



# COSMOS

## News Letter – May 2009

### *Celebrating 2009 International Year of Astronomy*

**R.A.S. Web Site:** Check it out at [www.ras.org.au](http://www.ras.org.au)

#### **RAS Mission Statement**

The Society exists for the enjoyment and promotion of Astronomy by its members. We have links to the Astronomical Fraternity including other Societies, Academic Institutions and major Australian Observatories.



#### **Table of Contents**

RAS Mission Statement.....	1
Presidents Report, by Chris Tacke.....	3
Membership:.....	4
Last General Meeting – April.....	4
Show and Tell:.....	4
In FOCUS: Preparation for a nights viewing -.....	7
News from <a href="http://www.spacedaily.com">www.spacedaily.com</a> .....	8
Last Viewing Night.....	12
Moon Watch.....	13
Viewing Highlights.....	14
Astronomical Calendar Events:.....	15
Society Meetings.....	16
Finding RAS.....	16
RAS Night Sky Viewing.....	16
Society Calendar - 2009.....	17
Membership.....	18
Library & Equipment (Members Only).....	18
Telescope Hire (Members Only).....	18
Newsletter.....	18
Office Bearers 2008/2009.....	18



# Redlands Astronomical Society

Saturn and Horse Head Nebula Images from NASA

ABN: 54 544 328 524

P.O. Box 2048, Wellington Point, Qld, 4160.

## Presidents Report, by Chris Tacke

I hope everyone had a great Easter break. Our family went out to the mountains near Stanthorpe. I should have known that not taking a telescope would mean clear skies. Oh well, there's always next year.

I hope everyone is excited about the society camp at Glengarry in May. The camp will be held on 22/23 May. There are plenty of day time activities at this site and hopefully dark and clear night skies. Feedback from our members suggests a good turnout.

The shuttle program remains on track for the shuttle Atlantis mission to the Hubble telescope set for early May. It's not often we see 2 shuttles prepared for launch at the same time.

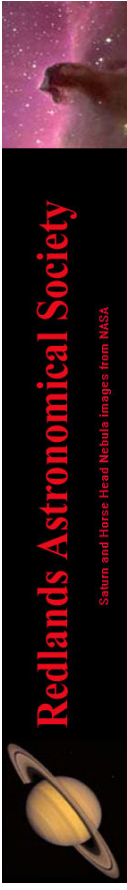
We have a very busy month or so coming up for the society, with 2 viewing nights, the camp, meetings (AGM) and the combined societies meeting in early June.

[www.ras.org.au](http://www.ras.org.au) - The RAS website is fully functional. If you would like to contribute to administration of the site, then I can arrange an account and provide some direction on how to.

## NOTICES:

- Requested Viewing Nights
  - [Cross Roads Capalaba](#) - **May 7<sup>th</sup> (Thursday)**
  - Lota Cub Scouts @ Ormiston - **June 1<sup>st</sup> (Monday)**
  - RAS Astro-Camp is coming – Book it in - **May 22/23 Glengarry**
  - Combines Societies Meeting - **June 5<sup>th</sup>**

Website: [www.ras.org.au](http://www.ras.org.au)



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## Membership:

On a sad note, George has decided to call it a day. We'll miss his friendship, fun and energy; all the best George.

## Last General Meeting – April

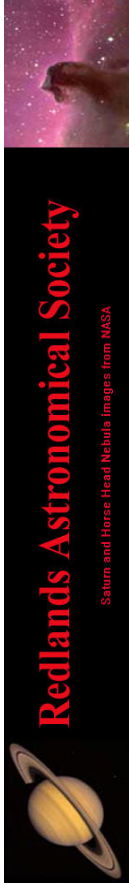
- Conspiracy Theories

## Show and Tell:

- ?

## Coming up Next Meeting:

- AGM
- Why is the sun dying?
- Viewing Night Highlights
- NASA Update



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## RAS ASTROCAMP May 22/23 Glengarry

Here's a reminder for the RAS Astro-camp.

The camp is open to all members/family & friends of RAS. Saturday will be the main camp night, but the facility is booked for the full weekend (Friday night thru Sunday). There are several members arriving late on the Friday evening to make the most of the weekend.

Location: Glengarry (Boys Brigade) on the banks of Atkinson Dam. The Glengarry site is approx 120 kmls from Wellington Point.

### Cost:

The Society has paid the \$100 deposit to hold the site. Attending members will make up the difference between the total cost of the camp less the deposit.

The camp costs per person, per night before deposits are:

- \$9 sleeping in dorms and
- \$8 camping.

We will pay the costs of the camp and recoup monies from attending participants on the weekend.

### Facilities:

- 3 dorm facilities, 2 sleeping 14 and 1 sleeping 12, BYO linen/pillows (mattresses supplied).
- Showers & Toilets, Full kitchen, large fridge and freezer, cutlery, plates, pots, pans etc
- Power for camp sites if required,
- Large Hall/Basket Ball capabilities, Trampoline
- BMX Track (with bikes)
- A small putting course (probably BYO putters and balls)
- Easy access to the dam (They have a couple of sailing cats of you know how to setup
- Canoes for the dam (which seems to have a lot more water these days)
- Obstacle Course
- Blow-Carts are unavailable on this weekend



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Here is a link to their website:

[http://boys.brigadeaustralia.org/wiki.php?act=wiki&p=Glengarry\\_Education\\_Centre:Welcome](http://boys.brigadeaustralia.org/wiki.php?act=wiki&p=Glengarry_Education_Centre:Welcome)

There is no smoking in the buildings and responsible consumption of alcohol is allowed.

It should be getting quite cool by this time of year, so I suspect warm clothing will be the go. You may have to dust off that old beanie for use during the night.

We should have all society Telescopes available on the night, i.e. the Society 10" Mead Schmidt-Newtonian, 5" Orion Maksutov and Sinch DOB Scopes for members to play with.

Power is available on site so we can run a few long power leads to our preferred field location for laptops, motorized mounts etc. Don't forget you red cellophane for your torch and red gel for your laptop.

If we have enough interest I may look at running a Saturday afternoon software demo or an astro-imaging workshop (G-star style, Converting Video (VirtualDubMod), Registax, Photoshop Elements)

### Night Time activities:

- Laser Pen Night Sky Tour
- [www.skymap.com](http://www.skymap.com) walk-thru
- Could be a good time to catch-up on some Messier sightings for your list.
- Viewing, Viewing, Viewing, (need a check list?)

I'll be doing some imaging on the night (pending conditions) for those that would like some hands on experience.

CYA there!



## In FOCUS: Preparation for a nights viewing -

To make the most of anything these days, it is better to plan ahead as opposed to winging things. This applies to a night of astronomical viewing pleasure. Without a plan of attack or program for your nights viewing efforts, there can be a strong tendency to view the same top ten favorites in the sky.

Preparation can be as simple as grabbing the latest night sky map from [www.skymaps.com](http://www.skymaps.com), perhaps target a constellation to focus on, grab a list of favorites from other astronomers, maybe even target a type of astronomical object Galaxies, planetary nebula, planets, comets, messier objects etc.

Here is a large list put together by local astronomer and supernova hunter Peter Marples. It covers a large variety of targets.  
<http://www.sas.org.au/Peter%20Marples/MarplesV8.htm>

You could even grab that unfinished Messier hunt catalog and catch-up on a large number of targets prominent at this time of year.

For those with an Argo Navis or similar GOTO device, you could prepare and upload your own personal night sky tour or use the computers own tour.

Utilising sites like [www.heavens-above.com](http://www.heavens-above.com) will give you other items like comets, satellites, IIS Passovers, Iridium Flares etc. for the week ahead. The following link is for Wellington point, save it as a favourite.  
<http://www.heavens-above.com/main.aspx?Loc=Wellington+Point&Lat=27.483&Lng=153.250&Alt=1&TZ=UCTm10>

I also find playing around on a computer with a planetarium package will also highlight things like transits, occultation's, phases of planets and events like the giant red spot on Jupiter.

So many options to broaden your viewing pleasure.



## News from [www.spacedaily.com](http://www.spacedaily.com)

### New Blow for Dinosaur-Killing Asteroid Theory by Staff Writers

Washington DC (SPX) Apr 28, 2009  
The enduringly popular theory that the Chicxulub [crater](#) holds the clue to the demise of the dinosaurs, along with some 65 percent of all species 65 million years ago, is challenged in a paper to be published in the Journal of the Geological Society on April 27, 2009.

The crater, discovered in 1978 in northern Yucatan and measuring about 180 kilometers (112 miles) in diameter, records a massive extra-terrestrial impact.

When spherules from the impact were found just below the Cretaceous-Tertiary (K-T) boundary, it was quickly identified as the "smoking gun" responsible for the mass [extinction](#) event that took place 65 million years ago.

It was this event which saw the demise of dinosaurs, along with countless other plant and animal species. However, a number of scientists have since disagreed with this interpretation. The newest research, led by Gerta Keller of Princeton University in New Jersey, and Thierry Adatte of the University of Lausanne, Switzerland, uses evidence from Mexico to suggest that the Chicxulub impact predates the K-T boundary by as much as 300,000 years.

"Keller and colleagues continue to amass detailed stratigraphic information supporting new thinking about the Chicxulub impact, and the [mass](#) extinction at the end of the Cretaceous," says H. Richard Lane, program director in the National Science Foundation (NSF)'s Division of Earth Sciences, which funded the research.

"The two may not be linked after all."



From El Penon and other localities in Mexico, says Keller, "we know that between four and nine meters of sediments were deposited at about two to three centimeters per thousand years after the impact. The mass extinction level can be seen in the sediments above this interval."

Advocates of the Chicxulub impact theory suggest that the impact crater and the mass extinction event only appear far apart in the sedimentary record because of earthquake or tsunami disturbance that resulted from the impact of the [asteroid](#).

"The problem with the tsunami interpretation," says Keller, "is that this sandstone complex was not deposited over hours or days by a tsunami. Deposition occurred over a very long time period."

The study found that the sediments separating the two events were characteristic of normal sedimentation, with burrows formed by creatures colonizing the ocean floor, erosion and transportation of sediments, and no evidence of structural disturbance. The scientists also found evidence that the Chicxulub impact didn't have the dramatic impact on species diversity that has been suggested.

At one site at El Penon, the researchers found 52 species present in sediments below the impact spherule layer, and counted all 52 still present in layers above the spherules. "We found that not a single species went extinct as a result of the Chicxulub impact," says Keller.

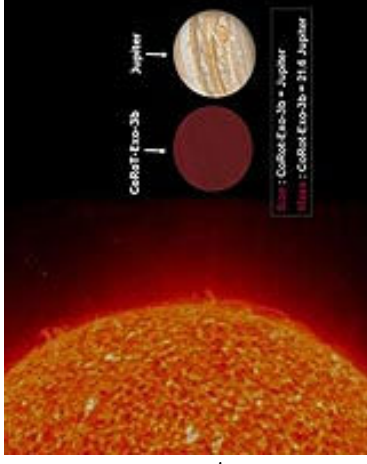
This conclusion should not come as too great a surprise, she says. None of the other great mass extinctions are associated with an impact, and no other large craters are known to have caused a significant extinction event.

Keller suggests that the massive volcanic eruptions at the Deccan Traps in India may be responsible for the extinction, releasing huge amounts of dust and gases that could have blocked out sunlight and brought about a significant greenhouse effect.



## Missing Planets Attest To Destructive Power of Stars' Tides by Staff Writers

Seattle WA (SPX) Apr 28, 2009  
During the last two decades, [astronomers](#) have found hundreds of planets orbiting stars outside our solar system. New research indicates they might have found even more except for one thing - some planets have fallen into their stars and simply no longer exist.



The idea that gravitational forces might pull a planet into its parent star has been predicted by computer models only in the last year or so, and this is the first evidence that such planet destruction has already occurred, said University of Washington astronomer Rory Barnes.

"When we look at the observed properties of [extrasolar planets](#), we can see that this has already happened - some extrasolar planets have already fallen into their stars," he said. Computer models can show where planets should line up in a particular star system, but direct observations show that some systems are missing planets close to the stars where models say they should be.

Barnes, a postdoctoral [astronomy](#) researcher with the Virtual Planet Laboratory at the UW, is a co-author of a paper describing the findings that was accepted this month for publication in *Astrophysical Journal*. Lead author Brian Jackson and co-author Richard Greenberg are with the Lunar and Planetary Laboratory at the University of Arizona. The research involves planets that are close to their parent stars. Such planets can be detected relatively easily by changes in brightness as their orbits pass in front of the stars.

But because they are so close to each other, the planet and star begin pulling on each other with increasingly strong gravitational force, misshaping the star's surface with rising tides from its gaseous surface. "Tides distort the shape of a star. The bigger the tidal distortion, the more quickly the tide will pull the planet in," Jackson said.



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Most of the planets discovered outside of our solar system are gas giants like Jupiter except that they are much more massive. However, earlier this year astronomers detected an extrasolar planet called CoRoT-7 B that, while significantly larger than our planet, is more like Earth than any other extrasolar planet found so far.

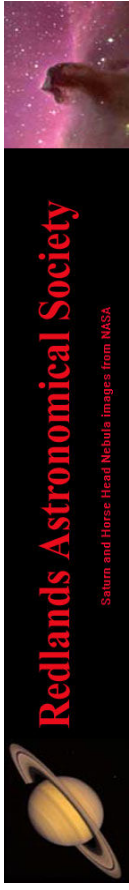
However, that planet orbits only about 1.5 million miles from its star, much closer than Mercury is to our sun, a distance that puts it in the category of a planet that will fall into its star. Its surface temperature is around 2,500 degrees Fahrenheit "so it's not a pleasant environment," Barnes said, and in a short time cosmically - a billion years or so - CoRoT-7 B will be consumed. The destruction is slow but inevitable, Jackson said. "The orbits of these tidally evolving planets change very slowly, over timescales of tens of millions of years," Jackson said. "Eventually the planet's orbit brings it close enough to the star that the star's gravity begins tearing the planet apart.

"So either the planet will be torn apart before it ever reaches the surface of the star, or in the process of being torn apart its orbit eventually will intersect the star's atmosphere and the heat from the star will obliterate the planet."

The researchers hope the work leads to better understanding of how stars destroy planets and how that process might affect a planet's orbit, Jackson said. The scientists also say their research will have to be updated as more extrasolar planets are discovered. NASA, which funded the research, recently launched the Kepler telescope, which is designed specifically to look for extrasolar planets that are closer in size to Earth.

Jackson hopes new observations will provide new lines of evidence to investigate how a star's tides can destroy planets.

"For example, the rotation rates of stars tend to drop, so older stars tend to spin more slowly than younger stars," he said. "However, if a star has recently consumed a planet, the addition of the planet's orbital angular momentum will cause the star to rapidly increase its spin rate. So we would like to look for stars that are spinning too fast for their age."



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### Last Viewing Night

The skies are becoming more favorable as we cool down. Last meeting saw scattered cloud quickly clear for a good night. We had 5 scopes in action. Be aware its getting cold at night and warm clothes are essential. We stayed until just before 10pm.

We had a good look around Saturn and moons, M104, Centaurus A, Omega Centauri, the doubles and triples in CRUX, the carbon star close in to Mimosas, Jewel Box, Eta Carina and the Homunculus Nebula and Galaxies M65/M66 in Leo. Scorpio is rising now and with Sagittarius (teapot) not far behind brings many targets for autumn.

Joy and I attended the morning ANZAC service @ Cleveland; we enjoyed clear views of Venus and Jupiter for early risers.

Hope to see you all next time.



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## Moon Watch

Moon Phase Calendar

Sun	Mon	Tues	Wed	Thur	Fri	Sat
3 ☾	4 ☾	5 ☾	6 ☾	7 ☾	8 ☾	9 ☾ <small>First, 06:46</small>
10 ☾	11 ☾	12 ☾	13 ☾	14 ☾	15 ☾	16 ☾ <small>Full, 14:03</small>
17 ☾ <small>Last, 17:27</small>	18 ☾	19 ☾	20 ☾	21 ☾	22 ☾	23 ☾
24 ☾ <small>New, 22:12</small>	25 ☾	26 ☾	27 ☾	28 ☾	29 ☾	30 ☾
31 ☾ <small>First, 13:24</small>	<b>May 2009</b>					

Moon Phase Calendar

Sun	Mon	Tues	Wed	Thur	Fri	Sat
7 ☾	8 ☾ <small>Full, 04:15</small>	9 ☾	10 ☾	11 ☾	12 ☾	13 ☾
14 ☾	15 ☾	16 ☾ <small>Last, 08:16</small>	17 ☾	18 ☾	19 ☾	20 ☾
21 ☾	22 ☾	23 ☾ <small>New, 05:37</small>	24 ☾	25 ☾	26 ☾	27 ☾
28 ☾	29 ☾ <small>First, 21:30</small>	30 ☾	<b>June 2009</b>			



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## Viewing Highlights

### Planets

**Mercury:** Moves into inferior conjunction this month and isn't worth a look.

**Venus:** accompanies mars for most of this month. Look for an interesting triangle on the 21<sup>st</sup> where the Moon, Mars and Venus play nicely together.

**Earth:** are we about to enter the next mini ice age due to extended solar minima, it has happened before; stay tuned.

**Mars:** Rising just before 4am staying in Pisces during the month.

**Jupiter:** Rises in Capricorn before Midnight by the end of the month. Jupiter also has a close call with Neptune during the last week of the month.

**Saturn:** Now well past opposition is my favourite planet. Rising under the sign of Leo, Saturn moves ever closer to its side-on presentation for September this year.

**Uranus:** rises by 1am at month end.

**Neptune:** The blue planet pushes ahead of Uranus and rises by 11pm by month end. Watch for a close encounter with Jupiter towards month end.

**Dwarf Planets:** Pluto rises in Sagittarius by around 7pm. Pluto will be in opposition next month and plays in a busy part of the night sky.

**Deep Sky:** Centaurus A, Omega Centauri, Vela, M44, The next few months are great for chasing galaxies in Leo, Virgo and Coma Berenices.

**Constellations:** Leo, Cancer, Gemini, Corvus, Virgo, Coma Berenices, Crux, Vela, Carina, Centaurus, ...



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## Astronomical Calendar Events:

### May 2009

- May 01 - 60th Anniversary (1949), [Gerard Kuiper's Discovery of Neptune Moon Nereid](#)
- May 02 - [Asteroid 2009 HG21 Near-Earth Flyby \(0.044 AU\)](#)
- May 04 - 20th Anniversary (1989), [Magellan Launch \(Venus Orbiter\)](#)
- May 05 - [Eta Aquarids Meteor Shower Peak](#)
- May 07 - [Progress M-02M Soyuz U Launch \(International Space Station 33P\)](#)
- May 08 - [Asteroid 6 Hebe At Opposition \(9.9 Magnitude\)](#)
- May 11 - [STS-125 Launch](#), Space Shuttle Atlantis, [Hubble Space Telescope Servicing Mission #4](#)
- May 14 - [Herschel/ Planck Ariane 5 Launch](#)

### June 2009

- Jun 05 - [Venus At Its Greatest Western Elongation \(46 Degrees\)](#)
- Jun 13 - [STS-127 Launch](#), Space Shuttle Endeavour, Japanese Experiment Logistics Module - Exposed Section (ELM-ES) (International Space Station 21/A)

Refer to the JPL Calendar for more events and event details.

<http://www2.jpl.nasa.gov/calendar/>



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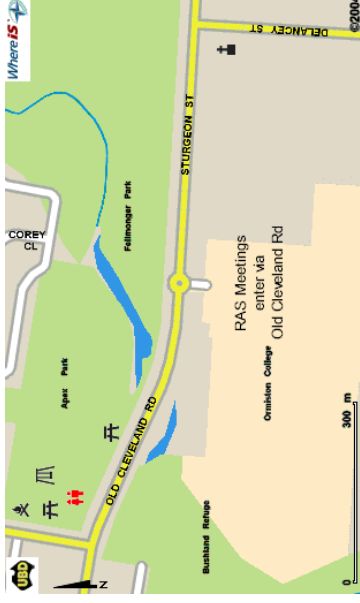
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## Society Meetings

The Society meets at 7:30pm on the **2nd** Tuesday of the month at Ormiston College in the Music Room. Visitors welcome. A supper charge of \$2 applies.

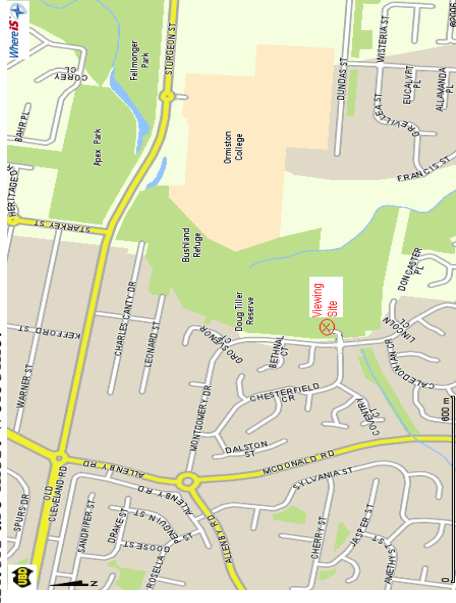
## Finding RAS

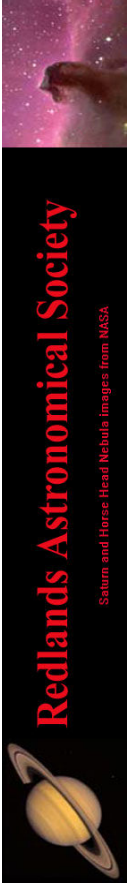
Enter the College via the lower gate at the roundabout in Sturgeon Street. Walk up the ramp/steps beside the Lingo Lin Hall. Our meeting room is ~25m from the Hall entrance.



## RAS Night Sky Viewing

Sky viewing evenings are held at 7:30pm on the **3rd** Tuesday of the month at the Doug Tiller Reserve, Montgomery Drive, Wellington Point. Look for our sign near the Amenities block. Our Back-up night for bad weather is the following Thursday. Visitors are most welcome.





# Redlands Astronomical Society

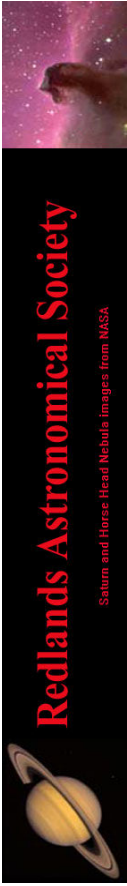
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## Society Calendar - 2009

- May
  - 5<sup>th</sup> - Committee Meeting
  - 7<sup>th</sup> - **CROSSROADS Viewing**
  - 12<sup>th</sup> - Society Meeting - AGM
  - 19<sup>th</sup> - Viewing Night
  - 22/23<sup>rd</sup> - RAS Astro Camp**
- June
  - 1<sup>st</sup> - **Lota Cubs @ Ormiston**
  - 2<sup>nd</sup> - Committee Meeting
  - 5<sup>th</sup> - **Combine Societies**
  - 9<sup>th</sup> - Society Meeting
  - 16<sup>th</sup> - Viewing Night
- July
  - 7<sup>th</sup> - Committee Meeting
  - 14<sup>th</sup> - Society Meeting
  - 21<sup>st</sup> - Viewing Night
- August
  - 4<sup>th</sup> - Committee Meeting
  - 11<sup>th</sup> - Society Meeting
  - 14<sup>th</sup>-23<sup>rd</sup> - **QLD Astrofest**
  - 18<sup>th</sup> - Viewing Night
- September
  - 1<sup>st</sup> - Committee Meeting
  - 8<sup>th</sup> - Society Meeting
  - 15<sup>th</sup> - Viewing Night
- October
  - 6<sup>th</sup> - Committee Meeting
  - 13<sup>th</sup> - Society Meeting
  - 20<sup>th</sup> - Viewing Night
- November
  - 3<sup>rd</sup> - Committee Meeting
  - 10<sup>th</sup> - Society Meeting
  - 17<sup>th</sup> - Viewing Night
- December
  - 1<sup>st</sup> - Committee Meeting
  - 8<sup>th</sup> - Society Meeting
  - 15<sup>th</sup> - Viewing Night



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## Membership

Membership enquiries should be directed to the Treasurer. We offer Student (\$15), Adult (\$25) and Family memberships (\$40) memberships.

## Library & Equipment (Members Only)

Books, charts, videos, slides & magazines etc are available for loan to members. If any members see or hear of any multimedia material that they would like purchased for our library, please let the committee know.

For those special occasions, the society has a Mead 10 Inch Schmidt Newtonian Scope mounted on a go-to motorized LXDS55 German equatorial mount.

## Telescope Hire (Members Only)

The Society has an 8" (204mm) Dobsonian and 5" (127mm) Orion telescope available for hire to members for \$10 per month. See Chris Tacke or Rod Allison for availability.

## Newsletter

Our COSMOS newsletter is posted or emailed to Members prior to each meeting. Monthly sky viewing highlights are typically discussed at each monthly meeting time permitting.

## Office Bearers 2008/2009

- President: Chris Tacke: (07) 3207 2818, 0410 444 702
- Vice President: George Nicholls: (07) 3286 7005, 0438 411 655
- Secretary: Rosalind Wyatt: (07) 3207 1827
- Treasurer: Rod Allison: (07) 3822 2991
- Committee: Richard Drennan
- Committee: Stuart Scanlan
- Cosmos Editor: Chris Tacke