#473

HELIOS 1 & 2
HOURLY AVG. FLUXED PROTONS
74-097A-08B
76-003A-08B

HELIOS-A & B

HOURLY AVERAGED FLUXES OF PROTONS

74-097A-08B

76-003A-08B

THESE DATA SETS HAVE BEEN RESTORED. ORIGINALLY EACH DATA SET CONTAINED ONE 9-TRACK, 1600 BPI TAPE WRITTEN IN BINARY. THERE IS ONE RESTORED TAPE FOR EACH DATA SET. THE DR TAPES ARE 3480 CARTRIDGES AND THE DS TAPES ARE 9-TRACK, 6250 BPI. THE ORIGINAL TAPES WERE CREATED ON AN IBM 360 COMPUTER AND WERE RESTORED ON AN IBM 9021 COMPUTER. THE DR AND DS NUMBERS ALONG WITH THE CORRESPONDING D NUMBERS AND TIME SPANS ARE AS FOLLOWS:

HELIOS-A 74-097A-08B

DR#	DS#	D#	FILES	TIME SPAN
DR005305	DS005305	D066088	1	12/15/74 - 02/12/84

HELIOS-B 76-003A-08B

DR#	DS#	D#	FILES	TIME SPAN
DR005303	DS005303	D043188	1	01/18/76 - 03/07/80

REQ. AGENT	RAND NO.	ACQ. AGENT
DEW	V0081	HKH
RSH		
SAR	V0289	HKH

HELIOS 1 & 2

HOURLY AVG. FLUXED PROTONS

74-097A-08B

76-003A-08B

This data set catalog consists of Helios 1 & 2 data. There is one tape to each data set. All tapes are Binary, 1600 BPI, 9-track, with one file of data. The tapes were created on an IBM 360 computer. The D and C numbers along with the time spans are as follows:

HELIOS 1 74-097A-08B

D#	C#	TIME SPAN
D-66088	C-23937	12/15/74 - 02/12/84

HELIOS 2 76-003A-08B

D-43188	C-21474	01/18/76 - 03/07/80

** These tapes are replaced every year.

EXT 08

October 17, 1980

TO: 601/Director, National Space Science Data Center

FROM: 660/Associate Chief, Laboratory for High Energy Astrophysics

SUBJECT: Helios E7 Data Distribution to the NSSDC

I have just learned that while Dr. Van Hollebeke wrote up a plan for the Helios E7 data to be put in the NSSDC, no letter was ever written to you. The result is that the plan outlined below is now well along to completion.

Two types of data with documentation will be sent to you. In addition, Xeroxed copies (8 1/2 x 11) of the orbit/attitude data will be furnished in a binder totaling ~3" thickness for each spacecraft.

The first type of data consist of magnetic tapes containing hourly averaged fluxes of protons in three energy bins from ~5 to 21.6 MeV, 21.6 to 57 MeV and >57 MeV. The period covered ranges from turn-on to January 1, 1980. This data will be delivered by November 3, 1980.

The second type consist of microfilm (35 mm) plots of the sectored X-ray data for the same period. A reel of film will cover 6 months from one spacecraft. Deliveries will begin ~ November 3, 1980, and be completed by May 1, 1981. These deliveries are paced by the availability of the 4060 machine.

James H. Trainor

cc: F.B. McDonald/660
H.Domchick/664

CSC COMPUTER SCIENCES CORPORATION

INTEROFFICE CORRESPONDENCE

to R. Post, Manager of NSDC from Dr. E. Ronish date Nov. 11, 1980

subject Helios-A/-B Sectored X-Ray Plot Description

The Sectored X-Ray Plot contains counts per second on an every readout basis. Each frame covers a five hour timespan and each point is an average of one set of eight sectors. On the bottom of the plot is a ranking table. With the three most intense directions indicated such that the most intense sector is placed on top. The time on the plot consists of the space craft event time associated with the readout of the first sector. The second time is a correction for one way light time to the sun and represents the event time at the sun. The space craft position in ecliptic coordinates is given at the top of each frame. The name of the spacecraft is also given at the top of the frame.

For further information pertaining to the above, please contact me at GSFC on extension 7794.

When working with the Helios tapes, I found two problems with the format:

First, the order of the halfwords in word 1 is switched. The number of physical quantities comes first, followed by the number of hourly intervals.

Second, the format states that there are 6 132-character lines (792 characters) between word 2 and word 201. Only 528 of those bytes are characters, the rest (264) are binary fill (hex 77).

Dave G.
7/12/93

9trk 1600 1 File

November 7, 1980

TO: 601/Director, National Space Science Data Center

FROM: 660/Associate Chief, Laboratory for High Energy Astrophysics

SUBJECT: Helios Experiment 7 Data Record Description

A data record contains hourly averaged data for no more than five days. In fact, except for a few instances, data records cover exactly 5 days.

Each data record contains a count of the number of hourly intervals in the record, as well as information as to how many physical quantities are contained within the record. This number is always 3 on the tapes being submitted.

Structure of a data record is as follows:

Word 1,	Halfword 1:	Number of hourly intervals in the record (N)
	Halfword 2:	Number of physical quantities (3)
Word 2:		Spare
Words 3-200:		Six 132-character lines identifying the physical quantities contained in the record
Words 201-N:		N entries of the form described below:
	Word 1, Halfword 1:	2-digit year
	Halfword 2:	Month of year
	Word 2, Halfword 1:	Day of month
	Halfword 2:	Hour of day
	Word 3, Halfword 1:	Minute of hour (always 0)
	Halfword 2:	Second of minute (always 0)
	Word 4:	Floating point Value of xxx-xxx MeV yyyyy flux
	Word 5:	Statistical error associated with xxx-xxx MeV yyyyy flux
	Word 6:	Value of xxx-xxx MeV yyyyy flux
	Word 7:	Statistical error associated with xxx-xxx MeV yyyyy flux
	Word 8:	Value of xxx-xxx MeV yyyyy flux
	Word 9:	Statistical error associated with xxx-xxx MeV yyyyy flux

Thus, the size of a record (in words) is given by: $N = 200 + 9N$.

These tapes were generated on IBM System 360. Halfword 1 refers to the high-order 16 bits of the 32-bit word, and Halfword 2 is the low-order half. Flux and error are stored as IBM single precision floating point numbers.

The (33*6)-word legend area identifies the quantities contained in the data record. This data is, therefore, the same for every record.

There is one tape for Helios-A and one for Helios-B, each tape ranging from the launch of the spacecraft to January 1, 1980, hour zero. The IBM 360 data control block (DCB) parameters used to create these tapes are RECFM=U and BLKSIZE=7294. The three physical quantities contained in each data record (previously described) are three unsectored rates divided by the geometry factor of their respective detector stack. These are defined as follows:

RATE MNEMONIC	DETECTOR STACK (RATE)	TELESCOPE	GEOMETRY FACTOR
R1	$(A2.K1+A1.C1).B.\overline{C3}$	High Energy	.27 cm^2 sr
R3A	A2.B.C3	High Energy	.44 cm^2 sr
R12A	$D1.D2.E1.\overline{F}$	Low Energy	.15 cm^2 sr

R1 responds mainly to protons from 21.6-57.0 MeV.
R3A responds to energetic particles above 57.0 MeV.
R12A responds to particles between 3.3 and 21.6 MeV.

For additional information, contact either Mr. John Broomhall on X6539 or Dr. Nand Lal on X7824.

James H. Trainor

9tk, 1600, 1 file

October 31, 1980

TO: NSSDA Users

FROM: 660/Helios E7 Principal Investigator

SUBJECT: Helios-1 Orbit Attitude Data

74-097A-00E?
Not a complete set of ephemeris

This book of printouts contains the Helios-1 orbit attitude data from December 11, 1974 to December 31, 1979. Hourly listings are given for the following quantities:

Helios Ecliptic Longitude
Helios Ecliptic Latitude
Sun-Helios Distance (AU)
Earth-Helios Distance (AU)
Earth-Helios-Sun Angle
Helios-Sun-Earth Angle
Helios Heliographic Latitude
Helios Velocity--Radial Component
Helios Velocity--Normal Component

James H. Trainor

Hal Domchick
63 63382

Dr. Trainor thinks that perhaps this came from 74-097A-00E; almost certain!
R Parthasarathy
6 Aug/86

********** 67 ********** 57 *********

JOBNAME-

```
SSSSSSSSSS   DDDDDDDDD    HH        HH   EEEEEEEEEEE  LL          DDDDDDDDD        AA        SSSSSSSSSSS
SSSSSSSSSSS  DDDDDDDDDD   HH        HH   EEEEEEEEEEE  LL          DDDDDDDDDD       AA        SSSSSSSSSSS
SS        SS DD       DD  HH        HH   EE           LL          DD       DD     AAAA       SS
SS           DD       DD  HH        HH   EE           LL          DD       DD     AAAA       SS
SSS          DD       DD  HH        HH   EE           LL          DD       DD    AA  AA      SS
 SSSSSSSSS   DD       DD  HHHHHHHHHHHH   EEEEEEE      LL          DD       DD    AA  AA      SSSSSSSSSSS
  SSSSSSSSS  DD       DD  HHHHHHHHHHHH   EEEEEEE      LL          DD       DD   AA    AA     SSSSSSSSSSS
         SSS DD       DD  HH        HH   EE           LL          DD       DD   AAAAAAAA             SS
         SS  DD       DD  HH        HH   EE           LL          DD       DD   AAAAAAAAAA           SS
SS        SS DD       DD  HH        HH   EE           LL          DD       DD   AA      AA     SS      SS
SSSSSSSSSSS  DDDDDDDDDD   HH        HH   EEEEEEEEEEE  LLLLLLLLLLLL  DDDDDDDDDD   AA      AA     SSSSSSSSSSS
 SSSSSSSSSS  DDDDDDDDD    HH        HH   EEEEEEEEEEE  LLLLLLLLLLLL  DDDDDDDDD    AA      AA     SSSSSSSSSSS
```

BOX

```
BBBBBBBBB    FFFFFFFFFFFF    33333333
BBBBBBBBBB   FFFFFFFFFFFF   3333333333
BB       BB  FF            33        33
BB       BB  FF                      33
BB       BB  FF                     33
BBBBBBBBB    FFFFFFFF           33333
BBBBBBBBBB   FFFFFFFF           33333
BB       BB  FF                     33
BB       BB  FF                     33
BB       BB  FF            33        33
BBBBBBBBBBB  FF            3333333333
BBBBBBBBBB   FF             33333333
```

SACC 300/91 READER NUMBER-P0206 CLASS-

```
      AA
      AA
     AAAA
     AAAA
    AA  AA
    AA  AA
   AA    AA
   AAAAAAAA
  AAAAAAAAAA
  AA      AA
 AA        AA
 AA        AA
```

ORA 11

10/1/75 - 10/31/75

NUMBER 57 CP 01L-ZMAS/CCL/910 ZCPJ 1 67/.LF YS2KNAC2/671 Z3PJME18/238 SDHELMAS/BF3 AT 15.39.04 SAT 23 FEB 80

```
********** 97 ***************************************************************************************** 97 *********

JOBNAME-
      SSSSSSSSSS   DDDDDDDDD     HH        HH  EEEEEEEEEEEE  LL            CCCCCCCCCC       AA        2222222222
     SSSSSSSSSSSS  DDDDDDDDDD    HH        HH  EEEEEEEEEEEE  LL           CCCCCCCCCCCC      AA       222222222222
     SS        SS  DD       DD   HH        HH  EE            LL           CC        CC     AAAA      22        22
     SS            DD        DD  HH        HH  EE            LL           CC        CC     AAAA                22
     SSS           DD        DD  HH        HH  EE            LL           CC        CC    AA  AA              22
      SSSSSSSSS    DD        DD  HHHHHHHHHHHH  EEEEEEEE      LL           CC        CC    AA  AA            22
       SSSSSSSSS   DD        DD  HHHHHHHHHHHH  EEEEEEEE      LL           CC        CC   AA    AA         22
              SSS  DD        DD  HH        HH  EE            LL           CC        CC   AAAAAAAA       22
               SS  DD        DD  HH        HH  EE            LL           CC        CC  AAAAAAAAAA    22
     SS        SS  DD       DD   HH        HH  EE            LL           CC        CC  AA      AA    22
     SSSSSSSSSSSS  DDDDDDDDDD    HH        HH  EEEEEEEEEEEE  LLLLLLLLLLLL  CCCCCCCCCCCC  AA        AA  222222222222
      SSSSSSSSSS   DDDDDDDDD     HH        HH  EEEEEEEEEEEE  LLLLLLLLLLLL   CCCCCCCCCC   AA        AA  222222222222

BOX-                                                  SACC 360/75      READER NUMBER-P0179          CLASS-
     BBBBBBBBB     FFFFFFFFFFFF    33333333                                                          AA
     BBBBBBBBBB    FFFFFFFFFFFF   3333333333                                                         AA
     BB       BB   FF            33        33                                                        AAAA
     BB       BB   FF                      33                                                        AAAA
     BB      BB    FF                    33                                                        AA  AA
     BBBBBBBBB     FFFFFFFF           33333                                                        AA  AA
     BBBBBBBBBB    FFFFFFFF           33333                                                       AA    AA
     BB       BB   FF                    33                                                       AAAAAAAA
     BB        BB  FF                      33                                                    AAAAAAAAAA
     BB        BB  FF            33        33                                                    AA      AA
     BBBBBBBBBB    FF             3333333333                                                     AA        AA
     BBBBBBBBBB    FF              33333333                                                      AA        AA
```

ORA 13
10/31/75 - 12/31/75

```
      XX SPACE=(CYL,(0,1))                                              00000160
      XXSYSPRINT DD SYSOUT=6OUT,UNIT=(2314,3),SPACE=(CYL,(0,2)),        00000170
      IEF653I SUBSTITUTION JCL - SYSOUT=A,UNIT=(2314,3),SPACE=(CYL,(0,2)),
      XX DCB=(RECFM=VBA,LRECL=137,BLKSIZE=6BLKSIZE)                     00000180
      IEF653I SUBSTITUTION JCL - DCB=(RECFM=VBA,LRECL=137,BLKSIZE=7265)
      XXSYSTERM  DD  SYSOUT=6TERMOUT                                    00000190
      IEF653I SUBSTITUTION JCL - SYSOUT=A
      //SYSUDUMP DD SYSOUT=A
      XXSYSUDUMP DD SYSOUT=A,SPACE=(CYL,(0,5))                          00000200
      //GO.GENTAP DD UNIT=(7TRACK,DEFER),
      //    VOL=SER=(TAPE,LABEL=(,NL,,IN),DISP=(OLD,KEEP),
      //    DCB=(RECFM=U,BLKSIZE=1944,DEN=2)
      //DATAS DD *
IEF236I ALLOC. FOR SCHLOAS GO
IEF237I 323   ALLOCATED TO SYSLIB
IEF237I 550   ALLOCATED TO
IEF237I 451   ALLOCATED TO
IEF237I 451   ALLOCATED TO
IEF237I 244   ALLOCATED TO
IEF237I 244   ALLOCATED TO
IEF237I 323   ALLOCATED TO SYSLOUT
IEF237I 323   ALLOCATED TO SYSLIN
IEF237I 452   ALLOCATED TO FT06F001
IEF237I 450   ALLOCATED TO FT06F001
IEF237I 450   ALLOCATED TO FT07F001
IEF237I 450   ALLOCATED TO SYSULINT
IEF237I 212   ALLOCATED TO SYSPRINT
IEF237I 232   ALLOCATED TO SYSPRINT
IEF237I 452   ALLOCATED TO SYSTERM
IEF237I 450   ALLOCATED TO SYSUDUMP
IEF237I 001   ALLOCATED TO GENTAP
```

CS/360 LOADER

```
CPTIONS USED - PRINT,MAP,NOLET,CALL,NOLOG,NOTEST,SIZE=(19224,NAME=**GO
               EP=DUMMIT
```

NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR
DUMMIT		SD 142810	CNVRTSCT*	SD 143670	CNVRT	*	LR 143670	DBGEN	*	SD 143998	DBFECV	*	LR 143858
FREAD	*	SD 143963	FREADB	*	LR 143808	FWRITE	*	LR 144070	RC#IND	*	LR 144202	LEAVE	*	LR 144366
OVLHAD	*	LR 144416	ADDR	*	LR 144530	MOVMEM	*	LR 144730	MEMMEM	*	LR 144932	ETRAP	*	LR 144822
FALLOA	*	LR 144AA0	FUNITABL*	SD 145460	FPL1	*	SD 145829	FODNLIST*	SD 145830	FERMSG	*	SD 145838
IHCUAREL*	SD 145bA0	FRDLLF	*	LR 145BA0	FWRLL#	*	LR 1461A4	IHCFCOMH*	SD 146670	IBCOM#	*	LR 146670
FSTOCE#	*	LR 146722	INTSATCH*	LR 147505	IHCCOMH2*	SD 147505	SEQDASD	*	LR 147952	FTF	*	SD 147C38
ITISCCT	*	SD 147CC8	ITI	*	LR 147CC8	FXFLT	*	SD 147D40	FIXFLT	*	LR 147D40	TRNSLTE	*	SD 147D88
TRAMS	*	LR 147D88	SITST	*	SD 147E98	CBTSDATA*	LR 147E78	DTDUM	*	SD 147FC8	IHCFCVTH*	SD 148098
ADCONA	*	LR 148098	FCVAOUTP*	LR 148142	FCVLIUTP*	LR 148152	FCVZOUTP*	LR 148322	FCVIOUTP*	LR 148650
FEVBOUTP*	LR 148BD8	FCVCOUTP*	LR 148DEC	INTSSCH*	LR 149033	IHCSFIOS*	SD 149238	FIOCS#	*	LR 149238
[illegible]	LR [illegible]	IHCMTCH*	SD [illegible]	IHCSTOP	*	SD [illegible]	EOF4UM	*	LR 14A6C6	IHCEFPE	*	LR 14A6C8
IHCSFNTH*	SD 14AC68	AXITH#	*	LR 14AC68	ADJUSTCH*	LR 14B034	IHCJOPT	*	SD 14B180	IHCUATOL*	SD 143428
IHCSTXDM	SD 14B81C	IHCTRCH	*	LR 14BB10	ERRTRA	*	LR 14BB18							

```
TOTAL LENGTH     9590
ENTRY ADDRESS 142810

                    SATIO   HELIOS-A        OPUNIT TAPE **02411
          7409701 UFB              75 274 000000 304 000000 5013 01 760515 015 01 01 E7  X
```

HELIOS-A YEAR 1975. LAUNCH TIME 23462150. 0.

DATE MO	DD	HR	MN	SC	HELIOS ECC.ANOM	HELIOS ECC.ANT	SUN-HELIOS DIST(A.U)	EARTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LAT(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
10	1	0	0	0	309.69	0.03	0.37	0.82	109.19	50.32	-2.00	0.011	0.03
10	1	0	59	59	309.85	0.03	0.37	0.81	109.35	50.15	-1.97	0.011	0.03
10	2	0	0	0	313.47	0.59	0.38	0.79	112.83	46.54	-1.47	0.012	0.03
10	2	0	59	59	313.62	0.59	0.38	0.79	112.98	46.39	-1.45	0.012	0.03
10	3	0	0	0	316.98	0.55	0.39	0.76	116.25	43.04	-0.97	0.012	0.03
10	3	0	59	59	317.10	0.54	0.40	0.75	116.38	42.90	-0.95	0.012	0.03
10	4	0	0	0	320.19	0.50	0.41	0.74	119.44	39.81	-0.49	0.012	0.03
10	4	0	59	59	320.32	0.50	0.41	0.73	119.57	39.68	-0.47	0.012	0.03
10	5	0	0	0	323.17	0.46	0.42	0.71	122.43	36.84	-0.04	0.013	0.03
10	5	0	59	59	323.29	0.45	0.42	0.71	122.55	35.72	-0.02	0.013	0.03
10	6	0	0	0	325.91	0.41	0.43	0.69	125.22	34.09	0.39	0.013	0.03
10	6	0	59	59	326.02	0.41	0.43	0.69	125.33	33.96	0.41	0.013	0.03

10	7	0	0	0	328.43	0.37	0.45	0.65	127.33	31.57	0.79	0.013	0.03
10	7	0	59	59	328.54	0.37	0.45	0.66	127.94	31.47	0.81	0.013	0.03
10	8	0	0	0	330.76	0.33	0.45	0.64	130.28	29.24	1.17	0.013	0.03
10	8	0	59	59	330.85	0.33	0.46	0.64	130.38	29.15	1.18	0.013	0.03
10	9	0	0	0	332.66	0.29	0.47	0.62	132.68	27.14	1.52	0.013	0.03
10	9	0	59	59	332.94	0.28	0.47	0.62	132.66	27.01	1.53	0.013	0.03
10	10	0	0	0	334.83	0.25	0.48	0.60	134.71	25.12	1.84	0.013	0.02
10	10	0	59	59	334.96	0.25	0.49	0.60	134.79	25.05	1.86	0.013	0.02
10	11	0	0	0	336.69	0.21	0.50	0.58	136.71	23.31	2.15	0.013	0.02
10	11	0	59	59	336.77	0.21	0.50	0.58	136.80	23.23	2.16	0.013	0.02
10	12	0	0	0	338.37	0.17	0.51	0.56	138.60	21.63	2.44	0.013	0.02
10	12	0	59	59	338.44	0.17	0.51	0.56	138.67	21.57	2.45	0.013	0.02
10	13	0	0	0	339.91	0.14	0.52	0.54	140.36	20.09	2.70	0.013	0.02
10	13	0	59	59	339.97	0.14	0.52	0.54	140.43	20.03	2.71	0.013	0.02
10	14	0	0	0	341.33	0.10	0.54	0.52	142.01	18.67	2.95	0.013	0.02
10	14	0	59	59	341.39	0.10	0.54	0.52	142.07	18.62	2.96	0.013	0.02
10	15	0	0	0	342.64	0.07	0.55	0.50	143.55	17.36	3.18	0.013	0.02
10	15	0	59	59	342.69	0.07	0.55	0.50	143.61	17.31	3.19	0.013	0.02
10	16	0	0	0	343.84	0.04	0.56	0.48	145.00	16.16	3.40	0.012	0.02
10	16	0	59	59	343.89	0.04	0.56	0.48	145.06	16.11	3.41	0.012	0.02
10	17	0	0	0	344.95	0.01	0.57	0.47	146.35	15.05	3.60	0.012	0.02
10	17	0	59	59	344.99	0.01	0.57	0.47	146.40	15.01	3.61	0.012	0.02
10	18	0	0	0	345.97	-0.02	0.59	0.45	147.61	14.03	3.80	0.012	0.02
10	18	0	59	59	346.01	-0.02	0.59	0.45	147.66	13.99	3.80	0.012	0.02
10	19	0	0	0	346.91	-0.04	0.60	0.44	148.78	13.09	3.97	0.012	0.02
10	19	0	59	59	346.95	-0.04	0.60	0.43	148.82	13.06	3.98	0.012	0.02
10	20	0	0	0	347.77	-0.07	0.61	0.42	149.85	12.23	4.14	0.012	0.02
10	20	0	59	59	347.80	-0.07	0.61	0.42	149.91	12.20	4.15	0.012	0.02
10	21	0	0	0	348.56	-0.09	0.62	0.41	150.87	11.44	4.30	0.012	0.02
10	21	0	59	59	348.57	-0.09	0.62	0.41	150.91	11.41	4.30	0.012	0.02
10	22	0	0	0	349.29	-0.12	0.63	0.39	151.79	10.72	4.44	0.011	0.02
10	22	0	59	59	349.31	-0.12	0.63	0.39	151.82	10.69	4.45	0.011	0.02
10	23	0	0	0	349.95	-0.14	0.64	0.38	152.63	10.05	4.58	0.011	0.02
10	23	0	59	59	349.97	-0.14	0.64	0.38	152.66	10.03	4.59	0.011	0.02
10	24	0	0	0	350.53	-0.16	0.66	0.36	153.39	9.45	4.71	0.011	0.02
10	24	0	59	59	350.53	-0.16	0.66	0.36	153.42	9.42	4.72	0.011	0.02
10	25	0	0	0	351.11	-0.18	0.67	0.35	154.07	8.83	4.83	0.011	0.02
10	25	0	59	59	351.13	-0.19	0.67	0.35	154.10	8.67	4.84	0.011	0.02
10	26	0	0	0	351.61	-0.20	0.68	0.34	154.67	8.39	4.95	0.011	0.02
10	26	0	59	59	351.63	-0.21	0.68	0.34	154.70	8.37	4.95	0.011	0.02
10	27	0	0	0	352.07	-0.22	0.69	0.33	155.20	7.93	5.06	0.010	0.02
10	27	0	59	59	352.04	-0.23	0.69	0.33	155.21	7.92	5.06	0.010	0.02
10	28	0	0	0	352.48	-0.24	0.70	0.32	155.63	7.52	5.16	0.010	0.02
10	28	0	59	59	352.49	-0.24	0.70	0.31	155.65	7.51	5.16	0.010	0.02
10	29	0	0	0	352.85	-0.26	0.71	0.30	155.94	7.15	5.25	0.010	0.02
10	29	0	59	59	352.85	-0.26	0.71	0.30	156.00	7.14	5.26	0.010	0.02
10	30	0	0	0	353.18	-0.28	0.72	0.29	156.26	6.82	5.35	0.010	0.02
10	30	0	59	59	353.19	-0.28	0.72	0.29	156.27	6.81	5.35	0.010	0.02
10	31	0	0	0	353.47	-0.30	0.73	0.28	156.44	6.53	5.43	0.010	0.02

END OF FILE ON ORBIT TAPE

```
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   M2.ZBNTC.SC002.LOAD                          KEPT       DDNAME=SYSLIB  -1        0 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS0.FORTLIB                                 KEPT       DDNAME=SYSLIB  -2       17 EXCPS
IEF285I   VOL SER NOS= M25YS2.
IEF285I   SYS1.FORTLIB                                 KEPT       DDNAME=SYSLIB  -3       89 EXCPS
IEF285I   VOL SER NOS= K3ITL0.
IEF285I   SYS2.FORTLIB                                 KEPT       DDNAME=SYSLIB  -4        0 EXCPS
IEF285I   VOL SER NOS= K3ITL0.
IEF285I   SYS1.PL1LIB                                  KEPT       DDNAME=SYSLIB  -5        0 EXCPS
IEF285I   VOL SER NOS= K3ITL6.
IEF285I   SYS1.FORTSSP                                 KEPT       DDNAME=SYSLIB  -6        0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS00054.T153627.SV000.SDHELCAS.R0000001     SYSOUT     DDNAME=SYSLOUT           1 EXCPS
IEF285I   VOL SER NOS= SCR000.
IEF285I   M2.ZBNTC.SC002.LOAD                          KEPT       DDNAME=SYSLIN  -1        7 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS00054.T153627.SV000.SDHELCAS.S0000008     SYSIN      DDNAME=FT05F001          2 EXCPS
IEF285I   VOL SER NOS= SCR001.
IEF285I   SYS00054.T153627.SV000.SDHELCAS.S0000008     DELETED    DDNAME=FT05F001          2 EXCPS
IEF285I   VOL SER NOS= SCR001.
IEF285I   SYS00054.T153627.SV000.SDHELCAS.R0000002     SYSOUT     DDNAME=FT06F001          2 EXCPS
IEF285I   VOL SER NOS= SCR000.
IEF285I   SYS00054.T153627.SV000.SDHELCAS.R0000003     DELETED    DDNAME=FT07F001          0 EXCPS
IEF285I   VOL SER NOS= SCR000.
IEF285I   SYS00054.T153627.SV000.SDHELCAS.R0000004     DELETED    DDNAME=SYSPRINT          0 EXCPS
IEF285I   VOL SER NOS= M25CR4.
```

```
JOBNAME-
      ZZZZZZZZZZZZ  BBBBBBBBB          JJJJJJ  HH        HH  BBBBBBBBB     CCCCCCCCCCC        AA          66666666
      ZZZZZZZZZZZZ  BBBBBBBBB          JJJJJJ  HH        HH  BBBBBBBBB     CCCCCCCCCCC        AA         6666666666
                ZZ  BB        BB          JJ    HH        HH  BB        BB  CC        CC      AAAA       66        66
               ZZ   BB        BB          JJ    HH        HH  BB        BB  CC        CC      AAAA       66
              ZZ    BB        BB          JJ    HH        HH  BB        BB  CC        CC     AA  AA      66
             ZZ     BBBBBBBBB              JJ    HHHHHHHHHHHH  BBBBBBBBB     CC        CC     AA  AA      6666666666
            ZZ      BBBBBBBBB              JJ    HHHHHHHHHHHH  BBBBBBBBB     CC        CC    AA    AA     66666666666
           ZZ       BB        BB          JJ    HH        HH  BB        BB  CC        CC    AAAAAAAA     66        66
          ZZ        BB        BB          JJ    HH        HH  BB        BB  CC        CC   AAAAAAAAAA    66        66
         ZZ         BB        BB  JJ      JJ    HH        HH  BB        BB  CC        CC   AA      AA    66        66
       ZZZZZZZZZZZ  BBBBBBBBBB    JJJJJJJJ    HH        HH  BBBBBBBBBB    CCCCCCCCCCC  AA        AA   6666666666
      ZZZZZZZZZZZZ  BBBBBBBBB      JJJJJJ     HH        HH  BBBBBBBBB     CCCCCCCCCCC  AA        AA    66666666

BOX-                                                  SACC 360/75      READER NUMBER-P0122          CLASS-
      BBBBBBBBB     FFFFFFFFFFFF    33333333
      BBBBBBBBB     FFFFFFFFFFFF   3333333333
      BB        BB  FF            33        33
      BB        BB  FF                      33
      BB        BB  FF                     33
      BBBBBBBBB     FFFFFFFF           33333
      BBBBBBBBB     FFFFFFFF           33333
      BB        BB  FF                     33
      BB        BB  FF                     33
      BB        BB  FF            33        33
      BBBBBBBBBB    FF             3333333333
      BBBBBBBBB     FF              33333333
```

ORA 01

12/11/74 — 12/31/74

NUMBER 81 ON 001-SDHELOA2/BF3 SDHELOA3/BF3 SDHELOA4/BF3 SDHELOA5/BF3 ZEJHBOA6/BF3 AT 12.23.37 MON 25 FEB 80

```
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(BLKSIZE=7265,LRECL=137,RECFM=VBA),
XX              SPACE=(CYL,(0,1)),UNIT=(DISK,3)                          00000180
XXSYSTERM  DD   SYSOUT=STTFEVSOT                                         00000190
IEF653I SUBSTITUTION JCL - SYSOUT=A
//SYSUDUMP DD SYSOUT=A
X/SYSUDUMP DD SYSOUT=A,SPACE=(CYL,(0,5))                                 00000200
//GO.GENTAP DD UNIT=(2TDACK,,DEFER),
//    VOL=SER=GENTAPE,LABEL=(,NL,,IN),DISP=(OLD,KEEP),
//    DCB=(RECFM=U,BLKSIZE=1944,DEN=2)
//DATAS DD *
IEF237I ALLOC. FOR ZEUR30X6 GO
IEF237I 332    ALLOCATED TO SYSLIB
IEF237I 320    ALLOCATED TO
IEF237I 451    ALLOCATED TO
IEF237I 231    ALLOCATED TO
IEF237I 344    ALLOCATED TO
IEF237I 244    ALLOCATED TO
IEF237I 220    ALLOCATED TO
IEF237I 251    ALLOCATED TO
IEF237I 335    ALLOCATED TO SYSLOUT
IEF237I 334    ALLOCATED TO SYSLIN
IEF237I 335    ALLOCATED TO FT05F001
IEF237I 335    ALLOCATED TO FT06F001
IEF237I 335    ALLOCATED TO FT07F001
IEF237I 335    ALLOCATED TO SYSPRINT
IEF237I 232    ALLOCATED TO SYSPRINT
IEF237I 235    ALLOCATED TO SYSPRINT
IEF237I 336    ALLOCATED TO SYSTERM
IEF237I 335    ALLOCATED TO SYSUDUMP
IEF237I 001    ALLOCATED TO GENTAP
```

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                                        OS/360 LOADER

OPTIONS USED - PRINT,MAP,NOLET,CALL,RES,NOTERM,SIZE=194560,NAME=**GO
               DP=DDRIT

      NAME   TYPE  ADDR      NAME   TYPE  ADDR      NAME   TYPE  ADDR      NAME   TYPE  ADDR      NAME   TYPE  ADDR
   ERBIT       SD  A3810   CNVRTUCT*  SD  A3670   CNVRT   *  LR  A3670   DBGEN   *  SD  A3998   DBFECV  *  CR  A3858
   FREAD   *   SD  A3B60   FREADB  *  LR  A3F68   FWRITE  *  LR  A4027   RF*IND   *  LR  A4282   LEAVE   *  LR  A4366
   UNLOAD  *   LR  A441A   PUCH    *  LR  A4530   MCUTL   *  LR  A4750   MCMBER   *  LR  A4932   FTRAP   *  LR  A4A22
   FALLOW  *   LR  A4AA0   FINITABL*  SD  A5A60   FPL1    *  SD  A5B28   FUDMLIST*  SD  A6330   FERMSG  *  SD  A5E38
   INCAAMELE   SD  A5AA6   FUDNLE  *  LR  A5B60   FARNLA  *  LR  A6144   INCECOMM*  SD  A6370   ISCOM#  *  LR  A667C
   FUDCOM  *   LR  A672C   INTSWTCH*  LR  A7500   INCCOMM2*  SD  A7508   SEQCASD  *  LR  A7450   FTF     *  SD  A7C38
   TTLECT  *   SD  A7C58   ITI     *  LR  A7C28   FXFLT   *  SD  A7D40   FIXFLT  *  LR  A7D40   TRNSLTE  *  SD  A7C88
   TRANS   *   LR  A7D98   HITST   *  SD  A7E34   CNTRDATA*  LR  A7E34   OTDMN    *  SD  A7FC8   INCFCVTH*  SD  A8598
   ADCOM#  *   LR  A8098   FCVAOUTP*  LR  A8142   FCVLOUTP*  LR  A8192   FCVZOUTP*  LR  A8322   FCVICUTP*  LR  A8600
   FCVLOUTP*   LR  A8U02   FCVCOUTP*  LR  A80EC   INTZSWCH*  LR  A9003   INCEFIOS*  SD  A9233   FIOCS*  *  LR  A9238
   FIOCSPER*   LR  A9238   INCFIOSM*  SD  A9160   INCERRR *  SD  A9650   ERRMON  *  LR  A4590   INCEPRE *  LR  AA6A8
   INCFNTH*    SD  AA068   ARITH#  *  LR  AAC68   ADJBWTCH*  LR  AB004   INCOUPT *  SD  AB180   INCUATBL*  SD  AB4D8
   INCITCH*    SD  AB610   INCTBCH *  LR  AC410   CONTRA  *  LR  AC019

   TOTAL LENGTH     5500
   ENTRY ADDRESS    A810
```

```
                    SATID  HELIOS-A        JOBNIT  TAPE #=DRA01
          7409701 CPB              74 344 075359 365 000000 0000 01 750827 005 01 01 E7  X
```

```
                    HELIOS-A          YEAR 1974.          LAUNCH TIME        2579.  1.
```

DATE MM	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	EARTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LAT(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
12	11	0	0	0	359.78	-0.00	0.98	0.00	90.29	0.22	-0.37	-.000	0.01
12	11	0	59	59	359.77	-0.00	0.98	0.00	90.26	0.23	-0.38	-.000	0.01
12	12	0	0	0	359.46	-0.00	0.98	0.01	90.45	0.54	-0.46	-.000	0.01
12	13	0	0	0	359.14	-0.00	0.98	0.01	90.98	0.86	-0.55	-.000	0.01
12	14	0	0	0	358.82	-0.00	0.98	0.02	91.50	1.14	-0.63	-.001	0.01
12	15	0	0	0	358.40	-0.00	0.98	0.03	92.15	1.50	-0.72	-.001	0.01
12	16	0	0	0	358.18	-0.00	0.98	0.03	92.92	1.82	-0.81	-.001	0.01
12	17	0	0	0	357.87	-0.00	0.98	0.04	93.50	2.13	-0.90	-.001	0.01
12	18	0	0	0	357.55	-0.00	0.98	0.04	94.19	2.45	-0.98	-.001	0.01
12	19	0	0	0	357.24	-0.00	0.99	0.05	94.89	2.76	-1.07	-.001	0.01
12	20	0	0	0	356.93	-0.00	0.98	0.05	95.59	3.07	-1.16	-.002	0.01
12	21	0	0	0	356.62	-0.00	0.98	0.06	96.31	3.33	-1.25	-.002	0.01
12	22	0	0	0	356.31	-0.00	0.97	0.06	97.03	3.69	-1.34	-.002	0.01
12	23	0	0	0	356.01	0.00	0.97	0.07	97.76	3.99	-1.42	-.002	0.01
12	24	0	0	0	355.71	0.00	0.97	0.07	98.50	4.29	-1.51	-.002	0.01

```
12 25  0  0  0    355.41   0.00   0.97   0.08   99.25   4.59   -1.60   -.002   0.01
12 26  0  0  0    355.11   0.00   0.97   0.09  100.91   4.84   -1.69   -.003   0.01
12 27  0  0  0    354.82   0.00   0.96   0.09  100.75   5.13   -1.78   -.003   0.01
12 28  0  0  0    354.54   0.00   0.96   0.10  101.57   5.46   -1.87   -.003   0.01
12 29  0  0  0    354.26   0.00   0.96   0.10  102.37   5.78   -1.96   -.003   0.01
12 30  0  0  0    353.98   0.00   0.95   0.11  103.13   6.02   -2.05   -.003   0.01
12 31  0  0  0    353.71   0.00   0.95   0.11  104.00   6.30   -2.14   -.003   0.01

END OF FILE ON ORBIT TAPE


IEF236I ZBJHBOA6 OBA01  DCI TR=002,T#=300,RS=000,CL=014,N=000,UC=C015A
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   M2.ZBRTC.S0002.LOAD                    KEPT          DDNAME=SYSLIB  -1        0 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS2.DEBLKUNV                          KEPT          DDNAME=SYSLIB  -2       17 EXCPS
IEF285I   VOL SER NOS= M2SY32.
IEF285I   SYS1.FORTLIB                           KEPT          DDNAME=SYSLIB  -3       51 EXCPS
IEF285I   VOL SER NOS= K3ITL0.
IEF285I   SYS2.FORTLIB                           KEPT          DDNAME=SYSLIB  -4       28 EXCPS
IEF285I   VOL SER NOS= K3SY32.
IEF285I   SYS1.PLILIB                            KEPT          DDNAME=SYSLIB  -5        0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS1.FORT33P                           KEPT          DDNAME=SYSLIB  -6        0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS2.COBLIB                            KEPT          DDNAME=SYSLIB  -7        0 EXCPS
IEF285I   VOL SER NOS= M2SYS1.
IEF285I   SYS1.ALCLIB                            KEPT          DDNAME=SYSLIB  -8        0 EXCPS
IEF285I   VOL SER NOS= K3SY32.
IEF285I   SYS80056.T121552.RV000.ZBJHBOA6.R0000001  SYSOUT     DDNAME=SYSLOUT           1 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   M2.ZBRTC.S0002.LOAD                    KEPT          DDNAME=SYSLIN  -1        7 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS80056.T121552.RV000.ZBJHBOA6.S0000008  SYSIN      DDNAME=FT05F001          2 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80056.T121552.RV000.ZBJHBOA6.S0000008  DELETED    DDNAME=FT05F001          2 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80056.T121552.RV000.ZBJHBOA6.R0000002  SYSOUT     DDNAME=FT06F001          1 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80056.T121552.RV000.ZBJHBOA6.R0000003  DELETED    DDNAME=FT07F001          0 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS80056.T121552.RV000.ZBJHBOA6.R0000004  DELETED    DDNAME=SYSPRINT          0 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80056.T121552.RV000.ZBJHBOA6.R0000005  DELETED    DDNAME=SYSTERM           0 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS80056.T121552.RV000.ZBJHBOA6.R0000006  DELETED    DDNAME=SYSUDUMP          0 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80056.T121552.RV000.ZBJHBOA6.R0000007  KEPT       DDNAME=GENTAP          160 EXCPS
IEF285I   VOL SER NOS= U4A01.
IEF320I K DCI,OBA01 ,ZBJHBOA6.SO
IEF373I STEP /GO      / START 80056.1216
IEF374I STEP /GO      / STOP  80056.1223 CPU   0MIN 04.09SEC MAIN 200K LCS   0K
- STEP 01 -      RETURN CODE = 0000                    STEP TIME =      .27 MINS=(CPU=      .06,IO=      .21)
                                   IO IN SECS. DISK=    11.17,DRUM=      .00,TAPE=     1.64,CELL=      .00,OTHR=      .15
- SUBCHARGES=(DRIVES ALLOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=00000)SECS.   TOTAL STEP TIME=      .27 MINS. -
     // EXEC NOTIFYTS                                                                  00000010
     XXDEFAULT  JACC MODE=,USRID=,MSG=,GSERID=,ID=  NOTIFYTS, SAC/21JUN73              00000020
     ***        SEND AS-ROUTINE JOB REPORT TO TSO USER                                 00000030
     XYNOTIFYTS EXEC PGM=NOTIFYTS,REGION=20K,COND=EVEN,                                00000040
     XX         PARM=(MODE,CUSRID,USERID,ID,E4,S1                                      00000050
     IEF653I SUBSTITUTION JCL - PARM='..'
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF373I STEP /NOTIFYTS/ START 80056.1223
IEF374I STEP /NOTIFYTS/ STOP  80056.1223 CPU   0MIN 00.05SEC MAIN    8K LCS    0K
- STEP 02 -      RETURN CODE = 0000                    STEP TIME =      .00 MINS=(CPU=      .00,IO=      .00)
                                   IO IN SECS. DISK=     .22,DRUM=      .00,TAPE=      .00,CELL=      .00,OTHR=      .06
- SUBCHARGES=(DRIVES ALLOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=00000)SECS.   TOTAL STEP TIME=      .00 MINS. -
IEF376I  JOB ZBJHBOA6/ START 80056.1216
IEF376I  JOB ZBJHBOA6/ STOP  80056.1223 CPU   0MIN 04.14SEC                                  TIME                    80-25-02
-  SYSTEM=REL21.8F (04-01-79) K3                                                                                      .21)
-  JOB 0230-                                   TOTAL TIME =      .27 MINS                                            .22
                                   IO IN SECS. DISK=    11.40,DRUM=      .00,TAPE=     1.64,                          S. -
- SUBCHARGES=(DRIVES ALLOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=00000)SECS.   TOTAL
  THERE WERE 01 TAPES MOUNTED FOR THIS JOB. TAPE MOUNT CHARGE WAS 30.0 MINUTES.
```

********** 02 **********

JOBNAME-

BOX-

SACC 360/75 HEADER NUMBER-P0119 CLASS-

1975 predict

ORA04

1/1/75 - 12/31/75

THIS PRINTOUT IS TO BE USED FOR ORBIT DATA FOR JAN. 1975
BECAUSE THE ACTUAL DATA FOR THIS MONTH IS UNAVAILABLE.

```
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(BLKSIZE=7265,LRECL=137,RECFM=VBA),
XX              SPACE=(CYL,(0,1)),UNIT=(DISK,3)                    00000180
XXSYSTERM  DD  SYSOUT=(TERMOUT)                                    00000190
IEF653I SUBSTITUTION JCL - SYSOUT=A
//SYSUDUMP DD SYSOUT=A
X/SYSUDUMP DD SYSOUT=A,SPACE=(CYL,(0,9))                           00000200
//GO.GENTAP DD UNIT=(TRACK,,DEFER),
//     VOL=SER=(RTAPE,RTAPE),DSN=(,NEW,,IN),DISP=(OLD,KEEP),
//     DCB=(RECFM=U,BLKSIZE=1944,DEN=2)
//DATAS DD *
IEF237I ALLOC. FOR SDHELO14 GO
IEF237I 333    ALLOCATED TO SYSLIB
IEF237I 322    ALLOCATED TO
IEF237I 451    ALLOCATED TO
IEF237I 231    ALLOCATED TO
IEF237I 244    ALLOCATED TO
IEF237I 220    ALLOCATED TO
IEF237I 231    ALLOCATED TO
IEF237I 335    ALLOCATED TO SYSLOUT
IEF237I 333    ALLOCATED TO SYSLIN
IEF237I 335    ALLOCATED TO FT05F001
IEF237I 335    ALLOCATED TO FT06F001
IEF237I 335    ALLOCATED TO FT07F001
IEF237I 335    ALLOCATED TO SYSPRINT
IEF237I 332    ALLOCATED TO SYSPRINT
IEF237I 335    ALLOCATED TO SYSPRINT
IEF237I 335    ALLOCATED TO SYSTERM
IEF237I 336    ALLOCATED TO SYSUDUMP
IEF237I 001    ALLOCATED TO GENTAP
```

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                                        OS/360 LOADER                                                    <

OPTIONS USED - PRINT,MAP,NOLET,CALL,RES,NOTERM,SIZE=194560,NAME=**GO
               EP=CRBIT

     NAME   TYPE  ADDR      NAME   TYPE  ADDR      NAME   TYPE  ADDR      NAME   TYPE  ADDR      NAME   TYPE  ADDR      NAME   TYPE  ADDR

  CRBIT      SD  A2810   CNVRTSCT*  SD  A3670   CNVRT    *  LR  A3670   DBGEN    *  SD  A3998   DBFEOV   *  LR  A3858
  FREAD    4 SD  A3060   FREADB  *  LR  A3F84   FWRITE   *  LR  A407C   FEVIND    *  LR  A4232   LEAVE    *  LR  A4366
  UNLOAD   *  LR  A441A   POSN   *  LR  A4530   MOUNT    *  LR  A47S0   MEMBER   *  LR  A4932   FTRAP    *  LR  A4A22
  FATLOA   *  LR  A4A03   FUNITAUB *  SD  A5360   FPL1     *  SD  A5028   FDONLIST*  SD  A5130   FERMSG   *  SD  A5838
  IHCNAMFL*  SD  A50A0   FRONL*  *  LR  A5810   FWRNL*   *  LR  A51A4   IHCECOMH*  SD  A6670   IBCOM#   *  LR  A6670
  FDICOS*  *  LR  A672C   INTSWTCH*  LR  A7506   IHCCOMH2*  SD  A7508   SEQCASD  *  LR  A7950   FTF      *  SD  A7C38
  FTISFCT  *  SD  A7EE0   IT4    *  LR  A7EE4   FXFLT    *  SD  A7040   FIXFLT   *  LR  A7040   TRNSLTE   *  SD  A7088
  TRANS    *  LR  A7088   BITST  *  SD  A7E98   CNTSDATA*  LR  A7E98   DTOUN    *  SD  A7FC8   IHCFCVTH*  SD  A8098
  ASCDN*   *  LR  A8098   FCVZOUTP*  LR  A8142   FCVLOUTP*  LR  A8102   FCVZOUTP*  LR  A3322   FCVIOUTP*  LR  A86D0
  FCVTOUTP*  LR  A3322   FCVCOUTP*  LR  A8DE0   INTSSACH*  LR  A5003   IHCEFIOS*  SD  A9233   FIOCS#   *  LR  A9238
  FIOCSTRP*  LR  A9238   IHCFIO32*  SD  AA160   IHCERRM *  SD  AA590   ERRMON    *  LR  AA590   IHCERRE *  LR  AA6A8
  IHCFCVTH*  SD  AA6C8   WRITE#  *  LR  AA6C8   ADJSATCH*  LR  AB0C4   IHCJUPT *  SD  AB1B0   IHCUATBL*  SD  AB408
  IHCETRCH*  SD  AB610   IHCTRCH *  LR  AB810   ERRTRA   *  LR  AB818

  TOTAL LENGTH    5590
  ENTRY ADDRESS   A2610

                    SATID  HELIOS-A        OORBIT TAPE #=ORAC4
          7A0M01 CRB            75 001 000030 365 000000 0005 01 751001 335 01 01 F7  X

                    HELIOS-A          YEAR 1975.          LAUNCH TIME    1674940.  1.                    <

     DATE                HELIOS     HELIOS     SUN-HELIOS     ERTH-HELIOS     EARTH-HELIOS    HELIOS-SUN    HELIOS     HELIOS-V(A.U/DAY)
  MO DC HR MN SC         ECL.LONG   ECL.LAT    DIST(A.U)      DIST(A.U)       SUN(DEG)        EARTH(DEG)    HEL-LAT(DEG)  RADIAL    NORMAL
   1  1  0  0  0          353.44     0.00       0.95           0.12            104.94          6.56          -2.23         -.004     0.01
   1  2  0  0  0          353.13     0.00       0.94           0.12            105.70          6.82          -2.32         -.004     0.01
   1  3  0  0  0          352.92     0.00       0.94           0.13            106.56          7.08          -2.41         -.004     0.01
   1  4  0  0  0          352.67     0.00       0.94           0.13            107.45          7.33          -2.50         -.004     0.01
   1  5  0  0  0          352.43     0.00       0.94           0.14            108.35          7.57          -2.59         -.004     0.01
   1  6  0  0  0          352.19     0.00       0.93           0.14            109.27          7.81          -2.68         -.004     0.01
   1  7  0  0  0          351.96     0.00       0.93           0.15            110.20          8.04          -2.77         -.005     0.01
   1  8  0  0  0          351.74     0.01       0.92           0.15            111.16          8.26          -2.87         -.005     0.01
   1  9  0  0  0          351.52     0.01       0.91           0.16            112.13          8.48          -2.96         -.005     0.01
   1 10  0  0  0          351.32     0.01       0.91           0.16            113.13          8.68          -3.05         -.005     0.01
   1 11  0  0  0          351.12     0.01       0.90           0.17            114.15          8.88          -3.15         -.005     0.01
   1 12  0  0  0          350.94     0.01       0.90           0.17            115.19          9.06          -3.24         -.005     0.01
   1 13  0  0  0          350.76     0.01       0.89           0.18            116.25          9.24          -3.34         -.006     0.01
```

1	14	0	0	0	350.60	0.01	0.89	0.18	117.34	9.40	-3.43	-.006	0.01
1	15	0	0	0	350.44	0.01	0.83	0.19	118.45	9.56	-3.53	-.006	0.01
1	16	0	0	0	350.30	0.01	0.88	0.19	119.59	9.70	-3.62	-.006	0.01
1	17	0	0	0	350.17	0.01	0.87	0.20	120.76	9.83	-3.72	-.006	0.01
1	18	0	0	0	350.05	0.01	0.86	0.20	121.96	9.95	-3.81	-.006	0.01
1	19	0	0	0	349.95	0.01	0.86	0.21	123.19	10.05	-3.91	-.007	0.01
1	20	0	0	0	349.86	0.01	0.85	0.21	124.45	10.14	-4.01	-.007	0.01
1	21	0	0	0	349.79	0.01	0.84	0.21	125.74	10.21	-4.11	-.007	0.01
1	22	0	0	0	349.73	0.01	0.84	0.22	127.07	10.27	-4.21	-.007	0.01
1	23	0	0	0	349.69	0.01	0.83	0.22	128.43	10.31	-4.31	-.007	0.01
1	24	0	0	0	349.67	0.01	0.82	0.23	129.82	10.33	-4.41	-.008	0.01
1	25	0	0	0	349.65	0.01	0.81	0.24	131.25	10.34	-4.51	-.008	0.01
1	26	0	0	0	349.65	0.01	0.81	0.24	132.72	10.32	-4.61	-.008	0.01
1	27	0	0	0	349.71	0.01	0.80	0.25	134.23	10.29	-4.71	-.008	0.01
1	28	0	0	0	349.77	0.01	0.79	0.25	135.77	10.23	-4.81	-.008	0.01
1	29	0	0	0	349.85	0.01	0.78	0.26	137.36	10.15	-4.91	-.008	0.02
1	30	0	0	0	349.96	0.01	0.77	0.26	138.98	10.04	-5.02	-.009	0.02
1	31	0	0	0	350.09	0.01	0.76	0.27	140.64	9.91	-5.12	-.009	0.02
2	1	0	0	0	350.25	0.01	0.75	0.27	142.35	9.75	-5.23	-.009	0.02
2	2	0	0	0	350.43	0.01	0.75	0.28	144.09	9.57	-5.33	-.009	0.02
2	3	0	0	0	350.65	0.01	0.74	0.29	145.88	9.35	-5.43	-.009	0.02
2	4	0	0	0	350.90	0.02	0.73	0.29	147.71	9.10	-5.53	-.010	0.02
2	5	0	0	0	351.19	0.02	0.72	0.30	149.59	8.81	-5.64	-.010	0.02
2	6	0	0	0	351.51	0.02	0.71	0.31	151.51	8.49	-5.74	-.010	0.02
2	7	0	0	0	351.87	0.02	0.70	0.31	153.47	8.13	-5.85	-.010	0.02
2	8	0	0	0	352.27	0.02	0.69	0.32	155.48	7.73	-5.95	-.010	0.02
2	9	0	0	0	352.71	0.02	0.68	0.33	157.54	7.29	-6.05	-.011	0.02
2	10	0	0	0	353.20	0.02	0.67	0.34	159.64	6.80	-6.15	-.011	0.02
2	11	0	0	0	353.73	0.02	0.65	0.34	161.79	6.26	-6.25	-.011	0.02
2	12	0	0	0	354.34	0.02	0.64	0.35	163.99	5.66	-6.35	-.011	0.02
2	13	0	0	0	354.99	0.02	0.63	0.36	166.24	5.01	-6.45	-.011	0.02
2	14	0	0	0	355.71	0.02	0.62	0.37	168.54	4.29	-6.55	-.012	0.02
2	15	0	0	0	356.49	0.02	0.61	0.38	170.89	3.51	-6.64	-.012	0.02
2	16	0	0	0	357.34	0.02	0.60	0.39	173.30	2.65	-6.73	-.012	0.02
2	17	0	0	0	358.27	0.02	0.59	0.40	175.77	1.73	-6.81	-.012	0.02
2	18	0	0	0	359.28	0.02	0.57	0.42	178.29	0.72	-6.89	-.012	0.02
2	19	0	0	0	0.38	0.02	0.56	0.43	179.12	0.38	-6.97	-.012	0.02
2	20	0	0	0	1.58	0.02	0.55	0.44	176.46	1.58	-7.04	-.013	0.02
2	21	0	0	0	2.89	0.02	0.53	0.46	172.73	2.88	-7.10	-.013	0.02
2	22	0	0	0	4.30	0.02	0.52	0.47	170.43	4.30	-7.15	-.013	0.02
2	23	0	0	0	5.83	0.02	0.51	0.49	168.05	5.83	-7.19	-.013	0.02
2	24	0	0	0	7.51	0.02	0.50	0.50	165.07	7.51	-7.22	-.013	0.02
2	25	0	0	0	9.32	0.02	0.49	0.52	162.01	9.32	-7.23	-.013	0.02
2	26	0	0	0	11.30	0.02	0.47	0.54	158.93	11.33	-7.22	-.013	0.03
2	27	0	0	0	13.43	0.02	0.46	0.56	155.55	13.68	-7.19	-.013	0.03
2	28	0	0	0	15.77	0.02	0.44	0.58	152.14	15.77	-7.13	-.013	0.03
3	1	0	0	0	18.30	0.02	0.43	0.60	148.60	18.30	-7.05	-.013	0.03
3	2	0	0	0	21.05	0.02	0.42	0.62	144.91	21.05	-6.93	-.013	0.03
3	3	0	0	0	24.03	0.02	0.41	0.64	141.06	24.03	-6.77	-.012	0.03
3	4	0	0	0	27.27	0.02	0.39	0.67	137.04	27.27	-6.56	-.012	0.03
3	5	0	0	0	30.78	0.02	0.38	0.69	132.84	30.78	-6.30	-.012	0.03
3	6	0	0	0	34.57	0.02	0.37	0.72	128.45	34.57	-5.99	-.011	0.03
3	7	0	0	0	38.66	0.02	0.36	0.75	123.85	38.66	-5.60	-.011	0.03
3	8	0	0	0	43.05	0.02	0.35	0.77	119.04	43.05	-5.15	-.010	0.03
3	9	0	0	0	47.76	0.02	0.34	0.80	114.03	47.76	-4.62	-.009	0.03
3	10	0	0	0	52.77	0.02	0.33	0.84	108.81	52.77	-4.01	-.008	0.04
3	11	0	0	0	58.06	0.02	0.32	0.87	103.42	58.06	-3.33	-.007	0.04
3	12	0	0	0	63.61	0.01	0.32	0.90	97.87	63.61	-2.58	-.005	0.04
3	13	0	0	0	69.39	0.01	0.31	0.93	92.21	69.39	-1.77	-.004	0.04
3	14	0	0	0	75.32	0.01	0.31	0.96	86.49	75.32	-0.91	-.002	0.04
3	15	0	0	0	81.36	0.00	0.31	1.00	80.75	81.36	-0.03	-.001	0.04
3	16	0	0	0	87.42	0.00	0.31	1.03	75.07	87.42	0.86	0.001	0.04
3	17	0	0	0	93.44	-0.00	0.31	1.06	69.51	93.44	1.72	0.003	0.04
3	18	0	0	0	99.34	-0.00	0.31	1.09	64.12	99.34	2.55	0.004	0.04
3	19	0	0	0	105.07	-0.01	0.32	1.12	58.96	105.07	3.32	0.006	0.04

HELIOS-A YEAR 1975. LAUNCH TIME 0614150. 1.

DATE MM	DD	HR	MN	SC	HELIOS SEC.LONG	HELIOS SEC.LAT	HELIOS DIST(AU)	SUN-HELIOS DIST(AU)	EARTH-HELIOS DIST(AU)	HELIOS-SUN EARTH(DEG)	HELIOS-EARTH (DEG)	HELIOS-X(A.U/DAY) RADIAL	HELIOS-X(A.U/DAY) NORMAL
3	20	0	0	0	110.47	-0.01	0.33	1.15	54.05	110.47	4.03	0.007	0.04
3	21	0	0	0	115.81	-0.01	0.33	1.18	49.46	115.81	4.66	0.008	0.04
3	22	0	0	0	120.76	-0.01	0.34	1.21	45.16	120.76	5.20	0.009	0.03
3	23	0	0	0	125.40	-0.02	0.35	1.23	41.18	125.40	5.67	0.010	0.03
3	24	0	0	0	129.73	-0.02	0.36	1.26	37.51	129.73	6.06	0.011	0.03
3	25	0	0	0	133.76	-0.02	0.37	1.28	34.14	133.76	6.38	0.011	0.03
3	26	0	0	0	137.50	-0.02	0.38	1.31	31.04	137.50	6.64	0.012	0.03
3	27	0	0	0	140.95	-0.02	0.40	1.33	28.22	140.95	6.84	0.012	0.03
3	28	0	0	0	144.14	-0.02	0.41	1.35	25.65	144.14	6.99	0.013	0.03
3	29	0	0	0	147.09	-0.02	0.42	1.37	23.31	147.09	7.10	0.013	0.03

3	30	0	0	0	149.80	-0.02	0.43	1.39	21.17	149.80	7.17	0.013	0.03
3	31	0	0	0	152.30	-0.02	0.45	1.41	15.23	152.30	7.21	0.013	0.03
4	1	0	0	0	154.60	-0.02	0.46	1.43	17.46	154.60	7.23	0.013	0.03
4	2	0	0	0	156.72	-0.02	0.47	1.45	15.65	156.72	7.22	0.013	0.02
4	3	0	0	0	158.68	-0.02	0.49	1.46	13.38	158.68	7.19	0.013	0.02
4	4	0	0	0	160.48	-0.02	0.50	1.48	13.05	160.48	7.14	0.013	0.02
4	5	0	0	0	162.14	-0.02	0.51	1.50	11.83	162.14	7.08	0.013	0.02
4	6	0	0	0	163.67	-0.02	0.52	1.51	10.73	163.67	7.01	0.013	0.02
4	7	0	0	0	165.08	-0.02	0.54	1.53	9.72	165.08	6.94	0.013	0.02
4	8	0	0	0	166.38	-0.02	0.55	1.54	8.80	166.38	6.85	0.013	0.02
4	9	0	0	0	167.58	-0.02	0.55	1.56	7.95	167.58	6.76	0.012	0.02
4	10	0	0	0	168.69	-0.02	0.58	1.57	7.19	168.69	6.66	0.012	0.02
4	11	0	0	0	169.71	-0.02	0.59	1.58	6.09	169.71	6.56	0.012	0.02
4	12	0	0	0	170.65	-0.02	0.60	1.60	5.66	170.65	6.45	0.012	0.02
4	13	0	0	0	171.51	-0.02	0.61	1.61	5.28	171.51	6.34	0.012	0.02
4	14	0	0	0	172.31	-0.02	0.62	1.62	4.75	172.31	6.23	0.012	0.02
4	15	0	0	0	173.04	-0.02	0.63	1.63	4.27	173.04	6.12	0.011	0.02
4	16	0	0	0	173.71	-0.02	0.65	1.65	3.83	173.71	6.01	0.011	0.02
4	17	0	0	0	174.33	-0.02	0.66	1.66	3.43	174.33	5.89	0.011	0.02
4	18	0	0	0	174.89	-0.02	0.67	1.67	3.07	174.89	5.78	0.011	0.02
4	19	0	0	0	175.41	-0.02	0.68	1.69	2.74	175.41	5.66	0.011	0.02
4	20	0	0	0	175.88	-0.02	0.69	1.69	2.45	175.88	5.55	0.010	0.02
4	21	0	0	0	176.31	-0.02	0.70	1.70	2.19	176.31	5.43	0.010	0.02
4	22	0	0	0	176.69	-0.02	0.71	1.71	1.94	176.69	5.32	0.010	0.02
4	23	0	0	0	177.04	-0.02	0.72	1.72	1.72	177.04	5.20	0.010	0.02
4	24	0	0	0	177.36	-0.02	0.73	1.73	1.53	177.36	5.09	0.010	0.02
4	25	0	0	0	177.64	-0.02	0.74	1.74	1.35	177.64	4.97	0.009	0.02
4	26	0	0	0	177.89	-0.02	0.75	1.75	1.21	177.89	4.86	0.009	0.02
4	27	0	0	0	178.12	-0.02	0.76	1.76	1.07	178.12	4.75	0.009	0.02
4	28	0	0	0	178.31	-0.02	0.77	1.77	0.96	178.31	4.63	0.009	0.02
4	29	0	0	0	178.48	-0.02	0.77	1.78	0.86	178.48	4.52	0.009	0.02
4	30	0	0	0	178.62	-0.02	0.78	1.79	0.77	178.62	4.41	0.008	0.02
5	1	0	0	0	178.74	-0.02	0.79	1.80	0.70	178.74	4.30	0.008	0.01
5	2	0	0	0	178.84	-0.02	0.80	1.81	0.65	178.84	4.19	0.008	0.01
5	3	0	0	0	178.92	-0.02	0.81	1.82	0.60	178.92	4.09	0.008	0.01
5	4	0	0	0	178.98	-0.02	0.82	1.82	0.57	178.98	3.98	0.008	0.01
5	5	0	0	0	179.02	-0.02	0.82	1.83	0.54	179.02	3.87	0.007	0.01
5	6	0	0	0	179.04	-0.02	0.83	1.84	0.53	179.04	3.77	0.007	0.01
5	7	0	0	0	179.04	-0.02	0.84	1.85	0.52	179.04	3.66	0.007	0.01
5	8	0	0	0	179.03	-0.02	0.84	1.85	0.53	179.03	3.56	0.007	0.01
5	9	0	0	0	179.00	-0.02	0.85	1.86	0.54	179.00	3.45	0.007	0.01
5	10	0	0	0	178.96	-0.02	0.86	1.87	0.56	178.96	3.35	0.007	0.01
5	11	0	0	0	178.91	-0.02	0.86	1.87	0.59	178.91	3.25	0.006	0.01
5	12	0	0	0	178.84	-0.01	0.87	1.88	0.62	178.84	3.15	0.006	0.01
5	13	0	0	0	178.76	-0.01	0.88	1.89	0.66	178.76	3.05	0.006	0.01
5	14	0	0	0	178.67	-0.01	0.88	1.89	0.71	178.67	2.95	0.006	0.01
5	15	0	0	0	178.56	-0.01	0.89	1.90	0.76	178.56	2.85	0.006	0.01
5	16	0	0	0	178.45	-0.01	0.89	1.91	0.82	178.45	2.75	0.006	0.01
5	17	0	0	0	178.33	-0.01	0.90	1.91	0.89	178.33	2.65	0.005	0.01
5	18	0	0	0	178.19	-0.01	0.90	1.92	0.95	178.19	2.55	0.005	0.01
5	19	0	0	0	178.05	-0.01	0.91	1.92	1.03	178.05	2.46	0.005	0.01
5	20	0	0	0	177.90	-0.01	0.91	1.93	1.10	177.90	2.36	0.005	0.01
5	21	0	0	0	177.74	-0.01	0.92	1.94	1.18	177.74	2.26	0.005	0.01
5	22	0	0	0	177.58	-0.01	0.92	1.94	1.27	177.58	2.17	0.004	0.01
5	23	0	0	0	177.40	-0.01	0.93	1.94	1.35	177.40	2.07	0.004	0.01
5	24	0	0	0	177.22	-0.01	0.93	1.94	1.44	177.22	1.98	0.004	0.01
5	25	0	0	0	177.04	-0.01	0.94	1.95	1.54	177.04	1.89	0.004	0.01
5	26	0	0	0	176.85	-0.01	0.94	1.95	1.64	176.85	1.79	0.004	0.01
5	27	0	0	0	176.65	-0.01	0.94	1.96	1.74	176.65	1.70	0.004	0.01
5	28	0	0	0	176.44	-0.01	0.95	1.96	1.84	176.44	1.61	0.003	0.01
5	29	0	0	0	176.23	-0.01	0.95	1.96	1.94	176.23	1.51	0.003	0.01
5	30	0	0	0	176.02	-0.01	0.95	1.97	2.05	176.02	1.42	0.003	0.01
5	31	0	0	0	175.80	-0.01	0.96	1.97	2.16	175.80	1.33	0.003	0.01
6	1	0	0	0	175.58	-0.01	0.96	1.97	2.27	175.58	1.24	0.003	0.01
6	2	0	0	0	175.35	-0.01	0.96	1.98	2.38	175.35	1.15	0.003	0.01
6	3	0	0	0	175.12	-0.01	0.97	1.98	2.50	175.12	1.06	0.002	0.01
6	4	0	0	0	174.89	-0.01	0.97	1.98	2.62	174.89	0.97	0.002	0.01
6	5	0	0	0	174.65	-0.01	0.97	1.99	2.74	174.65	0.88	0.002	0.01
6	6	0	0	0	174.41	-0.01	0.97	1.99	2.86	174.41	0.79	0.002	0.01
6	7	0	0	0	174.16	-0.01	0.97	1.99	2.98	174.16	0.70	0.002	0.01
6	8	0	0	0	173.92	-0.01	0.98	1.99	3.10	173.92	0.61	0.002	0.01
6	9	0	0	0	173.67	-0.01	0.98	1.99	3.22	173.67	0.52	0.002	0.01
6	10	0	0	0	173.42	-0.01	0.98	1.99	3.35	173.42	0.43	0.001	0.01
6	11	0	0	0	173.17	-0.01	0.98	1.99	3.48	173.17	0.34	0.001	0.01
6	12	0	0	0	172.91	-0.01	0.98	1.99	3.60	172.91	0.26	0.001	0.01
6	13	0	0	0	172.66	-0.01	0.98	1.99	3.73	172.66	0.17	0.001	0.01
6	14	0	0	0	172.40	-0.01	0.98	1.99	3.86	172.40	0.08	0.001	0.01
6	15	0	0	0	172.15	-0.00	0.98	1.99	3.99	172.15	-0.01	0.001	0.01
6	16	0	0	0	171.89	-0.00	0.98	2.00	4.12	171.89	-0.10	0.000	0.01
6	17	0	0	0	171.63	-0.00	0.98	2.00	4.25	171.63	-0.18	0.000	0.01
6	18	0	0	0	171.38	-0.00	0.98	2.00	4.38	171.38	-0.27	0.000	0.01

6	19	0	0	0	171.12	-0.00	0.98	1.99	4.51	171.12	-0.36	-.000	0.01
6	20	0	0	0	170.86	-0.00	0.98	1.99	4.64	170.86	-0.45	-.000	0.01
6	21	0	0	0	170.61	-0.00	0.98	1.99	4.77	170.61	-0.53	-.000	0.01
6	22	0	0	0	170.35	-0.00	0.98	1.99	4.90	170.35	-0.62	-.001	0.01
6	23	0	0	0	170.10	-0.00	0.98	1.99	5.03	170.10	-0.71	-.001	0.01
6	24	0	0	0	169.84	-0.00	0.98	1.99	5.16	169.84	-0.80	-.001	0.01
6	25	0	0	0	169.59	-0.00	0.98	1.99	5.30	169.59	-0.88	-.001	0.01
6	26	0	0	0	169.34	-0.00	0.98	1.99	5.43	169.34	-0.97	-.001	0.01
6	27	0	0	0	169.09	-0.00	0.98	1.99	5.56	169.09	-1.06	-.001	0.01
6	28	0	0	0	168.85	-0.00	0.98	1.98	5.69	168.85	-1.15	-.002	0.01
6	29	0	0	0	168.60	-0.00	0.98	1.98	5.82	168.60	-1.24	-.002	0.01
6	30	0	0	0	168.36	-0.00	0.97	1.98	5.94	168.36	-1.32	-.002	0.01
7	1	0	0	0	168.12	-0.00	0.97	1.98	6.07	168.12	-1.41	-.002	0.01
7	2	0	0	0	167.89	0.00	0.97	1.98	6.20	167.89	-1.50	-.002	0.01
7	3	0	0	0	167.65	0.00	0.97	1.97	6.33	167.65	-1.59	-.002	0.01
7	4	0	0	0	167.42	0.00	0.97	1.97	6.46	167.42	-1.68	-.002	0.01
7	5	0	0	0	167.20	0.00	0.96	1.97	6.58	167.20	-1.77	-.003	0.01
7	6	0	0	0	166.98	0.00	0.96	1.96	6.70	166.98	-1.85	-.003	0.01
7	7	0	0	0	166.76	0.00	0.96	1.96	6.82	166.76	-1.95	-.003	0.01
7	8	0	0	0	166.54	0.00	0.95	1.96	6.94	166.54	-2.04	-.003	0.01
7	9	0	0	0	166.34	0.00	0.95	1.95	7.06	166.34	-2.12	-.003	0.01
7	10	0	0	0	166.13	0.00	0.95	1.95	7.18	166.13	-2.22	-.003	0.01
7	11	0	0	0	165.94	0.00	0.94	1.95	7.29	165.94	-2.31	-.004	0.01
7	12	0	0	0	165.74	0.00	0.94	1.94	7.41	165.74	-2.40	-.004	0.01
7	13	0	0	0	165.56	0.00	0.94	1.94	7.52	165.56	-2.49	-.004	0.01
7	14	0	0	0	165.38	0.00	0.93	1.93	7.63	165.38	-2.58	-.004	0.01
7	15	0	0	0	165.21	0.00	0.93	1.93	7.74	165.21	-2.67	-.004	0.01
7	16	0	0	0	165.04	0.00	0.92	1.92	7.84	165.04	-2.76	-.004	0.01
7	17	0	0	0	164.88	0.01	0.92	1.92	7.94	164.88	-2.85	-.005	0.01
7	18	0	0	0	164.74	0.01	0.91	1.91	8.04	164.74	-2.95	-.005	0.01
7	19	0	0	0	164.59	0.01	0.91	1.91	8.13	164.59	-3.04	-.005	0.01
7	20	0	0	0	164.46	0.01	0.90	1.90	8.22	164.46	-3.13	-.005	0.01
7	21	0	0	0	164.34	0.01	0.90	1.90	8.31	164.34	-3.23	-.005	0.01
7	22	0	0	0	164.23	0.01	0.89	1.89	8.39	164.23	-3.32	-.006	0.01
7	23	0	0	0	164.13	0.01	0.89	1.89	8.47	164.13	-3.42	-.006	0.01
7	24	0	0	0	164.04	0.01	0.88	1.88	8.55	164.04	-3.51	-.006	0.01
7	25	0	0	0	163.96	0.01	0.88	1.87	8.62	163.96	-3.61	-.006	0.01
7	26	0	0	0	163.89	0.01	0.87	1.87	8.68	163.89	-3.71	-.006	0.01
7	27	0	0	0	163.83	0.01	0.86	1.86	8.74	163.83	-3.80	-.006	0.01
7	28	0	0	0	163.79	0.01	0.86	1.86	8.79	163.79	-3.90	-.007	0.01
7	29	0	0	0	163.76	0.01	0.85	1.85	8.84	163.76	-4.00	-.007	0.01
7	30	0	0	0	163.75	0.01	0.84	1.84	8.88	163.75	-4.10	-.007	0.01
7	31	0	0	0	163.75	0.01	0.84	1.83	8.91	163.75	-4.19	-.007	0.01
8	1	0	0	0	163.77	0.01	0.83	1.83	8.94	163.77	-4.29	-.007	0.01
8	2	0	0	0	163.80	0.01	0.82	1.82	8.95	163.80	-4.39	-.008	0.01
8	3	0	0	0	163.86	0.01	0.81	1.81	8.96	163.86	-4.49	-.008	0.01
8	4	0	0	0	163.93	0.01	0.81	1.80	8.96	163.93	-4.60	-.008	0.01
8	5	0	0	0	164.02	0.01	0.80	1.80	8.95	164.02	-4.70	-.008	0.01
8	6	0	0	0	164.13	0.01	0.79	1.79	8.92	164.13	-4.80	-.008	0.01
8	7	0	0	0	164.27	0.01	0.78	1.78	8.89	164.27	-4.90	-.008	0.01
8	8	0	0	0	164.43	0.01	0.77	1.77	8.84	164.43	-5.00	-.009	0.02
8	9	0	0	0	164.61	0.01	0.76	1.76	8.78	164.61	-5.11	-.009	0.02
8	10	0	0	0	164.82	0.01	0.76	1.75	8.70	164.82	-5.21	-.009	0.02
8	11	0	0	0	165.06	0.01	0.75	1.75	8.61	165.06	-5.31	-.009	0.02
8	12	0	0	0	165.33	0.01	0.74	1.74	8.50	165.33	-5.42	-.009	0.02
8	13	0	0	0	165.63	0.02	0.73	1.73	8.37	165.63	-5.52	-.010	0.02
8	14	0	0	0	165.97	0.02	0.72	1.72	8.22	165.96	-5.62	-.010	0.02
8	15	0	0	0	166.33	0.02	0.71	1.71	8.05	166.33	-5.73	-.010	0.02
8	16	0	0	0	166.74	0.02	0.70	1.70	7.86	166.74	-5.83	-.010	0.02
8	17	0	0	0	167.19	0.02	0.69	1.69	7.63	167.19	-5.94	-.010	0.02
8	18	0	0	0	167.63	0.02	0.68	1.68	7.39	167.63	-6.04	-.011	0.02
8	19	0	0	0	168.22	0.02	0.67	1.67	7.11	168.22	-6.14	-.011	0.02
8	20	0	0	0	168.80	0.02	0.66	1.66	6.80	168.80	-6.24	-.011	0.02
8	21	0	0	0	169.44	0.02	0.64	1.65	6.45	169.44	-6.34	-.011	0.02
8	22	0	0	0	170.14	0.02	0.63	1.64	6.07	170.14	-6.44	-.011	0.02
8	23	0	0	0	170.89	0.02	0.62	1.63	5.64	170.89	-6.53	-.012	0.02
8	24	0	0	0	171.71	0.02	0.61	1.62	5.17	171.71	-6.63	-.012	0.02
8	25	0	0	0	172.60	0.02	0.60	1.61	4.65	172.60	-6.72	-.012	0.02
8	26	0	0	0	173.56	0.02	0.59	1.59	4.07	173.56	-6.80	-.012	0.02
8	27	0	0	0	174.61	0.02	0.57	1.58	3.44	174.61	-6.88	-.012	0.02
8	28	0	0	0	175.74	0.02	0.56	1.57	2.74	175.74	-6.96	-.012	0.02
8	29	0	0	0	176.97	0.02	0.54	1.56	1.96	176.97	-7.03	-.012	0.02
8	30	0	0	0	178.30	0.02	0.54	1.55	1.11	178.30	-7.09	-.013	0.02
8	31	0	0	0	179.74	0.02	0.52	1.53	0.17	179.74	-7.14	-.013	0.02
9	1	0	0	0	181.30	0.02	0.51	1.52	0.80	178.70	-7.18	-.013	0.02
9	2	0	0	0	182.97	0.02	0.50	1.51	2.00	177.01	-7.21	-.013	0.02
9	3	0	0	0	184.84	0.02	0.49	1.49	3.26	175.17	-7.23	-.013	0.02
9	4	0	0	0	186.82	0.02	0.47	1.48	4.65	173.18	-7.22	-.013	0.03
9	5	0	0	0	188.97	0.02	0.46	1.46	6.17	171.03	-7.19	-.013	0.03
9	6	0	0	0	191.31	0.02	0.45	1.45	7.85	168.69	-7.14	-.013	0.03

9	7	0	0	0	193.85	0.02	0.43	1.43	9.70	166.15	-7.06	-.013	0.03
9	8	0	0	0	196.60	0.02	0.42	1.42	11.74	163.40	-6.95	-.013	0.03
9	9	0	0	0	199.59	0.02	0.41	1.40	13.78	160.41	-6.79	-.012	0.03
9	10	0	0	0	202.83	0.02	0.39	1.38	16.45	157.18	-6.59	-.012	0.03
9	11	0	0	0	206.33	0.02	0.38	1.36	19.16	153.67	-6.34	-.012	0.03
9	12	0	0	0	210.11	0.02	0.37	1.34	22.12	149.89	-6.03	-.011	0.03
9	13	0	0	0	214.19	0.02	0.36	1.32	25.36	145.81	-5.66	-.011	0.03
9	14	0	0	0	218.57	0.02	0.35	1.30	28.89	141.43	-5.21	-.010	0.03
9	15	0	0	0	223.27	0.02	0.34	1.28	32.71	136.73	-4.69	-.009	0.03
9	16	0	0	0	228.26	0.02	0.33	1.25	36.83	131.74	-4.10	-.008	0.04
9	17	0	0	0	233.55	0.02	0.33	1.23	41.24	126.45	-3.42	-.007	0.04
9	18	0	0	0	239.10	0.01	0.32	1.20	45.91	120.90	-2.68	-.005	0.04
9	19	0	0	0	244.87	0.01	0.31	1.17	50.82	115.13	-1.88	-.004	0.04
9	20	0	0	0	250.91	0.01	0.31	1.15	55.93	109.20	-1.02	-.002	0.04
9	21	0	0	0	256.85	0.01	0.31	1.12	61.18	103.15	-0.14	-.001	0.04
9	22	0	0	0	262.94	0.00	0.31	1.09	66.58	97.06	0.74	0.001	0.04
9	23	0	0	0	268.93	-0.00	0.31	1.06	71.89	91.02	1.61	0.002	0.04
9	24	0	0	0	274.92	-0.00	0.31	1.03	77.14	85.08	2.45	0.004	0.04
9	25	0	0	0	280.70	-0.01	0.32	0.99	82.32	79.31	3.23	0.005	0.04
9	26	0	0	0	286.24	-0.01	0.33	0.96	87.35	73.76	3.94	0.007	0.04
9	27	0	0	0	291.53	-0.01	0.33	0.93	92.18	68.47	4.58	0.008	0.04
9	28	0	0	0	296.53	-0.01	0.34	0.90	96.80	63.47	5.14	0.009	0.03
9	29	0	0	0	301.22	-0.02	0.35	0.87	101.17	58.78	5.61	0.010	0.03
9	30	0	0	0	305.60	-0.02	0.36	0.84	105.30	54.40	6.02	0.011	0.03
10	1	0	0	0	309.68	-0.02	0.37	0.82	109.18	50.32	6.35	0.011	0.03
10	2	0	0	0	313.46	-0.02	0.38	0.79	112.83	46.54	6.61	0.012	0.03
10	3	0	0	0	316.95	-0.02	0.39	0.76	116.24	43.05	6.82	0.012	0.03
10	4	0	0	0	320.18	-0.02	0.41	0.74	119.43	39.82	6.98	0.012	0.03
10	5	0	0	0	323.16	-0.02	0.42	0.71	122.42	36.84	7.09	0.013	0.03
10	6	0	0	0	325.90	-0.02	0.43	0.69	125.21	34.10	7.17	0.013	0.03
10	7	0	0	0	328.43	-0.02	0.45	0.66	127.83	31.57	7.21	0.013	0.03
10	8	0	0	0	330.75	-0.02	0.46	0.64	130.27	29.25	7.23	0.013	0.03
10	9	0	0	0	332.90	-0.02	0.47	0.62	132.56	27.10	7.22	0.013	0.03
10	10	0	0	0	334.87	-0.02	0.48	0.60	134.70	25.13	7.19	0.013	0.02
10	11	0	0	0	336.67	-0.02	0.50	0.58	136.71	23.31	7.15	0.013	0.02
10	12	0	0	0	338.36	-0.02	0.51	0.56	138.59	21.64	7.09	0.013	0.02
10	13	0	0	0	339.90	-0.02	0.52	0.54	140.35	20.13	7.02	0.013	0.02
10	14	0	0	0	341.32	-0.02	0.54	0.52	142.00	18.68	6.95	0.013	0.02
10	15	0	0	0	342.63	-0.02	0.55	0.50	143.55	17.37	6.86	0.013	0.02
10	16	0	0	0	343.84	-0.02	0.56	0.48	144.99	16.16	6.77	0.012	0.02
10	17	0	0	0	344.95	-0.02	0.57	0.47	146.34	15.05	6.67	0.012	0.02
10	18	0	0	0	345.97	-0.02	0.59	0.45	147.63	14.03	6.57	0.012	0.02
10	19	0	0	0	346.93	-0.02	0.60	0.44	148.77	13.10	6.46	0.012	0.02
10	20	0	0	0	347.77	-0.02	0.61	0.42	149.80	12.23	6.36	0.012	0.02
10	21	0	0	0	348.56	-0.02	0.62	0.41	150.36	11.44	6.25	0.012	0.02
10	22	0	0	0	349.23	-0.02	0.63	0.39	151.78	10.72	6.13	0.011	0.02
10	23	0	0	0	349.95	-0.02	0.64	0.38	152.62	10.05	6.02	0.011	0.02
10	24	0	0	0	350.55	-0.02	0.65	0.36	153.38	9.45	5.91	0.011	0.02
10	25	0	0	0	351.10	-0.02	0.67	0.35	154.07	8.90	5.79	0.011	0.02
10	26	0	0	0	351.61	-0.02	0.68	0.34	154.67	8.39	5.68	0.011	0.02
10	27	0	0	0	352.06	-0.02	0.69	0.33	155.19	7.94	5.56	0.010	0.02
10	28	0	0	0	352.47	-0.02	0.70	0.32	155.63	7.53	5.44	0.010	0.02
10	29	0	0	0	352.85	-0.02	0.71	0.30	155.98	7.15	5.33	0.010	0.02
10	30	0	0	0	353.18	-0.02	0.72	0.29	155.25	6.82	5.22	0.010	0.02
10	31	0	0	0	353.47	-0.02	0.73	0.28	156.45	6.53	5.10	0.010	0.02
11	1	0	0	0	353.73	-0.02	0.74	0.27	156.52	6.27	4.99	0.009	0.02
11	2	0	0	0	353.96	-0.02	0.75	0.26	156.52	6.04	4.87	0.009	0.02
11	3	0	0	0	354.16	-0.02	0.76	0.25	156.41	5.84	4.76	0.009	0.02
11	4	0	0	0	354.33	-0.02	0.76	0.24	156.20	5.67	4.65	0.009	0.02
11	5	0	0	0	354.47	-0.02	0.77	0.23	155.89	5.53	4.54	0.009	0.02
11	6	0	0	0	354.58	-0.02	0.78	0.23	155.46	5.42	4.43	0.008	0.02
11	7	0	0	0	354.67	-0.02	0.79	0.22	154.91	5.33	4.32	0.008	0.01
11	8	0	0	0	354.74	-0.02	0.80	0.21	154.24	5.26	4.21	0.008	0.01
11	9	0	0	0	354.79	-0.02	0.81	0.20	153.44	5.21	4.10	0.008	0.01
11	10	0	0	0	354.81	-0.02	0.81	0.19	152.50	5.19	3.99	0.008	0.01
11	11	0	0	0	354.82	-0.02	0.82	0.19	151.43	5.18	3.89	0.008	0.01
11	12	0	0	0	354.81	-0.02	0.83	0.18	150.23	5.19	3.78	0.007	0.01
11	13	0	0	0	354.77	-0.02	0.84	0.17	148.83	5.23	3.67	0.007	0.01
11	14	0	0	0	354.73	-0.02	0.84	0.17	147.29	5.27	3.57	0.007	0.01
11	15	0	0	0	354.66	-0.02	0.85	0.16	145.61	5.34	3.47	0.007	0.01
11	16	0	0	0	354.58	-0.02	0.86	0.16	143.76	5.42	3.36	0.007	0.01
11	17	0	0	0	354.49	-0.02	0.86	0.15	141.75	5.51	3.26	0.006	0.01
11	18	0	0	0	354.38	-0.01	0.87	0.15	139.62	5.62	3.16	0.006	0.01
11	19	0	0	0	354.26	-0.01	0.88	0.15	137.33	5.74	3.06	0.006	0.01
11	20	0	0	0	354.13	-0.01	0.88	0.14	134.92	5.87	2.96	0.006	0.01
11	21	0	0	0	353.98	-0.01	0.89	0.14	132.40	6.02	2.86	0.006	0.01
11	22	0	0	0	353.82	-0.01	0.89	0.14	129.78	6.18	2.76	0.006	0.01
11	23	0	0	0	353.66	-0.01	0.90	0.14	127.10	6.34	2.66	0.005	0.01
11	24	0	0	0	353.48	-0.01	0.90	0.14	124.38	6.52	2.56	0.005	0.01
11	25	0	0	0	353.29	-0.01	0.91	0.14	121.65	6.71	2.47	0.005	0.01

11	26	0	0	0	353.09	-0.01	0.91	0.14	118.52	6.91	2.37	0.005	0.01
11	27	0	0	0	352.88	-0.01	0.92	0.14	116.24	7.12	2.28	0.005	0.01
11	28	0	0	0	352.67	-0.01	0.92	0.14	113.81	7.33	2.18	0.004	0.01
11	29	0	0	0	352.45	-0.01	0.93	0.14	111.07	7.55	2.08	0.004	0.01
11	30	0	0	0	352.21	-0.01	0.93	0.14	108.63	7.79	1.99	0.004	0.01
12	1	0	0	0	351.98	-0.01	0.94	0.14	106.29	8.02	1.90	0.004	0.01
12	2	0	0	0	351.73	-0.01	0.94	0.15	104.09	8.27	1.80	0.004	0.01
12	3	0	0	0	351.48	-0.01	0.94	0.15	102.00	8.52	1.71	0.004	0.01
12	4	0	0	0	351.22	-0.01	0.95	0.15	100.05	8.78	1.62	0.003	0.01
12	5	0	0	0	350.96	-0.01	0.95	0.16	98.24	9.04	1.53	0.003	0.01
12	6	0	0	0	350.69	-0.01	0.95	0.16	96.59	9.31	1.43	0.003	0.01
12	7	0	0	0	350.41	-0.01	0.96	0.16	94.99	9.59	1.34	0.003	0.01
12	8	0	0	0	350.13	-0.01	0.96	0.17	93.55	9.87	1.25	0.003	0.01
12	9	0	0	0	349.85	-0.01	0.96	0.17	92.22	10.15	1.16	0.003	0.01
12	10	0	0	0	349.56	-0.01	0.97	0.18	91.01	10.44	1.07	0.002	0.01
12	11	0	0	0	349.27	-0.01	0.97	0.19	89.90	10.73	0.98	0.002	0.01
12	12	0	0	0	348.97	-0.01	0.97	0.19	88.89	11.03	0.89	0.002	0.01
12	13	0	0	0	348.67	-0.01	0.97	0.19	87.97	11.33	0.80	0.002	0.01
12	14	0	0	0	348.37	-0.01	0.97	0.20	87.13	11.63	0.71	0.002	0.01
12	15	0	0	0	348.06	-0.01	0.98	0.20	86.38	11.94	0.62	0.002	0.01
12	16	0	0	0	347.76	-0.01	0.98	0.21	85.70	12.24	0.53	0.002	0.01
12	17	0	0	0	347.45	-0.01	0.98	0.21	85.09	12.55	0.44	0.001	0.01
12	18	0	0	0	347.13	-0.01	0.98	0.22	84.54	12.87	0.36	0.001	0.01
12	19	0	0	0	346.82	-0.01	0.98	0.23	84.05	13.18	0.27	0.001	0.01
12	20	0	0	0	346.50	-0.01	0.99	0.23	83.62	13.50	0.18	0.001	0.01
12	21	0	0	0	346.19	-0.01	0.98	0.24	83.24	13.81	0.09	0.001	0.01
12	22	0	0	0	345.87	-0.00	0.98	0.24	82.91	14.13	-0.00	0.001	0.01
12	23	0	0	0	345.55	-0.00	0.99	0.25	82.63	14.45	-0.09	0.000	0.01
12	24	0	0	0	345.23	-0.00	0.98	0.25	82.38	14.77	-0.17	0.000	0.01
12	25	0	0	0	344.91	-0.00	0.98	0.26	82.19	15.09	-0.26	0.000	0.01
12	26	0	0	0	344.58	-0.00	0.99	0.26	82.01	15.42	-0.35	-.000	0.01
12	27	0	0	0	344.26	-0.00	0.98	0.27	81.88	15.74	-0.44	-.000	0.01
12	28	0	0	0	343.94	-0.00	0.98	0.27	81.78	16.06	-0.52	-.000	0.01
12	29	0	0	0	343.62	-0.00	0.99	0.28	81.71	16.38	-0.61	-.001	0.01
12	30	0	0	0	343.30	-0.00	0.98	0.29	81.67	16.70	-0.70	-.001	0.01
12	31	0	0	0	342.98	-0.00	0.98	0.29	81.66	17.02	-0.79	-.001	0.01

END OF FILE ON ORBIT TAPE

```
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   M2.ZBRTC.00002.LOAD                    KEPT        DDNAME=SYSLIB  -1        0 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS2.DCPLKJNV                          KEPT        DDNAME=SYSLIB  -2       17 EXCPS
IEF285I   VOL SER NOS= V2GY32.
IEF285I   SYS1.FORTLIB                           KEPT        DDNAME=SYSLIB  -3       61 EXCPS
IEF285I   VOL SER NOS= K31TL5.
IEF285I   SYS2.FORTLIB                           KEPT        DDNAME=SYSLIB  -4       28 EXCPS
IEF285I   VOL SER NOS= K33Y32.
IEF285I   SYS1.PLILIB                            KEPT        DDNAME=SYSLIB  -5        0 EXCPS
IEF285I   VOL SER NOS= K31TL5.
IEF285I   SYS1.FORT1330                          KEPT        DDNAME=SYSLIB  -6        0 EXCPS
IEF285I   VOL SER NOS= K31TL5.
IEF285I   SYS2.CORELIB                           KEPT        DDNAME=SYSLIB  -7        0 EXCPS
IEF285I   VOL SER NOS= M2SY31.
IEF285I   SYS1.ALGLIB                            KEPT        DDNAME=SYSLIB  -8        0 EXCPS
IEF285I   VOL SER NOS= K33YS2.
IEF285I   SYS80056.T121135.RV000.SDHELOA4.R0000001  SYSOUT   DDNAME=SYSLOUT          1 EXCPS
IEF285I   VOL SER NOS= K33CR2.
IEF285I   M2.ZBRTC.00002.LOAD                    KEPT        DDNAME=SYSLIN  -1        7 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS80056.T121135.RV000.SDHELOA4.S0000008  SYSIN    DDNAME=FT05F001          2 EXCPS
IEF285I   VOL SER NOS= K33CR2.
IEF285I   SYS80056.T121135.RV000.SDHELOA4.S0000008  DELETED  DDNAME=FT05F001          2 EXCPS
IEF285I   VOL SER NOS= K33CR2.
IEF285I   SYS80056.T121135.RV000.SDHELOA4.R0000002  SYSOUT   DDNAME=FT06F001          7 EXCPS
IEF285I   VOL SER NOS= K33CR2.
IEF285I   SYS80056.T121135.RV000.SDHELOA4.R0000003  DELETED  DDNAME=FT07F001          0 EXCPS
IEF285I   VOL SER NOS= K33CR6.
IEF285I   SYS80056.T121135.RV000.SDHELOA4.R0000004  DELETED  DDNAME=SYSPRINT          0 EXCPS
IEF285I   VOL SER NOS= K33CR2.
IEF285I   SYS80056.T121135.RV000.SDHELOA4.R0000005  DELETED  DDNAME=SYSTERM           0 EXCPS
IEF285I   VOL SER NOS= K33CR2.
IEF285I   SYS80056.T121135.RV000.SDHELOA4.R0000006  DELETED  DDNAME=SYSUDUMP          0 EXCPS
IEF285I   VOL SER NOS= K33CR6.
IEF285I   SYS80056.T121135.RV000.SDHELOA4.R0000007  KEPT     DDNAME=GENLP           374 EXCPS
IEF285I   VOL SER NOS= DRA04 .
IEF290E K 001.DRA04 .SDHELOA4.CD
IEF374I STEP /GO    / START 80056.1214
IEF374I STEP /GO    / STOP  80056.1214 CPU    0MIN 09.54SEC MAIN 200K LCS    OK
```

```
********** 40 ***************************************************************************** 40 *********

JOBNAME-
      SSSSSSSSSS   DDDDDDDDD     HH        HH  EEEEEEEEEEEE  LL          DDDDDDDDD       AA       555555555555
     SSSSSSSSSSS   DDDDDDDDDD    HH        HH  EEEEEEEEEEEE  LL          CCCDDDDDDDDD      AA       555555555555
     SS        SS  DD       DD   HH        HH  EE            LL          CC        DD     AAAA      55
     SS            DD        DD  HH        HH  EE            LL          DD        DD     AAAA      55
     SSS           DD        DD  HH        HH  EE            LL          CC        DD    AA  AA     55
      SSSSSSSSS    DD        DD  HHHHHHHHHHHH  EEEEEEEE      LL          DD        DD    AA  AA     55555555555
       SSSSSSSSS   DD        DD  HHHHHHHHHHHH  EEEEEEEE      LL          DD        DD   AA    AA    555555555555
              SSS  DD        DD  HH        HH  EE            LL          DC        DD   AAAAAAAA             55
               SS  DD        DD  HH        HH  EE            LL          DC        DD  AAAAAAAAAA            55
     SS        SS  DD       DD   HH        HH  EE            LL          DD        DD  AA      AA   55       55
     SSSSSSSSSSS   DDDDDDDDDD    HH        HH  EEEEEEEEEEEE  LLLLLLLLLLLL  CCDDDDDDDDDD  AA        AA  555555555555
      SSSSSSSSSS   DDDDDDDDD     HH        HH  EEEEEEEEEEEE  LLLLLLLLLLLL   DDDDDDDDD   AA        AA   5555555555

BOX-                                                  SACC 360/75      READER NUMBER-P0062          CLASS-
     BBBBBBBBB     FFFFFFFFFFFF    33333333                                                          AA
     BBBBBBBBB     FFFFFFFFFFFF   3333333333                                                         AA
     BB       BB   FF            33        33                                                        AAAA
     BB       BB   FF                      33                                                        AAAA
     BB       BB   FF                     33                                                        AA  AA
     BBBBBBBB      FFFFFFFF          33333                                                          AA  AA
     BBBBBBBBB     FFFFFFFF          33333                                                         AA    AA
     BB       BB   FF                     33                                                        AAAAAAAA
     BB        BB  FF                      33                                                       AAAAAAAAAA
     BB        BB  FF            33        33                                                       AA      AA
     BBBBBBBBBB    FF            3333333333                                                       AA        AA
     BBBBBBBBB     FF             33333333                                                        AA        AA
```

ORA 18

1/11/75 only

```
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(BLKSIZE=7265,LRECL=137,RECFM=VBA),
XX              SPACE=(CYL,(0,11),UNIT=(DISK,3)                          00000180
XXSYSTERM  DD   SYSOUT=&TERMOUT                                          00000190
IEF653I SUBSTITUTION JCL - SYSOUT=A
//SYSDUMP DD SYSOUT=A
X/SYSDUMP DD SYSOUT=A,SPACE=(CYL,(0,5))                                  00000200
//GO.GENTAP DD  UNIT=(7TRACK,,DEFER),
//    VOL=SER=CRTAPE,LABEL=(,NL,,IN),DISP=(OLD,KEEP),
//    DCB=(RECFM=U,BLKSIZE=1944,DEN=2)
//DATAS DD *
IEF236I ALLOC. FOR GDHELUAS GO
IEF237I 333    ALLOCATED TO SYSLIB
IEF237I 320    ALLOCATED TO
IEF237I 451    ALLOCATED TO
IEF237I 231    ALLOCATED TO
IEF237I 244    ALLOCATED TO
IEF237I 244    ALLOCATED TO
IEF237I 220    ALLOCATED TO
IEF237I 231    ALLOCATED TO
IEF237I 235    ALLOCATED TO SYSLOUT
IEF237I 333    ALLOCATED TO SYSIN
IEF237I 335    ALLOCATED TO FT05F001
IEF237I 237    ALLOCATED TO FT06F001
IEF237I 232    ALLOCATED TO FT07F001
IEF237I 335    ALLOCATED TO SYSPRINT
IEF237I 232    ALLOCATED TO SYSPRINT
IEF237I 235    ALLOCATED TO SYSPRINT
IEF237I 335    ALLOCATED TO SYSTERM
IEF237I 335    ALLOCATED TO SYSDUMP
IEF237I 001    ALLOCATED TO GENTAP
```

```
                                        OS/360 LOADER
OPTIONS USED - PRINT,MAP,NOLET,CALL,RES,NOTERM,SIZE=134560,NAME=**GO
               E0-CRBIT
```

NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR
CRBIT	SD	A2810	CNVRTSCT*	SD	A3670	CNVRT *	LR	A3670	DBGEN *	SD	A3998	DBFECV *	LR	A3858
FREAD *	SD	A3060	FREADB *	LR	A3F88	FWRITE *	LR	A407C	REWIND *	LR	A4282	LEAVE *	LR	A4366
UNLOAD *	LR	A4414	POSN *	LR	A4530	MOUNT *	LR	A4750	REMBER *	LR	A4932	FTRAP *	LR	A4A22
FALLOW *	LR	A4AA0	FUNITABL*	SD	A5A60	FDL1 *	SD	A5B29	FODNLIST*	SD	A5330	FERMSG *	SD	A5B38
IHCNAMEL*	SD	A5BA0	FRDNL# *	LR	A5BA0	FWRNL# *	LR	A6144	IHCECOMH*	SD	A6670	IBCOM# *	LR	A6670
FOIOCS* *	LR	A672C	INTS#TCH*	LR	A7536	IHCCOMH2*	SD	A7558	SEQDASD *	LR	A7950	FTF *	SD	A7C38
ITISPCT *	SD	A7CC8	ITI *	LR	A7CC8	FXFLT *	SD	A7D40	FIXFLT *	LR	A7D40	TRNSLTE *	SD	A7D98
TRANS *	LR	A7D88	BITST *	SD	A7E98	CNTGDATA*	LR	A7E98	DTDUN *	SD	A7FC8	IHCFCVTH*	SD	A8C98
ADCON# *	LR	A8098	FCVADUTP*	LR	A8142	FCVLOUTP*	LR	A8102	FCVZOUTP*	LR	A8322	FCVIOUTP*	LR	A86D0
FCVEOUTP*	LR	A8902	FCVCOUTP*	LR	A8D2C	INTS#TCH*	LR	A9C03	IHCEFIOS*	SD	A9238	FIOCS# *	LR	A9238
FIOCSREP*	LR	A923E	IHCFIO02*	SD	AA160	IHCSRRM *	SD	AA630	ERRMON *	LR	AA590	IHCERRE *	LR	AA6A8
IHCHNTH*	SD	AAC68	ARITH# *	LR	AAC68	A9JS#TCH*	LR	AB004	IHCUOPT *	SD	AB130	IHCUATBL*	SD	AB4D8
IHCETRCH*	SD	ABB10	IHCTRCH *	LR	ABB10	ERRTRA *	LR	ABB18						

```
TOTAL LENGTH     9590
ENTRY ADDRESS    A2810

                 SATID  HELIOS-A        DORBIT TAPE #=ORA18
          7409701 060                   74 366 010000 397 000000 0008 01 760328 008 01 01 E7  X

                 HELIOS-A          YEAR 1975.          LAUNCH TIME    1878540.  1.
```

DATE MM	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	ERTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LET(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
1	11	0	0	0	351.12	0.01	0.90	0.17	114.14	8.88	-3.15	-.005	0.01

```
END OF FILE ON ORBIT TAPE

IEF142I - STOP WAS EXECUTED - COND CODE 0000
IEF285I   M2.ZBRTC.SD002.LOAD                    KEPT        DDNAME=SYSLIB  -1        0 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS2.DERLKONV                          KEPT        DDNAME=SYSLIB  -2       17 EXCPS
IEF285I   VOL SER NOS= M2SYS2.
IEF285I   SYS1.FORTLIB                           KEPT        DDNAME=SYSLIB  -3       61 EXCPS
IEF285I   VOL SER NOS= K3ITLO.
```

```
JOBNAME-
      SSSSSSSSSS   DDDDDDDDD     HH        HH  EEEEEEEEEEEE  LL          CCCCCCCCCC        AA        2222222222
     SSSSSSSSSSSS  DDDDDDDDDD    HH        HH  EEEEEEEEEEEE  LL          CCCCCCCCCCCC      AA       222222222222
     SS        SS  DD       DD   HH        HH  EE            LL          CC        CC      AAAA     22        22
     SS            DD        DD  HH        HH  EE            LL          CC        CC      AAAA              22
     SSS           DD        DD  HH        HH  EE            LL          CC        CC     AA  AA            22
      SSSSSSSSS    DD        DD  HHHHHHHHHHHH  EEEEEEEE      LL          CC        CC     AA  AA          22
       SSSSSSSSS   DD        DD  HHHHHHHHHHHH  EEEEEEEE      LL          CC        CC    AA    AA        22
              SSS  DD        DD  HH        HH  EE            LL          CC        CC    AAAAAAAA      22
               SS  DD        DD  HH        HH  EE            LL          CC        CC   AAAAAAAAAA    22
     SS        SS  DD       DD   HH        HH  EE            LL          CC        CC   AA      AA   22
     SSSSSSSSSSSS  DDDDDDDDDD    HH        HH  EEEEEEEEEEEE  LLLLLLLLLLLL  CCCCCCCCCCCC  AA        AA  222222222222
      SSSSSSSSSS   DDDDDDDDD     HH        HH  EEEEEEEEEEEE  LLLLLLLLLLLL   CCCCCCCCCC   AA        AA  222222222222

BOX-                                          SACC 360/75      READER NUMBER-PO117          CLASS-
                                                                                                  AA
     BBBBBBBBE     FFFFFFFFFFFF    33333333                                                      AA
     BBBBBBBBB     FFFFFFFFFFFF   3333333333                                                     AAAA
     BB       BB   FF            33        33                                                    AAAA
     BB       BB   FF                      33                                                   AA  AA
     BB       BB   FF                      33                                                   AA  AA
     BBBBBBBBE     FFFFFFFF           33333                                                    AA    AA
     BBBBBBBBB     FFFFFFFF           33333                                                    AAAAAAAA
     BB       BB   FF                      33                                                  AAAAAAAAAA
     BB       BB   FF                      33                                                  AA      AA
     BB       BB   FF            33        33                                                  AA        AA
     BBBBBBBBBB    FF             3333333333                                                  AA        AA
     BBBBBBBBB     FF              33333333
```

ORA Ø6.

2/1/75 – 6/1/75

NUMBER 77 ON 001-YZTADNAS/601 ZBKLLBKE/671 SDHELDA1/BF3 ZSLLWFL2/119 SDHELDA2/BF3 AT 12.15.50 MON 25 FEB 80

```
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(BLKSIZE=7265,LRECL=127,RECFM=VBA),
XX              SPACE=(CYL,(0,1)),UNIT=(DISK,3)                          00000180
XXSYSTERM  DD  SYSOUT=STERMOUT                                           00000190
IEF653I SUBSTITUTION JCL - SYSOUT=A
//SYSDUMP DD SYSOUT=A
X/SYSDUMP DD SYSOUT=A,SPACE=(CYL,(0,5))                                  00000200
//GO.GENTAP DD UNIT=(7TRACK,,DEFER),
//   VOL=SER=GRTAPE,LABEL=(,NL,,IN),DISP=(OLD,KEEP),
//    DCB=(RECFM=),BLKSIZE=1944,DEN=2)
//DATA5 DD *
IEF237I ALLCC. FOR SDHELDA2 GC
IEF237I 333    ALLOCATED TO SYSLIB
IEF237I 326    ALLOCATED TO
IEF237I 451    ALLOCATED TO
IEF237I 231    ALLOCATED TO
IEF237I 244    ALLOCATED TO
IEF237I 244    ALLOCATED TO
IEF237I 220    ALLOCATED TO
IEF237I 231    ALLOCATED TO
IEF237I 336    ALLOCATED TO SYSLOUT
IEF237I 333    ALLOCATED TO SYSLIN
IEF237I 335    ALLOCATED TO FT05F001
IEF237I 335    ALLOCATED TO FT06F001
IEF237I 336    ALLOCATED TO FT07F001
IEF237I 335    ALLOCATED TO SYSPRINT
IEF237I 232    ALLOCATED TO SYSPRINT
IEF237I 335    ALLOCATED TO SYSPRINT
IEF237I 336    ALLOCATED TO SYSTERM
IEF237I 335    ALLOCATED TO SYSDUMP
IEF237I 001    ALLOCATED TO GENTAP
```

```
                                        OS/360 LOADER
OPTIONS USED - PRINT,MAP,NOLET,CALL,RES,NOTERM,SIZE=154560,NAME=**CC
               EP=CRBIT
```

NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR
CRBIT	SD	86810	CNVRTSCT*	SD	87670	CNVRT *	LR	87670	BRGEN *	SD	87998	DBFECV *	LR	87E58
FREAD *	SD	87060	FREADB *	LR	87F88	FWRITE *	LR	88070	REWIND *	LR	88282	LEAVE *	LR	88366
UNTEAD *	LR	8E41A	POSN *	LR	88E30	NCOUNT *	LR	88750	MEMBER *	LR	83932	FTRAP *	LR	88A22
FALLCW *	LR	88AA0	FUNITABL*	SD	99A60	FPLI *	SD	8C028	MODNLIST*	SD	89330	FERMSG *	SD	89E38
IHCNAME*	SD	8C1A0	FRUNL# *	LR	8C0A0	FARNL# *	LR	8A1A4	IHCCCCME*	SD	8A670	IBCCM# *	LR	8A670
FDICS# *	LR	8A720	INTSWTCH*	LR	88596	IHCCOMH2*	SD	83508	SEGDASD *	LR	83950	FTF *	SD	88C38
ITISFCT *	SD	88CE8	ITI *	LR	88CC8	FXFLT *	SD	8ED43	FIXFLT *	LR	83040	TRNSLTE *	SD	88088
TRAAS *	LR	8E088	DITST *	SD	8E693	CNTGDATA*	LR	8E698	DTDUN *	SD	88FC8	IHCFCVTH*	SD	8C098
ADCCN# *	LR	8C098	FCVAOUTP*	LR	8C142	FCVLOUTP*	LR	8CID2	FCVZOUTP*	LR	8C322	FCVICUTP*	LR	8C6D0
FCVCOUTP*	LR	8C002	FCVCOUTP*	LR	8C0EC	INTESACH*	LR	8C0D3	IHCFFICS*	SD	80238	FIOCS# *	LR	80238
FIOCSBCD*	LR	8E21E	IBCFIOS0*	SD	8E160	IBCERRM *	SD	8F698	BRGEN *	LR	8F690	IBCERME *	LR	8EEA8
IBCERRH*	SD	8F6A3	ABYTH# *	LR	8E6E3	ABYTHSTH*	LR	8E6E3	IBCEDBT *	SD	8F188	IBCUATOL*	SD	8F408
IBCTRCH*	SD	8F018	IBCTRCH *	LR	8E318	FRATIA *	LR	3F013						

```
TOTAL LENGTH     9590
ENTRY ADDRESS    8C010
```

```
                    SATID  HELIOS-A        OCRBIT TAPE #=CRACC
          7409701 OFG              75 032 000000 152 000000 0008 01 760217 00R 01 01 E7  X
```

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                    HELIOS-A          YEAR 1975.          LAUNCH TIME    4553340.  1.
```

	DATE MO	DE	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	ERTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LET(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
	2	1	0	0	0	350.25	0.01	0.75	0.27	142.35	9.75	-5.19	-.009	0.02
	2	1	0	59	59	350.25	0.01	0.75	0.27	142.42	9.75	-5.20	-.009	0.02
	2	2	0	0	0	350.43	0.01	0.75	0.28	144.65	9.57	-5.30	-.009	0.02
21	2	2	0	59	59	350.44	0.01	0.75	0.28	144.17	9.56	-5.30	-.009	0.02
11	2	3	0	0	0	350.65	0.01	0.74	0.29	145.88	9.35	-5.40	-.009	0.02
01	2	3	0	59	59	350.65	0.01	0.74	0.29	145.96	9.34	-5.41	-.009	0.02
5	2	4	0	0	0	350.90	0.02	0.73	0.29	147.71	9.10	-5.51	-.010	0.02
8	2	4	0	59	59	350.91	0.02	0.73	0.29	147.74	9.09	-5.51	-.010	0.02
1	2	5	0	0	0	351.19	0.02	0.72	0.30	149.50	8.81	-5.61	-.010	0.02
2	2	5	0	59	59	351.20	0.02	0.72	0.30	149.67	8.80	-5.61	-.010	0.02
9	2	6	0	0	0	351.51	0.02	0.71	0.31	151.51	8.49	-5.71	-.010	0.02
9	2	6	0	59	59	351.52	0.02	0.71	0.31	151.59	8.48	-5.72	-.010	0.02
9	2	7	0	0	0	351.87	0.02	0.70	0.31	153.47	8.13	-5.82	-.010	0.02
7	2	7	0	59	59	351.88	0.02	0.70	0.31	153.55	8.12	-5.82	-.010	0.02
5	2	8	0	0	0	352.27	0.02	0.69	0.32	155.48	7.73	-5.92	-.010	0.02

2	8	0	59	59	352.23	0.02	0.69	0.32	155.57	7.72	-5.93	-.010	0.02
2	9	0	0	0	352.71	0.02	0.68	0.33	157.54	7.29	-6.03	-.011	0.02
2	9	0	59	59	352.73	0.02	0.68	0.33	157.72	7.27	-6.03	-.011	0.02
2	10	0	0	0	353.20	0.02	0.67	0.34	159.64	6.80	-6.13	-.011	0.02
2	10	0	59	59	353.22	0.02	0.66	0.34	159.73	6.78	-6.13	-.011	0.02
2	11	0	0	0	353.75	0.02	0.65	0.34	161.79	6.26	-6.23	-.011	0.02
2	11	0	59	59	353.77	0.02	0.65	0.34	161.88	6.23	-6.24	-.011	0.02
2	12	0	0	0	354.34	0.02	0.64	0.35	163.95	5.66	-6.33	-.011	0.02
2	12	0	59	59	354.37	0.02	0.64	0.35	164.08	5.63	-6.34	-.011	0.02
2	13	0	0	0	354.99	0.02	0.63	0.36	166.24	5.01	-6.43	-.011	0.02
2	13	0	59	59	355.02	0.02	0.63	0.36	166.33	4.98	-6.43	-.011	0.02
2	14	0	0	0	355.71	0.02	0.62	0.37	168.54	4.29	-6.53	-.012	0.02
2	14	0	59	59	355.74	0.02	0.62	0.37	168.63	4.26	-6.53	-.012	0.02
2	15	0	0	0	356.49	0.02	0.61	0.38	170.89	3.51	-6.62	-.012	0.02
2	15	0	59	59	356.52	0.02	0.61	0.38	170.99	3.48	-6.62	-.012	0.02
2	16	0	0	0	357.34	0.02	0.60	0.39	173.30	2.66	-6.71	-.012	0.02
2	16	0	59	59	357.38	0.02	0.60	0.39	173.40	2.62	-6.71	-.012	0.02
2	17	0	0	0	358.27	0.02	0.58	0.40	175.77	1.73	-6.80	-.012	0.02
2	17	0	59	59	358.31	0.02	0.58	0.40	175.87	1.69	-6.80	-.012	0.02
2	18	0	0	0	359.23	0.02	0.57	0.42	178.29	0.72	-6.88	-.012	0.02
2	18	0	59	59	359.33	0.02	0.57	0.42	178.40	0.67	-6.88	-.012	0.02
2	19	0	0	0	0.33	0.02	0.56	0.43	179.12	0.38	-6.96	-.012	0.02
2	19	0	59	59	0.43	0.02	0.56	0.43	179.01	0.43	-6.96	-.012	0.02
2	20	0	0	0	1.53	0.02	0.55	0.44	176.46	1.58	-7.03	-.013	0.02
2	20	0	59	59	1.63	0.02	0.55	0.44	176.35	1.63	-7.03	-.013	0.02
2	21	0	0	0	2.89	0.02	0.53	0.46	173.73	2.88	-7.09	-.013	0.02
2	21	0	59	59	2.94	0.02	0.53	0.46	173.62	2.94	-7.09	-.013	0.02
2	22	0	0	0	4.30	0.02	0.52	0.47	170.93	4.30	-7.14	-.013	0.02
2	22	0	59	59	4.36	0.02	0.52	0.47	170.81	4.36	-7.14	-.013	0.02
2	23	0	0	0	5.83	0.02	0.51	0.49	168.05	5.83	-7.18	-.013	0.02
2	23	0	59	59	5.90	0.02	0.51	0.49	167.92	5.90	-7.19	-.013	0.02
2	24	0	0	0	7.51	0.02	0.50	0.50	165.07	7.51	-7.21	-.013	0.02
2	24	0	59	59	7.58	0.02	0.50	0.50	164.95	7.58	-7.21	-.013	0.02
2	25	0	0	0	9.32	0.02	0.48	0.52	162.01	9.32	-7.23	-.013	0.02
2	25	0	59	59	9.40	0.02	0.48	0.52	161.88	9.40	-7.23	-.013	0.02
2	26	0	0	0	11.30	0.02	0.47	0.54	158.93	11.30	-7.22	-.013	0.03
2	26	0	59	59	11.38	0.02	0.47	0.54	158.78	11.38	-7.22	-.013	0.03
2	27	0	0	0	13.44	0.02	0.46	0.56	155.05	13.44	-7.19	-.013	0.03
2	27	0	59	59	13.53	0.02	0.46	0.56	155.41	13.53	-7.19	-.013	0.03
2	28	0	0	0	15.77	0.02	0.44	0.59	152.14	15.77	-7.14	-.013	0.03
2	28	0	59	59	15.87	0.02	0.44	0.59	152.03	15.87	-7.14	-.013	0.03
3	1	0	0	0	18.30	0.02	0.43	0.60	148.60	18.30	-7.06	-.013	0.03
3	1	0	59	59	18.41	0.02	0.43	0.60	148.45	18.41	-7.05	-.013	0.03
3	2	0	0	0	21.05	0.02	0.42	0.62	144.91	21.05	-6.94	-.013	0.03
3	2	0	59	59	21.17	0.02	0.42	0.62	144.75	21.17	-6.94	-.013	0.03
3	3	0	0	0	24.03	0.02	0.41	0.64	141.06	24.03	-6.78	-.012	0.03
3	3	0	59	59	24.16	0.02	0.41	0.64	140.90	24.16	-6.78	-.012	0.03
3	4	0	0	0	27.27	0.02	0.39	0.67	137.04	27.27	-6.59	-.012	0.03
3	4	0	59	59	27.41	0.02	0.39	0.67	136.87	27.41	-6.57	-.012	0.03
3	5	0	0	0	30.78	0.02	0.38	0.69	132.94	30.78	-6.33	-.012	0.03
3	5	0	59	59	30.93	0.02	0.38	0.69	132.78	30.93	-6.31	-.012	0.03
3	6	0	0	0	34.57	0.02	0.37	0.72	128.45	34.57	-6.01	-.011	0.03
3	6	0	59	59	34.73	0.02	0.37	0.72	128.26	34.73	-6.00	-.011	0.03
3	7	0	0	0	38.66	0.02	0.36	0.75	123.85	38.66	-5.63	-.011	0.03
3	7	0	59	59	38.83	0.02	0.36	0.75	123.65	38.83	-5.62	-.010	0.03
3	8	0	0	0	43.05	0.02	0.35	0.77	119.04	43.05	-5.19	-.010	0.03
3	8	0	59	59	43.24	0.02	0.35	0.78	118.83	43.24	-5.16	-.010	0.03
3	9	0	0	0	47.76	0.02	0.34	0.80	114.03	47.76	-4.65	-.009	0.03
3	9	0	59	59	47.96	0.02	0.34	0.81	113.81	47.96	-4.63	-.009	0.03
3	10	0	0	0	52.77	0.02	0.33	0.84	108.81	52.77	-4.05	-.008	0.04
3	10	0	59	59	52.98	0.02	0.33	0.84	108.59	52.98	-4.03	-.008	0.04
3	11	0	0	0	58.06	0.02	0.32	0.87	103.42	58.06	-3.37	-.007	0.04
3	11	0	59	59	58.29	0.02	0.32	0.87	103.19	58.29	-3.34	-.006	0.04

HELIOS-A YEAR 1975. LAUNCH TIME 7843740. 1.

DATE MN	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	EARTH-HELIOS DIST(A.U)	EARTH-HELIOS SLA(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LAT(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
3	12	0	0	0	63.61	0.01	0.32	0.90	97.67	63.61	-2.62	-.005	0.04
3	12	0	59	59	63.85	0.01	0.32	0.90	97.64	63.85	-2.59	-.005	0.04
3	13	0	0	0	69.33	0.01	0.31	0.93	92.21	69.33	-1.92	-.004	0.04
3	13	0	59	59	69.63	0.01	0.31	0.93	91.97	69.63	-1.78	-.004	0.04
3	14	0	0	0	75.32	0.01	0.31	0.96	86.49	75.32	-0.96	-.002	0.04
3	14	0	59	59	75.57	0.01	0.31	0.96	86.25	75.57	-0.92	-.002	0.04
3	15	0	0	0	81.36	0.00	0.31	1.00	80.75	81.36	-0.07	-.001	0.04
3	15	0	59	59	81.61	0.00	0.31	1.00	80.51	81.61	-0.04	-.001	0.04
3	16	0	0	0	87.42	0.00	0.31	1.03	75.07	87.42	0.81	0.001	0.04
3	16	0	59	59	87.67	0.00	0.31	1.03	74.83	87.67	0.85	0.001	0.04
3	17	0	0	0	93.44	0.00	0.31	1.06	69.51	93.44	1.68	0.003	0.04

3	17	0	59	59	93.69	-0.00	0.31	1.06	69.28	93.69	1.72	0.003	0.04
3	18	0	0	0	99.34	-0.00	0.31	1.09	64.12	99.34	2.51	0.004	0.04
3	18	0	59	59	99.59	-0.00	0.32	1.09	63.90	99.59	2.54	0.004	0.04
3	19	0	0	0	105.07	-0.01	0.32	1.12	58.99	105.07	3.29	0.006	0.04
3	19	0	59	59	105.31	-0.01	0.32	1.12	58.75	105.31	3.32	0.006	0.04
3	20	0	0	0	110.57	-0.01	0.33	1.15	54.06	110.57	3.99	0.007	0.04
3	20	0	59	59	110.80	-0.01	0.33	1.15	53.96	110.80	4.02	0.007	0.04
3	21	0	0	0	115.81	-0.01	0.33	1.18	49.46	115.81	4.62	0.008	0.04
3	21	0	59	59	116.02	-0.01	0.33	1.18	49.27	116.02	4.65	0.008	0.04
3	22	0	0	0	120.76	-0.01	0.34	1.21	45.16	120.76	5.17	0.009	0.03
3	22	0	59	59	120.96	-0.01	0.34	1.21	44.99	120.96	5.19	0.009	0.03
3	23	0	0	0	125.40	-0.02	0.35	1.23	41.18	125.40	5.64	0.010	0.03
3	23	0	59	59	125.59	-0.02	0.35	1.23	41.02	125.59	5.66	0.010	0.03
3	24	0	0	0	129.73	-0.02	0.36	1.26	37.51	129.73	6.04	0.011	0.03
3	24	0	59	59	129.91	-0.02	0.36	1.26	37.36	129.91	6.05	0.011	0.03
3	25	0	0	0	133.76	-0.02	0.37	1.29	34.13	133.76	6.36	0.011	0.03
3	25	0	59	59	133.92	-0.02	0.37	1.28	34.00	133.92	6.37	0.011	0.03
3	26	0	0	0	137.50	-0.02	0.38	1.31	31.04	137.50	6.62	0.012	0.03
3	26	0	59	59	137.65	-0.02	0.38	1.31	30.92	137.65	6.63	0.012	0.03
3	27	0	0	0	140.95	-0.02	0.40	1.33	28.22	140.95	6.83	0.012	0.03
3	27	0	59	59	141.09	-0.02	0.40	1.33	28.11	141.09	6.83	0.012	0.03
3	28	0	0	0	144.14	-0.02	0.41	1.35	25.65	144.14	6.98	0.013	0.03
3	28	0	59	59	144.27	-0.02	0.41	1.35	25.55	144.27	6.99	0.013	0.03
3	29	0	0	0	147.09	-0.02	0.42	1.37	23.31	147.09	7.09	0.013	0.03
3	29	0	59	59	147.20	-0.02	0.42	1.37	23.21	147.20	7.10	0.013	0.03
3	30	0	0	0	149.40	-0.02	0.43	1.39	21.17	149.33	7.17	0.013	0.03
3	30	0	59	59	149.91	-0.02	0.43	1.39	21.09	149.91	7.17	0.013	0.03
3	31	0	0	0	152.30	-0.02	0.45	1.41	19.23	152.30	7.21	0.013	0.03
3	31	0	59	59	152.40	-0.02	0.45	1.41	19.15	152.40	7.21	0.013	0.03
4	1	0	0	0	154.60	-0.02	0.46	1.43	17.46	154.60	7.23	0.013	0.03
4	1	0	59	59	154.70	0.32	0.46	1.43	17.39	154.69	1.23	0.013	0.03
4	2	0	0	0	156.72	0.28	0.47	1.45	15.85	156.72	1.56	0.013	0.02
4	2	0	59	59	156.81	0.28	0.47	1.45	15.79	156.81	1.57	0.013	0.02
4	3	0	0	0	158.68	0.24	0.49	1.46	14.28	158.68	1.88	0.013	0.02
4	3	0	59	59	158.76	0.24	0.49	1.46	14.23	158.76	1.90	0.013	0.02
4	4	0	0	0	160.48	0.21	0.50	1.48	13.05	160.48	2.19	0.013	0.02
4	4	0	59	59	160.55	0.20	0.50	1.48	12.99	160.55	2.20	0.013	0.02
4	5	0	0	0	162.14	0.17	0.51	1.50	11.83	162.14	2.47	0.013	0.02
4	5	0	59	59	162.21	0.17	0.51	1.50	11.79	162.21	2.48	0.013	0.02
4	6	0	0	0	163.67	0.13	0.52	1.51	10.73	163.67	2.73	0.013	0.02
4	6	0	59	59	163.73	0.13	0.53	1.51	10.68	163.73	2.74	0.013	0.02
4	7	0	0	0	165.08	0.10	0.54	1.53	9.72	165.08	2.98	0.013	0.02
4	7	0	59	59	165.14	0.10	0.54	1.53	9.68	165.14	2.99	0.013	0.02
4	8	0	0	0	166.38	0.07	0.55	1.54	8.80	166.38	3.21	0.013	0.02
4	8	0	59	59	166.44	0.07	0.55	1.54	8.76	166.44	3.22	0.013	0.02
4	9	0	0	0	167.58	0.04	0.56	1.56	7.96	167.58	3.43	0.012	0.02
4	9	0	59	59	167.63	0.04	0.56	1.56	7.92	167.63	3.44	0.012	0.02
4	10	0	0	0	168.69	0.01	0.58	1.57	7.19	168.69	3.63	0.012	0.02
4	10	0	59	59	168.73	0.01	0.58	1.57	7.16	168.73	3.64	0.012	0.02
4	11	0	0	0	169.71	-0.02	0.59	1.58	6.49	169.71	3.82	0.012	0.02
4	11	0	59	59	169.75	-0.02	0.59	1.59	6.46	169.75	3.83	0.012	0.02
4	12	0	0	0	170.65	-0.05	0.60	1.60	5.86	170.65	4.00	0.012	0.02
4	12	0	59	59	170.69	-0.05	0.60	1.60	5.83	170.68	4.00	0.012	0.02
4	13	0	0	0	171.51	-0.07	0.61	1.61	5.28	171.51	4.16	0.012	0.02
4	13	0	59	59	171.55	-0.07	0.61	1.61	5.25	171.55	4.17	0.012	0.02
4	14	0	0	0	172.31	-0.10	0.62	1.62	4.75	172.31	4.32	0.012	0.02
4	14	0	59	59	172.34	-0.10	0.62	1.62	4.73	172.34	4.32	0.012	0.02
4	15	0	0	0	173.04	-0.12	0.63	1.63	4.27	173.04	4.46	0.011	0.02
4	15	0	59	59	173.07	-0.12	0.63	1.64	4.25	173.07	4.47	0.011	0.02
4	16	0	0	0	173.71	-0.14	0.65	1.65	3.83	173.71	4.60	0.011	0.02
4	16	0	59	59	173.74	-0.14	0.65	1.65	3.81	173.74	4.61	0.011	0.02
4	17	0	0	0	174.33	-0.17	0.66	1.65	3.43	174.33	4.73	0.011	0.02
4	17	0	59	59	174.35	-0.17	0.66	1.65	3.41	174.35	4.73	0.011	0.02
4	18	0	0	0	174.89	-0.19	0.67	1.67	3.07	174.89	4.85	0.011	0.02
4	18	0	59	59	174.91	-0.19	0.67	1.67	3.05	174.91	4.85	0.011	0.02
4	19	0	0	0	175.41	-0.21	0.68	1.68	2.74	175.41	4.96	0.011	0.02
4	19	0	59	59	175.43	-0.21	0.68	1.68	2.73	175.43	4.97	0.011	0.02
4	20	0	0	0	175.88	-0.23	0.69	1.69	2.45	175.88	5.07	0.010	0.02
4	20	0	59	59	175.90	-0.23	0.69	1.69	2.43	175.90	5.07	0.010	0.02
4	21	0	0	0	176.31	-0.25	0.70	1.70	2.18	176.31	5.17	0.010	0.02
4	21	0	59	59	176.32	-0.25	0.70	1.70	2.17	176.32	5.18	0.010	0.02
4	22	0	0	0	176.69	-0.26	0.71	1.71	1.94	176.69	5.27	0.010	0.02
4	22	0	59	59	176.71	-0.26	0.71	1.71	1.93	176.71	5.27	0.010	0.02
4	23	0	0	0	177.04	-0.28	0.72	1.72	1.72	177.04	5.36	0.010	0.02
4	23	0	59	59	177.06	-0.28	0.72	1.72	1.71	177.06	5.36	0.010	0.02
4	24	0	0	0	177.36	-0.30	0.73	1.73	1.53	177.36	5.44	0.010	0.02
4	24	0	59	59	177.37	-0.30	0.73	1.73	1.52	177.37	5.44	0.010	0.02
4	25	0	0	0	177.64	-0.31	0.74	1.74	1.37	177.64	5.52	0.009	0.02
4	25	0	59	59	177.65	-0.32	0.74	1.74	1.35	177.65	5.52	0.009	0.02
4	26	0	0	0	177.89	-0.33	0.75	1.75	1.21	177.89	5.59	0.009	0.02

4	26	0 59 59	177.90	-0.33	0.75	1.75	1.20	177.90	5.60	0.009	0.02
4	27	0 0 0	178.12	-0.35	0.76	1.76	1.07	178.12	5.67	0.009	0.02
4	27	0 59 59	178.13	-0.35	0.76	1.76	1.07	178.13	5.67	0.009	0.02
4	28	0 0 0	178.31	-0.36	0.77	1.77	0.96	178.31	5.73	0.009	0.02
4	28	0 59 59	178.32	-0.36	0.77	1.77	0.95	178.32	5.73	0.009	0.02
4	29	0 0 0	178.48	-0.37	0.77	1.78	0.86	178.48	5.80	0.009	0.02
4	29	0 59 59	178.49	-0.38	0.77	1.78	0.86	178.49	5.80	0.009	0.02
4	30	0 0 0	178.62	-0.39	0.78	1.79	0.77	178.62	5.85	0.008	0.02
4	30	0 59 59	178.63	-0.39	0.78	1.79	0.77	178.63	5.86	0.008	0.02
5	1	0 0 0	178.74	-0.40	0.79	1.80	0.70	178.74	5.91	0.008	0.01
5	1	0 59 59	178.75	-0.40	0.79	1.80	0.70	178.75	5.91	0.008	0.01
5	2	0 0 0	178.84	-0.41	0.80	1.81	0.65	178.84	5.96	0.008	0.01
5	2	0 59 59	178.85	-0.42	0.80	1.81	0.65	178.85	5.96	0.008	0.01
5	3	0 0 0	178.92	-0.43	0.81	1.82	0.60	178.92	6.01	0.008	0.01
5	3	0 59 59	178.92	-0.43	0.81	1.82	0.60	178.92	6.01	0.008	0.01
5	4	0 0 0	178.98	-0.44	0.82	1.82	0.57	178.98	6.06	0.008	0.01
5	4	0 59 59	178.98	-0.44	0.82	1.82	0.56	178.98	6.06	0.008	0.01
5	5	0 0 0	179.02	-0.45	0.82	1.83	0.54	179.02	6.10	0.007	0.01
5	5	0 59 59	179.02	-0.45	0.82	1.83	0.54	179.02	6.10	0.007	0.01
5	6	0 0 0	179.04	-0.46	0.83	1.84	0.53	179.04	6.14	0.007	0.01
5	6	0 59 59	179.04	-0.46	0.83	1.84	0.53	179.04	6.15	0.007	0.01
5	7	0 0 0	179.04	-0.47	0.84	1.85	0.52	179.04	6.18	0.007	0.01
5	7	0 59 59	179.04	-0.47	0.84	1.85	0.52	179.04	6.18	0.007	0.01
5	8	0 0 0	179.03	-0.48	0.84	1.85	0.53	179.03	6.22	0.007	0.01
5	8	0 59 59	179.03	-0.49	0.84	1.85	0.53	179.03	6.22	0.007	0.01
5	9	0 0 0	179.00	-0.50	0.85	1.86	0.54	179.00	6.25	0.007	0.01
5	9	0 59 59	179.00	-0.50	0.85	1.85	0.54	179.00	6.25	0.007	0.01
5	10	0 0 0	178.96	-0.51	0.86	1.87	0.56	178.96	6.28	0.007	0.01
5	10	0 59 59	178.96	-0.51	0.86	1.87	0.56	178.96	6.29	0.007	0.01
5	11	0 0 0	178.91	-0.52	0.86	1.87	0.59	178.91	6.31	0.006	0.01
5	11	0 59 59	178.90	-0.52	0.86	1.87	0.59	178.90	6.32	0.006	0.01
5	12	0 0 0	178.84	-0.53	0.87	1.88	0.62	178.84	6.34	0.006	0.01
5	12	0 59 59	178.84	-0.53	0.87	1.88	0.63	178.84	6.34	0.006	0.01
5	13	0 0 0	178.76	-0.53	0.88	1.89	0.66	178.76	6.37	0.006	0.01
5	13	0 59 59	178.75	-0.53	0.88	1.89	0.67	178.75	6.37	0.006	0.01
5	14	0 0 0	178.67	-0.54	0.88	1.89	0.71	178.67	6.39	0.006	0.01
5	14	0 59 59	178.66	-0.54	0.88	1.89	0.71	178.66	6.39	0.006	0.01
5	15	0 0 0	178.56	-0.55	0.89	1.90	0.76	178.56	6.41	0.006	0.01
5	15	0 59 59	178.56	-0.55	0.89	1.90	0.77	178.56	6.41	0.006	0.01
5	16	0 0 0	178.45	-0.56	0.89	1.91	0.82	178.45	6.43	0.006	0.01
5	16	0 59 59	178.45	-0.56	0.89	1.91	0.83	178.45	6.44	0.005	0.01
5	17	0 0 0	178.33	-0.57	0.90	1.91	0.89	178.33	6.45	0.005	0.01
5	17	0 59 59	178.32	-0.57	0.90	1.91	0.89	178.32	6.45	0.005	0.01
5	18	0 0 0	178.19	-0.58	0.90	1.92	0.95	178.19	6.47	0.005	0.01
5	18	0 59 59	178.13	-0.58	0.91	1.92	0.96	178.13	6.47	0.005	0.01
5	19	0 0 0	178.05	-0.59	0.91	1.92	1.03	178.05	6.49	0.005	0.01
5	19	0 59 59	178.05	-0.59	0.91	1.92	1.03	178.05	6.49	0.005	0.01
5	20	0 0 0	177.90	-0.59	0.91	1.93	1.10	177.90	6.50	0.005	0.01
5	20	0 59 59	177.90	-0.59	0.92	1.93	1.11	177.90	6.50	0.005	0.01
5	21	0 0 0	177.74	-0.60	0.92	1.93	1.18	177.74	6.51	0.005	0.01
5	21	0 59 59	177.74	-0.60	0.92	1.93	1.19	177.74	6.51	0.005	0.01
5	22	0 0 0	177.58	-0.61	0.92	1.94	1.27	177.58	6.52	0.004	0.01
5	22	0 59 59	177.57	-0.61	0.92	1.94	1.27	177.57	6.52	0.004	0.01
5	23	0 0 0	177.40	-0.62	0.93	1.94	1.35	177.40	6.53	0.004	0.01
5	23	0 59 59	177.40	-0.62	0.93	1.94	1.36	177.40	6.53	0.004	0.01
5	24	0 0 0	177.22	-0.62	0.93	1.94	1.44	177.22	6.54	0.004	0.01
5	24	0 59 59	177.22	-0.62	0.93	1.94	1.45	177.22	6.54	0.004	0.01
5	25	0 0 0	177.04	-0.63	0.94	1.95	1.54	177.04	6.55	0.004	0.01
5	25	0 59 59	177.03	-0.63	0.94	1.95	1.54	177.03	6.55	0.004	0.01
5	26	0 0 0	176.85	-0.64	0.94	1.95	1.64	176.85	6.56	0.004	0.01
5	26	0 59 59	176.84	-0.64	0.94	1.95	1.64	176.84	6.56	0.004	0.01
5	27	0 0 0	176.65	-0.64	0.94	1.96	1.74	176.65	6.56	0.004	0.01
5	27	0 59 59	176.64	-0.64	0.94	1.96	1.74	176.64	6.56	0.004	0.01
5	28	0 0 0	176.44	-0.65	0.94	1.96	1.84	176.44	6.57	0.003	0.01
5	28	0 59 59	176.43	-0.65	0.95	1.96	1.84	176.43	6.57	0.003	0.01
5	29	0 0 0	176.23	-0.66	0.95	1.96	1.94	176.23	6.57	0.003	0.01
5	29	0 59 59	176.23	-0.66	0.95	1.96	1.95	176.23	6.57	0.003	0.01
5	30	0 0 0	176.02	-0.66	0.95	1.97	2.05	176.02	6.57	0.003	0.01
5	30	0 59 59	176.01	-0.66	0.95	1.97	2.05	176.01	6.57	0.003	0.01
5	31	0 0 0	175.80	-0.67	0.96	1.97	2.16	175.80	6.57	0.003	0.01
5	31	0 59 59	175.79	-0.67	0.96	1.97	2.16	175.79	6.57	0.003	0.01
6	1	0 0 0	175.58	-0.67	0.96	1.97	2.27	175.58	6.57	0.003	0.01

END OF FILE ON ORBIT TAPE

```
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   M2.ZBRTC.S0002.LOAD                    KEPT          DDNAME=SYSLIB  -1          0 EXCPS
IEF285I   VOL SER NO= 013K15.
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JOBNAME-
      SSSSSSSSSS   DDDDDDDDD     HH         HH  EEEEEEEEEEE  LL          DDDDDDDDDD        AA        33333333
     SSSSSSSSSSS   DDDDDDDDDD    HH         HH  EEEEEEEEEEEE  LL         DDDDDDDDDDD       AA       3333333333
     SS        SS  DD        DD  HH         HH  EE            LL         DD        DD     AAAA     33        33
     SS            DD        DD  HH         HH  LL            LL         DD        DD     AAAA              33
     SSS           DD        DD  HH         HH  EE            LL         DD        DD    AA  AA             33
      SSSSSSSSS    DD        DD  HHHHHHHHHHHH  EEEEEEEE      LL         DD        DD    AA  AA          33333
       SSSSSSSSS   DD        DD  HHHHHHHHHHHH  EEEEEEEE      LL         DD        DD   AA    AA         33333
              SSS  DD        DD  HH         HH  EE            LL         DD        DD   AAAAAAAA             33
               SS  DD        DD  HH         HH  EE            LL         DD        DD   AAAAAAAAAA           33
     SS        SS  DD        DD  HH         HH  EE            LL         DD        DD   AA      AA   33      33
     SSSSSSSSSSS   DDDDDDDDDD    HH         HH  EEEEEEEEEEEE  LLLLLLLLLLLL  DDDDDDDDDDD  AA        AA  3333333333
      SSSSSSSSSS   DDDDDDDDDD    HH         HH  EEEEEEEEEEEE  LLLLLLLLLLLL   DDDDDDDDDD  AA        AA   33333333

ECX-                                                  SACC 360/91      REACEP NUMBER-P0212          CLASS-
     EEEEEBBBB     FFFFFFFFFFFF     33333333                                                          AA
     EEEEEEBBBB    FFFFFFFFFFFF    3333333333                                                         AA
     EE        BB  FF              33        33                                                       AAAA
     BB        BB  FF                        33                                                       AAAA
     BB       BB   FF                       33                                                       AA  AA
     EEBEBBBBB     FFFFFFFF            33333                                                        AA  AA
     EFEEEBBBBB    FFFFFFFF            33333                                                       AA    AA
     EE        BB  FF                       33                                                      AAAAAAAA
     EE         BB FF                        33                                                    AAAAAAAAAA
     BB         BB FF              33        33                                                    AA      AA
     EEEEEEBBBBE   FF              3333333333                                                    AA        AA
     EEBEBBBBBB    FF               33333333                                                     AA        AA
```

ORA Ø9

3/15/75 – 6/30/75

NUMBER 64 ON 00F-K3WDPACT/019 ZMASMPR2/910 SDHELOA4/BF3 SDHELCA1/BF3 SDHELCA3/BF3 AT 15.43.04 SAT 23 FEB 80

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XX SPACE=(CYL,(0,1))                                                    00000160
XXSYSPRINT DD SYSOUT=BOLT,UNIT=(2314,3),SPACE=(CYL,(0,2)),              00000170
IEF653I SUBSTITUTION JCL - SYSOUT=A,UNIT=(2314,3),SPACE=(CYL,(0,2)),
XX DCB=(RECFM=VBA,LRECL=137,BLKSIZE=BLKSIZE)                            00000180
IEF653I SUBSTITUTION JCL - DCB=(RECFM=VBA,LRECL=137,BLKSIZE=7265)
XXSYSTERM DD  SYSOUT=BTERMOUT                                           00000190
IEF653I SUBSTITUTION JCL - SYSOUT=A
//SYSUDUMP DD SYSOUT=A
XXSYSUDUMP DD SYSOUT=A,SPACE=(CYL,(0,5))                                00000200
//GO.CENTAP DD UNIT=(TTRACK,,DEFER),
//    VOL=SER=ORTAPE,LABEL=(,NL,,IN),DISP=(OLD,KEEP),
//    DCB=(RECFM=U,BLKSIZE=1544,DEN=2)
//DATAS DD *
IEF236I ALLOC. FOR SDPELCA2 GO
IEF237I 323   ALLOCATED TO SYSLIB
IEF237I 320   ALLOCATED TO
IEF237I 451   ALLOCATED TO
IEF237I 451   ALLOCATED TO
IEF237I 244   ALLOCATED TO
IEF237I 244   ALLOCATED TO
IEF237I 450   ALLOCATED TO SYSLOUT
IEF237I 323   ALLOCATED TO SYSLIN
IEF237I 451   ALLOCATED TO FT05F001
IEF237I 451   ALLOCATED TO FT06F001
IEF237I 450   ALLOCATED TO FT07F001
IEF237I 212   ALLOCATED TO SYSPRINT
IEF237I 232   ALLOCATED TO SYSPRINT
IEF237I 233   ALLOCATED TO SYSPRINT
IEF237I 452   ALLOCATED TO SYSTERM
IEF237I 450   ALLOCATED TO SYSUDUMP
IEF237I 000   ALLOCATED TO GENTAP
```

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                                        OS/360 LOADER

OPTIONS USED - PRINT,MAP,NOLET,CALL,FES,NOTERM,SIZE=160224,NAME=**GO
               EP=ORBIT

     NAME   TYPE  ADDR        NAME   TYPE  ADDR        NAME   TYPE  ADDR        NAME   TYPE  ADDR        NAME   TYPE  ADDR
  CREIT       SD 236810   CNVRTSCT*  SD 237670   CNVFT    *  LR 237670   OBGEN    *  SD 237998   OBFECV   *  LR 237058
  FREAD       SD 237D6C   FREADB   *  LR 237FP8   FWRITE   *  LR 238070   FRWIND   *  LR 238282   LTAVF    *  LR 238366
  UNLOAD   *  LR 23841A   POSN    *  LR 238530   MOUNT    *  LR 238750   MEMBER   *  LR 238932   FTRAP    *  LR 238A22
  FALLCK   *  LR 238AAC   FUNITABL*  SD 239A6C   FPL1     *  SD 239828   FDDNLIST*  SD 239830   FERMSG   *  SD 239838
  IHCNAMEL    SD 239BA0   FRDNL#   *  LR 239BAC   FWRNLA   *  LR 23A1A4   SEQCASD *  LR 239950   IBCDE**   *  LR 23A670
  FDIOCS# *   LR 23A72C   INTS*TCH*  LR 23B5B6   IHCCOMM2*  SD 23B5C8   FIXFLT   *  LR 23BD40   FTF      *  SD 23BC38   TRNSLTE *  SD 23BD88
  ITISECT *   SD 23BCE6   ITI     *  LR 23BCE6   FXFLT    *  SD 23BD40   DTCUN    *  SD 23BFC8   IHCFCVTH*  SD 23C098   FCVTCUTP*  LR 23C6D0
  TRANS   *   LR 23BDB6   BITST   *  SD 23BF98   CNTCDATA*  LR 23BF98   FCVZCUTP*  LR 23C322   FICCS#   *  LR 23D238
  ALCONV  *   LR 23C098   FCVACUTP*  LR 23C142   FCVLCUTP*  LR 23C102   IHCEFIOS*  SD 23D238   IHCEFRE  *  LR 23E6A6
  FCVECUTP*   LR 23CBD2   FCVCCUTP*  LR 23CDEC   INTES*CH*  LR 23D003   FERMCN   *  LR 23E650   IHCUATBL*  SD 23F4D8
  FICCSEP*    LR 23E23C   IHCFICS2*  SD 23E160   IHCLERM *  SD 23E650   IHCUCPT *  SD 23F180
  IHCEFNTH*   SD 23EC68   ARITH#   *  LR 23EC68   ADJS*TCH*  LR 23F004
  IHCETRCH*   SD 23FB10   IHCTRCH  *  LR 23FB1C   ERRTRA   *  LR 23FB18

  TOTAL LENGTH    9990
  ENTRY ADDRESS 236810
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                    SATID  HELICS-A        ORBIT TAPE 4*ORA09
        7409701 ORB          75 C74 000000 181 000000 2000 01 760310 000 01 01 E7  X
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                    HELICS-A          YEAR 1975.          LAUNCH TIME    8182140.  1.
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DATE MN	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	EARTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LAT(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
3	15	0	0	0	81.36	0.00	0.31	1.00	80.75	81.36	-0.07	-.001	0.04
3	15	0	59	59	81.61	0.00	0.31	1.00	80.51	81.61	-0.04	-.001	0.04
3	16	0	0	0	87.42	0.00	0.31	1.03	75.07	87.42	0.61	0.001	0.04
3	16	0	59	59	87.67	0.00	0.31	1.03	74.83	87.67	0.85	0.001	0.04
3	17	0	0	0	93.44	-0.00	0.31	1.06	69.51	93.44	1.68	0.003	0.04
3	17	0	59	59	93.69	-0.00	0.31	1.06	69.26	93.69	1.72	0.004	0.04
3	18	0	0	0	99.34	-0.00	0.31	1.09	64.12	99.34	2.51	0.004	0.04
3	18	0	59	59	99.59	-0.00	0.32	1.09	63.90	99.59	2.54	0.004	0.04
3	19	0	0	0	105.07	-0.01	0.32	1.12	58.56	105.07	3.29	0.006	0.04
3	19	0	59	59	105.31	-0.01	0.32	1.12	58.75	105.31	3.32	0.006	0.04
3	20	0	0	0	110.57	-0.01	0.33	1.15	54.06	110.57	3.99	0.007	0.04
3	20	0	59	59	110.80	-0.01	0.33	1.15	53.86	110.80	4.02	0.007	0.04

3	21	0	0	0	115.81	-0.01	0.33	1.18	49.46	115.81	4.62	0.008	0.04
3	21	0	59	59	116.02	-0.01	0.33	1.18	49.27	116.02	4.65	0.008	0.04
3	22	0	0	0	120.76	-0.01	0.34	1.21	45.16	120.76	5.17	0.009	0.03
3	22	0	59	59	120.96	-0.01	0.34	1.21	44.95	120.96	5.19	0.009	0.03
3	23	0	0	0	125.40	-0.02	0.35	1.23	41.18	125.40	5.64	0.010	0.03
3	23	0	59	59	125.59	-0.02	0.35	1.23	41.02	125.59	5.66	0.010	0.03
3	24	0	0	0	129.73	-0.02	0.36	1.26	37.51	129.73	6.04	0.011	0.03
3	24	0	59	59	129.91	-0.02	0.36	1.26	37.36	129.91	6.05	0.011	0.03
3	25	0	0	0	133.76	-0.02	0.37	1.28	34.13	133.76	6.36	0.011	0.03
3	25	0	59	59	133.92	-0.02	0.37	1.28	34.00	133.92	6.37	0.011	0.03
3	26	0	0	0	137.50	-0.02	0.38	1.31	31.04	137.50	6.62	0.012	0.03
3	26	0	59	59	137.65	-0.02	0.38	1.31	30.92	137.65	6.63	0.012	0.03
3	27	0	0	0	140.95	-0.02	0.40	1.33	28.22	140.95	6.83	0.012	0.03
3	27	0	59	59	141.09	-0.02	0.40	1.33	28.11	141.09	6.83	0.012	0.03
3	28	0	0	0	144.14	-0.02	0.41	1.35	25.65	144.14	6.98	0.013	0.03
3	28	0	59	59	144.27	-0.02	0.41	1.35	25.55	144.27	6.99	0.013	0.03
3	29	0	0	0	147.09	-0.02	0.42	1.37	23.31	147.09	7.09	0.013	0.03
3	29	0	59	59	147.20	-0.02	0.42	1.37	23.21	147.20	7.10	0.013	0.03
3	30	0	0	0	149.80	-0.02	0.43	1.39	21.17	149.80	7.17	0.013	0.03
3	30	0	59	59	149.91	-0.02	0.43	1.39	21.09	149.91	7.17	0.013	0.03
3	31	0	0	0	152.30	-0.02	0.45	1.41	19.23	152.30	7.21	0.013	0.03
3	31	0	59	59	152.40	-0.02	0.45	1.41	19.15	152.40	7.21	0.013	0.03
4	1	0	0	0	154.60	-0.02	0.46	1.43	17.46	154.60	7.23	0.013	0.03
4	1	0	59	59	154.70	0.32	0.46	1.43	17.39	154.69	1.23	0.013	0.03
4	2	0	0	0	156.72	0.28	0.47	1.45	15.65	156.72	1.56	0.013	0.02
4	2	0	59	59	156.81	0.28	0.47	1.45	15.79	156.81	1.57	0.013	0.02
4	3	0	0	0	158.68	0.24	0.49	1.46	14.28	158.68	1.88	0.013	0.02
4	3	0	59	59	158.76	0.24	0.49	1.46	14.33	158.76	1.90	0.013	0.02
4	4	0	0	0	160.48	0.21	0.50	1.48	13.05	160.48	2.19	0.013	0.02
4	4	0	59	59	160.55	0.20	0.50	1.48	13.00	160.55	2.20	0.013	0.02
4	5	0	0	0	162.14	0.17	0.51	1.50	11.83	162.14	2.47	0.013	0.02
4	5	0	59	59	162.21	0.17	0.51	1.50	11.79	162.21	2.48	0.013	0.02
4	6	0	0	0	163.67	0.13	0.52	1.51	10.72	163.67	2.73	0.013	0.02
4	6	0	59	59	163.73	0.13	0.53	1.51	10.68	163.73	2.74	0.013	0.02
4	7	0	0	0	165.08	0.10	0.54	1.53	9.72	165.08	2.98	0.013	0.02
4	7	0	59	59	165.14	0.10	0.54	1.53	9.68	165.14	2.99	0.013	0.02
4	8	0	0	0	166.38	0.07	0.55	1.54	8.80	166.38	3.21	0.013	0.02
4	8	0	59	59	166.44	0.07	0.55	1.54	8.76	166.44	3.22	0.013	0.02
4	9	0	0	0	167.58	0.04	0.56	1.56	7.96	167.58	3.43	0.012	0.02
4	9	0	59	59	167.63	0.04	0.56	1.56	7.92	167.63	3.44	0.012	0.02
4	10	0	0	0	168.69	0.01	0.58	1.57	7.19	168.69	3.63	0.012	0.02
4	10	0	59	59	168.73	0.01	0.58	1.57	7.16	168.73	3.64	0.012	0.02
4	11	0	0	0	169.71	-0.02	0.59	1.58	6.49	169.71	3.82	0.012	0.02
4	11	0	59	59	169.75	-0.02	0.59	1.58	6.46	169.75	3.83	0.012	0.02
4	12	0	0	0	170.65	-0.05	0.60	1.60	5.86	170.65	4.00	0.012	0.02
4	12	0	59	59	170.69	-0.05	0.60	1.60	5.83	170.68	4.00	0.012	0.02
4	13	0	0	0	171.51	-0.07	0.61	1.61	5.28	171.51	4.16	0.012	0.02
4	13	0	59	59	171.55	-0.07	0.61	1.61	5.25	171.55	4.17	0.012	0.02
4	14	0	0	0	172.31	-0.10	0.62	1.62	4.75	172.31	4.32	0.012	0.02
4	14	0	59	59	172.34	-0.10	0.62	1.62	4.73	172.34	4.32	0.012	0.02
4	15	0	0	0	173.04	-0.12	0.63	1.63	4.27	173.04	4.46	0.011	0.02
4	15	0	59	59	173.07	-0.12	0.63	1.64	4.25	173.07	4.47	0.011	0.02
4	16	0	0	0	173.71	-0.14	0.65	1.65	3.83	173.71	4.60	0.011	0.02
4	16	0	59	59	173.74	-0.14	0.65	1.65	3.81	173.74	4.61	0.011	0.02
4	17	0	0	0	174.33	-0.17	0.66	1.66	3.43	174.32	4.73	0.011	0.02
4	17	0	59	59	174.35	-0.17	0.66	1.66	3.41	174.35	4.73	0.011	0.02
4	18	0	0	0	174.89	-0.19	0.67	1.67	3.07	174.89	4.85	0.011	0.02
4	18	0	59	59	174.91	-0.19	0.67	1.67	3.05	174.91	4.85	0.011	0.02
4	19	0	0	0	175.41	-0.21	0.68	1.68	2.74	175.41	4.96	0.011	0.02
4	19	0	59	59	175.43	-0.21	0.68	1.68	2.72	175.43	4.97	0.011	0.02
4	20	0	0	0	175.88	-0.23	0.69	1.69	2.46	175.88	5.07	0.010	0.02
4	20	0	59	59	175.90	-0.23	0.69	1.69	2.43	175.90	5.07	0.010	0.02
4	21	0	0	0	176.31	-0.25	0.70	1.70	2.18	176.31	5.17	0.010	0.02
4	21	0	59	59	176.32	-0.25	0.70	1.70	2.17	176.32	5.18	0.010	0.02
4	22	0	0	0	176.69	-0.26	0.71	1.71	1.54	176.69	5.27	0.010	0.02
4	22	0	59	59	176.71	-0.26	0.71	1.71	1.52	176.71	5.27	0.010	0.02

HELIOS-A YEAR 1975. LAUNCH-TIME 11472550. 0.

DATE MM	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	EARTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LET(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
4	23	0	0	0	177.04	-0.28	0.72	1.72	1.72	177.04	5.36	0.010	0.02
4	23	0	59	59	177.06	-0.28	0.72	1.72	1.71	177.06	5.36	0.010	0.02
4	24	0	0	0	177.36	-0.30	0.73	1.73	1.63	177.36	5.44	0.010	0.02
4	24	0	59	59	177.37	-0.30	0.73	1.73	1.62	177.37	5.44	0.010	0.02
4	25	0	0	0	177.64	-0.31	0.74	1.74	1.36	177.64	5.52	0.009	0.02
4	25	0	59	59	177.65	-0.32	0.74	1.74	1.35	177.65	5.52	0.009	0.02
4	26	0	0	0	177.89	-0.33	0.75	1.75	1.21	177.89	5.59	0.009	0.02
4	26	0	59	59	177.90	-0.33	0.75	1.75	1.20	177.90	5.60	0.009	0.02

4	27	0	0	0	178.12	-0.35	0.76	1.76	1.07	178.12	5.67	0.009	0.02
4	27	0	59	59	178.13	-0.35	0.76	1.76	1.07	178.13	5.67	0.009	0.02
4	28	0	0	0	178.31	-0.36	0.77	1.77	0.96	178.31	5.73	0.009	0.02
4	28	0	59	59	178.32	-0.36	0.77	1.77	0.95	178.32	5.73	0.009	0.02
4	29	0	0	0	178.48	-0.37	0.77	1.78	0.86	178.48	5.80	0.009	0.02
4	29	0	59	59	178.49	-0.38	0.77	1.78	0.86	178.49	5.80	0.009	0.02
4	30	0	0	0	178.62	-0.39	0.78	1.79	0.77	178.62	5.85	0.008	0.02
4	30	0	59	59	178.63	-0.39	0.78	1.79	0.77	178.63	5.86	0.008	0.02
5	1	0	0	0	178.74	-0.40	0.79	1.80	0.70	178.74	5.91	0.008	0.01
5	1	0	59	59	178.75	-0.40	0.79	1.80	0.70	178.75	5.91	0.008	0.01
5	2	0	0	0	178.84	-0.41	0.80	1.81	0.65	178.84	5.96	0.008	0.01
5	2	0	59	59	178.85	-0.42	0.80	1.81	0.64	178.85	5.96	0.008	0.01
5	3	0	0	0	178.92	-0.43	0.81	1.82	0.60	178.92	6.01	0.008	0.01
5	3	0	59	59	178.92	-0.43	0.81	1.82	0.60	178.92	6.01	0.008	0.01
5	4	0	0	0	178.98	-0.44	0.82	1.82	0.57	178.98	6.06	0.008	0.01
5	4	0	59	59	178.98	-0.44	0.82	1.82	0.56	178.98	6.06	0.008	0.01
5	5	0	0	0	179.02	-0.45	0.82	1.83	0.54	179.02	6.10	0.007	0.01
5	5	0	59	59	179.02	-0.45	0.82	1.83	0.54	179.02	6.10	0.007	0.01
5	6	0	0	0	179.04	-0.46	0.83	1.84	0.53	179.04	6.14	0.007	0.01
5	6	0	59	59	179.04	-0.46	0.83	1.84	0.53	179.04	6.15	0.007	0.01
5	7	0	0	0	179.04	-0.47	0.84	1.85	0.52	179.04	6.18	0.007	0.01
5	7	0	59	59	179.04	-0.47	0.84	1.85	0.52	179.04	6.18	0.007	0.01
5	8	0	0	0	179.03	-0.48	0.84	1.85	0.53	179.03	6.22	0.007	0.01
5	8	0	59	59	179.03	-0.49	0.84	1.85	0.53	179.03	6.22	0.007	0.01
5	9	0	0	0	179.00	-0.50	0.85	1.86	0.54	179.00	6.25	0.007	0.01
5	9	0	59	59	179.00	-0.50	0.85	1.86	0.54	179.00	6.25	0.007	0.01
5	10	0	0	0	178.96	-0.51	0.86	1.87	0.56	178.96	6.28	0.007	0.01
5	10	0	59	59	178.96	-0.51	0.86	1.87	0.56	178.96	6.29	0.007	0.01
5	11	0	0	0	178.91	-0.52	0.86	1.87	0.59	178.91	6.31	0.006	0.01
5	11	0	59	59	178.90	-0.52	0.86	1.87	0.59	178.90	6.32	0.006	0.01
5	12	0	0	0	178.84	-0.53	0.87	1.88	0.62	178.84	6.34	0.006	0.01
5	12	0	59	59	178.84	-0.53	0.87	1.88	0.63	178.84	6.34	0.006	0.01
5	13	0	0	0	178.76	-0.53	0.88	1.89	0.66	178.76	6.37	0.006	0.01
5	13	0	59	59	178.75	-0.53	0.88	1.89	0.67	178.75	6.37	0.006	0.01
5	14	0	0	0	178.67	-0.54	0.88	1.89	0.71	178.67	6.39	0.006	0.01
5	14	0	59	59	178.66	-0.54	0.88	1.89	0.71	178.66	6.39	0.006	0.01
5	15	0	0	0	178.56	-0.55	0.89	1.90	0.76	178.56	6.41	0.006	0.01
5	15	0	59	59	178.56	-0.55	0.89	1.90	0.77	178.56	6.41	0.006	0.01
5	16	0	0	0	178.45	-0.56	0.89	1.91	0.82	178.45	6.43	0.006	0.01
5	16	0	59	59	178.45	-0.56	0.89	1.91	0.83	178.45	6.44	0.005	0.01
5	17	0	0	0	178.33	-0.57	0.90	1.91	0.85	178.33	6.45	0.005	0.01
5	17	0	59	59	178.32	-0.57	0.90	1.91	0.89	178.32	6.45	0.005	0.01
5	18	0	0	0	178.19	-0.58	0.90	1.92	0.95	178.19	6.47	0.005	0.01
5	18	0	59	59	178.19	-0.58	0.91	1.92	0.96	178.19	6.47	0.005	0.01
5	19	0	0	0	178.05	-0.59	0.91	1.92	1.03	178.05	6.49	0.005	0.01
5	19	0	59	59	178.05	-0.59	0.91	1.92	1.03	178.05	6.49	0.005	0.01
5	20	0	0	0	177.90	-0.59	0.91	1.93	1.10	177.90	6.50	0.005	0.01
5	20	0	59	59	177.90	-0.59	0.92	1.93	1.11	177.90	6.50	0.005	0.01
5	21	0	0	0	177.74	-0.60	0.92	1.93	1.18	177.74	6.51	0.005	0.01
5	21	0	59	59	177.74	-0.60	0.92	1.93	1.19	177.74	6.51	0.005	0.01
5	22	0	0	0	177.58	-0.61	0.92	1.94	1.27	177.58	6.52	0.004	0.01
5	22	0	59	59	177.57	-0.61	0.92	1.94	1.27	177.57	6.52	0.004	0.01
5	23	0	0	0	177.40	-0.62	0.93	1.94	1.35	177.40	6.53	0.004	0.01
5	23	0	59	59	177.40	-0.62	0.93	1.94	1.36	177.40	6.53	0.004	0.01
5	24	0	0	0	177.22	-0.62	0.93	1.94	1.44	177.22	6.54	0.004	0.01
5	24	0	59	59	177.22	-0.62	0.93	1.94	1.45	177.22	6.54	0.004	0.01
5	25	0	0	0	177.04	-0.63	0.94	1.95	1.54	177.04	6.55	0.004	0.01
5	25	0	59	59	177.03	-0.63	0.94	1.95	1.54	177.03	6.55	0.004	0.01
5	26	0	0	0	176.85	-0.64	0.94	1.95	1.64	176.85	6.56	0.004	0.01
5	26	0	59	59	176.84	-0.64	0.94	1.95	1.64	176.84	6.56	0.004	0.01
5	27	0	0	0	176.65	-0.64	0.94	1.96	1.74	176.65	6.56	0.004	0.01
5	27	0	59	59	176.64	-0.64	0.94	1.96	1.74	176.64	6.56	0.004	0.01
5	28	0	0	0	176.44	-0.65	0.95	1.96	1.84	176.44	6.57	0.003	0.01
5	28	0	59	59	176.43	-0.65	0.95	1.96	1.84	176.43	6.57	0.003	0.01
5	29	0	0	0	176.23	-0.66	0.95	1.96	1.94	176.23	6.57	0.003	0.01
5	29	0	59	59	176.23	-0.66	0.95	1.96	1.95	176.23	6.57	0.003	0.01
5	30	0	0	0	176.02	-0.66	0.95	1.97	2.05	176.02	6.57	0.003	0.01
5	30	0	59	59	176.01	-0.66	0.95	1.97	2.05	176.01	6.57	0.003	0.01
5	31	0	0	0	175.80	-0.67	0.96	1.97	2.16	175.80	6.57	0.003	0.01
5	31	0	59	59	175.79	-0.67	0.96	1.97	2.16	175.79	6.57	0.003	0.01
6	1	0	0	0	175.58	-0.67	0.96	1.97	2.27	175.58	6.57	0.003	0.01
6	1	0	59	59	175.57	-0.67	0.96	1.97	2.28	175.57	6.57	0.003	0.01
6	2	0	0	0	175.35	-0.68	0.96	1.98	2.38	175.35	6.57	0.003	0.01
6	2	0	59	59	175.34	-0.68	0.96	1.98	2.39	175.34	6.57	0.003	0.01
6	3	0	0	0	175.12	-0.68	0.97	1.98	2.50	175.12	6.56	0.002	0.01
6	3	0	59	59	175.11	-0.68	0.97	1.98	2.50	175.11	6.56	0.002	0.01
6	4	0	0	0	174.89	-0.69	0.97	1.98	2.62	174.89	6.56	0.002	0.01
6	4	0	59	59	174.88	-0.69	0.97	1.98	2.62	174.88	6.56	0.002	0.01
6	5	0	0	0	174.65	-0.69	0.97	1.98	2.74	174.65	6.56	0.002	0.01
6	5	0	59	59	174.64	-0.69	0.97	1.98	2.74	174.64	6.56	0.002	0.01
6	6	0	0	0	174.41	-0.70	0.97	1.98	2.86	174.41	6.55	0.002	0.01

6	6	0	55	59	174.40	-0.70	0.97	1.98	2.86	174.40	6.55	0.002	0.01
6	7	0	0	0	174.16	-0.70	0.97	1.99	2.98	174.16	6.54	0.002	0.01
6	7	0	55	59	174.15	-0.70	0.97	1.99	2.98	174.15	6.54	0.002	0.01
6	8	0	0	0	173.92	-0.71	0.98	1.99	3.10	173.92	6.53	0.002	0.01
6	8	0	55	55	173.91	-0.71	0.98	1.99	3.11	173.91	6.53	0.002	0.01
6	9	0	0	0	173.67	-0.71	0.98	1.99	3.22	173.67	6.53	0.002	0.01
6	9	0	55	59	173.66	-0.71	0.98	1.99	3.23	173.66	6.53	0.002	0.01
6	10	0	0	0	173.42	-0.72	0.98	1.99	3.35	173.42	6.52	0.001	0.01
6	10	0	55	59	173.41	-0.72	0.98	1.99	3.36	173.41	6.52	0.001	0.01
6	11	0	0	0	173.17	-0.72	0.98	1.99	3.48	173.17	6.50	0.001	0.01
6	11	0	59	59	173.16	-0.72	0.98	1.99	3.48	173.16	6.50	0.001	0.01
6	12	0	0	0	172.91	-0.73	0.98	1.99	3.60	172.91	6.49	0.001	0.01
6	12	0	55	59	172.90	-0.73	0.98	1.99	3.61	172.90	6.49	0.001	0.01
6	13	0	0	0	172.66	-0.73	0.98	1.99	3.73	172.66	6.48	0.001	0.01
6	13	0	55	59	172.65	-0.73	0.98	1.99	3.74	172.65	6.48	0.001	0.01
6	14	0	0	0	172.40	-0.74	0.98	1.99	3.86	172.40	6.47	0.001	0.01
6	14	0	55	59	172.39	-0.74	0.98	1.99	3.86	172.39	6.47	0.001	0.01
6	15	0	0	0	172.15	-0.74	0.98	1.99	3.99	172.15	6.45	0.001	0.01
6	15	0	55	59	172.14	-0.74	0.98	1.99	3.99	172.14	6.45	0.001	0.01
6	16	0	0	0	171.89	-0.74	0.98	2.00	4.12	171.89	6.44	0.000	0.01
6	16	0	55	59	171.88	-0.74	0.98	2.00	4.12	171.88	6.44	0.000	0.01
6	17	0	0	0	171.63	-0.75	0.98	2.00	4.25	171.63	6.42	0.000	0.01
6	17	0	55	59	171.62	-0.75	0.98	2.00	4.25	171.62	6.42	0.000	0.01
6	18	0	0	0	171.38	-0.75	0.98	2.00	4.38	171.38	6.40	0.000	0.01
6	18	0	55	59	171.37	-0.75	0.98	2.00	4.38	171.37	6.40	0.000	0.01
6	19	0	0	0	171.12	-0.75	0.98	1.99	4.51	171.12	6.38	-.000	0.01
6	19	0	55	59	171.11	-0.75	0.98	1.99	4.51	171.11	6.38	-.000	0.01
6	20	0	0	0	170.86	-0.76	0.98	1.99	4.64	170.86	6.36	-.000	0.01
6	20	0	55	59	170.85	-0.76	0.98	1.99	4.65	170.85	6.36	-.000	0.01
6	21	0	0	0	170.61	-0.76	0.98	1.99	4.77	170.61	6.34	-.000	0.01
6	21	0	55	59	170.60	-0.76	0.98	1.99	4.78	170.60	6.34	-.000	0.01
6	22	0	0	0	170.35	-0.76	0.98	1.99	4.90	170.35	6.32	-.001	0.01
6	22	0	59	59	170.34	-0.76	0.98	1.99	4.91	170.34	6.32	-.001	0.01
6	23	0	0	0	170.10	-0.77	0.98	1.99	5.03	170.10	6.30	-.001	0.01
6	23	0	55	59	170.09	-0.77	0.98	1.99	5.04	170.09	6.30	-.001	0.01
6	24	0	0	0	169.84	-0.77	0.98	1.99	5.16	169.84	6.28	-.001	0.01
6	24	0	55	59	169.83	-0.77	0.98	1.99	5.17	169.83	6.28	-.001	0.01
6	25	0	0	0	169.59	-0.77	0.98	1.99	5.30	169.59	6.25	-.001	0.01
6	25	0	59	59	169.58	-0.77	0.98	1.99	5.30	169.58	6.25	-.001	0.01
6	26	0	0	0	169.34	-0.78	0.98	1.99	5.43	169.34	6.23	-.001	0.01
6	26	0	55	59	169.33	-0.78	0.98	1.99	5.43	169.33	6.23	-.001	0.01
6	27	0	0	0	169.09	-0.78	0.98	1.99	5.56	169.09	6.20	-.001	0.01
6	27	0	59	59	169.08	-0.78	0.98	1.99	5.56	169.08	6.20	-.001	0.01
6	28	0	0	0	168.85	-0.78	0.98	1.98	5.69	168.85	6.17	-.002	0.01
6	28	0	55	59	168.84	-0.78	0.98	1.98	5.69	168.84	6.17	-.002	0.01
6	29	0	0	0	168.60	-0.78	0.98	1.98	5.82	168.60	6.15	-.002	0.01
6	29	0	55	59	168.59	-0.78	0.98	1.98	5.82	168.59	6.14	-.002	0.01
6	30	0	0	0	168.36	-0.79	0.97	1.98	5.94	168.36	6.12	-.002	0.01

END OF FILE ON ORBIT TAPE

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IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   M2.ZBRTC.SL002.LOAD                                  KEPT       DDNAME=SYSLIB  -1        0 EXCPS
IEF285I   VOL SER NOS= DISK1E.
IEF285I   SYS2.DEBLKLNV                                        KEPT       DDNAME=SYSLIB  -2       17 EXCPS
IEF285I   VOL SER NOS= M2SYS2.
IEF285I   SYS1.FORTLIB                                         KEPT       DDNAME=SYSLIB  -3       69 EXCPS
IEF285I   VOL SER NOS= K3ITLC.
IEF285I   SYS2.FORTLIB                                         KEPT       DDNAME=SYSLIB  -4        0 EXCPS
IEF285I   VOL SER NOS= K3ITLC.
IEF285I   SYS1.PL1LIB                                          KEPT       DDNAME=SYSLIB  -5        0 EXCPS
IEF285I   VOL SER NOS= K3ITLE.
IEF285I   SYS1.FORTSSP                                         KEPT       DDNAME=SYSLIB  -6        0 EXCPS
IEF285I   VOL SER NOS= K3ITLE.
IEF285I   SYS80054.T153952.SV000.SDHELCA3.F0000001             SYSOUT     DDNAME=SYSLOUT           1 EXCPS
IEF285I   VOL SER NOS= SCR000.
IEF285I   M2.ZBRTC.SL002.LOAD                                  KEPT       DDNAME=SYSLIN  -1        7 EXCPS
IEF285I   VOL SER NOS= DISK1E.
IEF285I   SYS80054.T153952.RV000.SDHELCA3.S0000008             SYSIN      DDNAME=FT05F001          2 EXCPS
IEF285I   VOL SER NOS= SCR001.
IEF285I   SYS80054.T153952.RV000.SDHELCA3.S0000008             DELETED    DDNAME=FT05F001          2 EXCPS
IEF285I   VOL SER NOS= SCR001.
IEF285I   SYS80054.T153952.SV000.SDHELCA3.F0000002             SYSOUT     DDNAME=FT06F001          5 EXCPS
IEF285I   VOL SER NOS= SCR001.
IEF285I   SYS80054.T153952.SV000.SDHELCA3.F0000003             DELETED    DDNAME=FT07F001          0 EXCPS
IEF285I   VOL SER NOS= SCR000.
IEF285I   SYS80054.T153952.SV000.SDHELCA3.F0000004             DELETED    DDNAME=SYSPRINT          0 EXCPS
IEF285I   VOL SER NOS= M2SCRE.
IEF285I   SYS80054.T153952.SV000.SDHELCA3.F0000005             DELETED    DDNAME=SYSTERM           0 EXCPS
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     SS        SS  DD        DD   HH        HH  EE            LL         CC        CC      /AAA           44 44
     SS            DD         DD  HH        HH  EE            LL         CC        CC      /AAA          44  44
     SSS           DD         DD  HH        HH  EE            LL         CC        CC     A/  AA        44   44
      SSSSSSSSS    DD         DD  HHHHHHHHHHHH  EEEEEEEE      LL         CC        CC     A/  AA       44    44
       SSSSSSSSS   DD         DD  HHHHHHHHHHHH  EEEEEEEE      LL         CC        CC    AA    AA     44     44
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             SS    DD         DD  HH        HH  EE            LL         CC        CC   AAA/AAAAAA   444444444444
     SS        SS  LL        LL   HH        HH  EE            LL         CC        CC   AA      AA           44
     SSSSSSSSSSS   DDDDDDDDDD     HH        HH  EEEEEEEEEEEE  LLLLLLLLLLLL  CCCCCCCCCCCC  AA        AA          44
      SSSSSSSSSS   DDDDDDDDD      HH        HH  EEEEEEEEEEEE  LLLLLLLLLLLL   CCCCCCCCCC   AA        AA          44

ECX-                                                  SACC 360/91      READER NUMBER-P0205          CLASS-
     EEEEEEEEE     FFFFFFFFFFFF     33333333                                                          AA
     EEEEEEEEEE    FFFFFFFFFFFF    3333333333                                                         AA
     EE        EE  FF            33        33                                                        AAAA
     EE        EE  FF                      33                                                        AAAA
     EE        EE  FF                      33                                                       AA  AA
     EEEEEEEEE     FFFFFFFF            33333                                                       AA  AA
     EEEEEEEEEE    FFFFFFFF            33333                                                      AA    AA
     EE        EE  FF                      33                                                     AAAAAAAA
     EE        EE  FF                      33                                                    AAAAAAAAAA
     EE        EE  FF            33        33                                                    AA      AA
     EEEEEEEEEEE   FF            3333333333                                                     AA        AA
     EEEEEEEEEE    FF             33333333                                                      AA        AA
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ORA 1Ø

7/01/75 – 9/30/75

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xx SPACE=(CYL,(C,1))                                                    00000160
XXSYSPRINT DD SYSOUT=&OUT,UNIT=(2314,3),SPACE=(CYL,(0,2)),              00000170
IEF652I SUBSTITUTION JCL - SYSOUT=A,UNIT=(2314,2),SPACE=(CYL,(0,2)),
xx DCB=(RECFM=VBA,LRECL=137,BLKSIZE=&BLKSIZE)                           00000180
IEF652I SUBSTITUTION JCL - DCB=(RECFM=VBA,LRECL=137,BLKSIZE=7265)
XXSYSTERM  DD  SYSOUT=&TERMOUT                                          00000190
IEF652I SUBSTITUTION JCL - SYSOUT=A
//SYSDUMP DD SYSOUT=A                                                   00000200
X/SYSDUMP DD SYSOUT=A,SPACE=(CYL,(C,5))
//GO.GENTAP DD UNIT=(7TRACK,,DEFER),
//    VOL=SER=GRTAPE,LABEL=(,NL,,IN),DISP=(OLD,KEEP),
//    DCB=(RECFM=U,BLKSIZE=1544,DEN=2)
//DATA5 DD *
IEF236I ALLOC. FOR SCHLLCA4 GO
IEF237I 323   ALLOCATED TO SYSLIB
IEF237I 330   ALLOCATED TO
IEF237I 451   ALLOCATED TO
IEF237I 451   ALLOCATED TO
IEF237I 244   ALLOCATED TO
IEF237I 244   ALLOCATED TO
IEF237I 450   ALLOCATED TO SYSLOUT
IEF237I 323   ALLOCATED TO SYSLIN
IEF237I 450   ALLOCATED TO FT05F001
IEF237I 450   ALLOCATED TO FT06F001
IEF237I 450   ALLOCATED TO FT07F001
IEF237I 232   ALLOCATED TO SYSPRINT
IEF237I 232   ALLOCATED TO SYSPRINT
IEF237I 232   ALLOCATED TO SYSPRINT
IEF237I 452   ALLOCATED TO SYSTERM
IEF237I 450   ALLOCATED TO SYSUDUMP
IEF237I 000   ALLOCATED TO GENTAP
```

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                                                  OS/360 LOADER

OPTIONS USED - PRINT,MAP,NOLET,CALL,FFS,NOTERM,SIZE=180224,NAME=4*GO
               EP=ORBIT
```

NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR
CREIT	SD	242010	CNVRTSCT*	SD	242C7C	CNVFT *	LR	242E70	CEGEN *	SD	243198	DEFFCV *	LR	243358
FREAD *	SD	243560	FREADB *	LR	2437B8	FWRITE *	LR	2436F0	REWIND *	LR	243AB2	LEAVE *	LR	243B66
UNLOAD *	LR	243C3A	POSN *	LR	243D30	NCUNT *	LR	243F50	MEMBER *	LR	244132	ETRAP *	LR	244222
FALLCW	LR	2442A0	FUNITABL*	SD	245260	FPLI *	SD	245328	FCONLIST*	SD	245330	FFRMSG *	SD	245338
IHCNAMEL*	SD	2453AC	FRDNL# *	LR	2453AC	FWRNL# *	LR	2455A4	IHCFCOMH*	SD	245E70	IBCOM# *	LR	245E70
FCICCS# *	LR	245F2C	INTSWTCH*	LR	246CE6	IHCCOMH2*	SD	246CD8	SFOCASC *	LR	247150	FTF *	SD	247438
ITISECT *	SD	2474FE	ITI *	LR	2474F8	FXFLT *	SD	247540	FIXFLT *	LR	247540	TRNSLTE *	SD	247588
TRANS *	LR	2475E6	BITST *	SD	247658	CNTCDATA*	LR	247658	CTCUN *	SE	2477C8	IHCFCVTH*	SD	247858
AFCCN#	LR	247858	FCVACUTP*	LR	247942	FCVLCUTP*	LR	247912	FCVZCUTP*	LR	247822	FCVICUTP*	LR	247CD0
FCVECUTP*	LR	2483L2	FCVCCUTP*	LR	2485CC	INTESWCH*	LR	24FFC3	IHCEFICS*	SD	248A38	FICCS# *	LR	248A38
FICCFEEEG	LR	2486B6	IHCCIES2*	SD	2496C8	IHCERRM *	SD	2490C6	CERMCN *	LR	2490C6	IHCERFE *	LR	2496A8
IEHERTCT*	SD	2486B6	ABYTE# *	LR	2486FE	ABYEBTCH*	LR	24A8C4	IHCUCPT *	SD	24A980	IHCUATBL*	SD	24ACD8
IHCFTFCT*	SD	248310	IHCTECH *	LR	24831C	EPRINA *	LR	248318						

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TOTAL LENGTH    5550
ENTRY ALLFLES 242010
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                    SATID--HELICS-A        ORBIT TAPE 4=CRA10
7409701 CRB              75 181 000000 273 000000 2001 01 760310 001 01 01 E7  X
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                    HELICS-A          YEAR 1975.          LAUNCH TIME    17426552.  2.
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MM	DATE DD	HR	MN	SC	HELICS ECL.LONG	HELICS ECL.LAT	SUN-HELICS DIST(A.U)	EARTH-HELICS DIST(A.U)	EARTH-HELICS SUN(DEG)	HELICS-SUN EARTH(DEG)	HELICS MIL-LET(DEG)	HELICS-V(A.U/DAY) RADIAL	NORMAL
6	30	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	1	0	0	0	168.12	-0.79	0.97	1.98	0.07	168.12	0.09	-.002	0.01
7	1	0	59	59	168.11	-0.79	0.97	1.98	0.08	168.11	0.08	-.002	0.01
7	2	0	0	0	167.88	-0.79	0.97	1.98	0.20	167.89	0.08	-.002	0.01
7	2	0	59	59	167.88	-0.79	0.97	1.98	0.20	167.88	0.08	-.002	0.01
7	3	0	0	0	167.65	-0.79	0.97	1.97	0.33	167.65	0.02	-.002	0.01
7	3	0	59	59	167.64	-0.79	0.97	1.97	0.33	167.64	0.02	-.002	0.01
7	4	0	0	0	167.42	-0.79	0.97	1.97	0.46	167.42	5.99	-.002	0.01
7	4	0	59	59	167.41	-0.79	0.97	1.97	0.46	167.41	5.99	-.003	0.01
7	5	0	0	0	167.20	-0.80	0.96	1.97	0.58	167.20	5.95	-.003	0.01
7	5	0	59	59	167.19	-0.80	0.96	1.97	0.58	167.19	5.95	-.003	0.01
7	6	0	0	0	166.97	-0.80	0.96	1.96	0.70	166.98	5.92	-.003	0.01

7	6	0	59	59	166.96	-0.80	0.96	1.96	6.70	166.97	5.52	-.003	0.01
7	7	0	0	0	166.76	-0.80	0.96	1.96	6.82	166.76	5.88	-.003	0.01
7	7	0	59	59	166.75	-0.80	0.96	1.96	6.83	166.75	5.86	-.003	0.01
7	8	0	0	0	166.54	-0.80	0.95	1.96	6.94	166.54	5.84	-.003	0.01
7	8	0	59	59	166.53	-0.80	0.95	1.96	6.95	166.54	5.84	-.003	0.01
7	9	0	0	0	166.33	-0.80	0.95	1.95	7.06	166.34	5.80	-.003	0.01
7	9	0	59	59	166.33	-0.80	0.95	1.95	7.07	166.33	5.80	-.003	0.01
7	10	0	0	0	166.13	-0.80	0.95	1.95	7.18	166.13	5.76	-.003	0.01
7	10	0	59	59	166.12	-0.80	0.95	1.95	7.18	166.12	5.76	-.003	0.01
7	11	0	0	0	165.93	-0.80	0.94	1.95	7.29	165.94	5.72	-.004	0.01
7	11	0	59	59	165.93	-0.80	0.94	1.95	7.30	165.93	5.72	-.004	0.01
7	12	0	0	0	165.74	-0.80	0.94	1.94	7.41	165.74	5.68	-.004	0.01
7	12	0	59	59	165.73	-0.80	0.94	1.94	7.41	165.74	5.67	-.004	0.01
7	13	0	0	0	165.56	-0.80	0.94	1.94	7.52	165.56	5.63	-.004	0.01
7	13	0	59	59	165.55	-0.80	0.94	1.94	7.52	165.55	5.62	-.004	0.01
7	14	0	0	0	165.38	-0.81	0.93	1.93	7.63	165.38	5.58	-.004	0.01
7	14	0	59	59	165.37	-0.81	0.93	1.93	7.63	165.37	5.58	-.004	0.01
7	15	0	0	0	165.21	-0.81	0.93	1.93	7.74	165.21	5.54	-.004	0.01
7	15	0	59	59	165.20	-0.81	0.93	1.93	7.74	165.20	5.53	-.004	0.01
7	16	0	0	0	165.04	-0.81	0.92	1.92	7.84	165.04	5.49	-.004	0.01
7	16	0	59	59	165.03	-0.81	0.92	1.92	7.84	165.04	5.48	-.004	0.01
7	17	0	0	0	164.88	-0.81	0.92	1.92	7.94	164.88	5.44	-.005	0.01
7	17	0	59	59	164.88	-0.81	0.92	1.92	7.94	164.88	5.43	-.005	0.01
7	18	0	0	0	164.73	-0.81	0.91	1.91	8.04	164.74	5.38	-.005	0.01
7	18	0	59	59	164.73	-0.81	0.91	1.91	8.04	164.73	5.38	-.005	0.01
7	19	0	0	0	164.59	-0.81	0.91	1.91	8.13	164.59	5.33	-.005	0.01
7	19	0	59	59	164.59	-0.81	0.91	1.91	8.14	164.59	5.33	-.005	0.01
7	20	0	0	0	164.46	-0.81	0.90	1.90	8.22	164.46	5.27	-.005	0.01
7	20	0	59	59	164.46	-0.81	0.90	1.90	8.23	164.46	5.27	-.005	0.01
7	21	0	0	0	164.34	-0.80	0.90	1.90	8.31	164.34	5.22	-.005	0.01
7	21	0	59	59	164.33	-0.80	0.90	1.90	8.31	164.34	5.21	-.005	0.01
7	22	0	0	0	164.23	-0.80	0.89	1.89	8.39	164.23	5.16	-.006	0.01
7	22	0	59	59	164.22	-0.80	0.89	1.89	8.40	164.22	5.15	-.006	0.01
7	23	0	0	0	164.13	-0.80	0.89	1.89	8.47	164.13	5.10	-.006	0.01
7	23	0	59	59	164.12	-0.80	0.89	1.89	8.48	164.12	5.09	-.006	0.01
7	24	0	0	0	164.03	-0.80	0.88	1.88	8.55	164.04	5.03	-.006	0.01
7	24	0	59	59	164.03	-0.80	0.88	1.88	8.55	164.03	5.03	-.006	0.01
7	25	0	0	0	163.95	-0.80	0.88	1.87	8.62	163.96	4.97	-.006	0.01
7	25	0	59	59	163.95	-0.80	0.88	1.87	8.62	163.95	4.97	-.006	0.01
7	26	0	0	0	163.89	-0.80	0.87	1.87	8.68	163.89	4.90	-.006	0.01
7	26	0	59	59	163.88	-0.80	0.87	1.87	8.68	163.89	4.90	-.006	0.01
7	27	0	0	0	163.83	-0.80	0.86	1.86	8.74	163.83	4.83	-.006	0.01
7	27	0	59	59	163.83	-0.80	0.86	1.86	8.74	163.83	4.83	-.006	0.01
7	28	0	0	0	163.79	-0.80	0.86	1.85	8.79	163.79	4.76	-.007	0.01
7	28	0	59	59	163.79	-0.80	0.86	1.85	8.80	163.79	4.76	-.007	0.01
7	29	0	0	0	163.76	-0.79	0.85	1.85	8.84	163.76	4.69	-.007	0.01
7	29	0	59	59	163.76	-0.79	0.85	1.85	8.84	163.76	4.68	-.007	0.01
7	30	0	0	0	163.75	-0.79	0.84	1.84	8.88	163.75	4.61	-.007	0.01
7	30	0	59	59	163.75	-0.79	0.84	1.84	8.88	163.75	4.61	-.007	0.01
7	31	0	0	0	163.75	-0.79	0.84	1.83	8.91	163.75	4.53	-.007	0.01
7	31	0	59	59	163.75	-0.79	0.84	1.83	8.91	163.75	4.52	-.007	0.01
8	1	0	0	0	163.77	-0.79	0.83	1.83	8.94	163.77	4.45	-.007	0.01
8	1	0	59	59	163.77	-0.79	0.83	1.83	8.94	163.77	4.45	-.007	0.01
8	2	0	0	0	163.80	-0.78	0.82	1.82	8.95	163.81	4.37	-.008	0.01
8	2	0	59	59	163.81	-0.78	0.82	1.82	8.95	163.81	4.36	-.008	0.01
8	3	0	0	0	163.86	-0.78	0.81	1.81	8.96	163.86	4.28	-.008	0.01
8	3	0	59	59	163.86	-0.78	0.81	1.81	8.96	163.86	4.27	-.008	0.01
8	4	0	0	0	163.93	-0.77	0.81	1.80	8.96	163.93	4.19	-.008	0.01
8	4	0	59	59	163.92	-0.77	0.81	1.80	8.96	163.93	4.18	-.008	0.01
8	5	0	0	0	164.02	-0.77	0.80	1.80	8.95	164.02	4.09	-.008	0.01
8	5	0	59	59	164.03	-0.77	0.80	1.80	8.95	164.03	4.09	-.008	0.01
8	6	0	0	0	164.13	-0.76	0.79	1.79	8.92	164.14	4.00	-.008	0.01
8	6	0	59	59	164.14	-0.76	0.79	1.79	8.92	164.14	3.99	-.008	0.01
8	7	0	0	0	164.27	-0.76	0.78	1.78	8.89	164.27	3.90	-.008	0.02
8	7	0	59	59	164.28	-0.76	0.78	1.78	8.89	164.28	3.89	-.008	0.02
8	8	0	0	0	164.43	-0.75	0.77	1.77	8.84	164.43	3.79	-.009	0.02

HELIOS-A MAR 1975 LAUNCH TIME 20800150. 0.

DATE MM	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	EARTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LAT(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
8	8	0	59	59	164.44	-0.75	0.77	1.77	8.84	164.44	3.79	-.009	0.02
8	9	0	0	0	164.61	-0.75	0.76	1.76	8.78	164.61	3.69	-.009	0.02
8	9	0	59	59	164.62	-0.75	0.76	1.76	8.77	164.62	3.68	-.009	0.02
8	10	0	0	0	164.83	-0.74	0.76	1.75	8.70	164.83	3.57	-.009	0.02
8	10	0	59	59	164.82	-0.74	0.76	1.75	8.70	164.82	3.57	-.009	0.02
8	11	0	0	0	165.06	-0.74	0.75	1.75	8.61	165.06	3.46	-.009	0.02
8	11	0	59	59	165.07	-0.74	0.75	1.75	8.60	165.07	3.45	-.009	0.02
8	12	0	0	0	165.33	-0.73	0.74	1.74	8.50	165.33	3.34	-.009	0.02

8	12	0	59	59	165.34	-0.73	0.74	1.74	8.49	165.34	3.23	-.009	0.02
8	13	0	0	0	165.63	-0.72	0.73	1.73	8.37	165.63	3.21	-.010	0.02
8	13	0	59	59	165.65	-0.72	0.73	1.73	8.36	165.65	3.21	-.010	0.02
8	14	0	0	0	165.97	-0.71	0.72	1.72	8.22	165.97	3.08	-.010	0.02
8	14	0	59	59	165.98	-0.71	0.72	1.72	8.21	165.98	2.98	-.010	0.02
8	15	0	0	0	166.34	-0.70	0.71	1.71	8.05	166.34	2.94	-.010	0.02
8	15	0	59	59	166.35	-0.70	0.71	1.71	8.04	166.35	2.81	-.010	0.02
8	16	0	0	0	166.74	-0.69	0.70	1.70	7.85	166.74	2.80	-.010	0.02
8	16	0	59	59	166.76	-0.69	0.70	1.70	7.84	166.76	2.66	-.010	0.02
8	17	0	0	0	167.19	-0.68	0.69	1.69	7.63	167.19	2.65	-.010	0.02
8	17	0	59	59	167.21	-0.68	0.69	1.69	7.62	167.21	2.51	-.011	0.02
8	18	0	0	0	167.68	-0.67	0.68	1.68	7.39	167.68	2.50	-.011	0.02
8	18	0	59	59	167.70	-0.67	0.68	1.68	7.37	167.70	2.35	-.011	0.02
8	19	0	0	0	168.22	-0.66	0.67	1.67	7.11	168.22	2.34	-.011	0.02
8	19	0	59	59	168.24	-0.66	0.67	1.67	7.10	168.24	2.18	-.011	0.02
8	20	0	0	0	168.80	-0.65	0.66	1.66	6.80	168.80	2.17	-.011	0.02
8	20	0	59	59	168.83	-0.65	0.66	1.66	6.78	168.83	2.01	-.011	0.02
8	21	0	0	0	169.44	-0.63	0.64	1.65	6.45	169.44	2.00	-.011	0.02
8	21	0	59	59	169.47	-0.63	0.64	1.65	6.44	169.47	1.83	-.011	0.02
8	22	0	0	0	170.14	-0.62	0.63	1.64	6.07	170.14	1.82	-.011	0.02
8	22	0	59	59	170.17	-0.62	0.63	1.64	6.05	170.17	1.64	-.012	0.02
8	23	0	0	0	170.89	-0.60	0.62	1.63	5.64	170.89	1.63	-.012	0.02
8	23	0	59	59	170.93	-0.60	0.62	1.63	5.62	170.93	1.44	-.012	0.02
8	24	0	0	0	171.71	-0.59	0.61	1.62	5.17	171.71	1.43	-.012	0.02
8	24	0	59	59	171.75	-0.59	0.61	1.62	5.15	171.75	1.23	-.012	0.02
8	25	0	0	0	172.60	-0.57	0.60	1.61	4.65	172.60	1.22	-.012	0.02
8	25	0	59	59	172.64	-0.57	0.60	1.61	4.63	172.64	1.01	-.012	0.02
8	26	0	0	0	173.57	-0.55	0.59	1.59	4.07	173.57	1.00	-.012	0.02
8	26	0	59	59	173.61	-0.55	0.59	1.59	4.05	173.61	0.79	-.012	0.02
8	27	0	0	0	174.61	-0.53	0.57	1.58	3.44	174.61	0.78	-.012	0.02
8	27	0	59	59	174.66	-0.53	0.57	1.58	3.41	174.66	0.55	-.012	0.02
8	28	0	0	0	175.75	-0.51	0.56	1.57	2.73	175.75	0.54	-.012	0.02
8	28	0	59	59	175.79	-0.51	0.56	1.57	2.70	175.79	0.30	-.013	0.02
8	29	0	0	0	176.97	-0.48	0.55	1.56	1.96	176.97	0.29	-.013	0.02
8	29	0	59	59	177.03	-0.48	0.55	1.56	1.93	177.03	0.03	-.013	0.02
8	30	0	0	0	178.30	-0.46	0.54	1.55	1.11	178.30	0.02	-.013	0.02
8	30	0	59	59	178.36	-0.46	0.54	1.55	1.07	178.36	-0.24	-.013	0.02
8	31	0	0	0	179.74	-0.43	0.52	1.53	0.17	179.74	-0.25	-.013	0.02
8	31	0	59	59	179.81	-0.43	0.52	1.53	0.13	179.80	-0.53	-.013	0.02
9	1	0	0	0	181.21	-0.40	0.51	1.52	0.87	178.69	-0.54	-.013	0.02
9	1	0	59	59	181.27	-0.40	0.51	1.52	0.51	178.63	-0.63	-.013	0.02
9	2	0	0	0	183.00	-0.36	0.50	1.51	2.01	177.00	-0.65	-.013	0.02
9	2	0	59	59	183.07	-0.36	0.50	1.51	2.06	176.93	-1.15	-.013	0.02
9	3	0	0	0	184.83	-0.33	0.48	1.49	3.26	175.17	-1.16	-.013	0.02
9	3	0	59	59	184.91	-0.33	0.48	1.49	3.32	175.09	-1.48	-.013	0.03
9	4	0	0	0	186.82	-0.29	0.47	1.48	4.65	173.18	-1.50	-.013	0.03
9	4	0	59	59	186.91	-0.29	0.47	1.48	4.71	173.09	-1.83	-.013	0.03
9	5	0	0	0	188.98	-0.25	0.46	1.46	6.17	171.02	-1.84	-.013	0.03
9	5	0	59	59	189.07	-0.25	0.46	1.46	6.24	170.93	-2.19	-.013	0.03
9	6	0	0	0	191.32	-0.20	0.45	1.45	7.86	168.68	-2.20	-.013	0.03
9	6	0	59	59	191.42	-0.20	0.45	1.45	7.93	168.58	-2.56	-.013	0.03
9	7	0	0	0	193.86	-0.15	0.43	1.43	9.71	166.14	-2.58	-.013	0.03
9	7	0	59	59	193.97	-0.15	0.43	1.43	9.79	166.03	-2.95	-.013	0.03
9	8	0	0	0	196.61	-0.10	0.42	1.41	11.75	163.39	-2.97	-.013	0.03
9	8	0	59	59	196.73	-0.10	0.42	1.41	11.84	163.27	-3.35	-.012	0.03
9	9	0	0	0	199.60	-0.05	0.41	1.40	13.59	160.40	-3.36	-.012	0.03
9	9	0	59	59	199.73	-0.05	0.41	1.40	14.09	160.27	-3.75	-.012	0.03
9	10	0	0	0	203.83	0.01	0.39	1.38	16.46	157.17	-3.77	-.012	0.03
9	10	0	59	59	203.97	0.01	0.39	1.38	16.56	157.03	-4.16	-.012	0.03
9	11	0	0	0	206.33	0.07	0.38	1.36	19.16	153.67	-4.18	-.012	0.03
9	11	0	59	59	206.48	0.08	0.38	1.36	19.28	153.51	-4.57	-.011	0.03
9	12	0	0	0	210.12	0.14	0.37	1.34	22.12	149.88	-4.59	-.011	0.03
9	12	0	59	59	210.28	0.14	0.37	1.34	22.28	149.72	-4.97	-.011	0.03
9	13	0	0	0	214.20	0.21	0.36	1.32	25.37	145.80	-4.98	-.011	0.03
9	13	0	59	59	214.37	0.21	0.36	1.32	25.51	145.62	-5.35	-.010	0.03
9	14	0	0	0	218.58	0.28	0.35	1.30	28.50	141.42	-5.36	-.010	0.03
9	14	0	59	59	218.77	0.28	0.35	1.30	29.05	141.23	-5.70	-.009	0.03
9	15	0	0	0	223.27	0.35	0.34	1.28	32.72	136.72	-5.71	-.009	0.03
9	15	0	59	59	223.48	0.36	0.34	1.27	32.89	136.52	-6.01	-.008	0.04
9	16	0	0	0	228.27	0.43	0.33	1.25	36.84	131.73	-6.02	-.008	0.04
9	16	0	59	59	228.48	0.43	0.33	1.25	37.02	131.51	-6.26	-.007	0.04
9	17	0	0	0	233.55	0.50	0.32	1.23	41.25	126.44	-6.27	-.007	0.04
9	17	0	59	59	233.78	0.50	0.32	1.23	41.44	126.21	-6.45	-.005	0.04
9	18	0	0	0	239.10	0.57	0.32	1.20	45.92	120.89	-6.45	-.005	0.04
9	18	0	59	59	239.34	0.57	0.32	1.20	46.12	120.66	-6.55	-.004	0.04
9	19	0	0	0	244.87	0.63	0.31	1.17	50.83	115.12	-6.55	-.004	0.04
9	19	0	59	59	245.12	0.63	0.31	1.17	51.04	114.88	-6.56	-.002	0.04
9	20	0	0	0	250.81	0.69	0.31	1.15	55.54	109.18	-6.56	-.002	0.04
9	20	0	59	59	251.06	0.69	0.31	1.14	56.16	108.93	-6.48	-.001	0.04
9	21	0	0	0	256.66	0.73	0.31	1.12	61.15	102.14	-6.47	-.001	0.04
9	21	0	59	59	257.11	0.73	0.31	1.11	61.41	102.88			

```
9 22  0  0  0    262.54    0.77    0.31    1.09    66.52    97.05    -6.29    0.001    0.04
9 22  0 59 59    262.20    0.77    0.31    1.08    66.74    96.80    -6.26    0.001    0.04
9 23  0  0  0    268.99    0.75    0.31    1.06    71.86    91.00    -6.01    0.002    0.04
9 23  0 59 59    265.24    0.75    0.31    1.05    72.08    90.75    -6.00    0.002    0.04
9 24  0  0  0    274.93    0.60    0.31    1.03    77.15    85.06    -5.65    0.004    0.04
9 24  0 59 59    275.18    0.60    0.31    1.02    77.27    84.82    -5.63    0.004    0.04
9 24  0  0  0    280.71    0.80    0.32    0.99    82.33    79.29    -5.22    0.005    0.04
9 25  0 59 59    280.94    0.80    0.32    0.99    82.88    79.06    -5.20    0.005    0.04
9 26  0  0  0    286.25    0.79    0.33    0.96    87.36    73.75    -4.73    0.007    0.04
9 26  0 59 59    286.48    0.79    0.33    0.96    87.57    73.52    -4.71    0.007    0.04
9 27  0  0  0    291.54    0.77    0.33    0.93    92.15    68.46    -4.20    0.008    0.04
9 27  0 59 59    291.75    0.77    0.33    0.93    92.39    68.25    -4.18    0.008    0.04
9 28  0  0  0    296.54    0.75    0.34    0.90    96.81    63.46    -3.65    0.009    0.03
9 28  0 59 59    296.74    0.75    0.34    0.90    96.99    63.26    -3.63    0.009    0.03
9 29  0  0  0    301.23    0.71    0.35    0.87   101.18    58.77    -3.09    0.010    0.03
9 29  0 59 59    301.42    0.71    0.35    0.87   101.36    58.58    -3.07    0.010    0.03
9 30  0  0  0    305.61    0.68    0.36    0.84   105.31    54.39    -2.54    0.011    0.03

END OF FILE ON ORBIT TAPE
```

```
IEC209I SDHELCA4 CRA10  GCO  TR=000,TW=CCC,RG=000,CL=0C9,N=000,SIC=02213
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   M2.ZBRTC.SCCC2.LOAD                          KEPT        DDNAME=SYSLIB  -1          0 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS2.DEBLKLNV                                KEPT        DDNAME=SYSLIB  -2         17 EXCPS
IEF285I   VOL SER NOS= M2SYS4.
IEF285I   SYS1.FORTLIB                                 KEPT        DDNAME=SYSLIB  -3         49 EXCPS
IEF285I   VOL SER NOS= K3ITL0.
IEF285I   SYS2.FORTLIB                                 KEPT        DDNAME=SYSLIB  -4          0 EXCPS
IEF285I   VOL SER NOS= K3ITL0.
IEF285I   SYS1.PL1LIB                                  KEPT        DDNAME=SYSLIB  -5          0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS1.FORTSSP                                 KEPT        DDNAME=SYSLIB  -6          0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS80054.T153527.SV000.SDHELCA4.F0000001     SYSOUT      DDNAME=SYSLOUT             1 EXCPS
IEF285I   VOL SER NOS= SCF00C.
IEF285I   M2.ZBRTC.SDC02.LOAD                          KEPT        DDNAME=SYSLIN  -1          7 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS80054.T153527.SV000.SDHELCA4.S0000008     SYSIN       DDNAME=FT05F001            2 EXCPS
IEF285I   VOL SER NOS= SCF00C.
IEF285I   SYS80054.T153527.SV000.SDHELCA4.S0000008     DELETED     DDNAME=FT0SF001            2 EXCPS
IEF285I   VOL SER NOS= SCF00C.
IEF285I   SYS80054.T153527.SV000.SDHELCA4.F0000002     SYSOUT      DDNAME=FT06F001            4 EXCPS
IEF285I   VOL SER NOS= SCF00C.
IEF285I   SYS80054.T153527.SV000.SDHELCA4.F0000003     DELETED     DDNAME=FT07F001            0 EXCPS
IEF285I   VOL SER NOS= SCF00C.
IEF285I   SYS80054.T153527.SV000.SDHELCA4.F0000004     DELETED     DDNAME=SYSPRINT            0 EXCPS
IEF285I   VOL SER NOS= M2SCF5.
IEF285I   SYS80054.T153527.SV000.SDHELCA4.F0000005     DELETED     DDNAME=SYSTERM             0 EXCPS
IEF285I   VOL SER NOS= SCP001.
IEF285I   SYS80054.T153527.SV000.SDHELCA4.F0000006     DELETED     DDNAME=SYSUDUMP            0 EXCPS
IEF285I   VOL SER NOS= SCF00C.
IEF285I   SYS80054.T153527.SV000.SDHELCA4.F0000007     KEPT        DDNAME=GENTAP          2,217 EXCPS
IEF285I   VOL SER NOS= CRA10 .
IEF28CE K GCO,CRA10 ,SDHELCA4,CC
IEF373I STEP /GO    / START 80054.1535
IEF374I STEP /GO    / STOP  80054.1538 CPU    0MIN 11.00SEC MAIN 200K LCS    CK
- STEP 01 -     RETURN CODE = 0000                                STEP TIME =      .66 MINS=(CPU=      .18,IO=      .48)
                                    IO IN SECS. DISK=     6.62,DRUM=      .00,TAPE=    22.21,CELL=      .00,CTHR=      .14
- SURCHARGES=(DRIVES ALOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=00000)SECS.   TOTAL STP TIME=      .66 MINS.  -
  // EXEC NOTIFYTS                                                                    00000010
  XXDEFAULT  PROC NODF=,USRID=,MSG=,USERID=,ID=  #IAR/21JUN79                         00000020
  XXNOTIFYTS EXEC PGM=NOTIFYTS,REGION=20K,COND=EVEN,                                  00000030
  XX         PARM='&MCLE,&USRIL&USRID&ID,&MSG'
  IEF631I SUBSTITUTION JCL - PARM='.,.'
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF373I STEP /NOTIFYTS/ START 80054.1538
IEF374I STEP /NOTIFYTS/ STOP  80054.1538 CPU    0MIN 00.02SEC MAIN    8K LCS    CK
- STEP 02 -     RETURN CODE = 0000                                STEP TIME =      .00 MINS=(CPU=      .00,IO=      .00)
                                    IO IN SECS. DISK=      .12,DRUM=      .00,TAPE=      .00,CELL=      .00,CTHR=      .04
- SURCHARGES=(DRIVES ALOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=00000)SECS.   TOTAL STP TIME=00000.00 MINS.  -
IEF373I JOB /SDHELCA4/ START 80054.1535
IEF376I JOB /SDHELCA4/ STOP  80054.1538 CPU    0MIN 11.02SEC                                TIME=15.38.34.00 DATE=02-23-80
-  SYSTEM=FB21.8F (10-15-78) M2                                  TOTAL TIME =      .66 MINS=(CPU=      .18,IO=      .48)
- JOB 0325                                  IO IN SECS. DISK=     6.75,DRUM=      .00,TAPE=    22.21,CELL=      .00,CTHR=      .19
- SURCHARGES=(DRIVES ALOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=00000)SECS.   TOTAL JOB TIME =      .66 MINS.  -
 THERE WERE 01 TAPES MOUNTED FOR THIS JOB. TAPE MOUNT CHARGE WAS 00.0 MINUTES.
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      XXFT07F001 DD SYSOUT=E,DCB=(RECFM=FB,BLKSIZE=7280,LRECL=80)              00000160
      XXSYSPRINT DD SYSOUT=&OUT,DCB=(BLKSIZE=&BLKSIZE,LRECL=137,RECFM=VBA),   00000170
      IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(BLKSIZE=7265,LRECL=137,RECFM=VBA),
      XX                SPACE=(CYL,(0,1)),UNIT=(DISK,3)                       00000180
      XXSYSTERM  DD  SYSOUT=&TERMOUT                                          00000190
      IEF653I SUBSTITUTION JCL - SYSOUT=A
      //SYSUDUMP DD SYSOUT=A
      X/SYSUDUMP DD SYSOUT=A,SPACE=(CYL,(0,5))                                00000200
      //GO.GENTAP DD UNIT=(7TRACK,,DEFER),
      //    VOL=SER=CRTAPE,LABEL=(,NL,,IN),DISP=(OLD,KEEP),
      //    DCB=(RECFM=U,BLKSIZE=1944,DEN=2)
      //DATAS DD *
IEF236I ALLOC. FOR SDHELOA2 GO
IEF237I 333    ALLOCATED TO SYSLIB
IEF237I 320    ALLOCATED TO
IEF237I 451    ALLOCATED TO
IEF237I 231    ALLOCATED TO
IEF237I 244    ALLOCATED TO
IEF237I 244    ALLOCATED TO
IEF237I 220    ALLOCATED TO
IEF237I 231    ALLOCATED TO
IEF237I 237    ALLOCATED TO SYSLOUT
IEF237I 333    ALLOCATED TO SYSLIN
IEF237I 335    ALLOCATED TO FT05F001
IEF237I 235    ALLOCATED TO FT06F001
IEF237I 335    ALLOCATED TO FT07F001
IEF237I 237    ALLOCATED TO SYSPRINT
IEF237I 232    ALLOCATED TO SYSPRINT
IEF237I 235    ALLOCATED TO SYSPRINT
IEF237I 336    ALLOCATED TO SYSTERM
IEF237I 335    ALLOCATED TO SYSUDUMP
IEF237I 000    ALLOCATED TO GENTAP
```

OS/360 LOADER

```
OPTIONS USED - PRINT,MAP,NOLET,CALL,RES,NOTERM,SIZE=194560,NAME=**GO
               EP=ORBIT
```

NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR
ORBIT	SD	A2810	CNVRTSCT*	SD	A3670	CNVRT *	LR	A3670	DBGEN *	SD	A3998	DBFECV *	LR	A3858
FREAD *	SD	A3D60	FREADB *	LR	A3F08	FWRITE *	LR	A407C	REWIND *	LR	A4282	LEAVE *	LR	A4366
UNLOAD *	LR	A441A	PDSN *	LR	A4530	MCLNT *	LR	A4750	MEMBER *	LR	A4932	FTRAP *	LR	A4A22
FALLOW *	LR	A4AA0	FUNITABL*	SD	A5A60	FPL1 *	SD	A5B28	FDDNLIST*	SD	A5830	FERMSG *	SD	A5838
IHCNAMEL*	SD	A5BA0	FRDNL# *	LR	A5BA0	FWRNL# *	LR	A61A4	IHCECOMH*	SD	A6670	IBCOM# *	LR	A6670
FDICCS# *	LR	A672C	INTSWTCH*	LR	A7586	IHCCOMH2*	SD	A75D8	SECCASD *	LR	A7250	FTF *	SD	A7C38
ITISECT *	SD	A7CE8	ITI *	LR	A7CE8	FXFLT *	SD	A7D40	FIXFLT *	LR	A7D40	TRNSLTE *	SD	A7D88
TRANS *	LR	A7D88	BITST *	SD	A7E98	CNTGDATA*	LR	A7E98	DTDUN *	SD	A7FC8	IHCFCVTH*	SD	A8C98
ADCON# *	LR	A8098	FCVAOUTP*	LR	A8142	FCVLOUTP*	LR	A8102	FCVZOUTP*	LR	A8322	FCVIOUTP*	LR	A86D0
FCVECUTP*	LR	A88D2	FCVCOUTP*	LR	A9DEC	INTGS#CH*	LR	A9003	IHCEFIOS*	SD	A9234	FIOCS# *	LR	A9238
FIOCSBEP*	LR	A923E	IHCFIO32*	SD	AA160	IHCERRM *	SD	AA690	ERRMON *	LR	AA690	IHCERRE *	LR	AA6A8
IHCEFNTH*	SD	AAC68	ARITH# *	LR	AAC68	ADJ3WTCH*	LR	ABDC4	IHCUOPT *	SD	AB180	IHCUATBL*	SD	AB4D8
IHCETRCH*	SD	AEB10	IHCTRCH *	LR	AEB10	ERRTRA *	LR	AEB18						

```
TOTAL LENGTH     5590
ENTRY ADDRESS    A2810

                 SATID  HELIOS-A        OORBIT TAPE #=ORA13
      7409701 ORB              75 304 000000 365 000000 0005 01 760513 005 01 01 E7  X
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                 HELIOS-A          YEAR 1975.          LAUNCH TIME   28054150.  1.
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DATE MN	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	ERTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LET(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
10	31	0	0	0	353.47	-0.30	0.73	0.28	156.44	6.53	5.43	0.010	0.02
10	31	0	59	59	353.49	-0.30	0.73	0.28	156.44	6.51	5.43	0.010	0.02
11	1	0	0	0	353.73	-0.31	0.74	0.27	156.53	6.27	5.51	0.009	0.02
11	2	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	3	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	4	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	5	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	6	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	7	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	8	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	9	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

11	10	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	11	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	12	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	13	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	14	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	15	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	16	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	17	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	18	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	19	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	20	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	21	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	22	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	23	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	24	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	25	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	26	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	27	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	28	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	29	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	30	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	1	0	0	0	351.98	-0.01	0.94	0.14	106.30	8.02	1.90	0.004	0.01
12	2	0	0	0	351.73	-0.01	0.94	0.15	104.09	8.27	1.80	0.004	0.01
12	3	0	0	0	351.48	-0.01	0.94	0.15	102.01	8.52	1.71	0.004	0.01
12	4	0	0	0	351.22	-0.01	0.95	0.15	100.06	8.78	1.62	0.003	0.01
12	5	0	0	0	350.96	-0.01	0.95	0.16	98.24	9.04	1.53	0.003	0.01
12	6	0	0	0	350.69	-0.01	0.95	0.16	96.55	9.31	1.43	0.003	0.01
12	7	0	0	0	350.41	-0.01	0.96	0.16	94.99	9.59	1.34	0.003	0.01
12	8	0	0	0	350.13	-0.01	0.96	0.17	93.55	9.87	1.25	0.003	0.01
12	9	0	0	0	349.85	-0.01	0.96	0.17	92.22	10.15	1.16	0.003	0.01
12	10	0	0	0	349.56	-0.01	0.97	0.18	91.01	10.44	1.07	0.002	0.01
12	11	0	0	0	349.27	-0.01	0.97	0.18	89.90	10.73	0.98	0.002	0.01
12	12	0	0	0	348.97	-0.01	0.97	0.19	88.89	11.03	0.89	0.002	0.01
12	13	0	0	0	348.67	-0.01	0.97	0.19	87.97	11.33	0.80	0.002	0.01
12	14	0	0	0	348.37	-0.01	0.97	0.20	87.13	11.63	0.71	0.002	0.01
12	15	0	0	0	348.07	-0.01	0.98	0.20	86.38	11.93	0.62	0.002	0.01
12	16	0	0	0	347.76	-0.01	0.98	0.21	85.70	12.24	0.53	0.002	0.01
12	17	0	0	0	347.45	-0.01	0.98	0.21	85.09	12.55	0.44	0.001	0.01
12	18	0	0	0	347.13	-0.01	0.98	0.22	84.54	12.87	0.36	0.001	0.01
12	19	0	0	0	346.82	-0.01	0.98	0.23	84.05	13.18	0.27	0.001	0.01
12	20	0	0	0	346.50	-0.00	0.98	0.23	83.62	13.50	0.18	0.001	0.01
12	21	0	0	0	346.19	-0.00	0.98	0.24	83.24	13.81	0.09	0.001	0.01
12	22	0	0	0	345.87	-0.00	0.98	0.24	82.91	14.13	0.00	0.001	0.01
12	23	0	0	0	345.55	-0.00	0.98	0.25	82.63	14.45	-0.08	0.000	0.01
12	24	0	0	0	345.23	-0.00	0.98	0.25	82.39	14.77	-0.17	0.000	0.01
12	25	0	0	0	344.91	-0.00	0.98	0.26	82.18	15.09	-0.26	0.000	0.01
12	26	0	0	0	344.59	-0.00	0.98	0.26	82.02	15.41	-0.35	-.000	0.01
12	27	0	0	0	344.26	-0.00	0.98	0.27	81.88	15.74	-0.44	-.000	0.01
12	28	0	0	0	343.94	-0.00	0.99	0.27	81.78	16.06	-0.52	-.000	0.01
12	29	0	0	0	343.62	-0.00	0.98	0.28	81.72	16.38	-0.61	-.001	0.01
12	30	0	0	0	343.30	-0.00	0.98	0.29	81.68	16.70	-0.70	-.001	0.01
12	31	0	0	0	342.98	-0.00	0.98	0.29	81.67	17.02	-0.79	-.001	0.01

END OF FILE ON ORBIT TAPE

```
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   M2.Z8RTC.SD002.LOAD                                KEPT      DDNAME=SYSLIB  -1        0 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS2.DEBLKUNV                                      KEPT      DDNAME=SYSLIB  -2       17 EXCPS
IEF285I   VOL SER NOS= M2SYS2.
IEF285I   SYS1.FORTLIB                                       KEPT      DDNAME=SYSLIB  -3       61 EXCPS
IEF285I   VOL SER NOS= K3ITL0.
IEF285I   SYS2.FORTLIB                                       KEPT      DDNAME=SYSLIB  -4       28 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SYS1.PL1LIB                                        KEPT      DDNAME=SYSLIB  -5        0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS1.FORTSSP                                       KEPT      DDNAME=SYSLIB  -6        0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS2.COBLIB                                        KEPT      DDNAME=SYSLIB  -7        0 EXCPS
IEF285I   VOL SER NOS= M2SYS1.
IEF285I   SYS1.ALGLIB                                        KEPT      DDNAME=SYSLIB  -8        0 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SY380045.T143937.SV000.SDHELDA2.R0000001           SYSOUT    DDNAME=SYSLOUT           1 EXCPS
IEF285I   VOL SER NOS= K3SCR4.
IEF285I   M2.Z8PTC.SD002.LOAD                                KEPT      DDNAME=SYSLIN  -1        7 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYSA0045.T143937.RV000.SDHELDA2.S0000006           SYSIN     DDNAME=FT05F001          2 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
```

```
JOBNAME-
      SSSSSSSSSS   DDDDDDDDD     HH        HH  EEEEEEEEEEEE  LL            OOOOOOOOOO       AA          11
     SSSSSSSSSSSS  DDDDDDDDDD    HH        HH  EEEEEEEEEEEE  LL           OOOOOOOOOOOO      AA         111
     SS        SS  DD       DD   HH        HH  EE            LL           OO        OO     AAAA        1111
     SS            DD        DD  HH        HH  EE            LL           OO        OO     AAAA          11
     SSS           DD        DD  HH        HH  EE            LL           OO        OO    AA  AA         11
      SSSSSSSSS    DD        DD  HHHHHHHHHHHH  EEEEEEEE      LL           OO        OO    AA  AA         11
       SSSSSSSSS   DD        DD  HHHHHHHHHHHH  EEEEEEEE      LL           OO        OO   AA    AA        11
              SSS  DD        DD  HH        HH  EE            LL           OO        OO   AAAAAAAA        11
               SS  DD        DD  HH        HH  EE            LL           OO        OO  AAAAAAAAAA       11
     SS        SS  DD       DD   HH        HH  EE            LL           OO        OO  AA      AA       11
     SSSSSSSSSSSS  DDDDDDDDDD    HH        HH  EEEEEEEEEEEE  LLLLLLLLLLLL  OOOOOOOOOOOO  AA        AA   111111
      SSSSSSSSSS   DDDDDDDDD     HH        HH  EEEEEEEEEEEE  LLLLLLLLLLLL   OOOOOOOOOO   AA        AA   111111

BOX-                                                  SACC 360/75      READER NUMBER-P0178          CLASS-
     BBBBBBBBB     FFFFFFFFFFFF    33333333                                                          AA
     BBBBBBBBBB    FFFFFFFFFFFF   3333333333                                                         AA
     BB       BB   FF            33        33                                                        AAAA
     BB       BB   FF                      33                                                        AAAA
     BB      BB    FF                     33                                                       AA  AA
     BBBBBBBBB     FFFFFFFF           33333                                                        AA  AA
     BBBBBBBBBB    FFFFFFFF           33333                                                       AA    AA
     BB       BB   FF                     33                                                      AAAAAAAA
     BB        BB  FF                      33                                                     AAAAAAAAAA
     BB        BB  FF            33        33                                                    AA      AA
     BBBBBBBBBB    FF             3333333333                                                    AA       AA
     BBBBBBBBBB    FF              33333333
```

ORA 12
1/1/76 - 2/1/76

```
      XX              SPACE=(CYL,(0,1)),UNIT=(DISK,3)                    00000180
      XXSYSTERM   DD   SYSOUT=&TERMOUT                                   00000190
      IEF653I SUBSTITUTION JCL - SYSOUT=A
      //SYSUDUMP DD SYSOUT=A                                             00000200
      X/SYSUDUMP DD SYSOUT=A,SPACE=(CYL,(0,5))
      //GO.GENTAP DD UNIT=(7TRACK,,DEFER),
      //    VOL=SCR=ORTAPE,LABEL=(,NL,,IN),DISP=(CLD,KEEP),
      //    DCB=(RECFM=U,BLKSIZE=1944,DEN=2)
      //DATAS DD *
IEF236I ALLOC. FOR SDHELOA1 GO
IEF237I 333    ALLOCATED TO SYSLIB
IEF237I 320    ALLOCATED TO
IEF237I 451    ALLOCATED TO
IEF237I 231    ALLOCATED TO
IEF237I 244    ALLOCATED TO
IEF237I 244    ALLOCATED TO
IEF237I 220    ALLOCATED TO
IEF237I 231    ALLOCATED TO
IEF237I 335    ALLOCATED TO SYSLOUT
IEF237I 333    ALLOCATED TO SYSLIN
IEF237I 335    ALLOCATED TO FT05F001
IEF237I 335    ALLOCATED TO FT06F001
IEF237I 336    ALLOCATED TO FT07F001
IEF237I 335    ALLOCATED TO SYSPRINT
IEF237I 232    ALLOCATED TO SYSPRINT
IEF237I 235    ALLOCATED TO SYSPRINT
IEF237I 336    ALLOCATED TO SYSTERM
IEF237I 335    ALLOCATED TO SYSUDUMP
IEF237I 0C0    ALLOCATED TO GENTAP
```

CS/360 LOADER

```
OPTIONS USED - PRINT,MAP,NOLET,CALL,RES,NOTERM,SIZE=194560,NAME=**GO
               EP=ORBIT
```

NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR
ORBIT	SD	B6810	CNVRTSCT*	SD	B7670	CNVRT *	LR	B7670	DBGEN *	SD	B7998	DBFEQV *	LR	B7B58
FREAD *	SD	B7D60	FREADB *	LR	B7FBB	F#RITE *	LR	B8C7C	REWIND *	LR	B82B2	LEAVE *	LR	B8366
UNLOAD *	LR	B941A	POSN *	LR	B8530	NCUNT *	LR	B8750	MEMBER *	LR	B8932	FTRAP *	LR	B8A22
FALLO# *	LR	B8AA0	FUNITABL*	SD	B9A60	FPL1 *	SD	B9B28	FDDNLIST*	SD	B9B30	FERMSG *	SD	B9B38
IHCNAMEL*	SD	B9BA0	FRDNL# *	LR	B9BA0	F#RNL# *	LR	BA1A4	IHCECOMM*	SD	BA670	IBCOM# *	LR	BA670
FDIOCS# *	LR	BA72C	INTS#TCH*	LR	BB586	IHCCOMH2*	SD	BB5D6	SEQDASD *	LR	BB950	FTF *	SD	BBC38
ITISECT *	SD	BBCE8	ITI *	LR	BBCE8	FXFLT *	SD	BBD40	FIXFLT *	LR	BBD40	TRNSLTE *	SD	BBD88
TRANS *	LR	BBD88	BITST *	SD	BBE98	CNTGDATA*	LR	BBE98	DTDUN *	SD	BDFC8	IHCFC#TH*	SD	BC098
ADCON# *	LR	BC098	FCVADUTP*	LR	BC142	FCVLOUTP*	LR	BCID2	FCVZOUTP*	LR	BC322	FCVIOUTP*	LR	BC6D0
FCVEDUTP*	LR	BCBD2	FCVCOUTP*	LR	BCDEC	INT6S#CH*	LR	BD9D3	IHCEFIGS*	SD	BD238	FIOCS# *	LR	BD238
FIOCSBEP*	LR	BD23E	IHCFIDS2*	SD	BE160	IHCERRM *	SD	BE69G	ERRMON *	LR	BE690	IHCERRE *	LR	BE6A8
IHCEFNTH*	SD	BE6B8	ARITH# *	LR	BEC6B	ADJS#TCH*	LR	BF004	IHCUOPT *	SD	BF180	IHCUATBL*	SD	BF4D3
IHCETRCH*	SD	BFB10	IHCTRCH *	LR	BFB10	ERRTRA *	LR	BFB18						

```
TOTAL LENGTH     9590
ENTRY ADDRESS    B6810

                 SATIO   HELIOS-A        00RBIT TAPE #=ORA12
        7409701 ORB              75 366 C00000 B97 000000 0006 01 760522 006 01 01 E7  X
```

HELIOS-A YEAR 1976. LAUNCH TIME 33410950. 04

DATE MM	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	ERTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LET(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
1	1	0	0	0	342.66	-0.00	0.98	0.30	81.68	17.34	-0.87	-.001	0.01
1	2	0	0	0	342.35	-0.00	0.98	0.30	81.72	17.65	-0.96	-.001	0.01
1	3	0	0	0	342.03	-0.00	0.98	0.31	81.79	17.97	-1.05	-.001	0.01
1	4	0	0	0	341.72	-0.00	0.98	0.31	81.87	18.28	-1.14	-.002	0.01
1	5	0	0	0	341.41	-0.00	0.98	0.32	81.99	18.59	-1.22	-.002	0.01
1	6	0	0	0	341.10	0.00	0.97	0.32	82.12	18.90	-1.31	-.002	0.01
1	7	0	0	0	340.79	0.00	0.97	0.33	82.27	19.21	-1.40	-.002	0.01
1	8	0	0	0	340.49	0.00	0.97	0.33	82.45	19.51	-1.49	-.002	0.01
1	9	0	0	0	340.19	0.00	0.97	0.34	82.64	19.81	-1.58	-.002	0.01
1	10	0	0	0	339.90	0.00	0.97	0.34	82.86	20.10	-1.67	-.002	0.01
1	11	0	0	0	339.61	0.00	0.96	0.35	83.10	20.39	-1.76	-.003	0.01
1	12	0	0	0	339.32	0.00	0.96	0.35	83.35	20.68	-1.84	-.003	0.01
1	13	0	0	0	339.03	0.00	0.96	0.35	83.63	20.97	-1.93	-.003	0.01
1	14	0	0	0	338.76	0.00	0.95	0.36	83.92	21.24	-2.02	-.003	0.01
1	15	0	0	0	338.48	0.00	0.95	0.36	84.24	21.52	-2.11	-.003	0.01
1	16	0	0	0	338.21	0.00	0.95	0.37	84.58	21.79	-2.20	-.003	0.01

1	17	0	0	0	337.95	0.00	0.94	0.37	84.93	22.05	-2.29	-.004	0.01
1	18	0	0	0	337.69	0.00	0.94	0.37	85.31	22.31	-2.38	-.004	0.01
1	19	0	0	0	337.44	0.00	0.94	0.38	85.71	22.56	-2.47	-.004	0.01
1	20	0	0	0	337.20	0.00	0.93	0.38	86.12	22.80	-2.57	-.004	0.01
1	21	0	0	0	336.96	0.01	0.93	0.39	86.56	23.04	-2.66	-.004	0.01
1	22	0	0	0	336.73	0.01	0.92	0.39	87.02	23.27	-2.75	-.004	0.01
1	23	0	0	0	336.51	0.01	0.92	0.39	87.51	23.49	-2.84	-.005	0.01
1	24	0	0	0	336.30	0.01	0.92	0.40	88.01	23.70	-2.93	-.005	0.01
1	25	0	0	0	336.09	0.01	0.91	0.40	88.54	23.91	-3.03	-.005	0.01
1	26	0	0	0	335.90	0.01	0.91	0.40	89.09	24.10	-3.12	-.005	0.01
1	27	0	0	0	335.71	0.01	0.90	0.41	89.67	24.29	-3.22	-.005	0.01
1	28	0	0	0	335.54	0.01	0.89	0.41	90.27	24.46	-3.31	-.005	0.01
1	29	0	0	0	335.37	0.01	0.89	0.41	90.90	24.63	-3.40	-.006	0.01
1	30	0	0	0	335.22	0.01	0.88	0.41	91.55	24.78	-3.50	-.006	0.01
1	31	0	0	0	335.07	0.01	0.88	0.42	92.24	24.93	-3.60	-.006	0.01
2	1	0	0	0	334.94	0.01	0.87	0.42	92.95	25.06	-3.69	-.006	0.01

END OF FILE ON ORBIT TAPE

```
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   M2.ZBRTC.SD002.LOAD                                   KEPT       DDNAME=SYSLIB  -1        0 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS2.CEBLKUNV                                         KEPT       DDNAME=SYSLIB  -2       17 EXCPS
IEF285I   VOL SER NOS= M2SYS2.
IEF285I   SYS1.FORTLIB                                          KEPT       DDNAME=SYSLIB  -3       61 EXCPS
IEF285I   VOL SER NOS= K3ITL0.
IEF285I   SYS2.FORTLIB                                          KEPT       DDNAME=SYSLIB  -4       28 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SYS1.PL1LIB                                           KEPT       DDNAME=SYSLIB  -5        0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS1.FORTSSP                                          KEPT       DDNAME=SYSLIB  -6        0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS2.COBLIB                                           KEPT       DDNAME=SYSLIB  -7        0 EXCPS
IEF285I   VOL SER NOS= M2SYS1.
IEF285I   SYS1.ALGLIB                                           KEPT       DDNAME=SYSLIB  -8        0 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SYS80045.T143833.SV000.SDHELOA1.R0000001              SYSOUT     DDNAME=SYSLOUT           1 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   M2.ZBRTC.SD002.LOAD                                   KEPT       DDNAME=SYSLIN  -1        7 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS80045.T143833.RV000.SDHELOA1.S0000008              SYSIN      DDNAME=FT05F001          2 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80045.T143833.RV000.SDHELOA1.S0000008              DELETED    DDNAME=FT05F001          2 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80045.T143833.SV000.SDHELOA1.R0000002              SYSOUT     DDNAME=FT06F001          1 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80045.T143833.SV000.SDHELOA1.R0000003              DELETED    DDNAME=FT07F001          0 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS80045.T143833.SV000.SDHELOA1.R0000004              DELETED    DDNAME=SYSPRINT          0 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80045.T143833.SV000.SDHELOA1.R0000005              DELETED    DDNAME=SYSTERM           0 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS80045.T143833.SV000.SDHELOA1.R0000006              DELETED    DDNAME=SYSUDUMP          0 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80045.T143833.RV000.SDHELOA1.R0000007              KEPT       DDNAME=GENTAP          750 EXCPS
IEF285I   VOL SER NOS= ORA12 .
IEF280E K 000.ORA12 .SDHELOA1.GO
IEF373I STEP /GO      / START 80045.1438
IEF374I STEP /GO      / STOP  80045.1444 CPU    0MIN 12.59SEC MAIN 200K LCS    0K
- STEP 01 -     RETURN CODE = 0000                                  STEP TIME =      .51 MINS=(CPU=      .20.IO=      .31)
                                   IO IN SECS. DISK=   11.12.DRUM=      .00.TAPE=     7.54.CELL=      .00.OTHR=      .17
- SURCHARGES=(DRIVES ALOC=000.TAPE MOUNTS=000.CORE=000.PAPER=000.PRIORITY=00000)SECS.   TOTAL STP TIME=      .51 MINS.
     // EXEC NOTIFYTS
     XXDEFAULT  PROC MODE=.USRID=.MSG=.USERID=.ID=  NOTIFYTS. EAC/21JUN73     00000010
     ***        SEND BACKGROUND JOB REPORT TO TSO USER                        00000020
     XXNOTIFYTS EXEC PGM=NOTIFYTS.REGION=20K.COND=EVEN.                       00000030
     XX         PARM='&MODE.&USRID&USERID&ID.&MSG'                            00000040
     IEF653I SUBSTITUTION JCL - PARM='..'
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF373I STEP /NOTIFYTS/ START 80045.1444
IEF374I STEP /NOTIFYTS/ STOP  80045.1444 CPU    0MIN 00.04SEC MAIN    8K LCS    0K
- STEP 02 -     RETURN CODE = 0000                                  STEP TIME =      .00 MINS=(CPU=      .00.IO=      .00)
                                   IO IN SECS. DISK=      .22.DRUM=      .00.TAPE=      .00.CELL=      .00.OTHR=      .02
- SURCHARGES=(DRIVES ALOC=000.TAPE MOUNTS=000.CORE=000.PAPER=000.PRIORITY=00000)SECS.   TOTAL STP TIME=00000.00 MINS.
IEF375I  JOB /SDHELOA1/ START 80045.1438
IEF376I  JOB /SDHELOA1/ STOP  80045.1444 CPU    0MIN 12.63SEC                                   TIME=14.44.41.91 DATE=02-14-80
-  SYSTEM=REL21.8F (04-01-79) K3                                   TOTAL TIME =      .52 MINS=(CPU=      .21.IO=      .31)
- JOB 0316-
                                   IO IN SECS. DISK=   11.35.DRUM=      .00.TAPE=     7.54.CELL=      .00.OTHR=      .24
```

```
**********   DB ***************************************************************************   DB *********

JOBNAME-
      ZZZZZZZZZZZZ  BBBBBBBBB          JJJJJJ  HH        HH  BBBBBBBBB     OOOOOOOOOO        AA        2222222222
      ZZZZZZZZZZZZ  BBBBBBBBB          JJJJJJ  HH        HH  BBBBBBBBB     OOOOOOOOOOOO      AA       222222222222
                ZZ  BB        BB         JJ    HH        HH  BB        BB  OO        OO      AAAA      22          22
              ZZ    BB        BB         JJ    HH        HH  BB        BB  OO        OO      AAAA                  22
            ZZ      BB        BB         JJ    HH        HH  BB        BB  OO        OO     AA  AA                22
          ZZ        BBBBBBBBB            JJ    HHHHHHHHHHHH  BBBBBBBBB     OO        OO     AA  AA              22
        ZZ          BBBBBBBBB            JJ    HHHHHHHHHHHH  BBBBBBBBB     OO        OO    AA    AA            22
      ZZ            BB        BB         JJ    HH        HH  BB        BB  OO        OO    AAAAAAAA          22
    ZZ              BB        BB         JJ    HH        HH  BB        BB  OO        OO   AAAAAAAAAA       22
  ZZZZZZZZZZZZ      BBBBBBBBBB     JJJJJJJJ    HH        HH  BBBBBBBBBB    OOOOOOOOOOOO  AA        AA  222222222222
  ZZZZZZZZZZZZ      BBBBBBBBBB       JJJJJJ    HH        HH  BBBBBBBBBB    OOOOOOOOOOOO  AA        AA  222222222222

JOX-                                                  SACC 369/91      READER NUMBER-P0209          CLASS-
      BBBBBBBBB     FFFFFFFFFFFF     33333333                                                          AA
      BBBBBBBBB     FFFFFFFFFFFF    3333333333                                                         AA
      BB        BB  FF            33        33                                                       AAAA
      BB        BB  FF                      33                                                       AAAA
      BB        BB  FF                      33                                                      AA  AA
      BBBBBBBBB     FFFFFFFF            33333                                                       AA  AA
      BBBBBBBBB     FFFFFFFF            33333                                                      AA    AA
      BB        BB  FF                      33                                                     AAAAAAAA
      BB        BB  FF                      33                                                    AAAAAAAAAA
      BB        BB  FF            33        33                                                    AA      AA
      BBBBBBBBBB    FF            3333333333                                                    AA        AA
      BBBBBBBBBB    FF             33333333                                                     AA        AA
```

ORAØ8

2/1/76 - 3/1/76

NUMBER 68 ON 01E-ZCDJNF07/WLF YS2KNAC2/671 Z3RJME18/238 S3HELCA5/8F3 Z8JHBDA2/8F3 AT 15.39.37 SAT 23 FEB 80

```
XX SPACE=(CYL,(0,1))                                                    00000160
XXSYSPRINT DD SYSOUT=&OUT,UNIT=(2314,3),SPACE=(CYL,(0,2)),              00000170
IEF633I SUBSTITUTION JCL - SYSOUT=A,UNIT=(2314,3),SPACE=(CYL,(0,2)),
XX DCB=(RECFM=VBA,LRECL=137,BLKSIZE=&BLKSIZE)                           00000180
IEF633I SUBSTITUTION JCL - DCB=(,RECFM=VBA,LRECL=137,BLKSIZE=7265)      00000190
XXSYSTSPM DD SYSOUT=&TIDMOUT
IEF633I SUBSTITUTION JCL - SYSOUT=A
//SYSOUDUM DD SYSOUT=A                                                  00000200
X/SYSOUDUM DD SYSOUT=A,SPACE=(CYL,(0,5))
//GENTAP DD UNIT=(,TRACK),DCB=(),
//    VOL=SER=(TAPE,LABEL=(,NL,,IN),DISP=(OLD,KEEP),
//    DCB=(,RECFM=U,BLKSIZE=1944,DEN=2)
//DATA DD *
IEF236I ALLOC. FOR ZBJHUMA2 GO
IEF237I 323   ALLOCATED TO SYSLIB
IEF237I 330   ALLOCATED TO
IEF237I 451   ALLOCATED TO
IEF237I 451   ALLOCATED TO
IEF237I 244   ALLOCATED TO
IEF237I 244   ALLOCATED TO
IEF237I 452   ALLOCATED TO SYSLOUT
IEF237I 323   ALLOCATED TO SYSLIN
IEF237I 450   ALLOCATED TO FT05F001
IEF237I 452   ALLOCATED TO FT06F001
IEF237I 452   ALLOCATED TO FT07F001
IEF237I 242   ALLOCATED TO SYSPRINT
IEF237I 212   ALLOCATED TO SYSPRINT
IEF237I 253   ALLOCATED TO SYSPRINT
IEF237I 451   ALLOCATED TO SYSTERM
IEF237I 452   ALLOCATED TO SYSUDUMP
IEF237I 002   ALLOCATED TO GENTAP
```

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                                        OS/360 LOADER

OPTIONS USED - PRINT,MAP,NOLET,CALL,RES,NETFM,SIZE=150244,NAME=MAIN
               LP=DRUIT

   NAME   TYPE   ADDR        NAME   TYPE  ADDR        NAME   TYPE  ADDR        NAME   TYPE  ADDR        NAME   TYPE  ADDR
 CRBIT          SD 210010   CNVRTSCT* SD 210F70   CNVRT    * LR 210F70   DBSCN    * SD 211198   DBFEDV   * LR 211358
 FREAD    *     SD 211560   FREADB  * LR 211788   FWRITE   * LR 21187C   REWIND   * LR 211A82   LEAVE    * LR 211966
 UNCHAD   *     LR 211C1A   PRSP    * LR 211E30   MOUNT    * LR 211F50   MEMBER   * LR 212132   FTSAP    * LR 212222
 FAILDM   *     LR 212240   FUNITABL* SD 213200   FP_1     * SD 213328   FDD#LIST* SD 213330   FERMSG   * SD 213338
 IHCNAMEL*      SD 213A40   FRDBL*  * LR 213A40   FWRNL#   * LR 213A44   IHCECOMH* SD 213E70   IBCOM#   * LR 213E70
 FDTCB#   *     LR 213F20   INTSWTCH* LR 214DB0   IHCECOMH2* SD 214D08   SSDDASD* LR 215150   FTF      * SD 215438
 ITISEXT  *     SD 215416   ITI     * LR 215458   FXFLT    * SD 215540   FIXFLT   * LR 215540   TFNSLTE * SD 215588
 IBAUP    *     LR 215B88   WITCX   * SD 215E98   CNIUDATA* LR 215E98   DIDUN    * SD 215FC8   IHCECVTH* SD 215B98
 ADCLM#   *     LR 215B90   FCVAOUTP* LR 215942   FCVLOUTP* LR 215942   FCVZOUTP* LR 215B22   FCVIOUTP* LR 215ED0
 FCVEOUTP*      LR 216302   FCVCOUTP* LR 216BFC   INTSSWCH* LR 216303   IHCEFICS* SD 216A38   FIOCS#   * LR 216A38
 FICSDUMP*      LR 216F31   IHCFIFS#  SD 217206   IHCFHFM * SD 217E46   FRSAIM   * LR 217E46   IHCFREE * LR 217EA8
 IHCEFNTH*      SD 218466   ARITH#  * LR 218468   ADJSATCH* LR 218404   IHCUPPT * SD 218660   IHCUATBL* SD 218C08
 IHCETRCH*      SD 219318   IHCTRCH * LR 219318   ESPTRA  * LR 219318

 TOTAL LENGTH    9990
 ENTRY ADDRESS 210010

                 DATE  HELIOS-A        DEBUIT TAPE #=CP4A0A
 7409701 CPB                76 032 000000 061 000000 0007 01 760502 007 01 01 E7  X

                 HELIOS-A        YEAR 1976.        LAUNCH TIME   30089350.  0.

     DATE          HELIOS    HELIOS    SUN-HELIOS   EARTH-HELIOS   EARTH-HELIOS   HELIOS-SUN   HELIOS    HELIOS-V(A.U/DAY)
  MM DD HR MM SC   ECL.LONG  ECL.LAT   DIST(A.U)    DIST(A.U)      SUN(DEG)       EARTH(DEG)   HEL-LAT(DEG)  RADIAL    NORMAL
  2  1  0  0  0    334.94    0.01      0.87         0.42           92.45          25.06        -3.69         -.006     0.01
  2  2  0  0  0    334.82    0.01      0.86         0.42           93.70          25.18        -3.79         -.005     0.01
  2  3  0  0  0    334.72    0.01      0.86         0.42           94.47          25.28        -3.89         -.007     0.01
  2  4  0  0  0    334.63    0.01      0.85         0.42           95.28          25.37        -3.98         -.007     0.01
  2  5  0  0  0    334.56    0.01      0.84         0.43           96.13          25.44        -4.08         -.007     0.01
  2  6  0  0  0    334.50    0.01      0.84         0.43           97.01          25.50        -4.18         -.007     0.01
  2  7  0  0  0    334.46    0.01      0.83         0.43           97.93          25.54        -4.28         -.007     0.01
  2  8  0  0  0    334.43    0.01      0.82         0.43           98.89          25.57        -4.38         -.007     0.01
  2  9  0  0  0    334.43    0.01      0.82         0.43           99.90          25.57        -4.48         -.008     0.01
  2 10  0  0  0    334.44    0.01      0.81         0.43           100.94         25.56        -4.58         -.008     0.01
  2 11  0  0  0    334.48    0.01      0.80         0.43           102.04         25.52        -4.68         -.008     0.01
  2 12  0  0  0    334.53    0.01      0.79         0.44           103.18         25.47        -4.78         -.008     0.01
```

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2 13  0  0  0   334.61   0.01   0.78   0.44   104.38   25.39   -4.89   -.008   0.02
2 14  0  0  0   334.72   0.01   0.77   0.44   105.63   25.28   -4.99   -.009   0.02
2 15  0  0  0   334.85   0.01   0.77   0.44   106.93   25.15   -5.09   -.009   0.02
2 16  0  0  0   335.00   0.01   0.76   0.44   108.30   25.00   -5.20   -.009   0.02
2 17  0  0  0   335.19   0.02   0.75   0.44   109.73   24.81   -5.30   -.009   0.02
2 18  0  0  0   335.40   0.02   0.74   0.44   111.22   24.60   -5.40   -.009   0.02
2 19  0  0  0   335.69   0.02   0.73   0.44   112.78   24.35   -5.51   -.010   0.02
2 20  0  0  0   335.93   0.02   0.72   0.44   114.42   24.07   -5.61   -.010   0.02
2 21  0  0  0   336.25   0.02   0.71   0.44   116.13   23.75   -5.71   -.010   0.02
2 22  0  0  0   336.60   0.02   0.70   0.44   117.92   23.40   -5.82   -.010   0.02
2 23  0  0  0   337.00   0.02   0.69   0.45   119.79   23.00   -5.92   -.010   0.02
2 24  0  0  0   337.43   0.02   0.68   0.45   121.75   22.57   -6.02   -.011   0.02
2 25  0  0  0   337.92   0.02   0.67   0.45   123.80   22.08   -6.13   -.011   0.02
2 26  0  0  0   338.45   0.02   0.66   0.45   125.94   21.55   -6.23   -.011   0.02
2 27  0  0  0   339.04   0.02   0.65   0.45   128.18   20.96   -6.33   -.011   0.02
2 28  0  0  0   339.68   0.02   0.63   0.45   130.53   20.32   -6.42   -.011   0.02
2 29  0  0  0   340.39   0.02   0.62   0.45   132.97   19.61   -6.52   -.012   0.02
3 1   0  0  0   341.16   0.02   0.61   0.46   135.53   18.84   -6.61   -.012   0.02

END OF FILE ON OMEIT TAPE


IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   42.ZBATC.SC002.LOAD                          KEPT        DDNAME=SYSLIB  -1          0 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS2.DEBUGLIB                                KEPT        DDNAME=SYSLIB  -2         17 EXCPS
IEF285I   VOL SER NOS= M2SYS2.
IEF285I   SYS1.PL1LIB                                  KEPT        DDNAME=SYSLIB  -3         89 EXCPS
IEF285I   VOL SER NOS= K3ITL0.
IEF285I   SYS2.PL1LIB                                  KEPT        DDNAME=SYSLIB  -4          0 EXCPS
IEF285I   VOL SER NOS= K3ITL0.
IEF285I   SYS1.PL1LIB                                  KEPT        DDNAME=SYSLIB  -5          0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS1.FORTSSP                                 KEPT        DDNAME=SYSLIB  -6          0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS80054.T153822.SV000.ZBJHBCA2.R0000001     SYSOUT      DDNAME=SYSLOUT             1 EXCPS
IEF285I   VOL SER NOS= SCH001.
IEF285I   42.ZBATC.SC002.LOAD                          KEPT        DDNAME=SYSLIN  -1          7 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS80054.T153822.SV000.ZBJHBCA2.S0000008     SYSIN       DDNAME=FT05F001            2 EXCPS
IEF285I   VOL SER NOS= SCH000.
IEF285I   SYS80054.T153822.SV000.ZBJHBCA2.S0000008     DELETED     DDNAME=FT05F001            2 EXCPS
IEF285I   VOL SER NOS= SCH000.
IEF285I   SYS80054.T153822.SV000.ZBJHBCA2.R0000002     SYSOUT      DDNAME=FT06F001            1 EXCPS
IEF285I   VOL SER NOS= SCH001.
IEF285I   SYS80054.T153822.SV000.ZBJHBCA2.R0000003     DELETED     DDNAME=FT07F001            0 EXCPS
IEF285I   VOL SER NOS= SCH001.
IEF285I   SYS80054.T153822.SV000.ZBJHBCA2.R0000004     DELETED     DDNAME=SYSPRINT            0 EXCPS
IEF285I   VOL SER NOS= SCH001.
IEF285I   SYS80054.T153822.SV000.ZBJHBCA2.R0000005     DELETED     DDNAME=SYSTEAM             0 EXCPS
IEF285I   VOL SER NOS= SCH000.
IEF285I   SYS80054.T153822.SV000.ZBJHBCA2.R0000006     DELETED     DDNAME=SYSUDUMP            0 EXCPS
IEF285I   VOL SER NOS= SCH001.
IEF285I   SYS80054.T153822.SV000.ZBJHBCA2.R0000007     KEPT        DDNAME=GENTAP            702 EXCPS
IEF285I   VOL SER NOS= LOA06 .
IEF285I K DL2.D.ACB .ZBJHBCA2.GC
IEF373I STEP /GO    / START 80054.1538
IEF374I STEP /GO    / STOP  80054.1539 CPU    0MIN 02.67SEC MAIN 200K LCS    0K
- STEP 01 -      RETURN CODE = 0000                    STEP TIME =      .26 MINS=(CPU=      .04,IO=      .22)
                                  IO IN SECS. DISK=      6.40,DRUM=      .00,TAPE=     7.06,CELL=      .00,OTHR=      .14
- SURCHARGES=(DRIVES ALOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=00000)SECS.   TOTAL STP TIME=      .26 MINS.  -
      // EXEC NOTIFYTS
      XXDEFAULT  PROC NODE=,JSID=,MSG=,USERID=,TID=,LAB/21JUN79                  00000010
      XXNOTIFYTS EXEC PGM=NOTIFYTS,REGION=20K,COND=EVEN.                         00000020
      XX         PARM='DDNOC,DUSLIC,DUSLLIDLIC,DMEG'                             00000030
      IEF653I SUBSTITUTION JCL - PARM='.,'
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF373I STEP /NOTIFYTS/ START 80054.1539
IEF374I STEP /NOTIFYTS/ STOP  80054.1539 CPU    0MIN 00.00SEC MAIN    4K LCS    0K
- STEP 02 -      RETURN CODE = 0000                    STEP TIME =      .00 MINS=(CPU=      .00,IO=      .00)
                                  IO IN SECS. DISK=      .12,DRUM=      .00,TAPE=      .00,CELL=      .00,OTHR=      .04
- SURCHARGES=(DRIVES ALOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=00000)SECS.   TOTAL STP TIME=00000.00 MINS.  -
IEF375I  JOB /ZBJHBCA2/ START 80054.1538
IEF376I  JOB /ZBJHBCA2/ STOP  80054.1539 CPU    0MIN 02.87SEC
-  SYSTEM=REL21.8F (10-15-78) M2                                   TIME=15.39.35.10 DATE=02-23-80
- JOB 0328-                                   TOTAL TIME =      .26 MINS=(CPU=      .04,IO=      .22)
                                  IO IN SECS. DISK=      6.60,DRUM=      .00,TAPE=     7.06,CELL=      .00,OTHR=      .19
- SURCHARGES=(DRIVES ALOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=00000)SECS.   TOTAL JOB TIME=      .26 MINS.  -
 THERE WERE 01 TAPES MOUNTED FOR THIS JOB. TAPE MOUNT CHARGE WAS 00.0 MINUTES.
```

```
JOBNAME-
SSSSSSSSSS   DDDDDDDDD    HH        HH   EEEEEEEEEEEE   LL          CCCCCCCCCC      AA      2222222222
SSSSSSSSSSSS DDDDDDDDDD   HH        HH   EEEEEEEEEEEE   LL          CCCCCCCCCCCC    AA     222222222222
SS        SS DD       DD  HH        HH   EE             LL          CC        CC    AAAA   22        22
SS           DD       DD  HH        HH   EE             LL          CC        CC   AA  AA          22
SS           DD       DD  HH        HH   EE             LL          CC        CC   AA  AA         22
SSS          DD       DD  HHHHHHHHHHHH   EEEEEEEE       LL          CC        CC  AA    AA       22
 SSSSSSSS    DD       DD  HHHHHHHHHHHH   EEEEEEEE       LL          CC        CC  AAAAAAAA      22
      SSS    DD       DD  HH        HH   EE             LL          CC        CC  AAAAAAAAAA   22
       SS    DD       DD  HH        HH   EE             LL          CC        CC  AA      AA   22
SS        SS DD       DD  HH        HH   EE             LL          CC        CC  AA      AA   222222222222
SSSSSSSSSSSS DDDDDDDDDD   HH        HH   EEEEEEEEEEEE   LLLLLLLLLLLL  CCCCCCCCCCCC  AA      AA   222222222222
 SSSSSSSSSS  DDDDDDDDD    HH        HH   EEEEEEEEEEEE   LLLLLLLLLLLL   CCCCCCCCCC   AA      AA

                                          SACC 360/75      READER NUMBER-P0059          CLASS-
BO X-
BBBBBBBBB    FFFFFFFFFFFF    33333333                                                    AA
BBBBBBBBBB   FFFFFFFFFFFF   3333333333                                                   AA
BB      BB   FF                   33                                                    AAAA
BB      BB   FF                   33                                                    AAAA
BB      BB   FF                   33                                                   AA  AA
BB      BB   FF                   33                                                   AA  AA
BBBBBBBBB    FFFFFFFF            33333                                                 AA    AA
BBBBBBBBBB   FFFFFFFF            33333                                                 AAAAAAAA
BB      BB   FF                   33                                                  AAAAAAAAAA
BB      BB   FF                   33                                                  AA      AA
BB      BB   FF                   33                                                 AA        AA
BBBBBBBBBB   FF                 3333333333                                           AA        AA
BBBBBBBBB    FF                  33333333
```

ORA15

3/1/76 — 6/30/76

```
XXFT07F001 DD SYSOUT=B,DCB=(RECFM=FB,BLKSIZE=7200,LRECL=80)                00000160
XXSYSPRINT DD SYSOUT=&OUT,DCB=(BLKSIZE=&BLKSIZE,LRECL=137,RECFM=VBA),     00000170
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(BLKSIZE=7265,LRECL=137,RECFM=VBA),
XX              SPACE=(CYL,(0,1)),UNIT=(DISK,3)                           00000180
XXSYSTERM  DD   SYSOUT=&TERMOUT                                           00000190
IEF653I SUBSTITUTION JCL - SYSOUT=A
//SYSUDUMP DD SYSOUT=A
X/SYSUDUMP DD SYSOUT=A,SPACE=(CYL,(0,5))                                  00000200
//GO.GENTAP DD UNIT=(7TRACK,,DEFER),
//     VOL=SER=CRTAPE,LABEL=(,NL,,IN),DISP=(OLD,KEEP),
//     DCB=(RECFM=U,BLKSIZE=1944,DEN=2)
//DATA5 DD *
IEF236I ALLOC. FOR SOMELOA2 GO
IEF237I 333    ALLOCATED TO SYSLIB
IEF237I 320    ALLOCATED TO
IEF237I 451    ALLOCATED TO
IEF237I 231    ALLOCATED TO
IEF237I 244    ALLOCATED TO
IEF237I 244    ALLOCATED TO
IEF237I 220    ALLOCATED TO
IEF237I 231    ALLOCATED TO
IEF237I 335    ALLOCATED TO SYSLOUT
IEF237I 333    ALLOCATED TO SYSLIN
IEF237I 335    ALLOCATED TO FT05F001
IEF237I 232    ALLOCATED TO FT06F001
IEF237I 335    ALLOCATED TO FT07F001
IEF237I 235    ALLOCATED TO SYSPRINT
IEF237I 232    ALLOCATED TO SYSPRINT
IEF237I 237    ALLOCATED TO SYSPRINT
IEF237I 335    ALLOCATED TO SYSTERM
IEF237I 336    ALLOCATED TO SYSUDUMP
IEF237I 000    ALLOCATED TO GENTAP
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                                        OS/360 LOADER

OPTIONS USED - PRINT,MAP,NOLET,CALL,REG,NOTERM,SIZE=194560,NAME=**GO
               EP=ORBIT

     NAME    TYPE  ADDR      NAME    TYPE  ADDR      NAME    TYPE  ADDR      NAME    TYPE  ADDR      NAME    TYPE  ADDR

     ORBIT     SD  78010     CNVRTSCT* SD  78E70     CNVRT   * LR  76E70     OBGEN   * SD  79198     DBFEOV  * LR  79358
     FREAD   * SD  79560     FREADD  * LR  79708     FWRITE  * LR  7987C     REWIND  * LR  79A82     LEAVE   * LR  79866
     UNLOAD  * LR  79C1A     POSN    * LR  79930     MOUNT   * LR  79F50     MEMBER  * LR  7A132     FTRAP   * LR  7A222
     FALLOW  * LR  7A2A0     FINITABL* SD  79260     FPL1    * SD  78328     FODNLIST* SD  73J30     FERMSG  * SD  7B338
     THCNAMEL* SD  7B3A0     FRONL#  * LR  7B3A0     FWRNL#  * LR  7B9A4     IHCCOMH* SD  7BE70     IBCOM#  * LR  7BE70
     FDIOCS# * LR  7BF2C     INTSWTCH* LR  7C036     IHCCOMH2* SD  7C0D8     SEQCASD * LR  70150     FTF     * SD  70438
     ITISECT * SD  7D4E8     ITI     * LR  73458     FXFLT   * SD  7D5A0     FIXFLT  * LR  70540     TRNSLTE * SD  70588
     TRANS   * LR  7D588     BITST   * SD  70698     CNTSDATA* LR  70698     DTDUN  * SD  707C8     IHCFCVTH* SD  70898
     ADCON#  * LR  70898     FCVADUTP* LR  70942     FCVLOUTP* LR  709D2     FCVZOUTP* LR  70J22     FCVIOUTP* LR  70ED0
     FCVEOUTP* LR  7E3D8     FCVCUTP* LR  7E5EC      INTSSWCH* LR  7E8D3     IHCEFIOS* SD  7EA38     FIOCS#  * LR  7EA38
     FIOCSHFP* LR  7EA3E     IHCFIOS2* SD  7F950     IHCERHM * SD  7FE90     ERRMON  * LR  7FE90     IHCERRE * LR  7FEA8
     IHCFFNTH* SD  80468     ARITH#  * LR  80468     ADJSWTCH* LR  8C804     IHCUOPT * SD  80980     IHCUATBL* SD  80CD8
     IHCETPCH* SD  81310     THCTRCH * LR  81310     ERRTRA  * LR  81318

     TOTAL LENGTH    9590
     ENTRY ADDRESS  78010

                    SATID  HELIOS-A        00ORBIT TAPE #=ORA15
          7409701 ORB              76 061 000000 182 000000 6007 01 760915 007 01 01 E7  X

                    HELIOS-A          YEAR 1976.          LAUNCH TIME  38594950.  0.
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DATE MM	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	ERTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LET(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
3	1	0	0	0	341.16	0.02	0.61	0.46	135.53	18.84	-6.61	-.012	0.02
3	2	0	0	0	342.00	0.02	0.60	0.46	138.21	18.00	-6.70	-.012	0.02
3	3	0	0	0	342.91	0.02	0.59	0.46	140.39	17.09	-6.79	-.012	0.02
3	4	0	0	0	343.91	0.02	0.58	0.47	143.90	16.09	-6.87	-.012	0.02
3	5	0	0	0	344.99	0.02	0.56	0.47	146.93	15.01	-6.95	-.012	0.02
3	6	0	0	0	346.17	0.02	0.55	0.48	150.09	13.83	-7.02	-.013	0.02
3	7	0	0	0	347.44	0.02	0.54	0.48	153.38	12.56	-7.08	-.013	0.02
3	8	0	0	0	348.83	0.02	0.53	0.49	156.79	11.17	-7.14	-.013	0.02
3	9	0	0	0	350.35	0.02	0.51	0.50	160.34	9.66	-7.18	-.013	0.02
3	10	0	0	0	351.99	0.02	0.50	0.50	164.03	8.01	-7.21	-.013	0.02
3	11	0	0	0	353.77	0.02	0.49	0.51	167.85	6.23	-7.22	-.013	0.02

3	12	0	0	0	355.70	0.02	0.47	0.52	171.81	4.30	-7.22	-.013	0.02
3	13	0	0	0	357.81	0.02	0.46	0.53	175.91	2.19	-7.20	-.013	0.03
3	14	0	0	0	0.09	0.02	0.45	0.55	179.83	0.09	-7.15	-.013	0.03
3	15	0	0	0	2.57	0.02	0.43	0.56	175.43	2.57	-7.07	-.013	0.03
3	16	0	0	0	4.27	0.02	0.42	0.58	170.88	5.27	-6.96	-.013	0.03
3	17	0	0	0	8.13	0.02	0.41	0.59	166.16	8.19	-6.82	-.013	0.03
3	18	0	0	0	11.37	0.02	0.40	0.61	161.29	11.37	-6.62	-.012	0.03
3	19	0	0	0	14.83	0.02	0.38	0.63	156.24	14.80	-6.33	-.012	0.03
3	20	0	0	0	18.52	0.02	0.37	0.65	151.02	18.52	-6.08	-.011	0.03
3	21	0	0	0	22.54	0.02	0.36	0.68	145.62	22.54	-5.72	-.011	0.03
3	22	0	0	0	26.85	0.02	0.35	0.70	140.04	26.85	-5.28	-.010	0.03
3	23	0	0	0	31.48	0.02	0.34	0.73	134.29	31.48	-4.77	-.009	0.03
3	24	0	0	0	36.41	0.02	0.33	0.75	128.37	36.41	-4.19	-.008	0.04
3	25	0	0	0	41.64	0.02	0.33	0.78	122.31	41.64	-3.53	-.007	0.04
3	26	0	0	0	47.13	0.01	0.32	0.81	116.13	47.13	-2.79	-.006	0.04
3	27	0	0	0	52.85	0.01	0.32	0.85	109.87	52.85	-2.00	-.004	0.04
3	28	0	0	0	58.75	0.01	0.31	0.88	103.57	58.75	-1.15	-.003	0.04
3	29	0	0	0	64.77	0.01	0.31	0.91	97.30	64.77	-0.28	-.001	0.04
3	30	0	0	0	70.84	0.00	0.31	0.94	91.10	70.84	0.61	0.001	0.04
3	31	0	0	0	76.89	-0.00	0.31	0.98	85.05	76.89	1.49	0.002	0.04
4	1	0	0	0	82.84	-0.00	0.31	1.01	79.20	82.84	2.33	0.004	0.04
4	2	0	0	0	88.63	-0.01	0.32	1.04	73.59	88.63	3.12	0.005	0.04
4	3	0	0	0	94.20	-0.01	0.32	1.07	68.28	94.20	3.84	0.006	0.04
4	4	0	0	0	99.52	-0.01	0.33	1.10	63.28	99.52	4.49	0.008	0.04
4	5	0	0	0	104.56	-0.01	0.34	1.13	58.61	104.56	5.06	0.009	0.03
4	6	0	0	0	109.29	-0.02	0.35	1.16	54.28	109.29	5.55	0.010	0.03
4	7	0	0	0	113.72	-0.02	0.36	1.19	50.28	113.72	5.96	0.010	0.03
4	8	0	0	0	117.84	-0.02	0.37	1.22	46.61	117.84	6.30	0.011	0.03
4	9	0	0	0	121.66	-0.02	0.38	1.24	43.24	121.66	6.57	0.012	0.03
4	10	0	0	0	125.20	-0.02	0.39	1.27	40.15	125.20	6.79	0.012	0.03
4	11	0	0	0	128.47	-0.02	0.41	1.29	37.34	128.47	6.95	0.012	0.03
4	12	0	0	0	131.49	-0.02	0.42	1.32	34.77	131.49	7.07	0.013	0.03
4	13	0	0	0	134.27	-0.02	0.43	1.34	32.42	134.27	7.16	0.013	0.03
4	14	0	0	0	136.84	-0.02	0.44	1.36	30.28	136.84	7.20	0.013	0.03
4	15	0	0	0	139.20	-0.02	0.46	1.38	28.33	139.20	7.22	0.013	0.03
4	16	0	0	0	141.38	-0.02	0.47	1.40	26.55	141.38	7.22	0.013	0.03
4	17	0	0	0	143.39	-0.02	0.48	1.42	24.92	143.39	7.20	0.013	0.02
4	18	0	0	0	145.24	-0.02	0.50	1.44	23.44	145.24	7.16	0.013	0.02
4	19	0	0	0	146.95	-0.02	0.51	1.46	22.08	146.95	7.10	0.013	0.02
4	20	0	0	0	148.52	-0.02	0.52	1.47	20.84	148.52	7.03	0.013	0.02
4	21	0	0	0	149.97	-0.02	0.53	1.49	19.70	149.97	6.96	0.013	0.02
4	22	0	0	0	151.31	-0.02	0.55	1.51	18.66	151.31	6.87	0.013	0.02
4	23	0	0	0	152.55	-0.02	0.56	1.52	17.71	152.55	6.78	0.012	0.02
4	24	0	0	0	153.69	-0.02	0.57	1.54	16.83	153.69	6.69	0.012	0.02
4	25	0	0	0	154.74	-0.02	0.58	1.55	16.03	154.74	6.58	0.012	0.02
4	26	0	0	0	155.71	-0.02	0.60	1.57	15.30	155.71	6.48	0.012	0.02
4	27	0	0	0	156.60	-0.02	0.61	1.58	14.63	156.60	6.37	0.012	0.02
4	28	0	0	0	157.43	-0.02	0.62	1.60	14.01	157.43	6.26	0.012	0.02
4	29	0	0	0	158.18	-0.02	0.63	1.61	13.44	158.18	6.16	0.011	0.02
4	30	0	0	0	158.83	-0.02	0.64	1.62	12.92	158.88	6.04	0.011	0.02
5	1	0	0	0	159.52	-0.02	0.65	1.64	12.46	159.52	5.92	0.011	0.02
5	2	0	0	0	160.10	-0.02	0.66	1.65	12.01	160.10	5.81	0.011	0.02
5	3	0	0	0	160.64	-0.02	0.68	1.66	11.61	160.64	5.69	0.011	0.02
5	4	0	0	0	161.13	-0.02	0.69	1.67	11.23	161.13	5.59	0.010	0.02
5	5	0	0	0	161.58	-0.02	0.70	1.68	10.91	161.58	5.46	0.010	0.02
5	6	0	0	0	161.98	-0.02	0.71	1.69	10.61	161.98	5.35	0.010	0.02
5	7	0	0	0	162.35	-0.02	0.72	1.71	10.33	162.35	5.23	0.010	0.02
5	8	0	0	0	162.69	-0.02	0.73	1.72	10.08	162.69	5.12	0.010	0.02
5	9	0	0	0	162.98	-0.02	0.74	1.73	9.85	162.98	5.00	0.009	0.02
5	10	0	0	0	163.25	-0.02	0.75	1.74	9.65	163.25	4.89	0.009	0.02
5	11	0	0	0	163.49	-0.02	0.75	1.75	9.46	163.49	4.78	0.009	0.02
5	12	0	0	0	163.70	-0.02	0.76	1.76	9.29	163.70	4.67	0.009	0.02
5	13	0	0	0	163.88	-0.02	0.77	1.77	9.14	163.88	4.56	0.009	0.02
5	14	0	0	0	164.04	-0.02	0.78	1.77	9.01	164.04	4.44	0.008	0.02
5	15	0	0	0	164.17	-0.02	0.79	1.78	8.90	164.17	4.33	0.008	0.01
5	16	0	0	0	164.28	-0.02	0.80	1.79	8.79	164.28	4.23	0.008	0.01
5	17	0	0	0	164.37	-0.02	0.81	1.80	8.70	164.37	4.12	0.008	0.01

HELIOS-A YEAR 1976. LAUNCH TIME 45251350. 0.

DATE MM	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	EARTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LAT(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
5	18	0	0	0	164.44	-0.02	0.81	1.81	8.63	164.44	4.01	0.008	0.01
5	19	0	0	0	164.50	-0.02	0.82	1.82	8.57	164.50	3.90	0.008	0.01
5	20	0	0	0	164.53	-0.02	0.83	1.82	8.51	164.53	3.80	0.007	0.01
5	21	0	0	0	164.54	-0.02	0.84	1.83	8.47	164.54	3.69	0.007	0.01
5	22	0	0	0	164.54	-0.02	0.84	1.84	8.44	164.54	3.59	0.007	0.01
5	23	0	0	0	164.53	-0.02	0.85	1.85	8.42	164.53	3.48	0.007	0.01

5	24	0	0	0	164.50	-0.02	0.86	1.85	8.41	164.50	3.38	0.007	0.01
5	25	0	0	0	164.45	-0.02	0.86	1.86	8.40	164.45	3.28	0.006	0.01
5	26	0	0	0	164.39	-0.01	0.87	1.86	8.41	164.39	3.18	0.006	0.01
5	27	0	0	0	164.32	-0.01	0.88	1.87	8.42	164.32	3.07	0.006	0.01
5	28	0	0	0	164.24	-0.01	0.89	1.88	8.44	164.24	2.97	0.006	0.01
5	29	0	0	0	164.14	-0.01	0.89	1.89	8.46	164.14	2.87	0.006	0.01
5	30	0	0	0	164.04	-0.01	0.89	1.89	8.49	164.04	2.78	0.006	0.01
5	31	0	0	0	163.92	-0.01	0.90	1.89	8.53	163.92	2.68	0.005	0.01
6	1	0	0	0	163.80	-0.01	0.90	1.90	8.57	163.80	2.58	0.005	0.01
6	2	0	0	0	163.66	-0.01	0.91	1.90	8.62	163.66	2.48	0.005	0.01
6	3	0	0	0	163.52	-0.01	0.91	1.91	8.67	163.52	2.39	0.005	0.01
6	4	0	0	0	163.37	-0.01	0.92	1.91	8.73	163.37	2.29	0.005	0.01
6	5	0	0	0	163.21	-0.01	0.92	1.92	8.80	163.21	2.19	0.005	0.01
6	6	0	0	0	163.04	-0.01	0.93	1.92	8.86	163.04	2.10	0.004	0.01
6	7	0	0	0	162.87	-0.01	0.93	1.92	8.94	162.87	2.01	0.004	0.01
6	8	0	0	0	162.69	-0.01	0.94	1.93	9.01	162.69	1.91	0.004	0.01
6	9	0	0	0	162.50	-0.01	0.94	1.93	9.09	162.50	1.82	0.004	0.01
6	10	0	0	0	162.31	-0.01	0.94	1.94	9.17	162.31	1.72	0.004	0.01
6	11	0	0	0	162.11	-0.01	0.95	1.94	9.26	162.11	1.63	0.004	0.01
6	12	0	0	0	161.91	-0.01	0.95	1.94	9.35	161.91	1.54	0.003	0.01
6	13	0	0	0	161.70	-0.01	0.95	1.94	9.44	161.70	1.45	0.003	0.01
6	14	0	0	0	161.48	-0.01	0.96	1.95	9.54	161.48	1.36	0.003	0.01
6	15	0	0	0	161.27	-0.01	0.96	1.95	9.64	161.27	1.27	0.003	0.01
6	16	0	0	0	161.04	-0.01	0.96	1.95	9.74	161.04	1.17	0.003	0.01
6	17	0	0	0	160.82	-0.01	0.96	1.96	9.84	160.82	1.08	0.003	0.01
6	18	0	0	0	160.59	-0.01	0.97	1.96	9.95	160.59	0.99	0.002	0.01
6	19	0	0	0	160.35	-0.01	0.97	1.96	10.05	160.35	0.90	0.002	0.01
6	20	0	0	0	160.12	-0.01	0.97	1.96	10.17	160.12	0.81	0.002	0.01
6	21	0	0	0	159.88	-0.01	0.97	1.96	10.28	159.88	0.72	0.002	0.01
6	22	0	0	0	159.64	-0.01	0.98	1.96	10.39	159.64	0.64	0.002	0.01
6	23	0	0	0	159.39	-0.01	0.98	1.96	10.51	159.39	0.55	0.002	0.01
6	24	0	0	0	159.14	-0.01	0.98	1.96	10.63	159.14	0.46	0.001	0.01
6	25	0	0	0	158.90	-0.01	0.98	1.96	10.75	158.90	0.37	0.001	0.01
6	26	0	0	0	158.65	-0.01	0.98	1.96	10.87	158.65	0.28	0.001	0.01
6	27	0	0	0	158.39	-0.01	0.98	1.96	10.99	158.39	0.19	0.001	0.01
6	28	0	0	0	158.14	-0.01	0.98	1.96	11.12	158.14	0.10	0.001	0.01
6	29	0	0	0	157.89	-0.01	0.98	1.96	11.24	157.89	0.02	0.001	0.01
6	30	0	0	0	157.63	-0.00	0.98	1.96	11.37	157.63	-0.07	0.000	0.01

END OF FILE ON ORBIT TAPE

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IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   M2.ZBRTC.00002.LOAD                          KEPT        DDNAME=SYSLIB  -1          0 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS2.DEBLKUNV                                KEPT        DDNAME=SYSLIB  -2         17 EXCPS
IEF285I   VOL SER NOS= M2SYS2.
IEF285I   SYS1.FORTLIB                                 KEPT        DDNAME=SYSLIB  -3         61 EXCPS
IEF285I   VOL SER NOS= K3ITL0.
IEF285I   SYS2.FORTLIB                                 KEPT        DDNAME=SYSLIB  -4         28 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SYS1.PETLIB                                  KEPT        DDNAME=SYSLIB  -5          0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS1.FORTSGP                                 KEPT        DDNAME=SYSLIB  -6          0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS2.COBLIB                                  KEPT        DDNAME=SYSLIB  -7          0 EXCPS
IEF285I   VOL SER NOS= M2SYS1.
IEF285I   SYS1.ALGLIB                                  KEPT        DDNAME=SYSLIB  -8          0 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SYS80045.T110117.RV000.SDHELOA2.R0000015     SYSOUT      DDNAME=SYSLOUT             1 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   M2.ZBRTC.00002.LOAD                          KEPT        DDNAME=SYSLIN  -1          7 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS80045.T110117.RV000.SDHELOA2.S0000022     SYSIN       DDNAME=FT05F001            2 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80045.T110117.RV000.SDHELOA2.S0000022     DELETED     DDNAME=FT05F001            2 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80045.T110117.RV000.SDHELOA2.R0000016     SYSOUT      DDNAME=FT06F001            3 EXCPS
IEF285I   VOL SER NOS= K3SCR3.
IEF285I   SYS80045.T110117.RV000.SDHELOA2.R0000017     DELETED     DDNAME=FT07F001            0 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80045.T110117.RV000.SDHELOA2.R0000018     DELETED     DDNAME=SYSPRINT            0 EXCPS
IEF285I   VOL SER NOS= K3SCR6.
IEF285I   SYS80045.T110117.RV000.SDHELOA2.R0000019     DELETED     DDNAME=SYSTERM             0 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80045.T110117.RV000.SDHELOA2.R0000020     DELETED     DDNAME=SYSUDUMP            0 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS80045.T110117.RV000.SDHELOA2.R0000021     KEPT        DDNAME=GENTAP          2,911 EXCPS
IEF285I   VOL SER NOS= DRA15 .
IEF28CE K OCO.DRA15 .SDHELOA2.GO
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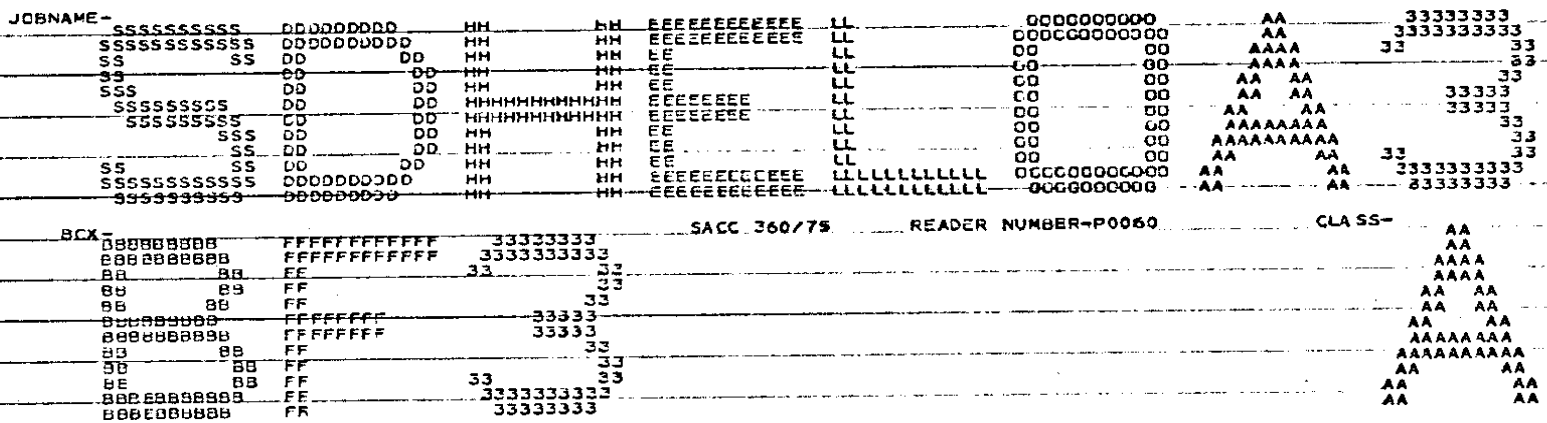
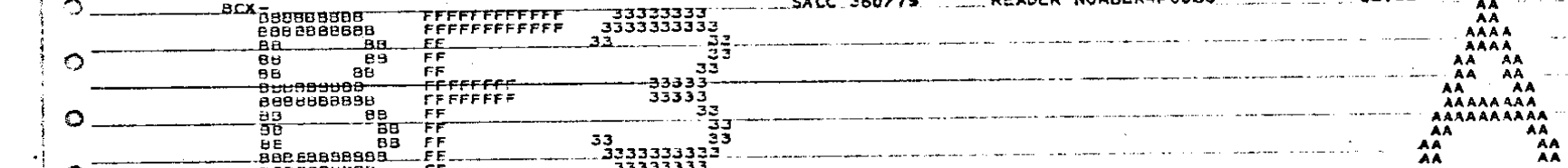
JOBNAME-



SACC 360/75 READER NUMBER-P0060 CLASS-



ORA 16

7/1/76 – 8/31/76

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XX              SPACE=(CYL,(0,1)),UNIT=(DISK,3)                          00000180
XXSYSTERM  DD   SYSOUT=STERMOUT                                          00000190
IEF6531 SUBSTITUTION JCL - SYSOUT=A
//SYSUDUMP DD SYSOUT=A                                                   00000260
X/SYSUDUMP DD SYSOUT=A,SPACE=(CYL,(0,5))
//GO.GENTAP DD UNIT=(7TRACK,,DEFER),
//    VOL=SER=ORTAPE,LABEL=(,NL,,IN),DISP=(OLD,KEEP),
//    DCB=(RECFM=U,BLKSIZE=1544,DEN=2)
//DATA5 DD *
IEF236I ALLOC. FOR SDHELOA3 GO
IEF237I 333   ALLOCATED TO SYSLIB
IEF237I 320   ALLOCATED TO
IEF237I 451   ALLOCATED TO
IEF237I 231   ALLOCATED TO
IEF237I 244   ALLOCATED TO
IEF237I 244   ALLOCATED TO
IEF237I 220   ALLOCATED TO
IEF237I 231   ALLOCATED TO
IEF237I 235   ALLOCATED TO SYSLOUT
IEF237I 333   ALLOCATED TO SYSLIN
IEF237I 335   ALLOCATED TO FT05F001
IEF237I 235   ALLOCATED TO FT06F001
IEF237I 237   ALLOCATED TO FT07F001
IEF237I 235   ALLOCATED TO SYSPRINT
IEF237I 232   ALLOCATED TO SYSPRINT
IEF237I 237   ALLOCATED TO SYSPRINT
IEF237I 235   ALLOCATED TO SYSTERM
IEF237I 335   ALLOCATED TO SYSUDUMP
IEF237I 061   ALLOCATED TO GENTAP
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OS/360 LOADER

```
OPTIONS USED - PRINT,MAP,NOLET,CALL,RES,NOTERM,SIZE=194560,NAME=**GO
               EP=ORBIT

   NAME     TYPE  ADDR      NAME     TYPE  ADDR      NAME     TYPE  ADDR      NAME     TYPE  ADDR      NAME     TYPE  ADDR
ORBIT         SD  B6810   CNVRTSCT*  SD  B7670   CNVRT    *  LR  B7670   DDGEN    *  SD  B7998   DDFEQV   *  LR  B7858
FREAD    *    SD  B7D60   FREADB   *  LR  B7FB8   FWRITE   *  LR  B807C   REWIND   *  LR  B8282   LEAVE    *  LR  B8366
UNLOAD   *    LR  B841A   POSN     *  LR  B8530   MCUNT    *  LR  B8750   MEMBER   *  LR  B8932   FTRAP    *  LR  B8A22
FALLOW   *    LR  B8AA0   FUNITABL*   SD  B9A60   FPL1     *  SD  B9B28   FDDNLIST*  SD  B9B30   FERMSG   *  SD  B9B38
IHCNAMEL*     SD  B9BA0   FRDNL#   *  LR  B9BA0   FWRNL#   *  LR  BA1A4   IHCECOMM*   SD  BA670   IBCCM#   *  LR  BA670
FDIBCS#  *    LR  BA72C   INTSWTCH*   LR  BB5B6   IHCCOM#2*  SD  BB6D8   SEQDASD  *  LR  BB950   FTF      *  SD  BBC38
ITISECT  *    SD  BBCE8   ITI      *  LR  BBCE8   FXFLT    *  SD  BBD40   FIXFLT   *  LR  BBD40   TRNSLTB  *  SD  BBD88
TRANS    *    LR  BBD88   BITST    *  SD  BBE98   CNTGDATA*   LR  BBE98   DTDUN    *  SD  BBFC8   IHCFCVTH*  SD  BC098
ADCON#   *    LR  BC098   FCVADUTP*   LR  BC142   FCVLOUTP*   LR  BC1D2   FCVZOUTP*  LR  BC322   FCVIOUTP*  LR  BC600
FCVEOUTP*     LR  BCBD2   FCVGOUTP*   LR  BCDEC   INTGSWCH*   LR  BD0D3   IHCEFIOS*  SD  BD238   FIOCS#   *  LR  BD238
FIOCSBEP*     LR  BD23E   IHCFIOS2*   SD  BE160   IHCERRM *   SD  BE690   ERRMON   *  LR  BE690   IHCCRRE  *  LR  BE6A8
IHCEFNTH*     SD  BEC68   ARITH#   *  LR  BEC68   ADJSWTCH*   LR  BF004   IHCJOPT  *  SD  BF180   IHCUATOL*  SD  BF4D8
IHCETRCH*     SD  BFB10   IHCTRCH  *  LR  BFB10   ERRTRA   *  LR  BFB18

TOTAL LENGTH    9590
ENTRY ADDRESS   B6810

                SATID  HELIOS-A        OORBIT TAPE #=ORA16
7409701 ORB          76 183 000000 244 000000 7608 01 761110 608 01 01 E7  X
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                HELIOS-A          YEAR 1976.          LAUNCH TIME   49135750.  04

   DATE                HELIOS    HELIOS    SUN-HELIOS   EARTH-HELIOS   EARTH-HELIOS   HELIOS-SUN   HELIOS    HELIOS-V(A.U/DAY)
MM DD HR MN SC         ECL.LONG  ECL.LAT   DIST(A.U)    DIST(A.U)      SUN(DEG)       EARTH(DEG)   HEL-LET(DEG)  RADIAL   NORMAL
 7  1  0  0  0         157.38    -0.00     0.98         1.96           11.50          157.38       -0.16         0.000    0.01
 7  2  0  0  0         157.12    -0.00     0.98         1.96           11.63          157.12       -0.25         0.000    0.01
 7  3  0  0  0         156.86    -0.00     0.98         1.96           11.76          156.86       -0.33         -.000    0.01
 7  4  0  0  0         156.61    -0.00     0.98         1.96           11.89          156.61       -0.42         -.000    0.01
 7  5  0  0  0         156.35    -0.00     0.98         1.96           12.02          156.35       -0.51         -.000    0.01
 7  6  0  0  0         156.10    -0.00     0.98         1.96           12.15          156.10       -0.60         -.001    0.01
 7  7  0  0  0         155.84    -0.00     0.98         1.96           12.28          155.84       -0.69         -.001    0.01

IHC208I IBCCM - PROGRAM INTERRUPT (P) -  UNDERFLOW   OLD PSW IS  FFA50000920BC032 . REGISTER CONTAINED   FC1177FC00000000

TRACEBACK  ROUTINE  CALLED FROM ISN   REG.  14   REG.  15   REG.   0   REG.   1
           &&BK                0031   6208746E   C0087670   00000028   000B6A8C
           ORBIT                      0001AA28   01086810   FF000008   000E7F38

ENTRY POINT=  01086810
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```
STANDARD FIXUP TAKEN , EXECUTION CONTINUING
IHC208I IBCOM - PROGRAM INTERRUPT (P) - UNDERFLOW   OLD PSW IS  FFA50000920BC032 , REGISTER CONTAINED  FA24C24408000000
TRACEBACK  ROUTINE  CALLED FROM ISN   REG. 14    REG. 15    REG. 0     REG. 1
           &&BK                 0031   620B746E   000B7670   00000028   000B6A8C
           OREIT                       0001AA28   010B6810   FF000008   000E7F38
ENTRY POINT=  010B6810
STANDARD FIXUP TAKEN , EXECUTION CONTINUING
IHC208I IBCOM - PROGRAM INTERRUPT (P) - UNDERFLOW   OLD PSW IS  FFA5000DA20BC032 , REGISTER CONTAINED  7AD652F039000000
TRACEBACK  ROUTINE  CALLED FROM ISN   REG. 14    REG. 15    REG. 0     REG. 1
           &&BK                 0031   620B746E   000B7670   00000028   000B6A8C
           OREIT                       0001AA28   010B6810   FF000008   000E7F38
ENTRY POINT=  010B6810
STANDARD FIXUP TAKEN , EXECUTION CONTINUING
IHC208I IBCOM - PROGRAM INTERRUPT (P) - UNDERFLOW   OLD PSW IS  FFA5000DA20BC032 , REGISTER CONTAINED  7EB1DDA380000000
TRACEBACK  ROUTINE  CALLED FROM ISN   REG. 14    REG. 15    REG. 0     REG. 1
           &&BK                 0031   620B746E   000B7670   00000020   000B6A8C
           OREIT                       0001AA28   010B6810   FF000008   000E7F38
ENTRY POINT=  010B6810
STANDARD FIXUP TAKEN , EXECUTION CONTINUING
IHC208I IBCOM - PROGRAM INTERRUPT (P) - UNDERFLOW   OLD PSW IS  FFA5000DA20BC048 , REGISTER CONTAINED  7A3BBD064B000000
TRACEBACK  ROUTINE  CALLED FROM ISN   REG. 14    REG. 15    REG. 0     REG. 1
           &&BK                 0031   620B746E   000B7670   00000020   000B6A8C
           OREIT                       0001AA28   010B6810   FF000008   000E7F38
ENTRY POINT=  010B6810
STANDARD FIXUP TAKEN , EXECUTION CONTINUING
```

0	0	0	0	0	******	0.00	*****	*****	******	******	-0.00	-.000	-0.00
7	8	0	0	0	155.59	-0.00	0.98	1.95	12.42	155.59	-0.77	-.001	0.01
7	9	0	0	0	155.34	-0.00	0.98	1.95	12.55	155.34	-0.86	-.001	0.01
7	10	0	0	0	155.09	-0.00	0.98	1.95	12.69	155.09	-0.95	-.001	0.01
7	11	0	0	0	154.84	-0.00	0.98	1.95	12.82	154.84	-1.04	-.001	0.01
7	12	0	0	0	154.59	-0.00	0.98	1.95	12.95	154.59	-1.12	-.001	0.01
7	13	0	0	0	154.35	-0.00	0.98	1.94	13.09	154.35	-1.21	-.002	0.01
7	14	0	0	0	154.10	-0.00	0.97	1.94	13.22	154.10	-1.30	-.002	0.01
7	15	0	0	0	153.86	-0.00	0.97	1.94	13.36	153.86	-1.39	-.002	0.01
7	16	0	0	0	153.63	-0.00	0.97	1.93	13.50	153.63	-1.48	-.002	0.01
7	17	0	0	0	153.39	-0.00	0.97	1.93	13.63	153.39	-1.56	-.002	0.01
7	18	0	0	0	153.16	0.00	0.97	1.93	13.77	153.16	-1.65	-.002	0.01
7	19	0	0	0	152.93	0.00	0.96	1.92	13.90	152.93	-1.74	-.003	0.01
7	20	0	0	0	152.71	0.00	0.96	1.92	14.03	152.71	-1.83	-.003	0.01
7	21	0	0	0	152.49	0.00	0.96	1.92	14.17	152.49	-1.92	-.003	0.01
7	22	0	0	0	152.27	0.00	0.96	1.91	14.30	152.27	-2.01	-.003	0.01
7	23	0	0	0	152.06	0.00	0.95	1.91	14.43	152.06	-2.10	-.003	0.01
7	24	0	0	0	151.86	0.00	0.95	1.91	14.56	151.86	-2.19	-.003	0.01
7	25	0	0	0	151.66	0.00	0.94	1.90	14.69	151.66	-2.28	-.004	0.01
7	26	0	0	0	151.46	0.00	0.94	1.90	14.82	151.46	-2.37	-.004	0.01
7	27	0	0	0	151.27	0.00	0.94	1.89	14.95	151.27	-2.46	-.004	0.01
7	28	0	0	0	151.09	0.00	0.93	1.87	15.08	151.09	-2.55	-.004	0.01
7	29	0	0	0	150.91	0.00	0.93	1.85	15.20	150.91	-2.64	-.004	0.01
7	30	0	0	0	150.74	0.00	0.92	1.88	15.32	150.74	-2.74	-.004	0.01
7	31	0	0	0	150.58	0.00	0.92	1.87	15.45	150.58	-2.83	-.005	0.01
8	1	0	0	0	150.43	0.00	0.92	1.87	15.56	150.43	-2.92	-.005	0.01
8	2	0	0	0	150.28	0.01	0.91	1.86	15.68	150.28	-3.01	-.005	0.01
8	3	0	0	0	150.14	0.01	0.91	1.86	15.79	150.14	-3.11	-.005	0.01
8	4	0	0	0	150.02	0.01	0.90	1.85	15.91	150.02	-3.20	-.005	0.01
8	5	0	0	0	149.90	0.01	0.90	1.84	16.01	149.90	-3.30	-.005	0.01
8	6	0	0	0	149.79	0.01	0.89	1.84	16.12	149.79	-3.39	-.006	0.01

8	7	0	0	0	149.69	0.01	0.88	1.83	16.22	149.69	-3.49	-.006	0.01
8	8	0	0	0	149.60	0.01	0.88	1.83	16.32	149.60	-3.58	-.006	0.01
8	9	0	0	0	149.53	0.01	0.87	1.82	16.41	149.53	-3.68	-.006	0.01
8	10	0	0	0	149.47	0.01	0.87	1.81	16.50	149.47	-3.78	-.006	0.01
8	11	0	0	0	149.42	0.01	0.86	1.81	16.58	149.42	-3.87	-.007	0.01
8	12	0	0	0	149.38	0.01	0.85	1.80	16.66	149.38	-3.97	-.007	0.01
8	13	0	0	0	149.36	0.01	0.85	1.79	16.73	149.36	-4.07	-.007	0.01
8	14	0	0	0	149.35	0.01	0.84	1.79	16.80	149.35	-4.17	-.007	0.01
8	15	0	0	0	149.36	0.01	0.83	1.78	16.86	149.36	-4.27	-.007	0.01
8	16	0	0	0	149.39	0.01	0.82	1.77	16.91	149.39	-4.37	-.007	0.01
8	17	0	0	0	149.43	0.01	0.82	1.77	16.96	149.43	-4.47	-.008	0.01
8	18	0	0	0	149.49	0.01	0.81	1.76	17.00	149.49	-4.57	-.008	0.01
8	19	0	0	0	149.58	0.01	0.80	1.75	17.02	149.58	-4.67	-.008	0.01
8	20	0	0	0	149.68	0.01	0.79	1.74	17.04	149.68	-4.77	-.008	0.01
8	21	0	0	0	149.80	0.01	0.78	1.74	17.05	149.80	-4.87	-.008	0.02
8	22	0	0	0	149.95	0.01	0.78	1.73	17.05	149.95	-4.97	-.009	0.02
8	23	0	0	0	150.12	0.01	0.77	1.72	17.03	150.12	-5.08	-.009	0.02
8	24	0	0	0	150.32	0.01	0.76	1.71	17.01	150.32	-5.18	-.009	0.02
8	25	0	0	0	150.54	0.01	0.75	1.70	16.96	150.54	-5.28	-.009	0.02
8	26	0	0	0	150.80	0.01	0.74	1.70	16.90	150.80	-5.39	-.009	0.02
8	27	0	0	0	151.08	0.01	0.73	1.69	16.83	151.08	-5.49	-.010	0.02
8	28	0	0	0	151.40	0.01	0.72	1.68	16.74	151.40	-5.60	-.010	0.02
8	29	0	0	0	151.76	0.02	0.71	1.67	16.62	151.76	-5.70	-.010	0.02
8	30	0	0	0	152.15	0.02	0.70	1.66	16.49	152.15	-5.80	-.010	0.02
8	31	0	0	0	152.58	0.02	0.69	1.65	16.33	152.57	-5.91	-.010	0.02

END OF FILE ON ORBIT TAPE

SUMMARY OF ERRORS FOR THIS JOB ERROR NUMBER NUMBER OF ERRORS

208 14

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IEC209I SDHELOA3 ORA16  0C1 TR=002.TS=000.EG=000.CL=047.N=000.SIO=01469
IEF142I  STEP WAS EXECUTED  - COND CODE 0000
IEF285I   M2.ZBRTC.SD002.LOAD                          KEPT        DDNAME=SYSLIB  -1        0 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS2.DEBLKUNV                                KEPT        DDNAME=SYSLIB  -2       17 EXCPS
IEF285I   VOL SER NOS= M2SYS2.
IEF285I   SYS1.FORTLIB                                 KEPT        DDNAME=SYSLIB  -3       61 EXCPS
IEF285I   VOL SER NOS= K3ITL0.
IEF285I   SYS2.FORTLIB                                 KEPT        DDNAME=SYSLIB  -4       28 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SYS1.PL1LIB                                  KEPT        DDNAME=SYSLIB  -5        0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS1.FORTSSP                                 KEPT        DDNAME=SYSLIB  -6        0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS2.COBLIB                                  KEPT        DDNAME=SYSLIB  -7        0 EXCPS
IEF285I   VOL SER NOS= M2SYS1.
IEF285I   SYS1.ALGLIB                                  KEPT        DDNAME=SYSLIB  -8        0 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SYS80045.T110249.SV000.SDHELOA3.R0000001     SYSOUT      DDNAME=SYSLOUT           1 EXCPS
IEF285I   VOL SER NOS= K3SCR6.
IEF285I   M2.ZBRTC.SD002.LOAD                          KEPT        DDNAME=SYSLIN  -1        7 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS80045.T110249.RV000.SDHELOA3.S0000008     SYSIN       DDNAME=FT05F001          2 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80045.T110249.RV000.SDHELOA3.S0000008     DELETED     DDNAME=FT05F001          2 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80045.T110249.SV000.SDHELOA3.R0000002     SYSOUT      DDNAME=FT06F001          2 EXCPS
IEF285I   VOL SER NOS= K3SCR6.
IEF285I   SYS80045.T110249.SV000.SDHELOA3.R0000003     DELETED     DDNAME=FT07F001          0 EXCPS
IEF285I   VOL SER NOS= K3SCR4.
IEF285I   SYS80045.T110249.SV000.SDHELOA3.R0000004     DELETED     DDNAME=SYSPRINT          0 EXCPS
IEF285I   VOL SER NOS= K3SCR6.
IEF285I   SYS80045.T110249.SV000.SDHELOA3.R0000005     DELETED     DDNAME=SYSTERM           0 EXCPS
IEF285I   VOL SER NOS= K3SCR6.
IEF285I   SYS80045.T110249.SV000.SDHELOA3.R0000006     DELETED     DDNAME=SYSUDUMP          0 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80045.T110249.RV000.SDHELOA3.R0000007     KEPT        DDNAME=GENTAP        1,481 EXCPS
IEF285I   VOL SER NOS= ORA16 .
IEF280E K 0C1,ORA16 .SDHELOA3,GO
IEF373I STEP /GO      / START 80045.1102
IEF374I STEP /GO      / STOP  80045.1105 CPU    0MIN 21.97SEC MAIN 200K LCS   0K
STEP 01        RETURN CODE = 0000                                STEP TIME =     .79 MINS=(CPU=     .36,IO=     .43)
                                  IO IN SECS. DISK=    11.07,DRUM=     .00,TAPE=    14.85,CELL=     .00,OTHR=     .16
- SURCHARGES=(DRIVES ALOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=00000)SECS.   TOTAL STP TIME=     .79 MINS.
      // EXEC NOTIFYTS
      XXDEFAULT  PROC MODE=,USRID=,MSG=,USERID=,ID=  NOTIFYTS, EAC/21JUN73     00000010
```

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********** 111 ********************************************************************** 111 **********

JOBNAME-
      ZZZZZZZZZZZZ  BBBBBBBB          JJJJJJ  HH        HH  BBBBBBBB     OOOOOOOOOO        AA        2222222222
      ZZZZZZZZZZZZ  BBBBBBBBB         JJJJJJ  HH        HH  BBBBBBBBB    OOOOOOOOOOOO       AA       222222222222
                ZZ  BB        BB          JJ  HH        HH  BB        BB  OO        OO      AAAA      22        22
              ZZ    BB        BB          JJ  HH        HH  BB        BB  OO        OO      AAAA                22
            ZZ      BB        BB          JJ  HH        HH  BB        BB  OO        OO     AA  AA              22
          ZZ        BBBBBBBBB             JJ  HHHHHHHHHHHH  BBBBBBBBB    OO        OO     AA  AA            22
        ZZ          BBBBBBBBB             JJ  HHHHHHHHHHHH  BBBBBBBBB    OO        OO    AA    AA          22
      ZZ            BB        BB          JJ  HH        HH  BB        BB  OO        OO    AAAAAAAA        22
    ZZ              BB        BB          JJ  HH        HH  BB        BB  OO        OO   AAAAAAAAAA     22
  ZZ                BB        BB  JJ      JJ  HH        HH  BB        BB  OO        OO   AA      AA    22
  ZZZZZZZZZZZZ      BBBBBBBBBB    JJJJJJJJ    HH        HH  BBBBBBBBBB    OOOOOOOOOOOO  AA        AA  222222222222
  ZZZZZZZZZZZZ      BBBBBBBBB      JJJJJJ     HH        HH  BBBBBBBBB     OOOOOOOOOO   AA        AA  222222222222

BOX-                                                  SACC 360/75      READER NUMBER-P0210          CLASS-
      BBBBBBBBB     FFFFFFFFFFFF    33333333                                                          AA
      BBBBBBBBB     FFFFFFFFFFFF   3333333333                                                         AA
      BB        BB  FF            33        33                                                        AAAA
      BB        BB  FF                      33                                                        AAAA
      BB        BB  FF                     33                                                        AA  AA
      BBBBBBBBB     FFFFFFFF           33333                                                        AA  AA
      BBBBBBBBB     FFFFFFFF           33333                                                        AA    AA
      BB        BB  FF                     33                                                        AAAAAAAA
      BB        BB  FF                      33                                                       AAAAAAAAAA
      BB        BB  FF            33        33                                                       AA      AA
      BBBBBBBBBB    FF            3333333333                                                         AA        AA
      BBBBBBBBBB    FF             33333333                                                          AA        AA
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ORA2Ø

9/1/76 – 9/30/76

```
XX                SPACE=(CYL,(0,1)),UNIT=(DISK,2)                          00000180
XXSYSTERM  DD  SYSOUT=&TERMOUT                                             00000190
IEF653I SUBSTITUTION JCL - SYSOUT=A
//SYSUDUMP DD SYSOUT=A                                                     00000200
//SYSUDUMP DD SYSOUT=A,SPACE=(CYL,(0,5))
//GO.GENTAP DD UNIT=(7TRACK,,DEFER),
//    VOL=SER=ORTAPE,LABEL=(,NL,,IN),DISP=(OLD,KEEP),
//    DCB=(RECFM=U,BLKSIZE=1544,DEN=2)
//DATAS DD *
IEF236I ALLOC. FOR ZBJHB2A2 GO
IEF237I 333   ALLOCATED TO SYSLIB
IEF237I 320   ALLOCATED TO
IEF237I 451   ALLOCATED TO
IEF237I 231   ALLOCATED TO
IEF237I 244   ALLOCATED TO
IEF237I 244   ALLOCATED TO
IEF237I 220   ALLOCATED TO
IEF237I 231   ALLOCATED TO
IEF237I 335   ALLOCATED TO SYSLOUT
IEF237I 333   ALLOCATED TO SYSLIN
IEF237I 335   ALLOCATED TO FT05F001
IEF237I 335   ALLOCATED TO FT06F001
IEF237I 335   ALLOCATED TO FT07F001
IEF237I 335   ALLOCATED TO SYSPRINT
IEF237I 232   ALLOCATED TO SYSPRINT
IEF237I 235   ALLOCATED TO SYSPRINT
IEF237I 335   ALLOCATED TO SYSTERM
IEF237I 335   ALLOCATED TO SYSUDUMP
IEF237I 000   ALLOCATED TO GENTAP
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CS/360 LOADER

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OPTIONS USED - PRINT,MAP,NOLET,CALL,RES,NOTERM,SIZE=194560,NAME=**GO
               EP=ORBIT
```

NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR
ORBIT	SD	AC810	CNVRTSCT*	SD	AD670	CNVRT *	LR	AD670	DBGEN *	SD	AD998	DBFEOV *	LR	AD858
FREAD *	SD	AD060	FREADB *	LR	ADF88	FWRITE *	LR	AE07C	REWIND *	LR	AE282	LEAVE *	LR	AE366
UNLOAD *	LR	AE41A	POSN *	LR	AE530	MOUNT *	LR	AE750	MEMBER *	LR	AE932	FTRAP *	LR	AEA22
FALLOW *	LR	AEAA0	FUNITABL*	SD	AFA60	FPL1 *	SD	AFB28	FDDNLIST*	SD	AFB30	FERMSG *	SD	AF838
IHCNAME *	SD	AFBA0	FRDNL# *	LR	AFBA0	FWRNL# *	LR	B01A4	IHCECOMH*	SD	B0670	IBCCM# *	LR	B0670
FDIOCS# *	LR	B072E	INTSWTCH*	LR	B1586	IHCCOMH2*	SD	B1508	SEQDASD *	LR	B1950	FTF *	SD	B1C38
ITISECT *	SD	B1CE8	ITI *	LR	B1CE8	FXFLT *	SD	B1D40	FIXFLT *	LR	B1D40	TRNSLTE *	SD	B1D88
TRANS *	LR	B1D88	BITST *	SD	B1E98	CNTGDATA*	LR	B1E98	QTOUN *	SD	B1FC8	IHCFCVTH*	SD	B2098
ADCON# *	LR	B2098	FCVADUTP*	LR	B2142	FCVLOUTP*	LR	B2102	FCVZOUTP*	LR	B2322	FCVIOUTP*	LR	B26D0
FCVEOUTP*	LR	B2BD2	FCVCOUTP*	LR	B2DEC	INT6SWCH*	LR	B30D3	IHCSFIOS*	SD	B3238	FIOCS# *	LR	B3238
FIOCSBEP*	LR	B323E	IHCFIOS2*	SD	B4160	IHCERRM *	SD	B4690	ERRMON *	LR	B4690	IHCERRB *	LR	B46A8
IHCEFNTH*	SD	B4C68	ARITH# *	LR	B4C68	ADJSWTCH*	LR	B5004	IHCJOPT *	SD	B51B0	IHCVATBL*	SD	B54D8
IHCETRCH*	SD	B5B10	IHCTRCH *	LR	B5B10	ERRTRA *	LR	B5B18						

```
TOTAL LENGTH    9590
ENTRY ADDRESS   AC810

                SATID  HELIOS-A      OORBIT TAPE #=CRA20
7409701 ORB              76 245 000000 274 000000 7639 01 761129 609 01 01 E7  X
```

HELIOS-A YEAR 1976. LAUNCH TIME 54492550. 0.

DATE MM	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	EARTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LET(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
9	1	0	0	0	153.05	0.02	0.68	1.64	16.15	153.05	-6.01	-.011	0.02
9	2	0	0	0	153.56	0.02	0.67	1.64	15.94	153.56	-6.11	-.011	0.02
9	3	0	0	0	154.13	0.02	0.66	1.63	15.70	154.13	-6.21	-.011	0.02
9	4	0	0	0	154.75	0.02	0.65	1.62	15.42	154.75	-6.31	-.011	0.02
9	5	0	0	0	155.42	0.02	0.64	1.61	15.11	155.42	-6.41	-.011	0.02
9	6	0	0	0	156.15	0.02	0.63	1.60	14.76	156.15	-6.51	-.012	0.02
9	7	0	0	0	156.94	0.02	0.61	1.59	14.37	156.94	-6.60	-.012	0.02
9	8	0	0	0	157.80	0.02	0.60	1.58	13.93	157.80	-6.69	-.012	0.02
9	9	0	0	0	158.74	0.02	0.59	1.57	13.44	158.74	-6.78	-.012	0.02
9	10	0	0	0	159.75	0.02	0.58	1.56	12.89	159.75	-6.86	-.012	0.02
9	11	0	0	0	160.85	0.02	0.57	1.55	12.28	160.85	-6.94	-.012	0.02
9	12	0	0	0	162.05	0.02	0.55	1.54	11.61	162.05	-7.01	-.013	0.02
9	13	0	0	0	163.34	0.02	0.54	1.53	10.86	163.34	-7.07	-.013	0.02
9	14	0	0	0	164.74	0.02	0.53	1.52	10.02	164.74	-7.13	-.013	0.02
9	15	0	0	0	166.26	0.02	0.51	1.51	9.10	166.26	-7.17	-.013	0.02
9	16	0	0	0	167.91	0.02	0.50	1.50	8.07	167.91	-7.21	-.013	0.02

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9 17  0  0  0   169.69   0.02   0.49   1.49   6.94   169.69   -7.22   -.013   0.02
9 18  0  0  0   171.63   0.02   0.48   1.48   5.68   171.63   -7.22   -.013   0.02
9 19  0  0  0   173.73   0.02   0.46   1.46   4.30   173.73   -7.20   -.013   0.03
9 20  0  0  0   176.01   0.02   0.45   1.45   2.76   176.01   -7.16   -.013   0.03
9 21  0  0  0   178.48   0.02   0.44   1.44   1.06   178.48   -7.09   -.013   0.03
9 22  0  0  0   181.16   0.02   0.42   1.43   0.82   178.84   -6.98   -.013   0.03
9 23  0  0  0   184.07   0.02   0.41   1.41   2.89   175.93   -6.84   -.013   0.03
9 24  0  0  0   187.23   0.02   0.40   1.40   5.17   172.77   -6.65   -.012   0.03
9 25  0  0  0   190.64   0.02   0.39   1.38   7.69   169.36   -6.42   -.012   0.03
9 26  0  0  0   194.33   0.02   0.37   1.37  10.45   165.67   -6.13   -.011   0.03
9 27  0  0  0   198.32   0.02   0.36   1.35  13.47   161.68   -5.77   -.011   0.03
9 28  0  0  0   202.61   0.02   0.35   1.33  16.77   157.39   -5.35   -.010   0.03
9 29  0  0  0   207.20   0.02   0.34   1.32  20.35   152.80   -4.85   -.009   0.03
9 30  0  0  0   212.10   0.02   0.33   1.30  24.22   147.90   -4.27   -.008   0.04

END OF FILE ON ORBIT TAPE


IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   M2.ZBRTC.SD002.LOAD                                  KEPT       DDNAME=SYSLIB  -1        0 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS2.OSBLKUNV                                        KEPT       DDNAME=SYSLIB  -2       17 EXCPS
IEF285I   VOL SER NOS= M2SYS2.
IEF285I   SYS1.FORTLIB                                         KEPT       DDNAME=SYSLIB  -3       61 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS2.FORTLIB                                         KEPT       DDNAME=SYSLIB  -4       28 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SYS1.PL1LIB                                          KEPT       DDNAME=SYSLIB  -5        0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS1.FORTSSP                                         KEPT       DDNAME=SYSLIB  -6        0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS2.COBLIB                                          KEPT       DDNAME=SYSLIB  -7        0 EXCPS
IEF285I   VOL SER NOS= M2SYS1.
IEF285I   SYS1.ALGLIB                                          KEPT       DDNAME=SYSLIB  -8        0 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SYS80042.T152208.RV000.ZBJHBCA2.R0000090             SYSOUT     DDNAME=SYSLOUT           1 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   M2.ZBRTC.SD002.LOAD                                  KEPT       DDNAME=SYSLIN  -1        7 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS80042.T152208.RV000.ZBJHBCA2.S0000097             SYSIN      DDNAME=FT05F001          2 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS80042.T152208.RV000.ZBJHBCA2.S0000097             DELETED    DDNAME=FT05F001          2 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS80042.T152208.SV000.ZBJHBCA2.R0000091             SYSOUT     DDNAME=FT06F001          1 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80042.T152208.SV000.ZBJHBCA2.R0000092             DELETED    DDNAME=FT07F001          0 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80042.T152208.SV000.ZBJHBCA2.R0000093             DELETED    DDNAME=SYSPRINT          0 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80042.T152208.SV000.ZBJHBCA2.R0000094             DELETED    DDNAME=SYSTERM           0 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80042.T152208.SV000.ZBJHBCA2.R0000095             DELETED    DDNAME=SYSUDUMP          0 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80042.T152208.RV000.ZBJHBCA2.R0000096             KEPT       DDNAME=GENTAP          702 EXCPS
IEF285I   VOL SER NOS= DRA20 .
IEF280E K 0C0.DRA20 .ZBJHBCA2.GO
IEF373I STEP /GO      / START 80042.1603
IEF374I STEP /GO      / STOP  80042.1611 CPU    0MIN 11.17SEC MAIN 200K LCS    0K
                                                                  STEP TIME =      .48 MINS=(CPU=      .18,IO=      .30)
- STEP 01 -      RETURN CODE = 0000
                                          IO IN SECS. DISK=    11.07,DRUM=      .00,TAPE=     7.06,CELL=      .00,CTHR=      .15
- SURCHARGES=(DRIVES ALOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=00000)SECS.   TOTAL STP TIME=      .48 MINS.  -
      // EXEC NOTIFYTS,ID=SDHEL
      XXDEFAULT   PROC MODE=,USRID=,MSG=,USERID=,ID=  NOTIFYTS. EAC/21JUN73   00000010
      ***         SEND BACKGROUND JOB REPORT TO TSO USER                      00000020
      XXNOTIFYTS EXEC PGM=NOTIFYTS,REGION=20K,COND=EVEN.                      00000030
      XX          PARM='&MODE,&USRID&USERID&ID,&MSG'                          00000040
      IEF653I SUBSTITUTION JCL - PARM='.SDHEL.'
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF373I STEP /NOTIFYTS/ START 80042.1611
IEF374I STEP /NOTIFYTS/ STOP  80042.1611 CPU    0MIN 00.05SEC MAIN    8K LCS    0K
                                                                  STEP TIME =      .00 MINS=(CPU=      .00,IO=      .00)
- STEP 02 -      RETURN CODE = 0000
                                          IO IN SECS. DISK=      .22,DRUM=      .00,TAPE=      .00,CELL=      .00,CTHR=      .06
- SURCHARGES=(DRIVES ALOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=00000)SECS.   TOTAL STP TIME=00000.00 MINS.  -
IEF375I  JOB /ZBJHBCA2/ START 80042.1603
IEF376I  JOB /ZBJHBCA2/ STOP  80042.1611 CPU    0MIN 11.22SEC
 SYSTEM=REL21.8F (04-01-79) K3                                                    TIME=16.11.30.75 DATE=02-11-80
                                                                  TOTAL TIME =     .48 MINS=(CPU=      .18,IO=      .30)
- JOB 0440-
                                          IO IN SECS. DISK=    11.30,DRUM=      .00,TAPE=     7.06,CELL=      .00,CTHR=      .22
- SURCHARGES=(DRIVES ALOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=00000)SECS.   TOTAL JOB TIME=      .48 MINS.  -
 THERE WERE 01 TAPES MOUNTED FOR THIS JOB. TAPE MOUNT CHARGE WAS 00.0 MINUTES.
```

```
********** 123 ************************************************************************ 123 ********

JOBNAME-
        SSSSSSSSSS   DDDDDDDDD     HH        HH  EEEEEEEEEEEE  LL          OOOOOOOOOO      AA          11
       SSSSSSSSSSSS  DDDDDDDDDD    HH        HH  EEEEEEEEEEEE  LL          OOOOOOOOOOOO     AA         111
       SS        SS  DD       DD   HH        HH  EE            LL          OO        OO    AAAA        1111
       SS            DD        DD  HH        HH  EE            LL          OO        OO    AAAA          11
       SSS           DD        DD  HH        HH  EE            LL          OO        OO   AA  AA         11
        SSSSSSSSS    DD        DD  HHHHHHHHHHHHH  EEEEEEEE      LL          OO        OO   AA  AA         11
         SSSSSSSSS   DD        DD  HHHHHHHHHHHHH  EEEEEEEE      LL          OO        OO  AA    AA        11
                SSS  DD        DD  HH        HH  EE            LL          OO        OO  AAAAAAAA        11
                 SS  DD        DD  HH        HH  EE            LL          OO        OO  AAAAAAAAAA      11
       SS        SS  DD       DD   HH        HH  EE            LL          OO        OO  AA      AA      11
       SSSSSSSSSSSS  DDDDDDDDDD    HH        HH  EEEEEEEEEEEE  LLLLLLLLLLLL  OOOOOOOOOOOO  AA      AA    111111
        SSSSSSSSSS   DDDDDDDDD     HH        HH  EEEEEEEEEEEE  LLLLLLLLLLLL   OOOOOOOOOO   AA      AA    111111

BOX-                                                  SACC 360/75      READER NUMBER-P0200          CLASS-
       BBBBBBBBB     FFFFFFFFFFFF     33333333                                                          AA
       BBBBBBBBBB    FFFFFFFFFFFF    3333333333                                                         AA
       BB       BB   FF            33        33                                                        AAAA
       BB       BB   FF                      33                                                        AAAA
       BB       BB   FF                     33                                                        AA  AA
       BBBBBBBBB     FFFFFFFF           33333                                                         AA  AA
       BBBBBBBBBB    FFFFFFFF           33333                                                        AA    AA
       BB       BB   FF                     33                                                        AAAAAAAA
       BB       BB   FF                      33                                                       AAAAAAAAAA
       BB       BB   FF            33        33                                                       AA      AA
       BBBBBBBBBB    FF            3333333333                                                       AA        AA
       BBBBBBBBBB    FF             33333333                                                        AA        AA
```

ORA24

10/1/76 - 10/31/76

```
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(BLKSIZE=7265,LRECL=137,RECFM=VBA),
XX            SPACE=(CYL,(0,1)),UNIT=(DISK,3)                          00000180
XXSYSTERM  DD  SYSOUT=&TERMOUT                                          00000190
IEF653I SUBSTITUTION JCL - SYSOUT=A
//SYSUDUMP DD SYSOUT=A
X/SYSUDUMP DD SYSOUT=A,SPACE=(CYL,(0,5))                                00000200
//GO.GENTAP DD UNIT=(7TRACK,,DEFER),
//    VOL=SER=ORTAPE,LABEL=(,NL,,IN),DISP=(OLD,KEEP),
//    DCB=(RECFM=U,BLKSIZE=1944,DEN=2)
//DATAS DD *
IEF236I ALLOC. FOR SDHELOA1 GO
IEF237I 333    ALLOCATED TO SYSLIB
IEF237I 320    ALLOCATED TO
IEF237I 451    ALLOCATED TO
IEF237I 231    ALLOCATED TO
IEF237I 244    ALLOCATED TO
IEF237I 244    ALLOCATED TO
IEF237I 220    ALLOCATED TO
IEF237I 231    ALLOCATED TO
IEF237I 336    ALLOCATED TO SYSLOUT
IEF237I 333    ALLOCATED TO SYSLIN
IEF237I 232    ALLOCATED TO FT05F001
IEF237I 336    ALLOCATED TO FT06F001
IEF237I 335    ALLOCATED TO FT07F001
IEF237I 336    ALLOCATED TO SYSPRINT
IEF237I 232    ALLOCATED TO SYSPRINT
IEF237I 235    ALLOCATED TO SYSPRINT
IEF237I 335    ALLOCATED TO SYSTERM
IEF237I 330    ALLOCATED TO SYSUDUMP
IEF237I 001    ALLOCATED TO GENTAP
```

```
                                        OS/360 LOADER

OPTIONS USED - PRINT,MAP,NOLET,CALL,RES,NOTERM,SIZE=194560,NAME=## GO
               EP=ORBIT

     NAME    TYPE  ADDR        NAME    TYPE  ADDR        NAME    TYPE  ADDR        NAME    TYPE  ADDR        NAME    TYPE  ADDR
  ORBIT       SD  A3810    CNVRTSCT*  SD  A4670    CNVRT    *  LR  A4670    DBGEN    *  SD  A4998    DBFEOV   *  LR  A4B58
  FREAD    *  SD  A4D60    FREADB   *  LR  A4EB8    FWRITE   *  LR  A507C    REWIND   *  LR  A5282    LEAVE    *  LR  A5366
  UNLOAD   *  LR  A541A    POSN     *  LR  A5530    MCUNT    *  LR  A5750    MEMBER   *  LR  A5932    FTRAP    *  LR  A5A22
  FALLO#   *  LR  A5AA0    FUNITABL*  SD  A6A60    FRL1     *  SD  A6B28    FDDNLIST*  SD  A6B30    FERMSG   *  SD  A6B38
  IHCNAMEL*  SD  A6BA0    PRDNL#   *  LR  A6BA0    FWRNL#   *  LR  A71A4    IHCECOMH*  SD  A7670    IOCCN#   *  LR  A7670
  FDIOCS#  *  LR  A772C    INTSWTCH#  LR  A8596    IHCCCMH2*  SD  A85D8    SEQDASD  *  LR  A8950    FIF      *  SD  A8C38
  ITISECT  *  SD  A8CE8    ITI      *  LR  A8CE8    FXFLT    *  SD  A8D40    FIXFLT   *  LR  A8D40    TRNSLTE  *  SD  A8D88
  TRANS    *  LR  A8D88    BITST    *  SD  A8E98    CNTGDATA*  LR  A8E98    DTDUN    *  SD  A8FC8    IHCFCVTH*  SD  A9098
  ADCON#   *  LR  A9098    FCVAOUTP*  LR  A9142    FCVLOUTP*  LR  A91D2    FCVZOUTP*  LR  A9322    FCVIOUTP*  LR  A96D0
  FCVEOUTP*  LR  A9BD2    ECVCOUTP*  LR  A9DEC    INTGSWCH*  LR  AA0D3    IHCEFICS*  SD  AA238    FIOCS#   *  LR  AA238
  FIOCSBEP*  LR  AA23E    IHCFIOS2*  SD  AB160    IHCERRM  *  SD  AB690    ERRMON   *  LR  AB690    IHCERRE  *  LR  AB6A8
  IHCETRCH*  SD  ABC68    ARITH#   *  LR  ABC68    ADJSWTCH*  LR  AC004    IHCJOPT  *  SD  AC1B0    IHCUATBL*  SD  AC4D8
  IHCETRCH*  SD  ACB10    IHCTRCH  *  LR  ACB10    ERRTRA   *  LR  ACB10

  TOTAL LENGTH     9590
  ENTRY ADDRESS  A3810
```

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                    SATID  HELIOS-A        00RBIT TAPE #=CRA24
          7409701 ORB              76 275 000000 305 000000 7613 01 770805 613 01 01 E7  X
```

```
                    HELIOS-A          YEAR 1976.          LAUNCH TIME    57084550.  04
```

DATE MM	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	ERTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LST(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
10	1	0	0	0	217.30	0.02	0.33	1.28	28.37	142.70	-3.62	-.007	0.04
10	2	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	2	0	30	0	222.88	0.01	0.32	1.25	32.87	137.12	-2.88	-.006	0.04
10	3	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	4	0	20	0	234.44	0.01	0.31	1.21	42.32	126.56	-1.26	-.003	0.04
10	5	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	5	0	50	0	240.58	0.01	0.31	1.18	47.39	119.42	-0.37	-.001	0.04
10	6	0	10	0	246.48	0.00	0.31	1.16	52.30	113.52	0.50	0.000	0.04
10	7	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	7	0	40	0	252.66	0.00	0.31	1.13	57.47	107.24	1.39	0.002	0.04
10	8	0	0	0	258.46	0.00	0.31	1.11	62.34	101.64	2.32	0.003	0.04
10	9	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	9	0	30	0	264.40	-0.01	0.32	1.08	67.23	95.60	3.03	0.005	0.04
10	10	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	11	0	20	0	275.31	-0.01	0.33	1.02	76.54	84.69	4.42	0.008	0.04

```
10 12  0  0  0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0
10 12  0 50  0    280.48    -0.01     0.34     0.99    80.91    79.52     5.01    0.009     0.03
10 13  0 10  0    285.12    -0.01     0.35     0.97    84.82    74.88     5.49    0.010     0.03
10 14  0  0  0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0
10 14  0 40  0    289.67    -0.02     0.36     0.94    88.66    70.53     5.92    0.010     0.03
10 15  0  0  0    293.70    -0.02     0.37     0.91    92.06    66.30     6.26    0.011     0.03
10 16  0  0  0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0
10 16  0 30  0    297.63    -0.02     0.38     0.89    95.35    62.37     6.55    0.012     0.03
10 17  0  0  0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0
10 18  0 20  0    304.46    -0.02     0.40     0.84   101.03    55.54     6.94    0.012     0.03
10 19  0  0  0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0
10 19  0 50  0    307.56    -0.02     0.42     0.81   103.58    52.44     7.07    0.013     0.03
10 20  0 10  0    310.27    -0.02     0.43     0.79   105.79    49.73     7.15    0.013     0.03
10 21  0  0  0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0
10 21  0 40  0    312.90    -0.02     0.44     0.77   107.91    47.10     7.20    0.013     0.03
10 22  0  0  0    315.21    -0.02     0.45     0.74   109.74    44.79     7.22    0.013     0.03
10 23  0  0  0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0
10 23  0 30  0    317.44    -0.02     0.47     0.72   111.48    42.56     7.22    0.013     0.03
10 24  0  0  0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0
10 25  0 20  0    321.28    -0.02     0.49     0.68   114.38    38.72     7.16    0.013     0.02
10 26  0  0  0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0
10 26  0 50  0    323.02    -0.02     0.51     0.66   115.63    36.98     7.11    0.013     0.02
10 27  0 10  0    324.54    -0.02     0.52     0.65   116.68    35.46     7.04    0.013     0.02
10 28  0  0  0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0
10 28  0 40  0    326.02    -0.02     0.53     0.63   117.65    33.98     6.97    0.013     0.02
10 29  0  0  0    327.31    -0.02     0.55     0.61   118.45    32.69     6.89    0.013     0.02
10 30  0  0  0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0
10 30  0 30  0    328.56    -0.02     0.56     0.59   119.17    31.44     6.79    0.012     0.02
10 31  0  0  0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0

END OF FILE ON ORBIT TAPE


IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   M2.ZBRTC.SD002.LOAD                          KEPT       DDNAME=SYSLIB  -1        0 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS2.DEBLKUNV                                KEPT       DDNAME=SYSLIB  -2       17 EXCPS
IEF285I   VOL SER NOS= M2SYS2.
IEF285I   SYS1.FORTLIB                                 KEPT       DDNAME=SYSLIB  -3       61 EXCPS
IEF285I   VOL SER NOS= K3ITL0.
IEF285I   SYS2.FORTLIB                                 KEPT       DDNAME=SYSLIB  -4       28 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SYS1.PL1LIB                                  KEPT       DDNAME=SYSLIB  -5        0 EXCPS
IEF285I   VOL SER NOS= K3ITL3.
IEF285I   SYS1.FORTSSP                                 KEPT       DDNAME=SYSLIB  -6        0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS2.COBLIB                                  KEPT       DDNAME=SYSLIB  -7        0 EXCPS
IEF285I   VOL SER NOS= M2SYS1.
IEF285I   SYS1.ALGLIB                                  KEPT       DDNAME=SYSLIB  -8        0 EXCPS
IEF285I   VOL SER NOS= K3SYS3.
IEF285I   SYS80037.T163839.SV000.SDHELCA1.R0000001     SYSOUT     DDNAME=SYSLOUT           1 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   M2.ZBRTC.SD002.LOAD                          KEPT       DDNAME=SYSLIN  -1        7 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS80037.T163839.RV000.SDHELCA1.S0000008     SYSIN      DDNAME=FT05F001          2 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80037.T163839.RV000.SDHELCA1.S00000C8     DELETED    DDNAME=FT05F001          2 EXCPS
IEF285I   VOL SER NOS= K3SCR3.
IEF285I   SYS80037.T163839.SV000.SDHELCA1.R0000002     SYSOUT     DDNAME=FT06F001          1 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS80037.T163839.SV000.SDHELCA1.R0000003     DELETED    DDNAME=FT07F001          0 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80037.T163839.SV000.SDHELCA1.R0000004     DELETED    DDNAME=SYSPRINT          0 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS80037.T163839.SV000.SDHELCA1.R0000005     DELETED    DDNAME=SYSTERM           0 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80037.T163839.SV000.SDHELCA1.R0000006     DELETED    DDNAME=SYSUDUMP          0 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS80037.T163839.RV000.SDHELCA1.R0000007     KEPT       DDNAME=GENTAP        1.035 EXCPS
IEF285I   VOL SER NOS= OFA24 .
IEF280E K 0C1,OFA24 ,SDHELCA1,SD
IEF373I STEP /GO      / START 80037.1639
IEF374I STEP /GO      / STOP  80037.1643 CPU    0MIN 13.84SEC MAIN 200K LCS    0K
- STEP 01 -      RETURN CODE = 0000                                STEP TIME =      .58 MINS=(CPU=      .23,IO=      .35)
                                        IO IN SECS. DISK=    11.07,DRUM=      .00,TAPE=    10.39,CELL=      .00,CTHR=      .16
- SURCHARGE3=(DRIVE3 ALOC=000,TAPE MOUNTS=000,CORE=000,PAPER=006,PRIORITY=000001SECS.    TOTAL STP TIME=      .58 MINS.
    // EXEC NOTIFYTS,ID=SDHEL
    XXDEFAULT  PROC MODE=,USRID=,MSG=,USERID=,ID=  NOTIFYTS, EAC/21JUN73      00000010
    ***        SEND BACKGROUND JOB REPORT TO TSO USER                         00000020
    XXNOTIFYTS EXEC PGM=NOTIFYTS,REGION=20K,COND=EVEN,                        00000030
```

```
JOBNAME-
        SSSSSSSSS3   DDDDDDDDD     HH         HH  EEEEEEEEEEEE  LL          CDDDDDDDDD       AA        2222222222
      SSSSSSSSSSS    DDDDDDDDD     HH         HH  EEEEEEEEEEEE  LL          CDDDDDDDDDDD     AA       222222222222
      SS        SS   DD      DD    HH         HH  EE            LL          CC      DD      AAAA      22        22
      SS             DD      DD    HH         HH  EE            LL          CC      DD      AAAA                22
      SSS            DD      DD    HH         HH  EE            LL          CC      DD     AA  AA              22
       SSSSSSSSS     DD      DD    HHHHHHHHHHHH   EEEEEEEE      LL          CC      DD     AA  AA            22
        SSSSSSSSS    DD      DD    HHHHHHHHHHHH   EEEEEEEE      LL          CC      DD     AA  AA          22
              SSS    DD      DD    HH         HH  EE            LL          CC      DD    AAAAAAAA        22
               SS    DD      DD    HH         HH  EE            LL          CC      DD    AAAAAAAAAA     22
      SS        SS   DD      DD    HH         HH  EE            LL          CC      DD    AA      AA     22
      SSSSSSSSSSS    DDDDDDDDD     HH         HH  EEEEEEEEEEEE  LLLLLLLLLLLL  CDDDDDDDDDDD  AA      AA     222222222222
       SSSSSSSSS     DDDDDDDDD     HH         HH  EEEEEEEEEEEE  LLLLLLLLLLLL   CDDDDDDDDD   AA      AA     222222222222

BOX-                                                  SACC 360775      READER NUMBER-P0207            CLASS-
      88888888E      FFFFFFFFFFFF     33333333                                                                  AA
      8888888888     FFFFFFFFFFFF    3333333333                                                                 AA
      88        88   FF             33        33                                                              AAAA
      88        88   FF                        33                                                              AAAA
      88        88   FF                        33                                                             AA  AA
      88888888E      FFFFFFFF            33333                                                                 AA  AA
      88888888E      FFFFFFFF            33333                                                                AA    AA
      88        88   FF                        33                                                             AAAAAAAA
      88        88   FF             33         33                                                            AAAAAAAAAA
      88        88   FF              3333333333                                                              AA      AA
      88888888888    FF               33333333                                                               AA      AA
```

ORA25

11/1/76 – 12/1/76

```
XXFTC7F001 DD SYSOUT=B,DCB=(RECFM=FB,BLKSIZE=7280,LRECL=80)                C0000160
XXSYSPRINT DD SYSOUT=6OUT,DCB=(BLKSIZE=6BLKSIZE,LRECL=137,RECFM=VBA),     C0000170
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(BLKSIZE=7265,LRECL=137,RECFM=VBA),
XX            SPACE=(CYL,(0,1)),UNIT=(DISK,3)                             C0000180
XXSYSTERM  DD  SYSOUT=6TERMOUT                                            C0000190
IEF653I SUBSTITUTION JCL - SYSOUT=A
//SYSUDUMP DD SYSOUT=A
XXSYSUDUMP DD SYSOUT=A,SPACE=(CYL,(0,5))                                  C0000200
//GO.GENTAP DD UNIT=(7TRACK,,DEFER),
//   VOL=SER=CRTAPE,LABEL=(,NL,,IN),DISP=(OLD,KEEP),
//    DCB=(RECFM=U,BLKSIZE=1944,DEN=2)
//DATAS DD *
IEF236I ALLOC. FOR SOHELOA2 GO
IEF237I 333   ALLOCATED TO SYSLIB
IEF237I 320   ALLOCATED TO
IEF237I 451   ALLOCATED TO
IEF237I 231   ALLOCATED TO
IEF237I 244   ALLOCATED TO
IEF237I 244   ALLOCATED TO
IEF237I 220   ALLOCATED TO
IEF237I 231   ALLOCATED TO
IEF237I 232   ALLOCATED TO SYSLOUT
IEF237I 333   ALLOCATED TO SYSLIN
IEF237I 232   ALLOCATED TO FT05F001
IEF237I 235   ALLOCATED TO FT06F001
IEF237I 336   ALLOCATED TO FT07F001
IEF237I 232   ALLOCATED TO SYSPRINT
IEF237I 235   ALLOCATED TO SYSPRINT
IEF237I 237   ALLOCATED TO SYSPRINT
IEF237I 336   ALLOCATED TO SYSTERM
IEF237I 335   ALLOCATED TO SYSUDUMP
IEF237I 0C1   ALLOCATED TO GENTAP
```

OS/360 LOADER

```
OPTIONS USED - PRINT,MAP,NOLET,CALL,RES,NOTERM,SIZE=194560,NAME=**GO
               EP=CRBIT

     NAME   TYPE  ADDR      NAME   TYPE  ADDR      NAME   TYPE  ADDR      NAME   TYPE  ADDR      NAME   TYPE  ADDR
  CRBIT      SD  63810   CNVRTSCT*  SD  64670   CNVRT   *  LR  64670   DBGEN   *  SD  64998   DBFECV  *  LR  64E58
  FREAD   *  SD  64XX0   FREADB  *  LR  64FB8   FWRITE  *  LR  65070   GETEND  *  LR  65282   LEAVE   *  LR  65366
  UNLOAD  *  LR  6541A   PCSN    *  LR  65530   MCONT   *  LR  65750   MEMBER  *  LR  65932   FTRAP   *  LR  65A22
  FALLOC  *  LR  65AA0   FUNITABL*  SD  66A60   FPL1    *  SD  66828   FDDNLIST*  SD  66330   FERMSG  *  SD  66E38
  IHCNAMEL*  SD  66BA0   FRONC*   *  LR  66BA0   FWRNC*  *  LR  67144   IHCECOMH*  SD  67670   IBCOM*  *  LR  67670
  FOICCS* *  LR  6772C   INTSWTCH*  LR  68586   IHCCOMH2*  SD  68608   SEQDASD *  LR  68950   FTF     *  SD  68C38
  ITISECT *  SD  69CB8   ITI     *  LR  68CE8   FXFLT   *  SD  69040   FIXFLT  *  LR  68D40   TRNSLTE *  SD  68D88
  TRANS   *  LR  68DB8   BITST   *  SD  68E98   CNTGDATA*  LR  68E98   DTDUN   *  SD  68FC8   IHCFCVTH*  SD  69C98
  ADCON*  *  LR  65098   FCVACUTP*  LR  69142   FCVLOUTP*  LR  69102   FCVZOUTP*  LR  69322   FCVICUTP*  LR  69ED0
  FCVEOUTP*  LR  69DD2   FCVCOUTP*  LR  69DEC   INTSSWCH*  LR  6A0D3   IHCEFIBC*  SD  6A238   FIOCS*   *  LR  6A238
  FIOCSREP*  LR  6A23E   IHCFIO32*  SD  6E160   IHCERRM *  SD  6E690   ERRMON  *  LR  6E690   IHCERRE *  LR  6E6A8
  IHCEFNTH*  SD  6EC68   ARITH*   *  LR  6EC68   ADJSWTCH*  LR  6C004   IHCUOPT *  SD  6C180   IHCUATBL*  SD  6C4D8
  IHCETRCH*  SD  6CB10   IHCTRCM  *  LR  6CB10   ERRTRA  *  LR  6CB18

  TOTAL LENGTH    5590
  ENTRY ADDRESS  63810

                    SATID  HELIOS-A        OCRBIT TAPE #=ORA25
          7409701 ORB              76 306 000000 336 000000 7614 01 770805 614 01 01 E7  X

                    HELIOS-A          YEAR 1976.          LAUNCH TIME   55762950.  0.
```

DATE MM	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	ERTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LET(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
11	1	0	0	0	330.70	-0.02	0.58	0.56	120.23	29.30	6.60	0.012	0.02
11	2	0	0	0	331.65	-0.02	0.59	0.55	120.60	28.35	6.49	0.012	0.02
11	3	0	0	0	332.53	-0.02	0.61	0.53	120.87	27.47	6.39	0.012	0.02
11	4	0	0	0	333.33	-0.02	0.62	0.52	121.05	26.67	6.28	0.012	0.02
11	5	0	0	0	334.06	-0.02	0.63	0.51	121.12	25.94	6.17	0.011	0.02
11	6	0	0	0	334.74	-0.02	0.64	0.49	121.11	25.26	6.05	0.011	0.02
11	7	0	0	0	335.35	-0.02	0.65	0.48	121.01	24.65	5.94	0.011	0.02
11	8	0	0	0	335.91	-0.02	0.66	0.47	120.81	24.09	5.82	0.011	0.02
11	9	0	0	0	336.42	-0.02	0.67	0.46	120.54	23.58	5.71	0.011	0.02
11	10	0	0	0	336.85	-0.02	0.68	0.45	120.18	23.12	5.59	0.010	0.02
11	11	0	0	0	337.30	-0.02	0.69	0.44	119.74	22.70	5.48	0.010	0.02

```
11 12  0  0  0   337.67   -0.02   0.71   0.43   119.23   22.33   5.36   0.010   0.02
11 13  0  0  0   338.01   -0.02   0.72   0.42   118.64   21.99   5.25   0.010   0.02
11 14  0  0  0   338.31   -0.02   0.72   0.41   117.98   21.69   5.13   0.010   0.02
11 15  0  0  0   338.57   -0.02   0.73   0.41   117.26   21.43   5.02   0.009   0.02
11 16  0  0  0   338.80   -0.02   0.74   0.40   116.47   21.20   4.91   0.009   0.02
11 17  0  0  0   339.00   -0.02   0.75   0.39   115.61   21.00   4.79   0.009   0.02
11 18  0  0  0   339.17   -0.02   0.76   0.39   114.70   20.83   4.68   0.009   0.02
11 19  0  0  0   339.31   -0.02   0.77   0.38   113.74   20.69   4.57   0.009   0.02
11 20  0  0  0   339.43   -0.02   0.78   0.38   112.73   20.57   4.46   0.009   0.02
11 21  0  0  0   339.52   -0.02   0.79   0.37   111.68   20.48   4.35   0.008   0.01
11 22  0  0  0   339.58   -0.02   0.80   0.37   110.59   20.42   4.24   0.008   0.01
11 23  0  0  0   339.63   -0.02   0.80   0.36   109.46   20.37   4.13   0.008   0.01
11 24  0  0  0   339.65   -0.02   0.81   0.36   108.31   20.35   4.02   0.008   0.01
11 25  0  0  0   339.66   -0.02   0.82   0.36   107.13   20.34   3.92   0.008   0.01
11 26  0  0  0   339.64   -0.02   0.83   0.36   105.93   20.36   3.81   0.007   0.01
11 27  0  0  0   339.61   -0.02   0.83   0.36   104.73   20.39   3.70   0.007   0.01
11 28  0  0  0   339.56   -0.02   0.84   0.35   103.51   20.44   3.60   0.007   0.01
11 29  0  0  0   339.50   -0.02   0.85   0.35   102.30   20.50   3.50   0.007   0.01
11 30  0  0  0   339.41   -0.02   0.86   0.35   101.08   20.59   3.39   0.007   0.01
12  1  0  0  0   339.32   -0.02   0.86   0.35    99.87   20.68   3.29   0.006   0.01
END OF FILE ON ORBIT TAPE


IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   M2.ZBRTC.S0002.LOAD                          KEPT        DDNAME=SYSLIB  -1        0 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS2.DEBLKUNV                                KEPT        DDNAME=SYSLIB  -2       17 EXCPS
IEF285I   VOL SER NOS= M2SYS2.
IEF285I   SYS1.FORTLIB                                 KEPT        DDNAME=SYSLIB  -3       61 EXCPS
IEF285I   VOL SER NOS= K3ITL0.
IEF285I   SYS2.FORTLIB                                 KEPT        DDNAME=SYSLIB  -4       28 EXCPS
IEF285I   VOL SER NOS= K3SY32.
IEF285I   SYS1.PL1LIB                                  KEPT        DDNAME=SYSLIB  -5        0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS1.FORTSSP                                 KEPT        DDNAME=SYSLIB  -6        0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS2.COBLIB                                  KEPT        DDNAME=SYSLIB  -7        0 EXCPS
IEF285I   VOL SER NOS= M2SYS1.
IEF285I   SYS1.ALGLIB                                  KEPT        DDNAME=SYSLIB  -8        0 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SYS80037.T164859.RV000.SDHELCA2.R0000013     SYSOUT      DDNAME=SYSLOUT           1 EXCPS
IEF285I   VOL SER NOS= K3SCR3.
IEF285I   M2.ZBRTC.S0002.LOAD                          KEPT        DDNAME=SYSLIN  -1        7 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS80037.T164859.RV000.SDHELCA2.S0000020     SYSIN       DDNAME=FT05F001          2 EXCPS
IEF285I   VOL SER NOS= K3SCR3.
IEF285I   SYS80037.T164859.RV000.SDHELCA2.S0000020     DELETED     DDNAME=FT05F001          2 EXCPS
IEF285I   VOL SER NOS= K3SCR3.
IEF285I   SYS80037.T164859.SV000.SDHELCA2.R0000014     SYSOUT      DDNAME=FT06F001          1 EXCPS
IEF285I   VOL SER NOS= K3SCR6.
IEF285I   SYS80037.T164859.SV000.SDHELCA2.R0000015     DELETED     DDNAME=FT07F001          0 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS80037.T164859.SV000.SDHELCA2.R0000016     DELETED     DDNAME=SYSPRINT          0 EXCPS
IEF285I   VOL SER NOS= K3SCR3.
IEF285I   SYS80037.T164859.SV000.SDHELCA2.R0000017     DELETED     DDNAME=SYSTERM           0 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS80037.T164859.SV000.SDHELCA2.R0000018     DELETED     DDNAME=SYSUDUMP          0 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80037.T164859.RV000.SDHELCA2.R0000019     KEPT        DDNAME=GENTAP          906 EXCPS
IEF285I   VOL SER NOS= ORA25 .
IEF283E K 0C1.ORA25 .SDHELCA2.CO
IEF373I STEP /GO      / START 80037.1651
IEF374I STEP /GO      / STOP  80037.1658 CPU    0MIN 13.72SEC MAIN 200K LCS    CK
- STEP 01 -      RETURN CODE = 0000
                                   IO IN SECS. DISK=     11.12,DRUM=      .00,TAPE=      .55 MINS=(CPU=      .22,IO=      .33)
                                                                  STEP TIME =      9.10,CELL=      .00,OTHR=      .16
- SURCHARGES=(DRIVES ALOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=C0000)SECS.   TOTAL STP TIME=      .55 MINS.
   // EXEC NOTIFYTS,ID=SDHEL
   XXDEFAULT   PROC MODE=,USRID=,MSG=,USERID=,ID=  NOTIFYTS. EAC/21JUN73      C0000010
   ***         SEND BACKGROUND JOB REPORT TO TSO USER                         00000020
   XXNOTIFYTS EXEC PGM=NOTIFYTS,REGION=20K,COND=EVEN,                         C0000030
   XX          PARM='&MODE,&USRID&USERID&ID,&MSG'                             00000040
   IEF653I SUBSTITUTION JCL - PARM=',SDHEL,'
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF373I STEP /NOTIFYTS/ START 80037.1659
IEF374I STEP /NOTIFYTS/ STOP  80037.1659 CPU    0MIN 00.05SEC MAIN   8K LCS    0K
- STEP 02 -      RETURN CODE = 0000
                                   IO IN SECS. DISK=      .22,DRUM=      .00,TAPE=      .00 MINS=(CPU=      .00,IO=      .00)
                                                                  STEP TIME =      .00,CELL=      .00,OTHR=      .06
- SURCHARGES=(DRIVES ALOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=C0000)SECS.   TOTAL STP TIME=00000.00 MINS.
IEF375I   JOB /SDHELCA2/ START 80037.1651
```

```
********** 20 ************************************************************************************ 40 ********

JOBNAME-
     SSSSSSSSSS   DDDDDDDDD     HH        HH  EEEEEEEEEEEE  LL          CCCCCCCCCC       AA        33333333
   SSSSSSSSSSSS   DDDDDDDDDD    HH        HH  EEEEEEEEEEEE  LL          CCCCCCCCCCCC     AA       3333333333
   SS        SS   DD       DD   HH        HH  EE            LL          CC        CC    AAAA     33        33
   SS             DD       DD   HH        HH  EE            LL          CC        CC    AAAA              33
   SSS            DD       DD   HH        HH  EE            LL          CC        CC    AA  AA          33333
    SSSSSSSSS     DD       DD   HHHHHHHHHHHH  EEEEEEEE      LL          CC        CC    AA    AA        33333
     SSSSSSSSS    DD       DD   HHHHHHHHHHHH  EEEEEEEE      LL          CC        CC    AAAAAAAA            33
          SSS     DD       DD   HH        HH  EE            LL          CC        CC    AAAAAAAAAA          33
           SS     DD       DD   HH        HH  EE            LL          CC        CC    AA        AA    33        33
   SS      SS     DD       DD   HH        HH  EE            LL          CCCCCCCCCCCC   AA        AA    3333333333
   SSSSSSSSSSSS   DDDDDDDDDD    HH        HH  EEEEEEEEEEEE  LLLLLLLLLLLL  CCCCCCCCCC     AA        AA     33333333
     SSSSSSSSSS   DDDDDDDDD     HH        HH  EEEEEEEEEEEE  LLLLLLLLLLLL    CCCCCCCCC    AA        AA

                                                  SACC 36C/75      READER NUMBER=P0235          CLASS-
BOX-                                                                                                  AA
   88888888    FFFFFFFFFFFF    33333333                                                               AA
   8888888888  FFFFFFFFFFFF   3333333333                                                             AAAA
   88      88  FF            33        33                                                            AAAA
   88      88  FF                       33                                                           AA  AA
   88      88  FF                       33                                                           AA  AA
   88888888    FFFFFFFF          33333                                                              AA    AA
   88888888    FFFFFFFF          33333                                                              AAAAAAAA
   88      88  FF                     33                                                            AAAAAAAAAA
   88      88  FF                     33                                                            AA      AA
   88      88  FF            33        33                                                            AA      AA
   8888888888  FF             3333333333                                                             AA      AA
   8888888888  FF              33333333
```

ORA26

12/1/76-12/31/76

```
XXFT07F001 DD SYSOUT=B,DCB=(RECFM=FB,BLKSIZE=7280,LRECL=80)                00000160
XXSYSPRINT DD SYSOUT=COUT,DCB=(BLKSIZE=6BLKSIZE,LRECL=137,RECFM=VBA),     00000170
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(BLKSIZE=7265,LRECL=137,RECFM=VBA),
XX          SPACE=(CYL,(0,1)),UNIT=(DISK,3)                               00000180
XXSYSTERM   DD   SYSOUT=STERMOUT                                          00000190
IEF653I SUBSTITUTION JCL - SYSOUT=A
//SYSUDUMP DD SYSOUT=A
XXSYSUDUMP DD SYSOUT=A,SPACE=(CYL,(0,5))                                  00000200
//GO.GENTAP DD UNIT=(7TRACK,,DEFER),
//     VOL=SER=CRTAPE,LABEL=(,NL,,IN),DISP=(OLD,KEEP),
//    DCB=(RECFM=U,BLKSIZE=1944,DEN=2)
//DATA5 DD *
IEF236I ALLOC. FOR SDHELOA3 GO
IEF237I 333    ALLOCATED TO SYSLIB
IEF237I 320    ALLOCATED TO
IEF237I 451    ALLOCATED TO
IEF237I 231    ALLOCATED TO
IEF237I 244    ALLOCATED TO
IEF237I 244    ALLOCATED TO
IEF237I 220    ALLOCATED TO
IEF237I 231    ALLOCATED TO
IEF237I 335    ALLOCATED TO SYSLOUT
IEF237I 333    ALLOCATED TO SYSLIN
IEF237I 232    ALLOCATED TO FT05F001
IEF237I 336    ALLOCATED TO FT06F001
IEF237I 232    ALLOCATED TO FT07F001
IEF237I 335    ALLOCATED TO SYSPRINT
IEF237I 232    ALLOCATED TO SYSPRINT
IEF237I 235    ALLOCATED TO SYSPRINT
IEF237I 336    ALLOCATED TO SYSTERM
IEF237I 335    ALLOCATED TO SYSUDUMP
IEF237I 0C1    ALLOCATED TO GENTAP
```

OS/360 LOADER

```
OPTIONS USED - PRINT,MAP,NOLET,CALL,RES,NOTERM,SIZE=194560,NAME=**GO
               EP=ORBIT
```

NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR
ORBIT	SD	B5010	CNVRTSCT*	SD	B5E70	CNVRT *	LR	B5E70	DBGEN *	SD	B6198	DBFEOV *	LR	B6358
FREAD *	SD	B6560	FREADB *	LR	B6768	FWRITE *	LR	B6B7C	REWIND *	LR	B6B82	LEAVE *	LR	B6E66
UNLOAD *	LR	B6C1A	POSN *	LR	B6D30	MCOUNT *	LR	B6F50	MEMBER *	LR	B7132	FTRAP *	LR	B7222
FALLOW *	LR	B72A0	FUNITABL*	SD	B8260	FPL1 *	SD	B8328	FODNLIST*	SD	B8330	FERMSG *	SD	B8338
IHCNAMEL*	SD	B83A0	FRONL* *	LR	B83A0	FWRNL* *	LR	B85A*	IHCECCRH*	SD	B8E70	IBCOM# *	LR	B8E70
FDICCS# *	LR	B8F2C	INTSWTCH*	LR	B9DB6	IHCCORH2*	SD	B9DD8	SEGDASD *	LR	BA153	FTF *	SD	BA438
ITISECT *	SD	BA4E8	ITI *	LR	BA4E8	FXFLT *	SD	BA540	FIXFLT *	LR	BA540	TRNSLTE *	SD	BA588
TRANS *	LR	BA588	BITST *	SD	BA698	CNTGDATA*	LR	BA698	DTOUN *	SD	BA7C8	IHCFCVTH*	SD	BA898
ADCON# *	LR	BA898	FCVACUTP*	LR	BA942	FCVLOUTP*	LR	BA9D2	FCVZOUTP*	LR	BAB22	FCVIOUTP*	LR	BAEDC
FCVEOUTP*	LR	BB392	FCVGOUTP*	LR	BB5EC	INTGSACH*	LR	BBBD3	IHCEFIOS*	SD	BB438	FIOCS# *	LR	BB438
FIOCSBEP*	LR	BBA3E	IHCFIO32*	SD	BC960	IHCERRM *	SD	BCE90	ERRMON *	LR	BCE90	IHCERRE *	LR	BCEA8
IHCEFNTH*	SD	BD468	ARITH# *	LR	BD468	ADJSWTCH*	LR	BD8D4	IHCUOPT *	SD	BD9B0	IHCUATBL*	SD	BDCD8
IHCETRCH*	SD	BE310	IHCTRCH *	LR	BE310	ERRTRA *	LR	BE319						

```
TOTAL LENGTH     9590
ENTRY ADDRESS    B5010
```

```
                SATID  HELIOS-A        DORBIT TAPE #=DRA26
        7409701 CF3            76 336 000000 366 000000 7615 01 77C8C8 615 01 01 E7  X
```

```
                HELIOS-A          YEAR 1976,          LAUNCH TIME   (2354950,  0,
```

DATE MM	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	EARTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LET(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
12	1	0	0	0	339.32	-0.02	0.86	0.35	99.87	20.68	3.29	0.006	0.01
12	2	0	0	0	339.21	-0.02	0.87	0.35	98.68	20.79	3.19	0.006	0.01
12	3	0	0	0	339.09	-0.02	0.87	0.35	97.50	20.91	3.09	0.006	0.01
12	4	0	0	0	338.95	-0.01	0.88	0.36	96.34	21.05	2.99	0.006	0.01
12	5	0	0	0	338.80	-0.01	0.89	0.36	95.20	21.20	2.89	0.006	0.01
12	6	0	0	0	338.64	-0.01	0.89	0.36	94.09	21.36	2.79	0.006	0.01
12	7	0	0	0	338.47	-0.01	0.90	0.36	93.00	21.53	2.69	0.005	0.01
12	8	0	0	0	338.29	-0.01	0.90	0.36	91.95	21.71	2.59	0.005	0.01
12	9	0	0	0	338.10	-0.01	0.91	0.37	90.92	21.90	2.50	0.005	0.01
12	10	0	0	0	337.90	-0.01	0.91	0.37	89.93	22.10	2.40	0.005	0.01
12	11	0	0	0	337.69	-0.01	0.92	0.37	88.97	22.31	2.30	0.005	0.01

```
12 12  0  0  0   337.48   -0.01   0.92   0.38   88.05   22.52   2.21   0.005   0.01
12 13  0  0  0   337.25   -0.01   0.93   0.38   87.16   22.75   2.11   0.004   0.01
12 14  0  0  0   337.02   -0.01   0.93   0.39   86.31   22.98   2.02   0.004   0.01
12 15  0  0  0   336.78   -0.01   0.94   0.39   85.49   23.22   1.92   0.004   0.01
12 16  0  0  0   336.53   -0.01   0.94   0.39   84.78   23.47   1.83   0.004   0.01
12 17  0  0  0   336.28   -0.01   0.94   0.40   83.55   23.72   1.74   0.004   0.01
12 18  0  0  0   336.02   -0.01   0.95   0.40   83.24   23.98   1.64   0.004   0.01
12 19  0  0  0   335.75   -0.01   0.95   0.41   82.55   24.23   1.55   0.003   0.01
12 20  0  0  0   335.48   -0.01   0.95   0.41   81.90   24.52   1.46   0.003   0.01
12 21  0  0  0   335.20   -0.01   0.96   0.42   81.29   24.80   1.37   0.003   0.01
12 22  0  0  0   334.92   -0.01   0.96   0.42   80.70   25.08   1.28   0.003   0.01
12 23  0  0  0   334.64   -0.01   0.96   0.43   80.14   25.36   1.19   0.003   0.01
12 24  0  0  0   334.34   -0.01   0.96   0.43   79.61   25.65   1.10   0.003   0.01
12 25  0  0  0   334.05   -0.01   0.97   0.44   79.12   25.95   1.01   0.002   0.01
12 26  0  0  0   333.75   -0.01   0.97   0.44   78.64   26.25   0.92   0.002   0.01
12 27  0  0  0   333.45   -0.01   0.97   0.45   78.20   26.55   0.83   0.002   0.01
12 28  0  0  0   333.15   -0.01   0.97   0.45   77.78   26.85   0.74   0.002   0.01
12 29  0  0  0   332.84   -0.01   0.98   0.46   77.39   27.16   0.65   0.002   0.01
12 30  0  0  0   332.53   -0.01   0.98   0.47   77.02   27.47   0.56   0.002   0.01
12 31  0  0  0   332.22   -0.01   0.98   0.47   76.68   27.78   0.47   0.001   0.01

END OF FILE ON ORBIT TAPE

IEC209I SDHELOA3 ORA26  0C1 TR=001,TW=000,EG=000,CL=000,N=000,SIO=00904
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   M2.ZORTC.SD002.LCAD                          KEPT      DDNAME=SYSLIB  -1      0 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS2.DEBLKUNV                                KEPT      DDNAME=SYSLIB  -2     17 EXCPS
IEF285I   VOL SER NOS= M2SYS2.
IEF285I   SYS1.FORTLIB                                 KEPT      DDNAME=SYSLIB  -3     61 EXCPS
IEF285I   VOL SER NOS= K3ITL0.
IEF285I   SYS2.FORTLIB                                 KEPT      DDNAME=SYSLIB  -4     28 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SYS1.PL1LIB                                  KEPT      DDNAME=SYSLIB  -5      0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS1.FORTSSP                                 KEPT      DDNAME=SYSLIB  -6      0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS2.COBLIB                                  KEPT      DDNAME=SYSLIB  -7      0 EXCPS
IEF285I   VOL SER NOS= M2SYS1.
IEF285I   SYS1.ALGLIB                                  KEPT      DDNAME=SYSLIB  -8      0 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SYS80037.T164536.SV000.SDHELOA3.R0000012     SYSOUT    DDNAME=SYSLOUT         1 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   M2.ZORTC.SD002.LCAD                          KEPT      DDNAME=SYSLIN  -1      7 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS80037.T164536.RV000.SDHELOA3.S0000019     SYSIN     DDNAME=FT05F001        2 EXCPS
IEF285I   VOL SER NOS= K3SCR3.
IEF285I   SYS80037.T164536.RV000.SDHELOA3.S0000019     DELETED   DDNAME=FT05F001        2 EXCPS
IEF285I   VOL SER NOS= K3SCR3.
IEF285I   SYS80037.T164536.SV000.SDHELOA3.R0000013     SYSOUT    DDNAME=FT06F001        1 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS80037.T164536.SV000.SDHELOA3.R0000014     DELETED   DDNAME=FT07F001        0 EXCPS
IEF285I   VOL SER NOS= K3SCR3.
IEF285I   SYS80037.T164536.SV000.SDHELOA3.R0000015     DELETED   DDNAME=SYSPRINT        0 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80037.T164536.SV000.SDHELOA3.R0000016     DELETED   DDNAME=SYSTERM         0 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS80037.T164536.SV000.SDHELOA3.R0000017     DELETED   DDNAME=SYSUDUMP        0 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80037.T164536.RV000.SDHELOA3.R0000018     KEPT      DDNAME=GENTAP        906 EXCPS
IEF285I   VOL SER NOS= ORA26 .
IEF280E K 0C1,ORA26 ,SDHELOA3,GO
IEF373I STEP /GO      / START 80037.1647
IEF374I STEP /GO      / STOP  80037.1650 CPU    0MIN 12.40SEC MAIN 200K LCS    0K
- STEP 01 -      RETURN CODE = 0000                                STEP TIME =      .53 MINS=(CPU=      .20,IO=      .33)
                                          IO IN SECS. DISK=    11.17,DRUM=      .00,TAPE=     9.10,CELL=      .00,OTHR=      .16
- SURCHARGES=(DRIVES ALOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=00000)SECS.    TOTAL STP TIME=      .53 MINS.
      // EXEC NOTIFYTS,ID=SDHEL                                                                  00000010
      XXDEFAULT  PROC MODE=,USRID=,MSG=,USERID=,ID=   NOTIFYTS. EAC/21JUN73                      00000020
      ***        SEND BACKGROUND JOB REPORT TO TSO USER                                          00000030
      XXNOTIFYTS EXEC PGM=NOTIFYTS,REGION=20K,COND=EVEN.                                         00000040
      XX         PARM='&MODE,&USRID&USERID&ID,&MSG'
      IEF653I SUBSTITUTION JCL - PARM=',SDHEL,'
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF373I STEP /NOTIFYTS/ START 80037.1650
IEF374I STEP /NOTIFYTS/ STOP  80037.1651 CPU    0MIN 00.02SEC MAIN    8K LCS    0K
- STEP 02 -      RETURN CODE = 0000                                STEP TIME =      .00 MINS=(CPU=      .00,IO=      .00)
                                          IO IN SECS. DISK=      .22,DRUM=      .00,TAPE=      .00,CELL=      .00,OTHR=      .00
- SURCHARGES=(DRIVES ALOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=00000)SECS.    TOTAL STP TIME=00000.00 MINS.
```

```
********** 33 ************************************************************************************ 33 *********

JOBNAME-
      SSSSSSSSSS   DDDDDDDDD     HH        HH  EEEEEEEEEEEE  LL          CCCCCCCCCC      AA            444
     SSSSSSSSSSSS  DDDDDDDDDD    HH        HH  EEEEEEEEEEEE  LL         CCCCCCCCCCCC     AA           4444
     SS        SS  DD       DD   HH        HH  EE            LL         CC        CC     AAAA         44 44
     SS            DD        DD  HH        HH  EE            LL         CC        CC     AAAA        44  44
     SSS           DD        DD  HH        HH  EE            LL         CC        CC    AA  AA      44   44
      SSSSSSSSS    DD        DD  HHHHHHHHHHHH  EEEEEEEE      LL         CC        CC    AA  AA     44    44
       SSSSSSSSS   DD        DD  HHHHHHHHHHHH  EEEEEEEE      LL         CC        CC   AA    AA    44     44
            SSS    DD        DD  HH        HH  EE            LL         CC        CC   AAAAAAAA   444444444444
             SS    DD        DD  HH        HH  EE            LL         CC        CC  AAAAAAAAAA  444444444444
     SS        SS  DD       DD   HH        HH  EE            LL         CC        CC  AA      AA          44
     SSSSSSSSSSSS  DDDDDDDDDD    HH        HH  EEEEEEEEEEEE  LLLLLLLLLLLL  CCCCCCCCCCCC  AA      AA          44
      SSSSSSSSSS   DDDDDDDDD     HH        HH  EEEEEEEEEEEE  LLLLLLLLLLLL   CCCCCCCCCC   AA      AA          44

BOX-                                                  SACC 360/75      READER NUMBER-P0212          CLASS-
     BBBBBBBBE     FFFFFFFFFFFF    33333333                                                          AA
     BBBBBBBBEB    FFFFFFFFFFFF   3333333333                                                         AA
     BB       BB   FF            33        33                                                        AAAA
     BB       BB   FF                      33                                                        AAAA
     BB      EB    FF                     33                                                        AA  AA
     BBBBBBBBE     FFFFFFFF           33333                                                         AA  AA
     BBBBBBBBEB    FFFFFFFF           33333                                                        AA    AA
     BB       BB   FF                     33                                                       AAAAAAAA
     BB        BB  FF                      33                                                     AAAAAAAAAA
     BB        BB  FF            33        33                                                     AA      AA
     BBBBBBBBEB    FF             3333333333                                                     AA        AA
     BBBBBBBBEB    FF              33333333                                                      AA        AA
```

ORA27

1/1/77 – 1/31/77

```
XXFT07F001 DD SYSOUT=E,DCB=(RECFM=FB,BLKSIZE=7280,LRECL=80)          00000160
XXSYSPRINT DD SYSOUT=&OUT,DCB=(BLKSIZE=&BLKSIZE,LRECL=137,RECFM=VBA),  00000170
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(BLKSIZE=7265,LRECL=137,RECFM=VBA),
XX          SPACE=(CYL,(0,1)),UNIT=(DISK,3)                          00000180
XXSYSTERM  DD  SYSOUT=STERMCHT                                       00000190
IEF653I SUBSTITUTION JCL - SYSOUT=A
//SYSUDUMP DD SYSOUT=A
//SYSUDUMP DD SYSOUT=A,SPACE=(CYL,(0,5))                             00000200
//GO.GENTAP DD UNIT=(7TRACK,,DEFER),
//    VOL=SER=CRTAPE,LABEL=(,NL,,IN),DISP=(OLD,KEEP),
//    DCB=(RECFM=U,BLKSIZE=1944,DEN=2)
//DATAS DD *
IEF236I ALLOC. FOR SOMELOAD GO
IEF237I 333   ALLOCATED TO SYSLIB
IEF237I 320   ALLOCATED TO
IEF237I 451   ALLOCATED TO
IEF237I 231   ALLOCATED TO
IEF237I 244   ALLOCATED TO
IEF237I 244   ALLOCATED TO
IEF237I 220   ALLOCATED TO
IEF237I 231   ALLOCATED TO
IEF237I 336   ALLOCATED TO SYSLOUT
IEF237I 333   ALLOCATED TO SYSLIN
IEF237I 232   ALLOCATED TO FT05F001
IEF237I 336   ALLOCATED TO FT06F001
IEF237I 336   ALLOCATED TO FT07F001
IEF237I 336   ALLOCATED TO SYSPRINT
IEF237I 232   ALLOCATED TO SYSPRINT
IEF237I 235   ALLOCATED TO SYSPRINT
IEF237I 336   ALLOCATED TO SYSTERM
IEF237I 336   ALLOCATED TO SYSUDUMP
IEF237I 001   ALLOCATED TO GENTAP
```

OS/360 LOADER

```
OPTIONS USED - PRINT,MAP,NOLET,CALL,RES,NOTERM,SIZE=194560,NAME=**GO
               EP=ORBIT

     NAME   TYPE  ADDR        NAME   TYPE  ADDR        NAME   TYPE  ADDR        NAME   TYPE  ADDR        NAME   TYPE  ADDR
  ORBIT      SD  7C810    CNVRTSCT*  SD  7D670    CNVRT    *  LR  7D670    DBGEN    *  SD  7D998    DBFECV   *  LR  7DE58
  FREAD    *  SD  7D060    FREADB   *  LR  7EFB8    FWRITE   *  LR  7E67C    REWIND   *  LR  7E2B2    LEAVE    *  LR  7E366
  UNLOAD   *  LR  7E41A    POSN     *  LR  7E530    MOUNT    *  LR  7E750    MEMBER   *  LR  7E932    FTRAP    *  LR  7EA22
  FALLCN   *  LR  7EAA0    FUNITABL*  SD  7FA60    FPL1     *  SD  7FB28    FDONLIST*  SD  7F330    FERMSG   *  SD  7FE38
  IHCNAMEL*  SD  7FBA0    FRONL#   *  LR  7FBA0    FWRNL#   *  LR  8C1A4    IHCECOMH*  SD  80670    IBCOM#   *  LR  8C67C
  FDICCS#  *  LR  8C72C    INTSWTCH*  LR  81586    IHCCOMH2*  SD  81598    SEQDASD  *  LR  81950    FTF      *  SD  81C38
  ITISECT  *  SD  81CF8    ITI      *  LR  81CF8    FXFLT    *  SD  81D40    FIXFLT   *  LR  81D40    TRNSLTE  *  SD  81D88
  TRANS    *  LR  81D88    BITST    *  SD  81E98    CNTGDATA*  LR  81E98    DTDUN    *  SD  81FC8    IHCFCVTH*  SD  82098
  ADCON#   *  LR  82098    FCVADJTP*  LR  82142    FCVLDUTP*  LR  821D2    FCVZDUTP*  LR  82322    FCVICUTP*  LR  82600
  FCVECUTP*  LR  82B02    FCVECUTP*  LR  82DEC    INTESWCH*  LR  83BD3    IHCEFICS*  SD  83233    FIDCS#   *  LR  83338
  FIDCSBEP*  LR  8323E    IHCFIOS2*  SD  84160    IHCERRM  *  SD  84690    ERRMON   *  LR  84690    IHCERRE  *  LR  846A8
  IHCEFNTH*  SD  84C68    ARITH#   *  LR  84C68    ADJSWTCH*  LR  85004    IHCUOPT  *  SD  85180    IHCUATBL*  SD  854D8
  IHCETRCH*  SD  85B10    IHCTRCH  *  LR  85B10    ERRTRA   *  LR  85B18

  TOTAL LENGTH    5590
  ENTRY ADDRESS  7C810

                 SATID  HELIOS-A       OORBIT TAPE #=ORA27
        740970I 0F8            76 367 000000 397 00C00C 77C1 C1 77C803 701 C1 01 E7  X

                 HELIOS-A          YEAR 1977,          LAUNCH TIME   65033350,  0,
```

DATE MM	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	EARTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LET(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
1	1	0	0	0	331.91	-0.01	0.98	0.48	76.36	28.09	0.38	0.001	0.01
1	2	0	0	0	331.59	-0.01	0.98	0.48	76.08	28.41	0.29	0.001	0.01
1	3	0	0	0	331.27	-0.01	0.98	0.49	75.78	28.73	0.20	0.001	0.01
1	4	0	0	0	330.95	-0.01	0.98	0.49	75.52	29.04	0.12	0.001	0.01
1	5	0	0	0	330.64	-0.01	0.98	0.50	75.28	29.36	0.03	0.001	0.01
1	6	0	0	0	330.32	-0.01	0.98	0.50	75.07	29.68	-0.06	0.000	0.01
1	7	0	0	0	330.00	-0.01	0.98	0.51	74.87	30.00	-0.15	0.000	0.01
1	8	0	0	0	329.68	-0.00	0.98	0.51	74.69	30.32	-0.24	0.000	0.01
1	9	0	0	0	329.35	-0.00	0.98	0.52	74.53	30.65	-0.32	-.000	0.01
1	10	0	0	0	329.03	-0.00	0.98	0.53	74.38	30.97	-0.41	-.000	0.01
1	11	0	0	0	328.71	-0.00	0.98	0.53	74.26	31.29	-0.50	-.000	0.01

1	12	0	0	0	328.39	-0.00	0.98	0.54	74.15	31.61	-0.59	-.000	0.01
1	13	0	0	0	328.07	-0.00	0.98	0.54	74.05	31.93	-0.67	-.001	0.01
1	14	0	0	0	327.75	-0.00	0.98	0.55	73.97	32.25	-0.76	-.001	0.01
1	15	0	0	0	327.43	-0.00	0.98	0.55	73.91	32.57	-0.85	-.001	0.01
1	16	0	0	0	327.12	-0.00	0.98	0.56	73.86	32.88	-0.94	-.001	0.01
1	17	0	0	0	326.80	-0.00	0.98	0.56	73.83	33.20	-1.02	-.001	0.01
1	18	0	0	0	326.49	-0.00	0.98	0.57	73.81	33.51	-1.11	-.001	0.01
1	19	0	0	0	326.19	-0.00	0.98	0.57	73.80	33.82	-1.20	-.002	0.01
1	20	0	0	0	325.87	-0.00	0.97	0.57	73.81	34.13	-1.29	-.002	0.01
1	21	0	0	0	325.57	-0.00	0.97	0.58	73.83	34.43	-1.38	-.002	0.01
1	22	0	0	0	325.27	-0.00	0.97	0.58	73.87	34.73	-1.46	-.002	0.01
1	23	0	0	0	324.97	-0.00	0.97	0.59	73.93	35.03	-1.55	-.002	0.01
1	24	0	0	0	324.67	-0.00	0.97	0.59	73.99	35.33	-1.64	-.002	0.01
1	25	0	0	0	324.33	0.00	0.96	0.60	74.07	35.62	-1.73	-.003	0.01
1	26	0	0	0	324.10	0.00	0.96	0.60	74.17	35.91	-1.82	-.003	0.01
1	27	0	0	0	323.81	0.00	0.96	0.60	74.28	36.19	-1.91	-.003	0.01
1	28	0	0	0	323.54	0.00	0.96	0.61	74.40	36.46	-2.00	-.003	0.01
1	29	0	0	0	323.26	0.00	0.95	0.61	74.54	36.74	-2.09	-.003	0.01
1	30	0	0	0	323.00	0.00	0.95	0.61	74.69	37.00	-2.18	-.003	0.01
1	31	0	0	0	322.73	0.00	0.95	0.62	74.86	37.27	-2.27	-.004	0.01

END OF FILE ON ORBIT TAPE

```
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   M2.ZBRTC.S0002.LOAD                                KEPT       DDNAME=SYSLIB  -1        0 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS2.DEOLKUNV                                      KEPT       DDNAME=SYSLIB  -2       17 EXCPS
IEF285I   VOL SER NOS= M2SY32.
IEF285I   SYS1.FORTLIB                                       KEPT       DDNAME=SYSLIB  -3       61 EXCPS
IEF285I   VOL SER NOS= K3ITL0.
IEF285I   SYS2.FORTLIB                                       KEPT       DDNAME=SYSLIB  -4       28 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SYS1.PL1LIB                                        KEPT       DDNAME=SYSLIB  -5        0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS1.FORTSSP                                       KEPT       DDNAME=SYSLIB  -6        0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS2.COBLIB                                        KEPT       DDNAME=SYSLIB  -7        0 EXCPS
IEF285I   VOL SER NOS= M2SYS1.
IEF285I   SYS1.ALGLIB                                        KEPT       DDNAME=SYSLIB  -8        0 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SYS80037.T165129.SV000.SDHELOA4.R0000044           SYSOUT     DDNAME=SYSLOUT           1 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   M2.ZBRTC.S0002.LCAD                                KEPT       DDNAME=SYSLIN  -1        7 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS80037.T165129.SV000.SDHELOA4.S0000051           SYSIN      DDNAME=FT05F001          2 EXCPS
IEF285I   VOL SER NOS= K3CR3.
IEF285I   SYS80037.T165129.SV000.SDHELOA4.S0000081           DELETED    DDNAME=FT06F001          2 EXCPS
IEF285I   VOL SER NOS= K3CR3.
IEF285I   SYS80037.T165129.SV000.SDHELOA4.R0000045           SYSOUT     DDNAME=FT06F001          1 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS80037.T165129.SV000.SDHELOA4.R0000046           DELETED    DDNAME=FT07F001          0 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS80037.T165129.SV000.SDHELOA4.R0000047           DELETED    DDNAME=SYSPRINT          0 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS80037.T165129.SV000.SDHELOA4.R0000048           DELETED    DDNAME=SYSTERM           0 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS80037.T165129.SV000.SDHELOA4.R0000049           DELETED    DDNAME=SYSUDUMP          0 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS80037.T165129.SV000.SDHELOA4.R0000050           KEPT       DDNAME=GENTAP          900 EXCPS
IEF285I   VOL SER NOS= ORA27 .
IEF280I K 0C1,ORA27 ,SDHELOA4,CC
IEF373I STEP /GO      / START 80037.1658
IEF374I STEP /GO      / STOP  80037.1701 CPU    0MIN 12.62SEC MAIN 200K LCS   0K
- STEP 01 -      RETURN CODE = 0000                                STEP TIME =      .54 MINS=(CPU=      .21,IO=      .33)
                                   IO IN SECS. DISK=    11.12,DRUM=      .00,TAPE=     9.12,CELL=      .00,CTHR=      .16
- SURCHARGES=(DRIVES ALOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=C0000)SECS.   TOTAL STP TIME=      .54 MINS.  -
   // EXEC NOTIFYTS,IO=SDHEL
      XXDEFAULT  PROC MODE=,USRID=,MSG=,USERID=,IO=  NOTIFYTS. EAC/21JUN73      00000010
      ***        SEND BACKGROUND JOB REPORT TO TSO USER                         00000020
      XXNOTIFYTS EXEC PGM=NOTIFYTS,REGION=20K,COND=EVEN.                        00000030
      XX         PARM='&MODE,&USRID&USERID&IO,&MSG'                             00000040
      IEF653I SUBSTITUTION JCL - PARM=',SDHEL,'
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF373I STEP /NOTIFYTS/ START 80037.1701
IEF374I STEP /NOTIFYTS/ STOP  80037.1702 CPU    0MIN 00.07SEC MAIN   0K LCS   0K
- STEP 02 -      RETURN CODE = 0000                                STEP TIME =      .00 MINS=(CPU=      .00,IO=      .00)
                                   IO IN SECS. DISK=     .22,DRUM=      .00,TAPE=      .00,CELL=      .00,CTHR=      .06
- SURCHARGES=(DRIVES ALOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=C0000)SECS.   TOTAL STP TIME=00000.00 MINS.  -
IEF375I  JOB /SDHELOA4/ START 80037.1658
```

```
********** 28 ************************************************************************** 28 *********

JOBNAME-
      SSSSSSSSSS   DDDDDDDDD     HH        HH  EEEEEEEEEEEE  LL          OOOOOOOOOO      AA            444
     SSSSSSSSSSS   DDDDDDDDDD    HH        HH  EEEEEEEEEEEE  LL         OOOOOOOOOOOO     AA           4444
     SS        SS  DD       DD   HH        HH  EE            LL         OO        OO    AAAA         44 44
     SS            DD       DD   HH        HH  EE            LL         OO        OO    AAAA        44  44
     SSS           DD       DD   HH        HH  EE            LL         OO        OO   AA  AA      44   44
      SSSSSSSSS    DD       DD   HHHHHHHHHHHH  EEEEEEEE      LL         OO        OO   AA  AA     44    44
       SSSSSSSSS   DD       DD   HHHHHHHHHHHH  EEEEEEEE      LL         OO        OO   AA    AA   44     44
              SSS  DD       DD   HH        HH  EE            LL         OO        OO   AAAAAAAA   444444444444
               SS  DD       DD   HH        HH  EE            LL         OO        OO   AAAAAAAAAA 444444444444
     SS        SS  DD       DD   HH        HH  EE            LL         OO        OO   AA      AA          44
     SSSSSSSSSSS   DDDDDDDDDD    HH        HH  EEEEEEEEEEEE  LLLLLLLLLLLL  OOOOOOOOOOOO  AA      AA          44
      SSSSSSSSSS   DDDDDDDDD     HH        HH  EEEEEEEEEEEE  LLLLLLLLLLLL   OOOOOOOOOO   AA      AA          44

BOX-                                                  SACC 360/75      READER NUMBER-P0061          CLASS-
      BBBBBBBBB     FFFFFFFFFFFF    33333333                                                          AA
      BBBBBBBBBB    FFFFFFFFFFFF   3333333333                                                         AA
      BB       BB   FF            33        33                                                        AAAA
      BB       BB   FF                      33                                                        AAAA
      BB       BB   FF                     33                                                        AA  AA
      BBBBBBBBB     FFFFFFFF           33333                                                        AA  AA
      BBBBBBBBBB    FFFFFFFF           33333                                                        AA    AA
      BB       BB   FF                     33                                                        AAAAAAAA
      BB       BB   FF                      33                                                       AAAAAAAAAA
      BB       BB   FF            33        33                                                       AA      AA
      BBBBBBBBBB    FF            3333333333                                                        AA       AA
      BBBBBBBBBB    FF              33333333                                                        AA       AA
```

ORA17

2/1/77 – 2/28/77

```
XX              SPACE=(CYL,(0,1)),UNIT=(DISK,3)                          00000180
XXSYSTERM  DD   SYSOUT=&TERMOUT                                          00000190
IEF653I SUBSTITUTION JCL - SYSOUT=A
//SYSUDUMP DD SYSOUT=A
X/SYSUDUMP DD SYSOUT=A,SPACE=(CYL,(0,5))                                 00000200
//GO.GENTAP DD UNIT=(7TRACK,,DEFER),
//    VOL=SER=OPTAPE,LABEL=(,NL,,IN),DISP=(OLD,KEEP),
//    DCB=(RECFM=U,BLKSIZE=1944,DEN=2)
//DATA5 DD *
IEF236I ALLOC. FOR SDHELOA4 GO
IEF237I 333   ALLOCATED TO SYSLIB
IEF237I 320   ALLOCATED TO
IEF237I 451   ALLOCATED TO
IEF237I 231   ALLOCATED TO
IEF237I 244   ALLOCATED TO
IEF237I 244   ALLOCATED TO
IEF237I 220   ALLOCATED TO
IEF237I 231   ALLOCATED TO
IEF237I 232   ALLOCATED TO SYSLOUT
IEF237I 333   ALLOCATED TO SYSLIN
IEF237I 335   ALLOCATED TO FT05F001
IEF237I 237   ALLOCATED TO FT06F001
IEF237I 232   ALLOCATED TO FT07F001
IEF237I 235   ALLOCATED TO SYSPRINT
IEF237I 232   ALLOCATED TO SYSPRINT
IEF237I 237   ALLOCATED TO SYSPRINT
IEF237I 335   ALLOCATED TO SYSTERM
IEF237I 335   ALLOCATED TO SYSUDUMP
IEF237I 060   ALLOCATED TO GENTAP
```

CS/360 LOADER

```
OPTIONS USED - PRINT,MAP,NOLET,CALL,RES,NOTERM,SIZE=194560,NAME=**GO
               EP=ORBIT
```

NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR
ORBIT	SD	70810	CNVRTSCT*	SD	71670	CNVRT *	LR	71670	CBGEN *	SD	71998	DBFEOV *	LR	71858
FREAD *	SD	71D60	FREADB *	LR	71F88	FWRITE *	LR	7207C	REWIND *	LR	72282	LEAVE *	LR	72366
UNLOAD *	LR	7241A	POSN *	LR	72530	MCUNT *	LR	72750	MEMBER *	LR	72932	FTRAP *	LR	72A22
FALLOW *	LR	72AA0	FUNITABL*	SD	73A60	FPL1 *	SD	73828	FODNLIST*	SD	73830	RERMSG *	SD	73838
IHCNAMEL*	SD	73BA0	FRDNL# *	LR	738A0	FWRNL# *	LR	741A4	IHCECOMH*	SD	74670	IBCCM# *	LR	74670
FDIOCS# *	LR	7472C	INTS*TCH*	LR	75586	IHCCOMH2*	SD	75508	SEQDABD *	LR	75950	FTP *	SD	75C38
ITISECT *	SD	75CEB	ITI *	LR	75CE8	FXFLT *	SD	75D40	FIXFLT *	LR	75D40	TRNSLTE *	SD	75D98
TRANS *	LR	75D88	BITST *	SD	75E98	CNTGDATA*	LR	75E98	DTDUN *	SD	75FC8	IHCFCVTH*	SD	76098
ADCON# *	LR	76098	FCVADUTP*	LR	76142	FCVLOUTP*	LR	76102	FCVZOUTP*	LR	76322	FCVIOUTP*	LR	76600
FCVEOUTP*	LR	76002	FCVCOUTP*	LR	76DEC	INTGSWCH*	LR	77003	IHCEFIOS*	SD	77238	FIOCS# *	LR	77238
FIOCSUFP*	LR	7723E	IHCFIOS2*	SD	78160	IHCERRM *	SD	78690	ERRMON *	LR	78690	IHCERRE *	LR	786A8
IHCEFNTH*	SD	78C68	ARITH# *	LR	78C68	ADJSWTCH*	LR	79004	IHCJOPT *	SD	79180	IHCUATSL*	SD	79408
IHCETRCH*	SD	79810	IHCTRCH *	LR	79810	ERRTRA *	LR	79818						

```
TOTAL LENGTH    9590
ENTRY ADDRESS  70810

                    SATID  HELIOS-A        ORBIT TAPE #=CRA17
        7409701 ORB          77 032 000000 059 000000 7026 01 770414 026 01 01 E7  X
```

HELIOS-A YEAR 1977. LAUNCH TIME 67711750. 0.

DATE MM	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	EARTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LET(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
2	1	0	0	0	322.48	0.00	0.94	0.62	75.04	37.52	-2.36	-.004	0.01
2	2	0	0	0	322.23	0.00	0.94	0.62	75.24	37.77	-2.45	-.004	0.01
2	3	0	0	0	321.99	0.00	0.93	0.63	75.46	38.01	-2.54	-.004	0.01
2	4	0	0	0	321.75	0.00	0.93	0.63	75.69	38.26	-2.63	-.004	0.01
2	5	0	0	0	321.53	0.00	0.93	0.63	75.94	38.47	-2.72	-.004	0.01
2	6	0	0	0	321.31	0.00	0.92	0.63	76.21	38.69	-2.82	-.005	0.01
2	7	0	0	0	321.09	0.00	0.92	0.64	76.49	38.91	-2.91	-.005	0.01
2	8	0	0	0	320.89	0.00	0.91	0.64	76.79	39.11	-3.00	-.005	0.01
2	9	0	0	0	320.70	0.00	0.91	0.64	77.11	39.30	-3.10	-.005	0.01
2	10	0	0	0	320.51	0.01	0.90	0.64	77.45	39.49	-3.19	-.005	0.01
2	11	0	0	0	320.34	0.01	0.90	0.64	77.81	39.66	-3.28	-.005	0.01
2	12	0	0	0	320.18	0.01	0.89	0.65	78.19	39.82	-3.38	-.006	0.01
2	13	0	0	0	320.02	0.01	0.88	0.65	78.59	39.98	-3.47	-.006	0.01
2	14	0	0	0	319.88	0.01	0.88	0.65	79.01	40.12	-3.57	-.006	0.01
2	15	0	0	0	319.75	0.01	0.87	0.65	79.46	40.25	-3.67	-.006	0.01
2	16	0	0	0	319.64	0.01	0.87	0.65	79.93	40.36	-3.76	-.006	0.01

2	17	0	0	0	319.54	0.01	0.86	0.65	80.42	40.46	-3.86	-.007	0.01
2	18	0	0	0	319.45	0.01	0.85	0.65	80.94	40.55	-3.96	-.007	0.01
2	19	0	0	0	319.37	0.01	0.85	0.65	81.49	40.63	-4.06	-.007	0.01
2	20	0	0	0	319.32	0.01	0.84	0.65	82.07	40.68	-4.15	-.007	0.01
2	21	0	0	0	319.28	0.01	0.83	0.65	82.67	40.72	-4.25	-.007	0.01
2	22	0	0	0	319.25	0.01	0.83	0.65	83.31	40.75	-4.35	-.007	0.01
2	23	0	0	0	319.25	0.01	0.82	0.65	83.98	40.75	-4.45	-.008	0.01
2	24	0	0	0	319.26	0.01	0.81	0.65	84.69	40.74	-4.55	-.008	0.01
2	25	0	0	0	319.30	0.01	0.80	0.65	85.43	40.70	-4.65	-.008	0.01
2	26	0	0	0	319.36	0.01	0.79	0.65	86.21	40.64	-4.76	-.008	0.01
2	27	0	0	0	319.44	0.01	0.79	0.64	87.04	40.57	-4.86	-.008	0.02
2	28	0	0	0	319.54	0.01	0.78	0.64	87.90	40.46	-4.96	-.009	0.02

END OF FILE ON ORBIT TAPE

```
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   M2.ZBRTC.SD002.LOAD                                   KEPT       DDNAME=SYSLIB  -1        0 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS2.DEBLKUNV                                         KEPT       DDNAME=SYSLIB  -2       17 EXCPS
IEF285I   VOL SER NOS= M2SYS2.
IEF285I   SYS1.FORTLIB                                          KEPT       DDNAME=SYSLIB  -3       61 EXCPS
IEF285I   VOL SER NOS= K3ITL0.
IEF285I   SYS2.FORTLIB                                          KEPT       DDNAME=SYSLIB  -4       28 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SYS1.PL1LIB                                           KEPT       DDNAME=SYSLIB  -5        0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS1.FORTSSP                                          KEPT       DDNAME=SYSLIB  -6        0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS2.CCBLIB                                           KEPT       DDNAME=SYSLIB  -7        0 EXCPS
IEF285I   VOL SER NOS= M2SYS1.
IEF285I   SYS1.ALGLIB                                           KEPT       DDNAME=SYSLIB  -8        0 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SYS80045.T110414.SV000.SDHELOA4.R0000001              SYSOUT     DDNAME=SYSLOUT           1 EXCPS
IEF285I   VOL SER NOS= K3SCR3.
IEF285I   M2.ZBRTC.SD002.LOAD                                   KEPT       DDNAME=SYSLIN  -1        7 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS80045.T110414.RV000.SDHELOA4.S0000008              SYSIN      DDNAME=FT05F001          2 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80045.T110414.RV000.SDHELOA4.S0000008              DELETED    DDNAME=FT05F001          2 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80045.T110414.SV000.SDHELOA4.R0000002              SYSOUT     DDNAME=FT06F001          1 EXCPS
IEF285I   VOL SER NOS= K3SCR4.
IEF285I   SYS80045.T110414.SV000.SDHELOA4.R0000003              DELETED    DDNAME=FT07F001          0 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS80045.T110414.SV000.SDHELOA4.R0000004              DELETED    DDNAME=SYSPRINT          0 EXCPS
IEF285I   VOL SER NOS= K3SCR6.
IEF285I   SYS80045.T110414.SV000.SDHELOA4.R0000005              DELETED    DDNAME=SYSTERM           0 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80045.T110414.SV000.SDHELOA4.R0000006              DELETED    DDNAME=SYSUDUMP          0 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80045.T110414.RV000.SDHELOA4.R0000007              KEPT       DDNAME=GENTAP          654 EXCPS
IEF285I   VOL SER NOS= ORA17 .
IEF290E K 0C0.ORA17 .SDHELOA4.GO
IEF373I STEP /GO      / START 80045.1104
IEF374I STEP /GO      / STOP  80045.1107 CPU    0MIN 10.85SEC MAIN 200K LCS    0K
                                                                STEP TIME =      .47 MINS=(CPU=      .18,IO=      .29)
- STEP 01 -     RETURN CODE = 0000          IO IN SECS. DISK=    10.97,DRUM=      .00,TAPE=     6.58,CELL=      .00,OTHR=      .16
- SURCHARGES=(DRIVES ALOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=00000)SECS.   TOTAL STP TIME=      .47 MINS.
      // EXEC NOTIFYTS
      XXDEFAULT  PROC MODE=,USRID=,MSG=,USERID=,ID=   NOTIFYTS. EAC/21JUN73     00000010
      ***        SEND BACKGROUND JOB REPORT TO TSO USER                         00000020
      XXNOTIFYTS EXEC PGM=NOTIFYTS,REGION=20K,COND=EVEN,                        00000030
      XX         PARM='&MODE,&USRID&USERID&ID,&MSG'                             00000040
      IEF653I SUBSTITUTION JCL - PARM=',,'
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF373I STEP /NOTIFYTS/ START 80045.1107
IEF374I STEP /NOTIFYTS/ STOP  80045.1107 CPU    0MIN 00.06SEC MAIN   8K LCS    0K
                                                                STEP TIME =      .00 MINS=(CPU=      .00,IO=      .00)
- STEP 02 -     RETURN CODE = 0000          IO IN SECS. DISK=     .22,DRUM=      .00,TAPE=      .00,CELL=      .00,OTHR=      .07
- SURCHARGES=(DRIVES ALOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=00000)SECS.   TOTAL STP TIME=00000.00 MINS.
IEF375I  JOB /SDHELOA4/ START 80045.1104
IEF376I  JOB /SDHELOA4/ STOP  80045.1107 CPU    0MIN 10.90SEC                                   TIME=11.07.28.15 DATE=02-14-80.
-  SYSTEM=REL21.8F (04-01-79) K3                                  TOTAL TIME =      .47 MINS=(CPU=      .18,IO=      .29)
- JOB 0121-                                 IO IN SECS. DISK=    11.20,DRUM=      .00,TAPE=     6.58,CELL=      .00,OTHR=      .23
- SURCHARGES=(DRIVES ALOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=00000)SECS.   TOTAL JOB TIME=      .47 MINS.
 THERE WERE 01 TAPES MOUNTED FOR THIS JOB. TAPE MOUNT CHARGE WAS 00.0 MINUTES.
```

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********** 148 ********************************************************************************** 148 *********

JOBNAME-
      SSSSSSSSSS   DDDDDDDDD     HH        HH  EEEEEEEEEEEE  LL          COCOOOOCOO        AA       555555555555
     SSSSSSSSSSS   DDDDDDDDDD    HH        HH  EEEEEEEEEEEE  LL          OOOOOOOOOOOO       AA       555555555555
     SS        SS  DD       DD   HH        HH  EE            LL          CO        OO      AAAA      55
     SS            DD        DD  HH        HH  EE            LL          OO        OO      AAAA      55
     SSS           DD        DD  HH        HH  EE            LL          CC        OO     AA  AA     55
      SSSSSSSSS    DD        DD  HHHHHHHHHHHH  EEEEEEEE      LL          OO        OO     AA  AA     55555555555
       SSSSSSSSS   DD        DD  HHHHHHHHHHHH  EEEEEEEE      LL          OO        OO    AA    AA    555555555555
              SSS  DD        DD  HH        HH  EE            LL          OO        OO    AAAAAAAA             55
              SS   DD        DD  HH        HH  EE            LL          OO        OO   AAAAAAAAAA            55
     SS        SS  DD       DD   HH        HH  EE            LL          CO        OO   AA      AA   55       55
     SSSSSSSSSSS   DDDDDDDDDD    HH        HH  EEEEEEEEEEEE  LLLLLLLLLLLL  COOOOOOOOOOO  AA        AA  555555555555
      SSSSSSSSSS   DDDDDDDDD     HH        HH  EEEEEEEEEEEE  LLLLLLLLLLLL   COOOOOOOOO   AA        AA   5555555555

                                                  SACC 360/75      READER NUMBER-P0228          CLASS-
BOX-
      BBBBBBBBB     FFFFFFFFFFFF    33333333                                                        AA
      BBBBBBBBBB    FFFFFFFFFFFF   3333333333                                                       AA
      BB       BB   FF            33        33                                                     AAAA
      BB       BB   FF                      33                                                     AAAA
      BB      BB    FF                     33                                                    AA  AA
      BBBBBBBBB     FFFFFFFF           33333                                                     AA  AA
      BBBBBBBBBB    FFFFFFFF           33333                                                    AA    AA
      BB       BB   FF                     33                                                   AAAAAAAA
      BB        BB  FF                     33                                                  AAAAAAAAAA
      BB        BB  FF            33       33                                                  AA      AA
      BBBBBBBBBB    FF             3333333333                                                 AA        AA
      BBBBBBBBBB    FF              33333333                                                  AA        AA
```

ORA23

3/1/77 - 3/31/77

```
XXFT07F001 DD SYSOUT=B,DCB=(RECFM=FB,BLKSIZE=7280,LRECL=80)                 00000160
XXSYSPRINT DD SYSOUT=&OUT,DCB=(BLKSIZE=&BLKSIZE,LRECL=137,RECFM=VBA),      00000170
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(BLKSIZE=7265,LRECL=137,RECFM=VBA),
XX          SPACE=(CYL,(0,1)),UNIT=(DISK,3)                                 00000180
XXSYSTERM  DD  SYSOUT=&TERMOUT                                              00000190
IEF653I SUBSTITUTION JCL - SYSOUT=A
//SYSUDUMP DD SYSOUT=A
X//SYSUDUMP DD SYSOUT=A,SPACE=(CYL,(0,5))                                   00000200
//GO.GENTAP DD UNIT=(7TRACK,,DEFER),
//    VOL=SER=CRTAPE,LABEL=(,NL,,IN),DISP=(OLD,KEEP),
//    DCB=(RECFM=U,BLKSIZE=1944,DEN=2)
//DATA5 DD *
IEF236I ALLOC. FOR SDHELOA5 GO
IEF237I 333    ALLOCATED TO SYSLIB
IEF237I 320    ALLOCATED TO
IEF237I 451    ALLOCATED TO
IEF237I 231    ALLOCATED TO
IEF237I 244    ALLOCATED TO
IEF237I 244    ALLOCATED TO
IEF237I 220    ALLOCATED TO
IEF237I 231    ALLOCATED TO
IEF237I 235    ALLOCATED TO SYSLOUT
IEF237I 333    ALLOCATED TO SYSLIN
IEF237I 336    ALLOCATED TO FT05F001
IEF237I 336    ALLOCATED TO FT06F001
IEF237I 237    ALLOCATED TO FT07F001
IEF237I 336    ALLOCATED TO SYSPRINT
IEF237I 232    ALLOCATED TO SYSPRINT
IEF237I 235    ALLOCATED TO SYSPRINT
IEF237I 335    ALLOCATED TO SYSTERM
IEF237I 336    ALLOCATED TO SYSUDUMP
IEF237I 0C1    ALLOCATED TO GENTAP
```

```
                                        OS/360 LOADER

OPTIONS USED - PRINT,MAP,NOLET,CALL,RES,NOTERM,SIZE=194560,NAME=**GO
               EP=ORBIT

     NAME   TYPE  ADDR      NAME   TYPE  ADDR      NAME   TYPE  ADDR      NAME   TYPE  ADDR      NAME   TYPE  ADDR

  ORBIT      SD  CE010    CNVRTSCT*  SD  CEE70    CNVRT   *  LR  CEE70    DBGEN   *  SD  CF198    DBFEQV  *  LR  CF358
  FREAD   *  SD  CF560    FREADB  *  LR  CF7B8    FWRITE  *  LR  CF87C    REWIND  *  LR  CFAB2    LEAVE   *  LR  CFB66
  UNLOAD  *  LR  CFC1A    POSN    *  LR  CFD30    MOUNT   *  LR  CFF50    MEMBER  *  LR  D0132    FTRAP   *  LR  D0222
  FALLOW  *  LR  D02A0    FUNITABL*  SD  D1260    FPL1    *  SD  D1328    FDDNLIST*  SD  D1330    FERMSG  *  SD  D1338
  IHCNAMEL*  SD  D13A0    FRONL#  *  LR  D13A0    FWRNL#  *  LR  D19A4    IHCECOMH*  SD  D1E70    IBCOM#  *  LR  D1E70
  FDICCS# *  LR  D1F2C    INTSWTCH*  LR  D2DB6    IHCCOMH2*  SD  D2CD9    SEQDASD *  LR  D3150    FTF     *  SD  D3438
  ITISECT *  SD  D34E8    ITI     *  LR  D34E8    FXFLT   *  SD  D3540    FIXFLT  *  LR  D3540    TRNSLTE *  SD  D3598
  TRANS   *  LR  D3588    BITST   *  SD  D3698    CNTGDATA*  LR  D3698    DTDLN   *  SD  D37C8    IHCFCVTH*  SD  D3898
  ADCON#  *  LR  D3898    FCVAOUTP*  LR  D3942    FCVLOUTP*  LR  D39D2    FCVZOUTP*  LR  D3322    FCVIOUTP*  LR  D3ED0
  FCVEOUTP*  LR  D43D2    FCVCOUTP*  LR  D45EC    INT6SWCH*  LR  D4BD3    IHCEFIOS*  SD  D4A38    FIOCS#  *  LR  D4A38
  FIOCSBEP*  LR  D4A3E    IHCFIOS2*  SD  D5960    IHCERRM *  SD  D5E90    ERRMON  *  LR  D5E90    IHCERRE *  LR  D5EA8
  IHCEPNTH*  SD  D6468    ARITH#  *  LR  D6468    ADJS#TCH*  LR  D6BD4    IHCUOPT *  SD  D6930    IHCUATBL*  SD  D6C08
  IHCETRCH*  SD  D7310    IHCTRCH *  LR  D7310    ERRTRA  *  LR  D7318

  TOTAL LENGTH     5590
  ENTRY ADDRESS    CE010
```

```
                    SATID   HELIOS-A        OORBIT TAPE #=ORA23
        7409701 ORB            77 060 000000 090 000000 7004 01 770511 004 01 01 E7  X
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```
                    HELIOS-A          YEAR 1977.          LAUNCH TIME   70130950.  0.
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DATE MM	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	ERTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LET(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
3	1	0	0	0	319.57	0.01	0.77	0.64	88.82	40.33	-5.06	-.009	0.02
3	2	0	0	0	319.82	0.01	0.76	0.64	89.78	40.18	-5.17	-.009	0.02
3	3	0	0	0	320.01	0.01	0.75	0.64	90.79	39.99	-5.27	-.009	0.02
3	4	0	0	0	320.22	0.01	0.74	0.63	91.86	39.76	-5.37	-.009	0.02
3	5	0	0	0	320.46	0.01	0.73	0.63	92.99	39.54	-5.48	-.010	0.02
3	6	0	0	0	320.74	0.01	0.72	0.63	94.18	39.26	-5.58	-.010	0.02
3	7	0	0	0	321.06	0.01	0.71	0.63	95.44	38.94	-5.69	-.010	0.02
3	8	0	0	0	321.41	0.02	0.70	0.62	96.76	38.59	-5.79	-.010	0.02
3	9	0	0	0	321.80	0.02	0.69	0.62	98.16	38.20	-5.89	-.010	0.02
3	10	0	0	0	322.23	0.02	0.68	0.62	99.64	37.77	-6.00	-.011	0.02
3	11	0	0	0	322.71	0.02	0.67	0.61	101.21	37.29	-6.10	-.011	0.02

3	12	0	0	0	323.24	0.02	0.66	0.61	102.87	36.76	-6.20	-.011	0.02
3	13	0	0	0	323.82	0.02	0.65	0.61	104.62	36.18	-6.30	-.011	0.02
3	14	0	0	0	324.46	0.02	0.64	0.60	106.48	35.54	-6.40	-.011	0.02
3	15	0	0	0	325.15	0.02	0.63	0.60	108.45	34.85	-6.49	-.012	0.02
3	16	0	0	0	325.91	0.02	0.62	0.60	110.53	34.09	-6.59	-.012	0.02
3	17	0	0	0	326.74	0.02	0.60	0.59	112.74	33.26	-6.68	-.012	0.02
3	18	0	0	0	327.64	0.02	0.59	0.59	115.09	32.36	-6.77	-.012	0.02
3	19	0	0	0	328.62	0.02	0.58	0.58	117.58	31.38	-6.85	-.012	0.02
3	20	0	0	0	329.68	0.02	0.57	0.58	120.22	30.32	-6.93	-.012	0.02
3	21	0	0	0	330.84	0.02	0.55	0.58	123.03	29.16	-7.00	-.013	0.02
3	22	0	0	0	332.10	0.02	0.54	0.58	126.00	27.90	-7.07	-.013	0.02
3	23	0	0	0	333.47	0.02	0.53	0.57	129.16	26.53	-7.12	-.013	0.02
3	24	0	0	0	334.95	0.02	0.52	0.57	132.51	25.05	-7.17	-.013	0.02
3	25	0	0	0	336.56	0.02	0.50	0.57	136.06	23.44	-7.20	-.013	0.02
3	26	0	0	0	338.31	0.02	0.49	0.57	139.83	21.69	-7.22	-.013	0.02
3	27	0	0	0	340.21	0.02	0.48	0.57	143.81	19.79	-7.23	-.013	0.02
3	28	0	0	0	342.28	0.02	0.46	0.57	148.02	17.72	-7.21	-.013	0.03
3	29	0	0	0	344.52	0.02	0.45	0.58	152.46	15.48	-7.17	-.013	0.03
3	30	0	0	0	346.95	0.02	0.44	0.58	157.14	13.05	-7.10	-.013	0.03
3	31	0	0	0	349.59	0.02	0.43	0.59	162.06	10.41	-7.00	-.013	0.03

END OF FILE ON ORBIT TAPE

```
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   M2.ZBRTC.SD002.LOAD                          KEPT      DDNAME=SYSLIB  -1      0 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS2.DEBLKUNV                                KEPT      DDNAME=SYSLIB  -2     17 EXCPS
IEF285I   VOL SER NOS= M2SYS2.
IEF285I   SYS1.FORTLIB                                 KEPT      DDNAME=SYSLIB  -3     61 EXCPS
IEF285I   VOL SER NOS= K3ITL0.
IEF285I   SYS2.FORTLIB                                 KEPT      DDNAME=SYSLIB  -4     28 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SYS1.PL1LIB                                  KEPT      DDNAME=SYSLIB  -5      0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS1.FORTSSP                                 KEPT      DDNAME=SYSLIB  -6      0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS2.COBLIB                                  KEPT      DDNAME=SYSLIB  -7      0 EXCPS
IEF285I   VOL SER NOS= M2SYS1.
IEF285I   SYS1.ALGLIB                                  KEPT      DDNAME=SYSLIB  -8      0 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SYS80042.T155339.SV000.SDHELOA5.R0000027     SYSOUT    DDNAME=SYSLOUT         1 EXCPS
IEF285I   VOL SER NOS= K3SCR6.
IEF285I   M2.ZBRTC.SD002.LOAD                          KEPT      DDNAME=SYSLIN  -1      7 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS80042.T155339.RV000.SDHELOA5.S0000034     SYSIN     DDNAME=FT05F001        2 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS80042.T155339.RV000.SDHELOA5.S0000034     DELETED   DDNAME=FT05F001        2 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS80042.T155339.SV000.SDHELOA5.R0000028     SYSOUT    DDNAME=FT06F001        1 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS80042.T155339.SV000.SDHELOA5.R0000029     DELETED   DDNAME=FT07F001        0 EXCPS
IEF285I   VOL SER NOS= K3SCR4.
IEF285I   SYS80042.T155339.SV000.SDHELOA5.R0000030     DELETED   DDNAME=SYSPRINT        0 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS80042.T155339.SV000.SDHELOA5.R0000031     DELETED   DDNAME=SYSTERM         0 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80042.T155339.SV000.SDHELOA5.R0000032     DELETED   DDNAME=SYSLDUMP        0 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS80042.T155339.RV000.SDHELOA5.R0000033     KEPT      DDNAME=GENTAP        726 EXCPS
IEF285I   VOL SER NOS= ORA23 .
IEF280E K 0C1,ORA23 ,SDHELOA5,GO
IEF373I STEP /GO     / START 80042.1704
IEF374I STEP /GO     / STOP  80042.1706 CPU    0MIN 11.72SEC MAIN 200K LCS    0K
                                                 STEP TIME =      .49 MINS=(CPU=      .19,IO=      .30)
- STEP 01 -     RETURN CODE = 0000                 IO IN SECS. DISK=    11.02,DRUM=      .00,TAPE=     7.30,CELL=      .00,OTHR=      .16
                                                 TOTAL STP TIME=      .49 MINS.  -
- SURCHARGES=(DRIVES ALOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=00000)SECS.
        // EXEC NOTIFYTS                                                          00000010
        XXDEFAULT  PROC MODE=,USRID=,MSG=,USERID=,ID=  NOTIFYTS, EAC/21JUN73      00000020
        ***        SEND BACKGROUND JOB  REPORT TO TSO USER                        00000030
        XXNOTIFYTS EXEC PGM=NOTIFYTS,REGION=20K,COND=EVEN,                        00000040
        XX         PARM='&MODE,&USRID&USERID&ID,&MSG'
        IEF653I SUBSTITUTION JCL - PARM=',,'
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF373I STEP /NOTIFYTS/ START 80042.1706
IEF374I STEP /NOTIFYTS/ STOP  80042.1706 CPU    0MIN 00.09SEC MAIN   8K LCS    0K
                                                 STEP TIME =      .00 MINS=(CPU=      .00,IO=      .00)
- STEP 02 -     RETURN CODE = 0000                 IO IN SECS. DISK=      .22,DRUM=      .00,TAPE=      .00,CELL=      .00,OTHR=      .06
                                                 TOTAL STP TIME=00000.00 MINS.  -
- SURCHARGES=(DRIVES ALOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=00000)SECS.
IEF375I  JOB /SDHELOA5/ START 80042.1704
```

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********** 37 ************************************************************************************ 37 *********

JOBNAME-
        SSSSSSSSSS    DDDDDDDDD     HH        HH  EEEEEEEEEEEE  LL          CCOOOOCOCCO        AA       555555555555
       SSSSSSSSSSS   DDDDDDDDDD     HH        HH  EEEEEEEEEEEE  LL         CCOOOCOOCOOO        AA       555555555555
       SS        SS  DD        DD   HH        HH  EE            LL         CC        OO      AAAA      55
       SS            DD        DD   HH        HH  EE            LL         CC        OO      AAAA      55
       SSS           DD        DD   HH        HH  EE            LL         CC        OO     AA  AA     55
        SSSSSSSSS    DD        DD   HHHHHHHHHHHH  EEEEEEEE      LL         CC        OO     AA  AA     55555555555
          SSSSSSSSS  DD        DD   HHHHHHHHHHHH  EEEEEEEE      LL         CC        OO    AA    AA    555555555555
                SSS  DD        DD   HH        HH  EE            LL         CC        OO    AAAAAAAA              55
                 SS  DD        DD   HH        HH  EE            LL         CC        OO   AAAAAAAAAA             55
       SS        SS  DD        DD   HH        HH  EE            LL         CC        OO   AA      AA   55        55
       SSSSSSSSSSS   DDDDDDDDDD     HH        HH  EEEEEEEEEEEE  LLLLLLLLLLLL  CCOOOOCCCOOO  AA        AA  555555555555
        SSSSSSSSSS   DDDDDDDDD      HH        HH  EEEEEEEEEEEE  LLLLLLLLLLLL   CCOOOOCOCOO   AA        AA   5555555555

BOX-                                                  SACC 360/75      READER NUMBER-P0216          CLASS-
       BBBBBBBBB     FFFFFFFFFFFF     33333333                                                          AA
       BBBBBBBBB     FFFFFFFFFFFF    3333333333                                                         AA
       BB        BB  FF              33        33                                                      AAAA
       BB        BB  FF                        33                                                      AAAA
       BB        BB  FF                        33                                                     AA  AA
       BBBBBBBBB     FFFFFFFF            33333                                                        AA  AA
       BBBBBBBBB     FFFFFFFF            33333                                                       AA    AA
       BB        BB  FF                        33                                                     AAAAAAAA
       BB        BB  FF                        33                                                    AAAAAAAAAA
       BB        BB  FF              33        33                                                    AA      AA
       BBBBBBBBBB    FF              3333333333                                                    AA        AA
       BBBBBBBBBB    FF               33333333                                                     AA        AA
```

ORA28

4/1/77 - 7/18/77

```
XXFT07F001 DD SYSOUT=B,DCB=(RECFM=FB,BLKSIZE=7280,LRECL=80)                00000160
XXSYSPRINT DD SYSOUT=&OUT,DCB=(BLKSIZE=&BLKSIZE,LRECL=137,RECFM=VBA),     00000170
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(BLKSIZE=7265,LRECL=137,RECFM=VBA),
XX          SPACE=(CYL,(0,1)),UNIT=(DISK,3)                               00000180
XXSYSTERM  DD  SYSOUT=&TERMOUT                                            00000190
IEF653I SUBSTITUTION JCL - SYSOUT=A
//SYSUDUMP DD SYSOUT=A
X/SYSUDUMP DD SYSOUT=A,SPACE=(CYL,(0,5))                                  00000200
//GO.GENTAP DD UNIT=(7TRACK,,DEFER),
//    VOL=SER=CRTAPE,LABEL=(,NL,,IN),DISP=(OLD,KEEP),
//    DCB=(RECFM=U,BLKSIZE=1944,DEN=2)
//DATA5 DD *
IEF236I ALLOC. FOR SOHFLOA5 GO
IEF237I 333    ALLOCATED TO SYSLIB
IEF237I 320    ALLOCATED TO
IEF237I 451    ALLOCATED TO
IEF237I 231    ALLOCATED TO
IEF237I 244    ALLOCATED TO
IEF237I 244    ALLOCATED TO
IEF237I 220    ALLOCATED TO
IEF237I 231    ALLOCATED TO
IEF237I 336    ALLOCATED TO SYSLOUT
IEF237I 333    ALLOCATED TO SYSLIN
IEF237I 232    ALLOCATED TO FT05F001
IEF237I 336    ALLOCATED TO FT06F001
IEF237I 237    ALLOCATED TO FT07F001
IEF237I 335    ALLOCATED TO SYSPRINT
IEF237I 232    ALLOCATED TO SYSPRINT
IEF237I 335    ALLOCATED TO SYSPRINT
IEF237I 336    ALLOCATED TO SYSTERM
IEF237I 335    ALLOCATED TO SYSUDUMP
IEF237I 001    ALLOCATED TO GENTAP
```

```
                                        OS/360 LOADER

OPTIONS USED - PRINT,MAP,NOLET,CALL,RES,NOTERM,SIZE=194560,NAME=**GO
               EP=ORBIT

     NAME   TYPE  ADDR      NAME   TYPE  ADDR      NAME   TYPE  ADDR      NAME   TYPE  ADDR      NAME   TYPE  ADDR
  ORBIT     SD   85010   CNVRTSCT*  SD   85E70   CNVRT    *  LR   85E70   DBGEN    *  SD   86198   DBFECV   *  LR   86358
  FREAD     *  SD   86560   FREAUB   *  LR   85783   FWRITE   *  LR   86870   NEWIND   *  LR   86AD2   LEAVE    *  LR   86E66
  UNLOAD    *  LR   86C1A   POSN     *  LR   86D30   MOUNT    *  LR   86F50   MEMBER   *  LR   87132   FTRAP    *  LR   87222
  FALLOW .  *  LR   872A0   FUNITABL*  SD   88260   FPL1     *  SD   86328   FDDNLIST*  SD   88330   FERMSG   *  SD   86338
  IHCNAMEL*  SD   883A0   FRDNL#    *  LR   883A0   FWRNL#   *  LR   88945   IHCECOMM*  SD   88E70   IBCOM#   *  LR   88E7C
  FDIOCS# *  LR   88F2C   INTSWTCH*  LR   89D86   IHCCOMH2*  SD   89CD8   SEQDASD *  LR   8A150   FTF      *  SD   8A438
  ITISECT *  SD   8A4E8   ITI      *  LR   8A4E8   FXFLT    *  SD   8A540   FIXFLT   *  LR   8A540   TRNSLTE *  SD   8A588
  TRANS   *  LR   8A588   BITST    *  SD   8A698   CNTGDATA*  LR   8A658   DTOUN    *  SD   8A7C8   IHCFCVTH*  SD   8A898
  ADCON#  *  LR   8A898   FCVADUTP*  LR   8A942   FCVLOUTP*  LR   8A9D2   FCVZOUTP*  LR   8AA22   FCVICUTP*  LR   8AEDC
  FCVSOUTP*  LR   8B302   FCVCCUTP*  LR   8B56C   INTSWTCH*  LR   8B6B3   IHCEFIOS*  SD   8C433   FIOCS*   *  LR   8CA38
  FIEESBEB*  LR   8BA3E   IHCFIOSB*  SD   8C960   IHCERRM *  SD   8CE90   ERRMON   *  LR   8CE90   IHCERRE *  LR   8CEA8
  IHCEFNTH*  SD   8D468   ARITH#    *  LR   8D468   ADJSWTCH*  LR   8D804   IHCUOPT *  SD   8D7B0   IHCUATBL*  SD   8DCD8
  IHCETRCH*  SD   8E310   IHCTRCH   *  LR   8E310   ERRTRA   *  LR   8E318

  TOTAL LENGTH    5590
  ENTRY ADDRESS   85010

                    SATID  HELIOS-A        OCRBIT TAPE #=ORA28
          7409701 CRB            77 091 000000 212 000000 7253 01 770910 253 01 01 E7  X

                    HELIOS-A          YEAR 1977.          LAUNCH TIME   72809350.   0.

     DATE          HELIOS     HELIOS     SUN-HELIOS    EARTH-HELIOS    EARTH-HELIOS   HELIOS-SUN   HELIOS    HELIOS-V(A.U/DAY)
MM DD HR MN SC   ECL.LONG   ECL.LAT    DIST(A.U)     DIST(A.U)        SUN(DEG)       EARTH(DEG)  HEL-LET(DEG)  RADIAL    NORMAL
 4  1  0  0  0    352.46      0.02       0.41          0.59           167.22          7.54        -6.86       -.013      0.03
 4  2  0  0  0    355.57      0.02       0.40          0.60           172.63          4.43        -6.68       -.012      0.03

IHC28I IBCOM - PROGRAM INTERRUPT (P) -  UNDERFLOW   OLD PSW IS  FFD5000DA20BA848 , REGISTER CONTAINED   7070000000000000

TRACEBACK  ROUTINE  CALLED FROM ISN   REG.  14    REG.  15    REG.   0    REG.   1

           SSBK              0031    E2085C6E    00085E70    00000000    0008528C

           ORBIT                     0001AA28    01085010    FFC00008    00DE6738

ENTRY POINT=  01085010
```

```
STANDARD FIXUP TAKEN . EXECUTICN CCNTINUING
IHC208I IBCCM - PRCGRAM INTERRUPT (P) -  UNDERFLOW   OLD PSW IS  FFD500CDA2CBA832 . REGISTER CCNTAINED   7CBF71434000000C0
TRACEBACK  ROUTINE  CALLED FRCM ISN   REG.  14   REG.  15   REG.   C   REG.   1
            ECBK                0031    E20B5C6E   00CB5E70   CCCCCCCC   CCCB528C
            ORBIT                       0001AA28   01CB5010   FFCCCCCE   CCCE6738
ENTRY POINT=  01CB5010
STANDARD FIXUP TAKEN . EXECUTICN CCNTINUING
IHC208I IBCCM - PRCGRAM INTERRUPT (P) -  UNDERFLOW   OLD PSW IS  FFD500CDA20BA832 . REGISTER CONTAINED   7ECCEF5FEC000000
TRACEBACK  ROUTINE  CALLED FRCM ISN   REG.  14   REG.  15   REG.   C   REG.   1
            EEBK                0031    E20B5C6E   00CB5E70   CCCCCCCC   CCCB528C
            ORBIT                       0001AA28   01CB5010   FFCCCCCE   CCCE6738
ENTRY POINT=  01CB5010
STANDARD FIXUP TAKEN . EXECUTICN CCNTINJING
IHC208I IBCCM - PRCGRAM INTERRUPT (P) -  UNDERFLOW   OLD PSW IS  FFD500CD920BA832 . REGISTER CONTAINED   FD45E3D00CC000C0
TRACEBACK  ROUTINE  CALLED FRCM ISN   REG.  14   REG.  15   REG.   C   REG.   1
            EEBK                0031    E20B5C6E   00CB5E70   CCCCCCCC   CCCB528C
            ORBIT                       0001AA28   01CB5010   FFCCCCCE   CCCE6738
ENTRY POINT=  01CB5010
STANDARD FIXUP TAKEN . EXECUTICN CCNTINUING
 4  3  0  0  0    358.95    0.02    0.39    0.61    178.28    1.05    -6.45    -.012    0.03
IHC208I IBCCM - PRCGRAM INTERRUPT (P) -  UNDERFLOW   OLD PSW IS  FFD500CDA2CBA832 . REGISTER CCNTAINED   7C1035078000000C
TRACEBACK  ROUTINE  CALLED FRCM ISN   REG.  14   REG.  15   REG.   C   REG.   1
            EEBK                0031    E20B5C6E   00CB5E70   CCCCCCCC   CCCB528C
            ORBIT                       0001AA28   01CB5010   FFCCCCCE   CCCE6738
ENTRY POINT=  01CB5010
STANDARD FIXUP TAKEN . EXECUTICN CCNTINUING
 4  4  0  0  0      2.60    0.02    0.38    0.62    175.84    2.60    -6.17    -.011    0.03
 4  5  0  0  0      6.54    0.02    0.37    0.64    169.74    6.54    -5.82    -.011    0.03
 4  6  0  0  0     10.78    0.02    0.35    0.66    163.42   10.78    -5.41    -.010    0.03
 4  7  0  0  0     15.33    0.02    0.34    0.67    156.91   15.33    -4.92    -.009    0.03
 4  8  0  0  0     20.19    0.02    0.34    0.70    150.22   20.19    -4.36    -.008    0.04
 4  9  0  0  0     25.34    0.02    0.33    0.72    143.35   25.34    -3.72    -.007    0.04
 4 10  0  0  0     30.77    0.02    0.32    0.74    136.45   30.77    -3.00    -.006    0.04
 4 11  0  0  0     36.45    0.01    0.32    0.77    129.45   36.45    -2.22    -.005    0.04
 4 12  0  0  0     42.31    0.01    0.31    0.80    122.43   42.31    -1.39    -.003    0.04
 4 13  0  0  0     48.32    0.01    0.31    0.83    115.47   48.32    -0.52    -.002    0.04
 4 14  0  0  0     54.39    0.00    0.31    0.86    108.61   54.39    0.37     0.000    0.04
 4 15  0  0  0     60.46    0.00    0.31    0.89    101.93   60.46    1.25     0.002    0.04
 4 16  0  0  0     66.45   -0.00    0.31    0.92     95.47   66.45    2.10     0.003    0.04
 4 17  0  0  0     72.30   -0.00    0.32    0.96     89.30   72.30    2.91     0.005    0.04
 4 18  0  0  0     77.94   -0.01    0.32    0.99     83.46   77.94    3.65     0.006    0.04
 4 19  0  0  0     83.35   -0.01    0.33    1.02     77.96   83.35    4.32     0.007    0.04
 4 20  0  0  0     88.47   -0.01    0.34    1.05     72.84   88.47    4.91     0.008    0.04
 4 21  0  0  0     93.30   -0.01    0.35    1.08     68.08   93.30    5.42     0.009    0.03
 4 22  0  0  0     97.82   -0.02    0.36    1.11     63.66   97.82    5.85     0.010    0.03
 4 23  0  0  0    102.03   -0.02    0.37    1.14     59.64  102.03    6.21     0.011    0.03
 4 24  0  0  0    105.94   -0.02    0.38    1.17     55.93  105.94    6.51     0.012    0.03
 4 25  0  0  0    109.57   -0.02    0.39    1.19     52.54  109.57    6.74     0.012    0.03
 4 26  0  0  0    112.92   -0.02    0.40    1.22     49.43  112.92    6.92     0.012    0.03
 4 27  0  0  0    116.01   -0.02    0.41    1.25     46.60  116.01    7.05     0.013    0.03
 4 28  0  0  0    118.86   -0.02    0.43    1.27     44.01  118.86    7.14     0.013    0.03
 4 29  0  0  0    121.50   -0.02    0.44    1.29     41.64  121.50    7.20     0.013    0.03
 4 30  0  0  0    123.92   -0.02    0.45    1.31     39.47  123.92    7.22     0.013    0.03
 5  1  0  0  0    126.16   -0.02    0.47    1.34     37.50  126.16    7.22     0.013    0.03
 5  1  0  0  0    126.16   -0.02    0.47    1.34     35.69  128.22    7.21     0.013    0.02
 5  2  0  0  0    128.22   -0.02    0.48    1.36
```

5	3	0	0	0	130.12	-0.02	0.49	1.38	34.03	130.12	7.17	0.013	0.02
5	4	0	0	0	131.87	-0.02	0.50	1.40	32.51	131.87	7.12	0.013	0.02
5	5	0	0	0	133.49	-0.02	0.52	1.42	31.12	133.49	7.05	0.013	0.02
5	6	0	0	0	134.98	-0.02	0.53	1.43	29.84	134.98	6.99	0.013	0.02
5	7	0	0	0	136.36	-0.02	0.54	1.45	28.67	136.36	6.90	0.013	0.02
5	8	0	0	0	137.63	-0.02	0.56	1.47	27.59	137.63	6.81	0.013	0.02
5	9	0	0	0	138.81	-0.02	0.57	1.49	26.59	138.81	6.71	0.012	0.02
5	10	0	0	0	139.89	-0.02	0.58	1.50	25.68	139.89	6.61	0.012	0.02
5	11	0	0	0	140.89	-0.02	0.59	1.52	24.84	140.89	6.51	0.012	0.02
5	12	0	0	0	141.81	-0.02	0.60	1.53	24.06	141.81	6.40	0.012	0.02
5	13	0	0	0	142.66	-0.02	0.62	1.55	23.35	142.66	6.29	0.012	0.02
5	14	0	0	0	143.44	-0.02	0.63	1.56	22.69	143.44	6.18	0.011	0.02
5	15	0	0	0	144.16	-0.02	0.64	1.57	22.08	144.16	6.07	0.011	0.02
5	16	0	0	0	144.82	-0.02	0.65	1.59	21.53	144.82	5.96	0.011	0.02
5	17	0	0	0	145.43	-0.02	0.66	1.60	21.01	145.43	5.84	0.011	0.02
5	18	0	0	0	145.98	-0.02	0.67	1.61	20.53	145.98	5.73	0.011	0.02
5	19	0	0	0	146.49	-0.02	0.68	1.63	20.10	146.49	5.61	0.011	0.02
5	20	0	0	0	146.96	-0.02	0.69	1.64	19.69	146.96	5.50	0.010	0.02
5	21	0	0	0	147.38	-0.02	0.70	1.65	19.32	147.38	5.38	0.010	0.02
5	22	0	0	0	147.76	-0.02	0.71	1.66	18.98	147.76	5.27	0.010	0.02
5	23	0	0	0	148.11	-0.02	0.72	1.67	18.67	148.11	5.15	0.010	0.02
5	24	0	0	0	148.43	-0.02	0.73	1.68	18.38	148.43	5.04	0.010	0.02
5	25	0	0	0	148.71	-0.02	0.74	1.69	18.12	148.71	4.92	0.009	0.02
5	26	0	0	0	148.96	-0.02	0.75	1.70	17.87	148.96	4.81	0.009	0.02
5	27	0	0	0	149.18	-0.02	0.76	1.71	17.66	149.18	4.70	0.009	0.02
5	28	0	0	0	149.38	-0.02	0.77	1.72	17.46	149.38	4.59	0.009	0.02
5	29	0	0	0	149.55	-0.02	0.78	1.73	17.27	149.55	4.48	0.009	0.02
5	30	0	0	0	149.69	-0.02	0.79	1.74	17.11	149.69	4.37	0.008	0.02
5	31	0	0	0	149.81	-0.02	0.80	1.75	16.96	149.81	4.26	0.008	0.01
6	1	0	0	0	149.92	-0.02	0.80	1.76	16.83	149.92	4.15	0.008	0.01
6	1	0	0	0	149.92	-0.02	0.80	1.76	16.83	149.92	4.15	0.008	0.01
6	2	0	0	0	150.00	-0.02	0.81	1.76	16.71	150.00	4.04	0.008	0.01
6	3	0	0	0	150.06	-0.02	0.82	1.77	16.61	150.06	3.93	0.008	0.01
6	4	0	0	0	150.10	-0.02	0.83	1.78	16.51	150.10	3.83	0.007	0.01
6	5	0	0	0	150.13	-0.02	0.83	1.79	16.43	150.13	3.72	0.007	0.01
6	6	0	0	0	150.13	-0.02	0.84	1.79	16.37	150.13	3.62	0.007	0.01
6	7	0	0	0	150.13	-0.02	0.85	1.80	16.31	150.13	3.51	0.007	0.01
6	8	0	0	0	150.10	-0.02	0.85	1.81	16.26	150.10	3.41	0.007	0.01
6	9	0	0	0	150.07	-0.02	0.86	1.81	16.23	150.07	3.31	0.006	0.01
6	10	0	0	0	150.02	-0.02	0.87	1.82	16.20	150.02	3.20	0.006	0.01
6	11	0	0	0	149.95	-0.02	0.87	1.82	16.18	149.95	3.10	0.006	0.01
6	12	0	0	0	149.83	-0.02	0.88	1.83	16.17	149.88	3.00	0.006	0.01
6	13	0	0	0	149.79	-0.01	0.89	1.84	16.16	149.79	2.90	0.006	0.01
6	14	0	0	0	149.69	-0.01	0.89	1.84	16.17	149.69	2.80	0.006	0.01
6	15	0	0	0	149.58	-0.01	0.90	1.85	16.18	149.58	2.70	0.005	0.01

HELIOS-A YEAR 1977. LAUNCH TIME 79292950. 0.

DATE MO	DD	HR	MN	SC	HELIOS ECL-LENG	HELIOS ECL-LAT	SUN-HELIOS DIST(A.U)	EARTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LAT(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
6	16	0	0	0	149.46	-0.01	0.90	1.85	16.20	149.46	2.61	0.005	0.01
6	17	0	0	0	149.34	-0.01	0.91	1.85	16.22	149.34	2.51	0.005	0.01
6	18	0	0	0	149.20	-0.01	0.91	1.86	16.25	149.20	2.41	0.005	0.01
6	19	0	0	0	149.05	-0.01	0.92	1.86	16.29	149.05	2.32	0.005	0.01
6	20	0	0	0	148.90	-0.01	0.92	1.87	16.33	148.90	2.22	0.004	0.01
6	21	0	0	0	148.73	-0.01	0.93	1.87	16.38	148.73	2.13	0.004	0.01
6	22	0	0	0	148.57	-0.01	0.93	1.87	16.43	148.57	2.03	0.004	0.01
6	23	0	0	0	148.39	-0.01	0.93	1.88	16.49	148.39	1.94	0.004	0.01
6	24	0	0	0	148.21	-0.01	0.94	1.88	16.55	148.21	1.84	0.004	0.01
6	25	0	0	0	148.02	-0.01	0.94	1.88	16.61	148.02	1.75	0.004	0.01
6	26	0	0	0	147.82	-0.01	0.95	1.89	16.68	147.82	1.66	0.004	0.01
6	27	0	0	0	147.62	-0.01	0.95	1.89	16.76	147.62	1.57	0.003	0.01
6	28	0	0	0	147.42	-0.01	0.95	1.89	16.83	147.42	1.47	0.003	0.01
6	29	0	0	0	147.21	-0.01	0.96	1.89	16.92	147.21	1.38	0.003	0.01
6	30	0	0	0	146.99	-0.01	0.96	1.89	17.00	146.99	1.29	0.003	0.01
7	1	0	0	0	146.77	-0.01	0.96	1.90	17.09	146.77	1.20	0.003	0.01
7	1	0	0	0	146.77	-0.01	0.96	1.90	17.09	146.77	1.20	0.003	0.01
7	2	0	0	0	146.55	-0.01	0.96	1.90	17.18	146.55	1.11	0.003	0.01
7	3	0	0	0	146.32	-0.01	0.97	1.90	17.28	146.32	1.02	0.002	0.01
7	4	0	0	0	146.09	-0.01	0.97	1.90	17.37	146.09	0.93	0.002	0.01
7	5	0	0	0	145.85	-0.01	0.97	1.90	17.47	145.85	0.84	0.002	0.01
7	6	0	0	0	145.62	-0.01	0.97	1.90	17.58	145.62	0.75	0.002	0.01
7	7	0	0	0	145.38	-0.01	0.98	1.90	17.68	145.38	0.66	0.002	0.01
7	8	0	0	0	145.13	-0.01	0.98	1.90	17.79	145.13	0.57	0.002	0.01
7	9	0	0	0	144.89	-0.01	0.98	1.90	17.90	144.89	0.48	0.001	0.01
7	10	0	0	0	144.64	-0.01	0.98	1.90	18.02	144.64	0.39	0.001	0.01
7	11	0	0	0	144.39	-0.01	0.98	1.90	18.13	144.39	0.31	0.001	0.01
7	12	0	0	0	144.14	-0.01	0.98	1.90	18.25	144.14	0.22	0.001	0.01
7	13	0	0	0	143.88	-0.01	0.98	1.90	18.37	143.88	0.13	0.001	0.01

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7 14   0   0   0     143.63     -0.01      0.98      1.90      18.50     143.63      0.04     0.001     0.01
7 15   0   0   0     143.37     -0.01      0.98      1.90      18.62     143.37     -0.05     0.000     0.01
7 16   0   0   0     143.12     -0.01      0.98      1.90      18.75     143.12     -0.13     0.000     0.01
7 17   0   0   0     142.86     -0.01      0.98      1.90      18.87     142.86     -0.22     0.000     0.01
7 18   0   0   0     142.60     -0.00      0.98      1.90      19.00     142.60     -0.31     0.000     0.01
7 18   0  25   8     142.60     -0.00      0.98      1.90      19.01     142.60     -0.31     0.000     0.01

END OF FILE ON ORBIT TAPE

SUMMARY OF ERRORS FOR THIS JOB    ERROR NUMBER    NUMBER OF ERRORS

                                     200              30


IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   M2.ZBRTC.SD002.LOAD                          KEPT        DDNAME=SYSLIB  -1          0 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS2.DEBLKUNV                                KEPT        DDNAME=SYSLIB  -2         17 EXCPS
IEF285I   VOL SER NOS= M2SYS2.
IEF285I   SYS1.FORTLIB                                 KEPT        DDNAME=SYSLIB  -3         61 EXCPS
IEF285I   VOL SER NOS= K3ITL0.
IEF285I   SYS2.FORTLTB                                 KEPT        DDNAME=SYSLIB  -4         28 EXCPS
IEF285I   VOL SER NOS= K3SY32.
IEF285I   SYS1.PL1LIB                                  KEPT        DDNAME=SYSLIB  -5          0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS1.FORTSSP                                 KEPT        DDNAME=SYSLIB  -6          0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS2.COBLIB                                  KEPT        DDNAME=SYSLIB  -7          0 EXCPS
IEF285I   VOL SER NOS= M2SYS1.
IEF285I   SYS1.ALGLIB                                  KEPT        DDNAME=SYSLIB  -8          0 EXCPS
IEF285I   VOL SER NOS= K3SY32.
IEF285I   SYS80037.T165715.RV000.SDHELOA5.R0000009     SYSOUT      DDNAME=SYSLOUT             1 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   M2.ZBRTC.SD002.LOAD                          KEPT        DDNAME=SYSLIN  -1          7 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS80037.T165715.RV000.SDHELOA5.S0000016     SYSIN       DDNAME=FT05F001            2 EXCPS
IEF285I   VOL SER NOS= K3SCR3.
IEF285I   SYS80037.T165715.RV000.SDHELOA5.S0000016     DELETED     DDNAME=FT05F001            2 EXCPS
IEF285I   VOL SER NOS= K3SCR3.
IEF285I   SYS80037.T165715.RV000.SDHELOA5.R0000010     SYSOUT      DDNAME=FT06F001            3 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS80037.T165715.RV000.SDHELOA5.R0000011     DELETED     DDNAME=FT07F001            0 EXCPS
IEF285I   VOL SER NOS= K3SCR4.
IEF285I   SYS80037.T165715.RV000.SDHELOA5.R0000012     DELETED     DDNAME=SYSPRINT            0 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80037.T165715.RV000.SDHELOA5.R0000013     DELETED     DDNAME=SYSTERM             0 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS80037.T165715.RV000.SDHELOA5.R0000014     DELETED     DDNAME=SYSLDUMP            0 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80037.T165715.RV000.SDHELOA5.R0000015     KEPT        DDNAME=GENTAP          2.625 EXCPS
IEF285I   VOL SER NOS= DRA34.
IEF283I K SCT.DRA28 .SDHELOA5.GO
IEF373I STEP /GO     / START 80037.1702
IEF374I STEP /GO     / STOP  80037.1712 CPU    0MIN 37.50SEC MAIN 200K LCS    CK
- STEP 01 -      RETURN CODE = 0000                                STEP TIME =     1.25 MINS=(CPU=      .63,IO=      .62)
                                          IO IN SECS. DISK=    11.22,DRUM=      .00,TAPE=    26.23,CELL=      .00,CTHR=      .16
- SURCHARGES=(DRIVES ALOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=00000)SECS.   TOTAL STP TIME=     1.25 MINS.  -
      // EXEC NOTIFYTS,ID=SDHEL
      XXDEFAULT  PREC MODE=,USRID=,MSG=,USERID=,ID=  NOTIFYTS. EAG/E1JUN13      00000010
      ***        SEND BACKGROUND JOB REPORT TO TSO USER                         00000020
      XXNOTIFYTS EXEC PGM=NOTIFYTS,REGION=20K,COND=EVEN,                        00000030
      XX         PARM='&MODE,&USRID&USERID&ID,&MSG'                             00000040
      IEF653I SUBSTITUTION JCL - PARM='.SDHEL.'
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF373I STEP /NOTIFYTS/ START 80037.1712
IEF374I STEP /NOTIFYTS/ STOP  80037.1712 CPU    0MIN 00.12SEC MAIN    8K LCS    CK
- STEP 02 -      RETURN CODE = 0000                                STEP TIME =      .00 MINS=(CPU=      .00,IO=      .00)
                                          IO IN SECS. DISK=      .22,DRUM=      .00,TAPE=      .00,CELL=      .00,CTHR=      .06
- SURCHARGES=(DRIVES ALOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=00000)SECS.   TOTAL STP TIME=00000.00 MINS.  -
IEF375I  JOB /SDHELOA5/ START 80037.1702
IEF376I  JOB /SDHELOA5/ STOP  80037.1712 CPU    0MIN 38.02SEC
- SYSTEM=REL21.8F (04-01-79) K3                                   TIME=17.12.56.25 DATE=02-06-80
- JOB 0391-                                       TOTAL TIME =     1.25 MINS=(CPU=      .63,IO=      .62)
                                          IO IN SECS. DISK=    11.45,DRUM=      .00,TAPE=    26.23,CELL=      .00,CTHR=      .22
- SURCHARGES=(DRIVES ALOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=00000)SECS.   TOTAL JOB TIME=     1.25 MINS.  -
 THERE WERE 01 TAPES MOUNTED FOR THIS JOB. TAPE MOUNT CHARGE WAS 00.0 MINUTES.
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JOBNAME-
      SSSSSSSSSS   DDDDDDDDD     HH        HH  EEEEEEEEEEEE  LL          OOOOOOOOOO       AA        2222222222
     SSSSSSSSSSS   DDDDDDDDDD    HH        HH  EEEEEEEEEEEE  LL          OOOOOOOOOOOO     AA        222222222222
     SS        SS  DD       DD   HH        HH  EE            LL          OO        OO     AAAA      22        22
     SS            DD        DD  HH        HH  EE            LL          OO        OO     AAAA                22
     SSS           DD        DD  HH        HH  EE            LL          OO        OO    AA  AA              22
      SSSSSSSSS    DD        DD  HHHHHHHHHHHH  EEEEEEEE      LL          OO        OO    AA  AA            22
       SSSSSSSSS   DD        DD  HHHHHHHHHHHH  EEEEEEEE      LL          OO        OO   AA    AA          22
              SSS  DD        DD  HH        HH  EE            LL          OO        OO   AAAAAAAA        22
               SS  DD        DD  HH        HH  EE            LL          OO        OO  AAAAAAAAAA      22
     SS        SS  DD       DD   HH        HH  EE            LL          OO        OO  AA      AA     22
     SSSSSSSSSSS   DDDDDDDDDD    HH        HH  EEEEEEEEEEEE  LLLLLLLLLLLL  OOOOOOOOOOOO  AA        AA   222222222222
      SSSSSSSSSS   DDDDDDDDD     HH        HH  EEEEEEEEEEEE  LLLLLLLLLLLL   OOOOOOOOOO   AA        AA   222222222222

BOX-                                                  SACC 360/75      READER NUMBER-P0075          CLASS-
     BBBBBBBBB     FFFFFFFFFFFF    33333333                                                          AA
     BBBBBBBBB     FFFFFFFFFFFF   3333333333                                                         AA
     BB       BB   FF            33        33                                                        AAAA
     BB       BB   FF                      33                                                        AAAA
     BB      BB    FF                     33                                                       AA  AA
     BBBBBBBBB     FFFFFFFF           33333                                                        AA  AA
     BBBBBBBBB     FFFFFFFF           33333                                                       AA    AA
     BB       BB   FF                     33                                                       AAAAAAAA
     BB        BB  FF                      33                                                     AAAAAAAAAA
     BB        BB  FF            33        33                                                     AA      AA
     BBBBBBBBBB    FF            3333333333                                                     AA        AA
     BBBBBBBBB     FF             33333333                                                      AA        AA
```

ORA30

8/1/77 - 12/31/77

DR

NUMBER 39 ON 001-ZBLAWMD2/671 ZYCTCPAT/168 ZMJLKNPC/910 Z820LEOR/X22 SDHELDA2/BF3 AT 12.01.01 FRI 01 FEB 80

IHCNAMEL*	SD	55BA0	FRONL# *	LR	553A0	F#RNL# *	LR	561A4	IHCECOMH*	SD	56670	IBCOM# *	LR	56670
FDIOCS# *	LR	5672C	INTSWTCH*	LR	57536	IHCCOMH2*	SD	57503	SEQDASD *	LR	57950	FTF *	SD	57C38
ITISECT *	SD	57CE8	ITI *	LR	57CE8	FXFLT *	SD	57D40	FIXFLT *	LR	57D40	TRNSLTE *	SD	57D88
TRANG *	LR	57D88	BITST *	SD	57E98	CNTGDATA*	LR	57E98	DTDUN *	SD	57FC8	IHCFCVTH*	SD	58C98
ADCON# *	LR	58098	FCVADUTP*	LR	58142	FCVLOUTP*	LR	58102	FCVZOUTP*	LR	58322	FCVIOUTP*	LR	58600
FCVCOUTP*	LR	59802	FCVCOUTP*	LR	59DEC	INTGSWCH*	LR	59DD3	IHCEFIOS*	SD	59239	FIOCS# *	LR	59238
FIOCSDEP*	LR	5923E	IHCFIUS2*	SD	5A160	IHCERR4 *	SD	5A690	ERRMON *	LR	5A690	IHCERRE *	LR	5A6A8
IHCFNTH*	SD	5AC68	ARITH# *	LR	5AC68	ADJS#TCH*	LR	58004	IHCUOPT *	SD	53180	IHCUATOL*	SD	5B4D8
IHCETRCH*	SD	5B810	IHCTRCH *	LR	5B810	ERRTRA *	LR	5BB18						

TOTAL LENGTH 5590
ENTRY ADDRESS 52910

SATID HELIOS-A ORBIT TAPE #=ORA30
7409701 068 77 213 000000 365 000300 8129 01 780712 129 01 01 E7 X

HELIOS-A YEAR 1977. LAUNCH TIME .83350152. 0.

DATE MN	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	ERTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LET(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
8	1	0	0	0	139.10	-0.00	0.97	1.86	20.94	139.10	-1.49	-.002	0.01
8	2	0	0	0	138.86	-0.00	0.97	1.86	21.09	138.86	-1.58	-.002	0.01
8	3	0	0	0	138.63	-0.00	0.96	1.85	21.23	138.63	-1.67	-.003	0.01
8	4	0	0	0	138.41	0.00	0.96	1.85	21.38	138.41	-1.76	-.003	0.01
8	5	0	0	0	138.18	0.00	0.96	1.84	21.52	138.18	-1.85	-.003	0.01
8	6	0	0	0	137.96	0.00	0.96	1.84	21.67	137.96	-1.94	-.003	0.01
8	7	0	0	0	137.75	0.00	0.95	1.83	21.82	137.75	-2.03	-.003	0.01
8	8	0	0	0	137.53	0.00	0.95	1.83	21.96	137.53	-2.12	-.003	0.01
8	9	0	0	0	137.33	0.00	0.95	1.83	22.11	137.33	-2.21	-.004	0.01
8	10	0	0	0	137.13	0.00	0.94	1.82	22.25	137.13	-2.30	-.004	0.01
8	11	0	0	0	136.93	0.00	0.94	1.82	22.40	136.93	-2.39	-.004	0.01
8	12	0	0	0	136.74	0.00	0.93	1.81	22.54	136.74	-2.49	-.004	0.01
8	13	0	0	0	136.56	0.00	0.93	1.81	22.69	136.56	-2.57	-.004	0.01
8	14	0	0	0	136.39	0.00	0.93	1.80	22.83	136.39	-2.67	-.004	0.01
8	15	0	0	0	136.22	0.00	0.92	1.80	22.97	136.22	-2.76	-.005	0.01
8	16	0	0	0	136.06	0.00	0.92	1.79	23.12	136.06	-2.85	-.005	0.01
8	17	0	0	0	135.90	0.00	0.91	1.78	23.26	135.90	-2.94	-.005	0.01
8	18	0	0	0	135.76	0.00	0.91	1.78	23.39	135.76	-3.04	-.005	0.01
8	19	0	0	0	135.62	0.00	0.90	1.77	23.53	135.62	-3.13	-.005	0.01
8	20	0	0	0	135.50	0.01	0.90	1.77	23.66	135.50	-3.23	-.005	0.01
8	21	0	0	0	135.38	0.01	0.89	1.76	23.80	135.38	-3.32	-.006	0.01
8	22	0	0	0	135.27	0.01	0.89	1.76	23.93	135.27	-3.42	-.006	0.01
8	23	0	0	0	135.18	0.01	0.88	1.75	24.05	135.18	-3.51	-.006	0.01
8	24	0	0	0	135.09	0.01	0.87	1.74	24.18	135.09	-3.61	-.006	0.01
8	25	0	0	0	135.02	0.01	0.87	1.74	24.30	135.02	-3.71	-.006	0.01
8	26	0	0	0	134.96	0.01	0.86	1.73	24.41	134.96	-3.80	-.006	0.01
8	27	0	0	0	134.92	0.01	0.85	1.72	24.53	134.92	-3.90	-.007	0.01
8	28	0	0	0	134.88	0.01	0.85	1.72	24.64	134.88	-4.00	-.007	0.01
8	29	0	0	0	134.87	0.01	0.84	1.71	24.74	134.87	-4.10	-.007	0.01
8	30	0	0	0	134.87	0.01	0.83	1.70	24.84	134.87	-4.20	-.007	0.01
8	31	0	0	0	134.88	0.01	0.83	1.70	24.93	134.88	-4.30	-.007	0.01
9	1	0	0	0	134.91	0.01	0.82	1.69	25.02	134.91	-4.40	-.008	0.01
9	2	0	0	0	134.96	0.01	0.81	1.69	25.10	134.96	-4.50	-.008	0.01
9	3	0	0	0	135.03	0.01	0.80	1.68	25.17	135.03	-4.60	-.008	0.01
9	4	0	0	0	135.12	0.01	0.80	1.67	25.23	135.12	-4.70	-.008	0.01
9	5	0	0	0	135.23	0.01	0.79	1.66	25.29	135.23	-4.81	-.008	0.01
9	6	0	0	0	135.37	0.01	0.78	1.66	25.33	135.37	-4.91	-.009	0.02
9	7	0	0	0	135.53	0.01	0.77	1.65	25.37	135.53	-5.01	-.009	0.02
9	8	0	0	0	135.71	0.01	0.76	1.64	25.39	135.71	-5.12	-.009	0.02
9	9	0	0	0	135.92	0.01	0.75	1.63	25.40	135.92	-5.22	-.009	0.02
9	10	0	0	0	136.16	0.01	0.74	1.63	25.40	136.16	-5.32	-.009	0.02
9	11	0	0	0	136.43	0.01	0.73	1.62	25.38	136.43	-5.43	-.010	0.02
9	12	0	0	0	136.73	0.01	0.72	1.61	25.34	136.73	-5.53	-.010	0.02
9	13	0	0	0	137.06	0.01	0.71	1.60	25.29	137.06	-5.64	-.010	0.02
9	14	0	0	0	137.43	0.02	0.70	1.60	25.22	137.43	-5.74	-.010	0.02
9	15	0	0	0	137.84	0.02	0.69	1.59	25.12	137.84	-5.85	-.010	0.02
9	16	0	0	0	138.29	0.02	0.68	1.58	25.01	138.29	-5.95	-.011	0.02
9	17	0	0	0	138.79	0.02	0.67	1.57	24.86	138.79	-6.06	-.011	0.02
9	18	0	0	0	139.33	0.02	0.66	1.57	24.69	139.33	-6.16	-.011	0.02
9	19	0	0	0	139.93	0.02	0.65	1.56	24.49	139.93	-6.26	-.011	0.02
9	20	0	0	0	140.57	0.02	0.64	1.55	24.25	140.57	-6.36	-.011	0.02
9	21	0	0	0	141.28	0.02	0.63	1.55	23.98	141.28	-6.46	-.011	0.02
9	22	0	0	0	142.04	0.02	0.62	1.54	23.67	142.04	-6.55	-.012	0.02
9	23	0	0	0	142.88	0.02	0.61	1.53	23.31	142.88	-6.65	-.012	0.02
9	24	0	0	0	143.79	0.02	0.59	1.52	22.91	143.78	-6.74	-.012	0.02
9	25	0	0	0	144.76	0.02	0.58	1.52	22.45	144.76	-6.82	-.012	0.02
9	26	0	0	0	145.83	0.02	0.57	1.51	21.93	145.83	-6.90	-.012	0.02
9	27	0	0	0	146.99	0.02	0.56	1.50	21.35	146.99	-6.98	-.012	0.02

9	28	0	0	0	148.24	0.02	0.54	1.49	20.70	148.24	-7.05	-.013	0.02
9	29	0	0	0	149.60	0.02	0.53	1.48	19.97	149.60	-7.11	-.013	0.02
9	30	0	0	0	151.07	0.02	0.52	1.48	19.15	151.07	-7.16	-.013	0.02
10	1	0	0	0	152.67	0.02	0.51	1.47	18.24	152.67	-7.19	-.013	0.02
10	2	0	0	0	154.41	0.02	0.49	1.46	17.22	154.41	-7.22	-.013	0.02
10	3	0	0	0	156.29	0.02	0.48	1.45	16.08	156.29	-7.23	-.013	0.02
10	4	0	0	0	158.33	0.02	0.47	1.44	14.82	158.33	-7.22	-.013	0.03
10	5	0	0	0	160.55	0.02	0.45	1.44	13.42	160.55	-7.19	-.013	0.03
10	6	0	0	0	162.95	0.02	0.44	1.43	11.86	162.95	-7.12	-.013	0.03
10	7	0	0	0	165.56	0.02	0.43	1.42	10.13	165.56	-7.03	-.013	0.03
10	8	0	0	0	168.39	0.02	0.41	1.41	8.21	168.39	-6.90	-.013	0.03
10	9	0	0	0	171.46	0.02	0.40	1.40	6.09	171.46	-6.73	-.012	0.03
10	10	0	0	0	174.79	0.02	0.39	1.39	3.75	174.79	-6.52	-.012	0.03
10	11	0	0	0	178.39	0.02	0.38	1.38	1.17	178.39	-6.24	-.012	0.03
10	12	0	0	0	182.27	0.02	0.37	1.36	1.66	177.73	-5.91	-.011	0.03
10	13	0	0	0	186.46	0.02	0.36	1.35	4.76	173.54	-5.51	-.010	0.03
10	14	0	0	0	190.96	0.02	0.35	1.34	8.14	169.04	-5.04	-.009	0.03
10	15	0	0	0	195.76	0.02	0.34	1.32	11.79	164.24	-4.49	-.009	0.03
10	16	0	0	0	200.36	0.02	0.33	1.31	15.72	159.14	-3.87	-.007	0.04
10	17	0	0	0	206.23	0.02	0.32	1.29	19.91	153.77	-3.17	-.006	0.04

HELIOS-A YEAR 1977. LAUNCH TIME 93006552. 0.

DATE MM	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	EARTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LET(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
10	18	0	0	0	211.86	0.01	0.32	1.28	24.33	148.14	-2.40	-.005	0.04
10	19	0	0	0	217.69	0.01	0.31	1.26	28.94	142.31	-1.57	-.003	0.04
10	20	0	0	0	223.66	0.01	0.31	1.24	33.70	136.34	-0.71	-.002	0.04
10	21	0	0	0	229.71	0.01	0.31	1.22	38.54	130.29	0.18	-.000	0.04
10	22	0	0	0	235.77	0.00	0.31	1.20	43.40	124.23	1.06	0.001	0.04
10	23	0	0	0	241.76	-0.00	0.31	1.18	48.22	118.24	1.92	0.003	0.04
10	24	0	0	0	247.62	-0.00	0.32	1.15	52.93	112.38	2.74	0.005	0.04
10	25	0	0	0	253.29	-0.01	0.32	1.13	57.47	106.72	3.49	0.006	0.04
10	26	0	0	0	258.71	-0.01	0.33	1.11	61.81	101.29	4.18	0.007	0.04
10	27	0	0	0	263.86	-0.01	0.34	1.08	65.90	96.14	4.78	0.008	0.04
10	28	0	0	0	268.71	-0.01	0.34	1.06	69.73	91.29	5.31	0.009	0.03
10	29	0	0	0	273.26	-0.02	0.35	1.04	73.29	86.74	5.76	0.010	0.03
10	30	0	0	0	277.50	-0.02	0.36	1.01	76.57	82.50	6.13	0.011	0.03
10	31	0	0	0	281.43	-0.02	0.38	0.99	79.57	78.57	6.44	0.011	0.03
11	1	0	0	0	285.08	-0.02	0.39	0.97	82.31	74.92	6.69	0.012	0.03
11	2	0	0	0	288.44	-0.02	0.40	0.95	84.79	71.56	6.88	0.012	0.03
11	3	0	0	0	291.55	-0.02	0.41	0.92	87.04	68.45	7.02	0.013	0.03
11	4	0	0	0	294.41	-0.02	0.42	0.90	89.05	65.59	7.12	0.013	0.03
11	5	0	0	0	297.05	-0.02	0.44	0.88	90.85	62.95	7.18	0.013	0.03
11	6	0	0	0	299.47	-0.02	0.45	0.86	92.46	60.53	7.22	0.013	0.03
11	7	0	0	0	301.71	-0.02	0.46	0.85	93.87	58.29	7.23	0.013	0.03
11	8	0	0	0	303.76	-0.02	0.48	0.83	95.12	56.24	7.21	0.013	0.02
11	9	0	0	0	305.65	-0.02	0.49	0.81	96.20	54.35	7.18	0.013	0.02
11	10	0	0	0	307.39	-0.02	0.50	0.79	97.13	52.61	7.14	0.013	0.02
11	11	0	0	0	308.99	-0.02	0.52	0.78	97.93	51.01	7.08	0.013	0.02
11	12	0	0	0	310.47	-0.02	0.53	0.76	98.59	49.53	7.01	0.013	0.02
11	13	0	0	0	311.83	-0.02	0.54	0.75	99.13	48.17	6.93	0.013	0.02
11	14	0	0	0	313.07	-0.02	0.55	0.73	99.56	46.93	6.84	0.013	0.02
11	15	0	0	0	314.22	-0.02	0.57	0.72	99.87	45.78	6.75	0.012	0.02
11	16	0	0	0	315.28	-0.02	0.58	0.71	100.09	44.72	6.65	0.012	0.02
11	17	0	0	0	316.25	-0.02	0.59	0.69	100.22	43.75	6.55	0.012	0.02
11	18	0	0	0	317.14	-0.02	0.60	0.68	100.26	42.86	6.44	0.012	0.02
11	19	0	0	0	317.95	-0.02	0.61	0.67	100.21	42.05	6.33	0.012	0.02
11	20	0	0	0	318.70	-0.02	0.63	0.66	100.09	41.30	6.22	0.012	0.02
11	21	0	0	0	319.39	-0.02	0.64	0.65	99.90	40.61	6.11	0.011	0.02
11	22	0	0	0	320.01	-0.02	0.65	0.64	99.64	39.99	6.00	0.011	0.02
11	23	0	0	0	320.58	-0.02	0.66	0.64	99.32	39.42	5.89	0.011	0.02
11	24	0	0	0	321.10	-0.02	0.67	0.63	98.94	38.90	5.77	0.011	0.02
11	25	0	0	0	321.57	-0.02	0.68	0.62	98.51	38.43	5.66	0.011	0.02
11	26	0	0	0	321.99	-0.02	0.69	0.61	98.03	38.01	5.55	0.010	0.02
11	27	0	0	0	322.37	-0.02	0.70	0.61	97.51	37.63	5.43	0.010	0.02
11	28	0	0	0	322.71	-0.02	0.71	0.60	96.94	37.29	5.32	0.010	0.02
11	29	0	0	0	323.01	-0.02	0.72	0.60	96.34	36.99	5.20	0.010	0.02
11	30	0	0	0	323.28	-0.02	0.73	0.59	95.71	36.72	5.09	0.010	0.02
12	1	0	0	0	323.52	-0.02	0.74	0.59	95.04	36.48	4.98	0.009	0.02
12	2	0	0	0	323.72	-0.02	0.75	0.59	94.35	36.28	4.86	0.009	0.02
12	3	0	0	0	323.89	-0.02	0.76	0.58	93.64	36.11	4.75	0.009	0.02
12	4	0	0	0	324.04	-0.02	0.77	0.58	92.92	35.96	4.64	0.009	0.02
12	5	0	0	0	324.16	-0.02	0.78	0.59	92.17	35.84	4.53	0.009	0.02
12	6	0	0	0	324.25	-0.02	0.79	0.58	91.42	35.75	4.42	0.008	0.02
12	7	0	0	0	324.32	-0.02	0.79	0.57	90.65	35.68	4.31	0.008	0.01
12	8	0	0	0	324.37	-0.02	0.80	0.57	89.88	35.63	4.20	0.008	0.01
12	9	0	0	0	324.39	-0.02	0.81	0.57	89.11	35.61	4.10	0.008	0.01
12	10	0	0	0	324.40	-0.02	0.82	0.57	88.33	35.60	3.99	0.008	0.01

12	11	0	0	0	324.38	-0.02	0.82	0.57	87.55	35.62	3.88	0.007	0.01
12	12	0	0	0	324.35	-0.02	0.83	0.57	86.78	35.65	3.78	0.007	0.01
12	13	0	0	0	324.30	-0.02	0.84	0.58	86.02	35.70	3.67	0.007	0.01
12	14	0	0	0	324.24	-0.02	0.85	0.58	85.26	35.76	3.57	0.007	0.01
12	15	0	0	0	324.16	-0.02	0.85	0.58	84.51	35.84	3.47	0.007	0.01
12	16	0	0	0	324.06	-0.02	0.86	0.59	83.77	35.94	3.37	0.007	0.01
12	17	0	0	0	323.95	-0.02	0.87	0.58	83.04	36.05	3.26	0.006	0.01
12	18	0	0	0	323.83	-0.02	0.87	0.59	82.33	36.17	3.16	0.006	0.01
12	19	0	0	0	323.69	-0.02	0.88	0.59	81.63	36.31	3.06	0.006	0.01
12	20	0	0	0	323.54	-0.01	0.89	0.59	80.94	36.46	2.96	0.006	0.01
12	21	0	0	0	323.39	-0.01	0.89	0.60	80.27	36.61	2.86	0.006	0.01
12	22	0	0	0	323.22	-0.01	0.90	0.60	79.61	36.78	2.77	0.005	0.01
12	23	0	0	0	323.04	-0.01	0.90	0.60	78.97	36.96	2.67	0.005	0.01
12	24	0	0	0	322.85	-0.01	0.91	0.61	78.35	37.16	2.57	0.005	0.01
12	25	0	0	0	322.65	-0.01	0.91	0.61	77.75	37.35	2.47	0.005	0.01
12	26	0	0	0	322.44	-0.01	0.92	0.61	77.16	37.56	2.38	0.005	0.01
12	27	0	0	0	322.22	-0.01	0.92	0.62	76.59	37.78	2.28	0.004	0.01
12	28	0	0	0	322.00	-0.01	0.93	0.62	76.04	38.00	2.19	0.004	0.01
12	29	0	0	0	321.76	-0.01	0.93	0.63	75.50	38.24	2.09	0.004	0.01
12	30	0	0	0	321.52	-0.01	0.93	0.63	74.99	38.48	2.00	0.004	0.01
12	31	0	0	0	321.28	-0.01	0.94	0.64	74.49	38.72	1.91	0.004	0.01

END OF FILE ON ORBIT TAPE

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IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   M2.ZORTC.SD002.LOAD                                  KEPT       DDNAME=SYSLIB  -1        0 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS2.DEBLKUNV                                        KEPT       DDNAME=SYSLIB  -2       17 EXCPS
IEF285I   VOL SER NOS= M2SYS2.
IEF285I   SYS1.FORTLIB                                         KEPT       DDNAME=SYSLIB  -3       61 EXCPS
IEF285I   VOL SER NOS= K3ITL0.
IEF285I   SYS2.FORTLIB                                         KEPT       DDNAME=SYSLIB  -4       28 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SYS1.PLILIB                                          KEPT       DDNAME=SYSLIB  -5        0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS1.FORTSSP                                         KEPT       DDNAME=SYSLIB  -6        0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS2.COBLIB                                          KEPT       DDNAME=SYSLIB  -7        0 EXCPS
IEF285I   VOL SER NOS= M2SYS1.
IEF285I   SYS1.ALGLIB                                          KEPT       DDNAME=SYSLIB  -8        0 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SYS80032.T114539.SV000.SDHELOA2.R0000001             SYSOUT     DDNAME=SYSLOUT           1 EXCPS
IEF285I   VOL SER NOS= K3SCR4.
IEF285I   M2.ZORTC.SD002.LOAD                                  KEPT       DDNAME=SYSLIN  -1        7 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS80032.T114539.RV000.SDHELOA2.S0000008             SYSIN      DDNAME=FT05F001          2 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80032.T114539.RV000.SDHELOA2.S0000008             DELETED    DDNAME=FT05F001          2 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80032.T114539.SV000.SDHELOA2.R0000002             SYSOUT     DDNAME=FT06F001          3 EXCPS
IEF285I   VOL SER NOS= K3SCR3.
IEF285I   SYS80032.T114539.SV000.SDHELOA2.R0000003             DELETED    DDNAME=FT07F001          0 EXCPS
IEF285I   VOL SER NOS= K3SCR6.
IEF285I   SYS80032.T114539.SV000.SDHELOA2.R0000004             DELETED    DDNAME=SYSPRINT          0 EXCPS
IEF285I   VOL SER NOS= K3SCR4.
IEF285I   SYS80032.T114539.SV000.SDHELOA2.R0000005             DELETED    DDNAME=SYSTERM           0 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80032.T114539.SV000.SDHELOA2.R0000006             DELETED    DDNAME=SYSUDUMP          0 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS80032.T114539.RV000.SDHELOA2.R0000007             KEPT       DDNAME=GENTAP        3,654 EXCPS
IEF285I   VOL SER NOS= DRA30 .
IEF280E K 0C1,DRA30 ,SDHELOA2,GO
IEF373I STEP /GO      / START 80032.1148
IEF374I STEP /GO      / STOP  80032.1200 CPU    0MIN 53.09SEC MAIN 200K LCS    0K
                                                                STEP TIME =     1.67 MINS=(CPU=      .88,IO=      .79)
- STEP 01 -     RETURN CODE = 0000
                                  IO IN SECS. DISK=    11.17,DRUM=      .00,TAPE=    36.59,CELL=      .00,OTHR=      .16
                                                                TOTAL STP TIME=    1.67 MINS.
- SURCHARGES=(DRIVES ALOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=00000)SECS.
     // EXEC NOTIFYTS,ID=SDHEL                                  00000010
     XXDEFAULT  PROC MODE=,USRID=,MSG=,USERID=,ID=  NOTIFYTS, EAC/21JUN73   00000020
     ***        SEND BACKGROUND JOB REPORT TO TSO USER          00000030
     XXNOTIFYTS EXEC PGM=NOTIFYTS,REGION=20K,COND=EVEN,         00000040
     XX         PARM='&MODE,&USRID&USERID&ID,&MSG'
     IEF653I SUBSTITUTION JCL - PARM=',SDHEL,'
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF373I STEP /NOTIFYTS/ START 80032.1200
IEF374I STEP /NOTIFYTS/ STOP  80032.1200 CPU    0MIN 00.07SEC MAIN    8K LCS    0K
                                                                STEP TIME =      .00 MINS=(CPU=      .00,IO=      .00)
- STEP 02 -     RETURN CODE = 0000
                                  IO IN SECS. DISK=      .22,DRUM=      .00,TAPE=      .00,CELL=      .00,OTHR=      .06
                                                                TOTAL STP TIME=00000.00 MINS.
- SURCHARGES=(DRIVES ALOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=00000)SECS.
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JOBNAME-
      SSSSSSSSSS   DDDDDDDDD     HH        HH  EEEEEEEEEEEE  LL          DDDDDDDDDD      AA            444
     SSSSSSSSSSSS  DDDDDDDDDD    HH        HH  EEEEEEEEEEEE  LL         DDDDDDDDDDDD     AA           4444
     SS        SS  DD      DD    HH        HH  EE            LL         DD        DD     AAAA         44 44
     SS            DD      DD    HH        HH  EE            LL         DD        DD     AAAA        44  44
     SSS           DD      DD    HH        HH  EE            LL         DD        DD    AA  AA      44   44
      SSSSSSSSS    DD      DD    HHHHHHHHHHHH  EEEEEEEE      LL         DD        DD    AA  AA     44    44
       SSSSSSSSS   DD      DD    HHHHHHHHHHHH  EEEEEEEE      LL         DD        DD   AA    AA    44     44
             SSS   DD      DD    HH        HH  EE            LL         DD        DD   AAAAAAAA   444444444444
              SS   DD      DD    HH        HH  EE            LL         DD        DD  AAAAAAAAAA  444444444444
     SS        SS  DD      DD    HH        HH  EE            LL         DD        DD  AA      AA          44
     SSSSSSSSSSSS  DDDDDDDDDD    HH        HH  EEEEEEEEEEEE  LLLLLLLLLLLL  DDDDDDDDDDDD  AA      AA          44
      SSSSSSSSSS   DDDDDDDDD     HH        HH  EEEEEEEEEEEE  LLLLLLLLLLLL   DDDDDDDDDD   AA      AA          AA

                                                SACC 360/75      READER NUMBER-P0080                CLASS-
BOX-
     BBBBBBBBB     FFFFFFFFFFFF    33333333                                                          AA
     BBBBBBBBBB    FFFFFFFFFFFF   3333333333                                                         AA
     BB      BB    FF            33        33                                                       AAAA
     BB      BB    FF                      33                                                       AAAA
     BB      BB    FF                      33                                                      AA  AA
     BBBBBBBBB     FFFFFFFF            33333                                                       AA  AA
     BBBBBBBBBB    FFFFFFFF            33333                                                      AA    AA
     BB      BB    FF                      33                                                     AAAAAAAA
     BB      BB    FF                      33                                                    AAAAAAAAAA
     BB      BB    FF            33        33                                                    AA      AA
     BBBBBBBBBB    FF            3333333333                                                    AA      AA
     BBBBBBBBBB    FF             33333333                                                     AA      AA
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ORA32
1/1/78 - 6/30/78

ITISECT *	SD	57CE8	ITI *	LR	57CE8	FXFLT *	SD	57D40	FIXFLT *	LR	57D40	TRNSLTE *	SD	57D88			
TRANS *	LR	57D88	BITST *	SD	57E98	CNTGDATA*	LR	57E98	DTDUN *	SD	57FC8	IHCFCVTH*	SD	58098			
ADCON# *	LR	58098	FCVAOUTP*	LR	58142	FCVLOUTP*	LR	581D2	FCVZOUTP*	LR	58322	FCVIOUTP*	LR	58600			
FCVEOUTP*	LR	58BD2	FCVCOUTP*	LR	58DEC	INT6S#CH*	LR	59CD3	IHCEFIOS*	SD	59238	FIOCS# *	LR	59238			
FIOCSBS2*	LR	5923E	IHCFIOS2*	SD	5A160	IHCERRM *	SD	5A690	ERRMON *	LR	5A690	IHCERRE *	LR	5A6A8			
IHCFNTH*	SD	5AC68	ARITH# *	LR	5AC68	ADJS#TCH*	LR	5B004	IHCJOPT *	SD	5B1B0	IHCUATBL*	SD	5B4D8			
IHCETRCH*	SD	5BB10	IHCTRCH *	LR	5BB10	ERRTRA *	LR	5BB18									

TOTAL LENGTH 9590
ENTRY ADDRESS 52010

SATID HELIOS-A ORBIT TAPE #ORA32
7409701 ORB 78 001 000000 181 000000 7701 01 783910 701 31 01 E7 X

HELIOS-A YEAR 1978. LAUNCH TIME 96569352. 0.

DATE MM	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	ERTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS REL-LET(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
1	1	0	0	0	321.02	-0.01	0.94	0.64	74.00	38.98	1.81	0.004	0.01
1	2	0	0	0	320.76	-0.01	0.95	0.65	73.54	39.24	1.72	0.004	0.01
1	3	0	0	0	320.50	-0.01	0.95	0.65	73.09	39.50	1.63	0.003	0.01
1	4	0	0	0	320.23	-0.01	0.95	0.66	72.66	39.77	1.54	0.003	0.01
1	5	0	0	0	319.95	-0.01	0.96	0.66	72.24	40.05	1.44	0.003	0.01
1	6	0	0	0	319.67	-0.01	0.96	0.67	71.84	40.33	1.35	0.003	0.01
1	7	0	0	0	319.39	-0.01	0.96	0.68	71.46	40.61	1.26	0.003	0.01
1	8	0	0	0	319.10	-0.01	0.96	0.68	71.09	40.90	1.17	0.003	0.01
1	9	0	0	0	318.80	-0.01	0.97	0.69	70.73	41.20	1.08	0.002	0.01
1	10	0	0	0	318.51	-0.01	0.97	0.69	70.39	41.49	0.99	0.002	0.01
1	11	0	0	0	318.21	-0.01	0.97	0.70	70.06	41.79	0.90	0.002	0.01
1	12	0	0	0	317.90	-0.01	0.97	0.70	69.75	42.10	0.81	0.002	0.01
1	13	0	0	0	317.60	-0.01	0.97	0.71	69.46	42.40	0.72	0.002	0.01
1	14	0	0	0	317.29	-0.01	0.98	0.71	69.17	42.71	0.63	0.002	0.01
1	15	0	0	0	316.98	-0.01	0.98	0.72	68.90	43.02	0.55	0.001	0.01
1	16	0	0	0	316.66	-0.01	0.98	0.72	68.64	43.34	0.46	0.001	0.01
1	17	0	0	0	316.35	-0.01	0.98	0.73	68.40	43.65	0.37	0.001	0.01
1	18	0	0	0	316.04	-0.01	0.98	0.74	68.17	43.96	0.28	0.001	0.01
1	19	0	0	0	315.72	-0.01	0.98	0.74	67.95	44.28	0.19	0.001	0.01
1	20	0	0	0	315.40	-0.01	0.98	0.75	67.74	44.60	0.10	0.001	0.01
1	21	0	0	0	315.08	-0.01	0.98	0.75	67.55	44.92	0.02	0.001	0.01
1	22	0	0	0	314.76	-0.01	0.98	0.76	67.36	45.24	-0.07	0.000	0.01
1	23	0	0	0	314.44	-0.01	0.98	0.76	67.19	45.56	-0.16	0.000	0.01
1	24	0	0	0	314.13	-0.01	0.98	0.77	67.03	45.88	-0.25	0.000	0.01
1	25	0	0	0	313.81	-0.00	0.98	0.77	66.88	46.19	-0.33	-.000	0.01
1	26	0	0	0	313.49	-0.00	0.98	0.78	66.75	46.51	-0.42	-.000	0.01
1	27	0	0	0	313.17	-0.00	0.98	0.78	66.62	46.83	-0.51	-.000	0.01
1	28	0	0	0	312.85	-0.00	0.98	0.79	66.50	47.15	-0.60	-.001	0.01
1	29	0	0	0	312.54	-0.00	0.98	0.79	66.40	47.46	-0.69	-.001	0.01
1	30	0	0	0	312.22	-0.00	0.98	0.80	66.31	47.78	-0.77	-.001	0.01
1	31	0	0	0	311.91	-0.00	0.98	0.80	66.22	48.09	-0.86	-.001	0.01
2	1	0	0	0	311.60	-0.00	0.98	0.81	66.19	48.40	-0.95	-.001	0.01
2	2	0	0	0	311.29	-0.00	0.98	0.81	66.15	48.71	-1.04	-.001	0.01
2	3	0	0	0	310.98	-0.00	0.98	0.81	66.04	49.02	-1.12	-.002	0.01
2	4	0	0	0	310.67	-0.00	0.98	0.82	66.00	49.33	-1.21	-.002	0.01
2	5	0	0	0	310.37	-0.00	0.97	0.82	65.97	49.63	-1.30	-.002	0.01
2	6	0	0	0	310.07	-0.00	0.97	0.83	65.95	49.93	-1.39	-.002	0.01
2	7	0	0	0	309.78	-0.00	0.97	0.83	65.94	50.22	-1.48	-.002	0.01
2	8	0	0	0	309.49	-0.00	0.97	0.83	65.94	50.51	-1.57	-.002	0.01
2	9	0	0	0	309.20	-0.00	0.96	0.84	65.95	50.80	-1.66	-.003	0.01
2	10	0	0	0	308.91	0.00	0.96	0.84	65.97	51.09	-1.74	-.003	0.01
2	11	0	0	0	308.63	0.00	0.96	0.84	66.01	51.37	-1.83	-.003	0.01
2	12	0	0	0	308.36	0.00	0.96	0.85	66.05	51.64	-1.92	-.003	0.01
2	13	0	0	0	308.09	0.00	0.95	0.85	66.11	51.91	-2.01	-.003	0.01
2	14	0	0	0	307.83	0.00	0.95	0.85	66.18	52.17	-2.10	-.003	0.01
2	15	0	0	0	307.57	0.00	0.95	0.86	66.26	52.43	-2.19	-.004	0.01
2	16	0	0	0	307.32	0.00	0.94	0.86	66.35	52.68	-2.28	-.004	0.01
2	17	0	0	0	307.07	0.00	0.94	0.86	66.45	52.93	-2.38	-.004	0.01
2	18	0	0	0	306.83	0.00	0.94	0.86	66.57	53.17	-2.47	-.004	0.01
2	19	0	0	0	306.60	0.00	0.93	0.86	66.70	53.40	-2.56	-.004	0.01
2	20	0	0	0	306.39	0.00	0.93	0.87	66.84	53.62	-2.65	-.004	0.01
2	21	0	0	0	306.16	0.00	0.92	0.87	67.00	53.84	-2.74	-.005	0.01
2	22	0	0	0	305.95	0.00	0.92	0.87	67.17	54.05	-2.84	-.005	0.01
2	23	0	0	0	305.75	0.00	0.91	0.87	67.35	54.25	-2.93	-.005	0.01
2	24	0	0	0	305.56	0.00	0.91	0.87	67.55	54.44	-3.02	-.005	0.01
2	25	0	0	0	305.38	0.00	0.90	0.87	67.77	54.62	-3.12	-.005	0.01
2	26	0	0	0	305.21	0.01	0.90	0.87	68.00	54.79	-3.21	-.005	0.01
2	27	0	0	0	305.05	0.01	0.89	0.87	68.25	54.95	-3.31	-.006	0.01
2	28	0	0	0	304.90	0.01	0.89	0.87	68.51	55.10	-3.40	-.006	0.01
3	1	0	0	0	304.76	0.01	0.88	0.87	68.80	55.24	-3.50	-.006	0.01
3	2	0	0	0	304.64	0.01	0.87	0.87	69.10	55.36	-3.59	-.006	0.01

3	3	0	0	0	304.52	0.01	0.87	0.87	69.42	55.48	-3.69	-.006	0.01
3	4	0	0	0	304.43	0.01	0.86	0.87	69.76	55.57	-3.79	-.006	0.01
3	5	0	0	0	304.34	0.01	0.86	0.87	70.12	55.66	-3.89	-.007	0.01
3	6	0	0	0	304.27	0.01	0.85	0.87	70.50	55.73	-3.98	-.007	0.01
3	7	0	0	0	304.21	0.01	0.84	0.87	70.91	55.79	-4.08	-.007	0.01
3	8	0	0	0	304.18	0.01	0.83	0.87	71.34	55.82	-4.18	-.007	0.01
3	9	0	0	0	304.15	0.01	0.83	0.86	71.80	55.85	-4.28	-.007	0.01
3	10	0	0	0	304.15	0.01	0.82	0.86	72.28	55.85	-4.38	-.008	0.01
3	11	0	0	0	304.17	0.01	0.81	0.86	72.79	55.83	-4.48	-.008	0.01
3	12	0	0	0	304.20	0.01	0.80	0.86	73.33	55.80	-4.58	-.008	0.01
3	13	0	0	0	304.26	0.01	0.80	0.86	73.90	55.74	-4.69	-.008	0.01
3	14	0	0	0	304.34	0.01	0.79	0.85	74.51	55.66	-4.79	-.008	0.01
3	15	0	0	0	304.44	0.01	0.78	0.85	75.14	55.56	-4.89	-.009	0.02
3	16	0	0	0	304.57	0.01	0.77	0.84	75.82	55.43	-5.00	-.009	0.02
3	17	0	0	0	304.72	0.01	0.76	0.84	76.54	55.28	-5.10	-.009	0.02
3	18	0	0	0	304.91	0.01	0.75	0.84	77.29	55.09	-5.20	-.009	0.02
3	19	0	0	0	305.12	0.01	0.74	0.83	78.09	54.88	-5.31	-.009	0.02

HELIOS-A YEAR 1978. LAUNCH TIME 103225752. 0.

DATE MM	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	EARTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LET(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
3	20	0	0	0	305.36	0.01	0.74	0.83	78.94	54.64	-5.41	-.009	0.02
3	21	0	0	0	305.64	0.01	0.73	0.82	79.84	54.36	-5.52	-.010	0.02
3	22	0	0	0	305.95	0.01	0.72	0.82	80.79	54.05	-5.62	-.010	0.02
3	23	0	0	0	306.29	0.02	0.71	0.81	81.80	53.71	-5.73	-.010	0.02
3	24	0	0	0	306.68	0.02	0.70	0.81	82.87	53.32	-5.83	-.010	0.02
3	25	0	0	0	307.11	0.02	0.69	0.80	84.01	52.89	-5.94	-.010	0.02
3	26	0	0	0	307.58	0.02	0.67	0.79	85.22	52.42	-6.04	-.011	0.02
3	27	0	0	0	308.10	0.02	0.66	0.79	86.50	51.90	-6.14	-.011	0.02
3	28	0	0	0	308.67	0.02	0.65	0.78	87.86	51.33	-6.24	-.011	0.02
3	29	0	0	0	309.30	0.02	0.64	0.77	89.31	50.70	-6.34	-.011	0.02
3	30	0	0	0	309.98	0.02	0.63	0.77	90.85	50.02	-6.44	-.011	0.02
3	31	0	0	0	310.73	0.02	0.62	0.76	92.50	49.27	-6.54	-.012	0.02
4	1	0	0	0	311.54	0.02	0.61	0.75	94.25	48.46	-6.63	-.012	0.02
4	2	0	0	0	312.43	0.02	0.60	0.74	96.13	47.57	-6.72	-.012	0.02
4	3	0	0	0	313.39	0.02	0.58	0.73	98.13	46.61	-6.81	-.012	0.02
4	4	0	0	0	314.44	0.02	0.57	0.73	100.27	45.56	-6.89	-.012	0.02
4	5	0	0	0	315.58	0.02	0.56	0.72	102.56	44.42	-6.97	-.012	0.02
4	6	0	0	0	316.81	0.02	0.55	0.71	105.01	43.19	-7.04	-.013	0.02
4	7	0	0	0	318.15	0.02	0.53	0.70	107.64	41.85	-7.10	-.013	0.02
4	8	0	0	0	319.60	0.02	0.52	0.69	110.46	40.40	-7.15	-.013	0.02
4	9	0	0	0	321.18	0.02	0.51	0.68	113.49	38.82	-7.19	-.013	0.02
4	10	0	0	0	322.89	0.02	0.49	0.68	116.73	37.11	-7.22	-.013	0.02
4	11	0	0	0	324.75	0.02	0.48	0.67	120.22	35.25	-7.23	-.013	0.02
4	12	0	0	0	326.77	0.02	0.47	0.66	123.97	33.23	-7.22	-.013	0.03
4	13	0	0	0	328.96	0.02	0.46	0.66	127.99	31.04	-7.19	-.013	0.03
4	14	0	0	0	331.34	0.02	0.44	0.65	132.30	28.66	-7.13	-.013	0.03
4	15	0	0	0	333.92	0.02	0.43	0.65	136.92	26.08	-7.05	-.013	0.03
4	16	0	0	0	336.72	0.02	0.42	0.64	141.87	23.28	-6.93	-.013	0.03
4	17	0	0	0	339.76	0.02	0.40	0.64	147.15	20.24	-6.76	-.012	0.03
4	18	0	0	0	343.06	0.02	0.39	0.64	152.77	16.94	-6.55	-.012	0.03
4	19	0	0	0	346.62	0.02	0.38	0.64	158.73	13.38	-6.29	-.012	0.03
4	20	0	0	0	350.47	0.02	0.37	0.64	165.04	9.53	-5.97	-.011	0.03
4	21	0	0	0	354.63	0.02	0.36	0.65	171.67	5.37	-5.58	-.010	0.03
4	22	0	0	0	359.09	0.02	0.35	0.66	178.60	0.91	-5.12	-.010	0.03
4	23	0	0	0	3.85	0.02	0.34	0.67	174.19	3.85	-4.59	-.009	0.03
4	24	0	0	0	8.92	0.02	0.33	0.68	166.76	8.92	-3.97	-.008	0.04
4	25	0	0	0	14.28	0.02	0.32	0.70	159.15	14.28	-3.28	-.006	0.04
4	26	0	0	0	19.88	0.01	0.32	0.72	151.43	19.88	-2.53	-.005	0.04
4	27	0	0	0	25.70	0.01	0.31	0.74	143.66	25.70	-1.71	-.004	0.04
4	28	0	0	0	31.67	0.01	0.31	0.76	135.93	31.67	-0.85	-.002	0.04
4	29	0	0	0	37.74	0.01	0.31	0.79	129.30	37.74	0.03	-.000	0.04
4	30	0	0	0	43.82	0.00	0.31	0.81	120.86	43.82	0.92	0.001	0.04
5	1	0	0	0	49.85	-0.00	0.31	0.84	113.67	49.85	1.78	0.003	0.04
5	2	0	0	0	55.76	-0.00	0.32	0.87	106.80	55.76	2.61	0.004	0.04
5	3	0	0	0	61.49	-0.01	0.32	0.90	100.29	61.49	3.37	0.006	0.04
5	4	0	0	0	66.98	-0.01	0.33	0.93	94.16	66.98	4.07	0.007	0.04
5	5	0	0	0	72.20	-0.01	0.33	0.96	88.44	72.20	4.69	0.008	0.04
5	6	0	0	0	77.13	-0.01	0.34	0.99	83.13	77.13	5.23	0.009	0.03
5	7	0	0	0	81.76	-0.01	0.35	1.02	78.23	81.76	5.69	0.010	0.03
5	8	0	0	0	86.08	-0.02	0.36	1.05	73.72	86.08	6.08	0.011	0.03
5	9	0	0	0	90.09	-0.02	0.37	1.08	69.59	90.09	6.39	0.011	0.03
5	10	0	0	0	93.82	-0.02	0.39	1.10	65.80	93.82	6.65	0.012	0.03
5	11	0	0	0	97.26	-0.02	0.40	1.13	62.33	97.26	6.85	0.012	0.03
5	12	0	0	0	100.44	-0.02	0.41	1.16	59.16	100.44	7.00	0.013	0.03
5	13	0	0	0	103.38	-0.02	0.42	1.18	56.26	103.38	7.10	0.013	0.03
5	14	0	0	0	106.08	-0.02	0.44	1.21	53.61	106.08	7.17	0.013	0.03

5	15	0	0	0	108.58	-0.02	0.45	1.23	51.19	168.58	7.21	0.013	0.03
5	16	0	0	0	110.88	-0.02	0.46	1.25	48.97	110.88	7.23	0.013	0.03
5	17	0	0	0	113.01	-0.02	0.47	1.27	46.94	113.01	7.22	0.013	0.02
5	18	0	0	0	114.97	-0.02	0.49	1.30	45.07	114.97	7.19	0.013	0.02
5	19	0	0	0	116.77	-0.02	0.50	1.32	43.36	116.77	7.14	0.013	0.02
5	20	0	0	0	118.44	-0.02	0.51	1.34	41.79	118.44	7.09	0.013	0.02
5	21	0	0	0	119.98	-0.02	0.53	1.35	40.34	119.98	7.02	0.013	0.02
5	22	0	0	0	121.40	-0.02	0.54	1.37	39.01	121.40	6.94	0.013	0.02
5	23	0	0	0	122.71	-0.02	0.55	1.39	37.78	122.71	6.85	0.013	0.02
5	24	0	0	0	123.92	-0.02	0.56	1.41	36.65	123.92	6.76	0.012	0.02
5	25	0	0	0	125.03	-0.02	0.58	1.42	35.60	125.03	6.67	0.012	0.02
5	26	0	0	0	126.07	-0.02	0.59	1.44	34.64	126.07	6.56	0.012	0.02
5	27	0	0	0	127.02	-0.02	0.60	1.46	33.75	127.02	6.46	0.012	0.02
5	28	0	0	0	127.89	-0.02	0.61	1.47	32.92	127.89	6.35	0.012	0.02
5	29	0	0	0	128.70	-0.02	0.62	1.49	32.16	128.70	6.24	0.012	0.02
5	30	0	0	0	129.45	-0.02	0.64	1.50	31.45	129.45	6.13	0.011	0.02
5	31	0	0	0	130.13	-0.02	0.65	1.51	30.80	130.13	6.02	0.011	0.02
6	1	0	0	0	130.76	-0.02	0.66	1.53	30.19	130.76	5.91	0.011	0.02
6	2	0	0	0	131.34	-0.02	0.67	1.54	29.63	131.34	5.79	0.011	0.02
6	3	0	0	0	131.87	-0.02	0.68	1.55	29.11	131.87	5.68	0.011	0.02
6	4	0	0	0	132.35	-0.02	0.69	1.56	28.63	132.35	5.56	0.010	0.02
6	5	0	0	0	132.79	-0.02	0.70	1.58	28.18	132.79	5.45	0.010	0.02
6	6	0	0	0	133.20	-0.02	0.71	1.59	27.77	133.20	5.34	0.010	0.02
6	7	0	0	0	133.56	-0.02	0.72	1.60	27.38	133.56	5.22	0.010	0.02
6	8	0	0	0	133.89	-0.02	0.73	1.61	27.03	133.89	5.11	0.010	0.02
6	9	0	0	0	134.19	-0.02	0.74	1.62	26.70	134.19	5.00	0.009	0.02
6	10	0	0	0	134.45	-0.02	0.75	1.63	26.40	134.45	4.88	0.009	0.02
6	11	0	0	0	134.69	-0.02	0.76	1.64	26.12	134.69	4.77	0.009	0.02
6	12	0	0	0	134.89	-0.02	0.77	1.65	25.87	134.89	4.66	0.009	0.02
6	13	0	0	0	135.07	-0.02	0.78	1.66	25.63	135.07	4.55	0.009	0.02
6	14	0	0	0	135.23	-0.02	0.78	1.67	25.42	135.23	4.44	0.008	0.02
6	15	0	0	0	135.37	-0.02	0.79	1.67	25.22	135.37	4.33	0.008	0.01
6	16	0	0	0	135.48	-0.02	0.80	1.68	25.04	135.48	4.22	0.008	0.01
6	17	0	0	0	135.57	-0.02	0.81	1.69	24.88	135.57	4.12	0.008	0.01
6	18	0	0	0	135.64	-0.02	0.82	1.70	24.73	135.64	4.01	0.008	0.01
6	19	0	0	0	135.69	-0.02	0.82	1.71	24.59	135.69	3.90	0.007	0.01
6	20	0	0	0	135.72	-0.02	0.83	1.71	24.47	135.72	3.80	0.007	0.01
6	21	0	0	0	135.74	-0.02	0.84	1.72	24.36	135.74	3.69	0.007	0.01
6	22	0	0	0	135.74	-0.02	0.85	1.73	24.27	135.74	3.59	0.007	0.01
6	23	0	0	0	135.73	-0.02	0.85	1.73	24.18	135.73	3.49	0.007	0.01
6	24	0	0	0	135.70	-0.02	0.86	1.74	24.11	135.70	3.38	0.007	0.01
6	25	0	0	0	135.65	-0.02	0.87	1.74	24.05	135.65	3.28	0.006	0.01
6	26	0	0	0	135.60	-0.02	0.87	1.75	24.00	135.60	3.18	0.006	0.01
6	27	0	0	0	135.53	-0.02	0.88	1.75	23.95	135.53	3.08	0.006	0.01
6	28	0	0	0	135.45	-0.02	0.88	1.76	23.92	135.45	2.98	0.006	0.01
6	29	0	0	0	135.35	-0.01	0.89	1.76	23.89	135.35	2.88	0.006	0.01
6	30	0	0	0	135.25	-0.01	0.89	1.77	23.88	135.25	2.78	0.005	0.01

END OF FILE ON ORBIT TAPE

```
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   M2.ZBRTC.SD002.LOAD                                  KEPT        DDNAME=SYSLIB  -1      0 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS2.DEBLKUNV                                        KEPT        DDNAME=SYSLIB  -2     17 EXCPS
IEF285I   VOL SER NOS= M2SYS2.
IEF285I   SYS1.FORTLIB                                         KEPT        DDNAME=SYSLIB  -3     61 EXCPS
IEF285I   VOL SER NOS= K3ITL0.
IEF285I   SYS2.FORTLIB                                         KEPT        DDNAME=SYSLIB  -4     28 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SYS1.PL1LIB                                          KEPT        DDNAME=SYSLIB  -5      0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS1.FORTSSP                                         KEPT        DDNAME=SYSLIB  -6      0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS2.COBLIB                                          KEPT        DDNAME=SYSLIB  -7      0 EXCPS
IEF285I   VOL SER NOS= M2SYS1.
IEF285I   SYS1.ALGLIB                                          KEPT        DDNAME=SYSLIB  -8      0 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SYS80032.T114956.SV000.SDHELOA4.R0C0000C1            SYSOUT      DDNAME=SYSLOUT         1 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   M2.ZUPTC.SD002.LOAD                                  KEPT        DDNAME=SYSLIN  -1      7 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS80032.T114956.RV000.SDHELOA4.S0000008             SYSIN       DDNAME=FT05F001        2 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80032.T114956.RV000.SDHELOA4.S0000008             DELETED     DDNAME=FT05F001        2 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80032.T114956.SV000.SDHELOA4.R0000002             SYSOUT      DDNAME=FT06F001        4 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS80032.T114956.SV000.SDHELOA4.R0000003             DELETED     DDNAME=FT07F001        0 EXCPS
```

JOBNAME-

```
SSSSSSSSSS   DDDDDDDDD     HH        HH  EEEEEEEEEEEE  LL          CCCCCCCCCC      AA        33333333
SSSSSSSSSSS  DDDDDDDDDD    HH        HH  EEEEEEEEEEEE  LL          CCCCCCCCCCCC    AA       3333333333
SS        SS DD       DD   HH        HH  EE            LL          CC        CC    AAAA     33        33
SS           DD        DD  HH        HH  EE            LL          CC        CC    AAAA              33
SS           DD        DD  HH        HH  EE            LL          CC        CC    AA  AA           33333
SSS          DD        DD  HHHHHHHHHHHH  EEEEEEEE      LL          CC        CC    AA    AA         33333
 SSSSSSSSS   DD        DD  HHHHHHHHHHHH  EEEEEEEE      LL          CC        CC    AAAAAAAA             33
  SSSSSSSSS  DD        DD  HH        HH  EE            LL          CC        CC    AAAAAAAAAA           33
        SSS  DD        DD  HH        HH  EE            LL          CC        CC    AA        AA  33        33
         SS  DD        DD  HH        HH  EE            LL          CC        CC    AA        AA  3333333333
SS       SS  DD       DD   HH        HH  EE            LL          CC        CC    AA        AA  33333333
SSSSSSSSSSS  DDDDDDDDDD    HH        HH  EEEEEEEEEEEE  LLLLLLLLLLLL  CCCCCCCCCCCC    AA        AA
 SSSSSSSSSS  DDDDDDDDD     HH        HH  EEEEEEEEEEEE  LLLLLLLLLLLL   CCCCCCCCCC     AA        AA
```

SACC 360/75 READER NUMBER-P0145 CLASS-

BOX-

```
BBBBBBBBB    FFFFFFFFFFFF    33333333
BBBBBBBBBB   FFFFFFFFFFFF   3333333333
BB       BB  FF            33        33
BB       BB  FF                      33
BB       BB  FF                     33
BBBBBBBBB    FFFFFFFF          33333
BBBBBBBBBB   FFFFFFFF          33333
BB       BB  FF                     33
BB       BB  FF                     33
BB       BB  FF            33        33
BBBBBBBBBB   FF             3333333333
BBBBBBBBB    FF              33333333
```

```
AA
AA
AAAA
AAAA
AA  AA
AA  AA
AA    AA
AAAAAAAA
AAAAAAAAAA
AA      AA
AA        AA
AA        AA
```

ORA36

7/1/78 - 8/31/78

NUMBER 33 ON 001-ZMJLKRE3/910 ZNCECP69/BF3 SDHELOA1/BF3 ATWJK318/116 SDHELOA3/BF3 AT 13.30.33 WED 30 JAN 80

```
X/SYSLIB DD DSN=SYS1.DUMMY,DISP=SHR                                    00000030
//       DD DSN=SYS2.DEBLKUNV,DISP=SHR                                 00000040
X/       DD DSN=SYS1.DUMMY,DISP=SHR                                    00000050
XX       DD DSN=SYS1.FORTLIB,DISP=SHR                                  00000060
XX       DD DSN=SYS2.FORTLIB,DISP=SHR                                  00000070
XX       DD DSN=SYS1.PLILIB,DISP=SHR                                   00000080
XX       DD DSN=SYS1.FORTSSP,DISP=SHR                                  00000090
XX       DD DSN=SYS2.COBLIB,DISP=SHR                                   00000100
XX       DD DSN=SYS1.ALGLIB,DISP=SHR                                   00000110
XXSYSLOUT DD SYSOUT=&OUT,DCB=(RECFM=FBSA,LRECL=121,BLKSIZE=3509)
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(RECFM=FBSA,LRECL=121,BLKSIZE=3509)
//SYSLIN DD DSN=M2.ZBRTC.S0002.LOAD(ORBIT),DISP=SHR
X/SYSLIN DD DSN=&OBJMOD,DISP=(OLD,DELETE)                              00000120
XX       DD DDNAME=OBJECT                                              00000130
XXFT05F001 DD DDNAME=DATA5                                             00000140
XXFT06F001 DD SYSOUT=&OUT,DCB=(BLKSIZE=&BLKSIZE,LRECL=137,RECFM=VBA)  00000150
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(BLKSIZE=7265,LRECL=137,RECFM=VBA)
XXFT07F001 DD SYSOUT=B,DCB=(RECFM=FB,BLKSIZE=7280,LRECL=80)            00000160
XXSYSPRINT DD SYSOUT=&OUT,DCB=(BLKSIZE=&BLKSIZE,LRECL=137,RECFM=VBA),  00000170
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(BLKSIZE=7265,LRECL=137,RECFM=VBA),
XX             SPACE=(CYL,(0,1)),UNIT=(DISK,3)                         00000180
XXSYSTERM  DD  SYSOUT=&TERMOUT                                         00000190
IEF653I SUBSTITUTION JCL - SYSOUT=A
//SYSUDUMP DD SYSOUT=A                                                 00000200
X/SYSUDUMP DD SYSOUT=A,SPACE=(CYL,(0,5))
//GO.GENTAP DD UNIT=(7TRACK,,DEFER),
//    VOL=SER=CRTAPE,LABEL=(,NL,,IN),DISP=(OLD,KEEP),
//    DCB=(RECFM=U,BLKSIZE=1944,DEN=2)
//DATA5 DD *
IEF236I ALLOC. FOR SDHFLOA3 GO
IEF237I 333    ALLOCATED TO SYSLIB
IEF237I 320    ALLOCATED TO
IEF237I 451    ALLOCATED TO
IEF237I 231    ALLOCATED TO
IEF237I 244    ALLOCATED TO
IEF237I 244    ALLOCATED TO
IEF237I 220    ALLOCATED TO
IEF237I 231    ALLOCATED TO
IEF237I 232    ALLOCATED TO SYSLOUT
IEF237I 333    ALLOCATED TO SYSLIN
IEF237I 335    ALLOCATED TO FT05F001
IEF237I 235    ALLOCATED TO FT06F001
IEF237I 335    ALLOCATED TO FT07F001
IEF237I 237    ALLOCATED TO SYSPRINT
IEF237I 232    ALLOCATED TO SYSPRINT
IEF237I 235    ALLOCATED TO SYSPRINT
IEF237I 336    ALLOCATED TO SYSTERM
IEF237I 335    ALLOCATED TO SYSUDUMP
IEF237I 0C0    ALLOCATED TO GENTAP
```

OS/360 LOADER

```
OPTIONS USED - PRINT,MAP,NOLET,CALL,RES,NOTERM,SIZE=194560,NAME=**GO
               EP=ORBIT

     NAME   TYPE  ADDR        NAME   TYPE  ADDR        NAME   TYPE  ADDR        NAME   TYPE  ADDR        NAME   TYPE  ADDR
  ORBIT      SD  98810    CNVRTSCT*  SD  99670    CNVRT    *  LR  99670    DBGEN    *  SD  99998    DBFEOV   *  LR  99858
  FREAD    *  SD  99060    FREADB   *  LR  99F88    FWRITE   *  LR  9A07C    REWIND   *  LR  9A282    LEAVE    *  LR  9A366
  UNLOAD   *  LR  9A41A    POSN     *  LR  9A530    MOUNT    *  LR  9A750    MEMBER   *  LR  9A932    FTRAP    *  LR  9AA22
  FALLOW   *  LR  9AAA0    FUNITABL*  SD  9BA60    FPL1     *  SD  9BB28    FDDNLIST*  SD  9B330    FERMSG   *  SD  9B838
  IHCNAMEL*  SD  9BBA0    FRDNL#   *  LR  9BBA0    F#RNL#   *  LR  9C1A4    IHCECOMH*  SD  9C670    IBCOM#   *  LR  9C670
  FDIOCS#  *  LR  9C72C    INTSWTCH*  LR  9D586    IHCCOMH2*  SD  9D5D8    SEODASD  *  LR  9D950    FTF      *  SD  9DC38
  ITIGECT  *  SD  9DCE8    ITI      *  LR  9DCE8    FXFLT    *  SD  9DD40    FIXFLT   *  LR  9DD40    TRNSLTE  *  SD  9DD88
  TRANS    *  LR  9DD88    BITST    *  SD  9DE98    CNTGDATA*  LR  9DE98    DTDUN    *  SD  9DFC8    IHCFCVTH*  SD  9EC98
  ADCON#   *  LR  9E099    FCVAOUTP*  LR  9E1A2    FCVLOUIP*  LR  9E1D2    FCVIOUTP*  LR  9E322    FCVIOJIP*  LR  9E6D0
  FCVEOUTP*  LR  9E8D2    FCVCOUTP*  LR  9E0EC    INT63WCH*  LR  9F0D3    IHCEFIOS*  SD  9F238    FIOCS#   *  LR  9F238
  FIOCSREP*  LP  9F23E    IHCFIO32*  SD  A0160    IHCERRM  *  SD  A0690    ERRMON   *  LR  A0690    IHCERRE  *  LR  A06A8
  IHCEFNTH*  SD  A0C68    ARITH#   *  LR  A0C68    ADJSWTCH*  LR  A1004    IHCUOPT  *  SD  A1130    IHCUATBL*  SD  A1408
  IHCETRCH*  SD  A1810    IHCTRCH  *  LR  A1810    ERRTRA   *  LR  A1018

  TOTAL LENGTH     9590
  ENTRY ADDRESS  98810

                 SATID  HELIOS-A        OORBIT TAPE #=ORA36
        7409701 ORB            78 132 000000 243 000000 8278 01 781009 278 01 01 E7  X
```

HELIOS-A YEAR 1978. LAUNCH TIME 112207752. 0.

DATE MM	DC	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	ERTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LET(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
7	1	0	0	0	135.13	-0.01	0.90	1.77	23.87	135.13	2.68	0.005	0.01
7	2	0	0	0	135.01	-0.01	0.91	1.78	23.87	135.01	2.59	0.005	0.01
7	3	0	0	0	134.88	-0.01	0.91	1.78	23.97	134.88	2.49	0.005	0.01
7	4	0	0	0	134.73	-0.01	0.92	1.78	23.88	134.73	2.39	0.005	0.01
7	5	0	0	0	134.58	-0.01	0.92	1.79	23.90	134.58	2.30	0.005	0.01
7	6	0	0	0	134.43	-0.01	0.92	1.79	23.93	134.43	2.20	0.004	0.01
7	7	0	0	0	134.26	-0.01	0.93	1.79	23.96	134.26	2.11	0.004	0.01
7	8	0	0	0	134.09	-0.01	0.93	1.80	24.00	134.09	2.02	0.004	0.01
7	9	0	0	0	133.90	-0.01	0.94	1.80	24.04	133.90	1.92	0.004	0.01
7	10	0	0	0	133.72	-0.01	0.94	1.80	24.09	133.72	1.83	0.004	0.01
7	11	0	0	0	133.53	-0.01	0.94	1.80	24.14	133.53	1.74	0.004	0.01
7	12	0	0	0	133.33	-0.01	0.95	1.80	24.20	133.33	1.64	0.003	0.01
7	13	0	0	0	133.12	-0.01	0.95	1.81	24.26	133.12	1.55	0.003	0.01
7	14	0	0	0	132.91	-0.01	0.95	1.81	24.32	132.91	1.46	0.003	0.01
7	15	0	0	0	132.70	-0.01	0.96	1.81	24.39	132.70	1.37	0.003	0.01
7	16	0	0	0	132.48	-0.01	0.96	1.81	24.47	132.48	1.28	0.003	0.01
7	17	0	0	0	132.26	-0.01	0.96	1.81	24.55	132.26	1.19	0.003	0.01
7	18	0	0	0	132.03	-0.01	0.97	1.81	24.63	132.03	1.10	0.002	0.01
7	19	0	0	0	131.80	-0.01	0.97	1.81	24.72	131.80	1.01	0.002	0.01
7	20	0	0	0	131.56	-0.01	0.97	1.81	24.81	131.56	0.92	0.002	0.01
7	21	0	0	0	131.33	-0.01	0.97	1.81	24.90	131.33	0.83	0.002	0.01
7	22	0	0	0	131.09	-0.01	0.97	1.81	25.00	131.09	0.74	0.002	0.01
7	23	0	0	0	130.84	-0.01	0.98	1.81	25.10	130.84	0.65	0.002	0.01
7	24	0	0	0	130.60	-0.01	0.98	1.81	25.20	130.60	0.56	0.001	0.01
7	25	0	0	0	130.35	-0.01	0.98	1.81	25.31	130.35	0.47	0.001	0.01
7	26	0	0	0	130.10	-0.01	0.98	1.81	25.42	130.10	0.38	0.001	0.01
7	27	0	0	0	129.84	-0.01	0.98	1.81	25.53	129.84	0.30	0.001	0.01
7	28	0	0	0	129.59	-0.01	0.98	1.81	25.65	129.59	0.21	0.001	0.01
7	29	0	0	0	129.33	-0.01	0.98	1.81	25.77	129.33	0.12	0.001	0.01
7	30	0	0	0	129.09	-0.01	0.98	1.81	25.89	129.09	0.03	0.001	0.01
7	31	0	0	0	128.82	-0.01	0.98	1.80	26.01	128.82	-0.06	0.000	0.01
8	1	0	0	0	128.56	-0.01	0.98	1.80	26.14	128.56	-0.14	0.000	0.01
8	2	0	0	0	128.30	-0.01	0.98	1.80	26.27	128.30	-0.23	0.000	0.01
8	3	0	0	0	128.04	-0.00	0.98	1.80	26.40	128.04	-0.32	-.000	0.01
8	4	0	0	0	127.78	-0.00	0.98	1.80	26.53	127.78	-0.41	-.000	0.01
8	5	0	0	0	127.52	-0.00	0.98	1.79	26.67	127.52	-0.49	-.000	0.01
8	6	0	0	0	127.26	-0.00	0.98	1.79	26.80	127.26	-0.59	-.001	0.01
8	7	0	0	0	127.00	-0.00	0.98	1.79	26.94	127.00	-0.67	-.001	0.01
8	8	0	0	0	126.74	-0.00	0.98	1.78	27.08	126.74	-0.76	-.001	0.01
8	9	0	0	0	126.49	-0.00	0.98	1.78	27.23	126.49	-0.85	-.001	0.01
8	10	0	0	0	126.23	-0.00	0.98	1.78	27.37	126.23	-0.93	-.001	0.01
8	11	0	0	0	125.98	-0.00	0.98	1.78	27.52	125.98	-1.02	-.001	0.01
8	12	0	0	0	125.72	-0.00	0.98	1.77	27.67	125.72	-1.11	-.002	0.01
8	13	0	0	0	125.47	-0.00	0.98	1.77	27.82	125.47	-1.20	-.002	0.01
8	14	0	0	0	125.22	-0.00	0.97	1.76	27.97	125.22	-1.29	-.002	0.01
8	15	0	0	0	124.98	-0.00	0.97	1.76	28.12	124.98	-1.37	-.002	0.01
8	16	0	0	0	124.74	-0.00	0.97	1.76	28.28	124.74	-1.46	-.002	0.01
8	17	0	0	0	124.50	-0.00	0.97	1.75	28.43	124.50	-1.55	-.002	0.01
8	18	0	0	0	124.26	-0.00	0.97	1.75	28.59	124.26	-1.64	-.003	0.01
8	19	0	0	0	124.02	-0.00	0.96	1.74	28.75	124.02	-1.73	-.003	0.01
8	20	0	0	0	123.79	0.00	0.96	1.74	28.91	123.77	-1.82	-.003	0.01
8	21	0	0	0	123.57	0.00	0.96	1.73	29.07	123.57	-1.91	-.003	0.01
8	22	0	0	0	123.35	0.00	0.95	1.73	29.23	123.35	-2.00	-.003	0.01
8	23	0	0	0	123.13	0.00	0.95	1.73	29.39	123.13	-2.09	-.003	0.01
8	24	0	0	0	122.92	0.00	0.95	1.72	29.56	122.92	-2.18	-.003	0.01
8	25	0	0	0	122.71	0.00	0.94	1.72	29.72	122.71	-2.27	-.004	0.01
8	26	0	0	0	122.51	0.00	0.94	1.71	29.89	122.51	-2.36	-.004	0.01
8	27	0	0	0	122.31	0.00	0.94	1.71	30.05	122.31	-2.45	-.004	0.01
8	28	0	0	0	122.12	0.00	0.93	1.70	30.22	122.12	-2.54	-.004	0.01
8	29	0	0	0	121.94	0.00	0.93	1.69	30.38	121.94	-2.63	-.004	0.01
8	30	0	0	0	121.76	0.00	0.92	1.69	30.55	121.76	-2.73	-.005	0.01
8	31	0	0	0	121.59	0.00	0.92	1.68	30.71	121.59	-2.82	-.005	0.01

END OF FILE ON ORBIT TAPE

```
IEC209I SDHELOA3 ORA36  OCO TR=011,TW=000,EG=000,CL=015,N=000,SIO=01468
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   M2.ZORTC.SD002.LOAD                    KEPT        DDNAME=SYSLIB  -1        0 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS2.OCBLKUNV                          KEPT        DDNAME=SYSLIB  -2       17 EXCPS
IEF285I   VOL SER NOS= M2SYS2.
IEF285I   SYS1.FORTLIB                           KEPT        DDNAME=SYSLIB  -3       61 EXCPS
IEF285I   VOL SER NOS= K3ITL0.
```

```
********** JO ************************************************************************************************ JO *********

JCBNAME-
        SSSSSSSSSS   DDDDDDDDD     HH        HH   EEEEEEEEEEEE  LL          CCCCCCCCCC      AA            444
      SSSSSSSSSSS    DDDDDDDDDD    HH        HH   EEEEEEEEEEEE  LL          CCCCCCCCCCCC    AA           4444
      SS        SS   DD      DD    HH        HH   EE            LL          CC      CC     AAAA         44 44
      SS             DD       DD   HH        HH   EE            LL          CC      CC    AA  AA       44  44
      SSS            DD       DD   HH        HH   EE            LL          CC      CC    AA  AA      44   44
       SSSSSSSSS     DD       DD   HHHHHHHHHHHH   EEEEEEEE      LL          CC      CC    AA  AA     44    44
        SSSSSSSSS    DD       DD   HHHHHHHHHHHH   EEEEEEEE      LL          CC      CC    AAAAAAAA   444444444444
                SSS  DD       DD   HH        HH   EE            LL          CC      CC    AAAAAAAA   444444444444
                 SS  DD       DD   HH        HH   EE            LL          CC      CC    AA      AA          44
      SS         SS  DD      DD    HH        HH   EE            LL          CC      CC    AA      AA          44
      SSSSSSSSSSS    DDDDDDDDDD    HH        HH   EEEEEEEEEEEE  LLLLLLLLLLLL  CCCCCCCCCCCC  AA      AA          44
       SSSSSSSSSS    DDDDDDDDD     HH        HH   EEEEEEEEEEEE  LLLLLLLLLLLL   CCCCCCCCCC   AA      AA          44

                                                  SACC 360/75      READER NUMBER-P0149          CLASS-
BOX-
        88888888     FFFFFFFFFFFF     33333333                                                    AA
        88888888     FFFFFFFFFFFF    3333333333                                                   AA
        88      88   FF             33        33                                                 AAAA
        88      88   FF                        33                                                 AAAA
        88      88   FF                        33                                                AA  AA
        88      88   FF                        33                                                AA  AA
        88888888     FFFFFFFF            33333                                                  AA    AA
        88888888     FFFFFFFF            33333                                                  AAAAAAAA
        88      88   FF                        33                                               AAAAAAAAAA
        88      88   FF                        33                                               AA      AA
        88      88   FF             33         33                                               AA      AA
        88888888     FF            3333333333                                                   AA      AA
        88888888     FF             33333333
```

ORA37

9/1/78 - 10/31/78

```
X/SYSLIB DD DSN=SYS1.DUMMY,DISP=SHR                                    00000030
//       DD DSN=SYS2.DEBLKUNV,DISP=SHR                                 00000040
X/       DD DSN=SYS1.DUMMY,DISP=SHR                                    00000050
XX       DD DSN=SYS1.FORTLIB,DISP=SHR                                  00000060
XX       DD DSN=SYS2.FORTLIB,DISP=SHR                                  00000070
XX       DD DSN=SYS1.PL1LIB,DISP=SHR                                   00000080
XX       DD DSN=SYS1.FORTSSP,DISP=SHR                                  00000090
XX       DD DSN=SYS2.COBLIB,DISP=SHR                                   00000100
XX       DD DSN=SYS1.ALGLIB,DISP=SHR                                   00000110
XXSYSLOUT DD SYSOUT=&OUT,DCB=(RECFM=FBSA,LRECL=121,BLKSIZE=3509)
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(RECFM=FBSA,LRECL=121,BLKSIZE=3509)
//SYSLIN DD DSN=M2.ZBRTC.S0002.LOAD(ORBIT),DISP=SHR                   00000120
X/SYSLIN DD DSN=&&OBJMOD,DISP=(OLD,DELETE)                             00000130
XX       DD DDNAME=OBJECT                                              00000140
XXFT05F001 DD DDNAME=DATA5                                             00000150
XXFT06F001 DD SYSOUT=&OUT,DCB=(BLKSIZE=&BLKSIZE,LRECL=137,RECFM=VBA)
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(BLKSIZE=7265,LRECL=137,RECFM=VBA)
XXFT07F001 DD SYSOUT=B,DCB=(RECFM=FB,BLKSIZE=7280,LRECL=80)            00000160
XXSYSPRINT DD SYSOUT=&OUT,DCB=(BLKSIZE=&BLKSIZE,LRECL=137,RECFM=VBA),  00000170
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(BLKSIZE=7265,LRECL=137,RECFM=VBA)
XX          SPACE=(CYL,(0,1)),UNIT=(DISK,3)                            00000180
XXSYSTERM   DD   SYSOUT=&TERMOUT                                       00000190
IEF653I SUBSTITUTION JCL - SYSOUT=A
//SYSUDUMP DD SYSOUT=A                                                 00000200
X/SYSUDUMP DD SYSOUT=A,SPACE=(CYL,(0,5))
//GO.GENTAP DD UNIT=(7TRACK,,DEFER),
//    VOL=SER=CRTAPE,LABEL=(,NL,,IN),DISP=(OLD,KEEP),
//    DCB=(RECFM=U,BLKSIZE=1944,DEN=2)
//DATA5 DD *
IEF236I ALLOC. FOR SDHELOA4 GO
IEF237I 333    ALLOCATED TO SYSLIB
IEF237I 320    ALLOCATED TO
IEF237I 451    ALLOCATED TO
IEF237I 231    ALLOCATED TO
IEF237I 244    ALLOCATED TO
IEF237I 244    ALLOCATED TO
IEF237I 220    ALLOCATED TO
IEF237I 231    ALLOCATED TO
IEF237I 335    ALLOCATED TO SYSLOUT
IEF237I 333    ALLOCATED TO SYSLIN
IEF237I 335    ALLOCATED TO FT05F001
IEF237I 237    ALLOCATED TO FT06F001
IEF237I 336    ALLOCATED TO FT07F001
IEF237I 232    ALLOCATED TO SYSPRINT
IEF237I 235    ALLOCATED TO SYSPRINT
IEF237I 237    ALLOCATED TO SYSPRINT
IEF237I 335    ALLOCATED TO SYSTERM
IEF237I 336    ALLOCATED TO SYSUDUMP
IEF237I 000    ALLOCATED TO GENTAP
```

OS/360 LOADER

```
OPTIONS USED - PRINT,MAP,NOLET,CALL,RES,NOTERM,SIZE=194560,NAME=**GO
               EP=ORBIT
```

NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR
ORBIT	SD	4DB10	CNVRTSCT*	SD	4E670	CNVRT *	LR	4E670	DBGEN *	SD	4E998	DBFEOV *	LR	4E858
FREAD *	SD	4E060	FREADB *	LR	4EFB8	F*RITE *	LR	4F07C	REWIND *	LR	4F282	LEAVE *	LR	4F366
UNLOAD *	LR	4F41A	POSN *	LR	4F530	#COUNT *	LR	4F750	MEMBER *	LR	4F932	FTRAP *	LR	4FA22
FALLOW *	LR	4FAA0	FUNITABL*	SD	50A60	FFL1 *	SD	50826	FDDNLIST*	SD	50330	FERMSG *	SD	50838
IHCNAMEL*	SD	50BA0	FRDNL# *	LR	50BA0	F#RNL# *	LR	511A4	IHCECOMH*	SD	51670	IBCOM# *	LR	51670
FDIOCS# *	LR	5172C	INTSWTCH*	LR	52536	IHCCOMH2*	SD	52508	SEQDASD *	LR	52950	FTF *	SD	52C38
ITISECT *	SD	52CE8	ITI *	LR	52CE8	FXFLT *	SD	52D40	FIXFLT *	LR	52D40	TRNSLTE *	SD	52D88
TRANS *	LR	52D88	BITST *	SD	52E98	CNTGDATA*	LR	52E98	DTDUN *	SD	52FC8	IHCFCVTH*	SD	53C98
ADCON# *	LR	53098	FCVADUTP*	LR	53142	FCVLOUTP*	LR	53102	FCVZOUTP*	LR	53322	FCVICUTP*	LR	53600
FCVEOUTP*	LR	53DD2	FCVCOUTP*	LR	53DEC	INTGS*CH*	LR	54003	IHCEFIOS*	SD	54238	FIOCS# *	LR	54238
FIOCSBEP*	LR	5423E	IHCFIOS2*	SD	55160	IHCERRM *	SD	55690	ERRMON *	LR	55690	IHCERRE *	LR	556A8
IHCEFNTH*	SD	55C68	ARITH# *	LR	55C68	ADJSWTCH*	LR	56004	IHCUOPT *	SD	56130	IHCUATBL*	SD	56408
IHCETRCH*	SD	56010	IHCTRCH *	LR	56810	ERRTRA *	LR	56818						

```
TOTAL LENGTH     5590
ENTRY ADDRESS   40810

                 3ATID  HELIOS-A        ORBIT TAPE #=ORA37
        7409701 ORB              78 244 000000 304 000000 9304 01 781208 304 01 01 E7  X
```

HELIOS-A YEAR 1979. LAUNCH TIME 117564552. 0.

DATE MN	DC	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	ERTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LET(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
9	1	0	0	0	121.43	0.00	0.91	1.69	30.86	121.43	-2.91	-.005	0.01
9	2	0	0	0	121.27	0.00	0.91	1.67	31.04	121.27	-3.01	-.005	0.01
9	3	0	0	0	121.13	0.00	0.90	1.67	31.21	121.13	-3.10	-.005	0.01
9	4	0	0	0	120.99	0.01	0.90	1.66	31.37	120.99	-3.19	-.005	0.01
9	5	0	0	0	120.87	0.01	0.89	1.65	31.53	120.87	-3.29	-.006	0.01
9	6	0	0	0	120.75	0.01	0.89	1.65	31.70	120.75	-3.38	-.006	0.01
9	7	0	0	0	120.64	0.01	0.88	1.64	31.86	120.64	-3.48	-.006	0.01
9	8	0	0	0	120.55	0.01	0.88	1.64	32.01	120.55	-3.58	-.006	0.01
9	9	0	0	0	120.47	0.01	0.87	1.63	32.17	120.47	-3.67	-.006	0.01
9	10	0	0	0	120.40	0.01	0.86	1.62	32.32	120.40	-3.77	-.006	0.01
9	11	0	0	0	120.34	0.01	0.86	1.62	32.47	120.34	-3.87	-.007	0.01
9	12	0	0	0	120.29	0.01	0.85	1.61	32.62	120.29	-3.97	-.007	0.01
9	13	0	0	0	120.27	0.01	0.84	1.61	32.77	120.27	-4.07	-.007	0.01
9	14	0	0	0	120.25	0.01	0.84	1.60	32.91	120.25	-4.16	-.007	0.01
9	15	0	0	0	120.25	0.01	0.83	1.59	33.04	120.25	-4.26	-.007	0.01
9	16	0	0	0	120.27	0.01	0.82	1.58	33.17	120.27	-4.37	-.008	0.01
9	17	0	0	0	120.31	0.01	0.81	1.58	33.30	120.31	-4.47	-.008	0.01
9	18	0	0	0	120.37	0.01	0.81	1.57	33.42	120.37	-4.57	-.008	0.01
9	19	0	0	0	120.44	0.01	0.80	1.57	33.53	120.44	-4.67	-.008	0.01
9	20	0	0	0	120.54	0.01	0.79	1.56	33.64	120.54	-4.77	-.008	0.01
9	21	0	0	0	120.66	0.01	0.78	1.56	33.73	120.66	-4.88	-.008	0.02
9	22	0	0	0	120.80	0.01	0.77	1.55	33.82	120.80	-4.98	-.009	0.02
9	23	0	0	0	120.97	0.01	0.76	1.54	33.90	120.97	-5.08	-.009	0.02
9	24	0	0	0	121.16	0.01	0.76	1.54	33.97	121.16	-5.19	-.009	0.02
9	25	0	0	0	121.38	0.01	0.75	1.53	34.02	121.38	-5.29	-.009	0.02
9	26	0	0	0	121.63	0.01	0.74	1.52	34.07	121.63	-5.40	-.009	0.02
9	27	0	0	0	121.92	0.01	0.73	1.52	34.09	121.92	-5.50	-.010	0.02
9	28	0	0	0	122.23	0.01	0.72	1.51	34.11	122.23	-5.60	-.010	0.02
9	29	0	0	0	122.58	0.01	0.71	1.51	34.10	122.58	-5.71	-.010	0.02
9	30	0	0	0	122.97	0.02	0.70	1.50	34.07	122.97	-5.81	-.010	0.02
10	1	0	0	0	123.40	0.02	0.69	1.49	34.03	123.40	-5.92	-.010	0.02
10	2	0	0	0	123.87	0.02	0.68	1.49	33.95	123.87	-6.02	-.011	0.02
10	3	0	0	0	124.39	0.02	0.67	1.48	33.86	124.39	-6.12	-.011	0.02
10	4	0	0	0	124.96	0.02	0.65	1.48	33.73	124.96	-6.23	-.011	0.02
10	5	0	0	0	125.58	0.02	0.64	1.47	33.57	125.58	-6.33	-.011	0.02
10	6	0	0	0	126.26	0.02	0.63	1.47	33.38	126.26	-6.43	-.011	0.02
10	7	0	0	0	126.99	0.02	0.62	1.46	33.15	126.99	-6.52	-.012	0.02
10	8	0	0	0	127.80	0.02	0.61	1.45	32.88	127.80	-6.62	-.012	0.02
10	9	0	0	0	128.67	0.02	0.60	1.45	32.56	128.67	-6.71	-.012	0.02
10	10	0	0	0	129.62	0.02	0.59	1.44	32.19	129.62	-6.79	-.012	0.02
10	11	0	0	0	130.65	0.02	0.57	1.44	31.77	130.65	-6.88	-.012	0.02
10	12	0	0	0	131.77	0.02	0.56	1.43	31.28	131.77	-6.95	-.012	0.02
10	13	0	0	0	132.98	0.02	0.55	1.43	30.73	132.98	-7.02	-.013	0.02
10	14	0	0	0	134.29	0.02	0.54	1.42	30.09	134.29	-7.09	-.013	0.02
10	15	0	0	0	135.72	0.02	0.52	1.42	29.38	135.72	-7.14	-.013	0.02
10	16	0	0	0	137.27	0.02	0.51	1.41	28.58	137.27	-7.18	-.013	0.02
10	17	0	0	0	138.95	0.02	0.50	1.41	27.67	138.95	-7.21	-.013	0.02
10	18	0	0	0	140.78	0.02	0.48	1.40	26.65	140.78	-7.23	-.013	0.02
10	19	0	0	0	142.75	0.02	0.47	1.40	25.51	142.75	-7.22	-.013	0.03
10	20	0	0	0	144.90	0.02	0.46	1.40	24.23	144.90	-7.20	-.013	0.03
10	21	0	0	0	147.24	0.02	0.44	1.39	22.80	147.24	-7.14	-.013	0.03
10	22	0	0	0	149.77	0.02	0.43	1.39	21.21	149.77	-7.06	-.013	0.03
10	23	0	0	0	152.52	0.02	0.42	1.38	19.43	152.52	-6.95	-.013	0.03
10	24	0	0	0	155.50	0.02	0.41	1.37	17.46	155.50	-6.79	-.012	0.03
10	25	0	0	0	158.73	0.02	0.39	1.37	15.28	158.73	-6.59	-.012	0.03
10	26	0	0	0	162.23	0.02	0.38	1.36	12.86	162.23	-6.34	-.012	0.03
10	27	0	0	0	166.01	0.02	0.37	1.36	10.20	166.01	-6.03	-.011	0.03
10	28	0	0	0	170.09	0.02	0.36	1.35	7.28	170.09	-5.65	-.011	0.03
10	29	0	0	0	174.48	0.02	0.35	1.34	4.09	174.48	-5.20	-.010	0.03
10	30	0	0	0	179.17	0.02	0.34	1.33	0.62	179.17	-4.68	-.009	0.03
10	31	0	0	0	184.16	0.02	0.33	1.32	3.12	175.84	-4.08	-.008	0.04

END OF FILE ON ORBIT TAPE

```
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   M2.ZBRTC.SD002.LOAD                    KEPT        DDNAME=SYSLIB  -1        0 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS2.DEBLK'JNV                         KEPT        DDNAME=SYSLIB  -2       17 EXCPS
IEF285I   VOL SER NOS= M2SYS2.
IEF285I   SYS1.FORTLIB                           KEPT        DDNAME=SYSLIB  -3       61 EXCPS
IEF285I   VOL SER NOS= K3ITL0.
IEF285I   SYS2.FORTLIB                           KEPT        DDNAME=SYSLIB  -4       28 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SYS1.PL1LIB                            KEPT        DDNAME=SYSLIB  -5        0 EXCPS
```

```
*********  4 ***************************************************************************  * *********

JOBNAME-
      SSSSSSSSSS   DDDDDDDDD     HH        HH   EEEEEEEEEEEE  LL          OOOOOOOOOO      AA      555555555555
     SSSSSSSSSSS   DDDDDDDDDD    HH        HH   EEEEEEEEEEEE  LL         OOOOOOOOOOOO     AA      555555555555
     SS        SS  DD       DD   HH        HH   EE            LL         OO        OO    AAAA     55
     SS            DD        DD  HH        HH   EE            LL         OO        OO    AAAA     55
     SSS           DD        DD  HH        HH   EE            LL         OO        OO   AA  AA    55
      SSSSSSSSS    DD        DD  HHHHHHHHHHHH   EEEEEEEE      LL         OO        OO   AA  AA    55555555555
       SSSSSSSSS   DD        DD  HHHHHHHHHHHH   EEEEEEEE      LL         OO        OO  AA    AA   555555555555
              SSS  DD        DD  HH        HH   EE            LL         OO        OO  AAAAAAAA            55
              SS   DD        DD  HH        HH   EE            LL         OO        OO  AAAAAAAAAA          55
     SS        SS  DD       DD   HH        HH   EE            LL         OO        OO  AA      AA  55      55
     SSSSSSSSSSS   DDDDDDDDDD    HH        HH   EEEEEEEEEEEE  LLLLLLLLLLLL  OOOOOOOOOOOO  AA      AA  555555555555
      SSSSSSSSSS   DDDDDDDDD     HH        HH   EEEEEEEEEEEE  LLLLLLLLLLLL   OOOOOOOOOO   AA      AA   5555555555

BOX-                                                  SACC 360/75      READER NUMBER-P0151          CLASS-
     BBBBBBBBB     FFFFFFFFFFFF    33333333                                                          AA
     BBBBBBBBBB    FFFFFFFFFFFF   3333333333                                                         AA
     BB       BB   FF            33        33                                                        AAAA
     BB       BB   FF                      33                                                        AAAA
     BB       BB   FF                      33                                                       AA  AA
     BBBBBBBBB     FFFFFFFF          33333                                                          AA  AA
     BBBBBBBBB     FFFFFFFF          33333                                                         AA    AA
     BB       BB   FF                      33                                                       AAAAAAAA
     BB       BB   FF                      33                                                      AAAAAAAAAA
     BB       BB   FF            33        33                                                      AA      AA
     BBBBBBBBBB    FF            3333333333                                                      AA      AA
     BBBBBBBBBB    FF             33333333
```

ORA38

11/1/78 - 11/30/78

NUMBER 4 ON OOF- ZMJLKRE3/910 ZWDJMTY2/161 ZBEJGNPH/671 SDHELDA5/BF3 AT 13.40.16 WED 30 JAN 80

```
X/        DD DSN=SYS1.DUMMY,DISP=SHR                                    00000040
XX        DD DSN=SYS1.FORTLIB,DISP=SHR                                  00000050
XX        DD DSN=SYS2.FORTLIB,DISP=SHR                                  00000060
XX        DD DSN=SYS1.PL1LIB,DISP=SHR                                   00000070
XX        DD DSN=SYS1.FORTSP,DISP=SHR                                   00000080
XX        DD DSN=SYS2.COBLIB,DISP=SHR                                   00000090
XX        DD DSN=SYS1.ALGLIB,DISP=SHR                                   00000100
XXSYSLOUT DD SYSOUT=6OUT,DCB=(RECFM=FBSA,LRECL=121,BLKSIZE=3509)        00000110
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(RECFM=FBSA,LRECL=121,BLKSIZE=3509)
//SYSLIN DD DSN=M2.ZBSTC.SD002.LOAD(ORBIT),DISP=SHR                    00000120
X/SYSLIN DD DSN=&&OBJMOD,DISP=(OLD,DELETE)                              00000130
XX        DD DDNAME=OBJECT                                              00000140
XXFT05F001 DD DDNAME=DATAS                                              00000150
XXFT06F001 DD SYSOUT=6OUT,DCB=(BLKSIZE=6BLKSIZE,LRECL=137,RECFM=VBA)    00000150
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(BLKSIZE=7205,LRECL=137,RECFM=VBA)
XXFT07F001 DD SYSOUT=B,DCB=(RECFM=FB,BLKSIZE=7280,LRECL=80)             00000160
XXSYSPRINT DD SYSOUT=6OUT,DCB=(BLKSIZE=6BLKSIZE,LRECL=137,RECFM=VBA)    00000170
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(BLKSIZE=7205,LRECL=137,RECFM=VBA),
XX              SPACE=(CYL,(0,1)),UNIT=(DISK,3)                         00000180
XXSYSTERM  DD   SYSOUT=6TERMOUT                                         00000190
IEF653I SUBSTITUTION JCL - SYSOUT=A
//SYSUDUMP DD SYSOUT=A                                                  00000200
X/SYSUDUMP DD SYSOUT=A,SPACE=(CYL,(0,5))
//GO.GENTAP DD UNIT=(7TRACK,,DEFER),
//    VOL=SER=DRTAPE,LABEL=(,NL,,IN),DISP=(OLD,KEEP),
//    DCB=(RECFM=U,BLKSIZE=1980,DEN=2)
//DATAS DD *
IEF236I ALLOC. FOR SDHELOAS GO
IEF237I 335   ALLOCATED TO SYSLIB
IEF237I 320   ALLOCATED TO
IEF237I 451   ALLOCATED TO
IEF237I 231   ALLOCATED TO
IEF237I 244   ALLOCATED TO
IEF237I 244   ALLOCATED TO
IEF237I 220   ALLOCATED TO
IEF237I 231   ALLOCATED TO
IEF237I 232   ALLOCATED TO SYSLOUT
IEF237I 333   ALLOCATED TO SYSLIN
IEF237I 335   ALLOCATED TO FT05F001
IEF237I 335   ALLOCATED TO FT06F001
IEF237I 235   ALLOCATED TO FT07F001
IEF237I 335   ALLOCATED TO SYSPRINT
IEF237I 232   ALLOCATED TO SYSPRINT
IEF237I 235   ALLOCATED TO SYSPRINT
IEF237I 336   ALLOCATED TO SYSTERM
IEF237I 335   ALLOCATED TO SYSUDUMP
IEF237I 000   ALLOCATED TO GENTAP
```

CS/360 LOADER

```
OPTIONS USED - PRINT,MAP,NDELET,CALL,RES,NOTERM,SIZE=104640,NAME=**JO
               EP=ORBIT
```

NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR
ORBIT	SD	50010	CNVRTSCT*	SD	50E70	CNVRT *	LR	50E70	D3GEN *	SD	51198	DBFEOV *	LR	51358
FREAD *	SD	51560	FREADB *	LR	51708	FWRITE *	LR	5187C	RE*IND *	LR	51AB2	LEAVE *	LR	51B66
UNLOAD *	LR	51C1A	POSN *	LR	51D30	MOUNT *	LR	51F50	MEMBER *	LR	52132	FTRAP *	LR	52222
FALLOW *	LR	52AA0	FUNITASL*	SD	532C0	FOL1 *	SD	53428	FCOMLIST*	SD	53330	FERMSG *	SD	53338
IHCNAMEL*	SD	533A0	FRONL# *	LR	533A0	F*RNL# *	LR	539A4	IHCECOMM*	SD	53E70	IBCOM# *	LR	53E70
FDIOCS* *	LR	53F2C	INTS*TCH*	LR	54006	IHCCOMM2*	SD	54008	SUDDASD *	LR	56150	FTF *	SD	55438
ITISCCT *	SD	55428	ITI *	LR	55478	FXFLT *	SD	55540	FIXFLT *	LR	55540	TRNSLTB *	SD	55588
TRANS *	LR	55589	BITST *	SD	55698	CNTSDATA*	LR	55698	DTDUN *	SD	557C8	IHCFCVTH*	SD	55898
ADCON# *	LR	55898	FCVXCUTP*	LR	55942	FCVLOUTP*	LR	55902	FCVZCUTP*	LR	55B22	FCVIOUTP*	LR	55ED0
FCVEOUTP*	LR	56352	FCVCOUTP*	LR	5652C	INTGS*CH*	LR	56803	IHCEFIOS*	SD	56A38	FIOCS# *	LR	56A38
FIOCSBEP*	LR	56A3E	IHCFIOS2*	SD	57960	IHCERM *	SD	57E90	ERRMON *	LR	57E90	IHCERRE *	LR	57EA8
IHCFFNTH*	SD	58468	ARITH# *	LR	58468	AJJS*TCH*	LR	58604	IHCJUMT *	SD	58980	IHCUATBL*	SD	58CD8
IHCETRCH*	SD	59310	IHCTRCH *	LR	59310	EFRTRA *	LR	59318						

```
TOTAL LENGTH    9590
ENTRY ADDRESS   50010

                SATID   HELIOS-A        OGRBIT TAPE #=ORA38
7+09701 ORB          78 3C6 000000 334 000300 B35A C1 F99111 73A 01 01 E7  X

        HELIOS-A        YEAR 1978.        LAUNCH TIME  122834952.  0.
```

DATE MM	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	EARTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LET(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
11	1	0	0	0	189.44	0.02	0.32	1.31	7.12	170.56	-3.40	-.007	0.04
11	2	0	0	0	194.98	0.01	0.32	1.30	11.36	165.02	-2.66	-.005	0.04
11	3	0	0	0	200.74	0.01	0.31	1.29	15.80	159.26	-1.85	-.004	0.04
11	4	0	0	0	206.66	0.01	0.31	1.28	20.39	153.34	-1.00	-.002	0.04
11	5	0	0	0	212.69	0.01	0.31	1.26	25.08	147.31	-0.12	-.001	0.04
11	6	0	0	0	218.74	0.00	0.31	1.25	29.80	141.26	0.77	0.001	0.04
11	7	0	0	0	224.75	0.00	0.31	1.23	34.50	135.25	1.64	0.003	0.04
11	8	0	0	0	230.65	-0.00	0.31	1.22	39.09	129.35	2.47	0.004	0.04
11	9	0	0	0	236.38	-0.01	0.32	1.20	43.54	123.62	3.25	0.005	0.04
11	10	0	0	0	241.88	-0.01	0.33	1.19	47.78	118.12	3.96	0.007	0.04
11	11	0	0	0	247.11	-0.01	0.33	1.16	51.78	112.89	4.59	0.008	0.04
11	12	0	0	0	252.05	-0.01	0.34	1.14	55.53	107.95	5.15	0.009	0.03
11	13	0	0	0	256.69	-0.01	0.35	1.12	58.99	103.31	5.52	0.010	0.03
11	14	0	0	0	261.02	-0.02	0.36	1.10	62.18	98.98	6.02	0.011	0.03
11	15	0	0	0	265.05	-0.02	0.37	1.09	65.09	94.95	6.35	0.011	0.03
11	16	0	0	0	268.78	-0.02	0.38	1.07	67.73	91.22	6.61	0.012	0.03
11	17	0	0	0	272.23	-0.02	0.40	1.05	70.12	87.77	6.82	0.012	0.03
11	18	0	0	0	275.41	-0.02	0.41	1.03	72.26	84.59	6.97	0.012	0.03
11	19	0	0	0	278.34	-0.02	0.42	1.02	74.17	81.66	7.09	0.013	0.03
11	20	0	0	0	281.04	-0.02	0.43	1.00	75.87	78.96	7.16	0.013	0.03
11	21	0	0	0	283.53	-0.02	0.45	0.98	77.36	76.47	7.21	0.013	0.03
11	22	0	0	0	285.82	-0.02	0.46	0.97	78.68	74.18	7.23	0.013	0.03
11	23	0	0	0	287.92	-0.02	0.47	0.95	79.82	72.08	7.22	0.013	0.02
11	24	0	0	0	289.86	-0.02	0.49	0.94	80.81	70.14	7.19	0.013	0.02
11	25	0	0	0	291.64	-0.02	0.50	0.93	81.65	68.36	7.15	0.013	0.02
11	26	0	0	0	293.28	-0.02	0.51	0.91	82.37	66.72	7.10	0.013	0.02
11	27	0	0	0	294.79	-0.02	0.52	0.90	82.95	65.21	7.03	0.013	0.02
11	28	0	0	0	296.18	-0.02	0.54	0.89	83.43	63.82	6.95	0.013	0.02
11	29	0	0	0	297.45	-0.02	0.55	0.88	83.80	62.55	6.87	0.013	0.02
11	30	0	0	0	298.63	-0.02	0.56	0.87	84.07	61.37	6.78	0.012	0.02

END OF FILE ON ORBIT TAPE

```
IEC209I SDHELDA5 ORA38  000 TR=001,TW=000,EG=000,CL=019,N=000,SIO=00700
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   M2.ZORTC.SD002.LOAD                    KEPT        DDNAME=SYSLIB  -1          0 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS2.DEBLKUNV                          KEPT        DDNAME=SYSLIB  -2         17 EXCPS
IEF285I   VOL SER NOS= M2SYS2.
IEF285I   SYS1.FORTLIB                           KEPT        DDNAME=SYSLIB  -3         61 EXCPS
IEF285I   VOL SER NOS= K3ITL6.
IEF285I   SYS2.FORTLIB                           KEPT        DDNAME=SYSLIB  -4         28 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SYS1.PL1LIB                            KEPT        DDNAME=SYSLIB  -5          0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS1.FORTSSP                           KEPT        DDNAME=SYSLIB  -6          0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS2.COBLIB                            KEPT        DDNAME=SYSLIB  -7          0 EXCPS
IEF285I   VOL SER NOS= M2SYS1.
IEF285I   SYS1.ALGLIB                            KEPT        DDNAME=SYSLIB  -8          0 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SYS80030.T133346.SV000.SDHELDA5.R0000001  SYSOUT   DDNAME=SYSLOUT              1 EXCPS
IEF285I   VOL SER NOS= K3SCR3.
IEF285I   M2.ZORTC.SD002.LOAD                    KEPT        DDNAME=SYSLIN  -1          7 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS80030.T133346.RV000.SDHELDA5.S0000008  SYSIN    DDNAME=FT05F001            2 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80030.T133346.RV000.SDHELDA5.S0000008  DELETED  DDNAME=FT05F001            2 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80030.T133346.SV000.SDHELDA5.R0000002  SYSOUT   DDNAME=FT06F001            1 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80030.T133346.SV000.SDHELDA5.R0000003  DELETED  DDNAME=FT07F001            0 EXCPS
IEF285I   VOL SER NOS= K3SCR6.
IEF285I   SYS80030.T133346.SV000.SDHELDA5.R0000004  DELETED  DDNAME=SYSPRINT            0 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80030.T133346.SV000.SDHELDA5.R0000005  DELETED  DDNAME=SYSTERM             0 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS80030.T133346.SV000.SDHELDA5.R0000006  DELETED  DDNAME=SYSUDUMP            0 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80030.T133346.RV000.SDHELDA5.R0000007  KEPT     DDNAME=GENTAP           706 EXCPS
IEF285I   VOL SER NOS= ORA38 .
IEF280E K 000,ORA38 ,SDHELDA5,GO
IEF375I STEP /GO      / START 80030.1334
IEF374I STEP /GO      / STOP  80030.1340 CPU    0MIN 11.60SEC,MAIN 200K LCS    0K
- STEP 01 -      RETURN CODE = 0000                    STEP TIME =      .49 MINS=(CPU=      .19,IO=      .30);
                                   IO IN SECS. DISK=    11.12,DRUM=      .00,TAPE=     7.10,CELL=      .00,OTHR=      .16
```

JOBNAME-

SACC 360/75 READER NUMBER-PC061 CLASS-

ORA39

12/1/78 - 12/31/78

```
X/        DD DSN=SYS1.DUMMY,DISP=SHR                                    00000040
XX        DD DSN=SYS1.FORTLIB,DISP=SHR                                  00000050
XX        DD DSN=SYS2.FORTLIB,DISP=SHR                                  00000060
XX        DD DSN=SYS1.PL1LIB,DISP=SHR                                   00000070
XX        DD DSN=SYS1.FORTSSF,DISP=SHR                                  00000080
XX        DD DSN=SYS2.COBLIB,DISP=SHR                                   00000090
XX        DD DSN=SYS1.ALGLIB,DISP=SHR                                   00000100
XXSYSLOUT DD SYSOUT=&OUT,DCB=(RECFM=FBSA,LRECL=121,BLKSIZE=3509)        00000110
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(RECFM=FBSA,LRECL=121,BLKSIZE=3509)
//SYSLIN DD DSN=M2.ZBRTC.SDCC2.LOAD(LRBIT),DISP=SHR                    00000120
X/SYSLIN DD DSN=&&OBJMOD,DISP=(OLD,DELETE)                              00000130
XX        DD DDNAME=OBJECT                                              00000140
XXFT05F001 DD DDNAME=DATA5                                              00000150
XXFT06F001 DD SYSOUT=&OUT,DCB=(BLKSIZE=&BLKSIZE,LRECL=137,RECFM=VBA)
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(BLKSIZE=7293,LRECL=137,RECFM=VBA)
XXFT07F001 DD SYSOUT=B,DCB=(RECFM=FB,BLKSIZE=7280,LRECL=80)             00000160
XXSYSPRINT DD SYSOUT=&OUT,DCB=(BLKSIZE=&BLKSIZE,LRECL=137,RECFM=VBA),   00000170
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(BLKSIZE=7293,LRECL=137,RECFM=VBA),
XX          SPACE=(CYL,(0,1)),UNIT=(DISK,3)                             00000180
XXSYSTERM  DD   SYSOUT=&TERMOUT                                         00000190
IEF653I SUBSTITUTION JCL - SYSOUT=A
//SYSUDUMP DD SYSOUT=A                                                  00000200
X/SYSUDUMP DD SYSOUT=A,SPACE=(CYL,(0,5))
//GO.GENTAP DD UNIT=(7TRACK,,DEFER),
//    VOL=SER=ORTAPE,LABEL=(,NL,,IN),DISP=(OLD,KEEP),
//    DCB=(RECFM=U,BLKSIZE=1944,DEN=2)
//DATA5 DD *
IEF236I ALLOC. FOR SDHLLDA1 GO
IEF237I 333   ALLOCATED TO SYSLIB
IEF237I 320   ALLOCATED TO
IEF237I 461   ALLOCATED TO
IEF237I 231   ALLOCATED TO
IEF237I 244   ALLOCATED TO
IEF237I 244   ALLOCATED TO
IEF237I 220   ALLOCATED TO
IEF237I 231   ALLOCATED TO
IEF237I 237   ALLOCATED TO SYSLOUT
IEF237I 333   ALLOCATED TO SYSLIN
IEF237I 335   ALLOCATED TO FT05F001
IEF237I 237   ALLOCATED TO FT06F001
IEF237I 335   ALLOCATED TO FT07F001
IEF237I 232   ALLOCATED TO SYSPRINT
IEF237I 235   ALLOCATED TO SYSPRINT
IEF237I 237   ALLOCATED TO SYSPRINT
IEF237I 336   ALLOCATED TO SYSTERM
IEF237I 335   ALLOCATED TO SYSUDUMP
IEF237I 001   ALLOCATED TO GENTAP
```

CS/360 LOADER

```
OPTIONS USED   PRINT,MAP,NOLET,CALL,RES,NOTERM,SIZE=1945,0,NAME=**GO
               EP=ORBIT
```

NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR
ORBIT	SD	77810	CNVRTSCT*	SD	73670	CNVRT *	LR	78670	DDGEN *	SD	73998	DEFEOV *	LR	78858
FREAD *	SD	78060	FREADB *	LR	74F98	FWRITE *	LR	7907C	REWIND *	LR	79282	LEAVE *	LR	79366
UNLOAD *	LR	7941A	POSN *	LR	79530	MCOUNT *	LR	79750	MEMBER *	LR	79932	FTRAP *	LR	79A22
FALLO# *	LR	79AA0	FUNITABL*	SD	7AAA0	FCL1 *	SD	7A628	FDONLIST*	SD	7A030	FCHMSG *	SD	7A038
IHCNAME*	SD	7A0A0	FRONL# *	LR	7A8A0	F*FNL# *	LR	7B1A4	IHCECOMH*	SD	7B670	IBCCOM# *	LR	7B670
FDIOCS# *	LR	7B72C	INTS*TCH*	LR	7C586	IHCCCMH2*	SD	7C5D8	SPODASD *	LR	7C950	FTF *	SD	7CC38
ITISECT *	SD	7CCE8	ITI *	LR	7CCE8	FXFLT *	SD	7CD40	FIXFLT *	LR	7CD40	TRNSLTB *	SD	7CD88
TRANS *	LR	7CD88	DITST *	SD	7CE98	CNTGDATA*	LR	7CE96	DTDUN *	SD	7CFC8	IHCFCVTH*	SD	7D098
ADCON# *	LR	7D098	FCVADUTP*	LR	7D142	FCVLOUTP*	LR	7D1D2	FCVZOUTP*	LR	7D322	FCVIOUTP*	LR	7D600
FCVCOUTP*	LR	7D8D2	FCVCOUTP*	LR	7DDEC	INT6SACH*	LR	7E003	IHCEFIOS*	SD	7E238	FIOCS# *	LR	7E238
FIOCSBEP*	LR	7E23E	IHCEFIOS2*	SD	7F160	IHCERRM *	SD	7F690	ERRMON *	LR	7F690	IHCERRE *	LR	7F6A8
IHCEFNTH*	SD	7F6A8	ARITH* *	LR	7A6AM	ADJS*TCH*	LR	[illegible]	IHCJORT *	SD	80100	IHCUATOL*	SD	80408
IHCLTRCH*	SD	80810	IHCTRCH *	LR	80010	ERRTRA *	LR	80018						

TOTAL LENGTH 0590
ENTRY ADDRESS 77810

```
SATID  HELIOS-A        OORBIT TAPE #=ORA39
7*09701 ORU            78 335 030000 366 000000 3366 01 790317 366 01 01 67  X
```

HELIOS-A YEAR 1978. LAUNCH TIME 125426952. C.

DATE MM	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	EARTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LAT(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
12	1	0	0	0	299.71	-0.02	0.57	0.86	84.26	60.29	6.68	0.012	0.02
12	2	0	0	0	300.70	-0.02	0.59	0.85	84.37	59.30	6.58	0.012	0.02
12	3	0	0	0	301.61	-0.02	0.60	0.84	84.40	58.39	6.48	0.012	0.02
12	4	0	0	0	302.44	-0.02	0.61	0.84	84.37	57.56	6.37	0.012	0.02
12	5	0	0	0	303.21	-0.02	0.62	0.83	84.27	56.79	6.26	0.012	0.02
12	6	0	0	0	303.91	-0.02	0.63	0.82	84.12	56.09	6.15	0.011	0.02
12	7	0	0	0	304.54	-0.02	0.65	0.82	83.91	55.46	6.04	0.011	0.02
12	8	0	0	0	305.13	-0.02	0.66	0.81	83.66	54.87	5.93	0.011	0.02
12	9	0	0	0	305.65	-0.02	0.67	0.81	83.37	54.35	5.81	0.011	0.02
12	10	0	0	0	306.13	-0.02	0.68	0.80	83.03	53.87	5.70	0.011	0.02
12	11	0	0	0	306.57	-0.02	0.69	0.80	82.67	53.43	5.58	0.010	0.02
12	12	0	0	0	306.96	-0.02	0.70	0.79	82.27	53.04	5.47	0.010	0.02
12	13	0	0	0	307.31	-0.02	0.71	0.79	81.85	52.69	5.36	0.010	0.02
12	14	0	0	0	307.62	-0.02	0.72	0.79	81.40	52.38	5.24	0.010	0.02
12	15	0	0	0	307.89	-0.02	0.73	0.79	80.93	52.11	5.13	0.010	0.02
12	16	0	0	0	308.13	-0.02	0.74	0.78	80.45	51.87	5.02	0.009	0.02
12	17	0	0	0	308.34	-0.02	0.75	0.78	79.95	51.66	4.90	0.009	0.02
12	18	0	0	0	308.52	-0.02	0.76	0.78	79.43	51.48	4.79	0.009	0.02
12	19	0	0	0	308.67	-0.02	0.77	0.78	78.91	51.33	4.68	0.009	0.02
12	20	0	0	0	308.80	-0.02	0.77	0.78	78.38	51.20	4.57	0.009	0.02
12	21	0	0	0	308.90	-0.02	0.78	0.78	77.84	51.10	4.46	0.008	0.02
12	22	0	0	0	308.97	-0.02	0.79	0.79	77.30	51.03	4.35	0.008	0.01
12	23	0	0	0	309.02	-0.02	0.80	0.79	76.76	50.98	4.24	0.008	0.01
12	24	0	0	0	309.05	-0.02	0.81	0.79	76.21	50.95	4.13	0.008	0.01
12	25	0	0	0	309.06	-0.02	0.81	0.79	75.67	50.94	4.03	0.008	0.01
12	26	0	0	0	309.05	-0.02	0.82	0.79	75.12	50.95	3.92	0.008	0.01
12	27	0	0	0	309.02	-0.02	0.83	0.79	74.58	50.98	3.82	0.007	0.01
12	28	0	0	0	308.98	-0.02	0.84	0.80	74.05	51.02	3.71	0.007	0.01
12	29	0	0	0	308.92	-0.02	0.84	0.80	73.51	51.09	3.61	0.007	0.01
12	30	0	0	0	308.84	-0.02	0.85	0.80	72.99	51.16	3.50	0.007	0.01
12	31	0	0	0	308.74	-0.02	0.86	0.80	72.47	51.26	3.40	0.007	0.01

END OF FILE ON ORBIT TAPE

```
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   M2.ZBRTC.SD002.LOAD                    KEPT      DDNAME=SYSLIB  -1        0 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS2.DEBLKUNV                          KEPT      DDNAME=SYSLIB  -2       17 EXCPS
IEF285I   VOL SER NOS= M2SYS2.
IEF285I   SYS1.FORTLIB                           KEPT      DDNAME=SYSLIB  -3       61 EXCPS
IEF285I   VOL SER NOS= K3ITL0.
IEF285I   SYS2.FORTLIB                           KEPT      DDNAME=SYSLIB  -4       28 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SYS1.PL1LIB                            KEPT      DDNAME=SYSLIB  -5        0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS1.FORTSSP                           KEPT      DDNAME=SYSLIB  -6        0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS2.COBLIB                            KEPT      DDNAME=SYSLIB  -7        0 EXCPS
IEF285I   VOL SER NOS= M2SYS1.
IEF285I   SYS1.ALGLIB                            KEPT      DDNAME=SYSLIB  -8        0 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SYS80025.T113403.SV000.SDHELCA1.R0000028  SYSOUT  DDNAME=SYSLOUT        1 EXCPS
IEF285I   VOL SER NOS= K3SCR4.
IEF285I   M2.ZBRTC.SD002.LOAD                    KEPT      DDNAME=SYSLIN  -1        7 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS80025.T113403.RV000.SDHELCA1.S0000035  SYSIN  DDNAME=FT05F001        2 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80025.T113403.RV000.SDHELCA1.S0000035  DELETED  DDNAME=FT05F001      2 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80025.T113403.SV000.SDHELCA1.R0000029  SYSOUT  DDNAME=FT06F001        1 EXCPS
IEF285I   VOL SER NOS= K3SCR4.
IEF285I   SYS80025.T113403.SV000.SDHELCA1.R0000030  DELETED  DDNAME=FT07F001      0 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80025.T113403.SV000.SDHELCA1.R0000031  DELETED  DDNAME=SYSPRINT      0 EXCPS
IEF285I   VOL SER NOS= K3SCR3.
IEF285I   SYS80025.T113403.SV000.SDHELCA1.R0000032  DELETED  DDNAME=SYSTERM       0 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS80025.T113403.SV000.SDHELCA1.R0000033  DELETED  DDNAME=SYSUDUMP      0 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80025.T113403.RV000.SDHELCA1.R0000034  KEPT     DDNAME=GENTAP      726 EXCPS
IEF285I   VOL SER NOS= DRA39 .
IEF280I K 0C1,DRA39 ,SDHELCA1.GO
IEF373I STEP /GO      / START 80025.1212
IEF374I STEP /GO      / STOP  80025.1218 CPU    0MIN 13.79SEC MAIN 200K LCS    0K
- STEP 01 -      RETURN CODE = 0000                    STEP TIME =      .52 MINS=(CPU=      .22,IO=      .30)
                                    IO IN SECS. DISK=    11.17,DRIVE=      .00,TAPE=      7.30,CELL=      .00,OTHR=      .16
- SURCHARGES=(DRIVES ALOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=00000)SECS.    TOTAL STP TIME=      .52 MINS.  -
```

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**********   BU ***********************************************************************   BU *********

JOBNAME-
      SSSSSSSSSS   DDDDDDDDD     HH        HH   EEEEEEEEEEEE  LL          OOOOOOOOOO       AA        2222222222
     SSSSSSSSSSS   DDDDDDDDDD    HH        HH   EEEEEEEEEEEE  LL          OOOOOOOOOOOO     AA        222222222222
     SS        SS  DD       DD   HH        HH   EE            LL          OO        OO     AAAA      22        22
     SS            DD        DD  HH        HH   EE            LL          OO        OO     AAAA                22
     SSS           DD        DD  HH        HH   EE            LL          OO        OO    AA  AA              22
      SSSSSSSSS    DD        DD  HHHHHHHHHHHH   EEEEEEEE      LL          OO        OO    AA  AA            22
       SSSSSSSSS   DD        DD  HHHHHHHHHHHH   EEEEEEEE      LL          OO        OO    AA    AA        22
              SSS  DD        DD  HH        HH   EE            LL          OO        OO    AAAAAAAA      22
               SS  DD        DD  HH        HH   EE            LL          OO        OO   AAAAAAAAAA    22
     SS        SS  DD       DD   HH        HH   EE            LL          OO        OO   AA      AA   22
     SSSSSSSSSSSS  DDDDDDDDDD    HH        HH   EEEEEEEEEEEE  LLLLLLLLLLLL  OOOOOOOOOOOO   AA      AA   222222222222
      SSSSSSSSSS   DDDDDDDDD     HH        HH   EEEEEEEEEEEE  LLLLLLLLLLLL   OOOOOOOOOO    AA      AA   222222222222

                                                  SACC 360/75      READER NUMBER-P0063          CLASS-
BOX-
     BBBBBBBBB     FFFFFFFFFFFF    33333333                                                      AA
     BBBBBBBBBB    FFFFFFFFFFFF   3333333333                                                     AA
     BB       BB   FF            33        33                                                   AAAA
     BB       BB   FF                      33                                                   AAAA
     BB       BB   FF                     33                                                   AA  AA
     BBBBBBBBB     FFFFFFFF           33333                                                    AA  AA
     BBBBBBBBBB    FFFFFFFF           33333                                                    AA    AA
     BB       BB   FF                     33                                                   AAAAAAAA
     BB        BB  FF                      33                                                  AAAAAAAAAA
     BB        BB  FF            33        33                                                  AA      AA
     BBBBBBBBBB    FF            3333333333                                                  AA        AA
     BBBBBBBBBB    FF             33333333                                                   AA        AA
```

ORA 40

1/1/79 – 2/28/79

NUMBER 80 ON 00F-ZMBMKGIT/B22 K3NLB596/173 ZBBLPTST/BF3 SDHELOA1/BF3 SDHELOA2/BF3 AT 12.28.42 FRI 25 JAN 80

```
X/SYSLIB DD DSN=SYS1.DUMMY,DISP=SHR                                  00000030
//       DD DSN=SYS2.DEBLKUNV,DISP=SHR
X/       DD DSN=SYS1.DUMMY,DISP=SHR                                  00000040
XX       DD DSN=SYS1.FORTLIB,DISP=SHR                                00000050
XX       DD DSN=SYS2.FORTLIB,DISP=SHR                                00000060
XX       DD DSN=SYS1.PL1LIB,DISP=SHR                                 00000070
XX       DD DSN=SYS1.FORTSP,DISP=SHR                                 00000080
XX       DD DSN=SYS2.COBLIB,DISP=SHR                                 00000090
XX       DD DSN=SYS1.ALGLIB,DISP=SHR                                 00000100
XXSYSLOUT DD SYSOUT=&OUT,DCB=(RECFM=FBSA,LRECL=121,BLKSIZE=3509)     00000110
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(RECFM=FBSA,LRECL=121,BLKSIZE=3509)
//SYSLIN DD DSN=M2.ZBRTC.SD002.LOAD(ORBIT),DISP=SHR
X/SYSLIN DD DSN=&&OJMOD,DISP=(OLD,DELETE)                            00000120
XX       DD DDNAME=SYSLCT                                            00000130
XXFT05F001 DD DDNAME=DATA5                                           00000140
XXFT06F001 DD SYSOUT=&OUT,DCB=(BLKSIZE=&BLKSIZE,LRECL=137,RECFM=VBA) 00000150
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(BLKSIZE=7265,LRECL=137,RECFM=VBA)
XXFT07F001 DD SYSOUT=D,DCB=(RECFM=FB,BLKSIZE=7293,LRECL=80)          00000160
XXSYSPRINT DD SYSOUT=&OUT,DCB=(BLKSIZE=&BLKSIZE,LRECL=137,RECFM=VBA), 00000170
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(BLKSIZE=7265,LRECL=137,RECFM=VBA),
XX          SPACE=(CYL,(0,1)),UNIT=(DISK,2)                          00000180
XXSYSTERM  DD  SYSOUT=&TERMOUT                                       00000190
IEF653I SUBSTITUTION JCL - SYSOUT=A
//SYSUDUMP DD SYSOUT=A
X/SYSUDUMP DD SYSOUT=A,SPACE=(CYL,(0,5))                             00000200
//GO.GENTAP DD UNIT=(7TRACK,,DEFER),
//    VOL=SER=ORTAPE,LABEL=(,NL,,IN),DISP=(OLD,KEEP),
//    DCB=(RECFM=U,BLKSIZE=1944,DEN=2)
//DATA5 DD *
IEF236I ALLOC. FOR SDHELOA2 GO
IEF237I 333   ALLOCATED TO SYSLIB
IEF237I 320   ALLOCATED TO
IEF237I 451   ALLOCATED TO
IEF237I 231   ALLOCATED TO
IEF237I 244   ALLOCATED TO
IEF237I 244   ALLOCATED TO
IEF237I 220   ALLOCATED TO
IEF237I 231   ALLOCATED TO
IEF237I 336   ALLOCATED TO SYSLOUT
IEF237I 333   ALLOCATED TO SYSLIN
IEF237I 335   ALLOCATED TO FT05F001
IEF237I 336   ALLOCATED TO FT06F001
IEF237I 336   ALLOCATED TO FT07F001
IEF237I 336   ALLOCATED TO SYSPRINT
IEF237I 232   ALLOCATED TO SYSPRINT
IEF237I 235   ALLOCATED TO SYSPRINT
IEF237I 336   ALLOCATED TO SYSTERM
IEF237I 335   ALLOCATED TO SYSUDUMP
IEF237I 001   ALLOCATED TO GENTAP
```

CS/360 LOADER

```
OPTIONS USED - PRINT,MAP,NOLET,CALL,RES,NOTERM,SIZE=194560,NAME=**CO
               EP=ORBIT
```

NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR
ORBIT	SD	78010	CNVRTSCT*	SD	78E70	CNVRT *	LR	78E70	DBGEN *	SD	79198	DBFEOV *	LR	79358
FREAD *	SD	79560	FREADB *	LR	79768	FWRITE *	LR	7987C	FCLINO *	LR	79A52	LEAVE *	LR	79B06
UNLOAD *	LR	79C1A	POSN *	LR	79D30	MOUNT *	LR	79F50	MEMBER *	LR	7A132	FTRAP *	LR	7A222
FALLOW *	LR	7A2A0	FUNITABL*	SD	7B260	FFL1 *	SD	7B328	FJDNLIST*	SD	7B330	FCRMSG *	SD	7B338
IHCNAME_*	SD	7B3A0	FRDNL* *	LR	7B3A0	FWRNL* *	LR	7B3A4	IHCECOM*	SD	7BE70	IBCCM* *	LR	7BE70
FDIOCS* *	LR	7BF2C	INTSWTCH*	LR	7CD86	IHCCOMH2*	SD	7CD08	SEQDASD *	LR	7D150	FTF *	SD	7D438
ITISECT *	SD	7D4E8	ITI *	LR	7D4E8	FXFLT *	SD	7D540	FIXFLT *	LR	7D540	TRNSLTE *	SD	7D588
TRANS *	LR	7D588	BITST *	SD	7D698	CNTCDATA*	LR	7D698	DIDJN *	SD	7D7C8	IHCFCVTH*	SD	7D898
ADCON* *	LR	7D898	FCVAOUTP*	LR	7D942	FCVLOUTP*	LR	7D9D2	FCVJOUTP*	LR	7DA02	FCVIOUTP*	LR	7DD30
FCVFOUTP*	LR	7E358	FCVCOUTP*	LR	7E5FC	INT65*CH*	LR	7E6D3	IHCEFIOS*	SD	7E6D8	FIOCS* *	LR	7E638
FIOCSBP*	LR	7E638	IHCFIOS2*	SD	7F960	IHCERFM *	SD	7F990	ERRMON *	LR	7F190	IHCERRE *	LR	7FEA8
IHCLENTH*	SD	80468	ARITH* *	LR	80468	ADJSWTCH*	LR	80804	IHCJOPT *	SD	80980	IHCJATBL*	SD	80CD8
IHCETRCH*	SD	81310	IHCTRCH *	LR	81310	ERRTRA *	LR	81318						

```
TOTAL LENGTH   9590
ENTRY ADDRESS  78010
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                    SATID  HELIOS-A        OCRBIT TAPE #=ORA40
          7409701 ORB            79 001 000000 059 000000 9058 01 790405 058 01 01 E7  X
```

HELIOS-A YEAR 1979. LAUNCH TIME 128105352. 0.

DATE MM	DD	HR	MN	SC	HELIOS ECC.ORG	HELIOS ECC.CRT	SUN-HELIOS DIST(A.U.)	EARTH-HELIOS DIST(A.U.)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS ECLIPTIC LAT	HELIOS ECLIPTIC AXIAL	HELIOS ECLIPTIC (A.U./DAY) NORMAL
1	1	0	0	0	309.64	-0.02	0.86	0.81	71.96	61.36	3.30	0.006	0.01
1	2	0	0	0	309.52	-0.02	0.87	0.81	71.45	61.48	3.20	0.006	0.01
1	3	0	0	0	309.38	-0.02	0.88	0.82	70.95	61.62	3.10	0.006	0.01
1	4	0	0	0	309.24	-0.02	0.88	0.82	70.47	61.76	3.00	0.006	0.01
1	5	0	0	0	309.08	-0.01	0.89	0.82	69.99	61.92	2.90	0.006	0.01
1	6	0	0	0	307.91	-0.01	0.89	0.83	69.52	62.09	2.80	0.006	0.01
1	7	0	0	0	307.74	-0.01	0.90	0.83	69.06	62.26	2.70	0.005	0.01
1	8	0	0	0	307.55	-0.01	0.90	0.84	68.61	62.45	2.60	0.005	0.01
1	9	0	0	0	307.35	-0.01	0.91	0.84	68.17	62.65	2.51	0.005	0.01
1	10	0	0	0	307.15	-0.01	0.91	0.85	67.74	62.85	2.41	0.005	0.01
1	11	0	0	0	306.93	-0.01	0.92	0.85	67.32	63.07	2.32	0.005	0.01
1	12	0	0	0	306.71	-0.01	0.92	0.86	66.91	63.29	2.22	0.004	0.01
1	13	0	0	0	306.48	-0.01	0.93	0.86	66.52	63.52	2.13	0.004	0.01
1	14	0	0	0	306.24	-0.01	0.93	0.87	66.13	63.76	2.03	0.004	0.01
1	15	0	0	0	306.00	-0.01	0.94	0.87	65.75	64.00	1.94	0.004	0.01
1	16	0	0	0	305.75	-0.01	0.94	0.88	65.38	64.25	1.84	0.004	0.01
1	17	0	0	0	305.49	-0.01	0.94	0.88	65.02	64.51	1.75	0.004	0.01
1	18	0	0	0	305.23	-0.01	0.95	0.89	64.68	64.77	1.66	0.003	0.01
1	19	0	0	0	304.96	-0.01	0.95	0.89	64.34	65.04	1.57	0.003	0.01
1	20	0	0	0	304.69	-0.01	0.95	0.90	64.01	65.31	1.48	0.003	0.01
1	21	0	0	0	304.41	-0.01	0.96	0.91	63.70	65.59	1.38	0.003	0.01
1	22	0	0	0	304.13	-0.01	0.96	0.91	63.39	65.87	1.29	0.003	0.01
1	23	0	0	0	303.84	-0.01	0.96	0.92	63.09	66.16	1.20	0.003	0.01
1	24	0	0	0	303.55	-0.01	0.97	0.92	62.80	66.45	1.11	0.002	0.01
1	25	0	0	0	303.26	-0.01	0.97	0.93	62.52	66.74	1.02	0.002	0.01
1	26	0	0	0	302.96	-0.01	0.97	0.93	62.26	67.04	0.93	0.002	0.01
1	27	0	0	0	302.66	-0.01	0.97	0.94	61.99	67.34	0.84	0.002	0.01
1	28	0	0	0	302.36	-0.01	0.97	0.94	61.74	67.64	0.75	0.002	0.01
1	29	0	0	0	302.06	-0.01	0.98	0.95	61.50	67.94	0.67	0.002	0.01
1	30	0	0	0	301.75	-0.01	0.98	0.96	61.27	68.25	0.58	0.002	0.01
1	31	0	0	0	301.44	-0.01	0.98	0.96	61.04	68.56	0.49	0.001	0.01
2	1	0	0	0	301.13	-0.01	0.98	0.97	60.82	68.87	0.40	0.001	0.01
2	2	0	0	0	300.82	-0.01	0.98	0.97	60.62	69.18	0.31	0.001	0.01
2	3	0	0	0	300.50	-0.01	0.98	0.98	60.42	69.50	0.22	0.001	0.01
2	4	0	0	0	300.19	-0.01	0.98	0.98	60.22	69.81	0.13	0.001	0.01
2	5	0	0	0	299.87	-0.01	0.98	0.99	60.04	70.13	0.05	0.001	0.01
2	6	0	0	0	299.56	-0.01	0.98	0.99	59.87	70.44	-0.04	0.000	0.01
2	7	0	0	0	299.24	-0.01	0.98	1.00	59.70	70.76	-0.13	0.000	0.01
2	8	0	0	0	298.93	-0.01	0.98	1.00	59.54	71.07	-0.22	0.000	0.01
2	9	0	0	0	298.61	-0.00	0.98	1.01	59.39	71.39	-0.30	-.000	0.01
2	10	0	0	0	298.30	-0.00	0.98	1.01	59.25	71.70	-0.39	-.000	0.01
2	11	0	0	0	297.99	-0.00	0.98	1.02	59.12	72.01	-0.48	-.000	0.01
2	12	0	0	0	297.67	-0.00	0.98	1.02	58.99	72.33	-0.57	-.001	0.01
2	13	0	0	0	297.36	-0.00	0.98	1.02	58.87	72.64	-0.65	-.001	0.01
2	14	0	0	0	297.05	-0.00	0.98	1.03	58.77	72.95	-0.74	-.001	0.01
2	15	0	0	0	296.74	-0.00	0.98	1.03	58.66	73.26	-0.83	-.001	0.01
2	16	0	0	0	296.44	-0.00	0.98	1.04	58.57	73.56	-0.92	-.001	0.01
2	17	0	0	0	296.13	-0.00	0.98	1.04	58.49	73.87	-1.01	-.001	0.01
2	18	0	0	0	295.83	-0.00	0.98	1.04	58.41	74.17	-1.09	-.002	0.01
2	19	0	0	0	295.53	-0.00	0.98	1.05	58.34	74.47	-1.18	-.002	0.01
2	20	0	0	0	295.23	-0.00	0.97	1.05	58.28	74.77	-1.27	-.002	0.01
2	21	0	0	0	294.94	-0.00	0.97	1.05	58.23	75.06	-1.36	-.002	0.01
2	22	0	0	0	294.65	-0.00	0.97	1.06	58.18	75.35	-1.45	-.002	0.01
2	23	0	0	0	294.36	-0.00	0.97	1.06	58.15	75.64	-1.54	-.002	0.01
2	24	0	0	0	294.08	-0.00	0.97	1.06	58.12	75.92	-1.62	-.002	0.01
2	25	0	0	0	293.80	-0.00	0.96	1.07	58.10	76.20	-1.71	-.002	0.01
2	26	0	0	0	293.52	0.00	0.96	1.07	58.09	76.48	-1.80	-.003	0.01
2	27	0	0	0	293.25	0.00	0.96	1.07	58.09	76.75	-1.89	-.003	0.01
2	28	0	0	0	292.99	0.00	0.95	1.07	58.10	77.01	-1.98	-.003	0.01

END OF FILE ON ORBIT TAPE

```
IEF142I   STEP WAS EXECUTED - COND CODE 0000
IEF285I   M2.ZBRTC.SD002.LOAD                    KEPT        DDNAME=SYSLIB  -1        0 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS2.DEBLKUNV                          KEPT        DDNAME=SYSLIB  -2       17 EXCPS
IEF285I   VOL SER NOS= M2SYS2.
IEF285I   SYS1.FORTLIB                           KEPT        DDNAME=SYSLIB  -3       61 EXCPS
IEF285I   VOL SER NOS= K3ITL0.
IEF285I   SYS2.FORTLIB                           KEPT        DDNAME=SYSLIB  -4       28 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SYS1.PL1LIB                            KEPT        DDNAME=SYSLIB  -5        0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS1.FORTSSP                           KEPT        DDNAME=SYSLIB  -6        0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
```

********** 00 ********** 00 **********

JOBNAME-

SACC 360/75 READER NUMBER-P0063 CLASS-

ORA45

3/1/79-3/31/79

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X/SYSLIN DD DSN=&OBJMOD,DISP=(OLD,DELETE)                          00000100
XX DD DDNAME=OBJECT                                                00000110
XXFT05F001 DD DDNAME=DATAS                                         00000120
XXFT06F001 DD  SYSOUT=&OUT,DCB=(RECFM=VBA,LRECL=137,BLKSIZE=58BLKSIZE),  00000130
IE=653I SUBSTITUTION JCL - SYSOUT=A,DCB=(RECFM=VBA,LRECL=137,BLKSIZE=7265),
XX SPACE=(CYL,(2,2))                                               00000140
XXFT07F001 DD SYSOUT=B,DCB=(RECFM=FB,LRECL=80,BLKSIZE=7200),       00000150
XX SPACE=(CYL,(0,1))                                               00000160
XXSYSPRINT DD SYSOUT=&OUT,UNIT=(2314,3),SPACE=(CYL,(1,2)),         00000170
IEF653I SUBSTITUTION JCL - SYSOUT=A,UNIT=(2314,3),SPACE=(CYL,(0,2)),
XX DCB=(RECFM=VBA,LRECL=137,BLKSIZE=68BLKSIZE)                     00000180
IE=652I SUBSTITUTION JCL - DCB=(RECFM=VBA,LRECL=137,BLKSIZE=7265)
XXSYSTERM DD SYSOUT=&TERMOUT                                       00000190
IEF653I SUBSTITUTION JCL - SYSOUT=A
//SYSUDUMP DD SYSOUT=A
X/SYSUDUMP DD SYSOUT=A,SPACE=(CYL,(0,5))                           00000200
//GO.GENTAP DD UNIT=(7TRACK,,DEFER),
//    VOL=SER=ORTAPE,LABEL=(,NL,,IN),DISP=(OLD,KEEP),
//    DCB=(RECFM=U,BLKSIZE=1944,DEN=2)
//DATAS DD *
IEF236I ALLOC. FOR SLHF.G42 GO
IEF237I 323    ALLOCATED TO SYSLIB
IEF237I 330    ALLOCATED TO
IEF237I 451    ALLOCATED TO
IEF237I 451    ALLOCATED TO
IEF237I 244    ALLOCATED TO
IEF237I 244    ALLOCATED TO
IEF237I 450    ALLOCATED TO SYSLOUT
IEF237I 323    ALLOCATED TO SYSLIN
IEF237I 450    ALLOCATED TO FT05F001
IEF237I 452    ALLOCATED TO FT06F001
IEF237I 450    ALLOCATED TO FT07F001
IEF237I 212    ALLOCATED TO SYSPRINT
IEF237I 232    ALLOCATED TO SYSPRINT
IEF237I 233    ALLOCATED TO SYSPRINT
IEF237I 452    ALLOCATED TO SYSTERM
IEF237I 450    ALLOCATED TO SYSUDUMP
IEF237I 0D2    ALLOCATED TO GENTAP
```

```
                                        OS/360 LOADER
OPTIONS USED - PRINT,MAP,NOLET,CALL,RES,NOTERM,SIZE=180224,NAME=**GO
               EP=ORBIT
```

NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR
ORBIT	SD	297010	CNVRTSCT*	SD	297E70	CNVRT *	LR	297E70	D3GEN *	SD	296198	D3FEOV *	LR	298358
FREAD *	SD	298560	FRFACB *	LR	298798	F*FITS *	LR	29307C	RF*IND *	LR	29A482	LEAVE *	LR	298866
UNLOAD *	LR	298C1A	PCSN *	LR	298D2A	MOUNT *	LR	2938B0	WMOFR *	LR	296132	FTRAP *	LR	299222
FA__OW *	LR	2992A2	FUNITABL*	SD	29A0C0	F*LI *	SD	29A3B0	FOONLIST*	SD	29A3B0	FFFMAS *	SD	29A330
IHCNAMEL*	SD	29A3A0	FPONL# *	LR	29A3A0	F*FNL# *	LR	29A0A4	IHCFCOMH*	SD	29AF70	IBCOM# *	LR	29AF70
FDIOCS# *	LR	29AF2C	INTSWTCH*	LR	29B0B6	IHCCOM42*	SD	29B0C8	SEQDASD *	LR	29C152	FTF *	SD	29C438
ITISECT *	SD	29C4E8	ITI *	LR	29C4E8	FXFLT *	SD	29C540	FIXFLT *	LR	29C542	TRNSLTE *	SD	29C588
TRANS *	LR	29C598	BITST *	SD	29C698	CNTGDATA*	LR	29C698	DTDUN *	SD	29C7C0	IHCFCVTH*	SD	29C998
ADCON# *	LR	29C898	FCVADUTP*	LR	29C942	FCVLCUTP*	LR	29CBE2	FCVZDUTP*	LR	29CB02	FCVIDUTP*	LR	29CED2
FCVEDUTP*	LR	29D3E2	FCVCCUTP*	LR	29D5FC	INTGS#C14	LR	29DEE0	IHCEFIOS*	SD	29EA28	FIOCS# *	LR	29EA38
FIOCS3EP*	LR	29EA3E	IHCFIOS2*	SD	29E960	IHCLERM *	SD	29E990	ERRMON *	LR	29EF92	IHCERPF *	LR	29EFA8
IHCERNTH*	SD	29F468	ARITH# *	LR	29F468	ADJGMTC14	LR	29F8A4	IHCJSCT *	SD	29F6B4	IHCWATEL*	SD	29FCD8
IHCETRCH*	SD	2A0310	IHCTRCH *	LR	2A0312	ERRTRA *	LR	2A0318						

```
TOTAL LENGTH    6590
ENTRY ADDRESS 297010

                    SATID  HELIOS-A        ORBIT TAPE #=0HA+3
        74C9701 0R3            79 066 [illegible] 244 01 79050 1 244 01 01 E7  X
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                    HELIOS-A          YEAR 1979.          LAUNCH TIME  1332 2952.  0.
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DATE MM	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	EARTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HELIOCENT(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
3	1	0	0	0	292.73	0.00	0.95	1.03	56.12	67.67	2.67	-.003	0.01
3	2	0	0	0	292.49	0.00	0.95	1.03	58.15	67.52	-2.15	-.003	0.01
3	3	0	0	0	292.23	0.00	0.94	1.03	54.19	67.77	-2.25	-.004	0.01
3	4	0	0	0	291.99	0.00	0.94	1.03	59.23	68.01	-2.34	-.004	0.01
3	5	0	0	0	291.75	0.00	0.94	1.03	58.29	68.25	-2.44	-.004	0.01

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3  6  0  0  0   291.53   0.00   0.93   1.08   58.36   68.47   -2.53   -.004   0.01
3  7  0  0  0   291.31   0.00   0.93   1.08   58.44   68.69   -2.62   -.004   0.01
3  8  0  0  0   291.09   0.00   0.92   1.09   58.53   68.91   -2.71   -.004   0.01
3  9  0  0  0   290.89   0.00   0.92   1.09   58.63   69.11   -2.81   -.005   0.01
3 10  0  0  0   290.69   0.00   0.91   1.09   58.75   69.31   -2.90   -.005   0.01
3 11  0  0  0   290.51   0.00   0.91   1.09   58.87   69.49   -2.99   -.005   0.01
3 12  0  0  0   290.33   0.00   0.90   1.09   59.01   69.67   -3.08   -.005   0.01
3 13  0  0  0   290.17   0.01   0.90   1.09   59.17   69.83   -3.18   -.006   0.01
3 14  0  0  0   290.01   0.01   0.89   1.09   59.33   69.99   -3.27   -.006   0.01
3 15  0  0  0   289.85   0.01   0.89   1.09   59.51   70.14   -3.37   -.006   0.01
3 16  0  0  0   289.73   0.01   0.88   1.08   59.71   70.27   -3.46   -.006   0.01
3 17  0  0  0   289.51   0.01   0.88   1.08   59.92   70.39   -3.56   -.006   0.01
3 18  0  0  0   289.53   0.01   0.87   1.08   60.15   70.50   -3.66   -.006   0.01
3 19  0  0  0   289.41   0.01   0.86   1.08   60.39   70.59   -3.75   -.006   0.01
3 20  0  0  0   289.32   0.01   0.86   1.08   60.65   70.68   -3.85   -.007   0.01
3 21  0  0  0   289.25   0.01   0.85   1.08   60.93   70.74   -3.95   -.007   0.01
3 22  0  0  0   289.21   0.01   0.84   1.07   61.23   70.79   -4.05   -.007   0.01
3 23  0  0  0   289.17   0.01   0.84   1.07   61.55   70.82   -4.15   -.007   0.01
3 24  0  0  0   289.15   0.01   0.83   1.07   61.89   70.85   -4.25   -.007   0.01
3 25  0  0  0   289.15   0.01   0.82   1.06   62.26   70.85   -4.35   -.007   0.01
3 26  0  0  0   289.17   0.01   0.82   1.06   62.64   70.83   -4.45   -.008   0.01
3 27  0  0  0   289.21   0.01   0.81   1.05   63.05   70.79   -4.55   -.008   0.01
3 28  0  0  0   289.26   0.01   0.80   1.05   63.49   70.74   -4.65   -.008   0.01
3 29  0  0  0   289.34   0.01   0.79   1.05   63.95   70.66   -4.75   -.008   0.02
3 30  0  0  0   289.45   0.01   0.78   1.04   64.44   70.55   -4.85   -.008   0.02
3 31  0  0  0   289.57   0.01   0.77   1.04   64.97   70.43   -4.95   -.009   0.02

END OF FILE ON ORBIT TAPE

IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   M2.ZBRTC.SD002.LOAD                                   KEPT       DDNAME=SYSLIB   -1       0 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS2.DEBLKUNV                                         KEPT       DDNAME=SYSLIB   -2      17 EXCPS
IEF285I   VOL SER NOS= M2SYS2.
IEF285I   SYS1.FORTLIB                                          KEPT       DDNAME=SYSLIB   -3      89 EXCPS
IEF285I   VOL SER NOS= K3ITL0.
IEF285I   SYS2.FORTLIB                                          KEPT       DDNAME=SYSLIB   -4       0 EXCPS
IEF285I   VOL SER NOS= K3ITL0.
IEF285I   SYS1.PL1LIB                                           KEPT       DDNAME=SYSLIB   -5       0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS1.FORTSSP                                          KEPT       DDNAME=SYSLIB   -6       0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS80023.T152523.SV000.SDHELOA2.R0000001              SYSOUT     DDNAME=SYSLOUT           1 EXCPS
IEF285I   VOL SER NOS= SCR000.
IEF285I   M2.ZBRTC.SD002.LOAD                                   KEPT       DDNAME=SYSLIN   -1       7 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS80023.T152523.RV000.SDHELOA2.S0000008              SYSIN      DDNAME=FT05F001          2 EXCPS
IEF285I   VOL SER NOS= SCR000.
IEF285I   SYS80023.T152523.RV000.SDHELOA2.S0000008              DELETED    DDNAME=FT05F001          2 EXCPS
IEF285I   VOL SER NOS= SCR000.
IEF285I   SYS80023.T152523.SV000.SDHELOA2.R0000002              SYSOUT     DDNAME=FT06F001          1 EXCPS
IEF285I   VOL SER NOS= SCR001.
IEF285I   SYS80023.T152523.SV000.SDHELOA2.R0000003              DELETED    DDNAME=FT07F001          0 EXCPS
IEF285I   VOL SER NOS= SCR000.
IEF285I   SYS80023.T152523.SV000.SDHELOA2.R0000004              DELETED    DDNAME=SYSPRINT          0 EXCPS
IEF285I   VOL SER NOS= M2SCR6.
IEF285I   SYS80023.T152523.SV000.SDHELOA2.R0000005              DELETED    DDNAME=SYSTERM           0 EXCPS
IEF285I   VOL SER NOS= SCR001.
IEF285I   SYS80023.T152523.SV000.SDHELOA2.R0000006              DELETED    DDNAME=SYSUDUMP          0 EXCPS
IEF285I   VOL SER NOS= SCR000.
IEF285I   SYS80023.T152523.RV000.SDHELOA2.R0000007              KEPT       DDNAME=GENTAP          726 EXCPS
IEF285I   VOL SER NOS= DRA45 .
IEF290E K OD2.DRA45 .SDHELOA2.GO
IEF373I STEP /GO      / START 80023.1842
IEF374I STEP /GO      / STOP  80023.1844 CPU    0MIN 03.52S.0 MAIN 200K LCS    0K
                                                        STEP TIME =    .28 MINS=(CPU=    .05,IO=    .23)
- STEP 01 -     RETURN CODE = 0000       IO IN SECS= DISK=   .00,DRUM=    .00,TAPE=    .00,CELL=   .00,OTHR=   .16
- SURCHARGES=(DRIVES ALOC=000).TAPE MOUNTS=000.CORE=000.PAPER=000).PRIORITY=00000)SECS.   TOTAL STP TIME=    .28 MINS.  -
      // EXEC NOTIFYTS                                                            00000010
      XXDEFAULT  PROC MODE=,USRID=,MSG=,USERID=,ID= '#CAR/2100047)                00000020
      XXNOTIFYTS EXEC PGM=NOTIFYTS,REGION=20K,COND=EVEN,                          00000030
      XX         PARM='&MODE.&USRID&USERID&ID.&MSG'
      IEF653I SUBSTITUTION JCL - PARM=',,'
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF373I STEP /NOTIFYTS/ START 80023.1844
IEF374I STEP /NOTIFYTS/ STOP  80023.1844 CPU    0MIN 00.23S.0 MAIN   8K LCS    0K
                                                        STEP TIME =    .00 MINS=(CPU=    .00,IO=    .00)
- STEP 02 -     RETURN CODE = 0000       IO IN SECS= DISK=   .12,DRUM=    .00,TAPE=    .00,CELL=   .00,OTHR=   .04
- SURCHARGES=(DRIVES ALOC=000).TAPE MOUNTS=000.CORE=000.PAPER=000).PRIORITY=00000)SECS.   TOTAL STP TIME=00000.00 MINS.  -
```

********** 82 ********** 82 **********

JOBNAME-

SACC 360/75 READER NUMBER-P0073 CLASS-

BOX-

ORA42

4/1/79 — 4/30/79

```
X/        DD DSN=SYS1.DUMMY,DISP=SHR                                    00000040
XX        DD DSN=SYS1.FORTLIB,DISP=SHR                                  00000050
XX        DD DSN=SYS2.FORTLIB,DISP=SHR                                  00000060
XX        DD DSN=SYS1.PL1LIB,DISP=SHR                                   00000070
XX        DD DSN=SYS1.FORTSUB,DISP=SHR                                  00000080
XX        DD DSN=SYS2.COBLIB,DISP=SHR                                   00000090
XX        DD DSN=SYS1.ALGLIB,DISP=SHR                                   00000100
XXSYSLOUT DD SYSOUT=6OUT,DCB=(RECFM=FBSA,LRECL=121,BLKSIZE=3509)        00000110
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(RECFM=FBSA,LRECL=121,BLKSIZE=3509)
//SYSLIN DD DSN=M2.ZBRTC.SD002.LOAD(ORBIT),DISP=SHR
X/SYSLIN DD DSN=&OBJMOD,DISP=(LLD,DELETE)                               00000120
XX        DD DDNAME=OBJECT                                              00000130
XXFT05F001 DD DDNAME=DATA5                                              00000140
XXFT06F001 DD SYSOUT=6OUT,DCB=(BLKSIZE=6BLKSIZE,LRECL=137,RECFM=VBA)    00000150
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(BLKSIZE=7265,LRECL=137,RECFM=VBA)
XXFT07F001 DD SYSOUT=B,DCB=(RECFM=FB,BLKSIZE=7200,LRECL=80)             00000160
XXSYSPRINT DD SYSOUT=6OUT,DCB=(BLKSIZE=6BLKSIZE,LRECL=137,RECFM=VBA),   00000170
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(BLKSIZE=7265,LRECL=137,RECFM=VBA),
XX            SPACE=(CYL,(0,1)),UNIT=(DISK,2)                           00000180
XXSYSTERM   DD   SYSOUT=6TERMOUT                                        00000190
IEF653I SUBSTITUTION JCL - SYSOUT=A
//SYSUDUMP DD SYSOUT=A
X/SYSUDUMP DD SYSOUT=A,SPACE=(CYL,(0,5))                                00000200
//GO.GENTAP DD UNIT=(7TRACK,,DEFER),
//    VOL=SER=6RTAPE,LABEL=(,NL,,IN),DISP=(OLD,KEEP),
//    DCB=(RECFM=U,BLKSIZE=1944,DEN=2)
//DATA5 DD *
IEF236I ALLOC. FOR ZBJH60A4 GO
IEF237I 333   ALLOCATED TO SYSLIB
IEF237I 320   ALLOCATED TO
IEF237I 451   ALLOCATED TO
IEF237I 231   ALLOCATED TO
IEF237I 244   ALLOCATED TO
IEF237I 244   ALLOCATED TO
IEF237I 220   ALLOCATED TO
IEF237I 231   ALLOCATED TO
IEF237I 336   ALLOCATED TO SYSLOUT
IEF237I 333   ALLOCATED TO SYSLIN
IEF237I 335   ALLOCATED TO FT05F001
IEF237I 335   ALLOCATED TO FT06F001
IEF237I 337   ALLOCATED TO FT07F001
IEF237I 336   ALLOCATED TO SYSPRINT
IEF237I 232   ALLOCATED TO SYSPRINT
IEF237I 235   ALLOCATED TO SYSPRINT
IEF237I 335   ALLOCATED TO SYSTERM
IEF237I 336   ALLOCATED TO SYSUDUMP
IEF237I 001   ALLOCATED TO GENTAP
```

```
                                        OS/360 LOADER

OPTIONS USED   PRINT,MAP,NOLET,CALL,REG,NOTERM,SIZE=104560,NAME=**GO
               EP=ORBIT

     NAME   TYPE  ADDR      NAME   TYPE  ADDR      NAME   TYPE  ADDR      NAME   TYPE  ADDR      NAME   TYPE  ADDR

  ORBIT      SD  4E010   CNVRTSCT*  SD  4E670   CNVRT   *  LR  4E670   D3GEN   *  SD  4F198   DBFEOV  *  LR  4F358
  FREAD   *  SD  4F560   FFEADB  *  LR  4F7DB   FWRITE  *  LR  4F87C   REWIND  *  LR  4FA82   LEAVE   *  LR  4FB66
  UNLOAD  *  LR  4FC1A   POSN    *  LR  4FD30   MOUNT   *  LR  4FE50   MEMBER  *  LR  50132   FTRAP   *  LR  50222
  FALLOW  *  LR  502A0   FUNITAPL*  SD  51246   FPL1    *  SD  51324   SDUMLIST*  SD  51333   FIOMSG  *  SD  51338
  INCNAMEL*  SD  513A0   FRONL*   *  LR  515A0   FWRNL*  *  LR  519A4   IHCECOMM*  SD  51E70   IBCOM*  *  LR  51E70
  FDICCS* *  LR  51F2C   INTSATCH*  LR  52E86   IHCCOMM2*  SD  52C08   SSODASD  *  SD  53150   FIF     *  SD  53438
  ITISFCT *  SD  53408   ITI     *  LR  53408   FXFLT   *  SD  53540   FIXFLT   *  LR  53540   TRNSLTE  *  SD  53598
  TRANS   *  LR  53588   BITST   *  SD  53698   CNTGDATA*  LR  53698   DTOJN   *  SD  53708   IHCFCVTH*  SD  53898
  ADCON*  *  LR  53898   FCVADUTP*  LR  53942   FCVLOUTP*  LR  53902   FCVZOUTP*  LR  53022   FCV1OUTP*  LR  53EDC
  FCVEOUTP*  LR  54002   FCVCOUTP*  LR  5456C   INTGOATCH*  LR  54B03   IHCEFIOS*  SD  54A38   FIOCS*  *  LR  54A38
  FIOCSBEP*  LR  54A3E   IHCFIOS2*  SD  55960   IHCEFM *  SD  55790   ERRMON  *  LR  55L90   IHCERRL *  LR  55EA8
  IHCEFNTH*  SD  56468   ARITH*   *  LR  56468   ADJSATCH*  LR  56B34   IHCJCRT *  SD  56960   IHCUATBL*  SD  56CD8
  IHCETRCH*  SD  57310   IHCTRCH *  LR  57310   ERRTRA  *  LR  57C18

  TOTAL LENGTH    9590
  ENTRY ADDRESS  4E010
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                    SATID  HELIOS-A        ORBIT TAPE #=ORA42
7409701 ORB                 76 061 066000 126 050000 9172 01 79C702 172 01 01 E7  X

                    HELIOS-A          YEAR 1979.          LAUNCH TIME  135881464.  C*
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DATE MM	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	EARTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LAT(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
4	1	0	0	0	289.73	0.01	0.77	1.03	65.52	70.27	-5.09	-.009	0.02
4	2	0	0	0	289.91	0.01	0.76	1.03	66.11	70.09	-5.17	-.009	0.02
4	3	0	0	0	290.12	0.01	0.75	1.02	66.74	69.88	-5.27	-.009	0.02
4	4	0	0	0	290.36	0.01	0.74	1.02	67.40	69.64	-5.38	-.009	0.02
4	5	0	0	0	290.63	0.01	0.73	1.01	68.11	69.37	-5.48	-.010	0.02
4	6	0	0	0	290.94	0.01	0.72	1.00	68.86	69.06	-5.59	-.010	0.02
4	7	0	0	0	291.28	0.01	0.71	0.99	69.66	68.72	-5.69	-.010	0.02
4	8	0	0	0	291.66	0.02	0.70	0.99	70.51	68.34	-5.80	-.010	0.02
4	9	0	0	0	292.09	0.02	0.69	0.98	71.42	67.91	-5.90	-.010	0.02
4	10	0	0	0	292.55	0.02	0.68	0.97	72.38	67.45	-6.00	-.011	0.02
4	11	0	0	0	293.07	0.02	0.67	0.96	73.41	66.93	-6.11	-.011	0.02
4	12	0	0	0	293.63	0.02	0.66	0.95	74.50	66.37	-6.21	-.011	0.02
4	13	0	0	0	294.25	0.02	0.65	0.94	75.67	65.75	-6.31	-.011	0.02
4	14	0	0	0	294.92	0.02	0.63	0.93	76.91	65.08	-6.41	-.011	0.02
4	15	0	0	0	295.66	0.02	0.62	0.92	78.24	64.34	-6.51	-.012	0.02
4	16	0	0	0	296.46	0.02	0.61	0.91	79.66	63.54	-6.60	-.012	0.02
4	17	0	0	0	297.33	0.02	0.60	0.90	81.18	62.67	-6.69	-.012	0.02
4	18	0	0	0	298.27	0.02	0.59	0.89	82.81	61.73	-6.78	-.012	0.02
4	19	0	0	0	299.30	0.02	0.57	0.88	84.56	60.70	-6.86	-.012	0.02
4	20	0	0	0	300.41	0.02	0.56	0.87	86.43	59.59	-6.94	-.012	0.02
4	21	0	0	0	301.62	0.02	0.55	0.86	88.45	58.38	-7.01	-.013	0.02
4	22	0	0	0	302.93	0.02	0.54	0.84	90.61	57.07	-7.08	-.013	0.02
4	23	0	0	0	304.36	0.02	0.52	0.83	92.95	55.64	-7.13	-.013	0.02
4	24	0	0	0	305.90	0.02	0.51	0.82	95.47	54.10	-7.18	-.013	0.02
4	25	0	0	0	307.58	0.02	0.50	0.81	98.18	52.42	-7.21	-.013	0.02
4	26	0	0	0	309.40	0.02	0.49	0.79	101.12	50.60	-7.22	-.013	0.02
4	27	0	0	0	311.37	0.02	0.47	0.78	104.29	48.63	-7.22	-.013	0.02
4	28	0	0	0	313.51	0.02	0.46	0.77	107.73	46.49	-7.20	-.013	0.03
4	29	0	0	0	315.83	0.02	0.45	0.75	111.45	44.17	-7.15	-.013	0.03
4	30	0	0	0	318.35	0.02	0.43	0.74	115.48	41.65	-7.08	-.013	0.03

END OF FILE ON ORBIT TAPE

```
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   M2.ZBRTC.S0002.LOAD                    KEPT       DDNAME=SYSLIB  -1        0 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS2.DEBLKUNV                          KEPT       DDNAME=SYSLIB  -2       17 EXCPS
IEF285I   VOL SER NOS= M2SYS2.
IEF285I   SYS1.FORTLIB                           KEPT       DDNAME=SYSLIB  -3       61 EXCPS
IEF285I   VOL SER NOS= K3ITL0.
IEF285I   SYS2.FORTLIB                           KEPT       DDNAME=SYSLIB  -4       28 EXCPS
IEF285I   VOL SER NOS= K3SY32.
IEF285I   SYS1.PL1LIB                            KEPT       DDNAME=SYSLIB  -5        0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS1.FORTSSP                           KEPT       DDNAME=SYSLIB  -6        0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS2.COBLIB                            KEPT       DDNAME=SYSLIB  -7        0 EXCPS
IEF285I   VOL SER NOS= M2SYS1.
IEF285I   SYS1.ALGLIB                            KEPT       DDNAME=SYSLIB  -8        0 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SYS80025.T115444.SV000.ZBJHBCA4.R0000001  SYSOUT  DDNAME=SYSLOUT          1 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   M2.ZBRTC.S0002.LOAD                    KEPT       DDNAME=SYSLIN  -1        7 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS80025.T115444.RV000.ZBJHBCA4.S0000008  SYSIN   DDNAME=FT05F001          2 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80025.T115444.RV000.ZBJHBCA4.S0000008  DELETED DDNAME=FT06F001          0 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80025.T115444.SV000.ZBJHBCA4.R0000002  SYSOUT  DDNAME=FT06F001          1 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80025.T115444.SV000.ZBJHBCA4.R0000003  DELETED DDNAME=FT07F001          0 EXCPS
IEF285I   VOL SER NOS= K3SCR4.
IEF285I   SYS80025.T115444.SV000.ZBJHBCA4.R0000004  DELETED DDNAME=SYSPRINT          0 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS80025.T115444.SV000.ZBJHBCA4.R0000005  DELETED DDNAME=SYSTERM           0 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80025.T115444.SV000.ZBJHBCA4.R0000006  DELETED DDNAME=SYSUDUMP          0 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS80025.T115444.SV000.ZBJHBCA4.R0000007  KEPT    DDNAME=GENTAP          702 EXCPS
IEF285I   VOL SER NOS= DFA42 .
IEF280C K 0C1,DFA42 ,ZBJHBCA4,GJ
IEF373I STEP /GO     / START 80025.1221
IEF374I STEP /GO     / STOP  80025.1226 CPU    0MIN 11.14SEC MAIN 200K LCS    OK
                                                   STEP TIME =      .48 MINS=(CPU=      .18,IO=      .30)
- STEP 01 -     RETURN CODE = 0000                                 7.06,CELL=      .00,CTRS=      .16
                                  IO IN SECS. DISK=    11.12,DRUM=      .00,TAPE=
                                                   TOTAL STP TIME=      .48 MINS.
- SURCHARGES=(DRIVES ALOC=000,TAPE MOUNTS=000,CARDS=000,PAPER=000,PRIORITY=00000)SECS.
```

```
JOBNAME-
      SSSSSSSSSS   DDDDDDDDD     HH         HH   EEEEEEEEEEEE   LL              OOOOOOOOOO        AA          33333333
     SSSSSSSSSSSS  DDDDDDDDDD    HH         HH   EEEEEEEEEEEE   LL             OOOOOOOOOOOO       AA         3333333333
     SS        SS  DD        DD  HH         HH   EE             LL             OO        OO      AAAA       33        33
     SS            DD        DD  HH         HH   EE             LL             OO        OO      AAAA                33
     SSS           DD        DD  HH         HH   EE             LL             OO        OO     AA  AA               33
      SSSSSSSSS    DD        DD  HHHHHHHHHHHHH   EEEEEEEE       LL             OO        OO     AA  AA           33333
       SSSSSSSSS   DD        DD  HHHHHHHHHHHHH   EEEEEEEE       LL             OO        OO    AA    AA          33333
              SSS  DD        DD  HH         HH   EE             LL             OO        OO    AAAAAAAA              33
               SS  DD        DD  HH         HH   EE             LL             OO        OO   AAAAAAAAAA             33
     SS        SS  DD        DD  HH         HH   EE             LL             OO        OO   AA      AA   33        33
     SSSSSSSSSSSS  DDDDDDDDDD    HH         HH   EEEEEEEEEEEE   LLLLLLLLLLLL   OOOOOOOOOOOO   AA        AA   3333333333
      SSSSSSSSSS   DDDDDDDDD     HH         HH   EEEEEEEEEEEE   LLLLLLLLLLLL    OOOOOOOOOO    AA        AA    33333333

BCX-                                                  SACC 360/75      READER NUMBER-P0068          CLASS-
     BBBBBBBBB     FFFFFFFFFFFF     33333333                                                          AA
     BBBBBBBBB     FFFFFFFFFFFF    3333333333                                                         AA
     BB        BB  FF            33        33                                                        AAAA
     BB        BB  FF                      33                                                        AAAA
     BB        BB  FF                      33                                                       AA  AA
     BBBBBBBBB     FFFFFFFF            33333                                                        AA  AA
     BBBBBBBBB     FFFFFFFF            33333                                                       AA    AA
     BB        BB  FF                      33                                                      AAAAAAAA
     BB        BB  FF                      33                                                     AAAAAAAAAA
     BB        BB  FF            33        33                                                     AA      AA
     BBBBBBBBBBB   FF             3333333333                                                     AA        AA
     BBBBBBBBBB    FF              33333333                                                      AA        AA
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ORA41

5/1/79 - 5/31/79

```
//        DD DSN=SYS2.DEBLKUNV,DISP=SHR
X/        DD DSN=SYS1.DUMMY,DISP=SHR                                  00000040
XX        DD DSN=SYS1.FORTLIB,DISP=SHR                                00000050
XX        DD DSN=SYS2.FORTLIB,DISP=SHR                                00000060
XX        DD DSN=SYS1.PLILIB,DISP=SHR                                 00000070
XX        DD DSN=SYS1.FORTSSP,DISP=SHR                                00000080
XX        DD DSN=SYS2.COBLIB,DISP=SHR                                 00000090
XX        DD DSN=SYS1.ALGLIB,DISP=SHR                                 00000100
XXSYSLOUT DD SYSOUT=&OUT,DCB=(RECFM=FBSA,LRECL=121,BLKSIZE=3509)      00000110
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(RECFM=FBSA,LRECL=121,BLKSIZE=3509)
//SYSLIN DD DSN=M2.ZBRTC.SD002.LOAD(ORBIT),DISP=SHR
X/SYSLIN DD DSN=&&OBJMOD,DISP=(OLD,DELETE)                            00000120
XX        DD DDNAME=&&OBJECT                                          00000130
XXFT05F001 DD DDNAME=DATA5                                            00000140
XXFT06F001 DD SYSOUT=&OUT,DCB=(BLKSIZE=6BLKSIZE,LRECL=137,RECFM=VBA)  00000150
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(BLKSIZE=7265,LRECL=137,RECFM=VBA)
XXFT07F001 DD SYSOUT=B,DCB=(RECFM=FB,BLKSIZE=7280,LRECL=80)           00000160
XXSYSPRINT DD SYSOUT=&OUT,DCB=(BLKSIZE=6BLKSIZE,LRECL=137,RECFM=VBA),  00000170
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(BLKSIZE=7265,LRECL=137,RECFM=VBA),
XX          SPACE=(CYL,(0,1)),UNIT=(DISK,3)                           00000180
XXSYSTERM DD SYSOUT=&TERMOUT                                          00000190
IEF653I SUBSTITUTION JCL - SYSOUT=A
//SYSUDUMP DD SYSOUT=A
X/SYSUDUMP DD SYSOUT=A,SPACE=(CYL,(0,5))                              00000200
//GO.GENTAP DD UNIT=(7TRACK,,DEFER),
//    VOL=SER=ORTAPS,LABEL=(,NL,,IN),DISP=(OLD,KEEP),
//    DCB=(RECFM=U,BLKSIZE=1944,DEN=2)
//DATA5 DD *
IEF236I ALLOC. FOR SDHELCA3 GO
IEF237I 333   ALLOCATED TO SYSLIB
IEF237I 320   ALLOCATED TO
IEF237I 451   ALLOCATED TO
IEF237I 231   ALLOCATED TO
IEF237I 244   ALLOCATED TO
IEF237I 244   ALLOCATED TO
IEF237I 220   ALLOCATED TO
IEF237I 231   ALLOCATED TO
IEF237I 237   ALLOCATED TO SYSLOUT
IEF237I 333   ALLOCATED TO SYSLIN
IEF237I 335   ALLOCATED TO FT05F001
IEF237I 335   ALLOCATED TO FT06F001
IEF237I 232   ALLOCATED TO FT07F001
IEF237I 335   ALLOCATED TO SYSPRINT
IEF237I 232   ALLOCATED TO SYSPRINT
IEF237I 235   ALLOCATED TO SYSPRINT
IEF237I 336   ALLOCATED TO SYSTERM
IEF237I 335   ALLOCATED TO SYSUDUMP
IEF237I 001   ALLOCATED TO GENTAP
```

CS/360 LOADER

```
OPTIONS USED - PRINT,MAP,NOLET,CALL,RES,NOTERM,SIZE=194560,NAME=**GO
               EP=ORBIT

   NAME    TYPE  ADDR      NAME     TYPE  ADDR      NAME    TYPE  ADDR      NAME    TYPE  ADDR      NAME    TYPE  ADDR
 ORBIT      SD   7F810   CNVRTSCT*  SD   80670   CNVRT   *  LR   80670   DDGEN   *  SD   80998   DDFEDV  *  LR   80B59
 FREAD   *  SD   8CD60   FREADB   *  LR   80F8B   FWRITE  *  LR   9107C   REWIND  *  LR   81282   LEAVE   *  LR   81366
 UNLOAD  *  LR   81414   POSN    *  LR   81530   MOUNT   *  LR   81760   MOUNER  *  LR   81932   FTRAP   *  LR   81A22
 FALLOW  *  LR   81AA0   FUNITABL*  SD   82A60   FPL1    *  SD   82828   FDDNLIST*  SD   82B30   FERMSG  *  SD   82B38
 IHCNAMEL*  SD   82BA0   FRDNL   *  LR   82BA0   FWRNL   *  LR   831A4   IHCECOMH*  SD   83670   IHCCM#  *  LR   83670
 FDIOCS  *  LR   8372C   INTSWTCH*  LR   84586   IHCCOMH2*  SD   84508   SCODASD *  LR   84950   FTP     *  SD   84C38
 ITISECT *  SD   84CE8   ITI     *  LR   84CE8   FXFLT   *  SD   84D40   FIXFLT  *  LR   84D40   TRNSLTE  *  SD   84D88
 TRANS   *  LR   84D88   BITST   *  SD   84E98   CNTGDATA*  LR   84E98   DTOUN   *  SD   84FC8   IHCFCVTH*  SD   85098
 ADCON#  *  LR   85098   FCVADUTP*  LR   85142   FCVLOUTP*  LR   85102   FCVZOUTP*  LR   85322   FCV10UTP*  LR   85600
 FCVEOUTP*  LR   85BD2   FCVCOUTP*  LR   85D5C   INT63#CH*  LR   86003   IHCEFIOS*  SD   86238   FIOCS#  *  LR   86238
 FIOCSBEP*  LR   8625E   IHCFIOS2*  SD   87160   IHCERRM *  SD   87690   ERRHON  *  LR   87690   IHCERRL *  LR   876A8
 IHCEFNTH*  SD   87C68   ARITH#  *  LR   87C68   ADJ3#TCH*  LR   88004   IHCUOPT *  SD   88100   IHCUATBL*  SD   88408
 IHCETRCH*  SD   88810   IHCTRCH *  LR   88810   ERRTRA  *  LR   88818

 TOTAL LENGTH    9590
 ENTRY ADDRESS   7F810
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                    SATIO  HELIOS-A        ORBIT TAPE #=GRA41
        7409701 ORB            79 121 000000 151 000000 9170 01 790621 170 01 01 E7  X
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                    HELIOS-A          YEAR 1979.          LAUNCH TIME  138473464.  0.
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DATE MN	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	EARTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LET(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
5	1	0	0	0	321.09	0.02	0.42	0.73	119.85	38.91	-6.97	-.013	0.03
5	2	0	0	0	324.05	0.02	0.41	0.72	124.57	35.95	-6.82	-.012	0.03
5	3	0	0	0	327.27	0.02	0.40	0.71	129.68	32.73	-6.63	-.012	0.03
5	4	0	0	0	330.75	0.02	0.38	0.70	135.19	29.25	-6.38	-.012	0.03
5	5	0	0	0	334.52	0.02	0.37	0.69	141.11	25.48	-6.08	-.011	0.03
5	6	0	0	0	338.58	0.02	0.36	0.69	147.47	21.42	-5.72	-.011	0.03
5	7	0	0	0	342.94	0.02	0.35	0.68	154.24	17.06	-5.28	-.010	0.03
5	8	0	0	0	347.61	0.02	0.34	0.68	161.42	12.39	-4.77	-.009	0.03
5	9	0	0	0	352.59	0.02	0.33	0.68	168.97	7.41	-4.18	-.008	0.04
5	10	0	0	0	357.86	0.02	0.33	0.68	176.84	2.14	-3.52	-.007	0.04
5	11	0	0	0	3.39	0.01	0.32	0.69	175.04	3.39	-2.78	-.005	0.04
5	12	0	0	0	9.15	0.01	0.31	0.70	166.75	9.15	-1.99	-.004	0.04
5	13	0	0	0	15.09	0.01	0.31	0.71	158.39	15.09	-1.14	-.003	0.04
5	14	0	0	0	21.14	0.01	0.31	0.73	150.06	21.14	-0.26	-.001	0.04
5	15	0	0	0	27.23	0.00	0.31	0.75	141.86	27.23	0.63	0.001	0.04
5	16	0	0	0	33.29	0.00	0.31	0.77	133.89	33.29	1.50	0.002	0.04
5	17	0	0	0	39.25	-0.00	0.31	0.79	126.23	39.25	2.34	0.004	0.04
5	18	0	0	0	45.05	-0.00	0.32	0.82	118.94	45.05	3.13	0.005	0.04
5	19	0	0	0	50.63	-0.01	0.32	0.84	112.07	50.63	3.85	0.007	0.04
5	20	0	0	0	55.95	-0.01	0.33	0.87	105.64	55.95	4.49	0.008	0.04
5	21	0	0	0	60.99	-0.01	0.34	0.90	99.66	60.99	5.06	0.009	0.03
5	22	0	0	0	65.72	-0.01	0.35	0.93	94.14	65.72	5.55	0.010	0.03
5	23	0	0	0	70.15	-0.02	0.36	0.96	89.06	70.15	5.96	0.011	0.03
5	24	0	0	0	74.27	-0.02	0.37	0.98	84.39	74.27	6.30	0.011	0.03
5	25	0	0	0	78.09	-0.02	0.38	1.01	80.11	78.09	6.57	0.012	0.03
5	26	0	0	0	81.63	-0.02	0.39	1.03	76.20	81.63	6.79	0.012	0.03
5	27	0	0	0	84.90	-0.02	0.41	1.06	72.62	84.90	6.95	0.012	0.03
5	28	0	0	0	87.92	-0.02	0.42	1.08	69.34	87.92	7.07	0.013	0.03
5	29	0	0	0	90.71	-0.02	0.43	1.11	66.35	90.71	7.15	0.013	0.03
5	30	0	0	0	93.28	-0.02	0.44	1.13	63.61	93.28	7.20	0.013	0.03
5	31	0	0	0	95.65	-0.02	0.46	1.15	61.09	95.65	7.22	0.013	0.03

END OF FILE ON ORBIT TAPE

```
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   M2.ZBRTC.SD002.LOAD                          KEPT      DDNAME=SYSLIB  -1      0 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS2.DEBLKUNV                                KEPT      DDNAME=SYSLIB  -2     17 EXCPS
IEF285I   VOL SER NOS= M2SYS2.
IEF285I   SYS1.FORTLIB                                 KEPT      DDNAME=SYSLIB  -3     61 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS2.FORTLIB                                 KEPT      DDNAME=SYSLIB  -4     28 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SYS1.PL1LIB                                  KEPT      DDNAME=SYSLIB  -5      0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS1.FORTSSP                                 KEPT      DDNAME=SYSLIB  -6      0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS2.CORLIB                                  KEPT      DDNAME=SYSLIB  -7      0 EXCPS
IEF285I   VOL SER NOS= M2SYS1.
IEF285I   SYS1.ALGLIB                                  KEPT      DDNAME=SYSLIB  -8      0 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SYS80025.T114626.SV000.SDHELCA3.R0000022     SYSOUT    DDNAME=SYSLOUT         1 EXCPS
IEF285I   VOL SER NOS= K3SCR4.
IEF285I   M2.ZBRTC.SD002.LOAD                          KEPT      DDNAME=SYSLIN  -1      7 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS80025.T114626.RV000.SDHELCA3.S0000039     SYSIN     DDNAME=FT05F001        2 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80025.T114626.RV000.SDHELCA3.S0000039     DELETED   DDNAME=FT05F001        2 EXCPS
IEF285I   VOL SER NOS= K3SCR3.
IEF285I   SYS80025.T114626.SV000.SDHELCA3.R0000023     SYSOUT    DDNAME=FT06F001        1 EXCPS
IEF285I   VOL SER NOS= K3SCR3.
IEF285I   SYS80025.T114626.SV000.SDHELCA3.R0000024     DELETED   DDNAME=FT07F001        0 EXCPS
IEF285I   VOL SER NOS= K3SCR3.
IEF285I   SYS80025.T114626.SV000.SDHELCA3.R0000025     DELETED   DDNAME=SYSPRINT        0 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80025.T114626.SV000.SDHELCA3.R0000026     DELETED   DDNAME=SYSTERM         0 EXCPS
IEF285I   VOL SER NOS= K3SCR6.
IEF285I   SYS80025.T114626.SV000.SDHELCA3.R0000027     DELETED   DDNAME=SYSUDUMP        0 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80025.T114626.RV000.SDHELCA3.R0000028     KEPT      DDNAME=GENTAP        726 EXCPS
IEF285I   VOL SER NOS= ORA41 .
IEF280E K 0C1,ORA41 ,SDHELCA3,GO
IEF373I STEP /GO      / START 80025.1221
IEF374I STEP /GO      / STOP  80025.1222 CPU    0MIN 11.79SEC MAIN 200K LCS    0K
- STEP 01 -      RETURN CODE = 0000          TO IN SECS. DISK=   11.10,DRUM=      .00,TAPE=      7.30,CELL=      .00,CTHR=      .10
                                                                  STEP TIME =      .49 MINS=(CPU=      .19,IO=      .30)
                                                                  TOTAL STP TIME=      .49 MINS.
- SURCHARGES=(DRIVES ALLOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=00000)SECS.
```

********** 83 **********

JOBNAME-

SACC 360/75 READER NUMBER-P0076 CLASS-

ORA43

6/1/79 - 6/30/79

```
X/        DD DSN=SYS1.DUMMY,DISP=SHR                                    00000040
XX        DD DSN=SYS1.FORTLIB,DISP=SHR                                  00000050
XX        DD DSN=SYS2.FORTLIB,DISP=SHR                                  00000060
XX        DD DSN=SYS1.PL1LIB,DISP=SHR                                   00000070
XX        DD DSN=SYS1.FORTSSF,DISP=SHR                                  00000080
XX        DD DSN=SYS2.COBLIB,DISP=SHR                                   00000090
XX        DD DSN=SYS1.ALGLIB,DISP=SHR                                   00000100
XXSYSLOUT DD SYSOUT=&OUT,DCB=(RECFM=FBSA,LRECL=121,BLKSIZE=3509)        00000110
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(RECFM=FBSA,LRECL=121,BLKSIZE=3509)
//SYSLIN DD DSN=M2.ZORTC.SD002.LOAD(ORBIT),DISP=SHR                     00000120
X/SYSLIN DD DSN=&&OUMOD,DISP=(OLD,DELETE)                               00000130
XX        DD DDNAME=DEJECT                                              00000140
XXFT05F001 DD DDNAME=DATA5                                              00000150
XXFT06F001 DD SYSOUT=&OUT,DCB=(BLKSIZE=&BLKSIZE,LRECL=137,RECFM=VBA)
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(BLKSIZE=7265,LRECL=137,RECFM=VBA)
XXFT07F001 DD SYSOUT=B,DCB=(RECFM=FB,BLKSIZE=7280,LRECL=80)             00000160
XXSYSPRINT DD SYSOUT=&OUT,DCB=(BLKSIZE=&BLKSIZE,LRECL=137,RECFM=VBA),   00000170
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(BLKSIZE=7265,LRECL=137,RECFM=VBA),
XX            SPACE=(CYL,(0,1)),UNIT=(DISK,3)                           00000180
XXSYSTERM  DD  SYSOUT=&TERMOUT                                          00000190
IEF653I SUBSTITUTION JCL - SYSOUT=A
//SYSUDUMP DD SYSOUT=A                                                  00000200
X/SYSUDUMP DD SYSOUT=A,SPACE=(CYL,(0,5))
//GO.GENTAP DD UNIT=(7TRACK,,DEFER),
//   VOL=SER=ORTAPE,LABEL=(,NL,,IN),DISP=(OLD,KEEP),
//   DCB=(RECFM=U,BLKSIZE=1944,DEN=2)
//DATA5 DD *
IEF236I ALLOC. FOR Z8JHB0A5 GO
IEF237I 353   ALLOCATED TO SYSLIB
IEF237I 320   ALLOCATED TO
IEF237I 451   ALLOCATED TO
IEF237I 231   ALLOCATED TO
IEF237I 244   ALLOCATED TO
IEF237I 244   ALLOCATED TO
IEF237I 220   ALLOCATED TO
IEF237I 231   ALLOCATED TO
IEF237I 257   ALLOCATED TO SYSLOUT
IEF237I 333   ALLOCATED TO SYSLIN
IEF237I 335   ALLOCATED TO FT05F001
IEF237I 232   ALLOCATED TO FT06F001
IEF237I 235   ALLOCATED TO FT07F001
IEF237I 237   ALLOCATED TO SYSPRINT
IEF237I 232   ALLOCATED TO SYSPRINT
IEF237I 235   ALLOCATED TO SYSPRINT
IEF237I 237   ALLOCATED TO SYSTERM
IEF237I 505   ALLOCATED TO SYSUDUMP
IEF237I 002   ALLOCATED TO GENTAP
```

OS/360 LOADER

```
OPTIONS USED - PRINT,MAP,NOLET,CALLVRES,NOTERM,SIZE=134540,NAME=**SO
               EP=ORBIT
```

NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR
ORBIT	SD	9D010	CNVRTSCT*	SD	9DE70	CNVFT *	LR	9DE70	DBGEN *	SD	9E198	DBFEOV *	LR	9E358
FREAD *	SD	9E560	FREADB *	LR	9E708	FWRITE *	LR	9E87C	REWIND *	LR	9EA02	LEAVE *	LR	9E356
UNLOAD *	LR	9EC1A	POSN *	LR	9ED30	MOUNT *	LR	9EF50	MEMBER *	LR	9F132	FTRAP *	LR	9F222
FALLOW *	LR	9F240	FUNITABL*	SD	A0260	FCL1 *	SD	A0328	FOUNLIST*	SD	A0330	FORMSC *	SD	A0338
IHCNAMEL*	SD	A03A0	FRDNL# *	LR	A03A0	FWRNL# *	LR	A09A4	IHCECOMH*	SD	A0E70	IBCOM# *	LR	A0E70
FDIOCS* *	LR	A0F3C	INTSWTCH*	LR	A1D96	IHCCOMM2*	SD	A1DD8	SEQDASD *	LR	A2150	FTF *	SD	A2438
ITISECT *	SD	A2439	ITI *	LR	A24D8	FXFLT *	SD	A2540	FIXFLT *	LR	A2540	TRNSLTE *	SD	A2538
TRANS *	LR	A2588	BITST *	SD	A2698	CNTCDATA*	LR	A2698	DTOUN *	SD	A27C8	IHCFCVTH*	SD	A2898
ADCON# *	LR	A2998	FCVADUTP*	LR	A2942	FCVLOUTP*	LR	A29D2	FCVZOUTP*	LR	A2B22	FCVIOUTP*	LR	A2ED0
FCVCOUTP*	LR	A33D2	FCVCOUTP*	LR	A35EC	INT65#CH*	LR	A3B03	IHCEFIOS*	SD	A3A38	FIOCS* *	LR	A3A38
FIOCS9E9*	LR	A3A3E	IHCFIOS2*	SD	A4960	IHCERRM *	SD	A4E90	ERRMON *	LR	A4E90	IHCERRC *	LR	A4EA8
IHCEFNT#	SD	A5468	ARITH# *	LR	A5468	AOJSWTCH*	LR	A4B9A	IHCUCRT *	SD	A5930	IHCUATBL*	SD	A5C08
IHCETRCH*	SD	A6310	IHCTRCH *	LR	A6310	ERRTRA *	LR	A6318						

```
TOTAL LENGTH    9590
ENTRY ADDRESS   9D010

                SATID  HELIOS-A        OORBIT TAPE #=CR#43
7409701 ORB            74-152 000000 181 000000 V201 01 700723 301 01 01 E7  X

                HELIOS-A        YEAR 1979.        LAUNCH TIME  141151992.  0.
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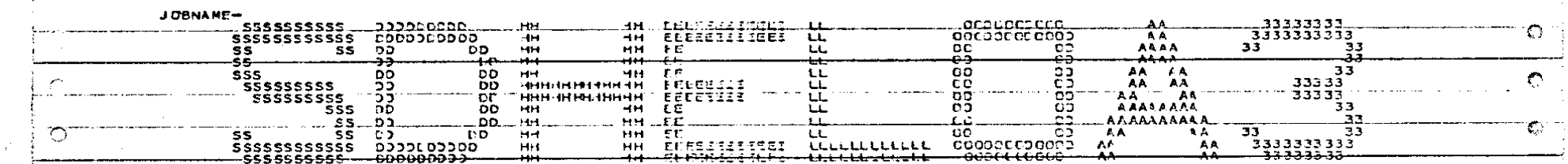
DATE MM	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	EARTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LAT(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
6	1	0	0	0	97.83	-0.02	0.47	1.17	58.79	57.83	7.22	0.013	0.03
6	2	0	0	0	99.65	-0.02	0.48	1.20	56.68	59.65	7.20	0.013	0.02
6	3	0	0	0	101.71	-0.02	0.50	1.22	54.73	101.71	7.18	0.013	0.02
6	4	0	0	0	103.42	-0.02	0.51	1.24	52.95	103.42	7.11	0.013	0.02
6	5	0	0	0	105.01	-0.02	0.52	1.26	51.30	105.01	7.04	0.013	0.02
6	6	0	0	0	106.47	-0.02	0.54	1.27	49.78	106.47	6.97	0.013	0.02
6	7	0	0	0	107.82	-0.02	0.55	1.29	48.38	107.82	6.88	0.013	0.02
6	8	0	0	0	109.07	-0.02	0.56	1.31	47.08	109.07	6.79	0.012	0.02
6	9	0	0	0	110.22	-0.02	0.57	1.33	45.88	110.22	6.70	0.012	0.02
6	10	0	0	0	111.28	-0.02	0.58	1.34	44.77	111.28	6.60	0.012	0.02
6	11	0	0	0	112.26	-0.02	0.60	1.36	43.75	112.26	6.50	0.012	0.02
6	12	0	0	0	113.17	-0.02	0.61	1.37	42.79	113.17	6.39	0.012	0.02
6	13	0	0	0	114.01	-0.02	0.62	1.39	41.91	114.01	6.23	0.012	0.02
6	14	0	0	0	114.77	-0.02	0.63	1.40	41.08	114.77	6.17	0.011	0.02
6	15	0	0	0	115.48	-0.02	0.64	1.42	40.32	115.48	6.06	0.011	0.02
6	16	0	0	0	116.13	-0.02	0.65	1.43	39.61	116.13	5.95	0.011	0.02
6	17	0	0	0	116.73	-0.02	0.67	1.44	38.95	116.73	5.83	0.011	0.02
6	18	0	0	0	117.28	-0.02	0.68	1.46	38.34	117.28	5.72	0.011	0.02
6	19	0	0	0	117.78	-0.02	0.69	1.47	37.77	117.78	5.60	0.010	0.02
6	20	0	0	0	118.24	-0.02	0.70	1.48	37.24	118.24	5.49	0.010	0.02
6	21	0	0	0	118.66	-0.02	0.71	1.49	36.74	118.66	5.37	0.010	0.02
6	22	0	0	0	119.04	-0.02	0.72	1.50	36.28	119.04	5.26	0.010	0.02
6	23	0	0	0	119.38	-0.02	0.73	1.51	35.85	119.38	5.15	0.010	0.02
6	24	0	0	0	119.69	-0.02	0.74	1.52	35.46	119.69	5.05	0.009	0.02
6	25	0	0	0	119.97	-0.02	0.75	1.53	35.09	119.97	4.92	0.009	0.02
6	26	0	0	0	120.22	-0.02	0.75	1.54	34.74	120.22	4.81	0.009	0.02
6	27	0	0	0	120.44	-0.02	0.76	1.55	34.43	120.44	4.70	0.009	0.02
6	28	0	0	0	120.63	-0.02	0.77	1.56	34.13	120.63	4.59	0.009	0.02
6	29	0	0	0	120.79	-0.02	0.78	1.57	33.86	120.79	4.48	0.008	0.02
6	30	0	0	0	120.94	-0.02	0.79	1.58	33.60	120.94	4.37	0.008	0.01

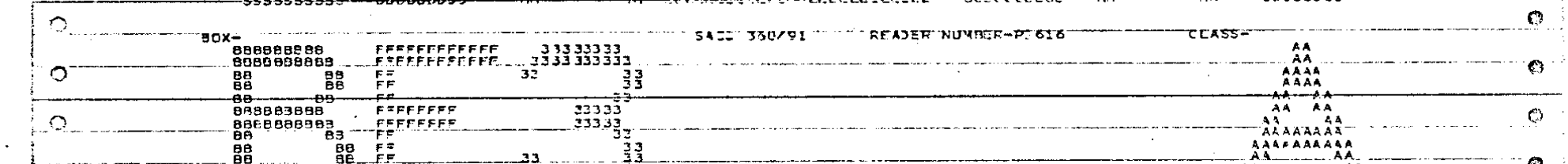
END OF FILE ON ORBIT TAPE

```
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   M2.ZBRTC.SD002.LOAD                                  KEPT      DDNAME=SYSLIB  -1        0 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS2.DEBLKUNV                                        KEPT      DDNAME=SYSLIB  -2       17 EXCPS
IEF285I   VOL SER NOS= M2SYS2.
IEF285I   SYS1.FORTLIB                                         KEPT      DDNAME=SYSLIB  -3       61 EXCPS
IEF285I   VOL SER NOS= K3ITL0.
IEF285I   SYS2.FORTLIB                                         KEPT      DDNAME=SYSLIB  -4       28 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SYS1.PL1LIB                                          KEPT      DDNAME=SYSLIB  -5        0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS1.FORTSSP                                         KEPT      DDNAME=SYSLIB  -6        0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS2.CODLIB                                          KEPT      DDNAME=SYSLIB  -7        0 EXCPS
IEF285I   VOL SER NOS= M2SYS1.
IEF285I   SYS1.ALGLIB                                          KEPT      DDNAME=SYSLIB  -8        0 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SYS80025.T115834.SV000.ZBJHBCA5.R0000001             SYSOUT    DDNAME=SYSLOUT           1 EXCPS
IEF285I   VOL SER NOS= K3SCR4.
IEF285I   M2.ZBRTC.SD002.LOAD                                  KEPT      DDNAME=SYSLIN  -1        7 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS80025.T115834.RV000.ZBJHBCA5.S0000008             SYSIN     DDNAME=FT05F001          2 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80025.T115834.RV000.ZBJHBCA5.S0000003             DELETED   DDNAME=FT05F001          2 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80025.T115834.SV000.ZBJHBCA5.R0000002             SYSOUT    DDNAME=FT06F001          1 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80025.T115834.SV000.ZBJHBCA5.R0000003             DELETED   DDNAME=FT07F001          0 EXCPS
IEF285I   VOL SER NOS= K3SCR6.
IEF285I   SYS80025.T115834.SV000.ZBJHBCA5.R0000004             DELETED   DDNAME=SYSPRINT          0 EXCPS
IEF285I   VOL SER NOS= K3SCR4.
IEF285I   SYS80025.T115834.SV000.ZBJHBCA5.R0000005             DELETED   DDNAME=SYSTERM           0 EXCPS
IEF285I   VOL SER NOS= K3SCR4.
IEF285I   SYS80025.T115834.SV000.ZBJHBCA5.R0000006             DELETED   DDNAME=SYSUDUMP          0 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80025.T115834.RV000.ZBJHBCA5.R0000007             KEPT      DDNAME=GENTAP          702 EXCPS
IEF285I   VOL SER NOS= GRA43 .
IEF285I K 062,GRA43 ,ZBJHBCA5,GO
IEF373I STEP /GO      / START 80025.1222
IEF374I STEP /GO      / STOP  80025.1236 CPU    0MIN 11.53SEC WAIN 200K LCS    0K
                                                 STEP TIME =      .49 MINS=(CPU=      .19,IO=      .30)
- STEP 01 -      RETURN CODE = 0000
                                 IO IN SECS. DISK=    11.12,DRUM=      .00,TAPE=     7.06,CELL=      .00,OTHR=      .17
- SURCHARGES=(DRIVES ALCC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=0000)SECS.   TOTAL STP TIME=      .49 MINS.
```

JOBNAME-



BOX- S4CC 330/91 READER NUMBER-PC616 CLASS-



ORA46

7/1/79 - 7/31/79

```
X/SYSLIN DD DSN=&OBJMOD,DISP=(OLD,DELETE)                          00000100
XX DD DDNAME=OBJECT                                                00000110
XXFT05F001 DD DDNAME=DATA5                                         00000120
XXFT06F001 DD  SYSOUT=&OUT,DCB=(RECFM=VBA,LRECL=137,3_<SIZE=&BLKSIZE),  00000130
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(RECFM=VBA,LRECL=137,BLKSIZE=7265)
XX SPACE=(CYL,(2,2))                                               00000140
XXFT07F001 DD SYSOUT=B,DCB=(RECFM=FB,LRECL=90,BLKSIZE=7230),       00000150
XX SPACE=(CYL,(0,1))                                               00000160
XXSYSPRINT DD SYSOUT=&OUT,UNIT=(2314,3),SPACE=(CYL,(),2)),         00000170
IEF653I SUBSTITUTION JCL - SYSOUT=A,UNIT=(2314,3),SPACE=(CYL,(0,2)),
XX DCB=(RECFM=VBA,LRECL=137,BLKSIZE=&BLKSIZE)                      00000180
IEF653I SUBSTITUTION JCL - DCB=(RECFM=VBA,LRECL=137,3_<SIZE=7265)
XXSYSTERM DD SYSOUT=&TERMOUT                                       00000190
IEF653I SUBSTITUTION JCL - SYSOUT=A
//SYSUDUMP DD SYSOUT=A                                             00000200
X/SYSUDUMP DD SYSOUT=A,SPACE=(CYL,(0,5))
//GO.GENTAP DD UNIT=(7TRACK,,DEFER),
//    VOL=SER=ORTAPE,LABEL=(,NL,,IN),DISP=(OLD,KEEP),
//    DCB=(RECFM=U,BLKSIZE=1944,DEN=2)
//DATA5 DD *
IEF236I ALLOC. FOR SDHELO43 GO
IEF237I 323   ALLOCATED TO SYSLIB
IEF237I 330   ALLOCATED TO
IEF237I 451   ALLOCATED TO
IEF237I 451   ALLOCATED TO
IEF237I 244   ALLOCATED TO
IEF237I 244   ALLOCATED TO
IEF237I 452   ALLOCATED TO SYSLOUT
IEF237I 323   ALLOCATED TO SYSLIN
IEF237I 450   ALLOCATED TO FT05F001
IEF237I 452   ALLOCATED TO FT06F001
IEF237I 452   ALLOCATED TO FT07F001
IEF237I 212   ALLOCATED TO SYSPRINT
IEF237I 232   ALLOCATED TO SYSPRINT
IEF237I 233   ALLOCATED TO SYSPRINT
IEF237I 452   ALLOCATED TO SYSTERM
IEF237I 452   ALLOCATED TO SYSUDUMP
IEF237I CC1   ALLOCATED TO GENTAP
```

```
                                        OS/360 LOADER

OPTIONS USED - PRINT,MAP,NOLET,CALL,RES,NOTERM,SIZE=180224,NAME=**GO
               EP=ORBIT

   NAME   TYPE  ADDR      NAME   TYPE  ADDR      NAME   TYPE  ADDR      NAME   TYPE  ADDR      NAME   TYPE  ADDR
ORBIT      SD 168810  CNVRTSCT* SD 169670  CNVRT   * LR 169670  DBGEN   * SD 169958  DBFEOV  * LR 169858
FREAD    * SD 169D6C  *RFAOB  * LR 169FB8  FWRITE  * LR 16A070  RE#IND  * LR 16A332  LEAVE  * LR 16A366
UNLOAD   * LR 16A41A  PDSN    * LR 16A532  MOUNT   * LR 16A750  MEMBER  * LR 16A932  FTRAP  * LR 16AA22
FALLOW   * LR 16AA4C  FUNIT#3L* SD 16BA63  FPEI    * SD 16BC29  PDDNLIST* SD 16C3[illegible]  FSFMCB  * SD 16B839
IHCNAMEL* SD 16BBAC  FRDNL#   * LR 16BBA2  FWRNL#  * LR 16C1A4  IHCFCOMH* SD 16C670  IBCCM#  * LR 16C670
FDIDCS# * LR 16C72C  INTSWTCH* LR 16C586  IHCCOM#2* SD 16D[illegible]  SFDCASD  * LR 16D950  FTF    * SD 16DC38
ITISECT * SD 16DCE8  ITI      * LR 16DCE8  FXFLT   * SD 16DD4C  FIXFLT  * LR 16D[illegible]  TRNSLTE * SD 16DD88
TRANS   * LR 16DD88  BITST    * SD 16DF98  CNTGDATA* LR 16DF98  DIDUN   * SD 16EFC8  IHCFCVTH* SD 16F098
ADCON#  * LR 16FC98  FCVADJTP* LR 16E142  FCVLOUTP* LR 16E1E2  FCVZDJTP* LR 16E322  FCVIDJTP* LR 16E6D3
FCVEOJTP* LR 16FBL2  FCVCOUTP* LR 16EDFC  INTOSCIA* LR 16FCC3  IHCEFIOS* SD 16F238  FIDCS*   * LR 16F238
FIDCSBEP* LR 16F23L  IHCFICS2* SD 170160  IHCLRR4 * SD 170590  FEEMON  * LR 170692  IHCFRPE * LR 1706A8
IHCEFNTH* SD 170C68  ARITH*   * LR 170C68  ADJSWTCH* LR 171[illegible]  IHCUD[illegible] * SD 171[illegible]  IHCUATCL* SD 171403
IHCETRCH* SD 171B1C  IHCTRCH  * LR 171B1C  EKETRA  * LR 171318

TOTAL LENGTH    559[illegible]
ENTRY ADDRESS 168810
```

```
                    SATID  HELIOS-A        ORBIT TAPE #=ORA[illegible]
7409701 0P3                 79 182 [illegible]  *
```

```
                    HELIOS-A          YEAR 1979.          LAUNCH TIME 1437A3992.  J.
```

DATE MN	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	EARTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN (EARTH(DEG)	HELIOS HE.-LAT(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
7	1	3	0	0	121.16	-0.02	0.81	1.59	33.37	121.16	4.25	0.008	0.01
7	2	3	0	0	121.15	-0.02	0.81	1.59	33.16	121.16	4.15	0.008	0.01
7	3	3	0	0	121.23	-0.02	0.81	1.60	32.96	121.23	4.04	0.008	0.01
7	4	3	0	0	121.29	-0.02	0.82	1.60	32.78	121.29	3.94	0.008	0.01
7	5	3	0	0	121.33	-0.02	0.83	1.61	32.61	121.33	3.83	0.007	0.01

7	8	3	0	0	121.36	-0.02	0.84	1.62	32.46	121.36	3.72	0.007	0.31
7	7	3	0	0	121.36	-0.02	0.84	1.62	32.32	121.36	3.62	0.007	0.31
7	8	3	0	0	121.35	-0.02	0.85	1.63	32.27	121.35	3.52	0.007	0.31
7	9	3	0	0	121.33	-0.02	0.86	1.63	32.08	121.33	3.42	0.007	0.31
7	10	3	0	0	121.29	-0.02	0.86	1.64	31.98	121.29	3.32	0.006	0.31
7	11	3	0	0	121.24	-0.02	0.87	1.65	31.89	121.24	3.22	0.006	0.31
7	12	3	0	0	121.18	-0.02	0.88	1.65	31.82	121.18	3.11	0.006	0.31
7	13	3	0	0	121.17	-0.02	0.88	1.65	31.75	121.17	3.01	0.006	0.31
7	14	3	0	0	121.11	-0.02	0.89	1.66	31.69	121.11	2.92	0.006	0.31
7	15	3	0	0	120.91	-0.01	0.89	1.66	31.64	120.91	2.82	0.006	0.31
7	16	3	0	0	120.80	-0.01	0.90	1.67	31.60	120.80	2.72	0.005	0.31
7	17	3	0	0	120.68	-0.01	0.90	1.67	31.57	120.68	2.62	0.005	0.31
7	18	3	0	0	120.65	-0.01	0.91	1.67	31.55	120.65	2.52	0.005	0.31
7	19	3	0	0	120.41	-0.01	0.91	1.68	31.54	120.41	2.42	0.005	0.31
7	20	3	0	0	120.26	-0.01	0.92	1.68	31.53	120.26	2.33	0.005	0.31
7	21	3	0	0	120.10	-0.01	0.92	1.69	31.53	120.10	2.24	0.005	0.31
7	22	3	0	0	119.94	-0.01	0.93	1.69	31.54	119.94	2.14	0.004	0.31
7	23	3	0	0	119.76	-0.01	0.93	1.69	31.55	119.76	2.05	0.004	0.31
7	24	3	0	0	119.59	-0.01	0.94	1.69	31.57	119.59	1.95	0.004	0.31
7	25	3	0	0	119.40	-0.01	0.94	1.69	31.60	119.40	1.85	0.004	0.31
7	26	3	0	0	119.21	-0.01	0.94	1.69	31.63	119.21	1.77	0.004	0.31
7	27	3	0	0	119.01	-0.01	0.95	1.69	31.67	119.01	1.68	0.003	0.31
7	28	3	0	0	118.81	-0.01	0.95	1.69	31.72	118.80	1.58	0.003	0.31
7	29	3	0	0	118.59	-0.01	0.95	1.69	31.77	118.59	1.49	0.003	0.31
7	30	3	0	0	118.38	-0.01	0.96	1.69	31.82	118.38	1.40	0.003	0.31
7	31	3	0	0	118.16	-0.01	0.96	1.69	31.88	118.16	1.31	0.003	0.31

END OF FILE ON ORBIT TAPE

```
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   M2.ZBRTC.SDC02.LOAD                    KEPT     DDNAME=SYSLIB  -1        1 EXCPS
IEF285I   VOL SER NOS= DISK15.                   KEPT     DDNAME=SYSLIB  -2       17 EXCPS
IEF285I   SYS2.DEBLKUNV                          KEPT     DDNAME=SYSLIB  -3       89 EXCPS
IEF285I   VOL SER NOS= M2SYS2.                   KEPT     DDNAME=SYSLIB  -4        0 EXCPS
IEF285I   SYS1.FORTLIB                           KEPT     DDNAME=SYSLIB  -5        0 EXCPS
IEF285I   VOL SER NOS= K3ITL0.                   KEPT     DDNAME=SYSLIB  -6        0 EXCPS
IEF285I   SYS2.FORTLIB                           KEPT     DDNAME=SYSLIB  -1        1 EXCPS
IEF285I   VOL SER NOS= K3ITL0.                   KEPT     DDNAME=SYSLIN  -1        7 EXCPS
IEF285I   SYS1.PL1LIB                            KEPT     DDNAME=FT05F001          2 EXCPS
IEF285I   VOL SER NOS= K3ITL5.                   KEPT     DDNAME=FT05F001          2 EXCPS
IEF285I   SYS1.FORTSSP                           SYSOUT   DDNAME=SYSLOUT           1 EXCPS
IEF285I   VOL SER NOS= K3ITL5.                   SYSOUT   DDNAME=FT06F001          1 EXCPS
IEF285I   SYS80023.T152727.RV000.SDHELOA3.R0000001  SYSIN  DDNAME=SYSLIN  -1        7 EXCPS
IEF285I   VOL SER NOS= SCR001.                   KEPT     DDNAME=FT05F001          2 EXCPS
IEF285I   M2.ZBRTC.SDC02.LOAD                    SYSIN    DDNAME=FT05F001          2 EXCPS
IEF285I   VOL SER NOS= DISK15.                   DELETED  DDNAME=FT06F001          1 EXCPS
IEF285I   SYS80023.T152727.RV000.SDHELOA3.S0000008  SYSOUT  DDNAME=FT06F001          1 EXCPS
IEF285I   VOL SER NOS= SCR002.                   DELETED  DDNAME=FT07F001          2 EXCPS
IEF285I   SYS80023.T152727.RV000.SDHELOA3.S0000008  DELETED  DDNAME=SYSPRINT          2 EXCPS
IEF285I   VOL SER NOS= SCR002.                   DELETED  DDNAME=SYSTERM           0 EXCPS
IEF285I   SYS80023.T152727.RV000.SDHELOA3.R0000003  DELETED  DDNAME=SYSUDUMP          0 EXCPS
IEF285I   VOL SER NOS= SCR001.                   KEPT     DDNAME=GENTAP          724 EXCPS
IEF285I   SYS80023.T152727.RV000.SDHELOA3.R0000004
IEF285I   VOL SER NOS= M2SCR6.
IEF285I   SYS80023.T152727.RV000.SDHELOA3.R0000005
IEF285I   VOL SER NOS= SCR001.
IEF285I   SYS80023.T152727.RV000.SDHELOA3.R0000006
IEF285I   VOL SER NOS= SCR001.
IEF285I   SYS80023.T152727.RV000.SDHELOA3.R0000007
IEF285I   VOL SER NOS= DRA46 .
IEF282E K 001,DRA46 ,SDHELOA3,GO
IEF373I STEP /GO    / START 80023.1842
IEF374I STEP /GO    / STOP  80023.1844 CPU    0MIN 52.00352C MAIN 200K LCS    0K                STEP TIME =     .27 MINS=(CPU=     .24,IO=     .23)
- STEP 01 -    RETURN CODE = 0000                                                                                                                  .16
                                    IO IN SECS, DISK=     .52,DRUM=     .00,TAPE=     7.89,CELL=     .00,OTHR=     .16
- SURCHARGES=(DRIVES ALOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=00000)SECS:    TOTAL STP TIME=     .27 MINS.   -
      // EXEC NOTIFYTS                                                                                  00000010
      XXDEFAULT  PROC MODE=,USRID=,MSG=,USERID=,ID=  4LAR/2100473                                       00000020
      XXNOTIFYTS EXEC PGM=NOTIFYTS,REGION=200K,COND=EVEN,                                               00000030
      XX         PARM='&MODE,&USRID&USERID&ID,&MSG'
      IEF653I SUBSTITUTION JCL - PARM='...'
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF373I STEP /NOTIFYTS/ START 80023.1844
IEF374I STEP /NOTIFYTS/ STOP  80023.1844 CPU    0MIN 00.00342C MAIN    8K LCS    0K                STEP TIME =     .00 MINS=(CPU=     .00,IO=     .00)
- STEP 02 -    RETURN CODE = 0000                                                                                                                  .04
                                    IO IN SECS, DISK=     .12,DRUM=     .00,TAPE=     .00,CELL=     .00,OTHR=     .04
- SURCHARGES=(DRIVES ALOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=00000)SECS:    TOTAL STP TIME=     .00 MINS.   -
```

```
JOBNAME-
        ZZZZZZZZZZZZ  EEBLEBBEB          JJJJJJ  EEEEEEEEEEEE  NN        NN   0000000000        AA              444
        ZZZZZZZZZZZZ  BBBBBBBBB         JJJJJJ  EEEEEEEEEEEE  NNN       NN   000000000000       AA             4444
                ZZ    BB      BB          JJ    EE            NNNN      NN   00        00      AAAA           44 44
                ZZ    BB      BB          JJ    EE            NN NN     NN   00        00      AAAA          44  44
              ZZ      BB      BB          JJ    EE            NN  NN    NN   00        00     AA  AA        44   44
            ZZ        EEBEBBBBB           JJ    EEEEEEEE      NN   NN   NN   00        00     AA  AA       44    44
          ZZ          EEBEBBBBB           JJ    EEEEEEEE      NN    NN  NN   00        00    AA    AA      44     44
        ZZ            BB      BB          JJ    EE            NN     NN NN   00        00    AAAAAAAA     444444444444
      ZZ              BB      BB          JJ    EE            NN      NNNN   00        00    AAAAAAAAAA   444444444444
    ZZ                BB      BB    JJ    JJ    EE            NN       NNN   00        00    AA      AA           44
  ZZZZZZZZZZZZ        BBBLEBBBBB    JJJJJJJJ    EEEEEEEEEEEE  NN        NN   000000000000   AA      AA           44
  ZZZZZZZZZZZZ        BBBBBBBBB      JJJJJJ     EEEEEEEEEEEE  NN        NN   000000000000   AA      AA           44

BOX-                                                  SACC-360/91      READER NUMBER-P0626          CLASS-
        BBLBBBBBB     FFFFFFFFFFFF    33333333                                                          AA
        BBLBBBBBB     FFFFFFFFFFFF   3333333333                                                         AA
        BB      BB    FF            33        33                                                       AAAA
        BB      BB    FF                      33                                                       AAAA
        BB      BB    FF                      33                                                      AA  AA
        BBBBBBBBB     FFFFFFFF          33333                                                         AA  AA
        BBLBBBBBB     FFFFFFFF          33333                                                        AA    AA
        BB      BB    FF                      33                                                      AAAAAAAA
        BB      BB    FF                      33                                                     AAAAAAAAAA
        BB      BB    FF            33        33                                                     AA      AA
        BBBBBBBBBB    FF            3333333333                                                     AA        AA
        BBBBBBBBB     FF             33333333                                                      AA        AA
```

ORA47

ORA47

8/1/79 - 10/30/79

~~3 months~~

~~8/1/79 - 10/30/79~~

NUMBER 109 ON 001-21WCHSPC/C32 ZBJVSNEV/671 FFDOCVS3/E22 F7AJKER2/620 ZBJENDA4/BF3 AT 18.56.28 WED 23 JAN 80

```
XXSYSLIN DD DSN=&&OBJMOD,DISP=(CLD,DELETE)                          00000100
XX DD DSNAME=&OBJECT                                                00000110
XXFT05F001 DD DSNAME=DATA5                                          00000120
XXFT06F001 DD  SYSOUT=&OUT,DCB=(RECFM=VBA,LRECL=137,BLKSIZE=6BLKSIZE),  00000130
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(RECFM=VBA,LRECL=137,BLKSIZE=7265),
XX SPACE=(CYL,(2,2))                                                00000140
XXFT07F001 DD SYSOUT=B,DCB=(RECFM=FB,LRECL=80,BLKSIZE=7280),        00000150
XX SPACE=(CYL,(0,1))                                                00000160
XXSYSPRINT DD SYSOUT=&OUT,UNIT=(2314,2),SPACE=(CYL,(0,2)),          00000170
IEF653I SUBSTITUTION JCL - SYSOUT=A,UNIT=(2314,3),SPACE=(CYL,(0,2)),
XX DCB=(RECFM=VBA,LRECL=137,BLKSIZE=BLKSIZE)                        00000180
IEF653I SUBSTITUTION JCL - DCB=(RECFM=VBA,LRECL=137,BLKSIZE=7265)
XXSYSTERM DD SYSOUT=&TERMOUT                                        00000190
IEF653I SUBSTITUTION JCL - SYSOUT=A
//SYSUDUMP DD SYSOUT=A
XXSYSUDUMP DD SYSOUT=A,SPACE=(CYL,(0,5))                            00000200
//GO.GENTAP DD UNIT=(7TRACK,,DEFER),
//    VOL=SER=GRTAPL,LABEL=(,NL,,IN),DISP=(OLD,KEEP),
//    DCB=(RECFM=U,BLKSIZE=1944,DEN=2)
//DATA9 DD *
IEF249I ZOJENDA4.GO       .GENTAP   UNABLE TO ALLOCATE
IEF247I ZOJENDA4 ALLOCATION RECOVERY
IEF247I ZOJENDA4 UC2.CC7.000.CD1 OFFLINE
IEF238A REPLY DEVICE NAME - *WAIT*,OR *CANCEL*
IEF236I ALLOC. FOR ZOJENDA4 GO
IEF237I 223   ALLOCATED TO SYSLIB
IEF237I 330   ALLOCATED TO
IEF237I 451   ALLOCATED TO
IEF237I 521   ALLOCATED TO
IEF237I 244   ALLOCATED TO
IEF237I 244   ALLOCATED TO
IEF237I 452   ALLOCATED TO SYSLOUT
IEF237I 323   ALLOCATED TO SYSLIN
IEF237I 450   ALLOCATED TO FT06F001
IEF237I 450   ALLOCATED TO FT05F001
IEF237I 452   ALLOCATED TO FT07F001
IEF237I 212   ALLOCATED TO SYSPRINT
IEF237I 232   ALLOCATED TO SYSPRINT
IEF237I 233   ALLOCATED TO SYSPRINT
IEF237I 450   ALLOCATED TO SYSTERM
IEF237I 452   ALLOCATED TO SYSUDUMP
IEF237I 001   ALLOCATED TO GENTAP
```

CS/360 LOADER

```
OPTIONS USED - PRINT,MAP,NOCET,CALL,RES,NOTERM,SIZE=(60224,NAME=**GO
EPSILON
```

NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR	NAME	TYPE	ADDR
MNBIT *	SD	228918	FNVRSCT*	CR	22376B	CNVRT *	LR	224E70	DOVEN *	SD	225158	CBFEOV *	LR	225358
FREAD *	SD	225308	FREADJ *	CR	223768	FWRITE *	LR	223B7C	REWIND *	LR	22E182	LEAVE *	LR	225866
UNLOAD *	LR	22EG1A	PRSN *	LR	225030	*CLNT *	LR	225F50	MEMBER *	LR	226132	FTRAP *	LR	226222
FALLOW *	LR	2262A0	FUNITABL*	SD	227260	FFLI *	SD	227328	FDONLIST*	SD	227330	FERMSG *	SD	227338
IHCNAMEL*	SD	2273A0	FIONL* *	LR	2273A0	FFRNL* *	LR	2276A4	IHCECOMM*	SD	227E70	IBCOM# *	LR	227E70
FDTCCW *	CR	227F2C	INTSWTCH*	LR	223DD6	IHCCCNH2*	SD	2283D8	SCOOASD *	LR	2291EC	FTF *	SD	229438
ITISECT *	SD	2294E8	ITI *	LR	2294E8	FXPLT *	SD	229540	FIXPLT *	LR	229540	TRNSLTE *	SD	229588
TRANS *	LR	229588	DIIST *	SD	229658	CNTSDATA*	LR	229693	DIDUN *	SD	2297CB	IHCFCVTB*	SD	229858
ADCON# *	LR	229898	FCVADUTP*	LR	229942	FCVLOUTP*	LR	229A02	FCVIOUTP*	LR	229B22	FCVIOUTF*	LR	229ED0
FCVEOUTP*	LR	22A302	FCVCOUTP*	LR	22A5EC	INTOS*CH*	LR	22A803	IHCEFIOS*	SD	22AA38	FIOCS# *	LR	22AA38
FIOCSBE*#	LR	22AA3E	IHCFIO52*	SD	22B960	IHCERRM *	SD	22BE90	ERRMON *	LR	22BE5C	IHCERRE *	LR	22BEA8
IHCEFNTH*	SD	22C478	ARITH* *	LR	22C468	ADJSWTCH*	LR	22C604	IHCUOPT *	SD	22C980	IHCUATBL*	SD	22CCD8
IHCETRCM*	SD	22D310	IHCTRCH *	LR	22D310	ERRTH* *	LR	22D318						

TOTAL LENGTH 22E598

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SATID--HELIOS-A        OCRBIT-TAPE-#-CRA47
7405701 ORB            79 212 000000 304 000000 9703 01 791205 303 01 01 E7  X
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HELIOS-A YEAR 1979. LAUNCH TIME 140422264. 0.

DATE MM	DD	HH	MN	SC	HELIOS ECL.LONG	HELIOS =ECL.LAT	SUN-HELIOS DIST(A.U)	EARTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LAT(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
8	1	0	0	0	117.93	-0.01	0.96	1.09	31.95	117.93	1.22	0.003	0.01

8	3	0	0	0	117.71	-0.01	0.97	1.69	33.06	117.71	1.13	0.003	0.01
8	3	0	0	0	117.47	-0.01	0.97	1.69	33.06	117.47	1.04	0.002	0.01
8	4	0	0	0	117.24	-0.01	0.97	1.69	33.17	117.24	0.95	0.002	0.01
8	5	0	0	0	117.00	-0.01	0.97	1.69	33.25	117.00	0.86	0.002	0.01
8	6	0	0	0	116.75	-0.01	0.97	1.69	33.34	116.75	0.77	0.002	0.01
8	7	0	0	0	116.51	-0.01	0.98	1.69	33.43	116.51	0.68	0.002	0.01
8	8	0	0	0	116.26	-0.01	0.98	1.69	33.53	116.26	0.59	0.002	0.01
8	9	0	0	0	116.01	-0.01	0.98	1.69	33.63	116.01	0.50	0.001	0.01
8	10	0	0	0	115.76	-0.01	0.98	1.69	33.73	115.76	0.41	0.001	0.01
8	11	0	0	0	115.50	-0.01	0.98	1.69	33.84	115.50	0.33	0.001	0.01
8	12	0	0	0	115.24	-0.01	0.98	1.69	33.95	115.24	0.24	0.001	0.01
8	13	0	0	0	114.98	-0.01	0.98	1.68	34.06	114.98	0.15	0.001	0.01
8	14	0	0	0	114.72	-0.01	0.98	1.68	34.16	114.72	0.06	0.001	0.01
8	15	0	0	0	114.46	-0.01	0.98	1.68	34.30	114.46	-0.03	0.000	0.01
8	16	0	0	0	114.20	-0.01	0.98	1.68	34.42	114.20	-0.11	0.000	0.01
8	17	0	0	0	113.94	-0.01	0.98	1.67	34.55	113.94	-0.20	0.000	0.01
8	18	0	0	0	113.67	-0.01	0.98	1.67	34.68	113.67	-0.29	-.000	0.01
8	19	0	0	0	113.41	-0.00	0.98	1.67	34.81	113.41	-0.38	-.000	0.01
8	20	0	0	0	113.14	-0.00	0.98	1.67	34.95	113.14	-0.46	-.000	0.01
8	21	0	0	0	112.88	-0.00	0.98	1.66	35.08	112.88	-0.55	-.001	0.01
8	22	0	0	0	112.61	-0.00	0.98	1.66	35.22	112.61	-0.64	-.001	0.01
8	23	0	0	0	112.35	-0.00	0.98	1.66	34.35	112.35	-0.73	-.001	0.01
8	24	0	0	0	112.09	-0.00	0.98	1.65	34.55	112.09	-0.82	-.001	0.01
8	25	0	0	0	111.83	-0.00	0.98	1.65	34.05	111.83	-0.90	-.001	0.01
8	26	0	0	0	111.56	-0.00	0.98	1.65	34.83	111.56	-0.99	-.001	0.01
8	27	0	0	0	111.31	-0.00	0.98	1.64	34.99	111.31	-1.08	-.001	0.01
8	28	0	0	0	111.05	-0.00	0.98	1.64	35.15	111.05	-1.17	-.002	0.01
8	29	0	0	0	110.79	-0.00	0.97	1.63	35.31	110.79	-1.26	-.002	0.01
8	30	0	0	0	110.54	-0.00	0.97	1.63	35.47	110.54	-1.34	-.002	0.01
8	31	0	0	0	110.29	-0.00	0.97	1.63	35.64	110.29	-1.43	-.002	0.01
9	1	0	0	0	110.04	-0.00	0.97	1.62	35.81	110.04	-1.52	-.002	0.01
9	2	0	0	0	109.80	-0.00	0.97	1.62	35.98	109.80	-1.61	-.002	0.01
9	3	0	0	0	109.56	-0.00	0.96	1.61	36.15	109.56	-1.70	-.003	0.01
9	4	0	0	0	109.32	-0.00	0.96	1.61	36.32	109.32	-1.79	-.003	0.01
9	5	0	0	0	109.09	0.00	0.96	1.60	36.50	109.09	-1.88	-.003	0.01
9	6	0	0	0	108.86	0.00	0.95	1.60	36.68	108.86	-1.97	-.003	0.01
9	7	0	0	0	108.63	0.00	0.95	1.59	36.86	108.63	-2.06	-.003	0.01
9	8	0	0	0	108.41	0.00	0.95	1.59	37.04	108.41	-2.15	-.003	0.01
9	9	0	0	0	108.20	0.00	0.94	1.58	37.23	108.20	-2.24	-.004	0.01
9	10	0	0	0	107.99	0.00	0.94	1.58	37.42	107.99	-2.33	-.004	0.01
9	11	0	0	0	107.78	0.00	0.94	1.57	37.60	107.78	-2.42	-.004	0.01
9	12	0	0	0	107.58	0.00	0.93	1.57	37.79	107.58	-2.51	-.004	0.01
9	13	0	0	0	107.39	0.00	0.93	1.56	37.98	107.39	-2.60	-.004	0.01
9	14	0	0	0	107.20	0.00	0.93	1.55	38.18	107.20	-2.70	-.004	0.01
9	15	0	0	0	107.02	0.00	0.92	1.55	38.37	107.02	-2.79	-.005	0.01
9	16	0	0	0	106.85	0.00	0.92	1.54	38.57	106.85	-2.88	-.005	0.01
9	17	0	0	0	106.69	0.00	0.91	1.54	38.76	106.69	-2.97	-.005	0.01
9	18	0	0	0	106.53	0.00	0.91	1.53	38.96	106.53	-3.07	-.005	0.01
9	19	0	0	0	106.39	0.00	0.90	1.53	39.15	106.39	-3.16	-.005	0.01
9	20	0	0	0	106.25	0.01	0.89	1.52	39.35	106.25	-3.26	-.005	0.01
9	21	0	0	0	106.12	0.01	0.89	1.52	39.55	106.12	-3.35	-.006	0.01
9	22	0	0	0	106.00	0.01	0.88	1.51	39.75	106.00	-3.45	-.006	0.01
9	23	0	0	0	105.88	0.01	0.88	1.51	39.94	105.88	-3.54	-.006	0.01
9	24	0	0	0	105.78	0.01	0.87	1.50	40.14	105.78	-3.64	-.006	0.01
9	25	0	0	0	105.72	0.01	0.87	1.49	40.33	105.72	-3.74	-.006	0.01
9	26	0	0	0	105.65	0.01	0.86	1.49	40.53	105.65	-3.84	-.007	0.01
9	27	0	0	0	105.59	0.01	0.85	1.48	40.72	105.59	-3.93	-.007	0.01
9	28	0	0	0	105.55	0.01	0.85	1.47	40.91	105.55	-4.03	-.007	0.01
9	29	0	0	0	105.52	0.01	0.84	1.47	41.10	105.52	-4.13	-.007	0.01
9	30	0	0	0	105.51	0.01	0.83	1.46	41.29	105.51	-4.23	-.007	0.01
10	1	0	0	0	105.52	0.01	0.82	1.46	41.47	105.52	-4.33	-.007	0.01
10	2	0	0	0	105.54	0.01	0.82	1.45	41.65	105.54	-4.43	-.008	0.01
10	3	0	0	0	105.58	0.01	0.81	1.45	41.82	105.58	-4.53	-.008	0.01
10	4	0	0	0	105.64	0.01	0.80	1.44	41.99	105.64	-4.64	-.008	0.01
10	5	0	0	0	105.72	0.01	0.79	1.43	42.15	105.72	-4.74	-.008	0.01
10	6	0	0	0	105.83	0.01	0.78	1.43	42.31	105.83	-4.84	-.008	0.02
10	7	0	0	0	105.95	0.01	0.78	1.42	42.46	105.95	-4.94	-.009	0.02
10	8	0	0	0	106.10	0.01	0.77	1.42	42.60	106.10	-5.05	-.009	0.02
10	9	0	0	0	106.28	0.01	0.76	1.41	42.72	106.28	-5.15	-.009	0.02
10	10	0	0	0	106.49	0.01	0.75	1.41	42.85	106.49	-5.26	-.009	0.02
10	11	0	0	0	106.72	0.01	0.74	1.40	42.96	106.72	-5.36	-.009	0.02
10	12	0	0	0	106.98	0.01	0.73	1.40	43.06	106.98	-5.46	-.010	0.02
10	13	0	0	0	107.28	0.01	0.72	1.39	43.14	107.28	-5.57	-.010	0.02
10	14	0	0	0	107.61	0.01	0.71	1.39	43.20	107.61	-5.67	-.010	0.02
10	15	0	0	0	107.98	0.02	0.70	1.38	43.25	107.98	-5.78	-.010	0.02
10	16	0	0	0	108.38	0.02	0.69	1.38	43.28	108.38	-5.88	-.010	0.02
10	17	0	0	0	108.83	0.02	0.68	1.38	43.29	108.83	-5.99	-.011	0.02

HELIOS-A YEAR 1979. LAUNCH-TIME 153078552. 0.

DATE	HELIOS	HELIOS	SUN-HELIOS	ERTH-HELIOS	EARTH-HELIOS	HELIOS-SUN	HELIOS	HELIOS-V(A.U/DAY)

MN	DD	HR	MN	SC	ECL.LONG	ECL.LAT	DIST(A.U)	DIST(A.U)	SUN(DEG)	EARTH(DEG)	HEL-LET(DEG)	RADIAL	NORMAL
10	18	0	0	0	105.33	0.02	0.67	1.37	43.27	105.33	-6.09	-.011	0.02
10	19	0	0	0	109.67	0.02	0.66	1.37	43.22	109.67	-6.19	-.011	0.02
10	20	0	0	0	110.46	0.02	0.65	1.36	43.15	110.46	-6.29	-.011	0.02
10	21	0	0	0	111.11	0.02	0.63	1.36	43.04	111.11	-6.39	-.011	0.02
10	22	0	0	0	111.82	0.02	0.62	1.36	42.90	111.32	-6.49	-.012	0.02
10	23	0	0	0	112.59	0.02	0.61	1.35	42.71	112.59	-6.59	-.012	0.02
10	24	0	0	0	113.43	0.02	0.60	1.35	42.48	113.43	-6.68	-.012	0.02
10	25	0	0	0	114.35	0.02	0.59	1.35	42.20	114.35	-6.77	-.012	0.02
10	26	0	0	0	115.34	0.02	0.58	1.35	41.87	115.34	-6.85	-.012	0.02
10	27	0	0	0	116.42	0.02	0.57	1.34	41.48	116.42	-6.93	-.012	0.02
10	28	0	0	0	117.59	0.02	0.55	1.34	41.02	117.59	-7.00	-.013	0.02
10	29	0	0	0	118.86	0.02	0.54	1.34	40.49	118.86	-7.07	-.013	0.02
10	30	0	0	0	120.24	0.02	0.53	1.34	39.87	120.24	-7.12	-.013	0.02

END OF FILE ON OREIT TAPE

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IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   MZ.PWIC.SC002.LOAD                          KEPT          DDNAME=SYSLIB  -1          0 EXCPS
IEF285I   VOL SER NOS= DISK1E.
IEF285I   SYS2.DEBUGCONV                              KEPT          DDNAME=SYSLIB  -2         17 EXCPS
IEF285I   VOL SER NOS= M2SYS2.
IEF285I   SYS1.FORTLIB                                KEPT          DDNAME=SYSLIB  -3         89 EXCPS
IEF285I   VOL SER NOS= K3ITL0.
IEF285I   SYS2.FORTLIB                                KEPT          DDNAME=SYSLIB  -4          0 EXCPS
IEF285I   VOL SER NOS= K3ITLC.
IEF285I   SYS1.PLI1LIB                                KEPT          DDNAME=SYSLIB  -5          0 EXCPS
IEF285I   VOL SER NOS= K3ITLE.
IEF285I   SYS1.FORTSOP                                KEPT          DDNAME=SYSLIB  -6          0 EXCPS
IEF285I   VOL SER NOS= K3ITLS.
IEF285I   SYS80023.T155736.SV000.ZBJENCA4.R0000115    SYSOUT        DDNAME=SYSLOUT             1 EXCPS
IEF285I   VOL SER NOS= SCR001.
IEF285I   MZ.ZBRTC.SC002.LOAD                         KEPT          DDNAME=SYSLIN  -1          7 EXCPS
IEF285I   VOL SER NOS= DISK1E.
IEF285I   SYS80023.T155736.SV000.ZBJENCA4.R0000122    SYSIN         DDNAME=FT05F001            2 EXCPS
IEF285I   VOL SER NOS= SCR000.
IEF285I   SYS80023.T155736.SV000.ZBJENCA4.R0000122    DELETED       DDNAME=FT05F001            2 EXCPS
IEF285I   VOL SER NOS= SCR006.
IEF285I   SYS80023.T155736.SV000.ZBJENCA4.R0000116    SYSOUT        DDNAME=FT06F001            2 EXCPS
IEF285I   VOL SER NOS= SCR000.
IEF285I   SYS80023.T155736.SV000.ZBJENCA4.R0000117    DELETED       DDNAME=FT07F001            0 EXCPS
IEF285I   VOL SER NOS= SCR001.
IEF285I   SYS80023.T155736.SV000.ZBJENCA4.R0000118    DELETED       DDNAME=SYSPRINT            0 EXCPS
IEF285I   VOL SER NOS= M2SCR6.
IEF285I   SYS80023.T155736.SV000.ZBJENCA4.R0000119    DELETED       DDNAME=SYSTERM             0 EXCPS
IEF285I   VOL SER NOS= SCR000.
IEF285I   SYS80023.T155736.SV000.ZBJENCA4.R0000120    DELETED       DDNAME=SYSUDUMP            0 EXCPS
IEF285I   VOL SER NOS= SCR001.
IEF285I   SYS80023.T155736.SV000.ZBJENCA4.R0000121    KEPT          DDNAME=GENTAP          2,189 EXCPS
IEF285I   VOL SER NOS= DRA47 .
IEF285I K 001,DRA47 ,ZBJENCA4,JE
IEF373I STEP /GO      / START 80023.1843
IEF374I STEP /GO      / STOP  80023.1847 CPU    0MIN 06.49SEC MAIN 200K LCS    0K
- STEP 01 -        RETURN CODE = 0000                                STEP TIME =      .61 MINS=(CPU=      .14,IO=      .47)
                                        IO IN SECS. DISK=     6.69,DRUM=      .00,TAPE=    21.93,CELL=      .00,OTHR=      .18
- SURCHARGES=(DRIVES ALOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=00000)SECS.    TOTAL STP TIME=      .61 MINS.  -
      // EXEC NOTIFYTS                                                    00000010
      XXDEFAULT  PROC MODE=,LSRID=,MSG=,LSUPID=,IO=   *LAF/21JUN79       00000020
      XXNOTIFYTS EXEC PGM=NOTIFYTS,COND=(0,GT),PARM=(OK,COND=EVEN,       00000030
      XX          PARM='DMODE,&LSRID&USERID&IO,&MSG'
      IEF653I SUBSTITUTION JCL - PARM='..'
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF373I STEP /NOTIFYTS/ START 80023.1847
IEF374I STEP /NOTIFYTS/ STOP  80023.1847 CPU    0MIN 00.00SEC MAIN   8K LCS    0K
- STEP 02 -        RETURN CODE = 0000                                STEP TIME =      .00 MINS=(CPU=      .00,IO=      .00)
                                        IO IN SECS. DISK=      .12,DRUM=      .00,TAPE=      .00,CELL=      .00,OTHR=      .04
- SURCHARGES=(DRIVES ALOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=00000)SECS.    TOTAL STP TIME=00000.00 MINS.  -
IEF375I  JOB /ZBJENCA4/ START 80023.1843
IEF376I  JOB /ZBJENCA4/ STOP  80023.1847 CPU    0MIN 08.49SEC
- SYSTEM=HEL41.OF (10-15-78) MS                                                    TIME=18.47.23.10 DATE=01-23-80
- JOB 1510-                                                 TOTAL TIME =      .61 MINS=(CPU=      .14,IO=      .47)
                                        IO IN SECS. DISK=     6.69,DRUM=      .00,TAPE=    21.93,CELL=      .00,OTHR=      .23
- SURCHARGES=(DRIVES ALOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=00000)SECS.    TOTAL JOB TIME=      .61 MINS.  -
 THERE WERE 01 TAPES MOUNTED FOR THIS JOB. TAPE MOUNT CHARGE WAS 00.0 MINUTES.
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********** 188 ********** 188 **********

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JOBNAME-
      ZZZZZZZZZZZZ  8883868 8          JJJJJJ  EEEEEEEEEEEE  NN        NN  OOOOOOOOOO        AA        555555555555
      ZZZZZZZZZZZZ  8888888888         JJJJJJ  EEEEEEEEEEEE  NNN       NN  OOOOOOOOOOOO      AA        555555555555
            ZZ      88        88           JJ  EE            NNNN      NN  OO        OO      AAAA      55
           ZZ       88        88           JJ  EE            NN NN     NN  OO        OO      AAAA      55
          ZZ        88        88           JJ  EE            NN  NN    NN  OO        OO     AA  AA     55
         ZZ         88888888               JJ  EEEEEEEE      NN   NN   NN  OO        OO     AA  AA     55555555555
        ZZ          88888888               JJ  EEEEEEEE      NN    NN  NN  OO        OO    AA    AA    555555555555
       ZZ           88        88           JJ  EE            NN     NN NN  OO        OO    AAAAAAAA            55
      ZZ            88        88           JJ  EE            NN      NNNN  OO        OO   AAAAAAAAAA           55
     ZZ             88        88  JJ       JJ  EE            NN       NNN  OO        OO   AA      AA   55      55
    ZZ              88        88  JJ       JJ  EE            NN        NN  OOOOOOOOOOOO  AA        AA  555555555555
   ZZZZZZZZZZZZ     88888888888    JJJJJJJJ    EEEEEEEEEEEE  NN        NN  OOOOOOOOOOOO  AA        AA  555555555555
  ZZZZZZZZZZZZ      8888888888      JJJJJJ     EEEEEEEEEEEE  NN        NN  OOOOOOOOOOOO  AA        AA  555555555555

BOX-                                                  SACC 360/91      READER NUMBER-PC628          CLASS-
      888888888     FFFFFFFFFFFF    33333333                                                          AA
      888888888     FFFFFFFFFFFF   3333333333                                                         AA
      88        88  FF            33        33                                                        AAAA
      88        88  FF                      33                                                        AAAA
      88        88  FF                      33                                                       AA  AA
      888888888     FFFFFFFF           33333                                                        AA  AA
      888888888     FFFFFFFF           33333                                                       AA    AA
      88        88  FF                      33                                                      AAAAAAAA
      88        88  FF                      33                                                     AAAAAAAAAA
      88        88  FF            33        33                                                     AA      AA
      888888888     FF             3333333333                                                     AA      AA
      888888888     FF              33333333
```

ORA48

ORA48

11/1/79-11/30/79

11/1/79-11/30/79

NUMBER 188 ON 00E-Z1WDHCDN/C52 ZMJSPHR1/B18 SDHELCA2/BF3 SDHELCA3/BF3 ZBJENGA5/BF3 AT 18:54:44 WED 23 JAN 80

```
X/SYSLIN DD DSN=&OBJMOD,DISP=(OLD,DELETE)                          00000130
XX DD DDNAME=OBJECT                                                00000140
XXFT05F001 DD DDNAME=DATA5                                         00000150
XXFT06F001 DD  SYSOUT=&OUT,DCB=(RECFM=VBA,LRECL=137,BLKSIZE=6BLKSIZE),  00000160
IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(RECFM=VBA,LRECL=137,BLKSIZE=7265),
XX SPACE=(CYL,(2,2))                                               00000140
XXFT07F001 DD SYSOUT=B,DCB=(RECFM=FB,LRECL=80,BLKSIZE=7280),       00000150
XX SPACE=(CYL,(0,1))                                               00000160
XXSYSPRINT DD SYSOUT=&OUT,UNIT=(2314,3),SPACE=(CYL,(),2)),         00000170
IEF653I SUBSTITUTION JCL - SYSOUT=A,UNIT=(2314,3),SPACE=(CYL,(0,2)),
XX DCB=(RECFM=VBA,LRECL=137,BLKSIZE=6BLKSIZE)                      00000180
IEF653I SUBSTITUTION JCL - DCB=(RECFM=VBA,LRECL=137,BLKSIZE=7265)
XXSYSTERM DD SYSOUT=&TERMOUT                                       00000190
IEF653I SUBSTITUTION JCL - SYSOUT=A
//SYSUDUMP DD SYSOUT=A
X/SYSUDUMP DD SYSOUT=A,SPACE=(CYL,(0,5))                           00000200
//GO.GENTAP DD UNIT=(7TRACK,,DEFER),
//    VOL=SER=ORTAPE,LABEL=(,NL,,IN),DISP=(OLD,KEEP),
//    DCB=(RECFM=U,BLKSIZE=1944,DEN=2)
//DATA5 DD *
IEF244I ZBJENDA5.GO      .GENTAP  UNABLE TO ALLOCATE
IEF247I ZBJENDA5 ALLOCATION RECOVERY
IEF247I ZBJENDA5 DC2,DC7,DDC DEFLINE
IEF238A REPLY DEVICE NAME , 'WAIT', OR 'CANCEL'
IEF236I ALLOC. FOR ZBJENDA5 GO
IEF237I 323   ALLOCATED TO SYSLIB
IEF237I 330   ALLOCATED TO
IEF237I 451   ALLOCATED TO
IEF237I 451   ALLOCATED TO
IEF237I 244   ALLOCATED TO
IEF237I 244   ALLOCATED TO
IEF237I 450   ALLOCATED TO SYSLOUT
IEF237I 323   ALLOCATED TO SYSLIN
IEF237I 450   ALLOCATED TO FT05F001
IEF237I 452   ALLOCATED TO FT06F001
IEF237I 450   ALLOCATED TO FT07F001
IEF237I 212   ALLOCATED TO SYSPRINT
IEF237I 232   ALLOCATED TO SYSPRINT
IEF237I 233   ALLOCATED TO SYSPRINT
IEF237I 452   ALLOCATED TO SYSTERM
IEF237I 450   ALLOCATED TO SYSUDUMP
IEF237I DDO   ALLOCATED TO GENTAP
```

```
                                        OS/360 LOADER
OPTIONS USED - PRINT,MAP,NOLET,CALL,RES,NOTERM,SIZE=(80224,4096)*,GO
               EP=ORBIT

   NAME    TYPE  ADDR      NAME    TYPE  ADDR      NAME    TYPE  ADDR      NAME    TYPE  ADDR      NAME    TYPE  ADDR
ORBIT        SD 265319  CNVRTSCT*  SD 265E7D  CNVRT    *  LR 265E7D  DBGEN    *  SD 266198  DBFEOV   *  LR 266358
FREAD     *  SD 266560  FREADB  *  LR 266788  F#FITE   *  LR 26687C  REWIND   *  LR 266A82  LEAVE    *  LR 266B65
UNLOAD    *  LR 256C1A  PCSN    *  LR 256D33  MOUNT    *  LR 266F50  MEMBER   *  LR 267132  FTRAP    *  LR 267222
FALLOW    *  LR 2672A0  FUNITABL*  SD 268260  FPL1     *  SD 253323  FDONLIST*  SD 268330  FERMSG   *  SD 268338
IHCNAMEL*    SD 2683A0  FRONL#  *  LR 2683A0  F#FNL#   *  LR 2639A4  IHCECOMH*  SD 268E7D  IBCCM#   *  LR 268E7D
FDIOCS#   *  LR 268F2C  INTSWTCH*  LR 269DB6  IHCCOMM2*  SD 26A118  SEQCASD   *  LR 26A150  FTF      *  SD 26A439
ITISECT   *  SD 26A4E8  ITI     *  LR 26A4E8  FXFLT    *  SD 26A540  FIXFLT   *  LR 26A540  TRNSLTE  *  SD 26A588
TRANS     *  LR 26A538  BITST   *  LR 26A6A0  CNTGOAT1*  LR 26A6A8  DTSUN    *  SD 26A7C8  IHCFCVTH*  SD 26A898
ADCON#    *  LR 26AB98  FCVADJTP*  LR 26A942  FCVLCJTP*  LR 26A942  FCVZCUTP*  LR 26A3C2  FCVICUTP*  LR 26AED0
FCVEOJTP*    LR 26B3D2  FCVCOJTP*  LR 26B5DC  INT6S#C4*  LR 26B3B3  IHCEFIOS*  SD 26DA78  FIOCS#   *  LR 26BA39
FIOCSBKP*    LR 26BA3C  IHCEFIOS2*  SD 26C960  IHCLR#A *  SD 26C960  FRFMON   *  LR 26CE9C  IHCFFRF  *  LR 26CFA3
IHCEFNTH*    SD 26D468  ASITH#  *  LR 26D468  ADJSWTC4*  LR 26D9C4  IHCUCPT   *  SD 26E9D7  IHCUAFPL*  SD 26DCD8
IHCETRCH*    SD 26E210  IHCTRCH *  LR 26E210  ERRTRA  *  LR 26E31B

TOTAL LENGTH     9590
ENTRY ADDRESS 265319
```

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                    SATID   HELIOS-A        OORBIT TAPE #=OR133
          7409701 ORB            79 305 000000 324 000000 0013 01 800115 315 31 01 E7  X

                    HELIOS-A          YEAR 1979.          ADJUST TIME  154371064.  0.
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DATE MM	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(AU)	EARTH-HELIOS DIST(AU)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LAT(DEG)	HELIOS-V(AU/DAY) RADIAL	NORMAL
11	1	0	0	0	123.37	0.02	0.50	1.24	39.37	123.37	-7.2)	-.013	0.32

```
11  2  0  0  0   125.14   0.02   0.49   1.33   37.46   125.14   -7.22   -.013   0.02
11  3  0  0  0   127.35   0.02   0.47   1.33   36.43   127.06   -7.22   -.013   0.02
11  4  0  0  0   129.14   0.02   0.46   1.33   35.26   129.14   -7.21   -.013   0.03
11  5  0  0  0   131.43   0.02   0.45   1.33   33.96   131.40   -7.15   -.013   0.03
11  6  0  0  0   133.85   0.02   0.44   1.33   32.40   133.66   -7.09   -.013   0.03
11  7  0  0  0   136.52   0.02   0.42   1.33   30.84   136.52   -6.99   -.013   0.03
11  8  0  0  0   139.42   0.02   0.41   1.33   29.00   139.42   -6.85   -.013   0.03
11  9  0  0  0   142.55   0.02   0.40   1.33   26.95   142.56   -6.66   -.012   0.03
11 10  0  0  0   145.96   0.02   0.39   1.33   24.68   145.96   -6.43   -.012   0.03
11 11  0  0  0   149.64   0.02   0.37   1.33   22.16   149.64   -6.14   -.011   0.03
11 12  0  0  0   153.61   0.02   0.36   1.33   19.39   153.61   -5.78   -.011   0.03
11 13  0  0  0   157.89   0.02   0.35   1.32   16.35   157.89   -5.36   -.010   0.03
11 14  0  0  0   162.47   0.02   0.34   1.32   13.04   162.47   -4.85   -.009   0.03
11 15  0  0  0   167.35   0.02   0.32   1.32   9.46   167.35   -4.29   -.008   0.04
11 16  0  0  0   172.53   0.02   0.33   1.31   5.61   172.53   -3.64   -.007   0.04
11 17  0  0  0   177.98   0.02   0.32   1.31   1.52   177.98   -2.91   -.006   0.04
11 18  0  0  0   183.66   0.01   0.32   1.30   2.78   176.34   -2.13   -.004   0.04
11 19  0  0  0   189.53   0.01   0.31   1.30   7.25   171.47   -1.29   -.003   0.04
11 20  0  0  0   195.52   0.01   0.31   1.29   11.83   164.48   -0.41   -.001   0.04
11 21  0  0  0   201.56   0.00   0.31   1.28   16.47   158.44   0.48   0.000   0.04
11 22  0  0  0   207.59   0.00   0.31   1.27   21.09   152.41   1.35   0.002   0.04
11 23  0  0  0   213.52   -0.00   0.31   1.26   25.63   146.48   2.20   0.004   0.04
11 24  0  0  0   219.33   -0.00   0.32   1.25   30.03   140.70   3.03   0.005   0.04
11 25  0  0  0   224.87   -0.01   0.32   1.24   34.25   135.15   3.73   0.006   0.04
11 26  0  0  0   231.19   -0.01   0.33   1.23   38.23   129.81   4.39   0.008   0.04
11 27  0  0  0   235.23   -0.01   0.34   1.21   41.96   124.77   4.97   0.009   0.03
11 28  0  0  0   239.96   -0.01   0.35   1.20   45.42   120.04   5.47   0.010   0.03
11 29  0  0  0   244.39   -0.02   0.36   1.19   48.60   115.61   5.89   0.010   0.03
11 30  0  0  0   248.31   -0.02   0.37   1.17   51.55   111.69   6.24   0.011   0.03

END OF FILE ON ORBIT TAPE
```

```
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   M2.ZBRTC.SDC02.LOAD                          KEPT     DDNAME=SYSLIB  -1        1 EXCPS
IEF285I   VOL SER NOS= DISK15.                         KEPT     DDNAME=SYSLIB  -2       17 EXCPS
IEF285I   SYS2.DEBLKUNV                                KEPT     DDNAME=SYSLIB  -3       89 EXCPS
IEF285I   VOL SER NOS= M2SYS2.
IEF285I   SYS1.FORTLIB                                 KEPT     DDNAME=SYSLIB  -4        1 EXCPS
IEF285I   VOL SER NOS= K3ITL0.
IEF285I   SYS2.FORTLIB                                 KEPT     DDNAME=SYSLIB  -5        3 EXCPS
IEF285I   VOL SER NOS= K3ITL0.
IEF285I   SYS1.PL1LIB                                  KEPT     DDNAME=SYSLIB  -6        3 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS1.FORTSSP                                 KEPT     DDNAME=SYSLIB  -6        3 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS80023.T155736.SV000.ZBJENOA5.R0000134     SYSOUT   DDNAME=SYSLOUT          1 EXCPS
IEF285I   VOL SER NOS= SCR000.
IEF285I   M2.ZBRTC.SDC02.LOAD                          KEPT     DDNAME=SYSLIN  -1        7 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS80023.T155736.RV000.ZBJENOA5.S0000141     SYSIN    DDNAME=FT05F001          2 EXCPS
IEF285I   VOL SER NOS= SCR000.
IEF285I   SYS80023.T155736.RV000.ZBJENOA5.S0000141     DELETED  DDNAME=FT05F001          2 EXCPS
IEF285I   VOL SER NOS= SCR000.
IEF285I   SYS80023.T155736.SV000.ZBJENOA5.R0000135     SYSOUT   DDNAME=FT06F001          1 EXCPS
IEF285I   VOL SER NOS= SCR001.
IEF285I   SYS80023.T155736.SV000.ZBJENOA5.R0000136     DELETED  DDNAME=FT07F001          0 EXCPS
IEF285I   VOL SER NOS= SCR000.
IEF285I   SYS80023.T155736.SV000.ZBJENOA5.R0000137     DELETED  DDNAME=SYSPRINT          0 EXCPS
IEF285I   VOL SER NOS= M2SCR0.
IEF285I   SYS80023.T155736.SV000.ZBJENOA5.R0000138     DELETED  DDNAME=SYSTERM           0 EXCPS
IEF285I   VOL SER NOS= SCR001.
IEF285I   SYS80023.T155736.SV000.ZBJENOA5.R0000139     DELETED  DDNAME=SYSJDUMP          0 EXCPS
IEF285I   VOL SER NOS= SCR000.
IEF285I   SYS80023.T155736.RV000.ZBJENOA5.R0000140     KEPT     DDNAME=GENTAP         702 EXCPS
IEF285I   VOL SER NOS= DFA48 .
IEF236I K 000.DRA48 .ZBJENOA5.GO
IEF373I STEP /GO      / START 80023.1844
IEF374I STEP /GO      / STOP  80023.1846 CPU    0MIN 12.95SEC  MAIN 200K LCS    0K
                                                                STEP TIME =      .26 MINS.(CPU=      .04,IO=      .22)
- STEP 01 -     RETURN CODE = 0000          IO IN SECS. DISK=      6.51,DRUM=      .01,TAPE=      7.75,CELL=      .00,DTHR=      .18
                                                                                                  TOTAL STEP TIME=      .26 MINS.
- SURCHARGES=(DRIVES ALSO=000,TAPE MOUNTS=000,CORE=000,PAPER=000),PRIORITY=0000)SECS:
      // EXEC NOTIFYTS                                                                  00200010
      XXDEFAULT  PROC MODE=,USRID=,MSG=,USERID=,ID=  *LAR/21JJ179                       00000020
      XXNOTIFYTS EXEC PGM=NOTIFYTS,REGION=20K,COND=EVEN,                                00000030
      XX         PARM='&MODE,&USRID,&USERID,&MSG'                                       00000040
      IEF653I SUBSTITUTION JCL - PARM='..'
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF373I STEP /NOTIFYTS/ START 80023.1846
IEF374I STEP /NOTIFYTS/ STOP  80023.1846 CPU    0MIN 00.00SEC  MAIN    8K LCS    0K
```

JOBNAME-

SACC 360/75 READER NUMBER-P0124 CLASS-

BCX-

ORA49

12/1/79 - 12/31/79

NUMBER 6 ON 00F-SOEFPMC2/X11 SDHELHL7/BF3 SEICCOPT/BF3 ZBJHBOA7/BF3 ZBJHBOA8/BF3 AT 12.30.58 MON 25 FEB 80

```
      XXFT07F001 DD SYSOUT=B,DCB=(RECFM=FB,BLKSIZE=7280,LRECL=80)          00000160
      XXSYSPRINT DD SYSOUT=EOUT,DCB=(BLKSIZE=69LKSIZE,LRECL=137,RECFM=VBA),  00000170
      IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(BLKSIZE=7265,LRECL=127,RECFM=VBA),
      XX              SPACE=(CYL,(0,1)),UNIT=(DISK,2)                      00000180
      XXSYSTERM  DD  SYSOUT=STERMOUT                                       00000190
      IEF653I SUBSTITUTION JCL - SYSOUT=A
      //SYSUDUMP DD SYSOUT=A
      XXSYSUDUMP DD SYSOUT=A,SPACE=(CYL,(0,5))                             00000200
      //GL.GENTAP DD UNIT=(7TRACK,,DEFER),
      //     VOL=SER=OKTABL,LABEL=(,NL,,IN),DISP=(OLD,KEEP),
      //     DCB=(RECFM=U,BLKSIZE=1544,DEN=2)
      //DATAS DD *
IEF236I ALLOC. FOR ZOJMBOAB GO
IEF237I 333    ALLOCATED TO SYSL18
IEF237I 220    ALLOCATED TO
IEF237I 451    ALLOCATED TO
IEF237I 231    ALLOCATED TO
IEF237I 244    ALLOCATED TO
IEF237I 244    ALLOCATED TO
IEF237I 220    ALLOCATED TO
IEF237I 231    ALLOCATED TO
IEF237I 336    ALLOCATED TO SYSLOUT
IEF237I 333    ALLOCATED TO SYSLIN
IEF237I 335    ALLOCATED TO FT05F001
IEF237I 336    ALLOCATED TO FT06F001
IEF237I 336    ALLOCATED TO FT07F001
IEF237I 336    ALLOCATED TO SYSPRINT
IEF237I 232    ALLOCATED TO SYSPRINT
IEF237I 236    ALLOCATED TO SYSPRINT
IEF237I 335    ALLOCATED TO SYSTERM
IEF237I 336    ALLOCATED TO SYSUDUMP
IEF237I 000    ALLOCATED TO GENTAP
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                                        CS/360 LOADER

OPTIONS USED - PRINT,MAP,NOLET,CALL,RES,NOTERM,SIZE=194560,NAME=**GO
               EP=ORBIT

     NAME   TYPE  ADDR        NAME   TYPE  ADDR        NAME   TYPE  ADDR        NAME   TYPE  ADDR        NAME   TYPE  ADDR

  ORBIT       SD  5AC10    CNVRTSCT*  SD  5AE70    CNVRT    *  LR  5AE70    DBGEN    *  SD  58198    DBFEOV   *  LR  58358
  FREAD    *  SD  58560    FREADB   *  LR  63784    FWRITE   *  LR  5067C    RESIND   *  LR  58A82    LEAVE    *  LR  58B66
  UNLOAD   *  LR  58C1A    POSN     *  LR  58D30    MCUNT    *  LR  58F50    MLMBER   *  LR  5C132    FTRAP    *  LR  5C222
  FALLS*   *  LR  5C2A0    FUNITABL*  SD  5D260    FPL1     *  SD  5D328    FDONLIST*  SD  5D330    FERMSG   *  SD  5D338
  IHCIAMEL*  SD  5DCA0    FRONL*   *  LR  5D2A0    FWRNL*   *  LR  5T9A4    IHCECOMH*  SD  5DE70    IBCOM#   *  LR  5DE70
  FOIOCS*  *  LR  5DF2C    INTSWTCH*  LR  5E0B6    IHCCOMH2*  SD  5FDD8    SEQDASD  *  LR  5F150    FTF      *  SD  5F438
  ITISECT  *  SD  5F4B8    ITI      *  LR  5F4L8    FXFLT    *  SD  5F540    FIXFLT   *  LR  5F540    TRNSLTE  *  SD  5F588
  TRANS    *  LR  5F588    BITST    *  SD  5F698    CNTGDATA*  LR  5F698    DTDUN    *  SD  5F7C8    IHCFCVTH*  SD  5F898
  ADCON#   *  LR  5F898    FCVACJTP*  LR  5F942    FCVLCUTP*  LR  5F9D2    FCVZOUTP*  LR  5FB22    FCVIOUTP*  LR  5FED0
  FCVEOUTP*  LR  60DD2    FCVECUTP*  LR  60EEC    INTOS*CH*  LR  60BD3    IHCEFIOS*  SD  60A38    FIOCS*   *  LR  60A38
  FIOCOBEP*  LR  60A38    IHCFIOS2*  SD  61960    IHCERRM  *  SD  61E90    ERRMON   *  LR  61C90    IHCERRE  *  LR  61EA8
  IHCCFNTH*  SD  62468    ARITH#   *  LR  62468    ADJSWTCH*  LR  62B34    IHCJOPT  *  SD  62980    IHCOATBL*  SD  62CD8
  IHCCTECH*  SD  63210    IHCTRCH  *  LR  63310    ERRTRA   *  LR  63318

  TOTAL LENGTH    9590
  ENTRY ADDRESS  5A010

                    SATID   HELIOS-A        ORBIT TAPE #=CRA49
        7409701 ORB              79 335 000000 365 000000 0038 01 800208 038 01 01 E7  X

                    HELIOS-A          YEAR 1979.          LAUNCH TIME  156963064.   0.
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DATE MM	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	EARTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LET(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
12	1	0	0	0	252.33	-0.02	0.38	1.16	54.14	107.67	6.53	0.012	0.03
12	2	0	0	0	255.86	-0.02	0.39	1.13	56.51	104.14	6.75	0.012	0.03
12	3	0	0	0	259.12	-0.02	0.40	1.13	58.64	100.88	6.93	0.012	0.03
12	4	0	0	0	262.13	-0.02	0.42	1.12	60.55	97.87	7.05	0.013	0.03
12	5	0	0	0	264.90	-0.02	0.43	1.11	62.24	95.10	7.14	0.013	0.03
12	6	0	0	0	267.45	-0.02	0.44	1.10	63.73	92.55	7.20	0.013	0.03
12	7	0	0	0	269.80	-0.03	0.46	1.09	65.04	90.20	7.22	0.013	0.03
12	8	0	0	0	271.96	-0.02	0.47	1.08	66.19	88.04	7.22	0.013	0.03
12	9	0	0	0	273.95	-0.02	0.48	1.07	67.18	86.05	7.21	0.013	0.02
12	10	0	0	0	275.77	-0.02	0.49	1.06	68.03	84.23	7.17	0.013	0.02
12	11	0	0	0	277.46	-0.02	0.51	1.05	68.76	82.54	7.12	0.013	0.02

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12 12  0  0  0   279.00   -0.02   0.52   1.04   69.37   81.00   7.05   0.013   0.02
12 13  0  0  0   280.43   -0.02   0.53   1.03   69.87   79.57   6.98   0.013   0.02
12 14  0  0  0   281.73   -0.02   0.55   1.02   70.28   78.27   6.90   0.013   0.02
12 15  0  0  0   282.94   -0.02   0.56   1.02   70.60   77.06   6.81   0.012   0.02
12 16  0  0  0   284.04   -0.02   0.57   1.01   70.84   75.96   6.72   0.012   0.02
12 17  0  0  0   285.06   -0.02   0.58   1.01   71.00   74.94   6.62   0.012   0.02
12 18  0  0  0   285.99   -0.02   0.59   1.00   71.10   74.01   6.51   0.012   0.02
12 19  0  0  0   286.85   -0.02   0.61   1.00   71.14   73.15   6.41   0.012   0.02
12 20  0  0  0   287.63   -0.02   0.62   0.99   71.12   72.37   6.30   0.012   0.02
12 21  0  0  0   288.35   -0.02   0.63   0.99   71.06   71.65   6.19   0.011   0.02
12 22  0  0  0   289.00   -0.02   0.64   0.98   70.95   71.00   6.08   0.011   0.02
12 23  0  0  0   289.60   -0.02   0.65   0.98   70.80   70.40   5.97   0.011   0.02
12 24  0  0  0   290.14   -0.02   0.66   0.98   70.62   69.86   5.85   0.011   0.02
12 25  0  0  0   290.63   -0.02   0.67   0.98   70.40   69.37   5.74   0.011   0.02
12 26  0  0  0   291.08   -0.02   0.68   0.98   70.16   68.92   5.62   0.010   0.02
12 27  0  0  0   291.48   -0.02   0.70   0.97   69.89   68.52   5.51   0.010   0.02
12 28  0  0  0   291.84   -0.02   0.71   0.97   69.59   68.16   5.40   0.010   0.02
12 29  0  0  0   292.16   -0.02   0.72   0.97   69.28   67.84   5.28   0.010   0.02
12 30  0  0  0   292.45   -0.02   0.73   0.97   68.95   67.55   5.17   0.010   0.02
12 31  0  0  0   292.70   -0.02   0.73   0.97   68.61   67.30   5.05   0.009   0.02

END OF FILE ON ORBIT TAPE

IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   M2.ZBRTC.S00002.LCAD                    KEPT      DDNAME=SYSLIB  -1      0 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS2.DIBLKUNV                           KEPT      DDNAME=SYSLIB  -2     17 EXCPS
IEF285I   VOL SER NOS= M2SYS2.
IEF285I   SYS1.FORTLIB                            KEPT      DDNAME=SYSLIB  -3     61 EXCPS
IEF285I   VOL SER NOS= K3ITL0.
IEF285I   SYS2.FORTLIB                            KEPT      DDNAME=SYSLIB  -4     29 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SYS1.PLILIB                             KEPT      DDNAME=SYSLIB  -5      0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS1.FORTSSP                            KEPT      DDNAME=SYSLIB  -6      0 EXCPS
IEF285I   VOL SER NOS= K3ITL5.
IEF285I   SYS2.CODLIB                             KEPT      DDNAME=SYSLIB  -7      0 EXCPS
IEF285I   VOL SER NOS= M2SYS1.
IEF285I   SYS1.ALGLIB                             KEPT      DDNAME=SYSLIB  -8      0 EXCPS
IEF285I   VOL SER NOS= K3SYS2.
IEF285I   SYS80056.T121947.SV000.ZBJHBCA8.R0000001  SYSOUT  DDNAME=SYSLOUT        1 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   M2.ZBRTC.S00002.LCAD                    KEPT      DDNAME=SYSLIN  -1      7 EXCPS
IEF285I   VOL SER NOS= DISK15.
IEF285I   SYS80056.T121947.SV000.ZBJHBCA8.S0000008  SYSIN   DDNAME=FT05F001        2 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80056.T121947.SV000.ZBJHBCA8.S0000009  DELETED DDNAME=FT05F001        2 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80056.T121947.SV000.ZBJHBCA8.R0000002  SYSOUT  DDNAME=FT06F001        1 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS80056.T121947.SV000.ZBJHBCA8.R0000003  DELETED DDNAME=FT07F001        0 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS80056.T121947.SV000.ZBJHBCA8.R0000004  DELETED DDNAME=SYSPRINT        0 EXCPS
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS80056.T121947.SV000.ZBJHBCA8.R0000005  DELETED DDNAME=SYSTERM         0 EXCPS
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS80056.T121947.SV000.ZBJHBCA8.R0000006  DELETED DDNAME=SYSUDUMP        0 EXCPS
IEF285I   VOL SER NOS= K2SCR5.
IEF285I   SYS80056.T121947.SV000.ZBJHBCA8.R0000007  KEPT    DDNAME=GENTAP         726 EXCPS
IEF285I   VOL SER NOS= UFA49 .
IEF285I   VOL SER NOS= UFA49 .
IEF236I K DCD.OFA49 .ZBJHBCA8.GO
IEF373I STEP /GO      / START 80056.1220
IEF374I STEP /GO      / STOP  80056.1230 CPU    0MIN 12.94SEC MAIN 200K LCS    0K
- STEP 01 -      RETURN CODE = 0000                    STEP TIME =      .51 MINS=(CPU=      .21.IO=      .30)
                                   IO IN SECS. DISK=    11.12.DRUM=      .00.TAPE=    7.30.CELL=      .00.OTHR=      .16
- SURCHARGES=(DRIVES ALOC=000.TAPE MOUNTS=000.CORE=000.PAPER=000.PRIORITY=00000)SECS.   TOTAL STP TIME=      .51 MINS.  -
      // EXEC NOTIFYTS
      XXDEFAULT  PROC MODE=.USRID=.MSG=.USERID=.ID=  NOTIFYTS. EAC/21JUN73      00000010
      ***        SEND BACKGROUND JOB REPORT TO TSO USER                         00000020
      XXNOTIFYTS EXEC PGM=NOTIFYTS.REGION=20K.COND=EVEN.                        00000030
      XX         PARM='&MODE.&USRID&USERID&ID.&MSG'                             00000040
      IEF653I SUBSTITUTION JCL - PARM='..'
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF373I STEP /NOTIFYTS/ START 80056.1230
IEF374I STEP /NOTIFYTS/ STOP  80056.1230 CPU    0MIN 00.05SEC MAIN    8K LCS    0K
- STEP 02 -      RETURN CODE = 0000                    STEP TIME =      .00 MINS=(CPU=      .00.IO=      .00)
                                   IO IN SECS. DISK=      .22.DRUM=      .00.TAPE=      .00.CELL=      .00.OTHR=      .06
- SURCHARGES=(DRIVES ALOC=000.TAPE MOUNTS=000.CORE=000.PAPER=000.PRIORITY=00000)SECS.   TOTAL STP TIME=00000.00 MINS.  -
IEF375I  JOB /ZBJHBCA8/ START 80056.1220
```

D4-370

```
IEF375I  JOB /SDHELDEA/ START 81031.1151
IEF376I  JOB /SDHELDEA/ STOP  81031.1153 CPU   0MIN 13.59SEC
- SYSTEM=FEL21.8F (04-01-79) K3                                          TIME=11.53.46.48 DATE=01-31-81
- JOB 0227-                                   TOTAL TIME =      .51 MINS=(CPU=      .22,IO=      .29)
                                  IO IN SECS, DISK=    10.47,DRUM=      .00,TAPE=     7.30,CEL_=      .00,OTHR=      .20
- SUBCHARGES=(DRIVES ALOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=00000)SECS.   TOTAL JOB TIME=      .51 MINS.  -
 THERE WERE 01 TAPES MOUNTED FOR THIS JOB. TAPE MOUNT CHARGE WAS 00.0 MINUTES.
```

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                                        OS/360 LOADER

OPTIONS USED - PRINT,MAP,NOLET,CALL,RES,NOTERM,SIZE=194550,NAME=**GO
               EP=ORBIT

     NAME   TYPE  ADDR      NAME   TYPE  ADDR      NAME   TYPE  ADDR      NAME   TYPE  ADDR      NAME   TYPE  ADDR
  ORBIT      SD  6B010   CNVRTSCT* SD  63E70   CNVCT   * LR  63E70   DBGEN   * SD  6C198   DBFECV  * LR  6C358
  FEREAD  *  SD  6C55D   FREADB  * LR  6C738   FWRITE  * LR  6C87C   FEWIND  * LR  5CA32   LEAVE   * LR  6CD66
  UNLOAD  *  LR  5CC1A   POSN    * LR  6CD30   MOUNT   * LR  6CE50   MEMBER  * LR  6D132   FTRAP   * LR  6D222
  FALLEN  *  LR  6D2AD   FUNITABL* SD  6E250   FPL1    * SD  6E329   FDDNLIST* SD  6E332   FERMSG  * SD  6E338
  IHCNAMEL* SD  6E3A0   FCONL#   * LR  6E3A0   FWRNL#  * LR  6E9A4   IHCECCMH* SD  6EE70   IBCOM#  * LR  6EE70
  FDICCS# * LR  6EE2C   INTSWTCH* LR  6FD36   IHCCCMH2* SD  6FD33   SEQDASD  * LR  70150   FTF     * SD  70448
  ITISECT * SD  704F8   ITF     * LR  704F8   FXFLT   * SD  70550   FIXFLT   * LR  70550   TRNSLTE * SD  70598
  TRAND   * LR  70598   BITST   * SD  706A8   CNTGDATA* LR  706A8   DTDUN   * SD  707D8   IHCFCVTH* SD  706F8
  ADCON#  * LR  70848   FCVADUTP* LR  70952   FCVLDUTP* LR  70952   FCVZDUTP* LR  70332   FCVICJTP* LR  70EC0
  FCVFCUTP* LR  713F2   FCVCCUTP* LR  715FC   INT6SWCH* LR  718E3   IHCEFIOS* SD  71A48   FIOCS#  * LR  71A48
  FIOCSFEP* LR  71A4E   IHCFIOS2* SD  72970   IHCSPRM * SD  72FA0   ERPMON  * LR  72FA0   IHCEFRE * LR  72FB8
  IHCERNTH* SD  73478   ABITH#  * LR  73478   ADJSWTCH* LR  73814   IHCUCPI * SD  739C0   IHCUATBL* SD  73CE8
  IHCETECH* SD  74320   IHCTECH * LR  74320   ERETRA  * LR  74328

  TOTAL LENGTH   8540
  ENTRY ADDRESS  6E010
```

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                SATID  HELIOS-A        ORBIT TAPE #=09A56
      7*09701 6P3            80 103 000000 213 000000 0252 01 801112 062 01 01 37  U
```

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                HELIOS-A          YEAR 1980.          LAUNCH TIME  175366392.  0.
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DATE MM	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	ERTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS EL-LET(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
7	1	0	0	0	102.17	-0.02	0.66	1.32	48.60	102.17	5.87	0.011	0.02
7	2	0	0	0	102.73	-0.02	0.67	1.34	47.88	102.73	5.76	0.011	0.02
7	3	0	0	0	103.25	-0.02	0.68	1.35	47.20	103.25	5.64	0.011	0.02
7	4	0	0	0	103.72	-0.02	0.69	1.36	46.57	103.72	5.53	0.010	0.02
7	5	0	0	0	104.16	-0.02	0.70	1.37	45.98	104.16	5.41	0.010	0.02
7	6	0	0	0	104.55	-0.02	0.71	1.38	45.43	104.55	5.30	0.010	0.02
7	7	0	0	0	104.90	-0.02	0.72	1.39	44.92	104.90	5.19	0.010	0.02
7	8	0	0	0	105.22	-0.02	0.73	1.40	44.44	105.22	5.07	0.010	0.02
7	9	0	0	0	105.51	-0.02	0.74	1.41	43.99	105.51	4.96	0.009	0.02
7	10	0	0	0	105.77	-0.02	0.75	1.42	43.57	105.77	4.85	0.009	0.02
7	11	0	0	0	106.00	-0.02	0.76	1.43	43.18	106.00	4.74	0.009	0.02
7	12	0	0	0	106.20	-0.02	0.77	1.44	42.82	106.20	4.63	0.009	0.02
7	13	0	0	0	106.37	-0.02	0.78	1.44	42.48	106.37	4.52	0.009	0.02
7	14	0	0	0	106.52	-0.02	0.79	1.45	42.17	106.52	4.41	0.008	0.02
7	15	0	0	0	106.65	-0.02	0.80	1.46	41.87	106.65	4.30	0.008	0.01
7	16	0	0	0	106.75	-0.02	0.80	1.47	41.60	106.75	4.19	0.008	0.01
7	17	0	0	0	106.84	-0.02	0.81	1.47	41.34	106.84	4.08	0.008	0.01
7	18	0	0	0	106.90	-0.02	0.82	1.48	41.11	106.90	3.98	0.008	0.01
7	19	0	0	0	106.95	-0.02	0.83	1.48	40.89	106.95	3.87	0.007	0.01
7	20	0	0	0	106.98	-0.02	0.83	1.49	40.69	106.98	3.76	0.007	0.01
7	21	0	0	0	106.99	-0.02	0.84	1.50	40.50	106.99	3.66	0.007	0.01
7	22	0	0	0	106.98	-0.02	0.85	1.50	40.33	106.98	3.56	0.007	0.01
7	23	0	0	0	106.96	-0.02	0.85	1.51	40.18	106.96	3.45	0.007	0.01
7	24	0	0	0	106.92	-0.02	0.86	1.51	40.03	106.92	3.35	0.006	0.01
7	25	0	0	0	106.88	-0.02	0.87	1.52	39.90	106.88	3.25	0.006	0.01
7	26	0	0	0	106.81	-0.02	0.87	1.52	39.79	106.81	3.15	0.006	0.01
7	27	0	0	0	106.74	-0.02	0.88	1.52	39.68	106.74	3.05	0.006	0.01
7	28	0	0	0	106.65	-0.02	0.89	1.53	39.59	106.65	2.95	0.006	0.01
7	29	0	0	0	106.55	-0.01	0.89	1.53	39.50	106.55	2.85	0.006	0.01
7	30	0	0	0	106.44	-0.01	0.90	1.53	39.43	106.44	2.75	0.005	0.01
7	31	0	0	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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OPTIONS )FO - PRINT,MAP,NOLET,CALL,RES,NOTERM,SIZE=194560,NAME---)GO
            EP=ORBIT

   NAME    TYPE   ADDR        NAME    TYPE   ADDR        NAME    TYPE   ADDR        NAME    TYPE   ADDR        NAME    TYPE   ADDR
ORBIT        SD   4D810     CNVRTSCT*  SD   4E670     CNVRT    *  LR   4E670     DRGEN    *  SD   4E998     DBFEOV   *  LR   4E858
FREAD    *   SD   4EC60     FREADB   *  LR   4EFB8     FWRITE   *  LR   4F07C     REWIND   *  LR   4F282     LEAVE    *  LR   4F366
UNLOAD   *   LR   4F41A     POSN     *  LR   4F530     MCUNT    *  LR   4F750     MEMBER   *  LR   4F932     FTRAP    *  LR   4FA22
FALLOW   *   LR   4FAA0     FUNITABL*  SD   50A60     FPL1     *  SD   50828     FDDNLIST*  SD   50830     FERMSG   *  SD   50838
IHCNAMFL*    SD   50BA0     FDDNL#   *  LR   50BA0     FWFNL#   *  LR   511A4     IHCECOMH*  SD   51670     IBCOM#   *  LR   51670
FUIOCS#  *   LR   5172C     INTSWTCH*  LR   52586     IHCCOMH2*  SD   52508     SEQDASD  *  LR   52960     FTF      *  LR   52C48
ITISFCT  *   SD   52CF8     ITI      *  LR   52CF8     FXFLT    *  SD   52D50     FIXFLT   *  LR   52D50     TRNSLTE  *  SD   52D98
TRANS    *   LR   52D98     BITST    *  SD   52EA8     CNTGDATA*  LR   52EA8     DTDUN    *  SD   52FD8     IHCFCVTH*  SD   530A8
ADCON#   *   LR   530A8     FCVADUTP*  LR   53152     FCVLOUTP*  LR   531E2     FCVZOUTP*  LR   53332     FCVIOUTP*  LR   536E0
FCVEOUTP*    LR   53BE2     FCVCOUTP*  LR   53DFC     INT6SWCH*  LR   540E3     IHCEFIOS*  SD   54248     FIOCS#   *  LR   54248
FIOCSBEP*    LR   542AE     IHCFIOS2*  SD   55170     IHCERRM  *  SD   556A0     ERRMON   *  LR   556A0     IHCERRE  *  LR   55688
IHCEFNTH*    SD   55C78     ARITH#   *  LR   55C78     ADJSWTCH*  LR   56014     IHCUOPT  *  SD   561C0     IHCUATBL*  SD   564E8
IHCETRCH*    SD   56820     IHCTRCH  *  LR   56820     ERRTRA   *  LR   56828

TOTAL LENGTH    95A0
ENTRY ADDRESS   4D810

                SATID  HELIOS-A        OORBIT TAPE #=ORA55
7409701 ORB                80 214 C00000 244 000000 0290 01 801016 290 01 01 B7  X

                HELIOS-A          YEAR 1980.          LAUNCH TIME  178044664.  0.
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DATE MM	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	ERTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LET(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
8	1	0	0	0	106.19	-0.01	0.91	1.54	39.31	106.19	2.56	0.005	0.01
8	2	0	0	0	106.05	-0.01	0.91	1.54	39.27	106.05	2.46	0.005	0.01
8	3	0	0	0	105.91	-0.01	0.92	1.54	39.23	105.91	2.37	0.005	0.01
8	4	0	0	0	105.75	-0.01	0.92	1.54	39.20	105.75	2.27	0.005	0.01
8	5	0	0	0	105.58	-0.01	0.93	1.55	39.18	105.58	2.18	0.004	0.01
8	6	0	0	0	105.41	-0.01	0.93	1.55	39.17	105.41	2.08	0.004	0.01
8	7	0	0	0	105.23	-0.01	0.93	1.55	39.17	105.23	1.99	0.004	0.01
8	8	0	0	0	105.04	-0.01	0.94	1.55	39.17	105.04	1.89	0.004	0.01
8	9	0	0	0	104.85	-0.01	0.94	1.55	39.18	104.85	1.80	0.004	0.01
8	10	0	0	0	104.65	-0.01	0.95	1.55	39.20	104.65	1.71	0.004	0.01
8	11	0	0	0	104.44	-0.01	0.95	1.55	39.23	104.44	1.62	0.003	0.01
8	12	0	0	0	104.23	-0.01	0.95	1.55	39.26	104.23	1.52	0.003	0.01
8	13	0	0	0	104.01	-0.01	0.96	1.55	39.29	104.01	1.43	0.003	0.01
8	14	0	0	0	103.79	-0.01	0.96	1.55	39.34	103.79	1.34	0.003	0.01
8	15	0	0	0	103.56	-0.01	0.96	1.55	39.39	103.56	1.25	0.003	0.01
8	16	0	0	0	103.33	-0.01	0.96	1.55	39.44	103.33	1.16	0.003	0.01
8	17	0	0	0	103.09	-0.01	0.97	1.55	39.50	103.09	1.07	0.002	0.01
8	18	0	0	0	102.85	-0.01	0.97	1.55	39.57	102.85	0.98	0.002	0.01
8	19	0	0	0	102.61	-0.01	0.97	1.55	39.64	102.61	0.89	0.002	0.01
8	20	0	0	0	102.36	-0.01	0.97	1.55	39.71	102.36	0.80	0.002	0.01
8	21	0	0	0	102.11	-0.01	0.98	1.55	39.79	102.11	0.71	0.002	0.01
8	22	0	0	0	101.86	-0.01	0.98	1.54	39.88	101.86	0.62	0.002	0.01
8	23	0	0	0	101.60	-0.01	0.98	1.54	39.97	101.60	0.53	0.001	0.01
8	24	0	0	0	101.34	-0.01	0.98	1.54	40.06	101.34	0.45	0.001	0.01
8	25	0	0	0	101.08	-0.01	0.98	1.54	40.16	101.08	0.36	0.001	0.01
8	26	0	0	0	100.82	-0.01	0.98	1.54	40.27	100.82	0.27	0.001	0.01
8	27	0	0	0	100.56	-0.01	0.98	1.53	40.38	100.56	0.18	0.001	0.01
8	28	0	0	0	100.29	-0.01	0.98	1.53	40.49	100.29	0.09	0.001	0.01
8	29	0	0	0	100.03	-0.01	0.98	1.53	40.61	100.03	0.01	0.000	0.01
8	30	0	0	0	99.76	-0.01	0.98	1.52	40.73	99.76	-0.08	0.000	0.01
8	31	0	0	0	99.49	-0.01	0.98	1.52	40.85	99.49	-0.17	0.000	0.01

END OF FILE ON ORBIT TAPE

```
SDHELA55:- FTIO - 80/308 @ 17:10:10.6 - PLEASE MOUNT TAPE # ORA55  ON DRIVE 0C1.
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                                    IO IN SECS. DISK=      .32,DRUM=      .88,TAPE=      .22,CEL=      .00,OTHR=      .0
- SURCHARGES=(DRIVES ALOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=00000)SECS.   TOTAL STD TIME=00000.05 MINS.
IEF376I   JOB /SDHELOP1/ START 81031.1152
IEF376I   JOB /SDHELOP1/ STOP  81031.1156 CPU    0MIN 03.99SEC                                  TIME=11.56.49.86 DATE=01-31-81
-   SYSTEM=FEL21.PF (04-01-79) K3
                                                                  TOTAL TIME =      .43 MINS=(CPU=      .14,IO=      .29)
-   JOB 9329                                                                   7.12,CEL.=      .00,OTHR=      .20
                                    IO IN SECS. DISK=     10.37,DRUM=      .00,TAPE=
- SURCHARGES=(DRIVES ALOC=000,TAPE MOUNTS=000,CORE=000,PAPER=000,PRIORITY=00000)SECS.   TOTAL JOB TIME=      .43 MINS.
 THERE WERE 01 TAPES MOUNTED FOR THIS JOB. TAPE MOUNT CHARGE WAS 00.0 MINUTES.
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                                                OS/360 LOADER

OPTIONS USED - PRINT,MAP,NOLET,CALL,RES,NOTERM,SIZE=194550,NAME=**GO
               EP=ORBIT

   NAME    TYPE  ADDR      NAME    TYPE  ADDR      NAME    TYPE  ADDR      NAME    TYPE  ADDR      NAME    TYPE  ADDR
ORBIT      SD   6F010   CNVFTSCT* SD   67E70   CNVPT   *  LR   63E70   D3GEN   *  SD   6C138   DRFEOV  *  LR   6C358
FREAD   *  SD   6C360   FEFADB  *  LR   6C738   FWRITE  *  LR   6C87C   FEWIND  *  LR   6CA82   LEAVE   *  LR   6CDEE
UNLOAD  *  LR   6CC1A   RCSN    *  LR   6D030   MOUNT   *  LR   6CE50   MEMBER  *  LR   6D132   FTDAP   *  LR   6D222
FALLOW  *  LR   6D2A0   FUNITABL* SD   6E260   FPL1    *  SD   6E328   FDDNLIST* SD   6E330   FERMSG  *  SD   6E338
IHCNAMEL* SD   6E3A0   FFDNL#   *  LR   6E3A0   FWFNL#  *  LR   6E9A4   IHCCCOMH* SD   6EE70   IBCOM#  *  LR   6EE70
FDIECB* * LR   6EF2C   INTSWTCH* LR   6F336   IHCCOMH2* SD   6F938   SFODASD  *  LR   70150   FTF     *  SD   70448
ITISECT *  SD   704F8   ITI     *  LR   704F8   FXFLT   *  SD   70550   FIXFLT  *  LR   70550   TRNSLTE *  SD   70598
TRANS   *  LR   70598   BITST   *  SD   706A8   CNTGDATA* LR   706A8   DTDUN   *  SD   70703   IHCFCVTH* SD   708A8
ADCON#  *  LR   70988   FCVAFOUTP* LR   70952   FCVLJUTP* LR   70DE2   FCVZOUTP* LR   70332   FCVIOJTP* LR   70EC0
FCVFOUTP* LR   713E2   FCVCOUTP* LR   715FC   INT6SWCH* LR   718E3   IHCEFIOS* SD   71A48   FIOCS#  *  LR   71A48
FIOCSREP* LR   71A4E   IHCEICS2* SD   72970   IHCSREM *  SD   72EA0   EERMON  *  LR   72EB0   IHCEPEE *  LR   72EB8
IHCEFNTH* SD   73478   ARITH#   *  LR   73478   ADJSWTCH* LR   73814   IHCUOPT *  SD   739C0   IHCUATBL* SD   73CE8
IHCETFCH* SD   74320   IHCTFCH  *  LR   74320   ERRTRA   *  LR   74328

TOTAL LENGTH    95A0
ENTRY ADDRESS   6F010
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                    SATIO  HELIOS A        OPFIT TAPE #=33A57
7409701 OPB                 80 245 000000 274 000000 0308 01 801106 308 01 01 57  U
```

HELIOS-A YEAR 1980. LAUNCH TIME 180723192. 0.

DATE MN	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	EARTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL LAT(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
9	1	0	0	0	99.22	-0.01	0.98	1.52	40.98	99.22	-0.26	-.000	0.01
9	2	0	0	0	98.95	-0.01	0.98	1.52	41.12	98.95	-0.35	-.000	0.01
9	3	0	0	0	98.69	-0.00	0.98	1.51	41.26	98.58	-0.43	-.000	0.01
9	4	0	0	0	98.41	-0.00	0.98	1.51	41.40	98.41	-0.52	-.000	0.01
9	5	0	0	0	98.14	-0.00	0.98	1.50	41.55	98.14	-0.61	-.001	0.01
9	6	0	0	0	97.86	-0.00	0.98	1.50	41.70	97.86	-0.70	-.001	0.01
9	7	0	0	0	97.60	-0.00	0.98	1.50	41.85	97.60	-0.78	-.001	0.01
9	8	0	0	0	97.33	-0.00	0.98	1.49	42.01	97.33	-0.87	-.001	0.01
9	9	0	0	0	97.06	-0.00	0.98	1.49	42.17	97.05	-0.96	-.001	0.01
9	10	0	0	0	96.79	-0.00	0.98	1.48	42.34	96.79	-1.05	-.001	0.01
9	11	0	0	0	96.53	-0.00	0.98	1.48	42.50	96.53	-1.14	-.002	0.01
9	12	0	0	0	96.26	-0.00	0.98	1.48	42.68	96.26	-1.22	-.002	0.01
9	13	0	0	0	96.00	-0.00	0.97	1.47	42.85	96.00	-1.31	-.002	0.01
9	14	0	0	0	95.74	-0.00	0.97	1.47	43.03	95.74	-1.40	-.002	0.01
9	15	0	0	0	95.49	-0.00	0.97	1.46	43.21	95.49	-1.49	-.002	0.01
9	16	0	0	0	95.24	-0.00	0.97	1.46	43.40	95.23	-1.58	-.002	0.01
9	17	0	0	0	94.99	-0.00	0.96	1.45	43.59	94.98	-1.67	-.003	0.01
9	18	0	0	0	94.74	-0.00	0.96	1.45	43.78	94.74	-1.76	-.003	0.01
9	19	0	0	0	94.50	0.00	0.96	1.44	43.98	94.50	-1.85	-.003	0.01
9	20	0	0	0	94.26	0.00	0.96	1.44	44.18	94.26	-1.93	-.003	0.01
9	21	0	0	0	94.02	0.00	0.95	1.43	44.38	94.02	-2.02	-.003	0.01
9	22	0	0	0	93.79	0.00	0.95	1.43	44.58	93.79	-2.11	-.003	0.01
9	23	0	0	0	93.57	0.00	0.95	1.42	44.80	93.57	-2.21	-.004	0.01
9	24	0	0	0	93.35	0.00	0.94	1.42	45.01	93.35	-2.30	-.004	0.01
9	25	0	0	0	93.13	0.00	0.94	1.41	45.23	93.13	-2.39	-.004	0.01
9	26	0	0	0	92.92	0.00	0.93	1.40	45.44	92.92	-2.48	-.004	0.01
9	27	0	0	0	92.72	0.00	0.93	1.40	45.67	92.72	-2.57	-.004	0.01
9	28	0	0	0	92.52	0.00	0.93	1.39	45.89	92.52	-2.66	-.004	0.01
9	29	0	0	0	92.33	0.00	0.92	1.39	46.12	92.33	-2.75	-.005	0.01
9	30	0	0	0	92.15	0.00	0.92	1.38	46.35	92.15	-2.85	-.005	0.01

OS/360 LOADER

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OPTIONS USED - PRINT,MAP,NCLFT,CALL,RES,NOTERM,SIZE=194560,NAME=**GO
               EP=ORBIT

      NAME   TYPE  ADDR        NAME   TYPE  ADDR        NAME   TYPE  ADDR        NAME   TYPE  ADDR        NAME   TYPE  ADDR

   ORBIT     SD   57010    CNVRTSCT* SD   57E70    CNVRT   * LR   57E70    DBGEN   * SD   58198    DBFEOV  * LR   58358
   FREAD   * SD   58560    FREADB  * LR   587B8    FWRITE  * LR   5887C    REWIND  * LR   58AB2    LEAVE   * LR   58B66
   UNLOAD  * LR   58C1A    POSN    * LR   58D30    MOUNT   * LR   58E50    MEMBER  * LR   59132    FTRAP   * LR   59222
   FALLOW  * LR   592A0    FUNITABL* SD   5A260    FPL1    * SD   5A328    FDDNLIST* SD   5A330    FERMSG  * SD   5A338
   IHCNAMFL* SD   5A3A0    FRDNL#  * LR   5A3A0    FWRNL#  * LR   5A9A4    IHCECOMH* SD   5AE70    IBCOM#  * LR   5AE70
   FDIOCS# * LR   5AF2C    INTSWTCH* LR   5BDB6    IHCCOMH2* SD   5BDD8    SEQDASD * LR   5C160    FTF     * SD   5C448
   ITISECT * SD   5C4F9    ITI     * LR   5C4F8    FXFLT   * SD   5C550    FIXFLT  * LR   5C550    TRNSLTE * SD   5C598
   TRANS   * LR   5C598    BITST   * SD   5C6A8    CNTGDATA* LR   5C6A8    DTDUN   * SD   5C7D8    IHCFCVTH* SD   5C8A8
   ADCON#  * LR   5C8A8    FCVADUTP* LR   5C952    FCVLOUTP* LR   5C952    FCVZOUTP* LR   5CB32    FCVIOUTP* LR   5CEE0
   FCVEOUTP* LR   5D3E2    FCVCOUTP* LR   5D5FC    INT6SWCH* LR   5D8E3    IHCEFIOS* SD   5DA48    FIOCS#  * LR   5DA48
   FIOCSRTP* LR   5DA4E    IHCFIOS2* SD   5E970    IHCERRM * SD   5EEA0    ERRMON  * LR   5EEA0    IHCERRE * LR   5EEB8
   IHCEFNTH* SD   5F478    ARITH#  * LR   5F478    ADJSWTCH* LR   5F814    IHCJOPT * SD   5F9C0    IHCDATBL* SD   5FCE8
   IHCETRCH* SD   60320    IHCTRCH * LR   60320    ERRTRA  * LR   60328

   TOTAL LENGTH    95A0
   ENTRY ADDRESS   57010
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                SATID  HELIOS-A        00RBIT TAPE #=ORA58
        7409701 ORB            80 275 000000 305 000000 0344 01 901211 344 01 01 E7  U
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HELIOS-A YEAR 1980. LAUNCH TIME 183315192. 0.

DATE MM	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	ERTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LET(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
10	1	0	0	0	91.98	0.00	0.91	1.38	46.58	91.98	-2.94	-.005	0.01
10	2	0	0	0	91.81	0.00	0.91	1.37	46.81	91.81	-3.03	-.005	0.01
10	3	0	0	0	91.65	0.00	0.90	1.37	47.05	91.65	-3.13	-.005	0.01
10	4	0	0	0	91.51	0.00	0.90	1.36	47.29	91.51	-3.22	-.005	0.01
10	5	0	0	0	91.37	0.01	0.89	1.36	47.53	91.37	-3.32	-.006	0.01
10	6	0	0	0	91.24	0.01	0.89	1.35	47.77	91.24	-3.41	-.006	0.01
10	7	0	0	0	91.12	0.01	0.88	1.34	48.01	91.12	-3.51	-.006	0.01
10	8	0	0	0	91.01	0.01	0.87	1.34	48.26	91.01	-3.61	-.006	0.01
10	9	0	0	0	90.92	0.01	0.87	1.33	48.51	90.92	-3.70	-.006	0.01
10	10	0	0	0	90.83	0.01	0.86	1.33	48.75	90.83	-3.80	-.006	0.01
10	11	0	0	0	90.76	0.01	0.85	1.32	49.00	90.76	-3.90	-.007	0.01
10	12	0	0	0	90.71	0.01	0.85	1.32	49.24	90.71	-4.00	-.007	0.01
10	13	0	0	0	90.67	0.01	0.84	1.31	49.49	90.67	-4.10	-.007	0.01
10	14	0	0	0	90.64	0.01	0.83	1.31	49.73	90.64	-4.20	-.007	0.01
10	15	0	0	0	90.63	0.01	0.83	1.30	49.98	90.63	-4.30	-.007	0.01
10	16	0	0	0	90.64	0.01	0.82	1.30	50.22	90.64	-4.40	-.008	0.01
10	17	0	0	0	90.67	0.01	0.81	1.29	50.46	90.67	-4.50	-.008	0.01
10	18	0	0	0	90.71	0.01	0.80	1.29	50.69	90.71	-4.60	-.008	0.01
10	19	0	0	0	90.78	0.01	0.80	1.28	50.92	90.78	-4.70	-.008	0.01
10	20	0	0	0	90.87	0.01	0.79	1.28	51.15	90.87	-4.80	-.008	0.02
10	21	0	0	0	90.98	0.01	0.78	1.27	51.37	90.98	-4.91	-.009	0.02
10	22	0	0	0	91.11	0.01	0.77	1.27	51.58	91.11	-5.01	-.009	0.02
10	23	0	0	0	91.27	0.01	0.76	1.27	51.79	91.27	-5.12	-.009	0.02
10	24	0	0	0	91.46	0.01	0.75	1.26	51.98	91.46	-5.22	-.009	0.02
10	25	0	0	0	91.67	0.01	0.74	1.26	52.17	91.67	-5.32	-.009	0.02
10	26	0	0	0	91.92	0.01	0.73	1.25	52.35	91.92	-5.43	-.010	0.02
10	27	0	0	0	92.19	0.01	0.72	1.25	52.51	92.19	-5.53	-.010	0.02
10	28	0	0	0	92.50	0.01	0.71	1.25	52.66	92.50	-5.64	-.010	0.02
10	29	0	0	0	92.85	0.01	0.70	1.25	52.79	92.85	-5.74	-.010	0.02
10	30	0	0	0	93.24	0.02	0.69	1.24	52.99	93.24	-5.85	-.010	0.02
10	31	0	0	0	93.67	0.02	0.68	1.24	52.99	93.67	-5.95	-.011	0.02

END OF FILE ON ORBIT TAPE

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END--   XXXXXXXXX   XXXXXXXXX    XX      XX  XXXXXXXXXXXX  XX          XXXXXXXXXXX  XXXXXXXXXX    XXXXXXXXXX
END--  XXXXXXXXXXX XXXXXXXXXX   XX      XX  XXXXXXXXXXXX  XX          XXXXXXXXXXX  XXXXXXXXXXX   XXXXXXXXXXX
END--  XX       XX  XX       XX  XX      XX  XX          XX          XX       XX  XX       XX   XX       XX
END--  XX           XX       XX  XX      XX  XX          XX          XX       XX  XX       XX   XX       XX
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SATID HELIOS-A 00RBIT TAPE #=ORA59
7409701 ORB 80 306 000000 366 000000 1029 01 810129 029 01 01 E7 U

HELIOS-A YEAR 1980. LAUNCH TIME 185993464. 0.

DATE MM	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	ERTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LST(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
11	1	0	0	0	94.14	0.02	0.67	1.24	53.06	94.14	-6.05	-.011	0.02
11	2	0	0	0	94.66	0.02	0.66	1.24	53.10	94.66	-6.16	-.011	0.02
11	3	0	0	0	95.22	0.02	0.65	1.23	53.12	95.22	-6.26	-.011	0.02
11	4	0	0	0	95.85	0.02	0.64	1.23	53.10	95.85	-6.36	-.011	0.02
11	5	0	0	0	96.53	0.02	0.63	1.23	53.05	96.53	-6.46	-.011	0.02
11	6	0	0	0	97.27	0.02	0.62	1.23	52.95	97.27	-6.55	-.012	0.02
11	7	0	0	0	98.08	0.02	0.60	1.23	52.82	98.08	-6.65	-.012	0.02
11	8	0	0	0	98.96	0.02	0.59	1.23	52.63	98.96	-6.74	-.012	0.02
11	9	0	0	0	99.92	0.02	0.58	1.23	52.39	99.92	-6.82	-.012	0.02
11	10	0	0	0	100.96	0.02	0.57	1.23	52.09	100.96	-6.90	-.012	0.02
11	11	0	0	0	102.09	0.02	0.56	1.23	51.73	102.09	-6.98	-.012	0.02
11	12	0	0	0	103.33	0.02	0.54	1.23	51.29	103.33	-7.05	-.013	0.02
11	13	0	0	0	104.66	0.02	0.53	1.24	50.78	104.66	-7.11	-.013	0.02
11	14	0	0	0	106.11	0.02	0.52	1.24	50.17	106.11	-7.16	-.013	0.02
11	15	0	0	0	107.69	0.02	0.51	1.24	49.47	107.69	-7.19	-.013	0.02
11	16	0	0	0	109.40	0.02	0.49	1.24	48.65	109.40	-7.22	-.013	0.02
11	17	0	0	0	111.26	0.02	0.48	1.25	47.72	111.26	-7.23	-.013	0.02
11	18	0	0	0	113.29	0.02	0.47	1.25	46.66	113.29	-7.21	-.013	0.03
11	19	0	0	0	115.48	0.02	0.45	1.25	45.45	115.48	-7.18	-.013	0.03
11	20	0	0	0	117.87	0.02	0.44	1.26	44.08	117.87	-7.12	-.013	0.03
11	21	0	0	0	120.46	0.03	0.43	1.26	42.54	120.46	-7.03	-.013	0.03
11	22	0	0	0	123.27	0.03	0.41	1.26	40.81	123.27	-6.90	-.013	0.03
11	23	0	0	0	126.32	0.02	0.40	1.27	38.88	126.32	-6.73	-.012	0.03
11	24	0	0	0	129.63	0.02	0.39	1.27	36.72	129.63	-6.51	-.012	0.03
11	25	0	0	0	133.21	0.02	0.38	1.28	34.32	133.21	-6.24	-.012	0.03
11	26	0	0	0	137.08	0.02	0.37	1.28	31.67	137.08	-5.91	-.011	0.03
11	27	0	0	0	141.25	0.02	0.36	1.28	28.75	141.25	-5.51	-.010	0.03
11	28	0	0	0	145.73	0.02	0.35	1.29	25.56	145.73	-5.03	-.009	0.03
11	29	0	0	0	150.51	0.02	0.34	1.29	22.10	150.51	-4.48	-.008	0.04
11	30	0	0	0	155.60	0.02	0.33	1.29	18.37	155.60	-3.86	-.007	0.04
12	1	0	0	0	160.96	0.02	0.32	1.30	14.38	160.96	-3.16	-.006	0.04
12	2	0	0	0	166.56	0.01	0.32	1.30	10.18	166.56	-2.39	-.005	0.04
12	3	0	0	0	172.37	0.01	0.31	1.30	5.79	172.37	-1.56	-.003	0.04
12	4	0	0	0	178.32	0.01	0.31	1.30	1.27	178.32	-0.70	-.002	0.04
12	5	0	0	0	184.35	0.01	0.31	1.29	3.31	175.65	0.19	-.000	0.04
12	6	0	0	0	190.39	0.00	0.31	1.29	7.91	169.61	1.07	0.001	0.04
12	7	0	0	0	196.36	0.00	0.31	1.29	12.44	163.64	1.93	0.003	0.04
12	8	0	0	0	202.19	-0.00	0.32	1.28	16.85	157.81	2.75	0.005	0.04
12	9	0	0	0	207.83	-0.01	0.32	1.28	21.09	152.17	3.50	0.006	0.04
12	10	0	0	0	213.23	-0.01	0.33	1.27	25.11	146.77	4.18	0.007	0.04
12	11	0	0	0	218.36	-0.01	0.34	1.27	28.88	141.64	4.79	0.008	0.04
12	12	0	0	0	223.19	-0.01	0.34	1.26	32.38	136.82	5.32	0.009	0.03
12	13	0	0	0	227.71	-0.01	0.35	1.25	35.61	132.29	5.76	0.010	0.03
12	14	0	0	0	231.92	-0.02	0.36	1.24	38.56	128.08	6.14	0.011	0.03
12	15	0	0	0	235.83	-0.02	0.38	1.24	41.24	124.17	6.44	0.011	0.03
12	16	0	0	0	239.45	-0.02	0.39	1.23	43.67	120.55	6.69	0.012	0.03
12	17	0	0	0	242.80	-0.02	0.40	1.22	45.85	117.20	6.88	0.012	0.03
12	18	0	0	0	245.88	-0.02	0.41	1.21	47.80	114.12	7.02	0.013	0.03
12	19	0	0	0	248.72	-0.02	0.43	1.21	49.53	111.28	7.12	0.013	0.03
12	20	0	0	0	251.34	-0.02	0.44	1.20	51.08	108.66	7.18	0.013	0.03
12	21	0	0	0	253.75	-0.02	0.45	1.19	52.44	106.25	7.22	0.013	0.03
12	22	0	0	0	255.96	-0.02	0.46	1.18	53.64	104.04	7.23	0.013	0.03
12	23	0	0	0	258.00	-0.02	0.48	1.18	54.69	102.00	7.21	0.013	0.02
12	24	0	0	0	259.88	-0.02	0.49	1.17	55.60	100.12	7.18	0.013	0.02
12	25	0	0	0	261.60	-0.02	0.50	1.17	56.39	98.40	7.13	0.013	0.02
12	26	0	0	0	263.19	-0.02	0.52	1.16	57.06	96.81	7.08	0.013	0.02
12	27	0	0	0	264.65	-0.03	0.53	1.16	57.63	95.35	7.00	0.013	0.02
12	28	0	0	0	265.99	-0.03	0.54	1.16	58.11	94.01	6.93	0.013	0.02
12	29	0	0	0	267.22	-0.03	0.55	1.15	58.50	92.78	6.84	0.013	0.02
12	30	0	0	0	268.36	-0.02	0.57	1.15	58.82	91.64	6.75	0.012	0.02
12	31	0	0	0	269.40	-0.02	0.58	1.15	59.07	90.60	6.65	0.012	0.02

END OF FILE ON ORBIT TAPE

SATID HELIOS-A OCRBIT TAPE #=CRA60
7-09701 ORB 81 001 000000 031 000000 1063 1 810306 063 01 01 E7 (

HELIOS-A YEAR 1981. LAUNCH TIME 191263992. 0.

DATE MM	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	ERTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LET(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
1	1	0	0	0	270.36	-0.02	0.59	1.14	59.25	89.64	6.55	0.012	0.02
1	2	0	0	0	271.24	-0.02	0.60	1.14	59.38	88.76	6.44	0.012	0.02
1	3	0	0	0	272.04	-0.02	0.61	1.14	59.46	87.96	6.33	0.012	0.02
1	4	0	0	0	272.80	-0.02	0.63	1.14	59.50	87.21	6.22	0.012	0.02
1	5	0	0	0	273.47	-0.02	0.64	1.14	59.49	86.53	6.11	0.011	0.02
1	6	0	0	0	274.08	-0.02	0.65	1.14	59.44	85.92	6.00	0.011	0.02
1	7	0	0	0	274.64	-0.02	0.66	1.14	59.36	85.36	5.89	0.011	0.02
1	8	0	0	0	275.15	-0.02	0.67	1.14	59.25	84.85	5.77	0.011	0.02
1	9	0	0	0	275.61	-0.02	0.68	1.14	59.11	84.39	5.66	0.011	0.02
1	10	0	0	0	276.02	-0.02	0.69	1.14	58.95	83.98	5.54	0.010	0.02
1	11	0	0	0	276.40	-0.02	0.70	1.14	58.76	83.60	5.43	0.010	0.02
1	12	0	0	0	276.73	-0.02	0.71	1.14	58.56	83.27	5.32	0.010	0.02
1	13	0	0	0	277.03	-0.02	0.72	1.15	58.34	82.97	5.20	0.010	0.02
1	14	0	0	0	277.29	-0.02	0.73	1.15	58.11	82.71	5.09	0.010	0.02
1	15	0	0	0	277.52	-0.02	0.74	1.15	57.86	82.48	4.98	0.009	0.02
1	16	0	0	0	277.71	-0.02	0.75	1.15	57.60	82.29	4.86	0.009	0.02
1	17	0	0	0	277.88	-0.02	0.76	1.16	57.34	82.12	4.75	0.009	0.02
1	18	0	0	0	278.02	-0.02	0.77	1.16	57.06	81.98	4.64	0.009	0.02
1	19	0	0	0	278.14	-0.02	0.78	1.16	56.78	81.86	4.53	0.009	0.02
1	20	0	0	0	278.23	-0.02	0.79	1.17	56.49	81.77	4.42	0.008	0.02
1	21	0	0	0	278.29	-0.02	0.79	1.17	56.20	81.71	4.31	0.008	0.01
1	22	0	0	0	278.34	-0.02	0.80	1.18	55.90	81.66	4.20	0.008	0.01
1	23	0	0	0	278.36	-0.02	0.81	1.18	55.60	81.64	4.10	0.008	0.01
1	24	0	0	0	278.37	-0.02	0.82	1.18	55.30	81.63	3.99	0.008	0.01
1	25	0	0	0	278.35	-0.02	0.83	1.19	55.00	81.65	3.88	0.007	0.01
1	26	0	0	0	278.32	-0.02	0.83	1.19	54.69	81.68	3.78	0.007	0.01
1	27	0	0	0	278.27	-0.02	0.84	1.20	54.39	81.73	3.67	0.007	0.01
1	28	0	0	0	278.21	-0.02	0.85	1.20	54.09	81.79	3.57	0.007	0.01
1	29	0	0	0	278.13	-0.02	0.85	1.21	53.78	81.87	3.47	0.007	0.01
1	30	0	0	0	278.04	-0.02	0.86	1.21	53.48	81.96	3.37	0.007	0.01
1	31	0	0	0	277.93	-0.02	0.87	1.22	53.18	82.07	3.26	0.006	0.01

END OF FILE ON ORBIT TAPE

SATID HELIOS-A ORBIT TAPE #=ORA61
7409701 CR8 81 032 000000 059 000000 1097 01 810408 097 01 01 E7 U

HELIOS-A YEAR 1981. LAUNCH TIME 193942264. 0.

DATE MM	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	ERTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LFT(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
2	1	0	0	0	277.81	-0.02	0.87	1.22	52.88	82.19	3.16	0.006	0.01
2	2	0	0	0	277.67	-0.02	0.88	1.23	52.59	82.33	3.06	0.006	0.01
2	3	0	0	0	277.53	-0.02	0.88	1.24	52.29	82.47	2.96	0.006	0.01
2	4	0	0	0	277.37	-0.02	0.89	1.24	52.00	82.63	2.86	0.006	0.01
2	5	0	0	0	277.21	-0.02	0.90	1.25	51.71	82.79	2.77	0.005	0.01
2	6	0	0	0	277.03	-0.02	0.90	1.25	51.43	82.97	2.67	0.005	0.01
2	7	0	0	0	276.85	-0.02	0.91	1.26	51.15	83.15	2.57	0.005	0.01
2	8	0	0	0	276.65	-0.01	0.91	1.26	50.87	83.35	2.47	0.005	0.01
2	9	0	0	0	276.45	-0.01	0.92	1.27	50.60	83.55	2.38	0.005	0.01
2	10	0	0	0	276.24	-0.01	0.92	1.27	50.33	83.76	2.28	0.005	0.01
2	11	0	0	0	276.02	-0.01	0.93	1.28	50.06	83.98	2.19	0.004	0.01
2	12	0	0	0	275.79	-0.01	0.93	1.29	49.80	84.21	2.09	0.004	0.01
2	13	0	0	0	275.56	-0.01	0.93	1.29	49.54	84.44	2.00	0.004	0.01
2	14	0	0	0	275.32	-0.01	0.94	1.30	49.28	84.69	1.91	0.004	0.01
2	15	0	0	0	275.08	-0.01	0.94	1.30	49.03	84.92	1.81	0.004	0.01
2	16	0	0	0	274.83	-0.01	0.95	1.31	48.79	85.17	1.72	0.004	0.01
2	17	0	0	0	274.58	-0.01	0.95	1.31	48.54	85.43	1.63	0.003	0.01
2	18	0	0	0	274.31	-0.01	0.95	1.32	48.31	85.69	1.54	0.003	0.01
2	19	0	0	0	274.05	-0.01	0.96	1.33	48.07	85.95	1.45	0.003	0.01
2	20	0	0	0	273.76	-0.01	0.96	1.33	47.85	86.22	1.35	0.003	0.01
2	21	0	0	0	273.51	-0.01	0.96	1.34	47.62	86.49	1.26	0.003	0.01
2	22	0	0	0	273.23	-0.01	0.96	1.34	47.40	86.77	1.17	0.003	0.01
2	23	0	0	0	272.95	-0.01	0.97	1.35	47.19	87.05	1.08	0.002	0.01
2	24	0	0	0	272.67	-0.01	0.97	1.35	46.98	87.33	0.99	0.002	0.01
2	25	0	0	0	272.36	-0.01	0.97	1.36	46.77	87.62	0.90	0.002	0.01
2	26	0	0	0	272.09	-0.01	0.97	1.36	46.57	87.91	0.81	0.002	0.01
2	27	0	0	0	271.80	-0.01	0.97	1.37	46.37	88.20	0.72	0.002	0.01
2	28	0	0	0	271.51	-0.01	0.98	1.37	46.18	88.49	0.64	0.002	0.01

END OF FILE ON ORBIT TAPE

ORA61

2/1/81 — 2/28/81

SATIC HELIOS-A ORBIT TAPE #=ORA62
7409701 CRB 81 060 000000 090 000000 1131 01 810511 131 01 01 E7 U

HELIOS-A YEAR 1981. LAUNCH TIME 196361464. 0.

DATE MN	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	ERTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LET(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
3	1	0	0	0	271.21	-0.01	0.98	1.38	45.99	88.79	0.55	0.001	0.01
3	2	0	0	0	270.91	-0.01	0.98	1.38	45.80	89.09	0.46	0.001	0.01
3	3	0	0	0	270.61	-0.01	0.98	1.39	45.62	89.39	0.37	0.001	0.01
3	4	0	0	0	270.31	-0.01	0.98	1.39	45.45	89.69	0.28	0.001	0.01
3	5	0	0	0	270.01	-0.01	0.98	1.40	45.28	89.99	0.19	0.001	0.01
3	6	0	0	0	269.71	-0.01	0.98	1.40	45.11	90.29	0.10	0.001	0.01
3	7	0	0	0	269.41	-0.01	0.98	1.40	44.95	90.59	0.02	0.001	0.01
3	8	0	0	0	269.11	-0.01	0.98	1.41	44.79	90.89	-0.07	0.000	0.01
3	9	0	0	0	268.80	-0.01	0.98	1.41	44.64	91.20	-0.16	0.000	0.01
3	10	0	0	0	268.50	-0.01	0.98	1.42	44.49	91.50	-0.25	0.000	0.01
3	11	0	0	0	268.20	-0.01	0.98	1.42	44.35	91.80	-0.33	-.000	0.01
3	12	0	0	0	267.90	-0.01	0.98	1.42	44.21	92.10	-0.42	-.000	0.01
3	13	0	0	0	267.60	-0.01	0.98	1.43	44.08	92.40	-0.51	-.000	0.01
3	14	0	0	0	267.30	-0.00	0.98	1.43	43.95	92.70	-0.60	-.001	0.01
3	15	0	0	0	267.01	-0.00	0.98	1.43	43.82	92.99	-0.68	-.001	0.01
3	16	0	0	0	266.71	-0.00	0.98	1.44	43.71	93.29	-0.77	-.001	0.01
3	17	0	0	0	266.42	-0.00	0.98	1.44	43.59	93.58	-0.86	-.001	0.01
3	18	0	0	0	266.13	-0.00	0.98	1.44	43.48	93.87	-0.95	-.001	0.01
3	19	0	0	0	265.84	-0.00	0.98	1.45	43.38	94.16	-1.04	-.001	0.01
3	20	0	0	0	265.55	-0.00	0.98	1.45	43.28	94.45	-1.12	-.002	0.01
3	21	0	0	0	265.27	-0.00	0.98	1.45	43.19	94.73	-1.21	-.002	0.01
3	22	0	0	0	264.99	-0.00	0.97	1.45	43.11	95.01	-1.30	-.002	0.01
3	23	0	0	0	264.71	-0.00	0.97	1.45	43.02	95.29	-1.39	-.002	0.01
3	24	0	0	0	264.44	-0.00	0.97	1.46	42.95	95.56	-1.48	-.002	0.01
3	25	0	0	0	264.17	-0.00	0.97	1.46	42.88	95.83	-1.57	-.002	0.01
3	26	0	0	0	263.90	-0.00	0.96	1.46	42.82	96.10	-1.65	-.003	0.01
3	27	0	0	0	263.64	-0.00	0.96	1.46	42.76	96.36	-1.74	-.003	0.01
3	28	0	0	0	263.39	-0.00	0.96	1.46	42.71	96.61	-1.83	-.003	0.01
3	29	0	0	0	263.14	-0.00	0.96	1.46	42.66	96.86	-1.92	-.003	0.01
3	30	0	0	0	262.89	-0.00	0.95	1.46	42.63	97.11	-2.01	-.003	0.01
3	31	0	0	0	262.65	0.00	0.95	1.46	42.60	97.35	-2.10	-.003	0.01

END OF FILE ON ORBIT TAPE

ORA62

3/1/81 – 3/31/81

SAT ID HELICS-A ORBIT TAPE #=ORA63
7409701 CFB 81 051 000000 151 000000 1151 01 E10615 151 01 01 E7 U

HELIOS-A YEAR 1981. LAUNCH TIME 155039592. 0.

DATE MN	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	ERTH-HELIOS DIST(A.U)	EARTH-HELICS SUN(DEG)	HELICS-SUN EARTH(DEG)	HELICS HEL-LET(DEG)	HELICS-V(A.U/DAY) FACIAL	NORMAL
4	1	0	0	0	262.41	0.00	0.95	1.46	42.57	97.59	-2.19	-.004	0.01
4	2	0	0	0	262.19	0.00	0.94	1.46	42.55	97.81	-2.28	-.004	0.01
4	3	0	0	0	261.98	0.00	0.94	1.46	42.54	98.04	-2.37	-.004	0.01
4	4	0	0	0	261.75	0.00	0.94	1.46	42.54	98.25	-2.47	-.004	0.01
4	5	0	0	0	261.54	0.00	0.93	1.46	42.55	98.46	-2.56	-.004	0.01
4	6	0	0	0	261.34	0.00	0.93	1.46	42.56	98.66	-2.65	-.004	0.01
4	7	0	0	0	261.15	0.00	0.92	1.46	42.58	98.85	-2.74	-.005	0.01
4	8	0	0	0	260.96	0.00	0.92	1.46	42.61	99.04	-2.84	-.005	0.01
4	9	0	0	0	260.79	0.00	0.91	1.46	42.65	99.21	-2.93	-.005	0.01
4	10	0	0	0	260.62	0.00	0.91	1.46	42.70	99.38	-3.02	-.005	0.01
4	11	0	0	0	260.46	0.00	0.90	1.46	42.76	99.54	-3.12	-.005	0.01
4	12	0	0	0	260.32	0.00	0.90	1.45	42.83	99.68	-3.21	-.005	0.01
4	13	0	0	0	260.18	0.00	0.89	1.45	42.91	99.82	-3.31	-.006	0.01
4	14	0	0	0	260.06	0.01	0.89	1.45	43.00	99.94	-3.40	-.006	0.01
4	15	0	0	0	259.95	0.01	0.88	1.45	43.10	100.05	-3.50	-.006	0.01
4	16	0	0	0	259.85	0.01	0.87	1.44	43.22	100.15	-3.55	-.006	0.01
4	17	0	0	0	259.76	0.01	0.87	1.44	43.34	100.24	-3.69	-.006	0.01
4	18	0	0	0	259.69	0.01	0.86	1.44	43.48	100.31	-3.79	-.006	0.01
4	19	0	0	0	259.63	0.01	0.86	1.43	43.64	100.37	-3.89	-.007	0.01
4	20	0	0	0	259.58	0.01	0.85	1.43	43.81	100.42	-3.98	-.007	0.01
4	21	0	0	0	259.56	0.01	0.84	1.42	43.99	100.44	-4.08	-.007	0.01
4	22	0	0	0	259.54	0.01	0.83	1.42	44.19	100.46	-4.18	-.007	0.01
4	23	0	0	0	259.55	0.01	0.83	1.41	44.40	100.45	-4.28	-.007	0.01
4	24	0	0	0	259.57	0.01	0.82	1.41	44.64	100.43	-4.38	-.008	0.01
4	25	0	0	0	259.61	0.01	0.81	1.40	44.89	100.39	-4.48	-.008	0.01
4	26	0	0	0	259.68	0.01	0.80	1.40	45.16	100.32	-4.59	-.008	0.01
4	27	0	0	0	259.76	0.01	0.80	1.39	45.45	100.24	-4.69	-.008	0.01
4	28	0	0	0	259.87	0.01	0.79	1.38	45.76	100.13	-4.79	-.008	0.01
4	29	0	0	0	259.99	0.01	0.78	1.38	46.10	100.01	-4.89	-.009	0.02
4	30	0	0	0	260.15	0.01	0.77	1.37	46.46	99.85	-5.00	-.009	0.02
5	1	0	0	0	260.33	0.01	0.76	1.36	46.84	99.67	-5.10	-.009	0.02
5	2	0	0	0	260.54	0.01	0.75	1.35	47.26	99.46	-5.21	-.009	0.02
5	3	0	0	0	260.77	0.01	0.74	1.35	47.70	99.23	-5.31	-.009	0.02
5	4	0	0	0	261.04	0.01	0.73	1.34	48.17	98.96	-5.41	-.009	0.02
5	5	0	0	0	261.34	0.01	0.72	1.33	48.68	98.66	-5.52	-.010	0.02
5	6	0	0	0	261.68	0.01	0.72	1.32	49.22	98.32	-5.62	-.010	0.02
5	7	0	0	0	262.05	0.01	0.71	1.31	49.80	97.95	-5.73	-.010	0.02
5	8	0	0	0	262.46	0.02	0.69	1.30	50.42	97.54	-5.83	-.010	0.02
5	9	0	0	0	262.92	0.02	0.68	1.29	51.08	97.08	-5.94	-.010	0.02
5	10	0	0	0	263.42	0.02	0.67	1.28	51.79	96.58	-6.04	-.011	0.02
5	11	0	0	0	263.96	0.02	0.66	1.27	52.55	96.04	-6.14	-.011	0.02
5	12	0	0	0	264.56	0.02	0.65	1.25	53.36	95.44	-6.25	-.011	0.02
5	13	0	0	0	265.21	0.02	0.64	1.24	54.23	94.79	-6.35	-.011	0.02
5	14	0	0	0	265.92	0.02	0.63	1.23	55.17	94.08	-6.44	-.011	0.02
5	15	0	0	0	266.70	0.02	0.62	1.21	56.17	93.30	-6.54	-.012	0.02
5	16	0	0	0	267.54	0.02	0.61	1.20	57.24	92.46	-6.63	-.012	0.02
5	17	0	0	0	268.45	0.02	0.59	1.19	58.40	91.55	-6.72	-.012	0.02
5	18	0	0	0	269.44	0.02	0.58	1.17	59.64	90.56	-6.81	-.012	0.02
5	19	0	0	0	270.51	0.02	0.57	1.16	60.98	89.49	-6.89	-.012	0.02
5	20	0	0	0	271.68	0.02	0.56	1.14	62.43	88.32	-6.97	-.012	0.02
5	21	0	0	0	272.94	0.02	0.55	1.12	63.98	87.06	-7.04	-.013	0.02
5	22	0	0	0	274.31	0.02	0.53	1.11	65.66	85.69	-7.10	-.013	0.02
5	23	0	0	0	275.79	0.02	0.52	1.09	67.48	84.21	-7.15	-.013	0.02
5	24	0	0	0	277.40	0.02	0.51	1.07	69.45	82.60	-7.19	-.013	0.02
5	25	0	0	0	279.14	0.02	0.49	1.05	71.58	80.86	-7.22	-.013	0.02
5	26	0	0	0	281.02	0.02	0.48	1.04	73.89	78.98	-7.23	-.013	0.02
5	27	0	0	0	283.07	0.02	0.47	1.02	76.41	76.93	-7.22	-.013	0.03
5	28	0	0	0	285.29	0.02	0.45	1.00	79.15	74.71	-7.19	-.013	0.03
5	29	0	0	0	287.70	0.02	0.44	0.97	82.13	72.30	-7.13	-.013	0.03
5	30	0	0	0	290.31	0.03	0.43	0.95	85.38	69.69	-7.04	-.013	0.03
5	31	0	0	0	293.15	0.03	0.42	0.93	88.93	66.85	-6.92	-.013	0.03

END OF FILE ON ORBIT TAPE

ORA63

4/1/81 — 5/31/81

SATID HELICS-A OCRBIT TAPE E=CRAEA

7409701 ORB E1 182 000000 181 000000 1247 01 E10909 247 01 01 E7 (

HELIOS-A YEAR 1981. LAUNCH TIME 204310264. 0.

DATE MN	DD	HR	MN	SC	HELIOS ECL.LCNG	HELICS ECL.LAT	SUN-HELIOS DIST(A.U)	ERTH-HELIOS DIST(A.U)	EARTH-HELICS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELICS HEL-LET(DEG)	HELICS-V(A.U/DAY) RADIAL	NORMAL
6	1	0	0	0	296.22	0.02	0.40	0.91	92.80	63.78	-6.75	-.012	0.03
6	2	0	0	0	299.54	0.02	0.39	0.99	97.03	60.46	-6.54	-.012	0.03
6	3	0	0	0	303.14	0.02	0.38	0.97	101.65	56.86	-6.28	-.012	0.03
6	4	0	0	0	307.03	0.02	0.37	0.85	106.69	52.97	-5.95	-.011	0.03
6	5	0	0	0	311.21	0.02	0.36	0.82	112.17	48.79	-5.56	-.010	0.03
6	6	0	0	0	315.70	0.02	0.35	0.80	118.13	44.30	-5.10	-.010	0.03
6	7	0	0	0	320.50	0.02	0.34	0.78	124.57	39.50	-4.56	-.009	0.03
6	8	0	0	0	325.60	0.02	0.33	0.77	131.50	34.40	-3.95	-.008	0.04
6	9	0	0	0	330.98	0.02	0.32	0.75	138.90	29.02	-3.25	-.006	0.04
6	10	0	0	0	336.62	0.01	0.32	0.73	146.74	23.38	-2.49	-.005	0.04
6	11	0	0	0	342.46	0.01	0.31	0.72	154.95	17.54	-1.67	-.003	0.04
6	12	0	0	0	348.46	0.01	0.31	0.71	163.46	11.54	-0.81	-.002	0.04
6	13	0	0	0	354.54	0.01	0.31	0.71	172.16	5.46	0.07	-.000	0.04
6	14	0	0	0	0.64	0.00	0.31	0.71	175.06	0.64	0.95	0.001	0.04
6	15	0	0	0	6.68	0.00	0.31	0.71	170.37	6.68	1.82	0.003	0.04
6	16	0	0	0	12.60	-0.00	0.32	0.71	161.64	12.60	2.64	0.004	0.04
6	17	0	0	0	18.33	-0.01	0.32	0.72	153.60	18.33	3.40	0.006	0.04
6	18	0	0	0	23.83	-0.01	0.33	0.73	145.72	23.83	4.10	0.007	0.04
6	19	0	0	0	29.05	-0.01	0.33	0.74	138.26	29.05	4.71	0.008	0.04
6	20	0	0	0	33.98	-0.01	0.34	0.76	131.31	33.98	5.25	0.009	0.03
6	21	0	0	0	38.61	-0.01	0.35	0.77	124.82	38.61	5.71	0.010	0.03
6	22	0	0	0	42.93	-0.02	0.36	0.79	118.81	42.93	6.09	0.011	0.03
6	23	0	0	0	46.94	-0.02	0.37	0.81	113.27	46.94	6.41	0.011	0.03
6	24	0	0	0	50.66	-0.02	0.39	0.83	108.17	50.66	6.66	0.012	0.03
6	25	0	0	0	54.11	-0.02	0.40	0.85	103.50	54.11	6.85	0.012	0.03
6	26	0	0	0	57.29	-0.02	0.41	0.87	99.21	57.29	7.00	0.013	0.03
6	27	0	0	0	60.23	-0.02	0.42	0.89	95.27	60.23	7.11	0.013	0.03
6	28	0	0	0	62.94	-0.02	0.44	0.91	91.67	62.94	7.18	0.013	0.03
6	29	0	0	0	65.43	-0.02	0.45	0.93	88.36	65.43	7.21	0.013	0.03
6	30	0	0	0	67.74	-0.02	0.46	0.94	85.22	67.74	7.23	0.013	0.03

END OF FILE ON ORBIT TAPE

HELIOS-A YEAR 1983. LAUNCH TIME 269974264. 0.

DATE MM	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	ERTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LET(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
7	1	0	0	0	265.72	0.02	0.41	1.12	64.37	94.28	-6.86	-.013	0.03
7	2	0	0	0	268.91	0.02	0.40	1.10	67.67	91.09	-6.67	-.012	0.03
7	3	0	0	0	272.35	0.02	0.39	1.07	71.28	87.65	-6.44	-.012	0.03
7	4	0	0	0	276.08	0.02	0.37	1.05	75.22	83.92	-6.15	-.011	0.03
7	5	0	0	0	280.10	0.02	0.36	1.02	79.53	79.90	-5.80	-.011	0.03
7	6	0	0	0	284.43	0.02	0.35	0.99	84.22	75.57	-5.37	-.010	0.03
7	7	0	0	0	289.06	0.02	0.34	0.96	89.53	70.94	-4.88	-.009	0.03
7	8	0	0	0	293.99	0.02	0.33	0.93	94.85	66.01	-4.31	-.008	0.04
7	9	0	0	0	299.23	0.02	0.33	0.90	100.81	60.77	-3.66	-.007	0.04
7	10	0	0	0	304.73	0.02	0.32	0.87	107.20	55.27	-2.93	-.006	0.04
7	11	0	0	0	310.47	0.01	0.32	0.85	113.99	49.53	-2.15	-.004	0.04
7	12	0	0	0	316.39	0.01	0.31	0.82	121.17	43.61	-1.31	-.003	0.04
7	13	0	0	0	322.44	0.01	0.31	0.79	128.67	37.56	-0.43	-.001	0.04
7	14	0	0	0	328.54	0.01	0.31	0.77	136.43	31.46	0.46	0.000	0.04
7	15	0	0	0	334.63	0.00	0.31	0.75	144.37	25.37	1.33	0.002	0.04
7	16	0	0	0	340.63	0.00	0.31	0.73	152.42	19.37	2.18	0.004	0.04
7	17	0	0	0	346.47	-0.00	0.32	0.71	160.48	13.53	2.98	0.005	0.04
7	18	0	0	0	352.11	-0.00	0.32	0.70	168.46	7.89	3.72	0.006	0.04
7	19	0	0	0	357.49	-0.01	0.33	0.69	176.28	2.51	4.38	0.008	0.04
7	20	0	0	0	2.59	-0.01	0.34	0.68	176.12	2.59	4.96	0.009	0.03
7	21	0	0	0	7.39	-0.01	0.35	0.67	168.80	7.39	5.46	0.010	0.03
7	22	0	0	0	11.88	-0.01	0.36	0.67	161.81	11.88	5.89	0.010	0.03
7	23	0	0	0	16.07	-0.02	0.37	0.67	155.18	16.07	6.24	0.011	0.03
7	24	0	0	0	19.95	-0.02	0.38	0.67	148.93	19.95	6.52	0.012	0.03
7	25	0	0	0	23.55	-0.02	0.39	0.68	143.06	23.55	6.75	0.012	0.03
7	26	0	0	0	26.88	-0.02	0.40	0.68	137.57	26.88	6.92	0.012	0.03
7	27	0	0	0	29.95	-0.02	0.42	0.69	132.45	29.95	7.05	0.013	0.03
7	28	0	0	0	32.78	-0.02	0.43	0.69	127.69	32.78	7.14	0.013	0.03
7	29	0	0	0	35.39	-0.02	0.44	0.70	123.27	35.39	7.20	0.013	0.03
7	30	0	0	0	37.80	-0.02	0.45	0.71	119.17	37.80	7.22	0.013	0.03
7	31	0	0	0	40.02	-0.02	0.47	0.72	115.36	40.02	7.23	0.013	0.03
8	1	0	0	0	42.07	-0.02	0.48	0.73	111.83	42.07	7.21	0.013	0.02
8	2	0	0	0	43.96	-0.02	0.49	0.74	108.55	43.96	7.17	0.013	0.02
8	3	0	0	0	45.70	-0.02	0.51	0.75	105.51	45.70	7.12	0.013	0.02
8	4	0	0	0	47.31	-0.02	0.52	0.76	102.69	47.31	7.06	0.013	0.02
8	5	0	0	0	48.80	-0.02	0.53	0.78	100.07	48.80	6.98	0.013	0.02
8	6	0	0	0	50.16	-0.02	0.55	0.79	97.63	50.16	6.90	0.013	0.02
8	7	0	0	0	51.43	-0.02	0.56	0.80	95.36	51.43	6.81	0.012	0.02
8	8	0	0	0	52.59	-0.02	0.57	0.81	93.24	52.59	6.72	0.012	0.02
8	9	0	0	0	53.67	-0.02	0.58	0.82	91.26	53.67	6.62	0.012	0.02
8	10	0	0	0	54.66	-0.02	0.59	0.83	89.42	54.66	6.52	0.012	0.02
8	11	0	0	0	55.58	-0.02	0.61	0.84	87.69	55.58	6.41	0.012	0.02
8	12	0	0	0	56.42	-0.02	0.62	0.85	86.08	56.42	6.30	0.012	0.02
8	13	0	0	0	57.20	-0.02	0.63	0.86	84.57	57.20	6.19	0.011	0.02
8	14	0	0	0	57.91	-0.02	0.64	0.86	83.15	57.91	6.08	0.011	0.02
8	15	0	0	0	58.57	-0.02	0.65	0.87	81.82	58.57	5.97	0.011	0.02
8	16	0	0	0	59.17	-0.02	0.66	0.88	80.57	59.17	5.86	0.011	0.02
8	17	0	0	0	59.72	-0.02	0.67	0.89	79.40	59.72	5.74	0.011	0.02
8	18	0	0	0	60.22	-0.02	0.68	0.90	78.30	60.22	5.63	0.010	0.02
8	19	0	0	0	60.68	-0.02	0.70	0.90	77.26	60.68	5.51	0.010	0.02
8	20	0	0	0	61.10	-0.02	0.71	0.91	76.28	61.10	5.40	0.010	0.02
8	21	0	0	0	61.48	-0.02	0.72	0.92	75.36	61.48	5.28	0.010	0.02
8	22	0	0	0	61.82	-0.02	0.73	0.93	74.49	61.82	5.17	0.010	0.02
8	23	0	0	0	62.13	-0.02	0.73	0.93	73.67	62.13	5.06	0.009	0.02
8	24	0	0	0	62.40	-0.02	0.74	0.94	72.90	62.40	4.95	0.009	0.02
8	25	0	0	0	62.64	-0.02	0.75	0.94	72.17	62.64	4.83	0.009	0.02
8	26	0	0	0	62.86	-0.02	0.76	0.95	71.49	62.86	4.72	0.009	0.02
8	27	0	0	0	63.04	-0.02	0.77	0.95	70.84	63.04	4.61	0.009	0.02
8	28	0	0	0	63.20	-0.02	0.78	0.96	70.22	63.20	4.50	0.009	0.02
8	29	0	0	0	63.34	-0.02	0.79	0.96	69.65	63.34	4.39	0.008	0.01
8	30	0	0	0	63.45	-0.02	0.80	0.97	69.10	63.45	4.28	0.008	0.01
8	31	0	0	0	63.54	-0.02	0.80	0.97	68.58	63.54	4.18	0.008	0.01
9	1	0	0	0	63.61	-0.02	0.81	0.97	68.10	63.61	4.07	0.008	0.01
9	2	0	0	0	63.65	-0.02	0.82	0.98	67.64	63.65	3.96	0.008	0.01
9	3	0	0	0	63.68	-0.02	0.83	0.98	67.20	63.68	3.86	0.007	0.01
9	4	0	0	0	63.69	-0.02	0.83	0.98	66.79	63.69	3.75	0.007	0.01
9	5	0	0	0	63.69	-0.02	0.84	0.99	66.41	63.69	3.65	0.007	0.01
9	6	0	0	0	63.66	-0.02	0.85	0.99	66.05	63.66	3.54	0.007	0.01
9	7	0	0	0	63.62	-0.02	0.86	0.99	65.70	63.62	3.44	0.007	0.01
9	8	0	0	0	63.57	-0.02	0.86	0.99	65.38	63.57	3.34	0.006	0.01
9	9	0	0	0	63.50	-0.02	0.87	0.99	65.08	63.50	3.24	0.006	0.01
9	10	0	0	0	63.42	-0.02	0.87	1.00	64.80	63.42	3.14	0.006	0.01
9	11	0	0	0	63.33	-0.02	0.88	1.00	64.53	63.33	3.04	0.006	0.01
9	12	0	0	0	63.22	-0.02	0.89	1.00	64.28	63.22	2.94	0.006	0.01
9	13	0	0	0	63.10	-0.02	0.89	1.00	64.05	63.10	2.84	0.006	0.01

9	14	0	0	0	62.98	-0.02	0.90	1.00	63.83	62.98	2.74	0.005	0.01
9	15	0	0	0	62.84	-0.02	0.90	1.00	63.63	62.84	2.64	0.005	0.01
9	16	0	0	0	62.69	-0.02	0.91	1.00	63.44	62.69	2.55	0.005	0.01

HELIOS-A YEAR 1983. LAUNCH TIME 276630552. 0.

DATE MM	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	ERTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LET(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
9	17	0	0	0	62.53	-0.02	0.91	1.00	63.27	62.53	2.45	0.005	0.01
9	18	0	0	0	62.36	-0.02	0.92	1.00	63.11	62.36	2.35	0.005	0.01
9	19	0	0	0	62.18	-0.02	0.92	1.00	62.96	62.18	2.26	0.005	0.01
9	20	0	0	0	62.00	-0.01	0.93	1.00	62.83	62.00	2.16	0.004	0.01
9	21	0	0	0	61.81	-0.01	0.93	1.00	62.71	61.81	2.07	0.004	0.01
9	22	0	0	0	61.61	-0.01	0.94	0.99	62.60	61.61	1.98	0.004	0.01
9	23	0	0	0	61.40	-0.01	0.94	0.99	62.50	61.40	1.88	0.004	0.01
9	24	0	0	0	61.18	-0.01	0.94	0.99	62.41	61.18	1.79	0.004	0.01
9	25	0	0	0	60.96	-0.01	0.95	0.99	62.34	60.96	1.70	0.004	0.01
9	26	0	0	0	60.74	-0.01	0.95	0.99	62.27	60.74	1.60	0.003	0.01
9	27	0	0	0	60.50	-0.01	0.95	0.99	62.22	60.50	1.51	0.003	0.01
9	28	0	0	0	60.26	-0.01	0.96	0.98	62.18	60.26	1.42	0.003	0.01
9	29	0	0	0	60.02	-0.01	0.96	0.98	62.15	60.02	1.33	0.003	0.01
9	30	0	0	0	59.77	-0.01	0.96	0.98	62.12	59.77	1.24	0.003	0.01
10	1	0	0	0	59.52	-0.01	0.96	0.98	62.11	59.52	1.15	0.003	0.01
10	2	0	0	0	59.26	-0.01	0.97	0.97	62.11	59.26	1.06	0.002	0.01
10	3	0	0	0	58.99	-0.01	0.97	0.97	62.11	58.99	0.97	0.002	0.01
10	4	0	0	0	58.73	-0.01	0.97	0.97	62.13	58.73	0.88	0.002	0.01
10	5	0	0	0	58.46	-0.01	0.97	0.96	62.15	58.46	0.79	0.002	0.01
10	6	0	0	0	58.18	-0.01	0.98	0.96	62.19	58.18	0.70	0.002	0.01
10	7	0	0	0	57.91	-0.01	0.98	0.96	62.23	57.91	0.61	0.002	0.01
10	8	0	0	0	57.63	-0.01	0.98	0.95	62.28	57.63	0.52	0.001	0.01
10	9	0	0	0	57.35	-0.01	0.98	0.95	62.34	57.35	0.44	0.001	0.01
10	10	0	0	0	57.06	-0.01	0.98	0.95	62.41	57.06	0.35	0.001	0.01
10	11	0	0	0	56.78	-0.01	0.98	0.94	62.49	56.78	0.26	0.001	0.01
10	12	0	0	0	56.49	-0.01	0.98	0.94	62.58	56.49	0.17	0.001	0.01
10	13	0	0	0	56.20	-0.01	0.98	0.93	62.68	56.20	0.08	0.001	0.01
10	14	0	0	0	55.91	-0.01	0.98	0.93	62.78	55.91	-0.01	0.000	0.01
10	15	0	0	0	55.61	-0.01	0.98	0.92	62.90	55.61	-0.09	0.000	0.01
10	16	0	0	0	55.32	-0.01	0.98	0.92	63.02	55.32	-0.18	0.000	0.01
10	17	0	0	0	55.03	-0.01	0.98	0.92	63.15	55.03	-0.27	-.000	0.01
10	18	0	0	0	54.73	-0.01	0.98	0.91	63.29	54.73	-0.36	-.000	0.01
10	19	0	0	0	54.44	-0.01	0.98	0.91	63.45	54.44	-0.44	-.000	0.01
10	20	0	0	0	54.14	-0.01	0.98	0.90	63.61	54.14	-0.53	-.001	0.01
10	21	0	0	0	53.85	-0.01	0.98	0.90	63.77	53.85	-0.62	-.001	0.01
10	22	0	0	0	53.55	-0.01	0.98	0.89	63.95	53.55	-0.71	-.001	0.01
10	23	0	0	0	53.26	-0.01	0.98	0.89	64.14	53.26	-0.80	-.001	0.01
10	24	0	0	0	52.97	-0.01	0.98	0.88	64.34	52.97	-0.88	-.001	0.01
10	25	0	0	0	52.68	-0.01	0.98	0.88	64.55	52.68	-0.97	-.001	0.01
10	26	0	0	0	52.39	-0.00	0.98	0.87	64.76	52.39	-1.06	-.001	0.01
10	27	0	0	0	52.10	-0.00	0.98	0.87	64.99	52.10	-1.15	-.002	0.01
10	28	0	0	0	51.81	-0.00	0.97	0.86	65.23	51.81	-1.23	-.002	0.01
10	29	0	0	0	51.52	-0.00	0.97	0.85	65.48	51.52	-1.32	-.002	0.01
10	30	0	0	0	51.24	-0.00	0.97	0.85	65.73	51.24	-1.41	-.002	0.01
10	31	0	0	0	50.96	-0.00	0.97	0.84	66.00	50.96	-1.50	-.002	0.01
11	1	0	0	0	50.68	-0.00	0.97	0.84	66.28	50.68	-1.59	-.002	0.01
11	2	0	0	0	50.41	-0.00	0.96	0.83	66.57	50.41	-1.68	-.003	0.01
11	3	0	0	0	50.14	-0.00	0.96	0.83	66.87	50.14	-1.77	-.003	0.01
11	4	0	0	0	49.87	-0.00	0.96	0.82	67.19	49.87	-1.86	-.003	0.01
11	5	0	0	0	49.61	-0.00	0.96	0.82	67.51	49.61	-1.95	-.003	0.01
11	6	0	0	0	49.35	-0.00	0.95	0.81	67.84	49.35	-2.04	-.003	0.01
11	7	0	0	0	49.09	-0.00	0.95	0.81	68.19	49.09	-2.13	-.003	0.01
11	8	0	0	0	48.84	-0.00	0.95	0.80	68.55	48.84	-2.22	-.004	0.01
11	9	0	0	0	48.60	-0.00	0.94	0.80	68.92	48.60	-2.31	-.004	0.01
11	10	0	0	0	48.36	-0.00	0.94	0.79	69.30	48.36	-2.40	-.004	0.01
11	11	0	0	0	48.13	0.00	0.93	0.79	69.69	48.13	-2.49	-.004	0.01
11	12	0	0	0	47.90	0.00	0.93	0.78	70.09	47.90	-2.58	-.004	0.01
11	13	0	0	0	47.68	0.00	0.93	0.78	70.51	47.68	-2.67	-.004	0.01
11	14	0	0	0	47.47	0.00	0.92	0.77	70.94	47.47	-2.77	-.005	0.01
11	15	0	0	0	47.26	0.00	0.92	0.77	71.38	47.26	-2.86	-.005	0.01
11	16	0	0	0	47.07	0.00	0.91	0.76	71.83	47.07	-2.95	-.005	0.01
11	17	0	0	0	46.88	0.00	0.91	0.76	72.30	46.88	-3.05	-.005	0.01
11	18	0	0	0	46.70	0.00	0.90	0.75	72.77	46.70	-3.14	-.005	0.01
11	19	0	0	0	46.53	0.00	0.90	0.75	73.26	46.53	-3.24	-.005	0.01
11	20	0	0	0	46.37	0.00	0.89	0.74	73.76	46.37	-3.33	-.006	0.01
11	21	0	0	0	46.22	0.00	0.88	0.74	74.27	46.22	-3.43	-.006	0.01
11	22	0	0	0	46.08	0.00	0.88	0.74	74.79	46.08	-3.52	-.006	0.01
11	23	0	0	0	45.95	0.00	0.87	0.73	75.33	45.95	-3.62	-.006	0.01
11	24	0	0	0	45.84	0.00	0.87	0.73	75.87	45.84	-3.72	-.006	0.01
11	25	0	0	0	45.73	0.01	0.86	0.73	76.42	45.73	-3.81	-.007	0.01
11	26	0	0	0	45.64	0.01	0.85	0.72	76.98	45.64	-3.91	-.007	0.01
11	27	0	0	0	45.57	0.01	0.85	0.72	77.55	45.57	-4.01	-.007	0.01

12	1	0	0	0	45.43	0.01	0.82	0.71	79.89	45.43	-4.41	-.008	0.01
12	2	0	0	0	45.43	0.01	0.81	0.71	80.49	45.43	-4.51	-.008	0.01
12	3	0	0	0	45.46	0.01	0.80	0.71	81.08	45.46	-4.61	-.008	0.01
12	4	0	0	0	45.51	0.01	0.79	0.71	81.68	45.51	-4.72	-.008	0.01
12	5	0	0	0	45.58	0.01	0.79	0.71	82.27	45.58	-4.82	-.008	0.02
12	6	0	0	0	45.67	0.01	0.78	0.71	82.86	45.67	-4.92	-.009	0.02
12	7	0	0	0	45.79	0.01	0.77	0.71	83.44	45.79	-5.03	-.009	0.02
12	8	0	0	0	45.94	0.01	0.76	0.71	84.02	45.94	-5.13	-.009	0.02
12	9	0	0	0	46.11	0.01	0.75	0.71	84.58	46.11	-5.24	-.009	0.02
12	10	0	0	0	46.31	0.01	0.74	0.71	85.13	46.31	-5.34	-.009	0.02
12	11	0	0	0	46.54	0.01	0.73	0.72	85.67	46.54	-5.44	-.010	0.02
12	12	0	0	0	46.80	0.01	0.72	0.72	86.19	46.80	-5.55	-.010	0.02
12	13	0	0	0	47.10	0.01	0.71	0.72	86.68	47.10	-5.65	-.010	0.02
12	14	0	0	0	47.44	0.01	0.70	0.73	87.15	47.44	-5.76	-.010	0.02
12	15	0	0	0	47.82	0.01	0.69	0.73	87.59	47.82	-5.86	-.010	0.02
12	16	0	0	0	48.23	0.01	0.68	0.73	88.00	48.23	-5.97	-.011	0.02
12	17	0	0	0	48.70	0.01	0.67	0.74	88.37	48.70	-6.07	-.011	0.02
12	18	0	0	0	49.21	0.02	0.66	0.75	88.70	49.21	-6.17	-.011	0.02
12	19	0	0	0	49.77	0.02	0.65	0.75	88.99	49.77	-6.28	-.011	0.02
12	20	0	0	0	50.39	0.02	0.64	0.76	89.23	50.39	-6.38	-.011	0.02
12	21	0	0	0	51.07	0.02	0.63	0.77	89.41	51.07	-6.47	-.012	0.02
12	22	0	0	0	51.81	0.02	0.61	0.77	89.54	51.81	-6.57	-.012	0.02
12	23	0	0	0	52.61	0.02	0.60	0.78	89.60	52.61	-6.66	-.012	0.02
12	24	0	0	0	53.50	0.02	0.59	0.79	89.59	53.50	-6.75	-.012	0.02
12	25	0	0	0	54.46	0.02	0.58	0.80	89.51	54.46	-6.84	-.012	0.02
12	26	0	0	0	55.50	0.02	0.57	0.81	89.35	55.50	-6.92	-.012	0.02
12	27	0	0	0	56.64	0.02	0.55	0.82	89.09	56.64	-6.99	-.013	0.02
12	28	0	0	0	57.88	0.02	0.54	0.83	88.74	57.88	-7.06	-.013	0.02
12	29	0	0	0	59.22	0.02	0.53	0.85	88.29	59.22	-7.12	-.013	0.02
12	30	0	0	0	60.69	0.02	0.52	0.86	87.72	60.69	-7.16	-.013	0.02
12	31	0	0	0	62.28	0.02	0.50	0.87	87.03	62.28	-7.20	-.013	0.02

END OF FILE ON ORBIT TAPE

HELIOS-A YEAR 1984. LAUNCH TIME 285871864. 0.

DATE MM	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	ERTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LET(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
1	1	0	0	0	64.00	0.02	0.49	0.89	86.20	64.00	-7.22	-.013	0.02
1	2	0	0	0	65.88	0.02	0.48	0.90	85.24	65.88	-7.23	-.013	0.02
1	3	0	0	0	67.92	0.02	0.46	0.92	84.11	67.92	-7.21	-.013	0.03
1	4	0	0	0	70.14	0.02	0.45	0.93	82.82	70.14	-7.17	-.013	0.03
1	5	0	0	0	72.56	0.02	0.44	0.95	81.35	72.56	-7.11	-.013	0.03
1	6	0	0	0	75.18	0.02	0.42	0.97	79.68	75.18	-7.01	-.013	0.03
1	7	0	0	0	78.03	0.02	0.41	0.98	77.80	78.03	-6.87	-.013	0.03
1	8	0	0	0	81.12	0.02	0.40	1.00	75.70	81.12	-6.70	-.012	0.03
1	9	0	0	0	84.47	0.02	0.39	1.02	73.36	84.47	-6.47	-.012	0.03
1	10	0	0	0	88.10	0.02	0.38	1.04	70.76	88.10	-6.19	-.011	0.03
1	11	0	0	0	92.02	0.02	0.36	1.06	67.89	92.02	-5.84	-.011	0.03
1	12	0	0	0	96.24	0.02	0.35	1.08	64.75	96.24	-5.43	-.010	0.03
1	13	0	0	0	100.77	0.02	0.34	1.10	61.33	100.77	-4.94	-.009	0.03
1	14	0	0	0	105.61	0.02	0.34	1.12	57.64	105.61	-4.38	-.008	0.04
1	15	0	0	0	110.75	0.02	0.33	1.14	53.68	110.75	-3.73	-.007	0.04
1	16	0	0	0	116.16	0.02	0.32	1.16	49.47	116.16	-3.02	-.006	0.04
1	17	0	0	0	121.80	0.02	0.32	1.18	45.05	121.80	-2.24	-.004	0.04
1	18	0	0	0	127.64	0.01	0.31	1.20	40.47	127.64	-1.40	-.003	0.04
1	19	0	0	0	133.62	0.01	0.31	1.22	35.77	133.62	-0.53	-.001	0.04
1	20	0	0	0	139.65	0.01	0.31	1.24	31.02	139.65	0.35	0.000	0.04
1	21	0	0	0	145.68	0.00	0.31	1.25	26.29	145.68	1.23	0.002	0.04
1	22	0	0	0	151.63	0.00	0.31	1.27	21.63	151.63	2.09	0.003	0.04
1	23	0	0	0	157.43	-0.00	0.32	1.28	17.12	157.43	2.89	0.005	0.04
1	24	0	0	0	163.03	-0.00	0.32	1.30	12.80	163.03	3.64	0.006	0.04
1	25	0	0	0	168.38	-0.01	0.33	1.31	8.71	168.38	4.30	0.007	0.04
1	26	0	0	0	173.45	-0.01	0.34	1.32	4.88	173.45	4.90	0.009	0.03
1	27	0	0	0	178.22	-0.01	0.35	1.33	1.31	178.22	5.41	0.009	0.03
1	28	0	0	0	182.69	-0.01	0.36	1.34	1.97	177.31	5.84	0.010	0.03
1	29	0	0	0	186.84	-0.02	0.37	1.35	4.99	173.16	6.20	0.011	0.03
1	30	0	0	0	190.70	-0.02	0.38	1.36	7.74	169.30	6.49	0.012	0.03
1	31	0	0	0	194.27	-0.02	0.39	1.37	10.23	165.73	6.73	0.012	0.03
2	1	0	0	0	197.56	-0.02	0.40	1.37	12.50	162.44	6.91	0.012	0.03
2	2	0	0	0	200.60	-0.02	0.41	1.38	14.54	159.40	7.04	0.013	0.03
2	3	0	0	0	203.40	-0.02	0.43	1.39	16.38	156.60	7.13	0.013	0.03
2	4	0	0	0	205.98	-0.02	0.44	1.40	18.03	154.02	7.19	0.013	0.03
2	5	0	0	0	208.35	-0.02	0.45	1.40	19.51	151.65	7.22	0.013	0.03
2	6	0	0	0	210.54	-0.02	0.47	1.41	20.84	149.47	7.23	0.013	0.03
2	7	0	0	0	212.54	-0.02	0.48	1.41	22.03	147.46	7.21	0.013	0.02
2	8	0	0	0	214.39	-0.02	0.49	1.42	23.10	145.61	7.17	0.013	0.02
2	9	0	0	0	216.10	-0.02	0.51	1.43	24.04	143.90	7.13	0.013	0.02
2	10	0	0	0	217.66	-0.02	0.52	1.43	24.89	142.34	7.06	0.013	0.02
2	11	0	0	0	219.11	-0.02	0.53	1.44	25.64	140.89	6.99	0.013	0.02
2	12	0	0	0	220.43	-0.02	0.54	1.44	26.30	139.57	6.91	0.013	0.02
2	13	0	0	0	221.66	-0.02	0.56	1.45	26.88	138.34	6.82	0.012	0.02
2	14	0	0	0	222.78	-0.02	0.57	1.46	27.40	137.22	6.73	0.012	0.02
2	15	0	0	0	223.81	-0.02	0.58	1.46	27.85	136.19	6.63	0.012	0.02
2	16	0	0	0	224.77	-0.02	0.59	1.47	28.25	135.23	6.53	0.012	0.02
2	17	0	0	0	225.64	-0.02	0.61	1.48	28.59	134.36	6.42	0.012	0.02
2	18	0	0	0	226.44	-0.02	0.62	1.48	28.88	133.56	6.32	0.012	0.02
2	19	0	0	0	227.18	-0.02	0.63	1.49	29.14	132.82	6.21	0.011	0.02
2	20	0	0	0	227.85	-0.02	0.64	1.50	29.35	132.15	6.09	0.011	0.02
2	21	0	0	0	228.46	-0.02	0.65	1.50	29.52	131.54	5.98	0.011	0.02
2	22	0	0	0	229.02	-0.02	0.66	1.51	29.67	130.98	5.87	0.011	0.02
2	23	0	0	0	229.53	-0.02	0.67	1.52	29.78	130.47	5.75	0.011	0.02
2	24	0	0	0	230.00	-0.02	0.68	1.52	29.87	130.00	5.64	0.011	0.02
2	25	0	0	0	230.42	-0.02	0.69	1.53	29.94	129.58	5.53	0.010	0.02
2	26	0	0	0	230.80	-0.02	0.70	1.54	29.98	129.21	5.41	0.010	0.02
2	27	0	0	0	231.13	-0.02	0.71	1.54	30.00	128.87	5.30	0.010	0.02
2	28	0	0	0	231.44	-0.02	0.72	1.55	30.00	128.56	5.19	0.010	0.02
2	29	0	0	0	231.71	-0.02	0.73	1.56	29.99	128.29	5.07	0.010	0.02

END OF FILE ON ORBIT TAPE

HELIOS-A YEAR 1984. LAUNCH TIME 291055864. 0.

DATE				HELIOS	HELIOS	SUN-HELIOS	ERTH-HELIOS	EARTH-HELIOS	HELIOS-SUN	HELIOS	HELIOS-V(A.U/DAY)	
IM	DD HR	MN	SC	ECL.LONG	ECL.LAT	DIST(A.U)	DIST(A.U)	SUN(DEG)	EARTH(DEG)	HEL-LET(DEG)	RADIAL	NORMAL
3	1 0	0	0	231.94	-0.02	0.74	1.56	29.96	128.06	4.96	0.009	0.02
3	2 0	0	0	232.15	-0.02	0.75	1.57	29.91	127.85	4.85	0.009	0.02
3	3 0	0	0	232.33	-0.02	0.76	1.58	29.85	127.67	4.74	0.009	0.02
3	4 0	0	0	232.48	-0.02	0.77	1.58	29.79	127.52	4.62	0.009	0.02
3	5 0	0	0	232.60	-0.02	0.78	1.59	29.71	127.40	4.51	0.009	0.02
3	6 0	0	0	232.70	-0.02	0.79	1.60	29.62	127.30	4.41	0.008	0.01
3	7 0	0	0	232.78	-0.02	0.80	1.60	29.52	127.22	4.30	0.008	0.01
3	8 0	0	0	232.84	-0.02	0.80	1.61	29.42	127.16	4.19	0.008	0.01
3	9 0	0	0	232.88	-0.02	0.81	1.62	29.30	127.12	4.08	0.008	0.01
3	10 0	0	0	232.90	-0.02	0.82	1.62	29.19	127.10	3.98	0.008	0.01
3	11 0	0	0	232.90	-0.02	0.83	1.63	29.06	127.10	3.87	0.007	0.01
3	12 0	0	0	232.88	-0.02	0.83	1.64	28.93	127.12	3.76	0.007	0.01
3	13 0	0	0	232.85	-0.02	0.84	1.64	28.80	127.15	3.66	0.007	0.01
3	14 0	0	0	232.80	-0.02	0.85	1.65	28.66	127.20	3.56	0.007	0.01
3	15 0	0	0	232.74	-0.02	0.85	1.66	28.52	127.26	3.45	0.007	0.01
3	16 0	0	0	232.66	-0.02	0.86	1.66	28.37	127.34	3.35	0.006	0.01
3	17 0	0	0	232.57	-0.02	0.87	1.67	28.22	127.43	3.25	0.006	0.01
3	18 0	0	0	232.47	-0.02	0.87	1.68	28.07	127.53	3.15	0.006	0.01
3	19 0	0	0	232.35	-0.02	0.88	1.68	27.92	127.65	3.05	0.006	0.01
3	20 0	0	0	232.23	-0.02	0.89	1.69	27.76	127.77	2.95	0.006	0.01
3	21 0	0	0	232.09	-0.02	0.89	1.70	27.60	127.91	2.85	0.006	0.01
3	22 0	0	0	231.95	-0.02	0.90	1.70	27.44	128.05	2.75	0.005	0.01
3	23 0	0	0	231.79	-0.02	0.90	1.71	27.28	128.21	2.66	0.005	0.01
3	24 0	0	0	231.62	-0.02	0.91	1.71	27.12	128.38	2.56	0.005	0.01
3	25 0	0	0	231.45	-0.02	0.91	1.72	26.95	128.55	2.46	0.005	0.01
3	26 0	0	0	231.27	-0.02	0.92	1.73	26.79	128.73	2.37	0.005	0.01
3	27 0	0	0	231.08	-0.02	0.92	1.73	26.63	128.92	2.27	0.005	0.01
3	28 0	0	0	230.88	-0.02	0.93	1.74	26.46	129.12	2.18	0.004	0.01
3	29 0	0	0	230.68	-0.01	0.93	1.74	26.29	129.32	2.08	0.004	0.01
3	30 0	0	0	230.47	-0.01	0.93	1.75	26.13	129.53	1.99	0.004	0.01
3	31 0	0	0	230.25	-0.01	0.94	1.75	25.96	129.75	1.89	0.004	0.01
4	1 0	0	0	230.03	-0.01	0.94	1.76	25.80	129.97	1.80	0.004	0.01
4	2 0	0	0	229.80	-0.01	0.95	1.77	25.63	130.20	1.71	0.004	0.01
4	3 0	0	0	229.56	-0.01	0.95	1.77	25.47	130.44	1.62	0.003	0.01
4	4 0	0	0	229.33	-0.01	0.95	1.78	25.30	130.67	1.52	0.003	0.01
4	5 0	0	0	229.08	-0.01	0.96	1.78	25.14	130.92	1.43	0.003	0.01
4	6 0	0	0	228.84	-0.01	0.96	1.78	24.97	131.16	1.34	0.003	0.01
4	7 0	0	0	228.59	-0.01	0.96	1.79	24.81	131.41	1.25	0.003	0.01
4	8 0	0	0	228.33	-0.01	0.96	1.79	24.65	131.67	1.16	0.003	0.01
4	9 0	0	0	228.08	-0.01	0.97	1.80	24.49	131.92	1.07	0.002	0.01
4	10 0	0	0	227.82	-0.01	0.97	1.80	24.33	132.18	0.98	0.002	0.01
4	11 0	0	0	227.55	-0.01	0.97	1.81	24.17	132.45	0.89	0.002	0.01
4	12 0	0	0	227.29	-0.01	0.97	1.81	24.01	132.71	0.80	0.002	0.01

HC208I IBCOM - PROGRAM INTERRUPT (P) - UNDERFLOW OLD PSW IS 078D000D92111B4A . REGISTER CONTAINED FC4062B458000000

RACEBACK ROUTINE	CALLED FROM ISN	REG. 14	REG. 15	REG. 0	REG. 1
&&BK	0031	6210CC6E	0010CE70	00000000	0010C28C
ORBIT		0001C0B0	0010C010	00104F5C	00104F80

ITRY POINT= 0010C010

TANDARD FIXUP TAKEN , EXECUTION CONTINUING

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IHC208I IBCOM - PROGRAM INTERRUPT (P) -  UNDERFLOW   OLD PSW IS  078D000DA2111B4A . REGISTER CONTAINED   7A3A7A0C00000
TRACEBACK  ROUTINE  CALLED FROM ISN   REG.  14   REG.  15   REG.   0   REG.   1
           &&BK              0031    6210CC6E   0010CE70   00000000   0010C28C
            ORBIT                     0001C0B0   0010C010   00104F5C   00104F80
ENTRY POINT=  0010C010
STANDARD FIXUP TAKEN , EXECUTION CONTINUING
IHC208I IBCOM - PROGRAM INTERRUPT (P) -  UNDERFLOW   OLD PSW IS  078D000D92111B4A . REGISTER CONTAINED   FB4310F340000000
TRACEBACK  ROUTINE  CALLED FROM ISN   REG.  14   REG.  15   REG.   0   REG.   1
           &&BK              0031    6210CC6E   0010CE70   00000000   0010C28C
            ORBIT                     0001C0B0   0010C010   00104F5C   00104F80
ENTRY POINT=  0010C010
STANDARD FIXUP TAKEN , EXECUTION CONTINUING
IHC208I IBCOM - PROGRAM INTERRUPT (P) -  UNDERFLOW   OLD PSW IS  078D000DA2111B4A . REGISTER CONTAINED   7DDB3E9ED0000000
TRACEBACK  ROUTINE  CALLED FROM ISN   REG.  14   REG.  15   REG.   0   REG.   1
           &&BK              0031    6210CC6E   0010CE70   00000000   0010C28C
            ORBIT                     0001C0B0   0010C010   00104F5C   00104F80
ENTRY POINT=  0010C010
STANDARD FIXUP TAKEN , EXECUTION CONTINUING
IHC208I IBCOM - PROGRAM INTERRUPT (P) -  UNDERFLOW   OLD PSW IS  078D000D92111B4A . REGISTER CONTAINED   FC4062B458000000
TRACEBACK  ROUTINE  CALLED FROM ISN   REG.  14   REG.  15   REG.   0   REG.   1
           &&BK              0031    6210CC6E   0010CE70   00000000   0010C28C
            ORBIT                     0001C0B0   0010C010   00104F5C   00104F80
ENTRY POINT=  0010C010
STANDARD FIXUP TAKEN , EXECUTION CONTINUING
```

4	13	0	0	0	227.02	-0.01	0.98	1.81	23.86	132.98	0.71	0.002	0.01
4	14	0	0	0	226.75	-0.01	0.98	1.82	23.70	133.25	0.62	0.002	0.01
4	15	0	0	0	226.48	-0.01	0.98	1.82	23.55	133.52	0.54	0.001	0.01
4	16	0	0	0	226.21	-0.01	0.98	1.82	23.40	133.79	0.45	0.001	0.01
4	17	0	0	0	225.93	-0.01	0.98	1.83	23.25	134.07	0.36	0.001	0.01
4	18	0	0	0	225.66	-0.01	0.98	1.83	23.10	134.34	0.27	0.001	0.01
4	19	0	0	0	225.38	-0.01	0.98	1.83	22.95	134.62	0.18	0.001	0.01
4	20	0	0	0	225.11	-0.01	0.98	1.84	22.81	134.89	0.09	0.001	0.01
4	21	0	0	0	224.83	-0.01	0.98	1.84	22.67	135.17	0.01	0.000	0.01
4	22	0	0	0	224.55	-0.01	0.98	1.84	22.52	135.45	-0.08	0.000	0.01
4	23	0	0	0	224.28	-0.01	0.98	1.84	22.38	135.72	-0.17	0.000	0.01
4	24	0	0	0	224.00	-0.01	0.98	1.85	22.25	136.00	-0.26	-.000	0.01
4	25	0	0	0	223.72	-0.01	0.98	1.85	22.11	136.28	-0.35	-.000	0.01

4	26	0	0	0	223.45	-0.01	0.98	1.85	21.98	136.55	-0.43	-.000	0.01
4	27	0	0	0	223.17	-0.01	0.98	1.85	21.85	136.83	-0.52	-.000	0.01
4	28	0	0	0	222.90	-0.01	0.98	1.85	21.72	137.10	-0.61	-.001	0.01
4	29	0	0	0	222.63	-0.01	0.98	1.85	21.59	137.37	-0.70	-.001	0.01
4	30	0	0	0	222.36	-0.01	0.98	1.85	21.47	137.64	-0.78	-.001	0.01
5	1	0	0	0	222.09	-0.01	0.98	1.86	21.34	137.91	-0.87	-.001	0.01
5	2	0	0	0	221.82	-0.01	0.98	1.86	21.22	138.18	-0.96	-.001	0.01
5	3	0	0	0	221.56	-0.01	0.98	1.86	21.11	138.44	-1.05	-.001	0.01
5	4	0	0	0	221.30	-0.00	0.98	1.86	20.99	138.70	-1.14	-.002	0.01
5	5	0	0	0	221.04	-0.00	0.97	1.86	20.88	138.96	-1.22	-.002	0.01
5	6	0	0	0	220.78	-0.00	0.97	1.86	20.78	139.22	-1.31	-.002	0.01
5	7	0	0	0	220.53	-0.00	0.97	1.86	20.67	139.47	-1.40	-.002	0.01
5	8	0	0	0	220.28	-0.00	0.97	1.86	20.57	139.72	-1.49	-.002	0.01
5	9	0	0	0	220.04	-0.00	0.97	1.86	20.47	139.96	-1.58	-.002	0.01
5	10	0	0	0	219.80	-0.00	0.96	1.86	20.38	140.20	-1.67	-.003	0.01
5	11	0	0	0	219.56	-0.00	0.96	1.86	20.29	140.44	-1.76	-.003	0.01
5	12	0	0	0	219.33	-0.00	0.96	1.85	20.20	140.67	-1.84	-.003	0.01
5	13	0	0	0	219.10	-0.00	0.96	1.85	20.12	140.90	-1.93	-.003	0.01
5	14	0	0	0	218.88	-0.00	0.95	1.85	20.04	141.12	-2.02	-.003	0.01
5	15	0	0	0	218.66	-0.00	0.95	1.85	19.97	141.34	-2.11	-.003	0.01
5	16	0	0	0	218.45	-0.00	0.95	1.85	19.89	141.55	-2.21	-.004	0.01
5	17	0	0	0	218.25	-0.00	0.94	1.85	19.83	141.75	-2.30	-.004	0.01

HELIOS-A YEAR 1984. LAUNCH TIME 297712152. 0.

DATE MM	DD	HR	MN	SC.	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	ERTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LET(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
5	18	0	0	0	218.05	-0.00	0.94	1.84	19.77	141.95	-2.39	-.004	0.01
5	19	0	0	0	217.86	-0.00	0.93	1.84	19.71	142.14	-2.48	-.004	0.01
5	20	0	0	0	217.68	0.00	0.93	1.84	19.66	142.32	-2.57	-.004	0.01
5	21	0	0	0	217.50	0.00	0.93	1.84	19.62	142.50	-2.66	-.004	0.01
5	22	0	0	0	217.33	0.00	0.92	1.83	19.58	142.67	-2.76	-.005	0.01
5	23	0	0	0	217.17	0.00	0.92	1.83	19.54	142.83	-2.85	-.005	0.01
5	24	0	0	0	217.02	0.00	0.91	1.83	19.52	142.98	-2.94	-.005	0.01
5	25	0	0	0	216.88	0.00	0.91	1.82	19.49	143.12	-3.04	-.005	0.01
5	26	0	0	0	216.74	0.00	0.90	1.82	19.48	143.26	-3.13	-.005	0.01
5	27	0	0	0	216.62	0.00	0.90	1.81	19.47	143.38	-3.22	-.005	0.01
5	28	0	0	0	216.51	0.00	0.89	1.81	19.47	143.49	-3.32	-.006	0.01
5	29	0	0	0	216.41	0.00	0.89	1.80	19.48	143.59	-3.41	-.006	0.01
5	30	0	0	0	216.32	0.00	0.88	1.80	19.49	143.69	-3.51	-.006	0.01
5	31	0	0	0	216.24	0.00	0.87	1.79	19.52	143.76	-3.61	-.006	0.01
6	1	0	0	0	216.17	0.00	0.87	1.79	19.55	143.83	-3.70	-.006	0.01
6	2	0	0	0	216.12	0.00	0.86	1.78	19.59	143.88	-3.80	-.006	0.01
6	3	0	0	0	216.08	0.01	0.85	1.78	19.64	143.92	-3.90	-.007	0.01
6	4	0	0	0	216.06	0.01	0.85	1.77	19.71	143.94	-4.00	-.007	0.01
6	5	0	0	0	216.05	0.01	0.84	1.76	19.78	143.95	-4.10	-.007	0.01
6	6	0	0	0	216.06	0.01	0.83	1.76	19.86	143.94	-4.20	-.007	0.01
6	7	0	0	0	216.09	0.01	0.83	1.75	19.96	143.91	-4.30	-.007	0.01
6	8	0	0	0	216.13	0.01	0.82	1.74	20.07	143.87	-4.40	-.008	0.01
6	9	0	0	0	216.20	0.01	0.81	1.74	20.20	143.80	-4.50	-.008	0.01
6	10	0	0	0	216.28	0.01	0.80	1.73	20.33	143.72	-4.60	-.008	0.01
6	11	0	0	0	216.38	0.01	0.79	1.72	20.49	143.62	-4.70	-.008	0.01
6	12	0	0	0	216.51	0.01	0.79	1.71	20.66	143.49	-4.81	-.008	0.02
6	13	0	0	0	216.66	0.01	0.78	1.70	20.85	143.34	-4.91	-.009	0.02
6	14	0	0	0	216.84	0.01	0.77	1.70	21.05	143.16	-5.01	-.009	0.02
6	15	0	0	0	217.04	0.01	0.76	1.69	21.28	142.96	-5.12	-.009	0.02
6	16	0	0	0	217.27	0.01	0.75	1.68	21.52	142.73	-5.22	-.009	0.02
6	17	0	0	0	217.53	0.01	0.74	1.67	21.79	142.47	-5.33	-.009	0.02
6	18	0	0	0	217.82	0.01	0.73	1.66	22.09	142.18	-5.43	-.010	0.02
6	19	0	0	0	218.14	0.01	0.72	1.65	22.40	141.86	-5.54	-.010	0.02
6	20	0	0	0	218.50	0.01	0.71	1.64	22.75	141.50	-5.64	-.010	0.02
6	21	0	0	0	218.89	0.01	0.70	1.62	23.12	141.11	-5.75	-.010	0.02
6	22	0	0	0	219.32	0.01	0.69	1.61	23.53	140.68	-5.85	-.010	0.02
6	23	0	0	0	219.80	0.01	0.68	1.60	23.97	140.20	-5.95	-.011	0.02
6	24	0	0	0	220.32	0.01	0.67	1.59	24.45	139.68	-6.06	-.011	0.02
6	25	0	0	0	220.89	0.02	0.66	1.58	24.96	139.11	-6.16	-.011	0.02
6	26	0	0	0	221.51	0.02	0.65	1.56	25.52	138.49	-6.26	-.011	0.02
6	27	0	0	0	222.18	0.02	0.64	1.55	26.12	137.82	-6.36	-.011	0.02
6	28	0	0	0	222.92	0.02	0.63	1.54	26.77	137.08	-6.46	-.011	0.02
6	29	0	0	0	223.71	0.02	0.62	1.52	27.48	136.29	-6.56	-.012	0.02
6	30	0	0	0	224.58	0.02	0.60	1.51	28.25	135.42	-6.65	-.012	0.02

ND OF FILE ON ORBIT TAPE

HELIOS-A YEAR 1984. LA ICH TIME 301596664. 0.

DATE MM	DD	HR	MN	SC	HELIOS ECL.LONG	HELIOS ECL.LAT	SUN-HELIOS DIST(A.U)	ERTH-HELIOS DIST(A.U)	EARTH-HELIOS SUN(DEG)	HELIOS-SUN EARTH(DEG)	HELIOS HEL-LET(DEG)	HELIOS-V(A.U/DAY) RADIAL	NORMAL
7	1	0	0	0	225.51	0.02	0.59	1.49	29.07	134.49	-6.74	-.012	0.02
7	2	0	0	0	226.53	0.02	0.58	1.48	29.97	133.47	-6.83	-.012	0.02
7	3	0	0	0	227.63	0.02	0.57	1.46	30.94	132.37	-6.91	-.012	0.02
7	4	0	0	0	228.82	0.02	0.56	1.44	32.00	131.18	-6.98	-.013	0.02
7	5	0	0	0	230.11	0.02	0.54	1.43	33.14	129.89	-7.05	-.013	0.02
7	6	0	0	0	231.51	0.02	0.53	1.41	34.38	128.49	-7.11	-.013	0.02
7	7	0	0	0	233.02	0.02	0.52	1.39	35.74	126.98	-7.16	-.013	0.02
7	8	0	0	0	234.66	0.02	0.50	1.37	37.21	125.34	-7.20	-.013	0.02
7	9	0	0	0	236.44	0.02	0.49	1.35	38.81	123.56	-7.22	-.013	0.02
7	10	0	0	0	238.36	0.02	0.48	1.33	40.55	121.64	-7.23	-.013	0.02
7	11	0	0	0	240.45	0.02	0.47	1.31	42.46	119.55	-7.21	-.013	0.03
7	12	0	0	0	242.71	0.02	0.45	1.29	44.54	117.29	-7.18	-.013	0.03
7	13	0	0	0	245.17	0.02	0.44	1.27	46.81	114.83	-7.12	-.013	0.03
7	14	0	0	0	247.83	0.02	0.43	1.24	49.29	112.17	-7.02	-.013	0.03
7	15	0	0	0	250.71	0.02	0.41	1.22	52.01	109.29	-6.89	-.013	0.03
7	16	0	0	0	253.84	0.02	0.40	1.19	54.98	106.16	-6.72	-.012	0.03
7	17	0	0	0	257.22	0.02	0.39	1.17	58.24	102.78	-6.50	-.012	0.03
7	18	0	0	0	260.88	0.02	0.38	1.14	61.79	99.12	-6.22	-.011	0.03
7	19	0	0	0	264.83	0.02	0.37	1.11	65.67	95.17	-5.89	-.011	0.03
7	20	0	0	0	269.08	0.02	0.36	1.08	69.91	90.92	-5.48	-.010	0.03
7	21	0	0	0	273.63	0.02	0.35	1.05	74.51	86.37	-5.01	-.009	0.03
7	22	0	0	0	278.50	0.02	0.34	1.02	79.49	81.50	-4.45	-.008	0.04
7	23	0	0	0	283.66	0.02	0.33	0.99	84.86	76.34	-3.82	-.007	0.04
7	24	0	0	0	289.10	0.02	0.32	0.96	90.62	70.90	-3.11	-.006	0.04
7	25	0	0	0	294.78	0.02	0.32	0.93	96.75	65.22	-2.34	-.005	0.04
7	26	0	0	0	300.66	0.01	0.31	0.90	103.22	59.34	-1.51	-.003	0.04
7	27	0	0	0	306.68	0.01	0.31	0.87	110.00	53.32	-0.64	-.002	0.04
7	28	0	0	0	312.78	0.01	0.31	0.84	117.03	47.22	0.24	-.000	0.04
7	29	0	0	0	318.87	0.00	0.31	0.81	124.24	41.13	1.12	0.002	0.04
7	30	0	0	0	324.90	0.00	0.31	0.78	131.58	35.10	1.98	0.003	0.04
7	31	0	0	0	330.78	-0.00	0.32	0.75	138.97	29.22	2.79	0.005	0.04
8	1	0	0	0	336.47	-0.00	0.32	0.73	146.35	23.53	3.54	0.006	0.04
8	2	0	0	0	341.91	-0.01	0.33	0.71	153.65	18.09	4.22	0.007	0.04
8	3	0	0	0	347.08	-0.01	0.34	0.69	160.83	12.92	4.82	0.008	0.04
8	4	0	0	0	351.95	-0.01	0.35	0.67	167.84	8.05	5.35	0.009	0.03
8	5	0	0	0	356.51	-0.01	0.36	0.66	174.63	3.49	5.79	0.010	0.03
8	6	0	0	0	0.76	-0.02	0.37	0.65	178.81	0.76	6.16	0.011	0.03
8	7	0	0	0	4.72	-0.02	0.38	0.64	172.51	4.72	6.46	0.011	0.03
8	8	0	0	0	8.38	-0.02	0.39	0.63	166.48	8.38	6.70	0.012	0.03
8	9	0	0	0	11.76	-0.02	0.40	0.63	160.75	11.76	6.89	0.012	0.03
8	10	0	0	0	14.89	-0.02	0.41	0.62	155.30	14.89	7.03	0.013	0.03
8	11	0	0	0	17.78	-0.02	0.43	0.62	150.15	17.78	7.12	0.013	0.03
8	12	0	0	0	20.44	-0.02	0.44	0.62	145.29	20.44	7.19	0.013	0.03
8	13	0	0	0	22.89	-0.02	0.45	0.62	140.71	22.89	7.22	0.013	0.03
8	14	0	0	0	25.15	-0.02	0.46	0.62	136.40	25.15	7.23	0.013	0.03
8	15	0	0	0	27.23	-0.02	0.48	0.63	132.36	27.23	7.21	0.013	0.02
8	16	0	0	0	29.16	-0.02	0.49	0.63	128.57	29.16	7.18	0.013	0.02
8	17	0	0	0	30.93	-0.02	0.50	0.64	125.01	30.93	7.13	0.013	0.02
8	18	0	0	0	32.56	-0.02	0.52	0.64	121.68	32.56	7.07	0.013	0.02
8	19	0	0	0	34.07	-0.02	0.53	0.65	118.56	34.07	7.00	0.013	0.02
8	20	0	0	0	35.46	-0.02	0.54	0.65	115.63	35.46	6.92	0.013	0.02
8	21	0	0	0	36.74	-0.02	0.56	0.66	112.89	36.74	6.84	0.013	0.02
8	22	0	0	0	37.93	-0.02	0.57	0.66	110.33	37.93	6.74	0.012	0.02
8	23	0	0	0	39.02	-0.02	0.58	0.67	107.92	39.02	6.64	0.012	0.02
8	24	0	0	0	40.03	-0.02	0.59	0.68	105.66	40.03	6.54	0.012	0.02

8	25	0	0		40.95	-0.02	0.60	0.68	103.54	40.95	6.44	0.012	0.02
8	26	0	0		41.81	-0.02	0.62	0.69	101.55	41.81	6.33	0.012	0.02
8	27	0	0	0	42.59	-0.02	0.63	0.69	99.68	42.59	6.22	0.011	0.02
8	28	0	0	0	43.32	-0.02	0.64	0.70	97.91	43.32	6.11	0.011	0.02
8	29	0	0	0	43.98	-0.02	0.65	0.71	96.26	43.98	6.00	0.011	0.02
8	30	0	0	0	44.59	-0.02	0.66	0.71	94.70	44.59	5.88	0.011	0.02
8	31	0	0	0	45.14	-0.02	0.67	0.72	93.23	45.14	5.77	0.011	0.02

END OF FILE ON ORBIT TAPE

Halon 1
D-60088 C-2-7
12/15/74-2/12/84
74-097A-08B

DUMP OF TAPE SO-20

INPUT TAPE SO-20 ON TA0
DATA INPUT H9 NF 1 FL 1 1 1

FILE 1 RECORD 1 LENGTH 5120BYTES

(0)	00030078	77777777	C8C5D3C9	D6E260C1	40404040	40C6D3E4	E740C6D6	D940E3C8	C540D7C5	D9C9D6C4
(40)	40F1F261	F1F561F7	F44040F0	7A40F07A	40F040E3	D640F1F2	61F1F961	F7F440F2	F37A40F0	7A40F040
(80)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(120)	40404040	40404040	40404040	40404040	40404040	C1407E40	4DD9F140	6140F24B	F2F0F0C5	60F0F15D
(160)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(200)	D9F1407E	404DC1F2	4BD2F14E	C1F14BC3	F15D4BC2	4B5FC3F3	40404040	40404040	40404040	40404040
(240)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	C2407E40	4DD9F3C1
(280)	406140F4	4BF4F0F0	C560F0F1	5D404040	40404040	40404040	40404040	40404040	40404040	40404040
(320)	40404040	40404040	40404040	D9F3C140	7E40C1F2	4BC24BC3	F3404040	40404040	40404040	40404040
(360)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(400)	40404040	C3407E40	4DD9F1F2	C1406140	F14BF5F0	F0C560F0	F15D4040	40404040	40404040	40404040
(440)	40404040	40404040	40404040	40404040	40404040	40404040	D9F1F2C1	407E40C4	F14BC4F2	4BC5F14B
(480)	5FC64040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(520)	40404040	40404040	40404040	40404040	77777777	77777777	77777777	77777777	77777777	77777777
(560)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(600)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(640)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(680)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(720)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(760)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(800)	004A000C	00000000	00000000	00000000	C1100000	00000000	C1100000	00000000	C1100000	004A000C
(840)	000F0001	00000000	00000000	C1100000	00000000	C1100000	00000000	C1100000	004A000C	000F0002
(880)	00000000	00000000	C1100000	00000000	C1100000	00000000	C1100000	004A000C	000F0003	00000000
(920)	00000000	C1100000	00000000	C1100000	00000000	C1100000	004A000C	000F0004	00000000	00000000
(960)	C1100000	00000000	C1100000	00000000	C1100000	004A000C	000F0005	00000000	00000000	C1100000
(1000)	00000000	C1100000	00000000	C1100000	004A000C	000F0006	00000000	00000000	C1100000	00000000
(1040)	C1100000	00000000	C1100000	004A000C	000F0007	00000000	00000000	C1100000	00000000	C1100000
(1080)	00000000	C1100000	004A000C	000F0008	00000000	00000000	C1100000	00000000	C1100000	00000000
(1120)	C1100000	004A000C	000F0009	00000000	00000000	C1100000	00000000	C1100000	00000000	C1100000
(1160)	004A000C	000F000A	00000000	00000000	C1100000	00000000	C1100000	00000000	C1100000	004A000C
(1200)	000F000B	00000000	00000000	C1100000	00000000	C1100000	00000000	C1100000	004A000C	000F000C
(1240)	00000000	00000000	C1100000	00000000	C1100000	00000000	C1100000	004A000C	000F000D	00000000
(1280)	00000000	C1100000	00000000	C1100000	00000000	C1100000	004A000C	000F000E	00000000	00000000
(1320)	C1100000	00000000	C1100000	00000000	C1100000	004A000C	000F000F	00000000	00000000	C1100000
(1360)	00000000	C1100000	00000000	C1100000	004A000C	000F0010	00000000	00000000	C1100000	00000000
(1400)	C1100000	00000000	C1100000	004A000C	000F0011	00000000	00000000	C1100000	00000000	C1100000
(1440)	00000000	C1100000	004A000C	000F0012	00000000	00000000	C1100000	00000000	C1100000	00000000
(1480)	C1100000	004A000C	000F0013	00000000	00000000	C1100000	00000000	C1100000	00000000	C1100000
(1520)	004A000C	000F0014	00000000	00000000	C1100000	00000000	C1100000	00000000	C1100000	004A000C
(1560)	000F0015	00000000	00000000	C1100000	00000000	C1100000	00000000	C1100000	004A000C	000F0016
(1600)	00000000	00000000	C1100000	00000000	C1100000	00000000	C1100000	004A000C	000F0017	00000000
(1640)	00000000	C1100000	00000000	C1100000	00000000	C1100000	004A000C	00100000	00000000	00000000
(1680)	C1100000	00000000	C1100000	00000000	C1100000	004A000C	00100001	00000000	00000000	C1100000
(1720)	00000000	C1100000	00000000	C1100000	004A000C	00100002	00000000	403E7DD8	3F5CD5CE	401E455D
(1760)	3F3F0E1B	3F16FC43	3F16FC43	004A000C	00100003	00000000	40353CFF	3F836FFF	401923EA	3F57C6E8
(1800)	00000000	00000000	004A000C	00100004	00000000	408316AF	3FAD9566	4017B425	3F50DBBB	3FB4997F
(1840)	3F50C440	004A000C	00100005	00000000	4048A3F0	3F5064EA	401791AB	3F2D1295	3EFCD6E9	3EFCD6E9
(1880)	004A000C	00100006	00000000	403ABCE8	3F484AF6	4021B6A6	3F36C4F3	3F104FEE	3F104FEE	004A000C
(1920)	00100007	00000000	40429AFF	3F4A9CF1	401CBB54	3F31014B	3F2C9E65	3F19C2B9	004A000C	00100008
(1960)	00000000	40390581	3F4590CA	401AC5D4	3F2F4E11	3F1EA5AF	3F15ABBD	004A000C	00100009	00000000
(2000)	404236B2	3F517E65	40218538	3F3A849A	3F25752C	3F1A7C91	004A000C	0010000A	00000000	403F8829
(2040)	3F4DBC05	401CDC2A	3F3551C9	3F483D68	3F241EB3	004A000C	0010000B	00000000	403BF641	3F54CC8B
(2080)	40176C31	3F34FFD5	3F41F548	3F2614B8	004A000C	0010000C	00000000	4046089F	3F8AFC59	401E2B18
(2120)	3F5B3873	3F329162	3F329162	004A000C	0010000D	00000000	40369721	3F46D886	401DA12F	3F328954
(2160)	3F4F0329	3F2355DC	004A000C	0010000E	00000000	403E12CF	3F477D87	401A723F	3F2F03FD	3EEDF76F
(2200)	3EEDF76F	004A000C	0010000F	00000000	4045F367	3F4D0CBC	401C67BF	3F30B9CF	00000000	00000000
(2240)	004A000C	00100010	00000000	403DDDB0	3F4A315C	401F046A	3F32EAB6	3F344FC6	3F1E33BE	004A000C
(2280)	00100011	00000000	421198B6	4026F201	401B45D1	3F307C1E	3F1EA5AF	3F15ABBD	004A000C	00100012

(2320)	00000000	40376948	3F45A804	401923EA	3F2DD70C	3EFCD6E9	3EFCD6E9	004A000C	00100013	00000000
(2360)	403D9DBD	3F48E072	401CF4CB	3F31F578	3F2F684C	3F1B5EE4	004A000C	00100014	00000000	403A041C
(2400)	3F462B6D	4017E7DD	3F2D64B4	3F4F0329	3F2355DC	004A000C	00100015	00000000	40453472	3F55AF08
(2440)	401EAA66	3F390972	3F26E5FC	3F1B815B	004A000C	00100016	00000000	404278FF	3F4ED624	401E870A
(2480)	3F34FA8F	3F329162	3F1D3204	004A000C	00100017	00000000	403BEEC3	3F47DFD1	401B45D1	3F307C1E
(2520)	3EFCD6E9	3EFCD6E9	004A000C	00110000	00000000	00000000	C1100000	00000000	C1100000	00000000
(2560)	C1100000	004A000C	00110001	00000000	00000000	C1100000	00000000	C1100000	00000000	C1100000
(2600)	004A000C	00110002	00000000	4040A57F	4010B10F	401AEF9F	3FC0BD0F	00000000	00000000	004A000C
(2640)	00110003	00000000	403E16FF	3F4C3174	401F9ADD	3F35E7D2	3F4F0329	3F2355DC	004A000C	00110004
(2680)	00000000	4048DB03	3F4FDF24	401D31F7	3F32F79E	3F5ED098	3F26B53E	004A000C	00110005	00000000
(2720)	40404C85	3F4BA336	401A112E	3F3028D8	3F413FB8	3F209FDC	004A000C	00110006	00000000	40381869
(2760)	3F4615C0	401B45D1	3F307C1E	3F2F684C	3F1B5EE4	004A000C	00110007	00000000	403D2BBD	3F685557
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(2840)	3F2F4E11	3F3B7DDD	3F1DBEEE	004A000C	00110009	00000000	403CAB10	3F47C16E	401E09A9	3F321B3F
(2880)	3F2F684C	3F1B5EE4	004A000C	0011000A	00000000	40414CA9	3F49E0BB	401F5029	3F33F3CB	3F3D4B5F
(2920)	3F1EA5AF	004A000C	0011000B	00000000	403A2E8B	3F676F31	401E4D93	3F4846E4	3F1DBEEE	3F1DBEEE
(2960)	004A000C	0011000C	00000000	4041D43B	3F518106	401DE624	3F379C6A	3F38E38E	3F20D845	004A000C
(3000)	0011000D	00000000	404052BF	3F48F4BE	401BCC48	3F2FF5E4	3F1E573A	3F157442	004A000C	0011000E
(3040)	00000000	40410F95	3F53142A	401E9F3B	3F39BDCC	3F4FD814	3F27EC09	004A000C	0011000F	00000000
(3080)	403A814B	3F45940E	401B26C9	3F2F6649	3F1E573A	3F157442	004A000C	00110010	00000000	4040A57F
(3120)	3F49239E	4020A57E	3F33F9A0	3EF2B9D2	3EF2B9D2	004A000C	00110011	00000000	40383E0F	3F44383A
(3160)	401C4867	3F315FE3	3F1E573A	3F157442	004A000C	00110012	00000000	403E28FA	3F51349F	40219101
(3200)	3F3BAC74	3F26E5FC	3F1B815B	004A000C	00110013	00000000	403D0E14	3F4AEC58	401BCE0F	3F31BD2D
(3240)	3F329162	3F1D3204	004A000C	00110014	00000000	4040FD0F	3F4B6FAB	401BF235	3F31146D	3F413FB8
(3280)	3F209FDC	004A000C	00110015	00000000	404113D3	3F54BC1E	401B951E	3F372A3D	3F28744E	3F1C9B03
(3320)	004A000C	00110016	00000000	40373E4C	3F4A6FEE	401FEC96	3F391B93	00000000	00000000	004A000C
(3360)	00110017	00000000	403D478B	3F48AD68	401EA3C5	3F336402	3F1F9ADD	3F16591A	004A000C	00120000
(3400)	00000000	4039965E	3F4A022A	401C3C83	3F33D2AE	3F22DFD9	3F18A8F1	004A000C	00120001	00000000
(3440)	403F9ECE	3F4AA34C	401BF235	3F31146D	00000000	00000000	004A000C	00120002	00000000	00000000
(3480)	C1100000	00000000	C1100000	00000000	C1100000	004A000C	00120003	00000000	00000000	C1100000
(3520)	00000000	C1100000	00000000	C1100000	004A000C	00120004	00000000	4047D454	3F7924CE	401E870A
(3560)	3F53C44A	3F26E5FC	3F26E5FC	004A000C	00120005	00000000	40404A10	3F4CAB61	40222E4E	3F390485
(3600)	3F22DFD9	3F18A8F1	004A000C	00120006	00000000	403A2E8B	3F4562C8	4018E38E	3F2D61B3	3F4BDA13
(3640)	3F21EC07	004A000C	00120007	00000000	403E0692	3F5347FE	401A7CB2	3F372C57	3F2A23D1	3F1DCC23
(3680)	004A000C	00120008	00000000	403B73A0	3F5DBA24	401CDC2A	3F414D84	3F362E0D	3F264F9B	004A000C
(3720)	00120009	00000000	00000000	C1100000	00000000	C1100000	00000000	C1100000	004A000C	0012000A
(3760)	00000000	00000000	C1100000	00000000	C1100000	00000000	C1100000	004A000C	0012000B	00000000
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(3840)	C1100000	00000000	C1100000	00000000	C1100000	004A000C	0012000D	00000000	00000000	C1100000
(3880)	00000000	C1100000	00000000	C1100000	004A000C	0012000E	00000000	404659BE	3F82D972	401D4AFD
(3920)	3F570871	40126FAB	3F6F7DE1	004A000C	0012000F	00000000	4080579D	3FB0BC2E	406E19DB	3FA8BB6F
(3960)	3FE38E3A	3F5CE630	004A000C	00120010	00000000	403718AF	3F65CAB4	401433B7	3F40A57E	3F7E6B71
(4000)	3F3F35B9	004A000C	00120011	00000000	40749831	3FB9A01B	40368BA2	3F76C35D	3FD2B318	3F5E3A4C
(4040)	004A000C	00120012	00000000	405333CE	3F70EA05	40268A0A	3F4E4FD0	40129FD4	3F59D8E1	004A000C
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(4200)	3F6C26D4	40194BE3	3F437508	3F1EF5BE	3F1EF5BE	004A000C	00120017	00000000	40474E98	3F5491EE
(4240)	401CBB54	3F362D58	3F25752C	3F1A7C91	004A000C	00130000	00000000	00000000	C1100000	00000000
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(4320)	3F26E5FC	3F1B815B	004A000C	00130002	00000000	404792A8	3F76BF86	401638E3	3F3DE4EE	3F1F9ADD
(4360)	3F1F9ADC	004A000C	00130003	00000000	4044A312	3F53BC82	4018C7F9	3F2FBB97	3F21B641	3F17D683
(4400)	004A000C	00130004	00000000	404BC394	3F7E6212	4021DCC8	3F51ADE3	3F27EC09	3F27EC09	004A000C
(4440)	00130005	00000000	4034CB6C	3F78AC63	401923EA	3F4C0460	3F3F35BA	3F2CB235	004A000C	00130006
(4480)	00000000	403CBA7F	3F5741DB	4011C71C	3F3183F0	00000000	00000000	004A000C	00130007	00000000
(4520)	4040389E	3F539EB2	402052BF	3F3B52DA	3F13F604	3F13F604	004A000C	00130008	00000000	40410801
(4560)	3F5009D8	401CAFD6	3F3678D9	3F25ED09	3F1AD153	004A000C	00130009	00000000	4035890D	3F75A88C
(4600)	401B2E4F	3F477F07	3F2A23D1	3F2A23D1	004A000C	0013000A	00000000	403B810F	3F4ACD26	401BF235
(4640)	3F31146D	3F107D52	3F107D52	004A000C	0013000B	00000000	4047C1F0	3F4D0E8C	4018E38E	3F2D61B3
(4680)	3F3CAE75	3F1E573A	004A000C	0013000C	00000000	4041558E	3F4BD662	401D8334	3F338571	3F2F684C
(4720)	3F1B5EE4	004A000C	0013000D	00000000	403E0F84	3F47A952	401BCC48	3F2FF5E4	3F3CAE75	3F1E573A
(4760)	004A000C	0013000E	00000000	4041F07C	3F49DDED	4017EB50	3F2C7D1F	3EF2B9D2	3EF2B9D2	004A000C
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(4840)	00000000	4037EB50	3F4405F8	401AD40A	3F2F1DD7	3F3CAE75	3F1E573A	004A000C	00130011	00000000
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(4920)	3F4A0C37	401B26C9	3F2F6649	3EF2B9D2	3EF2B9D2	004A000C	00130013	00000[illegible]	4041F07C	3F49DDED

(4960)	401A814A	3F2ED4F7	3EF2B9D2	3EF2B9D2	004A000C	00130014	00000000	40355E[illegible]	3F47A91E	4023A107
(5000)	3F39E19A	3F241EB3	3F198A67	004A000C	00130015	00000000	4034225E	3F536A2C	401C97F7	3F437452
(5040)	00000000	00000000	004A000C	00130016	00000000	40471C72	3F4CB580	401B7988	3F2FAE4D	3F4BDA13
(5080)	3F21EC07	004A000C	00130017	00000000	403CCC68	3F4D63CF	401E03B1	3F36601B	3F483D68	3F241EB3

FILE 1 RECORD 679 LENGTH 3104BYTES

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(40)	4040F261	F1F061F8	F44040F0	7A40F07A	40F040E3	D64040F2	61F1F261	F8F440F1	F57A40F0	7A40F040
(80)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(120)	40404040	40404040	40404040	40404040	40404040	C1407E40	4DD9F140	6140F24B	F2F0F0C5	60F0F15D
(160)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(200)	D9F1407E	404DC1F2	4BD2F14E	C1F14BC3	F15D4BC2	4B5FC3F3	40404040	40404040	40404040	40404040
(240)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	C2407E40	4DD9F3C1
(280)	406140F4	4BF4F0F0	C560F0F1	5D404040	40404040	40404040	40404040	40404040	40404040	40404040
(320)	40404040	40404040	40404040	D9F3C140	7E40C1F2	4BC24BC3	F3404040	40404040	40404040	40404040
(360)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(400)	40404040	C3407E40	4DD9F1F2	C1406140	F14BF5F0	F0C560F0	F15D4040	40404040	40404040	40404040
(440)	40404040	40404040	40404040	40404040	40404040	40404040	D9F1F2C1	407E40C4	F14BC4F2	4BC5F14B
(480)	5FC64040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(520)	40404040	40404040	40404040	40404040	00000000	00000000	00000000	00000000	00000000	00000000
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(600)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
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(720)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(760)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
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(880)	00000000	00000000	C1100000	00000000	C1100000	00000000	C1100000	00540002	000A0003	00000000
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(1080)	00000000	C1100000	00540002	000A0008	00000000	4025FAD4	3F2C51C3	40120372	3F1BDCE3	401F9ADD
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(1280)	00000000	C1100000	00000000	C1100000	00000000	C1100000	00540002	000A000E	00000000	00000000
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(1720)	3FDA2E8B	3F1DB0D7	4017B426	3F5ED098	00540002	000B0002	00000000	40296A05	3F492CC3	3FC1F07B
(1760)	3F279674	4014BDA1	3F58B0EF	00540002	000B0003	00000000	4027A57E	3F32A049	3FEA57E9	3F1EC553
(1800)	3FE12F67	3F33A938	00540002	000B0004	00000000	4028E8BA	3F336D0B	3FF26C99	3F1F4BFD	401284BD
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(1880)	00540002	000B0006	00000000	00000000	C1100000	00000000	C1100000	00000000	C1100000	00540002
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(1960)	00000000	00000000	C1100000	00000000	C1100000	00000000	C1100000	00540002	000B0009	00000000
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(2120)	3F21CDF0	4014BDA1	3F3EB6CF	00540002	000B000D	00000000	4026E38E	3F46E8A7	3FF26C99	3F2C42AA
(2160)	40104BD9	3F4E9DC5	00540002	000B000E	00000000	402A2BF6	3F3436AA	4010295F	3F2052BF	3FC97B40
(2200)	3F30DDCE	00540002	000B000F	00000000	402C71C7	3F6B343B	00000000	C1100000	00000000	C1100000
(2240)	00540002	000B0010	00000000	00000000	C1100000	00000000	C1100000	00000000	C1100000	00540002
(2280)	000B0011	00000000	402AB67D	3F4F71BB	4010D5C3	3F35DF3F	3F9E064D	3F46ABB8	00540002	000B0012
(2320)	00000000	00000000	C1100000	00000000	C1100000	00000000	C1100000	00540002	000B0013	00000000
(2360)	402BAFD6	3F3524AA	3FEA57E9	3F1EC553	3FD55557	3F32487C	00540002	000B0014	00000000	4027E624

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( 2400)  3F47D2E4  40112BF5  3F2F1E69  3FD55557  3F471C72  00540002  000B0015  00000000  402D33B7  3F360E92
( 2440)  3FFE8BA2  3F2011D8  3FBDA130  3F2F684B  00540002  000B0016  00000000  4026E38E  3F46E8A7  3FCA052B
( 2480)  3F28676E  3F7684BB  3F3500CA  00540002  000B0017  00000000  4020D40A  3F412649  4013B26C  3F3276F2
( 2520)  3FBDA130  3F430B51  00540002  000C0000  00000000  402913D3  3F3B80EE  40122E8B  3F307C1E  40104BD9
( 2560)  3F4E9DC5  00540002  000C0001  00000000  402AEDE6  3F4A805B  3FEA57E9  3F2B8437  4014BDA1  3F58B0EF
( 2600)  00540002  000C0002  00000000  4025A053  3F3151C5  3FFA8149  3F1FD06D  3FC97B40  3F30DDCE  00540002
( 2640)  000C0003  00000000  40235A81  3F5F9D07  3FE24339  3F2AC275  3FED0977  3F4AF52B  00540002  000C0004
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( 2720)  00000000  C1100000  00000000  C1100000  00000000  C1100000  00540002  000C0006  00000000  40307C1F
( 2760)  3F6FF890  00000000  C1100000  00000000  C1100000  00540002  000C0007  00000000  00000000  C1100000
( 2800)  00000000  C1100000  00000000  C1100000  00540002  000C0008  00000000  00000000  C1100000  00000000
( 2840)  C1100000  00000000  C1100000  00540002  000C0009  00000000  40296A05  3F677C1E  00000000  C1100000
( 2880)  00000000  C1100000  00540002  000C000A  00000000  4026219D  3F31A639  3FE24339  3F1E3C51  3F6AAAAB
( 2920)  3F238E39  00540002  000C000B  00000000  402D745D  3F4CA949  3FF26C99  3F2C42AA  3F8E38E2  3F3A0FDD
( 2960)  00540002  000C000C  00000000  402AEDE6  3F34AE30  4010AAAA  3F20D30B  3F7684BB  3F257A95  00540002
( 3000)  000C000D  00000000  4034052C  3F5202DF  3FEA57E9  3F2B8437  3FA5ED09  3F3EB6CF  00540002  000C000E
( 3040)  00000000  402A6C9B  3F345E9F  4011EDE6  3F220B88  3F7684BB  3F257A95  00540002  000C000F  00000000
( 3080)  4024DE62  3F450ADE  40122E8B  3F307C1E  3F7684BB  3F3500CA
```

FILE	INPUT RECS.	DATA RECORDS INPUT	MAX. SIZE	READ ERROR SUMMARY PERM	ZERO B	SHORT	UNDEF.	INPUT RETRIES #RECS.	TOTAL#
1	679	680	5120	0	0	0	0	0	0

```
EOJ        DUMP STOPPED AFTER FILE   1          # OF PERMANENT READ ERRORS   0

START TIME 06/18/85  10:39:08        STOP TIME 06/18/85  10:40:04
```

$$

Helios-2 D-43186
01/18/76 - 03/07/80

DUMP OF TAPE D01

INPUT TAPE D01 ON MT3
DATA INPUT H9 FL 1 1 1

LE 1 RECORD 1 LENGTH 5120BYTES

(0)	00030078	77777777	C8C5D3C9	D6E260C2	40404040	40C6D3E4	E740C6D6	D940E3C8	C540D7C5	D9C9D6C4
(40)	4040F161	F1F861F7	F64040F0	7A40F07A	40F040E3	D64040F1	61F2F261	F7F640F2	F37A40F0	7A40F040
(80)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(120)	40404040	40404040	40404040	40404040	40404040	C1407E40	4DD9F140	6140F24B	F2F0F0C5	60F0F15D
(160)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(200)	D9F1407E	404DC1F2	4BD2F14E	C1F14BC3	F15D4BC2	4B5FC3F3	40404040	40404040	40404040	40404040
(240)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	C2407E40	4DD9F3C1
(280)	406140F4	4BF4F0F0	C560F0F1	5D404040	40404040	40404040	40404040	40404040	40404040	40404040
(320)	40404040	40404040	40404040	D9F3C140	7E40C1F2	4BC24BC3	F3404040	40404040	40404040	40404040
(360)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(400)	40404040	C3407E40	4DD9F1F2	C1406140	F14BF5F0	F0C560F0	F15D4040	40404040	40404040	40404040
(440)	40404040	40404040	40404040	40404040	40404040	40404040	D9F1F2C1	407E40C4	F14BC4F2	4BC5F14B
(480)	5FC64040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(520)	40404040	40404040	40404040	40404040	77777777	77777777	77777777	77777777	77777777	77777777
(560)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(600)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(640)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(680)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(720)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(760)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(800)	004C0001	00120000	00000000	00000000	C1100000	00000000	C1100000	00000000	C1100000	004C0001
(840)	00120001	00000000	00000000	C1100000	00000000	C1100000	00000000	C1100000	004C0001	00120002
(880)	00000000	00000000	C1100000	00000000	C1100000	00000000	C1100000	004C0001	00120003	00000000
(920)	00000000	C1100000	00000000	C1100000	00000000	C1100000	004C0001	00120004	00000000	00000000
(960)	C1100000	00000000	C1100000	00000000	C1100000	004C0001	00120005	00000000	00000000	C1100000
(1000)	00000000	C1100000	00000000	C1100000	004C0001	00120006	00000000	00000000	C1100000	00000000
(1040)	C1100000	00000000	C1100000	004C0001	00120007	00000000	00000000	C1100000	00000000	C1100000
(1080)	00000000	C1100000	004C0001	00120008	00000000	00000000	C1100000	00000000	C1100000	00000000
(1120)	C1100000	004C0001	00120009	00000000	00000000	C1100000	00000000	C1100000	00000000	C1100000
(1160)	004C0001	0012000A	00000000	00000000	C1100000	00000000	C1100000	00000000	C1100000	004C0001
(1200)	0012000B	00000000	00000000	C1100000	00000000	C1100000	00000000	C1100000	004C0001	0012000C
(1240)	00000000	00000000	C1100000	00000000	C1100000	00000000	C1100000	004C0001	0012000D	00000000
(1280)	00000000	C1100000	00000000	C1100000	00000000	C1100000	004C0001	0012000E	00000000	00000000
(1320)	C1100000	00000000	C1100000	00000000	C1100000	004C0001	0012000F	00000000	00000000	C1100000
(1360)	00000000	C1100000	00000000	C1100000	004C0001	00120010	00000000	00000000	C1100000	00000000
(1400)	C1100000	00000000	C1100000	004C0001	00120011	00000000	00000000	C1100000	00000000	C1100000
(1440)	00000000	C1100000	004C0001	00120012	00000000	00000000	C1100000	00000000	C1100000	00000000
(1480)	C1100000	004C0001	00120013	00000000	00000000	C1100000	00000000	C1100000	00000000	C1100000
(1520)	004C0001	00120014	00000000	00000000	C1100000	00000000	C1100000	00000000	C1100000	004C0001
(1560)	00120015	00000000	00000000	C1100000	00000000	C1100000	00000000	C1100000	004C0001	00120016
(1600)	00000000	00000000	C1100000	00000000	C1100000	00000000	C1100000	004C0001	00120017	00000000
(1640)	00000000	C1100000	00000000	C1100000	00000000	C1100000	004C0001	00130000	00000000	00000000
(1680)	C1100000	00000000	C1100000	00000000	C1100000	004C0001	00130001	00000000	00000000	C1100000
(1720)	00000000	C1100000	00000000	C1100000	004C0001	00130002	00000000	00000000	C1100000	00000000
(1760)	C1100000	00000000	C1100000	004C0001	00130003	00000000	40546802	3F66AD3B	401CD2C1	3F371EE0
(1800)	3F4D4D1F	3F26A68F	004C0001	00130004	00000000	4051A89E	3F99FA22	405E306D	3F5B8B9E	439F2804
(1840)	413698CA	004C0001	00130005	00000000	4047F91B	3F591C6E	401F5029	3F33F3CB	00000000	00000000
(1880)	004C0001	00130006	00000000	4037E46B	3F6228DB	401CBB54	3F3D6E5B	3F1DBEEE	3F1DBEEE	004C0001
(1920)	00130007	00000000	404C9E35	3F993C6A	4018C7F9	3F52ACF5	00000000	00000000	004C0001	00130008
(1960)	00000000	404171CF	3F51C40D	401F4AA8	3F347BEB	3F3028F0	3F1BCE1C	004C0001	00130009	00000000
(2000)	4046F414	3F61B509	402B6C93	3F3C3EDE	3F382FC2	3F207077	004C0001	0013000A	00000000	00000000
(2040)	C1100000	408A6F51	3F6B915D	3F382FC2	3F207077	004C0001	0013000B	00000000	40458328	3F6F3840
(2080)	4053E8E7	3F53BF12	3F241EB3	3F198A67	004C0001	0013000C	00000000	4044A312	3F53BC82	401FFC8D
(2120)	3F34820B	3F104FEE	3F104FEE	004C0001	0013000D	00000000	404244B7	3F58AA95	401AC6D1	3F3334EC
(2160)	00000000	00000000	004C0001	0013000E	00000000	4045F06D	3F5245BD	401F57FF	3F332F22	3F1DBEEE
(2200)	3F150891	004C0001	0013000F	00000000	404AA6BA	3F55C120	401638E3	3F2BC40E	3F61DF95	3F27F4E5
(2240)	004C0001	00130010	00000000	40443CE9	3F4F353D	401C853F	3F3019E7	3F1DBEEE	3F150891	004C0001
(2280)	00130011	00000000	4041431C	3F52CF5D	401B474F	3F33155C	3F22ACD5	3F1884DE	004C0001	00130012

```
(  4960)   401FFC8D  3F34820B  3F120F59  3F120F59  004C0001  00160014  00000000  404895E4  3F53D084  402052BF
(  5000)   3F33FA4B  3F3D4B5F  3F1EA5AF  004C0001  00160015  00000000  404BC7AE  3F537878  40167FDF  3F2AB922
(  5040)   3F3B7DDD  3F1DBEEE  004C0001  00160016  00000000  4043EEFF  3F574E0E  401B1F2D  3F32CA33  3F344FC6
(  5080)   3F1E33BE  004C0001  00160017  00000000  404D045F  3F58B371  401CF4CB  3F31F578  3F4F0329  3F2355DC

FILE       1  RECORD      303  LENGTH     1664BYTES
(     0)   00030018  77777777  C8C5D3C9  D6E260C2  40404040  40C6D3E4  E740C6D6  D940E3C8  C540D7C5  D9C9D6C4
(    40)   4040F361  40F761F8  F04040F0  7A40F07A  40F040E3  D64040F3  6140F761  F8F040F2  F37A40F0  7A40F040
(    80)   40404040  40404040  40404040  40404040  40404040  40404040  40404040  40404040  40404040  40404040
(   120)   40404040  40404040  40404040  40404040  40404040  C1407E40  4DD9F140  6140F24B  F2F0F0C5  60F0F15D
(   160)   40404040  40404040  40404040  40404040  40404040  40404040  40404040  40404040  40404040  40404040
(   200)   D9F1407E  404DC1F2  4BD2F14E  C1F14BC3  F15D4BC2  4B5FC3F3  40404040  40404040  40404040  40404040
(   240)   40404040  40404040  40404040  40404040  40404040  40404040  40404040  40404040  C2407E40  4DD9F3C1
(   280)   406140F4  4BF4F0F0  C560F0F1  5D404040  40404040  40404040  40404040  40404040  40404040  40404040
(   320)   40404040  40404040  40404040  D9F3C140  7E40C1F2  4BC24BC3  F3404040  40404040  40404040  40404040
(   360)   40404040  40404040  40404040  40404040  40404040  40404040  40404040  40404040  40404040  40404040
(   400)   40404040  C3407E40  4DD9F1F2  C1406140  F14BF5F0  F0C560F0  F15D4040  40404040  40404040  40404040
(   440)   40404040  40404040  40404040  40404040  40404040  40404040  D9F1F2C1  407E40C4  F14BC4F2  4BC5F14B
(   480)   5FC64040  40404040  40404040  40404040  40404040  40404040  40404040  40404040  40404040  40404040
(   520)   40404040  40404040  40404040  40404040  77777777  77777777  77777777  77777777  77777777  77777777
(   560)   77777777  77777777  77777777  77777777  77777777  77777777  77777777  77777777  77777777  77777777
(   600)   77777777  77777777  77777777  77777777  77777777  77777777  77777777  77777777  77777777  77777777
(   640)   77777777  77777777  77777777  77777777  77777777  77777777  77777777  77777777  77777777  77777777
(   680)   77777777  77777777  77777777  77777777  77777777  77777777  77777777  77777777  77777777  77777777
(   720)   77777777  77777777  77777777  77777777  77777777  77777777  77777777  77777777  77777777  77777777
(   760)   77777777  77777777  77777777  77777777  77777777  77777777  77777777  77777777  77777777  77777777
(   800)   00500003  00070000  00000000  00000000  C1100000  00000000  C1100000  00000000  C1100000  00500003
(   840)   00070001  00000000  00000000  C1100000  00000000  C1100000  00000000  C1100000  00500003  00070002
(   880)   00000000  402FC83C  3F4BB2BF  3FE24339  3F263ECF  3F12F684  3F12F684  00500003  00070003  00000000
(   920)   402D8BDF  3F82E2CE  3FCEDE61  3F49239D  3F4BDA13  3F4BDA13  00500003  00070004  00000000  00000000
(   960)   C1100000  00000000  C1100000  00000000  C1100000  00500003  00070005  00000000  00000000  C1100000
(  1000)   00000000  C1100000  00000000  C1100000  00500003  00070006  00000000  00000000  C1100000  00000000
(  1040)   C1100000  00000000  C1100000  00500003  00070007  00000000  00000000  C1100000  00000000  C1100000
(  1080)   00000000  C1100000  00500003  00070008  00000000  00000000  C1100000  00000000  C1100000  00000000
(  1120)   C1100000  00500003  00070009  00000000  00000000  C1100000  00000000  C1100000  00000000  C1100000
(  1160)   00500003  0007000A  00000000  00000000  C1100000  00000000  C1100000  00000000  C1100000  00500003
(  1200)   0007000B  00000000  00000000  C1100000  00000000  C1100000  00000000  C1100000  00500003  0007000C
(  1240)   00000000  00000000  C1100000  00000000  C1100000  00000000  C1100000  00500003  0007000D  00000000
(  1280)   403C9B27  3FB10AA9  401433B7  3F66370B  00000000  00000000  00500003  0007000E  00000000  4038BCD3
(  1320)   3F46AC18  3FF7CFBA  3F2489AC  3F1F9ADD  3F16591A  00500003  0007000F  00000000  403BDF17  3F4B082B
(  1360)   40124507  3F288965  3F227A65  3F186134  00500003  00070010  00000000  40339462  3F436222  3FC9B26B
(  1400)   3F204C1F  3F2D82D8  3F1A469E  00500003  00070011  00000000  403532DB  3F43B754  3FFD6A03  3F2433B7
(  1440)   3F1E573A  3F157442  00500003  00070012  00000000  4035FC97  3F44F00D  4011D859  3F27382C  3F1F9ADD
(  1480)   3F16591A  00500003  00070013  00000000  40344471  3F43D4C1  40107F91  3F25B5DE  3F5ED098  3F26B53E
(  1520)   00500003  00070014  00000000  4036A443  3F495DE4  4010DD42  3F26F249  3F120F59  3F120F59  00500003
(  1560)   00070015  00000000  40332DAF  3F4CB15D  40117002  3F2B9292  00000000  00000000  00500003  00070016
(  1600)   00000000  403A0CC5  3F4602C3  401364D9  3F280F58  3EF2B9D2  3EF2B9D2  00500003  00070017  00000000
(  1640)   40363B30  3F469CC4  401284BD  3F27F3DB  3EFCD6E9  3EFCD6E9
```

FILE	INPUT RECS.	DATA RECORDS INPUT	MAX. SIZE	READ ERROR SUMMARY PERM	ZERO B	SHORT	UNDEF.	INPUT RETRIES #RECS.	TOTAL#
1	303	304	5120	0	0	0	0	0	0

EOJ DUMP STOPPED AFTER FILE 1 # OF PERMANENT READ ERRORS 0

TART TIME 06/08/81 12:47:54 STOP TIME 06/08/81 12:48:13