

#317

PIONEER 10

CHARGED PARTICLE

PULSE HEIGHT ANALYSIS & 5 MIN. AVG. COUNT RATES

72-012A-02B & 02C

6 TAPES

4 TAPES

Refer to 72-012A-02C

PIONEER 10

PULSE HEIGHT ANALYSIS DATA, TAPES

72-012A-02B

THIS DATA SET HAS BEEN RESTORED. THERE WERE ORIGINALLY 45 7-TRACK, 800 BPI TAPES, NINE 9-TRACK, 1600 BPI TAPES, AND 12 9-TRACK, 6250 BPI TAPES, ALL WRITTEN IN BINARY. THERE ARE 19 RESTORED TAPES. THE 7-TRACK TAPES WERE REPACKED AND THE 9-TRACK TAPES WERE NOT. THE DR TAPES ARE 3480 CARTRIDGES AND THE DS TAPES ARE 9-TRACK, 6250 BPI. THE FOLLOWING TAPES WERE UNABLE TO BE COPIED; D078982, 83, AND D079801. THE TAPES ARE NOT IN TIME SEQUENTIAL ORDER. 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:

DR#	DS#	D#	FILES	TIME SPAN
DR002839	DS002839	D017169	1	03/03/72 - 03/21/72
		D017170	2	03/22/72 - 04/27/72
		D017289	3	04/28/72 - 05/25/72
		D017171	4	05/28/72 - 06/03/72
		D017172	5	06/05/72 - 06/09/72
		D017173	6	06/10/72 - 06/17/72
DR002840	DS002840	D017174	1	06/17/72 - 06/22/72
		D028776	2	11/05/73 - 11/28/73
		D031865	3	08/16/75 - 10/19/75
DR002841	DS002841	D017175	1	06/23/72 - 07/14/72
		D017285	2	07/15/72 - 07/19/72
		D017286	3	07/20/72 - 07/27/72
		D017176	4	07/28/72 - 08/06/72
		D017177	5	08/07/72 - 08/19/72
DR002877	DS002877	D017284	1	09/04/72 - 09/11/72
		D017288	2	09/12/72 - 10/18/72
		D017179	3	10/19/72 - 12/01/72
		D017287	4	12/02/72 - 12/31/72
		D028769	5	01/01/73 - 02/26/73
		D028768	6	02/28/73 - 04/11/73

72-012A-02B

DR#	DS#	D#	FILES	TIME SPAN
DR002878	DS002878	D028766	1	04/11/73 - 05/04/73
		D028767	2	05/05/73 - 05/17/73
		D028771	3	05/19/73 - 06/13/73
		D028770	4	06/14/73 - 07/22/73
		D028772	5	07/22/73 - 08/21/73
		D028773	6	08/23/72 - 09/17/73
		D028774	7	09/17/73 - 10/04/73
		D028775	8	10/04/73 - 10/18/73
DR002879	DS002879	D028777	1	11/29/73 - 12/19/73
		D028778	2	12/19/73 - 12/31/73
		D031059	3	12/31/73 - 03/09/74
		D031058	4	03/09/74 - 04/28/74
		D031057	5	04/28/74 - 06/05/74
		D031056	6	06/05/74 - 06/18/74
DR002880	DS002880	D031054	1	06/19/74 - 07/28/74
		D031055	2	07/29/74 - 09/23/74
		D017178	3	08/20/72 - 09/03/72
		D031051	4	09/23/72 - 10/10/74
		D031053	5	10/11/74 - 11/22/74
		D031864	6	06/08/75 - 08/16/75
DR002881	DS002881	D031052	1	11/23/74 - 12/30/74
		D031861	2	01/01/75 - 03/26/75
		D031862	3	03/26/75 - 04/26/75
		D031863	4	04/26/75 - 06/07/75
DR002882	DS002882	D031866	1	10/20/75 - 12/31/75
		D047655	2	12/31/75 - 12/31/76
		D053823	3	12/31/76 - 06/18/77
DR002883	DS002883	D053824	1	06/18/77 - 12/31/77
		D053825	2	01/01/78 - 08/03/78
		D053826	3	08/03/78 - 12/30/78
DR002884	DS002884	D053827	1	01/01/79 - 12/31/79
		D058737	2	12/02/80 - 12/31/80
		D073384	3	12/31/80 - 12/31/81
DR002885	DS002885	D058736	1	12/31/79 - 12/02/80
		D073385	2	01/01/82 - 12/30/82
DR002886	DS002886	D073386	1	01/01/83 - 12/31/83
DR002887	DS002887	D074059	1	12/31/83 - 12/31/84
		D076251	2	12/31/84 - 12/31/85
DR003962	DS003962	D082579	1	12/31/88 - 12/31/89
DR005591	DS005591	D086238	1	01/01/90 - 12/31/90
DR005592	DS005592	D100503	1	12/31/90 - 12/31/91

72-012A-02B

DR#	DS#	D#	FILES	TIME SPAN
DR006041	DS006041	D107834	1	01/01/92 - 09/02/92
DR006042	DS006042	D107835	1	02/02/93 - 12/02/93

PIONEER 10

5-MIN AVG COUNT RATE TAPES

72-012A-02C

THIS DATA SET HAS BEEN RESTORED. THERE WERE ORIGINALLY 33 TAPES, 16 WERE 7-TRACK, 800 BPI, SEVEN WERE 9-TRACK, 1600 BPI, AND TEN WERE 9-TRACK , 6250 BPI TAPES, WRITTEN IN BINARY. THERE ARE SEVEN RESTORED TAPES. THE TAPE D079802 IS WAITING ON A RELACEMENT. 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:

DR#	DS#	DD#	FILES	TIME SPAN
DR002626	DS002626	D017418	1	03/03/72 - 05/26/72 (a)
		D017420	2	05/28/72 - 07/22/72 (b)
		D017419	3	07/23/72 - 10/18/72 (a)
		D017417	4	10/19/72 - 12/31/72 (a)
		D028793	5	01/01/73 - 04/19/73 (a)
		D028792	6	04/19/73 - 05/09/73 (a)
		D028796	7	05/09/73 - 05/15/73 (a)
		D028795	8	08/22/73 - 12/06/73 (a)
		D028794	9	12/06/73 - 04/20/74 (a)
DR002627	DS002627	D031048	1	12/06/73 - 04/19/74 (a)
		D031050	2	04/20/74 - 07/21/74 (a)
		D031047	3	07/22/74 - 11/01/74
		D031049	4	11/01/74 - 12/31/74 (a)
		D031858	5	01/01/75 - 04/25/75
		D031859	6	04/26/75 - 08/12/75
		D031860	7	08/13/75 - 12/31/75
DR002628	DS002628	D047656	1	01/01/76 - 12/31/76
		D053828	2	01/01/77 - 12/31/77
		D053829	3	01/01/78 - 08/02/78
		D053830	4	08/03/78 - 12/31/78
		D053831	5	01/02/79 - 12/31/79
		D058738	6	01/01/80 - 12/31/81

72-012A-02C

DR#	DS#	DD#	FILES	TIME SPAN
DR002629	DS002629	D073387	1	01/31/81 - 12/31/83
		D074060	2	12/31/83 - 12/31/84
DR002630	DS002630	D076252	1	01/31/85 - 12/31/85
		D078984	2	01/01/86 - 12/31/86
		D078985	3	01/01/87 - 12/31/87
DR003964	DS003964	D082580	1	01/01/89 - 12/30/89
		D086239	2	01/01/90 - 12/31/90
DR006045	DS006045	D100504	1	01/01/90 - 12/31/91
		D107836	2	12/31/91 - 09/01/92
		D107837	3	01/01/93 - 12/11/93

- (a) THE FIRST RECORD WAS REMOVED
(b) THE FIRST TWO RECORDS WERE REMOVED

Not for dist.

REQ. AGENT
CMT
PAR
WKD
DEW
DHG

RAND NO.
RC2742

RC7196

JHK
DVR
NJS

PIONEER 10

CHARGED PARTICLE PULSE HEIGHT ANALYSIS & 5 MIN. AVG. COUNT RATES
72-012A-02B & 72-012A-02C

This data set consists of 57 Pulse Height Analysis (02B) and 24 5 Minute Avg. Count Rate (02C) data tapes. The tapes, unless specified otherwise, are 7 track, 800 bpi, binary, single-filed. They were created at the University of Chicago on an XDS 930 computer.

The Pulse Height tapes contain data records between 150 and 1020 (24 bit) words long and header records of 120 words for every 15 minutes of real data. The header records are made up of 60 XDS double-precision floating point words. This double-precision word is described on page 138 of the format. The data records are written in fixed point format which is described on Page 137.

The Count Rate tapes contain data records of 480 double-precision floating point words. Each physical record consists of 6 logical records. The 'D' and 'C' numbers and time spans for the tapes are as follows:

PULSE HEIGHT DATA 72-012A-02B

<u>D#</u>	<u>C#</u>	<u>TIME SPAN</u>
D-17169	C-16827	03/03/72 - 03/21/72
D-17170	C-16828	03/22/72 - 04/27/72
D-17289	C-16842	04/28/72 - 05/26/72
D-17171	C-16829	05/28/72 - 06/04/72

PULSE HEIGHT DATA 72-012A-02B (cont')

<u>D#</u>	<u>C#</u>	<u>TIME SPAN</u>
D-17172	C-16830	06/05/72 - 06/09/72
D-17173	C-17121	06/10/72 - 06/16/72
D-17174	C-16831	06/17/72 - 06/22/72
D-17175	C-16832	06/23/72 - 07/14/72
D-17177	C-16834	08/07/72 - 08/19/72
D-17285	C-16838	07/15/72 - 07/19/72
D-17286	C-16839	07/20/72 - 07/27/72
D-17176	C-16833	07/28/72 - 08/06/72
D-17177	C-16834	08/07/72 - 08/19/72
D-17178	C-16835	08/20/72 - 09/03/72
D-17284	C-16837	09/04/72 - 09/11/72
D-17288	C-16841	09/12/72 - 10/18/72
D-17179	C-16836	10/19/72 - 12/01/72
D-17287	C-16840	12/02/72 - 12/31/72
D-28769	C-18688	01/01/73 - 02/27/73
D-28768	C-18687	02/28/73 - 04/10/73
D-28766	C-18685	04/11/73 - 05/04/73
D-28767	C-18686	05/05/73 - 05/18/73
D-28771	C-18690	05/19/73 - 06/13/73
D-28770	C-18689	06/14/73 - 07/21/73
D-28772	C-18691	07/22/73 - 08/22/73
D-28773	C-18692	08/23/73 - 09/16/73
D-28774	C-18693	09/17/73 - 10/03/73
D-28775	C-18694	10/04/73 - 11/04/73
D-28776	C-18695	11/05/73 - 11/28/73

PULSE HEIGHT DATA 72-012A-02B (cont')

<u>D#</u>	<u>C#</u>	<u>TIME SPAN</u>
D-28777	C-18696	11/29/73 - 12/18/73
D-28778	C-18697	12/19/73 - 12/31/73
D-31059	C-20553	01/01/74 - 03/09/74
D-31058	C-20552	03/10/74 - 04/27/74
D-31057	C-20551	04/28/74 - 06/05/74
D-31056	C-20550	06/06/74 - 06/18/74
D-31054	C-20548	06/19/74 - 07/28/74
D-31055	C-20549	07/29/74 - 08/14/74
D-31051	C-20545	09/24/74 - 10/11/74
D-31053	C-20547	10/12/74 - 11/22/74
D-31052	C-20546	11/23/74 - 12/31/74
D-31861	C-20498	01/01/75 - 03/26/75
D-31862	C-20499	03/27/75 - 04/25/75
D-31863	C-20500	04/26/75 - 06/08/75
D-31864	C-20501	06/09/75 - 08/15/75
D-31865	C-20502	08/16/75 - 10/19/75
D-31866	C-20503	10/20/75 - 12/31/75
D-47655*	C-22341*	01/01/76 - 12/31/76
D-53823*	C-22856*	01/01/77 - 06/18/77
D-53824*	C-22857*	06/18/77 - 12/31/77
D-53825*	C-22858*	01/01/78 - 08/03/78
D-53826*	C-22859*	08/03/78 - 12/31/78
D-53827*	C-22860*	01/02/79 - 12/31/79
D-58736*	C-23207*	01/01/80 - 12/01/80
D-58737*	C-23208*	12/02/80 - 12/31/80

PULSE HEIGHT DATA 72-012A-02B (cont')

<u>D#</u>	<u>C#</u>	<u>TIME SPAN</u>
D-73384**	C-26765**	01/01/81 - 01/01/82
D-73385**	C-26766**	01/02/82 - 01/01/83
D-73386**	C-26767**	01/02/83 - 01/01/84
D-74059**	C-26768**	01/02/84 - 01/01/85
D-76251**	C-26637**	01/01/85 - 12/31/85

*These tapes are 9-track, 1600 bpi
**These tapes are 9-track, 6250 bpi

COUNT RATE DATA 72-012A-02C

<u>D#</u>	<u>C#</u>	<u>TIME SPAN</u>
D-17418	C-16844	03/03/72 - 05/26/72
D-28792	C-18717	04/20/72 - 05/09/72
D-17420	C-16846	05/28/72 - 07/22/72
D-17419	C-16845	07/23/72 - 10/18/72
D-17417	C-16843	10/19/72 - 12/31/72
D-28793	C-18718	01/01/73 - 04/19/73
D-28796	C-18721	05/09/73 - 05/15/73
D-28795	C-18720	08/23/73 - 12/06/73
D-28794	C-18719	12/06/73 - 04/20/74
D-31048	C-20542	12/06/73 - 04/19/74
D-31050	C-20544	04/20/74 - 07/21/74
D-31047	C-20541	07/22/74 - 11/01/74
D-31049	C-20543	11/01/74 - 12/31/74
D-31858	C-20504	01/01/75 - 04/25/75
D-31859	C-20505	04/26/75 - 08/12/75
D-31860	C-20506	08/13/75 - 12/31/75
D-47656*	C-22342*	01/01/76 - 12/31/76
D-53828*	C-22861*	01/01/77 - 12/31/77
D-53829*	C-22862*	01/01/78 - 08/02/78
D-53830*	C-22863*	08/03/78 - 12/31/78
D-53831*	C-22864*	01/02/79 - 12/31/79
D-58738*	C-23309*	01/01/80 - 12/31/80
D-73387**	C-26769**	01/01/81 - 12/31/83
D-74060**	C-26770**	12/31/83 - 12/31/84
D-76252**	C-26638**	01/01/85 - 12/31/85

*These tapes are 9-track, 1600 bpi
**These tapes are 9-track, 6250 bpi

DATE TAPES: (02C)

YEAR IS THE FIRST FOUR DIGITS OF THE OCTAL DUMP.
SPACECRAFT ID IS SECOND FOUR DIGITS

START TIME WORDS ARE 9 AND 10 TOGETHER (SOMETIMES YOU MUST USE THE SECOND WORD)
A WORD = 8 OCTAL CHARACTERS (24 BITS)

STOP TIME WORDS ARE 11 AND 12 (LAST RECORD) TOGETHER.

TIMES ARE IN "XDS" 48 BIT FLOATING POINT FORMAT
USE "XDS" PROGRAM.

TIMES ARE IN DECIMAL SECONDS OF YEAR.
TO GET DAY OF YEAR, DIVIDE BY 86400

REMEMBER THAT IF THERE IS ANYTHING AFTER THE DECIMAL, ADD 1 DAY.

EXAMPLE: 24.531 = DAY 25

PULSE HEIGHT TAPES (02B)

USE PROGRAM "PULSE_HEIGHT" YOU MUST USE THE HEADER RECORD TO FIND 1ST
AND LAST DATE.

START TIME IS WORD 4 FIRST RECORD (SOMETIMES IT IS WORD 5)
STOP TIME IS WORD 5 LAST RECORD

WORDS ARE 16 OCTAL CHARACTERS (48 BITS)
WORDS ARE IN "XDS" 48 BIT FLOATING POINT FORMAT

TIMES ARE LISTED IN DAY SINCE JAN 1, 1972
(1/1/90 = DAY 6575) WHICH MEANS ADD ONE DAY

USE "XDS" PROGRAM TO TRANSLATE OCTAL WORDS.

II.

PRELIMINARY DOCUMENTATION

University of Chicago Charged Particle Instruments

of

Pioneer 10/11 Spacecraft

Pulse Height Tape Format

72-012A-02B

1 August 1974

GENERAL

This section supplies the minimum format and functional-specifications information to allow the user to read the University of Chicago Pioneer 10/11 Pulse Height tapes. These tapes contain all of the Pulse Height information from the Charged Particle Instrument (CPI) for the missions in a form easily accessible to a FORTRAN-language program. Individual pulse height frames are not time-tagged but are tabulated in blocks corresponding to 15 minutes of real-time at the spacecraft (spacecraft time). Additional bookkeeping, housekeeping and supporting instrument data are supplied to allow for general use of the pulse height information.

The general tape structure is shown in Figure II-1. All non-zero pulse height frames occurring within the bounds of a 15-minute period of real-time are tabulated as triads of numbers corresponding to the pulse heights measured in the three analyzed detectors of the UC-CPI.⁽¹⁾

The header block supplied at the beginning of each 15-minute block of data contains bookkeeping information (start and stop times of the data, instrument status, seconds of main frame and subcommutated (subcom) data actually received in the 15-minute block), housekeeping data including the initial bit rate, mode and format of the spacecraft during the 15-minute reporting period, and supporting instrument information in the form of selected rate data. The counting rates presented in the data block header records are extracted from the UC-CPI Rate Tapes. See Section IV for a discussion of the design of the logic and of the rate scalers in the instrument, Section III for a description of the basic rate-calculation algorithms and the Appendix, Section V-2 for the method of extracting and averaging the rates for inclusion in the PHA tapes. It is important to note that if a change in spacecraft or instrument mode occurs during a 15-minute recording period, the time block will be prematurely terminated at the time of the mode or status change and one (or more) additional blocks of less than 15 minutes, ending at the predetermined termination point of the original 15 minute block, will be generated with flags set for the changed mode(s).

⁽¹⁾ The detectors D1, D2 and D5 are pulse height analyzed in the UC-CPI. The range of each analysis is 0-128. The triad of pulse heights are accompanied by a range identification flag (ID), a data quality indicator bit and the octant of spacecraft revolution in which the event presented was analyzed. See the UC-CPI Instrument Description and Pioneer 10/11 Spacecraft Description for further details.

One or more data records of variable length containing all of the non-zero pulse height analyzed (PHA) events occurring during the 15 minute period specified in the previous header then follow. ⁽²⁾ With the main telescope (main telescope) and subcommutated (low energy telescope-LET) PHA data are extracted and reformatted into the data blocks. Only LET data with channel numbers between zero and twenty-seven are copied. In-flight calibrator data are excluded from the pulse height tape.

PULSE HEIGHT TAPE HEADER CONTENT

This section describes the content of the header record which precedes that data record(s) containing the data for the 15 minute span of real time. This header record is made up of sixty XDS double-precision floating point (double) words. The description of the floating point format is given as Appendix V-1. It is important to note that the quoted 15 minute intervals are nominal. That is, any 15 minute interval in which there was no appreciable quantity of data lost by transmission, or any significant instrument or spacecraft change will be 15 minutes in length starting within two frame times of the even hour, 15 minutes after the hour, 30 minutes after, etc. Clearly, if the spacecraft transmission was lost in the middle of a nominal 15 minute accumulation period and was not reattained until some number of 15 minute intervals later, the interval during which loss of transmission took place would be truncated at the time of the last recoverable pulse height returned to earth and the next 15 minute interval would show a start time after some lapse of time. The "15 minute" period following a data gap will, of course, start at an arbitrary time within some nominal 15 minute interval. The interval will, however, end at an "even" quarter-hour boundary. Similarly, as described earlier, if a spacecraft or instrument status change takes place in the middle of a nominal 15 minute interval that interval will be terminated prematurely as if a data gap had been encountered and a new header/data block would be supplied beginning at the time that the status change was first noted, with the new status in the header record, and would finish out the nominal 15 minute period started earlier (unless another instrument or spacecraft status change occurs in the same interval in which case the interval would be interrupted, etc.).

Table II-1 described the content of each floating-point word in the header record.

⁽²⁾ A "zero pulse height event" is defined to be an event wherein all three detectors, the ID and the sector are transmitted as zero, i.e. no event was seen within that readout time.

DATA RECORD FORMAT

A variable number of physical records of variable length, containing the pulse height data will be found after each header (Fig. II-1). The number of such records to be found in the data block is indicated in the header record for that data block. The total number of words in each record of the data block is indicated in the second 24-bit word of the data record (Figure II-2). If more than one physical record (say, N) occurs in the data block, the first $N-1$ such records will have 1020, 24-bit words in them (a 2 word record header and 509 main or LET work pairs containing data). The last record will be of a variable length with a minimum length of 150, 24-bit words and a maximum of 1020. This last record will be padded out with words containing garbage to the nearest multiple of 3, 24-bit words which gives a total record length greater than or equal to 150, 24-bit words. This is done in order to make the tapes compatible with the Univac 1108, 36-bit word record format. It is therefore necessary to use the event count (word 2 of the record) at all times to determine the end-of-logical-record.

The first word of each physical data record contains the number of the physical data record within the current 15-minute data block. The records are numbered starting with 1 after each header. The second word contains the number of data word pairs in the record and will be a number between 1 and 509.

Each pulse height event in the 15 minute interval is presented sequentially in pairs of 24-bit words beginning with the words 3 and 4 of the record. A main telescope word-pair is differentiated from a LET word-pair by bit 0 of the first word of the pair (which is 0 for LET, 1 for the main telescope). The format of the data within the word pair is given in Figure II-3. Table II-2 gives a description of the abbreviations used in Figure II-3.

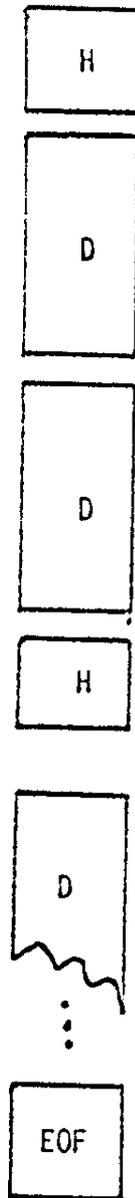
FIGURES

Figure II-1.	Pulse Height Tape Structure. Each block represents a physical record,40
Figure II-2.	Pulse Height Tape Data record format41
Figure II-3.	Pulse Height Tape Data Word Content.42
Figure II-4.	Relation of Spacecraft Z-axis and Start of Sector Zero to the Sun-Probe Line Projected on the Ecliptic (Euler Angles)43

FIGURE II-1

Pioneer 10

Pulse Height Tape Structure

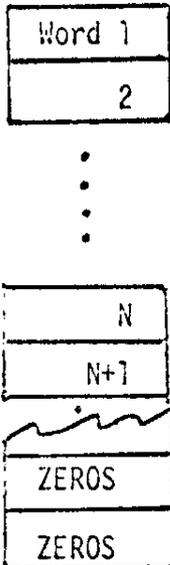


- H: Header record
120 24-bit words
(60 Floating point words)
- D: Data record
150-1020 24-bit words,
Fixed point.

Records are written in 7-track
binary at 800 BPI

FIGURE 11-2

Pioneer 10/11
Pulse Height Tape
Data Record Format



WORD 1 contains the physical record number of the data record in the data block (starting from 1 after the header).

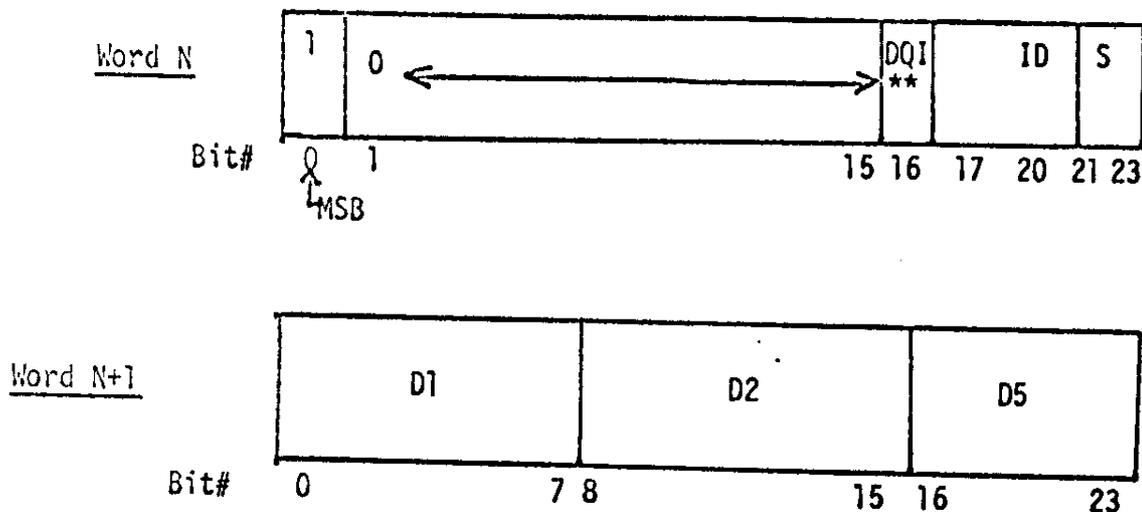
WORD 2 contains the number of word pairs in this record.

Words N, N+1 are the Word Pair.
 $1 \leq N \leq 509$

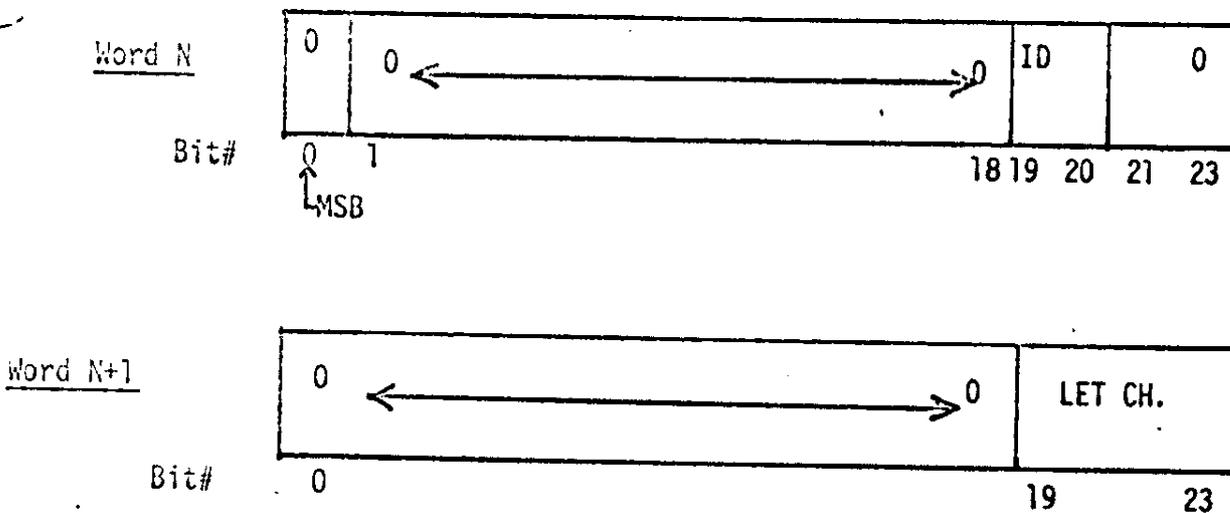
If the record is not filled with word pairs, the remaining words are filled with garbage (see text).

FIGURE II-3

Pioneer 10/11
Pulse Height Data Word Format*



A. Main Telescope Word Pair



B. LET Word Pair

*See Table II-2 for explanation of terms.

**The DQI (data quality indicator) does not appear (is always zero) on Pioneer 10 pulse height tapes for 1972 through day 172 of 1973. (See Table II-2.) It does appear on all Pioneer 11 tapes and on all subsequent Pioneer 10 tapes.

Figure II-4

Relation of Spacecraft Z-axis and
Start of Sector Zero to the Sun-Probe
Line Projected on the Ecliptic (Euler Angles)

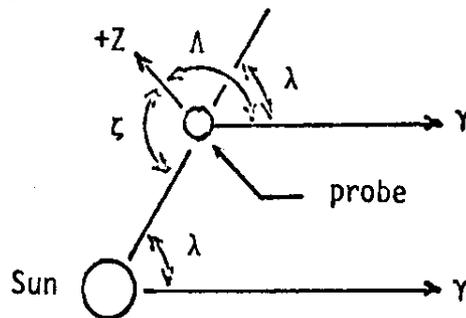
θ Celestial latitude of point on the celestial sphere intersected by +Z axis.

ζ Angle between the +Z axis and the sun-probe line, projected onto an axis parallel to the ecliptic. Computed as follows:

If λ = celestial longitude of probe in heliocentric system (from trajectory tape)

and Λ = celestial longitude of point on the celestial sphere intersected by +Z axis.

then



ω Angle between plane parallel to ecliptic and location of telescope axis at start of sector 0 in spin plane of probe when SPGR = 0° and 180° , respectively, and sun sensor is used. Positive in direction of roll.

$$\omega = \text{MOD}_{360} (\text{CKAH} + \text{SPGR} - 7.1^\circ)$$

When the star sensor is used, to an accuracy of $\pm 1^\circ$, $\omega = -7^\circ$ at all times.

TABLES

TABLE II-1 University of Chicago Charged Particle Instrument
Pioneer 10/11 Pulse Height Tape Header-Record Format. . .45-47

TABLE II-2 University of Chicago Charged Particle Instrument
Pioneer 10/11 Description of Data Block Word-Pair
Parameters. 48

TABLE II-1

University of Chicago Charged Particle Instrument
Pioneer 10/11
Pulse Height Tape Header-Record Format

HEADER WORD ¹	DESCRIPTION
1	-1
2	Requested (Nominal) interval start time in days and fractions beginning on 1 January 1972 (that is, 0000 on 1 January 1972 = 0.000...).
3	Requested (Nominal) interval end-time in days and fractions of days of 1972.
4	Actual start time in days and fractions of days of 1972.
5	Actual end time in days and fractions of days of 1972.
6	F/T ratio where: F=number of main telescope pulse height main frames with the data quality bit set to 1 (bad data) T=total main frames of pulse height data in the interval.
7	Mode (initial) = 2 for memory readout data = 1 for telemetry store data = 0 for real time data.
8	Initial bit rate. A number from 16-2048 in powers of 2.
9	Bookkeeping bits. This word is constructed as follows: $\text{WORD9} = 512 * S + 256 * \text{SUN} + 128 * \text{STAR}$ $+ 64 * E + 32 * D_1 + 16 * D_2$ $+ 8 * D_3 + 4 * P + 2 * U + C$ <p>If any variable in the equation is 0, then the corresponding condition is normal or the associated data is good. If any variable is 1:</p> <p>if S=1, the sectoring data is suspect; if SUN=1, the SUN=A or SUN=B reference source was used; if STAR=1, the STAR reference source was used; if E=1, the select status information was erroneous or missing; if any $D_i=1$ ($i=1,2,3$), then that detector was turned off;</p>

¹Each header word consists of two 24 bit computer words in XDS 930 standard double-precision floating point format. See the Appendix, Section V-1 for a discussion of this word structure.

TABLE II-1, Continued

HEADER WORD	DESCRIPTION
	if P=1, the instrument is in priority override mode; if C=1, the instrument was in calibrate mode; U is not used (is always zero).
10	Format specification. Set to 0 at the beginning of the interval specified for format A/B, 1 for D, 2 for C.
11	Number of seconds of "live time" ⁽²⁾ for the main telescope system during the interval. This includes the total observed time for all PHA's (both zero and non-zero) received through the telemetry but excludes time lost due to telemetry noise.
12	Total number of "valid" main telescope pulse height events in the interval. This includes all non-zero pulse height frames that are not filled. Their DQI's may be 0 or 1.
13	Number of filled main telescope pulse height events.
14	Main telescope counting rate. $\overline{D1D2SD3D7}$ in counts/second. ⁽³⁾
15	Total number of filled low energy pulse height events in the interval.
16	Minimum value of (signal+noise)/noise ratio observed in the interval.
17	Highest value of (signal+noise)/noise ratio observed in the interval.
18-33	Total number of pulse height events in the interval having ID 0, 1, 2, ..., 15 (16 words).
34	Spacecraft identification (10 or 11)
35	$\overline{L1L2}$ ⁽⁴⁾ counting rate (counts/second). ⁽³⁾
36	$\overline{D1SD2D3D7}$ counting rate (average for the interval-cts/sec.) ⁽³⁾
37	$\overline{D1D2D4D5D6}$ counting rate (average for the interval-cts/sec.) ⁽³⁾
38	$\overline{D2D4D5D6D7}$ counting rate (average for the interval-cts/sec.) ⁽³⁾
39	Average spin rate in RPM for the interval.
40	$\overline{D1D2SD3D7}$ counting rate (average for the interval cts/sec.) ⁽³⁾

(2) "live-time" is defined to be the time per frame (at the indicated bit rate) times the number of non-filled PHA frames times 2.

(3) A logic term is negated by a bar over the symbol. If a term (e.g. D4) does not appear, it is a "don't care" term. All times are spacecraft times.

(4) Low energy telescope; detector 1=L1, detector 2=L2.

TABLE II-1, Continued

HEADER WORD	DESCRIPTION
41	Live time in seconds for the low energy telescope pulse height data. The time is incremented when an event is analyzed in channels 0-27.
42	Total number of main telescope events that are non-zero and non-fill. This is the sum of words 18-33.
43	Total number of low energy telescope events that are non-fill and fall in the channel range 0-27 for both L1L2 and L1L2.
44	Total number of low energy telescope pulse height events for the condition L1L2 which are non-fill and fall in channel 1-27.
45	Total number of low energy telescope pulse height events for the condition L1L2 which are non-fill and fall in the channel 0-27.
46-48	Euler angles. (Described in Figure II-4).
49	Counting rate L1L2 (average for the interval-counts/second).
50	Livetime for D12SD3D7 Rate (seconds).
51	Livetime for L1L2 Rate (seconds).
52	Livetime for D1SD2D3D7 Rate (seconds).
53	Livetime for DdD2D4D5D6 Rate (seconds).
54	Livetime for D2D4D5D6D7 Rate (seconds).
55	Livetime for D1D2SD3D7 Rate (seconds).
56	Livetime for L1L2 Rate (seconds).
57	Number of physical data records following this header.
58-60	Date upon which the pulse height tape was generated (year, month, day).

TABLE II-2

University of Chicago Charged Particle Instrument
Pioneer 10/11
Description of Data Block Word-Pair Parameters

Descriptor	Description
ID (main telescope)	Range identification for particle in main telescope; integer 0-15.
ID (LET)	Range identification for a particle in the LET; 1 for L1L2, 2 for L2L2.
DQI*	Data quality indicator; set to 0 for good data, to 1 for suspect data.
S	Sector. This is the octant of spacecraft rotation in which the associated main telescope event was analyzed. The sector is not corrected for spacecraft attitude or location - see description of Euler angles in Figure II-4. Integer, 0-7.
D1	The telemetered pulse height analysis channel reported for the event from the detector 1. Integer, 0-127.
D2	The telemetered pulse height analysis channel reported for the event from the detector 2. Integer, 0-127.
D5	The telemetered pulse height analysis channel reported for the event from the detector 5. Integer, 0-127.
LET CH	Telemetered value of the PHA channel for the L1 detector of the low energy telescope. Integer, 0-127.

* not supplied (always zero) for all 1972 data and for 1973 data through day 172.

Pulse Height Program
Pioneer 10/11

U. of Chicago

PROGRAM:

The PHG program copies pulse height data in 3-dimensional format from the Summary Tape to a Pulse Height Tape and puts a header at the beginning of each 15-minute block of data. The header contains bookkeeping information: start and stop times of the data, instrument status, seconds of mainframe and subcom pulse height data.

The main frame pulse height data (Main Telescope) is reformatted and copied onto the PHT. Data where $PH1 = PH2 = PH5 = 0$, ID0 for non-calibrate data is not copied.

The subcom pulse height data (Low Energy Telescope) is formatted and copied onto the main frame data and copied. Only LET data with channel numbers between 0 and 27 are copied.

Calibrate data is excluded. It does not appear on the Summary Tape.

The header gives the initial bit rate, mode and format of the instrument during the 15-minute time period.

The Main Telescope status (detectors on or off, Priority normal or override) is invariant within the actual start and end time period given in header. If the Priority or Detector status changed, the 15-minute time block is broken.

Zero pulse heights. If a pulse height main frame with $ID = PH1 = PH2 = PH5 = 0$ is encountered, this frame does not increase the seconds of pulse height data or add to the number of events. This is a dummy frame. Only the word giving the number of zero pulse height frames preceding this dummy frame is used. This number increases the number of good frames (word 12) and seconds of pulse height data (word 11).

A 15-minute block is broken on changes in X_1 , X_2 , X_7 and Priority only.

Pioneer 10/11
Pulse Height Program

HEADER FORMAT:

The header is designed to allow for the insertion of rate data during subsequent processing. The program sets rate words to zero.

DATA RECORD FORMAT:

1. The physical records will have a variable length. The minimum number of 24-bit words is 150 (to allow programs to distinguish the 120 word headers from data records by word count) and the maximum number of words is 1020. The number of words in any physical data record must be a multiple of 3 (i.e. $N = 3M$, where $50 < M < 340$) in order for the tape to be compatible with the University of Maryland UNIVAC' 1108 system. (The 1108 has 36 bit words and the SDS 930 has 24 bit words; thus $N_{36} = 2/3 N_{24}$. If N_{24} is not a multiple of 3, N_{36} will be a non-integral number of words.

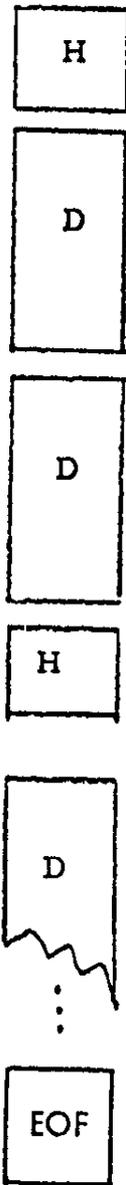
2. Word 1 of each physical data record contains the number of the physical data record. The records are numbered starting with one after each header. For example, if 5 records follow a header, Word 1 can be 1,2,3,4, or 5.

Word 2 contains the number of data word pairs in the record ($1 \leq M \leq 509$, where M is the number of pairs).

3. The pulse height events, starting with words 3 and 4, are word pairs. The Main telescope and Low Energy telescope events are differentiated by word 1, bit 0 of the pair (0 for LET, 1 for MT). The number of counts is always 1 since each word pair is an event.

Pioneer 10
Pulse Height Tape

I. TAPE STRUCTURE

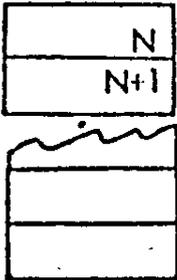
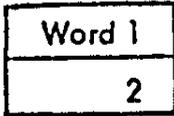


- H Header record
120 24-bit words
60 Floating point words
- D Data record
150-1020 24-bit words,
Fixed point

Records are written in
binary at 800 BPI

Pioneer 10/11
Pulse Height Tape

II. DATA RECORD



WORD 1 contains the physical record number of the record (starting from 1 after the header)

WORD 2 contains the number of word pairs.

Words N, N+1 are the Word Pair.
 $1 \leq N \leq 509$

Pioneer - 10/11
Pulse Height Program

Data Word-Pair Format

Bit 0 is the Least Significant Bit
 $1 \leq N \leq 509$

1. Main Telescope (see Fig. 1)

Word N, Bit 0 = 1

Word N:	BITS	INFORMATION
	0	1
	1-15	0
	16	Data Quality Indicator (0 good, 1 bad)
	17-20	ID (range 0 - 15)
	21-23	Sector (range 0 - 7)
Word N+1:	0-7	D1 channel
	8-15	D2 "
	16-23	D5 "

2. Low Energy Telescope (see Fig. 2)

Word N, Bit 0 = 0

Word N:	BITS	INFORMATION
	0	0
	1-18	0
	19-20	ID = 1 L1N1L2 = 2 L1L2
	21-23	0
Word N+1	0-18	0
	19-23	LET channel

Pioncer 10
Pulse Height Tape

III a.

Header	60 floating point words
Word	
1	-1
2	Requested start time in days of 1972 [†]
3	Requested end time in days of 1972 [†]
4	Actual start time in days of 1972 [†]
5	Actual end time in days of 1972 [†]
6	F/T where F = Number of main Telescope Pulse Height main frames with the data quality bit set to 1 (bad data). T = Total Main frames of Pulse Height data in interval.
7	Mode (initial) = 2 for Memory Read Out data = 1 for Telemetry Store data = 0 for real time data
8	Bit Rate (initial) 16 to 2048 for the corresponding bit rate.

Bookkeeping Bits

$$\begin{aligned} \text{Word 9} &= 512X S + 256 X \text{SUN} \\ &+ 128 X \text{STAR} + 64 X E + 32 X D1 \\ &+ 16 X D2 + 8 X D7 + 2 X U + C \\ &+ 4 * P \end{aligned}$$

S = 0 if sector information is good,
1 if bad (bad if a corrected parameter was used
in the calculation of angles for the main tele-
scope rate words.)

SUN = 1 if SUN A or B reference source used
= 0 if not.

STAR = 1 if STAR reference source used
= 0 if not

E = 1 if erroneous or missing select
status occurred
= 0 if not.

Detector D1 D1 = 0 (on), = 1 (off)

Detector D2 D2 = 0 (on), = 1 (off)

Detector D5 D5 = 0 (on), = 1 (off)

Priority P = 0 (normal), = 1 (override)

U (unusual) = 0

Calibrate C = 0 (not calibrate)

= 1 (calibrate)

- 10 Format (=0, A/B) (=2,C) (initial)
- 11 Main Telescope. Seconds of Pulse Height Data (includes non-zero pulse heights and where PH1 = 0, PH2 = 0, and PH5 = 0)
- 12 Number of Good Main Frame Pulse Height Events. Includes pulse height frames that are not fill. The DQI may be 0 or 1. Includes frames where PH1 = 0, PH2 = 0 and PH5 = 0 .
- 13 Number of Fill Main Frame Pulse Height Events
- 14 D125 - 3 - 7 Rate*
- 15 Number of Fill Low Energy Telescope Pulse Height Events
- 16 Lowest Value of Signal to Noise Ratio
- 17 Highest Value of Signal to Noise Ratio
- 18-33 Number of Pulse Height Events for ID's 0 - 15
- 34 Satellite number (10 or 11)
- 35 L1N12 Rate*
- 36 D15N2 Rate *
- 37 D1245N6 Rate*
- 38 D6N7 Rate*
- 39 Spin Rate*
- 40 D12NS Rate*
- 41 Seconds of Low Energy Telescope Pulse Height Data. Time incremented when L1L2 events fall in channels 0 - 27 and L1N12 events fall in channels 0 - 27.

- 42 Number of Main Telescope events that are not all zero (PH1 = PH2 = PH5 = 0 doesn't occur) and not fill. This is the sum of words 18-33.
- 43 Number of Good Low Energy Telescope events that are not fill and fall in the channel ranges 0-27 for both L1L2 and L1NL2.
- 44 Number of events for L1NL2 which are not fill and fall in the channel ranges 1-27.
- 45 Number of events for L1L2 which are not fill and fall in the channel ranges 0-27.
- 46-48 Euler angles*
- 49 RL1L2
- 50 livetime for D12S rate
- 51 " " L1N2 "
- 52 " " D1SN2 "
- 53 " " D1245N6 "
- 54 " " D6N7 "
- 55 " " D12NS "
- 56 " " L12 "
- 57 Number of physical data records following the header.
- 58-60 Date Pulse Height Tape generated.

* Pulse Height Program sets this word to zero, merged by another program

↑ Day 1 hour 0 of 1972 is 1.0

Day 1 hour 0 of 1973 is 367.0

Calculation of Rate averages for Pulse Height Tapes.

The Source of rate and time data is the rate tape.

The time interval on the PHT is nominably 15 minutes and that of the rate tape is 5 minutes.

If a change in (X1, X2, X7, or Priority status) occurs, the 5 minute (on the rate tape) rates are not broken, but a flag is set. The PHT interval is broken at the time the status change occurs. The rates on the rate tape that indicate a status change occurred will not be included on the PHT.

Normally, with coverage >0 and with no changes in X1, X2, X7, P, the rate that goes onto the PHT is calculated from the formula:

$$R = \frac{\sum_i R_i t_i}{\sum t_i}$$

where

R_i = rate on rate tape for i th summing interval
 t_i = livetime from rate tape for i th summing interval

By summing interval, this means that if the PHT interval is 15 minutes and the rate tape interval is 5 minutes, then there are 3 intervals to sum over.

Here, for each rate of the 7 rates, the time word >0 and the rate ≥ 0 .

If there is a status change during a rate interval, the rate for that summing interval is set to zero as well as the time in the above formula.

A rate word and time word can both = -1.

This means:

- 1) There was no coverage, or
- 2) There was a spike on the rate plots and the words were set to -1 for the time period of the spike.

Pioneer 10/11

Pulse Height Tapes

The Pulse Height Tape data records have pulse height events composed of word pairs. The main telescope pulse heights have a data quality bit (DQI) which indicates whether the data was good (=0) or bad (=1).

All Pioneer-11 pulse height data includes this bit.

Pioneer-10 1972 data does not include this bit before 1973 day 173, but includes it for 1973 day 173 and later data.

Appendix V-1

Number Representation

FIXED-POINT FORMAT

Fixed-point data words have the format:



Numbers held in this format are 8-digit, octal numbers, with the sign incorporated as the "leading bit" in the most significant octal digit. Bit position 0 is the sign bit, with negative numbers having a "1" in bit position 0 and positive numbers having a "0" in bit position 0.

The memory holds fixed-point numbers as 23-bit fractions with an assumed binary point to the left of bit position one. Numbers held in one word have the equivalent precision of over six decimal digits. The range of values of the fixed-point format is from minus one to slightly less than plus one. Scaling is used in handling numbers during computation.

Programmers sometime consider fixed-point numbers to be integers, with the binary point to the right of bit position 23. The range of integer values is from -2^{23} to $+2^{23}-1$.

The memory holds negative, fixed-point numbers in two's complement form; the computer operates on these numbers arithmetically in a two's complement number system.

FLOATING-POINT FORMAT

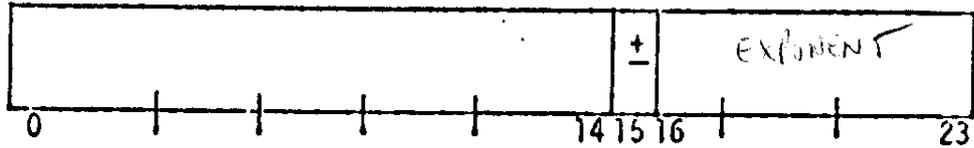
SDS offers standard programmed operator packages for performing double and single-precision floating-point arithmetic. The following paragraphs explain the standard floating-point number formats.

Double-Precision Floating-Point Format

Most Significant Word



Least Significant Word



The fractional portion of a double-precision, floating-point number is a 39-bit, proper fraction, with the leading bit being the sign bit and the assumed binary point just to the left of the most significant magnitude bit (bit 1 of the upper word).

The floating-point exponent is a 9-bit integer, with the leading bit being the sign. The standard routines operate on both fraction and exponent in two's complement form. If F represents the contents of the fractional field and E represents the contents of the exponent field, the number has the form $F \times 2^E$.

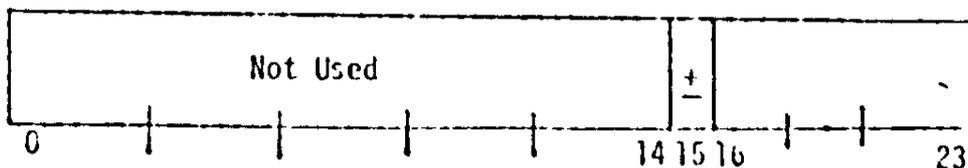
Double-precision, floating-point numbers have over 11 decimal digits of precision and a decimally equivalent exponent range of 10^{-77} to 10^{+77} .

Single-Precision Floating-Point Format

Fractional Word



Exponent Word



The fractional portion of a single-precision, floating-point number is a 24-bit proper fraction, with the leading bit being the sign and the assumed binary point just to the left of the most significant magnitude bit. The floating-point exponent is a 9-bit integer with a leading sign bit. The standard routines operate on both fraction and exponent in two's complement form.

Single-precision, floating-point numbers have over six decimal digits of precision and a decimally equivalent exponent range of 10^{-77} to 10^{+77} .

LOGICAL RECORD = 160 WORD - 5 MINS. OF DATA

PROG. 001 2/1
Rate TAPE

RECORD FORMAT
U of Chicago

72-012A-02C

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23		1
YEAR		SPACECRAFT NUMBER
STATUS		
TOWER ANGLE		
GUYER ANGLE		
EMMER ANGLE		
NUM. BAD FRAMES (DQI=1)		NUM. GOOD FRAMES (DQI=0)
SPIN RATE		
1	MAIN FRAME START TIME (in sec. of the year)	
10	MAIN FRAME STOP TIME (in sec. of the year)	
SEC. OF DATA (COVERAGE) FOR R1 FRAME RATES		
SEC. OF DATA (COVERAGE) FOR R2 FRAME RATES		
SEC. OF DATA (COVERAGE) FOR SECTORED R1 FRAME RATES - SECTOR 0		
" - SECTOR 1		
" - SECTOR 2		
" - SECTOR 3		
" - SECTOR 4		
" - SECTOR 5		
" - SECTOR 6		
" - SECTOR 7		
SEC. OF DATA (COVERAGE) FOR SECTORED R2 FRAME RATES - SECTOR 0		
" - SECTOR 1		
" - SECTOR 2		
" - SECTOR 3		
" - SECTOR 4		
" - SECTOR 5		
" - SECTOR 6		
" - SECTOR 7		

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

SUBCOM START TIME	49
(in sec. of the year)	50
SUBCOM STOP TIME	51
(in sec. of the year)	52
SEC. OF DATA (COVERAGE) FOR	53
SUBCOM RATE - FISSION 2	54
COVERAGE FOR SUBCOM RATE	55
FISSION 1	56
COVERAGE FOR SUBCOM RATE	57
D2-67	58
COVERAGE FOR SUBCOM RATE	59
LLL2	60
COVERAGE FOR SUBCOM RATE	61
D125	62
MAIN FRAME OMNIDIRECTIONAL	63
RATE - L1L2	64
MAIN FRAME OMNIDIRECTIONAL	65
RATE - DISD237	66
MAIN FRAME OMNIDIRECTIONAL	67
RATE - D124567	68
MAIN FRAME OMNIDIRECTIONAL	69
RATE - DISD2	70
MAIN RATE LLL2 -	71
SECTOR 0	72
"	73
SECTOR 1	74
"	75
SECTOR 2	76
"	77
SECTOR 3	78
"	79
SECTOR 4	80
"	81
SECTOR 5	82
"	83
SECTOR 6	84
"	85
SECTOR 7	86
MAIN RATE DISD37 -	87
SECTOR 0	88
"	89
SECTOR 1	90
"	91
SECTOR 2	92
"	93
SECTOR 3	94
"	95
SECTOR 4	96

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

MAIN RATE DIS D237 -	97
SECTOR 5	98
"	99
SECTOR 6	100
"	101
SECTOR 7	102
MAIN RATE DIS D4567 -	103
SECTOR 0	104
"	105
SECTOR 1	106
"	107
SECTOR 2	108
"	109
SECTOR 3	110
"	111
SECTOR 4	112
"	113
SECTOR 5	114
"	115
SECTOR 6	116
"	117
SECTOR 7	118
MAIN RATE DIS D2 -	119
SECTOR 0	120
"	121
SECTOR 1	122
"	123
SECTOR 2	124
"	125
SECTOR 3	126
"	127
SECTOR 4	128
"	129
SECTOR 5	130
"	131
SECTOR 6	132
"	133
SECTOR 7	134
SUBCOM DIGITAL RATE -	135
FISSION 2	136
SUBCOM DIGITAL RATE -	137
FISSION 1	138
SUBCOM DIGITAL RATE -	139
D2-67	140
SUBCOM DIGITAL RATE -	141
L112	142
SUBCOM DIGITAL RATE -	143
D125	144

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

SUBCOM ANALOG	145
CR1	146
SUBCOM ANALOG	147
CR2	148
SUBCOM ANALOG	149
CR3	150
SUBCOM ANALOG	151
D7	152
SUBCOM ANALOG	153
EGG TEMPERATURE	154
SUBCOM ANALOG	155
TELESCOPE TEMPERATURE	156
MAIN FRAME END OF INTERVAL TIME (actual 5 min. boundary time in sec. of the year)	157
SPARE	158
SPARE	159
	160

PION 19% RATE... TAPE FORMAT

U. of (Chicago)

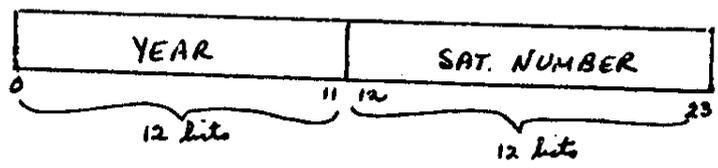
1 LOGICAL RECORD (80 FLOATING PT. WORDS) = 5 MIN. OF DATA
 PHYSICAL RECORD = 6 LOGICAL RECORDS = 480 floating point words
 or 960 words (24 BIT)

- YEAR + SAT. NUMBER (1)
- STATUS (2) - OBUF (1)
- ~~EMERGENCY~~ (3)
- ~~_____~~ (4) - (2)
- ~~_____~~ (5)
- #BAD FRs. + # Good FRs. (6) - (3)

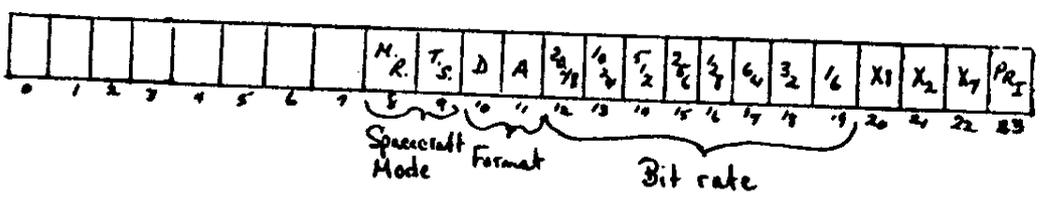
- (4) - SPIN RATE
- (5) - M.F. start time (in sec. of the yr.)
- (6) - M.F. stop time (")
- (7) - sec. of data (coverage) for R1 frame rates
- (8) - " " R2 "
- (9) - sec. of data (coverage) for sectored R1 frame rates
- (10) - sectors 0-7
- (11) - sec. of data (coverage) for sectored R2 frame rates
- (12) - sectors 0-7
- (25) - Subcom start time (in sec. of the yr.)
- (26) - Subcom stop time (")
- (27) - sec. of data (coverage) for each Subcom digital rate
- (31) - M.F. omni rate $L1\bar{L}2$
- (33) - " $D15\bar{D}237$
- (34) - " $D1245\bar{6}7$
- (35) - " $D15\bar{D}2$
- (36) - M.F. sectored rate $L1\bar{L}2$ - sectors 0-7
- (43) - M.F. sectored rate $D15\bar{D}237$ - sectors 0-7
- (44) - M.F. sectored rate $D1245\bar{6}7$ - sectors 0-7
- (51) - M.F. sectored rate $D15\bar{D}2$ - sectors 0-7
- (52) - M.F. sectored rate $D1245\bar{6}7$ - sectors 0-7
- (59) - M.F. sectored rate $D15\bar{D}2$ - sectors 0-7
- (60) - M.F. sectored rate $D1245\bar{6}7$ - sectors 0-7
- (67) - M.F. sectored rate $D15\bar{D}2$ - sectors 0-7

- (68) - Subcom digital - Fission 2
- (69) - " - Fission 1
- (70) - " - D2-67
- (71) - " - L1L2
- (72) - " - D125
- (73) - Subcom analog - CR1
- (74) - " - CR2
- (75) - " - CR3
- (76) - " - D7
- (77) - " - Egg Temp
- (78) - " - Telescope Temp
- (79) - M.F. end of interval time (actual 5min boundary time)
- (80) - spare (IN SECONDS OF YEAR)

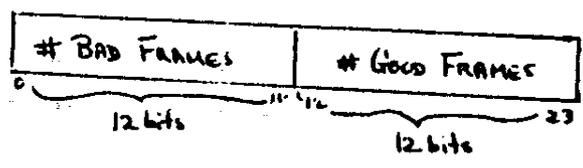
word 1:
Yr + Sat. # :



word 2:
STATUS :



word 6:
Bad frames - DQI = 1
Good frames - DQI = 0



5 Min. Count Rate Tapes

D-28792

Start Time - words 9+10 of first record

24101030 21754711

Exponent - $30_8 = 24_{10}$

sign bit

4 3 7 3 1 6 2 2
~~0100~~ 0111 1110 1100 1110 0100 1106 10

8 3 8 8 6 0 8

7 8 6 4 3 2

2 2 9 3 7 6

1 2 2 8 8

5 1 2

3 8 4

1 6

2

86400 59417618 109

86400

77761

77600

161

∴ Jan 1 = Day 0 then Day 109 = Day 110
 or. 4/26/73

9417618

Stop Time - Last Record. Words 9+10

27737030 25056024

5 2 1 3 4 0 5 0 8 = 1105 7 19 2 1 0

86400 51157192 128

∴ Jan. 1 = Day 0 then. Day 128 = Day 129

or. 5/9/73

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CHICAGO · ILLINOIS 60637
AREA CODE 312-962-7839

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and Space Research*

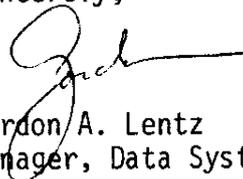
May 6, 1982

Mr. Ralph Post
National Space Sciences Data Center
Goddard Space Flight Center
Code 601
Greenbelt, Maryland 20771

Dear Ralph:

I have been unable to contact you by phone but, assuming that your message implied you wanted a second copy of the modified, 9-track format for the Pioneer data tape submission, I am enclosing a copy of my letter to you of 23 January 1980 which outlines this format. I hope this is what you need.

Sincerely,



Gordon A. Lentz
Manager, Data Systems and Analysis

GAL:rs
Enclosure

2

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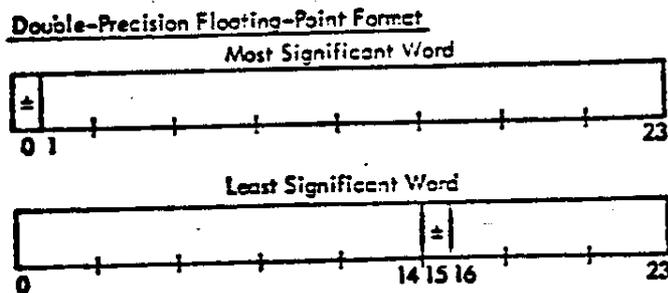
January 23, 1980

Mr. Ralph Post
National Space Sciences Data Center
Goddard Space Flight Center
Code 601
Greenbelt, Maryland 20771

Dear Mr. Post:

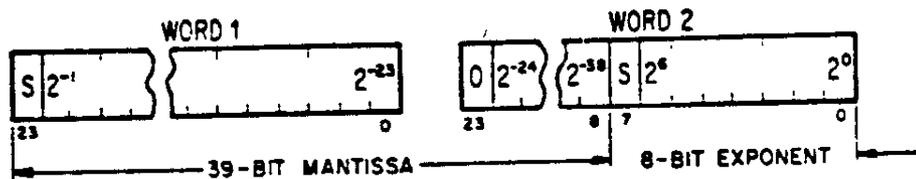
This is to inform you that our next submission of Pioneer 10 and 11 data will be in a different format than the previous submissions have been. The differences are twofold:

1. The tapes will be recorded in 9-track, ⁶²⁵⁰~~1600~~ fci mode and
2. While the form of integer data on the tapes is unchanged, the form of a floating point number is different. Both the new and the old format are 48-bit floating point numbers, however, the old floating point format was as follows:



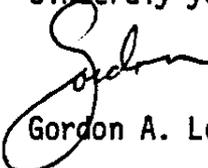
While the new floating point format is:

DOUBLE PRECISION - FLOATING POINT



You will notice there are three obvious significant differences between the two formats. First of all, the order of the words has been changed so that the word containing the most significant part of the mantissa will appear in memory in the lower-address word while in the older format it occupied the higher-address word, while secondly, bit 23 of the "exponent" word is unused in the new format and is always 0, while finally, the exponent in the new format is 8 bits instead of 9 bits long. Another thing to be aware of is that a floating point 0 in the new format consists of two words with the exponent containing octal 210 with zeros elsewhere. The old format was all 0. The form of both mantissa and exponent are the same as before (2's complement.) In order to refresh your memory as to the general form of the two data-tape types that we send you I have appended a brief verbal description. I hope that this change does not cause you much extra work; it is really a fairly straightforward change.

Sincerely yours,



Gordon A. Lentz

GAL:rs
Attachment

cc: Mr. Bill Valente - NSSDC
Peter Kruley - UC
Bruce McKibben - UC
John Simpson - UC

Pioneer Rate Tape Format:

1 physical record = 960 (24-bit) words = 6 logical records. Each logical record contains 160 24-bit words, of which words 1 → 6 incl. are integer fmt, and words 7 → 160 inc. are floating point (i.e., 77 48-bit words.)

Pulse Height Tape Format:

Each 15-minute interval is represented by 1 header record followed by 1 or more data records.

A header record consists of 60 48-bit words, all in floating point format.

A data record consists of N 24-bit words, $150 \leq N \leq 1020$. All of these are in integer format.

Header records and data records constitute distinct physical records. In addition to the difference in length, header records can be distinguished from data records by examining the most significant bit of the most significant word. In header records, this bit is set; in data records reset.

Pioneer 10 - D 100504
 72-012A-02C
 5-Min Av Count Rate

RECORD COUNT OF D-100504 ON MKAI00:

FILE	RECORDS	MAX SIZE	MIN SIZE	ERRORS
1	3209	2880	2880	0

TOTAL RECORDS ON TAPE = 3209
 TOTAL BYTES ON TAPE = 9241920
 TOTAL ERRORS ON TAPE = 0

START TIME: 29-JUN-1993 14:16:53.94
 END TIME: 29-JUN-1993 14:17:32.20
 ELAPSED TIME: 00:00:39

Pioneer 10

REGULAR OCTAL DUMP OF D-100504

12/29/90-12/31/91 - D-100504

5-minute count rate

FILE 1	RECORD 1	3840 BYTES	6	7	8	9	10
(0)	1370400120001	002000000000	000000000016	223146312314	606336044536	112334313604	46441247431
(48)	300001421156	115644100000	000000000201	000000000000	020100000000	000002010000	000000000201
(96)	000000000000	020100000000	000000000201	000000000000	020100000000	000002010000	000000000201
(144)	000000000000	020100000000	000000000201	000000000000	020100000000	000002010000	000000000201
(192)	360442711123	343136044571	112474310000	000000000000	020100000000	000002010000	000000000201
(240)	000000000000	020125252375	324037720000	000000000000	020100000000	000002010000	000000000201
(288)	000000000000	020100000000	000000000201	000000000000	020100000000	000002010000	000000000201
(336)	000000000000	020100000000	000000000201	000000000000	020100000000	000002010000	000000000201
(384)	000000000000	020100000000	000000000201	000000000000	020100000000	000002010000	000000000201
(432)	000000000000	020100000000	000000000201	000000000000	020100000000	000002010000	000000000201
(480)	000000000000	020100000000	000000000201	000000000000	020100000000	000002010000	000000000201
(528)	000000000000	020100000000	000000000201	000000000000	020100000000	000002010000	000000000201
(576)	365152232044	374223316747	033217462374	000000000000	020100000000	000002010000	000000000201
(624)	360446470000	031000000000	001200010020	30355230170	141142001125	224744065376	367632112005
(672)	360446461124	743136044756	00000000011	000000000000	000000000000	00000142231	463123146003
(720)	000000000000	020100000000	000000000201	000000000000	020100000000	000002010000	000000000201
(768)	000000000000	020100000000	000000000201	000000000000	020100000000	000002010000	000000000201
(816)	000000000000	020100000000	000000000201	000000000000	020100000000	000002010000	000000000201
(864)	000000000000	020100000000	000000000201	000000000000	020100000000	000002010000	000000000201
(912)	000000000000	020100000000	000000000201	216161613070	737300000000	000002010000	000000000201
(960)	000000000000	020100000000	000000000201	000000000000	020100000000	000002010000	000000000201
(1008)	000000000000	020100000000	000000000201	000000000000	020100000000	000002010000	000000000201
(1056)	000000000000	020100000000	000000000201	000000000000	020100000000	000002010000	000000000201
(1104)	000000000000	020100000000	000000000201	000000000000	020100000000	000002010000	000000000201
(1152)	000000000000	020100000000	000000000201	000000000000	020100000000	000002010000	000000000201
(1200)	000000000000	020100000000	000000000201	000000000000	020100000000	000002010000	000000000201
(1248)	000000000000	020100000000	476200000031	000000000000	020137060012	000100200000	000000000000

(624)	360204710000	003100000000	000000000000	001200010020	000000000000	000000000000	000000000000	000000152231	463123146003
(672)	360204650164	143136020603	016414310000	000000000201	000000000000	000000000000	000000000000	000002010000	000000000201
(720)	000000000000	020100000000	000000000000	000000000201	000000000000	000000000000	020100000000	000000000000	000000000201
(768)	254162540101	400625402030	223350062511	156423432406	245544262071	240624554426	207124062455	207124062455	000000000012
(816)	24570513337	140625014223	124570063602	022601641431	360205260164	143130000000	000000123000	000000123000	000000000012
(864)	300000000000	001230000000	000000123000	000000000012	000000000000	000000000000	000000000000	000000000000	000000000201
(912)	000000000000	020100000000	000000000000	000000000201	000000000000	000000000000	000000000000	000000000000	000000000201
(1008)	000000000000	020100000000	000000000000	000000000201	000000000000	000000000000	000000000000	000000000000	000000000201
(1056)	000000000000	020100000000	000000000000	000000000201	000000000000	000000000000	000000000000	000000000000	000000000201
(1104)	000000000000	020100000000	000000000000	000000000201	000000000000	000000000000	000000000000	000000000000	000000000201
(1152)	000000000000	020100000000	000000000000	000000000201	000000000000	000000000000	000000000000	000000000000	000000000201
(1200)	3052522125	277435252525	125353742444	407431345742	233167470332	174623745214	006677553035	006677553035	552301701411
(1248)	420011252247	440653763676	321120053602	321120053602	000000000031	000000000000	000000000000	000100200000	000000000011
(1296)	000000000000	001422314631	231460033602	060301641431	360207130164	143122000000	000000112200	000000112200	000000000011
(1344)	217473310264	140621442641	312600062142	641612601006	221422332057	406622254020	102330062174	102330062174	733102641406
(1392)	221564570324	740622237574	315440062174	733102641406	214426413126	006621426416	126010062214	126010062214	223320570406
(1440)	222540201022	300621747331	026414062215	645703247406	222375743154	400600000000	000000201000	000000201000	000000000201
(1488)	000000000000	020100000000	000000000000	000000000201	000000000000	000000000000	000000000000	000000000000	000000000201
(1536)	343434341216	177234343434	121617700000	000000000201	233115443311	577322762005	230367732170	230367732170	740003570773
(1584)	214027322376	67732315407	230263732037	017403701773	201757270233	477321326403	312053732721	312053732721	350532135372
(1632)	326377420100	677237600774	007743723647	572521362772	363026252130	737237017407	301743723645	301743723645	120531220772
(1680)	272063342140	137237213505	321353702762	005430366370	334312512334	577036475725	213627703630	213627703630	262521307370
(1728)	000000000000	020100000000	000000000000	000000000201	000000000000	000000000000	000000000000	000000000000	000000000201
(1776)	000000000000	020100000000	000000000000	000000000201	000000000000	000000000000	000000000000	000000000000	000000000201
(1824)	000000000000	020100000000	000000000000	000000000201	000000000000	000000000000	000000000000	000000000000	000000000201
(1872)	000000000000	020100000000	000000000000	000000000201	000000000000	000000000000	000000000000	000000000000	000000000201
(1920)	376700120001	002000000000	000000000000	000000000015	223146312314	600336020713	016414313602	016414313602	103101676031
(1968)	250001622201	001122000000	000000112463	554413260006	252071260040	600625513615	117674062530	117674062530	446711361406
(2016)	246355441320	700624635544	132070062444	000000000006	246212426416	00621426416	126010062200	126010062200	000000000006
(2064)	223044671136	140622075341	107534062221	422312457006	222702433270	240622061115	322740062141	322740062141	217230121406
(2112)	360205260164	143136021026	016760313000	007113004012	300900711300	401230000071	130040123000	130040123000	007113004012
(2160)	300000711300	401225252340	323627733030	262303314372	343434341216	177000000000	000002012525	000002012525	252512525373
(2208)	252525251252	537325252525	125353732525	253512525373	256446503031	377325450514	107207732523	107207732523	572730566373
(2256)	244602210140	137332612700	113053723214	473710072772	315670061167	037224701576	306027722405	306027722405	012012024372
(2304)	253515203162	277233052641	316007723263	255010050772	317244460141	037027153671	00537703004	00537703004	005230713770
(2352)	365741551102	477036720031	123623703625	635300401770	366210552307	337037627206	02201770000	02201770000	000000000201
(2400)	000000000000	020100000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000201
(2448)	000000000000	020131252430	315667732452	517111147374	35776701220	577422525176	020743742652	020743742652	515420222774
(2496)	244440743134	574223316747	033217462374	521400067755	303555230170	141142001125	224744065376	224744065376	367632112005
(2544)	360210320000	003100000000	00002013707	001200010020	000000000000	000000000000	000000142231	000000142231	463123146003
(2592)	360210310167	603136021141	018760312200	000000000011	220001622201	001122223351	130650062220	130650062220	712600406006
(2640)	215075340107	500621345300	006210320000	310520162406	222071260040	600622223351	130650062174	130650062174	733102641406
(2688)	222233511306	500622207126	004060062174	733102641406	222071260040	600622207126	004060062147	004060062147	331022416006
(2736)	21375471144	240621747331	026414060000	000000000201	000000000000	000000000000	000000000000	000000000000	000000000201
(2784)	000000000000	020100000000	000000000000	000000000201	000000000000	000000000000	000000000000	000000000000	000000000201
(2832)	000000000000	020120345261	325347743755	122601057773	366461070154	537335657555	203263733677	203263733677	072523354373
(2880)	200034550204	337420637542	12267742076	03703603774	266605552055	577236032355	10603723745	10603723745	041120207072
(2928)	377323403050	777237044621	021173723640	00711141372	325161250337	77722713505	321353723306	321353723306	340632134370
(2976)	267000530171	437027213505	321353703530	177302073770	364000711114	137037476427	322767703765	322767703765	545720416770
(3024)	370174073017	437000000000	000000201000	000000000201	000000000000	000000000000	000000201000	000000201000	000000000201
(3072)	000000000000	020100000000	000000000000	000000000201	000000000000	000000000000	000000000000	000000000000	000000000201
(3120)	000000000000	020100000000	000000000000	000000000201	000000000000	000000000000	000000000000	000000000000	000000000201
(3168)	000000000000	020100000000	000000000000	000000000201	000000000000	000000000000	000000000000	000000000000	000000000201
(3216)	000000000000	001522314631	231460033602	114101676031	360312570167	603122000000	000100200000	000100200000	000000000011
(3264)	000000000000	500621345300	203044062160	507512050406	222071260040	600622207126	004060062174	004060062174	733102641406
(3312)	222071260040	600622207126	004060062507	534110753406	245544262071	240624554426	207124062455	207124062455	442620712406
(3360)	245544262071	240625030446	311360062541	625401014006	254162540101	400600000000	000000201000	000000201000	000000000201
(3408)	000000000000	020100000000	000000201000	000000000201	000000000000	000000000000	000000201000	000000201000	000000000201
(3456)	343434341216	177200000000	000000201000	000000000201	341205752246	077334242346	207353733474	207353733474	331523075773

(3504) 345244470023 337334002541 304327733407 603700760373 344416010205 537334514637 127267732731 354533135772
 (3552) 350700661264 337237273213 115017723640 007111141372 364000711114 364000711114 301743723473 425631537772
 (3600) 267000530171 077200000000 000002010000 000000000201 000000000000 000000000000 000002010000 000002010000
 (3648) 000000000000 020100000000 000002010000 000000000201 000000000000 000000000000 000002010000 000000000201
 (3696) 000000000000 020100000000 000002010000 000000000201 000000000000 000000000000 000002010000 000000000201
 (3744) 000000000000 020100000000 000002010000 000000000201 000000000000 000000000000 000002010000 000000000201
 (3792) 000000000000 020100000000 000002010000 000000000201 000000000000 000000000000 000002010000 000000000201
 (3840) 000000000000 020100000000 000002010000 000000000201 000000000000 000000000000 000002010000 000000000201

REGULAR OCTAL DUMP OF D-100504

FILE 1 RECORD 3209 3840 BYTES

(0) 370700120001 002000000000 000000000000 000000000000 000000000000 000000000000 000000000000 000000000000
 (48) 220000000000 001122000000 00000112144 00000112144 223346312314 600336021257 016760313602 136701676031
 (96) 222071260040 600622172700 217270062174 217270062174 221564570324 740622237574 315440062174 733102641406
 (144) 222375743154 400621747331 026414062220 026414062220 712600406006 700621747331 312600062215 645703247406
 (192) 360210260167 603136021326 016760313000 016760313000 300000000000 001230000000 026414062142 641612601006
 (240) 300000000000 001234343434 121617730000 121617730000 343434341216 177000000000 000002013562 174730045373
 (288) 35477612337 43733771571 130357733311 130357733311 544631154773 237334263514 131647733407 603700760373
 (336) 351360551130 000000000000 000002010000 000002010000 000000000000 020100000000 000002010000 000000000201
 (384) 000000000000 020100000000 000002010000 000002010000 375526210051 037036451275 312207702720 633421401370
 (432) 272135053213 537031624631 325353703642 325353703642 452123541770 370174073017 007743700000 000000000201
 (480) 000000000000 020100000000 000002010000 000002010000 000000000000 000000000000 000002010000 000000000201
 (528) 000000000000 020100000000 000002010000 000002010000 000000000000 000000000000 000002010000 000000000201
 (576) 24440743134 574223316747 003100000000 000002013707 264131260006 000000000000 000003743000 000000000372
 (624) 360213730000 000000000000 000000000000 000000000000 000000000000 000000000000 224744065376 367632112005
 (672) 360213670167 603136021505 016760312500 016760312500 30355230170 141142001125 000000152231 463123146003
 (720) 246213203053 000624651767 316660062444 316660062444 246355441320 001125477371 333104062527 024332702406
 (768) 222702433270 240622061115 322740062203 322740062203 244631136006 044631136006 132070062523 757431544006
 (816) 214264161260 100622030446 000000000000 000000000000 000000000000 000000000000 000002010000 000000000201
 (864) 000000000000 020100000000 000002010000 000002010000 000000000000 000000000000 000002010000 000000000201
 (912) 343434341216 177021362512 437322577664 437322577664 111073732176 231643732131 101417730000 000000000201
 (960) 240501201202 000000000000 000000000000 000000000000 000000000000 000000000000 315077732341 020711302773
 (1008) 325730531015 277330144274 31173732512 31173732512 047731663373 316055050334 116047733263 255010050773
 (1056) 000000000000 020100000000 000002010000 000002010000 236510545373 250400540300 077327202541 000000000201
 (1104) 000000000000 020100000000 000002010000 000002010000 046211254370 000000000000 777036232133 000000000201
 (1152) 376007740077 437037600774 00743703667 00743703667 300320145770 000000000000 000002010000 000000000201
 (1200) 000000000000 020100000000 000002010000 000002010000 000000000000 000000000000 000002010000 000000000201
 (1248) 000000000000 020100000000 000002010000 000002010000 150600000031 150600000031 000100200000 000000000000
 (1296) 000000000000 001422314631 231460033602 231460033602 150501676031 150501676031 603122000000 000000000000
 (1344) 214733102241 600621361523 337634062174 337634062174 733102641406 733102641406 500622207126 000000000000
 (1392) 222071260040 600622233351 130650062174 130650062174 733102641406 733102641406 217270062145 706503737006
 (1440) 213757471144 240621747331 026414062220 026414062220 712600406006 712600406006 000002010000 000000000201
 (1488) 000000000000 020100000000 000002010000 000002010000 000000000000 000000000000 000002010000 000000000201
 (1536) 000000000000 020134343434 121617700000 121617700000 000000000201 000000000201 237272723701 740730174372
 (1584) 206651423367 037322746520 037322746520 037322746520 154433115773 154433115773 204477730000 000000000201
 (1632) 000000000000 020100000000 000002010000 000002010000 000000000201 000000000201 000002010000 000000000201
 (1680) 000000000000 020137017407 301743703635 301743703635 347422222370 347422222370 177034130364 002253702770

365

12

11

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11

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(1728)	272135053213	537035301773	020737703635	347422222370	000000000000	020100000000	0000032010000	0000000000201
(1776)	000000000000	020100000000	000002010000	000000000201	000000000000	020100000000	000002010000	0000000000201
(1824)	000000000000	020100000000	000002010000	000000000201	000000000000	020100000000	000002010000	0000000000201
(1872)	000000000000	020100000000	000002010000	000000000201	000000000000	020100000000	000002010000	0000000000201
(1920)	000000000000	020100000000	000002010000	000000000201	000000000000	020100000000	000002010000	0000000000201
(1968)	370700120001	002000000000	000000000000	000000000000	000000000000	020100000000	000002010000	0000000000201
(2016)	220001421156	441125000142	115644112162	132030530005	222071260040	600362207126	004060062163	733102641406
(2064)	222071260040	245544262071	240625061115	322740062541	625401014006	006100670066	554413207006	442620712406
(2112)	360213260167	603136021626	017270313000	017270313000	006100670066	201221616020	22097743434	442620712406
(2160)	300000610067	201221616020	015627742174	076013407774	076013407774	320103230772	303026461004	006100670066
(2208)	220056511167	177421776517	030417723640	007111141372	364000711114	322132301202	327032712320	007111141372
(2256)	221334333214	177435554105	137273953772	034713427770	323371142260	000000000000	020100000000	763412417770
(2304)	334533122031	47727353772	132647723640	365021365772	322132301202	000000000000	020100000000	0000000000201
(2352)	236336401311	177027457361	020353703170	034713427770	323371142260	000000000000	020100000000	0000000000201
(2400)	000000000000	020100000000	000002010000	000000000201	000000000000	020100000000	000002010000	0000000000201
(2448)	000000000000	020100000000	000002010000	000000000201	000000000000	020100000000	000002010000	0000000000201
(2496)	265642370134	674223316747	033217462374	521400067755	30355230170	141142001125	224744065376	520412002374
(2544)	360217340000	003100000000	000002013707	001200010020	000000000000	000000000000	0000000142231	367632112005
(2592)	360217330172	703136022043	017270312200	000000000011	220000000000	001122172702	217270062174	463123146003
(2640)	222233511306	500622202351	130650062174	733102641406	222233511306	240621457065	037370062220	733102641406
(2688)	221727022172	700621747331	026414062222	335113065006	222233511306	500621747331	026414062137	574711442406
(2736)	214570650373	700622207126	004060060000	000000000201	000000000000	020100000000	000002010000	0000000000201
(2784)	000000000000	020100000000	000002010000	000000000201	000000000000	020100000000	000002010000	0000000000201
(2832)	000000000000	020100000000	000002010000	000000000201	000000000000	020100000000	000002010000	0000000000201
(2880)	321037102377	637332557322	037443733157	006012101773	267173751161	1372227213505	321353723176	407601740773
(2928)	363534742222	237237017407	301743723765	545720416772	375245050107	577236400071	111413723642	452123541770
(2976)	370174073017	437036353474	222223702666	055520555770	273135053213	537033310124	107507703752	450501075770
(3024)	364000711114	137000000000	000002010000	000000000201	000000000000	020100000000	000002010000	0000000000201
(3072)	000000000000	020100000000	000002010000	000000000201	000000000000	020100000000	000002010000	0000000000201
(3120)	000000000000	020100000000	000002010000	000000000201	000000000000	020100000000	000002010000	0000000000201
(3168)	000000000000	020100000000	000002010000	000000000201	000000000000	020100000000	000002010000	0000000000201
(3216)	000000000000	020100000000	000002010000	000000000201	000000000000	020100000000	000002010000	0000000000201
(3264)	220611153227	400622270243	001422314631	204700000031	000000000000	020137070012	000000112200	0000000000011
(3312)	223044671136	140622044672	327024062201	422312457006	214264161260	1006212426416	126010062203	044631136006
(3360)	214264161260	100622030446	311360062230	446711361406	220446721361	240622014223	124570062142	641612601006
(3408)	000000000000	020100000000	000002010000	000000000201	000000000000	020100000000	000002010000	0000000000201
(3456)	343434341216	177200000000	000002010000	000000000201	222161130056	337321424667	320653733732	616130707373
(3504)	200510561257	177321651473	113027732322	470210477773	227402711371	077322343064	133073733034	412113420772
(3552)	362563530040	177236720031	123623723760	077400774372	376007740077	437236673003	201457723056	623523637772
(3600)	270744073216	077200000000	000002010000	000000000201	000000000000	020100000000	000002010000	0000000000201
(3648)	000000000000	020100000000	000002010000	000000000201	000000000000	020100000000	000002010000	0000000000201
(3696)	000000000000	020100000000	000002010000	000000000201	000000000000	020100000000	000002010000	0000000000201
(3744)	000000000000	020100000000	000002010000	000000000201	000000000000	020100000000	000002010000	0000000000201
(3792)	000000000000	020100000000	000002010000	000000000201	000000000000	020100000000	000002010000	0000000000201
(3840)	000000000000	020100000000	000002010000	000000000201	000000000000	020136022162	000000310000	0000000000201

RECORD COUNT OF D-100505 ON MKA100:

FILE ----- RECORDS ----- MAX SIZE ----- MIN SIZE ----- ERRORS -----

P10 5 MIN AVE CORANT

DUMP OF TAPE KOUTS

INPUT TAPE KOUTS ON MTI
DATA INPUT 02 FL 1 1 1

1978 RECORD = P10

384 BYTES

17 = 21, Base 8

152
3022
4096
65536
D-53829 72836 = DAY1

FILE	1	RECORD	LENGTH	384 BYTES
(1)	367200	0120701	020000000000	000000000130
(43)	201002	011422	301120100020	142230113772
(96)	3624264	013126	000536242641	312600053624
(144)	3624264	013126	000536242641	312600053624
(192)	216357	00611	102121663570	004031000010
(240)	300004	003100	001022664432	073330471774
(288)	251491	0101234	637533662027	300735772774
(336)	276430	0141326	137535432247	114137752124
(384)	2045266	00370	437521757655	366723753232
(432)	3112520	0003462	177331101755	047213732162
(480)	000000	00000	020100000000	00000012227
(528)	2220727	00404	37703777724	112557722252
(576)	3756155	013563	034223316747	073213462374
(624)	2167600	00000	062100000000	00002013672
(672)	2167553	00104	202121743130	121720212260
(720)	2311014	0221564	540623114223	70622763146
(768)	2311422	011645	70622763146	70622763146
(816)	2311260	010061	106623114223	164570622166
(864)	2200002	01400	001122000020	140000112200
(912)	3323476	015671	737032101715	052267743564
(960)	2205704	002075	337520045402	055147753577
(1008)	3612176	02346	577200000000	00002010000
(1056)	3261055	02354	677133114731	364670713553
(1104)	3434565	02415	777134345654	241577713455
(1152)	0000000	00000	020100000000	00002012415
(1200)	2707062	02261	077436161562	272367763651
(1248)	4200112	02250	00652747062	026000012174
(1296)	0000000	00000	014422617270	121730032174
(1344)	2310142	011564	540622502436	270240662226
(1392)	2311564	013432	440623114223	16457062225
(1440)	2311423	011645	706226366560	243654062226
(1488)	3000040	003100	001130000000	004031000010
(1536)	2436554	011241	337433234727	032717703323
(1584)	265264	0170647	037427446645	223117743505
(1632)	3234353	013760	77753537171	327223743152
(1680)	3434564	02415	777335560515	146417713532
(1728)	0000000	00000	02012113675	26447703553
(1776)	0000000	00000	020100000000	00002010000
(1824)	3777724	01125	577224529216	16020373125
(1872)	2374521	014006	235525005272	063114124200
(1920)	3672001	02001	020000000000	000000000144
(1968)	2266006	010467	201122660061	046720112225
(2016)	2312540	01142	200622351361	251764062226
(2064)	2226354	01132	040622263554	213204062227
(2112)	2200757	011625	402122053570	243650212200
(2160)	2200006	011440	001136563367	046333743323
(2208)	2250526	012623	277522470016	302263752275
(2256)	2773139	012200	177421641221	245577743467
(2304)	3541051	011405	777335537171	327223733553
(2352)	0000000	00000	020100000000	00002010000
(2400)	3513425	011203	377135537171	327223712476
(2448)	2374405	013757	277225252433	02766373377
(2496)	3756155	013563	034223316747	073213462374
(2544)	2205640	00000	002100000000	00002013672
(2592)	2205613	012436	502122123530	243653121226
(2640)	2226517	013716	640622263554	213204062225
(2688)	2226355	012132	040622651361	251764062311
(2736)	2226355	012132	040622263554	213204062205
(2784)	2261172	0101217	300321635030	06110212167
(2832)	3734733	010264	140536242641	312600053624
(2880)	3660000	000000	300536242641	312600053622
(2928)	3622030	0042335	100534551523	3767634053511
(2976)	3000040	003100	001030000040	004031000010
(3024)	2764054	00443235	073330471774	304717713024
(3072)	3211060	010116	777424522760	050627753003
(3120)	2175766	003667	237523031165	027443733451
(3168)	0000000	000000	020121175712	073577723774
(3216)	2175766	003667	237221772625	267627722275
(3264)	1000325	0025206	100032525206	076207743177
(3312)	0012420	001125	001242001125	225000065274
(3360)	0000000	000000	000000000000	00000142261
(3408)	2260020	01422	301122263554	213204062244
(3456)	2263554	0132	440622262132	034530062226
(3504)	0406222	003554	040622263554	213204062227
(3552)	2015514	005426	277533234756	36717373323
(3600)	3731351	0112162	237420604010	340367752371
(3648)	3553717	013272	23742062107	210057743436
(3696)	3034355	002445	777322105177	135403743434
(3744)	3553717	013272	237130760564	304667712733
(3792)	3556051	015464	177123510506	376095365000
(3840)	2525250	013550	277230707042	077163733743
(3888)	2331674	01732	134623745214	000623552367
(3936)	0000000	000000	020136720012	000102000000
(3984)	2201053	001625	402122600040	300464112260
(4032)	2263554	0132	040622263554	213204062255
(4080)	2241463	012314	600623114223	16467062311
(4128)	2263554	0132	040621727570	121720212200
(4176)	3000040	003100	001130000040	001000113500
(4224)	3670720	013730	437433773304	017377743541
(4272)	3652347	0162516	277422446725	132353752363
(4320)	0000000	000000	020132213717	144767703434
(4368)	3241413	0132501	037000000000	00002010000
(4416)	3556051	015464	177134574666	130007710000
(4464)	2706207	00310	077135537171	327223712525
(4512)	3477730	011435	53737422351	53717422351
(4560)	5274706	020260	000122011000	000000021000
(4608)	2261727	0101217	300322010530	162540212205
(4656)	2667373	0163310	540623114223	16467062311
(4704)	2226355	014232	040623104467	113614062252
(4752)	2251666	0020550	344623114223	16457062311
(4800)	2200060	010440	001122000061	044000112200
(4848)	0000000	000000	020133234677	076467712145
(4896)	3105243	0030647	337430341367	346177743015
(4944)	3434565	02415	777334345654	241677732141
(4992)	0000000	000000	020100000000	00002010000
(5040)	0000000	000000	020100000000	00002010000
(5088)	0201320	012153	263723713434	56542415771
(5136)	1776230	014223	17762304256	05314775377
(5184)	0012420	001125	001242001125	001242001125
(5232)	0000000	000000	000000000000	00000142261
(5280)	0011231	0103044	335134062226	355421324006
(5328)	2300406	010467	230040610467	16457062311
(5376)	2311422	011645	700623114223	700623114223
(5424)	5021220	003406	502122003406	502122003406
(5472)	2211757	0102456	221175702456	502122003406

P10 PHA

DUMP OF TAPE KOUTD

INPUT TAPE KOUTD ON MT1
DATA INPUT 09 FL 1 1 3

FILE	1	RECORD	1	LENGTH	480 BYTES	1	LENGTH	480 BYTES	1	LENGTH	480 BYTES
(0)	600000000000	000122634025	000122634025	495225252414	22634050071	241422634052	223100140000	0000000000201			
(48)	000000000000	020120000000	000060072000	000000000011	000000000000	020155777776	305254102400	0000000000006			
(96)	340000000000	000000000000	000002012000	000000000000	240000000000	000224000000	000000003000	0000000000201			
(144)	200000000000	000200000000	000002012000	000000000001	200000000000	000222000000	000000010000	0000000000201			
(192)	200000000000	000420000000	000000010000	000000000291	000000000000	020100000000	000002010000	0000000000201			
(240)	210000000000	000530000000	000000030000	000000000201	240000000000	000421755775	000002010000	0000000000201			
(288)	000000000000	020120252477	21615772257	065137371403	217777500000	000421755775	117223742175	577511722373			
(336)	200000000000	000120000000	000000000000	000000000201	446314630631	977277777777	034264132303	0000000000006			
(384)	277777400000	037434000040	504460103440	004030446010	344000403044	500226246314	314630112527	146306314011			
(432)	300000400000	001030000040	000000102000	000000000001	240000000000	601034400040	304460103000	0040000000010			
(480)	000000000000	000000000000	000000000000	000000000001	240000000000	000000000000	000000000000	0000000000013			

FILE	1	RECORD	9430	LENGTH	11528 BYTES	1	LENGTH	11528 BYTES	1	LENGTH	11528 BYTES
(0)	000000010000	021740000163	114424230000	002000000002	400001560000	4005400000151	000060044000	0076024164415			
(48)	400001500060	54354000014	506000004000	007701013407	400000740060	5010400000047	012054004000	0014354000000			
(96)	400000770120	400440000054	415266514000	015600011012	400001610420	301740000156	000074074000	0151000100006			
(144)	000000200000	000600000020	000000140000	007501414016	400001610572	124540000154	002034044000	000000607403			
(192)	400001540002	102540000071	012060003400	003526074400	400000770100	340640000073	012064054000	015700006013			
(240)	400001530000	740640000156	000044054000	015100205403	400001650320	640740000071	064254224000	015600403003			
(288)	400000310703	300000000075	010000024000	012203261414	400001540040	4006400000150	004034044000	016401407411			
(336)	400000771766	614540000073	012040003400	015600004007	400001530000	341040000076	014060104000	015400005005			
(384)	400001550000	440740000071	347051734000	007501010405	400001520000	600540000154	000034104000	016106241450			
(432)	400001649640	349540000121	010034364000	016501206006	400000770121	4041240000153	006100034000	015600205003			
(480)	400001120016	137440000076	012050064000	015200040003	400000201627	600040000152	002050054000	015600024034			
(528)	400001120001	200440000075	070420324000	004201417002	400001570040	400740000074	052400474000	015000005005			
(576)	400000730141	100340000070	010044074000	00741204013	400000770362	101640000152	002060124000	004701204000			
(624)	400001520000	640640000076	517403674000	00347447009	400000770243	103040000160	012044095000	002000000000			
(672)	000000100000	000740000035	345124000000	015100010410	400000750140	600640000160	012074144000	012309532007			
(720)	400000017330	000040000073	012060034000	004012264000	400001520040	500340000036	134650004000	007201004005			
(768)	400000750100	600540000161	024210254000	007601010407	400001510020	300540000154	002334064000	015100004005			
(816)	400000720120	701040000151	000040004000	012403015005	400001500000	741440000073	010030034000	015600204005			
(864)	400000530724	302540000006	000024164000	005032500130	400000460200	640040000161	044641244000	007507660072			
(912)	400000770120	300540000073	104464364000	015600042460	400001220263	456440000166	010204164000	005432677513			
(1008)	400001550000	400540000072	016074104000	015500015416	400001510040	400440000154	006040074000	015200007006			
(1056)	400000750241	202240000071	012034074000	015400227433	400001510040	340540000073	010034044000	003007242400			
(1104)	400001520020	340440000071	010044074000	015300403412	400000450260	340000000000	016104144000	015700021015			

FILE	1	RECORD	9431	LENGTH	480 BYTES	1	LENGTH	480 BYTES	1	LENGTH	480 BYTES
(0)	600000000000	000123767652	252524142376	770000000014	237676523041	641423767663	020074140000	0000000000201			
(48)	000000000000	020120000000	000000072000	000000000011	000000000000	02012474113340	047474113340	0000000000006			
(96)	350000000000	000523542354	116577222000	000000000001	240000000000	000324000000	000000030000	0000000000201			
(144)	200000000000	000130000000	000000022000	000000000003	200000000000	000230000000	000000020000	0000000000201			
(192)	300000000000	000300000000	000002010000	000000000201	300000000000	000020000000	000002010000	0000000000201			
(240)	350000000000	000530000000	000000020000	000000000201	240000000000	000426077153	164723733122	130336325372			
(288)	23523541165	777200000000	000002012257	065137371403	000000000000	020127777777	004264103300	0000000000006			
(336)	200000000000	000120000000	000000010000	000000000201	531463143146	400224631463	063140012417	146306314411			
(384)	000000000000	020120340000	000000112420	000000000011	242000000000	001123400000	000000110000	0000000000201			
(432)	000000000000	020100000000	000002012000	000000000001	240000000000	000330000000	000000043676	0000000000013			

FILE	1	RECORD	9432	LENGTH	600 BYTES	1	LENGTH	600 BYTES	1	LENGTH	600 BYTES
(0)	000000010000	006740000052	100752014000	004626673000	4000001550000	4004400000150	000114030000	0010000000033			
(48)	400001540020	340540000167	116220314000	0034707175000	400000470100	440040000152	004030034000	0156000004006			
(96)	400001530040	400340000036	325000004000	015100050100	400000750100	340740000071	032054104000	003530673400			
(144)	40000221667	600040000155	002044054000	012001005041	400000340645	240040000160	012070104000	016301025023			
(192)	400001570021	500740000024	417124074000	015713606407	400001520060	440640000156	00054104000	015100007414			
(240)	400000550201	400540000151	000044044000	012500005006	400000124220	7000340000124	013602114000	015100203405			
(288)	400001540000	441740000057	100474154400	015400403400	400000770060	000040000154	000100114000	015006034005			
(336)	400000730100	400640000156	000350414000	007101003403	400000150040	400440000151	000640774000	0156000012006			

Handwritten notes and dates:

- 4.01.77
- 10.01.77
- 12.31.78
- 20.4.8
- 24.9.01
- 25.7

(384) 400001510000 400740000154 004034034000 015100005411 400000243732 640040000151 002050104000 007401404406
 (432) 400001570001 101440000153 000100030000 000000000000 000000000000 000000000000 000000000000 000000000000 000000000000
 (480) 000000000000 000000000000 000000000000 000000000000 000000000000 000000000000 000000000000 000000000000 000000000000
 (528) 000000000000 000000000000 000000000000 000000000000 000000000000 000000000000 000000000000 000000000000 000000000000
 (576) 000000000000 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
1	9432	9435	1836	0	14	0	0	19

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

START TIME 11/24/82 14:03:12 STOP TIME 11/24/82 14:05:49

D-17169

72-012A-02B

PIONEER 10

PULSE HEIGHT DATA

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0049	000000000000	000000000012	200000000000	001120000000	000000000000	000000000000	235100000000	001132140000
0057	000000006334	000000000000	400000000000	000120000000	000000000000	000000000000	360000000000	001121040000
0145	000000000000	000000000007	352000000000	000434000000	000000000000	000000000000	000000000000	000000000000
0193	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
0289	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
0289	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000
0337	000000004000	000000000000	400000005341	200325560507	000000000000	000000000000	400000000000	000000000000
0337	000000004320	000000000002	200000000000	000424000000	000000000000	000000000000	344000000000	001132140000
0385	000000004000	000000000000	400000000000	000040000000	000000000000	000000000000	400000000000	001125640000
0433	000000004000	000000000000	400000000000	000120000000	000000000000	000000000000	400000000000	000040000000
0481	000000004030	000000000000	000000000000	000000000000	000000000000	000000000000	000000000000	000040000000
0529	400000071341	400000000020	000000000000	002000000000	000000000000	000000000000	000000000000	000010200000
0577	40000011521	400040000021	170060000000	002001400000	000000000000	000000000000	000000000000	000010200000
0625	400000040000	040040000005	124324000000	000510204000	000000000000	000000000000	000000000000	000010200000
0673	40000002062	000040000020	146034000000	000014412000	000000000000	000000000000	000000000000	000010200000
0721	40000042062	400040000003	154140000000	002414212400	000000000000	000000000000	000000000000	000010200000
0765	400000061320	700040000006	134074000000	000712416000	000000000000	000000000000	000000000000	000010200000
0817	400000012040	500040000001	146104000000	000212222400	000000000000	000000000000	000000000000	000010200000
0865	400000041540	400040000005	150240000000	000050004400	000000000000	000000000000	000000000000	000010200000
0913	400000071561	000040000040	046150000000	000015604400	000000000000	000000000000	000000000000	000010200000
0961	400000321640	440040000023	150110000000	000401201400	000000000000	000000000000	000000000000	000010200000
1005	400000062121	100040000006	162034000000	000710214000	000000000000	000000000000	000000000000	000010200000
1057	40000011300	500000000020	000000000000	002000000000	000000000000	000000000000	000000000000	000010200000
1105	400000332261	200040000044	052100000000	000420202000	000000000000	000000000000	000000000000	000010200000
1153	400000261400	640040000007	104000000000	000714611400	000000000000	000000000000	000000000000	000010200000
1201	400000011320	600040000002	122124000000	000214600000	000000000000	000000000000	000000000000	000010200000
1249	400000062000	240040000027	154110000000	000713406000	000000000000	000000000000	000000000000	000010200000
1297	400000212660	740040000022	164104000000	002213214400	000000000000	000000000000	000000000000	000010200000
1345	400000051420	140040000025	114334000000	000623204000	000000000000	000000000000	000000000000	000010200000
1393	400000202560	440040000020	174050000000	002414005000	000000000000	000000000000	000000000000	000010200000
1441	400000030420	440040000003	102020000000	000000012461	000000000000	000000000000	000000000000	000010200000
1489	400000260562	340040000027	146210000000	002716204400	000000000000	000000000000	000000000000	000010200000
1537	400000011200	300040000002	136034000000	000227605400	000000000000	000000000000	000000000000	000010200000
1585	400000030200	240040000024	176040000000	000516605400	000000000000	000000000000	000000000000	000010200000
1633	4000000470121	500040000007	010030000000	000202034000	000000000000	000000000000	000000000000	000010200000
1681	400000021600	600040000002	200038000000	000317214400	000000000000	000000000000	000000000000	000010200000
1725	4000000352061	200040000026	076150000000	000604001000	000000000000	000000000000	000000000000	000010200000
1777	400000001340	740040000021	156064000000	000113612400	000000000000	000000000000	000000000000	000010200000
1825	400000031461	040040000004	004060000000	000516012400	000000000000	000000000000	000000000000	000010200000
1873	400000072140	400040000007	170100000000	000224060000	000000000000	000000000000	000000000000	000010200000
1921	400000020140	040040000022	140214000000	000231640500	000000000000	000000000000	000000000000	000010200000
1965	400000050600	240040000006	174024000000	000602610000	000000000000	000000000000	000000000000	000010200000
2017	4000000201740	700040000001	036014000000	000122400000	000000000000	000000000000	000000000000	000010200000
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2113	400000260662	040040000006	122100000000	002713610000	000000000000	000000000000	000000000000	000010200000
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2209	400000041060	640040000005	170124000000	000000000000	000000000000	000000000000	000000000000	000010200000
2257	400000001200	500040000000	146030000000	000115205400	000000000000	000000000000	000000000000	000010200000
2305	400000431020	200040000003	154074000000	002416012400	000000000000	000000000000	000000000000	000010200000
2353	400000061641	240040000007	164040000000	000000000000	000000000000	000000000000	000000000000	000010200000
2401	400000010440	440040000002	064070000000	000222024400	000000000000	000000000000	000000000000	000010200000
2449	400000041361	200040000005	122110000000	000602201000	000000000000	000000000000	000000000000	000010200000
2497	400000001660	540040000000	172030000000	003110616000	000000000000	000000000000	000000000000	000010200000

3/3/72 - 3/24

WJM

2

63-41

3/3/72-3/2/72

0673	4000000750500	340540000167	015000254000	015000105206	000000200000	000000000020	000000044000	0031062333400
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0817	400001660100	417640000077	062340344000	003107441000	400000720502	703040000073	012074064000	012404631424
0865	4000000760140	7005400000150	000064064000	016401420445	400001570005	707740000151	000044074000	003412045000
0913	400001260646	402140000033	170650004000	012407433005	400001550000	500540000167	030524214000	015000004012
0961	4000000710100	500540000164	044064044000	007402415017	000000100000	000200000010	000000004000	015100073144
1005	4000000720342	141540000152	000050104000	007401204404	400000761064	454240000076	014064144000	015000005005
1057	400001610631	177340000163	016655704000	007401004404	400001550000	540640000076	054260434000	007010407410
1105	400000320664	10040000163	011232234000	01662050036	400000700100	500640000074	014064114000	015600017006
1153	400001570000	501040000070	012070114000	015200026431	400000700050	640540000154	000044044000	015600005005
1201	4000000700121	201140000070	014050054000	007105626427	400000730201	202240000154	000070104000	016515575066
1245	4000000760140	701040000157	000263654000	016003124672	400001610542	605640000072	024074114000	015300005410
1297	400000740140	640740000165	010550704000	007601204453	400000770141	440440000077	012044064000	007001606412
1345	400000730140	741340000164	011224360000	002000000000	000000100000	000000000000	000050114000	015700011010
1393	400000711366	050440000071	012074074000	003237725400	400000750563	304040000163	016635014000	007401005006
1441	400001550000	441740000160	351061774000	007101010004	400000720140	741540000153	004050064000	015500017422
1485	400000760261	341040000151	000244264000	007000605005	400001650201	101140000126	012114054000	015000217020
1537	400000720120	340440000154	000060064000	015500007004	400001160010	015540000150	000040054000	015300005005
1585	400000740120	640640000154	000430314000	015600061046	40000134740	000000000020	000000110000	002000000005
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1681	400000730100	441040000074	012044064000	016501227445	400001670212	116040000070	011054374000	015100010407
1725	400001550020	500640000162	263222064000	015000204416	400000331126	010040000075	010060074000	007701606410
1777	400000030020	740640000036	353060004000	016702015575	400001200060	600540000071	010050064000	007300604011
1825	400001540000	701040000151	000040050000	001000000002	000000200000	002340000153	004204174000	012301014013
1873	400001250101	640740000076	014074054000	007001005403	400001510004	743240000072	010050034000	015300007010
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2113	400001510000	741040000072	010044074000	007306033433	400000750723	704040000157	000054070000	002000000002
2161	400001610121	240740000156	000054064000	007701412405	400000700161	740640000071	010054074000	007701406003
2205	400000740120	501040000030	012754004000	007302404405	400000750201	201040000046	030054074000	007701406003
2257	400001600121	402540000152	000054074000	015300005010	400000740120	500640000075	042224214000	007601004407
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2545	400001560000	600740000151	006440064000	016401621064	400000760140	400640000157	000044044000	015100011414
2593	400000730200	700740000155	000054074000	016101206411	400001630120	540740000166	028232154000	015700010410
2641	40000010000	300140000074	012060074000	00701207007	400000701124	604540000153	000050164000	007500606017
2689	400000270667	200040000152	000034074000	000500004005	400000050000	400540000126	010050030000	001000000001
2737	400001500000	400740000073	012064064000	007400606010	400001560000	400040000077	006044005000	007201207407
2785	400000750400	540440000156	000060114000	015700014420	400000720542	543340000071	000044005000	007201207407
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0193	000000073040	00000000000	000000000000	000324000000	000000026000	000000000000	000000000000	000000000000
0241	00000073120	000000000006	314000000000	000000000000	000000042400	000043600773	240500602330	577330554331
0289	08633722247	43477002000	202524764631	400323314631	434467753525	243700000012	314000000000	001122140000
0337	00000052100	000000000003	200040000000	000424000000	000000000011	241000000000	003200000000	003200000000
0385	330007742060	60266114012	245000406111	401224560040	611140122456	00406114012	245000400000	001030000041
0433	00000112200	004100000011	250000410000	000120000000	000000262400	074200000024	203610700000	002431212120
0001	00000010000	046400000020	000001540000	015600004406	400000700221	401240000164	012045754000	015500606005
0045	400001630200	552040000154	000124124000	000500006005	400001500160	541240000034	072444004000	0074002616024
0097	400001650127	250540000073	036274414000	015400004404	400000770422	301540000110	000110100000	002000600002
0145	000000200000	000040000155	000040022400	016712222032	400001500000	540640000156	000040044000	012604256047
0193	400000770140	440440000156	000050074000	015700005007	400001601426	460440000152	000136104000	007301004005
0241	400001560002	001740000050	012050444000	015100004414	400001610533	525640000163	010104440000	015300005410
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FILE 0001 REC 0006 CH 0480

FILE 0001 REC 0007 CF 2472

INPUT TAPE 001 ON MT4
DATA INPUT 09 FL 1 1 1

DUMP OF TAPE 001

047655
11/01/76 - 12/31/76
Pioneer 16
Pulse Height

FILE	1	RECORD	1	LENGTH	480BYTES	266500013232	541326660052	252524130000	000000000201
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(48)	000000000000	000120000000	000000000000	0000002010000	000000000000	000000000000	000220000000	000000030000	0000000000201
(96)	200000000000	000100000000	000000000000	0000002012200	000000000000	000000000000	000420000000	000000000000	000000000002
(144)	220000000000	000400000000	000000000000	0000002012200	000000000000	000000000000	000500000000	0000002010000	000000000001
(192)	342000000000	000700000000	000000000000	0000000070000	000000000000	000000000000	000435106554	253403763442	617713151372
(240)	326000000000	001020000000	000000000000	251270012272	702417270003	257425473150	1376300123454	0000000000011	0000000000011
(288)	276476263147	437120501630	000000000000	0000000053400	000000000000	500000000000	000226000000	0000000032603	463123146011
(336)	220000000000	000630000000	000000000000	223344123272	005022334412	327200302233	441232670030	223344123220	003022300012
(384)	203520153316	077532670030	001232200030	223000122000	000000000001	243011420000	002526107000	000000163050	5050000000025
(432)	322000302230	001232200030	1704BYTES	000000304000	015200030433	400001640000	640740000047	012040004000	0121022464502
(0)	00000010000	032300000020	000000340000	026454064000	015000005405	400001550020	440540000075	012030264000	0157002040005
(48)	400001520041	601040000123	004034044000	004034044000	015500403404	400000761166	350240000071	036220314000	015200010414
(96)	400001510000	501340000153	004034044000	004034044000	015500403404	400000761166	350240000071	036220314000	015200010414
(144)	400000340463	200040000156	000000000000	000000000000	000000000000	4000001510000	500440000164	014040034000	003686043000
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(240)	400000770100	640740000161	000000000000	016124254000	00753224447	400001570005	003740000032	062434004000	007301611014
(288)	400000550100	500240000156	000000000000	000640340000	016003020537	40000124500	000400000075	006030064000	016601712262
(336)	400001670121	442240000071	010054074000	010054074000	007401004404	400000750201	342140000151	000054074000	007304024032
(384)	400000750161	300740000157	000130164000	000130164000	015100003003	400001520040	301440000154	004040104000	015100004410
(432)	400001520020	500640000154	004040064000	007602412017	007602412017	400000700140	760640000152	000044054000	015500012410
(480)	400001570000	300540000167	252657614000	252657614000	015100003003	400000730060	340340000000	022134164000	016703631175
(528)	400000710321	441740000152	000114154000	000114154000	015400011412	400000760141	4000000160	066364640000	015200007411
(576)	400001540000	500440000156	000040104000	000040104000	007002003406	400001520000	440640000154	000134214000	015500411010
(624)	400001570000	440540000072	034124264000	034124264000	003413065400	400001550000	400340000027	046501254000	015100605405
(672)	400000730120	741340000155	002040054000	012701051411	012701051411	400001510040	500300000020	000000050000	002000000002
(720)	400001530020	500540000154	002040064000	002040064000	016601600100	400001600100	340440000151	004144054000	015400203405
(768)	400001550000	400740000161	036104064000	036104064000	015200010007	400001630161	141440000155	004040034000	007703213421
(816)	400001510040	341040000153	000034034000	000034034000	007600605006	400000700100	300740000010	426000004000	007201004406
(864)	400000740100	440740000071	014050044000	007201003405	007201003405	400001540040	300740000010	034214114000	015000003407
(912)	400000710343	603640000044	347134014000	015500003004	015500003004	400001570001	401640000161	016104134000	016301010014
(960)	400001550020	300440000157	004034044000	004034044000	003106035400	400001520001	040640000164	024214234000	015660604403
(1008)	400000305514	000040000151	000034044000	000034044000	003510663000	400001200470	250340000072	010040054000	016301005405
(1056)	400001510002	405340000153	000034064000	000034064000	015500022423	400000760121	300440000020	411000004000	0154000406425
(1104)	400001560000	500640000031	331010004000	003211261400	003211261400	400000740100	440440000076	010060104000	0047022034000
(1152)	400001520060	400540000074	042260304000	042260304000	012602662443	400000470120	400140000151	002044100000	002000000002
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(1248)	400000370624	000040000150	004034054000	015200031422	015200031422	400000450121	040240000077	022110154000	0152002040004
(1296)	400001530000	640540000167	016461774000	016461774000	016100614577	400000730140	741440000035	150670040000	007607042471
(1344)	400000102260	000040000163	006040064000	011400205012	011400205012	400001560000	640240000152	006400114000	0074020006007
(1392)	400001560001	000740000000	006034204000	002136730000	002136730000	400001550040	400240000152	000202264000	015300003404
(1440)	400000750042	643240000077	016124104000	016101614422	016101614422	400001540040	500540000075	020100054000	007601205410
(1488)	400001500040	240440000122	004000274000	0154000403404	0154000403404	400001570000	540440000070	034264344000	003211047400
(1536)	400001530001	541140000006	000130205400	000130205400	007701011006	400001630120	702040000155	006054044000	0157000006003
(1584)	400001500001	241340000152	002634454000	015500003405	015500003405	400001570000	500440000152	002044064000	007501010011
(1632)	400001560000	400340000070	014074064000	015200043452	015200043452	400000731066	212240000150	004034064000	0151000011406
(1680)	400001230524	604740000155	002044034000	015300004406	015300004406				

FILE	1	RECORD	21852	LENGTH	MAX. SIZE	READ ERROR	SUMMARY	SHORT	UNDEF.	INPUT RETRIES
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(96)	400001510000	501340000153	004034044000	015500403404	400000761166	0	0	0	0	0
(144)	400000340463	200040000156	000000000000	000000000000	4000001510000	0	0	0	0	0
(192)	400000702221	341100000020	000000000000	000000000000	400001510000	0	0	0	0	0
(240)	400000770100	640740000161	000000000000	016124254000	00753224447	400001570005	003740000032	062434004000	007301611014	0
(288)	400000550100	500240000156	000000000000	000640340000	016003020537	40000124500	000400000075	006030064000	016601712262	0
(336)	400001670121	442240000071	010054074000	010054074000	007401004404	400000750201	342140000151	000054074000	007304024032	0
(384)	400000750161	300740000157	000130164000	000130164000	015100003003	400001520040	301440000154	004040104000	015100004410	0
(432)	400001520020	500640000154	004040064000	007602412017	007602412017	400000700140	760640000152	000044054000	015500012410	0
(480)	400001570000	300540000167	252657614000	252657614000	015100003003	400000730060	340340000000	022134164000	016703631175	0
(528)	400000710321	441740000152	000114154000	000114154000	015400011412	400000760141	4000000160	066364640000	015200007411	0
(576)	400001540000	500440000156	000040104000	000040104000	007002003406	400001520000	440640000154	000134214000	015500411010	0
(624)	400001570000	440540000072	034124264000	034124264000	003413065400	400001550000	400340000027	046501254000	015100605405	0
(672)	400000730120	741340000155	002040054000	012701051411	012701051411	400001510040	500300000020	000000050000	002000000002	0
(720)	400001530020	500540000154	002040064000	002040064000	016601600100	400001600100	340440000151	004144054000	015400203405	0
(768)	400001550000	400740000161	036104064000	036104064000	015200010007	400001630161	141440000155	004040034000	007703213421	0
(816)	400001510040	341040000153	000034034000	000034034000	007600605006	400000700100	300740000010	426000004000	007201004406	0
(864)	400000740100	440740000071	014050044000	007201003405	007201003405	400001540040	300740000010	034214114000	015000003407	0
(912)	400000710343	603640000044	347134014000	015500003004	015500003004	400001570001	401640000161	016104134000	016301010014	0
(960)	400001550020	300440000157	004034044000	004034044000	003106035400	400001520001	040640000164	024214234000	015660604403	0
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(1056)	400001510002	405340000153	000034064000	000034064000	015500022423	400000760121	300440000020	411000004000	0154000406425	0
(1104)	400001560000	500640000031	331010004000	003211261400	003211261400	400000740100	440440000076	010060104000	0047022034000	0
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