

DATA SET CATALOG #110

Explorer 12 Cosmic Ray 'A'
61-020A-04A 7 tapes

Explorer 12 Cosmic Ray 'B'
61-020A-04B 1 tape

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 This inventory information is now no longer maintained in the DSCs, but is now managed in the inventory part of the NSSDC information system.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

EXPLORER 12

COSMIC RAY RATES & P.H. REDUCED DATA

COSMIC RAY RATES & P.H. HOURLY AVERAGE

61-020A-04A

61-020A-04B

These data sets have been restored. There were originally eight 7-track, 800 BPI tapes written in Binary. There is one restored tape. Files 1-7 are dataset 61-020A-04A and file 8 is dataset 61-020A-04B. The DR tape is a 3480 cartridge and the DS tape is 9-track, 6250 BPI. The original tapes were created on a 7094 computer. The DR and DS numbers along with the corresponding D numbers and the time spans are as follows:

DR#	DS#	DD#	FILES	TIME SPAN
DR02180	DS02180	D01220	1	08/16/61 - 08/30/61
		D01221 *	2	08/30/61 - 09/13/61
		D01222	3	09/13/61 - 09/28/61
		D01223	4	09/28/61 - 10/13/61
		D01224	5	10/13/61 - 10/28/61
		D01225	6	10/28/61 - 11/14/61
		D01226	7	11/14/61 - 12/06/61
		D01271	8	08/16/61 - 12/06/61

* Read error occurred in record 226, File 1 of D01221

This data set consists of seven 800 BPI, binary, 7-track tapes with one file on each tape. They were made on the IBM 7094 computer.

<u>D#</u> *	<u>C#</u>	<u>Start</u>	<u>Stop</u>
D-01220	C-04857	8/16/61	8/30/61
D-01221	C-04858	8/30/61	9/13/61
D-01222	C-04859	9/13/61	9/28/61
D-01223	C-04860	9/29/61	10/13/61
D-01224	C-04861	10/13/61	10/28/61
D-01225	C-04862	10/28/61	11/14/61
D-01226	C-04863	11/14/61	12/06/61

* 4/21/73 - These 7 'D' tapes have been sent to the National Archives.

2. OPERATING INFORMATION

2.1 Program Setup

The normal mode for each of the programs in the system is to operate under the FORTRAN II system on an IBM 7094 stand alone computer. The individual program decks are binary object decks which are loaded onto a system tape (A2). If there are any parameter (data) cards, they are placed after the *DATA card which follows the last object deck.

Normal output includes an A3 tape to be listed on a 1403 printer.

2.2 Tape Formats

2.2.1 Encyclopedia Tapes

<u>Format</u>	<u>Words</u>	<u>Variable Name</u>	<u>Field Description</u>
O	1	SORT(1)	Start time of data as follows: Bits S, 1-5 : year of decade Bits 6-11 : month of year Bits 12-17 : day of month Bits 18-23 : hour of day Bits 24-35 : minute
O	2	SORT(2)	Start time of data as follows: Bits S, 1-11 : second of minute Bits 12-35 : ms of second
I	3-7	(NRY(I, 1), I=1,5)	Start time of data as follows:
I	3	NRY(1, 1)	Day of year
I	4	NRY(2,1)	Hour of day
I	5	NRY(3, 1)	Minute of hour
I	6	NRY(4, 1)	Second of minute

<u>Format</u>	<u>Words</u>	<u>Variable Name</u>	<u>Field Description</u>
I	7	NRV(5, 1)	Millisecond of second
I	8-12	(NRV(I, 2), I=1, 5)	End time of data as follows:
I	8	NRV(1, 2)	Day of year
I	9	NRV(2, 2)	Hour of day
I	10	NRV(3, 2)	Minute of hour
I	11	NRV(4, 2)	Second of minute
I	12	NRV(5, 2)	Millisecond of second
I	13	ID1	Satellite ID, = 3 for S3, = 13 for S3A
I	14	ID5	Station number
I	15	ID6	Analog tape number
I	16	ID2	Start time of data, month of year
I	17	ID3	Start time of data, day of month
I	18	ID4	Start time of data, year A.D.
A	19	SAT	Satellite ID (S3 or S3A), left adjusted
A	20,21	(AMONTH(1,I), I=1,2)	Start time of data, Julian month of year right adjusted plus blanks
A	22	ISEQ	Identification sequence number
F	23	DD(7)	Satellite height in kilometers or 0
F	24	DD(13)	Satellite magnetic latitude in degrees or 9999
F	25	SUNAN	Sun angle in degrees or 0
F	26	SUNSD	Average sun error in degrees in 0
F	27	PERD	Satellite spin period in seconds or 0
F	28	SDS	Spin period standard deviation in seconds or 0
F	29	PS	Satellite spin rate in RPM or 0
I	30	IERR	Switch for destructive readout: =1 for successful; =2 for not successful

<u>Format</u>	<u>Words</u>	<u>Variable Name</u>	<u>Field Description</u>
F	31-40	(SLTOM(I), I=1, 10)	Sensor look times in minutes
F	41-50	(ASUM(I), I=1, 10)	NASA energy level count sums or 99999
I	51-60	(NAWT(I), I=1, 10)	Number of NASA energy level counts
F	61-70	(AVER(I), I=1, 10)	Averages of NASA energy level counts or 99999.
F	71-80	(AERR(I), I=1, 10)	Errors associated with averages of NASA energy level counts or 99999
I	81-200	(INASA(I), I=1, 120)	NASA readings for constructing NASA energy level counts or 99999
F	201-320	(SLAN(I), I=1, 120)	Sensor look angles in degrees at time of NASA readings
I	321-440	(NADI(I), I=1, 120)	NASA energy level counts or 99999
A	441-560	(INASA(I), I=1, 120)	Flags for the NASA energy level counts, one character left adjusted: N=count not used; *=reconstructed reading used to calculate count
A	561-680	(NASA(I), I=1, 120)	NASA readings, right adjusted with = for missing digit
I	681	IPR	Data content of record: =1 for both NASA and RIDL; =2 for NASA data only; =3 for RIDL data only
A	682-713	(RCOL1(I,1), I=1, 32)	Six low order digits of eight digit RIDL count, in base 4, first transmission with = for missing digit
A	714-745	(RCOL2(I,1), I=1, 32)	Six low order digits of eight digit RIDL count, in base 4, second transmission with = for missing digit
A	746-777	(RCOL1(I,2), I=1, 32)	Two high order digits of eight digit count, in base 4, first transmission, left adjusted with = for missing digit

3. PROGRAMMING INFORMATION

3.1 Method

The S3, S3A data is transmitted from the satellite and recorded at various stations around the globe. The stations record the data on analog tapes. The data on a tape starts when the satellite first comes into the range of the station's receiver and ends when the satellite passes out of this range. During certain time periods, the telemetry data is recorded at more than one station.

Before being processed by the S3, S3A Data Processing System (S3DPS) the data is decommutated and digitized onto seven track magnetic tape. These tapes are known as experimenter tapes, and contain data from only the cosmic ray experiments.

The experimenter tapes consist of records containing thirty-two data frames with each frame containing the time of the data and channels 0, 1, 2, 3, 11. Each file of the tape consists of all data from one receiving station analog tape.

Each encyclopedia record produced consists of data from one 1280 frame telemetry block which contains 120 NASA readings and 32 RIDL readings. Other parameters included for future processing are: sun angle, spin period, sensor look times and angles, definitive orbital data, counts computed from the NASA and RIDL readings, and averages of the various energy level counts with associated statistical information.

NOTE: Frequent references to the system flowchart, Section 3.4, should be made to facilitate understanding of the following description of the system flow.

0001 001553000001 0010200300064 0056000000426 000344000000 000003000000 000064000000 000056000000 000426000000
0049 000344000000 000003000000 000073000000 000050000000 001577000000 000003000000 000013000000 000001000000
0097 000010000000 000020000000 003651000000 620360000000 606060606060 216427646263 000001000000 216507323674
0145 605564501521 207624260741 202757631045 201517734622 174712341166 206555624032 000001000000 206647007640
0193 206647270647 206647551614 206650032562 206650313571 206650574601 206651055611 206651336556 000000000000
0241 000000000000 210562000000 214543700000 214407000000 204640000000 000000000000 204700000000 207630000000
0289 203600000000 000000000000 203600000000 000006000000 000002000000 000002000000 000002000000 000000000000
0337 000060000000 000000000000 000003000000 000005000000 205755252525 213543700000 213407000000
0385 203640000000 221606476000 202452525252 206630000000 202400000000 000000000000 201463146314 202442124250
0433 205652667344 205556750765 201715405321 221606476000 200477223402 203503136224 200642027534 000000000000
0481 177765517473 026657000000 040447000000 063443000000 002614000000 002631000000 002634000000 002706000000
0529 002706000000 303237000000 002711000000 003141000000 014260000000 021446000000 021453000000 023540000000
0577 024035000000 024035000000 024252000000 024261000000 024261000000 024456000000 034417000000 036600000000
0625 066125000000 066313000000 066313000000 070175000000 070203000000 070203000000 070260000000 070424000000
0673 077412000000 012251000000 020050000000 020051000000 025622000000 025644000000 025644000000 026206000000
0721 026207000000 026343000000 034754000000 025621000000 025631000000 040672000000 303237000000 041310000000
0769 041761000000 042003000000 042003000000 042077000000 047637000000 017226000000 030466000000 043217000000
0817 043217000000 043313000000 045152000000 045152000000 045154000000 045230000000 051602000000 055342000000
0865 021752000000 022647000000 022650000000 303237000000 030141000000 030141000000 030173000000 030241000000
0913 033627000000 075450000000 303237000000 035564000000 035571000000 043517000000 043614000000 043614000000
0961 043640000000 043715000000 046715000000 026262000000 070154000000 071354000000 071361000000 303237000000
1009 303237000000 076764000000 076767000000 077012000000 001451000000 303237000000 035451000000 061174000000
1057 063754000000 073741000000 073757000000 073757000000 074152000000 074200000000 076236000000 065037000000
1105 017232000000 034703000000 044411000000 052022000000 055562000000 057211000000 060350000000 060356000000
1153 062022000000 063731000000 021761000000 042552000000 054307000000 061775000000 065540000000 067754000000
1201 071123000000 206467171720 206467171720 210556167373 210534721225 210513051673 210471242455 210450034403
1249 210426566215 210405420260 207747321654 206467171720 206467171720 207576552520 207534136375 207470517742
1297 207426003365 206746756504 206642126720 206532671140 206425440210 206467171720 206467171720 204420507500
1345 211547727214 211537224170 211526300414 211505072342 211505072342 211463664270 211463664270 206467171720
1393 206467171720 211431532446 211421027420 211410324374 210777442716 210756234645 210735026572 210713620521
1441 210672412447 206467171720 206467171720 210606570253 210566023462 210544154127 210522705741 210501540004
1489 210460733076 210437063544 210415715607 206467171720 206467171720 207665271565 207622555211 207560141065
1537 207515625173 207453110617 207410574724 206714140720 206607110452 206467171720 206467171720 205564411740
1585 204724662440 203601242500 211545510062 211535025105 211524322060 211514017515 211503334537 206467171720
1633 206467171720 211451624126 211441121102 211430616537 211420354311 211407631215 210776715642 210755507570
1681 210734301517 206467171720 206467171720 210651521747 210631015272 210607547104 210567002313 210545574242
1729 210525027450 210503561262 210463054605 206467171720 206467171720 210400275035 207737157256 207674541125
1777 207633225536 207570607406 207527173566 207466762740 207424344610 206467171720 206467171720 206536177200
1825 2064633147540 205654627700 205453163420 204501163200 201670416400 211541035343 211530572513 206467171720
1873 206467171720 211477521754 211467217010 211456734113 211446230470 211435745573 211425442627 211415157731
1921 211404454303 303237000000 011570000000 022774000000 017151000000 000015000000 000003000000 000052000000
1969 000000000000 303237000000 303237000000 000230000000 011170000000 005106000000 000005000000 002065000000
2017 000275000000 000000000000 000215000000 000007000000 000000000000 000175000000 007741000000 002161000000
2065 027325000000 000166000000 000000000000 001662000000 000006000000 000000000000 000055000000 000144000000
2113 006766000000 012637000000 005577000000 000001000000 005551000000 000022000000 000000000000 000342000000
2161 000001000000 000134000000 006411000000 070645000000 030010000000 013041000000 303237000000 303237000000
2209 000451000000 000022000000 000000000000 000074000000 000074000000 047367000000 011240000000 012531000000
2257 000000000000 000074000000 001637000000 000000000000 000002000000 000054000000 004352000000 003540000000
2305 044410000000 000675000000 000001000000 303237000000 303237000000 000000000000 000032000000 000046000000
2353 003366000000 041621000000 303237000000 303237000000 000005000000 005726000000 000075000000 000000000000
2401 000024000000 000055000000 003000000000 057345000000 041672000000 001200000000 000005000000 303237000000
2449 303237000000 303237000000 000003000000 000023000000 002437000000 303237000000 303237000000 023523000000
2497 002560000000 007765000000 000016000000 000000000000 000173000000 000026000000 002036000000 066601000000
2545 032173000000 015451000000 007506000000 005411000000 003540000000 001427000000 001124000000 000021000000
2593 001444000000 001707000000 036030000000 020571000000 011535000000 005466000000 005430000000 002214000000
2641 001147000000 606060606060 450000000000 450000000000 450000000000 450000000000 606060606060 606060606060
2689 606060606060 606060606060 606060606060 450000000000 450000000000 450000000000 606060606060 450000000000
2737 450000000000 450000000000 450000000000 450000000000 606060606060 450000000000 450000000000 606060606060
2785 450000000000 450000000000 606060606060 450000000000 606060606060 606060606060 450000000000 450000000000
2833 450000000000 450000000000 450000000000 450000000000 450000000000 606060606060 450000000000 606060606060
2881 540000000000 450000000000 450000000000 450000000000 606060606060 450000000000 606060606060 606060606060
2929 450000000000 450000000000 606060606060 450000000000 450000000000 450000000000 450000000000 450000000000

D-01220

8/16/61 -
8/30/61

1057	001747000000	303237000000	000065000007	000103000010	000070000007	000076000010	303237000000	000103000010
1105	000121000011	000162000013	221606212763	303237001747	600760303237	00000000112	000011000166	000013000144
1153	000012000175	000013000147	000012000151	000012000173	000013000161	000013221006	212763303237	001747601060
1201	303237000000	000142000012	000131000011	000142000012	000132000012	000206000014	303237000000	000165000013
1249	000122000011	221606212763	303237001747	601160303237	000000000131	000011000135	000012000125	000011000121
1297	000011303237	000000000140	000012303237	000000000073	000010221606	212763303237	001747010060	303237000000
1345	000124000011	000075000010	000114000011	000074000010	303237000000	303237000000	000066000007	000057000007
1393	221606212763	303237001747	010160000060	000070000071	000010000067	000070000065	000070000064	00007303237
1441	000000303237	000000000034	000007000042	00006205600	203673000005	00007010260	000055000007	000035000005
1489	000050000006	000041000006	000040000006	303237000000	303237000000	000040000006	000026000005	205550203655
1537	000014000007	010360000032	000005000040	000060000041	000060000042	000060000046	000060000037	000060000035
1585	000005000037	000006000025	000005205640	203506000000	00005010460	000026000005	000037000005	000033000005
1633	000022000004	000041000006	303237000000	000031000005	000026000005	000026000005	205540203454	000000000005
1681	010560000030	000005000035	000005000023	000040000022	000040000031	000005000016	00004001421	000034000026
1729	000005000022	000004205600	203471000005	00005010660	000015000004	000036000005	000025000005	000031000005
1777	000017000004	303237000000	303237000000	000030000002	000016000004	204640202715	400003000004	010760000015
1825	000004000017	000004000021	000004000022	000004000024	000004303237	000000303237	000000000011	000003000014
1873	000003204640	202715000000	00004011060	000015000004	000020000004	000016000004	303237000000	303237000000
1921	303237000000	303237000000	303237000000	000013000003	204640202715	000001000004	011160000023	000004000012
1969	000003000017	000004000020	000004303237	000000000017	000004303237	000000000013	000003000005	000002205460
2017	203426000011	000004020060	000003000002	000013000003	000016000004	000012000003	303237000000	303237000000
2065	000007000003	000012000003	000012000003	202600201673	400005000002	020160000011	000003000007	000003000006
2113	000002000010	000003303237	000000303237	000000303237	000000000012	000003000002	000001204440	202600000001
2161	000003020260	000004000002	000010000003	000010000003	000013000003	303237000000	000004000002	303237000000
2209	000006000002	000007000003	203400202400	400003000002	020360000004	000002000002	000001600004	000002000005
2257	000002303237	000000303237	000000000005	000002000012	000003000011	000003203400	202400400002	000002020460
2305	000002000001	000003000002	000006000002	000004000002	303237000000	303237000000	303237000000	000005000002
2353	000004000002	202400201552	400004000001	020560000006	000002000010	000003000010	000003000005	000002303237
2401	000000000006	000002303237	000000000005	000002000006	00000203600	202471000001	000002020660	000003000002
2449	000011000003	000005000002	000005000002	303237000000	000002000001	303237000000	000011000003	000005000002
2497	202600201673	400002000002	020760000004	000002000007	000003000012	000003000010	000003303237	00000303237
2545	000000303237	000000000002	000001000007	000003203400	202400400001	000002021660	000007000003	000006000002
2593	000006000002	000002000001	303237000000	303237000000	000005000002	000012000003	000010000003	203700202522
2641	000002000003	021160000011	000003000007	000003000005	000002000007	000003303237	000000000004	000002000005
2689	000002000005	000002000006	000002204440	202600000004	00000303060	303237000000	000011000003	000003000002
2737	000007000003	303237000000	303237000000	000007000000	000010000003	221606212763	303237001747	212160303237
2785	030160000001	000001000006	000002303237	000000000001	000001303237	000000303237	000000000010	000003000010
2833	000003000007	000003201400	201400400005	000001030260	303237000000	000006000002	000005000002	000012000003
2881	303237000000	303237000000	000012000003	000011000003	000012000003	221606212763	303237001747	212160303237
2929	0000000000651	000025000702	000025000667	000025000707	000025303237	000000303237	000000000732	000000000732
2977	00002621606	212763303237	001747222260	000135000012	000134000012	000144000012	000125000011	000147000012
3025	303237000000	303237000000	000124000011	000100000010	207564204464	000014000012	222360000062	000007000113
3073	000011000071	000010000075	000010000074	000010303237	000000303237	000000000042	000006000054	000007206620
3121	203704000002	000007242460	000054000007	000054000007	000061000007	303237000000	303237000000	303237000000
3169	303237000000	303237000000	000034000005	206540203650	000006000007	252560000023	000004000036	000005000037
3217	000006000036	000005303237	000000303237	000000303237	000000000043	000006000037	000005205460	203426400012
3265	000004262660	303237000000	000051000006	303237000000	000043000006	303237000000	303237000000	303237000000
3313	000046000006	000056000007	221606212763	303237001747	202746314631	200473474323	206623000000	202501145201
3361	216708240000	206611267311	206574343434	202446166455	206453434343	202405063627	205430000000	201465114364
3409	200525262525	176742557567	200721350564	177446302147	176564272135	176407232022	221606477776	212763777574
3457	210542000000	204651566743	221606477776	212763777574	221606477776	212763777574	221606477776	212763777574
3505	221606477776	212763777574	221606477776	212763777574	221606477776	212763777574	221606477776	212763777574
3553	221606477776	212763777574	221606477776	212763777574	206600000000	203673317273	206550000000	203655246333
3601	205640000000	203506254527	205540000000	203454137426	205600000000	203471421605	204640000000	202715405321
3649	204640000000	202715405321	204640000000	202715405321	205460000000	203426760315	202600000000	201673317273
3697	204440000000	202600000000	203400000000	202400000000	203400000000	202400000000	202400000000	201552023631
3745	203600000000	202471421605	202600000000	201673317273	203400000000	202400000000	203700000000	202522517752
3793	204440000000	202600000000	221606477776	212763777574	201400000000	201400000000	221606477776	212763777574
3841	221606477776	212763777574	207564000000	204464461446	206620000000	203704430577	205540000000	203650416244
3889	205460000000	203426760315	221606477776	212763777574	000000000000	207257000000	000010000000	225465000000
3937	000017000000	225240000000	000026000000	224232000000	000030000000	234152000000	000040000000	133547000000
3985	000050000000	135502000000	000062000000	137405000000	000074000000	075271000000	000006000000	003651000000

4033	015543000000	303237000000	303237000000	004175000000	001234000000	303237000000	000105000000	303237000000
4081	303237000000	016370000000	015463000000	303237000000	004052000000	000770000000	303237000000	303237000000
4129	303237000000	303237000000	303237000000	012557000000	303237000000	303237000000	000570000000	303237000000
4177	303237000000	000076000000	303237000000	014556000000	011311000000	303237000000	003657000000	000466000000
4225	000062000000	303237000000	303237000000	303237000000	016244000000	303237000000	303237000000	004035000000
4273	000572000000	000076000000	303237000000	000100000000	303237000000	020002000000	303237000000	303237000000
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4369	013607000000	003165000000	000576000000	303237000000	000102000000	303237000000	303237000000	017737000000
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4465	303237000000	014332000000	013512000000	303237000000	000735000000	000111000000	077410000000	303237000000
4513	303237000000	014325000000	017352000000	007255000000	003361000000	001152000000	303237000000	000102000000
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4705	216470360000	216470360000	216470360000	216470360000	216470360000	216470360000	216470360000	216470360000
4753	216470360000	216470360000	216470360000	216470360000	216470360000	216470360000	216470360000	216470360000
4801	216470360000	216470360000	216470360000	216470360000	216470360000	216470360000	605655734321	206414211001
4849	605715043704							