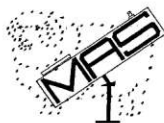


MACARTHUR ASTRONOMICAL SOCIETY Inc.

Journal



PRIME FOCUS

Volume 10 Issue 10

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PRESIDENT NOEL SHARPE	VICE PRESIDENT JOHN ROMBI	SECRETARY IAN COOK	TREASURER DICK EVERETT	EDITOR BOB BEE
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MAS through the Years.

Take your minds back 10 years to January 15th 1996. Most of you were possibly not even living in the area, had little interest or didn't know much about the field of Astronomy. Well, I remember what I was doing, having come up to live in Campbelltown after residing for 35 years in Narwee and attending The Sutherland Astronomical Society meetings once a month for as long as I can remember and at the same time as our guest speaker Father Chris Toohey.

Our first meeting was a balmy January evening saw 26 eager faces. It had been announced through the Chronicle that a meeting regarding Astronomy was going to take place at long last in the Macarthur region at my place.

The Macarthur Astronomical Society or affectionately known now as MAS did start with very humble beginnings. A nervous but

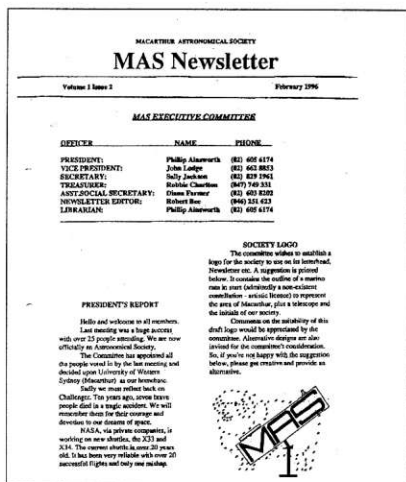
enthusiastic me stumbled through our first meeting in my garage. Coffee flowed through a leaky urn, and when I had done my short historical spiel of who I was and what I hoped to achieve, by the end of that first night we had a President (me), Vice President John Lodge (who no longer attends), Secretary David McBean, Treasurer Robbie Charlton and Terry Storey. Other long standing members from that first night still attending and I commend them on their loyalty are, Peter Druery, Steve Hutchinson, John Casey, John Koster, Rodger Powell, and I apologise to anyone I may have missed out on from that very first meeting, Noel will be going through the names and searching for other ten year members.

A lot of water has passed under the bridge. Our current President Noel entered the scene from the 2nd meeting we had, which was held at the University in building 21 in one of the lecture rooms. Long standing and good friend Bob Bee also joined at the 2nd meeting and took on the role of Editor of the newsletter.

I'm sure Bob cringes when he looks, as I do, at the first attempts at the Macarthur Astronomical Newsletter which is of course now known as Prime Focus.



1st Issue (January 1996 - The Original)



2nd Issue (February 1996)

I would like to thank at this stage early contributors to the Society who, without their support, wouldn't have gotten off the ground. These people are Carol Oliver & Ragbir Bhathal who no longer work at the University or attend our meetings.

While I am on to thanking people I must say the society would not be functioning without Noel Sharpe at the helm, his forward thinking and dedicated committee, Ian Cook, Dick Everett and John Rhombi who have the meetings and field nights so well organised compared to some of our scratchy first attempts. I remember one of our early nights out at Cobbitty, me, Noel & Lloyd sitting in the cricket sheds and just watched the rain heave down unrelentingly until after many coffees & jokes we packed it in when the fog hit at 1 pm. Many who attend the field nights I am sure have been there & done that, but after saying that we have held many magnificent sky watching nights at the Oaks, the dark forests of the Balanglo, to sharing our knowledge with the public at the University and various schools where we held star nights with very eager people from all walks of life.

One of these so called star nights I remember fondly. Having spoken to a few people at meetings I hoped only about 50 public would attend this night, but when I did finally do my talk on the solar system $\frac{3}{4}$ of the lecture hall was full, such was the interest in Astronomy in the Macarthur region.

Noel quickly settled into the society and became vice president in the first few months (May) after John, living so far away, that he had to abdicate his position. Noel as VP held the ship together for close on 5 years until he became el presidente in, I believe, 2000 and I

was VP, and 2001 saw me start to fade out to secretary.

MAS has also grown with the University and Rotary club erecting telescopes within the University grounds which work in very well with having a society here, as the public can look through genuinely semi-large scopes plus see the sky through all those dedicated society members scopes who bring there smaller & sometimes larger ones to each star night.

I must say throughout the years of MAS we have had some great speakers, international people such as the likes of Frank Drake, Seth Shostak, and local Paul Davies, Fred Watson, Frank Stoopman, Carol Oliver, not to mention our own knowledgeable folk who have also graced the stage such as Peter, Ian, Noel, myself, Dick, Bob, just to name a few.

MAS has grown maybe not in numbers but we do have more than 26 members on that first night, but in popularity with the local community and with us doing talks around schools, and different groups, promote ourselves now through our fantastic website thanks to I believe Daniel who also has put a lot of dedicated time & effort into keeping our society running smoothly & strongly.

I am proud to have not only started this society but feel others have the same if not more commitment to Astronomy.

I would like now to thank everyone affiliated with our wonderful friendly club I thank you all, for without your support & interest in the field of Astronomy this club wouldn't be as grand or remained so successful for 10 long years.

Phil Ainsworth

President's Report

In The Beginning.

It was very exciting when I took home a large cardboard box that had emblazoned upon it in large print "Telescope Magnifies 600 x". The box was adorned with the splendour of Saturn's Rings, Jupiter's belts, comets and shooting stars galore. Impressive galaxies were amazingly within easy reach of the magic that was inside this box, namely a Tasco 114mm reflecting telescope.

The telescope took pride and place in my lounge room for all to see. I really liked how it looked, it had plenty of bells and whistles, well ok, maybe a counterweight and a cable. I then said to my wife "I wonder if there is a club I can join?" I desperately needed to find out more about unlocking the mysteries displayed on the cover of the box that the telescope came in.

Well Fancy That!

Soon afterwards as if by some form of intelligent design a photo of a certain Mr Phillip Ainsworth appeared on the front page of the local paper. Phil was calling for interested persons to join him in forming an Astronomical Society. The photo and accompanying article was dated the 12th of December 1995.

Phillip was the driving force in the clubs formation years. I attended the second meeting in February 1996 and joined up straight away, I can personally attest to Phillip's considerable enthusiasm in establishing the society.

It gives me great pleasure to acknowledge that our founding member and previous president Phillip Ainsworth will be in receipt of a life membership certificate. We have the certificate available tonight for Phillip to receive, however at time of writing Phil may have relocated to the NSW town of Orange. In this case I have arranged to hold onto the certificate until early in the new year as Phil's travels may bring him down for a visit.

On behalf of myself and all members I publicly thank Phillip for his vision in creating this society and I sincerely wish him and his family all the best in their new endeavours.

Guest Speakers

Tonight it gives me great pleasure in presenting Bishop Chris Toohey. Chris is a founding member of the Central West Astronomical Society, long term member of Sutherland Astronomical Society and is a writer for "Sky and Space" magazine. Also Chris is a talented speaker. Some of our guys caught up with him at Hartzer Park Bowral. Chris was doing a talk about the universe to the religious education coordinators from the Catholic high schools in the Wollongong diocese. A number of MAS members supported the night with some fine telescopic viewings of the night sky. In his spare time Chris is the Roman Catholic Bishop of Wilcannia and Forbes district. Chris is our special end of year speaker and I am sure everyone will may him feel most welcomed.

Glenn Dawes was our guest last month. As you know Glenn is part of the team that brings us the *Astronomy Ephemeris* each year. Glenn gave a great talk and without doubt the contribution made by the *Astronomy* yearbooks is vast and far

reaching. I am looking forward in receiving my copy tonight so I can start to plan our activities for next year. I thank Glenn for taking the time to visit us, well done.

Speakers Galore

We have a great range of speakers coming up next year. For my part I have organised Dr Fred Watson from the Anglo-Australian Observatory to be our guest in February. After that speakers have been organised by John Rombi. I thank John for helping out with the speaker list as it allows me to focus (pun intended) on other activities for the society. I think elsewhere in the journal you will find some details about the speakers, suffice to say we are booked out until after July.

Stargard and Beyond

For a while now I have been alluding to the opportunities that have presented themselves around a possible Observatory site for our club. With the encouragement of the Wollondilly Council a favourable site does exist and recently we were able to assess this site for our possible use. Some members may have heard us previously refer to this site as the "Secret Garden", the site is at the rear of the Dudley Chesham Sportsground at The Oaks. As you know we use the front of the sportsground for our ongoing public nights.

This field at the back is quite large and flat, looks like an acre or two. There is limited light intrusion as it is almost completely tree lined on the perimeter. This is very good because it maintains an excellent dark horizon to the west and south, also if you position yourself correctly the northern sky can be viewed

down to about 30 odd degrees. The north is a little light polluted but still very useful.

The trees that line the field are very tall and in parts very dense and assist to block out the eastern sky glow. As members we can drive onto the field, the public can easily drive into some large parking areas just before the field and would not have to dim headlights. My guess is that the tree lined field will block the headlights. This makes life a whole lot easier as we would not have to control traffic and would ease public liability concerns. The whole area would effectively handle a hundred cars easily, there is also a toilet block nearby.

So why the name Stargard? Briefly, the name "Stargard" comes from the name of the property granted to Carl Rumker, the first government astronomer in NSW. Sir Thomas Brisbane granted Rumker 1,000 acres of land at Picton on the 9th of July, 1822. Rumker had a considerable reputation and was credited as the first person to rediscover the periodic Encke's Comet, also he discovered 3 other comets from Stargard

The property of Stargard was situated right here in Macarthur, fancy that! Rumker built an Observatory on the property which overlooked the township of Picton. There is a ton of history in all this especially when considering Rumker discovered comets from Picton, made numerous calculations and was employed at the Parramatta Observatory.

Due to a series of circumstances he eventually returned to his homeland, Germany, and took up a posting as the director of the Hamburg Observatory. He was also awarded a gold medal by the Royal Astronomical Society.

Whilst working at the Parramatta Observatory his colleagues were Sir Thomas Brisbane and James Dunlop. In doing some research I found that some lunar features, the Rumker Hills were named in his honour. Maybe one of our keen lunar observers can show me the hills next night out!

There is a ton of work to get this project up and running, our society is growing and next year looks like being our biggest year yet. Our Website is going great and I have many contacts and ideas around the Stargard proposal. For the future I think it maybe time to do something about having a junior section of the club, something for children, young adults and for new members who have just joined us.

For my part my attention will need to be given to the Stargard project as this will tie into our future vision and plans. I thank the many members who have given me all of their support in this. In order to promote the idea of the Stargard Observatory effectively I have previously used my title of President of the Society in order to get contacts made and opportunities happening. Very soon a more appropriate title will need to be applied, i.e. Director, Curator etc, I humbly canvas the idea that a more formal title be sought for myself.

I fully intend to talk with councils and various politicians in order to seek funding for the purpose of an Observatory. Also the society does hold a certificate to fundraise so that may be a possibility as well. Other aspects of Stargard will be to promote a more controlled lighting environment, i.e. contacting government utilities and various councils.

My personal wish is for this society is to increase its membership and really get in touch with all those who have an interest in Astronomy. I see that our website is crucial, our own Observatory on our own site is crucial, and for want of a better word a junior section is crucial.

These are very big plans indeed, but if I didn't believe it was possible than I would not be writing about it. It would not be conceivable for me to hold official or leadership positions in all of these endeavours, it's just too big a job, I believe we would benefit from the contributions of those members who have not previously sought to aspire to a more formal role in the society.

My enthusiasm and passion revolves around the Stargard Project, for a whole heap of reasons. At this stage I have only premature and non-committal interest in funding for this proposal, however I am getting green lights from Council on the use of the field and possibilities of placement of an observatory. I am sure that council may also assist in general upkeep and future promotion of the site. I just thought it was time to put some of this in writing, something to think about over Xmas.

The Dates

26/11/05	The Forest
03/12/05	The Oaks
07/12/05	Siemens Science School
11/12/05	Christmas Party, Koshigaya Park
16/01/06	General Meeting
21/01/06	Stargard (needs confirming)
28/01/06	The Forest (needs confirming)
20/02/06	General Meeting

At time of writing I still need to finalise the Forest night and the follow up visit to Stargard, I am not anticipating any problems though. Hopefully we should have the emailing list ready for those who have expressed an interest in this service. I think there are some writings elsewhere in the journal on the listing. If you wish any further details you can call John Rombi or email me on astrosharpe@bigpond.com.au, also my mobile is 0410 445 041

Public Events

The Campbelltown Rotary Observatory night that was to be held on Nov the 4th was a complete washout. Again this has happened to us! With daylight saving upon us it means we will have to look forward to next years schedule.

Recently I was speaking to the director of the Campbelltown Rotary Observatory, namely Dr Ragbir Bhathal about next years program. He indicated that he will be running astronomy nights for both the local schools and public next year, I should be in receiving a list of dates for those programs in due course. Ragbir has asked if we could lend a hand for the upcoming Siemens Science Astronomy night, on Wednesday the 7th of December. If the weather holds up we can expect up to 60 students and parents, so we need to have as many scopes on the ground as possible. Please arrive not much later than say 7.30pm for an official start at 8pm.

Also Ragbir has acknowledged that he will book this room for us for next years meetings. He is sending some paperwork to us to complete and return. On behalf of the society I pass on our thanks to Ragbir for all his ongoing support of our society.

It was great to finally get some scopes on the ground when we visited Mount Carmel high school the other week. We actually did some viewing, mainly of the Moon and Venus. Mars was also on show but the seeing conditions were abysmal. Still it was a good night and helps to promote astronomy to the community.

Other Matters

I wish to publicly thank one of our members, namely Frank Kish for his very kind donation of equipment to the society. Frank donated a Maxim DL imaging software package and an Argo Navis. The Argo Navis is an electronic locating device utilising digital setting circles. This will be a great asset on any large scale observatory telescope, maybe a 30 inch Dobsonian, - just wishful thinking! Thankyou Frank for all your kind support.

Well that's about it from me. It really looks like a very big year ahead for us. May I wish you a very merry Xmas and a happy new year, safe journeys and good stargazing!

Regards as always

Noel Sharpe

President



Stargard Observatory?

Personal Solar Telescope

Hello Fellow Star Gazers. I have recently purchased a "personal solar telescope" (P.S.T.). The reason for this purchase is because I am fascinated with the Sun. (What made me interested in the Sun, I hear you say?) Well a few months ago, about half a dozen of us from the society went to Zane Hammonds place near Goulburn. While we were there Zane showed us a view of the Sun through his solar telescope.

As soon as I looked through his telescope I was "Gob Smacked" what ever that means. Shocked more like it. The prominences and the detail of the Sun were unbelievable. I had to get one, so I did. The P.S.T. by itself is 1 Angstrom (What is that I hear you say?) Well, the main difference between Solar H-alpha filter needs to have an extremely narrow bandwidth so that it only passes the light of ionised hydrogen at 656.28 nanometres. You understand now don't you? Well, could you explain it to me please? (Just joking, I'll get there one day?).

As I explained earlier about Angstroms, with 1 angstrom being just right to observe prominences, magnetic fields and spicules. When you look at the Sun, you will see it "red." I also purchased a SM40 (Solar Max 40). This item fits on to the front of the solar scope, which takes it from 1 Angstrom to 0.6 Angstroms, which "dramatically" increases the surface detail.

I am very new to Solar observing, I think I am hooked?

All the best...

Lloyd Wright ■

Astronomy and some Earth Explorations on our trip in 2005

On the 12th July this year, we started our trip to Queensland. Our first stop was Coonabarabran where we camped in a Caravan Park. The next day we visited the Siding Spring Observatory like we did two years ago. We climbed up the hill and went up with the lift under the dome of the Observatory. I even made a photo of the ceiling and a part of the telescope.

There were beautiful posters on the wall of the Orion Nebula, the Horsehead Nebula and the Radio-Galaxy Centaurus A. Then we went down to the shop. There were a lot of Astronomical books, cards and so on. I bought cards of Mars and the Jewel Box. This time I did not see any video films. We were a bit in a hurry to go back. It was afternoon, and it started to get foggy in the Warrumbungle National Park, which would be a bit dangerous while we were driving. We would have gone to the Skywatch Observatory in Coonabarabran, but unfortunately it was cloudy and rainy, and we could not watch the stars.

The next day we travelled further and stayed in Moree at the Thermal baths for a few days. On the 17th July, we camped in Mitchel and on the 18th in Tambo. At night I watched the sky in the West and saw Regulus, Venus and Mercury. They made a triangle, beautiful to see! The next days we went Longreach – Winton, but we had some rain. On the 21st July we camped in Cloncurry. From the Caravan Park over the road I saw a small rocky mount. At night the full Moon was rising on the right side of this mount. It looked fantastic. I took a photo of it.

The next day we went all the way to Normanton. We have some friends there and stayed there for a couple of days. It was hot dry weather, the sky was clear at night but there was too much moonlight for observing the stars. I saw Ursa Major, the Big Dipper, but its position was different than when I saw it in June years ago on another trip. I found it more difficult to observe it with the telescope.

Finally on 26th July I could show Jupiter to our friends. Unfortunately we saw only Jupiter with only two of its Moons. I found out in the Astronomy book the next day that Europa and Callisto were in front of Jupiter. Then we went to Karumba in a Caravan Park. My husband went fishing in a boat, and I did reading, writing, walking and swimming. There is a swimming pool in the Caravan Park, You can't swim anywhere else because of the crocodiles.

On the 2nd August we went for dinner in the Sunset Tavern on the Gulf. Before we had our dinner we watched the beautiful sunset. It is amazing how the Sun is becoming flat, before it disappears. I took some photos. The next nights I observed the Crescent Moon, Venus and Jupiter. First it was a bit cloudy, so I did not have my telescope out. On the 8th August Venus and Moon were close together, and on the 10th the Moon and Jupiter were close together. Then I got my telescope ready when it was still daylight. There came three children at the age of 10 to 14 and ask me if I could see Mars. I told them that Mars is rising later in night, but I am going to watch Jupiter and the Moon and they should come back when it is dark. So they came back and I showed them the crescent Moon first and then Jupiter with three moons, all with the first eyepiece. The children were happy and thankful and I was happy that I can show the

public the heavenly objects with my telescope.

On the 12th August we travelled to the East coast – Blackbull – Groydon – then camped in Georgetown and in Mt. Surprise. In this area it was cold and so I watched the Half Moon and the stars only with my binoculars.

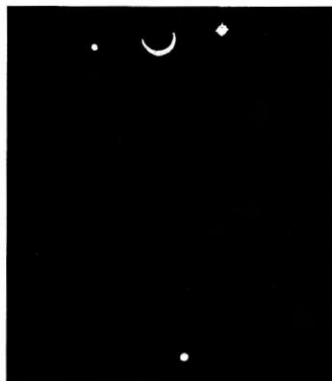
On the 14th we visited the Undara Lava Tubes and they told us the Undara Story – 190,000 years ago lava came out of the Earth and flaming fountains bathed the land in a fiery glow. The lava flowed across the land. There were rivers of lava which left tubes behind, and we explored one of them. It is like a giant tunnel.

On the 15th we arrived the East coast, and camped on Kurrimine Beach (King Reef Resort), but we had rain until the 20th when it was Full Moon again. Then we had good weather. I walked at low tide more than a km through the water to the Reef. I did not realise that it was such a long walk and I wanted only to go for a short walk while my husband was asleep. But luckily I came back in time, but Eric was amazed about what I did. It was too cloudy to watch the stars.

We went further south on the 22nd August to a free rest area at Rolling Stone. The sky was cloudy and I thought that it is no use to get my telescope out. But later at night was a beautiful starry sky. So I observed with my binoculars. To enjoy the stars you don't always need a telescope. Venus and Jupiter were brilliant. In Crux I watched the Jewel Box with my binoculars and on the right side of the pointers I saw the star cluster Omega Centauri, which is an very interesting object. I learned in the book *Australian Sky and Telescope* - Aussie Research News by Greg

Bryant, that Omega Centauri is actually the remnant nucleus of a dwarf galaxy that was stripped of its outer layers by gravity of our Milky Way Galaxy. Then I watched Scorpius and found the cluster NGC 6231 which has about 120 stars and looks like mini-Pleiades.

The next night the sky was a bit cloudy and on the 24th August we went to the Whitsunday Islands. We camped in a Caravan Park Sea Breeze at Cannonvale near Airlie Beach. It is amazing how the Whitsunday Islands developed, it was all volcanic long time ago. We drove around and I collected shells and pieces of corals on the beach. It was cloudy and rainy, and a bit sunshine for the first five days in the Whitsunday Islands. Then we had nice warm weather. At night I had a good naked eye show in the west with Spica in Virgo. Venus and Jupiter. They changed the position every night. Jupiter went deeper down and was underneath Venus on the 4th September. On the 6th Spica, Venus and Jupiter made a triangle and the crescent Moon was underneath Jupiter. I tried my telescope too and got Jupiter in focus, but I did not see its Moons. The air was moist and there was some light pollution in the Caravan Park.



On the 7th we went to Seaforth at Mackay. We drove around in this area and my husband tried some fishing on the river. At night I still watched the show in the west and that night Spica, Venus and Moon were close together. I could not work with my telescope anymore, maybe the batteries were low. The sky was sometimes cloudy in the evening, but in the middle of the night the sky was clear and I could see Orion, Taurus, the Pleiades and Mars. Mars is getting bigger again and the best time for observing it will be November.

One day we made a trip to Hillsborough Nature Resort not far from Seaforth. There is another Caravan Park too. We went on the beach and looked around at all the rocky hills and islands and rocks which have different colours. This was all volcanic long time ago.

On the 21st September we went further south and stopped on a rest area at St. Lawrence, I watched the Sky in the west again. Venus was high up in the sky, but Jupiter and Spica were lower down. The next day we went to the inland and stopped at a smaller town names Taroom. We went to a caravan park again and I watched with my binoculars later in the night. Jupiter was gone already and Venus was lower down. Scorpius was above Venus. I found star cluster NGC 6131 again. Then it was a bit foggy and I stopped observing the stars. On the 23rd we had a long trip to Goondiwindy on the border NSW and Queensland, and I was too tired for observing the stars. The last stop was Murrurundi. That night I saw Venus behind fog. On the 25th September we went via Newcastle and the Pacific Hwy home to Sydney.

Ursula Braatz

Items for Sale

The **Prices** quoted below for every item are **50%** of typical, 6 month-old all-up prices, (incl. Customs Duty and Air Freight) from: www.scopecity.com;
I would accept any offer below the quoted prices.

Item No.1): One only - Celestron's Advanced Astro Master.

This hand-held Computer device can be used with any past or present Celestron **C8, C11, C14** or **Super Polaris** mount. It easily adapts to **Dobsonians** or other types of mounts with own hardware. It runs either on 12Volt Battery or 12Volt DC Supply, as it is set up presently. For further technical data see:

www.celestron.com or local dealers for the Item: **Celestar-Module -Item No. 702-62040.**

Suggested Price: \$Au470.00 o.n.o.

Item No.2): "Hoorst" of Princeton, IND. USA.

Two (2) Stepper - Motors

12Volt DC. 4.5Watts.

For further technical data see:

www.celestron.com or local dealer for the item: **Celestar 8 - Item No. 702-62000.**

Suggested Price: \$Au220.00 o.n.o.

Item No.3): One only - "Losmandy" Digital Drive System - Model 492.

see: DSCH.

For further technical data see:

www.losmandy.com or local dealer.

Suggested Price: \$Au290.00 o.n.o.

Frank Kish, Email: ffk@unwired.com.au

Telephone No.: **46262939** at any time.

Beyond Messier

The popularity of the Messier Catalogue as an introduction to deep sky observing is well established and many members are well into the list or have completed their search. The question is, what's next?

With an eye to answering this question here are a few suggestions.

1. A good follow on list is the Jack Bennett Catalogue. Bennett was a member of the Astronomical Society of South Africa and like Messier was a comet searcher. He produced this list in 1969 to identify "non comets", it's like a Messier Catalogue for our gorgeous southern skies. Also available is an observing guide describing each object as it appears in the telescope. The Bennett list contains 130 items, 26 of which are also Messier items, gives you a run up start!

2. A list of bright Globular Clusters, the ARVAL Catalogue was prepared by a couple of amateur astronomers from Venezuela, Andre Valencia and Arnaldo Arnal. Containing 90 of the 143 Milky Way Globbs, it offers those that are brighter than 10th magnitude. Globular Clusters are predominantly a Southern Hemisphere phenomenon. M13 is the best in the Northern Hemisphere. Feel sorry for them as you work your way through the ARVAL 90.

3. For the somewhat more adventurous, here is a list (next page) of Planetary Nebulae prepared by Dick Everett. This is just a small sampling of about 1400 known. These objects are the visible remnants of dying stars and most stars will end their lives in this way. The visible phase lasts only a few thousands of years before the nebula fades out leaving only a cooling White Dwarf.

These Planetary nebulae have all been observed with an 8" F6 Newtonian, some with more difficulty than others, but most are fairly easy. It is helpful to take note of the projected size of the object, the smaller of them will need considerable magnification if they are to not just appear stellar.

A filter is useful in identifying your target, and often with finding those with lower surface brightness. A UHC filter or preferably OIII is what you'll need, the technique used is called "blinking", the filter is introduced by hand between eye and eyepiece to quickly compare the field with and without filtering.

Useful descriptions of these objects can be found in Hartung's "Astronomical Objects for Southern Telescopes" (Highly recommended)

Andrew James has a good "how, what and why" of Planetaries, but be a little casutious of his "where", a number of errors have crept into his observing list. You'll find it at: <http://www.asnsw.com/membership/sections/pne.htm>

If you want a copy of any or all of these catalogues contact Dick, or go to the websites below.

For the Jack Bennett Catalogue - www.hawastoc.org/deepsky/bennett.html and for the Observing Guide - www.sao.ac.za/assa/html/doc_bennett_catalogue1.html

Check out the ARVAL site - www.oarval.org/Gclust.htm and while you're there have a look at the other catalogues on offer.

BRIGHT PLANETARIES FOR SOUTHERN OBSERVERS

NGC	OTHER	CONST	RA	DEC	VMAG	SIZE(")
246		CET	00:47	-11:53	10.9	240X210
650/51	M76	PER	01:42	+51:34	10.2	85X40
1514		TAU	04:09	+30:48	10.8	120X90
1535		ERI	04:14	-12:44	9.6	30D
IC418		LEP	05:27	-12:42	10.7	14X11
2346		MON	07:09	-00:48	11.8	50X30
2392	ESKIMO	GEM	07:29	+20:55	9.1	40D
2438	(in M46)	PUP	07:42	-14:44	10.1	64D
2867		CAR	09:21	-58:19	9.7	24D
2899		VEL	09:27	-56:07	11.8	90D
3132	EIGHT BURST	VEL	10:08	-40:26	9.2	47D
3195		CHA	10:10	-80:52	11.6	38D
3242	GHOST of JUPITER	HYA	10:25	-18:38	8.6	40D
3699		CEN	11:28	-59:57	11.3	60D
3918	BLUE PLAN'Y	CEN	11:50	-57:11	8.4	12D
4361		CRV	12:24	-18:48	10.9	45D
5189	SPIRAL PLAN'Y	MUS	13:34	-65:59	10.3	180X120
5307		CEN	13:51	-51:12	11.2	13D
5315		CIR	13:54	-66:31	9.8	5D
IC4406		LUP	14:22	-44:09	10.2	20D
6210		HER	16:45	+23:49	9.3	15D
6302	BUG NEBULA	SCO	17:14	-37:06	9.6	90X30
6572		OPH	18:12	+06:51	9.0	8D
6720	RING NEB (M57)	LYR	18:54	+33:02	8.8	80X60
6818	LITTLE GEM	SGR	19:44	-14:09	9.3	25D
6853	DUMBELL (M27)	VUL	20:00	+22:43	7.4	360X250
7009	SATURN NEBULA	AQU	21:04	-11:22	8.3	20X15
7293	HELIX NEBULA	AQU	22:30	-20:48	7.5	900X700

Wot IC This Month

Nov 21, 2005 – Jan 16, 2006

Overhead at 9.30pm

December

Northwest Deneb in Cygnus with Altair above; the stars of Delphinus underneath Capricornus and Aquarius. Next comes Lacerta the Lizard and the Great Square of Pegasus underneath Mira the variable star in Cetus, followed by Andromeda, Aries and later Taurus.

Southwest we have Scorpius diving into the sunset with the Teapot of Sagittarius pouring himself out. Panning eastward next is Fomalhaut, Grus and Tuc 47 below Achernar. Then comes Reticulum with Canopus and later Sirius rising in the east.

January

Orion the mighty Hunter rules the evening with Taurus and the seven sisters. Under Orion's legs are Lepus the Hare and Columba the Dove. Way to the north Algol the Demon Star blinks his baleful red eye. Below the horns of Taurus is Capella blazing in multi colours with the Gemini twins above. Look up for Sirius and the two dogs with the Unicorn and the crowded clusters of Puppis and Vela.

Moon Diary

24/11	Last Quarter	24/12
02/12	New Moon	31/12
08/12	First Quarter	07/01
16/12	Full Moon	14/01

Planets and the Moon

Saturn and Last Quarter 22/11, then a Full Moon on 19/12.

Jupiter and last crescent Moon on morning 29/11, then a nearly full Moon and Jupiter on 27/12.

04/12 Venus and thin crescent in evening, and again on New Years Day.

11/12 Mars and nearly Full Moon, and again on 08/01.

30/12 Mercury and very thin crescent just 30 mins before sunrise.

The Evening Planets

Venus rises in the daylight following the Sun in the handle of the Teapot. During December the bright goddess moves into Capricornus before sliding behind the Sun in mid-January.

Mars just passed opposition rises in Aries in the daylight and remains visible most of the night. Appearing to be stationary in Aries early December it then starts to edge eastwards each successive night. Past opposition Mars will quickly shrink in size and brightness during Dec/Jan so don't delay.

Saturn rises in Cancer after midnight as it approaches opposition on Jan 28. December to February is the best time to view the ringed planet at its brightest and largest.

Neptune can be spotted as darkness finally falls round 9 pm. Still couched in the belly of Capricornus, it will set between 1am and 10 pm over these next two months.

Uranus mirrors its blue planet partner lagging behind by one hour in Aquarius.

For Morning Risers

Jupiter in November is up by 5 am and by 2 am in December. Having moved into Libra it will remain here for the next 12 months. Best viewing in the evening will be during May/June 2006.

Mercury is between the Sun and Earth in November but will pop up in the dawn sky 1 hour before sunrise in December. Best view this time will be 12th December.

Meteor Storms

Three showers are expected over Nov-Dec but all are rather sporadic and weak hourly rates. The best could be the **Puppis-Velids** which can last November to January. Max is forecast for the 6th December.

Portraits in the Sky

PEGASUS – The Flying Horse

Pegasus, the winged horse, flew out of the neck of Medusa when Perseus cut off her head. It was fathered by Poseidon but had to wait to be released by the Gorgon's death. Athene gave Pegasus to Bellerophon, who used the winged creature in his fight against the Chimaera - a monster with three heads.

Bellerophon shot arrows at the beast as he flew over her on Pegasus, then he jammed a huge lump of lead into the jaws where its own hot breath melted the lead which flowed down her throat burning her to death.

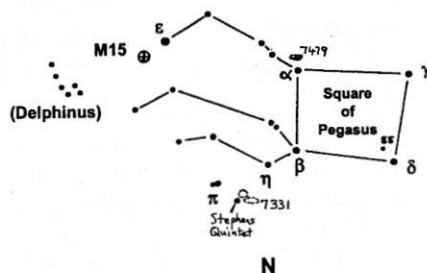
After a series of similar spectacular victories Bellerophon began to get a high opinion of himself. Flushed with victory he flew off to Olympus, home of the gods, as if he too were immortal. But Zeus sent a gadfly to sting Pegasus on the tail and Bellerophon was kicked off and landed on his big head.

Pegasus flew on to Olympus, where he changed his name to "Lightning" and got the job of carrying thunderbolts for Zeus. Bellerophon, for his presumption of greatness

was sent to wander the earth, blind, lame, and shunned by man till he died.

Pegasus is a conspicuous constellation especially the so-called "Great Square of Pegasus". However it now shares the northeast corner of the square with Andromeda: *Delta Pegasus* was given to Andromeda, to provide the lady with a head!

There are several interesting binaries, a curious flare star, and one outstanding deep sky object. The stars are generally second and third magnitude.



Double stars in Pegasus:

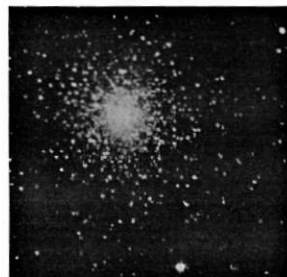
Epsilon Pegasi is a close binary which is too close to split but components AC are easy at 2.4/8.4 separated by 42" (arc seconds).

85 Pegasi is a well-known close binary with orbit of 26.27 years: 5.8, 8.9; currently the companion is at PA 149° and separation of 0.8", but a third companion can be found with 25mm at 33.0"

An interesting multiple system found by the Hipparcos satellite is at 22.34.5, +04.14 where a yellow and white pair, 6.3/7.5 separation 4.0" have a third star 13" away.

Deep Sky Objects :

Pegasus has many galaxies and an outstanding globular cluster.



M15

M15 (NGC 7078) is one of the finest globular clusters in the heavens, very bright and compact, at 35,000 to 40,000 light years away. It is found 4° NW of epsilon Pegasi.

NGC 7331 is a spiral galaxy resembling the Milky Way Galaxy; it's as if we were looking at ourselves from fifty million light years away.

NGC 7479 is a barred spiral galaxy about 3° due south of alpha Pegasi.



7479

Stephan's Quintet is a noted cluster of galaxies 0.5° SSW of NGC 7331. See how many of the five you can spot (three is average, four is good).

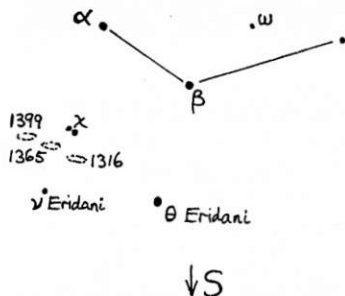


Stephans Quintet

FORNAX - "The Furnace"

Fornax is a constellation created by Nicolas Louis de Lacaille from several fairly bright stars in the bend of the river Eridanus.

Impressed by the development of chemistry in the mid-eighteenth century; he called it *Fornax Chemica*.



This uninspiring but surprisingly large asterism, connects the three brightest stars,

which are fourth and fifth magnitude. **Alpha Fornacis** passes overhead on 9 November and is an easy visual binary, however most interest is on the Fornax Galaxy Cluster located in one corner between Chi Fornacis and Nu Eridanus

Double stars:

Alpha Fornacis is a visual binary magnitude 4.0, 7.0; separation 5.1" with an orbit of 314 years, and **Omega For** is a binary: 5.0, 7.7; 10.8".

Deep Sky Objects:

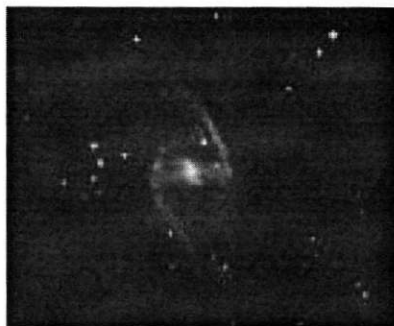
"The Fornax Galaxy Cluster" in the south-eastern corner on the border with Eridanus is a group of 18 galaxies gathered between Chi Fornax and Nu Eri. However most are 12th mag or fainter.



NGC1316 & 1317

The brightest is 8.9 magnitude **NGC 1316**, which is also the site of radio galaxy **Fornax A**. This interesting faint fuzzy is 1-2° SW of chi³ For, with **NGC 1317**, a 12 mag. galaxy right next to it.

NGC 1365, is about midway between Chi Fornacis and Nu Eri, or 1.5° ESE of chi³; at 9.5 mag. a splendid barred spiral seen face on with open spiral arms.



NGC1365

NGC 1399 is nearly as bright at 9.9, and is 2° E of chi² Fornacis.



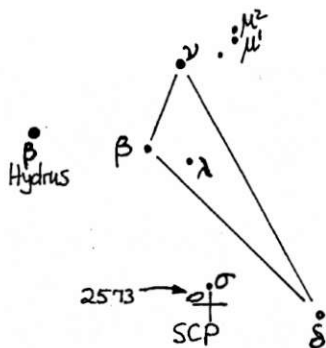
NGC1399

OCTANS - The Octant.

Originally named Octant Hadleianus in honour of John Hadley, this is one of Louis de Lacaille's mundane star shapes. He was a man so impressed with 18th century engineering and science that he filled the southern sky with shapes named after equipment and instruments, like Reticulum (a grid for measuring), Fornax (a chemical Furnace) and Circinus (a pair of compasses). One suspects he might have named Crux as X for an unknown quantity if given the opportunity; such was the bent of his mind.

John Hadley of comet fame invented the Octant. It had a triangular frame with a system of mirrors and vernier scales with various filters to measure the angle of stars from the horizon. The word 'octant' means 1/8th of a circle, or 45 degrees. It was the forerunner of the modern sextant.

Octans claim to fame is that within its boundary lies the South Celestial Pole much beloved by equatorial mount telescope owners. If you haven't done so before, find the star nearest the SCP – **sigma Octans**. I find it helpful to start from **Beta Hydus** then move south to a line of three stars and double the distance. What do you think?



If you measure one third of a straight line from Beta Hydus to Alpha Crucis you will be very close to the pole. No stars brighter than mag 4 here with the majority being just visible to the naked eye on a good night.

NGC 2573 is the closest galaxy to the Pole and was named Nebula Polarissima Australis by John Herschel in 1837 but you will need 30 cm telescope to find it.



A good star map would help to find two doubles – μ and also λ . Both of these are easy to see in binoculars. One challenge for observers is to be able to trace the triangular shape of the 3 main stars. I find it easier to start from Alpha Apodi (The Bird of Paradise).

Ancient Arabs thought there was some healing power for those who observed the Octans area intently. So remember, when you have a hard time finding your polar alignment, - keep looking it's doing you good!

Christmas Targets

Now for those Christmas sights I promised you last month.

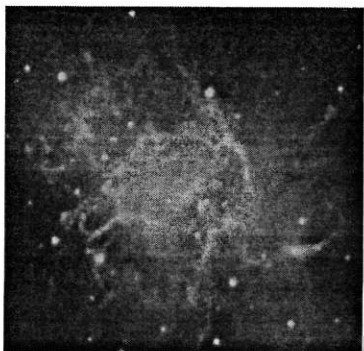


Firstly see if you can catch M34 at the bottom of Cygnus before it disappears below the horizon. Best seen in binoculars the loose cluster is quite obvious.



M34

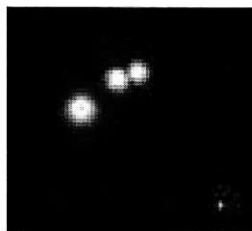
Next move over to Taurus and zoom in on the Crab Nebula M1. You'll find it close to the top horn of Taurus the bull below Orion, but it does not show easily. Look carefully!



M1

Now on to the dimmer star of the Gemini twins. This is Castor a double star which will require at least 150 magnification to see the two equal white stars. Start with low magnification then zoom in till it surrenders.

Now a triple system **β Monocerotis**. 80 times magnification will split the 5th and 6th magnitude stars, but the 6th mag star is also double and you will need that 150 magnification again.

 **β Monocerotis**

Let's not forget Orion's M42 and the Trapezium. Some people come back to this multiple star system again and again. Can you see the fifth star in the trapezium? What about M43, drifting off the "coast".



M42

Now for a deep red carbon star hiding in Lepus the Rabbit (Hare). The beautiful **Hind's Crimson Star** or **R Leporis** is a long-period carbon variable, deep red in colour. Described as like a 'drop of blood on black velvet' it ranges from 5th to 8th mag over 430 days. Small scopes show the colour well when it is bright. Starting with α extend a line to μ and beyond about 3.5° SW to find it.

I understand that Bruce Reardon knows a bit about this one so ask him!

Want to see a red dwarf and a white dwarf together? Turn to the southern sky where the constellation Eridanus swings around to meet up with Rigel in Orion. Directly west 14° from Rigel is omicron 1 and 2 Eri. α^2 Eri is a double double, one of the "don't miss" stars in the sky. The bright yellow component A is easily seen and 25mm in a 6" scope will reveal a white 9th magnitude dwarf companion. Zoom in with 17 or 12mm and next to the white star you can see a dull red 10 or 11th magnitude red dwarf. This is the closest and most easily seen white dwarf, so grab this opportunity to see one of these rare beasts, with the red dwarf thrown in as bonus.

So that's my Christmas gift list to you all!
Happy Christmas and a clear New Year.

Good seeing

IC



Message from Vice President

I have put together this list of guest speakers for the information of our members:

GUEST SPEAKERS

December: No Meeting

January: General Discussion

February: Fred Watson, Anglo- Australian Telescope

March: Michael Dopita, Mt Stromlo astronomer

April: Ian Cook, M.A.S. member, A.G.M.

May: Don Whiteman, A.N.S.W. member, Bintel Technician

June: Melissa Hulbert, Sydney Observatory.

SPECIAL NOTE

Fellow members,

If any of your personal information has changed (address, e-mail etc.) could you please contact Dick Everett (our Treasurer) and he will update your file.

As you I'm sure your aware, our club goes through times when our official observing nights are cancelled due to inclement weather. This has happened a lot lately. We also sometimes need help with observing nights involving the general public or other clubs.

If you would like to receive urgent information or would like to be contacted about unscheduled observing nights, could you please make your email address available to me. This could be taken care of at one of our meetings or email it to me at: astronut@alphalink.com.au .

We would like to give our urgent emails an official name. If yours is chosen by the committee, you will win a prize!!!
Lets make it catchy and memorable.

Cheers, John Rombi, V.P.



Borrowing MacDob

The Society's own telescope, a 6" Dobsonian, is available for loan to members. It is easy to transport, set up and use. If you would like to borrow MacDob for a month, speak to Bob Bee who is its custodian (at meeting or 46474335).

Mars – The Observation that Wasn't

OK, put your hand up if you actually got to see the 2005 Mars Opposition... thought not!

We all knew it wasn't going to be "as big as a full moon" as that bogus email was telling people, and we knew it would only be around 20" diameter (compared to 25" in August 2003), but we (or at least I) was hoping for a reasonable gander of this planet which wouldn't be seen this big again until 2018.

But, really, who expected all that rain and cloud over such a long period? And at the critical period? Yes, I suppose we in MAS should have expected it, given our record.

But, like many of you, I expect, I went out night after night into my back yard from around 28th October through to 7th November to see if there was a chance of an observation. But... no luck. That counts the nights when I thought the clouds would break and I set my scope up, only to have the clouds come over again, then clear after I had dismantled my scope and got ready for bed.

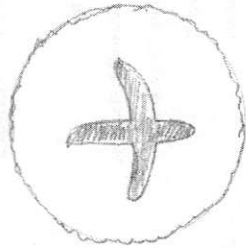
Then miracles of miracles, on 8th November, the sky looked promising and I set my scope up again. And guess what? The sky stayed clear and I had over an hour to observe Mars, and I have to ask... was it worth the effort?

Because Mars was barely 30° above the horizon, it was the worst seeing possible. It was like watching Mars through the heat haze above a bitumen highway in 50° heat wave.

The positive side to it was that I can say "I saw Mars close up and won't see it this close again until I am 73."

So, what DID I see? A largish disc, with an overall orangish tinge and a very shimmering circumference. I could not distinguish any polar caps (even if they were there).

However, one feature was constant, even when I came back to it after brief breaks. There was a 'bluish' feature right in the centre that covered approximately half the surface. It looked a bird in flight. I have drawn a very rough sketch from memory.



Yeah... I agree. But that was as good as it got, so we have to take what we can.

In hindsight, it was probably fortunate that the Public Night at the domes was a wash out, as the 'paying public' would have been pretty upset if we showed them that though our scopes.

I assume our friends in the northern hemisphere had a better view, being high in their sky. And good luck to them – it makes up for not having Omega Centauri, 47 Tuc and the Jewel Box.

And **THUS ENDS THE 10TH YEAR OF MACARTHUR ASTRONOMICAL SOCIETY.**

HAPPY CHRISTMAS TO YOU ALL!

RB