Planisphere

Locating Objects (40N)

Classroom Activity

Material List:

- 40ºN Latitude Rob Walrecht Planisphere
- Pen/pencil

Outline

The positions of stars are found using their celestial co-ordinates just as objects on Earth can be located by latitude and longitude.

Depending on where you stand on Earth, what you see in the sky will vary. Using a planisphere allows us to work out what is above us and where it has been or will be.

This activity will help you understand how a planisphere works and have you map celestial coordinates.

Procedure:

1   Study your planisphere and try and figure out what the different features mean and do.

2   Compare your planisphere with the labelled diagram and learn what each part does/means.

3   Use your planisphere to help you answer the following questions:

1. Name four constellations that lie on the ecliptic.

2. How many constellations, in total, does the ecliptic line cut through?

3. Name four constellations that remain (mainly) above the horizon throughout the year? Rotate the mask to do this. These are known as circumpolar constellations.

4. At midnight on the 1st July, which bright star is at the zenith? (Do this by placing zero on the time scale next to 1st July on the date scale, then see which bright stars are close to the zenith position.)

5. At midnight on the 11th December, which bright star is just a few degrees from the zenith?

4   Compare answers with the model answers to see if you are using the planisphere correctly.

How to find the celestial co-ordinates of a star:

To read the declination of a star, place the red meridian lines across the star and read the scale on the meridian line. To read the RA of a star, place the red meridian line across the star then read the RA on the rim where the red line intersects it. The earlier mentioned divisions on the meridian will give the declination.

5   Work with a partner and fill in the table below:

Name of Star	Right Ascension	Declination	Constellation
Regulus	10 hours 8 minutes	+12º	Leo
	5 hours 55 minutes	+8º	Orion
	16 hours 30 minutes	-26º	
Vega	18 hours 35 minutes		
Arcturus			Bootes
Altair			

6   All the declination and right ascension values are approximate. If you had a very large planisphere would your values be more accurate? Explain your answer.

Further Resources:
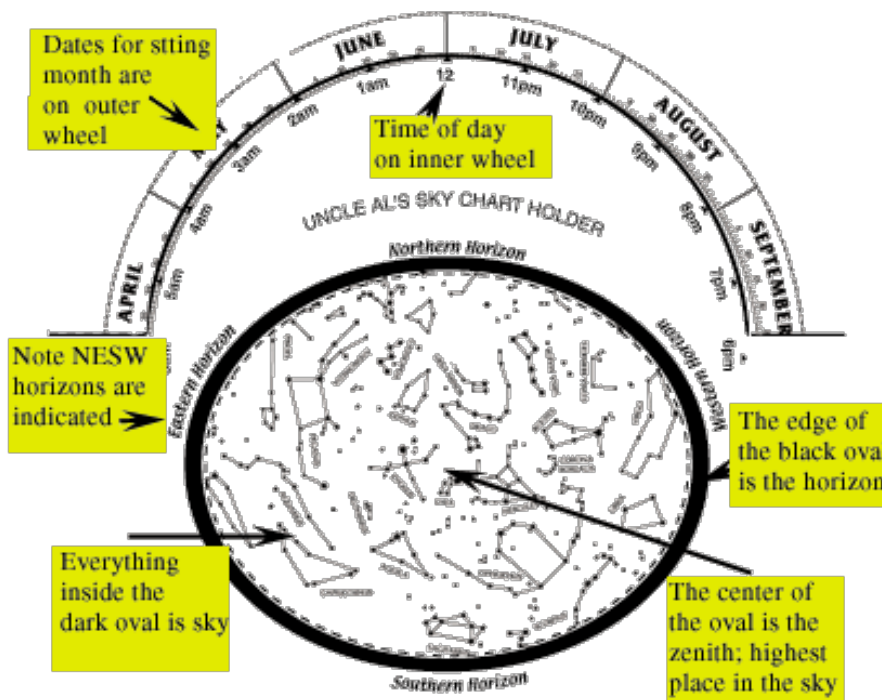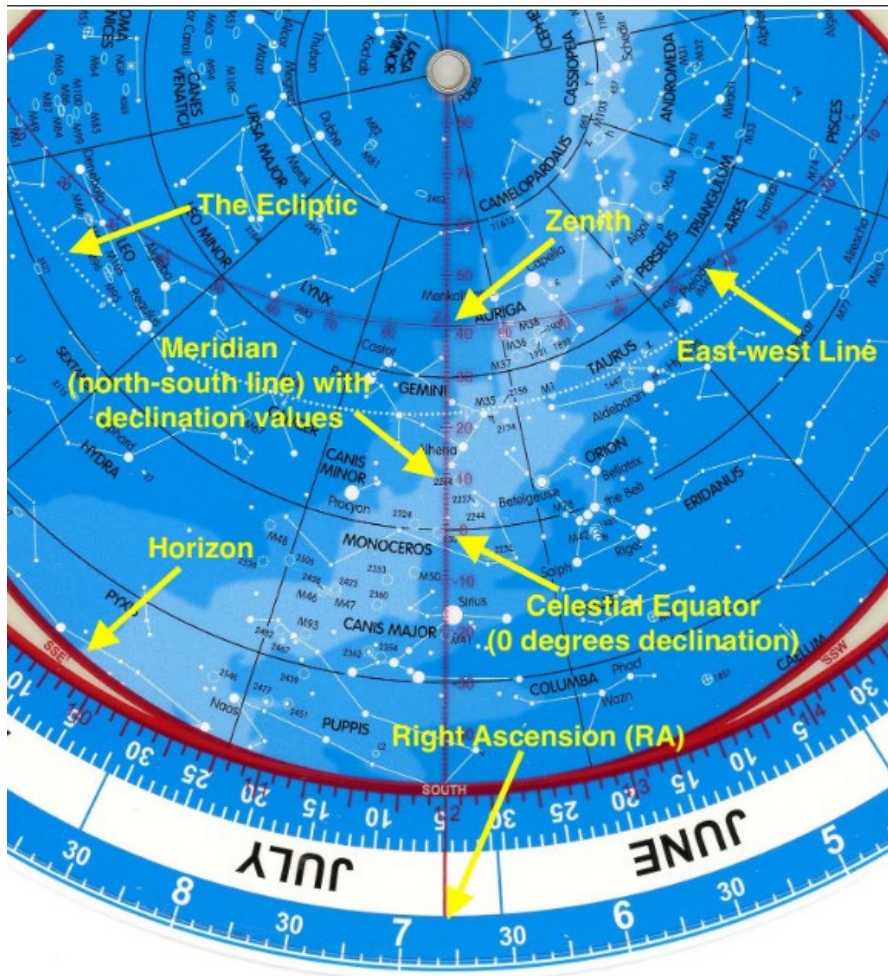
The online observatory collaboration consists of the following partners:
Baldone Observatory, Brorfelde Observatory, Cardiff University, Harestua Solar Observatory, Helsinki Observatory