

FIRE INFORMATION FOR RESOURCE MANAGEMENT SYSTEM (FIRMS)



The Fire Information for Resource Management System (FIRMS) distributes Near Real-Time (NRT) active fire data within 3 hours of satellite observation from both the Moderate Resolution Imaging Spectroradiometer (MODIS) and the Visible Infrared Imaging Radiometer Suite (VIIRS).

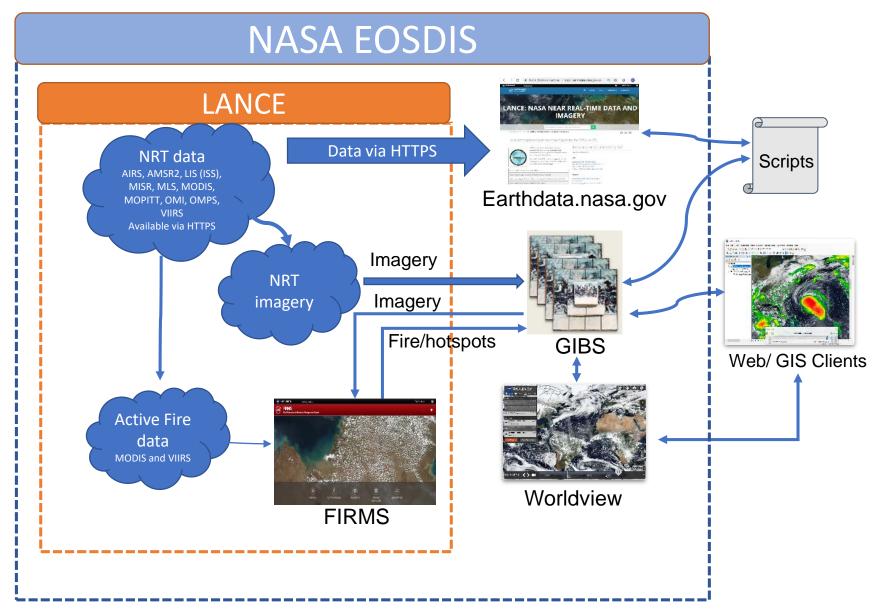
The active fire / hotspot data can be viewed in FIRMS Fire Map or in NASA's Worldview ☑ , delivered as email alerts or downloaded in the following formats: SHP, KML, TXT, WMS

FIRMS is part of NASA's Land, Atmosphere Near real-time Capability for EOS (LANCE).

https://firms.modaps.eosdis.nasa.gov/ or https://earthdata.nasa.gov/firms



FIRMS - LANCE - EOSDIS





Land, Atmosphere Near Real-time Capability for Earth Observing Systems (LANCE)

- NASA LANCE provides near real-time data and imagery much quicker than routine processing allows - to meet the timely needs of applications users
- Data products are available within 3 hours. Imagery generally takes another 1-2 hours.
- LANCE is used by a broad range of users including: natural resource managers, those monitoring hazards and disasters, scientists and researchers monitoring and analyzing natural and man-made phenomena, the press and members of the public.
- More information: https://earthdata.nasa.gov/lance



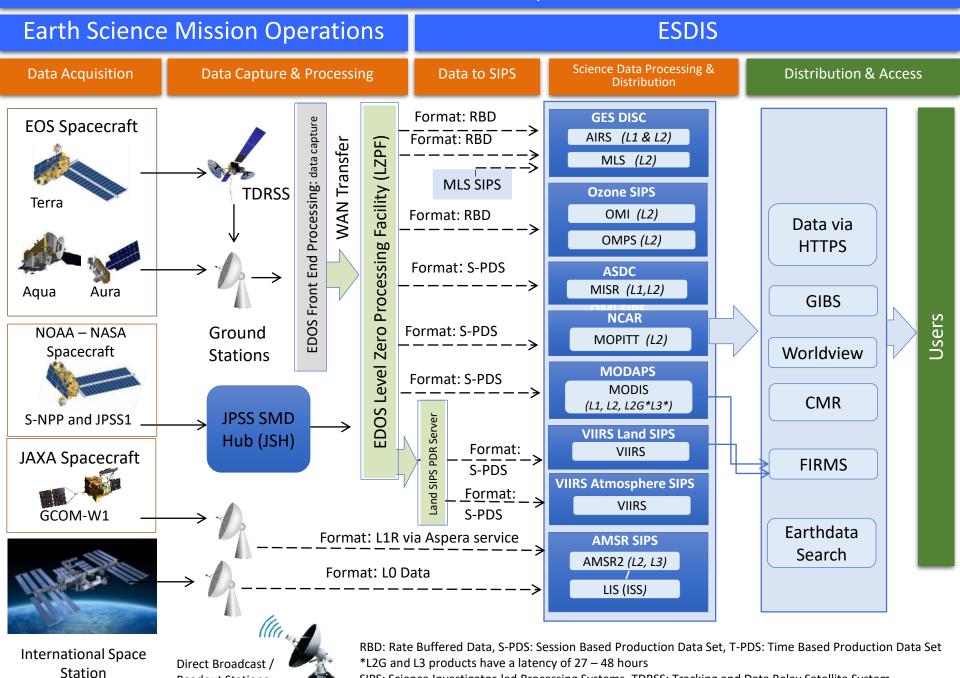
LANCE products are used for monitoring: Air Quality, Dust Storms, Fires, Smoke Plumes, Crops, Drought, Floods, Volcanic Eruptions, Ash plumes, Sea Ice and Severe Storms

LANCE FACILITIES



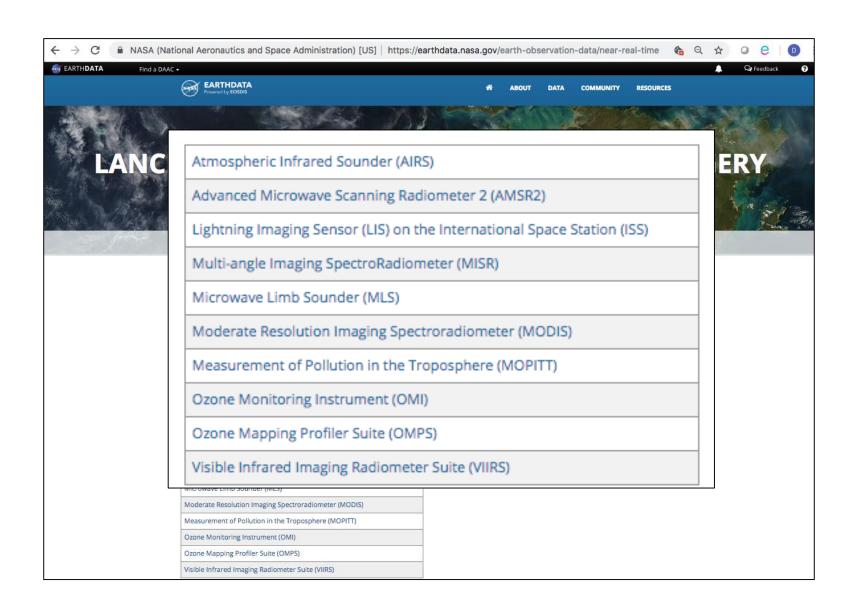
- GSFC Earth Sciences Data and Information Services Center (GES DISC) is providing AIRS with support from the AIRS Science Computing Facility (SCF) at JPL, and MLS data via the MLS SIPS at JPL
- Atmospheric Science Data Center (ASDC) is providing MISR data with support from the MISR SCF at JPL
- AMSR Science Investigator-led Processing System (SIPS) is providing AMSR2 and LIS data
- MODIS Adaptive Processing System (MODAPS) and Land SIPS are providing MODIS and VIIRS Land data
- Ozone Science Investigator-led Processing System (SIPS) is providing OMI and OMPS data
- MOPITT SIPS (National Center for Atmospheric Research (NCAR)) is providing MOPITT data
- Atmosphere SIPS (Space Science and Engineering Center (SSEC) University of Wisconsin) is providing VIIRS
 Atmosphere data

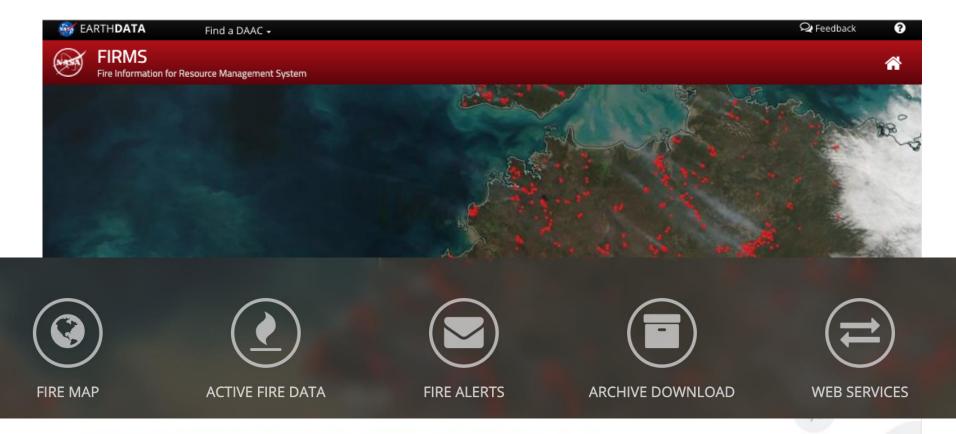
Earth Science Data Operations



Readout Stations

SIPS: Science Investigator-led Processing Systems, TDRSS: Tracking and Data Relay Satellite System





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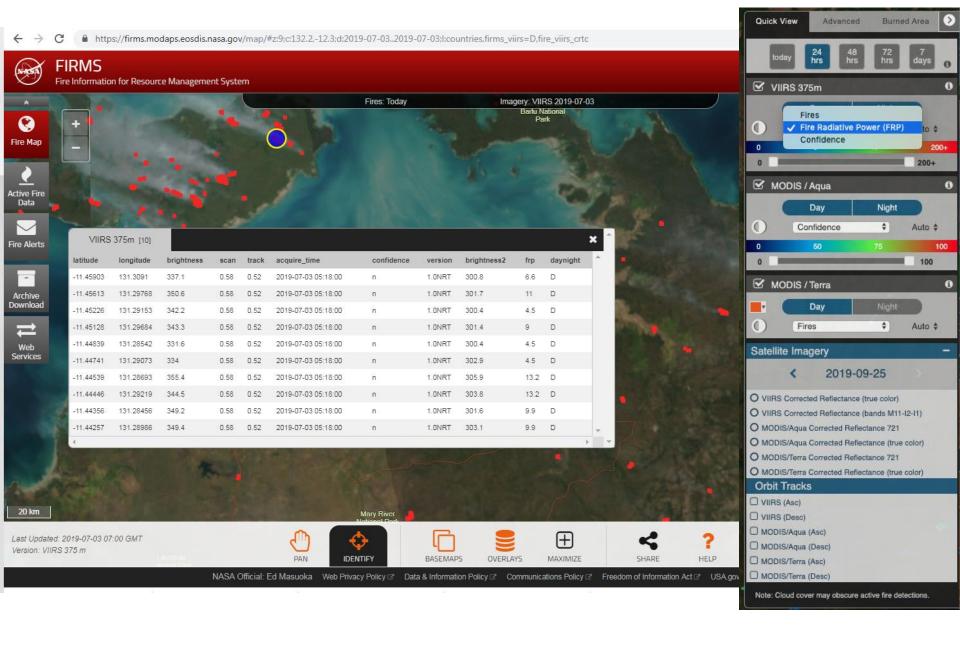


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Obtaining MODIS or VIIRS active fire / hotspot data from FIRMS





Fire Information for Resource Management System



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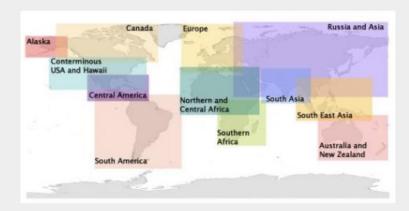




Active Fire Data

Download Near real-time MODIS (C6) and VIIRS (375 m) active fire data using the tables below.

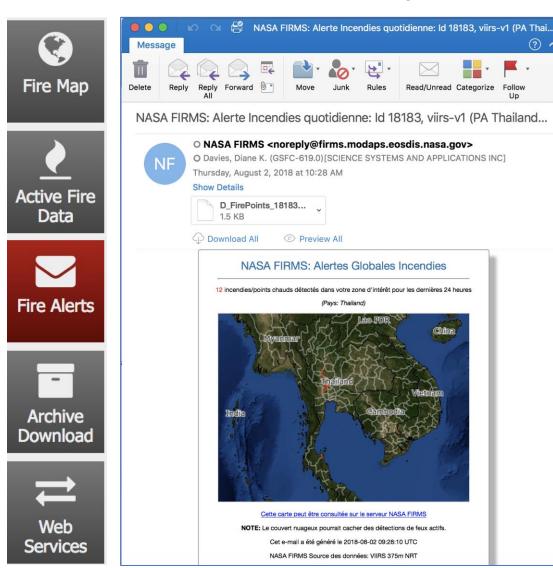
For data older than seven days, use the Archive Download



Shapefiles Google Earth KML Text Files (CSV)

	MODIS 1km	VIIRS 375m
World	24hG 48hG 7dG	24hG 48hG 7dG
Canada	24hG 48hG 7dG	24hG 48hG 7dG
Alaska	24h2 48h2 7d2	24hG 48hG 7dG

FIRMS Email Notifications of MODIS or VIIRS Hotspot Detections in your Area of Interest

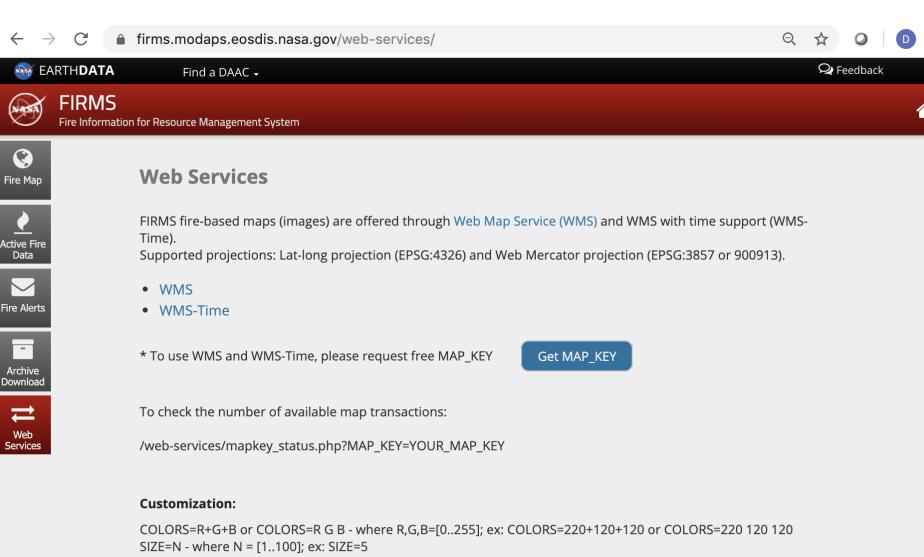


FIRMS Fire Alerts are sent to users in over 160 countries.

Users subscribe to their area of interest.

Alerts are sent when a fire is detected.

4,000 Daily alerts
30,000 Rapid alerts per day
600 Weekly alerts



SYMBOLS=circle,square,... - see Supported symbols below

Supported symbols:

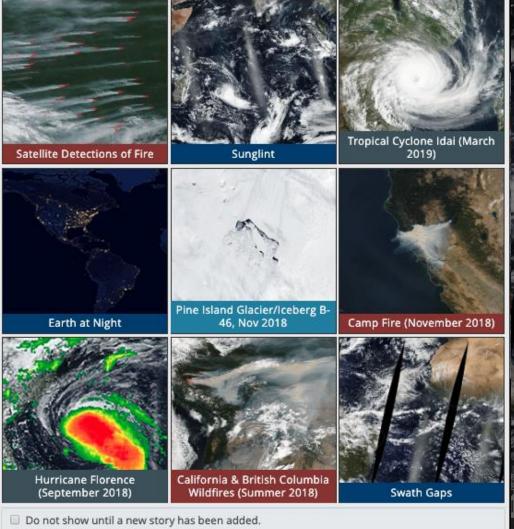
circle, circle-uf, cross, square, square-uf, triangle, triangle-uf, utriangle, utriangle-uf * uf - unfilled center

Welcome to Worldview!

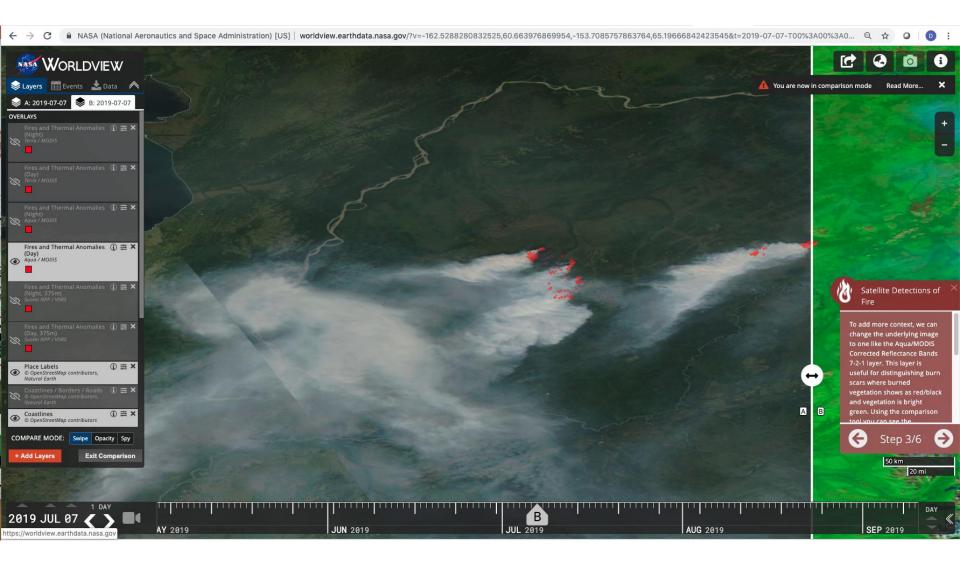
NASA (National Aero) WORLDVIEW 📚 Layers 🏥 Events 📩 Data 🙈 ⑤ = ×

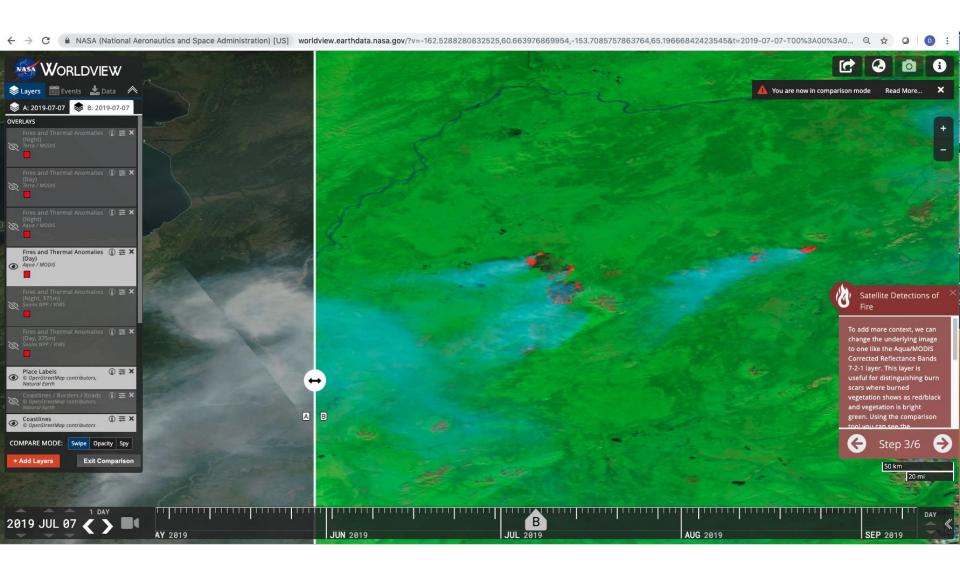
2019 SEP 25

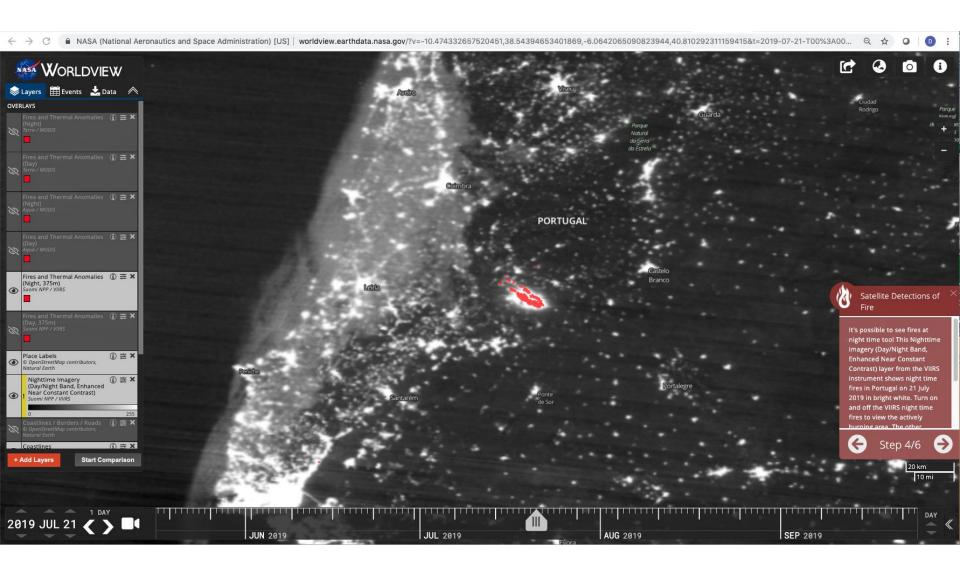
Visually explore the past and the present of this dynamic planet from a satellite's perspective. Select from an array of stories below to learn more about Worldview, the satellite imagery we provide and events occurring around the world. Start using Worldview ->



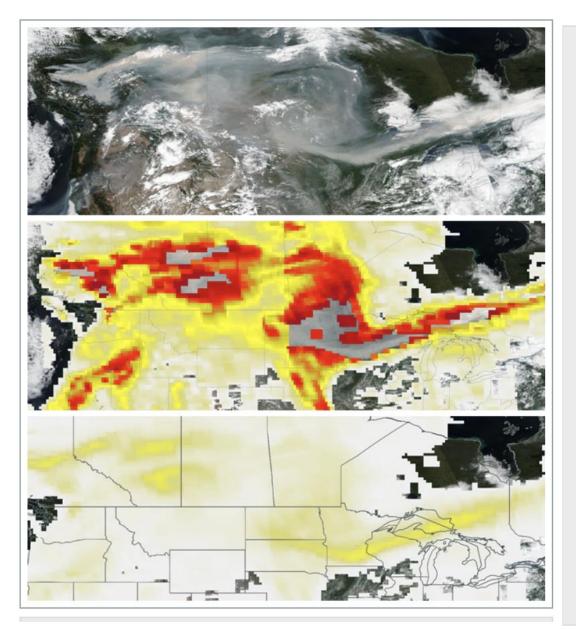




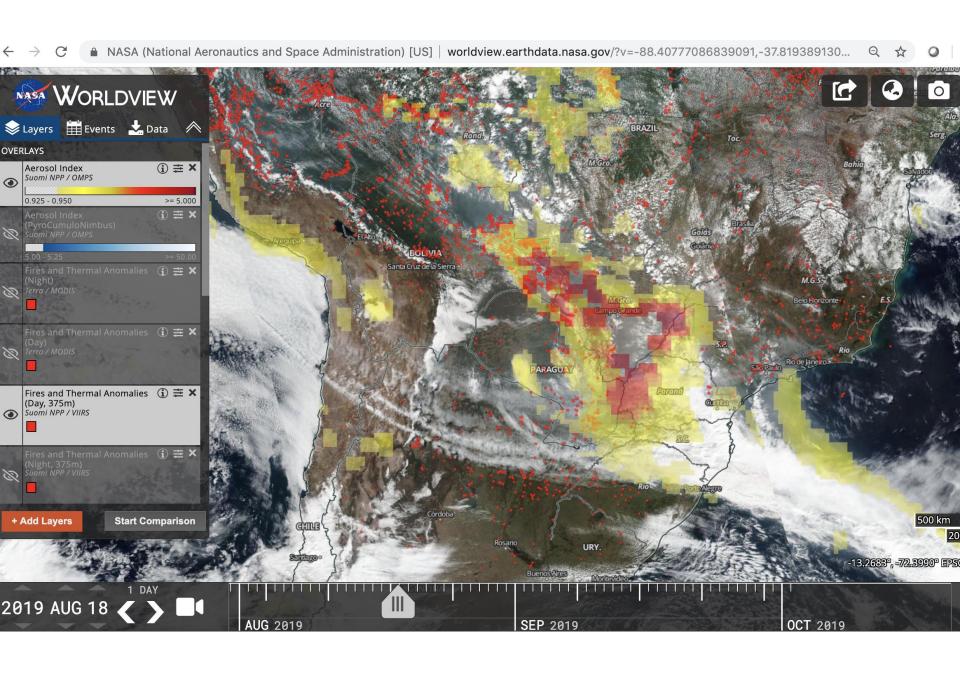


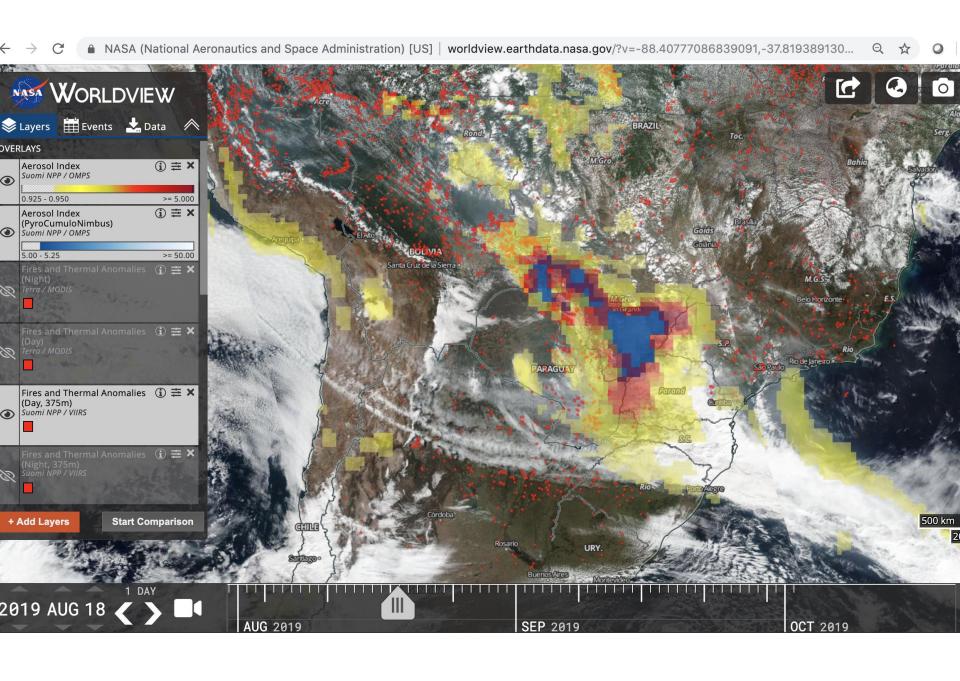


PyroCumuloNimbus product from OMPS



Suomi-NPP images from August 17, 2018, showing the utility of the new OMPS PyroCumuloNimbus AI product. Top image is a true color Visible Infrared Imaging Radiometer Suite (VIIRS) image of the Northern U.S. and Southern Canada. Milky white areas are smoke from wildfires in British Columbia (bright white areas are clouds or snow). Middle image is the same area overlain with the OMPS AI product. Note the red indicating AI values at the extreme high end of the AI scale and the gaps in the image where AI values are so high they are screened out. Bottom image is the same area overlain with the new OMPS PyroCumuloNimbus AI product. Note the correlation of the bright yellow areas in the lower image and the bright red areas in the middle image. Images courtesy of NASA Worldview.





Next Steps

- Active fire data from VIIRS NOAA 20 will be added to FIRMS
- Additional Vector support for the Global Imagery Browse Services (GIBS) and to Worldview will enable users to query the active fire data from FIRMS
- Geostationary imagery will be added to GIBS and Worldview this year



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More Information

FIRMS: https://firms.modaps.eosdis.nasa.gov/

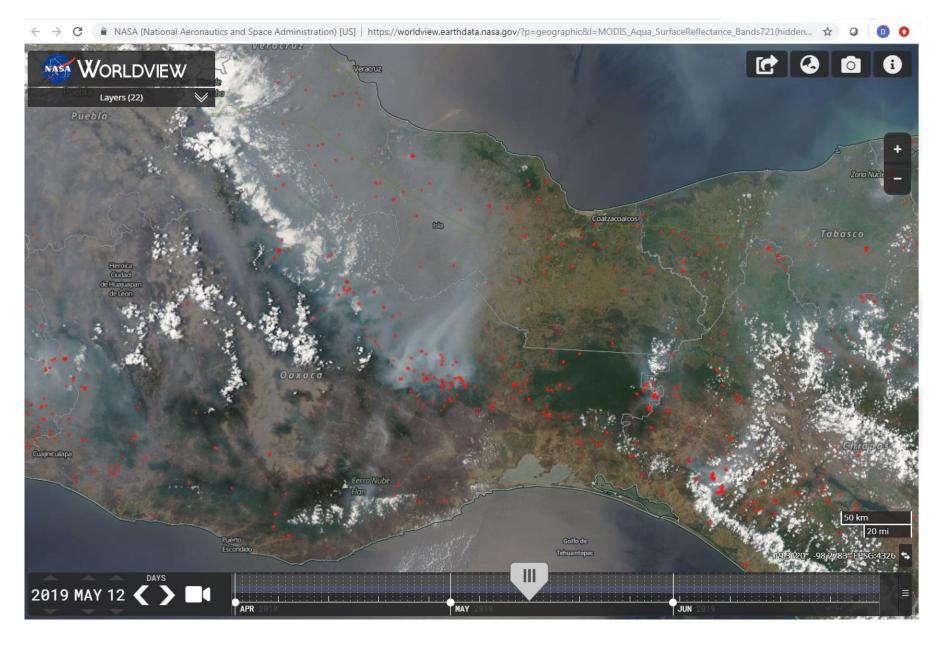
Worldview: https://worldview.earthdata.nasa.gov

LANCE: https://earthdata.nasa.gov/lance

NASA Earthdata article: Wildfires Can't Hide from Earth Observing Satellites https://earthdata.nasa.gov/learn/articles/wildfires-cant-hide-from-earth-observing-satellites

FIRMS Webinar – part of the <u>NASA Earthdata Webinar Series</u>:

<u>Discover NASA's Fire Information for Resource Management System (FIRMS)</u>
 : https://www.youtube.com/watch?v=0fPVmnY6pBs&feature=youtu.be



This image was posted on social media and Worldview went from about 4000 users to 63,000 users in one day



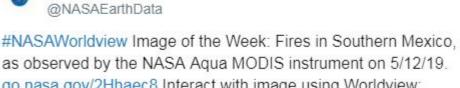


Así se ven los incendios en el país desde satélites de la NASA

13/05/2019 | 3 12:51 | Redacción [Ciudad de México]

https://www.eluniversal.com.mx/n acion/sociedad/asi-se-ven-losincendios-en-el-pais-desdesatelites-de-la-nasa had 14,000 users referred to Worldview





as observed by the NASA Aqua MODIS instrument on 5/12/19. go.nasa.gov/2Hhaec8 Interact with image using Worldview: go.nasa.gov/2JCKOqU

C 7.584 10:31 - 13 may. 2019

Α A⁺

NASAEarthdata

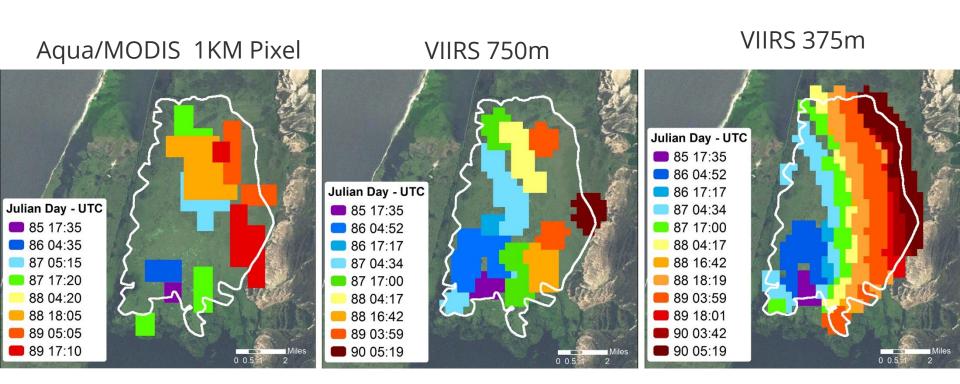
6.704 personas están hablando de esto



FIRMS Metrics



Differences between MODIS and VIIRS



Daily fire spread mapped by 1km Aqua/MODIS (left), 750 m VIIRS (center) and 375 m VIIRS (right) data at the Taim Ecological Reserve in southern Brazil. The data cover the period 26 -31 March 2013. The white outline shows represents the burned area mapped using 30m Landsat-7 on 31 March. This figure is reproduced here courtesy of Wilfrid Schroeder, NOAA University of Maryland

Fire Detections

The fire detection algorithms use a contextual algorithm that exploits the strong emission of mid-infrared radiation from fires.

See FIRMS FAQs for references -

https://earthdata.nasa.gov/firms-faq#ed-fire-detection

- MODIS PI: Louis Giglio (UMD)
- VIIRS PI: Wilfrid Schroeder (NOAA/UMD)

What does a MODIS fire detection mean on the ground?

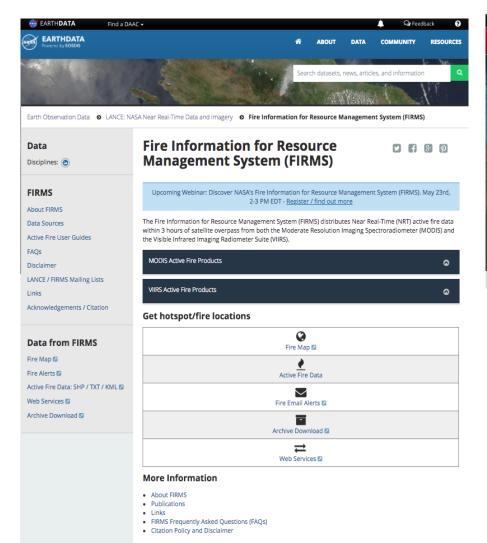
MODIS represented by a 1km pixel VIIRS 375m spatial resolution

Output display Thotspot in a 1 hotspot in a 1 km pixel Thouse of 4 pixels

FIRMS has 2 landing pages: they are interlinked and provide links to the same data

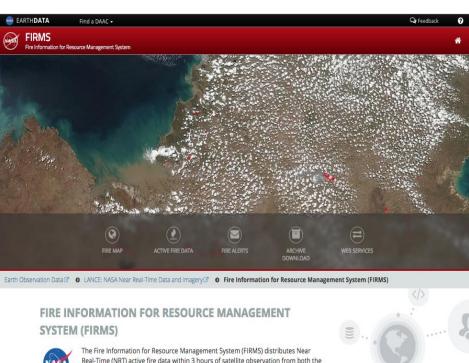
Earthdata FIRMS Landing page

https://earthdata.nasa.gov/firms



LANCE MODAPS FIRMS Landing page

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Find a DAAC -







FIRMS

Fire Information for Resource Management System











Fire Alert Subscription

- Subscribe to receive email alerts notifying you of fires in your area-of-interest.
- Alerts can be sent in near real-time or as daily or weekly summaries.

This service is free of charge.

Enter your email address to create a new subscription or manage your existing subscription

Enter email address

Proceed

■ LANCE-MODIS mailing list

FIRMS mailing list

ABOUT

Discialmer 2

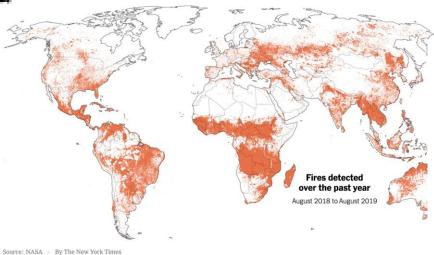
MODIS Active Fire Data ©
VIIRS Active Fire Data ©
Background ©
FAQs ©

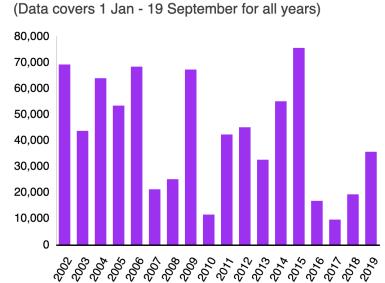
DATA

Fire Map
Fire Alerts
Archive Download
Web Services
SHP | TXT | KML

RESOURCES

VIIRS Active Fire User Guide
MODIS Active Fire User Guide
Acknowledgements & Citation
FIRMS Mailing List
Links





Fires in Indonesia

Source: University of Maryland and distributed by Nasa Fire Information for Resource Management System (FIRMS)

BBC



of human population.

Fires detected by satellite, 2000 to 2019

