



SCORPIUS

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

Volume VI, No. 5 1997

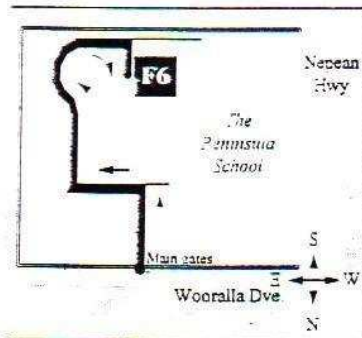
(Sep - Oct)

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

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

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

Visitors are always welcome!



Annual Membership

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

Due 1st of January each year

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Committee

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

All phone calls before 8:30pm please.

FUTURE EVENTS

General Meetings:

Wed 17th September '97

Session 1: Very topical video on *The Quest for Planet Mars*.

Session 2: Informal chat over coffee.

Wed 15th October '97

Session 1: Renato Alessio will talk on *Towards 2000: A Personal Quest to View 2000 Night Sky Objects Before the Turn of Millennium*.

Session 2: Informal chat over coffee.

Wed 19th November '97

Annual General Meeting

Session 1: Peter Skilton will talk on *the Meteorites of Cranbourne: A Tale of Sex, Lies & Cannibalism*.

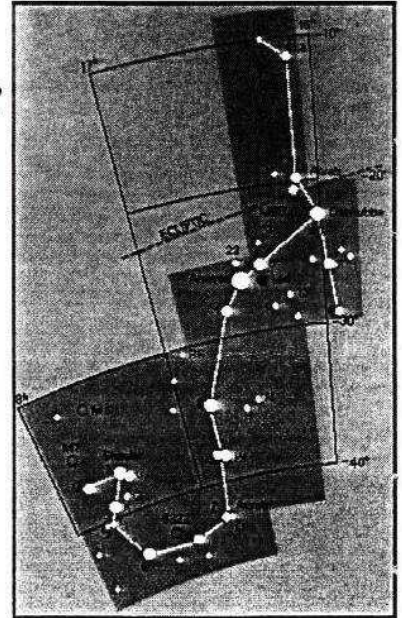
Session 2: A video from David Malin on *Colouring the Stars*.

REMEMBER there is NO meeting held in DECEMBER.

Viewing Nights:

Members Only:

Sat Sep 6 & 27, Oct 4 & 25, Nov 1 & 22 & 29, Dec 6 & 27 all at *The Briars*, Nepean Hwy, Mt. Martha (Melways 145/E12).



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

Public School & Community Groups Viewing/slide nights:

If you can assist, please contact the Secretary.

- Aldercourt Primary School, Silver Ave, Frankston North, on Fri 12th Sep, starting 8pm with telescopes, and slides later. About 100 Grade 3/4 pupils expected. Melways 100B7.
- Baxter Primary School, Baxter, on Thur 9th Oct, starting 8pm with telescopes, followed by a slide show. About 60 Grade 2 students expected. Melways 107F5.
- Erinwood Pre-school, Frankston on Thur 9th Oct. About 30 pre-schoolers expected in pyjamas. No assistance needed for this one.

Phenomenal Events:

- As detailed last meeting, there was a 59% partial solar eclipse visible locally on 2nd Sep, between 8:05am and 10:55am, with maximum coverage around 9:30am. Many observed this one.
- There is a total lunar eclipse visible locally on 17th Sep, between 2:11am and 7:22am. During central eclipse, the Moon should become a distinctly copper-red colour.
- The 18th NACAA (National Australian Convention of Amateur Astronomers) is being held next Easter 10th-13th Apr, 1998 in Sydney. Registration forms are now available. Cost is \$95, plus \$40 for convention dinner, plus accommodation, plus travel. Abstracts for any papers are due by 30th Sep.
- Ballarat Astronomical Society have astro-photographer David Malin on a weekend seminar at Ballarat Observatory on 9th-10th May, 1998.
- Predictions for seeing the troubled Russian spacestation *Mir* are available at meetings.

Talk, Talk, Talk:

- The Council of Adult Education in Melbourne is holding a 6 session course on *The Cosmos, Astrophysics, Quantum Cosmology, Chaos, Relativity* and *Are We Alone?* given by Dr. John O'Connor. Cost is \$38 per session. Thur 6-9pm from 6th Nov.
- Looking for a 3 week holiday from 11th Feb with an astronomical and volcanic bent? Well the Australian Museum is putting together a tour that includes Mauna Kea

Observatory in Hawaii, Meteor Crater, the Grand Canyon, Flagstaff Observatory, Montserrat (I think you might be seeing its volcano unexpectedly active!), and finishing with experiencing a total solar eclipse on the Leeward Islands. The cost is \$7,350 and enquiries can be made by phoning (02) 9320 6225.

YOUR SOCIETY

NEW MEMBERS

Welcome to the following new Society members:

Jane Stewart
Sue Stoner

The ASF is one of the largest in Australasia. Membership is currently at 100. Please feel free to say hello at general meetings. Specialised badges, windcheaters, T-shirts, planispheres, books & posters are available at meetings. Society name tags are free to new members who attend meetings. Members are able to borrow library books and are entitled to attend special viewing nights at *The Briars* where you can discover the night sky's secrets.

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.



If you would like to run one of the 2nd sessions at monthly meetings, please do not feel bashful. Remember they are intended primarily for newer members, so no topic is

considered as too basic. Give Bob Heale or David Girling a call for advice.

SECRETARY'S JOTTINGS

The three army huts at *The Briars* have now been moved elsewhere and cannibalised for the construction of the Education Centre that will neighbour our Observatory site. If driving at *The Briars* in the dark, take care with the roads which have the old huts' stumps nearby, survey pegs and potholes from the building activity. The grant obtained recently for photovisual gear has been used to acquire a good quality overhead projector. The procedure for determining the next host society of VASTROC in 1999 is being discussed.

Don Leggett

RECENT MEETINGS

July's meeting saw 48 hardy souls who braved a rainy evening and cold conditions to attend. The President opened the meeting with views from the surface of Mars, care of the Pathfinder mission that bounced to the surface during the month. Bob Heale presented *Sky for the Month*, and Ian Porter gave *What Goes Up*, with emphasis on recent launches and the collision that holed a module of the *Mir* spacestation, forcing the occupants to remain under emergency torch-light for a few weeks. Members reported comet Encke as being unremarkable to date, exhibiting no tail. Over Clayton's Coffee (Carl Moser was down with a Winter ail), a lobbying effort to press members into service for an observing fence for an exceptional asteroid occultation was undertaken, and

mustered 12 stout adventurers. Following the break, everyone reconvened, ignoring any second session on interesting astronomical gear, and heard instead Ian Porter give an uplifting talk on the progress of spacestations, including the political story of the rise of the international spacestation *Alpha*, which will be a square shape to the naked eye and will subtend an angle in the sky of a minute of arc. Excited by the prospect of this, the meeting closed after questions at 10:10pm.

August's meeting saw 40 in Attendance and was chaired by the President. The organised 7 *Iris* occultation was discussed, showing the marvellous cooperation of all involved across Victoria. Bob Heale presented *Sky for the Month* and a couple of members noted having witnessed an especially bright fireball in the sky since the last meeting. Bruce Tregaskis reported some minor sunspot activity, which is a change from the Sun's austere appearance during this cycle's minimum. Ian Porter then gave the *What Goes Up* session, with emphasis on the Mir orbiting spacestation, its current shaky status, and the likely fate of two of its former inhabitants who had just returned to Earth with a thump after retro rockets failed to fire in time during descent. After tea break, the group split 50:50, with one session having Peter Lowe demonstrate the CCD detector for his telescope. The other group attentively listened to Bruce Tregaskis tell the story behind the many eclipses he has travelled to in exotic places around the world over the years. Some were very successful, others impeded by

weather. Some were in tropical climates, and one was at -15°C in the snow, which was mild compared with the expected -40°C at that time of year in Canada. After many questions, the meeting closed at 10:40pm.

LIBRARY MATTERS

There are some new arrivals in the Library:

Solar System - Planet Earth series - by Time-Life books.

The Atlas of the Universe - by Patrick Moore, covers excellently all aspects of Astronomy from the Earth to the Solar System and beyond to the limits of the observable cosmos.

Kathy Stabb

IN THE MELWAYS

Member and cartography student John Cleverdon has arranged that the ASF now has its *Briars* Observatory marked in the recent edition of the Melways street directory at 151E1, shown as a place of interest. All we need now is a building to provide interest on the concrete foundations!

NEW COMETS

On 3rd July, Canberra amateur Vello Tabur discovered in the pre-dawn skies his second comet in his 20cm telescope. Comet Tabur reached around mag 6, and was at perihelion on 15th Aug. On 22nd July, South Australian amateur Justin Tilbrook, while sweeping Corvus, discovered his first comet in a 20cm reflector. It was 6 days past perihelion at the time of discovery. It is very faint at less than mag 11 now.

IRIS EYES NOT ALL SMILING

The 7 *Iris* asteroid occultation organised at July's meeting was attempted statewide by over 50 observers, most from our Society. The only definite observation of the asteroid's shadow was reported by Jim Blanksby of the ASV near Lake Eildon. The shadow was believed to have missed Cape Schanck. All other stations reported cloud or rain. Full details will appear next edition due to space constraints here.

[Since the last edition, sadly much grim news has come to hand, with several locally known astronomers passing away, together with other famous luminaries on the world stage].

VALE ARTHUR GEDDES

Octagenarian owner of Ultra-Vue Optics, founder of York Optical, and highly regarded instrument maker, Arthur Geddes, passed away in his sleep from pneumonia on 7th July. Arthur had attended our recent VASTROC in July, being one of our prime sponsors with a large instrument display. He also proudly appeared in the conference photograph. Most will remember him as someone who could come up with that odd little astronomical item that no-one else possibly could.

TELRAD INVENTOR DIES

The inventor of the *Telrad* illuminated finder scope for telescopes, Steve Kufield, also died unexpectedly at his home in the Sierra Nevada mountains in California. Details are sketchy, though it is believed his brother will continue production.

GENE SHOEMAKER PERISHES IN OUTBACK

Acclaimed 69 year old geologist and astronomer, Dr. Eugene Merle Shoemaker, was killed in a 4WD head-on collision on a blind curve along a rough stretch of the Tanami Track, 650km NW of Alice Springs on 18th July. His wife, Carolyn, only received minor injuries. Both were on their annual pilgrimage to Australia to visit meteorite craters, while compiling their latest book.

They were heading for *Goat Paddock* crater. The Shoemakers are famous to the public for their co-discovery of



comet Shoemaker-Levy-9 that slammed into Jupiter in 1994. Gene was responsible for NASA sending a geologist to the Moon during the Apollo missions in order to confirm how craters were formed and date the lunar surface. He applied to be an astronaut himself, but NASA turned him down on health grounds. He and his wife have discovered 32 comets and 1,125 asteroids. They met at *Meteor Crater* in Arizona, which he later went on to prove was due to the impact of an iron meteorite 45 metres across, 50,000 years ago. Prior to this, its origin was unknown. Gene will be missed.

FAREWELL STEVE

Respected member, past President, and instrument maker, Steve Malone, passed away on 30th Aug at the age of 72, after a long heart illness. Steve had been an active committee member for many

years, and was in the Society since the mid-1970's. He had a passion for school and public viewing nights, which he attended at every opportunity, often towing the Society's caravan to and from these. He found great joy in the faces of the children upon their discovering one or another of the jewels in the heavens. In recent years, Steve had poured his energies into Frankston's NACAA in



1990, had travelled and adventured the continent visiting meteorite craters, and researched his special interest in aboriginal astronomy. He was known to other members as an active, indefatigable, doer, championing the role of the caravan, or hunting for a permanent observatory home for the Society. A large gathering of friends and family attended a ceremony at St.Pauls Church of England in Frankston on 2nd Sep, and celebrated the achievements of Steve's life, from his times in New Guinea onboard Beaufort bombers, to his involvement with our Society. Steve leaves behind his wife June, son Peter, and daughter Robyn. His cheerful and jovial demeanour will be greatly missed.

FAREWELL PETER

Long-standing and highly regarded Treasurer, Peter Brown, passed away quietly on 4th Sep at the age of 68, after a long and courageous battle with cancer. Peter joined the Society early on and quickly rose to the Office Bearer position of

Treasurer, a post he held for over 16 years. He was notable for his contributions both to the 1990 NACAA and the 1997 VASTROC, and for his generosity in allowing committee meetings to be held at his home over the years. He was also President of the Victorian Laryngectomy Association and had a distinguished naval career stretching over many years. A large contingent of family and friends attended a farewell ceremony with a nautical theme on 8th Sep, also at St.Pauls Church of England in Frankston.

Peter leaves behind his wife Jan, who he met at school, and son Graeme. His dedication to performing a sometimes difficult role is to be highly commended, and his optimism and sense of humour at meetings will be missed.



JUST FOR STARTERS

THE SKY IS FALLING

There are many terms about rocks falling from the sky. To help remove the mystery when reading on the subject or listening to others talk about it, here are some brief definitions:

Asteroid A lump of rock, a kilometre or more in size, made of stone, iron and other metals in stable orbit around the Sun, and left over from the formation of our Solar System from the original Solar nebula cloud. Its orbit may be between the planets Mars and Jupiter, or may cross the Earth's orbit. The material may have collected together to

form a planet had Jupiter not been nearby.

Comet A lump of rock, ice and other materials left over from the formation of our Solar System, and originating from the Oort Cloud. The comet may or may not be in orbit around the Sun, returning again after a period of time. If it will return, then it has a "p-" in front of its name e.g. comet p-Halley.

Oort Cloud The very distant birthplace of comets, being a sphere of material half way to the nearest star other than the Sun. This cloud is composed of material originally in the Solar nebula, but which was swept out of the Solar System region.

Interplanetary Dust Small grains of silicate dust, mostly in the plane of our Solar System, left over from the birth of our Solar System, and replenished by the material of comet tails.

Ablation The burning off and wearing away of a body as it passes through our atmosphere at hypersonic speeds.

Meteoroid A lump of rock moving through space, but which is smaller than an *asteroid*.

Meteor A *meteoroid* which enters the Earth's atmosphere begins to burn up due to friction and leaves a luminous trail as it disintegrates. This transient streak across the sky is known as a *meteor*. Sometimes called a "Falling Star", though of course stars are made of gas, not rock. Typical size is that of a pea.

Meteorite A *meteoroid* that

actually reaches the Earth's surface. It is smaller than its parent *meteoroid* due to ablation by our atmosphere. Details of the meteorite fall at Cranbourne were in the Sep/Oct 1992 edition of the newsletter.

Fireball A particularly large *meteoroid* will release enormous amounts of energy as it passes through our atmosphere. It will appear dazzlingly bright (rivalling the midday Sun) and create noise.

Terminal Flare The bright last explosive gasps of a fairly large *meteoroid*, that has entered our atmosphere, at the very last instants before it completely breaks apart.

Bolide A very solid *asteroid* or very sizeable *meteoroid* that enters our atmosphere. Relative to its size, very little of it is burned off in the descent to the ground due to its sheer mass.

Tektite A smooth blob of rock that appears spherical on one side, and flat on the other. Thought to be formed from very hot debris, thrown high into our atmosphere from impact craters, where it cools as it drops to the ground, giving it a characteristic wind-swept appearance. Also speculated to have been ejected from the Moon's or Mars' surface, and travelled through space before entering the Earth's atmosphere. May be found on the Nullarbor Plain. An article on *tektites* appeared in the Sep/Oct 1992 newsletter edition.

Impact Pit A crater formed by a small *meteorite*. Typically a few centimetres across.

Megatons A million tonnes. Used to compare the energy released at impact with the equivalent weight of TNT explosive. Any object (even you) travelling at 3 kilometres per second will release upon impact the same energy as its own weight in TNT!

Crater A large hole in a body's surface left after impact by a sizeable projectile. Examples are seen on all the planets and moons, and even on asteroids themselves. You can even have craters on craters.

Astrobleme A very, very large cratering scar on the Earth's surface, formed by impact from a large *asteroid*. Thought to have helped shape our continents and influenced plate tectonics, as well as contributing to mass extinctions of ancient species such as the dinosaurs.

IN THE NEWS

A PIONEER SIGNS OFF

The *Pioneer 10* spacecraft, launched on March 2, 1972 aboard an Atlas Centaur rocket, was the first interplanetary probe to visit the planet Jupiter. Weighing just over 250kg, *Pioneer 10* provided the first ever close up images of this gas giant, and passed through its intense radiation belts. In fact during this passage, it was exposed to unexpected levels of radiation some 100,000 times more than is lethal to a human being. Indeed, the glass on the spacecraft's navigation star tracker turned black as a result, though the rest of the vessel remained intact and functional. The *Pioneer 10* craft was also

the first to navigate the asteroid belt, and use the slingshot effect using Jupiter's gravity to assist it to continue on its journey out of our Solar System and on to the stars. With the onboard radioactive plutonium power source nearly spent, it was decided to irrevocably shut it down in April, at 10.0 billion kilometres from Earth. It is the furthest manmade object in space, and carries a gold plaque designed by the late Carl Sagan and his wife Linda Salzman, which depicts a man, a woman, and a map of the Solar System, designed to show future beings where the spacecraft originated. *Pioneer 10* will drift silently onwards as human civilisations rise and fall in the coming eons, a permanent record that an intelligent, engineering capable, creature existed in our neighbourhood of the Galaxy.

FEATURE

LIVE FROM MARS

As most would be aware, the *Mars Pathfinder* mission sent a 90cm sided pyramid shaped lander onto Mars. It slowed by parachute, from over 26,000 km/hour, to hit the surface, cushioned with its novel air bag protectors, at a speed of around 90 km/hour. Once landed after 3 bounces (one to a height of about 15 metres), the side panels of the pyramid opened like petals, revealing a small 65x48x30cm battery powered vehicle, weighing 10.6 kilograms, called *Sojourner*.

The landing site was in the *Ares Vallis* area on Mars (19.4°N, 33.1°W), and images show it to be a very colourful and varied

landscape of greys and reds. The *Sojourner's* on-board alpha proton X-ray spectrometer has been analysing various rocks and has found their composition to be mostly the same, and indeed similar to that of the 12 meteorites that are believed to have originated from Mars.

The first rock studied was nicknamed *Barnacle Bill* and, judging by its high silica content, it is thought to have undergone reheating in a watery environment at some time in the past. On the other hand, the larger rock called *Yogi* (on which the rover became stuck after accidentally overshooting its target position) showed lesser levels of silica and seems to be ordinary volcanic basalt. However, it was noticed that many of the rocks were covered in dust, which may interfere with the measurements, so the NASA

suggesting they are genuine.

It is thought originally that Martian soil comes in two grades: a fine, bright red dust, known as *drift*, and a coarser, deep red dust known as *lag*. Drift is carried around the planet by the wind and dust storms, and so it thoroughly mixed on a global scale. On the other hand, lag is more likely to be of local origin, not being readily transported. Therefore you would expect both to have different compositions. However, they appear to be exactly the same. The lander craft itself has also turned up some mysteries. The weather seems to undergo large daily swings in temperature and pressure. Ground temperature for example can change by 20°C in a few minutes, possibly caused by "dust devils". There is also a 40°C temperature drop



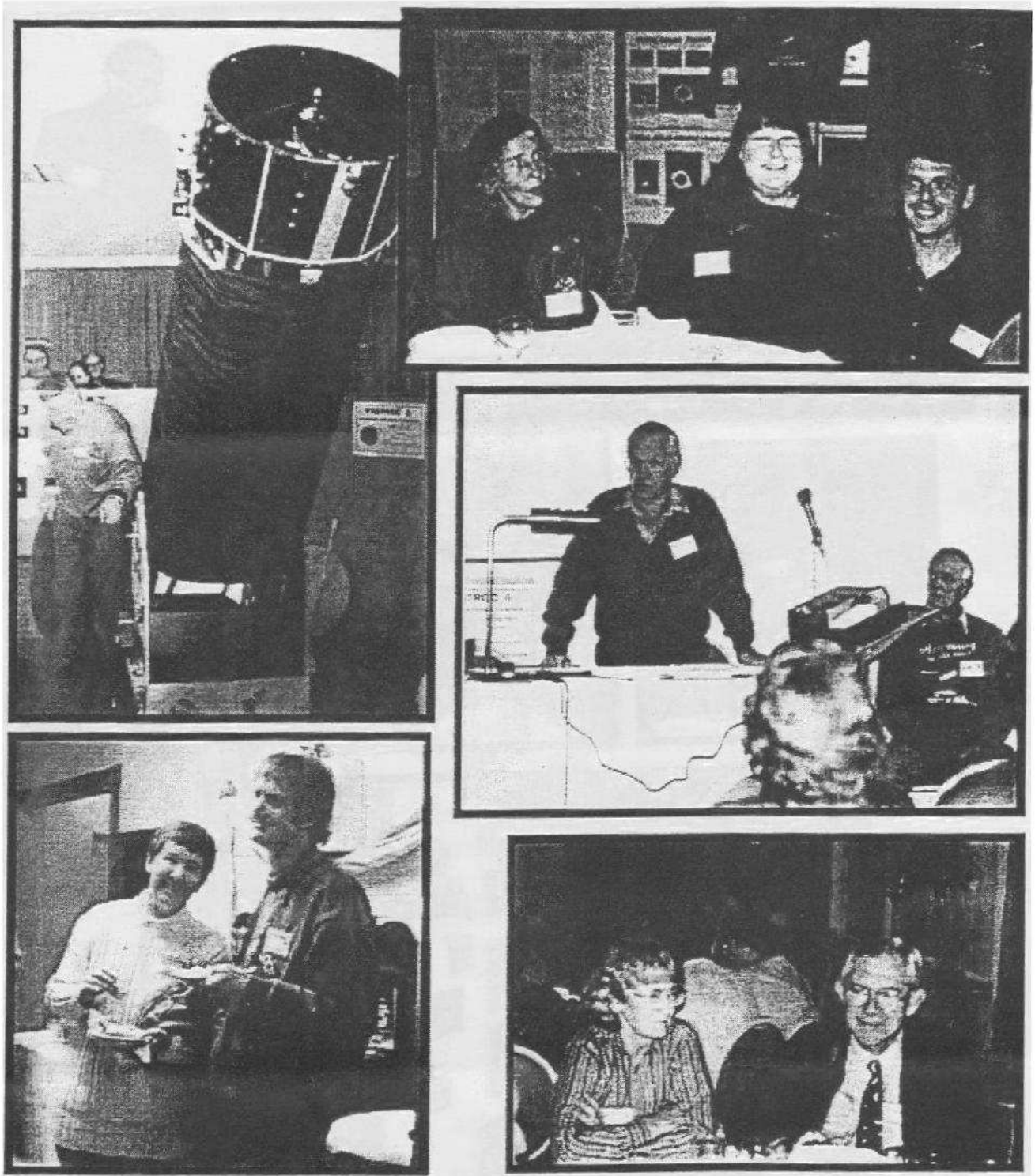
team in charge of the mission decided on the next rock, known as *Scooby Doo*, to first brush the rock off. As there was no brush available on the craft (no-one had thought of it), it was decided to run the wheels of *Sojourner* over the rock and spin them repeatedly so as to dislodge any dust. This made little difference though to the measurements,

from ground level to 5 feet above the Martian surface. These are yet more mysteries to be solved for the Red Planet.

Already the mission has returned over 10,000 pictures, and NASA's special internet site for the mission has been accessed over 600 million times to date, the most of any internet site.



Moments captured by Peter Lowe and Peter Skilton at VASTROC 6 at Mt.Eliza. From Left to Right, Top to Bottom: Hugh Carman on *Meteorites*; Peter Norman on *Quarks to Quasars*; Jim Trainor (ASV) running the astronomy quiz; Ian Sullivan (ASV) on the *Williamstown Observatory* but demonstrating there is plenty of ethanol in places other than outer space; Ian Porter on *Spying on Spy Satellites*; and some of the posters adjacent to the display and sponsor area on the right.



More moments captured by Peter Lowe at VASTROC 6. From Left to Right. Top to Bottom: Barry Clark (ASV) with his car trailer-mounted 20 inch Dobsonian and customised mounting ladder; Rene, Ros and Peter Skilton at dinner; Bill Fiddian (BAS) introduces Bruce Tregaskis (seated) on *Eclipses*; Vivienne Lowe and Jim Blanksby (ASV) at tea break; Karenza Burk (BAS) demonstrated glass star plates from Mt. Stromlo, and Mike Smith from the Binocular & Telescope shop at dinner.

EYEPIECE SELECTION

The following general rules may save you some money and frustration in the long term, as eyepieces are expensive.

In 1968, Hartung pointed out that the best magnification for observing faint objects was that of 5x per centimetre of telescope (i.e. 13x per inch of telescope). Thus, the optimal magnification for an 8 inch scope would be about 100x, and for an 8cm scope, it would be about 40x. I have tested the recommendation of Hartung and found that he is 100% correct. In my scope, galaxies are much easier to see at 100x than they are at either 135x or 78x.

Al Nagler's *TeleVue* provides further guidance on eyepieces or eyepiece/barlow combinations. His recommendation is that one tries to achieve the following approximate exit pupils: 0.5, 1, 2, 4 and 6mm. However, they stress that the 0.5mm pupil is an upper limit, and a 0.7mm may be better. To obtain the eyepiece focal length, simply multiply the exit pupil by the focal ratio of the telescope.

For example:

- For an f/10 telescope, eyepieces = 5 (or 7), 10, 20, 40 & 60mm.
- For an f/6 telescope, eyepieces = 3 (or 4), 6, 12, 24 & 36 mm.

Nagler's 2mm exit pupil corresponds exactly with Hartung's recommendation. I concur with the 1mm exit pupil, as this will nearly always give a reasonable image of planets in Melbourne. The 4mm exit pupil is nice to have, but I personally find the image a bit on the bright side. However, I find the 4mm exit pupil is best for observing large nebulae with a Deep Sky filter. The 0.5mm exit pupil is rarely of any use, but a 0.65mm exit pupil is occasionally useful, more so for a 0.8mm pupil.

However, I feel a 6mm pupil is too bright for use in rural areas near Melbourne. The images have a murky feel to them.

To summarise, make sure you get an eyepiece meeting the 2mm exit pupil/5x per cm criterion. It will become your favourite eyepiece for galaxies and faintish nebulae. If you are thinking of getting only one widefield eyepiece, then you may as well make sure it is one meeting this criterion.

For high power in Melbourne, get an eyepiece meeting the 1mm exit pupil/10x per cm criterion. It can be used most nights. For higher power in Melbourne, get an eyepiece with an exit pupil between 0.65 and 0.8mm, remembering that the smaller the exit pupil, the less likely you are to have a stable atmosphere to use it. For low power in Melbourne's rural areas, the 4mm exit pupil is as big as I would go, and even this pupil size makes the sky too bright. I mainly use this type of eyepiece for navigation purposes.

Renato Alessio

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.



Sutherland Astron. Soc. (NSW) -

The Society has started an "I Remember" column where members relate about intriguing experiences they have had over the years and share biographical info. Plenty of photos are included of their new large refractor mount, which is being aligned.

Latrobe Valley Astron. Soc. (Vic)

- A car park has been graded and foundations poured for a hut at their Wirulda site and for telescope pads. This was partly paid for by a solicited company donation for \$1000. It pays to ask.

Astron. Soc. Alice Springs (NT) - The NT government has given them a grant for eyepieces and a slide projector. A rundown of Cederberg Observatory in South Africa is given, and Hubble studies of Mars' weather and other phenomena are presented.

Astron. Soc. New South Wales (NSW) - The 6th annual South Pacific Star Party is planned for 26th-30th Mar 1998 at their Wiruna site. A series on neat southern planetaries is given, as is an explanation for the magnitudes of stars, and how to find True North or South by the Sun. A large sundial is being touted for their Ilford property. Pictures and details of the Mars Pathfinder mission are provided. Greg Bryant gives Uranus observing hints.

Astron. Soc. Vic. (Vic) -

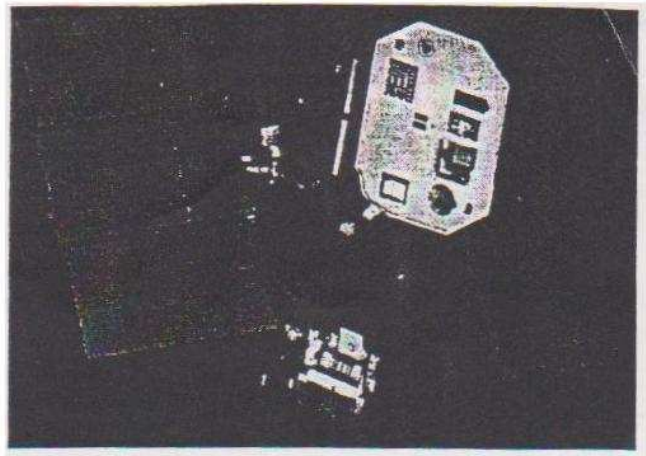
Celebrating 75th birthday, so have issued a special colour newsletter and given it the name of *Crix*. Many have told me this unfortunately is a copy of the newsletter name of a long-standing NSW Society. The history of the ASV is given from the earliest times.

FINAL PRONOUNCEMENT - RIGEL

The brightest star in the constellation of Orion is pronounced "Rie-jell". The name, derived from Arabic, means literally *leg of the giant*, an indication of where it sits in relation to the other stars of the constellation of the Hunter. Interestingly, it is designated as being *beta-Orionis*, suggesting it is the 2nd brightest star of Orion. Bayer letters for star names are assigned in the alphabetical order of *a* (alpha), *b* (beta), *c* (gamma), *d* (delta) etc. right along the Greek alphabet from the brightest star to the faintest star. In fact, Rigel is 0.1 of a magnitude brighter than Betelgeuse, which is confusingly designated *alpha-Orionis*. Rigel, itself is a supergiant B-type star, with a faint 7th magnitude companion. Has anyone seen it?

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.

Australia could potentially boast two rocket launch facilities by the end of the decade, and environment impact studies are already well underway. One site is touted for the tip of Cape York Peninsula, while the other is for a location near Darwin. The two separate companies involved intend to use Russian rockets to be launched from these remote sites, with up to 3 rockets per week being the target. Their market is mostly for communication satellites in low Earth orbit, for example to cater for global mobile phone networks which are predicted to expand greatly in the next decade. Both sites lie within 15° of the equator. This is desirable since less fuel is involved in putting a payload into orbit near the equator than is involved for a launch site further from the equator. This is because the Earth is basically a large spinning ball, and hence it moves faster at the equator than at the poles. In effect, the centrifugal force of the Earth's spin assists the launch by throwing the rocket into orbit. You can therefore either cut the cost of putting a single satellite into orbit due to less fuel, or launch a heavier payload for the same amount of fuel.



Left - ASF society dinner at the Dava Hotel on the 31st October 1998

Photo - By John Cleverdon



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

The Voyager spacecraft contained a gold phonograph record containing 118 encoded images intended to convey the essence of Earth and humanity to any extraterrestrials who might encounter it in the distant future. Among other things, Australia's Heron Island in the Great Barrier Reef was chosen, to emphasise the abundance of water on the Earth, and the Sydney Opera House was shown as an example of modern architecture, to show that humans are not limited to structures involving just rectangles and squares.