

DATA SET CATALOG #25

Telstar II Charged particle

63-013A-01A

8 tapes

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 This inventory information is now no longer maintained in the DSCs, but is now managed in the inventory part of the NSSDC information system.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

TELSTAR 2

CHARGED PARTICLE BESYS TAPES

SPMS 00654

63-013A-01A

THIS DATA SET HAS BEEN RESTORED. THERE WERE ORIGINALLY 8
7-TRACK, 800 BPI TAPES, WRITTEN IN BINARY. THERE ARE TWO
RESTORED TAPES. THE DR TAPES ARE 3480 CARTRIDGES AND THE DS
TAPES ARE 9-TRACK, 6250 BPI. THE TAPES WERE ORIGINALLY
CREATED ON AN IBM 360 COMPUTER . THE DR AND DS NUMBERS ALONG
WITH THE CORRESPONDING D NUMBERS AND TIME SPANS ARE AS FOLLOWS:

DR#	DS#	DD#	FILES	TIME SPAN
DR03098	DS03098	D00059	1 - 402	05/07/63 - 07/16/63
		D00060	403 - 763	08/12/63 - 11/01/63
		D00061	764 - 843	11/02/63 - 12/31/63
		D00062	844 - 1133	01/02/64 - 04/05/64
DR03099	DS03099	D00063	1 - 281	04/07/64 - 07/01/64
		D00064	282 - 447	07/02/64 - 09/30/64
		D00065	448 - 593	10/03/64 - 12/31/64
		D00066	594 - 949	01/04/65 - 05/07/65

DOCUMENTATION OF THE BTL SATELLITE DATA TAPES

I. TAPE FORMAT

The BTL satellite data tapes were written with Fortran programs on an IBM 7094 under control of the BE-SYS monitor. These Fortran output routines generate tapes where the logical records produced by individual WRITE TAPES or WRITE OUTPUT TAPE statements do not correspond to the actual physical records. The following description of this tape blocking process is provided to enable a user to decode the tapes.

BE-SYS uses word lengths of 36 bits, which can also be described as 12 octal digits, or as 6 characters, where a character is denoted by 2 octal digits. Character or BCD information is written on tape so as to be directly meaningful to the 1460. Since information is encoded there differently than in the 7094, a translation is necessary between tape and the 7094. Table I-1 contains a list of the character codes for the 7094 and their translation for the 1460 or for tapes.

Most of the data on the Bell Labs satellite output tapes is binary information written with the Fortran "WRITE TAPE" statement. The list of data written by one such statement is called a logical record, and can consist of up to 999 words. For uniformity, BE-SYS writes all tape output in physical records (or blocks) which normally contain up to 167 words. Each block is a single 800 bit per inch binary tape

record and can contain either part of a logical record, or one or more logical records.

Logical records are separated in the blocks (physical records) by control words (of 6 characters). The first character in the control word is always octal 77. The second character is a control character or flag. The third character, the file identification character, is generally blank and can be ignored. The last three characters indicate the length (word count in 1460 BCD code) of the logical record that follows. Records written with a Fortran "WRITE TAPE" statement will have only P and Q flags as control characters. If the logical record fits within the block, it is assigned a Q flag. However, if it overflows the block, it is broken into two or more logical records, the last of which has a Q flag, all others having P flags. Thus on reading, a sequence of logical records flagged P, followed by one flagged Q, should be considered as a single logical record.

Each block is terminated with a control word containing an E flag as the control character. The word count field in this control word is used to indicate the number of logical records within the block. This count includes only records which have been completed.

There is also some information on the tapes, generally identification files or records, which has been generated by Fortran "WRITE OUTPUT TAPE" statements. This

information has been encoded by means of a specified format into BCD or Hollerith information. BE-SYS blocks this data in the same manner as binary data (i.e. in physical records of up to 167 words which contain logical records separated by control words). This information is distinguished from binary information by the use of different control characters or flags.

The flags which are valid for a Fortran "READ INPUT TAPE" statement are H, L, and M. All indicate that the logical record contains BCD or Hollerith information to be decoded character by character according to some Format. An H flag indicates a BCD card image with a maximum length of 14 words (34 characters). Records written with a Fortran "WRITE OUTPUT TAPE" statement will have L and M flags as control characters. If the logical record is greater than 22 words, it is broken up into two or more records, the last of which has an L flag; all others having M flags. If the logical record contains 22 words or less, it is assigned an L flag. Thus, on reading, a sequence of logical records flagged M, followed by one flagged L should be treated as a single record.

Multireel Tapes: On some occasions, data runs over from one reel to a second. The BE-SYS monitor uses a double end-of-file mark to signify the end of a reel. Thus on reading a

double end of file, the user should proceed to the second tape and continue reading. This should not be interpreted as an end of file.

Examples of Tape Blocking

Example 1: This is an octal dump of the first file of the Relay I electron L-tables tape. This file is an identification file which was generated by a Fortran "WRITE OUTPUT TAPE" statement. It contains only one physical record (or block). The numbers in the first column of the dump refer to word number within the block.

The first word of the block (octal 774300120102) is a control word, as indicated by the octal 77. The second character in the word is denoted by the octal 43 which represents the character L (see Table I-1). This L indicates that the following logical record contains BCD information, and that the record is completed within the block. The last 6 octal digits (120102) represent the characters 012 and indicate that the logical record contains 12 words. Translating the next 12 words character by character yields: bRELAYbI bELECTRØnbDATAbTAPEbFØRb12/01/62b(DAYb335)b-b03/31/64b (DAYb091), where b represents a blank.

The final word in the block is another control word. Its second character is an E (octal 65) which indicates that this is the end of the block. The word count (octal 121201) specifies that one logical record was completed within the block.

EXAMPLE 1

RECORD NO. 0001

0001	774300120102	005105436130	007100000543	656323514645	006461236100	736147600066
0007	445100010211	120121060200	346401300003	030574004000	120321030121	06040346461
0008	300012110174	776500121201				

OF FILE

Example 2: This is an octal dump of the first file of the Explorer XV L-files tape. This is a data file which was generated by Fortran "WRITE TAPE" statements. It is contained in three physical records (or blocks).

The Q flag (octal 50) in the first control word (775000120104) indicates that the logical record contains binary information and is complete within the block; the word count (octal 120104) specifies that there are 14 words in the logical record. The next 14 words should be interpreted as explained in the Explorer XV write-up in section II: the first 13 as floating point data, and the fourteenth as an octal flag.

The first word following these 14 data words (word 16 of the block) is another control word. It indicates another 14-word binary logical record which follows.

The last logical record in the block begins with the control word at word 151 of the physical record. It is also 14 words long and is completed within the block. The final control word (word 166) contains an E flag (octal 65), and a word count (octal 120101) which indicates that 11 logical records have been completed within this block.

Example 3: This is an octal dump of the first two physical records of a data file on the Relay I electron L-tables tape.

The Q flag (octal 50) in the first control word (775000121206) indicates that the logical record contains

EXAMPLE 2

RECORD NO. 0001

0001	775000120104	201431463146	176741166710	211455330337	203607653304	000000000000
	203431075547	000000000000	202527431503	000000000000	202621276113	000000000000
	174740022345	207426172532	022223004440	775000120104	201431463146	177424044026
0019	211465230656	000000000000	000000000000	000000000000	000000000000	000000000000
0025	000000000000	000000000000	000000000000	177563245023	206734465706	01272004440
0031	775000120104	201431463146	177420513447	211502157137	000000000000	000000000000
0037	000000000000	200506677735	000000000001	000000000000	000000000000	000000000000
0043	177477780032	207407430153	021333000000	775000120104	201431463146	176762056652
0049	211506123644	200561426500	175702630507	176641564217	177607553334	201675610403
0055	177516214501	177463777430	177516562023	176650572712	207417137766	000000000000
0061	775000120104	201431463146	177403324377	211510104100	200740560420	175631463146
0067	177412363657	176422361173	201753073227	176407166640	203463002417	176774611235
	177431630653	207434652464	000000000000	775000120104	201431463146	000000000000
	211511141163	000000000000	000000000000	000000000000	000000000000	000000000000
0085	175404422576	000000000000	175402565747	176752707515	206770526034	031130000000
0091	775000120104	201431463146	176760101422	211521006705	000000000000	175264407712
0097	000000000000	200426234723	000000000000	177455445532	000000000000	177575507534
0103	176566040575	207411164111	010003000000	775000120104	201431463146	176777717001
0109	211523040054	000000000000	000300000000	000000000000	000000000000	000000000000
0115	175634626322	201431463146	175654268237	177401379133	207431505461	03203304440
0121	775000120104	000000000000	176742337633	211524130303	000000000000	000000000000
0127	000000000000	206622201240	000000000000	000000000000	177400000000	000000000000
0133	175475404054	000000000000	032223000000	775000120104	201431463146	176736555471
0139	211526110531	000000000000	175517604433	000000000000	200434631556	200573222071
0145	177642661503	201432543697	17710220322	000000000000	206655110442	010003000000
	775000120104	201431463146	176740710102	000000000000	000000000000	000000000000
	203713230443	000000000000	203556423771	211530071000	000000000000	000000000000
	174662361554	206715354522	032223004440	77500120101	202563775760	000000000000

RECORD NO. 0002

	775000120104	201431463146	176741204677	211531145413	203440702723	000000000000
	202414270076	000000000000	202434210766	000000000000	203414637436	176736553775
0013	174751731461	206760845130	022203000000	775000120104	201431463146	176746557260
0019	211533091014	000000000000	000000000000	000000000000	000000000000	000000000000
0025	000000000000	201431463146	000000000000	175761354651	206761126035	032223000000
0031	775000120104	000000000000	176760054441	211534030642	000000000000	000000000000
0037	000000000000	207413157329	000000000000	000000000000	000000000000	000000000000
0043	176566033634	000000000000	032223000000	775000120104	201431463146	176746452684
0049	211543932556	200610421046	000000000000	177402453753	000000000000	000000000000
0055	000000000000	201431463146	176740131102	174576093707	206731701523	032223004440
0061	775000120104	000000000000	200707511736	211555057614	202513247131	000000000000
0067	200425401821	000000000000	022223000000	000000000000	201431463146	000000000000
0073	174452067650	206604470321	175664340765	775000120104	176434621000	176737547794
0079	211552033423	202626429247	17644154410	201473471621	200446551071	201566205009
0085	176400157575	223404342550	1754703425	173457550261	203443467063	000000000000
0091	775000120104	201431463146	1754703425	211555074552	222501027417	000000000000
0097	202447426457	000000000000	20625774137	000000000000	201431463146	176743720033
	176520762646	000000000000	002223000000	775000120104	176436400051	000000000000
	211557054662	000000000000	000000000000	000000000000	206541726370	031135010500
0115	175712751671	000000000000	176743730013	175605661104	000000000000	000000000000
0121	775000120104	201431463146	000000000000	211557054462	000000000000	000000000000
0127	000000000000	176436460091	000000000000	175712751671	201431463146	176716004420
0133	175605661104	200541537564	031133000000	775000120104	000000000000	201724462302
0139	211561034216	000000000000	000000000000	202577317356	000000000000	032223000000
0145	000000000000	222637043000	176747061241	175425464071	206575660910	000000000000
0151	775000120104	201431463146	202442475403	211566055271	000000000000	000000000000
0157	202405560742	000000000000	032223000000	000000000000	21777120000	000000000000
0163	175776161466	206527111346		77500120101		

RECORD NO. 0003

0001	775000120104	201431463146	176750741021	211600116702	202702257374	000000000000
	200535003412	000000000000	200755467242	000000000000	221615155505	000000000000
	176433770650	206600416277	022223000000	775000120104	201431463146	176746557260
0019	211474054302	000000000000	000000000000	201757609453	000000000000	202433944729
0025	000000000000	221602620266	000000000000	175432526573	206646373401	031223000000
0031	775000121202					

END OF FILE

binary information and is complete within the block; the word count (octal 121206) specifies six words. These next six words should be interpreted as explained in the Relay I write-up in section V: the first two as floating point, and the last four as decrement integers.

In interpreting the remainder of the block one proceeds as in Example 2. At the end of the block an example of the use of the P flag occurs. The control word at word 163 of the block contains a P flag (octal 47) which indicates that only the first part of this logical record is contained in the block. The word count indicates that two words are in this block.

The final word of the block (a control word with an E flag) specifies that four logical records were completed in the block; this count does not include the record with the P flag.

The remaining portion of the incomplete record is found at the beginning of the next block. The first logical record there has a Q flag and contains 14 words. In unblocking, these 14 words should be appended to the two words from the preceding block to form a single 16 word logical record.

EXAMPLE 3

RECORD NO. 0001

0001	775000121200	201531463145	201546111563	000076000000	000533000000	000160000000
0007	000133000000	775000120402	000076000000	000534000000	000003000000	176664247673
0013	176653226712	176423126527	201546111565	201535341217	201546111565	211533976573
0019	211533076105	211533053776	000610002500	000467002577	000323002551	600527642420
0025	600534357456	600576246631	176452504751	176424600662	176452504751	176426831070
0031	176448260324	176447102330	200000002000	200077140016	010000010100	210456000000
0037	421674363517	176448542251	213645400000	621674363517	217545026057	212600000000
0043	421674363517	216817111174	211716666667	621674363517	215772479376	175501650721
0049	604554076566	201762543273	775000121104	000077000000	000033000000	000007000000
0055	175767044152	176421091077	176455220007	176401672150	176431673407	176411032651
0061	176448247737	201533412177	201534324774	201544472274	201534121727	201534152376
0067	201533513615	2015441014223	211607075662	00007707666	211607076623	211607075274
0073	211607077400	211607079006	211607077111	001431002550	001378002477	001115002550
0079	601465002550	001355002572	001461002550	001210002550	600722226506	600700012270
0085	600532125462	600714611635	000870765135	600706517400	600661506203	176426400662
0091	1764422110320	176447345362	176421371540	176426550466	176420133700	176435567567
0097	167405275000	174415165040	175645225010	171713152200	174664512220	173427017700
0103	175477677240	007000000003	007000000003	005000000003	007000000103	007100000003
0109	007000000003	007000000003	215404266667	215405507514	213757511112	215416733334
0115	214677000000	215420224744	215455733334	217657442223	217673297035	217422130304
0121	217703335556	217635762223	217710454160	217540273334	217462431111	217450224560
0127	216513415556	217473422222	217427751111	217502476654	216672644445	216580411111
0133	216574312742	215601255555	216605762223	216511378334	216404457655	216410591111
0139	202400422773	201770725370	202637245604	202472064717	177546126655	203516076331
0145	203520216457	775000120106	000077000000	000151000000	000001000000	176566561744
0151	201535747331	211725062046	600424002473	600571522535	176426033462	176560365430
0157	004000000001	212537362023	215673474605	214640224744	214421303373	177627173107
0163	774700121202	000077000000	000153000000	775000121204		

RECORD NO. 0002

0001	775000120104	000001000000	176642503324	201536152376	211727071107	000571007770
0007	600541013562	176426550466	176714770320	000000000000	210700451710	214411004120
0013	217461130057	212505056427	175440313200	775000120106	000077000000	000154000000
0019	000001000000	176414374240	201541625402	211730062581	000371002474	600595035560
0025	176437609264	176647647900	000000000004	211616161616	214737252525	213317335544
0031	213437070707	176573324311	775000120106	000077000000	000160000000	000001000000
0037	177413154750	201544467227	211734072663	000302002425	609452562000	176446697534
0043	177553202704	000000000000	000000000000	200707070707	000000010000	000000000000
0049	000000000000	775000120106	000770000000	600163000000	000001000000	176555555556
0055	201534121727	211737074211	0436002475	600543514251	176421371540	176452651744
0061	000000000000	210755212525	214530252525	213012707070	212616525252	175773332426
0067	775000120106	000077000000	000167000000	000011000000	177404165236	201534482004
0073	211743050144	000370002420	600460471010	176422626707	177301347026	000000000001
0079	000000000000	000000000000	000000000000	000000000000	000000000000	775000120106
0085	000077000000	000172000000	000001000000	17654651247	201533513615	211740052624
0091	000466002477	600533527245	176426133400	176716642544	000000000000	210427522152
0097	215401417576	212615075441	211659171227	175443741245	775000120106	000077000000
0103	000174000000	000001600000	276603601041	201541217220	211730070604	000000007420
0109	600562150207	176436301657	176637437750	000000000004	211602525252	215450307670
0115	214452070707	213355070707	177415500534	775000120106	000077000000	000000000000
0121	000001000000	176631030052	201537371656	211756067740	000532002433	600540100494
0127	176431748004	176702075124	000000000000	210732525252	214236434563	213384707070
0133	212605026101	176502124277	775000120106	000077000000	000203000000	000001000000
0139	176405134713	201534121727	211737060222	000544002430	600661174119	176421371540
0145	176574350844	000000000000	211634440767	215916302600	214331147521	213384017592
0151	177502201772	774700120106	000077000000	000211000000	000001000000	176434410652
0157	201535544264	211765094154	000403002427	600544635502	176425316256	176671741770
0163	000000000003	210730702070	214530707070	775000121211		

TABLE I-1

<u>Description or Function</u>	<u>7094 Octal Code</u>	<u>Blocked Tape Code (1460 BCD Code)</u>
Zero	00	12
One	01	01
Two	02	02
Three	03	03
Four	04	04
Five	05	05
Six	06	06
Seven	07	07
Eight	10	10
Nine	11	11
	12	20
Equals	13	13
Quotes	14	14
	15	15
	16	16
Tape Mark	17	17
Plus	20	60
A	21	61
B	22	62
C	23	63
D	24	64
E	25	65
F	26	66
G	27	67
H	30	70
I	31	71
Plus Zero	32	72
Period	33	73
Right Paren	34	74
	35	75
	36	76

TABLE I-1 (con't.)

<u>Description or Function</u>	<u>7094 Octal Code</u>	<u>Blocked Tape Code (1460 BCD Code)</u>
Group Mark	37	77
Minus	40	40
J	41	41
K	42	42
L	43	43
M	44	44
N	45	45
Ø	46	46
P	47	47
Q	50	50
R	51	51
Minus Zero	52	52
Dollar Sign	53	53
Asterisk	54	54
	55	55
	56	56
Mode Change	57	57
Blank	60	00
Slash	61	21
S	62	22
T	63	23
U	64	24
V	65	25
W	66	26
X	67	27
Y	70	30
Z	71	31
Record Mark	72	32
Comma	73	33
Left Paren	74	34
Word Separator	75	35
	76	36
Tape Seg. Mark	77	37

IV. TELSTAR II

The tapes containing the reduced radiation information from Telstar II are similar in format to the Telstar I tapes. They are file structured and each file contains a BCD identification record identical to the first record on the Telstar I RRI tapes.

Word 10 of the first record in each file specifies the number of 64-word binary records in the file. The words are described below:

Word

1-21			Identical to Words 1-21 of Telstar I RRI tape.
22-24	decrement integers		Number of times proton registers overflowed. (P1, P2, P3).
25-26	"	"	Number of times electron registers overflowed. (E1, E2).
27	"	"	Gain-state of electron counter. = 1 Low gain well determined. = 2 High gain well determined. = 3 Low } Format error, gain is = 4 High } determined from previous frame. = 5 Low } Gain well determined = 6 High } but does not agree with previous frame. = 7 Low } Telemetry noisy; gain = 8 High } determined from previous frame.

27 (con't.)

= 9 Low Telemetry noisy; no previous frame; gain determined as best guess.
= 10 High

28 Decrement integer

Bias-state of proton detectors.

1 ~-5v }
2 ~-15v } Bias well determined.
3 ~-100v }

4 ~-5v }
5 ~-15v } Bias well determined
6 ~-100v } but does not agree
with previous frame.

7 ~-5v }
8 ~-15v } Telemetry noisy; bias
9 ~-100v } determined from
previous frame.

10 ~-5v }
11 ~-15v } Format error; bias
12 ~-100v } determined from
previous frame.

13 ~-5v }
14 ~-15v } Telemetry noisy;
15 ~-100v } no previous frame;
bias is best guess.

16 }
Telemetry noisy;
no previous frame;
cannot guess bias.

29 Octal

Flag Word 1

Octal digit

1-5 = 0 C Relay off

= 1 C Relay on

6 = 0 B Relay off

= 1 B Relay on

7 = 0 E Relay off

= 1 E Relay on

8 = 0 frame contiguous with
previous frame

= 1 frame not contiguous

29 (cont.)

			9 = 0 frame contiguous with succeeding frame
			= 1 frame not contiguous
			10 = 0 decoder in lock
			= 1 decoder out of lock
			11 = 0 no 1401 format correction
			= 1 1401 format correction
			12 = 0 TWT off
			= 1 TWT on
30-31	octal		Flag Words 2, 3 identical to Flag Words 2, 3 of Telstar I.
32	floating decimal		Reading of P1 rate meter in bits.
33	"	"	Reading of E1 rate meter in bits.
34-35	"	"	Reading of P2 and P3 rate meters in bits.
36	"	"	Reading of E2 rate meter in bits.
37-44	"	"	Counting rate, B, L and γ for E1 and E2.
45-47	"	"	Counting rate, B and L for PP2.
48	"	"	Counting rate for PP3.
49-60	"	"	Counting rate, B, L and γ for P1, P2 and P3.
61-63	"	"	Counting rate as measured by rate meters for P2, P2 and E2.
64	"	"	This word is an extra word in each record with no significance.

More details on the BTL experiments on this satellite are contained in the BTL "Project Telstar Report on Communications and Radiation Experiments with Telatar II" - Section 5.

This is the Data Set Catalog for the Telstar 2 Charged Particle Experiment (63-013A-01A).

The data set consists of 8 binary 800 bpl tapes recorded under the Bell Labs System. (D-C0059 through D-00066). The tapes were unpacked with the NSSDC routine "GETBE".

This catalog consists of:

1. BCD listing of data in one file
2. Octal listing of logical records in one file
3. Full catalog of all eight tapes, 1 line per file
4. Octal dump of physical records in one file
5. Listing of the program used to produce 3
6. Notes on problems with three of the tapes
7. Supplementary octal dump to go with 6

The tapes and their bounds are

TAPE	START	STOP	FILES	COMMENTS
D-00059	May 7, 1963	July 16, 1963	400	Redundancy
D-00060	Aug. 12, 1963	Nov. 1, 1963	361	
D-00061	Nov. 4, 1963	Dec. 31, 1963	79	2 Redundancies
D-00062	Jan. 2, 1964	Apr. 4, 1964	289	
D-00063	Apr. 6, 1964	June 30, 1964	280	
D-00064	July 1, 1964	Sept. 29, 1964	165	
D-00065	Oct. 1, 1964	Dec. 31, 1964	145	EOF seems missing
D-00066	Jan. 2, 1965	May 7, 1965	355	

TELSTAR 2 CHARGED PARTICLE EXPERIMENT
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PAGE

TAPE D-00065
 BINARY 800 BPI
 BELL LABS SYSTEM
 UNPACKED BY GETBE

8/2/67

INVESTIGATOR
 W.L. BROWN

THE TAPE IS DOCUMENTED IN THE UNPUBLISHED MEMO
 'DOCUMENTATION OF THE BTL SATELLITE DATA TAPES'

THE DATA ARE FILE STRUCTURED AND ARE OUTPUT FROM THE MAIN DATA REDUCTION PROGRAM THE TRANSMITTING STATION AND THE STARTING TIME OF THE BINARY INFORMATION IN THE O SEQUENTIAL IN TIME. EACH BCD RECORD CONTAINS 10 WORDS AS FOLLOWS

- WORD 1 - SATELLITE NUMBER
- WORD 2 - DAY NUMBER AT BEGINNING OF FILE
- WORD 3 - YEAR - 1900
- WORD 4 - STARTING HOUR OF DAY IN WORD 2
- WORD 5 - STARTING MINUTE OF HOUR IN WORD 4
- WORD 6 - MINITRACK STATION NUMBER AS FOLLOWS
 - 3 FORT MYERS, FLORIDA
 - 5 QUITO, ECUADOR
 - 6 LIMA, PERU
 - 7 ANTOFAGASTO, CHILE
 - 8 SANTIAGO, CHILE
 - 13 COLLEGE, ALASKA
 - 15 WINKFIELD, ENGLAND
 - 16 JOHANNESBURG, R.S.A.
 - 17 MOJAVE, CALIFORNIA
 - 18 WOOMERA, AUSTRALIA
 - 31 ANDOVER, MAINE
 - 32 CAPE CANAVERAL, FLORIDA
 - 50 ANTIGUA
 - 55 SOUTH POINT, HAWAII
- WORD 7 - RIGHT ASCENSION OF SPIN AXIS (2 DEG)
- WORD 8 - DECLINATION OF THE SPIN AXIS (2 DEG)
- WORD 9 - ORBIT NUMBER
- WORD 10 - NUMBER OF FRAMES OF TELEMETRY IN THIS FILE

THIS IS FOLLOWED BY BINARY RECORDS OF 64 WORDS. ~~ONLY THE RECORDS THAT FALL LISTED (NOT FROM THE TAPE)~~
 (ALL NUMBERS OCCUPY 16 CHARACTERS WITH LEADING BLANKS)

HOURL	MINUTE	SECOND	R	THETA
-B(LAMBDA)	B	L	GAMMA	C RATE (P)
FIXED BIAS	LOW E BIAS	LOW E BIAS	METER TEMP P	METER TEMP E
E1 OVERFLOW	E2 OVERFLOW	GAIN-STATE E	BIAS-STATE	FLAG WORD 1
E1	P2	P3	E2	E1 C RATE
E2 C RATE	E2 B	E2 L	E2 GAMMA	PP2 C RATE
P1 C RATE	P1 B	P1 L	P1 GAMMA	P2 C RATE
P3 C RATE	P3 B	P3 L	P3 GAMMA	RATE METER

EXPERIMENT
FOR P. H. STOKER

TOR
WN

Full BCD listing of
first few files of D-00065

TELLITE DATA TAPES

MAIN DATA REDUCTION PROGRAM. EACH FILE CONTAINS A BCD RECORD IDENTIFYING
PRIMARY INFORMATION IN THE ONE OR MORE RECORDS WHICH FOLLOW. THE RECORDS ARE
FOLLOWS

MS

EG)
EG)

THIS FILE

~~THE RECORDS THAT FALL BETWEEN 1700 AND 0600 OF DAYS 376 AND 381 ARE~~

(ANKS)

	THETA	LAMBDA	-B(R)	-B(THETA)
R	C RATE (P)	C RATE (E)	SKIN TEMP HI	SKIN TEMP LG
GAMMA	METER TEMP E	P1 OVERFLOW	P2 OVERFLOW	P3 OVERFLOW
TEMP P	FLAG WORD 1	FLAG WORD 2	FLAG WORD 3	P1
S-STATE	E1 C RATE	E1 B	E1 L	E1 GAMMA
E2	PP2 C RATE	PP2 B	PP2 L	PP3 C RATE
2 GAMMA	P2 C RATE	P2 B	P2 L	P2 GAMMA
1 GAMMA	RATE METER	RATE METER	RATE METER	NOT USED
3 GAMMA				

TELSTAR 2 CHARGED PARTICLE EXPERIMENT
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PAGE

2 275 64 12 43 31 97 -47 3281 26

12 44 0.299999997E 01 0.117544994E 01 0.475299992E 02
-0.102515536E-01 0.345772162E-00 0.325279646E 01 0.706506222E 02 0.
-0.101935998E 03-0.156799994E 02-0.155119993E 02 0.474999972E 01 0.233799994E 0
0 0 2 2 00000001000
0. 0. 0. 0. 0.
0. 0.338597864E-00 0.329200871E 01 0.705927625E 02 0.
0. 0.342185013E-00 0.327240258E 01 0.706216924E 02 0.
0. 0.339315295E-00 0.328808747E 01 0.705985487E 02 0.

12 45 0.199999996E 01 0.118433326E 01 0.481233329E 02
-0.101153299E-01 0.337163009E-00 0.329985112E 01 0.705811918E 02 0.
-0.101935998E 03-0.155199997E 02-0.930719994E 02 0.247599997E 02 0.240699992E 0
0 0 1 3 00000000000
0. 0. 0. 0. 0.
0. 0.328577846E-00 0.330961838E 01 0.706314467E 02 0.
0. 0.332870424E-00 0.330473475E 01 0.706063189E 02 0.
0. 0.329436362E-00 0.330864161E 01 0.706264205E 02 0.

12 46 0.099999994E 01 0.119419992E 01 0.488166660E 02
-0.408063684E-02 0.326860815E-00 0.331157185E 01 0.706414983E 02 0.
-0.101935998E 03-0.479999989E 01-0.443199992E 01 0.247599997E 02 0.240699992E 0
0 0 2 1 00000000000
0. 0. 0. 0. 0.
0. 0.316046998E-00 0.326842889E 01 0.704530135E 02 0.
0. 0.321453907E-00 0.329000033E 01 0.705472551E 02 0.
0. 0.317128383E-00 0.327274315E 01 0.704718612E 02 0.

12 47 0. 0.120599993E 01 0.497999996E 02
0.134134300E-02 0.313884236E-00 0.325980030E 01 0.704153165E 02 0.
-0.101935998E 03-0.156799994E 02-0.155119993E 02 0.247599997E 02 0.240699992E 0
0 0 1 2 00000000000
0. 0. 0. 0. 0.
0. 0.301538847E-00 0.319329239E 01 0.702556379E 02 0.
0. 0.307711542E-00 0.322654635E 01 0.703354768E 02 0.
0. 0.302773386E-00 0.319994315E 01 0.702716060E 02 0.

12 47 0.589999996E 02 0.121976659E 01 0.508816659E 02
0.618202202E-02 0.299069777E-00 0.317999080E 01 0.702237032E 02 0.
-0.101935998E 03-0.155199997E 02-0.930719994E 02 0.247599997E 02 0.240699992E 0
0 0 2 3 00000000000
0. 0. 0. 0. 0.
0. 0.286587737E-00 0.309192886E 01 0.699076705E 02 0.
0.571428567E 00 0.292828754E-00 0.313095979E 01 0.700656869E 02 0.
0. 0.287835941E-00 0.309173502E 01 0.699392743E 02 0.

1 Record, 64 words.

PERIMENT
P.H. STOKER

1 0.475299992E 02 0.262644991E 03 0.326800235E-00 0.111784980E-00
 02 0. 0. -0.106399998E 02 0.500000000E 03
 01 0.233799994E 02 0 0 0
 2 000000010000 000000010000 000000000010 0.
 0. 0.341467582E-00 0.327632375E 01 0.706159053E 02
 02 0. 0.343619868E-00 0.326456010E 01 0.145454541E 01
 02 0. 0.340750150E-00 0.328024499E 01 0.706101201E 02
 02 0. 0. 0. 500000000000

1 0.481233329E 02 0.267459996E 03 0.318861020E-00 0.109048009E-00
 02 0. 0. -0.960000000E 01 0.500000000E 03
 02 0.240699992E 02 0 0 0
 3 000000000000 000000000000 000000000000 0.
 0. 0.332011908E-00 0.330571145E 01 0.706113443E 02
 02 0. 0.334587455E-00 0.330278128E 01 0.
 02 0. 0.331153393E-00 0.330668814E 01 0.706163697E 02
 02 0. 0. 0. 500000000000

1 0.488166660E 02 0.272174992E 03 0.308904864E-00 0.106766686E-00
 02 0. 0. -0.856000014E 01 0.500000000E 03
 02 0.240699992E 02 0 0 0
 1 000000000000 000000000000 000000000000 0.
 0. 0.320372522E-00 0.328568608E 01 0.705284066E 02
 02 0. 0.323615569E-00 0.329862893E 01 0.
 02 0. 0.319291145E-00 0.328137174E 01 0.705095582E 02
 02 0. 0. 0. 500000000000

1 0.497999996E 02 0.276599996E 03 0.295680381E-00 0.105331056E-00
 02 0. 0. -0.751999989E 01 0.500000000E 03
 02 0.240699992E 02 0 0 0
 2 000000000000 000000000000 000000000000 0.
 0. 0.306477003E-00 0.321989559E 01 0.703195095E 02
 02 0. 0.310180619E-00 0.323984794E 01 0.
 02 0. 0.305242464E-00 0.321324475E 01 0.703035422E 02
 02 0. 0. 0. 500000000000

1 0.508816659E 02 0.280828327E 03 0.280341797E-00 0.103985533E-00
 02 0. 0. -0.647999994E 01 0.500000000E 03
 02 0.240699992E 02 0 0 0
 3 000000000000 000000000000 000000000000 0.
 0. 0.291580550E-00 0.312115364E 01 0.700340837E 02
 02 0. 0.295325160E-00 0.315057226E 01 0.
 02 0. 0.290332347E-00 0.311134741E 01 0.700024799E 02
 02 0. 0. 0. 500000000000

TELSTAR 2 CHARGED PARTICLE EXPERIMENT
 PREPARED FOR P.H. STOKER

PAGE

12 48 0.579599998E 02 0.123353325E 01 0.521566659E 02
 0.102542043E-01 0.284091331E-00 0.306231648E 01 0.698444650E 02 0.
 -0.101935998E 03 -0.479999989E 01 -0.443199992E 01 0.247599997E 02 0.240699992E 0
 0 0 1 1 00001000000
 0. 0. 0. 0. 0. 0.
 0. 0.270641156E-00 0.295552514E 01 0.695017621E 02 0.
 0. 0.277366243E-00 0.300892077E 01 0.696731135E 02 0.
 0. 0.271936172E-00 0.296620429E 01 0.695360325E 02 0.

12 49 0.570000000E 02 0.124919996E 01 0.535299994E 02
 0.136297628E-01 0.267951123E-00 0.293416694E 01 0.694332227E 02 0.
 -0.101935998E 03 -0.156799994E 02 -0.155119993E 02 0.247599997E 02 0.240699992E 0
 0 0 2 2 00000000000
 0. 0. 0. 0. 0. 0.
 0. 0.251797637E-00 0.282083631E 01 0.690509371E 02 0.
 0. 0.261374377E-00 0.287750162E 01 0.692420796E 02 0.
 0. 0.256112985E-00 0.283216938E 01 0.690891653E 02 0.

12 50 0.559999995E 02 0.126493327E 01 0.549999990E 02
 0.163887106E-01 0.252166942E-00 0.279817022E 01 0.689744800E 02 0.
 -0.101935998E 03 -0.155199997E 02 -0.930719994E 02 0.247599997E 02 0.240699992E 0
 0 0 1 3 00000000000
 0. 0. 12.0 0. 0. 0.
 0. 0.238743618E-00 0.269342147E 01 0.685977235E 02 0.
 0.571428567E 00 0.245455280E-00 0.274579585E 01 0.687861018E 02 0.
 0.114285707E 01 0.240085952E-00 0.270389639E 01 0.686353996E 02 0.

12 51 0.549999997E 02 0.128249995E 01 0.564749993E 02
 0.183928840E-01 0.236058958E-00 0.267247178E 01 0.685223728E 02 0.
 -0.101935998E 03 -0.479999989E 01 -0.443199992E 01 0.247599997E 02 0.240699992E 0
 0 0 2 1 00000000000
 0. 0. 0. 0. 0. 0.
 0. 0.223160043E-00 0.256912775E 01 0.680614881E 02 0.
 0. 0.229609497E-00 0.262079976E 01 0.682919301E 02 0.
 0. 0.224449933E-00 0.257946216E 01 0.681075759E 02 0.

12 52 0.539999999E 02 0.130019993E 01 0.580399990E 02
 0.198685072E-01 0.220580257E-00 0.254845902E 01 0.679693118E 02 0.
 -0.101935998E 03 -0.156799994E 02 -0.155119993E 02 0.247599997E 02 0.240699992E 0
 0 0 1 2 00000000000
 0. 0. 0. 15.0 0. 0.
 0. 0.207913138E-00 0.244991548E 01 0.674005285E 02 0.133333333E-0
 0.571428567E 00 0.214246698E-00 0.249918722E 01 0.676849201E 02 0.
 0.571428567E 00 0.209179856E-00 0.245976984E 01 0.674574070E 02 0.

12 53 0.529999994E 02 0.131878324E 01 0.597016655E 02
 0.208415821E-01 0.205379717E-00 0.243020684E 01 0.672867723E 02 0.
 -0.101935998E 03 -0.155199997E 02 -0.930719994E 02 0.247599997E 02 0.240699992E 0
 0 0 2 3 00000000000
 0. 0. 16.0 26.0 0. 0.
 0. 0.193170503E-00 0.234269589E 01 0.667010926E 02 0.199999996E-0
 0.228571422E 01 0.199275114E-00 0.238645136E 01 0.669939324E 02 0.114285707E 0
 0.742857136E 01 0.194391429E-00 0.23514657E 01 0.667596601E 02 0.

E EXPERIMENT
FOR P.H. STOKER

5E 01	0.521566659E	02	0.284766659E	03	0.264408506E-00	0.103396706E-00
50E 02	0.		0.		-0.544000000E	01 0.500000000E 03
97E 02	0.240699992E	02		0	0	0
	1	000010000000	000000000000	000000000000	0.	
	0.	0.	0.276021227E-00	0.299824171E	01	0.696388431E 02
21E 02	0.		0.280056275E-00	0.303027906E	01	0.
35E 02	0.		0.274676211E-00	0.298756257E	01	0.696045727E 02
25E 02	0.		0.	0.		500000000000
6E 01	0.535299994E	02	0.288509995E	03	0.247121461E-00	0.102679193E-00
27E 02	0.		0.		-0.440000005E	01 0.500000000E 03
97E 02	0.240699992E	02		0	0	0
	2	000000000000	000000000000	000000000000	0.	
	0.	0.	0.260059029E-00	0.286616854E	01	0.692038514E 02
71E 02	0.		0.264005072E-00	0.290016770E	01	0.
96E 02	0.		0.258743681E-00	0.285483547E	01	0.691656224E 02
53E 02	0.		0.	0.		500000000000
7E 01	0.549999990E	02	0.292059995E	03	0.229955144E-00	0.102177337E-00
00E 02	0.		0.		-0.440000005E	01 0.500000000E 03
97E 02	0.240699992E	02		0	0	0
	3	000000000000	000000000000	000000000000	0.399999999E	01
	0.	0.	0.244112946E-00	0.273532100E	01	0.687484264E 02
35E 02	0.		0.248139940E-00	0.276674561E	01	0.
18E 02	0.		0.242770612E-00	0.272484608E	01	0.687107503E 02
96E 02	0.		0.	0.		500000000000
5E 01	0.564749993E	02	0.295324996E	03	0.212476283E-00	0.101189733E-00
28E 02	0.		0.		-0.336000010E	01 0.500000000E 03
97E 02	0.240699992E	02		0	0	0
	1	000000000000	000000000000	000000000000	0.199999996E	01
	0.	0.	0.228319608E-00	0.261046536E	01	0.682458416E 02
31E 02	0.		0.232189283E-00	0.264146857E	01	0.
01E 02	0.		0.227029718E-00	0.260013096E	01	0.681997538E 02
59E 02	0.		0.	0.		500000000000
3E 01	0.580399990E	02	0.298389994E	03	0.195480473E-00	0.100241095E-00
18E 02	0.		0.		-0.231999986E	01 0.500000000E 03
97E 02	0.240699992E	02		0	0	0
	2	000000000000	000000000000	000000000000	0.899999991E	01
	0.	0.	0.212979987E-00	0.248933293E	01	0.676280417E 02
35E 02	0.133333333E-00		0.216780126E-00	0.251889594E	01	0.
01E 02	0.		0.211713277E-00	0.247947857E	01	0.675711632E 02
70E 02	0.		0.	0.		500000000000
4E 01	0.597016655E	02	0.301261656E	03	0.17867 337E-00	0.991021000E-01
23E 02	0.		0.		-0.800001621E-01	0.500000000E 03
97E 02	0.240699992E	02		0	0	0
	3	000000000000	000000000000	000000000000	0.169999994E	02
	0.	0.	0.198054187E-00	0.237770028E	01	0.669353642E 02
26E 02	0.199999996E-00		0.201716952E-00	0.240395352E	01	0.909090906E-01
24E 02	0.114285707E	01	0.196833268E-00	0.236894920E	01	0.668767966E 02
01E 02	0.		0.478742376E	01	0.	500000000000

775000121203	000000000000	000000000000	500000000000	775000120604
202503207125	207761656050	210576372702	573620025066	172762241021
206665032047	000000000000	000000000000	205524753410	211764000000
205670243654	205653217266	000000000000	000000000000	000000000000
000002000000	000000000000	000000000000	000000110100	000000000000
204400000000	201525252525	173730364337	202762640205	206660652247
206656012375	000000000000	173732517542	202764005427	000000000000
206661422222	000000000000	173727600536	202762323652	206660102274
206656562347	000000000000	000000000000	000000000000	500000000000
205500000000	202504413465	207760210420	210577631462	573606316435
202760325541	206654472450	203417543723	000000000000	205524753410
607546773716	205670243654	205655217266	000000000000	000000000000
000002000000	000003000000	000000000000	000000000101	000000110010
206560000000	000000000000	205525252525	173717707630	202756135275
202754542372	206645603522	000000000000	173722002670	202757231417
202756434055	206651137075	201666666666	173717136615	202755636514
202755041153	206646342601	000000000000	206647651012	000000000000
000033000000	205460000000	202505620025	207756542770	210600765604
173713521530	202753745031	206644305364	000000000000	000000000000
603463146314	603433513615	205670243654	205655217266	000000000000
000000000000	000001000000	000001000000	000000000000	000000001000

98470 WORDS READ

775000120304	000000011000	000000000000	204700000000	000000000000
173707440276	202751553724	206640170757	000000000000	173704652130
173711471013	202752650366	000000000000	000000000000	173710175730
173706702644	202751255035	206637426703	000000000000	173705407561
000000000000	000000000000	500000000000	775000120604	000027000000
207755075341	210602160507	573563742530	172754003321	571431634110
000000000000	000000000000	205524753410	211754000000	607627574732
611764000000	000000000000	000000000000	000000000000	000000000000
000000000000	000000001000	000000101000	000000000000	000000000000
000000000000	173677457761	202745142570	206627711373	000000000000
000000000000	173701417413	202746252603	000000000000	000000000000
000000000000	173676745350	202744640036	206627143523	000000000000
000000000000	000000000000	000000000000	500000000000	775000120604
202510104637	207753427711	210603424365	573553131467	172752266624
206623546414	000000000000	000000000000	205511727022	606622121727
205670243654	205655217266	000000000000	000000000000	000000000000
000003000000	000000000010	000000000101	000000011110	205420000000
000000000000	201525252525	173667713574	202740615064	206617427307
206614615231	000000000000	173671636234	202741657712	000000000000
206620171722	200444444444	173667205434	202740326655	206616664674
206615357645	000000000000	000000000000	000000000000	500000000000

98470 WORDS READ

775000120604	000027000000	000036000000	205420000000	202511222505
172750436376	571424664717	173664046474	202736507410	206613310203
211764000000	607634132070	602753412173	603433513615	205670243654
000000000000	000000000000	000000000000	000002000000	000001000000
000000000000	000000000000	000000000000	000000000000	000000000000
206607264003	000000000000	173656036241	202733203755	206604521131
176564272135	000000000000	173661042356	202734745572	206610014556
206606533230	207444444444	173656522261	202733461075	206605251703
500000000000	775000120604	000027000000	000037000000	205400000000
573532255401	172746676441	571422310714	173654666203	202732451517
205524753410	607475534122	607627574732	604765605075	604651361523
000000000000	000000000000	000000000000	000000000000	000001000000
000000100101	000000000000	204440000000	000000000000	000000000000
202730466510	206577257367	201525252525	173647224070	202727224503
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