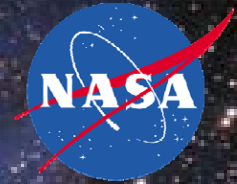


***Seeing Our Vision, Achieving Our Mission,  
It's Our Challenge***

**Mr. Gilberto Colón,  
Associate Director for the  
GSFC Heliophysics Projects Division**



# NASA



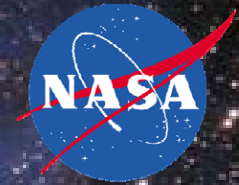
## **The NASA Vision**

To improve life here,  
To extend life to there,  
To find life beyond.

## **The NASA Mission**

To understand and protect our home planet,  
To explore the universe and search for life,  
To inspire the next generation of explorers  
...as only NASA can.

# NASA Field Centers



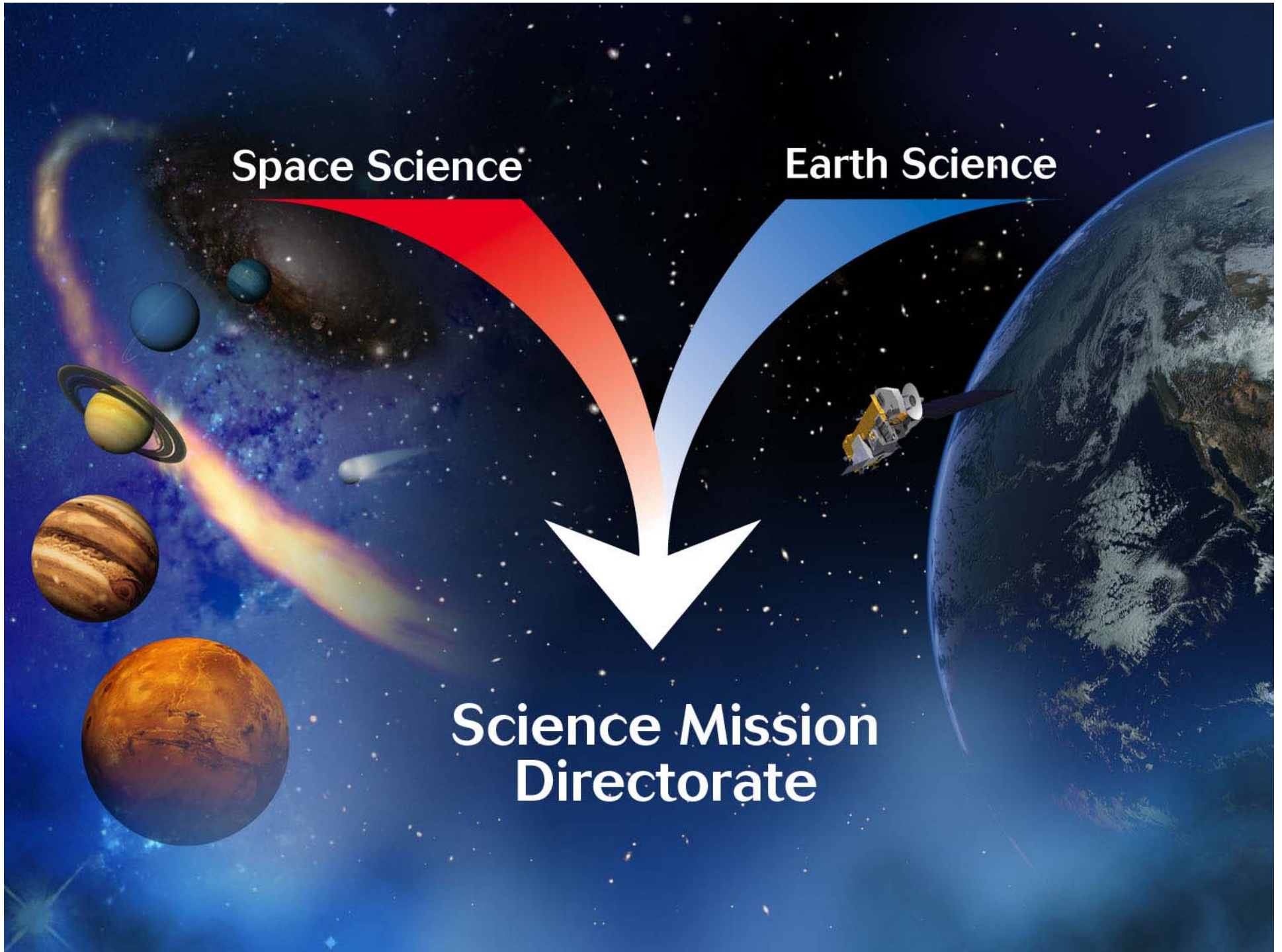
**17,000 civil servants and thousands of contractors in the private sector**

[www.nasa.gov](http://www.nasa.gov)

**Space Science**

**Earth Science**

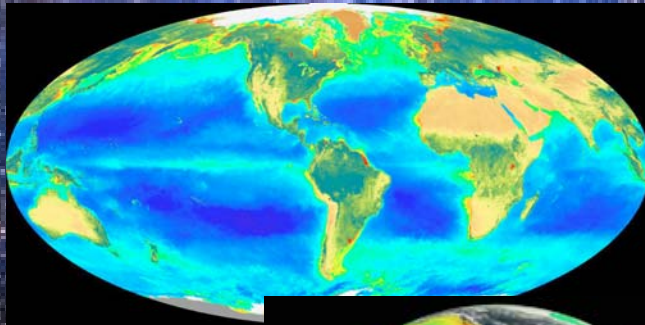
**Science Mission  
Directorate**



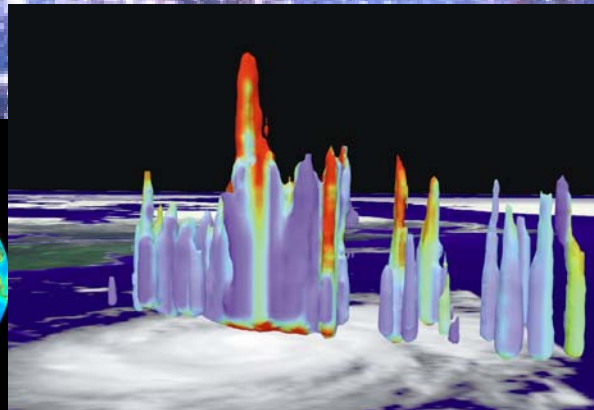
# Earth Science Achievements



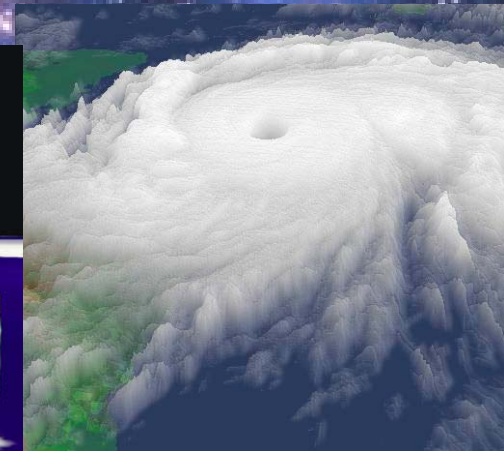
SeaWiFs  
Global  
Biosphere



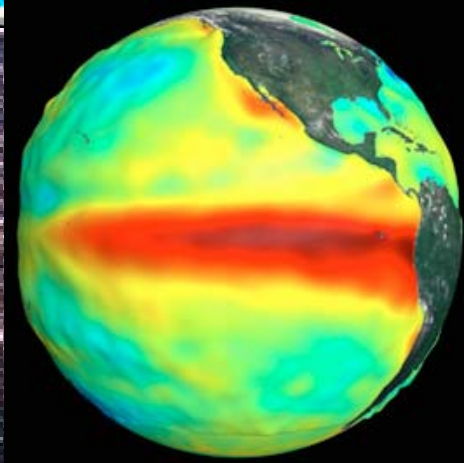
TRMM  
Hurricane Bonnie



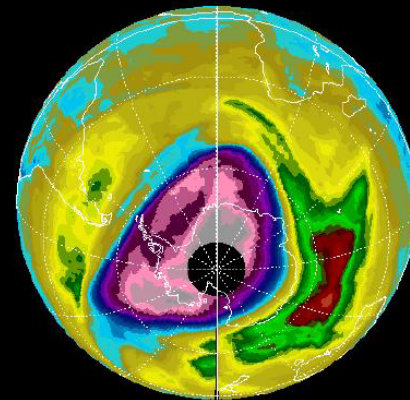
GOES-9  
Hurricane Mitch

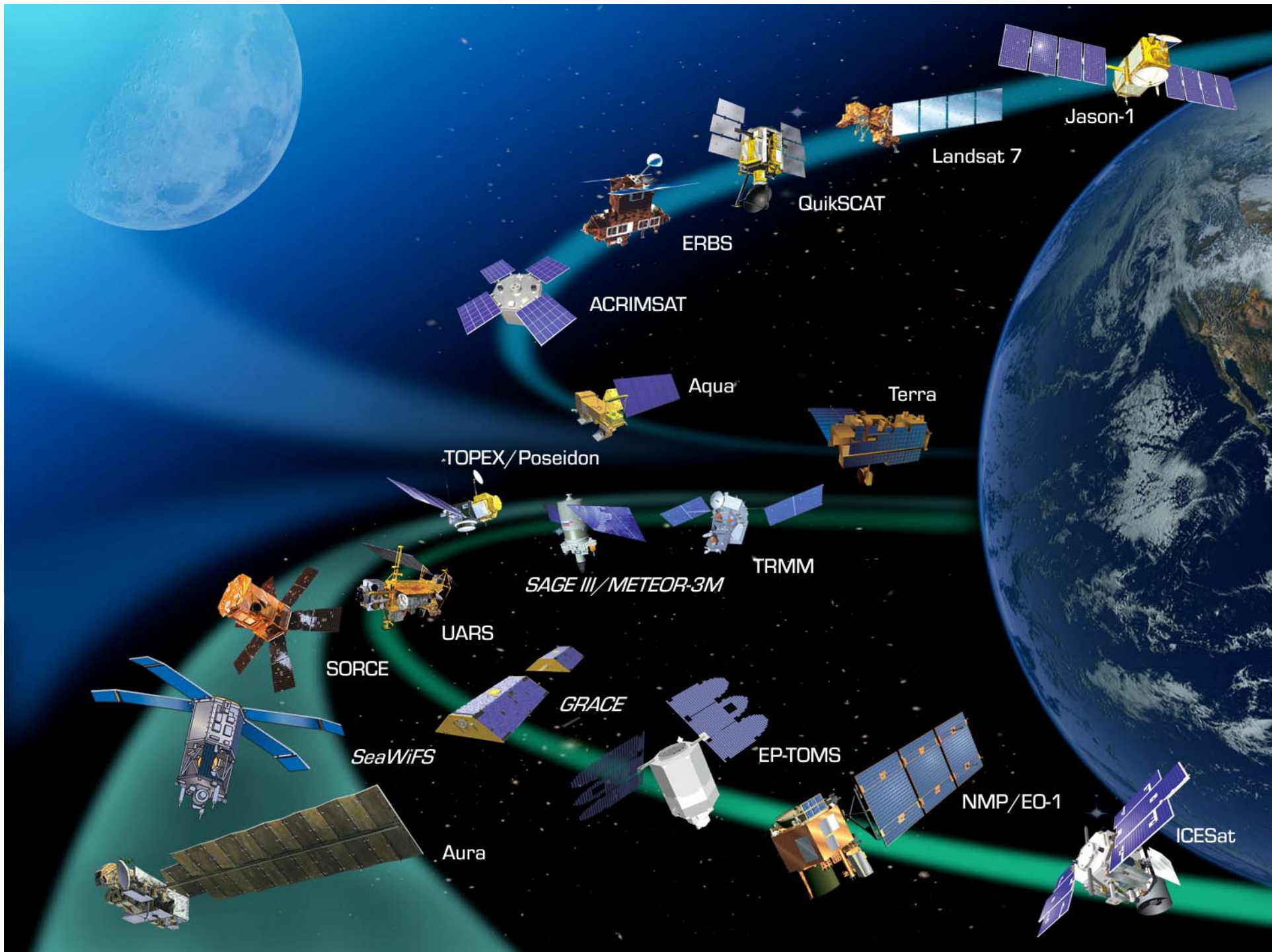


SeaWiFs  
El Niño



TOMS  
Ozone Hole





# Sun-Earth System Science



Sun- Earth  
Connection

Climate Variability  
and Change

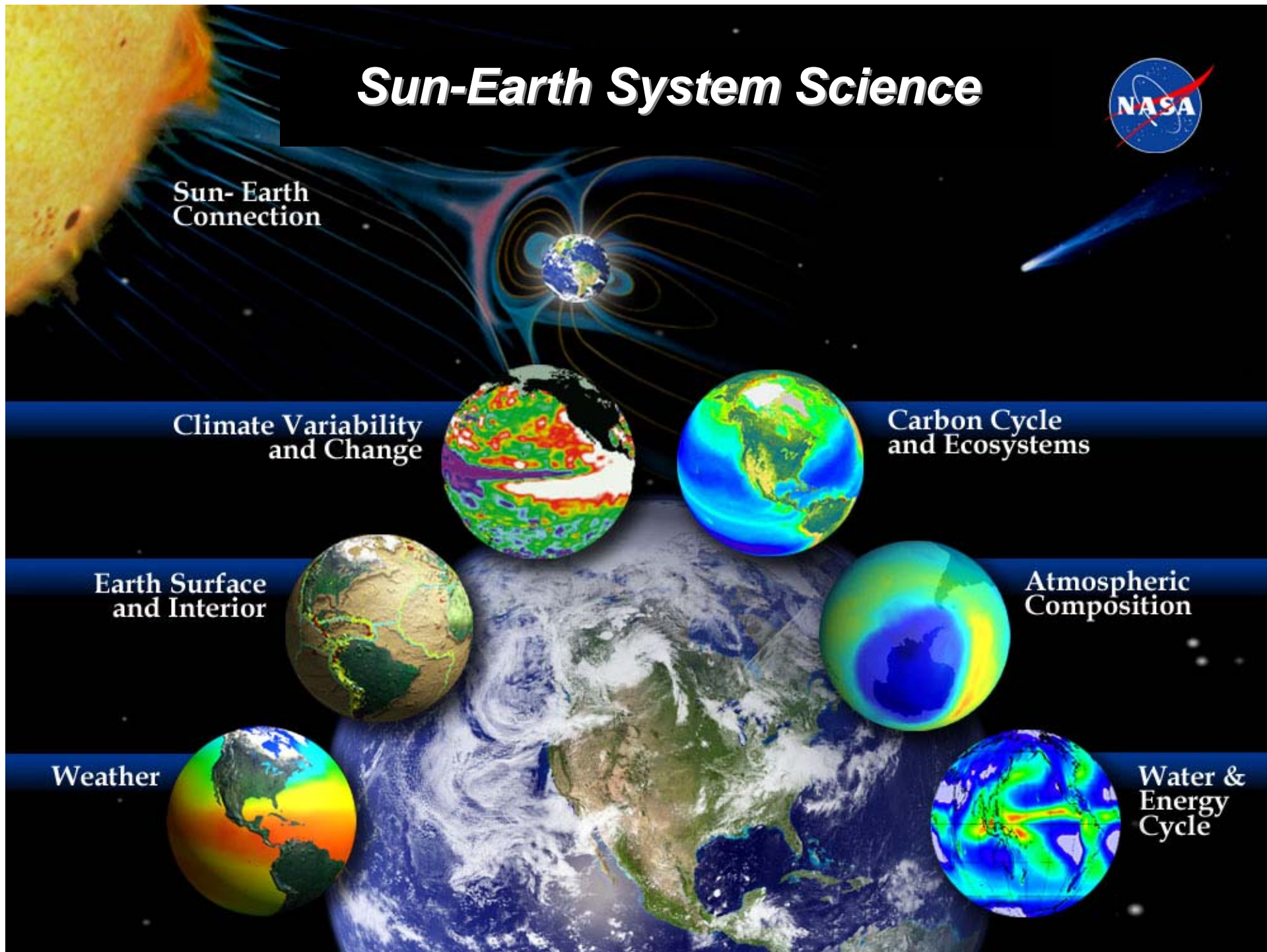
Carbon Cycle  
and Ecosystems

Earth Surface  
and Interior

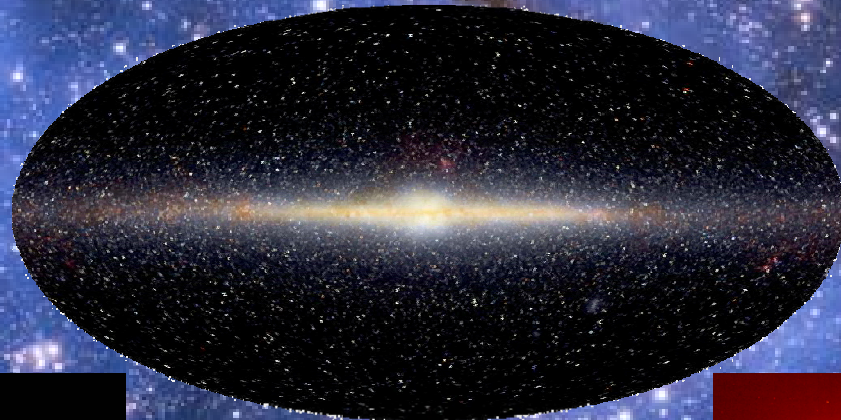
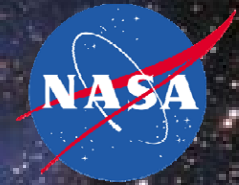
Atmospheric  
Composition

Weather

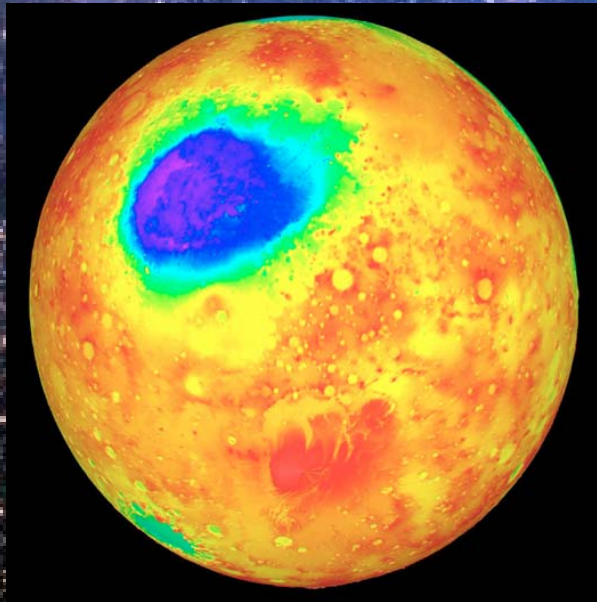
Water &  
Energy  
Cycle



# Space Science Achievements

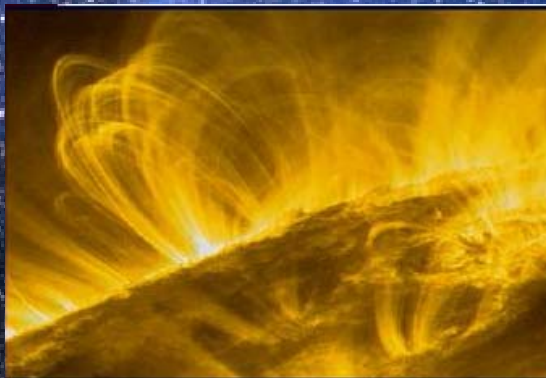


COBE  
Image of the Milky  
Way

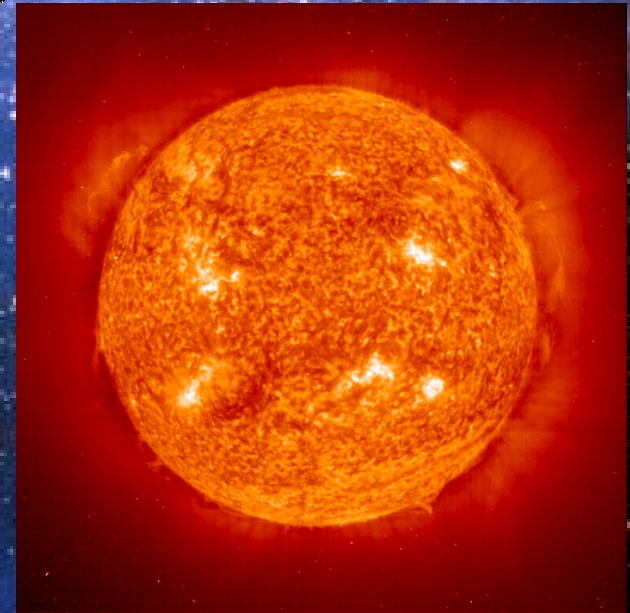


MOLA  
Image of Mars

[www.nasa.gov](http://www.nasa.gov)

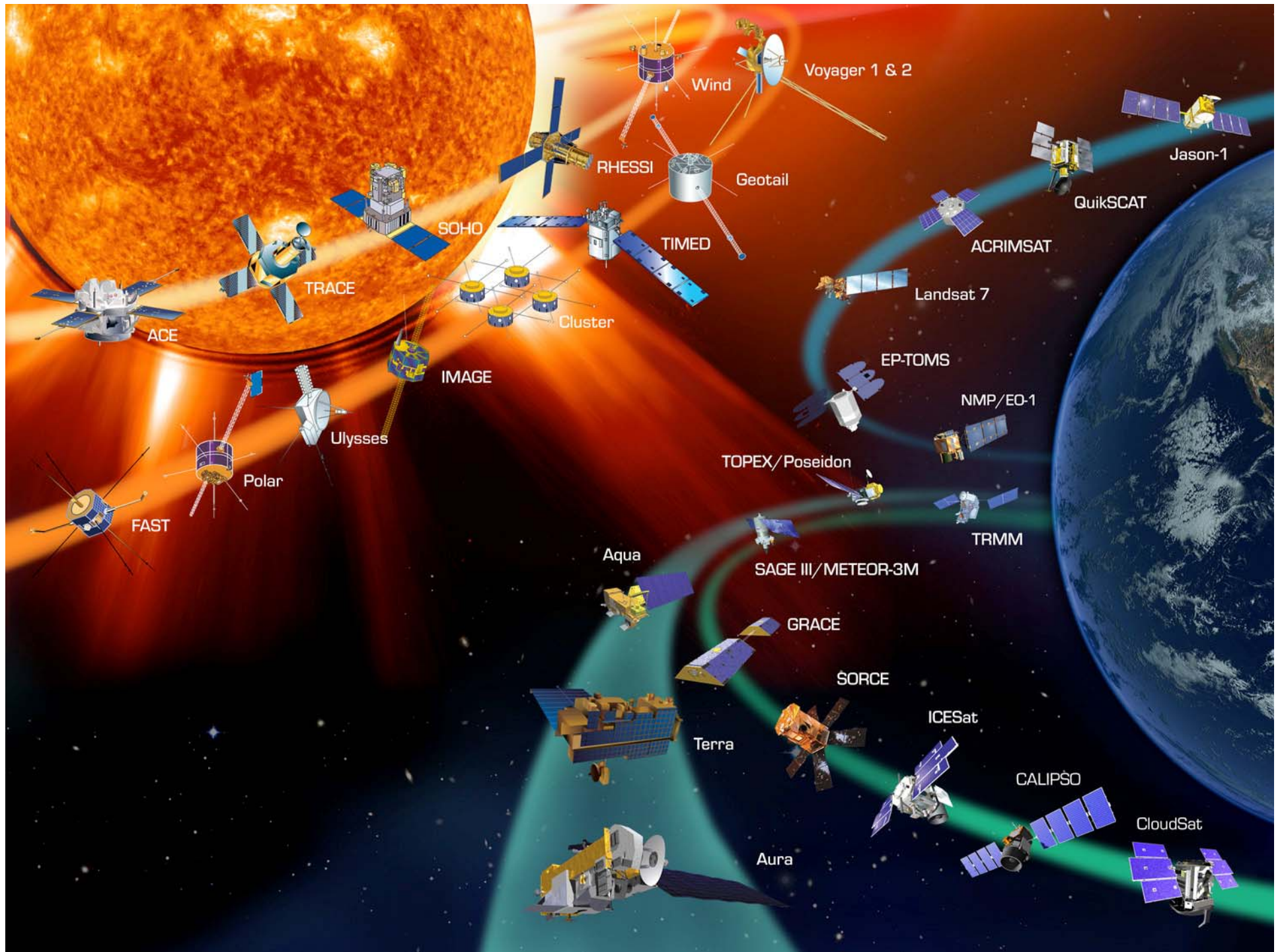


Coronal Mass  
Ejections

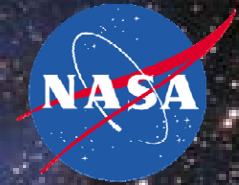


SOHO EIT  
Image of the Sun

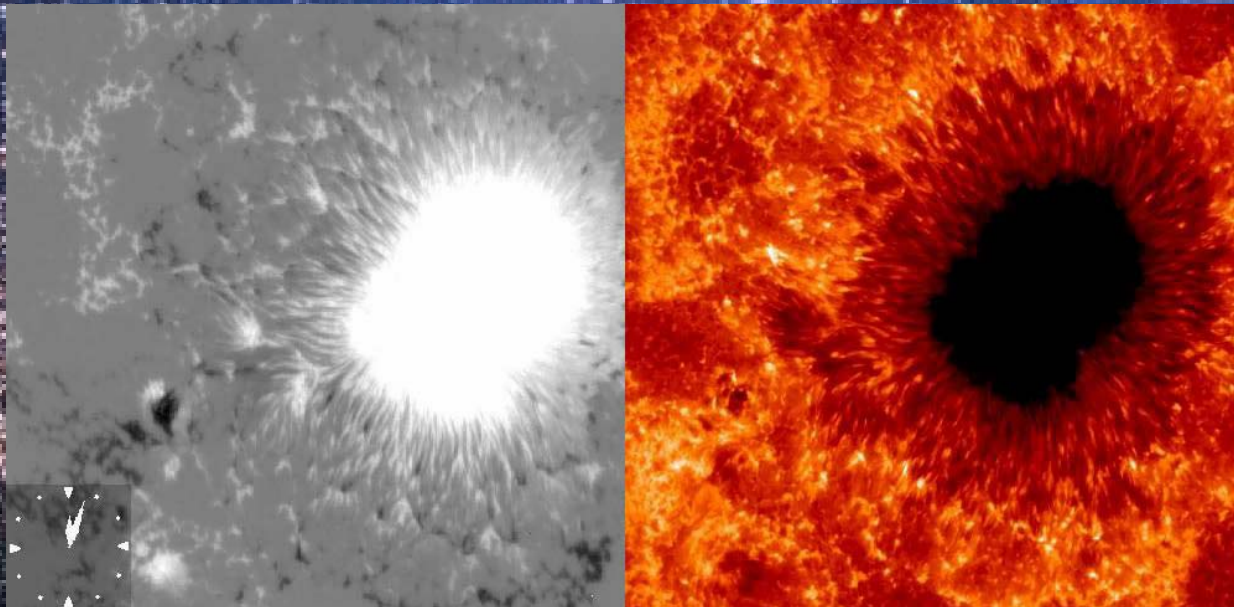




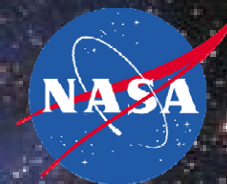
# Hinode (Solar-B)



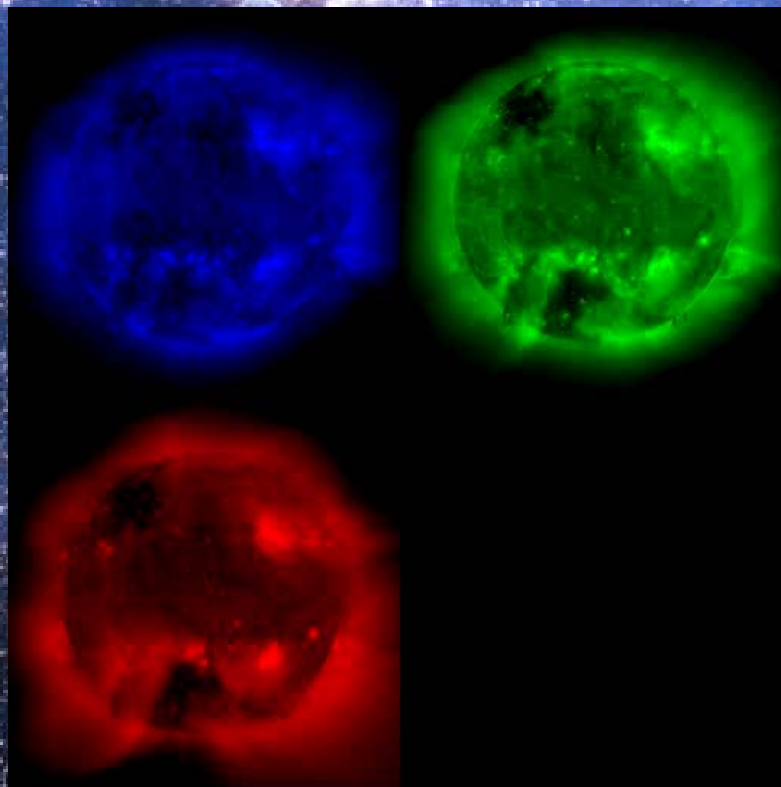
- Hinode (formerly known as Solar-B) is a Japanese ISAS mission proposed as a follow-on to the highly successful Japan/US/UK Yohkoh (Solar-A) collaboration. The mission consists of a coordinated set of optical, EUV and X-ray instruments that will study the interaction between the Sun's magnetic field and its high temperature, ionized atmosphere. The result will be an improved understanding of the mechanisms which give rise to solar magnetic variability and how this variability modulates the total solar output and creates the driving force behind space weather. (Launch Date: 9/23/06)



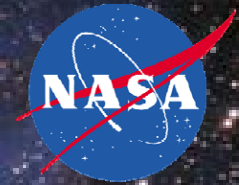
# STEREO



- Twin Spacecraft Swing Past Moon, Preparing for 3-D Solar Studies
  - NASA's twin STEREO spacecraft completed a series of complex maneuvers Sunday to position the spacecraft in their mission orbits. The spacecraft will be in position to produce the first 3-D images of the sun by April.



# A System of Systems



**LOCATION**

● Earth Satellites  
● Space Satellites

**MARS**

**SURFACE**

**ATTRIBUTES**

Planet	Mars	Volume (Earth=1)	0.149	Orbit Time (Earth Days)	686	Rotation Time (Earth Days)	1.02
AU	1.5	Mass (Earth=1)	0.107	Orbit Time (Earth Years)	1.88	Number of Moons	2
Temperature (C°)	-87/-5	Density (gm/cm <sup>3</sup> )	3.933	Rotation Time (Earth Hours)	24.6	Satellites	5
Equatorial Diameter (km)	6,794	Orbit Velocity (in km/s)	24				

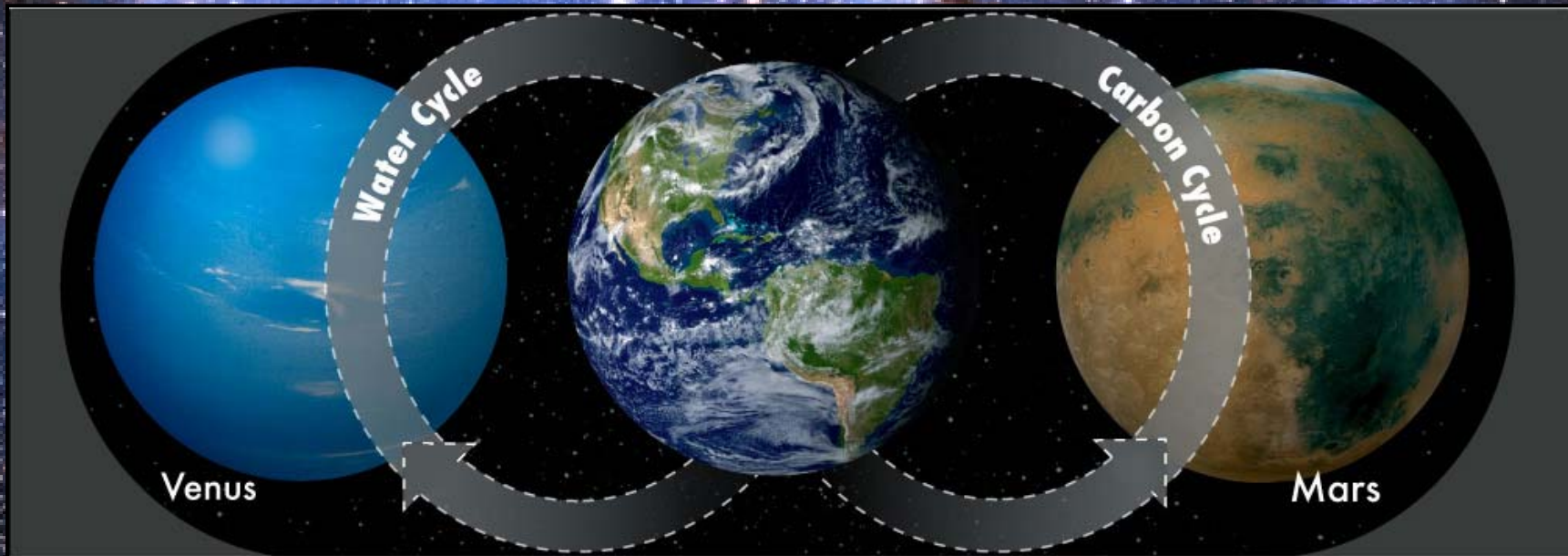
**MOONS**

Deimos      Phobos

**SATELLITES**

Mars Express      Opportunity/Spirit      Mars Global Surveyor      Mars 2001 Odyssey

# NASA Studies Planets...



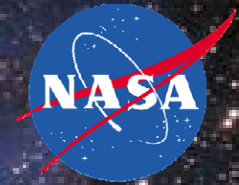
- Runaway greenhouse ::  
No water cycle to remove  
carbon from atmosphere

Earth  
*Harbor of Life*

- Loss of carbon ::  
No lithosphere motion on  
Mars to release carbon

...and None So Thoroughly as Planet Earth!

# *James Webb Space Telescope*



- **The James Webb Space Telescope is a large, infrared space telescope designed to study the earliest galaxies and some of the first stars formed after the Big Bang. Proposed launch date of August 2011.**

