

NOAA's Science On a Sphere®

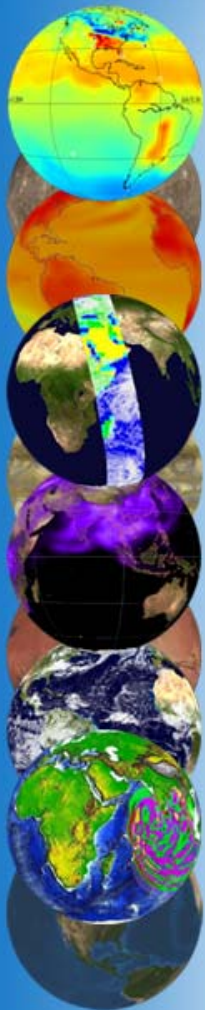
The Ideal Way to Display Global Data





Outline

- What is SOS?
- Why use SOS?
- An Example of SOS at work
- Requirement for SOS

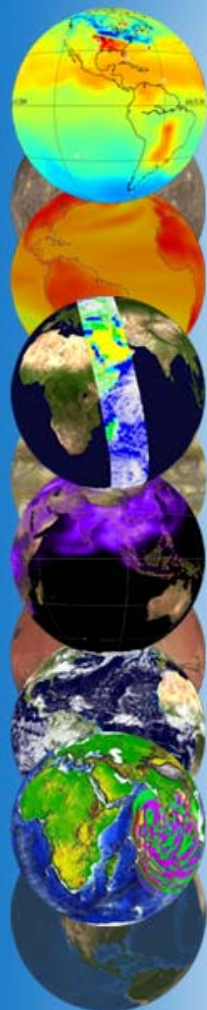




What is SOS?

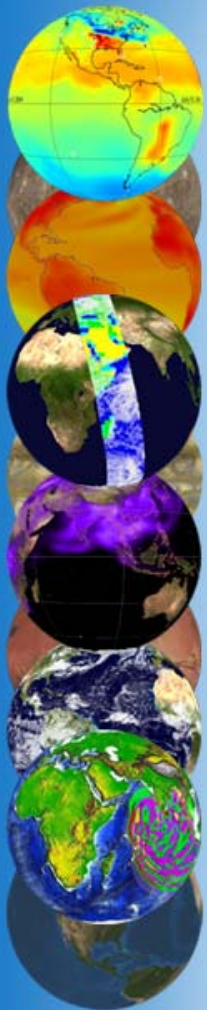
SOS is an interactive globe that can show dynamic, animated images of the atmosphere, oceans, and land of a planet. NOAA primarily uses SOS as an education and outreach tool to describe the environmental processes of Earth.

- 68 inch sphere
- Four projectors
- Five Linux-based computers





Science On a Sphere®

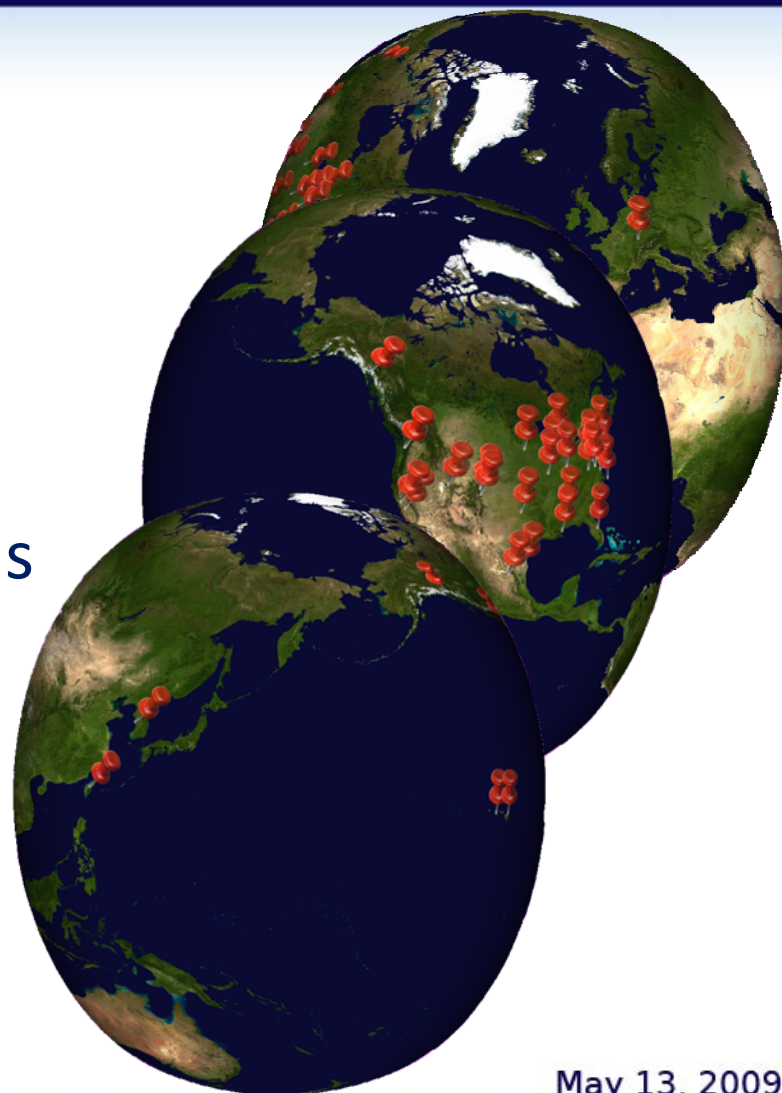
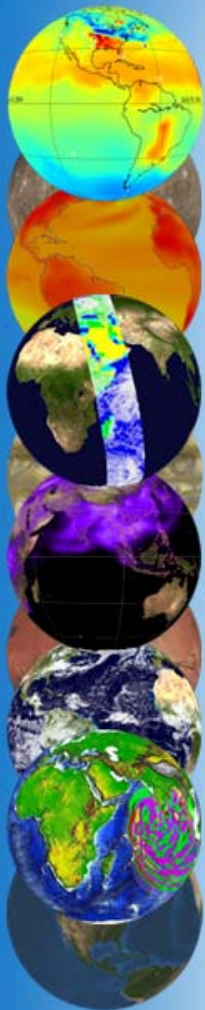


Science On a Sphere® at the Smithsonian National Zoo in Washington DC



SOS Locations

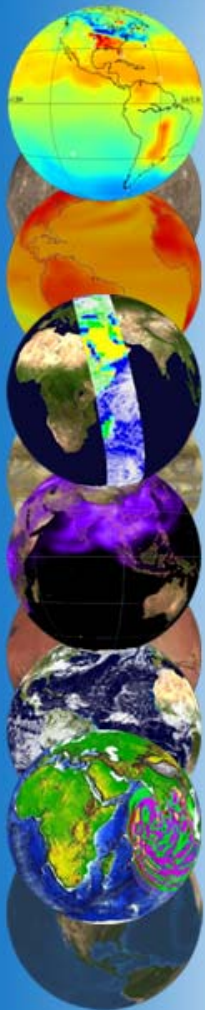
- First public installation of SOS in a science museum was in May 2005
- SOS is now installed in 36 permanent locations around the world, including museums, universities, planetariums and aquariums





Why SOS?

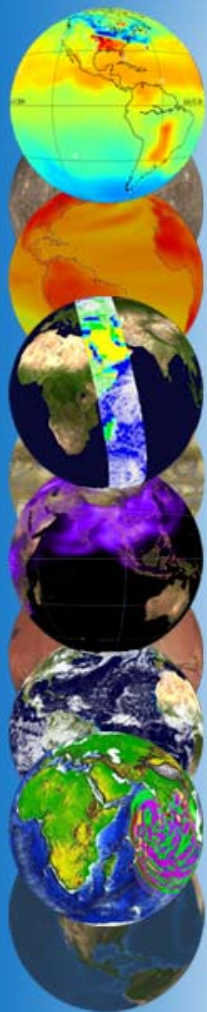
- SOS was invented by Dr. Alexander MacDonald, director of the Earth System Research Laboratory as a way to display global data
- SOS provides a platform for viewing global data in its native format – on a globe





Exposure for Earth Science

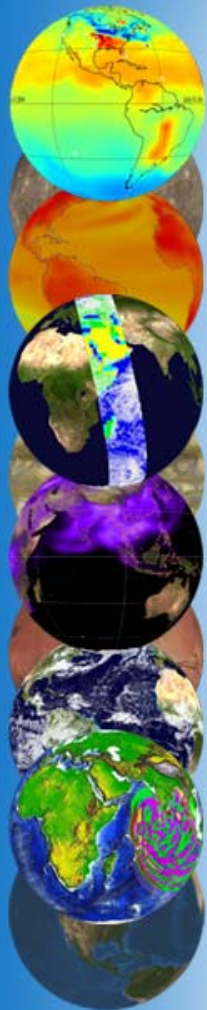
- With 36 installations, SOS is seen by over an estimated 12 million people yearly
- NOAA and other scientific agencies provide data and scientific expertise while the science museums provide a public forum for dissemination of ideas and audience-appropriate presentations





From the Inventor

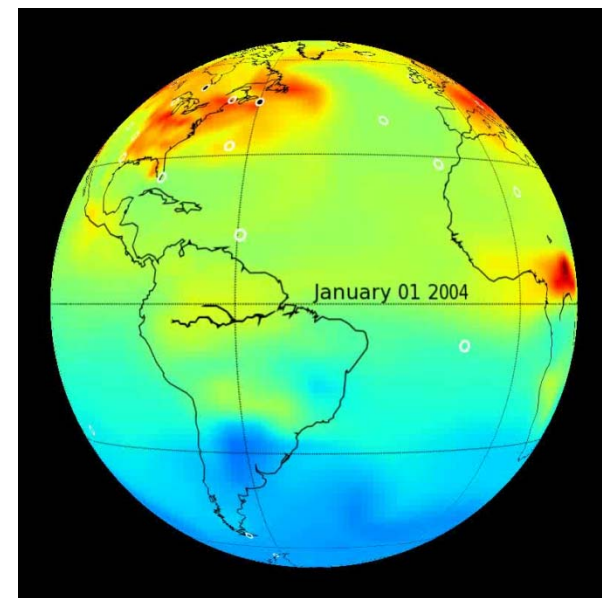
- “A big part of what I wanted for Science On a Sphere® is to show people what is happening on Earth. This is the most effective way to demonstrate the global crisis” – Dr. MacDonald in an interview for the Express in Washington DC





An Ideal Example

- CarbonTracker, developed by GMD, is one of over 250 datasets available for SOS
- Descriptions of the data are provided to SOS sites so that they are accurately presented

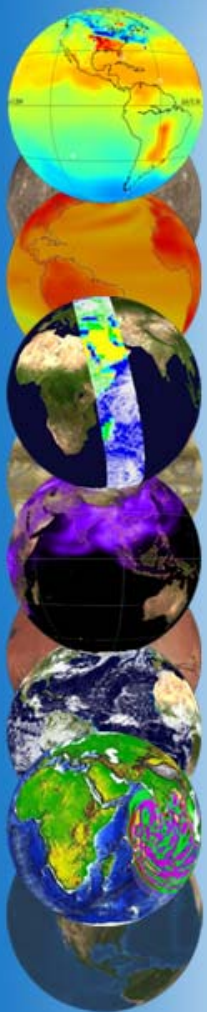


CarbonTracker as seen on SOS



Traveling SOS

- NOAA has a traveling SOS that is set up at conferences, meetings, and shows
- CarbonTracker was recently highlighted by NOAA presenters on SOS at the National Science Teachers Association Annual Meeting

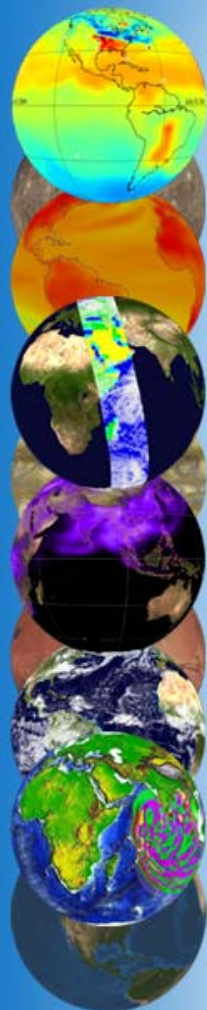


Science On a Sphere® traveling exhibit at the California State Fair in 2007



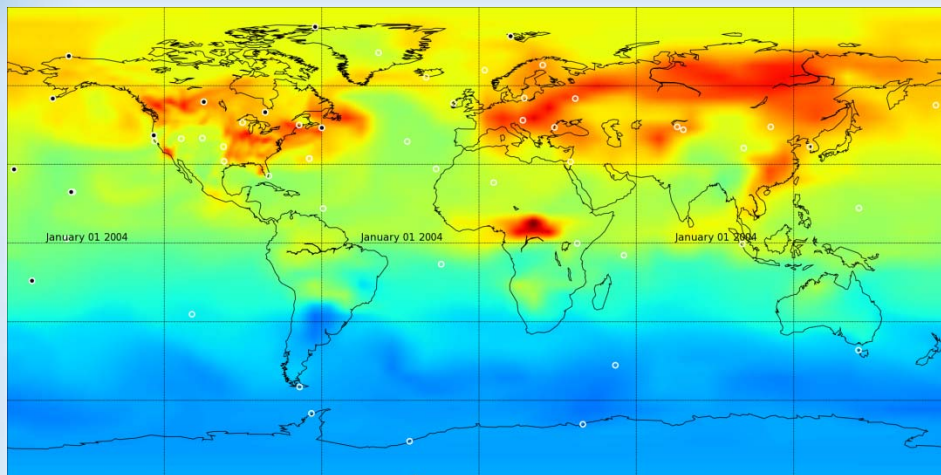
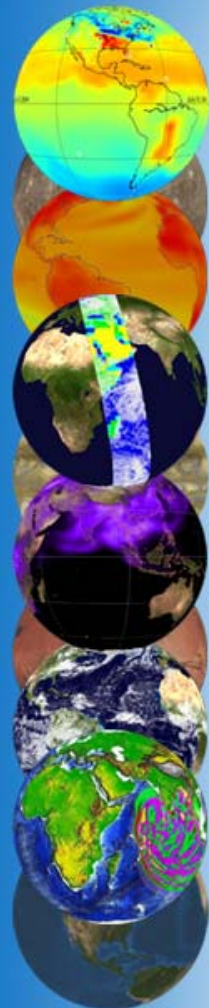
SOS Data

- NOAA SOS has collaborations with many branches of NOAA and other scientific agencies
- Have amassed a collection of over 250 global datasets with help from:
 - NOAA: ESRL, PMEL, GFDL, NESDIS, NWS, NMFS...
 - NASA GSFC and JPL
 - Universities, museums

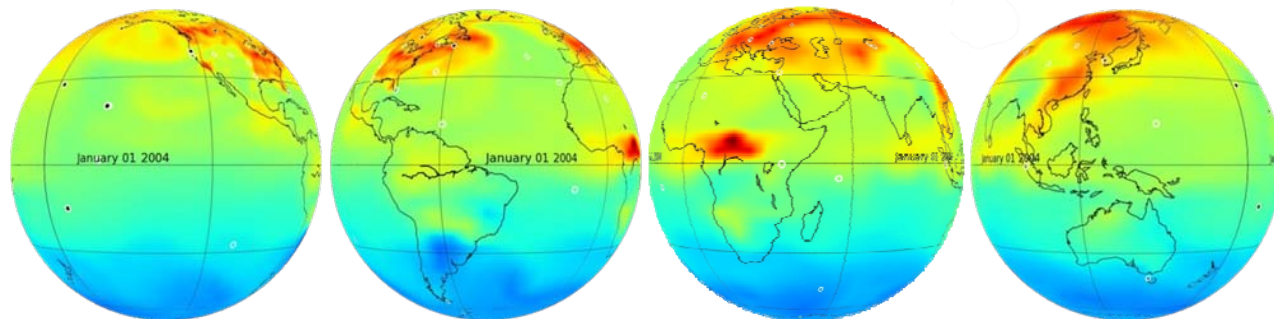




How SOS Works



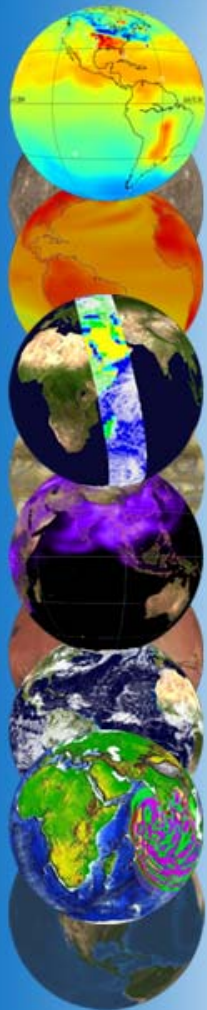
SOS software renders Lat/Long maps into four spherical images for the projectors to display





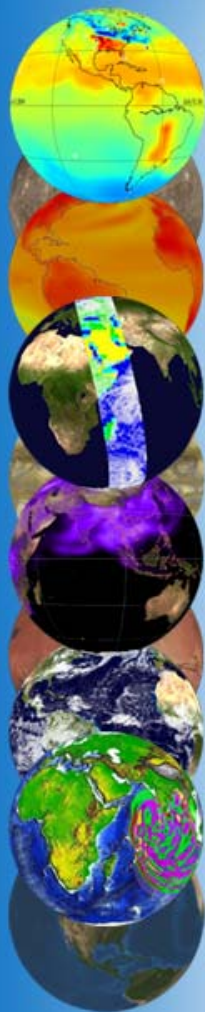
Data Details

- Single images are 4096x2048 jpeg or png files and animations are 2048x1024 mp4s or image sequences.
- Most of the SOS data is publically available on an SOS FTP site
- The online data catalog provides descriptions and credits for all of the data and links to the FTP site





Students and SOS

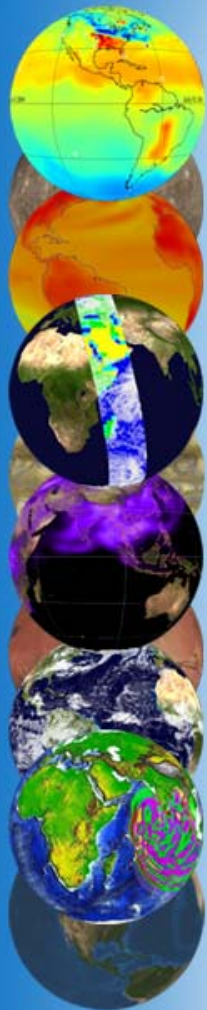


"School groups regularly visit the Earth System Research Laboratory (ESRL) to see Science On a Sphere (SOS) in the Planet Theater. Tom LeFebvre, of ESRL's Global Systems Division, is seen here giving a presentation of SOS to a class of captivated 5th graders. NOAA photo by Will von Dauster"



Survey Says...

- In a survey of students at the McWane Science Center in Birmingham, AL, 100% agreed that the Science on a Sphere[®] images made a complex topic more understandable and 82% agreed that they learned something new from the exhibit.

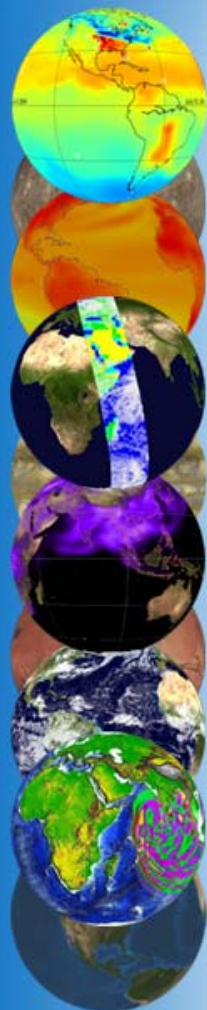


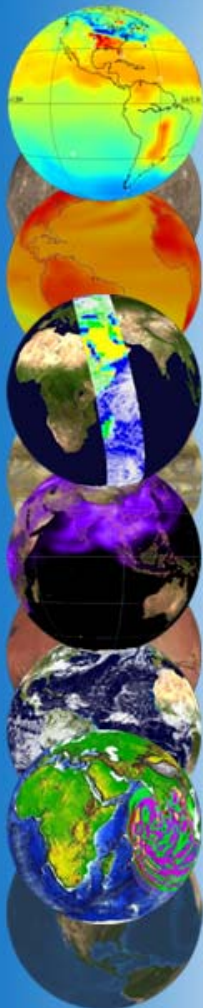


Always Expanding

- If you have global data that can be shared with the informal science education community to promote environmental literacy, please contact:

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QUESTIONS?

Thank You