

From: HRDRAC::UARS::PIERCE 16-JAN-1996 15:17:28.77
To: MARSHALL
CC: PIERCE
Subj: NURSm01

CCSD1Z00000100000052CSD1R00000300000032
DELIMITER=EOF;
TYPE=CCSD1F000001;
CCSD1C00000400000013
ADI=NURSNM01;
CCSD1R00000300000032
DELIMITER=EOF;
TYPE=CCSD1D000002;

Documentation of NMC gridded data produced for UARS project
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1) WHOLE DATA SETS  
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DataSetName:  
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NMC gridded data

DataSource:  
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National Meteorological Center data (NMC)/  
National Oceanic and Atmospheric Administration (NOAA)

ScientificContact:  
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SourceCharacteristics:  
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The National Meteorological Center (NMC) geopotential heights and temperatures are derived from two analysis systems:

1) tropospheric fields from 1000mb to 100mb, and 2) stratospheric analyses from 70mb to 04.mb. The tropospheric fields from 1000mb to 100mb are the 1200 GMT gridded fields which are part of the Global Daily Assimilation System (GDAS) described by McPherson et al. (1979), where data from radiosondes, aircraft, satellites, ships, buoys, or any other conventional means are assimilated and merged into meteorological fields (heights, temperature, winds). The stratospheric analyses developed by the NMC Climate Analysis Center are 1200 GMT operational analyses at the 70-0.4mb pressure levels, produced from satellite temperature retrievals and RAOBS via a modified Cressman analysis (Gelman et al., 1987), which is a successive iteration method where the fields are iteratively adjusted by weighted data depending on distance from the grid point. Tropospheric temperature analyses use combined NOAA-10 and NOAA-11 data.

The operational analyses now use satellite retrievals based on a

minimum variance simultaneous retrieval method described in Goldberg et al. (1988), Fleming et al. (1988), and Fleming et al. (1986). The minimum variance retrieval method is not dependent on week-old regression coefficients of co-located radiosonde data with satellite radiances as was done in the past.

The NMC analyses below 10mb are heavily dependent on RAOBS (particularly over the continents), but less dependent on the RAOBS and more dependent on the TOVS retrievals over ocean areas and ice covered regions.

Moisture (only for Northern hemisphere) and Winds are obtained from the NMC global data assimilation systems (briefly explained above). Analyses from assimilation are on the same gridded fields as temperature and height analyses.

InvestigationObjectives:

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UARS project

InstrumentAttributes: N/A

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MeasuredParameters:

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Analyzed fields will be produced for the following parameters:

Temperature TEMP K  
Geopotential Height HEIGHT m  
Wind Components: WINDS m/s  
- u comp. of wind wrt grid (U\_WIND)  
- v comp. of wind wrt grid (V\_WIND)  
Moisture MOISTURE %

Analyzed fields will be supplied to the CDHF for 12GMT each day.

The gridded fields are on the standard 65x65 NMC polar stereographic grid oriented 80W (Grid increment 381km at 60N) and 100E (grid increment 381km at 60S); Pole at (33,33).

Fields will be produced at 18 standard meteorological levels from 1000 mb to 0.4 mb for heights and temperatures. For moisture only the 6 lowest altitude pressure levels are used and there is no data for the southern hemisphere. For winds there are both U and V components. U comp. and V comp. of wind are given with respect to grid in the data files For the northern hemisphere there is wind data only for the 12 lowest altitude pressure levels (up to the 50 mb level). For the southern hemisphere there is wind data only at the 4 levels 1000, 500, 300, and 250 mb.

18 Standard pressure levels for data (mb):  
1000., 850., 700., 500., 400., 300., 250., 200., 150., 100.,  
70., 50., 30., 10., 5., 2., 1., 0.4

DataSetQuality:

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Analysis quality of meteorological fields are continually evaluated and updated at NMC. Within the access codes provided to UARS, errors are attributed to profiles in a general sense, i.e., the errors are computed depending on whether the profile is given in a dense data region or in a poor data region, as over the ocean.

DataProcessingOverview:

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Data used in the NMC analysis are purely from standard NMC sources, i.e., NOAA satellites, radiosondes from the worldwide network, aircraft winds, cloud vectors from satellites, and any other available data transmitted to NMC. See also 'SourceCharacteristics' for the brief description on what processing is applied to data after it is received at NMC.

DataUsage:  
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The main use of analyses from the NMC run is to provide an independent analysis for members of the UARS science team to compare with equivalent retrievals derived from UARS instruments.

AccessSoftware:  
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There is a routine provided on CDHF to access the daily produced NMC gridded data (temperature, height, winds and moisture). For detailed information please look under CDHF Help on CORRELATIVE NMC (@CDHF CORRELATIVE NMC). For issues related to access on the UARS CDHF contact UARS::PAC.

DataOrganization:  
-----

The data files each contain 1 header record followed by data records. Each data record contains data for one hemisphere at a single pressure altitude. The highest pressure (lowest altitude) record is first in each series of records. Standard pressure levels for NMC data and number of pressure levels for individual parameters are given above in the 'MeasuredParameters' section.

FileClassRelationships:  
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There will be four file classes:

NMCT\_DATE.DAT  
NMCZ\_DATE.DAT  
NMCN\_DATE.DAT  
NMCW\_DATE.DAT

These will comprise grid points fields of analyses for temperature, height, winds and moisture, with associated header records, as documented below.

LitReferences:  
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McPherson, R., D., K. H. Bergman, R. E. Kistler, G. E. Rasch, and D. S. Gordon: "The NMC Operational Global Data Assimilation System," Mon. Wea. Rev., Vol. 107, pp 1445-61.

Fleming, H. E., M. E. Goldberg, and D. S. Crosby, 1988: "Operational Implementation of the Minimum Variance Simultaneous Retrieval Method", Proceedings, AMS Third Conference on Satellite Meteorology and Oceanography, Jan. 31 - Feb. 5, 1988, Anaheim, Calif., pp.16-19.

--,--,--, 1986: "Minimum Variance Simultaneous Retrieval of Temperature and Water Vapor from Satellite Radiance Measurements", Preprint Volume, Second Conference on Satellite Meteorology/Remote Sensing and Applications, May 13-16, 1986, Williamsburg, Va. Published by the American Meteorological Society, Boston, Mass., pp 20-23.

Golberg, M. D. and J. M. Daniels, 1988: "A Method for Obtaining and Improved Approximation for the Temperature/Moisture Retrieval Problem", Proceeding, AMS Third Conference on Satellite Meteorology and Oceanography, Jan. 31 - Feb. 5, 1988, Anaheim, Calif. pp. 20-23.

(Literature on References can be found in the NASA library or can be requested through National Meteorological Center/ National Oceanic and Atmospheric Administration.)

## 2) FILE CLASS

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FileClassName: NMC daily temperature (12GMT) (DEGREE K) gridded data  
----- NMC daily height (12GMT) (GPM) gridded data  
NMC daily wind (M/SEC) gridded data  
NMC daily moisture (%) gridded data

RecordTypeNames: SFDU\_Label\_And\_UARS\_Header\_Record, Data\_Record  
-----

Algorithms: N/A to UARS project  
-----

FileClassSyntax: No. Records in the file = 1 + S + N  
----- S = Value (No\_levels\_for\_each\_correlative\_parameter  
for Southern hemisphere)  
N = Value (No\_levels\_for\_each\_correlative\_parameter  
for Northern hemisphere)

FileClassFieldRelationships:  
-----

The first 428 bytes (of 16964 bytes) of the SFDU\_Label\_And\_UARS\_Header\_Record, which is always Record#1, must be read first. It includes information on the size of the correlative data records (all the same length) and the total number of records in the file.

FileClassMisc: N/A  
-----

## 3) RECORD

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### 1. SFDU\_Label\_And\_UARS\_Header\_Record

-----

RecordName: SFDU\_Label\_And\_UARS\_Header\_Record  
-----

RecordStructure: Fixed Length (Variable length for different  
----- instruments)

RecordLength: 16964 bytes (NMC size)  
-----

RecordFieldName: Tz\_Field, Lz\_Field, Ti\_Field, Li\_Field,  
----- Vi\_Field,  
Project\_Name, UARS\_PI, UARS\_CMI,  
Correlative\_Data\_Class, Instrument\_Type,  
Observing\_Station\_Id,  
Correlative\_Data\_File\_Type\_Id,  
Start\_Time\_of\_File, Stop\_Time\_of\_File,  
Maximum\_Latitude, Minimum\_Latitude,  
Maximum\_Longitude, Minimum\_Longitude,  
Maximum\_Altitude\_Kilometers,

Minimum\_Altitude\_Kilometers,  
Maximum\_Altitude\_Millibars,  
Minimum\_Altitude\_Millibars,  
Record\_Size, Number\_Records\_in\_File,  
Data\_Quality\_Word#1, Data\_Quality\_Word#2,  
User\_Comments,  
Correlative\_Data\_Parameter#1,  
Correlative\_Data\_Parameter#2,  
Correlative\_Data\_Parameter#3,  
Correlative\_Data\_Parameter#4,  
Record\_Fill

RecordSyntax: 32 Fields

----- #1: Tz\_Field  
#2: Lz\_Field  
#3: Ti\_Field  
#4: Li\_Field  
#5: Vi\_Field  
#6: Project\_Name  
#7: UARS\_PI  
#8: UARS\_CMI  
#9: Correlative\_Data\_Class  
#10: Instrument\_Type  
#11: Observing\_Station\_Id  
#12: Correlative\_Data\_File\_Type\_Id  
#13: Start\_Time\_of\_File  
#14: Stop\_Time\_of\_File  
#15: Maximum\_Latitude  
#16: Minimum\_Latitude  
#17: Maximum\_Longitude  
#18: Minimum\_Longitude  
#19: Maximum\_Altitude\_Kilometers (blank)  
#20: Minimum\_Altitude\_Kilometers (blank)  
#21: Maximum\_Altitude\_Millibars  
#22: Minimum\_Altitude\_Millibars  
#23: Record\_Size  
#24: Number\_Records\_in\_File  
#25: Data\_Quality\_Word#1  
#26: Data\_Quality\_Word#2  
#27: User\_Comments  
#28: Correlative\_Data\_Parameter#1  
#29: Correlative\_Data\_Parameter#2  
#30: Correlative\_Data\_Parameter#3  
#31: Correlative\_Data\_Parameter#4  
#32: Record\_Fill

#### 4.1) FIELDS

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##### 1.1 Tz\_Field

-----

FIELD\_NAME: Tz\_Field  
FIELD\_MNEMONIC: SFDU1  
FIELD\_SYNTAX: ASCII Character\*12 String.  
FIELD\_RANGE: CCSD1Z000001  
FIELD\_DESCRIPTION: SFDU Type (Tz) Field.  
FIELD\_REPRESENTATION: 12A  
FIELD\_DISPLAY\_FORMAT: A12

##### 1.2 Lz\_Field

-----

FIELD\_NAME: Lz\_Field  
FIELD\_MNEMONIC: SFDU2  
FIELD\_SYNTAX: ASCII Character\*8 String.

FIELD\_RANGE: 00000068  
FIELD\_DESCRIPTION: SFDU Type (Lz) Field.  
FIELD\_REPRESENTATION: 8A  
FIELD\_DISPLAY\_FORMAT: A8

### 1.3 Ti\_Field

-----  
FIELD\_NAME: Ti\_Field  
FIELD\_MNEMONIC: SFDU3  
FIELD\_SYNTAX: ASCII Character\*12 String.  
FIELD\_RANGE: CCSD1Z000003  
FIELD\_DESCRIPTION: SFDU Type (Ti) Field.  
FIELD\_REPRESENTATION: 12A  
FIELD\_DISPLAY\_FORMAT: A12

### 1.4 Li\_Field

-----  
FIELD\_NAME: Li\_Field  
FIELD\_MNEMONIC: SFDU4  
FIELD\_SYNTAX: ASCII Character\*8 String.  
FIELD\_RANGE: 00000048  
FIELD\_DESCRIPTION: SFDU Type (Li) Field.  
FIELD\_REPRESENTATION: 8A  
FIELD\_DISPLAY\_FORMAT: A8

### 1.5 Vi\_Field

-----  
FIELD\_NAME: Vi\_Field  
FIELD\_MNEMONIC: SFDU5  
FIELD\_SYNTAX: ASCII Character\*48 String.  
FIELD\_RANGE: PROTOCOL=NONE; DELIMITER=EOF; TYPE=NURS1I00NM02;  
FIELD\_DESCRIPTION: SFDU Type (Vi) Field.  
FIELD\_REPRESENTATION: 48A  
FIELD\_DISPLAY\_FORMAT: A48

### 1.6 Project\_Name

-----  
FIELD\_NAME: Project\_Name  
FIELD\_MNEMONIC: PNAME  
FIELD\_SYNTAX: ASCII Character\*4 String.  
FIELD\_RANGE: UARS  
FIELD\_DESCRIPTION: The name of the project for which this file is supplied.  
FIELD\_REPRESENTATION: 4A  
FIELD\_DISPLAY\_FORMAT: A4

### 1.7 UARS\_PI

-----  
FIELD\_NAME: UARS\_PI  
FIELD\_MNEMONIC: UARSPI  
FIELD\_SYNTAX: ASCII Character\*20 String.  
FIELD\_RANGE: A. J. MILLER  
FIELD\_DESCRIPTION: The name of the UARS PI (Principal Investigator) supplying this file.  
FIELD\_REPRESENTATION: 20A (Left Justified)  
FIELD\_DISPLAY\_FORMAT: A20

### 1.8 UARS\_CMI

-----  
FIELD\_NAME: UARS\_CMI  
FIELD\_MNEMONIC: CORR

FIELD\_SYNTAX: ASCII Character\*20 String.  
FIELD\_RANGE: A. J. MILLER  
FIELD\_DESCRIPTION: The name of the UARS CMI (Correlative Measurement Investigator) supplying this file.  
FIELD\_REPRESENTATION: 20A (Left Justified)  
FIELD\_DISPLAY\_FORMAT: A20

#### 1.9 Correlative\_Data\_Class

-----

FIELD\_NAME: Correlative\_Data\_Class  
FIELD\_MNEMONIC: CORRDAT  
FIELD\_SYNTAX: ASCII Character\*8 String.  
FIELD\_RANGE: NMC  
FIELD\_DESCRIPTION: The source of data contained in the file.  
FIELD\_REPRESENTATION: 8A  
FIELD\_DISPLAY\_FORMAT: A8

#### 1.10 Instrument\_Type

-----

FIELD\_NAME: Instrument\_Type  
FIELD\_MNEMONIC: INSTYP  
FIELD\_SYNTAX: ASCII Character\*12 String.  
FIELD\_DESCRIPTION: The instrument used to provide the data.  
Field is blank - not used.  
FIELD\_REPRESENTATION: 12A  
FIELD\_DISPLAY\_FORMAT: A12

#### 1.11 Observing\_Station\_Id

-----

FIELD\_NAME: Observing\_Station\_Id  
FIELD\_MNEMONIC: OBSSTN  
FIELD\_SYNTAX: ASCII Character\*12 String.  
FIELD\_DESCRIPTION: The id of the observing station used to provide the data. Field is blank - not used.  
FIELD\_REPRESENTATION: 12A  
FIELD\_DISPLAY\_FORMAT: A12

#### 1.12 Correlative\_Data\_File\_Type\_Id

-----

FIELD\_NAME: Correlative\_Data\_File\_Type\_id  
FIELD\_MNEMONIC: FILEID  
FIELD\_SYNTAX: ASCII Character\*12 String.  
FIELD\_RANGE: TEMPERATURE, HEIGHT, WINDS, MOISTURE  
FIELD\_DESCRIPTION: An identifier indicating the type of data contained in this correlative file.  
FIELD\_REPRESENTATION: 12A (left justified)  
FIELD\_DISPLAY\_FORMAT: A12

#### 1.13 Start\_Time\_of\_File

-----

FIELD\_NAME: Start\_Time\_of\_File  
FIELD\_MNEMONIC: TIME\_VALUE  
FIELD\_SYNTAX: ASCII Character\*23 String.  
FIELD\_DESCRIPTION: The start time of the data in the file in standard VAX VMS date and time format.  
FIELD\_REPRESENTATION: 23A  
FIELD\_DISPLAY\_FORMAT: A23

#### 1.14 Stop\_Time\_of\_File

-----

FIELD\_NAME: Stop\_Time\_of\_File  
FIELD\_MNEMONIC: GSTOP  
FIELD\_SYNTAX: ASCII Character\*23 String.  
FIELD\_DESCRIPTION: The stop time of the data in the file in standard  
VAX VMS date and time format.  
FIELD\_REPRESENTATION: 23A  
FIELD\_DISPLAY\_FORMAT: A23

#### 1.15 Maximum\_Latitude

-----

FIELD\_NAME: Maximum\_Latitude  
FIELD\_MNEMONIC: MAXLAT  
FIELD\_SYNTAX: ASCII Character\*7 String.  
FIELD\_UNITS: Degrees.  
FIELD\_RANGE: +90.0 normally  
FIELD\_DESCRIPTION: The maximum latitude of the data in the file.  
FIELD\_REPRESENTATION: 7A (right justified - leading sign not included if  
value is positive)  
FIELD\_DISPLAY\_FORMAT: A7

#### 1.16 Minimum\_Latitude

-----

FIELD\_NAME: Minimum\_Latitude  
FIELD\_MNEMONIC: MINLAT  
FIELD\_SYNTAX: ASCII Character\*7 String.  
FIELD\_UNITS: Degrees.  
FIELD\_RANGE: -90.0 normally  
FIELD\_DESCRIPTION: The minimum latitude of the data in the file.  
FIELD\_REPRESENTATION: 7A (right justified)  
FIELD\_DISPLAY\_FORMAT: A7

#### 1.17 Maximum\_Longitude

-----

FIELD\_NAME: Maximum\_Longitude  
FIELD\_MNEMONIC: MAXLON  
FIELD\_SYNTAX: ASCII Character\*7 String.  
FIELD\_UNITS: Degrees.  
FIELD\_RANGE: +180.0 normally  
FIELD\_DESCRIPTION: The maximum longitude of the data in the file.  
FIELD\_REPRESENTATION: 7A (right justified - leading sign not included if  
value is positive)  
FIELD\_DISPLAY\_FORMAT: A7

#### 1.18 Minimum\_Longitude

-----

FIELD\_NAME: Minimum\_Longitude  
FIELD\_MNEMONIC: MINLON  
FIELD\_SYNTAX: ASCII Character\*7 String.  
FIELD\_UNITS: Degrees.  
FIELD\_RANGE: -180.0 normally  
FIELD\_DESCRIPTION: The minimum longitude of the data in the file.  
FIELD\_REPRESENTATION: 7A (right justified)  
FIELD\_DISPLAY\_FORMAT: A7

#### 1.19 Maximum\_Altitude\_Kilometers

-----

FIELD\_NAME: Maximum\_Altitude\_Kilometers  
FIELD\_MNEMONIC: MAXALTK  
FIELD\_SYNTAX: ASCII Character\*8 String.

FIELD\_UNITS: Kilometers.  
FIELD\_DESCRIPTION: The maximum altitude of the data in the file.  
Field is blank.  
FIELD\_REPRESENTATION: 8A  
FIELD\_DISPLAY\_FORMAT: A8

#### 1.20 Minimum\_Altitude\_Kilometers

-----

FIELD\_NAME: Minimum\_Altitude\_Kilometers  
FIELD\_MNEMONIC: MINALTK  
FIELD\_SYNTAX: ASCII Character\*8 String.  
FIELD\_UNITS: Kilometers.  
FIELD\_DESCRIPTION: The minimum altitude of the data in the file.  
Field is blank.  
FIELD\_REPRESENTATION: 8A  
FIELD\_DISPLAY\_FORMAT: A8

#### 1.21 Maximum\_Altitude\_Millibars

-----

FIELD\_NAME: Maximum\_Altitude\_Millibars  
FIELD\_MNEMONIC: MAXALTP  
FIELD\_SYNTAX: ASCII Character\*8 String.  
FIELD\_UNITS: Mb.  
FIELD\_RANGE: 0.4 to 1000.0  
FIELD\_DESCRIPTION: The maximum altitude of the data in the file.  
FIELD\_REPRESENTATION: 8A (right justified)  
FIELD\_DISPLAY\_FORMAT: A8

#### 1.22 Minimum\_Altitude\_Millibars

-----

FIELD\_NAME: Minimum\_Altitude\_Millibars  
FIELD\_MNEMONIC: MINALTP  
FIELD\_SYNTAX: ASCII Character\*8 String.  
FIELD\_UNITS: Mb.  
FIELD\_RANGE: 0.4 to 1000.0  
FIELD\_DESCRIPTION: The minimum altitude of the data in the file.  
FIELD\_REPRESENTATION: 8A (right justified)  
FIELD\_DISPLAY\_FORMAT: A8

#### 1.23 Record\_Size

-----

FIELD\_NAME: Record\_Size  
FIELD\_MNEMONIC: RECFM  
FIELD\_SYNTAX: ASCII Character\*6 String.  
FIELD\_UNITS: Bytes  
FIELD\_RANGE: positive integers (16964 Bytes)  
FIELD\_DESCRIPTION: The size of each record in the file.  
FIELD\_REPRESENTATION: 6A (right justified)  
FIELD\_DISPLAY\_FORMAT: A6

#### 1.24 Number\_Records\_in\_File

-----

FIELD\_NAME: Number\_Records\_in\_File  
FIELD\_MNEMONIC: NUMRECT  
FIELD\_SYNTAX: ASCII Character\*6 String.  
FIELD\_RANGE: positive integers  
FIELD\_DESCRIPTION: The total number of records in the file.  
HEIGHT (max#rec 37)  
TEMP (max#rec 37)  
MOISTURE (current#rec 7, max#rec 37)  
WINDS (current#rec 33, max#rec 37)

FIELD\_REPRESENTATION: 6A (right justified)  
FIELD\_DISPLAY\_FORMAT: A6

1.25 Data\_Quality\_Word#1  
-----

FIELD\_NAME: Data\_Quality\_Word#1  
FIELD\_MNEMONIC: USRQ11  
FIELD\_SYNTAX: ASCII Character\*3 String.  
FIELD\_DESCRIPTION: A number giving an indication of the quality of the data. (Not used)  
FIELD\_REPRESENTATION: 3A (right justified)  
FIELD\_DISPLAY\_FORMAT: A3  
FIELD\_FILLED\_CODE: Blanks

1.26 Data\_Quality\_Word#2  
-----

FIELD\_NAME: Data\_Quality\_Word#2  
FIELD\_MNEMONIC: USRQ12  
FIELD\_SYNTAX: ASCII Character\*3 String.  
FIELD\_DESCRIPTION: A number giving more indication of the quality of the data. (Not used)  
FIELD\_REPRESENTATION: 3A (right justified)  
FIELD\_DISPLAY\_FORMAT: A3  
FIELD\_FILLED\_CODE: Blanks

1.27 User\_Comments  
-----

FIELD\_NAME: User\_Comments  
FIELD\_MNEMONIC: USERCOM  
FIELD\_SYNTAX: ASCII Character\*80 String.  
FIELD\_DESCRIPTION: Comments supplied by the UARS PI on the data.  
FIELD\_REPRESENTATION: 80A  
FIELD\_DISPLAY\_FORMAT: A80  
FIELD\_FILLED\_CODE: Blanks

1.28 Correlative\_Data\_Parameter#1  
-----

FIELD\_NAME: Correlative\_Data\_Parameter#1  
FIELD\_MNEMONIC: CORRDAT1  
FIELD\_SYNTAX: ASCII Character\*12 String.  
FIELD\_DESCRIPTION: The subtype of the first parameter. Acceptable subtypes: TEMP, MOISTURE, HEIGHT and WINDS  
FIELD\_REPRESENTATION: 12A (left justified)  
FIELD\_DISPLAY\_FORMAT: A12  
FIELD\_FILLED\_CODE: Blanks

1.29 Correlative\_Data\_Parameter#2  
-----

FIELD\_NAME: Correlative\_Data\_Parameter#2  
FIELD\_MNEMONIC: CORRDAT2  
FIELD\_SYNTAX: ASCII Character\*12 String.  
FIELD\_DESCRIPTION: The subtype of the second parameter.  
FIELD\_REPRESENTATION: 12A (left justified)  
FIELD\_DISPLAY\_FORMAT: A12  
FIELD\_FILLED\_CODE: Blanks

1.30 Correlative\_Data\_Parameter#3  
-----

FIELD\_NAME: Correlative\_Data\_Parameter#3  
FIELD\_MNEMONIC: CORRDAT3

FIELD\_SYNTAX: ASCII Character\*12 String.  
FIELD\_DESCRIPTION: The subtype of the third parameter.  
FIELD\_REPRESENTATION: 12A (left justified)  
FIELD\_DISPLAY\_FORMAT: A12  
FIELD\_FILLED\_CODE: Blanks

#### 1.31 Correlative\_Data\_Parameter#4

-----

FIELD\_NAME: Correlative\_Data\_Parameter#4  
FIELD\_MNEMONIC: CORRDAT4  
FIELD\_SYNTAX: ASCII Character\*12 String.  
FIELD\_DESCRIPTION: The subtype of the fourth parameter.  
FIELD\_REPRESENTATION: 12A (left justified)  
FIELD\_DISPLAY\_FORMAT: A12  
FIELD\_FILLED\_CODE: Blanks

#### 1.32 Record\_Fill

-----

FIELD\_NAME: Record\_Fill  
FIELD\_MNEMONIC: Remaining fields in the SFDU record are not used by  
NMC routines for the NMC gridded data.  
FIELD\_SYNTAX: ASCII Character String.  
Its length = Value(Record\_Size) - 428 bytes.  
FIELD\_DESCRIPTION: A field of blanks used to fill out the SFDU\_Label\_  
And\_UARS\_Header\_Record so that its length equals  
the length of the other records in the file.  
(All records in a UARS correlative file must be  
of the same length).

#### 2. Data\_Record

-----

Number of Record (= No\_levels\_for\_each\_Correlative\_Parameter for Northern and  
Southern hemisphere) in the files.

RECORD\_NAME: Data\_Record  
RECORD\_STRUCTURE: Fixed length  
RECORD\_LENGTH: 16964 bytes  
RECORD\_FIELD\_NAMES: Data\_Type, Surf\_Type\_1, Surf\_Value\_1  
Surf\_Type\_2, Surf\_Value\_2, Year\_Data,  
Month\_Data, Day\_Data, Hour\_Data, Hemisphere,  
Time\_Indicator, Extra\_Byte, Grid\_Point\_Field  
RECORD\_SYNTAX: 13 Fields  
#1: Data\_Type  
#2: Surf\_Type\_1  
#3: Surf\_Value\_1  
#4: Surf\_Type\_2  
#5: Surf\_Value\_2  
#6: Year\_Data  
#7: Month\_Data  
#8: Day\_Data  
#9: Hour\_Data  
#10: Hemisphere  
#11: Time\_Indicator  
#12: Extra\_Byte  
#13: Grid\_Point\_Field

#### 4.2) FIELDS

=====

#### 2.1 Data\_Type

-----

FIELD\_NAME: Data\_Type

FIELD\_MNEMONIC: IQ  
FIELD\_SYNTAX: Scalar  
FIELD\_RANGE: 16 (Temp), 1 (Height), 88 (Moisture), 48(u)&49(v)  
(Winds)  
FIELD\_DESCRIPTION: The type of data contained in this correlative file.  
FIELD\_REPRESENTATION: VI4  
FIELD\_DISPLAY\_FORMAT: I4  
FIELD\_FILL\_CODE: 0

## 2.2 Surf\_Type\_1

-----

FIELD\_NAME: Surf\_Type\_1  
FIELD\_MNEMONIC: IS1  
FIELD\_SYNTAX: Scalar  
FIELD\_RANGE: 8 (NMC code number to indicate Constant pressure  
Surface)  
FIELD\_DESCRIPTION: Constant pressure surface  
FIELD\_REPRESENTATION: VI4  
FIELD\_DISPLAY\_FORMAT: I4  
FIELD\_FILL\_CODE: 0

## 2.3 Surf\_Value\_1

-----

FIELD\_NAME: Surf\_Value\_1  
FIELD\_MNEMONIC: PRES1  
FIELD\_SYNTAX: Scalar  
FIELD\_RANGE: 0.4 - 1000.0 mb  
FIELD\_DESCRIPTION: Values for the pressure levels  
FIELD\_REPRESENTATION: VR4  
FIELD\_DISPLAY\_FORMAT: R4  
FIELD\_FILL\_CODE: 0

## 2.4 Surf\_Type\_2

-----

FIELD\_NAME: Surf\_Type\_2  
FIELD\_MNEMONIC: IS2  
FIELD\_SYNTAX: Scalar  
FIELD\_RANGE: 0  
FIELD\_DESCRIPTION: Unused.  
FIELD\_REPRESENTATION: VI4  
FIELD\_DISPLAY\_FORMAT: I4  
FIELD\_FILL\_CODE: 0

## 2.5 Surf\_Value\_2

-----

FIELD\_NAME: Surf\_Value\_2  
FIELD\_MNEMONIC: PRES2  
FIELD\_SYNTAX: Scalar  
FIELD\_RANGE: 0.0  
FIELD\_DESCRIPTION: Unused.  
FIELD\_REPRESENTATION: VR4  
FIELD\_DISPLAY\_FORMAT: R4  
FIELD\_FILL\_CODE: 0

## 2.6 Year\_Data

-----

FIELD\_NAME: Year\_Data  
FIELD\_MNEMONIC: IYR  
FIELD\_SYNTAX: Scalar  
FIELD\_RANGE: 1990+  
FIELD\_DESCRIPTION: Year of the latest data

FIELD\_REPRESENTATION: VI4  
FIELD\_DISPLAY\_FORMAT: I4  
FIELD\_FILL\_CODE: 0

## 2.7 Month\_Data

-----  
FIELD\_NAME: Month\_Data  
FIELD\_MNEMONIC: IMN  
FIELD\_SYNTAX: Scalar  
FIELD\_RANGE: 1 to 12  
FIELD\_DESCRIPTION: Month of year of the latest data  
FIELD\_REPRESENTATION: VI4  
FIELD\_DISPLAY\_FORMAT: I4  
FIELD\_FILL\_CODE: 0

## 2.8 Day\_Data

-----  
FIELD\_NAME: Day\_Data  
FIELD\_MNEMONIC: IDY  
FIELD\_SYNTAX: Scalar  
FIELD\_RANGE: 1 to 31  
FIELD\_DESCRIPTION: Day of month of latest data  
FIELD\_REPRESENTATION: VI4  
FIELD\_DISPLAY\_FORMAT: I4  
FIELD\_FILL\_CODE: 0

## 2.9 Hour\_Data

-----  
FIELD\_NAME: Hour\_Data  
FIELD\_MNEMONIC: IHR  
FIELD\_SYNTAX: Scalar  
FIELD\_RANGE: 0 to 23  
FIELD\_DESCRIPTION: Hour of day of latest data  
FIELD\_REPRESENTATION: VI4  
FIELD\_DISPLAY\_FORMAT: I4  
FIELD\_FILL\_CODE: 0

## 2.10 Hemisphere

-----  
FIELD\_NAME: Hemisphere  
FIELD\_MNEMONIC: IHEM  
FIELD\_SYNTAX: Scalar  
FIELD\_RANGE: 27 (Northern) & 28 (Southern)  
FIELD\_DESCRIPTION: Indicates the hemisphere or area type for which  
the data is valid.  
FIELD\_REPRESENTATION: VI4  
FIELD\_DISPLAY\_FORMAT: I4  
FIELD\_FILL\_CODE: 0

## 2.11 Time\_Indicator

-----  
FIELD\_NAME: Time\_Indicator  
FIELD\_MNEMONIC: Time\_Value  
FIELD\_SYNTAX: Scalar  
FIELD\_DESCRIPTION: The processing time of the data in the file,  
standard VAX VMS date and time format.  
FIELD\_REPRESENTATION: ASCII Character\*23 String.  
FIELD\_DISPLAY\_FORMAT: 23A  
FIELD\_FILL\_CODE: 0

## 2.12 Extra\_Byte

-----  
FIELD\_NAME: Extra\_Byte  
FIELD\_MNEMONIC: Onebyte  
FIELD\_SYNTAX: 1 byte  
FIELD\_DESCRIPTION: Extra byte to fill the record to its fixed length  
FIELD\_REPRESENTATION: 1A  
FIELD\_DISPLAY\_FORMAT: A  
FIELD\_FILL\_CODE: 0

### 2.13 Grid\_Field\_Data

-----

FIELD\_NAME: Grid\_Point\_Field  
FIELD\_MNEMONIC: RECT  
FIELD\_SYNTAX: Array of Number\_of\_rows by Number\_of\_points elements  
FIELD\_RANGE: 4225-points  
FIELD\_DESCRIPTION: 4225-point (65x65) Northern and Southern Hemisphere  
polar stereographic grid. 381km at 60N and 60S.  
FIELD\_REPRESENTATION: VR4  
FIELD\_FILL\_CODE: 0

### Cataloging NMC correlative files

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TYPE = CORRELATIVE  
SOURCE = NMC  
SUBTYPES = TEMP  
HEIGHT  
MOISTURE  
WINDS (BOTH U AND V COMPONENTS)