#370

SKYLAB

73-027A-08B

DIGITIZED OZONE DATA

73-027A-08C

DIGITIZED AURORA DATA

73-027A-08A

Digitized Airglow Data

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 This inventory information is now no longer maintained in the DSCs, but is now managed in the inventory part of the NSSDC information system.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

SKYLAB

DIGITIZED AIRGLOW DATA ON TAPE

73-027A-08A SPIO-00205

THIS DATA SET HAS BEEN RESTORED. ORIGINALLY IT CONTAINED ONE 7-TRACK, 556 BPI TAPE WRITTEN IN BINARY. THERE IS ONE RESTORED TAPE. THE DR TAPE IS A 3480 CARTRIDGE AND THE DS TAPE IS 9-TRACK, 6250 BPI. THE ORIGINAL TAPE WAS CREATED ON AN IBM 360 COMPUTER AND WAS RESTORED ON AN IBM 9021 COMPUTER. THE DR AND DS NUMBER ALONG WITH THE CORRESPONDING D NUMBER AND TIME SPAN IS AS FOLLOWS:

DR#	DS#	D#	FILES	TIME SPAN
DR005204	DS005204	D028812	1-25	03/02/74 - 03/03/74

Refer to 73-027A-08C

```
$JOB  14:06:44
$NOP DUMP OF X-431
$ASS IN MS5 SI TY
$EXEC DPOCT7 BS
 INPUT TAPE ON MS5
 DATA INPUT     1 1 STOP
  FILE  1       RECORD    1        LENGTH    2144 BYTES
  (      0)   777702620266  030602600262  024002630255  026002620327  030103070261  026302610255  026302610271  026102400261
  (     48)   026002620264  033002610260  026002400265  033002620260  026003230261  026202706000  000004540000  567077777773
  (     96)   161015561614  154414701512  157215421556  156216261610  153415241534  155015341522  153615461532  153216061630
  (    144)   156215621574  163216261632  161216021562  155015621600  155015421520  151415721550  156215401532  153415441576
  (    192)   164216201570  157216301614  160615341524  153615721562  164216061620  156015561572  162216221562  154415401566
  (    240)   157416001556  161215661576  162015241552  153215361536  153615521576  154415701534  155616021546  153215141512
  (    288)   160015521510  154415521540  155215561602  163215501524  155415701572  156415641600  160616001546  156615161544
  (    336)   157415621510  147215121510  153415301532  155215761564  156215441556  155615441566  154415241534  153215601604
  (    384)   155414721526  153215261534  150615201532  152015161502  151415121532  151015361476  153215141504  151015561552
  (    432)   151215121534  155415041474  145214561412  147614741472  145614541420  144614641450  150014341450  143215021506
  (    480)   145214501422  145214261432  145214161422  141214461426  145213441406  142014501502  152215421472  145214661450
  (    528)   146014721530  151015261462  146214341456  146415341440  143214701500  147415021476  150015201516  146214661506
  (    576)   151015341546  152015521542  147614761554  152415161516  157615241512  154216221554  155615561530  154015521544
  (    624)   153415121472  150415101554  155616121624  163415661564  163416501614  157215721606  164216241574  160015561524
  (    672)   156615161564  157216161604  160216241626  160216321610  157616561650  157016021610  157415641614  160015761600
  (    720)   161016061576  160016021632  160416121602  156215641624  162615741624  164416261564  154615501572  151215321550
  (    768)   157416041554  157616101544  154615561540  152415141554  156215161540  155615641516  152214661472  154615121532
  (    816)   154415601512  152015661542  147214521502  142614261444  151414741504  151215241474  147215221476  150415161512
  (    864)   147414621470  144015201502  142014621500  151215201504  145215001474  152615201506  152615101526  151614441426
  (    912)   146414321440  151415301460  150415301542  151615101474  152615121470  152015501512  144614741474  147015201534
  (    960)   151614641446  144414641534  150214741446  147214641466  151615341544  150414721502  146614721410  143414521456
  (   1008)   146214621432  140614121460  146614421450  143414441412  143414441402  141014061430  144414661424  140013721336
  (   1056)   134213461356  134213241370  141013621360  134213201322  132413141322  127213201272  123612501316  125212301262
  (   1104)   126613021246  122212101220  120412141264  122012201224  123412441172  122612141220  120612121232  124612261216
  (   1152)   117012221224  117011301152  120412041174  116211621206  117212041170  113411441146  115212001144  115411521140
  (   1200)   111611241110  113211261130  113211041136  107211041112  114411141102  103010521054  105410541104  111410441054
  (   1248)   110011021112  105610721122  111011241076  112011041172  117411701142  110611201112  111611021074  107411561104
  (   1296)   106611001122  116211401122  111410761120  113011041076  105210721042  103410521100  106210721116  110010261074
  (   1344)   111011101116  113011201122  105610421074  107010741076  107011121102  104010501056  107211201110  111610661072
  (   1392)   107210721072  106010521070  111411061072  106610461112  110010261030  105410561102  107611121104  106410621056
  (   1440)   106210421076  106610761150  120412061142  107010421064  106610761114  106210521102  115211421110  106411121110
  (   1488)   110010641066  110411221100  107210701102  110411161074  112010721050  103210641076  110211001126  112611161076
  (   1536)   110011041104  103210361026  102210361034  105411021062  105010361014  101610141056  105610521050  104410641026
  (   1584)   100410200776  102410041016  107010521074  103210441056  104410641142  111611101100  106210541056  110211261144
  (   1632)   112610521070  107011061142  113211201110  112011301072  105210701032  105211001072  106211241114  107411041070
  (   1680)   107211001044  105010621112  111010641102  105210541072  111410741072  110211141114  112211401124  105410701132
  (   1728)   106010641060  105211021116  110410761100  107210541052  113611721124  110610561060  111011361116  111411061116
  (   1776)   111210441074  110011301170  114611541126  112411241152  114611341124  110010721054  105407721010  110211101074
  (   1824)   105010621062  107611261110  110411001070  107410421102  107410721102  113010761022  104410461054  104610641044
  (   1872)   105410601070  106211001042  103610301056  106011001112  115411521132  111411241106  107210661110  103610141010
  (   1920)   102410321032  106611161140  107210441070  106210541054  105010521100  107210641064  102610261056  105610501032
  (   1968)   103210701102  111211021054  110210661110  110410561056  105210521044  107210461036  106410461104  110411041064
  (   2016)   105210261016  103610421040  105410661066  107010721040  104610241022  110410701060  106010561072  112211001106
  (   2064)   105210721050  104211061072  107211041122  112010601054  106410721046  104210501064  106410401050  104610601044
  (   2112)   107210561054  110210141032  104010441076  112011061110  114411021054  1070
```

AIRGlow

```
$$
$REW LO
```

```
INPUT TAPE ON MS5
DATA INPUT     1 0 1
 FILE   1      RECORD    64      LENGTH    352  BYTES
 (      0)   777702620266  030602620270  024002630255  026002630303  030103140327  030503070263  025502610263  026202550262
 (     48)   024002610262  027003300266  026402400265  033002610260  026003230261  026202270260  777747144770  475000000144
 (     96)   105207761074  110410121054  105611041022  107010101100  105010541122  076210121140  100210701004  106011161062
 (    144)   111610361110  103410601106  117010741062  112011121062  105011201040  113411141012  102611241070  104210401050
 (    192)   103410761032  105211121120  102210501156  103610561056  106610601074  113411461044  105210621020  105210621072
 (    240)   103410721040  105611121052  106010641042  100610741104  103211121056  076210441064  103610121110  104611361016
 (    288)   110610441020  077210321010  103007721064  106610561134  104411121152  110210021112  105410421054  107410220766
 (    336)   103410601102  100010201052  07641052
FILE    1       # OF DATA RECORDS    64       # SUCCESSFUL READS   65
        # PERMANENT READ ERRORS    0       # ZERO BYTE ERRORS   0       # SHORT RECORDS    0       # UNDEFINED ERRORS   0
          # OF RECORDS RETRIED    0       TOTAL # OF RETRIES   0
$$
$EOJ   14:10:50
```

SKYLAB

DIGITIZED OZONE DATA ON TAPE

73-027A-08B SPIO-00204

THIS DATA SET HAS BEEN RESTORED. ORIGINALLY IT CONTAINED TWO 7-TRACK, 556 BPI TAPES WRITTEN IN BINARY. THERE IS ONE RESTORED TAPE. THE DR TAPE IS A 3480 CARTRIDGE AND THE DS TAPE IS 9-TRACK, 6250 BPI. THE ORIGINAL TAPES WERE CREATED ON AN IBM 360 COMPUTER AND THEY WERE RESTORED ON THE MODCOMP COMPUTER. THE DR AND DS NUMBERS ALONG WITH THE CORRESPONDING D NUMBERS AND THE TIME SPANS ARE AS FOLLOWS:

DR#	DS#	D#	FILES	TIME SPAN
DR004856	DS004856	D028755	1-4	02/26/74
		D028756	5-8	02/26/74

Refer to 73-027A-08C

DR004856 D28755 2/26/74 - 2/26/74

RECORD 1 OF FILE 1
LENGTH = 508 BYTES

1(	1)	777702600270	024003060261	024002620255	026202660240	032203050306	024003270305	030403070305	024002620265
9(	49)	026603300262	026402400262	026503230321	032302610262	027002400240	024002407463	000117540001	152677777747
17(	97)	014601420132	014601400136	014201420136	015201420144	014001440154	014201420142	014601340152	014201520144
25(	145)	015201320146	015001440144	015001320140	014001360142	015201400136	014001400156	013001460150	014401400146
33(	193)	014201400154	014201660172	014001360150	015401360144	015201400146	014001520136	015201500134	013201440134
41(	241)	013201460150	015401440146	014201660142	015201440162	015001440146	013601320152	014401500142	014001440152
49(	289)	014601440136	013201420152	016601440154	013601520152	015001520146	014601500126	014001420156	014401400144
57(	337)	015001600140	015001460152	015201460150	014601500144	013601400142	013201460142	013401520144	013601240142
65(	385)	014401500150	014401420142	013001500154	016001420152	015601320142	015401540152	015601420140	013601520142
73(	433)	014001640144	015001520156	016001520122	014001320136	015201460142	014401360146	014001360142	014201560146
81(	481)	015601460160	015201420142	015201360132	014401320142	01323032			

RECORD 21 OF FILE 1
LENGTH = 508 BYTES

1(	1)	777702600270	024003060261	024002620255	026202660240	032203050306	024003270305	030403070305	024002620265
9(	49)	026603300262	026402400262	026503230321	032302610262	027002400240	024002407463	000117540033	627277777747
17(	97)	302427663000	276030143040	301030303022	303230423030	303230263042	307430603036	303230303030	302430303016
25(	145)	301630463030	303030203022	302630163012	303427663016	304030523046	304430002712	277430323004	302030323040
33(	193)	304630443046	304230443046	305630143046	304030243024	305230523066	303630023042	306230723036	303430323062
41(	241)	307231063042	301027723016	303630043014	302230303040	300630263042	303230363032	276427603022	302027522754
49(	289)	301227642750	277227743022	302430523046	304430423026	305030203002	277630343010	303030303012	303430243036
57(	337)	301027663014	300627562760	300027663010	304630323004	302030263012	303230143020	303630163032	303027702774
65(	385)	274627323022	303430423010	277427743024	304230423022	277627642756	300430223034	303030203032	305030443034
73(	433)	301427662762	302030463046	302230363044	302227523014	301427623002	303630223010	301630123036	301630043034
81(	481)	301230163020	276630062772	300030323000	304030343022	27645632			

21 RECORDS IN FILE 1 OF TAPE

SKYLAB

DIGITIZED AURADRAL DATA ON TAPE

73-027A-08C SPIO-00075

THIS DATA SET HAS BEEN RESTORED. THERE WERE ORIGINALLY SEVEN 9-TRACK, 1600 BPI TAPES, WRITTEN IN BINARY. THERE IS ONE RESTORED TAPE. THE DR TAPE IS A 3480 CARTRIDGE AND THE DS TAPE IS 9-TRACK, 6250 BPI. THE TAPES ARE NOT IN SEQUENTIAL ORDER. THE ORIGINAL TAPES WERE 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	
DR03992	DS03992	D28757	1-4	03/13/74 - 03/13/74	
		D28758	5-9	03/13/74 - 03/13/74	(a)
		D28759	10-13	03/14/74 - 03/14/74	
		D28760	14-24	03/13/74 - 03/13/74	
		D28761	25-30	03/15/74 - 03/15/74	
		D28762	31-35	04/03/74 - 04/05/74	
		D28763	36-40	04/04/74 - 04/05/74	

(a) I/O ERROR ON RECORD 1, FILE 1

REQ. AGENT	RAND NO.	ACQ. AGENT
CMP	RC 7053	RNH

SKYLAB
73-027A-08A
DIGITIZED AIRGLOW DATA
73-027A-08B
DIGITIZED OZONE DATA
73-027A-08C
DIGITIZED AURORA DATA

This data set catolog contains 3 data sets, Digitized Ozone Data with 2 tapes and Digitized Aurora with 7 tapes. All tapes are 7 track, 556BPI, BINARY and are multifiled. These tapes were created on a 360 computer. On the following pages are the C & D numbers, number of files for each tape and the tape format. Please note that none of these tapes have the time span in the data.

73-027A-08B

D	C	TAPE #	FILES	TIME SPAN
28755	18631	MT #08	4	2/26/74
28756	18632	MT #10	4	2/26/74
73-027A-08C				
28757	18633	#58A	4	3/13/74
28758	18634	#58B	5	3/13/74
28759	18635	#58C	4	3/14/74
28760	18636	#61A	11	3/13/74
28761	18637	#61B	6	3/15/74
28762	18638	#67A	5	4/3/74 - 4/5/74
28763	18639	#67B	5	4/4/74 - 4/5/74
73-027A-08A				
28812	18671	#26	28	3/02/74 - 3/03/74

APPENDIX B

Magnetic Tape Format

The technical details of the magnetic tape format used in the recording of Experiment S063 digitized data are presented in the accompanying copy of a manual issued by the Perkin-Elmer Corp.

Magnetic tapes deposited with the NSSDC are copies of the original and are all recorded on ~~7~~ 9 tracks at ~~556~~ 6250 bits per inch. Each record contains one scan line, and a file mark is placed at the end of each complete frame scan. Four file marks indicate end of recording on a tape.

The mechanical movement of the scanning table of the microdensitometer (PDS) is back and forth; i.e., at the end of a scan line, the table stops, moves over to the next scan line and then scans in the direction opposite to the just-completed scan. In a Type R Scan, the data are recorded on tape in the order taken. In the Type F Scan, the scanning remains the same mechanically, but the computer reverses the order of the data of all even-numbered scans before transferring them to the magnetic tape. Thus in the Type F scan, the data are ordered as for a television type raster scan, each line starting at the same side of the frame. Magnetic tapes numbered 01 through 40 are Type R scans. Starting with tape 41, all the remainder of tapes are Type F scans.

OUTPUT DESCRIPTION

Magnetic Tape Format

Scansalot Program

Recording Information

Channels	7	9
Bits/Inch	556	~~800~~ 6250
Parity	Odd	Odd

File and interrecord gaps are IBM compatible.

Digit Representation

Figure 16 illustrates the relevant 7- and 9-track allocations and spacings. Note that in the 9-track system consecutive data channels are not allocated to consecutive tracks.

Character Contents

Each tape character has been recorded to represent six binary bits of information. Thus, in the 9-track system, channels 0 and 1 do not contain meaningful information and should be discarded during data reduction.

Data Format

The contents of each data record are as follows:

I Two tape characters representing the octal number 7777. These are used for the purpose of recognizing the beginning of a record. They are not part of the program data.

II Eighty characters representing forty 12-bit words of sample identification information. Each pair of characters contains

the ASCII code for one identification word.

e.g. The 2 tape characters (000011) (000001) would produce the octal number 0301, which is ASCII code for the letter A.

III Two characters representing the octal value for minus the number of data values following the coordinate information in the record. Each data value will be comprised of two tape characters, making one 12-bit word.

e.g. The two tape characters (110000) (000000) = 6000 = - 2000 would represent the fact that there are 2000 data values following the coordinate information in this record.

IV Four characters representing a 24-bit binary number which is the X coordinate on the sample (in micrometers) when data taking begins for the current data record. The most significant bit is a sign bit.

If the sign bit is a one, the coordinate value represented has a negative value. The binary absolute value of the coordinate, in this case, is found by twos complementing the 24-digit number and incrementing the result by one.

e.g. The tape characters (000000) (000010) (011100) (010000) represent the coordinate + 00023420 = + 10000 microns. The tape characters (111111) (111101) (100011) (110000) represent the coordinate - 00023420 = - 10000 microns.

V Four characters representing a 24-bit binary number which is the Y coordinate on the sample (in micrometers) where data taking begins for the current data record. Interpretation is the same as explained above for X.

VI Four characters representing a 24-bit binary number which is the X distance (in micrometers) between density (or transmission) readings. Interpretation is the same as explained above for X and Y.

VII The remaining characters in the record should be broken into groups of 2 characters each. Each group of 2 represents one density (or transmission) reading from the sample. To interpret the values, do the following:

Use 2 tape characters to obtain a 12-bit binary number. Convert the number to decimal. Divide by 400.0. The result is the desired density (or transmission) value.

e.g. The 2 tape characters (000111) (110100) represent the number 764 = 500 .

Then 500/400.0 = 1.25 (density value).

This completes the record contents.

Between any two data records for a given sample there is an interrecord gap.

Following the last data record for a given sample is a file gap.