



Volume 14, Issue 10

October 2009

### Inside this issue:

Secretary's Column	2
A note from the editor	3
Observing October 2009	4
Mythology, Memes, and the Magic of the Stars	6
Astronomy in The UK	7
Star Hopping to the Messiers #17	8
Different Universes	10
A Night At The Forest	11

### MAS Committee

#### President

John Rombi

#### Vice President

Trevor Rhodes

#### Secretary

Roger Powell

#### Treasurer

Tony Law

#### Merchandising Officer

Stewart Grainger

#### Webmaster

Chris Malikoff

#### Committee Members

Lloyd Wright  
Stuart Grainger  
Ivan Fox

#### Patron

Doctor Ragbir Bhathal

#### MAS Postal Address

P.O. Box 17  
MINTO NSW 2566

Web: [www.macastro.org.au](http://www.macastro.org.au)

#### Prime Focus Editor

Geoff Young  
[editor@macastro.org.au](mailto:editor@macastro.org.au)

## President's Report: John Rombi

Welcome to the October edition of *Prime Focus*.

I can't believe how quickly this year has passed us by!

### Last Month

Due to me missing most of the September events due to illness, I have left that part of the report to Trevor (our Vice President) Thank you Trevor.

I also wish to thank Trevor for chairing our last monthly meeting.

He has advised me that the casual approach to the evening went well, with many helpful opinions being offered around the room.

### Public Nights

We've just completed our seventh (and most important) public night of this year (September 26th)

Approx 100 members of the public turned up for an initial stormy session that eventually cleared to a cloudless sky.

The other half of our major event was Prof Fred Watson's presentation on "Why is Uranus upside down?" We were privileged to have access to one of the lecture theatres in the new medical building (very advanced & swish environment). We had approx 100 people take advantage of this enthralling talk.

I would like to sincerely thank ALL the members that contributed to the success of this event.

(Continued on page 2)

## Observing Dates

<u>October</u>		21/11/09	Stargard
		28/11/09	Public Night
10/10/09	Stargard		
17/10/09	The Forest		
19/10/09	General Meeting		
24/10/09	Public Night		
<u>November</u>		<u>December</u>	
		12/12/09	Stargard
		19/12/09	The Forest
14/11/09	The Forest		
16/11/09	General Meeting		



## President's Report:

John Rombi

Well Done Everyone.

Our next public night will be held on Saturday October 24<sup>th</sup>, due to daylight saving, sunset is not until 7.15pm.

This will mean that setup is not necessary until 6pm at the earliest.

As before we need as many telescopes on the field as possible.

### Guest Speakers 2010

MAS have been very privileged to have some of the world's best known astronomers accept our invitation to present their current works to our society in 2010.

Please check the "What's on" page for further details.

### What's on?

Keep an eye on our "What's on" link of our website for all the latest member information.

### Tonight

Chris Malikoff will present Part 2 of "Imaging with a Digital SLR"

### Next Month

Dr Tim Robshaw (Syd Uni) will be presenting "Magnetic Fields Near and Far"

Until next time,  
Clear Skies, John Rombi

## Secretary's Column:

Roger Powell

I would like to say a big thank you to Trevor Rhodes for standing in as Acting Secretary during my unexpected visit to England and ensuring that my MAS responsibilities were kept in order while I was absent. Trevor was very busy, as he also took over from John whilst he was sick last month. Well done Trevor.

I have written a separate article about Northern Hemisphere observing. It goes without saying that it was researched and written during the many cloudy evenings suffered during my seven week stay in the English Midlands. Despite the research I did in the article, I was disappointed to spot just two northerly Messier objects with my 7x50 binoculars in those heavily light polluted skies. Next time my suitcase stays at home and the telescope goes with me instead!

These days, of course, an extended absence does not mean being completely cut off from MAS affairs, thanks to our Macastro web site, with it's Forum and Private Messaging facilities. On the contrary, by taking a laptop and purchasing a mobile internet dongle, I was able to keep in daily contact with MAS affairs and regular contact with John. I was pleasantly surprised how simple and how effective a mobile internet connection can be.

Speaking of internet connections, while I was away, John sent out a Private Message to all members about what he called "the dreaded download/upload capacity of our internet connection". John is rightly concerned "that many members are paying a large amount for their service with little capacity" and that this restricts a lot of our members from using the Macastro web site and it's excellent facilities.

I agree this may be true. Our Society is an organisation

that relies more than ever on web access to communicate astronomically and socially with each other, in between meetings and observing nights. MAS uses a very fast and reliable web hosting site. To take advantage of this, (and without trying to dictate to members), it is a very good idea and in everybody's interests to try and encourage our membership to get well connected with a good ISP.

As we are such a very web-based organisation, members without web access will miss out on a lot. Those with restricted web access or limited download capacity will also miss out on much.

There is no need anymore to accept really slow speeds, limited monthly downloads with heavy penalties or obsolete dial-up connections, as there are a lot of small or medium sized ISP companies giving great internet deals on ADSL1 or ADSL2.

The advice I always give to people thinking about changing to a new ISP is: do not choose one without going to: <http://bc.whirlpool.net.au/> and selecting 'Broadband Choice'.

This 'communications industry' web site has an excellent facility which allows anyone to compare the internet access plans of all Australian Internet Service Providers by location, price, speed and download capacity, to come up with a plan that suits you, by comparing all the plans within your specified range of parameters.

I have used this facility a number of times - and the plans offered by the forever popular large communica-

*(Continued on page 3)*



## Secretary's Column:

Roger Powell

tions conglomerates who spend \$\$\$\$illions advertising on TV never come anywhere near being competitive.

On another topic, the recent poor decision by Campbelltown Library to sponsor a talk by an astroLoGer to 'celebrate' the International Year of Astronomy' caused a great flurry of exchanges on our Forum.

I wrote to the Library, expressing dismay that an Astronomer was not invited to do the job and asked whether they had sought the approval of the International Year of Astronomy organisation for this controversial and somewhat provocative decision. I was later called by Council's Library Services Manager, who apologised for a "grievous error" which he was very embarrassed about. He did not admit it but it is quite obvious that several people in the Library organisation

thought that Astronomy and astroLoGy are one and the same thing!

It is amazing how many people do still lump Astronomy and astroLoGy together, though the two have been completely separated since the Middle Ages - or what many would call the dawning of the Age of Reason.

The Age of Reason may have dawned but it's still 'early morning' and you can still go into some newsagents and find Astronomy next to astroLoGy on the magazine rack. It will still be a long time before the full daylight of reason reaches everyone in this world full of crack-pot ideas, of which astroLoGy is a prime example. Campbelltown Council please take note.

## Astronomy on Our Holiday:

Ursula Braatz

On the 10.7.09 my husband and I travelled to the north to escape the cold.

In Coonabarabran we camped in a Caravan Park. It was still cold there, but we visited friends in Binnaway. They had some pamphlets for us from Binnaway and Coonabarabran. I learned that the world's largest Model Solar System was built as a Tourist Drive from the Siding Spring Observatory all over the country. The Observatory represents the sun and further down the Observatory Rd came Mercury, Venus and Earth. Still further down in Timor Rd was Mars and even further down was Jupiter. These are three dimensional planet models on billboards. This Solar System Model is 38 million times smaller than the real one in outer space. We saw Saturn on the billboard on the way from Binnaway to Coonabarabran when we came back from our friends. That shows how far Saturn is from Jupiter in outer space. Because in Coonabarabran it was too cold, we went further north to Moree the next day.

On the way we saw Uranus, Neptune and Pluto. Pluto was on the way from Narrabri to Moree. That is the distance of the planets compared to the real Solar System. There are more models of Saturn, Uranus, Neptune and Pluto around the country. We stayed for two days in Moree to have a bath in the artesian pools.

On the 14.7 we went further to Queensland through the inland on the Newell Hwy and stopped in the Caravan Park in Taroom. The next day we drove to Rockhampton to the coast to a Rest Area at St. Lawrence. There was

a beautiful starry sky and I did a bit observing with my binoculars. I saw the Jewelbox in the Southern Cross and Jupiter with one of its moons.

On the 16.7.09 we arrived in the Whitsundays and camped there until the 17.9.09 in Seabreeze Caravan Park, Cannonvale. The sky was clear most of the time, but we camped under high trees which made observing difficult. I had to move my telescope a bit further and because I had trouble to keep objects in focus I did not feel like observing every night. Jupiter was brilliant every night and on the 9.9.09 I had it in focus with its moons Europa, Ganymede and Callisto on the right side, Io was over Jupiter like I found out in the Astronomy Book. I was stargazing without my telescope too and saw the Southern Cross and Scorpio high in the sky moving to the west. I went often to the internet cafe to receive emails and got information on Astronomy from physicsweb, Spaceflight Now and webmaster.

Then I received the news that Jupiter was hit by a meteorite and has a new black spot now. I am interested about what is going on in the universe and I like stargazing too. We enjoyed our holiday. I went swimming often. My husband went fishing and we made a cruise to the Great Barrier Reef. Sometimes I woke up at 5.00 am and saw the brilliant Orion in the sky and Venus; once, Venus and the Half Moon were together. When we had the Full Moon on the 5.8.09 I watched it with Jupiter underneath at night. On the 18.9.09 we went south and on the 24.9.09 we were back home

## A Really Brief Note from the editor: Geoff Young

Thankyou! Thankyou! We must be close to a record for the number of contributors. An excellent response!

This note is very brief - we have run out of space. Keep writing. How about some new members?



## OBSERVING OCTOBER 2009

Sun, Moon and Planets Observing List, evening of 2009 Oct 10 at Starga  
 Sunset 19:10, Twilight ends 20:33, Twilight begins 04:56, Sunrise 06:19,  
 Completely dark from 20:33 to 01:24. Third Quarter Moon. All times local (

Listing All Classes visible above the perfect horizon and in twilight or moonlight after 19:00 and before 01:31.

The minimum visual difficulty is: detectable.

Primary ID	Con	Mag	Rise
Jupiter	Cap	-2.6	14:09
Neptune	Cap	7.9	14:43
Uranus	Psc	5.7	17:06
Moon	Gem	-10.7	1:24
Mars	Gem	0.7	2:33

And	Andromeda	Lac	Lacerta	Cir	Circinus	Pup	Puppis
Ant	Antlia	Leo	Leo	Col	Columba	Pyx	Pyxis
Aps	Apus	LMi	Leo Minor	Com	Coma Berenices	Ret	Reticulum
Aqr	Aquarius	Lep	Lepus	CrA	Corona Austrina	Sge	Sagitta
Aql	Aquila	Lib	Libra	CrB	Corona Borealis	Sgr	Sagittarius
Ara	Ara	Lup	Lupus	CrV	Corvus	Sco	Scorpius
Ari	Aries	Lyn	Lynx	Crt	Crater	Scl	Sculptor
Aur	Auriga	Lyr	Lyra	Cru	Crux	Sct	Scutum
Boo	Boötes	Men	Mensa	Cyg	Cygnus	Ser	Serpens
Cae	Caelum	Mic	Microscopium	Del	Delphinus	Sex	Sextans
Cam	Camelopardalis	Mon	Monoceros	Dor	Dorado	Tau	Taurus
Cnc	Cancer	Mus	Musca	Dra	Draco	Tel	Telescopium
CVn	Canes Venatici	Nor	Norma	Egu	Equuleus	Tri	Triangulum
CMa	Canis Major	Oph	Ophiuchus	Eri	Eridanus	TrA	Triangulum Australe
CMi	Canis Minor	Ori	Orion	For	Formax	Tuc	Tucana
Cap	Capricornus	Pav	Pavo	Gem	Gemini	UMa	Ursa Major
Car	Carina	Peg	Pegasus	Gru	Grus	UMi	Ursa Minor
Cas	Cassiopeia	Per	Perseus	Her	Hercules	Vel	Vela
Cen	Centaurus	Phe	Phoenix	Hor	Horologium	Vir	Virgo
Cep	Cepheus	Pic	Pictor	Hy	Hydra	Vol	Volans
Cet	Cetus	Psc	Pisces	Hyi	Hydrus	Vul	Vulpecula
Cha	Chamaeleon	PsA	Piscis Austrinus	Ind	Indus		

Best and Brightest 200 Observing List, evening of 2009 Oct 10 at Stargard, The Oaks, NSW

Sunset 19:10, Twilight ends 20:33, Twilight begins 04:56, Sunrise 06:19, Moon rise 01:24, Moon set 11:29

Completely dark from 20:33 to 01:24. Third Quarter Moon. All times local (GMT+11).

Listing All Classes visible above the perfect horizon and in twilight or moonlight after 19:00 and before 01:31.

The minimum visual difficulty is: detectable.

Cls	Primary ID	Alternate ID	Con	Mag	Distance	Rise	Transit	Set
Glob	NGC 4372		Mus	7.2	20000 ly	-	12:09	-
Open	Jewel Box	NGC 4755	Cru	5.2	6400 ly	-	12:37	-
Open	NGC 6025	Collinder 296	TrA	6	2500 ly	-	15:46	-
Open	NGC 6067	Collinder 298	Nor	6.5	4600 ly	4:38	15:56	3:10
Open	NGC 6167	Harvard 11	Nor	6.6	3600 ly	6:27	16:17	2:03
Open	NGC 6178	Collinder 308	Sco	7.2	3300 ly	7:09	16:18	1:24
Open	NGC 6193	Collinder 310	Ara	5.4	3800 ly	6:46	16:24	1:59
Glob	M 12	NGC 6218	Oph	6.1	23000 ly	10:16	16:30	22:40
Glob	M 62	NGC 6266	Oph	6.4	26000 ly	9:02	16:44	0:22
Open	NGC 6322	Collinder 326	Sco	6.5	3200 ly	8:12	17:01	1:46
Open	NGC 6383	Collinder 335	Sco	5.4	3200 ly	9:25	17:17	1:06
Glob	NGC 6388		Sco	6.8	42000 ly	8:17	17:19	2:17
Open	Butterfly Cluster	M 6	Sco	4.6	1600 ly	9:32	17:23	1:10
Glob	NGC 6397		Ara	5.3	6500 ly	6:25	17:23	4:18
Open	M 7	NGC 6475	Sco	3.3	980 ly	9:34	17:36	1:35
Open	M 23	NGC 6494	Sgr	5.9	2000 ly	10:37	17:39	0:38
Open	M 20	NGC 6514	Sgr	5.2	2700 ly	10:29	17:45	0:57
Neb	Lagoon Nebula	M 8	Sgr	5		10:26	17:46	1:03
Open	M 21	NGC 6531	Sgr	7.2	3900 ly	10:32	17:47	0:57
Glob	NGC 6541		CrA	6.3	13000 ly	8:56	17:50	2:41
PNe	Blue Racquetball	NGC 6572	Oph	8	3500 ly	12:08	17:54	23:40
Open	Star Queen	M 16	Ser	6.5	5700 ly	11:14	18:01	0:44
Open	M 18	NGC 6613	Sgr	7.5	4200 ly	11:05	18:02	0:55
Glob	M 28	NGC 6626	Sgr	6.9	16000 ly	10:45	18:07	1:25
Open	NGC 6633	Collinder 380	Oph	5.6	1200 ly	12:22	18:09	23:56
Open	M 25	IC 4725	Sgr	6.2	2000 ly	11:11	18:14	1:13
Glob	M 22	NGC 6656	Sgr	5.2	9800 ly	11:00	18:19	1:34





## OBSERVING OCTOBER 2009

Open	NGC 6025	Collinder 296	TrA	6	2500 ly	-	15:46	-
Open	NGC 6067	Collinder 298	Nor	6.5	4600 ly	4:38	15:56	3:10
Open	NGC 6167	Harvard 11	Nor	6.6	3600 ly	6:27	16:17	2:03
Open	NGC 6178	Collinder 308	Sco	7.2	3300 ly	7:09	16:18	1:24
Open	NGC 6193	Collinder 310	Ara	5.4	3800 ly	6:46	16:24	1:59
Glob	M 12	NGC 6218	Oph	6.1	23000 ly	10:16	16:30	22:40
Glob	M 62	NGC 6266	Oph	6.4	26000 ly	9:02	16:44	0:22
Open	NGC 6322	Collinder 326	Sco	6.5	3200 ly	8:12	17:01	1:46
Open	NGC 6383	Collinder 335	Sco	5.4	3200 ly	9:25	17:17	1:06
Glob	NGC 6388		Sco	6.8	42000 ly	8:17	17:19	2:17
Open	Butterfly Cluster	M 6	Sco	4.6	1600 ly	9:32	17:23	1:10
Glob	NGC 6397		Ara	5.3	6500 ly	6:25	17:23	4:18
Open	M 7	NGC 6475	Sco	3.3	980 ly	9:34	17:36	1:35
Open	M 23	NGC 6494	Sgr	5.9	2000 ly	10:37	17:39	0:38
Open	M 20	NGC 6514	Sgr	5.2	2700 ly	10:29	17:45	0:57
Neb	Lagoon Nebula	M 8	Sgr	5		10:26	17:46	1:03
Open	M 21	NGC 6531	Sgr	7.2	3900 ly	10:32	17:47	0:57
Glob	NGC 6541		CrA	6.3	13000 ly	8:56	17:50	2:41
Best and Brightest 200 Observing List, evening of 2009 Oct 10 at Stargard, The Oaks, NSW								
Sunset 19:10, Twilight ends 20:33, Twilight begins 04:56, Sunrise 06:19, Moon rise 01:24, Moon set 11:29								
Completely dark from 20:33 to 01:24. Third Quarter Moon. All times local (GMT+11).								
Listing All Classes visible above the perfect horizon and in twilight or moonlight after 19:00 and before 01:31.								
The minimum visual difficulty is: detectable.								
Cls	Primary ID	Alternate ID	Con	Mag	Distance	Rise	Transit	Set
PNe	Blue Racquetball	NGC 6572	Oph	8	3500 ly	12:08	17:54	23:40
Open	Star Queen	M 16	Ser	6.5	5700 ly	11:14	18:01	0:44
Open	M 18	NGC 6613	Sgr	7.5	4200 ly	11:05	18:02	0:55
Glob	M 28	NGC 6626	Sgr	6.9	16000 ly	10:45	18:07	1:25
Open	NGC 6633	Collinder 380	Oph	5.6	1200 ly	12:22	18:09	23:56
Open	M 25	IC 4725	Sgr	6.2	2000 ly	11:11	18:14	1:13
Glob	M 22	NGC 6656	Sgr	5.2	9800 ly	11:00	18:19	1:34
Open	IC 4756	Collinder 386	Ser	5.4	1600 ly	12:31	18:21	0:11
Glob	M 70	NGC 6681	Sgr	7.8	65000 ly	10:34	18:25	2:13
Open	Wild Duck Cluster	M 11	Sct	6.1	6100 ly	12:12	18:33	0:55
PNe	Ring Nebula	M 57	Lyr	9.4	2600 ly	14:13	18:36	22:58
Open	NGC 6716	Collinder 393	Sgr	7.5	2600 ly	11:31	18:37	1:38
Glob	NGC 6723		Sgr	6.8	33000 ly	10:30	18:42	2:49
Glob	Pavo Globular	NGC 6752	Pav	5.3	20000 ly	-	18:53	-
Glob	M 55	NGC 6809	Sgr	6.3	20000 ly	11:37	19:22	3:04
PNe	Little Gem	NGC 6818	Sgr	10	7300 ly	12:42	19:26	2:10
Glob	M 71	NGC 6838	Sge	8.4	16000 ly	14:24	19:36	0:47
PNe	Dumbbell	M 27	Vul	7.3	1100 ly	14:42	19:41	0:41
PNe	Saturn Nebula	NGC 7009	Aqr	8.3	3200 ly	14:10	20:46	3:22
Glob	M 15	NGC 7078	Peg	6.3	42000 ly	15:40	21:12	2:43
Glob	M 2	NGC 7089	Aqr	6.6	49000 ly	15:08	21:15	3:22
Glob	M 30	NGC 7099	Cap	6.9	39000 ly	14:10	21:22	4:34
PNe	Helix	NGC 7293	Aqr	6.3	530 ly	15:07	22:11	5:16
Gal	NGC 55	MCG -7-1-13	Scl	8.5	4.9 Mly	15:35	23:56	8:17

These lists were produced using SkyTools v3. If members have any changes they would like made, please let me know at [editor@macastro.org.au](mailto:editor@macastro.org.au)



## Mythology, Memes, and the Magic of the Stars: David M Jones

In any diverse group of people, even one where there is a core interest such as astronomy, there are a variety of beliefs and opinions. In our organization, we have enthusiastic interest groups, and erudite individuals all of whom display quite amazing aptitude in their respective fields. Some areas of interest may even be a little out of left-field – for example, those who delve into the world of UFOs and even mythology. The following article might interest some more than others, but it holds elements of all aspects of human interaction with astronomy, astrology, mysticism, and the universe.



Ancient Sumerian Engraving

Human curiosity with the universe goes back to the beginning of time; there are even periods of history that have left behind remarkably good records of their observations. Some of these more ancient observations are often a mix of pseudo-science and mysticism, with little room for empirical evidence. Such records, however, have frequently provided a starting point for many of today's observations. This article focuses on just one of those ancient observations – the history of Nibiru – described by some sources as a Babylonian god (Marduk) – or by others as the name of a celestial object – The Dark Star! These first references to a large celestial object are generally accepted to refer to the planet Jupiter – but by others as something infinitely more mysterious; even catastrophic!

According to some authors, the 'ancients' apparently included the Moon and the Sun as planets in our solar system – Nibiru was reputedly considered by these 'ancients' to be 'the 12th planet'. Here is where a little smack of mystical license starts to arise in the story; the numbers suddenly do not stack up as they ought. As often happens, ancient tales become embroidered, they lose their original essence and become a cross, somewhere between truth (maybe) and fantasy. (Adachi, 1997-99)

How do such ancient accounts come down to us over thousands of years? One way is through rare and precious fragments of text; other 'messages' and observa-

tions come to us through religious books of various faiths. Yet other accounts come to us over great distances of time by way of memes (meme rhymes with "cream"). (Blackmore, 1999) 'Nibiru', is described as an example of an extremely successful modern meme.

Below is a brief list of what a meme amounts to:

A meme is:

- An idea that, like a gene, can replicate and evolve.
- A unit of cultural information that represents a basic idea that can be transferred from one individual to another, and subjected to mutation, crossover and adaptation.
- A cultural unit (an idea or value or pattern of behaviour) that is passed from one generation to another by nongenetic means (as by imitation); "memes are the cultural counterpart of genes".

(Anon)

There can be little doubt that the meme of Nibiru has survived down through the centuries. It has certainly taken on a life of its own. On occasions, the story has been 'lost in the mists of time', only somehow to reappear yet again, for no apparent reason. The story has even become synonymous with names such as Nostradamus and his uncanny predictions. Astronomy and astrology seems to have been interwoven over the years. I'm sure we all know of those who, even today, are unsure of the difference between the two!

In 1976, Nibiru was resuscitated yet again by the author, Zecharia Sitchin (1922) in his book, "The 12th Planet". Whilst much of this work was later debunked, it nevertheless gained certain notoriety and a following that remains to this day. (Wikipedia, 2009) Who amongst us does not remember Erich von Däniken, and his now infamous book, "Chariots of the Gods". True or false, such tales always leave lasting impressions. This then is the category into which Sitchin's interpretation of the ancient Sumerian texts was condemned. With the discrediting of Sitchin's work, one might have imagined this to be the end of Nibiru as a modern day meme – but you can never keep a good meme down it seems!

Stories about the mythical planet Nibiru and predictions of doomsday in December 2012 have recently blossomed on the Internet. (Billings, 2009) These, so-called predictions tell of the return of the mystical Nibiru, and its devastating collision with planet Earth.

Perhaps there is some yearning hard-wired into the human race that requires it to create such calamitous scenarios. I certainly recall more than one occasion on which 'the end of the world was supposed to be nigh'. NASA has gone as far as reassuring the public, via the Internet, that no truth lies behind the 2012 doomsday prediction. A little research on the Internet will reveal a multitude of similar such failed predictions.



## Mythology, Memes, and the Magic of the Stars: David M Jones

However, completing the meme's journey of nearly 4000 years, it might be wise to err on the side of caution! If one clear and starry night, when out observing, one should happen to spy a large object hurtling in our general direction, one might just recall this ancient and enduring tale. In case of such an emergency - NASA Headquarters can be found at - Washington, DC 20546-0001 - Phone: (202) 358-0000 FAX: (202) 358-3010 E-mail: [FiMiLast@mail.hq.nasa.gov](mailto:FiMiLast@mail.hq.nasa.gov) example [Jqpub-lic@mail.hq.nasa.gov](mailto:Jqpub-lic@mail.hq.nasa.gov)

### References

Adachi, K. (1997-99). *Trouble times the 12th planet*. Retrieved July 4, 2009, from Prophet 2000: <http://www.zetatalk.com/theword/tword12n.htm>.

Anon. (unknown). *The daily meme* ([Http://TheDailyMeme.Com](http://TheDailyMeme.Com)). Retrieved July 31, 2009, from <http://thedailymeme.com/what-is-a-meme/>.

Billings, L. (2009, August 3). *Ask an astrobiologist*. Retrieved August 4, 2009, from <http://astrobiology.nasa.gov/ask-an-astrobiologist/intro/nibiru-and-doomsday-2012-questions-and-answers>.

Blackmore, S. (1999). *The meme machine*. United States: Oxford University Press.

Wikipedia. (2009, July 25). *Zecharia Sitchin* (Sitchin Background). Retrieved August 4, 2009, from Wikipedia: [http://en.wikipedia.org/w/index.php?title=Zecharia\\_Sitchin](http://en.wikipedia.org/w/index.php?title=Zecharia_Sitchin)

## Astronomy in The UK:

## Roger Powell

Faced with spending two months in England, I decided to try to explore some of the sky that is forever inaccessible from our southerly latitude here in Macarthur.

The first thing I noticed is that from Sydney, we have access to a much larger proportion of the entire sky than observers in England. At 34° S, we can (theoretically) see all the sky from 90° South as far as declination 56° North. In England, at a latitude of 52° N, one could only see from 90° North as far as declination 38° South, leaving a very much larger area of the sky unseen. Some might say the better areas.

The converse of this is that a greater proportion of the sky is circumpolar in England, with all objects between declination 90° N and 52°N theoretically visible all the year round, making the sky much easier to familiarise oneself with.

There are eighty-eight constellations in the entire celestial sphere and it caught me by surprise to find out that there are only two of them that are fully below the theoretical horizon from Macarthur. These are Ursa Minor (southernmost boundary 65°N) and Cepheus (55°N).

Camelopardalis (53°N), Cassiopeia (52°N) and Draco (48°N) are three more constellations that are technically almost invisible from Macarthur and realistically they are.

Approximately half of the constellation of Ursa Major is invisible in Macarthur, as are very small parts of Lynx, Cygnus, Lacerta, Perseus and Auriga.

So, an MAS observer visiting the Northern hemisphere needs to concentrate on the constellations of Ursa Minor, Cepheus, Camelopardalis, Cassiopeia and Ursa

Major, because the rest are visible from Macarthur.

There are seven Messier objects in Ursa Major, two in Cassiopeia, one in Draco and none in Ursa Minor or Camelopardalis. So, if you are seeking Messier objects, there are only three constellations to worry about and they will be visible for much of the year.

Below is a list of the fourteen northernmost Messier objects, four of which are technically just visible from Macarthur:

Not all of these objects will be visible through binoculars but concentrating on just Ursa Major, Cassiopeia and Draco greatly simplifies the objectives for anyone visiting the northern hemisphere from MAS and wanting to star-hop to Messier objects.

However, this does not take into account the other governing factors, which are: weather; light pollution; localised light source glare; and very late summer sunsets.

England is renowned for it's cloudy weather. When it is not cloudy the sky will often be hazy, permitting views of bright objects such as Jupiter and the International Space Station - but little else.

Light pollution in the UK is much worse than in Macarthur. Naked eye astronomy is not what it was when I was a young man living in North London in the 1960's. At that time I learned the northern constellations very easily as I walked home from the tube station each night - but now it is difficult to pick out Polaris and the Little Dipper.

So how did I go? Well, despite these difficulties - to-



## Astronomy in The UK:

## Roger Powell

gether with the use of binoculars instead of my 'goto' Meade 8" LX-90 – backyard astronomy was a somewhat difficult experience but at least I was able to observe M52 and M103 in Cassiopeia. Ursa Major was fairly easily picked out but my binoculars could not pick out any of the Messier seven objects it contains.

Maybe this article will be of some value to any other members visiting the UK in the future. Despite the difficulties, I still recommend taking your binoculars and giving it a go.

69°N	Ursa Major	M81	NGC 3031	Spiral Galaxy	Mag 6.9
69°N	Ursa Major	M82	NGC 3034	Cigar Galaxy	Mag 8.4
61°N	Cassiopeia	M52	NGC 7654	Open Cluster	Mag 7.3
60°N	Cassiopeia	M103	NGC 581	Open Cluster	Mag 7.4
58°N	Ursa Major	M40	~	Double Star	Mag 8.4
55°N	Ursa Major	M108	NGC 3556	Spiral Galaxy	Mag 10.1
55°N	Draco	M102	NGC 5866	Edge On Galaxy	Mag 10.0
55°N	Ursa Major	M97	NGC 3587	Owl Nebula	Mag 9.9
54°N	Ursa Major	M101	NGC 5457	Pin Wheel Galaxy	Mag 7.7
53°N	Ursa Major	M109	NGC 3992	Spiral Galaxy	Mag 9.8
51°N	Perseus	M76	NGC 650	Little Dumbell	Mag 10.1
48°N	Cygnus	M39	NGC 7092	Open Cluster	Mag 4.6
47°N	Canes Venatici	M51	NGC 5194	Whirlpool Galaxy	Mag 8.4
47°N	Canes Venatici	M106	NGC 4258	Spiral Galaxy	Mag 8.3

## Star Hopping to the Messiers #17 Vulpecula, Sagitta and Cygnus: M27, M29, M39 and M71. Bob Bee

Vulpecula and Sagitta are to the North-West in October at 9pm (Eastern Summer Time). Both contain only one Messier object. Cygnus is to the North and contains two Messiers. Their details are given in the table below:

(PN = Planetary Nebula; OC = Open Cluster; GC = Globular Cluster.)

Messier No.	M27	M29	M39	M71
Constellation	Vulpecula	Cygnus	Cygnus	Sagitta
Type	PN	OC	OC	GC
Size (arc-min)	15.2	7	32	7.2
Magnitude	7.3	6.6	4.6	8.3

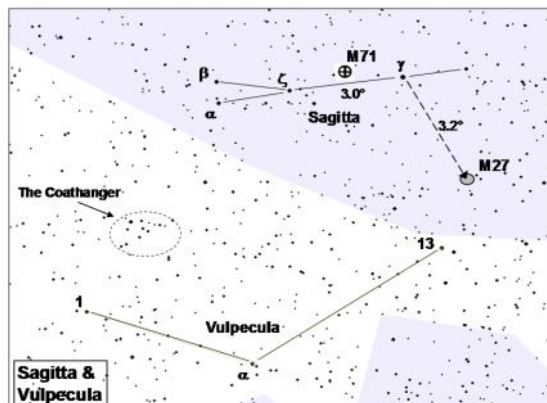
### M27 (in Vulpecula) & M71 (in Sagitta)

Sagitta and Vulpecula are conveniently located adjacent (above/below) each other so it is handy to search for their Messiers together. Using your planisphere you should be able to easily locate Sagitta. Vulpecula is less distinct but once you have found Sagitta, Vulpecula is

immediately below it. However, as you will see, you don't really need to find Vulpecula.

Though **M27**, the famous Dumbbell Nebula, is officially in Vulpecula, it is easier to star hop from the more obvious Sagitta. So first identify the small arrow of Sagitta and its two stars  $\gamma$  and  $\zeta$  Sge which are just  $3^\circ$  apart. Put your f/s centre on  $\gamma$  Sge. In the f/s FoV, imagine swinging the  $\gamma$ - $\zeta$  line by  $120^\circ$  around  $\gamma$ . It should land very closely on the location of M27 which is in fact  $3.2^\circ$  from  $\gamma$  Sge. Since M27 is only  $5^\circ$  from  $\zeta$  Sge, the triangle of M27,  $\gamma$  and  $\zeta$  should neatly fit in your f/s  $5^\circ$  FoV.

Now lets find **M71**. At mag. 8.3, it's unlikely it will show up in your f/s but you can easily 'nail' its exact position and view it in your main eye piece. As you can see from the chart, M71 is located almost exactly midway between  $\zeta$  and  $\gamma$  Sge. and offset by less than  $1/4^\circ$ . So simply place the stars  $\zeta$  and  $\gamma$  in your f/s FoV, centre it on the mid-point and move it off-centre by about  $1/4^\circ$ . Check in your main eye piece and you should have M71, a fairly diffuse globular cluster.



M 27



M 71

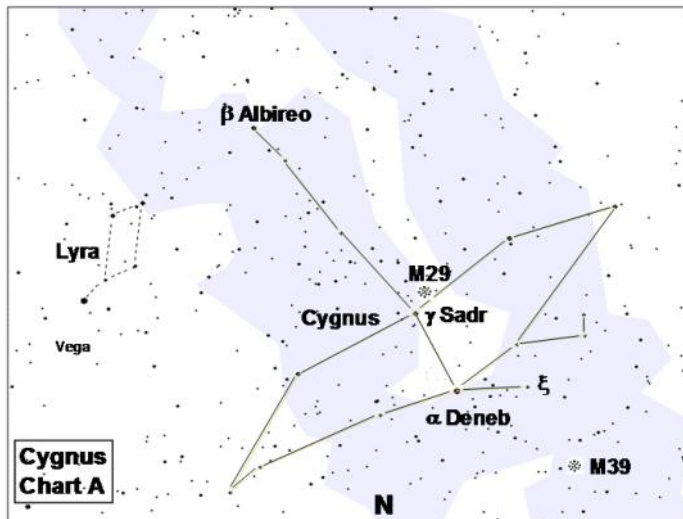




# Star Hopping to the Messiers #17 Vulpecula, Sagitta and Cygnus: M27, M29, M39 and M71. Bob Bee

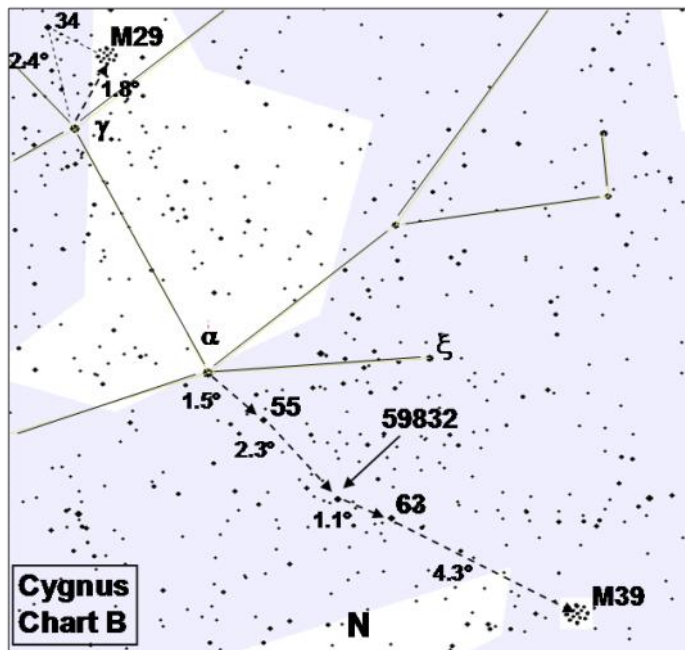
## Cygnus - M29 and M39:

Cygnus, the Swan, is like a large cross just above our northern horizon. It's most easily located just east of Vega and Lyra. Then  $\alpha$  and  $\beta$  Cygni (Deneb and Albireo) are fairly obvious, mag. 1.2 and 3.0 resp. You can see the general shape of Cygnus and the locations of M29



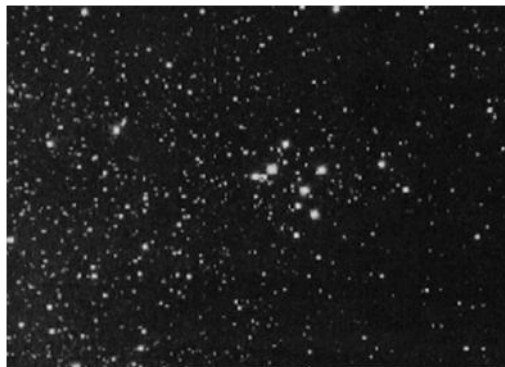
and m39 in Cygnus Chart A below.

Cygnus's stars form what's called the Northern Cross. The centre of the cross is the mag. 2.2 star  $\gamma$  Cyg. (Sadr). So first identify  $\alpha$  and  $\gamma$  Cygni and then refer to the enlarged Chart B below.



**First M29.** Centre your f/s on  $\gamma$  Cyg. M29 is only  $1.8^\circ$  away from  $\gamma$ , in the direction off the  $\alpha - \gamma$  line as shown. If needed, you can form a small triangle using  $\gamma$ , the 4.8 mag star 34 Cyg and M29 (not identifiable in your f/s). The triangle should fit well inside the f/s FoV.

**Now M39.** Move down to Deneb,  $\alpha$  Cyg, very obvious at mag. 1.2. There is a helpful trail of mag 4.6 – 4.8 stars (55, 59832 and 63 Cyg.) leading to M39. So, starting with your f/s on  $\alpha$ , locate (in the FoV) 55 Cyg  $1.5^\circ$  to the NE, move to it and continue in that line another  $2.3^\circ$  to 59832 Cyg.  $\alpha$ , 55 and 59832 should all fit into your f/s FoV.  $1.1^\circ$  beyond 59832 is 63 Cyg which should also be just inside the same FoV as  $\alpha - 63$  is exactly  $5^\circ$ . Centre on 63 Cyg. In the same line as 59832 – 63 and  $4.3^\circ$  beyond 63 is M39. Move from 63 Cyg in that direction and M39 should appear in your f/s. Check the main eye piece and enjoy.



M 29



M 39

Good Hopping.



## Different Universes: Robert Zindler (Amateur Cosmologist)

Cosmological concepts are by no means clear-cut and problem-free. Following are a few concepts that warrant some careful thought and consideration.

From a human point of view, space could be divided into three realms:-

- The micro-realm of the unobservable particle and sub-particle world of physics and thus ranging from infinitesimally small – but never nothing – to the limits of visibility.
- The middle realm of the “observable universe”, which includes the world of astronomy.

The macro-realm of the “unobservable universe” and beyond, which ranges from the limits of visibility to incomprehensible and unimaginable infinity.

All three realms have their unknowns, conundrums and mysteries which are the very reason for the immense research that is conducted all over the world.

The universe – the middle realm – can be viewed in several ways:-

- The technology-limited, borderless universe that is observable without telescopes and other technological devices. Observability ranges to, say, about two billion light years. Telescopes increase this range of observability by increasing distances to many billions of light years.
- Radio-telescopes can discover increasing distances, until this has now reached the range of the 13.7 billion light years of the most distant galaxy yet observed. Improved technology may in future increase this distance even further and it is clear that the “size” of the observable universe is limited only by observational technology. It must also be noted that there is no physical border of the observable universe, only a limit to the range of observability.
- The anthropocentric or human-centred observable universe. As a consequence of this view, all distances, and therefore all ages, of distant stars and galaxies are measured from the observer. Also the observed expansion of the universe, as discovered by Edwin Hubble, is measured from the observer. The anthropocentric universe is therefore no more than the modern version of the ancient and millennia-old concept of the terra-centric, or earth-centred, universe that even Copernicus has not been able to dislodge with all the inevitable and absurd consequences thereof.
- The observable universe of astronomers and “astronomical cosmologists”:-
  - Astronomers essentially function within the nearby range of observability of up to four billion

light years. Many problems are associated with stars and galaxies beyond this range, because the accuracy of observations begins to become increasingly problematic.

- “Astronomical cosmologists” also – by their adoption of the scientific “observability rule” – cover this same region (in order to maintain their scientific status), but then extend their endeavours by engaging in *unrestrained* imagination and by ignoring or violating natural laws, logic and self-consistence, such as:-
  - ◇ The theoretical process of “reverse-reasoning” in the theory of the “big bang” beginning of the universe, resulting in its hypothetical primordial “singularity” centre with its putative properties, inflation and the concept of an absolute beginning of the universe, including time and space.
  - ◇ Black hole theory, String theory, M-theory, Brane theory, Quintessence and others.
  - ◇ Dark energy.
  - ◇ The wedge-shaped illustrations of the cosmic expansion and inflation of the universe.

*Astronomical cosmologists* do acknowledge that the *big bang* could not have been initiated within the limits of the 13.7 billion light years radius of the *observable* universe and have made a small concession. They have extended their speculative views, but only a little, into the *unobservable* universe that clearly surrounds and contains and impacts on the observable universe, by “calculating” that the big bang started about 15 billion light years ago, only about two to three billion light years within the boundary of the *unobservable universe*.

The view of a 15 billion light year origin and source of measurement of the big bang clearly conflicts with the view of the anthropocentric universe, where all distance measurements commence from the observer. This is an unreasonable contradiction. Beyond this, astronomical cosmologists proceed to totally ignore everything else about the unobservable universe, again with all the inevitable consequences thereof. Some of these consequences are described in a forthcoming work. To summarise this little essay, it becomes clear that not all is well with some cosmological ideas that may therefore need some serious re-consideration.



## A Night At The Forest:

Trevor Rhodes

Our recent Deep Sky Night down at Belanglo State Forest was an outstanding success, not only for myself but for all present I suspect.

Anne and I had travelled down to the cabin on Friday afternoon and were looking forward to a relaxing weekend with good friends, good food and good viewing. We got two out of three on Friday. What we didn't get was clear skies. The clouds came rolling in early and hung around all night.

So the five of us present spent the evening indoors with the odd trek outside to see if there was any change.

Saturday was a different proposition altogether thankfully. The skies cleared and the day was warm. A couple of people took advantage of the quiet and had an afternoon nap in anticipation of a good night ahead, and a good night it was.

I had bought a new star atlas earlier in the week from Bintel and was looking forward to trying it out. You know the one with Pegasus on the front? Great addition to the travelling astronomy kit and highly recommended to anyone who doesn't have one yet. So there I was all set up and waiting to pick off a couple more Messier Objects. I'm on 90 at the moment and looking forward to getting 100.

Well I didn't get around to them because Ned kindly lent me three pages from an old S&T magazine that listed the Dunlop Catalogue. At least I know I will be able to complete this list as James Dunlop was working out of Parramatta Observatory.

Before the sun even went down there were stars out.

Two beautiful Wallabies, one with a Joey, came hopping into the clearing and hung around staring at the strange faces staring back at them. It's always wonderful to see the wildlife and to know not everything is too scared to come out and be seen.

Eventually, as it always does, the sun went down and the Astronomers came out as fast as the stars. Not quite as many, but we're astronomers, not rabbits. I ended up getting 25 of the 100 Dunlop Objects that night along with a new respect for the value of good eyes and patience. As Sarkis will attest, some of those galaxies I found were only visible using averted vision. Bruce also had a rewarding night with his camera.

The last time looked at my watch it was nearly 3am and everyone else had disappeared except for Bruce who was taking images of The Pleiades and The Orion Nebula. I look forward to continuing the hunt at the next For-

est Night and I hope those in attendance that night will be there again. It was one of the most enjoyable nights I have ever spent under the stars.

So come along and bring not only your telescope, but your enthusiasm as well and we'll have a great time together.



### Prime Focus Article Submission

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

**Monday 9th November 2009**

All Articles can be submitted via email [editor@macastro.org.au](mailto:editor@macastro.org.au)  
Or via snail mail to the MAS Postal address

**PLEASE NOTE THE CHANGE OF EMAIL ADDRESS  
FOR SUBMISSIONS!!!**