



SCORPIUS

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

Reg. No. A268

Volume VIII, No. 4 1999

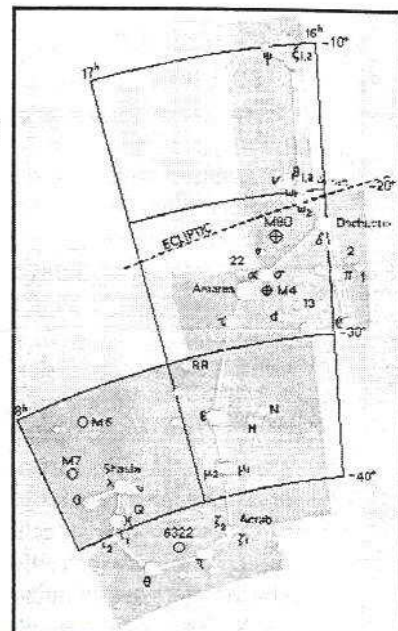
(Jul - Aug)

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 and observing nights for schools and community groups exclusively in the Peninsula and surrounding regions to Moorabbin, Dandenong & Tooradin.

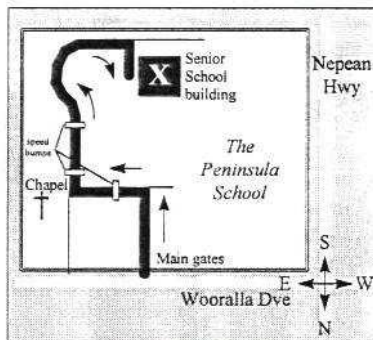
Meeting Venue: Peninsula School, Wooralla Drive, Mt. Eliza (Melways map 105/F5) in the Senior School at 8pm on the 3rd Wednesday of each month except December.

Internet: <http://www.peninsula.starway.net.au/~aggro>

Email: aggro@peninsula.starway.net.au



Visitors are always welcome!



Annual Membership

Full Member	\$30
Pensioner	\$25
Student	\$20
Family	\$40
Family Pensioners	\$35
Newsletter Only	\$15

DUE 1st OF JANUARY EACH YEAR

President & Editor

Peter Skilton (03) 9776 5898

Vice President & Briars Co-ordinator

Ian Porter (03) 5985 4203

Treasurer

Bob Heale (03) 9787 1748

Secretary & Loan Telescopes

Richard Pollard (0419) 100 802

Committee

John Cleverdon, Roger Giller, David Girling,
Don Leggett, Peter Lowe

All phone calls before 8:30pm please.

FUTURE EVENTS

General Meetings:

Wed 21st Jul '99

NOTE THAT THIS MEETING WILL BE OUR SOCIETY'S 30th ANNIVERSARY DINNER. THE VENUE IS NOW AT THE BAXTER TAVERN, Melways 107/B4 (corner of Baxter-Tooradin Rd & Hawkins Rd, Baxter). Meet in the Function Room behind the Bistro from 7pm onwards.

You can order a meal to suit your budget to have in the function area, with pensioner discount available. Friends, family and relatives are most welcome - it can hold 120 people!

Session 1: Peter Skilton will speak on *The 30th anniversary of Apollo 11 and Us - The Eagle has Landed.*

There will not be other sessions this month due to the layout of the room.

Wed 18th Aug '99

Session 1: *30th anniversary of the Murchison Meteorite Fall* by a speaker yet to volunteer.

Session 2: Video on *The Eagle Has Landed* for those who miss July's talk.

Session 3: Loan telescope outside if weather is clear.

Wed 15th Sep '99

Session 1: To be finalised.

Session 2: Video on *Electric Skies* for those who requested it from April.

Session 3: Session for prospective users of the Loan Telescope, lead by Richard Pollard & Ian Porter.

Wed 20th Oct '99

Session 1: To be finalised.

Session 2: Video on *The Great Pyramids - Gateway to the Stars?*

Session 3: Loan telescope outside if weather is clear.

Wed 10th Nov '99

*This is the Annual General Meeting and **NOTE THAT THE DATE HAS BEEN MOVED FORWARD 1 WEEK TO ACCOMMODATE LEONIDS METEOR STORM OBSERVERS.***

Session 1: *A Primer for the Leonids Meteor Shower on 17th Nov, and for the Transit of Mercury on 16th Nov.*

Session 2: Video on *Fingerprints of God.*

Session 3: Loan telescope outside if weather is clear.

Viewing Nights:

Members Only:

Sat Jul 10/17, Aug 7/14, Sep 4/11, Oct 9/16, Nov 6/13, Dec 4/11 all at *The*

Briars, Nepean Hwy, Mt. Martha
(Melways 151/E1).

If weather forecast for the Saturday looks bad, the Friday before may be used instead. New attendees must always confirm with **Ian Porter** on 5985 4203 before attending. Remember for security reasons you can only attend on planned Members' Nights, unless by prior arrangement with Ian who will liaise with *The Briars* accordingly. Last person out must switch on the shed security light.

Public, School & Community Groups Viewing/slide nights:

If you can assist, please contact the Secretary.

- The once-a-month basic public viewing nights at *The Briars* will continue on the first Friday of each month. The next nights are on Fri 2nd Jul and 6th Aug all at 8pm. Assistants are required. Please contact Richard on (0419) 100 802.

Phenomenal Events:

- Predictions for asteroid occultations of background stars are available, as are predictions for eclipses of Jupiter's moons for 1999/2000. If you're interested in doing this work for NASA please contact the editor for instructions.
- **VASTROC**, the *Victorian Astronomy Conference* and premier gathering of backyard astronomers in Victoria, will be held once again by our Society on the Labour Day weekend of NSW/SA this year on Sat/Sun 2nd & 3rd Oct. The venue is Norwood House Reception Centre, Mt. Eliza, with its adjacent hotel rooms for those who wish to stay on-site, and local transport may be arranged if you find it difficult to attend for lack of it. Booking will be on a first paid, first served basis, with a 10% discount for early birds, and registration for one or both days will be possible. No age limits apply. The theme of the conference is "**Epoch 2000**". If you wish to give a talk on any astronomy or sky related topic then please contact David Girling who is organising speakers on 5976 2806 or email to davekez@peninsula.hotkey.net.au. Registration to the Secretary or Treasurer is \$80, or \$72 if you pay in full by end of July. This cost includes a Saturday night dinner, 2 lunches and morning and afternoon teas as well as the astronomy sessions. Registration for one day only for those unable to attend both

days is \$30, plus \$25 if you wish the dinner included. This has been advertised across Australia and will be filled on a first-pays, first-in basis. Space is limited, so register now!

- Never seen our nearest neighbour, the dim red dwarf star Proxima Centauri? Well, we are hoping to have a "Proxima Centauri hunt" at a members' night one Saturday.

Talk, Talk, Talk:

- Professor Jocelyn Bell-Burnell, discoverer of pulsars, or neutron stars, visited Melbourne University on 13th May to talk to about 500 members of the public and high school students on where the chemical elements came from - this being jointly from previous generations of stars, and from supernovae explosions. Not all chemical elements can be formed from fusion processes within stars. For example, the conditions necessary to form gold can only be achieved in the last few seconds of a large star's life as it explodes as a supernova. She was an entertaining speaker and clearly knew her subject, pointing out that our Sun is a third generation star, being formed and recycled from the outpourings of two prior stars in the region. Inevitably we will all be recycled into a fourth eventually.

Social Events

- This year is both our Society's 30th anniversary, and the 30th anniversary of the Murchison meteorite fall. Events celebrating these milestones are being planned, possibly even a trip to Murchison. The first is the dinner being held at July's monthly meeting. This date coincides to the day with the 30th anniversary of Neil Armstrong's stepping upon the lunar surface.
- The Working Bee at *The Briars* had a good turnout considering the drizzling conditions on the 23rd May. Remaining debris that was apparently preventing the area from being slashed by council was removed. In addition the rough terrain near the Observatory slab was attacked with gusto to help level it out and reduce tripping hazards. Mark Quigley kindly offered his plumbing advice for the observatory site connections, and

Gary Fowler reviewed and tested the soil for planting of suitably indigenous natives to act as wind breaks and light shields. Thanks to the following for helping out: Ken Bryant, Bob Heale, David Huby, Peter Skilton and the Fowler, Porter, Quigley and Rummel families.

YOUR SOCIETY

NEW MEMBERS

Welcome to the following new Society members:

Alan Lundie
Mark Quigley

The ASF is one of the largest groups in Australasia. Membership is currently at 132 with some others yet to renew due to being overseas. Please feel free to say hello at general meetings. Specialised badges, windcheaters, T-shirts, books & posters are available at meetings. Society name tags are free to new members who attend meetings. Members are able to borrow library books and are entitled to attend special viewing nights at *The Briars* where you can discover the secrets and glories of the night sky.

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, but remember not to plagiarise. Hand written material is fine; computer text files are perfect. The editor will even correct any mistakes you might make, so don't be bashful.

Thanks to David Girling for copying the latest batch of society fliers for public nights, and to Cassandra Skilton for folding them. We immediately need 30 one litre rocket-bottom plastic drink bottles, with lids, for use in watering the 30 native shrubs at *The Briars* on our site. In addition we need 30 stout rubber bands to hold these to one of the stakes around each native. In particular, we also need these shrubs watered at least weekly by one or more members who pass that way, otherwise they may die (the shrubs that is). As things stand at the moment you will need to bring the water with you. Despite the rains recently, the ground is still very dry about 3 inches below the surface. Please offer your assistance

and time, especially if you pass the site on the way to work or are retired. Does any member have any wood working skills and/or timbers to help make some picnic tables (like those in public parks) for *The Briars* site? Do we have any imaginative woodworkers who can make a speakers' lectern for VASTROC and for meetings? It must be able to be collapsed for transport and sturdy when assembled and in use.

RECENT MEETINGS

May's meeting was attended by 53 people on a clear and pleasant evening, and saw many members we haven't seen for a while and also a visit by a distinguished meteor observer. The Vice-President chaired the first half of the proceedings. Bob Heale presented *Sky for the Month* and handed out his traditional sky maps for the month. Ian Porter then recounted the rocket launches for the past month in his *What Goes Up* session before breaking for tea. During the break, a petition was circulated to show support for saving the VNG shortwave time signal service from extinction due to Federal government ear-marked removal of its funding. This service provides the atomic clock time signal that both amateur and professional astronomers across Australia and surrounding islands use when observing occultations and eclipses for international bodies. In the end, 32 signatures were sent to the VNG service in Canberra on behalf of our society. Also during the break, Richard Pollard demonstrated an innovative CCD camera that he built from bits and pieces from *Dick Smiths* and *Radio Parts*, and had it mounted in a 1¼ inch tube so that it easily fitted in the members' loan telescope. He then proceeded to show people prime focus views of various objects, and he no doubt will be adding a Barlow lens in the near future to boost its magnification. Following the break, half the people decided to watch the inspiring video on *To The Moon and Beyond* (this was marked for June's meeting but the video for May's meeting on the Mir Cosmonauts was left at home by mistake). The remainder decided to take part in the discussion and question & answer session facilitated by the President next door on our society's future options and directions. Much wide-ranging

discussion ensued on our options given the star-burst formation-like appearance of new Victorian astronomical societies since about February, and many new ideas emerged that committee hadn't foreseen indicating how valuable this exercise was to the health of our especially friendly society. Once the video ended, the other session then joined the discussion group. Many good ideas arose and all will be aired to committee. The meeting closed at 10:45pm.

Thanks to the following members who participated in one or more of the viewing nights below: Ken Bryant, John & Roger Cleverdon, Peter Elias, Roger Giller, David Girling, Bob Heale, David Huby, Don Leggett, Richard Pollard, Peter Skilton. Remember that new members are more than welcome to come along and watch what goes on - just give the Secretary a call beforehand (no experience necessary - in fact you might even learn something yourself). Thanks also to Bob Heale, Don Leggett and Richard Pollard for organising these.

On 26th May, Pines Forest Primary was visited under rain conditions. While recovering from a cold, Richard Pollard delivered the talk to a group of 60 interested pupils of mixed ages. The telescopes present did not have the opportunity to view the heavens before they opened.

The public viewing night on 4th June saw about 20 present including many children on a cold night with cloud threatening. The group initially viewed Venus and Mars through the telescopes as cirrus encroached, then moved inside for a talk before revisiting the telescopes as the Moon rose above the Eastern horizon. All enjoyed the evening, even David Huby who commented on "that big light polluting thing" when asked if his 13.5 inch Dobsonian had seen it yet.

AURORA NETWORK

Because our Sun is approaching its next period of high solar activity (which goes through an 11 year cycle), flares, and hence aurorae on Earth will become more common. In order to allow as many members as possible to catch an aurora as it's happening, we

wish to set up an "aurora network" to pass on the news about these lights in our skies which are usually quite readily seen from our region. If you would like to be part of this network (especially if you've never seen the Southern Lights yourself), we will need the following information:

- (1) your name and a contact telephone number (preferably not a mobile).
- (2) any restrictions on when you wish to be called. For example, maybe you don't wish phone calls after 9pm or before 5:30am. An aurora can occur at any time of the day or night, though during the day you won't be able to see them, but radio interference may be noticeable. If you don't specify a time restriction, beware that you could be called at 2:30am to see dancing coloured ribbons in the night sky!

In return for attempting to notify you, we ask that you then pass on the favour to the next 3 people in the network, whose name and phone number will be made available to you, and who will do similarly. This will spread the word very quickly and fairly share the cost of phone calls around. If one or more of your contacts are not answering their phone when you attempt to notify them, then you at least tried. It is most unusual for the Aurora Australis to last more than an hour, so there is little point in passing on a late message.

A QUIET GATHERING

John Cleverdon and Bob Heale had a good viewing session at *The Briars* in early June. No intrusive lights were present (presumably this means that *The Briars Camp* was empty), however, the cows were noisy. It was so quiet that John complained of the Mooruduc Road traffic in the distance over the broadacres. John was apparently moving towards his 1,800th Deep Sky object observed, giving Renato Alessio a run for his money.

Bob Heale reports that he observed Comet Lee in his 10 inch scope in Cancer. The evening concentrated on galaxies and planetary nebulae, with Bob focusing on Scorpius, Ara, Corvus and Hydra, and John concentrating on the constellations of Leo, Virgo and Corvus. Cloud rolled in at 10:40pm when the intrepid bunch went home.

SECRETARY'S JOTTINGS

We are in the process of assembling a fully portable CCD camera, power supply and monitor for use in showing the night sky at viewing nights. This set up will be completely adapted for use in the field away from power points and is an excellent use of the grant monies we received for this type of project earlier in the year. The camera itself will simply fit into any standard telescope eyepiece holder. John Cleverdon has kindly keyboarded our constitution so that we now have it electronically. The loan telescope (a Dobsonian design) is looking a little worse for wear and in need of a good collimation of its optics. The laser collimator we obtained earlier last year is not proving up to the job and its future will need to be re-examined. To help preserve the loan telescope, a beginners session will be held later this year to instruct potential users on its optimal handling and storage. The society is looking into purchasing binoculars for loan to members. The storage shed is still 90% completed, but Don Leggett has kindly offered to complete it before he leaves on holidays. Once this critical activity is done we can progress connection of utilities to it as a permanent structure.

Indigenous fast-growing native plants to provide light shielding and wind breaks at *The Briars* are currently being hot-house propagated for planting next Spring. Thirty have already appeared at *The Briars*, care of a donation by our native horticultural experts, Gary & Trish Fowler, and the efforts of them and the Skilton family on 6th June with mattock, saw and spade. Therefore please take care when moving around on the property in the dark. These will add to the usefulness of the site and to the comfort of its users in all weathers. They do require watering at least weekly for the first year. Some are very, very rare species. Once the Spring planting occurs we will be requiring about 200-300 one litre "rocket-bottom" plastic bottles, complete with lids, to act as watering reservoirs for the plants. And of course some volunteers to plant them. Therefore please start hoarding these bottles at home now.

Due to the cost of Norwood House we

have looked at other alternative venues for holding our July's 30th anniversary meeting, and have settled on the Baxter Tavern. The second mail-out for VASTROC has occurred to other societies and organisations around the country. The society has applied for a grant for obtain another loan telescope aimed for our older members who may have difficulty with the size and operation of the existing instrument.

There are a few society "blue logo" windcheaters available, perfect for the colder months ahead. They are in sizes L or XL and are priced at \$20 to clear. If interested, please see the Treasurer Bob Heale or any committee member.

LIBRARY MATTERS

The library has acquired some more material that is available for borrowing. Our librarian, Kathy Stabb is more than willing to show you what is available. Members are reminded that borrowings are for a period of **one month only**, and can be reissued if necessary if you take the courtesy of phoning Kathy or any of the committee members who will relay the request.

Voyage Through the Universe: Galaxies. This member of the excellent Time-Life series of books continues the tradition of up-to-date information and high quality images, and focuses on galaxy formation from the earliest moments of the Universe to the types of galaxies we see today.

A Discovery Guide to the Night Sky by Brian Jones. Aimed at our younger members and other beginners, this book gives a brief coverage of most astronomy topics related to the night sky and includes good self-explanatory diagrams, background and colourful photography.

Moving a Rocket, a Sub and London Bridge by David Paige. This book is aimed at our younger members and details the above engineering projects, including the magnificent Saturn V rocket used to put men on the Moon, and explaining how they transported it from assembly to launch.

SPECIAL DONATION TO THE LIBRARY

Special thanks to a philanthropic relative of Meredith Falconer who has an active interest in matters astronomical (including meteorites) and has donated some astronomy books and magazines to the Society. David Girling is currently reviewing these. This is her second such kind donation, with a similar one being made in 1996.

EPOCH 2000 ARRIVAL

Which Society member is rumoured to be going (or rather has gone) for a "Millennium baby"? Stay tuned to see if the skillful planning exercise and sacrifice of observing time will make it for a 1/1/2000 arrival. Maybe members could suggest a name, such as Aster, Mira, Tirion or a constellation perhaps.

JUST FOR STARTERS

LEAKY PLANETS?

The gas giants - Saturn, Jupiter, Uranus and Neptune - all contain what is thought to be a solid core that is enveloped by various gaseous elements and compounds. Do these planets lose some of their gas into outer space?

In short, all the planets do indeed lose their gas to outer space since the molecules that form their atmospheres have an inherent velocity at a certain temperature. If the direction of a molecule is away from the gravitational pull of a planet, then if the molecule has sufficiently high speed between collisions with other molecules, it can reach escape velocity and hence disappear into space forever. The problem of calculating how much leakage occurs is one of classical chemical thermodynamics, involving not just the strength of the planet's gravitational pull but also its temperature profile with depth in the atmosphere and the mean time between collisions as well as the probability of forming a compound if a collision permits. This latter factor drops exponentially as temperature drops.

Therefore the colder the atmosphere and larger the planet, the less likelihood there is of a given sized molecule escaping the gravitational grip of the planet. Therefore on the

relatively small and warm Earth, the lighter gases of hydrogen and helium are extremely rare because they have mostly escaped into space already (unless in the former case they were able to react to form a chemical compound e.g. water). On the outer, larger and colder planets, they will be correspondingly more concentrated, however, over billions of years gas will continue to escape, though the rate of escape will decrease with time.

There is also another factor to consider. Over time material is continually falling *inwards* to a planet from outer space, replenishing loss. This includes comets, meteoroids, cosmic dust, material ejected from the Sun etc. that are drawn in by the planet's gravitational field.

IN THE NEWS

NEW BRIGHT NOVA

A new star visible to the naked eye appeared in the early evening on 22nd May when a nova erupted in the constellation of Vela. An eruption of the nova Eta Carina is shown elsewhere in this edition. It was magnitude 3.1 at the time of discovery, or equivalent to the brightness of the fifth star of the Southern Cross. It will fade over the coming months and some members will monitor it by measuring by eye its brightness on clear evenings. If you're interested in more details, or maybe on how to go about measuring this variable star yourself at home, please see Bruce Tregaskis. A nova this bright occurs on average about once every 50 years. The epoch 2000 coordinates for this one are RA 10h44m49.5s, Dec -52d25m35s and its position is about 3 widths of the Southern Cross to the right (West) of it in an extended line from beta to delta Crucis (the 2nd and 4th brightest stars in the Southern Cross). This nova subsequently brightened further to reach magnitude 2.9 before starting to fade. Member Martin Rudd captured the nova on its rise in brightness prior to its discovery. See the feature article in this edition for first-hand details.

IT CAME FROM THE DEEP

If you recall in 1996 NASA scientists announced the discovery of micro

fossils in a meteorite originating on Mars and found in Antarctica. Much controversy has raged over this pronouncement of Martian life, particularly since the size of the fossils was truly minuscule, much smaller than anything found on Earth so far. The operative words are "so far".



The nanobes - up close and personal. Are they living entities, or just inert chemicals?

Now microscopic filamentary structures have been discovered during oil exploration in sandstone buried 3 kilometres beneath the seabed off Western Australia. These appear to be the smallest organisms ever discovered on Earth. Queensland geologists are referring to the structures as "nanobes". These nanobes are a mere 20 to 150 nanometres in diameter, and it is still not absolutely certain that they are alive. In comparison, currently the smallest known bacteria range in size from 150 to 200 nanometres.

If they are shown to have been alive, this would provide evidence for the authenticity of the Martian meteorite fossils, which were 20 nanometres across. The subsea find was in an area of the Earth's crust that is at 150 degrees Celsius. Currently life has never been found on Earth in environments above 113 Celsius.

Intriguingly, when the nanobes were brought to the surface and exposed to room temperature they appeared to grow under the microscope and when placed in an electron microscope they actually moved away from the electron beam. Finally they gave positive results in three different DNA tests. Further work is being done to try and sequence any DNA, if it exists, and hence demonstrate if we have unearthed a new life form.

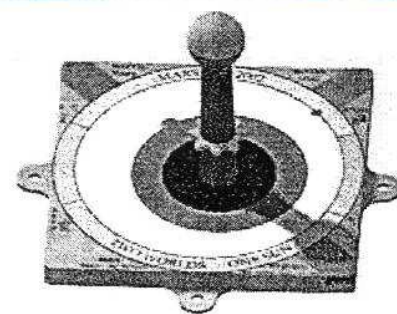
SUNDIAL ON MARS

The 2001 Mars Surveyor craft will carry a lander that will place a sundial onto the surface of Mars in January 2002. NASA intends to beam

live images of the 8cm x 8cm square sundial back to Earth and (where else) straight onto the Internet. In this way, anyone around the world will be able to tell the local time on Mars directly. The design of the sundial arose from a competition to design such an instrument. The sundial will be suitably coloured in order to calibrate the landing craft's colour camera when on the surface of Mars. Around its base is engraved a message that says "We sent this craft in peace to learn about Mars' past and about our future. To those who visit here, we wish a safe journey and the joy of discovery." The dial is labelled "Mars 2002 - Two Worlds, One Sun."

LIVING OFF MARS

NASA hopes to succeed in extracting oxygen from the Martian atmosphere. The idea is to use the resources on Mars to reduce the amount of material that needs to accompany a human mission. Producing oxygen using materials readily available on Mars is an important step toward reducing the costs and risks of an eventual human mission to Mars. A test of the technology will be aboard the Mars Surveyor 2001 Lander, scheduled to launch April 10, 2001, and land on Mars on January 22, 2002. The experiment will test the feasibility of using the thin Martian atmosphere to produce oxygen for breathing air and propellants. Propellants created on Mars could eventually be used to send samples and astronauts back to Earth.



The sundial soon to be placed on the Red Planet and visible on the internet.

The technique selectively absorbs carbon dioxide from the cold (-75 degrees Celsius) Martian atmosphere and converts it to oxygen using a thin ceramic disk made of catalytic zirconia.

FEATURE

OUR MAN SNAPS NOVA V382 VEL BEFORE ITS DISCOVERY!

{Member Martin Rudd's name has now been read around the world in the astronomical community after a chance encounter with a nova in our southern skies at The Briars. He tells the exciting story of his serendipitous pre-discovery}.

It had been organised. Those crazy guys who go meteor observing were going to meet at about 12:30am

Saturday morning (22nd May) at *The Briars* in Mt. Martha, where the ASF observing site is situated. Once there, we lay in banana lounges whilst wrapped in up to four pairs of socks, five pairs of tracksuit pants, copious layers of T-shirts and jumpers and finally a beanie on top to keep the noggin warm.

Oh, and can't forget the sleeping bag for that extra comfort and warmth and, believe me, at three in the morning when the thermometer reads four degrees, and there are still two hours of observing ahead, wearing all those clothes makes good sense. All this so that we could observe meteors and possibly the odd fireball (a meteor that is brighter than magnitude -3) in relative comfort and without freezing to death.

Our usual observing group, as it was on the Saturday morning, consisted of Roger Vodicka, Adam Marsh, David Girling and myself and we were all there for a typical night of story telling, jokes and meteors.

Ever since I took some great shots during our trip last November to Woomera to observe the Leonid meteor shower, I have been taking my camera with me to each observing session that we have.

Whilst meteor observing I've been



Member Martin Rudd, minus his bulky meteor observing outfit layers, justifiably proud of his pre-discovery photo of the nova, and mention in IAU circular #7184.

setting up the camera to take time exposures of a particular part of the sky for up to one hour's duration in the hope of catching meteors on film, and recently I have had some great luck.

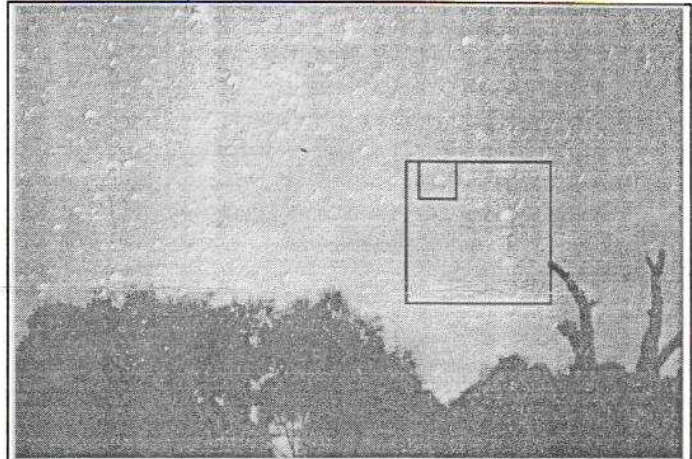
I arrived late Saturday morning at about 1:30am as I had been working on a Haig mount (a manually operated star tracking camera mount) to get it ready for trialling for that morning. Overall the morning went quite well. I took four photographs with the camera on the Haig mount and

numerous other photographs with the camera on the regular tripod, all of various regions of the sky. I did this whilst the other guys clocked up some more observation hours. By the end of the night I even managed to get two hours of observing in myself.

A few days later I arrived home from work to find a message on my answering machine from an excited David Girling. He stated that a nova had been discovered on Saturday night in the Carina region of the sky and that he had remembered that I had taken some photos of that region. He suggested that I get the film developed ASAP as I may have been lucky enough to have captured the nova on film, before its official discovery.

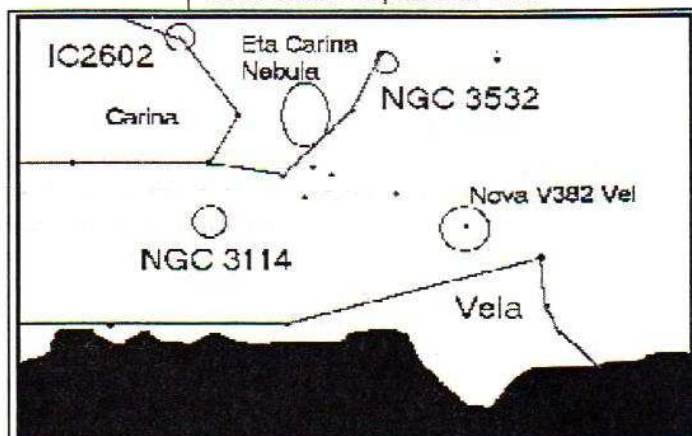
The first thing I did was refer to my star atlas to find out where in the sky Carina was, as I'm not too crash hot at knowing my constellations yet. I found that the constellation of Carina was next to Crux (the Southern Cross), a region of the sky which I knew I had been photographing. I had the film developed the next day.

After collecting the photos, I went home and jumped on the internet where I found a suitable nova location chart. I then drove to Adam Marsh's where we searched the photos for any sign of the nova. To my initial disappointment, the most promising photograph which contained part of the Crux-Carina region of the sky missed out on having the nova on it by a whisker. Adam then spotted another



Martin's pre-discovery photograph of Nova V382 Vel. The nova is enclosed within the smaller square. The larger square is expanded to give the accompanying "zoom-in" photo. Five minute exposure on Kodak Gold Flexiclear 400 film using a 28mm camera lens on May 21.715.

photograph that I had taken which possibly contained part of the Carina-Vela region but we were unable to determine the exact orientation of the sky in the photo, and therefore, identifying the exact location of the nova became impossible. I left



Explanation of photo above, indicating main constellations and objects in the field of view. The nova is circled in this schematic which includes The Briars horizon for reference.

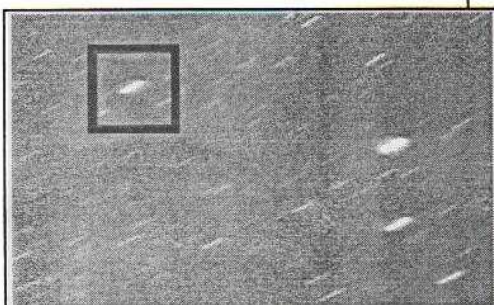
Adams's feeling very disappointed. The photos were so close.

Determined though as I was to possibly be one of the first people to have photographically recorded the nova, I

spent until the early hours of the morning trying to identify the exact orientation of the sky in the photograph that contained the Carina-Vela region. Eventually, I successfully managed to do this. Comparing a nova location chart with the photograph, the final location of the nova became quite apparent. To my delight, the photo did in fact contain the nova, which was now officially named Nova V382 Vel.

Two nights later I rang Bruce Sumner at the ASV who was delighted to hear that I had what was apparently a pre-discovery photograph of the nova. The next night I received an email from the IAU (International Astronomical Union) confirming that the photograph did contain Nova V382 Vel, taken 14 hours before its actual discovery by Peter Williams from Heathcote at 7:30pm Saturday evening. Thanks to David Girling and Adam Marsh for their assistance in this photographic discovery and to Bruce Sumner for its confirmation.

The photo containing Nova V382 Vel was taken using a Minolta SLR (SRT100) camera with a 50mm lens set at f1.4. The film used was Kodak Gold Flexiclear 400 film exposed for five minutes. The camera was mounted on a tripod. The photograph was supposed to be just of the ASF caravan with a starscape in the background. No big deal!



Expanded view of the larger square in the previous wide-field photo. The nova prior to its visual discovery is enclosed in the square. Stars are trailed due to the time exposure taken for this photograph. Magnitude of the nova was estimated as 3.6 from comparison with phi Vel and pi Cen.

WHAT IS A NOVA?

A nova is an explosive outburst in a binary star system which consists of a red giant and a white dwarf. Hydrogen gas from the red giant is drawn by gravity onto and about the white dwarf.

Over hundreds and thousands of years the captured materials grow hotter and hotter until enough material has accumulated to trigger a thermonuclear detonation. This massive explosion does not disrupt the binary star system but leads the white dwarf star to brighten by as much as 10 magnitudes and remain this bright for several days before slowly fading again. The progenitor of Nova V382 Vel is believed to have been a magnitude 16.5 star reaching a maximum of 2.9.

Martin Rudd

BOOK REVIEW - THE FACE OF THE MOON - A DESCRIPTIVE GUIDE

By Dr. Joseph Cohen, 263 Glen Eira Rd, North Caulfield 3161, fax 9532 9555
(Cost \$25 + \$6.50 P&H Cheque, VISA, M/C or Bankcard)

Something odd has happened to me. It's a crystal clear night, the moon is out, and I'm not moaning about it. In fact, I'm looking at the moon and having an absorbing time. All thanks to this gem of a book.

I bought "*The Face of the Moon*" after reading Jonathan Nally's glowing review in *Sky and Space*. The book only has 70 pages, is spiral bound, and has 16 hand drawn maps. It doesn't look anywhere as good as the other two guide books I own, and it doesn't have the detail of Rukl's "*Atlas of the Moon*", but it does the job better than all of them.

The book is well thought out, with Dr.Cohen breaking the areas up into The Eastern Seas, The Copernicus Region, The Western Seas, The Northern Continent, The Southern Peninsula and the Great Southern Peninsula. The areas are further logically subdivided. Thus, for example, The Eastern Seas chapter addresses Mare Nectaris, Mare Crisium, Mare Foecunditatis and Mare Tranquillitatis. Each sea then has its major features described in relation to certain aspects, namely the Floor - N, W, S & E and the Coast and Environs - N, W, S, & E.

The effect of his logical layout is to make it easy to make sense of lunar

features. Using my other books, the features would all become a mish-mash in my mind. To my embarrassment, until this book came along, I could only identify a couple of seas and 10 or so craters on the moon, despite years of observation.

The descriptions in the book are excellent. I am constantly amazed as he points out features which I must have seen a hundred times, but never noticed. For example, I never really noticed Mare Spumans and Mare Undarum before I read this book. Another example is the area around Tycho which has always driven me batty, given all the craters piled nearly on top of each other. I was amazed at how simple it was to make sense of this area, once Dr.Cohen pointed to a "Southern Cross" of four craters with Tycho at the top point and Clavius at the bottom.

The maps are not the detailed, near photographic representations that are used in other books. Rather, they are more akin to a street directory, which makes them less cluttered and far easier to use. South is at the top of the page, and West is on the right of the S-N line. This made the maps perfect for me, because I use an Amici prism. However, reflector owners will find themselves having to turn the maps upside down, as they currently do with the *Sky and Telescope* maps of the moon.

I view "*The Face of the Moon*" as the moon map equivalent to *Norton's* or *Sky Atlas 2000*, in the same way that Rukl's "*Atlas of the Moon*" is the moon map equivalent of *Uranometria* or *Millennium*. In my opinion, *The Face of the Moon* is the must-have moon guide, which enjoyably sets up the foundations for more advanced lunar observation, using an atlas such as Rukl's.

Renato Alessio

ASF ON THE WEB

The Society's internet site listed on the front page of *Scorpius* is the front door to a few other related sites that our members have on the World Wide Web. The vision is to have an up-front, single "umbrella" site that contains static information about the ASF that changes extremely rarely, and

this then branches off to other supplementary sites or sites maintained by some of our members.

John Cleverdon has offered to be our "Web Master" and is in the process of managing this data, with assistance from Peter Lowe. It is important to remember that we do indeed attract members via our internet presence, and as such we need to be consistent and up-to-date in our displayed info, and above all be interesting.

Some of these "branch" sites include:

<http://www.cdi.com.au/~johnc/asf.htm>

This site, maintained by John, contains additional dynamic information on the Society, and is linked to the main Home Page. Its content includes:

- * A map showing where the ASF is located with respect to Melbourne, Victoria, and Australia.
- * Dates of ASF viewing nights, social events, etc.
- * Photos of ASF activities (contributions welcome).
- * Information on VASTROC, coming up in October.
- * A brief history of the Society.
- * Details of astronomical events coming up (eg. eclipses, meteor showers, conjunctions).
- * Links to other astronomical Web sites.

<http://www.syberspace.com.au>

This satellite observing site, managed by Ian Porter, contains information on observing satellites, the Space Shuttle, and Mir. There is also another ASF-related photo gallery at <http://www.syberspace.com.au/asf/gallery.html>.

<http://axis.jeack.com.au/~armarsh/>

This meteor observing site covers the ASF-ASV meteor observing group. There is information on observing and recording meteors.

<http://www.wingdriver.com.au/~richard/astro.html>

This site is by Richard Pollard, and contains information on the monthly public viewing nights at *The Briars*.

John Cleverdon, Web Master, by email on: johnc@cdi.com.au

ETA CAR BRIGHTENS

Peter Lowe has reported much interest on the internet about the

famous Variable Star, *Eta Carinae* in the Southern sky. It is increasing in optical brightness at an unusual rate and has been brightening at a rate of -0.3 magnitude per year, being currently around magnitude 5.1, which is readily visible to the naked eye on moonless nights, or in 7x50 binoculars it shows a distinctive orange-red tinge. The last time *Eta Carinae* was this bright was in 1843 when it erupted violently and became the brightest star in the sky. Members should consider estimating its brightness or photographing it at every opportunity, just in case it erupts spectacularly again. Comparison charts are available upon request, and the Library has excellent guidelines on how to observe Variable Stars.

RED RAINBOW

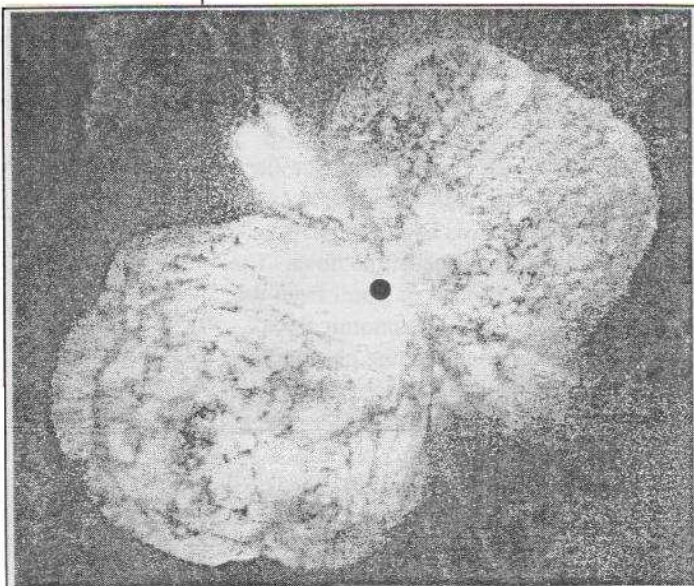
A red rainbow was observed in Frankston by Peter Skilton on 18th May at about 7:15am, just as the Sun was about to rise. The sunrise was very red and the rainbow was located high in the sky (about 45 degrees above the horizon) such that you could unusually see a full semi-circle. It was distinctly red, with the only other trace of colour being a faint yellow on the inside of the bow. There were no secondary superluminous bows inside the main rainbow. The conditions across the Melbourne metropolitan area were fine at the time, with no rain activity, indicating the bow was probably caused by high altitude moisture or small ice particles.

SCIENCE AWARDS

This year's science related awards and activities have appeared and younger members or their parents and teachers may find the following of interest:

- *Professional Work Experience in*

Astronomy for Teachers - The CSIRO Parkes Radiotelescope provides 2 weeks free room and board to about 6 school teachers each year. Details from Officer in Charge, CSIRO ATNF Parkes Observatory, PO Box 276, Parkes



Hubble space telescope image of Eta Carina, 7500 light years away, showing two expanding lobes following a thermonuclear explosion of material on the star in 1843 (hidden in the bright region in the middle between the expanding spheres of material and marked with an illustrative spot). The star survived this cataclysm, and another explosion is very highly likely in the near future.

NSW 2870 or email parkes@atnf.csiro.au.

- *Work Experience in Astronomy for Students* - The Parkes Radiotelescope gives a week's free room and board to a dozen students each year for any age group. Contact details are as above.
- *Space Endeavour Competition* - closes 28th June, with categories for primary school, years 7-10 and years 11-12. One winner and two runners up in each category. Winners travel to Woomera in October to witness a rocket launch. Details from Trish Grice, Committee Administrator, Engineering House, 11 National Circuit, Barton ACT 2600.
- *Siemens Science Experience* - 3 days of hands-on science in Universities in each State. Closes 6th Sep. Cost is \$55 and only Year 9 pupils in 1999 accepted. Contact Don Sinclair, National Director, The Siemens Science Experience,

PO Box 447, Richmond Vic 3121
or email
don.sinclair@siemens.com.au.

ZIPPY LITTLE ECLIPSE

This year's 11th August total eclipse of the Sun, visible in most of Europe, will be the most watched eclipse in history. All hotels in the UK, and especially in the Cornwall area have reportedly



been booked out for a couple of years already. Now on offer for late arrivers is the so-called "Go-Ped". For just over \$1,000, you can get one of these scooters powered by a lawn mower engine and thereby zip through the anticipated gridlock traffic jam. The idea is you then watch the eclipse in the south of England, hop on the Go-Ped and zip home again in time for tea.

BALLAARAT WINTER FESTIVAL

Our highly sociable friends at the Ballarat Astro Society look like having an astro festival that will run over the weekend of 17/18th July, including tours of their observatory near Sovereign Hill, talks on telescope making and solar energy, a trading table for anyone to swap items of interest, and some possible arts events and wine tastings. Those interested should phone the BAS Secretary, John Zeggars on 03 5344 8409 for more details.

AURORA COMPETITION

Dover High School in Tasmania is running a competition until end of August to provide the best photograph of the Aurora Australis southern lights that occur in the 12 months up until then. First prize is a flight for two to Antarctica, with other monthly prizes on offer. So turn your cameras skywards and compose a lasting image and you could win. Entry forms are available from *Sky & Space* magazine.

ANOTHER ECLIPSE TOUR

With the August eclipse of the Sun looming, the Australian Museum is offering another tour covering not

only astronomy but also geological features of the Canary Islands, France and Turkey. Martin George from Launceston Planetarium will lead the astronomy aspects and a geologist and vulcanologist will cover other aspects. For more information phone 02 9264 3366.

JEFF 1, ASV 0?

Reports in from a few members indicate one of the other Victorian astronomy societies, the ASV, recently attempted to champion on television the cause of light pollution on the new CityLink tollway development, especially in connection with the upward pointing lighting on the new Bolte bridge pylons. They succeeded in getting on most TV stations news bulletins. However, they seemed to take the wrong approach for this worthy cause and instead ended up drawing the pithy wrath of our State's Premier, Jeff Kennett, who unfortunately brushed them off by allegedly giving them the appearance of being light-fearing cranks. Different approach next time maybe?

FROM AROUND THE PLANET

Leading Astronomical Societies 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 collection.

Astron. Assoc. Queensland (Old)

- Report on the annular eclipse of 16th Feb this year, with members opting to sit on the central line and see a perfect "ring" rather than time Baily's Beads at the extremes of the shadow path. Pictures given of Rob McNaught and the simple equipment he uses for his "all sky" fireball detection and tracking network, perched atop a home water tank stand.

Ballarat Astron. Soc. (Vic) - The society is participating in the Ballarat Winter Festival of art, food and technology, and invites other societies to an astro trading table (contact Judith on 5341 7795 if keen). Report on a visit to the private Arkaroola Observatory and Sundial Park in the Flinders Ranges in South Australia,

which you can visit on the internet at <http://www.arkaroola.on.net>. Includes pictures of various sundials on this site.

Astron. Soc. Victoria (Vic) - They are getting a replacement editor. Some members from the Astro Society of Albury-Wodongo captured a magnitude 5.2 graze on video camera, seeing 34 events. Still conducting limited public nights at the Old Melbourne Observatory, but these are now controlled and facilitated by government employees from the Royal Botanic Gardens. Article on chasing total solar eclipses over the years.

Astron. Soc. Tasmania (Tas) -

The society enjoys access to the University of Tasmania's Mt. Canopus Observatory 16 inch telescope, and have moved their own 8 inch telescope and observing shed from Sandy Bay to this location. In return they pay the maintenance costs for the 16 inch, a good trade. They continue with adult education classes and have had a couple of public viewing nights this year. Membership is steady at 97, with about 20 attending each meeting due to geographic dispersion. Report on partial solar eclipse on 16th Feb from Hobart and Launceston. Detailed article on T Pyxidis and the current understanding of this recurrent nova. Many aurorae have been seen this year in southern areas of Tasmania, and the society contributes in this area to international research projects.

FINAL PRONOUNCEMENT - ALBEDO

The planets, asteroids and other debris that litter our Solar System are visible to us because they reflect the light from the Sun that hits them. This reflected light then travels to Earth where we observe it. A perfectly reflecting object (essentially with a mirror surface) would reflect 100% of the incident light on it. This is said to have an albedo of one, pronounced "Al-bee-doe". In contrast, a perfectly black body in space would absorb all light falling on it, remaining totally invisible. It would have an albedo of zero. Albedo therefore ranges between zero and one by definition.

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.

30th ANNIVERSARY OF FIRST MAN ON THE MOON

"I believe that this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the Moon and returning him safely to the Earth. We choose to go to the Moon in this decade, and to do the other things, not because they are easy, but because they are hard. Because that goal will serve to organise and measure the best of our energies and skills, because that challenge is one we're willing to accept, one we are unwilling to postpone and one we intend to win." So said the US President, John F. Kennedy in May 1961 in the very midst of the cold war with the Soviet Union, the superpower that boasted the leading space program at the start of that decade. Just over 8 years later, on July 16, 1969, a powerful Saturn V rocket lifted off from Cape Kennedy in perfect weather conditions with three astronauts on board (Michael Collins, Edwin Eugene "Buzz" Aldrin and Neil Aldin Armstrong), over a million watchers on the ground at the Cape, and nearly a quarter of Earth's population glued to their TV sets and radios. The launch occurred on schedule, to the nearest second. After nearly two orbits of the Earth and careful checking of all systems, the conical shaped command module, Columbia, attached to the spider-like lunar module, named Eagle, powered its way to the distant Moon at over 45,000 km/hr initially.

After a flight lasting 3 days, the spacecraft's main engine was fired to slow it into lunar orbit, and the lunar module was separated from the command module. Armstrong noted that *"the view of the Moon is really spectacular. It's a view worth the price of the trip."* The lunar module was landed by manual control of the engines because the automated systems became overloaded and were steering the craft at the last moment towards a crater about the size of a football field. Armstrong skillfully landed the craft with 20 seconds of spare fuel left to burn. The craft had landed over 6 kilometres away from the intended landing site on the south western edge of the Sea of Tranquillity, and its arrival was heralded with the famous words *"Houston, Tranquillity Base here. The Eagle has landed."*

If **undeliverable**, please return to
Astronomical Society of Frankston Inc.,
PO Box 596, Frankston, Victoria 3199.



ASF 30th Anniversary Dinner at Baxter Tavern,
on 21st July 1999.

Both Photos - By John Cleverdon

Two hours later, after securing the craft, the hatch was opened and 38 year-old Neil Armstrong gingerly descended the ladder to the lunar surface. Placing his left foot on the talcum powder-like surface, Armstrong proclaimed the immortal words *"That's one small step for a man, one giant leap for mankind."* Almost immediately he scooped up a bag full of lunar soil and stowed it in his pocket just in case an emergency evacuation became necessary. Nineteen minutes later, Aldrin descended the ladder to assist. After two hours of moon walking, collecting specimens and setting up scientific equipment on the Moon, the astronauts slept for seven hours before preparing to leave the surface. The departure and return to Earth were uneventful, with the adventurers splashing down on July 24 and being whisked into quarantine for three weeks to prevent any possible lunar organisms from contaminating the Earth. Their footprints are still present on the Moon today and will remain in pristine condition for thousands of millennia to come until micrometeorite impacts eventually crater them beyond recognition. It is interesting to note that the lunar landings were actually relayed, because of the signal quality, through NASA's tracking station in Canberra (Tidbinbilla), then sent via *Intelsat* satellite to Houston, Texas, for broadcasting to the waiting world. The Apollo 11 landing occurred on July 20, 1969 at 10:56pm USA Eastern Daylight time. This corresponded in Australia to being the afternoon of Monday, July 21, 1969 at 1:56pm Australian Eastern Standard Time which saw many school children at home that day.

Kindly reproduced by the efforts of Ken Bryant, and collated/posted by Shari & Ian Porter.