



# SOS Explorer 1.4.1

## Setup Guide

May 2018

[Part 1\) Wiring Diagram](#)

[Part 2\) Screen Resolution Settings and Multiple Monitors](#)

[Part 3\) Installing the SOS Explorer Software](#)

[Part 4\) Registering the SOS Explorer Software](#)

[Part 5\) Running the SOS Explorer Software](#)

[Part 6\) Selecting Datasets to be Shown in SOS Explorer](#)

[Part 7\) Modifying the SOS Explorer \(SOSx\) configuration](#)

[Part 8\) Dataset Downloads](#)

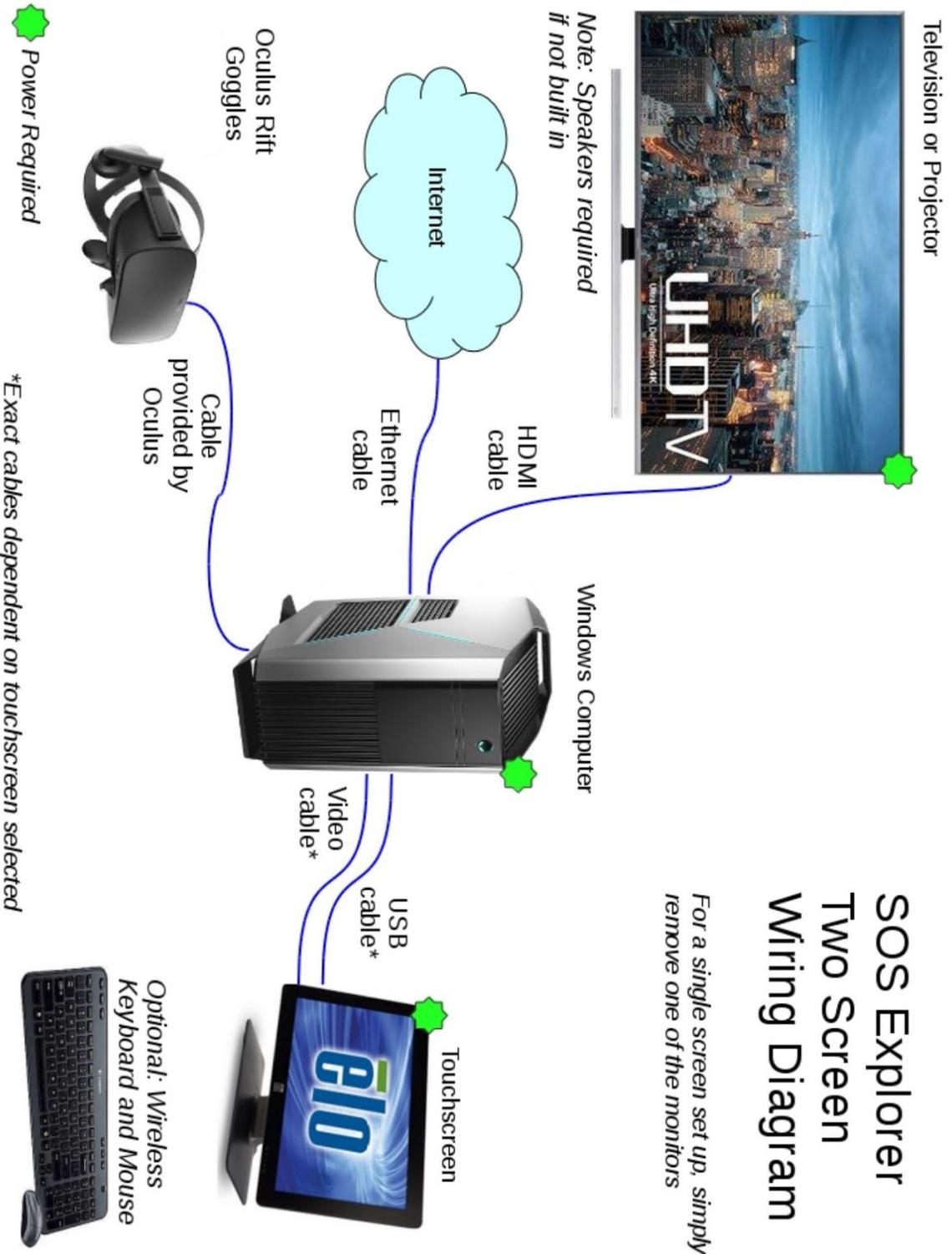
[Part 9\) Virtual Reality Support](#)

[Part 10\) Auto Updating the SOS Explorer Software](#)

[Part 11\) Contacting Support](#)

# SOS Explorer Two Screen Wiring Diagram

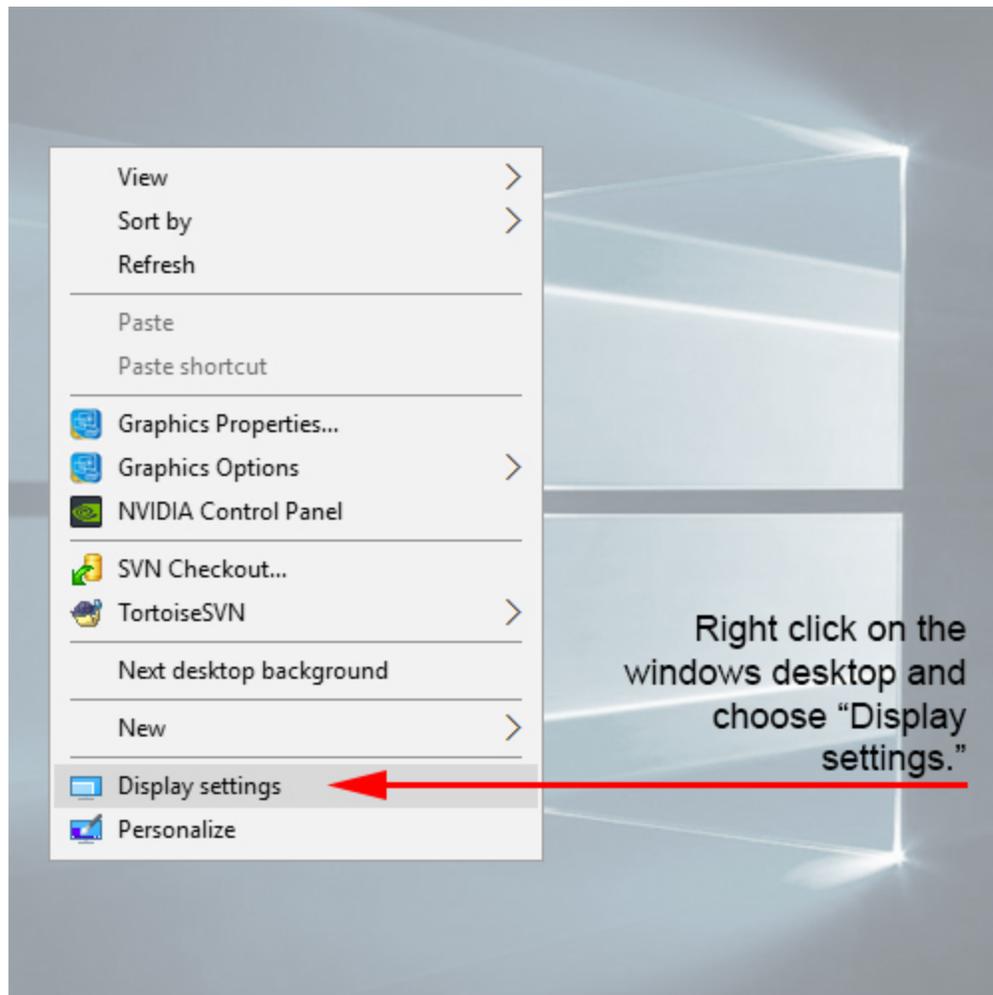
*For a single screen set up, simply  
remove one of the monitors*



## Part 1) Wiring Diagram

## Part 2) Screen Resolution Settings and Multiple Monitors

Before running SOS Explorer, the computer should be configured with the proper display configuration. The application expects two monitors to be attached. The main or primary screen should be the touch screen and the secondary screen should be the larger TV. To access the display settings right click on the desktop and choose “Display settings” as shown in the image below.



This will open the following dialog window where you should try to match the settings shown below. In two monitor mode both monitors should be displayed with the main (primary) touchscreen appears below the larger secondary TV. Further all displays should be set to 100% sizing and the extended desktop mode enabled. In single monitor mode there will be only one display shown. If using a set of virtual reality glasses they will not appear in this dialog.

Home

Find a setting

System

Display

Apps & features

Default apps

Notifications & actions

Power & sleep

Battery

Storage

Offline maps

Tablet mode

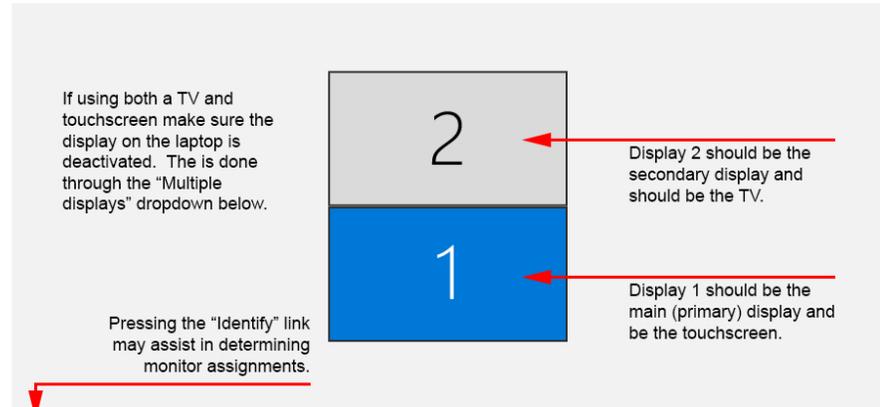
Multitasking

Projecting to this PC

Apps for websites

About

## Customize your display



Identify Detect Connect to a wireless display

Change the size of text, apps, and other items: 100%

Orientation

Landscape

Adjust brightness level

Multiple displays

Extend these displays

Make this my main display

Apply Cancel

Advanced display settings

All displays should be set to 100% sizing. Logging out and back into the computer may be necessary.

For two screen mode make sure to select "Extend these displays" and configure them as seen in the image above. In single screen mode if connecting to an external display you can choose to mirror the display.

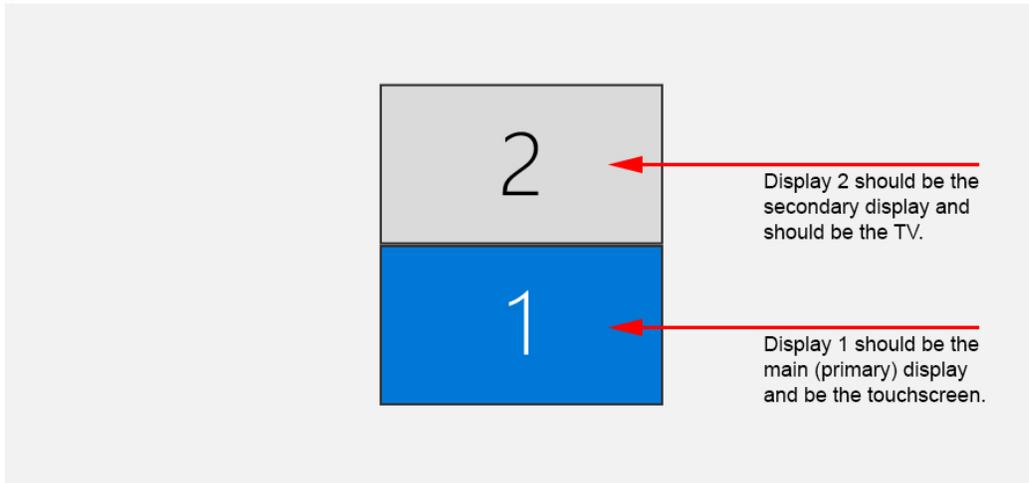
Change all displays to the same aspect ratio under "Advanced display settings."

Once all the changes have been made make sure to hit the "Apply" button.

Access "Advanced display settings" found at the bottom of the dialog window check to make sure that all the attached displays are running at the same screen ratio. Typical resolutions include 1920x1080 (1080P) or 3840x2160 (4K or 2160P).

## ⚙️ Advanced display settings

### Customize your display



Identify Detect Connect to a wireless display

Multiple displays

Extend these displays

Resolution

1920 × 1080

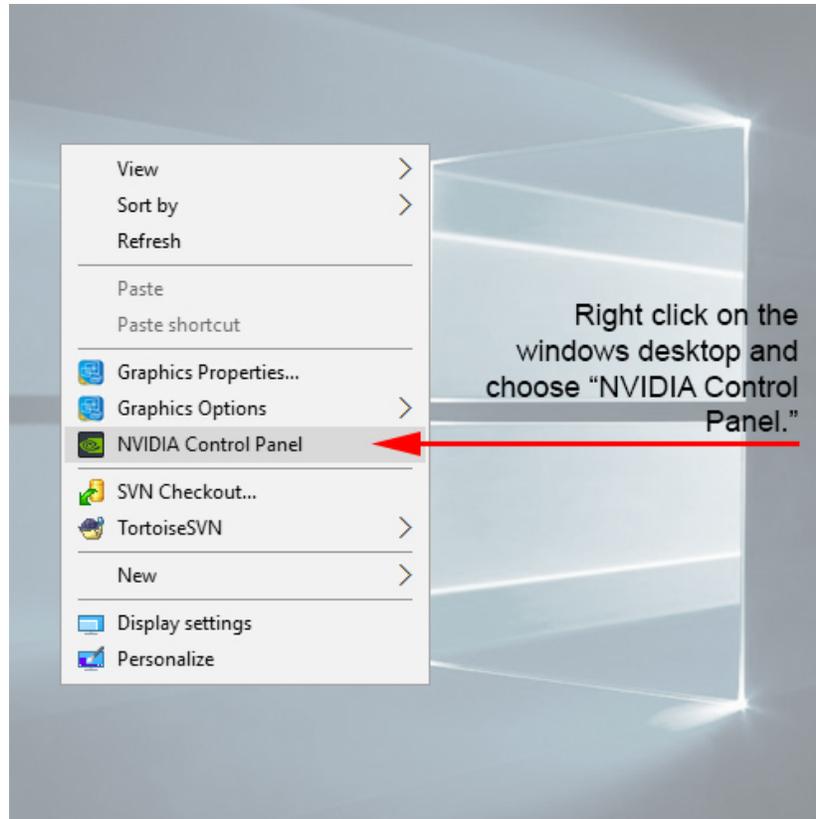
Apply Cancel

Once all the changes have been made make sure to hit the "Apply" button.

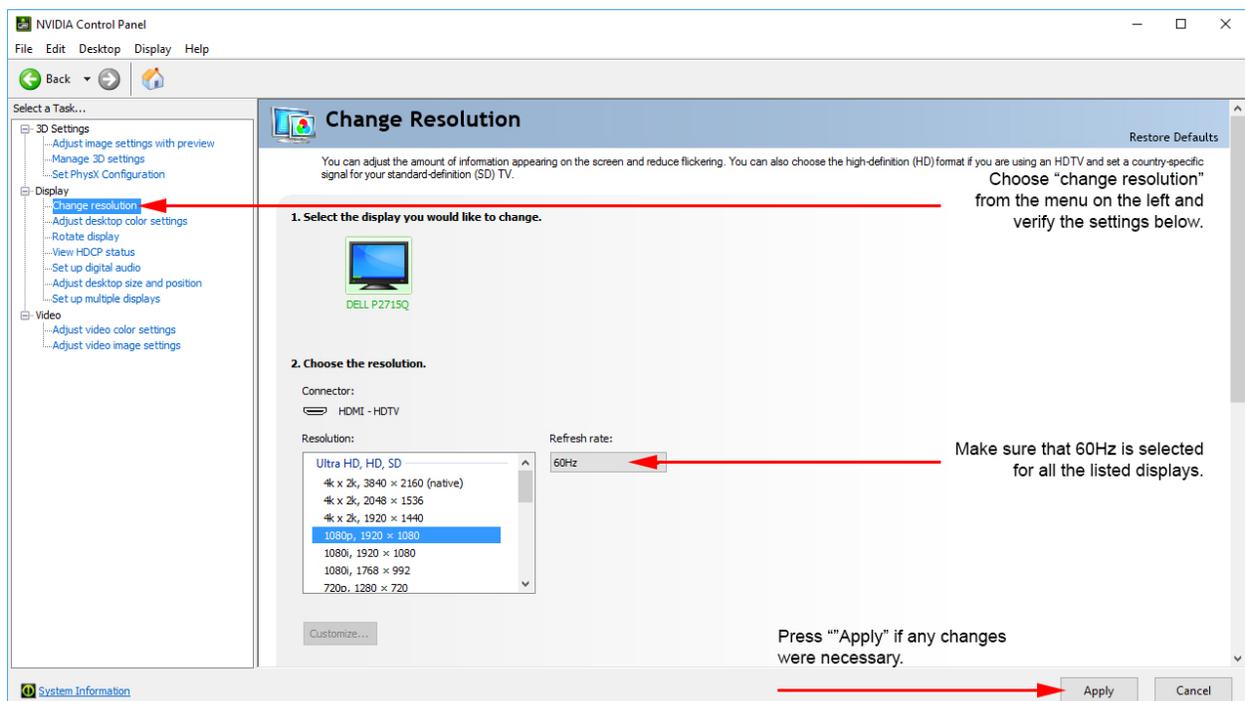
Make sure to select "Extend these displays" and configure them as seen in the image above. The displays may be different sizes. If using both a TV and a touchscreen deactivate the laptop monitor.

The resolution for all attached monitors should be the same aspect ratio. Typical resolutions are 1920x1080 (1080P) or 3840x2160 (4K or 2160P.)

Finally, it may be necessary to change the refresh rate on the TV. To do this right click on the desktop and select "NVIDIA Control Panel" as shown below.



Select "Change resolution" from the left panel in the dialog window and then verify that the refresh rate is set at 60Hz for all the available displays. See the image below for more instructions.



For Dual Display (2K / 4K Monitors) setups: you will want to run the SOSx Config utility and edit the UI Scale Factors for displays 1 and 2. The recommended settings are 1.65 for dual 2K monitors and 1.65 and 3.0 for 2K / 4K setups.

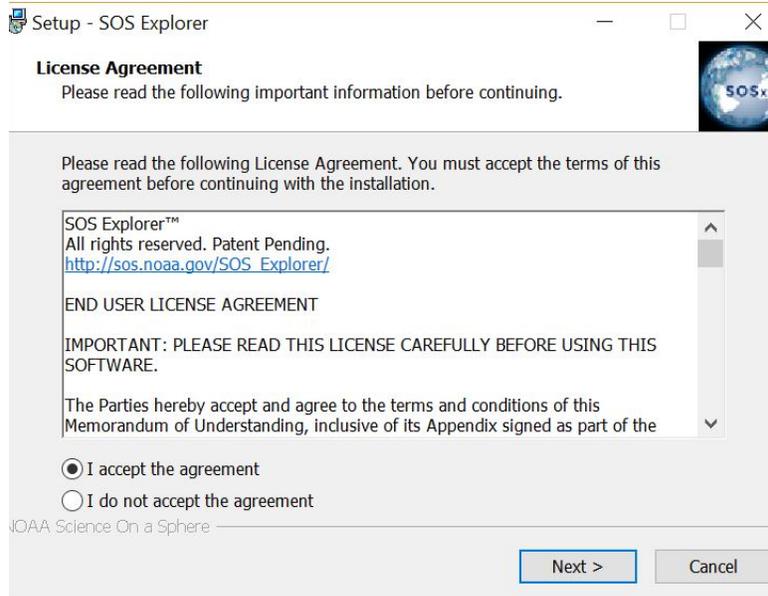


## Part 3) Installing the SOS Explorer (SOSx) Software

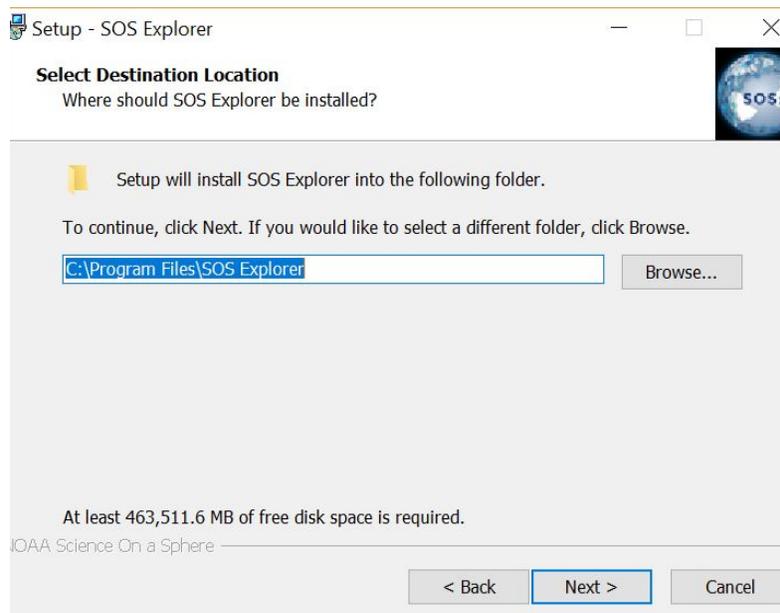
Before installing the software, **the computer needs to be configured** with all the hardware attached the correct screen configuration. For example, if you're using a touch screen and a 4k television, make sure the proper resolutions are set for each display. See the Setup Guide for instructions on this. You will also **need to be connected to the internet** for the final steps of the installation. **If you've previously installed SOSx, run the upgrade application provided separately called SOSx\_upgrade. These instructions do not apply.**

### Step-by-step Instructions:

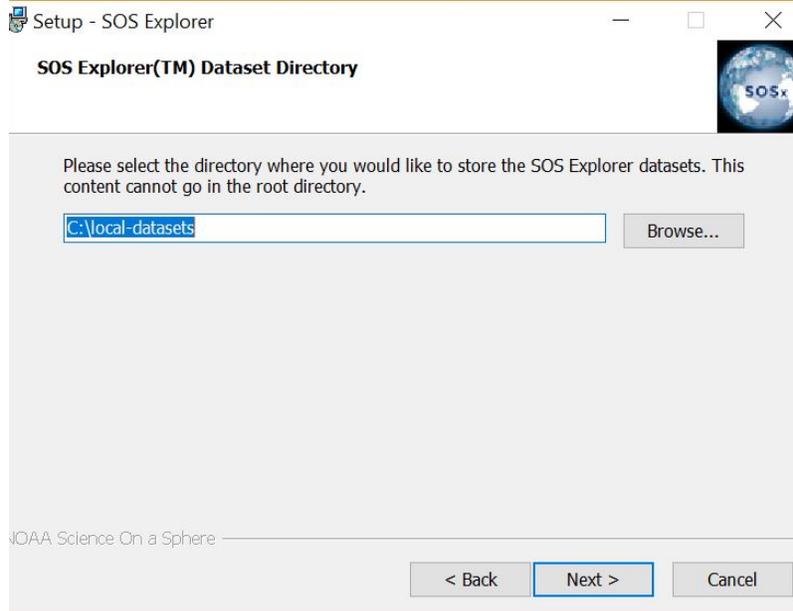
- 1) Plug the hard disk into one of the USB3 ports (they're blue), if you're installing multiple copies of SOSx, you can use the same hard disk.
- 2) If it doesn't automatically pop up (this behavior depends on configuration settings of your computer), open your file browser and look for the drive named SOSx\_Install
- 3) Double-click the SOSx-setup.exe file to launch the installation
- 4) A license agreement will pop up. Read through and click "I accept the agreement" and then press *Next*



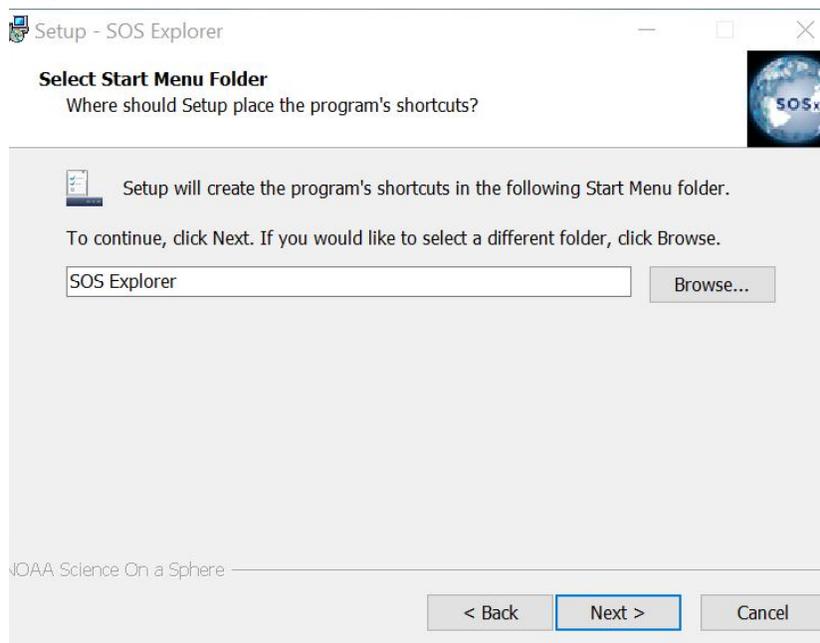
- 5) Then you will be asked to select the destination location. Typically, just accept the default location by pressing *Next*
- a) **If you've previously installed SOSx, instead run SOSx\_upgrade. These instructions do not apply.**



- 6) Next it will give you a prompt asking where to install the Dataset Directory. If you have just one drive, accept the default C:\local-datasets directory. If you have a secondary drive for storage, switch to that location using the browse button. **Please note that the datasets should not be installed directly in the root directory.** Then press *Next*

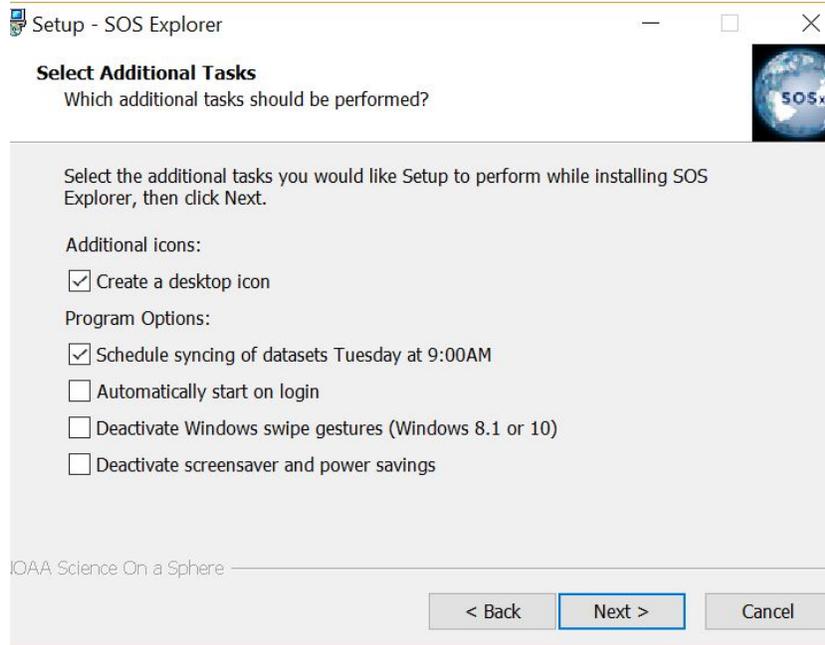


- 7) In the Select Start Menu Folder prompt that comes up next, accept the suggested Shortcut by pressing *Next*

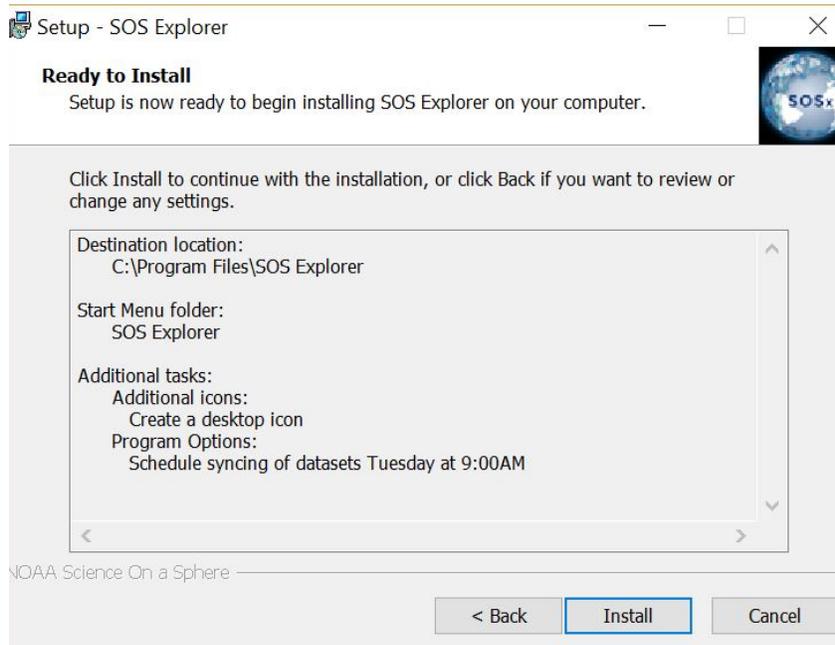


- 8) Next you will be asked to Select Additional Tasks. By default “Create a desktop icon” will be checked. The other options for you to select are:
- a) Schedule syncing of datasets Tuesday at 9:00AM
  - b) Automatically start on login
    - i) This is useful for systems that are set up as a kiosk
  - c) Deactivate Windows swipe gestures (Windows 8.1 or 10)

- i) This prevents visitors from easily exiting the application in an exhibit setting
- d) Deactivate screensaver and power savings
  - i) Select this if you don't want a screensaver coming on when there is no user interaction.



- 9) After selecting the above options press *Next* and a prompt will appear where you can click *Install*



- 10) At this point, the install software will download all the SOSx content onto your system. This step will take **several hours** the first time.
- 11) If there are missing software packages, you will be prompted to download these. Agree to all of them in order for the software to run properly. These are video codecs and Windows drivers.
- 12) Next you'll see a prompt about completing the setup. You are given the options to view this instruction manual or check for new data. Once you have selected what you want, click *Finish*.
  - a) If you selected to view the documentation or check for new data, you will see windows for those pop up.
  - b) If you selected modify or review configuration the SOSx Configurator will appear.



- 13) Double click on the SOS Explorer icon on the Desktop (if you kept that default) or in the Start menu folder that was created. This will initiate the registration process.
- 14) You will need to enter the requested information and then click *Send Profile*. This sends an email to the SOSx team to confirm your registration. An email will be sent to the provided email address once this has been confirmed with directions on what to do next.

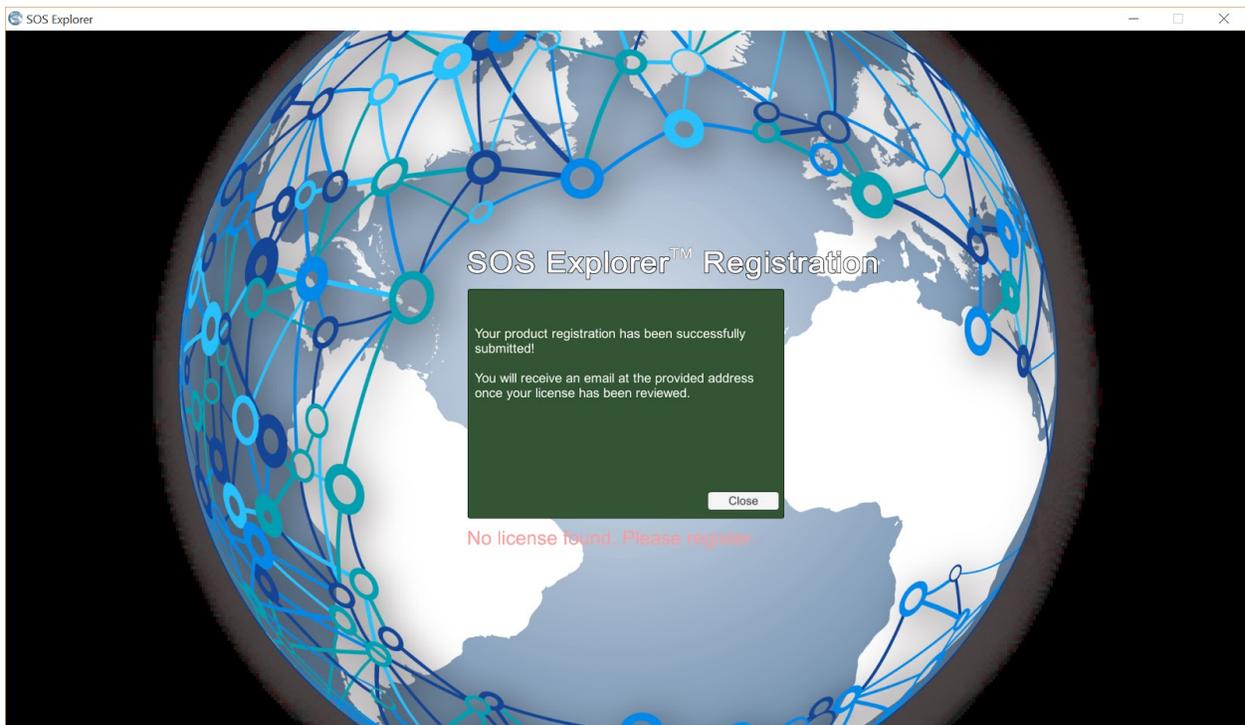
## Part 4) Registering the SOS Explorer (SOSx) Software

The first time SOSx Explorer is launched it will need to be registered in order to receive a license. If you have purchased multiple copies, it's not a problem to use the same information for each. You will see a screen that looks like the following:



<b>Name</b>	The name of the person who is responsible for administering the installation.
<b>Email</b>	The email address for the person who is responsible for administering the installation. <b><i>If other user accounts on the same machine need to run SOS Explorer those users will need to know this email address.</i></b>
<b>Organization</b>	The name of the organization in charge of the SOS Explorer installation.
<b>Phone</b>	A contact phone number.
<b>City</b>	The city where the SOS Explorer installation is located.
<b>State</b>	The state where the SOS Explorer installation is located.
<b>Country</b>	The country where the SOS Explorer installation is located.

After filling in the information click on “Send Profile.” You will need to be connected to the Internet for this step. If the submission is successful you will see a screen similar to this:



You will receive an email at the address provided from [sos.explorer@noaa.gov](mailto:sos.explorer@noaa.gov) saying the license request is being reviewed. Please allow up to 48 hours for activation. You will receive another email when the license request has been approved.

## Part 5) Running the SOS Explorer (SOSx) Software

If you accept all the default names and file locations during the installation process, there will be a SOS Explorer icon on your Desktop that you can use to launch the application. In the Start menu, there will be a SOS Explorer folder that contains:

- Launcher for SOS Explorer
- Launcher for the Tour Builder
- Launcher for the SOS Configurator
- Sync Datasets which updates all datasets
- Shortcut to the local datasets folder
- License file
- Setup guide (this document)
- Uninstall application

### How to start SOS Explorer

Click the icon to start SOSx. You will find the icon in the SOS Explorer folder in the start menu and on the Desktop.



### To exit SOS Explorer: Press Alt-F4 on a keyboard

SOS Explorer is difficult to quit when it's set up as an exhibit because it is designed to operate in an unattended exhibit environment where you would not want visitors gaining access to the desktop or operating system. In a classroom setting, the software can be modified through the config file ([see Part 7](#)) to include an exit button if you prefer. In the exhibit setting, you should leave the keyboard and mouse hidden during normal operation. If you need access to the Desktop or Windows environment you should retrieve the keyboard and mouse and press Alt-F4.

## Part 6) Selecting Datasets to be Shown in SOS Explorer

There are over 140 datasets loaded onto your exhibit, including real-time datasets that will automatically update every hour. However, if you would prefer to restrict to a particular theme, for example, if your museum is an aquarium and you want only *Water and People* datasets to appear in the *SOSx Search Window*, then it's possible to use our website to select the datasets that you want. You will still be able to access all the datasets from TourBuilder but they will not show up in the *SOSx Search Window*. **Please Note:** If you are an SOS user and you wish to make an *SOSx Presentation Playlist*, you will want to use the TourBuilder application.

Case 1: You want to restrict by category or narrated/non-narrated:

1. **NOTE:** You will receive new datasets in the categories that you choose to include automatically.
2. Open local-datasets directory to find a number of small text files including tag\_selection\_bak.json. Open it.
3. This is the text you will find - an example where only narrated movies would show up in the search window:

```
{
  "inclusive": true,
  "tags": {
    "Movies": {}
  }
}
```

4. **How to edit:** Inclusive can either be set to true or false depending on whether you would like to include or exclude categories (tags), respectively.  
For example: If you would like to exclude space datasets and narrated movies, you would edit it to look like this:

```
{
  "inclusive": false,
  "tags": {
    "Movies": {},
    "Space": {}
  }
}
```

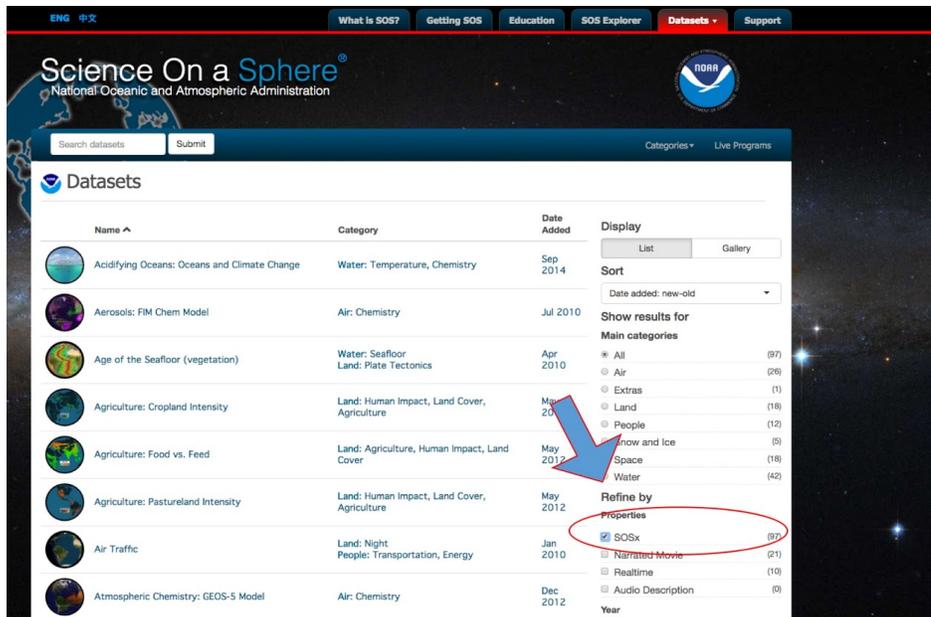
- When you're finished editing the file, save it and rename it to: tag\_selection.json and relaunch SOSx.

**Dataset categories on your exhibit are:**

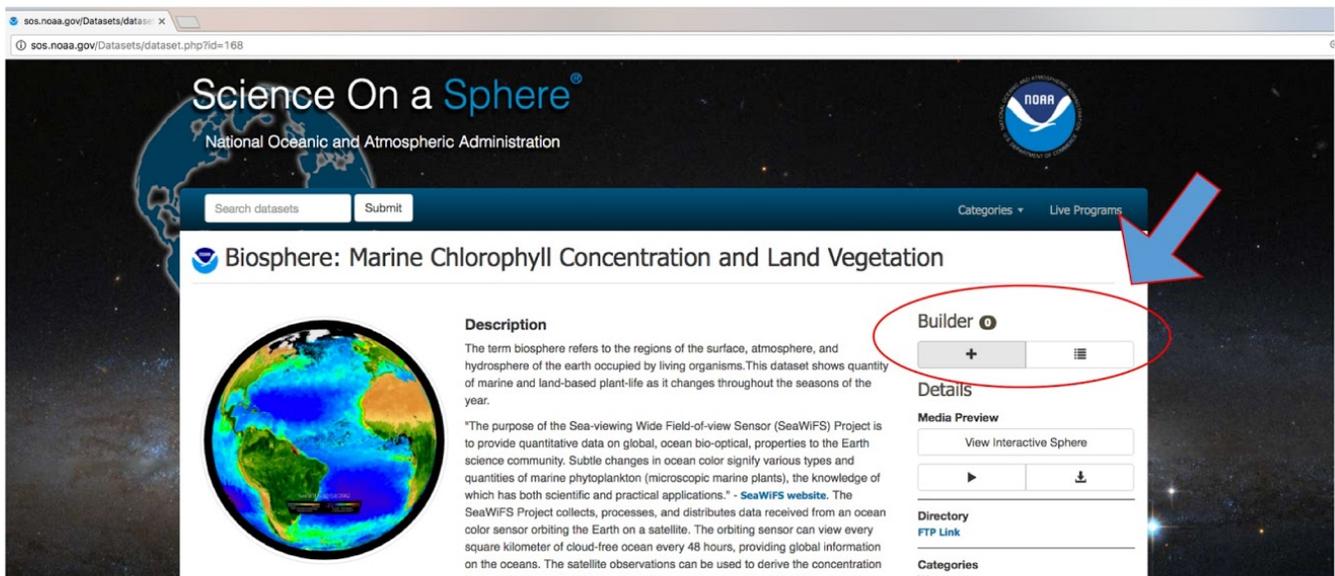
Air, Extras, Land, Movies, People, Real-time, Snow and Ice, Space, Tour, Water Datasets may be in multiple categories.

Case 2: You want to hand select specific datasets. Use our website:

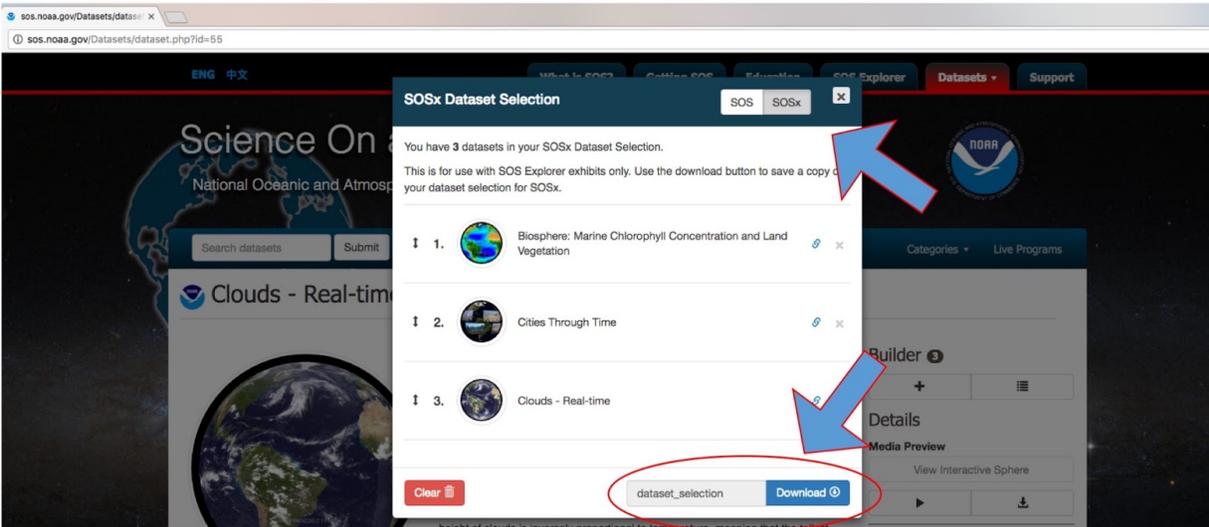
- NOTE:** You will not receive new datasets automatically using this method. Also, at this point, all NOAA tours show up and cannot be removed from your search.
- Go to sos.noaa.gov and select the *Datasets* tab.
- Under *Refine by*, check the *SOSx* box. The list of datasets on the left will reflect this.



- Click to open a dataset to read the description.
- While on the selected dataset page, in the upper left side of the screen, you'll see the *Builder*.



- Choose your datasets, one at a time, by clicking the **+**. They will appear in the list. To view your list, click the *button on the right* of the **+** sign. They will appear alphabetically in *SOSx Search Screen*, therefore there is **no need to reorder them**.
- Once you have selected all of the datasets that you want to appear in your SOSx exhibit, select *SOSx* from the toggle at the top of your list. Datasets that appear red are not available in SOSx. *Download*. The list will automatically be named `dataset_selection.json`.

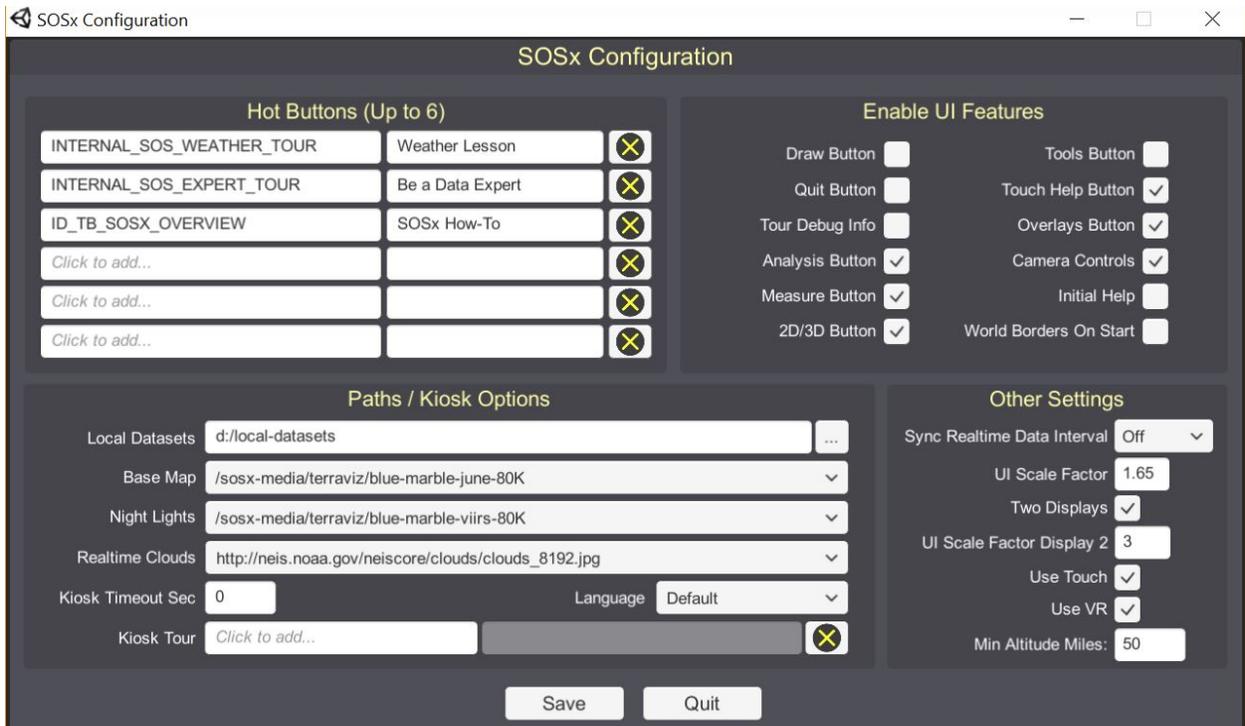


- Place this file in your **local-datasets** directory on your *SOSx* computer.
- Please note: *Variation Datasets*, i.e. Spanish language, with audio, with labels, etc., (10 of these currently exist in the list on the website) are not available for your system but appear to be in SOSx on the website. These cannot actually be selected.

## Part 7) Modifying the SOS Explorer (SOSx) configuration

SOS Explorer has many options for customizing your exhibit, from the number of displays, to the timing of data syncs, to whether or not you want to show an exit button (for use in classrooms, for example). In order to change the configuration of your exhibit, we have created a “Configurator” program, which edits a file called “config.json” for SOS Explorer.

When you first launch SOSx, it will automatically open. Any other time, open the SOSx Configurator program (Configurator.exe), located in the same folder as SOSx, to change the primary settings for SOSx.



With Configurator, you can choose which “Hot Buttons” appear on the lower left corner of SOSx, choose basemap / clouds options, link a kiosk tour (a tour that automatically plays after no one has touched the screen for a specified time: “Kiosk Timeout Sec”), various UI Features (for example, 2D/3D button on the lower right of the screen can be hidden), and various display options (for example, enabling a second display monitor or an optional VR Oculus Rift).

If you choose all the default options during the installation, you will find the configuration file at: C:\Program Files\SOS Explorer\SOSx\_Data\config\config.json

See table below for additional information and settings you may want to edit. A few of these settings can only be changed by directly editing the “config.json” file.

Attribute	Description
<b>Local Datasets</b>	The location where the datasets are installed.
<b>Base Map</b>	The directory where the chosen Earth basemap is installed. This is typically either an 8K or 80K version of NASA’s Blue Marble.
<b>Night Time Lights</b>	The directory where the chosen Earth night time lights dataset is installed. This is typically either an 8K or 80K version of NASA’s Black Marble.

<b>Real-Time Clouds</b>	The URL where the most recent version of clouds are located. This is typically either a 4K or 8K black and white equidistant projected cloud image.
<b>Language</b>	The language that should be used for display. Typically this should remain the default unless you want to override the system settings.
<b>Sync Realtime Data Interval</b>	The amount of time to wait between checks for new realtime data on the SOS FTP.
<b>UI Scale Factor</b>	A percentage to scale the UI elements on the main display. A value of <b>1</b> is the original size, but touch-screen users may prefer larger values such as <b>1.75</b> . Default is <b>1.75</b> .
<b>UI Scale Factor Display 2</b>	A percentage to scale the UI elements on the secondary display. A value of <b>1</b> is the original size. Default is <b>1.75</b> .
<b>Two Displays</b>	The number of displays to show SOS Explorer on. Checking the box means there are two displays, otherwise there is one.
<b>Use VR</b>	<b>true</b> to enable support for virtual reality using the Oculus Rift and Leap Motion. See part 9 for additional details.
<b>Min Altitude Miles</b>	How close to allow the view point to get to the Earth.
<b>Use Touch</b>	Check the box in most circumstances unless told otherwise.
<b>Kiosk Timeout Seconds</b>	The number of seconds before the automatic kiosk tour will run when there is no activity. Default is <b>420</b>
<b>Kiosk Tour</b>	The dataset ID of the tour to run when there is no activity
<b>World Borders on Start</b>	<b>true</b> displays country borders when the application is started, <b>false</b> shows the globe without borders. Default is <b>false</b> .
<b>enableFullFTPSyncOnStart (config file only)</b>	<b>true</b> to launch a full data synchronization process every time SOSx is started. This may impact system performance. The default is <b>false</b> .
<b>enableRealtimeFTPSyncOnIdle (config file only)</b>	<b>true</b> to synchronize the latest real-time datasets when there is no activity. The default is <b>true</b> . When set to <b>false</b> , the real-time datasets do not sync.
<b>refreshLocalDatasetsSec (config file only)</b>	The number of seconds to wait between real-time datasets syncing when the machine is idle. The default is <b>1800</b> .
<b>hideCountries (config file only)</b>	A string array of country names that should not appear in the corresponding overlay.

UI elements can be shown or hidden by checking the corresponding box.

Attribute Name	UI Element
<b>Draw Button</b>	Allows users to open a window to draw lines and place icons on the globe
<b>Quit Button</b>	Allows users to exit the application by pressing a quit button on the lower-right. Not recommended for exhibits.
<b>Analysis Button</b>	Allows users to probe and analyze datasets, and display graphs
<b>Measure Button</b>	Allows users to measure distances on the globe
<b>Overlay Button</b>	Allows users to display overlays on the globe such as country borders, cities, and grid lines
<b>Tools Button</b>	Shows a menu with a variety of resources. Normally hidden.
<b>Camera Controls</b>	Displays camera controls which allow the user to tilt and rotate the camera (pitch and roll)
<b>2D/3D Button</b>	Allows users to switch between 2D map and 3D globe mode

## Part 8) Dataset Downloads

New datasets are continually being added to SOSx and real-time datasets are being updated regularly. Defaults have been set for automatic data downloads, but you have the ability to change them to meet your site's needs. All dataset downloads require the computer to have an internet connection.

If you want to manually update the datasets, you can do this by selecting *Sync Datasets* in the SOS Explorer folder found in the Windows start menu under All Programs.

### Real-time Datasets

Most real-time datasets show new imagery either hourly or daily so that you can display current events. They are synced every time the software is idle. The time it takes for the software to be considered idle is defined by **kioskTimeoutSec** in the config file, which by default is set to 7 minutes. Once idle, the real-time datasets are synced by default every 30 minutes, as defined by the **refreshLocalDatasetsSec** option in the config file. Other real-time datasets (such as real-time earthquakes) attempt to download the latest data each time the dataset is loaded and require an Internet connection.

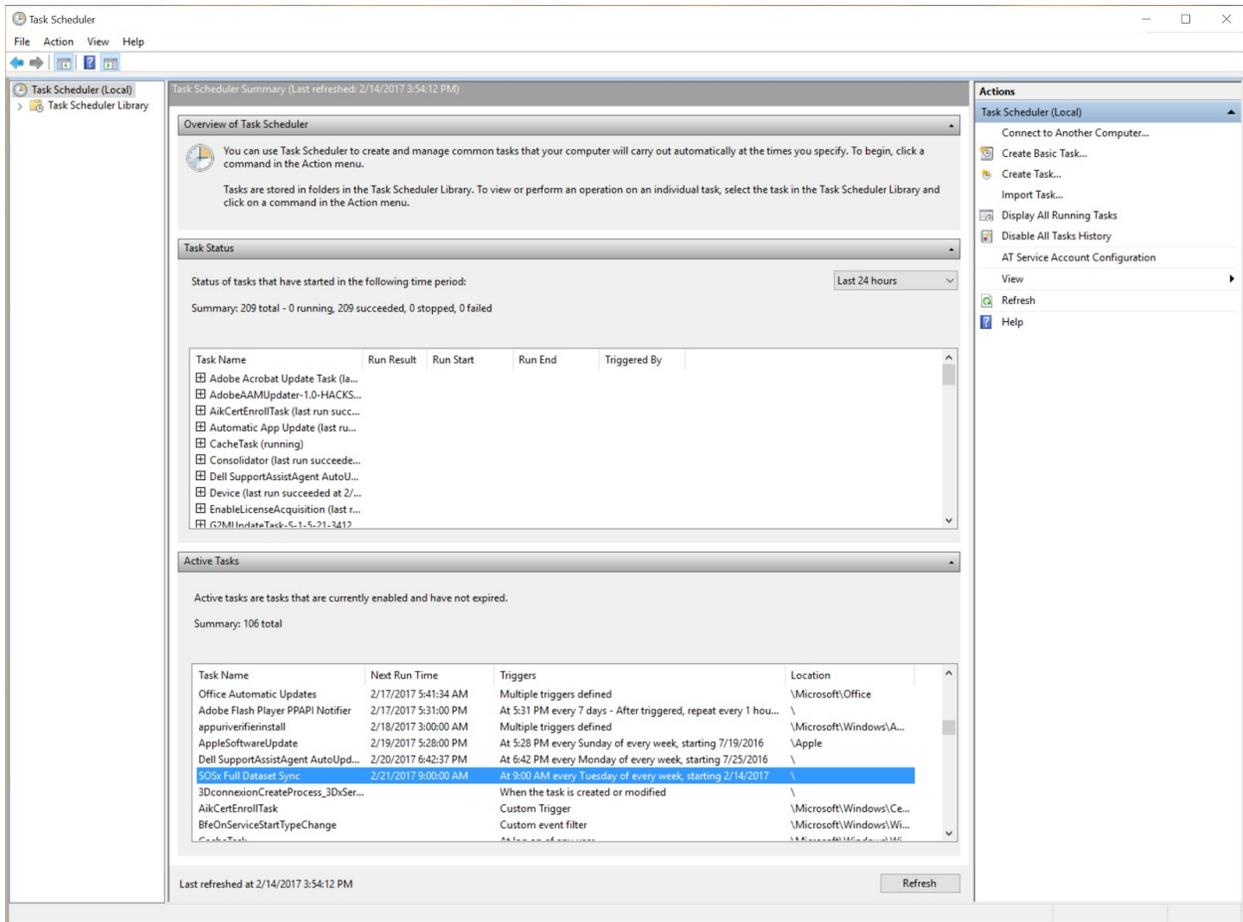
### Non real-time Datasets

If the "Schedule syncing of datasets Tuesday at 9:00AM" checkbox was left checked during the setup process all other datasets are updated every Tuesday at 9:00am through the Windows

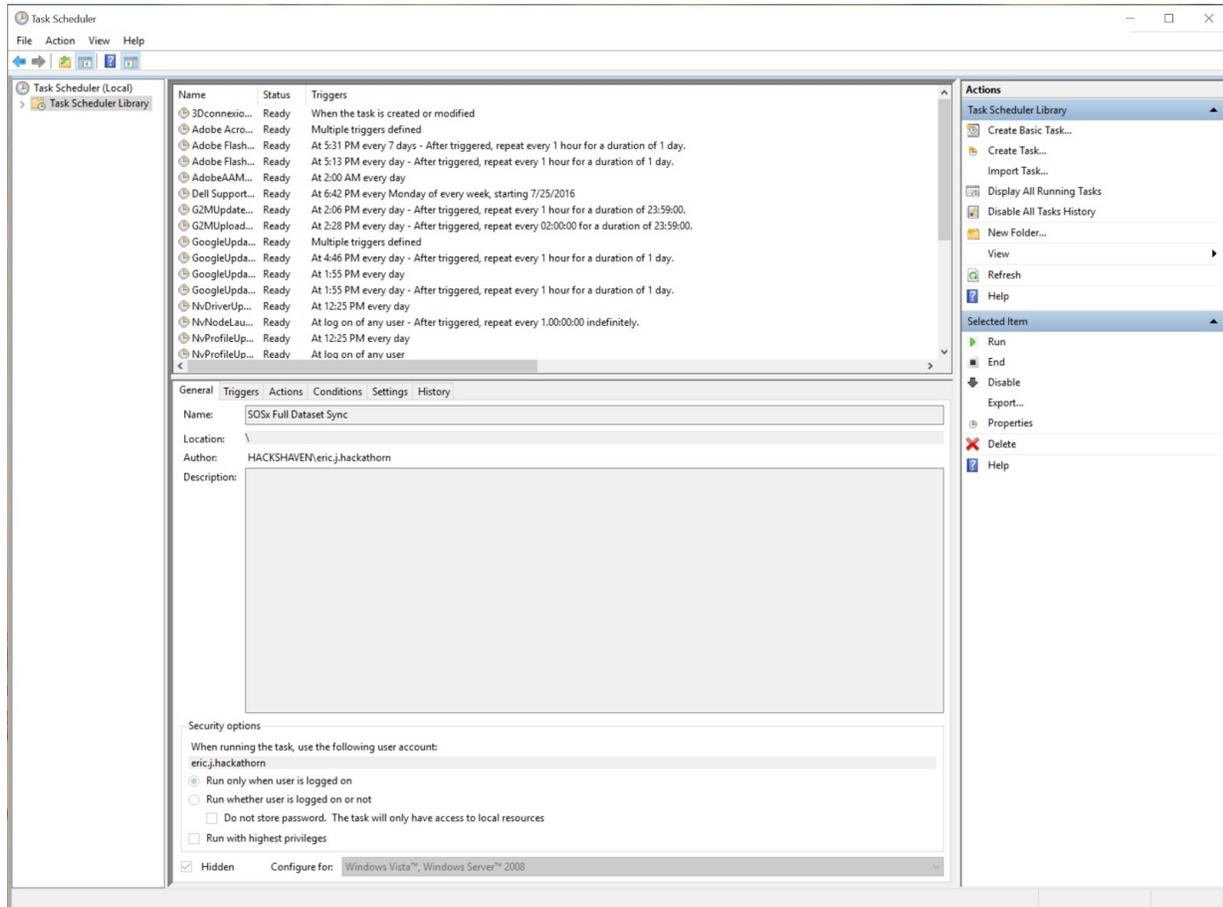
task scheduler. When the data download is happening, it's possible that you will see a decline in performance for the SOSx software. If you plan on leaving the computer on all the time, you can set this download to occur in the middle of the night to avoid potential performance issues.

If your computer happens to be off at 9:00am on Tuesday, you can use the manual sync described above to get any new datasets that you are missing.

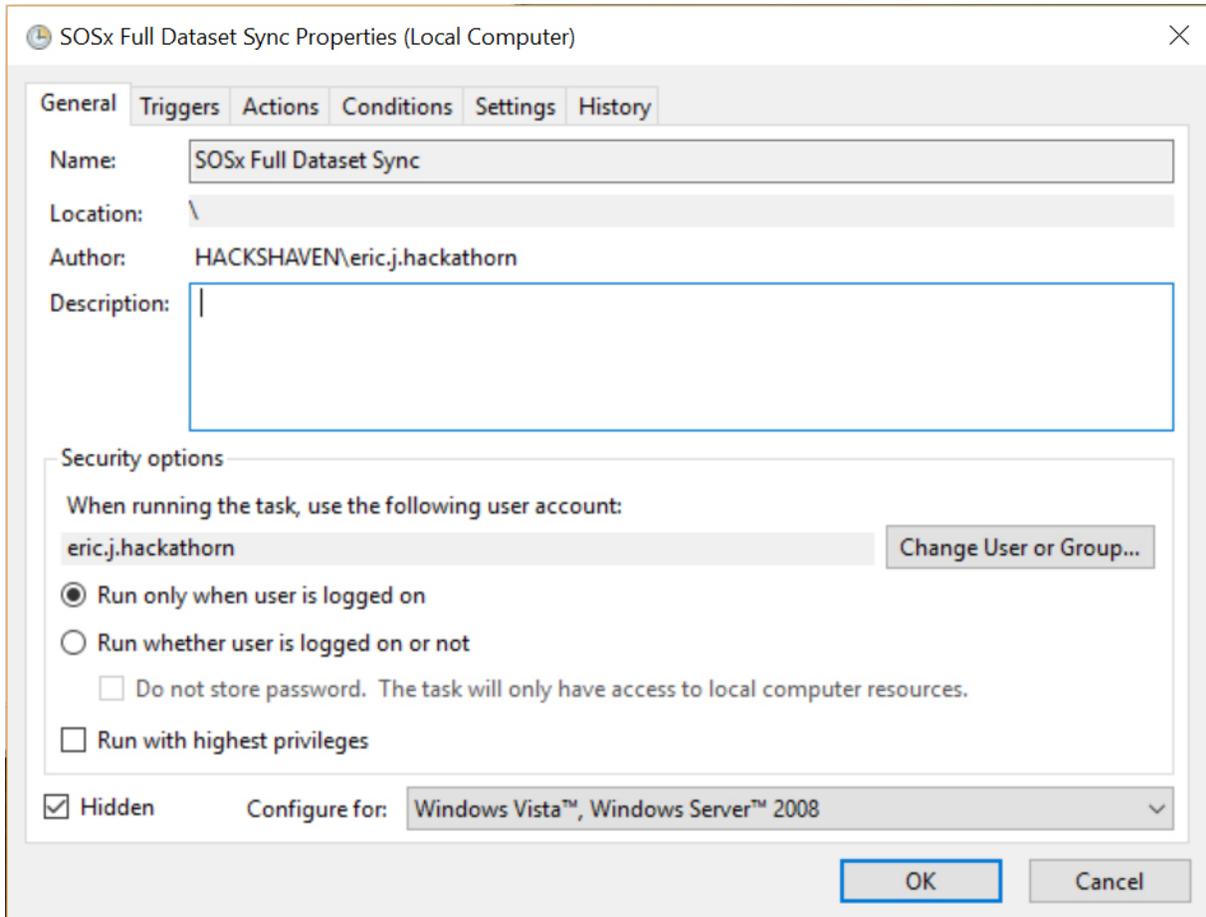
The scheduled task can be modified by starting the "Task Scheduler" found in the Start Menu.



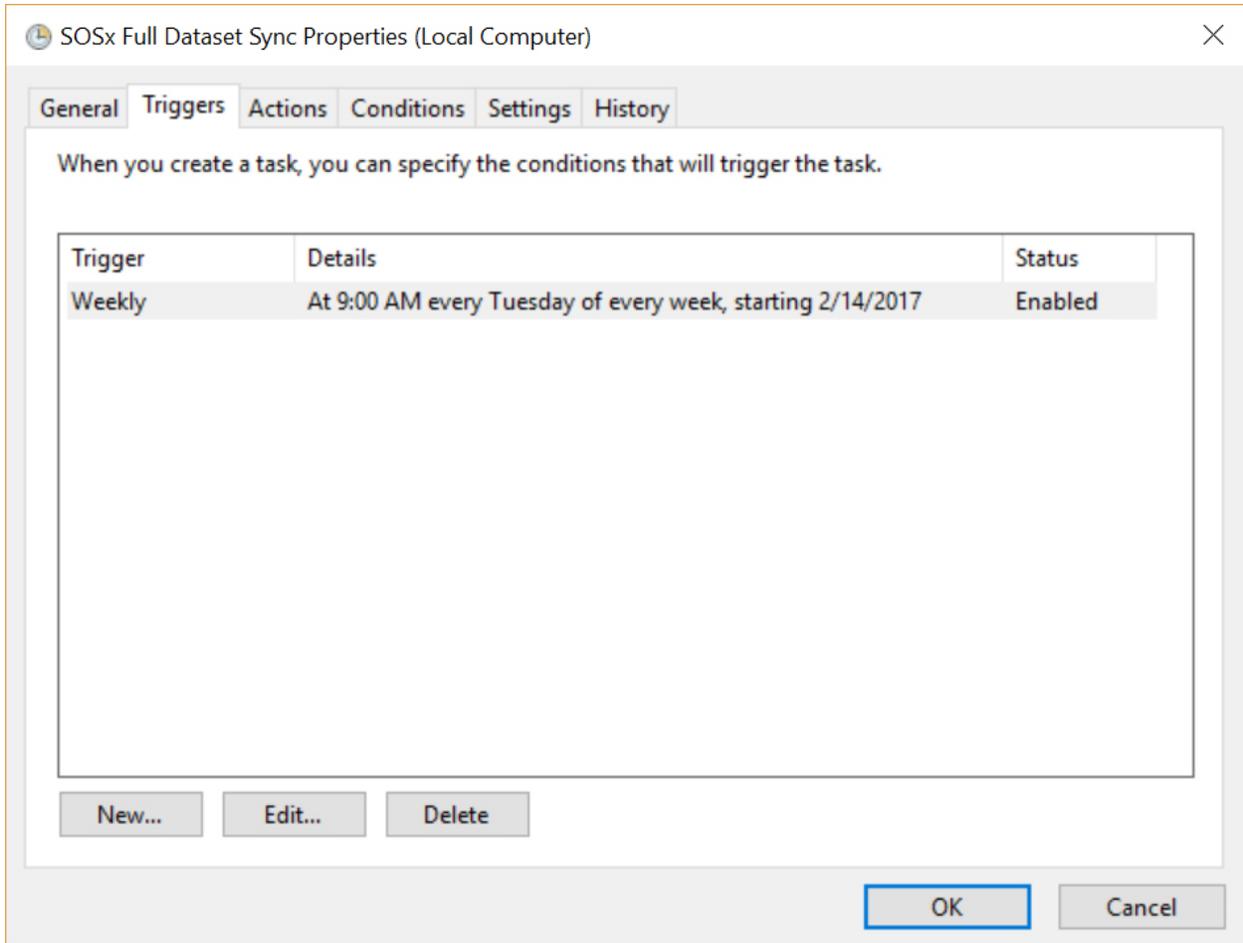
Double clicking on the "SOSx Full Dataset Sync" task pulls up the properties.



Click on “Properties” in the Actions bar on the right to edit the task.



The “Triggers” tab will let you change the time and frequency of the scheduled full dataset sync.



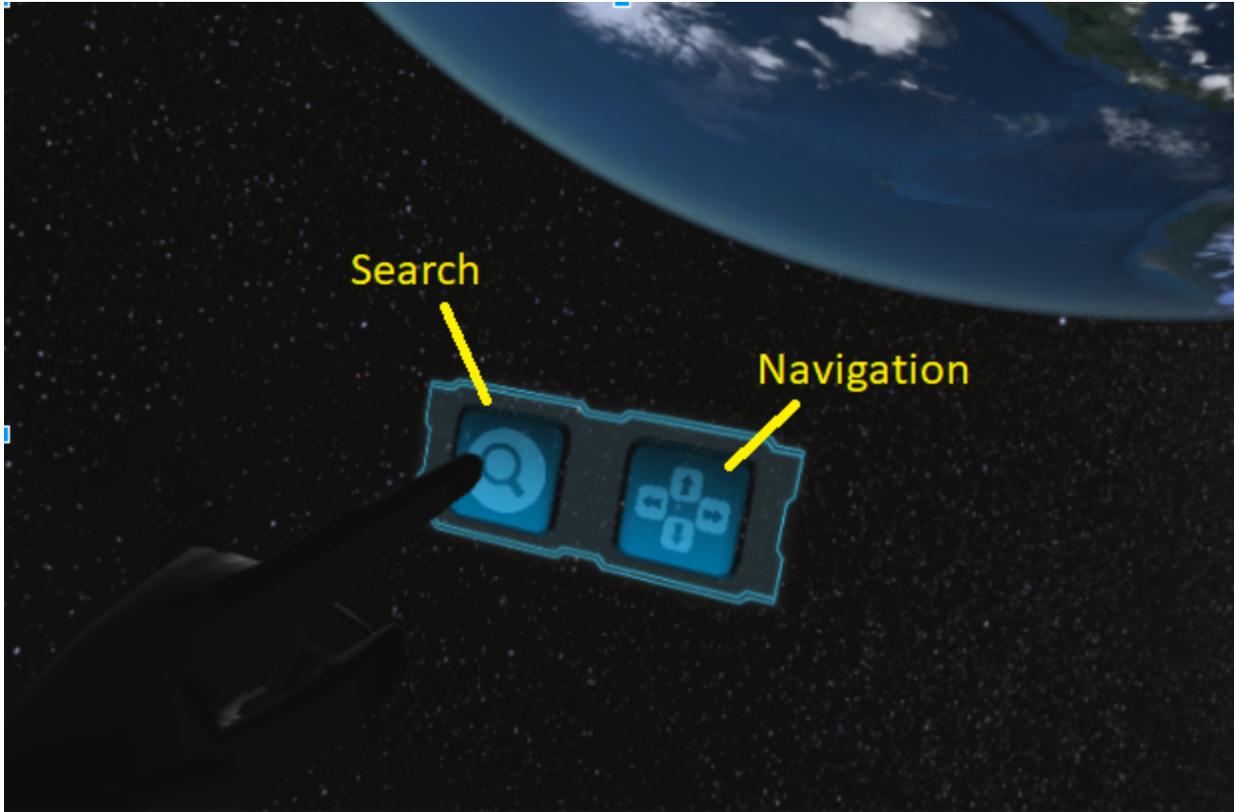
## Part 9) Virtual Reality Support

Starting in version 1.4 SOS Explorer (SOSx) offers full support for virtual reality (VR). This feature requires the following additional hardware:

- [Oculus Rift](#)
- [Leap Motion with VR Mount](#)

Follow the setup instructions included in both products and ensure the hardware is operational. Next run the Configurator program, check the “Use VR” box to enable VR, and click the Save button to save configuration options. At this time HTC Vive is not supported.

When you run SOSx with VR enabled on a system where Rift has been installed, you have the option of putting on the Rift headset to experience SOSx. With the Rift on, you will see the Earth in the distance and you will also see a virtual version of your hand. If you extend your index finger, you can touch buttons to activate them. When first starting SOSx, you will see two buttons in the main panel floating in front of the Earth: a Search button and a Navigate button.



**Tip:** The best way to press a button is to slowly move your index finger into it and then pull the finger directly away after you hear the beep.

If you press the Search button, the Search Window appears with categories of datasets for you to choose among.

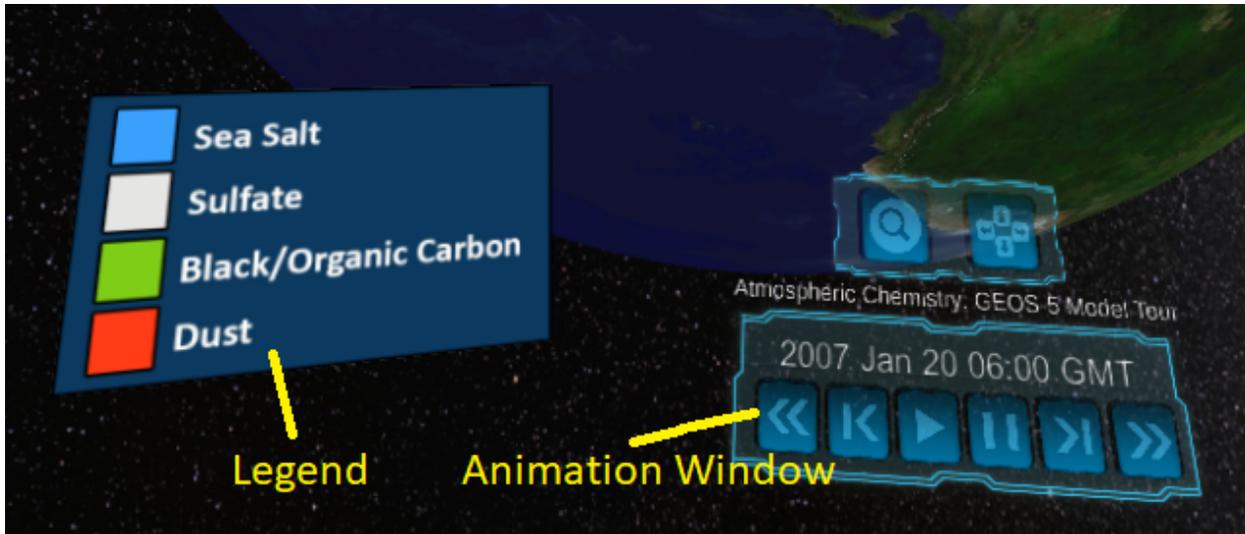


If you touch the Air button, for example, you'll see datasets in that category:



You can touch a dataset button to open that dataset. Note that you will see the dataset in your Rift and any user at the touch screen will also see the dataset load. If you load a dataset that

can be animated (e.g., a dataset with multiple images, one for each time) then you'll see a legend off on the left and below the main panel, you'll see the Animation window. Press the buttons to pause, rewind, advance frames, etc.



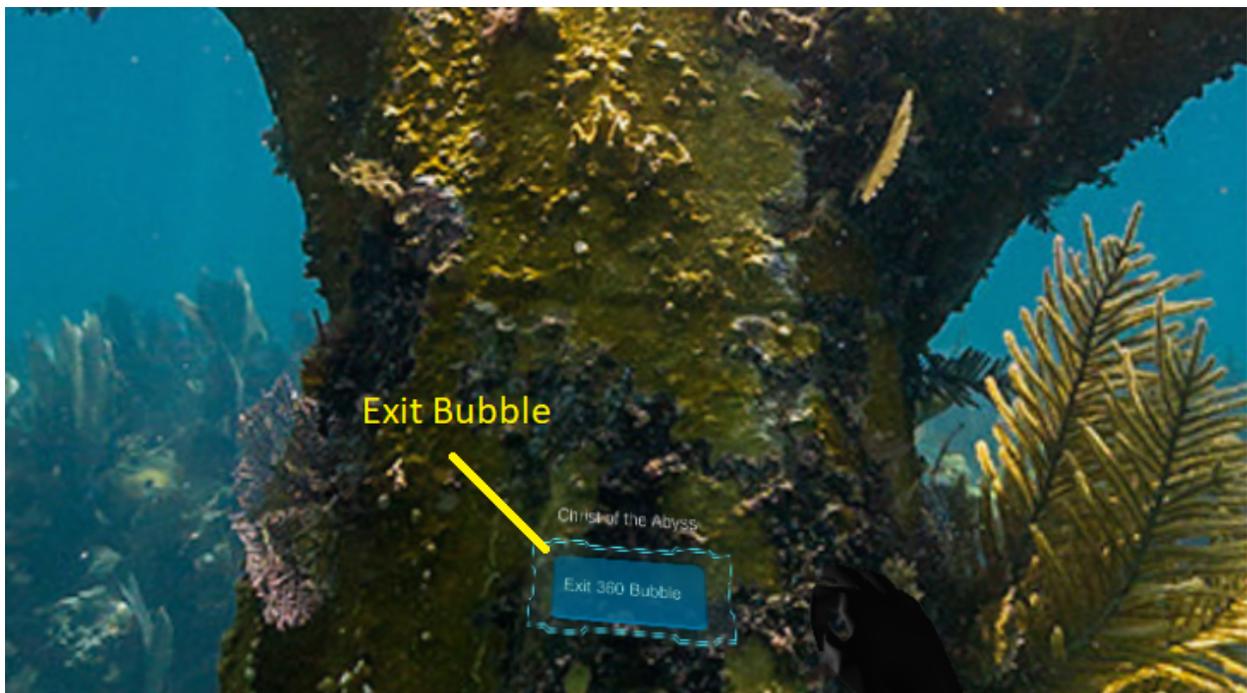
If you press the Navigation button with your finger, the Navigation window appears. Use this window to rotate the globe and zoom in/out.



If you load a tour with 360 degree content (bubbles) like the Florida Keys National Marine Sanctuary Tour, you'll see a VR window that enables you to choose which 360 degree "bubble" to fly into.

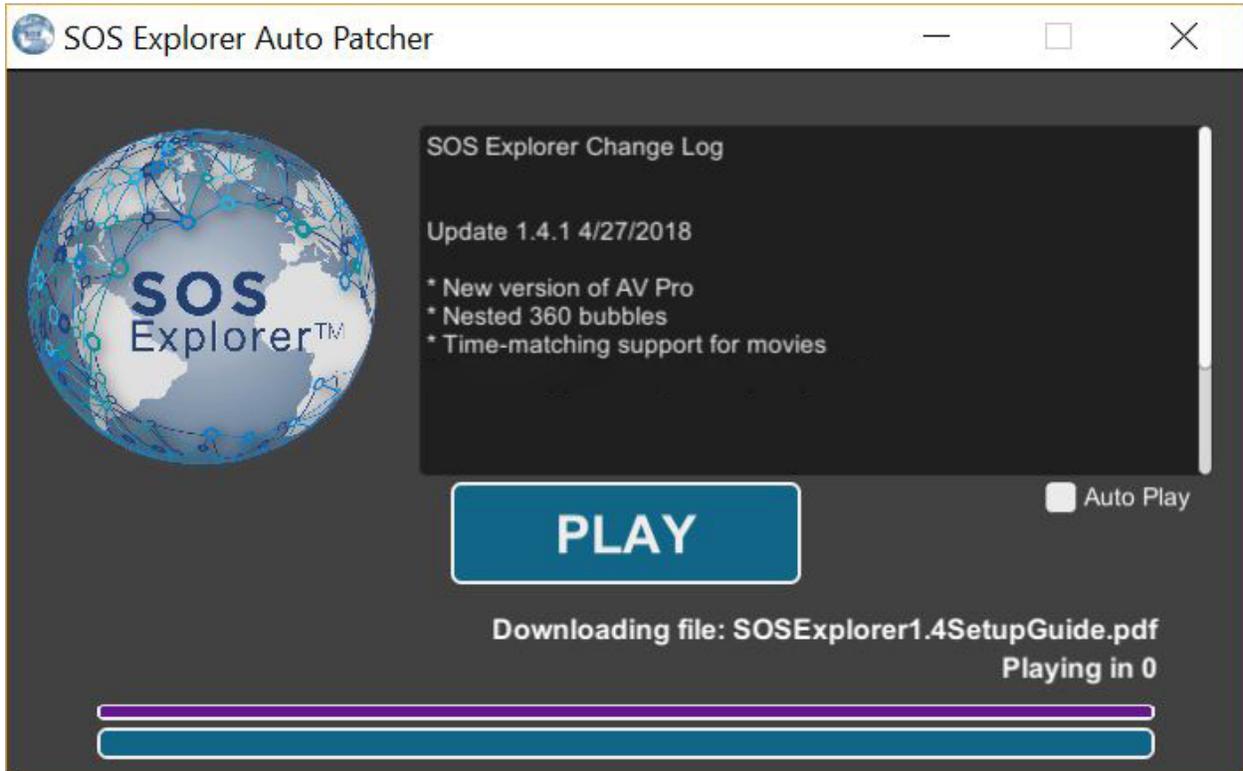


If you press the “Christ of the Abyss” button with your finger, for example, you will fly into that 360 degree bubble and can look around. Once inside the bubble, you can exit back out by touching the “Exit 360 Bubble” button.



## Part 10) Auto Updating the SOS Explorer Software

On occasion the SOS team will release updates to SOS Explorer. If you are connected to the Internet SOS Explorer will check to see if there are updates available and automatically patch the application. You can observe the progress as seen below.



## Part 11) Contacting Support

If you run into any problems or have any questions, you can contact the SOSx team by emailing [sos.explorer@noaa.gov](mailto:sos.explorer@noaa.gov). During regular business hours (we're in the Mountain time zone), you should receive same day responses.