

PLANNING OBSERVATIONS

During this session students will learn how to plan for astronomy observations. They will use Stellarium to work out what objects will be in the night sky on a particular date and time.

Learning Objectives, students will learn:

- 1 how to plan an evening of naked-eye observing
- 2 the importance of efficient planning for observing
- 3 the way that computer simulations can be useful to improve planning

* Stellarium is free, open-source software and runs on most computers (Windows, Mac, Linux). It is available to download from stellarium.org

Each group will require the following:

| REQUIRED RESOURCES | |
|--------------------|----------------------|
| ☆ | Stellarium software* |
| ☆ | Access to computers |
| ☆ | Student instructions |

There is also a web-based version, but that works slightly differently from the main software and so is not ideal for this activity. Smartphone and tablet apps are also available, but these are not always free.

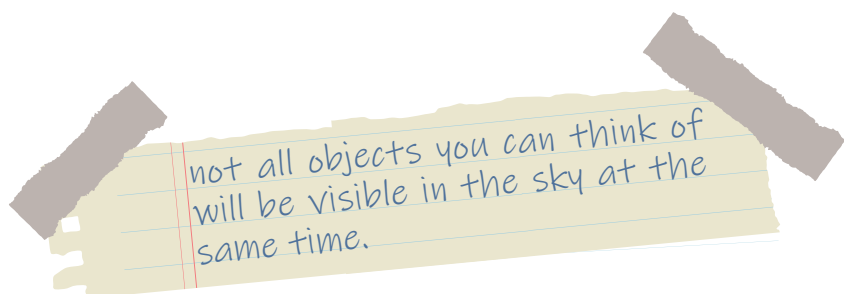
Before the session:

You will need to download Stellarium onto each computer for students to use. Instructions to set it up can be found on the next page. You may find it useful to play with Stellarium before the session to familiarise yourself with the software.

During the session:

Provide the students or groups with a copy of the student instructions for the session. After following the Stellarium instructions, students should answer the questions on their instruction sheets. They will imagine they are planning for a specific observing session at a particular date and time. It is up to you to decide if you want to plan for a real night of observing!

Students will set up Stellarium and select the desired location for observing – usually the nearest city. Then they will choose a time and date for observing. This can be anytime in the future and can be for an imaginary session. They can explore the sky by moving around or searching for particular objects they might know like ‘Mars’ or ‘Saturn’.

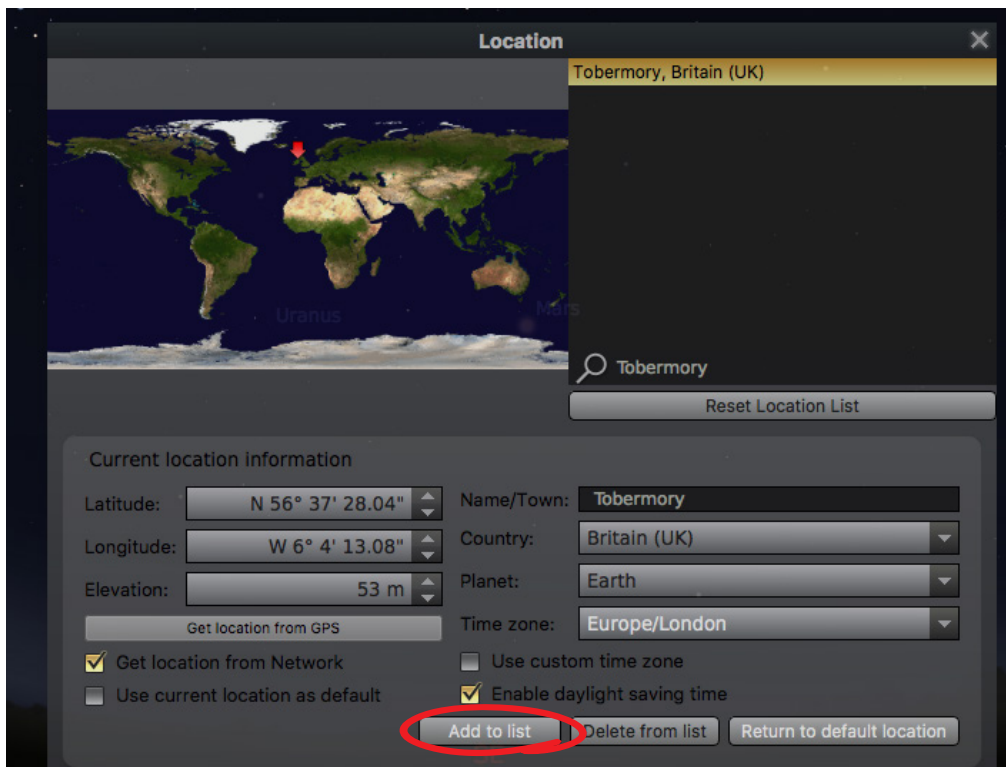


STELLARIUM INSTRUCTIONS

SETTING THE LOCATION

Stellarium includes a list of most of the major cities and observatories in the world. You may find your location is not included. To keep it simple, you can choose the nearest city to where you are. This won't make much difference to the objects you will see in the sky but it may change the level of light pollution that the software simulates. To be more exact, you may want to add your own location to the list.

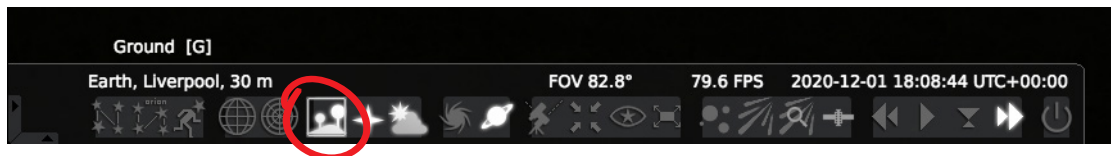
If you bring up the Location Window from the left-hand menu, you can add the name, latitude, longitude and altitude of any location. The image below shows Tobermory on the Isle of Mull being added. Remember to click on the 'Add to list' button to save it.



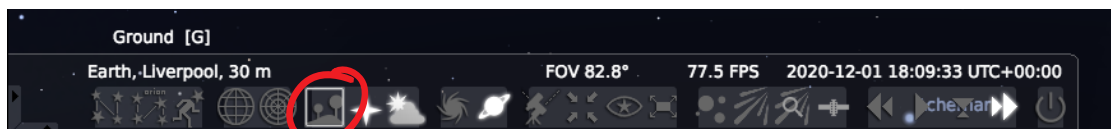
GROUND ON/OFF

Using the icon in the bottom menu, the ground can be made invisible.

On:

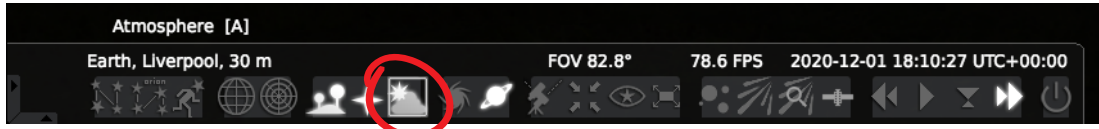


Off:



ATMOSPHERE ON/OFF

Similarly, the effect of the atmosphere can be removed or added back:



On:

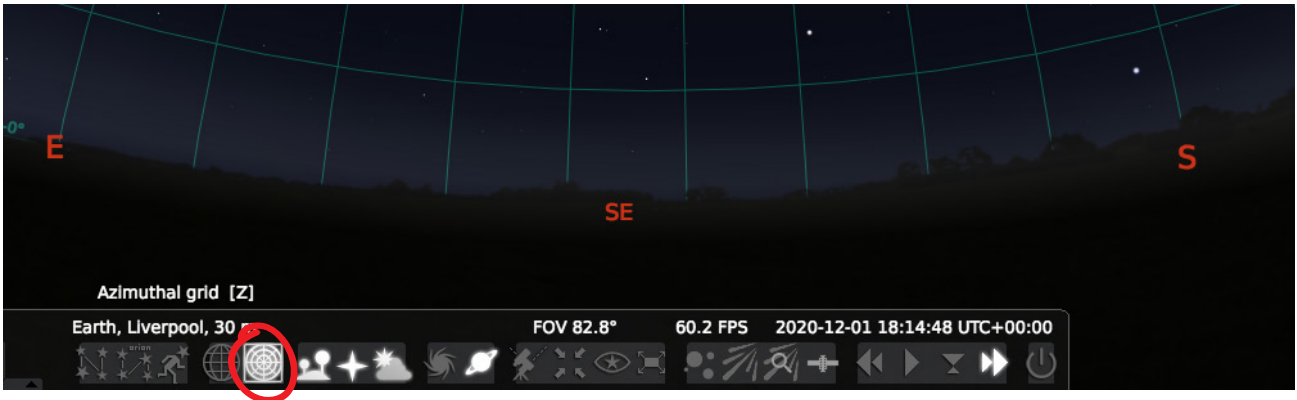


Off:



COORDINATE GRIDS

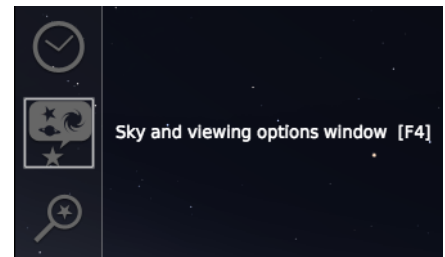
Several coordinate grids can be overlaid on the sky. For planning observations, the most useful is the Altitude/Azimuth grid:



ADVANCED VIEWING OPTIONS

If you want to really explore the simulation of the sky, there are advanced viewing options you can bring up from the left-hand menu:

Of these, perhaps the most useful for planning is to experiment with the effect of different levels of light pollution.



EXPERIMENT!

As you can probably see, there are many other options in Stellarium from showing constellations to simulating shooting stars - far more than any single workshop can cover. The best way to find the most useful options for you and your students is to explore and play.