#496

VOYAGER 1 & 2
JUPITER FLUX TIME - HISTORY RECORDS

77-084A-08A

77-076A-08A

Table of Contents

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1. INTRODUCTION:

The documentation for this data set was originally on paper, kept in NSSDC's Data Set Catalogs (DSCs). The paper documentation in the Data Set Catalogs have been made into digital images, and then collected into a single PDF file for each Data Set Catalog. The inventory information in these DSCs is current as of July 1, 2004. This inventory information is now no longer maintained in the DSCs, but is now managed in the inventory part of the NSSDC information system. The information existing in the DSCs is now not needed for locating the data files, but we did not remove that inventory information.

The offline tape datasets have now been migrated from the original magnetic tape to Archival Information Packages (AIP's).

A prior restoration may have been done on data sets, if a requestor of this data set has questions; they should send an inquiry to the request office to see if additional information exists.

2. ERRATA/CHANGE LOG:

NOTE: Changes are made in a text box, and will show up that way when displayed on screen with a PDF reader.

When printing, special settings may be required to make the text box appear on the printed output.

Version	Date	Person	Page	Description of Change
01				
02				

3 LINKS TO RELEVANT INFORMATION IN THE ONLINE NSSDC INFORMATION SYSTEM:

http://nssdc.gsfc.nasa.gov/nmc/

[NOTE: This link will take you to the main page of the NSSDC Master Catalog. There you will be able to perform searches to find additional information]

4. CATALOG MATERIALS:

a. Associated Documents — To find associated documents you will need to know the document ID number and then click here. http://nssdcftp.gsfc.nasa.gov/miscellaneous/documents/

b. Core Catalog Materials

VOYAGER 1

JUPITER FLUX TIME-HISTORY RECORDS

77-084A-08A PSFP-00189

THIS DATA SET HAS BEEN RESTORED. ORIGINALLY IT CONTAINED ONE 9-TRACK, 1600 BPI TAPE WRITTEN IN MIXED BINARY AND EBCDIC MODE. THERE IS ONE RESTORED TAPE. THE DR TAPE IS A 3480 CARTRIDGE AND THE DS TAPE IS 9-TRACK, 6250 BPI. THE ORIGINAL TAPE WAS CREATED ON AN IBM 360 COMPUTER AND WAS RESTORED ON THE MRS SYSTEM. THE DR AND DS NUMBER ALONG WITH THE CORRESPONDING D NUMBER AND THE TIME SPAN IS AS FOLLOWS:

DR#	DS#	D#	FILES	TIME SPAN
DR004407	DS004407	D045265	9	02/28/79 - 03/16/79

VOYAGER 2

JUPITER FLUX TIME-HISTORY RECORDS

77-076A-08A PSFP-00189

This data set has been restored. There was originally one 9-track, 1600 BPI tape written in Binary. There is one restored tape. The DR tape is a 3480 cartridge and the DS tape is 9-track, 6250 BPI. The original tape was created on an IBM 360 computer and the restored tape was created on an IBM 9021 computer. The DR and DS numbers along with the corresponding D numbers are as follows:

DR#	DS#	D#	FILES	TIME SPAN
DR004367	DS004367	D045266	9	07/03/79 - 08/04/79

REQ. AGENT	RAND NO.	ACQ. AGENT
LSM	V0083	RWV

VOYAGER 1 & 2
JUPITER FLUX TIME - HISTORY RECORDS
77-084A-08A
77-076A-08A

This data set catalog consists of 2 tapes. The tapes are 9 track, 1600, mixed mode with 9 files of data each. The tapes were created on an IBM 360 computer.

The time spans are as follows:

VOYAGER 1

D#	C#	TIME SPAN
D-45265	C-21540	02/28/79 - 03/17/79

VOYAGER 2

D#	C#	TIME SPAN
D-45266	C-21541	07/03/79 - 08/04/79

VOYAGER 1 AND 2

COSMIC RAY SUBSYSTEM

Description of Jupiter Encounter Data

Instrumentation

As its name implies, the Cosmic Ray Subsystem (CRS) was designed for cosmic ray studies (Stone et al., 1977). It consists of two High Energy Telescopes (HET), four Low Energy Telescopes (LET) and The Electron Telescope (TET). The detectors have large geometric factors (~ 0.48 to 8 cm^2 ster) and long electronic time constants (~ 24 μsec) for low power consumption and good stability. Normally, the data are primarily derived from comprehensive (ΔE_1, ΔE_2 and E) pulse-height information about individual events. Because of the high particle fluxes encountered at Jupiter and Saturn, greater reliance had to be placed on counting rates in single detectors and various coincidence rates. The detectors used for most of our work are listed in Table 1 and illustrated in Figure 1. In interplanetary space, guard counters are placed in anticoincidence with the primary detectors to reduce the background from high-energy particles penetrating through the sides of the telescopes. These guard counters were turned off in the Jovian magnetosphere when the accidental anticoincidence rate became high enough to block a substantial fraction of the desired counts. Fortunately, under these conditions the spectra were sufficiently soft that the background, due to penetrating particles, was small.

The data on proton and ion fluxes at Jupiter were obtained with the LET. The thicknesses of individual solid-state detectors in the LET and their trigger thresholds were chosen such that, even in the Jovian magnetosphere, electrons made, at most, a very minor contribution to the proton counting rates (Lupton and Stone, 1972). Dead time corrections and accidental coincidences were small (< 20%) throughout most of the magnetotail, but were substantial (> 50%) at flux maxima within 40 R_J of Jupiter. Data have been included in this package for those periods when the corrections are less than ~ 50% and can be corrected by the user with the dead time appropriate to the detector (2 to 25 μsec). The high counting rates, however, caused some baseline shift which may have raised proton thresholds significantly. In the inner magnetosphere, the L_2 counting rate was still useful because it never rolled over. This rate is due to 1.8- to 13-MeV protons penetrating L_1 (0.43 cm^2 ster) and > 9-MeV protons penetrating the shield (8.4 cm^2 ster). For an E^{-2} spectrum, the two groups would make comparable contributions; but in the magnetosphere, for the E^{-3} to E^{-4} spectrum above 2.5 MeV (McDonald et al., 1979), the contribution from protons penetrating the shield would be only 3 to 14%.

The LET $L_1L_2\overline{L_4}$ and $L_1L_2L_3$ coincidence-anticoincidence rates give the proton flux between 1.8 and 8 MeV and 3 to 8 MeV with a small alpha paticle contribution (~ 10^{-3}). Corrections are required for dead time losses in L_1, accidental L_1L_2 coincidences and anticoincidence losses from L_4. Data are given only for periods when these corrections are relatively small. In addition to the rates listed in the table, the energy lost in detectors L_1, L_2 and L_3 was measured for individual particles. For protons, this covered the energy range from 0.42 to 8.3 MeV. Protons can be identified positively by the ΔE vs. E technique, their spectra obtained and accidental coincidences greatly reduced. Because of telemetry limitations, however, only a small fraction of the events could be transmitted, and statistics become poor unless pulse-height data are averaged over a period of one hour.

HET and LET detectors share the same data lines and pulse-height analyzers; thus, the telescopes can interfere with one another during periods of high counting rates. To prevent such an interference and explore different coincidence conditions, the experiment was cycled through four operating modes, each 192 seconds long. Either the HETs or the LETs were turned on at a time. LET-D was cycled through L_1 only and L_1L_2 coincidence requirements. The TET was cycled through various coincidence conditions, including singles from the front detectors. At the expense of some time resolution, this procedure permitted us to obtain significant data in the outer magnetosphere and excellent data during the long passage through the magnetotail region.

Some of the published results from this experiment required extensive corrections for dead time, accidental coincidences and anticoincidences (Vogt et al., 1979a, 1979b; Schardt et al., 1981; Gehrels et al., 1981). These corrections can be aplied only on a case-by-case basis after a careful study of the environment and many self-consistency checks. They cannot be applied on a systematic basis and we have no computer programs to do so; therefore, data from such periods are not included in the Data Center submission. The scientists on the CRS team will, however, be glad to consider special requests if the desired information can be extracted from the data.

In order to acquaint the potential user of these data with the type of information that can be extracted from the CRS data, we are showing typical rates and fluxes in Figures 2 through 7.

Description of the Data

(1) LD1 RATE gives the nominal > 0.43-MeV proton flux $cm^{-2}s^{-1}sr^{-1}$. This rate includes all particles which pass through a 0.8 mg/cm^2 aluminum foil and deposits more than 220 keV in a 34.6 μ Si detector on Voyager 1 (209 keV, 33.9 μ on Voyager 2) Therefore, heavy ions, such as oxygen and sulfur are also detected; however, their contributin is believed to be relatiely

small. Only a small percentage of the pulses in this detector are larger than the maximum energy that can be deposited by a proton. Heavy ions would produce such large pulses, unless their energy spectra were much steeper than the proton spectrum. The true flux, F_t, can be calculated from the data:

$$F_t = \frac{F}{1 - 1.26\times10^{-4}F}$$

and corrections are small for $F < 1000\ cm^{-2}s^{-1}$.

(2) LD2 RATE is not suitable for an absolute flux determination and is given in counters per s. The detector responds to protons and ions that penetrate either (a) 0.8 mg/cm^2 Al plus 8.0 mg/cm^2 Si and lose at least 200 keV in a 35 μ Si detector (1.8 to 13 MeV) or (b) pass through > 140 mg/cm^2 Al. For an E^{-2} proton spectrum, the contributions from (a) and (b) would be about equal; however, the proton spectrum is substantially softer throughout most of the magnetosphere and the detector should respond primarily to (a). Dead time corrections are given by

$$R_t = \frac{R}{1 - 2.55\times10^{-5}R}$$

where R is the count rate in counts/s. Thus, correction to the supplied data are small for R < 4000 c/sec, but become so large in the middle magnetosphere that the magnitude of even relative intensity changes becomes uncertain.

(3) LD $L_1 \cdot L_2 \cdot\ L_4 \cdot$ SL COINCIDENCE RATE gives the total proton flux ($cm^{-2}s^{-1}sr^{-1}$) between ~ 1.8 and ~ 8.1 MeV with a small admixture of alpha particles. Accidental coincidences become substantial at higher rates and

the flux derived from pulse-height analysis should be used if accuracy is desired.

(4) LDTRP RATE gives proton flux ($cm^{-2}s^{-1}sr^{-1}$) between 3.0 and 8.0 MeV with a small alpha particle contribution ($L_1L_2L_3$ coincidences are required).

(5) IBS4E RATE gives the electron flux ($cm^{-2}s^{-1}sr^{-1}$) for electrons with a range between 4 and 10 mm in Si; this corresponds approximately to the energy range of 2.6–5.1 MeV. Accidental coincidence and dead time corrections are generally small in the magnetotail and have not been applied to these data. Because of differences between Voyager 1 and 2, we give the average rate for HET I and II for Voyager 1 and the HET I rate for Voyager 2.

(6) IBS3E RATE is the same as (5); but the electron range falls between 10 and 16 mm of Si, or approximately 5.1–8 MeV.

(7) IBS2E RATE is the same as (5); but the electron range falls etween 16 and 22 mm of Si, or approximately 8–12 MeV.

(8) D4L RATE is not suitable for an absolute electron flux determination. This counting rate includes all pulses from detector D_4 of TET (Fig. 1) which exceed 0.5 MeV. The shielding varies with direction of incidence but is at least 1.2 cm of Si. In the Jovian environment, the detector responds primarily to electrons with energies above ~ 6 MeV. The D_4L rate is useful primarily for determining relative changes in the high-energy electron flux. This rate has a high background from the RTG. Where needed, the dead time corrections should be applied as to the LD_2 rate ($\tau \sim 2.55 \times 10^{-5}$s).

(9) Pulse-height Analyzed Proton Flux (FPHA) is derived from a ΔE vs. E analysis of pulses from L_1, L_2 and L_3 of LET (Fig 1) and gives the

average proton flux ($cm^{-2}s^{-1}sr^{-1}MeV^{-1}$) in six energy channels. Where required, a correction should be applied for the dead time in LD1 as follows:

$$FPHA_t = \frac{FPHA}{1 - 1.26\times10^{-4} FLD1}$$

where FPHA is the listed flux of this rate (9) and FLD1 is the flux given in rate 1. FPHA gives the most accurate value of the proton flux available from this experiment; however, the counting statistics are poorer than for the other rates because of limited sampling. Fluxes derived from rate 3 (LD) which cover the same energy range as FPHA will be higher because of poorer definition of the energy threshold, accidental coincidences and a variable, but small, background contribution.

ENERGY CHANNELS (MEV) OF FPHA

(absolute accuracy ~ 10%)

	VOYAGER 1	VOYAGER 2
1	1.829 - 2.045	1.807 - 2.001
2	2.045 - 3.104	2.001 - 3.309
3	3.104 - 3.753	3.309 - 3.984
4	3.753 - 4.530	3.984 - 4.761
5	4.530 - 6.284	4.761 - 6.041
6	6.284 - 8.091	6.041 - 8.043

Data Format

Time-history of CRS data described above is being submitted on 9-track tapes recorded at ~~1600~~ 6250 BPI. Tape marked CRSJU1 contains Voyager 1 data and the one marked CRSJU2 contains Voyager 2 data.

Each tape contains nine files. Contents of CRSJU1 are described in Table 2, and those of CRSJU2 appear in Table 3. Each file consists of a number of Flux Time-History (FTH) records. An FTH record contains a count of the number of data items (NBIN) whose time-history is included in the record, a count of the number of averaging intervals (NINT) included in the record, definitions of data items included and time-history data. Table 4 defines the structure of an FTH record in detail. These tapes were generated on an IBM System 360 computer; thus, a word consists of 32 bits, half-word 1 is the high order 16-bit field of the word and half-word 2 the low order half (bits 16-31, with the left-most or MSB numbered 0). Characters are represented in 8-bit EBCDIC byte, real numbers are represented in the IBM single precision floating point format. Length (in words) of an FTH record is given by

$$200 + (3 + 2 * NBIN) * NINT \qquad NBIN \leq 5$$

$$233 + (3 + 2 * 6) * NINT \qquad NBIN = 6$$

For all files on CRSJU1 and CRSJU2, NINT $\leq$ 96. For file 9, NINT $\leq$ 24. Thus, maximum record length is 680 words (2720 bytes) for files 1-4 and 8, 872 words (3488 bytes) for files 5-7 and 593 words (2372 bytes) for file 9.

Table 1
CRS DETECTORS USED DURING JUPITER ENCOUNTER

Detector	Shielding	Energy Range+ (MeV)	Factor (cm^2ster)	Comments
PROTONS (LET):				
L1*	0.8 mg/cm^2 Aℓ	0.42-12	4.5	Also, alphas above 0.32 MeV/n
L2*	8.1 mg/cm^2 Si	1.8 -13	0.43	Through L1
	>140 mg/cm^2 Aℓ	>9	8.4	Protons through side. The intensity is comparable to those through front for E^{-2} spectrum
L1 L2 $\overline{L4}$		1.8 - 8	0.43	ΔE - E analysis
ELECTRONS (HET):				
Range: 4-10 mm Si		2.6- 5.1	1.46	Coincidence rates with good background rejections, but accidental coincidence problems at high counting rates (for details, see Stone et al., 1977).
10-16 mm Si		5.8- 8	1.25	
16-22 mm Si		8 -12	0.96	
ELECTRONS (TET):				
D4 (3 mm Si) .	~1.2 cm Si equivalent	>6	~14	Usable at higher flux than HET rates

*Single rates
+Small difference between similar detectors

Table 2. CONTENTS OF CRSJU1

FILE #	DATA ITEM	AVERAGING INTERVAL	TIME PERIOD
1	LD1 RATE	15 min.	2/28/79, 00:00, to 3/04/79, 12:00 3/06/79, 06:45, to 3/17/79, 00:00
2	LD2 RATE	15 min.	2/28/79, 00:00, to 3/09/79, 12:00
3	LD RATE	15 min.	2/28/79, 00:00, to 3/03/79, 12:00 3/07/79, 08:00, to 3/17/79, 00:00
4	LDTRP RATE	15 min.	Same as for LD RATE
* 5	BS4E RATE	15 min.	2/28/79, 00:00, to 3/03/79, 00:00 3/07/79, 08:00, to 3/17/79, 00:00
* 6	BS3E RATE	15 min.	Same as for BS4E RATE
* 7	BS2E RATE	15 min.	Same as for BS4E RATE
8	D4L RATE	15 min.	2/28/79, 00:00, to 3/04/79, 20:00 3/06/79, 02:00, to 3/08/79, 00:00
9	FPHA	1 hour	2/28/79, 00:00, to 3/03/79, 12:00 3/07/79, 08:00, to 3/17/79, 00:00

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*These files nominally contain two quantities, the rate when guard anticoincidence is required and the rate when guard term is deleted from coincidence requirement. The experiment is in the latter state from ~ 01:15:00, March 2, 1979, to ~ 20:15:00, March 2, 1979. Note also that HET-I and HET-II data are averaged in these files.

Table 3. CONTENTS OF CRSJU2

	FILE #	DATA ITEM	AVERAGING INTERVAL	TIME PERIOD
	1	LD1 RATE	15 min.	7/03/79, 00:00, to 7/08/79, 12:00 7/11/79, 12:00, to 8/04/79, 00:00
	2	LD2 RATE	15 min.	7/03/79, 00:00, to 7/14/79, 00:00
	3	LD RATE	15 min.	7/03/79, 00:00, to 7/06/79, 00:00 7/11/79, 18:00, to 8/04/79, 00:00
	4	LDTRP RATE	15 min.	Same as LD RATE
*	5	BS4E RATE	15 min.	7/03/79, 00:00, to 7/06/79, 04:00 7/12/79, 12:00, to 8/04/79, 00:00
*	6	BS3E RATE	15 min.	Same as BS4E RATE
*	7	BS2E RATE	15 min.	Same as BS4E RATE
	8	D4L RATE	15 min.	7/03/79, 00:00, to 7/08/79, 12:00 7/11/79, 12:00, to 8/14/79, 00:00
	9	FPHA	1 hour	7/03/79, 00:00, to 7/06/79, 04:00 7/11/79, 18:00, to 8/04/79, 00:00

*These files nominally contain two quantities, the rate when guard anticoincidence is required and the rate when guard term is deleted from coincidence requirement. The experiment is in the latter state from ~ 12:15:00, July 12, 1979, to ~ 06:15:00, July 18, 1979.

Table 4. STRUCTURE OF FLUX TIME-HISTORY RECORD

WORD	HALFWORD	TYPE	DESCRIPTION
1	1	Integer	Number of data items contained in the record (NBIN).
.	2	Integer	Number of averaging intervals (NINT) contained in the record.
3-35		character	132-character title identifies satellite and gives the start time of first averaging interval and last averaging interval in the record.
36-68		character	132-character description of first data item.
69-101		character	132-character description of second data item, if NBIN $\geq$ 2. Otherwise, not used.
102-134		character	132-character description of third data item, if NBIN $\geq$ 3. Otherwise, not used.
135-167		character	132-character description of fourth data item, if NBIN $\geq$ 4. Otherwise, not used.
168-200		character	132-character description of fifth data item, if NBIN $\geq$ 5. Otherwise, not used.
		NBIN $\leq$ 5	
201-			NINT Averaging Interval Entries (AIE). The structure of an AIE is shown in Table 5.
		NBIN = 6	
201-233		character	132-character description of sixth data item.
234-			NINT Averaging Interval Entries.

Table 5. STRUCTURE OF AVERAGING INTERVAL ENTRY

WORD	HALFWORD	TYPE	DESCRIPTION	
1	1	Integer	2-digit year	
	2	Integer	month of year	
2	1	Integer	day of month	Start time
	2	Integer	hour of day	of averaging interval
3	1	Integer	minute of hour	
	2	Integer	second of minute	
4-(3+2*NBIN)		Real	NBIN FLUX entries. Each FLUX entry is two words long. If the second word of the entry is -1.0, data for this item is not available; otherwise the first word is the value of flux and the second word contains the associated statistical error.	

REFERENCES

Gehrels, N., E.C. Stone and J.H. Trainor, "Energetic Oxygen and Sulful in the Jovian Magnetosphere," submitted to J. Geophys. Res., 1981.

Lupton, J.E., and E.C. Stone, "Measurement of Electron Detection Efficiencies in Solid-state Detectors," Nucl. Instr. and Meth. 98, 189, 1972.

McDonald, F.B., A.W. Schardt and J.H. Trainor, "Energetic Protons in the Jovian Magnetosphere," J. Geophys. Res. 84, 2579, 1979.

Schardt, A.W., F.B. McDonald and J.H. Trainor, "Energetic Particles in the Pre-dawn Magnetotail of Jupiter," J. Geophys. Res., special Voyager issue, 1981.

Stone, E.C., R.E. Vogt, F.B. McDonald, B.J. Teegarden, J.H. Trainor, J.R. Jokipii and W.R. Webber, "Cosmic Ray Investigation for the Voyager Mission: Energetic Particle Studies in the outer Heliosphere--and Beyond," Space Sci. Rev. 21, 355, 1977.

Vogt, R.E., W.R. Cook, A.C. Cummings, T.L. Garrard, N. Gehrels, E.C. Stone, J.H. Trainor, A.W. Schardt, T. Conlon, N. Lal and F.B. McDonald, "Voyager 1: Energetic Ions and Electrons in the Jovian Manetosphere," Science 204, 1003, 1979a.

Vogt, R.E., A.C. Cummings, N. Gehrels, E.C. Stone, J.H. Trainor, A.W. Schardt, T.F. Conlon and F.B. McDonald, "Voyager 2: Energetic Ions and Electrons in the Jovian Magnetosphere," Science 206, 984, 1979b.

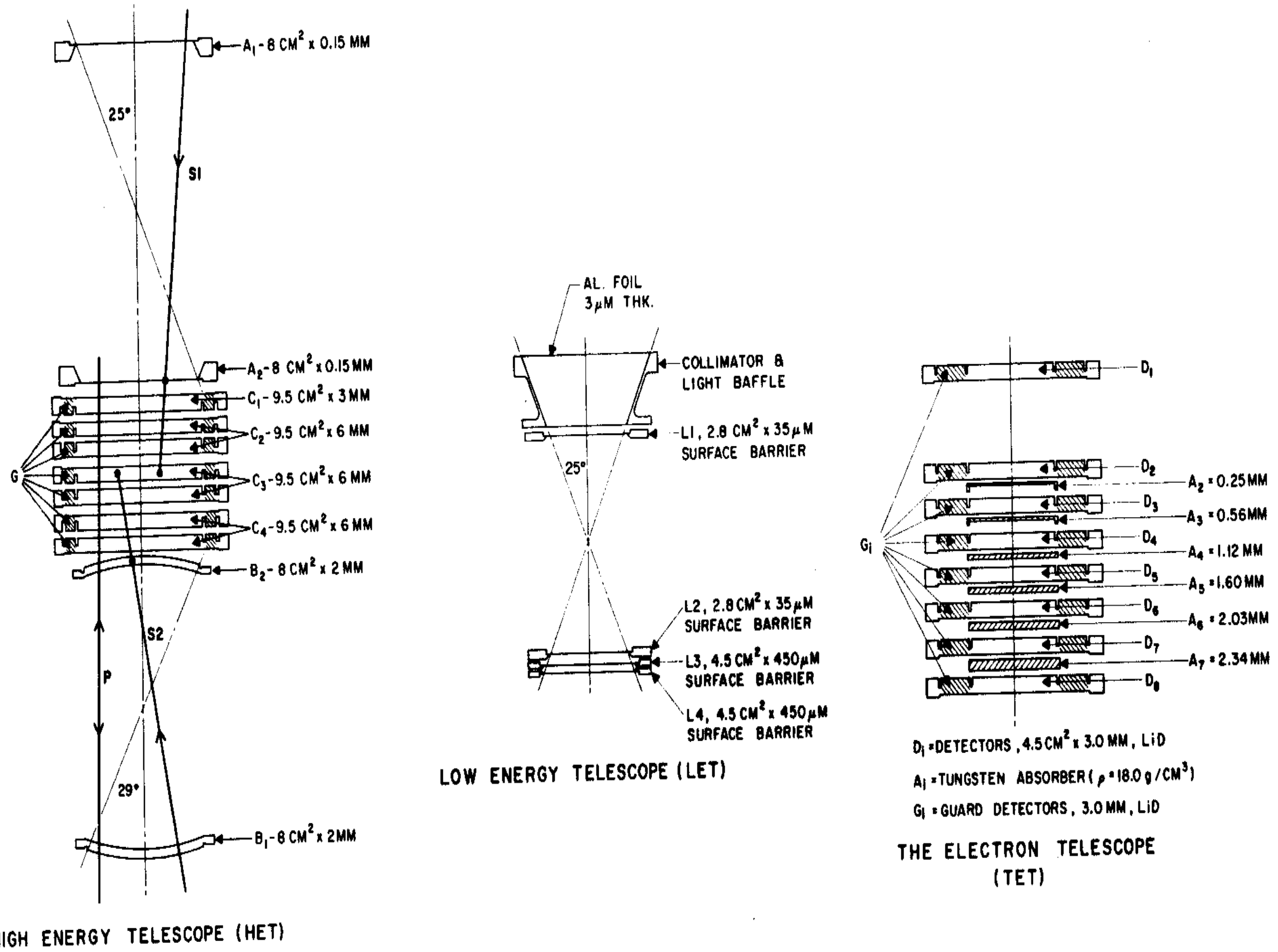

Fig. 1. Schematic diagram of the High Energy Telescope (HET), Low Energy Telescope (LET) and the Electron Telescope (TET) systems.

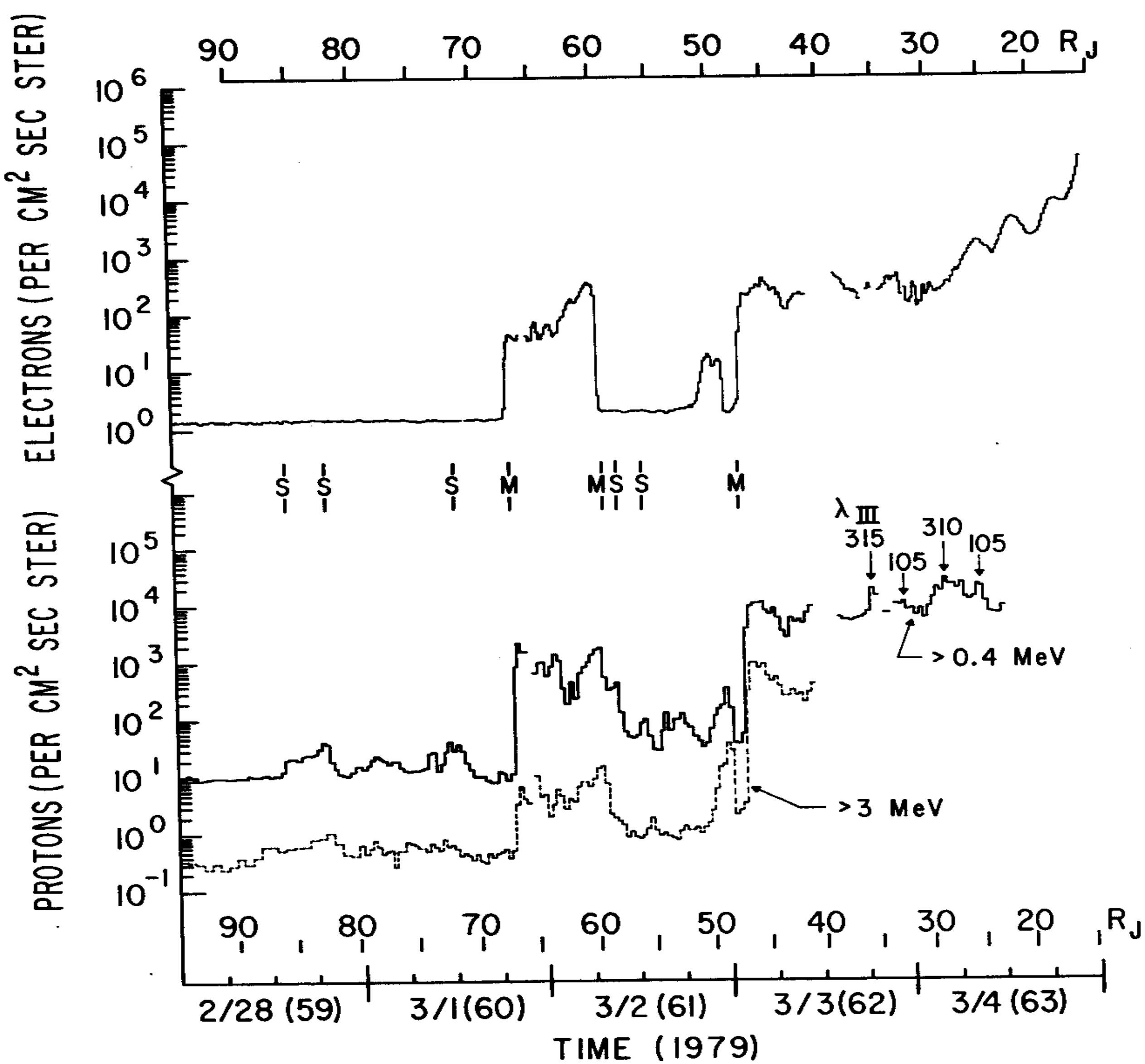

Fig. 2. Proton and > 5 MeV electron flux observed during the inbound pass of Voyager 1. Bow shock and magnetopause crossings are indicated by S and M, respectively. Jovicentric longitudes (λ_{III} 1965) of flux maxima near magnetic equatorial crossings are indicated.

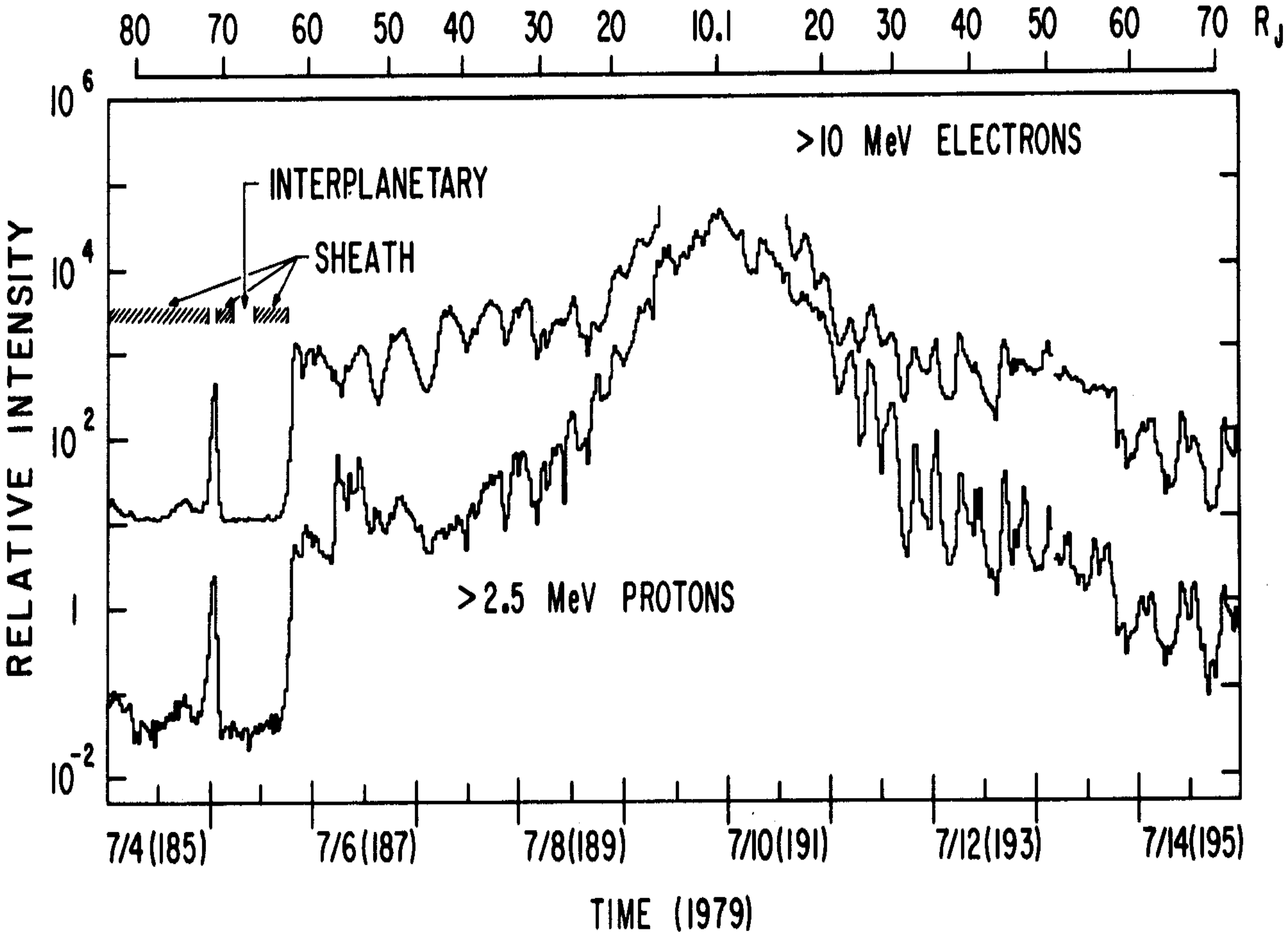

Fig. 3. Proton and electron intensities observed by Voyager 2

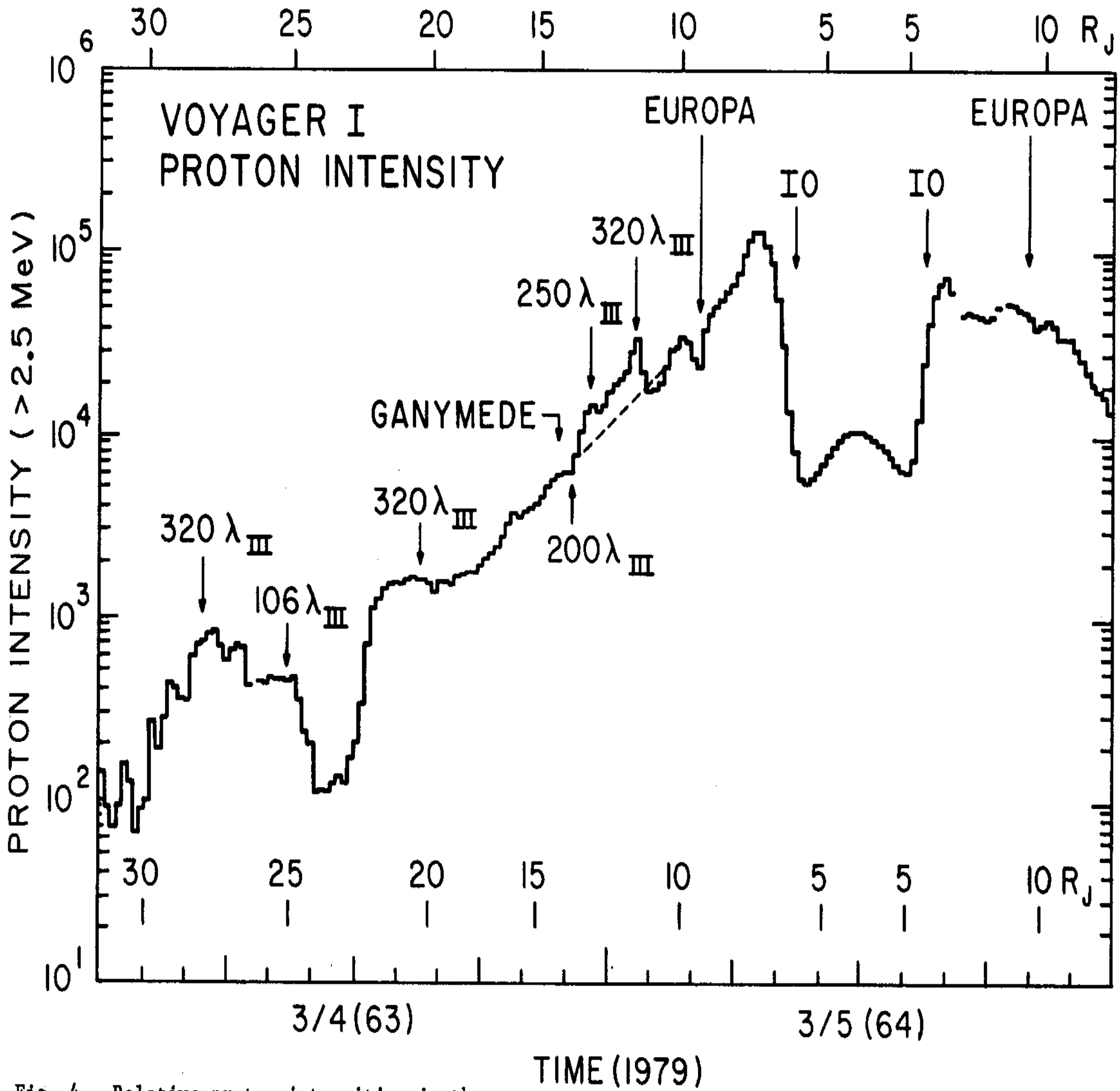

Fig. 4. Relative proton intensities in the middle magnetosphere observed with Voyager 1. Due to the extreme fluxes, the detector threshold shifted with counting rate.

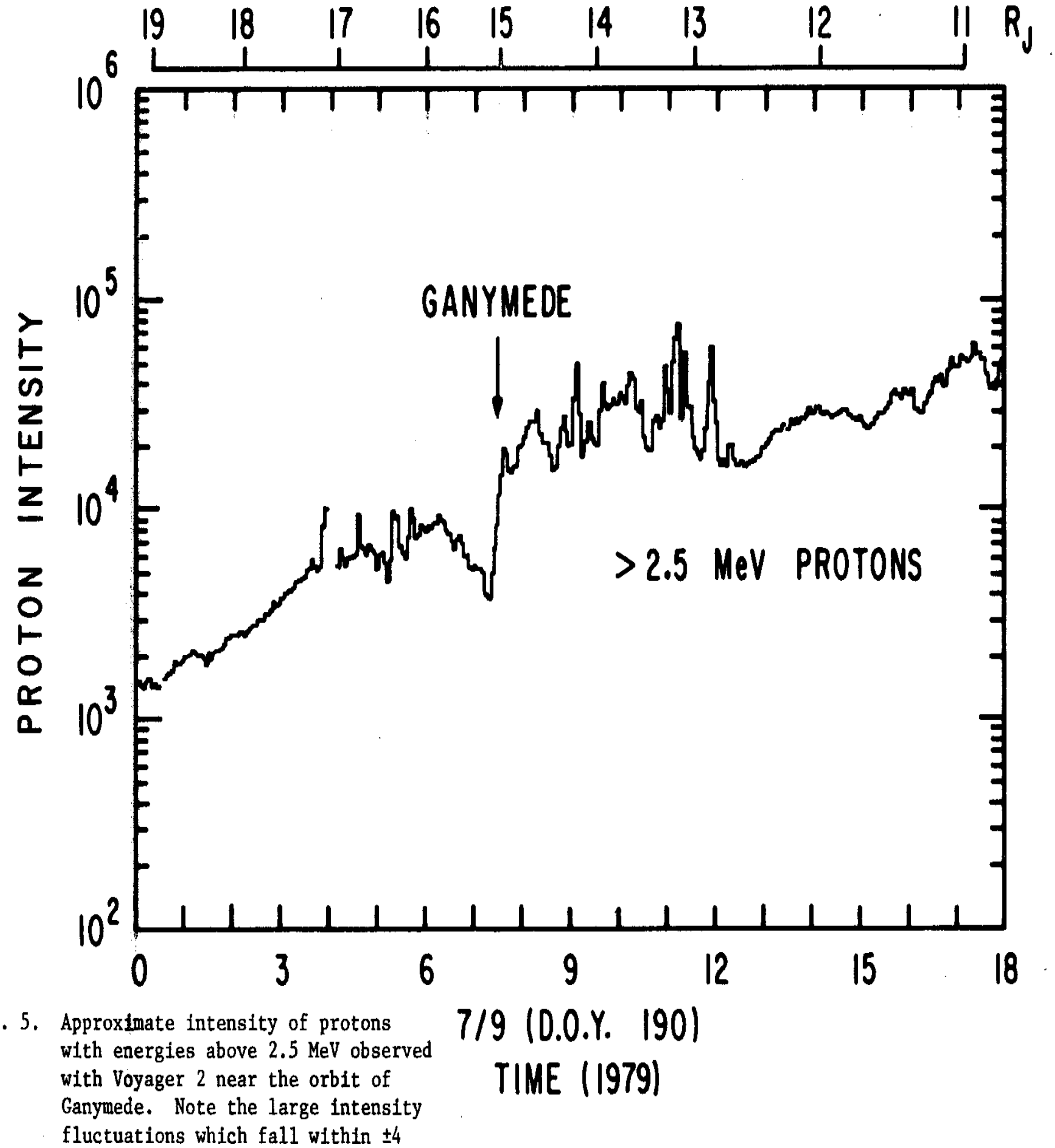

Fig. 5. Approximate intensity of protons with energies above 2.5 MeV observed with Voyager 2 near the orbit of Ganymede. Note the large intensity fluctuations which fall within ±4 hours of the closest approach to Ganymede.

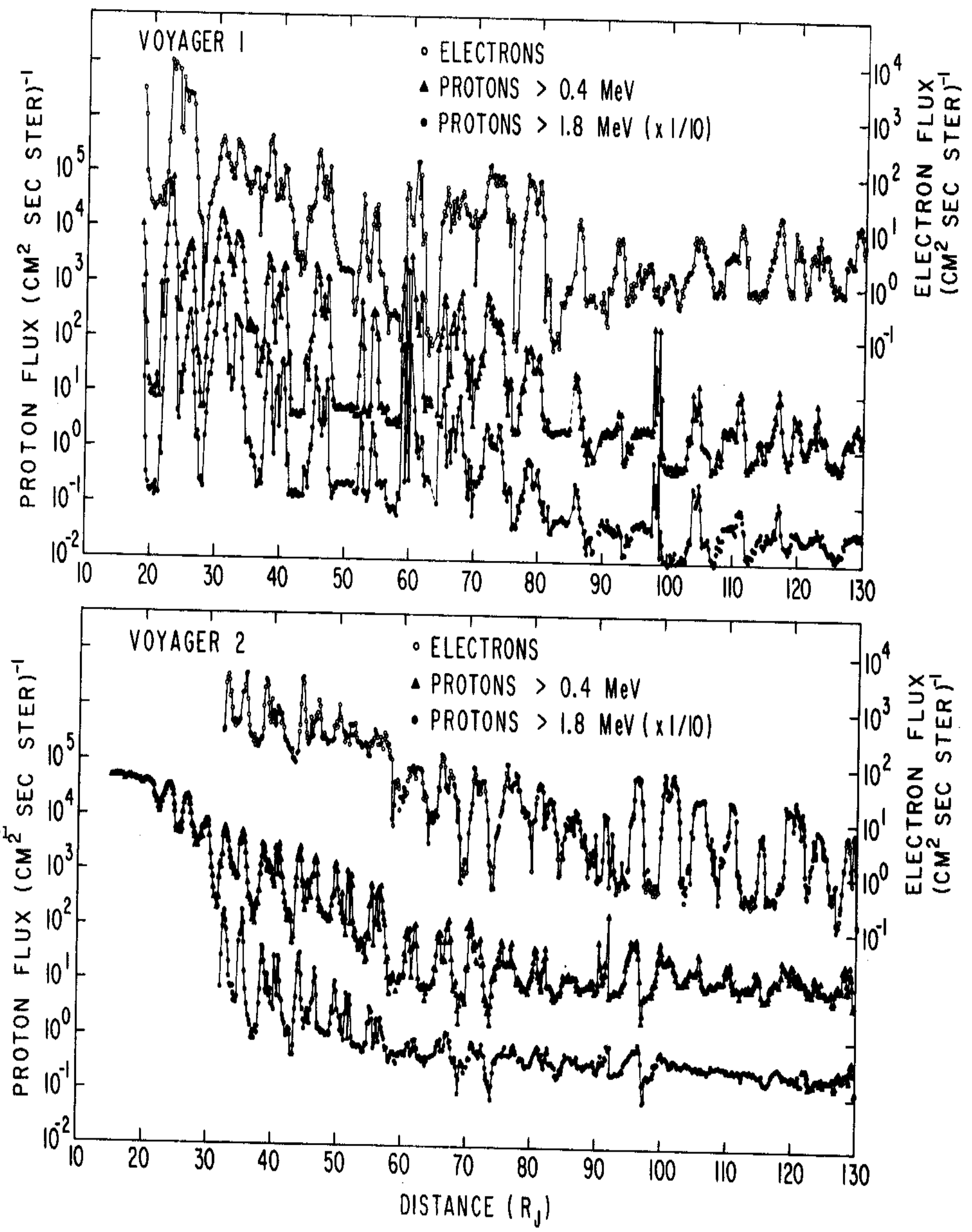

Fig. 6. Electron (2.6-5.1 MeV) and proton fluxes observed during the outbound passes of Voyagers 1 and 2. Electron and > 1.8 MeV proton fluxes above $10^3 cm^{-2} s^{-1} sr^{-1}$ are uncertain because of large corrections and show only relative trends.

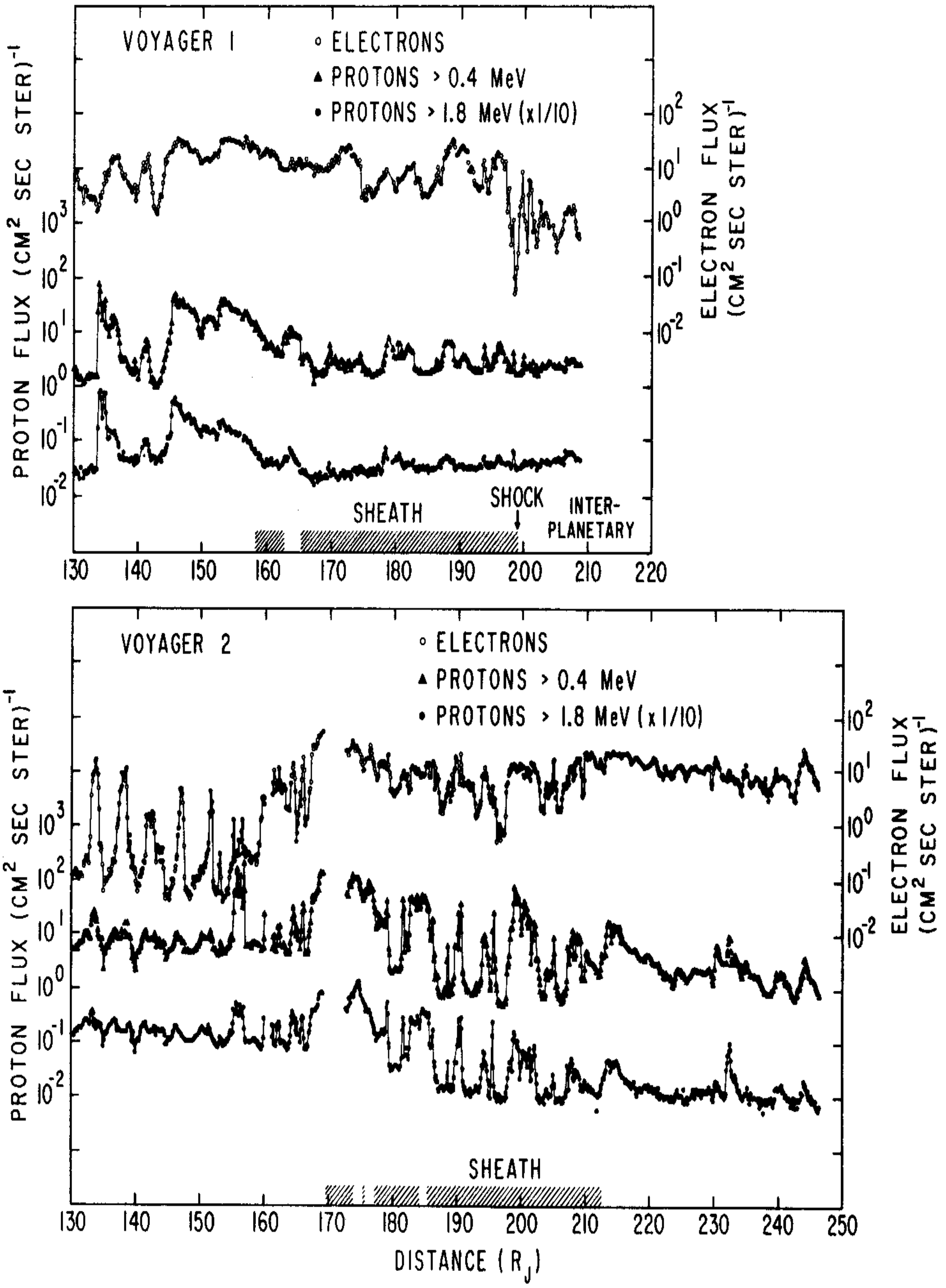

Fig. 7. The fluxes shown in Fig. 6 are extended from 130 to 250 Jovian radii. The shading near the distance scale indicates when the spacecraft were in the magnetotail.

HEX DUMP OF cn1132

Voyager 2 DR00F367

FILE 1 RECORD 1 2720 BYTES

7/ 03 / 79 07/ 03/ 79

(0)	00010060	77777777	E5D6E8C1	C7C5D960	F2404040	40C6D3E4	E740C6D6	D940E3C8	C540D7C5	D9C9D6C4
(40)	4040F761	40F361F7	F94040F0	7A40F07A	40F040E3	D64040F7	6140F361	F7F940F2	F37AF4F5	7A40F040
(80)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(120)	40404040	40404040	40404040	40404040	40404040	C1407E40	4DD3C4F1	604DE45D	406140F4	4BF5F6F3
(160)	C540F0F0	5D404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(200)	D3C4F140	7E40D3F1	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(240)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	77777777	77777777
(280)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(320)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(360)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(400)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(440)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(480)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(520)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(560)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(600)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(640)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(680)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(720)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(760)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(800)	004F0007	00030000	00000000	412A5EAA	4027CF02	004F0007	00030000	000F0000	41318EDB	4026820D
(840)	004F0007	00030000	001E0000	412E5087	40299EDC	004F0007	00030000	002D0000	412D59AC	4024D644
(880)	004F0007	00030001	00000000	412D254F	4029178E	004F0007	00030001	000F0000	412FC68D	402A459D
(920)	004F0007	00030001	001E0000	41313517	40265F1D	004F0007	00030001	002D0000	412D3BC0	4024CA1B
(960)	004F0007	00030002	00000000	412DE052	403A94C8	004F0007	00030002	000F0000	412A2CCB	40206DC6
(1000)	004F0007	00030002	001E0000	412E84E4	40254F05	004F0007	00030002	002D0000	412B89E2	403911B3
(1040)	004F0007	00030003	00000000	4130CC5D	402AB8D4	004F0007	00030003	000F0000	4130818F	402618DD
(1080)	004F0007	00030003	001E0000	4130818F	402618DD	004F0007	00030003	002D0000	412F30F0	402A0339
(1120)	004F0007	00030004	00000000	412CDA81	4028F575	004F0007	00030004	000F0000	412E84E4	40254F05
(1160)	004F0007	00030004	001E0000	41386548	402DED6A	004F0007	00030004	002D0000	413A52FE	4029C673
(1200)	004F0007	00030005	00000000	413B0685	402EFC6D	004F0007	00030005	000F0000	41350908	402C89C0
(1240)	004F0007	00030005	001E0000	41374907	4028AC1C	004F0007	00030005	002D0000	41385653	40290EB3
(1280)	004F0007	00030006	00000000	412E75EE	403AF3FD	004F0007	00030006	000F0000	4130FE3C	4022F3B0
(1320)	004F0007	00030006	001E0000	412F9230	4025BA67	004F0007	00030006	002D0000	412F8836	4030AFD7
(1360)	004F0007	00030007	00000000	412F7BBE	402A2478	004F0007	00030007	000F0000	412F5658	4025A2A5
(1400)	004F0007	00030007	001E0000	412E8EDD	40302F79	004F0007	00030007	002D0000	4130CC5D	402AB8D4
(1440)	004F0007	00030008	00000000	412BD4B0	40287D3A	004F0007	00030008	000F0000	412BD4B0	402436F1
(1480)	004F0007	00030008	001E0000	4129C90E	4027887B	004F0007	00030008	002D0000	412FCE07	4025D21B
(1520)	004F0007	00030009	00000000	412C1F7E	40289FB8	004F0007	00030009	000F0000	412CDA81	4028F575
(1560)	004F0007	00030009	001E0000	412F1A7F	40258AD3	004F0007	00030009	002D0000	412F5658	4025A2A5
(1600)	004F0007	0003000A	00000000	413322CD	403DD924	004F0007	0003000A	000F0000	412C068E	402121F5
(1640)	004F0007	0003000A	001E0000	412C8838	402480D0	004F0007	0003000A	002D0000	4131172B	40317A84
(1680)	004F0007	0003000B	00000000	412C6A4C	402F1042	004F0007	0003000B	000F0000	412A8B8C	4023ADF4
(1720)	004F0007	0003000B	001E0000	413267CA	402B6B78	004F0007	0003000B	002D0000	416D6E50	403FF9EE
(1760)	004F0007	0003000C	00000000	41489CEF	40341D3E	004F0007	0003000C	000F0000	4130BD67	40263056
(1800)	004F0007	0003000C	001E0000	4135E972	402CE798	004F0007	0003000C	002D0000	413EC405	402B562E
(1840)	004F0007	0003000D	00000000	41321CFC	402B4B33	004F0007	0003000D	000F0000	412FA125	402A350E
(1880)	004F0007	0003000D	001E0000	412F9230	4025BA67	004F0007	0003000D	002D0000	412CC410	4024994F
(1920)	004F0007	0003000E	00000000	412A13DC	40381A7B	004F0007	0003000E	000F0000	41325B53	40236F5B
(1960)	004F0007	0003000E	001E0000	412A5EAA	4027CF02	004F0007	0003000E	002D0000	4129E1FD	402DB3BD
(2000)	004F0007	0003000F	00000000	41243BC4	4024D030	004F0007	0003000F	000F0000	4127BD6C	404D1B58
(2040)	004F0007	0003000F	001E0000	412B98D8	40241E2F	004F0007	0003000F	002D0000	41339302	402BEB9B
(2080)	004F0007	00030010	00000000	41334834	402BCBB5	004F0007	00030010	000F0000	4131ACC7	40268DAB
(2120)	004F0007	00030010	001E0000	412C44E5	4028B0EC	004F0007	00030010	002D0000	412B89E2	40285A9E
(2160)	004F0007	00030011	00000000	412F5658	402A13DC	004F0007	00030011	000F0000	412B3F14	402837E5

(2200)	004F0007	00030011	001E0000	412DD15C	402506C0	004F0007	00030011	002D0000	41373A11	402D72F0
(2240)	004F0007	00030012	00000000	4130CC5D	403C6B01	004F0007	00030012	000F0000	412FBA15	4030C95A
(2280)	004F0007	00030012	001E0000	41299C2C	40234906	004F0007	00030012	002D0000	4125351E	402B1369
(2320)	004F0007	00030013	00000000	41264766	4025D68B	004F0007	00030013	000F0000	4123108D	4020642E
(2360)	004F0007	00030013	001E0000	41263870	4021D14A	004F0007	00030013	002D0000	412A8411	4027E090
(2400)	004F0007	00030014	00000000	412A13DC	4027ABCE	004F0007	00030014	000F0000	4126B020	40220614
(2440)	004F0007	00030014	001E0000	412AA978	4027F217	004F0007	00030014	002D0000	412B2128	4023EC79
(2480)	004F0007	00030015	00000000	4125B1CA	40258C51	004F0007	00030015	000F0000	41297E40	404ECA10
(2520)	004F0007	00030015	001E0000	412CC410	4024994F	004F0007	00030015	002D0000	41218B91	401FAE87
(2560)	004F0007	00030016	00000000	41206F4F	403141D8	004F0007	00030016	000F0000	412759AF	401F52F3
(2600)	004F0007	00030016	001E0000	412C6A4C	402F1042	004F0007	00030016	002D0000	412F5658	40309646
(2640)	004F0007	00030017	00000000	4131490A	403193A0	004F0007	00030017	000F0000	412EFC93	40257EE5
(2680)	004F0007	00030017	001E0000	41279F80	40226EB5	004F0007	00030017	002D0000	411FD9B3	402283CF

HEX DUMP OF cn1132

FILE 1 RECORD 30 1760 BYTES

(0)	00010030	77777777	E5D6E8C1	C7C5D960	F2404040	40C6D3E4	E740C6D6	D940E3C8	C540D7C5	D9C9D6C4
(40)	4040F861	40F361F7	F940F1F2	7A40F07A	40F040E3	D64040F8	6140F361	F7F940F2	F37AF4F5	7A40F040
(80)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(120)	40404040	40404040	40404040	40404040	40404040	C1407E40	4DD3C4F1	604DE45D	406140F4	4BF5F6F3
(160)	C540F0F0	5D404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(200)	D3C4F140	7E40D3F1	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(240)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	77777777	77777777
(280)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(320)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(360)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(400)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(440)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(480)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(520)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(560)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(600)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(640)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(680)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(720)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(760)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(800)	004F0008	0003000C	00000000	41114C6E	4016C03C	004F0008	0003000C	000F0000	4118BD74	4018D657
(840)	004F0008	0003000C	001E0000	411998E1	401BACD7	004F0008	0003000C	002D0000	41261588	401ED0E1
(880)	004F0008	0003000D	00000000	4125C0C0	40219C2E	004F0008	0003000D	000F0000	41220341	401FE6DA
(920)	004F0008	0003000D	001E0000	4129E1FD	402050F7	004F0008	0003000D	002D0000	415F295B	4030B639
(960)	004F0008	0003000E	00000000	41833340	40460D21	004F0008	0003000E	000F0000	4193C5BF	403832E3
(1000)	004F0008	0003000E	001E0000	417689B7	40365DD9	004F0008	0003000E	002D0000	417970C9	403C47C6
(1040)	004F0008	0003000F	00000000	4175EF21	403B675C	004F0008	0003000F	000F0000	41895626	403A84DA
(1080)	004F0008	0003000F	001E0000	419E6014	406CD846	004F0008	0003000F	002D0000	41928A7E	404A0898
(1120)	004F0008	00030010	00000000	41B02432	40489916	004F0008	00030010	000F0000	41C33175	4045C3C1
(1160)	004F0008	00030010	001E0000	421418AF	40621662	004F0008	00030010	002D0000	41EB6B90	404C9DF6
(1200)	004F0008	00030011	00000000	417C93AF	4037BBF8	004F0008	00030011	000F0000	41578B73	40332E58

D-45266
7/3/79 - 8/4/79

DUMP OF TAPE X410

INPUT TAPE X410 ON MT4
DATA INPUT H9 NF 9 FL 1 1 1 SR 9 1 1 SR 9 LAST 1

FILE 1 RECORD 1 LENGTH 2720BYTES

7/ 3/79 0: 0: 0 7/ 31/ 79 23:45: 0

(0)	00010060	77777777	E506E2C1	C7C5D260	F2404040	40C6D3E4	E740C6D6	D940E3C1	C540D7C5	D9C9D6C4
(40)	4040F761	40F361F7	F94040F0	7A40F07A	40F04053	D64040F7	6140F361	F7F940F2	F37AF4F5	7A40F040
(80)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(120)	40404040	40404040	40404040	40404040	40404040	C1407E40	4DD3C4F1	6D4DE45D	406140F4	4DE5E6E3
(160)	C540F0F0	5D404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(200)	D3C4F140	7E40D3F1	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(240)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	77777777	77777777
(280)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(320)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(360)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(400)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(440)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(480)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(520)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(560)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(600)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(640)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(680)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(720)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(760)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(800)	004F0007	00030000	00000000	412A5EAA	4027CF02	004F0007	00030000	000F0000	4131[illegible]ED3	4026[illegible]20D
(840)	004F0007	00030000	001E0000	412E5087	40299EDC	004F0007	00030000	002D0000	412D59AC	40240644
(880)	004F0007	00030001	00000000	412D254F	4029173E	004F0007	00030001	000F0000	412FC62D	402A459D
(920)	004F0007	00030001	001E0000	41313517	40265F1D	004F0007	00030001	002D0000	412D3BC0	4024CA1B
(960)	004F0007	00030002	00000000	412DE052	403A94C6	004F0007	00030002	000F0000	412A2CCB	40206DC6
(1000)	004F0007	00030002	001E0000	412E84E4	40254F05	004F0007	00030002	002D0000	412B89E2	403911B3
(1040)	004F0007	00030003	00000000	4130CC5D	402AB8D4	004F0007	00030003	000F0000	413081FF	402610DD
(1080)	004F0007	00030003	001E0000	413081FF	402610DD	004F0007	00030003	002D0000	412F30F0	402A0339
(1120)	004F0007	00030004	00000000	412CDA81	402BF575	004F0007	00030004	000F0000	412E84E4	40254F05
(1160)	004F0007	00030004	001E0000	41366548	402DED6A	004F0007	00030004	002D0000	413A52FE	4029C673
(1200)	004F0007	00030005	00000000	41380685	402EFC6D	004F0007	00030005	000F0000	4135090[illegible]	402C[illegible]9C0
(1240)	004F0007	00030005	001E0000	41374907	402BAC1C	004F0007	00030005	002D0000	41385653	4029DE83
(1280)	004F0007	00030006	00000000	412E75EE	403AF3FD	004F0007	00030006	000F0000	4130FE3C	4022F3B0
(1320)	004F0007	00030006	001E0000	412F9230	4025BA67	004F0007	00030006	002D0000	412F8836	4030AFD7
(1360)	004F0007	00030007	00000000	412F7BBE	402A2478	004F0007	00030007	000F0000	412F5658	4025A2A5
(1400)	004F0007	00030007	001E0000	412E8EDD	40302F79	004F0007	00030007	002D0000	4130CC5D	402AB8D4
(1440)	004F0007	00030008	00000000	412BD4B0	40287D3A	004F0007	00030008	000F0000	412BD4B0	402436F1
(1480)	004F0007	00030008	001E0000	4129C90E	40278E78	004F0007	00030008	002D0000	412FCE07	4025C21B
(1520)	004F0007	00030009	00000000	412C1F7E	40289F88	004F0007	00030009	000F0000	412CDA81	402BF575
(1560)	004F0007	00030009	001E0000	412F1A7F	4025BA03	004F0007	00030009	002D0000	412F5658	4025A2A5
(1600)	004F0007	0003000A	00000000	413322CD	403DD924	004F0007	0003000A	000F0000	412C068E	402121F5
(1640)	004F0007	0003000A	001E0000	412C4638	402480D0	004F0007	0003000A	002D0000	4131172B	40317A04
(1680)	004F0007	0003000B	00000000	412C6A4C	402F1042	004F0007	0003000B	000F0000	412A688C	4023ADF4
(1720)	004F0007	0003000B	001E0000	413267CA	402B6B78	004F0007	0003000B	002D0000	416D6E50	403FF9EE
(1760)	004F0007	0003000C	00000000	41409CEF	40341D3E	004F0007	0003000C	000F0000	4130BD67	40263056
(1800)	004F0007	0003000C	001E0000	4135E972	402CE798	004F0007	0003000C	002D0000	413EC405	4020562E
(1840)	004F0007	0003000D	00000000	41321CFC	402B4B33	004F0007	0003000D	000F0000	412FA125	402A350E
(1880)	004F0007	0003000D	001E0000	412F9230	4025BA67	004F0007	0003000D	002D0000	412CC410	4024994F
(1920)	004F0007	0003000E	00000000	412A13DC	4036[illegible]A78	004F0007	0003000E	000F0000	41325B53	40236F58
(1960)	004F0007	0003000E	001E0000	412A5EAA	4027CF02	004F0007	0003000E	002D0000	4129E1FD	402DE3BD
(2000)	004F0007	0003000F	00000000	41243EC4	40240030	004F0007	0003000F	000F0000	4127BD6C	404D185F
(2040)	004F0007	0003000F	001E0000	41289808	40241E2F	004F0007	0003000F	002D0000	41339302	402BE098
(2080)	004F0007	00030010	00000000	41334834	402BC895	004F0007	00030010	000F0000	4131ACC7	4026[illegible]DAB
(2120)	004F0007	00030010	001E0000	412C44E5	402BB0EC	004F0007	00030010	002D0000	412B89E2	402B5A9E
(2160)	004F0007	00030011	00000000	412F5658	402A13DC	004F0007	00030011	000F0000	41283F14	402837E5
(2200)	004F0007	00030011	001E0000	412DD15C	402506C0	004F0007	00030011	002D0000	41373A11	402D72F0
(2240)	004F0007	00030012	00000000	4130CC5D	403C6B01	004F0007	00030012	000F0000	412FBA15	4030C95A

(2320)	004F0007	00030013	00000000	41254766	402596[illegible]	004F0007	00030013	000F0000	412510[illegible]	4[illegible]6428
(2360)	004F0007	00030013	001E0000	41263[illegible]70	40210148	004F0007	00030013	002D0000	412[illegible]411	4027E0[illegible]
(2400)	004F0007	00030014	00000000	412A13DC	4027ABCE	004F0007	00030014	000F0000	4126E020	40220614
(2440)	004F0007	00030014	001E0000	412A5978	4027E217	004F0007	00030014	002D0000	412E212[illegible]	4023[illegible]C7[illegible]
(2480)	004F0007	00030015	00000000	4125E1CA	40258C51	004F0007	00030015	000F0000	41297E40	40[illegible]C[illegible]10
(2520)	004F0007	00030015	001E0000	412CC410	4024994F	004F0007	00030015	002D0000	4121[illegible]891	401[illegible]7
(2560)	004F0007	00030016	00000000	4126F4F	403141D8	004F0007	00030016	000F0000	412759AF	401F52F3
(2600)	004F0007	00030016	001E0000	412C6A4C	402F1042	004F0007	00030016	002D0000	412E565[illegible]	403C[illegible]646
(2640)	004F0007	00030017	00000000	4131490A	403193A0	004F0007	00030017	000F0000	412[illegible]FC93	40257E[illegible]
(2680)	004F0007	00030017	001E0000	41279F80	40226EB5	004F0007	00030017	002D0000	411FD983	4022[illegible]3CF

FILE 1 RECORD 30 LENGTH 1760BYTES

81/31/79 12:0:0 8/31/79 23:45:0

(0)	000100[illegible]	777[illegible]777	[illegible]D6E[illegible]C1	[illegible]7C5D[illegible]60	F2[illegible]4040	40C6D3E[illegible]	[illegible]740[illegible]6D[illegible]	D[illegible]E3C[illegible]	C5[illegible]07[illegible]	[illegible]C[illegible]C4
(40)	4040F[illegible]61	40F361F7	F940F1F2	7A40F07A	40F040E3	D64040F8	6140F361	F7F940F2	F37AF4F5	7A40F040
(80)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(120)	40404040	40404040	40404040	40404040	40404040	C1407E40	4003C4F1	6040E450	406140E4	40E5F6F3
(160)	C540F0F0	50404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(200)	D3C4F140	7E40D3F1	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(240)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	77777777	77777777
(280)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(320)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(360)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(400)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(440)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(480)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(520)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(560)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(600)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(640)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(680)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(720)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(760)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(800)	004F0008	0003000C	00000000	41114C6E	4016C03C	004F0008	0003000C	000F0000	411[illegible]D074	401[illegible]0657
(840)	004F0008	0003000C	001E0000	411998E1	401BACD7	004F0008	0003000C	002D0000	412615[illegible]	401ED9E1
(880)	004F0008	0003000D	00000000	4125C0C0	40219C2E	004F0008	0003000D	000F0000	41220341	401FF6DA
(920)	004F0008	0003000D	001E0000	412951ED	402050E7	004F0008	0003000D	002D0000	415E295B	40309632
(960)	004F0008	0003000E	00000000	41833340	40460021	004F0008	0003000E	000F0000	4193C5BF	403[illegible]32E3
(1000)	004F0008	0003000E	001E0000	417629D7	40365DD9	004F0008	0003000E	002D0000	41787009	403C47C6
(1040)	004F0008	0003000F	00000000	4175EF21	403B675C	004F0008	0003000F	000F0000	41695626	403A[illegible]4DA
(1080)	004F0008	0003000F	001E0000	419E6014	406CD846	004F0008	0003000F	002D0000	4192[illegible]A7E	404A0[illegible]8
(1120)	004F0008	00030010	00000000	41802432	40489916	004F0008	00030010	000F0000	41C33175	4045C3C1
(1160)	004F0008	00030010	001E0000	42141[illegible]AF	40621662	004F0008	00030010	002D0000	41EF6B90	4040ADE6
(1200)	004F0008	00030011	00000000	417C93AF	4037BBF8	004F0008	00030011	000F0000	4157[illegible]B73	40332[illegible]5[illegible]
(1240)	004F0008	00030011	001E0000	4157F42D	402ED4AA	004F0008	00030011	002D0000	4149ED8E	402[illegible]F44
(1280)	004F0008	00030012	00000000	413A70E6	402EC0B8	004F0008	00030012	000F0000	412FAB05	401FE86F
(1320)	004F0008	00030012	001E0000	41211DDA	401CBC6A	004F0008	00030012	002D0000	41243BC4	4020[illegible]040
(1360)	004F0008	00030013	00000000	41223F19	4020020E	004F0008	00030013	000F0000	41193A21	4019149E
(1400)	004F0008	00030013	001E0000	4110A7DC	4014610C	004F0008	00030013	002D0000	41109[illegible]E6	40164[illegible]F4
(1440)	004F0008	00030014	00000000	4113ACD7	40162641	004F0008	00030014	000F0000	41116F57	40140980
(1480)	004F0008	00030014	001E0000	41102136	4015F808	004F0008	00030014	002D0000	4111307[illegible]	40146BC9
(1520)	004F0008	00030015	00000000	40F4AC5F	40138GED	004F0008	00030015	000F0000	40DC[illegible]C6A	401450[illegible]C
(1560)	004F0008	00030015	001E0000	40D69F21	40125FA4	004F0008	00030015	002D0000	40E9C5AA	40131636
(1600)	004F0008	00030016	00000000	40DBBDDB	4016AA0F	004F0008	00030016	000F0000	41101CF0	4012[illegible]C36
(1640)	004F0008	00030016	001E0000	4114D[illegible]0F	4016CC3F	004F0008	00030016	002D0000	41141A3E	401[illegible]6BD
(1680)	004F0008	00030017	00000000	412113E1	401F75CF	004F0008	00030017	000F0000	411AFFF1	4010C05C
(1720)	004F0008	00030017	001E0000	411CEDA7	401AD683	004F0008	00030017	002D0000	411[illegible]895	401[illegible]19[illegible]C

FILE	INPUT RECS.	DATA RECORDS INPUT	MAX. SIZE	READ ERROR SUMMARY PERM	ZERO B	SHORT	UNDEF.	INPUT RETRIES #RECS.	TOTAL#
1	32	31	2720	0	4	0	0	4	4

FILE 9 RECORD 1 LENGTH 2720BYTES

7/3/79 0:0:0 7/4/79 7:0:0

(0)	000600[illegible]0	777[illegible]777	E5D6E[illegible]C1	C7C5D960	F2404040	40C6D3E4	E740C6D6	D[illegible]40E3C[illegible]	C5[illegible]0D7C5	[illegible]C4
(40)	4040F761	40F361F7	F94040F0	7A40F07A	40F040E3	D64040F7	6140F461	F7F94040	F77A40F0	7A40F040
(80)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040

8/ 3/79 10: 0: 0 8/ 3/79 2 3: 0 : 0

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(    0)  [illegible]
(   40)  4040F861 40F361F7 F240F1F0 7A40F07A 40F040E3 D64040F8 6140F361 F7F740F2 F37A40F0 7A40F040
(   80)  40404040 40404040 40404040 40404040 40404040 40404040 40404040 40404040 40404040 40404040
(  120)  40404040 40404040 40404040 40404040 40404040 C1407E40 F146F2F0 F7C540F0 F040F040 F240F0F0
(  160)  F1C540F0 F04004E5 E5400709 D6E3D6D5 404040C6 D3E4E740 40404040 40404040 40404040 40404040
(  200)  40404040 40404040 40404040 40404040 40404040 40404040 40404040 40404040 40404040 40404040
(  240)  40404040 40404040 40404040 40404040 40404040 40404040 40404040 40404040 C2407E40 F040F0F0
(  280)  F1C540F0 F0406040 F340F3F0 F9C540F0 F040D485 E540D7D9 D6E3D6D5 404040C6 D3E4E740 40404040
(  320)  40404040 40404040 40404040 40404040 40404040 40404040 40404040 40404040 40404040 40404040
(  360)  40404040 40404040 40404040 40404040 40404040 40404040 40404040 40404040 40404040 40404040
(  400)  40404040 C3407E40 F340F3F0 F9C540F0 F0406040 F34BF9F8 F4C540F0 F04004E5 E540D7D9 D6E3D6D5
(  440)  404040C6 D3E4E740 40404040 40404040 40404040 40404040 40404040 40404040 40404040 40404040
(  480)  40404040 40404040 40404040 40404040 40404040 40404040 40404040 40404040 40404040 40404040
(  520)  40404040 40404040 40404040 40404040 C4407E40 F34BF9F8 F4C540F0 F0406040 F44BF7F6 F1C540F0
(  560)  F040D485 E540D7D9 D6E3D6D5 404040C6 D3E4E740 40404040 40404040 40404040 40404040 40404040
(  600)  40404040 40404040 40404040 40404040 40404040 40404040 40404040 40404040 40404040 40404040
(  640)  40404040 40404040 40404040 40404040 40404040 40404040 40404040 C5407E40 F44BF7F6 F1C540F0
(  680)  F0406040 F64BF4F8 F6C540F0 F040D485 E540D7D9 D6E3D6D5 404040C6 D3E4E740 40404040 40404040
(  720)  40404040 40404040 40404040 40404040 40404040 40404040 40404040 40404040 40404040 40404040
(  760)  40404040 40404040 40404040 40404040 40404040 40404040 40404040 40404040 40404040 40404040
(  800)  004F0008 0003000A 00000000 4039995E 3FAB2254 40116B45 3F2448C2 3F249EBD 3F124F5E 3F1FC992
(  840)  3EFE5C90 00000000 00000000 00000000 00000000 004F0008 0003000B 00000000 4020C8E7 3F6D60A8
(  880)  3FE687B3 3F13F4B4 3F1A4200 3ED24000 3F16D180 3EB68C68 3E523CE1 3E3A26A3 3E2D9359 3E2D9359
(  920)  004F0008 0003000C 00000000 4024C8F6 3F75B646 3FDEF7AE 3F1BEEF5 3F1458C0 3EEDF45E 3F172DF7
(  960)  3EBC6FB8 00000000 00000000 00000000 00000000 004F0008 0003000D 00000000 4038C538 3F9172D7
( 1000)  3FFCBA86 3F109463 3F5083FA 3F173E2A 3F174D6B 3EBA6B58 3E7DF8F5 3E48BAF1 00000000 00000000
( 1040)  004F0008 0003000E 00000000 405EB349 3FC2008E 401A4EBA 3F276C3D 3F5D06C2 3F19C006 3F2B70CE
( 1080)  3F10702E 3F10CE39 3E6DB26B 00000000 00000000 004F0008 0003000F 00000000 4050A55B 3FC98435
( 1120)  4019251D 3F2B621B 3F5AAA3F 3F1CA869 3EFBE712 3EB21F41 3E7178E 3E503E61 3E3EE404 3E3EE404
( 1160)  004F0008 00030010 00000000 4080BC1E 3FEC4536 403199AF 3F358AC2 3FC33157 3F2709DE 3F733E3D
( 1200)  3F1BF357 3F33EAB4 3EC9777F 3ED8A2C7 3E6C5163 004F0008 00030011 00000000 4040DDE5 3F9E4600
( 1240)  401956BC 3F262387 3F5370BD 3F1C1650 3F3655C5 3F121C97 3F183296 3E89BC36 00000000 00000000
( 1280)  004F0008 00030012 00000000 4034D195 3F8ED908 40134A82 3F2148D9 3F685719 3F1AF0C6 3F1C2878
( 1320)  3EC143D8 3E5710CC 3E3D9090 00000000 00000000 004F0008 00030013 00000000 402F2F3B 3F257538
( 1360)  3FC8667F 3F1AB530 3F3D2854 3F1463C6 3F10816A 3ED31FD6 3EAA23D6 3E5511E0 3E5E4A53 3E42AC60
( 1400)  004F0008 00030014 00000000 4015F618 3F57D860 3F85D7DD 3F14E71D 3F25F5DE 3EF7F4D8 3E15F8FD
( 1440)  3EAFC7E8 3E9E60C6 3E4F3063 00000000 00000000 004F0008 00030015 00000000 40106D1D 3F46DE95
( 1480)  3F6F3F0E 3F1598SE 3F193CF8 3EC9E7C0 3F1B6423 3EC3FEC5 3E4EF950 3E37D7CD 00000000 00000000
( 1520)  004F0008 00030016 00000000 4021951E 3F7009F6 3F83F5D2 3F156822 3F28618F 3F107C4A 3F230F69
( 1560)  3EE503F4 00000000 00000000 3E2EAF3C 3E2EAF3C 004F0008 00030017 00000000 4013FC44 3F668965
( 1600)  3FA1247F 3F17C259 3F36504E 3F1333E9 3E5E5088 3E5E50B8 3F7F7775 3E4997C7 00000000 00000000
```

FILE	INPUT RECS.	DATA RECORDS INPUT	MAX. SIZE	READ ERROR SUMMARY PERM	ZERO B	SHORT	UNDEF.	INPUT RETRIES #RECS.	TOTAL#
9	21	22	2720	0	3	0	0	3	4

EOJ DUMP STOPPED AFTER FILE 9 # OF PERMANENT READ ERRORS 0

START TIME 07/14/81 19:50:14 STOP TIME 07/14/81 19:51:05