MACARTHUR ASTRONOMICAL SOCIETY Inc.



Journal



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PRESIDENT'S REPORT

Hello and welcome to another exciting month of astronomy within the Society. During September we are hoping for clear skies as we have our Star Camp. This star night is for members and their families. We usually arrive about 4-4.30 pm and enjoy some socialising around Dave Macey's portable BBQ. The nights are rapidly getting warmer. I hope you enjoy the night. The next one should be in November.

Tonight we are privileged to have internationally known SETI and Space Law expert from the United States, Stephen Doyle. He will discuss relevant treaties and legal situations that arise from prospecting on the moon and ownership of the materials and land. Plus who is responsible for any Earth satellites which hit, injure or destroy property or living entities on our beautiful blue world. This man is very interesting as

I have now listened to him speak in Australia 2-3 times.

The library has a copy of Stephen Doyle's UWS talk on space law. Also I have a list of most of the items available to borrow from the MAS library. Please indicate by writing your name on the notice board list. I have read Seth Shostak's book called 'Sharing The Universe', available for loan. I found it an informative and fun read, and anyone who missed his lecture on the star night will pick up on it through reading the book. However I won't steal Dave's review of the book, later in this issue of the Journal.

At this time in my report I would like to apologise that I have had little time to evaluate "The Sky" Software. Hopefully next month.(Sorry Frank, Pete and Bobbie.).

It's great to see the sunshine and also the stars these last few weeks, I have trying to familiarise myself with the sky just viewing casually with my 7X40 binoculars. Jupiter at the moment is spectacular in our night sky plus the Moon which I always enjoy observing, as it is easy to see and recognise many well know features scattered all over it's battered surface.

Next month we are hoping to have Peter Williams, our variable star man. Unfortunately he was flooded out as many of us were with the continual torrential rain we suffered throughout the endless August.

Christmas Lunch and Pool Party

Don't forget, Sunday 6th December. BYO food and drinks. At my place, 5 Boobook Pl, Ingleburn. Place your name on board to indicate you will be coming.

Latest News.

The Moon: Whilst on the Moon, Lunar Prospector has reportedly found millions of tons of water, more than previously thought. This water is believed to be mixed up in the Lunar regolith from comet impacts. However the only real way of determining the facts more clearly and without any debate is for a manned mission to investigate the lunar poles, and eventually set up a colony.

The Moon is also believed to have a larger magnetic field and a bigger core, making the Moon a must for manned exploration. It is hoped within 10 years NASA/Russia and the ESA will be sending a mission. Within 20, a scientific outpost, permanently manned and by the time I'm an old man in 30 years time, a colony. **Saturn:** The Cassini spacecraft, Saturn bound, is working by all reports without any major problems. It will reach Saturn by 2004. It has just completed a fly-by of Venus to gain gravity assistance.

UWS OPEN DAY.

What fantastic weather for this marvellous day held by the university every 2 years. MAS was once again prominent in providing telescopes for the public to view the Sun and the night sky. It was also a very profitable day for the Society as we have I believe procured some interested members of the public to attend our meetings and some even have joined us.

Before I start my afternoon/night report about the MAS presentation at the UWS open day, I wish to thank especially Eric Brown for taking the whole day and night to show the public the Sun and the solar storms currently on its surface. It's amazing to think one of those tiny black spots is the size of our Earth. Also a special thank you to Noel Sharpe for manning the stalls in the morning. Plus Phil & Dave Macey for an almost whole day's effort at the desk. Also I'd like to give my appreciation for Daniel Ross for all his hard work organising our stand and holding the fort despite his very busy schedule with many other commitments including our information package for the public. Thanks to Bob Bee for helping me out in the afternoon on the desk and bringing along MacDob for the night time viewing. While Bob informed the public about the Society I was taping the space law talk by tonight's guest Stephen Doyle.

After a tiring, but rewarding afternoon of informing the public about the Society and them having hands on with Eric's scope we wearily packed away for the 7.pm night viewing. The Society members who attended throughout the day refocussed their enthusiasm and showed the very keen 20-25 public the wonders of the night sky. After some initial problems setting up for myself (thanks Phil M. for help), all the scopes were pointing toward the celestial heavens and during the night there were many gasps from our audience when Alpha Centauri split into two stars. They were further amazed to know it is a triple star system. Other highlights included Jupiter - it was showing colourful bands on its gassy atmospheric surface, plus 2-3 moons - Io, Ganymede and at present haven't figured out the third moon I witnessed. (From Astronomy 98, suggest it was Europa - Ed.) The Jewel Box was as spectacular as usual, and Bob had his usual supportive audience listening intently to his entertaining night lecture. Bob, you have a real talent for

not only promoting the Society but giving the eager public what they want informative and interesting facts about our Universe. (Keep up the good work Bob). The crowd dispersed fairly quietly and quickly after 9 pm. Can't say I was disappointed as many of us had early morning starts on the Monday after a very exciting and busy day. The night despite being bitterly cold, was crystal clear, and was in my opinion an enormous success.

Of course the event would not have even taken place without the tireless work of Carol Oliver, many thanks for allowing us set up and be apart of this very successful day/night.

A quick thank you also to all those who attended the event and helped support the Society and make it a truly great day.

SETI VOLUNTEERS WANTED

Shortly the Society will be getting the 16" Meade (can't wait), I am salivating with anticipation. However, not only will Society members be able to utilise this wonderful equipment but also for those interested in Radio Astronomy, the University is going to purchase two dishes to do its own observing and listening in for a signal from ET. With the University already linked to Parkes, and by early next year having its own dishes which will be run solely on solar power, this is an exciting time for the

Society and especially the University and SETI.

Volunteers from the Society will be needed to man the telescope on public nights and for research. Also, computer database entry and installation of the dishes will require man power and enthusiastic helpers. More on this when it comes closer to the time, all you frustrated Astronomers bubbling over with excitement to be a part of a very exciting era within the university and our very own Macarthur Astronomical Society.

Apollo 16

Well, now we are soon ending an era of spaceflight which will live in the memory and history books forever. Apollo 16 was launched April 16th, 1972, and had astronauts John Young (fastest man on the Moon), Thomas. K. Mattingly and Charles M. Duke. This mission explored the uncharted regions of the Descartes highlands. This area was believed to be a lighter coloured and vastly different geological area of the Moon. The Apollo 16 mission was the first to use the Moon and show that it can be used for an astronomical laboratory, John Young and Charles Duke set up an ultra-violet camera an a tripod for astronomical observations. They also took deep samples of the rocks via a drill and mining equipment. During their many Lunar trips in the rover they accumulated a total of distance travelled as 27 kms. John Young also reached top speed of 16 MPH.

The astronauts were the first to discover that the Moon has a rather significant probability of a magnetic field. In their 20 hours outside the Command Module, they collected over 95 kg of lunar soil. After 71 hours on the surface the Lunar Module Orion blasted off to rendezvous with the Command Module (nicknamed Casper) and Thomas Mattingly The three brave astronauts splashed down safely in the Pacific Ocean at 2.45 pm (EST America) on April 24th.. Stay tuned for the final Apollo flight No.17. Then I will discuss the early days with Gemini and Mercury, then forward onto the success and failures of the very costly but fairly successful Space Shuttle.

Phil Ainsworth

MacDob: The Society's 'Scope

The Committee has appointed Bob Bee 'custodian' of our 150mm MacDob, meaning he will issue and receive the 'scope from those who wish to borrow it. There is no hiring fee for MacDob, but to cover maintenance costs, you are invited to make a voluntary donation consistent with the pleasure that MacDob has given you during your use of it. Contact Bob on (02) 46251623 for your loan of MacDob.

AURORA AUSTRALIS

Said to be among the most magnificent sights that the Earth has to offer are the heavenly displays of mobile coloured lights, known as the Southern Lights or Aurora Australis (Aurora Borealis in the Northern Hemisphere).

They are most often seen overhead in the polar latitudes and up to the 40th parallel (Sydney lies on the 35th parallel i.e. further away). However they do occur in all latitudes and more frequently around solar maximum.

Those of us that were able to attend the society meeting in June with guest speaker Andrew James will most likely have been surprised by Andrew's slide of Aurora Australis that he photographed from the Blue Mountains. That's right, it happens above us! Andrew assures us that the light given off by that Aurora was equivalent to about a $\frac{1}{2}$ moon. Very enlightening I'd say.

WHAT DRIVES AURORAE?

These spectacular displays are the result of the interaction of the solar winds (the constant stream or wind of charged particles coming from the Sun) and the Earth's magnetic fields.

The solar wind blows at around 1.6 million km/h (hang

on to your brolly) and is lethal to living cells. However, the Earth's magnetic field protects us from all but a small amount of these winds which are "channelled" into our upper atmosphere around the magnetic poles.

The charged particles of the solar wind cause our atmosphere to glow much the same way that a neon light glows. This can happen at heights anywhere between 100 to 600 kms.

Another sign of the Sun's solar wind can be seen in the tails of comets that stream away from the Sun much the same way as a weather cock points the winds direction.

...that makes us at Macarthur arguably the best placed in Sydney to get sightings...

Ultimately the driving force behind all this is the Sun's solar wind, which is in turn related to sun spot activity and the occurrence of solar flares.

At times of solar minimum (low sun spot activity) the Aurorae tend to move towards the magnetic poles and can be less frequent. At times of solar maximum (high sun spot activity) the Aurorae tend to move away from the magnetic poles (towards us) and are at their greatest activity

Solar activity follows an average 11 year solar cycle with the solar maximum due

around mid 1999. That means the time is ripe Right Now and for the next couple of years.

BEST TIME TO LOOK FOR AURORAE.

Aurorae can happen at any time day or night. However, for obvious reasons at these latitudes we're most likely to see them at night. Profound Eh? Apparently there is a tendency for them to occur in the hours after sunset and before sunrise.

Solar flares and the associated solar winds are well-tracked phenomena as they impact on our every day lives by interfering with satellite transmissions and radio communications. Warnings of solar winds passing the Earth can be given 24 to 48 hrs prior to their expected arrival.

For those of us interested in seeing an Aurora, this is good news as we also can benefit from this warning. Also as Aurorae are a southern "object", that makes us at Macarthur arguably the best placed in Sydney to get sightings because we have little in the way of light pollution to the south of us.

That has got to make this a pretty attractive (no pun intended) object to "hunt down"

How often are these Aurorae visible in these latitudes? Well, that's a reasonable question but unfortunately one for which generally the information available is inconclusive.

HOW TO GET INFORMED

Bob Evans of the Royal Astronomical Society of New Zealand is currently coordinating a project to quantify the sightings of Aurorae in our latitudes. Our local coordinator is Andrew James and it was he who introduced us to this project at the June meeting.

One of the benefits of this coordinated project is that our club can be put on "the network" to receive warning of "prime times" to go looking for these Aurorae. "Prime times" are a couple days either side of the expected arrival. All that is asked is that we report any sightings (as if we'd be able to keep it quiet!) back through the network.

It is estimated that warnings could occur at periods of around 6-8 weeks.

Sounds too good to miss out on! Any one that may be interested in being so lucky as to witness one of these little beauties, please give me yell so we can set up our own little "network".

Keep Your Eyes On The Skies

Dave Macey

Congratulations to Peter Williams who is now the proud discoverer of his very own comet! Peter is from Sutherland Astronomical Society and was to speak to us at our last meeting but had to cancel due to flooding.

Dave Macey



Prime Focus is the official Journal of the Macarthur Astronomical Society. It is issued monthly. All members are encouraged to contribute articles or news to Prime Focus. Any astronomical subject will be considered. Please submit copy on floppy disc (WordPerfect or Word accepted) or by email to the Editor Bob Bee. If the article is not overly long, hand written or typed is acceptable.

Phone (H) 02 46 251623, or (B) 02 9284n3568, or email robert.bee@tg.nsw.gov.au

MOVIE REVIEW

ARMAGEDDON - The End of the End of the World Films?

Fresh, seemingly from the scriptwriters of all of J.C. Van Dammme's films, the only redeeming features of this movie are the mindboggling special effects, and the hint of a love story.

The opening scene puts Godzilla to shame for sheer destruction of a major city. Once again it is left up to the Americans, not by choice, to save the planet.

Take a lovin' spoonful of ID4, The Right Stuff, Deep Impact, Godzilla and Die Hard, mix them all together, be sure to add computer-generated special effects that will make you think differently about space debris, bake for 2 1/2 hours, and you get the general idea of this film. **Rating** –

| Storyline | * |
|-----------------|-------|
| Love interest | *** |
| Special effects | **** |
| Overal} | **1/2 |

PS This review is from a person who disliked 'Lost in Space' and liked 'Starship Troopers' because "you got what you paid for".

Daniel Ross

AQUILA - THE EAGLE

Visible in the nor-nor-western sky, covering an area about $20^{\circ}x20^{\circ}$ (compare this to Crux's $6^{\circ}x7^{\circ}$), Aquila is an ancient constellation representing an eagle from Greek mythology.

An interesting (and helpful) aspect of Aquila is that it's most easily located by first spotting its brightest star, Altair (yes, of Forbidden Planet fame). Altair is one point of the so-called "Summer Triangle", with Vega (in Lyra) and Deneb (in Cygnus) as the other two points. At this time of the year, Deneb is just above the horizon, due north, and Vega is also just above the horizon. due north-west. Altair is the 'top' of the triangle, about 45° above the horizon, NNW. There, that's easily found. (I just went outside to check, and by George, I got it.)

Happily, Aquila lies right on the rich star fields of the Milky Way and the area seems to have had more than its fair share of novae. Aquila is not noted for its share of NGCs though.

So, what can we look for in Aquila?

... its brightest star, Altair... of Forbidden Planet fame...



 α Aquilae – Altair, is the 12th brightest star in the sky and also only about 16 l.y. away, making it one of the closer stars. (This also explains why it is one of the brightest.) It's a mag 0.77 white star (Class A7), similar in type to Sirius. However, it has a notable rotational speed. completing one rotation in 6.5 hours. (Compare this to our Sun's rotation in 25.4 days). This rotation gives Altair a significantly flattened shape, with its equatorial diameter twice its polar diameter. $(19h 51m, +9^{\circ})$

 β Aquilae - Alshain, mag 3.7 yellow star (Class G8). (Our Sun is a Class G2). It is also relatively close at only 49 l.y. (19h 55m, +6°)

 γ Aquilae is Tarazed, a mag 2.7 (brighter than β) yellow giant (Class K3), about 300 l.y. away. (19h 46m, +11°) As you can see from the diagram, β and γ effectively straddle Altair, a fact that helped derive their names from the Arabic for "The Balance".

 δ Aquilae is a white mag 3.4 star (Class F0), about 50 l.y. away. It has a close companion but it's not visually detectable, being outshone by its primary.

η (Eta) Aquilae is a Cepheid Variable. Its variation from mag 3.5 to 4.5 (with a period of about 7 days) is apparent even without a telescope. (Worth a try at Variable spotting. Try comparing it to β Aquilae which is steady at mag 3.7.) η is one of the brightest Cepheid variables known and is about 2,100 l.y. away. (19h 52m, +1°)

[Note to Society members: If you don't know what a Cepheid Variable is, and you'd like to know, ask some other member, or me if you dare. I'd be happy to explain.]

15 Aquilae is a wide optical double star, just under 1° south of λ (lambda). The main star is mag 5.5 (a giant yellow, Class K1), and has a 'purplish' mag 7.2 companion (giant, Class K4), reputably visible in small telescopes. [I'll have to get MacDob onto that. I once went on record saying that there are no purple stars. Whoops!](19h 05m, -4°)

57 Aquilae is a double star suitable for small scopes. It consists of a mag 5.7 blue star (Class B6) and another bluish companion, mag 6.5 (Class B8), with an orbital period of 55 years. About 650 l.y. away. (19h 55m, -8°)

The only NGC of note for amateur telescopes is **NGC6709**, a loose cluster of about 40 stars, ranging from mag 9 to 11, distance about 3000 l.y.

But apart from specific stars and objects, it is very worthwhile simply using your binoculars and telescope to scan the area of Aquila. Soak up the rich star fields and black nebulae. ie the 'holes' in the star fields. Aquila has many of these.

Bob Bee

WHAT'S TO SEE THIS MONTH? (21st Sep – 18th Oct)

Firstly, I assume you all observed Jupiter in opposition on 16th September. Magnificent, wasn't it?

Mars is still a morning object, rising just before the twilight. Mars is moving into Leo and approaches within 4° of Regulus about 30^{th} Sep. However, in October Mars gets even closer – 0.9° apart on 7^{th} Oct, low on the eastern horizon, about ENE. It continues close to Regulus, but drifting slowly apart till on 16^{th} , there is a delightful tableau of the crescent moon sitting between Mars and Regulus which are about 5° apart.

7.

Jupiter is rising earlier in the evening, moving from about 5.20pm on 21st Sep to about 3.15pm on 18th Oct. So it's all night viewing for you Jupiterphiles. There is a special treat on 4th October when Sydney has a view of a daylight occultation with the near new moon. Yes, daylght. It's all a matter of knowing where to look, and binoculars help. The schedule is: Jupiter disappears behind moon at 5.39pm (Alt 17°) and reappears at 6.39pm (in the dark). You'll need a good clear view of the eastern horizon to see this nifty disappearing act.

Saturn is rising earlier, from about 8.25pm on 21st Sep, to about 6.30pm on 18th Oct. So all you Ring Watchers can sharpen your eyepieces. It's Saturn's turn to be in opposition, on 24th October. (OK, that's in next Prime Focus's period, but I thought I'd forewarn you.) It is **bright** (-0.2 mag) and **big** (20"). In addition, the rings will be a treat as they are at their maximum degree of opening. And on the 6th and 7th October the moon will be flirting with Saturn (9° above and 5° below respectively).

Meteor Showers – The Orionids are visible from 2^{nd} Oct. through to November. Though maximum activity is expected on 21^{st} October, It's never too early (after 2^{nd}) to start looking. This is a good meteor shower (as long as one doesn't hit you) and can give displays of up to 25 per hour. By the way, we can thank Halley's Comet for these meteors.

Constellations:

Scorpius is fast heading towards the western horizon, so check out Antares, M4 and M80 (Globs), M6 and M7 (open clusters) and the other marvels along the scorpion's spine before it's too late. (Refer to Prime Focus, May 97 for details).

Sagittarius is in prime position up high. It's chockas with NGCs, so refer to Prime Focus August 97 for details.

Then there's **Aquarius** (PF Oct 97), with M2 (a Glob) and two planetary nebulae NGC7009 (Saturn Neb) and 7293 (Helix Nebula).

Finally (?), don't forget Aquila and Delphinus, details in this issue of Prime Focus.

Out with your star wheels, and

Good Seeing

Bob Bee

BOOK REVIEW

"Sharing The Universe -The Quest for Extraterrestrial Life" by : Seth Shostak

Published by:-Lansdowne Publishing P/L. ISBN 1 86302 629 0 **Cost: under 20 dollars**

Have you ever read a book and thought, "Gee, that was interesting but what did it all mean?" Well that won't happen with this book !

If you've taken the opportunity to attend one of Dr. Shostak's "lectures" on "Search for Extraterrestrial Intelligence" (SETI) you would realise that this man's brilliance is not just limited to his academic and professional achievements.

To attend one of his lectures is to be entertained by his witty light hearted approach to what can be a heavy weight subject all whilst being inseminated with a wealth of information. Never too long or too short. This man has got to be "the voice of the science of astronomy"(all due respect to the late Carl Sagan). He is able to talk to the people on the peoples level.

Well this reputation is teaming with life (as might well the heavens be) with the publishing of this book in Australia.

The book is presented in paper back with a stunning

"got ya by the eye balls" picture on the front cover. The numerous pictures inside are black and whites of reasonable quality. Reading is easy with well spaced lines and around 200 hundred pages.

The preface includes references to many greats of SETI and includes "our very own" Carol Oliver of UWS Macarthur. Forwards are by Paul Davies and Frank Drake.

Now sit back in a good chair and be prepared to get some strange looks as you'll no doubt have the odd chuckle! Sci-Fi buffs will get a real blast from the numerous references to movies, sitcoms, etc. as he discusses the many concepts that these "condition" us with , then presents us with insights into the pros and cons of these concepts.

Dr. Shostak presents discussions, for and against, all sorts of things, many of which you most likely haven't even thought of yet.

All in all this is a delightful read containing some real meaty info all the while maintaining a light readable style.

To quote Dr. Shostak "The Truth May be Out There".

2

Happy reading,

Dave Macey

THE NINTH PLANET CA 1979-99

I enjoy a good debate. Now the era is almost over, it's time to sort out the facts in this oft asked Trivia Question "Which is the Furthest Planet from the Sun?"

The trick is that for the years 1979 – 1999, Pluto is closer (just) than Neptune, so the answer after all those years of having Pluto drummed in as the Ninth Planet., is Neptune. Good trick!

I have no problems with that question – as long as you ask it right. The problem is that often, enthusiastic folk ask "What is the Ninth Planet?"

Well, I'm sorry, but until the day astronomers decide that Pluto is not in fact a planet, the answer will **always** be – Pluto.

Why? Because the number status of the planets is based on their mean distance, and while Pluto is presently about 4,425 million km from the Sun (compared to Neptune's 4,537 million km, Pluto's **mean distance** is 5,900 mill. km, compared to Neptune's 4,497 mill. km. ie Pluto is 'further out' than Neptune, even between 1979-99. The mean distance doesn't change.

So remember, The Ninth Planet is Pluto, the furthest (until 1999) is Neptune.

Bob Bee

8.

DELPHINUS - THE DOLPHIN

This is another ancient constellation of Greek origin. It depicts a dolphin, messenger of the sea-god Poseidon and also a rescuer who carried the Greek poet Arion when escaping from his enemies.

The entire constellation of Delphinus is about the same size as the Southern Cross (Crux) and for this month is found almost due north about 45° above the horizon, about 5° due east of Altair in Aquila,

Once you find it, the main stars of Delphinus have a distinctive shape, like a long handled upright vacuum cleaner. The four stars at the base (α , β , γ , δ) form a rhombus (a squashed rectangle) called Job's Coffin.

There's a cute story about the two brightest stars α and β . Their names are Sualocin and Rotanev. Arabic? Greek? No, they are the reverse spellings of Nicolaus Venator, the Latin version of Niccolo Cacciatore, assistant astronomer at Palermo Observatory in the 19th century.

Like Aquila, delphinus lies in the rich star fields of the Milky Way and is also a prime spot for finding novae.

There's not too much to shout about in Delphinus, but there are are a few interesting objects.



α **Delphini** is a mag 3.8 bluewhite star (Class B9) about 190 l.y. away.

9.

 $(20h 40m, +16^{\circ})$

 β Delphini is also mag 3.8, a white star (Class F5), 72 l.y. away. It is actually a very close double, with two stars of mag 4.0 and 4.9. Although discovered (as a double) in 1873 on a 150mm (6") scope, they are in fact too close for resolution in an amateur scope. The pair have an orbital period of 27 years, with a semi-axis of about 20AU. (20 38m, +15°)

...the main stars of Delphinus have a distinctive shape, like a long handled upright vacuum cleaner...

 γ Delphini is a very attractive double star, mag 3.9. It has a golden (mag 4.3, Class K2) and a yellow-white (mag 5.1, Class F8) which are easily split in an amateur scope, being about 300 AUs apart and about 125 l.y. away. (20h 47m, +15°) δ Delphini is a mag 4.5 dwarf Cepheid variable white star (Class A7). However, its variation is extremely slight, from mag 4.5 to 4.56. (20h 41m, +15°)

NGC7006. Now here's a test for your scope and eyesight. This is a Globular Cluster which is arguably the furthest GC from the centre of our Galaxy. It is also about 185,000 l.y. from us. (That's further than the diameter of our galaxy.)

Incredibly, despite its vast distance, it is reputably visible in a humble 6" scope (eg, like MacDob) as a fuzzy spot of mag 11.5. It would take a larger scope to recognise it as a Globular Cluster, though. (20h 59m, +16°)

Bob Bee

UWS OPEN DAY -THE MORNING SHIFT

To say that recent times have been bleak would be an understatement, what with all the rain, wind and storms and more rain. Things of late have been rather dank. [... and dull, dark, dismal, dreary, damp... Ed]

The UWS Macarthur Star Party was a soggy and cloud covered event, so it was a relief that clear blue skies greeted Sunday morning August 23rd and at last we could become an active participant in things astronomic.

Phil A. and I decided we could best utilise our resources if I did the a.m. and he completed the p.m., with the able assistance of several other members of our Society.

This was the University's Annual Open Day and big crowds were expected. With gratitude we accepted the offer to 'show our wares' so to speak. How does one 'show their wares'? I've always been 'at the scope' and not 'at the table'. A new experience and I might say a lot of fun, so let's start with a blank sheet.

Upon arriving, the sunshine was outstanding. What was also outstanding were the efforts of our combined early morning assault team. David Macey and I were industrious in setting up tables, organising brochures and pamphlets, telescopes for interior display and of course a strategic location just indoors. Dave Macey was a wealth of information with many questions being skillfully answered such as: Where's lecture Theatre 5? and; this program here, show me Building 17. We received lots of questions, unfortunately not related to astronomy.

What was needed was a clear indication that we were not the Information Booth, and Daniel was resplendent in whipping up some large posters bearing our Society's name. I thought our location was very central and we easily maintained our interactions with the telescopes doing solar observations, and yes, we did get lots of questions about MAS and astronomy. Indeed, at one point, I returned to find Dave revelling in entertaining a sizable crowd Well done!

...the Sun. I've never observed our nearest star before and it was truly outstanding.

I must admit this new role was a lot of fun. However, my preference will always be 'at the scope', explaining to people what they are seeing. However, recent events have laid me low and I'm appreciative in assisting in any capacity. The solar experience was very interesting and drew good crowds. We had two scopes available, one from the Sydney Observatory operated by Geoff and one from our own Society operated by Eric Brown. It was just fantastic that these two gentlemen were able to assist and without a doubt were the highlight of the day.

These telescopes were fitted with a special solar filter and the astronomers using them are highly skilled. Do NOT use your own telescopes without advice from the best authority as you could easily blind yourself for life... a high price to pay.

So, what did I see? Sunspots, lots of them, and of course the disk of the Sun. I've never observed our nearest star before and it was truly outstanding. Thanks to Eric and Geoff for making such an important contribution to the day's events.

Well, this was the morning crew: myself, Daniel Ross, Eric Brown, Dave Macey and Sydney Observatory's Geoff.

I was relieved of my duties around 12.30 by Phillip who was indulging in some dim sims, spring rolls and other assortments.

Well Done everyone.

Noel Sharpe (Vice President)



FROM THE EDITOR

Another new theory! Doesn't it make you spit? Just as you feel comfortable after years of study, struggling with theory and concepts and you happily accept the current model of our Universe, some upstart astronomer discovers some thing 'totally revolutionary' and you're back to Square 1. You begin to doubt if we really know anything.

Oh for the good old days when we 'knew' what was what. Everyone was happy with the Ptolemy model of everything going around the Earth. Made sense. You could see it was true. Then Copernicus put his oar in with the circular orbits around the Sun. OK, it was time for a change, but did it stop there? No!. Kepler chips in with his elliptical orbits... (elliptical, I ask you) and Three Laws to boot. Steady on, this was all going a bit fast after thousands of years of blissful ignorance.

Then... in steps Einstein with his Relativity. Ordinary apple dropping gravity wasn't good enough for him. No! He had to have space-time and rubber sheets (kinky!) and curved straight lines. Poor old (dead) Newton was told he was only a "good approximation". He must have turned red (and orange, yellow, green...) in his grave at that.

But it was the 20th Century, we should accept a degree of change as we approached the new millennium. At that stage, we thought we knew where we stood – on a planet circling an ordinary star in a huge universe called the Milky Way.

But they did it again. That pesky 200" Mt Palomar telescope found that those faint nebulous smudges were in fact distant galaxies... outside our own now very ordinary galaxy. How dare they? Our Universe was made of oodles of galaxies, all hanging there in a kind of steady state.

But Hubble pricks our bubble. The Universe is expanding (was it <u>ever</u> panding?), all caused by a... wait for it... Big Bang (a name given by the Steady State Champion himself, Fred Hoyle).

Soon Steady State was OUT! Big Bang was very much IN!

Thank goodness we settled that. At last a theory that is so abundant with empirical proof that we finally <u>know</u> how things actually <u>are</u>.

And at least, though we can always 'theorise' about the existence of other planets about other stars, we'll never never know because...

WRONG AGAIN. Marcy and Butler are too smart for anyone's good and soon we have indisputable evidence coming out of our ears on the existence of planets about nearby stars. But we can't actually *see* them, can we..? WRONG! More astronomers (where do they all come from?) produce photos of dust disks around stars and 'holes' in the disks where planets have been moonlighting as vacuum cleaners.

OK, fine, I accept all that. At least the progress has been positive, onward and upward. I accept Kepler, Einstein and all his relatives, I accept Big Bang (goodness knows I've entertained the poor public often enough with my graphic [if ignorant] accounts of that theory) and it's nice to know we can actually see other planets... or at least their dust.

Good. Stability at last. Let's sit back and enjoy it.

But noooo! Some smart... brained cosmologists have decided that the Big Bang is overblown and has holes in it. Not just holes, but gaping great chasms. There's a whole new school of cosmology now saying the BB is a No-no.

Where will it all end? Was Einstein and his Cosmological ("greatest mistake in my life") Constant actually right? Are we in fact all shrinking while the Universe stands still?

Stay tune for the 50 metre BLAST (B****y Large Advanced Space Telescope) which will prove, once and for all, that the Universe started as a superdense, superlarge Jaffa, many movie aisles ago.

Bob Bee

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ASTRO TRIVIA QUIZ

 What famous and media personality wrote the book "Sharing The Universe" ?
 When is Jupiter at opposition (Closest and easiest to see) (The exact date) ?

3. What aging senator and reinstated astronaut is going back up into space.?
4. Which Australian Astronaut recently spent 3 months on the MIR Space Station ?

5. Who wrote The Martian Chronicles ?

6. What recent astronomer died in the outback of Australia earlier this year ?
7. Who was Spock's father (Mainly for Daniel) ?
8. What spacecraft is currently orbiting Mars ?
9. Name the current 9th planet ?

10. Who was the first country into space, the name of the spacecraft, and the first man in space 11. What is the name of Australia's only space magazine?

12. Who did Jodie Foster play in 'Contact' - in the movie and the person she took off in real life?
13. What is the size of the UWS telescope which will be mounted up next year at the campus?
14. What type of telescope

is MacDob? 15. Who played Jim Lovell in the Apollo 13

movie ? 16. Name the triple star

system nearest to Earth?

17. What is the name of our galaxy? 18. Where are the star nights held at when we have our BBQ and camp? 19. Name the science/space organisation which is affiliated with the University? 20. What does the initials ESA stand for ? 21. What is alternative name to Rigil Kentaurus? 22. In what constellation is the Orion Nebula? 23. What space rocket company recently set up shop in Australia and will be launching satellites within the next two years? 24. Where are the year 2000 Olympics being held? Ha Ha --Get this wrong and I'll be shocked! 25. Where is the MAS Christmas Party being held & when? (Name only and date) 26. Who will win the RL Grand Final ???????

(Your guess is as good as mine)

27. How many men have walked on the Moon? How many women?28. What do the initials SETI stand for?29. Name the minor meteor shower due to arrive during September (peak time 20th)?

Phil Ainsworth

XMAS COMETH EARLY

....a Poem....by V.P.

It was a present you see Or at least I could hope That come around Christmas I'd be blessed with a scope.

But of all things unseen The unexpected did ensue That I was unfortunate indeed To get a ghastly flu.

Laid me low it did, with Vengeance of the Devil! Horrible and sickly and Feeling a tad disheveled.

So as circumstances unveil and Our dollar did plummeth It was necessary now To make Santa a'commeth!

So now in my room, of course filled with gloom stands a mighty monument, A telescope appears. I feel a little cheered For it's shiny and white A really good sight.

But under Doctor's advice And it's quite unfair To be banned from activities Involving night air.

Six weeks was the sentence And now we're up to the present So attired for the snow It's off to Wilton we go.

Well my time is now up And I'm feeling rather chuffed That observing will do no harm, So with eagerness I await In anticipation of fate That lots will be seen Down at Carol's farm