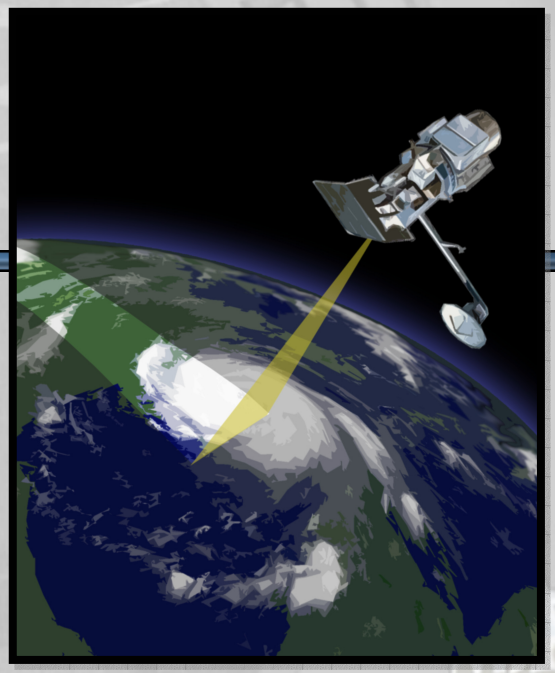
Data Access and Availability



Presented at the IV CEOS WGEdu Workshop
"Geotechnologies for Natural Disaster Monitoring in Latin America"
INPE, Santa Maria, RS, Brazil
March 29-31, 2010

Eric C. Wood, PhD
EROS
U.S. Geological Survey

USGS

Department of the Interior
U.S. Geological Survey

Data Issues in Disaster Monitoring

- **Attributes of remotely sensed imagery**
  - Resolution
  - Cost
- **Existence of baseline data**
  - Recent pre-disaster imagery
  - Vector data (GIS) , especially infrastructure in disaster area
- **Data accessibility and availability**

USGS

Selecting Remotely Sensed Data

The data you select depend mostly on *your* information requirements and on the characteristics of the remote sensing systems and data available.

- –spatial resolution
- –spectral coverage and resolution
- –geographic coverage
- –temporal characteristics
- –data availability
- –data accessibility
- –cost

USGS

Definition of Terms

- **Data Availability** – refers to data that have been acquired over an area and are able to be ordered by users.
- **Data Accessibility** – is different from availability in that it relates primarily to the mechanics of actually locating, selecting, and retrieving the data you wish to use in your study.

  Data search and order tools (a.k.a., user interfaces) are used to access remotely sensed data. ***Data policy, including pricing policy, also effects data accessibility***.

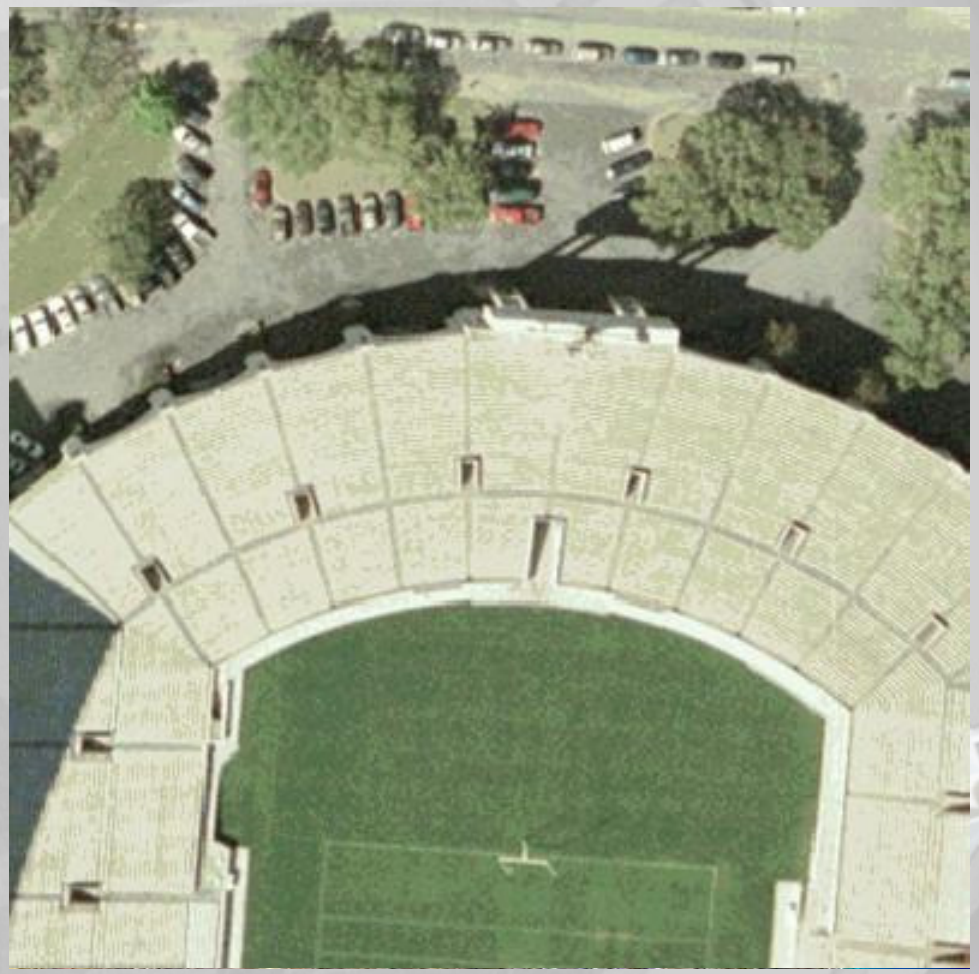
…or…..

"Do the data exist, and if yes, how do I get them?"

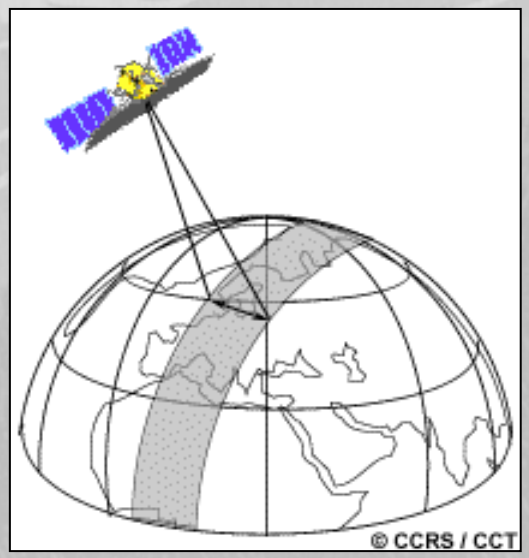
USGS

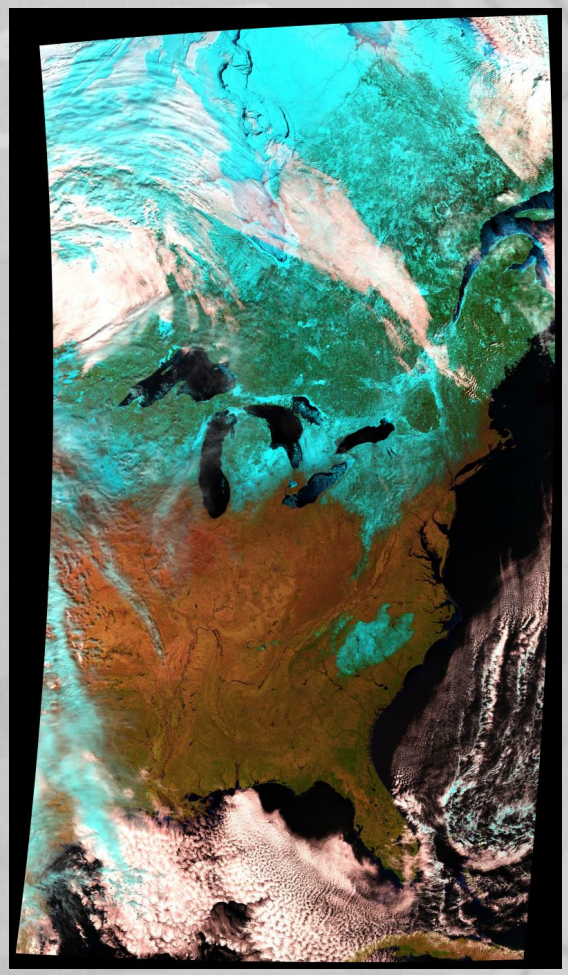
Spatial Resolution Examples (cont.)

USGS
Air Photo
1foot



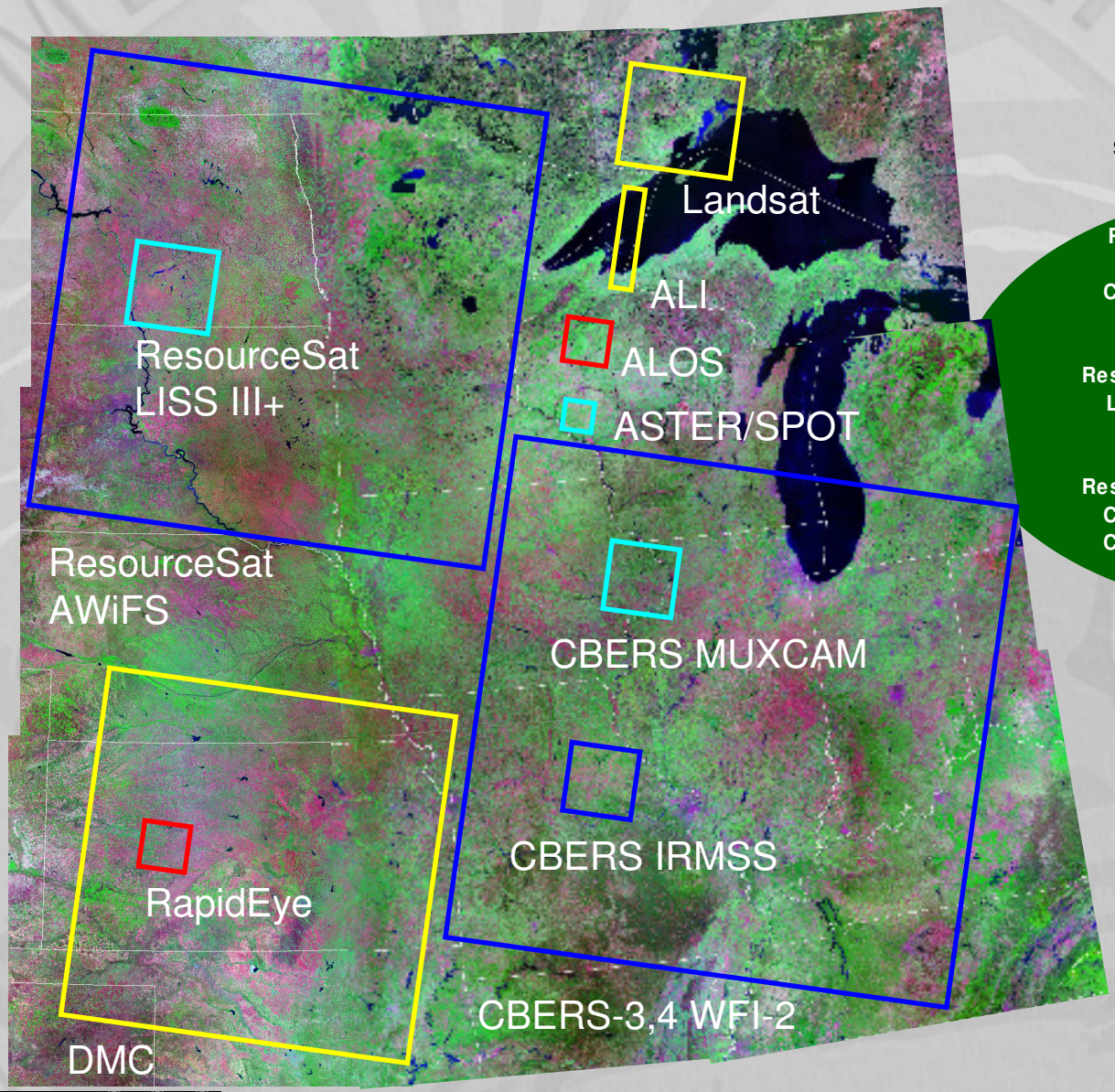
Role of Swath Width in Geographic Coverage





USGS

Variation in Mid-resolution Imagery



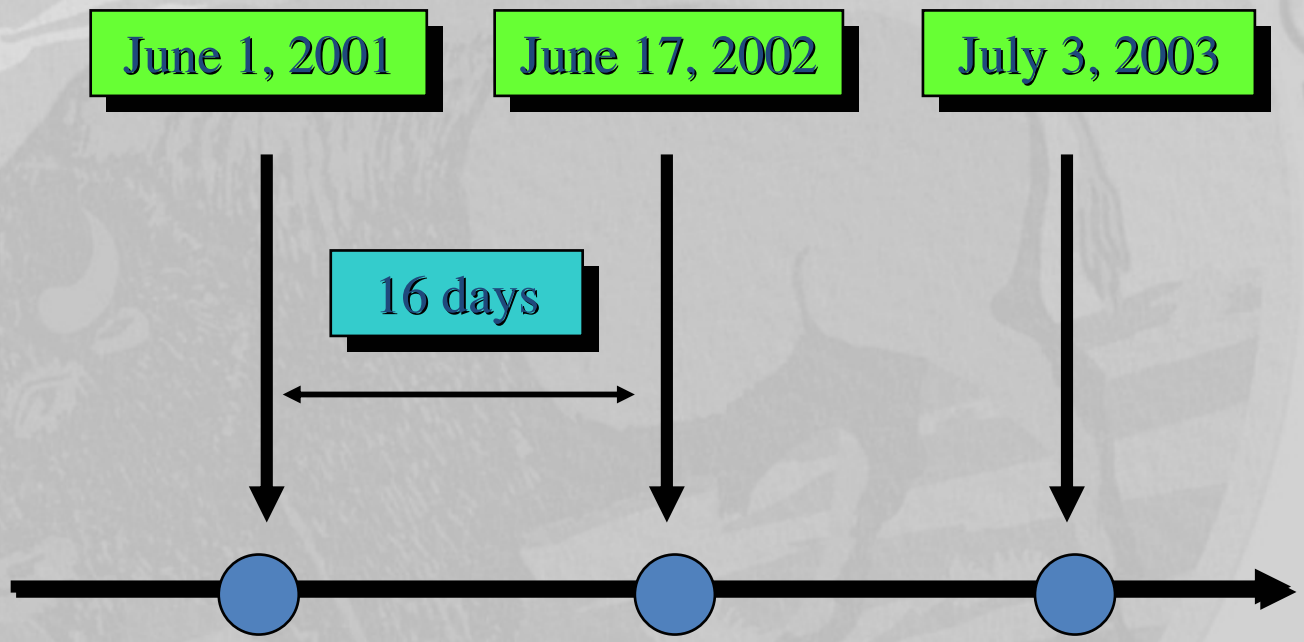
Satellite	Sensor	Ground Sample Distance (m)
RapidEye	REIS	6.5
ALOS	AVNIR	10
CBERS-3,4	MUXCAM	20
SPOT 5	HRG	10/20
Terra	ASTER	15/30/90
ResourceSat-1	LISS III+	23.5
Landsat 7	ETM+	15/30/60
EO-1	ALI	30
DMC	MSDMC	32
ResourceSat-1	AWiFS*	56
CBERS-3,4	WFI-2	73
CBERS-3,4	IRMSS	40/80

Note: For purposes of scene size comparison only. Locations do not represent actual orbital paths or operational acquisitions.

USGS

Temporal Resolution

Remote Sensor Data Acquisition



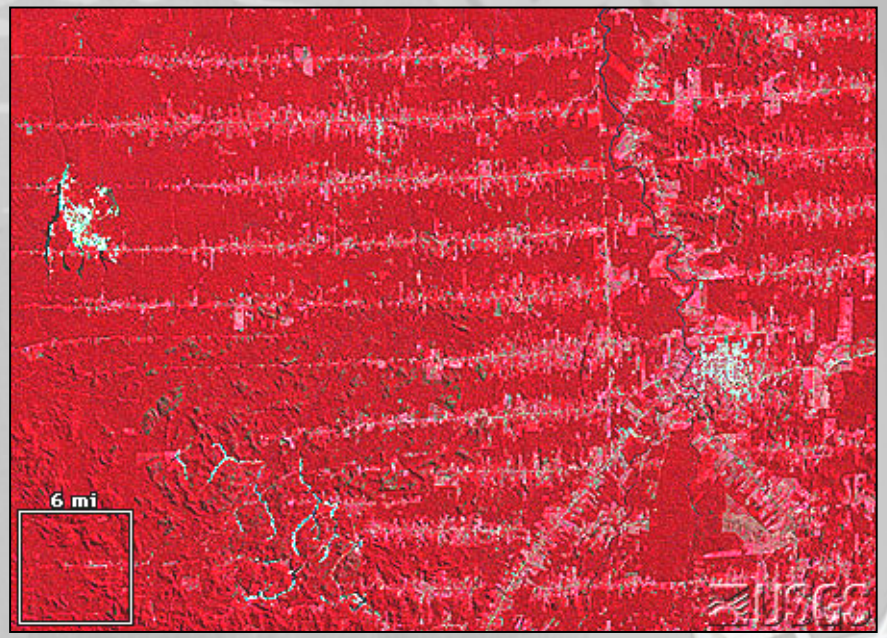
What about trade-offs?

Jenson, 2000

USGS

Importance of Historical Coverage

Brazilian Rain Forest - 1975



Brazilian Rain Forest - 1992

USGS

Trade-Offs with Selected Satellite Systems

AVHRR/ MODIS

- spatial resolution, 250m, 500m, 1000m

MISR

- spatial resolution, 275m, 550m, 1100m

Landsat

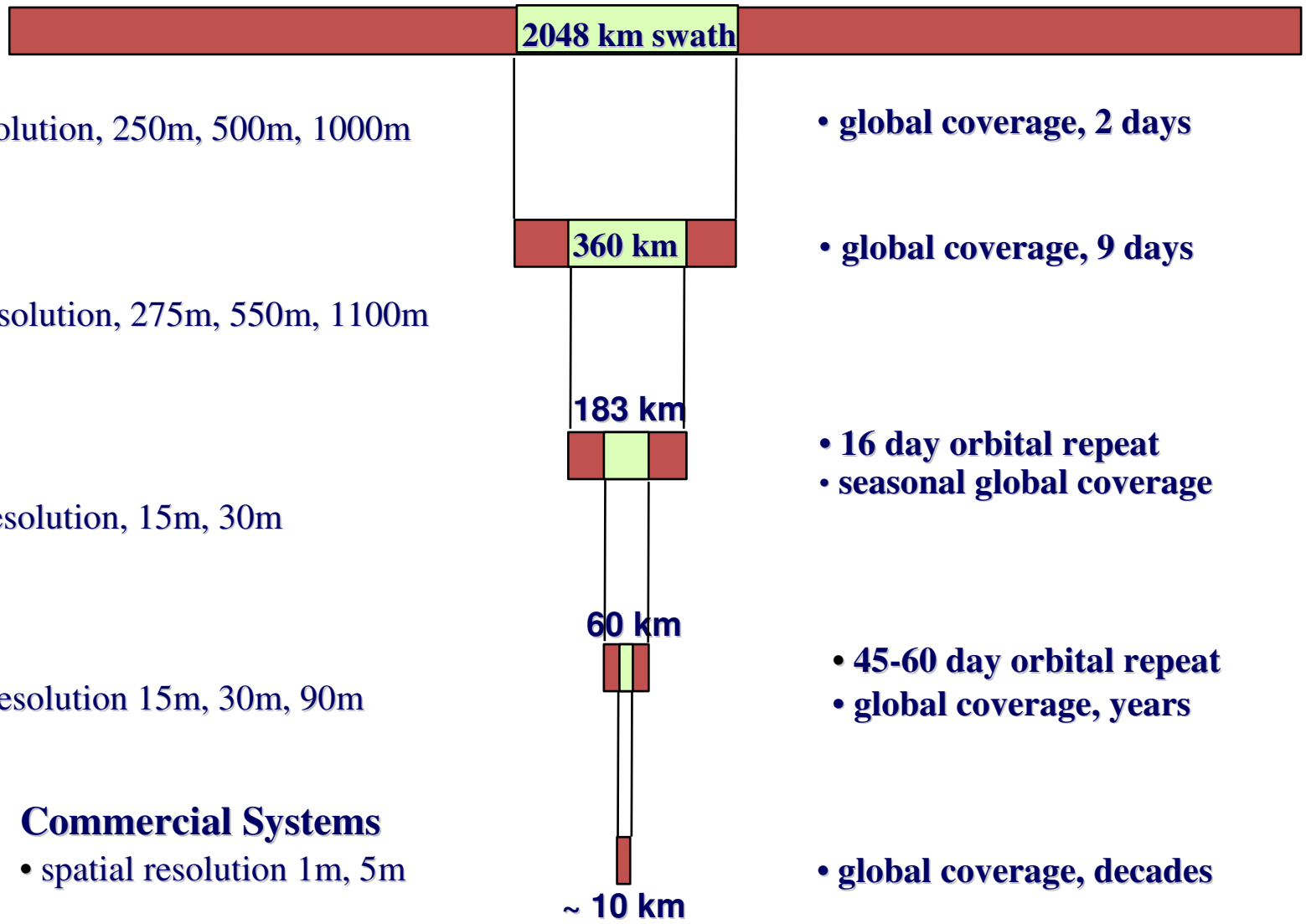
- spatial resolution, 15m, 30m

ASTER

- spatial resolution 15m, 30m, 90m

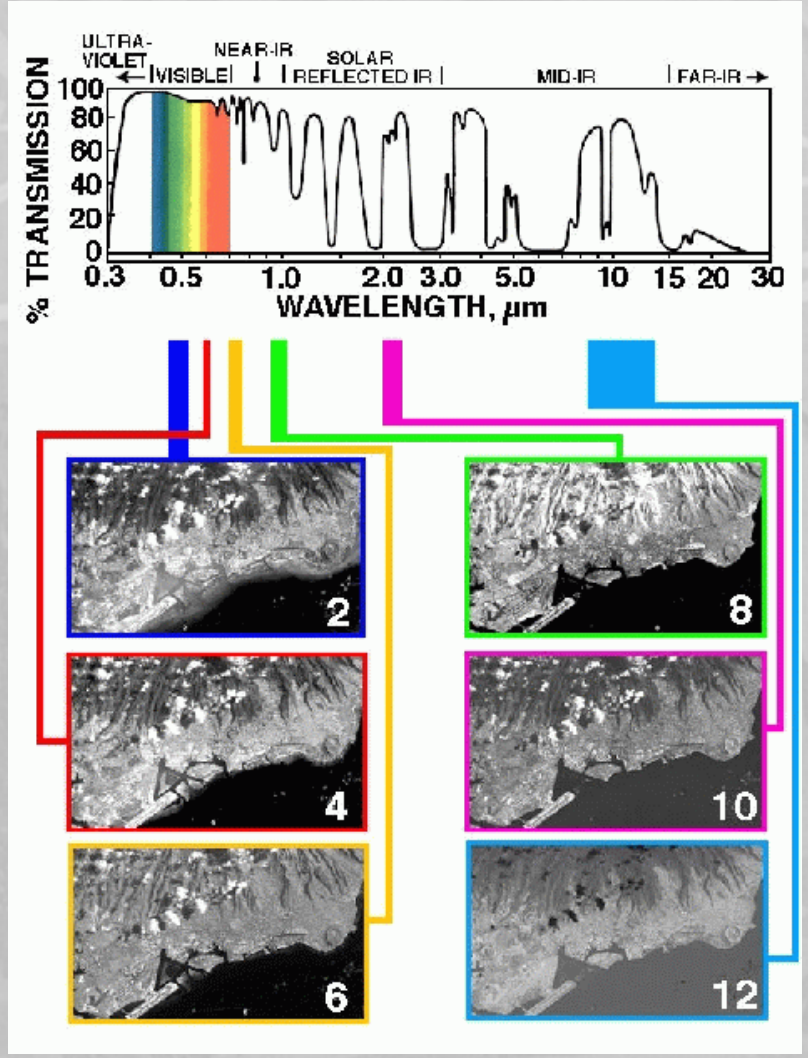
Commercial Systems

- spatial resolution 1m, 5m



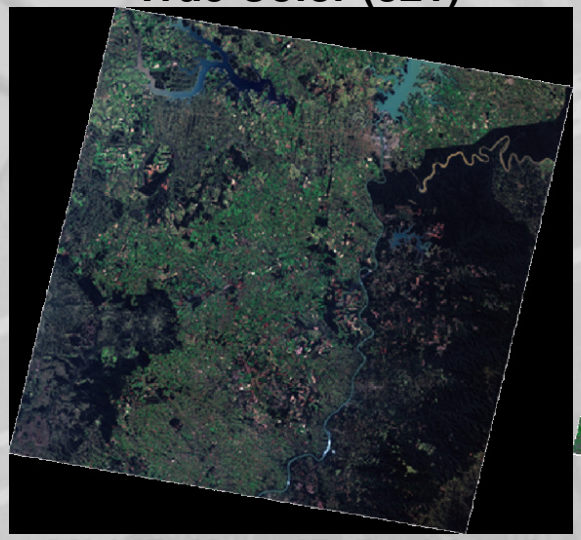
- **global coverage, 2 days**
- **global coverage, 9 days**
- **16 day orbital repeat**
- **seasonal global coverage**
- **45-60 day orbital repeat**
- **global coverage, years**
- **global coverage, decades**

Spectral Coverage & Resolution

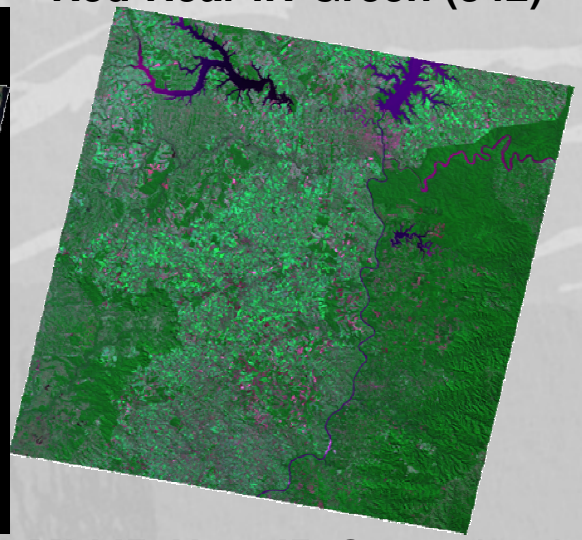


Landsat ETM+ Band Combinations

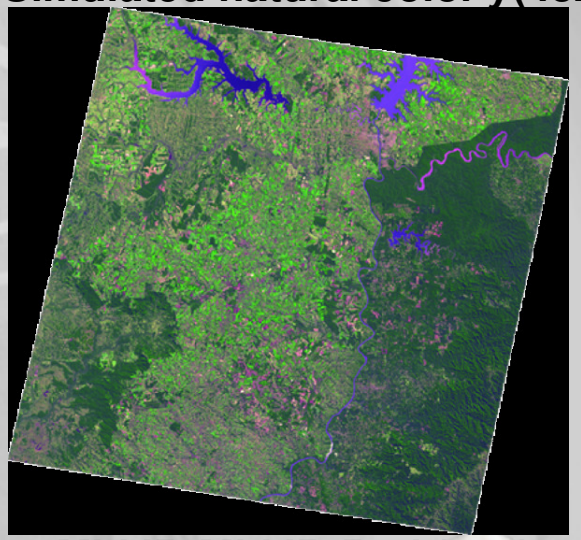
True Color (321)



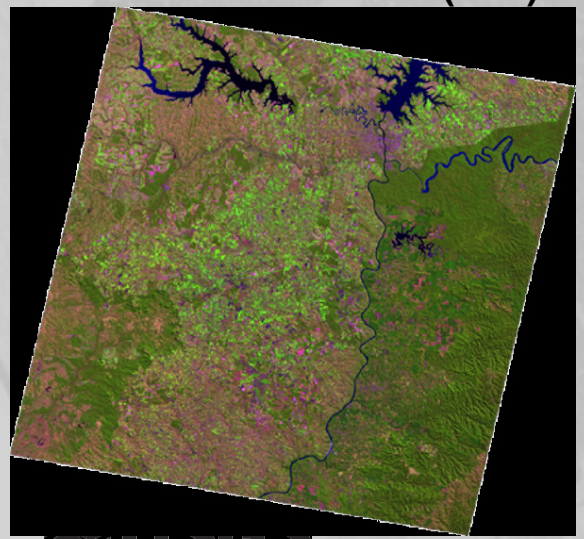
Red-Near IR-Green (342)



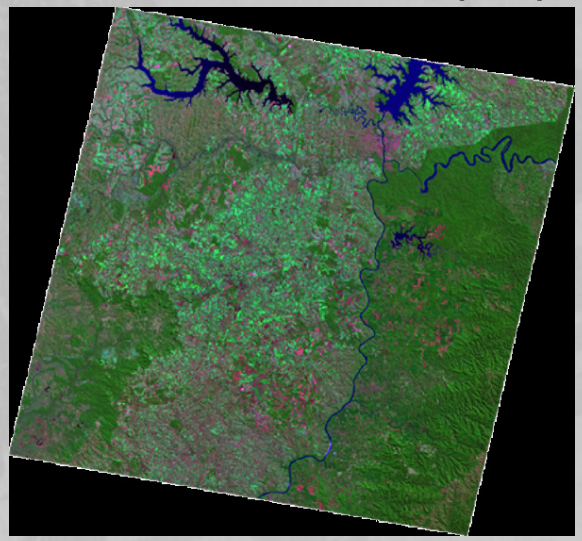
Simulated natural color *f*(432)



Mid IR-Near IR-Red (543)

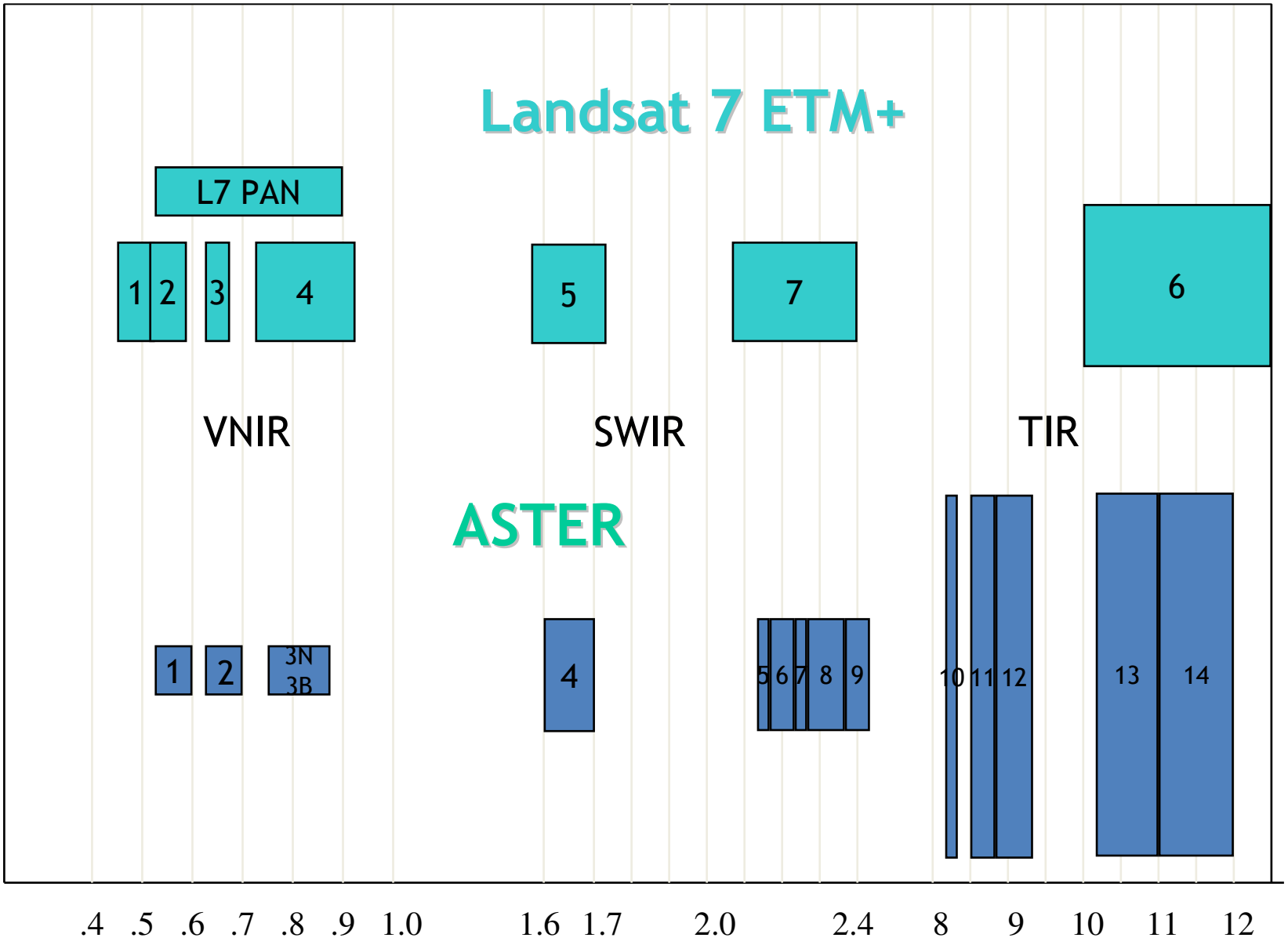


Mid IR-Near IR-Green (742)

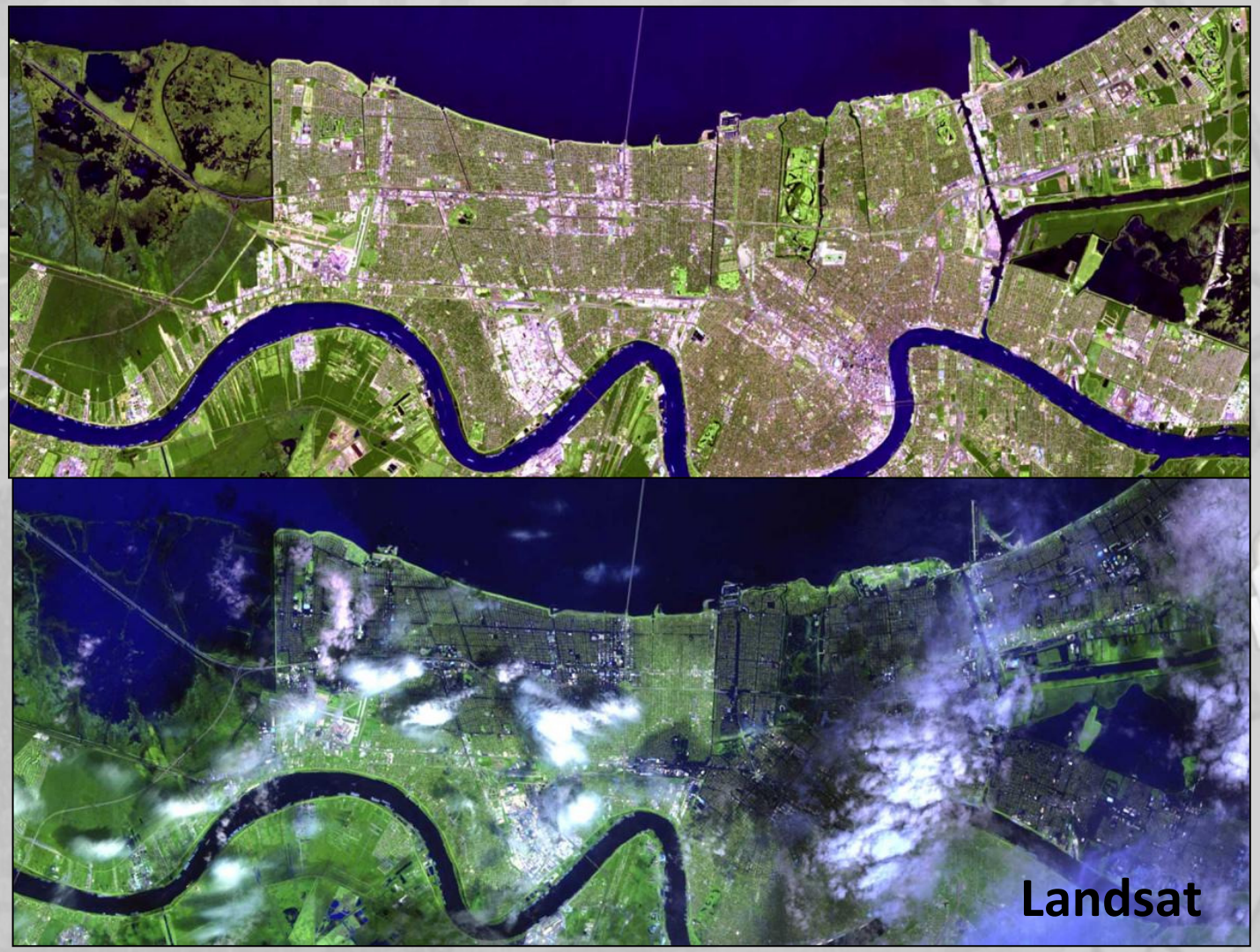


Mid IR-Mid IR-Red (753)

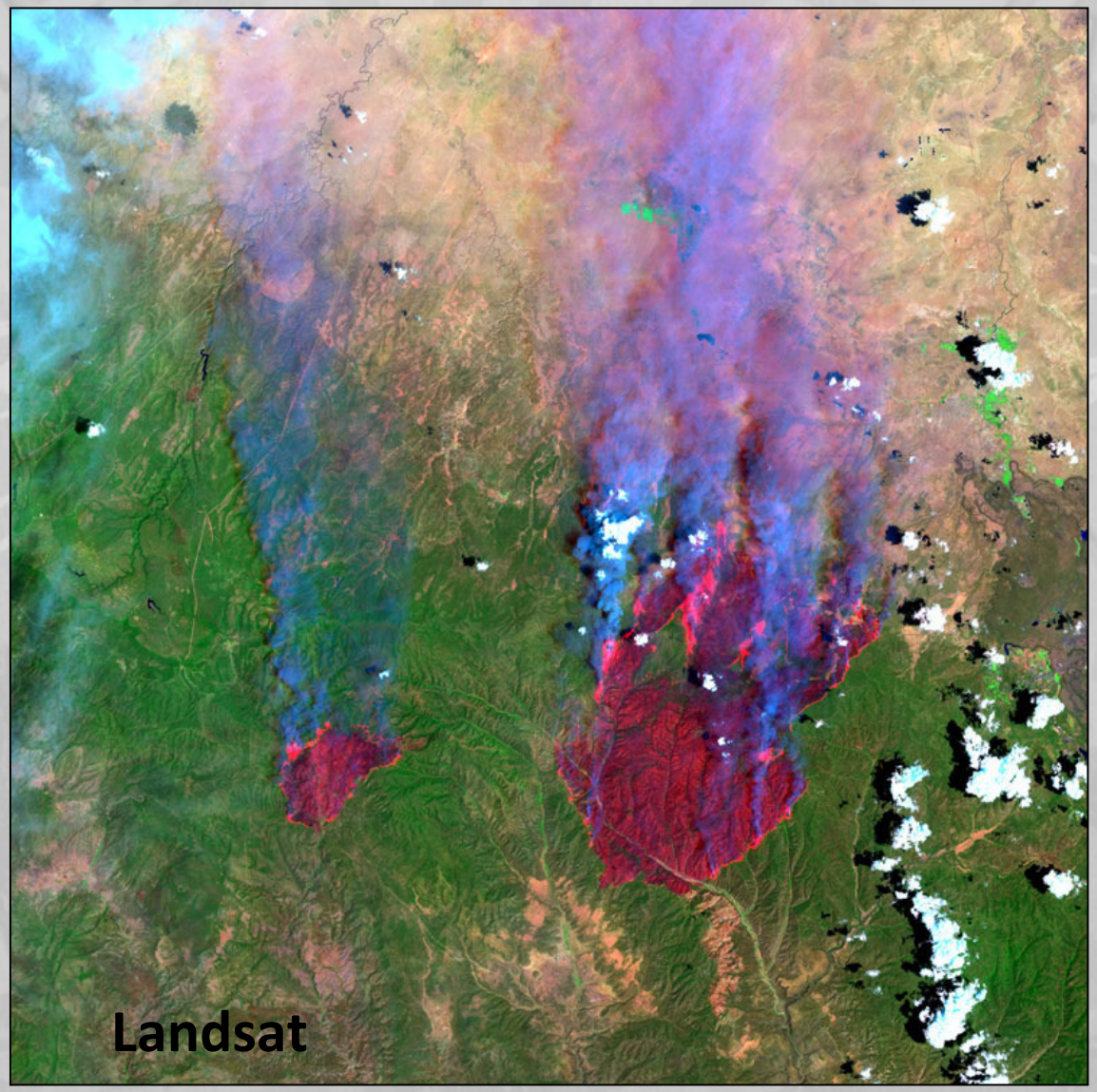
ETM+ & ASTER Spectral Bands and Resolution



Hurricane Katrina



USGS



Monitoring Wildfires

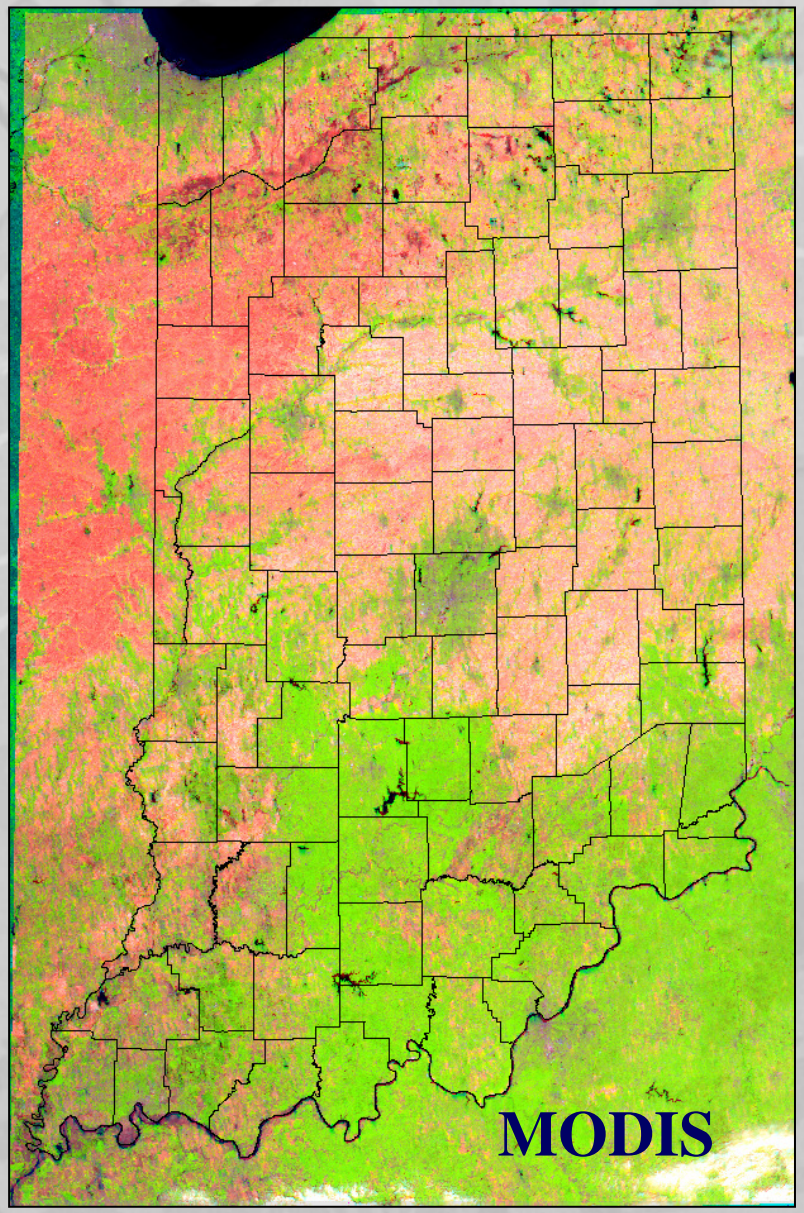
USGS

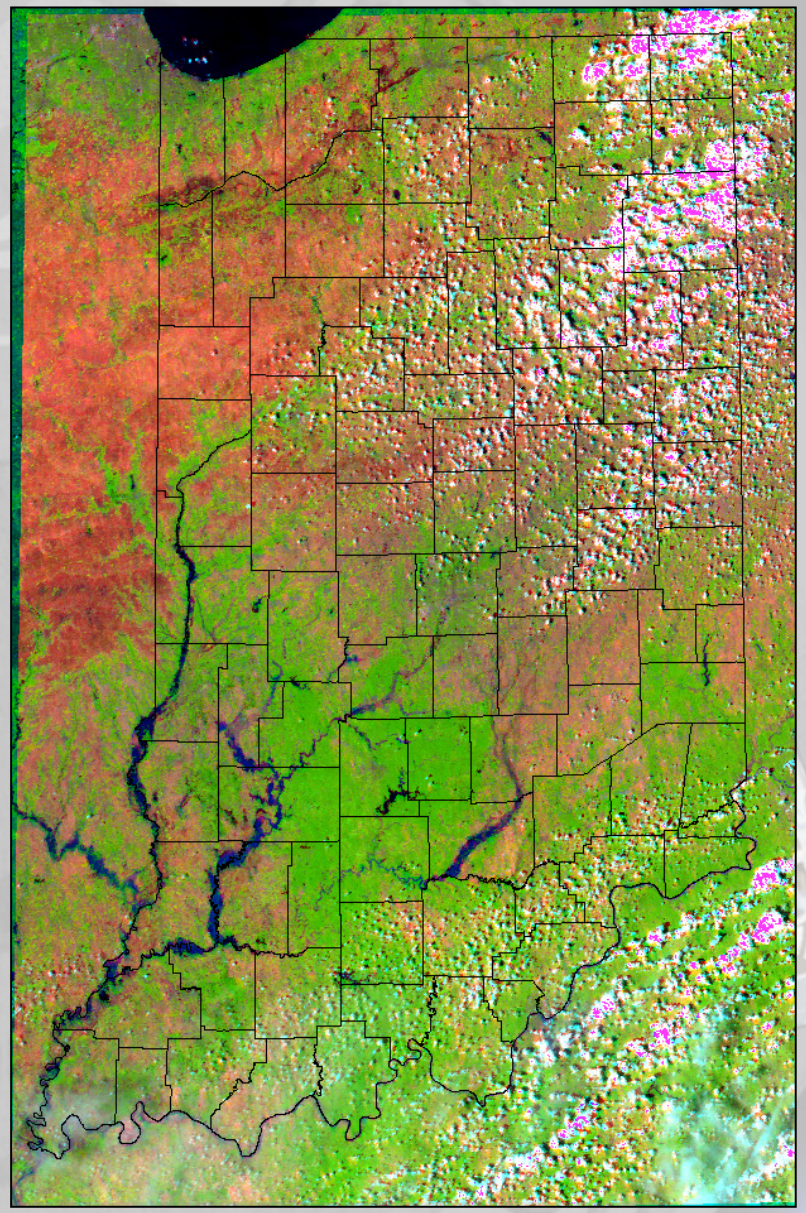
Haiti

USGS

Haiti

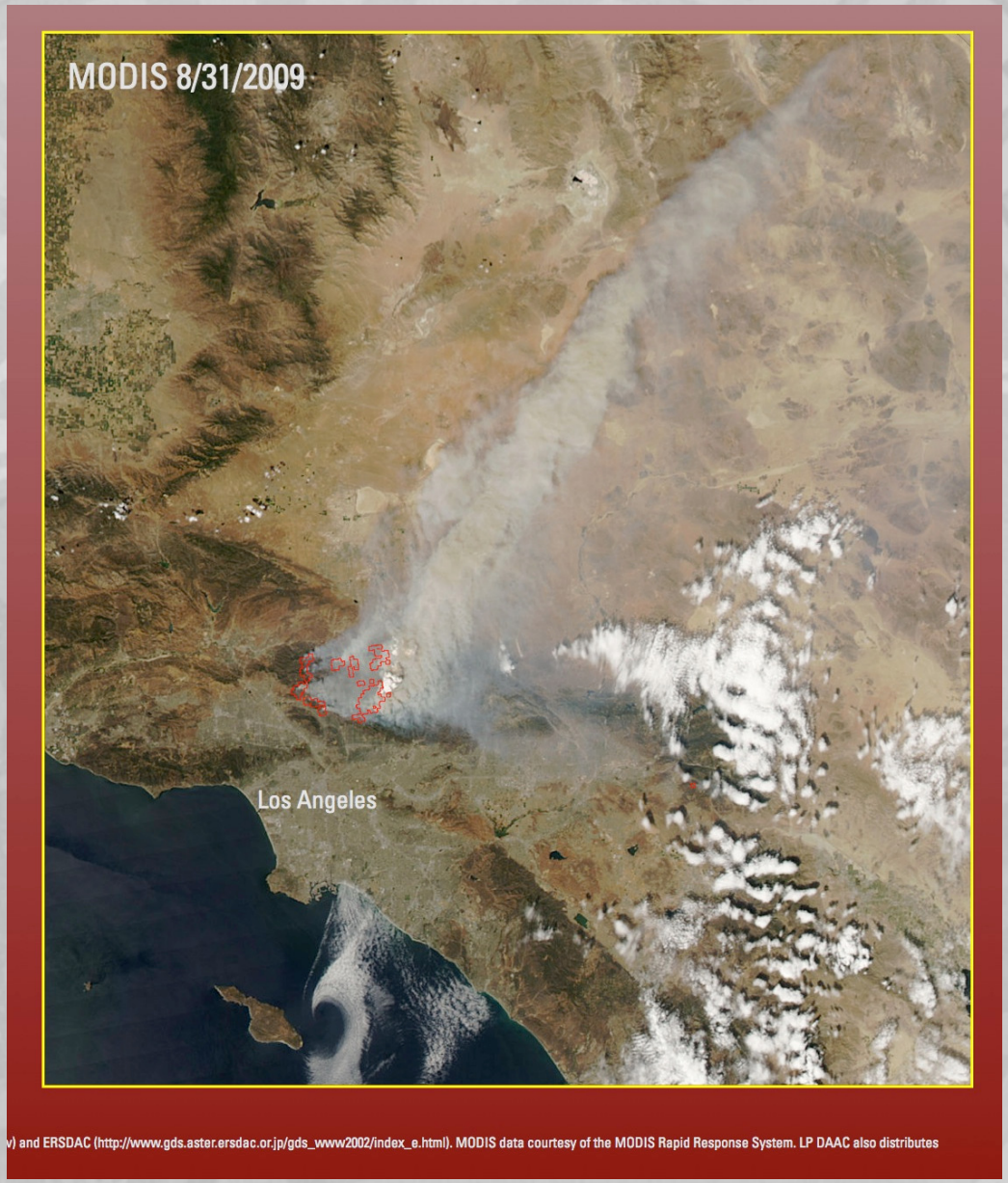
USGS





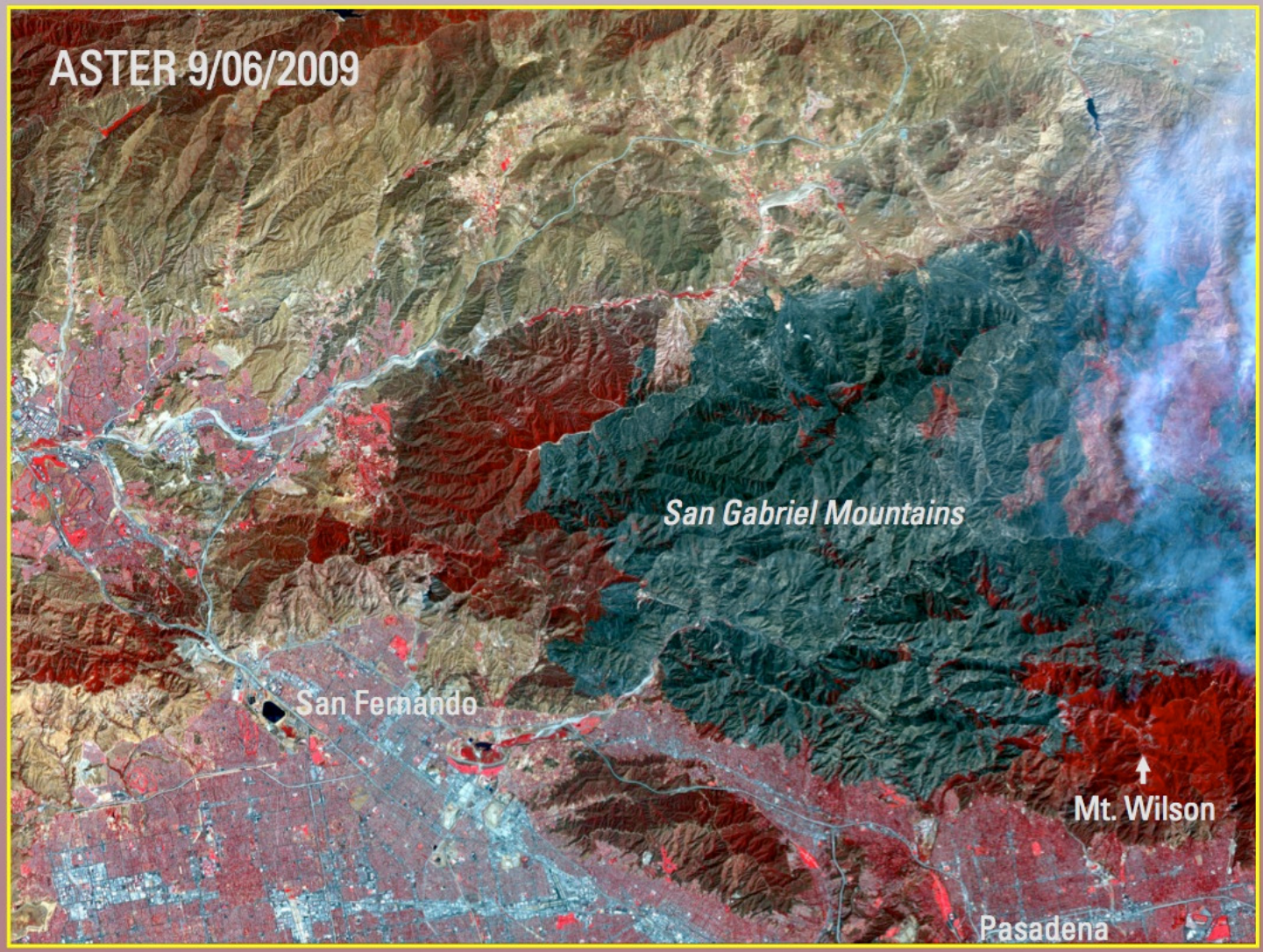
USGS

Fires in Los Angeles



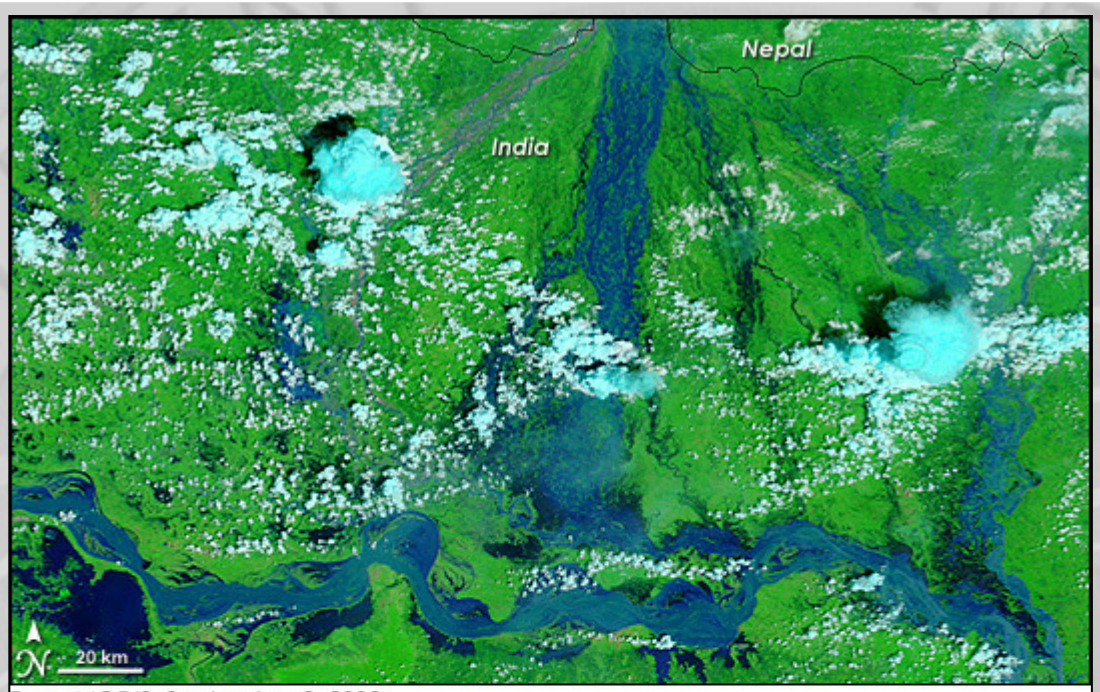
v) and ERSDAC (http://www.gds.aster.ersdac.or.jp/gds_www2002/index_e.html). MODIS data courtesy of the MODIS Rapid Response System. LP DAAC also distributes

USGS

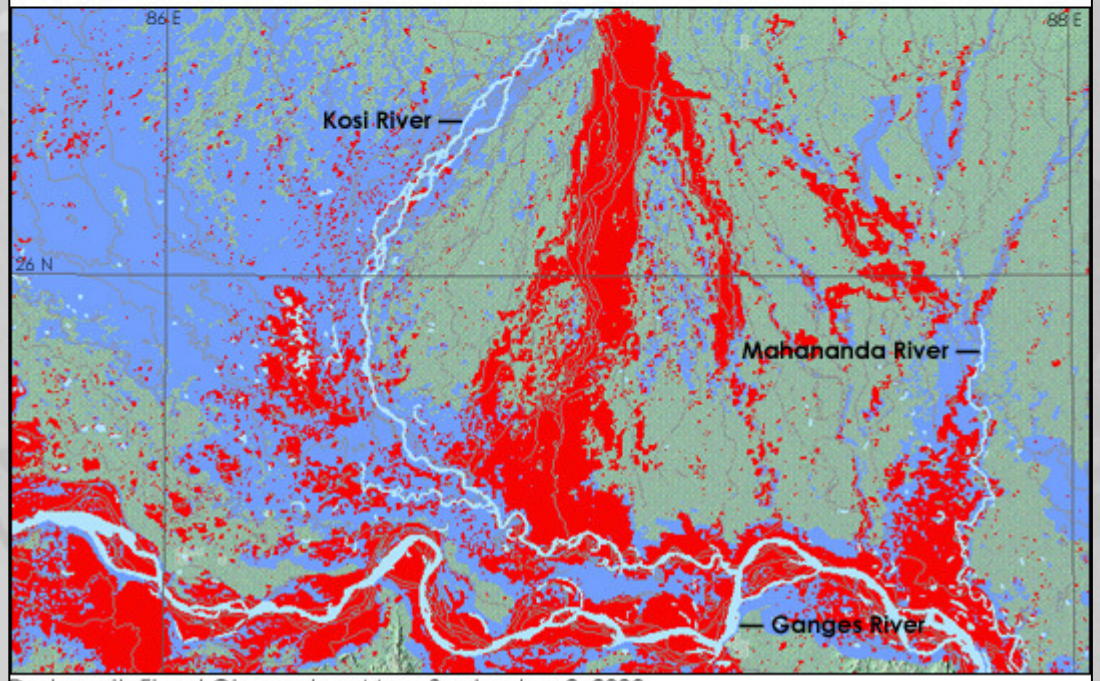

ASTER 9/06/2009
San Gabriel Mountains
San Fernando
Mt. Wilson
Pasadena

USGS

Asian Flood Mapping

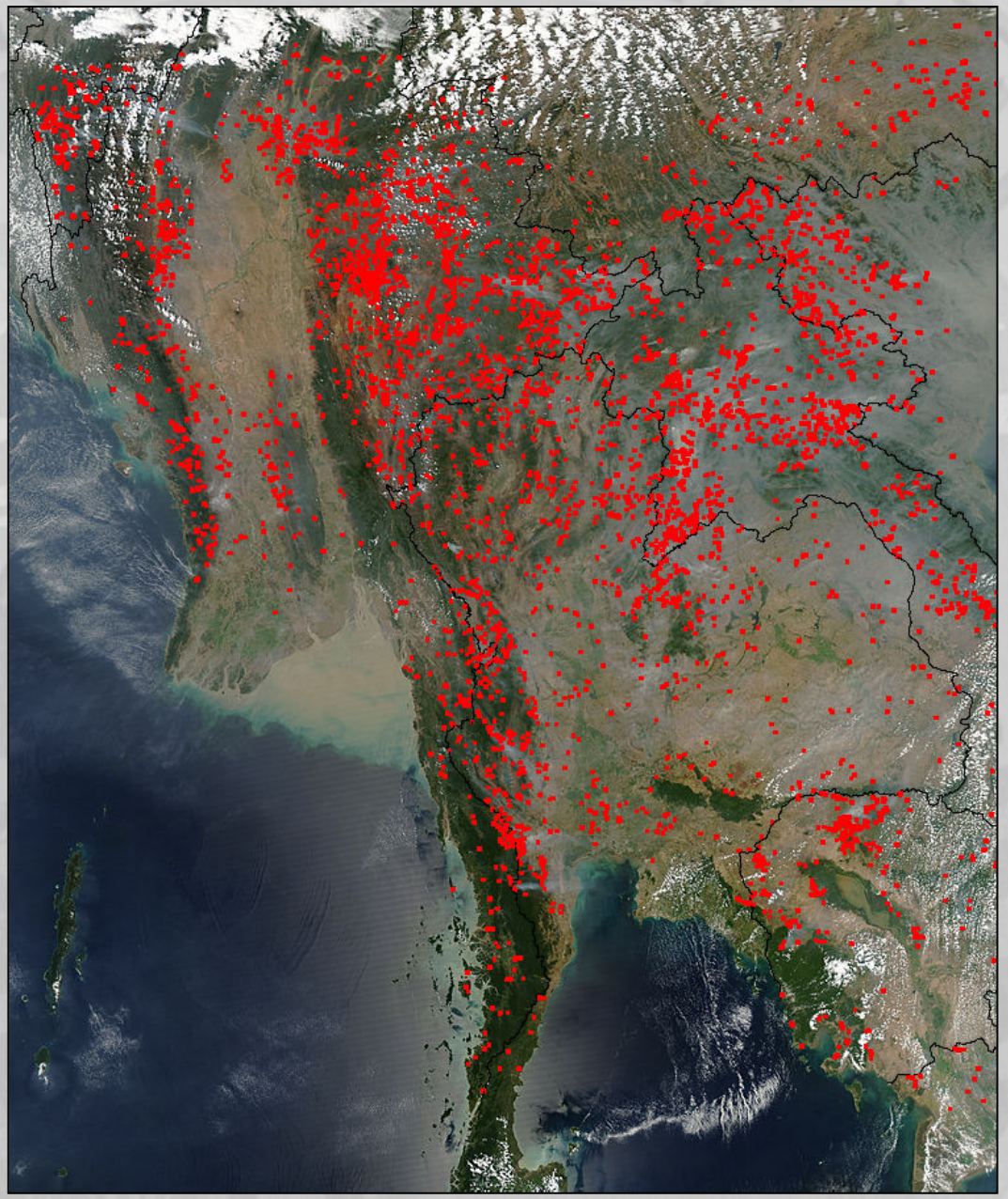


Terra MODIS, September 2, 2008



Dartmouth Flood Observatory Map, September 2, 2008

MODIS



Fires in Indonesia

MODIS

USGS

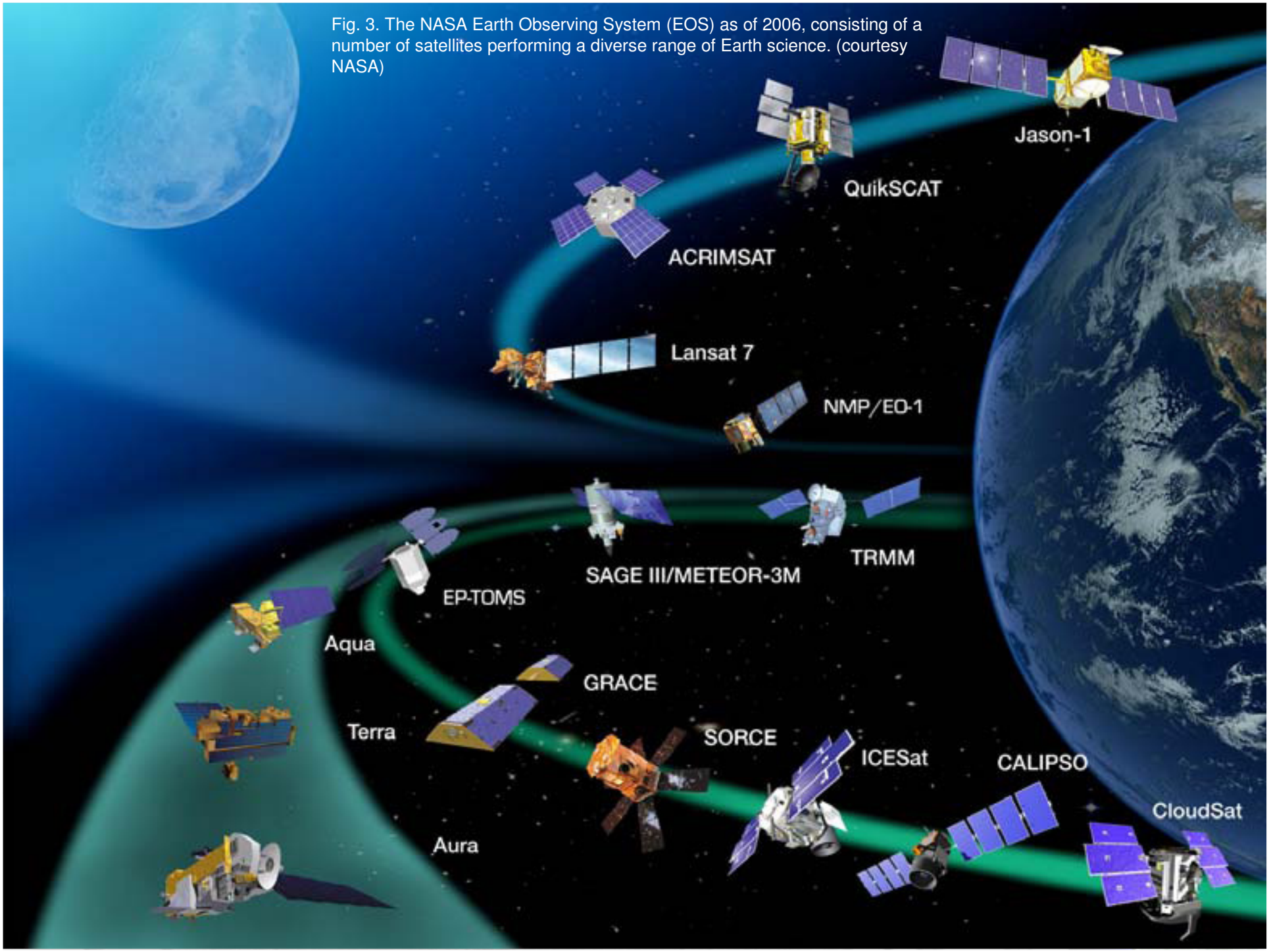


Fig. 3. The NASA Earth Observing System (EOS) as of 2006, consisting of a number of satellites performing a diverse range of Earth science. (courtesy NASA)

Data Availability and Access for Selected Systems

- High-Resolution Optical Systems (< 10m)
  - Primarily commercial (private sector) sources
  - Aerial (flown by airplane, not satellite)
  - IKONOS, Worldview, Formosat, Quickbird, GeoEye, etc.)
- Mid-Resolution Optical Systems (~5- 1000m)
  - Landsat Satellites
  - ASTER
  - SPOT
  - ALOS AVNIR
  - CBERS
- Coarse-Resolution Optical Systems (~> 100m)
  - AVHRR
  - MODIS

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CEOS Land Surface Imaging (LSI) Constellation Portal

CEOS Land Surface Imaging Constellation Portal
for
Mid-Resolution Optical LSI Satellite System Information and Enhanced Data Access
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About LSIC
GEO FCT
Contact
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Satellites
• Satellites & Sensors
• Status & Launches
• Orbit Information
Sensors
• Band Information
• Visible & NIR Bands
• SWIR Bands
• Thermal Bands
• Panchromatic Bands
• Hyperspectral Bands
• Radiometric & Geometric Characteristics
• Geographic Characteristics
Data
• Data Access
CEOS Member Agency Operated
Mid-Resolution Optical Land Surface Imaging Satellite Systems
Mid-resolution optical LSI satellite systems are spaceborne land remote sensing systems that image the Earth's land surface in visible, near-infrared, shortwave infrared, and thermal infrared wavelengths with spatial resolutions between 10 meters and 100 meters. Currently nine CEOS member space agencies operate such systems: NASA, USGS, CNES, ISRO, JAXA, INPE, CAST, CONAE, and GISTDA. Since 1972, the land remote sensing systems launched by these agencies have collected an enormous volume of image data that has great potential value to the global society because of the good that can be accomplished from the application of these data to a broad range of scientific, social, and practical problems and issues. The data have been utilized in a variety of government, public, private, and national security applications. Examples include land and water management, global change research, disaster management, oil and mineral exploration, agricultural yield forecasting, pollution monitoring, land surface change detection, cartographic mapping, and countless others.
Landsat:USA
SPOT:France
Earth Obs.:Japan
THEOS:Thailand
EO-1:USA
IRS:India
CBERS:China & Brazil
SAC-C:Argentina

USGS

CEOS Land Surface Imaging Constellation Portal

for

Mid-Resolution Optical LSI Satellite System Information and Enhanced Data Access

Overview

• CEOS Agency Mid-Resolution Optical Satellite Systems

Satellites

• Satellites & Sensors

• Status & Launches

• Orbit Information

Sensors

• Band Information

• Visible & NIR Bands

• SWIR Bands

• Thermal Bands

• Panchromatic Bands

• Hyperspectral Bands

• Radiometric & Geometric Characteristics

• Geographic Characteristics

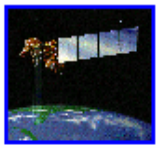
Data

• Data Access

• Documentation

CEOS Agency Current and Former Mid-Resolution Optical Satellites & Sensors

Satellite	Sensors	Agencies
ADEOS-1	AVNIR-1	JAXA
ALOS	AVNIR-2	JAXA
CBERS-1	HRCC, IRMSS	CAST, INPE
CBERS-2	HRCC, IRMSS	CAST, INPE
CBERS-2B	HRCC	CAST, INPE
EO-1	ALI, Hyperion	NASA, USGS
IMS-1	MX-T	ISRO
IRS-1A	LISS-I, LISS-II	ISRO
IRS-1B	LISS-I, LISS-II	ISRO
IRS-1C	LISS-IIIA	ISRO
IRS-1D	LISS-IIIA	ISRO
IRS-P2	LISS-IIIA	ISRO
IRS-P6	LISS-IIIB, AWiFS	ISRO
JERS-1	OPS	JAXA
Landsat 1	MSS	NASA, USGS
Landsat 2	MSS	NASA, USGS
Landsat 3	MSS-B	NASA, USGS
Landsat 4	MSS, TM	NASA, USGS
Landsat 5	MSS, TM	NASA, USGS
Landsat 7	ETM+	NASA, USGS
SAC-C	HRTC	CONAE
SPOT-1	HRV	CNES
SPOT-2	HRV	CNES
SPOT-3	HRV	CNES
SPOT-4	HRVIR	CNES
SPOT-5	HRG	CNES
Terra	ASTER	METI, NASA
THEOS	MS	GISTDA



Platform: LANDSAT-7

Click to view more

Platform-based Instruments:

Click to view more

Orbit

Orbit Altitude: 705km
Orbit Inclination: 98.2 degree
Equator Crossing: nominally 10 AM
Period: 99 minutes
Repeat Cycle: 16 days
Orbit Type: LEO > Low Earth Orbit > Polar Sun-Synchronous

Related Data Sets

View all records related to this platform

Description

Landsat 7 systematically provides well-calibrated, multispectral, moderate resolution, substantially cloud-free, sun-lit digital images of the Earth's continental and coastal areas with global coverage on a seasonal basis. It covers the United States every 16 days. Operations were transferred to USGS on Fall 2000.

The Landsat Project is a joint initiative of the U.S. Geological Survey (USGS) and the NASA to gather Earth resource data using a series of satellites. NASA

Click to view more

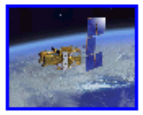
Online Resource:

http://nasascience.nasa.gov/missions/landsat-7
http://landsathandbook.gsfc.nasa.gov/handbook/handbook_htmls/chapter2/chapter2.html

http://landsat.gsfc.nasa.gov/

Platform Logistics:

Design Life: 5 Years
Launch Date: 1999-03-15
Primary Sponsors:
USA/USGS
USA/NASA



Platform: SPOT-5 > Systeme Probatoire Pour l'Observation de la Terre-5

Click to view more

Synonymous Platform Names:

Click to view more

Platform-based Instruments:

Click to view more

Orbit

Orbit Altitude: 822 km
Orbit Inclination: 98.8°
Equator Crossing: 10:30 AM (descending node)
Period: 101.4 minutes
Repeat Cycle: 2-3 days, depending on latitude
Perigee: 825.0 km
Apogee: 826.0 km
Orbit Type: LEO > Low Earth Orbit > Polar Sun-Synchronous

Related Data Sets

View all records related to this platform

Description

[Text Source: NASA/NSSDC,
http://nssdc.gsfc.nasa.gov/nmc/spacecraftDisplay.do?id=2002-021A]

Spot 5 is a French (CNES), Earth-imaging, three tonne satellite that was launched by an Ariane 42P rocket from Kourou at 00:31:00 UT on 4 May 2002. Its planar and stereoscopic relief images at about three meter resolution will be marketed for civilian and military uses, for cartographic and vegetation analyses. Panchromatic (at 2.5 m resolution) as well as multispectral images (at 10 m resolution) could be obtained. The position of the satellite, and hence the location of the images could be determined at 15 m accuracy by means of the DORIS position determination instrument. Extensive information on the instruments and data products is available via http://www.spotimage.com/

Online Resource:

http://smsc.cnes.fr/SPOT/index.htm
http://nssdc.gsfc.nasa.gov/nmc/spacecraftDisplay.do?id=2002-021A
http://www.spot.com/
http://www.satimagingcorp.com/satellite-sensors/spot-5.html

Launch Date: 2002-05-04
Launch Site: Kourou, French Guiana
Primary Sponsors:
France/CNES

CEOS Land Surface Imaging Constellation Port

for

Mid-Resolution Optical LSI Satellite System Information and Enhanced Data

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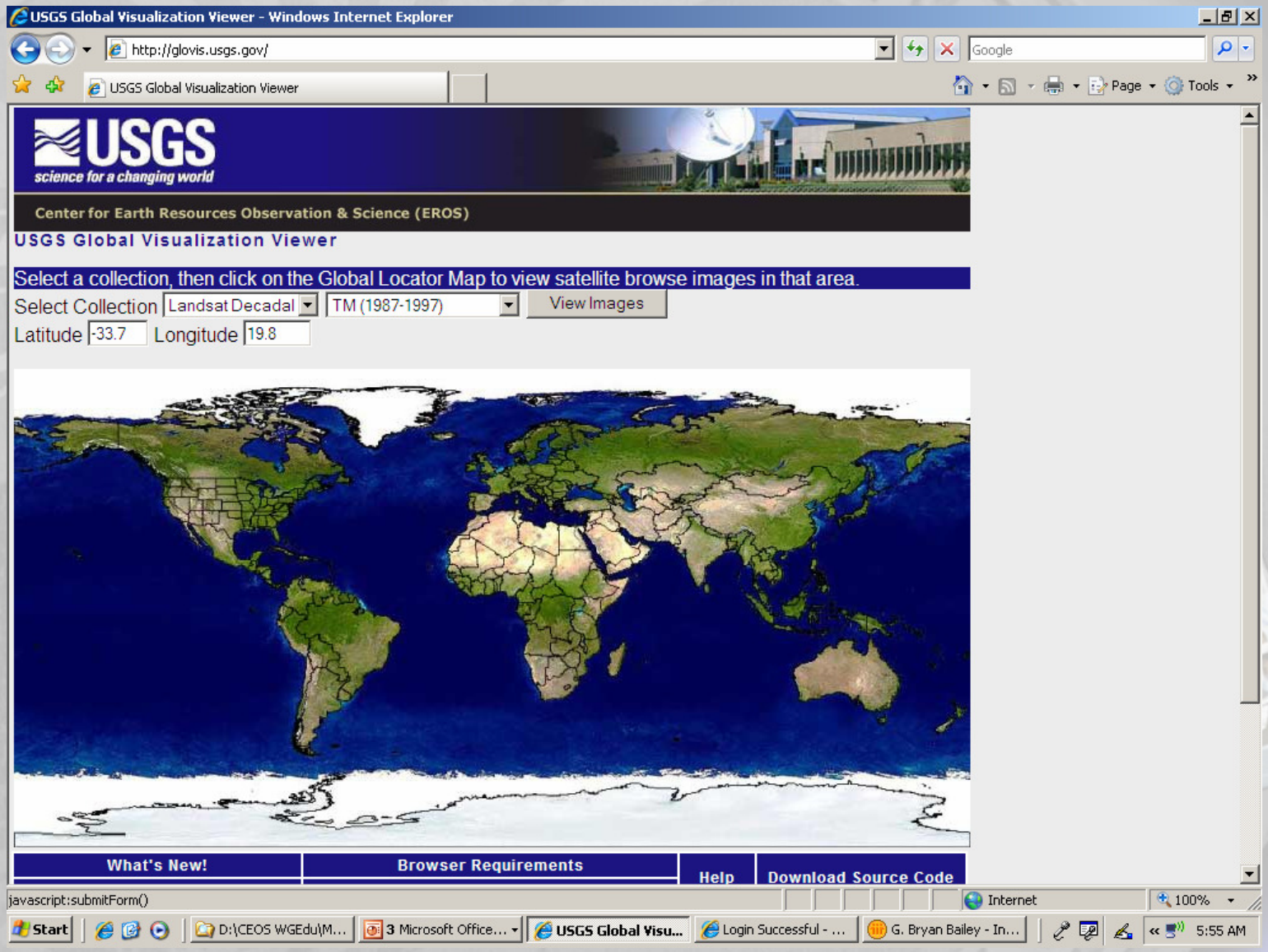
- Hyperspectral Bands
- Radiometric & Geometric Characteristics
- Geographic Characteristics

Data
- Data Access

Data Access

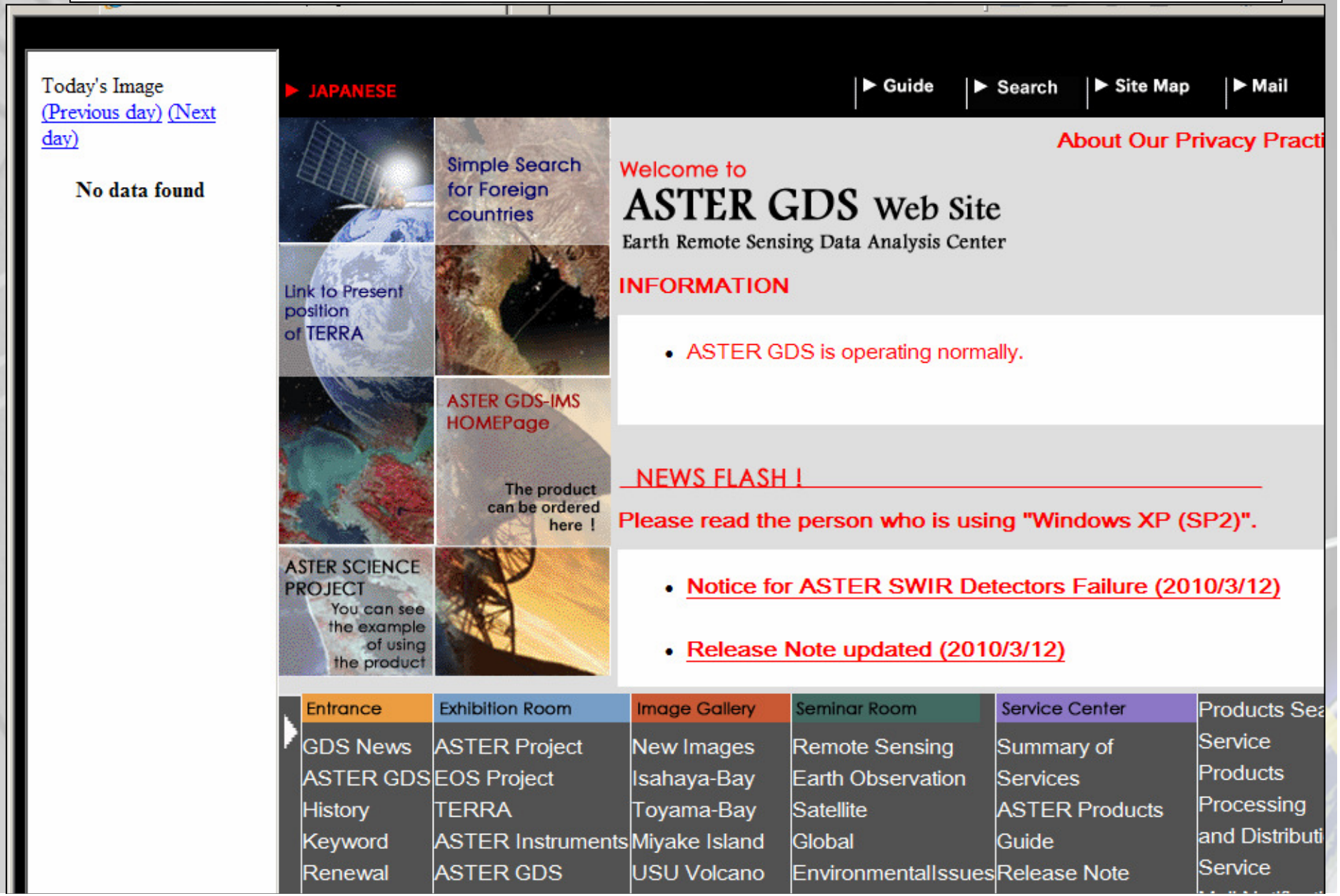
Satellite	Sensors	Data Center	Policy	Search Tool	Sample Data
ADEOS-1	AVNIR-1	RESTEC	cost	Search Service	sample images
ALOS	AVNIR-2	RESTEC	cost	AUIG, CROSS	yes
CBERS-1	CCD, IRMSS	CBERS Page	some free	CDSR	open archive
CBERS-2	CCD, IRMSS	CBERS Page	most free	CDSR	open archive
CBERS-2B	CCD	CBERS Page	most free	CDSR	open archive
EO-1	ALI, Hyperion	EROS	cost	GloVis	yes
IMS-1	MX-T	NRSC	n.a.	n.a.	n.a.
IRS-1A	LISS-I, LISS-II	NRSC	cost	Int Resellers	no
IRS-1B	LISS-I, LISS-II	NRSC	cost	Int Resellers	no
IRS-1C	LISS-IIIA	NRSC	cost	Int Resellers	yes
IRS-1D	LISS-IIIA	NRSC	cost	Int Resellers	yes
IRS-P2	LISS-IIIA	NRSC	cost	Int Resellers	yes
IRS-P6	LISS-IIIB, AWiFS	NRSC	cost	Int Resellers	yes
JERS-1	OPS	RESTEC	cost	Search Service	sample images
Landsat 1	MSS	EROS, other	free	GloVis, EE	open archive
Landsat 2	MSS	EROS, other	free	GloVis, EE	open archive
Landsat 3	MSS-B	EROS, other	free	GloVis, EE	open archive

Landsat Data Access - GloVis

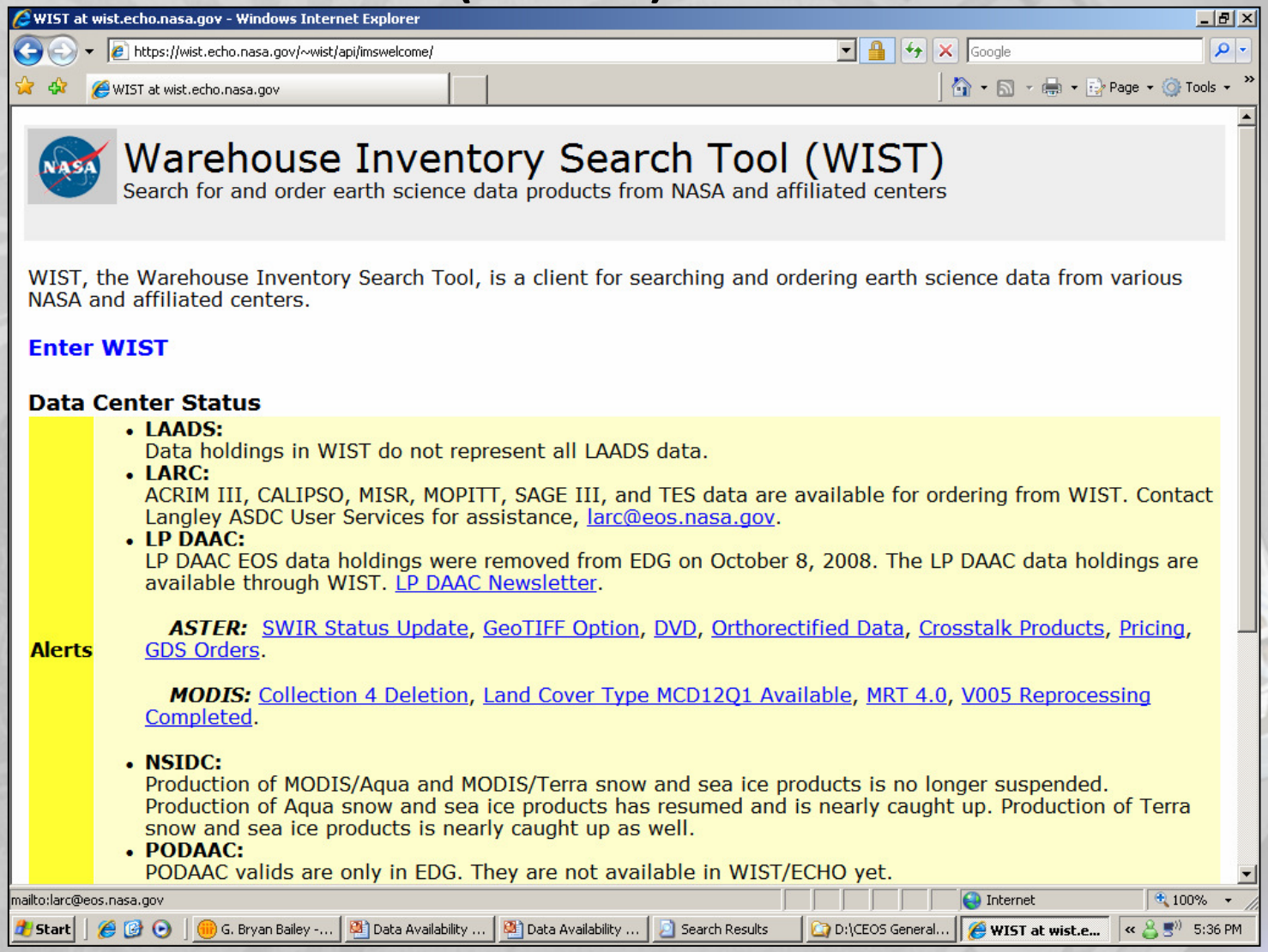


USGS

ASTER Data Access – Japan GDS

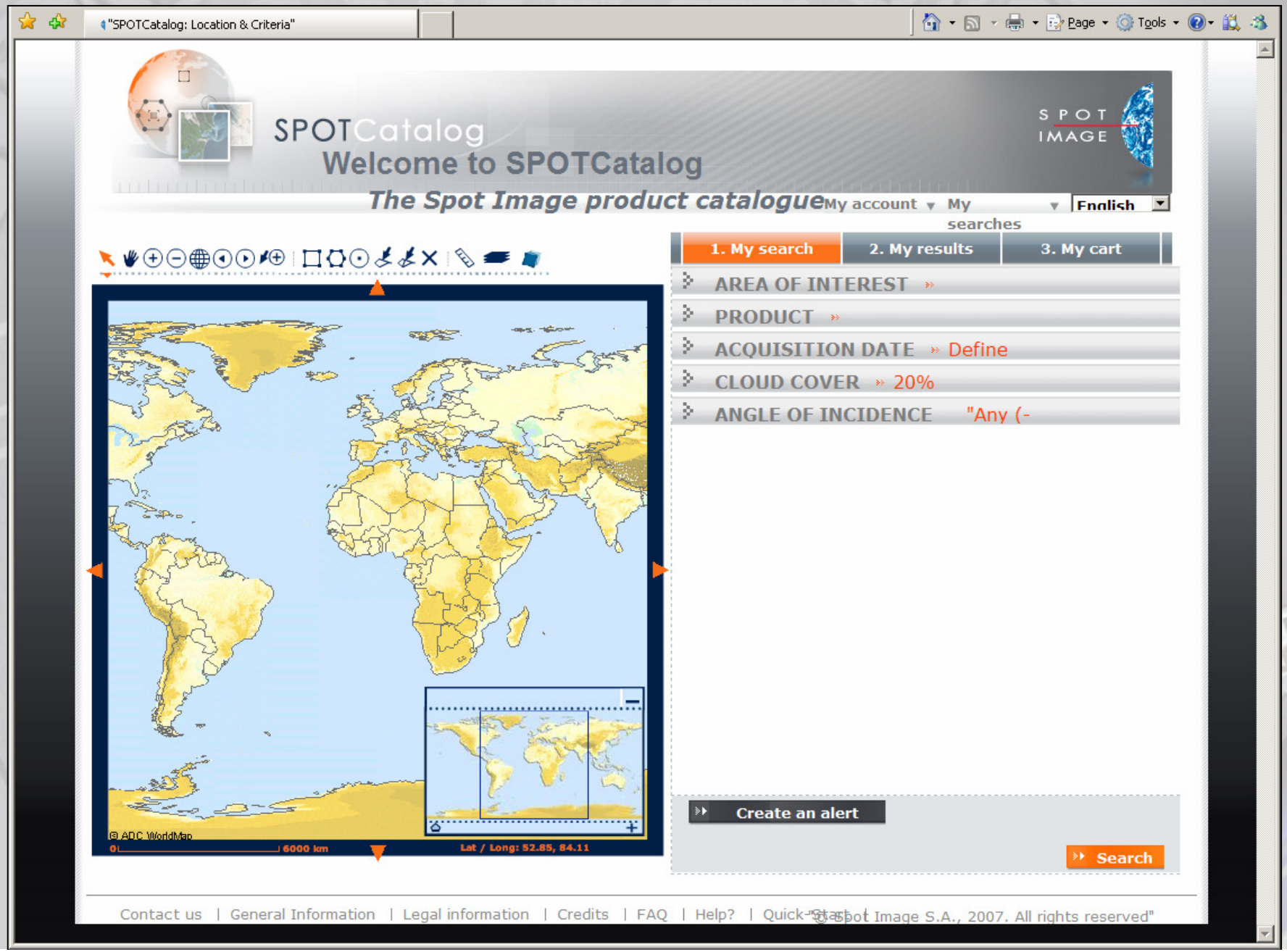


ASTER – Warehouse Inventory Search Tool (WIST)



USGS

SPOT Data Access – Sirius Online



Catálogo de Imagens - Windows Internet Explorer

http://www.dgi.inpe.br/CDSR/

File Edit View Favorites Tools Help | Links Bookmark Clip Customize Links EDC Home Free Hotmail USGS Windows

Catálogo de Imagens

English

INPE **Image Catalog**

Register | Log In | Log Out | Cart | History | ? Help

Basic Parameters

Satellite

Instrument

Time Interval Seasonal

From 29 / 05 / 1973

To 25 / 03 / 2010

Maximum Cloud Cover

Q1 50% Q2 50%

Q3 50% Q4 50%

Quick Look Small Big

Passage Mosaic

Date : / / or Path :

Execute

Country | City | Sta

Execute

Path | Row

From To From To

Execute

By Region

North 10.

West -90. East -30.

South -40.

Execute

Map Interface

Lat -17. Lon -48.

Navigate

Dear User,

"On March 11th, 2010, CBERS-2B had a problem in the subsystem of orbit attitude control. Procedures of emergency operation was performed jointly by Brazil and China in the same date.
Currently, specialists in orbit attitude control are analyzing the problem, seeking a final solution. Until we reach a conclusive result, the imaging operations are canceled until further notice."

We are, since Feb 22/2010, providing INPE's Image Catalog users with images from AWiFS and LISS3 sensors on-board IRS P6 indian natural resources satellite, on a costless ordering basis. These images cover South America region in the range of INPE's reception antenna in Cuiaba - MT (Brazil) and have daily been received since September 15/2009.
See information in Satelite IRS P6.

Read Information on recent CBERS-2B satellite imaging disturbance.
See below (item 4) how to proceed for downloading MARLIN - a tool oriented for displaying and handling digital images.

Welcome to the DGI/INPE's Image Database page.

DGI/INPE's Image Database presently contains images cast by Landsat-1, Landsat-2, Landsat-3, Landsat-5, Landsat-7, CBERS2 and CBERS-2B (China-Brazil Environment Resources Satellite) satellites.

All images are fully cost free when requested (via Internet). These images are (by default) sent via FTP to the users for downloading. It can rather be recorded on a CD media and mailed to the user, what implies costs (media plus mailing) driving the user to register at the Users Assistance Service (ATUS) for tax payment and shipment procedures.

Catálogo de Productos
Sistema simplificado de distribución de imágenes
Satélite SAC-C

Español

Descargar el Visualizador de Imágenes SAC-C

Los derechos de autor de las imágenes SAC C pertenecen a la Comisión Nacional de Actividades Espaciales (CONAE).

Los interesados podrán acceder a las imágenes que se ponen a disposición via Internet en forma gratuita. Otras imágenes o servicios (de archivo, en CDROM, diferentes niveles de procesamiento, etc.) deberán ser solicitadas a la Unidad DISPA (Paseo Colon 751 Capital Federal, CONAE).

Las imágenes SAC C estarán destinadas para el uso propio. No está permitida la comercialización de las mismas sin autorización expresa previa de CONAE.

Los usuarios podrán producir imágenes derivadas e imágenes clasificadas a partir de las imágenes SAC C para uso propio o

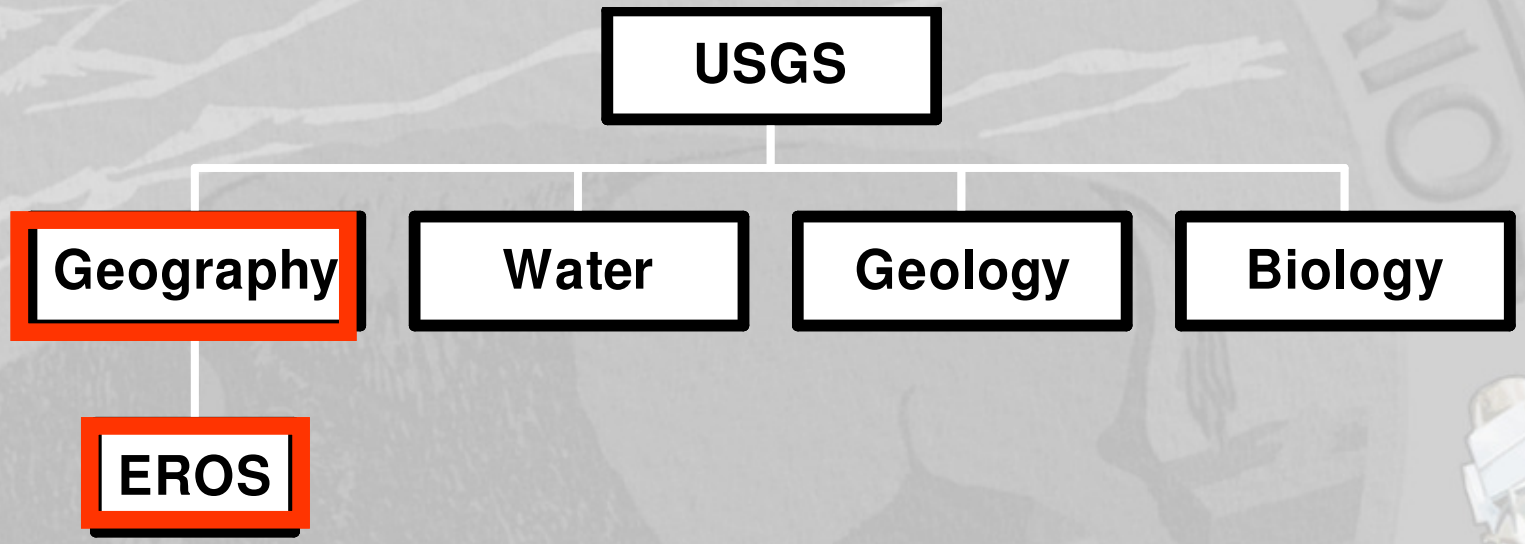
Lanzamiento del satélite SAC C. Vandenberg, California (21 de noviembre de 2000).

Productos Disponibles: (•) SAC-C ( ) SAC-C Integrados (PIMH)

Acepto las Condiciones

<< Volver a Catálogos

USGS Organizational Alignment



Land Remote Sensing Program

- **The USGS LRS Program is the Nation's archive for the world's largest collection of civilian remotely sensed data covering the Earth's land masses.**
- **The USGS maintains millions of satellite images and aerial photographs that are used by researchers, in both the public and private sectors, to understand natural resources, hazards, and long-term changes.**
- **The remote sensing products not produced by the USGS are acquired from multiple Federal, State, and private sector partners.**
- **The data and information are searchable and accessible online with real-time browse capability**

USGS

Geographic Analysis and Monitoring

GAM researchers use earth observation data supplied by land remote sensing coupled with data from many natural science sources and relevant socio-economic data to quantify the rates, identify key driving forces, and forecast future trends of landscape change.

GAM studies are conducted within a geographic context and at a range of spatial and temporal scales in order to provide a comprehensive, interdisciplinary perspective.

GAM scientists also conduct related studies about environmental and human health, wildfire, urban ecology, and natural hazards.

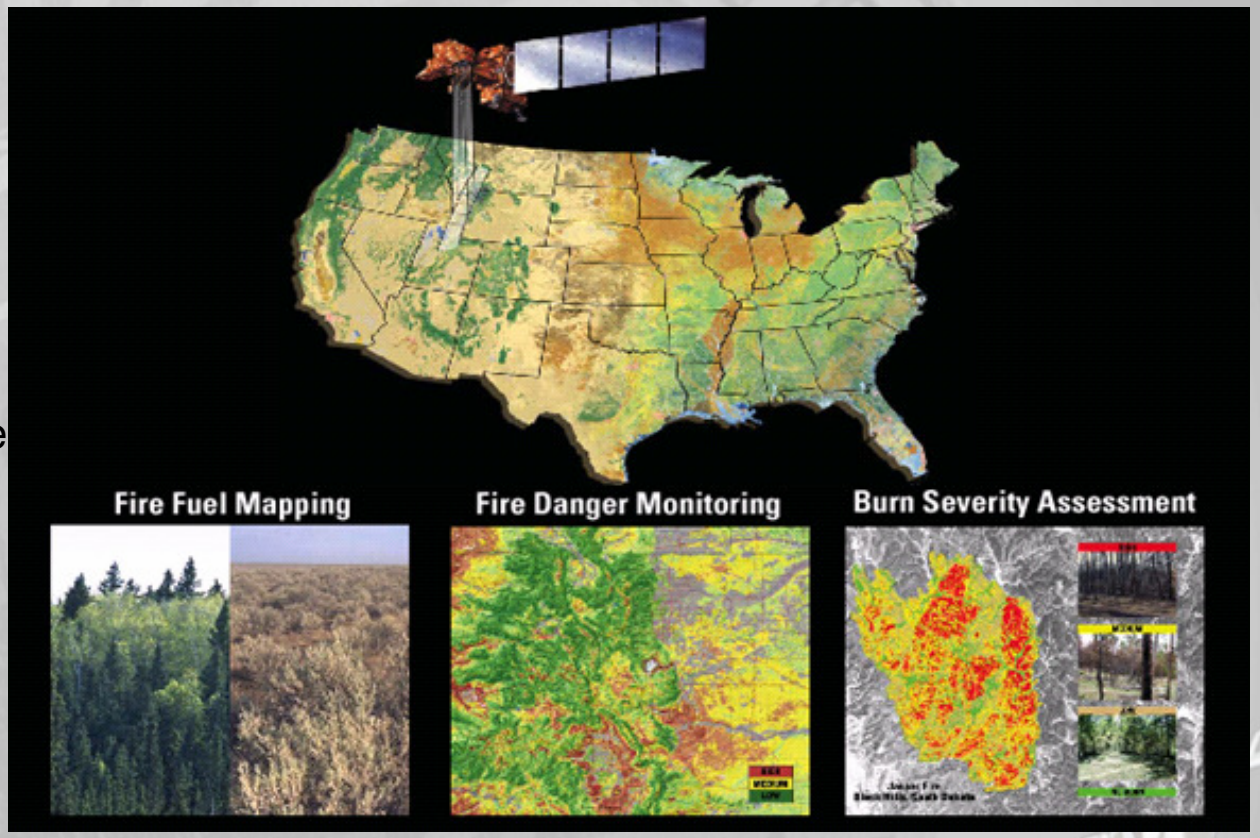
USGS

Responding to Natural Hazards

LANDFIRE: a multiyear effort to map fire fuels for the nation for fire risk assessment.

Fire Danger Monitoring: vegetation condition information for forecasting fire danger in support of the National Interagency Fire Center.

Monitoring Trends In Burn Severity: A multiyear effort to map over 10,000 major fires since 1984 and assess trends in burn severity.



These activities are conducted in cooperation with DOI agencies and the U.S. Forest Service

USGS

Earth Resources Observations and Science

Data Acquisition/Access:

To ensure that scientists, researchers, businesses, decision makers, and the public have ready access to land information

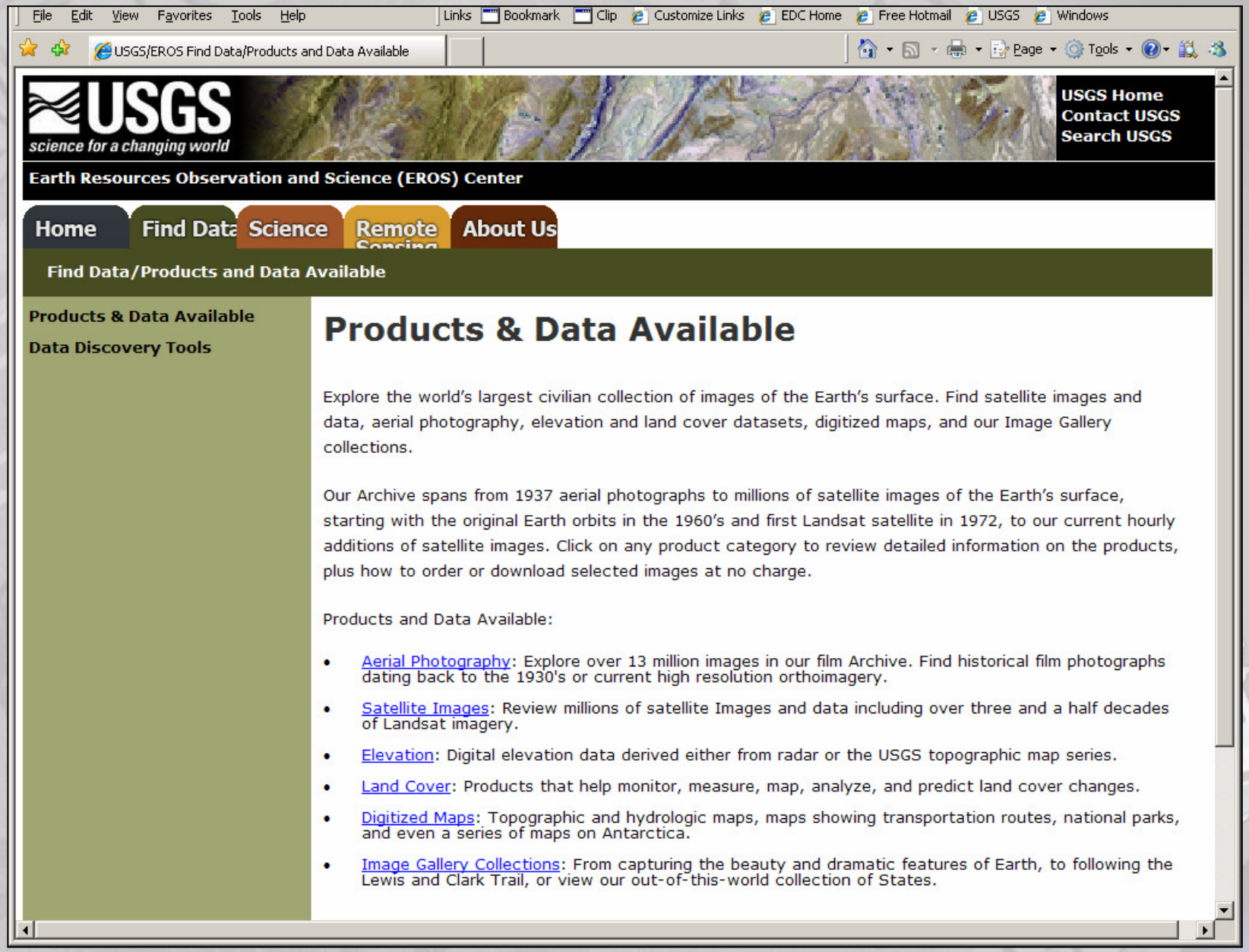
Data Archives:

To safeguard and expand the national archive of remotely sensed land data

Science:

To promote applications, users, and knowledge of land information to better understand our planet

USGS

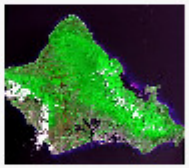
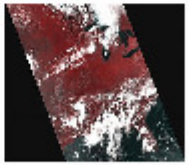

File Edit View Favorites Tools Help
Links Bookmark Clip Customize Links EDC Home Free Hotmail USGS Windows
USGS/EROS Find Data/Products and Data Available
Page Tools
USGS
science for a changing world
USGS Home
Contact USGS
Search USGS
Earth Resources Observation and Science (EROS) Center
Home
Find Data
Science
Remote Sensing
About Us
Find Data/Products and Data Available
Products & Data Available
Data Discovery Tools
Products & Data Available
Explore the world's largest civilian collection of images of the Earth's surface. Find satellite images and data, aerial photography, elevation and land cover datasets, digitized maps, and our Image Gallery collections.
Our Archive spans from 1937 aerial photographs to millions of satellite images of the Earth's surface, starting with the original Earth orbits in the 1960's and first Landsat satellite in 1972, to our current hourly additions of satellite images. Click on any product category to review detailed information on the products, plus how to order or download selected images at no charge.
Products and Data Available:
Aerial Photography: Explore over 13 million images in our film Archive. Find historical film photographs dating back to the 1930's or current high resolution orthoimagery.
Satellite Images: Review millions of satellite Images and data including over three and a half decades of Landsat imagery.
Elevation: Digital elevation data derived either from radar or the USGS topographic map series.
Land Cover: Products that help monitor, measure, map, analyze, and predict land cover changes.
Digitized Maps: Topographic and hydrologic maps, maps showing transportation routes, national parks, and even a series of maps on Antarctica.
Image Gallery Collections: From capturing the beauty and dramatic features of Earth, to following the Lewis and Clark Trail, or view our out-of-this-world collection of States.

USGS

USGS
ience for a changing world

oducts & Data Available
erial Photography
atellite Imagery
levation
and Cover
igitized Maps
mage Gallery Collections
AQs
ta Discovery Tools

Satellite Products

Example	Description	Availability
	**ASTER (Advanced Spaceborne Thermal Emission and Reflection Radiometer)** High-resolution (15- to 90-meter) multispectral data from the Terra satellite (2000 to present). (2000 - present)	WIST Data Pool GloVis
	**AVHRR (Advanced Very High Resolution Radiometer)** 1-km multispectral data from the NOAA satellite series. (1979 to present)	NOAA Archive
	Commercial Data Purchases (CDP) Imagery	EarthExplorer

Landsat ETM+ (Enhanced Thematic Mapper Plus)

EarthExplorer
GloVis

High-resolution (15- to 60-meter) multispectral data from Landsat 7.
(1999 to present)

Landsat MSS (Multispectral Scanner)

EarthExplorer
GloVis

80-meter multispectral data from Landsats 1 to 5.
(1972 to 1992)

Landsat TM (Thematic Mapper)

EarthExplorer
GloVis

30- to 120-meter multispectral data from Landsat 4 and 5.
(1982 to present)

LDCM (Landsat Data Continuity Mission)

not available yet

Multispectral data from the proposed Landsat Data Continuity Mission.

MODIS (Moderate Resolution Imaging Spectroradiometer)

WIST
GloVis
Data Pool

Moderate-resolution (250- to 1000-meter) multispectral data from the Terra Satellite (2000 to present) and Aqua Satellite (2002 to

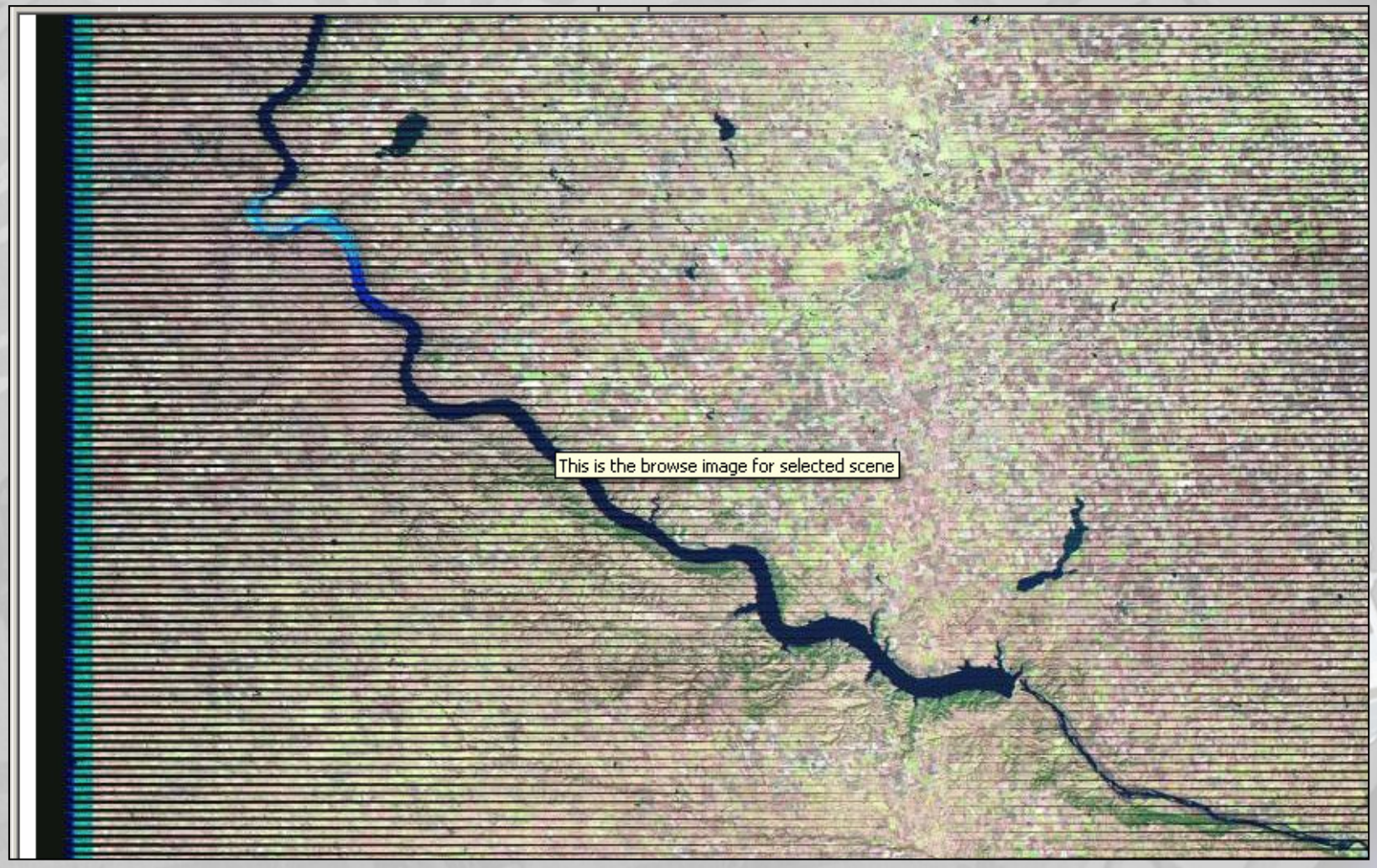
Landsat at USGS EROS

Landsat 5,
launched March 1, 1984

Landsat 7,
launched April 15, 1999

USGS

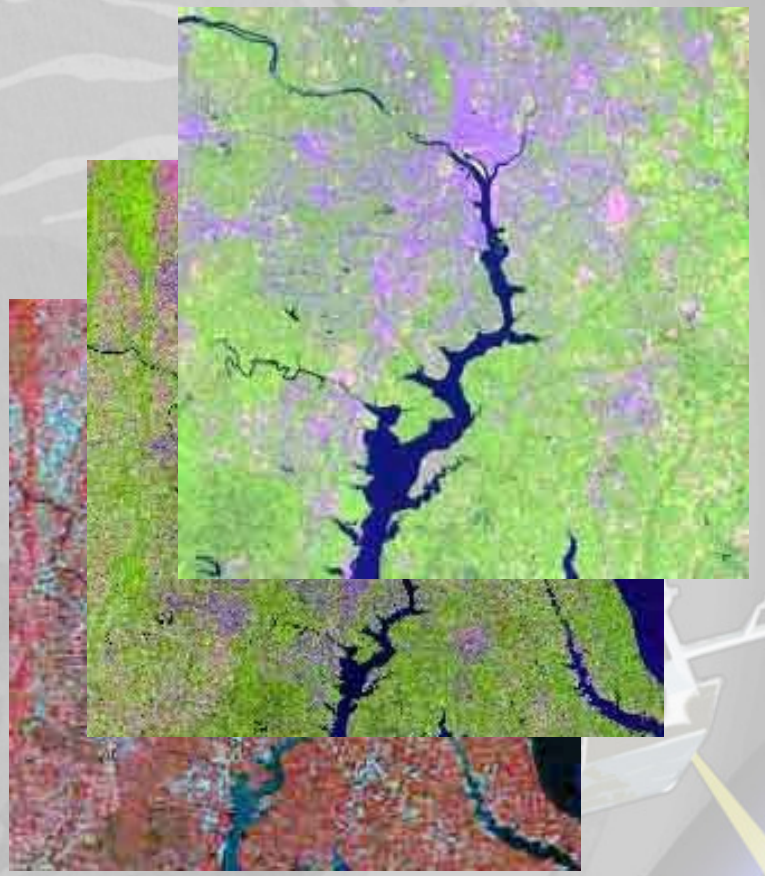
Landsat 7 Scan –line Correction Problem (since 2003)



U.S. Landsat Archive Overview

(Available scenes through November 30, 2009)

- **ETM+: Landsat 7**
  - **990,735 scenes**
  - **920TB RCC and L0Ra Data**
  - **Archive grows by 260 GB Daily**
- **TM: Landsat 4 & Landsat 5**
  - **843,787 scenes**
  - **211TB of L0Ra Data**
  - **Archive Grows by 40 GB Daily**
- **MSS: Landsat 1 through 5**
  - **652,088 scenes**
  - **19 TB of Data**



USGS

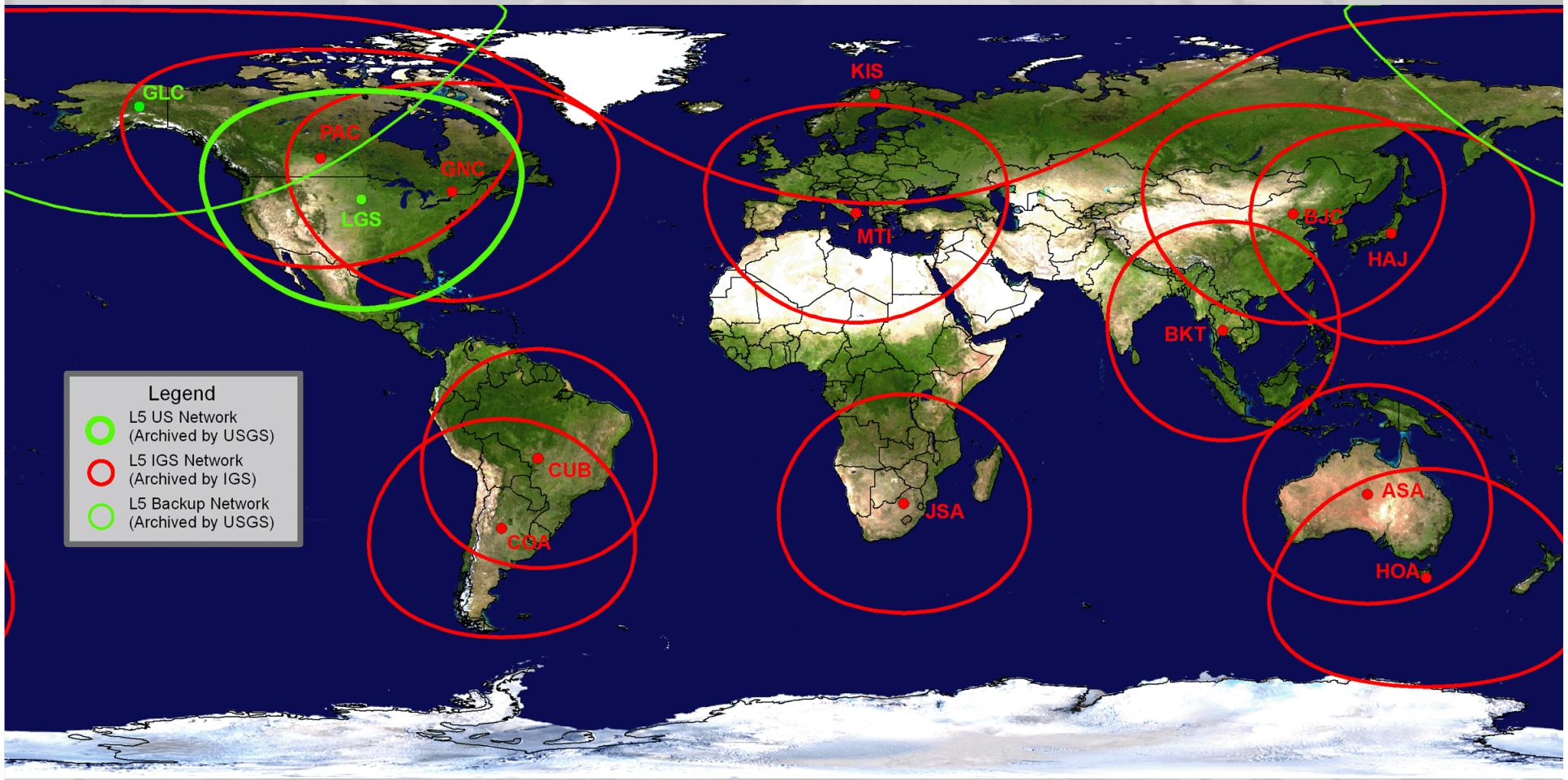
Landsat Standard Products

- **Pixel size: 15m/30m/30m**
- **Media type: Download (web-enabled)**
- **Product type: L1T (terrain-corrected)***
- **Output format: GeoTIFF**
- **Map projection: UTM (Polar Stereographic for Antarctica)**
- **Orientation: North up**
- **Resampling: Cubic convolution**
- **DEM: GLS DEM (SRTM, NED, CDAD, DTED, GTOPO 30)**

***Systematic correction (L1Gs) are also produced when terrain or precision ground control is not available.**

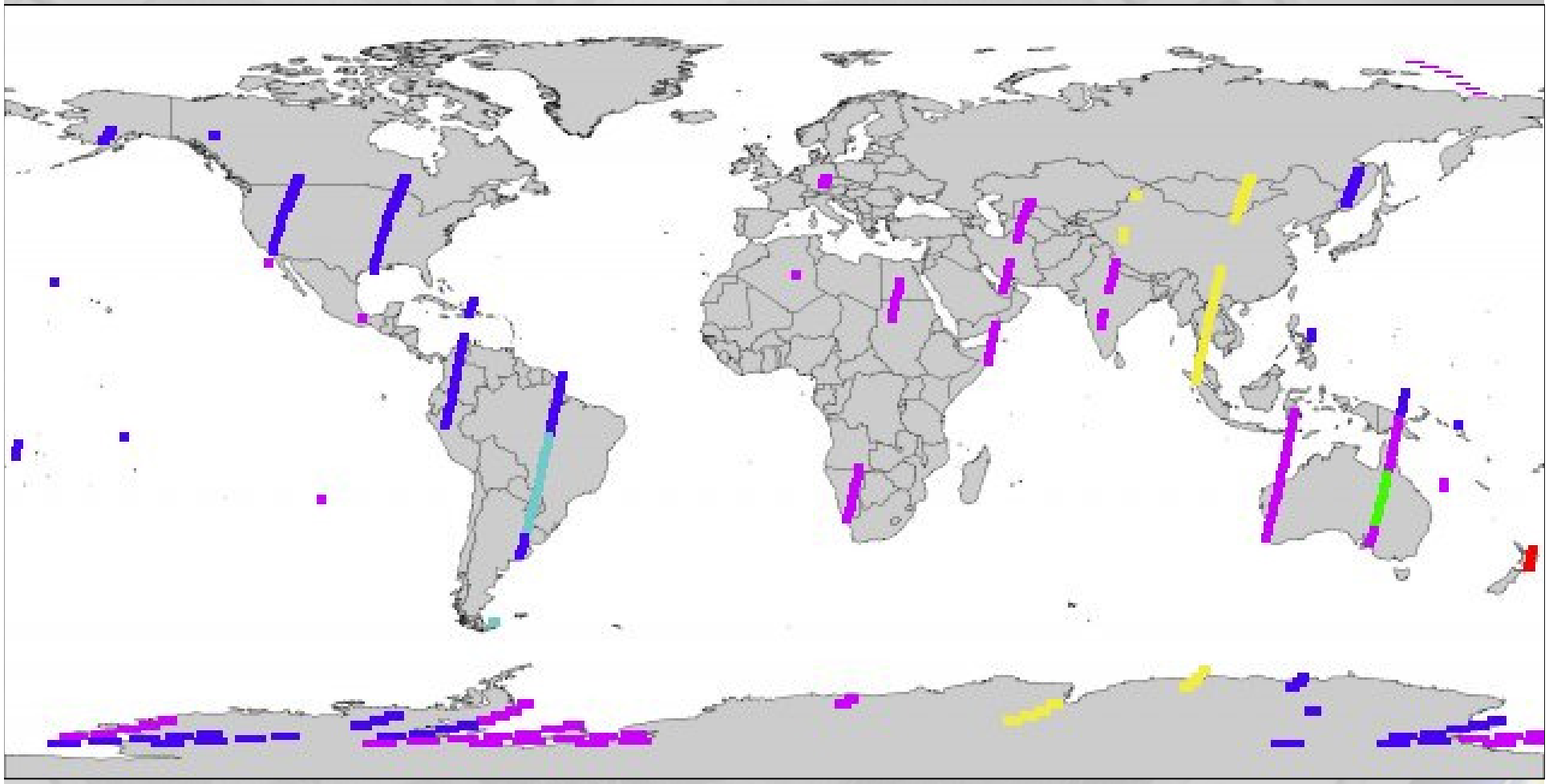
USGS

Landsat Int'l Ground Stations



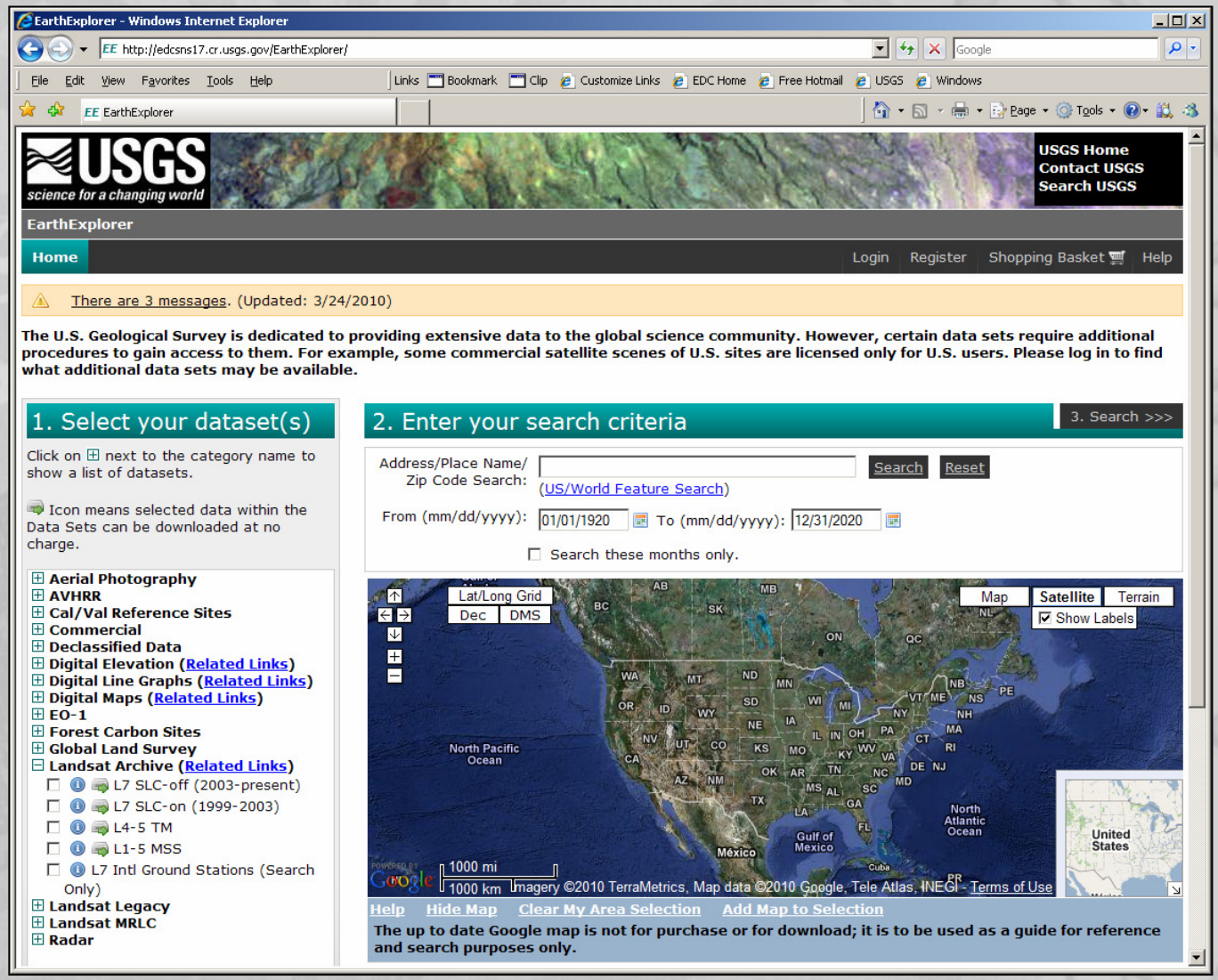
USGS

Landsat 7 Acquisitions: 15 Feb 2010

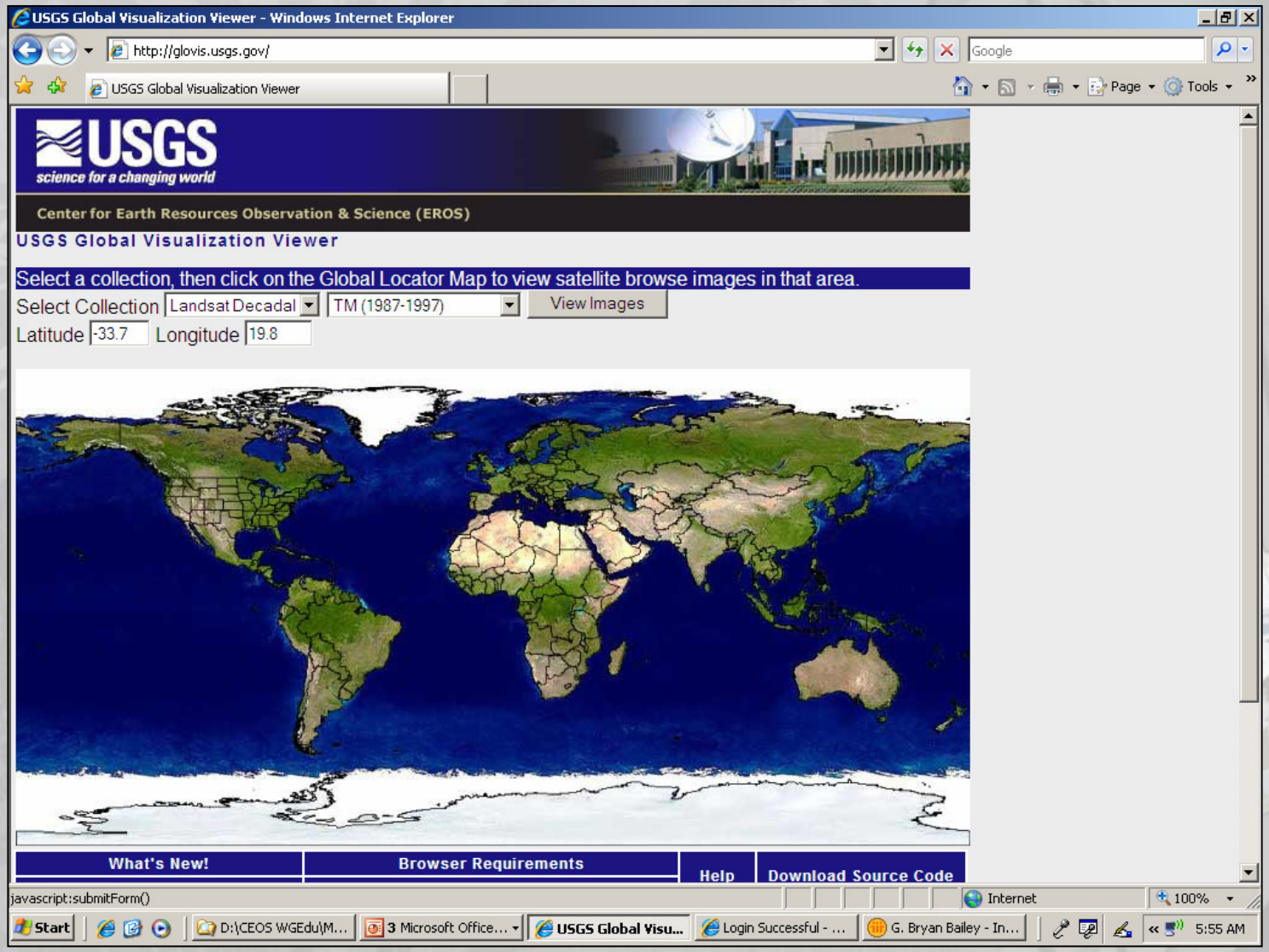


USGS

Landsat Data Access - EarthExplorer

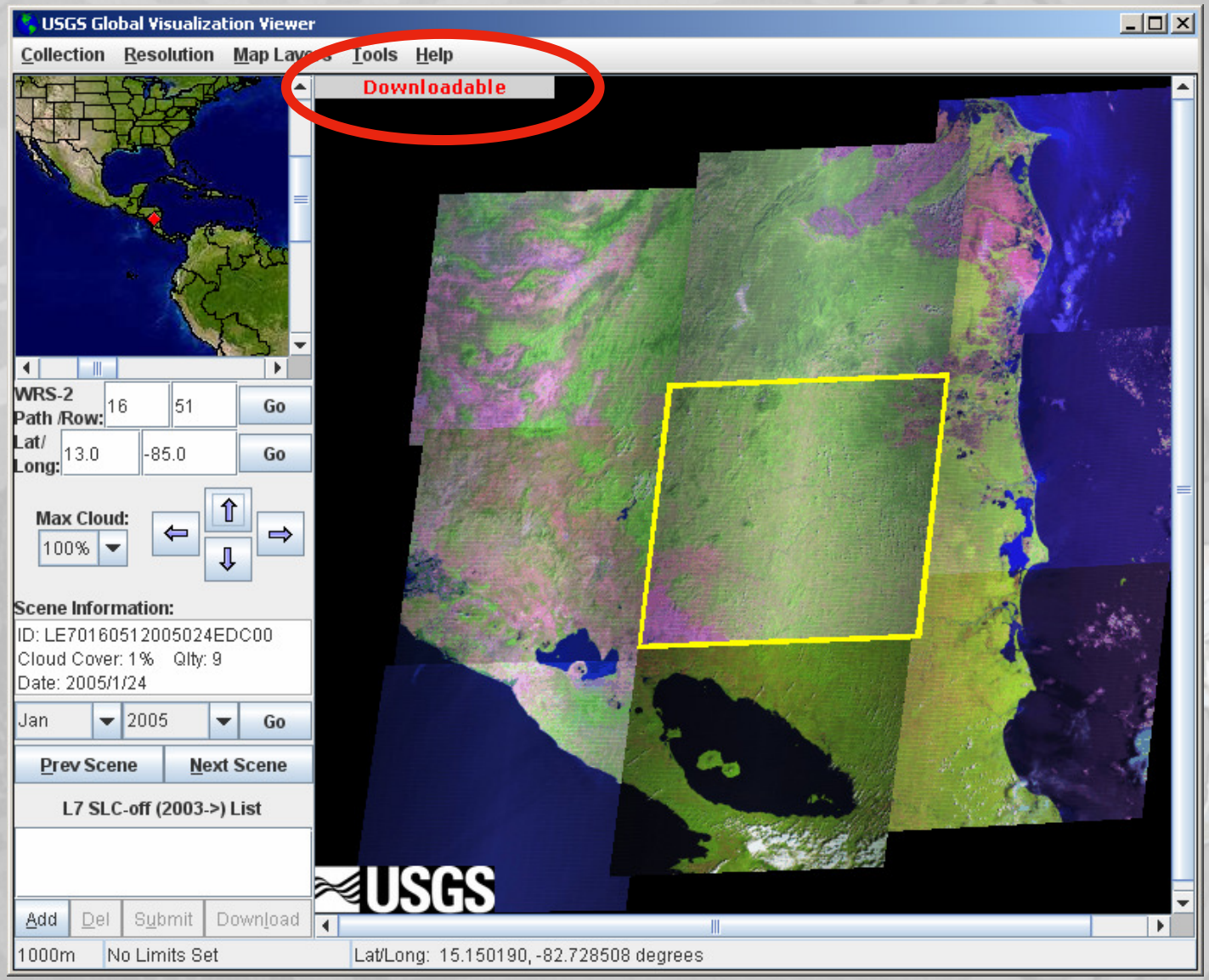


Landsat Data Access - GloVis

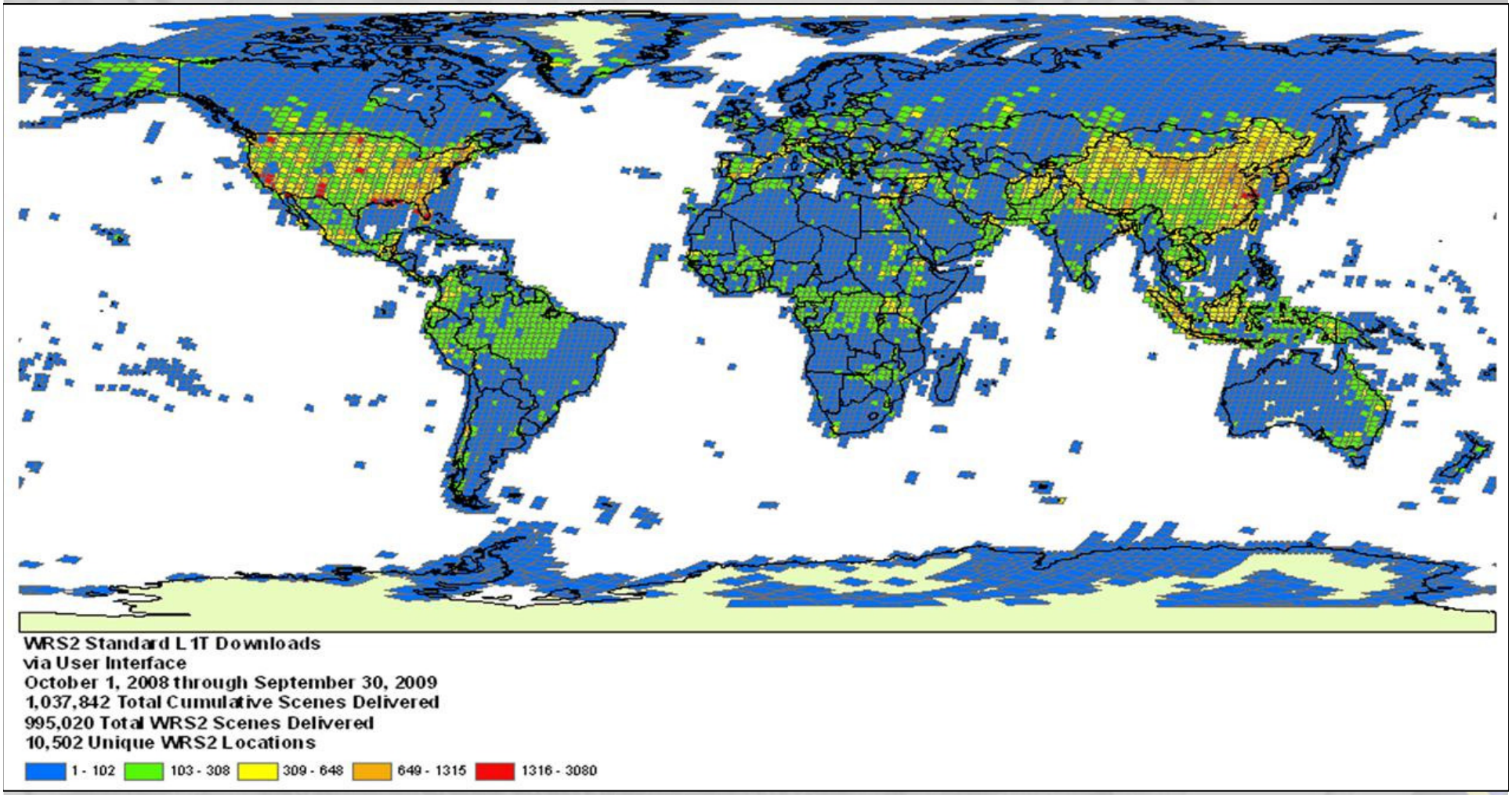


USGS

Landsat Data Access - GloVis



USGS

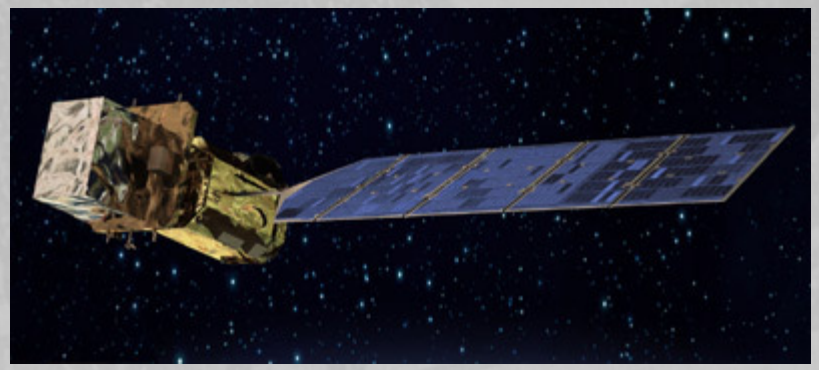

WRS2 Standard L1T Downloads
via User Interface
October 1, 2008 through September 30, 2009
1,037,842 Total Cumulative Scenes Delivered
995,020 Total WRS2 Scenes Delivered
10,502 Unique WRS2 Locations
1 - 102
103 - 308
309 - 648
649 - 1315
1316 - 3080

USGS

What's Next?

Landsat Data Continuity Mission: AKA Landsat 8

- Different technology (pushbroom vs. wiskbroom)
- Maintains spatial and temporal resolution
- Additional spectral resolution (deep blue band, cirrus band)
- Scheduled for launch in 2012 (?) on Atlas V



USGS

LP DAAC

LAND PROCESSES DISTRIBUTED ACTIVE ARCHIVE CENTER

Welcome

Products
Lists the satellite images available from the two sensors, MODIS and ASTER.

Get Data
Guides you through the steps needed to acquire the satellite images.

Tools
Some tools to help you work with the data.

User Community
A place to share knowledge with others.

Customer Service
Need assistance? Our staff is happy to help.

News

02/23/2010
Changes to WIST Order Size and LP DAAC Order Download Time

01/12/2010
ASTER Cloud Cover Accuracy Improved

01/11/2010
ASTER DEM Software Upgrade

10/07/2009
LP DAAC GDEM Distribution Milestone / Re-distribution Update

Read more news.

NASA and USGS Partnership

Data in Action

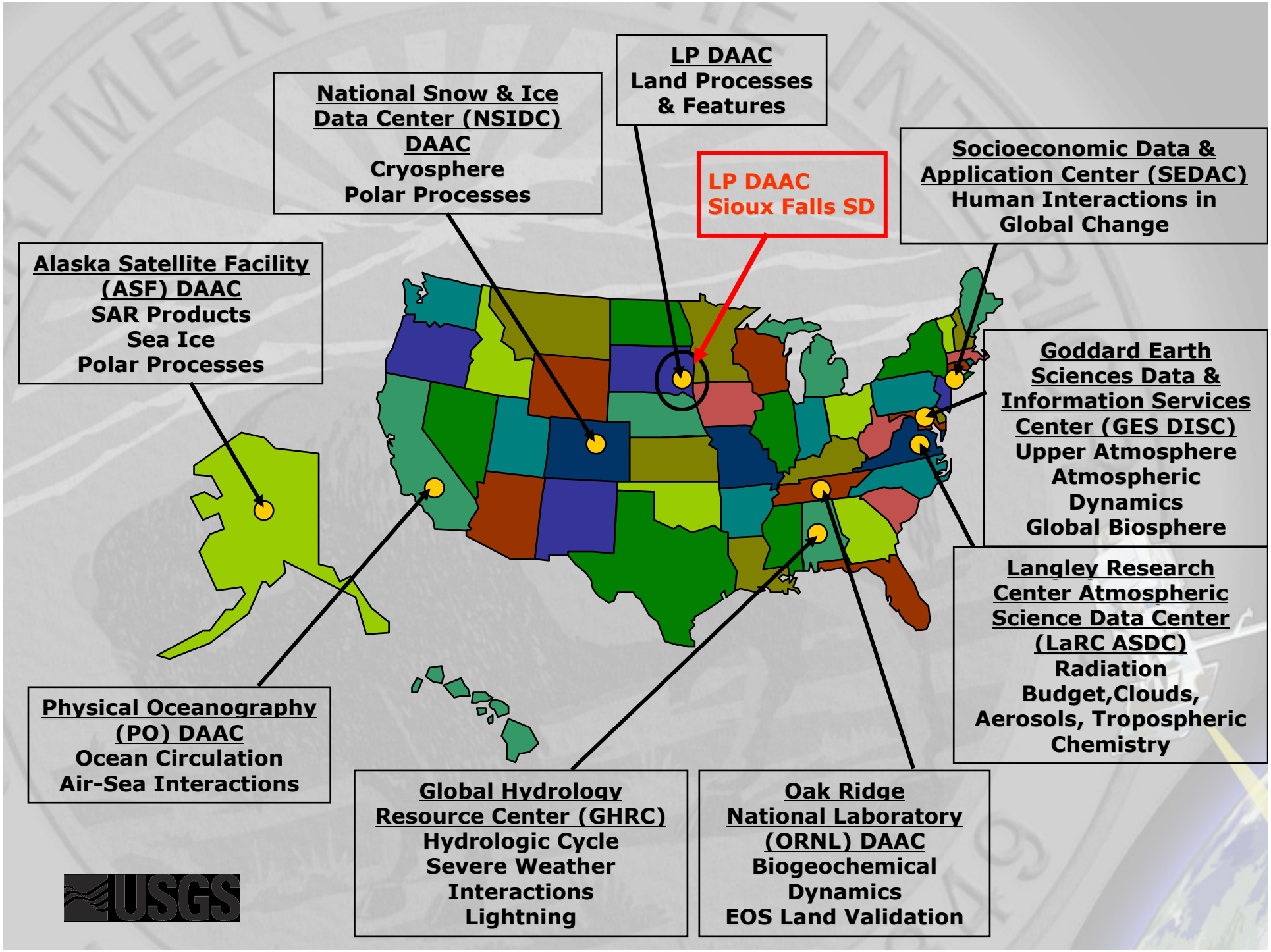
Chateaubriant, France

03/10/2010

Vestiges of Medieval Brittany mingle with signs of modern civilization in this simulated natural color satellite image of Châteaubriant, France. The small city is silver, colored by light bouncing off the reflective surfaces of modern times. The surrounding country is an irregular patchwork of small fields, reflecting land use in the Middle Ages.

Read original article.

Read more articles


LP DAAC
Land Processes
& Features
National Snow & Ice
Data Center (NSIDC)
DAAC
Cryosphere
Polar Processes
LP DAAC
Sioux Falls SD
Socioeconomic Data &
Application Center (SEDAC)
Human Interactions in
Global Change
Alaska Satellite Facility
(ASF) DAAC
SAR Products
Sea Ice
Polar Processes
Goddard Earth
Sciences Data &
Information Services
Center (GES DISC)
Upper Atmosphere
Atmospheric
Dynamics
Global Biosphere
Langley Research
Center Atmospheric
Science Data Center
(LaRC ASDC)
Radiation
Budget,Clouds,
Aerosols, Tropospheric
Chemistry
Physical Oceanography
(PO) DAAC
Ocean Circulation
Air-Sea Interactions
Global Hydrology
Resource Center (GHRC)
Hydrologic Cycle
Severe Weather
Interactions
Lightning
Oak Ridge
National Laboratory
(ORNL) DAAC
Biogeochemical
Dynamics
EOS Land Validation
USGS

LP DAAC

LAND PROCESSES DISTRIBUTED ACTIVE ARCHIVE CENTER

- MODIS Overview
- ASTER Policies
- MODIS Products Table
- MODIS Policies
- ASTER Overview
- ASTER Products Table
- Other Data Links

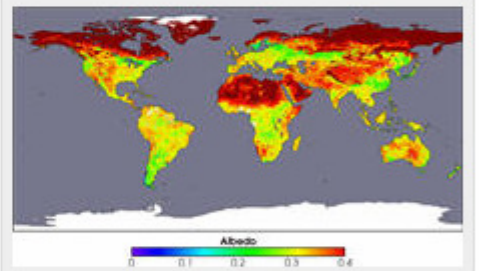
Products

LP DAAC MODIS Data

MODIS Overview · Details about naming conventions, temporal, and spatial resolutions and metadata.

MODIS Products · Sortable table of LP DAAC MODIS products with links to product-specific information.

MODIS Policies · MODIS pricing and distribution policies.



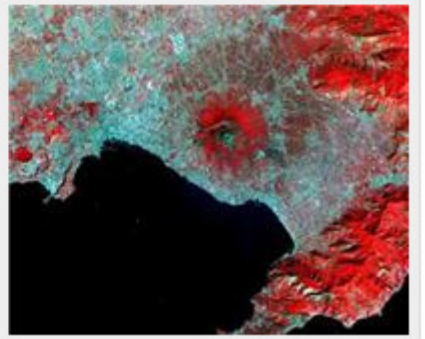
LP DAAC ASTER Data

ASTER Overview · What Makes ASTER Unique? Details about baseline, performance requirements and metadata.

ASTER Products · Sortable table of LP DAAC ASTER products with links to product-specific information.

ASTER Policies · ASTER data availability and redistribution policies.

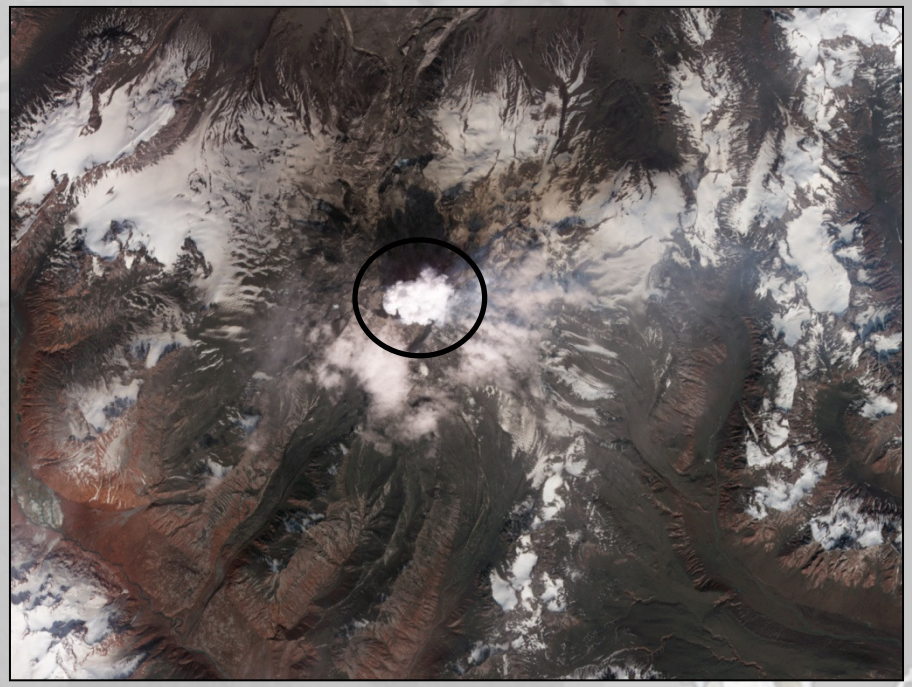
ASTER Tasking · Request data acquisition.



ASTER and MODIS Data

MODIS image of fires near Athens, Greece

- Acquired August 22, 2009
- Smoke from wildfires can be seen in image center



ASTER image of Mount Redoubt, Alaska

- Acquired May 5, 2009
- A steam plume can be seen in image center

USGS

Terra Satellite

- LAUNCH: December 18, 1999 from Vandenberg AFB
- Morning overpass
- Land Instruments:
  - MODIS - daily observations globally at 250-, 500- & 1000-meter resolution.
  - ASTER – intermittent images (60km by 60 km) at 15-, 30 & 60-meter resolution

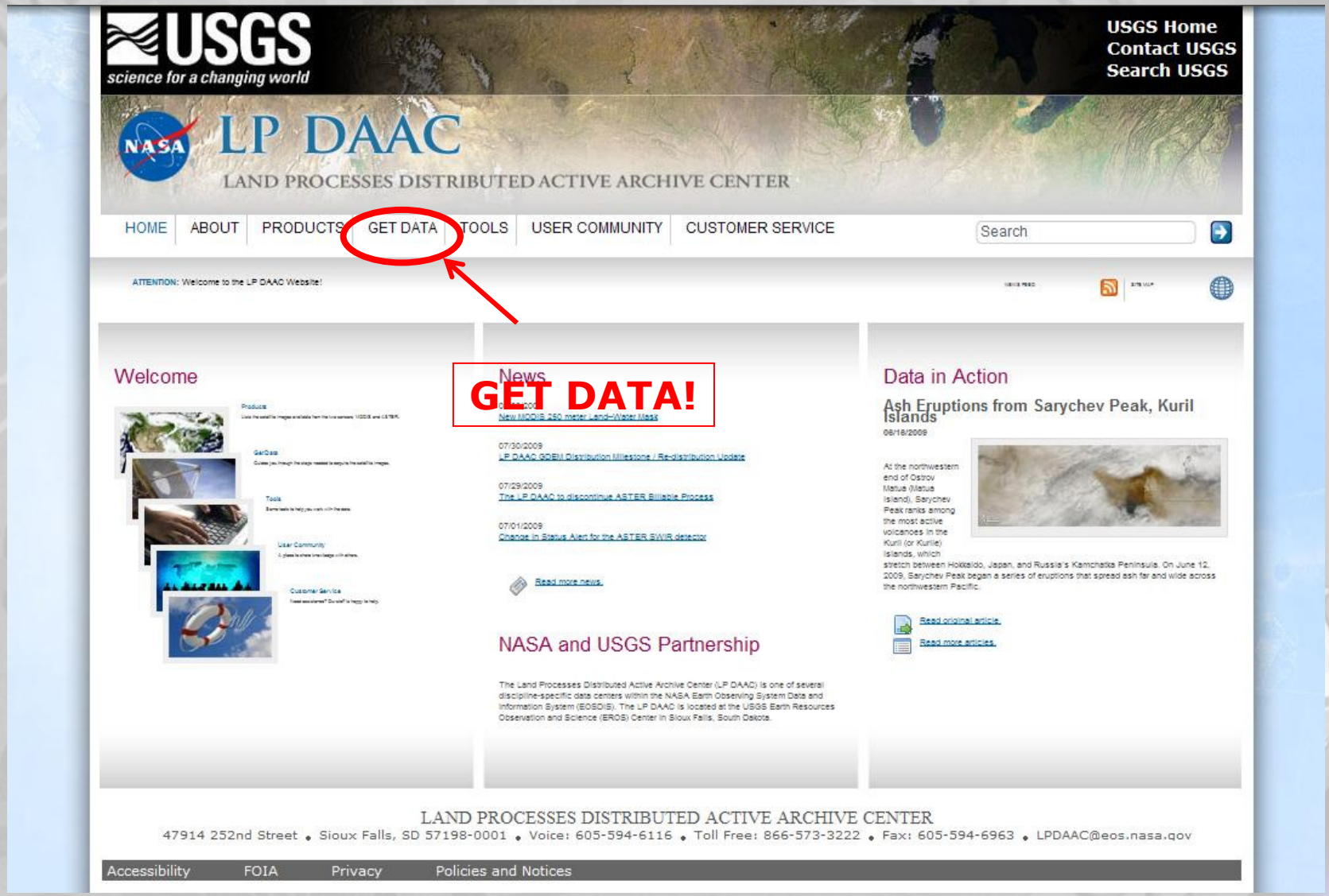
USGS

How to order ASTER or MODIS data from the LP DAAC?

- **Visit the "Get Data" area of the LP DAAC Web site.**
- **Warehouse Inventory Search Tool (WIST)**
  - Delivers all EOS data sets and meets all user needs
  - User Logins to allow saved searches and preferences
- **Global Visualization Viewer (GloVis)**
  - Browse-based tool for ASTER L1A and selected MODIS data sets
  - Point and click client
- **Data Pool**
  - ASTER L1B over U.S. and selected MODIS data sets
  - Data cached (58 TB) for immediate download
  - Search capabilities exist, along with simple folder-based directory structure
- **MRTWeb**
  - Combines the capabilities of GloVis and the MODIS Reprojection Tool
  - Access to selected MODIS data sets

USGS

https://lpdaac.usgs.gov



WIST – NASA

"By Discipline" not responding? Use the non-javascript version

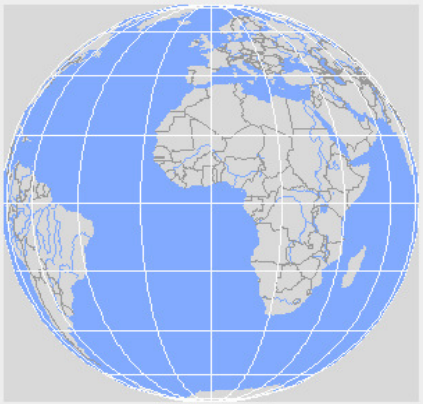
◉ By Discipline ○ By Categories/Attributes

Choose a Data Search Type

◉ Primary Data Search ○ Data Granule ID Search ○ Local Granule ID Search

Choose Search Area

Click & hold, then drag on the map to select a search region - or - enter **upper left & lower right** corners and then click on **Update Lat/Lon Corners on Map**.



Clear

Grid size: 20°

Features:
- ☑ Places
- ☑ Roads
- ☑ Rail
- ☑ Rivers
- ☑ Political

Zoom: 1x

(Single click on map to pan)

Lats and Lons must be in decimal degrees.
You must click on "Update Lat/Lon Corners on Map" if you type in coordinates.

upper left		upper right
	° Lat	
	° Lon	
	center	
	0	
	0	
	° Lat	
	° Lon	
lower left		lower right

Update Lat/Lon Corners on Map

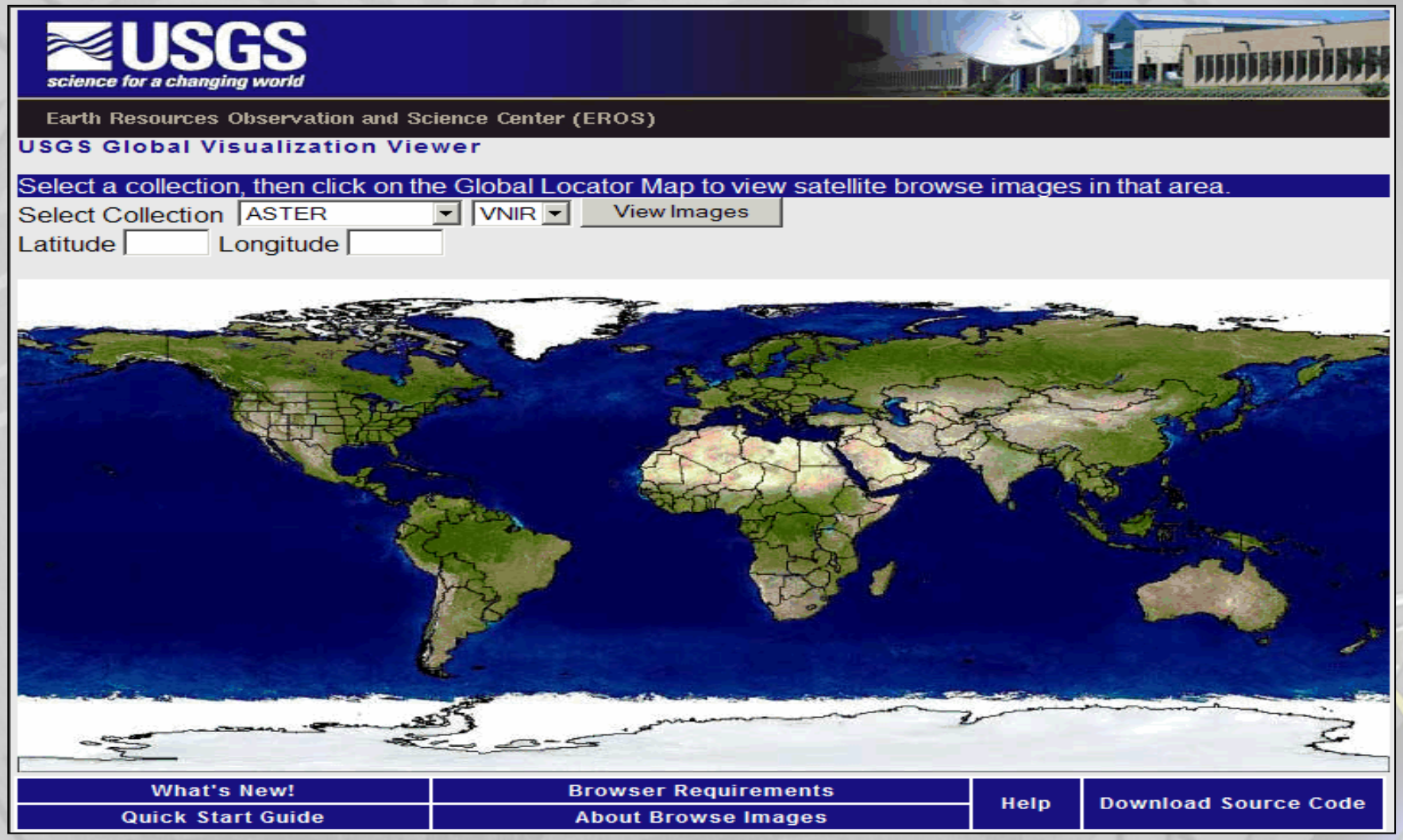
○ Global Search ○ Stereographic N-pole ○ Type in Lat/Lon Point
○ Equatorial ○ Stereographic S-pole ○ X/Y Coordinate Range
◉ Orthographic ○ Global granules only ○ Orbit Search

Choose a Date/Time Range (not required)

Date format: YYYY-MM-DD (1967-05-25) or MM/DD/YYYY (05/25/1967)
Time format: HH:MM (14:30) or HH:MM:SS (14:30:01)

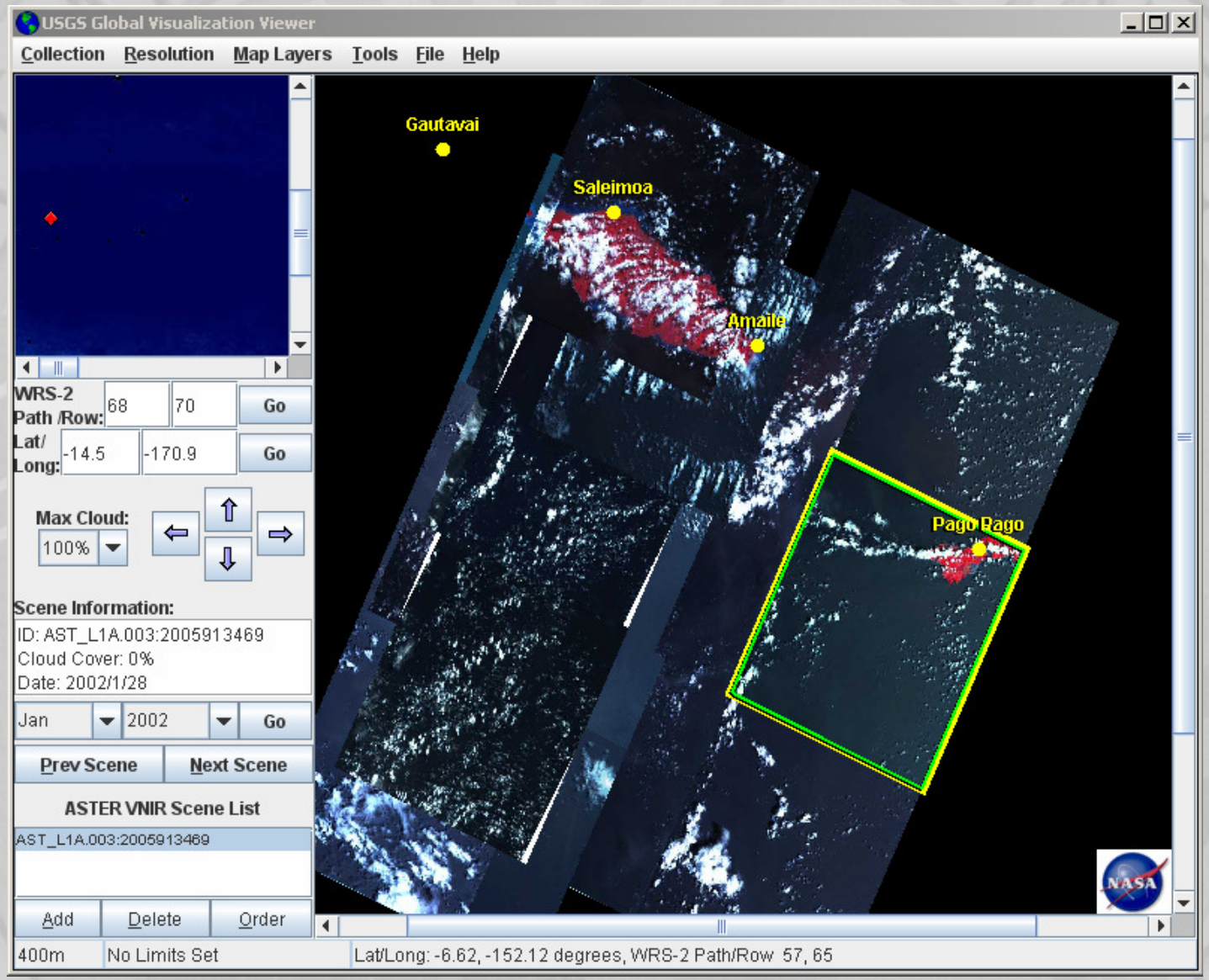
USGS

GloVis (Global Visualization)



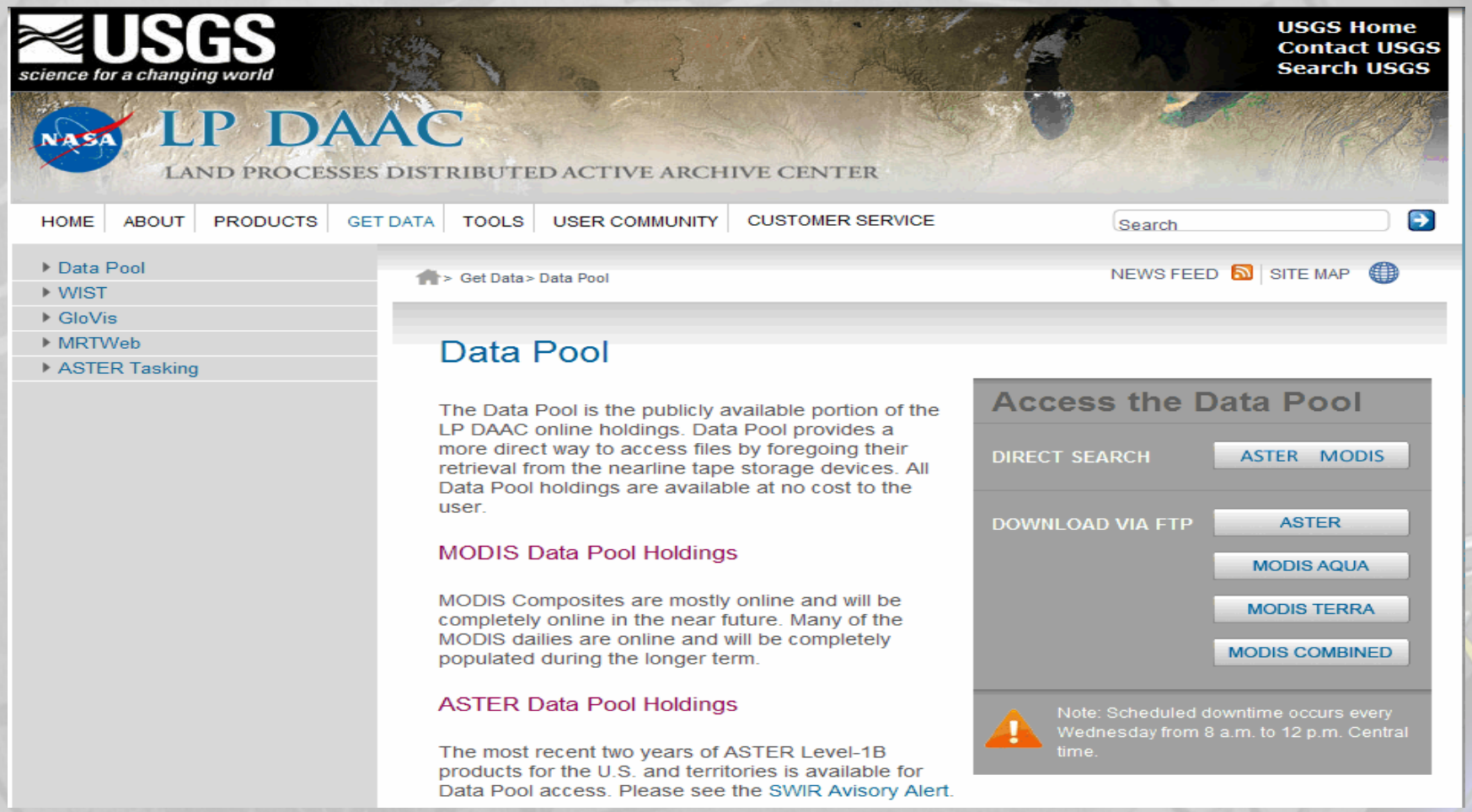
USGS

GloVis


USGS Global Visualization Viewer
Collection
Resolution
Map Layers
Tools
File
Help
Gautavai
Saleimoa
Amaile
Pago Pago
WRS-2 Path /Row:
68
70
Go
Lat/ Long:
-14.5
-170.9
Go
Max Cloud:
100%
Scene Information:
ID: AST_L1A.003:2005913469
Cloud Cover: 0%
Date: 2002/1/28
Jan
2002
Go
Prev Scene
Next Scene
ASTER VNIR Scene List
AST_L1A.003:2005913469
Add
Delete
Order
400m
No Limits Set
Lat/Long: -6.62, -152.12 degrees, WRS-2 Path/Row 57, 65
ID: AST_L1A.003:2045391102
0% Cloud, 2007/7/25
Show Metadata
Show Browse
Add To Scene List
Remove From Scene List
Hide Scene
Bring To Front
Send To Back
Set Point Of Interest
Select Scene

USGS

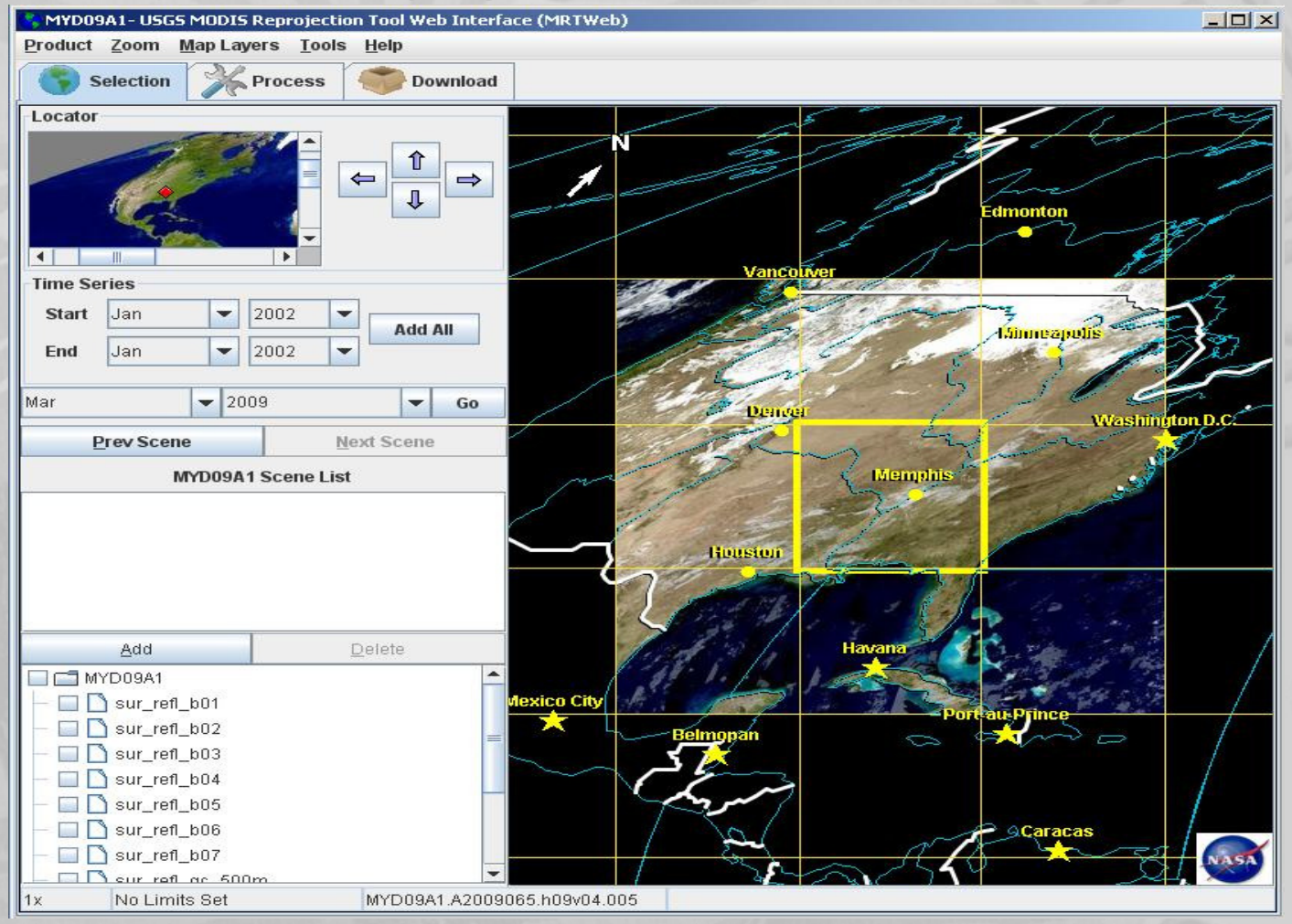
Datapool – soon to be on-line!



USGS

MRTWeb

(MODIS Reprojection Tool web-base service)



USGS

MRTWeb -Interface

1. SELECT

Use the MRTWeb Selection tab to choose MODIS Land product tiles, dates, and bands of interest. Select multiple adjacent tiles of the same date to build large area mosaics, or multiple dates of the same tile to build smaller area time series.

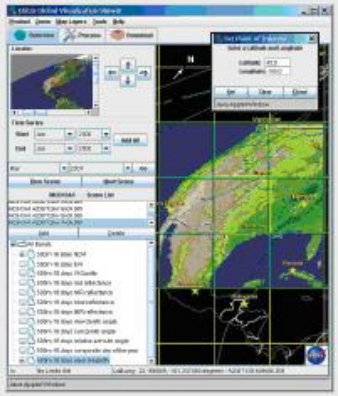


Figure 1. An example of finding, visualizing, and selecting input MODIS data for a continental U.S. mosaic. Thirteen MOD13A1 tiles from Julian day 129 2007 were selected and added to the scene list using the spatial and temporal navigation functions of MRTWeb. Only the NDVI and pixel reliability bands were selected for output from the twelve layers available in the original product. Zoom level, map layers, and help functions are also provided.

2. PROCESS

Continue to the MRTWeb Process tab to specify projection, spatial subsetting, resampling, and output formatting options. Then click the process button to intiate your processing job on LP DAAC servers.

Figure 2. An example of specifying user-defined processing options for a continental U.S. mosaic. The MODIS data selected in figure 1 are mosaicked and reprojected to the Lambert Azimuthal projection using nearest neighbor interpolation at native resolution. The outputs are then clipped to the specified spatial subset, and written to GeoTIFF format. Currently, MRTWeb supports fourteen projections and three output file formats (i.e., HDF-EOS, GeoTIFF, and binary).

3. DOWNLOAD

The MRTWeb Download tab provides status of your processing job and an FTP-link to your output product(s) when complete. The original input MODIS tiles, processing logs, and processing parameters are also available for download.

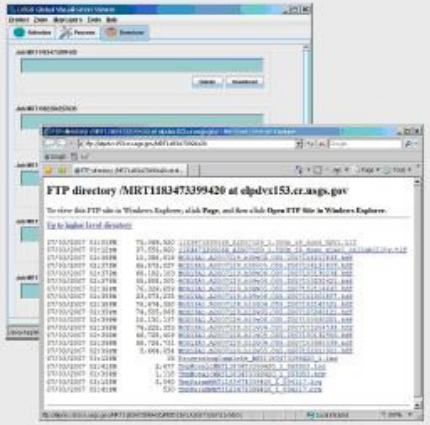


Figure 3. The MRTWeb job status and download screens for the continental U.S. mosaic example.

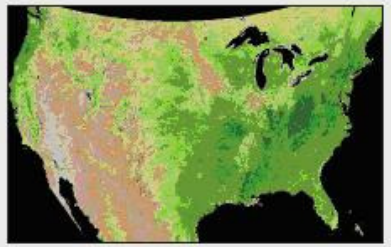


Figure 4. The custom MOD13A1 NDVI mosaic produced by MRTWeb.

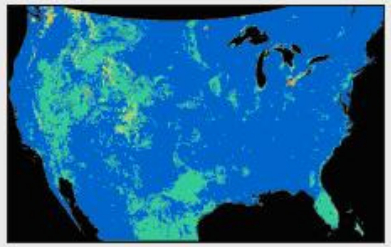


Figure 5. The MOD13A1 pixel reliability values carried along in the MRTWeb processing.

USGS

USGS EROS Emergency Operations

Minimize loss of life and property from natural disasters such as:

- **Landslides**
- **Earthquakes**
- **Volcanic Activity**
- **Flooding**
- **Wildfires**

USGS

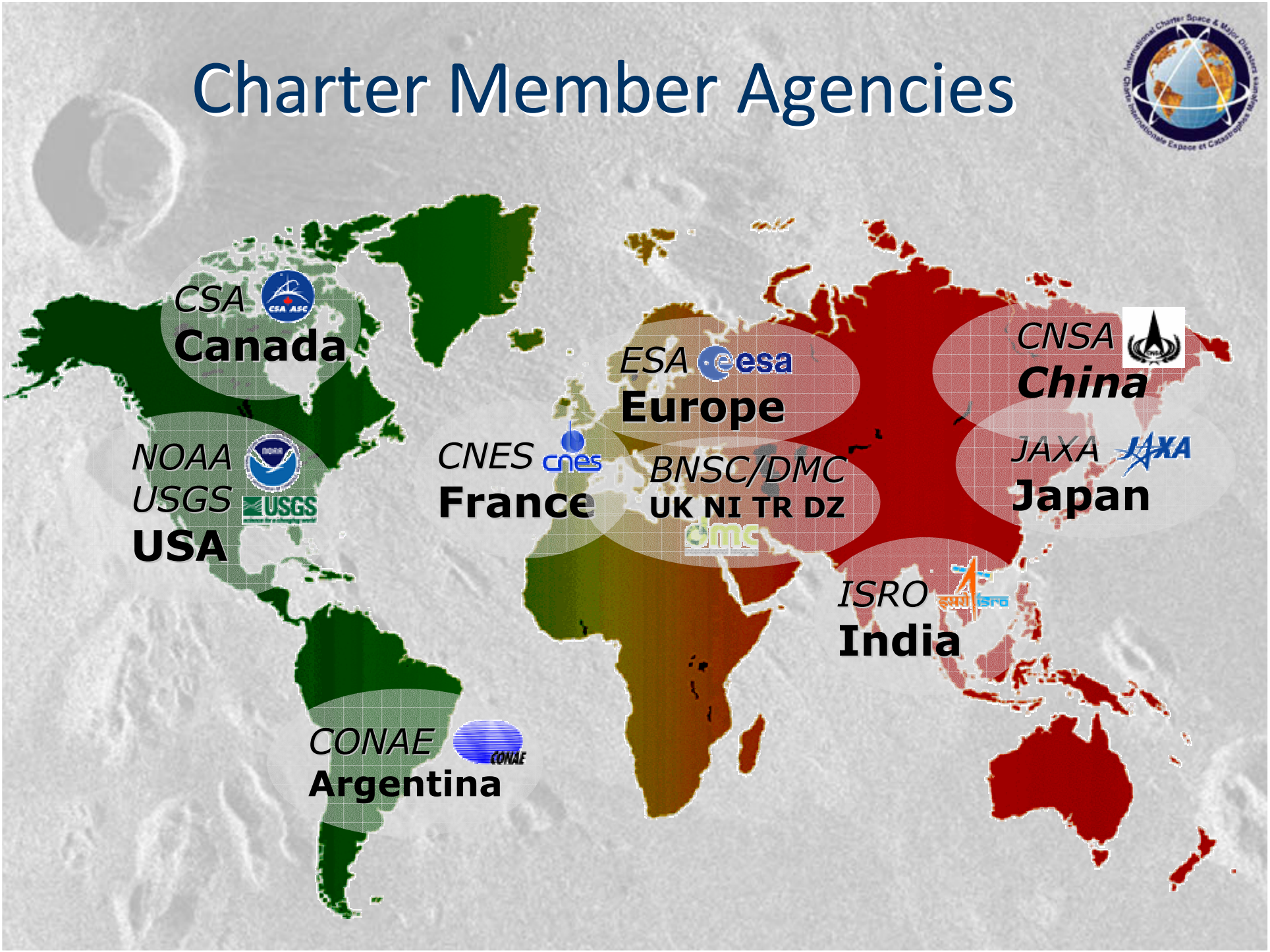
International Charter: Space and Major Disasters

An International agreement among Space Agencies to support, with space-based data and information, relief efforts in the event of emergencies caused by major disasters

- **Disaster response**
- **Multi-satellite data acquisition**
  - **Fast data turn-around – priority acquisition**
- **Archive retrievals and spacecraft tasking**
- **Data processing at pre-determined level**
- **Space Agency contribution in image/data**
- **Space Agency initiative for value-added-data fusion**

USGS

Charter Member Agencies



International Charter “Space and Major Disasters” Satellites

Argentina’s Comision Nacional de Actividades Espaciales (CONAE)

SAC-C

Country: Argentina
Satellite: SAC-C

Sensor: HSTC - High Sensitivity Camera (Night View)

Spatial Res	Spectral Bands /Modes	Spectral Range /No Beams	Swath Width	Revisit Time
234 m	Pan	450-520 nm	900 km	

Sensor: MMRS - Multispectral Medium Resolution Scanner

Spatial Res	Spectral Bands /Modes	Spectral Range /No Beams	Swath Width	Revisit Time
175 m	1	480-500 nm	360 km	
	2	540-560 nm		
	3	630-690 nm		
	4	795-835 nm		
	5	1550-1700 nm		

Sensor: HRTC - High Resolution Technological Camera

Spatial Res	Spectral Bands /Modes	Spectral Range /No Beams	Swath Width	Revisit Time
35 m	Pan	400-900 nm	90 km	

Canadian Space Agency (CSA)

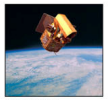
RADARSAT-1

Country: Canada
Satellite: RADARSAT-1
Sensor: Advanced radar/C Band/HH Polarization

Spatial Res	Spectral Bands /Modes	Spectral Range /No Beams	Swath Width	Revisit Time
8m	Fine	15	50 x 50 km	1-3Days
25m	Standard	7	100 x 100 km	
30m	Wide	3	150 x 150 km	
50m	ScanSAR Narrow	2	300 x 300 km	
100m	ScanSAR Wide	2	500 x 500 km	
25m	Extended High	3	75 x 75 km	
35m	Extended Low	1	170 x 170 km	

Centre National d’etudes Spatiales (CNES)

Spot 1,2,3,4,5


FORMOSAT -2

Country: France
Satellite: Spot-1,2,3 (Spot-1, 3 are used for archive data only)
Sensor: HRV (x 2)

Spatial Res	Spectral Bands /Modes	Spectral Range /No Beams	Swath Width	Revisit Time
20m	1	500-590 nm	60 km (120 km)	1-3 Days
	2	610-670 nm		
	3	780-890 nm		
10m	Pan	510-700 nm		

Satellite: Spot 4
Sensor: HRVIR (x 2)

Spatial Res	Spectral Bands /Modes	Spectral Range /No Beams	Swath Width	Revisit Time
20m	1	500-590 nm	60 km (120 km)	1-3 Days
	2	610-690 nm		
	3	780-890 nm		
	SWIR	1580-1700 nm		
10m	2 - Used as Pan	610-680 nm		

Satellite: Spot 5
Sensor: HRG (x 2)

Spatial Res	Spectral Bands /Modes	Spectral Range /No Beams	Swath Width	Revisit Time
10 m	1	500-590 nm	60 km (120 km)	1-3 Days
	2	610-690 nm		
	3	780-890 nm		
20 m	SWIR	1580-1700 nm		
2.5 m -5 m	Pan	490-690 nm		

Satellite: Spot 5
Sensor: HRS

Spatial Res	Spectral Bands /Modes	Spectral Range /No Beams	Swath Width	Revisit Time
10 m	Pan	490-690 nm	120 km	1-3 Days

Satellite: Spot 4, 5
Sensor: VEGETATION

Spatial Res	Spectral Bands /Modes	Spectral Range /No Beams	Swath Width	Revisit Time
1165 m	0	430-470 nm	2250 km	Daily
	2	610-690 nm		
	3	780-890 nm		
	SWIR	1580-1700 nm		

Country: Taiwan
Company: NSPO
Distributor: SPOT-IMAGE
Satellite: FORMOSAT - 2
Sensor: HSTC - High Sensitivity Camera (Night View)

Spatial Res	Spectral Bands /Modes	Spectral Range /No Beams	Swath Width	Revisit Time
8 m	1	450-520 nm	24 km	Daily
	2	520-600 nm		
	3	630-690 nm		
	4	760-900 nm		
2 m	Pan	450-900 nm		

Disaster Monitoring Constellation (DMC)

UK-DMC
Beijing-1
Nigeriasat-1
Bilsat-1
Alsat-1

Country: UK (SSTL)
Satellite: UK-DMC
Sensor: DMC

Spatial Res	Spectral Bands /Modes	Spectral Range /No Beams	Swath Width	Revisit Time
32 m	1	520-600 nm	660 km	Daily
	2	630-690 nm		
	3	770-900 nm		

Country: China (BLMIT)
Satellite: Beijing-1
Sensor: DMC +4

Spatial Res	Spectral Bands /Modes	Spectral Range /No Beams	Swath Width	Revisit Time
32 m	1	520-600 nm	660 km	
	2	630-690 nm		
	3	770-900 nm		
4 m	Pan	500-800 nm	24 km	

Country: Nigeria (NASRDA)
Satellite: NigeriaSat-1
Sensor: DMC

Spatial Res	Spectral Bands /Modes	Spectral Range /No Beams	Swath Width	Revisit Time
32 m	1	520-600 nm	660 km	
	2	630-690 nm		
	3	770-900 nm		

Country: Turkey (BILTEN)
Satellite: Bilsat-1
Sensor: DMC

Spatial Res	Spectral Bands /Modes	Spectral Range /No Beams	Swath Width	Revisit Time
26 m	1	520-600 nm	600 km	
	2	630-690 nm		
	3	770-900 nm		
	12 m	Pan	300 km	

Country: Algeria (CNTS)
Satellite: Alsat-1
Sensor: DMC

Spatial Res	Spectral Bands /Modes	Spectral Range /No Beams	Swath Width	Revisit Time
32 m	1	520-600 nm	660 km	
	2	630-690 nm		
	3	770-900 nm		

European Space Agency (ESA)

ERS

ENVISAT

Proba

Country: 17 European members (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Norway, the Netherlands, Portugal, Spain, Sweden, Switzerland and the United Kingdom).

Satellite: ERS
Sensor: AMI SAR (archives since 1991)

Spatial Res	Spectral Bands /Modes	Spectral Range /No Beams	Swath Width	Revisit Time
25 m	C band/VV Polarization		100 km	+/- 12-20 days

Satellite: ENVISAT
Sensor: ASAR

Spatial Res	Spectral Bands /Modes	Spectral Range /No Beams	Swath Width	Revisit Time
	C Band, 5 Polarization modes (VV,HH,VV/HH, HV/HH,VH/VV)			+/- 3-5 Days
25 Image/Wave			100 km(wave 5km)	
150 m Wide			400 km	
1000 Global			400 km	

Satellite: PROBA
Sensor: CHRIS/Hyperspectral

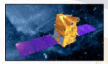
Spatial Res	Spectral Bands /Modes	Spectral Range /No Beams	Swath Width	Revisit Time
18-36 m	19-63	400-1050 nm	14 km	+/- 7 Days

Satellite: PROBA
Sensor: HRC/High Resolution Camera

Spatial Res	Spectral Bands /Modes	Spectral Range /No Beams	Swath Width	Revisit Time
5 m	Pan		5 km	+/- 7 Days

Indian Space Research Organisation (ISRO)

RESOURCESAT-1


Cartosat-1

Country: India
Satellite: Resourcesat-1 (IRS-P6)
Sensor: LISS-4

Spatial Res	Spectral Bands /Modes	Spectral Range /No Beams	Swath Width	Revisit Time
5.8 m	2	520-590 nm		5 Days
	3	620-680 nm	23 km MSN	
	4	770-860 nm	70 km Pan	

Sensor: LISS-3

Spatial Res	Spectral Bands /Modes	Spectral Range /No Beams	Swath Width	Revisit Time
23.5 m	2	520-590 nm	141 km	24 Days
	3	620-680 nm		
	4	770-860 nm		
	5	1550-1770 nm		

Sensor: AWIFS

Spatial Res	Spectral Bands /Modes	Spectral Range /No Beams	Swath Width	Revisit Time
56 m	2	520-590 nm	740 km	5 Days
	3	620-680 nm		
	4	770-860 nm		
	5	1550-1700 nm		

Satellite: Cartosat-1 (IRS-5

Spatial Res	Spectral Bands /Modes	Spectral Range /No Beams	Swath Width	Revisit Time
2.5 m	Pan	500-850 nm	30 km	5 Days

Japan Aerospace Exploration Agency (JAXA)

ALOS

Country: Japan
Satellite: ALOS
Sensor: PRISM

Spatial Res	Spectral Bands /Modes	Spectral Range /No Beams	Swath Width	Revisit Time
2.5 m	Pan	520-770 nm	35 km triplet 70 km wide	

Sensor: AVNIR-2

Spatial Res	Spectral Bands /Modes	Spectral Range /No Beams	Swath Width	Revisit Time
10 m	1	420-500 nm	70 km	2 Days
	2	520-600 nm		
	3	610-690 nm		
	4	760-890 nm		

Sensor: PALSAR

Spatial Res	Spectral Bands /Modes	Spectral Range /No Beams	Swath Width	Revisit Time
10 m	L Band/HH or VV polarization	Fine(FBS)	70 km	2 Days
20 m	L Band/HH/HV or VV/VH polarization	Fine (FBD)	70 km	
20 m	L Band/HH or VV polarization	Direct Downlink (DSN)	70 km	
100 m	L Band/HH or VV polarization	Scan SAR	250-350 km	
30 m	L Band/HH/HV /VV/VH polarization	Polarimetric	30 km	

National Oceanic and Atmospheric Administration (NOAA)

POES

GOES

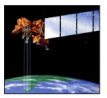
Country: United States
Satellite: POES
Sensor: AVHRR/NOAA 7,9,11,12,14

Spatial Res	Spectral Bands /Modes	Spectral Range /No Beams	Swath Width	Revisit Time
1100 m	1	580-680	2048 km	Daily
	2	725-1100 nm		
	3	3550-3930 nm		
	4	10300-11300 nm		
	5	11500-12500 nm		

Satellite: GOES
Sensor: GOES I-M

Spatial Res	Spectral Bands /Modes	Spectral Range /No Beams	Swath Width	Revisit Time
1000 m	1	550-750 nm	Full Earth Disc	Daily
4000 m	2	3800-4000 nm		
8000 m	3	6500-7000 nm		
4000 m	4	10200-11200 nm		
4000 m	5	11500-12500 nm		

United States Geological Survey (USGS)


Landsat 7
Landsat 5

Quickbird

IKONOS

GeoEye-1

Country: United States
Satellite: Landsat 7
Sensor: ETM+ Enhanced Thematic Mapper Plus

Spatial Res	Spectral Bands /Modes	Spectral Range /No Beams	Swath Width	Revisit Time
30 m	1	450-520 nm	185 km	16 Days
	2	520-600 nm		
	3	630-690 nm		
	4	760-900 nm		
	5	1550-1750 nm		
60 m	6	10400-12500 nm		
30 m	7	2080-2350 nm		
15 m	8	520-900 nm		

Satellite: Landsat 5
Sensor: TM Thematic Mapper

Spatial Res	Spectral Bands /Modes	Spectral Range /No Beams	Swath Width	Revisit Time
30 m	1	450-520 nm	185 km	16 Days
	2	520-600 nm		
	3	630-690 nm		
	4	760-900 nm		
	5	1550-1750 nm		
120 m	6	10400-12500 nm		
30 m	7	2080-2350 nm		

Company: Digital Globe
Satellite: QuickBird

Spatial Res	Spectral Bands /Modes	Spectral Range /No Beams	Swath Width	Revisit Time
2.4 m	1	450-520 nm	16.5 km	
	2	520-600 nm		
	3	630-690 nm		
	4	760-900 nm		
60 cm	Pan	445-900 nm		

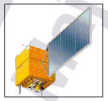
Company: GeoEye
Satellite: IKONOS

Spatial Res	Spectral Bands /Modes	Spectral Range /No Beams	Swath Width	Revisit Time
3.2 m	1	445-516 nm	11 km	1-3 Days
	2	506-595 nm		
	3	632-698 nm		
	4	757-853 nm		
.82 m	Pan	450-900 nm		

Company: GeoEye
Satellite: GeoEye 1

Spatial Res	Spectral Bands /Modes	Spectral Range /No Beams	Swath Width	Revisit Time
1.65 m	1	450-520 nm	8 km	<3 Days
	2	520-600 nm		
	3	625-695 nm		
	4	760-900 nm		
.41 m	Pan	450-900 nm	15.2 km	

China National Space Administration (CNSA)


CBERS

Country: China
Satellite: CBERS
Sensor: Wide Field Imager

Spatial Res	Spectral Bands /Modes	Spectral Range /No Beams	Swath Width	Revisit Time
260 m	1	630-690 nm	890 km	5 Days
	2	770-890 nm		

Sensor: High Resolution CCD Camera

Spatial Res	Spectral Bands /Modes	Spectral Range /No Beams	Swath Width	Revisit Time
20 m	Pan	510-730 nm	113 km	3 Days
	1	450-520 nm		
	2	520-590 nm		
	3	630-690 nm		
	4	770-890 nm		

Sensor: Infrared Multispectral Scanner

Spatial Res	Spectral Bands /Modes	Spectral Range /No Beams	Swath Width	Revisit Time
80 m	Pan	500-1110 nm	120 km	26 Days
	1	1550-1750 nm		
	2	2080-2350 nm		
	3	10400-12500 nm		

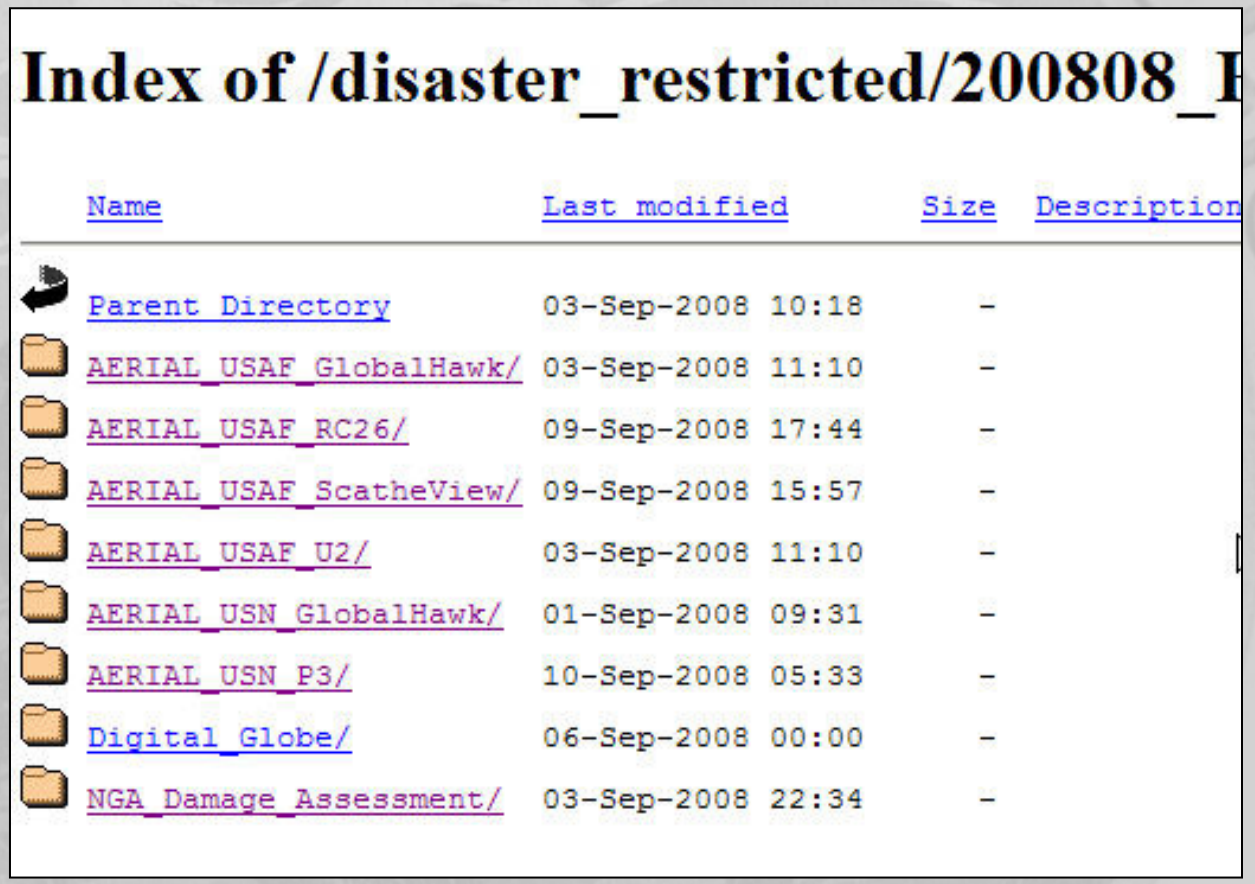
Charter Space & Major Disasters
Charte internationale Espace et Catastrophes majeures

Remote Sensing Assets

- NGA-Commercial Vendors
  - Digital Globe
  - World View
  - Quickbird
  - Ikonos

USGS

US DoD Unclassified Imagery



Index of /disaster_restricted/200808_F

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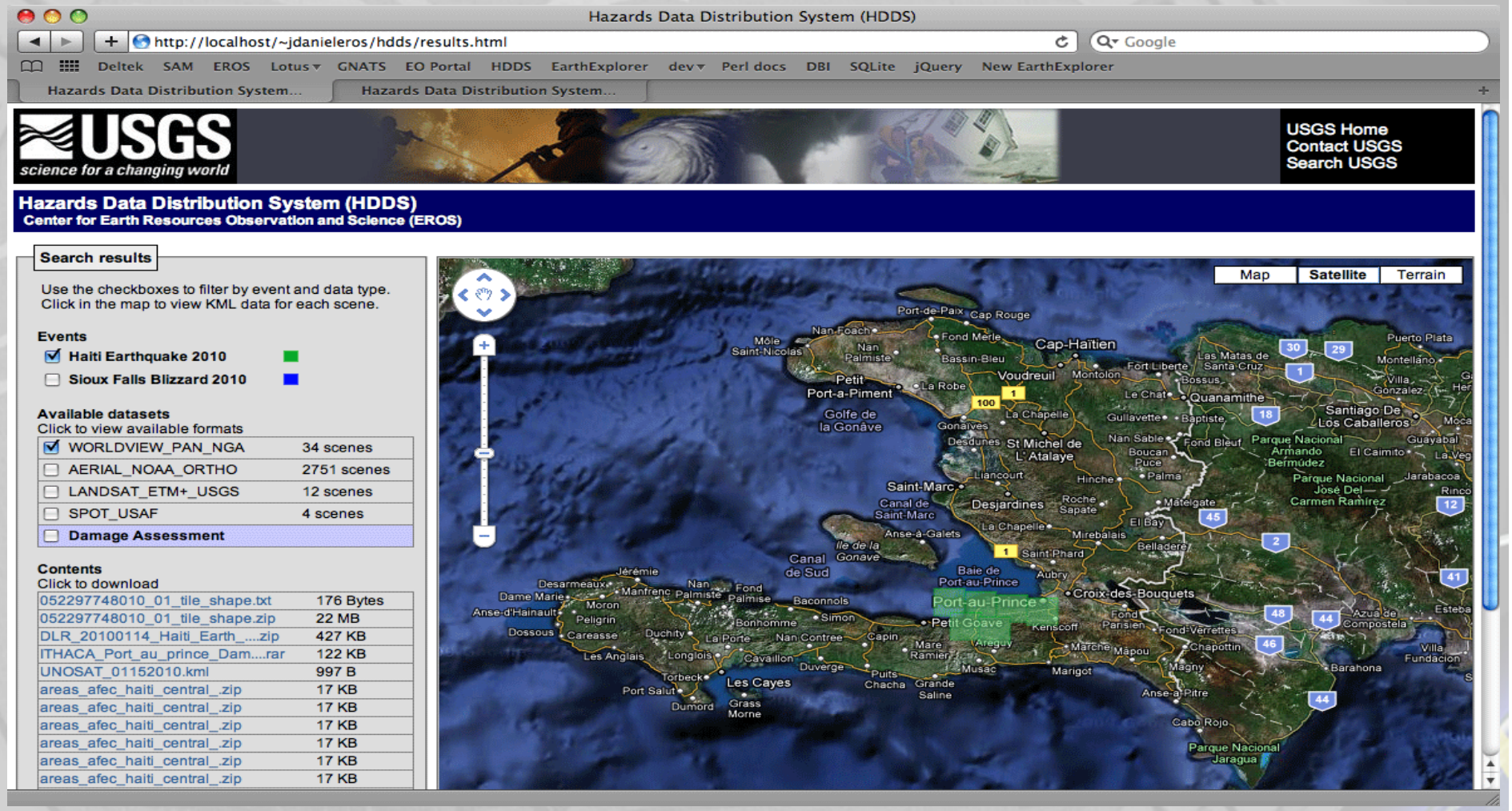
AERIAL_USAF_RC26/	09-Sep-2008 17:44	-	
AERIAL_USAF_ScatheView/	09-Sep-2008 15:57	-	
AERIAL_USAF_U2/	03-Sep-2008 11:10	-	
AERIAL_USN_GlobalHawk/	01-Sep-2008 09:31	-	
AERIAL_USN_P3/	10-Sep-2008 05:33	-	
Digital_Globe/	06-Sep-2008 00:00	-	
NGA_Damage_Assessment/	03-Sep-2008 22:34	-	

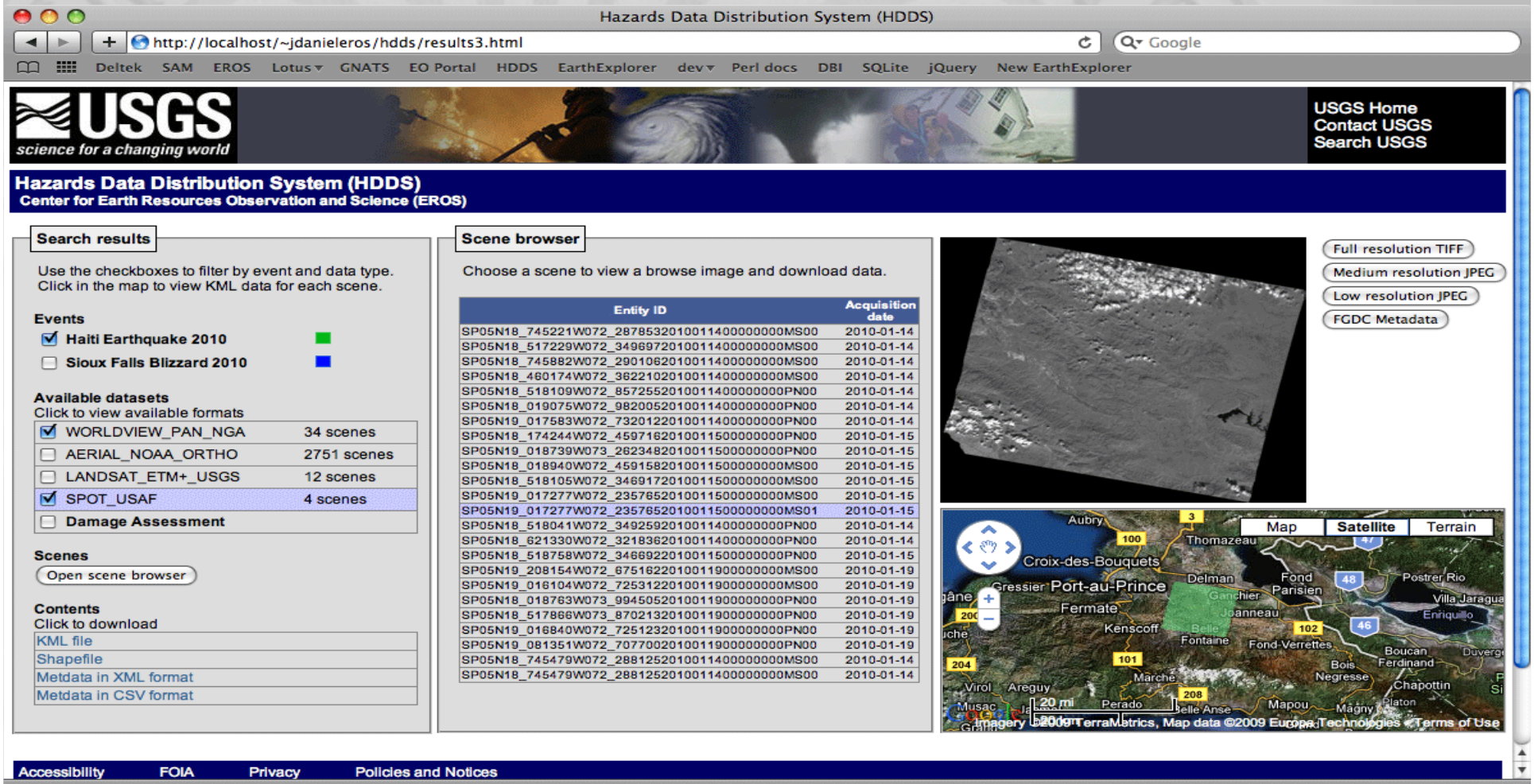
USGS

Event search results (parked data)



USGS

Search results (single scene)



Haiti Earthquake Support Status

2/26/2010

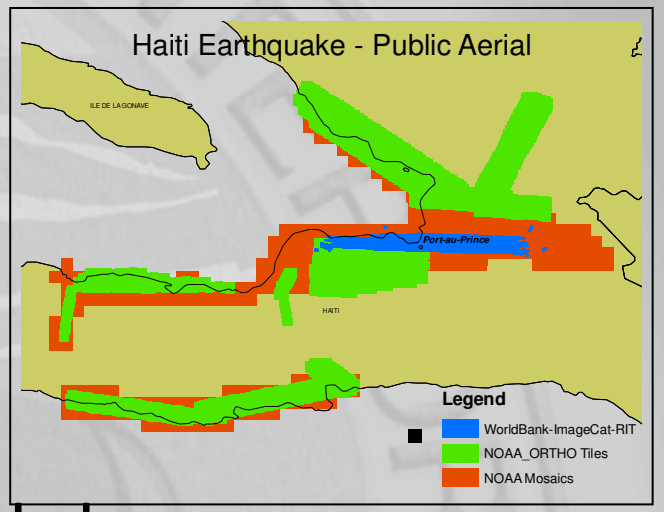
EROS Emergency Operations

USGS

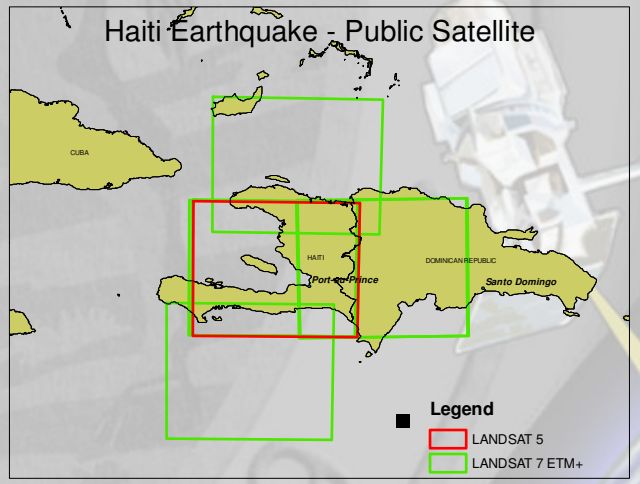
Public Data Overview

2.52 TB Available

- **AERIAL**
  - **NOAA Imagery**
    - **1,993 Post-event images ingested***
    - **2,283 Post-event native images parked**
  - **WorldBank – ImageCat – RIT**
    - **8,956 Post-event images ingested***
    - **18,100 Post-event native images parked**
  - **Microsoft**
    - **413 Post-event mosaics (preliminary), parked**



- **Satellite**
  - **ASTER**
    - **23 Post-event images (thru 213/10)**
  - **EO1**
    - **13 Post-event images (thru 2/02/10)**
  - **Landsat**
    - **1 L7 and 1 L5 Pre-event imagery**
    - **7 L7 Post-event images (thru 1/30/10)**



USGS

Public Data Overview (cont'd)

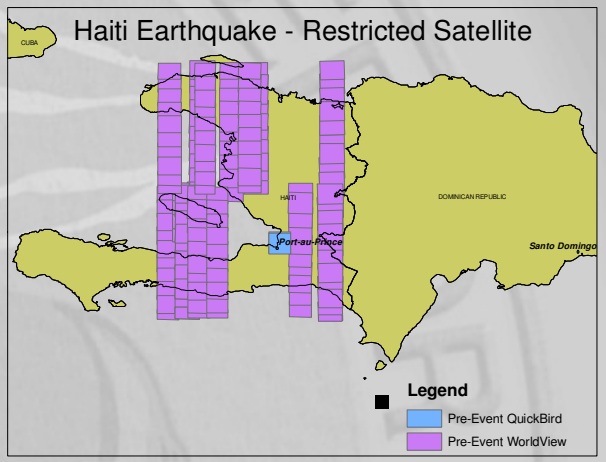
- **Digital Elevation Products**
  - **ASTER_CONTOURS folder**
    - **Derived from 30m DEM**
  - **University of Texas Products**
    - **Derived Aster and SRTM Products**
- **Map_Products**
  - **Delta State Haiti maps**
    - **Serving as a mirror site**
  - **China DMC**
  - **SERTIT assessment updates**
  - **Pacific Diaster Center**
- **WorldBank LIDAR**
  - **DEM and SEM images (1/21 – 1/27)**
- **Other**
  - **GPS Ground Control Points**
  - **Damage assessment vector information**
  - **Data resource documents**

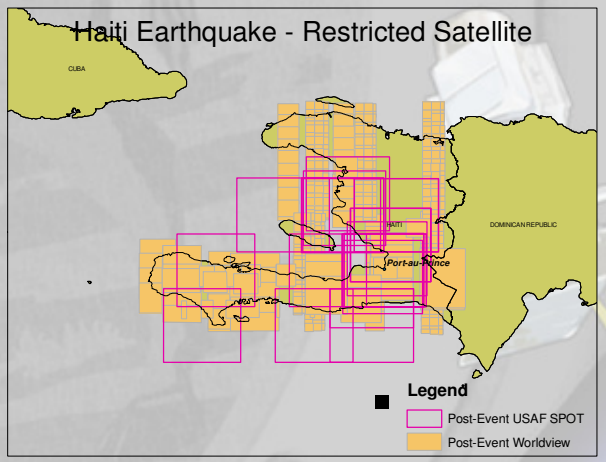
USGS

Restricted Data Overview

1.31 TB

- **Satellite**
  - **GEOEYE**
    - **3 Pre-event images**
    - **85 Post-event images (1/13 – 1/27)**
    - **8 Post-event stereo (1/16)**
    - **80 Post-event orthos/mosaics (thru 1/16)**
      - **Includes TIF and SID**
    - **Dominican Republic 12 images**
  - **IKONOS**
    - **119 Post-event images (1/14 – 2/03)**
    - **60 Post-event orthos/mosaics (thru 1/17)**
      - **Includes TIF and SID**
    - **Dominican Republic 34 images**
  - **QUICKBIRD**
    - **2 Pre-event images**
    - **107 Post-event images (1/15 - 1/28)**
    - **6 Post-event orthos/mosaics (1/18)**
      - **Includes TIF and SID**
    - **Dominican Republic 10 images**





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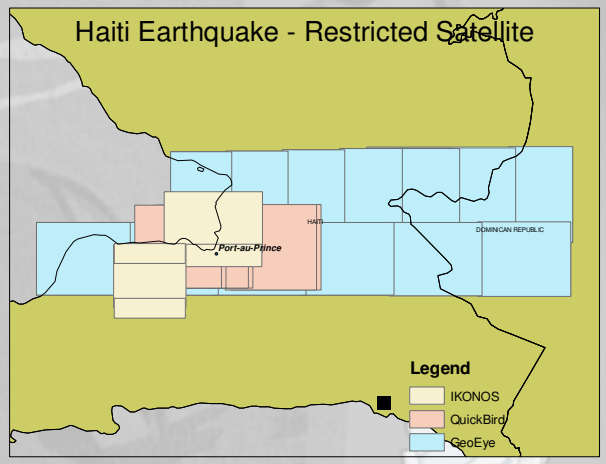
Restricted Data Overview (cont'd)

- **Satellite (cont'd)**
  - **ENVISAT**
    - **15 Post-event images (thru 1/22)**
  - **SPOT_USAF**
    - **23 SPOT-5 Post-event images (1/15 - 1/19)**
    - **37 SPOT-5 L1A images**
  - **RADARSAT**
    - **1 Radarsat-1 Pre-event image (5/31/04)**
    - **4 Radarsat-2 Post-event images (1/14 - 1/20)**
  - **TERRASARX**
    - **8 Post-event images (1/14 - 1/19)**
    - **2 Pre-event images**
  - **WORLDVIEW**
    - **206 Pre-event images**
    - **93 Post-event images (1/26)**
    - **68 Post-event orthos/mosaics (1/22)**
      - **Included TIF and SID**



Data Distribution

- Data Distribution Statistics for 1/13/10 – 2/25/10
  - **607,690** Files Downloaded
  - **54.1** TB of Data Distributed
    - Public
      - **382,315** Files Downloaded
      - **25.41** TB of Data Distributed
    - Restricted
      - **225,375** Files Downloaded
      - **28.69** TB of Data Distributed

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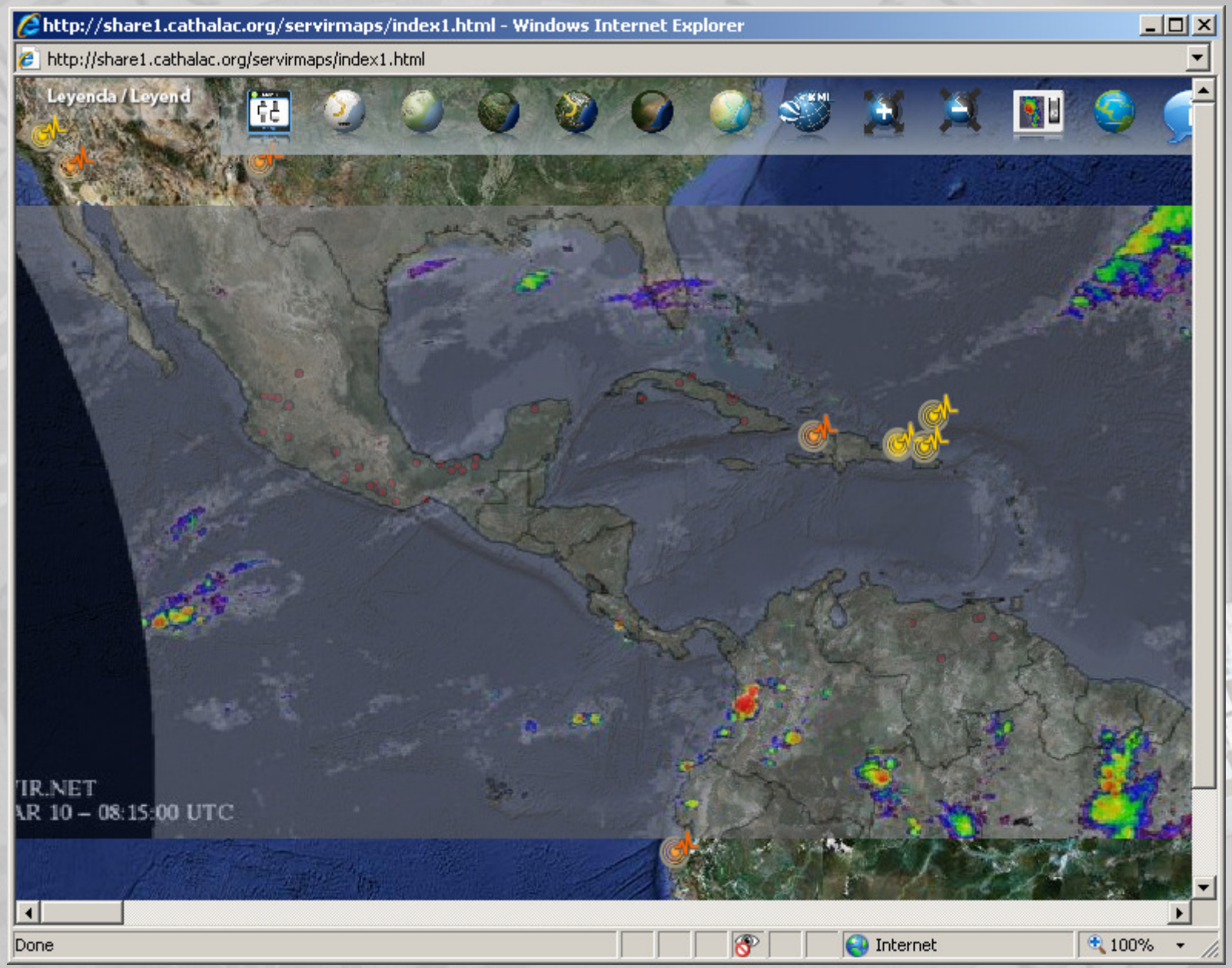
http://share1.cathalac.org/servirmaps/index1.html - Windows Internet Explorer
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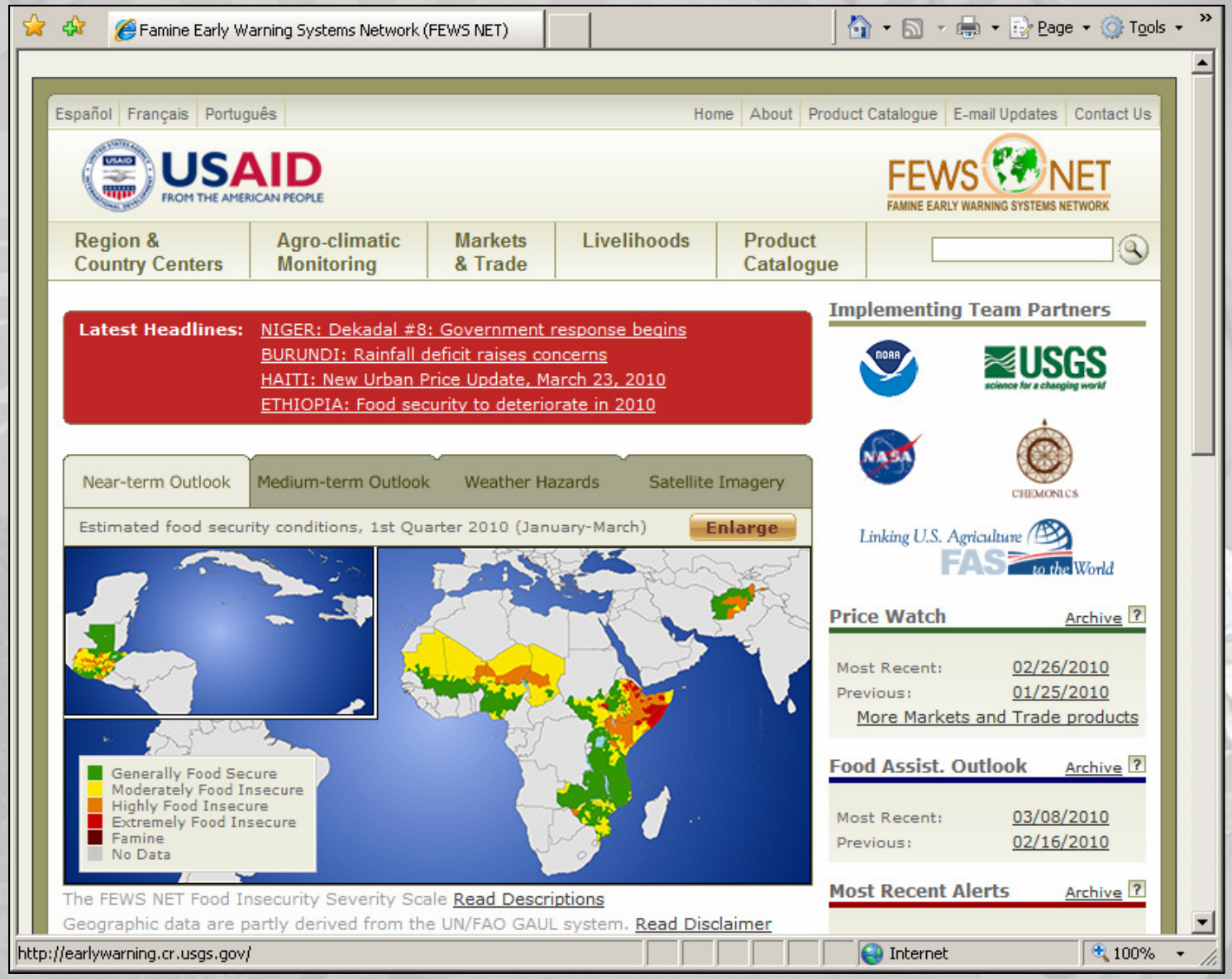
Internet
100%

http://www.fews.net



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FEWS NET Early Warning System

USGS - EROS Early Warning and Environmental Monitoring Program

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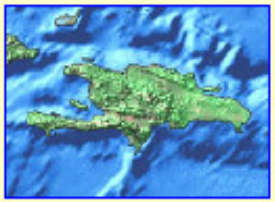
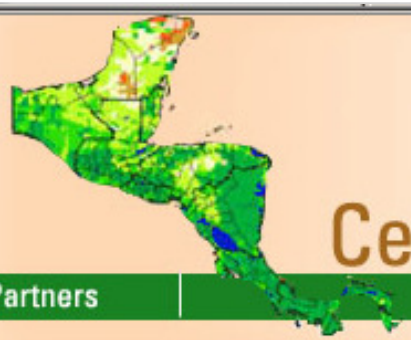


Haiti FEWS NET

South Asia Rainfall

Local intranet

MFEWS
Mesoamerican Food Security Early Warning System



Central America

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The Goal of the Famine Early Warning Systems Network (FEWS NET) is to strengthen the abilities of foreign countries and regional organizations to manage risk of food insecurity through the provision of timely and analytical early warning and vulnerability information. Read More...

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NDVI (Normalized Difference Vegetation Index)

eMODIS NDVI (Normalized Difference Vegetation Index) NEW!

Daily RFE (Rainfall Estimate) and Precipitation Forecast

Daily 30-Day Rain and Dry Days

Dekadal RFE (Rainfall Estimate)

Seasonal NDVI & Rainfall Charts - Interactive Viewer

Dekadal WRSI (Water Requirements Satisfaction Index):
April - September | August - December

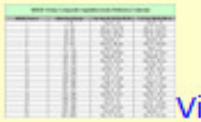
Dekadal SOS - Start of Season:
May - September | August - December

Dekadal Crop Soil Water Index:
May - September | August - December

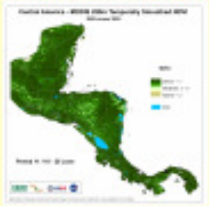
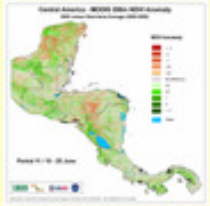
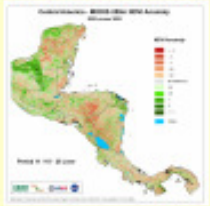
Daily WRSI (Water Requirements Satisfaction Index):

Central America

Normalized Difference Vegetation Index (NDVI) | **Explanation:** English Spanish

MODIS NDVI and Anomalies 250m (16-day)  View MODIS Calendar

Mar 06 - 21, 2010

Temporally Smoothed NDVI	Short-term Mean Anomaly	Previous Year Difference
		
PDF DATA	PDF DATA	PDF DATA

Interactive Map

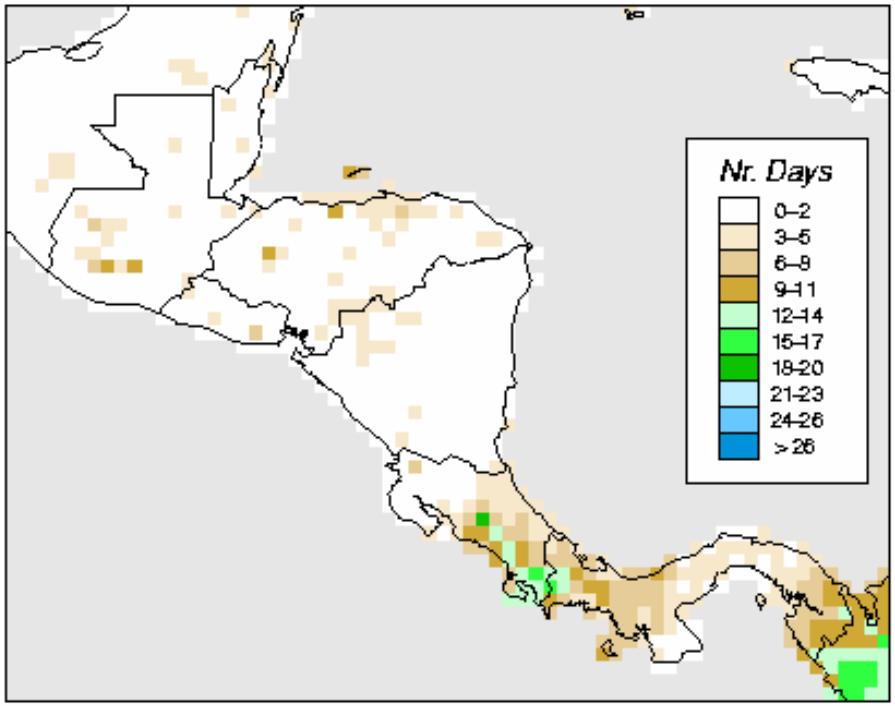
Choose a previous graphic (up to 2 years):

SPOT NDVI Difference 1km (10-day): PDF Map
AVHRR NDVI Difference 8km (15-day): PDF Map

USGS

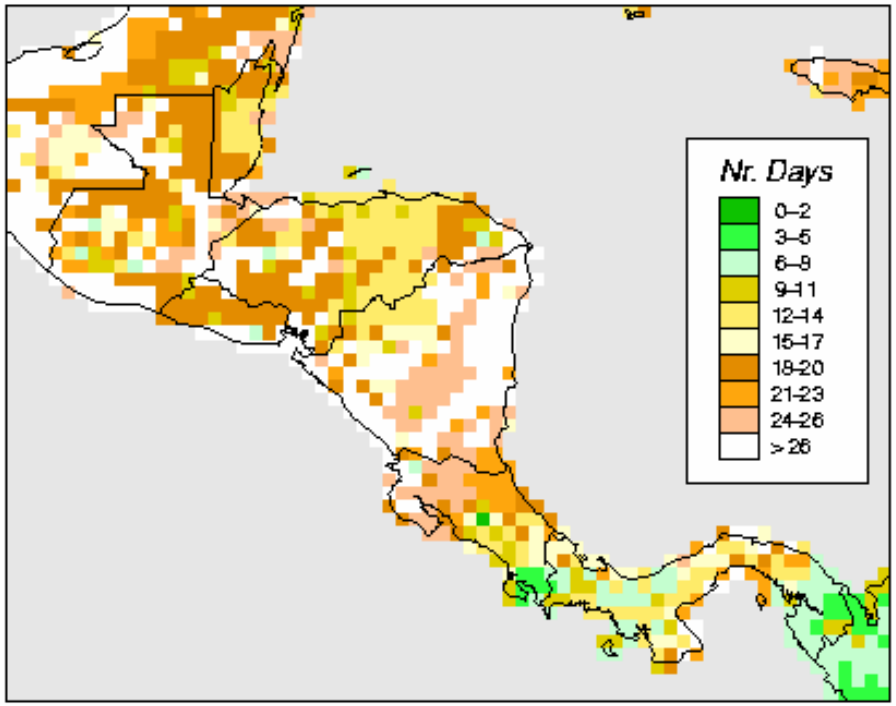
Number of Rain Days

in past 30 days, as of 27 Mar. 2010



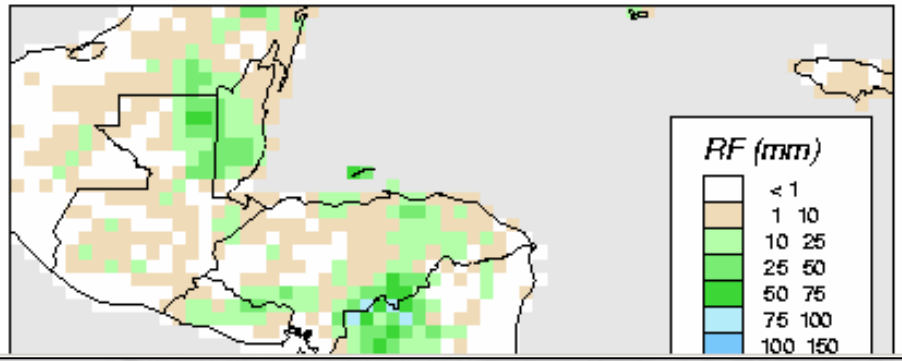
Maximum Consecutive Dry Days

in past 30 days, as of 27 Mar. 2010



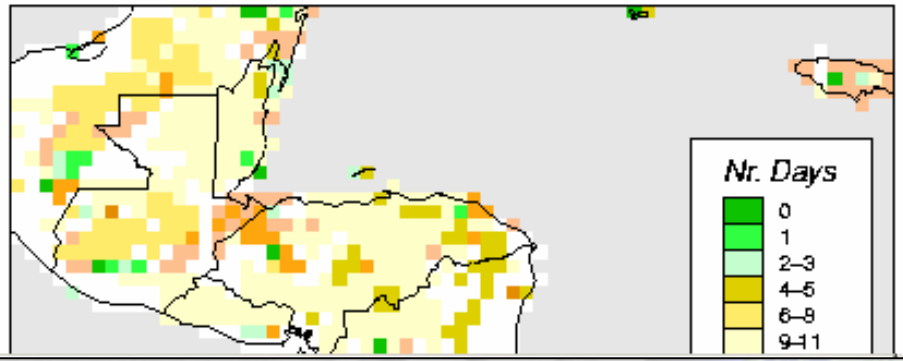
Total Accumulated Rainfall

in past 30 days, as of 27 Mar. 2010



Number of Days Since Rain

in past 30 days, as of 27 Mar. 2010



Questions ?