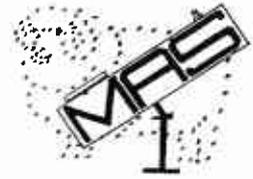


MACARTHUR ASTRONOMICAL SOCIETY Inc.

Journal



# PRIME FOCUS

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## **PRESIDENT'S REPORT**

Alas, I missed the last meeting, and believe the Planetarium was a great success. Anyway hopefully I'll make this next meeting.

Lots happening in the Astronomical world lately. I believe meeting with the Wollongong society was a fun night. However, I can assure you the following week at Cobbitty was a wash out, details later in report. Many thanks to Noel for talking to the Scout groups, Bob for the talk to the Japanese students. Let's keep up the good PR work.

## **COBBITTY NIGHT**

After endless Saturday night shifts I finally got one off. I eagerly awaited a starry sky, the forecast was, however, for late storms. I said to myself who believes the weather report, there hardly ever right.

Well let me tell you, he was right. It poured, lightening flashes the whole bit. There was me, Noel and John sitting in the cricket shed hearing the rain thunder down onto the tin roof, our hopes of a starry sky rapidly fading. Noel told me the weather was expected to clear later, however by 8pm it looked as if it had set in for the night. Slightly earlier our hopes rose, the sky cleared ever so slightly and we could see Scorpius and the Southern Cross. As explained earlier it was short lived and we were soon retreating hastily back to the cricket shed to avoid getting soaked. By 9pm I had given up all hope of a clear sky and slowly made my way to my car and back home. I just hope for Noel and John's sake it did clear later.

## **MARS NEWS**

Exciting news for all Mars lovers, Sim Mars, the interactive Mars CD ROM game is soon to hit the

computer stores. I saw a demo and I have to be honest and say it looks the best game I have ever laid my eyes upon. Also on the Mars front - a 5 hour (at least) TV series on Mars by James Cameron (Director of TITANIC) who is a confirmed Mars nut like myself. The TV series will be based on Kim Stanley Robinson's books Red Mars, Green Mars and Blue Mars (a great read). He is also making an Imax film about Mars. It is also rumoured that The X-files male star David Dutchchovny is to play one of the lead roles in the TV series. For more information on Mars go to the NASA web site or The Mars Society.

## **LATEST NEWS**

Mars Polar Lander - Will arrive on a smooth layered terrain on the 3<sup>rd</sup> December on a 4,000 Sq ms area with slopes no steeper than 10 degrees. The landing site is 76 degrees south latitude and 195

degrees west longitude, near the northern edge of the Martian south polar cap. When the landing takes place it will be spring and daylight on the south polar cap—non stop sunlight for 90 days. The Lander will study the soil and ice beneath the surface, and also deploy 2 probes which will be released 8 kms above the Martian surface and penetrate deep into it and at the same time study if any water is present. The Mars web sites I believe will go live on December 3<sup>rd</sup>. Next issue I will give some great web sites to go to on Mars. For now NASA.gov and the Mars Society offer great information. Also don't forget to checkout our web site, see Peter Elston for the address or just look up Astronomical Societies.

### **MIR**

MIR's 14 year history is about to end. Many astronauts from Russia, USSR, France, Japan, Canada, Australia, Italy, and many other countries have called MIR home for 12-18 months. The 14 year old space station is going to hopefully burn up in the atmosphere in January. Unfortunately it may not all come down in the ocean, some of its components are likely to hit land.

### **MARS ROCK**

Another Mars rock in the news. Nakhga (the largest yet found) was originally believed to contain amino acids just like on the infamous Alan Hill's one. However,

arguments yet again suggest that the specimen could have been contaminated with Earth microbes.

It seems to me the only way to get a pure sample is send a spacecraft there and extract one or many from the surface and bring it back for study on the International Space Station (ISS) which should be operational from next year. Whilst on the ISS, a simulated docking procedure performed by the Russian scientists was 100% successful.

### **SPACE DEVELOPMENT**

On a lighter note, for those interested in flying something to the Moon or Mars, commercial flights through a private company will do payloads for a measly 24 million dollars. Whilst this sounds expensive, it is much cheaper than the government payload prices. The first launch is expected to be 2003.

### **CASSINI**

A successful gravity assist was performed by the spacecraft around Earth, so it can now finally be on its way to Saturn. It is currently travelling at the velocity of 5.5 kms/sec. It will firstly reach Jupiter and receive another boost in December 2000, then if all goes well reach Saturn by the 1<sup>st</sup> July, 2004. It will orbit Saturn for at least 2 years and drop a small probe called Huygens to land on Titan (Saturn's largest moon) which is rich in a Nitrogen atmosphere. The surface of Titan and its air is the same as Earth's many

millions of kms away. The scientists don't hold much hope for life in the -200 degrees C, but one never knows if there are oceans of methane and ethane.

### **GALILEO**

This report is from Aug 16<sup>th</sup>. The spacecraft made its third and most dangerous fly-by of the moon Callisto. It copped a whopping amount of radiation from Jupiter which was expected to cripple the ship. However, it remains intact and working very efficiently with nearly everything on board still functioning. The spacecraft passed within 400,000 kms of Jupiter's clouds and within 3,000 kms of Callisto. Data is being stored and will be processed later this year on the latest findings.

Phil Ainsworth ■

### **PLANETARIUM**

Our sincere thanks to Geoff Zenner who gave us a tour through his Planetarium last meeting. It was marvellous stuff, and reminded us of the basics of astronomy. *Get out there and watch the night sky.*

### **MARS' MEANDERING**

How many of you have been watching Mars' progress through Scorpius the past few weeks? It has been quite fascinating, on a night by night basis. On the 16<sup>th</sup> Sep, Mars and Antares were face to face. Ah, the pleasures of naked eye astronomy. ■

## WHAT'S TO SEE THIS MONTH? (21 Sep – 19 Oct)

**Mercury** is in the evening twilight sky this month. It has a couple of interesting close encounters with other objects. On 30<sup>th</sup> Sep. setting at 7.15pm, Mercury comes within 2° of Virgo's Spica. At mag. -1.7, Mercury is the brighter of the two.

**Photo Opportunity**

Then on 11<sup>th</sup> October, about 1 hour after sunset, Mercury is within 7° of a very thin crescent moon.

**Photo Opportunity**

**Venus** is an extremely bright (mag. -4.5) morning object, rising about 30 minutes before twilight commences. It reaches its maximum brightness of mag. -4.6 on 27<sup>th</sup> September when it rises at 3.30am. It is a very large object with a diameter of 44.7 arcseconds. Large enough for binoculars to show the crescent nicely.

There will be a nice arrangement of the 26 day old crescent moon with Venus and Regulus (Leo, mag. 1.4) on 6<sup>th</sup> October. On 9<sup>th</sup> Oct. Venus will be closest to Regulus at 3°.

**Mars** moves into Ophiuchus setting at 11.30pm. At mag. 0.5, it will be within 2° of M19 (NGC6273) on 28<sup>th</sup> Sep. But even better still, Mars will only be 1° from the Lagoon nebula (M8) in Sagittarius on

18<sup>th</sup> Oct. **Photo Opportunity** and the following night (19<sup>th</sup>) will be just 0.2° from the globular cluster NGC 6544 (also in Sagittarius).

**Photo Opportunity**

**Jupiter** is rising at about 8.30pm and is at mag. -2.8, approaching opposition on 24<sup>th</sup> October. It presents a very nice view of its 47.4" diameter disk and on 27<sup>th</sup> Sep. it will be just 3.2° from a near full moon. **Photo Opportunity**

You'll find the four Galilean moons on the same side of Jupiter on 23<sup>rd</sup> & 27<sup>th</sup> Sept., and 1<sup>st</sup>, 3<sup>rd</sup>, 14<sup>th</sup> & 17<sup>th</sup> Oct.

**Saturn** is rising about 9.30pm and is at mag. 0.1. Its planetary disk is 19.36" dia., while its outer rings major axis is 44". On 28<sup>th</sup> September, Saturn comes within 2.4° of an almost full moon. **Photo Opportunity**

### Constellations:

**Capricornus** ('The Bikini Bottom') is almost directly overhead and to the north. The mag. 7.5 globular cluster M30 (NGC 7099) is to the east, visible in small telescopes and resolvable in 100mm upwards.

**Aquarius** is nearby, north-east of Capricornus. Objects of interest are:  
**M2** (21hr 34m, -1°) a 6.5 mag GC about 37,000 l.y. away – visible in binoculars and small scopes;

**M72** (20 hr 54m, -13°) is a 9<sup>th</sup> mag. GC 56,000 l.y. away; **NGC 7009** (21 hr 4m, -11°) also known as the Saturn Nebula, is only 3,000 l.y. away – visible in small scopes as an 8<sup>th</sup> mag. blue-green ellipse.;  
**NGC 7293** (22hr 30m, -21°) is the famous Helix Nebula, best found with binoculars because of its large size.

Bob Bee ■

### SECTION LEADERS

The following members have offered themselves as leaders (or coordinators) of those members with special interests in particular fields

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#### TELESCOPES :

**NOVICE/INTERMEDIATE**

Noel Sharpe

**ADVANCED:** Peter Druery.

#### ASTROPHOTOGRAPHY:

**NOVICE:** Noel Sharpe

**ADVANCED;** Peter Druery

**SETI ? YES!  
BUT WE STILL MIGHT BE  
ALONE ANYWAY...**

I have a nasty habit of approaching well known astronomers and asking them about things I am too stupid or lazy to find for myself.

As a SETI enthusiast, I didn't understand two SETI related problems:

Firstly, why (it's estimated) any detected aliens would be ½ million years in advance of us? What is the line of argument for that number?

And secondly, why is it possible we might never ever be able to detect ETs, even if it is proven that life – as such – is very common in the Universe?

How about you? Do you really know answers to these questions?

We all remember well Dr Seth Shostak from the SETI institute. Here is the content of his letter in reply to mine, responding to those questions:

“Regarding the degree to which any detected aliens would be in advance of us, let me try to explain it as follows.

Our Galaxy (The Milky Way) is roughly 10,000 million years old. Imagine, just for argument's sake, that during its long history, 10,000 technologically advanced civilisations have developed. That means that, very crudely

speaking, one civilisation will spring to life every million years, on average.

If these civilisations only last for, say, 100 or even 1,000 years, then they will be like candles that, one by one, are lit once per million years, but then flicker and die *long* before the next one is lit. The chance that one will be burning – that it will be sending radio waves into space that we can detect at the epoch when we conduct a SETI experiment – will be quite small. Clearly, in order for at least one candle to be burning all the time, the civilisations will have to last for about 1 million years.

If that's the case, then if we find one of those civilisations, it will, on average, be ½ million years old. This is the same argument as saying if you choose a random inhabitant of Earth, they will be roughly 35 years old, or half the average lifetime.

That is the line of argument for the numbers and you can modify them to your own tastes, but I think you will soon be able to convince yourself that if advanced civilisations last for only short periods of time – say less than 1,000 years – then we will have little chance of finding them.

This is the basis for the reasoning that says that a SETI success will result in the uncovering of a far more

advanced civilisation than our own.”

I also asked Dr Shostak what SETI book – as Book No. 1 – he might recommend. Well, the book is:

“The Search for Life in the Universe” by Donald Goldsmith and Tobias Owen (2<sup>nd</sup> edition, 1992, Addison-Wesley).

There are just two (!) copies only of this book in NSW public libraries: Liverpool and the State Library. The book might reach you in a few days or weeks, thanks to the inter-library loan system if it is ordered in your library.

I would like to assure you that the book is the real cream of scientific approach to the quest for ET. It's the best of the SETI books and you might find it interesting.

John Muszynski ■

**SPARE A THOUGHT...**

... for those of our members who are currently undergoing withdrawal from one of life's great addictions... *Babylon 5*. Yes, it ended on 8<sup>th</sup> Sept, and the sense of loss was profound. You'll recognise the poor souls by the indelible tear stains and occasionally vacant stares though an imaginary wormhole.

Sheridan, DeLenn, Lennier, Garibaldi, Ivanova, G'Kar, Londo, Lyta, Dr Franklin, Vir, Zack... *Vale!*