

### **The Sun**

On June 20th at 22.00 hours 44 minutes British Summer Time, the Sun, which has been creeping further and further north as the weeks pass, will reach its maximum northerly point and will begin its slow journey south towards winter.

Over the past few months the days have been getting longer but after June 20th they will begin to shorten. For a while nothing will appear to change but then you will hear someone say "The nights are drawing in" and you will know that winter is on its way. Of course, however sad for sun lovers, this is good news for astronomers.

As you will know, at mid-summer at our latitude, if you have been attempting to make observations recently, the Sun does not dip far enough below the horizon for the sky to get properly dark making it more difficult for us to see faint objects. On the other hand, the view around the southern horizon at this time of year affords a view towards the centre of our galaxy through the constellations of Scorpius and Sagittarius. More of this later.

### **The Moon**

The Moon will be full on June 5th and will reach last quarter on June 13th. It will be new on June 21st and will reach first quarter on June 28th.

**The Planets** put on a good show this month.

*Mercury* reaches greatest elongation on the 4th of June when it will be  $24^\circ$  from the Sun. It will be visible low in the north west, just after sunset. Remember to ensure that the Sun has set before looking for Mercury, especially if you are using binoculars or a telescope. I find it useful to use a planetarium program which gives the altitude and azimuth of the planet for the date and time which, with the aid of a compass and something to measure altitude, will enable you to pinpoint where Mercury is situated.

*Venus*, as it has been drawing closer to the Sun, has been putting on a great show displaying an increasingly narrow crescent. Unfortunately, it is now too close to the Sun to be visible in the western sky. It will reach inferior conjunction on June 3rd. By the end of June, it will be visible in the morning sky just before sunrise.

*Mars* is also an early morning object at the moment. It rises about 2.00 hours BST at the beginning of the month, staying low in the south east. However, by the end of the month it will be rising around 24.00 hours 40 minutes BST and climbing to around  $20^{\circ}$ . It will then be shining at around magnitude -0.5.

Mars' disc will have swelled to 11.3 arc seconds and will be around 84% illuminated. The disc will continue to grow as its orbit brings us closer to it. By its opposition in October it will have grown to 22.4 arc seconds and will shine at magnitude -2.6.

*Jupiter* is moving towards opposition in July. It is currently above the southern horizon, rising at around midnight BST and rising to about  $15^{\circ}$  degrees. By the end of June, it will be shining at magnitude -2.7 and its disc will be a magnificent 47.3 arc seconds. It will be rising earlier as the month progresses, rising at 22.00 hours BST by the month's end. Unfortunately, Jupiter is near that part of the ecliptic that does not rise very far above the horizon so viewing it will be handicapped by the large amount of air that the light from Jupiter will have to pass through before it reaches your telescope. It will therefore not be possible to get as crisp an image as would be the case if the planet was  $20^{\circ}$  or  $30^{\circ}$  higher.

*Saturn* is following Jupiter along the ecliptic and they are about  $5^{\circ}$  from each other. The pair are worth watching over the next few months as they gradually move closer together. On 27th December they will be only 0.1 of a degree apart. Jupiter is closer to the Sun than Saturn and so is moving round its orbit more rapidly. On 27th December Jupiter will, in effect, overtake Saturn

*Uranus* is emerging from behind the Sun and is in the constellation of Aries. It is shining at magnitude +5.7 at the end of the month and should be visible in a pair of binoculars.

*Neptune* is shining at magnitude +7.9 among the stars of Aquarius. Around mid-month it will be close to Mars. Mars is much closer to the Sun than Neptune and consequently is moving much faster. It will in effect overtake the ice giant in the race round the ecliptic.

### Now for **This Month's Challenge!**

The Zodiac constellations Scorpius and Sagittarius are displaying this month.

From our latitude they never appear far above the horizon and the window of opportunity to see them is relatively short.

To make matters worse they only appear in the short light nights of summer. However, when you look at them you are looking towards the centre of the Milky Way Galaxy.

The constellations are full of gas clouds and star clusters including no less than 19 Messier Objects.

Your challenge this month is to locate all 19 objects from Messier's Catalogue from Scorpius and Sagittarius. To complicate matters, there are plenty of faint fuzzy objects that are not in Messier's list.

To help you, I have divided the objects up.

There are two gaseous nebulae The Lagoon M8 and the Triffid M20.

There is a star cloud, M24, that is really worth seeing.

There are seven open clusters M 21; 23; 25; 18; 17; 7; 6;

In addition to these there are nine globular clusters M4; 22; 28; 54; 69; 70; 55; 75; 80;

You will need a good star atlas and/or a planetarium program such as Stellarium. Most, if not all, of the objects are visible in a pair of binoculars.

Best of luck!!