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NEWS



the **BLUE MARBLE**

true-color global imagery at 1km resolution

This spectacular “blue marble” image is the most detailed true-color image of the entire Earth to date. Using a collection of satellite-based observations, scientists and visualizers stitched together months of observations of the land surface, oceans, sea ice, and clouds into a seamless, true-color mosaic of every square kilometer (.386 square mile) of our planet. These images are freely available to educators, scientists, museums, and the public. Preview images and links to full resolution versions—up to 21,600 pixels across—are located below.

[Close-ups](#) at full (1km per pixel) resolution





Much of the information contained in this image came from a single remote-sensing device—NASA's [Moderate Resolution Imaging Spectroradiometer](#), or MODIS. Flying over 700 km above the Earth onboard the [Terra](#) satellite, MODIS provides an integrated tool for observing a variety of terrestrial, oceanic, and atmospheric features of the Earth. The land and coastal ocean portions of these images are based on surface observations collected from June through September 2001 and combined, or composited, every eight days to compensate for clouds that might block the sensor's view of the surface on any single day. Two different types of ocean data were used in these images: shallow water true color data, and global ocean color (or chlorophyll) data. Topographic shading is based on the GTOPO 30 elevation dataset compiled by the U.S. Geological Survey's EROS Data Center. MODIS observations of polar sea ice were combined with observations of Antarctica made by the National Oceanic and Atmospheric Administration's AVHRR sensor—the Advanced Very High Resolution Radiometer. The cloud image is a composite of two days of imagery collected in visible light wavelengths and a third day of thermal infra-red imagery over the poles. Global city lights, derived from 9 months of observations from the Defense Meteorological Satellite Program, are superimposed on a darkened land surface map.

[Source files](#) and technical details (ftp)

Credits:

NASA Goddard Space Flight Center

Image by Reto Stöckli (land surface, shallow water, clouds).
Enhancements by Robert Simmon (ocean color, compositing, 3D globes, animation).

View of the Earth From Space

[Western Hemisphere 2048 by 2048 pixels](#) (9.9 MB TIFF)

[Western Hemisphere 2048 by 2048 pixels](#) (580 KB JPEG)

[Eastern Hemisphere 2048 by 2048 pixels](#) (7.1 MB TIFF)

[Eastern Hemisphere 2048 by 2048 pixels](#) (520 KB JPEG)

[Eastern Hemisphere 540 by 540 pixels](#) (60 KB JPEG)

Animations

[Web Resolution](#) (1.7 MB MPEG)

[TV \(NTSC\) Resolution](#) (5.7 MB MPEG)

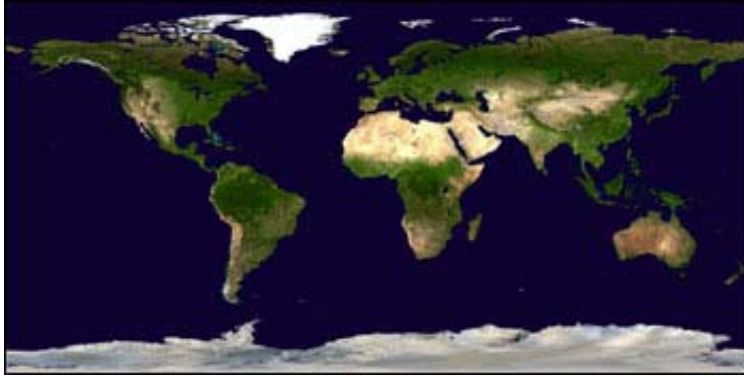
Lossless TV Resolution (98 MB Quicktime)**

[HDTV Resolution](#) (19 MB MPEG-2)
(Available on the [Visible Earth](#))

Lossless HDTV Resolution (210 MB Quicktime)**

Data and technical support: [MODIS Land Group](#); [MODIS Science Data Support Team](#); [MODIS Atmosphere Group](#); [MODIS Ocean Group](#)

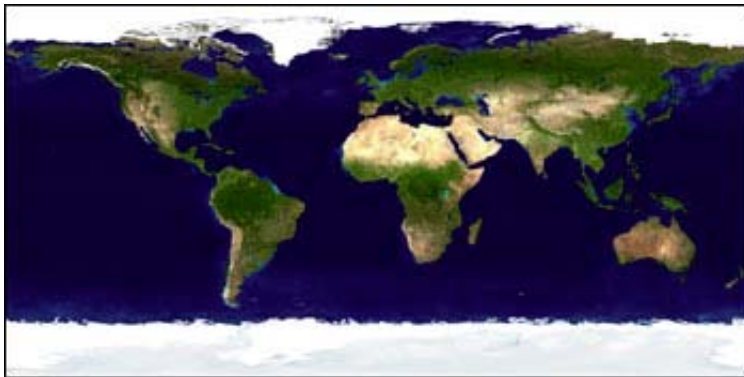
Additional data: [USGS EROS Data Center](#) (topography); [USGS Terrestrial Remote Sensing Flagstaff Field Center](#) (Antarctica); [Defense Meteorological Satellite Program](#) (city lights).



Land Surface, Shallow Water, and Shaded Topography

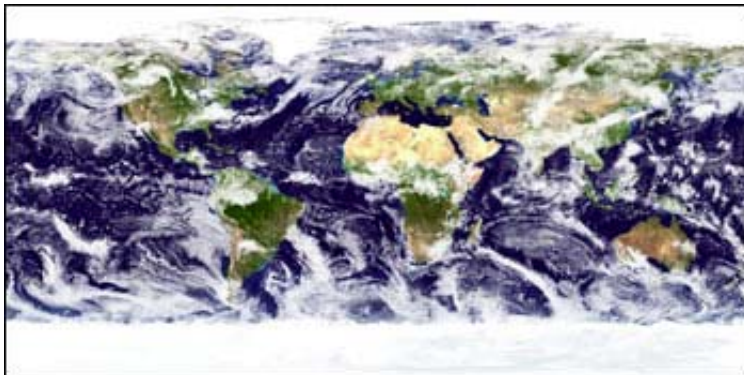
Western Hemisphere 21,600 by 21,600 pixels (1km) (240 MB TIFF)**
 Eastern Hemisphere 21,600 by 21,600 pixels (1km) (400 MB TIFF)**
 21,600 by 10,800 pixels (170 MB TIFF)**

[8192 by 4096 pixels](#) (26.5 MB TIFF)
 (Available on the [Visible Earth](#))
[2048 by 1024 pixels](#) (1.8 MB TIFF)
[2048 by 1024 pixels](#) (230 KB JPEG)



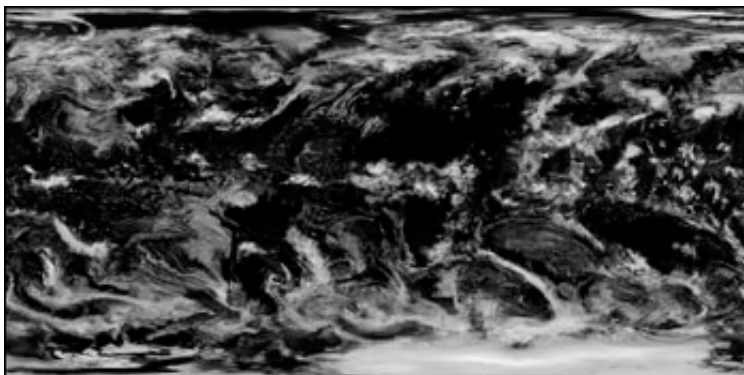
Land Surface, Ocean Color, and Sea Ice

[8192 by 4096 pixels](#) (31 MB TIFF)
 (Available on the [Visible Earth](#))
[2048 by 1024 pixels](#) (2.5 MB TIFF)
[2048 by 1024 pixels](#) (260 KB JPEG)



Land Surface, Ocean Color, Sea Ice, and Clouds

[8192 by 4096 pixels](#) (48.7 MB TIFF)
 (Available on the [Visible Earth](#))
[2048 by 1024 pixels](#) (3.4 MB TIFF)
[2048 by 1024 pixels](#) (580 KB JPEG)



Clouds

[8192 by 4096 pixels](#) (23 MB TIFF)
 (Available on the [Visible Earth](#))
[2048 by 1024 pixels](#) (1.7 MB TIFF)
[2048 by 1024 pixels](#) (460 KB JPEG)



Land, Ocean Color, Sea Ice, City Lights

[8192 by 4096 pixels](#) (10 MB TIFF)

(Available on the [Visible Earth](#))

[2048 by 1024 pixels](#) (1.2 MB TIFF)

[2048 by 1024 pixels](#) (150 KB JPEG)

Files denoted by double asterisks (**) are available upon request. Please send an email to eo-contact@eodomo.gsfc.nasa.gov with the file description. Requests will be processed during normal business hours.

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