



SCORPIUS

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(Jan - Feb)

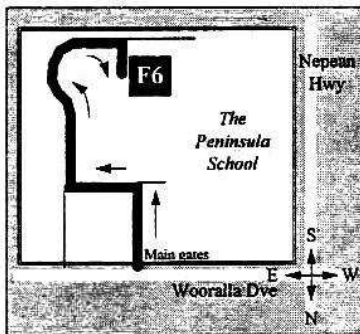
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The Astronomical Society of Frankston was founded in 1969 with the aim of fostering the study of Astronomy by amateurs and promoting the hobby of amateur Astronomy to the general public. The Society holds a General Meeting each month for the exchange 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/asf>

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

President & Editor
Peter Skilton (03) 9776 5898

Vice President & Briars Viewing
David Girling (03) 5976 2806

Treasurer
Peter Brown (03) 9789 5679

Secretary
Don Leggett (03) 5985 4927

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

Phone calls before 8:30pm please.

FUTURE EVENTS

General Meetings:

Wed 15th January '97

Session 1: Guest speakers Roger Vodicka and Adam Marsh of the ASV streak in with *Meteors*. To celebrate, we'll even raffle off a meteorite at \$2 a ticket (postal entries are fine).

Wed 19th February '97

Session 1: Video on the top secret history of Australia's Woomera rocket range.

Session 2: David Girling and Bob Heale on *Observing the Moon*.

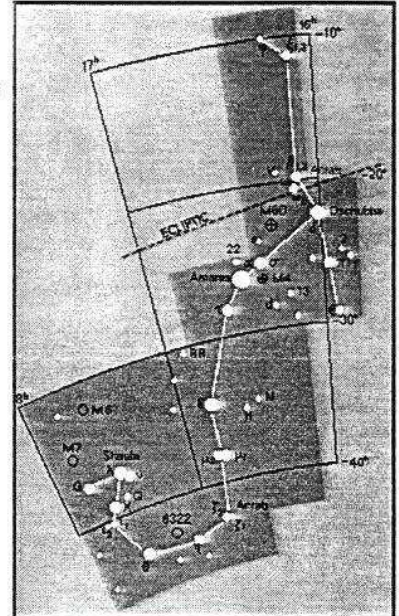
Wed 19th March '97

Session 1: Peter Skilton tells all on electromagnetic radiation in *A Little Light Relief*.

Session 2: Bob Heale will explain *Of What is that Celestial Object Made?*

Viewing Nights:

Members Only:



Jan 4 & 11, Feb 1 & 8, Mar 1 & 8 & 15, Apr 5 & 12, May 3 & 10 & 31, Jun 28, Jul 5 & 26, Aug 2 & 9 & 30, Sep 6 & 27, Oct 4 & 25, Nov 1 & 22 & 29, Dec 6 & 27 all at *The Briars*, Nepean Hwy, Mt. Martha (Melways 145/E12). For those unable to attend on Saturdays, there will be special Members' nights on Wed Apr 9 and Wed Jun 4, running from 7pm until 10pm.

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.

- Summer Public Viewing Nights at *The Briars* Visitors Centre on Fri Jan 10, 17, 24 & 31. All welcome.
- Ballam Park public Viewing Night will be held on Fri Apr 18 at 7pm. Melways 103/A4.

Social Events:

- A dinner will be held at the Dava on Fri Feb 21 at 7pm. Esplanade. Mornington. Melway 145/C6.
- There will be a Slab Party to celebrate our major milestone of pouring 3 trucks of reinforced concrete. Details advised at monthly meetings.
- Our Society will visit *Ballaarat Observatory* for a BYO BBQ and observing through their 26 inch scope. The Observatory is a short walk from *Sovereign Hill*. On Sat Mar 8, and transport may be arranged if needed.
- Bev and Roger Giller will sacrifice their home's peace this Solstice night on Sat Jun 21 at Berwick.

Phenomenal Events:

- The Russian space station *Mir* is visible to the naked eye, if you know where and when to look. Viewing predictions are available at meetings.
- An *Alpha-Centaurids* All-Nighter is planned for Fri/Sat Feb 7/8 at *The Briars*. This meteor shower is famous for its long lasting trails.
- A night for Lunar observing will be held at *The Briars* on Sat Mar 15, with a 6 day old Moon, and on Sat Jul 12 with a 7 day old Moon. Attendees (do I hear you say lunatics?) will meet at twilight to observe the visible features, craters and mountains on our nearest neighbour in space.
- An *Eta-Aquarids* All-Nighter is on for Sat/Sun May 3/4 at *The Briars*. These meteors originate from comet Halley.
- A Pluto planet hunt will occur with member's instruments at *The Briars* on Sats May 10

and May 31. Never seen it before? Now is the chance.

VASTROC 97:

- We host the 6th *Victorian Astronomy Conference* for amateurs on the Queen's Birthday weekend. Sat/Sun Jun 7 & 8. It will be held in Mt.Eliza at Norwood House, and places are limited, so get in now. Costs are currently being calculated, but should be around \$60 per person to cover the venue, meals and dinner, which is comparable to previous VASTROC's.

YOUR SOCIETY

NEW MEMBERS

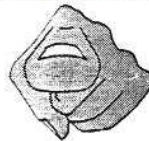
Welcome to the following new Society member:

Andrew Klop

The ASF is the 2nd largest Society in Victoria, and one of the largest in Australasia. Membership is 100. Please feel free to say hello at general meetings. Badges, windcheaters, planispheres, books & posters are available at meetings. Special name tags are free to new members who attend meetings. Replacements are \$2.

HELP NEEDED

Can any member help Ivan Blake by providing a lift to monthly meetings? Ivan is at Nepean Hwy, Seaford and can be contacted on 9786 1662. If you are contemplating throwing out old copies of the newsletter from past years, please offer them to the Librarian for the Society set. We would also like to borrow any pre-1989 for copying from long-standing members, so please rummage in your attic.



SECRETARY'S JOTTINGS

Final approval for our long-awaited concrete slabs at *The Briars* was obtained, and resulted in an unexpected soil test beforehand. The cows are now kept off the site by locking the gate, though entry to members is still unhindered via the top gate. Our grant submission for a telescope was unfortunately unsuccessful. After much dashing around the Peninsula inspecting venues and agreeing terms and conditions, the subcommittee has selected a suitable venue for VASTROC, where accommodation is also available for those who come from afar. Unfortunately, lecture theatre locations had to be ruled out due to exorbitant costs under user-pays philosophy. Thanks to those who helped with venue suggestions.

Don Leggett

RECENT MEETINGS

November's meeting chaired by the President was attended by 50, and saw several new faces and some not seen for many months due to competing interests (e.g. work, sailing the Whitsundays, overseas travel). Only two forgot the preceding meeting was at *The Briars*, and one was excused because that was his first general meeting. The AGM was dispatched in 21 minutes (overran by 60 seconds). The President's Report showed just how significantly the Society had developed in 1996, in addition to many phenomena in the sky. The Treasurer's Report showed we had a healthy balance, just being able to allow the pouring of both slabs in December. Orders were taken for the excellent and timely

publication *Astronomy 1997*, with half the attendees signing up then! Bob Heale gave a treat on *Sky for the Month*, covering both months before the next meeting. Three members indicated that the Sun was still curiously spot-free, as it had been since August. Three raffle prizes went off, one being donated by Kathy Stabb, and one being won by the organiser! Due to the preceding AGM, and much audience participation (such as on the availability of soldiers at our annual breakup), the group broke late for coffee, before returning to the parallel sessions. Bob Heale and David Girling talked about comets, meteor showers and what was in the sky, while next door Roger Giller rolled in talking about the Tides, anecdotes on wading birds, intertidal zones, and boating. The last meeting of the year closed at 10:30pm.

NEW LIBRARY BOOKS

The library has a new arrival from the book section. Remember members can borrow books for 1 month at meetings.

Moon, Mars and Meteorites - obtained from the British Geological Museum, London, where a large chunk of the Cranbourne meteorite resides.

ASTRONOMY 1997 NOW IN

Those who ordered the yearly almanac *Astronomy 1997* through the Book section, but are yet to collect it, can do so at a monthly meeting, or make other arrangements to collect it from the President. For those yet to pay, please note your copy will be held for January only, then offered for sale to others.

RECENT VIEWING NIGHTS

The annual breakup was held on Dec 7 at *The Briars*, as advised on the Secretary's answering machine. The Portsea location and Army viewing night were cancelled due to inclement weather threatening and the exposed location to the bay. About 25 souls met in a rather smoky army hut, complete with open fire, to chat about matters Astronomical. The stouter ones either viewed galaxies through the available instruments, or repaired tyres by torchlight.

Thanks go to the intrepid crowd for helping me out at the following nights. Manning the scopes and assisting were Ken Bryant, John Cleverdon, Sharron Fletcher, Roger Giller, David Girling, Tony Hales, Bob Heale, Don Leggett, Richard Pollard, Ian Porter and the Browns. Apologies to any others possibly overlooked.

Rosebud Secondary school on Nov 19 was attended by about 40 staff and students, observing the Moon and available planets. One pupil was even heard to say "*he really did learn something*". Truly.

On Nov 26, 45 students and teachers from Kangaroo Grounds Primary were treated to a slide show and a clear viewing night at Camp Manyung. Judging by the sheer number of questions, oohs and aahs, they all thoroughly enjoyed it.

On Dec 4, 80 Year 3 & 4 students and teachers visited Camp Manyung from Elfington Grammar and were provided with a serve of *Astronomy on the Move*. The

clear night and ample number of telescopes enabled much to be sampled in the sky before bedtime. All were impressed, and had the thrill of being able to hold a real shale ball meteorite from the famous Wolfe Creek crater in NE Western Australia.

On Friday Dec 13, the Society gave another of its long-standing Braeside Park viewing nights, which was attended by constellations of Astronomers (I wonder if that is a suitable collective noun). The planets Mercury, Jupiter and Saturn were on show, as was a young Moon. A special treat was Ian Porter's tracking and identification of the dozens of satellites passing overhead while we were there, which included all manner of eavesdropping satellites, discarded rocket casings and the Hubble Space telescope, as well as a curious equilateral triangle of spy satellites we were unable to find.

ALL SET AT THE BRIARS!

The much heralded observing platform and 20 cm thick Observatory slabs were poured in December, just prior to Christmas. The first working bee was held just before the new year, and thanks go to the many eager members who chipped in. Pictures in the next edition.

For the benefit of those unfamiliar with *The Briars*, the property covers 230 hectares and includes an historic homestead and surroundings of early rural settlement charm. The original vineyard is still in production, and the property contains many genuine Napoleonic artefacts. Its first owner, Alexander Balcombe, was Napoleon's

neighbour and friend while exiled on the island of St. Helena. Upon returning to Australia, Balcombe built *The Briars* in 1860, bringing much furniture and memorabilia with him. In addition, the property has bird hides on vast wetlands, an extensive woodland walk, Josephine's restaurant, and barbecue facilities, as well as many head of cattle. We are, of course, another *star* attraction.

DID YOU SEE IT?

About 10:25pm AESuT (1125 UT) on Friday Nov 29, long standing member Steve Malone reports he observed a fast, bright meteor while facing East. The body appeared white and travelled across 40 degrees of sky in about 1.5 seconds, being 15-20° above the horizon, and moving in a North-South direction near Orion. Steve estimates it was about magnitude 2 in brightness, and left neither a visible trail nor any sound before it faded without spectacle.

BOB SAW IT!

At the last meeting of 1996, members were reminded of two favourable potential minor planet occultations, both on the night of Dec 17. The early event saw the 300 km wide asteroid 704 Interamnia pass in front of a dim background star in Gemini. Although no Australian observers saw it, Bob Fried in Braeside, Arizona reported a 29 second disappearance, indicating he was almost exactly on the centre line of the body's shadow, which was predicted to give a 29.8 second event. He captured the event on video, with the WWV time signal radio station playing in the background.

AND ED BARBER DIDN'T SEE IT - LUCKILY

Recent member Ed Barber from Chelsea, using his 4-inch refractor, reported seeing a possible occultation of minor planet 1867 Deiphobus on Dec 29 at 17h24m00.5s UT under fair-to-poor conditions. The background star disappeared for 3.5 seconds, compared with the maximum predicted of 3.6 sec. Ed also reports seeing a brief secondary event about 2 seconds later. Negative observations were received from Burwood and Wandin, further North. Details will be forwarded to New Zealand for analysis and Southern hemisphere correlation.

LEONIDS CLOUDED OUT

The planned Leonids All-Nighter in November was clouded out for local observers in 1996. However, others around the country reported seeing rates of 1 meteor every 2 minutes, peaking at 1 per minute. Better luck in 1997.

JUST FOR STARTERS

DOWN THE PLUG HOLE

Does water go down the plughole in a different direction if you are in Australia, compared with when you are in England? This question has been around for many years and is linked to the so-called *Coriolis Effect*, named after Gustave Gaspard Coriolis, the French mathematician who described it first.

Since the Earth is roughly a sphere in shape, if you stand at the equator, where the Earth's

circumference is 40,000 km, this must turn around once in 24 hours. In other words, you are travelling at about 1,700 km per hour. However, if you stand near the South Pole, the circumference is only a few metres, and you would therefore be moving imperceptibly slowly. Therefore areas South (for we Southerners) travel more slowly than areas nearer the equator.

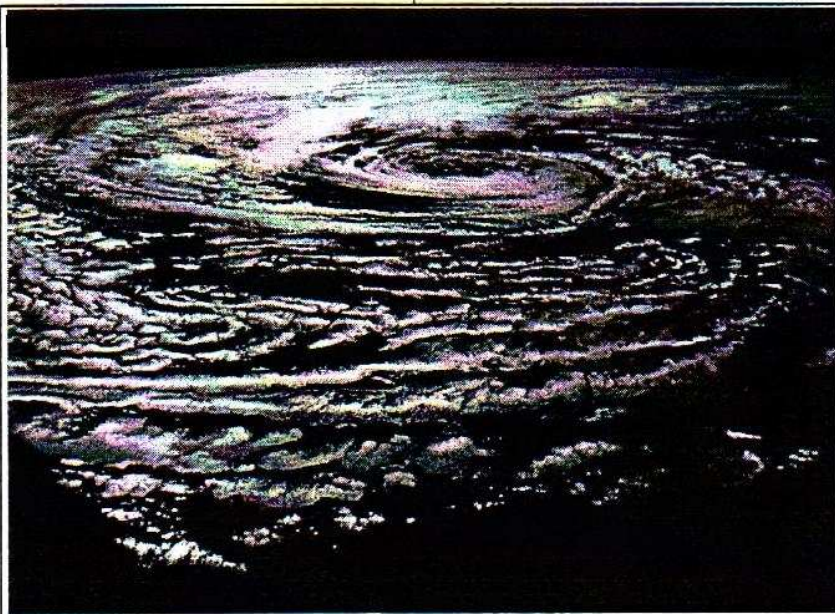
Imagine firing a gun near the equator such that the bullet travels due South. The projectile moves South, but it is also moving East at 1,700 kph along with you, the gun and everything else due to the rotation of the Earth. However, the target further down South is not travelling as quickly around Earth's axis, so the bullet will land East of where you thought you aimed it. You would perceive an imaginary force to have pushed it to the left. This is the *Coriolis Effect*, which only occurs due to the spherical nature of the Earth. It is not a real force, like that of Gravity. In the Northern hemisphere, you would have perceived it to have pushed the bullet to the right.

The Coriolis Effect is also responsible for the spin direction of winds in cyclones. Cyclones spin clockwise in the Southern hemisphere, and anti-clockwise in the Northern. International aircraft must take the Effect into account, or miss the destination.

You can cleverly demonstrate it by trying to draw a straight line with a texta on a piece of paper sitting on a record player turntable. The line will curve to the direction opposite that of rotation. Similarly if you stand in the centre of a Merry-go-

round and try to throw a ball to someone on the edge, you will miss unless you spin compensate for their faster motion.

You may have gathered from the above that the Effect is only noticeable over large distances, where the different rotation speeds are noticeable. Therefore, while large cyclones are affected, smaller tornadoes and dust devils are not. In a smaller bath or basin, the Effect is therefore entirely negligible, but it makes a good urban myth.



The familiar spiral form of a tropical cyclone as photographed by the U.S. Space Shuttle. Is the cyclone in the Northern or Southern hemisphere?

In 1965, the journal *Nature* published a paper showing that in a large circular tub left to settle for several days, the water does, indeed, tend to go down clockwise in the Southern hemisphere, and anticlockwise in the Northern, but the effect was subtle and easily overpowered by eddies and other effects due to the filling process. I can personally confirm this latter point as when I was in England in November I naturally tried it in the bath. The water went down clockwise, the opposite of that predicted.

IN THE NEWS

WAS IT REALLY LIFE IN MARTIAN METEORITE?

During the last quarter of a century, many ancient bacteria have been discovered on Earth. These microbes are able to survive under amazingly harsh conditions, raising hopes for finding life on Mars.

In the volcanic springs of Yellowstone Park, bacteria thrive at 235°C in superheated

subterranean microbes were brought to the surface, they would form a layer 1.6 metres thick! They do not require light or oxygen, but instead extract energy by chemically reducing iron, manganese, sulphates, methane and other substances.

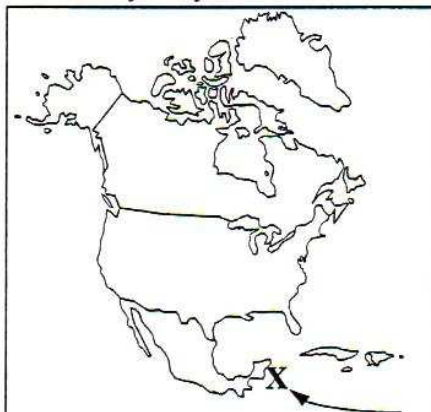
Against this optimism is the recently announced finding that some of the evidence pointing to life in the Martian meteorite ALH84001 might not be due to life after all, but be of simpler origins. The organic poly aromatic hydrocarbon molecules found were probably of Earthly origin, since later tests have detected the same ones in samples of ice found in the same region of Antarctica. As for the fossil bacteria-like structures, specialist microscopists believe they formed at nearly 800°C, too hot for life as we know it, and are composed of iron oxide or magnetite and show mineral screw dislocation defects in their structure. Further tests are naturally in progress.

WAVES OF COMETS

The fossil and cratering records show that waves of comets bombard the Earth every 30 million years or so. About 65 million years ago, one such onslaught drove the dinosaurs to extinction. The periodic nature of the bombardment has been a bit of a mystery, with the usual reason being given that a passing star gives the Oort Cloud a bit of a gravitational tug and throws many comets in towards the Sun, some eventually colliding with Earth. This "cloud" of debris lies at about 100,000 times the distance from the Sun that we do. However, why a star should pass by periodically is unclear.

water and at a pH of 1 (just like car battery acid). They freeze to death below 38°C. In the black smoker vents on the sea floor, where new crustal material is welling up from below, the pressure is 265 atmospheres and the temperature 250°C, yet bacteria happily exist here. Others have been brought to the surface from depths of up to 3 km underground by oil drilling rigs, and it is thought they could easily survive to depths of 10 km in solid crustal rock containing small amounts of water in microscopic pores. If all such

It has been suggested that our entire Solar System itself, which orbits around our Milky Way Galaxy once every 250 million years, in fact bobs up and down through the central plane of the Galaxy like a sewing machine needle, every 30 million years. Two Americans have shown how the bobbing motion brings about a periodic rain of death, by calculating the orbits expected from this interaction. During the bobbing, one force is directed at right angles to the plane of the Galaxy, while another is directed towards the centre. Of 84 known cometary orbits, a third are in exactly the orbits expected if the centrally directed force alone had perturbed their slumber. So passing stars may not always be responsible, but rather the matter between us and the Milky Way's heart.



"X" marks the location of the Yucatan Peninsula crater impact site, near Belize.

MORE ON YUCATAN

About 65 million years ago, a roughly 10 km wide asteroid collided with Earth on the Yucatan Peninsula, near the Caribbean, and it did so at the worst possible angle for the residents of Earth. Researchers have published their finding that the impact occurred at an angle of 20-30°, coming from the

South East, and spraying red hot debris North West over North America, and causing global calamity.

A head-on impact concentrates the energy downwards into the rock, whereas a glancing blow scatters material along the object's path. In the case of Yucatan, a cloud of molten vaporised rock would have roasted most living surface creatures, leaving behind a thick blanket of dust in the upper atmosphere which would have cooled the climate and interfered with photosynthesis in plants as it settled over a period of years. The Yucatan crater is elongated, rather than circular, and gravity measurements around it are also similarly stretched, supporting the idea of a shallow angle of impact. The fossil record also shows that ferns proliferated after the impact, due presumably to spores being able to take over newly exposed burned ground.

WATER ON MOON

Space scientists announced the apparent discovery of water ice in an ancient crater near our Moon's South Pole. The Clementine mission mapped the lunar surface over 2 months, and captured 1.8 million images. By taking pictures at different wavelengths of light, the composition of the surface could be determined. Water would have been deposited in the crater from past cometary impacts. Due to the intense solar radiation and vacuum conditions on the Moon, ice can only exist if it is in permanent darkness and at extremely low temperatures, for example in a polar crater. If this is confirmed the implications for manned settlement are huge, as

the cost of ferrying water to the Moon from Earth is enormous. The water would be used not only for drinking, but also for producing hydrogen and oxygen for fuel and breathing.

FEATURE

METEOR STREAM OBSERVATIONS

One feature of meteor Astronomy that can be very rewarding is the observation and study of meteor streams. Observations are carried out using the *Magnitude, Colour and Train* method, with the addition of information on whether the meteor came from a meteor stream.

Visible meteor streams are the result of multiple passes of comets around the Sun. As the comet orbits the Sun, it leaves behind debris of varying size dust grains. The debris over time becomes spread out over the entire orbit of the comet. When the Earth crosses such a comet's orbit, a meteor stream is produced.

Meteors from a particular meteor stream appear to emanate from a point in the sky called a *radiant*. The fact that meteors of a particular stream emanate from one point is a matter of perspective, the bodies all collide with our atmosphere with parallel paths. It is the same effect as a road disappearing into the distance, where the sides are parallel but appear to come from a point on the horizon.

Meteor stream observations provide valuable information about stream positions, shower

activity and composition of meteoroids belonging to certain comets (through colouration). Observations of fireballs from meteor streams can, in rare cases, lead to the recovery of a meteorite that has an extremely high scientific value.

Starting meteor stream observing is easy. The standard information about the meteor is taken: magnitude, colour and train information, along with information about the stream from which the meteor originated. To start, you will need to find out what meteor streams are active on the night you are going to observe. Once you know which meteor streams are active, you will need to record the position of the stream on a suitable star chart. The best type is a small pocket chart such as *The Gem Pocket Guide*, if you have one, or something similar. The coordinates of the meteor stream are listed for the maximum of the stream's activity. On your map, to represent the stream, you will need to draw a circle about 5 to 7 degrees in diameter. This is the area around the stream's position from which you may see meteors coming, if they belong to that stream.

Once you are out in your observing lounge (deck chair) with some observing strength coffee, you can check the position in the sky of the meteor stream. When facing the sky, to maximise the number of meteors you see from the stream, do not directly face the stream but instead point to one side of it about 30 degrees or so. When you see a meteor that you think may have come from a stream, there are a few important rules to

help you work out if they are stream meteors. The first is that the longer the meteor, the further away from the stream radiant it needs to be in order to be counted as a stream member. If a meteor is extremely long and started only 5 or so degrees from the radiant, the meteor cannot be counted as a member of that radiant. For the meteor to count, you have to first project a line back from the meteor. The region along this line, that a meteor can be counted as a stream member, starts 1.5 times the meteor's length from the start point of the meteor and extends back to 10 times the meteor's length from the start point.

This may sound a little confusing to start with, but you soon become used to it. One aid that can help is a long ruler or straight object about half a meter in length. When you see a meteor that you think is a stream member, hold up the object along the path the meteor made. This can help you identify from which stream the meteor came. Once you have worked out whether the meteor is a stream member or just a sporadic meteor (meteor without a stream), you can record the magnitude, colour and train information with the information about the stream beside it.

Identifying a meteor belonging to a stream may sound hard, but with practice it becomes very easy. Meteor Kits are available that go into more detail about this and other types of observing. Observing forms are also included in the kit.

One well-known event in meteor stream observing is the *Leonids*

meteor shower. It is active in November between the dates of the 14th and the 20th and is at maximum on the 17th. The stream is approaching a maximum in 1999 when its activity undergoes a great increase of the order of 1,000's to 10,000's per hour! On the years approaching this 33 year maximum, activity can increase a lot; not to the proportions listed above, but quite high. It is definitely worth a look. Good luck and happy observing.

Adam Marsh,

ASV Meteor Section

[Adam's article was submitted last year, but unfortunately missed the publication deadline. Those interested in meteors should see David Girling].

HELPFUL HINTS ON USING YOUR TELESCOPE

No matter what sort of observing you do, whether deep sky, planetary, variable stars etc., you need to be prepared. By this I mean you must know the basics and always keep learning. Let's look at some of these basics.

First, some sort of knowledge of the sky and how to find your way around is a necessity. You do not need to know every star in the sky. All you need are starting points. You should get to know at least 1 or 2 stars in each of the bright constellations that will then guide you on to fainter constellations and stars.

To help with this, use a planisphere, which you can buy through the Society. From now on I will assume you have a telescope and know your way around some of the sky.

You need a good sky atlas,

which is a matter of personal choice and budget. Personally, I have used *Sky Atlas 2000*, both desk and field editions, since they first appeared. I also use *Uranometria*. I highly recommend both. I strongly recommend you buy a yearly almanac. This will help you find planets etc. and the goings on from night to night.

Now for some tips for your telescope. First I hope you have a good one, by which I mean you use and are comfortable with it. Size and choice are a personal matter, which I will not pursue. Suffice to say, good optics and a sturdy mount are a necessity. Use dust covers on your scope and finder when not in use. Keep your finder and scope well aligned, keep the optics clean, and keep your optics collimated (aligned).

Collimated optics give sharper and brighter images than poorly aligned ones. When did you last check your scope?

Eyepieces are well worth the mention. My motto is better to have 2 good ones than have 6 bad ones. If you have not done so, go out and buy one of the latest fully multi-coated Plössl variety or similar. It is well worth the effort. By the way, keep those eyepieces clean and covered when not in use. As I said before, the most important thing with your scope is to be comfortable with it. If it is too big, too awkward, too small, or not for you, sell it and get one that suits.

Someone once said to me, it's not much point having a 20 inch scope if you only use it a couple of times a year. A 6 inch that

you use a couple of times a week is better than the one you do not use.

A few accessories that are worth having are coloured filters for planets, a Moon filter, a light pollution filter and nebula filters. These will make your observing more interesting. Some are expensive but worth the effort. Something worth trying, if conditions allow, is to use high magnification. I do not mean 500x but how about 200-300x or even 100-200x. For those people that view under 100x all the time, give high magnification a try. You may just be pleasantly surprised how better the galaxy looks or, yes, I can see that planetary nebula 1231. Jupiter, ah yes, those markings do stand out better at 250x. As one person said to me recently when looking at the Moon, I cannot believe you can see so closely (300x 20cm aperture).

One thing that gets me is the number of telescopes out there that are motor driven, but are never turned on. Sometimes there are clear reasons, but if I had a motor drive and could use it, I would. It must make for more pleasurable viewing. A few other quick tips. Use averted vision, get dark adapted and stay that way. Don't just have a quick glance at an object. The more you look, the more you may see. Just because the planet does not look any good now, wait a while because conditions could improve. Try to keep records of all your observations. Above all, enjoy what you are looking at, or doing, in the wonderful world of Astronomy. Clear skies.

David Girling

LUMICON MINUS VIOLET FILTER

Being annoyed with blue haloes around bright stars in pictures taken with my refractor, I purchased the Minus Violet filter for \$US49. While the ads say that it is mainly for black and white film, it is meant to improve colour photos taken from refractors and telephoto lenses. Comparing photos I took of open cluster N6231, with and without the filter, clearly showed that the filter does work. The roundish blobs were replaced with round dots.

Renato Alessio

HOW TO SEE LOTS OF DEEP SKY OBJECTS

It appears there are basically two types of recreational Astronomers in this world; those who view an object for an hour, and those who would prefer to view 30 objects in that hour. I am in the latter category. In a recent phone conversation with Mike Smith at the Binocular and Telescope Shop, he pointed out that in an article he had read it was found that the average telescope owner observes 200 objects in their lifetime. In the last three years, I have viewed 91 Messier objects, 1 Quasar, 70 Planetary Nebulae, 52 Nebulae, 87 Globulars, 229 Open Clusters and 653 galaxies. This is apparently considerably more than the average.

I used to be one of those average viewers until I discovered that fluorescent green highlighter pens show up really well under red light. The trick to increasing the rate of viewing objects is to get a copy of *Sky Atlas 2000* with black stars on a white

background. Then highlight in green each object you have viewed. When next you go viewing, ignore all the highlighted objects and view only the unhighlighted ones. I found this method got me over the rut I was in, where I seemed always to be looking at the same things. Furthermore, this method forced me to observe classes of objects I had previously taken no interest in, like Planetary Nebulae.

As your atlas eventually gets covered over in green highlighter, you will find that there are some objects you keep missing because of where they are located. To make sure you do view them, highlight them in pink, which is invisible under red light, but which stands out readily under a white light. This enables on-the-spot planning, sitting next to a telescope.

Renato Alessio

WANTED TO BUY, SWAP etc.

Altazimuth mount for use in binocular viewing of satellites. If you have one please contact the editor.

FROM AROUND THE PLANET!

Astronomical Societies 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.



West Cornwall Astron. Soc. (England) - Our Sister Society's bid for a planetarium & observatory has risen to \$16 million, and is of truly international proportions! They will know after March if they've been successful, though with many other UK Millennium Commission projects being funded, and the coming Solar eclipse over Cornwall, they stand a very good chance. Their project manager is Bob Gammon, a retired maths lecturer and member, and he will visit Australia early this year. If he makes contact,

I'm sure we'll convince him to give us the history of WCAS. In return for a Southern Sky tour. Details of the proposed development are impressive, imaginative, and inspiring to say the least. Professional Astronomer Patrick Moore has also offered his services. A walkthrough of Space Cartophily over the years is featured (i.e. cigarette, tea and trade cards on a Space theme). Pegasus and Perseus are the constellations briefed, and a primer is given on Lagrangian Points. An observer relates the partial Solar eclipse visible from Cornwall on 12 Oct last year.

Sutherland Astron. Soc. (NSW) - The AstroPhysics Starfire 13cm F6 refractor is reviewed by a new owner.

Latrobe Valley Astron. Soc.

(Vic) - Membership stands around the 38 mark, though the Society is active in taking Astronomy to schools and the public. They participated in a successful Family Fun Day organised by their Shire. Vandals have damaged some of the facilities at their Coach Rd Hill observatory. Positions for comet Hale-Bopp are tabulated for all 1997.

Astron. Soc. Alice Springs (NT) - They are setting up an Internet home page. A history is given of the Crab nebula, background is provided on ancient Japanese star lore, and a summary included of everything we know about the Moon.

Astron. Soc. of West Aust. (WA) - Astronomy from a Surveyor's perspective is elucidated, and NASA's press releases on the supposed fossils found in a Martian meteorite are given.

Astron. Soc. New South Wales (NSW) - A tour of the Small Magellanic Cloud is conducted. Many member eyepiece sketches are shown for deep sky objects. Lenses and mirrors are overviewed, while a member relates his hunt into the story behind an antique print he owns of a comet in Orion. They are thinking of buying a CCD/scope combination. The ASNSW has conducted their first school nights in several years. They have 239 members, including 14 juniors. A web page is available at <http://www.ozemail.com.au/~asnw>. An exposé of some Southern eclipsing

variable stars is given.

Balaarat Astron. Soc. (Vic)

Articles given on blackbody radiation, making a 10 inch scope, and various news clippings of interest. They have lost some junior members but are soldiering on regardless. The Baker telescope room is being bird-proofed.

Astron. Soc. Vic. (Vic) - Some ASV members have aperture fever, and are trying to raise money to buy a 27 inch telescope. New software, Expert Astronomer for Windows and a deep sky atlas MegaStar 3.07, is reviewed. An interesting article on selenography (mapping the Moon) is shown. Two members are running an Astronet facility whereby an automated 16 inch scope/CCD can take sky images on request and email them to you.

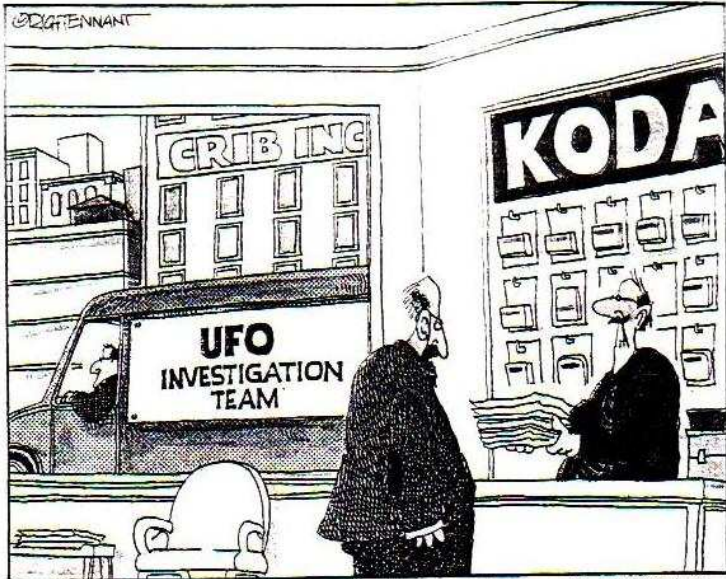
FINAL PRONOUNCEMENT - ROCHE

The Roche limit, named after its discoverer Edouard Roche in 1848, pronounced "roe-sh", is the distance from a planet inside which a body cannot orbit without being torn apart by tidal forces. It varies with density, but is typically 2.5 times the planet's radius, and arises because the near side of an orbiting body is tugged more strongly by gravity than the side farthest away. Small bodies hold together well inside the Roche limit (e.g. meteorites and man-made satellites), but larger ones disintegrate. Saturn's rings are composed of particles that lie within the Roche limit, possibly telling of their origin. If our Moon ever came too close to the Earth, it too would end up as a set of rings around the Earth.

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.

NEXT ISSUE

150th Anniversary of the discovery of the planet Neptune



"I'VE GOT SOME IMAGE EDITING SOFTWARE, SO I TOOK THE LIBERTY OF ERASING SOME OF THE SMUDGES THAT KEPT SHOWING UP AROUND THE CLOUDS. NO NEED TO THANK ME."



Above - Working Bee at the ASF Briars site on January 1997

Both Photos - By Peter Lowe

Above & Right - Working Bee at the ASF Briars site on January 1997

Both Photos - By Peter Skilton



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.



Pioneer 11 was launched on 5 Apr 1973, yet its onboard Plutonium power source lasted until Nov 1995, when all communications died out. The spacecraft is heading towards the constellation of *Aquila*, the Eagle, and will pass its nearest star in 4 million years. Then it will roam our Milky Way spiral galaxy as a modest messenger from Earth. It is currently 45.7 Astronomical Units from Earth (6.7 billion km), and is travelling at a cracking speed of 12.24 km per second.