

MOD29 AND MYD29 GLOBAL AND LOCAL SEA ICE ATTRIBUTES, VERSION 5

MOD29 and MYD29 Global Sea Ice Attributes, Version 5

The MOD29 and MYD29 sea ice product data files include three Earth Observing System Data and Information System (EOSDIS) Core System (ECS) global attributes. These global attributes are stored as character strings in Parameter Value Language (PVL) format. Also, these global attributes as well as other attributes can be found in the associated metadata file, and are formatted as Extensible Markup Language (XML). The metadata file should be examined to determine if post-production changes were made to the metadata. Post-production metadata changes are not updated in the data file. Changes such as Quality Assessment (QA) updates are only reflected in the metadata file.

The global attributes described in this document include:

- CoreMetadata.0
- ArchiveMetadata.0
- StructMetadata.0
- Product Specific Attributes

CoreMetadata.0

Also known as inventory metadata, core metadata are used to populate the EOSDIS Core System (ECS) inventory, which allows users to locate granules of interest.

Object Name	Comments	Sample Value
ShortName	Earth Science Data Type (ESDT), name of product.	MOD29
VersionID	ECS Version.	5
ReprocessingActual	Number of times processed.	reprocessed
ReprocessingPlanned	Expect that products will be reprocessed at least once.	further update is anticipated
LocalGranuleID		MOD29.A2000055.1630.005.2006251012020.hdf
DayNightFlag	Can be Day, Night, or Both.	Night
ProductionDateTime	Time granule was produced.	2006-09-08T01:20:21.000Z
LocalVersionID	Version of algorithm delivered from the Science Computing Facility (SCF).	SCF V5.0.1
PGEVersion	Version of the Production Generation Executable (PGE).	5.0.5
InputPointer	Location of the three input files in the production system.	MOD021KM.A2000055.1630.005.2006251011238.hdf MOD35_L2.A2000055.1630.005.2006251011455.hdf MOD03.A2000055.1630.005.2006250020046.hdf
RangeBeginningDate	Beginning date of the first scan line in the swath.	2000-02-24

Object Name	Comments	Sample Value
RangeBeginningTime	Beginning time of the first scan line in the swath.	16:30:00.000000
RangeEndingDate	Ending date of the last scan line in the swath.	2000-02-24
RangeEndingTime	Ending time of the last scan line in the swath.	16:35:00.000000
ExclusionGringFlag		N
GringPointLatitude	Geographic latitude bounds of swath coverage.	70.8882777954628 63.2943859872835 70.9129247178789 87.5238969788292
GringPointLongitude	Geographic longitude bounds of swath coverage.	103.651253274833 49.559073705244 5.30690667501476 170.111477089197
GringPointSequenceNo		1, 2, 3, 4
OrbitNumber		995
EquatorCrossingLongitude		-93.8082345793327
EquatorCrossingDate		2000-02-24
EquatorCrossingTime		16:59:59.017095
ParameterName	Parameter for which QA statistics are given in this metadata object.	Sea_Ice_by_Reflectance
AutomaticQualityFlag	Result of automated checks during the run of the algorithm that screens for significant amounts of anomalous data.	Passed

Object Name	Comments	Sample Value
AutomaticQualityFlagExplanation	Explanation of result of automated QA checks made during execution.	No automatic quality assessment done in the PGE
ScienceQualityFlag	Set by snow investigator after post-production investigation.	Not investigated
ScienceQualityFlagExplanation	Explanation of Science Flag.	Visit http://landweb.nascom.nasa.gov/cgi-bin/QA_WWW/qaFlagPage.cgi?sat=terra for the product Science Quality status.
QAPercentMissingData	0-100	0
QAPercentCloudCover	0-100	78
AncillaryInputPointer	Location of geolocation input product in production system.	MOD03.A2000055.1630.005.2006250020046.hdf
AncillaryInputType	Type of ancillary data referenced by pointer.	Geolocation
AssociatedSensorShortName		MODIS
AssociatedPlatformShortName		Terra
AssociatedInstrumentShortName		MODIS

CoreMetadata.0 Product Specific Attributes (PSAs)

The CoreMetadata.0 product specific metadata attributes can be found by using most search tools. Also, when using certain interfaces for tile numbers, these attributes may be used as search criteria to restrict searches.

Object Name	Comments	Sample Value
QAPercentGoodQuality	Summary quality assessment statistic based on the thermal data. Range is 0-100.	100
QAPercentOtherQuality		0
GranuleNumber	Unique granule identifier.	200
SealcePercent	Summary percentage of sea ice detected (0-100), or not a number (nan).	nan

ArchiveMetadata.0

This attribute contains information relevant to production of the data product. It also contains an alternate bounding of geographic coverage of the swath. These data are useful in determining what version of the algorithm was used to generate the product.

Object Name	Comment	Sample Value
EastBoundingCoordinate	Extent of swath coverage in latitude and longitude	160.930189011806
WestBoundingCoordinate		5.34047068143603
NorthBounding Coordinate		89.0155141245487
SouthBounding Coordinate		63.2960890323115
AlgorithmPackageAcceptanceDate	Algorithm descriptors	05-2005
AlgorithmPackageMaturityCode		Normal
AlgorithmPackageName		MOD29_PR29
AlgorithmPackageVersion		5
InstrumentName		Moderate-Resolution Imaging SpectroRadiometer
PlatformShortName		Terra
ProcessingDateTime		2006-09-08T01:20:21.000Z
LongName		MODIS/Terra Sea Ice Extent 5-Min L2 Swath 1km
Processing Center		MODAPS
SPSOParameters		none
LocalInputGranuleID	Names of the three input files	MOD021KM.A2000055.1630.005.2006251011238.hdf MOD35_L2.A2000055.1630.005.2006251011455.hdf MOD03.A2000055.1630.005.2006250020046.hdf
DESCRRevision	Version of Metadata Configuration File (MCF)	5.0

StructMetadata.0

These attributes specify the content and structure of an HDF-EOS file and are not discussed further here. For more information, please see the 2001 white paper [“An HDF-EOS and Data Formatting Primer for the ECS Project.”](#)

Product Specific Attributes

These attributes are specific to the MOD29 and MYD29 sea ice product.

Attribute Name	Comment	Sample Value
L1BCalibrationQuality		marginal
L1BMissionPhase		EXECUTION
L1BNadirPointing		Y
L1BVersionID	Version of L1B processing algorithm	2000-02-24
L1BAutoQA_EV_1KM_RefsB	Result of generalized quality analysis of L1B data	Suspect
SCFAlgorithmVersion	SCF versioning tracking information	\$Id: MOD_PR29_AA...

MOD29 AND MYD29 LOCAL SEA ICE ATTRIBUTES, VERSION 5

Local attributes describe the data and provide summary information about the results of the sea ice algorithm. Two types of local attributes are reported: Hierarchical Data Format (HDF) predefined and custom local attributes.

HDF Predefined Local Attributes

Attribute Name	Reserved Label(s)	Definition	Sample Value
Label	long_name	Long name of the Scientific Data Set (SDS).	Sea ice by reflective characteristics
Unit	units	International System of Units (SI) of the data. This attribute may or may not be used.	none
Format	format	How the data should be viewed in Fortran format notation	I3
Coordinate system	coordsys	Coordinate system to use for the data	cartesian
Range	valid_range	Maximum and minimum values of valid data.	0,254
Fill Value	_FillValue	Data used to fill gaps in the swath	255
Calibration	scale_factor	Value by which each data element is to be multiplied. (Ice Surface Temperature (IST) only).	0.01
	scale_factor_err	Error induced by scaling. (IST only).	0.0
	add_offset	Value to add to each array element. (IST only).	0.0
	add_offset_err	Error induced by offset. (IST only).	0.0
	calibrated_nt	HDF data types of the calibrated data. (IST only).	5 (float 32)

Custom Local Attributes for the Sea Ice by Reflectance Field

Attribute Name	Definition	Sample Value	
		Value	Description
Key	Key to the meaning of the coded integers within the SDS.	0 = missing data	L1B data missing
		1 = no decision	no decision
		11 = night	darkness, terminator, or polar
		25 = land	snow-free land
		37 = inland water	lake or inland water
		39 = ocean	open water
		50 = cloud	cloud obscured
		100 = lake ice	snow-covered lake ice
		200 = sea ice	snow-covered sea ice
		254 = detector saturated	detector saturated
		255 = fill	fill
Nadir_data_resolution	Nominal spatial resolution of the pixels at nadir.	1 km	
Valid EV Obs Band 2 (%)	Percentage ¹ of valid observations from Level 1B in Band 2 of the swath.	77.83251	
Valid EV Obs Band 4 (%)	Percentage ¹ of valid observations from Level 1B in Band 4 of the swath.	77.83248	
Valid EV Obs Band 6 (%)	Percentage ¹ of valid observations from Level 1B in Band 6 of the swath.	77.709114	

Attribute Name	Definition	Sample Value
Saturated EV Obs Band 2 (%)	Percentage ¹ of saturated observations from Level 1B in Band 2 of the swath.	0.0
Saturated EV Obs Band 4 (%)	Percentage ¹ of saturated observations from Level 1B in Band 4 of the swath.	0.0
Saturated EV Obs Band 6 (%)	Percentage ¹ of saturated observations from Level 1B in Band 6 of the swath.	0.0

Custom Local Attributes for the Ice Surface Temperature Field

Attribute Name	Definition	Sample Value	
Key	Key to the meaning of the scaled values within the SDS.	Value	Description
		0.0 = missing data	L1B data missing
		1.0 = no decision	no decision
		11.0 = night	darkness, terminator, or polar
		25.0 = land	snow-free land
		37.0 = inland water	lake or inland water
		39.0 = open ocean	open water
		50.0 = cloud	cloud obscured
		243.0 - 273.0 = expected Ice Surface Temperature (IST) range	
655.35 = fill	fill		
Valid EV Obs Band 31	Percentage of valid observations from level 1B in band 31 in the swath.	100.0	

Attribute Name	Definition	Sample Value
Valid EV Obs Band 32	Percentage of valid observations from level 1B in band 32 in the swath.	100.0
Saturated EV Obs Band 31	Percentage of saturated observations from level 1B in band 31 in the swath.	0.0
Saturated EV Obs Band 32	Percentage of saturated observations from level 1B in band 32 in the swath.	0.0

Custom Local Attributes for the Sea Ice by Reflectance Pixel QA Field

Attribute Name	Definition	Value
Key	Explanation of the Quality Assessment (QA) Flag.	0 = good quality 1 = other quality 252 = Antarctica mask 253 = land mask 254 = ocean mask 255 = fill

Custom Local Attributes for the Ice Surface Temperature Pixel QA Field

Attribute Name	Definition	Value
Key	Explanation of the Quality Assessment (QA) Flag.	0 = good quality 1 = other quality 252 = Antarctica mask 253 = land mask 254 = ocean mask 255 = fill

Custom Local Attributes for the Latitude Field

Attribute Name	Definition	Sample Value
Source	Where the geolocation information came from.	MOD03 geolocation product; data read from center pixel in 5 km box.

Custom Local Attributes for the Longitude Field

Attribute Name	Definition	Sample Value
Source	Where the geolocation information came from.	MOD03 geolocation product; data read from center pixel in 5 km box.