

# MOD10A2 and MYD10A2 Snow Cover Attributes, Version 5

## MOD10A2 AND MYD10A2 GLOBAL SNOW COVER ATTRIBUTES

The MODIS snow cover products 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. Many of 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 QA updates are only reflected in the metadata file.

### CoreMetadata.0

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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	MOD10A2
VersionID	ECS Version	5
ReprocessingActual	Reprocessed or not reprocessed	reprocessed
ReprocessingPlanned	Expect that products will be reprocessed at least once	further update is anticipated
LocalGranuleID		MOD10A2.A2000129.h07v03.0 05.2006223085826.hdf
DayNightFlag	Snow will have either Day or Both	Day
ProductionDateTime	Time granule was produced	2006-08-11T08:58:31.000Z
LocalVersionID	Version of algorithm delivered from the Science Computing Facility (SCF)	SCF V5.0.0
PGEVersion	Version of PGE in MODAPS	5.0.6



Object Name	Comments	Sample Value
InputPointer	Names of input files	MOD10A1.A2000129.h07v03.0 05.2006206165829.hdf MOD10A1.A2000130.h07v03.0 05.2006207032309.hdf MOD10A1.A2000131.h07v03.0 05.2006207081316.hdf MOD10A1.A2000132.h07v03.0 05.2006208043936.hdf MOD10A1.A2000133.h07v03.0 05.2006207181915.hdf MOD10A1.A2000134.h07v03.0 05.2006208022537.hdf MOD10A1.A2000135.h07v03.0 05.2006208160657.hdf MOD10A1.A2000136.h07v03.0 05.2006208215150.hdf
RangeBeginningDate	Beginning date of the first data used in the product	2000-05-08
RangeBeginningTime	Beginning time of the first data used in the product	00:00:00
RangeEndingDate	Ending date of the last data used in the product	2000-05-15
RangeEndingTime	Ending time of the last data used in the product	23:59:59
ExclusionGringFlag		N
GringPointLatitude	Geographic latitude bounds of tile coverage	48.9382100186222 56.0388053943621 56.9789890577371 49.7514464176439
GringPointLongitude	Geographic longitude bounds of tile coverage	-178.802776237407 178.45687533541 -154.197737435825 -155.613731035609
GringPointSequenceNo		1,2,3,4
ParameterName	Parameter for which QA statistics are given in this metadata object	Maximum Snow Extent
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	See <a href="#">MODLAND QA - Product Quality Documentation - Terra, C6</a> for the product Science Quality status
QAPercentMissingData	0-100	0
QAPercentCloudCover	0-100	1
AssociatedPlatformShortName		Terra
AssociatedInstrumentShortName		MODIS
AssociatedSensorShortName		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 statistics for data product. Note: pixels identified as cloud are considered good quality	100
QAPercentOtherQuality		0
HorizontalTileNumber	Horizontal position in Sinusoidal Grid (SIN)	7
VerticalTileNumber	Vertical position in SIN	3
TileID	Coded tile identifier	51007003
SnowCoverPercent	Summary percentage of snow-covered land	9

## ArchiveMetadata.0

These attributes contain information relevant to production of the data product. They also contain 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
CharacteristicBinAngularSize		15.0
CharacteristicBinSize		463.312716527778
DataColumns		2400
DataRows		2400
GlobalGridColumns		86400
GlobalGridRows		43200
AlgorithmPackageAcceptanceDate	Algorithm descriptors	01-2005
AlgorithmPackageMaturityCode		Normal
AlgorithmPackageName		MOD_PR10A2
AlgorithmPackageVersion		5
InstrumentName		Moderate Resolution Imaging Spectroradiometer
PlatformShortName		Terra
ProcessingDateTime		2006-08-11T08:58:26.000Z
LongName		MODIS/Terra Snow Cover 8-Day L3 Global 500m SIN Grid
ProcessingCenter		MODAPS
SPSOParameters		None
LocalInputGranuleID	Names of input files	MOD10A1.A2000129.h07v03.005.2006206165829.hdf, MOD10A1.A2000130.h07v03.005.2006207032309.hdf, MOD10A1.A2000131.h07v03.005.2006207081316.hdf, MOD10A1.A2000132.h07v03.005.2006208043936.hdf, MOD10A1.A2000133.h07v03.005.2006207181915.hdf, MOD10A1.A2000134.h07v03.005.2006208022537.hdf, MOD10A1.A2000135.h07v03.005.2006208160657.hdf, MOD10A1.A2000136.h07v03.005.2006208215150.hdf
EastBoundingCoordinate	Extent of tile coverage in latitude and longitude	-155.559418292319
WestBoundingCoordinate		-179.999999964708
NorthBoundingCoordinate		56.2583333282812
SouthBoundingCoordinate		49.9999999955098
DescrRevision	Version of MCF used	5.0
ProcessingEnvironment		IRIX64 mtvs3 6.5 10070055 IP35

## StructMetadata.0

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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 titled [An HDF-EOS and Data Formatting Primer for the ECS Project](#).

## Product Specific Global Attributes

These attributes are specific to the MOD10A2 and MYD10A2 snow cover product.

Attribute Name	Comment	Sample Value
HDFEOSVersion	Version of HDF-EOS Toolkit	HDFEOS_V2.9
Number of Input Days	Number of days input to the product (range 2-8)	8
Days Input	Year days of input in chronological order	2000-129, 2000-130, 2000-131, 2000-132, 2000-133, 2000-134, 2000-135, 2000-136
Eight Day Period	Days in the eight-day period	2000-129, 2000-136
SCF Algorithm Version	Internal SCF version	\$Id: MOD_PR10A2.AAmain.c,v 1.7 2002/05/01 19:15:30 powell Exp \$ \$Id: MOD_PR10A2.ActionMessages.h,v 1.3 1999/03/12 20:46:52 powell Exp \$ \$Id: MOD_PR10A2.h,v 1.9 2003/12/10 13:42:04 powell Exp \$ \$Id: MOD_PR10A2.CopyInputMeta.c,v 1.5 2003/11/20 12:41:53 powell Exp \$ \$Id: MOD_PR10A2.CopyGridStructure.c,v 1.3 1999/03/12 20:43:53 powell Exp \$ \$Id: MOD_PR10A2.InputOutput.c,v 1.5 2003/11/20 12:44:47 powell Exp \$ \$Id: MOD_PR10A2.ProcessDailySnowDay.c,v 1.4 2003/11/20 12:46:59 powell Exp \$ \$Id: MOD_PR10A2.CodeProducedMeta.c,v 1.12 2003/12/10 13:16:41 powell Exp \$

## MOD10A2 AND MYD10A2 LOCAL SNOW COVER ATTRIBUTES

Local attributes describe the data and provide summary information about the results of the snow cover 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)	Maximum snow extent over the 8-day period
Unit	units	International System of Units (SI) of the data.	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 within a selected data range	0,254
Fill Value	_FillValue	Data used to fill gaps in the swath	255
Calibration	scale_factor scale_factor_err add_offset add_offset_err calibrated_nt	Not used	Not used

## Custom Local Attributes for the Maximum\_Snow\_Extent Field

Attribute Name	Definition	Sample Value
Cell_area (km <sup>2</sup> )	Nominal cell area	0.21465868
Max_snow_area (km <sup>2</sup> )	Estimated area covered by snow	485125.2

Attribute Name	Definition	Sample Value	
		Value	Explanation
Key	Key to the meaning of the coded integers within the SDS.	0 = missing data	data missing
		1 = no decision	no decision
		11 = night	darkness, terminator, or polar
		25 = no snow	snow-free land
		37 = lake	lake or inland water
		39 = ocean	open water
		50 = cloud	cloud obscured
		100 = lake ice	snow-covered lake ice
		200 = snow	snow-covered land
		254 = detector saturated	detector saturated
		255 = fill	fill

## Custom Local Attributes for the Eight\_Day\_Snow\_Cover Field

Attribute Name	Definition	Sample Value	
		Value	Explanation
Key	Snow occurrence in chronological order. Day in period ordered as 87654321 corresponds to bit order of 76543210. Bit value of 1 means snow was observed. Bit value of 0 means snow was not observed.	0 = fill	fill

See [MOD10A2 and MYD10A2 Summary of Bit Values](#) for an interpretation of bit values and resulting integer values for the Eight Day Snow Cover field.