



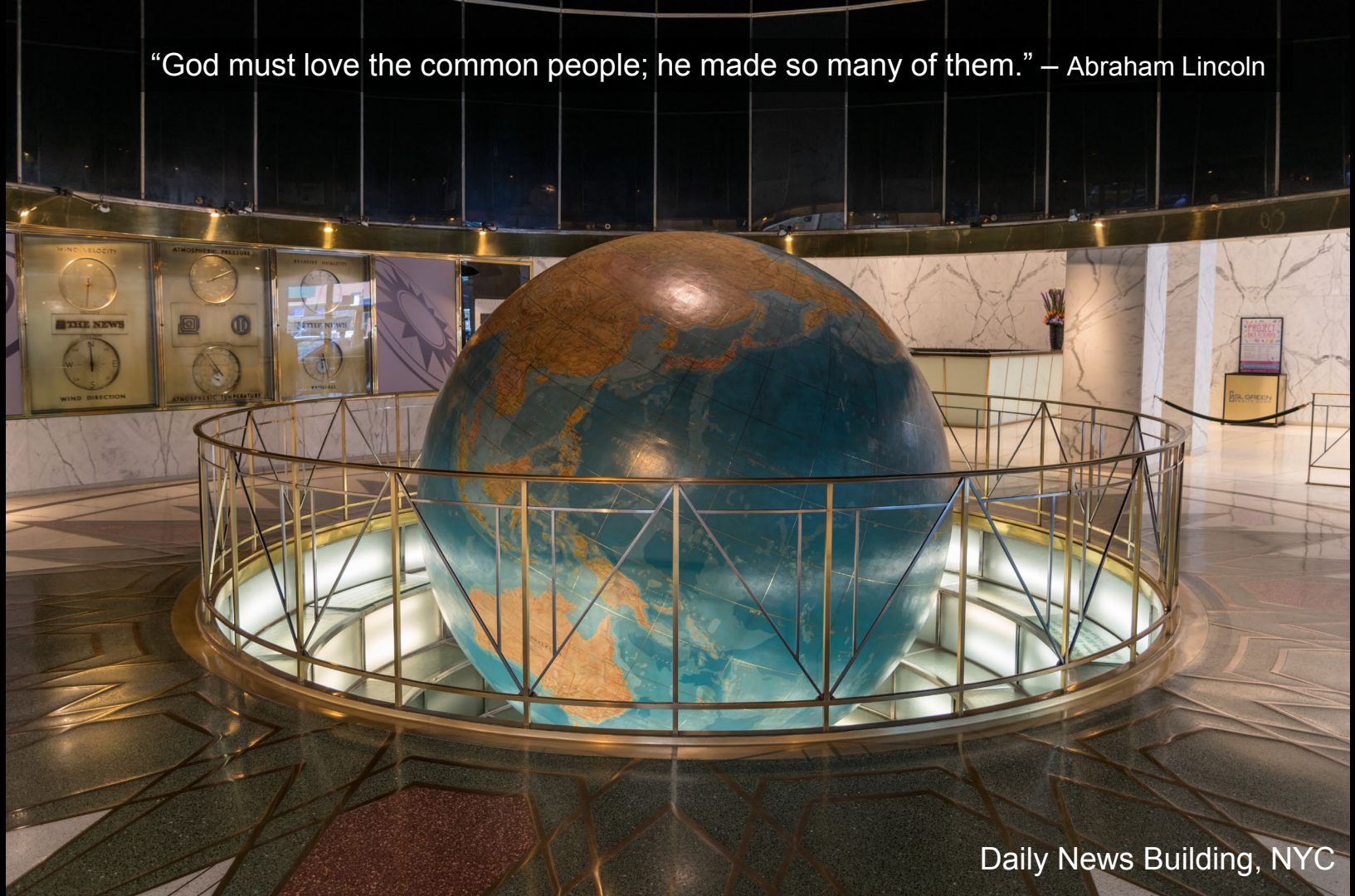
Updates from Boulder

NOAA Boulder SOS Team

November 27, 2018
SOS Users Collaborative Workshop

Science City
Kansas City, MO

“God must love the common people; he made so many of them.” – Abraham Lincoln



Daily News Building, NYC

NOAA's SOS and SOS Explorer Teams

Informatics, Visualization and Outreach Section

Jebb Stewart * - Section Lead

SOS Development Team

Keith Searight * – SOS System Dev Lead

Beth Russell * – SOS Operations Manager

Alex Kirst * – New – SOS Field Support and Dev

Ian McGinnis * – SOS Field Support and Dev

Hilary Peddicord * – SOS and SOSX Education Lead

Shilpi Gupta * – SOS Dev and Lead Ipad Dev

Evan Sheehan * – New – Web Dev and Support

Tony Liao – Kiosk and Asian Support

SOS Explorer Development Team

Eric Hackathorn * – SOSX Dev Lead

Jeff Smith – SOSX Dev

Jonathan Joyce – SOSX Dev

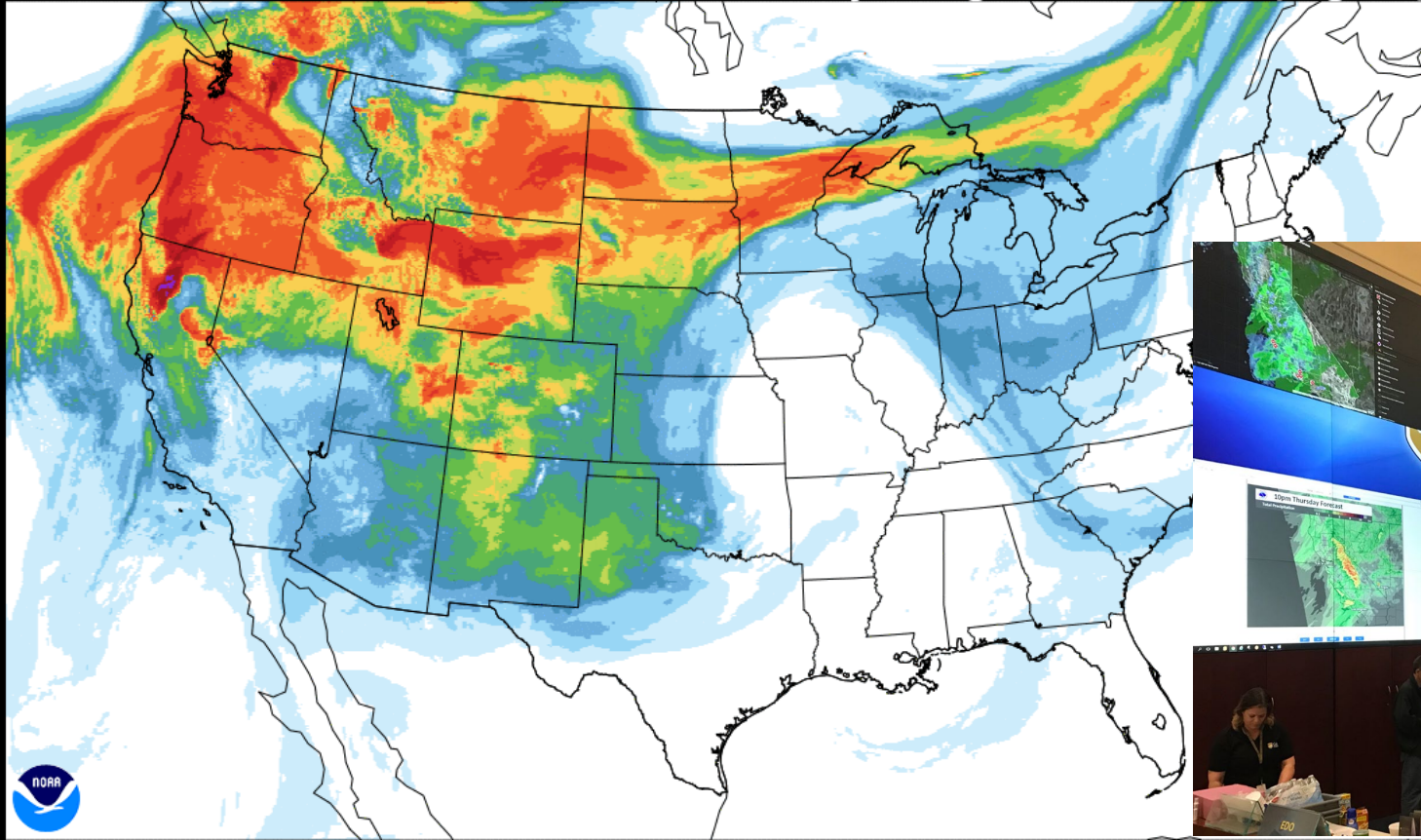
Support Services

Vivian Lefevbre – IT Support

Tanja Braunagel - Admin

Angie Scheck - Budget

HRRR-SMOKE 2018-08-15 06 UTC 0h fcst - EXPERIMENTAL Valid 08/15/2018 06:00 UTC
Vertically Integrated Smoke (mg/m²)



GSD Web products in use in California EOC




2 5 8 11 15 20 25 30 40 50 75 150 250 500

Feedback

Augmented Reality on the SOS
Content Building for SOS
SOS Explorer Mobile





“God must love the common people;
he made so many of them.”
— Abraham Lincoln

Liberty Science Center, Jersey City, NJ



New and Upcoming Installs

New Installs since last workshop (April 2017)

- 15 New Installations →
- Five Countries
 - Australia!
- 7 Completed by Distributors*

Upcoming Installs

- Orange Coast College
- Michigan State University
- Distributors busy at work around the globe!

Climate Planet, Aarhus, Denmark
Morristown-Beard School, Morristown, NJ
KSBB Biodiversity Museum, Trivandrum, Kerala, India*
National Center for Weather and Climate Prediction, MD
Raman Science Center, Nagpur, India*
The Regional Science Centre, Guwahati, Guwahati, India*
Liberty Science Center, Jersey City, NJ
Shrikrishna Science Centre, Patna, India*
MOD. at the University of South Australia, Adelaide, Australia
Second Institute of Oceanography, Hangzhou, PRC*
Marine Education Center, Ocean Springs, MS
Zhongdiantou Power Engineering Co., Ltd, Shanghai, PRC*
American Airlines C.R. Smith Museum*
Queensland Museum, Brisbane, Australia
Plantation Key School, Tavernier, FL



Supersize SOS



Climate Planet

A touring SOS in Europe!



SOS in Social Media

The screenshot shows the Facebook profile for NOAA Science On a Sphere. The header includes the NOAA logo and navigation links like Home, Find Friends, and Settings. The main content area features three large images: a globe on a stand, a person presenting at a podium with a globe on a screen, and a laptop displaying a globe. Below these images are buttons for 'Science On a Sphere', 'SOS Explorer', and 'SOSx Lite'. A 'Learn More' button is also present. The page shows a rating of 4.7 out of 5 based on 701 reviews. A post section is visible with a 'Write a post...' field and various sharing options. A recent Instagram post is shared, featuring a promotional image for 'FREE SOSx Lite 2.0 Download Available Now!'.

Follow us on Instagram and Facebook for announcements about new and timely datasets!

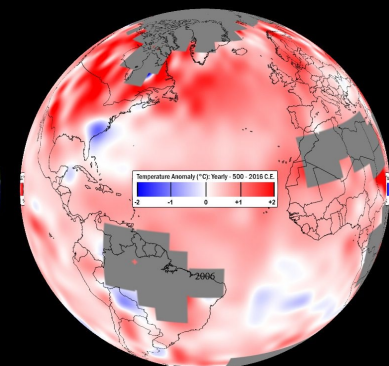
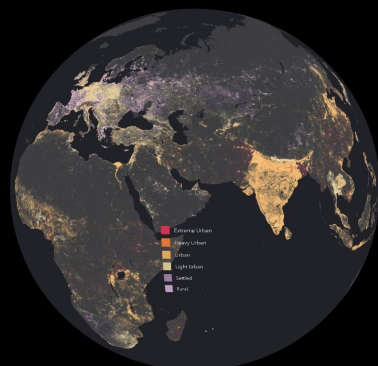
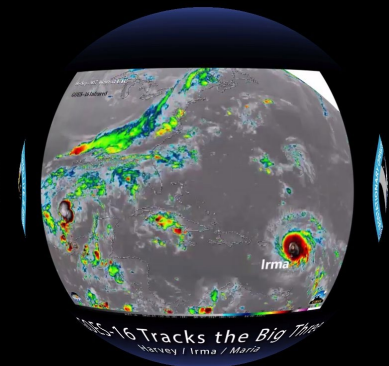
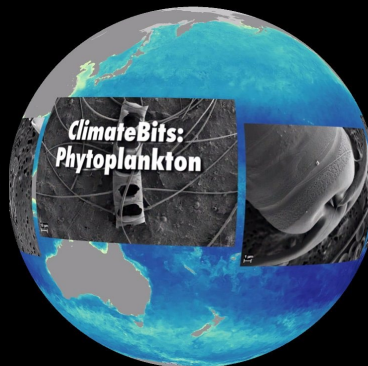
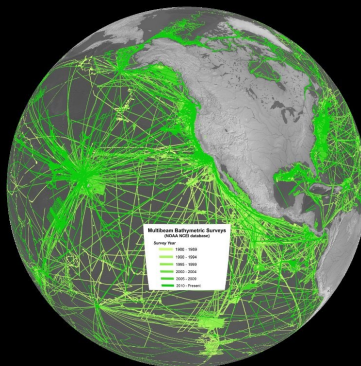
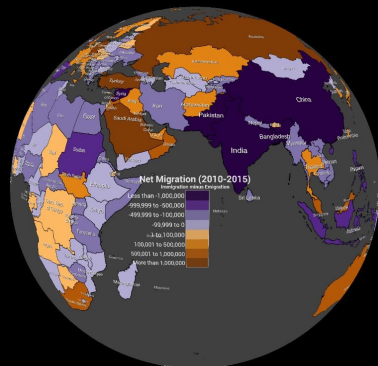
The screenshot shows the Instagram profile for scienceonasphere. The profile name is 'scienceonasphere' with a verified badge. The grid displays 12 circular images, each showing a different view of Earth or space, including the moon, various satellite imagery, and data visualizations. The bottom navigation bar shows the standard Instagram icons: home, search, post, activity, and profile.



New Datasets

Check them out Thursday afternoon!

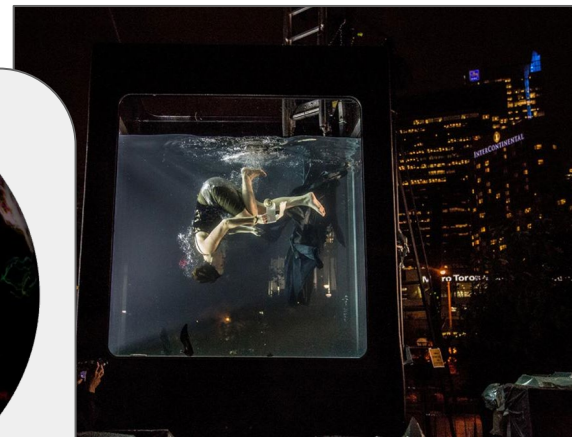
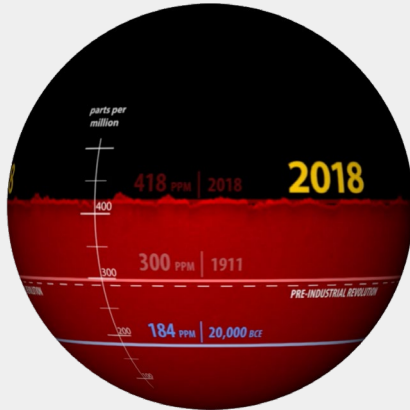
26 New Datasets since the April 2017 Workshop





Upcoming Dataset

- Collaboration between EcoArts Connections and NOAA SOS (Boulder)
- Grant through National Endowment for the Arts (NEA)
- Feb 2019: 5-min SOS film by artist **Lars Jans**, based on his work *Holoscenes*





Update from SOS Dev Team

What's new in Science On a Sphere®

- Overview in this presentation
- Live demos, details, and discussion in later sessions



SOS Product Suite: Feedback and Future Direction

Thurs @ 1:30pm in Arthur Stillwell Room

Join us and bring your wish list!



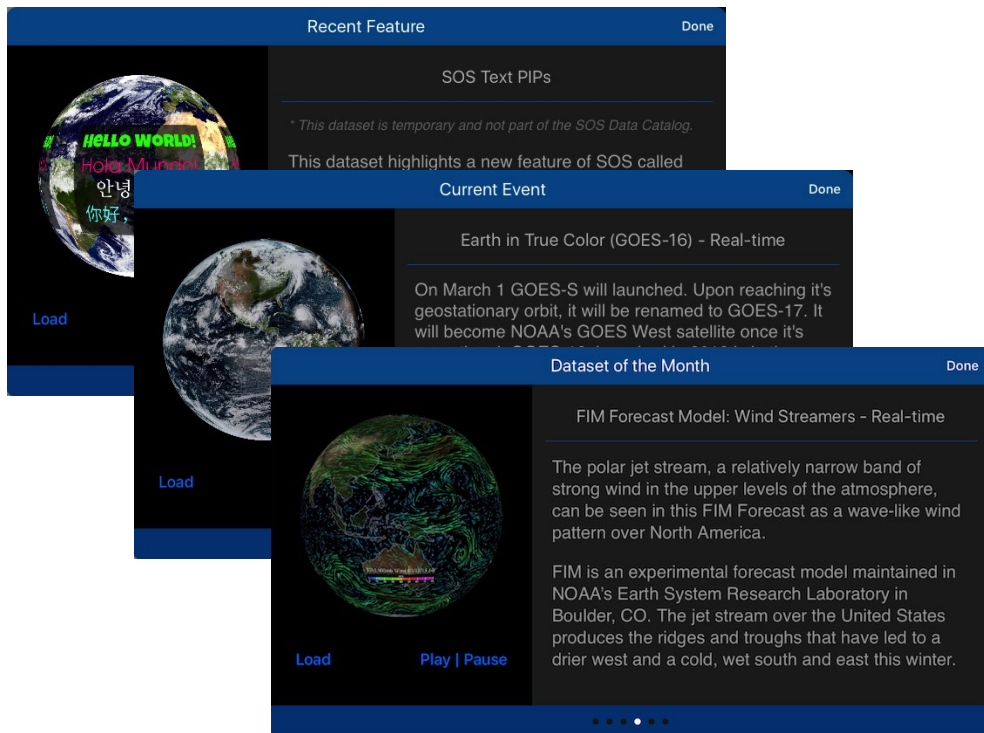
Newest Software Releases

Since Detroit Zoo Workshop in April 2017

Version	Date	Highlights
5.3	Feb. 2018	Spotlights, formatted labels, better security
5.3.1	Apr. 2018	Stability fixes for SOS display software
5.4	Nov. 2018	Moving PIPs, captions



Spotlights



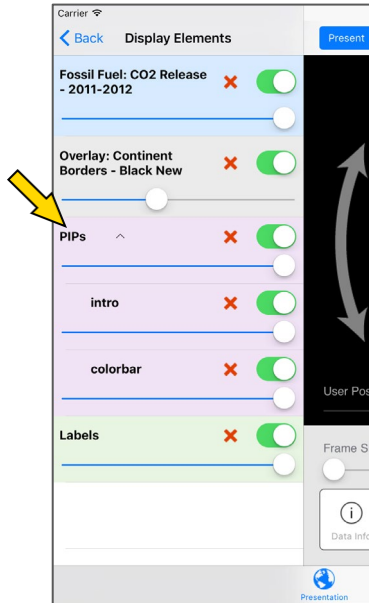
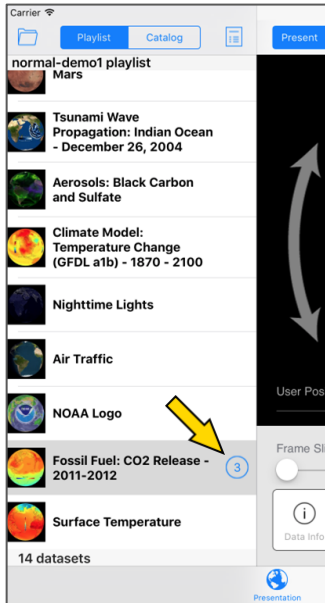
Spotlighting the Spotlight

Wed @ 11:00am in SOS Room

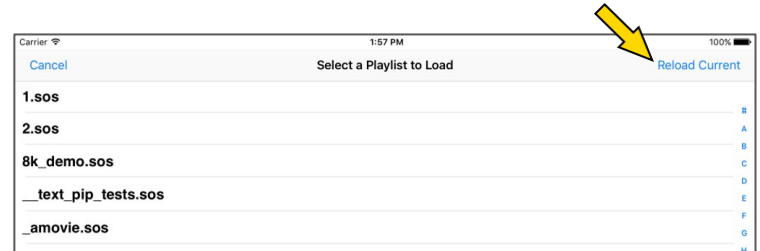
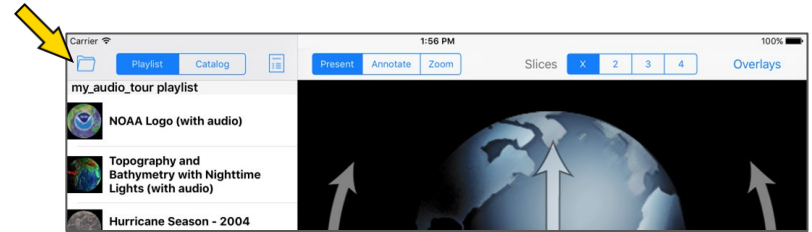


Remote App (iPad)

- Individual control of PIPs
- PIP and Overlay groups



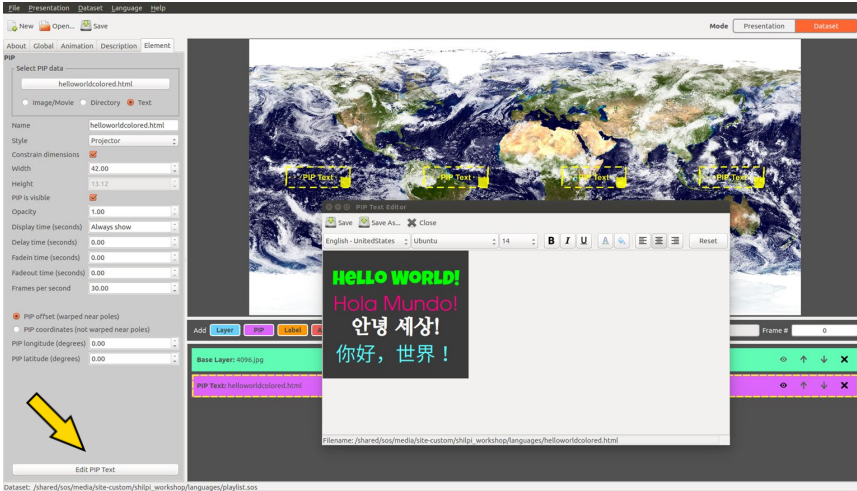
- Quick reload of current presentation



Become a power presenter using the iPad
Tues @ 4:30pm in SOS Room



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

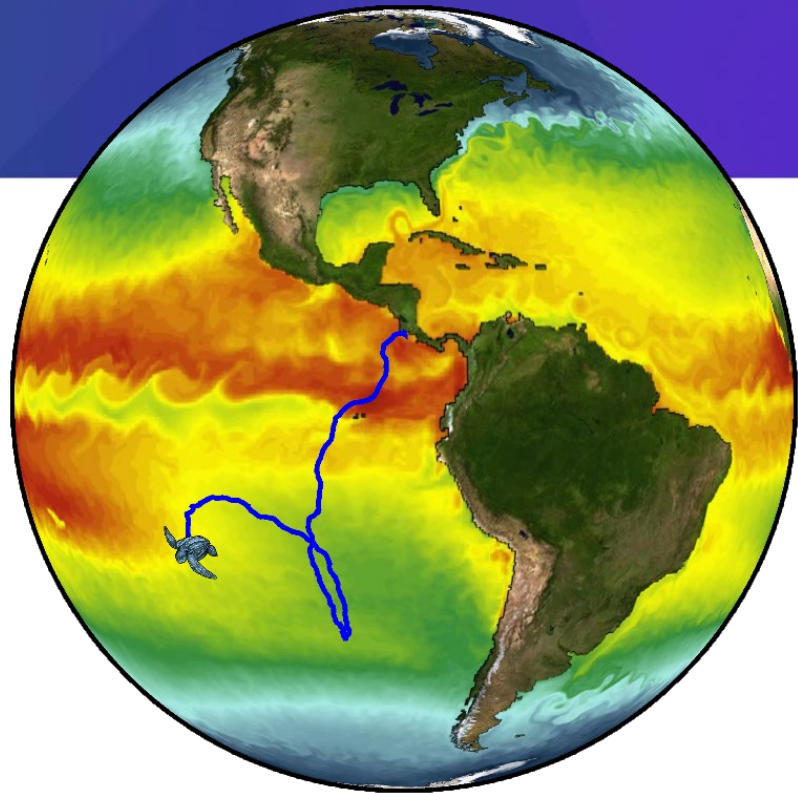
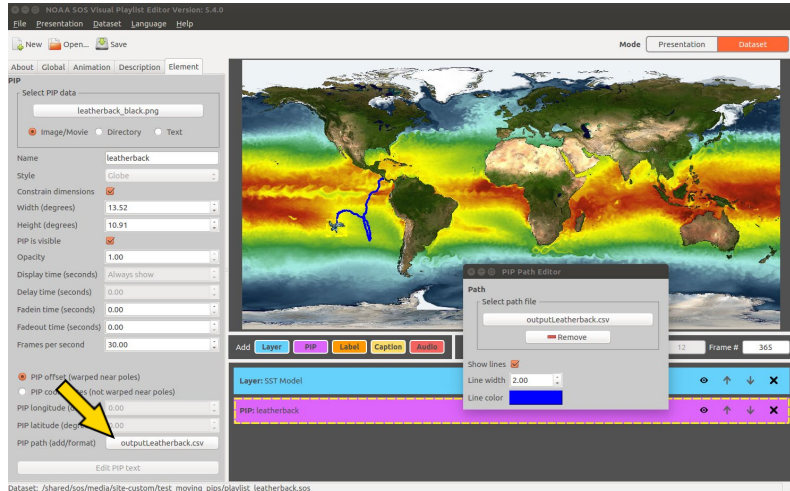


Getting the most out of PIPs

Wed @ 1:00pm in SOS Room



Moving PIPs



- Animal migrations, hurricane/ship tracking, etc
- Avoids embedding moving data into video
- Simple csv file format (frame #, lat, lon)
- Option to draw path and specify path attributes

Getting the most out of PIPs

Wed @ 1:00pm in SOS Room

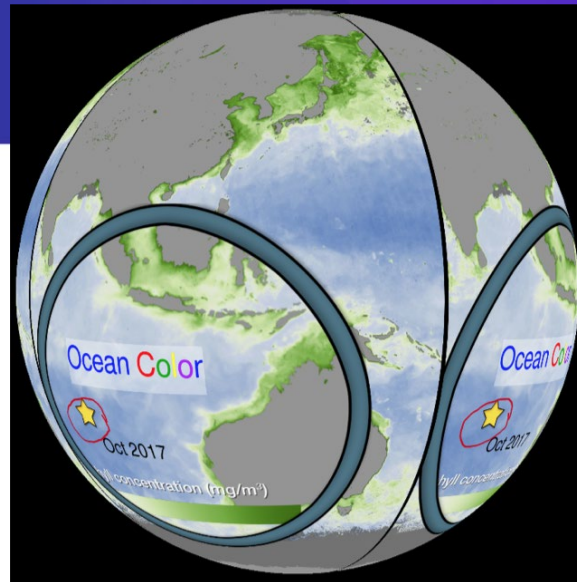


Display Software

Continued improving our core display software.

- Splitter & Magnifier
- Label formatting
- Wibu dongles are now required.

Ubuntu 12.04 - now End of Life and no longer getting security updates. Please upgrade to Ubuntu 16.04 & SOS 5.4 if possible.



Earthquake 01/21/2018






Usage Statistics

ENG 中文 Home Getting SOS Education **Datasets** Support

Science On a Sphere[®]
National Oceanic and Atmospheric Administration



Search

SOS Usage Statistics

Dataset Category: All Categories | Played By: All Sites | Time: All Time
Filter By: No Filters | Sorted By: Plays

559 Datasets Found Export all to csv **80 SOS Locations Reporting**

Dataset	Plays	Auto Plays	Duration	Autoplay Duration
<input type="checkbox"/> Blue Marble	1920316	813058	3358 days, 3:19:06	668 days, 18:33:07
<input type="checkbox"/> Air Traffic	731955	192966	965 days, 12:53:18	351 days, 8:02:57
<input type="checkbox"/> Mars	644171	341200	868 days, 23:46:15	506 days, 19:25:21
<input type="checkbox"/> Clouds - Real-time	636124	220607	933 days, 12:01:57	291 days, 20:02:46
<input type="checkbox"/> Moon	560818	95966	447 days, 10:23:37	161 days, 21:30:52
<input type="checkbox"/> Jupiter (movie)	513790	84238	294 days, 5:07:44	129 days, 3:34:45

- Dataset Category
- Filter By...
- Played By...
- Time Period



Captions

Displaying captions on SOS

- Show Labels and/or Captions
- Directly uses standard SRT files
- Convert from audio with YouTube
- Translations for non-English speakers
- Show on muted movies with AutoRun
- Edit text formatting in Playlist Editor
- Dozens of NOAA narrated movies getting SRT captions after workshop

Become a power presenter using the iPad, Tues @ 4:30pm in SOS Room

Closed Captioning 



Subtitles 





Public Kiosk

Overview

- 1st version: Nov. '15
- 4 major releases
- Free to SOS sites

Key Features

- Simpler than iPad
- Datasets in Groups
- Trackball controller
- Flexible customizing
- Multiple languages

NOAA Science On a Sphere[®]
Explore the Earth and the Solar System

Now Playing:
Lightning Detection - Jun 2011 - Aug 2012
The Global Lightning Dataset GLD360 network detects between 1 and 3 million lightning events around the world every day of the year. Lightning activity is not uniformly distributed across the globe. About ten times as many flashes occur over land than over the oceans, and the majority of global lightning is concentrated in the tropics. Over the course of a year, highest flash rate regions follow the inclination of the sun. The northern hemisphere sees more activity during June through August; the southern hemisphere has higher flash rates in January through March.

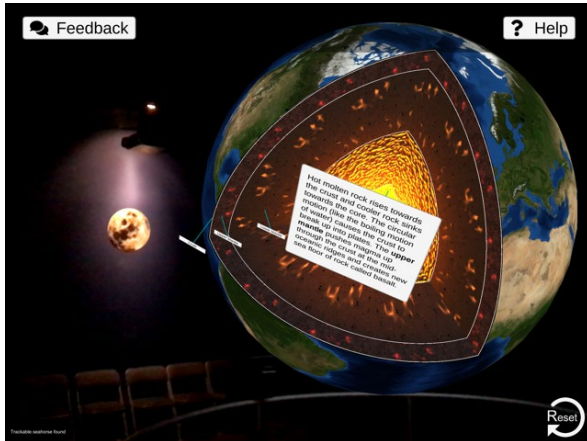
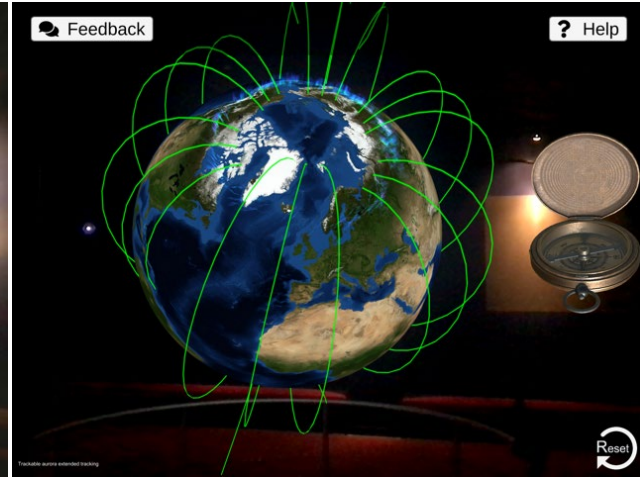
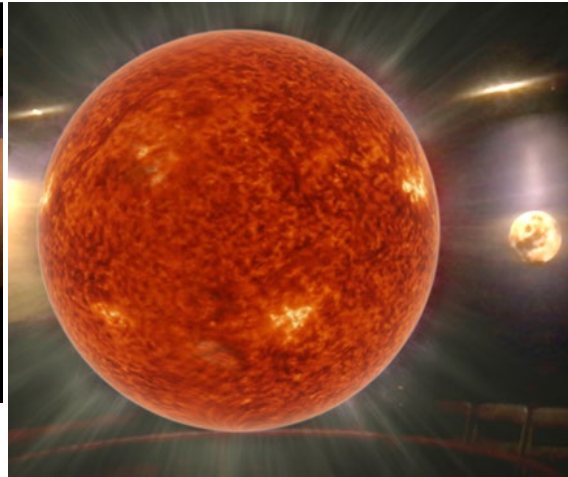
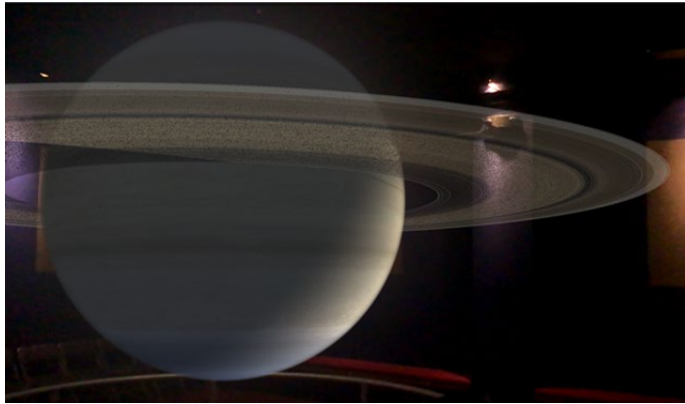
Overlays:
Atmospheric General Circulation
City Names
Continent Borders (black)

Navigation: English, 繁體中文, Popular, Movies, Air, Water, Land, Snow & Ice, 00:11 of 00:15

Dataset List: Climate Model: Temperature Change (RCP 6.0) - 2006 - 2100, Temperature Anomaly: Surface - Real-time, Clouds - Real-time, FIM Forecast Model: Clouds - Real-time, Lightning Detection - Jun 2011 - Aug 2012, Hurricane Season - 2012, Hurricane Tracks: Cumulative - 1950 - 2005, Water Falls, Hot Air: Atmosphere and Climate Change, Forecast: Tropical Cyclones, Our Instrumented Earth



Augmented Reality



Bring SOS visualizations inside or outside the sphere using your iPad!

Augmented Reality on the Sphere
Tuesday @ 4:00 on Science City's SOS



SOS Website

NGSS Pairing

Water

Refine by

Properties

- SOSx (116)
- Narrated Movie (24)
- Realtime (14)
- Audio Description (24)

Year

Keywords

Themes

NGSS ³ (125)

Crosscutting Concepts

Disciplinary Core Ideas

Grade Range Inclusive

Phenomena-based Learning Modules

https://sos.noaa.gov/education/phenomenon-based-learning/

ENG 中文

What is SOS? Getting SOS Education SOS Explorer Datasets Support

Science On a Sphere®
National Oceanic and Atmospheric Administration

Search datasets Submit

Phenomena SOS Explorer Activities Live Programs Resources

Phenomenon-based Learning Modules

Phenomenon-based learning is an educational approach that engages students in science. It starts with a "phenomenon," or an attention-grabbing image or video clip that hooks students into the lesson. Ideally, phenomena should be visually interesting and not easily understood at first glance. Instead, phenomena should be complex ideas that get students to ask questions and draw upon multiple areas of science to help answer them.

For example, the **tortoise** phenomenon on our site is a wacky story of a giant land tortoise that got washed across the Indian Ocean. The story can't be fully explained without knowing about sea surface currents, wind patterns, and monsoon seasons. In addition, the story is good fodder for discussion about the differences between tortoises (who generally don't swim) and their cousins, sea turtles, who make long migratory journeys across the oceans each year.

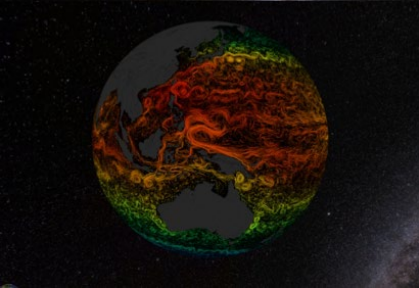
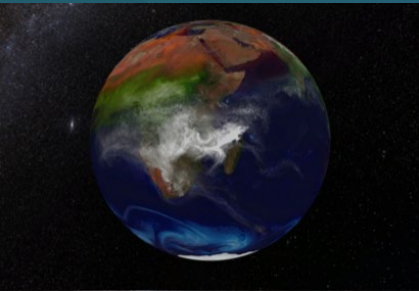
On this site, we use datasets from NOAA's Science On a Sphere® (SOS) to help explore and explain science phenomena. Phenomenon-based learning also pairs well with the **Next Generation Science Standards**.

Kindergarten – 12th grade

			Content
Can Elephants Sense Tsunamis?	Lightning Lake	Plastic in Mariana Trench	Kindergarten – 12th
			3rd – 12th
			6th – 12th



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, multi-screen, touchscreen

Display: Projector, video wall, touchscreen, 4k display

Server: Laptop or desktop

Settings: Museums, conferences, schools

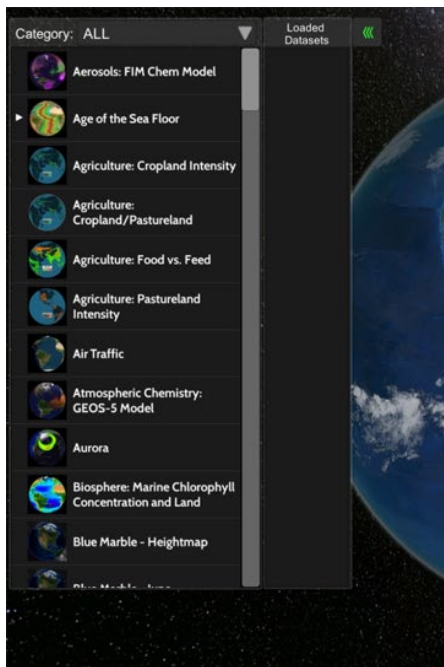
Locations: 25 total sites

11 museums including [Nurture Nature Center](#), 8 schools including one elementary school, 6 NOAA facilities





Methods of Interaction



Catalog Browsing



Self-Guided Tours



First Person Experiences



Virtual Reality



Make it local with the Tour Builder

File Edit Tools Help

Tour Tasks

Camera Dataset Environment Flow Media Resources User Interface

Fly To Reset Camera Zoom Out Tilt / Rotate Camera

Main Tour Timeline: Tour - Nighttime Lights, Before & After Hurricane Maria (D:\local-datasets\sosx-media\te

1 Load Dataset 2 Add Ground Overlay 3 Fly To 4 Text Box 5 Pause Seconds 6 Hide Text Box 7 Fly To 8 Hide Ground Overlay 9 Load Dataset 10 Dataset Animation

Sub Tour Timeline

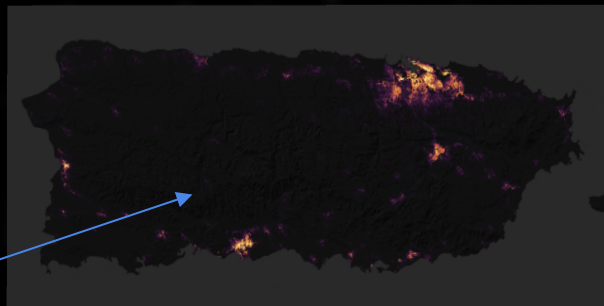
Hint: Sub Tour Timeline becomes active when a Load Tour task is selected in the Main Tour timeline. To create a new Sub Tour from a subset of the tasks in your main tour timeline, click on the first task and then Shift

Load Dataset (Task 1)

Attribute	Type	Value
Title	Text	Nighttime Lights - VIIRS 8K
ActiveLayer	Text	
DatasetID	Text	dataset1
WorldIndex	Integer	1
Transparency (%)	Decimal Number	0
ShowLegend	True/False	True

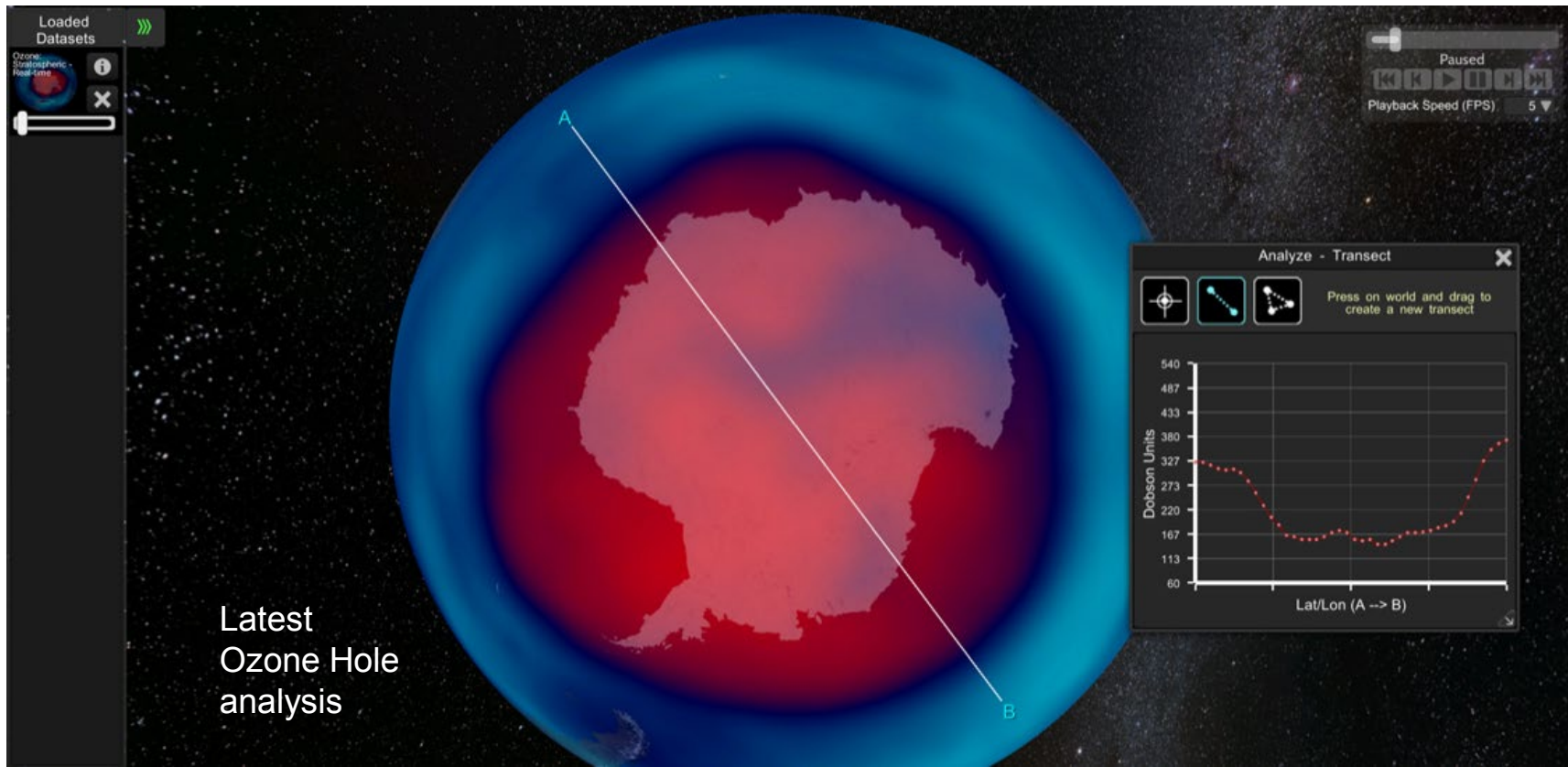
Add high resolution local maps as "ground overlays"

Weather satellites not only help us predict weather but can also provide life-saving information like high-resolution nighttime lights imagery of Puerto Rico before and after Hurricane Maria.





Dig Deeper with Analysis Tools





Data Catalog

Over 135 datasets including ones you **can't find** on SOS...

- + First Person Experiences: Moon Walk, Underwater Ocean Adventure, Tornado Safety
- + Space & Atmosphere: Real-time Satellite Positions, Saturn's Rings, Aurora
- + 3-D Models: Animal Migrations, Real-time Satellite Models, Space Junk



Land



Air



Snow & Ice

Water



Live Programs



People



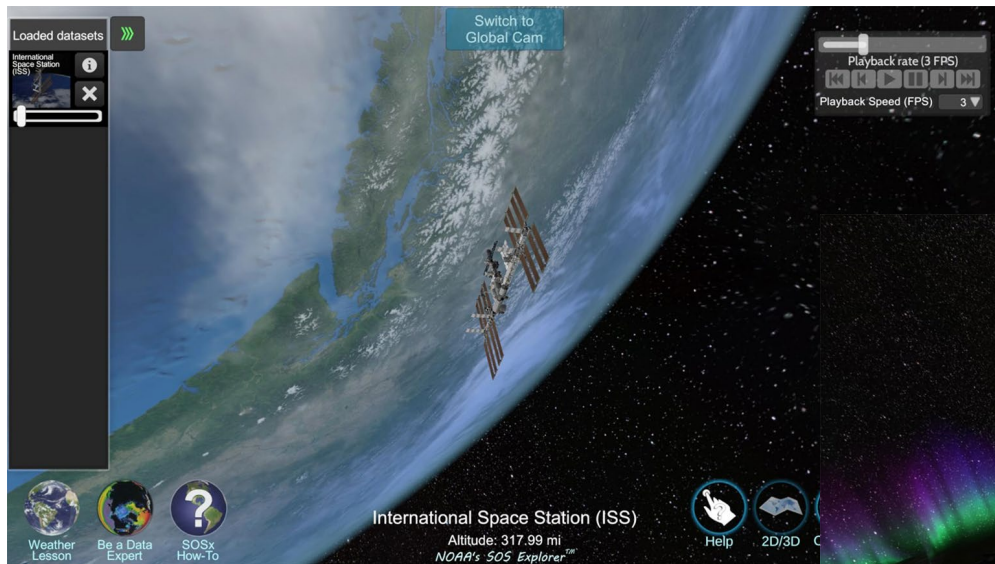
Space



Extras

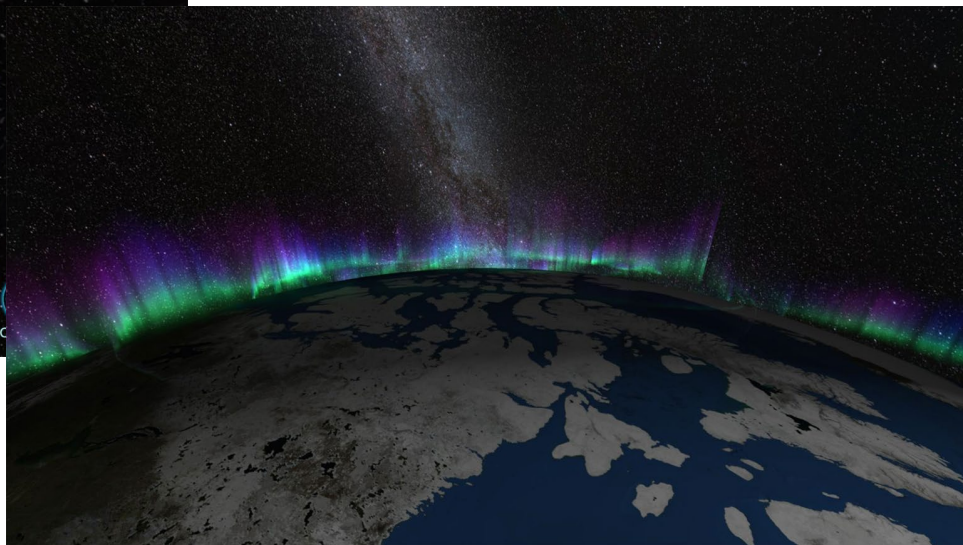


Beyond the Surface of the Sphere



The International Space Station in its correct orbit and it's projected location for a few days into the future.

The aurora from space





Experiences



Before and after pictures of a tornado's destruction



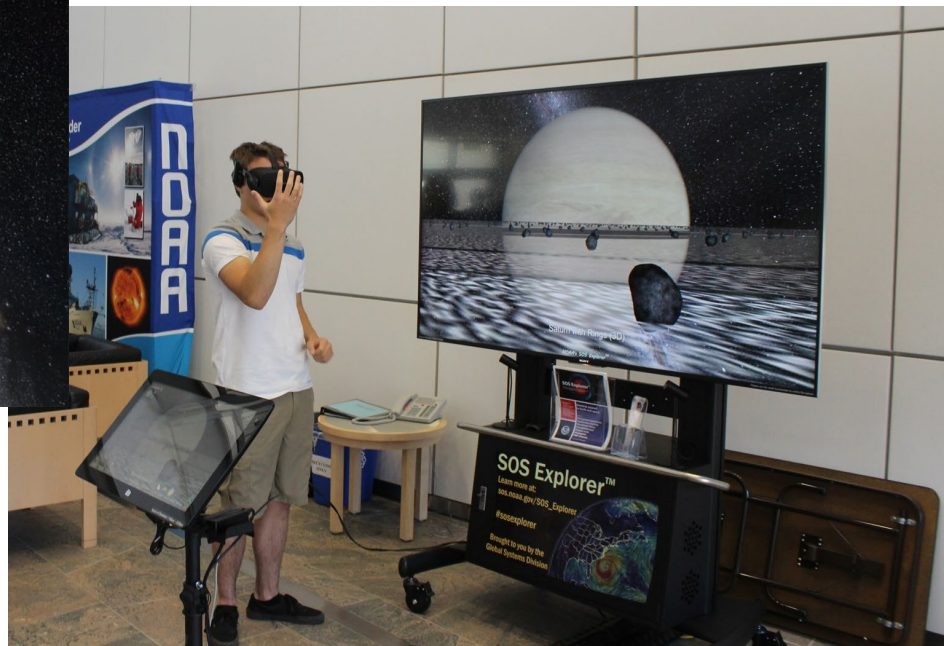
Tornado safety video



Virtual Reality



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





SOS Explorer Mobile

- NOAA datasets and pre-built tours
- iOS and Android Devices
- Small application size - Netflix meets SOSx
- Prototype available today
- FREE!





Questions??



Content Creation Question

1. Have you created new datasets OR custom playlists with elements like picture-in-pictures (PIPs), videos, text, layers, etc?

Circle the answer.

yes often

yes sometimes

yes once

no never

2. Why or why not? Be specific please.

3. What do you need in order to do more dataset and/or playlist creation? Feel free to make a list if you have more than one thing.

4. What tool(s) do you make your datasets and playlist with? Please circle ALL that apply.

Visual Playlist Editor

SOS Website

iPad Remote

Text file by hand