

MACARTHUR ASTRONOMICAL SOCIETY Inc.

Journal



PRIME FOCUS

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... and Thus Begins the 10th Year of MAS...

President's Report

Welcome to our 2nd meeting for 2005. It was great to see everyone at last month's meeting. It was a great turnout. Many thanks to Dick Everett for downloading a wad full of information on all matters astronomical. For those who did not attend last month's meeting please note that this edition of *Prime Focus* is our first for the year. As mentioned at that meeting we are now entering into our 10th year of operation as a society. This is a great achievement which would not have happened without the vision and enthusiasm of our founding father, namely a certain Mr Phillip Ainsworth.

Back to the Future.

The date was Tuesday, December 12, 1995 when Phillip Ainsworth graced the front page of the Macarthur Chronicle. The article conveyed Phillip's wish that an astronomical

society be started in the Macarthur area. Soon after that Phillip became President and the society was up and running.

There have been many great times over the years, great guest speakers, tons of public events and strong community and media support. But what stands out for me is the many friends that I have made, and the many times we have shared some brilliant night skies together.

When the skies turn cloudy or telescopes are dewed I have enjoyed the general conversations and camaraderie. At times we have spoken about our families, our personal lives and how we feel about all the trials and tribulations we face. These are special moments indeed and personally reach for me far beyond the general running and administrating of an astronomy club.

We certainly owe a lot to Phillip for having the vision and passion to see a vibrant and engaging Astronomical Society established in this region.

The Journey Continues

At time of writing I am still formulating some ideas around our guest speakers. It is planned for Peter Elston to present his adventures on Solar Eclipse chasing at tonight's meeting. I have seen the DVD and it looks great.

I have now received a list of dates from the Campbelltown Rotary Observatory for this years programme and these are now listed in the date list. Meanwhile our request to secure this meeting room for another year has been granted and we thank Dr Ragbir Bhathal and the University for their fantastic support for our club.

A Few Dates

21/02/05	General Meeting
05/03/05	The Oaks
12/03/05	The Forest, TBA
18/03/05	Rotary Observatory
21/03/05	General Meeting
02/04/05	The Oaks
09/04/05	The Forest (needs confirming)
18/04/05	General Meeting
30/04/05	The Oaks
07/05/05	The Forest
19/05/05	General Meeting
04/06/05	The Forest
10/06/05	Rotary Observatory
11/06/05	The Oaks
20/06/05	General Meeting
02/07/05	The Forest
09/07/05	The Oaks

Before heading out please check in with John Rombi or myself on 0410 445 041, things do change with weather or circumstances.

It was great to have some discussions last month around some of our favourite science fiction programmes. The intrepid crew of Voyager has now made their way back home from the Delta Quadrant, a changing of the guard now happens with the return of Enterprise. A new series called Lost will grace our screens as well as a remake of that classic series "Battlestar Galactica".

In speaking of science fiction I recently saw "Contact". This film in my opinion would have to be the all time classic, I say this because it exists on many levels. The film combines astronomy, engineering and science with themes of religious beliefs. It's a film that has it all, great effects and superb acting from Jodie Foster. She somehow projects onto the screen a sense of realism and you feel really drawn to her. What a film!

Out Of this World

I have been keeping up to date with the latest data from the Huygens probe which landed on Titan. Some of the images look amazing. I am sure this will keep scientists busy for years.

Elections and renewals of membership are fast approaching. If you wish to nominate for a committee position please grab a nomination form. Well that's all for now, hopefully the skies ahead will be favourable for some good stargazing. See you soon

Noel Sharpe President

A few thoughts on the side...

A good (non-astronomer) friend gave me the following 'scraps', probably as a way to help me keep my feet on the ground. Take them as you will. RB

When I Heard the Learn'd Astronomer

When I heard the learn'd astronomer,
When the proofs, the figures, were ranged in
columns before me,
When I was shown the charts and diagrams,
to add, divide, and measure them,
When I sitting heard the astronomer where he
lectured with much applause in the lecture
room,
How soon unaccountable I became tired and
sick,
Till rising and gliding out I wander'd off by
myself,
In the mystical moist night-air, and from time
to time,
Looked up in perfect silence at the stars.

WALT WHITMAN

*This poem soothes me and calms me down
when I feel angry or sad. It makes me think
how lucky I am to be alive; we do not need
learned men to tell us how beautiful the world
is, we can just go outside and look at it.*

ROSAMUND LAWS

Laser Pointer Safety Tips

There was an article lately in Sky & Telescope about laser pointers. It was in the context of how they had been flagged as a potential weapon in a terrorist's arsenal (only in America?) They may be used to bring down an overflying passenger plane by blinding the pilot. (Peter Elston beware!)

I'll just quote one particularly interesting (and chilling) section from the article:

"On January 4, 2005, a New Jersey man was arrested after allegedly shining a laser at a small passenger jet on approach to a nearby airport. The suspect claims he had been showing his daughter the night sky, using his laser pointer to direct her gaze at particular stars and planets. Now he faces a possible jail term and 6 figure fine. The incident sparked a media frenzy, with many articles appearing alongside other news from the War on Terror.

Depending on which newspaper you read or which television station you watch, you may hear that hand held laser pointers are either perfectly harmless or capable of bringing down a jumbo jet...."

The article then goes on to describe the various properties and safety issues (apart from downing a jet) of laser pointers. As some of us have these and use them, here is a list of safety tips taken from the article. Please read and take note:

** Laser pointers are designed to illuminate inanimate objects. Never shine a laser pointer toward any person, aircraft or other vehicle.

** Never look directly into the beam.

** Do not allow children to use one unsupervised. Laser pointers are NOT toys.

** If your telescope is equipped with a laser pointer that has a 'constant-on' setting, do not leave the instrument unattended with the laser switched on.

** Do not aim a pointer towards mirrors or other shiny surfaces. The reflected beam may inadvertently strike someone in the eye.

** Do not aim a laser pointer skyward if you hear or see an aircraft of any kind flying overhead.

It is understood there is a real possibility, based on genuine reasons or paranoia (take your pick) that purchase (or possession) of one of these pointers may be outlawed. So in order to minimise the risk of such an outcome, amateur astronomers should use their common sense and safe practices so as not to give more fuel to the issue.

Light Pollution

Members are reminded to inform guests and ourselves about white lights on observing nights. It is reasonable to allow some use of these on public nights but at club meetings to preserve night vision, flashlights and spotlights could be more restricted. Remember to turn off internal and boot car lights and if arriving or leaving during observing times, drive carefully on parking lights only and park away from the observing group with your car pointed in the direction you will go.

Annual General Meeting

Nomination forms for Management Committee and any items of Society business to be communicated to a committee member.

A Brief Analysis of Matter - Part 3

By Frank Kish

2) ORIGINS OF FINITE AND INFINITE MATTER

General Note on Astronomical Practice:

When scientific papers refer to the Beginning of the *Universe*, these references are synonymous with the word *Cosmos*. This *Beginning*, characterized by the so called *Big Bang*, which is located (in distance) approx. 13.7 billion light years, (i.e. 13.7Gy.) away from us in every direction, and we, the observers, find ourselves at the *center* of the *Universe*. This may sound strange, but that is one of the results of the endless "curved space" of Einstein's Theory of General Relativity. The *Universe* has a smaller entity within, which astronomers refer to as the *Observable Universe*, (approx. 10Gy. away from us), the deep sky that we can see through our telescopes. It extends in every direction, and we, the observers, find again ourselves at the center of this *Observable Universe* as well. The depth of this observable deep sky is gradually becoming greater by the advancement of telescopes and the CCD-Imaging technology.

The Present View of Physical Cosmology:

The *Universe*, and *matter* in it, was "Created by the *Big Bang*.....the *energy* of empty *space* may have planted the *seeds* from which galaxies and large-scale structures could *grow*,...elements, ...stars and planets developed". This introductory quote is an epitome of the present view; (The Astronomy Magazine, Feb. 1998, by R. Kolb.) The above described "*Present View*" is analyzed by the *Philosophical Cosmology* in the following:

1. The Finite Matter: The logical assumption is that if the Universe, with *energy/matter* in it, had one only beginning, at the moment of the *Big Bang* (or repeated beginnings after every recycle mode), then we can call it a *finite Universe*, because it means that the Universe had a *beginning* and probably will have an *end*. This would apply equally to *energy/matter* and *space/time* in it. However, while the assumption attempts to make us believe that the "*finite Big Bang* had the *infinite power*" to create *itself*, the *finite energy/matter*, the assumption becomes a contradiction in terms.

Furthermore:

In the case of a *finite Universe*, what was the *First Origin*, the *Prime Cause*, that is the *reason*, for the *Big Bang* of the Universe, together with *energy/matter* in it, to come into existence in the first place?

Philosophical logic suggests that this *Prime Cause*, the *reason* for its existence, had to come from the *outside* of the *finite Universe* itself, otherwise this would only become a variation on the above contradiction in terms.

2. The Infinite Matter: The obvious alternative to a *finite Universe*, is a self-sustaining, *infinite Universe*, which has never had a *beginning*, other than perhaps in its infinite number of recycling modes, (from "*Big Bang* to *Big Crunch*"). We could assume in this case that the Universe would exist *forever*, and without an *end*.

This would again apply equally to *energy/matter* and *space/time* in it. It would also be obvious that this Universe should possess *in itself* the *infinite power* required for *creating* and *sustaining itself* with an *infinite supply of energy/matter*, both in quantity and quality for ever.

Furthermore: As in the case of a *finite Universe* above, what was the *First Origin*, the *Prime Cause*, that is the *reason*, for an *infinite Universe*, together with *energy/matter* in it, to come into existence in the *first place* (if such ever existed), and what is the *reason* for its *ever-lasting* existence?

Proponents of *infinite Universe* suggest that it must have a *reason* for its existence *within* itself. This means that *energy/matter* has some *super power* to provide this *reason* for itself. Where did this *super power* come from in the first place?

If *energy/matter* has an infinite, *unending* (or infinite recycling) existence, would it not conflict with the *irreversibility* of the **Law of Entropy**, the **2nd Law of Thermodynamics**, that has been accepted by modern Physics as being applicable to our present Universe?

3. The Hybrid Theories of Matter:

These theories may be called anything but complete, they are given such titles as "*semi-finite*", "*recycling with a beginning but no end*", etc.; nevertheless they have one thing in common that they don't consider in their *Models* some or all of the following items:

- a) The question of *First Origin* is excluded, and the Principles of *Causality* are denied.
- b) The *Law of Contingency* with reference to physical matter is not applied.
- c) Some strange explanations are offered for the applicability of the *Law of Entropy*.
- d) The general concept of *Origin* of the Universe misses the logical connection with the problems of the *finite* or *infinite* matter.

To sum it all up:

A sad conclusion is that when considering the *finite* and *infinite matter*, perhaps *Physical Cosmology* alone may never be able to solve

the fundamental mystery of the *first origin* of Universe, nor whether the Universe and matter in it, is *finite* or *infinite*.

The first reason is because *Physical Cosmology* is reluctant to analyze the contradictory implications between the concept of *First Origin* of the Universe and the existence of the *finite* or the *infinite* Universe in the physical reality.

The second reason is because *Philosophical Cosmology* asserts on this subject that the concept of a hitherto unexplained, *self-generating* infinite matter contradicts the *contingent* nature of matter as well as the *Laws of Causality* in the physical reality. (To be continued...)

For Sale!!!!!!!

BRAND NEW

Advanced Series CELESTRON C8N
Newtonian Telescope, 200mm x 1000mm, F5
Note – has mounting rings only – no mount,
tripod or finder scope.

How much? \$400

Contact Bob Monkcom 46259348

What IC This Month

February 21 – March 20, 2005

Overhead at 9.00 pm

On the Northern horizon in the west is Aries, then Aldebaran in Taurus followed by Orion and Sirius. Underneath is Saturn and Gemini ahead of the Beehive cluster and Leo starting to appear on the eastern horizon. Low to the north lie the stars of Perseus and bright Capella in Auriga.

The Southern sky has Canopus rising in the east followed by blue-white 'Roger' in Vela and the False Cross; then Crux the Cross and Alpha and Beta Centauri. High overhead is Achernar the end of the River Eridanus then brilliant white Fomalhaut in the western twilight.

Moon Diary

24/02 Full Moon
04/03 Last Quarter
10/03 New Moon
18/03 First Quarter

Evening Planets

Saturn rises during daylight appearing as a bright star above the twins in Gemini. It remains in Gemini for the whole year, setting this month about 2.30 am. At its brightest for the year, now past opposition, with a light coloured filter to cut down the glare it is a great sight.

Jupiter rises next just as the twilight glow recedes. Situated in Virgo quite near the bright star, Spica, it rises directly east and will glide along overhead all night long. It remains in Virgo till October rising slightly earlier each night. On the 27th February the Full Moon will pass in front of Jupiter at 11 pm

for a rare occultation. Start observing about an hour before, as the glare from the moon may make it hard to find at the last minute.

Around 2.00am **Mars** will ascend into view in the constellation Sagittarius. Just as Saturn is setting in the west, the red planet will be passing through the Sagittarius Star cloud skimming some of the brighter Messier objects. If you really want to see or photograph this you will have to stay up till the early hours as Mars only lingers in Sagittarius till our next meeting.

Venus, Uranus, Neptune and Mercury are all too close to the Sun in either the morning or evening for sensible observing this month, however Mercury makes a brief appearance in March as an evening star.

Comets

K4 is fading from 9 to 10 mag. as it passes northeast through Eridanus.

T4 is predicted to reach 6th mag. passing along a track from Delphinus, Equuleus, Aquarius and Capricornus.

Meteors

Apart from the usual casual shooting star, this month the **gamma Normids** are active from Feb 25 to March 22. Although rates are low, 3-8 per hour, they are mostly yellow to orange with about 10% leaving smoky trails.

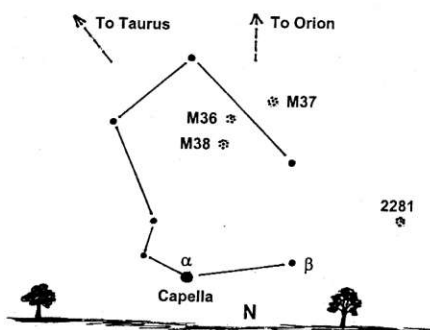
Roll on the end of daylight saving.

Constellation of the Month

Bright flashing fiery light of Capella in the north and one of the horns of Taurus (El Nath) in the south mark out **Auriga - The Charioteer** which is portrayed carrying a she

goat on his shoulder and two or three kids on his arm.

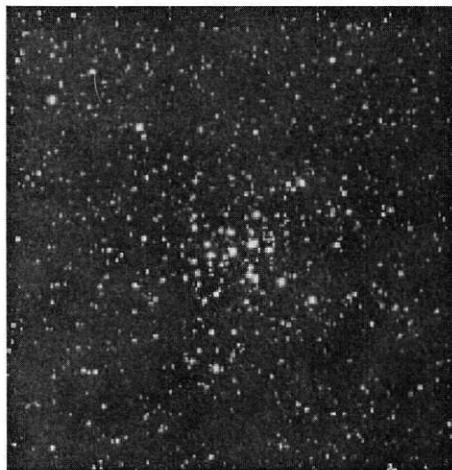
Capella has been called the 'she-goat star' since Roman times. Legend claims that Auriga is Erechtheus, son of the Roman god Vulcan and his wife Minerva, who invented a chariot to move his crippled body about.



Objects of Interest

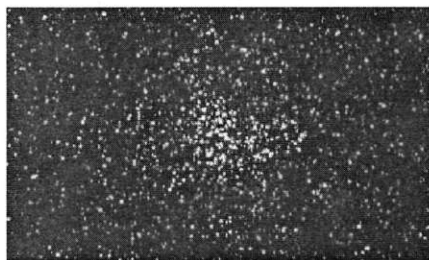
(α Aur) **Capella** - is one of my favourite stars because it is never still. Its coruscating light twinkles and flashes yellow, green, blue, white and orange red. In fact observers down the ages have disagreed about the colour. It is similar to our sun but a binary double and 250 times larger, it is 35 light years away. The next brightest star is to the right of Capella, called **Menkalinin**, 2.1 mag and also a multi star. A faint planetary nebula **IC2149** is just 1° north at 11.0 mag.

M36 - A bright open cluster with pronounced arms of 8th mag stars. A bit like a high-tension electricity pylon, I call him. "Pylon Man". M36 can be found 6-8° directly north of El Nath. On your way you will pass a rich open cluster **NGC1893** of 60 stars with nebulousity at 7.5 mag.



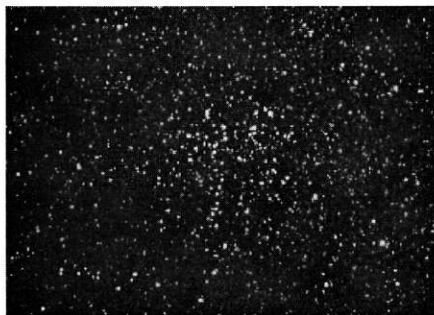
(M36)

M37 – A very large rich open cluster about the size of the moon in 26 mm eyepiece. Misty in appearance.



(M37)

M38 – Smaller than 37 but rich in stars. Some people say it has the shape of the Greek letter pi (π). Less than $\frac{1}{2}^\circ$ south you will see **NGC1907** an open cluster of 30 stars with nebulosity at 8.2 mag.



(M38)

Enjoy your ride with The Charioteer and...

Good seeing

IC

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.

Though there is no hiring fee, members are invited to make a donation of their choice which will go towards the upkeep and upgrade of MacDob