1.0 DATA DICTIONARY

The following subsections list the data content of ATL11xo. Each subsection corresponds to a HDF5 group on the data product. The ATLAS Standard Data Products are designed to be self-documenting and contain additional descriptive information not presented here. The descriptive information within the data dictionary is limited to preserve readability.

1.1.1 Attributes

short_name	ATL11xo
title	ATLAS/ICESat-2 L3B Slope-Corrected Land Ice Height Time Series
level	L3B
description	This data set provides slope-corrected land-ice surface heights at points where ATL06 (Land-Ice Height) tracks cross ATL11 (Slope-Corrected Land Ice Time Series) tracks. It allows direct comparisons between ATL06 and ATL11 elevations and allows the creation of dense height time series spanning the entire ICESat-2 mission.
Conventions	CF-1.6
citation	Cite these data in publications as follows: The data used in this study were produced by the ICESat-2 Science Project Office at NASA/GSFC. The data archive site is the NASA National Snow and Ice Data Center Distributed Active Archive Center.
contributor_name	Benjamin Smith (besmith@uw.edu), Tyler Sutterley (tsutterl@uw.edu), Suzanne Dickinson (sdickins@uw.edu), Benjamin Jelley (benjamin.p.jelley@nasa.gov), Denis Felikson (denis.felikson@nasa.gov), Thomas A Neumann (thomas.neumann@nasa.gov), Helen Fricker (hafricker@ucsd.edu), Aimee Gibbons (aimee.c.gibbons@nasa.gov), Christine Sadlik (christine.e.sadlik@nasa.gov), Laurence Padman (padman@esr.org), Thorsten Markus (thorsten.markus@nasa.gov), Nathan Kurtz (nathan.t.kurtz@nasa.gov), Suneel Bhardwaj (suneel.bhardwaj@nasa.gov), David W Hancock III (david.w.hancock@nasa.gov), Jeffrey Lee (jeffrey.e.lee@nasa.gov)
contributor_role	Investigator, Investigator, Algorithm Developer, Algorithm Developer, Investigator, Investigator, Investigator, Investigator, Investigator, Investigator, Investigator, Investigator, Investigator, Algorithm Developer

creator_name	GSFC I-SIPS > ICESat-2 Science Investigator-led Processing System
cycle	10
data_rate	Data within this group pertain to the granule in its entirety.
date_created	SET_BY_PGE
date_type	UTC
featureType	trajectory
geospatial_ellipsoid	WGS84
geospatial_lat_max	SET_BY_PGE
geospatial_lat_min	SET_BY_PGE
geospatial_lat_units	degrees_north
geospatial_lon_max	SET_BY_PGE
geospatial_lon_min	SET_BY_PGE
geospatial_lon_units	degrees_east
granule_type	ATL11xo
hdfversion	SET_BY_PGE
history	SET_BY_PGE
identifier_file_uuid	SET_BY_PGE
identifier_product_doi	doi:10.5067/ATLAS/ATL11xo.007
identifier_product_doi_authority	http://dx.doi.org
identifier_product_format_version	1.0
identifier_product_type	ATL11xo
institution	National Aeronautics and Space Administration (NASA)
instrument	ATLAS > Advanced Topographic Laser Altimeter System
keywords	EARTH SCIENCE > CRYOSPHERE > GLACIERS/ICE SHEETS > GLACIER ELEVATION/ICE SHEET ELEVATION > NONE > NONE > NONE
keywords_vocabulary	NASA/GCMD Science Keywords

license	Data may not be reproduced or distributed without including the citation for this product included in this metadata. Data may not be distributed in an altered form without the written permission of the ICESat-2 Science Project Office at NASA/GSFC.
naming_authority	http://dx.doi.org
platform	ICESat-2 > Ice, Cloud, and land Elevation Satellite-2
processing_level	3B
project	ICESat-2 > Ice, Cloud, and land Elevation Satellite-2
publisher_email	nsidc@nsidc.org
publisher_name	NSIDC DAAC > NASA National Snow and Ice Data Center Distributed Active Archive Center
publisher_url	http://nsidc.org/daac/
ref_surf_cycles	SET_BY_PGE
references	http://nsidc.org/data/icesat2/data.html
source	Spacecraft
spatial_coverage_type	Horizontal
standard_name_vocabulary	CF-1.6
summary	The purpose of ATL11xo is to facilitate direct comparisons between ATL06 and ATL11 elevations and to facilitate the creation of dense height time series spanning the entire ICESat-2 mission.
time_coverage_duration	SET_BY_PGE
time_coverage_end	SET_BY_PGE
time_coverage_start	SET_BY_PGE
time_type	CCSDS UTC-A

1.1.2 Datasets

Name Standard Name	Type(Dims) FillValue	Units	Description
dem_h dem_h	FLOAT(:) INVALID_R4B	meters	DEM height at the reference point Source: ATL06

Name Standard Name	Type(Dims) FillValue	Units	Description
e_slope e_slope	FLOAT(:) INVALID_R4B	unitless	Local east component of the reference surface slope Source: Derived, ATL11 algorithm
fit_quality fit_quality	INTEGER_1(:) INVALID_I1B	counts	Reference point fit quality Source: Derived, ATL11 algorithm
geoid_h geoid_h	FLOAT(:) INVALID_R4B	meters	geoid height at the reference point Source: ATL06
latitude latitude	DOUBLE(:) INVALID_R8B	degrees	latitude of the reference point Source: Derived, ATL11 algorithm
longitude longitude	DOUBLE(:) INVALID_R8B	degrees	longitude of the reference point Source: Derived, ATL11 algorithm
n_slope n_slope	FLOAT(:) INVALID_R4B	unitless	Local north component of the reference surface slope Source: Derived, ATL11 algorithm
x x	DOUBLE(:) INVALID_R8B	meters	Projected x coordinate of the reference point Source: Derived, ATL11 algorithm
xo_index xo_index	INTEGER_8(:) INVALID_I8B	counts	Order of points within the file Source: Derived, ATL11 algorithm
y y	DOUBLE(:) INVALID_R8B	meters	Projected y coordinate of the reference point Source: Derived, ATL11 algorithm

1.2 Group: /METADATA

ISO19115 Structured Metadata Represented within HDF5

1.2.1 Datasets

Name Standard Name	Type(Dims) FillValue	Units	Description
iso_19139_dataset_xml	STRING(1) -		ISO 19139 Dataset XML
iso_19139_series_xml	STRING(1) -		ISO 19139 Series XML

1.3 Group: /METADATA/AcquisitionInformation

1.4 Group: /METADATA/AcquisitionInformation/lidar

ATLAS on ICESat-2 determines the range between the satellite and the Earth's surface by measuring the two-way time delay of short pulses of laser light that it transmits in six beams. It is different from previous operational ice-sheet altimeters in that it is a photon-counting LIDAR. ATLAS records a set of arrival times for individual photons, which are then analyzed to derive surface, vegetation, and cloud properties. ATLAS has six beams arranged in three pairs, so that it samples each of three reference pair tracks with a pair of beams; ATLAS transmits pulses at 10 kHz, giving approximately one pulse every 0.7 m along track; ATLAS's expected pointing control will be better than 90 m RMS.

1.4.1 Attributes

identifier	ATLAS
pulse_rate	10000 pps
type	Laser Altimeter
wavelength	532 nm

1.5 Group: /METADATA/AcquisitionInformation/lidarDocument

1.5.1 Attributes

edition	Pre-Release
publicationDate	12/31/17
title	A document describing the ATLAS instrument will be provided by the ICESat-2 Project Science Office.

1.6 Group: /METADATA/AcquisitionInformation/platform

Ice, Cloud, and land Elevation Satellite-2

1.6.1 Attributes

identifier	ICESat-2
type	Spacecraft

1.7 Group: /METADATA/AcquisitionInformation/platformDocument

1.7.1 Attributes

edition	31-Dec-16
publicationDate	31-Dec-16
title	The Ice, Cloud, and land Elevation Satellite-2 (ICESat-2): Science requirements, concept, and implementation. Thorsten Markus, Tom Neumann, Anthony Martino, Waleed Abdalati, Kelly Brunt, Beata Csatho, Sinead Farrell, Helen Fricker, Alex Gardner, David Harding, Michael Jasinski, Ron Kwok, Lori Magruder, Dan Lubin, Scott Luthcke, James Morison, Ross Nelson, Amy Neuenschwander, Stephen Palm, Sorin Popescu, CK Shum, Bob E. Schutz, Benjamin Smith, Yuekui Yang, Jay Zwally. http://dx.doi.org/10.1016/j.rse.2016.12.029

1.8 Group: /METADATA/DataQuality

1.8.1 Attributes

scope	NOT_SET

1.9 Group: /METADATA/DataQuality/CompletenessOmission

1.9.1 Attributes

evaluationMethodType	directInternal
measureDescription	TBD
nameOfMeasure	TBD
unitofMeasure	TBD
value	NOT_SET

1.10 Group: /METADATA/DataQuality/DomainConsistency

1.10.1 Attributes

evaluationMethodType	directInternal

measureDescription	TBD
nameOfMeasure	TBD
unitofMeasure	TBD
value	NOT_SET

1.11 Group: /METADATA/DatasetIdentification

1.11.1 Attributes

VersionID	1.0
abstract	This data set provides slope-corrected land-ice surface heights at points where ATL06 (Land-Ice Height) tracks cross ATL11 (Slope-Corrected Land Ice Time Series) tracks. It allows direct comparisons between ATL06 and ATL11 elevations and allows the creation of dense height time series spanning the entire ICESat-2 mission.
characterSet	utf8
creationDate	SET_BY_PGE
credit	The software that generates the ATL11 product was designed and implemented within the ICESat-2 Science Investigator-led Processing System at the NASA Goddard Space Flight Center in Greenbelt, Maryland.
fileName	SET_BY_PGE
language	eng
originatorOrganizationName	GSFC I-SIPS > ICESat-2 Science Investigator-led Processing System
purpose	The purpose of ATL11xo is to facilitate direct comparisons between ATL06 and ATL11 elevations and to facilitate the creation of dense height time series spanning the entire ICESat-2 mission.
shortName	ATL11xo
spatialRepresentationType	along-track
status	onGoing
topicCategory	geoscientificInformation

uuid	SET_BY_PGE

1.12 Group: /METADATA/Extent

1.12.1 Attributes

eastBoundLongitude	SET_BY_PGE
northBoundLatitude	SET_BY_PGE
rangeBeginningDateTime	SET_BY_PGE
rangeEndingDateTime	SET_BY_PGE
southBoundLatitude	SET_BY_PGE
westBoundLongitude	SET_BY_PGE

1.13 Group: /METADATA/Lineage

1.14 Group: /METADATA/Lineage/ANC36-11

ISO 19139 XML file containing Series-level metadata information.

1.14.1 Attributes

fileName	ATL11xo.esdt.series.xml
shortName	ANC36-11
uuid	SET_BY_PGE
version	001

1.15 Group: /METADATA/Lineage/ANC38-11

ISO 19139 XML file containing DataSet-level metadata information.

1.15.1 Attributes

fileName	ATL11xo.esdt.dataset.xml
shortName	ANC38-11

uuid	SET_BY_PGE
version	001

1.16 Group: /METADATA/Lineage/Control

Exact command line execution of ICESat-2/ATL11 algorithm providing all of the conditions required for each individual run of the software.

1.16.1 Attributes

Control	SET_BY_PGE
shortName	CNTL
version	1

1.17 Group: /METADATA/ProcessStep

1.18 Group: /METADATA/ProcessStep/Browse

1.18.1 Attributes

identifier	SET_BY_PGE
processDescription	Browse processing is performed for each granule SIPS produces. The browse utility reads data from the granule and produces browse images as defined in the respective product ATBD. The utility then embeds each browse image into the product within the /Browse group.
runTimeParameters	SET_BY_PGE
softwareDate	SET_BY_PGE
softwareTitle	SET_BY_PGE
softwareVersion	SET_BY_PGE
stepDateTime	SET_BY_PGE

1.19 Group: /METADATA/ProcessStep/Metadata

1.19.1 Attributes

identifier	atlas_meta
processDescription	Metadata information is processed by the metadata utility for each granule produced by SIPS. During PGE processing, dynamic metadata are written to the product. Additional static information is provided with the metadata template. The metadata utility reads ISO Dataset and Series metadata files and updates the product with static information from within those files. The utility then merges the static and dynamic metadata to creates output ISO19139 Dataset and Series XML files. Finally the utility reads the ISO19139 Dataset and Series XML files into memory and stores the textual representations as attributes attached to the /METADATA group.
runTimeParameters	SET_BY_PGE
softwareDate	SET_BY_PGE
softwareTitle	Creates ATLAS XML metadata files
softwareVersion	Version 5.1.3
stepDateTime	SET_BY_PGE

1.20 Group: /METADATA/ProcessStep/PGE

1.20.1 Attributes

ATBDDate	06/30/2025
ATBDTitle	Algorithm Theoretical Basis Document (ATBD) For Land-Ice Along-Track Products Part 2: Slope-Corrected Land Ice Height Time Series
ATBDVersion	N/A
documentDate	June 2025
documentation	ATLAS Science Algorithm Software Design Description (SDD) - Volume 9 (atlas_l3a_is)
identifier	atlas_l3b_is
processDescription	Computes across-track slopes calculated for beam pairs.
runTimeParameters	SET_BY_PGE

softwareDate	February 01 2026
softwareTitle	ASAS L3B Land Ice PGE
softwareVersion	1.0
stepDateTime	SET_BY_PGE

1.21 Group: /METADATA/ProcessStep/QA

1.21.1 Attributes

identifier	atl11xo_qa_util
processDescription	QA processing is performed by an external utility on each granule produced by SIPS. The utility reads the granule, performs both generic and product-specific quality-assessment calculations, and writes a text-based quality assessment report. The name and creation data of this report are identified within the QADatasetIdentification metadata
runTimeParameters	SET_BY_PGE
softwareDate	Feb 6 2026
softwareTitle	ATL11xo QA Utility
softwareVersion	Version 2.1
stepDateTime	SET_BY_PGE

1.22 Group: /METADATA/ProductSpecificationDocument

1.22.1 Attributes

ShortName	ATL11xo_SDP
characterSet	utf8
edition	v1.0
language	eng
publicationDate	June 2025

title	ICESat-2-SIPS-SPEC-4265 - ATLAS Science Algorithm Standard Data Product (SDP) Volume 10 (ATL11).

1.23 Group: /METADATA/QADatasetIdentification

1.23.1 Attributes

abstract	An ASCII product that contains statistical information on data product results. These statistics enable data producers and users to assess the quality of the data in the data product granule
creationDate	SET_BY_PGE
fileName	SET_BY_PGE

1.24 Group: /METADATA/SeriesIdentification

1.24.1 Attributes

VersionID	SET_BY_PGE
abstract	This data set provides slope-corrected land-ice surface heights at points where ATL06 (Land-Ice Height) tracks cross ATL11 (Slope-Corrected Land Ice Time Series) tracks. It allows direct comparisons between ATL06 and ATL11 elevations and allows the creation of dense height time series spanning the entire ICESat-2 mission.
characterSet	utf8
credit	The software that generates the ATL11 product was designed and implemented within the ICESat-2 Science Investigator-led Processing System at the NASA Goddard Space Flight Center in Greenbelt, Maryland.
format	HDF
formatVersion	5
identifier_product_DOI	doi:10.5067/ATLAS/ATL11xo.007
language	eng
longName	ATLAS/ICESat-2 L3B Slope-Corrected Land Ice Height Time Series

maintenanceAndUpdateFrequency	asNeeded
maintenanceDate	SET_BY_META
mission	ICESat-2 > Ice, Cloud, and land Elevation Satellite-2
pointOfContact	NSIDC DAAC > NASA National Snow and Ice Data Center Distributed Active Archive Center
purpose	The purpose of ATL11xo is to facilitate direct comparisons between ATL06 and ATL11 elevations and to facilitate the creation of dense height time series spanning the entire ICESat-2 mission.
resourceProviderOrganizationName	National Aeronautics and Space Administration (NASA)
revisionDate	2023-05-31
shortName	ATL11xo
status	onGoing
topicCategory	geoscientificInformation

1.25 Group: /ancillary_data

Contains information ancillary to the data product. This may include product characteristics, instrument characteristics and/or processing constants.

1.25.1 Attributes

data_rate	Data within this group pertain to the granule in its entirety.

1.25.2 Datasets

Name Standard Name	Type(Dims) FillValue	Units	Description
atlas_sdp_gps_epoch	DOUBLE(1) -	seconds since 1980-01-06T00:00:00.000000Z	Number of GPS seconds between the GPS epoch (1980-01-06T00:00:00.000000Z UTC) and the ATLAS Standard Data Product (SDP) epoch (2018-01-01:T00.00.00.000000 UTC). Add this value to delta time parameters to compute full gps_seconds (relative to the GPS epoch) for each data point. Source: Operations
control	STRING(1) -	1	PGE-specific control file used to generate this granule. To re-use, replace breaks

Name Standard Name	Type(Dims) FillValue	Units	Description
			(BR) with linefeeds. Source: Operations
data_end_utc	STRING(1) -	1	UTC (in CCSDS-A format) of the last data point within the granule. Source: Derived
data_start_utc	STRING(1) -	1	UTC (in CCSDS-A format) of the first data point within the granule. Source: Derived
end_cycle	INTEGER(1) -	1	The ending cycle number associated with the data contained within this granule. The cycle number is the counter of the number of 91-day repeat cycles completed by the mission. Source: Derived
end_delta_time time	DOUBLE(1) -	seconds since 2018-01-01	Number of GPS seconds since the ATLAS SDP epoch at the last data point in the file. The ATLAS Standard Data Products (SDP) epoch offset is defined within /ancillary_data/atlas_sdp_gps_epoch as the number of GPS seconds between the GPS epoch (1980-01-06T00:00:00.000000Z UTC) and the ATLAS SDP epoch. By adding the offset contained within atlas_sdp_gps_epoch to delta time parameters, the time in gps_seconds relative to the GPS epoch can be computed. Source: Derived
end_geoseg	INTEGER(1) -	1	The ending geolocation segment number associated with the data contained within this granule. ICESat granule geographic regions are further refined by geolocation segments. During the geolocation process, a geolocation segment is created approximately every 20m from the start of the orbit to the end. The geolocation segments help align the ATLAS strong a weak beams and provide a common segment length for the L2 and higher products. The geolocation segment indices differ slightly from orbit-to-orbit because of the irregular shape of the Earth. The geolocation segment indices on ATL01 and ATL02 are only approximate because beams have not been aligned at the time of their creation. Source: Derived
end_gpssow	DOUBLE(1) -	seconds	GPS seconds-of-week of the last data point in the granule. Source: Derived

Name Standard Name	Type(Dims) FillValue	Units	Description
end_gpsweek	INTEGER(1) -	weeks from 1980-01-06	GPS week number of the last data point in the granule. Source: Derived
end_orbit	INTEGER(1) -	1	The ending orbit number associated with the data contained within this granule. The orbit number increments each time the spacecraft completes a full orbit of the Earth. Source: Derived
end_region	INTEGER(1) -	1	The ending product-specific region number associated with the data contained within this granule. ICESat-2 data products are separated by geographic regions. The data contained within a specific region are the same for ATL01 and ATL02. ATL03 regions differ slightly because of different geolocation segment locations caused by the irregular shape of the Earth. The region indices for other products are completely independent. Source: Derived
end_rgt	INTEGER(1) -	1	The ending reference groundtrack (RGT) number associated with the data contained within this granule. There are 1387 reference groundtrack in the ICESat-2 repeat orbit. The reference groundtrack increments each time the spacecraft completes a full orbit of the Earth and resets to 1 each time the spacecraft completes a full cycle. Source: Derived
granule_end_utc	STRING(1) -	1	Requested end time (in UTC CCSDS-A) of this granule. Source: Derived
granule_start_utc	STRING(1) -	1	Requested start time (in UTC CCSDS-A) of this granule. Source: Derived
qa_at_interval	DOUBLE(1) -	seconds/cell	Statistics time interval for along-track QA data. Source: control
release	STRING(1) -	1	Release number of the granule. The release number is incremented when the software or ancillary data used to create the granule has been changed. Source: Operations
start_cycle	INTEGER(1) -	1	The starting cycle number associated with the data contained within this granule. The cycle number is the counter of the number

Name Standard Name	Type(Dims) FillValue	Units	Description
			of 91-day repeat cycles completed by the mission. Source: Derived
start_delta_time time	DOUBLE(1) -	seconds since 2018-01-01	Number of GPS seconds since the ATLAS SDP epoch at the first data point in the file. The ATLAS Standard Data Products (SDP) epoch offset is defined within /ancillary_data/atlas_sdp_gps_epoch as the number of GPS seconds between the GPS epoch (1980-01-06T00:00:00.000000Z UTC) and the ATLAS SDP epoch. By adding the offset contained within atlas_sdp_gps_epoch to delta time parameters, the time in gps_seconds relative to the GPS epoch can be computed. Source: Derived
start_geoseg	INTEGER(1) -	1	The starting geolocation segment number associated with the data contained within this granule. ICESat granule geographic regions are further refined by geolocation segments. During the geolocation process, a geolocation segment is created approximately every 20m from the start of the orbit to the end. The geolocation segments help align the ATLAS strong a weak beams and provide a common segment length for the L2 and higher products. The geolocation segment indices differ slightly from orbit-to-orbit because of the irregular shape of the Earth. The geolocation segment indices on ATL01 and ATL02 are only approximate because beams have not been aligned at the time of their creation. Source: Derived
start_gpssow	DOUBLE(1) -	seconds	GPS seconds-of-week of the first data point in the granule. Source: Derived
start_gpsweek	INTEGER(1) -	weeks from 1980-01-06	GPS week number of the first data point in the granule. Source: Derived
start_orbit	INTEGER(1) -	1	The starting orbit number associated with the data contained within this granule. The orbit number increments each time the spacecraft completes a full orbit of the Earth. Source: Derived
start_region	INTEGER(1) -	1	The starting product-specific region number associated with the data contained within this granule. ICESat-2 data products

Name Standard Name	Type(Dims) FillValue	Units	Description
			are separated by geographic regions. The data contained within a specific region are the same for ATL01 and ATL02. ATL03 regions differ slightly because of different geolocation segment locations caused by the irregular shape of the Earth. The region indices for other products are completely independent. Source: Derived
start_rgt	INTEGER(1) -	1	The starting reference groundtrack (RGT) number associated with the data contained within this granule. There are 1387 reference groundtrack in the ICESat-2 repeat orbit. The reference groundtrack increments each time the spacecraft completes a full orbit of the Earth and resets to 1 each time the spacecraft completes a full cycle. Source: Derived
version	STRING(1) -	1	Version number of this granule within the release. It is a sequential number corresponding to the number of times the granule has been reprocessed for the current release. Source: Operations

1.26 Group: /crossing_track

Data derived from tracks crossing the ATL11 reference tracks

1.26.1 Datasets

Name Standard Name	Type(Dims) FillValue	Units	Description
along_track_rss along_track_rss	FLOAT(:) INVALID_R4B	meters	Root sum of the squared differences between the heights of the endpoints for the crossing-track segment and the centers of the previous and next segments Source: Derived, ATL11 algorithm
atl06_quality_summary atl06_quality_summary	INTEGER_1(:) INVALID_I1B	counts	Quality flag derived from ATL06. 0 indicates no problems detected, 1 indicates potential problems Source: ATL06
dac dac	FLOAT(:) INVALID_R4B	meters	Dynamic atmosphere correction Source: ATL06
delta_time time	DOUBLE(:) INVALID_R8B	seconds	time relative to the ICESat-2 reference epoch Source: ATL06

Name Standard Name	Type(Dims) FillValue	Units	Description
dh_geoloc dh_geoloc	FLOAT(:) INVALID_R4B	meters	Correction applied to Antarctic heights based on estimates of the geolocation bias. Source: Derived, ATL11 algorithm
h_corr h_corr	FLOAT(:) INVALID_R4B	meters	WGS-84 height, corrected for the ATL11 surface shape Source: Derived, ATL11 algorithm
h_corr_sigma h_corr_sigma	FLOAT(:) INVALID_R4B	meters	error in the height estimate Source: Derived, ATL11 algorithm
h_corr_sigma_systematic h_corr_sigma_systematic	FLOAT(:) INVALID_R4B	meters	systematic error in the height estimate Source: Derived, ATL11 algorithm
pair_track pair_track	INTEGER_1(:) INVALID_I1B	counts	Pair track number for the crossing data Source: ATL06
ref_pt ref_pt	INTEGER(:) INVALID_I4B	counts	Reference-point number of the fit center for the datum track Source: ATL06
rgt rgt	INTEGER(:) INVALID_I4B	counts	Reference ground track number Source: ATL06
segment_id segment_id	INTEGER_8(:) INVALID_I8B	counts	Segment ID for the crossing data Source: ATL06
spot spot	INTEGER_1(:) INVALID_I1B	counts	Spot number Source: ATL06
tide_ocean tide_ocean	FLOAT(:) INVALID_R4B	meters	Ocean-tide estimate Source: ATL06

1.27 Group: /datum_track

Data from the track for which the along-track calculation was performed in ATL11

1.27.1 Datasets

Name Standard Name	Type(Dims) FillValue	Units	Description
cycle_number cycle_number	INTEGER_1(:) INVALID_I1B	counts	Cycle number Source: ATL06
dac dac	FLOAT(:) INVALID_R4B	meters	Dynamic atmosphere correction Source: ATL06
delta_time time	DOUBLE(:) INVALID_R8B	seconds	time relative to the ICESat-2 reference epoch Source: ATL06

Name Standard Name	Type(Dims) FillValue	Units	Description
dh_geoloc dh_geoloc	FLOAT(:) INVALID_R4B	meters	Correction applied to Antarctic heights based on estimates of the geolocation bias Source: Derived, ATL11 algorithm
h_corr h_corr	FLOAT(:) INVALID_R4B	meters	WGS-84 height, corrected for the ATL11 surface shape for the datum track Source: Derived, ATL11 algorithm
h_corr_sigma h_corr_sigma	FLOAT(:) INVALID_R4B	meters	error in the height estimate Source: Derived, ATL11 algorithm
h_corr_sigma_systematic h_corr_sigma_systematic	FLOAT(:) INVALID_R4B	meters	systematic error in the height estimate Source: Derived, ATL11 algorithm
pair_track pair_track	INTEGER_1(:) INVALID_I1B	counts	Pair track number for the datum track Source: ATL06
ref_pt ref_pt	INTEGER(:) INVALID_I4B	counts	the reference-point number for the datum track Source: ATL06
rgt rgt	INTEGER(:) INVALID_I4B	counts	RGT number for the datum track Source: ATL06
tide_ocean tide_ocean	FLOAT(:) INVALID_R4B	meters	Ocean-tide estimate Source: ATL06

1.28 Group: /orbit_info

1.28.1 Datasets

Name Standard Name	Type(Dims) FillValue	Units	Description
bounding_polygon_dim1	INTEGER(:) -	1	Polygon extent vertex count Source: model
bounding_polygon_lat1	FLOAT(:) -	degrees North	Polygon extent vertex latitude Source: model
bounding_polygon_lon1	FLOAT(:) -	degrees East	Polygon extent vertex longitude Source: model

1.29 Group: /quality_assessment

Contains quality assessment data. This may include QA counters, QA along-track data and/or QA summary data.

1.29.1 Datasets

Name Standard Name	Type(Dims) FillValue	Units	Description
qa_granule_fail_reason	INTEGER(1) -	1	Flag indicating granule failure reason. 0=no failure; 1=processing error; 2=Insufficient output data was generated; 3=TBD Failure; 4=TBD_Failure; 5=other failure. Source: Operations Flags: 0()=no_failure, 1()=PROCESS_ERROR, 2()=INSUFFICIENT_OUTPUT, 3()=failure_3, 4()=failure_4, 5()=OTHER_FAILURE
qa_granule_pass_fail	INTEGER(1) -	1	Flag indicating granule quality. 0=granule passes automatic QA. 1=granule fails automatic QA. Source: Operations Flags: 0()=PASS, 1()=FAIL