



Cover image: M16 | The Eagle Nebula *By Steve Mohr*

This famous astronomical scene, found approximately 7,000 light years away, is more commonly known as the Eagle Nebula. Located in the constellation Serpens Cauda, the area was made famous by high resolution images taken with the Hubble Space Telescope: "The Pillars of Creation" and the "Black Pillar".

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 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 service of its members for on-site or off-site educational presentations and observing nights for schools and community groups.



MPAS - <https://www.facebook.com/mpas0/>

MPAS Members - <https://www.facebook.com/groups/MPAS1/>

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Mornington Peninsula Astronomical Society

SOCIETY NEWS

By Greg Walton



Public Night July 4th - saw more than 100 members of the public in attendance. We were all caught off guard as the sky had 100% cloud cover and we thought 'this will be an early night tonight'. Then at 8pm some stars started to appear and we had no telescopes set up. So I quickly set up Big Blue as the sky totally cleared. I mustered the members into action. Then Nerida and I started up the 4 telescopes in the observatory, with the public piling into the observatory in anticipation. All turned out ok with everyone getting a look at the planets. It stayed clear for the rest of the night and we heard many good comments about the Society. *VP Greg Walton*

Public Night July 13th - Almost a full house arrived at the Briars at 6pm under a rainy sky, looking like we would not see any astronomical delights. But at 8pm the planets started to peek out through gaps in the clouds. So we fired up the telescopes in the observatory. But by 9pm the clouds had stopped all viewing and the public went to the big shed for Peter Lowe's astronomy talk on Mars. In the observatory we had 3 telescopes continually on Mars, Saturn and Jupiter. Even though we could not see the planets with the naked eye, the planets were visible in the eyepiece. The last of the public left at 11pm. Time to go home. *VP Greg Walton*

MPAS gets a new glass-fronted mega fridge, as one of the 2 old fridges was tripping the power switch. So we now have plenty of room for those cheesecakes and pavlovas which get consumed at the monthly BBQ.

MPAS visited Optics Central - Optics Central have been holding an annual inner suburban star party in their car park at their Mitcham store for the last few years. They usually have a door prize of a budget telescope, which is the main reason most people come to the party. Dave Rolfe and I registered for the door prize, then we had a close look at the store and found they had a large range of binoculars and microscopes. They also had a complete range of Saxon telescopes from small Dobsonians up to the expensive stuff such as EQ8 GoTo mounts. Their range of eyepieces was limited to the cheaper types. But they did have many accessories for sale such as red dot finders, finder scopes, mounting plates and camera adaptors. We purchased a smart phone holder which clamps to the eyepiece, as many MPAS members are trying their hand at astrophotography with their smart phones. Photo below is Jamie Rolfe standing next to the 90mm telescope and holding a pair of 70mm binoculars which are to be given away at the MPAS astrophotography competition during the Science Week.

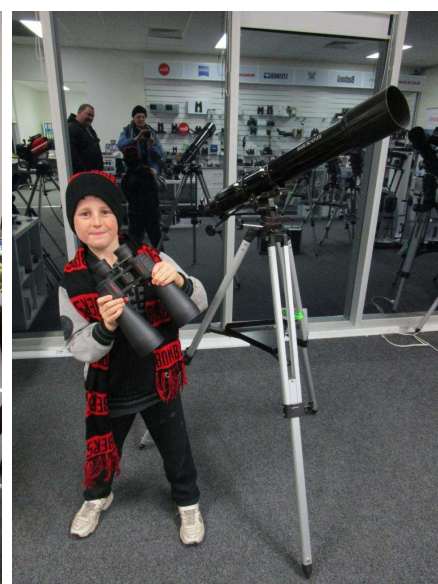


Optics Central

8/23 Cook Road,
Mitcham VIC 3132

Phone - 1300884763

<https://www.opticscentral.com.au>



MPAS setting up Coolart astrophotography display July 14th - Many thanks to Peter and Ros Skilton, Greg, Manfred and Nerida for setting up the Coolart Exhibition today. Despite the late delivery of the pictures by the framer we managed to finish up in record time. We were also blessed with perfect weather. Thanks also to everyone who submitted the pictures and those people who worked behind the scenes to make this happen. MPAS members are invited to get on down to Coolart with their family and friends to view the exhibition which opens Monday.
Regards Tony Nightingale.

Also many thanks to Tony Nightingale, who did most of the work. Greg Walton.



Photos Greg Walton

Members' Night July 14th - saw 8 members in attendance at the MPAS observatory due to a mostly clear sky. Alois showed us how to view Mars moons Demos & Phobos with his specialty modified eyepiece, but we could only see Demos, as Phobos was too close to the bright glare of Mars. Due to dust storms we could not see much detail on Mars at 300 times magnification, with the polar cap only just visible. Next we looked for comet C/2016 M1 near NGC6152 in the southern part of the sky. We quickly spotted it in the ED80 piggy-backed on the 350mm Meade. We also found it in the 35mm eyepiece looking through the Meade. We took some images of the comet and made a small video - see right. Also imaged M20 & M16. VP *Greg Walton*



AGM Society Meeting at the Briars July 18th - saw 25 members in attendance. Peter Lowe chaired the meeting and updated members on recent events. Then first up was to get through the Annual General Meeting reports and declare all committee positions open for the next incoming committee. Luckily we had enough members to fill all positions. With Peter Lowe staying on as President and Greg Walton as Vice President, Peter Skilton as Secretary, Jamie Pole as Treasurer and Anders Hamilton also staying on committee with new committee members Trevor Hand, Simon Hamm, Rohan Baumann & Nerida Langcake for the coming year. We extend the new committee many thanks for taking on the roles. Peter then gave his Mars talk, the same one he has been giving at the public nights but with a few extra bits of information. Greg Walton did a brief Sky for the Month, demonstrating why Mars is at it closest 3 days after opposition, also showed images and video of comet C/2016 M1 moving across the starry background. Then members chatted over coffee while some members opened the observatory to look at Mars.



Photo John Cleverdon

Public Night July 20th - As we always say, with Frankston under rain, travelling half way to the Briars with the windscreen wipers going all the time, the precipitation abated and, by the time I reached the Briars, not only had the rain stopped, but the clouds had mostly cleared. All 4 planets were up and readily visible for most of the evening at the observatory, with conditions clearing as the evening progressed. Dave Rolfe mentioned that he had one of the planets at a mammoth 500x magnification through a Nagler eyepiece on the large blue refractor and the seeing was still very good. So a unique night for observing, albeit a bit cold. We ended up with 47 of the public present after several cancelled at the last minute because of the weather (their misfortune as it turned out). There was a really good turnout of members to help during the evening, and most remembered to sign the logbook by the glass cabinet at the entrance. Peter Lowe gave the Mars talk he presented at the general meeting, with one audience member allegedly remarking that they'd gone to see Brian Cox present when he was last in Melbourne and they actually found Peter's Mars talk more informative! Well, Julia Zemira, here he comes for the next Stargazing Live on TV.... Inside the observatory and on the instruments on the pads and helping in general were Rohan Baumann, Nerida Langcake, Simon Hamm, Peter Skilton, Bob Heale, David and Jamie Rolfe, Ashley Cameron, Alan Predjak, Jason Heath and a few new members on the night. *Regards, Peter Skilton*



Photo Dave Rolfe

A few people asked me how I knew the magnification last night, so I will explain;

Magnification (Magnifying Power) = Telescope Objective Focal Length / Eyepiece Focal Length - So in last night's case Big Blue has a focal length of 2400mm and the eyepiece's was 4.8mm. 2400 divided by 4.8 = 500 (...500 times magnification). Normally I run Big Blue with the 9mm eyepiece for planets (260x Magnification). With any telescope the higher the magnification the duller the object will appear and the smaller the field of view that can be seen. It should be noted that both the telescope size and sky quality will limit the amount of magnification; when exceeding this limit things will look blurry and shimmery. *Regards, Dave Rolfe*

Members BBQ Saturday May 21st - saw about 20 plus members in attendance. No viewing due to clouds but still everyone enjoyed themselves. *Charlotte Swart*

Public Night July 27th - Friday night at the Briars we had 89 in attendance in the lead up to the lunar eclipse the next morning just before dawn. And the Mars opposition was also approaching, of course. As it turned out, we had about 20 bookings not showed up on the evening. One family came from Craigieburn and another from Point Cook on the other side of the bay, so quite a journey for both in one evening, and pointing to how interested the public is in the night sky (or how persuasive their kids were). Peter Lowe gave the Mars talk inside again, and there was a great turnout of members to help. Thanks to all those who came and put their names in the log book, despite it being fairly cool and cloudy. The public were positively humming with excitement, no doubt helped by the media. We had younger members Piper and Aiden helping during the evening, looking after the glass cabinet and money box, doing head counts and fixing up the chairs inside the auditorium. All in all, a good night. *Regards, Peter Skilton*

MPAS was on official duty again at Coolart Homestead on Saturday 28th and Sunday 29th all day, with no park staff rostered on.

It was a bit cooler than last week, with promise of rain increasing later in the weekend, so we weren't expecting as many (or any) to come along as the 200+ people we saw the previous Sunday. On Saturday, we had 57 people come through and no-one for the first hour, with Peter Skilton, Nerida Langcake and Peter Lowe there for most of the day, with even some astronomy books from the 1700s. The entire Cleverdon clan also visited during the afternoon. On Sunday, the weather turned quite a bit colder, rainier and windier, and the number of visitors of course increased substantially! Much like at the Briars when we observe that our public nights are paradoxically at capacity if it's raining and hailing outside. We had our first visitors within minutes of opening the doors, and the last right at closing time. In all there were 184 come through, including a few tourists. Peter Skilton and Greg Walton were there for the day, with the entire Taylor family who joined recently also visiting, complete with shiny new nametags that Nerida had organised. As we've seen at Coolart, there's quite a degree of public interest in smartphone and iPad imaging, often in disbelief, so perhaps the upcoming astrophotography workshop might need to factor that in for popularity. The highlight of Sunday, though, surely had to be the photo shoot for most of the afternoon. This came as a surprise, and wasn't quite your usual astrophoto shoot. So we had 5 European-looking models prancing around the gardens in-between showers, and inside draped along the main staircase of the homestead, leaning over the handrail, looking upwards pensively, standing in front of the exhibition photos pouting and generally looking glamorous for the photographers. And trying not to fall down the stairs in their high heels and dresses. One Ukrainian lass with long, dark hair even had to climb into the claw foot enamel bath in the room next to our exhibition so as to get just the right angle for the photographer for the light coming in through the window. Or at least that was his excuse. Greg and I, in our blue hi-vis MPAS vests, even heroically offered to stand on either side of one of the models so she wouldn't fall over the banister. For safety reasons, of course. But for some odd reason I didn't hear any shutters clicking. Must have been a mechanical malfunction. Just goes to show you never know who might drop by the exhibition, which goes until August 12th if you haven't seen it yet. *Regards, Peter Skilton*

Rare Lunar Eclipse
Saturday 28.07.18
Melbourne

Once in lifetime
 opportunity



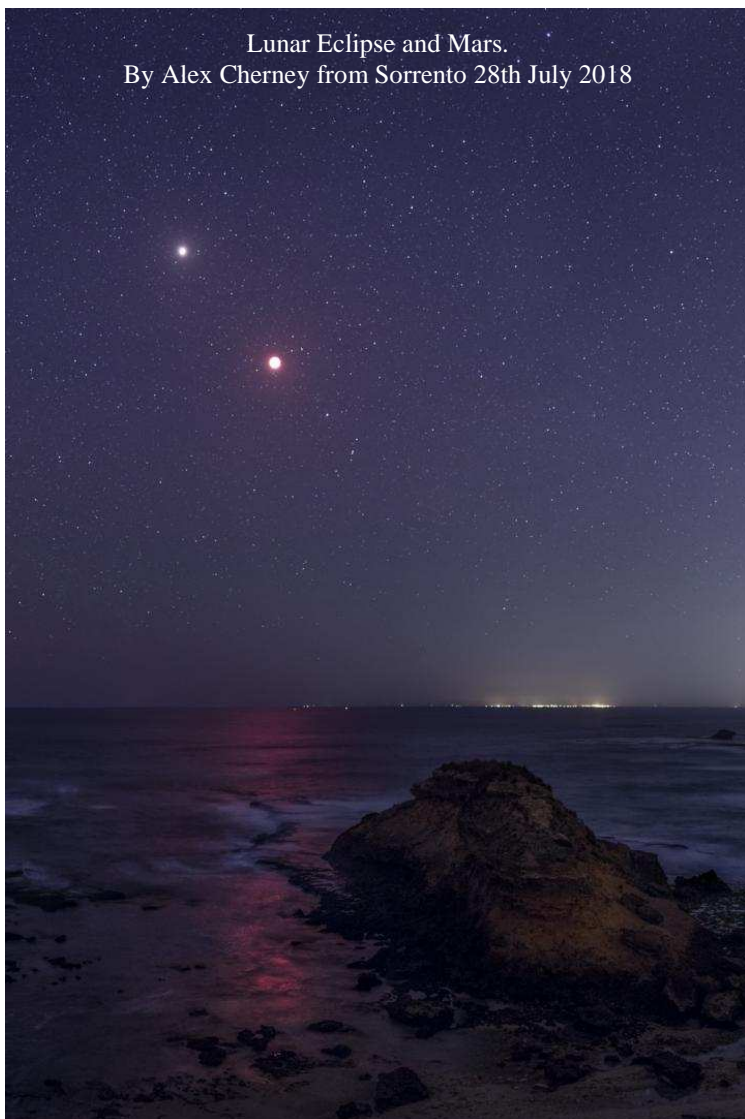
Longest Red
 1 Hr 43 Min

Blood Red Moon
6.27 am

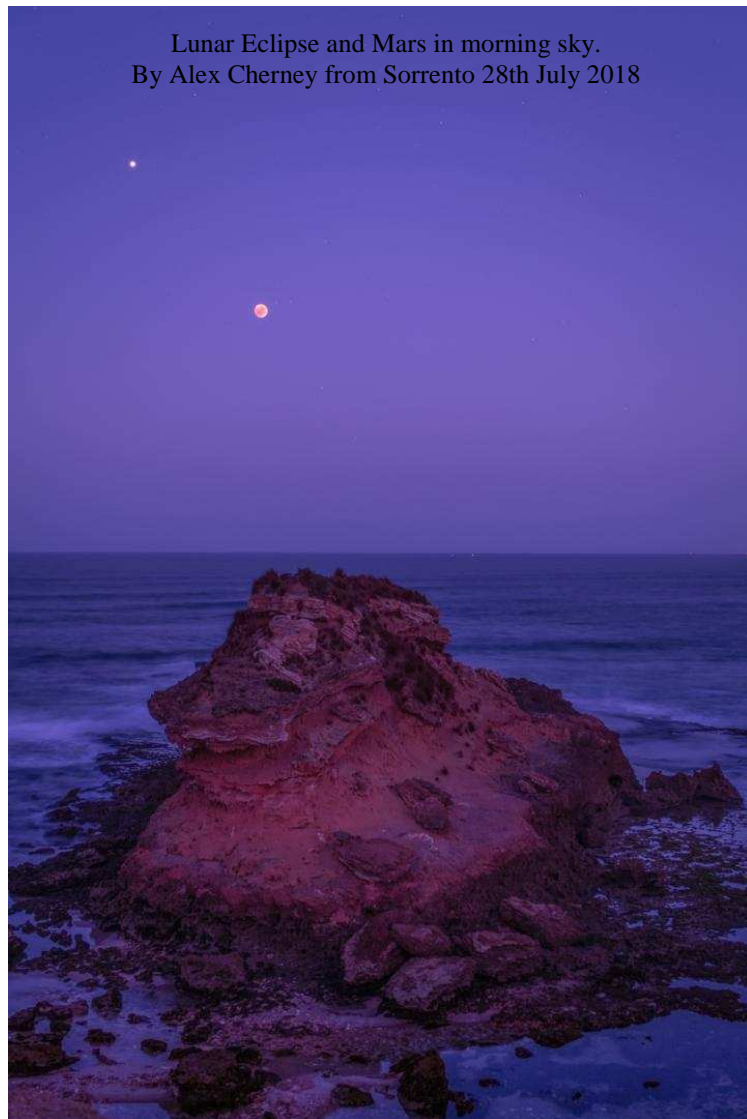
Photo by Abhay Dhoke



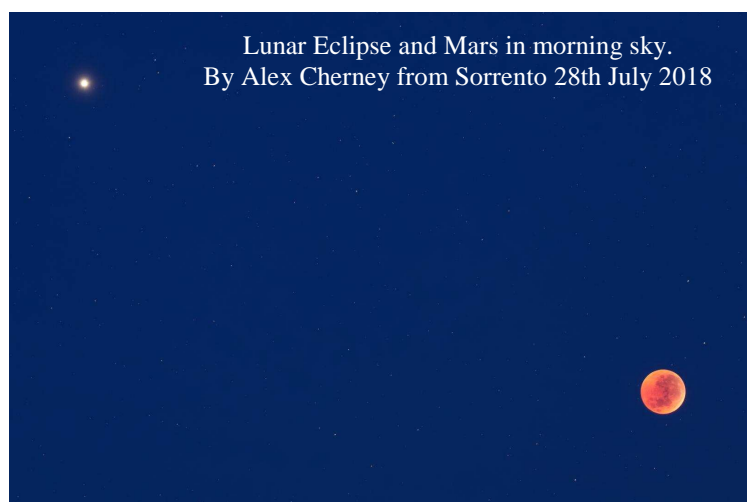
Lunar Eclipse and Mars.
 By Alex Cherney from Sorrento 28th July 2018



Lunar Eclipse and Mars in morning sky.
 By Alex Cherney from Sorrento 28th July 2018



Lunar Eclipse and Mars in morning sky.
 By Alex Cherney from Sorrento 28th July 2018



Lunar Eclipse By Domenic @ Dingley Victoria 28th July 2018



Worth getting up at 5am for.... kept shooting until I could no longer feel my fingers 😊:) #frozen (My Cheltenham backyard) Breathtaking phenomenon -
Tara Shepherd



Photograph By Tara Shepherd

← Mars



Photograph By Tara Shepherd



Photograph By Tara Shepherd

Public Night August 3rd - saw more than 80 members of the public in attendance. It rained continually so no viewing. Nerida Langcake showed the visitors the telescopes in the observatory. Peter Lowe did an extended talk due to the conditions. The public were interested in talking to the members, asking many question out the society and the universe. Due to the rain we had 2 microscopes set up, which kept the pubic amused. Also members did some repair in the observatory and unblocked the sink after a washcloth got stuck in the pipe.



MPAS bought a second-hand Sirius 2.3 metre domed observatory - Mark Hillen, Greg Walton, Robin Broberg and I turned up to the place in Rosebud, disassembled the domed observatory and transported it back to the Briars in two loads. Now we just need to decide where to put it, and what to use it for. *Regards Jamie Pole*



Scout Group @ the Briars Thursday 9th August - About 33 boys, girls and leaders of the first Mornington Scouts visited the Briars last night for preparing for their astronomy badge achievement award. Observing the planets and star clusters from inside the observatory started proceedings for the Scouts, with Nerida Langcake, Philip Rea, Simon Hamm, Robin Broberg and Fred Crump looking after the telescopes and marshalling the visitors. The skies were clear all evening. Peter Skilton then gave the badge talk indoors, after a few technical hitches at the start when his laptop looked as if its screen had decided to croak it at the worst possible moment. After some encouragement of the engineering kind, it came good and behaved itself for the rest of the evening. We almost had to go to Plan B of trying the PowerPoint slides on Peter Lowe's Apple's emulation of that software. The new sound system wasn't working that evening either, but fortunately the group wasn't large and so a traditional voice presentation did the job. There were a lot of questions asked, peppered around the room evenly, and many doubled-up ones like you get journalists firing at politicians in a press conference. One notable question that I noticed drew a few smiles around the room, especially from the Scout Leaders, and was the second question within the one sentence, was "Would an astronaut's body decompose in space?" I also noticed that some live fact checking was going on with scouts jumping onto Google on their phones. After an hour of interrogation, some of the group then went back down to the observatory with their parents for more viewing of the sky, whereas others went home. The evening was a success, with the next combined Scout night due a fortnight from tonight, and already having 3 troops booked for it. *Regards, Peter Skilton*



MPAS Astrophotography Workshop

Photos: The 3 Big telescopes I built all together at the MPAS Briars site. I was interviewed about the MPAS Astrophotography workshop to be held on the 8th September by Melisa from Married at First Sight, Mornington Peninsula News. *VP Greg Walton*

Astrophotography workshop on the 8th of September 2018 @ Briars MPAS society rooms Mt Martha, 12:30 pm till late.

\$40 entry, www.mpas.asn.au Book online at <http://www.trybooking.com/198793>



Photos by Pia Pedersen



ASTROPHOTOGRAPHY WORKSHOP

SYMPOSIUM

The Mornington Peninsula Astronomical Society is proud to announce an Astrophotography Workshop.

We will be canvassing and introducing concepts which will assist both the amateur and the professional photographer.

The day will have an array of lectures given by experienced and acknowledged astro-photographers.

A practical hands-on session will also be held during the evening at our observatory.

We will be providing tea, coffee and biscuits during the day.

A BBQ and refreshments will be supplied to gear you up for the night ahead.

TOPICS

Introduction to Astrophotography.

Imaging the Southern Lights (Aurora).

Wide-field Astrophotography with a DSLR.

Deep sky Astrophotography.

Photoshop for astrophotography
(If weather is overcast)

Practical application and consolidation of concepts acquired.

When: The 8th of September 2018

Where: The Briars MPAS society rooms Mt Martha

Time: 12:30 pm till late

Places are limited to 80 people so bookings are essential.

\$40 entry, which includes a BBQ Dinner and light refreshments.

Bring your Tripod, Camera, warm clothes and an enquiring mind.

Further information can be found at www.mpas.asn.au

Book online at <http://www.trybooking.com/198793>



Coolart 12th August - It was a huge Sunday at Coolart for MPAS as part of Science in the Park for National Science Week, starting just after 8 am with setup ahead of the arrival of the public at 10 am sharp. The stream of people arriving didn't abate until 30 minutes before closing time of 4 pm. The day started sunny, but by mid-afternoon the cloud had rolled in and with very light drizzle specks just before closing. Fearing the worst, Simon Hamm was available with a seemingly endless supply of bright fluorescent orange umbrellas he'd acquired from another marquee as he walked around and around the gardens during the day.

Photo Jamie Pole



There were many other organisations present, being mostly environmental and educational in nature, though ours was the largest marquee at 6 metres wide and 12 metres across and we filled it easily with science posters, live demonstrations of microscopes, mirrors, prisms, colour effects, using the new spectroscope as a teaching aid, Scinema space documentaries and short films for this year, solar observing of a somewhat featureless disc, a solar system jigsaw puzzle and periodic tables of the

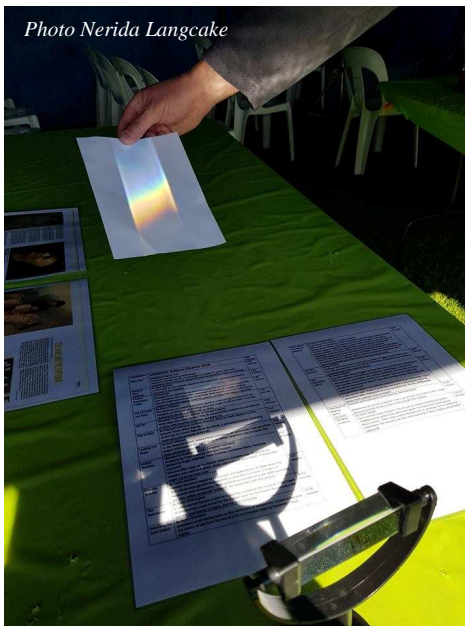
elements in different forms. There was never a slow moment throughout the day as people streamed through, with many being unaware of us before the day. We are probably going to get quite a few coming for the first time to our upcoming public nights at The Briars.

It was probably just as well that we were so busy, because Greg Walton and Pia Pedersen had barrages of interested kids with the microscopes and Pia was looking understandably a tad jet-lagged after her recent Denmark return and it must have helped her not nod off inside the inviting darkness of the marquee.

Philip Rea and his partner Christine attended their reflector with a solar filter, but the Sun didn't cooperate by showing much detail. Jamie Pole's special solar telescope also gave a nice red ball of colour, with David and Jamie Rolfe nearby, but no prominences or sunspots. Murphy's law. Nevertheless the spectroscope showed nice colours on the projection screen inside using the LED calibrating source.

The jigsaw puzzle was started by Piper, Jamie and Ashley Grierson in the morning, enticing waves of passing kids to have a go, though by afternoon it still wasn't finished. Never fear, Fred Crump arrived with his unique method of doing jigsaws and set to work on it in earnest. I didn't see the end result before it was put back in its box at the end of the day, but it must have been nearing completion.

Photo Nerida Langcake



Ros and Peter Skilton looked after explaining the many optical bits and pieces there, such as convex and concave mirrors, showing the meteorite, and helping the many Mums during the day untangle the Newton's Cradle after their kids had tried using it for a few minutes making it resemble macramé.

With Piper's help, many a rainbow spectrum was formed from the white sunlight passing through a triangular prism, and many photos were taken of this by the visitors.

Then, using a small projector device employing LEDs of different colours, the

individual colours were recombined to form a white light again where they overlapped, showing it working in both directions.

SCIENCE IN THE PARK

FREE SCIENCE ACTIVITIES FOR ALL AGES

WHERE IS IT: Coolart Wetlands and Homestead
Lord Somers Road, Somers VIC 3927
Melways Ref: 193 PJ

WHEN IS IT: 12th August 2018, 10am - 4pm
FREE ENTRY, FREE PARKING.
For more information go to:
www.facebook.com/scienceintheparkcoolart

IDENTIFY AND MONITOR

- Local species of waterbugs, frogs, birds and koalas

HANDS-ON SCIENCE ACTIVITIES

- Join PrimeSci, the Labrats Science Club and other organisations

SCIENCE SEMINARS

- Keynote Speakers include: Ian Temby, Urban Wildlife Conservationist
- Learn how YOU can participate in REAL science research

EXHIBITION

- "Adventures Under Southern Skies" by the Mornington Peninsula Astronomical Society

INDIGENOUS EVENTS

- Welcome to Country
- Smoking Ceremony
- Cultural Tour of the Coolart Reserve

TOURS OF COOLART RESERVE

- Learn about the local ecology with Gidge Walker
- EPA Discovery Walk

OTHER ACTIVITIES

- Visit the manned birdhides
- Participate in the Scavenger Hunt
- Meet "The Connies"
- BYO picnic or visit the food stalls

SPONSORS

GAME CHANGERS & CHANGE MAKERS

Partners: Western Port Biosphere, Monash University, Bururong Local Council, Port Phillip Waterport, Parks Victoria, Mornington Peninsula Astronomical Society, Friends of Coolart, etc.



Photo Jamie Pole



Photo Jamie Pole



Photo Jamie Pole

Several members patrolled the photo exhibition during the day, most notably Nerida Langcake on her mission to get everyone in Victoria to try phone photography at least once, engaging the public in explanations about the photos and techniques used by their photographers, and distributing leaflets.

A vital role in the homestead was performed by those overseeing the people-counter clicker at the top of the stairs. There were some younger visitors who liked to press it several times rather than once, and many other visitors who simply didn't bother to press it at all for their family.

Not very helpful for a head count. So Piper, Ashley and Jamie tried to even this out by watching who ascended the staircase or tried to sneak past. All in all between them they had this sorted out pretty well. The final tally at the end of the day was officially 799 visitors to the exhibition, plus 2 cleaners who came upstairs as I was turning out the lights at the end of the day.

This number of visitors was quite credible. The Coolart property was known from past years to be able to fit 250 cars before they have to put the overflow into the Somers Camp grounds next door. That holds about 100 cars, before it's overflow spills into the Somers Primary School nearby.



And if it's 100 filled then the cars had to wait in line until someone left as they weren't allowed to park along the road, clogging it to traffic. The Lions Club were managing traffic for the event. When Ros arrived near midday she had to wait for 15 minutes before her car was allowed to squeeze into the Primary School, so around 800 visitors is entirely believable for that many cars in total.

During the day we were also visited in the marquee by Associate Professor Chris Fluke, an astronomer from Swinburne Uni, and Dr. Russell Anderson, a physicist from Monash Uni, both of whom have visited MPAS to give a talk in the past. And we saw a former member from a couple of decades ago, Sue Stoner, and her son return and perhaps we've enticed them back.

Originally we were going to bump out the photos and paraphernalia at the end of today, but during the afternoon we were requested by both PrimeSci and Parks Victoria to extend it another 2-3 weeks so others can be told about it and bring their friends along. So we had some very impressed folk today at Coolart.

Well done to everyone attending and helping make it a big success, and of course to those behind the scenes as well. *Regards, Peter Skilton*



Photo Nerida Langcake



Photo Nerida Langcake

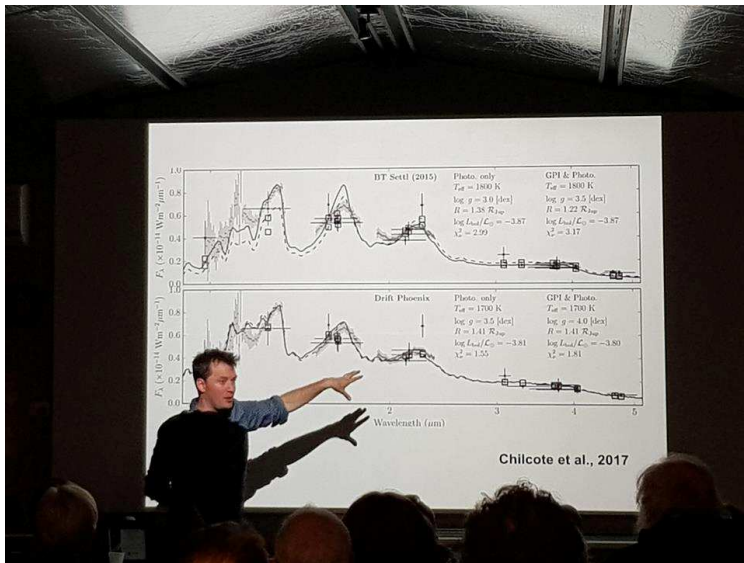


Photo Pia Pedersen

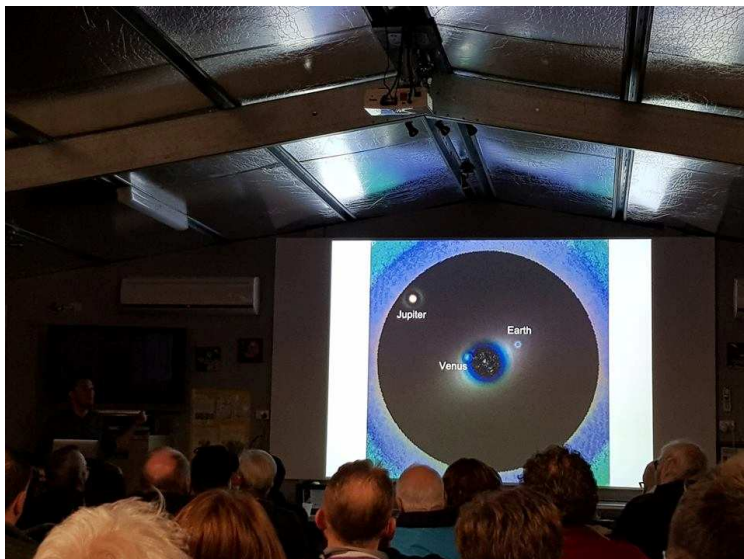


Photo Nerida Langcake

Society Meeting at the Briars August 15th - saw 60 members and about 20 from the public in attendance. Peter Skilton chaired the meeting. As part of Nation Science Week our guest speaker from NASA, Dr Laurent Pueyo, talked on how astronomers find Earth-like planets around other stars, about future missions and what is needed to find smaller planets and their moons. Dr Laurent also answered many questions. After the talk the sky was mostly clear so we then opened the observatory for members to look at the planets. Mars showed its shrinking polar cap and some grey patches as the dust storms on Mars appear to be abating. We also showed Dr Laurent NGC5139 Omega Centauri, which can only be seen from the southern hemisphere. Then members chatted over coffee.

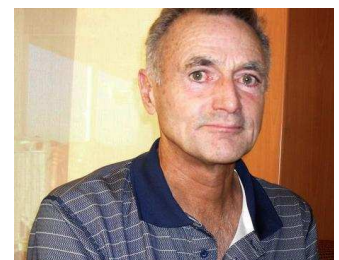


Dr. Laurent Pueyo from the Space Telescope Science Institute visited us at The Briars instead of the previously scheduled speakers. He is at the leading edge of the next generation of NASA space telescopes to find other Earth-sized planets and is an astronomer at the Space Telescope Science Institute, in Baltimore, Maryland. He earned his doctorate from Princeton University in 2008 and conducted post-doctoral work as a NASA Fellow at the Jet Propulsion Laboratory and as a Sagan Fellow at the Johns Hopkins University. His research focuses on imaging faint planets around nearby stars. He has pioneered advanced data analysis methods that are now standard tools used to study extra solar planets, and invented an optical technique that is now baselined for future NASA missions. At STScI his duties include optimising the extra solar planet-imaging capabilities of NASA's James Webb Space Telescope, scheduled to launch next year. He is also a member of the Science and Technology Definition Team for the Large Ultraviolet Optical and Infrared telescope, a future observatory that will identify Earth-sized planets and assess their habitability. Dr. Pueyo presented recent observational results in exoplanet imaging and discussed prospects for similar experiments on NASA missions such as the upcoming James Webb Space Telescope and the currently studied Large UV/Optical/IR Surveyor. For the talk, photography was permitted, but any sound or video recording was only allowed for the main talk and not the Q&A afterwards. *Regards, Peter Skilton*



We would like to say many thanks to Tony Nightingale for all the work he has done over the last few years as liaison officer for MPAS as well as for a lot of hard work put in at our events. Tony has lifted the public awareness of astronomy on the Mornington Peninsula. Tony has now moved to sunny Cairns in Queensland, so can't continue as liaison officer. But Tony said he will stay on as an MPAS member, as he will visit MPAS when in Melbourne.

On behalf of everyone at MPAS we wish you all the best. *VP Greg Walton*



National Science Week Public Night August 17th - More than 70 members of the public were in attendance. It turned out to be a very cold and windy night with patches of cloud passing overhead. Many arrived early hoping to see the planets before the talk by Peter Lowe (President). Venus was shining brightly in the west and in the telescope had the appearance of a first quarter Moon. Jupiter and Saturn also pleased the public as usual. Mars did show its small polar cap and some grey smudges at 200 times magnification in the 350mm Meade telescope. During the talk we announced the winners of the Space Photo Competition.

1st place - "Dark Nebula" by Logan Nicholson.



MPAS invites submissions from primary & secondary school students to an astronomy themed photo competition as part of our National Science Week program.

Space Photo Competition



1st Prize
Saxon 90mm
Refracting Telescope

Valued at \$350

+ MPAS 1 Year Family Membership



2nd Prize



Celestron
Skymaster 15x70 Binoculars
Valued at \$170

3rd Prize

Entry to the annual
MPAS Astrophotography
Workshop

Valued at \$40

Photos can be of anything (day or night) provided they have a reference to the subject of space or astronomy. Photos will be judged on content, composure & creativity.

Email your entry (and a description) as well as your details (including age) to photocomp@mpas.asn.au

Entries close midnight the 12th August 2018. Winners will be notified in advance and announced at our National Science Week event on August 17th at the Briars, Mt Martha.

The terms and conditions

- ◆ The picture needs to be taken in last 12 months ◆ One entry per person only
- ◆ Participant needs to be aged 18 years or under and be a resident of Victoria

For full terms & conditions refer to www.mpas.asn.au under events tab.



2nd place - "Sphere Squared" by Isaac Newman (Left)

3rd place - "Milky Way" by Harley Hopkins (Below)



We had 22 entries in all, which were voted on by MPAS members.

First place – Be157 with NGC6726/27 in Corona Australis

2nd place - taken at MPAS astrophotography expo at Coolart. See mirror ball in glass cabinet on page 3.

3rd place - wide angle view of the Milky Way in winter.

Mars imaged with its 2 moons Phobos and Deimos 5th August 2018 @ Time 11:05pm By Alois Dvornik

Maksutov 7" Focus length 2670 .TELE VUE 2x POWERMATE
Exposure 8s ._4 82C. SBIG ST-9 3CCD Camera.EQ-6 PRO

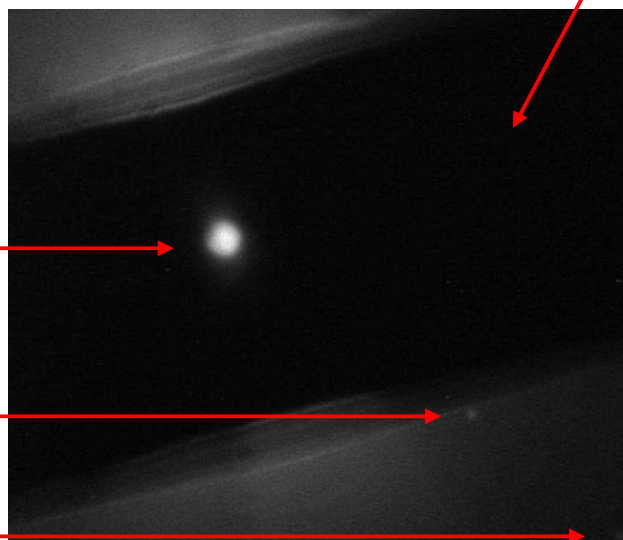
Dark area is where the occulting bar on the eyepiece or camera reduced the brightness of Mars.

Mars - Magnitude -2.7

Mars is too bright to see Phobos or Deimos.

Phobos - Magnitude 10.46

Deimos - Magnitude 11.55



MPAS Astrophotography expo @ Coolart gets extended.

It was a chilly, mostly windy and wet weekend at Coolart homestead with the photo exhibition. A typical Winter's weather for Melbourne. It was also a little eventful on both days, 18th & 19th August 2018.

Nevertheless, we had 219 visitors through, bringing the recorded total to date of 8320 visitors so far. During the weekdays we are averaging 230 a day, using our visitor clicker device when it's unattended. We know from direct observation that a good proportion of adults don't bother to click their presence, even after reading the sign, and a fair proportion of kids overclick so as to show off if their mates are with them. On the weekdays (when it's mostly adults coming through), the tally is therefore going to be an underestimate, but on the weekend is probably close to the true count when you get a mix of adults and kids visiting.

On Saturday, the day started off a little unexpectedly with the homestead's alarm system not recognising me. So for the first 20 minutes I had to contend with flashing lights, piercing klaxons, and the prospect of teams of men in black leaping from SWAT vans yelling hup, hup, hup coming to get me. After half a dozen phone calls, eventually the alarm gods were placated and silence returned to the homestead and then I could let the public in. About 15 minutes before closing time, a couple of locals slipped in who had already been to the exhibition during the week, but wanted to come again. Clearly no-one was there the first time, because when they saw me they made a beeline and it was question after question after question about the displays and photos. An hour later after I'd fielded all the curly questions, they were satisfied, and it was time to close the front door.

As I reached the bottom of the staircase, an enthusiastic family crossed the lawns and entered at speed. I didn't understand the grand-parents since I think they spoke only Hindi, but the father of the children, seeing I was just about to close up, hastily explained they'd just driven from Point Cook for the exhibition and could they come in pretty, pretty please. Well, how could I refuse that? Lights back on and in they came, including lifting a pram upstairs, and stayed for half an hour admiring it all and were profusely thankful.

Sunday on the other hand saw an overnight power outage across the property. The automatic front gate was firmly closed and required a manual key reset by the Ranger not on duty that weekend, so this took about half an hour to sort out. Fortunately no-one had been locked inside overnight, because exiting also would not be possible. The gates automatically close themselves at 5pm sharp. I opened up the homestead and fortunately there was enough ambient light for people to look around even without the lights on. Even though it was raining when I arrived, there were half a dozen people standing at the door waiting to come in. Now they were either keen for the exhibition or keen to get out of the wind. And when the power was eventually restored, you guessed it..... the alarm went off. Flashing lights, piercing klaxons, and the prospect of teams of men in black leaping from SWAT vans yelling hup, hup, hup.

Dave Rolfe and his family popped in during the afternoon (I can't be completely sure, but I didn't hear them go hup, hup, hup) and took the best part of half an hour to find the secret passageway of the homestead. I'm not sure if the highlight was them finding it, or me watching them all try to find it for so long. It took Nerida and me a few minutes originally on the first weekend there.

The exhibition will start to be removed from next Sunday afternoon onwards. So if you hope to experience it yourself, you need to get Coolart in Somers quickly. *Regards, Peter Skilton*

Photo Dave Rolfe

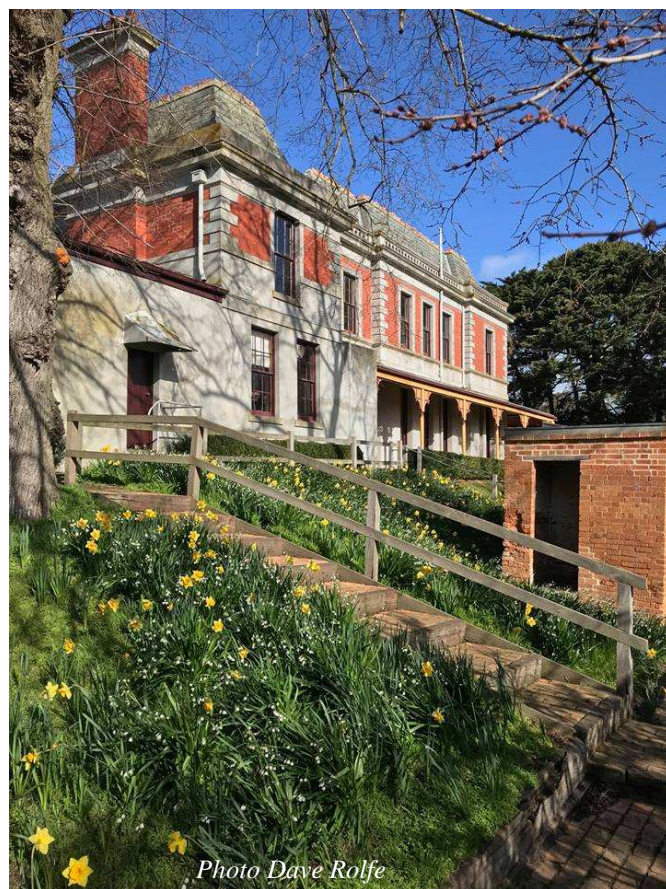
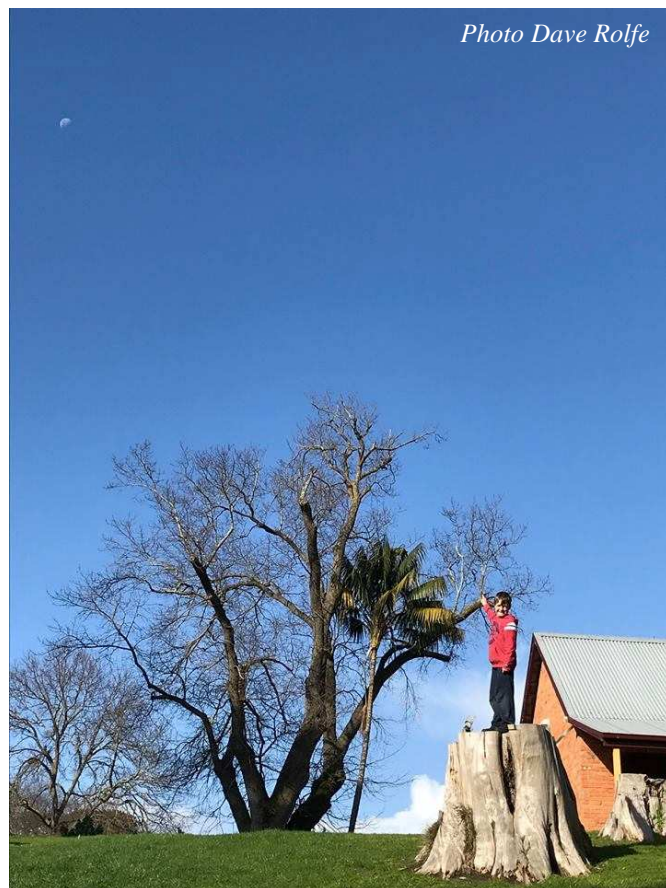


Photo Dave Rolfe

Members BBQ and working bee Saturday August 18th starting at 1pm.

About 15 members were in attendance on this rainy day. New members David Haddon and Adrian Taylor remove dead trees, dug a power cable trench for new dome observatory and also made stencils for 3 new wooden signs to be located on the Briars road to the MPAS site. Dave Rolfe and Roland Knabe washed all parts of the dome observatory. John Cleverdon helped set up the formwork for the new Sirius dome observatory and moved branches to the lower paddock. Manfred fixed the tracking motor on Big Blue, glued the lens in the Telrad finder on the 12 inch Dobsonian which had come loose and also helped set up wooden formwork. I fixed the tracking motor on the 18 inch Newtonian which had stopped working due to a loose wire. Pia cooked and cleaned, while other members set up tables and chairs. VP Greg Walton



Photo Greg Walton



Photo John Cleverdon



Photo Greg Walton



Photo Greg Walton

New Members Welcome	
<p>Elke & Peter Fulton & family</p> <p>Liam Fitzgerald & family</p> <p>Elizabeth Clifford & family</p> <p>Tracey Saville</p> <p>Lisa & Oliver Antrobus & family</p> <p>Matthew Haynes & family</p> <p>Paul & Julie Garner & family</p> <p>Asif Akbari & family</p> <p>Glenn, Blanka, Lachlan & Caelen Sneddon</p>	<p>Martin & Amber Bailey</p> <p>Peter Kalogris & family</p> <p>Rick Lanham</p> <p>Sandra Tiernan</p> <p>Asif Akari & family</p> <p>Helen & Nicholas Savva & family</p> <p>Grant Douglas</p> <p>Rachael, Daniel & Logan Nicholson</p>

**PUBLIC NIGHT THANK-YOU**

Recent public viewing nights and school viewing nights have continued 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.

**Scorpius editing team.**

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

Send them to: Greg Walton
gwmpas@gmail.com

MPAS SUBSCRIPTIONS 2018

Each ticking over of the New Year also means that Society fees are due to be paid. The committee has worked hard to ensure that 2018 fees are still the same as the previous many years' prices. So to assist the society in maintaining the facilities and services we provide and share, we appreciate your prompt payment for each and every year ahead. As a reminder, the following structure of the 2018 fees is:

SOCIETY FEES

Subscriptions can be paid in a number of ways:

- Cash payments to a committee member
- Send a cheque, made out to "Mornington Peninsula Astronomical Society", to 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.

Click on the link for further information - https://drive.google.com/file/d/0ByvkxzZG19g_NXZ4cWxHbERTdEE/view?usp=sharing

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

You can now renew your membership online. See link below. Click on Members then JOIN NOW at the bottom of the page. Then just fill in your detail on Try-booking.
<http://www.mpas.asn.au/members.html>



Full Member	\$50
Pensioner	\$45
Family	\$65
Family Pensioner	\$60

CALENDAR		September / 2018					Red Days indicate School Holidays
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
30						1	Venus 1.2 deg left of Spica
2 Fathers day	3 Last Quarter	4	5	6 Saturn stationary	7 Public Night 8pm	8 APW Neptune at opposition	
9	10 New Moon	11 Comet 21P/Gia-Zin near M37 Morning	12 ASV Meeting	13 Venus left of the Moon	14 Jupiter left of the Moon	15	
16 Comet 21P/Gia-Zin near M35 Morning	17 First Quarter Saturn above the Moon	18	19 Society Meeting 8pm	20 Mars above the Moon Moon at 404,876km	21 Venus at -4.8 mag	22 Members Night BBQ 6pm	
Equinox 23 Comet C/2016 M1 between Alpha & Beta Centauri	24	25 Full Moon Comet 21P/Gia-Zin near NGC2264 Morning	26	27 Moon at 394,466km	28	29	

Monthly Events

Public nights - 8pm start on the 7th @ the Briars

Society Meeting - 8pm to 10pm on the 19th @ the Briars

Members Night BBQ - 6pm on the 22nd @ the Briars

Astrophotography Workshop - 12:30pm on the 8th @ the Briars (We need members to help on the day)

CALENDAR		October / 2018					Red Days indicate School Holidays
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
	1 Comet 21P/Gia-Zin near NGC2301 Morning	2 Last Quarter	3	4	5 Public Night 8pm	6	
7	8 Comet 21P/Gia-Zin near M50 Morning	9 New Moon Vesta near NGC6638	10 ASV Meeting Mercury left of the Moon	11	12 Jupiter left of the Moon	13 Comet 21P/Gia-Zin near NGC2345 Morning	
14	15 Saturn left of the Moon	16 Venus close to Mercury Comet 21P/Gia-Zin near NGC2360 Morning	17 Society Meeting 8pm First Quarter	18 Mars above the Moon Moon at 404,227km	19	20 Members Night BBQ 6pm	
21	22	23 Comet 21P/Gia-Zin near NGC2367 Morning	24 Scorpius Deadline Uranus at opposition	25 Full Moon Moon at 383,848km	26	27 Comet 21P/Gia-Zin near NGC2362 Morning	
28 Jupiter close to Mercury	29	30	31				

Monthly Events

Southern Comets website - <http://members.westnet.com.au/mmatti/sc.htm>

Public nights - 8pm start on the 5th @ the Briars

Society Meeting - 8pm to 10pm on the 17th @ the Briars

Members Night BBQ - 6pm on the 20th @ the Briars

Please... we need helpers to keep the MPAS Observatory open to members on all Saturday nights.
If you can help, contact Greg Walton on 0415172503 or email - gwpas@gmail.com

SCIENCE WEEK OPENING

By Dave Rolfe



What a great way to celebrate the Victorian opening of Science Week! A beautifully arranged table of yummy nibbles, lovely locally sourced beer and wine and great combination of Royal Society of Victoria Members and Science Week facilitators all gathered at Magnet Galleries in Docklands to mark this occasion.



The evening commenced with Victoria's Lead Scientist, Dr Amanda Caples welcoming the crowd and proudly announcing the introduction of Victoria's Public Libraries as facilitators of activities this year. Also next year they will be holding a science photography contest (this year they co-sponsored MPAS's contest) and plan to get more involved in STEM projects. Then this was followed by an entertaining poem composed and presented by the coordinator of the Science Week program, encompassing many of the 350 varied activities planned across the state.

Dr Amanda Caples



To round out the evening it was time to be informed and entertained by Dr James Driscoll (Geologist, Monash Uni – Earth, Atmosphere & Environment), with an excellent presentation featuring fascinating facts and recently released information pertaining to volcanos, past, present, international and local.

His talk was centred on a Gothic tale that weaves art and science, focusing on the geological and climatic catastrophe that created the conditions for the writing of Frankenstein by Mary Shelley - three years of winter. He concluded by informing us of the 400 volcanos in western Victoria that have recently been studied by his fellows. An interesting point was his “don’t quote me prediction” of which one will erupt next - Penola or Ballarat!

James also clarified the following: Lava is the same as Magma (just above ground)..

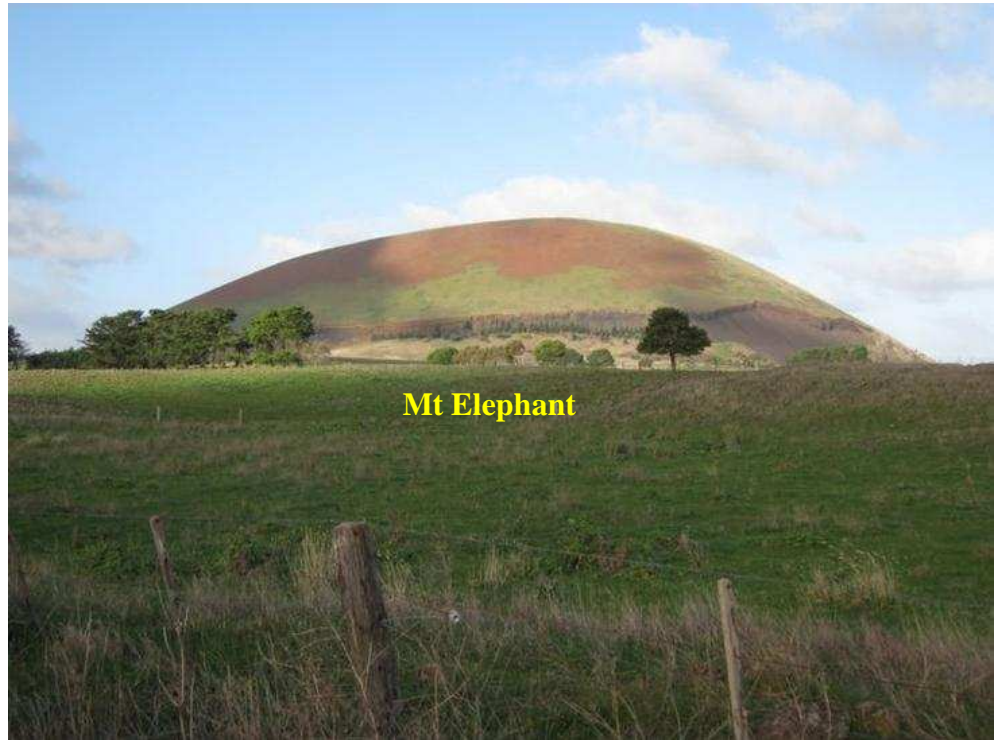
How pyroclastic clouds are created.

There is 300x more man-made CO₂ than those emitted from volcanos each year.

Hollywood often show people outrunning pyroclastic clouds that actually move at about 400km/h.

Lava flows (e.g. Hawaii at the moment) move slowly and no one has actually died from them!

Dr James Driscoll



national science week 2018

The Royal Society OF VICTORIA
Promoting science since 1854

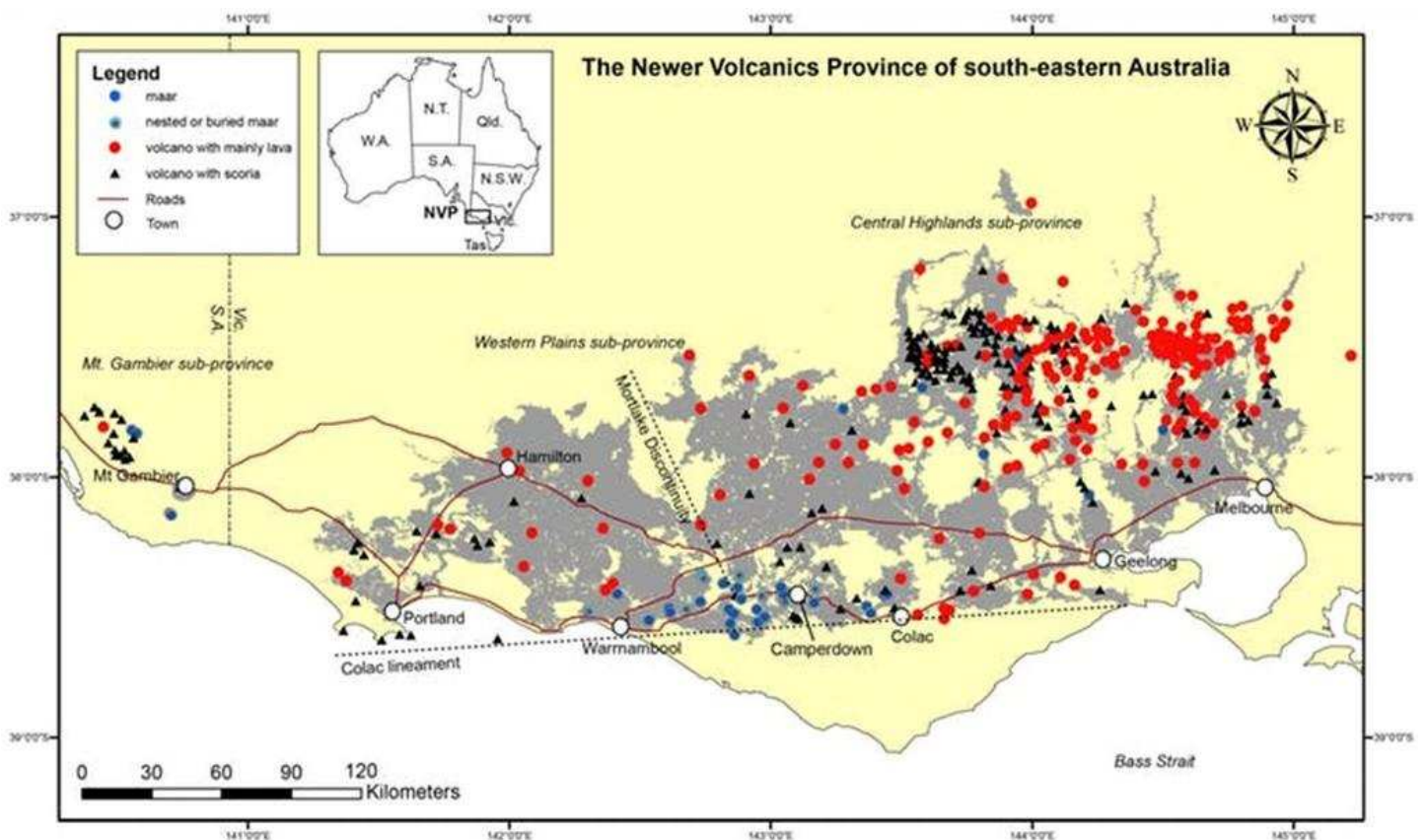


Economic Development,
Jobs, Transport
and Resources

MAGNET
GALLERIES
MELBOURNE

MAGNET
@ Docklands

Map below - Victorian Volcanos (even over 20 in greater Melbourne)



Astronomers discover 10 new moons for Jupiter

On July 17, 2018, astronomers announced they've discovered even more moons orbiting Jupiter – 10 additional moons, in fact, bringing the known total of Jupiter's moons now to 79. Nine of those 10 moons are what the astronomers are calling normal, but they've labelled one as a real oddball. As so often happens, the astronomers found the moons while searching for something completely unrelated.

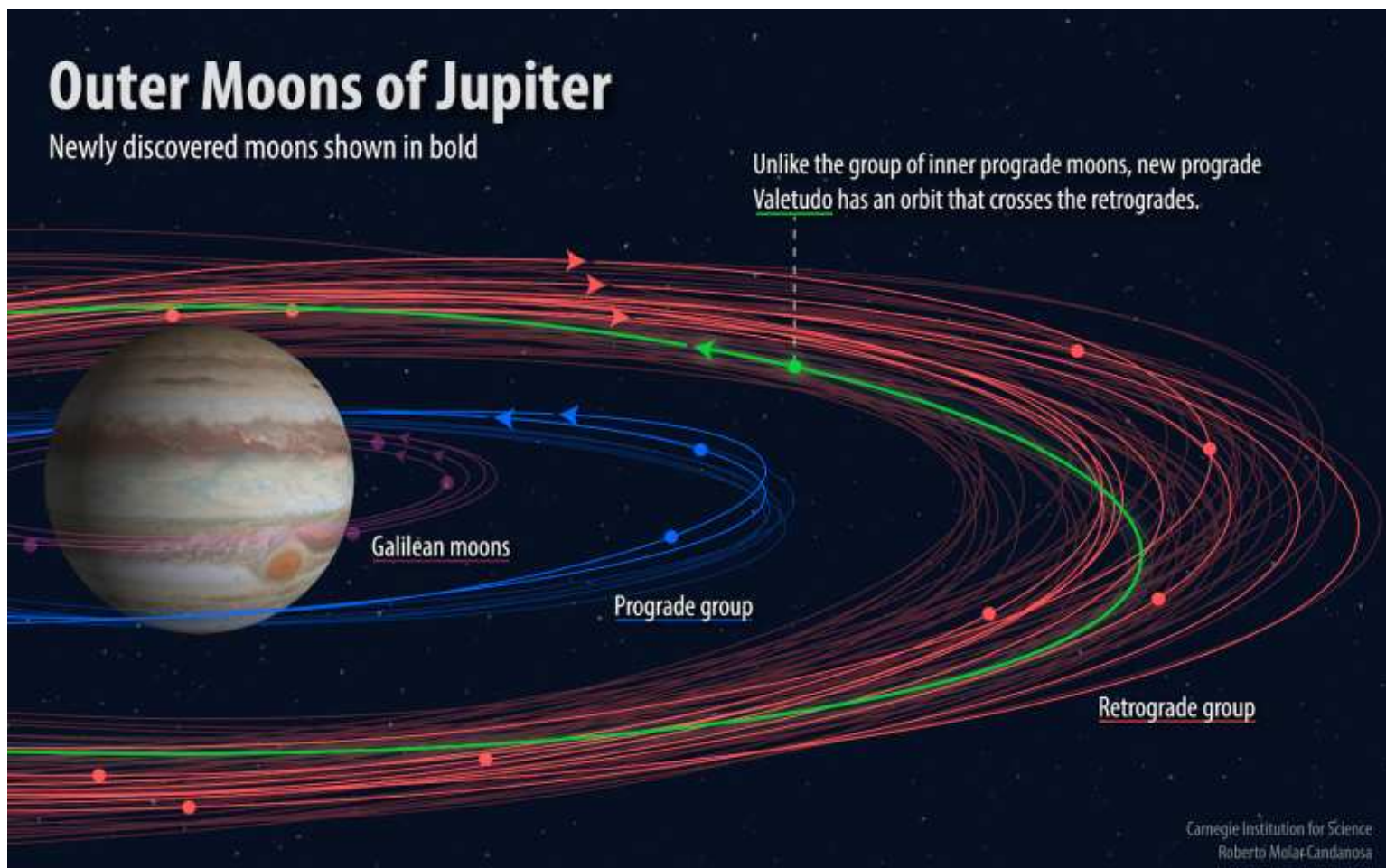
It should be noted that the July 17 announcement by Carnegie Science also contains two moons that had been previously found and announced in 2017. Those 2017 moons were labelled S/2016 J1 and S/2017 J1. That gives us a total of 12 new moons for Jupiter confirmed since early 2017, two last year and 10 this year.

All of these new moons are very small, only about one to three kilometres across (a kilometre is 0.6 miles). In that way, they're like many of Jupiter's other small moons. They're thought to have formed after the gas and dust from the earliest stages of planetary formation had dissipated.

Nine of the 10 new moons orbit in a retrograde direction, that is, opposite direction of Jupiter's spin. They are part of a larger swarm of moons orbiting a long distance out from Jupiter. All of these moons are thought to be the remnants of three much larger bodies that were destroyed by collisions with other moons, asteroids or comets.

The 10th new moon is the oddball. It's more distant than Jupiter's prograde moons – those that orbit in the same direction as Jupiter's spin. Its orbit is much more inclined, crossing the orbits of the outer retrograde moons. The moon has been nicknamed Valetudo, after the Roman god Jupiter's great-granddaughter.

Since Valetudo is moving in the opposite direction to the other retrograde moons, there is a greater chance of a collision occurring, and is probably inevitable. Such collisions would have been very common earlier in Jupiter's history, when most of the moons were still forming from the gas and dust surrounding the young planet. The two other moons mentioned by Carnegie Science are much closer to Jupiter, and orbit in the prograde direction, the same direction as Jupiter's rotation. They are also part of a larger group of small moons thought to be the left-over remnants of a once larger moon. So we are still finding moons for Jupiter. As for how many ultimately will be found, no one knows. For a long time the number hovered at 69, and now it is 79. It's likely that even more small moons are still waiting to be found. Now, thanks to a search that was primarily for Planet Nine, astronomers have discovered even more – for a total of 79. This is the largest number of moons of any planet in the solar system.



<http://earthsky.org/space/10-new-moons-discovered-jupiter-1-oddball>

Commander Chris Hadfield – Canadian Astronaut

Some of you may know who Chris Hadfield is, and if not by name, then you probably know him as the astronaut who played the guitar and covered the David Bowie song “Space Oddity” whilst commanding the International Space Station.

I had the pleasure of seeing Commander Chris Hadfield speaking live on stage in August 2015. He has lead a fascinating and exciting life, and has a published book called “An Astronaut’s Guide to Life” detailing the path which lead him to become the Commander aboard the ISS, and the time he has spent in space.

So, here’s a brief rundown of his history...

Chris Austin Hadfield (born 29 August 1959) is a retired Canadian astronaut who was the first Canadian to walk in space. An engineer and former Royal Canadian Air Force fighter pilot, Chris Hadfield has flown two space shuttle missions and served as commander of the International Space Station.

Chris Hadfield, who was raised on a farm in southern Ontario, was inspired as a child when he watched the Apollo 11 Moon landing on TV. He attended high school in Oakville and Milton and earned his glider pilot licence as a member of the Royal Canadian Air Cadets. He joined the Canadian Armed Forces and earned an engineering degree at Royal Military College. While in the military he learned to fly various types of aircraft and eventually became a test pilot and flew several experimental planes. As part of an exchange program with the United States Navy and United States Air Force, he obtained a master's degree in aviation systems at the University of Tennessee Space Institute.

In 1992, he was accepted into the Canadian astronaut program by the Canadian Space Agency. He first flew in space aboard STS-74 in November 1995 as a mission specialist. During the mission he visited the Russian space station Mir. In April 2001 he flew again on STS-100 and visited the International Space Station (ISS), where he walked in space and helped to install the Canadarm2.

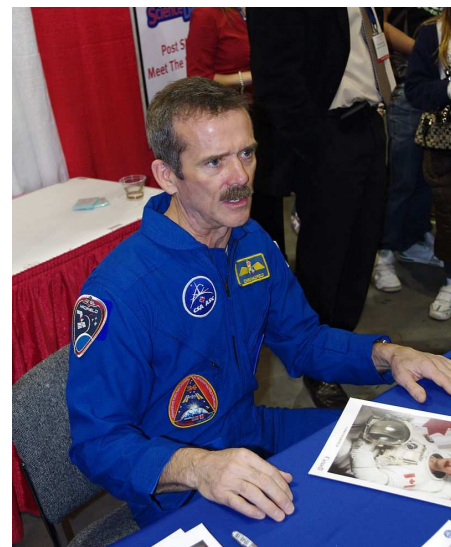
In December 2012 he flew for a third time aboard Soyuz TMA-07M and joined Expedition 34 on the ISS. He was a member of this expedition until March 2013 when he became the commander of the ISS as part of Expedition 35. He was responsible for a crew of five astronauts and helped to run dozens of scientific experiments dealing with the impact of low gravity on human biology. During the mission, he also gained popularity by chronicling life aboard the space station and taking pictures of the Earth and posting them on various social media platforms to a large following of people around the world. He was a guest on television news and talk shows and gained popularity by playing the International Space Station's guitar in space. His mission ended in May 2013 when he returned to Earth. Shortly after returning, he announced his retirement, capping a 35-year career as a military pilot and an astronaut.

One part of his book which stayed in my mind was the section where he detailed returning to Earth in the Soyuz after five months aboard the ISS and seeing 16 sunrises per day. Here’s an excerpt from his book:

“We’re back on Earth, at last.

Next thing you know the hatch is being pried open and there’s blue sky, bright sunshine, the smell of fresh air and living things, a commotion of voices. Arms reach in to lift Roman out of the capsule. Someone else digs out the samples and science, the things that need to be put in a freezer or on a plane right away. Tom is carried out next, then it’s my turn. I was NASA’s rep at several landings, so the ground crew knows me, and the guy who lifts me out says, in Russian, “Chris, the clip is magnificent, it made us proud.” He’s talking about “Space Oddity”, I realise, and he means he’s proud of this business we’re both in. It’s a nice way to be welcomed back when you’ve fallen from the sky.

I’m pale and blinking after months without sunlight, and so weak and rubber-limbed that I need to be carried over and propped up in a canvas chair beside Tom and Roman, who is already joking with the medical staff and looking great, like he’s ready to play a round of golf. I am not. Doctors and nurses are wiping the dirt off my forehead; I accidentally touched the charred edge of the Soyuz while getting out and then touched my face, so I look as though I’ve been smeared with charcoal. They’re asking if I’m alright, tenderly, and covering me with a blanket. NASA and CSA officials, local dignitaries and Russian soldiers are buzzing around. It’s overwhelming, after being with no more than five other human beings for the past five months, to be surrounded by a crowd of well-wishers, especially after the physical excesses of crashing down to Earth.



I'm doing my best to impersonate a person who doesn't feel disoriented and sick. But my arms feel so heavy I can barely lift them, and I stay motionless, to reduce exertion. Every part of my body feels sore or shocked, or both. It's like being a newborn, this sudden sensory overload of noise, colour, smells and gravity after months of quietly floating, encased in relative calm and isolation.

After sitting still for 15 minutes, and handing over my personal belongings to a support person who will make sure they don't mysteriously disappear (anything that's flown in space is a collector's item), I'm carried, chair and all, into a hastily erected medical tent to be transferred to a cot. By this point I'm retching, feeling just terrible. Medical staff clean me up, help me out of my Sokhol and my Leafs shirt, now soaked with sweat, and into my regular blue flight suit, then put in an IV to give me more fluids so I don't faint."

10 Things You Might Not Know About Astronaut Chris Hadfield until you read his book!

1. Col. Chris Hadfield is afraid of heights.

One might think this phobia would be a deal breaker for someone who's spent so many hours in space beyond the confines of the spacecraft, watching the world go by beneath his feet at thousands of miles per hour. Yet, Hadfield writes, peering over the edge of a tall building means "my stomach starts tumbling, my palms sweat and my legs don't want to move." Surprising, perhaps, but Hadfield says that a big part of being an astronaut is coming to grips with the litany of things that could kill you at any moment and dealing with it through incredible preparation.



2. His video demonstrations don't always go right.

Hadfield became a space sensation because of his informative, irreverent videos from the International Space Station. Some of my favourites include Hadfield showing everyone how to make a peanut-butter-and-honey sandwich in space, and what happens when you wring out a wet towel on the space station.

But even Hadfield makes mistakes. During his first ISS mission he made a video demonstration of cutting his fingernails over the air intake so they'd be sucked into it. One problem: He failed to vacuum out the intake immediately, and when the unsuspecting mission commander came to do it later, he released all the fingernail clippings into the station.

3. He knows Russian.

Hadfield served as NASA's director of operations in Russia from 2001 to 2003, where he learned the language, got familiar with the Soyuz spacecraft that would later fly him into space once the shuttle retired, and learned the local customs, including drinking heavily and urinating on a truck tire. Yes, another of the local customs is that cosmonauts are supposed to pee on the right rear tire of the bus that carries them to the launch, "as Yuri Gagarin apparently had," Hadfield writes. Unfortunately for Hadfield, he was leaving Earth for his final mission around Christmastime 2012, which meant going to the restroom required loosening multiple layers of space clothing. It's apparently less of a concern for female astronauts, "who bring little bottles of their pee to splash on the tires."



4. He nearly performed "Rocket Man" with Elton John.

Hadfield met the British singer when John's tour crossed paths with a Canadian air show in which Hadfield was taking part. There's only one song an astronaut can rightfully play with Elton John—"Rocket Man"—and so Hadfield rehearsed it on the off chance that Sir Elton granted his wish. It didn't work out, but Hadfield writes that he met up with John and had a nice chat. And many years later Hadfield was performing David Bowie's "Space Oddity" in space in a video that to date has garnered more than 17 million views.

5. There were no Canadian astronauts when he decided to become one.

Watching the Apollo moon landings of July 1969 as a 9-year-old kid galvanized what would become Hadfield's lifelong quest to go to space. But, he writes, "astronauts were American. NASA only accepted applications from U.S. citizens, and Canada didn't even have a space agency." No matter. By 1992, there was a Canadian Space Agency, which accepted Hadfield into the astronaut program.

6. He helped to build the ISS.

Speaking of "didn't exist yet," when Hadfield flew into space in 2001, it was to a space station that was not even fully assembled. His crew's mission was to add a crucial piece of equipment called Canadarm2, which remains one of the ISS's key components. It made sense to send Hadfield so a Canadian astronaut could install the Canadian space program's pride and joy.

7. On Hadfield's first space walk, he couldn't see a thing.

During the extravehicular activity (or EVA, NASA's name for a spacewalk) to install Canadarm2, some kind of irritant got in Hadfield's eye and made it water. But "tears need gravity," he says—without it they just stay in place. And you can't wipe your eyes in a spacesuit.

Through sheer force of will and some vigorous shaking of the head, Hadfield got his sight back and mission control let him continue the mission. It turns out that the "anti-fog stuff" astronauts use to polish their visions is essentially detergent, and Hadfield hadn't gotten all of it off.

8. He's watched lots of people rehearse his death.

It's called a "contingency sim." Really, it's a death sim, and it sounds like the most macabre role-playing game around. The NASA team begins with a scenario such as Hadfield being seriously injured on the ISS, he writes. Then they draw "green cards"—random events that change the game. Maybe the card says he has died, at which point the other astronauts and crew members discuss what to do with the corpse in space, how to inform him family, how to deal with the press, and every other contingency they can think of—all while Hadfield sits at the table watching the team rehearse his demise. He argues this is "weirdly uplifting" and not a recipe for depression.

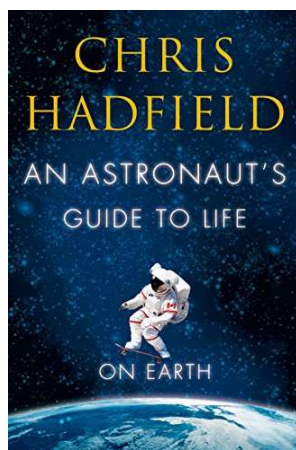
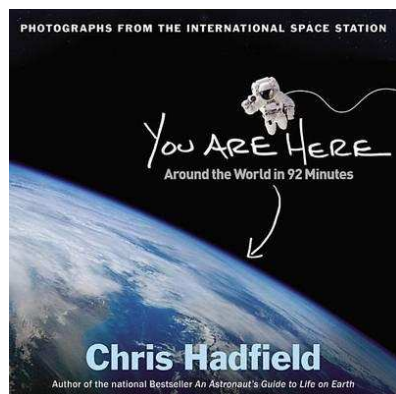
9. He broke into Mir using a Swiss Army Knife.

Hadfield's first space voyage, in 1995, travelled to the now-defunct Russian space station Mir. Except, when the space shuttle arrived there, the astronauts discovered that "the Russian engineers had taped, strapped, and sealed out the docking module's hatch just a little too enthusiastically." Further proof you should always carry a multitool, especially when leaving the planet.

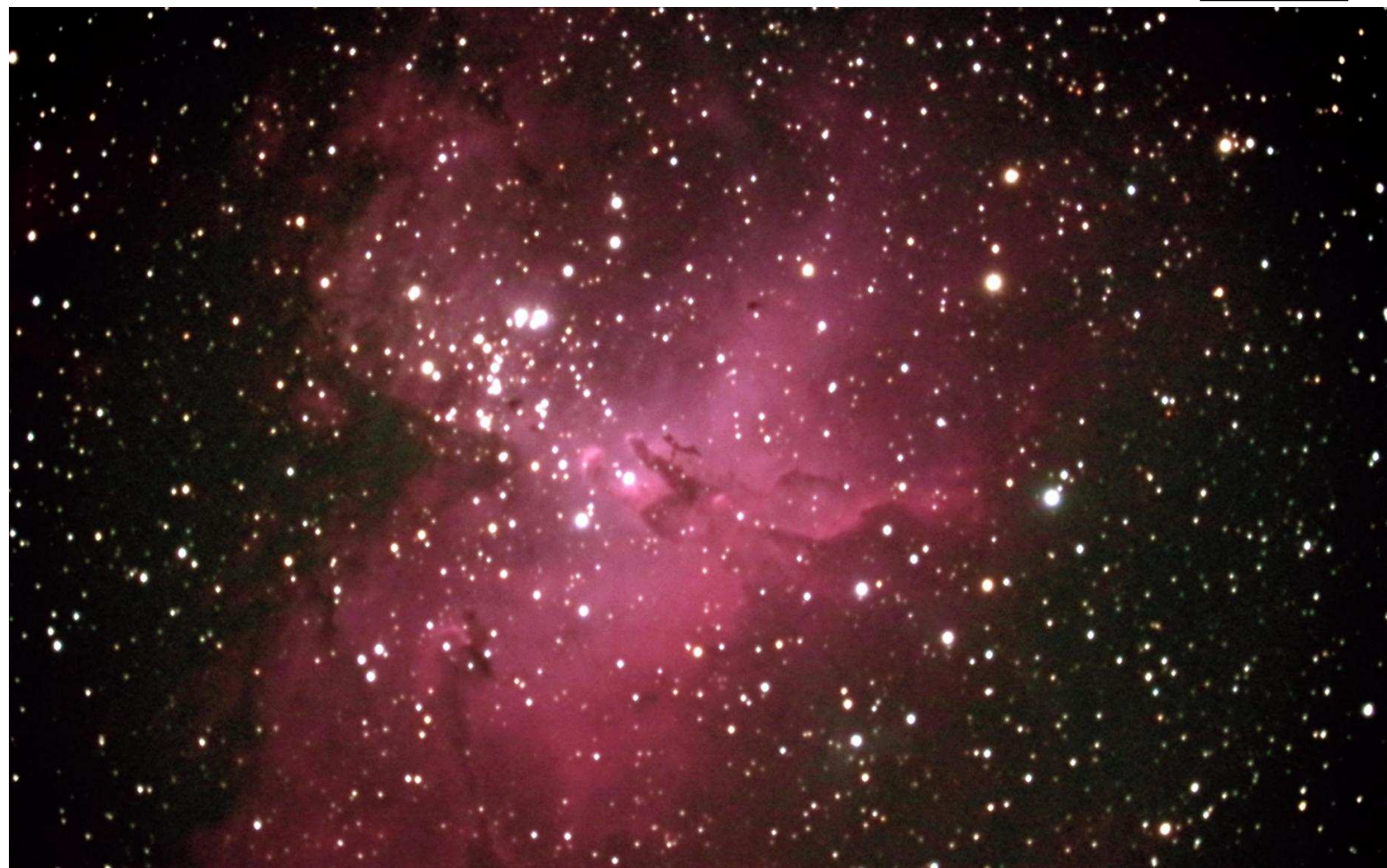
10. He can drive a one-man sub.

He's qualified to pilot the DeepWorker, a one-man sub that can explore undersea. Today it's mostly a toy for the rich, but "the DeepWorker is an analogue for the kinds of vehicles we may use someday to collect samples on the Moon, an asteroid, or Mars."

I highly recommend having a read of this book if you haven't already, it is well worth your time! It's well written, informative and fascinating! Chris Hadfield also published another book called "You Are Here: Around the World in 92 Minutes" which is a collection of some of the 45,000 amazing photos he took while on the ISS.



<https://www.popularmechanics.com/space/a9529/10-things-you-might-not-know-about-astronaut-chris-hadfield-15887993/>



M16 Briars Meade 350mm 0.7 reductor EQ8 Pentax K30 16x30sec iso12800 By Greg Walton 14 July 2018



M20 Briars Meade 350mm 0.7 reductor EQ8 Pentax K30 26x30sec iso12800 By Greg Walton 14 July 2018

NGC5170 - Edge on Spiral Galaxy | LRGB - Recently finished NGC 5170 is edge-on spiral galaxy found some 96 million light-years away in the constellation Virgo. With an apparent size of 9.9×1.2 arc minutes, NGC5170 shines at a mag 12.4. Across the span of the galaxy is a prominent broad dark lane with mottled detail that is most prominent against the bright core region. The core area shows the yellowish hue of old stars commonly found in many similar galaxies, with the outer arm regions showing the blue hue of hot young stars. I've always loved NGC891, so I'm always on the lookout for anything that looks similar. *By Steve Mohr*



NGC3503 - Nebula in Carina - Located in the constellation of Carina, NGC3503 is not a familiar sight! This object normally hides in the outer regions of the large wide views of the more popular Eta Carinae Nebula. Having a gentle set of wave like extensions of emission nebula surrounding it, and a reasonably dense field of beautifully coloured background stars peppering the entire region; NGC3503 actually occupies a very small section of this image. Having a small dusty halo to the one side. *By Steve Mohr*



OFFICE BEARERS OF THE MORNINGTON PENINSULA ASTRONOMICAL SOCIETY

President: Peter Lowe
Vice President: Greg Walton
Committee: Anders Hamilton, Trevor Hand,
 Simon Hamm, Nerida Langcake
 & Rohan Baumann

Secretary & Phone Contact: Peter Skilton
Treasurer: Jamie Pole
Web master: Rohan Baumann
Scorpius editor: Greg Walton
Librarian: Fred Crump

SOCIETY MEETINGS

Meeting Venue: MPAS Astronomy Centre
 The Briars, Nepean Hwy, Mt Martha
 (Melways ref. 151/E1)
Society meetings: Don Leggett Astronomy Centre
 8 pm on the third Wednesday of the month
 (except December)
 (See map at right & Below)

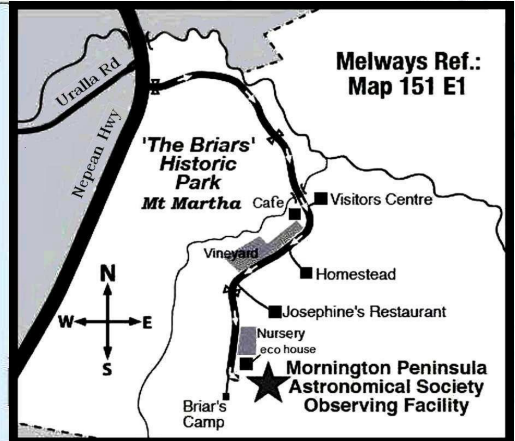


**Please Note - 2018
 Society meetings
 will be at the Briars.**

For addition details:
 Internet: www.mpas.asn.au
 email: welcome@mpas.asn.au

Phone: 0419 253 252

Mail: PO Box 596, Frankston 3199, Victoria, Australia



**Melways Ref.:
 Map 151 E1**

LIBRARY

The Society also has books & videos for loan from its library, made available on most public & members nights at The Briars site. Contact Fred Crump

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 & events information as well as being able to join in discussions & ask questions with other members.

To join, go to: www.groups.yahoo.com/e-scorpius and sign up to Yahoo groups - you are required to sign up to Yahoo groups to join E-Scorpius. Once you have signed up at Yahoo groups, email welcome@mpas.asn.au say that you want to join E-Scorpius & you will be added to the E-Scorpius list.

facebook MPAS - <https://www.facebook.com/mpas0/> MPAS members - <https://www.facebook.com/groups/MPAS1/>

VIEWING NIGHTS - MEMBERS ONLY

Viewing Night - 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 9776 2074 or 0415172503 if they need help getting to The Briars site. Upon arrival at the site, remember to sign the attendance book in the observatory building.

For addition details:

Internet: www.mpas.asn.au
 email: welcome@mpas.asn.au

Phone: 0419 253 252

Mail: PO Box 596, Frankston 3199, Victoria, Australia



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

Send them to the editor: Greg Walton gwmpas@gmail.com

MPAS Scorpius on face book - <https://www.facebook.com/Scorpius-MPAS-1694951307446763/>

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Peter Lowe



Greg Walton



Peter Skilton



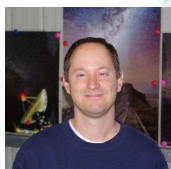
Jamie Pole



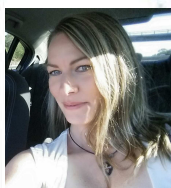
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