

#315

*Earth SC*

NIMBUS 5

MICROWAVE SPECTROMETER

NEMS OUTPUT TAPES (NEMSOT)

72-097A-03A - *E SAD.00129*

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 This inventory information is now no longer maintained in the DSCs, but is now managed in the inventory part of the NSSDC information system.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

## NIMBUS 5

MICROWAVE SPECTROMETER  
NEMS OUTPUT TAPES (NEMSOT)

72-097A-03A

ESAD-00129

This data set has been restored. There was originally 31 Binary 9-Track, 1600 BPI tapes. There are 4 restored tapes. The DR and DS tapes are 9-track, 8250 BPI. The tapes were created on an IBM 370/185 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           |
|---------|---------|--------|-------|---------------------|
| DR00024 | DS00024 | 022172 | 1     | 12/18/72 - 12/23/72 |
|         |         | 022171 | 2     | 12/24/72 - 12/30/72 |
|         |         | 022170 | 3     | 12/30/72 - 12/31/72 |
|         |         | 022168 | 4     | 01/01/73 - 01/06/73 |
|         |         | 022167 | 5     | 01/07/73 - 01/10/73 |
|         |         | 022166 | 6     | 01/11/73 - 01/15/73 |
|         |         | 022165 | 7     | 01/16/73 - 01/20/73 |
|         |         | 022158 | 8     | 01/21/73 - 01/27/73 |
| DR00025 | DS00025 | 022157 | 1     | 01/28/73 - 02/01/73 |
|         |         | 022163 | 2     | 02/01/73 - 02/05/73 |
|         |         | 022162 | 3     | 02/05/73 - 02/08/73 |
|         |         | 022161 | 4     | 02/08/73 - 02/13/73 |
|         |         | 022160 | 5     | 02/12/73 - 02/17/73 |
|         |         | 022159 | 6     | 02/18/73 - 02/23/73 |
|         |         | 022164 | 7     | 02/24/73 - 03/01/73 |
|         |         | D20583 | 8     | 03/01/73 - 03/07/73 |
| DR00026 | DS00026 | 022149 | 1     | 04/15/73 - 04/19/73 |
|         |         | 022169 | 2     | 04/19/73 - 04/22/73 |
|         |         | 022178 | 3     | 04/23/73 - 04/27/73 |
|         |         | 022177 | 4     | 04/27/73 - 05/01/73 |
|         |         | 022156 | 5     | 06/17/73 - 06/22/73 |
|         |         | 022155 | 6     | 06/22/73 - 06/27/73 |
|         |         | 022154 | 7     | 06/27/73 - 06/30/73 |
|         |         | 022176 | 8     | 08/12/73 - 08/16/73 |
| DR00027 | DS00027 | 022175 | 1     | 08/17/73 - 08/21/73 |
|         |         | 022174 | 2     | 08/22/73 - 08/27/73 |
|         |         | 022173 | 3     | 08/27/73 - 08/31/73 |
|         |         | 022153 | 4     | 10/14/73 - 10/19/73 |
|         |         | 022152 | 5     | 10/19/73 - 10/23/73 |
|         |         | 022151 | 6     | 10/24/73 - 10/27/73 |
|         |         | 022150 | 7     | 10/28/73 - 10/31/73 |

REQ. AGENTJVD  
MLRRAND NO.RC4285  
RC4608ACQ. AGENT

JCL

## NIMBUS 5

## MICROWAVE SPECTROMETER

## NEMS OUTPUT TAPES (NEMSOT)

72-097A-03A

This data set consists of 31 9 track, binary, 1600 BPI, tapes, written on an IBM 370/165. They contain 1 file from two to six days written sequentially in satellite time. The record format (variable span) has a 4-byte block - descriptor word and a 4-byte segment - descriptor word as the first 8 bytes of the 11624-byte record.

| <u>D#</u> | <u>C#</u> | <u>TIME SPAN</u>    | <u>ORBIT</u> |
|-----------|-----------|---------------------|--------------|
| D-20583   | C-16562   | 3/01/73 - 3/07/73   | 1077-1157    |
| D-22149   | C-17065   | 4/15/73 - 4/19/73   | 1676-1730    |
| D-22150   | C-17066   | 10/28/73 - 10/31/73 | 4307-4358    |
| D-22151   | C-17067   | 10/24/73 - 10/27/73 | 4254-4304    |
| D-22152   | C-17068   | 10/19/73 - 10/23/73 | 4186-4250    |
| D-22153   | C-17069   | 10/14/73 - 10/19/73 | 4119-4187    |
| D-22154   | C-17070   | 6/27/73 - 6/30/73   | 2656-2706    |
| D-22155   | C-17071   | 6/22/73 - 6/27/73   | 2591-2656    |
| D-22156   | C-17072   | 6/17/73 - 6/22/73   | 2522-2590    |
| D-22157   | C-17073   | 1/28/73 - 2/01/73   | 642- 690     |
| D-22158   | C-17074   | 1/21/73 - 1/27/73   | 549- 643     |
| D-22159   | C-17075   | 2/18/73 - 2/23/73   | 925-1002     |
| D-22160   | C-17076   | 2/12/73 - 2/17/73   | 858- 921     |
| D-22161   | C-17077   | 2/08/73 - 2/13/73   | 798--859     |
| D-22162   | C-17078   | 2/05/73 - 2/08/73   | 750- 800     |
| D-22163   | C-17079   | 2/01/73 - 2/05/73   | 696- 750     |

| <u>D#</u> | <u>C#</u> | <u>TIME SPAN</u>    | <u>ORBIT</u> |
|-----------|-----------|---------------------|--------------|
| D-22164   | C-17080   | 2/24/73 - 3/01/73   | 1008-1073    |
| D-22165   | C-17081   | 1/16/73 - 1/20/73   | 484- 545     |
| D-22166   | C-17082   | 1/11/73 - 1/15/73   | 415- 479     |
| D-22167   | C-17083   | 1/07/73 - 1/10/73   | 361- 411     |
| D-22168   | C-17084   | 1/01/73 - 1/06/73   | 280- 357     |
| D-22169   | C-17085   | 4/19/73 - 4/22/73   | 1730-1784    |
| D-22170   | C-17086   | 12/30/72 - 12/31/72 | 240- 277     |
| D-22171   | C-17087   | 12/24/72 - 12/30/72 | 159- 240     |
| D-22172   | C-17088   | 12/18/72 - 12/23/72 | 79- 156      |
| D-22173   | C-17089   | 8/27/73 - 8/31/73   | 3475-3539    |
| D-22174   | C-17090   | 8/22/73 - 8/27/73   | 3408-3475    |
| D-22175   | C-17091   | 8/17/73 - 8/21/73   | 3341-3405    |
| D-22176   | C-17092   | 8/12/73 - 8/16/73   | 3273-3336    |
| D-22177   | C-17093   | 4/27/73 - 5/01/73   | 1837-1891    |
| D-22178   | C-17094   | 4/23/73 - 4/27/73   | 1783-1838    |

B R I E F   D E S C R I P T I O N  
NEMS Output Tapes (NEMSOT)  
72-097A-03A

The Nimbus E Microwave Spectrometer (NEMS) data are available on magnetic tapes. Also referred to as NEMS Output Tapes (NEMSOT), the data were produced by the experimenter on an IBM 360/165 computer. They contain surface reflectivity, water vapor, liquid water, thickness, temperature at standard pressure levels, surface brightness temperature, and surface type information. Data are grouped into 16-s, earth-viewing frames. National Meteorological Center grid data, interpolated in time and space to the NEMS measurement point, are sometimes included. These data are also available on microfiche as data set 72-097A-03B.

M A T E R I A L S   F O R   D I S T R I B U T I O N  
72-097A-03A  
NEMS Output Tapes (NEMSOT)

"Nimbus 5 User's Guide" with corrections (B14758-000A).

"The NEMS Output Tape" description (7 pp., unnumbered) was found in the Data Set Catalog.

(CYN, 9/97)

DATA SET DOCUMENT

11/17/87

DATA SET NAME - MICROWAVE SPECTROMETER OUTPUT TAPES      NSSDC ID 72-097A-03A  
(NEMSOT)

TIME PERIOD COVERED - 12/18/72 TO 10/31/73

BRIEF DESCRIPTION

THE NIMBUS 5 MICROWAVE SPECTROMETER (NEMS) DATA ARE AVAILABLE ON 9-TRACK, 1600-BPI MAGNETIC TAPES. THESE TAPES, ALSO REFERRED TO AS NEMS OUTPUT TAPES (NEMSOT), WERE PRODUCED BY AN IBM 360/165 COMPUTER. EACH TAPE CONTAINS ONE FILE OF DATA COVERING A PERIOD OF 2 TO 6 DAYS WRITTEN SEQUENTIALLY IN SATELLITE TIME. EACH TAPE RECORD CONTAINS DATA FOR A NEMS CALIBRATION CYCLE, WHICH IS NORMALLY 16 FRAMES (A FRAME BEING 16 SEC OF SATELLITE TIME). FOURTEEN OF THE FRAMES ARE EARTH-VIEW DATA AND TWO ARE CALIBRATION DATA. EACH FRAME OF EARTH-VIEW DATA CONTAINS SURFACE REFLECTIVITY, WATER VAPOR, LIQUID WATER, THICKNESS, TEMPERATURE (AT STANDARD PRESSURE LEVELS), SURFACE BRIGHTNESS TEMPERATURE, AND SURFACE TYPE INFORMATION. NATIONAL METEOROLOGICAL CENTER GRID DATA, INTERPOLATED IN TIME AND SPACE TO THE NEMS MEASUREMENT POINT, ARE SOMETIMES INCLUDED. THESE DATA ARE ALSO AVAILABLE ON MICROFICHE AS DATA SET 72-097A-03B.

## The NEMS Output Tape

The measurements made by the Microwave Spectrometer aboard the Nimbus 5 satellite are recorded on the NEMS output tape (NEMSOT), the primary product of the NEMS software package used by the MIT investigators. This document describes the tape format, its data content, and other information a user of the tapes needs in order to examine the NEMS data. Descriptions of the programs which created the data on the tapes are found elsewhere.

### Tape Format

The NEMSOT is a nine-track tape written with a density of 1600 bpi on an IBM 370/165. The tape contains one file of data for a period of from two to six days written (usually) sequentially in satellite time. (An erroneous input tape directory sometimes caused one or two orbits to be out of sequence by two or four hours.) The record format is variable spanned with a record length of 11624 bytes. A variable spanned record has a 4-byte block-descriptor word and a 4-byte segment-descriptor word as the first 8 bytes of that 11624-byte record. The relevant FORTRAN and JCL computer code is as follows:

```
INTEGER*2 ITNEMS(5,8,18),IHNEMS(40,18),HDRMJF(30,16)
INTEGER   NFRG(14)
REAL*4    LAT(16),LON(16),TANEMS(5,4,16),HKNEMS(38,2),TBNEMS(5,14),
C          PARAMS(25,4,14),FLAT(16),FLON(16)
```

```
WRITE(30) ITNEMS,IHNEMS,HDRMJF,LAT,LON,TANEMS,HKNEMS,TBNEMS,
C          PARAMS,NFRG,FLAT,FLON
```

```
//FT30FOO1 DD UNIT=TAPE9,VOL=SER=000252,DISP=(NEW,PASS),LABEL=(1,NL),
// DCB=(RECFM=VS,BLKSIZE=11624,BUFNO=1)
```

### Data Content

Each record of the NEMSOT contains the data for a NEMS calibration cycle which is normally sixteen major frames. (A major frame represents sixteen

seconds of satellite time.) A major frame may be one of three types: earth-view data, cold-load calibration data, or ambient-load calibration data. Unless you are interested in recalibrating the data or observing general instrument performance, you are not interested in the cold-load and ambient-load frames. A normal calibration cycle will consist of fourteen earth-view frames followed by a cold-load frame followed, in turn, by an ambient-load frame. Calibration frames are only found in array positions for which the index MF=15,16,17, or 18. Data frames are found only in positions for which the index MF=1 through 14. (The meaning of MF will be made clear in the descriptions of the arrays.) Since the arrays written out are of a fixed size, some of the slots may be empty; e.g., if it is not a normal calibration cycle or is the beginning or end of an orbit. Further, if the data received is bad in some sense, it may not be calibrated and the non-integer arrays may be zero or nonsense. All NEMS data (even bad data) received on the SET's (the input tape provided by GSFC) is written onto the NEMSOT so that should errors be found in the calibration or inversion procedures, the data may be reprocessed. The information regarding the quality or presence of NEMS data in any particular major frame position MF is contained in HDRMJF(30,MF) where

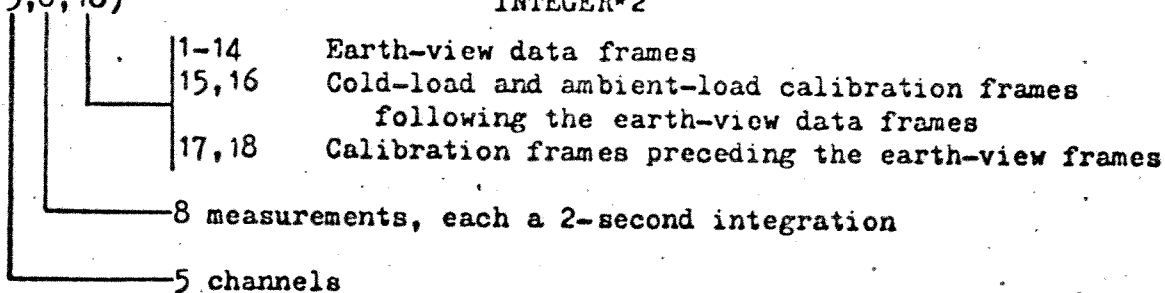
- if HDRMJF(30,MF)=0, then there is no data in the other arrays for this value of MF, and
- if HDRMJF(30,MF)=1, then there is "good" data in the other arrays for this value of MF, and
- if HDRMJF(30,MF)=2, then the integer arrays and FLAT and FLON contain data for this value of MF which is judged to be faulty and therefore no calibration and no inversion are performed (floating point arrays are invalid).

The NMC grid data (the values of meteorological parameters issued by the U.S. Weather Bureau) are sometimes interpolated in time and space to the NEMS measurement point. If this is available for the major frame indexed MF, then NFRC(MF)=1; otherwise, NFRC(MF)=0.

The following are the names, specifications, and contents of the arrays, in the order which they comprise the I/O list for one record:

i) ITNEMS(5,8,18)

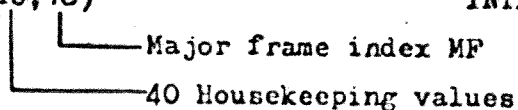
INTEGER\*2



ITNEMS(IC,IM,MF) is the uncalibrated integer (or "counts") value of the antenna temperature for the IC<sup>th</sup> channel, the IM<sup>th</sup> 2-second measurement for the MF<sup>th</sup> major frame of this calibration cycle.

ii) IHNEMS(40,18)

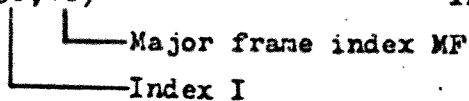
INTEGER\*2



IHNEMS(ISM,MF) is the uncalibrated integer value of the ISM<sup>th</sup> housekeeping parameter. What is meant by housekeeping parameters are things such as mixer currents, thermistor readings and voltages across fixed resistors, i.e., items which are necessary to compute brightness temperatures from antenna temperatures and to monitor instrument performance. A table of the identity of the ISM<sup>th</sup> parameter is on page 152 of the Nimbus 5 User's Guide. In that table SM #14 and #32 are incorrect; SM #14 should be the "O<sub>2</sub> Cal Load Temp" and SM #32 should be the "H<sub>2</sub>O Cal Load Temp."

iii) HDRMJF(30,16)

INTEGER\*2



The contents of HDRMJF for the various values of I are identified in the following table.

# Contents of HDRMJF

| I  | HDRMJF(I,MF)                                                                               | I  | HDRMJF(I,MF)                                                                                                         |
|----|--------------------------------------------------------------------------------------------|----|----------------------------------------------------------------------------------------------------------------------|
| 1  | Read-out orbit number                                                                      | 19 | NEMS state<br>=0, earth viewing<br>=1, ambient-load viewing<br>=2, cold-load viewing                                 |
| 2  | Day in year                                                                                |    |                                                                                                                      |
| 3  | Hour in day                                                                                |    |                                                                                                                      |
| 4  | Starting time of major frame<br>Minutes*100+seconds                                        | 20 | NEMS instrument mode<br>=0, normal<br>=1, locked on antenna<br>=2, locked on cold-load<br>=3, locked on ambient-load |
| 5  | Frame number                                                                               |    |                                                                                                                      |
| 6  | Altitude "counts" value                                                                    |    |                                                                                                                      |
| 7  |                                                                                            | 21 | Spare                                                                                                                |
| 10 | Roll "counts" values                                                                       | 22 | =1, if day (ascending)<br>=0, if night (descending)<br>as received on SET<br>(found to be unreliable)                |
| 11 |                                                                                            |    |                                                                                                                      |
| 14 | Pitch "counts" values                                                                      |    |                                                                                                                      |
| 15 | Subsystem status bits<br>MSB=Bit 16, LSB=Bit 1<br>(See G.E. PIR-NTCC-1PH2-NE29)            | 23 | =1, if NEMS data unit on<br>=0, if NEMS data unit off                                                                |
| 16 | Subsystem status bits<br>Bit 28 thru Bit 17=LSB                                            | 24 | =1, if NEMS channel 1 on<br>=0, if NEMS channel 1 off                                                                |
| 17 | Data content of SET                                                                        | 25 |                                                                                                                      |
| 18 | Sync summary (Bits 1-2)<br>=0, normally<br>=1, if Nimbus digital data<br>unit malfunctions | 28 | same for NEMS channels 2-5                                                                                           |
|    |                                                                                            | 29 | Internal processing var.<br>(time-space continuity code)                                                             |
|    |                                                                                            | 30 | =0, if no data<br>=1, if good data<br>=2, if bad data<br>(see above discussion)                                      |

iv) LAT(16) REAL\*4

LAT(MF) = latitude for start of frame MF according to SET

v) LON(16) REAL\*4

LON(MF) = longitude for start of frame MF according to SET

Note: Do not use the above for location of satellite since before day 284, hour 12 of 1973 it is not correct. Instead, use FLAT and FLON.

vi) TANEMS(5,4,16)

REAL\*4

Major frame index MF

|                   |                                            |
|-------------------|--------------------------------------------|
| =1, average       | } of the 8 measurements in the major frame |
| =2, rms deviation |                                            |
| =3, maximum       |                                            |
| =4, minimum       |                                            |

5 channels

TANEMS(IC,1,MF) = average antenna temperature for the IC<sup>th</sup> channel, MF<sup>th</sup> frame

Note: There are 16 positions for antenna temperatures even though positions 15 and 16 are reserved for the cold-load and ambient-load frames exclusively. These "antenna temperatures" were computed for the purpose of comparing the rms variation of a constant load with a real measurement. Do not use TANEMS(IC,1,MF), MF=15,16 as earth-view data.

vii) HKNEMS(38,2)

REAL\*4

|  |                                                                     |
|--|---------------------------------------------------------------------|
|  | =1, average over the calibration cycle                              |
|  | =2, rms deviation for the calibration cycle                         |
|  | =1, instrument state                                                |
|  | =2,3 ch. 1 signal/cal input switch temp.                            |
|  | =4,5 ch. 2 signal/cal input switch temp.                            |
|  | =6,7 ch. 3 signal/cal input switch temp.                            |
|  | =8,9 ch. 4 signal/cal input switch temp.                            |
|  | =10,11 ch. 5 signal/cal input switch temp.                          |
|  | =12 O <sub>2</sub> signal antenna temp.                             |
|  | =13 O <sub>2</sub> cal line temp.                                   |
|  | =14,15 O <sub>2</sub> cal radiator temp fine/coarse                 |
|  | =16,17,18 O <sub>2</sub> ambient-load temp fine #1/fine #2/coarse   |
|  | =19 H <sub>2</sub> O signal antenna temp.                           |
|  | =20 H <sub>2</sub> O cal line temp.                                 |
|  | =21,22 H <sub>2</sub> O cal radiator temp fine/coarse               |
|  | =23,24,25 H <sub>2</sub> O ambient-load temp fine #1/fine #2/coarse |
|  | =26,27 power supply module temp #1/#2                               |
|  | =28,29 ch. 1 mixer preamp monitor +/-                               |
|  | =30,31 ch. 2 mixer preamp monitor +/-                               |
|  | =32,33 ch. 3 mixer preamp monitor +/-                               |
|  | =34,35 ch. 4 mixer preamp monitor +/-                               |
|  | =36,37 ch. 5 mixer preamp monitor +/-                               |
|  | =38 power supply voltage                                            |

viii) TBNEMS(5,14)

REAL\*4

Major frame index, over earth-view frames only

5 channels

TBNEMS(IC,MF) is the brightness temperature that corresponds to the antenna temperature TANEMS(IC,1,MF) at the location FLON(MF), FLAT(MF) and time as given by HDRMJF(IX,MF), IX=2,3,4.

ix) PARAMS(25,4,14)

REAL\*4

Major frame index, over earth-view frames only

IY

IX

PARAMS(IX,IY,MF) contains the physical parameters of the earth as estimated from TBNEMS(IC,MF), IC=1,2,3,4,5, and the interpolated values of the NMC grid (if available, according to NFRM(MF)). The elements of the array for the various IX,IY are identified in the following table. The inversion scheme is a multiple linear regression derived from the correlation of radiosonde data and brightness temperatures computed from them. For detailed information see the internal NEMS memoranda 20-4, 30-4, 44-4, 53-4, 71-5, and especially "NEMS Data Reduction, Version I", numbered 88-6.  
(insert PARAMS table here)

x) NFRM(14)

INTEGER\*4

Major frame index, over earth-view frames only

NFRM(MF) = 1 if there is NMC data in PARAMS for that value of index MF.  
= 0 otherwise.

xi) FLAT(16)

REAL\*4

xii) FLON(16)

REAL\*4

FLAT(MF) and FLON(MF) are the fixed latitude and longitude for the middle of the 16-second time interval which comprises the major frame MF of the calibration cycle. These are computed geometrically from LAT(MF) and LON(MF) and the knowledge of whether the satellite is ascending or descending in latitude.

If the above information does not include that which you need or if it is found to be inaccurate, please write

Prof. David H. Staelin  
Massachusetts Institute of Technology, Room 26-341  
Cambridge, Massachusetts, 02139

# Contents of PARAMS

| IX | PARAMS(IX,1,MF)                                                                                   | PARAMS<br>(IX,2,MF)              | PARAMS(IX,3,MF)                                                                         | PARAMS(IX,4,MF)                                                                                                                                                                                        |
|----|---------------------------------------------------------------------------------------------------|----------------------------------|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | Surface reflectivity, ch. 2                                                                       |                                  | Surface elevation<br>(km.)                                                              | Blank                                                                                                                                                                                                  |
| 2  | Integrated water vapor<br>(g/cm <sup>2</sup> )                                                    |                                  | NMC fcst. integ.<br>water vapor                                                         | NMC analysis integ.<br>water vapor                                                                                                                                                                     |
| 3  | Integrated liquid water<br>(g/cm <sup>2</sup> )                                                   |                                  | Blank                                                                                   | Blank                                                                                                                                                                                                  |
| 4  | 1000 mb - 500 mb<br>layer thickness (m)                                                           | Blank                            | identified<br>otherwise                                                                 |                                                                                                                                                                                                        |
| 5  | 500 mb - 250 mb<br>layer thickness (m)                                                            |                                  |                                                                                         |                                                                                                                                                                                                        |
| 6  | 250 mb - 50 mb<br>layer thickness (m)                                                             |                                  |                                                                                         |                                                                                                                                                                                                        |
| 7  | Temp.(°K) at 1000 mb                                                                              | Blank<br>experimental inversions | NMC forecast of quantities<br>in column 1 when available,<br>-1. for missing quantities | NMC analysis values of quantities<br>identified in column 1 when<br>NFRG(MF)=1, values taken from NMC<br>coarse-mesh, octagon grid for the<br>northern hemisphere                                      |
| 8  | 850                                                                                               |                                  |                                                                                         |                                                                                                                                                                                                        |
| 9  | 700                                                                                               |                                  |                                                                                         |                                                                                                                                                                                                        |
| 10 | 500                                                                                               |                                  |                                                                                         |                                                                                                                                                                                                        |
| 11 | 400                                                                                               |                                  |                                                                                         |                                                                                                                                                                                                        |
| 12 | 300                                                                                               |                                  |                                                                                         |                                                                                                                                                                                                        |
| 13 | 250                                                                                               |                                  |                                                                                         |                                                                                                                                                                                                        |
| 14 | 200                                                                                               |                                  |                                                                                         |                                                                                                                                                                                                        |
| 15 | 150                                                                                               |                                  |                                                                                         |                                                                                                                                                                                                        |
| 16 | 100                                                                                               |                                  |                                                                                         |                                                                                                                                                                                                        |
| 17 | 70                                                                                                |                                  |                                                                                         |                                                                                                                                                                                                        |
| 18 | 50                                                                                                |                                  |                                                                                         |                                                                                                                                                                                                        |
| 19 | 30                                                                                                |                                  |                                                                                         |                                                                                                                                                                                                        |
| 20 | 10                                                                                                |                                  |                                                                                         |                                                                                                                                                                                                        |
| 21 | Equivalent surface<br>brightness temps<br>e <sub>1</sub> T <sub>s</sub> , ch. 1                   | Blank<br>Used for internal       | Surface<br>Reflectivity<br>1-e <sub>1</sub> , ch. 1                                     | Blank                                                                                                                                                                                                  |
| 22 | e <sub>2</sub> T <sub>s</sub> , ch. 2                                                             |                                  | 1-e <sub>2</sub> , ch. 2                                                                | Blank                                                                                                                                                                                                  |
| 23 | Radiometric determination<br>of surface type<br>=1, if sea<br>=2, if land                         | Blank<br>Used for internal       | Blank                                                                                   | Climatic type code<br>=1, if sea, 0-30°<br>=3, if sea, 30-60°<br>=5, if sea, 60-90°<br>=10, if land<br>tropical<br>=12, if land<br>temperate dry<br>=14, if land<br>temperate wet<br>=16, if land cold |
| 24 | Geographic determination<br>of surface type on 5° grid<br>=1, if sea; =2, if land<br>=3, if mixed |                                  | Blank                                                                                   | Blank                                                                                                                                                                                                  |
| 25 | Blank                                                                                             |                                  | Blank                                                                                   | Blank                                                                                                                                                                                                  |

\*\*\*\*\*GSFC DOES NOT EXIST BUT HAS BEEN ADDED TO DATA SET

```

IEF373I STEP /LINK      / START 75209.1252
IEF374I STEP /LINK      / STOP  75209.1252 CPU    0MIN 01.65SEC MAIN 130K LCS    0K
- STEP 02 -      RETURN CODE = 0000                      STEP TIME =      .20 MINS=(CPU=      .02,IO=      .18)

```

```
IEF236I ALLOC. FOR YZJRJVA4 GO
IEF237I 231 ALLOCATED TO PGM=*.DD
IEF237I 231 ALLOCATED TO FT05F001
IEF237I 331 ALLOCATED TO FT06F001
IEF237I 332 ALLOCATED TO FT07F001
IEF237I 331 ALLOCATED TO SYSPRINT
IEF237I 231 ALLOCATED TO SYSPRINT
IEF237I 232 ALLOCATED TO SYSPRINT
IEF237I 003 ALLOCATED TO FT08F001
```

NIMBUS 5  
NEMS D-20583

3/1/73 - 3/7/73

R/O ORBITS 1077-1157

[illegible]











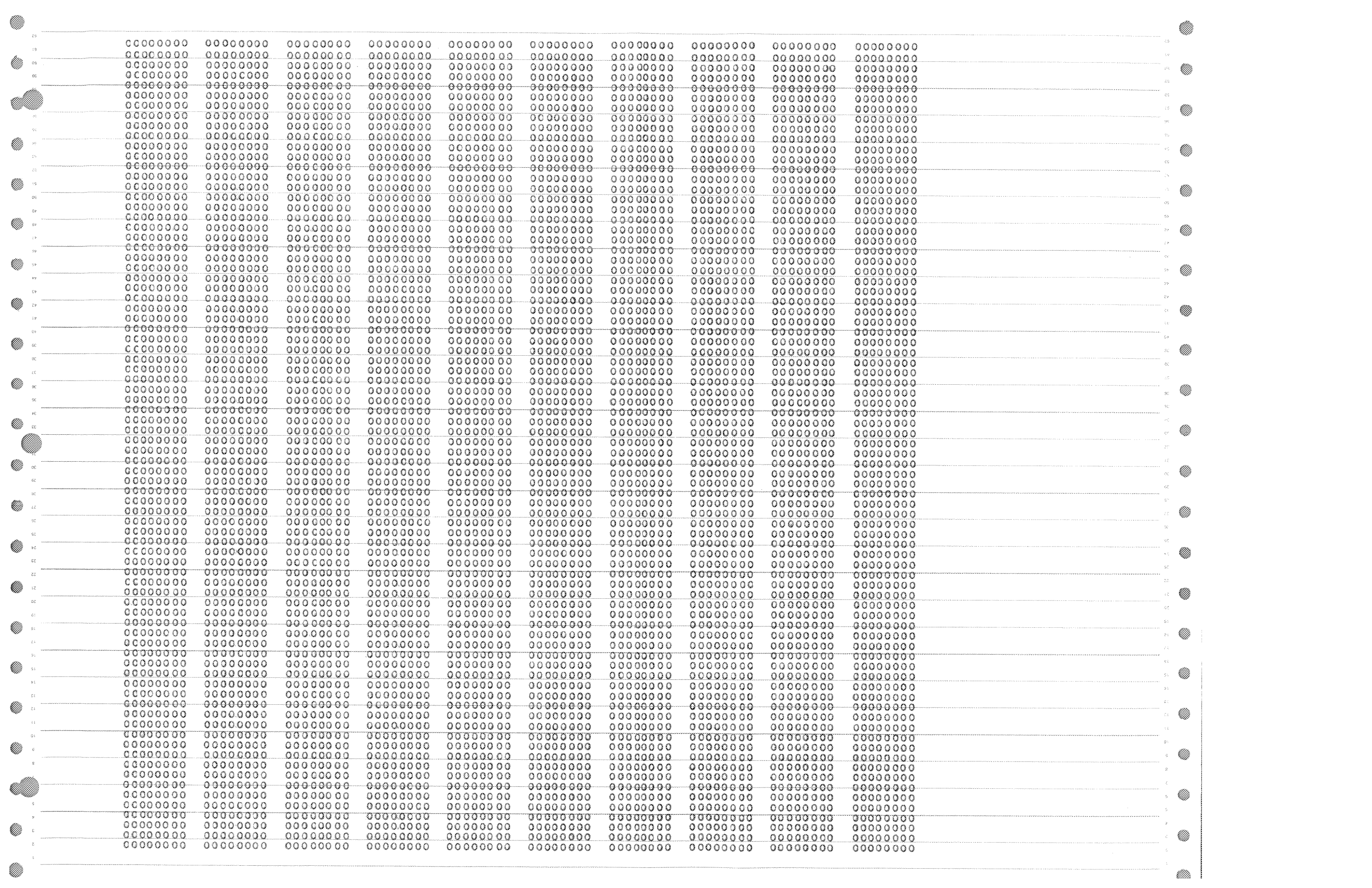












|          |          |          |          |          |          |          |          |          |          |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000001 | 00000001 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000000 | 424FFB2D | 42500F3D | 40C5AE6B | C2640000 | C2640000 | C2640000 |
| C2640000 | C2640000 | C2640000 | C2640000 | C2640000 | C2640000 | C2640000 | C2640000 | C2640000 | C2640000 |
| 4310B942 | 43106630 | 403166AD | C2640000 | C2640000 | C2640000 | C2640000 | C2640000 | C2640000 | C2640000 |
| C2640000 | C2640000 | C2640000 | C2640000 | 4311576F | 431109F9 |          |          |          |          |

1676 RECORDS IN FILE 1 OF TAPE

IEF142I - STEP WAS EXECUTED - COND CODE 0000  
IEF285I SYS75209.T090259.RV000.YZJRJVA4.LODMOD PASSED  
IEF285I VOL SER NOS= K3SCR2.  
IEF285I SYS75209.T090259.RV000.YZJRJVA4.S0000098 SYSIN  
IEF285I VOL SER NOS= K3SCR2.  
IEF285I SYS75209.T090259.RV000.YZJRJVA4.S0000098 DELETED  
IEF285I VOL SER NOS= K3SCR2.  
IEF285I SYS75209.T090259.SV000.YZJRJVA4.R0000094 SYSCUT  
IEF285I VOL SER NOS= K3SCR4.  
IEF285I SYS75209.T090259.SV000.YZJRJVA4.R0000095 DELETED  
IEF285I VOL SER NOS= K3SCR5.  
IEF285I SYS75209.T090259.SV000.YZJRJVA4.R0000096 DELETED  
IEF285I VOL SER NOS= K3SCR4.  
IEF285I SYS75209.T090259.RV000.YZJRJVA4.R0000097 KEPT  
IEF285I VOL SER NOS= JJ0044.  
IEF280E K 0D3.JJ0044.YZJRJVA4.GO  
IEF373I STEP /GO / START 75209.1252  
IEF374I STEP /GO / STOP 75209.1300 CPU 0MIN 11.25SEC MAIN 186K LCS 0K  
- STEP 03 - RETURN CODE = 0000

IO IN SECS. DISK= 2.10, DRUM= .34, TAPE= 33.61, CELL= .00, OTHR= .12  
IEF285I SYS75209.T090259.RV000.YZJRJVA4.LODMOD DELETED  
IEF285I VOL SER NOS= K3SCR2.  
IEF375I JOB /YZJRJVA4/ START 75209.1244  
IEF376I JOB /YZJRJVA4/ STOP 75209.1300 CPU 0MIN 24.80SEC  
- SYSTEM=MVT-21 (11-21-73) K3  
- JOB 0152-  
TOTAL TIME = 1.76 MINS=(CPU= .41, IO= 1.35)  
IO IN SECS. DISK= 12.85, DRUM= 1.08, TAPE= 67.24, CELL= .00, OTHR= .71

THERE WERE 03 TAPES MOUNTED FOR THIS JOB. TAPE MOUNT CHARGE WAS 00.0 MINUTES.















