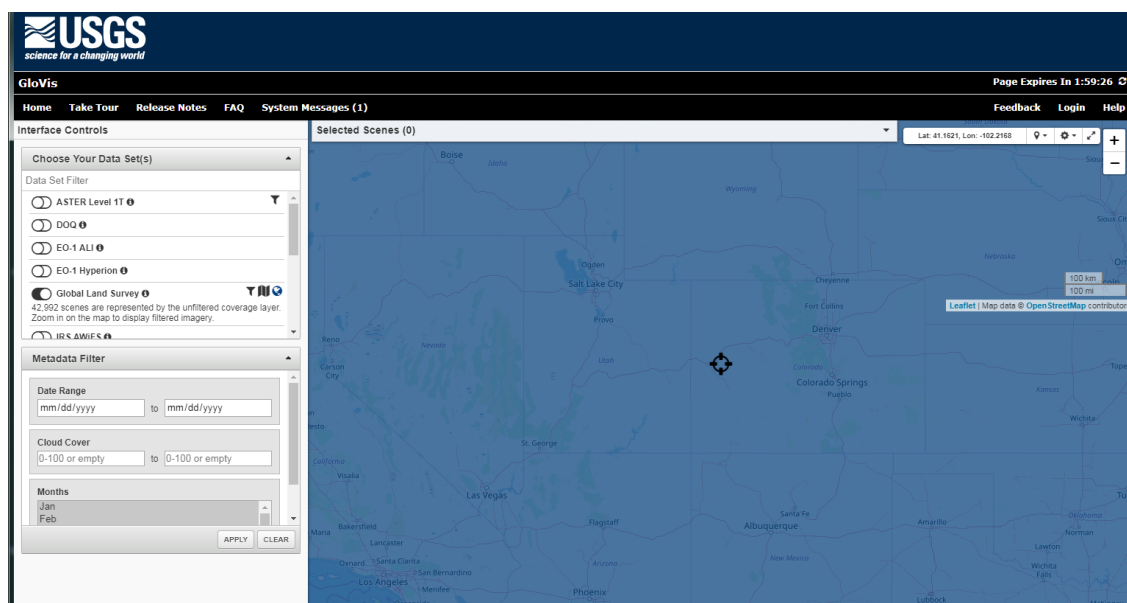Last Updated: January 2019

Global Visualization (GloVis) Viewer User Guide

Introduction

The USGS Global Visualization Viewer, or GloVis, is a simple and efficient way to search and order selected satellite data. The graphic interface allows the user to quickly browse images from multiple USGS Earth Resources Observation and Science (EROS) data holdings. An advantage of the GloVis interface is the ability to easily set several parameters, including cloud cover percentages, path/row locations, and a date range. In order to download data, you will need a USGS account, which is the same login you would use for USGS Earth Explorer.

Available Data

- Landsat
- Sentinel-2
- SRTM
- MODIS Aqua and Terra
- EO-1
- TerraLook
- Select aerial data

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Part 1: Browse the viewer

The GloVis website is located at https://glovis.usgs.gov/. There is no login required to browse, but an account with USGS is needed to download any data. You will be prompted to either login or to register when you first try to download imagery.

A. Open GloVis and Login

1. When you navigate to the GloVis site via the above link, you will be prompted to select the Full Screen Mode or the standard GloVis interface. Select the second option, **Launch GloVis**.

   i. The Full Screen Mode will simply devote more space to the map interface and parameter controls by removing some of the links and tabs that you would typically see at the top and bottom portions of the interface.

2. To download any data, you will need to login using your USGS login info. Click the **Login** button at the top right and enter your username and password.

B. Interface Overview

1. In the GloVis interface, you will see three primary sections, a **Choose Your Data Set(s)** window, a **Metadata Filter** and the map interface (see image below).
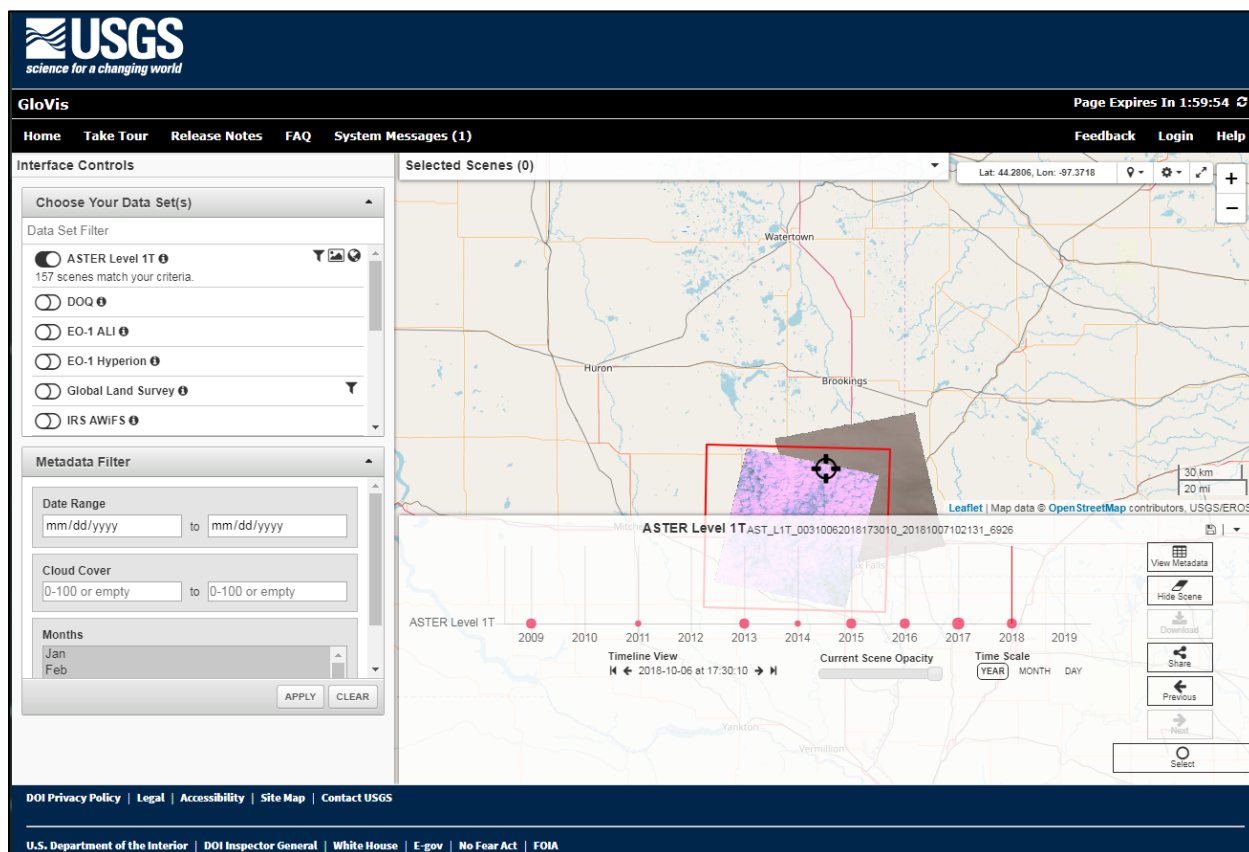
   i. In the **Choose Your Data Set(s)** section, you can select the type of data you would like to query and download. You can select datasets such as Landsat, Sentinel-2, or SRTM.

ii. The **Metadata Filter** allows you to specify a date range for data, acceptable cloud cover min/max percentages for satellite imagery, and the desired months you would like data for. This will limit your query results to only the data that meets these filters.

iii. The map interface has a crosshair in the middle of the map that is used to specify the location where you want to search for data. It also displays the extent of data that meet your search criteria.

(a) When a dataset is selected, a semi-transparent window pops up in the map interface that allows you to do several things:

(i)   see and select images based on a timeline of acquisition;

(ii) sort through and view a thumbnail of each scene

(iii) view metadata

2. If you would like to take a tour the GloVis interface, click the **Take Tour** button at the top left of the interface. This provides a detailed overview of GloVis and demonstrates how to use different components of the user interface. A similar step-by-step approach to querying and downloading data in GloVis is detailed in the following section.

Part 2: Query and Download Data

Now that you are familiar with the GloVis interface, you can practice querying data, sifting through the results, and ultimately downloading data. In this example, instructions are provided for querying and downloading Landsat 8 data in September 2018, but you should feel free to choose a different dataset and time frame that suits your desired application.

A. Set Search Parameters

1. In the **Choose Your Data Set(s)** panel on the left, scroll down and select the slider button next to **Landsat 8 OLI/TIRS C1 Level-1**.

i. Notice that the available images that meet the default parameters are displayed in the map interface.
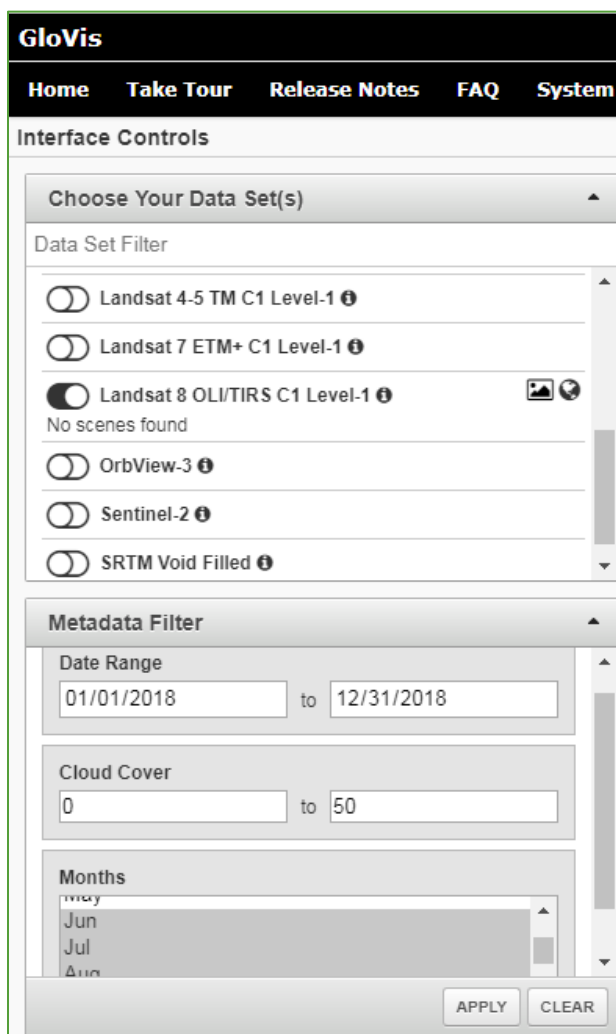
> **Note**: only Level-1 Landsat data products are available on GloVis. Level-2 surface reflectance data are available through EarthExplorer.

2. Adjust the location of your search by clicking and dragging the map interface to move the crosshair to your area of interest. Use the scroll wheel on your mouse to zoom in or out.

i. Try navigating to Denver. Orient the map interface so that the crosshair in the middle of the screen mostly overlaps with Denver.

ii. Notice that the images automatically adjust based on the location of your crosshair.

> **Note:** if you zoom out too far, the results will no longer be displayed in the map interface.

3. In the **Metadata Filter** section, adjust the date range to search for images between **1/01/2018** and **12/31/2018**. You can type the dates in that format or click the dropdown arrow to select the date range through the calendar interface.

4. Next, set the cloud cover percentage thresholds by specifying a minimum and maximum range of acceptable cloud cover. Set the minimum to **0** and the maximum to **50**.

5. Finally, you can specify the month(s) you would like to query data for. You can select one or multiple months to query data for. Select **June, July, August** and **September** by clicking **June**, holding the **Shift** key, and then clicking **September**. This should highlight all four months. Alternatively, you can hold the **Ctrl** key on your keyboard to select single months at a time.

6. Your parameters should look similar to the below image. Feel free to choose different parameters.

7. Click **Apply** to apply the parameters you just set.

B. Assess Results

1. Once you click **Apply**, you should notice a few things:

   i. The images in the map interface update to ones that meet your search parameters.

   ii. In the **Choose Your Data Set(s)** section, you should see a count of the images that match your criteria underneath the dataset you chose (see below).
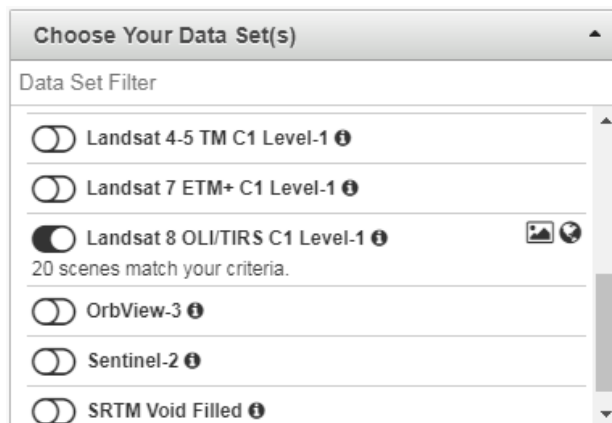
iii. Also, a semi-transparent timeline is displayed at the bottom of the map interface. You can use it to see the temporal availability of data. On the right side of the window, you can also see buttons that allow you to view metadata and sort through scenes.

2. Now that you have a collection of images that meet your search criteria, you can start evaluating what scenes will meet your needs.

3. Use the timeline window to sort through scenes. First, change the **Time Scale** parameter from **Year** to **Day** (see below).
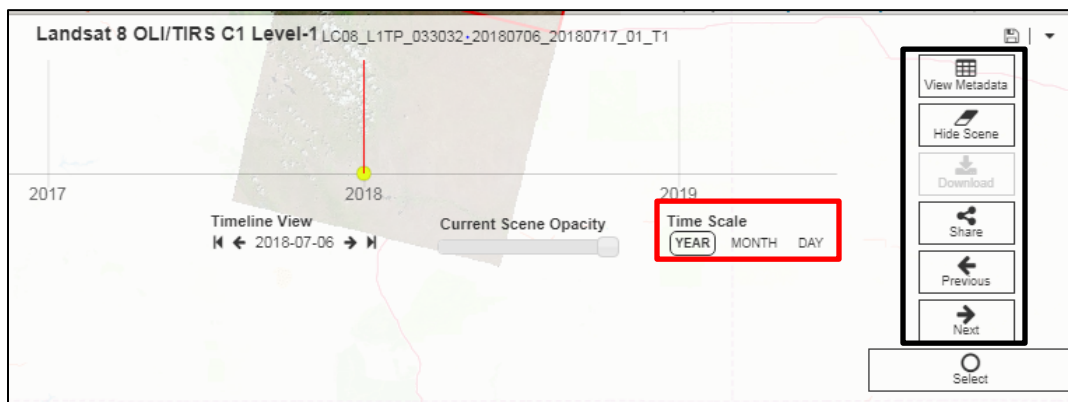
i. Once the **Day** option is selected, you can see more yellow dots located along the X-axis that represent the available scenes that meet your search criteria.

4. Click the **Next** button (see black box in image above) to sort through scenes. Notice that the selected scene is highlighted in red.

5. Once you identify a scene that looks satisfactory (i.e., low cloud cover), you can further assess the scene by clicking the **View Metadata** button. This will provide detailed information about the scene, including the acquisition date, path/row, cloud cover, and numerous other types of metadata.

6. Close the metadata window when you have finished reviewing it.

7. Continue to search for a scene (or scenes) that meets your requirements (i.e., cloud cover, time of year, etc.). Once you have identified the scene you would like to download, ensure that it is highlighted in the map interface, then click the **Select** button at the bottom right of the timeline interface.

    i. When you select a scene, it is added to the top of the map interface where it says **Selected Scenes**.

    ii. If you identified multiple scenes you would like to download, you can use the **Previous** and/or **Next** buttons to highlight the other scene(s) you would like to add to your list of downloads. Simply click the **Select** button again for the other scene(s) and notice that they are added to the list of selected scenes.

8. If you would like to identify and select a scene from an adjacent Path/ Row, you can pan around in the map interface to move the crosshair to that Path/Row. Your search parameters will automatically be applied to the different area of interest.

9. Once you have selected all the desired scenes, click the **Selected Scenes** dropdown at the top of the map interface.

10. This will expand to show a list of scenes that you have selected. Notice that there are several options at the top of the window (see image below).
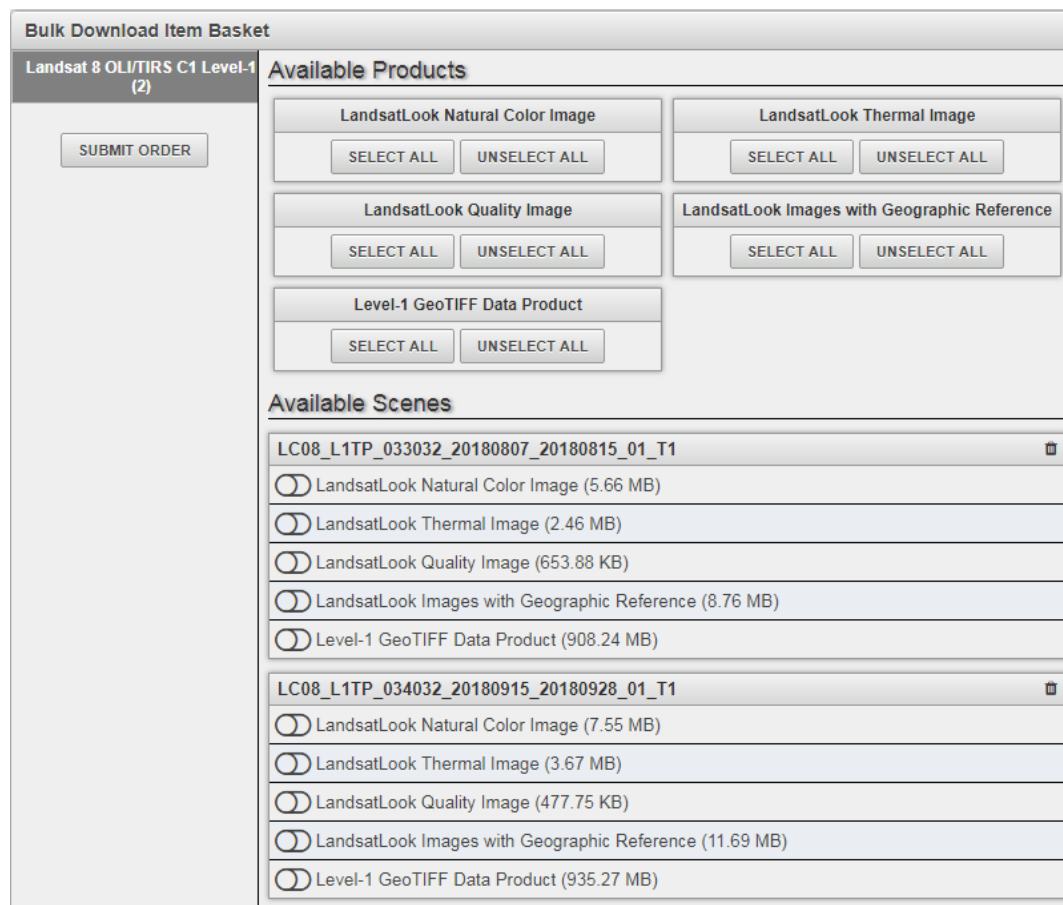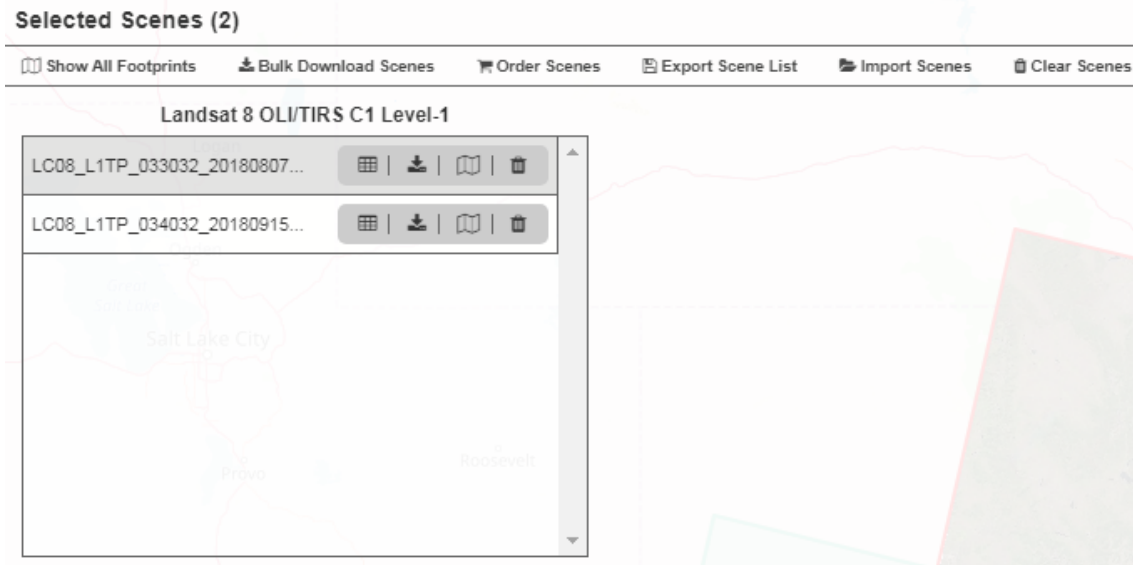
i. **Show All Footprints** will display the extent of each scene on the map.

ii. **Bulk Download Scenes** will take you to a different website where you can download many scenes at once.

iii. **Order Scenes** will take you to a different website where you can download a single scene at a time.

iv. **Export Scene List** creates a .gv file (GloVis file format) with scene IDs for the selected imagery. This list can later be used to Import Scenes.

v. **Import Scenes** ingests a .gv file with a list of scene IDs that will be added to the list of Selected Scenes.

vi. **Clear Scenes** deletes all of the currently selected scenes from your list.

11. In addition, each individual scene has options to **View Metadata**, **Download Scene**, **Show Footprint**, and **Remove/Unselect Scene**.

i. This is the easiest way to download individual scenes quickly.

12. Click the **Download Scene** button to the right of one of your selected scenes.

13. In the **Download Options** window that opens, select the **Download** button next to **Level-1 GeoTIFF Data Product.**

i. This is the primary data product that includes all of the individual bands for the given scene. Other options only include a portion of the data, primarily for

Note: you may need to allow pop ups in order to download data from this website. Pop up blockers may keep the download from starting.

14. The data will then be added to your browser's Downloads folder with a **.tar.gz** extension. This is a compressed file type that can be opened with most standard unzip software (e.g., 7-zip).

15. If you want to download more than one scene at a time, click the **Bulk Download Scenes** button at the top of the **Selected Scenes** window. Click **Yes** in the **Continue to Bulk Download Order?** Window.

16. In the **Bulk Download** window that opens up, notice that you can select different products for individual scenes or select the same option for all scenes at the top of the window (see below).

i. To download the standard dataset, click **Select All** under **Level-1 GeoTIFF Data Product**.

ii. Click **Submit Order** to prepare the data for download.

iii. In order to actually download this bulk order, you will need to download and install the Bulk Download Application. After you click Submit Order, a new page pops up with a link and instructions for doing this. You will also receive an email that confirms your bulk order and provides more information on accessing that data.