April 2007 Volume 12, Issue 3



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## **MAS Committee**

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Journal

# PRIME FOCUS

## Presidents Report

Good evening to all our members and guests, tonight we will hold our Annual General Meeting. It's a statutory obligation that all incorporated associations conduct these meetings annually in order to table reports and hold elections.

After the AGM we will have a presentation by two of our members Martin and Bruce, which should be very informative and entertaining, thanks guys.

This will be my eleventh MAS Annual General Meeting that I have attended, for a while now it's been a business as usual type of affair, this year however we had some vacancies which have resulted in some new people to consider for the management committee.

The nominations for positions have been posted on our website; I personally think the society is in great shape to have the support of such talented members who have put their hat in the ring, so to speak.

Only members holidaying on Mars would have missed the very well published fact that I have not sought to re nominate for President, or any other position within the club. Also Mr. Ian Cook previously indicated that he also would not be seeking nominations for a future position.

I have previously gone to print in Prime Focus to detail the whys and wherefores of my decision, also mentioned previously in Prime Focus was Ian Cook's decision. This was done to hopefully generate plenty of time and interest within the ranks for all members to consider their involvement in the club, i.e. some swapping and changing of existing positions and some new faces as well. I am personally very pleased this has happened and that can only be a very good thing for the society.

Later tonight we will take a show of hands to indicate if their nominations have been successful, all I can say is good luck to you all!

#### Last Month.

Our special guest speaker was Bob Evans. Bob is well known to many of us as one this countries most esteemed astronomers, specializing in the discoveries of Super Novae.



Bob gave a very entertaining and informative talk. His slide show gave us insights about his discoveries and he was gracious to show us his personal collection of the original southern sky survey photographs.

I am sure that I can express the society's great appreciation in having someone of Bob's caliper pay us a visit, just fantastic!

## Next Month

Melissa Hulbert from Sydney Observatory pays us a welcomed return visit; her talk will be on eclipse chasing. Melissa also is a prominent member of Sutherland Astronomical Society; it will be great to catch up with her again.

## Something Really Special

Tonight we are honoured to be joined by the founder and previous President of MAS, namely Phillip Ainsworth. With Phil's assistance we will be handing out the MAS 10 year membership badges as mentioned previously.

To qualify you have to be a continuous financial member of the society for 10 completed years. I have perused the previous records and original receipt books going back to February 1996, if I have accidentally missed anyone than pleased let me know

## **10-Year Members**

Phillip Ainsworth Noel Sharpe Frank Kish Peter Druery Lou Timpano Dick Everett Ian Cook Roger Powell Daniel Ross Bob Bee Ragbir Bhathal

On behalf of the society I pass on our congratulations to all the above members, well done.

#### **Other Things**

At this point I might mention that renewal fees are now due so remember if you have joined us from October last year than you are covered until next year.

The night we had up at the domes for earth watch was a huge success, I would think our best night ever, at one point I counted 150 very keen and eager stargazers. Given the comings and goings we could have even hit around 200 in total for the night.

Even with the near full moon some objects were quite visible and presentable, like Saturn, The Orion Nebulae, Eta Carinae. Martin had a fine view of Omega Centauri. I think it's great that along with the regular band of members who attend these nights we had some newer members give us a hand. Well done to everyone.

I thank Ragbir Bhathal for doing such a great job with the publicity, as he has done on previous occasions, especially with contacting the local schools. The society did itself proud supporting the night and let's hope for some great nights coming up. I am pretty sure we have or will soon have a confirmed schedule as we have made some adjustments with Ragbirs cooperation.

## The Dates

21/04/07 Magellan Observatory and
The Forest.
12/05/07 Stargard
19/05/07 The Forest
21/05/07 General Meeting
25/05/07 Campbelltown Rotary
Observatory

Please watch out for the Critical Mas emails which advise and confirms location and times. Also we might add some extra nights, or cancel schedule nights if the weather is poor.

## It's Time to Say Goodbye.

Well the time has come to say farewell, as this is my last Presidents report, no longer will I convey information, schedules and dates. In all of my writings I have had the sense it's like we are having a personal conversation, simply put it's been a pleasure. Now we are drawing to a close and my appearances in print and out the front will be a lot less frequent.

Very sincerely I would like to say what an honour it has been to have your support when going about my duties on behalf of the club. Many kind comments have come my way regarding the decisions I have made recently, I cannot tell you how very appreciative I have been in receiving those comments. It's a great society to belong to; we have a continuing list of great guest speakers and a fantastic meeting room with facilities. Our field nights are very well attended and still remain the best way to learn about telescopes and the night sky.

I think the society is in great shape, now I will be able to open up more time to concentrate on my family and working life. I certainly will remain a keen member of MAS and will try to attend as many meetings and field nights as I can.

Goodbye, farewell and good stargazing.

## 2006-2007 MAS Committee

A big thank you to the outgoing Committee Members tonight; your time and effort over the last 12 months is appreciated by all MAS members.

Presidènt:	Noel Sharpe			
Vice President:	John Rombi			
Secretary:	Ian Cook			
Treasurer:	Dick Everett			

Committee Members Lloyd Wright Bob Bee Daniel Ross



#### Some Observing at Last Bob Bee

It was 30<sup>th</sup> March, the night before the Earth Night event at the domes (which I was unable to attend). It was a beautiful evening, despite the fullish Moon, and it would have been a crime against MAS not to do some observing.

So I set up my 235mm SCT and resurrected an observation program which had died a month earlier for lack of a sky. It was going to be a chance to try out a few new toys – my wide angle 16mm eyepiece and my 'sliding chair' courtesy of Handyman Dick. The latter was to be very important as my prime observing target was going to be the constellation Vela, virtually directly overhead which would normally be a back-and-neck ache for owners of rear-viewing SCTs.

To warm up (or was I simply putting off the coming agony of star-hopping through Vela?), I checked out the near full Moon with Moon filter and high magnification. I'm usually not a Moon person, but even I found it fascinating checking out the details of the craters hanging near the Moon's limb on the Terminator. Watch as I might for many minutes, I didn't see any new craters appear. Strange! But that 16mm e/p certainly brought the existing ones up close and personal. It was also moments like this that I appreciated having a tracking equatorial mount (set to Moon speed) and not a Dobsonian mount requiring

constant nudging to keep up, especially at high magnification. But I digress.

I then did the inevitable – moved to Saturn. Beautiful. I can never tire of just staring at it. My 16mm gave me x147 and I could get a nice sharp image of the disc and rings. Unfortunately, as I was later to discover, there must have been a bit of moisture in the upper air, as when I used my 9mm (x260), I just couldn't get a truly sharp image. This was confirmed when I aimed at  $\sigma$  Orionis, a distinct multiple star. Each component, even in my 16mm, had a cloudy haze about them when they would normally be sharp as knives.

My first new target was **NGC2362 in Canis Major**, which the Collins Pocket Guide (CPG) describes as "a compact cluster surrounding the mag. 4.4 blue supergiant  $\tau$  CanMaj. which is a genuine member". It was relatively easily star-hopped from the dog's rear end star  $\delta$  in the direction directly opposite the hind leg star  $\sigma$ . I counted about 50 to 60 fainter stars distributed fairly evenly in a roughly circular pattern around the brighter central star. Quite attractive.



NGC2362

Then I returned to an old foe – **Columba**. I'd given up on this a year ago down at Belanglo because it was directly overhead at the time and I didn't have the famous 'sliding chair' to make SCT viewing comfortable. It was agony that time. Now it was easier. Thanks, Dick.

My target was NGC1851. To quote CPG: "A 7<sup>th</sup> magnitude globular cluster, visible in small telescopes but requiring moderate apertures to resolve the brighter stars. It lies 35,000 l.y. away." Initially I had difficulty in star hopping as the faint guide stars (the brightest star in Columba is mag 2.7) were made near invisible by the bright Moon. Ultimately, I located them and after moving to the approximate location (see the chart below), I cast about and found the unmistakable compact glow of a globular. I was using my lowest power eye piece, a 45mm (x52). I was impressed. It had a brightish intense and concentrated center with a faint glow around it. (Remember, it is 35,000 l.v. away.)

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Then I upped the magnification to x146. Unfortunately, the 'seeing' hadn't improved but the globular did appear larger (no surprise there, I suppose). I could definitely resolve more 'loose' stars around the still concentrated center. For a remote glob, it was attractive and a nice find.



#### NGC1851

My next target was **NGC2017 in Lepus**. (Notice how I am still avoiding Vela?) This was my second attempt to identify this cluster (if you can deign to call it a cluster). My main reason for 'failing' the first time was I didn't really know what it should look like so didn't recognize it when (maybe) I saw it. This time I was prepared. Behold, below, NGC2017.



NGC2017

Four stars, maybe 5 or 6 if you count the fainter ones. No wonder I missed it first time. Really! From the chart below, I was able to star hop to the required location and Bingo! – there is was, as per picture above.



LEPUS

NGC2017 is not really that spectacular. A neat arrangement of four nearly equally bright stars with two fainter stars. It's almost like the Coathanger but with fewer stars and no hook. To be fair, once you overcome your anticlimax, it is really a pretty arrangement of stars to view through your eye piece. Then, I moved on to **Vela.** Vela contains a horde of NGCs and ICswhere do you start? I already had a list, so I decided to track them down. Here is the list: NGCs 2547, 3228, (IC)2391, 2670, (IC)2395, 2670, 3201, (IC)2488, 2679 & Trumpler 10. A number of these I had already checked out while writing my binocular book but I wanted to revisit them to see if my perceptions of them had changed (i.e. improved). I was aware that, with the bright Moon, it was not the best night for hunting down some relatively faint clusters.

Here's a map of Vela with most of those objects shown:



I started with the globular cluster **NGC3201**. Supposedly a mag 6.5, I had found it in binoculars under dark sky conditions on previous nights but not this night. However, from the chart it was relatively easy to find in my telescope by extending the line from  $\mu$  to p by two lengths. It was very faint in the x52 but by upping the magnification, it was very definitely a glob though with no apparent central concentration. It could easily be mistaken for an open

cluster of 'star dust' appearance. Quite pretty, actually. Would look a lot better without the moonlight.



NGC3201

Next was **IC2488** (not shown on chart above.) This is located midway between  $\kappa$  Velorum and the False Cross star below it ( $\iota$  Carinae). I found it as a very sparse and dainty open cluster in my scope. At first I thought "is this just the back ground stars?", but on moving the scope from side to side etc, it was clearly a distinct cluster. All the stars were very faint, with no particular pattern.

I revisited **IC2391** – a naked eye cluster, made more distinctive in binoculars. It has the bright 3.6 mag blue-white star  $_{0}$ Velorum near its center.



IC2391

If you look closely at the picture above, you will see about 1° to the left (east) a small cluster of stars. This is the binocular cluster **NGC2669**, almost lost in the glare of its brighter IC companion.



NGC2669 (enlarged in scale).

Another attractive binocular cluster is **IC2395**, about 5° above IC2391. It has about 40 stars, with some brighter members (which may be foreground stars).



## IC2395

About  $\frac{1}{2}^{\circ}$  to the south of 2395 is another smaller cluster **NGC2670**, at around 8<sup>th</sup> mag.



NGC2670

Then, **NGC2547** is just below  $\gamma$  Vel. On a dark night, it is just naked eye visible, but best viewed in binoculars.





**NGC3228** is a pretty little cluster approx. midway between  $\phi$  and  $\mu$  Vel.



NGC3228

I then sought out **Trumpler 10**. This is just visible in binoculars as a smattering of stars to the east of d Vel. In my scopes finderscope, it shows as a starry smudge, while in the x52 eyepiece it is a very sparce collection of about 40 to 50 stars, very open in nature but clearly a cluster. It contains widely-spaced stars of magnitude 7 or fainter, and is about 30'-40' across, but as it is set in a busy star field, it's hard to tell where the cluster boundaries are.

I'm sure there are many other clusters available for hunting down in Vela (check the various charts), but I suspect they are more subtle than the ones identified above. Let me encourage you to spend an evening hunting them down (preferably by star hopping, but with Go-To if you must) and enjoying the hunt and the observing.

## **Hunting For Messiers**

Ian Cook

Those intrepid observers, who hunt for Charles Messier's 110 objects, understand too well that Sydney's latitude of 33 degrees south means that some M's are twice as hard for us to find because of their far north latitude and the amount of atmosphere we have to hunt through. Moreover about ten objects are impossible to sight from here, so we can only ever hope to find 100 of the original, unless we travel to Nth Queensland.

Hartung in his book "Objects for Southern Telescopes" gives an 86-object extension to Messer's list, many of them naked eye. Now it would be legitimate to take ten of the easiest sights and substitute them for the ten original Messiers', but that would be just too easy.

At great cost of time and labour a genuine ten substitutes have been assembled from Hartung, and presented here for your enjoyment and challenge. Wherever possible the objects are identical in type, magnitude and size. They are also identically located in reverse declination. This means that if the original object is at +63 degrees, then the substitute is at – 63 degrees, giving us an appropriate equality with our northern colleagues.

Henceforth these objects could be known as "MSM" – MAS Substitute Messier with the same Messier Number

		NGC No	Туре	Constellation	RA	DEC	Size '	Mag	Dist	Name
		Hj		Crux	12 28.1	-60 02		8.0 / 9.9		54' from
MSM	40	4524	Dbl Star						sep 30"	epsilon
MSM	52	6025	OC	Tri Aust	16.03.7	-60.30	12	6.0	800 pc	
MSM	76	3918	Pneb	Centaurus	11.50.3	-57.11	12"	8.1	800 pc	Blue Planetary
MSM	81	5128	Galaxy	Centaurus	13.25.5	-43.01	18*14	6.8	3.5 mpc	Centaurus A
MSM	82	6744	Galaxy	Pavo	19.09.8	-63.51	16*10	8.4	8 mpc	
										Eight Burst
MSM	97	3132	Pneb	Vela	10.07.7	-40.26	45"	9.2	800 pc	Nebula
MSM	101	300	Galaxy	Sculptor	00.54.9	-37.41	20*15	8.1	2 mpc	
MSM	102	1549	Galaxy	Dorado	04.15.7	-55.36	4*3	9.9	12 mpc	
MSM	103	4103	OC	Crux	12.06.7	-61.15	7	7.4	1.9 kpc	
MSM	108	1365	Galaxy	Fornax	03.33.6	-36.08	10*6	9.5	11 mpc	
MSM	109	1398	Galaxy	Fornax	03.38.9	-26.20	7*5	9.5	17 mpc	
One	more	e for goo	od measu	ıre						
1		1316	Galaxy	Fornax	03.22.7	-37.12	7*6	8.3	17 mpc	Fornax A

## To Infinity and Beyond Bob Bee

The Universe is a very big place. Bigger than you could possibly imagine. But let's try. Let's look at our own Solar System first.

If you imagined that our 1.4 million km diameter Sun was actually a 1.4 cm diameter grape (that's a scale of one in 100 billion), our Earth would be a 1/8<sup>th</sup> mm diameter grain of salt and 1.5 metres from the Sun. Pluto, at the edge of our Solar System would be 57 metres away. The next nearest star, Alpha Centauri (actually a binary star with two grapes 14 metres apart), would be 400 km away. You can probably just grasp that in your mind. But the diameter of our Milky Way galaxy, a fried egg shaped collection of 400 billion stars, would be 10 million km. Hmm!

It starts getting BIG at this stage. Hold on to your heads. Remember, one light year is really 9.46 trillion km but only 94.6 km in our scale model. The distance to the nearest major galaxy like our own (Andromeda Galaxy, actually 2.5 million light years away) would be 240 million km. And the distance all the way to the edge of our observable universe in our model? 3.5 trillion km. That's 15,000 times further than the Andromeda Galaxy. You would not be alone if you admitted that those numbers cannot be imagined and hurt your head when you try. And remember, that's

on a 1 in 100 billion scale model. It is because of such vast distances between the stars and galaxies that most scientists believe that, while there may be and probably is life on planets around other stars, they certainly haven't travelled all that way to Earth to play silly games with crop circles.

It's when you contemplate those vast distances while you gaze at the stars overhead at night that you feel a marvelous sense of awe and could be forgiven for waxing poetic, as I did below:

Beyond our Solar System's sway Beyond the sparkling clusters Beyond the diffuse nebulae With blazing stars to light 'em, Beyond our local Milky Way Where matter darkly musters, Past galaxy on galaxy, And on, ad infinitum.

Of course, there is another marvelous side to these vast distances in space (and even the not so vast). Did you know that the very act of looking into space, with either the naked eye, binoculars or a telescope, is a trip in a Time Machine? I kid you not!

Light travels at a finite speed – 300,000 km per second. When you look at an object, you are seeing the light emitted by or reflected off that object. On Earth, the delay times are trifling and can be ignored. But from space, the time for the light to travel

to your eye is significant. So when you see a planet, star, nebula or galaxy, you are seeing it not as it is NOW but as it WAS when the light left it on its way to your eye.

So you see the Moon as it was 1.25 seconds ago, the Sun 8.3 minutes ago and the nearest star, Alpha Centauri, 4.25 years ago. You are, in every real sense of the word, looking back in time. So, when you see that beautiful red star Betelgeuse in Orion, you see it as it was 430 ago in the year 1577. What is exciting is that Betelgeuse is a red hot

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## Astronomy 2007

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## AVAILABLE NOW

March – Crossword Solution

#### Across:

1. Dobsonian4. Charon11. Titan13. Carbonaceous

#### Down:

1. Deep Sky Object2. Sun7. Alpha Centauri8. Asteroid15. Sunspot16. Mercury

candidate to go supernova at any time and it could in fact already have done so since 1577. That means the light from its cataclysmic explosion is already on its way to us, but we won't know till it arrives.

It always gives me a thrill when I look through my telescope at a galaxy 15 million light years away, that I am seeing the universe at it was circa 15 million B.C. Now, that's time travel. H.G. Wells, eat your heart out.

## Prime Focus Article Submission

Deadline for article submissions for the May edition of Prime Focus is

## Monday 7th May 2007

All Articles can be submitted via email to <u>cyberpiggy@optusnet.com.au</u> Or via snail mail to the MAS Postal address

Thanks to all the contributors for this month.....

10. Iron

3. Aquarius 4. Cluster 5. Acrux 11. Tereshkova 12. Coma 14. Nebula

16. Magnitude 18. Tropical 19. Quasar

Maunakea 9. Kepler