

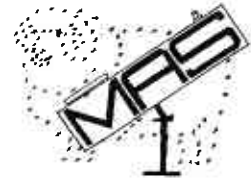


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MACARTHUR ASTRONOMICAL SOCIETY Inc.

Newsletter



# PRIME FOCUS

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## PRESIDENT'S REPORT

Hi to all astronomy lovers. This is our first Newsletter for 1999 and our third meeting. Tonight we are privileged to have as special guest Carol Oliver who is the publicity officer for SETI Australia and works at the university here promoting SETI to everyone in the community.

The list of events this year is very good, with guest speakers sprinkled throughout the year, plus star nights and star camps. Here's hoping we see you at some of these special nights, or at our regular monthly meetings.

Thanks to all those members who have renewed their membership. However, to all those a little slower in renewing, this is a small reminder that after the last day in March, any member not having paid their dues will unfortunately become

unfinancial and no longer a member. It is really important to send in those dues on time as it makes our Treasurer's job a lot easier.

## AGM President's Report.

What an exciting year 1998 was with our many guest speakers, rainy star nights and Prime Focus just getting better and better with more input thanks to members in our Society contributing.

My thanks must go especially to Noel Sharpe for taking on the Treasury during the year and backing me all the way as Vice-President; Bob Bee for ever helping me in committee meetings, Prime Focus and occasionally filling in as Minutes Secretary, plus aiding at most of our star nights and doing talks to different groups in our community.

Also Eric Brown for all his fine work as Treasurer and keeping the books straight; Peter Druery for all his star night assistance, Daniel Ross for liaising with the university and organising the meeting room throughout the year and helping on star nights; David McBean for being Minutes Secretary throughout most of 1998; Chris Barnett for his Internet resources; Dick Everett for his input and assistance at star nights; Peter and Bobbie Elston for organising the tea and coffee each month; Dave Macey for all his behind the scenes work, especially with the projector; and to all members for attending and helping out wherever they could and the members who simply make the Society what it is - a fun group to be associated with.

Phil Ainsworth  
President)

## ANCIENT MYSTERIES

There have been a lot of theories and scepticism about the great Pyramids that tower over the skies of Giza in Egypt. The greatest of them all (hence the name *Great Pyramid*) has a height of 146 metres, consisting of 10 – 15 tonne limestone blocks and weighing over six million tonnes. History claims that the Pyramids were built by the Pharaohs of the 4<sup>th</sup> Dynasty (2650BC –2400BC) to entomb and preserve their mummified bodies.

Was this the only purpose of these great structures or did they serve some other significance?

In the late 19<sup>th</sup> century, British astronomer Richard Proctor came up with a very valid theory that the Great Pyramid was used as an astronomical observatory.

In order to successfully farm, an agricultural civilisation would need an accurate calendar which involves precise observations of the stars and the Moon. To accomplish this, Richard Proctor explained, you would need to determine North and then align a tube on the Northern Star. Today it would have been aligned with the Pole Star, however due to the *precession of the equinoxes*, the Northern Star in ancient Egypt would have been Alpha Draconis.

If the ancient Egyptians wanted to align a tube or passage to Alpha Draconis, they would have had to point it at an angle of approx. 26° which happens to be the angle of the descending passage to the Grand Gallery. Proctor also described that the pit beneath the Pyramid would have been filled with water and the light from Alpha Draconis would reflect from the pool giving a mirror-like effect, similar to an astronomer's telescope.

So one reason the ancient Egyptians took great interest in the skies is to have an accurate calendar. Besides the North Star, another star was important to complete the calendar – Sirius.

Sirius had been known to the Egyptians long before the Pyramids were ever built. In ancient Egypt, the so called 'Dog Star' rose at dawn at the start of the Egyptian new year, at the time when the Nile began to rise.

Next Article: Why the great Pyramids of Giza were also associated with the constellation Orion.

Attila Kaldy



## JUST 22 SECONDS

An article in Astronomy magazine tells a phenomenal story, both about an astronomical event and the technology which we sometimes take for granted.

NASA's orbiting Compton Gamma Ray Observatory detected the start of a bright gamma-ray burst. Computers calculated a position and sent it to the Gamma Ray Burst Coordinates HQ in Maryland, USA. (Yes, there is such a facility). That position was then transmitted to observatories around the world.

At the ROTSE (Robotic Optical Transient Search Experiment) in New Mexico, the first photo of the object was snapped. And how long did this take after the initial burst detection? 20 minutes? 1 hour? That would have been amazing. But no, it took just ... 22 seconds.

Think about it.

It turns out that the gamma ray burst came from an object about 9 billion light years from Earth, more than halfway back to the Big Bang. And for about three seconds of our observing, it shone as bright as 100,000 normal galaxies. Even hardened astronomers were momentarily lost for words.

Bob Bee



**INAUGURAL COBBITTY  
STAR NIGHT**

The first Society Star Night at our own dark site will be held on **Saturday 20<sup>th</sup> March**.

A map showing how to get there is provided as an insert to this Newsletter. On the reverse side of the map is a set of Conditions of use of the site, which we ask all members to read and abide by.

Hope to see you there, because there's plenty to see.

**WHAT'S TO SEE THIS  
MONTH?**

(15<sup>th</sup> March – 19<sup>th</sup> April)

It's a reasonably interesting month for the planets, particularly if you're willing to make the odd sacrifice.

**Mercury:** On 20<sup>th</sup> March, Mercury is in inferior conjunction (ie between the Earth and the Sun). This means it moves into the morning sky (hence the sacrifice). All early April is a good time for morning viewing of Mercury, and on 17<sup>th</sup> April, it reaches its greatest western elongation from the Sun. This means that Mercury reaches a viewable height above the horizon before the Sun rises.

As a bonus, on 14<sup>th</sup> April, Mercury will be occulted by the Moon in broad daylight. This will be visible from

Sydney but binoculars or telescopes will be needed. The Moon will be a very thin crescent, and at 3.33pm Mercury will slip behind the lit side of the crescent and reappear from the dark side (of the Moon, not the crescent ... der) at 4.03pm. Note that the Moon will be about 30° from the Sun, so absolute care should be taken to avoid aiming your telescope or binoculars at the Sun.

**Venus** is setting later and later from March to April and offers great chances to view it, at magnitude -4.0. Venus is also moving towards Saturn and will offer some closish conjunctions. For example, on 20<sup>th</sup> March, a very attractive grouping of Venus, Saturn and the crescent Moon occurs just after sunset.

Then, as a bonus, in early April, Venus passes through Taurus where it will approach within 3° of the Pleiades. And on 18<sup>th</sup> and 19<sup>th</sup> April, we have another grouping, this time Aldebaran (in Taurus), Venus and the Moon, all within 10° of each other.

**Mars** is rising earlier from March to April and is quite close (mag. -0.6) given that opposition will occur on 25<sup>th</sup> April.

High magnification and good seeing conditions might reveal the odd Polar Cap or surface marking.

Mars also has a 4° brush with the Moon on the 3<sup>rd</sup> of April.

**The Constellations:**

If you have a Star Wheel, you don't need me to tell you the following, but just in case you're lazy, read on:

**Southern Cross (Crux)** is getting higher above the trees and more suitable for observation. See if you can split Alpha Crux into its two components (easy enough); spot Gamma Crux's unrelated companion; split Mu ( $\mu$ ) Crux (left of Gamma, right above Beta) into its mag. 4.0 and 5.2 blue-white components; and of course admire NGC4755, the dazzling Jewel Box, just to the left and below Beta Crux.

**The "Bugged If I Know" Cluster** NGC 2516 (thanks Noel) is hovering directly overhead at the foot of the False Cross. Always worth a look at its 80 or so stars. Can you spot the red giant (mag. 5.2) near its centre?

**Orion** is heading over the horizon fast, so you'd better get your last looks before it disappears until November.

**Cancer**, with its M44 Beehive Cluster is well positioned to the North, in the triangle bounded by Procyon, Caster and Pollux, and Regulus.

**The Main Stars:**

This is a good time to do what you've always promised yourself you would... learn the names and locations of the main stars. With the exception of Fomalhaut and Altair, most

of them are up there right now.

It may sound obvious, but the best way to find your way about the sky is to know the main signposts. A little practice will have you looking up and identifying at least one key star immediately. From there you just work your way out.

So, get out your Star Wheel, locate them, remember their names and recognise their relative positions to the other stars. It's all like learning your times tables (a little bit of rote learning never goes astray). After a while, it comes automatically, and also very satisfying. What are the main stars?

- Sirius** (the brightest in the sky, in Canis Major);
- Canopus** (the 2<sup>nd</sup> brightest, in Carina);
- Achernar** (in Eridanus);
- Alpha & Beta Centaurii** (the Pointers in Centaurus);
- Rigel & Betelgeuse** (Orion);
- Aldebaran** (in Taurus);
- Procyon** (in Canis Minor);
- Castor & Pollux** (in Gemini);
- Regulus** (in Leo);
- Spica** (in Virgo);
- Arcturus** (in Bootes);
- Antares** (in Scorpius).

The two we can't see at the moment are: **Fomalhaut** (Piscis Austrinus); **Altair** (in Aquila).

So improve your star power – there will be questions at the next Star Night.

### **MACQUARIE NIGHT** Saturday 27<sup>th</sup> March

This is always a BIG night for astronomy societies and also the public.

MAS joins many other societies by providing a display table to tell the public (literally thousands attend) about astronomy generally and our Society.

We also provide telescopes in the car park – the queues are very long and the people very appreciative.

So if you'd like to join us there, please let Phil or Noel or Daniel know. The public pay to enter but Society members get in free because of our involvement. Enter about 6pm (or later if you like) via the University main front gate and ask for directions.

Oh yes, there's a great Sausage & Steak sizzle there, at very reasonable prices.

### **UWS MACARTHUR SEMINAR**

UWS Macarthur is organising a 'Seminar on Astronomy Education and an Astronomy Night' on Saturday 1<sup>st</sup> May, from 10am – 5pm, and 6.30pm – 11.00pm.

This is supported by and involves our Society.

The purpose of the seminar is to review and disseminate information on astronomy education programs to educators and people interested in astronomy.

There is a line up of very interesting speakers for this seminar, including: Professor Donald Melrose & Dr John O'Byrne (University of Sydney); Dr Nick Lomb (Sydney Observatory); Jonathan Nally (Sky & Space); Dr David Malin (A.A.O.); Peter Druery (MAS); Dr Russell Cannon (A.A.T.) and others.

There will be a registration fee of \$20, which also covers lunch and morning/afternoon teas.

This sounds like an exciting day. If interested, contact either Ragbir Bhathal, Daniel Ross or Bob Bee for details and a Registration Form.

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### **CROWDED MOUNTAIN**

First there was the Keck 10m binoculars (ie Keck I and Keck II 10m telescopes), sitting on top of the world on Mauna Kea, Hawaii, with 8 other major telescopes. Now there are two more gathering light. The 'Subaru' telescope, the world's largest single piece 8.3m scope. And the 8.1m Gemini North telescope. (This will soon have a twin in Chile, called the Gemini South). Jealous?

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