



# SCORPIUS

The Journal of the  
Astronomical Society of Frankston Inc.  
P.O. Box 596, Frankston, Victoria 3199

Volume VI, No. 2 1997

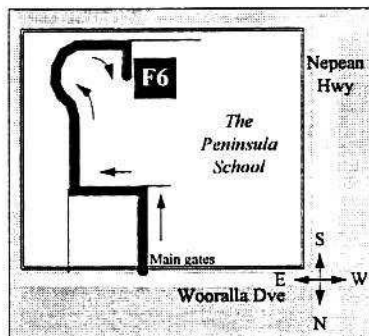
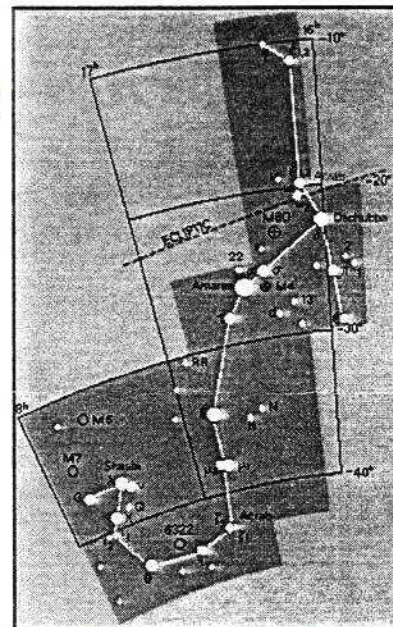
( Mar - Apr )

The Astronomical Society of Frankston was founded in 1969 with the aim of fostering the study of Astronomy by amateurs and promoting the hobby of amateur Astronomy to the general public. The Society holds a General Meeting each month for the exchange of ideas and information. Regular observing nights, both private and public are arranged to observe currently available celestial objects. For decades the Society has provided *Astronomy on the Move* educational presentations or observing nights for schools and community groups exclusively in the area bounded by Moorabbin, Dandenong and Tooradin.

**Meeting Venue:** *Peninsula School*, Wooralla Drive, Mt Eliza (Melways map 105/F5) in room F6 at 8pm on the 3rd Wednesday of each month except December.

**Internet:** <http://www.peninsula.starway.net.au/asf.htm>

*Visitors are always welcome!*



Annual Membership	
Full Member	\$30
Pensioner	\$25
Student	\$20
Family	\$40
Family Pensioners	\$35
Newsletter Only	\$10

Due 1st of January each year

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Committee  
Ken Bryant, Roger Giller, Bob Heale,  
Peter Lowe, Richard Pollard

Phone calls before 8:30pm please.

## FUTURE EVENTS

### General Meetings:

**Wed 19th March '97**

Session 1: Peter Lowe drops in to tell us about *Gravity*.

Session 2: Bob Heale will explain *Of What is that Celestial Object Made?*

**Wed 16th April '97**

Session 1: Guest speaker Peter Nelson from the Latrobe Valley Astro Society, enlightens us on Variable Stars.

**Wed 21st May '97**

Session 1: Two videos explain all there is to know about Stars, Nebulae and Galaxies, and the Universe.  
Session 2: Various members will go *Back to Basics*, and explain brief Astronomical concepts for beginners, or for those who wish a refresher.

**Wed 18th June '97**

Session 1: VASTROC debriefing.  
Session 2: Bob Heale and David Girling explain how to clean up *Messier Objects*.

### Viewing Nights:

#### Members Only:

Mar 1 & 15 (NOTE: Mar 8 cancelled due to Ballarat visit), Apr 5 & 12, May

3 & 10 & 31, Jun 28, Jul 5 & 26, Aug 2 & 9 & 30, Sep 6 & 27, Oct 4 & 25, Nov 1 & 22 & 29, Dec 6 & 27 all at *The Briars*, Nepean Hwy, Mt. Martha (Melways 145/E12). For those unable to attend on Saturdays, there will be special Members' nights on Wed Apr 9 and Wed Jun 4, running from 7-10pm.

If weather forecast for the Saturday looks bad, the Friday before may be used instead. New attendees must always confirm with David Girling on the phone number above before attending. Follow the signs at *The Briars* from the Visitor Centre. Remember you can only attend on planned Members' Nights, unless by prior arrangement with David.

### Public School & Community Groups Viewing/slide nights:

If you can assist, please contact the Secretary.

- Langwarrin Park Primary school in NorthGateway on Mon Mar 17 at 7:30pm. Melways 136/A4. About 100 Grade 6 pupils are expected so several telescopes are needed. Minor Planet observers, please note a very favourable passage occurs around 10pm on this night.



- Ballam Park public viewing night on Fri Apr 18 has been cancelled as it clashes with the dinner below. Regular monthly public nights at *The Briars* are likely later in the year instead.

*Ballarat Observatory* for a BYO BBQ and hopefully observing through their 26 inch scope. The Observatory is a short walk from *Sovereign Hill*. On Sat Mar 8, and transport may be

Meiways 145/C6. All welcome.

- Bev and Roger Giller will sacrifice their home's peace this Solstice night on Sat Jun 21 at Berwick. It will be a Christmas theme, and likely catering costs will soon be announced.

The roll-off roof Observatory concrete slab poured just prior to the first Working Bee at *The Briars*. The President poses while the grass is mowed and the earth moves.



### Social Events:

- About 14 attended the Dava on Fri Feb 21, complete with strange bright lights over in the Western sky, possibly F1-11 afterburners from the Avalon airshow. Numbers were down due to the hot weather during that week.
- Our Society will visit

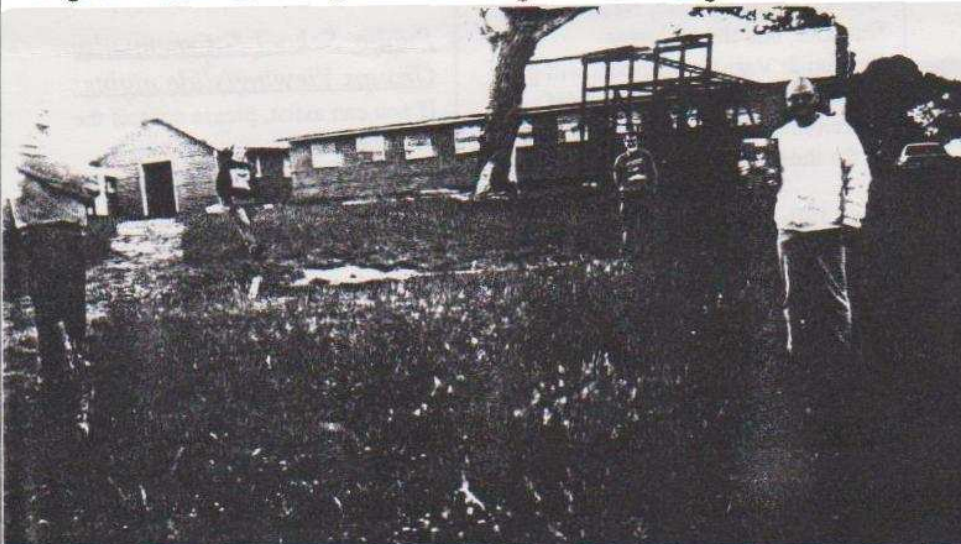
arranged if needed. Note this is a long weekend and the Grand Prix will be on. If rain is possible for Ballarat, a *Go/NO-Go* message will be left on the Secretary's answering machine that day, so please check it first.

- The next Social dinner at the Dava, Esplanade, Mornington will be at 7pm on Fri Apr 18.

### Phenomenal Events:

- The Russian space station *Mir* is visible to the naked eye. Predictions are available at meetings. Kathy Stabb reports a spectacularly bright viewing early one morning in February, as predicted.
- An *Ides of March* night for Lunar observing will be held at *The Briars* on Sat Mar 15, with a 6 day old Moon, and on Sat Jul 12 with a 7 day old Moon. Meet at twilight to observe the craters, mountains and other features on our nearest neighbour.
- An *Eta-Aquarids* All-Nighter is on for Sat/Sun May 3/4 at *The Briars*. These meteors originate from comet Halley.
- A Pluto planet hunt will occur with member's instruments at *The Briars* on Sats May 10 and May 31. Never seen it before? Now is the chance.

Virgin soil at *The Briars* in early Dec 96 where the viewing platform was to be poured. Pegged out by (L to R) Don Leggett, John Cleverdon, Ken Bryant & Peter Lowe who must get a retainer fee from Quasar Publishing. View is looking West.



### VASTROC 97:

Places have already been reserved for some keen participants and speakers for the 6th *Victorian Astronomy Conference* on Sat/Sun Jun 7 & 8 at Mt.Eliza. Space is getting very limited, so get in now.

**YOUR SOCIETY**



## NEW MEMBERS

Welcome to the following new Society members:

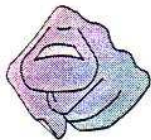
Mary and Ron Connell  
 Denis Grimmer  
 Neil Hewson  
 Tony Kaucit  
 Darryl Moule  
 David Sherry

The ASF is the 2nd largest Society in Victoria, and one of the largest in Australasia. Membership is 104. Please feel free to say hello at general meetings. Specialised badges, windcheaters, T-shirts, planispheres, books & posters are available at meetings. Society name tags are free to new members who attend meetings.

## NEW ARRIVAL

On January 17, Ros Skilton gave birth to a healthy 4.025kg baby boy, Christopher James, at Clayton. He hasn't yet looked through a telescope eyepiece. We are yet to hear of Allison Gurney's baby in 1996.

## HELP NEEDED



Articles, features, book reviews, member observations and points of general interest for this journal are always welcome. New contributors are encouraged. For example do a bit of reading and pass on some information. Hand written material is fine, though computer text files are preferred.

If you have pre-1989 copies of the newsletter, please offer them to the Librarian for the Society set or just for photocopying.

The Society's viewing night caravan is in need of a good

preparation and paint. Does any member have UV hardy paint they can donate which can go over rusty areas and stand up to the weather? The roof and trailer sections are white, while the body is currently a dark blue, though any blue colour would be suitable, or even black. Does

"New Members' night" was trialed successfully in February and saw 10 turn up. This will continue at 7pm on the 4th Wednesday of the next few months as long as demand keeps up. There was much discussion about VASTROC sponsorship.  
 Don Leggett

Viewing platform looking South, with Society caravan in background. Shown are (to R), Roger Cleverdon, Don Leggett, Peter Skilton, John Cleverdon, David Girling, Peter Lowe, Bob Heale, Peter Elias with the Peter Norman scope & Richard Pollard.



anyone have a spare shed for placing at *The Briars* for storing mowers and tools etc.? Alternatively, do you have any near-new building materials to construct a shed. Are there any old Whiteboards out there?

## SECRETARY'S JOTTINGS

The two donated mowers have been repaired and will be stowed in one of the army huts at *The Briars* until we have a small shed of our own. T-shirts are now available, care of one industrious member, Andrew Klop, and have been selling like wildfire. In order to reduce stocks before VASTROC, committee has decided to sell its remaining Society windcheaters at cost for \$28. They will be available at meetings, or can be reserved by phoning David Girling or Don Leggett. A special informal

## RECENT MEETINGS

January's meeting was chaired by the Vice-President, and saw over 60 in attendance. General business was covered first, followed by Bob Heale doing the *Sky for the Month*, as well as issuing *MilkyWay* bars as Sky Quiz prizes. David Girling showed his recent slides of the space station Mir passing over our skies, and some lightning shots he had taken from the *Leonids All-Nighter* last year. After the tea break, the group reconvened to hear Roger Vodicka talk on the history of meteors and meteorites, and the work carried out by the ASV Meteor section. Adam Marsh of the ASV also spoke on how to observe meteors, and record your observations for later use.

February's meeting was chaired by the President and



saw 42 in attendance due to the oppressive heat wave we were in at the time. By coincidence, the temperature that day was also 42 °C. Hand fans were the order of the evening. After hearing about what occurred in the Society for the month, planned events were covered with a few surprises occurring. A beginners' gathering was scheduled for the following Wednesday evening. Slides were shown of *The Briars* observing platform and

Moon, as a primer for the Lunar night in March. The other session attendees discovered the secret, now declassified, achievements that were made at the Woomera Rocket Range, and some of the shortsighted, self-sabotaging government decisions made at the time. The video was supplied by George Fowler who worked at Woomera during his aeronautical career. The meeting closed at 10:25pm.

long obsession to build a time keeper. Full of heroism, chicanery, brilliance and the absurd, it is a fascinating brief history of Astronomy, navigation and clockmaking.

*The Practical Astronomer* - by Colin Ronan, is a good all-round introduction to Astronomical concepts in simple language.

Don't forget to check your book shelves and cupboards from time to time to see if you still have any of the Society's books that have been overlooked. I am pleased to have received a few more returns lately. Check the catalogue book for all books listed - it's easier than looking on the shelves. There are currently 132 books listed, plus magazines, yearbooks and newsletters from other Societies. All have 1 month lending time, and can be re-issued if needed.

Kathy Stabb

Northerly view over Virgin territory before the Observatory slab was cast. Pegs are (L to R), Peter Skilton, Don Leggett, Roger Cleverdon, Ken Bryant & Peter Lowe.



Observatory slab, and Dick Riordan showed slides of lightning he had recently captured. Bob Heale presented Sky for the Month, and stressed Saturn will soon go behind the Sun, and Mars is becoming a favourable object to observe. Ian Porter updated attendees on the status of four current interplanetary space probe missions, together with numerous orbital mission rocket launches that had recently occurred (one of which is now in a million pieces). Thirteen people were in orbit at the time of the meeting. After breaking for cool cordial, the group divided equally. One session heard Bob Heale and David Girling outline observing the

#### NEW LIBRARY BOOKS

The library has 3 new arrivals from the book section. Remember members can borrow books for 1 month at meetings. *Relativity: The Special and the General Theory* - by Albert Einstein, this translated book explains all about these famous theories, in response to a question from our suggestion box. Requires a degree of concentration.

*Longitude: The True Story of a Lone Genius Who Solved the Greatest Scientific Problem of His Time* - written by Dava Sobel, this best seller is a dramatic story of an epic scientific quest and a 40 year

#### RECENT VIEWING NIGHTS

About 110 people attended the four January Friday public viewing nights held at *The Briars* on the new concrete platforms. The weather was kind this year, and David Girling presented a new slide show, and a tour of the night sky was conducted in the field. The nights were very successful. Thanks to Don Leggett, Peter and Jan Brown, Ken Bryant, Roger Giller, John Cleverdon, Tony Hales, Darryl Moule, Bob Heale, Bruce Tregaskis, Peter Norman and the others who helped out with telescopes.

Thanks go to the intrepid crowd for helping me out at the following nights. Manning



the scopes and assisting were Renato Alessio, Ken Bryant, John Cleverdon, Sharron Fletcher, Roger Giller, David Girling, Bob Heale, Don Leggett, Peter Lowe, Richard Pollard, Ian Porter and Bruce Tregaskis. Apologies to any others possibly overlooked. Thanks to David Girling for talking at *The Briars* Public nights in January, which were blessed with fine weather and were well attended.

On 13th & 14th Feb, Mt. Martha primary school Years 5 and 6 pupils were visited by both us and exceptionally good viewing conditions under a first quarter Moon. About 230 pupils, parents and teachers showed great enthusiasm for matters Astronomical, this subject forming part of the curriculum.

Erinwood pre-school Possums group in Frankston was shown a waning crescent Moon through the telescope on Feb 12. In the process these 4 year olds learned you can see the Moon during the daytime, and saw a crater. They were remarkably good at looking through an eyepiece for the first time.

### WORKING BEES ABUZZ!

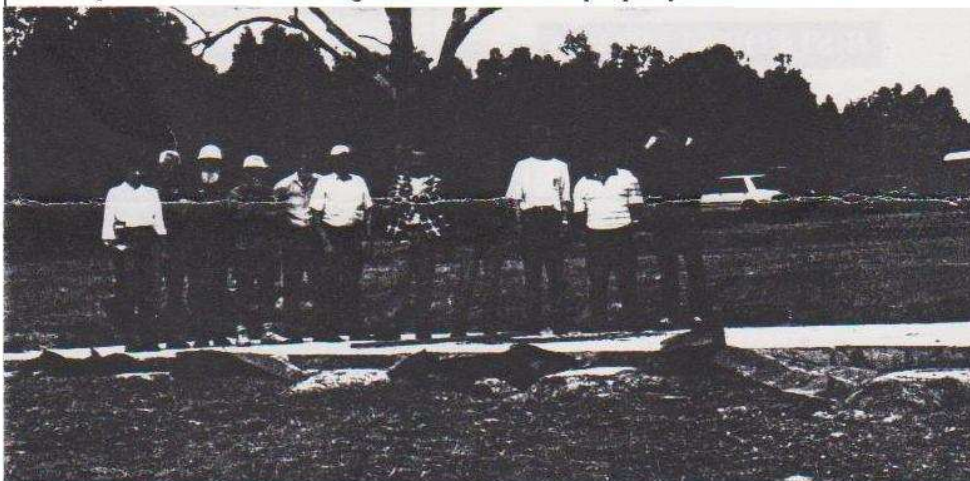
The first working bee at *The Briars* was held prior to the New Year, and saw the grass being mowed, and soil moved around the slabs to assist with moving about in the dark. The photos included were taken at the time. Thanks to the many members who attended for the afternoon. A second bee was held in late February, and removed many major trip hazards and objects that might

impact mower blades. General rubbish was also removed from the property. In addition, the donated concrete storm channel drains began to be placed on the high side of the Observatory slab. Future bees will be combined with a social event, so come along, even if only for a

### DOWN BUT NOT OUT

Member, and past President, Steve Maione was hospitalised in early Feb, but thankfully returned home after a couple of weeks. We wish him well for the fullest possible recovery.

Main slab at the first Working Bee, looking South West. L to R are Viv Lowe, Do Leggett, Roger Cleverdon, David Girling, Ken Bryant, Bob Heale, Richard Pollard, Peter Elias, John Cleverdon, Peter Lowe and Peter Skilton keeping the flies awa. Others present were wandering elsewhere over the property and missed out.



natter, sausage or just to serve a drink to those wielding tools.

The next Working Bee will be combined with the *Ides of March* Lunar Observing Night on Sat Mar 15. Meet at 3pm. BYO BBQ and garden tools. All welcome.

### FROM THE STARS WE COME; TO THEM WE GO

It is with much sadness that I announce the sudden passing of Ian Thompson in early January. Ian was a very friendly and active young member of the Ballarat Astronomical Society, and known to many in our Society. Indeed, he enthusiastically helped arrange our Ballarat visit in March. Over 300 friends attended his memorial service to say farewell.

### ALPHA-CENTAURIDS CLOUDED OUT

The planned *Alpha-Centaurids* All-Nighter on Feb 7/8 was clouded out.

### UFO - IDENTIFIED

Member Ken Bryant was searching out the field near the South Pole for the Variable star TU Mensae recently when a strange sight drifted across the eyepiece to his startled gaze. Consisting of two illuminated ovals of light, connected by a long, straight illuminated bar, it moved in a North-South direction for a second or two before being lost to sight again out of the eyepiece field. A subsequent enquiry directed to the Society's own expert on celestial hardware, Ian Porter, brought an immediate



identification as *TISS* - an acronym for *Tethered Improved Sustainability Satellite*. This object consists of a long electrical conductor - the bar - being moved through the Earth's magnetic field for experimental generation of electric current, and its chance sighting in the eyepiece was long odds against, it seems. Ken is now hoping for some similar luck with his Tattslotto entries.

## JUST FOR STARTERS

### YEAR 2000 - WHEN DO WE PARTY?

A century ago exactly, the Astronomer Royal, Sir George Airy was called in to settle a dispute about when the end of the 19th century would really occur. Was it January 1, 1900 or January 1, 1901? We will soon be confronted with the same question as the end of the millennium approaches.

His brief reply was that *"simple as the matter seems, the fact that it is occasionally brought into question, shows that there is still some difficulty connected with it. Probably, however, this is in great measure due to the circumstances that the actual figures indicating the century are changed on January 1, 1900, the day preceding being December 31, 1899. A century is a very definite word for an interval, respecting which there is no possible room for mistake or differences of opinion. But the date of its ending depends*

*upon that of its beginning. Our double system of backward and forward reckoning leads to a good deal of inconvenience".*

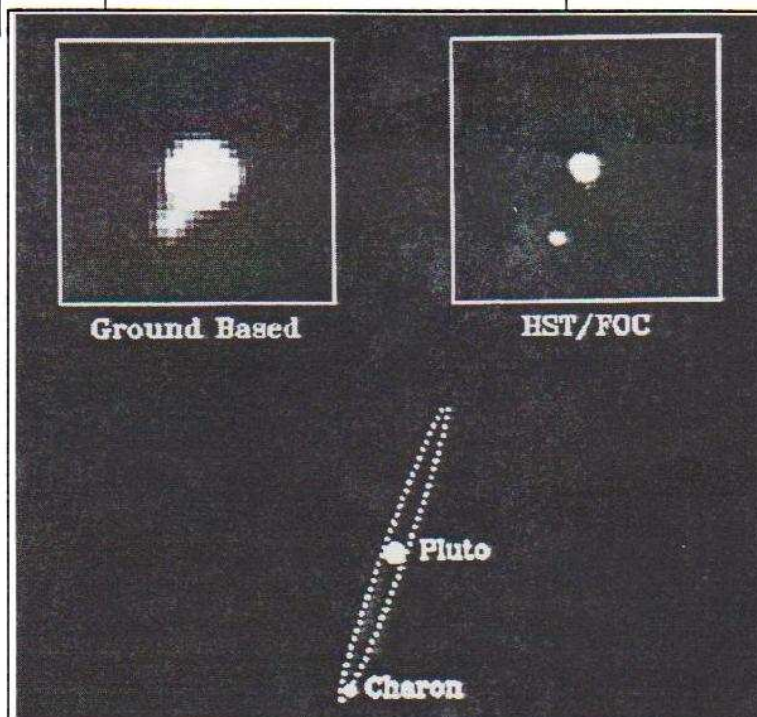
In short, we must party on January 1, 2001, not 2000, though the chance for two celebrations is too good to pass up. It should be recalled that there never was a Year 0. The date 31st December 1 BC was followed the next day by the 1st of January, 1 AD.

painstaking work comparing photographic plates of the night sky, success arrived. By comparing images taken a few days apart it was possible to see if any point of light had moved, betraying its presence as a planet. On the night of February 18, Tombaugh noticed a tiny speck on the photos had moved. This was Pluto, the outermost planet in the inky blackness of our Solar System. At the time, Tombaugh had just turned 24

years old, was a self-taught Astronomer, and a poorly paid assistant at the Lowell Observatory in Flagstaff, Arizona. He came from a lowly farming family in Kansas, where he built himself a telescope and spent time drawing Mars and Jupiter. Using these drawings, he was given the job at Lowell in 1929.

Upon discovery, he kept it secret for 45 minutes

before telling his superiors. He later wrote that *"I was in the most excited state of mind in my life. For three quarters of an hour, I was the only person in the world who knew exactly where Pluto was. It electrified me. I realised I'd be world famous and turn the scientific world upside-down".* Although he never became truly world famous, for his efforts, his superiors gave him a \$10 pay



The planet Pluto and its moon, Charon. Above left is an excellent ground based telescope image, just betraying Charon's presence as a small bump at 7 o'clock position. At right is the Hubble Space telescope view at the same time, using its Faint Object Camera. The orientation of the orbital plane of Charon about Pluto in these two photos is shown in the lower diagram.

## IN THE NEWS

### FAREWELL TO PLUTO'S DISCOVERER

Clyde Tombaugh, discoverer of the ninth planet of our Solar System, Pluto, passed away from heart failure on January 17 this year at his home in New Mexico at the age of 90. In 1930, after 10 months of



rise, and the discovery obtained him a scholarship to study at the Uni of Kansas for a degree. Later, Tombaugh was also to discover a comet, a globular cluster, five superclusters and 775 minor planets. He leaves behind a son, a daughter and a black cat, naturally named Pluto.

## FAREWELL TO CARL SAGAN

Renowned Astronomer, Educator and science populariser Carl Sagan, passed away from pneumonia in December at the age of 62 after a 2 year battle with a rare bone marrow disease. Most members would know of Sagan as the presenter of the popular Cosmos series shown on TV several years ago now (reputed to have been seen by 500 million viewers world-wide).

He was founder of the Planetary Society, having over 100,000 members worldwide, professor at Cornell Uni, editor of the journal Icarus, Pulitzer Prize winner, and a true visionary planetary scientist and exobiologist. The Pioneer and Voyager deep space probes all carry messages to the stars thanks to Sagan, for reading by any extraterrestrials who might just happen upon the craft in the distant future.

He was also not afraid to venture into the controversial areas of the arms race, nuclear winter, asteroid hazards, ozone layer and the greenhouse effect, as well as being an opponent of pedestrian missions such as the space shuttle and space station, in favour of more enlightening and adventurous unmanned missions.

## MOVEMENT AT THE POLE

At the geographic South Pole is a sign commemorating the first two explorers to find it. First was Roald Amundsen on Dec 14, 1911, who wrote in his journal "*So we arrived and were able to plant our flag at the geographic South Pole*". Shortly after on Jan 12, 1912, Robert F. Scott arrived and wrote "*The Pole. Yes, but under very different circumstances from those expected*". Nowadays, the Pole can be a bit harder to find... it moves. Each year, a metal marker has been driven into the snow to show where the Pole currently is placed, because the overlying ice sheet is moving at about 10 metres every year, carrying the marker peg with it. Consequently, the sign is accompanied by a series of steel pegs marching off into the distance in a straight line. However, last year and the year before, the march apparently stopped, moved to one side, then resumed in the same direction as originally. Has the ice sheet changed its movement? No. It seems the Americans at the base near the Pole mark out its position by taking last year's peg, and simply pacing out 10 metres to account for the ice moving. However, in 1995, the Global Positioning System, using satellites to pinpoint location on the Earth, was used for the first time. The result was a hasty correction for the peg.

## WAVE GOODBYE

Australia recently turned on its very own Gravity Wave detector in Western Australia. The world's largest lump of precious niobium metal (one and a half tonnes of it) is also now

the world's most sensitive detector of these waves predicted from Einstein's general theory of relativity. The instrument measures how much the bar of metal vibrates like a pendulum to a mind-boggling accuracy. It can measure a swing of a billionth of a billionth of a metre, which is a hundred million times smaller than the size of a single atom!

Gravity waves are theorised to be produced when matter accelerates (or decelerates). Any matter will do, even you accelerating in a car, however, the bigger the clump of matter and the faster it accelerates, the easier it is to detect. At an extreme is the collision between two massive black holes in space. Although gravity waves have not been detected to date, it is hoped that any such collision will produce waves that will be detectable here on Earth, after crossing our galaxy. Researchers are moderately confident of detecting any black holes colliding within our Milky Way in the near future.

## IS GRAVITY CONSTANT?

Mexican researchers have recently suggested that the Gravitational constant,  $G$ , of the Universe might not be so constant after all. In a theoretical model of our Universe, the University of Mexico workers arranged for oscillations of a few percent in the force of gravity over long time scales. The fluctuations are theorised to arise from interactions with a hypothetical particle called a *dilaton*, which is present as the so-called dark matter. The results were dramatic, explaining why distant



galaxies appear to cluster in their red shift in multiples of 400 light years (rather than being randomly peppered about), something which no other model has yet predicted. Furthermore the model predicts an age of our Universe that agrees with current measurements, and produces realistic relative abundances of protons and neutrons. Only time will tell if the model holds up.

## WANT TO BUY A GOOD USED ROCK?

A New York auctioneer recently put up for sale 3 Martian meteorites, ranging in size from a grapefruit to a golf ball. They are the only known examples of a private collection of meteorites that have been shown to originate from Mars. Each meteorite represents the different mineral classifications known (Shergottite, Nakhlite and Chassignite). Museums around the world suspended sales of their Martian meteorites in 1996 when world prices began to sky rocket out of control, after NASA announced its finding of possible fossils in such meteorites recovered from Antarctica. If you had hoped to add these rocks to your collection, you would have had to start bidding at \$2 million.

## FEATURE

### SEEING

To get the best results when observing something in the sky, objects should be viewed when they are as far as possible above the horizon. This is because at lower altitudes, the increased thickness of the atmosphere being looked

through, and any haze or mist present between the object and you, the observer, will obscure and dim the light from the object, as well as giving it false colours (for example a setting Sun is redder than when it is high in the sky). Should there be heat turbulence, familiar for giving daytime mirages in the desert, this will also cause stars and planets to twinkle.

On really dark nights, when the skies are their brightest, observing is not necessarily the best. Twinkling stars are a sure sign that the air is unsteady and not very good for observing. Surprisingly, during a slight mist, the air is often calm, and crisp, and sharp images are seen. For example, this typically occurs in mid-Winter after rain.

The term "*seeing*" indicates the quality of sky conditions at the time, and is judged by the observer based on their impression of any atmospheric effects on the worth of their observation. Poor seeing is normally characterised by small, unpredictable movements and blurring of an image, and in worst cases, objects will become "blobs" that seem to have a boiling motion. Perfect seeing, on the other hand, will show stars as pin-points of light. Over the centuries, several numerical scales have been used to try and assign a number to prevailing seeing conditions. The simplest and most widely used is the Antoniadi scale.

The *Antoniadi* scale, devised by the French planetary Astronomer Eugenio M. Antoniadi (1870-1944) is widely used by amateur Astronomers for simply describing in shorthand the "seeing" quality of the

atmosphere during an observation, for example of a sketch of a planet's surface features, of variable star brightness measurements etc.

The seeing conditions are assessed and judged by the observer, then assigned a number from 1 to 5 in Roman numerals as follows:

- I* - perfect seeing, without a quiver.
- II* - slight undulations with calm moments lasting several seconds.
- III* - moderately good seeing, though with noticeable air tremors.
- IV* - poor seeing, making observing difficult.
- V* - very bad seeing, permitting no useful observing, with only rough sketching barely possible.

You might like to try assigning a number the next time you are out under the stars observing by eye, binoculars or by telescope.

## I THOUGHT IT WAS A WARM NIGHT

It's now official. American scientists have confirmed that it is warmer on nights of full Moon than at other times in the Moon's cycle. Robert Balling and Randall Cerveny studied satellite global temperature records from 1979 to 1994, and concluded that the Earth is warmer by 1/50 of a degree Celsius on nights of full Moon, compared to when it is new Moon. Increased reflection of sunlight from the Moon is responsible, since it is merely acting as a large mirror. I am sure there are other effects at full Moon also, as I've heard stories



from members in the police force and in hospitals of strange goings on at that time.

## NOTES IN THE DARK

If you like to take notes or make rough drawings in the dark by your telescope, the ubiquitous *Innovations* mail order catalogue has just the thing for you .... the light pen. It costs \$15 plus postage. It has a white light near the blue biro point enabling you to write in the dark. It's powered by one AAA battery. I found it to be too bright, but was okay after I coloured the translucent plastic with red from a marker pen, and put a tiny strip of red insulation tape around the gap between the translucent bit and the rest of the pen body. On the other hand, it may be worth waiting a while, as most of the objects that do not sell too well in those mail order catalogues usually wind up costing a few dollars at the Reject Shop.

Renato Alessio

## TELRADES & OPERA GLASSES

As pointed out in *Sky and Telescope*, if one places one binocular tube behind a Telrad finder scope, one can have a 7X or 10X finder, depending on the power of the binoculars. I tested this out and found that 7x35 and 7x50 binoculars were best for this activity. I also concluded that it was so difficult to line up the binocular with the Telrad circles, and to keep it steady once lined up, that this activity was only worth doing out of despair. However, it certainly does work.

I recently purchased a solid chunky pair of 2.5x25 Russian

opera glasses from Stanko Import in North Melbourne, figuring that the \$35 price tag was very reasonable. The roughly 12 degree field of view made up for the tunnel vision effect, typical of this type of instrument. The 10mm exit pupil was most interesting, and enabled one to see whole constellations one magnitude deeper than with the naked eye. More importantly, the opera glasses are very easy to use behind the Telrad, and are a much better alternative to the previously mentioned binoculars. I discovered another use for the opera glasses several weeks later. When my thermometer hit 1°C, all my anti-dewing measures failed. Not only did my telescope and finder frost over, but so did all my eyepieces. For some reason, the opera glasses remained unaffected and they became my instrument of last resort for another hour, until I packed up and went home.

Renato Alessio

## FROM AROUND THE PLANET!

Astronomical Societies as a rule exchange each other's newsletters to assist in sharing items of interest. This column grabs some of the highlights of recent receipts. You can find out more in the library.



*West Cornwall Astron. Soc. (England)* - Their project manager for the Cornwall Astronomy Centre development, Bob Gammon, briefly visited Melbourne in February and phoned the night after our Feb meeting. In fact he had just travelled across New Zealand, then campervanned from Darwin to Sydney to Rosebud, before continuing on. Obviously he enjoys travelling. Being a whistlestop tour, unfortunately we were unable to get to meet he and his wife Jean in person, but maybe next time they are out in a few years' time we can provide a

Southern Sky tour and some real Australian hospitality.

*Astron. Soc. Alice Springs (NT)* - Includes how the speed of light was deduced, and articles on the discovery of two new Solar System members this year, the latest on the Supernova from 1987 and the Cassini mission to Saturn.

*Astron. Soc. of West Aust. (WA)* - A visitor to the Parkes Radio telescope tells of his experiences there. Plans for the Society's Astrophotography section are outlined and include a question and answer service on the subject.

*Astron. Soc. New South Wales (NSW)* - Includes history & features of the Orion Nebula (including the multiple star systems to see there), quasars, treasures of the Small Magellanic Cloud, and tips for observing Mars this opposition. They are to add an amenities block with toilet/shower to their Wiruna site. It will then have a 2 bedroom house, a meeting hall, bunkhouse for sleeping 8, the amenities block, an open air eating area, and storage for scopes & equipment. They are organising another Star Party for May 9-12.

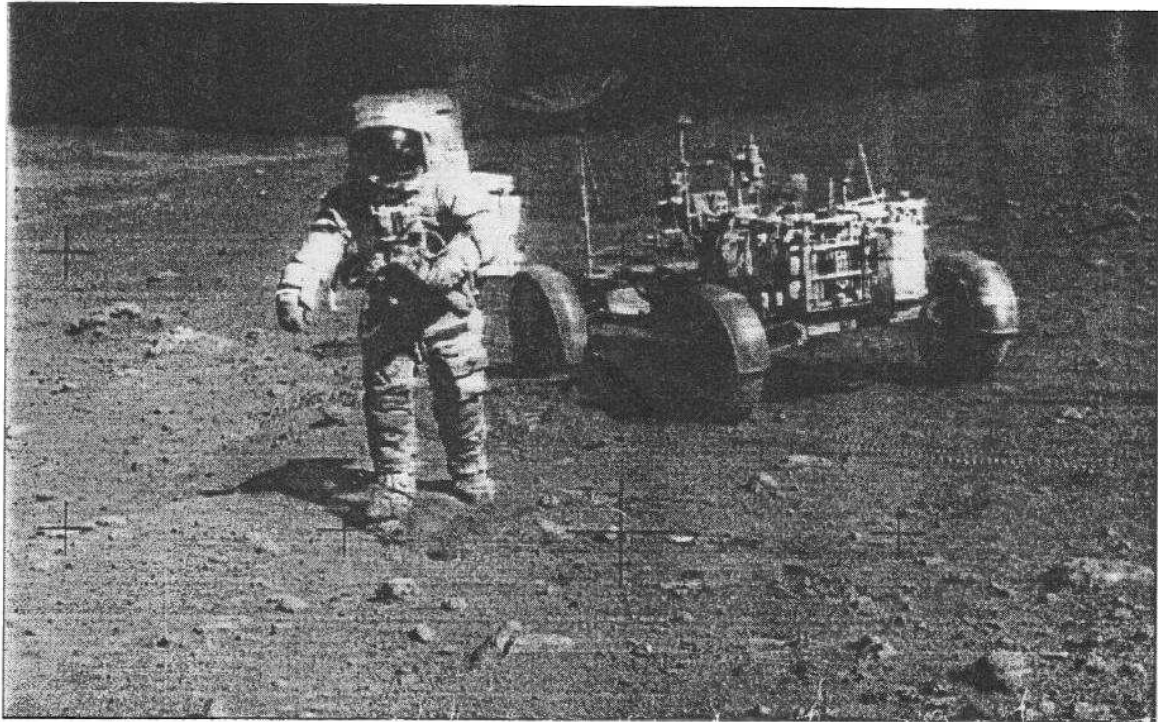
*Astron. Soc. Vic. (Vic)* - A guide and template are given for observing Mars. The history of early Moon mappers is given, as is an article on the comets of Caroline Herschel.

## FINAL PRONOUNCEMENT - NADIR

Most would have heard of the Zenith; that point in the sky directly overhead. It is the extension upwards into the sky of a plumb-line. However, fewer know the name of the point in the exact opposite direction; in other words pointing directly downwards along a plumb-line held by the observer. This direction is called the Nadir, pronounced "Nay-deer".

If you have any Astronomical query that has been niggling you, drop it in the question box at a General Meeting and let us look into it for you.





Left - ASF Society Dinner at the Dava Hotel on 21st February 1997

Photo - By John Cleverdon



If this box is ticked then membership needs renewing and this may be your last edition of the newsletter, so please contact the Treasurer in this case. Newer members who join late in a calendar year will have this time taken fairly into account when renewing in January, and should remind the Treasurer of this.

The last few manned missions to the Moon in the 1970's used battery-powered lunar rover vehicles (as pictured above) to explore beyond the immediate terrain of the landing site. These disposable NASA rovers functioned flawlessly and were duly left behind on the lunar surface, where they remain in pristine condition to this day. Members are reminded that they can freely collect one or more of the rovers at any time that is convenient. The only catch is you have to get there and back.