



# SCORPIUS

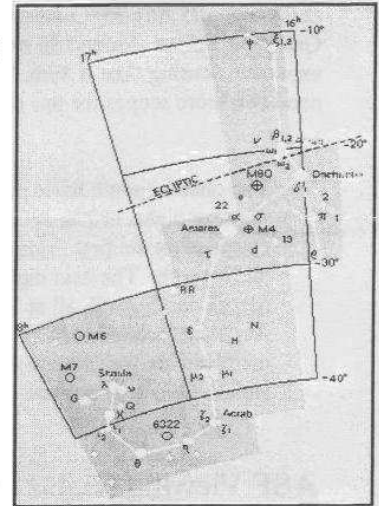
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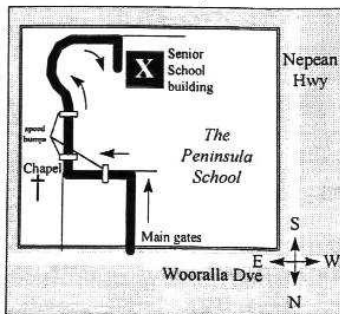
Volume XI, No. 2 (Mar 2002)

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. Regulars observing nights, both private and public are arranged to observe currently available celestial objects. For decades the Society has provided *Astronomy on the Move* educational presentations and observing nights for schools and community groups exclusively in the Peninsula and surrounding regions to Moorabbin, Dandenong & Tooradin.

**Meeting Venue:** Peninsula School, Wooralla Drive, Mt. Eliza (Melways map 105/F5) in the Senior School at 8pm on the 3<sup>rd</sup> Wednesday of each month except December.  
**Phone:** 0419 253 252 **Mail:** P.O. Box 596, Frankston 3199, Victoria, Australia  
**Internet:** <http://www.asfnet.20m.com>  
**E-mail:** [aggro@peninsula.starway.net.au](mailto:aggro@peninsula.starway.net.au)



Visitors are always welcome!



Annual Membership

Full Member	\$35
Pensioner	\$30
Student	\$25
Family	\$45
Family Pensioners	\$40
Newsletter Only	\$16
Organisation	\$50

## DUE 1<sup>ST</sup> JAN EACH YEAR

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President	
Peter Skilton	(0414) 645 077
-----	
Vice President	
David Girling	(03) 5975 6506
-----	
Treasurer	
TBA	
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Sally Zetter	(03) 5976 2679
-----	

Editor

Richard Pollard (0419) 100 802

Committee of Management:

John Cleverdon, Marty Rudd, Jane McConnell,  
Russell Thompson, Ian Sullivan.

All calls after hours and pre- 8:30pm please.

## FUTURE EVENTS

### General Meetings:

**WED 20 Mar 2002** at Peninsula School.  
 Session 1: Peter Skilton on *The Natural Treasures of Cranbourne - Hunting Number 13*. In the 1850's Victoria was famous worldwide not so much for it's gold rush, but rather for the enormous nickel-iron meteorites that were discovered on the Mornington Peninsula and which were the largest in the world. Twelve are known to science, but perhaps there are more.  
 Session 2: Video on *Woomera - The Silent Partners*.  
 Session 3: Informal interaction and viewing if clear.

**WED 17 April 2002** at Peninsula School.

Session 1: Russell Thompson on *The Universe in a Nutshell*.  
 Session 2: Video to be announced.  
 Session 3: Informal interaction and viewing if clear.

### Viewing Nights:

Members Only:

**NOTE: Members nights are also now held on Fridays!**

**Mar 8th/9th and 15th/16<sup>th</sup>**, all at The Briars, Nepean Hwy, Mt. Martha.  
**Apr 5th/6th and 12th/13<sup>th</sup>**, all at The Briars, Nepean Hwy, Mt. Martha.

New attendees must always confirm with **David Girling** on 5975-6506 or 0421 452 428 **before** attending. Remember for security reasons you can only attend on planned Members' Nights, unless by prior arrangement with **David** who will liaise with *The Briars* accordingly. Last person out must switch on the shed security light.

### Public, School & Community Groups Viewing/slide nights:

If you can assist, please contact the Secretary. All events commence at 8pm.



**THU Mar 7<sup>th</sup>** - Monash University Science Teacher Trainees will be down at Lord Somers Camp in Somers, Melways 193/H9. 100 tertiary trainees of all ages are expected. We need 4 more telescopes, other than those who already have indicated they will attend.

**WED Mar 13<sup>th</sup>** - St Pauls "Woodleigh" School (Melways 107 E3). Around 75 students expected, starting time is 8pm.

**THU Mar 14<sup>th</sup>** - Camp Manyung (Melways 105 A6), for Camberwell Grammar School. Around 55 students expected, starting time is 8pm. We need two more scopes for this one.

The once-a-month basic public viewing nights at *The Briars* will continue on the first Friday of each month. The next nights are 1 March and 5 April, all at 8pm. Assistants are required. New members are welcome to watch and participate if desired.

## ASF Viewing Nights at the Briars

**Most Friday & Saturday nights are Viewing Nights at our Briars site (check this newsletter & calendar for dates).**

Some things to note:

1. Last person leaving must turn shed light ON, check with me if unsure.
2. Please sign Observatory log book, thank you.
3. Observing nights start at dusk, those arriving late please do not drive with your lights shining on members viewing.

A range of telescopes is normally on hand from small refractors to large newtonians to computerised scopes. ALL members are most welcome whether you own a telescope or not. If you have a scope no matter what sort please bring it along; we would love to see you there.

Coffee & tea are available in the Observatory building.

If you have never seen the night sky through a telescope or want to see a particular object, ask a member "Please may I have a look?" and I'm sure they would love to help.

Some interesting objects currently worth looking at are:

Jupiter, Saturn and Mars low in the northwest sky. In April and May, Jupiter, Saturn, Mars, Venus and Mercury all gather in the northwest. On our May 11<sup>th</sup> viewing night, we will be holding a BBQ, hopefully encouraging photographers to try and catch on film the 'Dance of the Planets.'

Theres always lots happening on these viewing nights so come along and enjoy. For more details contact me (David Girling) on 59756506.or [davekez@peninsula.hotkey.net.au](mailto:davekez@peninsula.hotkey.net.au)  
**NOW IF ONLY THE CLOUD WOULD GO AWAY!**

**Take Note: The next WORKING BEE is on the 7<sup>th</sup> April... details at the March Meeting!**

## YOUR SOCIETY

Welcome to the following new Society member(s):

*Steve Cummins*

*Joy Francis*

*Sarah George*

*Les Joyner*

*Vicki Miezis, Laura and Peter*

*Snyders*

*Harry, Jenny, Harry, Emily and*

*Charlotte Paternoster*

*Jessica Spithuven*

*Colin Thomson*

The current number of members is 161.

## VALE PETER HYSON

Peter Hyson, a keen member of many years, sadly passed away in mid-January while at the beach. He had been ill for several months, which made getting to meetings difficult, and was recovering well when he unexpectedly suffered a stroke. He had been particularly looking forward to seeing the results of the Leonids trips that members had taken around the country.

## GET WELL SOON

Long time members Ken Bryant and Rene Skilton have both recently been very ill. We wish them a speedy recovery and hope to see them at a society gathering soon. Former librarian, Kathy Stabb, was also looking well earlier in February after her heart valve replacement last year.

## Know anybody?

Do we have a plumber in our membership who might be able to connect up the sink in The Briars observatory?

Do we have a tree surgeon able to inspect the trees on The Briars site to suggest which limbs are safe and which should be removed?

## BASIC ASTRONOMY CLASS?

I am offering my services free for classes probably during weekends in the months to come if there are sufficient ASF members (and maybe others) interested, who would be expected to pay to cover other costs. Members can contact me on (03)9555 6913 or see me at General Meetings.

## ASF SLIDE TAPE

I am preparing a slide tape introducing ASF and need slides of ASF activities - day and night, venues and members in astronomical poses. If you have any you are prepared to donate please see me at General Meeting or phone.

*Ian Sullivan*

## TELESCOPE DAY

**Not sure how to use your new telescope?**

The ASF is running a hands-on teaching afternoon on Saturday the 20<sup>th</sup> April (back up day the 27<sup>th</sup> April) Bring your Telescope, Binoculars, Star charts etc.

The afternoon will start at 1pm and run till 5pm. Those who wish to stay late and observe with their new scope can

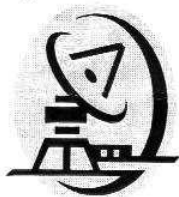


do so. A BBQ will be held starting around 6pm.

A minimum number of 6 people will be needed for this event to go ahead. So bookings are essential. Please book with Dave Girling on Ah 5975 6506 or e-mail Dave at [davekez@peninsula.hotkey.net.au](mailto:davekez@peninsula.hotkey.net.au)

## Dish Washing Experience Anyone?

The giant Parkes radiotelescope, near Forbes in NSW, and made famous to the general public in the Australian movie, *The Dish*, is advising that work experience vacancies are available during 2002 for a limited number of students in years 10, 11 or 12.



The work is unpaid, but you get to stay in the

Visiting Astronomers' quarters free of charge if successful. A written (not emailed) resume and a telephone interview are necessary. You'll stand a good chance if you sound confident, are reasonably knowledgeable about astronomy - hey you're already in an astro society so this demonstrates an interest - and are well-spoken.

There are books readily available about the Parkes radiotelescope, such as *Under Southern Skies*, if you wish to come across as particularly cluey. If you are interested, either check out the Parkes Visitors Centre website, or ask Peter Skilton for a copy of the details.

## THE ASF EMAIL GROUP – E-SCORPIUS

If you have an email address that you would like added to the Society's yahoo news group, just forward it to the moderator, Richard Pollard on [alphacent@iprimus.com.au](mailto:alphacent@iprimus.com.au), who would be more than pleased to add you on. Or, by visiting the group homepage at <http://www.groups.yahoo.com/group/e-scorpius> you can add yourself with your own Yahoo ID. This is free to members, and will enable you rapidly to receive late breaking astronomical news (for example notice of new comets, aurorae, novae or other sky phenomena) and notification of science lectures from other organisations and other special events that you might otherwise miss

out on before the next general meeting. In addition, you'll also receive a reminder of all society events that are imminent.

## Astronomy on the Web: Richard's Top Ten

A few editions ago I published a list of my favourite websites for astronomy and sources of information. Here's an update on those sites and a bit about each one, not in any particular order...

<http://www.space.com> is packed with news on spaceflight, astronomy has great links to all sorts of places. Check out the on-line forums.

<http://www.astronomy.com> Homepage of the US 'Astronomy' magazine.

<http://www.nasa.gov> is the starting point for NASA's massive website.

<http://www.heavens-above.com> is the one place for all satellite predictions, as well as comets and sky charts. Great for Iridium flare predictions!

<http://www.stsci.edu> is the homepage of the Space Telescope Science Institute for everything Hubble.

<http://photojournal.jpl.nasa.gov> is NASA's photojournal of the planets. If you need an image of a planet, asteroid, or moon, if it exists, it's here.

<http://www.aao.gov.au> Homepage of the Anglo Australian Telescope at Siding Spring.

<http://www.parkes.atnf.csiro.au> if you want to learn more about the real Dish.

<http://astronomy-mall.com> US site if you're up for some shopping. Hundreds of links to shops and dealers worldwide.

<http://encke.jpl.nasa.gov> is yet another NASA site, this one exclusively deals with comets... needing a finder chart? This is the place.

## The Library

The Library has acquired the following latest additions. See the Librarians Andrew Thornton or Jane McConnell at the meetings.

*The Universe in a Nutshell*, by Stephen Hawking. This sequel to his international best seller, *A Brief History of Time* (also in the library) is an extremely well illustrated account of the Universe, covering everything from time, relativity, the future, time travel and the latest of brane theories of the nature of the Universe.

*The Case for Mars: The Plan to Settle the Red Planet and Why We Must*, by Robert Zubrin, President of the Mars Society. Since the beginning of human history, Mars has been an alluring dream – the stuff of legends, gods and mystery. The planet most like ours, it has still been thought impossible to reach, yet alone explore and inhabit. The book outlines the revolutionary blueprint that will one day in the near future see astronauts who are probably currently in our school system step upon the Red Planet.

*The End of Time: The Next Revolution in Our Understanding of the Universe*, by Julian Barbour. Time seems to be the most powerful force in the Universe, an irresistible river carrying us from birth to death. For this physicist, it is an illusion. In this revolutionary book, he argues that paradoxically we might be able to explain the mysterious arrow of time – the difference between past and future – by abandoning time altogether. But to understand how, we need to change radically our ideas of how the Universe works.

*Probability 1: Why There Must be Intelligent Life in the Universe*, by Amir Aczel. This associate professor of statistics uses mathematical probability arguments for the existence and nature of extraterrestrial intelligent life elsewhere in the cosmos, and comes to some startling conclusions based on reason.



*Our Cosmic Origins: From the Big Bang to the Emergence of Life and Intelligence*, by Armand Delsemme. Aimed at

the general reader, this book provides a provocative and wide-ranging account of how life on Earth evolved and how likely it is to exist elsewhere in the Universe. It provides a grand sweep from cosmic evolution from the Big Bang to Homo Sapiens.



*Introducing Time*, by Craig Callendar and Ralph Edney. This very accessible account, illustrated with cartoon explanations, tackles the question of what is time, and dares to look at how it has been described and theorised over the centuries by the great scientists and philosophers. It also tackles what is different about the fourth dimension, and whether time really exists at all, or is just an illusion.

*Greenwich: The Place Where Days Begin and End*, by Charles Jennings. No more than a couple of square miles in area, the historical centre of Greenwich is the birthplace of classical architecture in England, the spiritual home of its maritime past, a royal retreat and the site of the Millennium Dome. It is also the place where days begin and end, where the heavens were first comprehensively mapped out, where the most important chronometer in history was tested, and where the world's prime meridian runs across an ordinary pavement.

*Companion to the Cosmos*, by John Gribbin. This weighty tome is a user-friendly answer to anyone trying to find out something about most things in the Universe, explained in accessible terms. It is primarily laid out like an encyclopaedia, but with time lines and biographies and longer narratives on the bigger questions in the Universe.

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### BY THE LIGHT OF THE SLIVERY MOON: UPCOMING GRAZING OCCULTATION FIELD TRIP IN THE DEAD OF NIGHT

There will be a grazing occultation expedition mounted to Balnarring in the pre-dawn hours (4:30am) of Sunday March 10<sup>th</sup> to observe a background magnitude 7.8 star graze along the mountains and valleys at the edge of the Moon's limb. The very weak shadow of the mountains and valleys cast by the star is predicted to sweep over the Mornington Peninsula region at this time. At the time of the event, the moon will be a 24% sliver, 24 degrees above the horizon, and the star will disappear at a cusp angle of 14 degrees on the dark limb, so well inside the dark zone, making the observation relatively easy. Any observers with a 4.5 inch or wider diameter telescope are encouraged to observe this one on a precise line between Lara-Balnarring-

Wonthaggi. With several telescopes placed at right angles to the path of the shadow, each telescope will witness the star disappear and reappear at slightly different points in time because of the differing shape of the shadow with position. By recording for each telescope the exact moment when the star disappeared or reappeared, it is then possible to mathematically calculate the exact profile of the lunar limb at that point. With several telescopes, several points are obtained, enabling a determination of the exact profile of the lunar landscape. This is the most accurate method available for determining the size and shape of features on the edge of the Moon, other than sending surveyors to the Moon.

If you are interested in participating, or are curious just to see what goes on, please contact Peter Skilton who will have details of where everyone will meet just prior to the event so that all telescopes are positioned correctly along the available roads in the Balnarring region. He can also advise on the simple equipment necessary (such as an ordinary cassette recorder, watch or stopwatch). Should the weather suggest fogs in the Balnarring area, the meeting place may be moved to the Eastern side of the Mornington Peninsula instead. It is planned that other active astronomical societies will also participate in this field trip in order to boost the number of observing stations.

### ASTRONOMY 2002 Is Still Available

The 2002 edition of the excellent and highly popular annual sky almanac *Astronomy 2002* can be picked up at any society general meeting, or by leaving a message on the Society's phone number of 0419 253 252. Price is still \$18 to members, or \$20 to non-members. As in all previous years, remember that proceeds made on the sale of these books directly supports your Library for purchase of all books, videos and other material.

### February 16<sup>th</sup> Viewing Night: A Poem

Oh what a night for the fortunate few.  
Bob, Greg, John and Mark, Dave,  
Roger & co.

The afternoon was Blue as to become  
so Black  
The Stars shone so Bright with not a  
cloud in sight.

As our tour began the Moon, Jupiter  
and Saturn with their Moons, Oh this  
was Heaven.

The Takahashi did perform, oh what a  
Scope a beauty that's for sure.

An Intruder in our Sky, Comet Ikeya-  
Zhang was its name. The big Dob  
swung to show it in flight and on its  
way.

As the night progressed the LX 90 did  
purr, from object to object it did race.  
From here to afar the Universe was in  
reach.

Our Observations were many, our  
Scopes were great.  
As 2am came our eyes are heavy. As  
we drift off to sleep our memories are  
many.

By Dave Girling

## RECENT MEETINGS

**The January meeting**, chaired by the President, was attended by 50 on a mild evening, with many regulars absent, and a few visitors from the ASV. Peter Skilton opened with the sad news of two long-time members having passed away since last meeting. In 2001, the International Year of the Volunteer, he had approached Frankston council about recognising some of our longer standing financial members for their contributions as volunteers to the community. As a result, several 10+ year and 20+ years recognition certificates signed by the State Premier, Steve Bracks, and lapel pins, were awarded at the meeting as a surprise, thanks to the generosity of Frankston City Council, and were greatly appreciated. David Girling opened the segments, changing the topic he'll cover this year from occultations to members' viewing nights and some of the specific astro challenges he'll set as a theme for these this year. He gave intriguing advance notice of a possible 3-5 hour field trip later this year for dark sky observing at a site never before visited. Ian Porter followed in true multimedia fashion



with the rockets launched since last meeting, there having been several, even a satellite launch by the small country of Morocco, prompting questions as to why Australia isn't more of a leader in this area. Sky for the month was then presented by Bob Heale on his laptop, complete with handout sheet, followed by a presentation on auroral sightings and images from across the globe since last meeting, assembled by Roger Giller and delivered in absentia by the President. There had been many, including from Canberra. Following the raffle draw, the group broke for tea then regathered in two rooms. The library room showed a video on the Hubble Space Telescope, which was watched by a quarter of the assembly. In the main theatre, the rest heard the exciting tales and saw some of the slides and watched the videos from the various expeditions our Society sent around the continent recently. Marty Rudd started with his trip with Leanne and other friends to Alice Springs, showing video footage of the Henbury meteorite crater, fording bodies of water, and the Alice Springs region. This culminated in an excellent low-light video footage of the Leonids that he took from Bond Airstrip near The Alice, which amazed the audience. The President noted that this was by far the best meteor shower footage he'd ever seen and it captured extremely well what the immediate radiant area actually looked like and behaved like even from Woomera on the morning of November 19<sup>th</sup> last year. After an impossibly difficult act to follow, Jane McConnell showed some Leonids slides she took from Ayers Rock, Peter Skilton showed some further ones he took from Woomera which had been developed and mounted that morning, and Ken Bryant told his tale of expeditioning from Port Augusta alone through the harsh outback of the Northern Territory in search of the optimal cloud-free region, which fortunately he found. The meeting proceedings were video taped for inclusion in the Society's library. Meeting closed at 10:50pm.

**The February meeting** was chaired by the President sporting a cold and saw 58 in attendance in the theatre. As usual, it was video taped for inclusion in the library. The proceedings opened at 8:02pm, which for the pattern-minded was curiously

20:02 20/02 2002. Two more 20+ year certificates and badges were then handed out marking the close of the International Year of the Volunteer. David Girling then opened the information segments with a report of the latest members' viewing nights at The Briars, including one with perfect seeing conditions, and reports of comet Ikeya-Zhang being still just a fuzzy blob. Ian Porter followed with his rundown of the international payload launches and astronomical happenings in the last month, then Bob Heale passed around his sky chart handout and gave the Sky for the Month on the data projector and overhead projector. The preceding month had seen a good amount of auroral activity at high latitudes in the northern hemisphere, and Roger Giller presented images of those aurorae captured in living colour. Marty Rudd presented some photographs he had taken of comet Linear from his backyard in Somerville the preceding Sunday morning, clearly showing its 2.5 degree tail, extending behind its naked eye coma, and several members reported having seen impressive displays from this interplanetary interloper over the last few weeks. Finder charts for the comet in the pre-dawn sky were handed around to all attendees interested. Ian Sullivan gave advance notice of the next annual solar observing day for members on March 3<sup>rd</sup> at The Briars site, and a paper make-your-own sundial project was handed to everyone. Following the raffle draw, the group broke for tea, then reconvened in three parallel sessions. One group talked shop on instrument making matters in the common room, while another watched the video on the asteroidal demise of the dinosaurs, *Living with Dinosaurs*, and now know why the crocodiles survived the environmental catastrophe. The other group in the main theatre, listened to expeditioner Ian Sullivan who, with his wife and a couple of friends, ventured into deepest, darkest Africa last year to observe the total solar eclipse. The talk was complete with twin dissolve slide projectors and audio accompaniment. Meeting closed at 10:30pm.

**The public night at The Briars on January 11<sup>th</sup>** was not advertised by the local papers as per usual due to the holiday break taking their staff away. This resulted in it being attended by 10

people only, mostly members plus one family, with conditions being totally overcast, so it was decided that the formal proceedings be delayed until the following Friday. Thanks go to those members who turned up regardless, including Greg and Val Walton, Bob Heale, David Girling, Don Leggett and John Cleverdon.

**Twenty-five attended the public night at The Briars on January 18<sup>th</sup>.** Richard Pollard and Peter Skilton gave the talk and handed around mounted photographs that Richard had snapped of the Leonids meteor storm from Alice Springs last November. Following the refreshment break, the group went outside to the telescopes and received magnificent views of the ringed Saturn, Jupiter and its four Galilean moon, a crescent Moon, the Orion nebula, various globular clusters and comet Linear at magnitude 5. Also clearly seen by everyone was an Iridium satellite flare that reached a very bright magnitude -4 which Richard Pollard photographed. Thanks in the field to Greg and Val Walton, Jeremy Scott, Bob Heale, Don Leggett, Neil Hewson, Phil Snelling, Ken Bryant, Bruce Tregaskis, John and Roger Cleverdon, Roger Chandler and David Girling. The group included some very enthusiastic 9 year old girls from Pearce Dale and so the evening concluded around 11:30pm as tiredness overcame their curiosity for the heavens.

**The viewing night for the public on January 25<sup>th</sup>** at The Briars had a good turnout of around 35 people considering it was almost total cloud cover to begin with, however, only 2 instruments showed up for the evening. Richard Pollard delivered the talk and, following this, the clouds had cleared leaving plenty to see in the moonlit conditions, including at the end of the evening a bright unidentified satellite from the South. Thanks in the field to Phil Snelling, David Girling, Don Leggett, Roger Chandler, Greg Walton, John Cleverdon, Peter Skilton and Russell Thompson.

**The public night at The Briars on February 1<sup>st</sup>** had 40 in attendance, including a troupe from the First Mornington Scouts. Conditions were totally overcast with distant, and not-so-distant, lightning and threatening



rain. Richard Pollard gave the talk, and thanks for assistance go to Don Leggett for supper, David Girling for treasury, and in the field Roger Chandler, Sally Zetter, Jane McConnell, Peter Skilton, John & Marg Cleverdon, Phil Snelling and Ian Sullivan.

### *Schools and Community Groups:*

**Coast Action, a state government group**, had an evening of astronomy at The Briars on Saturday, January 12<sup>th</sup>. Although 36 people were booked in, some from quite far afield in Victoria, the drizzle was unkind so the group was only able to hear the talk by Peter Skilton, which was tailored to various environmental themes of interest to them. Thanks in the field go to Don Leggett, Bob Heale, David Girling, Roger Chandler, Bruce Tregaskis, John and Roger Cleverdon.

**Whitefriars College of Donvale** had 112 year 7 boys visit Camp Manyung on February 4<sup>th</sup> under inclement conditions. The talk was given by Russell Thompson who noted the impressive number and quality of questions he had to field from the enthusiastic bunch under complete cloud cover. Thanks for assistance goes to Greg and Val Walton, Don Leggett, John Cleverdon and Bruce Tregaskis who turned up with telescopes, though no viewing was possible.

**Whitefriars then had another 91 year 7 boys** and teachers visited on February 6<sup>th</sup> at Camp Manyung in Mornington. Peter Skilton gave the talk and fielded the questions asked. The group then moved up to the oval where the telescopes had assembled – an impressive mixture of types and apertures. The sky was mostly clear, with good views being had of the gas giants, several sporadic meteors, a large number of manmade visible satellites, and various dark sky treasures. Thanks in the field to Bruce Tregaskis, Don Leggett, Ian Sullivan, Val and Greg Walton and Jakub Bukovsky.

## Observations

### TALL TAILS AND TRUE – COMET LINEAR

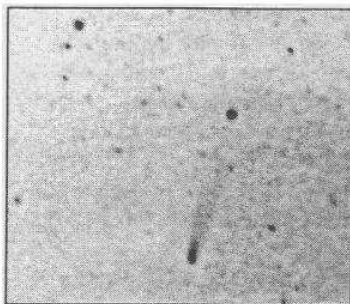
On the early morning of February 1<sup>st</sup>, Michael Mattiazzo from Wallaroo in South Australia reported that comet **LINEAR 2000WM1** was naked eye visible at magnitude 3.0. It subsequently peaked at near to magnitude 2. In 25x100 binoculars, he reports that the coma was visible with diameter of 4.0' and the jets observed 48hrs previously had created a bright dust hood 11' long in Position Angle 200 degrees East of North, while the total tail length was over 2 degrees.

Closer to home, a number of ASF reports have come in from Dandenong to Dromana of easily being able to see the comet, though it is fading. Despite moonlight, a very impressive beast apparently.

At 5am on February 2<sup>nd</sup> in Dandenong, Richard Pollard reports easily picking it up by naked eye in highly light polluted conditions at the Dandenong Letters Centre, and seeing a shortish but very distinct tail with 8x40 binocs with no problem. Richard noted that he "can't wait for the next near moonless night" and that "he had his colleagues going ga ga at a very bright light in the sky that he had somehow summoned up - a magnitude -8 Iridium flare in fact".

In Dromana on February 6<sup>th</sup>, John Cleverdon reports at 5am that he was easily able to find the comet with the naked eye once dark-adapted. In 20x70 binocs he could readily resolve a tail a couple of degrees long, appearing "quite good, almost like comet Hyakutake" (you'll recall the magnificent once-in-a-century tail of this visible comet in our morning skies a few years ago).

Marty Rudd, after completing night shift on February 3<sup>rd</sup> had a look at the comet from Somerville. He reports that



*"I finished at 3:00am and was home by 3:30am and it was totally clouded over in Somerville. Went inside and did some chart work on the comet and went outside to see if I could see anything*

*and lo and behold the sky was now crystal clear !! Scorpius was up nice and high and Sagittarius was half way up so I thought the comet must be up by now too - the time being 3:45am. I quickly found Epsilon Sgr and soon found alpha Corona Telescopium and knew the comet mustn't be too far below. By 3:55am I had my 10 inch Meade out and was looking at a magnitude 3.0 comet through a 19mm eyepiece and it was a magnificent sight. The core of the comet was very compact, bright and defined with a very visible tail.*

*I observed for about 30 minutes then packed up and went to bed. The moon was fairly bright and did interfere with the observing as well as the fact that the glow from BHP in Hastings also interferes with my SE horizon, but I am looking forward to the weekend for more comet observing. Well worth a look."*

Bruce Tregaskis also has been keenly observing the comet in the pre-dawn skies since the start of the second week of February, and noted that the coma, or head of the comet, was at least as bright as epsilon crucis to the naked eye (the 5<sup>th</sup> star of the southern cross). Through binoculars, a 2 degree tail was clearly visible, despite the moonlight, and with a 6 inch telescope, structure was visible in the tail.

## NEWS

### OPENING IN A BLAZE OF GLORY

The deepest views of the cosmos from NASA's Hubble Space Telescope are yielding clues that the very first stars may have burst into the universe as brilliantly and spectacularly as a fireworks finale. In this case though the finale came first, long before Earth, the Sun and the Milky Way Galaxy formed.

If this interpretation is correct, it offers a tantalizing possibility that astronomers may behold this stellar blaze of glory when they use NASA's Next Generation Space Telescope and other future space telescopes to probe even farther into the very early universe.

Studies of Hubble's deepest views of the heavens by Kenneth M. Lanzetta of the State University of New York at



Stony Brook and colleagues lead to the preliminary conclusion that the universe

made a significant portion of its stars in a torrential firestorm of star birth, which abruptly lit up the pitch-dark heavens just a few hundred million years after the big bang. Though stars continue to be born today in galaxies, the star birthrate could be a trickle compared to the predicted gusher of stars in those opulent early years. This new idea of a continually escalating rate of star birth the farther Hubble looks back in time offers a dramatic revision of previous Hubble Deep Field studies that proposed that the star birthrate in the early universe ramped up to a "baby boom" about halfway back to the beginning of the universe.

"If this can be verified it will dramatically change our understanding of the universe," said Dr. Anne Kinney, director of the Astronomy and Physics division at NASA Headquarters, Washington. "Because stars are the building blocks of galaxies and the birthplace of solar systems, proving that countless numbers of stars began forming so early after the birth of the universe could cause us to rethink a lot of our theories."

Lanzetta bases his conclusion on a new analysis of galaxies in the Hubble deep fields taken near the north and south celestial poles (in 1995 and 1998 respectively). He reports in an upcoming issue of the *Astrophysical Journal* that the farthest objects in the deep fields are only the "tip of the iceberg" of an effervescent period of star birth that is unlike anything the universe will ever see again. Lanzetta concludes that 90 percent of the light from the early universe is missing in the Hubble deep fields. "The previous census of the deep fields missed most of the ultraviolet light in the universe; most of it is invisible," he says.

Based on an analysis of galaxy colours, Lanzetta concludes that the farthest objects in the deep fields must be extremely intense, unexpectedly bright knots of blue-white, hot newborn stars embedded in primordial galaxies that are too faint to be seen even by Hubble's far vision. It's like seeing only the lights on a distant Christmas tree and inferring the presence of the whole tree.

Likewise, Lanzetta deduced the total population of stars in the early universe based on observing only the brightest stars with the Hubble telescope.

Because such far extrapolations are built on certain assumptions, this conclusion will require further analysis and observation.

Lanzetta next plans to use Hubble's Advanced Camera for Surveys, to be installed in early 2002, to look even deeper into the universe to try to directly verify some portion of the missing light. He will also look for very distant supernovae as an alternate measure of star formation. "Because they are point sources of light, supernovae are not subject to the same cosmological brightness-dimming effects like galaxies (which are extended sources of light)," says Lanzetta.

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### NASA Changes Direction

Projects to explore the outer planets have been slashed in the latest NASA budget, and the administration have instead proposed to revive nuclear propulsion as a major means of space exploration (for peaceful purposes of course).

In a sign of the materialistic times we live in, the Pluto-Kuiper Belt flyby and a planned Europa orbiter both get axed because they had been performing poorly to cost. Mars exploration will continue to be strongly funded, as will the trouble-plagued International Space Station, maintaining a stripped-down three-astronaut presence into the foreseeable future, which means little science will actually be done there as the crew will be preoccupied with maintenance activities (the original intention was for a crew of seven).

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### How Do We Look?

If alien astronomers from a nearby star system pointed their version of the Hubble Space Telescope at Earth, astronomer Markus Landgraf believes they would not see our planet but they would find hints of our presence. With their infrared camera, the smart aliens would detect a vast doughnut-shaped ring of dust with a classic hole in the middle, all surrounding a yellow star. A little maths, Landgraf says, and they could deduce the presence of a large planet, like Jupiter, that had cleared out the hole. They would also

spot Neptune's signature scrawled in the dust.

If this culture's astronomical knowledge were as advanced as ours, they would then wonder if a planet like their own, a habitable world, also orbited the yellow star.

Landgraf, an earthbound astronomer working in Darmstadt, Germany, as a mission analyst for the European Space Agency, studies data collected by a pair of space probes that left Earth three decades ago. His research, along with that of some colleagues, is making a mirror out of our solar system, one that reflects on other stars and the planets they might harbour.

Our solar system's doughnut is made up of dust grains of many sizes. In order to see signs of planets in the dust, the alien astronomers would need to tune their instruments to spot the smallest dust. Landgraf studies this, too, bits that are just one-hundredth of a millimetre, or dozens of times tinier than a typical grain of sand. It is everywhere in our solar system, zipping around ten times faster than a rifle bullet.

Near Earth's orbit around the Sun, there is about one spec of this small dust in each cubic kilometre of space, Landgraf says. If there were no planets circling the Sun, the dust inside Jupiter's orbit would be at least twice as dense, he said.

The densest portion of the dust doughnut is beyond Saturn's orbit, at about fifteen times the Sun-Earth distance. Here, larger dust grains rule. The Pioneer 10 and 11 spacecraft found this far-out, high concentration of dust in the 1970s and early '80s. Previously, astronomers had expected dust to thin out with distance from the Sun, because they knew that solar radiation created drag on the dust particles, causing them to spiral inward to the Sun.

Ever since the Pioneer findings, astronomers have wondered where all the dust comes from. Since theory held that such dust would eventually be shipped to the Sun, there must be some mighty dust factories out in the suburbs of the solar system, replenishing the supply. Landgraf and his colleagues have estimated that 50 tons of dust are produced every second.

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If you have something you'd like published in *Scorpius*, simply e-mail it in a document file to me at [alphacent@iprimus.com.au](mailto:alphacent@iprimus.com.au) (Richard, EDITOR)



E	T	A	S	T	E	R	O	I	D	W	I	C	U	W
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WORDSEARCH: Try and find the following astronomy words in the puzzle... remember they go up, down, left, right and diagonal.

ALPHA CENTAURI, ASTEROID, ASTRONOMY, BLACK HOLE, CLUSTER, CONSTELLATION, EXPLORER, GALAXY, LIGHT-YEAR, JUPITER, METEOR, MARS, MERCURY, MILKY WAY, MOON, NEBULA, PLANET, PLUTO, RED GIANT, SATELLITE, SOLAR SYSTEM, SUPERNOVA, TELESCOPE, UNIVERSE, URANUS, WHITE DWARF.

The letters left over spell out something as well!

If **undeliverable**, please return to  
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Working Bee at the Briars 3rd march 2002 Photo by John Cleverdon

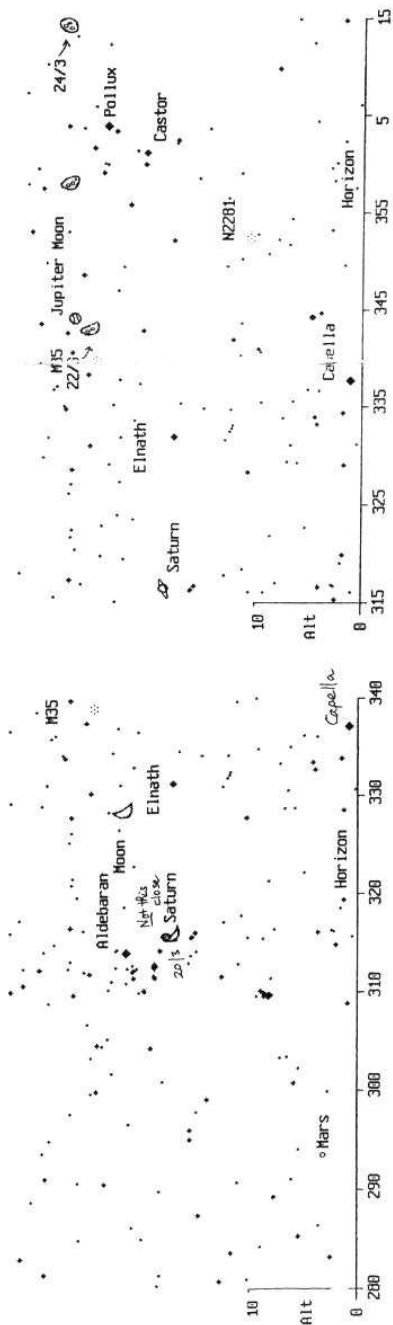


*Kindly reproduced by Ken Bryant and collated/posted by the Zetter family*

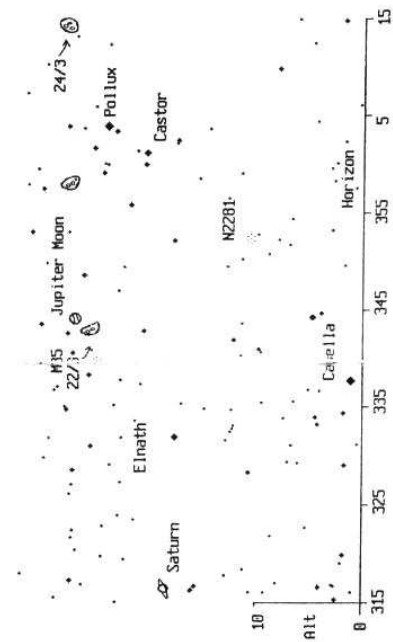


# SKY FOR THE MONTH 20 MARCH TO 19 APRIL (INCLUSIVE) 2002 MORNINGTON PENINSULA

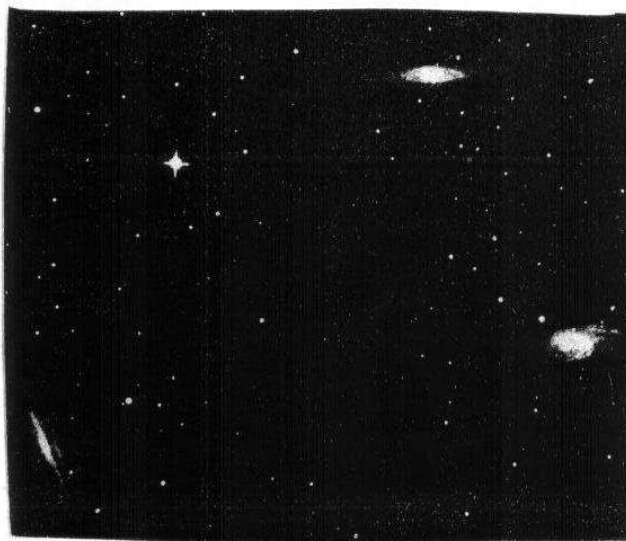
9:00 pm Near West Night Sky 20th March 2002 Summer Time  
 U1.00 (c) Bob Heale 18/4/99  
 All objects no fainter than 5.5 1 X Sky View



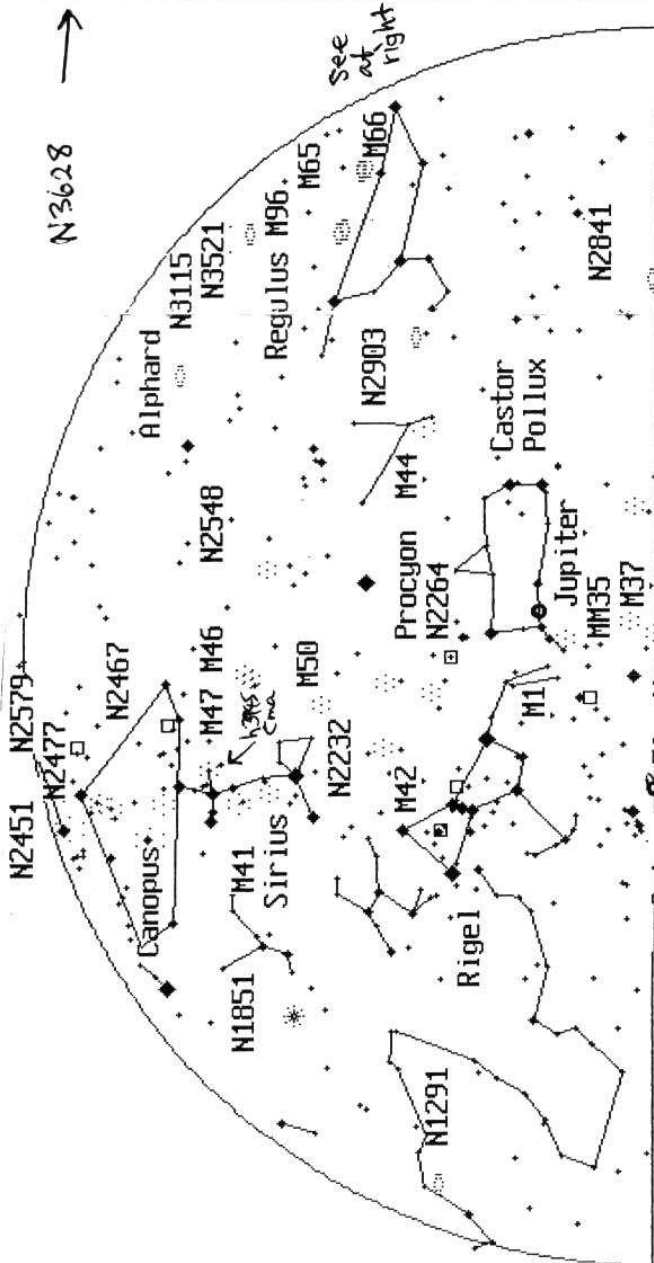
8:45 pm Near North Dawn: Sky 23rd March 2002 Summer Time  
 U1.00 (c) Bob Heale 18/4/99  
 All objects no fainter than 5.5 1 X Sky View



Bob's computer software view  
 and  
 Telescope View ↑ North



M65  
 (NGC 3623)



10:00 pm 2nd April NW Night Sky 2002 Summer Time  
 Also 9pm 16 April, 19 March 11 pm Summer Time

Bob Heale ASF 18/3/2002



