592

Earth Sc.

NIMBUS 7
SAMS RADIANCE ARCHIVE TAPE
78-098A-02A

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 This inventory information is now no longer maintained in the DSCs, but is now managed in the inventory part of the NSSDC information system.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

REQ. AGENT	RAND NO.	ACQ. AGENT
BER	V0184	YPS

NIMBUS 7

SAMS RADIANCE ARCHIVE TAPE

78-098A-02A ESAD-00243

THIS DATA SET CATALOG CONSISTS OF 196 MAGNETIC TAPES. THE TAPES ARE 9-TRACK, 1600 BPI, AND CREATED ON AN IBM 360 COMPUTER. THE FIRST FILE IS A HEADER RECORD WRITTEN TWICE IN EBCDIC, FOLLOWED BY MULTIPLE BINARY DATA FILES. ~~DOCUMENTATION FOR THIS DATA SET CAN BE FOUND IN ROOM 123, IN THE FILING CABINET.~~ THE D AND C NUMBERS, ALONG WITH THE TIME SPANS ARE AS FOLLOWS:

D#	C#	FILES	TIME SPAN
D-58666	C-23157	10	10/23/78 - 10/29/78
D-57262		10	10/28/78 - 11/06/78
D-57291		15	11/05/78 - 11/14/78
D-57282		10	11/13/78 - 11/22/78
D-57253		10	11/21/78 - 11/29/78
D-57280		10	11/29/78 - 12/08/78
D-57252		10	12/07/78 - 12/16/78
D-57268		9	12/15/78 - 12/24/78
D-57247		10	12/24/78 - 12/31/78
D-57281		9	01/01/79 - 01/08/79
D-57273		10	01/08/79 - 01/15/79
D-57279		12	01/17/79 - 01/25/79
D-57258		12	01/25/79 - 02/01/79
D-57263		11	02/01/79 - 02/10/79
D-57283		10	02/10/79 - 02/17/79
D-57276		11	02/18/79 - 02/26/79
D-57257		10	02/26/79 - 03/05/79
D-57292		10	03/06/79 - 03/13/79
D-57274		10	03/14/79 - 03/20/79
D-57293		11	03/22/79 - 03/29/79
D-57275		12	03/29/79 - 04/06/79
D-57278		11	04/06/79 - 04/14/79
D-57260		10	04/15/79 - 04/21/79
D-57277		10	04/23/79 - 04/30/79
D-57286		10	05/01/79 - 05/08/79
D-57259		12	05/09/79 - 05/17/79
D-57261		10	05/16/79 - 05/24/79
D-57269		10	05/25/79 - 05/31/79
D-57266		11	06/02/79 - 06/09/79
D-57270		9	06/09/79 - 06/16/79

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D#	C#	FILES	TIME SPAN
D-57249		10	06/18/79 - 06/25/79
D-57265		10	06/25/79 - 07/04/79
D-57255		10	07/03/79 - 07/12/79
D-57271		10	07/12/79 - 07/18/79
D-57246		10	07/20/79 - 07/27/79
D-57289		10	07/28/79 - 08/04/79
D-57251		11	08/04/79 - 08/11/79
D-57267		10	08/13/79 - 08/20/79
D-57256		10	08/20/79 - 08/27/79
D-57288		10	08/29/79 - 09/05/79
D-57248		10	09/06/79 - 09/12/79
D-57287		10	09/14/79 - 09/21/79
D-57272		10	09/22/79 - 09/28/79
D-57290		10	09/30/79 - 10/07/79
D-57250		10	10/08/79 - 10/15/79
D-57264		10	10/16/79 - 10/22/79
D-57254		10	10/24/79 - 10/31/79
D-57285		10	11/01/79 - 11/07/79
D-57284		10	11/09/79 - 11/16/79
D-61967		11	11/16/79 - 11/24/79
D-57369		10	11/25/79 - 12/02/79
~~D-57268~~ 57368		11	12/03/79 - 12/09/79
D-57376		11	12/11/79 - 12/19/79
D-57363	C-23121	10	12/19/79 - 12/26/79
D-57384		10	12/27/79 - 01/02/80
D-57396	C-23123	10	01/04/80 - 01/10/80
D-57383		10	01/11/80 - 01/18/80
D-57366		10	01/20/79 - 01/27/80
D-57365		10	01/27/80 - 02/04/80
D-57367		10	02/05/80 - 02/13/80
D-57340		10	02/13/80 - 02/20/80
D-57338		20	02/21/80 - 02/29/80
D-57341		10	02/29/80 - 03/07/80
D-57335		11	03/08/80 - 03/15/80
D-57342		10	03/16/80 - 03/22/80
D-57332		10	03/24/80 - 03/31/80
D-57343		11	04/01/80 - 04/07/80
D-57339		10	04/08/79 - 04/15/80
D-57333		10	04/17/80 - 04/24/80
D-57374		10	04/25/80 - 05/01/80
D-57375		10	05/03/80 - 05/10/80
D-57331		10	05/10/80 - 05/17/80
D-57329		10	05/19/80 - 05/26/80
D-57330		9	05/27/80 - 06/03/80
D-57360	C-23118	10	06/04/80 - 06/11/80
D-57337		10	06/12/80 - 06/19/80
D-57347		11	06/20/80 - 06/26/80
D-57348		10	06/28/80 - 07/05/80
D-57315		10	07/05/80 - 07/13/80
D-57364	C-23122	10	07/14/80 - 07/21/80

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D#	C#	FILES	TIME SPAN
D-57334		11	07/21/80 - 07/28/80
D-57350		10	07/30/80 - 08/06/80
D-57356	C-23114	10	08/07/80 - 08/13/80
D-57357	C-23115	10	08/15/80 - 08/22/80
D-57358	C-23116	10	08/23/80 - 08/29/80
D-57319		10	08/30/80 - 09/07/80
D-57359	C-23117	10	09/08/80 - 09/14/80
D-57385		10	09/15/80 - 09/22/80
D-57320		10	09/24/80 - 10/01/80
D-57355	C-23113	10	10/02/80 - 10/08/80
D-57361	C-23119	10	10/10/80 - 10/17/80
D-57316		10	10/18/80 - 10/24/80
D-57318		10	10/26/80 - 11/02/80
D-57317		10	11/03/80 - 11/10/80
D-57314		10	11/10/80 - 11/18/80
D-57327		10	11/19/80 - 11/26/80
D-57346		10	11/26/80 - 12/03/80
D-57328		10	12/05/80 - 12/12/80
D-57344		10	12/13/80 - 12/19/80
D-57345		10	12/21/80 - 12/28/80
D-57349		10	12/29/80 - 01/05/81
D-57325		10	01/06/81 - 01/13/81
D-57326		10	01/14/81 - 01/21/81
D-57321		10	01/21/81 - 01/28/81
D-57386		10	01/30/81 - 02/06/81
D-57353	C-23111	10	02/06/81 - 02/15/81
D-57322		10	02/15/81 - 02/22/81
D-57324		10	02/23/81 - 03/01/81
D-57323		10	03/03/81 - 03/10/81
D-57352	C-23110	10	03/11/81 - 03/17/81
D-57336		10	03/18/81 - 03/26/81
D-57351		10	03/27/81 - 04/03/81
D-57354	C-23112	10	04/03/81 - 04/11/81
D-57371		10	04/12/81 - 04/19/81
D-57370		10	04/20/81 - 04/26/81
D-57372		10	04/24/81 - 05/05/81
D-57379		10	05/06/81 - 05/12/81
D-57378		10	05/14/81 - 05/21/81
D-57373		10	05/22/81 - 05/29/81
D-57381		10	05/30/81 - 06/05/81
D-~~67382~~ 57382		10	06/07/81 - 06/14/81
D-57380		10	06/15/81 - 06/21/81
D-57362	C-23120	10	06/23/81 - 06/30/81
D-57377		10	07/01/81 - 07/07/81
D-61969		11	07/08/81 - 07/17/81
D-61970		11	07/16/81 - 07/25/81
D-61971		11	07/24/81 - 08/02/81
D-61986		11	08/01/81 - 08/10/81
D-62516		11	08/09/81 - 08/18/81
D-61968		11	08/17/81 - 08/25/81

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D#	C#	FILES	TIME SPAN
D-62985		11	08/25/81 - 09/03/81
D-61983		11	09/02/81 - 09/11/81
D-61982		11	09/11/81 - 09/19/81
D-61984		11	09/18/81 - 09/27/81
D-61981		11	09/26/81 - 10/05/81
D-61980		11	10/04/81 - 10/13/81
D-61979		11	10/12/81 - 10/21/81
D-61978		11	10/20/81 - 10/29/81
D-61977		11	10/28/81 - 11/06/81
D-61976		12	11/05/81 - 11/14/81
D-61975		11	11/13/81 - 11/22/81
D-61973		11	11/21/81 - 11/30/81
D-61972		11	11/29/81 - 12/08/81
D-61974		11	12/08/81 - 12/15/81
D-62689		10	12/15/81 - 12/24/81
D-62509		10	12/23/81 - 01/01/82
D-62526		9	01/01/82 - 01/09/82
D-62521		10	01/09/82 - 01/17/82
D-62513		10	01/16/82 - 01/25/82
D-62525		10	01/24/82 - 02/02/82
D-62706		10	02/01/82 - 02/10/82
D-62531		11	02/09/82 - 02/18/82
D-62702		10	02/17/82 - 02/26/82
D-62704		10	02/25/82 - 03/06/82
D-62523		10	03/05/82 - 03/14/82
D-62532		10	03/13/82 - 03/22/82
D-62515		10	03/21/82 - 03/29/82
D-62528		10	03/29/82 - 04/07/82
D-62687		10	04/06/82 - 04/15/82
D-62530		10	04/14/82 - 04/23/82
D-62511		11	04/22/82 - 05/01/82
D-62707		10	04/30/82 - 05/09/82
D-62710		10	05/08/82 - 05/17/82
D-62512		10	05/16/82 - 05/25/82
D-62520		10	05/24/82 - 06/02/82
D-62685		10	06/01/82 - 06/10/82
D-62703		10	06/09/82 - 06/18/82
D-62686		10	06/17/82 - 06/26/82
D-62705		10	06/25/82 - 07/04/82
D-62517		10	07/03/82 - 07/12/82
D-62708		10	07/11/82 - 07/20/82
D-62524		11	07/19/82 - 07/27/82
D-62514		12	07/27/82 - 08/05/82
D-62529		10	08/04/82 - 08/10/82
D-62522		6	08/10/82 - 08/13/82
D-62510		11	08/13/82 - 08/21/82
D-62709		10	08/20/82 - 08/29/82
D-62533		10	08/28/82 - 09/06/82
D-62711		10	09/05/82 - 09/14/82
D-62519		10	09/13/82 - 09/22/82

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D#	C#	FILES	TIME SPAN
D-62688		10	09/21/82 - 09/30/82
D-62684		10	02/12/83 - 02/21/83
D-62518		10	02/20/83 - 03/01/83
D-62527		10	02/28/83 - 03/09/83
D-62690		10	03/08/83 - 03/17/83
D-62691		10	03/16/83 - 03/25/83
D-62695		10	03/24/83 - 04/02/83
D-62694		10	04/01/83 - 04/10/83
D-62696		10	04/09/83 - 04/18/83
D-62693		10	04/17/83 - 04/26/83
D-62692		10	04/25/83 - 05/03/83
D-62700		10	05/03/83 - 05/12/83
D-62697		10	05/11/83 - 05/20/83
D-62699		10	05/19/83 - 05/28/83
D-62701		10	05/27/83 - 06/05/83
D-62698		8	06/04/83 - 06/13/83

B R I E F D E S C R I P T I O N

Radiance Archive Tape (RAT)
78-098A-02A

This experimenter-supplied radiance data set is written on magnetic tape in 16-bit integers. It contains uncalibrated and calibrated data frame by frame along the orbit, housekeeping functions, derived tangent point pressures, relevant spacecraft functions, and retrieved temperature profiles at 2.5-deg intervals along the tangent track. Each tape covers 6 days of data.

M A T E R I A L S F O R D I S T R I B U T I O N

78-098A-02A
Radiance Archive Tape (RAT)

SAMS RAT description, T884021 (6/83), B36660-000A.
Nimbus-7 SAMS experiment data user's guide, NASA RP 1221 (5/89), B38980-000A

A C K N O W L E D G E M E N T S

When using the data in any reports, publications, or presentations, please acknowledge the National Space Science Data Center and the following individuals or groups:

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Dr. F. W. Taylor And Dr. C. D. Rodgers, University Of Oxford, Members Of The Sams Nimbus Experiment And Information Processing Teams

REVISION A 6/22/83
added; Appendix,TDF

SAMS RAT DESCRIPTION T884021

GODDARD SPACE FLIGHT CENTER
GREENBELT, MARYLAND

SAMS RAT DESCRIPTION T884021

Goddard Space Flight Center
Greenbelt, Maryland

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TABLE

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SAMS RAT DESCRIPTION T884021

1. INTRODUCTION

This specification relates to the Stratospheric and Mesospheric Sounder Radiance Archive Tapes (SAMS RAT's) as delivered to the Nimbus Observation Processing System (NOPS). Each tape covers a period 8 calendar days giving a total of 46 tapes/year. Because for most of the time the SAMS is in STANDBY one day in every four, only 6 data days will be on most tapes. The tape is a 9-track, 1600-bpi, 2400-ft. magnetic tape, with overall structure as shown in the following table:

Table 1
SAMS RAT Tapes

Number of Physical Records	Identifier	Length (in bytes)
2	NOPS Header	630
EOF*		
2	1	108
1	132	36
EOF		
n	2	4104
1	132	36
EOF		
m	3	4104
1	132	36
EOF		
Repeated p times		
1	196	36
EOF		
2	TDF**	630
EOF		
EOF		

*End of file
**Trailing Documentation File

2. NOPS STANDARD HEADER RECORD

The Standard Header Record (SHR) consists of two physical records of 5 logical records each of 126 EBCDIC characters (Figure 1).

3. DATA RECORDS

The data records are made up of data blocks copied from the Oxford Archive tape with record numbers, identifiers, and checksums added (Figure 2). The details of the Oxford Archive tape are given in the second file on the tape and in the Appendix to this document. All Oxford SAMS data are in 16-bit words.

4. TRAILING DOCUMENTATION FILE

The last two phisical records on the tape are the TDF. In the first 90 characters of the first physical record is the string: **********NOPS TRAILER DOCUMENTATION FILE FOR TAPE PRODUCT T884021 GENERATED ON DDD HH MM. The rest aof the record is blank. The second physical record is a copy of the NOPS SHR.

Total 24-bit Words	MSB 24 22 20 18 16 14 12 10 8 6 4 2 LSB 1	Total Bits
1	• Nimbus – 7 NOPS$_b$SPEC$_b$ NO$_b$T └If TDF exists (24 Characters)	
8		192
9 10	SPEC NO. (6 Digits) 880421	
	$_b$SQ$_b$NO$_b$ (7 Characters)	
13	PDFC CODE HC (2 Char.)	
14	5-Digit Sequence No. (5 Characters) YJJJN *For CZCS these characters (40-45) are a	
15	six-digit sequence f(includes Redo) REDO CHARACTER	408
16	1 Char..Tape Copy No Blank Character	
17	(4 Characters) SUBSYSTEM I.D. SAMS	
18	Blank Character SOURCE FACILITY OXFD	
19	(4 Characters)	
	Blank Character	
20	(T) Character (Ø) Character Blank Character	
21	(4 Characters) DESTINATION FACILITY I.D. IPD	
22	(23 Characters)	
	START YEAR, DAY, HOURS, MINUTES, SECONDS $_b$START$_b$19XX$_b$DDD$_b$HHMMSS$_b$	
29		696
	END DATE AND TIME OF DATA (19 Characters) TO$_b$19XX$_b$DDD$_b$HHMMSS$_b$ * Some Facilities may not include end time in header	
36	(20 Characters)	
	DATE AND TIME TAPE WAS GENERATED GEN$_b$19XX$_b$DDD$_b$HHMMSS$_b$	
42		1008
84	NASA RAT$_b$ Vn.n$_b$bbbbbb THE$_b$ FIRST$_b$ FILE$_b$ ON$_b$ THE$_b$ TAPE$_b$ IS$_b$ A$_b$ DESCRIPTION$_b$ OF$_b$ THE$_b$ TAPE$_b$ CONTENTS (44 BLANK) BLANK (126 Characters)	2016
126		3024
	BLANK (126 Characters)	
168		4032
	BLANK (126 Characters)	
210		5040

EBCDIC TAPE FORMAT

Figure 1. Standard Header (Physical Record Format)
(1 Character = 8 bits)

	12		
1	PHYSICAL RECORD NO.(12 BITS)	SPARE (4) RECORD ID (8)	24
	OXFORD DATA IN 16-BIT WORDS PACKED TO MULTIPLE OF 36 BYTES WITH ZEROS		
n		CHECKSUM	24n

where n can take values of 12, 36, and 1368.

Figure 2. Data Records

5. APPENDIX

Archive tapes are exact copies of Oxford Master Archive tapes with blocks packed with zeros to a multiple of 36 bytes. The first file on the tape is a copy of the Oxford Ansi Header; athe second file is a text description in ascii of the contents of the tape, written as blocks of arbitrary length, with lines terminated by end of record; the remaining files on the tape contain blocked records, each block having the following structure:

```
      (  record 1:    length of record in bytes       (2 bytes)
      (               record serial number in file    (2 bytes)
      (               data                            (length-65534 bytes)
      (  record 2:    ditto
block(   .
      (  .
      (  record n:    ditto
      (  record n+1:  zero                            (2 bytes)
```

* each file is terminated by a filemark

* the byte ordering within 16 bit integers follows the dec convention of least significant byte first on the tape.

File Structure

* each file has a basic structure of the following type:

* file header record
  data records
  EOF

* The file header record contains

```
7200            (2 bytes indicating this is file header)
file# on tape(2 bytes)
year
day
7201            )
7202            ) list of data types in this file
7203            ) terminated by zero.
0               )
checksum
```

* the data records contain:

```
7201 or
7202 or 7203 (2 bytes indicating type of data)

data checksum (lowest 16 bits of a sum of the bytes as
               positive integers)
```

5. APPENDIX - continued

Record Identification

7200	file header record
7201	data header
7202	major frame data
7203	temperature data

Data Header (258 16 bit integers)

word	
-1	7201 identifier
0-3	system flags
4	header number (1st day = 1, 2nd = 2 etc,thus 0 implies no data)
5-0	reserved for system
10	orbit # (as received)
11	segment # (as received)
12	true orbit #
13-16	start time of data (year, day, secs (2))
17-20	finish time of data (year, data, secs (2))
21-24	time of reception (year, data, secs (2))
25-28	time and longitude of last equator crossing going north (day, secs (2), long)
29-32	time and longitude of last equator crossing going south (day secs (2), long)
33-36	time and latitude of last day/night crossing (day, secs (2), lat)

(statistics on day)

41	length (number of major frames)
42	number of checksum errors on transmission
43	number of checksum errors on mag tape
44	number of sync errors
45	number of verification readouts
46	number of length of cda file (number of blocks containing calibration information)
47,48	mode at start of day
49,50	mode at end of day
51	lat/long error flag (no of secs wrong if 100)
52	nominal of eigen coefficients used in retrieval
53	nominal of temperature sub levels used in retrieval
54	nominal data year of this sub block of data
55	nominal data data of this sub block of data
56	pmc daily mean temperatures (deg*100) (7 words)
63	pmc daily mean pressure (mb*100) (7 words)
70	pmc daily mean periods (counts) (7 words)
77	flag to indicate data should have limited processing
78-208	(spare)
209	version number x 10 of receiving and unformatting program
210	version number of dataformat (as indicated by first number in appendix)
211-255	(spare)
256	checksum

5. APPENDIX - continued

Mode words:

first word: first byte = pmc mode,
lowest 3 bits of second byte =power/launch/standby
second word: pcl prog nominal in first 4 bits, + pmc sieve setting (10 bits)

pmc mode byte is packed as follows:
:c1 : b12 : c2 : a3 : c3 : a4 : -- : a12 :
(0 = on, 1 = off)

pmc sieve settings are packed into the lowest 10 bits as follows:
: c3 : c2 : c1 - c1 - c1 : b12 - b12 : a4 : a3 :
a12 - a12 :

Major Frame Data (386 16-bit integers)

Word	Function	
-1	7202	identifier
0	format/mark #	2 bytes: Format = data type; Mark = format gen #
1	error flags	see note (1)
2	year	
3	day	
4,5	time (secs	
6	latitude	(*100 degrees)
7	longitude	(*100 degrees)
8	altitude	(km)
9	lat of tangent point	(*100 degrees)
10	long of tangent point	(*100 degrees)
11	flags (3 words)	see Note (2)
14	blackbody temperature	(deg C * 100)
15	chopper temperature	(deg C * 100)
16	digital b	see note (3)
22	spacecraft status	
27	channel identification	(4 bytes * 9 chan) see note (4)
45	radiances	(8 words *12 slots) see note (5)
141	estimated errors in radiances	(12 words)
153	pmc pressures	(7 words) see note (6)
160	pmc cell temperatures	(7 words) (deg C *100) see note (6)
167	azimuth position	(8 words,degrees * 1000)
175	lvdt (degrees rel datum *1000)	(8 words)
183	roll angle (ch d at step 40)	(8 words) (deg * 1000)
191	h (tangent ht of chan d)	(8 words) (km*100 from ref lev at 7 sh)
199	tangent scale ht of a chans	(8 words)(scale ht*1000) see note (7)
207	tangent scale ht of b chans	(8 words) see note (7)
215	tangent scale ht of c chans	(8 words) " " "

5. APPENDIX - continued

Major Frame Data (386 16 bit integers) - continued

Word	Function	
223	est. error on zt's	(8 words) " " "
231	roll angle derived by retrev	(8 words - deg * 100000)
239	estimated error in above	(8 words - deg * 100000)
247	acs roll fine error	(8 words)
255	terminator height at tangent point	(km*100 above ellipsoid
256	yaw	(16 bytes)
264	pitch	(16 bytes)
272	radiances	(alp, alw, a234p,a234w)
304	radiances	(b2p,b2w,clp,clw,c23p,c23w)
352	pmc periods	(7 words)
359	pmc amplitudes	(7 words)
366	chopper amplitude	
367	sieve temperatures	(7 words)
374	chopper temperature expanded	
375	a234, bl, al, cl detector temp	(4 words
379	b1, a234 det. dc level	(2 words)
381	m1, m2 mirror temperature	(2 words)
383	seu taemperature 'a'	
384	checksum	

NOTES

(1) error flags

bit
- 0 = checksum on transmission) for first seven 2 sec
- 1 = checksum on reading mag tape) readouts
- 2,3 = sync loss * sync slip sum bits)
- 4 = checksum on transmission) for last one 2 second
- 5 = checksum on reading mag tape) readout
- 6,7 = sync loss & sync slip sum bits
- 14 = forced end of orbit
- 15 = end of orbit flag detected (i.e., last abut one word of raw block was 5252 octal (2730 decimal) or 6453 octal (3371 decimal)).

(2) flag words

11 non zero if data all bad
- bit 0: launch mode
- bit 1: standby mode
- bit 2: power off
- bit 3: memory verify

12 bits 0-2: pcl program identifier

13 bits 8-15: bit i+8 will be set if there is some doubt that pmc (i) is changing.

5. APPENDIX - continued

NOTES - continued

(3) digital b

1/1 sample will occupy 1 16 bit word. The remaining 3/16 samples will be arranged as 5 groups of 3 bits per 16 bit word and 1 spare bit.

The earliest of the 3 or 16 samples is the one corresponding to the most significant bit position.

Off Set	Bits	Function#	Name	Bit = (1/0)
0	0-15	12018	azimuth forward sector	yes/no
1	0-15	12019	azimuth backward sector	yes/no
2	12-14	12001	power	on/off
	9-11	12002	limb scan drive	on/off
	6-8	12003	azimuth scan drive	on/off
	3-5	12004	launch mode	on/off
	0-2	12005	pcl	auto/manual
3	12-14	12006	pcl memory	verify/normal
	9-11	12007	pcl	memoryb/memorya
	6-8	12008	cooler door	shut/open
	3-5	12009	upper limb scan limit	yes/no
	0-2	12010	low limb scan limit	yes/no
4	12-14	12011	forward azimuth sc.lim.	yes/no
	9-11	12012	backwards azimuth sc.lim.	yes/no
	6-8	12013	blackbody out of fox	yes/no
	3-5	12009	blackbody in fov	yes/no
	0-2	12015	serial data cmd	ena/dis
5	12-14	12016	standby mode	yes/no
	9-11	12017	pcl busy	yes/no
	6-8	12020	a 2/3/4 heater	on/off
	3-5	12021	bl gain	low/high
	0-2	----	spare	

(4) Channel Identification

Consists of 4 bytes of data for each of 9 channels in the order 27:a1, 29:a2, 31:a3, 33: a4, 35:b1, 37:b2, 39:c1, 41:c2, 43:c3.

byte 0		pmr data quality flag
byte 1		wb data quality flag
byte 2		sieve setting
byte 3	bits 0-3	pointer to pmr data
byte 3	" 4-7	pointer to wb data

bit 0 is lsb. the data quality flag bytes contain 1 bit for each observation; bit 0 corresponds to the 1st sample in the frame. "1" is bad, "0" is good. The quality checks for pmr and wb data are independent.

5. APPENDIX - continued

NOTES - continued

(4) Channel Identification - continued

If there is no data all in the channel, the data pointer will be set to 15 (all 4 bits set); otherwise the 8 radiances will be found at word 45 + 8* (p-1) onwards in the frame, where p is the pointer.

Grounds for rejection of data/setting of channel id bits.

In the following table the program prforming the check and setting the flag bits is also indicated.

bad:	*frame flag (word 11) non zero	(qual)
	*modulator off, or other modulator interfering	(qual)
	*a2/3/4 cooler door not open, or heater on	(qual)
	*more than 4 steps since last sample	(qual)
	*bb in in/out transient	(calib2)
	*bl gain changing	(qual)
	*suspect data during internal blackbody view	(calib2)
suspect:	*modulator on but run up +	
	*sieve temp not settled +	
	*pmc temp not stable +	
	*a2/3/4 detector too warm	(calib2)
	*internal blackbody view (if this data wanted, check flag word 2)	(calib2)

+ not yet implemented.
Bad radiances will be set to -9999. Suspect radiances will be left. Note, in case of wideband channels several pointers may be indicating the same data, i.e., those channels which share the same detector.

Channel ID

27	a1
29	a2
31	a3
33	a4
35	b1
37	b2
39	c1
41	c2
43	c3

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Reference
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Nimbus-7 Stratospheric and Mesospheric Sounder (SAMS) Experiment Data User's Guide

F. W. Taylor,
C. D. Rodgers,
S. T. Nutter,
and N. Oslik

NASA

```
$NOP
$NOP
$NOP ************B01 *******
$EXEC TPLIST BS

INPUT PARAMETERS ARE:  ED AL 1

 TAPE NO.   1              FILE NO.   1
 RECORD   1                LENGTH   63C
*NIMBUS-7 NOPS SPEC NO T884021 SQ NO HC10701-2 SAMS OXFD TO IPD  START 1981 070 005659 TO 1981 076
231523 GEN 1983 005 144352 NASARAT V1.0       THE FIRST FILE ON THE TAPE IS A DESCRIPTION OF THE TAP
E CONTENTS


 TAPE NO.   1              FILE NO.   1
 RECORD   2                LENGTH   63C
*NIMBUS-7 NOPS SPEC NO T884021 SQ NO HC10701-2 SAMS OXFD TO IPD  START 1981 070 005659 TO 1981 076
231523 GEN 1983 005 144352 NASARAT V1.0       THE FIRST FILE ON THE TAPE IS A DESCRIPTION OF THE TAP
E CONTENTS


***** JOB DONE.
$EXEC TPDUMP BS
```

NIMBUS 7
SAMS RAT
D-57352
3/11/81 - 3/17/81
C-23010

```
$NOP *********** BO-2 ***************
$EXEC TPLIST BS

INPUT PARAMETERS ARE:  ED AL 1

 TAPE NO.   1              FILE NO.   1
 RECORD   1                LENGTH   630
*NIMBUS-7 NOPS SPEC NO T884021 SQ NO HC10371-2 SAMS OXFD TO IPD  START 1981 037 225259 TO 1981 046
023715 GEN 1983 026 122329 NASARAT V1.0       THE FIRST FILE ON THE TAPE IS A DESCRIPTION OF THE TAP
E CONTENTS


 TAPE NO.   1              FILE NO.   1
 RECORD   2                LENGTH   630
*NIMBUS-7 NOPS SPEC NO T884021 SQ NO HC10371-2 SAMS OXFD TO IPD  START 1981 037 225259 TO 1981 046
023715 GEN 1983 026 122329 NASARAT V1.0       THE FIRST FILE ON THE TAPE IS A DESCRIPTION OF THE TAP
E CONTENTS


***** JOB DONE.
$EXEC TPDUMP BS
```

SAMS RAT
D-57353
2/6/81 - 2/15/81
C-23011

```
$NOP
$NOP ************ LIST OF BO-3 ****************
$EXE TPLIST BS

INPUT PARAMETERS ARE:  ED AL 1

 TAPE NO.   1              FILE NO.   1
 RECORD   1                LENGTH   630
*NIMBUS-7 NOPS SPEC NO T884021 SQ NO HC10931-2 SAMS OXFD TO IPD  START 1981 093 234459 TO 1981 101
 13315 GEN 1983 006 144537 NASARAT V1.0       THE FIRST FILE ON THE TAPE IS A DESCRIPTION OF THE TAP
E CONTENTS


 TAPE NO.   1              FILE NO.   1
 RECORD   2                LENGTH   630
*NIMBUS-7 NOPS SPEC NO T884021 SQ NO HC10931-2 SAMS OXFD TO IPD  START 1981 093 234459 TO 1981 101
 13315 GEN 1983 006 144537 NASARAT V1.0       THE FIRST FILE ON THE TAPE IS A DESCRIPTION OF THE TAP
E CONTENTS


***** JOB DONE.
$WEO LPS


$$
$EXE TPNRCF BS
```

SAMS RAT
D-57354
4/3/81 - 4/11/81
C-23012

```
$NOP ******** BO-4 ***********
$EXEC TPLIST BS

INPUT PARAMETERS ARE:  ED AL 1

 TAPE NO.   1              FILE NO.   1
 RECORD   1                LENGTH   630
*NIMBUS-7 NOPS SPEC NO T884021 SQ NO HC02761-2 SAMS OXFD TO IPD  START 1980 276 011650 TO 1980 282
213546 GEN 1982 363 161506 NASARAT V1.0       THE FIRST FILE ON THE TAPE IS A DESCRIPTION OF THE TAP
E CONTENTS


 TAPE NO.   1              FILE NO.   1
 RECORD   2                LENGTH   630
*NIMBUS-7 NOPS SPEC NO T884021 SQ NO HC02761-2 SAMS OXFD TO IPD  START 1980 276 011650 TO 1980 282
213546 GEN 1982 363 161506 NASARAT V1.0       THE FIRST FILE ON THE TAPE IS A DESCRIPTION OF THE TAP
E CONTENTS


***** JOB DONE.
$WEO LPS


$$
$EXE TPNRCF BS
```

SAMS RAT
D-57355
10/2/80 – 10/8/80
C-23013