#425

PIONEER 10

BACKGROUND SKY TAPE

72-012A-14A

PIONEER 10

BACKGROUND SKY TAPE

72-012A-14A

Tape Format

This dataset has been restored. It originally consisted of two tapes that have been stacked onto one tape. Files 1-45 are from tape 1, and files 46-58 are from tape 2. The DS tape is 9-track, 6250 bpi. The DR tape is a 3480 cartridge. The data were originally written in UNIVAC 1100 36-bit words. They have been converted to ASCII. The DR and DS numbers along with the corresponding D numbers and time spans are as follows:

DR #	DS#	DD#	FILES	TIME SPAN
DR004076	DS004076	DD031029	1-45	04/10/72 - 10/06/73
		DD031028	46-58	05/17/72 - 12/04/72

72-012A-14A

TAPE FORMAT

Each original tape had a header file (files 1 and 46 on the new tape) that containes two header records. The rest of the files are data files and contain one header record, followed by data records.

The header records are fixed length and contain ASCII zero values for any unused space. Each data record is divided into four sectors. Each sector contains 16 header words (items 1-16 on format below), and a variable number of 14-word elements, one for each star in the sector (the number of stars is contained in item 6 of the sector header).

NOTE: The first record of the first header file (file 1 on tape) is missing.

Following is a more detailed description of each part of the tape.

72-012A-14A

Header file

Record 1:

Item #	Format	Description
1	I5	# of data files on tape (directory file not included)
2	I5	# of days on tape
3	I5	Spacecraft - Pioneer (10 or 11)
4	A6	Day of year map was made DAY/YR
5	A6	Number of this tape
6	A6	Input tape number (ignore)
7	A6	Is input tape corrected (ignore)
8	I5	# of sections for day
9-243	Repeat items 4-8 for each remaining day	Maximum of 48 days

Record 2:

Item #	Format	Description
1	A6	Day of year map was made
2	I5	File # where data is located (directory file not included)
3	I5	Section #
4	F6.2	First look angle in section
5	F6.2	Last look angle in section
6	F6.2	Minimum elongation
7	F6.2	Maximum elongation
8-336	Repeat of items 1-7 for each section of every day	

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Data File

Record 1: (header record)

Item #	Format	Description
1	A6	Day of year map was made
2	A6	Input tape # (ignore)
3	I5	Section #
4	I5	Start time of observations for this section, hours (GMT)
5	I5	Start time of observations for this section, minutes (GMT)
6	I5	Start time of observations for this section, seconds (GMT)
7	I5	Stop time of observations for this section, hours (GMT)
8	I5	Stop time of observations for this section, minutes (GMT)
9	I5	Stop time of observations for this section, seconds (GMT)
10	A6	Element name containing position data (ignore)
11	F7.2	Right ascension of +z spin axis
12	F7.2	Declination of +z spin axis
13	F7.2	Correction for look angle
14	F7.2	Correction for sector
15	F7.2	Clock angle of equator
16	F7.2	Clock angle of sun
17	F7.2	Cone angle of sun
18	I6	# of stars used to get pointing correction
19	F7.2	Standard deviation of correction for look angle
20	F7.2	Standard deviation of correction fo sector.
21	I5	# of look angles included in this section
22-111	F7.2	Look angles included in this section

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Data Records (records 2-n):

Item #	Format	Description

Sector Header (written once for each of four sectors in record)

1	F10.2	Right ascension of center of field of view
2	F10.2	Declination of center of field of view
3	F10.2	Elongation angle of sun
4	I6	Sector - azimuthal angle label of field of view
5	F10.2	Look angle - polar angle label of field of view
6	I6	# of stars in field of view
7	F10.2	BP - Blue brightness (Parallel channel) in EDR units.
8	F10.2	RP - Red brightness (Parallel channel) in EDR units.
9	F10.2	BS - Blue brightness (Senkrecht channel) in EDR units.
10	F10.2	RS - Red brightness (Senkrecht channel) in EDR units.
11	F10.2	BPc
12	F10.2	RPc } Brightness after star subtraction and corrected
13	F10.2	BSc } for secular decay in units of $S_{10}(V)$
14	F10.2	RSc
15	F10.2	BCTOT = BPc + BSc
16	F10.2	RCTOT = RPc + RSc

The individual stars that were subtracted (written once for each star in sector)

17a	I6	Declination of star * 1000 - if 0 bit is set then declination is negative
17b	I6	Right ascension of star * 100
18a	I6	BS of star * 1000
18b	I6	BP of star * 1000
18c	I6	IF1 - Flag denoting stellar anomalies (see section 3)
19a	I6	RS of star * 1000
19b	I6	RP of star * 1000
19c	I6	IF2 - Flag denoting spectral type (see section 3)
20	F10.2	Dwell time
21	F10.2	Vignetting correction for BP channel
22	F10.2	Vignetting correction for RP channel
23	F10.2	Vignetting correction for BS channel
24	F10.2	Vignetting correction for RS channel

pick up from p. 3 of the BST User's Guide following this page.

PIONEER 10/11 BACKGROUND SKY TAPE (BST)

USER'S GUIDE

Experiment:	PIONEER 10/11 STARLIGHT/ZODIACAL LIGHT
NSSDC Experiment #'s:	PIONEER 10-72-012A-14 PIONEER 11-73-019A-15
Principal Investigator:	J. L. Weinberg, Director, Space Astronomy Laboratory State University of New York at Albany Executive Park East, Albany, New York 12203 (518) 457-4134
Co-Investigator:	D. W. Schuerman, Space Astronomy Laboratory
Contents:	1. Tape Specifications and Format 2. Parameter Definitions 3. Coding of Flags Designating Spectral Type 4. Experiment Bibliography

The Background Sky Tape (BST) contains the reduced data of photo-polarimetric measurements of the brightness of the sky as viewed from the deep-space probes Pioneer 10 and 11. The NSSDC will provide the user with the first two papers of a series of articles dealing with the Pioneer 10/11 Starlight/Zodiacal Light Experiment. The first of these defines the scope of the investigation and describes the instrument; the second explains the reduction process leading to the creation of BST. They are referred to in this guide as Paper I and Paper II, respectively.

retyped

Computer Word	Format	Description
20	F	Dwell time.
21	F	Vignetting correction for BP channel.
22	F	Vignetting correction for RP channel.
23	F	Vignetting correction for BS channel.
24	F	Vignetting correction for RS channel.
25-32	F	Repeat computer words 17-24 for second star.
.	F	Repeat computer words 17-24 for each remaining
.	.	star in field of view (8 computer words are
.	F	required per star).
.		
.	F	Repeat computer words 1-16 for sector 2.
.	.	Repeat computer words 17-24 for each star in
.	F	this field of view.
.	F	Repeat computer words 1-16 for sector 3.
.	.	Repeat computer words 17-24 for each star in
.	F	this field of view.
.	F	Repeat computer words 1-16 for sector 4.
.	.	Repeat computer words 17-24 for each star in
.	F	this field of view.

Variable length, Maximum 1664 words.

RECORD 3: Repeat record 2 for sectors 5, 6, 7, 8
. Repeat record 2 for sectors .....
. Repeat record 2 for sectors .....
. Repeat record 2 for sectors .....
RECORD 17: Repeat record 2 for sectors 61, 62, 63, 64

RECORD 18-33: Repeat records 2-17 for next look angle.

RECORD 34-N: Repeat records 2-17 for each remaining (L) look angle in section #1. $N = 16L + 1$.

FILE 3: Repeat FILE 2 for section 2.

FILE 4-(M+1): Repeat FILE 2 for each remaining (up to M) section of day.

Repeat files 2-(M+1) for each day.

This tape has a maximum of 49 files, including the directory file.

2. PARAMETER DEFINITIONS

section	Each day's observations of the sky may be broken up into a number of sections (up to 8). The sections are delineated by look angle. Pointing corrections are determined for each section (Paper I - the need for sectioning; Paper II - the pointing of sections).
look angle	The polar angle between the +z spin axis and the pointing direction of the instrument as determined by telemetry (Papers I and II).
elongation	The angle between pointing direction and the sun.
+ z spin axis	That end of the spacecraft spin axis which points toward the earth. If one's thumb points toward + z, the spacecraft spins according to a right-hand rule.
sector	One spacecraft spin is divided into 64 sectors (Paper I).
clock angle	The true azimuthal angle swept out by the spin of the spacecraft. The clock angle is zero at that node of the ecliptic at which the instrument is rotating into the northern hemisphere (Paper II).
cone angle	True polar angle between + z spin axis and pointing of instrument (Paper II).
BP, RP, BS, RS Parallel Senkrecht Note: The EDR (Experiment Data Record) unit is a unit of relative instrument response. All reduction is performed in these units, including star subtraction. Absolute calibration is then applied to the final results.	The radiance reading (in relative or EDR units) as given by the four channels of the imaging photopolarimeter (IPP). The B designation stands for blue, the R for red. The S and P designations represent orthogonal directions of polarization. Define an "instrumental" coordinate system based on a Senkrecht (S) direction, which is parallel to the IPP rotation axis and perpendicular to the spacecraft spin axis, and a direction Parallel (P) to the spacecraft spin axis; i.e., the S vector is along the longer side of the effective field-of-view and the P vector is along the shorter. Assume the light source observed with the IPP is partially plane-polarized. This light can be divided into an unpolarized part, I_u, and a completely plane polarized component, I_{pol}. Let the amplitude of the polarized component be $\vec{E}_{pol}$ where $\lvert\vec{E}_{pol}\rvert^2 = I_{pol}$. If Θ is the angle between the S direction and the plane of polarization, the component of $\vec{E}_{pol}$ in the S direction is $\lvert\vec{E}_{pol}\rvert \cos\Theta$, and the component in the P direction is $\lvert\vec{E}_{pol}\rvert \sin\Theta$. The intensities seen by the S

and P channels are therefore

$$I_s = \frac{1}{2} I_u + I_{pol} \cos^2\theta$$
$$I_p = \frac{1}{2} I_u + I_{pol} \sin^2\theta$$

where I_s corresponds to the BS or RS readings and I_p corresponds to the BP or RP readings.

BPC, RPC, BSC, RSC	Primary Results	Stand for corrected values of BP, RP, BS, and RS, respectively. The corrections applied (see Paper II) are: 1) foreground stars have been subtracted, 2) the secular decay of the instrument sensitivity is accounted for, 3) absolute calibration is applied so that each channel reads in $S_{10}(V)$ units: blue(4360A) : 1 $S_{10}(V)$=1.16x10^{-9} ergs cm^{-2}s^{-1}ster^{-1}A red(6420A) : 1 $S_{10}(V)$ =1.07x10^{-9} ergs cm^{-2}s^{-1}ster^{-1}A
BCTOT		The sum of BSC and BPC.
RCTOT		The sum of RSC and RPC.
BP of star RP of star BS of star RS of star		The values that the IPP would read if the star was scanned at a cone angle of 90° (Paper II).
dwell time		That fraction of 1/64 of the spacecraft spin period for which the star spends in the instrumental field of view (Paper II).
vignetting correction		This term, on the average, is near 1. It corrects for the fact that the instrument response varies depending on the position of the stars in the field of view (Paper II).
(B-V) calculated		For some stars, a B-V color index is not available. This index is needed to determine the IPP response to any given star. B-V was therefore calculated from spectral type information as described in Paper II.

Note: The uncertainty (1 standard deviation) in the corrections for look angle and sector significantly influence the quality of the data. If the instrument pointing is not determined accurately, the star subtraction process can introduce large errors. Nominal values for computer words 19 and 20, File 2, Record 1, are 0.15 and 0.40, respectively.

3. CODING OF FLAGS DESIGNATING SPECTRAL TYPE

IF1		IF2	
0	Normal star	0	
1	Moderately reddened	1	Type O
2	Marginal variable	2	B
3	Very reddened	3	A
4	Lum class I	4	F
5	Probable significant variable	5	G
6	Significant variable	6	K
7	Sig. variable + class I	7	M
8	Sig. variable + very reddened or Very reddened + class I + sig. var.	8	Very late
9	Sig. variable + moderately reddened or Moderately reddened + class I + sig. var	9	Type O + (B-V) calculated*
10	Probably sig. var. + class I	10	B + (B-V) calculated
11	Prob. sig. var. + very reddened or Very reddened + class I + prob. sig. var.	11	A + (B-V) calculated
12	Prob. sig. var. + moderately reddened or Mod. reddened + class I + prob. sig. var.	12	F + (B-V) calculated
13	Moderately reddened + class I or Moderately reddened + class I + mar. var.	13	G + (B-V) calculated
14	Marginal variable + class I	14	K + (B-V) calcualted
15	Very reddened + class I or Very reddened + class I + mar. var.	15	M + (B-V) calculated

*See page five.

4. EXPERIMENT BIBLIOGRAPHY
(pertinent to this guide)

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3. J. L. Weinberg, M. S. Hanner, H. M. Mann, P. B. Hutchison, and R. Fimmel, Observations of Zodiacal Light from the Pioneer 10 Asteroid-Jupiter Probe: Preliminary Results, in Space Research XIII (Akademie-Verlag, Berlin), 1187-1192, 1973.

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11. R. Soberman, J. M. Alvarez, and J. L. Weinberg, Dust in the Outer Solar System - Review of Early Results from Pioneers 10 and 11, in Lecture Notes in Physics, Number 48, 182-186, 1976.

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13. J. L. Weinberg and J. G. Sparrow*, Zodiacal Light as an Indicator of the Interplanetary Dust, a chapter scheduled for publication in Cosmic Dust, (J. A. M. McDonnell, ed.), New York: Wiley and Sons, 1977.

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REQ. AGENT
VJP

RAND NO.
RD0046

ACQ. AGENT
RWV

PIONEER 10

BACKGROUND SKY TAPE

72-012A-14A

This catalog consists of 2 Pioneer 10 data tapes. The tapes are 1600 BPI, 9 track, Binary and are multi-filed. The tapes were created on a UNIVAC 1110 computer. To read tape it should be Octal dumped.

The Time Span are as follows:

D#	C#	FILES	TIME SPAN
D-31028	C-19839	13	5/17/72 - 12/04/72
D-31029	C-19840	45	4/10/72 - 10/06/73

Superceded

DRIDS
004076

ASCII LIST OF BACKGROUND SKY TAPE

FILE 1 RECORD 1 1920 BYTES

```
101/72    1    1 90.79173.42 58.84178.37216/73    2    1 90.74110.90 90.08113.40216/73    3    2109.53129.61106.71129.95216/73    4
   3128.17155.68126.57157.22216/73    5    4151.76170.10150.16171.64149/73    6    1 29.21 69.55 16.47 81.13149/73    7    2 66.97 9
2.64 54.38104.37149/73    8    3 90.74114.57 78.13126.28149/73    9    4109.56129.73 97.31141.80149/73   10    5128.20153.87115.9316
5.91149/73   11    6151.82170.10140.22179.13293/72   12    1 90.48158.29 74.40177.88293/72   13    2153.57168.24135.73175.10 68/74
 14    1 29.24 90.78 26.73 92.65 68/74   15    2 90.71110.90 88.32112.91 68/74   16    3109.59152.09107.05153.94 68/74   17    4151.
79170.13149.34172.06104/72   18    1 90.79169.60 61.54179.29354/72   19    1 28.98 69.35 25.83 76.05354/72   20    2 67.03 92.70 61.
79 97.32354/72   21    3 90.74110.71 85.68115.51354/72   22    4109.56129.73104.28134.30354/72   23    5128.20157.68123.17162.51354/
72   24    6151.82170.13146.87175.04 21/74   25    1 29.01 67.46 26.83 72.90 21/74   26    2 66.94 92.67 62.53 95.88 21/74   27    3
 90.71110.93 87.46115.32 21/74   28    4109.62129.81105.38133.21 21/74   29    5128.14153.87124.14157.49 21/74   30    6151.79170.13
147.36173.32 93/73   31    1128.14153.78115.62167.26 93/73   32    2151.79170.13138.63179.16237/73   33    1 29.27 69.58 24.21 74.11
237/73   34    2 68.83 96.33 63.27100.36237/73   35    3 92.57110.88 87.49115.39237/73   36    4111.39133.40106.15137.75237/73   37
   5130.01153.84124.98158.41237/73   38    6153.60170.07148.13174.20279/73   39    1 29.24 69.52 18.69 79.43279/73   40    2 68.86 9
4.53 58.27104.40279/73   41    3 92.60110.93 82.23121.03279/73   42    4111.45129.79101.02139.82279/73   43    5130.04166.83119.7317
6.97279/73   44    6163.73169.23153.48179.29000000    0    0  0.00  0.00  0.00  0.00000000    0    0  0.00  0.00  0.00  0.00000000
  0    0  0.00  0.00  0.00  0.00000000    0    0  0.00  0.00  0.00  0.00
```

ASCII LIST OF BACKGROUND SKY TAPE

FILE 2 RECORD 1 757 BYTES

```
101/72D0491    1   19   51   45   23    1    810121P  55.22  26.74   0.17-305.24 -13.22 190.00  31.82    15   0.07   0.15   41  90.
80  92.63  94.46  96.30  98.13  99.96 101.80 103.63 105.46 107.30 109.13 110.96 112.80 114.63 116.46 118.30 120.13 121.96 123.80 125
.63 127.46 129.30 131.13 132.96 134.80 136.63 138.47 140.30 142.13 143.97 145.80 147.63 149.47 151.24 153.08 154.91 156.74 158.58 16
0.35 164.25 173.42   0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00
 0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00
  0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00
```

ASCII LIST OF BACKGROUND SKY TAPE

FILE 2 RECORD 2 2176 BYTES

```
    127.79    -31.92    106.25     1     90.80     6    237.31    224.35    211.09    334.20    229.34    210.22    203.15    321.47
    432.48    531.69  -412   383   529   572     0    11    92     0     0.01     1.17     0.96     0.84     1.20  -411   380
 834   876     0   263   345     0     0.16     0.74     0.96     1.00     1.20  -417   265   171   229     1   722   779     0
      0.45     0.95     1.07     0.93     1.00  -418   404   182   235     0   252   320     0     0.45     0.95     1.07
  0.99     1.03  -416   344   179   232     0   222   290     0     0.45     0.96     1.00     1.02     1.26  -422   313   739
   793     0   863   933     0     0.21     1.10     1.07     1.02     1.12   131.09   -27.08   108.83     2    90.80     5
   150.45   172.75   146.14   419.70   138.23   147.97   135.44   394.22   273.67   542.19  -422   313   739   793     0
 863   933     0     0.24     0.83     1.09     1.02     1.04  -430   395   594   639     0   184   263     0     0.31     1.
35     0.91     0.65     1.27  -422   151 64937 64996     0   202   253     0     0.21     0.00     0.00     0.00     0.00
-426   124   915   972     0  1287  1350     0     0.34     0.86     1.09     1.04     1.38  -433   437   445   491     0    88
   166     0     0.00     0.00     0.00     0.00     0.00   134.13   -22.18   111.28     3    90.80     1   119.80   116.
00   102.84   364.73   118.16   115.89   100.94   366.05   219.10   481.93  -433   437   445   491     0    88   166     0
   0.44     0.95     1.06     1.03     1.13   136.96   -17.23   113.55     4    90.80     4   104.47  &110.84    97.43
  254.81    95.27   106.96    88.77   251.75   184.04   358.72  -444   306   760   805     0   321   400     0     0.45
```

D-31028
D-10
5/17/72 - 12/04/72

DUMP OF TAPE J2IN-1

INPUT TAPE J2IN-1 ON MS3
DATA INPUT 09 NF 13 FL 2 1 1 SR 13 1 1 SR 13 LAST 1

12 Files 11 DAYS D-10 138/72?

FILE 1 RECORD 1 LENGTH 1458BYTES

(0)	000000000014	000000000013	000000000012	616370746762	116071666605	116063706105	232405050505	000000000002
(48)	616266746762	116071666605	116061667105	232405050505	000000000001	616571746762	116071666605	116061667105
(96)	232405050505	000000000001	617061746762	116071666605	116065716205	232405050505	000000000001	626271746762
(144)	116071666605	116065716205	232405050505	000000000001	626463746762	116071666605	116061667105	232405050505
(192)	000000000001	626471746762	116071666605	116061667105	232405050505	000000000001	626761746762	116071666605
(240)	116061667105	232405050505	000000000001	636071746762	116071666605	116061626405	232405050505	000000000001
(288)	636264746762	116071666605	116061626405	232405050505	000000000001	636371746762	116071666605	116063706105
(336)	232405050505	000000000001	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(384)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(432)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(480)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(528)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(576)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(624)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(672)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(720)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(768)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(816)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(864)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(912)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(960)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(1008)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(1056)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(1104)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(1152)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(1200)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(1248)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(1296)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(1344)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(1392)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(1440)	000000000000	000000000000	000000000000					

FILE 1 RECORD 2 LENGTH 2016BYTES

(0)	616370746762	000000000001	000000000001	205724243656	210525226416	205544604300	210531752735	616370746762
(48)	000000000002	000000000002	210457454020	210524202031	210444622511	210534041263	616266746762	000000000003
(96)	000000000001	205720517676	210520516662	205434342124	210546632744	616571746762	000000000004	000000000001
(144)	205724621321	210524466213	204756433513	210546677175	617061746762	000000000005	000000000001	205724243656
(192)	210521470244	204403056741	210546331572	626271746762	000000000006	000000000001	207552560510	210523061116
(240)	207406727763	210545013101	626463746762	000000000007	000000000001	207432432477	210517535136	206563155024
(288)	210546224473	626471746762	000000000010	000000000001	207414000000	210517757473	206532416477	210546407702
(336)	626761746762	000000000011	000000000001	207414000000	210523224366	206546412240	210546720373	636071746762
(384)	000000000012	000000000001	205723320713	210502120713	204706525014	210546720373	636264746762	000000000013
(432)	000000000001	206413310550	210531421321	205434360151	210546720373	636371746762	000000000014	000000000001
(480)	205723320713	210524523760	205472415675	210546720373	000000000000	000000000000	000000000000	000000000000
(528)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(576)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(624)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(672)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(720)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(768)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(816)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(864)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(912)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(960)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(1008)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(1056)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(1104)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(1152)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000

GET OCT. DUMP of Files 1, 2 & 13

(1200)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(1248)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(1296)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(1344)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(1392)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(1440)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(1488)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(1536)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(1584)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(1632)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(1680)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(1728)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(1776)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(1824)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(1872)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(1920)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
(1968)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000

FILE	INPUT RECS.	DATA RECORDS INPUT	MAX. SIZE	READ ERROR SUMMARY PERM	ZERO B	SHORT	UNDEF.	INPUT RETRIES #RECS.	TOTAL#
1	2	3	1512	0	0	0	0	0	0

FILE	2 / RECORD 72	1 LENGTH	666BYTES	sect # 1	hr	MIN 31	sec 9		
(0)	616370746762	116063706105	000000000001	000000000005	000000000037	000000000011	000000000013	000000000060	
(48)	000000000062	616370626125	206644477372	205634611157	202450753412	566326432070	573075156456	211407002031	
(96)	203451625402	000000000036	174753412173	176517676356	000000000116	205724243656	205765247737	206411247737	
(144)	206430000000	206446523760	206465254020	206504000000	206522523760	206541254020	206560000000	206576530041	
(192)	206615254020	206634004061	206652530041	206671260102	206710004061	206726534122	206745260102	206764010142	
(240)	207401256051	207410530041	207420004061	207427256051	207436532071	207446004061	207455260102	207464532071	
(288)	207474006112	207503260102	207512534122	207522006112	207531262132	207540534122	207550006112	207557262132	
(336)	207566442642	207575714632	207605170652	207614442642	207623716662	207633170652	207642444672	207651716662	
(384)	207661170652	207670444672	207677716662	207707172703	207716444672	207725720713	207735172703	207744446723	
(432)	207753720713	207763174733	207772446723	210400751362	210404476356	210410224366	210413751362	210417476356	
(480)	210423224366	210426751362	210432477372	210436224366	210441752376	210445477372	210451225402	210454752376	
(528)	210460500406	210464225402	210467753412	210473500406	210477225402	210502753412	210506500406	210512226416	
(576)	210515753412	210521501422	210525226416	000000000000	000000000000	000000000000	000000000000	000000000000	
(624)	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000		

FILE	2 RECORD	1249 LENGTH	1152BYTES					
(0)	210705104312	571335601106	210507522566	000000000075	210525226416	000000000003	210454643224	210500260766
(48)	210423631526	211447501235	210427560303	210454574375	207771400054	211436153317	211412170154	211664451515
(96)	670214053750	775517770140	775177767125	200466560326	201620634054	201433637666	200636343713	201472171056
(144)	671430054061	776647775101	003774021526	201400000000	201431372330	201415507774	201405146657	201444110333
(192)	671677054335	005124026000	001074007002	201400000000	200744333564	201441733737	201447625654	201550455155
(240)	210702560624	571342331117	210507711254	000000000076	210525226416	000000000004	210417506333	210441715557
(288)	207771472130	210700425003	210412462523	210417530472	207757566755	210657577563	211401167044	211537554126
(336)	675211053710	003700020720	000344004213	176747772766	201420237516	200704741767	200744535605	201470523545
(384)	670214053750	775517770140	775177767125	201400000000	201536320237	201455541531	200677445043	201476771507
(432)	671430054061	776647775101	003774021526	201400000000	200765307175	201476630647	201456736737	201472401266
(480)	671677054335	005124026000	001074007002	176456760536	177605334437	200507423411	200516311525	200703213015
(528)	210700375074	571347722102	210510137665	000000000077	210525226416	000000000005	207770273551	210420664663
(576)	207752221617	210522057370	207715424660	210414435361	207705626436	210511541751	210711525547	211453077555
(624)	674601053500	777167776360	776313773644	200623406171	201427757307	200774377740	200771212267	201431755326
(672)	676216053455	007100035720	003544021213	176716443224	200667347262	177505452345	200454274373	200553324217
(720)	675211053710	003700020720	000344004213	201400000000	200764666151	201437257650	201421142733	201562445103
(768)	670214053750	775517770140	775177767125	173540462056	201401304271	201431466152	200664672674	201444052017
(816)	671430054061	776647775101	003774021526	176550622674	176755242332	177671464165	177644513663	177734307021
(864)	210676364746	571356107240	210510425535	000000000100	210525226416	000000000004	210430114134	210410250324
(912)	207771472130	210654536633	207661141371	207721551774	207603655356	210611174077	210632407363	211471030436
(960)	677304053421	001514010260	003764021676	200547172460	201426122224	200673603123	200741712753	201457505414
(1008)	674601053500	777167776360	776313773644	201400000000	201414112332	201500444224	201455472260	201507113326
(1056)	676216053455	007100035720	003544021213	201400000000	201450716102	201433354756	201432363550	201551636641
(1104)	675211053710	003700020720	000344004213	200550605764	200630516310	201432034765	201433660757	201526633666

FILE	INPUT RECS.	DATA RECORDS INPUT	MAX. SIZE	READ ERROR SUMMARY PERM	ZERO B	SHORT	UNDEF.	INPUT RETRIES #RECS.	TOTAL#

PRINTED IN U.S.A.

```
          2     1249     1250              3924          0        2        0        0        2        2

FILE      13 RECORD 339/22   1  LENGTH     666BYTES
(      0)  636371746762  116063706105  000000000001  000000000022  000000000020  000000000042  000000000027  000000000057
(     48)  000000000050  636371626125  207630735136  205605523760  177671260102  566326443247  203465503453  201647534122
(     96)  204444243656  000000000035  175540203045  176432477372  000000000116  205723320713  205760570652  206407024366
(    144)  206425550345  206444463146  206463213207  206501737167  206520300406  206537024366  206555743250  206574467230
(    192)  206613213207  206631743250  206650467230  206667217270  206705743250  206724473311  206743217270  206761560510
(    240)  207400235544  207407511565  207416763555  207426237575  207435511565  207444763555  207454237575  207463511565
(    288)  207472765605  207502237575  207511513615  207520765605  207530146315  207537422335  207546674325  207556146315
(    336)  207565422335  207574674325  207604150345  207613422335  207622676356  207632150345  207641424366  207650676356
(    384)  207660152376  207667424366  207676700406  207706152376  207715426416  207724700406  207734152376  207743426416
(    432)  207752700406  207762154427  207771426416  210400341217  210404066213  210407614223  210413341217  210417067230
(    480)  210422614223  210426342234  210432067230  210435614223  210441247737  210444774733  210450522743  210454247737
(    528)  210457774733  210463522743  210467247737  210472775747  210476522743  210502250754  210505775747  210511523760
(    576)  210515250754  210520776764  210524523760  000000000000  000000000000  000000000000  000000000000  000000000000
(    624)  000000000000  000000000000  000000000000  000000000000  000000000000  000000000000  000000000000

FILE      13  RECORD     1249  LENGTH     816BYTES
(      0)  211431012050  571354642540  210512632253  000000000075  210524523760  000000000001  210502714457  210622506477
(     48)  210446523177  210655352305  210547724474  210674341537  210503600157  210703456243  211525652325  211700010001
(     96)  674017066765  777554000460  002024012076  201400000000  200775660654  201503014636  201453272376  201456141204
(    144)  211427657077  571356067365  210511467661  000000000076  210524523760  000000000001  210573565200  210712271044
(    192)  210525464672  211410565771  210654454527  211403205721  210574424075  211434012165  211624440312  212417510043
(    240)  674017066765  777554000460  002024012076  177504704624  177615604205  200515637514  200473557772  200503050422
(    288)  211426543741  571360166075  210510372331  000000000077  210524523760  000000000002  210703257607  211415435013
(    336)  210623154767  211454222777  210734440603  211456051270  210650444707  211476302575  211702442645  212466166032
(    384)  677377066057  006564034260  003740022143  174650113572  000000000000  000000000000  000000000000  000000000000
(    432)  677346066167  007330037020  003240017632  200514630313  201424220016  200637332765  200717763126  201441200311
(    480)  211425457700  571363120177  210507343421  000000000100  210524523760  000000000005  211430330015  211463635367
(    528)  210760465670  211500223241  211406013325  211510067356  210714531113  211501605272  211754267772  212504736324
(    576)  675510065655  004040021500  000250003672  175765713445  201573224017  200646600333  200460575355  201451321650
(    624)  676535065726  776457774040  000130002626  200421144016  201421375352  200656352354  200674774673  200721513411
(    672)  677305066025  000760005240  776377774303  200673213720  201432637411  200753204622  200766260565  201455556142
(    720)  677377066057  006564034260  003740022143  201400000000  201434677737  200765346677  201401214707  201504617612
(    768)  677346066167  007330037020  003240017632  201400000000  201440337121  201457354224  201445764710  201573324362

          FILE   INPUT     DATA RECORDS     MAX.          READ ERROR SUMMARY          INPUT RETRIES
                 RECS.       INPUT          SIZE       PERM  ZERO B   SHORT  UNDEF.  #RECS.  TOTAL#
            13    1249      1250            4248        0      4       0      0       7       7

EOJ        DUMP STOPPED AFTER FILE   13        # OF PERMANENT READ ERRORS  0

START TIME 03/29/78  10:32:59        STOP TIME 03/29/78  10:37:27

$$
$REW LO
```

SAMPLE READ PROGRAM (4 pp)

```
SAL*MISS(1).READSTARTAPE
      C SAMPLE PROGRAM TO READ THE 'BACKGROUND SKY TAPES' CREATED FROM
      C PIONEER 10/11 DATA.
      C
      C LANGUAGE: FORTRAN V
      C AUTHOR: BARBARA A GREEN, SPACE ASTRONOMY LABORATORY
      C
      C THIS ROUTINES PRINTS THE DATA OF DESIRED SECTIONS
      C INPUTS: IDAY=DAY OF YEAR DESIRED (EX. 237/73)
      C         NSECT=ARRAY OF SECTIONS TO BE PRINTED (EX. 1 2 3 4 5 6 0)
      C         @EOF-AFTER ALL DATA OF DAYS HAS BEEN DONE
      C UNIT 22 = INPUT BACKGROUND SKY TAPE
      C
            DIMENSION NSECT(7),INFO(336),IHEAD(111),OHEAD(111),IDATA(1664),
           +ODATA(1664),XLA(90)
            DIMENSION AZZ(2),DZZ(2),S1(2),S2(2),S3(2),S4(2),IFS(2),
           +          IFL(2),IFR(2),IFV(2),DWT(2),V1(2),V2(2),
           +          V3(2),V4(2)
            COMMON RZD,DZD,CNSTL,CNSTS
            EQUIVALENCE (IDOY,IHEAD(1)),(NSEC,IHEAD(3)),(NLA,IHEAD(21)),
           +(IHEAD(22),XLA),(ODATA,IDATA),(IHEAD,OHEAD)
      C
          5 READ (5,900,END=90) IDAY,NSECT
        900 FORMAT (A6,7I2)
            CALL REWIND (22)
      C INPUTS RECORD 1 OF DIRECTORY FILE (243 WORDS)
            CALL GETAPE(22,243,INFO,ISTAT)
            PRINT 901,IDAY,INFO(3),NSECT
        901 FORMAT (20X,'PROCESSING DAY ',A6,'  PIONEER ',I2,
           +'   USING SECTIONS ',7(I2,', '))
            N=INFO(1)*7
            ISC=INFO(3)
      C INPUT RECORD 2 OF DIRECTORY FILE (336 WORDS)
            CALL GETAPE(22,336,INFO,ISTAT)
      C
      C FIND LOCATION OF DAY DESIRED
            DO 20 I=1,N,7
            IF (IDAY.NE.INFO(I)) GO TO 20
            ISKIP=INFO(I+1)
            GO TO 25
         20 CONTINUE
            PRINT 902, IDAY
        902 FORMAT (3X,'CANNOT FIND DATA ON TAPE FOR DAY ',A6)
            STOP
      C
      C SKIPS TO SECTION ONE OF DESIRED DAY
         25 CALL TSKIPF(22,ISKIP)
            KL=1
         28 IF (NSECT(KL).EQ.0) GO TO 5
      C INPUT HEADER RECORD OF DATA FILE (111 WORDS)
         13 CALL GETAPE(22,111,OHEAD,ISTAT)
            IF (ISTAT.LT.0) STOP
            IF (NSECT(KL).EQ.NSEC .AND. IDAY.EQ.IHEAD(1)) GO TO 30
      C SKIP TO NEXT SECTION
         29 CALL TSKIPF(22)
            GO TO 28
         30 PRINT 909,NSECT(KL)
```

```
  909 FORMAT (1H1,48X,'******** STARTING SECTION',I2,' ********')
      PRINT 913,(IHEAD(J),J=1,12),(IHEAD(J),J=15,19),IHEAD(13),
     +IHEAD(20),IHEAD(14),IHEAD(21),ISC,(XLA(J),J=1,NLA)
  913 FORMAT(/' IDOY=',A6,' ITAPE=',A6,' SECTION #=',I1,' ISTART='
     +,3I2,' ISTOP=',3I2,' IFILE=',A6/' RZD=',F8.3,' DZD=',F8.3,
     +' BETAD=',F8.3,' CLSUND=',F8.3,' CNSUND=',F8.3/
     +' # OF MAP STARS=',I2,' SIGL=',F6.3,' CNSTL=',F8.3,
     +' ESSIG=',F6.3,' CNSTS=',F8.3/
     +' NUMBER OF LA IN THIS SECTION=',I2,8X,'PIONEER',I3,
     +/7(1X,F8.3))
      RZD=OHEAD(11)
      DZD=OHEAD(12)
      CNSTL=OHEAD(13)
      CNSTS=OHEAD(14)
      KL=KL+1
C
   36 PRINT 911
  911 FORMAT (/'********************')
C
C THIS LOOP IS BECAUSE THERE ARE 16 RECORDS PER LA
      DO 38 II=1,16
C READ DATA RECORD (VARIABLE LENGTH-MAXIMUN 1664 WORDS)
      CALL GETAPE(22,1664,IDATA,ISTAT)
      IF (ISTAT.EQ.-2) GO TO 28
      IS=0
C
C THIS LOOP IS BECAUSE THERE ARE 4 SECTORS PER RECORD
      DO 55 KK=1,4
   37 PRINT 905, (IDATA(IS+J),J=1,5),(IDATA(IS+J),J=7,10),
     +(IDATA(IS+J),J=15,16),(IDATA(IS+J),J=11,14)
  905 FORMAT (/' RACD=',F8.3,' DECCD=',F8.3,'  ELONGD=',F6.2,' SECTOR=',
     +I2,' LA=',F8.3,2X,' BP=',F9.3,'  RP=',F9.3,'  BS=',F9.3,'  RS=',
     +F9.3/5X,'  BCTOT=',F8.3,'  RCTOT=',F8.3,
     +32X,'BPC=',F8.3,'  RPC=',F8.3,'  BSC=',F8.3,'  RSC=',F8.3)
      NN=2
      IDA=IDATA(IS+6)
      IF (IDA.EQ.0) GO TO 51
C
C THIS LOOP IS TO GET ALL STARS WHICH WERE SUBTRACTED
      DO 50 M=1,IDA,2
C PULLS OFF INFORMATION CONCERNING THE STARS
      IDEC=0
      IRA=0
      JK=(8*M)+9+IS
      IRA=FLD(18,18,IDATA(JK))
      IF (IDATA(JK).LT.0) IDEC=-0
      FLD(18,18,IDEC)=FLD(0,18,IDATA(JK))
      AZZ(1)=IRA/100.
      DZZ(1)=IDEC/1000.
      CALL MAGBR(IDATA(JK+1),IDATA(JK+2),S1(1),S2(1),S3(1),S4(1),
     +IFS(1),IFL(1),IFR(1),IFV(1))
      DWT(1)=ODATA(JK+3)
      V1(1)=ODATA(JK+4)
      V2(1)=ODATA(JK+5)
      V3(1)=ODATA(JK+6)
      V4(1)=ODATA(JK+7)
      IF ((M+1).LE.IDA) GO TO 40
```

```
      NN=1
      GO TO 45
C
   40 IDEC=0
      JK=(8*(M+1))+9+IS
      IRA=FLD(18,18,IDATA(JK))
      IF (IDATA(JK).LT.0) IDEC=-0
      FLD(18,18,IDEC)=FLD(0,18,IDATA(JK))
      AZZ(2)=IRA/100.
      DZZ(2)=IDEC/1000.
      CALL MAGBR(IDATA(JK+1),IDATA(JK+2),S1(2),S2(2),S3(2),S4(2),
     +IFS(2),IFL(2),IFR(2),IFV(2))
      DWT(2)=ODATA(JK+3)
      V1(2)=ODATA(JK+4)
      V2(2)=ODATA(JK+5)
      V3(2)=ODATA(JK+6)
      V4(2)=ODATA(JK+7)
C PRINTS INFORMATION FOR 2 STARS AT A TIME
   45 PRINT 906,(AZZ(N),DZZ(N),S1(N),S2(N),S3(N),S4(N),IFS(N),
     +IFL(N),IFR(N),IFV(N),DWT(N),V1(N),V2(N),V3(N),V4(N),N=1,NN)
  906 FORMAT (2(1X,2F6.2,4F4.1,1X,I2,3I1,F5.3,1X,4F6.4,':'))
   50 CONTINUE
      GO TO 52
   51 PRINT 907
  907 FORMAT (7X,'NO STARS SUBTRACTED')
   39 IDA=IDATA(IS+6)
   52 IS=IS+16+(IDA*8)
   55 CONTINUE
   38 CONTINUE
      GO TO 36
   90 STOP
C
C THIS SUBROUTINE DECODES THE TWO MAGNITUDE WORDS FROM
C THE STAR CATALOG (MB,MR) INTO FOUR MAGNITUDES S(1),
C S(2),S(3),S(4) WHICH CORRESPOND TO BP,RP,BS,RS CHANNELS
C RESPECTIVELY.  IT ALSO DECODES THE FLAG IF1 INTO 'SUB' FLAGS
C IFL,IFR AND IFV.  IFS IS IF2+1.
C AUTHOR: FRANK FIOVANI
C
C FLAGS:
C    IFL=IFR=IFV=0, NORMAL STAR
C    IFL=1, LUM. CLASS I
C    IFR=1, VERY REDDENED
C    IFR=2, MODERATELY REDDENED
C    IFV=1, SIGNIFICANT VARIABLE
C    IFV=2, PROBABLE SIGNIFICANT VARIABLE
C    IFV=3, MARGINAL VARIABLE
C
      SUBROUTINE MAGBR(MB,MR,S1,S2,S3,S4,IFS,IFL,IFR,IFV)
      IC=0
      IFL=0
      IFR=0
      IFV=0
      ID=0
      IF(FLD(16,1,MB).EQ.1)IC=-0
      FLD(20,16,IC)=FLD(16,16,MB)
      IF(MB.LT.0)ID=-0
```

```
      FLD(20,16,ID)=FLD(0,16,MB)
      IF1=FLD(32,4,MB)+1
      S1=10.**(IC/1000.)
      S3=10.**(ID/1000.)
      IC=0
      ID=0
      IF(FLD(16,1,MR).EQ.1)IC=-0
      FLD(20,16,IC)=FLD(16,16,MR)
      IF(MR.LT.0) ID=-0
      FLD(20,16,ID)=FLD(0,16,MR)
      IFS=FLD(32,4,MR)+1
      S2=10.**(IC/1000.)
      S4=10.**(ID/1000.)
      GO TO (99,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15),IF1
    9 IFV=1
    1 IFR=2
      RETURN
   14 IFL=1
    2 IFV=3
      RETURN
    8 IFV=1
    3 IFR=1
      RETURN
   13 IFR=2
    4 IFL=1
      RETURN
   10 IFL=1
    5 IFV=2
      RETURN
    7 IFL=1
    6 IFV=1
      RETURN
   11 IFV=2
      IFR=1
      RETURN
   12 IFV=2
      IFR=2
      RETURN
   15 IFR=1
      IFL=1
   99 RETURN
      END
```

&SEND

SAMPLE OUTPUT USING PROGRAM READSTARTAPE

```
@XQT RUN1
PROCESSING DAY 138/72  PIONEER 10   USING SECTIONS  2,  0,  0,  0,  0,  0,  0,
```

```
                                        ******** STARTING SECTION 2 ********
IDOY=138/72 ITAPE=00361  SECTION #=2 ISTART=1224 5 ISTOP=13 850 IFILE=13822P
RZDE=  52.574 DZDE=  25.790 BETADE= -14.083 CLSUND= 264.279 CNSUND=   4.653
# OF MAP STAPSE= 3 SIGLE=  .053 CNSTLE=     .747 ESSIGE=  .164 CNSTSE=-297.449
NUMBER OF LA IN THIS SECTION=11          PIONEER 10
 151.793  153.626  155.460  157.293  159.127  160.960  162.793
 164.627  166.460  168.294  170.127

*******************

RACDE= 203.734 DECCDE= -42.615  ELONGDE=147.30 SECTORE= 1 LAE= 151.793   BPE=  126.358  RPE=  138.424  BSE=  126.403  RSE=   77.300
      BCTOTE= 240.140  RCTOTE= 206.763                                   BPCE= 120.275  RPCE= 134.980  BSCE= 119.865  RSCE=  71.783
203.50-43.89 2.1 3.2 1.9 2.8  7000 .546 1.00401.1472 .92981.0540: 204.95-43.94 2.2  .7 2.0  .6  3000 .382  .76511.0156 .99801.0781:
204.75-42.89 1.9  .7 1.7  .5  3000 .753  .93011.05321.05121.3083: 205.28-43.19 1.9  .7 1.7  .6  3000 .553  .89861.06961.08191.3715:

RACDE= 202.300 DECCDE= -40.114  ELONGDE=147.57 SECTORE= 2 LAE= 151.793   BPE=  139.124  RPE=  155.778  BSE=  124.487  RSE=  106.619
      BCTOTE= 217.835  RCTOTE= 152.969                                   BPCE= 113.298  RPCE= 101.216  BSCE= 104.537  RSCE=  51.753
200.90-39.49 3.7 8.5 3.3 7.4  7000 .539 1.36871.1378 .89361.1657: 201.09-39.91 1.1 2.2 1.0 1.9 15000 .728 1.27571.1684 .94511.1300:
202.03-39.1511.524.210.120.8  6020 .604 1.10571.11641.06201.2389: 202.90-38.64  .8  .8  .7  .7  6000 .427 1.00371.05451.03071.3924:
202.30-38.14 1.7 2.9 1.5 2.5  7000 .266 1.0759 .8574 .93601.1919:

RACDE= 201.247 DECCDE= -37.518  ELONGDE=147.88 SECTORE= 3 LAE= 151.793   BPE=  167.394  RPE=  130.205  BSE=  199.216  RSE=  153.311
      BCTOTE= 317.655  RCTOTE= 214.553                                   BPCE= 137.305  RPCE=  95.716  BSCE= 180.350  RSCE= 118.837
199.44-36.4596.238.686.932.2  4000 .279  .3416 .1859 .1803 .2867: 200.80-39.49 3.7 8.5 3.3 7.4  7000 .235 1.04421.1748 .93981.1180:
200.38-37.77  .4 1.4  .4 1.2  7000 .659 1.07871.0948 .96091.0349: 201.09-39.91 1.1 2.2 1.0 1.9 15000 .093  .83031.1287 .92711.0584:
202.03-39.1511.524.210.120.8  6020 .325  .7016 .9744 .96101.0036: 202.90-38.64  .8  .8  .7  .7  6000 .345  .82761.10901.10701.3558:
202.30-38.14 1.7 2.9 1.5 2.5  7000 .653  .92401.06661.07281.3446:

RACDE= 200.541 DECCDE= -34.856  ELONGDE=148.21 SECTORE= 4 LAE= 151.793   BPE=  144.596  RPE=  124.725  BSE=  195.383  RSE=   52.325
      BCTOTE= 318.819  RCTOTE= 167.930                                   BPCE= 129.118  RPCE= 122.222  BSCE= 189.702  RSCE=  45.708
199.44-36.4596.238.686.932.2  4000 .265  .3120 .1879 .1891 .2755: 200.09-32.92  .8 3.4  .7 3.0 16000 .241 1.0792 .8764 .9138 .9748:

RACDE= 200.151 DECCDE= -32.154  ELONGDE=148.57 SECTORE= 5 LAE= 151.793   BPE=   85.321  RPE=   88.192  BSE=   74.668  RSE=   47.982
      BCTOTE= 162.172  RCTOTE= 127.611                                   BPCE=  86.697  RPCE=  84.513  BSCE=  75.475  RSCE=  43.098
200.09-32.92  .8 3.4  .7 3.0 16000 .681  .91721.13401.05801.1257:

RACDE= 200.052 DECCDE= -29.433  ELONGDE=148.95 SECTORE= 6 LAE= 151.793   BPE=   70.731  RPE=   75.406  BSE=   69.878  RSE=  -23.685
      BCTOTE= 142.754  RCTOTE=  50.868                                   BPCE=  71.541  RPCE=  76.510  BSCE=  71.213  RSCE= -25.642
198.91-28.07 1.6 1.6  .9 1.3  6000 .349 1.6372 .9686 .79111.3192:

RACDE= 200.220 DECCDE= -26.714  ELONGDE=149.36 SECTORE= 7 LAE= 151.793   BPE=   76.202  RPE=   86.365  BSE=   66.046  RSE=   -7.397
      BCTOTE= 144.119  RCTOTE=  77.792                                   BPCE=  77.245  RPCE=  87.406  BSCE=  66.874  RSCE=  -9.614
198.91-28.07 1.6 1.6  .9 1.3  6000 .307 1.4219 .9947 .84281.2761: 201.44-27.14 1.0  .9  .9  .7  5000 .614  .1697 .4109 .3342 .7001:

RACDE= 200.634 DECCDE= -24.018  ELONGDE=149.78 SECTORE= 8 LAE= 151.793   BPE=   76.202  RPE=   80.886  BSE=   76.585  RSE=   15.406
      BCTOTE= 156.122  RCTOTE=  94.771                                   BPCE=  77.939  RPCE=  81.451  BSCE=  78.183  RSCE=  13.320
201.75-23.02  .5 1.6  .4 1.4  9001 .483 1.07631.04851.04541.4022:

RACDE= 201.279 DECCDE= -21.361  ELONGDE=150.21 SECTORE= 9 LAE= 151.793   BPE=   70.731  RPE=   79.059  BSE=   67.962  RSE=  101.189
      BCTOTE= 141.973  RCTOTE= 181.318                                   BPCE=  72.542  RPCE=  79.999  BSCE=  69.430  RSCE= 101.319
201.75-23.02  .5 1.6  .4 1.4  9001 .356  .85311.11571.11591.3722:

RACDE= 202.139 DECCDE= -18.762  ELONGDE=150.66 SECTORE=10 LAE= 151.793   BPE=   78.938  RPE=   83.626  BSE=   77.543  RSE=   87.073
      BCTOTE= 139.367  RCTOTE= 157.813                                   BPCE=  70.251  RPCE=  77.114  BSCE=  69.116  RSCE=  80.698
201.69-18.47  .6 1.7  .5 1.4  7000 .903  .94531.0749 .93051.0017: 202.34-18.47 4.6 2.2 4.1 1.9 12000 .841 1.03921.14531.11061.2196:
```