# MACARTHUR ASTRONOMICAL SOCIETY Inc.

Journal



# **PRIME FOCUS**

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## **President's Report**

## Last Time

Welcome to all members and guests. This is our Annual General Meeting tonight and as such and we need to observe the requirements that fulfil our obligations. Elections will take place and reports will be filed, afterwards our guest speaker will be Mr lan Cook, who put his hand up a while back to give us a talk. Should be great, thanks lan. Elsewhere in this journal you will find my yearly report to the members.

Ben Pawlutschenko, from the NSW Astronomical Society shared his knowledge around solar observing at last months meeting, Ben's talk was just fantastic, he included topics such as magnetic flux tubes, coronal loops and positive and negative sunspots.

Ben also explained the research being undertaken by himself and his colleagues,

namely Harry Roberts and Monty Leventhal. I would think anything that you needed to know about the Sun could be easily answered by this team. We are very appreciative that amateur astronomers of such calibre who contribute professionally would take the time to visit us. Thanks Ben

# The Dates

24/04/04	The Oaks
15/05/04	The Forest
17/05/04	Monthly Meeting
22/05/04	Either The Oaks, or Public night
12/06/04	The Oaks
19/06/04	The Forest
21/06/04	Monthly Meeting
10/07/04	The Oaks
17/07/04	The Forest
21/07/04	Monthly Meeting
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The above dates can be taken as confirmed. However, poor weather conditions can result in a cancellation, so contact John Rombi or myself on the day to confirm if it looks doubtful. My mobile is 0410 445 041

## Good News

Our public liability insurance has been renewed for another year, also there looks to be a way of obtaining future insurance by combining with other societies around the country, the costing is very attractive. However, we need to obtain more information before making any decisions.

With the help of Mr Dick Everett I was able to sight one of the comets the other week, it was low on the horizon but still visible in the scope. Should be a real blast in May when it's nice and high. The comet in question was C/2001 Q4 NEAT, and it was in the constellation of Tucana. The thrill of hunting it down in the sky glow just above the tree line was certainly good news, for me anyway!

## More good news

I've been a tad busy on the phones lately and now I can announce the following with a fair amount of certainty

Special guest speaker for our monthly meeting on 21<sup>st</sup> June will be Dr John O'Byrne. John is the senior lecturer at the School of Physics, University of Sydney. I spoke to John last year at the Festival of Astronomy night held at North Sydney and asked if he would like to talk to us. We agreed to follow this up in the first half of this year.

Dr O'Byrne is most highly regarded, recently he gave a talk at the South Pacific Star Party, he was also on duty at the FANS night holding lectures in the main hall. Other societies have also invited John as their key note speaker, he is very busy so I'm really pleased he is taking the time to visit us.

The topic for the talk will be focused on a telescopic theme, excuse the pun. As most of you are aware some large Observatory class telescopes are using the adaptive optics system. The talk will be on the instrumentation that is used and the results that have been gathered to date.

Adaptive optics basically enable a telescope to eliminate bad seeing conditions. It's like having a ground based Hubble Space Telescope right in your own backyard. Also they can build really big ones as they don't have to fly the things into orbit. This should be a fascinating talk

The meeting of 20th September will see the return of Michael West from the Mars Society of Australia. Last year Michael spoke to us about manned missions to Mars as well as developments in the flow on technologies. Remember the Mars skin suit and the endurance habitats in the Australian deserts, to test the mettle of future explorers.

I myself had volunteered for such harsh acclimatization. However, when I found out that there were no separate quarters provided, no mini bar, no beer and not even a hope of dial out pizza I reluctantly withdrew.

Michael will have some updates on the Mars probes, and will primarily give a talk on rocket propulsion and the future of space flight. What a blast!

A colleague of Michael recently toured with Carol Oliver when she addressed an international consortium at JPL. When I spoke to Carol last she was really excited about this. I was also invited by NASA, all expenses paid but had to decline as I had already pre-booked a room in Dubbo, see below for details.

#### Other Things

I recently went bush on a holiday. The locust's decided to rain on my parade somewhat and were prolific between Bathurst, Dubbo and on to Narrabri, wall to wall squashed bugs on the windscreen. I have never seen anything like this before. Well, at least it wasn't a kangaroo decorating the windscreen.

We stopped off at the Western Plains Zoo in Dubbo, an excellent zoo indeed. Then I went up to my friend's farm just west of Wee Waa. I would love to talk to you about the trip but as time is short all I can say is that one could easily turn the trip into an astronomical pub crawl... well, without the pub anyway. Start off at the Dubbo observatory and view the heavens before making your way to the Gilgandra observatory for the next night's show.

Siding Springs will be the next stop for a peek at the big guys, then meander down to the Australia Telescope array at Narrabri to see those radio dishes listening to the stars. It's a great way to link up a trip with an astronomical theme.

Last month's meeting saw a terrific turnout of members attend. We even took some new applications for membership, all in all a great night! Also last months Prime Focus was a very good read indeed. Articles on X-ray astronomy were contributed by lan Cook and John Casey and the article by Bob on navigation to Mars was excellent. Well done guys.

#### Your Indulgence Please

What did catch my eye, so to speak was John Casey's article "More Life Out There." John is mostly unheralded in acknowledgement for his writing. This article was just fascinating and I found that even without an extensive knowledge in science and chemistry I could easily follow where he was taking the reader.

Is there life elsewhere? That's a very big question, like so many other big questions such as what happens to us when we leave this mortal world to the great beyond.

Recently I saw on television the concert for the late George Harrison. George was my favourite member of The Beatles. He wrote songs that engaged you in thinking about life and love and the bigger picture, eg "All Things Must Pass", "Something" and "My Sweet Lord" to name a very small few. His interactions with Indian music and culture gave him insights into a spiritual world and this reflected into his music.

To get back to John's article, he writes "So life is precious and rare, how rare is the question." The events that led to the creation of just the simplest life forms are just staggeringly complex and totally reliant on chance and happenstance. We search the skies for other life forms yet know little about the life forces that drive our own existence.

To get back to my friend George, I saw an interview a while back in which he said there are only three questions you need to ask yourself, "Who am I, What am I doing here, and Where am I going?" These are very big questions. Many times when out in the field with my fellow astronomers we look at the all the stars and marvel in the immensity of it all. Is it all by happenstance, is there a design and purpose to it all?

My wish is that everyone had a great Easter, I know that my kids enjoyed devouring all those Easter eggs and like many of us Easter is was a time get away and enjoy a break. My hope is that in some passing moments we human beings of Earth ponder questions relating to our existence and truly believe that we are precious and rare. We shall continue our search for answers to all those big questions as it's in our nature to do so.

Goodbye, farewell and amen

Noel Sharpe President

## Target Earth.

On the daily basis, about one hundred tons of interplanetary material drifts down to the Earth's surface. Most of the smallest interplanetary particles that reach the Earth's surface are the tiny dust particles that are released by comets as their ices vaporize in the solar neighbourhood. The vast majority of the larger interplanetary material that reaches the Earth's surface originates as the collision fragments of asteriods that have run into one another some eons ago.

With an average interval of about 100 years, rocky or iron asteriods larger than 50 metres would be expected to reach the Earth's surface and cause local disasters or produce the tidal waves that can inundate low lying coastal areas. On an average of every few hundred thousand years or so, asteroids larger than a kilometer could cause Global disasters. In this case the impact debris would spread throughout the Earth's atmosphere, so that plant life would suffer from acid rain partial blocking of sunlight ,and from the firestorms resulting from heated impact debris raining back down upon the Earth's surface.

Since their orbital paths often cross that of the Earth, collisions with near- earth objects have occured in the past and we should remain "alert" to the possibility of future close Earth approaches. At the moment, our best insurance rests with the NEO Scientists and their efforts to first find these objects and then track their motions into the future. We need to first find them, then keep an eye on them.

America at this stage spends about 1 million dollars a year on comet and asteriod detection. However, the southern hemisphere as far as I know does not have a NEO Detection Unit I do realise that the chance of an asteroid or comet impact on the Earth is pretty remote. However, it just could happen? Over the last year or two there have been a few asteroids that have passed about 2 moon distances 800,000 kms from Earth, I remember about a year ago one went past the Earth which was a few kms in diameter. NASA didn't know about it until 2 days after it passed us. They know the orbits of 10% of asteroids and comets. 90% they don't know of...scary 'isn't it? Well, something to think about isn't it?

Lloyd Wright

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# **President's AGM Report**

This report gives us the opportunity to reflect and make comments on the various activities of the society from one AGM to the next, basically covering 12 months.

It's been a year of good observing for most of us, some excellent speakers and some exciting events. Personally it's been a year of much learning as I continue to venture into the world of Astronomy. A very pleasing aspect has been the number of newer members purchasing a first telescope or existing members updating their equipment. Well done to you all.

I'm getting a tad envious at the moment with the number of 2 inch eyepieces being paraded around the place and what about some of those large aperture Go-To scopes just fantastic. We are certainly a growing club with new memberships and we receive a strong level of enquiry from the community. Most communication is via our email address and various phone numbers. At time of writing our website, when up and running, is bound to increase this further.

#### Speakers

Bob Bee - Life cycle of stars Dick Everett - Jupiter's moons, latest news Peter Druery - Black holes, shuttle debris, great slides from the forest. Dr Russell Cannon - large telescopes, Chinese trip, Dover Heights and other things Michael West - Mars Society on developments for a possible manned flight Dr Richard Hunstead Sydney University -Quasars big and small.

lan Cook and Bruce Reardon also spoke to us on various topics Ben Pawlutschenko, NSW astronomical Society - solar observing

I hope I haven't left anyone out, if so please accept my apologies. I think it's great that we have so many great speakers in our own club to call on to address our membership. I also thank the professional astronomers and those who are expert in their chosen field who make time and effort to visit, just fantastic.

#### Field nights

The Forest, we made quite a few visits to the forest, dark skies, great company and a nice cabin to stay over night if you wish. We were blessed with some very fine viewing for the most part, thrown in were some new discoveries, like the magic mushrooms, strange circles in the rocks and worms that glowed green around midnight. We also had our minor dramas like cars getting stuck on dirt mounds, cars not starting next morning, fallen trees and a top up of the water tanks when things got a bit dry.

On a serious note we all need to be a bit careful with those close encounters of the wildlife kind, kangaroos and wombats roam freely and many of us have had a close shave. For those who journey back please take care on the roads and watch those storms. No more exploding trees please as it ruins our night vision as one of our members can attest.

The Oaks, great site but we have had weather problems which cancelled some of our schedule nights. Better luck this year both with the weather and access to the site. Unfortunately some gremlins crept in when we were not looking and ran an active campaign of padlock disruption. The Oaks serves us very well. It's a fair bit closer than the Forest and provides a very useable sky, also it's ideal to visit off schedule.

#### Events

Festival of North Sydney 2003. Great night, good networking including a television appearance by yours truly in which the issue of light pollution received good coverage. The date was Sunday the 20<sup>th</sup> of July and it was attended by well over a thousand members of the public. This was a premier event celebrating the International Astronomical Union's annual conference held in Sydney.

We also did star nights for the girl guides and some international students. I am sure there have been some other events as well but certainly our schedule this year has been a bit easier to handle than bumper year we had before.

Bob Bee ran a successful programme out at the Mt Annan Botanical gardens on Friday nights in November which combined dinner and information about various sky stories, astronomical features and mythological mayhem. Great work

Observatory nights were unfortunately few. Of those nights we had some good crowds and we can be assured that many members of the public support the club in our role of providing this astronomical service. We know that by some advertising on radio, courtesy of David Everett and Bob's own excellent series of Heavens Above! articles in the Chronicle we have the advertising side of things covered. Thanks everyone.

#### Acknowledgements

I'm never comfortable writing about this because I might forget someone who has made an important contribution over the year. If I do please let me know so I can make amends and please accept my sincerest apologies.

John Rombi, starting meetings, the Oaks organiser and padlock specialist. Thanks for all your great support especially when I throw things at you short notice. I can't do it without you - thanks heaps

Ian Cook, looks after our emails courtesy of skyview@zipworld.com.au, he answers many public enquiries and is a great contributor to Prime Focus. He has helped me on numerous occasions when calls from the public make their way to my phone. Unfortunately at times I am not in a position to assist the callers. Also Ian is doing the running with the up and coming web site. Again thanks Ian

Dick Everett - Dick has been kind enough to act in a speaking role on many occasions. Also I am sure that I pass on many thanks from all the members you have helped in accessorising their scopes. Dick always is willing to pass on his great knowledge of the night sky - thanks Dick

Bob Bee - Bob's column in the Chronicle every fortnight is a fantastic avenue in which to reach the public. Also all the work that goes into our own journal is very appreciated. Going forward I am sure that the more contributors we have for the journal would make Bob's workload in the writing department a bit easier. Bob also has been busy in doing various astronomical presentations for the community. Also my particular thanks for being the societies liaison to outside committees, eg FANS and the new insurance discussions. What can I say? Lloyd Wright - Lloyd is a great ambassador for the club and has helped me on many occasions with the Forest and cabin duties. Also thanks to Ned Pastor as well. Lloyd helps with the library and is always around to help with anything I ask. Thanks for all the support.

Peter Druery - Peter has helped out previously with some excellent speaking roles. In June last year he gave us a tour of those small black holes, as well as a grab bag of news. Peter collects and hands back the keys for the log cabin when we go down to the Forest. This is really a big help for us and very much appreciated - thanks Pete.

I know I must have left someone out but please be assured it's just an oversight. The society is only as good as its members, and what a great bunch of members we have. It's a pleasure to belong to such a enthusiastic and vibrant club.

At times I have felt the challenges have outweighed the enjoyment I seek. It should after all be a hobby, to enjoy and participate in, also as a release from work, career and family responsibilities. One of our members said I worry too much. I said it comes with the job. A reply back was it comes with me - wise words. The position of president is very important. Certainly I can take a breather every now and then but I cannot slacken off so to speak.

Some other wise words from another member were that it's not so much a job but a responsibility, and there lies the key to it. Even though there will be challenges ahead I think it is important for me to hold the passion and joy I feel for astronomy and this Society foremost in my mind. This is easily done. I thank you all for allowing me to be involved in the club at the level I currently enjoy. It's been a pleasure to serve.

Yours sincerely Noel

# Alpha Centauri Our Closest Star. A Tripple Star System.

Alpha Centauri is a triple star system', consisting of Alpha Centauri A, Alpha Centauri B and Alpha Centauri C, which is a red dwarf known as Proxima Centauri. Alpha Centauri A & B are components of a binary star. They orbit each other every 80 years or so.

Proxima Centauri takes 500,000 years to do one revolution around Alpha Centauri A & B. Alpha Centauri A & B have mean separation of about 35 astronomical units and at closest approach as 11 astronomical units, one astronomical unit being the distance from Earth to the Sun (150 million kilometres.)

Proxima Centauri is approximately 13,000 astronomical units from A and B. Alpha Centauri is 4.3 light years from Earth, or just over 40 trillion km. If you were on Alpha Centauri looking back at our Sun, our Sun would be a 1<sup>st</sup> magnitude star near the Cassiopeian – Perseus border.

The diameter of Proxima Centauri is approximately 64,000 kms. However, they are not too sure whether Proxima Centauri is part of this system?... mmmmmmm... Interesting...

Lloyd Wright

## What IC This Month April 19 – May 16, 2004

**Overhead at 8.30pm:** Orion in the northwest followed by Gemini, Hydra's head and Leo then Spica above and Arcturus low in the east.

Turning to the south, Canopus and Sirius just past directly overhead, the bright stars of the False Cross, then Crux and the Pointers with the head of Scorpius rising out of the east. There is an interesting line-up of Mars, Venus and Saturn in the north-west on the 6<sup>th</sup> May about 6 pm.

### The Moon Diary

19th April	New Moon tonight
28th April	First Quarter
5th May	Full Moon
11 <sup>th</sup> May	Last Quarter

On 24<sup>th</sup> April the Moon, Mars and Venus will dance in close formation about 7 pm just below Orion.

## **Evening Sky Planets**

Jupiter rises in Leo directly north around 8 pm. One month past opposition the great Jovian disk shines like aircraft lights to the casual observer, as it ends its backward motion and heads off to meet up with Spica later in the year. The planet rises in daylight and sets between 2.30 am and 12 midnight by our next meeting. On the 30<sup>th</sup> April the waxing Moon will pass close by.

Saturn next in line to the west, rises in Gemini in daylight and sets between 9.45 and 8 pm. On 25<sup>th</sup> April "the star with ears" will pass by a quarter Moon. The next month will see the last of good views of Saturn as it progressively sinks into the western atmosphere layer.

Mars begins the month in Taurus but will end in Gemini near Saturn. Rising in daylight and setting between 8.30 and 7.45 pm it will slide by a thick crescent Moon on the 24<sup>th</sup> April.

Venus comes next because its brightness will be hard to ignore. Appearing near Aldebaran and moving higher to meet Mars in the horns of the bull, it will set between 7.45 and 6.45 pm as the month draws on. After the dance with Mars and the Moon on the 24<sup>th</sup> April mentioned above it will reach its greatest brightness for this appearance on 2<sup>nd</sup> May. It will also line up and be equally spaced from, Mars and Saturn on May 11.

## Morning Sky

Mercury appears in Pisces 2 hours before the Sun from late April through most of May. It will reach its furthest distance from the Sun on 15<sup>th</sup> May before reversing to sink into the glare once more.

Uranus and Neptune rise in the mid morning sky and will move into the late evening by the end of May.

#### Meteors

The **Lyrids** peak from  $15^{\text{th}} - 25^{\text{th}}$  April coming from the north east in the morning at 18 ZHR, but the **Puppids** will be better for us. Although their peak during  $15^{\text{th}} - 28^{\text{th}}$  April is only 5-20 per hour they are noted for slow fireballs and smoky trails. Keep your eyes roving between Canopus and Sirius.

## Comets

Q4 NEAT will be an evening object for us and is predicted to brighten to 3<sup>rd</sup> or even 2<sup>nd</sup> magnitude by early May. Setting around midnight by end of April it will move quickly through Hydrus, Horologium, Reticulum, Dorado, Pictor and into Puppis. On May 4 it will be a moon width south of Epsilon Can Major and on the 7<sup>th</sup> 1° NW of M47 in Puppis

**T7 LINEAR** is a morning object appearing from Aquarius and Pisces about 4.30 am. It is predicted to reach 2<sup>nd</sup> or maybe 1<sup>st</sup> magnitude but it will be moving very fast because the Earth is rushing head-on to pass it while the comet speeds on in the direction of Eridanus and Hydra. On May 22<sup>nd</sup>, T7 will be 3° SE of Sirius, and on 23<sup>rd</sup> less then 2° south of Alpha Hydrae.

These are the best comets for some time so they are a gift to us observers as they pass through our neighbourhood.

## **Constellation of the Month**

Virgo is the only female figure in the zodiac and one of only three females in all the constellations. It is the second largest in area, and is removed from the Milky Way so there are no emission nebula or open star clusters, only one globular cluster, and any planetary nebula are very faint. However it lies in an area rich in galaxies known as the Virgo Cluster of Galaxies which is the nearest giant cluster of galaxies to our own Local Group. The majority of text which follows is directly quoted from an article in Prime Focus June 1999 by Bob Bee.

"Images of Virgo are mixed. On one hand it is seen as the Goddess of Justice, holding

scales represented by Libra in the east. On the other hand, it is seen as the Corn Goddess - Demeter, holding an ear of wheat (the star Spica).

Virgo is best known astro-nomically for its cluster of galaxies, which is about 45 million ly away and is contained within an area of approx.  $12^{\circ} \times 10^{\circ}$  (if you overlook M104). There are thought to be over 3000 galaxies within the cluster though most of these are too faint for amateur viewing Some of the brighter ones may be viewed by 150mm reflector on a dark moon less night.

## The Stars:

#### α (Alpha) Virginis - Spica.

As well as being the 16th brightest star in the sky, Spica also serves as a good yardstick for a 1st magnitude star. ie. It is blue-white, 280 ly away and mag. 1.0. Spica is a 'helium' type star with a luminosity of ~ 2300 Suns. Spica has many ancient references from the Egyptians, Greeks, Romans, Syrian, Turks and Persians. Most meanings refer to "an ear of wheat". (RA 13hr 25m, -11°)

β (Beta) Virginis is an unexceptional mag 3.6 yellow star only 33 ly away.

 $\gamma$  (Gamma) Virginis is recognised as one of the finest visual binaries. It is only 36 ly away and consists of two mag 3.6, virtually identical white-yellow F type main sequence stars. They have an orbital period 169 years and the overall brightness is mag 2.8. You will need a telescope aperture larger than 100mm to split them.

 $\delta$  (Delta) Virginis an unexceptional mag 3.6 red giant about 260 ly away.

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ε (Epsilon) Virginis - Vindemiatrix 'The Grape Gatherer'. A G9 class yellow giant 2.8 mag about 100 ly away. ε is a good marker for locating the Virgo Cluster of Galaxies which falls halfway between ε Virginis and β Leonis" (end Quote)

#### The Virgo Cluster of Galaxies.

None of these objects are visible to the naked eye and indeed only one or two would be seen with 7 x 50 binoculars. However it is a significant deep sky field, visible and ideally sited for southern sky observers like us.

Where does one start? Some of the more interesting objects in Virgo are Messiers. One book suggests a start with M59 and 60 simply because they are closest to Vindemia-trix, appear together in a 1° eyepiece field and are easily recognised. The following 4 objects are in a straight line from Vindemiatrix to Dene-bola in Leo, starting right going left



**M59** / 60 4.5° from Vin. WWN. In the eyepiece 60 is bigger and has a close NGC galaxy next to it, on the right of the picture. 59 appears more elliptical and small 25 min away to the lower left.

**M58** A barred spiral. Further to the left just over 1° from 59, a hint of the central bar is possible with 8" telescopes.

**M87** A giant elliptical galaxy, one of the largest in the Cluster. Just under 2° from M58; 7.0 arc min in size. A source of radio

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and X-rays, over 2 trillion times our Sun. Boggling!

M49 is in a different part of the constellation further south on a line between d Virginus and b Leo (Denebola).



We can not leave Virgo with-out making an attempt to see **M104** The Sombrero Galaxy On line between Corvus the Crow and Spica small and dif-ficult to find



A most spectacular galaxy M104 8.0 mag 9\*4 min

This fair maiden has a lot to attract our interest.

Good seeing

IC

# Can We See Black Holes?

Though we cannot see a Black Hole itself (since not even light can escape from the hole's gravitational field) we may see the hole's effects on nearby matter. For example,, if gas from a nearby star was sucked towards the black hole, the intense gravitational energy would heat the gas to millions of degrees. The resulting x-ray emissions could point to the presence of a black hole.

Or if a massive black hole were surrounded by large amounts of orbiting material – gas, dust, even stars – their rapid motion close to to the hole could be observable via shifts in the energy of the radiation they emit. Evidence along these lines is mounting, suggesting that black holes may not be that rare in the universe. However, such evidence remains indirect and therefore inconclusive.

To confirm that black holes actually do exist, we'll need to be able to observe the gravitational waves they produce as they form or interact. If scientists could build gravitational wave detectors of sufficient sensitivity, they should be able to measure the vibrations in space-time generated by black holes as they form from a collapsing star when they 'ingest' large amounts of matter, or if they interact, even collide, with a second black hole or another massive object such as a neutron star. Certain patterns of gravitational waves emitted would reveal the 'smoking gun.'

So far the wavelike disturbances in spacetime have eluded detection. In a relativistic universe, there should be no shortage of places in which to hunt for black holes. Much larger and more sensitive detectors are now under construction. Wit luck, soon gravitation scientists may be shouting EUREKA!.

Lloyd Wright

# **Borrowing MacDob**

The Society's own telescope, MacDob, a 6" Dobsonian, is available for loan to financial members. It is easy to transport, set up and use. If you would like to borrow MacDob for a month, speak to Bob Bee (at Meetings or on 46474335) 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. See Bob after the meeting to make arrangements, or call him before the next

meeting so he can bring it to hand over.

It's a great scope, so why not borrow it?

## Bradfield's 18th

We're not talking about someone's birthday, nor the last hole of a golf course.

We're talking about the New Zealand born Australian (in accordance with common Aussie tradition, we claim him as our own) William A. Bradfield of Yankalilla, South Australia.

Bradfield, an agile 76 year old, has just been credited with the individual discovery of his 18<sup>th</sup> comet. He did so with his 10" reflector, low in the western sky in the constellation of Cetus. (He must have let out a whale of a shout when he found it.)

Because of its close proximity to the Sun, it will be very difficult for amateurs to observe. It reaches perihelion on 17<sup>th</sup> April when it will only be 0.17 AUs from the Sun.

This breaks a kind of draught for Bradfield since it has been nine years since his last comet discovery. His first discovery was in 1972.



William A. Bradfield in 2002 with his 6-inch comet seeker on a homemade mount. The most prolific amateur visual comet discoverer of the 20th century. *Courtesy Katherine Bradfield*.

What I don't understand is ... why name a highway after a comet hunter?

RB 🔳

## **Twin Comets Cometh**

As Ian has mentioned in his "What I See", there are two comets coming to town in April/May. While nothing is certain when it comes to comets, there is every chance of a good show this year. And the big thing is, clouds etc permitting, you may be able to see both on the same night. The good news (for a change) is that the best views will be from the Southern Hemisphere.

If you can read the map below (courtesy of the Sky & Telescope website), it shows the paths and dates of the two comets, C/2001 Q4 NEAT, and C/2002 T7 LINEAR.



The best idea is to keep an eye on the sky maps provided by the astronomy websites. They will give exact locations in the sky for given dates.

Generally, from mid-April to late May, comet LINEAR will move from Pisces to Cetus to Lepus, Canis Major and Puppis. NEAT will be moving from Canis Major in early May through Monoceros andCancer in later May.

This is your BIG chance. Don't blow it! RB

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