



## EARTH SYSTEM SCIENCE

## Data and Services

## CRYOSPHERE Data Set Reference Sheet

December 2016

Physical Properties	Data Center	<b>Selected Data Sets and Data Collections</b> <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="https://earthdata.nasa.gov">https://earthdata.nasa.gov</a></i>
Frozen Ground	<b>NSIDC DAAC</b> <a href="http://nsidc.org/daac">http://nsidc.org/daac</a>	<ul style="list-style-type: none"> <li>• MEaSURES Global Record of Daily Landscape Freeze/Thaw Status, Version 03</li> <li>• SMAP L3 Radar Northern Hemisphere Daily 3 km EASE-Grid Freeze/Thaw State</li> </ul>
Gravity Gravity Field Models, Measurements	<b>CDDIS</b> <a href="http://cddis.gsfc.nasa.gov">http://cddis.gsfc.nasa.gov</a>	<ul style="list-style-type: none"> <li>• Ground Network/Satellite Measurements: Daily, hourly, and sub-hourly code and phase observations from GNSS ground network; Daily and hourly files of round trip time of flight from satellite laser ranging (SLR) ground network; Time-tagged range-rate measurements from DORIS ground network</li> <li>• Daily and weekly precision satellite orbits derived from GNSS, SLR, and DORIS ground network observations. Note: Precise satellite orbits are required for higher level products.</li> <li>• Station positions and velocities from GNSS, SLR, VLBI and DORIS ground networks</li> </ul>
	<b>PO.DAAC</b> <a href="http://podaac.jpl.nasa.gov">http://podaac.jpl.nasa.gov</a>	<ul style="list-style-type: none"> <li>• GRACE Level 2 Monthly Gravity Field Estimates</li> <li>• Surface Mass Density Changes from GRACE (monthly mass grids of water equivalent thickness)</li> </ul>
Land Ice Ice sheet topography, ice sheet volume change, glacier change	<b>ASDC DAAC</b> <a href="https://eosweb.larc.nasa.gov">https://eosweb.larc.nasa.gov</a>	<ul style="list-style-type: none"> <li>• International Satellite Cloud Climatology Project (ISCCP) D1, D2, and ICESNOW data products</li> <li>• Multi-angle Imaging SpectroRadiometer (MISR) Level 1B2 Ellipsoid Data, Level 1B2 Terrain Data, Level 2 Surface Parameters, and Level 3 Component Global Land (daily, monthly, quarterly, and yearly) Products</li> </ul>
	<b>ASF DAAC</b> <a href="http://www.asf.alaska.edu">http://www.asf.alaska.edu</a>	<ul style="list-style-type: none"> <li>• AMM-1 and MAMM SAR Image Mosaics of Antarctica 100m (RADARSAT-1)</li> <li>• ASF Data Pool of processed SAR data and images (Sentinel-1A, Sentinel-1B, SMAP, Seasat, ALOS PALSAR, JERS-1, RADARSAT-1, ERS-1, ERS-2, UAVSAR, AIRSAR)</li> <li>• Custom SAR Interferograms (ERS-1, ERS-2, JERS-1, PALSAR, RADARSAT-1)</li> <li>• International Polar Year SAR Datasets</li> <li>• UAVSAR Repeat Pass Interferometric products</li> </ul>
	<b>LP DAAC</b> <a href="https://lpdaac.usgs.gov">https://lpdaac.usgs.gov</a>	<ul style="list-style-type: none"> <li>• ASTER Digital Elevation Model</li> <li>• ASTER L1B Registered Radiance at the Sensor</li> <li>• ASTER Level 3 Global Digital Elevation Model (GDEM) 1 Arc-Second</li> </ul>
	<b>NSIDC DAAC</b> <a href="http://nsidc.org/daac">http://nsidc.org/daac</a>	<ul style="list-style-type: none"> <li>• Antarctic 1 km DEM from Combined ERS-1 Radar and ICESat Laser Satellite Altimetry</li> <li>• Antarctic 5-km DEM from ERS-1 Altimetry</li> <li>• Antarctic Ice Velocity Data</li> <li>• Digital SAR Mosaic and Elevation Map of the Greenland Ice Sheet</li> <li>• GLAS/ICESat 1 km Laser Altimetry Digital Elevation Model of Greenland</li> <li>• GLAS/ICESat 500 m Laser Altimetry Digital Elevation Model of Antarctica</li> <li>• GLAS/ICESat L1B Global Elevation Data</li> <li>• GLAS/ICESat L2 Global Antarctic and Greenland Ice Sheet Altimetry Data</li> <li>• GLIMS Glacier Database</li> <li>• Greenland 5 km DEM, Ice Thickness, and Bedrock Elevation Grids</li> <li>• Greenland Ice Sheet Melt Characteristics Derived from Passive Microwave Data</li> <li>• IceBridge Aircraft Data Sets (a large collection of data sets bridging the ICESat-1 and ICESat-2 missions)</li> <li>• IceBridge ATM L1B Elevation and Return Strength</li> <li>• Images of Antarctic Ice Shelves [from AVHRR and MODIS]</li> <li>• MEaSURES Annual Greenland Outlet Glacier Terminus Positions from SAR Mosaics</li> <li>• MEaSURES Antarctic Grounding Line from Differential Satellite Radar Interferometry</li> <li>• MEaSURES Greenland Ice Sheet Mosaics from SAR Data</li> <li>• MEaSURES Greenland Ice Sheet Velocity Map from InSAR Data</li> </ul>

<b>Land Ice</b> Ice sheet topography, ice sheet volume change, glacier change (continued)	<b>NSIDC DAAC</b> <a href="http://nsidc.org/daac">http://nsidc.org/daac</a> (continued)	<ul style="list-style-type: none"> <li>• MEaSURES Greenland Ice Velocity: Selected Glacier Site Velocity Maps from InSAR</li> <li>• MEaSURES Greenland Ice Velocity: Selected Glacier Site Velocity Maps from Optical Images, Version 1</li> <li>• MEaSURES Greenland Surface Melt Daily 25km EASE-Grid 2.0</li> <li>• MEaSURES InSAR-Based Antarctica Ice Velocity Map</li> <li>• MEaSURES InSAR-Based Ice Velocity Maps of Central Antarctica: 1997 and 2009</li> <li>• MEaSURES InSAR-Based Ice Velocity of the Amundsen Sea Embayment, Antarctica</li> <li>• MEaSURES MODIS Mosaic of Greenland 2005 (MOG2005) Image Map</li> <li>• Program for Arctic Regional Climate Assessment (PARCA) Data</li> <li>• Radarsat Antarctic Mapping Project Digital Elevation Model Version 2</li> <li>• RAMP AMM-1 SAR Image Mosaic of Antarctica</li> </ul>
	<b>PO.DAAC</b> <a href="http://podaac.jpl.nasa.gov">http://podaac.jpl.nasa.gov</a>	<ul style="list-style-type: none"> <li>• BYU Daily Browse Images of NSCAT, QuikSCAT, and SeaWinds Sigma-0 Measurements</li> <li>• BYU Enhanced Resolution Images of Seasat, ERS, and NSCAT Sigma-0 Measurements</li> <li>• BYU Enhanced Resolution Images of SeaWinds on QuikSCAT and ADEOS-II Sigma-0 Measurements</li> <li>• BYU Local-Time-of-Day Browse Images of SeaWinds on QuikSCAT and ADEOS-II Sigma-0 Measurements</li> </ul>
<b>Sea Ice</b> Extent, concentration, motion, temperature	<b>ASDC DAAC</b> <a href="https://eosweb.larc.nasa.gov">https://eosweb.larc.nasa.gov</a>	<ul style="list-style-type: none"> <li>• First ISCCP Regional Experiment (FIRE) data sets</li> <li>• ISCCP D1, D2, and ICESNOW Data Products</li> <li>• MISR Level 1B2 Ellipsoid Data</li> </ul>
	<b>ASF DAAC</b> <a href="http://www.asf.alaska.edu">http://www.asf.alaska.edu</a>	<ul style="list-style-type: none"> <li>• AMM-1 and MAMM SAR Image Mosaics of Antarctica 100m (RADARSAT-1)</li> <li>• Arctic MEaSURES sea ice dynamics products (RADARSAT-1)</li> <li>• ASF Data Pool of processed SAR data and images (Sentinel-1A, Sentinel-1B, SMAP, Seasat, ALOS PALSAR, JERS-1, RADARSAT-1, ERS-1, ERS-2, UAVSAR, AIRSAR)</li> <li>• International Polar Year SAR Datasets</li> </ul>
	<b>GHRC DAAC</b> <a href="http://ghrc.nsstc.nasa.gov">http://ghrc.nsstc.nasa.gov</a>	<ul style="list-style-type: none"> <li>• NRT AMSR2 Daily L3 12.5 km and 25 km Tb and Sea Ice Concentration Polar Grids</li> </ul>
	<b>NSIDC DAAC</b> <a href="http://nsidc.org/daac">http://nsidc.org/daac</a>	<ul style="list-style-type: none"> <li>• AMSR-E/Aqua Daily L3 12.5 km Brightness Temperatures, Sea Ice Concentration, and Snow Depth Polar Grids</li> <li>• AMSR-E/Aqua Daily L3 25 km Brightness Temperatures &amp; Sea Ice Concentration Polar Grids</li> <li>• AMSR-E/Aqua Daily L3 6.25 km Sea Ice Drift Polar Grids</li> <li>• Bootstrap Sea Ice Concentrations from Nimbus-7 SMMR and DMSP SSM/I</li> <li>• GLAS/ICESat L2 Sea Ice Altimetry Data</li> <li>• IceBridge Aircraft Data Sets (a large collection of data sets bridging the ICESat-1 and ICESat-2 missions)</li> <li>• IceBridge Sea Ice Freeboard, Snow Depth and Thickness</li> <li>• MEaSURES Arctic Sea Ice Characterization Daily 25km EASE-Grid 2.0</li> <li>• MEaSURES Northern Hemisphere State of Cryosphere Daily 25km EASE-Grid 2.0</li> <li>• MEaSURES Northern Hemisphere State of Cryosphere Weekly 100km EASE-Grid 2.0</li> <li>• MODIS/Aqua Sea Ice Extent 5-Min L2 Swath 1km Data</li> <li>• MODIS/Aqua Sea Ice Extent and IST Daily L3 Global 1km &amp; 4km EASE-Grid Data for Day and Night</li> <li>• MODIS/Terra Sea Ice Extent 5-Min L2 Swath 1km Data</li> <li>• MODIS/Terra Sea Ice Extent and IST Daily L3 Global 1km &amp; 4km EASE-Grid Data for Day and Night</li> <li>• NASA Scatterometer Climate Pathfinder (SCP) Arctic and Antarctic Ice Extent from QuikSCAT, 1999-2004</li> <li>• Near-Real-Time DMSP SSM/I-SSMIS Daily Polar Gridded Sea Ice Concentrations</li> <li>• Near-Real-Time SSM/I-SSMIS EASE-Grid Daily Global Ice Concentration and Snow Extent</li> <li>• Polar Pathfinder Daily 25 km EASE-Grid Sea Ice Motion Vectors</li> <li>• Sea Ice Concentrations from Nimbus-7 SMMR and DMSP SSM/I Passive Microwave Data</li> <li>• Sea Ice Trends and Climatologies from SMMR and SSM/I</li> </ul>
<b>PO.DAAC</b> <a href="http://podaac.jpl.nasa.gov">http://podaac.jpl.nasa.gov</a>	<ul style="list-style-type: none"> <li>• BYU Daily Browse Images of NSCAT, QuikSCAT, and SeaWinds Sigma-0 Measurements</li> <li>• BYU Enhanced Resolution Images of Seasat, ERS, and NSCAT Sigma-0 Measurements</li> <li>• BYU Enhanced Resolution Images of SeaWinds on QuikSCAT and ADEOS-II Sigma-0 Measurements</li> <li>• BYU Local-Time-of-Day Browse Images of SeaWinds on QuikSCAT and ADEOS-II Sigma-0 Measurements</li> <li>• SeaWinds on QuikSCAT Arctic Sea Ice Age Classification (BYU/SCP)</li> </ul>	
<b>Snow Cover</b> Extent, water, equivalent, depth	<b>ASDC DAAC</b> <a href="https://eosweb.larc.nasa.gov">https://eosweb.larc.nasa.gov</a>	<ul style="list-style-type: none"> <li>• ISCCP D1, D2, and ICESNOW data products</li> <li>• MISR Level 1B2 Ellipsoid Data and Level 1B2 Terrain Data</li> </ul>
	<b>ASF DAAC</b> <a href="http://www.asf.alaska.edu">http://www.asf.alaska.edu</a>	<ul style="list-style-type: none"> <li>• Global snow cover time series animation (MEaSURES Wetlands Extent and Inundated Wetlands Time Series)</li> </ul>

<b>Snow Cover</b> Extent, water, equivalent, depth (continued)	<b>NSIDC DAAC</b> <a href="http://nsidc.org/daac">http://nsidc.org/daac</a>	<ul style="list-style-type: none"> <li>• AMSR-E/Aqua Daily, 5-day, and Monthly L3 Global Snow Water Equivalent EASE-Grids</li> <li>• Canadian Meteorological Centre (CMC) Daily Snow Depth Analysis Data</li> <li>• CLPX-Ground: Snow Measurements Data</li> <li>• Historical Soviet Daily Snow Depth Version 2 (HSDSD)</li> <li>• IceBridge Accumulation Radar L1B Geolocated Radar Echo Strength Profiles</li> <li>• IceBridge Sea Ice Freeboard, Snow Depth and Thickness</li> <li>• IceBridge Snow Radar L1B Geolocated Radar Echo Strength Profiles</li> <li>• MEaSURES Northern Hemisphere State of Cryosphere Daily 25km EASE-Grid 2.0</li> <li>• MEaSURES Northern Hemisphere State of Cryosphere Weekly 100km EASE-Grid 2.0</li> <li>• MEaSURES Northern Hemisphere Terrestrial Snow Cover Extent Daily 25km EASE-Grid 2.0</li> <li>• MEaSURES Northern Hemisphere Terrestrial Snow Cover Extent Weekly 100km EASE-Grid 2.0</li> <li>• MODIS/Aqua L3 Snow Cover Daily, 8-day, and Monthly Data</li> <li>• MODIS/Aqua Snow Cover 5-Min L2 Swath 500m</li> <li>• MODIS/Terra L3 Snow Cover Daily, 8-day, and Monthly Data</li> <li>• MODIS/Terra Snow Cover 5-Min L2 Swath 500m</li> <li>• Near-Real-Time SSM/I-SSMIS EASE-Grid Daily Global Ice Concentration and Snow Extent</li> <li>• Northern Hemisphere EASE-Grid Weekly Snow Cover and Sea Ice Extent Version 3</li> <li>• Program for Arctic Regional Climate Assessment (PARCA) Data Sets</li> </ul>
	<b>ORNL DAAC</b> <a href="http://daac.ornl.gov">http://daac.ornl.gov</a>	<ul style="list-style-type: none"> <li>• BOREAS RSS-08 Snow Maps Derived from Landsat TM Imagery</li> <li>• Daymet: Daily Surface Weather Data on a 1-km Grid for North America, Version 3</li> <li>• ISLSCP II Northern Hemisphere Monthly Snow Cover Extent</li> </ul>

**ASDC DAAC** Atmospheric Science Data Center DAAC (ASDC DAAC) at NASA Langley Research Center

**ASF DAAC** Alaska Satellite Facility DAAC

**CDDIS** Crustal Dynamics Data Information System

**GHRC DAAC** Global Hydrology Resource Center DAAC

**LP DAAC** Land Processes DAAC

**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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