



Instructions

1. Any edits made should be made in *suggestion mode*.
2. Once the editor incorporates the edits into the latest file, the editor should resolve the suggestions.



PLANET EXPLORER USER GUIDE

LAST UPDATED July 2018

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Disclaimer

This document is designed as a general guideline for customers interested in acquiring Planet Explorer Lab products and services. Planet takes an agile and iterative approach to its technology, and therefore may make changes to the product(s) described in this document.

1. OVERVIEW

Planet Explorer is an online tool leveraged to easily search and browse recent and past geospatial data, enabling users to see change across the planet over time. It can be used to search Planet's catalog of imagery, view metadata, and download full-resolution images. The application and all of its features are built entirely on the externally available Planet Data API.

This document provides an overview of the interface and descriptions of commonly used functionality available in the Planet Explorer graphical user interface (GUI) application. This application is used specifically to search and access PlanetScope, RapidEye, Skysat, Landsat 8, and Sentinel-2 imagery products.

The link to the Planet Explorer is: www.planet.com/explorer.

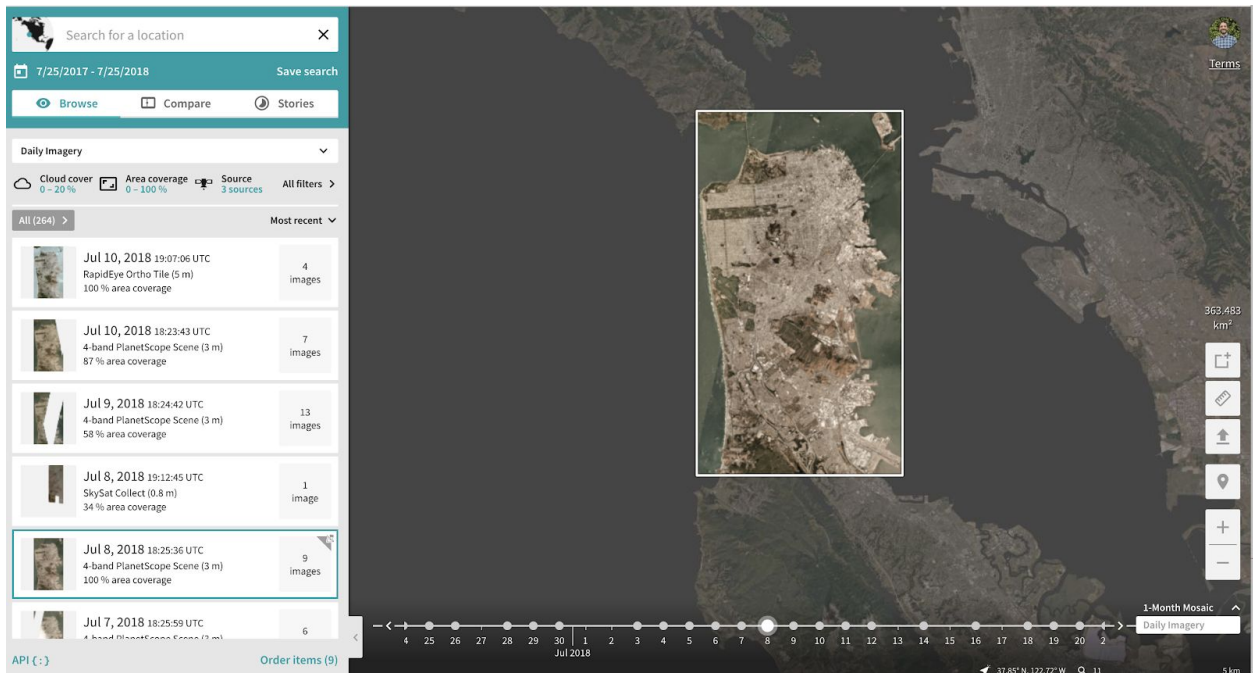
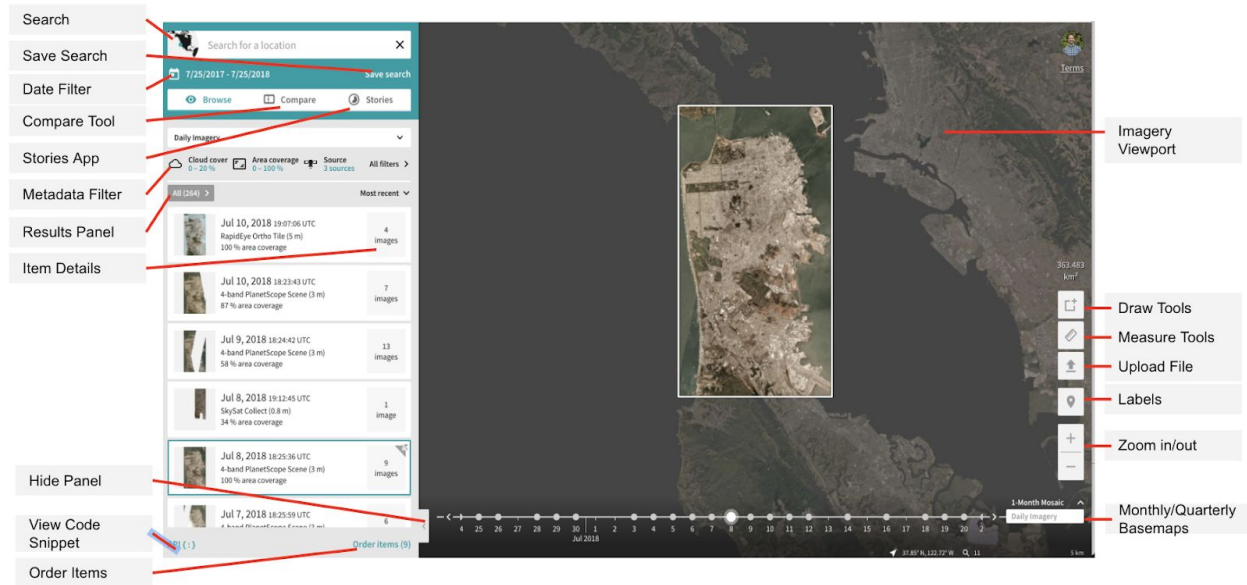
2. FEATURES

For **Planet Explorer Users** (account required), the GUI allows the user to:

1. **View Timelapse Basemaps:** Planet customers and users can preview all quarterly and monthly global basemaps at limited zoom (30-40m/pixel).
2. **Search:** A user can Search for any location or a specific area of interest by entering into the input box OR by uploading a geometry file (Shapefile, GeoJSON, KML, or WKT).
3. **Save Search:** The Save functionality allows a user to save search criteria based on area of interest, dates, and filters, or update an existing Saved Search.
4. **Filter:** A user can filter by a specific date range and/or customizing metadata parameters (e.g. estimated cloud cover, ground sample distance).
5. **Zoom and Preview Imagery:** Planet customers and users can preview quarterly, monthly, and daily imagery globally at limited zoom (30-40m/px), along with the areas of interest according to data subscriptions.
6. **File Upload:** Upload geometry files as Shapefile, GeoJSON, KML, or WKT.
7. **View Imagery Details:** A user can review metadata details about each imagery product.
8. **Order Items:** The Order Items link allows a user to order and download imagery based on their data subscription.
9. **Draw Tools:** These tools allow you to specify an area to see imagery results. The draw tool capabilities available are drawing a circle, drawing a rectangle, drawing a polygon, and/or limiting the size of the drawing to the size of loadable imagery.
10. **Measurement Tools:** These tools allow you to measure the distance between two points, the area within a polygon or the bearing of a drawn line.
11. **Compare Tool:** The Compare Tool allows a user to compare sets of Planet imagery from different days, months, and quarters.
12. **Coverage Map:** Provides an estimate of the percentage of the area that has been covered by PlanetScope and RapidEye imagery and/or the number of imagery captures made within a specified timeframe. Note: Changing the metadata filters, like cloud cover and sensor type, will impact the coverage percentage.
13. **Labs:** Labs are features that have yet to be launched into production but are available for Explorer users to experiment with. Note: These features may be unreliable as they are still works in progress. Once they are ready to be launched fully into production, they will be removed from the list of Labs and added as a regular Explorer feature.

3. USER INTERFACE FOR PLANET EXPLORER USERS

3.1 Basemaps



1. **Imagery Viewport:** This area displays all imagery and basemap products. In this view, this area displays the resulting timelapse basemaps.

2. **Draw Tools:** These tools allow you to specify an area to see imagery results. The draw tool capabilities available are drawing a circle, drawing a rectangle, drawing a polygon, and/or limiting the size of the drawing to the size of loadable imagery.
3. **Measurement Tools:** These tools allow you to measure the distance between two points, the area within a polygon or the bearing of a drawn line.
4. **File Upload:** Upload geometry files as Shapefile, GeoJSON, KML, or WKT.
5. **Zoom:** Allows you to zoom in or out of the selected area. Zoom-in capabilities allow you to zoom in to zoom level 15 (~5 m pixel resolution per [OpenStreetMap](#)) for imagery available under your subscription and zoom level 12 for everywhere else.
6. **Coverage Map:** Provides an estimate of the percentage of the area that has been covered by PlanetScope and RapidEye imagery and/or the number of imagery captures made within a specified timeframe. Note: Changing the metadata filters, like cloud cover and sensor type, will impact the coverage percentage.
7. **Label Toggle:** Overlays labels of places around the world.
8. **Quarterly & Monthly Basemaps:** Browse through a series of basemaps generated from Planet imagery. The current basemaps available are from imagery captured in a quarterly or monthly timeframe since January 2016.

3.2 Imagery

The screenshot shows the Planet Labs imagery interface. On the left, a sidebar contains several sections: Search, Save Search, Date Filter, Compare Tool, Stories App, Metadata Filter, Results Panel, and Item Details. The main area displays a satellite imagery map with a selected area and a zoomed-in inset. On the right, a vertical toolbar includes Imagery Viewport, Draw Tools, Measure Tools, Upload File, Labels, Zoom in/out, and Monthly/Quarterly Basemaps. At the bottom, there is a timeline for the month of July 2018.

1. **Search:** Search for any location or a specific area of interest by entering a location into the Search Box.
2. **Save Search:** The Save Search functionality allows you to save your search criteria based on area of interest, dates, and filters. Your Saved Searches can also be pulled from the Search Box.
3. **Date Filter:** Filter by specifying a specific date range.
4. **Metadata Filter:** Filter by customizing metadata. Available metadata filters include (but are not limited to) cloud cover, ground sample distance, and solar elevation.

5. **Results Panel:** Lists all imagery available, organized by the date it was captured, for your selected area. By default, the results are listed by most recent captured. You can sort by date of image acquisition and imagery product type.
6. **Item Details:** View metadata details about each imagery product.
7. **Hide Sidebar:** Hide the left sidebar to just see the imagery window.
8. **Order Items:** The Order Items link allows you to download imagery at full resolution along with supporting data files based on your subscription.
9. **Compare Tool:** The Compare Tool allows a user to compare sets of Planet imagery from different days, months, and quarters.
10. **Stories:** Planet's Stories application will walk you through creating a shareable timelapse movie showing change over time.
11. **View Code Snippet:** View cURL code snippets and imagery IDs from your search.
12. **Menu:** The Menu keeps track of your order history, status of pending orders, saved searches, labs and settings.
13. **Imagery Viewport:** This area displays all imagery and basemap products. In this view, the Viewport highlights imagery results based on the search in the Imagery Results Window (below) and dims the surrounding area.
14. **Imagery Results Display:** This area displays the specific visual imagery product results based on the search.
15. **File Upload:** Upload geometry files as Shapefile, GeoJSON, KML, or WKT.
16. **Draw Tools:** These tools allow you to specify an area to see imagery results. The draw tool capabilities available are drawing a circle, drawing a rectangle, drawing a polygon, and/or limiting the size of the drawing to the size of loadable imagery.
17. **Measurement Tools:** These tools allow you to measure the distance between two points, the area within a polygon or the bearing of a drawn line.
18. **Zoom:** Allows you to zoom in or out of the selected area. Zoom-in capabilities allow you to zoom in to zoom level 15 (~5 m / pixel resolution) for imagery available under your subscription and zoom level 12 (~40 m / pixel resolution) for everywhere else.
19. **Quarterly, Monthly, Daily Imagery:** Browse through imagery in the form of quarterly & monthly basemaps or daily imagery.
20. **Timeline:** The Timeline provides indications of the dates with imagery data.

4. COMMON WORKFLOWS

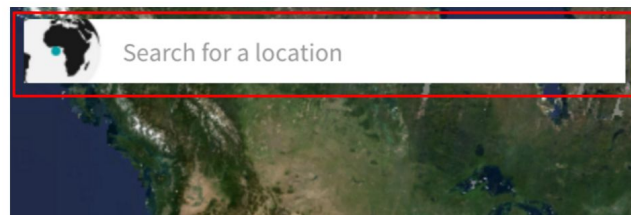
1.

4.1 Search for Area of Interest

There are different methods you can search for an Area of Interest or any location. The following outlines each method.

Method 1: Entering a Location

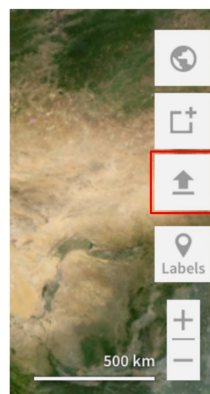
1. In the Search box, enter the name of a location. Suggestions will appear in the dropdown.



2. Hit "enter" after entering your location OR click on the appropriate suggestion that drops down.
3. The resulting imagery of your search will then appear in the Results Panel on the left side panel.

Method 2: Uploading a Geometry File

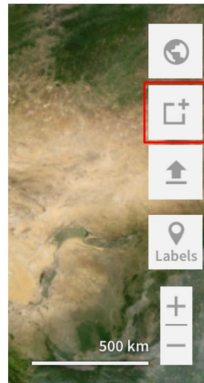
1. Click on the upload button in the bottom right corner of the Imagery Viewport.



2. Select the file you want to upload. File types supported are: Shapefile, GeoJSON, KML, or WKT.

Method 3: Draw an Area

1. Click on the Draw Tools button in the bottom right corner of the Imagery Viewport.



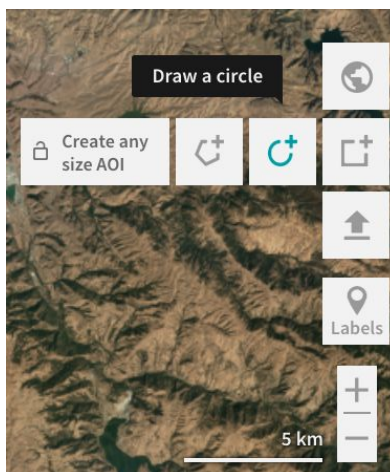
2. You can use the Draw Tools to specify a circle, rectangle, or polygon to see imagery results. More details in the section below.

4.2 Using Draw Tools

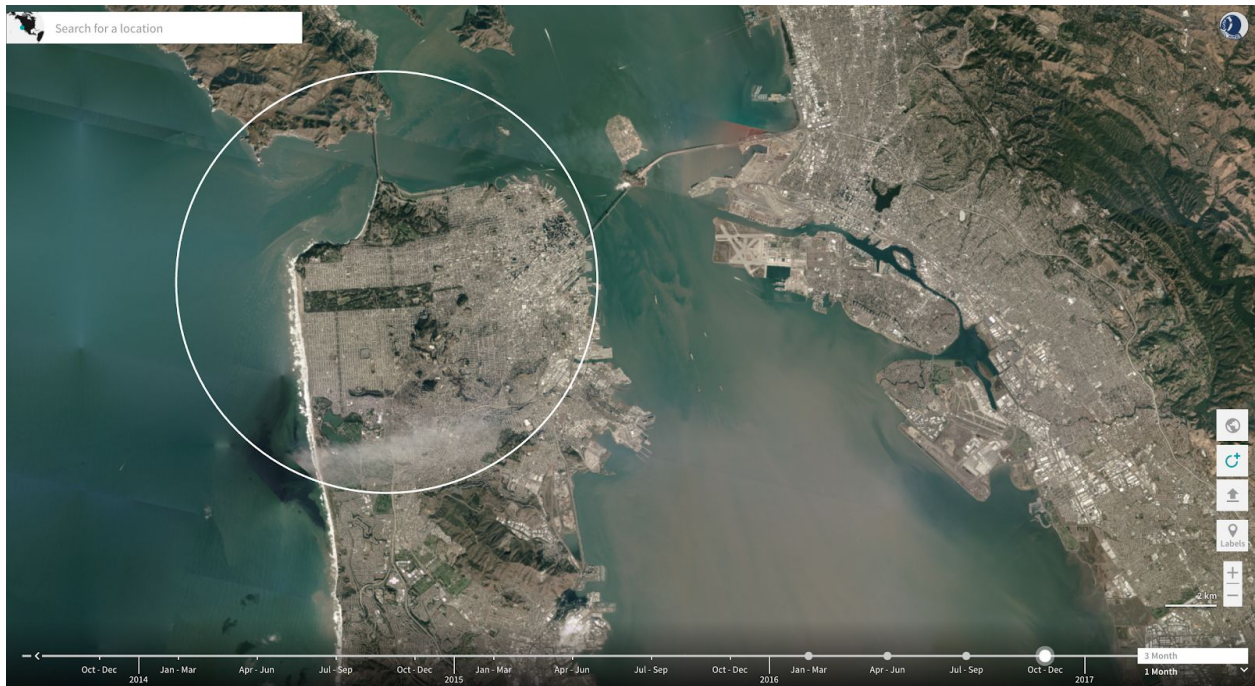
You can customize your Area of Interest by using the Draw Tools. These tools allow you to specify a specific area to see imagery results. The draw tool capabilities available are drawing a circle, drawing a rectangle, drawing a polygon, and/or limiting the size of the drawing to the size of loadable, daily imagery.

Draw a Circle

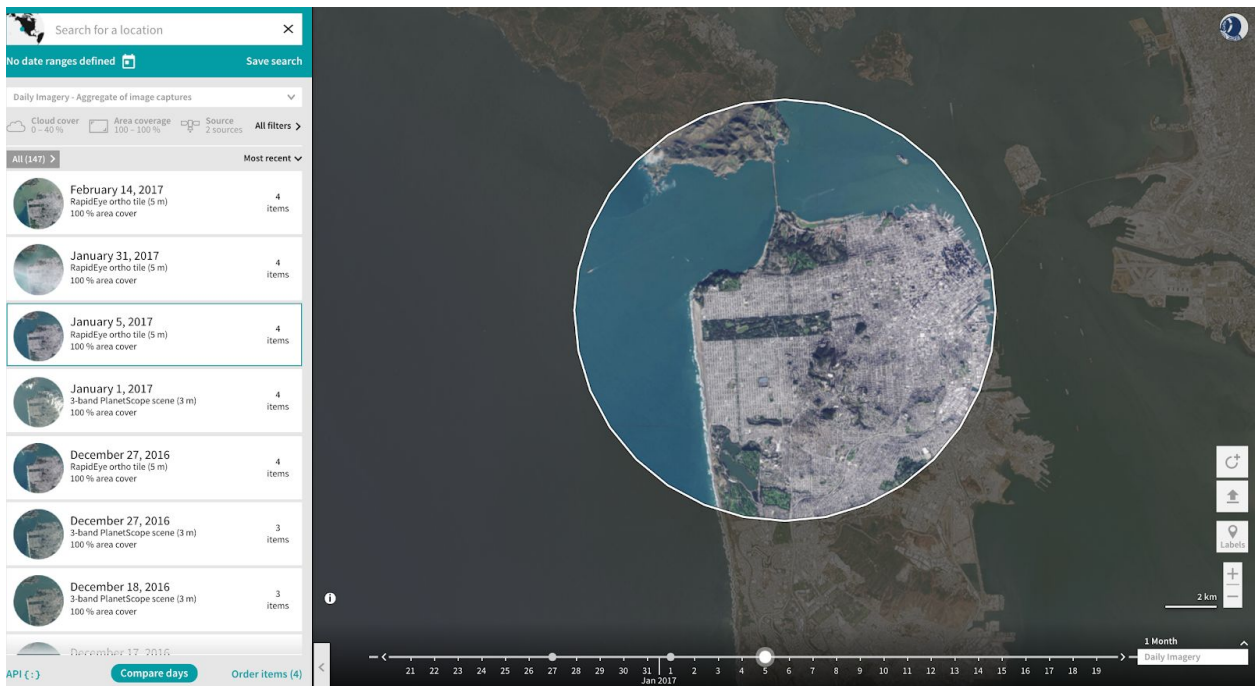
1. Click on the “Draw a circle” icon.



2. In the Imagery Viewport, click to select the location of the center of the circle you want to draw.
3. Move the cursor to change the radius of the circle.

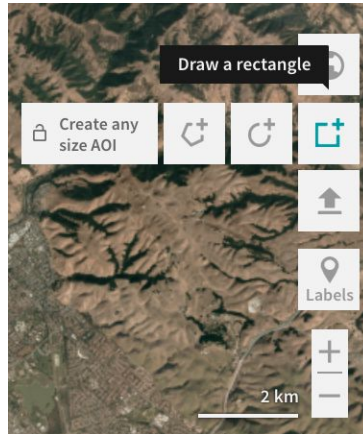


4. Click again to set the radius of the circle.
5. The results will then appear in the left Results Panel after you set the shape.

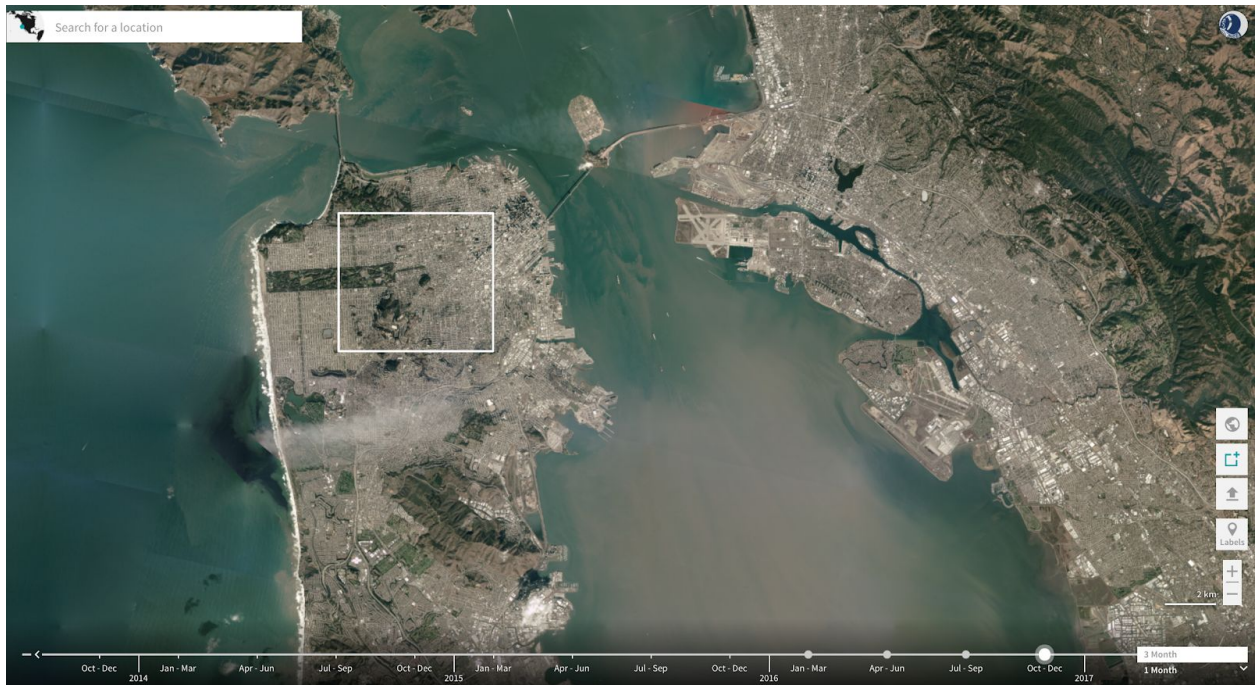


Draw a Rectangle

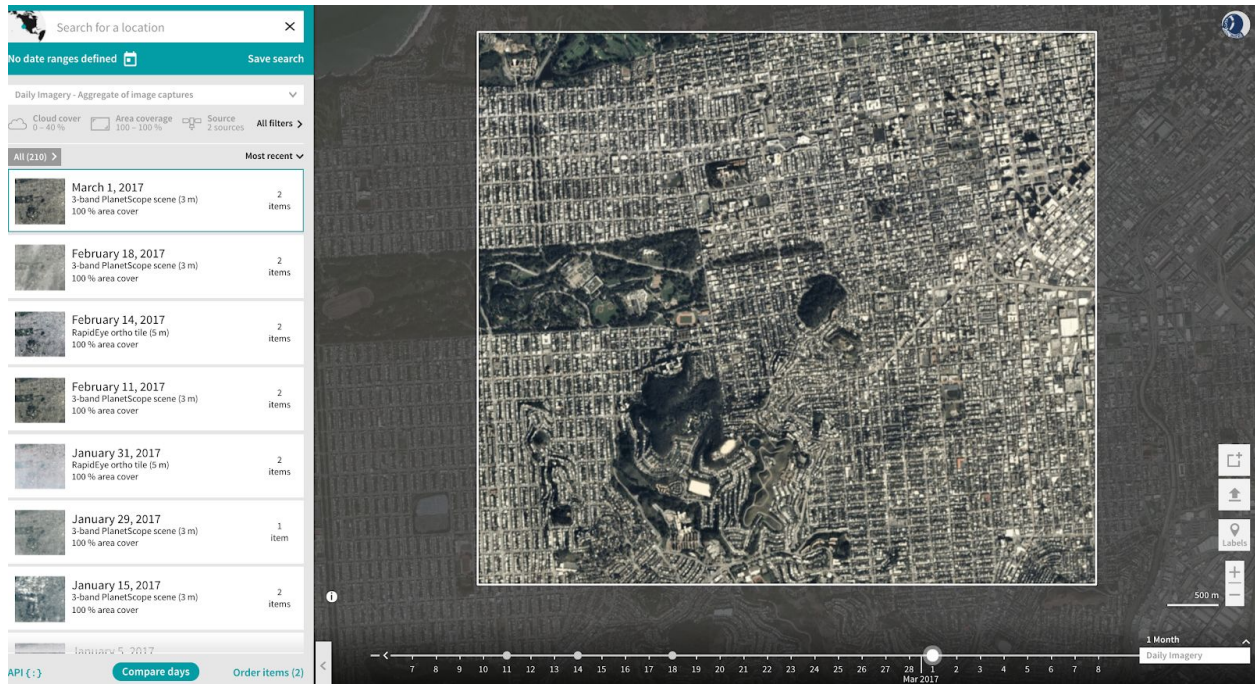
1. Click on the “Draw a rectangle” icon.



2. In the Imagery Viewport, click to select the location of the first corner of the rectangle.
3. Move the cursor to expand the size of the rectangle.

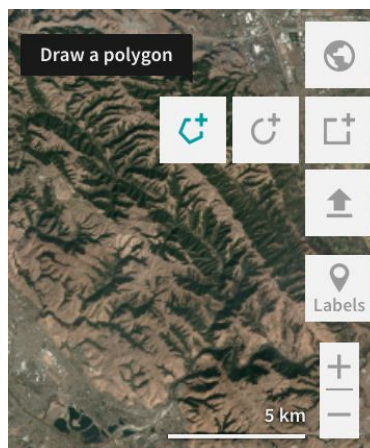


4. Click again to set the size of the rectangle.
5. The results will then appear in the left Results Panel after you set the shape.

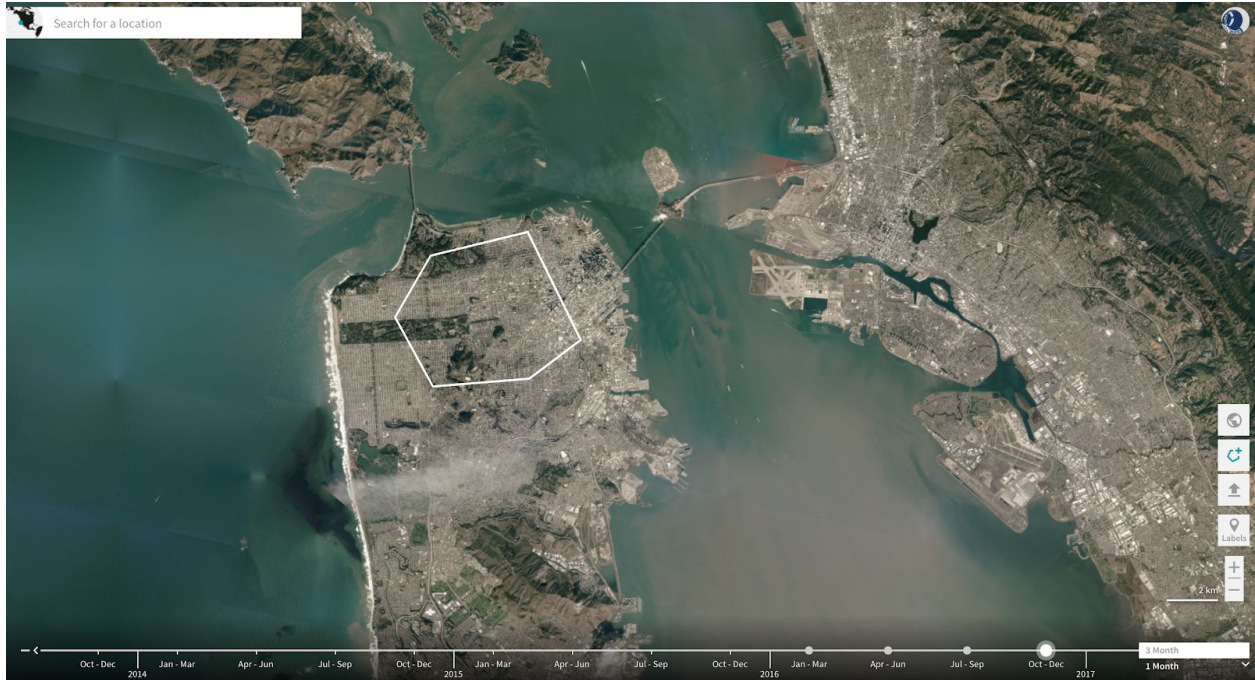


Draw a Polygon

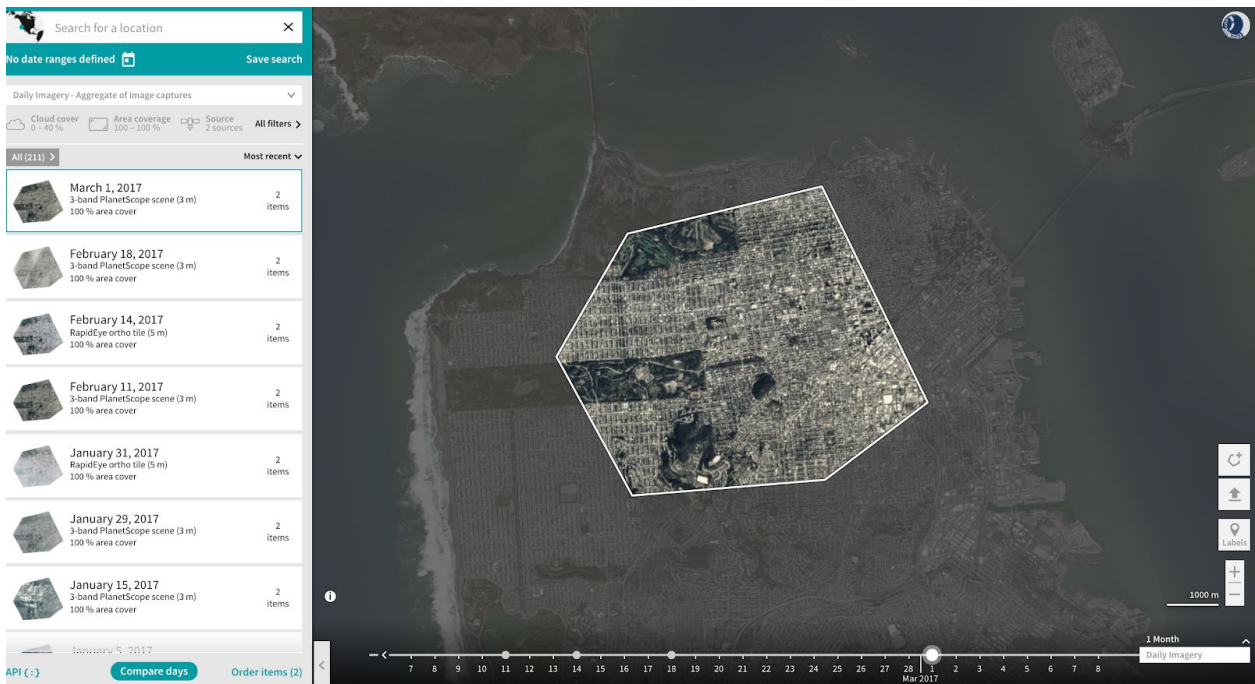
1. Click on the "Draw a polygon" icon.



2. In the Imagery Viewport, click to select the location of the first corner of the polygon.
3. Click and then move the cursor to select the location of another corner of the polygon.

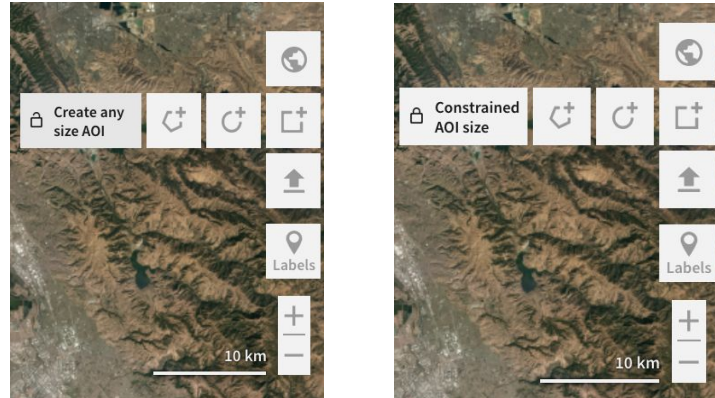


4. To set the shape of the polygon, double click.
5. The results will then appear in the left Results Panel after you set the shape.



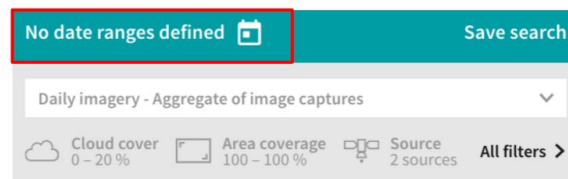
Limiting the Draw Tool Size

1. In some cases, a certain Area of Interest may be too large to load daily imagery (the current limit is 10,000 sq km). You can click on the “Constrained AOI size” button to automatically select a shape size that will guarantee daily imagery results.

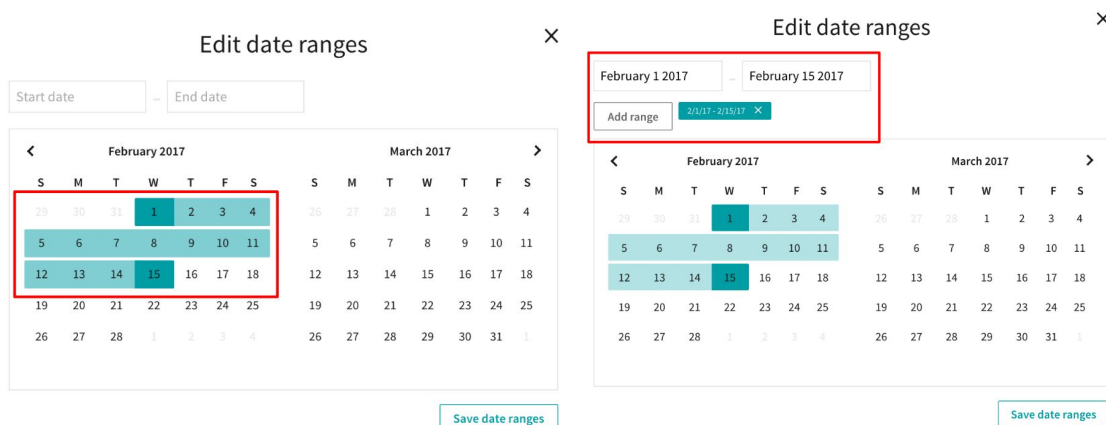


4.3 Filtering by Date

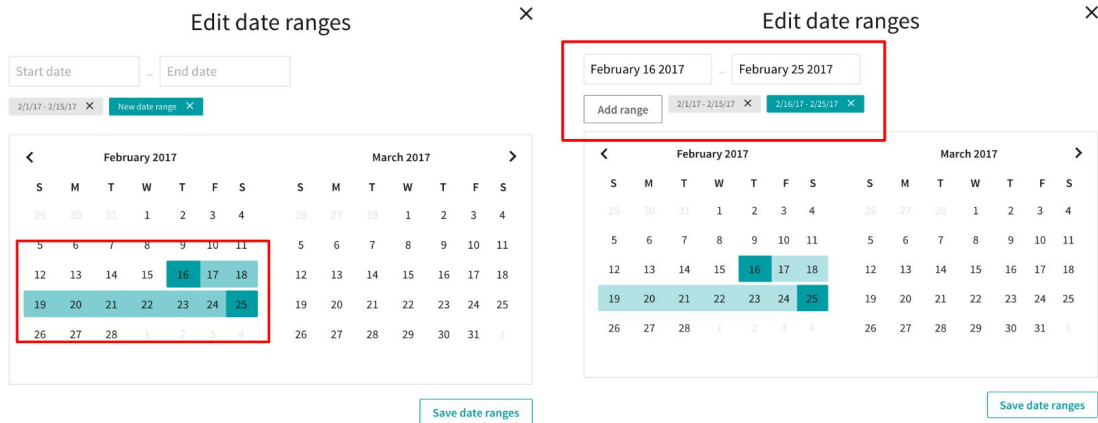
1. After you search for an Area of Interest, the results are loaded for all time by default.
2. To filter by dates, click the Date Filter.



3. An “Edit date ranges” window will display. For a single date range, you can select the start date and end date by clicking on the calendar.

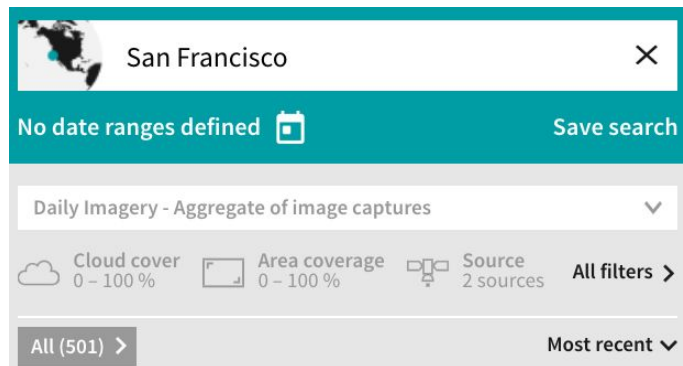


4. For multiple date ranges, click on the “Add range” button and then select the start date and end dates for each date range.

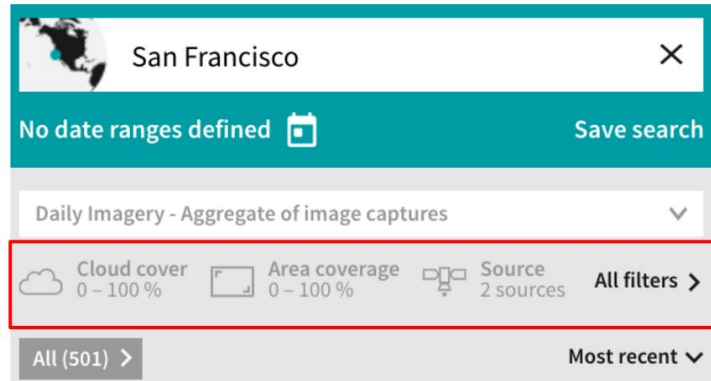


4.4 Filtering by Metadata

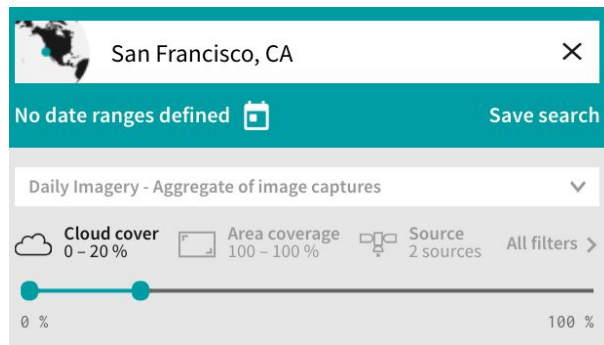
1. After you search for an Area of Interest, the results are loaded for all imagery that we have published with no metadata filters enabled by default. In this example, there are 501 results for this Area of Interest.



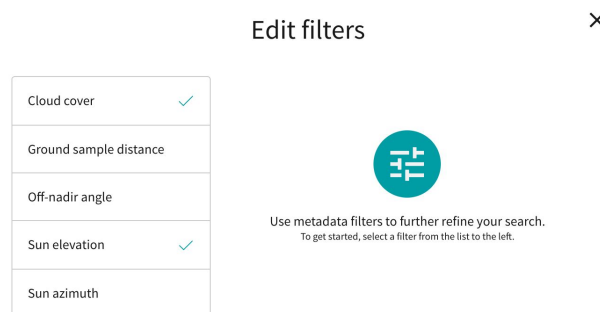
2. You can adjust the metadata filters by clicking on the filter icons above the Results Panel on the left side. Click on the filter you would like to adjust. For example, if you want to filter on cloud cover, click on “Cloud cover.”



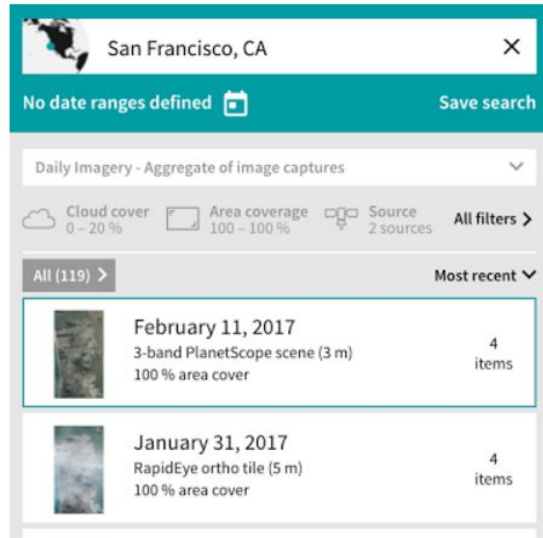
3. You can move the slider to filter the results for cloud cover within a desired range. For example, if you would like to filter out any imagery with more than 20% cloud cover, move the right end of the slider from 100% to 20%.



4. If you would like to filter on more metadata parameters, click on “All filters.” A set of metadata parameters for which you can adjust the filters will display.

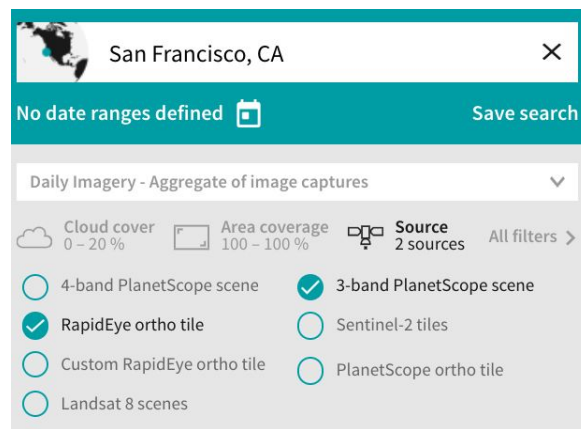


5. Adjust for the filters you'd like to make. Return back to the imagery port and you'll notice that the results in the Results Panel has updated to filter imagery based on your adjusted metadata filter. In this example, there are now 119 results.



4.5 Selecting Imagery Source

1. Planet offers data from four different sensors: PlanetScope, RapidEye, Landsat 8, and Sentinel-2. To select specific sensor types, use the “Source” selection button in the main window.



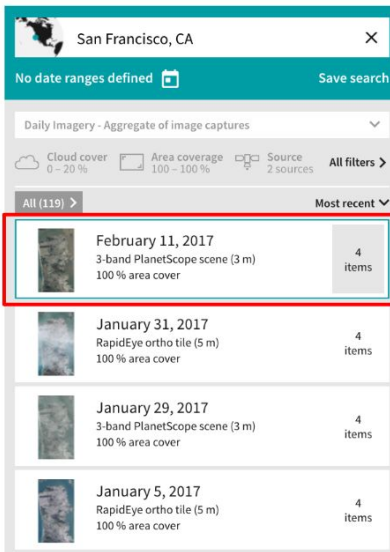
2. Click or unclick the sources you’d like to be displayed in the Results Panel. Click the “Source” filter again to dismiss the dropdown menu with the source selections.

4.6 Viewing Imagery Product Metadata

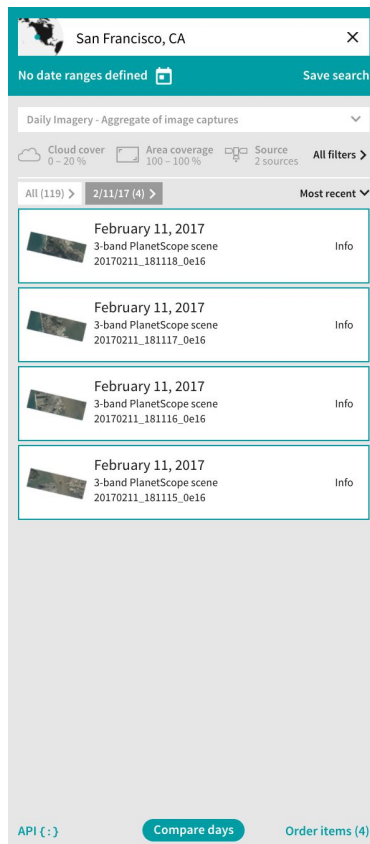
Each image results has associated metadata, such as acquisition time, cloud cover, etc. which you can view in the Planet Explorer Beta. Full metadata details can be found in Planet Documentation [here](#).

1. In the Results Panel that displays after you search for an Area of Interest or location, the imagery is organized by the date it was captured.

- To view all the single imagery captures for a specific day, click on the right side of the image row with “# items.”



- After you click on “# items,” a view of all single imagery captures that were acquired on that specific date will appear.



- To view the metadata associated with a single imagery capture, click on an image item row for a single image capture.

San Francisco, CA

No date ranges defined Save search

Daily Imagery - Aggregate of image captures

Cloud cover 0 - 20% Area coverage 100 - 100% Source 2 sources All filters >

All (119) > 2/11/17 (4) > 10:11:16 AM PST

February 11, 2017
20170211_181116_0e16 View

Source	3-band PlanetScope scene
Cloud cover	0 %
Ground sample distance	3.87 m
Satellite ID	0e16
Sun azimuth	142.2°
Sun elevation	29.9°
Off-nadir angle	0.1°

5. If you'd like to see a Detailed View of the Imagery, click on the right side of the image item row with "info."

San Francisco, CA

No date ranges defined Save search

Daily Imagery - Aggregate of image captures

Cloud cover 0 - 20% Area coverage 100 - 100% Source 2 sources All filters >

All (119) > 2/11/17 (4) > Most recent >

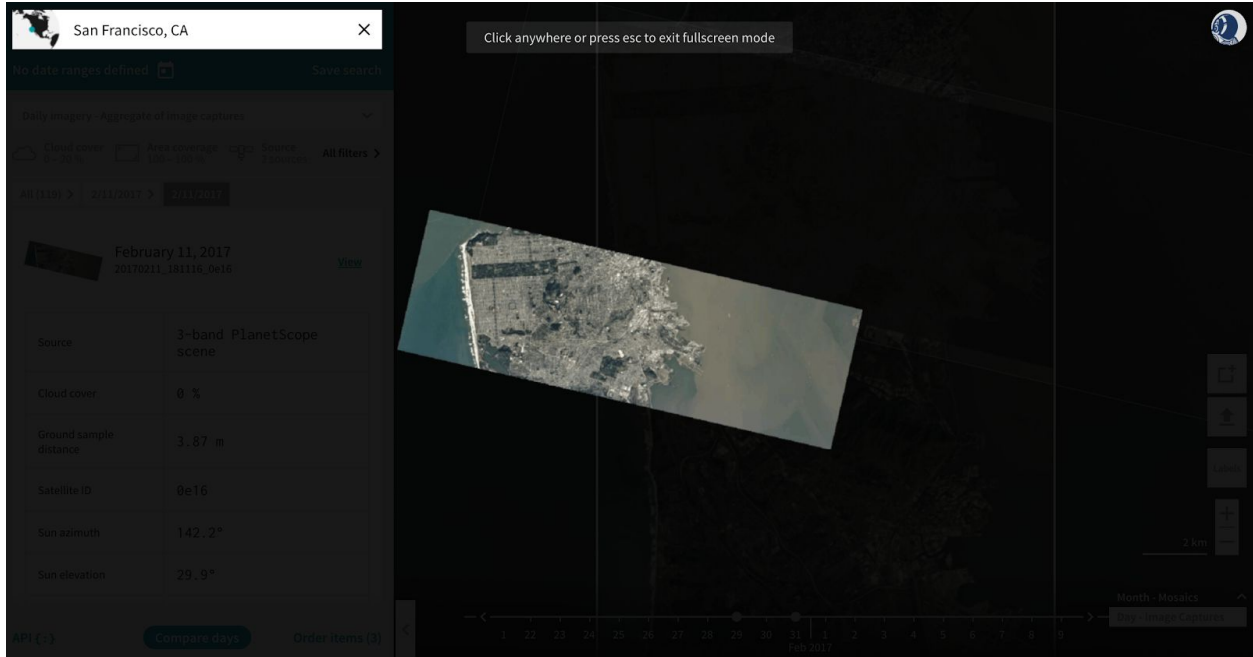
- February 11, 2017
3-band PlanetScope scene
20170211_181118_0e16 info
- February 11, 2017
3-band PlanetScope scene
20170211_181117_0e16 info
- February 11, 2017
3-band PlanetScope scene
20170211_181116_0e16 info
- February 11, 2017
3-band PlanetScope scene
20170211_181115_0e16 info

API (-) Compare days Order items (4)

5 km

1 Month Daily Imagery

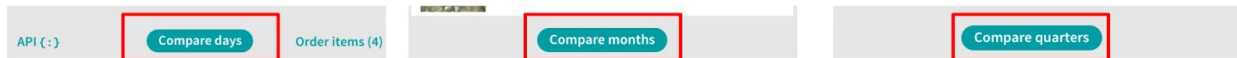
6. A Detailed View will display in the Imagery Viewport.



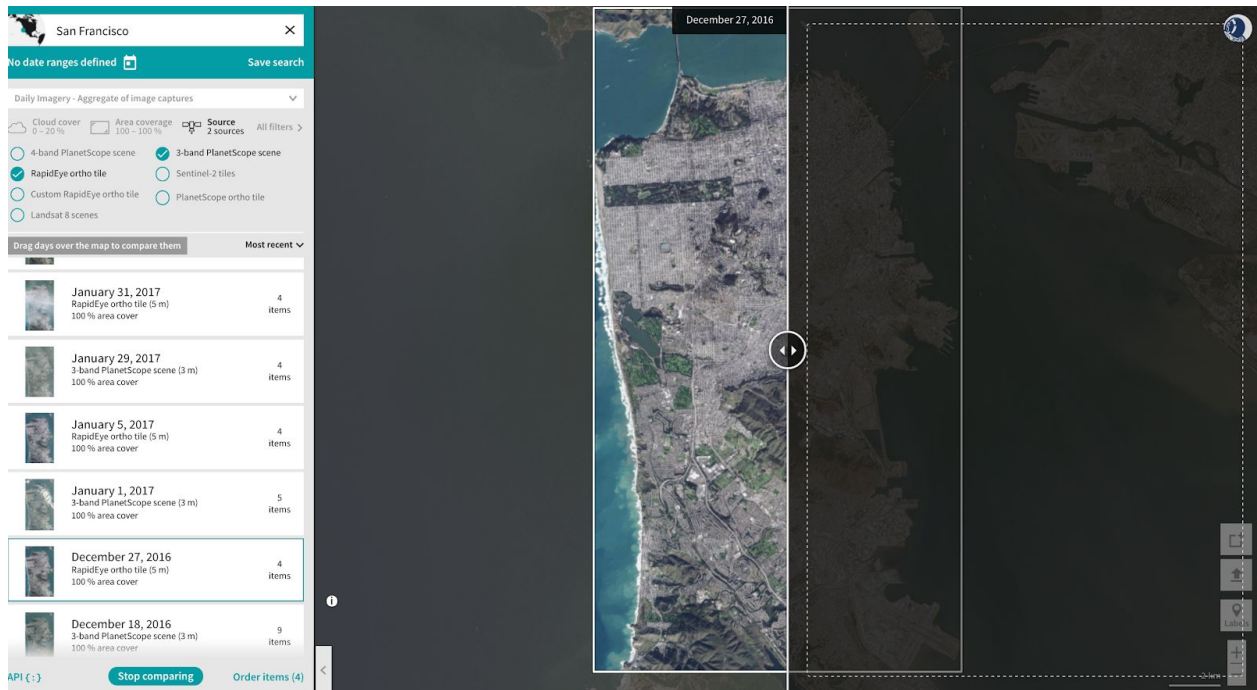
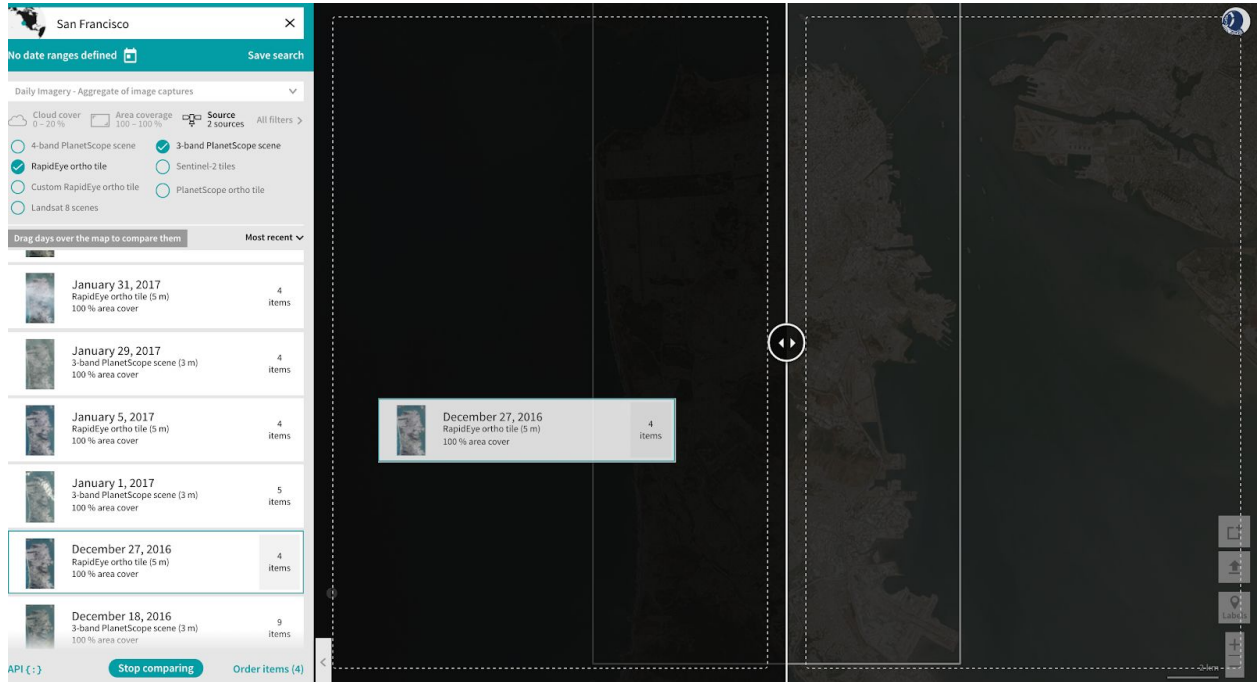
4.7 Comparing Imagery

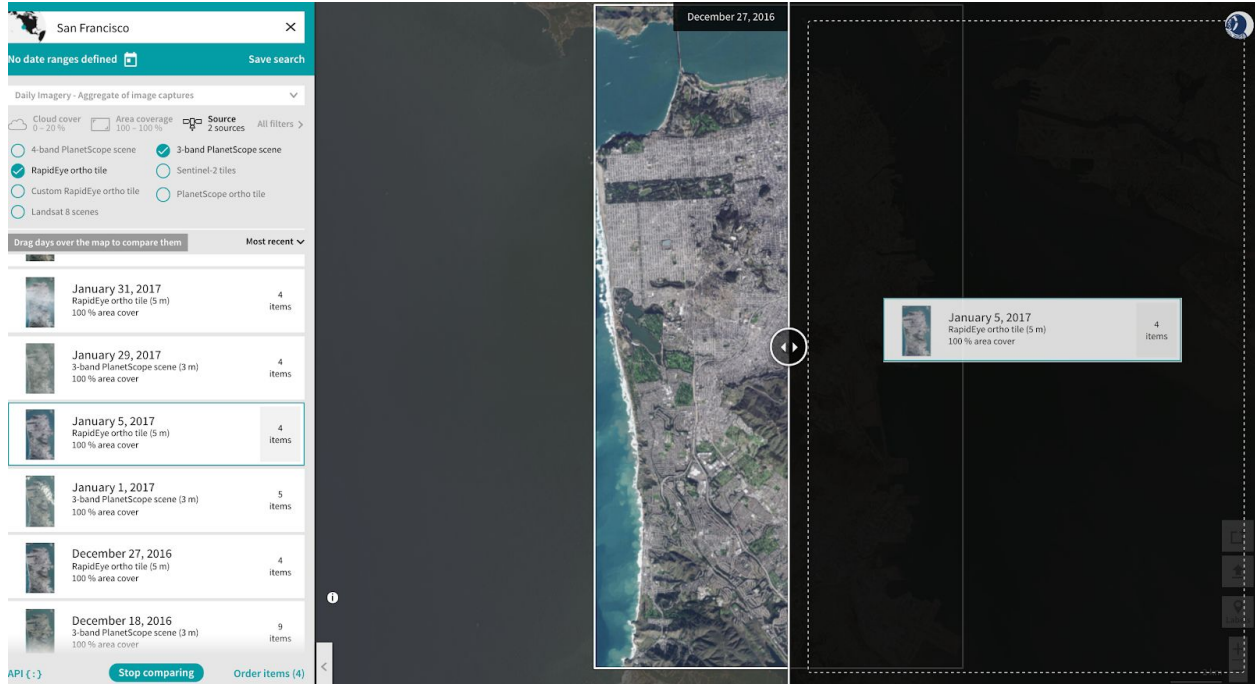
The Compare Tool allows you to compare sets of Planet imagery from one date with another date.

1. The Compare Tool, located at the bottom of the Results Panel, is disabled by default until the user enables it. To enable it, click on “Compare days,” “Compare months,” or “Compare quarters,” depending on the timeslice you have selected.

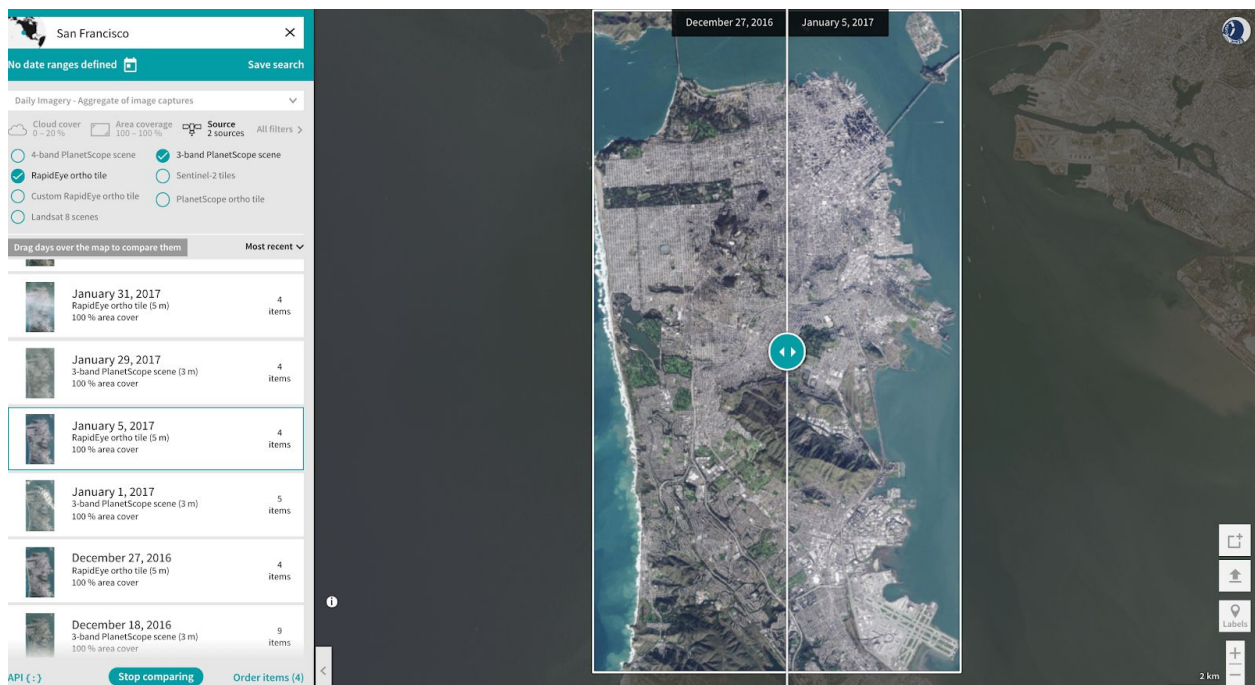


2. When the Compare Tool has been enabled, the Imagery Viewport will display a split screen. For example, if you want to Compare Days, drag and drop two images from two different days from the Results Panel onto either side of the map to compare them with the slider.





- Once you drag and drop two images from the Results Panel into both the Left and Right side, you can move the slider to see how the imagery from the two dates differ.



You can enable the Compare Tool to compare months and quarterly basemaps if you've selected "1 Month Basemap" or "3 Month Basemap," respectively.

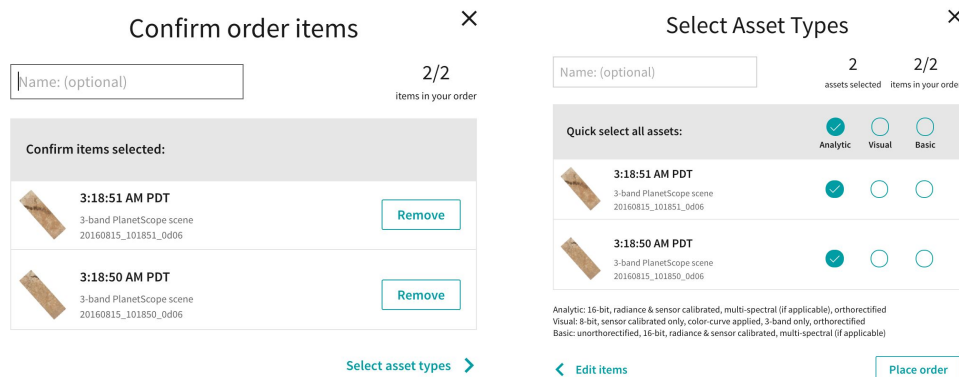
4.8 Download Imagery

The Download feature allows you to download imagery and data based on your subscription.

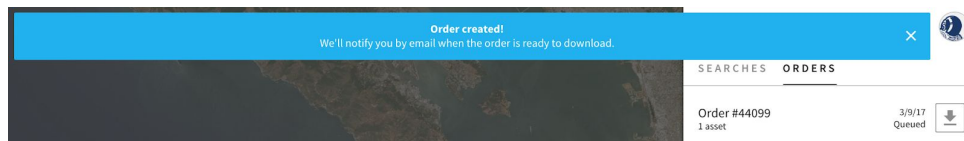
1. Click on the Order items link on the bottom of the Results Panel.



2. In the "Confirm order items" pop up window, you can enter the name of your order. You have the option of selecting the Visual (RGB bands), Analytic (RGB + NIR), Basic (RGB + NIR, if available) assets, or all imagery products. You also have the option of removing individual captures from the capture date you selected to download.



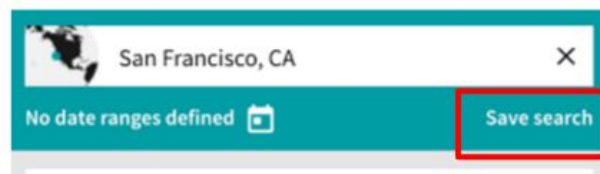
3. After entering the name of your order, click "Place order."
4. When you place the order, you will see a notification confirming that your order has been created and is being processed. The status of your order will be available in the menu screen (from your profile avatar).



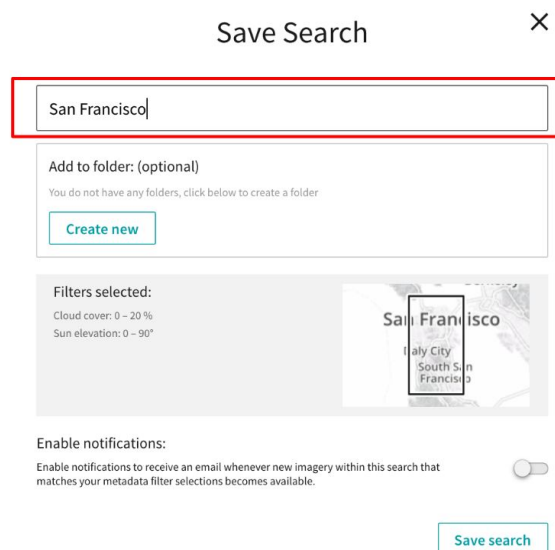
4.9 Saving Searches

The Save search functionality allows you to save your search criteria based on area of interest, dates, and filters.

1. If you do a search, click on the “Save search” link in the upper left under the Search box.



2. In the pop up window, you can enter the name of your search.



3. You also have the option to receive email notifications whenever there is new imagery published within your search criteria.

Save Search ×

San Francisco


Add to folder: (optional)

You do not have any folders, click below to create a folder

[Create new](#)

Filters selected:

Cloud cover: 0 - 20 %
Sun elevation: 0 - 90°



Enable notifications:

Enable notifications to receive an email whenever new imagery within this search that matches your metadata filter selections becomes available.

[Save search](#)


- All your saved searches will be available in the menu screen, viewable by clicking your profile avatar in the top right.

SEARCHES ORDERS


San Francisco ×

From all time

- If you would like to edit an existing saved search, click on the saved search from the menu screen as shown in the step above.
- The data from your saved search will load in the Results Panel with imagery displayed in the Imagery Viewport. If you make an edit to any of the filters, you can click on “Update search” in the top left to update the existing saved search.



San Francisco, CA ×

No date ranges defined 

[Update search](#)

- The Save Search screen will display and you have the opportunity to update the name of the saved search, add to folders, or enable or disable notifications. Once you are done, click on “Update search.”

Save Search ×


Add to folder: (optional)

You do not have any folders, click below to create a folder

[Create new](#)

Filters selected:

Cloud cover: 0 – 20 %
Sun elevation: 0 – 90°



Enable notifications:

Enable notifications to receive an email whenever new imagery within this search that matches your metadata filter selections becomes available.

[Update search](#)

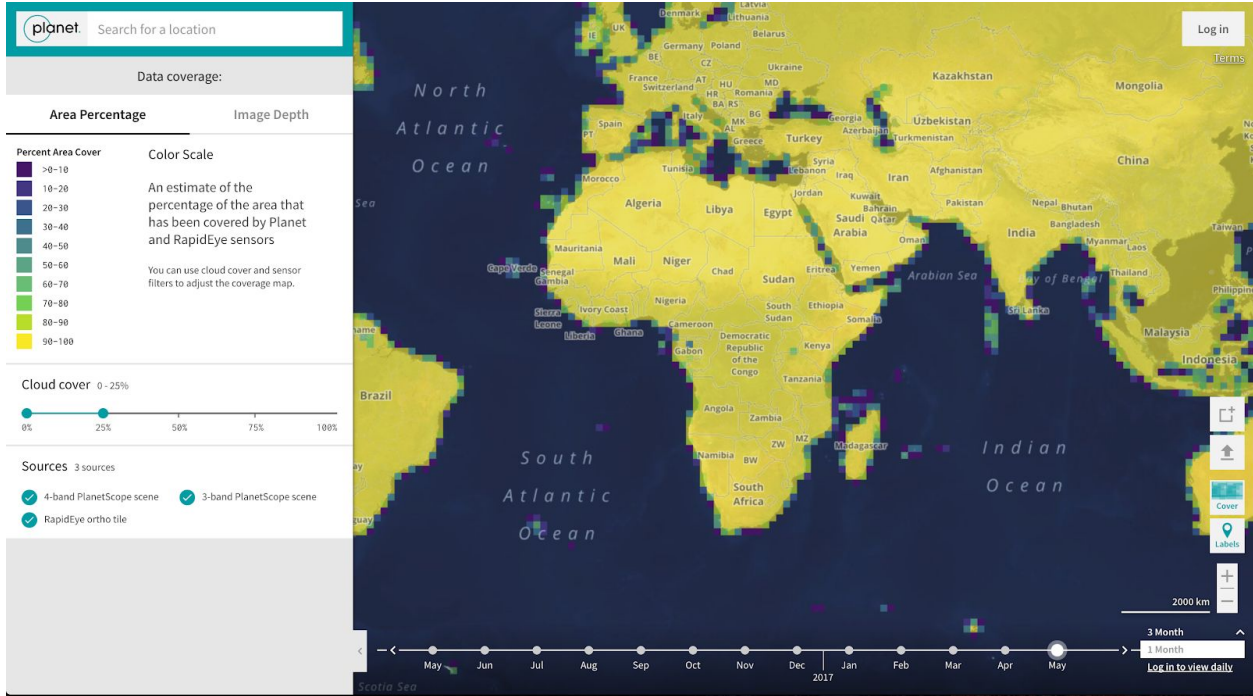
4.10 Coverage Map

The Coverage Map provides an estimate of the percentage of the area that has been covered by PlanetScope and RapidEye imagery and/or the number of imagery captures made within a specified timeframe.

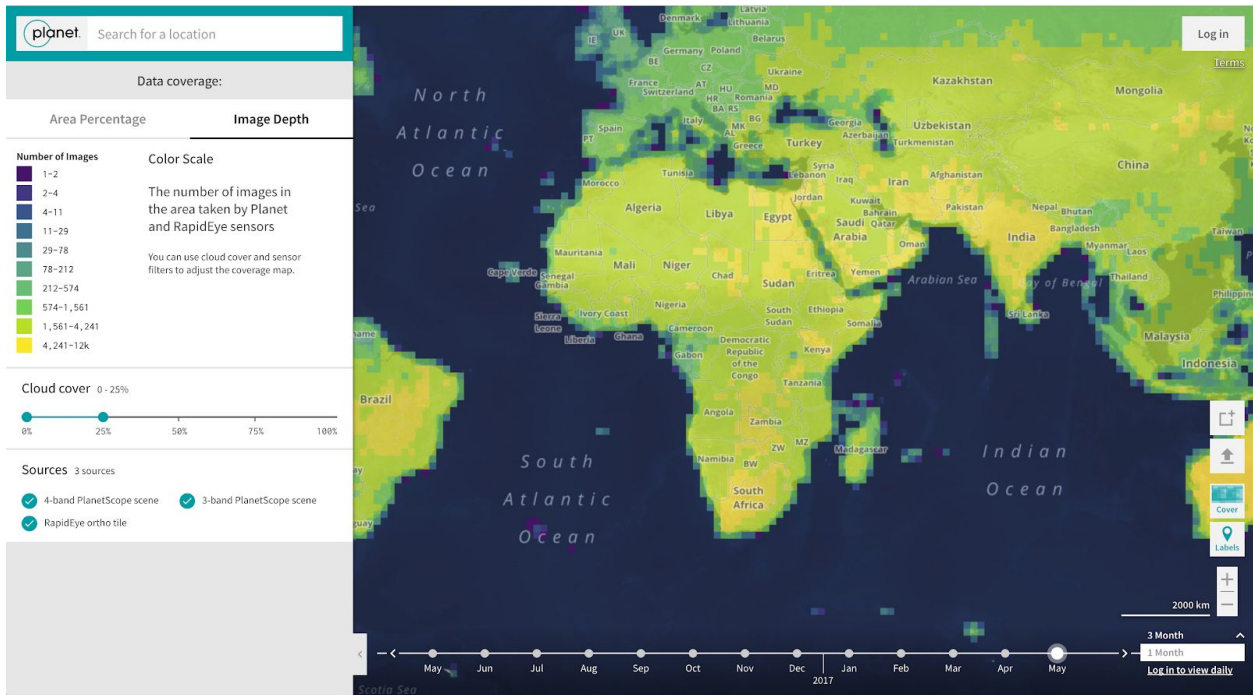
1. To enable the Coverage Map, click “Cover” in the bottom right.



2. You will now see the Coverage Map overlaid in the Imagery Viewport.



3. The left panel displays the menu with a color scale and adjustable metadata filters. Changing the metadata filters, like cloud cover and imagery sensor source, will impact the coverage percentage.
4. Click the "Image Depth" tab to see an updated coverage map showcasing the number of imagery captures made for the same specified filters.



4.11 Labs

Labs are features that have yet to be launched into production but are available for Explorer users to experiment with. Note: These features may be unreliable as they are still works in progress. Once they are ready to be launched fully into production, they will be removed from the list of Labs and added as a regular Explorer feature.

1. To see available Labs, click on the Menu button in the top right corner



2. Select the Labs tab

Saved Searches Orders **Labs**

Welcome to Labs

Labs are for you to try out our new and experimental features. Your feedback is greatly appreciated.

Compare - Pixel diffing

When comparing two images, use this to view the highlighted difference between the two.

[Give feedback](#)

3. Choose which labs you'd like to enable by clicking on the toggle