

ASTRONOMICAL SOCIETY OF FRANKSTON, INC.P.O. BOX 956, FRANKSTON, 3199NEWSLETTER, MARCH 1986Meeting, Wednesday April 9th

The April meeting is scheduled to be held as an Observing Night at our Peninsula School Observatory site to co-incide with the closest approach of Comet Halley to Earth, and the best observing conditions. It is hoped that the Observatory and 30cm B. J. Smith telescope will be in operation again by this date, but in any case members are asked to bring along instruments of all sizes for this night. Remember, the best instruments for observing the comet are likely to be 7 x 50 or 12 x 80 binoculars! Starting time 8 p.m.

Observing Night, Saturday March 15th

The March Observing Night is scheduled for Saturday, March 15th commencing at 8.30 p.m. The Moon will be 5 days old and setting at 9.50 p.m. Daylight Saving Time on this date, so there will be plenty of opportunity for observing deep sky objects later. Venus will be low in the west after sunset and Mars and Saturn will be rising before midnight. Should Saturday be clouded then Sunday, March 16th will be substituted as the March viewing night. If this is the case then the Sunday viewing night will commence at 7.30 p.m. Eastern Standard Time as Daylight Saving Time will end on the Sunday morning.

Observing Nights, April 1986

In addition to the Society Meeting and

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Observing Night on Wednesday, April 9th, a number of other Observing Nights are planned to be held to co-incide with the best viewing period for Halley's Comet. These are:-

Monday, April 7th at Peninsula School Observation Site. This is to be held for the benefit of students at Peninsula School. Startime time 8 p.m.

Saturday, April 12th at Mt. Martha Park for the Mornington Peninsula Field Naturalists Club. Starting time 8 p.m.

Thursday, April 24th at Peninsula School. This is to co-incide with the total eclipse of the Moon which occurs on this evening, which will temporarily blacken out the sky and allow a final good view of Halley's Comet before its return to the outer solar system. Totality occurs on this occasion between 10.11 p.m. and 11.15 p.m. and, weather permitting, this should be a memorable combination of two celestial spectacles. Don't miss it! Starting time on April 24th, 8.30 p.m. The following day, Friday April 25th, being Anzac Day, is a Public Holiday so a late night out should be no problem on this occasion. Members of the public are expected to be invited to this viewing night.

Please bring instruments of all kinds for these nights, remembering again that for viewing the Comet the best instruments will be those with wide, bright fields.

In addition, arrangements have been made with Pakenham Consolidated School for a Comet and Sky viewing night on Monday, April 14th, commencing at 7.30 p.m. following their request for the same. As a large number of students are likely to be involved it will be very desirable to have several members with telescopes/binoculars to make a success of this night. Members willing to help

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visible in the constellations on the charts. Bob also showed a number of slides of deep sky objects listed on the descriptive sheets and marked on the charts.

Bruce Tregasjus followed with slides and descriptions of a variety of deep sky objects in the Autumn sky and Ken Bryant concluded by giving an overall description of the Autumn constellations and visible planets, together with a summary of the distances of the various classes of astronomical objects.

He also suggested that members attempt various observations as a personal challenge using naked eye, binoculars or telescope; for instance, locating Uranus with the naked eye, identifying the fainter constellations and attempting location of 3C 273 - a quasar in Virgo.

Another successful Observing Night was held on Sunday, March 16th at Peninsula School and members viewed through a number of telescopes including David Murray's 8" Meade and Ken Bryant's 20 cm Newtonian.

Observations were made of numerous deep sky objects including 3 planetary nebulae and two pairs of galaxies in Leo. Tony Hales' newly obtained 13mm Nagler eyepiece, a remarkable construction of very heavy weight for an eyepiece, was used together with David Murray's 8" Meade telescope to observe the Great Orion Nebula and other objects.

On Saturday, March 22nd a number of members, with telescopes, met at the Observatory, Peninsula School for photographs to be taken by a "Standard" Newspaper photographer, of themselves

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and their instruments against the background of the Observatory building and re-installed B. J. Smith telescope. The photographs, together with an article on the Society, and Comet Halley, are to appear in the "Standard".

A golden medallion was presented to the Society recently by the City of Frankston in recognition of the Society's services to the community in the field of Astronomy, and as part of the city's 150th Anniversary of Victoria celebrations. The medallion, which was displayed to members at the March meeting, was accepted by Peter Norman and Steve Malone on behalf of the Society, and is to be mounted on a board, together with a plaque for display.

### Sky Notes

Comet Halley will reach its closest point to Earth for this visit on April 11th at 0.42 Astronomical Units.

From late February onwards the comet has been visible in the eastern sky before dawn and has been observed on numerous occasions by members. During most of April Halley will be above the horizon all night from sunset to sunrise, providing excellent observing conditions. However, the Moon will be at First Quarter on April 17th and from then till Last Quarter on May 1st will interfere with observations. The early part of April, as the comet passes near the tail of Scorpius, will therefore provide the better viewing conditions.

On the night of April 24th a total eclipse of the Moon will once again dramatically reveal

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Comet Halley high in the sky during the period of totality from 10.11 p.m. to 11.15 p.m. Photography of the comet can be undertaken with a tripod mounted camera using fast film - 1000 ASA - for 1 or 2 minute exposures, in addition to any photography through a telescope.

Constellations. The evening sky in April and May shows the Milky Way - the plane of our galaxy - stretching from East to West with the Southern Cross high in the sky. To the south the two Magellanic Clouds hang low in the sky whilst to the north we see the constellations of Leo, Virgo, Coma Berenices and Bootes. In the east the bright star fields of Scorpius and Sagittarius are rising, whilst Sirius and Canis Major sink in the west.

The Virgo/Coma Berenices region contains the Virgo Cluster of external galaxies at distances of 30 and 40 million light years. Some 100 of these galaxies are visible in a moderate size telescope, mostly as misty patches of light and Burnham's Celestial Handbook contains a useful chart for locating and identifying many of these. The constellation of Coma Berenices, or Berenice's Hair, like a strand of glistening hair to the imaginative eye, is in fact a physically related group of stars that, if it were further distant, would be viewed as a star cluster such as the Pleiades, but at its distance of 250 light years presents a more open appearance.

Planets. Saturn, which is at opposition on May 28th, will provide observers with good views of its ring system and several satellites during the autumn. Tables in the ASV Yearbook and BAA Handbook allow identification of the various satellites at different times.

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Mars, at opposition on July 10th, will be at one of its closer approaches at a distance of 60 million km on that date. Surface features should become visible during May and the planet will reach an apparent diameter of 23 seconds of arc at closest approach in July.

Venus may be seen in the evening twilight during April and May, while the two outer giants, Uranus and Neptune, situated in Ophiuchus and Sagittarius respectively, may be located with binoculars and in the case of Uranus, also with the naked eye. The charts in the ASV Yearbook and BAA Handbook will assist in finding these two planets.

The best Southern Hemisphere viewing time for Mercury this year occurs in April when it will be visible for up to two hours before sunrise in mid-April at near zero magnitude.

### The Moon

New Moon	Apr 9	May 9
First Quarter	Apr 17	May 17
Full Moon	Apr 24	May 24
Last Quarter	May 1	May 30

### Total Lunar Eclipse April 24th/25th

Moon enters penumbra	20h 05m
Moon enters umbra	21h 03m
Total eclipse begins	22h 10m
Total eclipse ends	23h 15m
Moon leaves umbra	00h 22m
Moon leaves penumbra	01h 20m

## HALLEY'S COMET

# Halley - Just Another Comet

Dennis N. Harwood, Astronomer, Perth Observatory

Halley's Comet has been, in a phrase common to the entertainment industry, well and truly over exposed. This applies to both the scientific and the general press. Aspects of the structure of the nucleus, molecular structures and composition of the tail have all been aired, with popular theories now commonplace topics of conversation. It was therefore a somewhat difficult task to select a topic of interest.

After some thought one question struck me as having some variance with most other publications — Why all this activity for what is scientifically thought to be nothing but a dirty snowball?

Is Comet Halley Special? — the true answer to this is no! However, people from all walks of life are now actively taking part in a great orchestrated display of Comet Halley Worship. Our children eat Comet Halley Icy Poles and Lollies. Our teenagers wear Comet Halley T-shirts while the wily adults sit back smugly and purchase telescopes which will never be used again.

It's certainly not restricted to the public or amateur astronomers — just look at the professionals. One would think that this is the one and only comet, not one of a possible twelve which will be observed this year and any other year. But we have what every scientist would like, public interest which goes to make that age old formula work!

$$MA \propto PI$$

Where MA = Money available

PI = Public Interest

That's our excuse for our sudden rush of Comet Halley activities.

But what really causes this public surge of interest reminiscent of the dark ages?

A widely accepted explanation is that Comet Halley is the brightest periodic comet known. This statement is true in one sense — it is the brightest periodic comet; but the claim that this is the reason for its popularity is rather simplistic. Halley has been extensively observed during the past 2200 years without the significance of its periodicity being known prior to the 18th century. However, since Sir Edmund's findings, its regular appearances combined with its brightness have done much to heighten its public image.

As mentioned above it is a bright comet and it returns every 76 years. So what? The Moon is brighter and bigger and comes around a lot more frequently. The same goes for the planets though Venus and Jupiter have much to answer for when it comes to their imitations of a U.F.O. Even if we stick to comets there have been many brilliant comets recorded throughout the history of man which have not produced the same degree of hysteria. Maybe the Professional Astronomers combined with the popular press have much to answer for after all.

Possibly it's not all their fault and to highlight this I will introduce to this discussion some fellow travellers. In Table 1 there is a list of bright comets observable with the naked eye over the past 20 years. The number of years is significant as it directly relates to my own interest in Astronomy. During this period we have had six bright comets including Halley, all of which were



PLATE 1: PL 15147  
COMET WEST 1976 VI

Taken at the Perth  
Observatory 1976 March 14,  
by Michael P. Candy  
8 minute exposure  
on 103aa plate

## HALLEY'S COMET

brighter than Halley is, or will most likely be following perihelion in 1986.

Table 1

### BRIGHT COMETS

1910 I	Great January Comet of 1910
1910 II	Comet Halley
1965 VIII	Ikeya-Seki
1969 IX	Tago-Sato-Kosaka
1970 II	Comet Bennett
1976 VI	Comet West
1982 I	Comet Halley

(1982 I refers to the first sighting of Halley's Comet prior to Perihelion)

To place them in perspective Ikeya-Seki (1965 VIII) is grouped with the great comets of 1106, 1843 and 1882 and is considered as being one of the most brilliant on record. It was observed with the naked eye within one degree of the Sun at a magnitude of about  $-10$  or  $-11$ . Some  $2\frac{1}{4}$  degrees of tail was visible during daylight while just prior to sunrise it covered some  $45^\circ$  of the sky. With all this to recommend it who, but a very small band of comet enthusiasts still remembers it. It's still very much within living memory but something about it was wrong!

The next comet in order of brightness is Comet West (Plate 1) which reached a magnitude of about  $-3$ . This is brighter than Jupiter and again there was little public response. No one for instance publicly queried whether it may hit the Earth, should we take our children out of school, and so forth. It came, it shone, it vanished. This is unfortunately the truth in more ways than one. West on its last approach in 1975 gained substantially

in momentum as a result of its close approach to the Sun and will not return. The interesting thing about this comet is that although it had a periodic orbit it has not had a previous appearance recorded.

Another bright comet was Comet Bennett (Plate 2) which visited our neighbourhood in 1970. With a magnitude close to 1 shortly after perihelion this comet was again readily visible with the naked eye. It is not a periodic comet and will not reappear. However, for a short period of time it produced quite a flutter amongst the Astronomical Community. If no one else.

The last comet in this list is another non periodic comet Tago-Sato-Kosaka 1968 IX (Plate 3). Not a spectacular object visually but photographically quite a prize with a large coma surrounding the nucleus and a small narrow filamentous tail. Publicly this was very much a non-event and if this can happen with a comet which reached a magnitude close to 2 then if magnitude is the only consideration, Halley this time round should be a total non event. Tago-Sato-Kosaka however did not have a manager or publicity officer whereas Halley has several thousand of both scattered world wide.

To further enhance the comparisons the "Great January Comet of 1910" (1910 II) has been included along with the 1910 appearance of Halley. The Great January Comet was bright enough to be seen in daylight and reached a magnitude of about  $-5$  compared with the later appearance that year of Halley, which only reached a magnitude of  $-1$ . Although in fact many elderly people who can remember seeing a comet in that year actually saw the Great Comet, most only remember the name Halley.

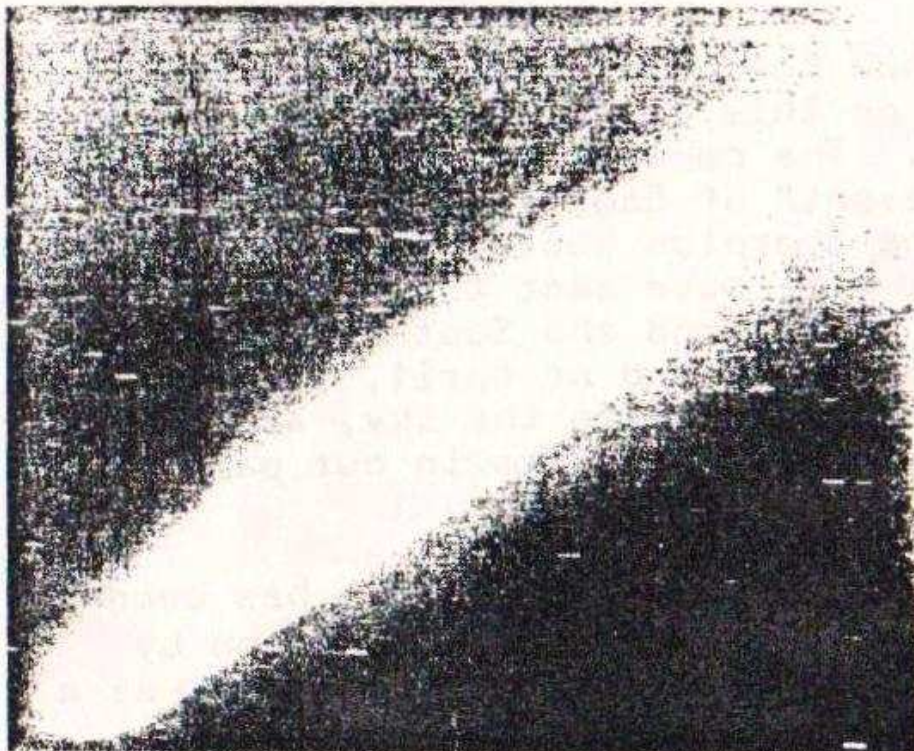


PLATE 2: PL 12885  
COMET BENNETT (1969 I)  
Taken at the Perth Observatory  
by Dr E. Nikolov and  
Peter Birch, 1970 March 16  
28 minute exposure  
on 103au plate

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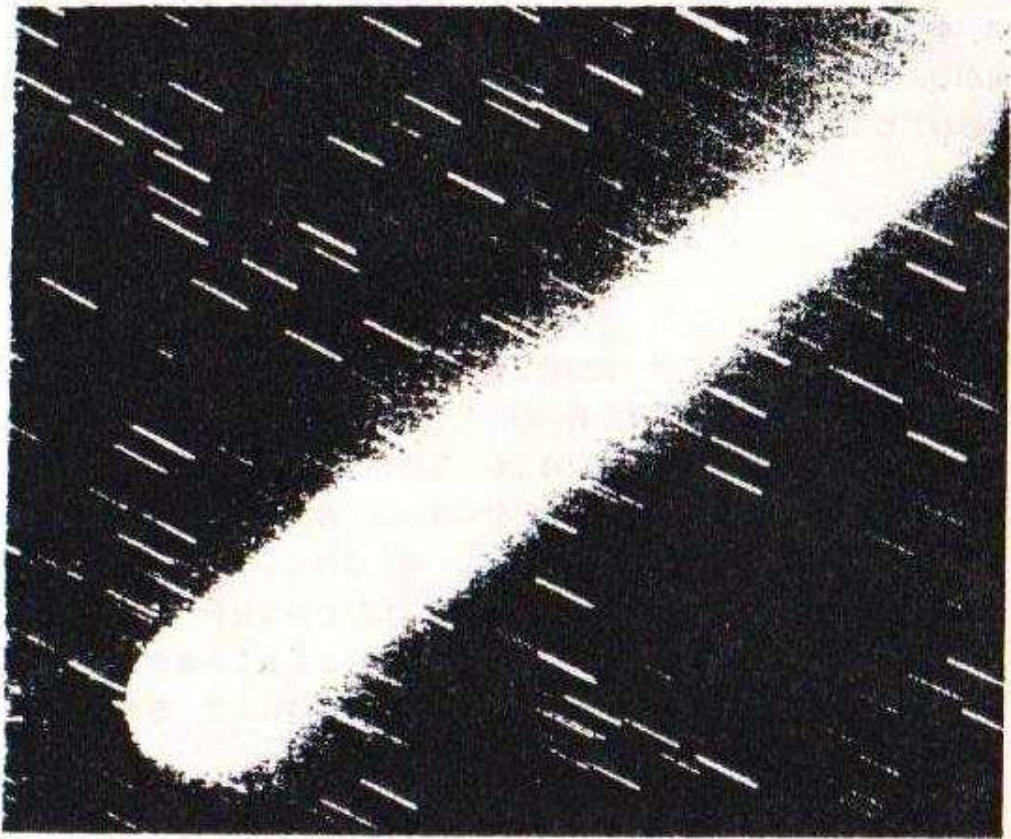
Director, ASV Auroral Section. Some of these were from Victoria and others from as far north as Brisbane. Members who may happen to see auroras, or suspected auroras are asked to contact him on Ph. 787-2444.

### Astro/Legal Note

Most people would be aware that a jury consists of "12 good men (or women) and true". However, probably few would also be aware that the custom is said to originate from the supposed astrological influence of the twelve zodiacal signs, twelve persons, one from each sign being chosen to provide a supposed balance of personalities within the group. Astronomical influences would seem to lurk in some unexpected places!

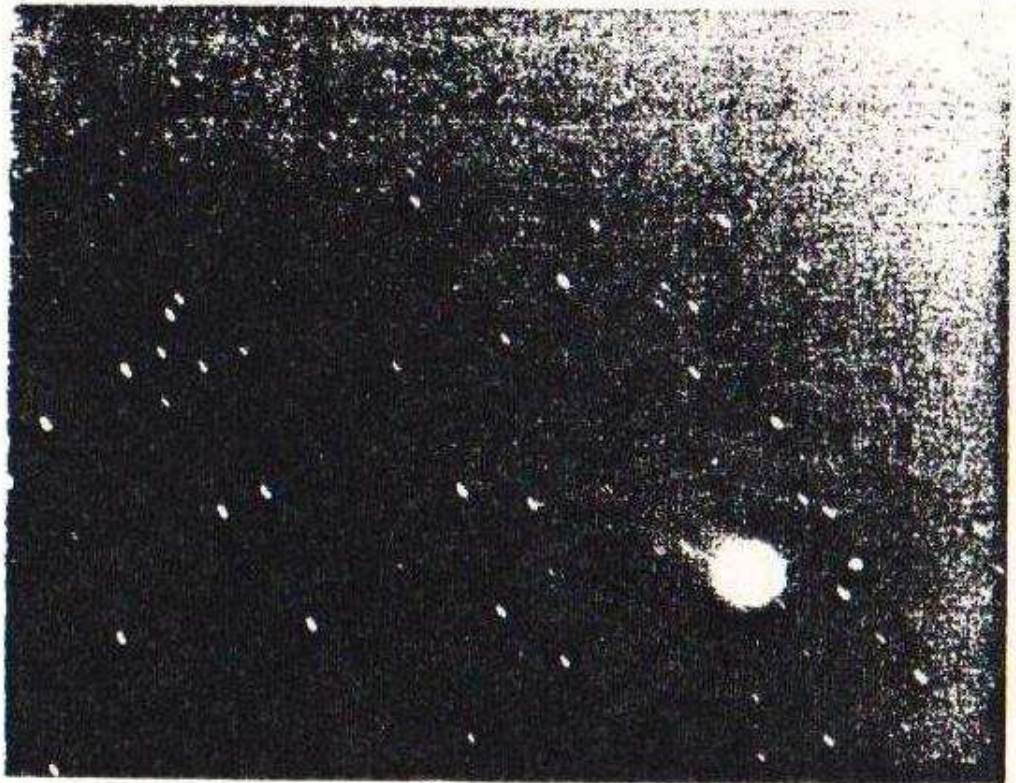
<u>President</u>	Peter Norman	Ph. (059) 75-3040
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**HALLEY'S COMET**



**PLATE 3: PL. 12723  
COMET TAGO-SATO-  
KOSAKA 1969 g**

1970 January  
Taken at the Perth Observatory  
by Dr I. Nikoloff  
60 minute exposure  
on 103ao plate



**PLATE 4:  
COMET HALLEY 1982 I**

Taken by Jeffrey Johnston  
at the Perth Observatory  
on 1985 December 31  
35 minutes exposure  
on 103ao plate