ASTRONOMICAL SOCIETY OF FRANKSTON INC.

P.O. BOX 596, FRANKSTON, 3199

NEWSLETTER JULY 1986

MEETING, WEDNESDAY, AUGUST 13th

The Society's August meeting will be held in Room F.6 of the Upper School, Peninsula School, Mt. Eliza starting at 8 p.m.

It is planned to hold this meeting as a Symposium on the recent visit of Halley's Comet, featuring slides and photos of the Comet taken by Arthur Higginson, Bruce Tregaskis and others including, it is hoped, a guest speaker from Astronomical Society of Victoria.

MEETING, WEDNESDAY, SEPTEMBER 10th

Bruce Tregaskis is to speak on Earth's renewable energy sources.

OBSERVING NIGHT, SATURDAY, JULY 26th

The July Observing Night is to be held, weather permitting, on Saturday, July 26th at Peninsula School Observatory commencing at 7 p.m. If this evening is clouded out the following night, Sunday, July 27th, will be substituted as the Observing Night.

The 30cm aperture B. J. Smith telescope is now fully operational in the Observatory. However, members may also like to continue to avail themselves of the chance to use their own telescopes at the Observatory site, probably one of the best observing locations in our area.

This night should be a further good opportunity for observations of Mars, which on July 10th is at its closest opposition, or approach, to Earth since 1971. Halley's Comet should still be visible as a telescopic object in the western sky during the early evening, whilst Saturn, Venus and Jupiter will also be available for observation, with the brightest area of the Milky Way high in the zenith above.

SOCIETY NEWS

The Society's May meeting featured a talk by our President, Peter Norman, on the Australia Telescope project currently under way and due for completion in 1988, Australia's Bicentennial Year for white settlement.

The project consists of a planned link-up of a variety of Australian Radio Telescopes to provide, by virtue of the wide distance between the various telescope dishes, a degree of resolution approximating to that of optical telescopes. The telescopes to be link3d are five each of 22m. diameter at Culgoora,N.S.W., one of 22m at Siding Spring Observatory, the Parkes radio telescope and perhaps also the Tidbinbilla radio telescope, the whole project being costed at $31 million.

In addition Peter showed a number of short movies on the Parkes radio telescope,featuring details of its construction and operation. The telescope's observations of the Magellanic Clouds, which are considerably larger at radio than optical wavelengths, its location of the quasar 3C273 by observation of its radio eclipse by the Moon, and the search for organic molecules, the precursors of life, in space, were also described.

SKY NOTES

Comet Halley can still be located as a telescopic object in the early evening sky, but with increasing difficulty as the month advances, and at the end of August the Comet will be setting before the end of evening twilight.

Constellations. The Milky Way is now at its brightest in our skies with Sagittarius, the Archer, and Scorpius, the Scorpion, high overhead. These two constellations, lying in the direction of the Galactic Centre, and the nearby Milky Way constellations of Centaurus, the Centaur, and Lupus, the Wolf to the south, with Ophiuchus, the Serpent Bearer, Scutum, the Shield and Aquila, the Eagle to the north, contain numerous clusters and areas of nebulosity. These objects mostly have Messier catalogue numbers whilst some, such as the Lagoon Nebula, the Trifid Nebula and the Swan Nebula, all in Sagittarius, have popular names known to generations of astronomers. Further down, or northwards, on the line of the Milky Way may be seen the "Dumbbell" planetary nebula in Valpecula, and a little to the west of the Milky Way is the Ring Nebula, another planetary, in Lyra the Harp. Location of these distant nebulae and clusters amidst the profusion of stars and nebulosity in the Milky Way can be undertaken with the aid of suitable star charts such as Norton's Star Atlas, Tirion's Sky Atlas 2000.0, or the Skalnate Pleso charts, together with a clear dark sky or a moonless night.

Few external galaxies are to be seen in the direction of the Milky Way because of the blocking action of the dust clouds in the plane of the Milky Way on light from these far distant sources, and the main clustering of galaxies in "our" region of the Universe, the Virgo cluster at 30 to 40 million light years distance, is now sinking in the west.

Planets. The Red Planet Mars is now a very conspicuous object in the night sky, being at a very close opposition on July 10th in fact the closest such approach since 1971. Surface features and polar caps are now readily visible at a suitable magnification in the telescope, and may be identified using firstly a chart of surface markings of Mars (there is a very good series of charts in the 'Amateur Astronomer', Octopus Publications, London) and secondly a knowledge of the longitude of Mars in the centre of its disc at the time of observation. This latter information is necessary as Mars is all the time rotating, with a period of rotation very similar to that of Earth, and different surface features are seen at different times of observation. A reference to the value of the central meridian of Mars at different times may be found in the ASV Yearbook and BAA Handbook.

Saturn remains high in the sky in Ophiuchus and again 1986 is a good year for observations as the planet is now in that part of its orbit where the Ring system is widely open as seen from Earth, a situation recurring every 14 to 15 years, whilst in between these positions the Ring system, when edge on, appears to disappear from view. Jupiter is now a brilliant object in the eastern sky in Aquarius, reaching opposition on September 10th, whilst Venus, the'Evening Star' reaches the extremely bright magnitude of -4.4 on August 28th in Virgo.

THE MOON

New Moon	July 7	Aug 6
First Quarter	July 15	Aug 13
Full Moon	July 21	Aug 20
Last Quarter	July 29	Aug 27

OBSERVING PLANETS AND STARS DURING DAYLIGHT

Whilst astronomical observations are naturally usually carried out at night, it is worth remembering that some observations can. nevertheless, be carried out in full daylight with the Sun high in the sky. The present time offers a good opportunity to carry out at least one such observation by locating Venus, now exceptionally bright, during the daytime.

Venus can, in fact, be quite easily seen with the naked eye during full daylight and the trick consists in first of all determining the area of sky where Venus is located by looking up its times of rising and setting (e.g. from the 'Age'), taking the time half way between these two times, when Venus will be due north, and then carefully studying the sky in the north at the altitude where Venus will be situated. In late July the altitude above the horizon for Venus when due north will be approximately 50°. increasing to 60° in August. A search at this altitude at this time of day should, after a while, allow Venus to be seen as a bright point of light. Once located it is generally quite easy to relocate and one wonders why one didn't notice it before!

It is also possible, although with a little more difficulty, to locate Jupiter in daylight with the naked eye, and a group of Latrobe Valley Society members, including Ken Bryant, succeeded in doing this in November 10th, 1973, following on from their observations of a transit of Mercury at Yallourn Observatory on the same afternoon, their observations later being reported in "Sky and Telescope" magazine for March, 1975.

With an equatorially mounted, polar aligned, telescope fitted with setting circles, it is possible to locate, in daylight, not only planets such as Venus, Jupiter and Mercury but also a number of bright stars such as Sirius, Alpha Centauri, Proiyon and others.

In this case the procedure is to set the telescope at the declination for the star concerned and then move it to the corresponding Right Ascension for the star. The correct Right Ascension may be quickly obtained in daylight by firstly pointing the telescope in the direction of the Sun - BEWARE! NEVER look directly through any optical instrument, or its finder, at the Sun - simply use the position of the telescope's shadow on the ground beneath to fix the telescope in the direction of the Sun.

The Sun's Right Ascension for the day can be obtained from the Sun's Ephemeris, in the ASV Yearbook, and the telescope is then offset the necessary number of hours of Right Ascension to correspond with the position of the star in question. The star should then be visible either in the finder or a widefield eyepiece if alignment, and setting is sufficiently accurate.

Daylight observations through the telescope provide an interesting change from night-time observing and, in the case of Venus and Mercury, can actually provide better views then when seen in morning or evening twilight; however, always remember never to attempt observations near to the Sun or where the Sun may be within the field of the finder telescope.

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