



SCORPIUS

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

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(May - Jun)

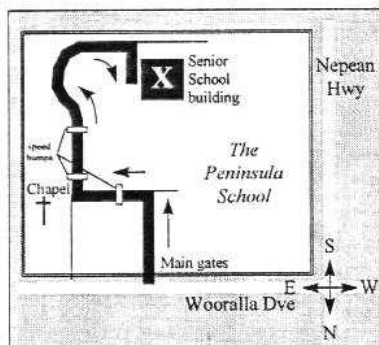
The Astronomical Society of Frankston was founded in 1969 with the aim of fostering the study of Astronomy by amateurs and promoting the hobby of amateur Astronomy to the general public. The Society holds a General Meeting each month for the exchange of ideas and information. Regular observing nights, 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

Ian Porter (0414) 308 072

Treasurer

Bob Heale (03) 9787 1748

Secretary & Loan Telescope

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 19th May '99

Session 1: Informal chat and "meet the committee" session and a chance to air your ideas about the ASF.

Session 2: Video on *The Mir Cosmonauts*.

Session 3: Loan telescope outside if weather is clear.

Wed 16th Jun '99

Session 1: To be arranged.

Session 2: Video on *To the Moon and Beyond*.

Session 3: Loan telescope outside if weather is clear.

Wed 21st Jul '99

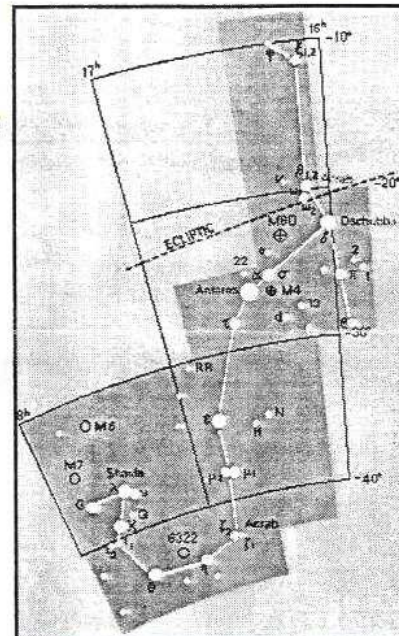
Session 1: Peter Skilton will speak on *The 30th anniversary of Apollo 11 and Us - The Eagle has Landed*.

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

Session 3: Loan telescope outside if weather is clear.

Being our 30th anniversary, a special tea-break will be arranged - so don't miss out.

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 arranged.

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

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 May 15, Jun 12/19, 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 0414 308 072 before attending. Follow the signs at *The Briars* from the Visitor Centre (Melways 145/F12). 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 4th Jun and 2nd Jul all at 8pm. Assistants are required. Please contact Richard on (0419) 100 802.
- Pines Forest Primary School will have a viewing night on Wed 26th May at 6:45pm for a combined "all-grades" group of 150 pupils or more. Needless to say, but help is required for telescopes on this one, particularly if the parents turn up as well. If you live near this area, even if you've never tried a school night with us before, why not consider it. Melways 99/J8, Forest Drive, Frankston North.

Phenomenal Events:

- Predictions for asteroid occultations of background stars are available, as are predictions for eclipses of Jupiter's moons for the 1999/2000 apparition of Jupiter. If you're interested in doing this work for NASA/JPL please contact the editor for starting details.
- The Red Planet, Mars, was at opposition on 25th Apr at a brightness of magnitude -1.7. It is a distinctly red colour to the naked eye, and is rising in the Eastern sky around sunset. North polar ice caps and dark markings on the surface of the planet are visible in telescopes at high magnification at the moment (ca. x 200), and the planet is about the apparent diameter of Venus currently.
- **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 neighbouring star, the dim red dwarf Proxima Centauri? Well, we are hoping to have a "Proxima Centauri hunt" at a members' night one Saturday this year. A volunteer is sought to arrange it.

Talk, Talk, Talk:

- Members were amongst about 180 who attended the talk by world renowned SETI scientist, Dr. Seth Shostak at Monash Uni on the evening of 25th April. This talk, arranged as a public outreach science initiative of Monash University in Clayton, was announced at the March meeting. Seth gave a very entertaining and well illustrated talk on the Search for Extraterrestrial Intelligence and the initiatives made so far. In short, we've heard nothing yet from ET, but we're listening. If you missed the talk, the material is covered in his new book which is now available from book stores, called *Sharing the Universe - The Quest for Extraterrestrial Life*.
- Those few who saw this in *The Age*

newspaper beforehand, went to see the Museum of Victoria present a talk by Dr. Bryan Gaensler, 1999 Young Australian of the Year and astronomer, at the State Library in Melbourne. This was part of a whirlwind visit to Melbourne. The talk was attended by about 80 people, and was on *Exploding Stars and Smoke Rings*, covering basically the life cycle of stars from nebulae and then back to nebulae at the end of their lives. It was well endowed with colour transparencies and the speaker was very articulate. It was related that during the filming of the movie *Contact*, starring Jodie Foster, that Bryan was at the controls of the *Very Large Array* telescope in New Mexico. The film's director wanted to point it one way in the sky, and Bryan's long-awaited precious observing period was viewing the heavens in the opposite direction. Guess who won. We are now on the Museum's mailing list so future talks like this should be able to be notified well in advance.

- Professor Jocelyn Bell-Burnell from the Open University in London, discoverer of Pulsars (or rotating neutron stars) will be in Melbourne on Thur 13th May, giving a public lecture at 8pm at Melbourne University in the Public Lecture Theatre, Old Arts Building (Melways 75A/G6). The topic is *Cosmic Explosions and the Creation of the Elements*. The talk is free, and seating is first-come, first-served. The Nobel Prize for this discovery went to Jocelyn's supervisor (who protested this situation) and another worker in the field. This talk is not to be missed.

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. Set aside Sat 24th Jul and Sat 31st Jul in your diary now. One of these dates will most likely be a large afternoon or evening ASF gathering at Norwood House in Mt.Eliza to celebrate our anniversary over a meal and speakers, and members and friends are invited. More details will be forthcoming soon,

but transport might be possible for those otherwise unable to attend due to lack of it.

- There must be a **Working Bee** at *The Briars* to remove rubble from the site. The council who slashes our block is refusing to cut the grass as there are too many stones, rocks and solid clumps, bits of branches etc. on the site, and they are supposedly damaging their cutting blades. They clearly set their blades very low as we've never had any problems in the past with hand mowers. Therefore it is essential that we have an "EMU BOB" gathering as soon as possible to remove this debris and put it on a trailer for removal. When the wet weather comes this will become very difficult to do otherwise. Therefore please come along on Sunday 23rd May at 2pm to help form a police-line and pick up the bits and pieces. Bring gloves, a comfy chair, and any other tools you feel may be of help. The barbecue will be fired up if you wish to bring along food and make a social afternoon of the gathering, even if you just wish to sit back and observe the emus.
- The Equinox dinner on 19th Mar at The Dava hotel was not overly well attended this year, with weather and other Friday night commitments being the likely cause. The Dava has also changed management and the quality and selection range of food available has seemingly dropped considerably.
- The Victorian State Government recently opened the refurbished Old Melbourne Observatory within the grounds of the Botanic Gardens, across the road from the Shrine of Remembrance. This is part of the *Observatory Gate* project and the restoration and lick of heritage colours paint have done marvels for the outside appearance of the former domes, even though they sport small instruments inside. Sources however indicate the operation of the dome is now problematic (painted closed maybe?) The site has a modern looking open café, bookshop and conference-type centre which is most pleasant for a cup of coffee. After checking out the bookshop I'd say they stock a lot of botanical books, but their range on the

subject of astronomy is very poor. Worth a look nevertheless, followed by a stroll through the wonderful Botanical Gardens.

YOUR SOCIETY

NEW MEMBERS

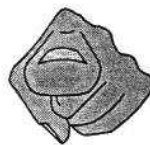
Welcome to the following new Society members:

Carolyn & Paul Arnold
A & S Baker
J & B Knopsmacher
Adam Marsh
Fiona Saunders
Zetter family

The ASF is one of the largest groups in Australasia. Membership is currently at 130. 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.



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? If you found it, please drop it off to the Library or phone the editor. 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

March's meeting was chaired by the President and saw 53 present on a temperate, clear night, including a number of visitors. Society activity during the month was reported, then

Bob Heale presented *Sky for the Month*, concentrating on a day time occultation of Mercury by the Moon, with appropriate observer warnings about the Sun being nearby, and handing out sky charts for the month. Gerry Holt fixed one of the library cupboards, vandalised by school children, and Kathy Stabb received many new books for the library, including latest editions for both advanced and beginner astronomers. Ian Porter presented *What Goes Up*, reporting on numerous rocket launches recently, delays in the Shuttle schedule, gyro failures on the Hubble Space Telescope, and that the Starshine satellite is now awaiting launch (if you recall, Ian's school students polished a mirror for the outside of Starshine for NASA). Richard Pollard told about the latest space happenings on the internet and gave a brief rundown on what the committee is currently up to, including an offer of thanks to John Cleverdon and Peter Lowe for revamping our web pages. David Girling reported from the Meteor Observing section, and handed out report forms, notifying of the pending all-nighter at *The Briars*. John Cleverdon brought along two local papers from the peninsula, and we made front page, leading story for two weeks. Six top priority asteroid occultations were due before next meeting, including a naked eye one, and so star charts and observer instructions for beginners were handed out.

Following the tea break, a small number of members and visitors moved outside to view the heavens through the loan telescope, and the remainder listened to Barry Adcock of the BAS, ASV and ASA give an all-rounder talk on Mars and its close apparition in April/May. Barry brought along posters of excellent photos he had captured of Mars over the years, and gave an insightful demo of the effects of using coloured filters in your eyepiece to enhance certain details of Mars, such as albedo markings and atmospheric details, by employing a second slide projector, a diffraction grating and several Kodak blue and red filters. Following a lively question time, since Barry has never seen "canals" on Mars himself, he was presented with an appropriate alcoholic aid as thanks. The meeting closed at 10:15pm.

April's meeting was chaired by the President and saw 51 in attendance on a chilly evening, with a theme of "light". This number included a few faces we haven't seen for some time, and some visitors. John Cleverdon reported seeing comet Lee, and predicted sky positions were handed out. *Sky for the Month* was given by the Treasurer, Bob Heale, with emphasis naturally on Mars, with handouts being issued. Our Vice-President, Ian Porter, delivered the *What Goes Up*, and showed pictures of Ukrainian rocket launches from mobile former oil platforms that had been towed to be near the Earth's equator - a very imaginative usage. There is also continued uncertainty as to whether the Russian *Mir* spacestation will be allowed to crash back to Earth (it would undoubtedly have received some AFL sponsorship for the recent football advertisements on our television featuring a *Mir* cosmonaut in orbit being interviewed). The Secretary, Richard Pollard, reported from the internet on yet another solar system discovery of new planets, bringing the tally to about 20 other known solar systems. Attendees were notified of the SETI talk by a visiting scientist at Monash Uni in late April, and another from the discoverer of Pulsars at Melbourne Uni in mid-May.

After tea break, half attended the talk session, a third viewed the video on Lightning and the remainder viewed the Red Planet through the telescope outside and chatted on matters astronomical. The video, whose subject matter was clearly intriguing, apparently did not track well part way through, and unfortunately no-one pointed this out to one of the operators in the next room who could have fixed this quickly if notified. Because of this, and due to requests to see it again, it will be rescreened in a few month's time, this time with more supervision.

Past President and retired physics lecturer from Monash Uni, Peter Norman, condensed what is an enormous topic, *Light*, down into a single talk, complete with illustrative drop-down spectral charts, a "tree-scope" and a home-made physical model of a single photon of light for people to see. After this quick intro to quantum mechanics and relativity, many questions were asked, ranging

from the Doppler Effect to what is beyond the observable Universe. Peter did very well as he was also double-hatting by serving the tea during the tea-break! The meeting closed at 10:25pm when members departed fully enlightened, one way or another.

Thanks to the following members who participated in one or more of the viewing nights below: Ken Bryant, John & Roger Cleverdon, Sharron Fletcher, Roger Giller, David Girling, Bob Heale, Neil Hewson, David Huby, Don Leggett, Pam Marchington, Richard Pollard, Ian Porter, Peter Skilton, Russell Thompson, Bruce Tregaskis, Trent & Greg Veitch. 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).

The Briars public night on 5th Mar saw 15 in attendance on a clear, pleasantly warm evening, capped off with a late rise of the gibbous Moon. David Huby brought his brand, spanking new, trailer-towed giant Dobsonian telescope along, but unfortunately its secondary mirror detached and fell into the tube when setting up. This was especially disappointing as it had just been purchased from a Melbourne-based establishment, and apparently was only held in place by a few spots of glue. The public nevertheless enjoyed the evening immensely and saw one or two meteors during the evening. The April Briars public night did not proceed due to it coinciding with Good Friday.

On 20th April, sixty St.Kilda Primary combined grades 4, 5 & 6 pupils and teachers visited us at Camp Manyung. Ian Porter provided the talk and impossibly overcast and drizzling conditions cleared at the right time to enable all to have a fun viewing after the talk. This enabled good views of Mars' markings and polar cap between the drizzle that swept over throughout the evening.

Sixty grade 5 & 6 pupils from St.Catherine's Primary in Lalor received a dose of *Astronomy on the Move* on 22nd April, with Richard Pollard providing the talk. Although winds at *The Briars Education Centre*

were cold, the highlights of Mars sporting definite markings and the clear appearance of new comet Lee and its readily visible fan-tail prevailed. All enjoyed the evening immensely before trotting off to a nice warm bed.

On 26th April, Richard Pollard talked to sixty ten-year olds from St.Francis of Assisi Primary at Camp Manyung. Although the day was wet, the clouds cleared sufficiently to enable viewing. Richard engrossed the audience with his talk (something which the teachers said would be impossible for this rowdy lot - well done Richard) and the telescope operators repeatedly packed away and skilfully reset up their instruments in between cloud bursts.

On 28th April, Peter Skilton talked to over ninety grade 5 and 6 pupils from St.Francis of Assisi Primary at Camp Manyung. It was a cool but clear evening with the teachers interlacing us with a possum spotting walk in the meantime, and with the talk after the telescopes. Many students seemed particularly fascinated by Black Holes.

On 6th May, Richard Pollard talked to a packed house of about 200 pupils plus students and teachers from Langwarrin Park Primary school. The skies were perfectly clear and the assembly had great views of the Red Planet, star clusters and other objects through the many gathered telescopes.

The Briars public night on 7th May was booked out and saw 45 attend under total cloud cover, in the hope of glimpsing the Red Planet for real. Visitors from the ASV also attended in the hope of a decent view of the night sky. Those who persisted were able to see Mars and alpha Centauri, but only through cloud. David Huby had his newly repaired giant telescope on his car's trailer, but the cloud cover meant it was not used. Peter Skilton talked to the members of the public present, who ranged across all ages from the young twins who fell asleep on the floor in the front row (no comments please!) to those who had had a lifelong interest in the stars spanning over half a century and who had now decided to seek out a friendly astronomy group. The questions ranged far and wide, from the simple to the deeply profound.

GOOD KARMA AT THE MEMBERS' NIGHT

Six members and four scopes ranging from 6 to 10 inches ventured out into the night on the 10th April. The night was reasonably warm, although one member was seen to be in his freezer suit (possibly just shaking out the cobwebs in preparation for winter). With some of the lights from the school camp interfering, the Vice-President politely requested them to be turned off, only to be confronted with a Hindu Priest!

It appears some kind of Hindu (or Buddhist) youth camp was using the facility. After politely deflecting requests for a "look through the scopes", with info on our school/group nights programme, the worst of the offending lights were doused.

John Cleverdon quickly found Comet Hale-Bopp, which he has been following for 3½ years and is still visible! Russell Thompson, observing for the first time after a long break, was transfixed by Omega Centauri, prompting Bob Heale to tell him to "break away" and look at something else! I think Sharron Fletcher just came along to stir us all up, as she had left her scope at home! Roger Cleverdon was again acting as a "scope taxi", I think it's time John got a bigger scope, with all that room in the back of the ambulance...

An excellent night was had by all, although the sky conditions varied through the night. Mars was showing good detail in steady seeing, with several dark surface markings, the polar cap and some curious white patches in evidence.

All members are encouraged to attend *Briars* nights, which offer a great opportunity to meet and compare notes, equipment, and generally gasbag about astronomy (or many other issues!) in a friendly atmosphere. Oh, and you can look at some cool stuff in the sky as well!

Ian Porter

SECRETARY'S JOTTINGS

We have been successful in securing a grant to purchase a

small low-light video camera suitable for mounting on a telescope for use at public and school viewing nights. The society is continuing its high profile this year in the local media, particularly in *The Independent* and *The Mail*, primarily because they can accept stories electronically - *The Standard* does not even have email facilities and merely retypes all stories sent to them on paper or fax. We are also trying in the Berwick/Cranbourne areas as well. Rates for VASTROC were set, and it seems that we nearly have sufficient speakers already, with registrations flowing in. No word yet on the Observatory and Orrery grant application. The Beginners' session at *The Briars* held in March went well, and it is likely a repeat will be given later in the year. The committee has decided that the IAU Circulars be stopped for the moment, as the information was generally received faster via the informal network of members, and tended mostly to be objects well beyond the light grasp of backyard telescopes. We now need utilities connected to the shed at *The Briars* from the feeds to the Education Centre. To start with, power and water will need to be connected. This is a final plea for any members or their friends who have expertise in this area and would be willing to help. Remember that we are willing to pay a reasonable amount. The society is checking out what native bushes and fast-growing/long-lived species are suitable for planting at *The Briars* to provide some light shielding for the Education Centre. This is unlikely to occur until Spring, with Winter almost upon us.

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.

Lost Moon: The Perilous Voyage of Apollo 13 by Jim Lovell and Jeffrey Kluger (pp 378). America launched 7 Apollo missions to land on the Moon. Six of the efforts succeeded outstandingly. One failed. This is the gripping story of that well known disaster and the heroism and initiative that brought the crippled craft and its crew of three astronauts back to Earth. Jim Lovell was the commander of this mission so you get to read what really happened, not what NASA would like you to know.

Looking for Earths: The Race to Find New Solar Systems by Alan Boss (pp 240). Scientists have long guessed that planets like Earth should be common around the other stars in the sky, and that life has arisen on many other worlds. This book tells you of the current evidence for planets and life around nearby stars to us, and leads you through the techniques used in the quest for their discovery, as written by one of the astronomers doing the searching.

Hawking and Black Holes by Paul Strathern (pp 88). This book tells the life of Stephen Hawking (author of a Brief History of Time - also in the Library) and explains in simple terms about his discoveries in the field of Black Holes and Cosmology that have changed the way we view the world and the cosmos forever.

Newton and Gravity by Paul Strathern (pp 96). This book tells the life of arguably the most influential scientist the world has ever known, who discovered the theory of gravity, the concept of force, the nature of light and introduced calculation by the method of integration.

Crick, Watson and DNA by Paul Strathern (pp 96). This book tells the story of the discovery of the fundamental building block of life; the double helix coil of DNA.

Earth Story: The Shaping of Our World by Simon Lamb and David Sington (pp 240). Ever wondered how the Earth was formed, what triggers Ice Ages, volcanism, earthquakes and

other geological events, and how oceans are born and die? This book tells all, explaining the amazing story of how our planet has got to where it is today from small particles in space, and how it became hospitable to the formation of life as we know it. This is a magnificently illustrated tale of the inner and outer workings of our world, which became a BBC series in the UK.

Ian Freeman-Wright has kindly donated some astronomy software to the Library, including *Redshift* for Windows, and *The Sky* Version 4. I'm sure Ian would be happy to give you basic driving instructions at a monthly meeting if you have a suitable computer at home.

JUST FOR STARTERS

IT'S A BIG UNIVERSE

One of the most humbling parts of starting in astronomy is coming to terms with the sheer size of the Universe - and that's just our Universe. Analogies involving common experience are best employed to convey these relative sizes. Consider the observable Universe (that is out to a distance that is receding at the speed of light and so we can theoretically see it). If we shrunk our entire Universe to the size of Australia, our Galaxy, the Milky Way, would shrink to about 20 metres across, about the size of a semi-trailer. Our humble little solar system, which we have yet to explore properly due to the vast distances involved, would shrink to well under a micron in size, about the size of a single virus particle. However, the planet Earth, containing all living creatures we are aware of, shrivels down to an infinitesimal 0.000000003 of a millimetre, or less than half a percent of the size a single hydrogen atom, the smallest atom in our Universe.

IN THE NEWS

PUT A SMILE ON YOUR FACE

Now that NASA has debunked the famous, or infamous, face or pyramids on Mars in the Cydonia region as being nothing more than a

rock formation with shadow, comes this latest revelation.



The original dour face on Mars, snapped in the 1970's by the Viking spacecraft.

The welcoming face appears in a 215 kilometres wide crater named *Galle*, and the level of Martian technology needed to create such a monument on such a large scale is clearly impressive.

The pathfinder mapping mission will continue for another 2 years (or one Martian year) and will resolve fine details on Mars down to a resolution of better than 2 metres.

MARS JAM

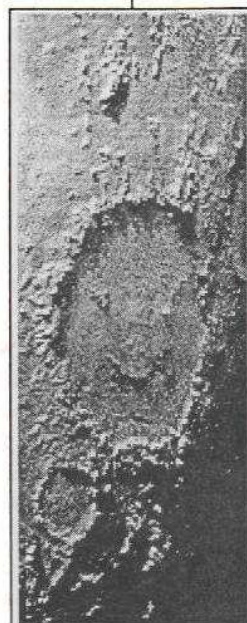
The Mars Global Surveyor spacecraft, currently in orbit about the Red Planet, has just had its main communications antennae jammed in one position, rendering it fairly ineffective at maintaining contact with Earth. This means that photos cannot be beamed back to Earth. It is currently envisaged periodically to turn the spacecraft to point the antenna to Earth to enable photos to be relayed, however, this will require some fuel usage unfortunately.

COMET DISCOVERED

A new comet, Comet Lee (official designation 1999H1) has been discovered by a member of the Sutherland Astronomical Society and is reasonably bright and well placed for observations in the evening sky over the next couple of months. It could be a great target for beginners who may only have binoculars. As it moves westward towards its July perihelion its

The *Mars Global Surveyor* spacecraft, currently in orbit around the Red Planet, has just returned this picture of a Martian happy face, one week into its mapping mission of the planet's surface.

The welcoming



Welcome to Mars, 1999 style.

highly inclined orbit has it moving towards the north. It will be lost in the NW evening twilight sky in early July. Its reappearance in the morning sky will better suit northern viewers. On its way to perihelion it will pass through the Carina/Vela star clusters, through Antlia, Pyxis, Hydra and Cancer.

SEE A GRAVITY LENS

The Chile based OGLE-2 Early Warning System sent out an alert during April of a possible gravity lens event near the tail of the constellation Scorpius. A magnitude 18.8 star (now that is very faint for backyard telescopes) was predicted to undergo gravitational lensing and in the process brighten to magnitude 9.1 on 13th Apr, which was within range of small amateur telescopes. The lensing event would last a few days only.

A lensing event occurs if one massive (possibly invisible) object comes between a distant visible object and the Earth. The massive object might be a dark star or a large planet. The massive object's gravity bends the light from the distant star around it, causing a ring or brightening effect, like looking through a magnifying glass at a light bulb filament.

The OGLE-2 project monitors the same 25 million stars in the Galactic bulge of the Milky Way and the Large and Small Magellanic Clouds each

night, and looks for any detected variation in brightness from night to night for each individual star. So far they have discovered about 50 lensing events per year. In 1999, seven events have been predicted to date. Such events occur from time to time and in rare circumstances are visible in small backyard instruments such as this time. For predictions, or to put yourself on their alert mailing list see the internet pages at <http://www.astrouw.edu.pl/~tfp/ogle/ogle2/ews/bul-05.html>.

As it turned out, the predicted event did not brighten as much as expected, however, who knows next time.

FEATURE

LEONIDS ADVENTURE

When November came around last year, like many others, I wanted to get a good look at the *Leonids* meteor shower. Ideally, I would have found somewhere in northern Victoria, but this did not prove to be practical.



John Cleverdon, going to the Murray River for the next Leonids.

On the night of the 17th, I was anxiously watching the weather. At this stage, despite patchy cloud, I was looking at spending the night at *The Briars*, and doing some deep-

sky viewing until around 2am (when the peak of activity was supposed to start). Because of the cloud, I was also ringing up friends and relatives in the Woodend-Kyneton-Lancefield area, to see what the weather was like in that area, just in case.

However, the cloud got worse, and by 9.30pm, I decided that there was nothing to be gained by staying on the Peninsula, so we set off, with both Mum and Dad. As Mum didn't want to go through Melbourne, I decided on a feature called Elephant Rock, near Upper Beaconsfield, as our viewing point. Here, the sky was fairly clear, so I got my telescope out and proceeded to do some viewing. However, the cloud gradually increased, and by 12.30am, it had started raining. As a result, I hurriedly packed the scope away, and decided to head off.

At this stage we were in touch by mobile phone with fellow member Bob Heale, who had decided to stay at *The Briars*, and John Goodall, another astronomer from Dromana, who had gone up to the Maryborough-Avoca area to try and get better weather. Although we got news that the sky was clearing up at *The Briars*, I made the decision to head north, to try and get to clearer weather north of Melbourne. Going along Wellington Rd, we almost ran over a wallaby at the side of the road. As we progressed through Melbourne (by now after 1am), the cloud began to break up, and by the

time we passed the Sunbury area, it was more or less clear.



An interesting negative image taken by Martin Rudd, showing two persistent trains of high altitude debris left over after the passage of a large Leonids meteor 15 minutes beforehand! Taken on T-Max 400 print film. The Pleiades are at top left. The train on the left was made by a magnitude -7 meteor, and that on the right by a magnitude -9 meteor (the full moon is mag -12 for comparison). Both meteors lit up the surrounding desert at Woomera.

From here, we went on to Mt. Macedon, hoping for a good view from the summit. As we neared the top, the road was crowded as if peak hour; and the good view was not to be. At the car park for the Camel's Hump, I got out, and saw that the weather was a combination of cloud, wind, and light rain - not any good for viewing. I also met a Queenslander, who had come down to Victoria for the first time, to view the meteor shower.

By now, it was getting towards 3am, and I realised that we needed to find somewhere soon to stop off and do some viewing. As we knew the area well, I settled on Lancefield Cemetery, which we got to about 3.20am. This is on the northern side of a hill, with good northern and eastern views. While I later found that we had just missed a couple of the best fireballs, over the next hour and a half we saw about 15-20 meteors, mostly *Leonids*, with some good fireballs included.

However, the weather was not too good, being mostly cloudy with occasional rain. Even though I was wearing my freezer suit, I spent most

of the time in the car, staring out of the windscreen.

About 5am, we headed off on the trip back home. To cap it all off, we ran out of fuel only about 10km from home, and had to wait an hour for the RACV to come along and help out. We finally got home around 9.30am, having spent about 12 hours out, and covered around 400km. To make things worse, that night at the meeting, Bob mentioned that he had had a good night staying at *The Briars*. Later on, we heard of the success that David Girling's group had at Woomera.

So what's in for this year? I hope to be able to wangle a couple of days off work, and get up to somewhere on the Murray River (Echuca/Cobram area).

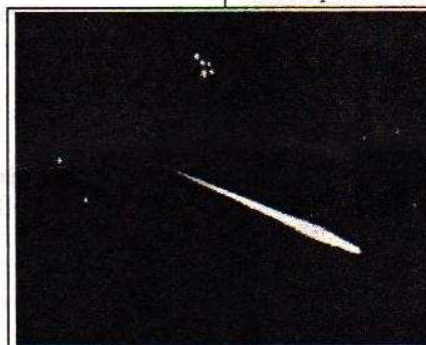
John Cleverdon

(photos from Woomera kindly provided by David Girling)

FIREBALL LIGHTS
EASTERN SEABOARD

Glenn Dawes reports that he witnessed an interesting sky event on April 26th. At the time he was driving along the M5 freeway towards Sydney and was a few kilometres South of Mittagong when he saw a bright fireball in the NE sky. It appeared about 15 degrees above the horizon and was travelling straight down. It immediately became a split fan shape and disappeared behind the

local horizon. There was then a flash (the source out of sight) leaving him to believe there had been an impact or a plane had crashed. Being in a car with the windows rolled up and music playing he couldn't comment on any sound. The time was close to 7:50pm AEST. With the bright lights of the freeway (and the



Leonid meteor at magnitude -7 brightness, as captured by Martin Rudd on T-Max 400 print film during his expedition to Woomera last November with David Girling and other meteor observers. Note the Pleiades (seven sisters) at centre top of this photo for scale purposes.

Moon) it was difficult to give a bearing related to any constellation.

It was originally believed it could have

been a piece of space debris re-entering Earth's atmosphere, but Ian Porter was able to discount this possibility via his Internet contacts in the USA. There was nothing due to decay in orbit that would have been big enough to cause the fireball. Zane Hammound at Lake Bathurst to the east of Canberra also apparently witnessed the fireball very low in the east, probably a few hundred kilometres out to sea.

Shortly after, Rob McNaught from the Anglo-Australia Observatory reported that a bright fireball was observed over an extensive region of the SE Australian seaboard from south of Sydney to north of Brisbane on April 26 at 9:49:26UT. The fireball was out to sea, so there appears to be no possibility of meteorites on land should anything have survived the passage.

A satellite detection of the brilliant terminal burst was detected by US military spacecraft at the above time. Films from the Eastern Australian Fireball Network are yet to be processed, but are unlikely to have recorded it, with all the cameras west of the Great Divide. However, the fact of the satellite detection (from which well calibrated data on the energy of the event will be obtained) demand that some effort be put into determination of the trajectory from eyewitnesses.

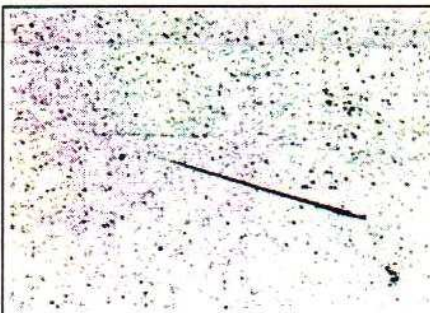
Rob is after any possible local sightings or reports, no matter how scanty, of this event. The important information is as follows

- 1) The path of the fireball across the sky (celestial or horizontal coordinates). These could also be determined by on-site interview.
- 2) The latitude, longitude and height of the location of observation.
- 3) Duration of the event.
- 4) Brightness of the event from first seen to the terminal explosion
- 5) General description (fragmentation, colour, persisting ionised trail after the fireball had disappeared). In particular, the manner of final extinguishing is of great importance. Did the object become lost from sight by passing over the observer's horizon, did the event end in the terminal burst or did fragments continue and fade out whilst still above the horizon?
- 6) It is possible that some security

video of the event may exist, from which the velocity of entry and deceleration could be derived. If you know any business with such an outdoor security system, have them check their tape for that night at the appropriate time. Even the flash on the ground could be of value.

- 7) Pressure waves (sonic booms) may possibly have been detectable from the coast some minutes after the event. Again, these can be important in determining the energy of the event if recorded on a microbarograph.

Rob McNaught can be contacted via email at rmm@aaocbn.aao.gov.au.



A Leonids meteor flashes overhead at Woomera. Negative image captured on T-Max 400 print film by member Martin Rudd during the observing expedition interstate. Brightness of this meteor was estimated as magnitude -5.

INTRAGALACTIC, LIGHTER THAN NITROGEN, POLYORGANIC SPHEROIDS SEEN OVER SOUTHERN PENINSULA

Ian Porter reports there was someone playing with fire balloons over Sorrento/Portsea (or maybe even further west) on Saturday night 24th April. This caused the appearance of strange lights in the night sky at the time, possibly giving rise to local UFO reports. He reports that "at 10:20pm local time I was moving from Comet Lee to look at Mars (having spent some time cursing the crude finder chart I downloaded for Comet Lee). I noticed two bright orange lights low in the sky at Azimuth 303 degrees. They at first appeared to be moving very slowly toward me, but in fact were simply moving up. I got a 50mm spotter scope on them and saw that they were not steady, but flickering like flame. I then saw some flaming debris drop from one (dead giveaway). One soon went out,

but the other descended below my horizon still alight. Their motion was consistent with the wind conditions at the time (none) and the slow ascent and descent of a fire balloon. If we see some UFO reports about this we can set the record straight.....".

A TALK TO THE LVAS

Recently I was asked by David R. Shead of the Latrobe Valley Astronomical Society, who is also a member of the ASF, if I could give a talk to the LVAS. "No worry's", I said. The subject was to be *Meteor Observing*. So on the 9th of March, off I went. Upon arriving at David's house around 6pm, it was about an hour's drive to Morwell where the LVAS meet, at Monash Uni. The meeting was attended by about 14 members. I gave a talk for about an hour made up of how to go about Meteor observing and our trip to Woomera. I used overhead projections of meteors taken off our web site (ASVMS), using photos taken by Martin Rudd & Caroline van Dissell - great photos. The photos did not come out well on the overheads. Visit the ASVMS web site and check them out. As well as the overheads, I used for the first time tape recordings taken from our sensational night's observing at Woomera. These went over very well, the members thought it really was a year's worth of observing, not a couple of hours! The tapes are pretty exciting stuff. Overall I think the talk went well - I hope some of the members go and do some meteor observing. I invited them all to come along to VASTROC and mentioned that I would like to see the LVAS & ASF have closer relations.

Dave Girling

TIP FOR SPYING MARTIANS

In mid-April there were some good nights for observing Mars, with lots of dark markings just detectable without having to use a filter. With a filter they were easily visible, with a 6 inch telescope having no problem seeing the markings. As a tip, if you're having difficulty seeing the markings on the Red Planet, try the red cellophane wrapping paper trick over the eyepiece, or look through the eyepiece with some yellow sun glasses.

Renato Alessio

COMET LEE OBSERVED

John Cleverdon reports that on 23rd April about 11-11.30pm he viewed Comet Lee from Dromana through 20x70 binoculars, through which he could see comet Lee without too much difficulty, and through 10x50 binocs where comet Lee was visible, but more borderline. At *The Briars* on 22nd April we could pick up some elongation in the comet through Bob Heale's 10 inch scope and detected a definite fan-shape to the tail. The comet is currently predicted to round the Sun and reach perihelion at 1999 July 11 UT.

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.

Latrobe Valley Astron. Soc.

(Vic) - Report and charts provided for comet Tilbrook. Article on the Russian space mirror, Znamya (meaning banner).

Astron. Soc. South West (WA) -

A local sports club donated \$500 to buy nebula filters, while a local school donated astronomy slides, and a member donated various astronomy books and an equatorial telescope mount. Recently members enjoyed a local astrocamp. Reports of the 1998 Leonids showed it was locally disappointing. Members are keeping busy with school nights in Bunbury. They are experiencing some trouble with dust blowing into their site, so they are now planting trees.

Astron. Soc. New South Wales

(NSW) - Their monthly newsletter is packed full of articles as usual, ranging from double stars to the Sun. Intro article on Venus and Mars, covering not only space missions but also their planetary history. Article on the star Capella. Reports on the Coonabarabran Astrofest last year. They are having termite problems at their Wiruna site. They have begun radio astronomy and are currently repairing a 5.4 metre dish for their Ilford property to observe at the 21cm line of hydrogen. This instrument will

be used as a meridian transit telescope at radio wavelengths. Observations can be done inside, and at any time, including at Full Moon. They are looking at doing collaborative radio projects with career astronomers. Detailed construction notes on building an 8 inch portable Dobsonian telescope are given over three editions. Brief biography given of Percival Lowell, infamous for furthering the notion of canals on Mars, and founder of the Lowell Observatory in Arizona. He also saw "canals" on Venus!

Astron. Soc. Victoria (Vic) - An issue of eclipse photos and stories from Geraldton by members who travelled there for the annular eclipse of 16th Feb. The 30 inch mirror on loan from Mt. Stromlo is plate glass and reports are that it is a little astigmatic with a turned-down edge. It may end up mounted at Heathcote as a research telescope and a sub-committee has been formed to investigate. A precis is given of the society's vision, which seems to include selling off the Parer Street clubrooms, leaving the State Government's Old Melbourne Observatory, and focussing all efforts on their donated Heathcote property (which sadly has a dust and land degradation problem). The society apparently has over 800 members at present, but lost about 150 last year.

Astron. Assoc. Queensland (Qld)

- Organising a weekend astrocamp at Toowoomba, and preparing to visit Siding Spring and the Australia telescope. History is given of the AAQ and its forebear societies. An overview is provided of Rob McNaught's fireball video monitoring set up at his home. One member travelled to Eucla, the site where a piece of Skylab crashed to Earth on 11th July, 1979, and where the local council issued NASA with an infringement notice for littering!

Sutherland Astron. Soc. (NSW) -

Details of the SETI at home project given where your computer's screen saver can search signals down-loaded from Arecibo radio telescope for extraterrestrial patterns. See <http://setiathome.ssl.berkeley.edu>. The eclipsing binary BL TEL underwent its mid-eclipse on 1998 August 09.5UT, 779 days since the previous one. The next predicted is for 2000 Sep 23. Visited by Frank Bateson from the

Variable Star Section of the RASNZ. Some members attempted to determine rotational periods for two asteroids using a CCD-equipped 14 inch telescope. The society is preparing a visit to Parkes radiotelescope.

FINAL PRONOUNCEMENT - AURORA

The so-called Southern and Northern lights are each an example of an aurora, pronounced "A-ror-rer". In the Northern hemisphere it is called the aurora borealis and in the Southern it is called the aurora australis. An aurora is a display in the skies of moving streamers, bands, curtains, arcs, etc. of light visible at high latitudes near to the South and North poles of the Earth. The night time display and coloured patterns can vary with time, lasting of the order of minutes to hours. They are caused by charged particles from the sun passing into the Earth's magnetic field. As the particles travel along the magnetic field lines to the Earth's poles, they collide with gas molecules in the atmosphere, exciting them and causing them to glow. This occurs about 100 km above the Earth's surface. In this respect they are very much like household fluorescent tube lights where charged electrons are passed through a gas in the tube, causing the gas to glow from the collisions that occur. Aurorae are usually either red or green. Green light is emitted by oxygen atoms high in the atmosphere, whereas red light is emitted from collisions with nitrogen molecules. Occurrences of aurorae coincide well with the 11 year solar cycle, increasing at times when the sun is more active and more likely to create explosive solar flares that send massive bursts of high energy particles towards the Earth. As we are now approaching the next maximum, an increase in aurorae is expected. Aurorae are quite unpredictable well in advance but, when they do occur, they are readily seen on the Peninsula in darker areas and can take the appearance of "S" shapes, spirals, searchlight-like beams of light that wave slowly from side to side, or sheets of faint colour in the sky. They are absolutely silent and lovely to behold. Look roughly South.

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.



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

Mars, named after the Roman god of war, has two small moons called Phobos and Deimos being named after the horses which the ancients believed drew Mar's chariot. Phobos translates to mean "fear", and Deimos translates to be "Dread". They were not discovered until 1877, however, more than a hundred years before this they were both mentioned in Jonathan Swift's *Gulliver's Travels*. Swift even almost correctly guessed their orbital periods and said, "the Laputans have likewise discovered two lesser stars, or satellites, which revolve around Mars, whereof the innermost revolves in the space of ten hours, and the latter in twenty-one and a half." Phobos is a lopsided moon about 20 kilometres in diameter, while Deimos is about 9 kilometres in diameter. Phobos is the only known moon in the Solar System that whirls around its planet at a faster speed than the planet rotates itself. In fact, Phobos goes three times around Mars for every single rotation of the planet itself. Can you imagine seeing our Moon speeding through the sky such that you see it rise a few times every day. If you could stand on Mars' surface, you would see Phobos rise in the West, stay in the Martian sky about 5½ hours, then set in the East. Deimos, on the other hand, would rise in the East and stay above the Martian horizon for about two days. This strange behaviour of the moons of Mars caused a Russian astronomer in 1950 to suggest that the moons were not natural, but were space stations built by Martians. It was argued that perhaps they were built as giant launching platforms that helped the Martians escape their dying homeworld as it was becoming too arid and hostile to support them. After more recent flyby missions, spacecraft suggest that the moons are probably just captured asteroids that strayed too close to Mars and were captured by its gravitational field.

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