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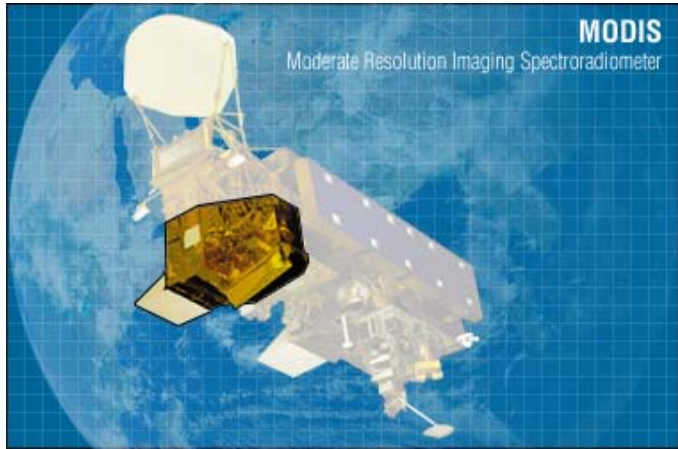
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Aqua

Project Science

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The **Moderate Resolution Imaging Spectroradiometer (MODIS)**, is a 36-band spectroradiometer measuring visible and infrared radiation and obtaining data that are being used to derive products ranging from vegetation, land surface cover, and ocean chlorophyll fluorescence to cloud and aerosol properties, fire occurrence, snow cover on the land, and sea ice cover on the oceans. The first MODIS instrument was launched on board the Terra satellite in December 1999, and the second was launched on Aqua in May 2002.

INSTRUMENT CHARACTERISTICS

- + Selected for flight on Terra (launched Dec. 1999) and Aqua.
- + Medium-resolution, multi-spectral, cross-track scanning radiometer.
- + Measures physical properties of the atmosphere, and biological and physical properties of the oceans and land.
- + 36 spectral bands—21 within 0.4-3.0 μm ; 15 within 3-14.5 μm .
 - + Continuous global coverage every 1 to 2 days.
- + Signal-to-noise ratios from 900 to 1300 for 1 km ocean color bands at 70° solar zenith angle.
 - + NEDT's typically < 0.05 K at 300K.
- + Absolute irradiance accuracy of 5% for <3 μm and 1% for >3 μm .
 - + Daylight reflection and day/night emission spectral imaging.

INSTRUMENT FACTS

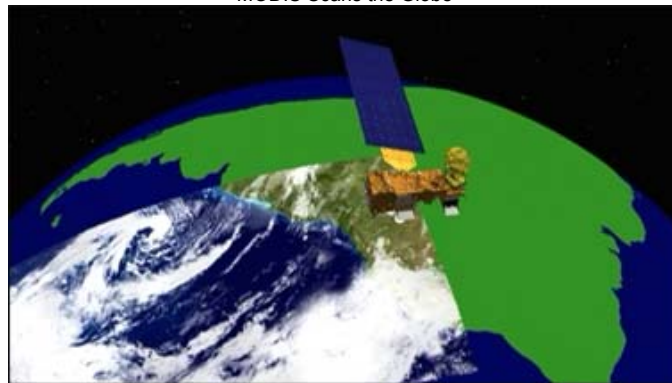
Heritage	Advanced Very High Resolution Radiometer (AVHRR), High Resolution Infrared Radiation Sounder (HIRS), Landsat Thematic Mapper (TM), and Nimbus-7 Coastal Zone Color Scanner (CZCS)
Responsible Center	NASA Goddard Space Flight Center
Polarization Sensitivity	2% from 0.43 μm to 2.2 μm and $\pm 45^\circ$ scan
Swath	2300 km at 110° ($\pm 55^\circ$) from 705 km altitude
Mass	229 kg
Duty Cycle	100%
Power	162.5 W (average), 225 W (peak)

Data Rate	6.2 Mbps (average), 10.5 Mbps (day), 3.2 Mbps (night)
Thermal Control By	Radiator
Thermal Operating Range	268°K ±5°K
Instrument Instantaneous FOV	250 m (2 bands), 500 m (5 bands), 1000 m (29 bands)
Geolocation (100m, 2σ)	
Control	3600 arcsec
Knowledge	141 arcsec
Stability	28 arcsec/sec
Jitter	1031 arcsec/sec (yaw and roll), 47 arcsec/sec (pitch)
Physical size	1.044 x 1.184 x 1.638 m

VISUALIZATIONS

DOWNLOAD

"MODIS Scans the Globe"



+ 19.9 MB
 Quicktime .mov
 + 9.1 MB
 Quicktime .mpg
 + 4.8 MB
 Quicktime .mpg

The Aqua MODIS is the second MODIS, the first having been launched in 1999 on board the Terra satellite. This artist's concept animation shows the MODIS instrument measuring clouds, land surface cover, snow cover on the land, and sea ice cover on the oceans.



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