Long Name	Description
ASTER Global Digital Elevation Model	The Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) Global Digital Elevation Model (GDEM) was developed jointly by the U.S. National Aeronautics and Space Administration (NASA) and Japan's Ministry of Economy, Trad, and Industry (METI). ASTER is capable of collecting in-track stereo usig nadir- and aft-looking near infrared cameras. Since 2001, these stereo pairs have been used to produce single-scene (60- x 60-kilomenter (km)) digital elevation models (DEM) having vertical (root-mean-squared-error) accuracies generally between 10- and 25-meters (m). The methodology used by Japan's Sensor Information Laboratory Corporation (SILC) to produce the ASTER GDEM involves automated processing of the entire ASTER Level-1A archive. Stereo-correlation is used to produce over one million individual scene-based ASTER DEMs, to which cloud masking is applied to remove cloudy pixels. All cloud-screened DEMS are stacked and residual bad values and outliers are removed. Selected data are averaged to create final pixel values, and residual anomalies are corrected before partitioning the data into 1 degree (°) x 1° tiles. The ASTER GDEM covers land surfaces between 83°N and 83°S and is comprised of 22,702 tiles. Tiles that con at least 0.01% land area included. The ASTER GDEM is distributed as Geographic Tagged Image File Format (GeoTIFF) files with geographic coordinates (latitude, longitude). The data are posted on a 1 arc-second (approximately 30–m at the equator) grid an referenced to the 1984 World Geodetic System (WGS84)/ 1996 Earth Gravitational Model (EGM96) eoid. While the ASTER GDEM 2 benefits from substantial improvements over GDEM 1, users are nonetheless advised that the products still may contain anomalies and artifacts that will reduce its usability for certain applications, because they can introduce large elevation errors on local scales. The data are provided "as is and neither NASA nor METI/ERSDAC will be responsible for any damages resulting from use o the data. V002 data set release date: 2009-06-28 Data Set Characteristics: Geographic Extent: Global between 83º latitude Scee Coverage: 1º x 1º tiles Image Dimensions: 3601 x 3601 Total Number Tiles: V001: 22,604; V002: 22,702 e Volume: ~25MB, 6.4 Mcompressed Compression Type: zip File Format: GEOTIFF Map Projection: Geographic Lat/Lon Datum: WGS84/EGM96 Resolution: 1 arcsecond (30-m horizontal posting at equator)
Decadal Surface Water Maps 1991-2011	Maps of the location and extent of surface water for the ABoVE study region at decadal time step from 1991 - 2011. Data are stored in raster files (geotiff) in the ABoVE tile grid.
Landsat 4-5 Thematic Mapper	"The Landsat Thematic Mapper (TM) is a sensor carried onboard Landsats 4 and 5 and has acquired images of the Earth nearly continuously from July 1982 to the present, with a 16-day repeat cycle. Landsat TM image data consist of seven spectral bands (band designations) with a spatial resolution of 30 meters for bands 1 to 5 and band 7. Spatial resolution for band 6 (thermal infrared) is 120 meters, but band 6 data are oversampled to 30 meter pixel size. Approximate scene size is 170 km north-south by 183 km east-west (106 mi by 114 mi). Systematic Correction (Level 1G) includes both radiometric and geometric correction. The scene will be rotated, aligned, and georeferenced to a user-specified map projection. Absolute geometric accuracy of the systematically corrected Landsat TM product can vary, depending on the accuracy of the predicted ephemeris that is used for processing. Please be aware that TM Level 1G products may require additional image geometric correction and/or co-registration to known ground control points (GCPs). Precision Correction (Level 1P) includes radiometric and geometric correction, as well as the use of ground control points (GCPs) to improve geometric accuracy. For locations outside the United States, accuracy of the precision-corrected product will depend on the availability of local GCPs. Terrain Correction (Level 1T) includes radiometric and geometric precision correction, as well as the use of a digital elevation model (DEM) to improve the satellite model and to correct for relief displacement caused by local terrain. For locations outside the United States, the accuracy of a terrain-corrected product will depend on the availability of local ground control points (GCPs), as well as the quality of the best available DEM.

Landsat 7 Enhanced Thematic Mapper Plus (ETM+)	"The Landsat Enhanced Thematic Mapper Plus (ETM+) is a sensor carried onboard the Landsat 7 satellite and has acquired images of the Earth nearly continuously since July 1999, with a 16-day repeat cycle. Landsat ETM+ image data consist of eight spectral bands (band designations), with a spatial resolution of 30 meters for bands 1 to 5 and band 7. Resolution for band 6 (thermal infrared) is 60 meters and resolution for band 8 (panchromatic) is 15 meters. Approximate scene size is 170 km north-south by 183 km east-west (106 mi by 114 mi). The Level 0R data product is reformatted raw data. Reformatting involves shiftin pixels by integer amounts to correct for three effects: 1) the alternating forward-reverse scanning pattern of the Landsat ETM+ sensor; 2) the odd-even detector arrangement within each band; and 3) the detector offsets inherent in engineering design of the focal plane array. Pixels in L0R images are not resampled, nor are they geometrically corrected or registered, which means that the pixels are NOT aligned per scan line. The Level 1T (L1T) data product provides systematic radiometric accuracy, geometric accuracy by incorporating ground control points, while also employing a Digital Elevation Model (DEM) for topographic accuracy. Geodetic accuracy of the product depends on the accuracy of the ground control points and the resolution of the DEM used.
MERRA 2D IAU Diagnostic, Vertical Integrals and Budget Terms, Instantaneous 1-hourly (2/3x1/2L1)"	"The MAI1NXINT or inst1_2d_int_Nx data product is the MERRA Data Assimilation System 2-Dimensional vertical integral that is Instantaneous single-level at the native resolution. It is a history file that is produced from the GCM during the corrector segment of the IAU cycle. All collections from this group are at reduced horizontal resolution. MERRA, or the Modern Era Retrospective-analysis for Research and Application, is a NASA reanalysis for the satellite era (30 years 1979-current) using the Goddard Earth Observing System Data Assimilation System Version 5 (GEOS-5 DAS). This data product contains 2-dimensional fields that do not vary during the reanalysis. The data are on the GEOS-5 native 540 x 361 grid with 2/3° longitude x 1/2° latitude resolution. Data are archived in the HDF-EOS (Grid) format, based on HDF4.
MERRA 3D IAU State, Meteorology Instantaneous 3-hourly (p-coord, 1.25 x 1.25 L42)"	"The MAIMCPASM or instM_3d_asm_Cp data product is the MERRA Data Assimilation System 3-Dimensional assimilated state on pressure, at a reduced resolution. It is a history file that is produced from the GCM during the corrector segment of IAU cycle. All collections from this group are at reduced horizontal resolution. MERRA, orthe Modern Era Retrospective-analysis for Research and Application, is a NASA reanalysis for the satellite era (30 years 1979-current) using the Goddard Earth Observing System Data Assimilation System Version 5 (GEOS-5 DAS). This data product 2-dimensional and 3-dimensional fields that do not vary during the reanalysis. The data are on the GEOS-5 native 288 x 144 grid with 1.25 deg longitude x 1.25 deg latitude resolution. The pressure level data will be output in 42 pressure levels. The files contain the data processed as monthly means. Data are archived in the HDF-EOS (Grid) format, based on HDF4.
MERRA Chem 3D IAU Edge Pressure, Instantaneous 3-Hourly (eta coord, 2/3x1/2L73)"	"The MAI3NECHM or inst3_3d_chm_Ne data product is the MERRA Data Assimilation System Chemistry 3-Dimensional chemistry on layer Edges that is time averaged, 3D model levels, at native resolution. It is a history file that is intended for forcing off-line chemistry/aerosol models with the results of the reanalysis. Like other histories, they are produced from the GCM during the corrector segment of the IAU cycle. All collections from this group are at reduced horizontal resolution. MERRA, or the Modern Era Retrospective-analysis for Research and Application, is a NASA reanalysis for the satellite era (30 years 1979-current) using the Goddard Earth Observing System Data Assimilation System Version 5 (GEOS-5 DAS). This data product contains fields that do not vary during the reanalysis. The data are on the GEOS-5 native 540 x 361 grid with 2/3° longitude x 1/2° latitude resolution. The files are compacted into a single daily file with the times: 1:30, 4:30, 7:30, 10:30, 13:30, 16:30, 19:30, 22:30 GMT. Data are archived in the HDF-EOS (Grid) format, based on HDF4.
MERRA 3D Analyzed State, Meteorology	"The MAI6NPANA or inst6_3d_ana_Np data product is the MERRA Data Assimilation System 3-Dimensional instantaneous, on pressure levels, at native resolution. MERRA, or the Modern Era Retrospective-analysis for Research and Application, is a NASA reanalysis for the satellite era (30 years 1979-current) using the Goddard Earth Observing System Data Assimilation System

Instantaneous 6-hourly (p-coord, 2/3x1/2L42)"	Version 5 (GEOS-5 DAS). This data product contains 2-dimensional and 3-dimensional fields that do not vary during the reanalysis. The data are on the GEOS-5 native 540 x 361 grid with 2/3° longitude x 1/2° latitude resolution. The pressure-level data will be output in 42 pressure levels. File sizes are about 792 Mbytes per day with the following times compacted into a daily file: 00, 06, 12, 18 GMT; monthly and seasonal are also available. Data are archived in the HDF-EOS (Grid) format, based on HDF4.
MERRA 3D Analyzed State, Meteorology Instantaneous 6-hourly (eta-coord, 2/3x1/2L72)"	"The MAI6NVANA or inst6_3d_ana_Nv data product is the MERRA Data Assimilation System 3-Dimensional instantaneous, on model levels, at native resolution. MERRA, or the Modern Era Retrospective-analysis for Research and Application, is a NASA reanalysis for the satellite era (30 years 1979-current) using the Goddard Earth Observing System Data Assimilation System Version 5 (GEOS-5 DAS). This data product contains 2-dimensional and 3-dimensional fields that do not vary during the reanalysis. The data are on the GEOS-5 native 540 x 361 grid with 2/3° longitude x 1/2° latitude resolution. File sizes are about 1347 Mbytes per day with the following times compacted into a daily file: 00, 06, 12, 18 GMT. Data are archived in the HDF-EOS (Grid) format, based on HDF4.
MERRA 2D IAU Diagnostic, Vertical Integrals and Budget Terms, Instantaneous monthly (2/3x1/2L1)"	"The MAIMNXINT or instM_2d_int_Nx data product is the MERRA Data Assimilation System 2-Dimensional vertical integral that is time averaged single-level at the native resolution in a monthly mean. It is a history file that is produced from the GCM during the corrector segment of the IAU cycle. All collections from this group are at reduced horizontal resolution. MERRA, or the Modern Era Retrospective-analysis for Research and Application, is a NASA reanalysis for the satellite era (30 years 1979-current) using the Goddard Earth Observing System Data Assimilation System Version 5 (GEOS-5 DAS).
MERRA 3D Analyzed State, Meteorology Instantaneous Monthly (p-coord, 2/3x1/2L42)"	"The MAIMNPANA or instM_3d_ana_Np data product is the MERRA Data Assimilation System 3-Dimensional instantaneous, on pressure levels, at native resolution. MERRA, or the Modern Era Retrospective-analysis for Research and Application, is a NASA reanalysis for the satellite era (30 years 1979-current) using the Goddard Earth Observing System Data Assimilation System Version 5 (GEOS-5 DAS). This data product contains 2-dimensional and 3-dimensional fields that do not vary during the reanalysis. The data are on the GEOS-5 native 540 x 361 grid with 2/3° longitude x 1/2° latitude resolution. The pressure-level data will be output in 42 pressure levels. File sizes are about 792 Mbytes per day with the following times compacted into a daily file: 00, 06, 12, 18 GMT; monthly and seasonal are also available. Data are archived in the HDF-EOS (Grid) format, based on HDF4.
MERRA 3D IAU State, Meteorology Instantaneous Monthly (p-coord, 1.25x1.25L42)"	"The MAIMCPASM or instM_3d_asm_Cp data product is the MERRA Data Assimilation System 3-Dimensional assimilated state on pressure, at a reduced resolution. It is a history file that is produced from the GCM during the corrector segment of the IAU cycle. All collections from this group are at reduced horizontal resolution. MERRA, or the Modern Era Retrospective-analysis for Research and Application, is a NASA reanalysis for the satellite era (30 years 1979-current) using the Goddard Earth Observing System Data Assimilation System Version 5 (GEOS-5 DAS). This data product contains 2-dimensional and 3-dimensional fields that do not vary during the reanalysis. The data are on the GEOS-5 native 288 x 144 grid with 1.25 deg longitude x 1.25 deg latitude resolution. The pressure-level data will be output in 42 pressure levels. The files contain the data processed as monthly means. Data are archived in the HDF-EOS (Grid) format, based on HDF4.
MERRA 2D IAU Diagnostic, Surface Fluxes, Time Average 1-hourly	"The MAT1NXFLX or tavg1_2d_flx_Nx data product is the MERRA Data Assimilation System 2-Dimensional surface turbulence flux diagnostic that is time averaged single-level at the native resolution. It is a history file that is produced from the GCM during the corrector segment of the IAU cycle. All collections from this group are at reduced horizontal resolution. MERRA, or the Modern Era Retrospective-analysis for Research and Application, is a NASA reanalysis for the satellite era (30 years 1979-current) using the Goddard Earth Observing System Data Assimilation System Version 5 (GEOS-5 DAS). This data product contains 2-dimensional fields that do not vary

(2/3x1/2L1)"	during the reanalysis. The data are on the GEOS-5 native 540 x 361 grid with 2/3° longitude x 1/2° latitude resolution. Data are archived in the HDF-EOS (Grid) format, based on HDF4.
MERRA IAU 2d Vertical integrals	"The MAT1NXINT or tavg1_2d_int_Nx data product is the MERRA Data Assimilation System 2-Dimensional vertical integral that is time averaged single-level at the native resolution. It is a history file that is produced from the GCM during the corrector segment of the IAU cycle. All collections from this group are at reduced horizontal resolution. MERRA, or the Modern Era Retrospective-analysis for Research and Application, is a NASA reanalysis for the satellite era (30 years 1979-current) using the Goddard Earth Observing System Data Assimilation System Version 5 (GEOS-5 DAS). This data product contains 2-dimensional fields that do not vary during the reanalysis. The data are on the GEOS-5 native 540 x 361 grid with 2/3° longitude x 1/2° latitude resolution. Data are archived in the HDF-EOS (Grid) format, based on HDF4.
MERRA 2D IAU Diagnostic, Land Only States and Diagnostics, Time Average 1-hourly (2/3x1/2L1)"	"The MAT1NXLND or tavg1_2d_lnd_Nx data product is the MERRA Data Assimilation System 2-Dimensional land surface diagnostic that is time averaged single-level at the native resolution. It is a history file that is produced from the GCM during the corrector segment of the IAU cycle. All collections from this group are at reduced horizontal resolution. MERRA, or the Modern Era Retrospective-analysis for Research and Application, is a NASA reanalysis for the satellite era (30 years 1979-current) using the Goddard Earth Observing System Data Assimilation System Version 5 (GEOS-5 DAS). This data product contains 2-dimensional fields that do not vary during the reanalysis. Parameters include: GRN - Vegetation greenness fraction LAI - Leaf area index GWETROOT - Root zone soil wetness GWETTOP - Top soil layer wetness TPSNOW - Top snow layer temperature TUNST - Surface temperature of unsaturated zone TSAT - Surface temperature of saturated zone TWLT - Surface temperature of wilted zone PRECSNO - Surface snowfall PRECTOT - Total surface precipitation SNOMAS - Snow mass SNODP - Snow depth EVPSOIL - Bare soil eEvaporation EVPTRNS - Transpiration EVPINTR - Interception loss EVPSBLN - Sublimation RUNOFF - Overland runoff BASEFLOW - Baseflow SMLAND - Snowmelt FRUNST - Fractional unsaturated area FRSAT - Fractional saturated area FRSNO - Fractional snow-covered area FRWLT - Fractional wilting area PARDF - Surface downward PAR diffuse flux PARDR - Surface downward PAR beam flux SHLAND - Sensible heat flux from land LHLAND - Latent heat flux from land EVLAND - Evaporation from land LWLAND - Net downward longwave flux over land SWLAND - Net downward shortwave flux over land GHLAND - Downward heat flux at base of top soil layer TWLAND - Total water store in land reservoirs TELAND - Energy store in all land reservoirs WCHANGE - Total land water change per unit time ECHANGE - Total land energy change per unit time The data are on the GEOS-5 native 540 x 361 grid with 2/3° longitude x 1/2° latitude resolution. Data are archived in the HDF-EOS (Grid) format, based on HDF4.
MERRA-Land 2d land surface diagnostics, Time Average 1-hourly (2/3x1/2L1)"	"The Modern-Era Retrospective Analysis for Research and Applications (MERRA) is a state-of-the-art reanalysis data product that provides, in addition to atmospheric fields, global estimates of soil moisture, latent heat flux, snow, and runoff for 1979-present. A supplemental and improved set of land surface hydrological fields (MERRA-Land) was generated by re-running a revised version of the land component of the MERRA system (Reichle et al., 2012). Specifically, the MERRA-Land estimates benefit from corrections to the precipitation forcing with the global gauge-based NOAA Climate Prediction Center Unified (CPCU) precipitation product and from revised parameter values in the rainfall interception model, changes that effectively correct for known limitations in the MERRA surface meteorological forcings. With a few exceptions, the MERRA-Land data appear more accurate than the original MERRA estimates and are thus recommended for those interested in using MERRA output for land surface hydrological studies. The MERRA-Land product, MST1NXMLD or tavg1_2d_mld_Nx, is a simulated 2-Dimensional time averaged single-level at the native resolution. All collections from this group are at reduced horizontal resolution. The data are on the GEOS-5 native 540 x 361 grid with 2/3° longitude x 1/2° latitude resolution. Data are archived in the HDF-EOS (Grid) format, based on HDF4.

MERRA 2D IAU Ocean Surface Diagnostic, Single Level, Time Avg 1-hr (2/3x1/2L1)"	"The MAT1NXOCN or tavg1_2d_ocn_Nx data product is the MERRA Data Assimilation System 2-Dimensional ocean surface single-level diagnostics that is time averaged single-level at the native resolution. It is a history file that is produced from the GCM during the corrector segment of the IAU cycle. All collections from this group are at reduced horizontal resolution. MERRA, or the Modern Era Retrospective-analysis for Research and Application, is a NASA reanalysis for the satellite era (30 years 1979-current) using the Goddard Earth Observing System Data Assimilation System Version 5 (GEOS-5 DAS). This data product contains 2-dimensional fields that do not vary during the reanalysis. The data are on the GEOS-5 native 540 x 361 grid with 2/3° longitude x 1/2° latitude resolution. The files contain the following times compacted into a daily file: 0:30, 1:30, 2:30, 3:30, 4:30, & GMT. Data are archived in the HDF-EOS (Grid) format, based on HDF4.
MERRA 2D IAU Diagnostic, Radiation Surface and TOA, Time Average 1-hourly (2/3x1/2L1)"	"The MAT1NXRAD or tavg1_2d_rad_Nx data product is the MERRA Data Assimilation System 2-Dimensional surface and TOA radiation flux that is time averaged single-level at the native resolution. It is a history file that is produced from the GCM during the corrector segment of the IAU cycle. All collections from this group are at reduced horizontal resolution. MERRA, or the Modern Era Retrospective-analysis for Research and Application, is a NASA reanalysis for the satellite era (30 years 1979-current) using the Goddard Earth Observing System Data Assimilation System Version 5 (GEOS-5 DAS). This data product contains 2-dimensional fields that do not vary during the reanalysis. The data are on the GEOS-5 native 540 x 361 grid with 2/3° longitude x 1/2° latitude resolution. Data are archived in the HDF-EOS (Grid) format, based on HDF4.
MERRA Chem 3D IAU Sates Cloud Precip Time average 3-hourly (eta coord 1.25x1L72)	The MAT3FVCHM or tavg3_3d_chm_Fv data product is the MERRA Data Assimilation System Chemistry 3-Dimensional chemistry on layers file that is time averaged 3D model levels at reduced FV resolution. It is a history file that is intended for forcing off-line chemistry/aerosol models with the results of the reanalysis. Like other histories they are produced from the GCM during the corrector segment of the IAI cycle. All collections from this group are at reduced horizontal resolution. MERRA or the Modern Era Retrospective-anlaysis for Research and Application is a NASA reanalysis for the satellite era (30 years 1979-current) using the Goddard Earth Observing System Data Assimilation System Version 5 (GEOS-5 DAS). This data product contains fields that do not vary during the reanalysis. The data are on the GEOS-5 native 288 x 281 grid with 1.25 deg longitude x 1.25 deg latitude resolution. The files are compacted into a single daily file with the times: 1:30 4:30 7:30 10:30 13:30 16:30 19:30 22:30 GMT. Data are archived in the HDF-EOS (Grid) format based on HDF4.
MERRA 2D IAU Diagnostic, Single Level Meteorology, Time Average 1-hourly (2/3x1/2L1)"	"The MAT1NXSLV or tavg1_2d_slv_Nx data product is the MERRA Data Assimilation System 2-Dimensional atmospheric single-level diagnostics that is time averaged single-level at the native resolution. It is a history file that is produced from the GCM during the corrector segment of the IAU cycle. All collections from this group are at reduced horizontal resolution. MERRA, or the Modern Era Retrospective-analysis for Research and Application, is a NASA reanalysis for the satellite era (30 years 1979-current) using the Goddard Earth Observing System Data Assimilation System Version 5 (GEOS-5 DAS). This data product contains 2-dimensional fields that do not vary during the reanalysis. The data are on the GEOS-5 native 540 x 361 grid with 2/3° longitude x 1/2° latitude resolution. The files contain the following times compacted into a daily file: 0:30, 1:30, 2:30, 3:30, 4:30, & GMT. Data are archived in the HDF-EOS (Grid) format, based on HDF4.
MERRA Chem 2D IAU Diagnostics Fluxes and Meteorology Time Average	The MAT3FXCHM or tavg3_3d_chm_Fx data product is the MERRA Data Assimilation System Chemistry 2-Dimensional chemistry that is time averaged single-level at reduced FV resolution. It is a history file that is intended for forcing off-line chemistry/aerosol models with the results of the reanalysis. Like other histories they are produced from the GCM during thec corrector segment of the IAU cycle. All collections from this group are at reduced horizontal resolution. MERRA or the Modern Era Retrospective-analysis for Research and Application is a NASA reanalysis for the satellite era (30 years 1979-current) using the Goddard Earth Observing System Data Assimilation System Version 5 (GEOS-5 DAS). This data product contains fields that do not vary during the

3-hourly (surface 1.25x1L1)	reanalysis. The data are on the GEOS-5 native 288 x 181 grid with 1.25° longitude x 2° latitude resolution. The files are compacted into a single daily file with the times: 1:30 4:30 7:30 10:30 13:30 16:30 19:30 22:30 GMT. Data are archived in the HDF-EOS (Grid) format based on HDF4.
MERRA Chem 3D IAU Precip Mass Flux Time average 3-hourly (eta coord edges 1.25X1L73)	The MAT3FECHM or tavg3_3d_chm_Fe data product is the MERRA Data Assimilation System Chemistry 3-Dimensional chemistry on layers edges that is time averaged 3D model levels at reduced FV resolution. It is a history file that is intended for forcing off-line chemistry/aerosol models with the results of the reanalysis. Like other histories they are produced from the GCM during the corrector segment of the IAU cycle. All collections from this group are at reduced horizontal resolution. MERRA or the Modern Era Retrospective-analysis for Research and Application is a NASA reanalysis for the satellite era (30 years 1979-current) using the Goddard Earth Observing System Data Assimilation System Version 5 (GEOS-5 DAS). This data product contains fields that do not vary during the reanalysis. The data are on the GEOS-5 native 288 x 181 grid with 1.25° longitude x 2° latitude resolution. The files are compacted into a single daily file with the times: 1:30 4:30 7:30 10:30 13:30 16:30 19:30 22:30 GMT. Data are archived in the HDF-EOS (Grid) format based on HDF4.
MERRA Chem 3D IAU C-Grid Edge Mass Flux Time Average 3-Hourly (eta coord 2/3x1/2L73)	The MAT3NECHM or tavg3_3d_chm_Ne data product is the MERRA Data Assimilation System Chemistry 3-Dimensional chemistry on layer Edges that is time averaged 3D model levels at native resolution. It is a history file that is intended for forcing off-line chemistry/aerosol models with the results of the reanalysis. Like other histories they are produced from the GCM during the corrector segment of the IAU cycle. All collections from this group are at reduced horizontal resolution. MERRA or the Modern Era Retrospective-analysis for Research and Application is a NASA reanalysis for the satellite era (30 years 1979-current) using the Goddard Earth Observing System Data Assimilation System Version 5 (GEOS-5 DAS). This data product contains fields that do not vary during the reanalysis. The data are on the GEOS-5 native 540 x 361 grid with 2/3° longitude x 1/2° latitude resolution. The files are compacted into a single daily file with the times: 1:30 4:30 7:30 10:30 13:30 16:30 19:30 22:30 GMT. Data are archived in the HDF-EOS (Grid) format based on HDF4.
MERRA Chem 3D IAU C-Grid Wind and Mass Flux Time Average 3-Hourly (eta coord 2/3x1/2L72)	The MAT3NVCHM or tavg3_3d_chm_Nv data product is the MERRA Data Assimilation System Chemistry 3-Dimensional chemistry on layers that is time averaged 3D model levels at native resolution. It is a history file that is intended for forcing off-line chemistry/aerosol models with the results of the reanalysis. Like other histories they are produced from the GCM during the corrector segment of the IAU cycle. All collections from this group are at reduced horizontal resolution. MERRA or the Modern Era Retrospective-analysis for Research and Application is a NASA reanalysis for the satellite era (30 years 1979-current) using the Goddard Earth Observing System Data Assimilation System Version 5 (GEOS-5 DAS). This data product contains fields that do not vary during the reanalysis. The data are on the GEOS-5 native 540 x 361 grid with 2/3° longitude x 1/2° latitude resolution. The files are compacted into a single daily file with the times: 1:30 4:30 7:30 10:30 13:30 16:30 19:30 22:30 GMT. Data are archived in the HDF-EOS (Grid) format based on HDF4.
MERRA 3D IAU Diagnostic, Cloud Properties, Time average 3-hourly (1.25x1.25L42)"	"The MAT3CPCLD or tavg3_3d_cld_Cp data product is the MERRA Data Assimilation System 3-Dimensional cloud diagnostic that is time averaged on pressure levels at a reduced resolution. It is a history file that is produced from the GCM during the corrector segment of the IAU cycle. All collections from this group are at reduced horizontal resolution. MERRA, or the Modern Era Retrospective-analysis for Research and Application, is a NASA reanalysis for the satellite era (30 years 1979-current) using the Goddard Earth Observing System Data Assimilation System Version 5 (GEOS-5 DAS). This data product contains 2-dimensional and 3-dimensional fields that do not vary during the reanalysis. The data are on the GEOS-5 native 288 x 144 grid with 1.25° longitude x 1.25° latitude resolution. The pressure-level data will be output in 42 pressure levels. The files contain the following times compacted into a daily file: 1:30, 4:30, 7:30, 10:30, 13:30, 16:30, 19:30, 22:30 GMT. Data are archived in the HDF-EOS (Grid)

	format, based on HDF4.
MERRA 3D IAU Diagnostic, Moist Physics, Time average 3-hourly (1.25x1.25L42)"	"The MAT3CPMST or tavg3_3d_mst_Cp data product is the MERRA Data Assimilation System 3-Dimensional moist process diagnostic that is time averaged on pressure levels at a reduced resolution. It is a history file that is produced from the GCM during the corrector segment of the IAU cycle. All collections from this group are at reduced horizontal resolution. MERRA, or the Modern Era Retrospective-analysis for Research and Application, is a NASA reanalysis for the satellite era (30 years 1979-current) using the Goddard Earth Observing System Data Assimilation System Version 5 (GEOS-5 DAS). This data product contains 2-dimensional and 3-dimensional fields that do not vary during the reanalysis. The data are on the GEOS-5 native 288 x 144 grid with 1.25° longitude x 1.25° latitude resolution. The pressure-level data will be output in 42 pressure levels. The files contain the following times compacted into a daily file: 1:30, 4:30, 7:30, 10:30, 13:30, 16:30, 19:30, 22:30 GMT. Data are archived in the HDF-EOS (Grid) format, based on HDF4.
MERRA 3D IAU Tendency Ozone Time average 3-hourly (1.25x1.25L42)	The MAT3CPODT or tavg3_3d_odt_Cp data product is the MERRA Data Assimilation System 3-Dimensional ozone tendencies that is time averaged on pressure levels at a reduced resolution. It is a history file that is produced from the GCM during the corrector segment of the IAU cycle. All collections from this group are at reduced horizontal resolution. MERRA or the Modern Era Retrospective-analysis for Research and Application is a NASA reanalysis for the satellite era (30 years 1979-current) using the Goddard Earth Observing System Data Assimilation System Version 5 (GEOS-5 DAS). This data product contains 3-dimensional fields that do not vary during the reanalysis. The data are on the GEOS-5 native 288 x 144 grid with 1.25° longitude x 1.25° latitude resolution. The pressure-level data will be output in 42 pressure levels. The files contain the following times compacted into a daily file: 1:30 4:30 7:30 10:30 13:30 16:30 19:30 22:30 GMT. Data are archived in the HDF-EOS (Grid) format based on HDF4.
MERRA 3D IAU Tendency Specific Humidity Time average 3-hourly (1.25x1.25L42)	The MAT3CPQDT or tavg3_3d_qdt_Cp data product is the MERRA Data Assimilation System 3-Dimensional moisture tendencies that is time averaged on pressure levels at a reduced resolution. It is a history file that is produced from the GCM during the corrector segment of the IAU cycle. All collections from this group are at reduced horizontal resolution. MERRA or the Modern Era Retrospective-analysis for Research and Application is a NASA reanalysis for the satellite era (30 years 1979-current) using the Goddard Earth Observing System Data Assimilation System Version 5 (GEOS-5 DAS). This data product contains 3-dimensional fields that do not vary during the reanalysis. The data are on the GEOS-5 native 288 x 144 grid with 1.25° longitude x 1.25° latitude resolution. The pressure-level data will be output in 42 pressure levels. The files contain the following times compacted into a daily file: 1:30 4:30 7:30 10:30 13:30 16:30 19:30 22:30 GMT. Data are archived in the HDF-EOS (Grid) format based on HDF4.
MERRA 3D IAU Diagnostic Radiation Time average 3-hourly (1.25x1.25L42)	The MAT3CPRAD or tavg3_3d_rad_Cp data product is the MERRA Data Assimilation System 3-Dimensional radiation diagnostic that is time averaged on pressure levels at a reduced resolution. It is a history file that is produced from the GCM during the corrector segment of the IAU cycle. All collections from this group are at reduced horizontal resolution. MERRA or the Modern Era Retrospective-analysis for Research and Application is a NASA reanalysis for the satellite era (30 years 1979-current) using the Goddard Earth Observing System Data Assimilation System Version 5 (GEOS-5 DAS). This data product contains 2-dimensional and 3-dimensional fields that do not vary during the reanalysis. The data are on the GEOS-5 native 288 x 144 grid with 1.25° longitude x 1.25° latitude resolution. The pressure-level data will be output in 42 pressure levels. The files contain the following times compacted into a daily file: 1:30 4:30 7:30 10:30 13:30 16:30 19:30 22:30 GMT. Data are archived in the HDF-EOS (Grid) format based on HDF4.
MERRA 3D IAU	The MAT3CPTDT or tavg3_3d_tdt_Cp data product is the MERRA Data Assimilation System 3-Dimensional temperature tendencies that is time averaged on pressure levels at a reduced resolution. It is a history file that is produced from the GCM during the corrector segment of the IAU cycle. All collections from this group are at reduced horizontal resolution. MERRA or the

Tendency Temperature Time average 3-hourly (1.25x1.25L42)	Modern Era Retrospective-analysis for Research and Application is a NASA reanalysis for the satellite era (30 years 1979-current) using the Goddard Earth Observing System Data Assimilation System Version 5 (GEOS-5 DAS). This data product contains 3-dimensional fields that do not vary during the reanalysis. The data are on the GEOS-5 native 288 x 144 grid with 1.25° longitude x 1.25° latitude resolution. The pressure-level data will be output in 42 pressure levels. The files contain the following times compacted into a daily file: 1:30 4:30 7:30 10:30 13:30 16:30 19:30 22:30 GMT. Data are archived in the HDF-EOS (Grid) format based on HDF4.
MERRA 3D IAU Diagnostic Turbulence Time average 3-hourly (1.25x1.25L42)	The MAT3CPTRB or tavg3_3d_trb_Cp data product is the MERRA Data Assimilation System 3-Dimensional turbulence diagnostic that is time averaged on pressure levels at a reduced resolution. It is a history file that is produced from the GCM during the corrector segment of the IAU cycle. All collections from this group are at reduced horizontal resolution. MERRA or the Modern Era Retrospective-analysis for Research and Application is a NASA reanalysis for the satellite era (30 years 1979-current) using the Goddard Earth Observing System Data Assimilation System Version 5 (GEOS-5 DAS). This data product contains 3-dimensional fields that do not vary during the reanalysis. The data are on the GEOS-5 native 288 x 144 grid with 1.25° longitude x 1.25° latitude resolution. The pressure-level data will be output in 42 pressure levels. The files contain the following times compacted into a daily file: 1:30 4:30 7:30 10:30 13:30 16:30 19:30 22:30 GMT. Data are archived in the HDF-EOS (Grid) format based on HDF4.
MERRA 3D IAU Tendency Wind Components Time average 3-hourly (1.25x1.25L42)	The MAT3CPUDT or tavg3_3d_udt_Cp data product is the MERRA Data Assimilation System 3-Dimensional eastward wind tendencies that is time averaged on pressure levels at a reduced resolution. It is a history file that is produced from the GCM during the corrector segment of the IAU cycle. All collections from this group are at reduced horizontal resolution. MERRA or the Modern Era Retrospective-analysis for Research and Application is a NASA reanalysis for the satellite era (30 years 1979-current) using the Goddard Earth Observing System Data Assimilation System Version 5 (GEOS-5 DAS). This data product contains 3-dimensional fields that do not vary during the reanalysis. The data are on the GEOS-5 native 288 x 144 grid with 1.25° longitude x 1.25° latitude resolution. The pressure-level data will be output in 42 pressure levels. The files contain the following times compacted into a daily file: 1:30 4:30 7:30 10:30 13:30 16:30 19:30 22:30 GMT. Data are archived in the HDF-EOS (Grid) format based on HDF4.
MERRA 2D IAU Diagnostic, Land Only States and Diagnostics, Monthly Mean (2/3x1/2L1)"	"The MATMNXLND or tavgM_2d_lnd_Nx data product is the MERRA Data Assimilation System 2-Dimensional land surface diagnostic that is time averaged single-level at the native resolution. It is a history file that is produced from the GCM during the corrector segment of the IAU cycle. All collections from this group are at reduced horizontal resolution. MERRA, or the Modern Era Retrospective-analysis for Research and Application, is a NASA reanalysis for the satellite era (30 years 1979-current) using the Goddard Earth Observing System Data Assimilation System Version 5 (GEOS-5 DAS). This data product contains 2-dimensional fields that do not vary during the reanalysis. The data are on the GEOS-5 native 540 x 361 grid with 2/3° longitude x 1/2° latitude resolution. Data are archived in the HDF-EOS (Grid) format, based on HDF4.
MERRA 2D IAU Diagnostic, Radiation Surface and TOA, Monthly Mean (2/3x1/2L1)"	"The MATMNXRAD or tavgM_2d_rad_Nx data product is the MERRA Data Assimilation System 2-Dimensional surface and TOA radiation flux that is time averaged single-level at the native resolution. It is a history file that is produced from the GCM during the corrector segment of the IAU cycle. All collections from this group are at reduced horizontal resolution. MERRA, or the Modern Era Retrospective-analysis for Research and Application, is a NASA reanalysis for the satellite era (30 years 1979-current) using the Goddard Earth Observing System Data Assimilation System Version 5 (GEOS-5 DAS). This data product contains 2-dimensional fields that do not vary during the reanalysis. The data are on the GEOS-5 native 540 x 361 grid with 2/3° longitude x 1/2° latitude resolution. Data are archived in the HDF-EOS (Grid) format, based on HDF4.

MERRA 2D IAU Diagnostic, Single Level Meteorology, Monthly Mean (2/3x1/2L1)"	"The MATMNXSLV or tavgM_2d_slv_Nx data product is the MERRA Data Assimilation System 2-Dimensional atmospheric single-level diagnostics that is time averaged single-level at the native resolution. It is a history file that is produced from the GCM during the corrector segment of the IAU cycle. All collections from this group are at reduced horizontal resolution. MERRA, or the Modern Era Retrospective-analysis for Research and Application, is a NASA reanalysis for the satellite era (30 years 1979-current) using the Goddard Earth Observing System Data Assimilation System Version 5 (GEOS-5 DAS). This data product contains 2-dimensional fields that do not vary during the reanalysis. The data are on the GEOS-5 native 540 x 361 grid with 2/3° longitude x 1/2° latitude resolution. The files contain the monthly mean. Data are archived in the HDF-EOS (Grid) format, based on HDF4.
MODIS/Terra Surface Reflectance 8-Day L3 Global 500m SIN Grid	MODIS/Terra Surface Reflectance 8-Day L3 Global 500m SIN Grid
MODIS/Terra Surface Reflectance Daily L2G Global 1km and 500m SIN Grid	MODIS/Terra Surface Reflectance Daily L2G Global 1km and 500m SIN Grid
MODIS/Aqua Surface Reflectance 8-Day L3 Global 500m SIN Grid	MODIS/Terra Surface Reflectance 8-Day L3 Global 500m SIN Grid
MODIS/Aqua Surface Reflectance Daily L2G Global 1km and 500m SIN Grid	MODIS/Aqua Surface Reflectance Daily L2G Global 1km and 500m SIN Grid
Pre-ABoVE: Remotely Sensed Active Layer Thickness, Prudhoe Bay, Alaska, 1992-2000"	"Active layer thickness (ALT) is a critical parameter for monitoring the status of permafrost that is typically measured at specific locations using probing, in situ temperature sensors, or other ground-based observations. The thickness of the active layer is the average annual thaw depth, in permafrost areas, due to solar heating of the surface. This data set includes the mean Remotely Sensed Active Layer Thickness (ReSALT) over years 1992 to 2000 for an area near Prudhoe Bay, Alaska. The data were produced by an Interferometric Synthetic Aperture Radar (InSAR) technique that measures seasonal surface subsidence and infers ALT. ReSALT estimates were validated by comparison with ground-based ALT measurements at multiple sites. These results indicate remote sensing techniques based on InSAR could be an effective way to measure and monitor ALT over large areas on the Arctic coastal plain.These data provide gridded (100-m) estimates of active layer thickness (cm; ALT), seasonal subsidence (cm) and subsidence trend (mm/yr), as well as calculated uncertainty in each of these parameters. This data set was developed in support of NASA's Arctic-Boreal Vulnerability Experiment (ABoVE) field campaign.The data are presented in one netCDF (*.nc) file. .
	"Active layer thickness (ALT) is a critical parameter for monitoring the status of permafrost that is typically measured at specific locations using probing, in situ temperature sensors, or other ground-based observations. The thickness of the active layer is the average annual thaw depth, in

Pre-ABoVE: Remotely Sensed Active Layer Thickness, Barrow, Alaska, 2006-2011"	permafrost areas, due to solar heating of the surface. This data set includes the mean Remotely Sensed Active Layer Thickness (ReSALT) over years 2006 to 2011 for the region near Barrow, Alaska. The data were produced by an Interferometric Synthetic Aperture Radar (InSAR) technique that measures seasonal surface subsidence and infers ALT. ReSALT estimates were validated by comparison with ground-based ALT obtained using probing and Ground Penetrating Radar at multiple sites. These results indicate remote sensing techniques based on InSAR could be an effective way to measure and monitor ALT over large areas on the Arctic coastal plain. These data provide gridded (30-m) estimates of active layer thickness (cm; ALT) and seasonal subsidence (cm), as well as calculated uncertainty in each of these parameters. This data set was developed in support of NASA's Arctic-Boreal Vulnerability Experiment (ABoVE) field campaign.