Observation Planning

Using Starry Night to plan an observing session

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1. **Open Starry Night** – when you load Starry Night you will be prompted to register the product. If you wish to do so, fill in the boxes in the pop-up window and click ‘Ok’. Otherwise, click ‘Ok’ with the boxes kept blank.

2. You will then be asked if you would like data updates – this updates the position data for asteroids, comets, planets and satellites in the Starry Night database. You must register the product to receive the updates. If you have not registered Starry Night and do not wish to do so, click ‘Cancel File Update’

3. **Set Home Location** - The next step is to set the home location in Starry Night as the position of FTN on Maui. If you are running Starry Night for the first time, a pop-up box will appear upon which you can either choose the home location from a List, Map or by entering the Latitude/Longitude. If this pop-up window does not appear, the home location can be set by going to **Starry Night Pro > Set Home Location** and following the instructions below.
Click on the 'Latitude/Longitude' tab, and enter the co-ordinates of FTN (latitude 20° 42' 27" N; longitude 156° 15' 22" W). NOTE: Starry Night does not like symbols or decimal places in the lat/long box. Input the numbers only, rounding up the last digits. Check the home location is correct. For the time zone, click 0 hours off GMT and uncheck the DST box. **The time given in Starry Night is now in UT.**

Save FTN in the list of locations by clicking on `Add Location to List`, then `Save as Home Location`.

Your home location can be changed in Starry Night by going to `Options` on the menu bar at the top of the screen. Click on `Viewing Location` where you are shown the same pop-up window as at the start of Starry Night. The co-ordinates of FTN can be input and set as home.

4. **Changing the Date and Time** – in order to plan your observing session, you will have to change the date and time of Starry Night to match the date and time of your planned session. At the top left of the Starry Night screen, click on the Date and Time and change them to the time of your session.
5. **Finding Objects** – If you know what objects you would like to observe in your session, but would like to check if they are visible and above an altitude of 30°, click on the ‘Find’ tab to the left of the main screen.

Enter the name of the object you would like to observe in the search box – the possible objects are then listed. If visible in the sky, they are given in black; if not visible they are greyed out. Also shown is the altitude of the object. To label the position of the object on the main Starry Night screen, tick the box next to the object name. To order the objects in ascending or descending altitude, click the ‘Alt’ title at the top of the list.

6. **Getting information about the object** – In order to find out more detailed information on the object you wish to observe, such as its RA, Dec and time when directly overhead (transit time), move the mouse cursor over the name of the object in the main screen.
7. **Planning your observing session** – we will now run through an example of how you can use Starry Night to plan an observing session. Click on the `Planner’ tab and select `Add…’. The observing tool window pops-up.

From each drop-down menu in the planner, you can choose what type of object to add, which database to search, the magnitude of the objects and the type and constellation. You can also input objects in the search box if you want to check that an object is visible during your session.

Once your search criteria has been chosen, click on ‘Find’.
Once the list of objects which satisfy your search criteria are shown in the box, you can include them as part of your observing plan by checking the include box, labelled, ‘Inc’. Information including the object’s rise, transit and set times are given. At this point, you should be checking that the objects will fit in the field of view of the telescope, and that their altitude value during your session, is above at least 25 degrees.

To see all the objects you have chosen to add to your observation plan, click on ‘Show Session Items’. Click ‘OK’ when your objects have been chosen.

Checking if an object is rising/setting – apart from looking at the information given in the Observation Planner box, one way of looking to see whether the objects you wish to observe are rising or setting during your session is to run Starry Night through the session in quick time. Start the observing time to correspond to the time of your session. Change the ‘Time Flow Rate’ to, say, 300×. The movement of the objects can then be watched in the main Starry Night screen.
Other Useful Starry Night Features

The Moon - It is helpful when planning your observing session to know what phase the moon is in and therefore choose either an observing session when it is not bright, or choose objects which lie far from the moon when it is bright.

Starry Night has a moon calendar which shows the phases of the moon, and can be accessed by clicking on the 'Sky Calendar' tab. The month or year can be changed by clicking the appropriate buttons.

Help – Starry Night has an extensive Help facility available. There is online help, which includes a FAQ section for any problems you may have. There’s also a ‘User’s Guide’ which goes through the basics of using Starry Night – useful for aspects of Starry Night which is not Faulkes related and therefore not covered in these leaflets. Finally, there’s the ‘Companion Book’.