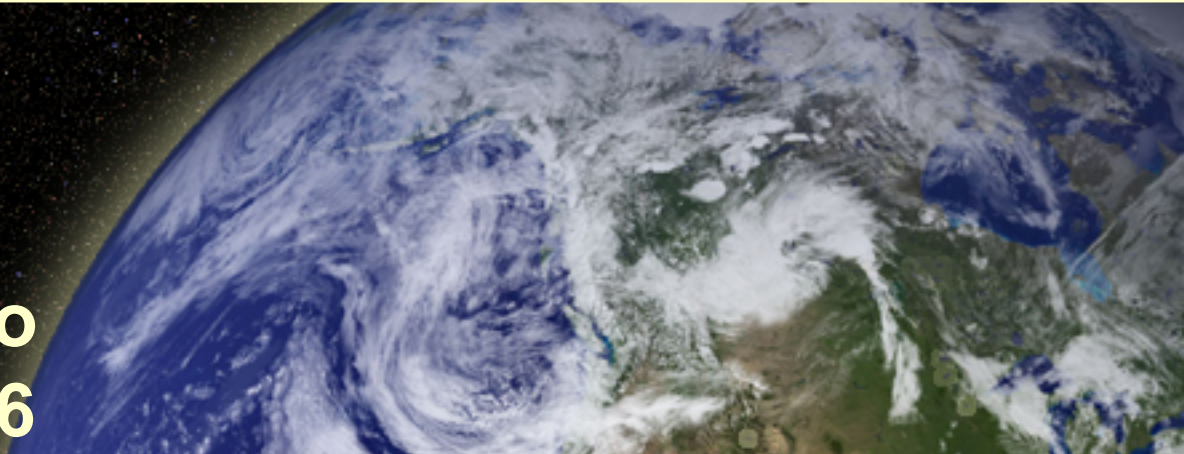


# GEOSS

SCIENCE  
SERVING  
SOCIETY

Global Earth Observation System of Systems

**North American  
Drought Monitor  
Workshop  
Mexico City, Mexico  
October 18-19, 2006**



J. Eric Madsen  
International Relations Specialist  
National Oceanic and Atmospheric Administration (NOAA)  
July, 2006



# Group on Earth Observations (GEO) History

## EOS I

- 🌐 July 31, 2003, Washington, D.C.
- 🌐 33 Countries + EC + 20 International Organizations



## EOS II

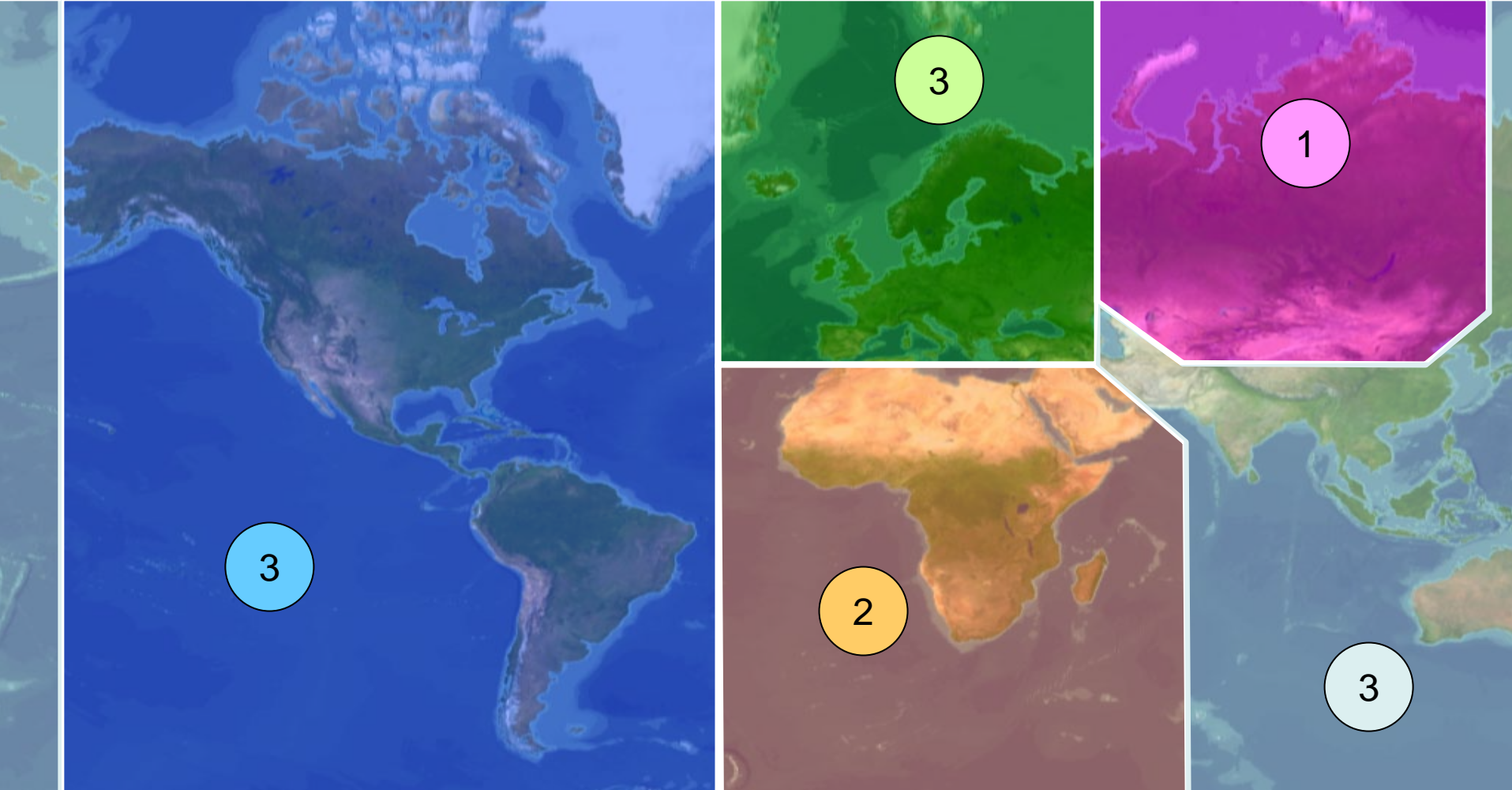
- 🌐 April 25, 2004, Tokyo, Japan
- 🌐 47 Countries + EC + 26 International Organizations



## EOS III

- 🌐 February 2005, Brussels
- 🌐 Nearly 60 Countries + EC and 41 International Organizations
- 🌐 10-Year Implementation Plan
- 🌐 Establish Group on Earth Observations (GEO) to implement plan
- 🌐 Commerce Secretary Gutierrez led the US delegation





**Americas**

Brazil  
Honduras  
USA

**Europe**

European  
Commission  
Germany  
Italy

**Africa**

Morocco  
South Africa

**Commonwealth of Independent States**

Russia

**Asia/Oceania**

China  
Japan  
Thailand

**GEO Executive Committee**





# What is GEOSS?



Comprehensive

Coordinated

Sustained

An end-to-end system  
of existing systems  
(both in situ and remote  
sensing observation  
platforms)  
linked with new  
systems



# Societal Benefits of GEOSS



Natural & Human Induced Disasters



Water Resources



Terrestrial, Coastal & Marine Ecosystems



Human Health & Well-Being



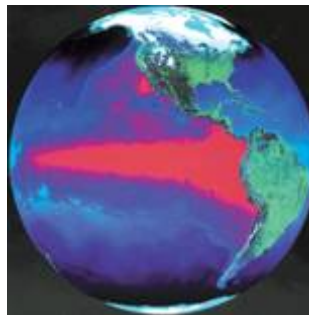
Energy Resources



Sustainable Agriculture & Desertification



Weather Information, Forecasting & Warning



Climate Variability & Change



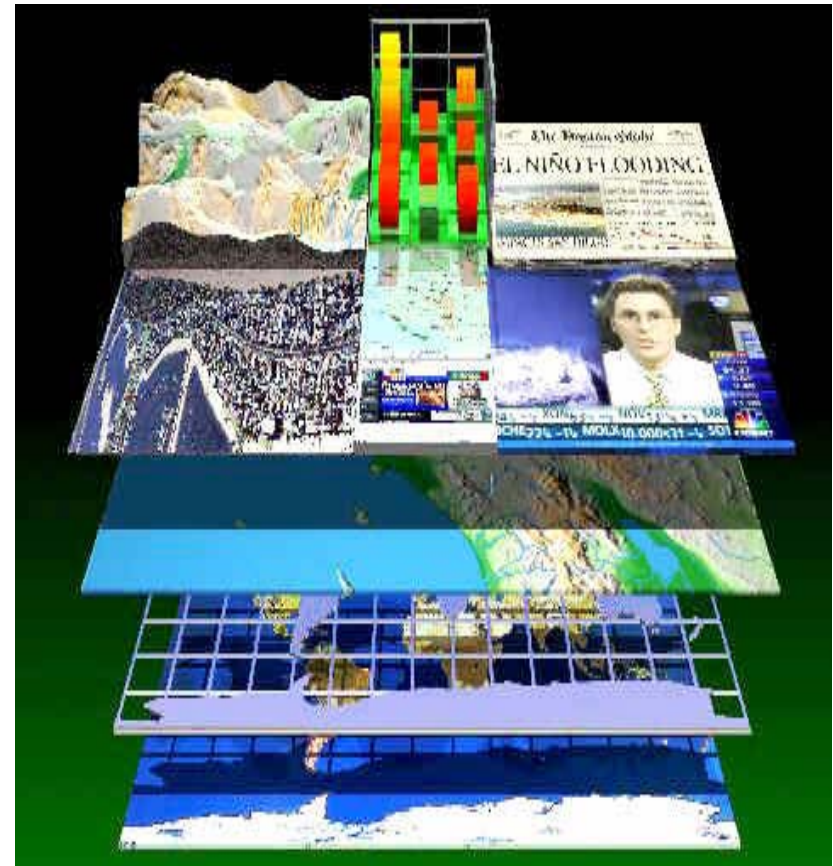
Biodiversity



# GEOSS Implementation

## Data Management Needs

- 🌐 New systems mean 100-fold increase in data
- 🌐 Current systems already face challenges
- 🌐 Development of browser and visualization systems— underpinned by core geospatial technologies
- 🌐 Interoperability through protocols and standards





# U.S. Contribution to GEOSS

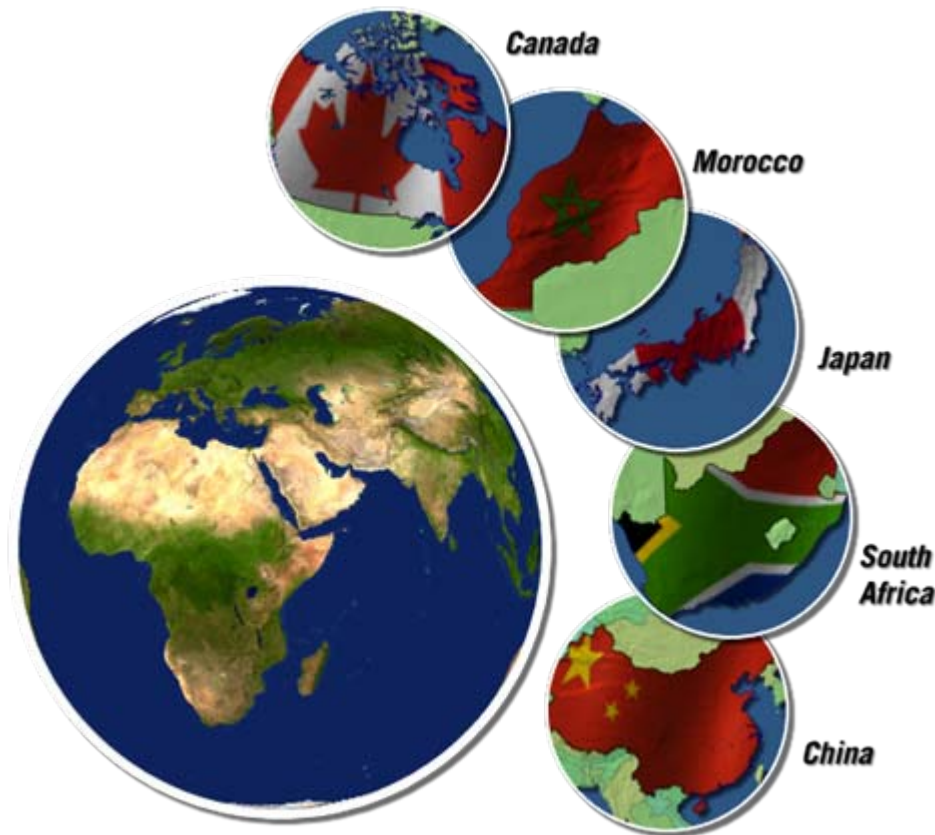
## An Interagency Effort

**STRATEGIC PLAN  
FOR THE U.S.  
INTEGRATED EARTH  
OBSERVATION  
SYSTEM**



Interagency Working Group on Earth Observations  
NSTC Committee on Environment and Natural Resources

Other Nations Developing Internal  
Coordination Initiatives



[http://usgeo.gov/docs/EOCStrategic\\_Plan.pdf](http://usgeo.gov/docs/EOCStrategic_Plan.pdf)





# NOAA's Mission and Goals

## **Mission:**

To understand and predict changes in the Earth's environment and manage coastal and marine resources to meet the Nation's economic, social, and environmental needs

## **Mission Goals:**

Protect, restore, and manage the use of coastal and ocean resources through an ecosystem approach to management

Understand climate variability and change to enhance society's ability to plan and respond

Serve society's needs for weather and water information

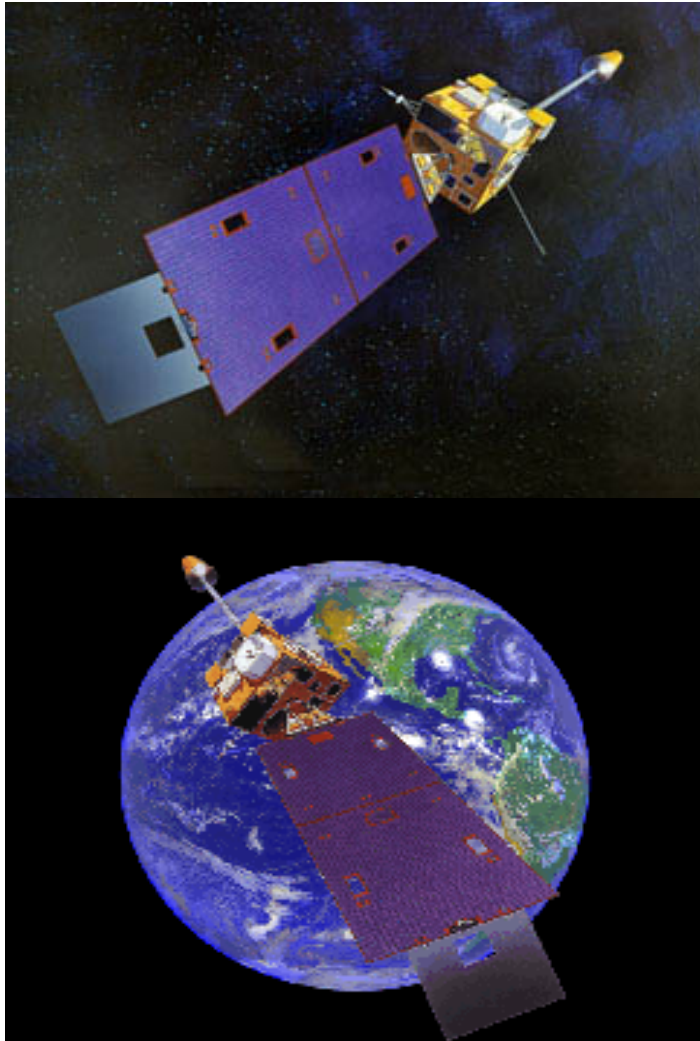
Support the Nation's commerce with information for safe, efficient, and environmentally sound transportation

Provide critical support for NOAA's mission





# EARTH OBSERVATION PARTNERSHIP OF THE AMERICAS (EOPA)



The Earth Observation Partnership of the Americas (EOPA) is:

🌐...an informal set of partnerships to improve Earth observations and their utilization throughout the Western Hemisphere.

🌐 The aim of EOPA is to improve Earth observations and their utilization by:

- 🌐 Facilitating working relationships and collaborations;
- 🌐 Encouraging the use and exchange of data;
- 🌐 Coordinating and leveraging regional assets and resources.

# Key Objectives of EOPA

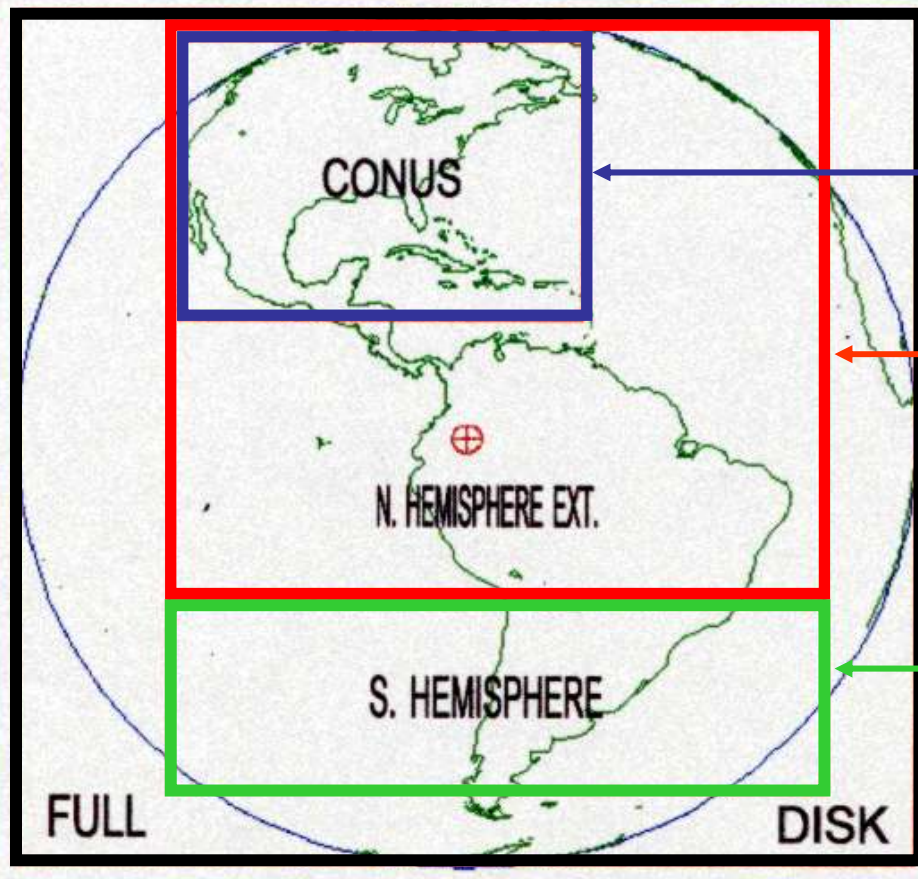


- Develop **partnerships**.
- Make current and future **environmental data more readily available** in the countries of North, Central, and South America and the Caribbean.
- Provide **education and training** to regional data users that support both data availability and its utilization.
- Develop **engineering and scientific cooperation** in the region.
- Encourage **ready access and exchange** of Earth observation data and the **integration** of Earth observation systems.
- Support the implementation of **GEOSS**





# GOES-10 MOVE



When the GOES-East imager is in normal operation it images the following areas at these time intervals.

**Continental United State (CONUS), every 15 minutes**

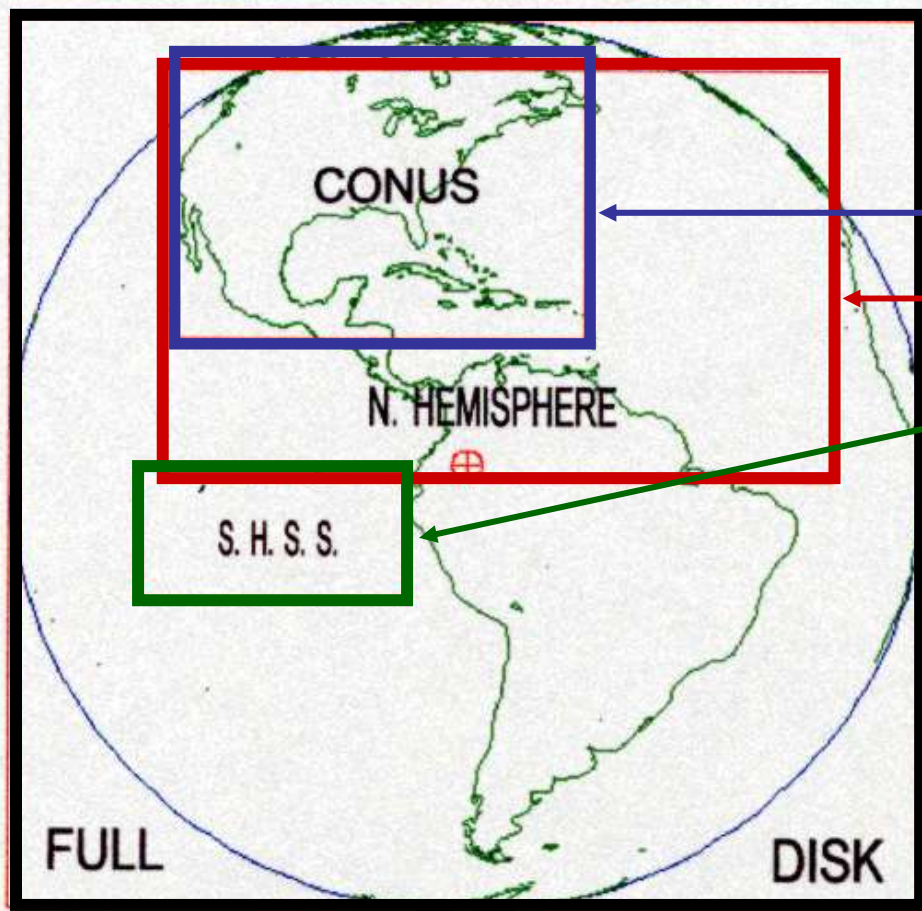
**Northern Hemisphere Extended (down to 20° South), every 30 minutes**

**Southern Hemisphere, every 30 minutes**

**Full Disk, every 3 hours.**



# GOES-10 MOVE



When the **GOES-East Imager** is put into **Rapid Scan mode** during extreme weather events, it images the following areas at these time intervals.

**CONUS, every 7 minutes**

**Northern Hemisphere (down to 0°), every 30 minutes**

**Southern Hemisphere Small Sector, every 60 minutes**

**Full Disk, every 3 hours**

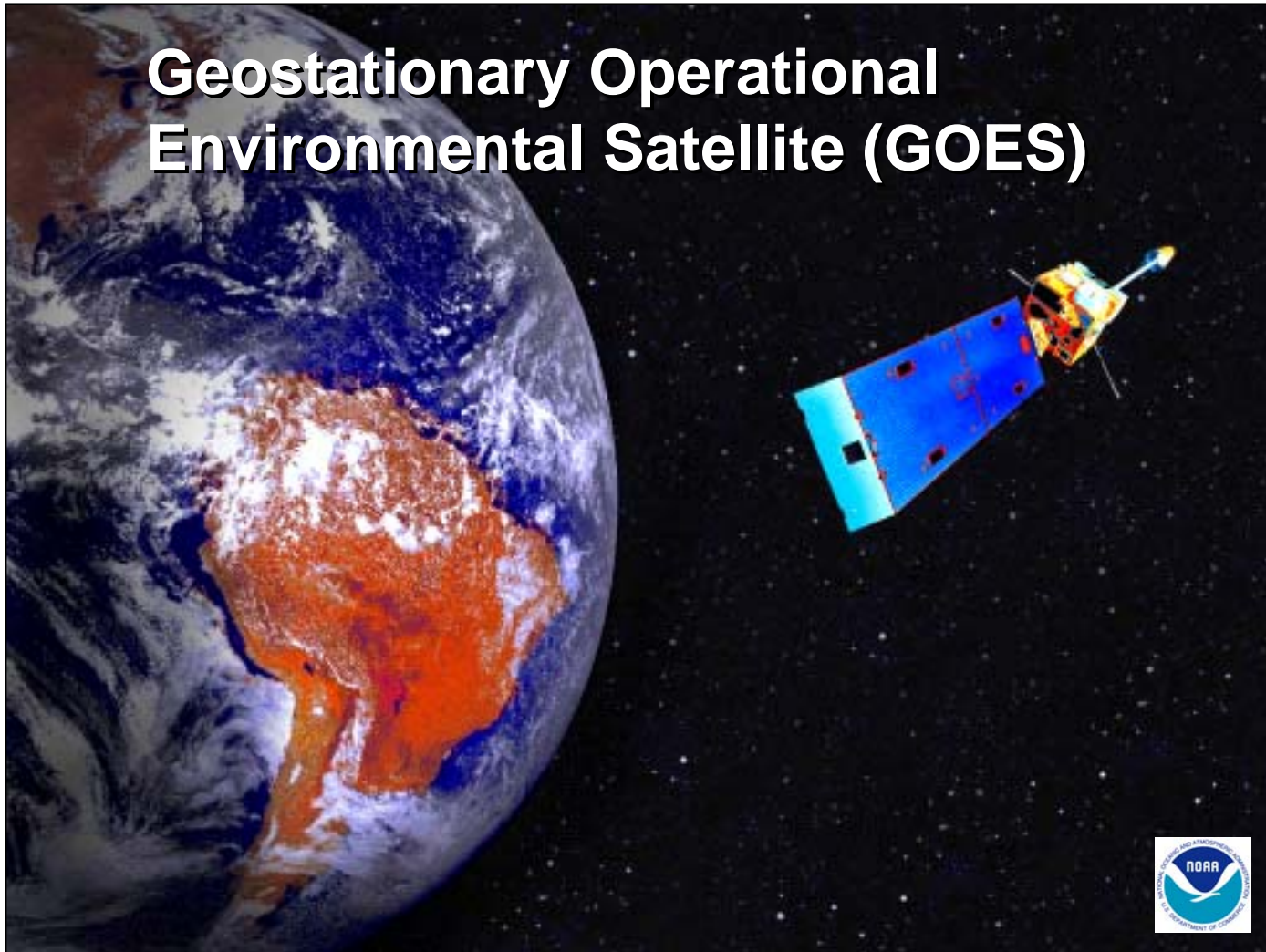
**Problem:**

When the imager is in Rapid Scan mode the portion of South America below the Equator receives imager data only every 3 hours. This does not allow South American forecasting for severe weather events.



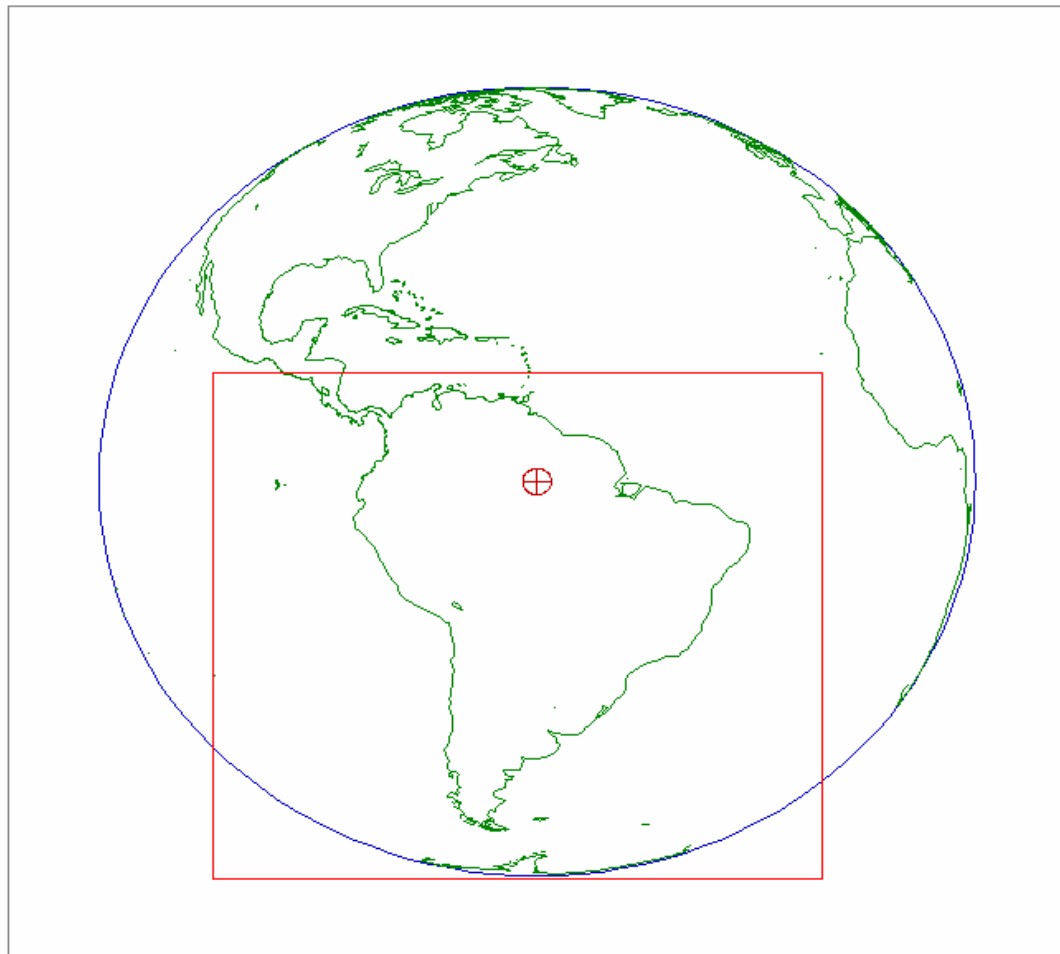
# GOES-10 MOVE

## Geostationary Operational Environmental Satellite (GOES)





# EOPA PARTNERSHIPS



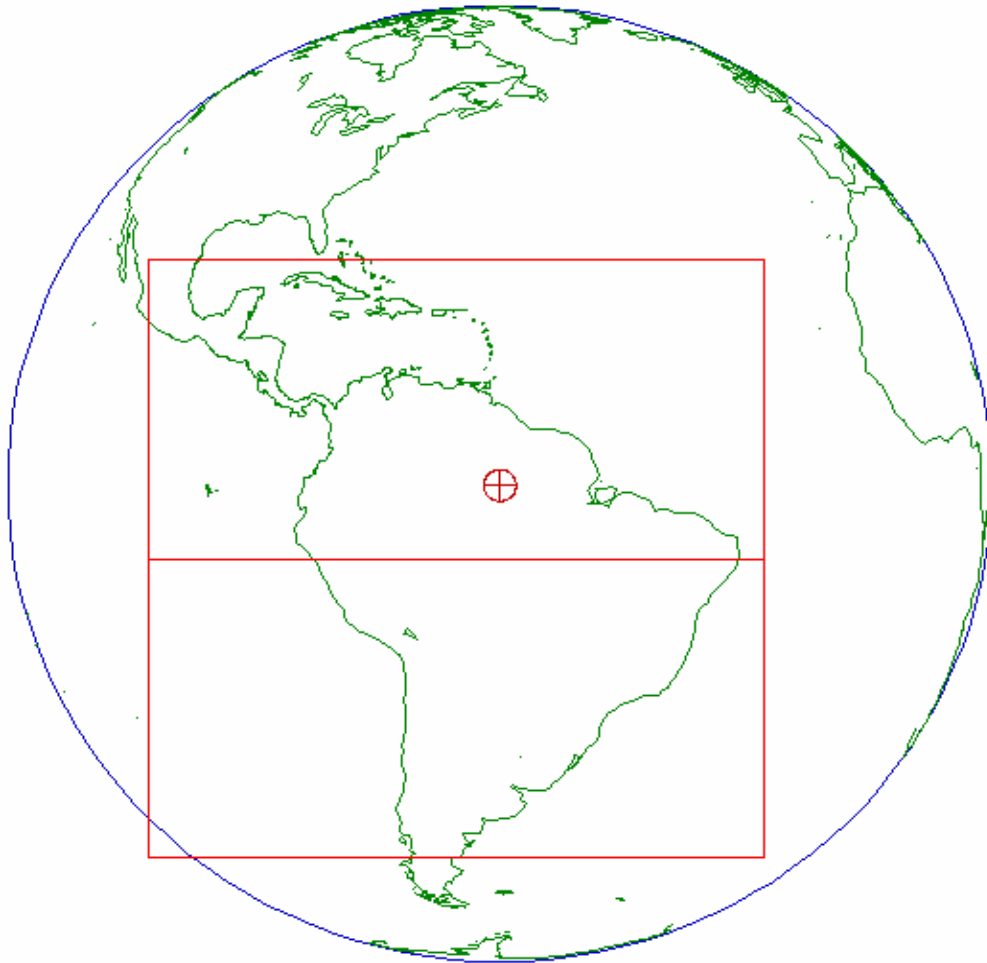
**Imager:**

**15-Minute Imager  
Frame for South  
America from 60°  
West**



# EOPA PARTNERSHIPS

**Sounder:  
South America Scan  
Frames from 60°  
West,  
2 Frames Every 4  
Hours**







# EOPA PARTNERSHIPS

## North American Drought Monitor

August 31, 2006

Released: Friday, September 15, 2006

<http://www.ncdc.noaa.gov/nadm.html>

Analysts:

Canada - Trevor Hadwen\*  
Dwayne Chobanik\*\*  
Mexico - Miguel Cortez  
U.S.A. - Ned Guttman  
Tom Heddinghaus

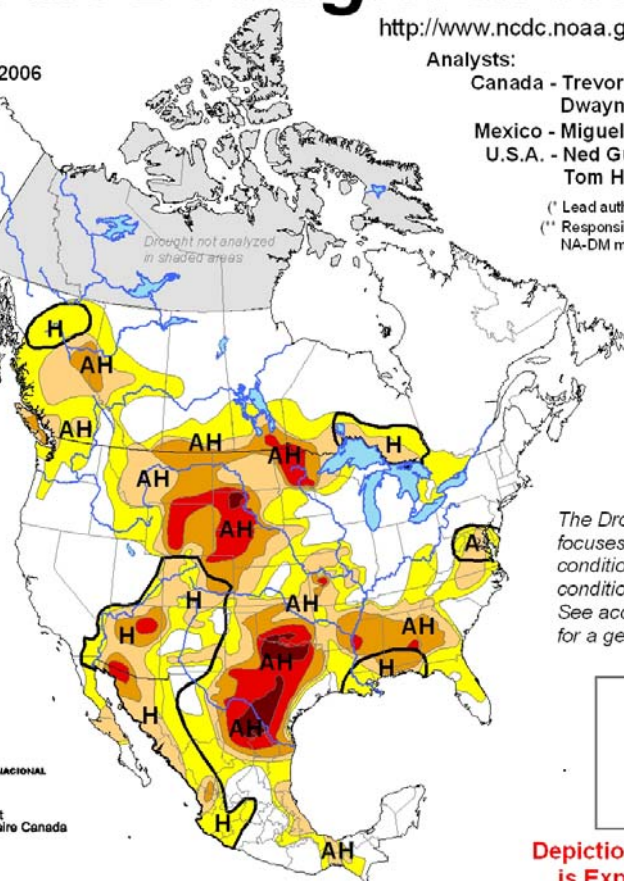
(\* Lead author)  
(\*\* Responsible for assembling the NA-DM map)

### Intensity:

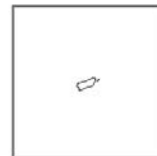
- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

### Drought Impact Types:

- Delineates dominant impacts
- A = Agriculture
- H = Hydrological (Water)



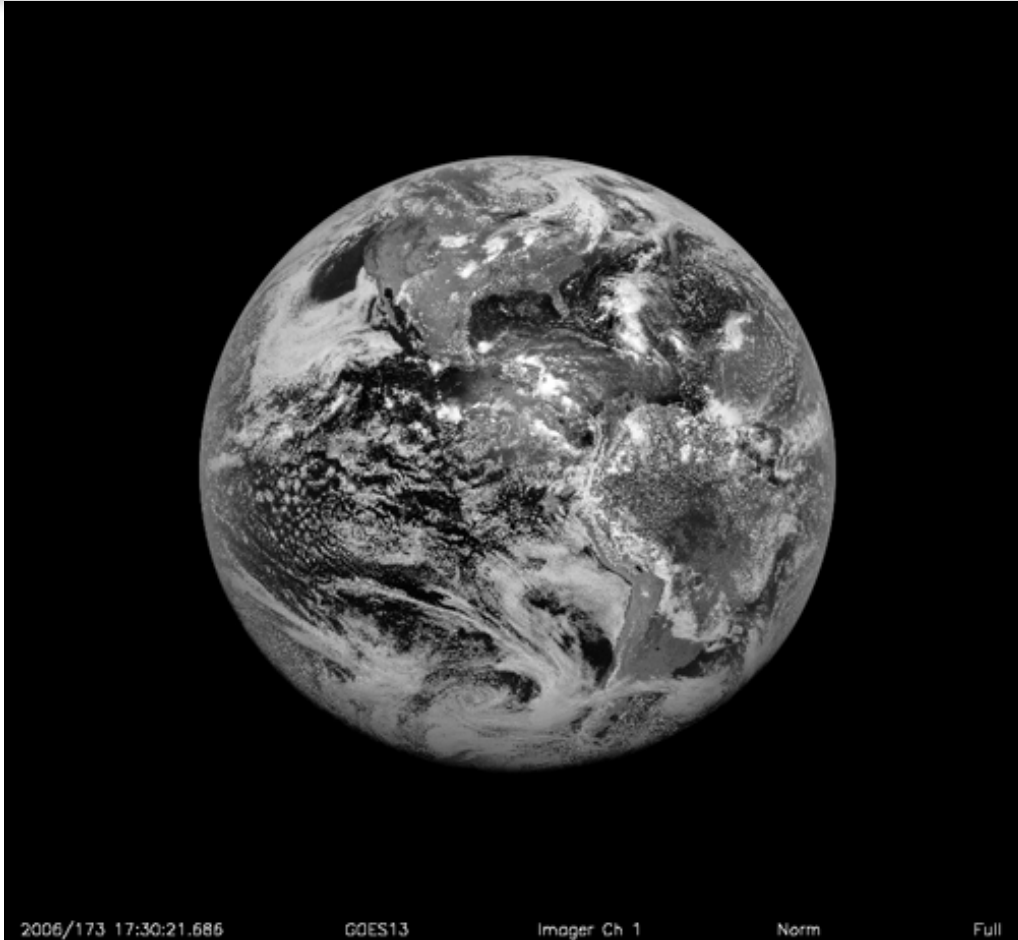
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text for a general summary.



Depiction for Canada is Experimental



# EOPA: Contributing to the GEOSS Vision



**First GOES-13 Image**

**Thursday, June 22, 2006, 13:30 EDT**

*“The goal is to access and provide the right information, in the right format, at the right time, to the right people, to make the right decisions.”*

Vice Admiral Conrad C.  
Lautenbacher, Jr., NOAA  
Administrator

