



SHENANDOAH ASTRONOMICAL SOCIETY

September 2008

Summer Triangle Lingers

The fall season is around the corner. This fills me with great anticipation for cooler days and cooler nights. You can tell it's the beginning of fall when the leaves begin to change color, the air feels a bit crisper. But when does fall officially kick off? The Autumn Equinox falls on September 22. It is also one of the best times of the year for photography. The color changes that accompany the oncoming of fall provide great opportunities for photographers. The Fall Equinox is the first day of fall and signifies the start of shorter days and longer nights for us.

At the autumnal equinox, the sun appears to cross the celestial equator, from north to south, this marks the beginning of autumn in the Northern Hemisphere. You can almost feel the planet coursing through the equinox. We have finally reached the season of spectacular change! The hottest days are past and each is shorter than the last.

When Fall Equinox occurs, the life-force or energy on our planet also changes. There is a remarkable asterism that hovers in the sky all summer and late into the fall, but will soon be there earlier. As darkness comes earlier it seems to linger in the night sky for a long time for us. The Summer Triangle outline is made up of three bright stars, Vega, Deneb, and Altair. The home constellations of these three stars, respectively Cygnus, Lyra and Aquila, are extremely prominent in the summer skies of the northern hemisphere.

Would you like to find the summer triangle? First, locate the well known dipper-shaped asterism in the constellation known as the Great Bear in the northern sky. The two outer stars of the dipper are known as the pointers, and they can be used to find the position of the North Pole. The two inner stars can be used to find the Summer Triangle. By tracing a line through the stars and extending the line northwards, you finally reach a very bright star. This star is Vega, one of the brightest stars in the northern hemisphere. To Vega's left is another bright star - this is Deneb. To the south of both stars is the final member of the trio - Altair.

Vega, or Alpha Lyrae is a very prominent star in the small constellation of Lyra, the Harp. Vega is 25 light years away from Earth, and the name Vega comes from the Arabic word meaning 'Falling Eagle'. It is a main sequence star three times larger and 50 times more luminous than our Sun.

Deneb, or Alpha Cygni, is a completely different type of star to Vega. It's a super giant star, which is another way of saying that it is enormous. It has a diameter over 200 times that of our Sun, and the same luminosity as 85,000 suns. It looks similar to Vega in our sky only because it is much further away – about 1,500 light years. Deneb is one of the biggest stars in the entire Milky Way galaxy, but its luminosity and size indicate that it is a dying star. Some time within the next few million years, it will go supernova, i.e. it will explode suddenly and violently leaving a

SAS Newsletter – Page 2

huge dust cloud and a small, dead neutron star in its wake.

Deneb forms the tail of the constellation Cygnus, the Swan – an easy constellation to recognize because the bright stars of this constellation form a pattern that looks like a swan in flight. The 'head' of the swan points south from Deneb.

Altair, or Alpha Aquila, is the most southerly of the three stars of the Summer Triangle. It is also the most similar to our Sun, being only 1.5 times larger, and 10 times more luminous. It's also closer to us than either Vega or Deneb – only 17 light years away. Altair is part of the Aquila (Eagle) constellation.

These three stunning stars are an unofficial star group or Asterism that link the three constellations: Lyra, the harp, Cygnus the Swan and Aquila the Eagle. These three stars make an almost perfect right triangle. The Summer Triangle lies high above, over the Milky Way which now sweeps across the heavens from north to south. The Summer Triangle is one of the favorite parts of the sky for most sky watchers, perhaps because of its sheer simplicity in contrast to overabundance of bright stars found in the sky. Go outside in the early darkness and look overhead or lie back on the ground and watch nature put on a show, there should be plenty to see. For some of us, star gazing observing can be relaxing or enjoyable, and just plain fun. Happy hunting for the Summer Triangle. –
Jan Clatterbuck

September 10 Meeting of SAS 7:00 PM at LFCC

Bill Cheng will give a talk on telescopes. I understood Bill to say he would tell us about a telescope design that I had not heard of so this should be interesting.

Also He did mention giving some information on telescope design and answering questions about optics that anyone wants to ask. So bring them on.

Empty Space that SAS members could fill with their comments, questions for others, or short reports of astronomy experiences.