MATLAS_L2A Product Data Dictionary

Date Generated : 2014-12-04T15:36:57.000000Z
Product Type: MATLAS_L2A, Format Version : 2.0

Group: /		
h5es_id	(Attribute)	1
granule_type	(Attribute)	matlas_l2a
short_name	(Attribute)	matlas_l2a
level	(Attribute)	L2A
description	(Attribute)	MATLAS L2A Simulated Elevation Data (HDF5)
citation	(Attribute)	The data used in this study were produced by the ICESat-2 Science Project Office at NASA/GSFC. The data archive site is TBD.
comment	(Attribute)	Data granules consist of approximately 1 minute of HDF5 derived MABEL data that simulate ICESat-2 ATLAS geolocated elevation data in meters. All measured/simulated parameters are in science units.
contributor_name	(Attribute)	David W. Hancock (David.W.Hancock@nasa.gov), Thomas E Neumann (thomas.neumann@nasa.gov), Thorsten Markus (thorsten.markus-1@nasa.gov), Jeffrey E Lee (Jeffrey.E.Lee@nasa.gov)
contributor_role	(Attribute)	Data Originator, Investigator, Producer, Producer
Conventions	(Attribute)	CF-1.6
creator_email	(Attribute)	David.W.Hancock@nasa.gov
creator_name	(Attribute)	ICESat Science Investigator-led Processing System (I-SIPS)
date_type	(Attribute)	J2000
featureType	(Attribute)	trajectory
geospatial_lat_units	(Attribute)	degrees_north
geospatial_lon_units	(Attribute)	degrees_east
identifier_product_doi	(Attribute)	TBD
identifier_product_doi_authority	(Attribute)	http://dx.doi.org
identifier_product_type	(Attribute)	MATLAS_L2A
InputPointer	(Attribute)	SET_BY_PGE
institution	(Attribute)	National Aeronautics and Space Administration (NASA)
instrument	(Attribute)	Multiple Altimeter Beam Experimental Lidar (MABEL)
keywords	(Attribute)	Earth Science > Spectral/Engineering > Infrared Wavelengths > Sensor Counts > Photons
keywords_vocabulary	(Attribute)	GCMD Science Keywords Version 6.0
license	(Attribute)	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 ICESat-2 Science Project Office at NASA/GSFC.
naming_authority	(Attribute)	http://dx.doi.org
processing_level	(Attribute)	L2A
project	(Attribute)	Multiple Altimeter Beam Experimental Lidar (MABEL)
publisher_email	(Attribute)	David.W.Hancock@nasa.gov
publisher_name	(Attribute)	ICESat Science Investigator-led Processing System (I-SIPS)
publisher_url	(Attribute)	http://icesat.gsfc.nasa.gov/icesat2/data/mabel/data/browse/index.html
references	(Attribute)	http://icesat.gsfc.nasa.gov/icesat2/data/mabel/mabel_docs.php (Documentation set for this product at the ICESat-2 Website), http://icesat.gsfc.nasa.gov/icesat2/data/mabel/data/browse/index.html (Browse data for MABEL at the ICESat-2 Website)
source	(Attribute)	Aircraft measurements
spatial_coverage_type	(Attribute)	Horizontal
standard_vocabulary_name	(Attribute)	CF-1.6
summary	(Attribute)	The elevation data are the primary distribution product intended for ICESat-2 Science Team analysis. Each granule was created from a corresponding MABEL_L2A granule. The provenance metadata shows the history that created the granule.
time_type	(Attribute)	UTC
title	(Attribute)	MATLAS L2A Simulated Elevation Data (HDF5)
date_created	(Attribute)	2014-12-03T17:18:30.000000Z
flight_location	(Attribute)	Jakabshaven 1
flight_number	(Attribute)	27
scenario_number	(Attribute)	8
hdfversion	(Attribute)	HDF5 1.8.9
history	(Attribute)	2014-12-03T17:18:30.000000Z;BBD77A8C-5FEC-4564-87C0-7021660F7361;Created by PGE matlas Version 2.0
identifier_file_uuid	(Attribute)	BBD77A8C-5FEC-4564-87C0-7021660F7361
identifier_product_format_version	(Attribute)	2.0
time_coverage_duration	(Attribute)	60.000000000000000
time_coverage_end	(Attribute)	2012-04-19T13:11:00.000000Z
time_coverage_start	(Attribute)	2012-04-19T13:10:00.000000Z
platform	(Attribute)	ER-2 High Altitude Airborne Science Aircraft
geospatial_lat_min	(Attribute)	0.0000000000000000

geospatial_lon_min	(Attribute)	0.0000000000000000
geospatial_lat_max	(Attribute)	0.0000000000000000
geospatial_lon_max	(Attribute)	0.0000000000000000
Group: /METADATA		
h5es_id	(Attribute)	117
Description	(Attribute)	This group contains structured, computer-parseable ECHO-style collection and inventory-level metadata.
Group: /METADATA/COLLECTIONMETADATA		
h5es_id	(Attribute)	41
Description	(Attribute)	ECHO-style collection-level metadata.
AccessConstraints	(Attribute)	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 ICESat-2 Science Project Office at NASA/GSFC.
BrowseMimeType	(Attribute)	application/x-hdf5
BrowseOnlineMimeType	(Attribute)	image/jpeg
CitationforExternalPublication	(Attribute)	The data used in this study were produced by the ICESat-2 Science Project Office (PSO) at NASA/GSFC. The data archive site is the PSO.
CollectionDescription	(Attribute)	Data granules consist of approximately 1 minute of HDF5 derived MABEL data that simulate ICESat-2 ATLAS geolocated elevation data in meters. All measured/simulated parameters are in science units.
CollectionState	(Attribute)	In Work
DataFileFormat	(Attribute)	HDF5
DLLName	(Attribute)	TBD
LongName	(Attribute)	MATLAS L2A Simulated Elevation Data (HDF5)
MaintenanceandUpdateFrequency	(Attribute)	asNeeded
ScienceMimeType	(Attribute)	application/x-hdf5
ShortName	(Attribute)	MATLAS_L2A
SpatialKeyword	(Attribute)	Global
SpatialSearchType	(Attribute)	NotSupported
TemporalKeyword	(Attribute)	Day
VersionID	(Attribute)	9
GranuleTimeDuration	(Attribute)	60.000000000000000
Group: /METADATA/COLLECTIONMETADATA/AdditionalAttributes		
h5es_id	(Attribute)	42
Flightline	(Attribute)	AdditionalAttributesContainer
identifier_file_uuid	(Attribute)	AdditionalAttributesContainer
identifier_product_doi	(Attribute)	AdditionalAttributesContainer
identifier_product_doi_authority	(Attribute)	AdditionalAttributesContainer
Group: /METADATA/COLLECTIONMETADATA/AdditionalAttributes/Flightline		
h5es_id	(Attribute)	43
AdditionalAttributeDatatype	(Attribute)	string
AdditionalAttributeDescription	(Attribute)	The unique number based on time of day assigned to each data.
AdditionalAttributeName	(Attribute)	Flightline
ParameterRangeBegin	(Attribute)	0
ParameterRangeEnd	(Attribute)	3000
ParameterUnitsofMeasurement	(Attribute)	flightlines
Group: /METADATA/COLLECTIONMETADATA/AdditionalAttributes/identifier_file_uuid		
h5es_id	(Attribute)	44
AdditionalAttributeDatatype	(Attribute)	varchar
AdditionalAttributeDescription	(Attribute)	Digital object identifier that uniquely identifies this data product
AdditionalAttributeName	(Attribute)	identifier_product_doi
Group: /METADATA/COLLECTIONMETADATA/AdditionalAttributes/identifier_product_doi		
h5es_id	(Attribute)	45
AdditionalAttributeDatatype	(Attribute)	varchar
AdditionalAttributeDescription	(Attribute)	Digital object identifier that uniquely identifies this data product
AdditionalAttributeName	(Attribute)	identifier_product_doi
Group: /METADATA/COLLECTIONMETADATA/AdditionalAttributes/identifier_product_doi/InformationContent		
h5es_id	(Attribute)	46
ParameterValue	(Attribute)	TBD
Group: /METADATA/COLLECTIONMETADATA/AdditionalAttributes/identifier_product_doi_authority		
h5es_id	(Attribute)	47
AdditionalAttributeDatatype	(Attribute)	varchar
AdditionalAttributeDescription	(Attribute)	URL of the digital object identifier resolving authority
AdditionalAttributeName	(Attribute)	identifier_product_doi_authority

Group: /METADATA/COLLECTIONMETADATA/AdditionalAttributes/identifier_product_doi_authority/InformationContent		
h5es_id	(Attribute)	48
ParameterValue	(Attribute)	http://dx.doi.org
Group: /METADATA/COLLECTIONMETADATA/CSDTDescription		
h5es_id	(Attribute)	49
CSDTComments	(Attribute)	Data for each flight is divided into one minute granules.
Implementation	(Attribute)	HDF5
IndirectReference	(Attribute)	flight-lines
PrimaryCSDT	(Attribute)	n-Dim Array of Records
Group: /METADATA/COLLECTIONMETADATA/CollectionAssociation		
h5es_id	(Attribute)	50
MABEL_L0	(Attribute)	CollectionAssociationContainer
MABEL_L1A	(Attribute)	CollectionAssociationContainer
MABEL_L1B	(Attribute)	CollectionAssociationContainer
MABEL_L2A	(Attribute)	CollectionAssociationContainer
Group: /METADATA/COLLECTIONMETADATA/CollectionAssociation/MABEL_L0		
h5es_id	(Attribute)	51
CollectionType	(Attribute)	Science Associated
CollectionUse	(Attribute)	The initial collection of time-of-flight, status and housekeeping data collected from the instrument.
ShortName	(Attribute)	MABEL_L0
VersionID	(Attribute)	9
Group: /METADATA/COLLECTIONMETADATA/CollectionAssociation/MABEL_L1A		
h5es_id	(Attribute)	118
CollectionType	(Attribute)	Science Associated
CollectionUse	(Attribute)	Data granules consist of approximately 1 minute of HDF5 data and include decommutated raw MABEL data in engineering units reformatted into HDF5. Some parameters are converted for data handling and ordering.
ShortName	(Attribute)	MABEL_L1A
VersionID	(Attribute)	9
Group: /METADATA/COLLECTIONMETADATA/CollectionAssociation/MABEL_L1B		
h5es_id	(Attribute)	52
CollectionType	(Attribute)	Input
CollectionUse	(Attribute)	Data granules consist of approximately 1 minute of HDF5 data and include MABEL range data in meters from measuring the distance from MABEL to each detected photon. Also includes reformatted GPS/IMU position/attitude information. All measured parameters are converted to science units.
ShortName	(Attribute)	MABEL_L1B
VersionID	(Attribute)	9
Group: /METADATA/COLLECTIONMETADATA/CollectionAssociation/MABEL_L2A		
h5es_id	(Attribute)	124
CollectionType	(Attribute)	Input
CollectionUse	(Attribute)	Data granules consist of approximately 1 minute of HDF5 data and include corrected and geolocated MABEL elevation data (in meters) measuring the elevation of each detected photon within a range window about the DEM. All measured parameters are in science units.
ShortName	(Attribute)	MABEL_L2A
VersionID	(Attribute)	1
Group: /METADATA/COLLECTIONMETADATA/ContactOrganization		
h5es_id	(Attribute)	55
Archive	(Attribute)	ContactOrganizationContainer
Data_Originator	(Attribute)	ContactOrganizationContainer
Group: /METADATA/COLLECTIONMETADATA/ContactOrganization/Archive		
h5es_id	(Attribute)	56
City	(Attribute)	Greenbelt
ContactInstructions	(Attribute)	Contact by e-mail first
ContactOrganizationName	(Attribute)	ICESat-2 Project Science Office
Country	(Attribute)	USA
ElectronicMailAddress	(Attribute)	thomas.neumann@nasa.gov
HoursofService	(Attribute)	M-F, 8:00am to 5:00pm, Eastern Time
PostalCode	(Attribute)	20771
Role	(Attribute)	Archive
StateProvince	(Attribute)	Maryland
StreetAddress	(Attribute)	Code 615.0 NASA Goddard Space Flight Center 8800 Greenbelt Road
TelephoneNumber	(Attribute)	(301) 614-5923
TelephoneNumberType	(Attribute)	Voice

Group: /METADATA/COLLECTIONMETADATA/ContactOrganization/Data_Originator		
h5es_id	(Attribute)	57
City	(Attribute)	Greenbelt
ContactInstructions	(Attribute)	Contact by e-mail first
ContactOrganizationName	(Attribute)	ICESat-2 Project Science Office
Country	(Attribute)	USA
ElectronicMailAddress	(Attribute)	thomas.neumann@nasa.gov
HoursofService	(Attribute)	M-F, 8:00am to 4:30pm Central Time
PostalCode	(Attribute)	20771
Role	(Attribute)	Data Originator
StateProvince	(Attribute)	Maryland
StreetAddress	(Attribute)	Code 615.0 NASA Goddard Space Flight Center 8800 Greenbelt Road
TelephoneNumber	(Attribute)	757-824-1238
TelephoneNumberType	(Attribute)	Voice
Group: /METADATA/COLLECTIONMETADATA/ContactPerson		
h5es_id	(Attribute)	58
Bhardwaj	(Attribute)	ContactPersonContainer
Cook	(Attribute)	ContactPersonContainer
Hancock	(Attribute)	ContactPersonContainer
Lee	(Attribute)	ContactPersonContainer
Markus	(Attribute)	ContactPersonContainer
Neumann	(Attribute)	ContactPersonContainer
Group: /METADATA/COLLECTIONMETADATA/ContactPerson/Bhardwaj		
h5es_id	(Attribute)	123
City	(Attribute)	Greenbelt
ContactFirstName	(Attribute)	Suneel
ContactInstructions	(Attribute)	None
ContactJobPosition	(Attribute)	ICESat-2 SIPS Lead
ContactLastName	(Attribute)	Suneel
Country	(Attribute)	USA
ElectronicMailAddress	(Attribute)	Suneel.K.Bhardwaj@nasa.gov
HoursofService	(Attribute)	M-F, 8:00am to 4:30pm Central Time
PostalCode	(Attribute)	20771
Role	(Attribute)	Producer
StateProvince	(Attribute)	Maryland
StreetAddress	(Attribute)	Code 615.0 NASA Goddard Space Flight Center 8800 Greenbelt Road
TelephoneNumber	(Attribute)	301-614-4941
TelephoneNumberType	(Attribute)	Voice
Group: /METADATA/COLLECTIONMETADATA/ContactPerson/Cook		
h5es_id	(Attribute)	121
City	(Attribute)	Greenbelt
ContactFirstName	(Attribute)	William
ContactInstructions	(Attribute)	None
ContactJobPosition	(Attribute)	MABEL Instrument Scientist
ContactLastName	(Attribute)	Cook
Country	(Attribute)	USA
ElectronicMailAddress	(Attribute)	william.cook@nasa.gov
HoursofService	(Attribute)	M-F, 8:00am to 4:30pm Central Time
PostalCode	(Attribute)	20771
Role	(Attribute)	Producer
StateProvince	(Attribute)	Maryland
StreetAddress	(Attribute)	Code 615.0 NASA Goddard Space Flight Center 8800 Greenbelt Road
TelephoneNumber	(Attribute)	301-614-7123
TelephoneNumberType	(Attribute)	Voice
Group: /METADATA/COLLECTIONMETADATA/ContactPerson/Hancock		
h5es_id	(Attribute)	59
City	(Attribute)	Wallops Island
ContactFirstName	(Attribute)	David
ContactInstructions	(Attribute)	None
ContactJobPosition	(Attribute)	Science Software Development Manager.

ContactLastName	(Attribute)	Hancock
ContactMiddleName	(Attribute)	W.
Country	(Attribute)	USA
ElectronicMailAddress	(Attribute)	thomas.neumann@nasa.gov
HoursofService	(Attribute)	M-F, 8:00am to 4:30pm Central Time
PostalCode	(Attribute)	23337
Role	(Attribute)	Data Originator
StateProvince	(Attribute)	Virginia
StreetAddress	(Attribute)	NASA Wallops Flight Facility 34200 Fulton Street
TelephoneNumber	(Attribute)	757-824-1238
TelephoneNumberType	(Attribute)	Voice
Group: /METADATA/COLLECTIONMETADATA/ContactPerson/Lee		
h5es_id	(Attribute)	60
City	(Attribute)	Wallops Island
ContactFirstName	(Attribute)	Jeffrey
ContactInstructions	(Attribute)	None
ContactJobPosition	(Attribute)	Science Software Development Lead
ContactLastName	(Attribute)	Lee
ContactMiddleName	(Attribute)	E
Country	(Attribute)	USA
ElectronicMailAddress	(Attribute)	Jeffrey.E.Lee@nasa.gov
PostalCode	(Attribute)	23337
StateProvince	(Attribute)	Virginia
StreetAddress	(Attribute)	NASA Wallops Flight Facility 34200 Fulton Street
TelephoneNumber	(Attribute)	757-824-1853
TelephoneNumberType	(Attribute)	Voice
Group: /METADATA/COLLECTIONMETADATA/ContactPerson/Markus		
h5es_id	(Attribute)	61
City	(Attribute)	Greenbelt
ContactFirstName	(Attribute)	Thorsten
ContactInstructions	(Attribute)	None
ContactJobPosition	(Attribute)	ICESat-2 Project Scientist
ContactLastName	(Attribute)	Markus
Country	(Attribute)	USA
ElectronicMailAddress	(Attribute)	thorsten.markus-1@nasa.gov
HoursofService	(Attribute)	M-F, 8:00am to 4:30pm Central Time
PostalCode	(Attribute)	20771
Role	(Attribute)	Producer
StateProvince	(Attribute)	Maryland
StreetAddress	(Attribute)	Code 615.0 NASA Goddard Space Flight Center 8800 Greenbelt Road
TelephoneNumber	(Attribute)	301-614-5882
TelephoneNumberType	(Attribute)	Voice
Group: /METADATA/COLLECTIONMETADATA/ContactPerson/Neumann		
h5es_id	(Attribute)	62
City	(Attribute)	Greenbelt
ContactFirstName	(Attribute)	Thomas
ContactInstructions	(Attribute)	None
ContactJobPosition	(Attribute)	MABEL Science Team Leader
ContactLastName	(Attribute)	Neumann
ContactMiddleName	(Attribute)	E
Country	(Attribute)	USA
ElectronicMailAddress	(Attribute)	thomas.neumann@nasa.gov
HoursofService	(Attribute)	M-F, 8:00am to 4:30pm Central Time
PostalCode	(Attribute)	20771
Role	(Attribute)	Investigator
StateProvince	(Attribute)	Maryland
StreetAddress	(Attribute)	Code 615.0 NASA Goddard Space Flight Center 8800 Greenbelt Road
TelephoneNumber	(Attribute)	301-614-5923
TelephoneNumberType	(Attribute)	Voice
Group: /METADATA/COLLECTIONMETADATA/DisciplineTopicParameters		

h5es_id	(Attribute)	119
Group: /METADATA/COLLECTIONMETADATA/DisciplineTopicParameters/Spectral		
h5es_id	(Attribute)	63
Engineering	(Attribute)	DisciplineTopicParametersContainer
Group: /METADATA/COLLECTIONMETADATA/DisciplineTopicParameters/Spectral/Engineering		
h5es_id	(Attribute)	65
ECSDisciplineKeyword	(Attribute)	Earth Science
ECSTermKeyword	(Attribute)	Infrared Wavelengths
ECSTopicKeyword	(Attribute)	Spectral/Engineering
ECSVariableKeyword	(Attribute)	Sensor Counts
Group: /METADATA/COLLECTIONMETADATA/DisciplineTopicParameters/Spectral/Engineering/ECSParameter		
h5es_id	(Attribute)	66
ECSParameterKeyword	(Attribute)	Photons
Group: /METADATA/COLLECTIONMETADATA/ECSCollection		
h5es_id	(Attribute)	67
ArchiveCenter	(Attribute)	ICESat-2 Project Science Office
DatasetDisclaimerPointer	(Attribute)	http://icesat.gsfc.nasa.gov/icesat2/data/mabel/mabel_docs.php
ECSCollectionGuidePointer	(Attribute)	http://icesat.gsfc.nasa.gov/icesat2/data/mabel/mabel_docs.php
ECSCollectionGuidePointerComment	(Attribute)	Documentation set for this product at the ICESat-2 Website
MiscellaneousInformationPointer	(Attribute)	http://icesat.gsfc.nasa.gov/icesat2/data/mabel/data/browse/index.html
MiscellaneousInformationPointerComment	(Attribute)	Browse data for MABEL at the ICESat-2 Website
ProcessingCenter	(Attribute)	GSFC I-SIPS
RevisionDate	(Attribute)	7/1/13
SuggestedUsage	(Attribute)	The elevation data are the primary distribution product intended for ICESat-2 Science Team analysis. Each granule was created from a corresponding MABEL_L2A granule. The provenance metadata shows the history that created the granule.
VersionDescription	(Attribute)	Reprocessed
Group: /METADATA/COLLECTIONMETADATA/Platform		
h5es_id	(Attribute)	68
platform_container	(Attribute)	PlatformContainer
Group: /METADATA/COLLECTIONMETADATA/Platform/ER-2		
h5es_id	(Attribute)	69
PlatformType	(Attribute)	Aircraft
PlatformLongName	(Attribute)	ER-2 High Altitude Airborne Science Aircraft
PlatformShortName	(Attribute)	ER-2
Group: /METADATA/COLLECTIONMETADATA/Platform/ER-2/Instrument		
h5es_id	(Attribute)	70
GPS	(Attribute)	InstrumentContainer
IMU	(Attribute)	InstrumentContainer
MABEL	(Attribute)	InstrumentContainer
Group: /METADATA/COLLECTIONMETADATA/Platform/ER-2/Instrument/GPS		
h5es_id	(Attribute)	71
InstrumentLongName	(Attribute)	Global Positioning System Receiver
InstrumentShortName	(Attribute)	GPS
InstrumentTechnique	(Attribute)	Radionavigation
NumberofSensors	(Attribute)	1
Group: /METADATA/COLLECTIONMETADATA/Platform/ER-2/Instrument/GPS/Sensor		
h5es_id	(Attribute)	72
GPS_Receiver	(Attribute)	SensorContainer
Group: /METADATA/COLLECTIONMETADATA/Platform/ER-2/Instrument/GPS/Sensor/GPS_Receiver		
h5es_id	(Attribute)	73
SensorLongName	(Attribute)	Dual frequency GPS receiver
SensorShortName	(Attribute)	GPS Receiver
SensorTechnique	(Attribute)	Pseudorange and carrier phase
Group: /METADATA/COLLECTIONMETADATA/Platform/ER-2/Instrument/IMU		
h5es_id	(Attribute)	74
InstrumentLongName	(Attribute)	Inertial Measurement Unit
InstrumentShortName	(Attribute)	IMU
InstrumentTechnique	(Attribute)	Inertial Measurement
NumberofSensors	(Attribute)	1
Group: /METADATA/COLLECTIONMETADATA/Platform/ER-2/Instrument/IMU/Sensor		

h5es_id	(Attribute)	75
IMU	(Attribute)	SensorContainer
Group: /METADATA/COLLECTIONMETADATA/Platform/ER-2/Instrument/IMU/Sensor/IMU		
h5es_id	(Attribute)	76
SensorLongName	(Attribute)	Inertial Measurement Unit
SensorShortName	(Attribute)	IMU
SensorTechnique	(Attribute)	Inertial Measurement
Group: /METADATA/COLLECTIONMETADATA/Platform/ER-2/Instrument/MABEL		
h5es_id	(Attribute)	77
InstrumentLongName	(Attribute)	Multiple Altimeter Beam Experimental Lidar
InstrumentShortName	(Attribute)	MABEL
InstrumentTechnique	(Attribute)	Laser Altimetry and Light Detection and Radar
NumberofSensors	(Attribute)	2
Group: /METADATA/COLLECTIONMETADATA/Platform/ER-2/Instrument/MABEL/Sensor		
h5es_id	(Attribute)	78
LA1064	(Attribute)	SensorContainer
LA532	(Attribute)	SensorContainer
Group: /METADATA/COLLECTIONMETADATA/Platform/ER-2/Instrument/MABEL/Sensor/LA1064		
h5es_id	(Attribute)	79
SensorLongName	(Attribute)	Laser Altimeter 1064
SensorShortName	(Attribute)	LA1064
SensorTechnique	(Attribute)	Exact Measurement of Time between Transmit Pulse and receive photon.
Group: /METADATA/COLLECTIONMETADATA/Platform/ER-2/Instrument/MABEL/Sensor/LA1064/SensorCharacteristic		
h5es_id	(Attribute)	80
tof	(Attribute)	SensorCharacteristicContainer
wavelength	(Attribute)	SensorCharacteristicContainer
Group: /METADATA/COLLECTIONMETADATA/Platform/ER-2/Instrument/MABEL/Sensor/LA1064/SensorCharacteristic/tof		
h5es_id	(Attribute)	81
SensorCharacteristicDataType	(Attribute)	varchar
SensorCharacteristicDescription	(Attribute)	detector
SensorCharacteristicName	(Attribute)	tof
SensorCharacteristicUnit	(Attribute)	counts
SensorCharacteristicValue	(Attribute)	0-TBD
Group: /METADATA/COLLECTIONMETADATA/Platform/ER-2/Instrument/MABEL/Sensor/LA1064/SensorCharacteristic/wavelength		
h5es_id	(Attribute)	82
SensorCharacteristicDataType	(Attribute)	varchar
SensorCharacteristicDescription	(Attribute)	transmission
SensorCharacteristicName	(Attribute)	wavelength
SensorCharacteristicUnit	(Attribute)	nanometer
SensorCharacteristicValue	(Attribute)	1064 nm
Group: /METADATA/COLLECTIONMETADATA/Platform/ER-2/Instrument/MABEL/Sensor/LA532		
h5es_id	(Attribute)	83
SensorLongName	(Attribute)	Laser Altimeter 532
SensorShortName	(Attribute)	LA532
SensorTechnique	(Attribute)	Exact Measurement of Time between Transmit Pulse and receive photon
Group: /METADATA/COLLECTIONMETADATA/Platform/ER-2/Instrument/MABEL/Sensor/LA532/SensorCharacteristic		
h5es_id	(Attribute)	84
tof	(Attribute)	SensorCharacteristicContainer
wavelength	(Attribute)	SensorCharacteristicContainer
Group: /METADATA/COLLECTIONMETADATA/Platform/ER-2/Instrument/MABEL/Sensor/LA532/SensorCharacteristic/tof		
h5es_id	(Attribute)	85
SensorCharacteristicDataType	(Attribute)	varchar
SensorCharacteristicDescription	(Attribute)	detector
SensorCharacteristicName	(Attribute)	tof
SensorCharacteristicUnit	(Attribute)	counts
SensorCharacteristicValue	(Attribute)	0-TBD
Group: /METADATA/COLLECTIONMETADATA/Platform/ER-2/Instrument/MABEL/Sensor/LA532/SensorCharacteristic/wavelength		
h5es_id	(Attribute)	86
SensorCharacteristicDataType	(Attribute)	varchar
SensorCharacteristicDescription	(Attribute)	transmission

SensorCharacteristicName	(Attribute)	wavelength		
SensorCharacteristicUnit	(Attribute)	nanometer		
SensorCharacteristicValue	(Attribute)	532nm		
Group: /METADATA/COLLECTIONMETADATA/ProcessingLevel				
h5es_id	(Attribute)	87		
ProcessingLevelDescription	(Attribute)	Sensor Measurements		
ProcessingLevelID	(Attribute)	L2A		
Group: /METADATA/COLLECTIONMETADATA/Spatial				
h5es_id	(Attribute)	88		
EastBoundingCoordinate	(Attribute)	180		
NorthBoundingCoordinate	(Attribute)	90		
SouthBoundingCoordinate	(Attribute)	-90		
SpatialCoverageType	(Attribute)	Horizontal		
WestBoundingCoordinate	(Attribute)	-180		
Group: /METADATA/COLLECTIONMETADATA/StorageMediumClass				
h5es_id	(Attribute)	89		
StorageMedium	(Attribute)	Online		
Group: /METADATA/COLLECTIONMETADATA/Temporal				
h5es_id	(Attribute)	90		
DateType	(Attribute)	J2000		
EndsatPresentFlag	(Attribute)	Y		
PrecisionofSeconds	(Attribute)	2		
RangeBeginningDate	(Attribute)	4/2/12		
RangeBeginningTime	(Attribute)	0:00:00		
RangeEndingDate	(Attribute)	1/1/20		
RangeEndingTime	(Attribute)	0:00:00		
TemporalRangeType	(Attribute)	Continuous Range		
TimeType	(Attribute)	UTC		
Group: /METADATA/INVENTORYMETADATA				
h5es_id	(Attribute)	91		
ShortName	(Attribute)	MABEL_L2A		
RangeEndingDate	(Attribute)	2012-04-19		
RangeEndingTime	(Attribute)	13:11:00.000000Z		
RangeBeginningDate	(Attribute)	2012-04-19		
RangeBeginningTime	(Attribute)	13:10:00.000000Z		
VersionID	(Attribute)	ERROR-NO_RELEASE_IN_CONTROL		
Group: /METADATA/INVENTORYMETADATA/ECSDataGranule				
h5es_id	(Attribute)	92		
ProductionDateTime	(Attribute)	2014-12-03T17:18:30.000000Z		
LocalGranuleID	(Attribute)	matlas_l2_20120419t131000_010_1_4_1test.h5		
LocalVersionID	(Attribute)	NO_VERSION_IN_CONTROL		
Group: /METADATA/INVENTORYMETADATA/InputGranule				
h5es_id	(Attribute)	93		
InputPointer	(Attribute)	matlas_l2_20120419t131000_010_1_4_1test_v9.ctl, tai-utc.dat, matlas_l2a_meta_template.h5, matlas_l2a_template.h5, mabel_l2_20120419t131000_010_1.h5		
Group: /METADATA/INVENTORYMETADATA/ProductSpecificMetadata				
h5es_id	(Attribute)	120		
identifier_product_doi	(Attribute)	TBD		
identifier_product_doi_authority	(Attribute)	http://dx.doi.org		
Flight_Location	(Attribute)	Jakabshaven 1		
Flight_Number	(Attribute)	27		
Scenario_Number	(Attribute)	8		
identifier_file_uuid	(Attribute)	BBD77A8C-5FEC-4564-87C0-7021660F7361		
Group: /ancillary_data				
h5es_id	(Attribute)	7		
Description	(Attribute)	Ancillary data specific to each MATLAS granule.		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
control (Compact Dataset)	STRING:4096 (1)	Control File (not_set)	not_set Operations	PGE-specific control file used to generate this granule. To re-use, replace breaks (BR) with linefeeds.
data_end_gpssow (Compact Dataset)	DOUBLE (1)	Ending GPS Seconds-of-Week (not_set)	seconds Derived	GPS seconds-of-week for the last data point in the granule. (not referenced to granule_gps_epoch)

data_end_gpsweek (Compact Dataset)	INTEGER_4 (1)	Ending GPSWeek (not_set)	weeks Derived	GPS week number for the last data point in the granule. (not referenced to granule_gps_epoch)
data_end_utc (Compact Dataset)	STRING:27 (1)	End UTC (not_set)	not_set Derived	UTC (in CCSDS-A format) of the last data point within the granule. (not referenced to granule_gps_epoch)
data_start_gpssow (Compact Dataset)	DOUBLE (1)	Starting GPS Seconds-of-Week (not_set)	seconds Derived	GPS seconds-of-week for the first data point in the granule. (not referenced to granule_gps_epoch)
data_start_gpsweek (Compact Dataset)	INTEGER_4 (1)	Starting GPSWeek (not_set)	weeks since 1980-01-06T00:00:00Z Derived	GPS week number for the first data point in the granule. (not referenced to granule_gps_epoch)
data_start_utc (Compact Dataset)	STRING:27 (1)	Actual Start UTC of Granule (not_set)	not_set Derived	UTC (in CCSDS-A format) of the first data point within the granule. (not referenced to granule_gps_epoch)
end_latitude (Compact Dataset)	DOUBLE (1)	Ending Latitude (not_set)	degrees_north Derived	Best-available latitude (product-specific) in degrees at last data point within the granule.
end_longitude (Compact Dataset)	DOUBLE (1)	Ending Longitude (not_set)	degrees_east Derived	Best-available longitude (product-specific) in degrees at last data point within the granule.
granule_end_utc (Compact Dataset)	STRING:27 (1)	Ending Time of Granule (not_set)	not_set Derived	Requested end time (UTC CCSDS-A) of this granule.
granule_gps_epoch (Contiguous Dataset)	DOUBLE (1)	Elapsed GPS Seconds (not_set)	seconds since 1980-01-06T00:00:00.000000Z Derived	Number of GPS seconds since GPS epoch (1980-01-06T00:00:00.000000Z UTC) corresponding to the requested start time of the granule. Add this value to the data [delta_time] parameter to compute [gps_seconds] for each data point.
granule_start_utc (Compact Dataset)	STRING:27 (1)	Requested Start Time of Granule (not_set)	not_set Derived	Requested start time (UTC CCSDS-A) of this granule.
release (Compact Dataset)	STRING:80 (1)	Release Number (not_set)	not_set Operations	This identifies the release number of the granule. The release number is incremented when the software or ancillary data used to create the granule has been changed.
start_latitude (Compact Dataset)	DOUBLE (1)	Starting Latitude (not_set)	degrees_north Derived	Best-available latitude (product-specific) in degrees at first data point within the granule (corresponds to data_start_utc).
start_longitude (Compact Dataset)	DOUBLE (1)	Starting Longitude (not_set)	degrees_east Derived	Best-available longitude (product-specific) in degrees at first data point within the granule (corresponds to data_start_utc).
version (Compact Dataset)	STRING:80 (1)	Version (not_set)	counts Operations	This identifies the 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.

Group: /ancillary_data/matlas

h5es_id	(Attribute)	9		
Description	(Attribute)	Contains MATLAS parameters.		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
al2a_atlas_noise_rate (Compact Dataset)	DOUBLE (1)	MATLAS instrument noise rate (not_set)	hz not_set	MATLAS instrument noise rate
al2a_atlasback_photonrate (Compact Dataset)	DOUBLE (1)	Predicted solar background noise rate (not_set)	hz not_set	Predicted solar background noise rate adjusted for multipliers and canopy fraction.
al2a_atlasstrong_signal (Compact Dataset)	DOUBLE (1)	Predicted strong beam signal photons (not_set)	counts not_set	Predicted strong beam signal photons per laser fire adjusted for multipliers and canopy fraction.
al2a_atlasweak_signal (Compact Dataset)	DOUBLE (1)	Predicted weak beam signal photons (not_set)	counts not_set	Predicted weak beam signal photons per laser fire adjusted for multipliers and canopy fraction.
al2a_backregion_offset (Compact Dataset)	DOUBLE (2)	Bottom and top offsets from DEM of noise window (not_set)	m not_set	Bottom and top offsets from DEM of MABEL noise statistics range window.
al2a_bin_back_multiplier (Compact Dataset)	DOUBLE (1)	Multiplier applied to MABEL noise counts standard deviation (not_set)	not_set not_set	Multiplier applied to standard deviation of MABEL noise counts in stats bins used to classify signal and noise photons.
al2a_dc_solar_elevation_angle (Compact Dataset)	DOUBLE (1)	Solar elevation angle used in Design Case (not_set)	deg not_set	Solar elevation angle used in Tony Martino Design Case modeling.
al2a_delta_time_boundaries (Compact Dataset)	DOUBLE (2)	Delta time range of MABEL simulation (not_set)	seconds not_set	Delta time range of MABEL segment simulated (0-60).
al2a_footprint_diameter (Compact Dataset)	DOUBLE (1)	MATLAS footprint diameter (not_set)	m not_set	MATLAS footprint diameter
al2a_footprint_separation (Compact Dataset)	DOUBLE (1)	MATLAS footprint separation (not_set)	meters not_set	Along-track spacing between the MATLAS footprints.
al2a_i_channel_noise_rate_c (Compact Dataset)	DOUBLE (10)	MABEL Instrument noise rates for center group (not_set)	hz not_set	MABEL Instrument noise rates for channels in center group
al2a_i_channel_noise_rate_l (Compact Dataset)	DOUBLE (10)	MABEL Instrument noise rates for left group (not_set)	hz not_set	MABEL Instrument noise rates for channels in left group.
al2a_i_channel_noise_rate_r (Compact Dataset)	DOUBLE (10)	MABEL Instrument noise rates for right group (not_set)	hz not_set	MABEL Instrument noise rates for channels in right group.
al2a_i_select_channels_c (Compact Dataset)	INTEGER_4 (10)	MABEL Channels used in center group (not_set)	not_set not_set	MABEL Channels used in center group.
al2a_i_select_channels_l (Compact Dataset)	INTEGER_4 (10)	MABEL Channels used in left group (not_set)	not_set not_set	MABEL channels used in left group.

al2a_i_select_channels_r (Compact Dataset)	INTEGER_4 (10)	MABEL channels used in right group (not_set)	not_set not_set	MABEL channels used in right group.
al2a_mabel_laser_rate (Compact Dataset)	DOUBLE (1)	MABEL laser pulse rate (not_set)	hz not_set	MABEL laser pulse rate.
al2a_mabel_stat_length (Compact Dataset)	DOUBLE (1)	MABEL statistics segment length (not_set)	m not_set	MABEL statistics segment length.
al2a_matlas_height_range (Compact Dataset)	DOUBLE (2)	Bottom and top offsets from DEM of MATLAS data (not_set)	meters not_set	Bottom and top offsets from DEM of MATLAS simulation output.
al2a_matlas_solar_elevation_angle (Compact Dataset)	DOUBLE (1)	Simulation solar elevation angle (not_set)	deg not_set	Simulation solar elevation angle; -999.9 to use MABEL angle.
al2a_n_select_channels_c (Compact Dataset)	INTEGER_4 (1)	Number of MABEL channels used in center group (not_set)	counts not_set	Number of MABEL channels used in center group.
al2a_n_select_channels_l (Compact Dataset)	INTEGER_4 (1)	Number of MABEL channels used in left group (not_set)	counts not_set	Number of MABEL channels used in left group.
al2a_n_select_channels_r (Compact Dataset)	INTEGER_4 (1)	Number of MABEL channels used in right group (not_set)	counts not_set	Number of MABEL channels used in right group.
al2a_seed (Compact Dataset)	INTEGER_4 (1)	Seed number used in random number generator (not_set)	not_set not_set	Seed number used in the random number generator that initializes random photon selection.
al2a_track_end_latitude_c (Compact Dataset)	DOUBLE (1)	MATLAS Center Line End Latitude (not_set)	degrees_north not_set	MATLAS Center Line End Latitude
al2a_track_end_latitude_l (Compact Dataset)	DOUBLE (1)	MATLAS Left Line End Latitude (not_set)	degrees_north not_set	MATLAS Left Line End Latitude
al2a_track_end_latitude_r (Compact Dataset)	DOUBLE (1)	MATLAS Right Line End Latitude (not_set)	degrees_north not_set	MATLAS Right Line End Latitude
al2a_track_end_longitude_c (Compact Dataset)	DOUBLE (1)	MATLAS Center Line End Longitude (not_set)	degrees_east not_set	MATLAS Center Line End Longitude
al2a_track_end_longitude_l (Compact Dataset)	DOUBLE (1)	MATLAS Left Line End Longitude (not_set)	degrees_east not_set	MATLAS Left Line End Longitude
al2a_track_end_longitude_r (Compact Dataset)	DOUBLE (1)	MATLAS Right Line End Longitude (not_set)	degrees_east not_set	MATLAS Right Line End Longitude
al2a_track_start_latitude_c (Compact Dataset)	DOUBLE (1)	MATLAS Center Line Start Latitude (not_set)	degrees_north not_set	MATLAS Center Line Start Latitude
al2a_track_start_latitude_l (Compact Dataset)	DOUBLE (1)	MATLAS Left Line Start Latitude (not_set)	degrees_north not_set	MATLAS Left Line Start Latitude
al2a_track_start_latitude_r (Compact Dataset)	DOUBLE (1)	MATLAS Right Line Start Latitude (not_set)	degrees_north not_set	MATLAS Right Line Start Latitude
al2a_track_start_longitude_c (Compact Dataset)	DOUBLE (1)	MATLAS Center Line Start Longitude (not_set)	degrees_east not_set	MATLAS Center Line Start Longitude
al2a_track_start_longitude_l (Compact Dataset)	DOUBLE (1)	MATLAS Left Line Start Longitude (not_set)	degrees_east not_set	MATLAS Left Line Start Longitude
al2a_track_start_longitude_r (Compact Dataset)	DOUBLE (1)	MATLAS Right Line Start Longitude (not_set)	degrees_east not_set	MATLAS Right Line Start Longitude
al2a_vertical_bin_size (Compact Dataset)	DOUBLE (1)	Vertical size of statistics and analysis bins (not_set)	m not_set	Vertical size of statistics and analysis bins
mabel_solar_azimuth (Compact Dataset)	DOUBLE (1)	MABEL Solar Azimuth (not_set)	degrees not_set	Average MABEL solar azimuth angle during data collection.
mabel_solar_elevation (Compact Dataset)	DOUBLE (1)	MABEL solar elevation (not_set)	degrees not_set	Average MABEL solar elevation angle during data collection.
Group: /novatel_ins				
h5es_id	(Attribute)	20		
Description	(Attribute)	Contains parameters provided within the L1A Novatel INS input file.		
hertz	(Attribute)	Most parameters in this group are at the data rate of the L1B Novatel INS data packet (nominally 100hz). The imu2gps and s2body parameters are single instance values for the whole file.		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	Delta Time (not_set)	seconds since granule_gps_epoch Derived (gps_seconds-granule_gps_epoch)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
ds_xyz (Contiguous Dataset)	INTEGER_4 (3)	Dimension scale for XYZ axes. (not_set)	counts Geolocation ATBD	Dimension scale for XYZ axes (x, y, z) flag_values: 1, 2, 3 flag_meanings : X Y Z
imu2gps_lever (Compact Dataset)	FLOAT (3)	Lever Arm XYZ (not_set)	m L1A INS Data File	IMU to GNSS Antenna Lever Arm X,Y,Z. This parameter may not be available for early MABEL flights (check FillValue).
s2body_rot (Compact Dataset)	FLOAT (3)	SC to Body XYZ (not_set)	m L1A INS Data File	Sensor-to-Body rotation X, Y, Z. This parameter may not be available for early MABEL flights (check FillValue).
Group: /novatel_ins/attitude				
h5es_id	(Attribute)	21		
Description	(Attribute)	Contains aircraft orientation parameters from the Novatel INS instrument.		
data_rate	(Attribute)	Parameters in this group are at the data rate of the L1B Novatel INS data packet (nominally 100hz)		

Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
ins_heading (Chunked Dataset)	DOUBLE (UNLIMITED)	heading (not_set)	degrees L1A INS Data	Heading angle computed by GPS/INS routines
ins_heading_sd (Chunked Dataset)	FLOAT (UNLIMITED)	heading_sd (not_set)	degrees L1A INS Data	standard deviation of heading
ins_pitch (Chunked Dataset)	DOUBLE (UNLIMITED)	pitch (not_set)	degrees L1A INS Data	Pitch angle computed by GPS/INS routines
ins_pitch_sd (Chunked Dataset)	FLOAT (UNLIMITED)	pitch_sd (not_set)	degrees L1A INS Data	standard deviation of pitch
ins_roll (Chunked Dataset)	DOUBLE (UNLIMITED)	roll (not_set)	degrees L1A INS Data	Roll angle computed by GPS/INS routines
ins_roll_sd (Chunked Dataset)	FLOAT (UNLIMITED)	roll_sd (not_set)	degrees L1A INS Data	standard deviation of roll
Group: /novatel_ins/covariance				
h5es_id	(Attribute)	22		
Description	(Attribute)	Contains velocity-related parameters.		
data_rate	(Attribute)	Parameters in this group are at the data rate of the L1B Novatel INS data packet (nominally 100hz)		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
ins_cx11 (Chunked Dataset)	DOUBLE (UNLIMITED)	Position X-X covariance (not_set)	m2 L1A INS Data	Position X-X covariance. This parameter may not be available on early MABEL flights. Check FillValue.
ins_cx21 (Chunked Dataset)	DOUBLE (UNLIMITED)	Position Y-X covariance (not_set)	m2 L1A INS Data	Position Y-X covariance. This parameter may not be available on early MABEL flights. Check FillValue.
ins_cx22 (Chunked Dataset)	DOUBLE (UNLIMITED)	Position Y-Y covariance (not_set)	m2 L1A INS Data	Position Y-Y covariance. This parameter may not be available on early MABEL flights. Check FillValue.
ins_cx31 (Chunked Dataset)	DOUBLE (UNLIMITED)	Position Z-X covariance (not_set)	m2 L1A INS Data	Position Z-X covariance. This parameter may not be available on early MABEL flights. Check FillValue.
ins_cx32 (Chunked Dataset)	DOUBLE (UNLIMITED)	Position Z-Y covariance (not_set)	m2 L1A INS Data	Position Z-Y covariance. This parameter may not be available on early MABEL flights. Check FillValue.
ins_cx33 (Chunked Dataset)	DOUBLE (UNLIMITED)	Position Z-Z covariance (not_set)	m2 L1A INS Data	Position Z-Z covariance. This parameter may not be available on early MABEL flights. Check FillValue.
ins_cxee (Chunked Dataset)	DOUBLE (UNLIMITED)	ins_cxee (not_set)	m2 L1A INS Data	cx11 covariance. This parameter may not be available on early MABEL flights. Check FillValue.
ins_cxeh (Chunked Dataset)	DOUBLE (UNLIMITED)	ins_cxeh (not_set)	m2 L1A INS Data	cx11 covariance. This parameter may not be available on early MABEL flights. Check FillValue.
ins_cxen (Chunked Dataset)	DOUBLE (UNLIMITED)	ins_cxen (not_set)	m2 L1A INS Data	cx11 covariance. This parameter may not be available on early MABEL flights. Check FillValue.
ins_cxhh (Chunked Dataset)	DOUBLE (UNLIMITED)	ins_cxhh (not_set)	m2 L1A INS Data	cx11 covariance. This parameter may not be available on early MABEL flights. Check FillValue.
ins_cxnh (Chunked Dataset)	DOUBLE (UNLIMITED)	ins_cxnh (not_set)	m2 L1A INS Data	cx11 covariance. This parameter may not be available on early MABEL flights. Check FillValue.
ins_cxnn (Chunked Dataset)	DOUBLE (UNLIMITED)	ins_cxnn (not_set)	m2 L1A INS Data	cx11 covariance. This parameter may not be available on early MABEL flights. Check FillValue.
ins_cxvee (Chunked Dataset)	DOUBLE (UNLIMITED)	ins_cxvee (not_set)	m2 L1A INS Data	cx11 covariance. This parameter may not be available on early MABEL flights. Check FillValue.
ins_cxveh (Chunked Dataset)	DOUBLE (UNLIMITED)	ins_cxveh (not_set)	m2 L1A INS Data	cx11 covariance. This parameter may not be available on early MABEL flights. Check FillValue.
ins_cxven (Chunked Dataset)	DOUBLE (UNLIMITED)	ins_cxven (not_set)	m2 L1A INS Data	cx11 covariance. This parameter may not be available on early MABEL flights. Check FillValue.
ins_cxvhh (Chunked Dataset)	DOUBLE (UNLIMITED)	ins_cxvhh (not_set)	m2 L1A INS Data	cx11 covariance. This parameter may not be available on early MABEL flights. Check FillValue.
ins_cxvnh (Chunked Dataset)	DOUBLE (UNLIMITED)	ins_cxvnh (not_set)	m2 L1A INS Data	cx11 covariance. This parameter may not be available on early MABEL flights. Check FillValue.
ins_cxvnn (Chunked Dataset)	DOUBLE (UNLIMITED)	ins_cxvnn (not_set)	m2 L1A INS Data	cx11 covariance. This parameter may not be available on early MABEL flights. Check FillValue.
ins_vel_cx11 (Chunked Dataset)	DOUBLE (UNLIMITED)	Velocity X-X covariance (not_set)	m2/s2 L1A INS Data	Velocity X-X covariance. This parameter may not be available on early MABEL flights. Check FillValue.
ins_vel_cx21 (Chunked Dataset)	DOUBLE (UNLIMITED)	Velocity Y-X covariance. (not_set)	m2/s2 L1A INS Data	Velocity Y-X covariance. This parameter may not be available on early MABEL flights. Check FillValue.
ins_vel_cx22 (Chunked Dataset)	DOUBLE (UNLIMITED)	Velocity Y-Y covariance (not_set)	m2/s2 L1A INS Data	Velocity Y-Y covariance. This parameter may not be available on early MABEL flights. Check FillValue.
ins_vel_cx31 (Chunked Dataset)	DOUBLE (UNLIMITED)	Velocity Z-X covariance. (not_set)	m2/s2 L1A INS Data	Velocity Z-X covariance. This parameter may not be available on early MABEL flights. Check FillValue.
ins_vel_cx32 (Chunked Dataset)	DOUBLE (UNLIMITED)	Velocity Z-Y covariance (not_set)	m2/s2 L1A INS Data	Velocity Z-Y covariance. This parameter may not be available on early MABEL flights. Check FillValue.
ins_vel_cx33 (Chunked Dataset)	DOUBLE (UNLIMITED)	Velocity Z-Z covariance (not_set)	m2/s2 L1A INS Data	elocity Z-Z covariance. This parameter may not be available on early MABEL flights. Check FillValue.
Group: /novatel_ins/ecef				
h5es_id	(Attribute)	23		
Description	(Attribute)	Contains Earth-centered, earth-facing (ECEF) parameters from the Novatel INS instrument.		
data_rate	(Attribute)	Most parameters in this group are at the data rate of the L1B Novatel INS data packet (nominally 100hz). The imu2gps and s2body parameters are single instance values for the whole file.		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description

ins_x_ecef (Chunked Dataset)	DOUBLE (UNLIMITED)	x_ecef (not_set)	meters L1A INS Data	X, earth-centered earth-fixed frame
ins_x_ecef_sd (Chunked Dataset)	FLOAT (UNLIMITED)	x_ecef_sd (not_set)	meters L1A INS Data	standard deviation of x_ecef
ins_y_ecef (Chunked Dataset)	DOUBLE (UNLIMITED)	y_ecef (not_set)	meters L1A INS Data	Y, earth-centered earth-fixed frame
ins_y_ecef_sd (Chunked Dataset)	FLOAT (UNLIMITED)	y_ecef_sd (not_set)	meters L1A INS Data	standard deviation of y_ecef
ins_z_ecef (Chunked Dataset)	DOUBLE (UNLIMITED)	z_ecef (not_set)	meters L1A INS Data	Z, earth-centered earth-fixed frame
ins_z_ecef_sd (Chunked Dataset)	FLOAT (UNLIMITED)	z_ecef_sd (not_set)	meters L1A INS Data	standard deviation of z_ecef
Group: /novatel_ins/flags				
h5es_id	(Attribute)	24		
Description	(Attribute)	Contains flag data from the Novatel INS instrument.		
data_rate	(Attribute)	Parameters in this group are at the data rate of the L1B Novatel INS data packet (nominally 100hz)		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
ins_bad_field_count (Chunked Dataset)	INTEGER_4 (UNLIMITED)	bad_field_count (not_set)	counts L1A INS Data	Number of fields in this INS record that were determined as bad uponinput of the L1A INS data. These fields are generally filled with a value of -9999.99
ins_flag (Chunked Dataset)	INTEGER_4 (UNLIMITED)	imu_flag (not_set)	counts L1A INS Data	IMU Status - (0=ideal), where : 0=GPS position computed and used; 1=GPS range update applied; 2=no update applied (free mode); 3=zero velocity update applied (not moving); 4=phase update applied. flag_values: 0, 1, 2, 3, 4 flag_meanings : position_used position_update free_mode not_moving phase_update
ins_num_gps_sat (Chunked Dataset)	INTEGER_4 (UNLIMITED)	Number of GPS Satellites (not_set)	counts L1A INS Data	Number of GPS satellites in observation
ins_quality_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	quality_num (not_set)	counts L1A INS Data	Quality factor (integer: 1=best; 6=worst)
Group: /novatel_ins/geolocation				
h5es_id	(Attribute)	25		
Description	(Attribute)	Contains geolocation-related parameters from the Novatel INS instrument.		
data_rate	(Attribute)	Parameters in this group are at the data rate of the L1B Novatel INS data packet (nominally 100hz)		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
ins_comb_sd (Chunked Dataset)	FLOAT (UNLIMITED)	Combined standard deviation (not_set)	meters L1A INS Data	Combined N, E, and Hgt standard deviation
ins_ht_ell (Chunked Dataset)	DOUBLE (UNLIMITED)	Height above ellipsoid (height)	meters L1A INS Data	Height above WGS84 ellipsoid
ins_latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	latitude (latitude)	degrees_north L1A INS Data	Latitude, WGS84, North=+
ins_longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	longitude (longitude)	degrees_east L1A INS Data	Longitude, WGS84, East=+
Group: /novatel_ins/rms				
h5es_id	(Attribute)	26		
Description	(Attribute)	Contains RMS values from the Novatel INS instrument.		
data_rate	(Attribute)	Parameters in this group are at the data rate of the L1B Novatel INS data packet (nominally 100hz)		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
ins_ca_rms (Chunked Dataset)	FLOAT (UNLIMITED)	ca_rms (not_set)	counts L1A INS Data	C/A code RMS error
ins_l1_rms (Chunked Dataset)	FLOAT (UNLIMITED)	l1_rms (not_set)	counts L1A INS Data	L1 RMS error
Group: /novatel_ins/solar_angle				
h5es_id	(Attribute)	27		
Description	(Attribute)	Contains solar angle parameters from the Novatel INS instrument.		
data_rate	(Attribute)	Parameters in this group are at the data rate of the L1B Novatel INS data packet (nominally 100hz)		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
ins_solar_azimuth (Chunked Dataset)	FLOAT (UNLIMITED)	Inst Solar Azimuth (not_set)	degrees L1A INS Data	average solar azimuth angle during data acquisition
ins_solar_elevation (Chunked Dataset)	FLOAT (UNLIMITED)	Inst Solar Elevation (not_set)	degrees L1A INS Data	average solar elevation angle during data acquisition
Group: /novatel_ins/sta				
h5es_id	(Attribute)	28		
Description	(Attribute)	Contains status parameters from the Novatel INS instrument.		
data_rate	(Attribute)	Parameters in this group are at the data rate of the L1B Novatel INS data packet (nominally 100hz)		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description

ins_pdop (Chunked Dataset)	FLOAT (UNLIMITED)	position dilution of precision (not_set)	counts L1A INS Data	position dilution of precision (indicator of x, y, z geometry)
Group: /novatel_ins/time				
h5es_id	(Attribute)	29		
Description	(Attribute)	Contains GPS time parameters from the Novatel INS instrument.		
data_rate	(Attribute)	Parameters in this group are at the data rate of the L1B Novatel INS data packet (nominally 100hz)		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
ins_gps_sow (Chunked Dataset)	DOUBLE (UNLIMITED)	gps seconds of week (not_set)	seconds L1A INS Data	GPS seconds of week corrected for receiver clock bias
ins_gps_week (Chunked Dataset)	INTEGER_4 (UNLIMITED)	gps week (not_set)	weeks L1A INS Data	GPS week number
Group: /novatel_ins/velocity				
h5es_id	(Attribute)	30		
Description	(Attribute)	Contains velocity-related parameters.		
data_rate	(Attribute)	Parameters in this group are at the data rate of the L1B Novatel INS data packet (nominally 100hz)		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
ins_v_east (Chunked Dataset)	FLOAT (UNLIMITED)	v_east (not_set)	meters per second L1A INS Data	Velocity component in the local level east axis
ins_v_north (Chunked Dataset)	FLOAT (UNLIMITED)	v_north (not_set)	meters per second L1A INS Data	Velocity component in the local level north axis
ins_v_up (Chunked Dataset)	FLOAT (UNLIMITED)	v_up (not_set)	meters per second L1A INS Data	Velocity component in the local level vertical axis
Group: /photon				
h5es_id	(Attribute)	31		
Description	(Attribute)	Contains photon parameters.		
Group: /photon/center				
h5es_id	(Attribute)	32		
Description	(Attribute)	Contains photon parameters for left, right or center channels.		
Group: /photon/center/channel000				
h5es_id	(Attribute)	33		
Description	(Attribute)	Contains per-channel photon parameters.		
Group: /photon/center/channel000/atlas_50_shot				
h5es_id	(Attribute)	55		
Description	(Attribute)	ATLAS signal and noise for 50 shots in a 2 km search window.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
atlas_50shot_delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	atlas_50shot_delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
atlas_50shot_first_shot (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_first_shot (not_set)	counts Derived	ATLAS shot number of first shot in the ATLAS 50 shot segments
atlas_50shot_n_noise (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_n_noise (not_set)	counts not_set	Number of ATLAS noise photons in strong beam for each group of 50 ATLAS shots in 2 km search window
atlas_50shot_n_strong_signal (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_n_strong_signal (not_set)	counts not_set	Number of ATLAS signal photons in strong beam for each group of 50 ATLAS shots in 2 km search window.
atlas_50shot_n_weak_signal (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_n_weak_signal (not_set)	counts not_set	Number of ATLAS signal photons in weak beam for each group of 50 ATLAS shots in 2 km search window.
Group: /photon/center/channel000/mabel_stats				
h5es_id	(Attribute)	56		
Description	(Attribute)	MABEL photon counts in statistics segment defined by mab_stat_length.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
stats_delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	stats_delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
stats_first_shot (Chunked Dataset)	INTEGER_4 (UNLIMITED)	Stats_first_shot (not_set)	counts not_set	MABEL Shot number of first shot in the statistics segments
stats_noise (Chunked Dataset)	INTEGER_4 (UNLIMITED)	stats_noise (not_set)	counts not_set	Number of MABEL noise photons in statistics segments.
stats_signal (Chunked Dataset)	INTEGER_4 (UNLIMITED)	stats_signal (not_set)	counts not_set	Number of MABEL signal photons in statistics segments.
Group: /photon/center/channel000/matlas_total_counts				
h5es_id	(Attribute)	57		
Description	(Attribute)	Total photon counts in MATLAS granule.		
Label	Datatype	long_name	units	description

(Layout)	(Dimensions)	(standard_name)	source	
total_bkgrd_noise (Compact Dataset)	INTEGER_4 (1)	total_background_noise (not_set)	counts not_set	Total number of MATLAS solar background noise photons
total_instr_noise (Compact Dataset)	INTEGER_4 (1)	total_instrument_noise (not_set)	counts not_set	Total number of MATLAS instrument noise photons
total_strong_signal (Compact Dataset)	INTEGER_4 (1)	total_strong_signal (not_set)	counts not_set	Total number of MATLAS signal photons in strong beam
total_weak_signal (Compact Dataset)	INTEGER_4 (1)	total_weak_signal (not_set)	counts not_set	Total number of MATLAS signal photons in weak beam
Group: /photon/center/channel000/strong				
h5es_id	(Attribute)	34		
Description	(Attribute)	Contains strong or weak channel photon parameters.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
dist_from_track (Chunked Dataset)	FLOAT (UNLIMITED)	MABEL photon distance from ATLAS track (not_set)	meters Derived	Perpendicular distance of MABEL photon to the MATLAS track; positive = to the right; negative = to the left.
height (Chunked Dataset)	FLOAT (UNLIMITED)	MATLAS height (not_set)	meters Derived	MATLAS Height above the WGS84 ellipsoid
latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Latitude (not_set)	degrees_north Derived (Geolocation ATBD)	MATLAS Latitude, WGS84, North=+
longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Longitude (not_set)	degrees_east Derived	MATLAS Longitude, WGS84, East=+
mabel_latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL latitude (not_set)	degrees_north MABEL L2	MABEL Latitude, WGS84, North=+, copied from MABEL L2
mabel_longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL longitude (not_set)	degrees_east MABEL L2	MABEL Longitude, WGS84, East=+, copied from MABEL L2
mabel_photon_id (Chunked Dataset)	INTEGER_2 (UNLIMITED)	MABEL photon_id (not_set)	counts MABEL L2	MABEL Photon-per-shot counter. Increments for each photon detected within a shot. Together with shot_num, forms a unique identifier for each photon. However, be aware of shot_num rollover.
mabel_shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MABEL shot number (not_set)	counts MABEL L2	MABEL Shot number, copied from the MABEL L2.
photon_type (Chunked Dataset)	INTEGER_1 (UNLIMITED)	MATLAS photon type (not_set)	not_set Derived	MATLAS Photon type: xxx = signal photon in channel xxx; 100 = solar background noise photon, 101 = instrument noise photon.
shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MATLAS Shot Number (not_set)	counts Derived	MATLAS shot number.
Group: /photon/center/channel000/weak				
h5es_id	(Attribute)	34		
Description	(Attribute)	Contains strong or weak channel photon parameters.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
dist_from_track (Chunked Dataset)	FLOAT (UNLIMITED)	MABEL photon distance from ATLAS track (not_set)	meters Derived	Perpendicular distance of MABEL photon to the MATLAS track; positive = to the right; negative = to the left.
height (Chunked Dataset)	FLOAT (UNLIMITED)	MATLAS height (not_set)	meters Derived	MATLAS Height above the WGS84 ellipsoid
latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Latitude (not_set)	degrees_north Derived (Geolocation ATBD)	MATLAS Latitude, WGS84, North=+
longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Longitude (not_set)	degrees_east Derived	MATLAS Longitude, WGS84, East=+
mabel_latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL latitude (not_set)	degrees_north MABEL L2	MABEL Latitude, WGS84, North=+, copied from MABEL L2
mabel_longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL longitude (not_set)	degrees_east MABEL L2	MABEL Longitude, WGS84, East=+, copied from MABEL L2
mabel_photon_id (Chunked Dataset)	INTEGER_2 (UNLIMITED)	MABEL photon_id (not_set)	counts MABEL L2	MABEL Photon-per-shot counter. Increments for each photon detected within a shot. Together with shot_num, forms a unique identifier for each photon. However, be aware of shot_num rollover.
mabel_shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MABEL shot number (not_set)	counts MABEL L2	MABEL Shot number, copied from the MABEL L2.
photon_type (Chunked Dataset)	INTEGER_1 (UNLIMITED)	MATLAS photon type (not_set)	not_set Derived	MATLAS Photon type: xxx = signal photon in channel xxx; 100 = solar background noise photon, 101 = instrument noise photon.
shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MATLAS Shot Number (not_set)	counts Derived	MATLAS shot number.

Group: /photon/center/channel004				
h5es_id	(Attribute)	33		
Description	(Attribute)	Contains per-channel photon parameters.		
Group: /photon/center/channel004/atlas_50_shot				
h5es_id	(Attribute)	55		
Description	(Attribute)	ATLAS signal and noise for 50 shots in a 2 km search window.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
atlas_50shot_delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	atlas_50shot_delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
atlas_50shot_first_shot (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_first_shot (not_set)	counts Derived	ATLAS shot number of first shot in the ATLAS 50 shot segments
atlas_50shot_n_noise (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_n_noise (not_set)	counts not_set	Number of ATLAS noise photons in strong beam for each group of 50 ATLAS shots in 2 km search window
atlas_50shot_n_strong_signal (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_n_strong_signal (not_set)	counts not_set	Number of ATLAS signal photons in strong beam for each group of 50 ATLAS shots in 2 km search window.
atlas_50shot_n_weak_signal (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_n_weak_signal (not_set)	counts not_set	Number of ATLAS signal photons in weak beam for each group of 50 ATLAS shots in 2 km search window.
Group: /photon/center/channel004/mabel_stats				
h5es_id	(Attribute)	56		
Description	(Attribute)	MABEL photon counts in statistics segment defined by mab_stat_length.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
stats_delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	stats_delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
stats_first_shot (Chunked Dataset)	INTEGER_4 (UNLIMITED)	Stats_first_shot (not_set)	counts not_set	MABEL Shot number of first shot in the statistics segments
stats_noise (Chunked Dataset)	INTEGER_4 (UNLIMITED)	stats_noise (not_set)	counts not_set	Number of MABEL noise photons in statistics segments.
stats_signal (Chunked Dataset)	INTEGER_4 (UNLIMITED)	stats_signal (not_set)	counts not_set	Number of MABEL signal photons in statistics segments.
Group: /photon/center/channel004/matlas_total_counts				
h5es_id	(Attribute)	57		
Description	(Attribute)	Total photon counts in MATLAS granule.		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
total_bkgrd_noise (Compact Dataset)	INTEGER_4 (1)	total_background_noise (not_set)	counts not_set	Total number of MATLAS solar background noise photons
total_instr_noise (Compact Dataset)	INTEGER_4 (1)	total_instrument_noise (not_set)	counts not_set	Total number of MATLAS instrument noise photons
total_strong_signal (Compact Dataset)	INTEGER_4 (1)	total_strong_signal (not_set)	counts not_set	Total number of MATLAS signal photons in strong beam
total_weak_signal (Compact Dataset)	INTEGER_4 (1)	total_weak_signal (not_set)	counts not_set	Total number of MATLAS signal photons in weak beam
Group: /photon/center/channel004/strong				
h5es_id	(Attribute)	34		
Description	(Attribute)	Contains strong or weak channel photon parameters.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
dist_from_track (Chunked Dataset)	FLOAT (UNLIMITED)	MABEL photon distance from ATLAS track (not_set)	meters Derived	Perpendicular distance of MABEL photon to the MATLAS track; positive = to the right; negative = to the left.
height (Chunked Dataset)	FLOAT (UNLIMITED)	MATLAS height (not_set)	meters Derived	MATLAS Height above the WGS84 ellipsoid
latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Latitude (not_set)	degrees_north Derived (Geolocation ATBD)	MATLAS Latitude, WGS84, North=+
longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Longitude (not_set)	degrees_east Derived	MATLAS Longitude, WGS84, East=+
mabel_latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL latitude (not_set)	degrees_north MABEL L2	MABEL Latitude, WGS84, North=+, copied from MABEL L2
mabel_longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL longitude (not_set)	degrees_east MABEL L2	MABEL Longitude, WGS84, East=+, copied from MABEL L2
mabel_photon_id (Chunked Dataset)	INTEGER_2 (UNLIMITED)	MABEL photon_id (not_set)	counts MABEL L2	MABEL Photon-per-shot counter. Increments for each photon detected within a shot. Together with shot_num,

				forms a unique identifier for each photon. However, be aware of shot_num rollover.
mabel_shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MABEL shot number (not_set)	counts MABEL L2	MABEL Shot number, copied from the MABEL L2.
photon_type (Chunked Dataset)	INTEGER_1 (UNLIMITED)	MATLAS photon type (not_set)	not_set Derived	MATLAS Photon type: xxx = signal photon in channel xxx; 100 = solar background noise photon, 101 = instrument noise photon.
shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MATLAS Shot Number (not_set)	counts Derived	MATLAS shot number.
Group: /photon/center/channel004/weak				
h5es_id	(Attribute)	34		
Description	(Attribute)	Contains strong or weak channel photon parameters.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
dist_from_track (Chunked Dataset)	FLOAT (UNLIMITED)	MABEL photon distance from ATLAS track (not_set)	meters Derived	Perpendicular distance of MABEL photon to the MATLAS track; positive = to the right; negative = to the left.
height (Chunked Dataset)	FLOAT (UNLIMITED)	MATLAS height (not_set)	meters Derived	MATLAS Height above the WGS84 ellipsoid
latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Latitude (not_set)	degrees_north Derived (Geolocation ATBD)	MATLAS Latitude, WGS84, North=+
longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Longitude (not_set)	degrees_east Derived	MATLAS Longitude, WGS84, East=+
mabel_latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL latitude (not_set)	degrees_north MABEL L2	MABEL Latitude, WGS84, North=+, copied from MABEL L2
mabel_longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL longitude (not_set)	degrees_east MABEL L2	MABEL Longitude, WGS84, East=+, copied from MABEL L2
mabel_photon_id (Chunked Dataset)	INTEGER_2 (UNLIMITED)	MABEL photon_id (not_set)	counts MABEL L2	MABEL Photon-per-shot counter. Increments for each photon detected within a shot. Together with shot_num, forms a unique identifier for each photon. However, be aware of shot_num rollover.
mabel_shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MABEL shot number (not_set)	counts MABEL L2	MABEL Shot number, copied from the MABEL L2.
photon_type (Chunked Dataset)	INTEGER_1 (UNLIMITED)	MATLAS photon type (not_set)	not_set Derived	MATLAS Photon type: xxx = signal photon in channel xxx; 100 = solar background noise photon, 101 = instrument noise photon.
shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MATLAS Shot Number (not_set)	counts Derived	MATLAS shot number.
Group: /photon/center/channel006				
h5es_id	(Attribute)	33		
Description	(Attribute)	Contains per-channel photon parameters.		
Group: /photon/center/channel006/atlas_50_shot				
h5es_id	(Attribute)	55		
Description	(Attribute)	ATLAS signal and noise for 50 shots in a 2 km search window.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
atlas_50shot_delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	atlas_50shot_delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
atlas_50shot_first_shot (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_first_shot (not_set)	counts Derived	ATLAS shot number of first shot in the ATLAS 50 shot segments
atlas_50shot_n_noise (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_n_noise (not_set)	counts not_set	Number of ATLAS noise photons in strong beam for each group of 50 ATLAS shots in 2 km search window
atlas_50shot_n_strong_signal (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_n_strong_signal (not_set)	counts not_set	Number of ATLAS signal photons in strong beam for each group of 50 ATLAS shots in 2 km search window.
atlas_50shot_n_weak_signal (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_n_weak_signal (not_set)	counts not_set	Number of ATLAS signal photons in weak beam for each group of 50 ATLAS shots in 2 km search window.
Group: /photon/center/channel006/mabel_stats				
h5es_id	(Attribute)	56		
Description	(Attribute)	MABEL photon counts in statistics segment defined by mab_stat_length.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
stats_delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	stats_delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
stats_first_shot (Chunked Dataset)	INTEGER_4 (UNLIMITED)	Stats_first_shot (not_set)	counts not_set	MABEL Shot number of first shot in the statistics segments

stats_noise (Chunked Dataset)	INTEGER_4 (UNLIMITED)	stats_noise (not_set)	counts not_set	Number of MABEL noise photons in statistics segments.
stats_signal (Chunked Dataset)	INTEGER_4 (UNLIMITED)	stats_signal (not_set)	counts not_set	Number of MABEL signal photons in statistics segments.
Group: /photon/center/channel006/matlas_total_counts				
h5es_id	(Attribute)	57		
Description	(Attribute)	Total photon counts in MATLAS granule.		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
total_bkgrd_noise (Compact Dataset)	INTEGER_4 (1)	total_background_noise (not_set)	counts not_set	Total number of MATLAS solar background noise photons
total_instr_noise (Compact Dataset)	INTEGER_4 (1)	total_instrument_noise (not_set)	counts not_set	Total number of MATLAS instrument noise photons
total_strong_signal (Compact Dataset)	INTEGER_4 (1)	total_strong_signal (not_set)	counts not_set	Total number of MATLAS signal photons in strong beam
total_weak_signal (Compact Dataset)	INTEGER_4 (1)	total_weak_signal (not_set)	counts not_set	Total number of MATLAS signal photons in weak beam
Group: /photon/center/channel006/strong				
h5es_id	(Attribute)	34		
Description	(Attribute)	Contains strong or weak channel photon parameters.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
dist_from_track (Chunked Dataset)	FLOAT (UNLIMITED)	MABEL photon distance from ATLAS track (not_set)	meters Derived	Perpendicular distance of MABEL photon to the MATLAS track; positive = to the right; negative = to the left.
height (Chunked Dataset)	FLOAT (UNLIMITED)	MATLAS height (not_set)	meters Derived	MATLAS Height above the WGS84 ellipsoid
latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Latitude (not_set)	degrees_north Derived (Geolocation ATBD)	MATLAS Latitude, WGS84, North=+
longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Longitude (not_set)	degrees_east Derived	MATLAS Longitude, WGS84, East=+
mabel_latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL latitude (not_set)	degrees_north MABEL L2	MABEL Latitude, WGS84, North=+, copied from MABEL L2
mabel_longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL longitude (not_set)	degrees_east MABEL L2	MABEL Longitude, WGS84, East=+, copied from MABEL L2
mabel_photon_id (Chunked Dataset)	INTEGER_2 (UNLIMITED)	MABEL photon_id (not_set)	counts MABEL L2	MABEL Photon-per-shot counter. Increments for each photon detected within a shot. Together with shot_num, forms a unique identifier for each photon. However, be aware of shot_num rollover.
mabel_shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MABEL shot number (not_set)	counts MABEL L2	MABEL Shot number, copied from the MABEL L2.
photon_type (Chunked Dataset)	INTEGER_1 (UNLIMITED)	MATLAS photon type (not_set)	not_set Derived	MATLAS Photon type: xxx = signal photon in channel xxx; 100 = solar background noise photon, 101 = instrument noise photon.
shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MATLAS Shot Number (not_set)	counts Derived	MATLAS shot number.
Group: /photon/center/channel006/weak				
h5es_id	(Attribute)	34		
Description	(Attribute)	Contains strong or weak channel photon parameters.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
dist_from_track (Chunked Dataset)	FLOAT (UNLIMITED)	MABEL photon distance from ATLAS track (not_set)	meters Derived	Perpendicular distance of MABEL photon to the MATLAS track; positive = to the right; negative = to the left.
height (Chunked Dataset)	FLOAT (UNLIMITED)	MATLAS height (not_set)	meters Derived	MATLAS Height above the WGS84 ellipsoid
latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Latitude (not_set)	degrees_north Derived (Geolocation ATBD)	MATLAS Latitude, WGS84, North=+
longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Longitude (not_set)	degrees_east Derived	MATLAS Longitude, WGS84, East=+
mabel_latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL latitude (not_set)	degrees_north MABEL L2	MABEL Latitude, WGS84, North=+, copied from MABEL L2
mabel_longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL longitude (not_set)	degrees_east MABEL L2	MABEL Longitude, WGS84, East=+, copied from MABEL L2
mabel_photon_id (Chunked Dataset)	INTEGER_2 (UNLIMITED)	MABEL photon_id (not_set)	counts MABEL L2	MABEL Photon-per-shot counter. Increments for each photon detected within a shot. Together with shot_num,

				forms a unique identifier for each photon. However, be aware of shot_num rollover.
mabel_shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MABEL shot number (not_set)	counts MABEL L2	MABEL Shot number, copied from the MABEL L2.
photon_type (Chunked Dataset)	INTEGER_1 (UNLIMITED)	MATLAS photon type (not_set)	not_set Derived	MATLAS Photon type: xxx = signal photon in channel xxx; 100 = solar background noise photon, 101 = instrument noise photon.
shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MATLAS Shot Number (not_set)	counts Derived	MATLAS shot number.
Group: /photon/center/channel010				
h5es_id	(Attribute)	33		
Description	(Attribute)	Contains per-channel photon parameters.		
Group: /photon/center/channel010/atlas_50_shot				
h5es_id	(Attribute)	55		
Description	(Attribute)	ATLAS signal and noise for 50 shots in a 2 km search window.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
atlas_50shot_delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	atlas_50shot_delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
atlas_50shot_first_shot (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_first_shot (not_set)	counts Derived	ATLAS shot number of first shot in the ATLAS 50 shot segments
atlas_50shot_n_noise (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_n_noise (not_set)	counts not_set	Number of ATLAS noise photons in strong beam for each group of 50 ATLAS shots in 2 km search window
atlas_50shot_n_strong_signal (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_n_strong_signal (not_set)	counts not_set	Number of ATLAS signal photons in strong beam for each group of 50 ATLAS shots in 2 km search window.
atlas_50shot_n_weak_signal (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_n_weak_signal (not_set)	counts not_set	Number of ATLAS signal photons in weak beam for each group of 50 ATLAS shots in 2 km search window.
Group: /photon/center/channel010/mabel_stats				
h5es_id	(Attribute)	56		
Description	(Attribute)	MABEL photon counts in statistics segment defined by mab_stat_length.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
stats_delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	stats_delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
stats_first_shot (Chunked Dataset)	INTEGER_4 (UNLIMITED)	Stats_first_shot (not_set)	counts not_set	MABEL Shot number of first shot in the statistics segments
stats_noise (Chunked Dataset)	INTEGER_4 (UNLIMITED)	stats_noise (not_set)	counts not_set	Number of MABEL noise photons in statistics segments.
stats_signal (Chunked Dataset)	INTEGER_4 (UNLIMITED)	stats_signal (not_set)	counts not_set	Number of MABEL signal photons in statistics segments.
Group: /photon/center/channel010/matlas_total_counts				
h5es_id	(Attribute)	57		
Description	(Attribute)	Total photon counts in MATLAS granule.		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
total_bkgrd_noise (Compact Dataset)	INTEGER_4 (1)	total_background_noise (not_set)	counts not_set	Total number of MATLAS solar background noise photons
total_instr_noise (Compact Dataset)	INTEGER_4 (1)	total_instrument_noise (not_set)	counts not_set	Total number of MATLAS instrument noise photons
total_strong_signal (Compact Dataset)	INTEGER_4 (1)	total_strong_signal (not_set)	counts not_set	Total number of MATLAS signal photons in strong beam
total_weak_signal (Compact Dataset)	INTEGER_4 (1)	total_weak_signal (not_set)	counts not_set	Total number of MATLAS signal photons in weak beam
Group: /photon/center/channel010/strong				
h5es_id	(Attribute)	34		
Description	(Attribute)	Contains strong or weak channel photon parameters.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
dist_from_track (Chunked Dataset)	FLOAT (UNLIMITED)	MABEL photon distance from ATLAS track (not_set)	meters Derived	Perpendicular distance of MABEL photon to the MATLAS track; positive = to the right; negative = to the left.
height (Chunked Dataset)	FLOAT (UNLIMITED)	MATLAS height (not_set)	meters Derived	MATLAS Height above the WGS84 ellipsoid
latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Latitude (not_set)	degrees_north Derived (Geolocation	MATLAS Latitude, WGS84, North=+

			ATBD)	
longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Longitude (not_set)	degrees_east Derived	MATLAS Longitude, WGS84, East=+
mabel_latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL latitude (not_set)	degrees_north MABEL L2	MABEL Latitude, WGS84, North=+, copied from MABEL L2
mabel_longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL longitude (not_set)	degrees_east MABEL L2	MABEL Longitude, WGS84, East=+, copied from MABEL L2
mabel_photon_id (Chunked Dataset)	INTEGER_2 (UNLIMITED)	MABEL photon_id (not_set)	counts MABEL L2	MABEL Photon-per-shot counter. Increments for each photon detected within a shot. Together with shot_num, forms a unique identifier for each photon. However, be aware of shot_num rollover.
mabel_shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MABEL shot number (not_set)	counts MABEL L2	MABEL Shot number, copied from the MABEL L2.
photon_type (Chunked Dataset)	INTEGER_1 (UNLIMITED)	MATLAS photon type (not_set)	not_set Derived	MATLAS Photon type: xxx = signal photon in channel xxx; 100 = solar background noise photon, 101 = instrument noise photon.
shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MATLAS Shot Number (not_set)	counts Derived	MATLAS shot number.
Group: /photon/center/channel010/weak				
h5es_id	(Attribute)	34		
Description	(Attribute)	Contains strong or weak channel photon parameters.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
dist_from_track (Chunked Dataset)	FLOAT (UNLIMITED)	MABEL photon distance from ATLAS track (not_set)	meters Derived	Perpendicular distance of MABEL photon to the MATLAS track; positive = to the right; negative = to the left.
height (Chunked Dataset)	FLOAT (UNLIMITED)	MATLAS height (not_set)	meters Derived	MATLAS Height above the WGS84 ellipsoid
latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Latitude (not_set)	degrees_north Derived (Geolocation ATBD)	MATLAS Latitude, WGS84, North=+
longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Longitude (not_set)	degrees_east Derived	MATLAS Longitude, WGS84, East=+
mabel_latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL latitude (not_set)	degrees_north MABEL L2	MABEL Latitude, WGS84, North=+, copied from MABEL L2
mabel_longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL longitude (not_set)	degrees_east MABEL L2	MABEL Longitude, WGS84, East=+, copied from MABEL L2
mabel_photon_id (Chunked Dataset)	INTEGER_2 (UNLIMITED)	MABEL photon_id (not_set)	counts MABEL L2	MABEL Photon-per-shot counter. Increments for each photon detected within a shot. Together with shot_num, forms a unique identifier for each photon. However, be aware of shot_num rollover.
mabel_shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MABEL shot number (not_set)	counts MABEL L2	MABEL Shot number, copied from the MABEL L2.
photon_type (Chunked Dataset)	INTEGER_1 (UNLIMITED)	MATLAS photon type (not_set)	not_set Derived	MATLAS Photon type: xxx = signal photon in channel xxx; 100 = solar background noise photon, 101 = instrument noise photon.
shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MATLAS Shot Number (not_set)	counts Derived	MATLAS shot number.
Group: /photon/left				
h5es_id	(Attribute)	32		
Description	(Attribute)	Contains photon parameters for left, right or center channels.		
Group: /photon/left/channel000				
h5es_id	(Attribute)	33		
Description	(Attribute)	Contains per-channel photon parameters.		
Group: /photon/left/channel000/atlas_50_shot				
h5es_id	(Attribute)	55		
Description	(Attribute)	ATLAS signal and noise for 50 shots in a 2 km search window.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
atlas_50shot_delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	atlas_50shot_delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
atlas_50shot_first_shot (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_first_shot (not_set)	counts Derived	ATLAS shot number of first shot in the ATLAS 50 shot segments
atlas_50shot_n_noise (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_n_noise (not_set)	counts not_set	Number of ATLAS noise photons in strong beam for each group of 50 ATLAS shots in 2 km search window
atlas_50shot_n_strong_signal (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_n_strong_signal (not_set)	counts not_set	Number of ATLAS signal photons in strong beam for each group of 50 ATLAS shots in 2 km search window.
atlas_50shot_n_weak_signal (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_n_weak_signal (not_set)	counts not_set	Number of ATLAS signal photons in weak beam for each group of 50 ATLAS shots in 2 km search window.

Group: /photon/left/channel000/mabel_stats				
h5es_id	(Attribute)	56		
Description	(Attribute)	MABEL photon counts in statistics segment defined by mab_stat_length.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
stats_delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	stats_delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
stats_first_shot (Chunked Dataset)	INTEGER_4 (UNLIMITED)	Stats_first_shot (not_set)	counts not_set	MABEL Shot number of first shot in the statistics segments
stats_noise (Chunked Dataset)	INTEGER_4 (UNLIMITED)	stats_noise (not_set)	counts not_set	Number of MABEL noise photons in statistics segments.
stats_signal (Chunked Dataset)	INTEGER_4 (UNLIMITED)	stats_signal (not_set)	counts not_set	Number of MABEL signal photons in statistics segments.
Group: /photon/left/channel000/matlas_total_counts				
h5es_id	(Attribute)	57		
Description	(Attribute)	Total photon counts in MATLAS granule.		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
total_bkgrd_noise (Compact Dataset)	INTEGER_4 (1)	total_background_noise (not_set)	counts not_set	Total number of MATLAS solar background noise photons
total_instr_noise (Compact Dataset)	INTEGER_4 (1)	total_instrument_noise (not_set)	counts not_set	Total number of MATLAS instrument noise photons
total_strong_signal (Compact Dataset)	INTEGER_4 (1)	total_strong_signal (not_set)	counts not_set	Total number of MATLAS signal photons in strong beam
total_weak_signal (Compact Dataset)	INTEGER_4 (1)	total_weak_signal (not_set)	counts not_set	Total number of MATLAS signal photons in weak beam
Group: /photon/left/channel000/strong				
h5es_id	(Attribute)	34		
Description	(Attribute)	Contains strong or weak channel photon parameters.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
dist_from_track (Chunked Dataset)	FLOAT (UNLIMITED)	MABEL photon distance from ATLAS track (not_set)	meters Derived	Perpendicular distance of MABEL photon to the MATLAS track; positive = to the right; negative = to the left.
height (Chunked Dataset)	FLOAT (UNLIMITED)	MATLAS height (not_set)	meters Derived	MATLAS Height above the WGS84 ellipsoid
latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Latitude (not_set)	degrees_north Derived (Geolocation ATBD)	MATLAS Latitude, WGS84, North=+
longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Longitude (not_set)	degrees_east Derived	MATLAS Longitude, WGS84, East=+
mabel_latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL latitude (not_set)	degrees_north MABEL L2	MABEL Latitude, WGS84, North=+, copied from MABEL L2
mabel_longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL longitude (not_set)	degrees_east MABEL L2	MABEL Longitude, WGS84, East=+, copied from MABEL L2
mabel_photon_id (Chunked Dataset)	INTEGER_2 (UNLIMITED)	MABEL photon_id (not_set)	counts MABEL L2	MABEL Photon-per-shot counter. Increments for each photon detected within a shot. Together with shot_num, forms a unique identifier for each photon. However, be aware of shot_num rollover.
mabel_shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MABEL shot number (not_set)	counts MABEL L2	MABEL Shot number, copied from the MABEL L2.
photon_type (Chunked Dataset)	INTEGER_1 (UNLIMITED)	MATLAS photon type (not_set)	not_set Derived	MATLAS Photon type: xxx = signal photon in channel xxx; 100 = solar background noise photon, 101 = instrument noise photon.
shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MATLAS Shot Number (not_set)	counts Derived	MATLAS shot number.
Group: /photon/left/channel000/weak				
h5es_id	(Attribute)	34		
Description	(Attribute)	Contains strong or weak channel photon parameters.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
dist_from_track (Chunked Dataset)	FLOAT (UNLIMITED)	MABEL photon distance from ATLAS track (not_set)	meters Derived	Perpendicular distance of MABEL photon to the MATLAS track; positive = to the right; negative = to the left.

height (Chunked Dataset)	FLOAT (UNLIMITED)	MATLAS height (not_set)	meters Derived	MATLAS Height above the WGS84 ellipsoid
latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Latitude (not_set)	degrees_north Derived (Geolocation ATBD)	MATLAS Latitude, WGS84, North=+
longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Longitude (not_set)	degrees_east Derived	MATLAS Longitude, WGS84, East=+
mabel_latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL latitude (not_set)	degrees_north MABEL L2	MABEL Latitude, WGS84, North=+, copied from MABEL L2
mabel_longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL longitude (not_set)	degrees_east MABEL L2	MABEL Longitude, WGS84, East=+, copied from MABEL L2
mabel_photon_id (Chunked Dataset)	INTEGER_2 (UNLIMITED)	MABEL photon_id (not_set)	counts MABEL L2	MABEL Photon-per-shot counter. Increments for each photon detected within a shot. Together with shot_num, forms a unique identifier for each photon. However, be aware of shot_num rollover.
mabel_shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MABEL shot number (not_set)	counts MABEL L2	MABEL Shot number, copied from the MABEL L2.
photon_type (Chunked Dataset)	INTEGER_1 (UNLIMITED)	MATLAS photon type (not_set)	not_set Derived	MATLAS Photon type: xxx = signal photon in channel xxx; 100 = solar background noise photon, 101 = instrument noise photon.
shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MATLAS Shot Number (not_set)	counts Derived	MATLAS shot number.
Group: /photon/left/channel008				
h5es_id	(Attribute)	33		
Description	(Attribute)	Contains per-channel photon parameters.		
Group: /photon/left/channel008/atlas_50_shot				
h5es_id	(Attribute)	55		
Description	(Attribute)	ATLAS signal and noise for 50 shots in a 2 km search window.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
atlas_50shot_delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	atlas_50shot_delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
atlas_50shot_first_shot (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_first_shot (not_set)	counts Derived	ATLAS shot number of first shot in the ATLAS 50 shot segments
atlas_50shot_n_noise (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_n_noise (not_set)	counts not_set	Number of ATLAS noise photons in strong beam for each group of 50 ATLAS shots in 2 km search window
atlas_50shot_n_strong_signal (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_n_strong_signal (not_set)	counts not_set	Number of ATLAS signal photons in strong beam for each group of 50 ATLAS shots in 2 km search window.
atlas_50shot_n_weak_signal (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_n_weak_signal (not_set)	counts not_set	Number of ATLAS signal photons in weak beam for each group of 50 ATLAS shots in 2 km search window.
Group: /photon/left/channel008/mabel_stats				
h5es_id	(Attribute)	56		
Description	(Attribute)	MABEL photon counts in statistics segment defined by mab_stat_length.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
stats_delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	stats_delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
stats_first_shot (Chunked Dataset)	INTEGER_4 (UNLIMITED)	Stats_first_shot (not_set)	counts not_set	MABEL Shot number of first shot in the statistics segments
stats_noise (Chunked Dataset)	INTEGER_4 (UNLIMITED)	stats_noise (not_set)	counts not_set	Number of MABEL noise photons in statistics segments.
stats_signal (Chunked Dataset)	INTEGER_4 (UNLIMITED)	stats_signal (not_set)	counts not_set	Number of MABEL signal photons in statistics segments.
Group: /photon/left/channel008/matlas_total_counts				
h5es_id	(Attribute)	57		
Description	(Attribute)	Total photon counts in MATLAS granule.		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
total_bkgrd_noise (Compact Dataset)	INTEGER_4 (1)	total_background_noise (not_set)	counts not_set	Total number of MATLAS solar background noise photons
total_instr_noise (Compact Dataset)	INTEGER_4 (1)	total_instrument_noise (not_set)	counts not_set	Total number of MATLAS instrument noise photons
total_strong_signal (Compact Dataset)	INTEGER_4 (1)	total_strong_signal (not_set)	counts not_set	Total number of MATLAS signal photons in strong beam
total_weak_signal (Compact Dataset)	INTEGER_4 (1)	total_weak_signal (not_set)	counts not_set	Total number of MATLAS signal photons in weak beam
Group: /photon/left/channel008/strong				
h5es_id	(Attribute)	34		
Description	(Attribute)	Contains strong or weak channel photon parameters.		

data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
dist_from_track (Chunked Dataset)	FLOAT (UNLIMITED)	MABEL photon distance from ATLAS track (not_set)	meters Derived	Perpendicular distance of MABEL photon to the MATLAS track; positive = to the right; negative = to the left.
height (Chunked Dataset)	FLOAT (UNLIMITED)	MATLAS height (not_set)	meters Derived	MATLAS Height above the WGS84 ellipsoid
latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Latitude (not_set)	degrees_north Derived (Geolocation ATBD)	MATLAS Latitude, WGS84, North=+
longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Longitude (not_set)	degrees_east Derived	MATLAS Longitude, WGS84, East=+
mabel_latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL latitude (not_set)	degrees_north MABEL L2	MABEL Latitude, WGS84, North=+, copied from MABEL L2
mabel_longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL longitude (not_set)	degrees_east MABEL L2	MABEL Longitude, WGS84, East=+, copied from MABEL L2
mabel_photon_id (Chunked Dataset)	INTEGER_2 (UNLIMITED)	MABEL photon_id (not_set)	counts MABEL L2	MABEL Photon-per-shot counter. Increments for each photon detected within a shot. Together with shot_num, forms a unique identifier for each photon. However, be aware of shot_num rollover.
mabel_shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MABEL shot number (not_set)	counts MABEL L2	MABEL Shot number, copied from the MABEL L2.
photon_type (Chunked Dataset)	INTEGER_1 (UNLIMITED)	MATLAS photon type (not_set)	not_set Derived	MATLAS Photon type: xxx = signal photon in channel xxx; 100 = solar background noise photon, 101 = instrument noise photon.
shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MATLAS Shot Number (not_set)	counts Derived	MATLAS shot number.
Group: /photon/left/channel008/weak				
h5es_id	(Attribute)	34		
Description	(Attribute)	Contains strong or weak channel photon parameters.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
dist_from_track (Chunked Dataset)	FLOAT (UNLIMITED)	MABEL photon distance from ATLAS track (not_set)	meters Derived	Perpendicular distance of MABEL photon to the MATLAS track; positive = to the right; negative = to the left.
height (Chunked Dataset)	FLOAT (UNLIMITED)	MATLAS height (not_set)	meters Derived	MATLAS Height above the WGS84 ellipsoid
latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Latitude (not_set)	degrees_north Derived (Geolocation ATBD)	MATLAS Latitude, WGS84, North=+
longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Longitude (not_set)	degrees_east Derived	MATLAS Longitude, WGS84, East=+
mabel_latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL latitude (not_set)	degrees_north MABEL L2	MABEL Latitude, WGS84, North=+, copied from MABEL L2
mabel_longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL longitude (not_set)	degrees_east MABEL L2	MABEL Longitude, WGS84, East=+, copied from MABEL L2
mabel_photon_id (Chunked Dataset)	INTEGER_2 (UNLIMITED)	MABEL photon_id (not_set)	counts MABEL L2	MABEL Photon-per-shot counter. Increments for each photon detected within a shot. Together with shot_num, forms a unique identifier for each photon. However, be aware of shot_num rollover.
mabel_shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MABEL shot number (not_set)	counts MABEL L2	MABEL Shot number, copied from the MABEL L2.
photon_type (Chunked Dataset)	INTEGER_1 (UNLIMITED)	MATLAS photon type (not_set)	not_set Derived	MATLAS Photon type: xxx = signal photon in channel xxx; 100 = solar background noise photon, 101 = instrument noise photon.
shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MATLAS Shot Number (not_set)	counts Derived	MATLAS shot number.
Group: /photon/right				
h5es_id	(Attribute)	32		
Description	(Attribute)	Contains photon parameters for left, right or center channels.		
Group: /photon/right/channel000				
h5es_id	(Attribute)	33		
Description	(Attribute)	Contains per-channel photon parameters.		
Group: /photon/right/channel000/atlas_50_shot				
h5es_id	(Attribute)	55		
Description	(Attribute)	ATLAS signal and noise for 50 shots in a 2 km search window.		
data_rate	(Attribute)	not_set		

Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
atlas_50shot_delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	atlas_50shot_delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
atlas_50shot_first_shot (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_first_shot (not_set)	counts Derived	ATLAS shot number of first shot in the ATLAS 50 shot segments
atlas_50shot_n_noise (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_n_noise (not_set)	counts not_set	Number of ATLAS noise photons in strong beam for each group of 50 ATLAS shots in 2 km search window
atlas_50shot_n_strong_signal (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_n_strong_signal (not_set)	counts not_set	Number of ATLAS signal photons in strong beam for each group of 50 ATLAS shots in 2 km search window.
atlas_50shot_n_weak_signal (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_n_weak_signal (not_set)	counts not_set	Number of ATLAS signal photons in weak beam for each group of 50 ATLAS shots in 2 km search window.
Group: /photon/right/channel000/mabel_stats				
h5es_id	(Attribute)	56		
Description	(Attribute)	MABEL photon counts in statistics segment defined by mab_stat_length.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
stats_delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	stats_delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
stats_first_shot (Chunked Dataset)	INTEGER_4 (UNLIMITED)	Stats_first_shot (not_set)	counts not_set	MABEL Shot number of first shot in the statistics segments
stats_noise (Chunked Dataset)	INTEGER_4 (UNLIMITED)	stats_noise (not_set)	counts not_set	Number of MABEL noise photons in statistics segments.
stats_signal (Chunked Dataset)	INTEGER_4 (UNLIMITED)	stats_signal (not_set)	counts not_set	Number of MABEL signal photons in statistics segments.
Group: /photon/right/channel000/matlas_total_counts				
h5es_id	(Attribute)	57		
Description	(Attribute)	Total photon counts in MATLAS granule.		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
total_bkgrd_noise (Compact Dataset)	INTEGER_4 (1)	total_background_noise (not_set)	counts not_set	Total number of MATLAS solar background noise photons
total_instr_noise (Compact Dataset)	INTEGER_4 (1)	total_instrument_noise (not_set)	counts not_set	Total number of MATLAS instrument noise photons
total_strong_signal (Compact Dataset)	INTEGER_4 (1)	total_strong_signal (not_set)	counts not_set	Total number of MATLAS signal photons in strong beam
total_weak_signal (Compact Dataset)	INTEGER_4 (1)	total_weak_signal (not_set)	counts not_set	Total number of MATLAS signal photons in weak beam
Group: /photon/right/channel000/strong				
h5es_id	(Attribute)	34		
Description	(Attribute)	Contains strong or weak channel photon parameters.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
dist_from_track (Chunked Dataset)	FLOAT (UNLIMITED)	MABEL photon distance from ATLAS track (not_set)	meters Derived	Perpendicular distance of MABEL photon to the MATLAS track; positive = to the right; negative = to the left.
height (Chunked Dataset)	FLOAT (UNLIMITED)	MATLAS height (not_set)	meters Derived	MATLAS Height above the WGS84 ellipsoid
latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Latitude (not_set)	degrees_north Derived (Geolocation ATBD)	MATLAS Latitude, WGS84, North=+
longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Longitude (not_set)	degrees_east Derived	MATLAS Longitude, WGS84, East=+
mabel_latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL latitude (not_set)	degrees_north MABEL L2	MABEL Latitude, WGS84, North=+, copied from MABEL L2
mabel_longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL longitude (not_set)	degrees_east MABEL L2	MABEL Longitude, WGS84, East=+, copied from MABEL L2
mabel_photon_id (Chunked Dataset)	INTEGER_2 (UNLIMITED)	MABEL photon_id (not_set)	counts MABEL L2	MABEL Photon-per-shot counter. Increments for each photon detected within a shot. Together with shot_num, forms a unique identifier for each photon. However, be aware of shot_num rollover.
mabel_shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MABEL shot number (not_set)	counts MABEL L2	MABEL Shot number, copied from the MABEL L2.
photon_type (Chunked Dataset)	INTEGER_1 (UNLIMITED)	MATLAS photon type (not_set)	not_set Derived	MATLAS Photon type: xxx = signal photon in channel xxx; 100 = solar background noise photon, 101 = instrument noise photon.
shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MATLAS Shot Number (not_set)	counts Derived	MATLAS shot number.

Group: /photon/right/channel000/weak				
h5es_id	(Attribute)	34		
Description	(Attribute)	Contains strong or weak channel photon parameters.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
dist_from_track (Chunked Dataset)	FLOAT (UNLIMITED)	MABEL photon distance from ATLAS track (not_set)	meters Derived	Perpendicular distance of MABEL photon to the MATLAS track; positive = to the right; negative = to the left.
height (Chunked Dataset)	FLOAT (UNLIMITED)	MATLAS height (not_set)	meters Derived	MATLAS Height above the WGS84 ellipsoid
latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Latitude (not_set)	degrees_north Derived (Geolocation ATBD)	MATLAS Latitude, WGS84, North=+
longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Longitude (not_set)	degrees_east Derived	MATLAS Longitude, WGS84, East=+
mabel_latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL latitude (not_set)	degrees_north MABEL L2	MABEL Latitude, WGS84, North=+, copied from MABEL L2
mabel_longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL longitude (not_set)	degrees_east MABEL L2	MABEL Longitude, WGS84, East=+, copied from MABEL L2
mabel_photon_id (Chunked Dataset)	INTEGER_2 (UNLIMITED)	MABEL photon_id (not_set)	counts MABEL L2	MABEL Photon-per-shot counter. Increments for each photon detected within a shot. Together with shot_num, forms a unique identifier for each photon. However, be aware of shot_num rollover.
mabel_shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MABEL shot number (not_set)	counts MABEL L2	MABEL Shot number, copied from the MABEL L2.
photon_type (Chunked Dataset)	INTEGER_1 (UNLIMITED)	MATLAS photon type (not_set)	not_set Derived	MATLAS Photon type: xxx = signal photon in channel xxx; 100 = solar background noise photon, 101 = instrument noise photon.
shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MATLAS Shot Number (not_set)	counts Derived	MATLAS shot number.
Group: /photon/right/channel007				
h5es_id	(Attribute)	33		
Description	(Attribute)	Contains per-channel photon parameters.		
Group: /photon/right/channel007/atlas_50_shot				
h5es_id	(Attribute)	55		
Description	(Attribute)	ATLAS signal and noise for 50 shots in a 2 km search window.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
atlas_50shot_delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	atlas_50shot_delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
atlas_50shot_first_shot (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_first_shot (not_set)	counts Derived	ATLAS shot number of first shot in the ATLAS 50 shot segments
atlas_50shot_n_noise (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_n_noise (not_set)	counts not_set	Number of ATLAS noise photons in strong beam for each group of 50 ATLAS shots in 2 km search window
atlas_50shot_n_strong_signal (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_n_strong_signal (not_set)	counts not_set	Number of ATLAS signal photons in strong beam for each group of 50 ATLAS shots in 2 km search window.
atlas_50shot_n_weak_signal (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_n_weak_signal (not_set)	counts not_set	Number of ATLAS signal photons in weak beam for each group of 50 ATLAS shots in 2 km search window.
Group: /photon/right/channel007/mabel_stats				
h5es_id	(Attribute)	56		
Description	(Attribute)	MABEL photon counts in statistics segment defined by mab_stat_length.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
stats_delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	stats_delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
stats_first_shot (Chunked Dataset)	INTEGER_4 (UNLIMITED)	Stats_first_shot (not_set)	counts not_set	MABEL Shot number of first shot in the statistics segments
stats_noise (Chunked Dataset)	INTEGER_4 (UNLIMITED)	stats_noise (not_set)	counts not_set	Number of MABEL noise photons in statistics segments.
stats_signal (Chunked Dataset)	INTEGER_4 (UNLIMITED)	stats_signal (not_set)	counts not_set	Number of MABEL signal photons in statistics segments.
Group: /photon/right/channel007/matlas_total_counts				
h5es_id	(Attribute)	57		
Description	(Attribute)	Total photon counts in MATLAS granule.		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description

total_bkgrd_noise (Compact Dataset)	INTEGER_4 (1)	total_background_noise (not_set)	counts not_set	Total number of MATLAS solar background noise photons
total_instr_noise (Compact Dataset)	INTEGER_4 (1)	total_instrument_noise (not_set)	counts not_set	Total number of MATLAS instrument noise photons
total_strong_signal (Compact Dataset)	INTEGER_4 (1)	total_strong_signal (not_set)	counts not_set	Total number of MATLAS signal photons in strong beam
total_weak_signal (Compact Dataset)	INTEGER_4 (1)	total_weak_signal (not_set)	counts not_set	Total number of MATLAS signal photons in weak beam
Group: /photon/right/channel007/strong				
h5es_id	(Attribute)	34		
Description	(Attribute)	Contains strong or weak channel photon parameters.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
dist_from_track (Chunked Dataset)	FLOAT (UNLIMITED)	MABEL photon distance from ATLAS track (not_set)	meters Derived	Perpendicular distance of MABEL photon to the MATLAS track; positive = to the right; negative = to the left.
height (Chunked Dataset)	FLOAT (UNLIMITED)	MATLAS height (not_set)	meters Derived	MATLAS Height above the WGS84 ellipsoid
latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Latitude (not_set)	degrees_north Derived (Geolocation ATBD)	MATLAS Latitude, WGS84, North=+
longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Longitude (not_set)	degrees_east Derived	MATLAS Longitude, WGS84, East=+
mabel_latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL latitude (not_set)	degrees_north MABEL L2	MABEL Latitude, WGS84, North=+, copied from MABEL L2
mabel_longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL longitude (not_set)	degrees_east MABEL L2	MABEL Longitude, WGS84, East=+, copied from MABEL L2
mabel_photon_id (Chunked Dataset)	INTEGER_2 (UNLIMITED)	MABEL photon_id (not_set)	counts MABEL L2	MABEL Photon-per-shot counter. Increments for each photon detected within a shot. Together with shot_num, forms a unique identifier for each photon. However, be aware of shot_num rollover.
mabel_shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MABEL shot number (not_set)	counts MABEL L2	MABEL Shot number, copied from the MABEL L2.
photon_type (Chunked Dataset)	INTEGER_1 (UNLIMITED)	MATLAS photon type (not_set)	not_set Derived	MATLAS Photon type: xxx = signal photon in channel xxx; 100 = solar background noise photon, 101 = instrument noise photon.
shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MATLAS Shot Number (not_set)	counts Derived	MATLAS shot number.
Group: /photon/right/channel007/weak				
h5es_id	(Attribute)	34		
Description	(Attribute)	Contains strong or weak channel photon parameters.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
dist_from_track (Chunked Dataset)	FLOAT (UNLIMITED)	MABEL photon distance from ATLAS track (not_set)	meters Derived	Perpendicular distance of MABEL photon to the MATLAS track; positive = to the right; negative = to the left.
height (Chunked Dataset)	FLOAT (UNLIMITED)	MATLAS height (not_set)	meters Derived	MATLAS Height above the WGS84 ellipsoid
latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Latitude (not_set)	degrees_north Derived (Geolocation ATBD)	MATLAS Latitude, WGS84, North=+
longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Longitude (not_set)	degrees_east Derived	MATLAS Longitude, WGS84, East=+
mabel_latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL latitude (not_set)	degrees_north MABEL L2	MABEL Latitude, WGS84, North=+, copied from MABEL L2
mabel_longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL longitude (not_set)	degrees_east MABEL L2	MABEL Longitude, WGS84, East=+, copied from MABEL L2
mabel_photon_id (Chunked Dataset)	INTEGER_2 (UNLIMITED)	MABEL photon_id (not_set)	counts MABEL L2	MABEL Photon-per-shot counter. Increments for each photon detected within a shot. Together with shot_num, forms a unique identifier for each photon. However, be aware of shot_num rollover.
mabel_shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MABEL shot number (not_set)	counts MABEL L2	MABEL Shot number, copied from the MABEL L2.
photon_type (Chunked Dataset)	INTEGER_1 (UNLIMITED)	MATLAS photon type (not_set)	not_set Derived	MATLAS Photon type: xxx = signal photon in channel xxx; 100 = solar background noise photon, 101 = instrument noise photon.
shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MATLAS Shot Number (not_set)	counts Derived	MATLAS shot number.
Group: /photon/right/channel009				

h5es_id	(Attribute)	33		
Description	(Attribute)	Contains per-channel photon parameters.		
Group: /photon/right/channel009/atlas_50_shot				
h5es_id	(Attribute)	55		
Description	(Attribute)	ATLAS signal and noise for 50 shots in a 2 km search window.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
atlas_50shot_delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	atlas_50shot_delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
atlas_50shot_first_shot (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_first_shot (not_set)	counts Derived	ATLAS shot number of first shot in the ATLAS 50 shot segments
atlas_50shot_n_noise (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_n_noise (not_set)	counts not_set	Number of ATLAS noise photons in strong beam for each group of 50 ATLAS shots in 2 km search window
atlas_50shot_n_strong_signal (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_n_strong_signal (not_set)	counts not_set	Number of ATLAS signal photons in strong beam for each group of 50 ATLAS shots in 2 km search window.
atlas_50shot_n_weak_signal (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_n_weak_signal (not_set)	counts not_set	Number of ATLAS signal photons in weak beam for each group of 50 ATLAS shots in 2 km search window.
Group: /photon/right/channel009/mabel_stats				
h5es_id	(Attribute)	56		
Description	(Attribute)	MABEL photon counts in statistics segment defined by mab_stat_length.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
stats_delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	stats_delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
stats_first_shot (Chunked Dataset)	INTEGER_4 (UNLIMITED)	Stats_first_shot (not_set)	counts not_set	MABEL Shot number of first shot in the statistics segments
stats_noise (Chunked Dataset)	INTEGER_4 (UNLIMITED)	stats_noise (not_set)	counts not_set	Number of MABEL noise photons in statistics segments.
stats_signal (Chunked Dataset)	INTEGER_4 (UNLIMITED)	stats_signal (not_set)	counts not_set	Number of MABEL signal photons in statistics segments.
Group: /photon/right/channel009/matlas_total_counts				
h5es_id	(Attribute)	57		
Description	(Attribute)	Total photon counts in MATLAS granule.		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
total_bkgrd_noise (Compact Dataset)	INTEGER_4 (1)	total_background_noise (not_set)	counts not_set	Total number of MATLAS solar background noise photons
total_instr_noise (Compact Dataset)	INTEGER_4 (1)	total_instrument_noise (not_set)	counts not_set	Total number of MATLAS instrument noise photons
total_strong_signal (Compact Dataset)	INTEGER_4 (1)	total_strong_signal (not_set)	counts not_set	Total number of MATLAS signal photons in strong beam
total_weak_signal (Compact Dataset)	INTEGER_4 (1)	total_weak_signal (not_set)	counts not_set	Total number of MATLAS signal photons in weak beam
Group: /photon/right/channel009/strong				
h5es_id	(Attribute)	34		
Description	(Attribute)	Contains strong or weak channel photon parameters.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
dist_from_track (Chunked Dataset)	FLOAT (UNLIMITED)	MABEL photon distance from ATLAS track (not_set)	meters Derived	Perpendicular distance of MABEL photon to the MATLAS track; positive = to the right; negative = to the left.
height (Chunked Dataset)	FLOAT (UNLIMITED)	MATLAS height (not_set)	meters Derived	MATLAS Height above the WGS84 ellipsoid
latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Latitude (not_set)	degrees_north Derived (Geolocation ATBD)	MATLAS Latitude, WGS84, North=+
longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Longitude (not_set)	degrees_east Derived	MATLAS Longitude, WGS84, East=+
mabel_latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL latitude (not_set)	degrees_north MABEL L2	MABEL Latitude, WGS84, North=+, copied from MABEL L2
mabel_longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL longitude (not_set)	degrees_east MABEL L2	MABEL Longitude, WGS84, East=+, copied from MABEL L2
mabel_photon_id (Chunked Dataset)	INTEGER_2 (UNLIMITED)	MABEL photon_id (not_set)	counts MABEL L2	MABEL Photon-per-shot counter. Increments for each photon detected within a shot. Together with shot_num, forms a unique identifier for each photon. However, be aware of shot_num rollover.

mabel_shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MABEL shot number (not_set)	counts MABEL L2	MABEL Shot number, copied from the MABEL L2.
photon_type (Chunked Dataset)	INTEGER_1 (UNLIMITED)	MATLAS photon type (not_set)	not_set Derived	MATLAS Photon type: xxx = signal photon in channel xxx; 100 = solar background noise photon, 101 = instrument noise photon.
shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MATLAS Shot Number (not_set)	counts Derived	MATLAS shot number.
Group: /photon/right/channel009/weak				
h5es_id	(Attribute)	34		
Description	(Attribute)	Contains strong or weak channel photon parameters.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
dist_from_track (Chunked Dataset)	FLOAT (UNLIMITED)	MABEL photon distance from ATLAS track (not_set)	meters Derived	Perpendicular distance of MABEL photon to the MATLAS track; positive = to the right; negative = to the left.
height (Chunked Dataset)	FLOAT (UNLIMITED)	MATLAS height (not_set)	meters Derived	MATLAS Height above the WGS84 ellipsoid
latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Latitude (not_set)	degrees_north Derived (Geolocation ATBD)	MATLAS Latitude, WGS84, North=+
longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Longitude (not_set)	degrees_east Derived	MATLAS Longitude, WGS84, East=+
mabel_latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL latitude (not_set)	degrees_north MABEL L2	MABEL Latitude, WGS84, North=+, copied from MABEL L2
mabel_longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL longitude (not_set)	degrees_east MABEL L2	MABEL Longitude, WGS84, East=+, copied from MABEL L2
mabel_photon_id (Chunked Dataset)	INTEGER_2 (UNLIMITED)	MABEL photon_id (not_set)	counts MABEL L2	MABEL Photon-per-shot counter. Increments for each photon detected within a shot. Together with shot_num, forms a unique identifier for each photon. However, be aware of shot_num rollover.
mabel_shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MABEL shot number (not_set)	counts MABEL L2	MABEL Shot number, copied from the MABEL L2.
photon_type (Chunked Dataset)	INTEGER_1 (UNLIMITED)	MATLAS photon type (not_set)	not_set Derived	MATLAS Photon type: xxx = signal photon in channel xxx; 100 = solar background noise photon, 101 = instrument noise photon.
shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MATLAS Shot Number (not_set)	counts Derived	MATLAS shot number.
Group: /photon/right/channel011				
h5es_id	(Attribute)	33		
Description	(Attribute)	Contains per-channel photon parameters.		
Group: /photon/right/channel011/atlas_50_shot				
h5es_id	(Attribute)	55		
Description	(Attribute)	ATLAS signal and noise for 50 shots in a 2 km search window.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
atlas_50shot_delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	atlas_50shot_delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
atlas_50shot_first_shot (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_first_shot (not_set)	counts Derived	ATLAS shot number of first shot in the ATLAS 50 shot segments
atlas_50shot_n_noise (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_n_noise (not_set)	counts not_set	Number of ATLAS noise photons in strong beam for each group of 50 ATLAS shots in 2 km search window
atlas_50shot_n_strong_signal (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_n_strong_signal (not_set)	counts not_set	Number of ATLAS signal photons in strong beam for each group of 50 ATLAS shots in 2 km search window.
atlas_50shot_n_weak_signal (Chunked Dataset)	INTEGER_4 (UNLIMITED)	atlas_50shot_n_weak_signal (not_set)	counts not_set	Number of ATLAS signal photons in weak beam for each group of 50 ATLAS shots in 2 km search window.
Group: /photon/right/channel011/mabel_stats				
h5es_id	(Attribute)	56		
Description	(Attribute)	MABEL photon counts in statistics segment defined by mab_stat_length.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
stats_delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	stats_delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
stats_first_shot (Chunked Dataset)	INTEGER_4 (UNLIMITED)	Stats_first_shot (not_set)	counts not_set	MABEL Shot number of first shot in the statistics segments
stats_noise (Chunked Dataset)	INTEGER_4 (UNLIMITED)	stats_noise (not_set)	counts not_set	Number of MABEL noise photons in statistics segments.

stats_signal (Chunked Dataset)	INTEGER_4 (UNLIMITED)	stats_signal (not_set)	counts not_set	Number of MABEL signal photons in statistics segments.
Group: /photon/right/channel011/matlas_total_counts				
h5es_id	(Attribute)	57		
Description	(Attribute)	Total photon counts in MATLAS granule.		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
total_bkgrd_noise (Compact Dataset)	INTEGER_4 (1)	total_background_noise (not_set)	counts not_set	Total number of MATLAS solar background noise photons
total_instr_noise (Compact Dataset)	INTEGER_4 (1)	total_instrument_noise (not_set)	counts not_set	Total number of MATLAS instrument noise photons
total_strong_signal (Compact Dataset)	INTEGER_4 (1)	total_strong_signal (not_set)	counts not_set	Total number of MATLAS signal photons in strong beam
total_weak_signal (Compact Dataset)	INTEGER_4 (1)	total_weak_signal (not_set)	counts not_set	Total number of MATLAS signal photons in weak beam
Group: /photon/right/channel011/strong				
h5es_id	(Attribute)	34		
Description	(Attribute)	Contains strong or weak channel photon parameters.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
dist_from_track (Chunked Dataset)	FLOAT (UNLIMITED)	MABEL photon distance from ATLAS track (not_set)	meters Derived	Perpendicular distance of MABEL photon to the MATLAS track; positive = to the right; negative = to the left.
height (Chunked Dataset)	FLOAT (UNLIMITED)	MATLAS height (not_set)	meters Derived	MATLAS Height above the WGS84 ellipsoid
latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Latitude (not_set)	degrees_north Derived (Geolocation ATBD)	MATLAS Latitude, WGS84, North=+
longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Longitude (not_set)	degrees_east Derived	MATLAS Longitude, WGS84, East=+
mabel_latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL latitude (not_set)	degrees_north MABEL L2	MABEL Latitude, WGS84, North=+, copied from MABEL L2
mabel_longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL longitude (not_set)	degrees_east MABEL L2	MABEL Longitude, WGS84, East=+, copied from MABEL L2
mabel_photon_id (Chunked Dataset)	INTEGER_2 (UNLIMITED)	MABEL photon_id (not_set)	counts MABEL L2	MABEL Photon-per-shot counter. Increments for each photon detected within a shot. Together with shot_num, forms a unique identifier for each photon. However, be aware of shot_num rollover.
mabel_shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MABEL shot number (not_set)	counts MABEL L2	MABEL Shot number, copied from the MABEL L2.
photon_type (Chunked Dataset)	INTEGER_1 (UNLIMITED)	MATLAS photon type (not_set)	not_set Derived	MATLAS Photon type: xxx = signal photon in channel xxx; 100 = solar background noise photon, 101 = instrument noise photon.
shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MATLAS Shot Number (not_set)	counts Derived	MATLAS shot number.
Group: /photon/right/channel011/weak				
h5es_id	(Attribute)	34		
Description	(Attribute)	Contains strong or weak channel photon parameters.		
data_rate	(Attribute)	not_set		
Label (Layout)	Datatype (Dimensions)	long_name (standard_name)	units source	description
delta_time (Chunked Dataset)	DOUBLE (UNLIMITED)	delta_time (time)	seconds Derived (gps_seconds-gps_second_offset)	Elapsed seconds since start of MABEL granule_gps_epoch (start of MABEL granule).
dist_from_track (Chunked Dataset)	FLOAT (UNLIMITED)	MABEL photon distance from ATLAS track (not_set)	meters Derived	Perpendicular distance of MABEL photon to the MATLAS track; positive = to the right; negative = to the left.
height (Chunked Dataset)	FLOAT (UNLIMITED)	MATLAS height (not_set)	meters Derived	MATLAS Height above the WGS84 ellipsoid
latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Latitude (not_set)	degrees_north Derived (Geolocation ATBD)	MATLAS Latitude, WGS84, North=+
longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MATLAS Longitude (not_set)	degrees_east Derived	MATLAS Longitude, WGS84, East=+
mabel_latitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL latitude (not_set)	degrees_north MABEL L2	MABEL Latitude, WGS84, North=+, copied from MABEL L2
mabel_longitude (Chunked Dataset)	DOUBLE (UNLIMITED)	MABEL longitude (not_set)	degrees_east MABEL L2	MABEL Longitude, WGS84, East=+, copied from MABEL L2
mabel_photon_id (Chunked Dataset)	INTEGER_2 (UNLIMITED)	MABEL photon_id (not_set)	counts MABEL L2	MABEL Photon-per-shot counter. Increments for each photon detected within a shot. Together with shot_num, forms a unique identifier for each photon. However, be aware of shot_num rollover.

mabel_shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MABEL shot number (not_set)	counts MABEL L2	MABEL Shot number, copied from the MABEL L2.
photon_type (Chunked Dataset)	INTEGER_1 (UNLIMITED)	MATLAS photon type (not_set)	not_set Derived	MATLAS Photon type: xxx = signal photon in channel xxx; 100 = solar background noise photon, 101 = instrument noise photon.
shot_num (Chunked Dataset)	INTEGER_4 (UNLIMITED)	MATLAS Shot Number (not_set)	counts Derived	MATLAS shot number.