ASTRONOMICAL SOCIETY OF FRANKSTON 3199

P.O BOX 596 FRANKSTON 3199

NEWSLETTER FOR DECEMBER & JANUARY 1990-91

To all Members,your former and current Committee wish all the very best for the festive season. May your health be of the best and may you and your Society enjoy the greatest of good fortune.

Because the end of this and the start of the New Year bring many calls on your time, Society activity is restricted to our picnic on the 8th and a viewing night on the 15th December,with a Committee meeting on the 15th of January at 6 Graeme St Frankston. This should allow you to enjoy your families company.

On the 21st and 22nd of January,a viewing night has been requested by Peter Norman, for attendants at the conference of Out-door Activities,being held at the Chisholm Cam pus,Frankston. Willing participants, with 'Scopes contact Peter on 059 753040 before this date to finalize arrangements.

It was pleasing to hear that Ken Bryant will be trying to attend our Christmas picnic at Devils Bend,on the eighth. Heis feeling better and should ,see you then

The speaker at our October meeting,Mr Roger Davis from the Association against Obtrus-ive lighting,Victorian Chapter,has left

report forms with us to report cases of light polution. They can be obtained from the Committee and returned to the Association,via the ASV Librarian GPO Box 1059J Melbourne 3001

TREASURERS REPORT

Balance brought forward $1713-71

Receipts		Expences	
Subs	16-00	corporateFees	25-00
Inter	11-45	postage & stationary 2 months	61-13
Donat.	50-00		

Balance at 21-11-90 $1705-03

The Telescope Building Group has flopped lately with only three of us active. Laurie McIntyre cutting mirrors and tools.Gerry Holt and myslf (Steve Malone).So far we have traded our way to the point where we have nearly covered the cost of the 15" 12" and the 10".With the sale of only a few more mirrors we will cover the cost of the TV set.

The search for an Observatory site is still being carried out.The Briars site has not been discounted,but we are still awaiting a reply from the governing committee to tell us what we may do there.

We have viewed a possible site in Tubbarubba

Reserve ,just down from Foxys corner,which has possabilities. Currently we are canvassing the Mornington Peninsular Water Board. They have extensive areas under their control.So all possibilities are being

RETIRING PRESIDENT'S THANKS

As your President for 1990,I wish to thank the Committee and all those members who helped to make it a very interesting year. I wish to thank again those ladies whom Bruce has called our Ladies Auxilliary, (unofficial) who put in such a sterling effort during the year.Special thanks to Jan Brown,Loma Palmer,June McIntyre and finaly my support June Malone. Thank you ladies, your efforts have been superb and the Society is in your debt.

THE INCOMING NEWSLETTER EDITORS HOPES

It is my hope to maintain the standard of the Newsletter to something approaching Ken Bryants excellence,but to do so I willneed a lot of assistance from other members of the Society.

It is intended to continue with general News items and with the excellent Sky Notes supplied by our incoming President,Bruce Tregaskis. Then there will be reports from the Telescope Building group,Schools and Clubs Informationactivities and some of our monthly meeting speakers notes.For the benefit of novices like myself,some notes for astro-beginners.If anybody has any topics for this,please let me know. PT

NEW PRESIDENT"S MESSAGE

I would like to thank all members for electing me as their president for the forthcoming year and I am sure that I willreceive plenty of suppo rt from the committee and other members in 1991. I would especially thank our immediate Past President, Steve Malone, for the tremendous amount of work he has done for the society. Just two items alone, which come quickly to mind are the caravan for housing our telescopes and the NACAA held in Frankston last Easter. Steve was deeply involved in both of these projects and spent many hours of his time on them. I will find it very hard to emulate his effort and enthusiasm.

For some time now Steve has also been encouraging members to build their own reflecting telescopes and he is still continuing with this work. I would now like to concentrateon the next step and encourage members to use their binoculars and telescopes or even just their naked eyes to look at the Sky. As well as the fun and enjoyment obtained from finding and observing new and interesting objectsthere are many useful observing projectsin which members can participate and contribute their observations to the worldwide astronomical community. A few examples are:

* recording details of aurorae, using the naked eye and/or camera.
* observing and recording the brightness of variable stars
* observing and recording details of meteors.

* observing and sketching features of planets e.g Jupiter or
* timing occultations of stars by the moon or asteroids.

That is by no means an exhaustive list as many more examples could be quoted. I hope, however, that it does give some indication that there is a vast universe out there waiting to be explored and amateurs can certainly make worthwhile contributions

Bruce Tregaskis

VASTROC 1991

The Latrobe Valley Astronomical Society will be hosting the third Victorian Astronomical Societies Convention VASTROC) from Friday evening 26 April,until Sunday 28 April 1991. At the Gippsland campus of Monash University, Churchill near Morwell.Accomodation will be available at the low price of about $13 per night and meals will be available at the colleges cafeteria.

VASTRC will be run like the NACAA held in Frankston last Easter.You will be able to renew aquaintances with other amateurs from around Victoria.To add to the interest tours around the area are also likely to be organised.

The theme of the conference will be along the lines of the amateur And technology, and may include such items as digital setting circles,computor assisted telescopes, stepper motors and charge coupled devices. An interesting program is being organised and it will include guest speakers and a VASTROC dinner on the Saturday Night.To present a paper please contact Peter Nelson on (056)27 8516 or the LVAS secretary,G Thomas (051) 92 4347

SKY NOTES

Comet Tsuchiya-Kiuchi, 1990i, was mentioned in our previous newsletter.It was seen easily,around 20 November, in binoculars, a small finder and a 6" telescope as a 7th to 8th magnitude round,somewhat diffused object with no tail..In early December it will be visiblein the evening sky in the south east and will be moving mainly westward through Puppis. By 12 December,it will be about 8° north of Canopus,Alpha Carinae, the second brightest star in the sky.The ephemeris presented last month is continued below,with positions given for 5 am Summer Time:

Date - 1990	RA (1950)	Dec (1950)	Delta	r	Mag
December 4	7h 50.3m	-39° 36'.9	0.946	1.517	7.2
6	7 30.2	-41 09 .8	0.942	1.538	7.2
8	7 09.1	-42 26 .7	0.944	1.559	7.3
10	6 47.2	-43 25 .3	0.950	1.581	7.4
12	6 24.9	-44 04 .1	0.961	1.602	7.5

Note: Delta is the comet's distance from the earth and r its distance from the sun, both in Astronomical Units.

Constellations. In mid-December at 10 pm Summer Time,the two bright pointers,Alpha and Beta Centauri, will be due south of us at lower culmination, about 9° above the horizon. Because they are circumpolar stars, six months later ,at the same time of might they will again be due south of us but at upper culmination,nearly 60° higher in the sky. Both of these stars are doubles but the separation of the two componants is about 10 times greater for Alpha than for Beta (1.3 arcseconds).The latter also has a difference of about 3 magnitudes between its componants. Therefore,Beta is not normally separated in amateur intruments. The southern

cross,to the left of the pointers,is still almost standing on its head.

On a dark,moonless summer night,we can trace the Milky Way up from Centaurus,in the south through Crux (the Southern Cross).Carina, Vela,Puppis,Canis Major,Monoceros,Orion, Gemeni,Taurus and Auriga to Perseus,on our northern horizon. Slightly above (west of) the Milky Eay is Gould's Belt of Bright stars, believed to be a spur on the local spiralarm of our Galaxy. Some of the brightest stars in the sky,suchas Sirius,Canopus,Rigel and Aldebaran are found in this belt.There are also many other interesting objects in this area of the sky

The constellation of Orion,the Hunter,is now well up in the north-east.One of the best objects in the sky is M42,the great nebula in Orion. Even to the naked eye,it appears as a fuzzy star in the centre of the handle of the "Saucepan" (Orions sword), mentioned last month.The slightest optical aid brings it well up as it covers an area about 1° across. A small telescope shows theta-one as a multiple star with four bright componants, known as the "Trapezium" immersed near the centre of the nebula. A largertelescope reveals even more stars.

Lower down and further towards the north is Taurus,the bull.Aldeberan,Alpha Tauri isthe reddish star at the bottom right hand side of an "A" shaped open cluster (the Hyades) which, because of its nearness and large apparent size,is best observed through binoculars

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SUPPLEMENT TO NEWSLETTER FOR DECEMBER 1990

SKY NOTES : (This section was omitted from previous Newsletter - Ed)

(Read on from conclusion of previous notes) A telescope needs to be swept over the area to see all the stars. Using a low power on the cluster, three wide doubles can be found each pair at the point of an equilateral triangle.

A smaller cluster can be seen faintly with the naked eye in Taurus,even lower and nearer the northern horizon.This is the well known Pleiades (or seven Sisters) open cluster. Most people can see only six stars although some people with keen eyesight can see more. This cluster is seen well in binoculars or a low power eyepiece in the telescope.

The " Great Square of Pegasus ", formed of four bright stars in eachcorner and with sides about 15° long,is now low in the north-west,with M31,the great spiral galaxy in Andromeda, trailing about another 15° behind and below Alpha Andromeda, the bottom right hand star in the square.

High in the south are the two Magellanic Clouds, small companion galaxies to our own Milky Way. Just to the right of the Small Magellanic Cloud (SMC) is a fuzzy fourth magnitude object,faintly visible to the

naked eye. It is the magnificent global cluster,47 Tucanae, in the constellation of Tucanan,the Toucan. Through binoculars ,its nature canbe guessed at,although its stars cannot be resolved. However ,a medium to large sized amateur telescope resolves a myriad of stars, which are very concentrated towards the centre.

In the large Magellanic Cloud (LMC) are numerous patches of nebulosity and faint star clusters. Without a doubt the best object in the LMC is 30 Doradus, the Tarantula Nebula, faintly visible to the naked eye, and a wonderful sight through a 12" telescope. It was near here, early in 1987 that the supernova, 1987A. blazed forth and brightened to about third magnitude,before slowely fading over months to become invisible in most amateur instruments. An enormous amount of astronomical research was carried out on this one relativly bright object because of the rarity of such an event in a nearby galaxy.

PLANETS : Mars is rising shortly before sunset, having passed through opposition on 28 November. It is mow decreasing in size from its maximum of about 18 arcseconds. Mars is the bright orange object low in the north-east after sunset. It is poorly placed for southern hemisphereobservers because of its declination of about 22° north. By mid-December, the bright white planet Jupiter is rising before midnight,but it is also rather poorly situated at a declination of about 17° north. However, these are the only two planets worth observing because Mercury,Venus,Saturn Uranus and Neptune are setting too soon after sunset to be worth observing.Pluto is like-

wise lost in the dawn,low in the east before sunrise.

JUPITER'S SATELLITE PHENOMENA

Eclipses of Jupiter's four main satellites by the planet itself have been observed by most amateurs with telescopes. Between December 1990 and March 1992 mutual occulations or eclipses of one satellite by another will be occurring. These phenomena recur about every six years. Accurate timings of these events would be both interesting and useful, An article on this subject appeared in the ASV Newsletter, December1990, page 10, and further information will be published later.

THE MOON

New Moon	December 17	January 16	February 15
First Quarter	December 25	January 24	February 22
Full Moon	January 1	Janaury 30	March 1
Last Quarter	December 9	Janaury 8	February 7

ANNULAR ECLIPSE OF THE SUN ON WEDNESDAY 16 JANUARY 1991

On the morning of Wednesday,16 January,1991 an eclipse of the Sun will be visible as either an annular or partial event over the whole of Australia and New Zealand, and parts of Indonesia,PNG and Antartica.

Being an annular eclipse, the Sun will never be entirely covered by the Moon (total eclipse) no matter where the observer is located. The reasonfor this is that on this occasion the Earth will be at perhelion (closest to the Sun) on 3 January while the moon will be

just 75 hours past apogee (furthest from the Earth). This combination will ensure that the Moon will appear smaller in apparent size than the Sun (29' 46".2 compared with 32' 31".0 apparent diameter respectively)

The annular phase begins at 9.00 am Australian Eastern Summer Time in the Indian Ocean just off the west coast of Western Australia, crosses the extreme south-western part of Western Australia,the Great Australian Bight, Tasmania and Bass Strait islands,central

New Zealand and some small islands in the Society group,and ends at 12.46 pm, Australian Eastern Summer Time,on the Equator in the Pacific Ocean. The maximum duration of the annular phase is 7m 55s

In our area,the northern limit of annularity is closest to Victoria some 75 km south-west of Cape Otway. It passes north of King Island, and then across the northern half ofFlinders IslAND. The central line is close to Burnie,Devenport and Launceston,while the southern limit is south of Queenstown but north of Hobart. Therefore, to see the eclipse as annular it will be necessary to travel to either Tasmania itself or King or Flinders Island. For example,at Wynyard on the north-west coast of Tasmania,maximum eclipse will occur at 9.23 am Australian Eastern Summer Time,with the sun at an altitude of 35°. The width of the path of annularity will be 306 km,the magnitude of the eclipse (the fraction of the solar diameter covered by the Moon) 0.961, the degree of obscuration (the fraction of the area of the Sun's apparent disc covered by the moon) 85.3% and the duration of annularity 6m 43s

In Victoria,although an annular eclipse will not be seen,a partial eclipse of large magnitude will occur and this will be especially pronounced near the coast. So, if you are unable to travel across Bass Strait, try to drive as far south as possible. The circumstances at a few locations are given below :

Location	1st contact			Max Eclipse				Second contact		
	h	m	P	h	m	A	magn	h	m	P
Frankston	8	00.3	256°	9	19,0	34°	0,887	10	50.8	81°
Melbourne	7	59:9	25 5°	9	18.5	34°	o.877	10	50.2	82°
Portland	7	59.3	258°	9	16.7	31°	0.913	10.44.4		81°
Cape Otway	8	00.4	258°	9	18.1	33°	0.916	10	48.4	80°

Note: Australian Eastern Summer Time used. P is the position angle of contact of the moon with the Sun's disc,measured eastwards from the north point of the solar disc. A is the Sun's altitude at the time of maximum eclipse,for which time the magnitude is also given

Assistance in compiling these notes was obtained from numerous sources but especially the "ASV Newsletter",1990 December,inthe case of the eclipse article. Grateful thanks are extended to Jim Trainor of the ASV and David Herald of the Canberra Astronomical Society Inc.