

MODIS and VIIRS Imagery in Worldview and the Global Imagery Browse Services (GIBS)

<https://worldview.earthdata.nasa.gov> <https://earthdata.nasa.gov/gibs>

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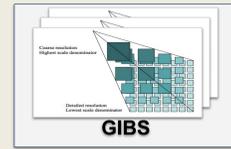
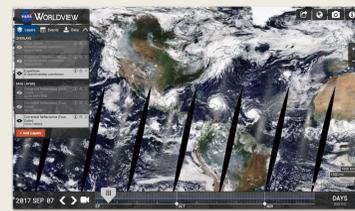
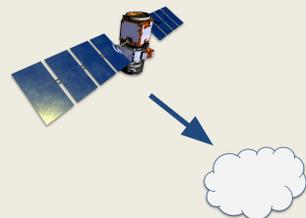


NASA's Worldview and Global Imagery Browse Services (GIBS) provide a visual-first approach to discovering and using Earth Observing System (EOS) satellite imagery. Within hours of satellite overpass, users can discover the latest events such as wildfires, severe storms, volcanic eruptions, dust and haze, ice shelves calving as well as many other events are occurring around the world. The powerhouse satellites, Terra and Aqua and more recently, Suomi-National Polar orbiting Partnership (Suomi-NPP) platforms, chiefly through the Moderate Resolution Imaging Spectroradiometer (MODIS) and Visible Infrared Imaging Radiometer Suite (VIIRS) instruments, have provided daily, global observations of this Earth. Imagery from these instruments represent the core of the GIBS and Worldview offerings. Through responsive and highly available web services/APIs, GIBS provides full resolution visual representations of NASA Earth science data in a free, open, and interoperable manner. NASA's Worldview interactive web map application pulls this imagery from GIBS to allow users to interactively browse the imagery within hours of it being acquired. This poster will explore MODIS and VIIRS imagery products available now and in the future, current ways in which the imagery is used, and future improvements to the system.

See our talk on Thursday, October 18 at 9am in the Cyprus Ballroom during the 2018 MODIS/VIIRS Science Team meeting!

What is Worldview and GIBS?

Worldview and the Global Imagery Browse Services (GIBS) provide a **visual-first** approach to finding and using Earth observations.



Worldview

worldview.earthdata.nasa.gov

Worldview is a **web app** to interactively browse NASA's global satellite imagery within hours of it being acquired

- Interactively explore the Earth as it is "right now" and throughout the past
- Browse over 800 imagery products provided by the Global Imagery Browse Services (GIBS), many of which are available in near real-time via the Land, Atmosphere Near real-time Capability for EOS (LANCE)
- Download imagery (e.g., GeoTIFFs) and/or the underlying data (e.g., HDFs)
- Use the Comparison feature, Animation feature, Events listing, and many more features and tools
- Coming soon: Worldview Snapshots, a separate, lightweight tool for creating image snapshots, designed to be a replacement for Rapid Response Subsets

Global Imagery Browse Services (GIBS)

gibs.earthdata.nasa.gov

GIBS is a **system** providing fast and open access to 800+ NASA imagery products for Worldview and any other application via standards-based APIs.

- Access imagery through standards-based web services for access through web clients, GIS clients, and GDAL-based scripts
- Imagery is provided in several map projections:
 - Geographic / Equirectangular (EPSG:4326)
 - Web Mercator (EPSG:3857)
 - Arctic Polar Stereographic (EPSG:3413)
 - Antarctic Polar Stereographic (EPSG:3031)



Imagery Products

VIIRS

Available

- Land Level 2 (6)
 - NRT Forward Processing

Planned/Future

- Snow/Ice Level 2 (+4)
 - NRT Forward Processing
- Land Level 2 (+4)
 - NRT Forward Processing
- Atmosphere Level 2 (+28)
 - NRT Forward Processing
- Daily Black Marble / Night Lights (+6)
 - Standard Historical and Forward processing

MODIS

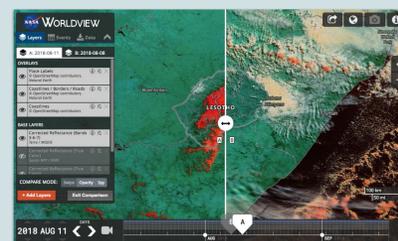
Available

- Collection 6 Land Level 2 (29)
 - Standard Historical
 - NRT Forward Processing
- Collection 6.1 Atmosphere (55)
 - Standard Historical
 - NRT Forward Processing
- Collection 6 Terra NDVI/EVI Level 3 (2)
 - NRT Forward Processing

Planned/Future

- Collection 6 Land Level 2 (+0)
 - Standard Forward processing
- Collection 6.1 Atmosphere (+0)
 - Standard Forward processing
- Collection 6 Land Level 3 (+55)
 - Standard Historical and Forward processing
- Collection 6 Atmosphere Geographic and Polar (+12/+8)
 - Standard Historical and Forward processing
- Collection 6 MCD19* MAIAC (+3)
 - Standard Historical and Forward processing
- Collection 6 Flood Product (+1)
 - NRT Forward Processing

Worldview Features

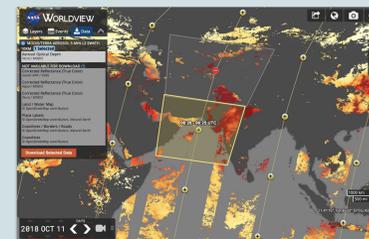


Compare

Compare the same imagery from different days or compare different imagery from the same day, or any combination of the above!

Download

Select and download individual data granules from within the app or select a bounding box and export an image.

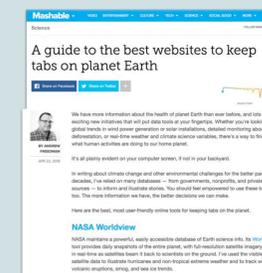


Animate

View and animate imagery over time and export them as animated GIFs to share.



In the Wild



"This site is **fantastic!**"

If you are curious to know, our centre is using the site to **monitor river ice breakup** in the Far North of Ontario where there are several remote fly-in only First Nations communities that are **highly susceptible** to nearly annual ice induced flooding that has substantial financial and social cost. Your site is a **very useful tool** for this purpose."

Hydrologic Specialist
 Surface Water Monitoring Centre
 Ontario Ministry of Natural Resources and Forestry



"...I use it a dozen times a day as I try and sort out field campaign data, quickly look for aernet site locations, or generally figure out "what happened?". It is probably the biggest productivity enhancers you folks have ever done for me personally."

Research Scientist
 Naval Research Laboratory

"In the 80s and 90s, [this process] used to take from days to weeks. Now, you can look at images for days, weeks, and even years in a matter of **minutes** in Worldview, immediately find the images you need, and download them for use. **It's fantastic!**"

Associate Research Scientist
 Goddard Earth Sciences Technology and Research (GESTAR)