#503

PIONEER 11

TRD BINARY REDUCTION TAPE

73-019A-05D

PIONEER 11

TRD BINARY REDUCTION TAPE

73-019A-05D

THIS DATA SET HAS BEEN RESTORED. ORIGINALLY THERE WERE TEN 7-TRACK. 556 BPI TAPES WRITTEN IN BINARY. ONE OF THESE TAPES (D046017 AND C021785) WAS BAD. THERE IS ONE RESTORED TAPE. THE DR TAPE IS A 3480 CARTRIDGE AND THE DS TAPE IS 9-TRACK. 6250 BPI. THE ORIGINAL TAPES WERE CREATED ON A CDC 3600 COMPUTER. AFTER THESE TAPES WERE ORIGINALLY RESTORED TWO EXTRANEOUS RECORDS (ONE. A 60 BYTE IBM VOLUME LABEL. THE OTHER A 3659 BYTE RECORD OF UNKNOWN ORIGIN) WERE REMOVED FROM FILE ONE OF THE DR/DS TAPES. FILES 2 - 9 WERE PADDED TO BRING THEM INTO CONFORMANCE WITH STANDARDS. THE DR AND DS NUMBER ALONG WITH THE CORRESPONDING D NUMBERS AND THE TIME SPANS ARE AS FOLLOWS:

DR#	DS#	D#	FILES	TIME SPAN
DR003203	DS003203	D046015	1	08/30/79 - 08/30/79
		D046016	2	08/31/79 - 08/31/79
		D046018	3	09/01/79 - 09/01/79
		D046019	4	09/01/79 - 09/01/79
		D046020	5	09/01/79 - 09/02/79
		D046021	6	09/02/79 - 09/02/79
		D046022	7	09/03/79 - 09/03/79
		D046023	8	09/03/79 - 09/03/79
		D046024	9	09/04/79 - 09/04/79

REQ. AGENT	RAND NO.	ACQ. AGENT
GLS	V0095	WSC
GLS	RD8543	WSC

PIONEER 11

TRD BINARY REDUCTION TAPE

73-019A-05D

This data set catalog contains 10 magnetic data tapes. Each tape is 7 track, 556 BPI (except D-46015 is 800 BPI), Binary data with one file. These tapes were created on the CDC 3600 computer. The following table list the D numbers, C numbers and day of coverage of each tape.

D#	C#	DAY
D-46015	C-22203	08/30/79
D-46016	C-21784	08/31/79
D-46017	C-21785	08/31/79
D-46018	C-21786	09/01/79
D-46019	C-21787	09/01/79
D-46020	C-21788	09/02/79
D-46021	C-21789	09/02/79
D-46022	C-21790	09/03/79
D-46023	C-21791	09/03/79
D-46024	C-21792	09/04/79

UNIVERSITY OF CALIFORNIA, SAN DIEGO

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CENTER FOR ASTROPHYSICS AND
SPACE SCIENCES (CASS) C-011

LA JOLLA, CALIFORNIA 92093

July 21, 1981

James I. Vette
Director, NSSDC
NASA GSFC
Greenbelt, Md. 20771

Subj: Pioneer 11 Saturn encounter data submission

Dear Dr. Vette:

We are sending you ten magnetic tapes containing all of the readings from the UCSD Trapped Particles Instrument during the Pioneer 11 Saturn encounter. The following table lists the coverage for these tapes.

Tape Name	Date	
M53580	08/30/79 ~~8/31/79~~	1 file, 4500 records, 7 track, 800 bpi
M53581	8/31/79	1 file, 2082 records, 7 track, 556 bpi
M53582	8/31/79 ~~9/1/79~~	1 file, 4500 records, 7 track, 556 bpi
M53583	9/1/79	1 file, 2100 records, 7 track, 556 bpi
M53584	9/1/79 ~~9/2/79~~	1 file, 4500 records, 7 track, 556 bpi
M53585	9/2/79	1 file, 1475 records, 7 track, 556 bpi
M53586	9/2/79 ~~9/3/79~~	1 file, 4500 records, 7 track, 556 bpi
M53587	9/3/79	1 file, 1793 records, 7 track, 556 bpi
M53588	9/3/79 ~~9/4/79~~	1 file, 4500 records, 7 track, 556 bpi
M53589	9/4/79	1 file, 1424 records, 7 track, 556 bpi

These are UCSD Binary Reduction Tapes (BRT's) in the Encounter format described in section 4.3 (pgs 55-74) of the Data Package we have provided with each submittal. Each tape contains a single valid file; any records found beyond the EOF mark are merely residue from previous uses of the reels.

For documentation we are sending another copy of the "Data Package for the UCSD Trapped Radiation Detector...", and reprints of two papers on the Saturn encounter: Fillius, W. and C. McIlwain, "Very Energetic Protons in Saturn's Radiation Belt," J. Geophys. Res. , 85, 5803-5811, November 1, 1980; and Fillius, W., W.-H. Ip, and C. McIlwain, "Trapped Radiation Belts of Saturn: First Look," Science, 207, 425-431, 25 January, 1980. Instrument characteristics for the Saturn encounter are described in Table 1 of the J. G. R. paper named above.

The submittal will arrive in two packages: one for the tapes, and one for the documentation. A copy of this letter will accompany each package.

This will complete the UCSD data submittal for the Pioneer 11 Saturn encounter.

Very truly yours,

Walker Fillius

Walker Fillius

714-452-3315
1853

cc: Dr. A. G. Opp
Dr. Palmer Dyal
Mr. Richard Fimmel

PIONEER 11

TRD BINARY REDUCTION TAPES

FORMAT

WORD#	ID	DESCRIPTION
1	TCOLE	COLE TIME (MS)
2	IDV	DETECTOR ID/HV STATUS
3	CR	COUNT RATE/ELECTROMETER RANGE
4	CRANCE	ENCODER OVERFLOW/ELECTROMETER RANGE
5	FLAGES	DATA FLAGS
6	PP123	PERFORMANCE PARAMETERS - DC BUS VOLTAGE DC BUS CURRENT PLATFORM TEMP.
7	PP456	PERFORMANCE PARAMETERS - PULSE TEMP. H.V.R.C. DETECTOR C TEMP.
8	ANGSWP	ANGULAR SCAN OF LOOK VECTOR DURING DATA SAMPLE
9	ANGLS	ANGLE BETWEEN LOOK VECTOR & SUN VECTOR
10	HCSXEC	X-DIRECTION H. COS.
11	HCSYEC	Y-DIRECTION H. COS.
12	HCSZEC	Z-DIRECTION H. COS.
13	BLOOKDEG	ANGLE BETWEEN LOOK VECTOR & MAGNETIC FIELD
14	ATCCLT	COLATITUDE - (SPIN AXIS-S/C) ECLIPTIC
15	ATCLONG	LONGITUDE - (SPIN AXIS - S/C) ECLIPTIC
16	SPNPD	SPIN PERIOD (MICRO-SECONDS)
17	ATFLAGS	ATTITUDE FLAGS
18	RADPJ	RADIUS (S/C - SATURN)
19	CLNPJJ	COLATITUDE (S/C - SATURN) EQUATOR
20	ALGPJJIR	LONGITUDE (S/C-SATURN) EQUATOR
21	TLCPJJ	LOCAL TIME (S/C - SATURN) EQUATOR
22	CLTPJC	COLATITUDE (S/C - SATURN) ECLIPTIC
23	ALGPJC	LONGITUDE (S/C - SATURN) ECLIPTIC
24	ALGSJC	LONGITUDE (SUN - SATURN) ECLIPTIC
25	ANGDISCJ	ANG. SEMI DIAMETER
26	ANGSTP	SUN/SATURN/SPACECRAFT ANGLE
27	RADPJM	RADIUS (S/C - SATURN) MAG. EQUATOR
28	CLTPJM	COLATITUDE (S/C - SATURN) MAG. EQUATOR
29	TLCPJM	LOCAL TIME (S/C - SATURN) MAG. EQUATOR
30	ALGPJJ3L	LONGITUDE (S/C - SATURN) EQUATOR
31	ALGOJC	LONGITUDE ECLIPTIC
32	B	MAGNETIC FIELD
33	EL	L VALUE
34	PHINV	ADIABATIC INVARIANT FOR AZIMUTH
35	RTLT	ROUND TRIP LIGHT TIME
36	FORM	TELEMETRY FORMAT
37	BITR	BIT RATE
38	SCNO	SPACECRAFT NO. (10=P-10 ; 11=P-11)
39	STNO	RECEIVING STATION NO.
40	ANGECLN	ANGLE BETWEEN LOOK VECTOR & ECLIPTIC NADIR OF LOOK VECTOR

WORD#	ID	DESCRIPTION
41	-2	
42	-2	
.		
.		
337	-2	
338	-2	
339	-2	
340	-2	
341	-2	
342	NFMOD	BINARY REDUCTION TAPE FORMAT (3=SATURN ENCOUNTER)

WORDS 1-42 are repeated 8 times per physical record.

CONVERSION OF COLE TIME

1. FIND COLE TIME

2. CONVERT COLE TIME TO DECIMAL

3. MOVE DECIMAL POINT OVER 5 PLACES

4. DIVIDE DECIMAL NUMBER BY 864 THAT WILL EQUAL THE NUMBER OF DAYS SINCE JAN. 1, 1972

5. SUBTRACT FROM 2557 (JAN. 1, 1979) = DAY OF YEAR IN 1979

Special Note:
Cole_time
Enter the leading Øs and hit Enter.
Use Re-packed for the Octal Dump.

4.3 UCSD/TRD BINARY REDUCTION TAPES

The Binary Reduction Tapes (BRT's) are written in 7 track tape at 556 bits per inch by a CDC 3600 computer. All data are written as positive binary integers to facilitate decoding by different machines. (Padding and missing data are given negative values). The record length is 342 48-bit words, which is equivalent to 2736 six-bit characters.

FOR FUTHER DOCUMENTATION SEE B DOCUMENTS
#B33031-000A
#B31093-000A
#B27390-000A

4.3.1 BINARY TAPE FORMAT

Earth Traversal (Launch)		Cruise		Encounter	
1	TCOLE	1	TCOLE	1	TCOLE
2	IDV	2	IDV	2	IDV
3	CR	3	CR	3	CR
4	CRANGE	4	CRANGE	4	CRANGE
5	FLAGES	5	FLAGES	5	FLAGES
6	PP123	6	ANGSWP	6	PP123
7	PP456	7	ANGLS	7	PP456
8	ANGSWP	8	ANGLEC	8	ANGSWP
9	ANGLS	9	HCSXEC	9	ANGLS
10	HCSXEQ	10	HCSYEC	10	HCSXEC
11	HCSYEQ	11	HCSZEC	11	HCSYEC
12	HCSZEQ	12	ANGECLIP	12	HCSZEC
13	ANGBLOOK	.		13	BLOOKDEG (alias ANGBLOOK)
14	A.QCLT	.		14	A.CCLT
15	A.QLONG	.		15	A.CLONG
16	SPGPD	289	TCOLE	16	SPGPD
17	A.FLAGS	290	RADPS	17	A.FLAGS
18	RADPE	291	CLTPSC	18	RADPJ
19	CLTPEE	292	ALGPSC	19	CLTPJJ
20	ALGPEE	293	RADES	20	ALGPJJ1R (alias ALGPJJ)
21	TLCPEE	294	CLTESC	21	TLCPJJ
22	CLTPEC	295	ALGESC	22	CLTPJC
23	ALGPEC	296	RADIS	23	ALGPJC
24	ALGSEC	297	CLTISC	24	ALGSJC
25	ALGDISCE	298	ALGISC	25	ALGDISCJ
26	ALGSIP	299	ALGESP	26	ANGSJP
27	RADOOE	300	RILI	27	RADPJM
28	CDCCOEE	301	A.CCLT	28	CLTPJM
29	RADOOEE	302	A.CLONG	29	TLCPJM
30	CLTOOEC	303	SPGPD	30	ALGPJJ3L
31	ALGOOEC	304	A.FLAGS	31	ALGOJC
32	B	305	-2	32	B
33	L	306	-2	33	EL (alias L)
34	PHINV	.		34	PHINV

TRAVERSAL

35	RTLT
36	FORM
37	BITR
38	SCNO
39	STNO
40	ANGECLN
41	-2
42	-2
.	
.	
337	-2
338	-2
339	-2
340	-2
341	-2
342	NFMOD

42 words describe 1 data point
8 data points per record.
Words 1-42 are repeated 8 times.

CRUISE

.	
.	
336	PP123
337	PP456
338	FORM
339	BITR
340	SCNO
341	STNO
342	NFMOD

12 words describe 1 data point.
24 data points per record.
Words 1-12 are repeated 24 times.

18 words describe spacecraft position.
Words 289-306 give the position for first data point in record.
Words 307-324 give the position for last data point in record.

Words 336 and 337 are averages over all data points in record.

ENCOUNTER

35	RTLT
36	FORM
37	BITR
38	SCNO
39	STNO
40	ANGECLN
41	-2
42	-2
.	
.	
337	-2
338	-2
339	-2
340	-2
341	-2
342	NFMOD

42 words describe 1 data point.
8 data points per record.
Words 1-42 are repeated 8 times.

4.3.2 BINARY TAPE PARAMETER LIST

3/15/74

PARAMETER NAME	MODE	BINOUT POSITION	PARAMETER	BODY	REF. POINT	REF. PLANE	BINOUT UNITS	SOURCE	SOURCE UNITS	SOURCE LOCATION
ALGESC	* Traversal	Ref.	Longitude	Earth	Sun	Ecliptic	-	CELLNE or CELLNE + 360	Degrees	INTERP 7)
ALGESC	* Cruise	295	"	Earth	Sun	Ecliptic	Micro-radians	CELLNE	Degrees	INTERP 6)
ALGSJC	** Cruise	298	"	Jupiter	Sun	Ecliptic	"	ALGSJC + 180°	-	-
ALGOJC	Encounter	31	"	Io	Jupiter	Ecliptic	"	TBS	-	-
ALGMOEC	Traversal	31	"	Moon	Earth	Ecliptic	"	(1) DECOOEE, RASOOEE	-	-
ALGPEC	Traversal	23	"	Pioneer S/C	Earth	Ecliptic	"	(2) XCTPEC, YCTPEC, ZCTPEC	-	-
ALGPEE	Traversal	20	"	Pioneer S/C	Earth	Equator	"	EALONP	Degrees	INTERP 11)
ALGPJC	Encounter	23	"	Pioneer S/C	Jupiter	Ecliptic	"	(3) XCPTJC, YCPTJC, ZCPTJC	-	-
ALGPJIR	Encounter	20	"	Pioneer S/C	Jupiter	Equator	"	BILONP	Degrees	INTERP 3)
ALGPJOL	Encounter	30	"	Pioneer S/C	Jupiter	Equator	"			
ALGPSC	Cruise	292	"	Pioneer S/C	Sun	Ecliptic	"	CELLNP	Degrees	INTERP 4)
ALGSEC	Traversal	24	"	Sun	Earth	Ecliptic	"	ALGESC - 180°	-	-
ALGSJC	* Cruise	Ref.	"	Sun	Jupiter	Ecliptic	-	RASI	-	-
ALGSJC	* Encounter	24	"	Sun	Jupiter	Ecliptic	Micro-radians	RASI	-	-
ALLESC	Cruise	Ref.	Latitude	Earth	Sun	Ecliptic	-	CELLTE	Degrees	INTERP(5)
ALLSJC	Cruise	Ref.	"	Jupiter	Sun	Ecliptic	-	-ALTSJC	-	-
ALLOJC	Encounter	Ref.	"	Io	Jupiter	Ecliptic	-	TBS	-	-
ALLOJJ	Encounter	Ref.	"	Io	Jupiter	Equator	-	TBS	-	-
ALLPEE	Traversal	Ref.	"	Pioneer S/C	Earth	Equator	-	EALATP	Degrees	INTERP(10)
ALLPJJ	Encounter	Ref.	"	Pioneer S/C	Jupiter	Equator	-	BILATP	Degrees	INTERP(4)
ALLPSC	Cruise	Ref.	"	Pioneer S/C	Sun	Ecliptic	-	CELLTP	Degrees	INTERP(3)
ALLSJC	Cruise	Ref.	"	Sun	Jupiter	Ecliptic	-	DECS1	-	-
ANGLOK	* Traversal	13	Angle between look vector and magnetic field				Micro-radians	TBS	-	-
ANGDISCE	Traversal	25	Ang. Semi diameter	Earth	Pioneer S/C		"	EASD	Degrees	INTERP(9)
ANGDISJJ	Encounter	25	Ang. Semi diameter	Jupiter	Pioneer S/C		"	ASASD	Degrees	INTERP(5)
ANGESP	Cruise	259	Earth/Sun/Spacecraft angle				"	ESPANG	Degrees	INTERP 11)
ANGLEC	Cruise	8	Angle between look vector and ecliptic plane				"	90° - ALEC	Radians	READ...

BINARY TAPE PARAMETERS LIST

3/15/74

PARAMETER NAME	MODE	BINOUT POSITION	PARAMETER	BODY	REF.POINT	REF.PLANE	BINOUT UNITS	SOURCE	SOURCE UNITS	SOURCE LOCATION
ANGLS	* Traversal	9	Angle between look vector and sun vector				Micro-radians	ALS	Radians	READING(8)
ANGLS	* Cruise	7	Angle between look vector and sun vector				"	ALS	Radians	READING(8)
ANGLS	* Encounter	9	Angle between look vector and sun vector				"	ALS	Radians	READING(8)
ANGSJP	* Traversal	26	Sun/Jupiter/Spacecraft angle				"	SSP	Degrees	INTERP(17)
ANGSJP	* Encounter	26	Sun/Jupiter/Spacecraft angle				"	SSP	Degrees	INTERP(17)
ANGECLN	* Trav/Enc	40	Angle between look vector and ecliptic nadir of look vector (e.g: at asc node, = 90°)				"	SWPA	Radians	/SWPA/
ANGECLN	* Cruise	12	Angle between look vector and ecliptic nadir of look vector		"	"	"	SWPA	Radians	/SWPA/
ANGSWP	* Trav/Enc	8	Angular scan of look vector during data sample				"	ASW	Radians	READING(9)
ANGSWP	* Cruise	6	Angular scan of look vector during data sample				"	ASW	Radians	READING(9)
ATCCLT	* Cruise	301	Colatitude	Spin Axis	Pioneer S/C	Ecliptic	"	90° - ATCLAT	-	-
ATCCLT	* Encounter	14	Colatitude	Spin Axis	Pioneer S/C	Ecliptic	"	90° - ATCLAT	-	-
ATCLAT	* Cruise	Ref.	Latitude	Spin Axis	Pioneer S/C	Ecliptic	"	ATCLAT	Radians	/BROOM/
ATCLAT	* Encounter	Ref.	Latitude	Spin Axis	Pioneer S/C	Ecliptic	"	ATCLAT	Radians	/BROOM/
ATCLONG	* Cruise	302	Longitude	Spin Axis	Pioneer S/C	Ecliptic	"	ATCLNG	Radians	/BROOM/
ATCLONG	* Encounter	15	Longitude	Spin Axis	Pioneer S/C	Ecliptic	"	ATCLNG	Radians	/BROOM/
ATFLAGS	* Traversal	17	Attitude flags				(A)	(4) ISEC(1),AREF(KPOINT)	-	/EDR/,/ASCEL/
ATFLAGS	* Cruise	304	Attitude flags				(A)	(4) ISEC(1),AREF(KPOINT)	-	/EDR/,/ASCEL/
ATFLAGS	* Encounter	17	Attitude flags				(A)	(4) ISEC(1),AREF(KPOINT)	-	/EDR/,/ASCEL/
ATQCLT	Traversal	14	Colatitude	Spin Axis	Pioneer S/C	E.Equator	Micro-radians	90° - ATQLAT	-	-
ATQLAT	Traversal	Ref.	Latitude	Spin Axis	Pioneer S/C	E.Equator	"	ATQDEC	Radians	/BROOM/
ATQLONG	Traversal	15	Longitude	Spin Axis	Pioneer S/C	E.Equator	"	ATQRASC	Radians	/BROOM/
B	* Traversal	32	Magnetic field				Micro-gauss	TES	-	-
B	* Encounter	32	Magnetic field				Micro-gauss	TES	-	-
BITR	* Traversal	37	Bit Rate				(1)	BR	Seconds^{-1}	IFIRST(7)
BITR	* Cruise	339	Bit Rate				(1)	BR	Seconds^{-1}	IFIRST(7)
BITR	* Encounter	37	Bit Rate				(1)	BR	Seconds^{-1}	IFIRST(7)
BLOOKDEG	* Encounter	13	Angle between look vector and magnetic field				Micro-radians	TES	-	-

BINARY TAPE PARAMETERS LIST

3/15/74

PARAMETER NAME	MODE	BINOUT POSITION	PARAMETER	BODY	REF.POINT	REF.PLANE	BINOUT UNITS	SOURCE	SOURCE UNITS	SOURCE LOCATION
CDCOOEE	Traversal	28	Codeclination	Moon	Earth	Equator	Micro-Radians	90° - DECOOEE	-	-
CLTESC	Cruise	294	Colatitude	Earth	Sun	Ecliptic	"	90° - ALTESC	-	-
CLTJSC	** Cruise	297	Colatitude	Jupiter	Sun	Ecliptic	"	90° - ALTJSC	-	-
CLTOOEC	Traversal	30	Colatitude	Moon	Earth	Ecliptic	"	⑤ DECOOEE,RASOOEE	-	-
CLTPEC	Traversal	22	Colatitude	Pioneer S/C	Earth	Ecliptic	"	⑥ XCTPEC,YCTPEC,ZCTPEC	-	-
CLTPEE	Traversal	19	Colatitude	Pioneer S/C	Earth	Equator	"	90° - ALTPEE	-	-
CLTPJC	Encounter	22	Colatitude	Pioneer S/C	Jupiter	Ecliptic	"	⑦ XCTPJC,YCTPJC,ZCTPJC	-	-
CLTPJJ	Encounter	19	Colatitude	Pioneer S/C	Jupiter	Equator	"	90° - ALTPJJ	-	-
CLTPJM	Encounter	28	Colatitude	Pioneer S/C	Jupiter	Mag.Equator	"			
CLTPSC	Cruise	291	Colatitude	Pioneer S/C	Sun	Ecliptic	"	90° - ALTPSC	-	-
COSXEC	* Cruise	Ref.	X-direction cos.	Look Vector	Pioneer S/C	Ecliptic	±1	CSXEC	+1	/BROOM/
CPSXEC	* Encounter	Ref.	X-direction cos.	Look Vector	Pioneer S/C	Ecliptic	"	CSXEC	"	/BROOM/
COSXEQ	Traversal	Ref.	X-direction cos.	Look Vector	Pioneer S/C	E.Equator	"	CSXEC	"	/BROOM/
COSYEC	* Cruise	Ref.	Y-direction cos.	Look Vector	Pioneer S/C	Ecliptic	"	CSYEC	"	/BROOM/
COSYEC	* Encounter	Ref.	Y-direction cos.	Look Vector	Pioneer S/C	Ecliptic	"	CSYEC	"	/BROOM/
COSYEQ	Traversal	Ref.	Y-direction cos.	Look Vector	Pioneer S/C	E.Equator	"	CSYEQ	"	/BROOM/
COSZEC	* Cruise	Ref.	Z-direction cos.	Look Vector	Pioneer S/C	Ecliptic	"	CSZEC	"	/BROOM/
COSZEC	* Encounter	Ref.	Z-direction cos.	Look Vector	Pioneer S/C	Ecliptic	"	CSZEC	"	/BROOM/
COSZEQ	Traversal	Ref.	Z-direction cos.	Look Vector	Pioneer S/C	E.Equator	-	CSZEQ	±	/BROOM/
CR	* Traversal	3	Count rate/Electrometer count				(J)	COUNTS	$Seconds^{-1}$	READ (3)
CR	* Cruise	3	Count rate/Electrometer count				(J)	COUNTS	$Seconds^{-1}$	READ (3)
CR	* Encounter	3	Count rate/Electrometer count				(J)	COUNTS	$Seconds^{-1}$	READ (3)
CRANGE	* Traversal	4	Encoder overflow/Electrometer range				(B)	RANG	0-1	IREAD(4)
CRANGE	* Cruise	4	Encoder overflow/Electrometer range				(B)	RANG	0-1	IREAD(4)
CRANGE	* Encounter	4	Encoder overflow/Electrometer range				(B)	RANG	0-1	IREAD(4)
DECOOEE	Traversal	Ref.	Declination	Moon	Earth	Equator	-	DECMOO	Degrees	INTERP(5)
DECS1	Cruise	Ref.	Latitude	Sun	Jupiter	Ecliptic	-	-HDEC5	-	-

BINARY TAPE PARAMETERS LIST

3/15/74

PARAMETER NAME	MODE	BINOUT POSITION	PARAMETER	BODY	REF. POINT	REF. PLANE	BINOUT UNITS	SOURCE	SOURCE UNITS	SOURCE LOCATION
EL	* Traversal	33	L value				Micro-radii	TBS	-	-
EL	* Encounter	33	L value				Micro-radii	TBS	-	-
FLAGES	* Traversal	5	Data flags				Ⓒ	FLAG	$0\text{-}7777_8$	IREAD 1)
FLAGES	* Cruise	5	Data flags				Ⓒ	FLAG	$0\text{-}7777_8$	IREAD 1)
FLAGES	* Encounter	5	Data flags				Ⓒ	FLAG	$0\text{-}7777_8$	IREAD 1)
FORM	* Traversal	36	Telemetry format				Ⓓ	FMT	A,A/D,B,B/D	IFIRST(9)
FORM	* Cruise	338	Telemetry format				Ⓓ	FMT	A,A/D,B,B/D	IFIRST(9)
FORM	* Encounter	36	Telemetry format				Ⓓ	FMT	A,A/D B,B/D	IFIRST(9)
HDEC5	Cruise	Ref.	Latitude	Jupiter	Sun	Ecliptic	-	HDEC5	Degrees	IDERP(8)
HR5	Cruise	Ref.	Radius	Jupiter	Sun	Ecliptic	-	HR5	Kilometers	IDERP(7)
HRA5	* Cruise	Ref.	Longitude	Jupiter	Sun	Ecliptic	-	HRA5	Degrees	IDERP(9)
HRA5	* Encounter	Ref.	Longitude	Jupiter	Sun	Ecliptic	-	HRA5	Degrees	IDERP(9)
HCSXEC	* Cruise	9	X-direction h.cos.	Look vector	Pioneer S/C	Ecliptic	$(0\text{-}2)*10^6$	1.-COSXEC	-	-
HCSXEC	* Encounter	10	X-direction h.cos.	Look vector	Pioneer S/C	Ecliptic	$(0\text{-}2)*10^6$	1.-COSXEC	-	-
HCSXEQ	Traversal	10	X-direction h.cos.	Look vector	Pioneer S/C	E.Equator	$(0\text{-}2)*10^6$	1.-COSXEQ	-	-
HCSYEC	* Cruise	10	Y-direction h.cos.	Look vector	Pioneer S/C	Ecliptic	$(0\text{-}2)*10^6$	1.-COSYEC	-	-
HCSYEC	* Encounter	11	Y-direction h.cos.	Look vector	Pioneer S/C	Ecliptic	$(0\text{-}2)*10^6$	1.-COSYEC	-	-
HCSYEQ	Traversal	11	Y-direction h.cos.	Look vector	Pioneer S/C	E.Equator	$(0\text{-}2)*10^6$	1.-COSYEQ	-	-
HCSZEC	* Cruise	11	Z-direction h.cos.	Look vector	Pioneer S/C	Ecliptic	$(0\text{-}2)*10^6$	1.-COSZEC	-	-
HCSZEC	* Encounter	12	Z-direction h.cos	Look vector	Pioneer S/C	Ecliptic	$(0\text{-}2)*10^6$	1.-COSZEC	-	-
HCSZEQ	Traversal	12	Z-direction h.cos	Look vector	Pioneer S/C	E. Equator	$(0\text{-}2)*10^6$	1.-COSZEQ	-	-
IDV	* Traversal	2	Detector ID/HV status				Ⓔ	Ⓑ IPP(13), IREAD(2)	0-1,1-16	/PP/,/READING/
IDV	* Cruise	2	Detector ID/HV status				Ⓔ	Ⓑ IPP(13),IREAD(2)	0-1,1-16	/PP/,/READING/
IDV	* Encounter	2	Detector ID/HV status				Ⓔ	Ⓑ IPP(13),IREAD(2)	0-1,1-16	/PP/,/READING/
NFMOD	* Traversal	342	Binary reduction tape format				Ⓕ	NFMOD	1-3	/CNTRL/
NFMOD	* Cruise	342	Binary reduction tape format				Ⓕ	NFMOD	1-3	/CNTRL/
NFMOD	* Encounter	342	Binary reduction tape format				Ⓕ	NFMOD	1-3	/CNTRL/

BINARY TAPE PARAMETERS LIST

3/15/74

PARAMETER NAME	MODE	BINOUT POSITION	PARAMETER	BODY	REF. POINT	REF. PLANE	BINOUT UNITS	SOURCE	SOURCE UNITS	SOURCE LOCATION
PHIAV	* Traversal	34	Adiabatic invariant for azimuth				TBS	TBS	-	-
PHIAV	* Encounter	34	Adiabatic invariant for azimuth				TBS	TBS	-	-
PP123	* Traversal	6	Performance Parameters:	DC Bus voltage			Milli-volts	(9) PP(1)	Volts	/PP/
				DC Bus current			Milli-amps	(9) PP(3)	Amps	/PP/
				Platform Temperature			Deci-degrees	(9) PP(5)	Degrees C	/PP/
PP123	* Cruise	336	Performance Parameters:	DC Bus voltage			Milli-volts	(10) PP(1)	Volts	/PP/
				DC Bus current			Milli-amps	(10) PP(3)	Amps	/PP/
				Platform temperature			Deci-degrees	(10) PP(5)	Degrees C	/PP/
PP123	* Encounter	6	Performance Parameters:	DC Bus voltage			Milli-volts	(9) PP(1)	Volts	/PP/
				DC Bus current			Milli-amps	(9) PP(3)	Amps	/PP/
				Platform Temperature			Deci-degrees	(9) PP(5)	Degrees C	/PP/
PP456	* Traversal	7	Performance Parameters:	Pulse Temperature			Deci-degrees	(11) PP(7)	Degrees C	/PP/
				H.V.R.C.			10^{-8} amps	(11) PP(9)	10^{-6} amps	/PP/
				Det. C Temperature			Deci-degrees	(11) PP(11)	Degrees C	/PP/
PP456	* Cruise	337	Performance Parameters:	Pulse Temperature			Deci-degrees	(12) PP(7)	Degrees C	/PP/
				H.V.R.C.			10^{-8} amps	(12) PP(9)	10^{-6} amps	/PP/
				Det. C Temperature			Deci-degrees	(12) PP(11)	Degrees C	/PP/
PP456	* Encounter	7	Performance Parameters:	Pulse Temperature			Deci-degrees	(11) PP(7)	Degrees C	/PP/
				H.V.R.C.			10^{-8} amps	(11) PP(9)	10^{-6} amps	/PP/
				Det. C Temperature			Deci-degrees	(11) PP(11)	Degrees C	/PP/
RADES	+ Cruise	293	Radius	Earth	Sun		Micro-AU	REARSU	Km.	INTERP(10)
RADJS	+ Cruise	296	Radius	Jupiter	Sun		Micro-AU	RJSI	-	-
RADMOE	+ Traversal	27	Radius	Moon	Earth		Micro-RE	REARMO	Km.	INTERP(3)
RADPE	+ Traversal	18	Radius	Pioneer S/C	Earth		Micro-RE	REARPR	Km.	INTERP(3)
RADPJ	+ Encounter	18	Radius	Pioneer S/C	Jupiter		Micro-RJ	BIMAGR	Km.	INTERP(3)
RADPJM	Encounter	27	Radius	Pioneer S/C	Jupiter	Mag.Equator	Micro-RJ			
RADPS	+ Cruise	290	Radius	Pioneer S/C	Sun		Micro-AU	BRANGP	Km.	INTERP(3)

BINARY TAPE PARAMETERS LIST

3/15/74

PARAMETER NAME	MODE	BINOUT POSITION	PARAMETER	BODY	REF. POINT	REF. POINT	BINOUT UNITS	SOURCE	SOURCE UNITS	SOURCE LOCATION
RAS1	* Cruise	Ref.	Longitude	Sun	Jupiter	Ecliptic	-	HRA5-180°	-	-
RAS1	* Encounter	Ref.	Longitude	Sun	Jupiter	Ecliptic	-	HRA5-180°	-	-
RASOOEE	Traversal	29	Right Asc.	Moon	Earth	Equator	Micro-radians	RTASCM	Degrees	IN.ERP(3)
RASPEE	Traversal	Ref.	Right Asc.	Pioneer S/C	Earth	Equator	-	RTASCP	Degrees	IN.ERP(3)
RASSEE	Traversal	Ref.	Right Asc.	Sun	Earth	Equator	-	RTASCS	Degrees	IN.ERP(3)
RS1	Cruise	Ref.	Distance to the Sun				-	HR5	-	-
RTLT	* Traversal	35	Round trip light time				Milli-seconds	RTLT	Milli-seconds	IFIRST(10)
RTLT	* Cruise	300	Round trip light time				"	RTLT	Milli-seconds	IFIRST(10)
RTLT	* Encounter	35	Round trip light time				"	RTLT	Milli-seconds	IFIRST(10)
SCRO	* Traversal	38	Spacecraft number				(G)	SAT	F or C	EDR File 1
SCRO	* Cruise	340	Spacecraft number				(G)	SAT	F or C	EDR File 1
SCRO	* Encounter	38	Spacecraft number				(G)	SAT	F or C	EDR File 1
SPPD	* Traversal	16	Spin period				Micro-seconds	ASP	Seconds	Second(3)
SPPD	* Cruise	303	Spin Period				"	ASP	Seconds	Second(3)
SPPD	* Encounter	16	Spin Period				"	ASP	Seconds	Second(3)
STRO	* Traversal	39	Receiving station number				(H)	DSS	XXX_3	IFIRST(6)
STRO	* Cruise	341	Receiving station number				(H)	DSS	"	IFIRST(6)
STRO	* Encounter	39	Receiving station number				(H)	DSS	"	IFIRST(6)
TCOL	* Traversal	1	Cole Time				Milli-seconds	MSDATA	Milli-seconds	/CTIME/
TCOL	* Cruise	1	Cole Time				"	MSDATA	Milli-seconds	/CTIME/
TCOL	* Encounter	1	Cole Time				"	MSDATA	Milli-seconds	/CTIME/
TLOPZE	Traversal	21	Local Time	Pioneer S/C	Earth	Equator	Micro-hour	(13) KASPEE, RASSEE	-	-
TLOPJ	Encounter	21	Local Time	Pioneer S/C	Jupiter	Equator	"	TES	-	-
TLOPM	Encounter	29	Local Time	Pioneer S/C	Jupiter	Mag.Equator	"			
XCTPEC	Traversal	Ref.	Cartesian X	Pioneer S/C	Earth	Ecliptic	-	XPCSEF	Km.	IN.ERP(13)
XPTPC	Encounter	Ref.	Cartesian X	Pioneer S/C	Jupiter	Ecliptic	-	XPISEF	Km.	IN.ERP(13)
YCTPEC	Traversal	Ref.	Cartesian Y	Pioneer S/C	Earth	Ecliptic	-	YPCSEF	Km.	IN.ERP(13)

BINARY TAPE PARAMETERS LIST

3/15/74

PARAMETER NAME	MODE	BINOUT POSITION	PARAMETER	BODY	REF. POINT	REF. PLANE	BINOUT UNITS	SOURCE	SOURCE UNITS	SOURCE LOCATION
YCTPJC	Encounter	Ref.	Cartesian Y	Pioneer S/C	Jupiter	Ecliptic	-	YP1SFF	Km.	INTERP(9)
ZCTPEC	Traversal	Ref.	Cartesian Z	Pioneer S/C	Earth	Ecliptic	-	ZP1SFF	Km.	INTERP(15)
ZCTPJC	Encounter	Ref.	Cartesian Z	Pioneer S/C	Jupiter	Ecliptic	-	ZP1SFF	Km.	INTERP(10)

** ALGJSC = ALGSJC + 180° = RAS1 + 180° = (HRA5 - 180°) + 180° = HRA5 = INTERP(9)

CLTJSC = 90° - ALTJSC = 90° - (- ALTSJC) = 90° - (- DECS1) = 90° - HDEC5 = 90° - INTERP(8)

+ AU = 1.495985×10^{13} cm : Allen, Astrophysical Quantities, 1963.

RE = 6378.166 km. : ATS-E Orbit Tape Listing

RJ = 71372.0 km. :

* Caution: More than one entry exists under this name. Be sure you have selected the correct mode.

(1) ALGOOEC =

ATAN2 [CDSR * CW + SD * SW, CD * COS(RAS)] + PI
CDSR = CD * SR
CD = COS (DEC)
SD = SIN (DEC)
SR = SIN (RAS)
DEC = DECOOEE * FACTOR
RAS = RASOOEE * FACTOR
FACTOR = radians/degree = $\pi/180$ = 0.1745329
CW = COS (23°) = 0.917060098
SW = SIN (23°) = 0.398749015

(2) ALGPEC =

ACOS $\left|XCTPEC/SQRT\ [\ XCTPEC^2 + YCTPEC^2]\right|$ + FAC
FAC = 0. or π

(3) ALGPJC =

ACOS $\left|XCTPJC/SQRT\ [XCTPJC^2 + YCTPJC^2]\right|$ + FAC
FAC = 0. or π

(4) ATFLACS =

RSHIFT [ATTFLGS, 18] .OR. LSHIFT [AREF + 2,6]
ATTFLGS = ISEC(1)
AREF = AREF (KPOINT)

(5) CLTOOEC =

$\pi/2$ - ASIN (SD * CW - CDSR * SW)
See ALGOOEC above

(6) CLTPEC =

ACOS $\left|ZCTPEC/SQRT\ [XCTPEC^2 + YCTPEC^2 + ZCTPEC^2]\right|$

(7) CLTPJC =

ACOS $\left|ZCTPJC/SQRT\ [XCTPJC^2 + YCTPJC^2 + ZCTPJC^2]\right|$

(8) IDV =

HVSTAT .OR. ID
HVSTAT = LSHIFT [IPP(13), 5]
ID = IREAD(2) + 1

(9) PP123 =

P1 .OR. P2 .OR. P3
P1 = LSHIFT [PP(1) * 1000., 32] and PP(1) = DC Bus Voltage
P2 = LSHIFT [PP(3) * 1000., 16] and PP(3) = DC Bus Current
P3 = PP(5) * 10. and PP(5) = Platform Temperature

(10) PP123 = P1 .OR. P2 .OR. P3

P1 = LSHIFT [(PP1/CNT1) * 1000. , 32]

P2 = LSHIFT [(PP2/CNT2) * 1000. , 16]

P3 = (PP3/CNT3) * 10. + 1000.

PP1 = Running sum of good values of PP(1)

PP2 = Running sum of good values of PP(3)

PP3 = Running sum of good values of PP(5)

CNT1 = Counter for good values of PP(1)

CNT2 = Counter for good values of PP(3)

CNT3 = Counter for good values of PP(5)

PP(1) = DC Bus Voltage

PP(3) = DC Bus Current

PP(5) = Platform Temperature

(11) PP456 = P4 .OR. P5 .OR. P6

P4 = LSHIFT [PP(7) * 10. , 32] and PP(7) = Pulse Temp.

P5 = LSHIFT [PP(9) * 100. , 16] and PP(9) = H.V.R.C.

P6 = PP(11) * 10. and PP(11) = Det. C Temp.

(12) PP456 = P4 .OR. P5 .OR. P6

P4 = LSHIFT [(PP4/CNT4) * 10. + 1000. , 32]

P5 = LSHIFT [(PP5/CNT5) * 100. , 16]

P6 = (PP6/CNT6) * 10. + 1000.

PP4 = Running sum of good values of PP(7)

PP5 = Running sum of good values of PP(9)

PP6 = Running sum of good values of PP(11)

CNT4 = Counter for good values of PP(7)

CNT5 = Counter for good values of PP(9)

CNT6 = Counter for good values of PP(11)

PP(7) = Pulse Temp.

PP(9) = H.V.R.C.

PP(11) = Det. C Temp.

(13) TLCPEE = AMOD [(RASPEE - RASSEE + 540.) , 360.] / 15

(A)

ISEC(1) = ATTFLGS = ARIPPHEC, ASPNPDC, RAT, SPF = FLAG4, FLAG3, FLAG2, FLAG1

AREF (KPOINT) = AREF = AREFSELS

ATFLAGS = ATTFLGS, AREFLSELS

ATTFLGS: 00 = ok
01 = old value
10 = value missing
11 = corrected value

AREFSELS: 00 = Error
01 = Star
10 = Sun B
11 = Sun A

FLAG4	FLAG3	FLAG2	FLAG1	AREF	Binary ATFLAGS	Octal ATFLAGS	Decimal ATFLAGS
00	00	00	00	00	Any combination	0	0
01	01	01	01	01	of any five	↓	↓
10	10	10	10	10	binary numbers		
11	11	11	11	11	across the table	03 03 03 03 03	51130563

ATFLAGS will range thus, without biasing :

0_2 - $0000110000110000110000110000011_2$

0_8 - 0303030303_8

0_{10} - 51130563_{10}

(B)

CRANGE = 0 : No overflow/low range

= 1 : Overflow/high range

Overflow refers to pulse data

Range refers to electrometer data

(c) FLAGES :

BITS	ID	MEANING
1 - 2	DQ	Data quality as given on EDR tape. See DQ below.
3	P	Data or padded as given on EDR tape: 0 = data, 1 = fill
4	SCID	Discontinuity in SCID: 1 = yes, 0 = no
5	GMT	Discontinuity in Time: 1 = yes, 0 = no
6	TCF	Time correction flag as given on EDR tape. 1 = suspect, 0 = no correction
7		
8		
9		
10		Average value used
11		Reconstructed by average method
12		Word reconstructed by bit rate

DQ : 00 = Data is bad, no sync
01 = At least 2 indicators bad, data is suspect
10 = At least 1 indicator bad, data is suspect
11 = Data is good, all indicators good

BITS:	12	11	10	9	8	7	6	5	4	3	2	1
Value	0	0	0	0	0	0	0	0	0	0	0	0
	1	1	1	1	1	1	1	1	1	1	1	1

FLAGES will range thus:

0_2 - 111111111111_2

0_8 - 7777_8

0_{10} - 4095_{10}

(D) FORM:

Format	Value
A	1
A/D	2
B	3
B/D	4
Illegal	5

FORM will thus range:

$1_{10} - 5_{10}$

(E) IDV:

Type Data:	Unbiased Value	Biased Value
CDC	0	1
SEDC	1	2
SPDC	2	3
-	3	4
C1	4	5
E1L	5	6
M1L	6	7
CAL1	7	8
C2	8	9
E2L	9	10
M2L	10	11
CAL2	11	12
C3	12	13
E3L	13	14

Type Date:	Unbiased Value	Biased Value
M3L	14	15
CAL3	15	16
E1H	16	17
E1U	17	18
M1H	18	19
M1U	19	20
E2H	20	21
E2U	21	22
M2H	22	23
M2U	23	24
E3H	24	25
E3U	25	26
M3H	26	27
M3U	27	28

IDV thus ranges after a +1 bias:

$1_{10} - 28_{10}$

$1_8 - 34_8$

$1_2 - 011100_2$

Bits:	5	4	3	2	1
Value:	0	0	0	0	0
	1	1	1	1	1

(F) NFMOD = 1 ; Earth Traversal

2 ; Interplanetary Cruise

3 ; Jupiter Encounter

(G) SCNO = 10_{10} = 12_8 ; Pioneer-10 = 10

= 11_{10} = 13_8 ; Pioneer-11 = 11

(H) STNO:

Name	Source Code	$STNO_{10}$	$STNO_2$	$STNO_8$
DSS 11	051	11	00001011	13
DSS 12	351	12	00001100	14
DSS 14	031	14	00001110	16
DSS 21	153	21	00010101	25
DSS 27, DSN Simulation Center (SIMCEN)	023	27	00011011	31
DSS 41	211	41	00101001	51
DSS 42	111	42	00101010	52
DSS 51	026	51	00110011	63
DSS 61	326	61	00111101	75
DSS 62	166	62	00111110	76
DSS 70, Cape Building AO	106	70	01000110	106
DSS 71	046	71	01000111	107
DSS 90, Merritt Island MSFN (MIL)	100	90	01011010	132
DSS 91, USNS Vanguard MSFN (VAN)	112	91	01011011	133
DSS 92, Bermuda MSFN (BDA)	114	92	01011100	134
DSS 93, Ascension MSFN (ACN)	117	93	01011101	135
DSS 94, Canary Island MSFN (CYI)	121	94	01011110	136
DSS 99, Boulder, Colorado	200	99	01100011	143
DSS 00, SFOF 1	310	0	00000000	0

(I) BITR:

Bits/Second	Value Biased	Value Unbiased
16	1	0
32	2	1
64	3	2
128	4	3
256	5	4
512	6	5
1024	7	6
2048	8	7

The binary tape contains the unbiased value.

(J) CR:

Count Rate = Counts/kilosecond

Electrometer Count = $* 10^3$

(K) Right-handed System I longitude as carried on JPL ephemeris tape.

(L) Left-handed System III longitude (I.A.U. definition), in Micro-radians.

READING, IREAD

1	FLAG	Int.
2	ID	Int.
3	COUNTS	Real
4	RANG	Int.
5	TIME	Int.
6	ASW	Real
7	ALEC	Real
8	ALS	Real
9	ACEL or AGLO	Real 1
10	Empty or AGLA	Real

FIRST, IFIRST

1	GMT	Int.
2	DAY	Int.
3	COLE TIME	Int.
4	TCF	Int.
5	SNR	Real
6	DSS	Int.
7	BR	Int.
8	MOD	Int.
9	FMT	Int.
10	RTLT	Int.
11	ESC	Int.
12	ACCT	Real
13	IPFT	Int.
14	NREDUN	Int.
15	NCOM	Int.
16	IADD	Int.

SECOND, ISEC

1	ATTFLGS	Int.
2	RAT	Real
3	ASP	Real
4	SPF	Int.
5	ARIPHC	Real
6	CMF112	Int.
7	C124	Int.
8	CMF124	Int.
9	C431	Int.

```
COMMON/ANGEL/IFLAG(3), RAT(3), ASP(3), ISPF(3), ARIPH(3), C112(3), AREF(3), ASTD(3), KPOINT
COMMON/BROOM/ATQDEC, ATQRASC, ATCLAT, ATCLNG, CSXEC, CSYEC, CSZEC, CZYEQ, CSZEQ
COMMON/CNTRL/SAT, TYPE, RSTRT1, EDRTAP, EDRSNO, NFMOD, TRJA, TRJB
COMMON/CTIME/MSDATA
COMMON/EDR/FIRST(36), SECOND(18), ARRAY(224), IPOINT, ICHG, NDEC, NREADS, NSCID, JPOINT, JCHG
COMMON/PP/PP(14)
COMMON/READING/READING(128), NTRIES, DTIME
```

3/15/74

INTERP (TRJDAT)

Traversal:

Position	Source ID	Array TRAJ Origin	PC 262.04 Tape Parameter #
1	VICDAT	8	3
2	REARPR	34	11
3	REARMO	52	17
4	RTASCP	40	13
5	RTASCS	49	16
6	RTASCM	58	19
7	CELLNE	79	26
8	DECMOO	55	18
9	EASD	460	153
10	EALATP	181	60
11	EALONP	184	61
12	S5P	445	148
13	XPCSFF	97	32
14	YPCSFF	100	33
15	ZPCSFF	103	34
16	HOURAN	325	108
17	CELLTP	70	23
18	CELLNP	73	24

Cruise:

Position	Source ID	Array TRAJ Origin	PC 262.04 Tape Parameter #
1	VICDAT	8	3
2	HRANGP	61	30
3	CELLTP	70	23
4	CELLNP	73	24
5	CELLTE	76	25
6	CELLNE	79	26
7	HR5	418	139
8	HDEC5	415	138
9	HRAS	412	137
10	REARSU	43	14
11	ESPANG	256	85

Encounter:

Position	Source ID	Array TRAJ Origin	PC 262.04 Tape Parameter #
1	VICDAT	8	3
2	BIMAGR	169	56
3	BILONP	199	66
4	BILATP	196	65
5	A5ASD	469	156
6	S5P	445	148
7	HRAS	412	137
8	XP1SFF	133	44
9	YP1SFF	136	45
10	ZP1SFF	139	46

Word in TRAJ = Tape Parameter * 3 + 1 after parameter 4

PP, IPP

1	DC Bus Voltage	Real
2	Ø in sum PP(1)	Int.
3	DC Bus Current	Real
4	Ø in sum PP(3)	Int.
5	Platform Temperature	Real
6	Ø in sum PP(5)	Int.
7	Pulse Temperature	Real
8	Ø in sum PP(7)	Int.
9	HVRC	Real
10	Ø in sum PP(9)	Int.
11	Det. C Temperature	Real
12	Ø in sum PP(11)	Int.
13	HV	Int.
14	Ø in sum PP(13)	Int.

4.1.2 UCSD/TRD Pioneer Summary Tape Format

)ne- -ummary tapes are single-file, multi-record tapes, written in odd parity th- .C 3600. Each 300 word record contains one complete data summary, along :h ociated information. All numbers are written on the tape as positive ıary integers. The tape format is as follows:
(tapes are 7-track, 556 bpi, 48 bit words)

)rd ımber	Name	Definition	Bias,Value or Units
1	SAT	Satellite Number	10 or 11
2	NFMOD	Mode of reduction: Earth traversal, Cruise or Jupiter Encounter	1-3
3	ISTART	Start time of summary	Cole time (ms) = 43,200,000 for Jan 1, 1972, 1200
4	ISTOP	Stop time of summary	Cole time (ms)
5	IDAY	Day of year	
6	IYR	4 digit year	
7	IDRTAP	5 digit name of EDR tape which produced the summary	
8	BRTAP	5 digit name of binary reduction tape associated with the summary	
9	IFF	1 digit code for data format, 1 = A, 2 = A/D, 3 = B, 4 = B/D	
10	IB	1 digit code for bit rate	1-8 [$2^4, 2^5 \ldots 2^{11}$ (bits/sec)]
11	IBR(IB)	Bit rate as defined by IB	16-2048
12	RTLT	Round trip Light Time (for ISTART)	milliseconds
13	ICOMAL	Number of commutate alarms; currently unused (-2)	
14-16	PMIN(I),I=1,3	Minimum Pulse Temp., High Voltage Regulator current & Detector C Temp., respectively	PMIN(I)*1.E6+1.E8
17-19	PMAX(I),I=1,3	Maximum values of the above parameters	PMAX(1)*1.E6+1.E8
20	PAVE(I),I=1,3	Average values of the above I=2 not currently used.	PAVE(I)*1.E6+1.E8

$EXE TPDUMP BS

DUMP OF TAPE GOUT9

9/4/79

D-46024

INPUT TAPE GOUT9 ON MT6
DATA INPUT 07 FL 1 1 STOP

FILE	1 RECORD	1 LENGTH	2736BYTES					
(0)	000341464372	244000000000	000000330000	000000000000	000000000000	000000000000	000000033321	141150602007
(48)	010170161720	177700000000	045301670000	000006257560	000000000335	547500000000	026215760000	000000121105
(96)	000000001204	231600000000	060634150000	000027052101	000000003525	271400000000	000000040000	000276276021
(144)	000000000550	043400000000	002075130000	000030250662	000000000361	043400000000	222243330000	000027050425
(192)	000000000004	711000000000	054541430000	000276276021	000000000550	043400000000	302506620000	000027550145
(240)	777777777777	777500000000	000000010000	000300104753	777777777777	777500000000	474225660000	000000000003
(288)	000000000000	000300000000	000000130000	000000000016	000000001270	551477777777	777777757777	777777777775
(336)	000341464372	537400000000	000000310000	000000000000	000000000000	000000000000	000000033321	141150602007
(384)	010170161720	177700000000	045301670000	000005257647	000000000435	352200000000	066450420000	000001436101
(432)	000000000535	040300000000	060634150000	000027052101	000000003525	271400000000	000000040000	000276276404
(480)	000000000550	043400000000	002071140000	000030250701	000000000361	043400000000	222243330000	000027050425
(528)	000000000004	711000000000	054541430000	000276276404	000000000550	043400000000	302507010000	000027550544
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DUMP OF TAPE GAIL1 08/30/79 D-46015

INPUT TAPE GAIL1 ON MT5
DATA INPUT 07 FL 1 1 STOP
COLE TIME

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