GLAH10 Product Data Dictionary

File-Level (Global) Attributes

Attribute	Example Value
featureType	timeSeries
ShortName	GLAH10
title	GLAS/ICESat L2 Global Aerosol Vertical Structure Data (HDF5)
comment	The level 2 aerosol vertical structure data contains cloud and aerosol backscatter and extinction cross section profiles provided at a minimum of once per 4 seconds. Data granules will contain approximately 23 hours (14 orbits) of data.
summary	GLAH10 contains cloud and aerosol backscatter and the extinction cross section data for researchers. Cloud data are provided at 1Hz and aerosol data will be provided at .25Hz. Each GLAH10 file was created from an equivalent GLA10 binary file. The data used to create the GLAH10 values are contained in the equivalent GLAHxx files for the GLAxx files. See the provenance metadata for the creation of the GLA10.
license	http://nsidc.org/data/icesat/disclaimer.html
references	https://nsidc.org/data/glah02-glah07-glah08-glah09-glah10-glah11/versions/33/documentation (Guide Document for this product at NSIDC), http://nsidc.org/data/icesat/ (GLAS Product page at NSIDC)
AccessConstraints	Data may not be reproduced or distributed without including the CitationForExternalPublication for this product included in this Metadata. Data may not be distributed in an altered form without the written permission of the GLAS Science Team.
CitationforExternalPublication	The data used in this study were produced by the GLAS Science Team at the ICESat Science Investigator-led Processing System (I-SIPS) at NASA/GSFC. The data archive site is the NSIDC DAAC.
contributor_role	Data Originator, Investigator, Producer, Producer
contributor_name	David W. Hancock (David.W.Hancock@nasa.gov), Bob E Schutz (schutz@utcsr.ae.utexas.edu), Jay Zwally (Jay.Zwally@nasa.gov), John P DiMarzio (John.P.Dimarzio.1@nasa.gov)
creator_name	ICESat Science Investigator-led Processing System (I-SIPS)
creator_email	David.W.Hancock@nasa.gov
publisher_name	NSIDC User Services
publisher_email	nsidc@nsidc.org
publisher_url	http://nsidc.org/data/icesat/
platform	Ice, Cloud, and Land Elevation Satellite (ICESat)
instrument	Geoscience Laser Altimeter System (GLAS)
processing_level	2

Support

Attribute	Example Value
date_created	2012-12-20T20:27:46
spatial_coverage_type	Horizontal
history	2011-06-20T15:27:20 glas_atm 6.0.1 GLA10_633_2103_002_0407_0_01_0001.DAT, 2012-12-20T20:27:46.000000Z GLA10_h5_convert Version 1.0 (December 2012) out/GLAH10_633_2103_002_0407_0_01_0001.H5
geospatial_lat_min	-90.0
geospatial_lat_max	90.0
geospatial_lon_min	-180.0
geospatial_lon_max	180.0
geospatial_lat_units	degrees_north
geospatial_lon_units	degrees_east
keywords	Earth Science > Atmosphere > Clouds > Cloud Reflectance > Aerosol Backscatter Cross Section Profile, Earth Science > Atmosphere > Aerosols > Aerosol Backscatter > Aerosol Backscatter Cross Section Profile, Earth Science > Atmosphere > Aerosols > Aerosol Extinction > Aerosol Extinction Cross Section Profile, Earth Science > Atmosphere > Atmospheric Radiation > Transmittance
keywords_vocabulary	GCMD Science Keywords Version 6.0
standard_vocabulary_name	CF-1.6
naming_authority	http://dx.doi.org/10.5067/ICESAT/GLAS/DATA203
project	Ice, Cloud, and Land Elevation Satellite (GLAS_HDF)
time_type	UTC
date_type	J2000
time_coverage_start	2003-11-18T01:51:38
time_coverage_end	2003-11-19T00:24:45
time_coverage_duration	81280
source	Satellite Measurements
HDFVersion	HDF5 1.8.9
identifier_file_uuid	599740C3-F062-4F49-A756-8A0DA37BC95B
identifier_product_doi	10.5067/ICESAT/GLAS/DATA203
identifier_product_type	GLAH10
identifier_product_format_version	1.0
Conventions	CF-1.6

Attribute	Example Value
institution	National Aeronautics and Space Administration (NASA)

Group: /Data_4s

This group contain Aerosol crosssection and layer data. The data may be indexed to the 40HZ data using the i_rec_ndx parameter in each respective time group.

Dimension Scales

Label	Datatype (Dimensions)	long_name (standard_name)	units	description	source	coordinates
DS_UTCTime_4s	DOUBLE (UNLIMITED)	Transmit Time of First Shot in frame in J2000 (time)	seconds	The transmit time of the first shot in the 4 second frame measured as 'UTC seconds' elapsed since Jan 1 2000 12:00:00 UTC. This time has been derived from the GPS time accounting for leap seconds.	Rel 33 GLAS Binary Data	NOT_SET
DS_HeightRel_548	DOUBLE (UNLIMITED)	Relative Height (NOT_SET)	NOT_SET	This array contains the height above the DEM, where DEM = `DEMmin+HoffMin`.	Constants	NOT_SET
DS_Cloud_Layer_9	INTEGER (UNLIMITED)	Cloud Layer Index (NOT_SET)	NOT_SET	This array contains the cloud layer index, up to 9	Constants	NOT_SET

Group: Data_4s/Time

This group contains the 4s index and time-related parameters.

Label	Datatype (Dimensions)	long_name (standard_name)	units	description	source	co
i_rec_ndx	INTEGER (UNLIMITED)	GLAS Record Index (NOT_SET)	NOT_SET	Unique index that relates this record to the corresponding record(s) in each GLAS data product.	Rel 33 GLAS Binary Data	DS
shot_time_flg	INTEGER_1 (UNLIMITED)	time correction flag (NOT_SET)	NOT_SET	Shot time;0=shot time is transmit time;1=shot time is ground bounce time flag values: 0, 1 flag_meanings: `transmit_time ground_bounce_time`	Rel 33 GLAS Binary Data	DS
gps_time_flg	INTEGER_1 (UNLIMITED)	time correction flag (NOT_SET)	NOT_SET	GPS time;0=no delta gps time correction applied to shot time;1=delta gps time correction applied to shot time flag values: 0, 1 flag_meanings: `not_applied applied`	Rel 33 GLAS Binary Data	DS

Label	Datatype (Dimensions)	long_name (standard_name)	units	description	source	co
pl_timing_flg	INTEGER_1 (UNLIMITED)	time correction flag (NOT_SET)	NOT_SET	Post-launch timing;0=no post-launch timing bias applied;1=post-launch timing bias applied - see header for value flag values: 0, 1 flag_meanings: not_applied applied	Rel 33 GLAS Binary Data	D
ddelay_flg	INTEGER_1 (UNLIMITED)	time correction flag (NOT_SET)	NOT_SET	Digitizer turn-on delay;0=digitizer turn-on delay accounted for in shot time - see header;1=digitizer turn-on delay not accounted for in shot time flag values: 0, 1 flag_meanings: applied not_applied	Rel 33 GLAS Binary Data	D
peaktp_flg	INTEGER_1 (UNLIMITED)	time correction flag (NOT_SET)	NOT_SET	Peak of transmit pulse;0=time to peak of transmit pulse accounted for in shot time;1=time to peak of transmit pulse not accounted for in shot time flag values: 0, 1 flag_meanings: applied not_applied	Rel 33 GLAS Binary Data	D

Group: Data_4s/Geolocation

This group contains geolocation-related parameters.

Label	Datatype (Dimensions)	long_name (standard_name)	units	description	source	coordinates
d_lat	DOUBLE (UNLIMITED)	Profile Location, Latitude (latitude)	degrees_north	Profile coordinate in the IERS Terrestrial Reference Frame: east longitude and north latitude, at the 0.25 hertz rate.	Rel 33 GLAS Binary Data	DS_UTCTime_4s
d_lon	DOUBLE (UNLIMITED)	Profile Location, Longitude (longitude)	degrees_east	Profile coordinate in the IERS Terrestrial Reference Frame: east longitude and north latitude, at the 0.25 hertz rate.	Rel 33 GLAS Binary Data	DS_UTCTime_4s

Group: Data_4s/Flags

This group contains flags at 1 per 4 sec.

Label	Datatype (Dimensions)	long_name (standard_name)	units	description	source	coordinates
i_AttFlg3	INTEGER_1 (UNLIMITED)	Attitude Flag 3 (NOT_SET)	NOT_SET	Attitude Flag 3, 0=PAD used for geolocation, 1=PAD not used for geolocation. flag values: 0, 1 flag_meanings: PAD_used PAD_not_used	Rel 33 GLAS Binary Data	DS_UTCTim

Group: Data_4s/AerosolProfiles

This group contain Aerosol crosssection and layer data. The data may be indexed to the 40HZ data using the i_rec_ndx parameter in each respective time group.

Label	Datatype (Dimensions)	long_name (standard_name)	units	description	source	coordinates
r_aer4_bs_prof	REAL (UNLIMITED, 548)	Aerosol Backscatter Cross Section Profile at 532nm (need in meta data the height for each of the 548 bins (once for both profiles?)) (NOT_SET)	1/(m-sr)	532 nm aerosol backscatter cross section from 40 to -1km at 0.25hz. The 4*548 bytes refer to the profile at the four second interval.	Rel 33 GLAS Binary Data	DS_UTCTime_4s
r_aer4_ext_prof	REAL (UNLIMITED, 548)	Aerosol Extinction Cross Section Profile at 532 nm (NOT_SET)	1/m	Aerosol extinction cross section profile for 40 to -1km calculated from the 532 nm data at 0.25hz. The 4*548 bytes refer to the profile at the four second interval.	Rel 33 GLAS Binary Data	DS_UTCTime_4s
r_aod_botht_4s	REAL (UNLIMITED)	Cloud-free Trop. Height (NOT_SET)	meters	Height of cloud-free troposphere (bottom of full column extinction profile).	Rel 33 GLAS Binary Data	DS_UTCTime_4s

Group: Data_4s/PBL4_od

This group contains the 4 second PBL OD related parameters.

Label	Datatype (Dimensions)	long_name (standard_name)	units	description	source	coordinates
r_Aer_PBL_LR_grd_det	REAL (UNLIMITED)	Low Resolution Ground Detection at 532 nm (NOT_SET)	meters	Low resolution processed ground detection height at 0.25hz, 1 per profile	Rel 33 GLAS Binary Data	DS_UTCTime_4s

Group: Data_4s/AerosolLayers

This group contains aerosol layer information.

Label	Datatype (Dimensions)	long_name (standard_name)	units	description	sou
r_aer4_bot	REAL (UNLIMITED, 9)	Low Resolution Aerosol Layer Bottom at 532 nm (NOT_SET)	meters	Low resolution aerosol layer bottom heights for layers which were selected for optical processing at 0.25hz, 1 per layer, 9 layers including the planetary boundary layer and PSC	Rel GL Bin Dat
r_aer4_top	REAL (UNLIMITED, 9)	Low Resolution Aerosol Layer Top at 532 nm (NOT_SET)	meters	Low resolution aerosol layer top heights for layers which were selected for optical processing at 0.25hz, 1 per layer, 9 layers including the planetary boundary layer and PSC	Rel GL Bin Dat
r_aer4_sval1	REAL (UNLIMITED, 9)	Aerosol true S Values from table (NOT_SET)	sr	Aerosol true extinction to backscatter ratios calculated from meteorological and geographic data	Rel GL Bin Dat
r_aer4_sval2	REAL (UNLIMITED, 9)	Aerosol true S Values from equation calc. (NOT_SET)	sr	Aerosol true extinction to backscatter ratios calculated from optically thin layer considerations	Rel GL Bin Dat

Label	Datatype (Dimensions)	long_name (standard_name)	units	description	sou
r_Aer_bot_pres	REAL (UNLIMITED, 9)	Aerosol Layers Pressure at Bottom of Layer at 532 nm (NOT_SET)	hPa	Aerosol Layers Pressure at Bottom of Layer at 532 nm	Rel GL Bin Dat
r_Aer_bot_relh	REAL (UNLIMITED, 9)	Aerosol Layers Relative Humidity at Bottom of Layer at 532 nm (NOT_SET)	percent	Aerosol Layers Relative Humidity at Bottom of Layer at 532 nm	Rel GL Bin Dat
r_Aer_bot_temp	REAL (UNLIMITED, 9)	Aerosol Layers Temperature at Bottom of Layer at 532 nm (NOT_SET)	degree Celsius	Aerosol Layers Temperature at Bottom of Layer at 532 nm	Rel GL Bin Dat
r_Aer_top_pres	REAL (UNLIMITED, 9)	Aerosol Layers Pressure at Top of Layer at 532 nm (NOT_SET)	hPa	Aerosol Layers Pressure at Top of Layer at 532 nm	Rel GL Bin Dat
r_Aer_top_relh	REAL (UNLIMITED, 9)	Aerosol Layers Relative Humidity at Top of Layer at 532 nm (NOT_SET)	percent	Aerosol Layers Relative Humidity at Top of Layer at 532 nm	Rel GL Bin Dat
r_Aer_top_temp	REAL (UNLIMITED, 9)	Aerosol Layers Temperature at Top of Layer at 532 nm (NOT_SET)	degree Celsius	Aerosol Layers Temperature at Top of Layer at 532 nm	Rel GL Bin Dat
i_aer4_bs_uf	INTEGER_1 (UNLIMITED, 9)	Aerosol backscatter flag for 532 nm (NOT_SET)	NOT_SET	Use FLAG SATURATION STATUS: 0 = no saturation detected; 1 = one or two bins were saturated with 1064 nm conversion performed; 2 = at least three bins were saturated with 1064 nm conversion performed; 3 = at least one but less than four bins were saturated with no conversion performed; 4 = four or more bins were saturated with no conversion performed; 15 = invalid flag values: 0, 1, 2, 3, 4, 15 flag_meanings: `no_saturation_detected one_or_two_bins_saturated_1064nm_conversion at_least_three_bins_saturated_1064nm_conversion one_to_three_bins_saturated_no_conversion four_or_more_bins_saturated_no_conversion invalid`	Rel GL Bin Dat

<table>
<tr><th>Label</th><th>Datatype (Dimensions)</th><th>long_name (standard_name)</th><th>units</th><th>description</th><th>sou</th></tr>
<tr><td>i_aer4_bs_qf</td><td>INTEGER_1 (UNLIMITED, 9)</td><td>Aerosol backscatter flag for 532 nm (NOT_SET)</td><td>NOT_SET</td><td>Quality Flag: 0 = 0-5 % Error; 1 = 5-10 % Error; 2 = 10-15 % Error; 3 = 15-20 % Error; 4 = 20-25 % Error; 5 = 25-30 % Error; 6 = 30-35 % Error; 7 = 35-40 % Error; 8 = 40-45 % Error; 9 = 45-50 % Error; 10 = 50-55 % Error; 11 = 55-60 % Error; 12 = 60-65 % Error; 13 = 65-70 % Error; 14 = 70 and greater % Error; 15 = Unable to calculate error
<table>
<tr><th>flag values</th><th>flag_meanings</th></tr>
<tr><td>0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15</td><td>0-5_pct_err 5-10_pct_err 10-15_pct_err 15-20_pct_err 20-25_pct_err 25-30_pct_err 30-35_pct_err 35-40_pct_err 40-45_pct_err 45-50_pct_err 50-55_pct_err 55-60_pct_err 60-65_pct_err 65-70_pct_err 70_and_greater_pct_err unable_to_calc_err</td></tr>
</table></td><td>Rel GL Bin Dat</td></tr>
<tr><td>i_aer4_ext_uf</td><td>INTEGER_1 (UNLIMITED, 9)</td><td>Aerosol extinction flag for 532 nm (NOT_SET)</td><td>NOT_SET</td><td>Use Flag Meaning: 00 = PBL generic (all PBL indices not mentioned below); 01 = PBL maritime (index 4); 02 = PBL continental ice (index 7); 03 = PBL continental haze (index 11); 04 = PBL Saharan dust (index 12); 05 = PBL desert (index 13); 06 = PBL smoke (indices 15,3); 07 = TROP generic (all TROP indices not mentioned below); 08 = TROP volcanic (index 3); 09 = TROP continental haze (index 11); 10 = TROP Saharan dust (index 12); 11 = TROP smoke (index 15); 12 = STRATO aerosol (any non-PSC layer whose top is > tropopause; 13 = PSC type I (PSC with rh less than or equal to 95%); 14 = PSC type II (PSC with rh greater than 95%); 15 = invalid
<table>
<tr><th>flag values</th><th>flag_meanings</th></tr>
<tr><td>0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15</td><td>PBL_generic PBL_maritime PBL_continental_ice PBL_continental_haze PBL_Saharan_dust PBL_desert PBL_smoke TROP_generic TROP_volcanic TROP_continental_haze TROP_Saharan_dust TROP_smoke STRATO_aerosol PSC_type_I PSC_type_II invalid</td></tr>
</table></td><td>Rel GL Bin Dat</td></tr>
</table>

Label	Datatype (Dimensions)	long_name (standard_name)	units	description	sou
i_aer4_ext_qf	INTEGER_1 (UNLIMITED, 9)	Aerosol extinction flag for 532 nm (NOT_SET)	NOT_SET	Quality Flag Values: 0 = 0-5 % Error; 1 = 5-10 % Error; 2 = 10-15 % Error; 3 = 15-20 % Error; 4 = 20-25 % Error; 5 = 25-30 % Error; 6 = 30-35 % Error; 7 = 35-40 % Error; 8 = 40-45 % Error; 9 = 45-50 % Error; 10 = 50-55 % Error; 11 = 55-60 % Error; 12 = 60-65 % Error; 13 = 65-70 % Error; 14 = 70 and greater % Error; 15 = Unable to calculate error flag values: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 flag_meanings: `0-5_pct_err 5-10_pct_err 10-15_pct_err 15-20_pct_err 20-25_pct_err 25-30_pct_err 30-35_pct_err 35-40_pct_err 40-45_pct_err 45-50_pct_err 50-55_pct_err 55-60_pct_err 60-65_pct_err 65-70_pct_err 70_and_greater_pct_err unable_to_calc_err`	Rel GL Bin Dat
i_aer4_sval_uf	INTEGER_1 (UNLIMITED, 9)	Aerosol true S Values use flag (NOT_SET)	NOT_SET	Aerosol true S values use flag for 9 layers at 1 per 4 sec. Bits 0-3 (least significant bits) of byte 5 are for first layer, bits 0-3 of byte 1 are for 9th layer. 15 denotes no layer detected (invalid). Bits 36-39 are spares needed to make 5 bytes. Stipulates which extinction to backscatter ratio was used in processing (1=default, 2=calculated). flag values: 1, 2, 15 flag_meanings: `default calculated no_layer_detected`	Rel GL Bin Dat

Group: /Data_1HZ

This group contains data with a rate of 1HZ. 1Hz data may be indexed to the 40HZ data using the i_rec_ndx parameter in each respective time group.

Dimension Scales

Label	Datatype (Dimensions)	long_name (standard_name)	units	description	source	coordinates
DS_UTCTime_1	DOUBLE (UNLIMITED)	Transmit Time of First Shot in frame in J2000 (time)	seconds	The transmit time of the first shot in the 1 second frame measured as 'UTC seconds' elapsed since Jan 1 2000 12:00:00 UTC. This time has been derived from the GPS time accounting for leap seconds.	Rel 33 GLAS Binary Data	NOT_SET
DS_HeightRel_280	DOUBLE (UNLIMITED)	Relative Height (NOT_SET)	NOT_SET	This array contains the height above the DEM, where DEM = `DEMmin+HoffMin`.	Constants	NOT_SET
DS_Cloud_Layer_10	INTEGER (UNLIMITED)	Cloud Layer Index (NOT_SET)	NOT_SET	This array contains the cloud layer index, up to 10	Constants	NOT_SET

Group: Data_1HZ/Time

This group contains the 1HZ index and time-related parameters.

Label	Datatype (Dimensions)	long_name (standard_name)	units	description	source	coordinates
i_rec_ndx	INTEGER (UNLIMITED)	GLAS Record Index (NOT_SET)	NOT_SET	Unique index that relates this record to the corresponding record(s) in each GLAS data product.	Rel 33 GLAS Binary Data	DS_UTCTime_1

Group: Data_1HZ/Geolocation

This group contains geolocation-related parameters.

Label	Datatype (Dimensions)	long_name (standard_name)	units	description	source	coordinates
d_lat	DOUBLE (UNLIMITED)	Profile Location, Latitude (latitude)	degrees_north	Profile coordinate in the IERS Terrestrial Reference Frame: east longitude and north latitude, at the 1 hertz rate.	Rel 33 GLAS Binary Data	DS_UTCTime_1
d_lon	DOUBLE (UNLIMITED)	Profile Location, Longitude (longitude)	degrees_east	Profile coordinate in the IERS Terrestrial Reference Frame: east longitude and north latitude, at the 1 hertz rate.	Rel 33 GLAS Binary Data	DS_UTCTime_1

Group: Data_1HZ/Cloud

This group contains information relating to the 1 HZ Clouds.

Label	Datatype (Dimensions)	long_name (standard_name)	units	description	source	coordinates
r_cld1_bs_prof	REAL (UNLIMITED, 280)	Cloud Backscatter Cross Section Profile at 532 nm(need in meta data the height for each of the 280 bins (once for both profiles?)) (NOT_SET)	1/(m-sr)	532 nm cloud backscatter cross section corrected for attenuation, from 20 to -1km at 1hz. The first 4*280 bytes refer to the profile at the first second.	Rel 33 GLAS Binary Data	DS_UTCTime_1
r_cld1_ext_prof	REAL (UNLIMITED, 280)	Cloud Extinction Cross Section Profile at 532 nm (NOT_SET)	1/m	Cloud extinction cross section profile from 20 to -1km at 1hz calculated from the 532 nm data. The first 4*280 bytes refer to the profile at the first second.	Rel 33 GLAS Binary Data	DS_UTCTime_1

Group: Data_1HZ/Geophysical

This group contains geophysical parameters.

Label	Datatype (Dimensions)	long_name (standard_name)	units	description	source	coordinates
r_cld1_grd_det	REAL (UNLIMITED)	Medium Resolution Ground Detection at 532 nm (NOT_SET)	meters	Medium resolution processed ground height at 1hz, 1 per profile	Rel 33 GLAS Binary Data	DS_UTCTime_1

Label	Datatype (Dimensions)	long_name (standard_name)	units	description	source	coordinates
r_Surface_pres	REAL (UNLIMITED)	Surface Pressure (surface_air_pressure)	hPa	Surface Pressure, 4 of 1-second intervals.	Rel 33 GLAS Binary Data	DS_UTCTime_1
r_Surface_relh	REAL (UNLIMITED)	Surface Relative Humidity (relative_humidity)	percent	Surface Relative Humidity, 4 of 1-second intervals.	Rel 33 GLAS Binary Data	DS_UTCTime_1
r_Surface_temp	REAL (UNLIMITED)	Surface Temperature (surface_temperature)	degree Celsius	Surface Temperature, 4 of 1-second intervals.	Rel 33 GLAS Binary Data	DS_UTCTime_1
r_Surface_wdir	REAL (UNLIMITED)	Surface Wind Direction Azimuth from North (NOT_SET)	degrees	Surface wind direction azimuth from North, 4 of 1-second intervals. Wind direction at Earth's surface level measured in degrees of azimuth from North and derived from the meteorological data files.	Rel 33 GLAS Binary Data	DS_UTCTime_1
r_Surface_wind	REAL (UNLIMITED)	Surface Wind Speed (NOT_SET)	meters/second	Surface Wind Speed, 4 of 1-second intervals. Wind speed at Earth's surface level measured in km/hour and derived from the meteorological data files.	Rel 33 GLAS Binary Data	DS_UTCTime_1

Group: Data_1HZ/Quality

This group contains flags indicating the quality or suitability of data.

<table>
<tr><th>Label</th><th>Datatype (Dimensions)</th><th>long_name (standard_name)</th><th>units</th><th>description</th><th>sour</th></tr>
<tr><td>orbit_pred_flg</td><td>INTEGER_1 (UNLIMITED)</td><td>POD flag (Orbit Flag) (NOT_SET)</td><td>NOT_SET</td><td>Predicted or precision orbit;0=precision orbit used;1=predicted orbit used;2=on-board orbit used<table><tr><td>flag values</td><td>flag_meanings</td></tr><tr><td>0, 1, 2</td><td>precision_orbit_used predicted_orbit_used on-board_orbit_used</td></tr></table></td><td>Rel 3 GLAS Binar Data</td></tr>
<tr><td>orbit_man_flg</td><td>INTEGER_1 (UNLIMITED)</td><td>POD flag (Orbit Flag) (NOT_SET)</td><td>NOT_SET</td><td>Maneuvers;0=no maneuvers;1=maneuvers occurred during this record; orbit degraded<table><tr><td>flag values</td><td>flag_meanings</td></tr><tr><td>0, 1</td><td>no_maneuvers maneuvers orbit_degraded</td></tr></table></td><td>Rel 3 GLAS Binar Data</td></tr>
</table>

Label	Datatype (Dimensions)	long_name (standard_name)	units	description	sour
orbit_model_flg	INTEGER_1 (UNLIMITED)	POD flag (Orbit Flag) (NOT_SET)	NOT_SET	Model problems;0=no model problems;1=model problems; orbit RMS > 5 cm; required accuracy not met flag values: 0, 1 flag_meanings: no_problems problems	Rel 3 GLAS Binar Data
orbit_att_flg	INTEGER_1 (UNLIMITED)	POD flag (Orbit Flag) (NOT_SET)	NOT_SET	Attitude;0=instrument attitude used for orbit;1=modeled attitude used, possible orbit degradation flag values: 0, 1 flag_meanings: instrument_attitude_used modeled_attitude_used possible_orbit_degradation	Rel 3 GLAS Binar Data
orbit_array_flg	INTEGER_1 (UNLIMITED)	POD flag (Orbit Flag) (NOT_SET)	NOT_SET	Solar ray orientation;0=solar ray orientation used from measurement;1=modeled solar ray orientation, possible orbit degradation flag values: 0, 1 flag_meanings: solar_ray_orientation_from_measurement modeled_solar_ray_orientation	Rel 3 GLAS Binar Data
orbit_gps_flg	INTEGER_1 (UNLIMITED)	POD flag (Orbit Flag) (NOT_SET)	NOT_SET	GPS;0=no GPS data outage;1=GPS data missing from portion of this record, possible degradation flag values: 0, 1 flag_meanings: no_GPS_data_outage GPS_data_missing	Rel 3 GLAS Binar Data
att_offnadir_flg	INTEGER_1 (UNLIMITED)	Attitude Flag 1 (NOT_SET)	NOT_SET	Off-nadir angle; 0=off-nadir angle within limits;1=large off-nadir angle flag values: 0, 1 flag_meanings: off-nadir_angle_within_limits large_off-nadir_angle	Rel 3 GLAS Binar Data
att_oceansw_flg	INTEGER_1 (UNLIMITED)	Attitude Flag 1 (NOT_SET)	NOT_SET	Ocean sweep;0=non-ocean sweep, 1=within time frame of ocean sweep flag values: 0, 1 flag_meanings: non-ocean_sweep ocean_sweep	Rel 3 GLAS Binar Data

<table>
<tr><th>Label</th><th>Datatype (Dimensions)</th><th>long_name (standard_name)</th><th>units</th><th>description</th><th>sour</th></tr>
<tr><td>att_pointing_flg</td><td>INTEGER_1 (UNLIMITED)</td><td>Attitude Flag 1 (NOT_SET)</td><td>NOT_SET</td><td>Target of opportunity off-pointing;0=not within target of opportunity off-pointing 1=within time of target of opportunity off-pointing
<table><tr><td>flag values</td><td>flag_meanings</td></tr><tr><td>0, 1</td><td>not_TOO TOO</td></tr></table></td><td>Rel 3
GLAS
Binar
Data</td></tr>
<tr><td>att_steering_flg</td><td>INTEGER_1 (UNLIMITED)</td><td>Attitude Flag 1 (NOT_SET)</td><td>NOT_SET</td><td>Steering to reference track;0=not within target of opportunity off-pointing 1=within time of target of opportunity off-pointing
<table><tr><td>flag values</td><td>flag_meanings</td></tr><tr><td>0, 1</td><td>not_TOO TOO</td></tr></table></td><td>Rel 3
GLAS
Binar
Data</td></tr>
<tr><td>att_actual_flg</td><td>INTEGER_1 (UNLIMITED)</td><td>Attitude Flag 1 (NOT_SET)</td><td>NOT_SET</td><td>0=i_AttFlg_1 through i_AttFlg_3 have been set based on actual data 1=i_AttFlg_1 through i_AttFlg_3 have not been set - IGNORE these flags
<table><tr><td>flag values</td><td>flag_meanings</td></tr><tr><td>0, 1</td><td>actual ignore</td></tr></table></td><td>Rel 3
GLAS
Binar
Data</td></tr>
<tr><td>att_ist_flg</td><td>INTEGER_1 (UNLIMITED)</td><td>Attitude Flag 1 (NOT_SET)</td><td>NOT_SET</td><td>IST data;0 = IST data is good 1 = Missing IST for at least a portion of the time of this frame 2 = Noisy IST for at least a portion of the time of this frame 3 = Noisy and missing IST for at least a portion of the time of this frame
<table><tr><td>flag values</td><td>flag_meanings</td></tr><tr><td>0, 1, 2, 3</td><td>IST_data_good IST_missing IST_noisy IST_noisy_and_missing</td></tr></table></td><td>Rel 3
GLAS
Binar
Data</td></tr>
<tr><td>att_gyro_flg</td><td>INTEGER_1 (UNLIMITED)</td><td>Attitude Flag 1 (NOT_SET)</td><td>NOT_SET</td><td>GYRO data;0 = GYRO data is good 1 = Missing GYRO for at least a portion of the time of this frame 2 = Noisy GYRO for at least a portion of the time of this frame 3 = Noisy and missing GYRO for at least a portion of the time of this frame
<table><tr><td>flag values</td><td>flag_meanings</td></tr><tr><td>0, 1, 2, 3</td><td>GYRO_data_good GYRO_data_missing GYRO_data_noisy GYRO_data_noisy_and_missing</td></tr></table></td><td>Rel 3
GLAS
Binar
Data</td></tr>
</table>

Label	Datatype (Dimensions)	long_name (standard_name)	units	description	sour
att_lrs_flg	INTEGER_1 (UNLIMITED)	Attitude Flag 1 (NOT_SET)	NOT_SET	LRS Data;0 = LRS data good, consists of star, laser and CRS 1 = LRS data good, but no star data for at least a portion of this frame 2 = LRS data good, but no laser data for at least a portion of this frame 3 = LRS data good, but no CRS data for at least a portion of this frame 4 = LRS data good, but only CRS data for at least a portion of this frame 5 = LRS data good, but only laser data for at least a portion of this frame 6 = LRS data good, but only star data for at least a portion of this frame 7 = Missing LRS for at least a portion of the time of this frame flag values: 0, 1, 2, 3, 4, 5, 6, 7 flag_meanings: LRS_data_good LRS_data_good_but_no_star_data LRS_data_good_but_no_laser_data LRS_data_good_but_no_CRS_data LRS_data_good_but_only_some_CRS_data LRS_data_good_but_only_some_laser_data LRS_data_good_but_only_some_star_data some_missing_LRS_data	Rel 3 GLAS Binar Data
i_LidarQF	INTEGER_1 (UNLIMITED)	Lidar Frame quality flag (NOT_SET)	NOT_SET	Lidar frame quality flag. 0=good data, 1=data unsuitable for L2 processing due to weak 532 laser energy or high background. flag values: 0, 1 flag_meanings: good unsuitable	Rel 3 GLAS Binar Data

Group: Data_1HZ/Flags

This group contains flags indicating the quality or suitability of data.

Label	Datatype (Dimensions)	long_name (standard_name)	units	description	source	coordinates
surf_ld_flg	INTEGER_1 (UNLIMITED)	Region Type (NOT_SET)	NOT_SET	Region type;0=no Land;1=Land	Rel 33 GLAS Binary Data	DS_UTCTime_1
surf_si_flg	INTEGER_1 (UNLIMITED)	Region Type (NOT_SET)	NOT_SET	Region type;0=no Sea Ice;1=Sea Ice	Rel 33 GLAS Binary Data	DS_UTCTime_1
surf_oc_flg	INTEGER_1 (UNLIMITED)	Region Type (NOT_SET)	NOT_SET	Region type;0=no Ocean;1=Ocean	Rel 33 GLAS Binary Data	DS_UTCTime_1
surf_is_flg	INTEGER_1 (UNLIMITED)	Region Type (NOT_SET)	NOT_SET	Region type;0=no Ice Sheet;1=Ice Sheet	Rel 33 GLAS Binary Data	DS_UTCTime_1

Group: Data_1HZ/Angle

This group contains beam pointing angle information.

Label	Datatype (Dimensions)	long_name (standard_name)	units	description	source	coordinates

Label	Datatype (Dimensions)	long_name (standard_name)	units	description	source	coordinates
r_beam_azimuth	REAL (UNLIMITED)	Azimuth (NOT_SET)	degrees	Azimuth (Az) is the direction clockwise from north of the laser beam as seen by an observer at the laser ground spot.	Rel 33 GLAS Binary Data	DS_UTCTime_1
r_beam_coelev	REAL (UNLIMITED)	Co-elevation (NOT_SET)	degrees	Co-elevation (CE) is direction from vertical of the laser beam as seen by an observer located at the laser ground spot.	Rel 33 GLAS Binary Data	DS_UTCTime_1
r_pad_angle	REAL (UNLIMITED)	PAD Angle (NOT_SET)	degrees	Attitude angle calculated from PAD and POD.	Rel 33 GLAS Binary Data	DS_UTCTime_1

Group: Data_1HZ/Reflectivity

This group contains reflectivity information.

Label	Datatype (Dimensions)	long_name (standard_name)	units	description	source	coordinates
r_SolAng	REAL (UNLIMITED)	Solar Angle (NOT_SET)	Degrees	Solar Angle above or below the plane tangent to the ellipsoid surface at the laser spot. Positive values mean the sun is above the horizon, while negative values mean it is below the horizon. The effect of atmospheric refraction is not included. This is a low-precision value, with approximately one degree accuracy.	Rel 33 GLAS Binary Data	DS_UTCTime_1

Group: Data_1HZ/MRCloudLayer

This group contains the 1HZ medium resolution cloud layer parameters.

Label	Datatype (Dimensions)	long_name (standard_name)	units	description
r_cld1_bot	REAL (UNLIMITED, 10)	Medium Resolution Cloud Bottom at 532 nm (NOT_SET)	meters	Medium resolution cloud bottom heights for layers which were selected for optical processing at 1hz, 1 per layer, 10 layers
r_cld1_top	REAL (UNLIMITED, 10)	Medium Resolution Cloud Top at 532 nm (NOT_SET)	meters	Medium resolution cloud top heights for layers which were selected for optical processing at 1hz, 1 per layer, 10 layers
r_cld1_sval1	REAL (UNLIMITED, 10)	Cloud true S values from table (NOT_SET)	sr	Cloud true extinction to backscatter ratios calculated from meteorological and geographic data. The first set of 2*10 bytes refers to the 10 possible layers at the first second.
r_cld1_sval2	REAL (UNLIMITED, 10)	Cloud true S values from equation calc. (NOT_SET)	sr	Cloud true extinction to backscatter ratios calculated from optically thin layer considerations. The first set of 2*10 bytes refers to the 10 possible layers at the first second.

Label	Datatype (Dimensions)	long_name (standard_name)	units	description
r_MRg_cldbot_pres	REAL (UNLIMITED, 10)	Medium Resolution 532 nm Cloud Bottom Pressure (NOT_SET)	hPa	Medium Resolution 532 nm Cloud Bottom Pressure
r_MRg_cldbot_relh	REAL (UNLIMITED, 10)	Medium Resolution 532 nm Cloud Bottom Relative Humidity (NOT_SET)	percent	Medium Resolution 532 nm Cloud Bottom Relative Humidity
r_MRg_cldbot_temp	REAL (UNLIMITED, 10)	Medium Resolution 532 nm Cloud Bottom Temperature (NOT_SET)	degree Celsius	Medium Resolution 532 nm Cloud Bottom Temperature
r_MRg_cldtop_pres	REAL (UNLIMITED, 10)	Medium Resolution 532 nm Cloud Top Pressure (NOT_SET)	hPa	Medium Resolution 532 nm Cloud Top Pressure
r_MRg_cldtop_relh	REAL (UNLIMITED, 10)	Medium Resolution 532 nm Cloud Top Relative Humidity (NOT_SET)	percent	Medium Resolution 532 nm Cloud Top Relative Humidity
r_MRg_cldtop_temp	REAL (UNLIMITED, 10)	Medium Resolution 532 nm Cloud Top Temperature (NOT_SET)	degree Celsius	Medium Resolution 532 nm Cloud Top Temperature
i_cld1_sval_uf	INTEGER_1 (UNLIMITED, 10)	Cloud true S values use flag (NOT_SET)	NOT_SET	Cloud true S values use flag for 10 layers at 1 Hz for 4 sec. First 40 bits (bytes 16-20) are for 10 layers of the first second, last 40 bits (bytes 1 - 5) are for 10 layers of the fourth second. Stipulates which extinction to backscatter ratio was used in processing (1=default, 2=calculated). 15 denotes no layer detected (invalid). flag values: 1, 2, 15 flag_meanings: `default calculated no_layer_detected`

<table>
<tr><th>Label</th><th>Datatype (Dimensions)</th><th>long_name (standard_name)</th><th>units</th><th>description</th></tr>
<tr><td>i_cld1_bs_uf</td><td>INTEGER_1 (UNLIMITED, 10)</td><td>Cloud backscatter use flag for 532 nm (NOT_SET)</td><td>NOT_SET</td><td>Use Flag - 0 = no saturation detected; 1 = one or two bins were saturated with 1064 nm conversion performed; 2 = at least three bins were saturated with 1064 nm conversion performed; 3 = at least one but less than four bins were saturated with no conversion performed; 4 = four or more bins were saturated with no conversion performed; 15 = invalid

<table><tr><td>flag values</td><td>flag_meanings</td></tr><tr><td>0, 1, 2, 3, 4, 15</td><td>no_saturation_detected
one_or_two_bins_saturated_1064nm_conversion
at_least_three_bins_saturated_1064nm_conversion
one_to_three_bins_saturated_no_conversion
four_or_more_bins_saturated_no_conversion
invalid</td></tr></table></td></tr>
<tr><td>i_cld1_bs_qf</td><td>INTEGER_1 (UNLIMITED, 10)</td><td>Cloud backscatter quality flag for 532 nm (NOT_SET)</td><td>NOT_SET</td><td>Quality Flag: 0 = 0-5 % Error; 1 = 5-10 % Error; 2 = 10-15 % Error; 3 = 15-20 % Error; 4 = 20-25 % Error; 5 = 25-30 % Error; 6 = 30-35 % Error; 7 = 35-40 % Error; 8 = 40-45 % Error; 9 = 45-50 % Error; 10 = 50-55 % Error; 11 = 55-60 % Error; 12 = 60-65 % Error; 13 = 65-70 % Error; 14 = 70 and greater % Error; 15 = Unable to calculate error

<table><tr><td>flag values</td><td>flag_meanings</td></tr><tr><td>0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15</td><td>0-5_pct_err 5-10_pct_err 10-15_pct_err 15-20_pct_err 20-25_pct_err 25-30_pct_err 30-35_pct_err 35-40_pct_err 40-45_pct_err 45-50_pct_err 50-55_pct_err 55-60_pct_err 60-65_pct_err 65-70_pct_err 70_and_greater_pct_err unable_to_calc_err</td></tr></table></td></tr>
<tr><td>i_cld1_ext_uf</td><td>INTEGER_1 (UNLIMITED, 10)</td><td>Cloud extinction use flag at 532 nm (NOT_SET)</td><td>NOT_SET</td><td>Use Flag - 00 = less than or equal to -75.0 C; 01 = -75.0 through -68.5; 02 = -68.5 through -62.0; 03 = -62.0 through -55.5; 04 = -55.5 through -49.0; 05 = -49.0 through -32.5; 06 = -32.5 through -26.0; 07 = -26.0 through -19.5; 08 = -19.5 through -13.0; 09 = -13.0 through -6.5; 10 = -6.5 through 0.0; 11 = 0.0 through 6.5; 12 = 6.5 through 13.0; 13 = 13.0 through 19.5; 14 = greater than 19.5 C; 15 = invalid

<table><tr><td>flag values</td><td>flag_meanings</td></tr><tr><td>0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15</td><td>up_to_-75_C -75_to_-68.5 -68.5_to_-62.0 -62_to_-55.5 -55.5_to_-49 -49_to_-32.5 -32.5_to_-26 -26_to_-19.5 -19.5_to_-13 -13_to_-6.5 -6.5_to_0 0_to_6.5 6.5_to_13 13_to_19.5 greater_than_19.5_C invalid</td></tr></table></td></tr>
</table>

Label	Datatype (Dimensions)	long_name (standard_name)	units	description
i_cld1_ext_qf	INTEGER_1 (UNLIMITED, 10)	Cloud extinction quality flag at 532 nm (NOT_SET)	NOT_SET	Quality Flag Values: 0 = 0-5 % Error; 1 = 5-10 % Error; 2 = 10-15 % Error; 3 = 15-20 % Error; 4 = 20-25 % Error; 5 = 25-30 % Error; 6 = 30-35 % Error; 7 = 35-40 % Error; 8 = 40-45 % Error; 9 = 45-50 % Error; 10 = 50-55 % Error; 11 = 55-60 % Error; 12 = 60-65 % Error; 13 = 65-70 % Error; 14 = 70 and greater % Error; 15 = Unable to calculate error flag values: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 flag_meanings: `0-5_pct_err 5-10_pct_err 10-15_pct_err 15-20_pct_err 20-25_pct_err 25-30_pct_err 30-35_pct_err 35-40_pct_err 40-45_pct_err 45-50_pct_err 50-55_pct_err 55-60_pct_err 60-65_pct_err 65-70_pct_err 70_and_greater_pct_err unable_to_calc_err`

/ANCILLARY_DATA

/ANCILLARY_DATA

Attribute	Example Value
glas_osc_rate	1.000000023
glas_osc_rate_date	2003-10-30
glas_osc_rate_time	00:00:00
sc_osc_rate	0.99999998854809
sc_osc_rate_date	2003-10-30
sc_osc_rate_time	00:00:00
internal_time_delay	0.0000151100
internal_time_delay_date	2003-10-30
internal_time_delay_time	00:00:00
internal_range_delay	9.5560
internal_range_delay_date	2003-10-30
internal_range_delay_time	00:00:00
Additional_Attribute	`SP_ICE_PATH_NO, SP_ICE_GLAS_StartBlock, SP_ICE_GLAS_EndBlock, ReferenceOrbit, Track, PercentGroundHit, Cycle, Instance`
internal_range_delay_desc	Internal range calibration bias determined during GLAS instrument integration testing and validated in-flight, meters.

Attribute	Example Value
internal_time_delay_desc	Internal time calibration bias determined during GLAS instrument integration testing and validated in-flight, seconds.

/METADATA

/METADATA

Attribute	Example Value
description	This group contains structured, computer-parseable ECHO-style collection and inventory-level metadata.
HDFVersion	HDF5 1.8.9
ControlFile	cf_name=gla10_test.ctl

/METADATA/COLLECTIONMETADATA

Attribute	Example Value
DLLName	libDsESDTGlGLASPoly.001Sh.so
GranuleTimeDuration	81280
SpatialSearchType	Orbit
DataFileFormat	HDF5
ScienceMimeType	application/x-hdfeos
BrowseMimeType	application/x-hdfeos
BrowseOnlineMimeType	image/jpeg
ShortName	GLAH10
LongName	GLAS/ICESat L2 Global Aerosol Vertical Structure Data (HDF5)
CollectionDescription	The level 2 aerosol vertical structure data contains cloud and aerosol backscatter and extinction cross section profiles provided at a minimum of once per 4 seconds. Data granules will contain approximately 23 hours (14 orbits) of data.
VersionID	33
CitationforExternalPublication	The data used in this study were produced by the GLAS Science Team at the ICESat Science Investigator-led Processing System (I-SIPS) at NASA/GSFC. The data archive site is the NSIDC DAAC.
CollectionState	In Work
MaintenanceandUpdateFrequency	Daily
AccessConstraints	Data may not be reproduced or distributed without including the CitationForExternalPublication for this product included in this Metadata. Data may not be distributed in an altered form without the written permission of the GLAS Science Team.
TemporalKeyword	Day

Attribute	Example Value
SpatialKeyword	Global

/METADATA/COLLECTIONMETADATA/AdditionalAttributes

Attribute	Example Value
PercentGroundHit	AdditionalAttributesContainer
Track	AdditionalAttributesContainer
Instrument_State	AdditionalAttributesContainer
ReferenceOrbit	AdditionalAttributesContainer
SP_ICE_PATH_NO	AdditionalAttributesContainer
SP_ICE_GLAS_StartBlock	AdditionalAttributesContainer
SP_ICE_GLAS_EndBlock	AdditionalAttributesContainer
Cycle	AdditionalAttributesContainer
Instance	AdditionalAttributesContainer
Instrument_State_Date	AdditionalAttributesContainer
Instrument_State_Time	AdditionalAttributesContainer
Timing_Bias	AdditionalAttributesContainer
Timing_Bias_Date	AdditionalAttributesContainer
Timing_Bias_Time	AdditionalAttributesContainer
identifier_product_doi	AdditionalAttributesContainer
identifier_file_uuid	AdditionalAttributesContainer
identifier_product_doi_authority	AdditionalAttributesContainer

/METADATA/COLLECTIONMETADATA/AdditionalAttributes/Cycle

Attribute	Example Value
AdditionalAttributeDatatype	int
AdditionalAttributeDescription	A count of the number of exact repeats of this reference orbit.
AdditionalAttributeName	`Cycle`
ParameterUnitsofMeasurement	counts
ParameterRangeBegin	0
ParameterRangeEnd	250

/METADATA/COLLECTIONMETADATA/AdditionalAttributes/Instance

Attribute	Example Value
AdditionalAttributeDatatype	int
AdditionalAttributeDescription	The number of times that we have returned to a specific reference orbit.
AdditionalAttributeName	Instance
ParameterUnitsofMeasurement	counts
ParameterRangeBegin	1
ParameterRangeEnd	99

/METADATA/COLLECTIONMETADATA/AdditionalAttributes/Instrument_State

Attribute	Example Value
AdditionalAttributeDatatype	int
AdditionalAttributeDescription	Flag word that indicates which redundant units (laser, detector, oscillator) of the GLAS instrument are in operation.
AdditionalAttributeName	Instrument_State
ParameterUnitsofMeasurement	Flag word
ParameterRangeBegin	0
ParameterRangeEnd	5

/METADATA/COLLECTIONMETADATA/AdditionalAttributes/Instrument_State_Date

Attribute	Example Value
AdditionalAttributeDatatype	date
AdditionalAttributeDescription	The date that corresponds to the first valid Instrument_State. There is a maximum of two per granule.
AdditionalAttributeName	Instrument_State_Date

/METADATA/COLLECTIONMETADATA/AdditionalAttributes/Instrument_State_Time

Attribute	Example Value
AdditionalAttributeDatatype	time
AdditionalAttributeDescription	The time that corresponds to the first valid Instrument_State. There is a maximum of two per granule.
AdditionalAttributeName	Instrument_State_Time

/METADATA/COLLECTIONMETADATA/AdditionalAttributes/PercentGroundHit

Attribute	Example Value

Attribute	Example Value
AdditionalAttributeDatatype	float
AdditionalAttributeDescription	Percent of data for this granule that had a detected ground return of the transmitted laser pulse.
AdditionalAttributeName	PercentGroundHit
ParameterUnitsofMeasurement	Percent
ParameterRangeBegin	0.0
ParameterRangeEnd	100.0
ParameterValueAccuracy	1
ParameterMeasurementResolution	1

/METADATA/COLLECTIONMETADATA/AdditionalAttributes/ReferenceOrbit

Attribute	Example Value
AdditionalAttributeDatatype	int
AdditionalAttributeDescription	Assigned number for which exact orbital elements describe the exact repeat orbit pattern.
AdditionalAttributeName	ReferenceOrbit
ParameterUnitsofMeasurement	Assigned number
ParameterRangeBegin	1
ParameterRangeEnd	30000

/METADATA/COLLECTIONMETADATA/AdditionalAttributes/SP_ICE_GLAS_EndBlock

Attribute	Example Value
AdditionalAttributeDatatype	int
AdditionalAttributeDescription	Integer number within GLAS coverage scheme in which granule data ends.
AdditionalAttributeName	SP_ICE_GLAS_EndBlock
ParameterRangeBegin	1
ParameterRangeEnd	360

/METADATA/COLLECTIONMETADATA/AdditionalAttributes/SP_ICE_GLAS_StartBlock

Attribute	Example Value
AdditionalAttributeDatatype	int
AdditionalAttributeDescription	Integer number within GLAS coverage scheme in which granule data starts.
AdditionalAttributeName	SP_ICE_GLAS_StartBlock

Attribute	Example Value
ParameterRangeBegin	1
ParameterRangeEnd	360

/METADATA/COLLECTIONMETADATA/AdditionalAttributes/SP_ICE_PATH_NO

Attribute	Example Value
AdditionalAttributeDatatype	int
AdditionalAttributeDescription	Number which represents the GLAS path number.
AdditionalAttributeName	SP_ICE_PATH_NO
ParameterRangeBegin	1
ParameterRangeEnd	32768

/METADATA/COLLECTIONMETADATA/AdditionalAttributes/Timing_Bias

Attribute	Example Value
AdditionalAttributeDatatype	int
AdditionalAttributeDescription	The time tag error determined by the calibration team that was added to the time tags to compute the true time of data as provided on the granule.
AdditionalAttributeName	Timing_Bias
ParameterUnitsofMeasurement	Microseconds
ParameterRangeBegin	-1000000
ParameterRangeEnd	+1000000

/METADATA/COLLECTIONMETADATA/AdditionalAttributes/Timing_Bias_Date

Attribute	Example Value
AdditionalAttributeDatatype	date
AdditionalAttributeDescription	The date that corresponds to the first valid Timing_Bias. There are a maximum of two per granule.
AdditionalAttributeName	Timing_Bias_Date

/METADATA/COLLECTIONMETADATA/AdditionalAttributes/Timing_Bias_Time

Attribute	Example Value
AdditionalAttributeDatatype	time
AdditionalAttributeDescription	The time that corresponds to the first valid Timing_Bias. There are a maximum of two per granule.
AdditionalAttributeName	Timing_Bias_Time

/METADATA/COLLECTIONMETADATA/AdditionalAttributes/Track

Attribute	Example Value
AdditionalAttributeDatatype	int
AdditionalAttributeDescription	The unique number assigned for each repeat ground track (one orbit) of the reference orbit.
AdditionalAttributeName	Track
ParameterUnitsofMeasurement	counts
ParameterRangeBegin	0
ParameterRangeEnd	3000

/METADATA/COLLECTIONMETADATA/AdditionalAttributes/identifier_file_uuid

Attribute	Example Value
AdditionalAttributeDatatype	varchar
AdditionalAttributeDescription	Universally unique identifier for this data product's files
AdditionalAttributeName	identifier_file_uuid

/METADATA/COLLECTIONMETADATA/AdditionalAttributes/identifier_product_doi

Attribute	Example Value
AdditionalAttributeDatatype	varchar
AdditionalAttributeDescription	Digital object identifier that uniquely identifies this data product
AdditionalAttributeName	identifier_product_doi

/METADATA/COLLECTIONMETADATA/AdditionalAttributes/identifier_product_doi/InformationContent

Attribute	Example Value
ParameterValue	http://dx.doi.org/10.5067/ICESAT/GLAS/DATA203

/METADATA/COLLECTIONMETADATA/AdditionalAttributes/identifier_product_doi_authority

Attribute	Example Value
AdditionalAttributeDatatype	varchar
AdditionalAttributeDescription	URL of the digital object identifier resolving authority
AdditionalAttributeName	identifier_product_doi_authority

/METADATA/COLLECTIONMETADATA/AdditionalAttributes/identifier_product_doi_authority/InformationContent

Attribute	Example Value

Attribute	Example Value
ParameterValue	http://dx.doi.org/10.5067/ICESAT/GLAS/DATA203

/METADATA/COLLECTIONMETADATA/CSDTDescription

Attribute	Example Value
PrimaryCSDT	n-Dim Array of Records
IndirectReference	tracks/orbits
Implementation	HDF
CSDTComments	Granule contains fourteen orbits of data; nominally 24-hour period.

/METADATA/COLLECTIONMETADATA/CollectionAssociation

Attribute	Example Value
GLA00	CollectionAssociationContainer
GLAH02	CollectionAssociationContainer
GLAH07	CollectionAssociationContainer
GLAH09	CollectionAssociationContainer
GLAH08	CollectionAssociationContainer
GLAH11	CollectionAssociationContainer

/METADATA/COLLECTIONMETADATA/CollectionAssociation/GLA00

Attribute	Example Value
CollectionType	Science Associated
CollectionUse	The initial collection of GLAS instrument data downlinked from the spacecraft.
ShortName	GLA00
VersionID	1

/METADATA/COLLECTIONMETADATA/CollectionAssociation/GLAH02

Attribute	Example Value
CollectionType	Science Associated
CollectionUse	Level 1A atmospheric data product file containing: normalized lidar signals.
ShortName	GLAH02
VersionID	33

/METADATA/COLLECTIONMETADATA/CollectionAssociation/GLAH07

Attribute	Example Value
CollectionType	Input
CollectionUse	Level 1B file containing: calibrated backscatter profiles.
ShortName	GLAH07
VersionID	33

/METADATA/COLLECTIONMETADATA/CollectionAssociation/GLAH08

Attribute	Example Value
CollectionType	Input
CollectionUse	Level 2 file containing: planetary boundary layer heights and aerosol layer top and bottom.
ShortName	GLAH08
VersionID	33

/METADATA/COLLECTIONMETADATA/CollectionAssociation/GLAH09

Attribute	Example Value
CollectionType	Input
CollectionUse	Level 2 file containing: cloud layer top and bottom heights.
ShortName	GLAH09
VersionID	33

/METADATA/COLLECTIONMETADATA/CollectionAssociation/GLAH11

Attribute	Example Value
CollectionType	Science Associated
CollectionUse	Level 2 file containing: cloud and aerosol layer optical depths.
ShortName	GLAH11
VersionID	33

/METADATA/COLLECTIONMETADATA/ContactOrganization

Attribute	Example Value
Data_Originator	ContactOrganizationContainer
Archive	ContactOrganizationContainer

/METADATA/COLLECTIONMETADATA/ContactOrganization/Archive

Attribute	Example Value
Role	Archive
HoursofService	M-F, 8:00am to 5:00pm, Mountain Time
ContactInstructions	For inquiries, contact NSIDC User Services. Primary first level contact.
ContactOrganizationName	NSIDC User Services
StreetAddress	CIRES/NSIDC University of Colorado Campus, Box 449
City	Boulder
StateProvince	Colorado
PostalCode	80309-0449
Country	USA
TelephoneNumber	303-492-2468
TelephoneNumberType	Facsimile
ElectronicMailAddress	nsidc@nsidc.org

/METADATA/COLLECTIONMETADATA/ContactOrganization/Data_Originator

Attribute	Example Value
Role	Data Originator
HoursofService	M-F, 8:00am to 4:30pm Eastern Time
ContactInstructions	Contact by e-mail first
ContactOrganizationName	ICESat Science Investigator-led Processing System (I-SIPS)
StreetAddress	Building 33, NASA Goddard Space Flight Center
City	Greenbelt
StateProvince	Maryland
PostalCode	20771
Country	USA
TelephoneNumber	757-864-1238
TelephoneNumberType	Voice
ElectronicMailAddress	David.W.Hancock@nasa.gov

/METADATA/COLLECTIONMETADATA/ContactPerson

Attribute	Example Value

Attribute	Example Value
Hancock	ContactPersonContainer
Schutz	ContactPersonContainer
Zwally	ContactPersonContainer
DiMarzio	ContactPersonContainer

/METADATA/COLLECTIONMETADATA/ContactPerson/DiMarzio

Attribute	Example Value
Role	Producer
HoursofService	M-F, 8:00am to 4:30pm Eastern Time
ContactInstructions	None
ContactJobPosition	Deputy Science Software Development Manager
ContactFirstName	John
ContactMiddleName	P
ContactLastName	DiMarzio
StreetAddress	Building 33, Rm. B-209D, NASA/GSFC
City	Greenbelt
StateProvince	Maryland
PostalCode	20771
Country	USA
TelephoneNumber	301-614-5893
TelephoneNumberType	Voice
ElectronicMailAddress	John.P.Dimarzio.1@nasa.gov

/METADATA/COLLECTIONMETADATA/ContactPerson/Hancock

Attribute	Example Value
Role	Data Originator
HoursofService	M-F, 8:00am to 4:30pm. Eastern Time.
ContactInstructions	None
ContactJobPosition	Science Software Development Manager.
ContactFirstName	David

Attribute	Example Value
ContactMiddleName	W.
ContactLastName	Hancock
StreetAddress	Building N-159, NASA/GSFC Wallops Flight Facility.
City	Wallops Island
StateProvince	Virginia
PostalCode	23337
Country	USA
TelephoneNumber	757-824-1238
TelephoneNumberType	Voice
ElectronicMailAddress	David.W.Hancock@nasa.gov

/METADATA/COLLECTIONMETADATA/ContactPerson/Schutz

Attribute	Example Value
Role	Investigator
HoursofService	M-F, 8:00am to 4:30pm Central Time
ContactInstructions	None
ContactJobPosition	GLAS Science Team Leader
ContactFirstName	Bob
ContactMiddleName	E
ContactLastName	Schutz
StreetAddress	3925 W. Braker Lane, Center for Space Research
City	Austin
StateProvince	Texas
PostalCode	78759-5321
Country	USA
TelephoneNumber	512-471-4267
TelephoneNumberType	Voice
ElectronicMailAddress	schutz@utcsr.ae.utexas.edu

/METADATA/COLLECTIONMETADATA/ContactPerson/Zwally

Attribute	Example Value
Role	Producer
HoursofService	M-F, 8:00am to 4:30pm Eastern Time
ContactInstructions	None.
ContactJobPosition	ICESat Project Scientist
ContactFirstName	Jay
ContactLastName	Zwally
StreetAddress	Building 33, Rm A-217
City	Greenbelt
StateProvince	Maryland
PostalCode	20771
Country	USA
TelephoneNumber	301-614-5643
TelephoneNumberType	Voice
ElectronicMailAddress	Jay.Zwally@nasa.gov

/METADATA/COLLECTIONMETADATA/DisciplineTopicParameters

Attribute	Example Value
Atmosphere	DisciplineTopicParametersContainer

/METADATA/COLLECTIONMETADATA/DisciplineTopicParameters/Atmosphere

Attribute	Example Value
ECSDisciplineKeyword	Earth Science
ECSTopicKeyword	Atmosphere
ECSTermKeyword	Atmospheric Radiation
ECSVariableKeyword	Transmittance

/METADATA/COLLECTIONMETADATA/DisciplineTopicParameters/Atmosphere/ECSParameter

Attribute	Example Value
ECSParameterKeyword	Aerosol Extinction Cross Section Profile

/METADATA/COLLECTIONMETADATA/ECSCollection

Attribute	Example Value
RevisionDate	2012-06-25
SuggestedUsage	GLAH10 contains cloud and aerosol backscatter and the extinction cross section data for researchers. Cloud data are provided at 1Hz and aerosol data will be provided at .25Hz. Each GLAH10 file was created from an equivalent GLA10 binary file. The data used to create the GLAH10 values are contained in the equivalent GLAHxx files for the GLAxx files. See the provenance metadata for the creation of the GLA10.
ProcessingCenter	GSFC I-SIPS
ArchiveCenter	NSIDC
VersionDescription	Initial Version
DatasetDisclaimerPointer	http://nsidc.org/data/icesat/disclaimer.html
ECSCollectionGuidePointer	https://nsidc.org/data/glah02-glah07-glah08-glah09-glah10-glah11/versions/33/documentation
ECSCollectionGuidePointerComment	Guide Document for this product at NSIDC
MiscellaneousInformationPointer	http://nsidc.org/data/icesat/
MiscellaneousInformationPointerComment	GLAS Product page at NSIDC

/METADATA/COLLECTIONMETADATA/Platform

Attribute	Example Value
ICESat	PlatformContainer

/METADATA/COLLECTIONMETADATA/Platform/ICESat

Attribute	Example Value
PlatformShortName	ICESat
PlatformLongName	Ice, Cloud, and Land Elevation Satellite
PlatformType	Spacecraft

/METADATA/COLLECTIONMETADATA/Platform/ICESat/Instrument

Attribute	Example Value
GLAS	InstrumentContainer
GPS	InstrumentContainer

/METADATA/COLLECTIONMETADATA/Platform/ICESat/Instrument/GLAS

Attribute	Example Value
InstrumentShortName	GLAS

Attribute	Example Value
InstrumentLongName	Geoscience Laser Altimeter System
InstrumentTechnique	Laser Altimetry and Light Detection and Radar
NumberofSensors	3

/METADATA/COLLECTIONMETADATA/Platform/ICESat/Instrument/GLAS/InstrumentCharacteristic

Attribute	Example Value
SwathWidth	InstrumentCharacteristicContainer

/METADATA/COLLECTIONMETADATA/Platform/ICESat/Instrument/GLAS/InstrumentCharacteristic/SwathWidth

Attribute	Example Value
InstrumentCharacteristicName	SwathWidth
InstrumentCharacteristicDescription	The width of the sensor scan as the satellite moves along the ground track.
InstrumentCharacteristicDataType	int
InstrumentCharacteristicUnit	kilometers
InstrumentCharacteristicValue	2

/METADATA/COLLECTIONMETADATA/Platform/ICESat/Instrument/GLAS/Sensor

Attribute	Example Value
LA	SensorContainer
PC	SensorContainer
CD	SensorContainer

/METADATA/COLLECTIONMETADATA/Platform/ICESat/Instrument/GLAS/Sensor/CD

Attribute	Example Value
SensorShortName	CD
SensorLongName	Cloud LIDAR
SensorTechnique	Measure of 1064nm return energy in 75m bins from 20km to surface

/METADATA/COLLECTIONMETADATA/Platform/ICESat/Instrument/GLAS/Sensor/CD/SensorCharacteristic

Attribute	Example Value
wavelength	SensorCharacteristicContainer

/METADATA/COLLECTIONMETADATA/Platform/ICESat/Instrument/GLAS/Sensor/CD/SensorCharacteristic/wavelength

Attribute	Example Value
SensorCharacteristicName	wavelength
SensorCharacteristicDescription	detector
SensorCharacteristicDataType	varchar
SensorCharacteristicUnit	nanometer
SensorCharacteristicValue	1064 nm

/METADATA/COLLECTIONMETADATA/Platform/ICESat/Instrument/GLAS/Sensor/LA

Attribute	Example Value
SensorShortName	LA
SensorLongName	Laser Altimeter
SensorTechnique	Exact Measurement of Time between Transmit Pulse and receive ground return

/METADATA/COLLECTIONMETADATA/Platform/ICESat/Instrument/GLAS/Sensor/LA/SensorCharacteristic

Attribute	Example Value
wavelength	SensorCharacteristicContainer
waveform	SensorCharacteristicContainer

/METADATA/COLLECTIONMETADATA/Platform/ICESat/Instrument/GLAS/Sensor/LA/SensorCharacteristic/waveform

Attribute	Example Value
SensorCharacteristicName	waveform
SensorCharacteristicDescription	digitizer
SensorCharacteristicDataType	varchar
SensorCharacteristicUnit	counts
SensorCharacteristicValue	0-255

/METADATA/COLLECTIONMETADATA/Platform/ICESat/Instrument/GLAS/Sensor/LA/SensorCharacteristic/wavelength

Attribute	Example Value
SensorCharacteristicName	wavelength
SensorCharacteristicDescription	transmission
SensorCharacteristicDataType	varchar
SensorCharacteristicUnit	nanometer

Attribute	Example Value
SensorCharacteristicValue	1064 nm

/METADATA/COLLECTIONMETADATA/Platform/ICESat/Instrument/GLAS/Sensor/PC

Attribute	Example Value
SensorShortName	PC
SensorLongName	Photon Counter for the 532 nm Aerosol Returns
SensorTechnique	Counting of 532nm photon return in 75m bins 40km to surface

/METADATA/COLLECTIONMETADATA/Platform/ICESat/Instrument/GLAS/Sensor/PC/SensorCharacteristic

Attribute	Example Value
wavelength	SensorCharacteristicContainer

/METADATA/COLLECTIONMETADATA/Platform/ICESat/Instrument/GLAS/Sensor/PC/SensorCharacteristic/wavelength

Attribute	Example Value
SensorCharacteristicName	wavelength
SensorCharacteristicDescription	detector
SensorCharacteristicDataType	varchar
SensorCharacteristicUnit	nanometer
SensorCharacteristicValue	532nm

/METADATA/COLLECTIONMETADATA/Platform/ICESat/Instrument/GPS

Attribute	Example Value
InstrumentShortName	GPS
InstrumentLongName	Global Positioning System Receiver
InstrumentTechnique	Radionavigation
NumberofSensors	1

/METADATA/COLLECTIONMETADATA/Platform/ICESat/Instrument/GPS/Sensor

Attribute	Example Value
GPS_Receiver	SensorContainer

/METADATA/COLLECTIONMETADATA/Platform/ICESat/Instrument/GPS/Sensor/GPS_Receiver

Attribute	Example Value

Attribute	Example Value
SensorShortName	GPS Receiver
SensorLongName	Dual frequency GPS receiver
SensorTechnique	Pseudorange and carrier phase

/METADATA/COLLECTIONMETADATA/Platform/ICESat/PlatformCharacteristic

Attribute	Example Value
OrbitInclination	PlatformCharacteristicContainer
OrbitalPeriod	PlatformCharacteristicContainer

/METADATA/COLLECTIONMETADATA/Platform/ICESat/PlatformCharacteristic/OrbitInclination

Attribute	Example Value
PlatformCharacteristicName	OrbitInclination
PlatformCharacteristicDescription	Angle between the orbit plane and the Earth's equatorial plane
PlatformCharacteristicDataType	float
PlatformCharacteristicUnit	Degrees
PlatformCharacteristicValue	94.0

/METADATA/COLLECTIONMETADATA/Platform/ICESat/PlatformCharacteristic/OrbitalPeriod

Attribute	Example Value
PlatformCharacteristicName	OrbitalPeriod
PlatformCharacteristicDescription	Orbital period in decimal minutes.
PlatformCharacteristicDataType	float
PlatformCharacteristicUnit	Minutes
PlatformCharacteristicValue	96.7

/METADATA/COLLECTIONMETADATA/ProcessingLevel

Attribute	Example Value
ProcessingLevelDescription	Geophysical Quantities at the sensor resolution or geolocated
ProcessingLevelID	2

/METADATA/COLLECTIONMETADATA/Review

Attribute	Example Value

Attribute	Example Value
ScienceReviewDate	2001-03-04
ScienceReviewStatus	QA at DAACs
FutureReviewDate	2001-09-04

/METADATA/COLLECTIONMETADATA/Spatial

Attribute	Example Value
SpatialCoverageType	Horizontal
WestBoundingCoordinate	-180.0
NorthBoundingCoordinate	90.0
EastBoundingCoordinate	180.0
SouthBoundingCoordinate	-90.0

/METADATA/COLLECTIONMETADATA/StorageMediumClass

Attribute	Example Value
StorageMedium	Online

/METADATA/COLLECTIONMETADATA/Temporal

Attribute	Example Value
TimeType	UTC
DateType	J2000
TemporalRangeType	Continuous Range
PrecisionofSeconds	2
EndsatPresentFlag	Y
RangeBeginningDate	2003-01-13
RangeBeginningTime	00:00:00
RangeEndingDate	2010-01-13
RangeEndingTime	00:00:00

/METADATA/INVENTORYMETADATA

Attribute	Example Value
PGEVersion	Version 1.0

Attribute	Example Value
ShortName	GLAH10
VersionID	33
RangeBeginningTime	01:51:38
RangeEndingTime	00:24:45
RangeBeginningDate	2003-11-18
RangeEndingDate	2003-11-19

/METADATA/INVENTORYMETADATA/ECSDataGranule

Attribute	Example Value
ReprocessingPlanned	no further update anticipated
ReprocessingActual	reprocessed
LocalGranuleID	GLAH10_633_2103_002_0407_0_01_0001.H5
ProductionDateTime	2012-12-20T20:27:46
LocalVersionID	33

/METADATA/INVENTORYMETADATA/InputGranule

Attribute	Example Value
InputPointer	gla10_test.ctl, tai-utc.dat, GLA10_633_2103_002_0407_0_01_0001.P0310, DsESDTGlGLAH10.033.desc

/METADATA/INVENTORYMETADATA/MeasuredParameter

Attribute	Example Value
ParameterName	Cloud_Extinction_Cross_Section_Profile, Aerosol_Backscatter_Cross_SectionProfile

/METADATA/INVENTORYMETADATA/OrbitCalculatedSpatialDomain

Attribute	Example Value
OrbitNumber	4604, 4605, 4606, 4607, 4608, 4609, 4610, 4611, 4612, 4613, 4614, 4615, 4616, 4617, 4618
StartOrbitNumber	4604
StopOrbitNumber	4618
EquatorCrossingLongitude	-103.22287, -127.41792, -151.61336, -175.8089, 159.99582, 135.80128, 111.6064, 87.41001, 63.21418, 39.01927, 14.825027, -9.368591, -33.562866, -57.758118, -81.95212
EquatorCrossingTime	01:38:10, 03:14:50, 04:51:29, 06:28:07, 08:04:46, 09:41:25, 11:18:05, 12:54:44, 14:31:22, 16:08:02, 17:44:42, 19:21:21, 20:58:00, 22:34:38, 00:11:17

Attribute	Example Value
EquatorCrossingDate	2003-11-18, 2003-11-18, 2003-11-18, 2003-11-18, 2003-11-18, 2003-11-18, 2003-11-18, 2003-11-18, 2003-11-18, 2003-11-18, 2003-11-18, 2003-11-18, 2003-11-18, 2003-11-18, 2003-11-19

/METADATA/INVENTORYMETADATA/ProductSpecificMetadata

Attribute	Example Value
PercentGroundHit	0
Track	407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421
Instrument_State	373338
ReferenceOrbit	1
SP_ICE_PATH_NO	3429, 3430, 3431, 3432, 3433, 3434, 3435, 3436, 3437, 3438, 3439, 3440, 3441, 3442, 3443
SP_ICE_GLAS_StartBlock	NOT SET
SP_ICE_GLAS_EndBlock	NOT SET
Cycle	2
Instance	3
Instrument_State_Date	2003-10-30
Instrument_State_Time	00:00:00
identifier_product_doi	10.5067/ICESAT/GLAS/DATA203
identifier_file_uuid	599740C3-F062-4F49-A756-8A0DA37BC95B
identifier_product_doi_authority	http://dx.doi.org/10.5067/ICESAT/GLAS/DATA203

/METADATA/PROVENANCE

/METADATA/PROVENANCE/STEP_1

Attribute	Example Value
ProcessDateTime	2011-06-20T15:27:20

/METADATA/PROVENANCE/STEP_1/ProcessAgent

Attribute	Example Value
Name	glas_atm
Type	2
Version	6.0.1
Description	This process is an instantiation of the GLAS Science Algorithm Software (GSAS) 2 ATBDs.

/METADATA/PROVENANCE/STEP_1/ProcessInput

Attribute	Example Value
Name	GLA02_033_2103_002_0407_0_02_0001.DAT, GLA02_033_2103_002_0409_0_02_0001.DAT, GLA02_033_2103_002_0411_0_02_0001.DAT, GLA02_033_2103_002_0413_0_02_0001.DAT, GLA02_033_2103_002_0415_0_02_0001.DAT, GLA02_033_2103_002_0417_0_02_0001.DAT, GLA02_033_2103_002_0419_0_02_0001.DAT, GLA05_633_2103_002_0407_1_01_0001.DAT, GLA05_633_2103_002_0407_2_01_0001.DAT, GLA05_633_2103_002_0407_3_01_0001.DAT, GLA05_633_2103_002_0407_4_01_0001.DAT, GLA05_633_2103_002_0408_1_01_0001.DAT, GLA05_633_2103_002_0408_2_01_0001.DAT, GLA05_633_2103_002_0408_3_01_0001.DAT, GLA05_633_2103_002_0408_4_01_0001.DAT, GLA05_633_2103_002_0409_1_01_0001.DAT, GLA05_633_2103_002_0409_2_01_0001.DAT, GLA05_633_2103_002_0409_3_01_0001.DAT, GLA05_633_2103_002_0409_4_01_0001.DAT, GLA05_633_2103_002_0410_1_01_0001.DAT, GLA05_633_2103_002_0410_2_01_0001.DAT, GLA05_633_2103_002_0410_3_01_0001.DAT, GLA05_633_2103_002_0410_4_01_0001.DAT, GLA05_633_2103_002_0411_1_01_0001.DAT, GLA05_633_2103_002_0411_2_01_0001.DAT, GLA05_633_2103_002_0411_3_01_0001.DAT, GLA05_633_2103_002_0411_4_01_0001.DAT, GLA05_633_2103_002_0412_1_01_0001.DAT, GLA05_633_2103_002_0412_2_01_0001.DAT, GLA05_633_2103_002_0412_3_01_0001.DAT, GLA05_633_2103_002_0412_4_01_0001.DAT, GLA05_633_2103_002_0413_1_01_0001.DAT, GLA05_633_2103_002_0413_2_01_0001.DAT, GLA05_633_2103_002_0413_3_01_0001.DAT, GLA05_633_2103_002_0413_4_01_0001.DAT, GLA05_633_2103_002_0414_1_01_0001.DAT, GLA05_633_2103_002_0414_2_01_0001.DAT, GLA05_633_2103_002_0414_3_01_0001.DAT, GLA05_633_2103_002_0414_4_01_0001.DAT, GLA05_633_2103_002_0415_1_01_0001.DAT, GLA05_633_2103_002_0415_2_01_0001.DAT, GLA05_633_2103_002_0415_3_01_0001.DAT, GLA05_633_2103_002_0415_4_01_0001.DAT, GLA05_633_2103_002_0416_1_01_0001.DAT, GLA05_633_2103_002_0416_2_01_0001.DAT, GLA05_633_2103_002_0416_3_01_0001.DAT, GLA05_633_2103_002_0416_4_01_0001.DAT, GLA05_633_2103_002_0417_1_01_0001.DAT, GLA05_633_2103_002_0417_2_01_0001.DAT, GLA05_633_2103_002_0417_3_01_0001.DAT, GLA05_633_2103_002_0417_4_01_0001.DAT, GLA05_633_2103_002_0418_1_01_0001.DAT, GLA05_633_2103_002_0418_2_01_0001.DAT, GLA05_633_2103_002_0418_3_01_0001.DAT, GLA05_633_2103_002_0418_4_01_0001.DAT, GLA05_633_2103_002_0419_1_01_0001.DAT, GLA05_633_2103_002_0419_2_01_0001.DAT, GLA05_633_2103_002_0419_3_01_0001.DAT, GLA05_633_2103_002_0419_4_01_0001.DAT, GLA05_633_2103_002_0420_1_01_0001.DAT, GLA05_633_2103_002_0420_2_01_0001.DAT, GLA05_633_2103_002_0420_3_01_0001.DAT, GLA05_633_2103_002_0420_4_01_0001.DAT, ANC01_006_20031117_180000_01_0000.DAT, ANC01_006_20031118_000000_01_0000.DAT, ANC01_006_20031118_060000_01_0000.DAT, ANC01_006_20031118_120000_01_0000.DAT, ANC01_006_20031118_180000_01_0000.DAT, ANC01_006_20031119_000000_01_0000.DAT, ANC01_006_20031117_180000_01_0002.DAT, ANC01_006_20031118_000000_01_0002.DAT, ANC01_006_20031118_060000_01_0002.DAT, ANC01_006_20031118_120000_01_0002.DAT, ANC01_006_20031118_180000_01_0002.DAT, ANC01_006_20031119_000000_01_0002.DAT, ANC01_006_20031117_180000_01_0003.DAT, ANC01_006_20031118_000000_01_0003.DAT, ANC01_006_20031118_060000_01_0003.DAT, ANC01_006_20031118_120000_01_0003.DAT, ANC01_006_20031118_180000_01_0003.DAT, ANC01_006_20031119_000000_01_0003.DAT, ANC01_006_20031117_180000_01_0004.DAT, ANC01_006_20031118_000000_01_0004.DAT, ANC01_006_20031118_060000_01_0004.DAT, ANC01_006_20031118_120000_01_0004.DAT, ANC01_006_20031118_180000_01_0004.DAT, ANC01_006_20031119_000000_01_0004.DAT, ANC01_006_20031117_180000_01_0001.DAT, ANC01_006_20031118_000000_01_0001.DAT, ANC01_006_20031118_060000_01_0001.DAT, ANC01_006_20031118_120000_01_0001.DAT, ANC01_006_20031118_180000_01_0001.DAT, ANC01_006_20031119_000000_01_0001.DAT, ANC01_006_20031117_180000_01_0005.DAT, ANC01_006_20031118_000000_01_0005.DAT, ANC01_006_20031118_060000_01_0005.DAT, ANC01_006_20031118_120000_01_0005.DAT, ANC01_006_20031118_180000_01_0005.DAT, ANC01_006_20031119_000000_01_0005.DAT, ANC01_006_20031117_180000_01_0006.DAT, ANC01_006_20031118_000000_01_0006.DAT, ANC01_006_20031118_060000_01_0006.DAT, ANC01_006_20031118_120000_01_0006.DAT, ANC01_006_20031118_180000_01_0006.DAT, ANC01_006_20031119_000000_01_0006.DAT,

Attribute	Example Value
Type	GLA02, GLA02, GLA02, GLA02, GLA02, GLA02, GLA02, GLA05, ANC01, ANC04, ANC04, anc07, anc07, anc07, anc07, anc07, anc07, anc07, ANC08, ANC08, ANC09, ANC09, anc12, anc12, anc13, anc18, anc25, anc27, anc27, anc30, anc31, ANC33, anc35, ANC36, ANC36, ANC36, ANC36, ANC36, ANC36, ANC36, anc38, anc38, anc38, anc38, anc41, anc45, anc45, anc45, anc45, anc45, anc45, anc45, anc45, anc45, anc45, anc45, anc45, anc45, anc45, anc45
Version	033, 033, 033, 033, 033, 033, 033, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 633, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 006, 007, 007, 033, 033, 033, 033, 033, 033, 033, 015, 015, 076, 076, 004, 004, 006, 001, 005, 001, 001, 004, 004, 001, 001, 033, 033, 033, 033, 033, 033, 033, 005, 005, 005, 005, 009, 033, 033, 033, 033, 033, 033, 033, 033, 033, 033, 033, 033, 033, 033, 033

/METADATA/PROVENANCE/STEP_1/ProcessOutput

Attribute	Example Value
Name	GLA10_633_2103_002_0407_0_01_0001.DAT
Type	GLA10
Version	633

/METADATA/PROVENANCE/STEP_2

Attribute	Example Value
ProcessDateTime	2012-12-20T20:27:46.000000Z

/METADATA/PROVENANCE/STEP_2/ProcessAgent

Attribute	Example Value
Name	GLA10_h5_convert
Type	Data_Reformat
Version	Version 1.0 (December 2012)
Description	GLA10 Conversion PGE

/METADATA/PROVENANCE/STEP_2/ProcessInput

Attribute	Example Value
Name	./gla10_test.ctl, ../../data/tai-utc.dat, in/GLA10_633_2103_002_0407_0_01_0001.P0310, ../../glas_hdf/data/esdts/DsESDTGlGLAH10.033.desc

Attribute	Example Value
Type	IN_CNTL, IN_ANC_TAIUTC, IN_GLA10, IN_ESDT
Version	0, 0, 1, 1

/METADATA/PROVENANCE/STEP_2/ProcessOutput

Attribute	Example Value
Name	out/GLAH10_633_2103_002_0407_0_01_0001.H5
Type	OUT_GLAH10
Version	1
UUID	599740C3-F062-4F49-A756-8A0DA37BC95B
DOI	10.5067/ICESAT/GLAS/DATA203

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