



AYLESBURY ASTRONOMICAL SOCIETY OBSERVING REPORT

August 2009 – By Peter Biswell

On Friday 21 August three members went up to the Observatory. The sky was still not properly dark when we started to observe, so we concentrated on brighter objects, rather than faint galaxies. We looked at some globular clusters, starting with Messier 9 and 10 in the constellation of Ophiuchus. M9 was not well seen because it was too low down but M10 appeared quite large and bright, although spread out and not obviously globular. We then turned to M92 and M13 in Hercules. M13 is the best globular cluster in the northern sky and it filled the field of view. M92 was very impressive but it tends to get overlooked in favour of M13.

We then chose some double stars to observe. Gamma Andromedae was easily split since it has a separation of 10 arc seconds. The component stars appear orange and blue. We turned to the constellation of Lyra and looked at epsilon. It appears as a single star to the unaided eye but a binocular will show that it consists of two fourth magnitude stars about $3\frac{1}{2}$ minutes of arc apart. A telescope shows that these two stars are themselves close doubles. The northern component, epsilon1, has a separation of 2.5 arcsec and the southern one, epsilon2, 2.3 arcsec. The two pairs are orientated almost perpendicular to each other, the position angles being 353° and 87° respectively. All four stars appear white and are spectral class A. However, William Herschel, who discovered this double star in August 1779, considered that the fainter star in epsilon1 showed a red tint, while Admiral Smyth went so far as to say that the pair appeared “yellow and ruddy”. The observed change in the position angle has allowed a provisional orbit to be computed – the period is 1,165 years with the closest approach (periastron) of the pair occurring in 2318 AD. The computed period for epsilon2 is 585 years with periastron in 2229 AD. These orbits will doubtless be revised over the coming centuries as more measurements are made of the Double Double.