

**EDG Data Set Name**

MODIS/Terra Surface Reflectance 8-Day L3 Global 250m SIN Grid

Granule Shortname

MOD09Q1

Version	Acquisition Range	Science Quality Status
V003	March 21, 2000 (2000081) – December 31, 2002 (2002365)	Provisional as of Nov 1, 2000
V004	February 24, 2000 (2000055)	

Data Set Characteristics

Area = ~ 10° x 10° lat/long
 Image Dimensions = 2 (4800x4800 row/column)
 Average File Size = 139 MB
 Resolution = 250 meters
 Projection = Sinusoidal
 Data Format = HDF-EOS
 Science Data Sets (SDSs) = 3

Product Description

MODIS 250 m Surface Reflectance is a two-band product computed from the MODIS Level 1B land bands 1 and 2 (centered at 648 nm and 858 nm, respectively). The product is an estimate of the surface spectral reflectance for each band as it would be measured at ground level if there were no atmospheric scattering or absorption. A correction scheme reducing the effects of atmospheric gases, aerosols, and thin cirrus clouds is applied to all pixels passing Level 1B quality control.



The MODIS/Terra Surface Reflectance 8-Day L3 Global 250m SIN Grid product, MOD09Q1, is a composite of the previous 8 daily L2G Surface Reflectance products ([MOD09GQK](#)), which maintain the native 250m resolution in Bands 1 and 2. The best observations during an 8-day period, as determined by overall pixel quality and observational coverage, are matched geographically according to corresponding 250m Pointer Files ([MODPTQKM](#)). Quality assurance data for the MOD09Q1 product is provided at three different levels of detail: at the individual pixel level, at each band and each resolution level, and at the level of the whole file.

NOTE: These products are validated, meaning that product uncertainties are well defined over a range of representative conditions. Although there may be later improved versions, these data are ready for use in scientific publications.

SDS	Units	Data Type-bit	Fill Value	Valid Range	Multiply by Scale Factor
Surface Reflectance for band 1 (620-670 nm)	reflectance	16-bit signed integer	-28672	-100 - 16000	0.0001
Surface Reflectance for band 2 (841-876 nm)	reflectance	16-bit signed integer	-28672	-100 - 16000	0.0001

*Surface reflectance 250m quality control flags	Bit field	16-bit unsigned integer	65535	0-4294966531	na
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***Quality Control Bit Index:**

Bit	Description
0	spare (unused);
1	different orbit from 500 m;
	1 -- yes
	0 -- no
2	adjacency correction performed;
	1 -- yes
	0 -- no
3	atmospheric correction performed;
	1 -- yes
	0 -- no
4-7	band 2 data quality four bit range;
	0000 -- highest quality
	1000 -- dead detector; data copied from adjacent detector
	1001 -- solar zenith ≥ 86 degrees
	1010 -- solar zenith ≥ 85 and < 86 degrees
	1011 -- missing input
	1100 -- internal constant used in place of climatological data for at least one atmospheric constant
	1101 -- quality so low that it is not useful
	1110 -- L1B data faulty
	1111 -- not useful for any other reason or not processed due to deep ocean or clouds
8-11	band 1 data quality four bit range;
	SAME AS ABOVE
12-13	cloud state;
	00 -- clear
	01 -- cloudy
	10 -- mixed
	11 -- not set, assumed clear
14-15	MODLAND QA bits;
	corrected product produced at
	00 -- ideal quality all bands

	01 -- less than ideal quality some or all bands
	corrected product not produced due to
	10 -- cloud effects all bands
	11 -- other reasons some or all bands may be fill value
	[Note that a value of (11) overrides a value of (01)].

Order Data through the EOS Data Gateway

(<http://edcimswww.cr.usgs.gov/pub/imswelcome/>)

EOS Data Gateway Search Tips

Data Center: EDC-ECS
Sensor: MODIS
Dataset: MODIS/Terra Surface Reflectance 8-Day L3 Global 250m SIN Grid
Spatial: HORIZONTALTILENUMBER Max/Min VERTICALTILENUMBER Max/Min
Geographic Extent: Type Lat/Long Range or Draw on Map
Temporal Extent: 2000-02-24 to present

Retrieve Data through the LP DAAC Data Pool

(<http://edcdaac.usgs.gov/tutorial/datapool.html>)

Product Information

[Product Description](#)

(<http://modis-land.gsfc.nasa.gov/products/products.asp?ProdFamID=2>)

[User Guide](#)

(<http://modis-land.gsfc.nasa.gov/mod09/html/guide.htm>)

[Algorithm Theoretical Basis Document \(ATBD\)](#)

(http://eospsso.gsfc.nasa.gov/eos_homepage/for_scientists/atbd/viewInstrument.php?instrument=MODIS)

[MODIS Standard Data Products Catalog](#)

(<http://modis.gsfc.nasa.gov/data/dataprod/descchart.html>)

[EOS Data Products Handbook Volume 1 \(2000\)](#)

(http://eospsso.gsfc.nasa.gov/eos_homepage/misc_html/data_prod.html)

Contact Information

[LP DAAC User Services](#)

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URL: <http://LPDAAC.usgs.gov/modis/mod09q1v4.html>

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