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PlanIt! for Photographers

ALL-IN-ONE PLANNING APP FOR LANDSCAPE PHOTOGRAPHERS

QUICK USER GUIDE

User Interface Overview

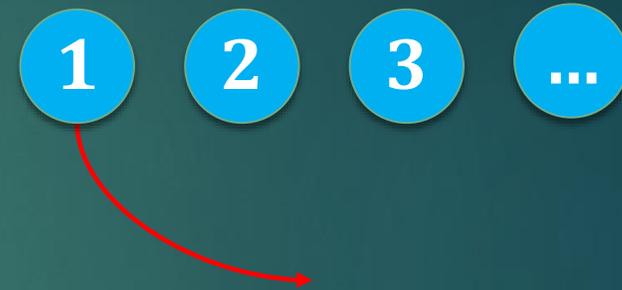


The screenshot shows the PlanIt! app interface with the following labeled components:

- Title Bar:** Contains the "Adjust the Composition" title and the current location "Wawona Road, California, United States".
- Ephemeris Pager:** Displays celestial data for the Sun (Azimuth: -17.8°, Altitude: 254.1°) and the Moon (Azimuth: +23.5°, Altitude: 87.1°, 98.7% Full Moon).
- Page Indicator:** A row of colored squares representing different scene pages, with "Yosemite" highlighted.
- Info Window:** Shows camera settings: Azimuth 76.3°, Focal Length 45.0 mm, and Orientation Landscape.
- Map with Info and Ephemeris Overlays:** A satellite map of Yosemite National Park with a green camera view frustum and various scene pins.
- Scene Pin:** A red pin on the map indicating the current scene location.
- Camera Pin:** A red pin on the map indicating the camera's current position.
- Menu Button:** A hamburger menu icon in the top left.
- Search:** A magnifying glass icon in the top right.
- Current Location Button:** A location pin icon in the top right.
- Quick Zoom Control:** A vertical slider on the right side of the map.
- Plan Button:** A red camera icon on the map.
- Mode Button:** A plus sign (+) button on the right.
- Event/Calendar Button:** A calendar icon on the right.
- Date/Time Bar:** Shows the date "Dec 12, 2016, Monday" and time "6:13 PM | Dark Night Starts".
- Date/Time Slider:** A horizontal timeline at the bottom for navigating through the day.

Tips for the User Guide

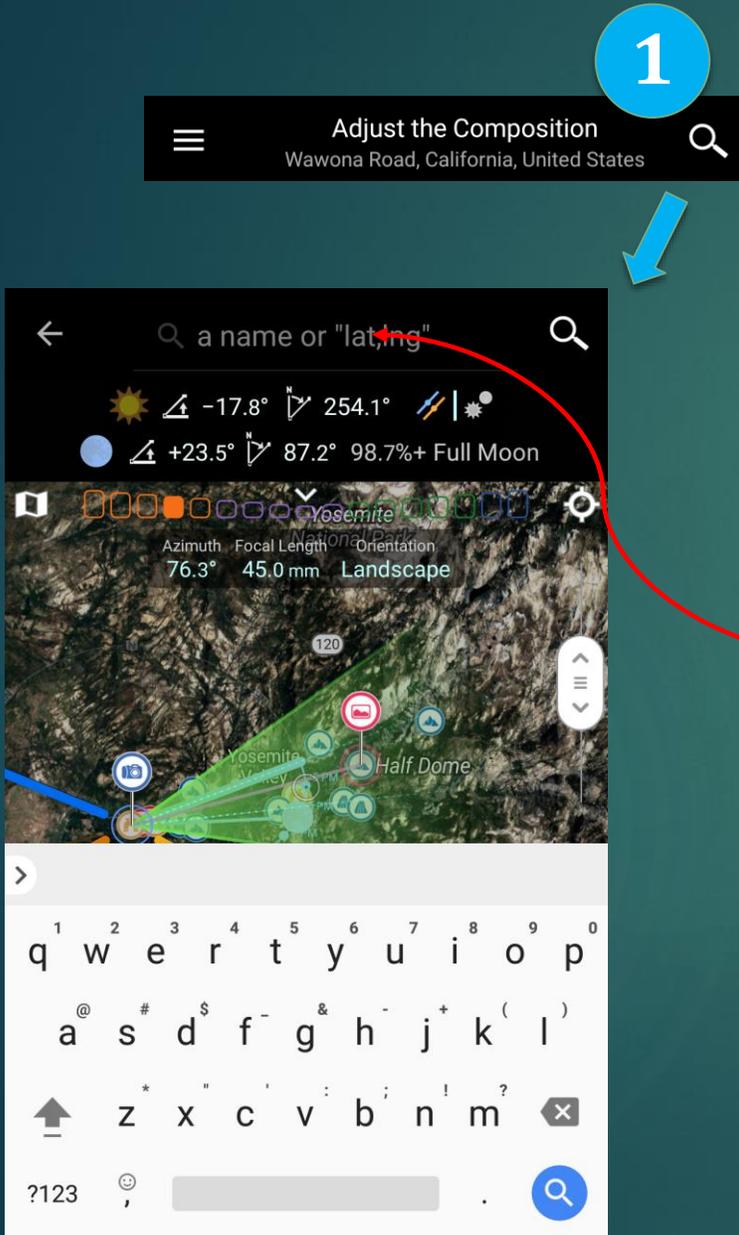
- ▶ The numbers on the slides indicate important points or steps . Follow the numbers so that you don't miss any important points.
- ▶ The arrow will connect the number with the corresponding description.



Search



You can search by



▶ Latitude and Longitude

- ▶ 37.715595, -119.677024
- ▶ 37 42 56.14, -119 40 37.29
- ▶ 37:42:56.14, -119:40:37.29
- ▶ 37.71576°N 119.67718°W
- ▶ 37° 42' 56.74" N 119° 40' 37.85" W

▶ Other Format

- ▶ Open Location Code: 8592P88F+66. aka. the plus code, which is supported by Google Maps. You can copy and paste it into Google to find the location (e.g., Tunnel View).
- ▶ Maidenhead Locator System: DM07DR81SR18
- ▶ Military Grid Reference System (MGRS): 11SKB 64038 77634
- ▶ K Code: 8jxea8czx, which is available only in China

▶ Place Name

- ▶ In English: Tunnel View, Half Dome, Eiffel Tower
- ▶ In Other Languages: *Tour Eiffel*, ふじさん (fujisan), 黄山 (huangshan)

Here are a few examples of what you can enter into the Search box.

Comma is needed unless there are also letters 'N', 'S', 'E', 'W' to separate the two numbers.



Plan

What Is a Plan?

- ▶ In PlanIt, a plan includes four types of information:
 - ▶ Camera location
 - ▶ Scene location
 - ▶ Date/time
 - ▶ Composition
- ▶ Why do we need to plan?
 - ▶ To understand light conditions
 - ▶ To capture a unique moment
 - ▶ To rule out unnecessary surprises
 - ▶ To help prepare logistics
 - ▶ To save time and money



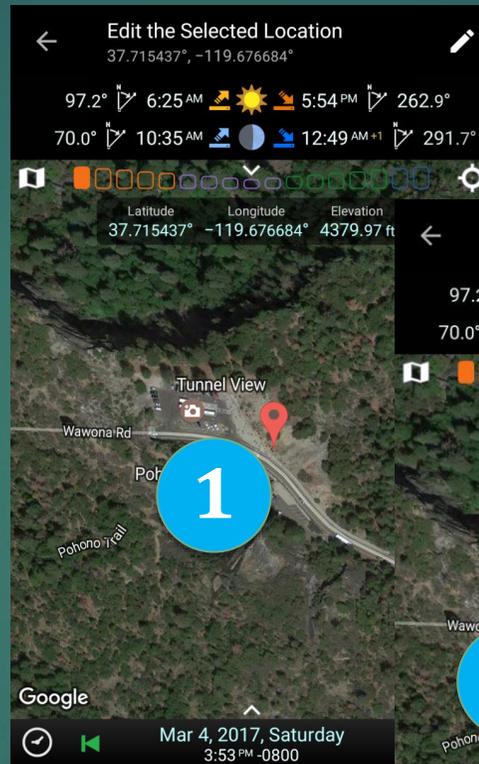
The Selected Location

- ▶ The selected location is a concept we introduced in the last release.
- ▶ It is a location on the map that a user can select. When a location is selected, the Plan Button and the Quick Zoom Control buttons will always have a point of reference even when the Camera pin or the Scene pin is not set.

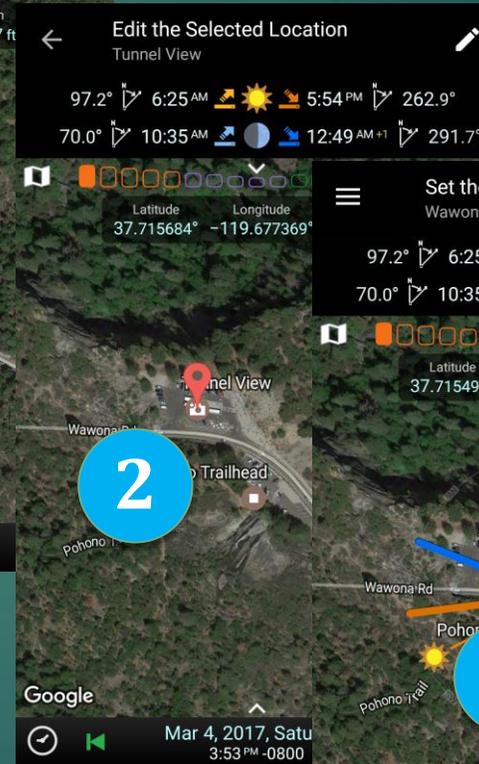


How to Select a Location on the Map

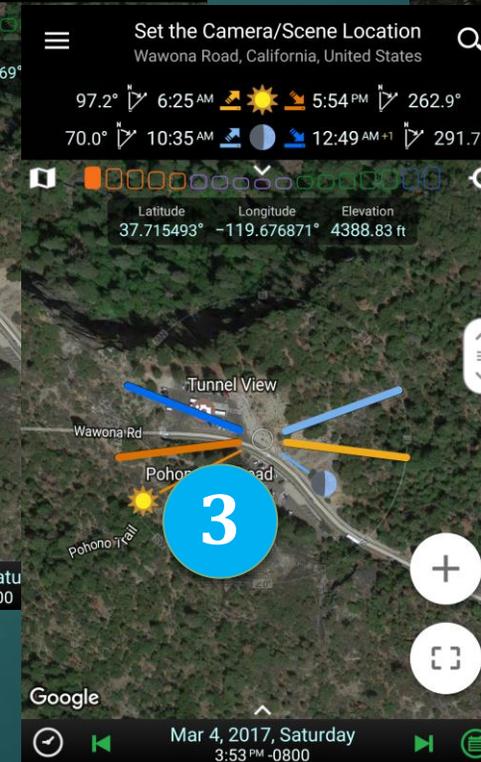
- ▶ Press long on the map
- ▶ Tap on an existing POI (Point of Interest)
- ▶ Tap on an existing marker
- ▶ Tap the Camera or the Scene pin to select a camera or the scene location
- ▶ A tap on a non-selected area of the map will deselect any previous selections. If no selections are made, the center of the map will be used as the default selected location. A circle at the center of the map indicates the selected location.



Long press

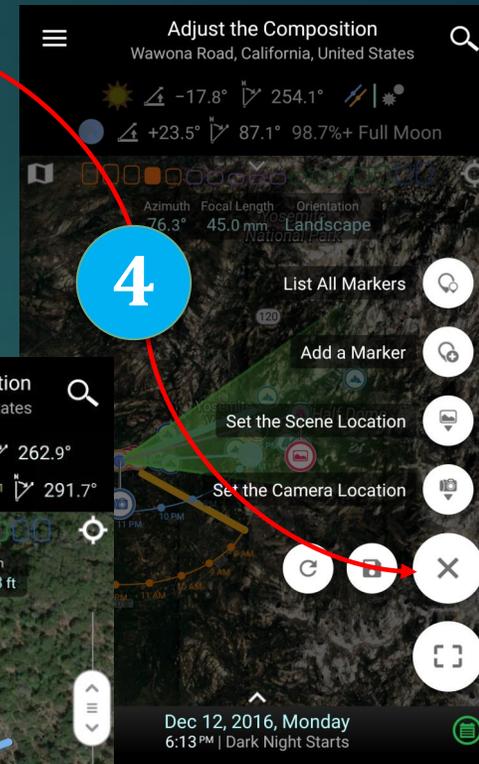


Tap POI



Center

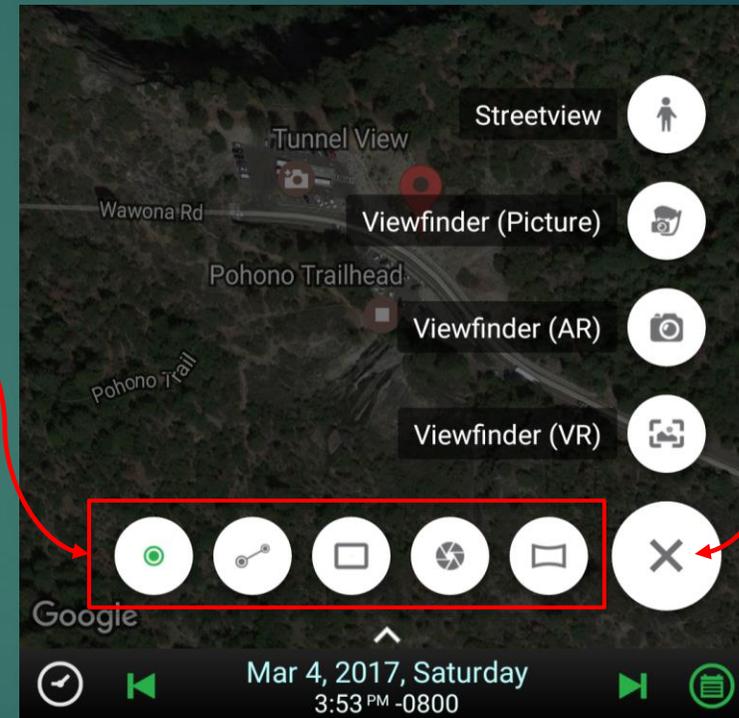
Plan
Action button



The Plan Button works with the selected location

Five Tools

- ▶ The only way to change to a different tool is to use the horizontal buttons after you tap on the Mode button
- ▶ From left to right, they are
 1. Location
 2. Distance and View
 3. Composition (a.k.a. Focal Length)
 4. Depth of Field
 5. Panorama



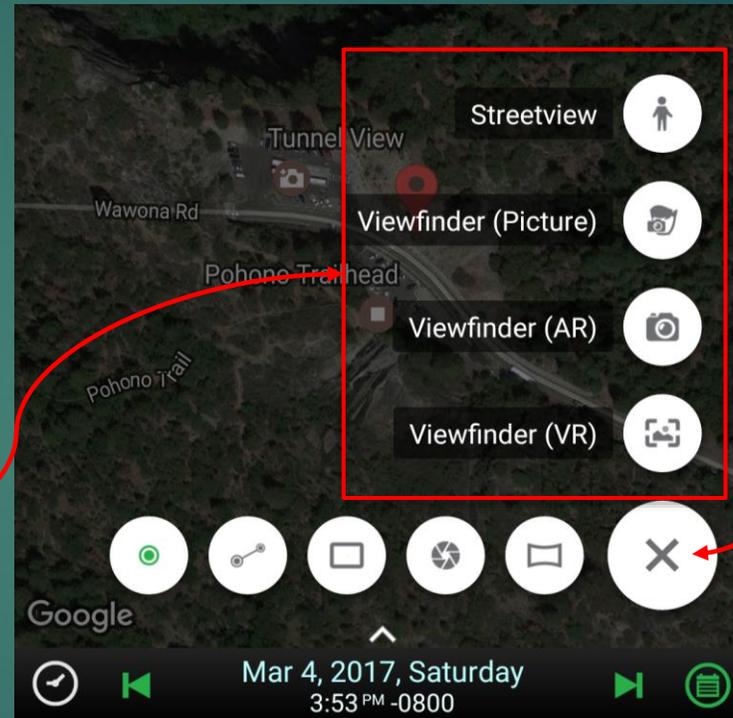
1

2

Mode Button

Four Viewfinder Modes

- ▶ The only way to change to a different viewfinder mode is to use the vertical buttons after a tap on the Mode button
- ▶ From top to bottom in this order, they are
 1. Streetview
 2. Viewfinder (Picture)
 3. Viewfinder (AR)
 4. Viewfinder (VR)
- ▶ You can learn how to use these views in the 4th chapter of this user guide series.



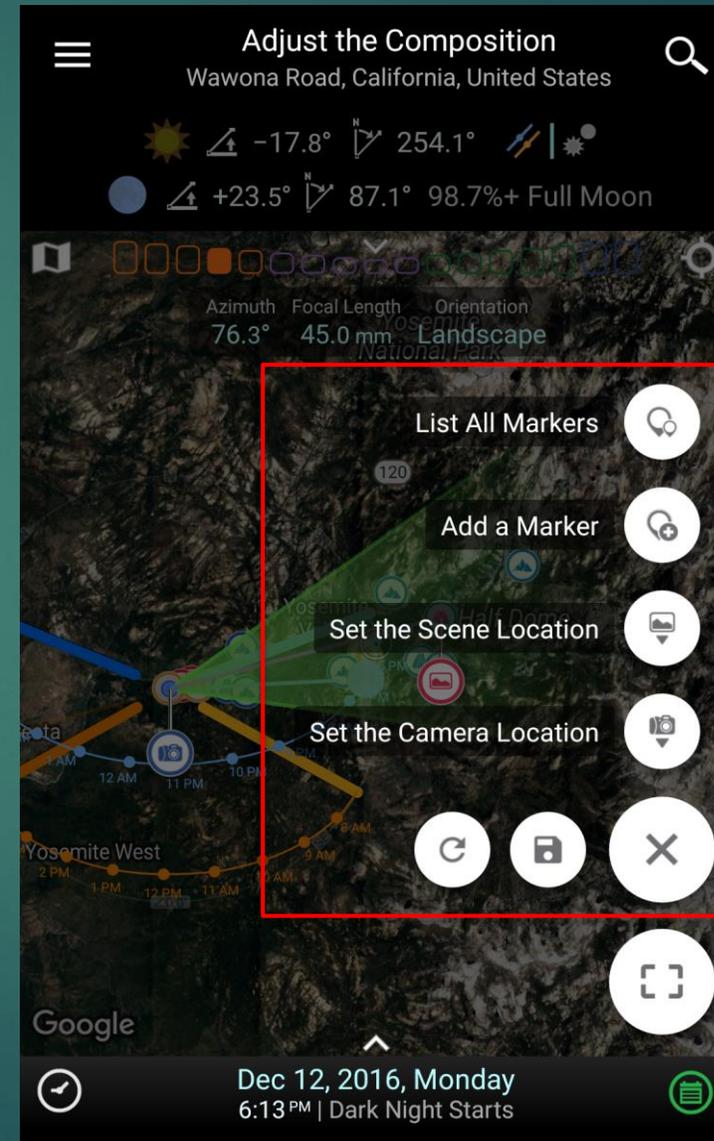
2

Mode Button

1

Plan Button

- ▶ The Plan Button uses a selected location as the camera or scene location. It can also be used to add a new marker or list all markers.
- ▶ It allows you to create and save a new plan.



Locations

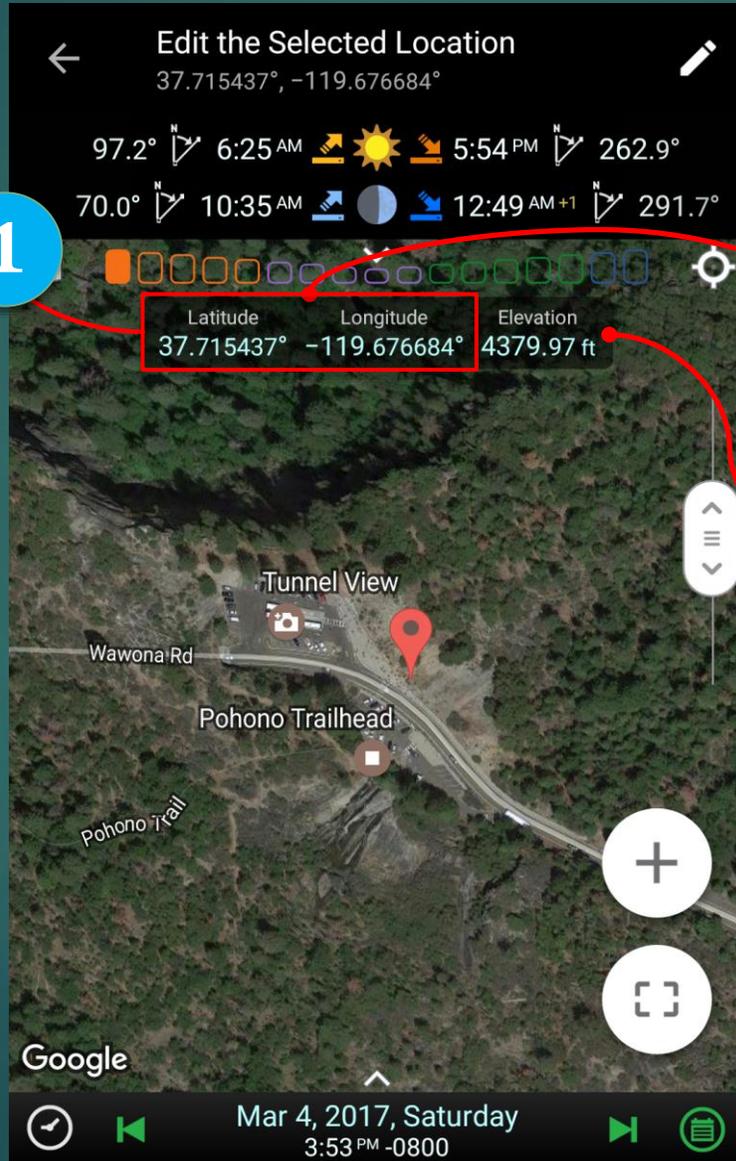


The Info window shows a selected location's GPS coordinates and its elevation.

When to use?

To find out the GPS coordinates and elevation of any location on the map.

Or sometimes you may want to use the location tool because it has the least information overlays.



1

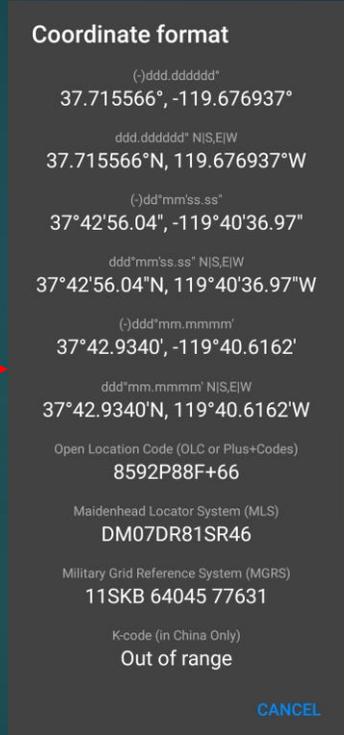
3

Tap on the coordinates to choose a different format.

You can share the coordinate information as text with a long press on the coordinates in the Info window or on the format chooser dialog box if you want to share a different format.

2

Tap here to see the elevation of the center of the map [footnote 1](#)



4

footnote 1

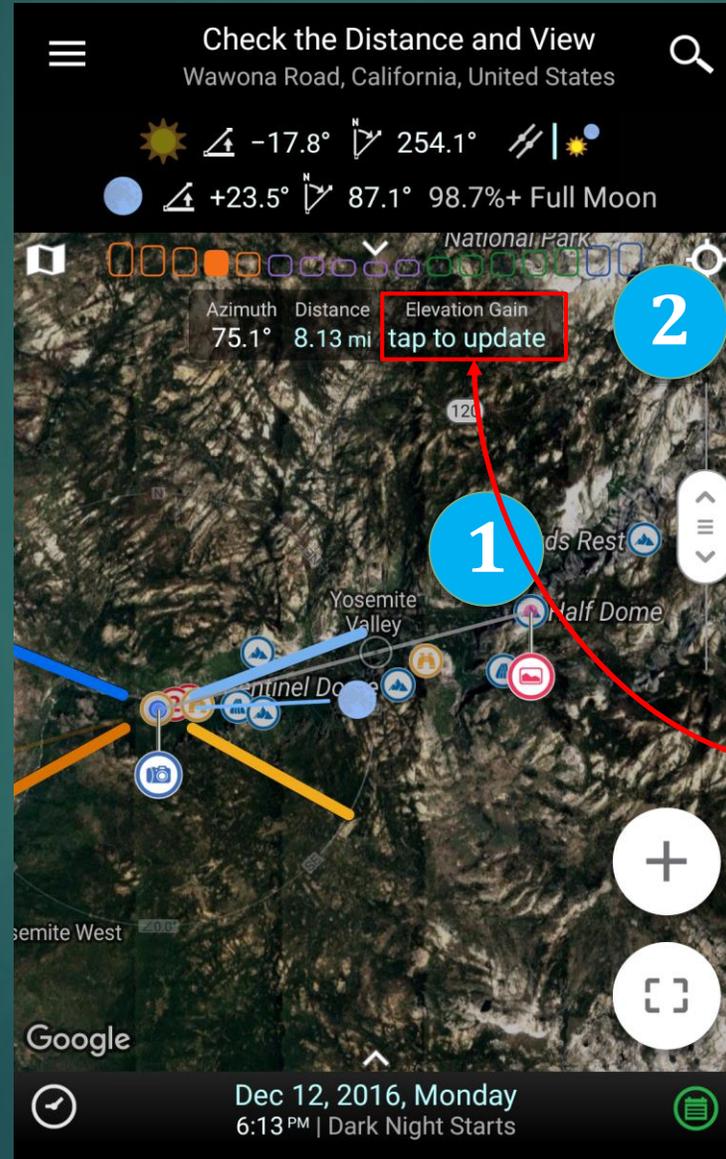
We are using Google Elevation service, which has a daily limitation of 2,000 queries. This is why we don't automatically ask for the elevation information. You can tap the elevation field to get it only when needed. Please refer to the last three slides of this presentation to find out how to get elevation to work offline.

Distance and View

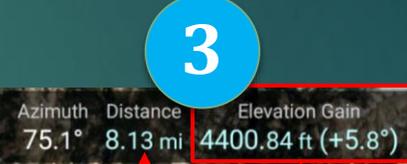
The Info window shows the distance between the camera and scene locations, the direction (as azimuth), and the elevation gain between the two locations.

When to use?

To find the distance between any two locations on the map by placing the Camera and the Scene pins on them. The elevation gain also lets you check whether you can see the scene from the camera location because of the surrounding terrain.

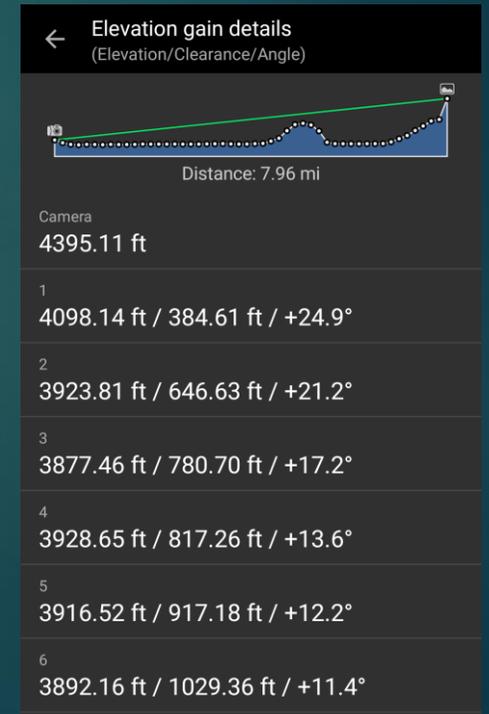


4 Green means you can see the scene from the camera location. Red means the view is blocked at that location. Yellow means the view is almost blocked.



3 Tap the distance to change the measuring unit to U.S. or metric. Tap the elevation gain again to see the elevation gain details.

Tap here to see the elevation gain from the center of the map to the camera location

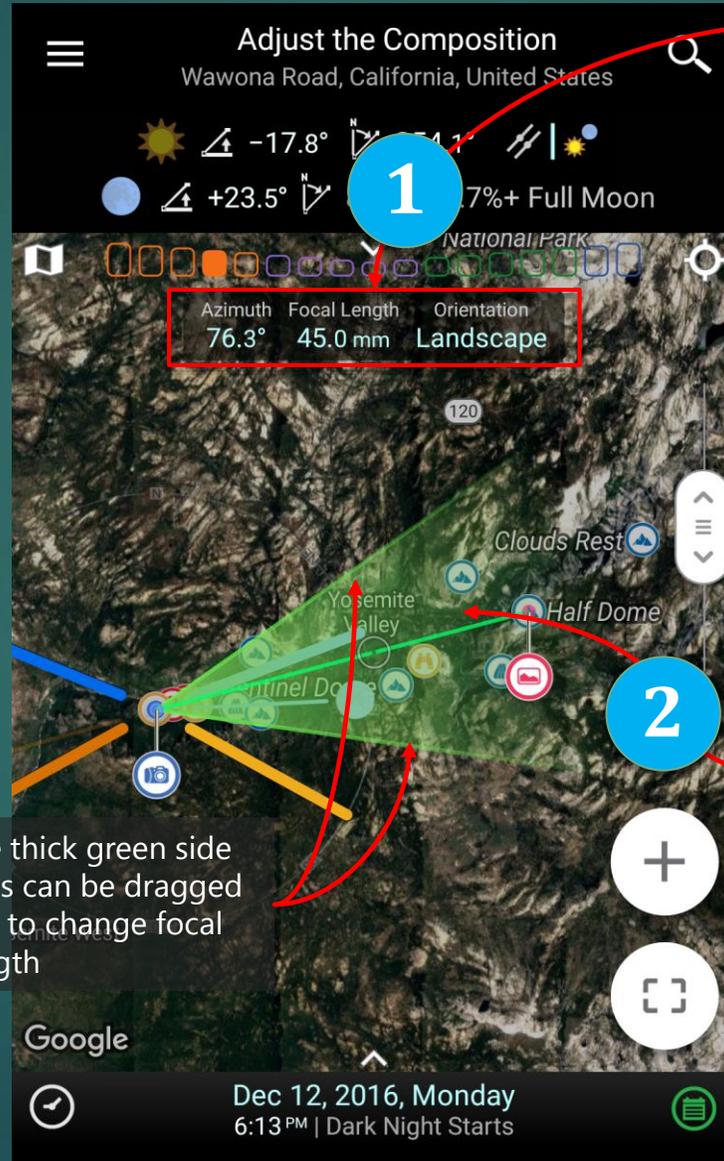


Adjust the Composition

The Info Window shows the camera azimuth, focal length, and the orientation.

When to use?

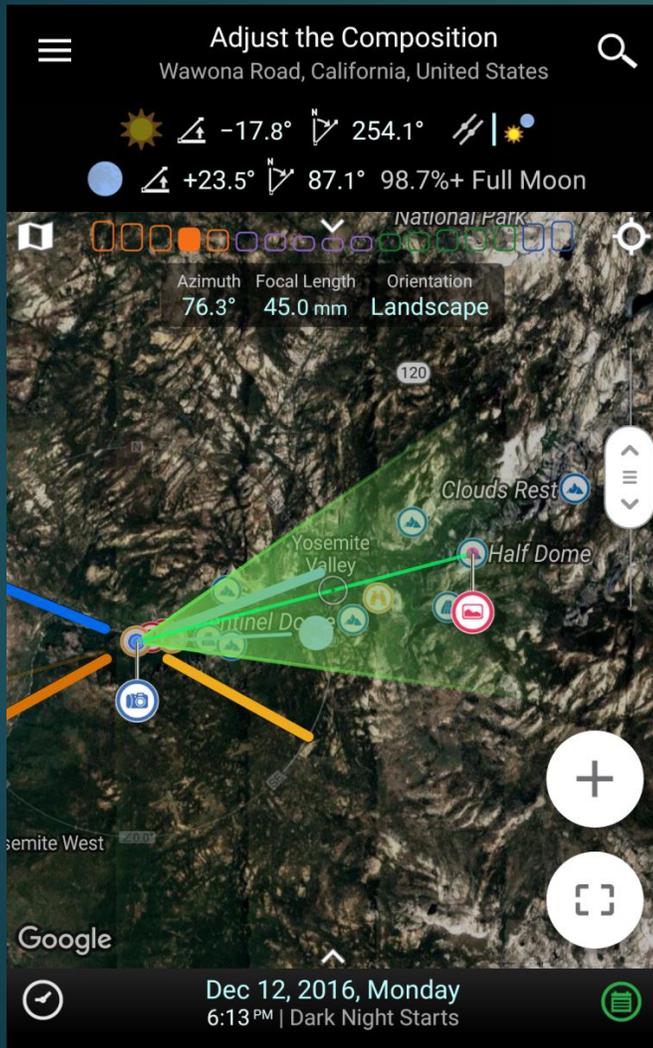
To find out what focal length to use and the camera direction. Adjust the composition.



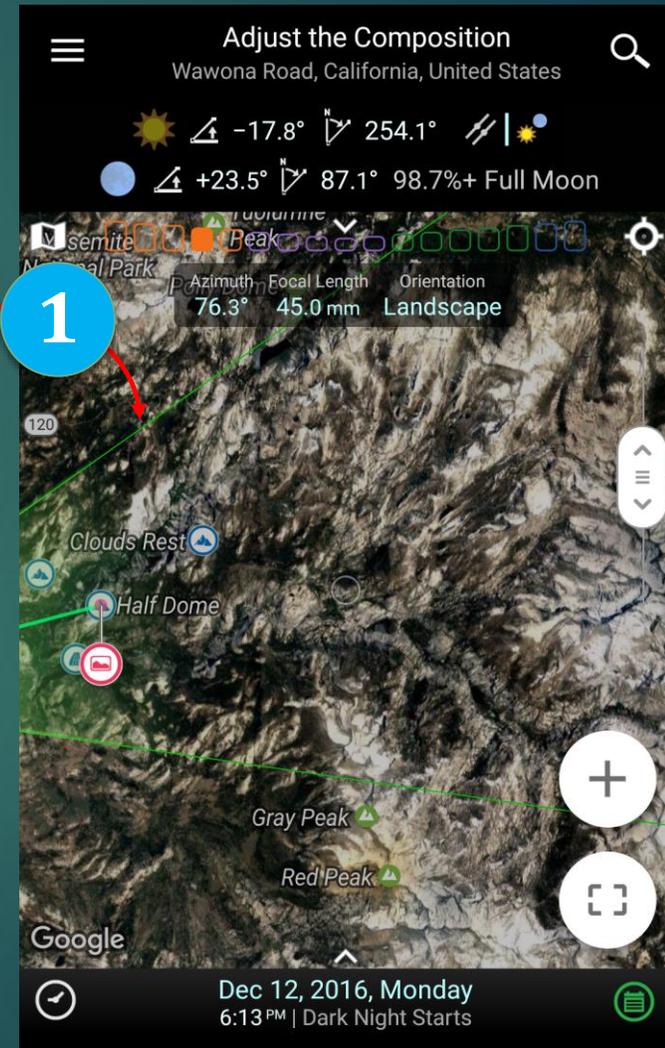
All the blue values in the Info window can be tapped to change the value.

The area between the two thick green lines are the angle of view of the selected focal length, e.g., 50mm in this case. You can drag it to change the camera direction, which is the "azimuth" value in the Info window.

Extended Field-of-View Lines



If you drag the map so that the Camera pin is outside the map, you will see two thin green lines. The lines are used to indicate the field of view of the selected focal length. The field of view will typically extend about 500 km (310 miles) from the camera location. Unlike the thick green lines, the thin green lines **cannot** be dragged so that it doesn't block you from dragging the map. However, you can still see which area is in the field of view even if it is far away from the camera location. Sometimes you want to check if there is a big mountain in the background of your composition. This feature is useful because it allows you to zoom in to the mountain and add markers to show the ground contour.



Quick Zoom Controls



We need to zoom the map a lot during planning. One common way to zoom is to use the two-finger pinch to zoom in or out. Google Maps also added the one-finger tapping feature. You can use one finger to tap twice to zoom in, two-finger tap twice to zoom out, etc. The problem with those finger movements is that the zoom center is not very accurate.

So we added the Quick Zoom Control function.

First of all, the controls look like a slider. Drag the zoom button up and down to zoom in and out. If you would like to customize the direction, you can adjust the setting on the Settings screen. If you select a location on the map, the location will be the zoom center instead of the default map center.

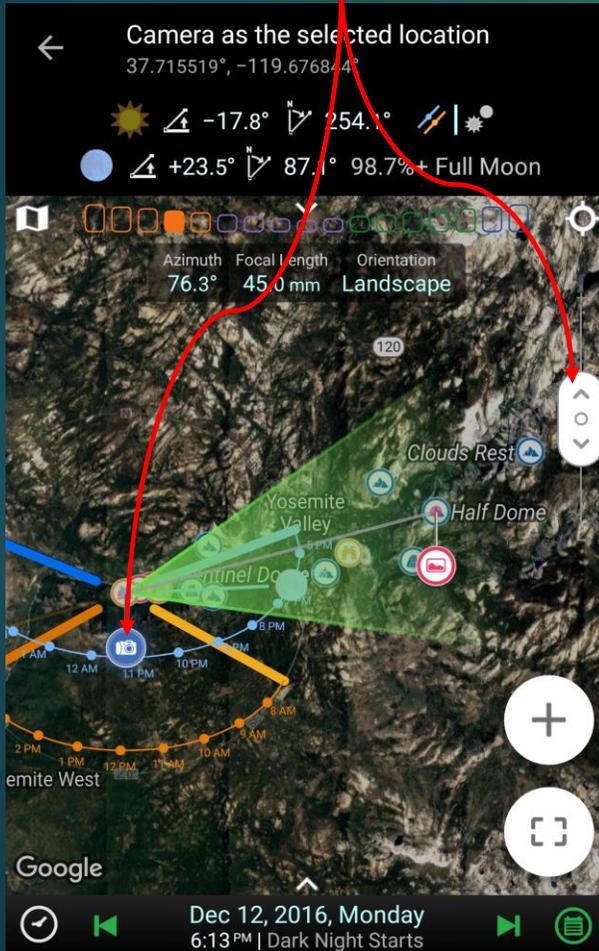
Secondly, the slider will reset as soon as the finger is released, which is different from most other sliders. It acts as if there was a spring inside. Although the track is not very long, you can still drag it to get to any zoom level. Even when you reach the end of the track, you can still continue dragging.

Try it, you will see what I mean. It is very powerful.

Quick Zoom Control

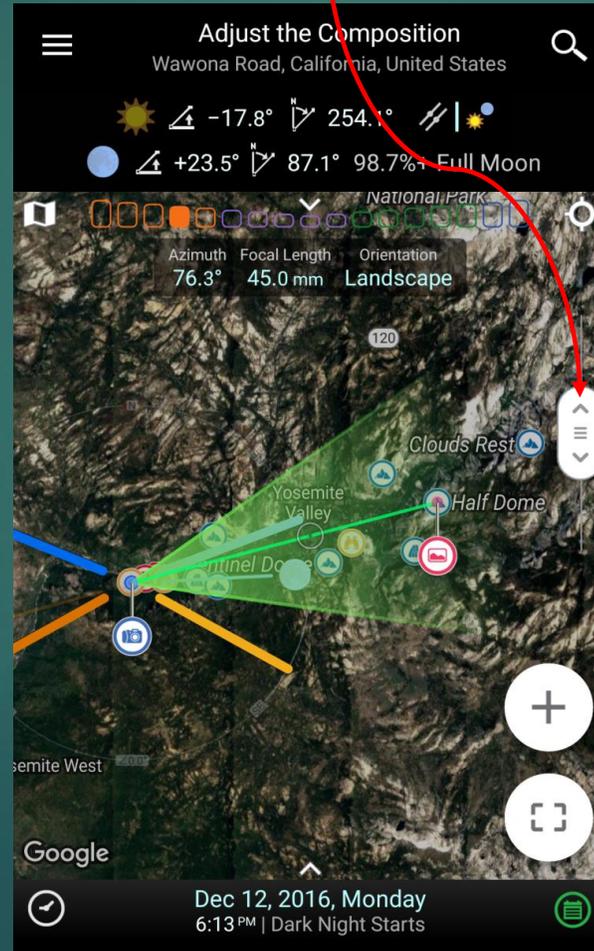
1

When a location is selected (the Camera pin in this case), the slider icon shows a circle



2

When no location is selected, the slider icon shows three lines



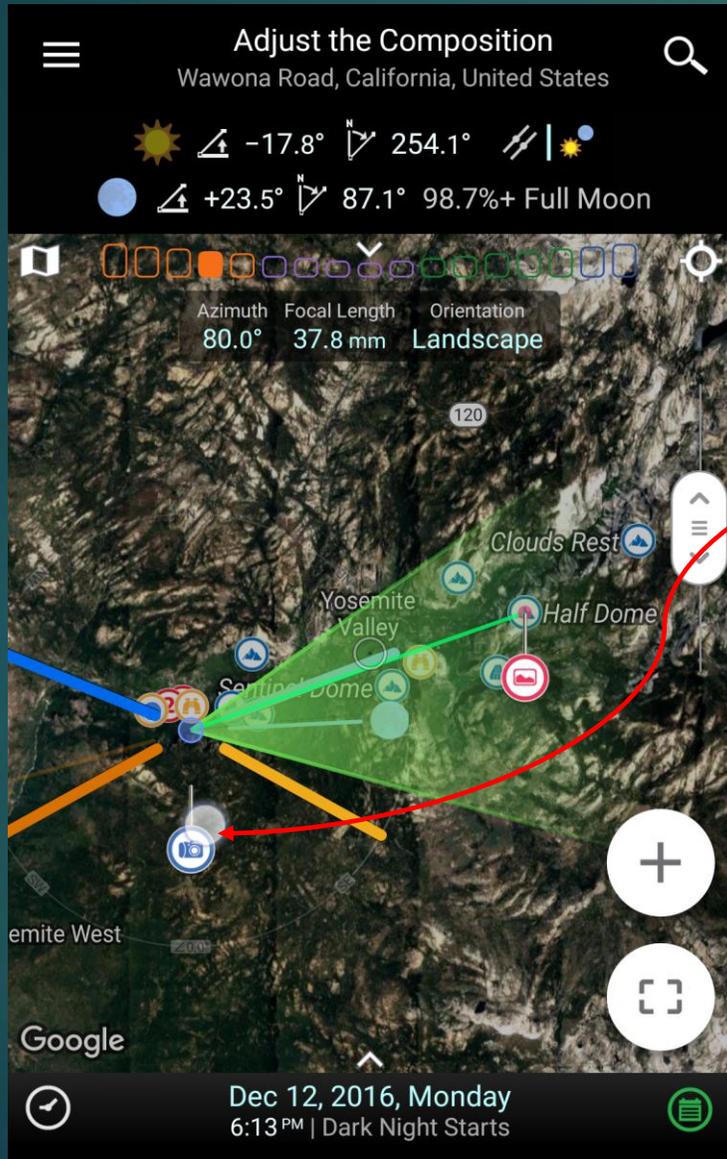
The other feature of the Quick Zoom Control is the auto-zoom feature by tapping on the zoom button.

If there is a selected location, tap on the zoom button will zoom into the selected location. The selected location could be a selected marker, a selected camera or scene, or any location you long pressed on the map.

If there is no selection, tap on the zoom button will auto-zoom the map so that both the camera and the scene are visible.

The icon on the zoom button is different in the two cases. In the former case, it shows a circle. In the latter case, it shows three lines.

Adjust the Camera and Scene Pins



Long Press on the Camera pin until you see the pin floats, then you can start to drag the pin. When you release the finger, the pin will drop into place.

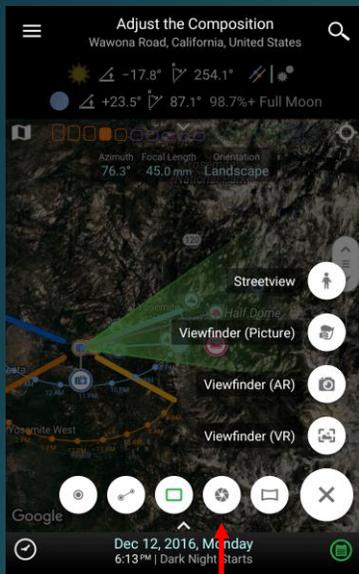
1

If you drag the pin to a marker, the pin will snap into the marker location to make it easy to pin the camera exactly at the marker location.

The Scene pin works similarly.

You may notice both the Camera and the Scene pins are upside down, which is unusual comparing with the normal map pins. It is an option that you can change in Settings. The reason for this design is to resolve the issue that the finger blocks the view of the map during pin dragging.

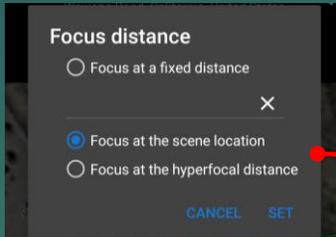
Check the Depth-of-Field Details



How to get to this step?
Tap the fourth horizontal button.

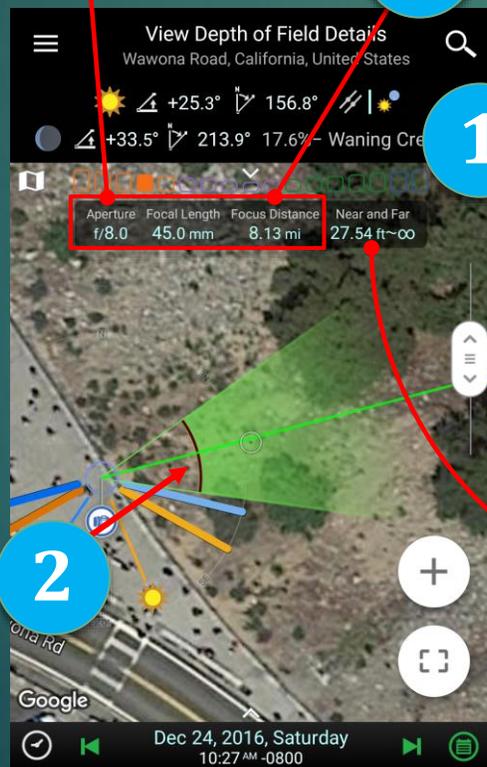


The gray line shows the hyperfocal distance

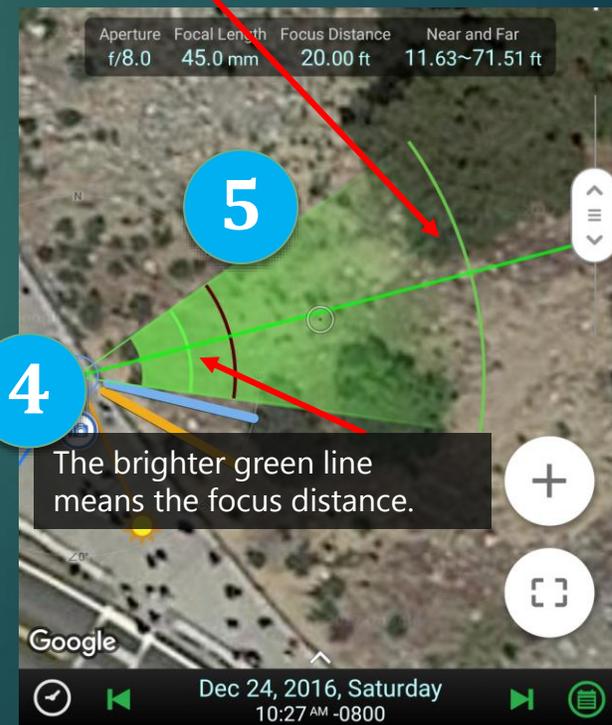
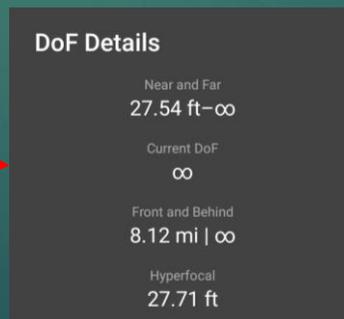


These darker green lines are the near or far distance markers. Anything between the two darker green lines are within the depth of field.

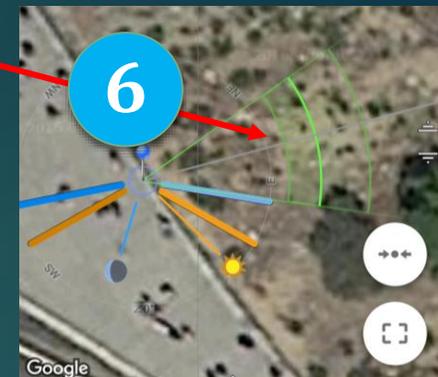
Select this option in the focus distance dialog and you will see this screen.



The DoF depends on the aperture, focal length, and focus distance. You can tap to change all three of them.



The brighter green line means the focus distance.



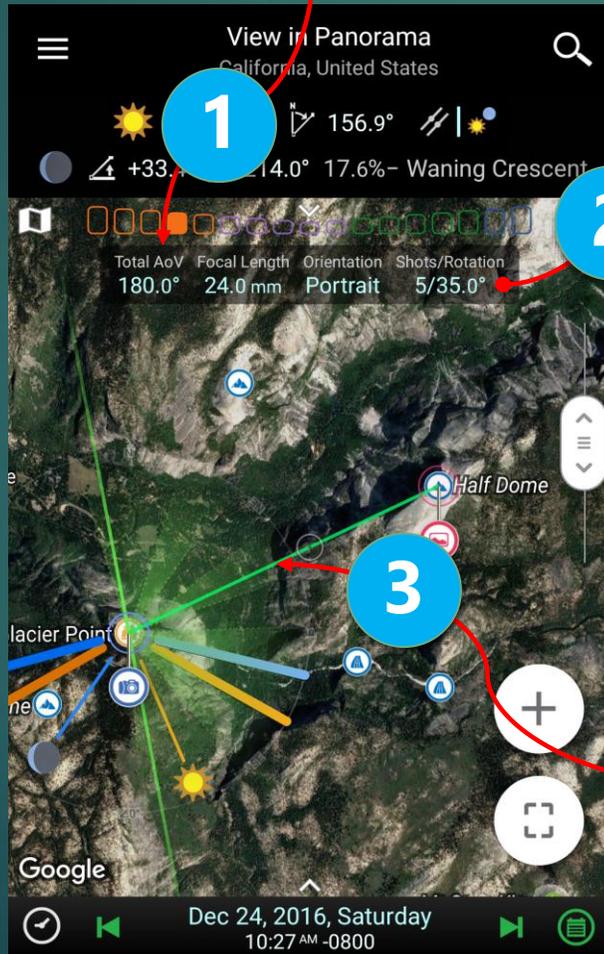
View in Panorama



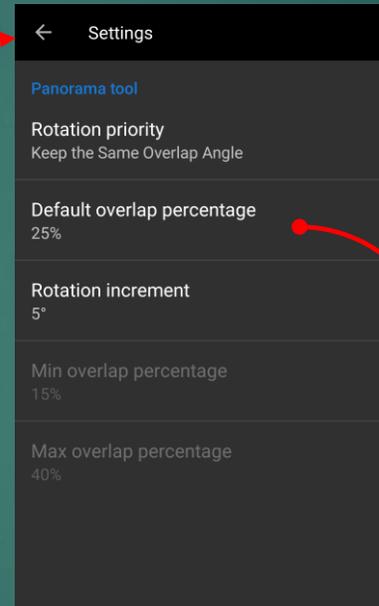
How to get to this step?
Tap the fifth horizontal button.



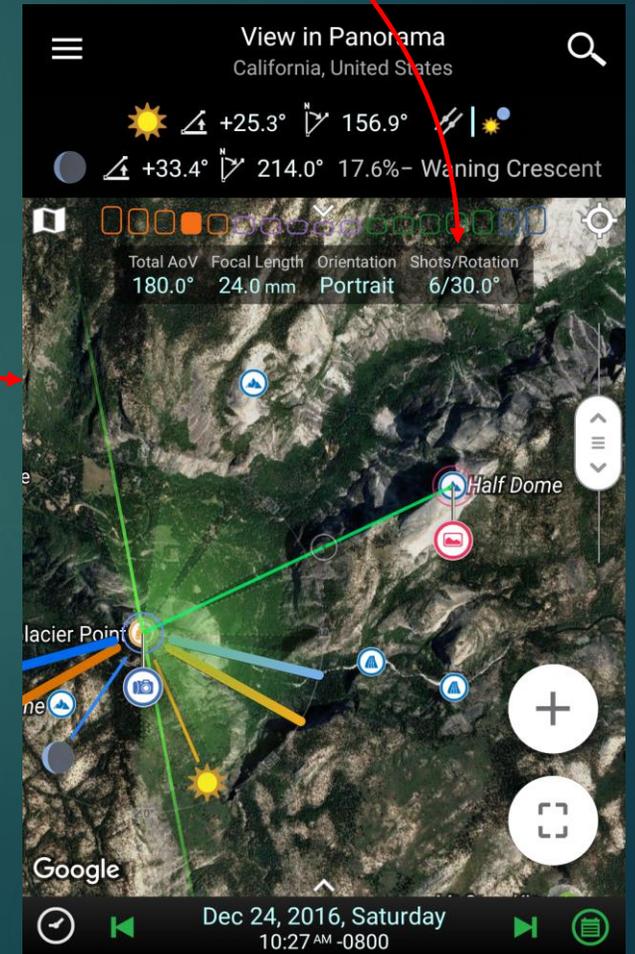
The panorama feature allows you to choose the total angle of view, the focal length, and the camera orientation. It will tell you how many shots to take and how many degrees to rotate between shots.



You can tap on the shots/rotation to change the panorama settings. For example, you can change the overlap percentage between two shots to 40% and this screen shows the results.



You can see the angle of view of each shot in the panorama view on the map. The darker shaded areas are the overlapping areas between the shots.



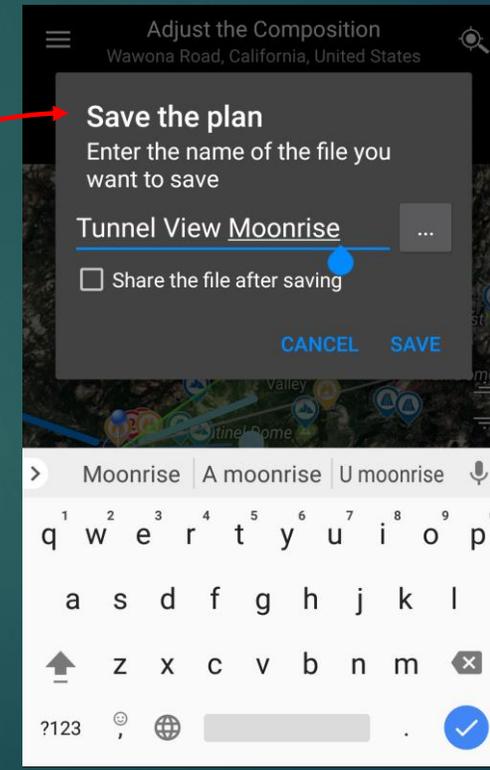
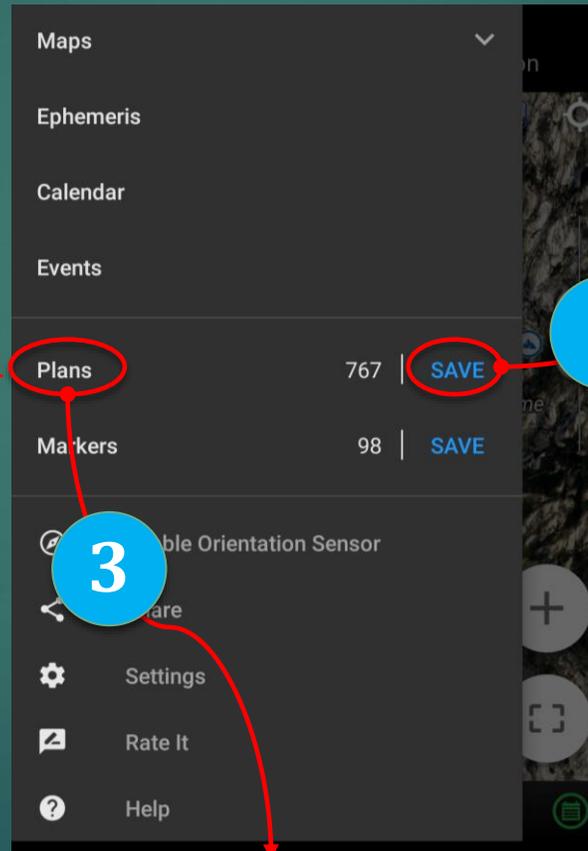
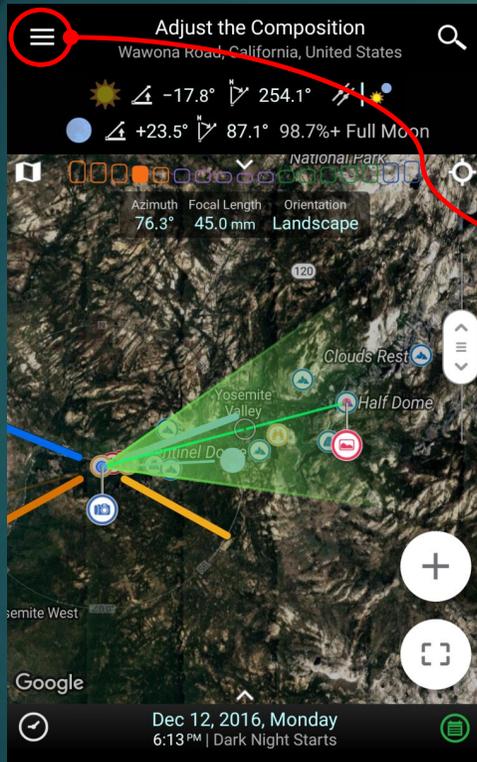
Save a Plan as a Plan File

Tap the drawer button to the left of the title bar to show the drawer menu. Or swipe from the left edge of the screen.

Tap the SAVE button next to "Plans"

Give it a unique name and save. Optionally you can check the share box to share it after saving.

1



Tap here to open a previously saved plan file

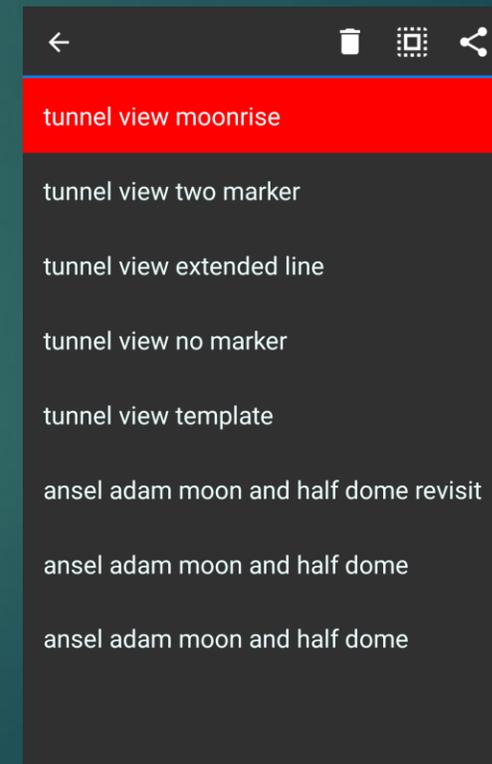
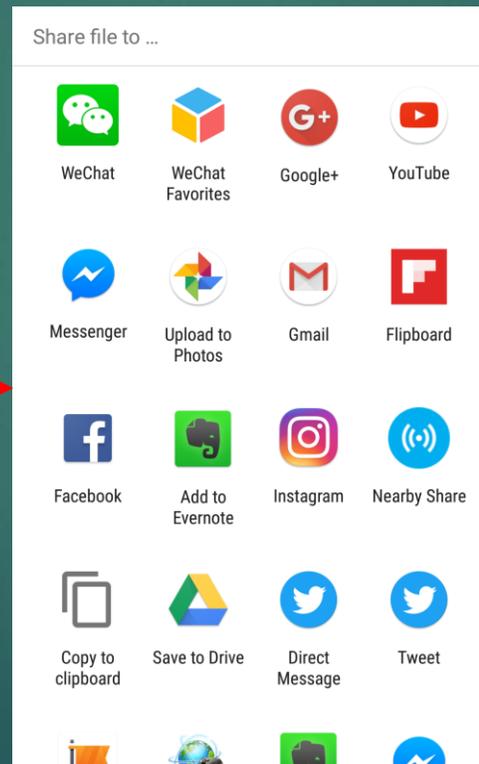
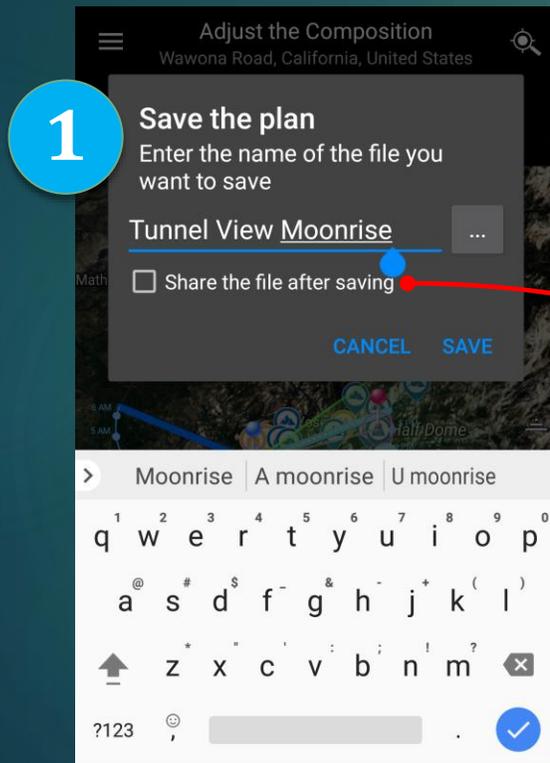
Share the Plan File



When you save a plan file, you can share it with others. If you want to share the file, select the check box.

After the plan file is saved, a share screen will show up where all apps that support file sharing will be listed.

If you want to share an existing plan file, you can go to the Plans screen (Menu – Plans). A long press on it (for Android) or a slide to the left (for iOS) will show the option to share (or delete) the plan file.

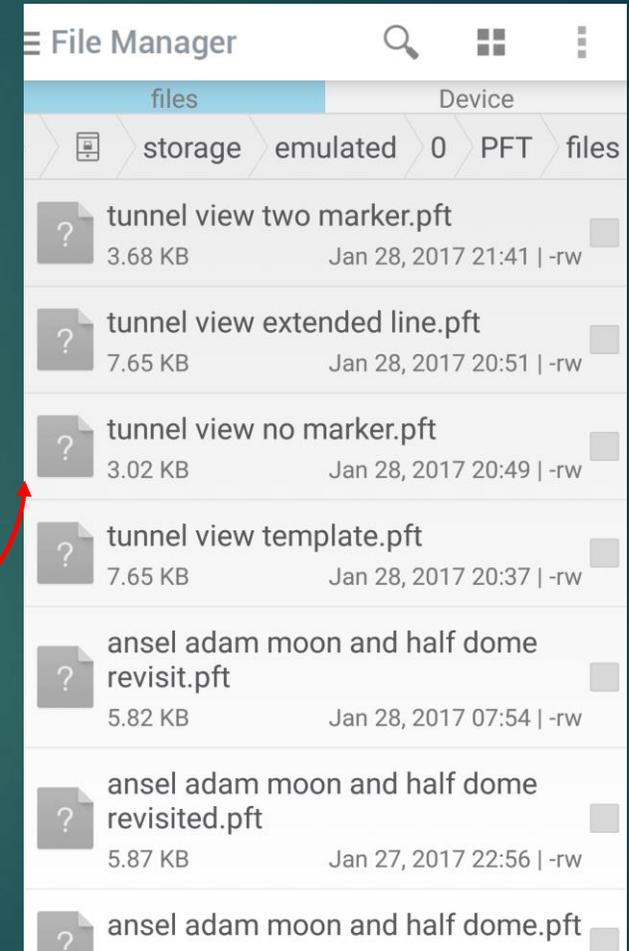




Open a Plan File

- ▶ In most cases, you can open the plan file directly from those apps. It will prompt you to open the PlanIt app.
- ▶ (Android only) If for whatever reason, it fails to open the file, you can still save the file to your phone's internal memory or SD card, and then use a file manager app to browse to it and open it from there. Another way is to save the file to the default PlanIt folder. The default PlanIt folder is under internal memory or SD card in a folder called PFT/. If you copy the marker file under /PFT/files/, the PlanIt app will be able to see it when you choose Menu – Markers from the drawer menu.

Copy your plan files to this folder. PlanIt will be able to open them.



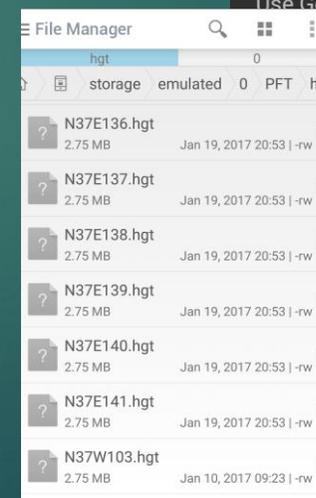
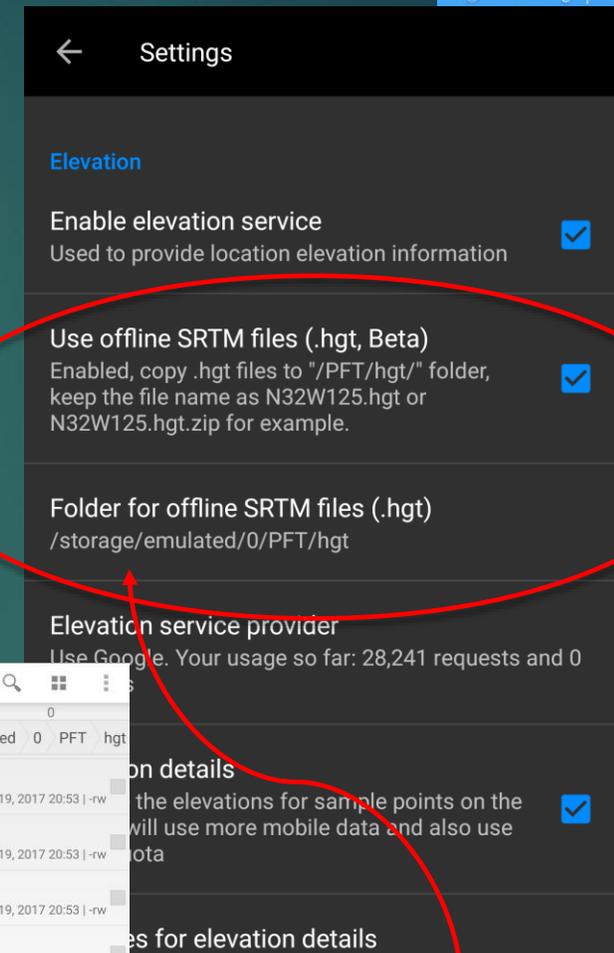


Websites to Download SRTM hgt file

- ▶ <http://viewfinderpanoramas.org/dem3.html>
- ▶ http://viewfinderpanoramas.org/Coverage%20map%20viewfinderpanoramas_org3.htm
 - ▶ The main page is the first link. The second link provides a map to download 1", 3", 15" resolutions. I suggest you download 3" resolution files, which are roughly in 90M resolution. The app currently doesn't work with 1" or 15" resolution files.
- ▶ https://dds.cr.usgs.gov/srtm/version2_1/
 - ▶ This is only for U.S. The files are zipped. Unzip the file and then copy the hgt files to the hgt folder
- ▶ The total size hgt files for the whole world is about 15 GB zipped. For half the U.S. geographic area, for example, it will be around 1GB. If you have enough storage on your phone, you can download everything to your phone. However, I suggest you download the hgt files to your computer and copy only the hgt files you need to your phone.
- ▶ In future releases, we will allow you to download and manage hgt files within the app.

Offline Elevation Data (for Android)

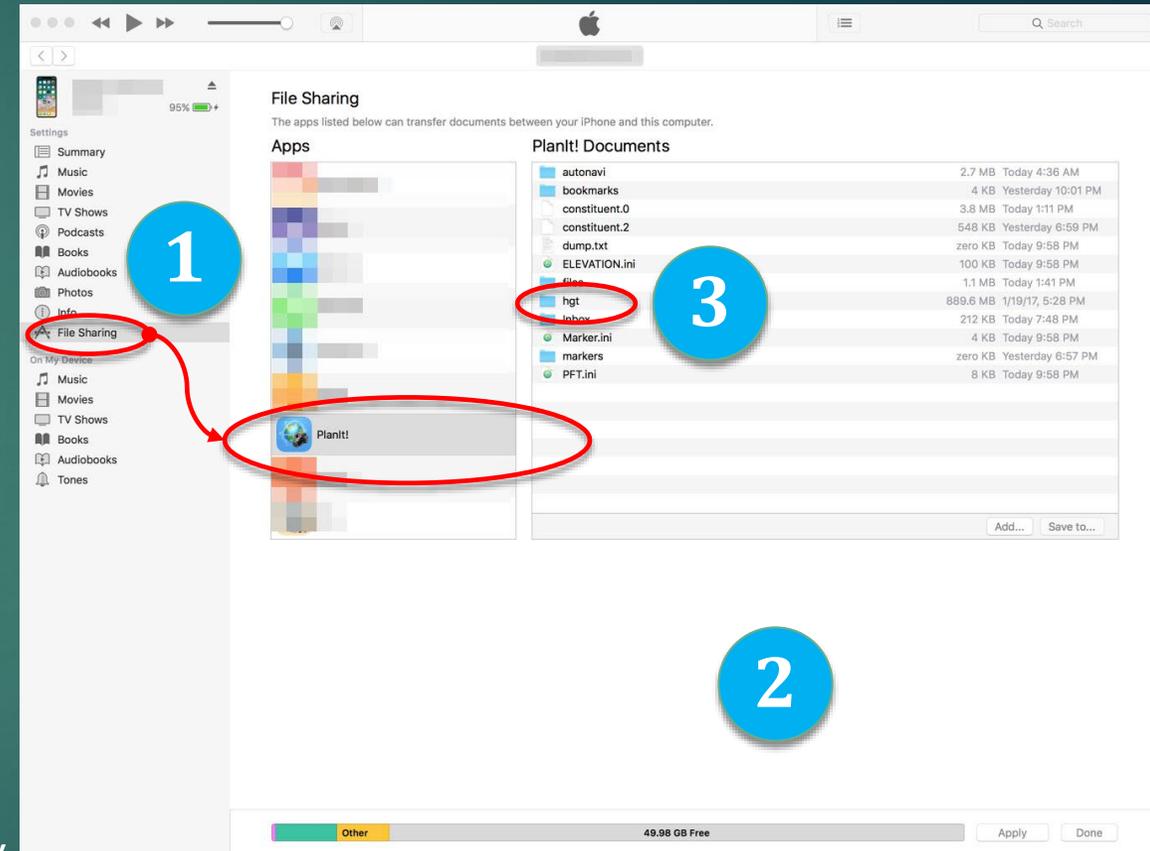
- ▶ By default, we are using Google Elevation service which has a daily quota limitation. To lift this limitation, you can download elevation data from various websites.
- ▶ The elevation file is in an SRTM hgt file format. The suffix for it is hgt. It is usually organized by one degree of latitude and longitude. For example, N32W120.hgt contains the elevation data.
- ▶ Put all .hgt files under your phone storage's /PFT/hgt folder. No subfolder is allowed under hgt. Please note, the PFT folder should already be there so you don't need to create it. The hgt folder is the only folder you need to create it.
- ▶ The PFT folder could be on the internal storage of your phone, or on the external SD card, depending on your preference. If you are not sure, open the settings, you will see the folder name. You can also change it to another location.



Although it says /storage/emulated/0, they are not real folders but an alias. You will only see the /PFT folder at the root of your phone storage and that's the one.

Offline Elevation Data (for iOS)

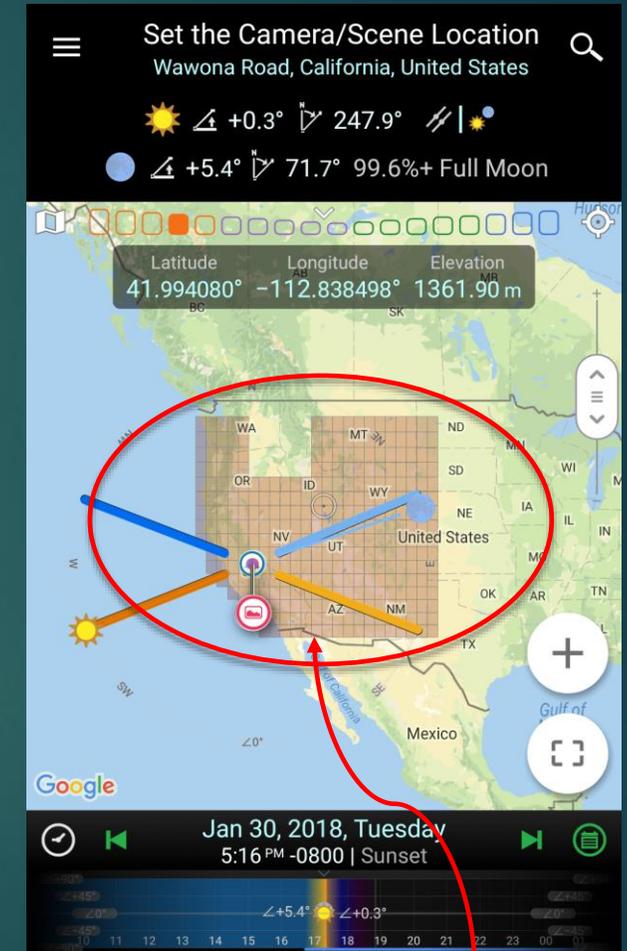
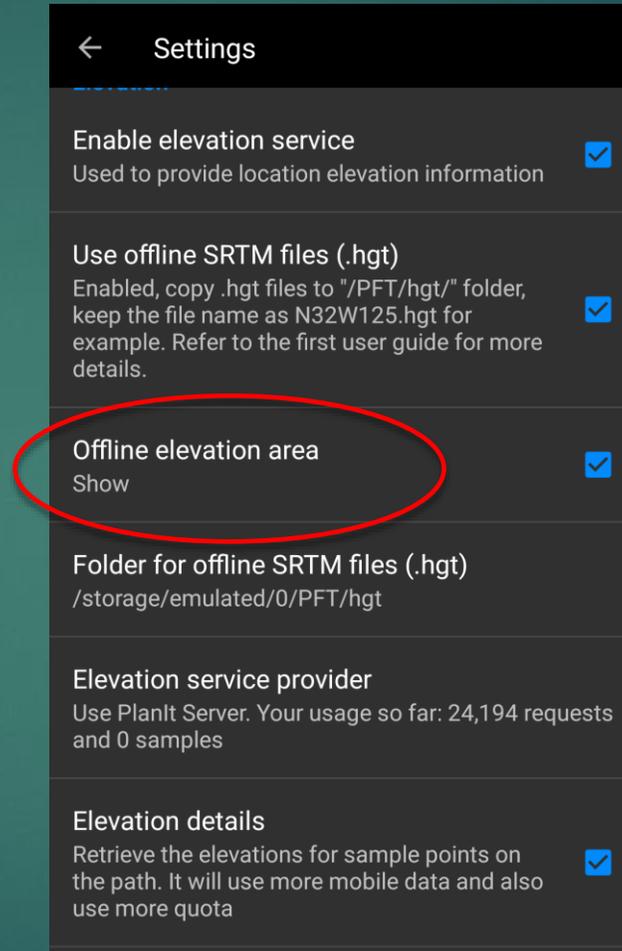
- ▶ By default, we are using Google Elevation service, which has a daily quota. To lift this limitation, you can download elevation data from various websites.
- ▶ The elevation file is in the SRTM hgt file format. The suffix for it is hgt. For example, N32W120.hgt contains the elevation data. It is usually organized by one degree of latitude and longitude.
- ▶ On your computer, copy all .hgt files to a folder named hgt. **No subfolder is allowed.**
- ▶ Connect your device to your computer, open iTunes, and select the device. On the left under "Settings," select Apps, select "PlanIt! Pro" from the app list, and the content in the app folder will display on the right-side pane. Drag the hgt folder you just prepared on your computer to the PlanIt! Documents area. You will see iTunes starting to copy the files. When the copy is done, the offline elevation data is ready for use.



Verify the Installation of the Offline Elevation



- ▶ Go to Settings and check "Offline elevation area"
- ▶ Exit the Settings and look at the map to see whether there is any red-shade area.

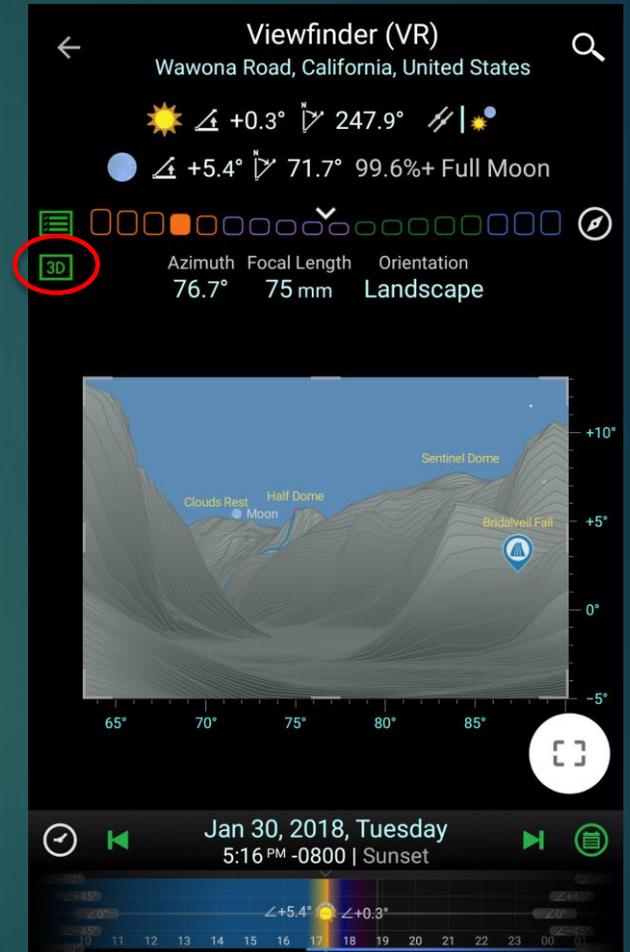


The red-shade area is the area that has offline elevation data



Benefits of Offline Elevation Data

- ▶ The most advantage is you can click on the 3D button on the viewfinder to see a 3D renderer of the terrain.
- ▶ There will be no more “tap to update” on the elevation and the elevation gain value. The value will appear right away when the location is changed.
- ▶ The distance line between the camera and the scene will always be color-coded to indicate weather you can see the scene from the camera location.
- ▶ On the “Light and Shadow” page, the light condition will be instantly displayed when the time changes.
- ▶ You can add many markers and select the “Show the Ground Contour” option for the markers. Try to add markers to high-elevation locations so that the simulated viewfinder will show a simulation that is closer to the real terrain.
- ▶ Last but not the least, you can do any operations that use the elevation data even if there’s no network connection.



Accuracy of Offline Elevation



- ▶ Based on our limited testing, we found the offline elevation is not as accurate as the Google Elevation. Although they use the same elevation data source, Google certainly did a good job to polish the data in their end and make the elevation data more accurate, thus they can charge for a premium for their service.
- ▶ With that said, for the general planning, the accuracy is good enough. But if you are doing a precise planning (an alignment shot for example), you might want to turn off the offline elevation from the settings so that the Google Elevation will be used instead.
- ▶ You can see an example of the difference on the right. The viewfinder is under 280mm focal length so they look quite different. In fact, it is only because the 10m different of the camera elevation between the elevation providers. But it caused 0.5° different between the Moon and the Golden Gate Bridge.

Using Google elevation



Using offline elevation

