



SCORPIUS

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

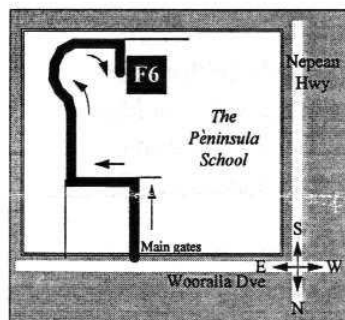
Volume V No. 1 1996 (Jan - Feb)

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. In addition, the Society provides the services of its members for educational presentations or observing nights for schools and local community groups.

Meeting Venue:
The Peninsula School
Wooralla Drive, Mt Eliza
(Melways Map 105, F5)

Room F6 at 8pm on the 3rd
Wednesday of each month
except December.

Visitors always welcome



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

Membership fees are due
1st of January each year

President & Editor
Peter Skilton (03) 9776 5898

Vice President

David Girling (059) 76 2806

Treasurer

Peter Brown (03) 9789 5679

Secretary

Don Leggett (059) 85 4927

Committee

Ken Bryant, Bob Heale,
Peter Lowe, Ros Skilton,
Ken Stratton

Phone before 8:30pm please.

FUTURE EVENTS

General Meetings:

Wed 17th January '96

Session 1: Talk on *Vermin of the Sky* by Peter Lowe.

Session 2: David Girling & Bob Heale pair up on *Double Stars*.

Wed 21st February '96

Session 1: Talk on *Basic Introductory Astronomy* by various members.

Session 2: David Girling & Bob Heale will give a *Slide night*, probably on Deep Sky objects.

Wed 20th March '96

Session 1: Talk on *From the Smallest to the Biggest in the Universe* by Peter Skilton.

Session 2: David Girling & Bob Heale on *How I Observe from my Backyard*.

Wed 17th April '96

Session 1: *Feedback and photos from those who attended NACAA 1995 astro conference at Brisbane*.

Session 2: David Girling & Bob Heale on *Eyepieces*.

Viewing Nights:

Members Only:

Sat 20th & 27th January '96 and
Sat 10th & 17th February '96 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 (not in January though because of the *Briars'* nights - see below). Always confirm with David Girling on (059) 76-2806 before attending. Meet at the *Briars'* Visitor Centre at 8 pm sharp (Daylight Savings).

Public/School/Community
Groups Viewing nights or slide
nights:

If you can assist, please contact the Secretary.

- The annual Briars' Pre-booked Public Possum Prowl viewing nights every Friday evening in Jan 1996 at 8pm. Slides, then viewing if fine. Previous years have seen this go ahead, even during driving rain conditions. Shows that some members of the public are keen! Come along, even just to make up the numbers.



Social Events:

- None arranged over the holiday season, though a working bee may be forthcoming once we have news about progress on our site at *The Briars*.

Phenomenal Events:

- Saturn's rings are again starting to close for the last time. If you have yet to see the whisper thin rings on either side of the planet's disk, do so at one of the Briar's viewing nights before it is too late.

YOUR SOCIETY

NEW MEMBERS

Welcome to the following new Society member: The Girlings' second child (no details available at the time of writing), born to David and Kerry on 20th December. The Society

offers its congratulations. I wonder if this is another active little Deep Sky observer?

Total membership is 74, keeping us the 2nd largest Society in Victoria. Please feel free to say hello (or in this case ga-ga goo-goo) at general meetings, where your name tag will be made available. Society badges showing the logo, Planispheres and Astronomy books & posters are also available at monthly meetings. A limited supply of Society windcheaters is available for \$35 in M/L/XL from the Secretary.

HELP NEEDED

Is your mailing label correct? If not, please pass corrections to the Secretary.

Does anyone know something about Tides? The Field Naturalists have asked us for a talk on 13th April 1996, with a practical demo! The latter should be a challenge, but a short talk would suffice. Volunteers are eagerly sought or we may have to disappoint them. They know very little about the Moon and Sun etc. so only basic details are needed.

We need assistance for February's talks on basic introductory Astronomy. Several members are needed to talk for a couple of minutes (5 or 10 minutes at most), on topics that can be a little baffling to newer members. Please, some new speakers are needed, other than those who say something most meetings. Choice of topic will be left up to you, so please phone the President if you can help. Some examples might include explaining Right Ascension and Declination, how distances are measured in the Universe, what is an eclipse, what types of telescope there are, what an equatorial mount is (no,

it's not a horse at zero degrees latitude), a bit about the planets or some other pet topic, how the eye works, the apparent motions of planets in the sky, what is magnification, what's the difference between a pair of binoculars and a telescope, and so on Remember it is aimed at someone who knows nothing or next to nothing on the topic.

SECRETARY'S JOTTINGS

The Mornington council is preparing to consider our development and lease of the Briars' site before year end. Further details will emerge by next meeting. The Society has purchased a couple of slide sets for use at viewing nights and for meetings.

Don Leggett

RECENT MEETINGS

The last meeting for 1995 went smoothly, with over 40 in attendance. It was good to see many faces reappearing at the meeting after lengthy absences due to one reason or another. The then-Vice President chaired the Annual General Meeting, delivered his version of the President's report, and had everything completed smoothly and on time in 20 minutes, with the new committee being elected for 1996.

Current phenomena were then discussed. This included the showing of some excellent slides of the total Solar Eclipse in India taken by Jim Blanksby (ASV) in late October from about 30km North of the Taj Mahal. At about \$60 a second to obtain them, the crowd really appreciated the view! These slides clearly demonstrated several large pinkish-red solar

prominences and the spectacular "diamond ring" effect. If anyone is interested in a copy, I might be able to arrange it for \$2 a slide to help Jim reimburse his trip's outlay.

After that, Bob Heale gave his traditional Sky for the Month to an interested audience. After a brief break, the group split into two with Bob running one session, which explored the constellation of Carina (amongst other things), and the new President providing a talk and slide show on the US/German Galileo mission to Jupiter, preceding its arrival on December 7. This talk was followed by a video detailing various ideas on the origin of the Star of Bethlehem. This is traditionally topical at the last meeting, but increased the length of the meeting above normal. The meeting finished around 10:30pm.

Ros Skilton

RECENT VIEWING NIGHTS

The public viewing night held at Braeside Park in late November proved a great success, with an excellent turnout from members despite the cloudy conditions. Nevertheless, the many interested attendees were able to see a rare alignment of Jupiter, Mars, Venus and the Moon on the night. In fact this viewing night provided us with the largest donations ever.

The two nights at Kingsley Park Primary School also proved most popular, with about 100 present on each night. The first night had a good glimpse of most planets before cloud interfered, and the Grade 5's were most impressed, especially

with the bright meteor that slowly went across the full length of the sky from East to West. Over half of those present saw it, the other half were facing the wrong way - typical! The Grade 6's on the following night unfortunately had to make do with less to see due to the weather. Nevertheless the first quarter Moon proved a treat. One of the organising teachers told me after the first night that she had received calls from many parents saying they had been bombarded with persistent requests for telescopes for Christmas. I suspect we made a long-lasting impression on these children, and I wonder what Santa will bring them?

The final members' night for 1995 was held at *The Briars* at the same time as their Carols by Candlelight performance. Seven members enjoyed the very good seeing conditions, while some 500 others sang for their enjoyment just over the hill. It certainly wasn't a Silent Night!

I was told one of the members arrived to find two other members' cars deserted on the viewing site, with no sign of them or their telescope. He was somewhat reticent to get out of his car and set his instrument up just in case something came out of the woods and dragged him screaming into the mulga.

Very good seeing conditions were had that night, and Ken Bryant's *OIII* filter was put to good use, viewing the extended nebulosity of the Tarantula Nebula, and enhancing the redness of Eta Carinae, though it gave no discernible improvement on the Crab Nebula in Taurus. In Tony Hales' 30cm Dobsonian

telescope at about 100 magnification, Saturn exhibited a solid black line across its equator, and a slender white line extending a diameter to the West, and half a diameter to the East. This was the first time most of us had seen the rings in the backlit orientation, though the rings came and went with fluctuations in the seeing conditions.

WE'RE CERTIFIED

It's official. The body of Australian professional astronomers (the Astronomical Society of Australia) has informed us that our *Briars* site is a recognised "Designated Observatory". This means that it has a case for protection against obtrusive lighting conditions in the future, in the same way that Mt. Stromlo or other Observatories are considered. While this does not confer any automatic legal status to the site, it is nevertheless an important step in establishing an educational site that is to retain its natural appeal for future generations.

VARIABLE STARS

An alert has been put out to keep an eye on TOADS. TOADS are Tremendous Outburst Amplitude Dwarfs (not green, warty amphibians), and the Planetary Science Institute in Arizona is hoping to turn the IUE orbiting telescope onto them during outburst. At outburst, some of these TOADS reach up to magnitude 8, and so are within reach of most small telescopes. Finder charts are available from the editor if you wish to hop into this observing program. Your patrol role is to watch them until you see an

outburst, then promptly report it to the coordinator Peter Nelson (LVAS) on (056) 278 516. Who knows, you may be responsible for turning the IUE satellite around. The program will last for a long interval, as outbursts are quite rare.

EX-PRESIDENT STONED

On his way home from Dandenong on the early evening of Tuesday 24th Oct in 1995, Peter Lowe reports an exceedingly bright meteor appeared in the sky above him.

Judging by his account of its brightness, it was probably a large fragment of rock that would be classified as a decent fireball. He reports that *"it was so bright I was unable to look at it, being easily as bright as the Sun, and unbearable to look at even through the tinted upper section of my car's front*

windscreen. The entire surrounding landscape was lit up as the object sped overhead towards due South".

The whole event only lasted several seconds, and no sound was heard over that of the engine. Peter did not mention whether or not he received a nice tan from it. Judging by the fact that no other reports have filtered to the media, or via other Astronomical channels, it is likely he was the only witness to this exceedingly rare phenomenon. If anyone else saw something on the night, please forward details as it may help triangulate the path and hence suggest a source for the object.

FIRST LIGHT

New Society member Peter Elias recently completed constructing a commendable 20cm Newtonian telescope on a

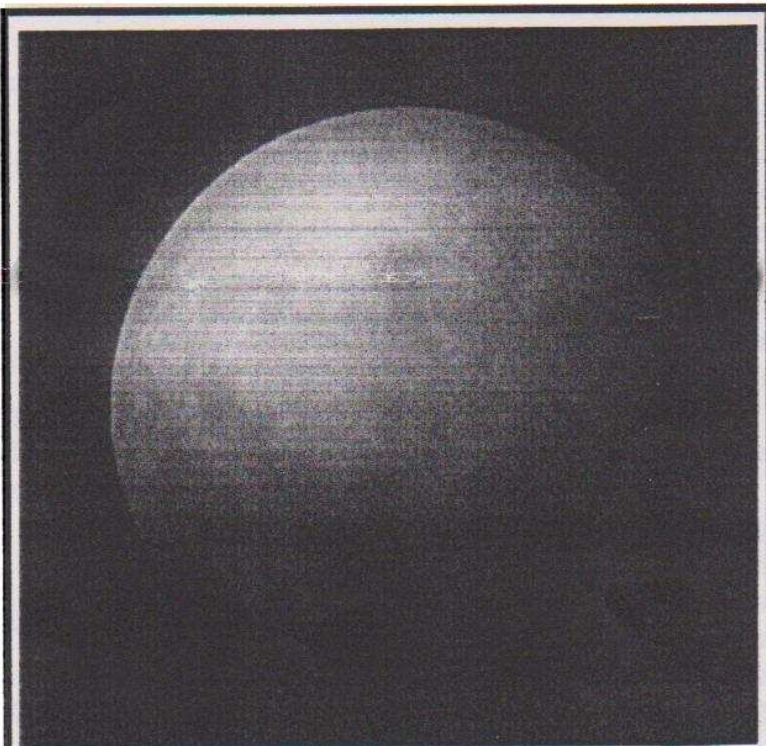
Dobsonian mount. The instrument has been tried at *The Briars*, and demonstrated to the public at Braeside Park. The optics of this impressive effort were purchased and Peter mounted the lot inside a PVC drainage pipe, which clearly has sufficient strength to prevent flexing, while still being very light and easy to manoeuvre. Ask for a demo if you see him at meetings. With luck, a picture should be in next issue.

DEDICATED OBSERVERS

Members recently got a little carried away in November with the fine conditions at our dark sky site in Mornington. During a deluge of rain on the Saturday night, our intrepid observers packed their scopes away and retired to the caravan for tea. Some time later when the rain stopped, they emerged to near perfect seeing conditions on the hill. This then prompted them to stay until nearly 3am in the morning. I believe even the Andromeda galaxy was clearly visible from the site at the time. The dedicated band included a couple of hardy newer members, Sharron Fletcher and Peter Elias, who displayed much enthusiasm, and were treated to a great night out under the stars, and one of whom had to get up for work a handful of hours later.

GRAZE EXPEDITION

The Southern limit graze of a dim binary star system by the edge of a nearly quarter Moon went ahead on Sunday night 29th Oct last year as planned. Five observers manned 4 telescopes down dark, dusty country roads. From South to North were set up Chris Stockdale (LVAS), Peter Nelson



In Frankston, Gary Fowler obtained this mid-eclipse view of the 1995 April 15 partial lunar eclipse, by focussing his tripod-mounted camera directly at the eyepiece of a 15cm Newtonian telescope. Notice that a good deal of the Moon is in shadow.

and Rod Stubbings (LVA), Alfred Kruijshoop (ASV) and Peter Skilton (ASF). The Southern most station started off with one interested cow (not the observer!!!!), and ended up with about 40 listening to VNG time signals echo across the paddocks. Fortunately, the fence held!

Five additional observers from the ASV and ASF who were willing to participate were called off at the last minute due to the weather prospects on the night. Unfortunately for most in attendance down the Latrobe Valley, cloud interfered resulting in only one definite star disappearance and a number of suspected dimmings due to one member of the binary pair being hidden by the Moon.

JUST FOR STARTERS

THERE'S A LOT OF JUNK UP THERE

Currently there are four dead satellites in orbit, for every live one. What happens to manmade satellites as they age?

Although natural processes, such as the expansion of the Earth's atmosphere due to solar activity, cleanse hundreds of tonnes of debris from low Earth orbit each year (as meteors), there is nothing to vacuum up bits and pieces in higher orbits. Satellites in high orbit will remain there for thousands or even millions of years.

If two large pieces collide, they fragment readily and create thousands of new, smaller particles, any of which could potentially puncture a spacesuit or spacecraft. There are other dangers also. Unspent fuel in

rockets can spontaneously explode, showering the region in shrapnel. Batteries can also build up static charge as they move through space, and this can cause catastrophic discharges within the batteries that can literally tear them apart with some violence. Even paint peeling off spacecraft can prove lethal. The chance of losing a spaceshuttle mission is a few percent each launch, just purely because of collision in orbit from manmade debris. It certainly isn't a safe environment up there.

IN THE NEWS

The National Aeronautics and Space Administration (NASA) has just announced a mission known as "Stardust". In 1999, a small spacecraft will be launched which will rendezvous with comet Wild-2 in January 2004. Upon arrival, it will photograph the comet's nucleus and will attempt to trap dust particles from the comet onto aerogel, ultralightweight material. These samples would then be returned to Earth in 2006 for detailed analysis.

The US Air Force has advanced plans to launch a vehicle in 1998 that is the successor to its earlier Clementine mission. If you recall, this mission successfully mapped our Moon at a host of different wavelengths, but then failed due to a software error, before it could be targeted at a nearby asteroid. Clementine 2 will be more ambitious and will carry a host of more advanced instrumentation. The USAF considers this mission to be part of its defence against the threat to Earth of so-called Earth-

crossing asteroids that pass through our orbit periodically.

For \$US 80 million, the vehicle will carry several 10 kilogram mini-satellites that will be sent hurtling at an asteroid at velocities up to 10 kilometres per second. The mother craft will then observe the impacts and the resultant craters formed. During its 2 year mission, planners hope to target up to 6 different asteroids, pelting them with these bowling ball sized projectiles.

With the Greenhouse effect and global warming on our doorsteps, scientists are taking a keen interest in ocean currents and heat circulation around the globe. Therefore when 20,000 rubber ducks and other assorted bathroom toys fell overboard in heavy weather in the North Pacific two years ago, some researchers jumped with glee. Apparently, hundreds of bath toys have been turning up ashore in Alaska, with the rest migrating North to the Polar Cap on the prevailing currents. Members of the Rubber Duck Surveillance Team are keenly tracking their movement and contend this is "serious science".

Our Sun appears to have started its next sunspot cycle early in August. Sunspot numbers normally come and go over an 11 year cycle, with the next maximum expected to be in 2001. However, it now seems that 1999 will be closer to the mark, with the first sunspot of the new cycle already been observed. Sunspots switch magnetic polarity with successive cycles. A period of increased solar magnetic storms, and increased night aurorae are now likely. Watch the skies.

An English amateur astronomer has reportedly discovered a new minor planet from his backyard in Bradfield, UK. Using a 30 cm telescope housed in his garden shed,

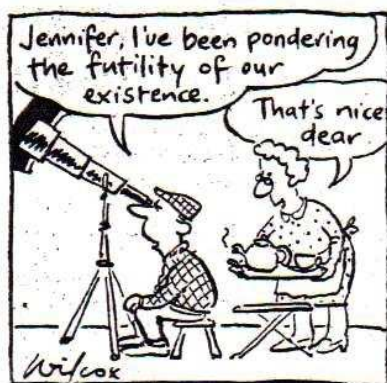


Amateur astronomer George Sallit, of Bradfield, England

George Sallit, 43, has found a 32 kilometre diameter new asteroid between the orbits of Mars and Jupiter, in the Asteroid Belt.

This has been confirmed by Harvard University in the US. George was quoted as saying *"I've been stargazing since I was 11 years old, but I never thought anything like this would happen to me"*. Initially, he thought his discovery was a smudge on his telescope's mirror, but soon realised otherwise.

In a traditionally British manner, George thanked his wife Jennifer, who constantly brings him cups of tea in his shed, and said *"When I told her I'd found a new planet, she said 'That's nice dear'"*.



FEATURE

THE STRANGE SEARCH FOR THE MYSTERIOUS PLANET *VULCAN*

Astronomically, the 19th century was a period of great excitement about the Solar System. The grand design of the Solar System was now known. Its scale and working could be calculated in great detail. Small discrepancies between the predicted and actual position of the planet Uranus lead to what must be one of the discovery predictions of all time, namely the prediction of the position of the planet Neptune. Astronomers and mathematicians were supremely confident they were on a winner with regard to Newtonian Mechanics based on the Law of Gravitation espoused by Isaac Newton. Armed with this law, astronomers could compute the positions of the planets with ever increasing accuracy. As more accurate measurements were made, the differences between the predicted and observed planetary positions could be explained away with minor changes to the calculation assumptions. Some differences, however, were a bit harder to explain and people started looking for more undiscovered planets to account for these discrepancies.

Consider the planet Mercury for instance. Mercury has the most eccentric orbit of the planets known to nineteenth century astronomers. When Mercury is at its closest to the Sun (known as perihelion) it is some 46 million kilometres away and moving at an orbital speed of 56 kilometres per second. As it climbs out to its farthest distance from the Sun (known as

aphelion) it is 70 million kilometres from the Sun and has an orbital speed of 37 kilometres per second. This high eccentricity made the prediction of Mercury's orbital path somewhat harder than the other planets.

Observationally it is much harder to measure Mercury's position because it always stays close to the Sun. To get really accurate measurements astronomers struck on the idea of measuring the planet's position during times of transit across the face of the Sun. Because Mercury lies closer to the Sun than the Earth, occasionally it gets between the Sun and the Earth and astronomers can see it move across the face of the Sun. Measurement in the 1700's of the exact time of eclipse and the path across the Sun's face allowed astronomers to compute the scale of the Solar system.

When calculating the orbit of Mercury, the gravitational influences of every other planet must be taken into account. Each planet applies a slight tug on the planet Mercury causing its orbit path to change (or perturbate) ever so slowly. Unfortunately when all the perturbations for the known planets were taken into account there remained a small but measurable discrepancy. It was found that the point at which Mercury reached its perihelion moved forward in the direction of its motion by a small amount more than was predicted. The amount is very small being only 34 arc-seconds per century. It would take some 4,000 years for the prediction error to mount up to the apparent width of the Moon. While small, the discrepancy was significant and at this stage astronomers were

not prepared to accept something was wrong with Newton's Law so they looked elsewhere.

Varying the model assumptions to find a solution was no help. For instance, the mass of Venus was only known to about 10% at that time and this was enough to explain away the Mercurial problem. However a 10% more massive Venus would cause larger perturbations of our own Earth which were just not there. The only solution seemed to be another planet close to Mercury yet far from the Earth; that is the planet had to be closer to the Sun than Mercury.

This suggestion was made by the French astronomer Joseph Leverrier in 1859 and he even went so far as to name the planet *Vulcan*, the Roman God of Fire. Leverrier had in 1846 predicted the position of the planet Neptune and became the first person to discover a planet by calculation. (An English astronomer John Adams had done the same calculation three years earlier but couldn't get anyone to look for him).

The problem with predicting the existence of *Vulcan* was it was nearly impossible to observe. It would always be very close to the Sun and would move very fast from night to night. Apart from the very short periods of darkness at total solar eclipses when searches close to the Sun could be done, there seemed no other way to directly observe the

planet. The only possibility seemed to be to wait until *Vulcan* transited the Sun and calculate an orbit from there. If a second transit could be predicted the existence of the planet was confirmed. The only thing to be done was wait for an accidental sighting.



And the sightings did indeed come in. Leverrier eventually had enough data to estimate the planet was orbiting the Sun at a distance of 21 million kilometres with a period of 19.7 days. He estimated its diameter to be about 2,000 kilometres. Unfortunately, this was just not enough to explain the discrepancy in the advancement of Mercury's perihelion and, despite the orbital calculation, *Vulcan* always failed to re-appear at the predicted times.

The controversy continued right up until Leverrier's death in 1877. It was not until photography became a standard astronomical tool in the 1900's that astronomers could conclude that no planet brighter than eighth magnitude existed inside Mercury's orbit. This meant

nothing bigger than about 50 km diameter and meant the death knell for the planet *Vulcan*.

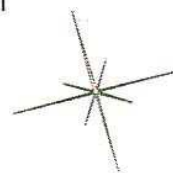
It wasn't until the start of the 20th century that the whole problem was swept away by Albert Einstein and the General Theory of Relativity. Einstein's relativistic view showed that the gravitational field of the Sun has an equivalent mass in its own right and this must be taken into account. Mercury is sufficiently close to the Sun for this mass-equivalent effect to equate to one planet, namely *Vulcan*. All the other planets are similarly affected but these effects were beyond the measurements of the day.

With this the planet *Vulcan* was banished into history as one of the many good ideas, but wrong, of which science is full.

Peter Lowe

NACAA 17 in BRISBANE

This is about your last chance to book in to the next conference of amateur Astronomers to be held in Queensland at Easter. Details are available from any committee member.



THE UNCERTAIN FUTURE - SEARCHING FOR NEAR- EARTH ASTEROIDS

(Ed: this is a current plea from Duncan Steel, a professional Astronomer at Adelaide

University and the AAO, broadcast on the worldwide Internet to everyone interested in keeping the *Asteroid and Comet Search and Tracking Programs* going. Please spare the time to read this and maybe respond in kind.)

There has been much talk over the past few years about searching out the asteroids and comets that threaten life on Earth, and one might have hoped that, having seen the huge explosions on Jupiter last year, the people with the money (governments, private foundations) would have determined to do something about it. Well, some of them did: they cut all the funding.

Despite what you might think from reading the volume on the net, or in the mass media, the level of activity (with regard to sky searching) is the lowest it's been for some years. Last year there were four Near Earth Object (NEO) search programs operating, but from the end of this year we may be down to just one: only *Spacewatch* at the University of Arizona.

My immediate concern is the (terminating) program in Australia, which will finish on December 31st 1995 because the Australian government is not providing any further funding.

Thus, any Australian reader of this who feels that his/her government should be spending some cash on helping to ensure that we are not taken unawares by a sneaky asteroid giving us a really bad day (or life) should write to one or both of the Ministers mentioned below. However, letters from all around the world would help: a lot.

You may not be Australian voters or taxpayers, but don't let that stop you from telling the government here that you'd like to see something done. Here, Down Under, people feel rather left out of the world at times, and letters from Des Moines, Moosehead, Nempnett Thrubwell (that's in England), Milan and Moscow, to name a few, will have a considerable effect upon our politicians.

Please, write a simple letter telling the following Ministers that as a citizen of the world you'd like to see Australia continue (and indeed expand) its efforts in this regard. If we are to solve this problem then some southern hemisphere coverage is essential, and that should be Australia's role.

Tell these people all the other good reasons for searching these objects out: targets for exploration, more accessible than the Moon, composed of the materials like metals, silicates and ice which we will need in the future century or so to move out into space. Accentuate the need for international collaboration, that being a good reason for you to write.

The people to write to are:

The Hon Simon Crean, M.P.
Minister for Education,
Employment and Training
Parliament House
Canberra, ACT 2600
Australia.

Senator Peter Cook
Minister for Industry, Science
and Technology
Parliament House
Canberra, ACT 2600
Australia.

But don't stop there. Send a similar letter to your own Member of Parliament, Congressman, Representative, or Senator, saying that you want your own country to be involved in this.

If Spaceguard is to go ahead, and we are to guarantee that civilization will not be extinguished by some chance, massive impact within the next century, then we need to build and operate the Spaceguard network of telescopes around the globe, and operate them diligently for a couple of decades. Then we'll have it licked; and then we'll have to either worry about one or two potential impactors, or (more likely) we can breath a sigh of relief and get on with exploring them, and using them as sources of raw materials to get our descendants off of this planet, and out into the cosmos.

It needs thirty minutes of your time, and a postage stamp or two. Please do it.

Duncan Steel
Anglo-Australian Observatory &
The University of Adelaide.
dsteel@physics.adelaide.edu.au

FOR SALE

Sonoco cardboard concrete-former tube, 150cm/60inch long, and 25cm/10in diameter. Suitable for a 20cm/8inch telescope. Focal lengths up to f/7. Excellent condition - \$20. Call John Cleverdon on (059)-87-1535.

Parks off-axis guider body for Celestron or Meade SCT, but does not work with f6.3 focal reducer/corrector - \$65. If interested, phone Renato Alessio on (03)-9798-8926.

BACK ISSUES

Back copies are available for \$3.

FROM AROUND THE NATION

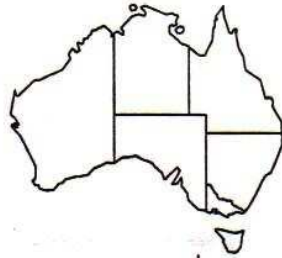
Astronomical Societies in Australia, as a rule, exchange each

other's newsletters to assist in sharing items of interest. This column grabs some of the highlights of recent receipts. You can find out more in the library.

Sutherland Astr. Soc. (NSW) - Membership is about 120 at the moment. One member is hoping to start up a double star section and is looking for others with a similar interest. A review of commercially available scopes is presented. Feedback is provided on the 1995 Space Frontier Conference in Sydney.

Latrobe Valley Astr. Soc. (VIC) - An interesting talk on the local weather and predicting it is reported. In the Latrobe Valley at 9pm, 56% of nights have 50% or more of cloud cover, 43% of nights have 88% cloud cover or greater. A recent interview with telescope maker and former monk John Dobson is reported. The LVAS is assessing a potential new observatory site at Wirilda Park near Morwel, and is currently assessing the seeing conditions at this site.

Astron. Soc. of Victoria (VIC) - The history of their Leon Mow viewing site at Heathcote is given. Significant new developments are upcoming, including installing toilets, an overnight cabin, scope piers and concrete pads and a camping area, with longer term plans for an 18 person lodge the size of a house. Feedback on their membership survey seemed to suggest (1) put more money into the Heathcote property, (2) put more into public education, and



(3) acquire some telescopes for loan to members.

FINAL PRONOUNCEMENT - KUIPER & OORT

Comets were among the first objects to form in our Solar System, and were created from the same spinning gas and dust nebula that gave birth to the planets and the Sun 4.6 billion years ago. The outer portions of the nebula disc condensed and gravitationally interacted over the millennia to form a spherical region call the Oort Cloud, which is believed to be situated a good fraction of the way from our Sun to the next nearest star. This was named after the Dutch Astronomer Jan Oort (pronounced "Yarn Or-t") who theorised its existence in 1950.

Also in 1950, a Dutch-American, Gerard Kuiper (curiously pronounced "Koy-per") suggested there would also exist a disc-like region in the plane of the Solar System, but just beyond the outer planets, that would contain a lot of the original material left over from the planet building era. The Hubble Space Telescope has confirmed the existence of this Kuiper Belt by finding several comet-asteroid-like objects at this distance. All comets are thought to arise either from the Oort Cloud, or the Kuiper Belt, and they would number in the trillions.

If you recall in 1994, during the collision of comet Shoemaker-Levy-9 with Jupiter, NASA's Kuiper Airborne Observatory with its onboard infrared telescope was based at Melbourne Airport and a slide

show regarding it was given during that year.

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

NEXT ISSUE

Getting Your Observing Programme Ready

STOP PRESS

The Galileo spacecraft featured in December's meeting has now reached the gas giant Jupiter and has inserted itself into orbit successfully. Its probe entered the Jovian atmosphere perfectly and functioned flawlessly. By now the small probe has been totally vaporised to atoms by the heat present as it descended into the atmosphere (there is no solid surface on which to land). The total contents of its scientific mission are stored on both the faulty onboard tape recorder, and in areas of the spacecraft's computer memory (as a safeguard). Transmission of the data back to Earth will begin in January/February when Jupiter is better placed in the sky. Currently the Sun is between Jupiter and the Earth.

Prior to its encounter with Jupiter, the craft had been encountering virtual dust storms in space. Normally its detectors would register an impact from a speck of dust once or so a day. However, as the craft neared Jupiter, this rose to over 20,000 particles a day. These particles, thought to be from the moon Io, are only the size of smoke particles and pose no threat to the vessel. It is curious that no increase in impacts was observed while Galileo twice passed through the Asteroid Belt.

COMPETITION ANSWERS

The answers to the Crossword competition from last issue are shown on the right. The winner of the competition is John Cleverdon who took time out from his Surveying studies to eagerly submit the most correct (100%), first opened entry from the Society's P.O. Box. Congratulations John on your knowledge of matters Astronomical. John's Astronomy book on *Variable Stars* was presented at the Society breakup in December.

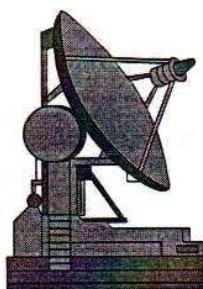
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Left - ASF society dinner at the Dava Hotel on the 29th February 1996
Photo - By John Cleverdon



Note: If this box is ticked then membership needs renewing and this may be your last edition of the newsletter. Please contact the Treasurer in this case.



The total radio energy collected by all the radiotelescopes that have ever existed would only light an ordinary torch globe for a tiny fraction of a second.

