



SCORPIUS

THE JOURNAL OF THE
MORNINGTON PENINSULA ASTRONOMICAL SOCIETY INC.

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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 amateurs 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 service of its members for education presentations and observing nights for schools and community groups.

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Cover images - By Dave Rolfe - First picture processed from the SPSP 2015 trip this year. M16 'The Eagle Nebula', taken over 2 nights. 9 Hours of data used (7 hours of luminance).



SCORPIUS The journal of the Mornington Peninsula Astronomical Society

Newsletter Disclaimer

The Scorpius Newsletter is published online, once every two months for its membership, by the Mornington Peninsula Astronomical Society, for Educational Purposes Only. As a newsletter, this publication presents news spanning a spectrum of activities, reports, and publications in order to keep society members abreast of a variety of events and views pertaining to astronomy. While prudent, reasonable effort has been utilized to verify factual statements made by authors, inclusion in this newsletter does not constitute or imply official MPAS endorsement. All materials (except previously published material, where credited) are subject to copyright protection © 2015, Mornington Peninsula Astronomical Society

SOCIETY NEWS

By Greg Walton

May public night - Approximately 50 in attendance - 20 members and 30 members of the public. On arrival Venus was shining brightly in the west & the sky was clear. Over the next 4 hours, clouds slowly moved in till only the Moon was visible. Trevor's talk "Galaxies" in honour of Star Wars Day on Monday...May the fourth be with you! ... in a galaxy far, far, away... Everyone got to see Jupiter & Saturn, while the almost full Moon made it hard to find deep sky objects. Overall the night had a very good feel about it. *Greg Walton*

May Society Meeting - 20 members were in attendance. Peter Lowe (President) chaired the meeting. Our guest speaker, Bruno Zielka from ASV talked on the **FORMATION OF BLACK HOLES**. We learnt about the different types of black holes from stellar black holes with the mass of only 3 suns to giant galactic black holes with the mass of 5 billions suns. Then Greg Walton did "sky for the month", showed time lapse & images from the 2015 South Pacific Star Party. Members chatted over coffee. *Greg Walton*

May members BBQ - 25 members were in attendance. Thank you to all for help with the cooking. Also thanks to the members for setting up the food and the cleaning up afterwards. We waited for Saturn to emerge for the clouds but that did not happen, so there was no viewing as the sky was totally overcast. Members chatted & some helped each other with Astro software on there computers. Kevin showed photos from his recent overseas trip to Europe & Turkey; see some of his photos at right. Kevin standing at Greenwich, England from where time is measured; Kevin at the wax works with Star Treks captain of the Enterprise John Luke Bacardi (Patrick Stewart) & even got a **selfie?** with Ray Martin. *Greg Walton*

Camp Manyung on 6 June - The viewing night for Camp Quality kids with cancer went very well last night at Camp Manyung camping grounds, with 59 in attendance, plus a good number of MPAS members with 7 telescopes set up of different types and sizes. The evening began early with cloud cover horizon to horizon and not looking promising at all for viewing later in the evening. The anticipated early evening pass over of the International Space Station, Hubble Space Telescope and an Iridium 14 flare, unfortunately were hidden from view. Peter Lowe began the solar system talk inside, while outside optimistically set up on the camp oval were Anders Hamilton, Rod Brackenridge, Jamie and Josh Pole, Fiona Murphy, Sky Murphy, Peter and Chris Skilton and Colin and Melanie Armour. About half an hour into the talk, the talk paused and the group was taken up to view through the telescopes. Amazingly, and as we tend to see many times over the years, the previously hopeless-looking sky conditions had cleared almost completely, enabling Venus, Jupiter and its moons, Saturn and Titan, Jewel Box and other objects to be seen readily. The clearing persisted for over a hour, enabling everyone to get a good look. The group then ventured back inside into the warm to hear the rest of the talk. Then the sky conditions started to cloud over again. Thanks to everyone who was able to help out. It was a bit chilly in the breeze, but I could see that the children were really impressed. The youngest appeared about 2 or 3 years old, and the oldest would have been around 17-18 years. My daughter Cassandra, who was looking forward to attending, came down with a cold and so was unable to attend at the last moment (so as not to spread it on), but donated some glittery star stickers and glow sticks for the kids. As each child saw Saturn, they received one of the stickers. *Regards, Peter Skilton*

June public night - There was a good number of members at the public night on Friday at The Briars. We saw 56 in attendance, being mostly a visiting cub and scout pack from Rosebud. The weather was cool and very cloudy initially, and this probably dissuaded many from the general public coming this month. For those who persevered and stayed until after Trevor Hand's talk, the sky miraculously cleared almost completely enabling viewing through the telescopes from them onwards. Only 3 or 4 instruments were set up. Unfortunately most of the scouts had left by the time the sky cleared. Thanks to those members who attended, even for part of the evening. Do please remember to put your name in the log book inside the building during the evening if you do attend. Those I recall seeing while manning the door were Peter Lowe, David Rolfe, Paul Albers, Colin Armour, John and Marj Cleverdon, Sky Murphy and Fiona Murray, but there may have been others I missed in the dark and who didn't sign the log book - my apologies if I missed your name. *Regards, Peter Skilton*



Upgraded BBQ facilities. In September the society is hosting a conference on Astrophotography and has taken the opportunity to upgrade our BBQ facilities. A new carport cover has been added to the main Briars building so we can continue BBQ's even in bad weather. Thanks to Jamie and Dave for organising the installation. Dave's wife Leane acted as site supervisor and I was the trades assistant. *Peter Lowe*



June Society Meeting - The planned speaker for the June meeting fell through so the President Peter Lowe acted a standby speaker and gave an updated presentation on the search for Life On Mars followed by a discussion about the New Horizons Space Mission. Greg Walton gave a long distance "Sky for the Month" via ST *Cheers Peter Lowe*

How to get to the meetings - 8pm MPAS General Meeting at the Peninsula School in the Senior School Theatre, Building T. Enter and exit via Gate 1 on Wooralla Drive, which is the main large iron gate of the school. Follow the road around to the left and up the hill, then turn right at the T intersection at the Chapel. Proceed along until you see the maintenance tin shed on the left, at the next T intersection. Building T is then on your right. Simply park there in the adjacent southern most car park.

Wallaroo Primary School (Hastings) Friday 19th June - We had 37 from Wallaroo Primary in Hastings visit us at The Briars last night. They ranged in age from Preps up to Year 6, so undoubtedly a special challenge for Peter Lowe who gave the talk inside. It was a cold evening outside, with plenty of dew but no wind. However, this did give surprisingly clear and steady seeing conditions. Outside helping with telescopes were Alex Cherney, Colin Armour, Sky Murphy, Phil Holt and Chris and Peter Skilton. Clear views were had of the thin crescent Moon and semi-circular Venus before the talk, and then afterwards it as Jupiter with 4 moons visible, Saturn with Titan, Omega Centauri. The view of the homunculus nebula surrounding Eta Carinae was impressive in Alex's 22 inch Dobsonian, clearly showing the lobes of expanding material. If you don't know what it looks like, do a google search and the view shown by the Hubble Space telescope is not that different than seen last night, just a bit more magnified. *Regards, Peter Skilton*

The Hastings Primary School viewing night went well despite variable weather. The students has a lively interaction with the speaker about Planets in the Solar System. The sky Lear enough to get a view on the Moon, Venus & Jupiter. Thanks to those members who braved the weather to make the night memorable. *Cheers Peter Lowe*

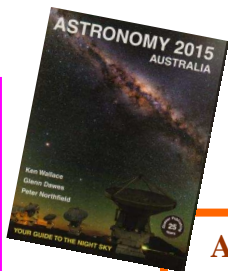
June Members BBQ - It has been decided to CANCEL the members BBQ this Saturday. We have a major viewing event at the Briars this Saturday which coincides with the normal member's BBQ viewing night. Given we are expecting around 150 people it is impractical to hold both events. We have 120 Ballam Park and Frankston District cubs and scouts coming for a viewing night on Saturday 20th June at the earlier time of 7pm. They are doing this after a hike and BBQ during the day. Help is needed from members with the talk and viewing night telescopes. We'd need at least 8 telescopes or binoculars looked after. I'll talk to the committee about holding the member's BBQ/Viewing on the 27th June *Cheers Peter Lowe*

The Peninsula Scouts & Cubs had a much better viewing evening seeing the Moon, Jupiter, Venus & Saturn. The scouts seemed to enjoy the viewing evening with the large number of members manning telescopes. Sky gave a particularly good sky tour presentation showing visitors what they could see in the sky. *Cheers Peter Lowe*

While washing my telescope I thought I should make a movie.

Never Look at the SUN with a telescope - *By Greg Walton*

Click on this Link to view <https://vimeo.com/126709156>



Astronomy 2015-year books can be purchased @ \$25 for members.

New Members Welcome

Rachael, Chris, Dylan & Jade - Storey family

Harry, Charlie, Shane, Bev & Rob - Maxwell family

Colin Armour

Orlando Arancibia (family)

Brian Paton

PUBLIC NIGHT THANK-YOU

Recent public viewing nights and school viewing nights have continue to be very well received by the attendees. It is no coincidence that this is due to the efforts put in by the members that help out at these events. To everyone that has helped out over the past months, a very big thank-you goes to you all. Your efforts are very much appreciated. and are being very well received.

2015 SUBSCRIPTIONS DUE

The ticking over of the New Year also means that society fees are now due to be paid. The society has worked hard to ensure that 2015 fees are still the same as last years prices. So to assist the society in maintaining the facilities and service we provide, we appreciate your prompt payment for the 2015-year ahead.

As a reminder, the following structure of the fees are:

SOCIETY FEES

Subscriptions can be paid in a number of ways:

- Direct Cash payments to a committee member
- Send a cheque or mail order to the society mail box MPAS. P O Box 596, Frankston 3199
- Make a direct electronic payment into the society working bank account.

The account details are BSB 033-272 Account 162207. Remember to add your name and details to the transfer so we can identify the payment in the bank records.

If you have any concerns please talk to a committee member.

- \$50 – Full Member
- \$45 – Pensioner Member
- \$65 – Family Membership
- \$60 – Family Pensioner Membership

Under the new government regulations, a list of financial member is required for insurance purposes, so please make certain your membership renewals are on time.

A word from the Scorpius editing team.

Members please write a story about your astronomy experiences and add some pictures.

Send them to:

Brett Bajada

Peter Lowe

Bruce Renowden

Greg Walton

gwmpas@gmail.com

CALENDAR		July / 2015				
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1 Venus & Jupiter 0.35 degrees apart	2 Full Moon	3 Public Night 8pm	4
5	6	7	8 ASV Meeting	9 Last Quarter	10	11
12	13	14	15 Society Meeting 8pm	16 New Moon	17	18 Members Night BBQ 6pm
19 Venus & Jupiter below the Moon	20	21	22 Committee Meeting 8pm	23	24 First Quarter	25
26 Saturn right of the Moon	27	28	29	30	31 Full Moon	

Monthly Events & High Lights. - Watch out for Auroras- Red Days indicates School Holidays
Public nights 3rd, 8pm start - **Society Meeting** at 8pm on 15th @ the Peninsula School
Members Night BBQ 6pm at the Briars 18th
Evening - 2 Full Moons this month - Venus & Jupiter 0.35 degrees apart on the 1st
Evening - Saturn right of the Moon on the 26th

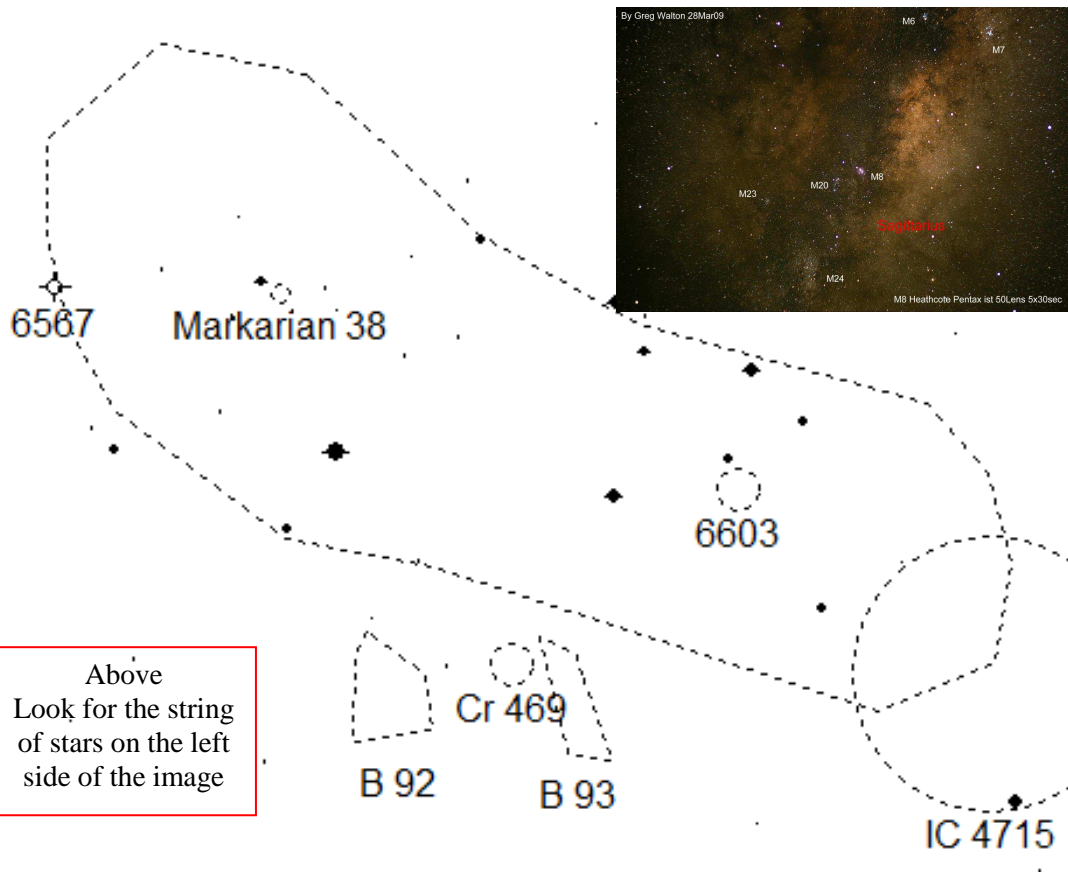
CALENDAR		August / 2015				
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
30 Full Moon	31				Jupiter & Mercury very close on the 7th	1
2	3 Venus, Jupiter & Mercury	4 Venus, Jupiter & Mercury	5 Venus, Jupiter & Mercury	6 Venus, Jupiter & Mercury	7 Public Night 8pm Last Quarter	8 Venus, Jupiter & Mercury
9 Venus, Jupiter & Mercury	10 Venus, Jupiter & Mercury	11	12 ASV Meeting	13 Mars below the Moon	14	15 New Moon
16 Mercury above the Moon	17	18	19 Society Meeting 8pm	20	21	22 Members Night BBQ 6pm
23 First Quarter Saturn below the Moon	24	25	26 Committee Meeting 8pm	27	28	29

Monthly Events & High Lights. - Watch out for Auroras
Public nights 7th 8pm start - **Society Meeting** at 8pm on 19th @ the Peninsula School
Members Night BBQ 6pm at the Briars 22nd
Evening - Jupiter & Mercury very close on the 7th also watch Venus, Jupiter & Mercury from the 3rd to the 10th
Evening Twilight - Mercury above the Moon on the 16th
Dawn - Mars below the Moon on the 13th

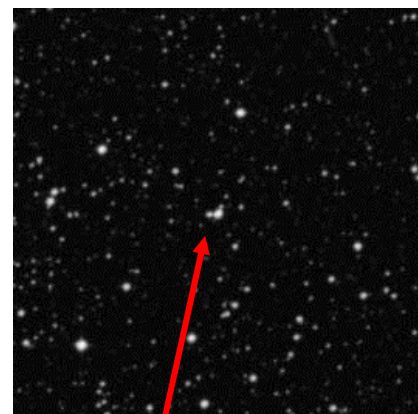
Note this years the Members night BBQ's will be the first Saturday after the Society Meeting.

Also General Meetings will be called Society Meetings under the new regulations.

Sky for July/August we will look closely at M24 star cloud in Sagittarius, which is a 4th magnitude naked eye object easily spotted under a dark sky, its size is 2 degrees by 1 degree & shines brightly in a pair of binoculars. This is one of my very favourite objects & have spent much time looking into, for it has mesmerizing strings of stars & hiding at its heart is a globular cluster NGC6603. Also next to it, is 2 inky black dark nebula Barnard 92 & 93



Globular cluster NGC 6603



NGC6567
For the more experienced. Try & find the Planetary nebula, is not easy to spot, what gives it away. Is the 2 star next to it, a bit like Mickey mouse ears.

Above
Look for the string
of stars on the left
side of the image

ASTRO NEWS

By Peter Lowe

Mars Rovers Ready for Communications Blackout

Every 26 months Earth goes into solar conjunction with the planet Mars as seen from Mars. Of course Mars also goes simultaneously into solar conjunction as seen from Earth. When this happens communications between Earth and Mars will diminish. The various Mars missions both on the surface and in orbit must be put into safe modes or automated observation modes until communications can be reliably restored. This is true of the Mars rovers particularly the Opportunity rover (yes, it's still going) which has limited communications capability.

To prevent spacecraft at Mars from receiving garbled commands that could be misinterpreted or even harmful, the teams running NASA's three active Mars orbiters and two Mars rovers will refrain from sending commands to their spacecraft from about June 7 to June 21. During that period, the sun will be within two degrees of Mars in Earth's sky.

Finders Keepers

By treaty space is legally international territory and thus neutral, which means a nation cannot "claim" sovereignty by right of possession. This has been a legally fuzzy area when it comes to mining rights. How do you define a mining claim on another planet or asteroid? What happens if different nations claim different parts of an asteroid? Can mining companies claim the whole planetary body or just a specific resource? And of course different nations have different rules regarding mining. Obviously some form of international agreement needs to be established. Under the Spurring Private Aerospace Competitiveness and Entrepreneurship (SPACE) Act, which the US House of Representatives recently passed, firms involved in asteroid mining will be able to keep whatever they dig up. This may sound a bit futuristic but it is one of the first times the legal system has actually got ahead of the technology. Normally technological development is way ahead of the legal ramifications and the law struggles to catch up. (aka organ transplants) While the SPACE Act clarifies from a US viewpoint the property rights beyond earth it still has to be ratified by the Senate and must similarly be accepted by the other space fairing nations. Such ratification is not at all a given but at least it's a start. Let's hope there's something out there worth mining.

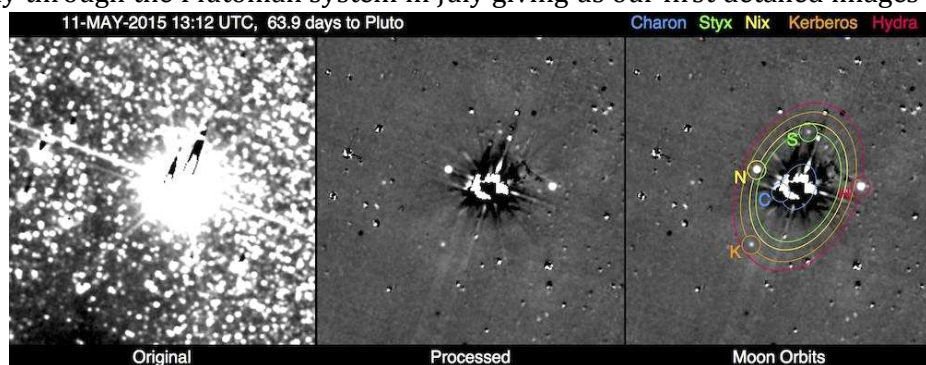


Setting Sail on the Solar Seas

After several anxious periods of radio silence, the Planetary Society's solar LightSail space probe has successfully deployed its giant, feather light sail. The unfurled sail marks a proof in principle of using the Solar wind to provide cheap and efficient space travel. Next year, the organization will launch another sail-powered CubeSat probe on a more extensive cruise. In the meantime the plan is to test the sailing characteristics of LightSail before atmospheric drag pulls into a fiery end in Earth's atmosphere. In the late 1970s, famed astronomer Carl Sagan theorized that solar particles could propel a sail-powered spacecraft, eliminating the need for heavy fuel loads. Previous experiments by NASA and Japanese engineers have demonstrated the potential of solar sailing. The current work aims to improve the technology (and make it more affordable).

Pluto New Horizons Mission Given a Green Light on Current Course

The New Horizons Space probe will fly directly through the Plutonian system in July giving us our first detailed images of distant Edgeworth-Kuiper Belt objects. As the probe approaches the system searches for potential hazards are being conducted. The latest search shows Pluto and its five accompanying moons but no other objects giving it a green light to continue on its present course.

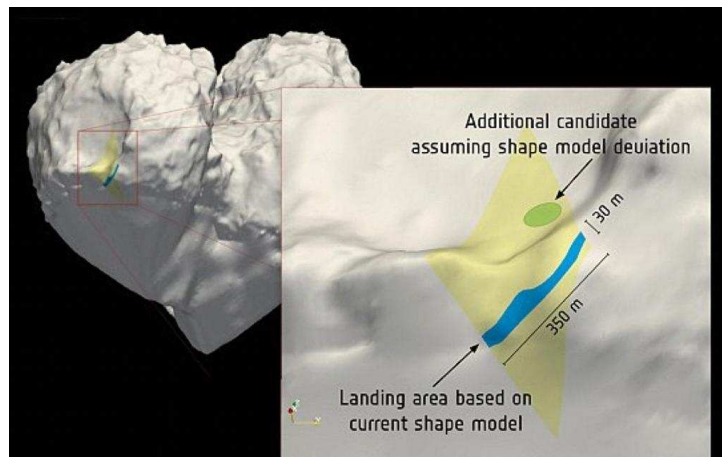
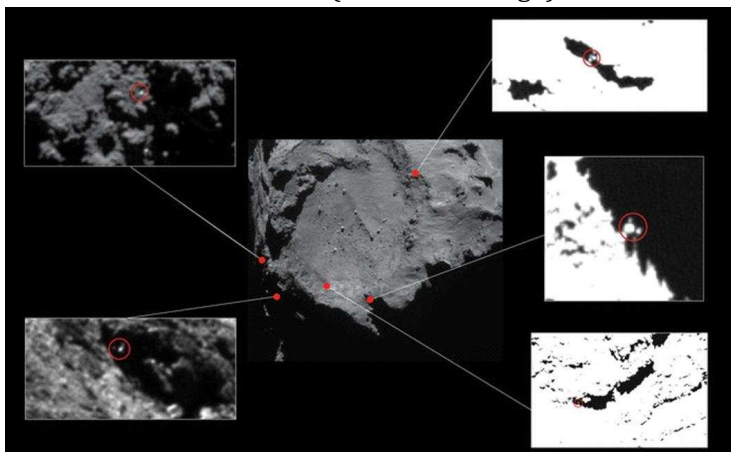


Philae Returns from a Near Dead Experience.

Europe's tiny robot laboratory Philae, resting on the surface of Comet 67P/Churyumov-Gerasimenko awoke overnight and sent home its first message in nearly seven months. "Hello Earth! Can you hear me?" the washing machine-sized lander tweeted under the hashtag #WakeUpPhilae, breaking a silence that had lasted since November 15 when its batteries ran out. The message was sufficient to confirm that Philae is healthy and that its sub-systems OK for ongoing communication with its Rosetta mothership still in orbit about the comet.

Philae, equipped with 10 instruments, may now get a grandstand view of the gas, dust and icy crystals that blast from the comet as it gets ever closer to the Sun. The comet reaches perihelion, the closest point to the Sun in the comet's orbit, on August 13. Philae touched down on the comet's surface on November 12 last year after an epic 10-year trek piggybacking on Rosetta.

A quick health check shows the probe is basically healthy with adequate power reserves to operate. Provided the probe remains sunlit the batteries may charge further and its scientific program can resume. Philae's operators hope that the new data will allow them to pinpoint the lab's exact location on the comet, which has so far been narrowed to an area of about 100-200 metres. (See lower image)



Rosetta's watches as Comet 67P Sleeps

The Rosetta spacecraft still orbiting low over the surface of Comet 67P/Churyumov-Gerasimenko has captured direct evidence of continued nighttime activity from the comet's surface. Such activity has been suggested from other comet missions but Rosetta has captured images showing jets of material from the Ma'at region located on the comet's "head" take half an hour after sunset in that region. This is direct evidence that although the dark surface material cools quickly at sunset there is a reserve of heat stored beneath the surface that continues to drive jet activity. The image was taken from a distance of only 93km. As the comet rapidly approaches perihelion in mid-August the surface is expected to warm considerably driving further jet activity. At perihelion the comet will be only 270 million kilometers from the Sun.



Simulated Mars Mission comes to an end at Hawaii

A human mission to Mars is expected to take eight months there and eight months back plus one or two years on the Martian surface. On June 13 the Hawaii Space Exploration Analog and Simulation (HI-SEAS) mission concluded. The mission led by researchers at the University of Hawaii at Manoa, included a six-person crew who served as simulated astronauts for the past eight months. The NASA-funded research is gaining insights into the human factors that contribute to astronaut crew function and performance over time-including the psychological, social, and biological challenges of isolation and confinement. While the technical challenges of such a mission are immense, the human challenges may be the deciding limiting factor on the mission. Its predecessor missions-included a four-month study in early 2014 and the data from this eight-month HI-SEAS mission is anticipated to expose many unexpected realities that future Mars explorers will endure once they become situated on the planet surface in a small space for a prolonged period of time. Mars is cold, isolated, and essentially barren with almost no atmosphere making it a very challenging environment for humans. Sites such as the high mountains of Hawaii are reasonable simulation sites to test both people and equipment.



MPAS road trip to the 2015 South Pacific Star Party, by Greg Walton

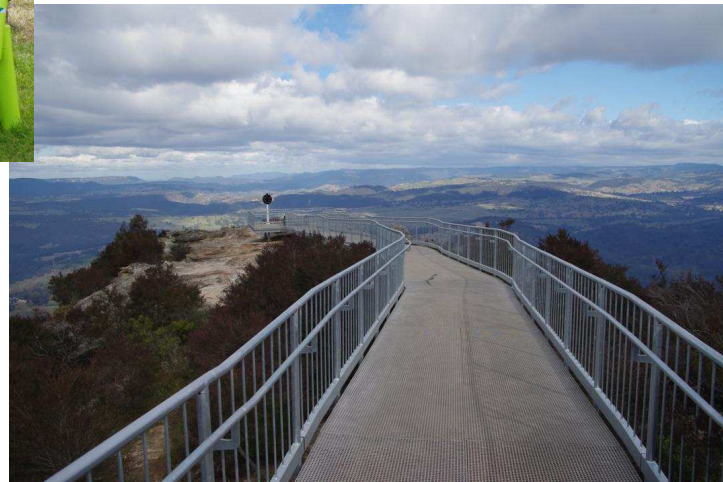
Once again we headed to NSW for the SPSP. Pia & I stopped at Tocumwal on the banks of the Murray river, where we were told of a blow hole in a large flat rock in a paddock not far away. The story behind this blow hole is that when the Murray river is high the hole has no water in it & when the Murray river is low the hole is filled with water, which does not make sense at all. It is said to be linked to the Murray river by a cave system, but no one knows how this all works. It's also several kilometres from the Murray river. We thought we must have a look... see photo at right.



Next day we headed to Lithgow where we would spend 2 days site seeing, where we were met by 2 aliens warning us to slow down! We went to Lithgow last year hoping to ride the Zig-Zag railway, but it was not running due to recent bush fires & this year was not running due to safety problems... Maybe next year???



Last year we saw the glow worms tunnel & old steel works ruins. There are plenty of things to do around Lithgow. This year we went to some of the Blue mountain lookouts. The one at right, is one of the highest, with breath taking views & only 3 Km's out of Lithgow. We did not stay too long as there was a very cold wild - felt like it was about zero with the wild chilled factor. Next we headed to The Blue Mountain Botanic Gardens about 40 Km from Lithgow. The road follows the Zig-Zag railway most of the way. We also stopped at more lookouts along the way. At The Blue Mountain Botanic Gardens we found more breathtaking views & a large bronze sundial. It was a hurried visit as it was still very cold & the sun was getting low. Time to head back to camp at Lithgow.



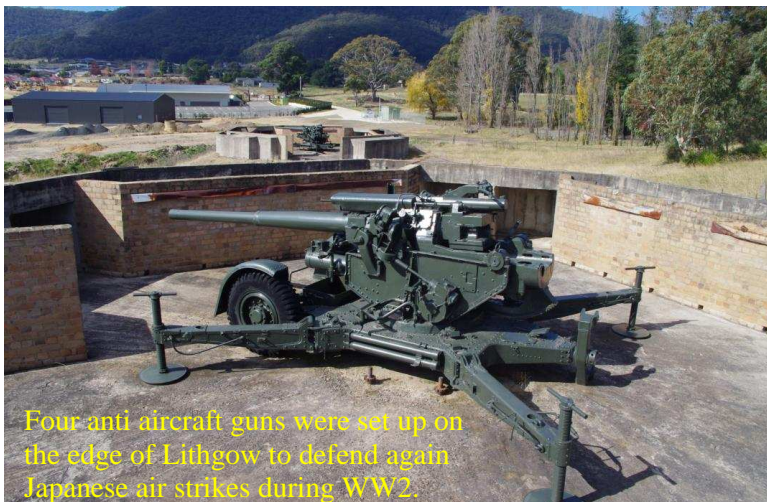
The next day was not any warmer, so we were happy to be indoors at the Lithgow Small Arms Factory Museum. A fascinating place with much history & stories of interest. I never know we made guns on such a large scale in this country. The factory was set up just before the first world war & is still operating today, employing 300 people. The factory stock piled so many guns, that they did not need to make any guns for the second world war. Instead, the factory made hand cuffs, sheep shearing equipment, golf clubs, car gear boxes & even sewing machines! There were all types of guns from almost every country. All are registered with the police & have had there firing pins removed, which are stored in a safe. All these guns still work & are fired from time to time on the firing range behind the factory.



Rifles & machine guns from all over the world



Above - 303 rifles made between WW1 & WW2
 Right - Machine gun from jet fighter & Spitfire.
 Right - Dozens of glass cabinets filled with hundreds of hand gun, valued at \$5,000,000. Many with interesting pasts such as this Gold revolver own by a ex prim minister wife.
 Below Right - Sewing machine made at the factory.



Four anti aircraft guns were set up on the edge of Lithgow to defend again Japanese air strikes during WW2.

I admired the care & beautiful craftsmanship of these gun, you would never think there purpose is for killer things. I have never ever fire a gun, but as a tool maker found this all very interesting & will most likely return one day. *Greg Walton*



We all arrived at the South Pacific Star Party on the Thursday about 2pm as black clouds rolled in, but we still sprang into action setting up camp & telescopes. Dave Rolfe set up the 240 volt generator & ham radio aerial so he could talk to people at the Texas star party, which he did. Steve set up his wind shield around his telescope & rain covers, as it did not look good. Pia & I sat by the wood fire in the Astro-house & drank wine, then at 7pm someone said the sky was clearing, so we cranked up the scope & cameras, for a very cold but successful night. The other two nights were mostly clear as well, but the temperature sat around 2 degrees every night, making it a bit uncomfortable. We also saw a steady stream of meteors as the milky-way turned over head. By day we talked to fellow astronomers & kicked the tyres on many scopes. There were also many guest speakers talking on many topics & work shops to keep everybody amused.



The final count of registered participants was 299 people, aged from 2 upwards. There were at least 41 kids registered this year. One cheeky adult said her age was 47 - was she trying to be in the kids' draw for the 6" Dob? 60 of the total registrations were on-site registrations! 171 roast dinners were sold and there was sufficient left over to feed those who stayed on Sunday night. Visitors came from all the eastern states (NSW, ACT, Vic, Tas, Qld) and seven participants were from overseas (one from NZ, a couple from Thailand and a couple from Singapore). Apart from the things that broke, the things we forgot and the things we didn't think of, all went pretty smoothly. Not to mention, the weather was mostly considerate (after we thawed out from Wednesday's chill). We are grateful to our sponsors who contribute to the prize draw each year. We thank Lisa Kewley for coming so far to give her splendid talk. And, of course, there's the outstanding food and drink service provided by the 1st Kandos Scouts. Where would we be without them? We are especially grateful to our 45+ volunteers who contribute their time, efforts, ideas and resources (year after year and the new ones) - not just over the weekend but for many months out, in the lead-up to the event. Without these people, the website would be useless, the dinner would be raw, the garbage would be a mountain, the coffee would be cold, the showers and toilets would be a mess, the money would be uncounted, the lights would be dark, the sound would be silent and the stars would be unappreciated. If you helped in any small way, THANK YOU!! Thank you all for coming and making it such a success. We hope to see you again next year and we can do it all over again! *All the best, from Lesa Moore - Treasurer of the Astronomical society of New South Wales*

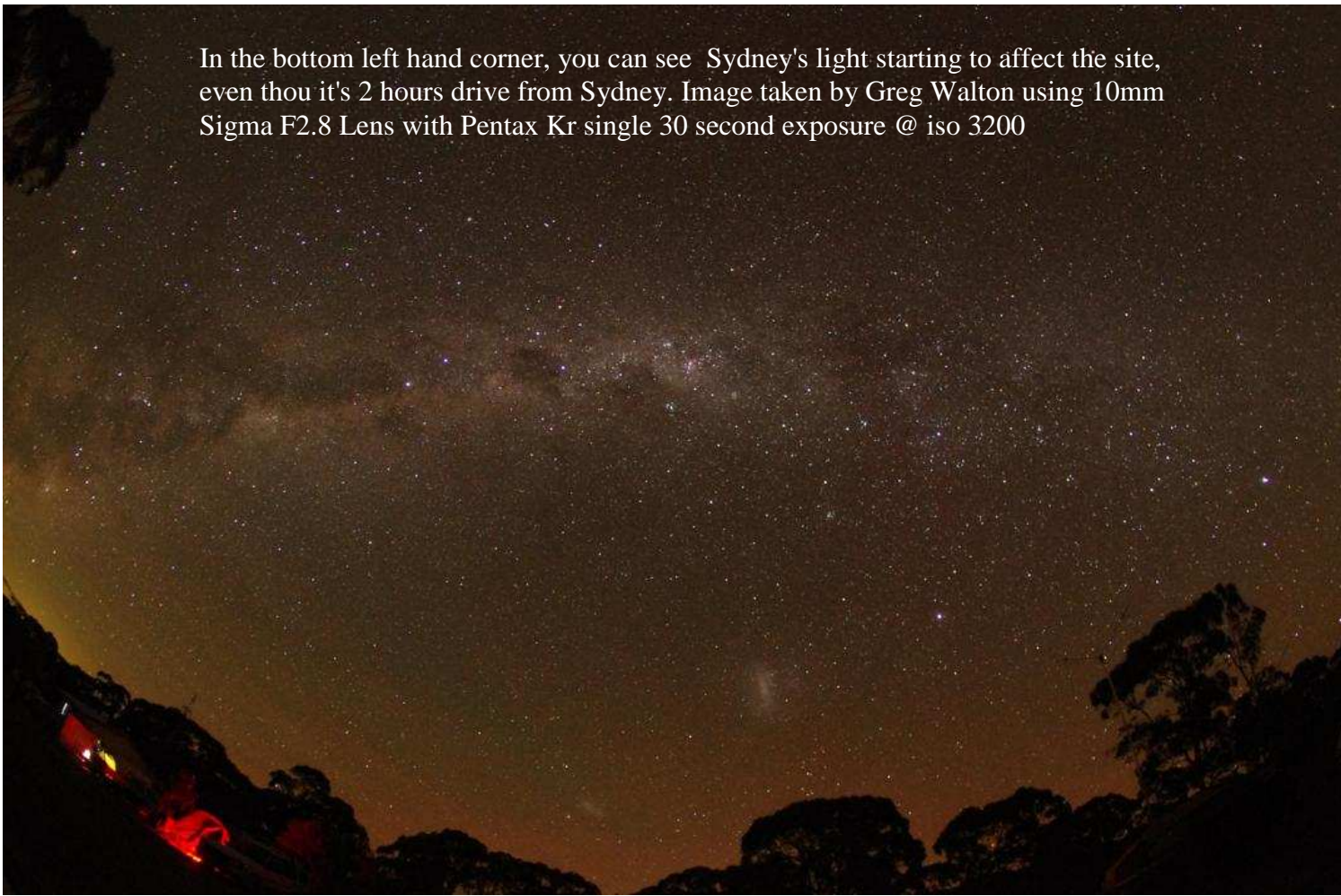


Left - The Scouts kept the food come almost 24 - 7 so we made shore we supported them. The works Hamburgers & home made cakes were very popular, but there were many other things on offer.

Below - Some of the setups we seen while walking around the viewing field, from small refractors to large Dobsonian's. There is also many permanent observatories, Roll of sheds & caravans owned by ASNSW members, making the site very homely & user friendly. *Photos by Greg Walton*



In the bottom left hand corner, you can see Sydney's light starting to affect the site, even though it's a 2-hour drive from Sydney. Image taken by Greg Walton using 10mm Sigma F2.8 Lens with Pentax Kr single 30-second exposure @ iso 3200



On these trips something usually goes wrong... This time it was Dave's mount, the altitude adjusting screw stripping the thread. So we used some cocky string (wire) to jam the thread in place & just place some packing under the south leg on the tripod till the polar alignment was achieved, *see right*. Once Dave's problems were sorted he was able to get a beautiful image of the pillars of creation M16 seen on the front cover.

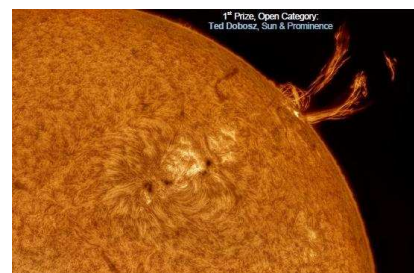
Steve & Dave tried their luck by entering some photos into the astrophotography competition. There were many entrants in the open & deep sky categories. The astrophotography competition is very fair as everybody is a judge, you just right the number of the image you like on your voting slip & place it in the box.

On the Saturday most things happen, lots of talks, awards for the best home built telescope, drawing of the door prizes, announce the winners of the astrophotography competition, the group photo & then the roast dinner. They also present the kids door prize. First this year, a 6-inch Dobsonian telescope picked up by young Cathi Humphrey-Hood. The major prize was a go-to telescope. Other prizes were an ethos eyepiece, camera tracker, Argonavius, books & magazine subscriptions.

Then came the astrophotography competition. The open section winner was Ted Dobosz for his Sun & Prominence image, *see right*. The deep sky section winner was Mike Sidonio for his image of CG4 or (the hand of god). The deep sky section second place winner was MPAS member Steve Mohr for his image of NGC2029. Dave Rolfe MPAS member picked up an honourable mention for his image of a lunar eclipse.

After we assembled for the group photo & then waited for the roast dinner. The temperature was dropping fast & we were all eager to get back to the telescopes for this last night, before we had to pack up & head home. We were plagued by clouds around midnight, meaning we all got an early night sleep. Just as well, as we were hoping to drive the 1,000 odd kilometres back to Melbourne in one go.

Sunday we said our last goodbyes & hit the road about 9am, getting back home about 8pm. We all ended up with some good images, as you can see Steve's images on page 14.

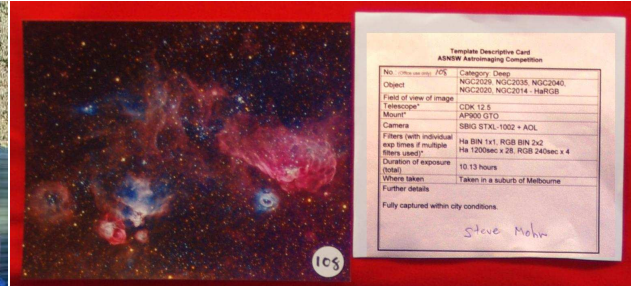




Above - Mike Sidonio Image of CG4 (the hand of god)



Above centre - Mike Sidonio left & Steve Mohr right with their trophies.



Top right - Steve Mohr image of NGC2029

Middle right - Steve Mohr waving as he collected his second prize

Right - Dave Rolfe collecting his honourably mention

Below - Entrants for the astrophotography competition.

Bottom - The group photo taken by Greg Priestley



Taken by Greg Priestley

MPAS Gallery By Steve Mohr

Both images below were captured at the South Pacific Star Party.
Top NGC6727 & NGC6720 Below NGC4945




Viewing with Kodak Wratten Coloured Filters



Type	Colour	Transmission %	Improves (Note - Blue Font most commonly used)
#15	Deep yellow	67%	Lunar feature contrast/terminator; Venus clouds; Mars clouds/ice caps; Mars, Jupiter, Saturn feature contrast; Uranus/Neptune detail
#58	Green	24%	Venus clouds; Mars ice caps; Jupiter GRS; Saturn clouds/belts/polar regions
#80A	Medium Blue	30%	Lunar surface detail & feature contrast; Venus clouds; Mars clouds/ice caps; Jupiter belts/rills/festoons/ GRS; Saturn belts/polar regions; reduces low-pressure sodium-vapour light pollution ; most generally useful colour filter
#82A	Pale Blue	73%	Luna/Mars/Jupiter/Saturn low-contrast features/detail; Jupiter/Saturn cloud belts; comet tails; reduce refractor false colour ; structure/detail in bright galaxies
#11	Yellow Green	78%	Venus clouds; Mars maria/ice caps; Jupiter/ Saturn clouds/feature contrast ; Saturn Cassini Division; Uranus/Neptune detail/contrast
#21	Orange	46%	Mercury/Venus contrast against daytime sky; Mars maria; Jupiter/Saturn belts/festoons/polar regions; colour correction with Mylar Solar filters; similar to #15 but with lower transmission and higher contrast
#25	Red	14%	Mercury features/contrast; Venus clouds/contrast/terminator; Mars maria/ice caps/surface detail ; Jupiter clouds/belts/transits; Saturn clouds NOTE - too dense for use with small scopes
#47	Violet	13%	Lunar detail; Mercury/Venus clouds/contrast/detail (many observers' first choice for Venus); Mars ice caps; Saturn ring structures. NOTE - too dense for use with small scopes
#8	Light Yellow	83%	Moon features/contrast; Mars maria; Jupiter/Saturn belts; Uranus/Neptune detail; comet tail/coma detail; similar to #12 but with higher transmission and less pronounced effects
#12	Yellow	74%	Moon features/contrast; Mars maria; Jupiter/Saturn belts; Uranus/Neptune detail; intermediate between #8 and #15 in transmission and effects
#23A	Light Red	25%	Mercury/Venus sky contrast in daylight/twilight; Mercury features/contrast; Venus clouds/contrast/terminator; Mars maria/ice caps/surface detail ; Jupiter clouds/belts/transits; Saturn clouds; similar to #25 with higher transmission and less pronounced effects NOTE - for use with small scopes
#29	Deep Red	8%	Mercury/Venus sky contrast in daylight/twilight; Mercury features/contrast; Venus clouds/contrast/terminator; Mars maria/ice caps/surface detail; Jupiter clouds/belts/transits; Saturn clouds; similar to #25, but much darker and with more pronounced effects NOTE - too dense for use with small scopes
#38A	Deep Blue	17%	Venus clouds; Mars dust storms; Jupiter belts/GRS; Saturn rings/belts/clouds; bright comet tails
#56	Light Green	53%	Lunar detail; Mars dust storms/ice caps/clouds; Jupiter clouds/low-contrast detail; Saturn cloud/surface detail

Viewing with Fringe killer Filters & Moon Filters

Name	Type	Transmission %	Improves
Violet	Fringe killer	85%	Removes Violet fringe from around Moon & bright stars when using low cost refractor telescopes (Costly @ \$150.00)
ND25	Gray	25%	Neutral-density filters used when you need to dim the image, for example, as if you are viewing Luna at low power.
Moon	Polarizing	10%	Used when viewing Luna surface at low power.
Moon	Variable Polarizing	5% to 70%	Polarizing filters are, in effect, variable neutral-density filters. They comprise two layers of Polarizing material in a mount that allows the layers to be rotated relative to each other. As you change the relative position of the Polarizing layers, the visible neutral density varies from moderate to high.
Mask		5% to 20%	You can also dim the image of the Moon by stopping down your telescope or place a mask over the front of the telescope. Many telescope come with 50mm holes in the dust cover, just remove the 50mm cap over the hole to view the Moon, its best if the hole is positioned to the bottom on the dust cover, as rising heat will degrade the view.

Viewing with Deep sky Filters - (1=Poor, 2=Fair, 3=Good, 4=Excellent, 5=Best) - Note best with telescopes 10inch & over

Name	Type	Open Cluster	Globular Cluster	Emission Nebula	Reflection Nebula	Planetary Nebula	Galaxies	Comet	Improves
LPR	Broadband	1	1	2	2	3	1	2	Blocks sodium street lighting
Deep Sky	Broadband	2	2	2	2	3	2	2	Blocks sodium street lighting
Sky-glow	Broadband	2	2	1	1	3	2	2	Blocks sodium street lighting
UHC	Narrowband	1	1	3	2	4	1	1	Excellent all round Nebula filter
H-Beta	Line	1	1	4	1	1	1	1	Horse Head, California & Cocoon Nebula
O3	Line	1	1	4	2	4	1	1	Planetary & Emission Nebula
Swan Band	Line	1	2	2	2	3	1	4	Comets & Planetary Nebula

I have put this table together after some member have asked me about using visual filters. There are many more filters not included in the table above. Information is from the Astronomy Hack Book, The Dobsonian Hand Book, manufactures specifications & my own experience, by Greg Walton




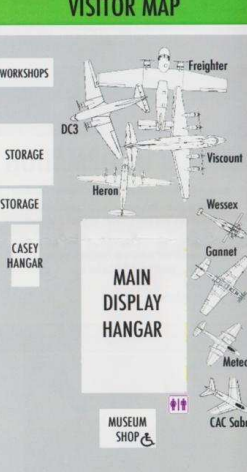





If you are looking to kill a few hours, then the Aviation Museum at Moorabbin airport is the place to go. ... Many interesting displays of memorabilia, engines, gauges, cloths, rockets, guns, ejector seat, flight simulator. And 'planes of all sizes from a small plane powered by a Victor lawn mower engine to large planes like the DC3... lots of model planes & interesting facts. You can even sit behind the controls of a helicopter. There are any model aeroplane kits & Books on sale.
By Greg Walton



Opening Hours
 Mon-Fri 10am-4pm
 Sat-Sun 10am-5pm
Admission: Adults \$10
Children/Concession \$5
Family 2Adults 2Children \$20
Location:
 Corner First St & Second Ave
 Moorabbin airport. 3194
 P: 9580 7752
 E: info@aarg.com
 W: www.aarg.com



<p>MILITARY AVIATION</p> <p>The aircraft in this collection are predominantly post war, including the only surviving RAF Bristol Sydenham biplane, a Gloster Meteor (the first military jet type in Australia), a CAC Sabre, an F-111 Crew Module, and a GAF Mirage III jet.</p> <p>In addition to the collection there are four Royal Australian Navy carrier based aircraft, three of which operated from HMAS Melbourne, and one - being a Fairey Firefly - which operated from HMAS Sydney.</p>  <p>GAF Mirage III</p>	<p>CIVIL AIR TRANSPORT</p> <p>The collection includes the rare Eastern Airlines DC-2 airliner, DH Heron and the TAA DHA Dromedary feeder liners, the Ansett-ANA DC-3, and TAA Vickers Viscount Turboprop airliners, as well as the Air Express Bristol Freighter purpose built cargo transport, and a TAA DC-9 Flight Simulator</p>  <p>Douglas DC-3</p>	<p>AUSTRALIAN NATIONAL AVIATION MUSEUM</p> <p>VISITOR INFORMATION</p> <p>Welcome to the Australian National Aviation Museum. See one of Australia's most comprehensive collections of military and civil aircraft, engines and more.</p> <p>Special events include open cockpits, engine runs and more - check our website or Facebook page. Models, t-shirts, snacks and drinks for sale. Disabled Access. Group Tours Welcome.</p> <p>NEW! FREE INTERACTIVE GUIDE FOR SMARTPHONE / TABLET www.mylnteractiveguide.com/aarg</p> 	<p>VISITOR MAP</p>  <p>WORKSHOPS STORAGE STORAGE CASEY HANGAR MAIN DISPLAY HANGAR MUSEUM SHOP</p>	<p>ABOUT THE MUSEUM</p> <p>The Australian National Aviation Museum was founded in 1962 and is the oldest volunteer based aviation museum in Australia. With a collection of over 50 aircraft and engines as well as relics and a massive archive, this collection is one of the most comprehensive representations of Australian aviation history in the country.</p> <p>The Museum relies almost entirely on visitors, donations and memberships to help preserve and display the aircraft to the public. Regular events are held at the Museum including open cockpit days, model shows and more.</p> <p>As you walk around, you will notice the heading of exhibits is in a colour band. This represents the theme to which that exhibit belongs to, and those themes are shown here for your convenience.</p> <p>We hope you enjoy your visit to the Museum and if you have any questions about the Museum or display please ask one of our helpful volunteers.</p> <p>PIONEER FLYING MACHINES</p> <p>This collection, while small, covers thousands of years, from the Indigenous Boomerangs and throwing weapons, through lighter than air flights of the 1800's and into the 1900's up to 1933.</p> <p>It cover identities such as Hargrave, Taylor, Houdini, Hammond, Duigan, Hart, Hawker among others, and features the experiments, attempted and successful first flights, and development of Australian designs. Many of these stories and people are Victorian based.</p> <p>The Museum holds significant items such as the 1910 JAP V4 Engine of Lawrence Marshall considered to be the first Australian built aircraft engine, parts of the Taylor Glider, the world's oldest set of original BE2A wings as well as the Duigan 1910 Replica. Many of these items are undergoing conservation works, and may not be on display during your visit.</p>  <p>Dugoin Biplane</p>	<p>THE INTER WAR YEARS</p> <p>The advent of light aircraft encouraged many to take up flying as a recreational pastime. This period through to 1939 saw the rapid expansion of civil aviation in parallel to military aviation, until WW2 commenced.</p> <p>The Museum has three pre-war WW2 series registered aircraft - a DH 60 Gipsy Moth, Deuster II and BA Swallow. It also owns the Douglas DC-2 pre-war airliner used by Halmeyr / ANA, and a number of pre war sea engines.</p>  <p>Perceval Proctor</p> <p>DEFENDING AUSTRALIA IN WW2 AUSTRALIAN MADE</p> <p>Tiger Moth</p> <p>The Aviation manufacturing industry came into its own with the outbreak of World War II. Many of the aircraft on display in this theme came from factories at Fishermans Bend in Melbourne or Mascot in Sydney. The most notable are the CAC Wirraway, the oldest CAC aircraft remaining, and the DAP Beaufighter, delivered to the RAAF on the day the Pacific Campaign ended. A future exhibit is the national Beaufort bomber 49-10, the oldest surviving in the world and one to have also seen RAF service.</p>  <p>Beaufighter</p>
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LMDSS Rave

Here's a report and a high recommendation of the ASV's Leon Mow Dark Sky Site, near Heathcote (ESE Bendigo), Vic. Hope the info is useful for some readers.

The weekend 16-17 May 2015 was a perfect window of opportunity with several factors co-occurring: super clear sky with perfect seeing, near new moon, weekend, winter skies, ASV's scheduled field trip. Members who had been there frequently said that it was a once a year kind of great seeing condition, remarking that the Milky Way had a rich *texture* to it.

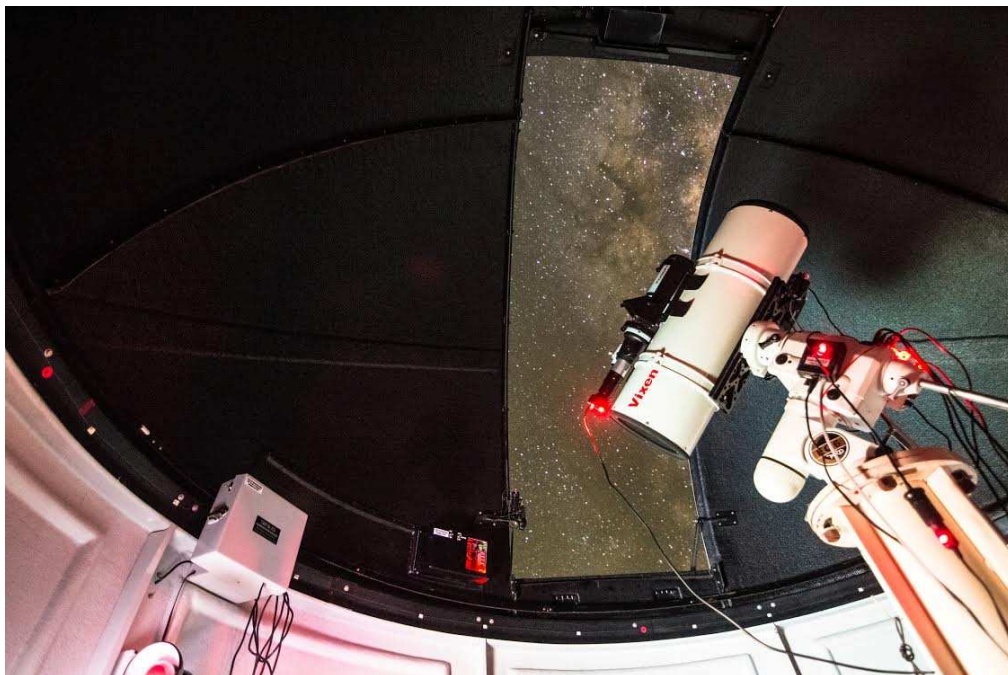
I think it was EXCEPTIONAL. Part of the Milky Way looked like whipped cream! I had to check with others whether it was some thick clouds. Even though it was not the darkest sky I'd seen in terms of the stars, everything made it well worth the 3 hour drive... and the cold. A few of us stayed up till nearly 3 am. Past 1 am it got to 4 degree C, someone said, with heavy dew then 2C. Well rugged up that was all very ok.

The 25" Obsession showed COMET C/2015 G2 (MASTER) and a large number of deep and not so deep –sky objects. I'm very grateful to ASV, to Leon Mow, and for the kindness and patience of the Deep Sky Section representatives. I later read (devoured) the book 'The Dobsonian Telescope, A Practical Manual for Building Large Aperture Telescopes' by David Kriege and Richard Berry, the designers/builders of the Obsession telescopes. I'm very grateful to them too for the generosity of sharing detailed information; the book is very informative and extremely well written with bits that were so comical it was killing funny to recognise the obsessive-compulsive ways we carry on.

For me I also got to ogle at the constellations, a large number of which are normally too faint to see; so added 18 more to my previously known 21. The best was Aquila the Eagle rising, albeit up-side-down, with a majestic wingspan and its beautiful Altair head appearing blue above the treetops (it's supposed to be yellow-white so it might have appeared blue only because of the gum tree effect like for the Blue Mountains or quite possibly it's my eyes' rather pleasant chromatic aberration; however, I do see orange stars higher up as orange). The faintest were Cancer the Crab, Libra the Scales, Pavo the Peacock, and Octans.... Octans! The largest, apart from the Argo ship, was Ophiuchus holding the Serpent in two halves.

Frustratingly I did not have a larger 'scope but it was a great opportunity to use the hand-me-up 60mm refractor to its (my, actually) full capability and that was great –I did weight-balance the thing (with my camera and a laugh) and saw many objects old and new including M6 Butterfly Wings and M7 next to it, sharply clearly. How I wish for a large folded refractor... *Simsalabim...*

There was, probably, the Venus shadow effect but sadly I forgot to look out for the zodiacal glow. With Emma Bland's kindness I also got to *experience* the dome; even pressing a button to make the roof open and close made it a reality of personal connection. It's like the difference between looking at someone fishing and actually feeling the lively bite on the line.



[Images kindly supplied by Emma Bland. Photos from inside the dome, after enhancement. Please note also the galactic centre – homework for everyone to locate it.]

I'm very indebted to Emma who also showed me how to work my awesome camera to take my first shots of the Milky Way but that showed its (my, actually) limitations for astro, which means having to, maybe.... Umm... acquire a new one?

Someone mentioned an aurora possibility. I saw some faint rust-colour horizontal band but two others did not see that. I don't think it's all imagination either (although it could very well be); I can see colours very well but self-admittedly not usually observant in spotting events. We're all different. Later all three of us saw a blue-green glow directly south in a narrow area.

Driving routes: the GPS navigator took me on the M3 Eastlink, a long long way round but nearly non-stop. Note: once there on unsealed roads, follow the ASV direction and not the GPS navigator's; also drive at 60-70 kph over the very corrugated surface and not rattle every bone off at slower speeds. Watch for kangaroos on or bounding onto roads!! On the way back I used (the reverse of) M11, Springvale, Westall, Princess Hwy, M1, Bolte Bridge, etc; same duration and not many kms shorter.

In terms of facilities, it was perfect. That means amply adequate without extraneous superfluous un-necessities. A perfect way to live on this precious Earth.

May a high sense of fulfilment be yours, too. Sky

Odds & Ends - By Greg Walton

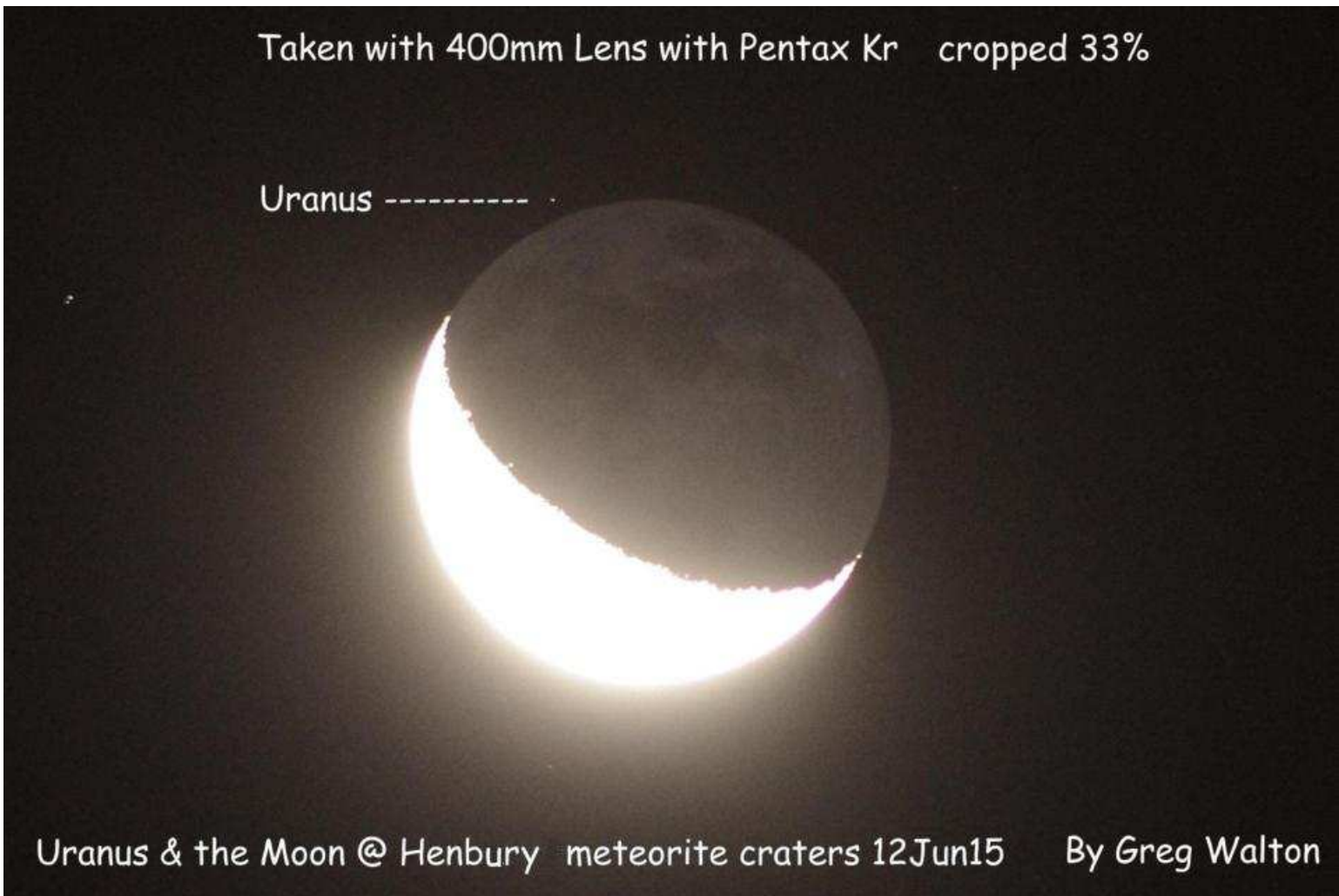


Top Left - Comet C/2015 Masters imaged with setup shown at left

Above - Weather forecasting tool I seen at a country museum

Left - Some old fixed length lens I use for imaging the night sky

Below - Uranus with the moon imaged from Henbury meteorite crater imaged with setup shown at left



SOCIETY INFORMATION



Peter Lowe



Dave Rolfe



Peter Skilton



Jamie Pole



Trevor Hand



Paul Albers



Paula Ritchens



Clemens Unger



Greg Walton

OFFICE BEARERS OF THE MORNINGTON PENINSULA ASTRONOMICAL SOCIETY

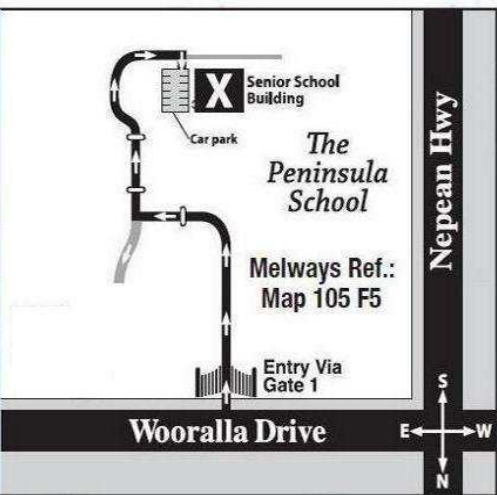
President: Peter Lowe
Vice President: David Rolfe
Committee: Trevor Hand, Fiona Murray, Paul Albers, Paula Ritchens, Clemens Unger.
Phone Contact: Peter Skilton - 0419 253 252

Secretary: Peter Skilton
Treasurer: Jamie Pole
Web Master: Steven Mohr
Scorpius Editor: Greg Walton
Library: Fiona Murray

SOCIETY MEETINGS

Meeting Venue: The Peninsula School, Wooralla Drive, Mt. Eliza, (Melways ref. 105/F5) in the Senior School at 8pm, on the 3rd Wednesday of each month (except December). Entry is via the main gate, off Wooralla Drive. (see map).

For additional details:
Internet: <http://www.mpas.asn.au>
email: welcome@mpas.asn.au
Phone: 0419 253 252
Mail: P.O. Box 596, Frankston 3199, Victoria, Australia.



LIBRARY

The Society also has books and videos for loan from it's library, made available on most members nights at The Briars site, contact Fiona Murray.

E-SCORPIUS NEWSGROUP

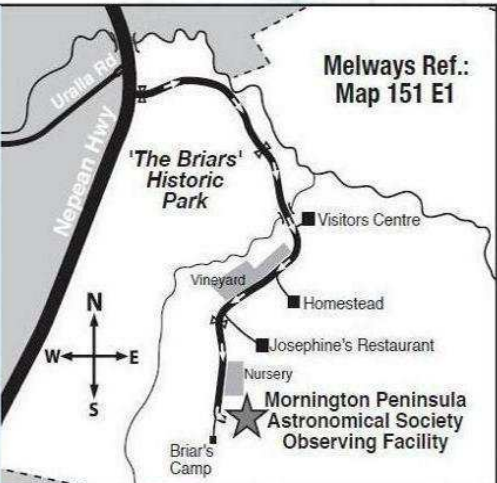
M.P.A.S. main line of communication is the online newsgroup called E-Scorpius. Here you will be kept up to date with the latest M.P.A.S. news and event information as well as being able to join in discussions and ask questions with other members.

To join, go to: <http://groups.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 saying that you want to join E-Scorpius and you will be added to the E-Scorpius list.

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 9776 2074 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.

For additional details:
Internet: <http://www.mpas.asn.au>
email: welcome@mpas.asn.au
Phone: 0419 253 252
Mail: P.O. Box 596, Frankston 3199, Victoria, Australia.



Members please write a story about your astronomy experiences and add some pictures. Send them to: Greg Walton gwmpas@gmail.com