

PRIME FOCUS

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President's Report

Greetings to all our members and guests to The Macarthur Astronomical Society's monthly meeting and official newsletter. I hope you all had a Happy Easter. Thank you for all the members in the society who have supported me throughout my two terms as President. I hope this year we can continue on having a fun time observing and socialising at our monthly meetings and star nights.

It's been a busy month for astronomy and our Society as we have been actively participating in many astronomical events. From the onset it was hectic with Macquarie University holding its regular star night in which many scopes were on show for the public to view and let them see many of the wondrous night sky objects. In the hall we were entertained by a fascinating talk by Fred Watson in which he discussed many different types of telescopes and of course the Anglo-Australian Telescope, where he is currently working.

The Macquarie Open Nights are one of the major events in Astronomy not to be missed. Approximately 1,000 members of

the public and most societies over Sydney attended this evening on April 4th. I would like to especially thank Noel, Peter, Ian, Bob and Dave for their scopes, and Daniel and Ragbir for helping at the desk and all the other MAS members who came along and helped out or just came out to enjoy the event. The next Macquarie night is being held on October 31st.

April continued to be very busy for certain members of the society as Eric and Terry went to Ilford and experienced the dark skies and friendly atmosphere of this very popular event.

The following week was the 18th Amateur Astronomers Convention held by Sutherland Astronomical Society. This conference was extremely well run and organised with many experts in the field discussing various techniques on CCD imaging, Variable Star and Planetary observing. Just rubbing shoulders and discussing ideas with some of the elite amateur and professional astronomers was a tremendous thrill for myself. It was also encouraging to see some of our members at the public lecture to hear Professor Jeremy Mould of the Mt. Stromlo and

Siding Spring Observatories present a very entertaining lecture.

The flow continued when our society went down last Saturday to the Balangalo State Forest to show and explain to the members of Independence House and International Students some of the stunning objects which can be viewed in different telescopes during a very dark and non light polluted sky. More on how this event turned out in next month's journal.

Tonight at our monthly meeting we are privileged to have as special guest to our Society, Rev. Bob Evans who is a world renowned expert on Supernovae.

During many of this month's events, your president has been recruiting some high profile guest speakers. Some of these include:

June - Andrew James who will talk to us about Planetary Nebula in Building 21;

July - Ralph Buttigig, President of the BAA, and he will discuss 'A Manned Mission to Mars';

later in the year we will be going to hear variable star expert Peter Williams from Sutherland Astronomical Society; plus a few other surprises yet to be confirmed.

An exhilarating few months are coming our way as in May our Society is holding a Trivia Night which will be organised and run by Daniel Ross and myself. Come along and join in the fun.

Later in August (probably 22nd) a Family Star Night is being organised by MAS and the University. Daniel Ross is forming a sub-committee. If you feel you can help out for this public event with telescopes, or manning the desk on the night or any other support it would be greatly appreciated.

Next month the Society is going down to Camden Public School for a star night, plus we should be having a deep sky

observing night and maybe a camp. Contact me for details if you wish to find out when these events will be taking place.

Phil Ainsworth (President) ■

REV. ROBERT EVANS EXPLODES ON THE SCENE

Ever since I read an article in Southern Sky (Nov/Dec 1994) by Greg Bryant, and saw the picture of Bob Evans standing in front of his 16-inch telescope (it was bigger than he was), I've wanted to meet the man.

And Tonight's The Night!

Any amateur astronomer who can do a galaxy tour at the rate of 120 galaxies per hour (not to mention discovering 26+ supernovae) is worth meeting. In shaking hands, maybe some of that skill will rub off. One can but hope.

Now that he has retired from his Uniting Church ministry in Coonabarabran and lives in Hazelbrook, I wonder what he does with all that spare time, hmmm?

My latest info on Bob Evans' supernovae scalp belt shows 26 supernovae discovered between 1981 (SN 1981A in NGC 1532) and 1993 (SN 1993L in IC 5270). One particularly famous discovery was the one in Centaurus A (SN 1986G in NGC 5128). Study of this supernova helped astronomers learn much about that galaxy, including its distance from us and the composition of its distinctive dust lane.

Since 4 years have passed, I suspect there should be some additions to this list. We may hear about those tonight.

Rev. Robert Evans... MAS welcomes and salutes you.

Bob Bee ■

SOME REFLECTIONS ON MACQUARIE OPEN NIGHT (4TH APRIL)

It was a real buzz manning MacDob with Ian Cook and talking to the public in the darkened car park at Macquarie Uni. Peter Druery was there with his 200mm SCT, and Noel with his 200mm Newtonian Equatorial (assisted by Dave Macey and his binoculars for the queue). We had some competition up the way from a 16" (400mm) Dobsonian Truss telescope – gosh, it was BIG!

But still, our scopes, including humble 150mm MacDob had never ending lines of people keen to see what was 'out there'.

And the questions they asked really kept us on our toes. Phillip Macey helped out as a reference library, using his red torch and Collins Pocket Guide to dig answers out for me when I got stuck, or when I wanted a 'rough' estimate polished off.

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The interesting thing is that at the end of the night, I knew a lot more facts and figures than I did at the beginning. So I thought I'd share some of those random bits of information with you. You never know when you might be asked one of these questions.

1. Alpha (α) Centauri is the nearest star at 4.3 l.y. (OK, you knew that.) This star is mag. -0.27 , the 3rd brightest in the sky. However, it is made up of two orbiting stars of mag. 0.00 and $+1.13$ which are Class G2 (like our Sun) and K4 respect. They orbit each other every 80 years.

To complicate matters, these two stars are orbited by another star, called Proxima Centauri, (because it is marginally closer

than α^1 and α^2 by 0.1 l.y.). Proxima is actually about 2° away from its primaries and so not in the same field of view when viewing them, even under low power.

Proxima is an 11th mag red dwarf and is estimated to orbit α^1 and α^2 in about 1 million years.

Now the α^1 and α^2 orbit has an eccentricity of 0.52 and a semi-mean axis of 3,500 million km. As best I can calculate, this means that they have a minimum distance of 1,750 million km (approx. Sun-Saturn) and a maximum distance of 5,250 million km (approx Sun – Pluto).

2. Omega (ω) Centauri, the globular cluster. It's interesting to note that the average Mr and Mrs Public were just as enthralled by a simple double star (α Cen) as they were by a multi-million star globular cluster (GC). Certainly makes our job easier.

ω Cen is in fact 17,000 l.y. away (I had guessed 20,000 l.y., so I wasn't that far off) and, arguably, contains up to 10 mill. Stars. It is the finest of all the Globulars. For reasons too complicated to discuss here, GCs are made up of some of the oldest stars in our galaxy.

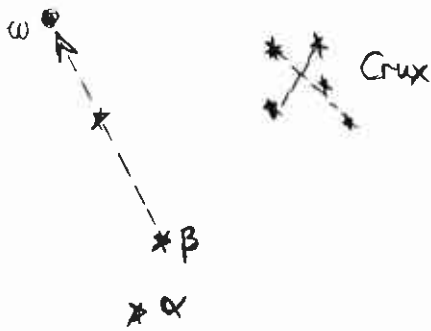
All the star forming gas in the cluster has been stripped away (thought to be by the force of exploding supernovae in the early stages) so no new stars formed, leaving only surviving and aging stars. The brightest stars in GCs are actually red giants, hundreds of times more luminous than our Sun. However, there are many more dwarfs than giants, but these are fainter and more closely crowded, so harder to view individually.

Though difficult to define exactly, the diameters of typical GCs are in the order of 100 l.y. or more, depending on where you define the boundary. If you extend it to the furthest reach of the most diffuse stars, it can be up to 300 l.y.

The star density inside a GC is fantastically high. In our local area of space, the average star-star distance is

about 3 to 4 l.y. Inside a GC, the density is estimated to be in the order of several *light-months*. In the most condensed central region, perhaps only *light-weeks*. Imagine how bright the night sky would be for a planet around one of those stars.

Here's a quick way to find ω Centauri (which, on a dark site is visible to the naked eye as a 3rd mag fuzzy star).



Find β Cent (the 2nd Pointer Star). Then, tracing a line parallel to the axis of the Southern Cross, find the faint star to β 's left and continue in the same line the same distance. There you will find ω . Easy!

3. The Jewel Box. The other popular viewing object was the Jewel Box, so named by John Herschel, Sir William's son, because it resembled a casket of variously coloured precious stones.

The eye catching bright stars are blue supergiants (the emeralds and diamonds) with one gorgeous bright red supergiant in the middle.

This is a very young open cluster – only about 15 million years old – and its brightest stars that give it the characteristic shape will do their dash and end explosively in another 20 or 30 million years or so.

Jewel Box is about 7,600 l.y. away and can easily be found in binoculars and small scopes. The lower the power, the better. If you get too close in, you lose its arrow (or Capital A) shape. It can easily be found at about 7 o'clock from β Crucis.

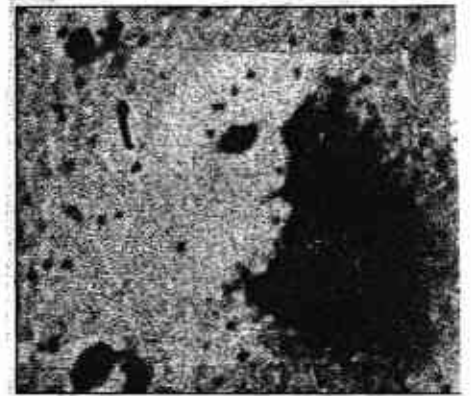
So, next time you can man MacDob and answer all the public's questions easily.

Bob Bee ■

EGG ON THEIR FACE

Strike 3 for the 'Old Martian Civilisation Movement' (honorary patron Van Danniken) and Conspiracy Theorists, it would seem. If you've just returned from the South Pole, here are the 'before' and 'after' photos of The Face on Mars in the Cydonia region of Mars:

Before (by 1976 Viking)



After (by 1998 Global surveyor)



Whoops! Where has the face gone? The answer? Nowhere! Of course, it was never there to begin with. It was simply a mesa, a natural formation, with a trick of the afternoon light. If I can spot alien faces in the Cone Nebula and Fox heads in Eta Carina, you can imagine faces on Mars.

Those conspiratorists must hate those mesas to pieces!

Bob Bee ■