SCORPIUS

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

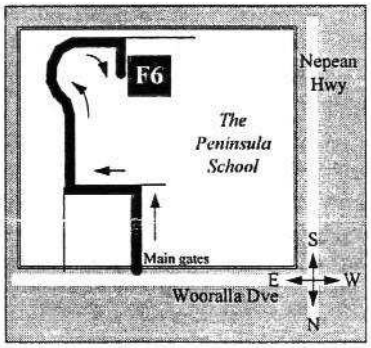
Volume V No. 3 1996 (May - Jun)

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. 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
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David Girling (059) 76 2806

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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 15th May '96
Session 1: Video of the recent stunning *On Jupiter* special, missed by some members.
Session 2: David Girling and Bob Heale on *Eyepieces.*

Wed 19th June '96
Session 1: Mt.Martha Field Naturalists tell us *What that Bump In The Night is at The Briars while observing.* To be confirmed.
Session 2: Roger Giller on *Right Ascension and Declination.*

Wed 17th July '96
Session 1: David Girling and Peter Lowe on *Life in Space.*
Session 2: Peter Skilton on *Occultations: When the Lights Go Out.*

Wed 21st August '96
Session 1: Slide show on *Astronomy in Australia.*
Session 2: Bob Heale on *The Colour of Stars.*

Viewing Nights:

Members Only:
Sat 11th & 18th May, 8th & 15th June, 13th & 20th July 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 (059) 76-2806 before attending. Follow the new signs at *The Briars* from the Visitor Centre at twilight. The bottom gate is no longer used. Remember you can

only attend on planned Members' Nights, unless by prior arrangement with David.

Public/School/Community Groups Viewing nights or slide nights:
If you can assist, please contact the Secretary.

- Mentone Girls Secondary College have asked us for a night on Mon 21st Oct at 7:30pm. About 100 expected. Melways 86H6, enter on oval at Charman's Rd.
- Public viewing night at Ballam Park, Frankston on Sat 27th July.
- The ASF Winter Lectures in basic Astronomy will be on again this year at *The Briars* on Wed 3rd, 10th and 24th July. Details to be advised at the monthly meetings.
- Peninsula Field Naturalists at *The Briars* wish a talk and, tongue in cheek, "practical demo" of the Tides on Wed 12th Jun at 8 pm. Should prove interesting. This will be followed on Sat 15th Jun by a viewing night at *The Briars* at 7 pm coinciding with a Members' Night

Social Events:

- A 1996 Solstice Party will be held on Sat 22nd Jun at the home of Vivienne and Peter Lowe, 4 Grainstore Crt, Langwarrin, at 6:30pm. Details will be advised at the monthly meeting, but will be BYO, bring a plate, and have a donation of $5 a head.

Phenomenal Events:

- Ready your annual leave from work now, for Sun/Mon 17/18th November this year for our inaugural "**Leonids All-nighter**" *at The Briars* where members will watch this famous meteor shower as we approach storm levels. Buy a banana lounge and warm clothing or a rug now.
- Comet Hyakutake made a big and bright impression in the middle of March, requiring unfortunately observing after midnight or before dawn. The comet's head or coma was clearly visible to the unaided eye, as was the tail in local reports of 18th March. A couple of days later it was lost over our Northern horizon as it approached the Sun more closely. It reappears mid-May.
- The 4th Galilean moon of Jupiter, Callisto, is now undergoing eclipses that can be viewed in even small telescopes.
- The eclipsing star system called BL Telescopii goes into eclipse once every 780 days or so. Each eclipse occurs over a period of 2 months, and the next is centred near 25th June. Charts and help on observing it are available from Peter Skilton. It is simple and needs only small binoculars.

YOUR SOCIETY

NEW MEMBERS

Welcome to the following new Society members:

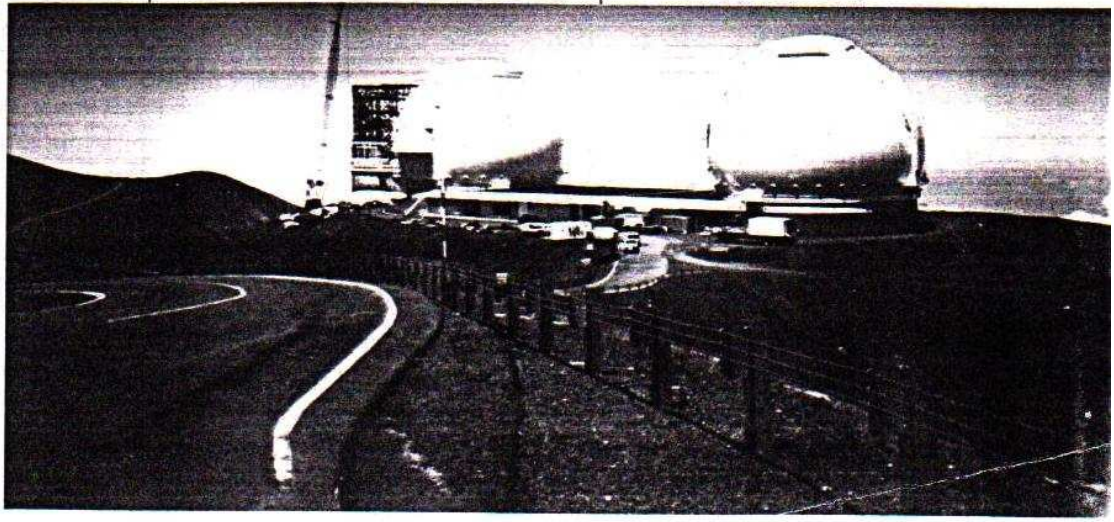
Rae Crittenden
June Elmer
Ivan Blake - newsletter only
Esme & Reuben Kent - newsletter only

The ASF is the 2nd largest Society in Victoria. Please feel free to say hello at general meetings. Society badges showing the logo, Planispheres and Astronomy books & posters are also available at monthly meetings to full members. A limited supply of Society windcheaters is available for $35 in M/L/XL from the Secretary.

SIMON VISITS HAWAII

Last year, the Society wrote a recommendation for young member Simon Hamm to attend the *Australian International Space School*. It turns out his application, only open to Years 10 and 11 students, was successful, and it subsequently lead to a trip to Mauna Kea in Hawaii. Upon his return Simon has provided the following feedback and photos.

On the 16th of April 1995 myself, 37 other graduates from



the AISS (Australian International Space School) and a non AISS graduate, (Juanita Morgan) flew to Hawaii for The 1995 AISS Hawaiian Trip.

The first half of the trip was spent on the Big Island of Hawaii where we saw the Volcanoes National Park, Black Sand Beach (a beach with jet black sand caused by volcanic ash), the Onizuka Space Centre (set up in memory of Ellison S. Onizuka, Hawaii's first Astronaut, who died in the Challenger Space Shuttle disaster) and the Natural Energy Laboratory of Hawaii (NELHA), which originally started as an environmentally friendly thermal energy centre and is now a world leader in aquatic research. The group also saw the world famous W.M.Keck Observatory situated 13,680 feet high on the Hawaiian volcano Mauna Kea. This observatory currently houses the largest optical telescope in the world at 10 metres diameter.

The second part of the trip was spent on Waikiki Beach, on the tourist island of Oahu, where everyone visited Pearl Harbour, the Hard Rock Cafe, the last rain forest in the United States and saw Diamond Head Mountain. All up, the 1995 AISS Hawaiian trip was very enjoyable and the experience was well worth the money!

Simon Hamm

HELP NEEDED

The search continues for an Overhead Projector for the Society. All members are asked to keep an eye out.

Members are asked to identify suitable venues and places of Astronomical interest for when we host the VASTROC conference next year. If you have contacts associated with a suitable lecture area/tea room type facility we are keen to hear from you, particularly if you might get it at a discount.

Articles of interest, book reviews or notifications of events of special interest in the sciences or Astronomy in

particular are always sought. While a simple TEXT file format on a 3.5 inch floppy diskette is preferred, the editor is willing to keyboard handwritten or typed material if it is legible.

SECRETARY'S JOTTINGS

All Victorian Societies have now been informed of our intent to hold VASTROC next year, and no objections have been received. Our planispheres have been found, though there were fewer than expected. Committee is investigating obtaining a VCR and Overhead Projector, second hand if possible.

Regarding progress at *The Briars*, the National Trust is now apparently happy with our proposed observing site developments, so building permits now go before the shire council in April.

Following this final approval, the concrete can be poured for the Observatory floor, and pine open fencing erected (like around parks and reserves). Does anyone have any contacts in the fencing trade who could provide discounts or freebies?

David Girling is arranging to have laser-cut signs prepared to help people find the viewing site within *The Briars*, particularly since the preferred route changes every now and again for one reason or another e.g. where the cows are.

Don Leggett

RECENT MEETINGS

March's meeting was run by Peter Skilton, and again saw about 50 in attendance. After the usual background covered happenings of the previous month, and what is about to happen, Bob Heale soldiered on with his *Sky for the Month*, and what now seems a regular monthly battle with the borrowed overhead projector. Much information was provided on Comet Hyakutake.

The raffle was then drawn by Kathy Stabb, allowing Ed Barber to run away with the prize. Following the usual chat over coffee, the gathering split into two, with one session run by Bob and David concentrating on the comet. Next door, the President zoomed the audience from the infinite to the infinitesimal in the Universe with a talk on *From the Biggest to the Smallest*. Some members were heard trying to reassure themselves on the way home that there cannot possibly be that many ugly dust mites in their bed. The meeting closed at 10pm.

Unseasonably rainy weather kept many away from April's meeting chaired by the President, with about 35 braving the elements, including many new faces. Slides and photos taken of comet Hyakutake, prior to its April disappearance over our Northern horizon, were shown and clearly indicated an impressive tail and spike in the coma. Bob presented his Sky for the Month, detailing the planets currently visible and their appearance. The library has undergone its metamorphosis, with all books labelled and catalogued. Truly a wonderful effort by our Librarian Kathy Stabb. New rules have been introduced for borrowing, and will be posted on the door. Member co-operation in following them will ensure the library stays under control. This month Peter Norman won the raffle.

After breaking for coffee, one session retired next door to hear Steve Malone talk on Telescopes and their construction, backed by Bob Heale talking on comets and nebulae.

Next door, Peter Lowe and Ken Bryant enlightened the others on what happened at the National Australian Convention of Amateur Astronomers, the biennial conference held over Easter this year at Brisbane. Peter gave lucid details of a subterranean hypersonic wind tunnel he visited, which involved a donated 6 inch Naval gun firing a projectile down a barrel, compressing the gas ahead of it. The shock wave generated could then be focussed and directed onto a model spacecraft re-entry vehicle immersed in a gaseous atmosphere, to study how well the craft would survive re-entry from orbit. Speeds of about 7 km/sec could be generated. The meeting closed at 10:20pm.

Ros Skilton

RECENT VIEWING NIGHTS

The slide show and viewing night at St.Louis de Montford school in Aspendale was a great success in late March, with 150 in attendance. After a few initial hitches such as the teacher forgetting the key to the school, and one member forgetting his telescope stand, the night proceeded well, with 4 members in attendance. There was much interest generated in our Society, particularly since the school had been visited by an Astrodome facility the day

before. Thanks go to Bruce Tregaskis, Ken Bryant and Peter Lowe for assisting.

Mornington Environment week also went well, with more than 100 children a day seeing the displays put together by the Society. Representing us over the 5 day period in late March were Don Leggett, Ken Bryant, Don Casserly and Michael Kot.

COMET HYAKUTAKE

The naked eye comet discovered by Japanese amateur Hyakutake graced our skies in March. Reports on the 19th of the month by Jim Blanksby indicated the tail was visible to the unaided eye, with 12x50 binoculars showing it to be at least 3 degrees long (the angle of 6 Moon diameters in the sky). Photographs taken by Jim that morning were passed around at the March meeting. 1600ASA slide film exposed in the early morning of 25th March showed a blue tail of a staggering 20 degrees in length, with the coma just above the horizon.

During the week of 18th March, member John Cleverdon was up at Howmans Gap Recreation Camp (about 5km north of Falls Creek) on a cartography camp for University. He writes:

I realised this would be a great chance to view the comet from dark skies. Monday night turned out clear, and after waiting for a while, the comet rose by 11.30pm. The three lecturers, a friend, and myself observed it through a theodolite, although it was easily visible with the naked eye (magnitude about 3).

Tuesday and Wednesday nights turned out cloudy. Thursday night saw a drive into Falls Creek where everybody except myself and a friend spent 4 hours drinking (the lecturers too were drinking - luckily we got back to camp safely). While driving back, I saw the comet out the window of the minibus, and back at camp, the theodolite was set up again to view the comet. By now, it had brightened to around magnitude 1.5, with a very bright, condensed coma perhaps 20 arcminutes in diameter, and a tail faintly visible up to 2 degrees long (not everyone who looked was able to see the tail - perhaps the effects of alcohol?). There were also two meteors visible.

This time, there were more people looking at the comet - the lecturers, about 10 RMIT students, as well as some students and staff from a Charles Sturt University group also staying at the camp, and also one of the camp staff (all up, about 50 in total!). Being clear, the night was also quite cold - there was frost the next morning, so I didn't stay out too long, getting to bed about 1am (some RMIT students stayed up playing pool/table tennis etc until 7am - then had to get up in time for a 9.30am departure !). By Friday night I was too tired to stay up to look for the comet.

Saturday night I stayed up until 12.30am with no luck, so I got up at 2.30am Sunday morning and set the telescope up on it. I also woke Mum and Dad up and showed them, however, due to light pollution and hazy cloud it wasn't too spectacular. One thing of interest I noted was that the co-ordinates given for the comet turned out to be rather inaccurate - the comet didn't head roughly due north as predicted.

John Cleverdon

THE MT. WAVERLEY GRAZE: HERE, I WANT A WORD WITH YOU

On Saturday morning, April 13, a graze expedition met at AFL Park in Mt. Waverley at 4am local time. The party was composed of 7 observers; 3 were from the ASF (Ken Bryant, Peter Lowe, Peter Skilton) and the remainder from the ASV. More were discouraged by the cloud cover, the thought of work the next day, or by hangover from *The Briars*' viewing night the previous evening.

I arrived second on the scene to find the local constabulary interrogating Jim Blanksby who had arrived early, and could sense he was having considerable trouble convincing the police of his noble intent. Dressed in dark clothes, wearing a beany on his head, and for all the world looking like a stereotypical burglar, Jim was quietly trying to show one policewoman the graze prediction sheet, while explaining that he was there in the dead on night to observe a star graze along the limb of the Moon. "A likely alibi", I could hear her think. Looking somewhat perplexed and still very sceptical after she looked at the sky (since there was no Moon or stars to see due to almost total cloud cover!), she turned to me and asked if his car had really broken down. After I confidently corroborated Jim's outlandish story that we were there to do Science, the constables seemed satisfied and

drove off, but I did notice they cruised slowly by us again about half an hour later.

The other members of the party arrived shortly after and fanned out along the Eastern edge of the park. One, Patricia Larkin, arrived late after she locked herself out of her house in her enthusiasm to leave. After the graze she would have to climb through her bathroom window, but hopefully not under the watchful eye of the long arm of the law (at least she wasn't wearing a beany).

Well, just before 5am, the graze occurred with only one site recording possible events through a break in the clouds. Meeting over coffee and pikelets afterwards, slides of comet Hyakutake and photos of NACAA in Brisbane were passed around, before the group departed for some more sleep. The night's adventure was over.

JUST FOR STARTERS

EYE IN THE SKY

Aerial photography has been used over the years as an aid to discovering minerals, preparing maps, predicting crop yields, policing and protecting the environment. With the Australian continent being so large and sparsely populated, aircraft-borne observation of the land surface is somewhat inefficient. However, with the advent of satellite-based photography, the situation has changed in perspective.

Among the host of satellites watching the Earth from orbit are the Earth resources satellites, such as Landsat. The Landsat series of satellites had their launch in 1972, 1975 and 1978 by NASA, and can view all of Australia in a total of 500 pictures, providing an excellent overview of the continent. Each craft has a mass of 1 tonne and orbits from North to South at a height of 920 kilometres, providing a complete coverage of the Earth's surface every 18 days. The satellite orbit stays fixed in space, and the Earth simply turns beneath it.

The onboard cameras are sensitive to four wavelengths of light: green, red and two infrared bands, and have a resolution of better than 80 metres. Therefore a football field would represent about one tiny pixel on a photograph. If you take a close-up view of your television set you will also see the picture is composed of **pixels**, or picture elements. One Landsat image is made up of just over 7 million pixels, orders of magnitude more than on your television.

IN THE NEWS

In 1992, NASA conducted an ambitious experiment to see if electricity could be generated in Earth orbit by trailing an experimental satellite at the end of a long, conducting tether line which was intended to cut Earth's magnetic field lines and generate power in the process.

At the time, this cable actually jammed in the Space Shuttle's cargo bay winch, after only about 300 metres of it had been unwound. It was then hauled back into the cargo bay so they could shut the doors for re-entry, and the experiment was abandoned.

The second attempt was recently tried, and nearly 21 kilometres of metallic tether was played out into space, with a small satellite dangling on the end. This time the line snapped, as it was almost fully extended, freeing the satellite in its higher orbit.

At the time of breakage, the tether which was made of a composite of teflon, nylon and copper, was experiencing about 3500 volts and carrying about half an amp of current. The electrical circuit was completed by firing electron guns (like those that make the picture in your television) from the Shuttle's cargo bay. The $440 million experiment then went drifting away in orbit. Parts of Northern Australia have been lucky enough to view the satellite in their skies, trailing the tether line which was also visible.

The U.S. National Oceanic and Atmospheric Administration's high technology $77 million satellite NOAA-13 was launched in August 1994 to monitor the Earth's weather, and to assist in global search and rescue missions. A fortnight later it stopped working permanently.

The culprit was eventually traced to a 10 cent screw. The screw, a mere 3 centimetres long was unfortunately a couple of millimetres too long.

With the rigours of launch vibrations and life in space, components can move about somewhat as they expand and contract as a satellite passes into or out of Earth's shadow. In this case, the screw just punctured a circuit board causing a short circuit to develop between tracks. Unfortunately, the shortcircuit was across the

satellites solar panels and so its onboard batteries quickly drained flat. The satellite is now dead in orbit. A sister satellite due to be launched has now had the end of this screw filed off and the insulation around the circuit board doubled in thickness, just in case.

FEATURE

GALILEO JUPITER ATMOSPHERE PROBE - FIRST RESULTS

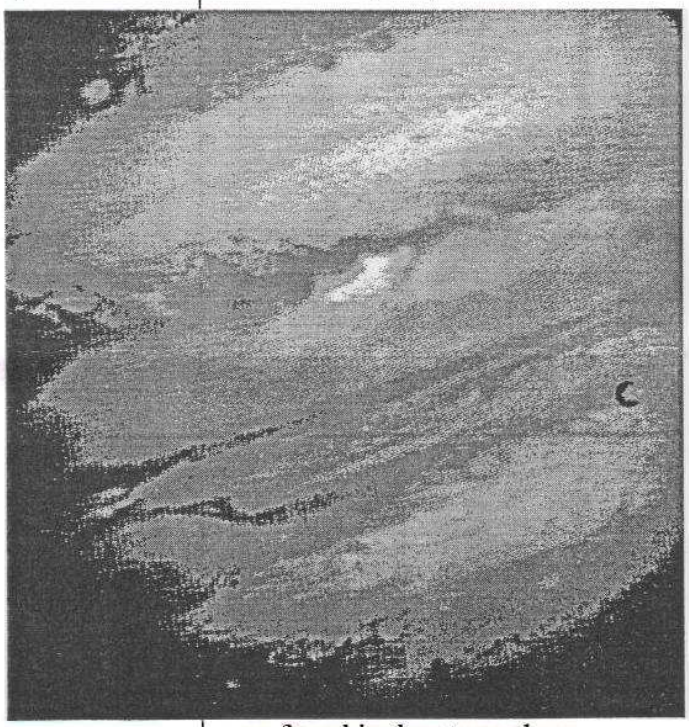
A new instrument is a good instrument if it forces us to reconsider our theories and beliefs in the light of new information.

By this definition the Galileo-Jupiter atmospheric probe has been a good instrument. Plunging into Jupiter's atmosphere on December 7 last year the probe's life barely lasted 58 minutes, but in that short time has returned data forcing planetary Astronomers to re-think their current models of planetary structure and evolution.

Entering the Jovian atmosphere at 170,700 km/hr, it experienced deceleration forces up to 230g slowing it to 3,000 km/hr before the heat shield was discarded and data transmission began. Hanging from its parachute, the probe's life lasted from the atmospheric cloud tops, where the pressure was 0.1 bar (1 Earth atmosphere = 1 bar), until something finally succumbed under a pressure of 23 bar some 600km below.

All the probe instruments worked as planned and, despite tape recorder problems on the Galileo orbiter, all data were successfully transmitted to Earth. Only preliminary findings have been released by the mission scientists and much more analysis needs to be done but the findings so far require us to re-think our understanding about this gas giant planet.

Some findings so far are :-



(1) A new intense radiation belt, similar to Earth's *Van Allen Belt*, was found a few hours prior to the probes atmospheric entry. The belt is approximately 10 times stronger than Earth's *Van Allen Belt*. Surprisingly, highly ionised helium was observed which is totally unexpected and the source of this helium remains unknown.

(2) There has been much argument about the planet's winds since the early interplanetary probes. We can only see the cloud tops from Earth or orbital craft, and the deeper wind structures are unknown. Some investigators have favoured high velocity winds at the top of the atmosphere, with only general planetary circulation deeper down, much like those found on Earth. Alternatively, other investigators have postulated high mixing winds, deeper in the atmosphere.

The probe revealed strong winds of approximately 540km/hr persisting deep into the atmosphere and wind strength seemed independent of depth. A major implication from this finding is that wind structures on Jupiter are not driven by differential heating via sunlight such as experienced on Earth. Furthermore, very little water was found in the atmosphere seeming to preclude winds driven by heating due to condensation of water vapour, again as occurs during cloud formation here on Earth. Another energy source must therefore be driving these wind mechanisms. One highly likely mechanism could be heat energy escaping from Jupiter's deep interior.

(3) Upper atmospheric density and temperature appear to be significantly higher than expected. The measured temperature gradient shows the atmosphere to be convective at all levels and seems to require an additional heat source beyond sunlight to account for these results. If correct this may mean the deep atmosphere is well mixed and the probe atmospheric analysis is also representative of the deeper

levels. Visibility was much greater than expected. While some haze was detected, no thick cloud structure was found. Only one distinct cloud structure was detected and seems to correspond to a predicted ammonium hydrosulfide cloud layer.

No lightning flashes were observed, although radio lightning bursts were detected. The radio wave intensity suggests lightning activity is some 3 to 10 times less than on Earth.

(4) With regard to atmospheric analysis, some interesting results appeared.

(a) Water vapour
- much less than expected

(b) Oxygen
- much less than expected

(c) Methane
- much less than expected

(d) Hydrogen Sulfide
- slightly less than expected

(e) Nitrogen
- greater than expected

(f) Neon
- much less than expected

(g) Helium
- much less than expected, at least in initial review of the returned results.

The amount of helium seemed to be much less than that observed in the Sun. The helium abundance was expected to be about the same since the planet and the Sun were formed from the same cloud material, and the Sun has not made that much more additional helium yet. This suggests helium could have fractionated or "rained out" of the Jovian atmosphere into the deeper regions.

What does all this mean? For a start, a lot of re-thinking and, without doubt, we need more probes. All these data come from one spot check, and already scientists are questioning whether the probe entered at some unique location. No doubt more information will be forthcoming as the remaining probe data is deciphered.

Peter Lowe

BOOK REVIEW

THE WONDERS OF THE WEATHER

Bob Crowder (Australian Government Publishing Service, 1995) 270 pages. ISBN 0 644 35020 2 $39.95 available at Information Victoria.

As amateur Astronomers most of us have a more than passing interest in the weather. There is an old saying that "Everyone talks about the weather but nobody does anything about it". Well, we still can't do a lot to change the weather but a better understanding of the causes and effects of various weather patterns can help us to plan our observing sessions to avoid wasted travel time or missed opportunities.

Australia's first weather map was published in the Sydney Morning Herald on February 5th 1877. It was based on observations collected from 77 stations in New South Wales, Victoria, Queensland and New Zealand. Today's modern weather map will be based on information from hundreds of ground stations, ships, aircraft, radar, sounding balloons and satellites.

Would you like to take a guess at Melbourne's annual average rainfall? It depends on how you define Melbourne. The figures increase as we move eastwards, from just on 400 mm per year around Werribee through 600 mm near the city centre, over 800 at Box Hill to over 1400 mm per year around Belgrave. Melbourne also appears to be the cloudiest of the capitals with just 5.7 hours of sunshine per day averaged over the year compared with 5.8 for Hobart and 6.7 for Sydney. Darwin wins with 8.4. These are just a few of the hundreds of interesting facts contained in Bob Crowder's *"The Wonders of the Weather"*.

This A4 size book has 11 chapters covering topics such as "The Sun, the Earth and the Seasons", "Clouds" , "Precipitation", "Weather Maps" etc. Each topic is explained clearly by means of photographs, tables, maps and clear, concise diagrams. An appendix covers units of measurement, the SI system and scientific notation. The book has a strong Australian focus, so much so that even the tornado photograph is from Booleroo, South Australia and not the usual Kansas twister that we see in other weather related publications. It is very easy to read, being well designed and laid out. Photographs and diagrams are mostly close to the corresponding sections of text and are well captioned. The work appears to be free of the typographical errors, transposed captions and incorrect page references that we sometimes encounter.

There is some Astronomical content, mostly in the first chapter, covering the orbit of the Earth, the seasons and lunar phases. The diagram of the Sun on page 2 confuses a solar prominence with a solar flare but I have seen the same mistake in more than one recent publication devoted entirely to matters astronomical. I cannot comment on the accuracy of the technical and historical information presented but given the author's background as a retired Deputy Director (Services) of the Bureau of Meteorology I have no reason to doubt it. *"The Wonders of the Weather"* is highly recommended for anyone with a more than passing interest in the weather. I will have a copy available for inspection at the next couple of meetings for those who want to have a browse.

Roger Giller

U3A COURSE ON OFFER AGAIN

Past Society President, Peter Norman is once again conducting a series of Astronomy talks at his home in Mornington as part of the *University of the Third Age*. The course is an introduction to the nature of the Universe, including topics on the early history of Astronomy, optical and radio telescopes, the evolution of the Universe, galaxies, stars, the solar system and life.

The first of eight sessions will be held on Thursday 2nd May at 16 Shelbourne Court, Mornington, from 10 am to 11:30 am. Please phone Peter on (059) 75-3040 to register your interest. No previous knowledge is assumed.

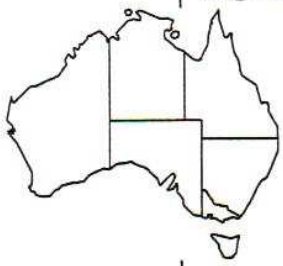
STUDENT PRIZES

Details of current science competitions held around Australia at the moment for Primary and Secondary school students have recently become available. You can arrange a copy to be posted to you for $1 by phoning the Secretary.

WANTED TO BUY, SWAP etc.
Micrometer eyepiece for use in double star work. Graduated eyepiece for use in lunar occultations. 6 inch Newtonian telescope. If you have any of these, and you no longer wish the status quo, please contact the editor.

BACK ISSUES
Back copies of past journal editions are available for $3 from the editor.

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.

Astron. Soc. of Victoria (VIC) - Annual reports from interest section directors are given. A book review of Hartung's *Astronomical Objects for Southern Telescopes* is provided. The ASV has started a New Astronomers' meeting held prior to their normal meeting, and are releasing scopes on loan to new members only. ASV Committee is considering scrapping the traditional ASV yearbook which will be released late May now.

Astron. Soc. NSW (NSW) - The ephemeris for comet Hyakutake in May/June is listed to enable it to be found upon its return around the Sun. The society's 4th South Pacific Star Party will be held at their viewing site on May 16-21. Much feedback is provided on the Galileo mission and other material gleaned from the Internet, and an article given on megabright stars. Siderostats and Coelostats are described.

FINAL PRONOUNCEMENT - MARE

The extensive dark, flat areas on our Moon's surface are easily visible to the unaided eye. Originally thought to be liquid water seas or oceans, we now know they contain no water, and never have. Their smooth appearance is due to violent volcanic activity in the distant past that has spread lava across large areas of the Moon. These areas were originally excavated by meteoroid impacts some 4 billion years ago, then later filled with lava, forming what we now see as huge dark plains. Such a plain is referred to by the Latin name for "sea", being Mare, pronounced *"Marr-ray"*. The plural form is Maria (not to be confused with a girl's name), pronounced *"Marr-ee-err"*.

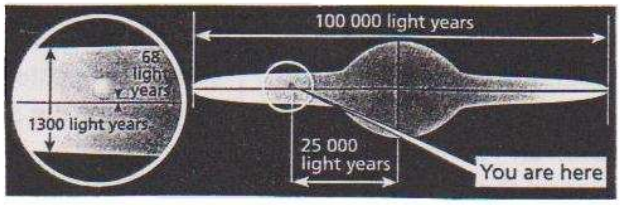
There is a noticeable deficiency of craters in the Maria than on the brighter highland areas of the Moon, indicating the Maria were formed later than the highlands since all the old craters would have been filled by lava, and only newer craters are therefore visible now.

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
Choosing Your Binoculars

OUR PLACE IN SPACE

Our Galaxy, the Milky Way, contains approximately 200,000 million stars. This collection of suns is saucer shaped, resembling a flat disc that bulges in the centre. It looks much like a fried egg sitting in a frying pan. Our Sun is one small insignificant yellow star about 25,000 light years from the centre, almost exactly half way from the centre to the rim. By counting the number of stars when looking up out of the plane of the Galaxy in the night sky, compared with the number when looking down in the night sky, we now know that we are very close to the galactic plane, just 68 light years above it. Where we are, the Milky Way is only about 1,300 light years thick, in the "white of the egg", and so we are about 10% above the plane of the Galaxy.



Left - ASF Briars site 1996

Photo - By Peter Skilton

☐ 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. Members who joined late last year will have this time taken fairly into account, and should remind the Treasurer of this.

ANSWER to ODD ONE OUT from LAST EDITION

Of the five words *mystery, jester, sign, emu, vikings*, the odd one out is emu, since all the others start and end with the same letter of the alphabet as does some planet in our Solar System i.e. Mercury, Jupiter, Saturn, Venus.