



Cover image - Clear skies last night gave me a chance to shoot this with my DSLR with standard lens at 70mm focal length. Heart of Scorpius, yellow star Antares near Rho Ophiuchi nebula. 13th September 2022 *Chris Kostokanellis*

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.



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SOCIETY NEWS



School viewing Night August 30th - Prospects were looking hopeful last night at the original intended start time of 7pm for seeing Saturn and the crescent Moon, with only about half the sky clouded at Merricks Lodge. It was raining all the way down the Peninsula while heading south to there, though, so it just shows yet again that you can't rely on what the weather is at your own home before leaving. But unfortunately the camp organisers decided at the last moment to postpone the start time to be 7:30pm instead while dinner clean up chores were done. Fred Crump, Phil Peters and Chris Kostokanellis all had telescopes set up ready. But, as you probably might guess, that 30 minutes made all the difference, with the sky being 100% clouded and drizzling as soon as the girls arrived at the instruments. And it stayed like that for the rest of the evening. Oops on that call. Nevertheless, the 47 Year 10 girls and staff from Strathcona Girls Grammar listened instead to Peter Skilton give the talk indoors and had plenty of questions to bowl at him. Considering they'd all been kayaking all day, they did well to stay awake and to think of questions to ask. Afterwards, a couple of telescopes were set up indoors, and Phil and Chris answered questions from those girls who stayed on, while Peter showed other meteorites and answered more questions from others.

Regards, Peter Skilton

Scout viewing Night August 31st - It was a wonderful evening at the Briars for the visit of the 1st Redhill cubs, with 107 attending. This was surprisingly about double the number anticipated to be attending, so the roller door was raised much higher to assist with ventilation, and there was a scramble to mobilise extra instruments outdoors. Things started outdoors under cloudless skies, but the weather prediction was for 100% low-level clouds rolling in later. So straight to the telescopes the visitors went as a precaution, and enjoyed views of Mercury and the waxing crescent Moon in the west, and Saturn over in the East, together with many other deep sky objects. Then the group moved indoors for 15 minutes of the talk, before moving back outside to see the International Space Station passing by unmistakably in a south-westerly direction, about a handspan above the horizon over the Education Camp building. Some of the assembled folk in their excitement even waved at the astronauts, who I'd like to think waved back accordingly. Then back indoors they went to hear the rest of the talk by Katherine McCoy and Peter Skilton. At the end of the evening, Jupiter and its moons had risen, allowing those remaining to see the mighty gas giant over in the east to cap off the evening. Helping with instruments outdoors were Ben Claringbold, Chris Kostokanellis, Mark Stephens, Fred Crump, Guido Tack and Greg Walton. Also Katherine had her telescope out in multi-tasking mode, before ducking inside to get the talk underway. The evening had a great buzz of activity to it, and oodles of questions, and plenty to see in the sky as well. And it turns out that we also had the Tyabb and Sorrento Scouts present last night at the Briars as well, not just the Redhill ones.

Regards, Peter Skilton

Public viewing Night September 2nd - The September public night at the Briars yesterday was a hive of activity, with 80 visitors. Everyone booked seemed to turn up this month, including some carryover folk from previous clouded nights coming midway through. Just prior to the start of the evening, the skies were 50% overcast, so it was decided to start with some telescope time outside, and this enabled Mercury and the crescent Moon to be seen easily in the west, and some saw Saturn high in the sky. There was a predicted brief flyover of the International Space Station about 7:50pm, much like at the scouts' event on the preceding Wednesday night but, alas, cloud totally blocked the sky in the south-westerly direction at the wrong time. Everyone then went inside to hear Trevor Hand give a talk about the southern skies. In that time, the cloud cover built and subsided a few times in waves, but by the time the visitors came outside, had mostly cleared and Jupiter with its 4 Galilean moons, and Saturn were easily visible. Some even got to see Neptune, plus of course other deep sky objects well outside the Solar System. Unfortunately the Hubble Space Telescope flyover wasn't visible due to low-lying clouds still in the north. Members present and helping run the night were Simon Hamm, Gavin Curnow, Fred Crump, Bonnie Cass, Guido Tack, Phil Peters, Yvonne Hsu, Peter Skilton, Mark Stephens, Katherine McCoy, Chris Kostokanellis, Ben Claringbold and welcoming newcomers to the site of Nerissa & Rob McDonald, Abdullah Qasemi, Mike Greenwood, Luke Kelly, and probably some other new members I didn't get the chance to meet. If you were there, and I've missed your name, sing out and I'll add you on before Greg puts it in the next newsletter. The evening was a bit chilly, punctuated at one point with light drizzle, even though Jupiter was putting on a fine show over in the east at the time, but mercifully there was no wind at ground level.

Regards, Peter Skilton

Scout viewing Night September 7th - Wednesday evening, saw 46 Joeys and Cubs, plus their leaders, from the Baden Powell Park Scout Group get a dose of astronomy at their hall in Frankston South. We've visited them several times over the years. The proceedings started outdoors with the telescopes, with concern that cloud might thicken ahead of rain over the next 2-3 days. Views of the waxing gibbous Moon started very fuzzy due to thin cloud, but this fortunately dissipated very soon after, enabling clear views of the lunar craters and mountains, and also of the ringed planet Saturn, with Titan, several degrees below it in the sky. Other objects, such as the Jewel Box were easily visible towards the south, with Crux lying on its right hand side, with the Pointers above it. A scheduled flyover of the International Space Station was, alas, only 10-20 degrees above the western to northerly horizon, and that was obscured by thick cloud in that direction and elevation at the wrong time. Members helping outside with telescopes were Phil Peters, Greg Walton, Mark Stephens, Nerida Langcake and Fred Crump. The pack then moved indoors to hear Peter Skilton give a shortened talk and answer questions, surrounded by kids sitting on the floor 360 degrees around him, which makes it very, very challenging for eye contact without getting dizzy. They really enjoyed the meteorite. Because of their young age, the evening finished by 8pm, which was still a little early before Jupiter was due to rise in the East.

Regards, Peter Skilton

School viewing Night September 8th - Thursday viewing night for Parkdale Secondary College was unfortunately fully under cloud and some drizzle all evening. Nevertheless, seventy Year 7 pupils and their families were in attendance in the school theatre, with the weather clearly dissuading the bulk of students from attending. Those who did come heard Peter Skilton give the talk, using a decidedly yellow screen due to some intermittent HDMI cable issue to their ceiling projector. The school is about to overhaul its AV system, so when we visit next year it will very probably be a wifi connection to the projector. After the talk, the audience moved down to the stage area where several telescopes of different types and sizes were set up, with a member or two on each, explaining all about them, and there were also other artefacts to be seen, including a Moon rock, a piece of Apollo 11, a piece of the Cranbourne Meteorite and the iridium clay from K-T boundary where the dinosaurs went extinct. This informal mingling worked well and enabled a lot of question asking and

information seeking. I suspect we'll see some families from this evening come to a later public night at the Briars. Helping to explain the telescopes and how they work were Greg Walton, Phil Peters, Nerida Langcake, Chris Kostokanellis and Guido Tack. There were also some interesting things we learned after some fact checking after student questions arising.

1) You can indeed fit all the planets in a line between the Earth and Moon, but it depends on the Moon being at apogee, and the planets being oriented to have their shortest pole distances sideways.

2) Uranus indeed has a moon called Juliet, but a Romeo hasn't been assigned yet (or so we think). Its moons are named after Shakespearean characters.

3) The biggest planet in the Universe would be 80 times the mass of Jupiter, because at this mass, it then turns into a star instead. So, we don't know where any of that size are actually located, but that's about the theoretical maximum.



Photo Nerida Langcake

Regards, Peter Skilton

Scout viewing Night September 9th - Friday night saw 70 cubs, scouts, parents and leaders from the 3rd Ringwood East group travel to the Briars for some stargazing and astronomical adventure, having visited us before in past years. The evening began outdoors with views of the nearly full Moon and Saturn and some constellations, with threat of thickening cloud later that night. Mercury unfortunately was behind cloud. After 30 minutes the group moved indoors to hear the talk by Peter Skilton. Plenty of questions arose during the evening. After the talk, many left for the journey home, but some optimists remained -who were then rewarded by the cloud clearing so as to see Jupiter and other deep sky objects under clearer conditions. Members also present and helping on the night included Greg Walton, Phil Peters, Nerida Langcake, Piper & Ashley Grierson, Chris Kostokanellis, Mark Stephens, Ben Claringbold, Fred Crump and Simon Hamm. The group leaders all reported having a wonderful and informative evening. *Regards, Peter Skilton*

School viewing Night September 13th - saw 37 Year 7 girls and teachers from Toorak College visit the Briars by bus. As chance would have it, the Tiangong Chinese Space station passed over quite brightly about 15 minutes before everyone arrived, so only the members present were able to see it. The evening then started indoors with the talk being given by Katherine McCoy and Peter Skilton, then everyone moved outdoors under wonderfully clear skies, though somewhat chilly for those without a coat. Telescopes present were operated by Nerida Langcake, Katherine McCoy, Mark Stephens, Greg Walton, Phil Peters, Chris Kostokanellis, Fred Crump and Ben Claringbold. There was plenty of noise and excitement on the viewing field as Jupiter and Saturn were bright and prominent, with lots of deep sky objects as well, though the waning gibbous Moon rose a little late to be seen by the visitors. At the end of the evening, the girls were clearly impressed and they gave a special outdoors thankyou to the members within earshot. *Regards, Peter Skilton*

APW September 17th - Astrophotography Workshop for 2022. The event was a huge success, despite the poor weather (we were unable to have the practical session afterward due to full cloud, but had partially cleared by approximately 10pm when we left). There were approximately 64 people in attendance, with a mix of Members and Public attending on the day. Many thanks to the presenters for the day

– Mark Stephens for the intro, Alex Cherney, Greg Walton, Chris Kostokanellis, Nerida Langcake and Myself. The presentations were of an excellent standard and the group clearly impressed by both the content and professionalism. Thanks, Alex Cherney, for jumping in and doing two sessions. Special thanks to all those that helped making things happen, the willingness to help makes these events a success. Special thanks to Peter Skilton for doing the Pizza run (I'm sure his car smells lovely this morning). Members present were (please forgive me if I've forgotten someone – I'm awful with names) - Nerida Langcake, Greg Walton, Simon Hamm, Mark Stephens, Chris Kostokanellis, Alex Cherney, John & Marg Cleverdon, Maria Queriozs, Brad & Emma Gilmour, Ben Claringbold, Phil Peters, Peter Skilton, Sabby and Shal Bala, Sylvie Grandit, Yvonne Hsu, Stav Mihelakos, Stewart Gangell, Leigh Hornsby, Anne and Geoff Danne, David Conner, Mark Cassidy, Connor Mathieson, Fred Prata. Thanks everybody! *Jamie Pole.*



Photo Nerida Langcake

I would like to extend my personal thanks also to all at MPAS who helped make this event such a success. It was a very well run and presented event, which could not have happened without the support of yourself, presenters and other MPAS members. Also, as a follow-on event from last night's event, perhaps a visit to a suggested dark sky site, where small groups of 4-6 and include someone with astrophotography experience, could be arranged to attend to further develop their skill sets. Eg: Cape Schanck, Phillip Island, Grantville or perhaps at a location that someone knows of a property owner who lives in a dark sky area east of Melbourne.

Big thanks to all. *Kind Regards Stewart Gangell*



It was a pleasure attending the workshop and meeting MPAS members. An informative workshop with excellent presentations. Well done to all the people who have presented and organised the event. A lot of information that I had not come across before. It would have been a great outdoor session had the weather not played spoilsport. To the presenters, is it possible to share the general info from the session? I tried taking notes and photographs but still missed out on a few things. I look forward to being a part of future events. Warm regards, Adi

Society meeting September 20th - For those of you who are not yet subscribed (it's free) to the MPAS YouTube channel, this month's meeting has been uploaded for viewing. The meeting features Dr. Michael Wong, Astrobiologist and Planetary Scientist, Carnegie Institution, Earth and Planets Laboratory, on the topic of "The Science of Star Trek". The background behind the NASA DART mission, to collide with Dimorphos next Tuesday, and the legacy of the late Frank Drake, are also covered. You can also watch it here by clicking on this link and going to the most recent video on the channel:

<https://www.youtube.com/channel/UCm6XOkIcIflt4y0XRBXpXuw>

or watch it on the MPAS site once it's refreshed for this month:

<https://www.mpas.asn.au/meeting-recordings/>

Regards, Peter Skilton



Members BBQ & Working Bee September 23rd - The working bee was very successful with most jobs completed. The fast growing spring grass took longer than usual to cut. Phil, Stewart and myself arrived early to get it done before too many cars were on site. Phil and Geoff trimmed trees on the south boundary and wheelbarrowed the branches down to the burn pile. I cleaned out gutters. Connor and Fred dusted off the telescopes and swept out the observatory. We also found time to straighten the large dent in the garden shed. Guido worked on setting up the new visual system. Nerida did a great job in buying all the footy themed pies, sausage rolls and hot dogs. Anna as always was helping in the kitchen and made a large cake which was very popular. Stewart donated a pressure washer which will be handy for washing the domed observatory. As the sky darkened and clouds disappeared Ben, Connor and Andrew set up their telescopes outside, while I opened the observatory. At first Jupiter had little detail visible due to being low on the horizon. But by 10pm Jupiter looked brilliant with lots of detail visible in the bands. We also found comet K2 Panstarrs which showed a faint tail, I then attached my camera and photographed the comet as it flew past a star with a similar brightness. There was another comet nearby, but we failed to see it.

Big thanks to all who helped out on the day. *Greg Walton*

Photo at left - A rainbow peeked out during our working bee at MPAS, *Nerida Langcake*

Photo at right - Comet K2 2017 Panstarrs by *Greg Walton*



NASA's International Observe the Moon night in countries across the globe on Saturday October 1st went ahead here at Frankston foreshore.

MPAS was officially registered as one of 5 hosts in Victoria and set up a phalanx of telescopes along the seawall at the base of Oliver's Hill in Frankston, with extra instruments also held back in reserve in case an unexpected major onslaught of the public, and requiring reinforcement of the line.

Fortunately only about 150 visitors came during the 3 and a bit hours we were set up and, after the Sun had set most gloriously in the west over the Bay, the sea breeze kicked in and the temperature soon became a little chilly for those unprepared.

Defending the wall with telescopes in the first wave were Sara Elizabeth, Sylvie Grandit, Chris Kostakanellis, Phil Peters, Guido Tack and Nerida Langcake, all doing a sterling job. Also with telescopes in reserve, helping usher people, support the troops, and sign the visitors up for special NASA certificates were Ben Claringbold, Simon Birch, Dave, Landon & Jamie Rolfe, Ian Argent and Peter Skilton.

The skies were wonderfully clear as the 30% waxing crescent Moon arched across the heavens, followed by Saturn near the zenith, and Jupiter and its 4 primary moons rising above the cliff-top houses across the Nepean Highway to the east. As the skies darkened, the Moonlight reflected a lovely ladder of shimmering silver light across the calm water, and was a sight to behold. The bulk of visitors were families, and all enjoyed themselves. If only a fast food van or coffee van had thought to set up nearby, they might have done a brisk trade that evening. *Regards, Peter Skilton*



Photo Nerida Langcake

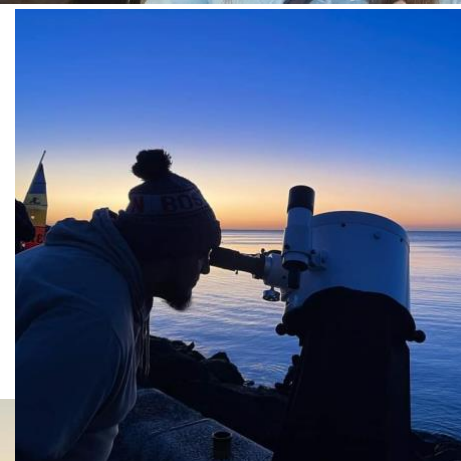
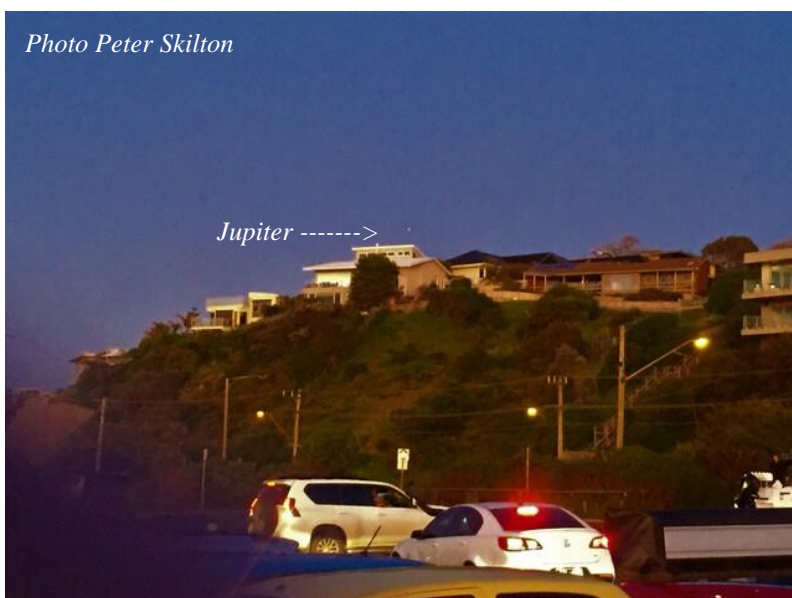


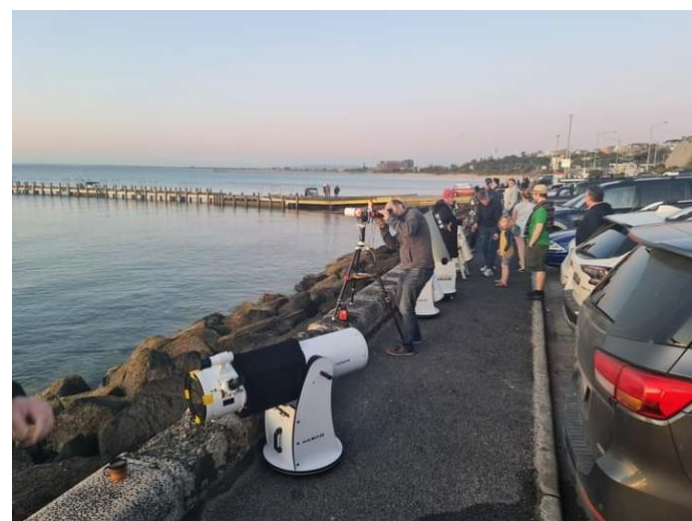
Photo Peter Skilton



Photo Sylvie Grandit



Jupiter ----->



NASA's International Observe the Moon Night

MPAS helped us do just that, with members setting up their telescopes in ever growing numbers beside the sea wall of the Oliver's Hill car park, Frankston.

And there was the Moon, over in a reddening eastern sky.

Since Google knows about these things, over to Google: *The current moon phase for October 1st, 2022 is the waxing crescent phase.*

On this day, the moon is 5.36 days old and 31.5% illuminated with a tilt of -35.721° . The approximate distance from Earth to the moon is 372,385 km and the moon is (in?) Sagittarius.

Since Google is handy: Does the moon have a name?

Earth has one moon. We call it "the Moon" because for a long time it was the only one we knew about. Many languages have beautiful names for our Moon. It is "Luna" in Italian, Latin and Spanish, "Lune" in French, "Mond" in German and "Selene" in Greek.

Unearthing the Boonwurrung word for moon may have to wait for a more propitious time, but with the growing number of known moons out there, I see trouble on the way if we insist on calling it *the Moon*.

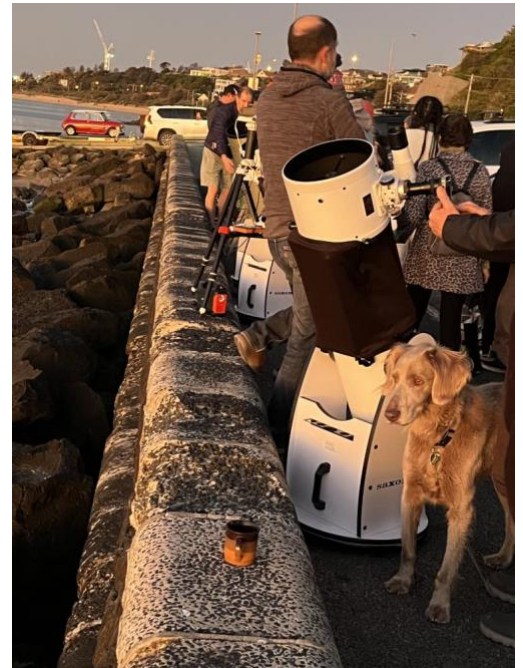
But there were other things of interest in the October sky, including a drone.

And it didn't take long before attention shifted to another light, in the eastern sky this time and visible above the roofs across the way: Jupiter. But wasn't Saturn also visible? It was a yes/no moment before we got a definite fix - higher up and maybe looking to be about midway between Jupiter and - I vote for - Selene.

Time to redirect telescopes and adjust for what appeared from Earth to be tinier targets - and doing one's best to capture the resultant images via smartphones.

We were in for a busy - if shorter - night. *By Ian Argent*

Photos Ian Argent



School viewing Night October 3rd - All year levels of Stella Maris Primary School at Oak St Beaumaris were invited to enjoy a visit by MPAS on the evening of October 3rd. This was the first time we've interacted with this school. With quite heavy cloud cover, 120 students and parents were seated indoors to hear the talk by Peter Skilton, with about the same number of less optimistic families deciding on the spur of the moment to stay home instead. Those attending made the right choice. Within the hour of the talk, the sky had miraculously improved to thin high level cloud and patches of clear, enabling everyone to move out to the telescopes that were set up on the basketball court. Good views of the first quarter Moon, Saturn and Titan, and Jupiter with its 4 Galilean moons were had by all, and other artefacts were on display indoors and attracted a lot of interest and questions in parallel with the telescope usage. One student was inspired enough to want to be an astrophysicist, and she was asking lots of questions about what to study and where to do so, and parents were coming up to enquire about how to get a solar eclipse experience for their family. By the general buzz in the group, it was a highly successful evening, and thankfully the sky co-operated ahead of the advancing stormy weather from the West. Doing a magnificent job outdoors with the telescopes were Alex Cherney, Pia Pedersen, Greg Walton, Phil Peters, Nerida Langcake, Guido Tack, Chris Kostakanellis and Jamie Pole. The Deputy Principal relayed today that they received an overwhelming amount of positive feedback from the parents and students, and we'll be having you back in 2023. *Regards, Peter Skilton*

School viewing Night October 5th - Conditions were a bit blustery and completely overcast last night at the Briars, when 40 Year-7 girls from Toorak College in Mt. Eliza visited. Always impressive to see a driver successfully get a greyhound bus through the little one lane bridge near the Visitors Centre, with 15cm to spare on either side, and the approaching road having a curve just before the bridge as an extra challenge. The talk was given indoors by Katherine McCoy and Peter Skilton, with questions aplenty during the evening. Then the group went down to the main observatory to look at the instruments and hear how they work, given the roof couldn't be opened due to the weather. Members helping run the evening included Nerida Langcake, Mark Stephens, Chris Kostokanellis, Ben Claringbold, Greg Walton and Phil Peters. *Regards, Peter Skilton*

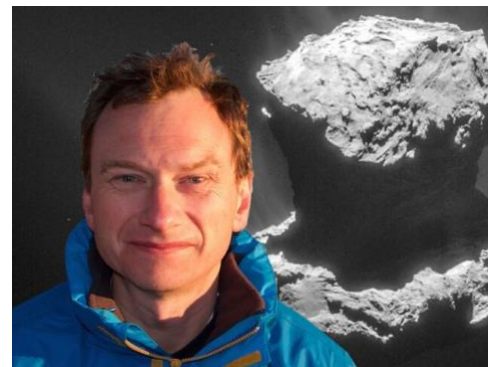
Public viewing Night October 7th - The October public night at the Briars saw 51 in attendance. Although the skies were heavily clouded in surrounding suburbs, especially to the north, on average it was 50% clear at the observatory, so we began with the telescope viewing first, with good views had of the waxing gibbous Moon, Saturn and Jupiter and Big Blue easily split alpha Centauri into its components. A naked-eye visible satellite passed right in front of Jupiter at one point, seen by a handful of attendees, and was also picked up by Phil Peters who was lucky enough to see it through the eyepiece at just the right time. There was also a lovely colourful Moonbow which particularly fascinated one of the young girls present on the night with her parent. The group then moved indoors to hear Manfred Berger talk about the moons of the Solar System. By the time the talk finished, the clouds had closed in and it threatened to drizzle, so the instruments were put away and the observatory closed. Members present and helping on the evening were Guido Tack, Nerida Langcake, Phil Peters, Peter Skilton, Sylvie Grandit, Anders Hamilton, Mark Stephens, Jamie Pole, Dave & Jamie Rolfe, Simon Hamm, Fred Crump & Bonnie Cass, Ben Claringbold, Greg Walton, Chris Kostokanellis, Jason Heath and Alan Predjak. *Regards, Peter Skilton*

School viewing Night October 10th - Forty Year-10 students plus teachers were visited last night at the southern campus of Bayside Christian College at the border of Langwarrin South and Frankston, with the weather prediction being almost total cloud cover by 8pm, ahead of a wet change moving in from the West. We've visited this school several times over the years. The talk indoors was given by Peter Skilton, then the group moved out onto the school oval for some telescope viewing. And the skies were completely clear the entire evening. The conditions were mild, but cool, and a slight breeze only came up towards the end of the evening. Operating the telescopes were Katherine McCoy, Greg Walton, Pia Pedersen, Phil Peters, Fred Crump, Chris Kostokanellis, Robin Broberg and Ben Claringbold. A Full Moon was on display, together with Saturn, Titan, Jupiter and its 4 moons, and plenty of fuzzy other little objects along the Milky Way, albeit a bit contrast-reduced due to the Moonlight. The school oval had a great view with low horizons in all directions. It would have been a long day for the teachers, after also having done an excursion to the Melbourne Zoo as well as us in the evening as an incursion! *Regards, Peter Skilton*

Brian Cox event - On 15th October about 20 MPAS members went to see the long awaited Brian Cox lecture / show, as the show had been rescheduled due to Covid. Before the Show we met up at The Boat Builders restaurant / open air bar at 5:30pm next to the Polly Woodside, which is said to be the first all steel hull sailing ship. I first visited the Polly Woodside 50 years ago when the restoration work had just begun. I remember it as being only an empty shell laying in the dry dock with a small team of men removing hexagon concrete ballast blocks and replacing rusted-out steel plates. After dinner and drinks, we headed to the conference centre and found our seats along with 5,500 others. For me it was the first time I've been with such a large group in many years. The show started with all the fanfare of the rock concert with stunning views of distance world, an armada of spaceships and music by The Police, Walking on the Moon. When Brian Cox walked out on stage a lot of ladies screamed with excitement. OMG are we in the right place? This was his 100th show for the year. It was good to see he continually updated the show, with content which included the latest information and observations of the oldest objects in the sky, with some of the images only 2 weeks old from the Webb space telescope. Brian had 3 breaks throughout the show. When a comedian came on stage, I could have done without him, only one of his jokes really got the crowd going. In the second half of the show I did see a few people nodding off. At the end of the show Brian Cox answered questions on all things astronomy and did an excellent job at that. He looked pretty good for someone born in 1968. *Greg Walton*



Society meeting October 17th - Peter Skilton chaired the meeting and updated members on events past and future, then we watched videos mentioned below Mark Stephen did Sky for the Month. Break for coffee, then more short videos while I opened the observatory. We looked at Jupiter, Saturn, Neptune, Uranus and NGC104. *Greg Walton*



For those of you who are not yet subscribed (it's free) to the MPAS YouTube channel, this month's meeting has been uploaded for viewing. The meeting features Prof. Alan Fitzsimmons, Astrophysicist, Queen's University, Belfast, on the topic of "The Geology of Asteroids and Comets". Also covered is the highest ever resolution simulation of the Moon's birth in a remarkably short time after the Earth-Theia impact 4 billion years ago, an update on the DART impact on Dimorphos, and explaining the latest thinking about what happened at Tunguska, Siberia, in 1908. You can also watch it here by clicking on this link and going to the most recent video on the channel: <https://www.youtube.com/channel/UCm6XOKIcfl1t4y0XRBXpXuw> or watch it on the MPAS site once it's refreshed for this month: <https://www.mpas.asn.au/meeting-recordings/> *Regards, Peter Skilton*



Photo Chris Kostokanellis

Members BBQ & TLD October Saturday 22nd - Telescope Learning Day saw about 50 public & 20 members in attendance. Mark Stephens did a very informative talk on how to operate all the different types of telescopes. Then several experienced members helped the public and members set up and align their telescopes. We also did many small repairs on the telescopes. Luckily the Sun shone bright enough to try out a camera on the club's solar telescope, sending the image to the projector in the clubrooms. Unfortunately, the clouds rolled in, stopping any viewing through the telescopes. Jamie and Ben ran the BBQ while Pia, Chris, John, and Katherine helped in the kitchen preparing the food, sausages, bread, pasta salad, tea and coffee. Nerida and Simon signed up some new members. We had many thanks of appreciation throughout the day. Big thanks to all the members who helped out on the day. *Regards Greg Walton*



Photo Pia Pedersen

Scout viewing Night October 28th - Friday saw 28 cubs from the Ballam Park and Ranelagh groups visit the Briars for some astronomy. Sky conditions were totally overcast with rain encountered all the way to the Briars so the visitors started with a tour of the facilities, with Greg Walton and Phil Peters giving a short talk about telescopes.

Then the talk indoors was given by Peter Skilton and, as tends to happen, right as the talk was finishing, the rain miraculously stopped, the clouds parted and members scrambled to open up the observatory, enabling good views to be had of the waxing Moon, Jupiter, Saturn and 47 Tucana, much to the great delight of the visitors. Within 30 minutes, the sky had closed in again, but by that time it was time to leave anyway. Helping outside during the evening were also Fred Crump, Mark Stephens and Nerida Langcake. A great time was had by all. *Regards, Peter Skilton*



Photo John Cleverdon

ICU viewing Night October 29th – Cancelled

OBSERVATORY UPDATE

By Guido Tack



Next time you come to a society meeting or public viewing night, look out for our new “point-tilt-zoom” camera in the auditorium – and don’t forget to smile! We have upgraded the audio/video system, with the help of a generous grant from the federal government. The new hardware will make it much easier to record presentations at our members meetings, and it will enable us to live-stream events from time to time. You may also notice the much improved sound quality when playing back videos in the big room, and we are investing in new microphones for the presenters.

If you are interested in the technical specs: The camera can be remote controlled, has a 15x optical zoom, good low-light performance and delivers up to 4K resolution. It is connected to a PC at the lectern, which is equipped with a four-channel USB audio interface for the microphones and a HDMI capture card to record the presenter’s laptop screen. We are using OBS (Open Broadcaster Software) to record the combined audio and video streams. The PC is connected to a 5.1 channel surround sound system (donated by Greg and Pia). Everything is controlled from a small StreamDeck (a programmable external keyboard), so that our meetings can be recorded at the push of a button.



WHAT'S ON



The 2022 timetable of public events.

NOVEMBER

Friday 4th, 8pm The Briars MPAS. Public stargazing night. Speaker Trevor Hand. 70 anticipated.

Tuesday 8th, 7:30pm, Lunar Eclipse, The Briars. Speaker Trevor Hand. 60 public & members anticipated.

Thursday 17th, 8pm, Good Samaritan Primary, at Camp Manyung, 35 Sunnyside Rd, Mt. Eliza. Speaker Peter Skilton. 50 Year 6

Sunday 20th, 11am-5pm, Bentleigh Street Festival, main street of Bentleigh. No speaker. 2000 public anticipated.

DECEMBER

Friday 2nd, 8pm The Briars. Public stargazing night. Speaker Katherine McCoy. 70 anticipated.

To attend the school events and scout/girl guide events, these days you need to have a Working With Children check done first. It takes about a fortnight from the time you apply online to when you get the card in the mail. For volunteers it is free. It's essentially a check of police and justice records over the decades that sees if there might be anything in the past that would preclude participating in these sorts of outreach events involving kids. Once you receive your card, let the Secretary know your card number and expiry details as we are required as an organisation to record them.

<https://www.workingwithchildren.vic.gov.au/>

Regards, Peter Skilton

★ New Members Welcome ★

Maria Gabriela Queiroz
Abdullah Qasemi & family
Chris Black
Linda Presswell & family
Colin Heagney

Michael Greenwood & family
Adi Nadiminti
Michelle Moore & family
Frank & Lorraine Bradley
Johann Bartolo

MPAS SUBSCRIPTIONS 2022

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 2022 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 2022 fees is:

Subscriptions can be paid in a number of ways:

- On-line (preferred, see at right)
- 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 (state your name clearly).

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.

SOCIETY FEES

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

See more options on-line



You can renew your membership online using the link included in the annual mailout email, which is sent near the end of each year. Please ensure to renew before Feb 1. Any late renewals may be required to re-join as a new membership.

CALENDAR		November / 2022					Red Days indicate School Holidays
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
Evening - 6th Eu transit 8:57pm S Eu shadow 10:48pm S Io transit 11:25pm F	Morning - 13th Eu transit 11:19pm S Evening - 14th Io shadow 8:53pm S Io transit 10:00pm F Io shadow 11:03am F	1 First Quarter	2 Saturn left of Moon Melbourne Cup	3	4 Public night 8pm	5 Jupiter left of Moon Io transit 11:32pm S	
6 Io shadow 12:27am S Io transit 1:43am F Io shadow 2:39am F	7 Comet C/2017 K2 near NGC6169 Eu shadow 1:17am F Io shadow 9:06pm F	8 Full Moon Total Lunar eclipse at 10pm	9 Moon above Pleiades	10 Comet C/2017 K2 near NGC6178	11 Mars above Moon Remembrance Day	12	
13 Io transit 1:20am S Io shadow 2:23am S Io transit 3:32am F Io shadow 4:35am F	14 Moon at 404,921km Comet C/2017 K2 near NGC6204 Eu shadow 1:23am S Io transit 3:52am F	15 Comet C/2017 K2 near NGC6200	16 Society Meeting 8pm Last Quarter	17 Good Samaritan Primary Comet C/2017 K2 near NGC6193 Io shadow 7:30pm S Io shadow 10:07pm F	18	19 Working bee 4pm BBQ 6pm	
20 Io transit 3:11am S Io shadow 2:23am S Io transit 3:32am F Io shadow 4:35am F	21 Io transit 9:38pm S Io shadow 10:48pm S Io transit 11:50pm F	22 Io shadow 1:00am F	23	24 New Moon Ga shadow 11:29pm S	25 Ga shadow 2:09am F	26 Moon at 362,826km	
27	28 Io transit 11:30pm S Io shadow 10:48pm S Io transit 11:50pm F	29 Saturn below Moon Comet C/2017 K2 near NGC6253	30 Io shadow 9:23pm F	30 Morning - 29th Io shadow 12:44am S Io transit 1:42am F Io shadow 2:55am F			

Monthly Events

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

Public night - 8pm to 10pm on the 4th @ The Briars MPAS

Comet Panstarrs C/2017 passes near NGC objects

Total Lunar eclipse at 10pm – 7:30pm to 11pm on the 8th @ The Briars

Society Meeting - 8pm to 10pm on the 16th @ The Briars

Working Bee - 4pm - **Members night & BBQ** - 6pm on the 19th @ The Briars

CALENDAR		December / 2022					Red Days indicate School Holidays
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
				1 First Quarter Io shadow 10:19pm F Ga transit 10:20pm S	2 Public night 8pm Jupiter below Moon Ga transit 1:11am F	3	
4	5	6	7 Io shadow 9:10pm S Io shadow 11:19pm F	8 Full Moon Mars above Moon Eu shadow 10:30pm S	9 Eu shadow 12:55am F	10	
11	12 Moon at 405,869km	13	14 Io shadow 11:05pm S	15 Io shadow 1:15am F	16 Last Quarter Eu shadow 1:07am S	17 Xmas party BBQ 6pm	
18	19 Scorpius Deadline	20	21	22	23 New Moon	24 Moon at 358,270km Venus & Mercury right of the Moon	
25 Xmas Day	26 Boxing Day Saturn right of the Moon	27 Xmas Day Holiday	28	29 Jupiter right of the Moon Venus & Mercury close	30 First Quarter	31 New Years Eve	

Monthly Events

Jupiter shadow transits can now start to be seen. Times in brown

Public night - 8pm to 10pm on the 2nd @ The Briars MPAS

Society Meeting - No meeting in December

Xmas party Members Night BBQ - 6pm on the 17th @ The Briars

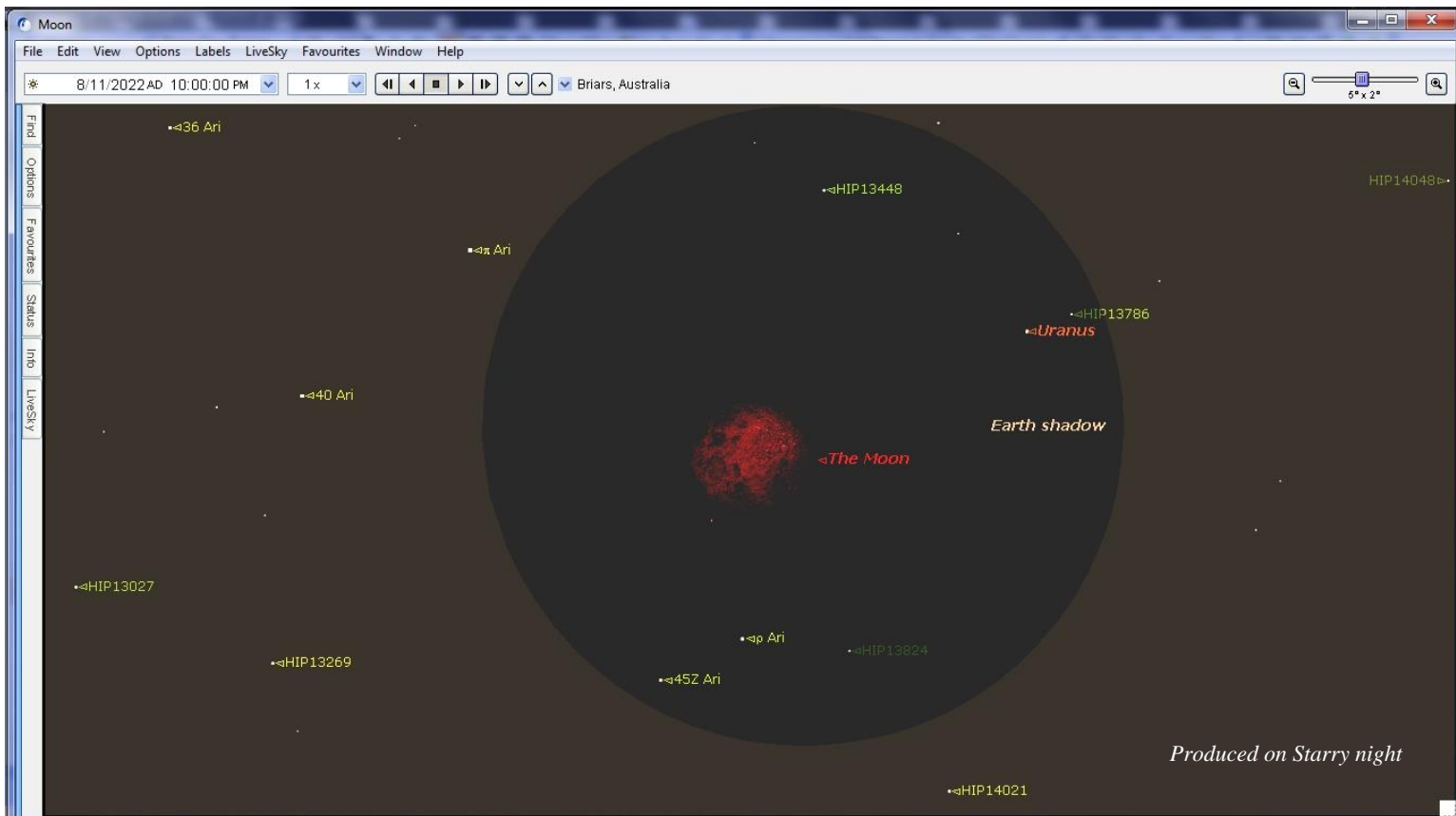
Jupiter Moon code
 Io = Io
 Eu = Europa
 Ga = Ganymede
 Ca = Callisto
 S = start
 F = finish

THE BRIARS SKY

By Greg Walton

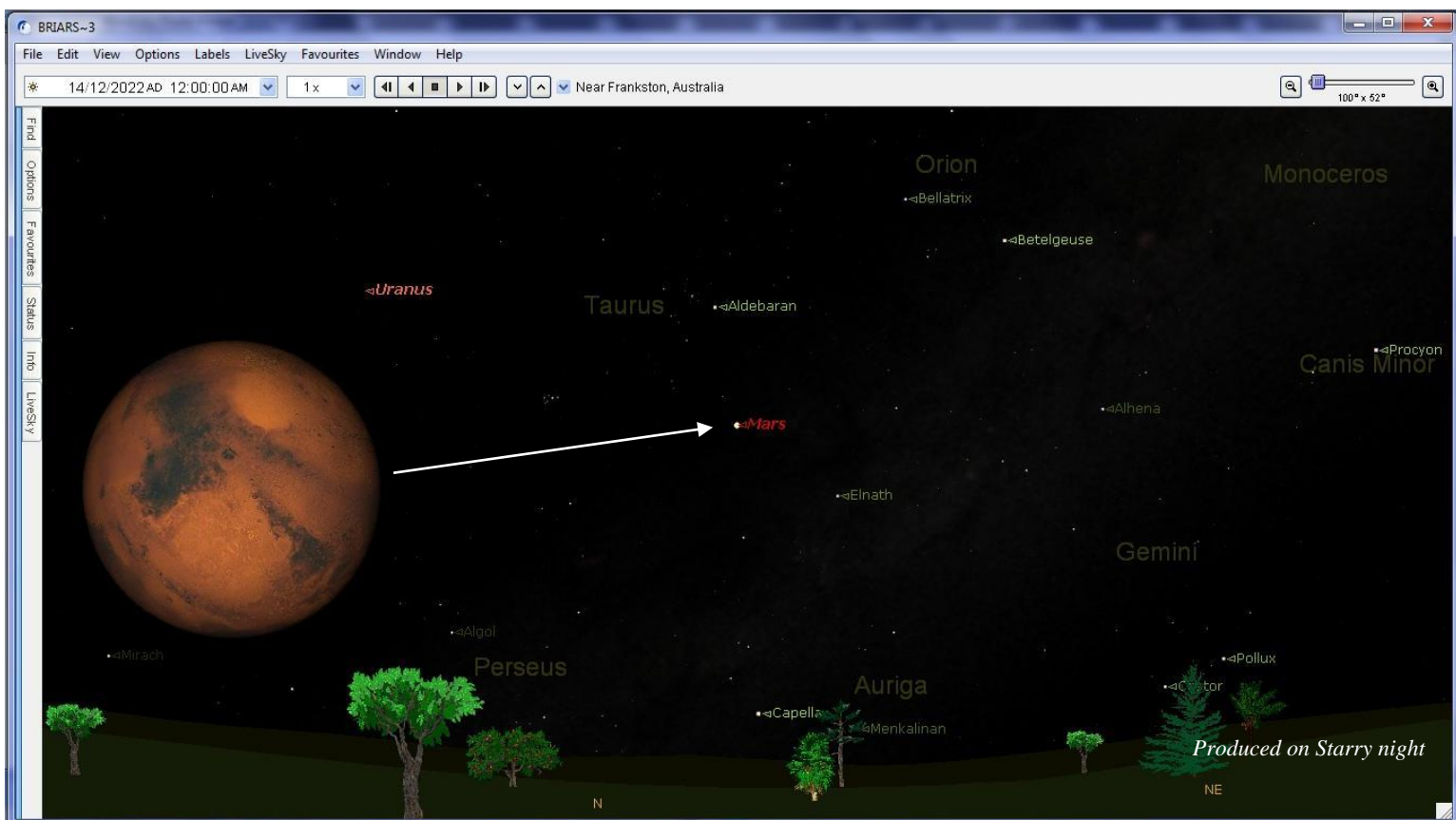


Lunar eclipse 8th November starts at 8pm and reaches totality at 10pm then the Moon will be 19 degrees above the horizon ending after midnight when Mars is rising in the east. Also you can find Uranus nearby, see diagram below.



Mars is at opposition on the 8th December, but will be at its closest point to Earth on the 1st December.

Is there a best time and date to view Mars? Yes 13th & 14th December at midnight, this is because the most interesting surface features will be facing the Earth. Mars will be 74 degrees above the northern horizon, the orange coloured star Aldebaran which is often mistaken to be Mars as they're of a similar colour.



Artemis 1 has a new launch date! November 14

NASA has scheduled a night time launch for Artemis 1, with a new launch date for the much-delayed moon mission. The mission is a first step in our human return to the moon. Artemis 1 is now due to go up from Kennedy Space Center in Florida – without human passengers this time – on November 14, 2022. So wow! It could be a spectacular light show as Artemis 1 blasts off into the midnight sky.

NASA announced the update to the launch time and date via its Artemis blog. There's a 69-minute launch window. The agency said its mighty Space Launch System (SLS) – consisting of a rocket that's taller than the Statue of Liberty, with the Orion crew capsule on top – is essentially still ready to fly following the most recent launch abort on September 27.

At present, the moonship is still in the Vehicle Assembly Building, where it was placed to keep it safe during Hurricane Ian. It'll undergo a minor makeover and a bit of primping prior to flight. The rollout back to Launch Complex 39B is planned for early next month, NASA said. Teams will perform standard maintenance to repair minor damage to the foam and cork on the thermal protection system and recharge or replace batteries on the rocket, several secondary payloads, and the flight termination system. The agency plans to roll the rocket back to the launch pad as early as Friday, November 4.



A full moon was in view from Launch Complex 39B at NASA's Kennedy Space Center in Florida on June 14, 2022. Image via NASA

Mercury's sodium tail in photographs

Mercury has a long flowing tail trailing away from the sun, much like a comet, visible in long-exposure photographs. Scientists first predicted Mercury had a tail in the 1980s, then discovered it in 2001. NASA's Messenger mission also revealed many tail details between 2011 and 2015 when it orbited Mercury. Nowadays, astrophotographers here on Earth are able to capture great shots of Mercury's tail with the right equipment and a little know-how. Photographers can capture it using filters for the sodium range of the electromagnetic spectrum.



Steven Bellavia in Southold, New York, captured this photo on April 24, 2022. Steven said: "Only a narrowband filter that captures the bright yellow sodium light at 589 nanometers shows this sodium tail."

Why does Mercury have a tail? The answer lies in part in sodium atoms. These atoms are freed from Mercury's surface by the push of sunlight and micrometeorite impacts. The sodium atoms from the surface are blasted into Mercury's atmosphere and into space, where they form the planet's tail. Messenger discovered that sunlight scatters off the sodium atoms, giving them a yellow or orange glow. The sun isn't just selectively blowing sodium off the surface of Mercury, though. Mercury's tail is made up of many elements, but sodium gets the top billing because it does such a good job of scattering yellow light. This allows the tail to appear on long-exposure photographs.

And how big is Mercury's sodium tail? It's roughly 100 times longer than the diameter of Earth!

Astronomers can use filters in the 589 nm range to learn about more objects than just Mercury's tail. The sun and comets are good targets for sodium filters. Astronomers have also seen sodium streaming from our moon, as well as surrounding Jupiter in a haze after being blown off its moon Io. Discovery of sodium in other star systems allows scientists to learn about rocky exoplanets. They can even use sodium absorption bands to measure redshifts and the size of the universe.

When NASA's Messenger spacecraft flew past Mercury, it saw sodium flowing off the planet due to the solar wind, which shaped it into a tail streaming away from the planet in the opposite direction from the sun, much like a comet's tail blown by the solar wind points away from the sun.

YOUR ASTRO QUESTIONS



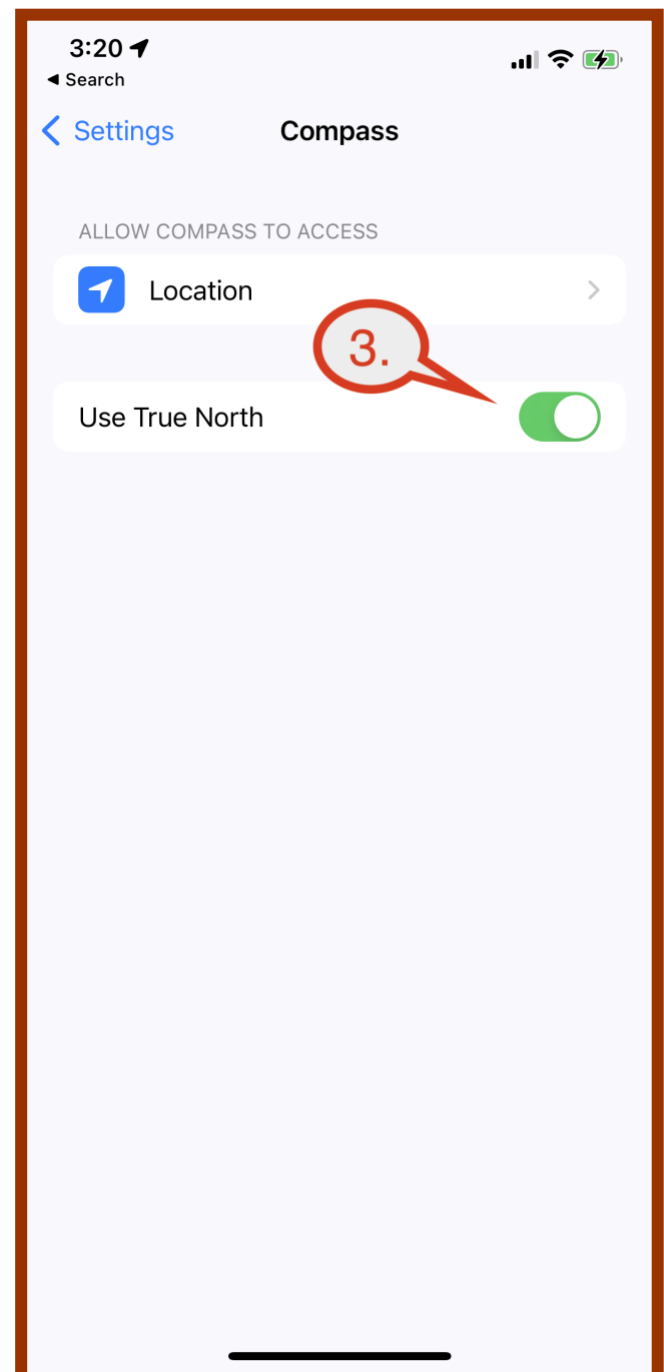
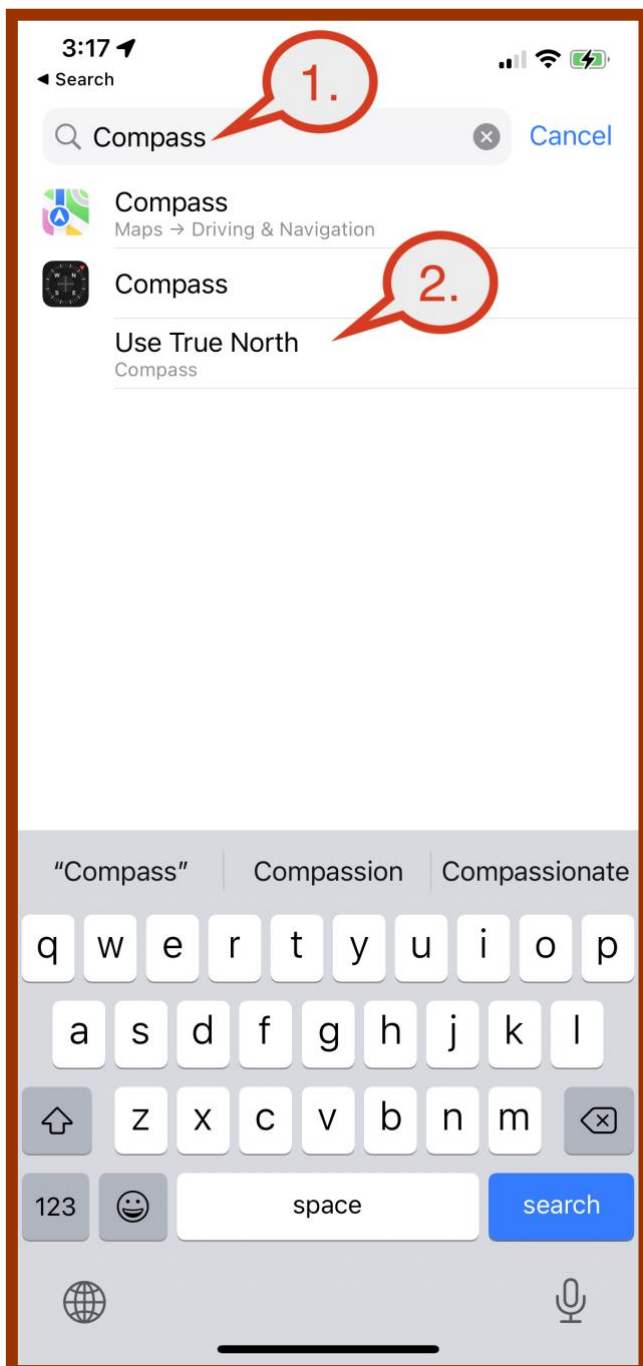
Which south is my iPhone's compass pointing to? *Andrew Parsons*

I often use my iPhone for astronomy to tell me which way is south but I have never quite known which south is it pointing at - True South or Magnetic South? Like orienteering compasses, I have assumed my phone too pointed to the magnetic north and south. When setting up your telescope, you do not want to add extra declination calculations using your phone if it is already pointing to True North!!

Now you can find out where it's pointing! An iPhone setting tells you which one your iPhone is using. Better still you can change your iPhone to always point to the true poles for your astronomy!

Open Settings, search for "compass" or "use true north" (step 1) > tap on "Use True North" (step 2) > turn on "Use True North" (step 3)

From now on you will always know your iPhone's south is pointing toward True South.



My photography setup

This is all the gear I use to do astrophotography, I'm not very good at writing so this may be extremely dull or too much information, but I've written a bit about each piece of my setup and what it does.



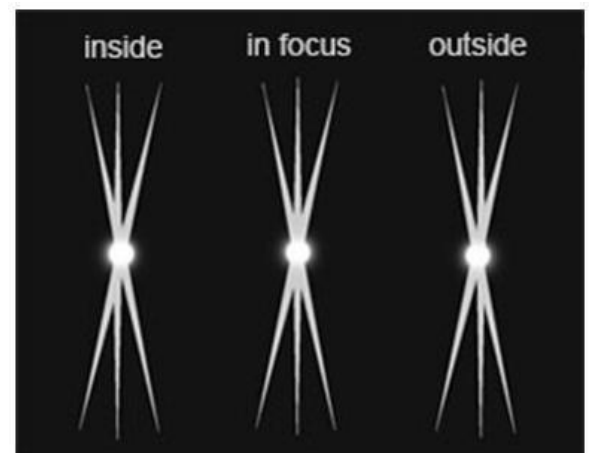
Scope

The scope is a William Optics Zenithstar 81. This is a two element apochromatic refractor with a focal ratio of f/6.9 and a focal length of 559mm. From what I've read and been told, using a small refractor to do astrophotography is one of the easier ways to get started. I chose this scope because the focal length sits between a 200mm Canon camera lens I own, and the 952mm focal length of the black refractor in the observatory at The Briars. This gives me lots of options for framing objects and looking at different areas of the sky at different magnifications. It's pretty light weight so my mount can support it easily even with all the other equipment stacked onto the scope.

It has two features I really like. The first is the lens cap has a Bahtinov mask built in; this is a clear piece of plastic with a clever design which helps you focus the scope when pointing at a star

When pointing at a star with the lens cap on and the cover removed, stars appear as an X like at right. You change the focus and the middle line moves from side to side; once you get it in the middle the stars are in focus.

The other thing I really like is how the guide scope mounts to the main scope, the top of the handle has a slot and the guide scope has a special base that slots into the handle perfectly then you simply do up some screws and it's connected. This isn't anything revolutionary, a lot of scopes use rings to hold the scope, I just like how this looks and it's very easy to take apart to transport.



Guide Scope

The guide scope I have has a focal length of 200mm which is a good match for the focal length of my telescope. The purpose of the guide scope is to track a star across the sky using a guide camera, and then direct the mount to follow it. When taking long exposure photos you need to “track” the sky as it rotates or the stars turn into lines rather than dots. Motorized equatorial mounts can track the sky on their own, but the one I have isn't very accurate when you start taking photos longer than 30-40 seconds. Using the guide camera/guide scope I've been able to pick a star, track it across the sky and take photos of up to 3 minute exposures without the stars becoming blurry or trailing in the photos.



Guide Camera

The guide camera I have is a ZWO ASI120mm mini. This connects to the back of the guide scope and is used to look at a star and direct the mount to follow it. The camera is black and white and has a tiny little sensor, but this is all that is needed for tracking on my setup. The back of the camera has 2 ports, one **USB** to connect to a computer so the tracking software can view the sky, and another port that connects to the mount and tells the mount how to move based on the tracking program on the computer.



Field Flattener

This is the FLAT6AIII 0.8x REDUCER that goes with my telescope. This is used to make sure when I connect my camera the stars are the right shape in the photos. Without this, in the corners of photos the stars can tend to be stretched due to how lenses are designed.



Above

This is an example, the picture on the left is using a flattener, the one on the right is not. The flattener also reduces the focal length of the scope by .8x which means its focal length is about 450mm.

Mount

The mount I have is a Skywatcher HEQ5 Pro. This is a motorized equatorial mount with a GoTo system. This allows it to “track” across the sky which is essential for long exposure photos. Tracking means the mount is moving the same speed as the Earth is rotating, so whatever you point it at will stay in the field of view. How successful this is comes down to lots of little things but generally if you polar align well, have the mount at the right pitch for your location and have it sitting level it should work pretty well. The guide camera/software connects to the mount to improve the tracking accuracy. My Telescope/camera/guide scope are all well under the weight limit this mount can carry and so far it’s been working great. This mount is big enough to carry all my equipment but still small enough I can pack it up into my car and transport it around.



Cameras

One of the cameras I am using is a Canon 6D Mark II. This is a 26 megapixel full frame digital camera. I purchased this long before buying a telescope and used it for probably a year on the mount with just a camera lens. The main reason I purchased this camera is it was one of the most affordable for a full frame sensor, this is one of the bigger sensors you can get in a basic consumer camera, and means I can get a wider field of view of the sky than a crop frame or smaller sensor in a different camera. Another handy feature is the flip-out screen on the back, often when taking photos the telescope points straight up to the sky so it gets a bit awkward trying to look at the camera screen if it's facing down at the ground. I have a few different lenses that I've used for astrophotography, both deep sky stuff and wide angle Milky Way photos.



The-Digital-Picture.com Reviews

The other camera I have is a ZWO ASI 183MC Pro. This is a dedicated astrophotography camera, it has no buttons on it and the only way to use it is connected to a computer. It has a few advantages over a normal digital camera for astro photos. Normal digital cameras have filters inside them that remove a lot of the red light from photos; as they're mostly used to take every day photos this is helpful as it makes them look natural. However with astrophotography, red is one of the most important colours to get in nebulas so a normal digital camera may not be the best for taking photos of nebulas. The 183MC Pro doesn't have this red filter, so it captures much more detail when taking photos of deep sky objects. Another advantage is the cooling system of the camera. When a camera gets hot the sensor produces noise, this shows up in photos as red/green pixels or just makes the photos look blurry or fuzzy. By having the cooling system I can keep the camera at 40 degrees below ambient temp if needed to keep the sensor cold and remove a lot of noise from the photos. I haven't had a go of this yet on a hot summer day but it should make a huge difference. Currently I have it cooled to -10c for all the photos I've taken and I can definitely notice the improvement over the DSLR.



The sensor in this camera is much smaller than my Canon camera so the field of view is a lot narrower. This is both good and bad as for some objects it's like being zoomed right in on them, but for some of the bigger deep sky targets they don't actually fit in the field of view with my telescope.

Computer

This is the brains of the whole operation, the ZWO ASiAir plus. I could write a whole 4 pages about this device itself so I'll try to list the main things it does briefly. I connect the mount, guide camera, astro camera and the dew heaters to this little box and control everything with an app on my phone. It controls the polar alignment process by taking photos using the camera and then telling you how to move the mount to align. Once aligned you can use it to focus the telescope. I have an autofocus device which is controlled by the ASiAir Plus; basically all I need to do is hit focus and it works it all out for me without me needing to do anything. Once focused I choose something I want to take a photo of and the mount will slew to the target, and the **ASiAir** will take a photo and use a process called plate solving to work out if it's actually pointing in the right spot. This feature itself is worth the price I think; it has made such a huge difference to taking photos and making it easier to get going. It will take a photo of what the scope is pointing at, and if that photo isn't 100% lined up with the object you told it to point at, it can work out how far away it is from where it's meant to be pointing, then move the mount to point the scope in exactly the right place.



[The ZWO ASI AIR Plus is Here!](#) Here's a good video about the device. For me this is the best thing I've purchased for my astrophotography setup as it's made getting set up and going for the night so much easier.

What next?

Hopefully nothing for a while. Astrophotography gets very expensive very quickly. Any upgrades for me at this point would be a bigger telescope and a bigger mount but I've got a lot to learn before I need to think about a new scope or a mount.

Processing the photos once you take them is probably even more work than taking the photos so I have a lot to learn about this as well.

I don't have a light pollution filter so taking photos when the Moon is full or somewhere bright isn't ideal. I'm unsure if a filter would really help much but would be good to try one out to see how it goes.

I'm always happy to answer any questions about this stuff but at the same time I'm no expert. A lot of YouTube videos and asking other members is how I've learned to take these photos.

This is a photo of the Carina Nebula I took with my setup. It is 30 180second exposures then stacked and processed

Ben Claringbold

Create your own astro images using the Hubble Space Telescope – by Russell Smith


So, you want to work on some astro photos but don't have the gear you'd like; or maybe you do, but you don't have any clear skies? You could try a telescope hosting service, where you can get access to some amazing telescopes located at high altitude to minimise atmospheric disturbance – but doing that is expensive. How about access to a telescope that suffers from no atmospheric disturbance, changed humanity's understanding of the universe countless times, has an aperture of 2.4 metres and cost well over \$10 billion, has a massive amount of raw mages available to the public to use, and all are free? That's right, you can download and process your own Hubble photos!

The Hubble Space Telescope orbits Earth at over 500 km from the surface.

So how do you do it? Well, you visit the Hubble Legacy Archive at the following link <https://hla.stsci.edu/hlview.html>

The intro page is pretty spartan – all you need to do is type in the object you are after - Messier code, NGC number or simply a location works.

Below I put in the famous Orion Nebula or M42. The archive spat out over 5900 results! Luckily there is a quickish way to check the files before you start downloading blind. The left hand column has a 'Display' heading which lets you click on the file for a preview. Actually, it is better than a preview, it pops up into a new browser window which allows you to zoom in, change filters (if the file has multiple filters used – look at the tabs in red, green, and blue; you may be able to click on them and change the filter). The previewer lets you adjust saturation, brightness etc – which is great if you want to do some simple editing.




October 1.

Hubble Legacy Archive

M42 [advanced search](#)

Examples: M101, 14 03 12.6 +54 20 56.7 r=0.2d. more...
Requires Firefox, Safari, IE, or compatible browser



[Inventory](#) [Images](#) [Footprints](#) [Cart, 0 kB](#) [Grism Spectra \(ST-ECF\)](#) [Help Center](#)

M42 RA = 83.818660 Dec = -5.389680 r = 0.200000 [05:35:16.478 -05:23:22.85]

Results 1-100 of 5933 Show results per page

Click column heading to sort list - Click rows to select [Add selection to cart](#)
Show selected rows: [First](#) [Mixed](#) [Only](#) [Not](#) [Select all](#) [Reset selection](#)
Text boxes under columns select matching rows [Apply Filter](#) [Clear Filter](#)

Display	PlotCat	Retrieve	RA	DEC	Level	Target	Detector	Aperture	Spectral_Elt	NExposures	ExpTime	StartTime	Dataset	PropID	VisitNum
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Display		FITS	05:35:16.8	-05:27:00.0	4	ORIMOS-26	ACS/WFC	WFCENTER	F850LP/F658N/ F435W	66	12645	2005-04-09 01:19:11	hlsp_orion_hst_acs_strip1r_f850lp_f658n_f435w_v1_drz	10246	strip1r
Display		FITS	05:34:37.2	-05:25:30.0	5	ORIMOS-19	ACS/WFC	WFCENTER	F435W	12	2520	2005-04-04 07:45:05	hlsp_orion_hst_acs_strip1r_f435w_v1_drz	10246	strip1r
Display		FITS	05:34:37.2	-05:25:30.0	5	ORIMOS-19	ACS/WFC	WFCENTER	F555W	14	2695	2005-04-04 08:13:30	hlsp_orion_hst_acs_strip1r_f555w_v1_drz	10246	strip1r
Display		FITS	05:34:37.2	-05:25:30.0	5	ORIMOS-19	ACS/WFC	WFCENTER	F658N	12	2040	2005-04-04 06:41:53	hlsp_orion_hst_acs_strip1r_f658n_v1_drz	10246	strip1r
Display		FITS	05:34:37.2	-05:25:30.0	5	ORIMOS-19	ACS/WFC	WFCENTER	F775W	14	2695	2005-04-04 08:04:31	hlsp_orion_hst_acs_strip1r_f775w_v1_drz	10246	strip1r

Under the 'Spectral_Elt' column it gives an idea of what filters were being used. In this case I chose the one 6 rows down which was entitled B/G/R. This indicates that it is a colour image with the Blue, Green, and Red filters – all in the one file (otherwise I may have had to blend the individual filters myself). This was true, and actually they were in that order, with the Blue mapped to the Red channel and the Red mapped to Blue. I changed that setting and made a few edits and saved them. Also look at the ExpTime (exposure time) column to help you decide which files to download.

M42 – The Orion Nebula with a quick edit in the Hubble Legacy Archive's online editor.



However the best thing about the Hubble is the resolution of course – so why not zoom in and take advantage of some close-up views!



You can of course download the FITS files if you wish to process the files as you normally would – it is fun to compare your processing with what NASA has done. You can even compare objects to your existing data (if you feel confident!!) - sometimes this is useful if you are unsure whether a feature you have in one of your images is a processing artefact or real. It is also refreshing to see just how 'rough' some of the NASA data actually is before processing!

Well I don't feel confident but for the sake of science I've decided to demonstrate three levels of astrophotography. My Running Chicken Nebula vs the European Southern Observatories 2.2m telescope, vs the Hubble's not so wide field version. All images have the Thackerays Globules visible (dark cloudy like globules which are thought to develop multiple star systems).

Right -
Author's Running Chicken in SHO – 0.3m F/4
Newtonian – QHY22 (6mp camera)

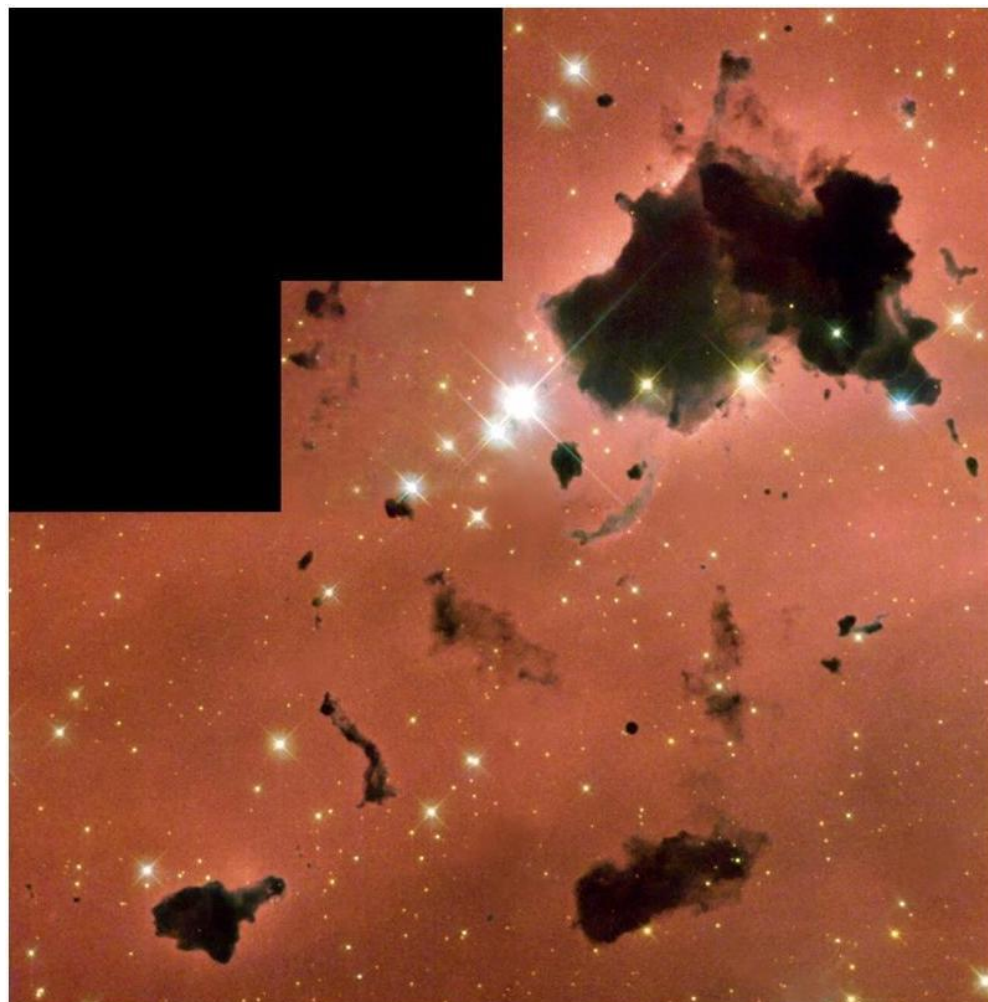


Below right top, ESO close up. Below right bottom, author's close-up in Hydrogen Alpha

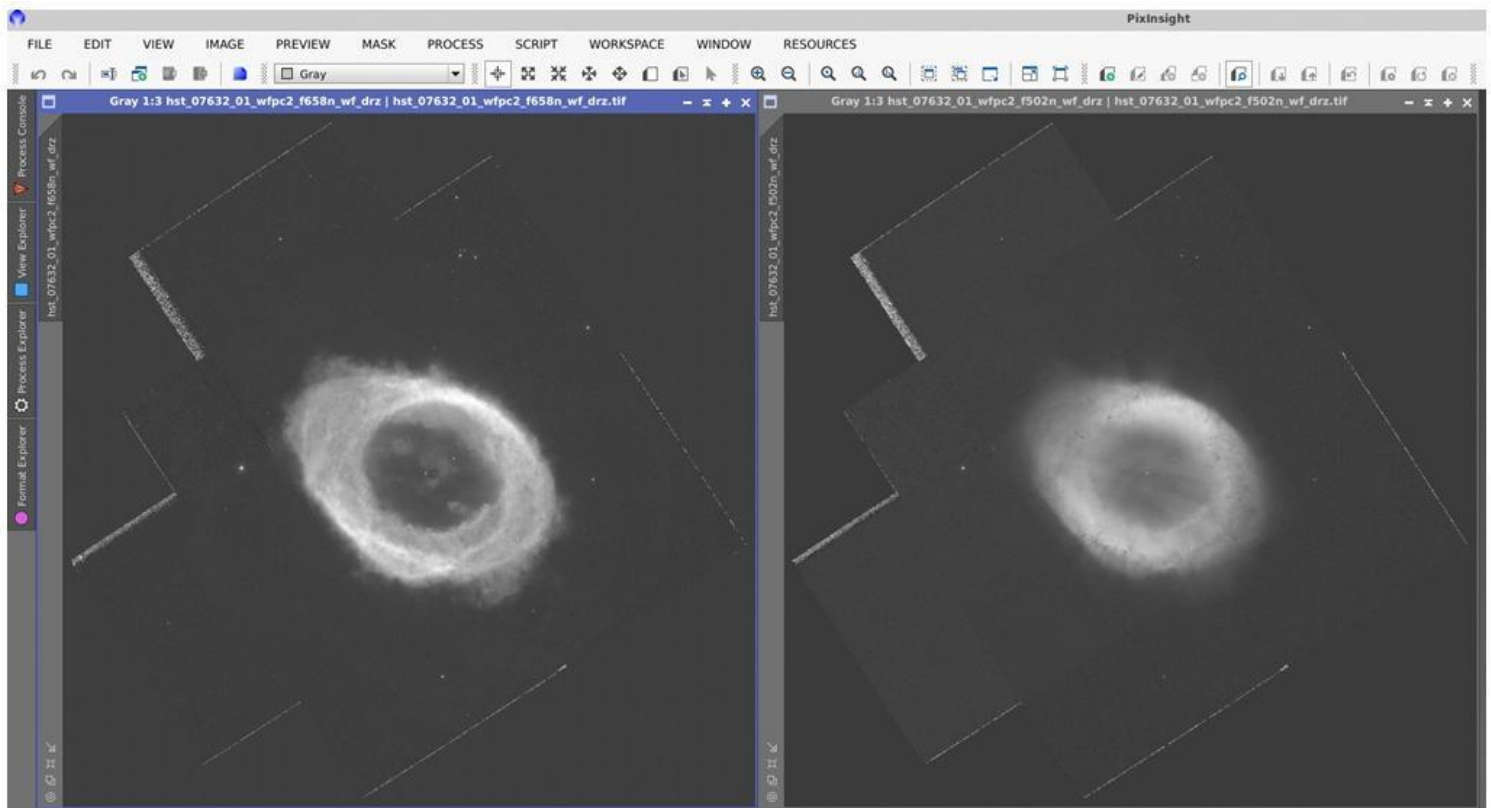
ESO's Widefield HaRGB – 2.2m F/8 Ritchey-Chretien (left)



Hubble's view is in another league entirely thanks to its location outside Earth's atmosphere



It can also be interesting checking out the individual filters like for the Ring Nebula below



There you have it, hours of exploration at your fingertips. Challenge yourself or other members to process an image better than NASA has done. Perhaps MPAS members could share their efforts with each other on e-Scorpius. Some suggested areas to explore would be Messier 16 “Pillars of Creation”, the close-ups of Carina Nebula (NGC 3372) are super interesting – such as the “Mystic Mountain”, or perhaps you want to go close in on a grand spiral galaxy such as NGC 6814. I personally enjoy going for planetary nebulae as they appear relatively tiny in amateur telescopes (IC 418 The Spirograph Nebula anybody?) and have a diversity of shapes and features which Hubble is able to zoom right in on. For the more experienced astro-imagers, I think there is more of a challenge to process some of the less popular Hubble images, as that is where you are possibly find data that hasn’t been cleaned up and maximised to its full potential.

If you download the FITS files and have a go at the raw data you may find that your image processing software can’t read it. You can download the free FitsLiberator <https://noirlab.edu/public/products/fitsliberator/> (Linux/Mac/Win) or something like GIMP (Linx/Mac/Win) is able to read them and export the files <https://www.gimp.org/downloads/> - I don’t believe Photoshop is able to so without plugins.

Of course Hubble has now been superseded by the James Webb Space Telescope, unfortunately it doesn’t have the back catalogue of images like the Hubble has and will likely never will due to its planned shorter life span. So even though the few images out from James Webb Space Telescope are downloadable (but definitely not user friendly – e.g. needing to run a script to extract) – the Hubble archive will be the go-to resource for many years to come.

MEMBER PROFILE



One man's journey to the stars

It all started when news of the imminent arrival of Halley's comet was announced. Perched, as we were, on the side of Mt. Talgarno outside Albury-Wodonga on a twenty-five acre farm. My three young sons were all keen to see this celestial interloper when it arrived. We had no telescope, nor had I any experience with the use of one, so as the time for maximum brightness approached I took several shots with my SLR to confirm exposure time, ISO rating, etc. The results were stunning. The images are now somewhere safe; that means I can't find them. But when the appointed day arrived, all we saw was a fuzzy ball, no tail, nothing. The experts just got it all wrong. That event, however, sparked my interest and, after joining the local Wodonga club, borrowed an 8" Newtonian to take back to the farm in Berthanga to play with.

Berthanga was then Bortle class 1 sky. Yep, it was that good. We would even lie out on the trampoline and just stare straight up, stars so close you could almost touch them.

Fuelled by this wonderland, I bought a 4" refractor from a PMG technician in Melbourne. It had an equatorial mount, manual in both axes, of course. Knowing nothing about Polar alignment, chasing any object across the heavens was, as you can imagine, a challenge. But when it worked, it was worth the effort.

Returning to Melbourne, telescope still in the box, we went to what I believe was an MPAS viewing night on a property that was then a sawmill on Bungower Road about halfway to Mornington from Somerville.

Dragging the gear onto the paddock and with the help of the current members, we managed to see Saturn. We were hooked.

Size counts some folk say, and so off I went to Bintel and bought a 10" Newtonian on an EQ6 Pro mount. I remember the chap saying, "When you get serious you will probably need a coma corrector" -whatever that was. But as it all seemed so far off into the future his advice was forgotten.

Like all talented engineers, I trawled through any and every book, pamphlet, or sales literature I could find trying to understand what I had got into. Also, lugging this monstrosity in and out of the shed and then try to get a three star alignment was a test for my resilience. Climbing over a very large (to me) telescope in the pitch-black night while perched precariously on a stepladder soon became not only problematic but something to test the patience of a saint.

I managed one great shot: Orion in full bloom, though sadly (as I discovered years later) with horrific coma distortion.

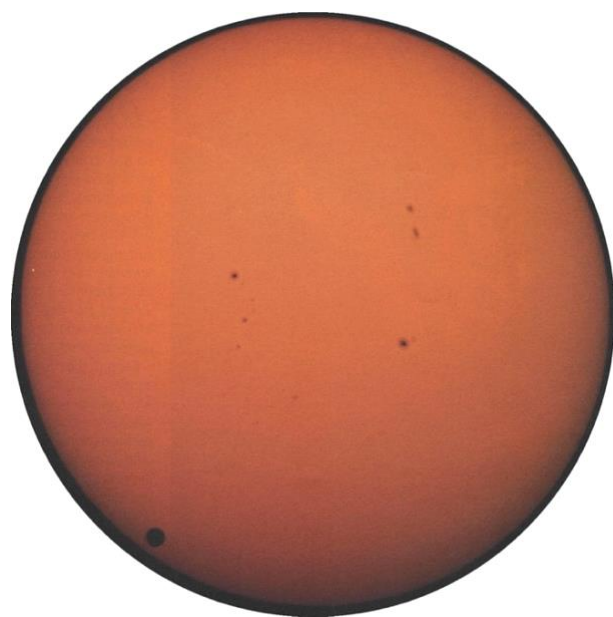
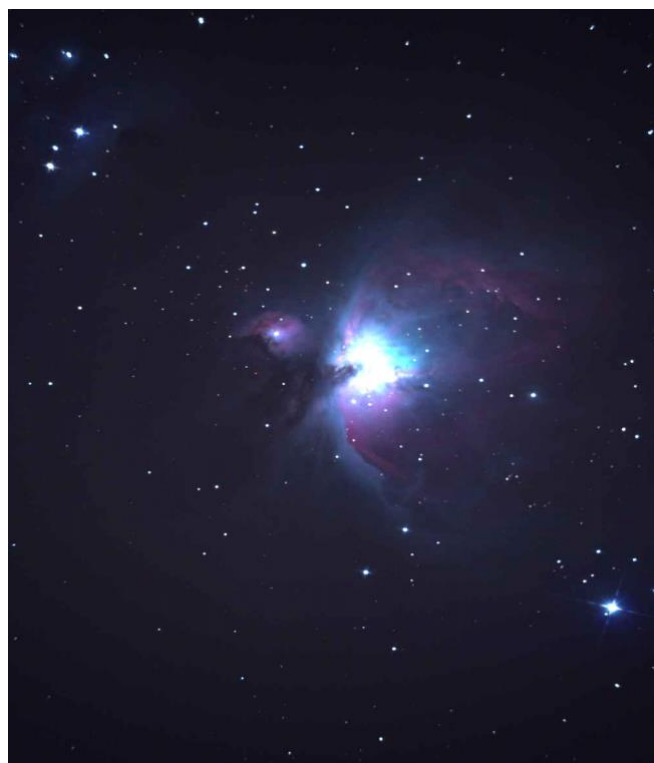
Sadly, the focuser that came with the scope was also no match for the weight of my camera and so would slip and slide no matter how hard I tried to lock the travel. From the US I purchased a serious electric focuser and mounted that. No more drifting. One issue solved, but the weight of the whole setup was a serious concern. Seeing an ad for a trolley in a US magazine I fabricated one for myself. It could probably handle the weight of the Sidings Springs radio dish...

Now I had a rig that would not lose focus nor break my back getting it outside on clear nights, but the real pain was still not resolved: alignment. After many fruitless nights trying to get a three star alignment, I confess the scope spent a long time being more in the shed than out of it.

One highlight, however, was June 2006. I convinced a busload of colleagues to come and see the transit of Venus. Using only a cheap? Filter from Bintel (they had sold all the glass ones months before) everyone got a look and I managed not only to take some shots but to write a nice article for the Esso magazine.

Like they say in the movies, time passes and so it was only a couple of years ago when my youngest son's latent interest bloomed. Living in Perth with a Bortle 6 sky, we goaded each other on. This is the then four-year-old boy who went missing from his Berthanga bed at 2am one night, only to be found outside in the long (snake infested) grass star gazing.

His enthusiasm and my bruised ego soon got us both into high gear, joining forces to pull each other to new heights and thankfully aided by the advent of new technology.



They say astrophotography is challenging. It can also be rather expensive, but the results we thought were worth it. Small ZWO cameras and laptop-loaded software took us to a new level. It was still hard and alignment was still the pain it always was.

It was going well, though sitting outside all night in a Melbourne winter was not that much fun, but better days were around the corner.

The advent of the ASIAir transformed my life, no exaggeration.

Also, now with Baader coma corrector, 2x Barlow, Ha and Dual-band Ha & OIII filters, I now had a rig I could only have dreamed of twenty years before. I take my hat off to all you old hands. I don't know how you did it. So, today I'm just a thrilled astrophotographer. The rig can be set up, levelled and aligned in about fifteen minutes (I put marks on the concrete.)

The CAT5 cable runs from the unit into the house to the 5 GHz Wi-Fi. So now, after setting up, doing some focus and test exposures, I sneak back into the warm study, iPad under my arm, waiting for the wonders of the universe to burst into view.

Things I had never seen, things I could never see with just an eyepiece, have left me besotted with the hobby. Post production is still a learning curve but I will give a cheap plug to Affinity Photo and James Ritson (their guru who is a keen astrophotographer) for providing not only the software but dozens of free powerful macros to ease (tease) out the images.

Somerville is Bortle 4, which is okay, and now with narrow band filters I can shoot virtually every night the sky is clear. My last shot of the Trifid was taken with my dual-band filter while pointing basically right at a waxing gibbous moon.

In summary: Like my art teacher used to say, "Play with all the pencils, but when you find the one you like, don't change!" So, true to that mantra, I now only use the ASI for tracking and total control of the rig. Affinity is my go-to (pardon the pun) software but I will check sometimes with DSS if I'm not sure whether what I see it what I should see.

So, from early wonder and excitement, through years of pain and disappointment, I'm truly in my happy place. With a rig I couldn't have imagined back when we started years ago.

I'm just so pleased everything is still up there for us to see.

Rob Clarke

All images by *Rob Clarke*



MEMBERS GALLERY



Right

Barnard 33 aka Horsehead Nebula.

Reprocessed data using newer software
and techniques learned over time
TS Optics 130 and 0.6 Altair reducer
ZWO ASiAir 294MC Pro
Skywatcher NEQ6 mount
3 hours acquisition.

By Nik Axe



Below

NGC 2070 The Tarantula Nebula

Over 20 hours of data taken over several
nights and over a year of old and new data.
Combination of 180, 300 and 600 second
subs then combined in Astropixel
processor.

RGB and Ha extracted and used as a
luminance layer.

One shot colour ZWO 294MC Pro and the Optolong L Extreme.

TS Optics 130mm with the Riccardi 0.75 reducer, ASI AIR

As the season progresses, I will be adding more and more data and see what eventuates. Nik Axe



First nebula image taken with my setup on Saturday night. Lobster Nebula. Turns out that RAW and FITS files can't be mixed when calibrating so I had to chuck out all my flats and biases as I didn't use my computer to take those. Didn't bother doing any work on it past auto stretching in PixInsight after putting the light frames through basic calibration and then stacking. Surprised anything came up after stretching as it was looking like nothing was captured on Saturday night in my test shots.

By Connor Mathieson



Right

Maybe my best smartphone images of Jupiter & Saturn so far.

Videos taken through 10" Dob with my Samsung Note20 Ultra smartphone, then frames extracted and stacked.

By Nerida Langcake

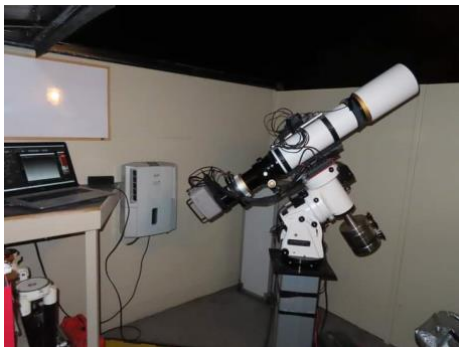


Below

The Tarantula Nebula
NGC2070 Taken from Cranbourne.

William Optics FLT132 / SBIG STL11K
Camera / AP 1100GTO mount
3 Hours of LRGB exposure time.
Processed in CCDStack, Photoshop &
Topaz Studio

By Dave Rolfe



Right

What a great Saturday 1st October night! It was clear and we had good seeing conditions!! Jupiter is now a few days past opposition and is at its best in the sky. You can see the Great Red Spot almost face-on. Taken with a C14 with a ZWO ASI485 colour camera. Fire-capture, RegiStax, WinJupos, and processed in PS.

By Dominic Lucaralli

Below

Finally a bit of clear weather, managed to snap these on Saturday night. A bit breezy and jet stream just ok. Images taken with a 12" Dob, 5x Powermate and ZWO ASI224MC. Also threw in an overexposed version to show their satellites (e.g. Triton).

Clear Skies! Russell Smith



SOCIETY INFORMATION



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Mark Stephens



Nerida Langcake



Jamie Pole



Anders Hamilton



Trevor Hand



Chris Kostokanellis



Guido Tack



Simon Hamm



Greg Walton

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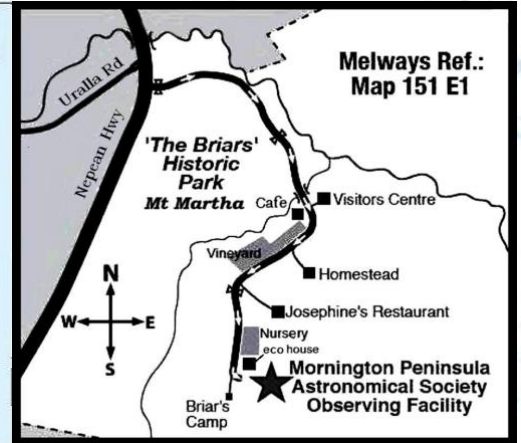
SOCIETY MEETINGS

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



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

Phone: 0419 253 252
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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 or Lara Conway



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, email welcome@mpas.asn.au say that you want to join E-Scorpius & you will be added to the E-Scorpius list.



MPAS members - <https://www.facebook.com/groups/MPAS1/>
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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 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 additional details:
 Internet: www.mpas.asn.au
 email: welcome@mpas.asn.au

Phone: 0419 253 252
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Members please write a story about your astronomy experiences and add some pictures. Send them to the editor: Greg Walton gwpas@gmail.com
 MPAS newsletters online - https://drive.google.com/folderview?id=0ByvxkzZG19g_SUNmZVhkZTFGWTA

SCORPIUS The journal of the Mornington Peninsula Astronomical Society

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