Global Hydrology Resource Center

Data User Guide

AMSU/MSU Day/Month Temperature Anomalies and Annual Cycle V6

Introduction

The AMSU/MSU Day/Month Temperature Anomalies and Annual Cycle V6 datasets consist of temperature anomalies and annual cycle temperatures derived from the Microwave Sounding Unit (MSU) and the Advanced Microwave Sounding Unit-A (AMSU-A) radiance data since January 1978. All products are derived for four bulk layers of the atmosphere: the lower stratosphere, tropopause, mid-troposphere, and lower troposphere. The datasets begin on January 1, 1978 and are still currently ongoing. The data are available in netCDF-4 and ASCII formats.

Citations

There are four citations, each for the lower stratosphere, tropopause, mid-troposphere, and lower troposphere, respectively. Please select the appropriate citation for the data you are using:

AMSU/MSU Lowstratosphere Day/Month Temperature Anomalies and Annual Cycle V6

Spencer, Roy W. and John R. Christy. 2018. AMSU/MSU Lowstratosphere Day/Month Temperature Anomalies and Annual Cycle V6 [indicate subset used]. Dataset available online from the NASA Global Hydrology Center Distributed Active Archive Center, Huntsville, Alabama, U.S.A.
doi: http://dx.doi.org/10.5067/GHRC/AMSU-A/DATA401

AMSU/MSU Midtroposphere Day/Month Temperature Anomalies and Annual Cycle V6

Spencer, Roy W. and John R. Christy. 2018. AMSU/MSU Midtroposphere Day/Month Temperature Anomalies and Annual Cycle V6 [indicate subset used]. Dataset available online from the NASA Global Hydrology Center Distributed Active Archive Center, Huntsville, Alabama, U.S.A.

doi: http://dx.doi.org/10.5067/GHRC/AMSU-A/DATA403

AMSU/MSU Lowtroposphere Day/Month Temperature Anomalies and Annual Cycle V6

Spencer, Roy W. and John R. Christy. 2018. AMSU/MSU Lowtroposphere Day/Month Temperature Anomalies and Annual Cycle V6 [indicate subset used]. Dataset available online from the NASA Global Hydrology Center Distributed Active Archive Center, Huntsville, Alabama, U.S.A.
doi: http://dx.doi.org/10.5067/GHRC/AMSU-A/DATA402

AMSU/MSU Tropopause Day/Month Temperature Anomalies and Annual Cycle V6

Spencer, Roy W. and John R. Christy. 2018. AMSU/MSU Tropopause Day/Month Temperature Anomalies and Annual Cycle V6 [indicate subset used]. Dataset available online from the NASA Global Hydrology Center Distributed Active Archive Center, Huntsville, Alabama, U.S.A.
doi: http://dx.doi.org/10.5067/GHRC/AMSU-A/DATA404

Keywords:

AMSU, MSU, lower stratosphere, mid-troposphere, lower troposphere, tropopause, temperature, anomalies, annual cycle, *microwave*

Project/Instrument Description

Global temperatures have been monitored by satellites since 1978 with the Microwave Sounding Units (MSU) flying onboard the National Oceanic and Atmospheric Administration's (NOAA) Television InfraRed Operational Satellite-Next-generation (TIROS-N) series of polar-orbiting weather satellites. As the predecessor to the Advanced Microwave Sounding Unit (AMSU), the MSU was first launched onboard the TIROS-N satellite in October 1978 and provided global coverage (from Pole to Pole). The MSU carries a 4-channel microwave radiometer, operating between 50 to 60 GHz. The spatial resolution on the ground is about 2.5 degrees in longitude and latitude (about 250 km circle). There were 9 different MSUs launched onboard TIROS-N and NOAA-6 through NOAA-14 (excluding NOAA-13), respectively. These MSUs provided temperature measurements of the troposphere and lower stratosphere until 1998, when the first AMSU was deployed.

The first AMSU was launched in May 1998 on board the NOAA-15 satellite. So far, there are 8 AMSU instruments, 5 on NOAA platforms (NOAA-15 through NOAA-19), 2 on the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) platforms (Metop-A and Metop-B), and one on NASA AQUA satellite. The AMSU is a multi-channel microwave radiometer installed on meteorological satellites. The instrument

examines several bands of microwave radiation from the atmosphere to perform atmospheric sounding of temperature and moisture levels. The AMSU has two sub-instruments, AMSU-A and AMSU-B. AMSU-A is a cross-track, line-scanning instrument designed to measure scene radiances in 15 discrete frequency channels which permit the calculation of the vertical temperature and moisture profile from about 3 millibars (~45 km) to the Earth's surface. Each scan has 30 cells, with a resolution of 3.3 degrees (50 km at nadir). The swath width is about 2,343 km (96.66 degrees). The AMSU-A instrument is made up of two separate modules, A1 and A2. AMSU-A1 contains the 13 highest frequencies (50.3 - 89 GHz) of various polarizations. AMSU-A2 contains the two lowest frequency channels (23.8 and 31.4 GHz), both vertically polarized.

The AMSU/MSU Day/Month Temperature Anomalies and Annual Cycle V6 datasets are derived by combining MSU data on board TIROS-N, NOAA-6 through NOAA-14 (excluding NOAA-13) and AMSU data from NOAA-15, NOAA-18, NOAA-19, and AQUA.

Investigators

Roy W. Spencer
Earth System Science Center
University of Alabama in Huntsville
Huntsville, AL

John R. Christy
Earth System Science Center
University of Alabama in Huntsville
Huntsville, AL

Data Characteristics

The AMSU/MSU Day/Month Temperature Anomalies and Annual Cycle V6 datasets consist of global temperatures for the lower stratosphere, tropopause, mid-troposphere, and lower troposphere derived from MSU and AMSU radiance data. The datasets begin on January 1, 1978 and are still currently ongoing. The data are available in netCDF-4 and ASCII formats at a Level 3 processing level. More information about the NASA data processing levels are available on the EOSDIS Data Processing Levels website. Table 1 provides the characteristics of the AMSU/MSU datasets.

Table 1: Data Characteristics

Characteristic	Description
Platform	Platforms for MSU: TIROS-N, NOAA-6, NOAA-7, NOAA-8, NOAA-9, NOAA-10, NOAA-11, NOAA-12, NOAA-14 Platforms for AMSU-A: NOAA-15, NOAA-18, NOAA-19, AQUA
Instrument	Microwave Sounding Unit (MSU), Advanced Microwave Sounding Unit-A (AMSU-A)
Projection	n/a
Spatial Coverage	N: 90, S: -90, E: 180, W: -180 (Global)
Spatial Resolution	2.5 degrees
Temporal Coverage	January 1, 1978 - ongoing
Temporal Resolution	Annual
Sampling Frequency	Daily
Parameter	Atmospheric temperature
Version	6
Processing Level	3

File Naming Convention

The AMSU/MSU Day/Month Temperature Anomalies and Annual Cycle V6 datasets have the following file naming convention:

Data files:
t[lt|mt|tp|ls]monacg_6.0[.txt|.nc]
t[lt|mt|tp|ls]glhmam_6.0[.txt|.nc]
t[lt|mt|tp|ls]monamg.YYYY_6.0[.txt|.nc]
uahncdc_[lt|mt|tp|ls]_6.0[.txt|.nc]
uahncdc_pen_[mt|tp|ls]_6.0[.txt|.nc]
tltpenacg_6.0[.txt|nc]
tltpenamg.YYYY_6.0[.txt|nc]

Table 2: File naming convention variables

Variable	Description
lt|mt|tp|ls	Vertical ranges: **lt**: lower troposphere **mt**: mid-troposphere **tp**: tropopause **ls**: lower stratosphere
monacg	gridded climatological monthly global temperature (30-year Climatology from 1991 to 2020)

	*mon=monthly, ac=annual cycle, g=gridded
glhmam	regional monthly mean anomaly temperature since Dec. 1978 (global, southern hemisphere, northern hemisphere, tropics) *gl=global, hm=hemisphere, am=anomaly
monamg	gridded monthly anomaly temperature since Dec. 1978 *mon=monthly, am=anomaly, g=gridded
uahncdc	regional monthly mean anomaly temperature since Dec. 1978 (global, southern hemisphere, northern hemisphere, tropical, north pole, south pole, conterminous USA, conterminous USA and Alaska, Australian)
uahncdc_pen	regional 5-day mean anomaly temperature since Dec. 1978 (global, southern hemisphere, northern hemisphere, tropical, north pole, south pole, conterminous USA, conterminous USA and Alaska, Australian) *pen=pentad (a group or set of five)
penacg	gridded climatological 5-day global temperature (30-year Climatology from 1991 to 2020) *pen=pentad (a group or set of five), ac=annual cycle, g=gridded
penamg	gridded 5-day anomaly temperature since Dec. 1978 *pen=pentad (a group or set of five), am=anomaly, g=gridded
YYYY	Four-digit year
.nc	netCDF-4 format
.txt	ASCII format

Data Format and Parameters

The AMSU/MSU Day/Month Temperature Anomalies and Annual Cycle V6 datasets consist of atmospheric temperature data files in netCDF-4 and ASCII formats. Main parameters include monthly anomaly temperature, climatological monthly mean temperature, and 5-day mean anomaly temperature. These satellite-derived air temperature data are either on a global 2.5 x 2.5 degree grid or averaged over regions listed in Table 3. Data fields are listed in Table 4 through Table 7.

Table 3: AMSU/MSU temperature regions.

Regions	Spatial coverage
Global	90S-90N
Northern hemisphere	0-90N

Southern hemisphere	90S-0
Tropics	20S-10N
Northern extratropics	20N-90N
Southern extratropics	90S-20S
North pole	60N-90N
South pole	90S-60S
Conterminous USA	covers the 48 conterminous US States
Conterminous USA and Alaska	covers the 48 conterminous US States + Alaska
Australian: covers Australia	covers Australia

Table 4: Data fields in netCDF-4 files

File Name	Data Field	Description	Unit	Data Type	Missing Value
t[lt|mt|tp|ls]glh mam_6.0	time	months since January 1st, 1978	months since 1978-01-01 00:00:00	int32	-
	time_bounds	the months (counted since January 1, 1978) bounding a given month within the dataset	-	int32	-
	global	monthly mean global anomaly temperature	K	float32	-99.99
	global_running	running mean global anomaly temperature	K	float32	-99.99
	north	monthly mean southern hemisphere anomaly temperature	K	float32	-99.99
	north_running	running mean southern hemisphere anomaly temperature	K	float32	-99.99
	south	monthly mean southern hemisphere anomaly temperature	K	float32	-99.99
	south_running	running mean southern hemisphere anomaly temperature	K	float32	-99.99
	tropics	monthly mean tropics anomaly temperature	K	float32	-99.99
	tropics_running	running mean tropics	K	float32	-99.99

		anomaly temperature			
	days_in_month	days in month used for calculating means	days	int32	-
	days_in_running	days used for calculating means	days	int32	-
t[lt|mt|tp|ls]monacg_6.0	time	month of climatological year [1-12]	months since 0000-01-01 00:00:00	int32	-
	climatological_bounds	climatology boundaries (the year-months bounding a given year_month within the climatology)	-	int32	-
	latitude	degrees latitude	degrees_north	float32	-
	latitude_bounds	-	-	float32	-
	longitude	degrees longitude	degrees_east	float32	-
	longitude_bounds	-	-	float32	-
	global_temperatures	climatological monthly global temperature	K	int32	-9999
tltpenacg_6.0	time	5 days of climatological year [1-73]	months since 0000-01-01 00:00:00	int32	-
	climatological_bounds	climatology boundaries (the year-months bounding a given year_month within the climatology)	-	int32	-
	latitude	degrees latitude	degrees_north	float32	-
	latitude_bounds	-	-	float32	-
	longitude	degrees longitude	degrees_east	float32	-

	longitude_bounds	-	-	float32	-
	global_temperatures	climatological 5-day global temperature	K	int32	-9999
t[lt|mt|tp|ls]monamg.<YYYY>_6.0	time	time	months since <YYYY>-01-01 00:00:00	int32	-
	time_bounds	-	-	int32	-
	latitude	degrees latitude	degrees_north	float32	-
	longitude	degrees longitude	degrees_east	float32	-
	latitude_bounds	-	-	float32	-
	longitude_bounds	-	-	float32	-
	anomaly_data	monthly anomaly temperatures for <YYYY>	K	int32	-9999
tltpenamg.<YYYY>_6.0	time	time	Days since <YYYY>-01-01 00:00:00	int32	-
	time_bounds	-	-	int32	-
	latitude	degrees latitude	degrees_north	float32	-
	longitude	degrees longitude	degrees_east	float32	-
	latitude_bounds	-	-	float32	-
	longitude_bounds	-	-	float32	-
	anomaly_data	5-day anomaly temperatures for <YYYY>	K	int32	-9999
uahncdc_[lt|mt|tp|ls]_6.0	time	months since December 1st, 1978	months since 1978-12-01 00:00:00	int32	-

	time_bounds	the number of months (since December 1, 1978) before and after a given month within the dataset	-	int32	-
	global	monthly mean global anomaly temperature	K	float32	-
	global_land	monthly mean global land anomaly temperature	K	float32	-
	global_ocean	monthly mean global ocean anomaly temperature	K	float32	-
	north	monthly mean north hemisphere anomaly temperature	K	float32	-
	north_land	monthly mean north hemisphere land anomaly temperature	K	float32	-
	north_ocean	monthly mean north hemisphere ocean anomaly temperature	K	float32	-
	south	monthly mean southern hemisphere anomaly temperature	K	float32	-
	south_land	monthly mean southern hemisphere land anomaly temperature	K	float32	-
	south_ocean	monthly mean southern hemisphere ocean anomaly temperature	K	float32	-
	tropics	monthly mean tropics anomaly temperature	K	float32	-
	tropics_land	monthly mean tropics land anomaly temperature	K	float32	-
	tropics_ocean	monthly mean tropics ocean anomaly temperature	K	float32	-
	noext	monthly mean northern extended hemisphere	K	float32	-

		anomaly temperature			
	noext_land	monthly mean northern extended hemisphere land anomaly temperature	K	float32	-
	noext_ocean	monthly mean northern extended hemisphere ocean anomaly temperature	K	float32	-
	soext	monthly mean southern extended hemisphere anomaly temperature	K	float32	-
	soext_land	monthly mean southern extended hemisphere land anomaly temperature	K	float32	-
	soext_ocean	monthly mean southern extended hemisphere ocean anomaly temperature	K	float32	-
	nopol	monthly mean north pole anomaly temperature	K	float32	-
	nopol_land	monthly mean north pole land anomaly temperature	K	float32	-
	nopol_ocean	monthly mean north pole ocean anomaly temperature	K	float32	-
	sopol	monthly mean south pole anomaly temperature	K	float32	-
	sopol_land	monthly mean south pole land anomaly temperature	K	float32	-
	sopol_ocean	monthly mean south pole ocean anomaly temperature	K	float32	-

	us48	monthly mean of the conterminous USA anomaly temperature	K	float32	-
	us49	monthly mean of the conterminous USA and Alaska anomaly temperature	K	float32	-
	aust	monthly mean Australian anomaly temperature	K	float32	-
uahncdc_pen_[mt|tp|ls]_6.0	time	days since January 1st, 1978	days since 1978-01-01 00:00:00	int32	-
	time_bounds	the number of days (since January 1, 1978) before and after a given day within the dataset	-	int32	-
	global	5-day mean global anomaly temperature	K	float32	-
	global_land	5-day mean global land anomaly temperature	K	float32	-
	global_ocean	5-day mean global ocean anomaly temperature	K	float32	-
	north	5-day mean north hemisphere anomaly temperature	K	float32	-
	north_land	5-day mean north hemisphere land anomaly temperature	K	float32	-
	north_ocean	5-day mean north hemisphere ocean anomaly temperature	K	float32	-
	south	5-day mean southern hemisphere anomaly temperature	K	float32	-
	south_land	5-day mean southern hemisphere land anomaly	K	float32	-

		temperature			
	south_ocean	5-day mean southern hemisphere ocean anomaly temperature	K	float32	-
	tropics	5-day mean tropics anomaly temperature	K	float32	-
	tropics_land	5-day mean tropics land anomaly temperature	K	float32	-
	tropics_ocean	5-day mean tropics ocean anomaly temperature	K	float32	-
	noext	5-day mean northern extended hemisphere anomaly temperature	K	float32	-
	noext_land	5-day mean northern extended hemisphere land anomaly temperature	K	float32	-
	noext_ocean	5-day mean northern extended hemisphere ocean anomaly temperature	K	float32	-
	soext	5-day mean southern extended hemisphere anomaly temperature	K	float32	-
	soext_land	5-day mean southern extended hemisphere land anomaly temperature	K	float32	-
	soext_ocean	5-day mean southern extended hemisphere ocean anomaly temperature	K	float32	-
	nopol	5-day mean north pole anomaly temperature	K	float32	-
	nopol_land	5-day mean north pole land anomaly	K	float32	-

		temperature			
	nopol_ocean	5-day mean north pole ocean anomaly temperature	K	float32	-
	sopol	5-day mean south pole anomaly temperature	K	float32	-
	sopol_land	5-day mean south pole land anomaly temperature	K	float32	-
	sopol_ocean	5-day mean south pole ocean anomaly temperature	K	float32	-
	us48	5-day mean of the conterminous USA anomaly temperature	K	float32	-
	us49	5-day mean of the conterminous USA and Alaska anomaly temperature	K	float32	-
	aust	5-day mean Australian anomaly temperature	K	float32	-

Table 5: Data fields in t[lt|mt|tp|ls]glhmam_6.0.txt files. These ASCII files consist of regional monthly mean anomaly temperature since Dec. 1978.

Column number	Description	Unit
1	year	-
2	month	-
3	Monthly mean global anomaly temperature	K
4	Monthly mean northern hemisphere anomaly temperature	K
5	Monthly mean southern hemisphere anomaly temperature	K
6	Monthly mean tropics anomaly temperature	K

7	The number of days in the associated month used for calculating monthly means	days
8	Running mean global anomaly temperature	K
9	Running mean northern hemisphere anomaly temperature	K
10	Running mean southern hemisphere anomaly temperature	K
11	Running mean tropics anomaly temperature	K
12	The number of days preceding and including a given month used for calculating running means associated with that month	days

Table 6: Data fields in uahncdc_[lt|mt|tp|ls]_6.0.txt files. These ASCII files consist of regional monthly mean anomaly temperature since Dec. 1978.

Column number	Description	Unit
1	year	-
2	month	-
3	Monthly mean global anomaly temperature	K
4	Monthly mean global land anomaly temperature	K
5	Monthly mean global ocean anomaly temperature	K
6	Monthly mean northern hemisphere anomaly temperature	K
7	Monthly mean northern hemisphere land anomaly temperature	K
8	Monthly mean northern hemisphere ocean anomaly temperature	K
9	Monthly mean southern hemisphere anomaly temperature	K
10	Monthly mean southern hemisphere land anomaly temperature	K

11	Monthly mean southern hemisphere ocean anomaly temperature	K
12	Monthly mean tropics anomaly temperature	K
13	Monthly mean tropics land anomaly temperature	K
14	Monthly mean tropics ocean anomaly temperature	K
15	Monthly mean northern extratropics anomaly temperature	K
16	Monthly mean northern extratropics land anomaly temperature	K
17	Monthly mean northern extratropics ocean anomaly temperature	K
18	Monthly mean southern extratropics anomaly temperature	K
19	Monthly mean southern extratropics land anomaly temperature	K
20	Monthly mean southern extratropics ocean anomaly temperature	K
21	Monthly mean north pole anomaly temperature	K
22	Monthly mean north pole land anomaly temperature	K
23	Monthly mean north pole ocean anomaly temperature	K
24	Monthly mean south pole anomaly temperature	K
25	Monthly mean south pole land anomaly temperature	K
26	Monthly mean south pole ocean anomaly temperature	K
27	Monthly mean of the conterminous USA anomaly temperature	K
28	Monthly mean of the conterminous USA and Alaska anomaly temperature	K
29	Monthly mean Australian anomaly temperature	K

Table 7: Data fields in uahncdc_pen_[mt|tp|ls]_6.0.txt files. These ASCII files consist of regional 5-day mean anomaly temperature since Dec. 1978.

Column	Description	Unit

number		
1	year	-
2	month	-
3	5-day mean global anomaly temperature	K
4	5-day mean global land anomaly temperature	K
5	5-day mean global ocean anomaly temperature	K
6	5-day mean northern hemisphere anomaly temperature	K
7	5-day mean northern hemisphere land anomaly temperature	K
8	5-day mean northern hemisphere ocean anomaly temperature	K
9	5-day mean southern hemisphere anomaly temperature	K
10	5-day mean southern hemisphere land anomaly temperature	K
11	5-day mean southern hemisphere ocean anomaly temperature	K
12	5-day mean tropics anomaly temperature	K
13	5-day mean tropics land anomaly temperature	K
14	5-day mean tropics ocean anomaly temperature	K
15	5-day mean northern extratropics anomaly temperature	K
16	5-day mean northern extratropics land anomaly temperature	K
17	5-day mean northern extratropics ocean anomaly temperature	K
18	5-day mean southern extratropics anomaly temperature	K
19	5-day mean southern extratropics land anomaly temperature	K
20	5-day mean southern extratropics ocean anomaly temperature	K

21	5-day mean north pole anomaly temperature	K
22	5-day mean north pole land anomaly temperature	K
23	5-day mean north pole ocean anomaly temperature	K
24	5-day mean south pole anomaly temperature	K
25	5-day mean south pole land anomaly temperature	K
26	5-day mean south pole ocean anomaly temperature	K
27	5-day mean of the conterminous USA anomaly temperature	K
28	5-day mean of the conterminous USA and Alaska anomaly temperature	K
29	5-day mean Australian anomaly temperature	K

Algorithm

The version presented here is termed Version 6 (Spencer et al., 2017). The version 6 of the AMSU/MSU Day/Month Temperature Anomalies and Annual Cycle datasets include substantial changes in methods and procedures from previous versions:
(1) a new method for monthly gridpoint averaging which uses all of the footprint data at the various view angles, yet eliminates the need for limb correction;
(2) a new multi-channel (rather than multi-angle) method for computing the lower troposphere temperature product;
(3) a new empirical method for diurnal drift correction.

The mid-tropospheric temperature (TMT) is computed from MSU channel 2 (MSU2) or AMSU channel 5 (AMSU5). The lower stratospheric temperature (TLS) is computed from MSU4 or AMSU9. A new bulk layer centered on the tropopause was added in version 6.0 and its temperature (TTP) is computed from MSU3 or AMSU7. The lower troposphere temperature (TLT) is calculated from a linear combination of TMT, TTP and TLS rather than from a linear combination of view-angles from the single channel (MSU2 or AMSU5) as was done in versions 5.6 and earlier. More details about the Version 6 algorithm and procedures can be found in the Mean Layer Temperature - UAH - Climate Algorithm Theoretical Basis Document and Spencer et al. (2017). For details on the background of the AMSU/MSU data, the reader is referred to Spencer and Christy (1990), Spencer et al. (1990), Christy (1995), and Christy et al. (1998).

Quality Assessment

The quality of the output products is continually assessed in two basic ways (Mean Layer Temperature - UAH - Climate Algorithm Theoretical Basis Document). First, the standard

error of the differences of the co-orbiting satellites is followed with each month's run to check that the values are consistent and small. If a change occurs (i.e. an increasing standard error) this is usually a sign that a satellite's sensor is experiencing problems and will be investigated. In a number of cases (e.g. NOAA-14, NOAA-15, AQUA) this led to the cessation of utilizing data from the offending satellite from that point forward. Secondly, there will be routine comparisons between these Version 6 products and satellite - equivalent products from independent sources (i.e. radiosonde and Reanalyses datasets). When a consistent difference between these Version 6 products is discovered, an Investigation will commence to determine the source of the differences.

Compared to Version 5.6, the two most significant results from Version 6 are:
(1) a decrease in the global-average lower tropospheric temperature (TLT) trend from +0.14°C decade^{-1} to +0.11°C decade^{-1} (Jan. 1979 through Dec. 2015). This +0.03°C decade^{-1} reduction in the global TLT trend is partly due to lesser sensitivity of the new TLT to land surface skin temperature (est. 0.01°C decade^{-1}), with the remainder of the reduction (0.02°C decade^{-1}) due to the new diurnal drift adjustment, the more robust method of LT calculation, and other changes in processing procedures;
(2) the geographic distribution of the TLT trend, including higher spatial resolution, owing to the new method for computing TLT (Spencer et al., 2017).

Radiosonde comparisons indicate that this AMSU/MSU V6 products explains slightly more variance in the independently-constructed radiosonde datasets, in the tropical (20S-20N) troposphere, than do other satellite-based datasets (Spencer et al., 2017).

Software

The data files in netCDF-4 format may be read using Python, IDL, or other common netCDF-4 reader. Panoply or HDFView can be used to easily view these data. No software is required to view the ASCII data files.

Known Issues or Missing Data

The AMSU/MSU Day/Month Temperature Anomalies and Annual Cycle V6 datasets do not use NOAA-17 (short record), Metop (failed AMSU7), NOAA-16 (excessive calibration drifts), NOAA-14 after July 2001 (excessive calibration drift), NOAA-9 after February 1987 for MSU2 only (failed channel), or NOAA-15 after 2007 (calibration drift in AMSU5). More information can be found in the Mean Layer Temperature - UAH - Climate Algorithm Theoretical Basis Document.

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Related Data

Other dataset containing parameters derived from AMSU measurements can be considered related to this dataset. These dataset can be located using the GHRC HyDRO 2.0 search tool, by entering the term 'AMSU'.

Contact Information

To order these data or for further information, please contact:

NASA Global Hydrology Resource Center DAAC
User Services
320 Sparkman Drive
Huntsville, AL 35805
Phone: 256-961-7932
E-mail: support-ghrc@earthdata.nasa.gov
Web: https://ghrc.nsstc.nasa.gov/

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