

# Grabbing Real-time Data From Anywhere to Enhance Your Visualizations

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Nathan Wells



# Salt Lake City, UT



# Salt Lake City, UT



## Why real-time?

- Learning strategies are evolving to recognize and incorporate the use of real-time data.
- Current information allows more personalization and context to be provided.
- Access to local phenomena promotes higher interest and drives relevancy.

## Taking the next step:

- *Enhancing context to current real-time datasets.*
- *Bringing your own real-time data to expand context and enhance visualizations.*

# Current capture and display process for real-time datasets:

Available Real-time Dataset



SOS Visualization



Auxiliary Screen Display

Science On a Sphere®  
National Oceanic and Atmospheric Administration

Earthquakes - Real-time

Description

Earthquakes occur naturally everyday. Anything that causes seismic waves to radiate throughout the Earth is an earthquake. There are two main types of earthquakes, tectonic and anthropogenic (caused by humans). Tectonic earthquakes are naturally occurring and are caused by earth movement. The surface of the Earth is composed of a mosaic of tectonic plates moving with respect to each other. When two plates slide past one another, a stress builds up at the boundary. When that stress reaches a critical level, the boundary slips and the result is an earthquake. The traces of repeated slips are known as fault lines. Anthropogenic earthquakes can be caused by mining for fossil fuels, extraction of minerals, high explosives, and the collapse of large buildings.

Most earthquakes are small enough to barely be noticed. However, some can be very powerful causing widespread death and destruction and can even trigger tsunamis. The Richter magnitude scale was created to rate the strength and magnitude of earthquakes. It is a base-10 logarithmic scale of ground motion 100km from the epicenter. Each increase of 1 magnitude means 10 times greater ground motion. To measure the amount of energy that was released during an Earthquake, a base 32 logarithmic scale is used. This real-time dataset shows the earthquakes that only happen around the world that are greater than 2.0 on the Richter scale. With the current database from the USGS, many earthquakes outside of the United States under 4.0 magnitude on the Richter Scale are not reported. The size of the circle is proportional to the magnitude of the earthquake, with bigger values on the Richter scale represented by larger circles. The coloring of the circles is based on the depth of the earthquake below the surface according to the provided color bar. After an earthquake occurs, the representing circle fades out over a seven day period. This dataset is updated hourly.

Notable Features

- Circles indicate earthquake; size indicates magnitude; color indicates depth

## 5.7 magnitude earthquake rocks out power to thousands and diverts focus from coronavirus pandemic

By Jason Hanna and Konstantin Toropin, CNN  
Updated 9:41 PM ET, Wed March 18, 2020

Salt Lake City shook by powerful earthquake

Doctor comforting elderly patient in heartbreaking photo speaks out

Ailon: Trump's refusal has moved from denial to delusion

Teenager shot for playing loud music, police say

Severe snowfall for Eastern US

(CNN) — A 5.7 magnitude earthquake shook the Salt Lake City area Wednesday morning, cutting power to tens of thousands and suspending work at Utah's public health lab amid the coronavirus pandemic, officials said.

## Earthquakes

Stable Features

- Circle indicates an earthquake
- Color of the circle represents the depth of the earthquake
- Size of the circle is proportional to the magnitude of the earthquake
- Color bar indicates the depth of the earthquake on the Richter scale

Source: NOAA, USGS

NOAA Science On a Sphere®  
sos.noaa.gov

# Desired capture and display process for real-time datasets:

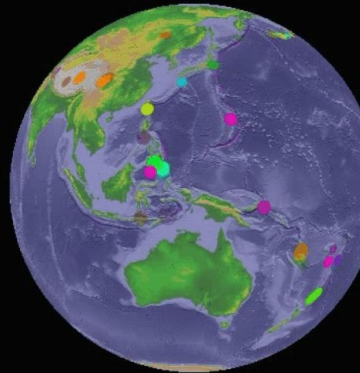
Available Real-time Dataset



SOS Visualization



Auxiliary Screen Display



## Utah Earthquakes

CLARK PLANETARIUM SALT LAKE COUNTY

Recent Large Earthquakes in Utah

Magnitude	Depth (km)	Date	Location
2.65	8.5	2020-10-03	16 km SW of Circleville, Utah
2.58	8.01	2020-10-03	15 km SW of Circleville, Utah
4.42	8.34	2020-10-03	15 km SW of Circleville, Utah
2.8	4.81	2020-09-30	7 km NW of Jensen, Utah
2.59	8.15	2020-09-25	28 km SSW of Circleville, Utah
2.66	18.15	2020-09-20	7 km E of North Logan, Utah
2.55	2.38	2020-09-20	20 km WNW of Levan, Utah
2.5	1.36	2020-09-19	Utah
2.75	4.09	2020-09-15	12 km S of Snowville, Utah
3.31	-3.34	2020-08-27	12 km NNE of Granger, Wyoming
2.86	11.58	2020-08-08	12 km NW of Summit, Utah
2.96	2	2020-08-06	10 km NNE of Altonville, Utah
2.61	4.33	2020-07-29	20 km WSW of Corville, Utah
2.54	10.52	2020-07-25	4 km NE of Magna, Utah
2.72	7.68	2020-07-21	10 km NNE of Pine Valley, Utah
3.76	8.74	2020-07-21	11 km N of Pine Valley, Utah
2.56	-3.48	2020-07-07	17 km SSE of Sunnyside, Utah
2.74	-0.53	2020-06-30	29km WSW of Ferris, Utah
3.13	19.72	2020-06-25	48km NE of Escalante, Utah
2.11	20.81	2020-06-24	18km E of Hildale, Utah
2.55	11.26	2020-06-23	67km ESE of Wendover, Utah
2.81	-3.32	2020-06-22	26km WNW of Geneva River, Wyoming
2.87	6.37	2020-04-29	28km NW of Garland, Utah

- Utah has an abundance of active faults such as the Wasatch Fault, Hurricane Fault, and Needles Fault.
- Most of the population of Utah lives along the Wasatch Fault Line.



Updated with Local Real-time Data

# Utah Earthquakes

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2.81	-3.32	2020-06-22	36km WNW of Green River, Wyoming
2.87	6.37	2020-04-29	28km NW of Garland, Utah



# What about other real-time datasets:

Available Real-time Dataset



SOS Visualization



Auxiliary Screen Display

Science On a Sphere®  
National Oceanic and Atmospheric Administration

Sun: STEREO/SDO (ionized helium) - Real-time

Description

The Solar Terrestrial Relations Observatory (STEREO), which consists of two satellites, was launched in October 2006. The two satellites are on a path similar to Earth's orbit, with one satellite ahead of Earth and one satellite behind Earth in orbit. The satellites, named STEREO-Ahead and STEREO-Behind, are slowly drifting further apart, keeping Earth between them. As they drift further from Earth, they are able to provide a view of the sun that cannot be seen from Earth. The satellites passed 150 degrees of separation on Feb 0, 2011, providing a view of the far side of the sun for the first time. The two STEREO spacecraft provide a stereoscopic view of the Sun and its atmosphere, similar to the way our two eyes allow us to see the three-dimensional world around us. Being in permanent orbit about the Sun, the pair will continue their migration, and will cross behind the Sun in 2015. Since passing the 150 degree mark, the STEREO mission now has a growing blind spot on the eastward view of the sun. To complete these observations, the maps also include data from the Solar Dynamics Observatory (SDO) taken at the same time and wavelength band. SDO was launched in February 2010, and has been providing nearly continuous images of the Sun since June 2010.

There are two STEREO/SDO datasets for Science On a Sphere, both from the extreme ultraviolet wavelength, which the human eye cannot see directly. In order to keep all of the various wavelengths straight, scientists color the different wavelengths. The 195Å wavelength is arbitrarily colored green, while orange was selected for the 304Å wavelength. The 195Å wavelength is able to detect coronal holes at about 1.5 million degrees C and the 304Å wavelength detects coronal helium at about 60,000 degrees C. The brighter areas in both images show greater intensity of the material and this is where magnetic forces are the strongest. In normal filter light, these areas would often appear as sunspots. It is in these bright, active regions where solar storms are likely to originate. In these areas, hot plasma from the sun is trapped in the sun's magnetic field. A solar flare is an explosion that occurs when the energy trapped in the magnetic field is suddenly released. Solar flares are often associated with Coronal Mass Ejections (CMEs) which are outflows of plasma from the sun that can cause geomagnetic storms on Earth. CMEs can occur and often do without a solar flare as well. The dark areas that can be seen are called coronal holes, and are areas where the plasma is able to escape because the magnetic field is open. These real-time datasets are updated daily with a five day data lag. There is one image for every ten minutes.

Builder

Details

Media Preview

View interactive Sphere

Directory

Categories

Space base

Dataset Source

NASA/STEREO, SDO

Dataset Contact

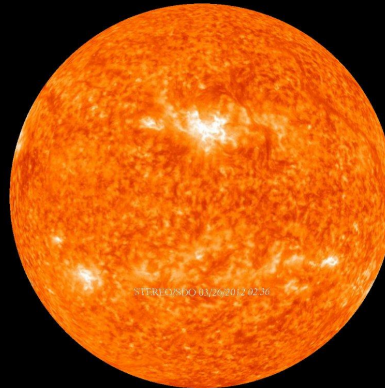
National Oceanic and Atmospheric Administration (NOAA)

Dataset Developer

National Oceanic and Atmospheric Administration (NOAA)

Dataset Visualization Developer

National Oceanic and Atmospheric Administration (NOAA)



## Space Weather Forecast

CLARK PLANETARIUM SALT LAKE COUNTY

- The solar wind is a continuous flow of charged particles that come from the Sun.
- The solar wind is dynamic and constantly changing in density of particles and the energy they have.

Daily Sun: 22 Oct 20

Sunspot number: 11

Solar Winds

Speed: 368.1 kg/sec

Density: 7.6 protons/cm<sup>3</sup>

	2020-10-22	2020-10-23	2020-10-24
Radio Blackout Chance:			
R1-R2	1%	1%	1%
R3 or Greater	1%	1%	1%
Solar Radiation Storm Chance:			
S1 or Greater	1%	1%	1%

Updated with...?

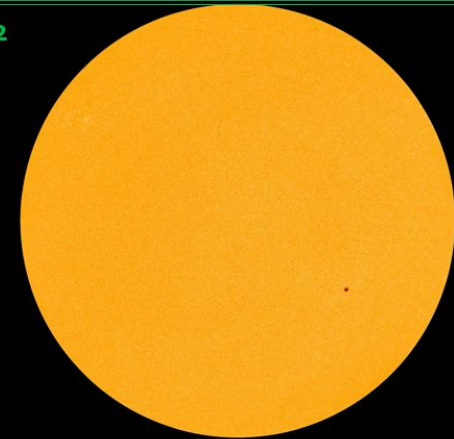
# Space Weather Forecast

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1  
**Daily Sun: 22 Oct 20**



3  
**Sunspot number: 11**

4  
**Solar Winds**

**Speed: 368.1 kg/sec**

**Density: 7.6 protons/cm<sup>3</sup>**

# So how does this work?

## Data Flow



# Looking for desired real-time components: [Space Weather Forecast]

spaceweather.com  
News and information about the Sun-Earth environment

Subscribe to SpaceweatherNews  go!

AURORA ALERTS | SUBMIT YOUR PHOTOS | CONTACT US | SUBSCRIBE | FLYBYS | EARTH

## Current Conditions

**Solar wind**  
speed: **365.0** km/sec  
density: **6.6** protons/cm<sup>3</sup>  
more data: [AFC](#), [USCOW](#)  
Updated: Today at 2110 UT

**X-ray Solar Flares**  
6-hr max: **A1** 0000 UT Jan01  
24-hr: **A3** 0933 UT Oct22  
[explanation](#) | [more data](#)  
Updated: Today at: 2115 UT

**Daily Sun: 22 Oct 20**



2776

New-cycle sunspot AR2776 is stable and poses no threat for strong solar flares. Credit: SDO/HMI

**Sunspot number: 11**  
[AFC](#) | [USCOW](#)  
Updated 22 Oct 2020

**Spotless Days**  
Current Stretch: 0 days  
2020 total: 204 days (69%)  
2019 total: 281 days (77%)  
2018 total: 221 days (61%)

## What's up in space

Thursday, Oct. 22, 2020

Never miss another geomagnetic storm. Sign up for [Space Weather Alerts](#) and you'll receive a text message when auroras appear in your area. Aurora tour guides and professional astronomers use this service. Now [you can, too!](#)



**SUNSET SKY SHOW:** When the sun goes down tonight, step outside and look south. The Moon, Saturn and Jupiter have converged to form a bright triangle in the constellation Sagittarius. It's a great way to end the day. [Sky map](#)

**STRANGE RED AURORAS:** Spoiler alert: We do not know the answer to this question. *Where did all the red auroras come from?* For much of mid-October, Earth's magnetic field has been very quiet. Extremely quiet. There should have been almost no auroras at all, yet around the Arctic Circle, photographers recorded scenes like this:



[Rayann Elzein](#) of Utsjoki, Finland, took the picture on Oct. 17th. "I saw red

archives  
October  
22  
2020

SPACE WEATHER PREDICTION CENTER  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Thursday, October 22, 2020 21:32:31 UTC

HOME | ABOUT SPACE WEATHER | PRODUCTS AND DATA | DASHBOARDS | MEDIA AND RESOURCES | SUBSCRIBE | ANNUAL MEETING | FEEDBACK

Home > Dashboards > Space Weather Enthusiasts Dashboard

## SPACE WEATHER CONDITIONS on NOAA Scales

24-Hour Observed Maximums Latest Observed

R S G R S G

none none none null null none

Predicted 2020-10-22 UTC

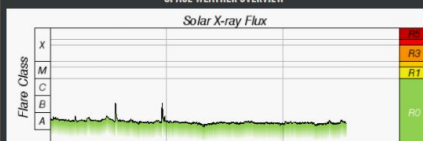
R1-R2 1% S1 or greater 1% G 1%  
R3-R5 1% none

Solar Wind Speed: **376** km/sec Solar Wind Magnetic Fields: B1 **4** nT, Bz **0** nT Noon 10.7cm Radio Flux: **75** sfu

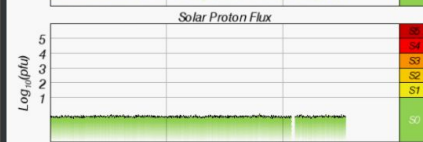
## SPACE WEATHER ENTHUSIASTS DASHBOARD

### SPACE WEATHER OVERVIEW

Solar X-ray Flux



Solar Proton Flux



Geomagnetic Activity



Flare Class: X, M, C, B, A  
Log<sub>10</sub>(pfu): 5, 4, 3, 2, 1  
Kp index: 7, 6, 5, 4, 3, 2, 1

Product: 3-Day Forecast  
Issued: 2020 Oct 22 1230 UTC  
# Prepared by the U.S. Dept. of Commerce, NOAA, Space Weather Prediction Center  
# A. NOAA Geomagnetic Activity Observation and Forecast

The greatest observed 3 hr Kp over the past 24 hours was 3 (below NOAA Scale levels).  
The greatest expected 3 hr Kp for Oct 22-Oct 24 2020 is 5 (NOAA Scale G1).

NOAA Kp index breakdown Oct 22-Oct 24 2020

	Oct 22	Oct 23	Oct 24
00-03UT	3	4	3
03-06UT	1	5 (G1)	4
06-09UT	1	4	3
09-12UT	0	4	3
12-15UT	3	3	2
15-18UT	2	3	3
18-21UT	5 (G1)	2	3
21-00UT	3	3	3

Rationale: G1 (Minor) levels are likely on 22-23 Oct, due to influences from a series of extensions from the northern crown CH S5.

B. NOAA Solar Radiation Activity Observation and Forecast

Solar radiation, as observed by NOAA GOES-16 over the past 24 hours, was below 5-scale storm level thresholds.

Solar Radiation Storm Forecast for Oct 22-Oct 24 2020

# What if there isn't a real-time dataset with info you want to use?

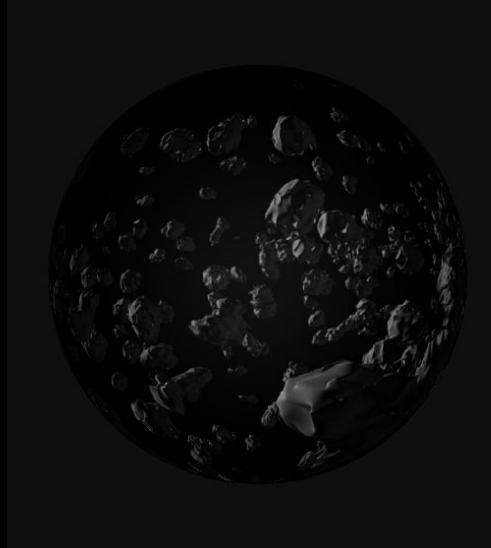
My Own Real-time Dataset?



SOS Visualization



Auxiliary Screen Display



Near Earth Asteroids		CLARK PLANETARIUM SALT LAKE COUNTY		
Close Approach Data				
Object	Close-Approach (CA) Date	Relative Velocity (km/s)	Estimated Diameter	
(2020 UL2)	2020-Oct-22 09:46 ± < 00:01	7.47	4.8 m - 11 m	
(2020 UY2)	2020-Oct-22 11:36 ± < 00:01	12.68	9.7 m - 22 m	
(2020 TK6)	2020-Oct-22 15:26 ± < 00:01	7.87	14 m - 32 m	
(2020 UO3)	2020-Oct-22 15:53 ± < 00:01	16.75	6.2 m - 14 m	
(2020 UV)	2020-Oct-22 16:21 ± < 00:01	8.33	9.4 m - 21 m	
(2020 TX1)	2020-Oct-22 18:16 ± < 00:01	7.94	17 m - 38 m	
(2020 UF3)	2020-Oct-22 22:17 ± < 00:01	22.01	5.7 m - 13 m	
(2020 TG1)	2020-Oct-22 22:49 ± < 00:01	13.74	47 m - 110 m	
(2020 UK1)	2020-Oct-23 00:56 ± < 00:01	8.95	21 m - 46 m	
(2020 TK4)	2020-Oct-23 01:49 ± < 00:01	8.89	14 m - 32 m	

The following table shows close approaches to the Earth by near-Earth objects (NEOs).

Near-Earth Objects (NEOs) are comets and asteroids that have been nudged by the gravitational attraction of nearby planets into orbits that allow them to enter the Earth's neighborhood.

# Near Earth Asteroids



## Close Approach Data

1

The following table shows close approaches to the Earth by near-Earth objects (NEOs).

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# Looking for desired real-time components: [Near Earth Asteroids]

**NEO Earth Close Approaches**

Introduction Tutorial **Data Table** Comets (pre-1900) Uncertainties

Close Approach Data

The following table shows close approaches to the Earth by near-Earth objects (NEOs) limited as selected in the "Table Settings" below. Data are not available prior to 1900 A.D. nor after 2200 A.D. Data are further limited to encounters with **reasonably low uncertainty**.

Check out our [brief video tutorial](#).

**Table Settings:** Near future (within 60 days) - Nominal dist. <= 0.05au - no H limit -

Show 10 entries

Showing 1 to 10 of 41 entries

Object	Close-Approach (CA) Date	CA Distance Nominal (LD) (au)	CA Distance Minimum (LD) (au)	V relative (km/s)	V infinity (km/s)	H (mag)	Estimated Diameter
<a href="#">(2020 WN)</a>	2020-Nov-23 02:29 ± < 00:01	4.35   0.01117	4.33   0.01113	11.30	11.28	27.8	7.4 m - 17 m
<a href="#">(2020 WV2)</a>	2020-Nov-23 10:28 ± < 00:01	18.37   0.04720	18.17   0.04669	6.75	6.74	27.0	11 m - 24 m
<a href="#">(2020 WC)</a>	2020-Nov-23 13:49 ± < 00:01	4.18   0.01073	4.17   0.01071	6.27	6.23	27.6	7.9 m - 18 m
<a href="#">(2017 WJ16)</a>	2020-Nov-24 02:30 ± < 00:01	5.29   0.01360	5.29   0.01360	4.74	4.70	24.3	37 m - 82 m
<a href="#">(2020 TJ8)</a>	2020-Nov-24 13:46 ± < 00:01	16.71   0.04295	16.71   0.04293	4.56	4.55	25.2	25 m - 55 m
<a href="#">(2020 WM2)</a>	2020-Nov-25 12:11 ± < 00:01	12.19   0.03132	12.11   0.03111	15.95	15.95	25.1	25 m - 57 m
<a href="#">(2020 VK6)</a>	2020-Nov-25 21:05 ± < 00:01	13.07   0.03357	13.02   0.03345	11.16	11.15	25.5	21 m - 46 m
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Use the "Print" button above to print data contained in this table. Use the "CSV" or "Excel" buttons to download the data for use in your spreadsheet program. Allow a few seconds for downloads of large datasets.

Machine-readable data are available. See the [API document](#) for details.

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# How to Develop Real-Time Slides

- Download necessary programs
- Setup working folder
- Identify a website, and its type
  - Text Type
  - Image Type
  - HTML Table Type
  - Spreadsheet Download Type
- Copy Script Template
- Link Excel Data to PowerPoint





# Near Earth Asteroids



## Close Approach Data

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34 **Space Weather Forecast** CLARK PLANETARIUM

I am looking at the Galaxy MCG2-9-1 with Advanced Camera for Surveys. For OS: Windows & Mac OS X

Daily Sun: 22 Oct 20

- The solar wind is a continuous flow of charged particles that come from the Sun.
- The solar wind is dynamic and constantly changing in density of particles and the energy they have.

Public Electron Chorus: 200010-01 200010-02 200010-03 200010-04

Hz	1%	1%	1%
kHz	1%	1%	1%
MHz	1%	1%	1%

Solar Wind: Speed: 368.1 mph Density: 7.8 protons/cm<sup>3</sup>

---

35 **Solar Panels (Solar Dashboard)** CLARK PLANETARIUM

- Clark Planetarium has a rooftop solar array that generates electricity for our building.
- Here we can look at a dashboard of information about our solar array.

CO2 Emissions Saved: 70,244.94 lb

Equivalent Trees Planted:

Current Power	Energy Today	Energy This Month	Lifetime Energy
23.16 kW	95.11 kWh	3.1 MWh	45.36 MWh

Last update: 10/22/2020 1:47

---

36 **Near Earth Asteroids** CLARK PLANETARIUM

Close Approach Data

The following table shows close approaches to the Earth by near-Earth objects (NEOs).

Near-Earth Objects (NEOs) are comets and asteroids that have been nudged by the gravitational attraction of nearby planets into orbits that allow them to enter the Earth's neighborhood.

---

37 **Spotting The Space Station** CLARK PLANETARIUM

How do I spot the Station?

The following table displays dates and times where the International Space Station will be visible from Salt Lake City.

Date	Time	Duration	Altitude	Direction	Distance
10/22/2020	1:47	1:47	277	W	277
10/23/2020	1:47	1:47	277	W	277
10/24/2020	1:47	1:47	277	W	277
10/25/2020	1:47	1:47	277	W	277
10/26/2020	1:47	1:47	277	W	277
10/27/2020	1:47	1:47	277	W	277
10/28/2020	1:47	1:47	277	W	277
10/29/2020	1:47	1:47	277	W	277
10/30/2020	1:47	1:47	277	W	277
10/31/2020	1:47	1:47	277	W	277

34 **Space Weather Forecast** CLARK S&T PLANETARIUM

The solar wind is a continuous flow of charged particles that come from the Sun.

The solar wind is dynamic and constantly changes in density of particles and the energy they have.

Daily from 22 Oct 20

35 **Solar Panels (Solar Dashboard)** CLARK S&T PLANETARIUM

Clark Planetarium has a rooftop solar array that generates electricity for our building.

CO2 Emissions Saved: 70,244.94 lb

Equivalent Trees Planted:

Current Power: 23.16 kW Energy Today: 95.11 MWh Energy This Month: 3.1 MWh Lifetime Energy: 45.36 MWh

36 **Near Earth Asteroids** CLARK S&T PLANETARIUM

**Close Approach Data**

The following table shows close approaches to the Earth by near-Earth objects (NEOs).

Near-Earth Objects (NEOs) are comets and asteroids that have been nudged by the gravitational attraction of nearby planets into orbits that allow them to enter the Earth's neighborhood.

37 **Spotting The Space Station** CLARK S&T PLANETARIUM

How do I spot the station?

The following table displays data and times when the International Space Station will be visible from Salt Lake City.

For the best possible viewing, look for longer periods of visibility with greater Max heights.

Voyager (12)  
Space Missions & Tech (65)  
The Sun (8)  
Mercury (3)  
Venus (3)  
Earth (41)  
Earth's Climate (26)

# Near Earth Asteroids



## Close Approach Data

The following table shows close approaches to the Earth by near-Earth objects (NEOs).

Paste Special

Source: Microsoft Excel Worksheet  
near\_earth\_objects13481c13r11c4

As:

Paste Microsoft Excel Worksheet Object

Paste link Attach Hyperlink

Display as icon

Result

Inserts a picture of the clipboard contents into your presentation. Paste link creates a shortcut to the source file so that changes to the source file will be reflected in your presentation.

OK Cancel

Near-Earth Objects (NEOs) are comets and asteroids that have been nudged by the gravitational attraction of nearby planets into orbits that allow them to enter the Earth's neighborhood.

# Near Earth Asteroids



## Close Approach Data

The following table shows close approaches to the Earth by near-Earth objects (NEOs).

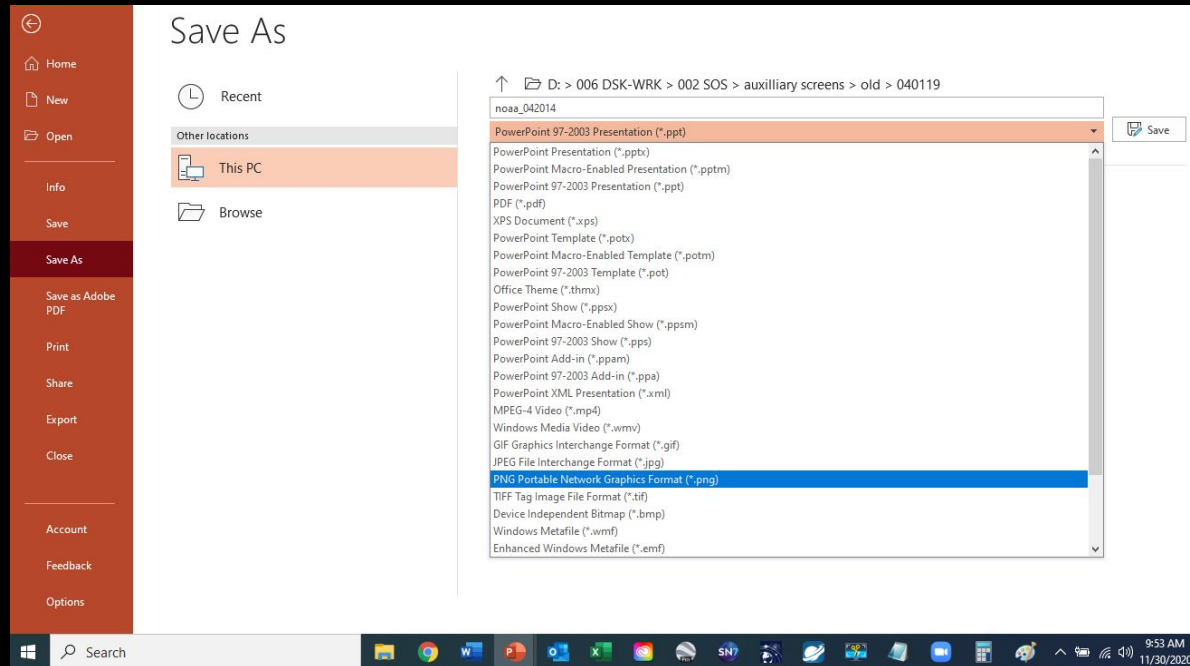
Near-Earth Objects (NEOs) are comets and asteroids that have been nudged by the gravitational attraction of nearby planets into orbits that allow them to enter the Earth's neighborhood.

Object	Close-Approach (CA) Date	Relative Velocity (km/s)	Estimated Diameter
(2020 UL2)	2020-Oct-22 09:46 ± < 00:01	7.47	4.8 m - 11 m
(2020 UY2)	2020-Oct-22 11:36 ± < 00:01	12.68	9.7 m - 22 m
(2020 TK6)	2020-Oct-22 15:26 ± < 00:01	7.87	14 m - 32 m
(2020 UO3)	2020-Oct-22 15:53 ± < 00:01	16.75	6.2 m - 14 m
(2020 UV)	2020-Oct-22 16:21 ± < 00:01	8.33	9.4 m - 21 m
(2020 TX1)	2020-Oct-22 18:16 ± < 00:01	7.94	17 m - 38 m
(2020 UF3)	2020-Oct-22 22:17 ± < 00:01	22.01	5.7 m - 13 m
(2020 TG1)	2020-Oct-22 22:49 ± < 00:01	13.74	47 m - 110 m
(2020 UK1)	2020-Oct-23 00:56 ± < 00:01	8.95	21 m - 46 m
(2020 TK4)	2020-Oct-23 01:49 ± < 00:01	8.89	14 m - 32 m

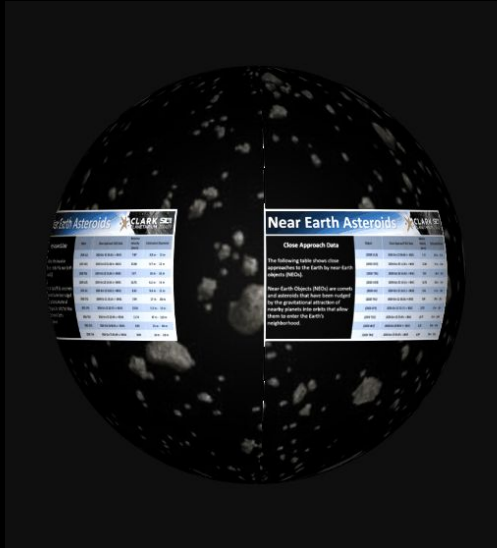
Open Discussion Time:  
Thoughts, Questions, Insults?



# Saving slides as images for use as pips:



# Using slides as pips



## Near Earth Asteroids

CLARK PLANETARIUM SALT LAKE COUNTY

**Close Approach Data**

The following table shows close approaches to the Earth by near-Earth objects (NEOs).

Near-Earth Objects (NEOs) are comets and asteroids that have been nudged by the gravitational attraction of nearby planets into orbits that allow them to enter the Earth's neighborhood.

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(2020 LY2)	2020-Oct-22 11:36 ± < 00:01	12.68	9.7 m - 22 m
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(2020 UK1)	2020-Oct-23 00:56 ± < 00:01	8.95	21 m - 46 m
(2020 TK4)	2020-Oct-23 01:49 ± < 00:01	8.89	14 m - 32 m


# Adjusting pip size and position:

← → ↻ sos.noaa.gov/support/manuals/dataset-manual/ ☆ ⚙️ ☰ 🌐

There can be multiple playlist.sos files in one folder for different versions of the dataset. The file names simply need to start with playlist and end with .sos and **there must be one file that is named playlist.sos**. For example, you could have playlist.sos, playlist\_with\_audio.sos, and playlist\_extra\_labels.sos all in the same folder. If you don't have a playlist.sos file then none of the variations will show up in the data catalog on the iPad.

The "include" lines used in presentation playlists should not be used in a playlist.sos file, since the purpose of the playlist.sos file is to describe a single self-contained dataset with optional layers, PIPs, etc. Only presentation playlists should use the include attribute.

### A playlist.sos Example



```
playlist.sos ⌘
name = Blue Marble
data = 4096_309
fps = 40
tlttx = 23.5
category = Land
catalog_url = http://sos.noaa.gov/Datasets/dataset.php?id=42
majorcategory = Land

playlist_audio.sos ⌘
name = Blue Marble (with audio)
data = 4096_309
fps = 40
tlttx = 33
audio = audio/BlueMarble.mp3
tlttx = 23.5
category = Land
catalog_url = http://sos.noaa.gov/Datasets/dataset.php?id=42
majorcategory = Land
```

In this blue\_marble example, there are two playlist.sos files in the folder for the blue\_marble dataset, playlist.sos and playlist\_audio.sos. Both playlists point to the same data, and the only difference is that one includes audio and a timer and the other doesn't. Notice that the audio files have been put into their own folder. If there are multiple audio files or PIPs, a folder can be created in the dataset folder that contains those files. While this isn't required, it helps to keep the folder uncluttered.

When files that are referenced in the playlist.sos file aren't in the same directory as the playlist.sos, the path to the file needs to be

#### Content

- Definitions
- System Interactions with Datasets
- Organization of Datasets
- Parts of a Dataset
- Dataset Format
- Dataset Considerations
- Media Folder
- Differences in Playlist Files
- Dataset playlist.sos Files
- [A playlist.sos Example](#)
- Basic Options in the Playlist
- Picture In a Picture
- Live Video PIP
- Annotation Icons



# Thank you!

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