



# SCORPIUS

THE JOURNAL OF THE  
MORNINGTON PENINSULA ASTRONOMICAL SOCIETY INC.

Volume XX, No. 4 (September 2011)

The Mornington Peninsula Astronomical Society (formerly the Astronomical Society of Frankston) was founded in 1969 with the aim of fostering the study and understanding of Astronomy by amateurs and promoting the hobby of amateur Astronomy to the general community at all levels.

The Society holds a focused general meeting each month for the exchange of ideas and information. Regular public and private observing nights are arranged to observe currently available celestial objects and phenomena. In addition, the society encourages the services of its members for educational presentations and observing nights for schools and community groups.

starmus festival

June 20 - 25, 2011 - Tenerife, Canary Islands, Spain

## Celebrating 50 years of manned space exploration: STARMUS Festival

2011 has been a big year for MPAS member Alex Cherney. About the time we were hosting VASTROC (to be covered in a later Scorpius), Alex's hard work was coming into the public and astronomical community light. This has culminated with Alex winning multiple astrophotography awards this year, including a trip to the Starmus Festival, back in June. Here is a report from Alex about his trip...



Insert Image, Right to left: Francisco Sánchez (IAC), Garik Israelian (IAC), Robert Williams (IAU), Juan Ruiz (ACIISI), Buzz Aldrin, Alexei Leonov

I spent an incredible week on Canary Islands being a lucky winner of astro-photography contest with the all expenses paid trip to the STARMUS festival and one hour on 10.4m GranTeCan telescope as a prize. After 36-hour flight I landed safely on Tenerife Island and checked in to a very nice hotel right on the beach. The festival was to start next day and I had some time to relax.

Kathryn Gray, a girl who recently discovered a supernova opened the festival and was followed by Dr. Robert Williams, the president of IAU presenting the "Five Key Astronomical Discoveries of the Past 50 Years".

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# what's on?

Need to know more about what's going on? Then download the full edition of the Scorpius newsletter from [www.mpas.asn.au/MembersArea/scorpius/scorpius.htm](http://www.mpas.asn.au/MembersArea/scorpius/scorpius.htm)



## Our Next Public Viewing Night...

**Friday 7th October at The Briars (8pm).**

October's regular Public Viewing Nights at The Briars, starting at 8pm, and held regardless of the weather. As usual, a large turnout is expected so we will need at least 6 scopes.



## Our Next General Meeting...

**Wednesday 21st September at The Peninsula School (8pm).**

Session 1 - Dr. David Floyd from Monash Uni. "What Black Holes Eat for Breakfast".  
Session 2 - Open Forum and 'Sky for the Month'

## Society Calendar...

**Friday 16th Sept** - Balcolme Grammar School Viewing Night at their school (389 Nepean Hwy in Mt. Martha Melways Ref 151/C2). 7pm start

**Tuesday 4th October** - Talk to Skeptics - Peter Lowe is giving an invited talk - "A History of Astronomical Armageddon".

**Sunday 9th October** - Solar Observing at The Australia Gardens, Cranbourne. The society has been asked to participate in the gardens Spring Activities program. Members are welcome to bring telescopes for solar observing.

**Wednesday 19th October** - October's General Meeting (Speaker TBA).

**Tuesday 25th October** - School Camp at the Briars, 8pm start.

**Friday 7th November** - Public Viewing Night. 8pm start.

**Saturday 12th November** - Mentone Grammar School Viewing Night at Sykes Camp in Shoreham (74 Marine Pde, Shoreham Melways Ref 256/J7). 8pm start.

**Wednesday 16th November** - Annual General Meeting (Speaker TBA)

**Friday 2nd December** - Public Viewing Night at the Briars. 8pm start.

**Saturday 10th December** - Christmas Party/Viewing Night at the Briars.

*Be sure to subscribe to Yahoo's E-Scorpius emails for the latest society events updates*

## Our Next Committee Meeting - September 28th @ The Briars (8pm)

### 2011 Society Calendar

Need to look further ahead to see what is happening in 2011? Then the MPAS 2011 Calendar is what you need. For the full listing of this year's society events, go to the MPAS website, and download the calendar from *Upcoming Events* page, or visit E-Scorpius and download from the online files section, under *Calendars*.



The Committee and Society are pleased to welcome the following new members.

Wishing you all clear skies.



Hedley Family - Stuart, Jane, Daniel, & Owen

Nicole Callaghan  
Ben Perry  
Ron Marshall

Dr. David Brownhill  
Peter Reichelt  
Trish & Gary Fowler



# General Meeting

## August's General Meeting

August 17th, 2011

At the August General Meeting (which was also our National Science Week event for 2011), Alex Cherney's gave an overview of his trip to the Canary Islands. Alex had won the Overall Prize for the Starmus Astrophotography Competition.

The Starmus Festival is a unique scientific, artistic and musical event that took place in the Canary Islands, a touristic and astronomical paradise in Spain. These islands host two of the most advanced astronomical observatories in the world. The Festival celebrates astronomy during five days of recreational and informative activities. The festival includes talks, space-art, astrophotography, exhibitions, documentaries, star parties and conferences plus a stellar cast of musicians, including the band Tangerine Dream.

The festival was timed to honor the legendary Cosmonaut Yuri Gagarin, who became the first man in space on 12 April 1961 the exhibition was a globe event of astronomy and space sciences.

Alex was presented with his astrophotography prize and had the opportunity to meet many of the Soviet, American and European astronauts including Neil Armstrong and Alexei Leonov. Since then Alex has been in great demand by the local media and as a speaker at various astronomical events.

*(Alex's 'Starmus Festival' report in this begins on Page 1)*



Alex with his daughter Milana



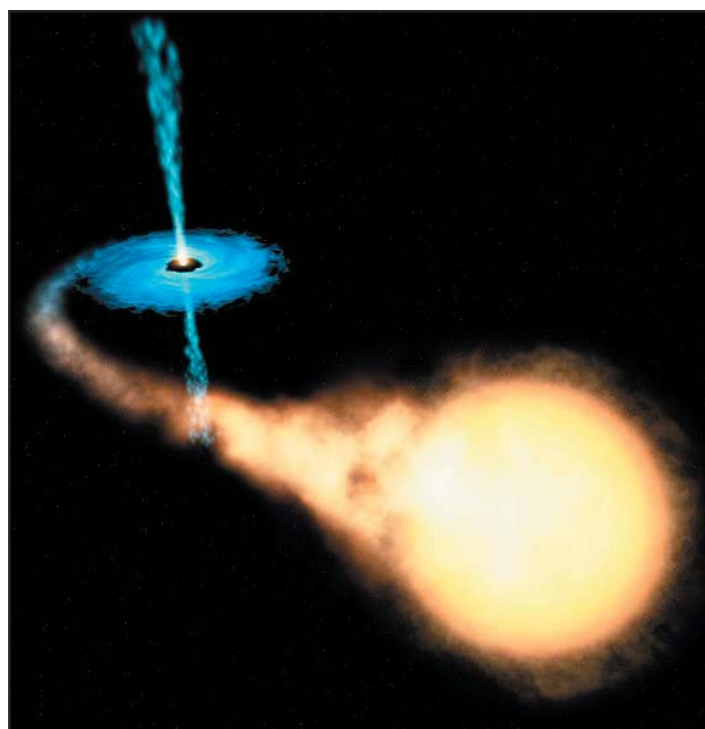
From Left to Right: Alexei Leonov, Neil Armstrong, Buzz Aldrin, Charlie Duke, Victor Gorbatko, Bill Anders, Yuri Baturin, Claude Nicollier, Jim Lovell



Our invited speaker was Dr. Duncan Galloway who talked about his work on X-ray binaries stars. Coincidentally Duncan was at the Canary Island observatories at the same time as Alex. X-Ray binaries are high energy objects consisting of high mass binary stars.

One of the stars has undergone collapse into a neutron star and matter is streaming off the surface of the companion star onto the surface of the neutron star in the process producing X-Rays from the resultant hotspot. By studying the variability and spectra of these X-Rays it is possible to deduce the physical characteristics of the binary system as well as some of the properties of the neutron star.

As an added extra, Greg Walton exhibited his new collapsible, "suitcase" Dobsonian telescope that created a lively discussion of the benefits of alternate telescope designs.





## Celebrating 50 years of manned space exploration: STARMUS Festival

*(Continued from Page 4)*

On Sunday I flew to Roque de los Muchachos Observatory on La Palma Island for the observation night at the GranTeCan. It was most unforgettable experience.

Being on the volcanic peak 2,267 metres and above clouds, the chances of good weather at night were rather good and the Weather Gods did not disappoint.

I arrived to the telescope in the evening with the astronomer on duty and we started preparing the observation plan. After long consideration back home, I chose Arp84 and the primary object for the observation.

When the twilight ended the telescope was pointed at the pair of galaxies and we took a first few shots to position it in the 7.8' field of view.

Then the imaging sequence with green, red, infrared, H-alpha and SIII filters was executed flawlessly. The seeing varied in 0.8-1 arcseconds and the images turned out great.

The next day I had a tour of the observatory visiting the MAGIC, a pair of 17m Gamma Ray photon detector dishes, Swedish Solar Observatory and 2.54m Isaac Newton Telescope.

It was a truly great event and I am still suffering from STARMUS withdrawal symptoms.

*Alex Cherney*  
July '11

Picture: ARP 84, draft processed image with green, red and infrared images combined

## US Manned Space Program Declines

The Space Shuttle Endeavour has completed the last shuttle supply trip to the International Space Station (ISS). This flight ends the US shuttle program and effectively terminates the US manned space efforts. All the Space Shuttles will be handed over to various organizations as museum exhibits.

The US has decided to hand over manned space exploitation to private enterprise while continuing its exploration programs using robotic vehicles. The ISS will continue to operate supplied by Russian, European and US private companies. Its operational life is limited however with plans to de-orbit the station around 2020.

Unless financially viable uses can be found for it, this phase of manned space occupation will come to an end.

Unfortunately the next automated supply module failed to reach orbit which further jeopardizes the station's future. Unless the next supply missions succeed it may become necessary to abandon the station and allow it to operate in automatic mode.



Image Credit: © 2011 NASA

## Mars Opportunity Rover Reaches Endeavour Crater

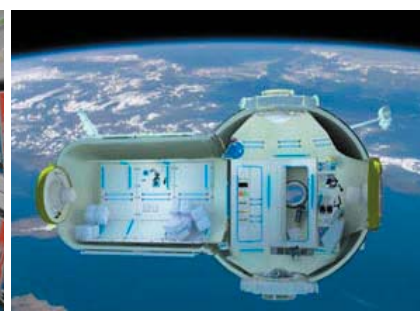
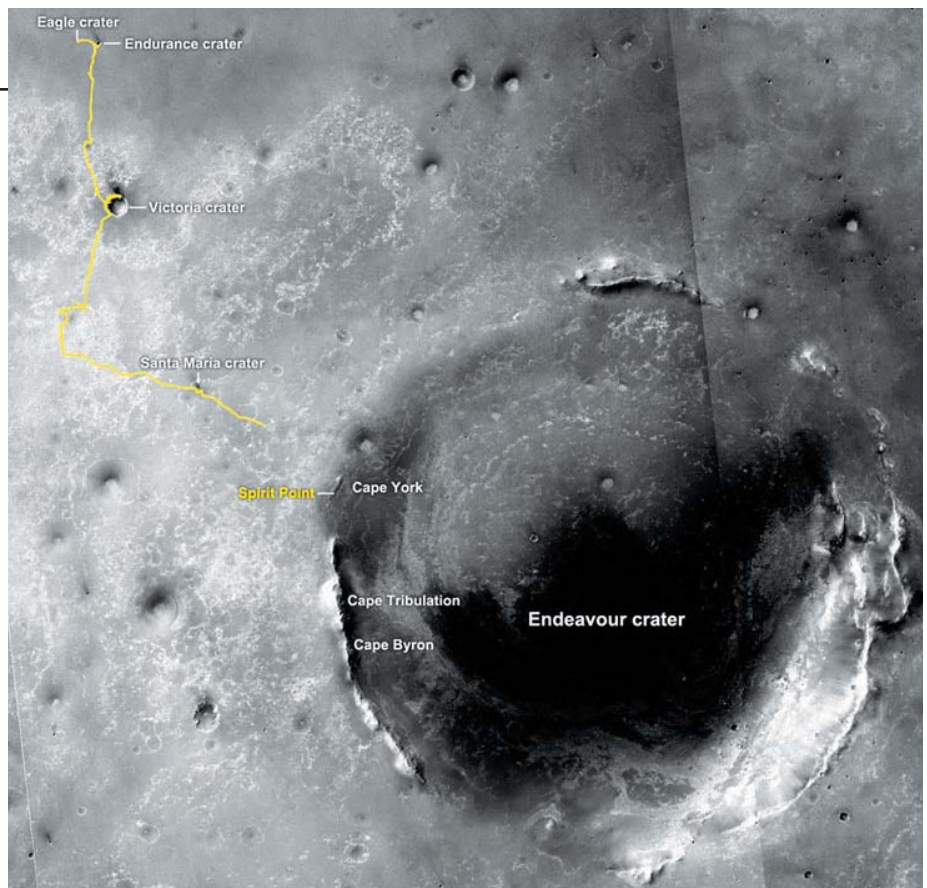
The Mars Opportunity rover arrived three weeks ago at the rim of the 22-kilometer-wide Endeavour crater and has found the surface composition to be different from anything seen in its 7.5 years on Mars.

The first rock compositions are similar to some volcanic rocks, but there's much more zinc and bromine than we've typically seen.

Observations by Mars orbiters suggest that rock exposures on Endeavour's rim date from early in Martian history and include clay minerals that form in less-acidic wet conditions, possibly more favorable for life.

Discontinuous ridges are all that remains of the ancient crater's rim. The ridge at the section of the rim where Opportunity arrived is named "Cape York." A gap between Cape York and the next rim fragment to the south is called "Botany Bay."

Opportunity drove about 21 kilometers to reach the Endeavour crater from Victoria crater. All up it has driven 33.5 kilometers since landing on Mars.



## Russian Space Hotel Unveiled

The Russian firm Orbital Technologies has unveiled plans for an orbital hotel by 2016. The first module will measure about 20 cubic meters, have four cabins and will be able to hold up to seven passengers.

Orbital Technologies is a subsidiary of partly state-owned RKK Energia, which helped send

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## Russian Space Hotel Unveiled (cont.)

space tourists to the International Space Station.

Its hotels main purpose will be space tourism. It will be designed and built in such a way that will provide the most comfortable conditions possible for the tourist's space stay. It will not be luxurious but will provide a space travel experience. The hotel is aimed at wealthy individuals and those working for private companies who want to do space research.

Initially the cost of a trip to the hotel will be \$50- to \$60-million, which is about the same cost as a flight to the International Space Station. Eventually the price of a five-day stay at the orbital hotel for a space tourist is expected be about \$1 million.

## Itokawa Asteroid

A space mission to a nearby asteroid launched in 2005 has yielded some interesting clues about Earth's early formation. Japanese mission scientists report in the journal Science that despite retrieving a very small sample from the nearby Itokawa asteroid, the knowledge they gained is huge.

"This is a great achievement for the Japan Aerospace Exploration Agency," said Humberto Campins, a professor at the University of Central Florida and international expert on asteroids and comets.

"The analysis of the Itokawa asteroid sample illustrates the wealth of information that can be obtained even from very small samples and sets the stage nicely for NASA's OSIRIS REx mission, which is to sample a more primitive asteroid. That asteroid should help us understand the role asteroids played in the origin of Earth's oceans and life."

What scientists found in the Itokawa sample is unequivocal evidence that this type of asteroid is the parent of ordinary chondrites - the most common type of meteorites found on Earth. Space weather morphs asteroid fragments and when they enter Earth's atmosphere they burn up as meteors, changing their chemical nature a bit. That's why they are referred to as meteorites.

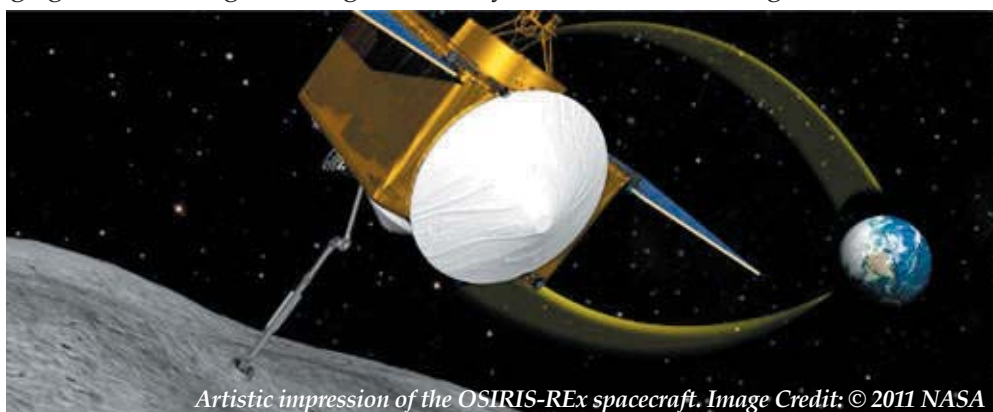
The Japanese's pristine sample has helped distinguish the original material on the rock and how it changed when it entered Earth's atmosphere. That is helpful to understanding the origin and evolution of the planet and the solar system.

Although technical glitches caused the Japanese space mission to collect a smaller sample size than had been intended, Campins said the knowledge gained offers great insight and only makes him more eager to see NASA's own asteroid mission take place.

The OSIRIS-REx mission, which targets an older and more primitive asteroid, is scheduled to launch in 2016. Campins is part of that scientific team and believes a sample collected may hold important clues to understanding the illusive question of how the Earth got its oceans.

He has reason to believe water on Earth may have originally come from a primitive asteroid. Campins made international headlines in 2010 when he discovered evidence of water ice on two other primitive asteroids based on long-range observations. OSIRIS REx is an opportunity to potentially confirm those findings through a hands-on sample.

"It's very exciting," Campins said. "I just can't wait to see what we find and what surprises Mother Nature has in store for us."



Artistic impression of the OSIRIS-REx spacecraft. Image Credit: © 2011 NASA

## DAWN Orbits Asteroid Vesta

The Dawn space probe has successfully completed the first orbital phase of its exploration of the asteroid Vesta. Most of August was devoted to a first survey orbit at an altitude of about 2,700 kilometers. The orbit took about 69 hours. Vesta rotates much faster, turning once on its axis every 5 hours, 20 minutes.

The spacecraft is in a polar orbit and took seven orbits to fully photograph Vesta's sunlit surface.

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## DAWN Orbits Asteroid Vesta (cont.)

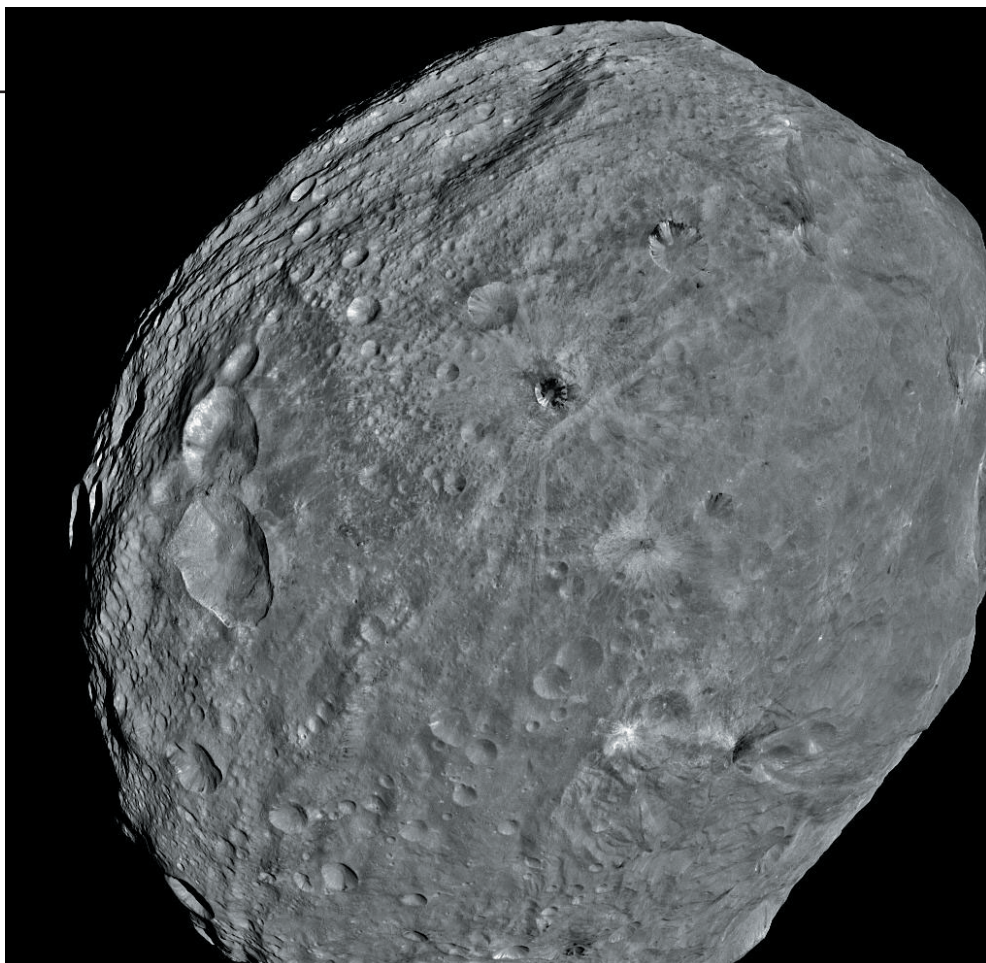
At present Vesta's seasons are such that right now, the southern hemisphere is facing the sun, so everywhere between about 52 degrees north latitude and the North Pole is in darkness leaving about 10% to photograph in the 2012 northern summer.

So far the space probe has collected some 3 million spectra and has photographed the current sunlit 90% at least five times. This far exceeds the initial mission objects. With pictures taken from multiple angles, stereo views can be constructed; and images at different times allow features to be observed under varied lighting conditions. All of the camera's color filters were used, providing coverage in the near infrared and visible.

Until recently, Vesta was known as little more than a smudge of light, but now scientists have more than 2,800 photos from this first survey.

In the survey orbits, Dawn was 2,700 kilometers above Vesta. Its next orbital target lies at an altitude of about 680 kilometers. This lower orbit is designed to optimize scientific investigations by changing the illumination angles presented to the sensors.

Vesta is currently 1.35 AU (about 200 million kilometers) from Earth, or some 500 times as far as the moon. Radio signals take about 11 minutes to reach the probe.



*Above & Below Pictures: The latest up close images of Vesta from the Dawn Spacecraft*



*Above Picture: An artist's impression of the Dawn spacecraft in the Asteroid Belt*

# Society Pictures

## Annual General Meeting - Committee Elections Wednesday, 16th of November, 2011.

Have you considered joining the society committee?

The Mornington Peninsula Astronomical Society operates because we have a committee of management responsible for the general operation of the society. We're always on the look out for interested persons who can contribute to the society's success.

The Society's committee is structured under the constitution and has a number of specific officer positions together with a number of general committee members. Each committee member takes responsibility for handling some aspect of the society's business. The President and Vice President are responsible for the general planning and operation of the Society's business and represent the society to the members, other societies and the general public. The Secretary is the formal contact point of all formal society business and maintains the records of the society. The Treasurer monitors the society financial status and handles the various money transactions required.

Other committee members provide logistical support for the various society activities & development programs. These include :

- Developing the forward society calendar of activities including speakers for the general meetings and special events both social and astronomical.
- Handling and planning school viewing nights
- Preparing the "What's On" handouts for members.
- Publishing the Scorpius and managing the E-Scorpius internet chat room.
- Maintaining the publicity and public notices we require to keep the general public apprised of our activities.
- Developing and creating the library.

Without this group of dedicated supporters the society would definitely slow down.

If you feel you would like to get involved in the society business or have a particular skill you think would be useful to the society as a whole please give some thought to becoming a committee member.

The Annual General Meeting will be held on Wednesday, 16<sup>th</sup> of November, 2011. In this edition of Scorpius (below), there is a 'Committee Election Form' that can be used for the submission of nominations for the next committee. This can be posted to M.P.A.S., PO Box 564, Frankston, VIC. 3199. Alternatively, nominations can also be submitted electronically to [welcome@mpas.asn.au](mailto:welcome@mpas.asn.au) by stating which position on the committee you would like to nominate for.



### Mornington Peninsula Astronomical Society Inc. ANNUAL GENERAL MEETING ELECTIONS

Nominee: \_\_\_\_\_

Proposer: \_\_\_\_\_

Secunder: \_\_\_\_\_

} Must be current  
financial members

**Position:** *(tick 1 or more\*)* **Office Bearers:**  President  Vice President  Treasurer  Secretary

**Ordinaries:**  Public Officer  Ordinary Committee Member (5 of these)

Acceptance Signature of Nominee: \_\_\_\_\_

Submit 1 day prior to the Annual General Meeting.

Post to M.P.A.S., PO Box 596, Frankston, VIC. 3199.

\* Note : (1) That one person cannot nominate for multiple Office Bearer positions. (2) The committee is responsible for the development and operation of the society according to the MPAS Constitution. To support this, all committee members are expected to take responsibility for some aspect of society business

# General Society Information

## Office bearers of the Mornington Peninsula Astronomical Society

**President:** Peter Lowe  
**Vice President:** Brett Bajada  
**Committee:** Ian Sullivan, Trevor Hand, David Rolfe,  
Bob Heale, Fiona Murray, Greg Walton.  
**Phone Contact:** Peter Skilton - 0419 253 252

**Secretary:** Peter Skilton  
**Treasurer:** Marty Rudd  
**Public Officer:** Rhonda Sawosz  
**Web Master:** Steven Mohr  
**Scorpius Editor:** Brett Bajada

## General Meetings

Meeting Venue: *The Peninsula School*, Wooralla Drive, Mt. Eliza, (Melways map 105/F5) in the Senior School at 8pm, on the 3rd Wednesday of each month, except December. Entry is via the main gates or Gate 3, off Wooralla Drive. Exit is via Gate 3 Only after 9:30pm (see map).

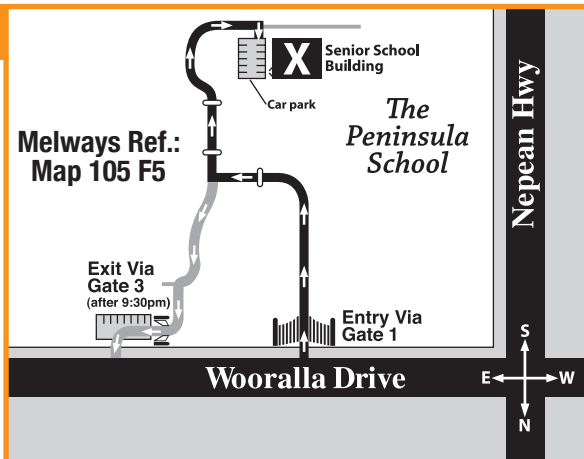
For additional details:

Phone: 0419 253 252

Mail: P.O. Box 596, Frankston 3199, Victoria, Australia.

Internet: <http://www.mpas.asn.au>

email: [welcome@mpas.asn.au](mailto:welcome@mpas.asn.au)



## Loan Equipment

The Society has a variety of telescopes including an 8-inch reflector, 80mm refractor and binoculars, all available for loan.

Contact a committee member to arrange the loan of equipment. The Society also has books and videos for loan from it's library, made available during General Meetings.

## Contributions to Scorpius

If you would like to submit an article or written contribution to Scorpius, then please send your

submission to M.P.A.S., P.O. Box 596, Frankston 3199, or you can now email to [scorpius@mpas.asn.au](mailto:scorpius@mpas.asn.au).

Any astronomical events that you have witnessed or tales you would like to tell, things you have for sale (eg: telescopes, eyepieces, etc.) then please send them in. All contributions and any feedback you wish to make about the newsletter are welcome.

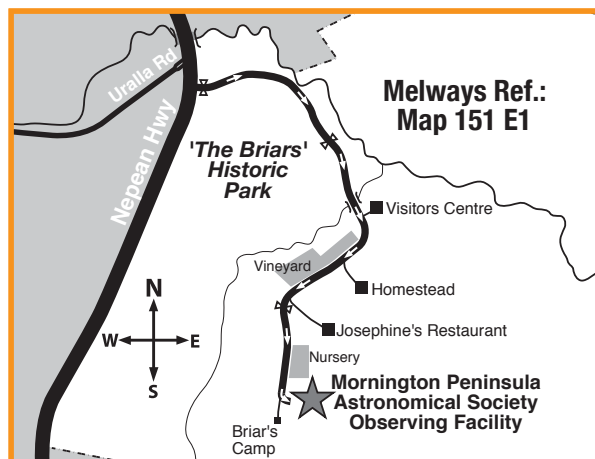
## E-Scorpius Newsgroup

M.P.A.S. has an online newsgroup called E-Scorpius. Here you will be kept up to date with the

latest M.P.A.S. news and event information as well as being able to join in discussions and ask questions with other members.

To join, go to: <http://groups.yahoo.com/group/e-scorpius> and sign up to Yahoo groups. You require to sign up to Yahoo groups to join E-Scorpius.

Once you have signed up at Yahoo groups, email [welcome@mpas.asn.au](mailto:welcome@mpas.asn.au) saying that you want to join E-Scorpius and you will be added to the E-Scorpius list. Come on, join up. The more people in the group the better.



## Viewing Nights - Members Only

Any night, at The Briars, Nepean Hwy, Mt. Martha, starting at dusk. Members visiting The Briars for the first time must contact Greg Walton on either 9773 0098 or 0415 172 503 if they need help in getting to the site. Upon arrival at the site, remember to sign the attendance book in the observatory building to verify that the mobile is turned on.

For additional details: <http://www.mpas.asn.au>