



# PRIME FOCUS

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VICE PRESIDENT  
NOEL SHARPE

SECRETARY  
DANIEL ROSS

TREASURER  
PETER ELSTON

EDITOR  
BOB BEE

MAS : Postal Address PO Box 17 MINTO 2566 Phone (02) 9605 617

## VICE PRESIDENT'S REPORT

Thanks everyone for making our Cobbitty observing nights such a success, remember to check the dates as some months we are holding the 'double headers' and observe twice in the month.

The telescope brigade keeps getting bigger, thanks to one member's recent acquisition of a 10" Dobsonian, a prospective member's 10" on an equatorial, and with our existing scopes, will make a total of four 10" scopes and a 14" to come maybe in November.

As to astrophotographers, they're now coming out of the woodwork. The Society has four members actively shooting with at last count another four taking up the challenge.

The 'new four' are equatorially equipped, have cameras and are positioning themselves to advance into the ranks. If anyone else wants to become involved, you are most welcome indeed.

Noel Sharpe. ■

(... and the Editor expects to see some of your photos for Prime Focus...Ed)

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## ARMCHAIR ASTRONOMER ACTIVITIES

Hi! I am – according to our own Peter Druery – an Armchair Amateur Astronomer. Good potential for the lowest of low category of brain-dead wheel chair astronomer, and my name is John Muszynski.

I do not own a 6" (or any other telescope). I do not

attend Cobbitty field nights. Neither do I ask Bob Bee for MacDob, even when there is no hiring fee.

Armchair astronomers are like Believers who don't follow the Ten Commandments and do not attend church. They are like permanent pains in the neck... you cannot get rid of them. You must somehow deal and live with them.

Essentially, what role do armchair amateurs play? Well, basically they are annoying real amateur astronomers. Their activities are very limited:

They are busy reading 'Penthouse' type literature and occasionally – if any time is left over – astronomy magazines. That's about all. To do anything beyond that is exhaustive, very rare and I am still recovering after what I did recently.

Do you remember the 1<sup>st</sup> May seminar on Astronomy Education? I dared to approach Dr John O'Byrne and ask him for a short list of the best basic books on astronomy. To my surprise, on 11<sup>th</sup> June, I received a very kind letter responding to my request and I'd like to share the information he provided with you. Why not?

The list provided is very interesting and useful, especially if one day you'll join me to become an Armchair Astronomer. Please, just consider it. It's a pretty quiet life, believe me.

John Muszynski ■

#### Reference list:

*Horizons, Exploring the Universe.* M.A. Seeds (Wadsworth Publishing 1998)

*Foundations of Astronomy* (4<sup>th</sup> Edn) M.A. Seeds (Wadsworth Publishing 1997)

*Voyages Through the Universe.* A. Franknoi et al. (Saunders College Pub. 1997)

*Exploration of the Universe* (6<sup>th</sup> Edn). G.C. Abell et al. (Saunders College Pub. 1993)

*Astronomy: From the Earth to the Universe.* J.M. Pasachoff (Saunders College Pub. 1995)

*Astronomy: The Evolving Universe* (8<sup>th</sup> Edn). M. Zeilik (Wiley 1997)

A slightly (but not very) more mathematical treatment is available in:

*Introductory Astronomy & Astrophysics* (3<sup>rd</sup> Edn). Zeilik et al. (Saunders, 1991)

### **WHAT'S TO SEE THIS MONTH**

**19<sup>th</sup> July – 15<sup>th</sup> August**

#### **The Planets:**

**Mercury:** Not a great month for viewing. At mag. 1.1, Mercury is visible during evening twilight during late July and then in the morning twilight during early August. It might be well worth waiting for October when the evening views will be available for the full month at the brighter magnitude of -0.2.

**Venus:** This is the last month in 1999 that we'll see Venus in the evening sky, so make the most of it. On 15<sup>th</sup> July, it was at its brightest at mag. -4.5. By 15<sup>th</sup> August it will set 30 minutes before the end of the evening twilight and will be setting even earlier thereafter.

Venus will not reappear in the evening sky until the year 2000.

**Mars:** Still viewable all evening, though it will be setting about mid-night by mid-August. Mars is drifting further away from Spica now, after a prolonged pairing during June.

By the end of July, Mars is dimming to 0 mag and by mid-August will be down to 0.2 mag. Its disc diameter is down to 10 arcseconds (10").

**Jupiter** is still a very late rising planet this month (mag. -2.6). By 15<sup>th</sup> August, it will be rising at 11pm (not too late for dedicated Star Nighters).

For those interested in the 'Dance of the Moons', all four Galilean moons will be visible on the same side of Jupiter on 29/30<sup>th</sup> July, 31<sup>st</sup> July, 8<sup>th</sup> August and 13<sup>th</sup> August.

#### **Photo Opportunity**

**Saturn** is rising about an hour later than Jupiter, so by mid-August it's rising about mid-night. Mag. is 0.2.

On 5<sup>th</sup> August, there is a 5° encounter with the ½ Moon.

During August, Saturn's rings are at the maximum tilt to Earth for all of 1999 (21°). This compares to the maximum possible viewable tilt (at other times) of 28°.

**Uranus & Neptune:** Both are rising early in the evening (Neptune rises one hour before Uranus) so they are up there for finding all night in the constellation of Capricornus.

On 26<sup>th</sup> July, Neptune is at opposition (mag. 7.8).

On 28<sup>th</sup> July, the Moon approaches within 2.5° of Neptune. This coincides with

a partial eclipse of the Moon at 9pm. **Photo Opportunity?**

On 29<sup>th</sup> July, the Moon is within 3° of Uranus. (We don't get to see the occultations seen elsewhere.)

On 8<sup>th</sup> August, Uranus will be at opposition (mag. 5.7). Its location will be: 21hr 9m 58s, -17°4'16".

### Constellations:

Anyone with eyes to see with will have observed that **Scorpius** and **Sagittarius** are hovering directly overhead at mid-evening. (Fun for fork mounted SCTs).

Ditto for **Crux** and the **Pointers**, along with **Omega Centaurii** and **Centaurus A** (a 7<sup>th</sup> mag. elliptical galaxy with *that* dark dust lane.) Theoretically, on a clear dark sky (like at our Cobbitty site, minus the fog), Centaurus A is visible in binoculars, but a medium sized telescope (say 100mm +) is needed to see the galaxy's elliptical shape and discern the dark lane.

Other constellations presenting themselves for easy viewing are:

**Lupus:** (found between Scorpius and Centaurus) with its numerous binary and multiple stars; open cluster NGC5822 (15hr 5m, -54°); and mag. 7 Globular Cluster NGC5986 (15hr 46m, -38°).

**Libra:** (between Scorpius & Virgo) with its doubles; the

interesting mag 2.6 'green' star  $\beta$  **Librae** (15hr 17m, -9°); and a 9<sup>th</sup> mag. Glob NGC5897 (15hr 17m, -21°) 40,000 l.y. away.

**Serpens:** (on either side of Ophiuchus). This is an odd constellation. It is in two halves, book ending Ophiuchus. Basically, it's found north of Scorpius and Sagittarius.

The western half of Serpens is home to M5 (NGC5904, 15hr 19m, +2°), a 6<sup>th</sup> mag, globular cluster. M5 is a very fine Glob, looking great in a 100mm + aperture scope.

The eastern half has M16 (NGC6611, 18hr 19m, -14°), an open cluster embedded in the Eagle Nebula. A nice sight in binoculars.

**Scutum:** ( a very faint and small constellation between the eastern half of Serpens and Aquila.) Scutum (which means The Shield) is best known for its Wild Duck Cluster (M11, NGC6705 at 18hr 51m, -6°).

This glorious open cluster (which is supposed to look like a huge flock of wild ducks) has over 200 stars and occupies an area of about ½ a Moon diameter. It appears as a misty patch in binoculars but can be resolved into fine sparkling stars in a telescope with 100+ magnification.

**Ophiuchus:** Dead north of Scorpius. This constellation is well worth a study on one of

our Star Nights. It's ideally placed at the moment. See the feature article in the next August issue for details.

So there are your challenges and opportunities for this month. Good Seeing!

Bob Bee

### CLOTHESLINE NEBULA

**The Rationale:** In wishing to capitalise on my recent week's annual leave, I decided to photograph from my backyard. The early indications were of clear skies and cold temperatures. It was Thursday night and a World Cup cricket match was being telecast – Australia playing South Africa, the winner to play Pakistan.

**Location, Location:** For privacy reasons, I prefer to set up my telescope in the backyard. A level area exists just near the laundry and the garage shields the front street lamp. The laundry provides quick access to the house and I can run power from the car to my telescope. I hung a large thick blanket on our clothesline and could rotate the line (right ascension) to block the neighbour's family room light. I could even sight the south pole stars for alignment.

The only slight annoyance was that in placement of the telescope I found myself directly 'under' the

clothesline. Not a great concern, a bit tricky, but I could easily see between the lines.

**Best Laid Plans:** A slight misjudgement occurred on my behalf when I did not factor in the contingency of one's spouse wishing to hang out the washing at 6pm, a task never before attempted. The wife's rationale was that with all the cold weather it's been absolutely freezing at 7am and made more sense to hang wet clothes at early night-time instead of getting frostbite in the morning cold.

**The Advice:** When setting up under a clothesline, check first, as in my recent experience I found polar aligning restricted by various forms of undergarments, pants, jumpers and some delicate 'unmentionables'.

Having completed all the legwork, I held my ground against all odds and in a masterstroke of diplomacy managed to secure one section of the line devoid the offending articles. If my aim was true, I could still obtain some results of the photographic kind.

**The Night Was Long:** Having secured polar alignment and having a small window of opportunity to photograph, I loaded some ASA200 film in and logged my exposure times. I made some quick entry and exits, courtesy of the laundry, to catch the Aussies bowling to South Africa. Things looked a

bit grim, so back to the yard for some more photography. About 5 minutes for that one, line up the next shot, then back to the cricket. The lateness of the hour was not a concern.

Next over Shane Warne came on and 'whoa', a double wicket maiden. Things were looking up. I ran back to the yard to reset my camera and returned to the cricket.

I was caught in a time loop and repeated the same pattern over and over. It was the best one day match ever. So exciting to watch it live, it almost made astro-photography take second place. The hard days night ended around 4am, one frozen telescope, one frozen camera and one great way to spend a night.

**The Results:** 213 and 213 – it's a tie. But what about the photos? Well, the Jewel Box cluster came through very nicely thank you, and my best photograph yet was of wonderful pinpoint stars and rich nebulae around Scorpius. Just too bad about the dark dust lane running straight through the middle of the photos, which upon investigation, proved to be the silhouette of the clothesline. I guess one word would suffice ... Bugger!

Noel Sharpe  
Frustrated Photographer ■

### COMING SPEAKERS:

**July** – Peter Druery

**August** – Geoff Zenner and Mobile Planetarium (Planned)

**September** – Andrew James

**October** – John Casey

### Official Dates for Cobbitty Field Nights

7/8/99	14/8/99
4/9/99	11/9/99
9/10/99	16/10/99
6/11/99	13/11/99
4/12/99	11/12/99

### COMMON BINARIES?

Just how common are binary stars? Two classic 1991 & 1992 independent surveys of G and M Class stars, led by Michael Mayor and Geoffrey Marcey, revealed these ratios of singles to doubles to triples to quadruples:

**G Stars – 57:38:4:1**

**M Stars – 58:33:7:1**

i.e Almost half of all G and M class stars are binaries or more. So there!

Also it was discovered it was 'the norm' for these binaries etc to have highly eccentric orbits. It would make life on their planets (if any) interesting. ■