ASTRONOMICAL SOCIETY OF FRANKSTON INC.

P.O. BOX 596, FRANKSTON, 3199

NEWSLETTER AUGUST, 1986

MEETING, WEDNESDAY, SEPTEMBER 10th

The September meeting will be in Room F.6 of the Upper School, Peninsula School, Mt. Eliza commencing at 8 p.m. The speaker for this meeting will be Bruce Tregaskis who will speak on Earth's renewable energy resources in the form of tidal power, wind power, geothermal energy, etc. All these varieties of energy originate from either interplanetary sources, in the form of gravitation or solar radiation, or the residual energy present from the formation of the solar system; Bruce is currently engaged in research on the direct utilisation of these freely available sources of energy.

MEETING, WEDNESDAY, OCTOBER 8th

Rick Tudor from the staff of Peninsual School will speak on Primitive Life Forms.

OBSERVING NIGHT, SATURDAY, AUGUST 30th

The Observing Night for August is scheduled for Saturday, August 30th, starting at 7.30 p.m., or, if cloudy, the following night, August 31st will be the Observing Night for the month.

This night will provide a further opportunity for observation of Mars at a time close to the opposition which occurred on July 10th. Whilst the distance of Mars is now increasing it remains an extremely bright object with a visible diameter much greater than can be seen during most years. Saturn is also well placed for observation and Jupiter rises at twilight by the end of August.

'FRANKSTON ASTRONOMY DAY' - ASV VISIT

A visit from members of Astronomical Society of Victoria is planned for Saturday, 27th September. This is to include a visit to Bruce Tregaskis' and Arthur Higginson observing facilities, a barbeque and, weather permitting, a star party afterwards.

SOCIETY NEWS

Brian Cabena presented a talk entitled "In the Beginning ....." to the July 9th meeting, consisting of a critical review of currently popular scientific theories in Cosmology - the history of the Universe - and related fields.

Brian commenced his talk with a reference to the opening words of the Book of Genesis including the verse "And God said 'Let there be light and there was light' and went on to question current theories of the origin of the Universe in the so-called "Big Bang", which he saw as in some ways incompatible with our knowledge of the Universe - for example with respect to the continuing existence of rotation in our Solar System and the Galaxy.

Brian emphasised the transiet nature of many scientific theories, with reference to the Steady State and Big Bang theories in Cosmology, theories of the evolution of the Solar Systen, and varying ideas on the evolution of life forms. He suggested the probable inadequancies of our view of existence using the analogy of the limited views of the Universe which would be available to creatures existing in one dimension compared to the view provided to other creatures living in 2, 3, 4 or more dimensions. Brian concluded by presenting the view that the Universe could best be regarded as in a state of Timelessness, as hinted at in Bible passages and that the Universe should be seen as having neither Beginning nor End,

Also at the July meeting Bruce Tregaskis and Arthur Higginson showed a number of personal slides taken of the recent apparition of Halley's Comet.

An Observing Night was held on Sunday, June 29th following a oeriod with several days of heavy rain. This was attended by Bruce Tregaskis, Tony Hales, Arthur Higginson and Ken Bryant, the first three of these driving down the slope to the Observatory site where it became quickly obvious that the rain over previous days had created a quagmire from which it was impossible to drive the cars without assistance. Ken Bryant, arriving somewhat later, was successfully prevented from joining the group of bogged vehicles and the next hour or so was devoted to driving, pushing and towing the cars back on to the solid road surface with Arthur Higginson at one stage giving a commendable demonstration of rally driving skills as he moved, at speed, in several directions across a sea of mud.

The observers, by now well covered in mud, then retired to the Observatory where they enjoyed good views of Mars and Saturn, located planetary nebulae and galaxies, but were not successful in locating Halley's Comet, by then low in the west.

From this experience of winter mud at the Observatory site, it would seem good advice not to attempt driving to the Observatory from the road unless an inspection shows the ground to be sufficiently dry, or some improvement can be made to the track to the Observatory.

SKY NOTES

Constellations. The late winter and early spring skies see the constellations towards the galactic centre, Scorpius and Sagittarious, still high in the evening sky but sinking towards the western horizon

as the season advances.

Towards the south, the two Magellanic Clouds, low in the sky during winter, are now rising in the sky and will be at their best position for viewing in late spring.

Due north in the evening, and close to our horizon, can be seen the constellation of Cygnus the Swan, also known as the Northern Cross from its resemblance to a Christian Cross, inverted in the sky as seen from Southern Australia. The Northern Cross is in fact a much more distinct and larger cross shape than the better-known Southern Cross and is an interesting constellation to recognise and observe at this thime of the year.

There are many fine Milky Way star fields in the Cygnus region and if a suitable dark sky site with a clear northern horizon can be found it shows some of the best star fields available to binoculars and Rich Field Telescopes.

To the west of Cygnus is the small constellation of Lyra, the Harp, with the bright bluish star, Vega, near the horizon. Perhaps the best known of all the planetary nebulae is the 'Ring' Nebula in Lyra and this can quite easily be found by first of all identifying the two stars Beta Lyrae (itself a well-known variable) and Gamma Lyrae at the top or south of the constellation grouping. Very close to a point half way between these two stars can then be found, in the telescope, the faint oval of light known as the Ring Nebula, the result of a stellar explosion casting off a gaseous ring at sometime in the past, and situated at about 1,400 light years distance.

Planets. The late winter of 1986 sees all of the bright planets, except Mercury, in the evening sky, and again this month Mars remains the principal object of interest at close to its opposition distance of 60 million km, its closest approach since 1971.

A further and even closer approach is due for 1988, repeating the pattern of oppositions of 1969 and 1971. Through a telescope of suitable aperture, say 15 cm upwards, numerous surface features can be identified including the conspicuous white polar caps. The best known, most prominent, dark marking on Mars, is that known as Syrtis Major, a roughly triangular projection seen near the Martian equator. The name Syrtis Major is, in fact, the same name used by the Ancient Romans for the Gulf of Sidra, the bay on the southern edge of the Mediterranean sea extending into Libya which has been the subject of a number of news reports over past months.

On the opposite side of the planet are two other conspicuous dark areas, Mare Sirenum and Mare Cimmerium, and various others can be identified with a suitable chart of Mars.

Saturn and Jupiter are both good objects for observation at this time and Venus blazes brilliantly in the western sky until November, its diameter increasing at the same time as its phase, or portion illuminated becomes smaller as it approaches Earth.

THE MOON

New Moon	August 6	Sept. 4
First Quarter	August 13	Sept. 11
Full Moon	August 20	Sept. 18
Last Quarter	August 27	Sept. 26

METEORITE STRIKES - DISCOVERIES AND SPECULATIONS

All of us are familiar with the sudden bright streak of light across the night sky, popularly known as a 'shooting star' or meteor and resulting from the burning up in the Earth's atmosphere of a small - grain of dust size, body from outer space. Occasionally, and on average over very long intervals, a much larger

body will strike the surface of the Earth with enormous force. All bodies from space reaching the surface of the Earth in this way are known as 'meteorites' and the impact of a truly huge meteorite in South Australia, some 600 million years ago, has recently come to light. This discovery has been made by geologist George Williams of B.H.P. and fellow geologist Dr. Victor Gostin of Melbourne University. Dr. Williams deduced the meteorite impact from satellite photographs of Lake Acraman in the Gawler Ranges, which showed a circular structure later shown to have intensely shattered rocks under the surface. This was later confirmed by Dr. Gostin, who found broken rock fragments thrown out by the impact far away in the sedimentary folds of the Flinders Ranges. Calculations now show that the meteorite was about 4 km in diamter, travelling at 25 km/sec and impacting with a force of 5 to 10 million megatons. For comparison the largest H bomb ever exploded was about 100 megatons.

With further reference to meteorite impacts, Society member Aubrey Mather remembers hearing the suggestion some time ago that ships sinking in deep ocean trenches, where enormous pressures exist, would not actually reach the bottom but would remain suspended by these pressures, and wonders whether such a situation might occur with a meteorite striking the ocean. The answer to this would seem to be, firstly, that should a situation arise where a meteorite, or ship, was in these ocean depths then it would continue to sink as its density, or mass per unit volume, would remain greater than that of water since water and other liquids remain almost incompressible and hence effectively of the same density as at the surface. Secondly, in the case of a large meteorite, the heat generated by impact would vaporise large volumes of water, causing the meteorite to be surrounded by water vapour and not liquid water.

South Australia's Lame Acraman is thought to have been formed 600 million years ago, a period which co-incides with present estimates of the start of organized life on Earth. Could it be that in some way this huge impact created environmental changes which triggered

the evolution of organised life forms, much as the demise of the dinosaurs 65 million years ago is now thought to be associated with an asteroidal impact?

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