Comenius 'CITIES' Night Sky Observations

The Moon

Your task

Observe the Moon any time in the evening this Friday (18 October) before the eclipse* starts at 10.50 p.m. British Summer Time (or 11.50 pm in Amsterdam, Rome and Lyon).

Comment on its brightness and colour. What features do you observe on the surface? Record the time, date and location*** of your observation. Estimate the direction**** of the Moon (azimuth) and its height in the sky (the elevation, that is its angle above the horizon).**

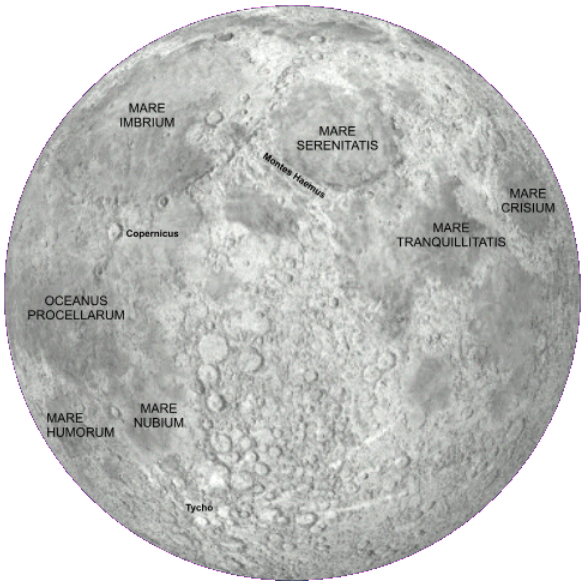
If observations are not possible this Friday (cloudy skies or you forget or you are going to a party!) then carry out the above observations on any day of the following week (18th to 25th October).

If you are able to observe after midnight (BST) or 1.00a.m. ('European' time) this Friday then repeat the above observations once the eclipse has started.

Email your observations to Dr B. Tedd English teacher Coordinator at bt@kehsmail.co.uk

* The Eclipse This Friday (18/19 October 2013) there is a penumbral eclipse when the Moon is immersed in the lesser, outer region of the Earth's shadow called the penumbra. It is not like a partial lunar or solar eclipse where a bite is taken out near the limb. Instead the appearance of the Moon will change in colour and brightness. The eclipse starts at 10.50 pm BST (11.50 pm European Time) with the Moon fairly high up in the sky. Just after 00.00 BST the effects of the eclipse should be apparent (assuming clear skies!) but will not last long. The eclipse finishes ends at 2.50 am BST.

**Features on the lunar surface



***Your Location – state the city in which you live, but also give your latitude and longitude if you are able to do so. http://itouchmap.com/latlong.html

**** Find the azimuth (direction) of the Moon using a magnetic compass or using an app with your iphone, ipad or other. To find the elevation (angle above the horizon) use the approximate method described below.

Angles in the Sky

Measurements in astronomy often use angles. From a clear horizon you could see 360° in any direction. However you could see 180° of the sky (as the other 180° is under the horizon). From the Horizon to Zenith is 90°. Humans can see 100° at any one time. The amount of sky you can see at any time is called the **field of view**. A pair of 10 x 50 binoculars will give a field of view of 10°. A powerful telescope will give a smaller field of view. The Faulkes telescope has a field of view of 4.6 x 4.6 arc minutes.

From the 360° in a circle each degree is called an **arc minute**. This is then split into another 60°. Each of these is an **arc second**.

Your hands can act as a useful way to measure angles (see below). The Moon and Sun are about ½ degree in the sky. You can hold out your arm, stretch your little finger and block out the Moon.