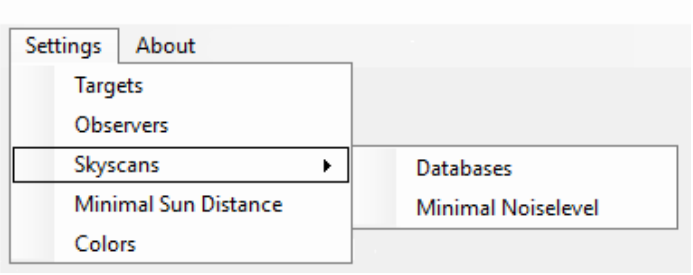
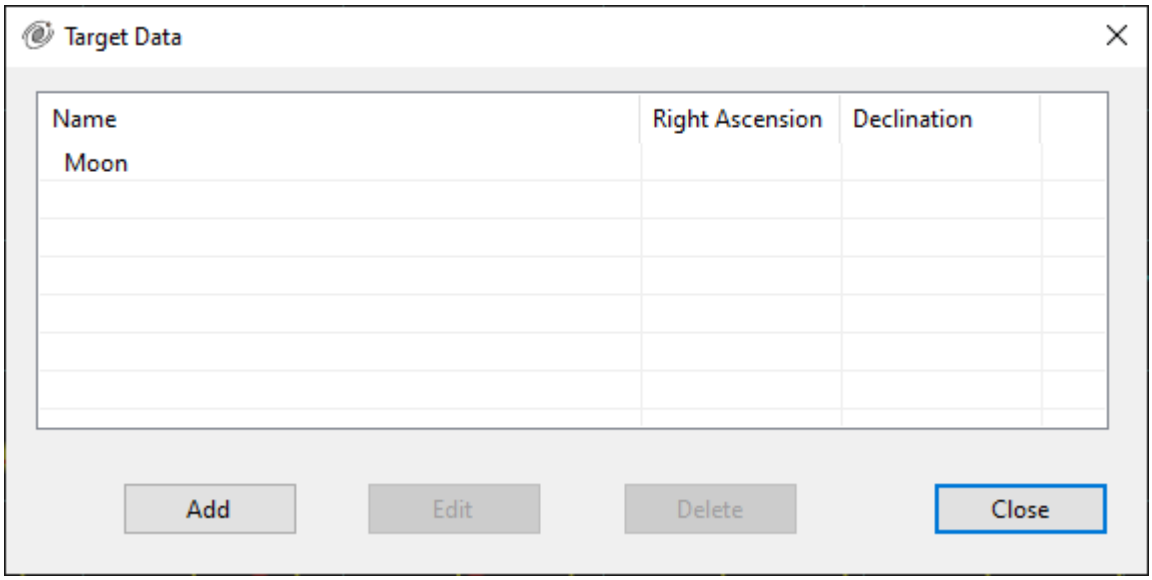
OrbitPredict

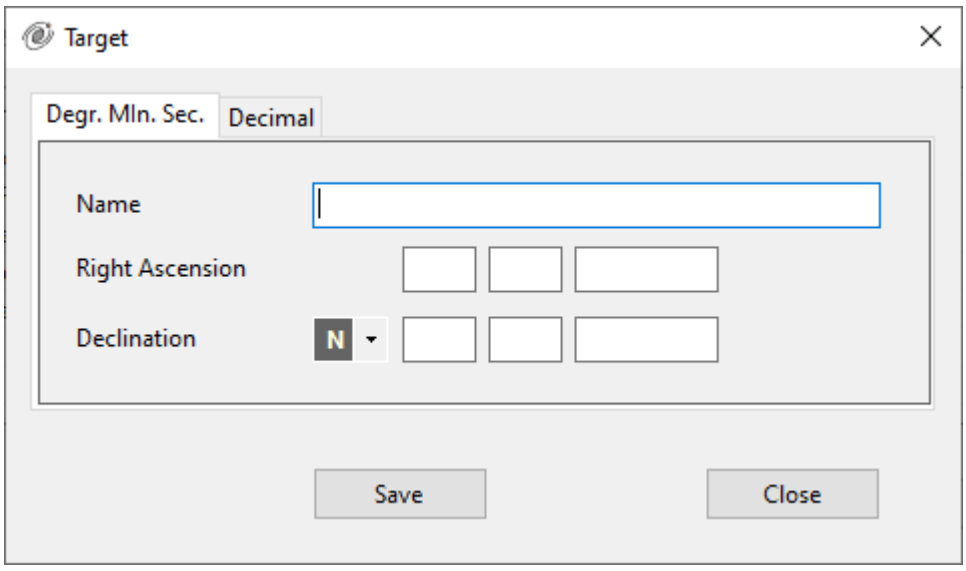
A simple program to see if it makes sense to make a connection via the moon in your own environment.

Menu Settings

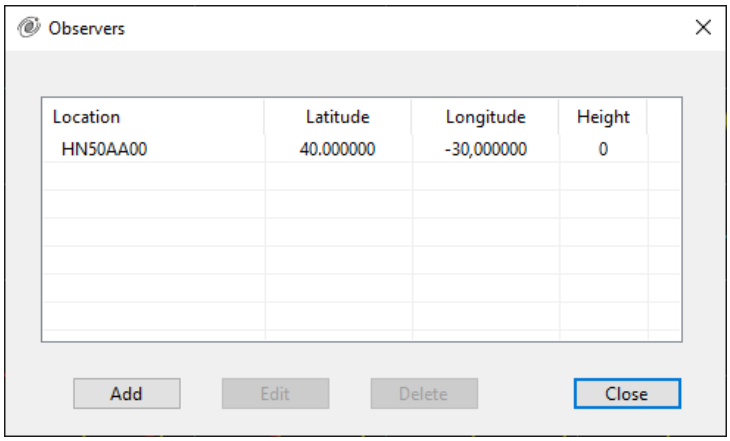


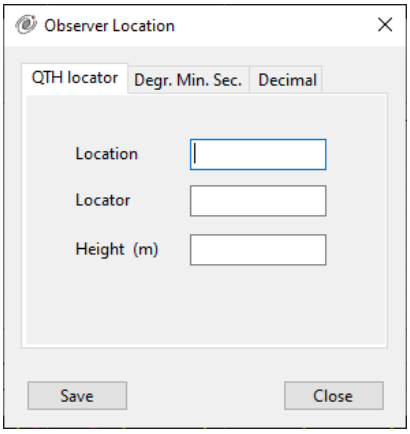
With **Targets** can also optionally add, modify and remove celestial bodies. With the moon, removal is not possible.
The position can be set with degrees, minutes, seconds and decimal degrees.





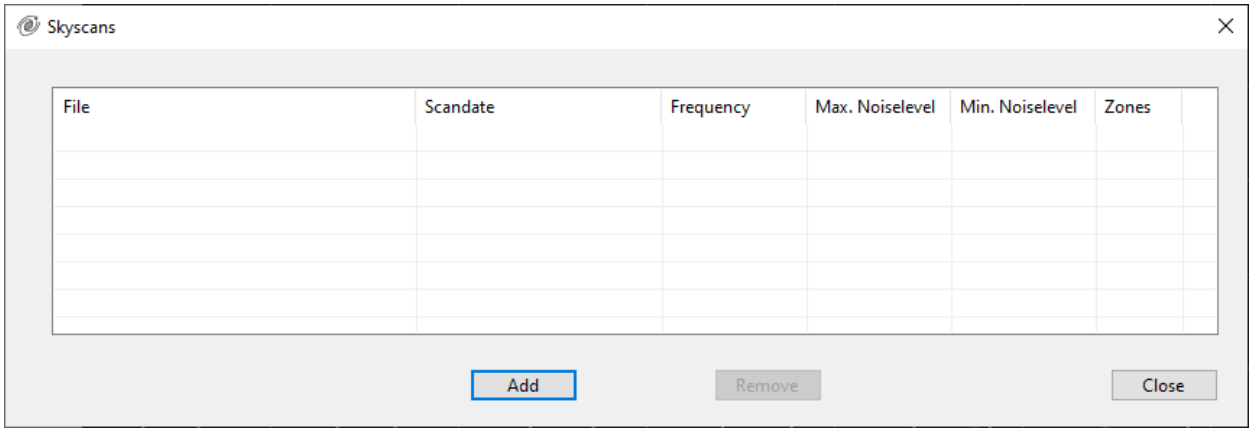
The own location can be set with **Observers**



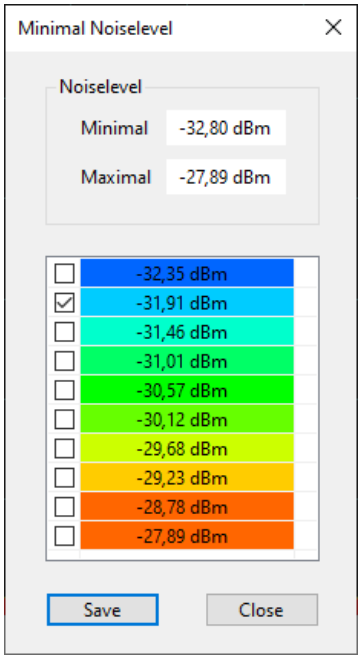


The location can be set with QTH, degrees, minutes, seconds and decimal degrees to the correct values for your own location.

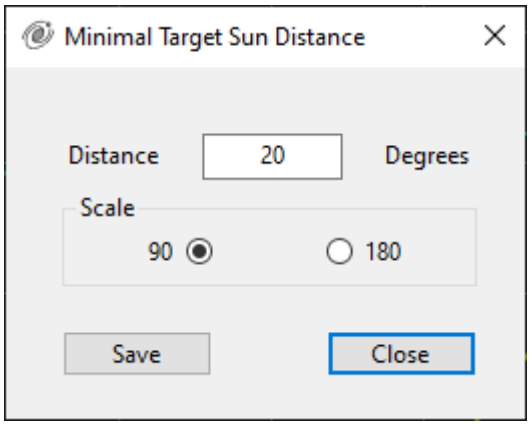
With **SkyScans/Databases**, an exported database from SkyScanner e.g. “Exported database - 2025-01-15 22.19.49.csv” can be added. The Data folder is checked first, but such a file can also be selected in another folder.



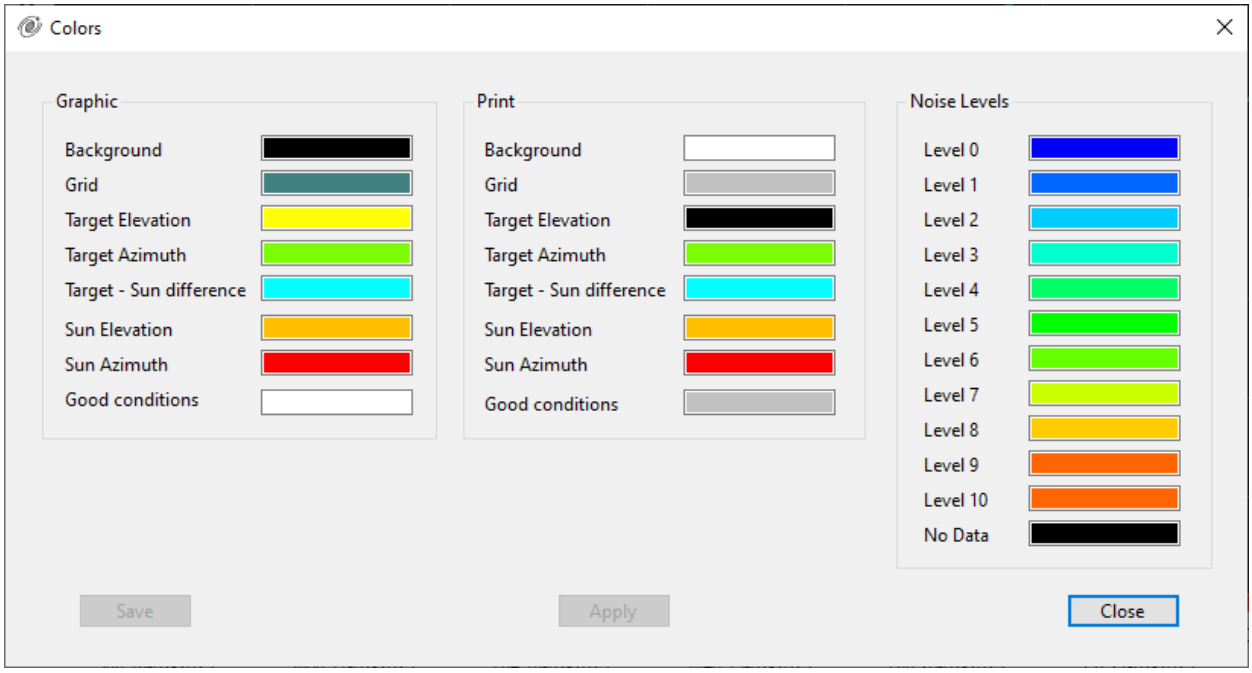
With **SkyScans/Minimal Noise Level**, you can select a higher minimum noise level.
In some environments, the difference in levels is so small that it makes sense to select a higher level to achieve a continuous period.



With **Minimal Target Sun Distance** you can set when it makes no sense to make a connection via the moon if the sun is too close to the moon. The Distance Moon – Sun graph will then turn red. SkyScanner has the ability to scan around the sun. This allows you to determine when the noise level from the sun no longer affects receiving.
You can also set the maximum value for the graph to 90 or 180 degrees here.



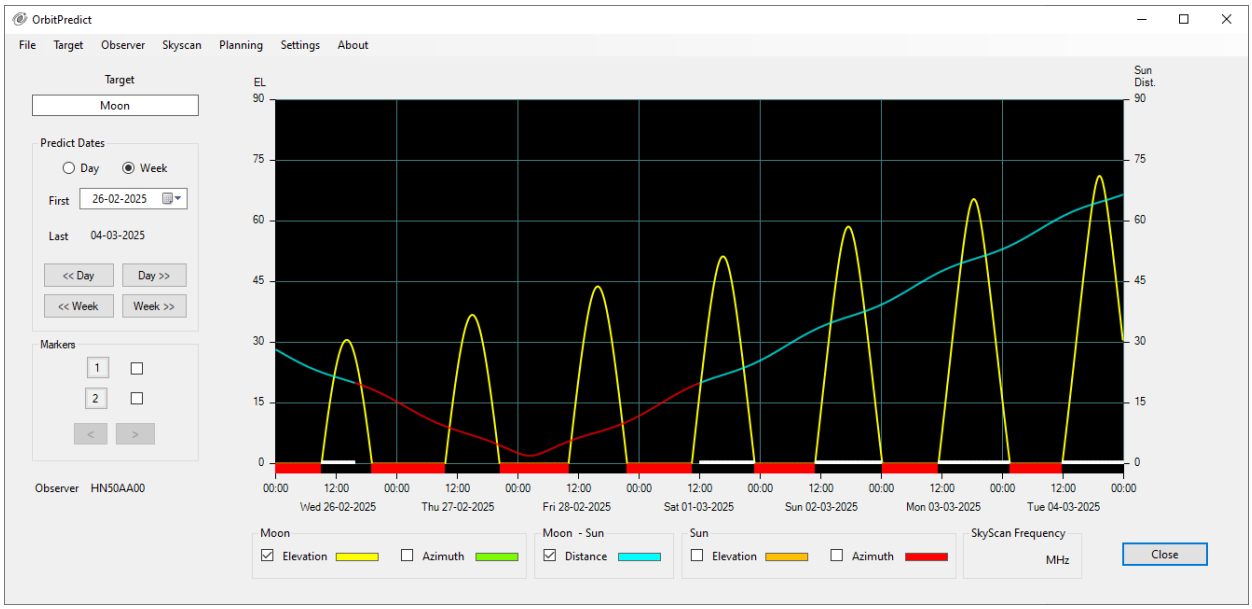
Finally, **Colors** allows you to set all the graph colors and the Skyscanner Noise Levels.



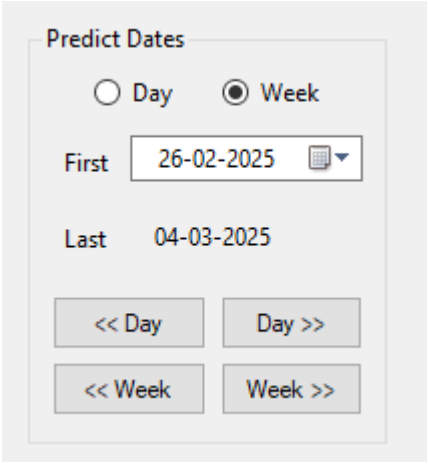
Usage

When the application is started, depending on how a previous session was closed, the daily or weekly overview will be presented. By default, the weekly overview and the elevation of the moon and the distance between the sun and the moon are selected.

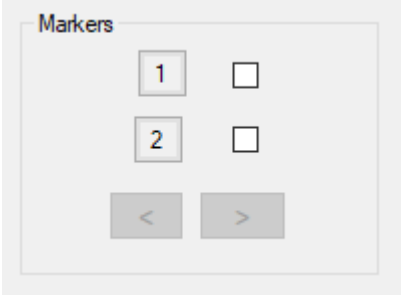
Weekly overview



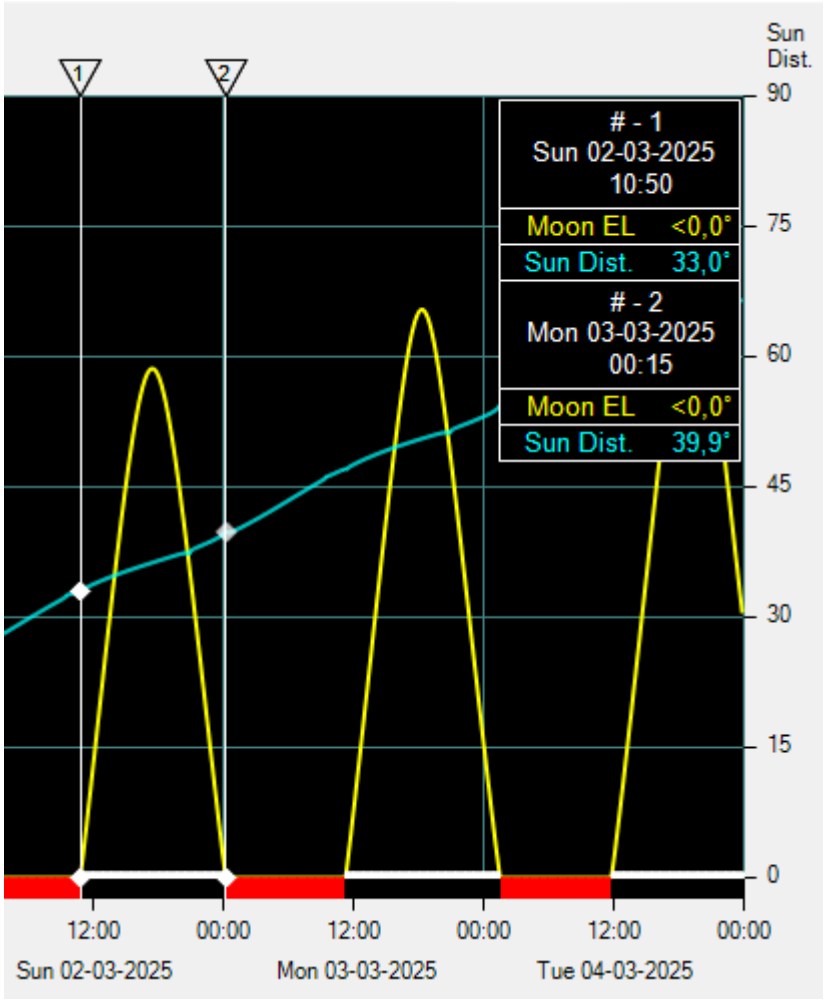
The weekly overview starts then with today's date.
The white bar indicates when the distance between the sun and the moon is more than the minimum distance.
The bar below that's for Skyscanner data. If that's not available as in this example, it is red when the moon is below the horizon and black to indicate that there is no SkyScanner data.



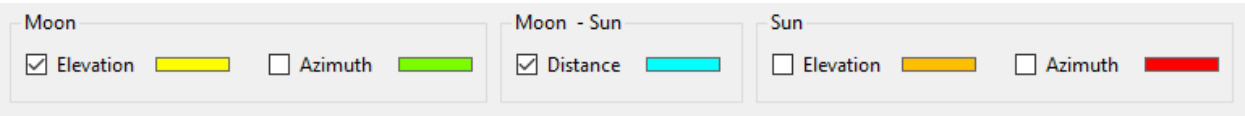
With First you can set a different date for the first day and with the buttons <<Day Day >> and <<Week Week >> you can shift the overview forward and backward one day or week respectively.



2 markers can be set to get more information from a certain point in the graph.

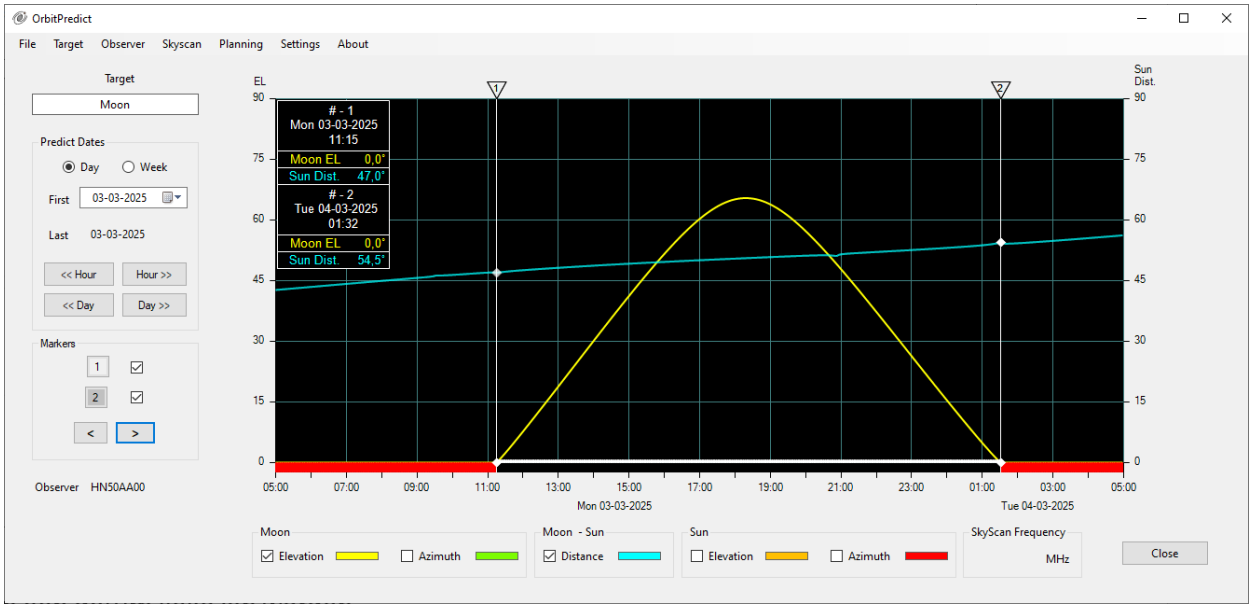


If the checkbox for a marker is selected, the marker is positioned at the beginning of the graph and can then be moved to a certain position with the mouse and placed with a click of the left mouse button. The marker then can be moved by dragging the relevant triangle at the top of the graph with the left mouse button. The marker can also be moved with the < and > buttons, but this must be activated for the marker in question by clicking the button next to the checkbox.
The marker position information is shown in the box at the top right. If it's in the way, you can drag it to a better position with the left mouse button.



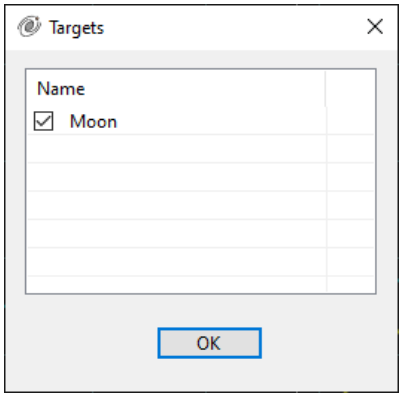
Checking one of the checkboxes will also show those lines.

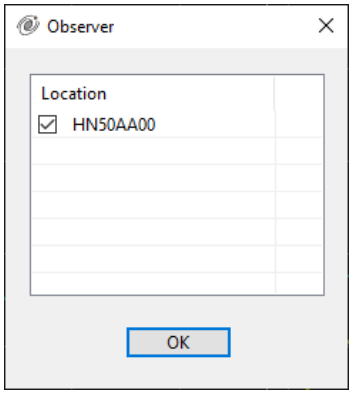
Daily overview

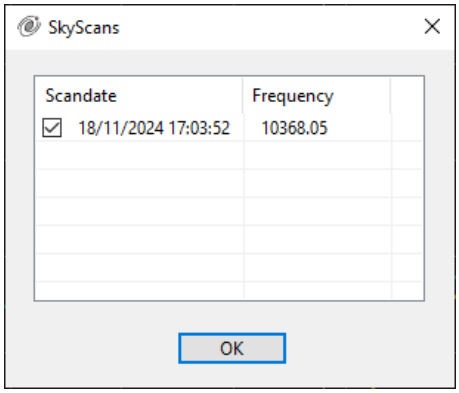


This screen can be switched to in 2 ways, via the Day selection button or by clicking on the date below the graph in the weekly overview. Here you can look more closely at when the moon is visible. And here too a date can be chosen.
As already indicated, the panel with the marker values can be placed in a different position.
In this overview the graph can be moved forward and backward one day or one hour. The range of the hours is somewhat limited, it can be moved forward a maximum of 12 hours, in this example 6 hours

Menu's Target, Observers en SkyScans

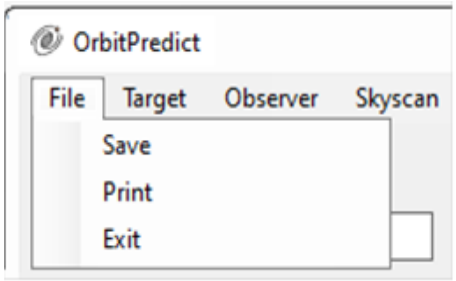




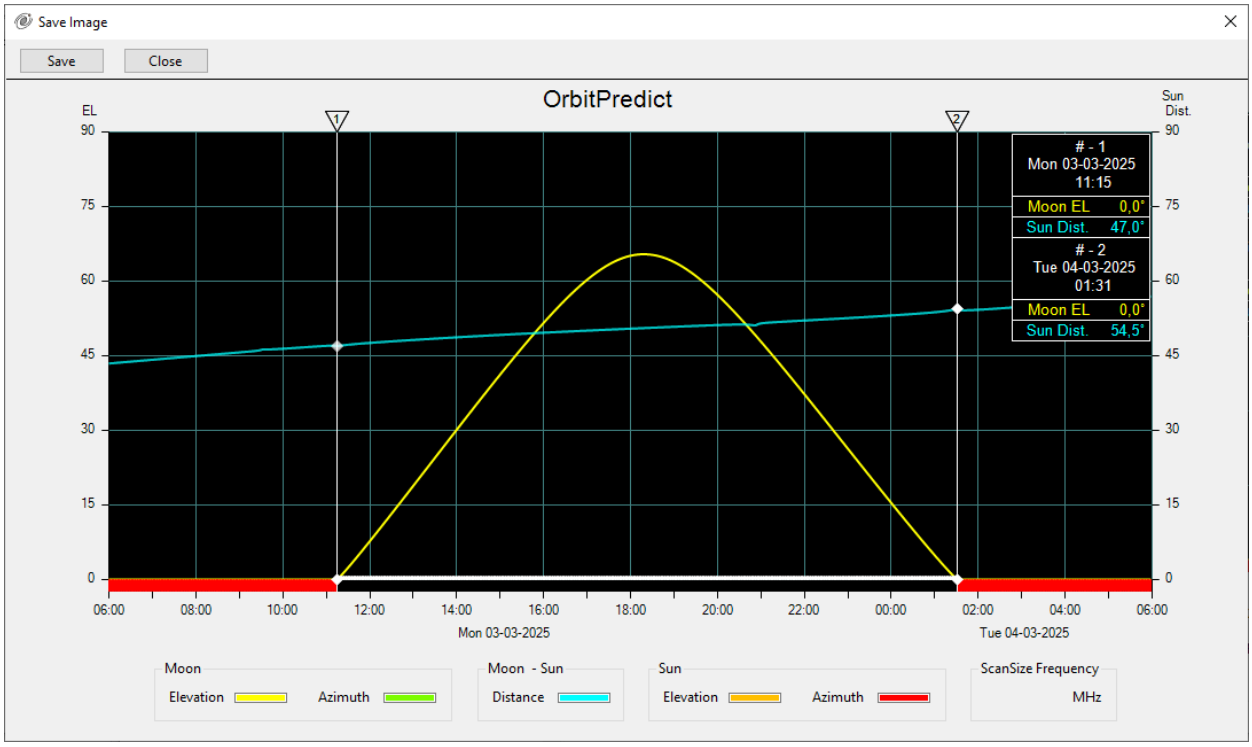


These menus allow you to select from the various data entered.

Menu File

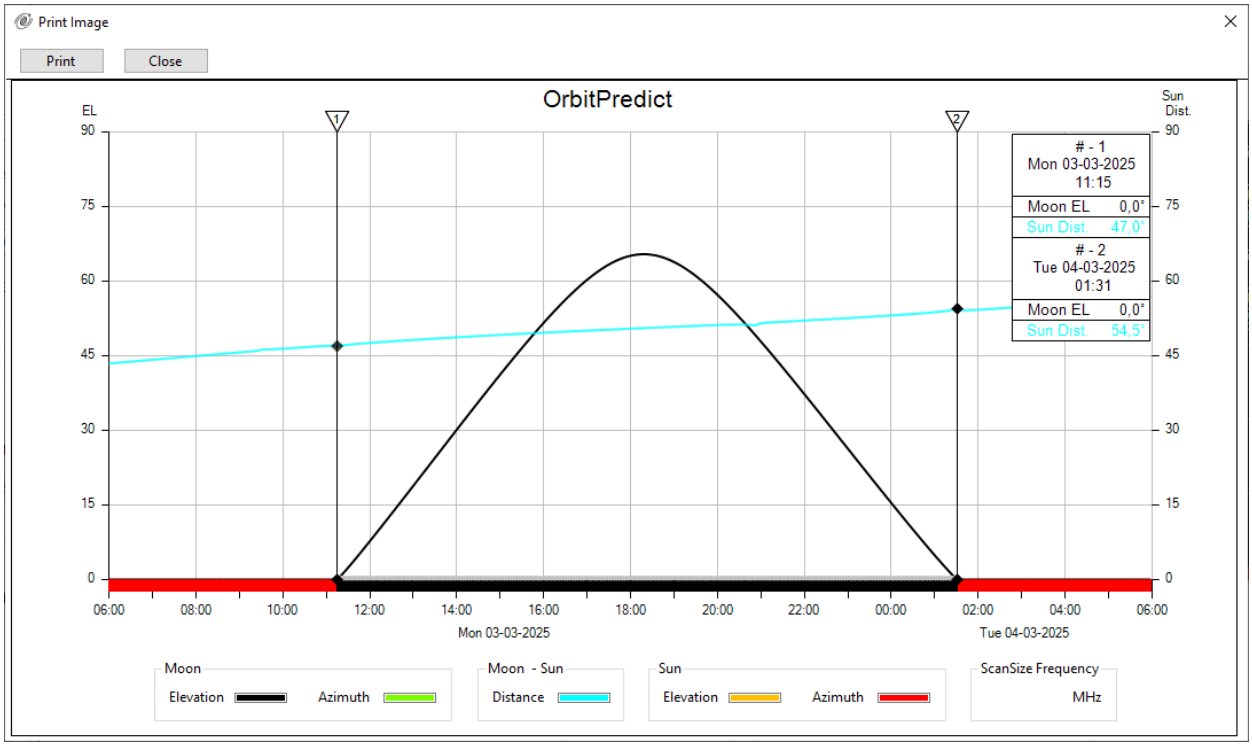


This menu allows you to save or print the shown graph.
When you select **Save**, the image below will appear.



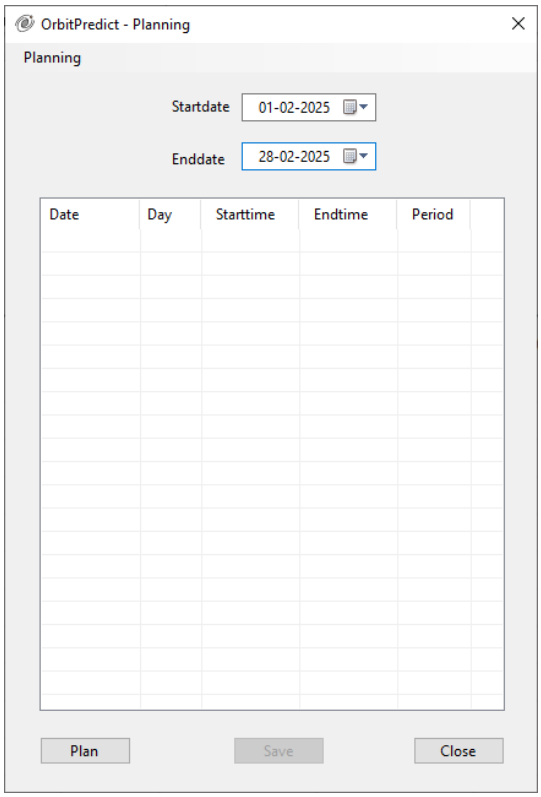
The presented view is saved.

The same applies to **Print** but then with the colors that were chosen for printing.

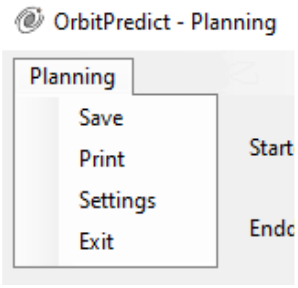


Menu Planning

When this menu item is selected the screen below will appear.

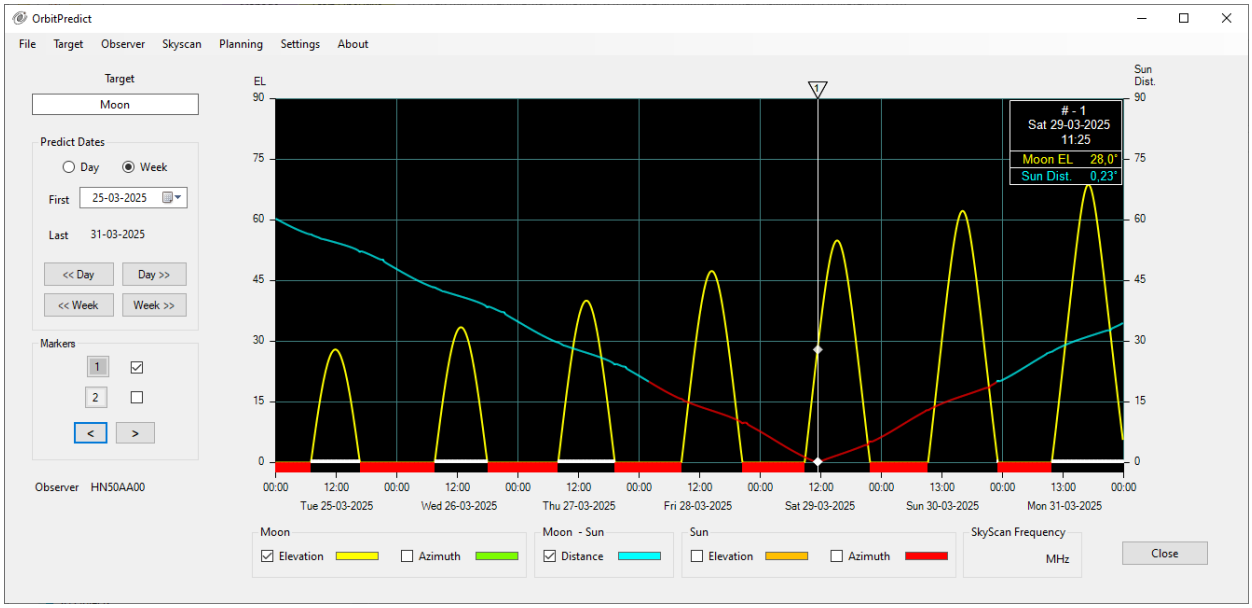


Here you can set the period to be planned.

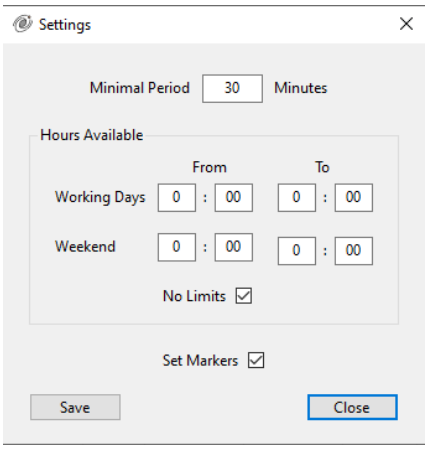


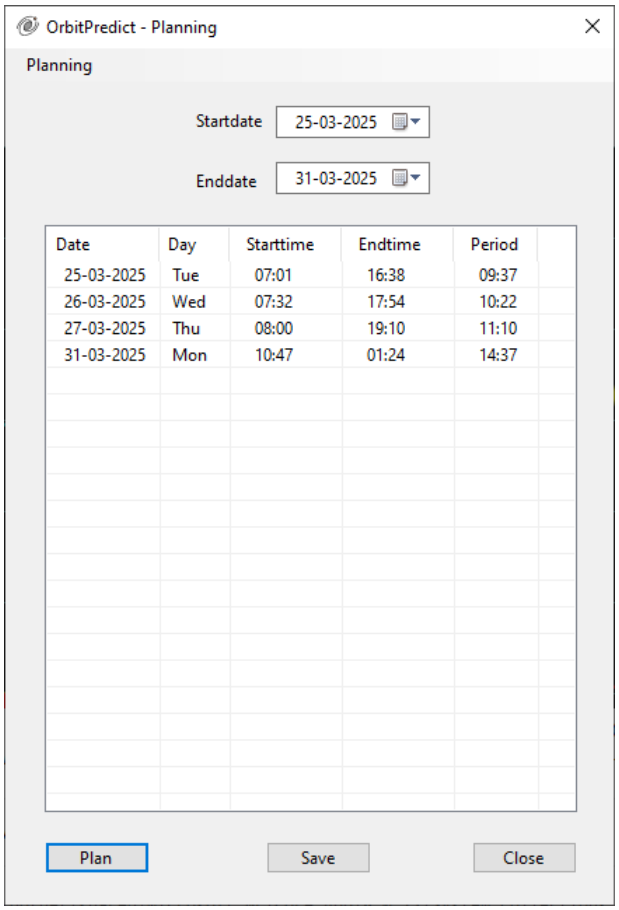
The **Settings** menu item allows you to make additional settings.

The last week of March the conditions look like below.



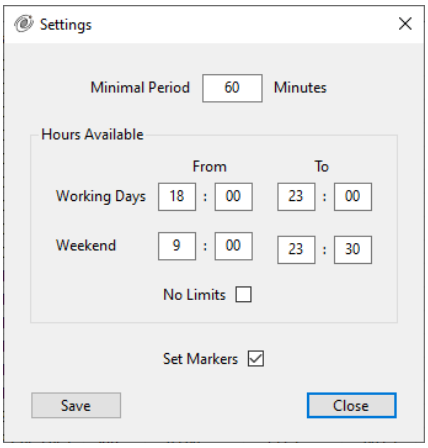
Below is the schedule for this week with the corresponding settings.

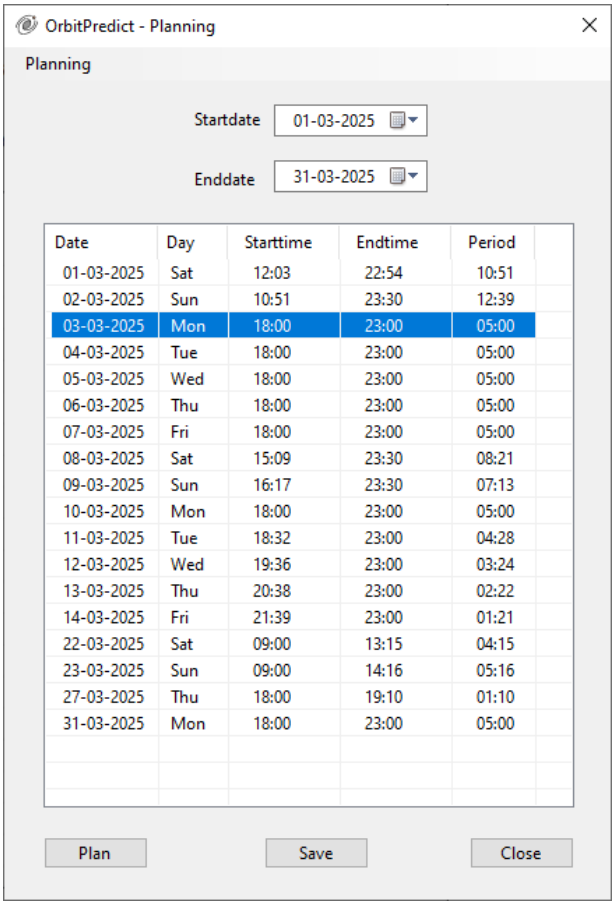




If there is no SkyScanner data available yet, only the Hours Available and Set Markers items are of interest.
The schedule is determined with the **Plan** button. In the schedule that is then generated, 28-3 to 30-3 are missing because then the sun comes too close to the moon. In this case even a partial solar eclipse
Hours Available can be used to indicate which hours are available to work on moonbounce.

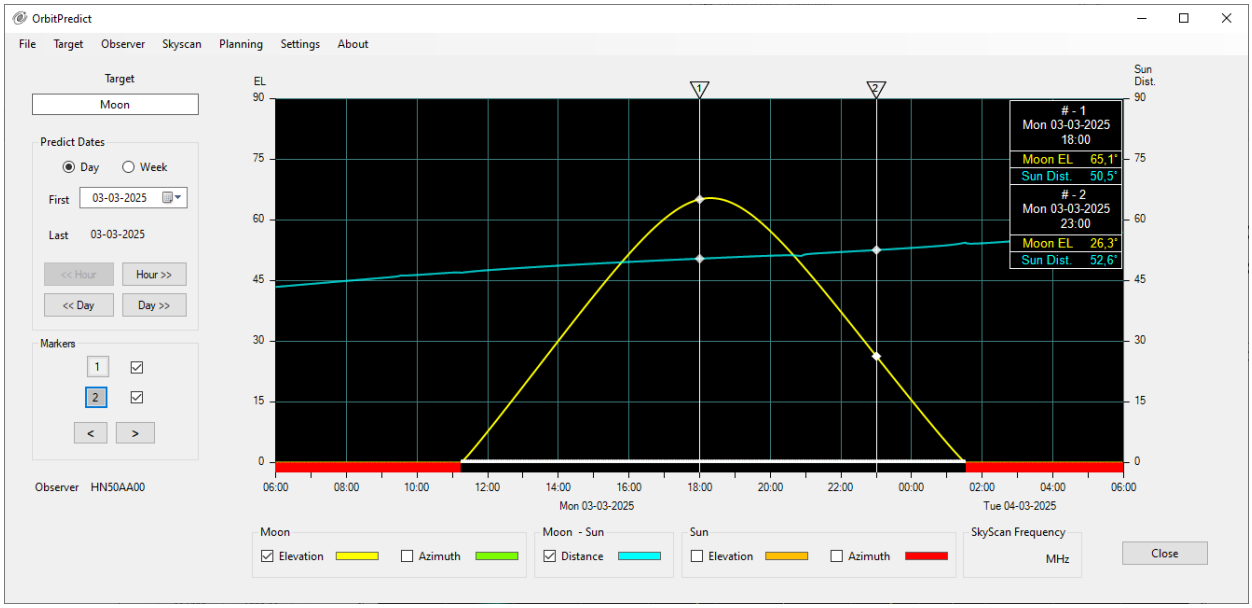
For the month of March 2025 available hours during the week from 18:00 to 23:00 and in the weekend from 09:00 to 23:30, the following periods are shown.
For this, the No Limits selection must be deactivated.



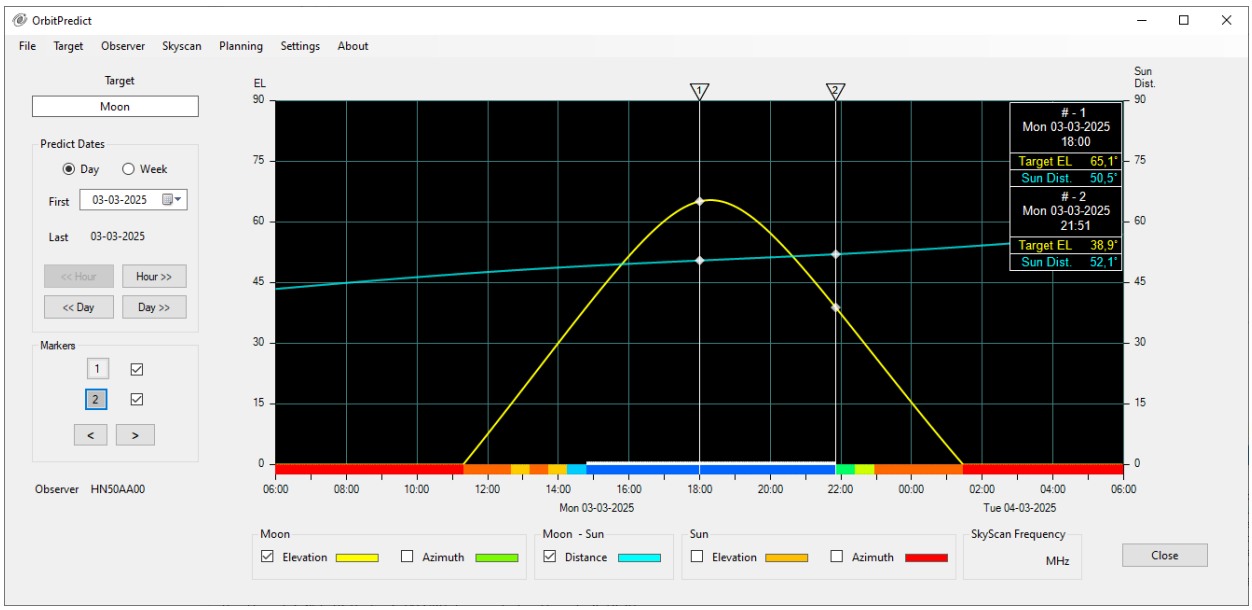


The **Save** button can be used to save the schedule as a text file.

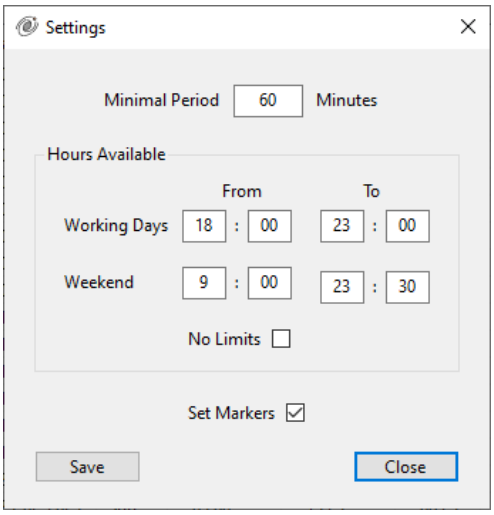
If you want to see how the circumstances are on 3-3-2025, you can do that by clicking on the period in the list of that day. The daily overview is then shown with the markers at the beginning and end of the available period.

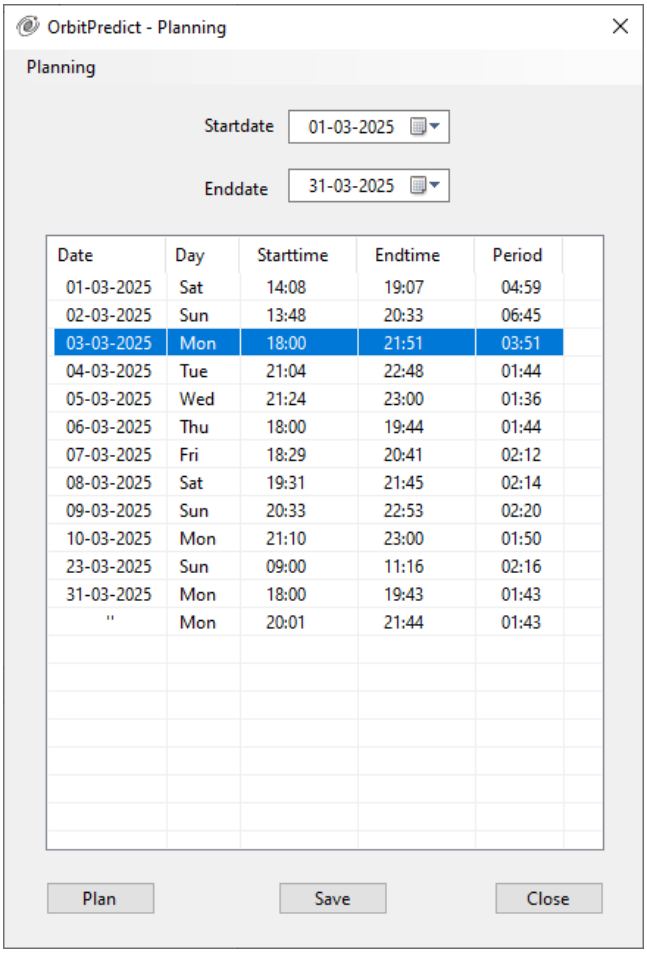


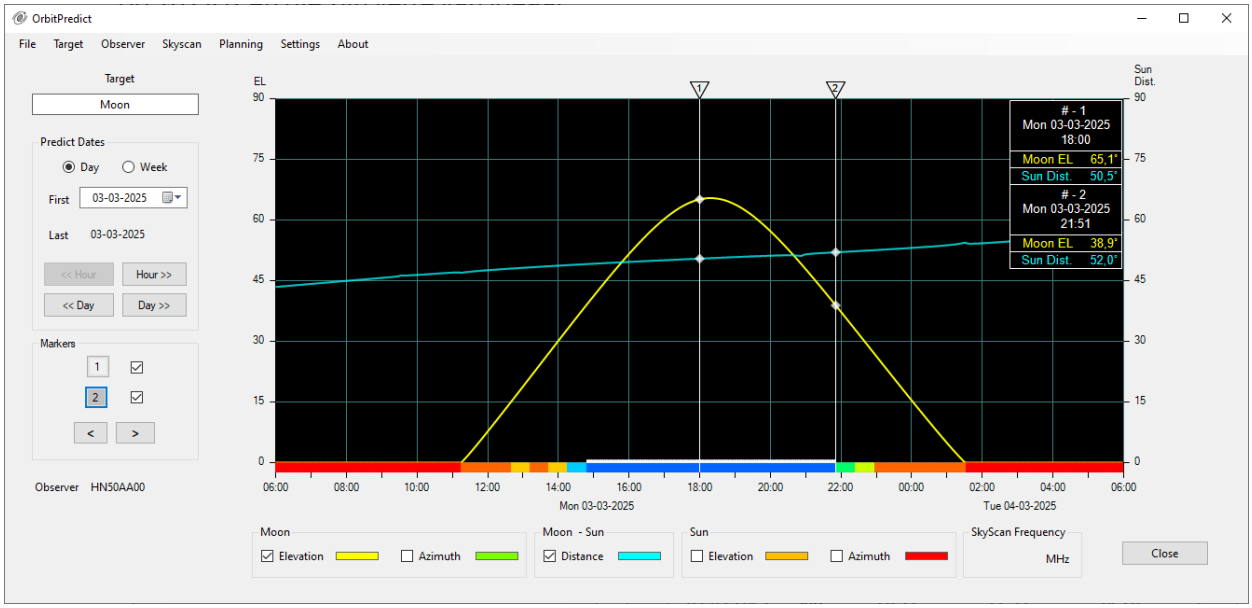
With SkyScanner data the image looks a bit different.
Here the conditions chosen were those scanned in my backyard with a 70 cm dish at 10 GHz and they are far from ideal.



With the settings below, the planning will also look different.







The bottom bar now shows in blue when I am bothered by the environment and in this case that's 03:51 hours and in ideal conditions that is 05:00 hours