



Updates from Boulder

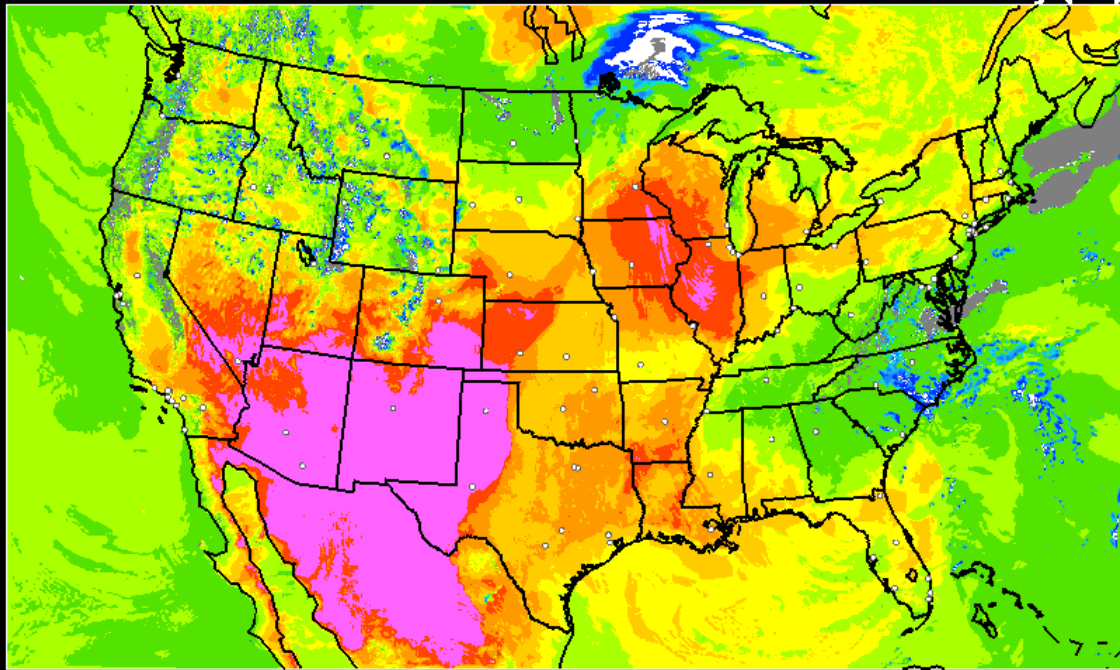
NOAA Boulder SOS Team

Making Forecasts Better

NOAA's Global Systems Division – Boulder, CO

HRRRX 04/24/2017 (16:00) 9h fcst - Experimental

Valid 04/25/2017 01:00 UTC
Sfc Visibility (mi)



5 1 2 3 4 5 10 15 20 30 40 50

We Predict the Future

GSD develops some of the greatest weather forecast models in the world

GSD's Experimental High Resolution Rapid Refresh Model

Making Forecasts Better

NOAA's Global Systems Division – Boulder, CO



We Use the Best of Big Data

GSD collects, uses, and distributes comprehensive meteorological data

NOAA's (GOES-16) Geostationary Operational Environmental Satellite

Making Forecasts Better

NOAA's Global Systems Division – Boulder, CO



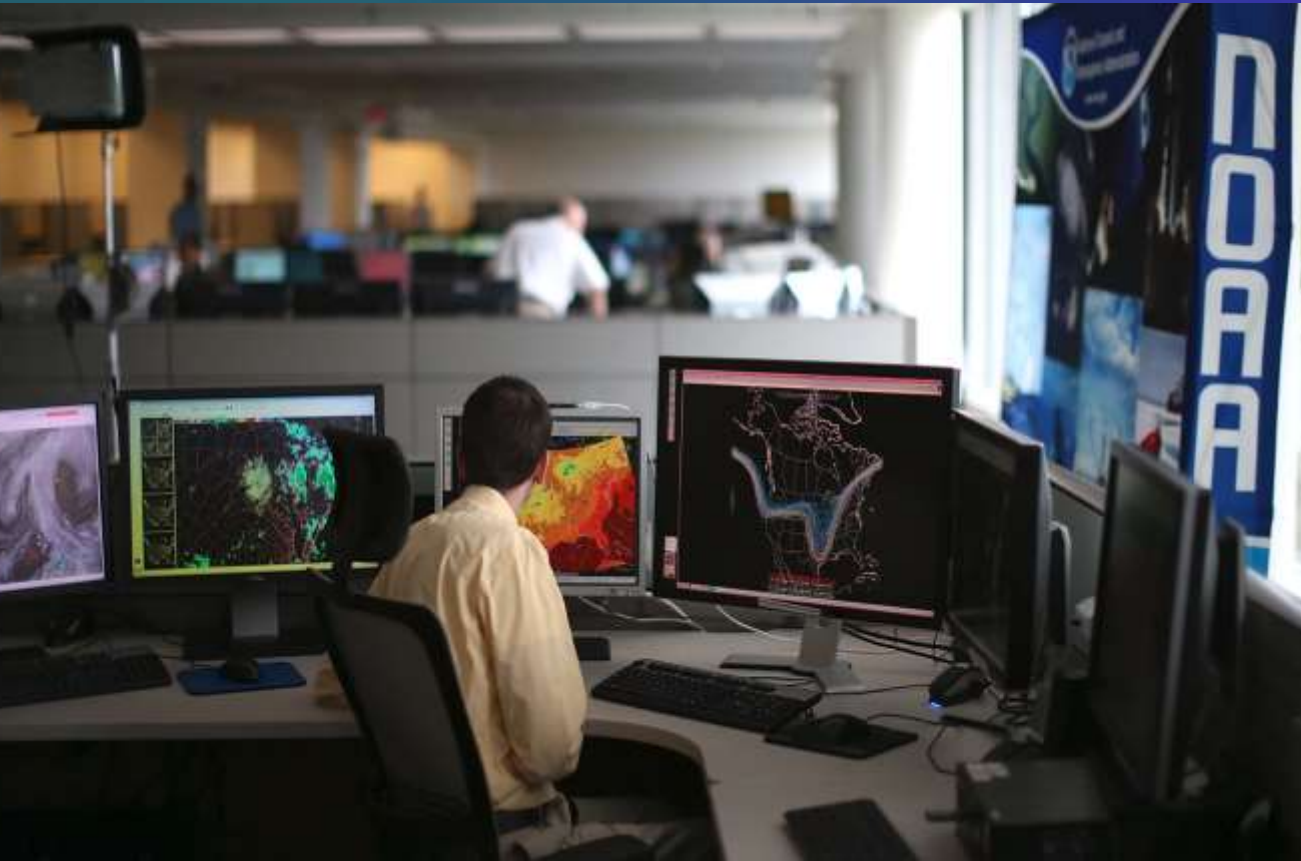
DOE's Titan Supercomputer System

We Design for the Fastest Computers in the World

GSD develops methods to get the most compute out of new and existing technology

Making Forecasts Better

NOAA's Global Systems Division – Boulder, CO



We Build Advanced Decision Support

GSD develops tools used by
weather forecasters and
emergency managers

NOAA's Advanced Weather Interactive
Processing System II (AWIPS II)

Making Forecasts Better

NOAA's Global Systems Division – Boulder, CO



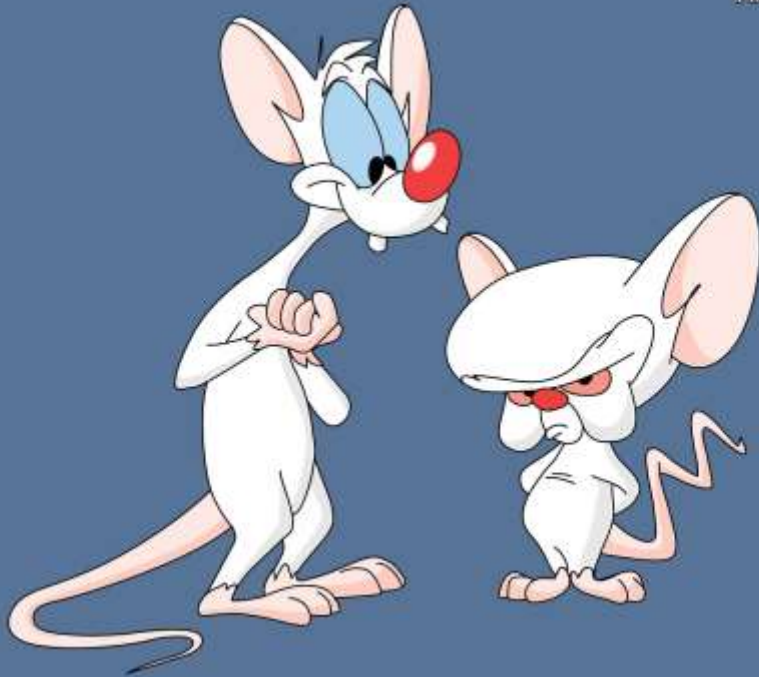
We Promote Science Understanding

GSD develops systems for those beyond sophisticated forecasters tools



22 years of the Science On a Sphere Idea And 10 years of SOS Network

1995 First concept SOS beach ball



2017

145 World Installations

64 International Installations (1st 2008)

500+ data sets in easy to use library (2006)

Ipad with Advanced controls (2008 Wii remote)

SOS Education Forum (quarterly in 2012)

Tech Advances:

Visual Playlist Editor

Text Picture in Picture

NOAA Public Kiosk

Translation/ Localization

4k support for SOS

NASA/BWC - Quick Deploy SOS system

4D Plus – SOS Explorer with Tour Builder



The SOS and SOS Explorer Teams

SOS Operations Manager

Beth Russell

SOS Development Team

Keith Searight

Vincent Keller

Ian McGinnis

Shilpi Gupta

Hilary Peddicord

Tony Liao

Stephan Kasica

Steve Albers

SOS Explorer Development Team

Eric Hackathorn

Jeff Smith

Jonathan Joyce

Jebb Stewart

Support Services

Vivian Lefevbre

Tanja Bruanagel

Angie Scheck



New and Upcoming Installs

New Installs since last workshop (December 2015)

15 New Installations

Five Countries

8 Completed by Distributors*

Upcoming Installs

Climate Planet APS, Aarhus, Denmark

NOAA Center for Weather and Climate Prediction

Morristown-Beard School, Morristown, NJ



Sanya Meteorological Bureau, Sanya, PRC*
Energy Science Center, Dhahran, Saudi Arabia
Macao Science Center, Macau*
Science City Kolkata, Kolkata, India*
National Science Centre, New Delhi, India*
Discovery Museum, Bridgeport, CT
JiangXi Weather Bureau, JiangXi, PRC*
Yan'an Science and Technology Museum, Yan'An City, PRC*
Spaceport Sheboygan, Sheboygan, WI
Fair Oaks Farms, Fair Oaks, IN
Nehru Science Centre, Mumbai, India*
Kalamazoo Valley Museum, Kalamazoo, MI
National Media Museum, Bradford, UK
Keesler Air Force Base, Biloxi, MS*
Santa Fe Community College, Santa Fe, NM



New Configurations



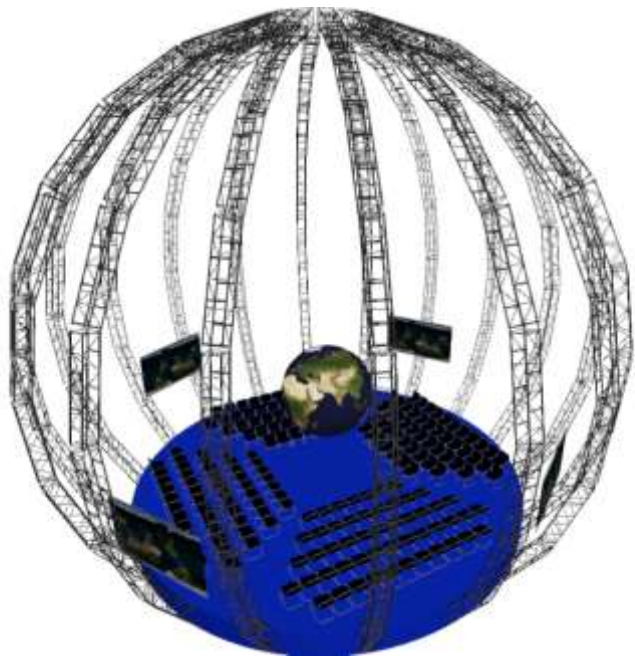
Kalamazoo Valley Museum
2 Projectors with a sphere in the corner



North Carolina Aquarium at Roanoke Island
2 Projectors with a hemisphere



Different Sizes Now Available



4 m sphere inside a 25 m sphere!



4 ft sphere in a small room



Website Changes

Product Suite



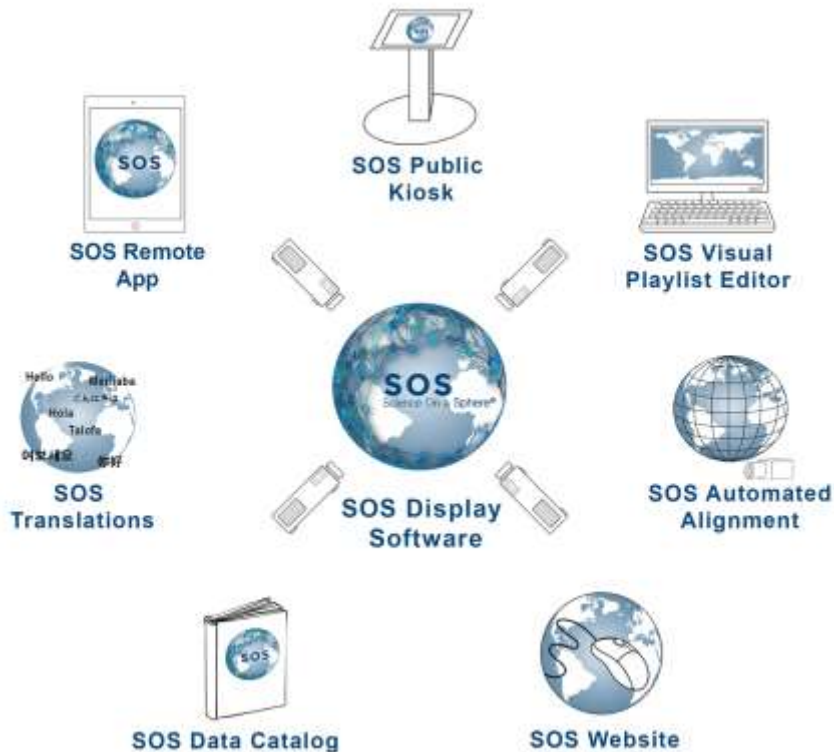
New look and feel to Support Page

Documentation

New documentation that lets you view the manuals as either HTML pages or PDF files

Data Catalog Navigation

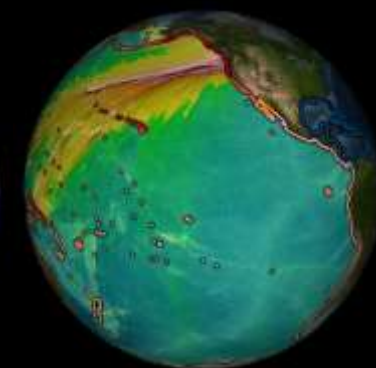
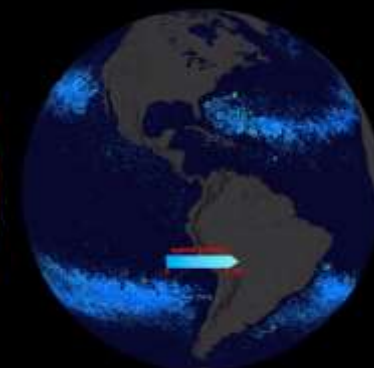
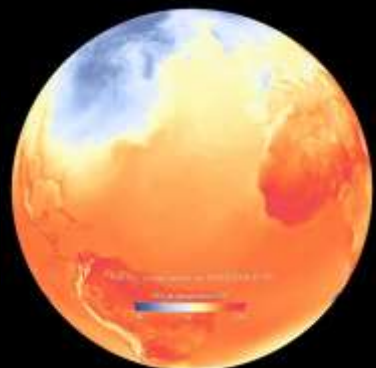
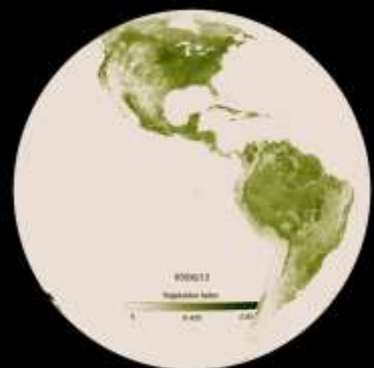
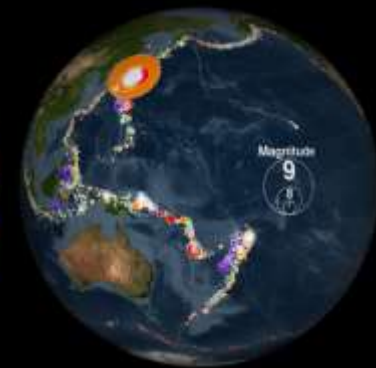
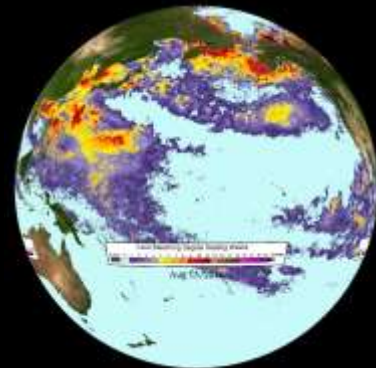
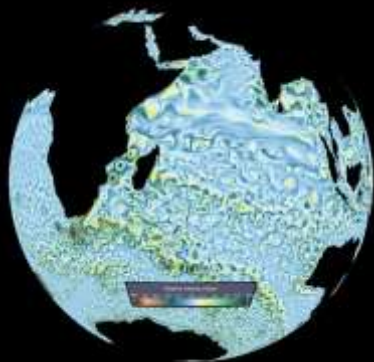
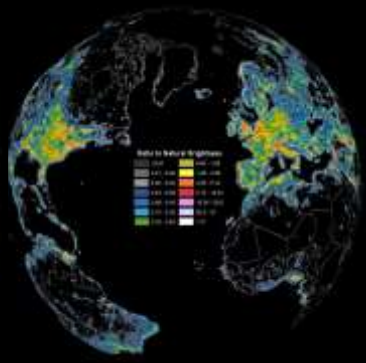
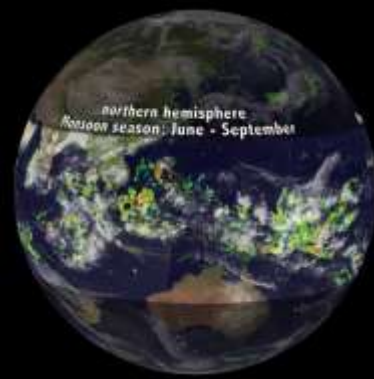
New URLs from the data catalog let you send your search results and applied filters to others





New Datasets

70 New Datasets since the December 2015 Workshop





SOS in Social Media

Come to the Best Practices in
Social Media talk today at 1:00

New! Follow us on Instagram!





Update from SOS Dev Team

What's new in the SOS Product Suite

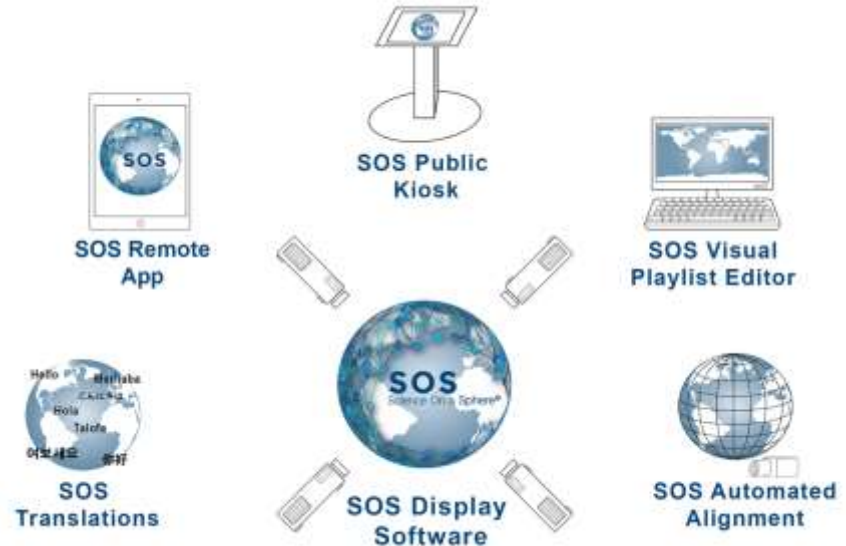
Overview in this presentation

Live demos, details, and discussion in later sessions

What's New in the SOS Product Suite Tues
@ 4pm on both the Zoo Sphere and in Classroom 3/4 (switch at 4:30pm)

SOS Visual Playlist Editor Tutorial Thurs
@ 10:30am in Classroom 1/2

SOS Product Suite: Feedback and Future Direction
Thurs @ 1pm in Classroom 1/2
Bring your wish list!





Newest Software Releases

Since OMSI Workshop in Nov 2015

Version	Release Date	Selected Highlights
5.1	Aug '16 (Kiosk: Jul '16)	Ubuntu 16.04 support, presentations in VPLE, custom overlays, numerous fixes & enhancements
5.1.x	Aug - Nov '16	Important fixes for different products
5.2	Apr '17	Text PIPs, iPad PIP/overlay controls, Projector Controller, numerous fixes & enhancements



Getting SOS Products

What We Do and How You Get It

System	Products	NOAA Release	SOS Site Installation
Linux	SOS, Playlist Editor, Utils	Build “debian” packages	Run Ubuntu's APT (Advanced Packaging Tool), which pulls packages from the SOS website
iOS	Remote App	Build & upload app to Apple for approval	Use App Store app to get & install on iPad, which downloads from Apple
Windows	Public Kiosk	Build installer	Download installer to Kiosk from SOS web link & run it



Display Software

SOS 5.1.0+ requires Ubuntu 16.04

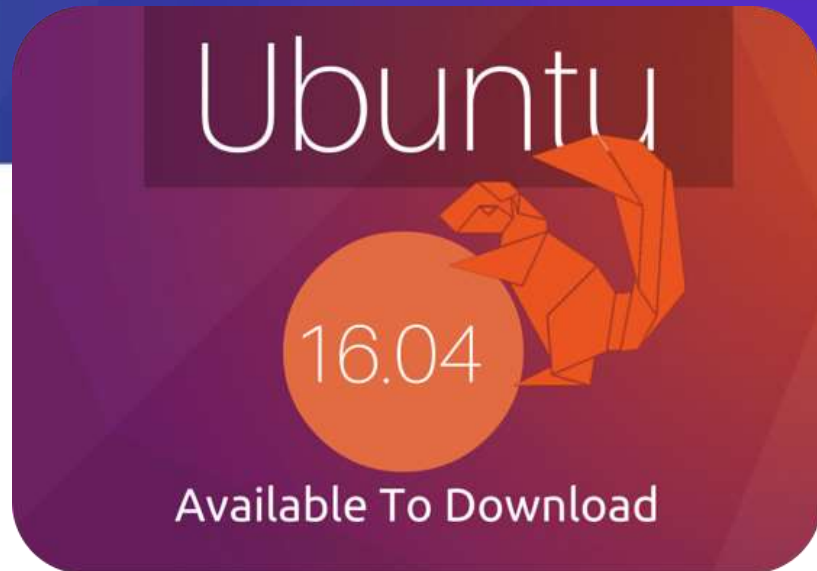
Patches for security vulnerabilities.

New hardware support (Graphics Card drivers)

Continued 4K research

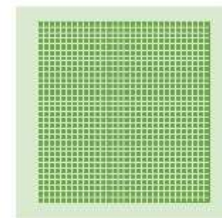
Hardware (Projectors / Graphics Cards)

In progress: moving more computation from CPU to graphics card (shaders).



CPU

4-8 High Performance Cores



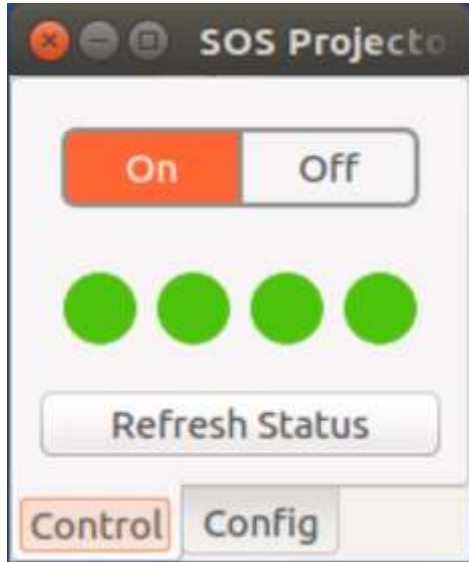
GPU

100s-1000s of bare bones cores

What's New in the SOS Product Suite (Tues @ 4pm)



Projector Control



- Handles multiple projector protocols (PjLink / PjTalk)
- Protocols may be heterogeneous
- Shows status of each projector
- Easily configurable
- Available to both 5.1 and 5.2 via Ubuntu Software manager



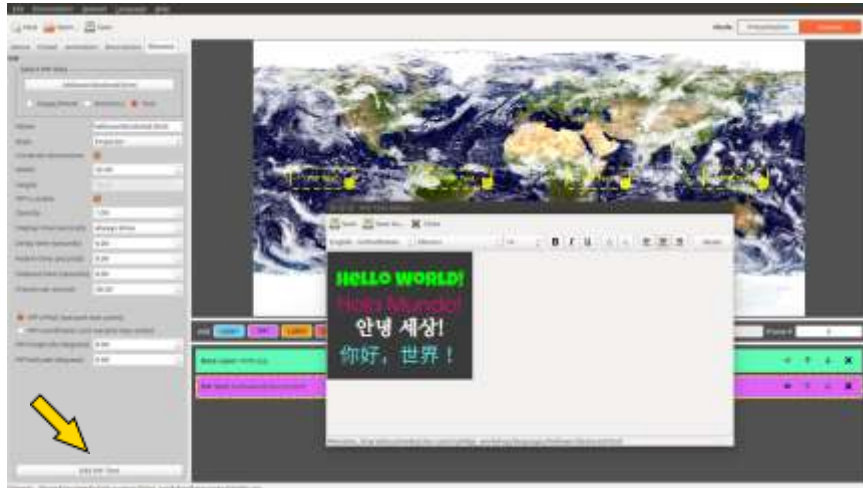
Visual Playlist Editor

- Presentation mode
- Catalog / Site-Custom searching
- Dataset descriptions
- Presentation playlist summary (icons and dataset names)
- Exporting presentation playlists, datasets, and presentation notes
- Text PIP support

What's New in the SOS Product Suite (Tues @ 4pm)
SOS Visual Playlist Editor Tutorial (Thurs @ 10:30am)



Text PIPs



- Create text for SOS using simple text editor
- Text auto-scales for optimal resolution
- Same functionality as normal PIPs
- Support for multiple languages



What's New in the SOS Product Suite (Tues @ 4pm)
SOS Visual Playlist Editor Tutorial (Thurs @ 10:30am)



Remote App (iPad)

- Individual control of PIPs
- PIP and Overlay groups



- Quick reload of current presentation



What's New in the SOS Product Suite (Tues @ 4pm)



Alignment

Auto Alignment

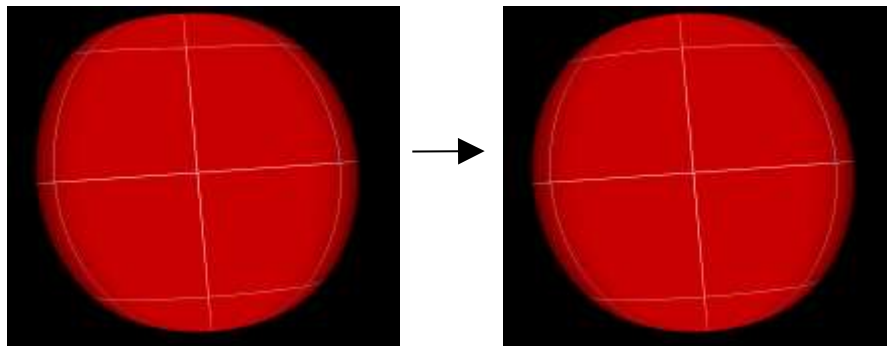
No longer an experimental feature!

Provides a good first-pass alignment



Other Alignment Features

Vertex Resetting





Public Kiosk

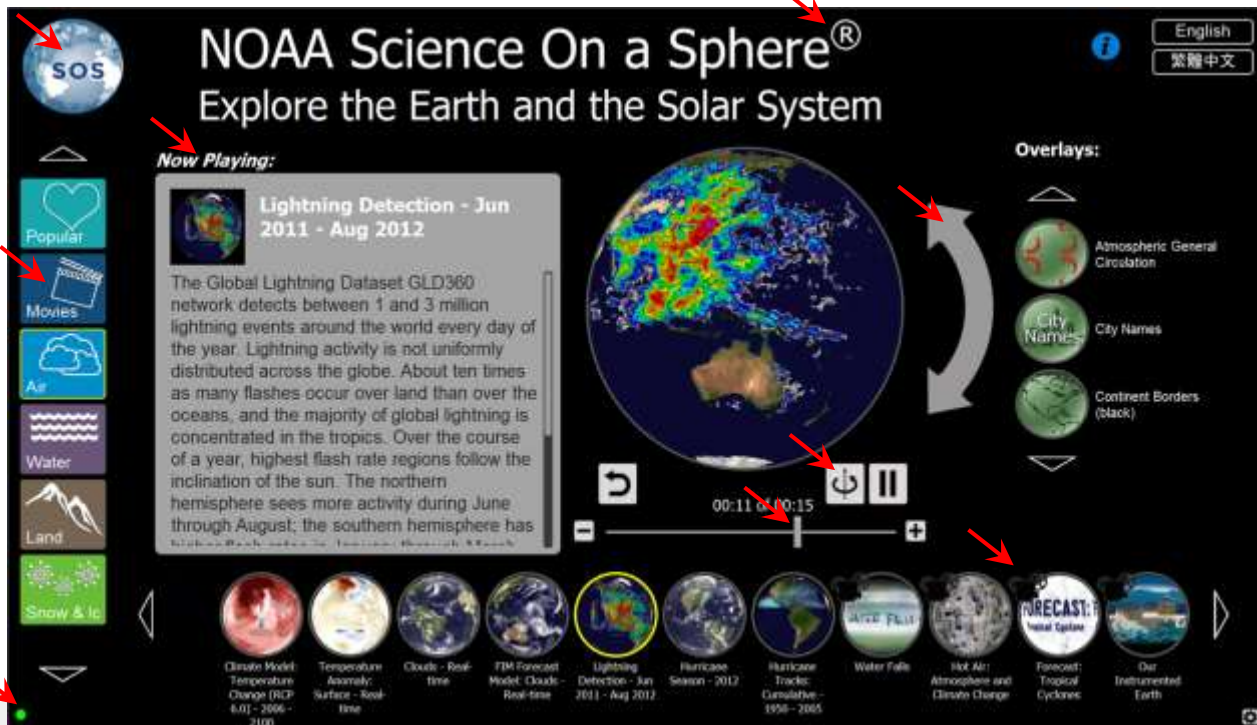
Kiosk Stats

- 17+ unique requests
- 3rd major release

Latest Improvements

- UI & controls
- Trackball sync
- File transfer w/ SOS
- More customization

What's New in the SOS Product Suite (Tues @ 4pm)
Greater stability





Translations / Localization

What's Supported

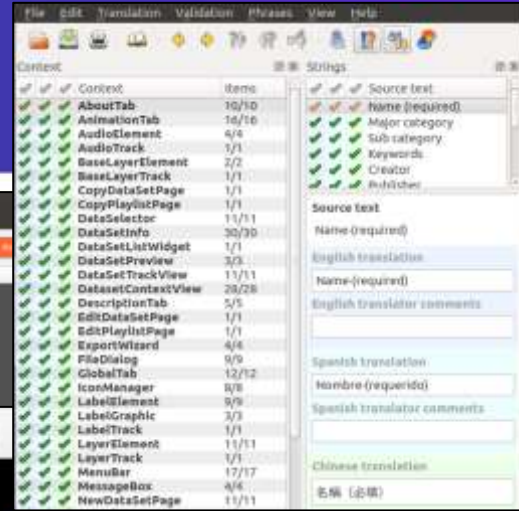
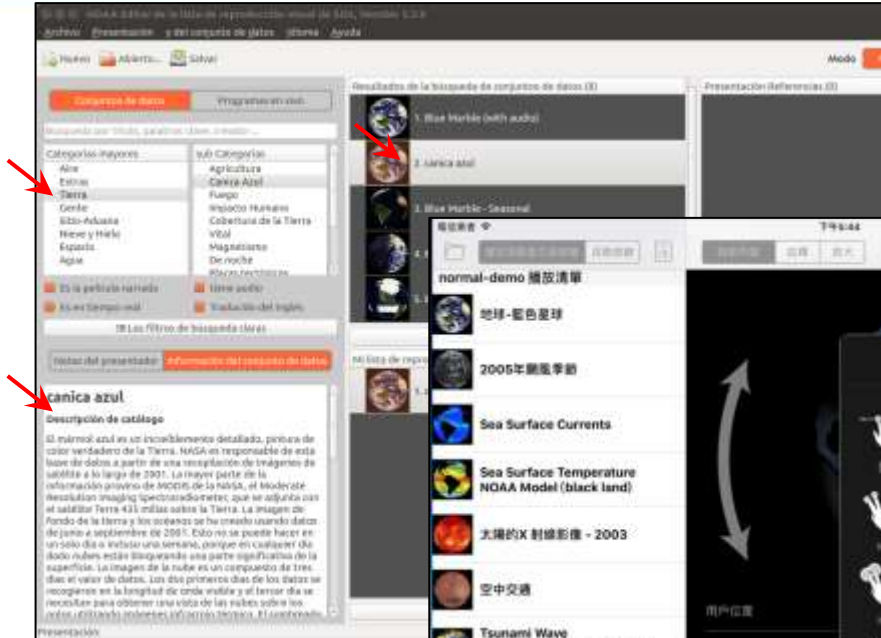
UIs: Kiosk, Playlist Editor, Remote App

Catalog: name, descriptions, categories, keywords

Tools
Qt Linguist

Spreadsheets

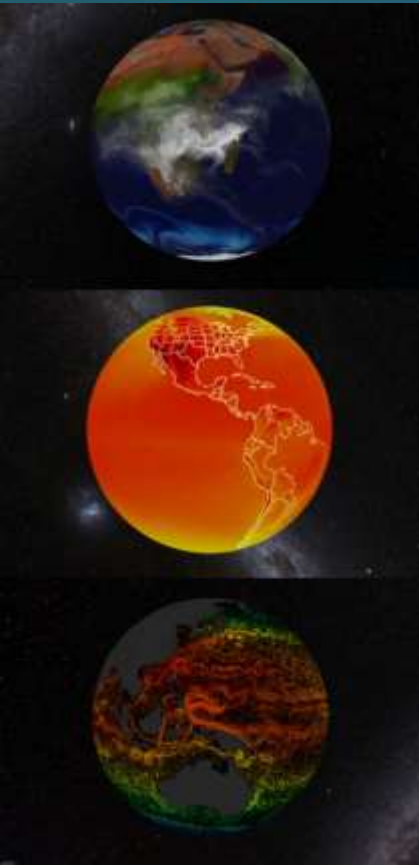
Seeking Collaborators. Ask Me!





SOS Explorer

SOS Explorer™ (SOSx) is a flat screen, interactive, and portable version Science On a Sphere (SOS).





Ideal for Variety of Settings

User Interface: Single-screen (mouse & keyboard), multi-screen, touchscreen

Display: Projector, video wall, touchscreen

Server: Laptop or desktop

Settings: Museums, conferences, classrooms...

Installations: Columbia River Maritime Museum, Mote Marine Laboratory, EcoExploratorio, Climate Planet APS, Nurture Nature Center





Methods of Interaction



Catalog Browsing



Self-Guided Tours



First Person Experiences

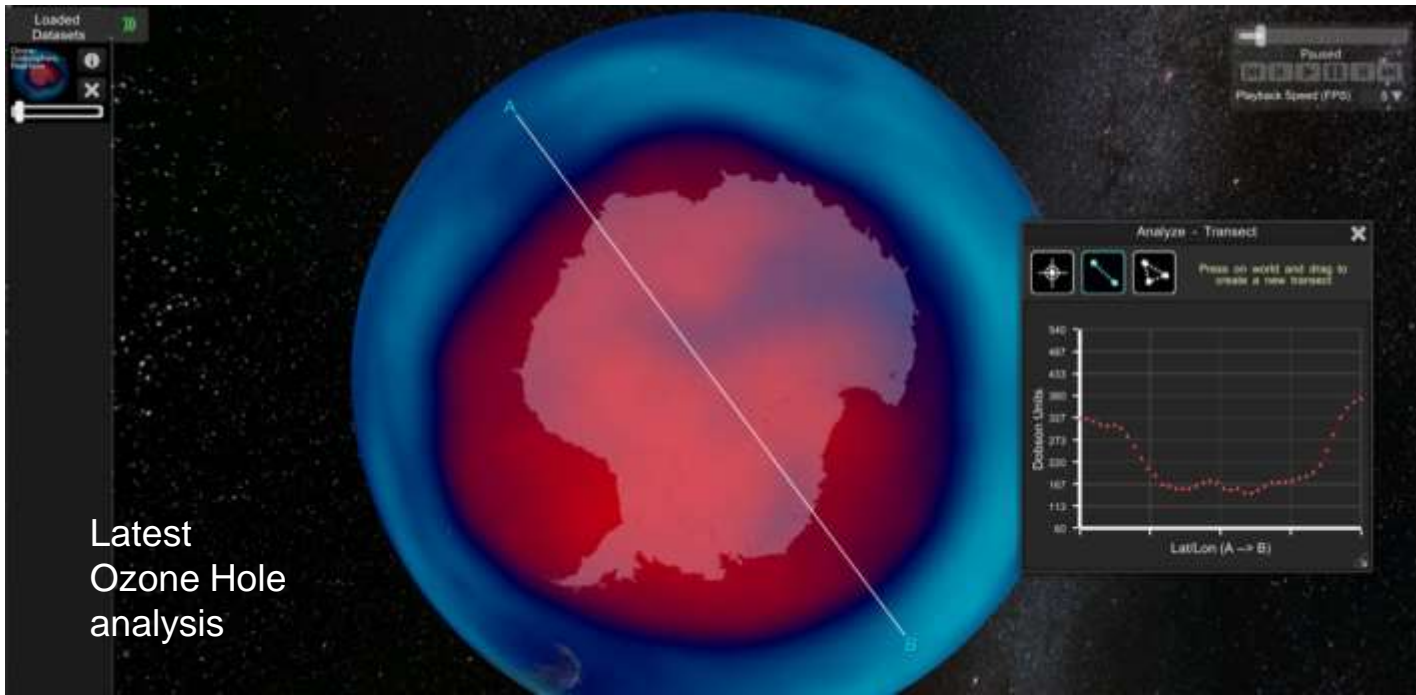


Maximum Interactivity



Dig Deeper with Analysis Tools

SOSx comes with analysis tools to easily measure, probe, and plot data from the visualizations. The plots animate through time along with the visualizations.





Data Catalog

Over 115 SOS datasets and...

- + First Person Experiences: Moon Walk, Underwater Ocean Adventure, Tornado
- + Space & Atmosphere: Real-time Satellite Positions, Saturn's Rings, Sun's Corona
- + 3-D Models: Whale Migration, Real-time Satellite Models, Real-time Cruise Ships





SOSx Lite

Free downloadable version of SOSx
sos.noaa.gov/sos-explorer/download-sos-explorer-lite/

Update coming this summer

Great for Teacher PD

Available to promote/teach at your
workshops





SOS Explorer What's Next

Upcoming efforts include:

- + Virtual Reality
- + Beyond the Surface of the Sphere
- + Experiences
- + Performance and Stability



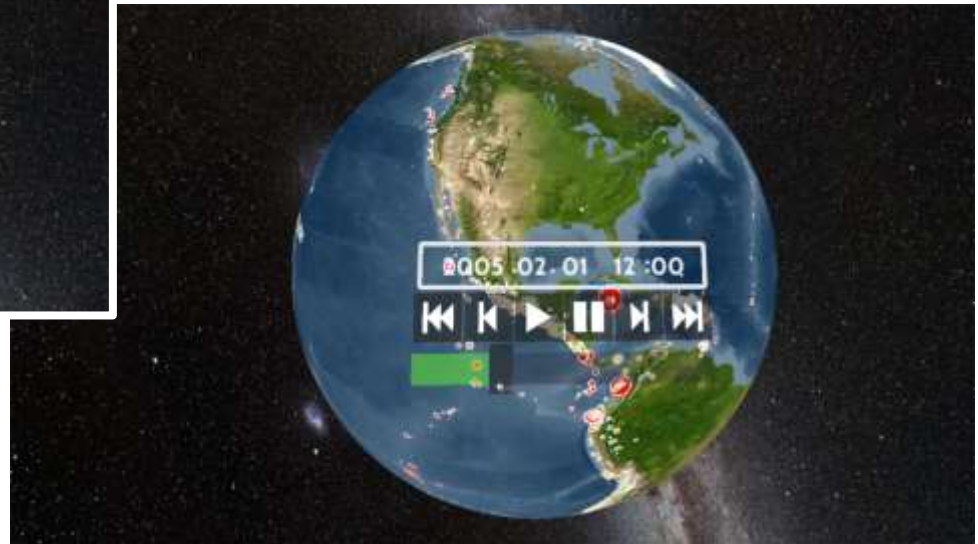


Virtual Reality



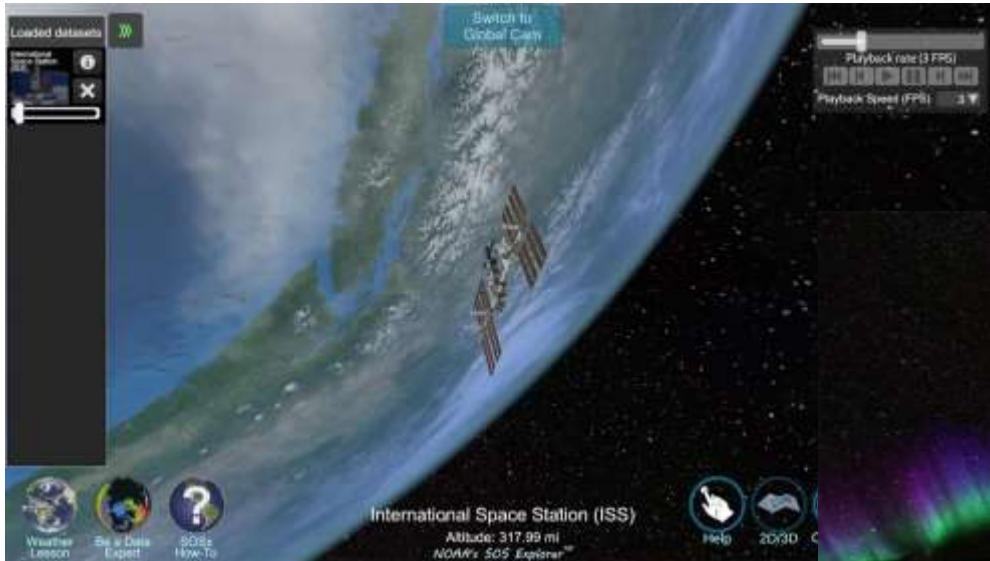
Searching for datasets via a “Minority Report” style hand interface

Animating a dataset using a floating interface





Beyond the Surface of the Sphere



The International Space Station in its correct orbit

The aurora from space





Experiences



Before and after pictures of a tornado's destruction



Tornado safety video



Questions??

