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More trouble seems to have developed with the dome of the Observatory. Because of this the Open Day probably has to be postponed. The new date for the Open Day will be published as soon as possible, probably in the next Journal.

There was a general meeting of the Society on May 24<sup>th</sup> at which some matters were discussed, details will be in the next Journal. A number of photographs will probably be taken of the Observatory and dome, and will probably be available for half a crown or so each to members who ask for them. Again, more details should be available in the next Journal.

The rest of this edition is devoted to this month's night sky. In summer in this part of the world darkness does not occur until after 10 p.m. B.S.T.; however, many of you may go to the Mediterranean area for a holiday, and there the sky grows dark much earlier. The farther south you go, the earlier darkness falls. The ideal place to be for this, obviously, is the equator.

#### "What's Up?" The Night Sky in June:-

**The Planets:** **MERCURY:** is visible in June, as an evening star. As you know, Mercury is an elusive object. This month it is worth looking for him after sunset. The bright blue glare of the sky obviously glares out Mercury, and to aid finding him, coloured filters can be used, yellow, orange and red are the most useful colours, as they tend to cut out the bright blue of the sky. Polarised sunglasses also help (NOT ordinary sunglasses) since the light from the sky is polarised, whereas Mercury's is not. Binoculars of low magnification are a help. Mercury will appear low down, within 15° of the horizon at its highest, and to the south of west. June 10th, Mercury sets at 21.00hrs G.M.T. (10 p.m. B.S.T.) which is just 40 minutes after the sun. Mercury will be best visible on June 25th, setting at 21.50hrs G.M.T. (10.50 p.m. B.S.T.) 1 1/2 hours after the sun. The day before, and the day after June 25th should give a fair view also. On June 28th, Mercury will be 0.3° North of Mars, at 16.00hrs G.M.T. and very close during the rest of the day. Mercury will also be visible into July. Mercury will be in Gemini, quite close to Epsilon (ε, mag 3), and in Cancer at the end of June. Mercury is quite bright, being mag -0.1 on June 15th, -0.4 on June 22nd, 0.0 on June 27th, and +0.3 on July 2nd.

**VENUS** is not well seen this month, setting very shortly after the sun. The same goes for **MARS**.

**JUPITER** is quite well seen throughout the month rising at about the same time as the Sun sets, in the south-east, magnitude -2.2, and is in Sagittarius.

**SATURN** is invisible this month, being too close to the Sun seen from the Earth.

**THE MOON** reaches Last Quarter on June 4th at 21h 22m G.M.T., New Moon at 11h 30m G.M.T. on June 11th, First Quarter at 15h 41min June 18th, Full Moon on June 26th at 18h 46min, and Last Quarter again at 03h 25min July 24th. Phase and libration will allow a fairly good view of the Lunar North Pole on the evenings of the 20th and 21st June.

**METEOR SHOWERS:** 1) June Lyrids, radiating from Lyra, June 10th until June 21st, reaching a maximum of about 10 meteors per hour on June 15th in the evening. Blue meteors with fine trains are expected, it is very favourable this year.

2) **ε Perseids:** June 17th until June 26th, reaching a maximum of 12 meteors per hour on June 20th, radiating from ε Perseus, not very favourable.



This Month's Star Chart. For early June use the May Sky Map included in the last Journal. For the sky in late June use the star map included in this issue. The only constellation with a really distinct shape is Cygnus, the Swan, otherwise known as the 'Northern Cross'. Prominent stars include 1) Vega (Alpha Lyrae), Magnitude +0.03, distance 26 lt yrs, 50 times as luminous as the Sun, spectral type A0 (Letter A, number 0) (The Sun is G0). 2) Altair (Alpha Aquilae) easily identified by gamma  $\gamma$ , and Beta  $\beta$ , on either side. Magnitude +0.75, distance 16 lt yrs, 9 times as luminous as the Sun. Spectral type A7 IV V. (3) Deneb (Alpha Cygni), magnitude +1.26, distance 1500 lt yrs, 10000 times as luminous as the sun approximately.

One of the closest stars to Earth/Solar System, is 61 Cygni, in Cygnus, in between  $\gamma$  &  $\nu$ , the two 4th mag stars to the left of the star gamma ( $\gamma$ ) at the crossing centre of the cross of Cygnus. 61 Cygni is mag +5.2, 11.2 lt yrs away, only 0.06 as luminous as the Sun, and spectral type K5. It is smaller, but similar to the Sun, and might just conceivably have a planet habitable by man. It is a double star, the components being mags 5.3 & 5.9. The two components are visible in a small telescope. 61 Cygni was the first star to have its distance from Earth measured, by Bessel in 1838.

Nebulae & Clusters:- 1) M-2 in Aquarius (above & left of the word "Aquarius") is a globular cluster 7' across, best seen in larger instruments. 2) M-39 in Cygnus (above & left of Deneb, above the word 'Map IIb', to the right of star  $\pi$ ). (2) is a large open cluster, best seen in low powers or binoculars. (3) M-57 in Lyra, between Beta  $\beta$  and Gamma ( $\gamma$ ) (Sheliak and Sulphat) the bottom two stars in Lyra, is an oval planetary nebula (so called because it looks like a dim planet in a telescope) 80"x60" in size, it is called the "Ring Nebula" and is nearer Beta  $\beta$ , than Alpha ( $\alpha$ ) (Sulphat). It bears high magnification; a star is visible there in apertures of more than 4" (6" for reflectors), the faint central star itself is only visible in large telescopes. (4) M-15 in Pegasus, above the word "Equuleus", is a bright globular cluster, 6' across, blazing in the centre, visible in binoculars. (5) M-11 or the "Wild Duck" cluster in Scutum, (to the left of the word Scutum) is a bright fan shaped open cluster with a bright star at the apex. (6) M-27 (above the word Sagitta) is in Vulpeca, & is known as the "Dumb-bell Nebula". An ellipse with faintly luminous notches. Seven stars, probably unconnected, are visible in a 10-inch instrument.

A very famous variable star is Beta Lyrae (Sheliak), 12.91 days period varies from mag 3.4 to 4.1. It is spectral type B2. It is the typical "Lyrid" variable. It has two unequal minima (mags :- 3.8 & 4.1) separated by two equal maxima (mags 3.4). The variations in light are due to the mutual eclipse of two unequally bright stars, very close together, and ellipsoidal in shape as a result of tidal actions, distortions. Gamma nearby is mag 3.3; Delta  $\delta$  is Mag 4.5; Zeta  $\zeta$  is Mag 4.3; these stars all make good comparisons with Beta Lyrae to see what magnitude it is. Delta and Zeta are the two between Vega and M-57, Zeta being nearer Vega. Epsilon has a total magnitude of 3.9, but appears double in a telescope.

Double Stars:- 1) Epsilon Lyrae the famous "double-double". Keen eyesight will reveal that it has two near equal brightness components, Epsilon-1 and Epsilon-2 which are 208" apart. A telescope of 3" aperture of more will show that Epsilon-1 and 2 are each double again in themselves. Epsilon-2 has total magnitude of :- 4.7 and Epsilon-1 has a total magnitude of 4.5. The two components of Epsilon-2 are 4.9 and 5.2. Epsilon-1's components are magnitude :- 4.6 and 6.3. The components of Epsilon-2 are 2.3" apart, and the components of Epsilon-1 are 2.9" apart. Epsilon-1 is to the north of Epsilon-2. The components orbit each other.

2) Zeta is double (mags 4, 5.5, 44" separation) Delta  $\delta$  has a naked eye companion. Rather like Mizar and Alcor of Ursa Major. 3) Albireo or Beta  $\beta$  Cygni is a famous double. (mags 3.0 & 5.3, 34.6" sep'n). The two components are yellow and blue a grand contrast. 4) Gamma Delphini (the topmost star to the left of in Delphinus). Components, mags 4.0 ~ 5.0, 10.4" separation, colour yellow & emerald. In the parallelogram formed by Epsilon  $\epsilon$ , Gamma  $\gamma$ , Alpha  $\alpha$  (Deneb), and 61 Cygni, in Cygnus, is a "hole" in the Milky Way, really a black nebula known as the Northern Coal-sack.

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