

#409

IMP H & J

HOURLY AVERAGED SOLAR PLASMA
72-073A-02A
73-078A-02A

1-2 MINUTE RESOLUTION PLASMA PARAMETER DATA
73-078A-02G

FINE RESOLUTION PLASMA DATA FROM MIT
(1-MIN PLASMA PARAMETER)
73-078A-03L

Table of Contents

1. Introduction
2. Errata/Change Log
3. LINKS TO RELEVANT INFORMATION IN THE ONLINE NSSDC
INFORMATION SYSTEM
4. Catalog Materials
 - a. Associated Documents
 - b. Core Catalog Materials

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 This inventory information is now no longer maintained in the DSCs, but is now managed in the inventory part of the NSSDC information system.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

IMP-H & J

HOURLY AVG. SOLAR PLASMA
INTERPLANETARY HOURLY AVG.

72-073A-02A SPHE-00517
73-078A-02A SPHE-00698

THESE DATA SETS HAVE BEEN RESTORED. THERE WERE ORIGINALLY FIVE 9-TRACK 6250 BPI TAPES, WRITTEN IN EBCDIC AND ONE TAPE THAT WAS ASSIGNED TO FILES 2-26 THAT WERE RECEIVED ELECTRONICALLY. THERE IS ONE RESTORED TAPE WRITTEN IN ASCII. THE RESTORED TAPE WAS VAX LABELED SO THAT ALL THE DATA WOULD FIT ON ONE TAPE. THE DR TAPE IS A 3480 CARTRIDGE AND THE DS TAPE IS 9-TRACK, 6250 BPI. FILE ONE IS IMP-H DATA AND FILES 2-27 ARE IMP-J DATA. THE ORIGINAL TAPES WERE CREATED ON AN IBM 360 COMPUTER AND WERE RESTORED ON AN IBM 9021 COMPUTER. THE DR AND DS NUMBER ALONG WITH THE CORRESPONDING D NUMBERS AND TIME SPANS ARE AS FOLLOWS:

DR#	DS#	D#	FILES	TIME SPAN
DR004836	DS004836	DD030506	1	01/03/76 - 01/24/77 (IMP-H)
		DD109569	2-27	11/04/73 - 11/29/98 (IMP-J)

***!! IMPORTANT INFORMATION !!** As of October 31, 1996 the North/South flow angle corrections have NOT yet been done for the hourly average files!

Here are some notes about the content of the hourly average subsets. Please note that these averages are only for SOLAR WIND data.

1) Each averaged parameter consists of three columns of information. The first column is the average value, the second is the standard deviation (std. dev.) of that average, and the third is the number of individual data points (# pts.) used to calculate that average. Because different parameters are calculated using slightly different assumptions, there may be variations in the number of points used for the various averages in an hour. The averages were calculated from fine resolution parameters that are based on a convected, isotropic Maxwellian model.

2) These are only averages of our 'best' parameters. A value of 0. means that we had no values of that parameter for that hour. If you're desperate, we can (after some discussion) give you less accurate parameters for specific times, but caveat emptor...

3) We use the convention Jan. 1 = DOY 1. Decimal times are the middle of each hour. Please note that the decimal year is double precision, e.g. 1994.xxxxxxx where xxxxxxx is fraction of year.

4) The velocity coordinates are in GSE, meaning +x toward Sun, +z towards the North, perpendicular to the (Earth's) ecliptic, y for a right-hand system (+y in the direction opposite to Earth's motion). Everything is km/s. Effects due to Earth's motion around the Sun were removed from the values before averaging. It is important to note that while for each data point, $\text{speed} = \sqrt{V_x^2 + V_y^2 + V_z^2}$, that is NOT true for each hour's average. Therefore, the average speed may not (is probably not) equal to the square root of the squares of the components.

5) Thermal speed is the most probable thermal speed (i.e., the square root of $[2kT/m(\text{proton})]$). To convert thermal speed to temperature in eV, multiply 0.0052 by the square of the thermal speed.

6) The angles are in degrees. Azimuth is E/W, with each meaning 'from the (E/W),' while elevation is N/S with the same meaning. For signs, positive azimuth angle means flow from the W; positive elevation angle means flow from the S. If we don't get good angles, you don't get any velocity components. Fine resolution data for the speed, velocity components and angles are not available in these cases. The aberration in velocity due to Earth's motion around the Sun was removed from the data values before averaging.

7) The FORTRAN format statement used to write this file was:

```
format (3I4,f16.7,8(3x,3e12.3))
```

8) For papers and presentations using these data, please acknowledge that you received them from the MIT Space Plasma Physics Group. Please feel free to contact us if you have questions about any parameters.

9) Please send us a copy of papers, presentations, et cetera using these data.

10) If you have any questions, please contact

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REQ. AGENT
CMP
RSH
DHG

RAND NO.
RC8205

ACQ. AGENT
DJH
DAC

IMP H & J

HOURLY AVERAGED SOLAR PLASMA DATA

72-073A-02A (IMP H)

73-078A-02A (IMP J)

This data set consists of ⁵ tapes. D-30506 is ⁹ track, ⁶²⁵⁰ ~~800~~ BPI, BCD with ^{ASCII} ~~EBCDIC~~ 2 files, a logical recordsize of 106 bytes and blocksize of 10600 bytes. The tape contains data from both IMP H (file 2) and IMP J (file 1). The remaining tapes in this data set are 9 track, 6250 bpi, EBCDIC, with one file, logical record length of 430 bytes, and blocksize of 4300 bytes. The 'D' and 'C' numbers and time spans follow.

<u>D#</u>	<u>C#</u>	<u>Time Span</u>
D-30506	C-19498	01/01/76 - 03/19/77 (File 1/IMP J) 01/03/76 - 01/24/77 (File 2/IMP H)
D-64143	C-24185	12/28/81 - 07/13/84
D-73713	C-25931	02/19/83 - 11/14/86
D-76480	C-26667	11/14/86 - 10/18/87
D-79317	C-27101	10/19/87 - 11/28/88

The tape characteristics for D-30506, C-19498:

TRACKS = ~~8~~⁹ TRACK
 DENSITY = ~~800~~ BPI 6250
 RECFM = FB
 LRECL = 106 BYTES
 BLKSIZE = 10600 BYTES
 TRTCH = ET

The tape characteristics for D-64143:

TRACKS = 9 TRACK
 DENSITY = 6250 BPI
 RECFM = FB
 LRECL = 430 BYTES
 BLKSIZE = 4300 BYTES

The tape characteristics for C-24185:

TRACKS = 9 TRACK
 DENSITY = 1600 BPI
 RECFM = FB
 LRECL = 430 BYTES
 BLKSIZE = 4300 BYTES

Format is as follows: (GOOD ONLY FOR D-30506)

ITEM	TYPE	VARIABLE
1	A4	S/C NAME (IMP-7 OR IMP-8)
2	I4	YEAR
3	I4	DAY OF YEAR (JAN. 1 = DAY 1)
4	I4	HOUR (0 - 23)
5	F10.3	SPEED
6	F10.3	
7	F10.3	
8	F10.3	DENSITY
9	F10.3	
10	F10.3	
11	F10.3	THERMAL SPEED
12	F10.3	
13	F10.3	

Average
 Standard deviation
 Number of values averaged

"

"

IMP Hourly Average MIT Plasma Tape Format
73-078A-02A

ITEM	TYPE	VARIABLE	UNITS
1	A4	S/C Name	----
2	I4	Year (i.e. 1974)	----
3	I4	Day (Jan 1 = day 1)	----
4	I4	Hour (0 to 23)	----
5	F10.3	Bulk Speed	Average km/sec
6	F10.3	"	Standard Deviation km/sec
7	F10.3	"	Number of values averaged ----
8	F10.3	Density	Average cm^{-3}
9	F10.3	"	Standard Deviation cm^{-3}
10	F10.3	"	Number of values averaged ----
11	F10.3	Thermal	Average km/sec
12	F10.3	Speed	Standard Deviation km/sec
13	F10.3	"	Number of values averaged ----
14	F10.3	Flux	Average $\text{cm}^{-2}\text{sec}^{-1}$
15	F10.3	"	Standard Deviation $\text{cm}^{-2}\text{sec}^{-1}$
16	F10.3	"	Number of values averaged ----
17	F10.3	Thermal	Average ----
18	F10.3	Speed/Bulk	Standard Deviation ----
19	F10.3	Speed	Number of values averaged ----
20	F10.3	E-W Angle	Average degrees
21	F10.3	(+ from	Standard Deviation degrees
22	F10.3	West)	Number of values averaged ----
23	F10.3	N-S Angle	Average degrees
24	F10.3	(+ from	Standard Deviation degrees
25	F10.3	South)	Number of values averaged ----
26	F10.3	V_t	Average km/sec
27	F10.3	"	Standard Deviation km/sec
28	F10.3	"	Number of values averaged ----
29	F10.3	V_n	Average km/sec
30	F10.3	"	Standard Deviation km/sec
31	F10.3	"	Number of values averaged ----
32	F12.3	(-45,45)	Average $\#/\text{cm}^2\text{sec}$
33	F12.3	S/C	Standard Deviation $\#/\text{cm}^2\text{sec}$
34	F12.3	Longitude	Number of values averaged ----
35	F12.3	(45,135)	Average $\#/\text{cm}^2\text{sec}$
36	F12.3	S/C	Standard Deviation $\#/\text{cm}^2\text{sec}$
37	F12.3	Longitude	Number of values averaged ----
38	F12.3	(135,-135)	Average $\#/\text{cm}^2\text{sec}$
39	F12.3	S/C	Standard Deviation $\#/\text{cm}^2\text{sec}$
40	F12.3	Longitude	Number of values averaged ----
41	F12.3	(-135,-45)	Average $\#/\text{cm}^2\text{sec}$
42	F12.3	S/C	Standard Deviation $\#/\text{cm}^2\text{sec}$
43	F12.3	Longitude	Number of values averaged ----

Flux
in 4
Sectors

INPUT PARAMETERS ARE: ED FL=1=1

550045

IMP-8 13-078A-02A

D-64143 C-24185

12/28/81 - 7/13/84

TAPE NO. 1 FILE NO. 1
RECORD 1 LENGTH 4300
IMP81981 362 16 0.388E+03 0.308E+02 0.270E+02 0.134E+02 0.375E+01 0.270E+02 0.471E+02 0.159E+02 0.270E+02 0.501E+04 0.141E+04 0.270E+02 0.121E+00 0.401E-01 0.270E+02 0.714E+01 0.840E+01 0.270E+02 0.958E+01 0.744E+01 0.270E+02 0.463E+02 0.560E+02 0.270E+02 0.621E+02 0.495E+02 0.270E+02 0.148E+0
9 0.642E+09 0.460E+02 0.815E+07 0.549E+08 0.460E+02 0.815E+07 0.549E+08 0.460E+02
0.857E+07 0.576E+08 0.460E+02 IMP81981 362 17 0.390E+03 0.791E+01 0.340E+02 0.127E+02 0.163E+0
1 0.340E+02 0.481E+02 0.939E+01 0.340E+02 0.491E+04 0.667E+03 0.340E+02 0.123E+00 0.243E-01 0.340E+
02 0.479E+01 0.182E+01 0.340E+02 0.619E+01 0.239E+01 0.340E+02 0.324E+02 0.126E+02 0.340E+02 0.418E
+02 0.160E+02 0.340E+02 0.132E+09 0.502E+09 0.370E+02 0.101E+08 0.612E+08 0.370E+02 0
.306E+08 0.186E+09 0.370E+02 0.106E+08 0.643E+08 0.370E+02 IMP81981 362 18 0.408E+03 0.10
2E+02 0.350E+02 0.818E+01 0.159E+01 0.350E+02 0.457E+02 0.527E+01 0.350E+02 0.329E+04 0.613E+03 0.3
50E+02 0.112E+00 0.134E-01 0.350E+02 0.536E+01 0.102E+01 0.350E+02 0.685E+01 0.259E+01 0.350E+02-0.
378E+02 0.726E+01 0.350E+02 0.485E+02 0.185E+02 0.350E+02 0.495E+08 0.695E+08 0.360E+02 0.6
44E+05 0.137E+03 0.360E+02 0.644E+05 0.137E+03 0.360E+02 0.676E+05 0.150E+03 0.360E
+02 IMP81981 362 19 0.417E+03 0.125E+02 0.300E+02 0.660E+01 0.123E+01 0.300E+02 0.518E+02 0.156E+02
0.300E+02 0.271E+04 0.563E+03 0.300E+02 0.124E+00 0.351E-01 0.300E+02 0.370E+01 0.202E+01 0.300E+0
2 0.847E+01 0.456E+01 0.300E+02-0.265E+02 0.145E+02 0.300E+02 0.614E+02 0.333E+02 0.300E+02 0.211
E+09 0.103E+10 0.320E+02 0.354E+08 0.200E+09 0.320E+02 0.117E+08 0.658E+08 0.320E+0
2 0.123E+08 0.691E+08 0.320E+02 IMP81981 362 21 0.416E+03 0.105E+02 0.700E+01 0.633E+01 0.158
E+01 0.700E+01 0.406E+02 0.138E+02 0.700E+01 0.259E+04 0.643E+03 0.700E+01 0.977E-01 0.338E-01 0.70
0E+01 0.391E+01 0.194E+01 0.700E+01 0.787E+01 0.541E+01 0.700E+01-0.278E+02 0.136E+02 0.700E+01 0.5
69E+02 0.399E+02 0.700E+01 0.309E+08 0.461E+07 0.700E+01 0.644E+05 0.108E+03 0.700E+01
0.644E+05 0.108E+03 0.700E+01 0.677E+05 0.691E+02 0.700E+01 IMP81981 362 22 0.418E+03 0
.709E+01 0.140E+02 0.634E+01 0.152E+01 0.140E+02 0.418E+02 0.134E+02 0.140E+02 0.263E+04 0.635E+03
0.140E+02 0.997E-01 0.309E-01 0.140E+02 0.328E+01 0.195E+01 0.140E+02 0.519E+01 0.495E+01 0.140E+02
-0.237E+02 0.141E+02 0.140E+02 0.377E+02 0.363E+02 0.140E+02 0.310E+09 0.116E+10 0.170E+02
0.220E+08 0.903E+08 0.170E+02 0.151E+08 0.619E+08 0.170E+02 0.603E+08 0.248E+09 0.1
70E+02 IMP81981 362 23 0.420E+03 0.157E+02 0.170E+02 0.742E+01 0.115E+01 0.170E+02 0.398E+02 0.708E
+01 0.170E+02 0.310E+04 0.531E+03 0.170E+02 0.946E-01 0.164E-01 0.170E+02 0.486E+01 0.141E+01 0.170
E+02 0.127E+01 0.543E+01 0.170E+02-0.354E+02 0.104E+02 0.170E+02 0.938E+01 0.395E+02 0.170E+02 0.
342E+08 0.400E+07 0.170E+02 0.644E+05 0.143E+03 0.170E+02 0.644E+05 0.143E+03 0.170
E+02 0.676E+05 0.111E+03 0.170E+02 IMP81981 363 0 0.414E+03 0.123E+02 0.200E+01 0.877E+01 0.
228E+01 0.200E+01 0.431E+02 0.274E+01 0.200E+01 0.364E+04 0.105E+04 0.200E+01 0.104E+00 0.354E-02 0
.200E+01 0.221E+01 0.184E+01 0.200E+01 0.284E+01 0.216E+01 0.200E+01-0.158E+02 0.129E+02 0.200E+01
0.207E+02 0.162E+02 0.200E+01 0.374E+08 0.793E+07 0.200E+01 0.644E+05 0.640E+02 0.200E+
01 0.644E+05 0.640E+02 0.200E+01 0.676E+05 0.0 0.200E+01 IMP81981 363 7 0.576E+0
3 0.961E+01 0.240E+02 0.194E+02 0.242E+01 0.240E+02 0.902E+02 0.160E+02 0.240E+02 0.111E+05 0.143E+
04 0.240E+02 0.157E+00 0.277E-01 0.240E+02 0.273E+01 0.189E+01 0.240E+02 0.786E+01 0.191E+01 0.240E
+02-0.270E+02 0.188E+02 0.240E+02 0.785E+02 0.187E+02 0.240E+02 0.470E+09 0.219E+10 0.370E+02
0.137E+08 0.832E+08 0.370E+02 0.101E+08 0.612E+08 0.370E+02 0.107E+08 0.643E+08
0.370E+02 IMP81981 363 11 0.606E+03 0.349E+01 0.180E+02 0.194E+02 0.697E+00 0.180E+02 0.650E+02 0.8
68E+01 0.180E+02 0.117E+05 0.433E+03 0.180E+02 0.107E+00 0.145E-01 0.180E+02-0.239E+01 0.644E+00 0.
180E+02 0.376E+01 0.159E+01 0.180E+02 0.252E+02 0.683E+01 0.180E+02 0.397E+02 0.168E+02 0.180E+02
0.117E+09 0.515E+07 0.180E+02 0.644E+05 0.878E+02 0.180E+02 0.644E+05 0.878E+02 0.
180E+02 0.676E+05 0.0 0.180E+02

TAPE NO. 1 FILE NO. 1
RECORD 772 LENGTH 860
IMP81984 195 6 0.430E+03 0.832E+01 0.700E+01 0.426E+02 0.320E+01 0.700E+01 0.393E+02 0.304E+01 0.
700E+01 0.183E+05 0.124E+04 0.700E+01 0.914E-01 0.672E-02 0.700E+01-0.256E+01 0.102E+01 0.700E+01-0
.789E+00 0.182E+01 0.700E+01 0.193E+02 0.777E+01 0.700E+01-0.590E+01 0.138E+02 0.700E+01 0.235E+0
9 0.139E+09 0.800E+01 0.646E+05 0.726E+02 0.800E+01 0.646E+05 0.726E+02 0.800E+01
0.678E+05 0.593E+02 0.800E+01 IMP81984 195 7 0.427E+03 0.799E+01 0.180E+02 0.429E+02 0.452E+0
1 0.180E+02 0.517E+02 0.728E+01 0.180E+02 0.183E+05 0.211E+04 0.180E+02 0.121E+00 0.157E-01 0.180E+
02-0.202E+01 0.220E+01 0.180E+02-0.374E+00 0.284E+01 0.180E+02 0.150E+02 0.163E+02 0.180E+02-0.289E
+01 0.209E+02 0.180E+02 0.181E+09 0.159E+08 0.180E+02 0.646E+05 0.176E+03 0.180E+02 0
.646E+05 0.176E+03 0.180E+02 0.678E+05 0.164E+03 0.180E+02

***** JOB DONE.
\$WEO LPS

D-30506

Trk, 800, BCD, 2 files
Imp. 7 + 8

15

YR 1 DAY - Hrs

[illegible]

REQ. AGENTDHG
SAR
SARRAND NO.V0309
V0348
V0352ACQ. AGENTDAC
JHK
JHK

IMP J

1-2 MINUTE RESOLUTION PLASMA PARAMETER DATA

73-078A-02G

SPHE-00442

This data set consists of five tapes, created on an IBM 360. The format is 9-track, 6250 BPI, ASCII. They have one file each. The 'D' and 'C' numbers and time span are as follows:

<u>D#</u>	<u>C#</u>	<u>TIME SPAN</u>
D-68313	C-25075	10/31/73 - 02/20/75
D-74124	C-26187	01/06/77 - 04/11/78
D-74123	C-26186	04/12/78 - 09/02/82
D-74125	C-26188 —	02/17/83 - 12/10/85
D-74596	C-26284 —	12/11/85 - 10/18/87
D-79751	C-27527	10/19/87 - 05/16/89

NOTE: THIS DATASET (73-078A-02G) HAS FULL ORBIT COVERAGE; IT DOES NOT CONTAIN SOLAR WIND TIMES ONLY.

September 1986

IMP TAPE FORMAT DESCRIPTION

Type of Tape: Spectrum Analysis Tape (SPAT)

Content: Fine time resolution plasma parameters for IMP 8. Only tracking mode, non-tracking mode or acquisition mode spectra are used.

Origin: Generated by program IMPANAL with a formatted write using DD UNIT=T6250,LABEL=(,BLP),DCB=(BLKSIZE=9500,LRECL=190, RECFM=FB,OPTCD=Q)

Format: 9 track; odd parity; 6250 BPI; written in ASCII.

1. Tape terminates with a double end of file; there is no internal file structure.
2. There are 50 logical records per tape block; each block is 9500 bytes long.
3. Each logical record is 23 items (190 bytes) long (written in 8I5, 15E10.3 format):

Item	Name	Description
1	MODE	analyzed spectrum flag (1 = AQM, 2 = TM, 3 = NTM)
2	IYR	4 digit year
3	IDOY	day of year (Jan. 1 = 1)
4	IHR	hour of day (0 to 23)
5	IMIN	minute of hour (0 to 59)
6	ISEC	second of minute (0 to 59)
7	IMP	spacecraft number (7 or 8)
8	ITYP	spectrum type (1 = Tracking Mode Spectrum, 3 = Non-Tracking Mode, 4 = Acquisition Mode Spectrum)
9	FLUXS	(or "VINT") flux from (-45, 45) s/c longitude
10	VFIT	bulk speed in s/c frame from either 3 point fit
11	VEST	to Maxwellian or method of moments (see IMPANAL) (at M.I.T. we generally use the fits)
12	FLUXY	(or "WINT") flux from (45, 135) s/c longitude
13	WFIT	thermal speed (ref. VFIT)
14	WEST	
15	FLUXAS	(or "DINT") flux from (135, -135) s/c longitude
16	DFIT	density (ref. VFIT)
17	DEST	

Item	Name	Description
18	FLUXAY	(or "AINT") flux from (-135, -45) s/c longitude
19	ALFRAC	(or "AFIT") = + 100.0; alpha fraction; ratio of alpha current to proton peak current
20	AEST	N/S flow angle (positive from south) using nominal spin axis orientation
21	PEAK	(or "BINT") 4 digit peak flag (see IMPANAL)
22	BFIT	E/W flow angle (positive from west) (ref. VFIT)
23	BEST	

NOTE** That, owing to different gain shifts in the electrons associated with the two semicircular Faraday cup collector plates, there is offset in the apparent solar wind flow latitude. For the period 1977 through 1989, this offset has been approximately constant at about 5 degrees positive. This 5.0 should be subtracted from the flow latitude values contained on these tapes to get the "true" flow latitudes.

(JHK, 10/89)

INPUT PARAMETERS ARE: AS FL=1=1 1 1 1

TAPE NO.	1	FILE NO.	1
RECORD	1	LENGTH	9500
1 1973 304	23	10	27
3 0.667E+05 0.364E+01 0.527E+01 0.701E+05 0.367E+00 0.195E+02 0.111E+04 0.960E+01 0.124E+02 1 19	73 304 20	23 39	8
4 0.256E+08 0.329E+03 0.408E+03 0.670E+05 0.441E+02 0.128E+03 0.670E+05 0.206E+01 0.600E+01 0.704E+05 0.144E+00 0.173E+02 0.111E+04 0.144E+02 0.152E+02 2 1973 304	20 26 8	1 0.157E+08 0.0	0.389E+03 0.667E+05 0.0
0.844E+02 0.667E+05 0.0	0.408E+01 0.701E+05 0.363E+00 0.184E+02 0.811E+04 0.100E+03 0.137E+02	2 1973 304	20 2
6 37 8 1 0.181E+08 0.0 0.0 0.667E+05 0.0 0.0 0.667E+05 0.0 0.0	0.701E+05 0.100E+03 0.100E+03 0.711E+04 0.100E+03 0.100E+03	2 1973 304	20 27 8
8 1 0.159E+08 0.0 0.0 0.667E+05 0.0 0.0 0.667E+05 0.0 0.0	0.701E+05 0.100E+03 0.100E+03 0.511E+04 0.100E+03 0.100E+03	2 1973 304	20 27 40 8 1
0.167E+08 0.0 0.0 0.667E+05 0.0 0.0 0.667E+05 0.0 0.0	5-0.100E+03 0.100E+03 0.411E+04 0.100E+03 0.100E+03	2 1973 304	20 28 9 8 1 0.163E+
08 0.0 0.0 0.667E+05 0.0 0.0 0.667E+05 0.0 0.0	+03-0.100E+03 0.621E+04 0.100E+03 0.100E+03	2 1973 304	20 28 37 8 1 0.164E+08 0.0
0.336E+03 0.667E+05 0.0 0.768E+02 0.667E+05 0.0 0.490E+01 0.701E+05 0.437E+00 0.16	8E+02 0.621E+04 0.100E+03 0.144E+02	2 1973 304	20 29 7 8 1 0.148E+08 0.0 0.0
0.557E+05 0.0 0.0 0.667E+05 0.0 0.0 0.701E+05 0.100E+03 0.100E+03 0.0	421E+04 0.100E+03 0.100E+03	2 1973 304	20 29 35 8 1 0.155E+08 0.318E+03 0.332E+03 0
0.667E+05 0.563E+02 0.713E+02 0.667E+05 0.371E+01 0.467E+01 0.701E+05 0.275E+00 0.147E+02 0.511E+04	0.134E+02 0.146E+02	2 1973 304	20 30 4 8 1 0.149E+08 0.0 0.0 0.667E+05
0.0 0.0 0.557E+05 0.0 0.0 0.701E+05 0.100E+03 0.100E+03 0.611E+04 0.100E+03	3-0.100E+03	2 1973 304	20 30 32 8 1 0.147E+08 0.0 0.0 0.667E+05 0.0
0.0 0.667E+05 0.0 0.0 0.701E+05 0.100E+03 0.100E+03 0.221E+04 0.100E+03 0.100E+03	+03 2 1973 304	20 31 2 8 1 0.139E+08 0.0 0.0 0.667E+05 0.0	0.0
0.557E+05 0.0 0.0 0.701E+05 0.100E+03 0.100E+03 0.811E+04 0.100E+03 0.100E+03	1973 304	20 31 30 8 1 0.146E+08 0.0 0.0 0.667E+05 0.0 0.0	0.6
67E+05 0.0 0.0 0.701E+05 0.100E+03 0.100E+03 0.611E+04 0.100E+03 0.100E+03	04 20 45	2 8 4 0.255E+08 0.318E+03 0.336E+03 0.667E+05 0.556E+02 0.970E+02 0.667E+05 0	1 1973 3
0.440E+01 0.714E+01 0.701E+05 0.511E+00 0.102E+02 0.111E+04 0.208E+02 0.196E+02 3 1973 304 20	49 39 8	3 0.667E+05 0.321E+03 0.342E+03 0.667E+05 0.644E+02 0.951E+02 0.667E+05 0.535E+01	0.730E+01 0.701E+05 0.491E+00 0.100E+03 0.111E+04 0.210E+02 0.222E+02 1 1973 304 20 54 3
9 8 4 0.239E+08 0.340E+03 0.358E+03 0.667E+05 0.105E+03 0.886E+02 0.667E+05 0.686E+01 0.589E+	01 0.701E+05 0.167E+00 0.770E+01 0.111E+04 0.220E+02 0.210E+02	2 1973 304	20 57 14 8
1 0.171E+08 0.0 0.347E+03 0.667E+05 0.0 0.719E+02 0.667E+05 0.0 0.501E+01 0.701	E+05 0.382E+00 0.475E+01 0.911E+04 0.100E+03 0.201E+02	2 1973 304	20 57 42 8 1 0.17
0E+08 0.0 0.328E+03 0.667E+05 0.0 0.703E+02 0.667E+05 0.0 0.524E+01 0.701E+05 0.2	15E+00 0.569E+01 0.611E+04 0.100E+03 0.202E+02	2 1973 304	20 58 12 8 1 0.180E+08 0.0
0 0.0 0.667E+05 0.0 0.0 0.667E+05 0.0 0.0 0.701E+05 0.100E+03 0.0	0.100E+03 0.511E+04 0.100E+03 0.100E+03	2 1973 304	20 58 40 8 1 0.187E+08 0.0
0.0 0.667E+05 0.0 0.0 0.667E+05 0.0 0.0 0.701E+05 0.100E+03 0.100E+03	0.611E+04 0.100E+03 0.100E+03	2 1973 304	20 59 9 8 1 0.172E+08 0.0 0.0
0.667E+05 0.0 0.0 0.667E+05 0.0 0.0 0.701E+05 0.100E+03 0.100E+03 0.711E+	04-0.100E+03 0.100E+03	2 1973 304	20 59 37 8 1 0.168E+08 0.0 0.319E+03 0.667E
+05 0.0 0.689E+02 0.667E+05 0.0 0.524E+01 0.701E+05 0.214E+00 0.443E+01 0.711E+04 0.100	E+03 0.213E+02	2 1973 304	21 0 7 8 1 0.193E+08 0.0 0.0 0.667E+05 0.0
0.0 0.0 0.667E+05 0.0 0.0 0.701E+05 0.100E+03 0.100E+03 0.111E+03 0.100E+03 0.1	00E+03	2 1973 304	21 0 35 8 1 0.194E+08 0.0 0.0 0.667E+05 0.0 0.0
0 0.667E+05 0.0 0.0 0.701E+05 0.100E+03 0.100E+03 0.131E+04 0.100E+03 0.100E+03	2 1973 304	21 1 4 8 1 0.178E+08 0.0 0.315E+03 0.667E+05 0.0 0.676E+02	0.567E+05 0.0
0.567E+05 0.0 0.568E+01 0.701E+05 0.284E+00 0.686E+01 0.911E+04 0.100E+03 0.199E+02 2 1973	304 21	1 32 8 1 0.180E+08 0.0 0.0 0.667E+05 0.0 0.0 0.667E+05	0.0
5 0.0 0.0 0.701E+05 0.100E+03 0.100E+03 0.211E+04 0.100E+03 0.100E+03	21 2 2 8	1 0.199E+08 0.295E+03 0.311E+03 0.667E+05 0.552E+02 0.674E+02 0.667E+05 0.469E	+01 0.614E+01 0.701E+05 0.299E+00 0.722E+01 0.221E+04 0.225E+02 0.206E+02 1 1973 304 21 6
7 8 4 0.219E+08 0.321E+03 0.337E+03 0.667E+05 0.587E+02 0.940E+02 0.667E+05 0.393E+01 0.58	4E+01 0.701E+05 0.347E+00 0.713E+01 0.111E+04 0.199E+02 0.180E+02	1 1973 304	21 11 16
8 4 0.212E+08 0.315E+03 0.317E+03 0.667E+05 0.493E+02 0.802E+02 0.667E+05 0.401E+01 0.587E+01 0.0	701E+05 0.204E+01 0.766E+01 0.111E+04 0.187E+02 0.173E+02	3 1973 304	23 17 43 8 3 0
0.667E+05 0.443E+03 0.453E+03 0.667E+05 0.143E+03 0.970E+02 0.667E+05 0.431E+01 0.320E+01 0.701E+05	0.719E+01 0.100E+03 0.111E+04 0.225E+02 0.225E+02	3 1973 304	23 21 52 8 3 0.179E+07

Imp. of
1-2 min. Resolution
Plasma Parameter Data
73-078A-02G
D-68313, C-25075
10/31/73-02/20/75

0.0	0.0	0.597E+06	0.0	0.0	0.169E+07	0.0	0.0	0.720E+06	-0.100E+0
3-0.100E+03	0.102E+04	-0.100E+03	-0.100E+03	3 1973	304	23	26	7	8
0.0	0.667E+05	0.0	0.0	0.304E+07	0.0	0.0	0.0	0.142E+07	-0.100E+03
+03 0.0	-0.100E+03	-0.100E+03	3 1973	304	23	28	9	8	3 0.667E+05
E+03	0.667E+05	0.297E+02	0.267E+02	0.667E+05	0.359E+00	0.390E+00	0.701E+05	-0.100E+03	-0.100E+03
1E+04	0.225E+02	0.233E+02	3 1973	304	23	30	10	8	3 0.667E+05
67E+05	0.900E+02	0.916E+02	0.667E+05	0.175E+01	0.173E+01	0.701E+05	0.693E-01	-0.100E+03	0.111E+04
225E+02	0.225E+02	3 1973	304	23	32	15	8	3 0.667E+05	0.517E+03
.515E+02	0.505E+02	0.667E+05	0.123E+01	0.110E+01	0.701E+05	-0.100E+03	-0.100E+03	0.111E+04	0.225E+02
0.217E+02	3 1973	304	23	34	17	8	3 0.667E+05	0.338E+03	0.343E+03
0.544E+02	0.667E+05	0.762E+00	0.923E+00	0.701E+05	-0.100E+03	-0.100E+03	0.111E+04	0.225E+02	0.225E+0
2	3 1973	304	23	36	20	8	3 0.667E+05	0.0	0.436E+03
02	0.667E+05	0.0	0.724E-01	0.701E+05	-0.100E+03	-0.100E+03	0.778E+04	-0.100E+03	0.225E+02
973	304	23	38	29	8	3 0.667E+05	0.0	0.0	0.667E+05
E+05	0.0	0.0	0.701E+05	-0.100E+03	-0.100E+03	0.0	-0.100E+03	-0.100E+03	3 1973
23	42	32	8	3 0.667E+05	0.377E+03	0.379E+03	0.667E+05	0.297E+02	0.260E+02
53E+01	0.142E+01	0.333E+07	-0.100E+03	-0.100E+03	0.111E+04	-0.238E+02	-0.149E+02	3 1973	304
44	40	8	3 0.667E+05	0.398E+03	0.412E+03	0.667E+05	0.971E+02	0.107E+03	0.667E+05
.421E+01	0.701E+05	0.308E-01	-0.100E+03	0.111E+04	0.225E+02	0.225E+02	3 1973	304	23
8	3 0.670E+05	0.400E+03	0.426E+03	0.670E+05	0.138E+03	0.131E+03	0.670E+05	0.427E+01	0.458E+01
0.704E+05	0.517E+00	-0.100E+03	0.111E+04	0.225E+02	0.225E+02	3 1973	304	23	48
3 0.667E+05	0.403E+03	0.401E+03	0.667E+05	0.832E+02	0.837E+02	0.667E+05	0.190E+01	0.225E+01	0.701E+
05-0.100E+03	-0.100E+03	0.111E+04	0.225E+02	0.217E+02	3 1973	304	23	50	55
+05	0.398E+03	0.386E+03	0.667E+05	0.483E+02	0.812E+02	0.667E+05	0.681E+00	0.101E+01	0.701E+05
E-01	-0.100E+03	0.111E+04	0.225E+02	0.225E+02	3 1973	304	23	52	55
3E+03	0.434E+03	0.667E+05	0.572E+02	0.835E+02	0.667E+05	0.220E+01	0.288E+01	0.701E+05	-0.100E+03
00E+03	0.111E+04	0.225E+02	0.225E+02	3 1973	304	23	54	55	8
408E+03	0.567E+05	0.873E+02	0.128E+03	0.667E+05	0.206E+01	0.331E+01	0.701E+05	-0.100E+03	-0.100E+03
.111E+04	0.225E+02	0.225E+02	3 1973	305	0	11	19	8	3 0.667E+05
0.667E+05	0.609E+02	0.418E+02	0.667E+05	0.528E+00	0.459E+00	0.701E+05	-0.100E+03	-0.100E+03	0.111E+04
0.225E+02	0.225E+02	3 1973	305	0	13	19	8	3 0.557E+05	0.0
5 0.0	0.0	0.567E+05	0.0	0.0	0.701E+05	-0.100E+03	-0.100E+03	0.0	-0.100E+
03-0.100E+03	3 1973	305	0	17	22	8	3 0.667E+05	0.0	0.0
0.0	0.667E+05	0.0	0.0	0.701E+05	-0.100E+03	-0.100E+03	0.0	-0.100E+03	-0.100
E+03	3 1973	305	0	21	29	8	3 0.667E+05	0.0	0.0
0.667E+05	0.0	0.0	0.701E+05	-0.100E+03	-0.100E+03	0.0	-0.100E+03	-0.100E+03	

TAPE NO. 1

FILE NO. 1

RECORD 9965

LENGTH 380

2 1975	51	13	19	14	8	1 0.572E+08	0.439E+03	0.438E+03	0.661E+05	0.363E+02	0.351E+0
2	0.661E+05	0.127E+02	0.119E+02	0.694E+05	-0.100E+03	0.878E+00	0.111E+04	0.596E+01	0.592E+01	2 19	
75	51	13	20	12	8	1 0.582E+08	0.440E+03	0.438E+03	0.661E+05	0.357E+02	0.343E+02
+05	0.129E+02	0.121E+02	0.694E+05	-0.100E+03	0.149E-02	0.111E+04	0.596E+01	0.592E+01			

***** JOB DONE.

\$WEO LPS

\$\$

\$ASS IN HT1

\$EXE TPNRCF BS

REQ. AGENT

CMW

ACQ. AGENT

JHK

IMP-J

FINE RESOLUTION PLASMA DATA FROM MIT

73-078A-02L

SPHE-00193

This data set consists of 8 magnetic tapes. The tapes were written on 9-track, 6250 bpi, in ASCII format, and labeled. The backup "C" tape is a low density 8mm cartridge, containing all 255 files. The first 2 physical files on each "D" tapes are the README documentations. The D and C numbers and time spans are as follows:

D#	C#	FILES	LABEL	TIME SPAN
-----	-----	-----	-----	-----
D-108257		36	FR73-5	11/04/73 - 12/30/75
D-108258		37	FR76-8	01/03/76 - 12/13/78
D-108259		24	FR7981	01/12/79 - 12/31/81
D-108260		22	FR82-4	01/01/82 - 12/31/84
D-108261		29	FR85-7	01/01/85 - 12/31/87
D-108262		32	FR8890	01/01/88 - 12/31/90
D-108263		29	FR9193	01/01/91 - 12/31/93
D-108264		11	FR9495	01/01/94 - 12/31/94
D-109068		35	02L98	01/01/95 - 07/28/98
	C-032362	255	FR-IMP	11/04/73 - 07/28/98

superseded by 73-078A-02N

IMP-J Fine Resolution Plasma Data from MIT

Word	Format	Definition
1	1X,I1	mode of instrument (2=tracking)
2	I5	year
3	I4	day of year (January 1 = 1)
4	I3	hour
5	I3	minute
6	I3	second
7	2X,F14.7,5X	decimal year
8	F8.2	spacecraft position in: xse
9	F8.2	" " " yse
10	F8.2	" " " zse
11	F8.2	" " " ysm
12	F8.2	" " " zsm
13	1X,F7.1*	speed (km/s)##
14	1X,F7.1*	Vx (x-component of velocity, km/s)
15	1X,F7.1*	Vy (y-component of velocity, km/s)#
16	1X,F7.1*	Vz (z-component of velocity, km/s)
17	1X,F6.1**	thermal speed (km/s)
18	1X,F6.1**	density (#/cc)
19	1X,G10.3***	E/W angle (degrees)##
20	1X,G10.3***	N/S angle (degrees ##

* if value = +/-9999., format is 1X,F7.0

** if value = +/-9999., format is 1X,F6.0

*** if value = +/-9999., format is 1X,G10.4

aberration due to Earth's motion is removed

computed using Vx, Vz, and the aberration-corrected Vy

These data were retrieved from MIT via FTP by NSSDC. They are in files on VAX labeled tapes. The files contain ASCII records arranged in columns, with headings at the top of each file. The following notes (1-10) are taken directly from MIT's World Wide Web site.

1) These are only our 'best' parameters. A value of 9999. means that we couldn't calculate them. If you're desperate, we can give you less accurate parameters for specific times, but caveat emptor... The parameters are based on a convected, isotropic Maxwellian model.

2) We use the convention Jan. 1 = DOY 1. Please note that the decimal year is double precision, e.g. 1994.xxxxxxx where xxxxxxxx is fraction of year.

3) All velocity coordinates are in GSE, meaning +x toward Sun, +z towards the North, perpendicular to the (Earth's) ecliptic, y for a right-hand system (+y in the direction opposite to Earth's motion). Everything is in km/s. Effects due to the orbital motion of Earth are removed.

4) Thermal speed is the most probable thermal speed (i.e., the square root of $[2kT/m(\text{proton})]$). To convert thermal speed to temperature in eV, multiply 0.0052 by the square of the thermal speed.

[To convert to temperature in degrees Kelvin, multiply 60.5 by the square of the thermal speed - NSSDC/JHK]

5) The angles are in degrees. Azimuth is E/W, with each meaning 'from the (E/W),' while elevation is N/S with the same meaning. For signs, positive azimuth angle means flow from the W; positive elevation angle means flow from the S. If we don't get good angles, you don't get any velocity components. Fine resolution data for the speed, velocity components and angles are not available in these cases. The aberration in velocity due to Earth's motion around the Sun has been removed.

6) The spacecraft trajectory values (xse, yse, zse, ysm, zsm) are in units of Earth radii.

7) The field labeled "md" refers to the spacecraft mode and is probably unimportant to you.

8) For papers and presentations using these data, please acknowledge that you received them from the MIT Space Plasma Physics Group. Please feel free to contact us if you have questions about any parameters.

9) Please send us a copy of papers, presentations, et cetera using these data.

10) If you have any questions, please contact

Pamela A. Milligan pam@space.mit.edu Karolen I. Paularena
kip@space.mit.edu Dr. Alan J. Lazarus ajl@space.mit.edu

ASCII LIST OF bt1014

D-108361
Physical File: 4

FILE 11 RECORD 1 18300 BYTES

```

0097***** Please read the AAA_README_IMPS file in this directory before using these data! *****00040186md year doy hr min sec de
cimal year xse yse zse ysm zsm speed Vx Vy Vz thermal speed density E/W an
gle N/S angle 00040187 2 1985 1 13 12 55 1985.0015086 32.57 -5.04 0.97 -4.95 1.40 695.8 -685
.1 -20.2 -119.9 60.0 4.2 -1.69 -9.92 0187 2 1985 1 13 19 46 1985.0015216 32
.59 -4.97 1.01 -4.88 1.41 676.2 -663.8 1.2 -128.5 59.6 3.8 0.103 -11.
0 0187 2 1985 1 13 22 50 1985.0015275 32.60 -4.93 1.03 -4.84 1.42 710.3 -688.4 -37.9 -171.2
62.2 4.5 -3.16 -13.9 0187 2 1985 1 13 23 49 1985.0015293 32.61 -4.92 1.04
-4.83 1.42 702.4 -690.7 -34.5 -122.8 49.6 3.7 -2.86 -10.1 0187 2 1985 1 1
3 24 51 1985.0015313 32.61 -4.91 1.04 -4.82 1.42 700.3 -687.9 -28.6 -128.1 48.7 3
.6 -2.38 -10.5 0187 2 1985 1 13 25 53 1985.0015333 32.62 -4.90 1.05 -4.81 1.42
702.2 -693.1 -30.8 -108.6 48.6 4.0 -2.55 -8.90 0187 2 1985 1 13 26 26 1985.001534
3 32.62 -4.89 1.05 -4.81 1.42 705.9 -695.3 -32.3 -117.8 55.0 3.9 -2.66
-9.60 0187 2 1985 1 13 27 25 1985.0015362 32.62 -4.88 1.06 -4.80 1.42 709.1 -698.6 -33.9
-116.6 59.3 4.0 -2.78 -9.47 0187 2 1985 1 13 28 25 1985.0015381 32.62 -4.87
1.07 -4.79 1.43 687.0 -672.5 -25.8 -138.2 64.2 4.2 -2.20 -11.6 0187 2
1985 1 13 30 23 1985.0015418 32.63 -4.85 1.08 -4.77 1.43 701.5 -688.8 -38.9 -127.1 59.8
4.5 -3.23 -10.4 0187 2 1985 1 13 32 25 1985.0015457 32.64 -4.83 1.09 -4.74 1.
43 696.5 -688.1 -13.3 -106.8 50.6 3.5 -1.11 -8.82 0187 2 1985 1 13 33 28
1985.0015477 32.64 -4.82 1.10 -4.73 1.44 689.5 -678.5 -3.4 -123.0 55.5 4.2 -
0.290 -10.3 0187 2 1985 1 13 34 26 1985.0015495 32.65 -4.81 1.10 -4.72 1.44 702.1 -692
.7 -16.0 -113.2 50.7 3.7 -1.32 -9.28 0187 2 1985 1 13 34 58 1985.0015505 32
.65 -4.80 1.11 -4.72 1.44 785.1 -766.7 -23.8 -167.5 64.1 3.4 -1.78 -12.
3 0187 2 1985 1 13 35 32 1985.0015516 32.65 -4.79 1.11 -4.71 1.44 715.6 -698.5 -32.2 -152.3
59.9 4.1 -2.64 -12.3 0187 2 1985 1 13 36 30 1985.0015535 32.65 -4.78 1.12
-4.70 1.44 732.2 -703.2 -34.4 -201.2 67.2 4.5 -2.80 -15.9 0187 2 1985 1 1
3 37 33 1985.0015555 32.66 -4.77 1.12 -4.69 1.45 728.0 -702.0 -30.0 -190.6 75.2 4
.7 -2.45 -15.2 0187 2 1985 1 13 38 36 1985.0015575 32.66 -4.76 1.13 -4.68 1.45
704.9 -694.3 -24.6 -119.2 51.8 3.8 -2.03 -9.73 0187 2 1985 1 13 39 34 1985.001559
3 32.67 -4.75 1.13 -4.67 1.45 718.9 -704.3 -28.4 -141.3 61.6 4.2 -2.31
-11.3 0187 2 1985 1 13 40 37 1985.0015613 32.67 -4.74 1.14 -4.66 1.45 703.5 -691.7 -28.2
-125.0 55.0 3.9 -2.34 -10.2 0187 2 1985 1 13 42 38 1985.0015651 32.68 -4.72
1.15 -4.64 1.46 713.0 -698.6 -26.5 -140.3 58.6 4.0 -2.17 -11.3 0187 2
1985 1 13 44 40 1985.0015690 32.68 -4.70 1.17 -4.62 1.46 710.3 -698.2 -29.0 -127.1 54.5
3.9 -2.38 -10.3 0187 2 1985 1 13 45 45 1985.0015711 32.69 -4.68 1.17 -4.61 1.
46 701.6 -689.1 -26.9 -129.5 48.9 3.9 -2.23 -10.6 0187 2 1985 1 13 53 38
1985.0015861 32.72 -4.60 1.22 -4.52 1.48 721.1 -705.4 -38.5 -144.6 64.7 4.8
-3.13 -11.6 0187 2 1985 1 13 54 37 1985.0015879 32.72 -4.59 1.23 -4.51 1.48 715.4 -700
.5 -49.1 -137.1 54.0 4.4 -4.01 -11.0 0187 2 1985 1 13 55 42 1985.0015900 32
.72 -4.58 1.23 -4.50 1.48 710.5 -692.8 -36.0 -153.8 55.0 4.3 -2.97 -12.
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```

.78	-4.41	1.33	-4.35	1.52	699.4	-681.0	-32.9	-155.6	69.5	4.6	-2.77	-12.
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1985.0016524	32.84	-4.22	1.43	-4.18	1.56	689.3	-674.8	-25.5	-138.4	71.7	4.5	
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1985	1 14 43 29	1985.0016809	32.89	-4.06	1.52	-4.03	1.59	710.8	-694.2	-24.7	-150.8	47.5
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6 16 48	1985.0018584	33.18	-3.04	2.08	-3.17	1.89	690.1	-674.0	5.5	-147.9	57.8	4
.8	0.469	-12.4	0187 2 1985	1 16 19 57	1985.0018644	33.19	-3.01	2.10	-3.15	1.90		
691.5	-669.8	24.5	-170.2	51.8	4.1	2.09	-14.2	0187 2 1985	1 16 21 57	1985.001868		
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	-13.5	0187 2 1985	1 16 22 56	1985.0018701	33.20	-2.98	2.11	-3.12	1.91	678.2	-660.4	56.7

IMP-J

FINE RESOLUTION PLASMA DATA FROM MIT

73-078A-02N

SPHE-00879

This dataset supersedes 73-078A-02L and has been updated on one CD-RW.
The data has been downloaded from
ftp://nssdcftp.gsfc.nasa.gov/spacecraft_data/imp/imp8/plasma_mit/sw_msheath_min/
written in ASCII format. The KD and KW numbers are as follows:

KD023114 KW000210 10/31/1973 - 05/01/2004

New data set

Name: 1 min solar wind and magnetosheath data

Availability code =S

Discipline code SPHE

Brief Description -

This data set contains ~1 min resolution solar wind and magnetosheath plasma parameters from the IMP 8 MIT Faraday Cup. The parameters include two sets of values of density, flow vectors (flow speed and direction angles), and thermal speeds as determined for protons by two independent approaches. On the one hand, non-linear fits of measured distributions to assumed convecting maxwellian distribution functions were taken, and on the other hand, simple moments over the measured distributions were taken. The fits-based values are believed more reliable by the MIT team. Aberration effects are removed from the fits-based flow longitude, but not from the moments-associated longitude. Flow latitude has a long term average value of ~2 deg, which is likely to be instrumental and not real. Each record has a flag indicating whether the data were taken in the solar wind, not in the solar wind, or during an interval of multiple closely spaced bow shock crossings. Position data are included in the data records. This data set was created at MIT during 2004 and as such supersedes earlier versions.

The data set is extensively described at

ftp://nssdcftp.gsfc.nasa.gov/spacecraft_data/imp/imp8/plasma_mit/sw_msh_eath_min/00readme.txt

The data set is accessible as annual ASCII files via ftp from

ftp://nssdcftp.gsfc.nasa.gov/spacecraft_data/imp/imp8/plasma_mit/sw_msh_eath_min/

The data set is accessible with subset and display capability from

http://nssdc.gsfc.nasa.gov/ftp-helper/imp_mit_min.html

Also, please change the availability Code for 73-078A-02L to L (deleted). And add a sentence at the bottom of the -02L brief description: "This data set was superseded by 73-078A-02? in 2005."

1973	304	20	10	27	8	1973.8324400	3	1	-7.50	16.39	15.17	18.52	12.48	339.9	342.1	103.0	85.4	5.0	4.6	12.9	-14.8	17.6
1973	304	20	23	39	8	1973.8324651	3	1	-7.72	16.34	15.13	18.39	12.56	404.8	405.5	117.4	131.0	5.6	5.9	15.7	-18.6	14.8
1973	304	20	26	37	8	1973.8324707	3	2	-7.77	16.33	15.13	18.36	12.58	373.9	327.7	95.4	140.8	5.0	8.1	14.6	-19.9	17.3
1973	304	20	27	8	8	1973.8324717	3	2	-7.78	16.33	15.13	18.36	12.58	341.3	344.5	82.1	88.0	4.7	4.7	14.5	-19.1	16.5
1973	304	20	27	40	8	1973.8324727	3	2	-7.79	16.33	15.13	18.35	12.59	348.8	345.0	85.6	98.6	4.8	5.1	13.9	-18.9	15.3
1973	304	20	28	9	8	1973.8324736	3	2	-7.80	16.33	15.12	18.35	12.59	345.4	326.5	90.9	112.6	4.8	5.8	14.0	-19.3	15.4
1973	304	20	28	37	8	1973.8324745	3	2	-7.80	16.32	15.12	18.34	12.59	334.9	325.6	76.8	97.6	4.7	5.4	14.5	-19.8	14.7
1973	304	20	29	7	8	1973.8324755	3	2	-7.81	16.32	15.12	18.34	12.59	343.3	333.2	86.9	95.1	4.4	4.6	14.1	-20.8	14.3
1973	304	20	29	35	8	1973.8324764	3	2	-7.82	16.32	15.12	18.33	12.60	331.1	331.1	71.2	80.7	4.5	4.6	14.9	-18.5	13.6
1973	304	20	30	4	8	1973.8324773	3	2	-7.83	16.32	15.12	18.33	12.60	329.2	326.7	75.7	67.7	4.5	4.2	13.9	-19.1	12.5
1973	304	20	30	32	8	1973.8324782	3	2	-7.84	16.32	15.12	18.32	12.60	326.1	327.2	79.3	76.9	4.5	4.2	12.1	-11.4	13.2
1973	304	20	31	30	8	1973.8324800	3	2	-7.85	16.31	15.12	18.31	12.61	338.4	337.9	80.4	85.9	4.3	4.4	13.1	-18.2	13.9
1973	304	20	45	2	8	1973.8325058	3	1	-8.08	16.26	15.08	18.18	12.70	334.0	326.7	92.1	101.5	6.7	6.9	20.2	-25.7	7.3
1973	304	20	49	39	8	1973.8325146	3	3	-8.16	16.25	15.07	18.14	12.73	338.9	9999.0	87.1	91.9	6.9	6.8	21.9	9999.0	9999.0
1973	304	20	54	39	8	1973.8325241	3	1	-8.24	16.23	15.06	18.09	12.76	355.0	361.5	82.7	82.1	5.6	5.4	20.9	-26.4	5.1
1973	304	20	57	42	8	1973.8325299	3	2	-8.29	16.22	15.06	18.06	12.78	327.3	325.4	70.3	76.1	5.1	5.1	20.7	-25.6	3.9
1973	304	20	58	12	8	1973.8325308	3	2	-8.30	16.22	15.05	18.06	12.78	330.7	315.3	79.3	92.9	5.5	6.1	20.5	-28.8	5.3
1973	304	20	58	40	8	1973.8325317	3	2	-8.31	16.21	15.05	18.05	12.78	335.2	313.5	82.4	107.4	5.7	7.0	19.9	-25.1	6.0
1973	304	20	59	9	8	1973.8325326	3	2	-8.32	16.21	15.05	18.05	12.79	321.4	307.6	76.1	81.8	5.4	5.8	20.7	-25.9	3.4
1973	304	20	59	37	8	1973.8325335	3	2	-8.33	16.21	15.05	18.04	12.79	318.5	310.1	68.8	78.0	5.2	5.5	21.3	-26.4	0.8
1973	304	21	0	35	8	1973.8325354	3	2	-8.34	16.21	15.05	18.03	12.79	315.3	313.0	74.9	84.5	6.2	6.1	19.7	-26.0	3.1
1973	304	21	1	32	8	1973.8325372	3	2	-8.36	16.20	15.05	18.03	12.79	310.3	311.8	69.5	70.2	5.8	5.5	20.5	-27.6	5.0
1973	304	21	2	2	8	1973.8325381	3	2	-8.37	16.20	15.04	18.02	12.79	311.4	313.2	67.4	74.9	6.0	5.9	20.5	-27.6	5.1
1973	304	21	6	7	8	1973.8325459	3	1	-8.43	16.18	15.03	17.99	12.80	337.9	337.7	92.1	85.4	5.4	4.9	18.6	-24.6	3.3
1973	304	21	11	16	8	1973.8325557	3	1	-8.52	16.16	15.02	17.96	12.81	315.3	318.5	73.5	63.1	5.4	4.6	17.9	-23.8	4.2
1973	304	23	17	43	8	1973.8327963	3	3	-10.59	15.62	14.64	17.26	12.66	451.4	9999.0	95.7	105.1	3.1	3.2	22.5	9999.0	9999.0
1973	304	23	28	9	8	1973.8328161	3	3	-10.76	15.56	14.61	17.23	12.59	304.0	9999.0	20.8	9999.0	0.3	9999.0	25.2	9999.0	9999.0
1973	304	23	30	10	8	1973.8328200	3	3	-10.79	15.56	14.60	17.23	12.58	497.4	9999.0	89.9	92.4	1.6	1.7	22.5	9999.0	9999.0
1973	304	23	32	15	8	1973.8328239	3	3	-10.83	15.55	14.59	17.23	12.56	516.9	9999.0	48.7	44.2	1.0	1.1	21.4	9999.0	9999.0
1973	304	23	34	17	8	1973.8328278	3	3	-10.86	15.54	14.59	17.22	12.55	343.5	9999.0	53.0	60.9	0.8	0.8	22.5	9999.0	9999.0
1973	304	23	42	32	8	1973.8328435	3	3	-10.99	15.50	14.56	17.20	12.49	377.2	9999.0	26.6	9999.0	1.4	9999.0	-15.2	9999.0	9999.0
1973	304	23	44	40	8	1973.8328475	3	3	-11.03	15.48	14.55	17.20	12.48	412.2	9999.0	106.0	120.8	4.0	4.2	22.5	9999.0	9999.0
1973	304	23	46	40	8	1973.8328513	3	3	-11.06	15.48	14.55	17.19	12.46	426.4	9999.0	130.4	161.0	4.4	5.3	22.5	9999.0	9999.0
1973	304	23	48	49	8	1973.8328554	3	3	-11.10	15.46	14.54	17.19	12.45	404.9	9999.0	81.9	97.7	2.1	2.2	21.5	9999.0	9999.0
1973	304	23	50	55	8	1973.8328594	3	3	-11.13	15.45	14.53	17.18	12.43	390.7	9999.0	76.5	71.9	0.8	0.8	22.5	9999.0	9999.0
1973	304	23	52	55	8	1973.8328632	3	3	-11.16	15.45	14.52	17.18	12.42	435.9	9999.0	82.0	70.5	2.7	2.5	22.5	9999.0	9999.0
1973	304	23	54	55	8	1973.8328670	3	3	-11.20	15.44	14.52	17.17	12.41	411.2	9999.0	125.9	169.9	3.1	4.0	22.5	9999.0	9999.0
1973	305	0	11	19	8	1973.8328982	3	3	-11.46	15.35	14.46	17.16	12.25	328.2	9999.0	35.9	55.6	0.3	0.4	22.5	9999.0	9999.0
1973	305	22	48	42	8	1973.8354808	3	3	-27.79	4.77	5.59	5.37	5.02	128.8	9999.0	16.6	9999.0	115.9	9999.0	111.5	9999.0	9999.0
1973	305	23	11	41	8	1973.8355245	3	3	-27.97	4.56	5.40	5.14	4.84	126.3	9999.0	13.2	9999.0	143.8	9999.0	67.5	9999.0	9999.0
1973	307	12	33	43	8	1973.8397902	3	3	-32.20	-15.69	-13.34	-20.12	-4.42	282.4	9999.0	46.2	26.5	0.8	0.6	-21.5	9999.0	9999.0
1973	307	12	35	46	8	1973.8397941	3	3	-32.19	-15.71	-13.36	-20.13	-4.45	248.5	9999.0	39.1	36.7	1.9	1.7	-9.5	9999.0	9999.0
1973	307	13	0	16	8	1973.8398407	3	3	-32.13	-15.90	-13.54	-20.33	-4.78	283.3	9999.0	64.1	63.7	0.8	0.7	-21.1	9999.0	9999.0
1973	307	13	2	20	8	1973.8398446	3	3	-32.12	-15.92	-13.56	-20.35	-4.81	309.5	9999.0	60.2	57.8	3.2	2.9	-10.8	9999.0	9999.0
1973	307	13	4	23	8	1973.8398485	3	3	-32.12	-15.93	-13.57	-20.36	-4.85	277.7	9999.0	58.0	73.5	5.8	5.7	5.6	9999.0	9999.0
1973	307	13	6	23	8	1973.8398523	3	3	-32.11	-15.95	-13.59	-20.37	-4.88	322.3	9999.0	73.8	72.2	4.2	3.8	-8.2	9999.0	9999.0
1973	307	13	8	23	8	1973.8398561	3	3	-32.11	-15.97	-13.60	-20.39	-4.92	304.7	9999.0	44.6	37.2	3.6	3.1	-1.9	9999.0	9999.0
1973	307	13	10	26	8	1973.8398600	3	3	-32.10	-15.98	-13.62	-20.40	-4.95	298.9	9999.0	46.7	46.8	5.0	4.4	-0.5	9999.0	9999.0
1973	307	13	12	27	8	1973.8398639	3	3	-32.10	-16.00	-13.63	-20.41	-4.99	287.3	9999.0	51.1	54.4	5.7	5.0	8.1	9999.0	9999.0
1973	307	13	14	27	8	1973.8398677	3	3	-32.09	-16.01	-13.65	-20.42	-5.02	253.9	9999.0	41.5	60.5	2.2	2.5	19.6	9999.0	9999.0
1973	307	13	17	25	8	1973.8398733	3	1	-32.08	-16.03	-13.67	-20.44	-5.07	296.1	9999.0	64.9	76.5	1.4	1.4	2.3	9999.0	9999.0
1973	307	13	20	0	8	1973.8398782	3	3	-32.08	-16.05	-13.69	-20.46	-5.12	303.1	9999.0	68.5	52.3	2.6	2.1	-0.1	9999.0	9999.0
1973	307	13	26	5	8	1973.8398898	3	3	-32.06	-16.10	-13.73	-20.50	-5.22	366.5	9999.0	56.0	58.6	0.2	0.2	-22.5	9999.0	9999.0

1973	365	23	47	43	8	1973.9999766	1	2	19.82	0.29	15.79	-4.31	15.19	651.6	646.1	67.6	64.2	3.1	3.4	4.1	1.1	2.4
1973	365	23	48	22	8	1973.9999779	1	1	19.82	0.30	15.79	-4.30	15.19	655.9	651.8	67.7	59.3	2.9	3.2	3.7	0.5	0.9
1973	365	23	50	55	8	1973.9999827	1	2	19.81	0.34	15.80	-4.26	15.21	682.0	682.1	64.8	53.2	2.9	3.1	2.3	-0.6	-3.9
1973	365	23	51	25	8	1973.9999837	1	2	19.81	0.35	15.80	-4.25	15.22	671.0	669.9	68.9	60.9	3.2	3.5	2.2	-0.9	-3.2
1973	365	23	51	55	8	1973.9999846	1	2	19.80	0.35	15.80	-4.24	15.22	665.5	662.6	68.3	61.2	3.2	3.5	2.8	-0.2	1.6
1973	365	23	52	23	8	1973.9999855	1	2	19.80	0.36	15.80	-4.23	15.22	662.7	658.2	69.1	65.9	3.1	3.3	3.7	0.9	2.6
1973	365	23	52	51	8	1973.9999864	1	2	19.80	0.37	15.80	-4.22	15.23	659.8	655.7	66.2	61.1	3.1	3.4	4.5	1.9	3.1
1973	365	23	53	20	8	1973.9999873	1	2	19.80	0.38	15.80	-4.22	15.23	650.1	642.8	69.6	67.7	3.3	3.6	3.7	0.5	1.2
1973	365	23	53	48	8	1973.9999882	1	2	19.80	0.38	15.80	-4.21	15.23	658.0	652.6	66.7	62.4	3.0	3.3	4.7	1.9	2.0
1973	365	23	54	16	8	1973.9999891	1	2	19.79	0.39	15.81	-4.20	15.24	651.7	645.2	71.9	67.7	3.2	3.5	3.0	-0.5	0.0
1973	365	23	54	45	8	1973.9999900	1	2	19.79	0.40	15.81	-4.19	15.24	655.6	650.5	71.6	66.6	3.2	3.5	2.8	-0.5	0.0
1973	365	23	55	14	8	1973.9999909	1	2	19.79	0.41	15.81	-4.19	15.24	655.2	650.2	69.6	63.7	3.1	3.3	3.4	0.1	0.0
1973	365	23	55	42	8	1973.9999918	1	2	19.79	0.41	15.81	-4.18	15.25	655.5	650.0	70.4	66.2	3.1	3.3	2.5	-0.5	-1.3
1973	365	23	56	10	8	1973.9999927	1	2	19.79	0.42	15.81	-4.17	15.25	651.2	643.6	72.5	70.8	3.1	3.4	3.8	0.9	-3.1
1973	365	23	56	42	8	1973.9999937	1	2	19.78	0.43	15.81	-4.16	15.26	642.8	623.7	76.7	75.1	3.2	3.5	4.8	2.2	-2.1
1973	365	23	57	10	8	1973.9999946	1	2	19.78	0.44	15.81	-4.16	15.26	643.7	625.1	76.5	77.3	3.3	3.6	4.9	2.4	1.6
1973	365	23	57	38	8	1973.9999955	1	2	19.78	0.44	15.81	-4.15	15.26	645.3	631.3	76.1	77.0	3.1	3.5	4.2	0.9	-1.6
1973	365	23	58	8	8	1973.9999964	1	2	19.78	0.45	15.82	-4.14	15.27	658.2	654.4	70.2	64.0	3.3	3.5	2.4	-1.1	-2.1
1973	365	23	58	36	8	1973.9999973	1	2	19.78	0.46	15.82	-4.13	15.27	654.5	648.5	73.4	69.9	3.3	3.6	2.4	-1.1	-0.6
1973	365	23	59	4	8	1973.9999982	1	2	19.77	0.47	15.82	-4.12	15.27	657.3	653.1	71.2	66.3	3.2	3.6	2.9	-0.5	-3.9