



## EARTH SYSTEM SCIENCE

# Data and Services

**ATMOSPHERE** *Data Set Reference Sheet*

December 2009

| Physical Properties            | Data Center  | <b>Selected Data Sets and Data Collections</b><br><i>Complete data set listings available through each individual data center. For more information about NASA's Earth Observing System Data and Information System (EOSDIS) data centers, see: <a href="http://nasadaacs.eos.nasa.gov">http://nasadaacs.eos.nasa.gov</a></i>   |
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| <b>Atmospheric Temperature</b> | <b>LaRC ASDC</b><br><a href="http://eosweb.larc.nasa.gov">http://eosweb.larc.nasa.gov</a>            | <ul style="list-style-type: none"> <li>• International Satellite Cloud Climatology Project (ISCCP) data sets</li> <li>• Stratospheric Aerosol and Gas Experiment (SAGE) III L2 Solar Event and Lunar Event Species Profiles</li> <li>• Surface meteorology and Solar Energy (SSE) data set</li> <li>• Tropospheric Emission Spectrometer (TES) L2 Atmospheric Temperatures Nadir and L2 Atmospheric Temperatures Nadir Special Observations data</li> <li>• Clouds and the Earth's Radiant Energy System (CERES) ISCCP-D2 like data</li> </ul>  |
|                                | <b>GES DISC</b><br><a href="http://disc.sci.gsfc.nasa.gov">http://disc.sci.gsfc.nasa.gov</a>         | <ul style="list-style-type: none"> <li>• AIRS/Aqua Level 2 Products</li> <li>• AIRS/Aqua Level 3 Daily, Multiday, and Monthly Physical Retrieval Products</li> <li>• TOVS Pathfinder Path A and Path B Atmospheric and Surface Parameters, 5-Day Atmospheric Sounding Data from TOVS</li> <li>• MSU Limb93 Data Sets [e.g., MSU LIMB93 Daily Lower Tropospheric Temperature (along with Daily Upper Tropospheric and Lower Stratospheric Temperature Data Sets)]</li> <li>• UARS CLAES, HRDI, ISAMS, MLS, and WINDII Level 3A Daily Data (Level 3AT Time Ordered and Level 3AL Latitude Ordered), HALOE Level 3AT Time Ordered Data</li> <li>• A Multi-year Global Analysis Employing the Goddard EOS (GEOS) Data Assimilation System</li> <li>• Atmospheric Dynamics Data - CPC/ACDB Analysis</li> <li>• MLS/Aura Level 2 Daily Profiles of Temperature at 2-3 km Vertical Resolution</li> <li>• HIRDLS/Aura Level 2 vertical profiles of O3, H2O, CH4, N2O, NO2, HNO3, N2O5, ClONO2, CFC-11, CFC-12, Temperature, Cloud Top Pressure, and four Aerosol Extinctions (HIRDLS2)</li> </ul> |
|                                | <b>GHRC DAAC</b><br><a href="http://ghrc.nsstc.nasa.gov">http://ghrc.nsstc.nasa.gov</a>              | <ul style="list-style-type: none"> <li>• CAMEX-3 Data Sets [e.g., CAMEX-3 DC-8 Meteorological Measurement System MMS, CAMEX-3 Airborne Vertical Atmosphere Profiling System (AVAPS)]</li> <li>• CAMEX-4 Data Sets [e.g., CAMEX-4 Microwave Temperature Profiler, CAMEX-4 DC-8 Meteorological Measurement System (MMS)]</li> <li>• NAMMA DC-8 Meteorological Measurement System (MMS)</li> </ul>   |
|                                | <b>MODAPS LAADS</b><br><a href="http://ladsweb.nascom.nasa.gov/">http://ladsweb.nascom.nasa.gov/</a> | <ul style="list-style-type: none"> <li>• MOD07_L2 - MODIS/Terra and MODIS Aqua Level 2 Joint Atmosphere Product of Profiles, Total Column Ozone, Water Vapor, and Stability Indices</li> <li>• MOD08_D3, MOD08_E3, MOD08_M3 - MODIS/Terra and MODIS Aqua Level 3 Daily, 8-day, and Monthly Joint Aerosol/Water vapor/Cloud Products</li> </ul>  |
|                                | <b>NSIDC DAAC</b><br><a href="http://nsidc.org/daac">http://nsidc.org/daac</a>                       | <ul style="list-style-type: none"> <li>• TOVS Pathfinder Path-P Daily and Monthly Arctic Atmospheric Grids</li> <li>• NCEP/NCAR Arctic Marine Rawinsonde Archive</li> </ul>   |
|                                | <b>ORNL DAAC</b><br><a href="http://daac.ornl.gov">http://daac.ornl.gov</a>                          | <ul style="list-style-type: none"> <li>• BOREAS Data Sets: BOREAS AFM-06 Mean Temperature Profile Data, BOREAS AFM-08 ECMWF Hourly Surface and Upper Air Data for the SSA and NSA</li> <li>• FIFE Data Sets: Atmospheric Profiles: TOVS-NOAA, Radiosonde-NCDC</li> <li>• Climatological Data Set: Global 30-Year Mean Monthly Climatology 1961-1990 (New et al.)</li> <li>• SAFARI 2000: AVHRR-derived land use surface temperature maps for Africa 1995-2000</li> </ul>  |
| <b>Atmospheric Humidity</b>    | <b>LaRC ASDC</b><br><a href="http://eosweb.larc.nasa.gov">http://eosweb.larc.nasa.gov</a>            | <ul style="list-style-type: none"> <li>• SAGE III L2 Solar Event and Lunar Event Species Profiles</li> <li>• NASA Water Vapor Project (NVAP) data sets</li> <li>• SSE data set</li> <li>• TES L2 H2O Nadir and L2 H2O Nadir Special Observations data</li> <li>• CERES Synoptic Radiative Fluxes and Clouds (SYN), Monthly Regional Radiative Fluxes and Clouds (AVG), and Monthly Zonal and Global Radiative Fluxes and Clouds (ZAVG) Products [from Terra, Aqua]</li> </ul>   |

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| <b>Atmospheric Humidity</b><br>(continued)                         | <b>GES DISC</b><br><a href="http://disc.sci.gsfc.nasa.gov">http://disc.sci.gsfc.nasa.gov</a>         | <ul style="list-style-type: none"> <li>• AIRS/Aqua Level 2 Products</li> <li>• AIRS/Aqua Level 3 Daily, Multiday, and Monthly Physical Retrieval Products</li> <li>• TOVS Pathfinder Path A and Path B Atmospheric and Surface Parameters, 5-Day Atmospheric Sounding Data from TOVS</li> <li>• UARS CLAES, ISAMS, and MLS Level 3A Daily Data (Level 3AT Time Ordered and Level 3AL Latitude Ordered), HALOE Level 3AT Time Ordered Data.</li> <li>• A Multi-year Global Analysis Employing the Goddard EOS (GEOS) Data Assimilation System</li> <li>• MLS/Aura Level 2 Daily Profiles of Water Vapor, Relative Humidity with respect to Ice, and Ice Water Content at 2-3 km Vertical Resolution</li> </ul>   |
|  | <b>GHRC DAAC</b><br><a href="http://ghrc.nsstc.nasa.gov">http://ghrc.nsstc.nasa.gov</a>              | <ul style="list-style-type: none"> <li>• CAMEX-3 Data Sets (August-September, 1998)</li> <li>• CAMEX-4 Data Sets (August-September, 2001)</li> <li>• GOES Water Vapor Transport CD</li> </ul> <p><b>Over Ocean Only</b></p> <ul style="list-style-type: none"> <li>• MSFC SSM/I Swath and Daily Gridded Integrated Water Vapor Products from DMSP F13, F14, and F15</li> <li>• MSFC SSM/I Swath and Daily Gridded Cloud Liquid Water Products from DMSP F13, F14, and F15</li> <li>• TRMM Microwave Imager (TMI) Wentz Ocean Products [integrated water vapor and cloud liquid water]</li> <li>• NAMMA DC-8 Dropsonde</li> </ul>  |
|  | <b>MODAPS LAADS</b><br><a href="http://ladsweb.nascom.nasa.gov/">http://ladsweb.nascom.nasa.gov/</a> | <ul style="list-style-type: none"> <li>• MOD05_L2 &amp; MYD05_L2 - MODIS/Terra &amp; MODIS/Aqua Level 2 Total Precipitable Water Vapor Test Results</li> <li>• MOD07_L2 &amp; MYD07_L2 - MODIS/Terra and MODIS/Aqua Level 2 Joint Atmosphere Product of Profiles, Total Column Ozone, Water Vapor, and Stability Indices</li> <li>• MODATML2 &amp; MYDATML2 - MODIS/Terra &amp; MODIS/Aqua Level 2 Joint Atmospheric Product</li> <li>• MOD08_D3, MOD08_E3, MOD08_M3 &amp; MYD08_D3, MYD08_E3, MYD08_M3 - MODIS/Terra &amp; MODIS/Aqua Level 3 Daily, 8-day, and Monthly Joint Aerosol/Water vapor/Cloud Products</li> </ul>  |
|  | <b>NSIDC DAAC</b><br><a href="http://nsidc.org/daac">http://nsidc.org/daac</a>                       | <ul style="list-style-type: none"> <li>• AMSR-E/Aqua L2B Global Swath Ocean Products derived from Wentz Algorithm [integrated water vapor and cloud liquid water]</li> <li>• AMSR-E/Aqua Daily, Weekly, and Monthly L3 Ocean Products [integrated water vapor and cloud liquid water]</li> </ul>  |
|  | <b>ORNL DAAC</b><br><a href="http://daac.ornl.gov">http://daac.ornl.gov</a>                          | <ul style="list-style-type: none"> <li>• BOREAS Data Sets: BOREAS AFM-08 ECMWF Hourly Surface and Upper Air Data for the SSA and NSA</li> <li>• FIFE Data Sets: Atmospheric Profiles: TOVS-NOAA, Radiosonde-NCDC</li> <li>• Climatological Data Set: Global 30-Year Mean Monthly Climatology 1961-1990 (New et al.)</li> </ul>  |
| <b>Stratospheric Chemistry</b><br>Ozone, ClO, BrO, OH, trace gases | <b>LaRC ASDC</b><br><a href="http://eosweb.larc.nasa.gov">http://eosweb.larc.nasa.gov</a>            | <ul style="list-style-type: none"> <li>• SAGE III L2 Solar Event and Lunar Event Species Profiles</li> <li>• SAGE II data set</li> <li>• Stratospheric Aerosol Measurement (SAM) II data set</li> <li>• Polar Ozone and Aerosol Measurement (POAM) II and III data sets</li> </ul>  |
|  | <b>GES DISC</b><br><a href="http://disc.sci.gsfc.nasa.gov">http://disc.sci.gsfc.nasa.gov</a>         | <ul style="list-style-type: none"> <li>• TOMS Level 3 Total Ozone Daily Gridded 1.25 x 1.0 Degree Data</li> <li>• TOMS Level 2 Total Ozone at Instrument Resolution (50 x 50 km at Nadir)</li> <li>• SBUV Level 2 Ozone Profiles from Nimbus-7 and NOAA-9, 11 and 16 (SBUV/2)</li> <li>• UARS CLAES Level 3AT and Level 3AL Daily Data Products (O3 CH4, N2O, NO, NO2, N2O5, HNO3, ClONO2, CFC13, CF2Cl2, and H2O profiles)</li> <li>• UARS HALOE Level 2 and Level 3AT Daily Products (O3, HCl, HF, CH4, NO, NO2, and H2O profiles)</li> <li>• UARS ISAMS Level 3AT and Level 3AL Daily Data Products (CH4, CO, H2O, NO2, N2O, N2O5, and O3 profiles)</li> <li>• UARS MLS Level 3AT and Level 3AL Daily Data Products (CH3CN, ClO, H2O, HNO3, O3, and SO2 profiles)</li> <li>• MLS/Aura Level 2 Daily Profiles of BrO, CH3CN, ClO, CO, H2O, HCL, HCN, HNO3, HO2, HOCl, N2O, O3, OH, and SO2 at 2-3 km Vertical Resolution</li> <li>• OMI/Aura Level 2 Daily Total Column Ozone (O3) at Instrument Resolution (13 x 24 km at Nadir)</li> <li>• AIRS/Aqua Level 2 Product (Ozone Column and Profile)</li> <li>• AIRS/Aqua Level 3 Daily, Multiday, and Monthly Physical Retrieval Products (Ozone Column and Profile)</li> <li>• OMI/Aura Level 2 DOAS Total Column Ozone (O3) at Instrument Resolution</li> <li>• OMI/Aura Level 2 Total &amp; Tropospheric Column Nitrogen Dioxide (NO2) at Instrument Resolution</li> <li>• OMI/Aura Level 2 Total Column Sulphur Dioxide (SO2) at Instrument Resolution</li> <li>• OMI/Aura Level 2 Total Column Bromine Monoxide (BrO) at Instrument Resolution</li> <li>• OMI/Aura Level 2 Total Column Formaldehyde (HCHO) at Instrument Resolution</li> <li>• OMI/Aura Slant Column Chlorine Dioxide (OCIO) at Instrument Resolution</li> <li>• OMI/Aura TOMS-Like Ozone, Aerosol Index, Radiative Cloud Fraction Daily L3 Global 0.25x0.25 deg Grid</li> <li>• OMI/Aura TOMS-Like Ozone, Aerosol Index, Radiative Cloud Fraction Daily L3 Global 1.0x1.0 deg Grid</li> <li>• OMI/Aura DOAS Total Column Ozone Daily L3 Global 0.25 deg Lat/Lon Grid</li> <li>• HIRDLS/Aura Level 2 vertical profiles of O3, H2O, CH4, N2O, NO2, HNO3, N2O5, ClONO2, CFC-11, CFC-12, Temperature, Cloud Top Pressure, and four Aerosol Extinctions (HIRDLS2) - [GSFC, Please see note #1 below]</li> </ul> |

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| <b>Winds</b><br>Wind speed,<br>wind direction,<br>vertical air motions,<br>upper air winds | <b>LaRC ASDC</b><br><a href="http://eosweb.larc.nasa.gov">http://eosweb.larc.nasa.gov</a>    | <b>Cloud Winds (Global)</b> <ul style="list-style-type: none"> <li>MISR Level 2 TOA/Cloud Stereo Parameters and Level 3 Component Global Cloud (daily, monthly, quarterly, and yearly) Products</li> </ul> <b>Surface Winds (Global)</b> <ul style="list-style-type: none"> <li>SSE data set</li> </ul>  |
|  | <b>GES DISC</b><br><a href="http://disc.sci.gsfc.nasa.gov">http://disc.sci.gsfc.nasa.gov</a> | <b>Assimilation Products</b> <ul style="list-style-type: none"> <li>A Multi-year Global Analysis Employing the Goddard EOS (GEOS) Data Assimilation System</li> <li>DAO 4D Assimilation Monthly Mean Subset Data</li> </ul> <b>Upper Air Winds (Global)</b> <ul style="list-style-type: none"> <li>UARS High Resolution Doppler Imager (HRDI) Level 3A Daily Data (Level 3AT Time Ordered and Level 3AL Latitude Ordered)</li> <li>UARS Wind Imaging Interferometer (WINDII) Level 3A Daily Data (Level 3AT Time Ordered and Level 3AL Latitude Ordered)</li> </ul>  |
|  | <b>GHRC DAAC</b><br><a href="http://ghrc.nsstc.nasa.gov">http://ghrc.nsstc.nasa.gov</a>      | <b>Surface Wind Fields (Global Ocean)</b> <ul style="list-style-type: none"> <li>SSM/I Daily Gridded/Swath Oceanic Wind Speed</li> <li>TRMM Microwave Imager (TMI) Wentz Ocean Products (with other atmospheric parameters plus SST under all cloud conditions)</li> </ul> <b>Field Experiments (Regional)</b> <ul style="list-style-type: none"> <li>CAMEX-3 Multi-center Airborne Coherent Atmospheric Wind Sensor (MACAWS)</li> <li>CAMEX-4 MIPS 915 MHz Doppler Wind Profiler</li> <li>GOES Water Vapor Transport</li> </ul>   |
|  | <b>NSIDC DAAC</b><br><a href="http://nsidc.org/daac">http://nsidc.org/daac</a>               | <ul style="list-style-type: none"> <li>AMSR-E/Aqua Daily, Weekly, and Monthly L3 Global Ascending/Descending .25x.25 deg Ocean Grids</li> <li>AMSR-E/Aqua L2B Global Swath Ocean Products derived from Wentz Algorithm</li> </ul>  |
|  | <b>ORNL DAAC</b><br><a href="http://daac.ornl.gov">http://daac.ornl.gov</a>                  | <ul style="list-style-type: none"> <li>FIFE Data Sets: Wind Profile Data: LIDAR - NOAA; Atmospheric Profile: STD. PRESS. LEVEL</li> <li>BOREAS Data Sets: BOREAS/AES Campbell Scientific 15-Minute Surface Meteorological Data: 1993, 1994, 1995, and 1996</li> </ul>  |
|  | <b>PO.DAAC</b><br><a href="http://podaac.jpl.nasa.gov">http://podaac.jpl.nasa.gov</a>        | <b>Surface Wind Fields (Global Ocean)</b> <ul style="list-style-type: none"> <li>Cross-Calibrated Multi-Platform (CCMP) Ocean Surface Wind Velocity Product</li> <li>SeaWinds on ADEOS-II Level 2B and Level 3 Winds with AMSR Corrections</li> <li>SeaWinds on QuikSCAT Level 2B and Level 3 Ocean Wind Vectors</li> <li>SeaWinds on ADEOS-II Level 2B and Level 3 Ocean Wind Vectors</li> <li>BYU Daily Browse Images of QuikSCAT Sigma-0 Measurements</li> <li>BYU Daily Browse Images of SeaWinds Sigma-0 Measurements</li> <li>NSCAT Global 25km Sigma-0 and Ocean Winds</li> <li>NSCAT Science Product, Levels 1,7,2,3</li> <li>Seasat Scatterometer Products</li> <li>SSM/I Derived Global Ocean Surface Wind Components</li> </ul> |
| <b>Lightning</b><br>Events, area,<br>flash structure                                       | <b>GHRC DAAC</b><br><a href="http://ghrc.nsstc.nasa.gov">http://ghrc.nsstc.nasa.gov</a>      | <ul style="list-style-type: none"> <li>Lightning Imaging Sensor (LIS) Science Data</li> <li>Lightning Detection and Ranging Raw Data and Browse Images</li> <li>Operational Linescan System (OLS) Analog and Digital Derived Lightning Products</li> <li>Optical Transient Detector Lightning</li> <li>LIS/OTD Gridded Lightning Climatology Data sets (1995-2005)</li> </ul>  |
| <b>Tropospheric Chemistry</b><br>Ozone,<br>precursor gases,<br>carbon dioxide              | <b>LaRC ASDC</b><br><a href="http://eosweb.larc.nasa.gov">http://eosweb.larc.nasa.gov</a>    | <ul style="list-style-type: none"> <li>Measurements Of Pollution In The Troposphere (MOPITT) Derived CO data (Level 2), and Gridded Daily and Monthly CO Retrievals (Level 3)</li> <li>North American Research Strategy for Tropospheric Ozone (NARSTO) data sets</li> <li>TES L2 Global Survey and Special Observation and L3 Global Survey Daily and Monthly data sets</li> </ul>  |
|  | <b>CDDIS</b><br><a href="http://cddis.gsfc.nasa.gov">http://cddis.gsfc.nasa.gov</a>          | <ul style="list-style-type: none"> <li>Daily and weekly zenith tropospheric path delay estimates derived from GNSS ground observations</li> </ul>  |
|  | <b>GES DISC</b><br><a href="http://disc.sci.gsfc.nasa.gov">http://disc.sci.gsfc.nasa.gov</a> | <ul style="list-style-type: none"> <li>OMI/Aura Total and Tropospheric Column NO2 Daily L3 Global 0.25x0.25 deg Grid</li> <li>Environmental Protection Agency AIRNow PM2.5 data from ground-based monitoring stations (through Giovanni)</li> </ul>  |
|  | <b>ORNL DAAC</b><br><a href="http://daac.ornl.gov">http://daac.ornl.gov</a>                  | <ul style="list-style-type: none"> <li>FLUXNET Atmospheric CO2 concentration and CO2 fluxes between atmosphere and land</li> <li>SAFARI 2000: Aerosols, Biomass, Biomass Emissions, Air Chemistry Measurements, and MOPITT Carbon Monoxide</li> <li>Global Fire Emissions Database (GFDB), Version 2</li> <li>Global N Cycle Fluxes and N2O Mixing Ratios Originating from Human Activity</li> <li>Annual Mean CO2 Flux Estimates from TransCom3 Atmospheric Inversion Experiments</li> </ul>  |

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| <b>Precipitation</b>  | <b>LaRC ASDC</b><br><a href="http://eosweb.larc.nasa.gov">http://eosweb.larc.nasa.gov</a>            | <ul style="list-style-type: none"> <li>• SSE data set</li> </ul>   |
|   | <b>GES DISC</b><br><a href="http://disc.sci.gsfc.nasa.gov">http://disc.sci.gsfc.nasa.gov</a>         | <ul style="list-style-type: none"> <li>• Chang SSM/I Derived Monthly Rain Indices</li> <li>• Arkin &amp; Janowiak GPI: IR Based Monthly Rainfall for the GPCP</li> <li>• GPCP Version 2 Combined Precipitation (Gauge and Satellite-Merged) and Intermediate Products</li> <li>• MSU Daily Oceanic Precipitation with Limb93 Correction</li> <li>• TRMM Precipitation Radar (PR) Gridded Rainfall Product</li> <li>• TRMM Combined Precipitation Radar (PR) and TRMM Microwave Imager (TMI) Gridded Rainfall Product</li> <li>• TRMM Visible and Infrared Radiances (VIRS)</li> <li>• TRMM-based merged rainfall product</li> </ul>  |
|   | <b>GHRC DAAC</b><br><a href="http://ghrc.nsstc.nasa.gov">http://ghrc.nsstc.nasa.gov</a>              | <ul style="list-style-type: none"> <li>• TRMM Microwave Imager (TMI) Wentz Ocean Products [precipitation rate]</li> </ul>  |
|   | <b>NSIDC DAAC</b><br><a href="http://nsidc.org/daac">http://nsidc.org/daac</a>                       | <ul style="list-style-type: none"> <li>• AMSR-E/Aqua L2B Global Swath Rain Rate/Type GSFC Algorithm</li> <li>• AMSR-E/Aqua Monthly L3 5x5 deg Rainfall Accumulations</li> <li>• APR-2 Dual-frequency Airborne Radar Observations, Wakasa Bay</li> <li>• CLPX-Ground: Ground Based Passive Microwave Radiometer (GBMR-7) Data</li> <li>• Double Rain Gauge Network, Iowa</li> <li>• SMEX02 Soil Moisture and Temperature Profiles, Walnut Creek, Iowa</li> </ul>  |
|   | <b>ORNL DAAC</b><br><a href="http://daac.ornl.gov">http://daac.ornl.gov</a>                          | <ul style="list-style-type: none"> <li>• BOREAS Rain Data Set: BOREAS 1996 HYD-09 Tipping Bucket Rain Data</li> <li>• SAFARI 2000 Data Sets: TRMM Monthly (1-Deg)</li> <li>• Climatological Data Set: Global Monthly Precipitation 1900-1999 (Hulme)</li> </ul>  |
| <b>Aerosol Properties</b><br>Stratospheric,<br>tropospheric | <b>LaRC ASDC</b><br><a href="http://eosweb.larc.nasa.gov">http://eosweb.larc.nasa.gov</a>            | <ul style="list-style-type: none"> <li>• MISR Level 2 Aerosol Parameters and Level 3 Component Global Aerosol (daily, monthly, quarterly, and yearly) Products</li> <li>• SAGE I and II data sets</li> <li>• SAGE III L2 Solar Event and Lunar Event Species Profiles</li> <li>• CLAMS (CLAMS_MODIS_L2_AEROSOL_PRODUCTS)</li> <li>• GTE data sets</li> <li>• MISR_AEROSOL_CLIM - "Climatologically-Likely" global, monthly aerosol climatology derived from 'typical-year' aerosol transport model results</li> <li>• POAM II and III data sets</li> <li>• Cloud-Aerosol Lidar and Infrared Pathfinder Satellite Observations (CALIPSO) Lidar Level 2 aerosol layer data (5 km) and aerosol profile data (40 km): Lidar Level 2 Vertical Feature Mask data</li> <li>• CERES SYN, AVG, and ZAVG Products [from Terra]</li> </ul>  |
|   | <b>GES DISC</b><br><a href="http://disc.sci.gsfc.nasa.gov">http://disc.sci.gsfc.nasa.gov</a>         | <ul style="list-style-type: none"> <li>• MODIS/Terra Aerosol 5-Min L2 Swath 10 km, through Giovanni tool</li> <li>• MODIS/Terra Aerosol Cloud Water Vapor Ozone Daily, 8-Day, and Monthly L3 Global 1Deg CMG Products, through Giovanni tool</li> <li>• UARS CLAES Level 3AL and Level 3AT Daily Data Products (aerosol profiles)</li> <li>• UARS HALOE Level 2 and Level 3AT Daily Products (aerosol extinction profiles)</li> <li>• UARS ISAMS Level 3AL and Level 3AT Daily Data Products (aerosol extinction profiles)</li> <li>• OMI/Aura Level 2 Daily Aerosol Optical Thickness and Aerosol Single Scattering Albedo at Instrument Resolution</li> <li>• TOMS Level 3 Aerosol Index Daily Gridded 1.25 x 1.0 Degree Data</li> <li>• TOMS Level 2 Aerosol Index at Instrument Resolution</li> <li>• HIRDLS/Aura Level 2 vertical profiles of O3, H2O, CH4, N2O, NO2, HNO3, N2O5, ClONO2, CFC-11, CFC-12, Temperature, Cloud Top Pressure, and four Aerosol Extinctions (HIRDLS2) [GSFC, Please see note #1 below]</li> <li>• OMI/Aura TOMS-Like Ozone, Aerosol Index, Radiative Cloud Fraction Daily L3 Global 0.25x0.25 deg Grid</li> <li>• OMI/Aura TOMS-Like Ozone, Aerosol Index, Radiative Cloud Fraction Daily L3 Global 1.0x1.0 deg Grid</li> <li>• OMI/Aura TOMS-Like Ozone Aerosol Index Reflectivity Daily L3 Global 1.0x1.25 deg Grid</li> <li>• Air Quality daily 1°x1° EPA AIRNOW surface PM2.5 concentrations over the continental U.S. and Daily MODIS and OMI aerosol data, through Giovanni tool</li> </ul> |
|   | <b>MODAPS LAADS</b><br><a href="http://ladsweb.nascom.nasa.gov/">http://ladsweb.nascom.nasa.gov/</a> | <ul style="list-style-type: none"> <li>• MOD04_L2 - MODIS/Terra and MODIS Aqua Level 2 Aerosol</li> <li>• MODATML2 - MODIS/Terra and MODIS Aqua Level 2 Joint Atmospheric Product</li> <li>• MODARNSS - MODIS/Terra and MODIS Aqua Atmosphere Aeronet Subsetting Product</li> <li>• MOD08_D3, MOD08_E3, MOD08_M3 - MODIS/Terra and MODIS Aqua Level 3 Daily, 8-day, and Monthly Joint Aerosol/Water vapor/Cloud Products</li> </ul>  |
|   | <b>NSIDC DAAC</b><br><a href="http://nsidc.org/daac">http://nsidc.org/daac</a>                       | <ul style="list-style-type: none"> <li>• GLAS/ICESat L2 Global Planetary Boundary Layer and Elevated Aerosol Layer Heights</li> <li>• GLAS/ICESat L2 Global Aerosol Vertical Structure Data</li> <li>• GLAS/ICESat L2 Global Thin Cloud/Aerosol Optical Depths Data</li> <li>• GLAS/ICESat L1B Global Backscatter Data</li> </ul>  |

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| <b>Aerosol Properties</b><br>(continued)                      | <b>ORNL DAAC</b><br><a href="http://daac.ornl.gov">http://daac.ornl.gov</a>                          | <ul style="list-style-type: none"> <li>SAFARI 2000: Aerosol fatty acid and stable isotope data for Mongu</li> </ul>  |
| <b>Cloud Properties</b><br>Amount, optical properties, height | <b>LaRC ASDC</b><br><a href="http://eosweb.larc.nasa.gov">http://eosweb.larc.nasa.gov</a>            | <ul style="list-style-type: none"> <li>MISR Level 2 TOA/Cloud Stereo, Level 2 TOA/Cloud Albedo, Level 2 TOA/Cloud Classifier Parameters and Level 3 Component Global Cloud (daily, monthly, quarterly, and yearly) Products</li> <li>CERES Clouds and Radiative Swath (CRS), Monthly Gridded Single Satellite Fluxes and Clouds (FSW), Monthly Gridded TOA/Surface Fluxes and Clouds (SFC), Monthly TOA/Surface Averages (SRBAVG), Single Scanner Footprint TOA/Surface Fluxes and Clouds (SSF), AVG, ZAVG, and SYN Products [from TRMM, Terra, Aqua]</li> <li>International Satellite Cloud Climatology Project (ISCCP) DX, D1, and D2 data products</li> <li>SAGE III L2 Monthly Cloud Presence Data</li> <li>SSE data set</li> <li>CALIPSO Lidar Level 2 cloud layer data (1/3 km, 1 km, and 5 km) and cloud profile data (5 km); and Lidar Level 2 Vertical Feature Mask data</li> <li>CERES ISCCP-D2like data</li> <li>CERES SSF TOA/Surface Fluxes and Clouds, and MISR Ellipsoid and Terrain Radiances data</li> <li>CERES-NEWS (NASA Energy Water cycle Study) CCCM (CERES-MODIS-CALIPSO-CloudSat) data set</li> </ul> |
|   | <b>GES DISC</b><br><a href="http://disc.sci.gsfc.nasa.gov">http://disc.sci.gsfc.nasa.gov</a>         | <ul style="list-style-type: none"> <li>MODIS/Terra Clouds 5-Min L2 Swath 1 km and 5 km, through Giovanni tool</li> <li>MODIS/Terra Cloud Mask and Spectral Test Results 5-Min L2 Swath 250 m and 1 km, through Giovanni tool</li> <li>MODIS/Terra Aerosol Cloud Water Vapor Ozone Daily, 8-Day, and Monthly L3 Global 1Deg CMG Products, through Giovanni tool</li> <li>AIRS/Aqua Level 2 Products</li> <li>AIRS/Aqua Level 3 Daily, Multiday, and Monthly Physical Retrieval Products</li> <li>OMI/Aura Level 2 Daily Cloud Fraction and Pressure at Instrument Resolution (13 x 24 km at Nadir)</li> </ul>   |
|   | <b>GHRC DAAC</b><br><a href="http://ghrc.nsstc.nasa.gov">http://ghrc.nsstc.nasa.gov</a>              | <ul style="list-style-type: none"> <li>TCSP Cloud Radar System (CRS)</li> <li>NAMMA Data Sets [e.g., NAMMA Cloud Microphysics (CAPS-PIP), NAMMA CVI Cloud Condensed Water Content]</li> <li>CAMEX-4 Data Sets [e.g., CAMEX-4 Cloud Microphysics, CAMEX-4 CVI Cloud Condensed Water Content, CAMEX-4 NOAA WP-3D Cloud Physics]</li> </ul>   |
|   | <b>LP DAAC</b><br><a href="https://lpdaac.usgs.gov">https://lpdaac.usgs.gov</a>                      | <ul style="list-style-type: none"> <li>ASTER On-Demand L2 Polar Surface and Cloud Classification</li> </ul>  |
|   | <b>MODAPS LAADS</b><br><a href="http://ladsweb.nascom.nasa.gov/">http://ladsweb.nascom.nasa.gov/</a> | <ul style="list-style-type: none"> <li>MOD06_L2 - MODIS/Terra and MODIS Aqua Level 2 Cloud Product</li> <li>MOD35_L2 - MODIS/Terra and MODIS Aqua Level 2 Cloud Mask and Spectral Test Results</li> <li>MOD08_D3, MOD08_E3, MOD08_M3 - MODIS/Terra and MODIS Aqua Level 3 Daily, 8-day, and Monthly Joint Aerosol/Water vapor/Cloud Products</li> </ul>  |
|   | <b>NSIDC DAAC</b><br><a href="http://nsidc.org/daac">http://nsidc.org/daac</a>                       | <ul style="list-style-type: none"> <li>AMSR-E/Aqua Daily, Weekly, and Monthly L3 Global Ascending/Descending .25x.25 deg Ocean Grids</li> <li>AMSR-E/Aqua L2B Global Swath Ocean Products derived from Wentz Algorithm</li> <li>AVHRR Polar Pathfinder Twice-Daily 1.25 km, 5 km, and 25 km EASE-Grid Composites</li> <li>Comprehensive Ocean - Atmosphere Data Set (COADS) LMRF Arctic Subset</li> <li>Daily Arctic Ocean Rawinsonde Data from Soviet Drifting Ice Stations</li> <li>GLAS/ICESat L2 Global Cloud Heights for Multi-Layer Clouds</li> <li>GLAS/ICESat L2 Global Thin Cloud/Aerosol Optical Depths Data</li> <li>GLAS/ICESat L2 Global Aerosol Vertical Structure Data</li> <li>GLAS/ICESat L1B Global Backscatter Data</li> </ul>  |
| <b>Mesospheric and Thermospheric / Ionospheric Chemistry</b>  | <b>CDDIS</b><br><a href="http://cddis.gsfc.nasa.gov">http://cddis.gsfc.nasa.gov</a>                  | <ul style="list-style-type: none"> <li>Daily global ionosphere maps of vertical total electron content (VTEC) derived from GNSS and DORIS ground observations</li> </ul>   |
| <b>Radiative Energy Fluxes</b><br>Top of atmosphere, surface  | <b>LaRC ASDC</b><br><a href="http://eosweb.larc.nasa.gov">http://eosweb.larc.nasa.gov</a>            | <ul style="list-style-type: none"> <li>CERES data sets [from TRMM, Terra, and Aqua]</li> <li>CERES Energy Balanced and Filled (EBAF)</li> <li>CERES-NEWS CCCM data set</li> <li>Earth Radiation Budget Experiment (ERBE) Data Sets</li> <li>Surface Radiation Budget (SRB) data sets (3-hourly, daily, and monthly)</li> <li>MISR Level 1B2 Ellipsoid Data, Level 1B2 Terrain Data, Level 2 TOA/Cloud Albedo Parameters, Level 2 Surface Parameters, and Level 3 Component Global Land and Level 3 Component Global Radiance (daily, monthly, quarterly, and yearly) Products</li> <li>SSE data set</li> <li>Fast Longwave And Shortwave Radiative Fluxes (FLASHFlux) data set</li> </ul>  |

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| <b>Radiative Energy Fluxes</b><br>(continued) | <b>GES DISC</b><br><a href="http://disc.sci.gsfc.nasa.gov">http://disc.sci.gsfc.nasa.gov</a> | <ul style="list-style-type: none"> <li>• DAO 4D Assimilation Monthly Mean Subset Data (including outgoing longwave radiation, net upward longwave radiation at the ground, net downward shortwave radiation at the ground, and incident shortwave radiation at the top of the atmosphere)</li> <li>• A Multi-year Global Analysis Employing the Goddard EOS (GEOS) Data Assimilation System</li> <li>• International Satellite Land Surface Climatology Project (ISLSCP) Initiative I Data (Radiation and Clouds data include surface and TOA fluxes)</li> <li>• SORCE Level 3 and Level 4 Solar Irradiance products</li> </ul>  |
|   | <b>LP DAAC</b><br><a href="https://lpdaac.usgs.gov">https://lpdaac.usgs.gov</a>              | <ul style="list-style-type: none"> <li>• ASTER L1B Registered Radiance at the Sensor</li> <li>• ASTER On-Demand L2 Surface Reflectance VNIR</li> <li>• ASTER On-Demand L2 Surface Radiance VNIR</li> <li>• MODIS/Terra+Aqua Albedo 16-Day L3 Global 1km SIN Grid</li> <li>• MODIS/Terra+Aqua Nadir BRDF-Adjusted Reflectance 16-Day L3 Global 1km SIN Grid</li> <li>• MODIS/Terra+Aqua Albedo 16-Day L3 Global 0.05Deg CMG</li> <li>• MODIS/Terra+Aqua BRDF/Albedo Parameters 16-Day L3 Global 0.05Deg CMG</li> <li>• MODIS/Terra and MODIS/Aqua Nadir BRDF-Adjusted Reflectance 16-Day L3 Global 0.05Deg CMG</li> <li>• MODIS/Terra and MODIS/Aqua Surface Reflectance 8-Day L3 Global 250m SIN Grid</li> <li>• MODIS/Terra and MODIS/Aqua Surface Reflectance 8-Day L3 Global 500m SIN Grid</li> <li>• MODIS/Terra+Aqua Albedo 16-Day L3 Global 500m SIN Grid</li> <li>• MODIS/Terra+Aqua BRDF/Albedo Model Parameters 16-Day L3 Global 1km SIN Grid</li> <li>• MODIS/Terra+Aqua BRDF/Albedo Model Parameters 16-Day L3 Global 500m SIN Grid</li> <li>• MODIS/Terra+Aqua Nadir BRDF-Adjusted Reflectance 16-Day L3 Global 500m SIN Grid</li> </ul> |

**LaRC ASDC** Langley Research Center (LaRC) Atmospheric Science Data Center (ASDC)

**CDDIS** Crustal Dynamics Data Information System

**GES DISC** Goddard Space Flight Center (GSFC) Earth Sciences Data and Information Services Center (DISC)

**GHRC DAAC** Global Hydrology Resource Center

**LP DAAC** Land Processes DAAC

**MODAPS LAADS** Level-1 Atmospheres Archive and Distribution System (LAADS)

**NSIDC DAAC** National Snow and Ice Data Center DAAC

**ORNL DAAC** Oak Ridge National Laboratory DAAC

**PO.DAAC** Physical Oceanography DAAC

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