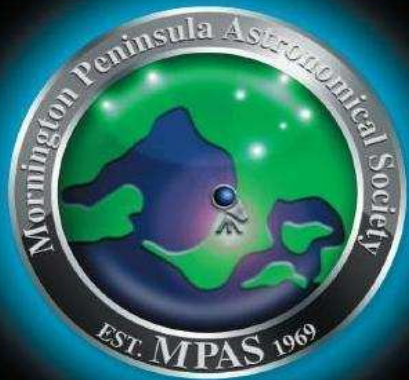


Cover image - Carina Nebula from The Briars 22nd January, Big thanks to Jamie Pole for helping find Octans so I could get aligned.

Ben Claringbold



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/>

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

Mornington Peninsula Astronomical Society

facebook

WHAT'S ON



Our COVIDSafe Plan is in place, and therefore there are rules we must all follow when visiting the site.

Here are the basic rules which are required and are mandatory for all MPAS Members:

- 1) **BOOKING.** If visiting site outside of an organised event, please email your booking (welcome@mpas.asn.au) showing date/times, name and phone of all persons.
- 2) **SICK.** If slightly unwell or with cold/flu symptoms **DO NOT** enter the site any further. Go home.
- 3) **SIZE.** Currently no density limits indoors or outdoors.
- 4) **CHECK-IN.** All attendees must check-in using the MPAS QR code (or logbook as last resort) to assist in contact tracing, and (aged 12+) show a committee member your digital or printed certificate proof of full vaccination status or official medical exemption upon arrival.
- 5) **CLEANLINESS.** All touched surfaces and handles must be carefully cleaned after your use. Wipes and cleaning agents provided. Cleaning checklist on-site.
- 6) **DISTANCING.** Recommend minimum 1.5 metres between people anywhere on-site.
- 7) **HANDS.** Wash often. Never assume someone else has already cleaned the surface. Hand sanitiser provided.
- 8) **MASKS.** Masks must be worn inside at all times. **(NOTE - These rules may change at any time)**

With the imminent transition of COVID-19 restrictions for community groups such as ourselves, we have reopened the Briars observatory site in line with applicable government guidelines, and cognizant of the age and health of some of our members.

Members, vaccinated guests and public who are able to show they are fully vaccinated may attend the 2022 events below. Unvaccinated members will have to be patient and wait until the government eases restrictions even further once COVID-19 is considered endemic throughout the community.

The 2022 timetable of public events.

MARCH

Thursday 3rd, 7:30pm, Strathcona Baptist Girls School at Point Leo Camp, 114 Point Leo Road, Shoreham. 42 Year 5 girls are booked for this stargazing evening. WWCC required.

Friday 4th, 8:00pm, Public Viewing Night @ The Briars MPAS site. Speaker Trevor Hand.

Saturday 26th, 6:00pm, Musical Stargazing Trivia Night @ the Briars MPAS site. Event partners Cranbourne Lions Concert Band.
Book via the MPAS website now! <https://www.trybooking.com/BWEES>

APRIL

Thursday 7th, 6:30pm, Essex Heights Primary at Iluka Retreat, 20 Shoreham Road, Shoreham. 75 Year-5 pupils. WWCC required.

JUNE

Saturday 11th, 7pm, Narre Warren South Scouts at either their new scout hall or Cranbourne. 60 scouts. WWCC required.

AUGUST

Tuesday, 30th, 7:00pm, Strathcona Baptist Girls School at Merricks Lodge Camp site in Merricks, 3670 Frankston-Flinders Road, Merricks. 28 Year 10 girls are booked for this stargazing evening. WWCC required.

Those attending must QR code on arrival and, if aged 12 or older, show their proof of vaccination electronically, or on paper, or be carrying a medical exemption certificate. Compliance is still necessary with all public health orders. Bookings aren't necessary, however we must ensure required attendance caps on the night if they look like being exceeded.

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

SOCIETY NEWS



Public viewing Night January 7th, 14th, 21st & 28th - Cancelled due to Covid

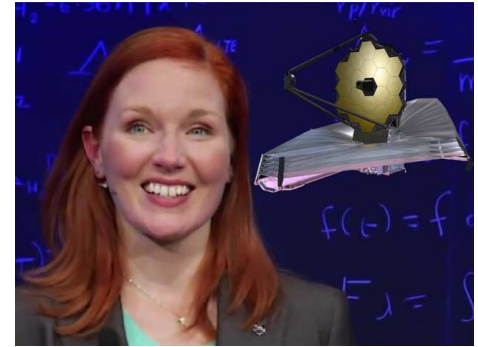
Society meeting January 19th - For those of you who are not yet subscribed (it's free) to the MPAS YouTube channel, this month's meeting has been uploaded for viewing. The meeting features Dr. Amber Straughn, a NASA Astrophysicist and member of the JWST team, speaking about "A New Era in Astronomy: NASA's James Webb Space Telescope". If subscribed, you should be notified of this automatically by YouTube. 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/>

The video is not posted to e-scorpis as it is too large. *Regards, Peter Skilton*



Members BBQ & Working Bee January 22nd - The working bee was very successful with most jobs completed. Dave installed 2 new security cameras in the observatory, so we now have 6 cameras monitoring the site and buildings. We installed shelving on 2 walls in the shipping container. This means we now have a clear path through the middle of the container. The outside screen got a coat of paint. Clock batteries changed. Lawns were cut. A lot of sweeping and dusting was done. A big thanks for all the hard work put in by members. After the BBQ a few more members arrived for telescope training and viewing in the observatory. While outside Ben, Chris & Stephen set up astrophotography systems and were getting good results. About 20 members in attendance. *Regards Greg Walton*



Public Viewing Night February 4th - Cancelled due to Covid

Society meeting February 16th - The February society meeting, being the first back this year under the pandemic restrictions easing slightly, saw 25 members attend the Briars. The meeting was chaired by Peter Skilton, who gave a run down of the most significant event since last meeting, being the successful unfurling and positioning of the James Webb telescope at the L2 Lagrange Point.

An informative video was then shown explaining the first few instants of our Universe's existence.

Mark Stephens gave Sky for the Month. Then the Lagrange Points were explained in detail, showing what is currently at each of them, and what is planned to be in the future. Meeting closed around 10:30pm. *Regards, Peter Skilton.*

Telescope Learning Day & BBQ February 19th - It was a beautiful day with not a cloud in the sky for a change. We had approximately 30 members attend throughout the day, with some new and some longer-term members going through the basics of finder scope alignment, collimation, and observing using members scopes, including some solar viewing using a filter on a reflector telescope. The day started at about 4pm and wound up around midnight. We had a nice sausage sizzle under clear skies, and mild conditions.



OBSERVATORY UPDATE



I cleaned the Geoff Dudley 8 inch Dobsonian telescope and removed all the Velcro.

I added wheelbarrow style wheels to the Dobsonian mount. This will make it easier to move around. The 100mm diameter wheels are 20mm above the ground and only come into contact with the ground when the telescope is being moved. The handles swing down when not in use and also clear the ground by 20mm. I slightly squashed the 8mm nuts out of round, so they would lock onto the threads of the pivot bolts. The wood I used was Australia hardwood which I coated with clear decking oil.

I also had to add 2 stainless steel stops at the front of the base (rocker box), as I found that when I picked up the telescope, it would almost topple off its base (rocker box). I could have made the stop from wood but I found the steel stops in my junk pile.

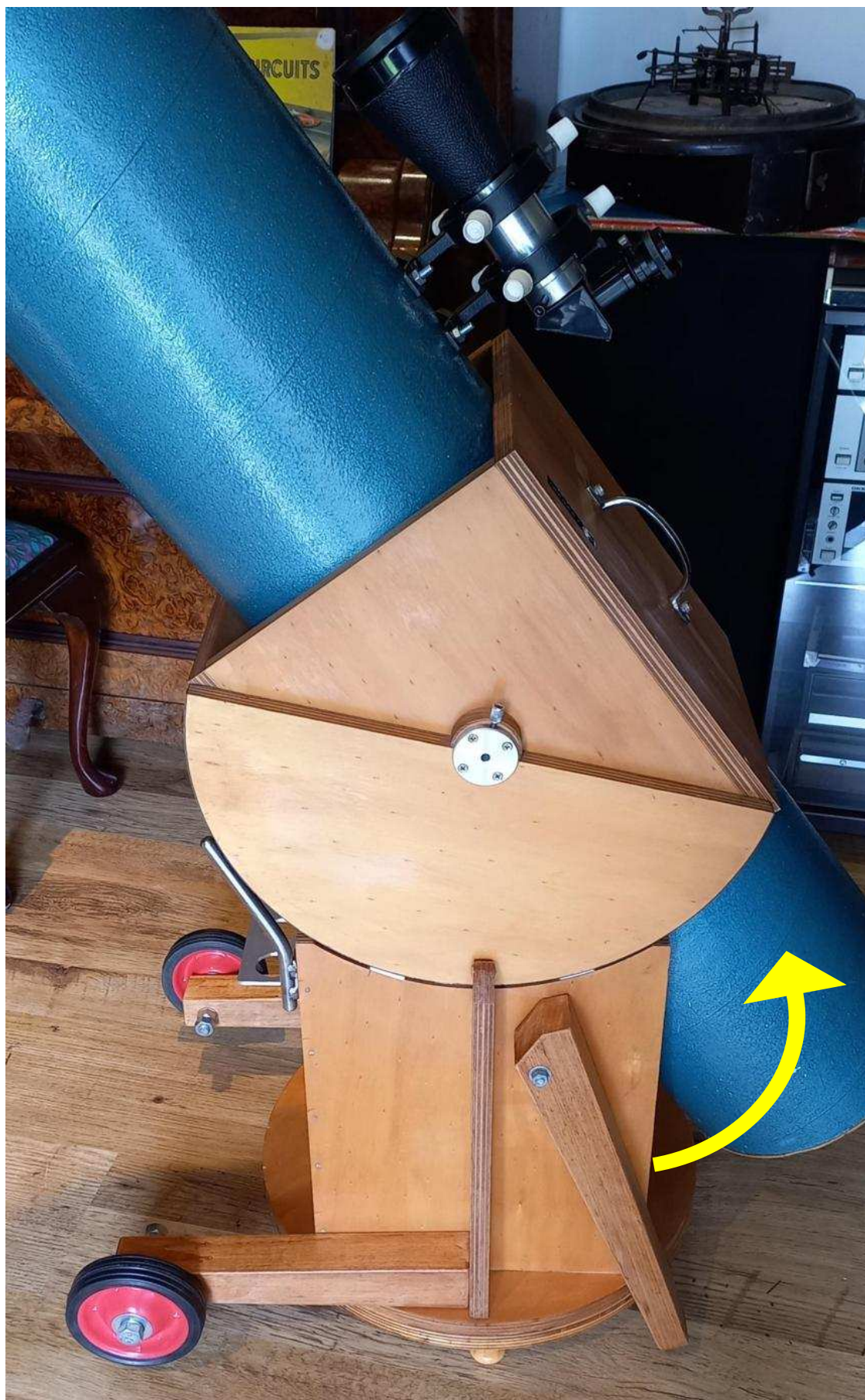
I fitted a right angle finder scope which I made from a broken pair of 70mm binoculars. This will make it easier to find the fainter deep sky objects. I also had to add a counter weight on the underside of the tube to balance the telescope tube.

Fitted 2 new AA batteries in the Telrad finder and adjusted.

Also added an aluminium eyepiece storage rack.

I used the telescope to look at the Moon and found that telescope works well. The mirror must be of good quality: I also looked at the Orion Nebula with a 10mm eyepiece and found I could easily see the 5 stars in the Trapezium. Then I looked at the Jewel Box and some other star clusters, the telescope was a joy to use and I know the members will get much pleasure from this telescope.

Regards Greg Walton



JWST You can do at home, particularly during the school holidays, provided you have access to a printer of pdf files, try making a paper model of the James Webb Space Telescope. Plans and instructions for various levels of difficulty are here from NASA's Goddard Space Flight Centre: <https://webb.nasa.gov/content/features/educational/paperModel/paperModel.html#chooseAModel>



I'm sure Greg would be delighted to put a photo of your built one in a future edition of Scorpius, if you email them in.

This year's Women in Nuclear Astrophysics calendar has been released. It features 12 women who made groundbreaking contributions in astrophysics, and is aimed to inform and inspire prospective STEM students in the future. Some of the 12 are well-known; some are yet to be. It is free to download here in multilingual versions: <https://cloud.konkoly.hu/s/pBLJtG2CFyF66Df>

For simplicity, I attach the English version. *Regards, Peter Skilton*

Food for Change at The Briars. The council has given them a 99-year lease on 5 acres of land behind the old restaurant. Every Saturday morning they will be working the land growing fruit and vegetables for the needy. In the past 6 months they have already planted 100 fruit trees and a large area of rhubarb and herbs. You may have already seen a 40 ft shipping container on the back road in to the MPAS site. This belongs to the Food for Change and has been painted up on the north side. Food for Change also have a site in Sandringham where they grow food. So the good news is that the land east of the MPAS site is not part of their lease. Food for Change are looking for more volunteers so they can expand the growing area and hope one day can sell vegetables as well. With the council's help they have been working to get rid of the rabbits. I found they are very down to earth people. *Greg Walton*



New Members Welcome

- Robert & Robyn Sonneveld
- Pamela & Shaun Boyle
- Sergio & Joshua Heekeng
- Neville Drake
- Kathryn Harley & family
- Mitchell Keats
- Dan & Sawyer Power-Mirfin
- Maria Remova & family
- Memphis Campbell-McLean & family

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*



\$30.00 joining fee

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 | | March / 2022 | | | | | Red Days indicate School Holidays |
|----------|-----------------------------------|---|------------------------------|--|---------------------------------|---|-----------------------------------|
| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | |
| | | 1 Saturn & Mercury left of a thin crescent dawn Moon | 2 | 3 New Moon Saturn & Mercury 0.6 degree apart | 4 Public night 8pm | 5 | |
| 6 | 7 | 8 | 9 | 10 First Quarter | 11 Moon at 404,268km | 12 | |
| 13 | 14 Labour Day | 15 | 16 Society Meeting 8pm | 17 St Patricks day | 18 Full Moon | 19 Working bee 4pm BBQ 6pm | |
| 20 | 21 | 22 | 23 | 24 Moon at 369,760km | 25 Last Quarter | 26 Mega musical Trivia Night & BBQ 6pm | |
| 27 | 28 Mars below the dawn Moon | 29 Saturn, Venus & Mars above the dawn Moon | 30 | 31 Jupiter left of the dawn Moon | | | |

Monthly Events

Public night - 8pm to 10pm on the 4th @ the Briars
Society Meeting - 8pm to 10pm on the 16th @ the Briars
Working Bee - 4pm on the 19th **BBQ** - 6pm @ the Briars
Mega musical Trivia night & BBQ - 6pm on the 26th @ the Briars
 (Booking required) <https://www.trybooking.com/BWEES>

Working Bee job list
 Cut back tree near observatory
 Remove tree branches
 Clean kitchen
 Clean observatory

| CALENDAR | | April / 2022 | | | | | Red Days indicate School Holidays |
|----------------------------------|--|--|---|---|--|---|-----------------------------------|
| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | |
| | | | | | 1 New Moon Public night 8pm | 2 | |
| 3 Daylight Saving Ends | 4 | 5 Saturn & Mars 0.3 degrees apart in the dawn | 6 | 7 | 8 SCAG Moon at 404,438km | 9 First Quarter | |
| 10 | 11 | 12 | 13 | 14 | 15 Easter | 16 Easter | |
| 17 Easter Full Moon | 18 Easter | 19 | 20 Society Meeting 8pm Moon at 365,143km | 21 | 22 | 23 Working bee 4pm BBQ 6pm Last Quarter | |
| 24 | 25 ANZAC Day Saturn below the dawn Moon | 26 Mars below the dawn Moon | 27 Scorpius Deadline | 28 Venus & Jupiter above the dawn Moon | 29 | 30 Venus & Jupiter close in the dawn | |

Monthly Events

Public night - 8pm to 10pm on the 1st @ The Briars
Scout & Guides viewing night - 8pm to 10pm on the 8th @ The Briars
Society Meeting - 8pm to 10pm on the 20th @ The Briars
Working Bee & Members Night BBQ - 4pm on the 23rd @ The Briars

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

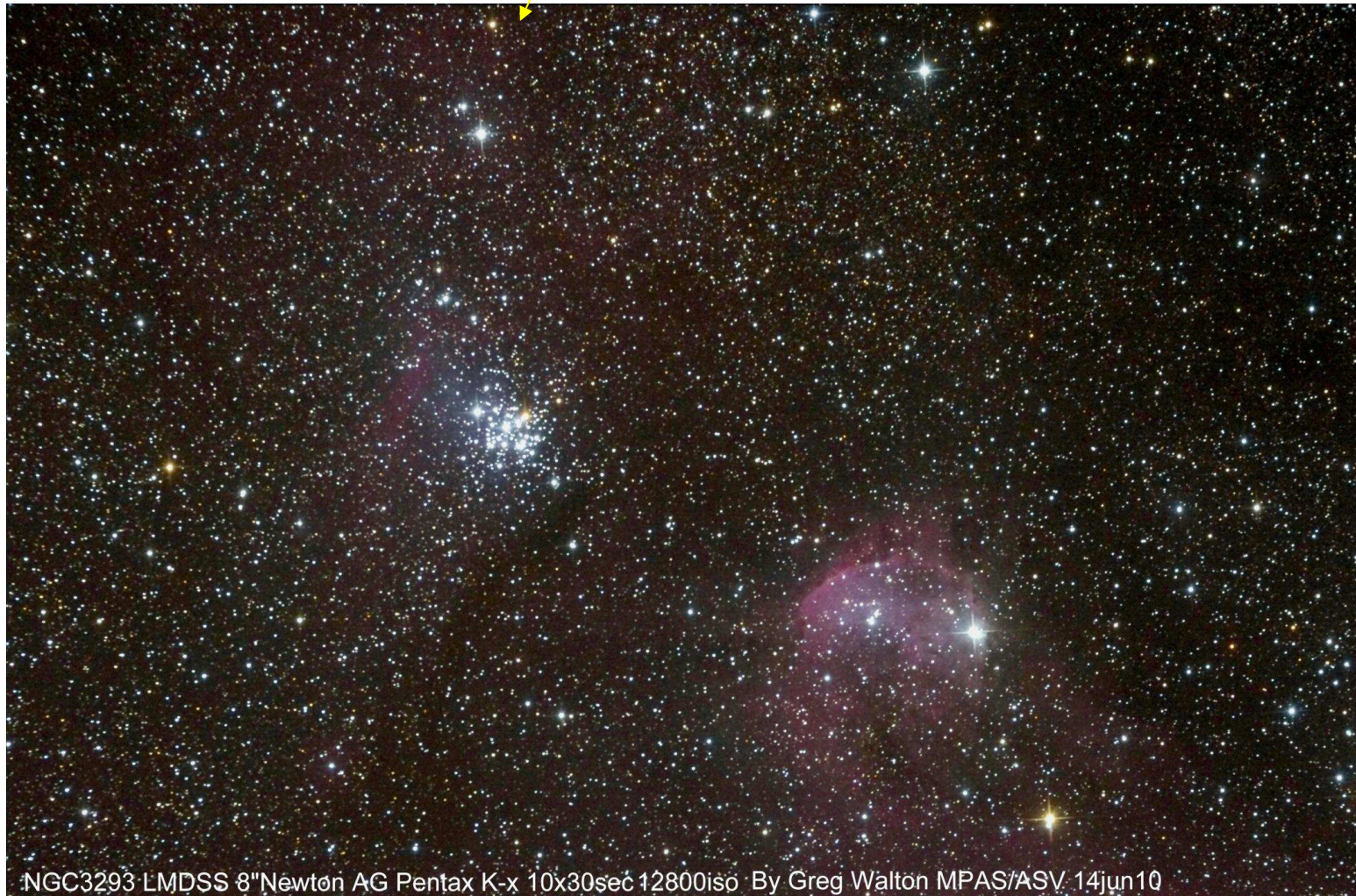
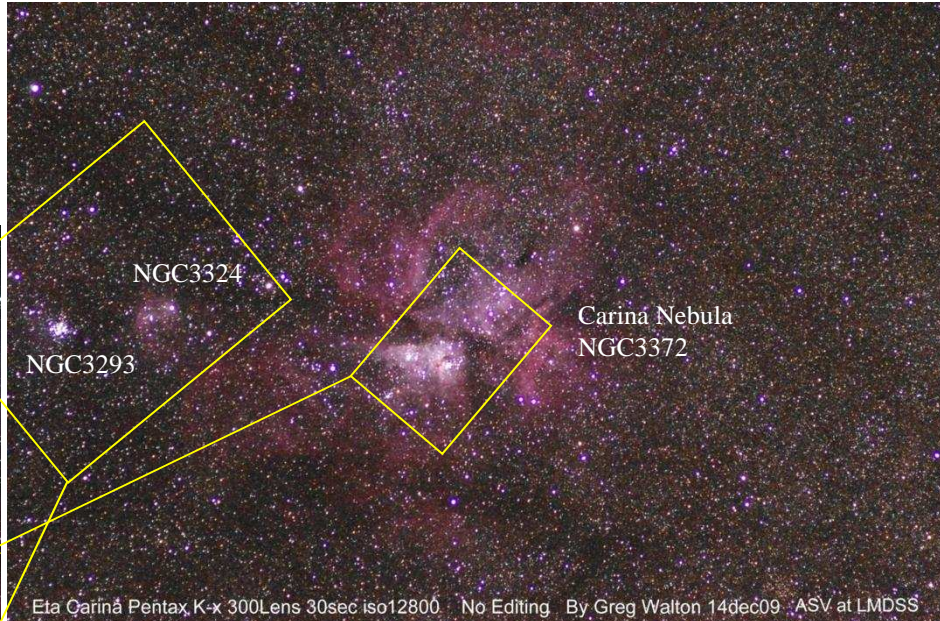
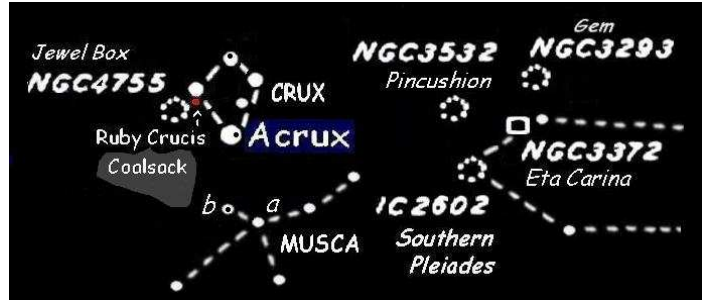
Watch your emails, as on any clear nights the Observatory may be opened for members-only viewing.

THE BRIARS SKY

By Greg Walton



The Eta Carinae Nebula NGC3372 C92 also known as the Keyhole Nebula, is one of the most popular objects in the southern sky and even though it hides in the Milky Way it is still visible to the naked eye. It's very large, some 200 light years across and 6,000 light years from Earth. A yellow 6th magnitude variable star lays at its centre. In 1843 this star brightened to -0.8 magnitude. If you move your telescope slowly up, you will find a small but bright star cluster which rivals the Jewel Box NGC4577. This 4.7 magnitude cluster NGC3293 is 8,500 light years from Earth, also known as the Gem it has a distinct bright yellow star like the Jewel Box. If you are into astrophotography then all you need to do, is get NGC3293 the centre of your field and you will find a colourful nebula nearby known as The Bubble NGC3324. The area of sky around The Gem star cluster is steel blue and just below is a dark nebula which blocks out most of the background stars.



NASA's Artemis 1 moon mission

NASA's Artemis 1 moon mission will be the agency's first big step toward returning astronauts to the lunar surface.

Formerly known as Exploration Mission 1 (EM-1), Artemis 1 will be the first test flight of the agency's new Space Launch System megarocket and the Orion crew capsule. Together the systems will not only provide valuable testing for humans, but they will also carry humanoid and robotic passengers for science and publicity purposes.

The SLS rocket will launch the uncrewed Orion spacecraft on an approximately 26-day mission, during which it will spend six days orbiting the moon before returning to Earth.

Artemis 1 launch has already been delayed a few times and is now scheduled to launch no earlier than May 2022, from NASA's Kennedy Space Center in Florida. However, the May window is continuing to be evaluated as there's still a lot of work ahead.

Artemis 1 is NASA's first mission to the moon under the agency's Artemis program, which aims to send astronauts to the moon by around 2025 or so. That crewed moon landing will occur on the Artemis 3 mission.

As the first to fly, Artemis 1 will not carry a crew, but will fly on a trip around the moon with instruments, cubesats and more aboard. The mission will use the new Space Launch System to launch an Orion space capsule to the moon and back.



*A close-up view of NASA's Artemis 1 Space Launch System megarocket inside the Vehicle Assembly Building at NASA's Kennedy Space Center in Florida.
Image credit: NASA*

NASA's Parker Solar Probe spacecraft zips past the sun again!

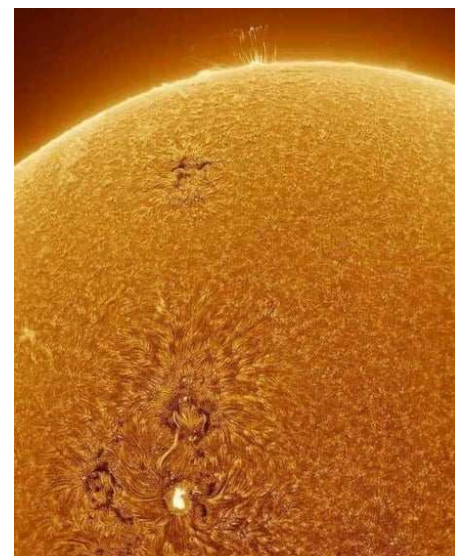
The Parker Solar Probe has made its 11th close flyby of the sun during its quest to understand how our neighbouring star works. It zoomed close to 5 million miles from the sun's surface.

The spacecraft, heavily shielded against the sun's radiation and extreme heat, dipped to within 8.5 million kilometers of the solar surface on Saturday 26th February. That's about 14 times closer than the orbit of Mercury, our closest planet to the sun.

At closest approach, the spacecraft was flying at about 586,860 kph; Parker Solar Probe has held the speed record for fastest spacecraft since 2018, a couple of months after its launch.

By the end of its mission, the spacecraft will be send home data from within just 6.16 million km of the sun's surface. Getting that close to the sun will allow scientists to continue making observations about the solar environment, particularly the atmosphere, which scientists call the corona. The incredibly hot corona is millions of degrees hotter than the surface, regardless of the scale of temperature used, and it's not quite clear yet how this huge jump in temperatures happens.

While doing solar science, Parker is also performing flybys of other planets to pick up speed and to do some side science observations. An example includes visible-light pictures of Venus that the probe captured, released earlier in February. Over the mission, the probe will make a total of seven Venus flybys to use the planet's gravity to adjust course; the next such flyby will occur in August 2023.



My Astro Journey to Large Aperture SDM Telescopes. By Melvin Lee

Greetings to my fellow MPAS members and my thanks for allowing me to share my experiences on how I ended up going the SDM path of telescopes and the passion I have for these scopes.

Since I was a child, I have always loved anything related to space but didn't have the means to acquire any equipment to view the skies. My only equipment was my good old eyeballs as it was free. ☺

Fast forward to 2016 and I was able to acquire a 16" Orion XX16g which opened my eyes to what was possible to view and instil my passion for the night sky. I loved taking the 16" every clear night outside and when possible, to darker skies in the country and really enjoyed the views through it.

I stumbled upon the SDM Telescopes website in 2016 and I spent most of my free time drooling over the scopes on the site. In particular SDM#74 which had a 24" f/4 mirror and I knew it was the SDM scope I really wanted to acquire. I knew as soon as I saw SDM#74 that it was a big scope but following what SDM stands for – SIZE DOES MATTER, it definitely was the way I wanted to go!

In November 2018 I started discussions with Peter Read (SDM Telescopes) to acquire a larger scope of around 24" as an ultimate dream scope for me. I am sure I bombarded Peter with many questions during this period regarding the scope build. ☺ Peter informed me that I needed to source the mirror from a mirror maker and the majority of them are in the USA. This was a new experience for me.

In doing my research and talking with others I decided to go with Carl Zambuto as my mirror maker for my SDM scope and emailed Carl regarding making a 24" mirror. Carl did say he doesn't make any larger than 20" but he was willing to make the 24" as f/4 and using quartz since it will be my dream scope. Carl put me at ease as it was a big decision for me on whom to go with for the 24" mirror.

The reason I went with Carl was, in speaking to many other scope owners and researching on Zambuto's mirrors, his name stood out that many others measure themselves against. Carl adheres to his seven criteria and his mirrors speak for themselves as the level of consistent quality that he holds himself too.

It became a three-year wait for the mirror, but it has been worth the wait. I am exceptionally happy with the quality of the mirror and the views I have got from it so far. I go into a bit of the observations with the mirror and scope later.

The ease of use of the SDM is amazing and level of workmanship that Peter attains for each scope is exceptional. The scope's weight distribution and smoothness of movement takes it to the next level and it's always a pleasure to use the scope. I now only use the SDM scopes now as they are so easy to use, and the level of care and craftsmanship shines through the scope.

I always look forward to using the scope when I am out, and the scope allows me to forget where I am and just enjoy the night skies!

It's my pleasure to share the progress build of the SDM scope over the past three years!

Scope Build:



Pete starting the scope mirror box build and rocker box build. (I think a lot of my friends thought this might look like an expensive dummy)



Measuring the angle of the truss poles.



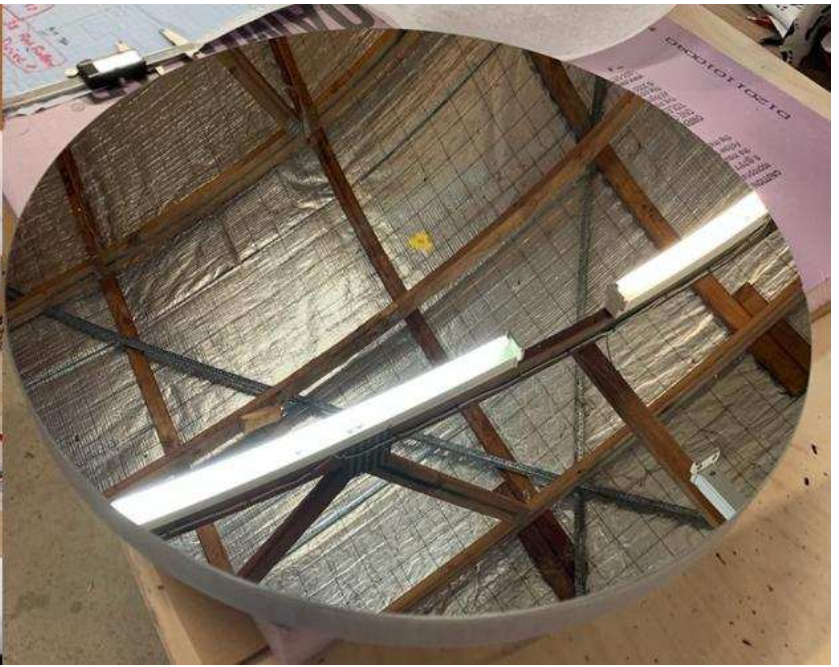
Doing first coat of the wood stain.



Final coat completed for the mirror box.



Painting the UTA black to eliminate reflections.



24" f/4 Quartz Mirror just out of the coating chamber.

24" mirror ready for installation.



SDM scope build completed!

The scope has the below items:

- Remote Servocat Keypad
- ServoCat
- Telrad
- SIPS focuser
- Astrosystems Laser Collimator
- Stellarvue 10x60mm Finderscope
- Nexus DSC Pro
- Dew Control
- Motorised Collimation
- Tablet Stalk
- Mirror Fan
- Boundary Layer Fans

Delivery of the scope took place on a cloudy day of course. It was a pity we couldn't test the scope on the day of delivery.



Back of the mirror was polished by Carl Zambuto.

Observation Report:

I have had only a limited chance to get the scope out to test it but below is the report I sent to Carl Z regarding my viewing experience with the SDM scope.

I was able to see fine detail on Jupiter going to x700, the colours and contrasts within the bands and festoons really stood out and were vivid. I could clearly make out subtle granulation at both poles of Jupiter and was just awestruck.

Saturn was next with the Cassini Division and how black and sharp with the planet really stood out for me. The pastel colours on the planet was incredible.

I finally was able to take the 24" to darker skies after Christmas, wow is all I can say. I remember the deep sky objects I viewed but the ones in particular are below:

47 Tuc - I love this globular, the view was stunning with pinpoint stars like hot sand in a dense ball. I could discern varying density and brightness radiating from the core and gaps between the stars within the core. This alone is worth the price of admission into large Zambuto mirrors for me.

Eta Carinae Nebula - The Bubble around Eta Carinae even really low in the sky was sharp and defined. The nebula was like a 3d wave of blue and white/grey. I was stunned by the view I saw.

Tarantula Nebula - Tarantula took on a new level of interpretation of what I used to see, the twists of blue/white of the nebula filled the eyepiece. It looked like a biohazard symbol combo with all the subtle looping and twists. You can clearly make out the grouping of stars in the centre of the nebula.

Fornax Gxy NGC1365 - I had never seen a galaxy like this with so much structure and visible central bar with its spiral arms curving out. Best galaxy view for me.□

Many thanks, Carl, you have given me a lifelong experience and memories I will treasure. I hope to make many more new ones.





One very happy and proud owner of a SDM 24" scope!

If you are thinking of getting a premium scope/mirror, I highly recommend contacting Peter Read at SDM Telescopes. Peter is so accommodating and such a nice person to deal with. I see Peter as more a friend than a business transaction and Peter has been always generous with his time and knowledge.

I love the SDM scopes so much, I have a 12" f/6.3 Mark Suchting mirror and 18" f/4 quartz Carl Zambuto coming as well to join the 24" f/4 quartz and 14.5" f/4 in the stable of scopes.

<http://www.sdmtlescopes.com.au/> - SDM Telescopes (Australian Premium Scope Builder)
<https://zambutomirrors.com/> - Carl Zambuto (American Mirror Maker)

Wireless imaging! All-in-one “ZWO ASI AIR Plus” First Impressions, *by Russell Smith*

Have you ever wanted to control your telescope from your phone while you stay mosquito free in the summer or away from the freezing nights in winter? Well-known Astro imaging brand ZWO has recently released their updated version of the ASI AIR, the [ASI AIR Plus](#).

This little computer unit acts as a central port that controls all of your bits and bobs without the need of a laptop or multiple power cables. A single power cable goes into the device; and your imaging camera, guide camera, ASCOM to Mount cable, electronic focuser, focuser wheel, and dew heating control plug into the device and that’s it. You can then control the device from your iPhone, iPad or Android phone.

I managed to purchase one recently and have managed to give it a bit of a test run. Here is a brief overview of my impressions of the device so far. I had to download the ASI AIR app from the app store. I currently am half way between switching from an iPhone to a de-Google'd Android phone, so I downloaded both versions. The first thing the app wants to do is to verify / “activate” the product. Unfortunately, I have to say this was tedious and took many attempts to get it to work. I could only get it working on my iPhone and not my Android – whether that was from the de-Googleing (deletion of Google services and apps etc) I am not yet sure. I am not sure on how it eventually worked either; there seemed to be issues connecting to the ASI AIR network and the phone or home Wi-Fi network at the same time.



ZWO ASI AIR Plus pictured above

Although we were off to a bad start, once the device was activated things improved somewhat from there. I was able to connect to all of my gear with the exception of my MoonLite focuser. I was aware that as a ZWO product there was going to be some limitations on the compatibility with other brands – I actually purchased a new ZWO ASI120 mini to replace my ageing hot pixel ridden Lodestar guide camera at the same time as the ASI AIR Plus. Unfortunately, an early review I read ended up being misleading. It suggested that ZWO was going to widen compatibility across ASCOM products such as Feather Touch and MoonLite focusers and this has proven to not to be the case (confirmed on ZWO’s product Q&A page) – it needs to be used with ZWO products with the exception of DSLRs, dew heaters and mounts. This is disappointing as while ZWO makes fantastic cameras they only have one electronic focuser on the market (with a couple of variants) – this will automatically preclude a high number of serious astrophotographers, that require the use of heavy-duty focusers, from considering the ASI AIR Plus as an option for them.



Activating the product before use was a severe pain, it would be beneficial if ZWO dropped this requirement in future updates.

The good news is that it does allow compatibility with approximately 100 Canon and Nikon models (DSLR and mirrorless) so a ZWO camera is not necessarily required. So not a huge problem, I would have to focus manually which I can easily do by slewing to a bright star.

The unit fits into finderscope clamps no problem and USB hubs worked fine piggy backing off the unit.

The next teething issue I had was connecting my EQ Direct Cable that allows control of my SkyWatcher mount. The USB cable was too thick near the ASI AIR’s tightly packed USB ports. I managed to plug in a USB hub and keep it attached via a couple of thick rubber bands which thankfully worked and I could successfully connect to the mount.

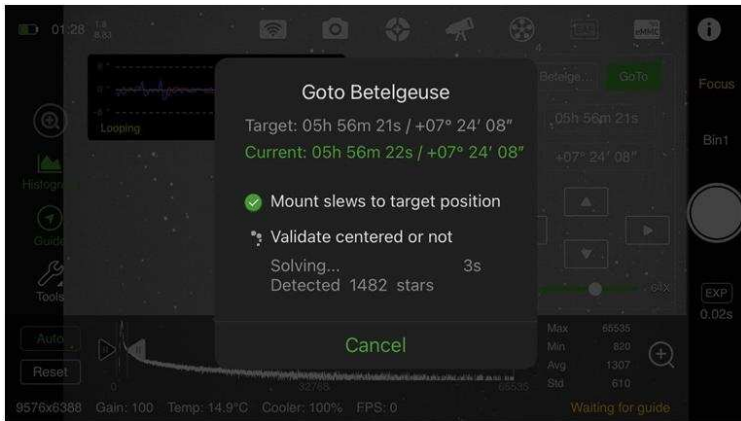
I fixed the ASI AIR unit to my telescope in the finderscope clamp area; however there are many holes for screws to be connected in other fashions.

The app is quite intuitive to use. After connecting to all the hardware I decided to polar align through the app. The limitation here is that you need a direct view to the South Celestial Pole (SCP). It works in a similar fashion to the paid SharpCap polar alignment routine. I found it to work reasonably well and fairly quickly. If you do not have an unimpeded view to the SCP you may need to consider aligning with your handset before turning on the ASI AIR Plus. The routine lets you know when you have it close enough to the SCP.



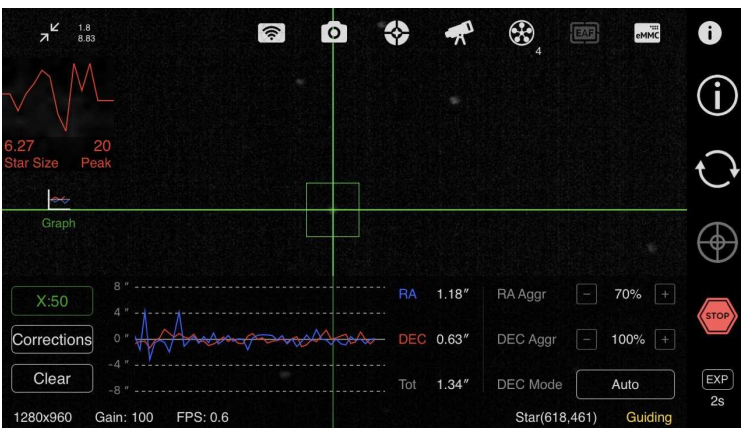
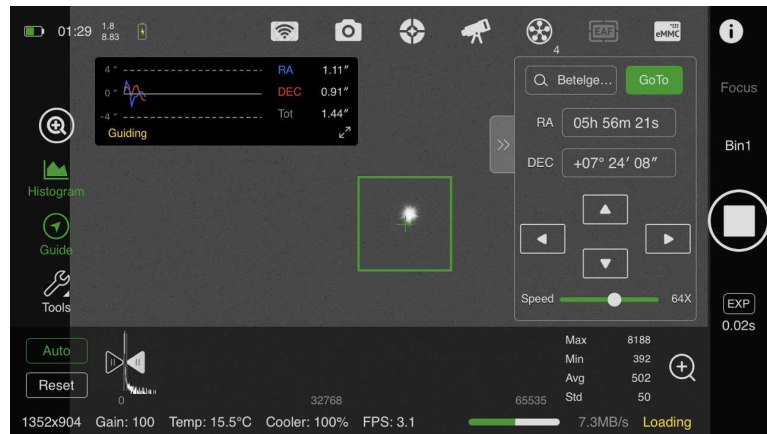
The unit connected to my ZWO filter wheel with no problems, although I couldn't find a way to rename the filter slots which were simply numbered 1 through 7. So you may need to remember which filter you have placed in which position.

Once you are all connected you are ready to image. The app has a really useful list of objects to choose from including graphical representation of whether it is close to passing the meridian or not. Once you choose your object the app will automatically plate solve and centre the object.



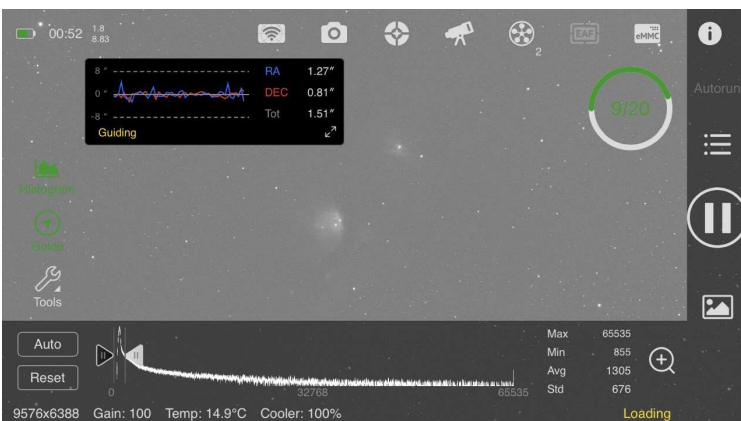
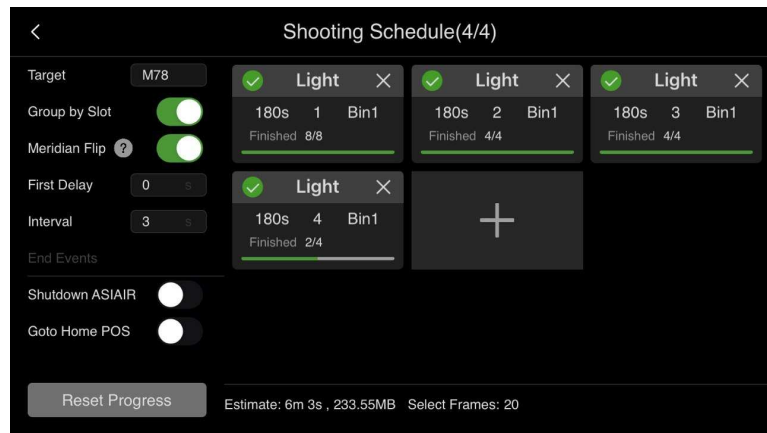
The ASI AIR app allows you to slew to and automatically plate solves objects so that it can be centred with ease and speed.

Once you have arrived at your object you can then start the guiding calibration and guiding.



Familiar controls allowing you to select a star or it will do multistar guiding.

Setting up a schedule for the night is quite easy to achieve. In the menu shown here I have already selected M78 and am capturing 4 subs on 4 filters (LRGB).

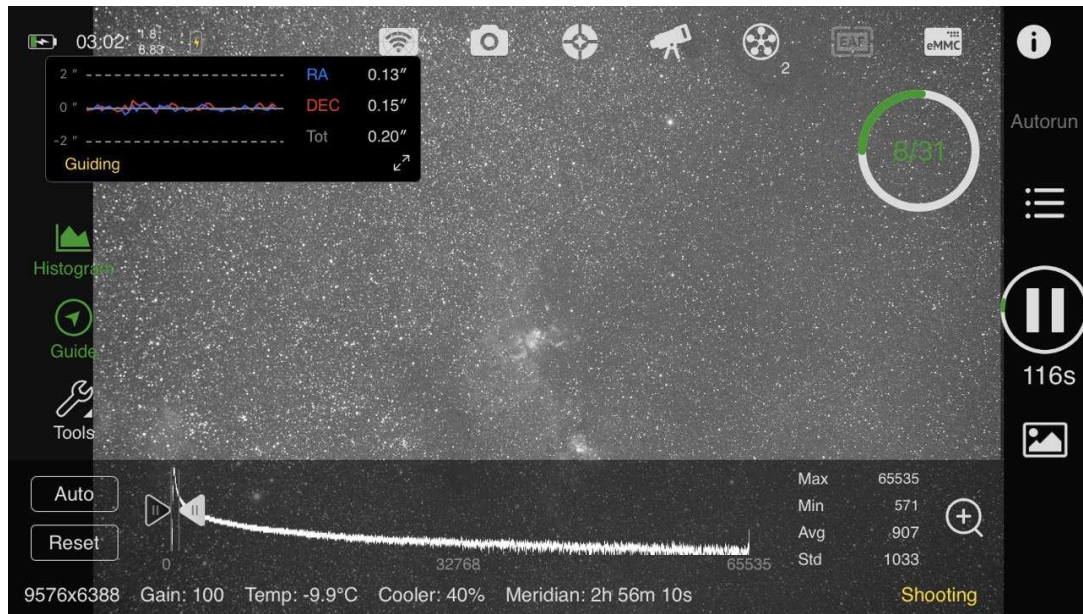


The app sends JPGs to your phone and you can auto stretch or alter the white point to see how the subs are looking, including zoom in. You also have the ability to directly copy the raw file to your phone.

Preview of the subs is sent to your phone. Remember to manually switch on the DC outputs to enable things like cooling!

Two issues I discovered after my first night of trialling was that the external SSD I had plugged into the ASI AIR did not save the files. The second issue I discovered was that while my camera's cooler was set to cooling and said it was, it didn't cool the camera. You have to go in and manually turn on each DC output port on in another setting – something that I think could easily be forgotten.

Luckily there is some onboard memory and I was able to copy all the files through Wi-Fi directly to my PC. I believe I need to use an SD or TF memory card to save the files rather than USB.



Second night of use; I have the ASI AIR Plus dialled in – much better guiding and I even rememberd to put the cooling on!

The unit is also capable of undertaking planetary videos, however I have not tried this as yet. Based on how it performed I think it will be more than capable.

The Wi-Fi performance was quite good, I was able to get the signal no problem from a few rooms away. I understand the previous model did have some issues with Wi-Fi and it is now generally accepted as fixed in the Plus version. You are able to connect via an Ethernet port if required.

In summary I really enjoyed using the ASI AIR Plus. I found it really easy to use. Polar Alignment, guiding and plate solving were super quick and easy to set up. I expected the plate solving to be much slower but it was really quick. The unit costs US\$299 direct from ZWO or locally it is about \$469 Aussie.

| Positives | Negatives |
|--|---|
| <ul style="list-style-type: none"> Plenty of USB and DC output ports Ability to attach a USB hub All-in-one solution DSLR compatibility Excellent and quick software Good Wi-Fi Range Reasonable Price Small and light Very easy to use | <ul style="list-style-type: none"> Product Activation a nightmare Finder Compatibility DC outputs fairly hidden in the menus not automatically on Naming Filters Can't access / familiarise yourself to the app unless you are connected to the unit. Storage compatibility appears to be limited / restricted. PA requires view to SCP. |

I ended up finding it so useful that I have purchased the ZWO EAF focuser unit, and will remove my MoonLite and reinstate the original focuser -I am yet to know if it will handle the weight ok but I am reasonably hopeful. I was having issues with the threads of my focuser connection to my reducer flattener so am happy to be trialling another solution, fingers crossed it works! So if you have ZWO equipment and are aware of the main limiting factors (SCP visible for PA, must use ZWO products or DSLRs) or have a basic setup and think you will be looking to upgrade to a dedicated system then I think it is a winner.

NGC 3576 or Statue of Liberty Nebula in LHaRGB

Captured using the ZWO ASI AIR Plus

130mm F5.53 refractor, Zwo 6200mm, EQ8 mount



MEMBERS GALLERY



Left - Comet 2021 A1 Leonard on 27th December 2021 taken from Somerville. Single image ISO 1600 f2.8 25 sec 50mm Lens cropped.

By Mark Hillen



Right - Comet 2021 A1 Leonard on 28th December 2021 taken from Somerville with old Canon 1000d at 25sec, Sky 90 Takahashi f5.6, 1600 ISO

By Mark Hillen



Left - Comet 2021 A1 Leonard on 28th December 2021. My second attempt is a bit better but tracking was off a lot. First image is a single frame. Second is a stack of 15 images. Stacked in Sequator, processed in Siril. Images are at 25sec, Sky 90 Takahashi f5.6, 1600 ISO. The processing and stacking are done very basic as the two programs I never used before and don't know what I am doing.

By Mark Hillen



Right - Comet 2021 A1 Leonard 29th December 2021. Been playing with 60 images in three groups at different exposures. Used the reducer flattener for this group and stacked 17 images. Sky 90 working at f4.7 with 800 ISO, at 25sec exposures. Tracking is way better this time but the sky background was not as dark as the night before so not as much tail detail as the night before where the image had poor tracking and the Sky 90 at its native f5.6 with no flattener reducer.

By Mark Hillen



Left -

Managed to get a shot of Comet Leonard a couple of days ago while at Port Fairy. This is a stack of around 20 x 10 sec ISO6400 images taken off a tripod using a Canon 700D.

By Chris Kostokanellis

Chris Kostokanellis

Right -
Comet A1 2021 Leonard taken from Yea Victoria.
By Alex Cherney



Above - Here is my version of Comet Leonard, from a few days ago at The Briars. Canon 700D with the stock 50-250mm zoom lens (at 250mm) on an AZ EQ6 in alt-az mode. 38x15s subs, stacked and processed in PixInsight.

By Guido Tack



Left - Comet A1 Leonard through clouds tonight. Not the best but happy to get something. By Mel Lee

My poor effort at photographing Comet Leonard from my backyard as the comet dived into the trees. I also went to Gunnamatta (on 29th) but clouds got in the way. Had better seeing at Cape Paterson. I've been trying to register, comet align and integrate using PixInsight but I'm at the start of the learning curve. These are single shot exposures with no tracking - I have a Rainbow Astro RST-135E mount but have not yet done any alignment (+several WO refractors and a RASA 8"). Lots to look forward to in 2022. Hope to be more active on this forum in the future.

Best regards, Fred Prata





Comet C2021 A1 Leonard zooms away from Earth towards the Sun, my image captured from the Mornington Peninsula on December 28.

Above - About 100,000 kms away from the Sun, 34 million kms away from Earth, Comet Leonard is gradually brightening but further away. It may not survive its journey past the Sun.

I'm really happy with the detail we can see in the comet's tail which shows distinct streams. The icy, bright nucleus has a visible atmosphere, a product of out gassing due to warming by the Sun. This image is heavily saturated to detect colours. The green in the nucleus is C2 and C3 compounds (carbon) excited by UV and the reddish hues are from dust scattering (credit Mladen Dugec!). There is likely a blue ion tail not visible in this image.

Orbiting the Sun about every 80,000 years, Comet Leonard is a long period comet and is about 1km across. It came within 4 million kms of Venus, that planet's closest-known cometary approach.

20 subs of 20s, Takahashi FSQ85 ED, ASI1600MM Pro, ZWO LRGB filters, processed in APP and Photoshop. *By Steve Wilkins*

Right -

Comet Leonard C2021 from The Briars last night - with David and Paul - Nice night to catch up and view the comet. Taken from a Canon 6D, with a 70-200F2.8 @ 200mm - ISO 6400, 2 second exposure - camera on a tripod only. Seems to be fading - but good to get an image just the same.

By Jamie Pole



Right - My first attempt at Comet Leonard with my smartphone. Pity about the wispy cloud but I dragged my 12 year-old daughter out with me and she was getting tired, so we had to head home. A few more clearer nights ahead...

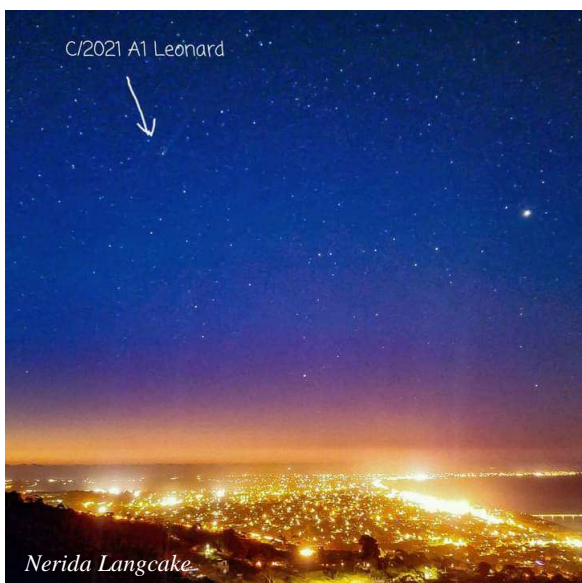
Nerida Langcake

Below - This time I went up to the first lookout on the way to Arthurs Seat. Lots of light pollution, but it's really pretty ☐ Taken with Samsung Note20 Ultra smartphone, 15 secs @ ISO250.

Nerida Langcake



Nerida Langcake



Nerida Langcake

Right -

Another comet image. This was taken from the vineyard at The Briars. Samsung Note20 Ultra smartphone, 30sec @ ISO200.

Happy New Year everyone! Here is my version of Comet Leonard, from a few days ago at the Briars.

Nerida Langcake



Right -

Last night's effort. 20x1min unguided through the ED80 and 5D3 at ISO3200. Starting to get a bit low on the horizon. This might be my last shot of it, though I'll need to reprocess these images at some point, as the colour was problematic on the first attempt. This time I did polar align. Not perfect but good enough. I didn't realize how much software I was still missing from my laptop after the reinstall.

The guide scope USB cable must be faulty - need to replace that. The comet is moving so slowly that you could probably use 2-3 minute exposures with this setup.

Not a bad way to end 2021.

Andrew Nilsson

**Right -**

Single image of Comet Leonard A1 2021 taken from Sorrento with 135mm lens Pentax K30 Polaris tracker 25sec ISO 3200

By Greg Walton 27dec2021



Comet Leonard A1 2021 Sorrento 135mm lens Pentax K30 Polaris tracker 25sec iso3200 By Greg Walton 27dec2021

Right -

Stacked image of Comet Leonard A1 2021 taken from Sorrento with 135mm lens Pentax K30 Polaris tracker 32 x 25sec ISO 3200

By Greg Walton 27dec2021



Comet Leonard A1 2021 Sorrento 135mm lens Pentax K30 Polaris 32 x 25sec iso3200 By Greg Walton 27dec2021

Right -

Something different from the comet, The Dolphin Head Nebula captured over 2 nights late last week.

By Nik Axe

**Right -**

Horsehead Nebula - taken with ASI 294mc Pro ZWO ASI AIR Pro - Skywatcher ED 72 and .85 reducer Skywatcher NEQ6 Pro. 5 hours acquisition combined 300 and 600 second images.

Optolong L-enhance which I think may subdue the blues a touch but it really captures the Ha.

Astropixel processor to extract Ha and O3 and recombined post process then I used an Ha layer as a luminance.

By Nik axe

**Right -**

NGC 2024 and IC 434, Flame and Horse Head, 22nd January 80x500mm refractor. 10 x 240 subs, using my new guide scope and camera.

A personal best!

Chris Kostokanellis



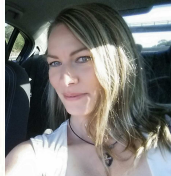
SOCIETY INFORMATION



Peter Skilton



Mark Stephens



Nerida Langcake



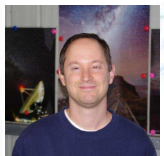
Jamie Pole



Anders Hamilton



Trevor Hand



Simon Hamm



Guido Tack



Ben Claringbold



Greg Walton

OFFICE BEARERS OF THE MORNINGTON PENINSULA ASTRONOMICAL SOCIETY

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Web master: Guido Tack
Scorpius editor: Greg Walton
Librarian: Fred Crump

SOCIETY MEETINGS

Meeting Venue: MPAS Astronomy Centre
 The Briars, Nepean Hwy, Mt Martha
 (Melways ref. 151/E1)

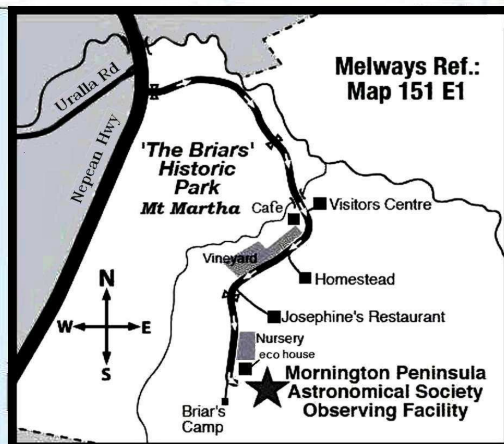
Society meetings: Don Leggett Astronomy Centre
 8pm on the third Wednesday of the month
 (except December)
 (See map at right & Below)



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 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.

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

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

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 gwpas@gmail.com

MPAS newsletters online - https://drive.google.com/folderview?id=0ByvxkzZGI9g_SUNmZVhkZTFGWTA

SCORPIUS The journal of the Mornington Peninsula Astronomical Society

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