

#577

PIONEER 11

HI TIME RESOLUTION B VECTORS

73-019A-01C

1-MIN HYM CRUISE DATA

73-019A-01J

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 This inventory information is now no longer maintained in the DSCs, but is now managed in the inventory part of the NSSDC information system.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

PIONEER 11

HI TIME RESOLUTION B VECTORS, TAPE

73-019A-01C SPHE-00098

This data set has been restored. There were originally sixteen 7-track, 800 BPI tapes written in Binary. There is one restored tape. The tapes were created on a 1108 Computer. The DR tape is a 3480 cartridge and the DS tape is 9-track, 6250 BPI. The DR and DS numbers along with the corresponding D numbers and the time spans are as follows:

DR#	DS#	DD#	FILES	TIME SPAN
DR03868	DS03868	D29051*	1-2	04/30/73 - 05/01/73
		D40298	3	11/24/74 - 11/24/74
		D40299	4	11/25/74 - 11/25/74
		D40300	5	11/26/74 - 11/26/74
		D40301	6	11/27/74 - 11/27/74
		D40302	7	11/28/74 - 11/28/74
		D40303	8	11/29/74 - 11/29/74
		D40304	9	11/30/74 - 11/30/74
		D40305	10-16	12/01/74 - 12/07/74
		D40306	17	12/08/74 - 12/08/74
		D40307	18	12/09/74 - 12/09/74
		D40308	19	12/10/74 - 12/10/74
		D40309	20	12/11/74 - 12/11/74
		D40310	21	12/12/74 - 12/12/74
		D40311	22	12/13/74 - 12/13/74
		D40312	23	12/14/74 - 12/14/74

* NOTE: THE TIME GAP BETWEEN THE SECOND FILE AND THE THIRD FILE

REQ. AGENT
JVP
BER

RAND NO.
RC7435

ACQ. AGENT
JHK
RWP

PIONEER 11
HI TIME RESOLUTION B VECTORS
73-019A-01C

This data set catalog consists of 16 Pioneer 11 data tapes. The tapes are 800 BPI, 7 track, binary and contain one file of data per day. Two tapes are multifiled and are so labeled. The tapes were created on a UNIVAC 1108 computer.

Time spans are as follows:

<u>D#</u>	<u>C#</u>	<u>FILES</u>	<u>TIME SPAN</u>
D-29051	C-18776	2	4/30/73 - 5/01/73
D-40298	C-21020		11/24/74
D-40299	C-21021		11/25/74
D-40300	C-21022		11/26/74
D-40301	C-21023		11/27/74
D-40302	C-21024		11/28/74
D-40303	C-21025		11/29/74
D-40304	C-21026		11/30/74
D-40305	C-21027	7	12/01/74 - 12/07/74
D-40306	C-21028		12/08/74
D-40307	C-21029		12/09/74
D-40308	C-21030		12/10/74
D-40309	C-21031		12/11/74
D-40310	C-21032		12/12/74
D-40311	C-21033		12/13/74
D-40312	C-21034		12/14/74

JET PROPULSION LABORATORY California Institute of Technology • 4800 Oak Grove Drive, Pasadena, California 91103

February 7, 1977

Refer to: 328-EJS:ct

Dr. Joseph King
Mail Stop 601.1
National Space Science Data Center
Goddard Space Flight Center
Greenbelt, Maryland 20771

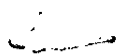
Dear Joe:

Under separate cover we are sending you a magnetic tape containing our high time resolution Pioneer Magnetometer data for two days. We call these tapes which contain individual field vectors, reduced data records (RDRs). We have finished a number of quality checks and are not aware of any bad data or other anomalies on these days.

A format statement will accompany the tape. There is one exception in the tape you will receive: it will not contain a BCD header file. The information contained in this header serves only to identify the tape, and for simplicity, was deleted in reproduction.

I think this tape will satisfy your requirement of having examples that can be provided to prospective RDR users. We are now proceeding down the list of other data that we have agreed to provide NSSDC. You should be receiving more data from me reasonably soon.

Sincerely,


E. J. Smith

Enclosure

cc: B. Bonetani (w/o encl.)
J. Hall "
C. Stanley "

ELAINE DOBBINS

8-792-2750

354-
2248

APPENDIX 1

Form and Content of the RDR Tapes

The Pioneer HVM RDR Tapes are written on 7-track tape units at 800 bpi. Each tape has a header file written in even parity (BCD) to identify the tape. The header file is followed by one or more data sets (files). Each data set contains all the data for a given day of the mission. Days are numbered consecutively for each year. January 1 is day 1.

Each block (physical record) in a data set consists of a HEADER of 44 words and zero or more SCIENCE DATA GROUPS of variable length. A word is defined as 36 bits (6 tape characters of 6 bits each). A block with zero SCIENCE DATA GROUPS is a dummy record indicating that there is no data for a given day. If there is any data for a day all blocks in the data set will have at least one SCIENCE DATA GROUP.

(WARNING: Many of the older tapes have empty files for days on which there is no data. This means that a double end-of-file mark does not necessarily mean end-of-volume on these tapes.)

Table 1 - Header Portion of Block

<u>Word</u>	<u>Variable</u>	<u>Description</u>
1	NBLK	Block Number. (Blocks are numbered consecutively starting with one in each data set.)
2	LBLK	Block Length (in 36 bit words).
3	NGRP	Number of Science Data Groups in the block. If there are no gaps in the EDR record from which this data is taken, NGRP is one.

<u>Word</u>	<u>Variable</u>	<u>Description</u>
4	IFDAY	The magnitude of the contents of this word is the day of the year. If the number is negative, there are corrected or suspect times in the block.
5	NFRAME	Number of first frame in the block (modulo 8192).
6	IRTLT	Round trip light time.
7	HRANGP	Distance of spacecraft from sun (km).
8	CELLTP	Heliocentric celestial latitude of spacecraft (degrees).
9	CELLNP	Heliocentric celestial longitude of spacecraft (degrees).
10	REARSU	Distance of Earth from sun (km).
11	CELLTE	Heliocentric celestial latitude of Earth (degrees).
12	CELINE	Heliocentric celestial longitude of Earth (degrees).
13		
•		Spectrum Analyzer data plus contents of Science Subcom
•		Words 106 and 202. (See Figure 1 for format of this
•		group of words.)
44		

The first 12 words of the HEADER are in 1108 internal format. The spectrum analyzer data is in a format similar to that used for the science data words except the fractions are 6 bits instead of 9 bits. The E106 words are not converted. Figure 3 shows the meaning of bits. Science subcom word 202 is subcommutated again into a cycle eight words long. The first word is a sync word and should always contain zero. The second word is the instrument serial number. The third word is the electronics temperature in degrees C. The fourth word is the sensor temperature in degrees C. The fifth word is the voltage at the +12 volt supply monitor (this is the

only non-integer word in the group. For this word only, the three low order bits are assumed to be to the right of the binary point). The sixth word is the A/D converter reference and should be about 41. The seventh word contains the range in which the instrument is operating. The eighth word is from the 24 volt monitor and should be 63.

The SCIENCE DATA GROUPS are stored as shown in Figure 2. Each SDG consists of a series of consecutive data points. The number of points is given (split between two words as shown), and the times of the first and last points are given in addition to the data values themselves. (Note that the RDR read program reconstructs all the times of the data points in a group from the information given.)

The three fractions of the science data words give the three components of the magnetic field in Solar-Interplanetary Coordinates in units of gamma. The values are stored on the tape in a floating point octal representation. The given characteristic is a power of eight given in excess -16 notation (allowing exponents to have the range -16 to +15) and is used with all three fractions. Three sign bits are given as shown in Figure 2. Each of the fractions is three octal digits long. The fraction having the largest magnitude is normalized in terms of octal digits (not bits) and the remaining two fractions are adjusted to have the same exponent. The fractions are truncated not rounded when they are stored on the tape.

$$\text{FRACTION} = \frac{9 \text{ BIT INTEGER}}{512 \text{ (1000 OCTAL)}}$$

HEADER

Q is quality indicator, 0 if word contains good data, 1 if word contains fill

FIGURE 2

SCIENCE DATA GROUP

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
n	Number of frames (H.O.B.)									GMT in milliseconds of day of first frame in group																										
n+1	Number of frames (L.O.B.)									GMT in milliseconds of day of last frame in group																										
n+2	0	Characteristic				S ₁	S ₂	S ₃	Fraction 1								Fraction 2								Fraction 3											
n+3	"	"				"	"	"	"								"								"											
n+4	"	"				"	"	"	"								"								"											
.	"	"				"	"	"	"								"								"											
.	"	"				"	"	"	"								"								"											

FORMAT OF E106

1	0 if calibrate off, 1 if calibrate on
2	0 if ranging in manual mode, 1 if ranging in automatic mode
3	0 if instrument in normal mode, 1 if instrument in interchange mode
4	High order bit of calibration step
5	Middle bit of calibration step
6	Low order bit of calibration step

J. Dayⁱⁿ
Oct 2

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DUMP OF TAPE BR015

INPUT TAPE BR015 ON MT5
DATA INPUT 07 NF 1 FL 1 1 1

FILE	1	RECORD	1	LENGTH	4884BYTES
(0)	0000000000001	000000001456	0000000000001	000000000524	0000000023417
(48)	211537765714	234430707032	615226177510	27506244722	620777777077
(96)	170613030020	170262626020	170262626020	170472323020	170261326020
(144)	170212121020	170613030020	170333333020	170336633020	620777777077
(192)	170542626064	170663333021	170262626751	170542626144	170262626052
(240)	170306130064	170613030021	170663333751	170545426144	001000107570
(288)	207233431300	207233430242	207104454250	207005473246	207122510234
(336)	207054460225	207132437220	207200416254	207114455250	207145455270
(384)	207107472224	207106467240	207133444242	207134451236	207020507243
(432)	207066472213	207104456241	207147421231	207157416217	207116417235
(480)	207114454247	207144520232	207077425223	207144451232	207102442230
(528)	207134452221	207102442227	207131434252	207104455230	207100427245
(576)	207077426256	207131435221	207110476265	207047477223	207136460250
(624)	207155453220	207070433241	207051442226	207142437205	207154520243
(672)	207126465211	207141476237	207145455215	207072447213	207144446241
(720)	207073521234	207133446167	207055463244	207147465243	207131504227
(768)	207121501226	207123516233	207173436250	207206457220	207150471241
(816)	207154447245	207204443232	207134450173	207106466262	207136464246
(864)	207143442241	207121504252	207177461264	207102511232	207152503255
(912)	207134452251	207146461254	207210465244	207107471276	207114453214
(960)	207125456237	207134452253	207103450247	207143443252	207144451245
(1008)	207063451214	207142437240	207122440265	207121433217	207151431237
(1056)	207172432270	207132441230	207126463240	207156461204	207141501244
(1104)	207145453232	207206455216	207125022246	207145462236	207114452226
(1152)	207113514266	207146457240	207174446210	207205520274	207134446262
(1200)	207156461234	207144447244	207250460234	207112442273	207102440265
(1248)	207203435261	207124523253	207163436260	207147464233	207127472257
(1296)	207141476276	207210465255	207113447305	207117471247	207110476314
(1344)	207120500247	207143444301	207103446222	207214441270	207114454227
(1392)	207154444233	207074454251	207062446251	207213432301	207155452247
(1440)	207102442263	207132505250	207157415245	207060504252	207135456230
(1488)	207136463262	207127466251	207163441220	207155403253	207101435236
(1536)	207173440220	207134447262	207124451266	207111505230	207077475264
(1584)	207133442250	207127470246	207162431275	207134451261	207210464233
(1632)	207072443247	207075461304	207161424266	207144520273	207044526304
(1680)	207113444263	207166456250	207114454310	207105463252	207161477314
(1728)	207126465271	207126462262	207166455253	207132440312	207170417266
(1776)	207134447263	207115457263	207121435263	207063453237	207154444253
(1824)	207102442303	207111434257	207125461252	207102442255	207127472240
(1872)	207175450273	207151431242	207206452264	207202432242	207210463265
(1920)	207137466326	207166456271	207146462276	207223434275	207102510274
(1968)	207121502267	207153442241	207176454312	207156461251	207127470277
(2016)	207171476274	207205450260	207106464301	207214441261	207172502270
(2064)	207246445272	207207457303	207135456314	207065462306	207234434300
(2112)	207144446300	207152433242	207166456243	207161425306	207051444257
(2160)	207106467217	207057474250	207146411263	207244433254	207114452217
(2208)	207204443255	207126463214	207167462257	207113514262	207114454244
(2256)	207123445306	207116465246	207230463302	207204452253	207204452243
(2304)	207146463274	207104523242	207112507277	207103450272	207156457310
(2352)	207146462312	207160466305	207202500255	207114452253	207147466306
(2400)	207137467256	207154444255	207100503247	207152503270	207155451270
(2448)	207172433255	207147464277	207076466300	207163442240	207034461262
(2496)	207175447266	207174443265	207144444300	207176453264	207206451302
(2544)	207114454260	207141430260	207162505245	207176457256	207126461261
(2592)	207116464232	207153511300	207037434223	207163440244	207106466246
(2640)	207053453260	207111432306	207122437257	207126460300	207106467254
(2688)	207103445271	207052445301	207103447240	207035470252	207127472224
(2736)	207201422255	207072515246	207131433250	207126465254	207116465272
					207144451264
					207154445257
					207100550267

Pioneer 21
D-40312

12/14/74

REQ. AGENT

CMW

ACQ. AGENT

JFC

PIONEER 11

HELIUM VECTOR MAGNETOMETER - 1-MIN CRUISE DATA

73-019A-01J

SPHE-00662

This data set consists of 1 magnetic tape. The tape were written on 9-track, 6250 bpi, in ASCII format, and labeled 'P11HVM'. There are a total of 138 files on the tape (46 physical files, with a header file and a trailer file). The last 5 physical files contains documentations, description and file formats. The D and C numbers are as follows:

D#	C#	FILES	LABEL	TIME SPAN
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D-108256	C-032361	46	P11HVM	04/06/73 - 12/31/76

Directory ANON_DIR:[COHO.P11MAG.MINUTE]

RIGHTTIME.P11;2	393	24-JUL-1995	13:55:11.00
M73091.P11;1	2802	18-JUL-1995	17:31:28.00
M73119.P11;1	4208	18-JUL-1995	17:43:14.00
M73154.P11;1	2861	18-JUL-1995	17:45:28.00
M73182.P11;1	3268	18-JUL-1995	17:46:41.00
M73210.P11;1	4152	18-JUL-1995	17:49:32.00
M73245.P11;1	3334	18-JUL-1995	17:50:52.00
M73273.P11;1	4435	18-JUL-1995	17:52:04.00
M73308.P11;1	3354	18-JUL-1995	17:55:07.00
M73336.P11;1	3175	18-JUL-1995	17:57:50.00
M73364.P11;1	233	18-JUL-1995	17:58:56.00
M74001.P11;1	3713	21-JUL-1995	15:56:34.00
M74034.P11;1	2308	21-JUL-1995	15:58:08.00
M74062.P11;1	3077	21-JUL-1995	16:00:57.00
M74090.P11;1	3251	21-JUL-1995	16:03:00.00
M74118.P11;1	4317	21-JUL-1995	16:04:30.00
M74153.P11;1	3474	21-JUL-1995	16:06:33.00
M74181.P11;1	4399	21-JUL-1995	17:19:45.00
M74216.P11;1	3349	21-JUL-1995	16:10:30.00
M74244.P11;1	3767	21-JUL-1995	16:13:57.00
M74272.P11;1	4330	21-JUL-1995	16:16:48.00
M74307.P11;1	2927	21-JUL-1995	16:18:41.00
M74349.P11;1	1927	24-JUL-1995	14:37:15.00
M74363.P11;1	414	21-JUL-1995	16:20:45.00
M75001.P11;1	3748	21-JUL-1995	16:21:56.00
M75033.P11;1	3040	24-JUL-1995	10:44:56.00
M75061.P11;1	2398	21-JUL-1995	16:23:54.00
M75089.P11;1	6234	21-JUL-1995	16:24:54.00
M75152.P11;1	7671	21-JUL-1995	16:26:20.00
M75214.P11;1	5461	21-JUL-1995	16:27:59.00
M75271.P11;1	2638	21-JUL-1995	16:29:19.00
M75306.P11;1	2098	21-JUL-1995	16:30:19.00
M75334.P11;1	2330	21-JUL-1995	16:32:50.00
M76001.P11;1	1380	21-JUL-1995	16:35:37.00
M76036.P11;1	896	21-JUL-1995	16:38:50.00
M76064.P11;1	966	21-JUL-1995	16:40:17.00
M76092.P11;1	2620	21-JUL-1995	16:40:58.00
M76148.P11;1	2192	21-JUL-1995	16:41:55.00
M76204.P11;1	2756	21-JUL-1995	16:42:49.00
M76260.P11;1	2967	21-JUL-1995	16:45:31.00
M76316.P11;1	4751	21-JUL-1995	16:46:21.00
MAGCOORD.DOC;3	38	17-JUL-1995	14:46:59.98
P11HVM_15M.SFD;3	20	1-AUG-1995	14:18:11.10
P11MAGMN.CAT;1	3	1-AUG-1995	14:28:48.39
P11MAGMN.FMT;4	10	2-AUG-1995	15:37:18.04
WOLF.TXT;2	10	1-AUG-1995	14:22:04.71

Total of 46 files, 127695 blocks.

FATS070 CONTROL CARD TABLE SIZE IS 4096 BYTES

FATAR CONTROL CARDS

1-- ANALYZE BLP,LABELS=NO,PRTLEN=2000
 2-- PRINT LF=2,B=1-2,CHAR
 3-- PRINT LF=131,B=1-2,CHAR
 4-- PRINT LF=134,B=1-2,CHAR
 5-- PRINT LF=137,B=1-2,CHAR

8
 10-10256
 4/6/73 - 12/31/76

FATS071 TAPE BUFFER SIZE IS 65535 BYTES

CHARACTERISTICS OF THE TAPE TO BE ANALYZED

UNIT SERIAL DEN TRTCH
 59B CMR1 6250

FATAR DETAIL REPORT

BLOCK LNTH/ MESSAGE/
 NUMBER DISPL BLOCK TYPE

1...5...10...15...20...25...30...35...40...45...50...55...60...65...70...75...80
 (COLUMN GRID IS VALID ONLY FOR CHARACTER FORMATTED DATA)

***** START FILE 1

FATS038 DATA FILE IN ISCII/ASCII - TRANSLATED TO EBCDIC

***** END OF FILE 1 -- FILE CONTAINED 5 BLOCKS

***** START FILE 2

FATS038 DATA FILE IN ISCII/ASCII - TRANSLATED TO EBCDIC

I	2048	PRINT REQUESTED	0035 YR DAY HR MN SC	DELAY (SEC)	0030 73 096 07 44 00	0.6410030 73 097 00
+00080	00 00	2.4880030 73 098 00 00 00	5.1960030 73 099 00 00 00	7.8990030		
+00160	73 100 00 00 00	10.5990030 73 101 08 48 00	14.2820030 73 102 00 01 00	1		
+00240	5.9880030 73 103 00 07 00	18.6880030 73 104 00 59 00	21.4700030 73 105 00			
+00320	00 00	24.0700030 73 106 00 00 00	26.7520030 73 107 00 00 00	29.4240030		
+00400	73 108 00 00 00	32.0900030 73 109 00 00 00	34.7470030 73 110 00 01 00	3		
+00480	7.3950030 73 111 00 01 00	40.0340030 73 112 00 00 00	42.6650030 73 113 00			
+00560	01 00	45.2840030 73 114 00 00 00	47.8950030 73 115 00 00 00	50.4930030		
+00640	73 116 00 00 00	53.0830030 73 117 00 03 00	55.6690030 73 118 00 00 00	5		
+00720	8.2340030 73 119 22 24 59	63.1810030 73 120 22 24 59	65.7270030 73 121 22			
+00800	24 59	68.2670030 73 122 22 24 59	70.8010030 73 123 22 24 59	73.3290030		
+00880	73 124 22 24 59	75.8540030 73 125 22 24 59	78.3770030 73 126 22 24 59	8		
+00960	0.8980030 73 127 22 24 59	83.4190030 73 128 22 24 59	85.9410030 73 129 22			
+01040	24 59	88.4650030 73 130 22 24 59	90.9930030 73 131 22 24 59	93.5260030		
+01120	73 132 22 24 59	96.0640030 73 133 22 24 59	98.6110030 73 134 22 24 59	10		
+01200	1.1670030 73 135 22 24 59	103.7340030 73 136 22 24 59	106.3130030 73 137 22			
+01280	24 59	108.9070030 73 138 22 24 59	111.5170030 73 139 22 24 59	114.1440030		
+01360	73 140 22 24 59	116.7920030 73 141 22 24 59	119.4610030 73 142 22 24 59	12		
+01440	2.1550030 73 143 22 24 59	124.8740030 73 144 22 24 59	127.6220030 73 145 22			
+01520	24 59	130.4010030 73 146 22 24 59	133.2120030 73 147 22 24 59	136.0580030		
+01600	73 148 22 24 59	138.9410030 73 149 22 24 59	141.8640030 73 150 22 24 59	14		
+01680	4.8290030 73 151 22 24 59	147.8380030 73 152 22 24 59	150.8940030 73 153 22			
+01760	24 59	153.9980030 73 154 22 24 59	157.1520030 73 155 22 24 59	160.3590030		
+01840	73 156 22 24 59	163.6200030 73 157 22 24 59	166.9370030 73 158 22 24 59	17		
+01920	0.3110030 73 159 22 24 59	173.7440030 73 160 22 24 59	177.2380030 73 161 22			