Cover image: Taken after the first public night on 5th January 2018
By Greg Walton https://vimeo.com/249880290

SCORPIUS

THE JOURNAL OF THE
MORNINGTON PENINSULA ASTRONOMICAL SOCIETY INC.

Reg No: A268 ABN: 34569548751 ISSN: 1445-7032

Volume XXVII, No. 2 (March / April) 2018

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

SOCIETY NEWS

By Greg Walton

First Public Night January 5th - The Public Viewing Night on the 5th Jan was a huge success and a huge thanks to all the volunteers who helped on the night. It would be impossible to draw out individuals for special thanks with the team effort bringing the whole event together. The "official" crowd count was 174 I'm told but I'm demanding a recount. My personal count was 200+ using the Trump crowd counting methodology and the President is always right !! (I have a photo to prove it) Well done. *Peter Lowe*

Just one short of the 176 record for a public night. There's always next Friday for that to be broken, of course. One young one slipped through the gatekeepers at the front desk who wasn't on his family's trybooking booking, but did receive a raffle ticket. So 175 public there, plus members on top of that, so overall would have been 200+ on site. So the place was buzzing nicely, and there were over 12 telescopes operating. Just a pity there were no major planets or Moon to be seen that evening. We went through at least 3 big bottles of cordial concentrate and half a dozen biscuit assortment packets that I saw. The proceedings could probably have buzzed even more, and into the early hours of the morning at home, if we'd just put out all red cordial for the kids. Interesting touch this time was that we provided complimentary Aerogard use to the visitors who wanted it. I didn't notice any mozzie action, but there were plenty taking up the offer just in case. We had a fair passover of the International Space Station in the south during the evening (mag -1.5), and of the Hubble Space Telescope in the north (mag 2.9). The ISS was just seen above the treetops by most of the public present, while the Hubble was seen by far fewer due to its magnitude, lower elevation, and a car's headlights that were unfortunately turned on at just the wrong moment as it was brightening, dazzling that patch of sky. By the time night vision returned, it had faded. Nevertheless everyone seemed to have a lot of fun doing a family activity together, judging by the comments I overheard as I wandered around the site pointing out visual sky objects to those waiting at the telescopes. Regards, *Peter Skilton*

MPAS public night 5th January time-lapse video link below
https://vimeo.com/249880290

Second Public Night Friday January 12th - Despite the rain, last night's PVN was quite successful. We had an audience of about 25. I gave two talks on meteorites and the Earth/Moon system. Thanks to those who helped out. Next week I'll be talking about "How Planets work" Cheers *Peter Lowe*

Most members had an easy night due to the cloudy sky. While Peter Lowe gave the talk, Dave & Heath replaced the faulty light in the kitchen area and installed a new 3 way light in the sales area. I changed the batteries in the red dot finders on the telescopes in the observatory and then showed the visitors the telescopes in the observatory. *Greg Walton*

Society Meeting at the Briars January 17th - saw 24 members in attendance. Peter Lowe chaired the meeting and talked about the passing of Apollo astronaut John Young, the upcoming MPAS events, and NACAA which is to be hosted by the Ballarat Astronomical Society over Easter this year. Ian Sullivan talked on the making of astronaut suits. Greg Walton did sky for the month and showed member's images & videos; also showed photos of the site at the Peninsula school, where MPAS held the Society meeting for the past 30 years... Now all demolished as you can see in this photo. Afterwards members chatted over coffee and viewed some deep sky objects in the telescopes in the observatory, finishing up at 11:20pm. *Greg Walton*

Photo by Greg Walton

Third Public Night Friday January 19th - Thanks everyone for their help last night. The weather played ball and it had cooled off before the event started. We managed a record guest attendance of **180**, passing the 176 that followed Brian Cox's TV show and the 175 just 2 weeks previous. To celebrate this there is the monthly members viewing / BBQ on this Saturday at the Briars. BYO drinks as usual and a plate to add (salad, dessert, etc.) Regards, *Dave Rolfe*

Yes, another wildly successfully public viewing night last night with a great turnout of member volunteers. We ran two speakers. Peter Skilton very cleverly gave a demonstration of the surface conditions on Venus by having the aircon. set at 25degC. Too many volunteers to thank for a great effort but a special thanks to Greg, Pia, Anders and Dave. 2018 is getting off to a great start. The monthly BBQ is on this Saturday so a good opportunity to just come and relax. I think Peter Skilton's crowd counter device is "stuck" on about **180**. Maybe it needs a bit of WD40 maintenance !! Thanks to all, Cheers *Peter Lowe*

Hi All, I had my camera making another time-lapse video last night, I over brightened a bit to show the foreground.
See Link. PVN 19th January https://vimeo.com/251900616
Also thanks for the big effort last night, with a special thanks to Leanne Rolfe for organizing the parking near the night manager's cottage. *VP Greg Walton*

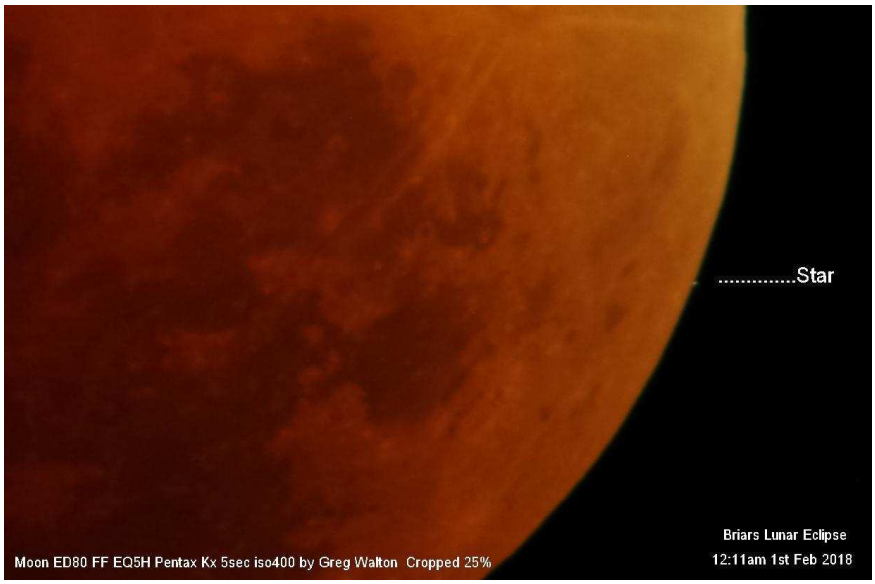
Photo by John Cleverdon

Photo by John Cleverdon

Members BBQ Saturday January 20th - saw about 20 members in attendance. After the BBQ we opened the observatory and trained some of the new members on the telescopes. We looked at many of the brighter deep sky objects NGC104, NGC2070, M42 and Eta Carina, to name a few.

Public Night Lunar Eclipse 31st January - saw about 65 public and 15 members in attendance, everyone had a wow of a time. At first it looked like a no-go, with clouds covering most of the sky and the Moon only popping through occasionally. I got my ED80 telescope on HEQ5 mount with Pentax K30 & 300mm lens with Pentax K30 on a Polarie tracker running. I could not polar align the mounts due to the clouds but had a rough guess and they seemed to track the Moon ok. I set the cameras to take a photo every 30 seconds. Then spent the rest of the night helping others get some great images through the Society's telescopes. Around 10:30 the lunar eclipse started with a slight darkening on one side. I heard, "Yes, it's happening!" But the clouds kept coming and some members decided to drive off looking for clearer skies. About 11pm the cloud totally cleared for good. Then, at 11:30, the moon started changing to red and by midnight was almost 100% - though one edge never seemed to change to a perfect red, as can be seen in the image at right taken by Dave Rolfe. The Moon stayed red for an hour, as we watched the background star pass by the red Moon. Normally, you could not see the stars around a full Moon. See image at bottom right I took, *Greg Walton*

When I posted this photo on the internet, I got some interesting comments. The newspapers were right & it looks like a death star. Moon taken with ED80 with 2 time converter & Pentax K30 at midnight added to a background image of the field, by *Greg Walton*



Public Night February 5th - Yet another big night at the Briars. Boy so far we have been so lucky with the weather over the summer program. Clear skies with only one night clouded out and no rain. Last night was another great success thanks to the monster effort put in by the volunteer members. The car park was over flowing. Trevor and I did back-to-back talks (so four talks for the evening) plus the observatory was in full swing as well as members' scopes on the observing platforms. I don't know what the "official" head count was. I've heard numbers ranging from 150 to nearly 200 so I think 165 is about right. Feedback from the public was highly positive. Well done everyone, *Peter Lowe*

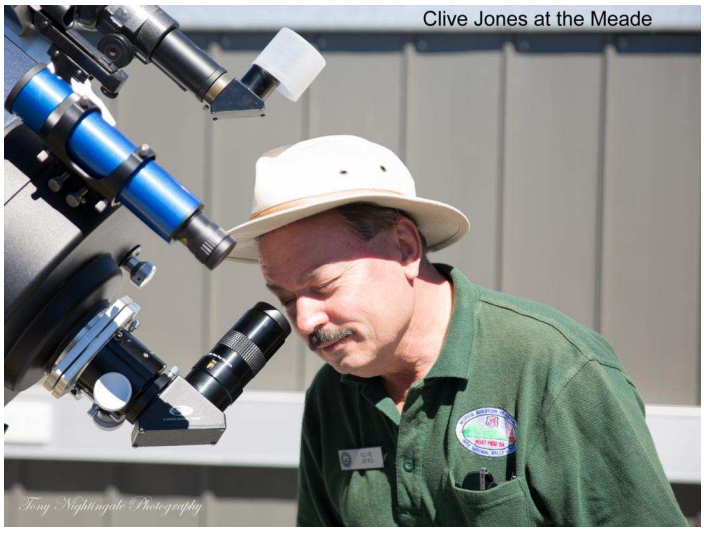
Wow, what a turn up for the books last night at MPAS for our public stargazing night. We had two talks running concurrently, and then repeated for those at the other talk. Kathryn counted about 140 for my first talk and about another 20 or so for the repeat. I think a lot of the interest was thanks to the lunar eclipse, plus very clear skies and a warm night. I think the public got fantastic value for their money, hopefully we have helped inspire some of the young ones into an interest in science! Wonder what it will be like next month? *Trevor Hand*

Peter, Luck has been with us, but it's only been the weather component! – the rest is the hard work of all the members involved with these nights. It's a testament to what is a small and very talented bunch of people. This includes the tireless work of Greg & Pia with all that they do, presenters (PeterL, PeterS, and Trevor), members on telescopes and those performing whatever is required. Also the organisation that goes into making the event great to start with: the online promotion, advertising, ticket sales, and answering emails, taking phone bookings etc (Big thanks to Dave & PeterS). It has indeed been a very busy period. Special thanks last night to Leanne & Jasmine for valet service in the carpark – well done organising the throngs in a difficult situation! A big thank-you to all involved again. *Jamie Pole*

Thank you everyone for making the society such a wonderful force for education. I have enjoyed it very much. I've been distributing some MPAS brochures at the school where I work, and getting significant interest. *Gabriel Thelen*

Never has so much been accomplished by so few!
Tony Nightingale

Morris Car Club - saw about 3 members among the visitors. The Morris Registry visited the Briars this morning and we gave them a short presentation on the society, light pollution and meteorites. It all seemed to go well. Greg manned the observatory while Tony took various publicity photos. As a matter of interest Greg backtracked the water supply to see if we have a leak given our recent water bills. He discovered that with all the water taps turned off (& no toilet leaks) the water meter was still logging usage. We decided to do the "cut off" test which means turn the mains off at the meter and see if anyone screams. Cheers *Peter Lowe*



The Register encourages the restoration of Morris vehicles to original specifications and standards, and monthly club meetings provide the opportunity for members to exchange information about restoration techniques, source spare parts and solve, or at least share, their restoration problems. The club committee also arranges guest speakers on topics of interest to members, and regularly screens films and videos on vintage motoring in general, and the Morris marque.

The Morris Register of Victoria has a loose affiliation with Morris Registers in New South Wales, South Australia and Queensland, and Victorian members look forward to meeting fellow enthusiasts from interstate at a biennial National Rally hosted by each Register in turn. The club has a similar informal relationship with the Morris Register in UK and through that organization has access to a wide range of Morris related technical and other literature. *Tony Nightingale*
Here is the link to their website: http://moreg.org.au/wordpress/

ASTROPHOTOGRAPHY WORK SHOP

MPAS hosted another successful astrophotography workshop on the 10th February for the members of the Melbourne Walk and Shoot Group.

The day started around 3pm with members setting up telescopes, cleaning the kitchen and toilets in readiness for the day ahead while the MPAS speakers got ready their presentations. The weather forecast was cloudy with patchy rain and lightning forecasted at around 5pm; not the best weather for this event ... though we did see glimpses of the sun through the solar telescope.

First up was Jamie Pole talking on wide field photography followed by Alex Cherney talking on imaging auroras then Greg Walton talked on time-lapse photography. At the same time the volunteers set up tables outside on the upper slab. Then, because the pizzas arrived ahead of schedule, we stopped for dinner and cool drinks. Luckily the rain had stopped and the sky cleared.

After dinner Paul Albers talked on deep sky imaging, then Anders Hamilton talked on imaging auroras from Antarctica, ending around 9pm when the sky was about 80 per cent clear. The visitors set up their cameras and tripods in anticipation of getting some great images of the Milky Way. Some wished to image through the telescopes in the observatory. So we set up the Meade with a Canon T-ring pointing at the Orion Nebula and the 127mm refractor with a Nikon T-ring pointing at the Eta Carinae Nebula. So we had 2 lines of people waiting their turn. Unfortunately the cloud blocked out the sky only after 3 visitors got their images. Most waited around to see if it cleared. It looked very bad so we closed the observatory. One hour later the sky cleared and we quickly reopened the observatory and pumped through as many images as we could before the clouds set in for good at 12:30. Everyone said they learnt a lot and had a great time. *VP Greg Walton*

Society Meeting at the Briars February 21st - saw 20 members in attendance. Peter Lowe chaired the meeting and talked about the upcoming MPAS events and NACAA which is to be hosted by the Ballarat Astronomical Society over Easter this year. See next page.

Telescope Learning Day at the Briars February 24th - saw about 40 public and members in attendance. Telescope learning day has always been for members to get together and help each other to get the best out of their astronomy equipment. Also an opportunity for members to demonstrate their telescopes and astronomical projects e.g. astrophotography, home-made telescopes, comet hunting, meteor watching, etc. About 10 years ago MPAS decided to open the day to the public, which has proved very popular for those who received a telescope for Xmas and wanted to learn how it works. The day started at 4pm with Peter Lowe's talk on the different types of telescopes and how they work; while, outside, members helped newbies and visitors with their telescopes. At 6pm there was the usual members BBQ with visitors encouraged to stay on. Unfortunately clouds covered the sky for most of the day and into the night, only clearing for 10 minutes when we glimpsed the First Quarter Moon with the telescopes in the observatory. On the same night there was a blues concert on the hill below the MPAS site, which provided a party mood, though they did have a bit of a problem with gate crashers. *VP Greg Walton*

Photos by John Cleverdon

Blood Moon on a Blue Moon.

65 members of the public and MPAS members gathered at the Briars Astronomy Centre on the evening of 31st January to witness the total lunar eclipse on the second full moon of the month. After listening to an informative talk in the Don Leggett Hall, visitors and members proceeded to set up cameras and telescopes to view the rising moon. At first, the mood was somewhat subdued as the cloud cover was heavy but around 10pm the skies cleared revealing the beginning of the Penumbral Eclipse. Over the next four hours the shadow of the Earth gradually came between the moon and the sun, changing the colour of the moon to a blood red. Members of MPAS were kept busy helping the public set up their cameras and telescopes. By 1am, most people had called it a night leaving a few diehards to watch the end of the eclipse in the cool night air under the Milky Way. The next total lunar eclipse will be on 28th July 2018, commencing at 3.13am with astronomical twilight beginning just prior to mid-eclipse, ending observation at 6.22am.

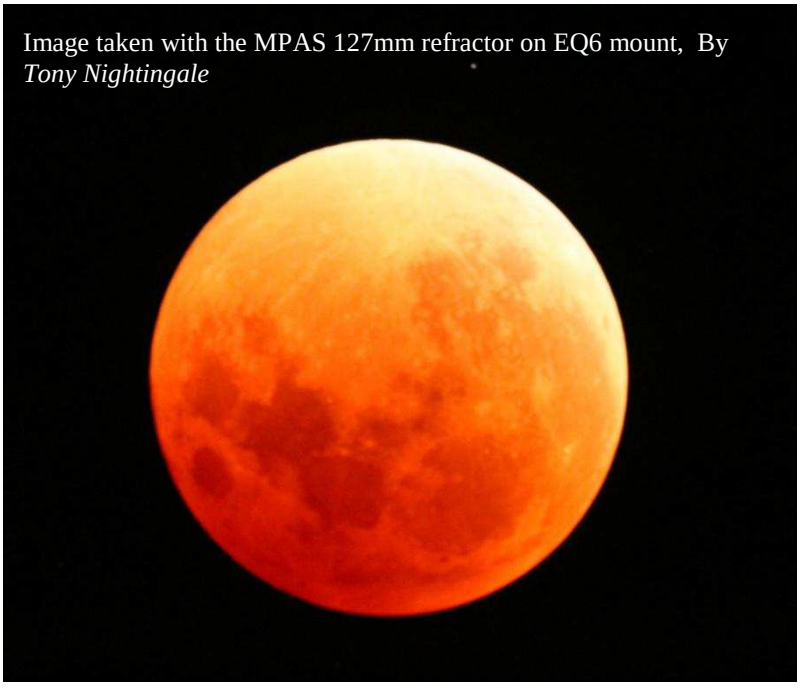


Image taken with the MPAS 127mm refractor on EQ6 mount, By *Tony Nightingale*

New Members Welcome

COLAIACOMO family	ANDREA
ARAVIND	DEEPA
EDGOOSE	LOUISE
KONCAR	GAVRILO
BAKER family	DEBBIE
DELLA GATTA family	DANIEL & CARLA
BROBERG family	CHRISTINE & ROBIN
SHAW	JAN
FUJII family	DESMA & YOSHI
PARR family	MELINDA PIESSE & WAYNE
LINDTON family	HELEN
SMITH	MICHAEL
SRIRAMAN family	VINODH KUMAR
CIASTKOWSKI	JOAN
BUCKWORTH	HAYDEN
BENDALL family	MARK
JOHNSON	DIANE & RAY
Dhoke family	ABHAY
JONES	CHERRY
MACKEY family	ALEX
HESTER family	JULIE
LAMBA	KAYELA

NACAA XXVIII, Ballarat 2018

The 28th NACAA will be hosted by the Ballaarat Astronomical Society in collaboration with the Ballarat Municipal Observatory and Museum. The Ballarat Observatory is the oldest operating public observatory in Australia, marking its 132nd anniversary in 2018.
The event will be held over the 2018 Easter weekend, 30th March to 2nd April. The venues will be the Mercure Ballarat Hotel & Conference Centre, and the Ballarat Observatory.
The 12th Trans-Tasman Symposium on Occultations will be held in conjunction with NACAA XXVIII. In addition the International Dark-Sky Association Victoria are running a half-day Dark Sky Symposium with the theme "Working Towards Dark Skies" on the Monday Morning.

The Ballaarat Astronomical Society is very excited to host the next NACAA in Ballarat. The last time it came to Ballarat was in 1969, and a lot of astronomical phenomena have passed over our heads in that time.

Our home, the Ballarat Municipal Observatory and Museum, has undergone several changes over the intervening 49 years and we hope that when you visit, if you haven't been for some time, you will like the additions and changes we have made.

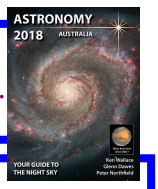
NACAA is an opportunity for serious amateur astronomers to share their knowledge with the broader community. The standard of work amongst amateurs is such that collaboration regularly occurs between professionals and amateurs. If you are interested in sharing your knowledge and getting other people involved, please consider making a presentation.
If you are not already a NACAA member, join up now to receive announcements about the programme as it is finalised.
Registration is now available using the Register link in the menu above left. You need to be a NACAA member to use our e-commerce site. Join up now.

Main Registration package	$300
Single Day (Saturday or Sunday)	$95
Convention Dinner (Saturday)	$85
Welcome Function (Friday)	$45
Farewell BBQ (Sunday)	$40
Dark Sky Symposium (Monday morning)	$50
Occultation Symposium - TTSO 12 (Monday)	$95

The main registration package includes: attendance at all of the sessions on Saturday and Sunday, lunch and refreshments on Saturday and Sunday.

Welcome Function on Friday night,
Convention Dinner on Saturday night,
Farewell Function on Sunday night.
It does not include attendance at the extra activities on Monday.

We now have the ASTRONOMY 2018 books in stock. Members can purchase their copies for $25 each at the Society Meetings, Public Nights & Members BBQs.



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

PUBLIC NIGHT THANK-YOU

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

JOIN NOW

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

MPAS SUBSCRIPTIONS 2018

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

SOCIETY FEES

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

Subscriptions can be paid in a number of ways:
- **Cash payments to a committee member**
- **Send a cheque, made out to "Mornington Peninsula Astronomical Society", to MPAS. P O Box 596, Frankston 3199**
- **Make a direct electronic payment into the society working bank account.**

The account details are BSB 033-272 Account 162207. Remember to add your name and details to the transfer so we can identify the payment in the bank records. If you have any concerns please talk to a committee member.
Click on the link for further information - https://drive.google.com/file/d/0ByvkxzZGI9g_NXZ4cWxHbERTdEE/view?usp=sharing

Scorpius editing team.
Members please write a story about your astronomy experiences and add some pictures.
Send them to: Greg Walton
gwmpas@gmail.com
Peter Lowe & Bruce Renowden

CALENDAR March / 2018

Red Days indicate School Holidays

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
ASV Messier star party - 10th March 2018 Heathcote - at the end of town turn right towards Echuca. Travel 12.5km turn left Lewis Rd & follow the signs.				1	**Full Moon** 2 **Public Night 8pm**	3 **MPAS Observatory open to members**
4 Venus & Mercury 1 degree apart evening	5	6	7 Jupiter above the Moon	8	9 **Last Quarter**	10 **MPAS Observatory open to members** Messier star party
11 Mars above the dawn Moon	12 **Labour Day** Saturn above the dawn Moon	13	14 ASV Meeting	15	16	**New Moon** 17 **MPAS Observatory open to members**
18	19 Venus below the evening Moon	20	21 **Society Meeting 8pm**	22	23	**Solar Day** 24 **Members Night BBQ 6pm**
25 **First Quarter**	26	27	28	29 Mars & Saturn 2.4 degrees apart	**30** **Easter**	**Full Moon** 31 **NACAA Easter**

Monthly Events

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

Public nights - 8pm start on the 2nd @ the Briars
Society Meeting - 8pm to 10pm on the 21st @ the Briars
Members Night BBQ - 6pm on the 24th @ the Briars also
Solar Day - 1pm on the 24th @ the Briars - You can make your own MPAS sundial
28th NACCA - Hosted by the Ballaarat Astronomical Society 30th March to 2nd April

CALENDAR April / 2018

Red Days indicate School Holidays

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Day savings Ends **1** **NACAA Easter**	**2** **NACAA Easter** Mars & Saturn 1.2 degrees apart	**3** Jupiter right of the Moon	**4**	**5**	**6** **Public Night 8pm**	**7** **MPAS Observatory open to members**
8 **Last Quarter**	**9**	**10**	**11** ASV Meeting	**12**	**13**	**14** **MPAS Observatory open to members**
15	16 **New Moon**	17	18 **Society Meeting 8pm**	19	20	**Sky Atlas** 21 **Members Night BBQ 6pm**
22	23 **First Quarter**	24	25 **Anzac Day**	26 **Scorpius Deadline**	27	28
29	30 **Full Moon** Jupiter right of the Moon					

Monthly Events

Public nights - 8pm start on the 6th @ the Briars
Society Meeting - 8pm to 10pm on the 18th @ the Briars
Members Night BBQ - 6pm on the 21st @ the Briars
Sky Atlas - How to use a Sky atlas 21st April @ the Briars 8pm

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

SAFETY AT THE BRIARS

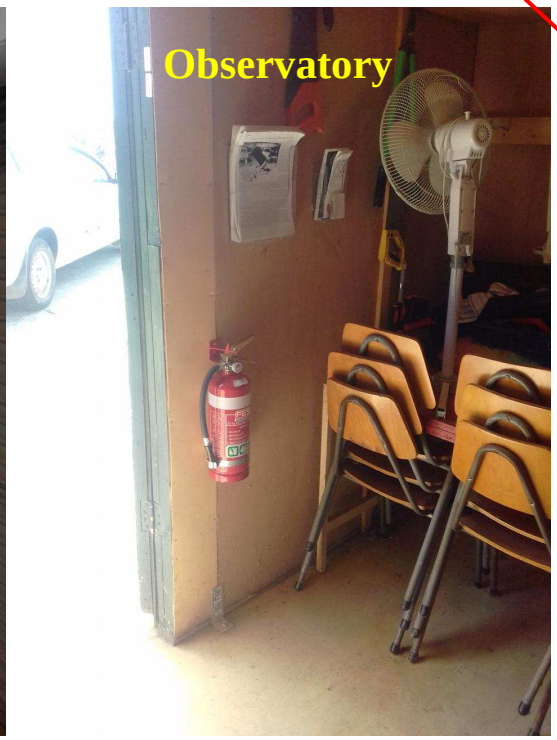
MPAS members are urged to be mindful while using the MPAS Briars site. When walking around the site at night it's so easy to trip over some astronomical equipment, especially if you have just walked out of the brightly lit building. Also it's always a good idea to let other MPAS members know in the e-scorpius group that you are going to the MPAS Briars site.

MPAS has 2 fire extinguishers, one just inside the double door in the big shed (Don Leggett astronomy centre) and the other one is just inside the entrance door of the observatory. See photos below.

MPAS has 3 First aid cabinets around the site. They're located in the kitchen, observatory and toilet. See photos below.

The MPAS water meter is near the fire point in the car park if you need to turn the water OFF or ON for any reason.

Please see a committee member if you see anything wrong or missing.
VP Greg Walton



ASTRO NEWS

By Tony Nightingale

Mornington Peninsula Astronomical Society

John W Young (Captain, USN Ret.) former NASA Astronaut.

Astronaut John Young, who walked on the Moon during Apollo 16 and commanded the first space shuttle mission, died Friday 5th Jan., 2018 at the age of 87 from complications of pneumonia. Young began his impressive career at NASA in 1962, when he was selected from among hundreds of young pilots to join NASA's second astronaut class, known as the "New Nine." He was the only astronaut to fly in NASA's Gemini, Apollo and Space Shuttle Programs. His career included the test pilot's dream of two 'first flights' in a new spacecraft -- with Gus Grissom on Gemini 3, and as Commander of STS-1, the first space shuttle mission, which some have called 'the boldest test flight in history.' He flew as Commander on Gemini 10, the first mission to rendezvous with two separate spacecraft in the course of a single flight. He orbited the Moon in Apollo 10, and landed there as Commander of the Apollo 16 mission. On STS-9, his final spaceflight, and in an iconic display of test pilot 'cool,' he landed the space shuttle with a fire in the back end.

Young was born in San Francisco, California. His family moved to Georgia and then Florida, where he lived for most of his childhood along with his younger brother. As a boy, Young's favourite pastimes were building model airplanes -- the first hint of his passion for aeronautics -- and reading. "My grandpa taught me how to read," said Young. "I read the encyclopedia when I was five." His father, a civil engineer, was Young's role model. Young graduated from Orlando High School and then earned a degree in aeronautical engineering from Georgia Tech, where he graduated with highest honors in 1952. Upon graduation from Georgia Tech, Young entered the United States Navy. After serving on the west coast destroyer USS LAWS (DD-558) in the Korean War, he was sent to flight training. He was then assigned to Fighter Squadron 103 for 4 years, flying Cougars and Crusaders. After test pilot training at the U.S. Navy Test Pilot School in 1959, he was assigned to the Naval Air Test Center for 3 years. His test projects included evaluations of the Crusader and Phantom fighter weapons systems. In 1962, he set world time-to-climb records to 3,000-meter and 25,000-meter altitudes in the Phantom. Prior to reporting to NASA, he was maintenance officer of Phantom Fighter Squadron 143. Young retired from the Navy as a Captain in September 1976, after completing 25 years of active military service.

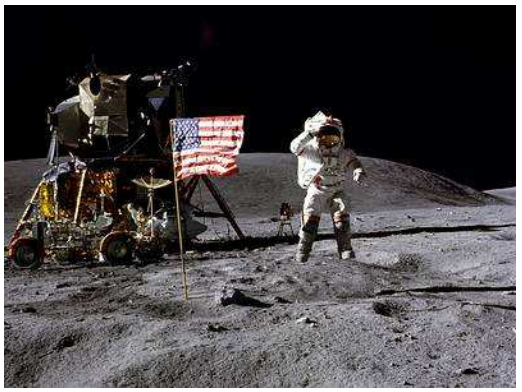
After hearing President Kennedy's bold proposal in 1961 to land a man on the Moon and return him safely to Earth, Young said knew what he had to do. "I thought returning safely to Earth sounded like a good idea," said Young, who stood on the Moon, drove 16 miles in a lunar rover and spent three nights on the lunar surface.

In September 1962, Young was selected as an astronaut. He is the first person to fly in space six times from earth, and seven times counting his lunar lift-off. The first flight was with Gus Grissom in Gemini 3, the first manned Gemini mission, on March 23, 1965. This was a complete end-to-end test of the Gemini spacecraft, during which Gus accomplished the first manual change of orbit altitude and plane and the first lifting re-entry, and Young operated the first computer on a manned spacecraft. On Gemini 10, July 18-21, 1966, Young, as Commander, and Mike Collins, as Pilot, completed a dual rendezvous with two separate Agena target vehicles. While Young flew close formation on the second Agena, Mike Collins did an extravehicular transfer to retrieve a micro meteorite detector from that Agena. The mission became the first to rendezvous with two spacecraft -- an Agena target docking vehicle launched for their mission and the one orbited earlier that year for Gemini VIII.

On his third flight, May 18-26, 1969, Young was Command Module Pilot of Apollo 10. Tom Stafford and Gene Cernan were also on this mission which orbited the Moon, completed a lunar rendezvous, and tracked proposed lunar landing sites. The mission served as a "dress rehearsal" for the first lunar landing mission two months later.

His fourth space flight, Apollo 16, April 16-27, 1972, was a lunar exploration mission, with Young as Spacecraft Commander, and Ken Mattingly and Charlie Duke. He walked on the moon with lunar module pilot Charlie Duke while Ken Mattingly orbited in the command module. Young and Duke set up scientific equipment and explored the lunar highlands at Descartes. They collected 200 pounds of rocks and drove over 16 miles in the lunar rover on three separate geology traverses. "The moon is a very nice place," Young said. "When we landed, we were 20 minutes behind. Because time on the Moon was so precious, what I remember most is trying to catch up." During the Apollo 16 moon walks, Mission Control in Houston radioed up that Congress had passed funding for the space shuttle.

Young's fifth flight was as Spacecraft Commander of STS-1, the first flight of the Space Shuttle, April 12-14, 1981, with Bob Crippen as Pilot, launching a new era of spaceflight 20 years to the day after Russian cosmonaut Yuri Gagarin became the first human to travel in space. The 54-1/2 hour, 36-orbit mission verified Space Shuttle systems performance during launch, on orbit, and entry. Tests of the Orbiter Columbia included evaluation of mechanical systems including the payload bay doors, the attitude and manoeuvring rocket thrusters, guidance and navigation systems, and Orbiter/crew compatibility. One hundred and thirty-three of the mission's flight test objectives were accomplished. The Orbiter Columbia was the first manned spaceship tested during ascent, on orbit, and entry without benefit of previous unmanned missions. Columbia was also the first winged re-entry vehicle to return from space to a runway landing. It weighed about 98 tons as Young landed it on the dry lakebed at Edwards Air Force Base, California.



Young's sixth flight was as Spacecraft Commander of STS-9, the first Spacelab mission, November 28-December 8, 1983, with Pilot Brewster Shaw, Mission Specialists Bob Parker and Owen Garriott, and Payload Specialists Byron Lichtenberg of the USA and Ulf Merbold of West Germany. When STS-9 lifted off, Young became the first person to fly in space a sixth time. This would be the first shuttle mission to carry the European Space Agency's Spacelab module in the cargo bay. The mission successfully completed all 94 of its flight test objectives. For ten days the 6-man crew worked 12-hour shifts around-the-clock, performing more than 70 experiments in the fields of atmospheric physics, Earth observations, space plasma physics, astronomy and solar physics, materials processing and life sciences. The mission returned more scientific and technical data than all the previous Apollo and Skylab missions put together. The Spacelab was brought back for re-use, so Columbia weighed over 110 tons as Young landed the spaceship at Edwards Air Force Base, California.

Young was also on five backup space flight crews: backup pilot in Gemini 6, backup command module pilot for the second Apollo mission (before the Apollo Program fire) and Apollo 7, and backup spacecraft commander for Apollo 13 and 17. In preparation for prime and backup crew positions on eleven space flights, Young has put more than 15,000 hours into training so far, mostly in simulators and simulations. He has logged more than 15,275 hours flying time in props, jets, helicopters, rocket jets, more than 9,200 hours in T-38s, and six space flights of 835 hours.

In January 1973, Young was made Chief of the Space Shuttle Branch of the Astronaut Office, providing operational and engineering astronaut support for the design and development of the Space Shuttle. In January 1974, he was selected to be Chief of the Astronaut Office, with responsibility for the coordination, scheduling, and control of activities of the astronauts. Young served as Chief of the Astronaut Office until May 1987. During his tenure, astronaut flight crews participated in the Apollo-Soyuz joint American-Russian docking mission, the Space Shuttle Orbiter Approach and Landing Test Program, and 25 Space Shuttle missions. From May 1987 to February 1996, Young served as Special Assistant to the Director of JSC for Engineering, Operations, and Safety. In that position, he had direct access to the Center Director and other senior managers in defining and resolving issues affecting the continued safe operation of the Space Shuttle. Additionally, he assisted the Center Director in providing advice and counsel on engineering, operational, and safety matters related to the Space Station, Shuttle upgrades, and advanced human Space Exploration Programs, back to the Moon and on to Mars.

In February 1996 Young was assigned as Associate Director (Technical), responsible for technical, operational and safety oversight of all Agency Programs and activities assigned to the Johnson Space Center. On December 31, 2004 Young retired from NASA. He continued to advocate the development of the technologies that will allow us to live and work on the Moon and Mars. Those technologies over the long (or short) haul may save civilization on Earth.

Young's numerous awards and special honors included the Congressional Space Medal of Honor, three NASA Distinguished Service Medals, the NASA Outstanding Leadership Medal, two Navy Distinguished Service Medals, three Navy Distinguished Flying Crosses, the Georgia Tech Distinguished Young Alumni Award, the Exceptional Engineering Achievement Award and the American Astronautical Society Space Flight Award.

Those are among more than 80 major honors and awards, including four honorary doctorate degrees, Young has received. He was inducted into the National Aviation Hall of Fame in 1988.

"I've been very lucky, I think," Young said at his retirement from NASA in 2004. As to which moment was most memorable, he said simply, "I liked them all."

Somewhat bizarre but a fascinating rocket launch and use of an electric car.

Click on these link to see more about Tesla motor car in space

Elon Musk has launched a rocket into space carrying one of his Tesla Motor Cars. For the cost of 90 million dollars.

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https://youtu.be/I7LJIuB2CHE

http://www.abc.net.au/news/2018-02-07/spacexs-rocket-carries-elon-musks-car-to-space/9404372

https://www.youtube.com/watch?v=BBA7su98v3Y

https://www.youtube.com/watch?v=7JcJcZWke1c

https://www.youtube.com/watch?v=ImoQqNyRL8Y

https://www.youtube.com/watch?v=C3ymPWY6Jrw

https://www.youtube.com/watch?v=md0K_eRSHAE

https://www.youtube.com/watch?v=fzQRWjhJB1s

Eta Carinae Nebula taken by *Dave Rolfe*
VC200L / STL11k. 4 Hours of LRGB data
1st Frame out of the new VC200L that arrived today.
5 Minute Image of Eta, Dark frame subtracted, no flats applied. Field fairly flat on CGD inspector.

Waiting for a clear night with no Moon can be frustrating. Night after night the clouds block out the sky.
But when you find that rare clear night, at the Briars observatory, it's worth the wait when you get images like the ones below.
Three galaxies I imaged with the MPAS 350mm Meade telescope on the 16th January 2018. By *Greg Walton*

Space Station Visits the Sun - Jamie Pole from MPAS recorded the transit of the International Space Station (ISS) past the Sun on 31st December at 7.28pm. The ISS is a large spacecraft nearly 110m long, 75m wide and 20m deep. It orbits the earth at an average height of 405 km and is moving on average at over 27,600 km/h, completing an orbit of the earth in about 92 minutes. At night it can be seen travelling in an arc and its bright light could be mistaken for a plane. The first crew arrived on 2nd November, 2000 and people have lived there ever since, finally finishing the space station in 2011. Six people can live in this home in orbit where crew members take part in research which could not be done on earth. It has science labs from the United States, Russia, Japan and Europe. Astronauts fly to and from the space station on the Russian Soyuz spacecraft along with food and water supplies from Earth. A Soyuz spacecraft is always tethered to the ISS in case of an emergency evacuation. Scientists are studying the effects on people when they live in space, preparing to send humans deeper into the universe. *Tony Nightingale*

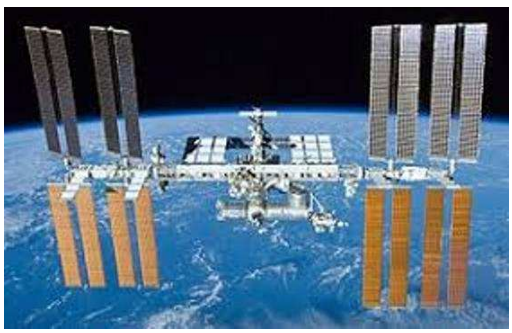


Image of International Space Station courtesy Wikipedia.

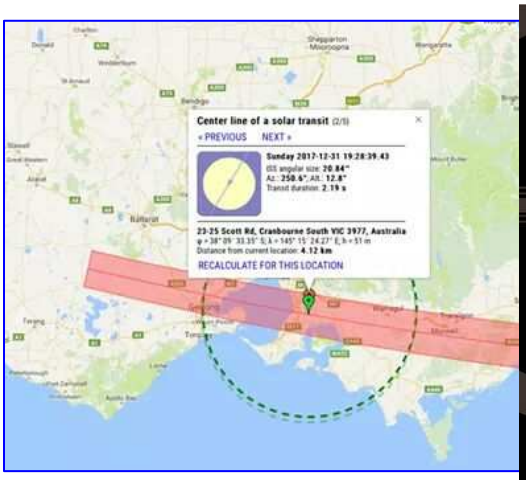
New Years Eve - ISS Transit of the Sun, *by Jamie Pole*

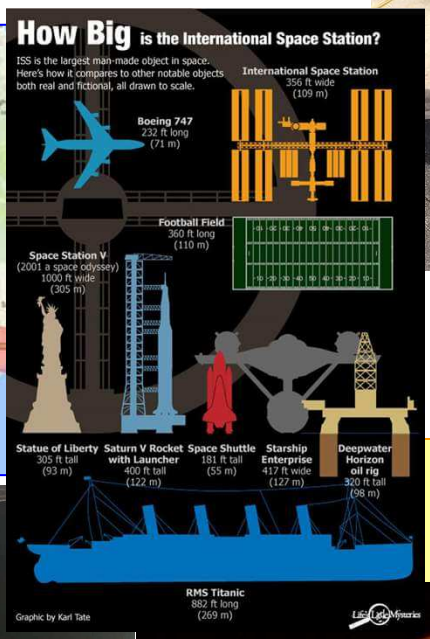
ISS Transiting the sun - (at about 12 o'clock position) from Aspendale Gardens, Victoria. Two laptops were set up to image the transit (one missed completely)

On 31st December 2017 - we were lucky enough to have clear skies, and a Transit of the Space Station across the face of the Sun. It was captured at 7:28pm Local time, which is getting a bit low in the sky for ideal viewing.

I had a go at capturing this with my solar scope and setup.
I captured the ISS using a Hydrogen Alpha Solar Scope, and a high-speed video camera. The transit was so fast - I've captured 22 images, while filming at 15 frames per second...

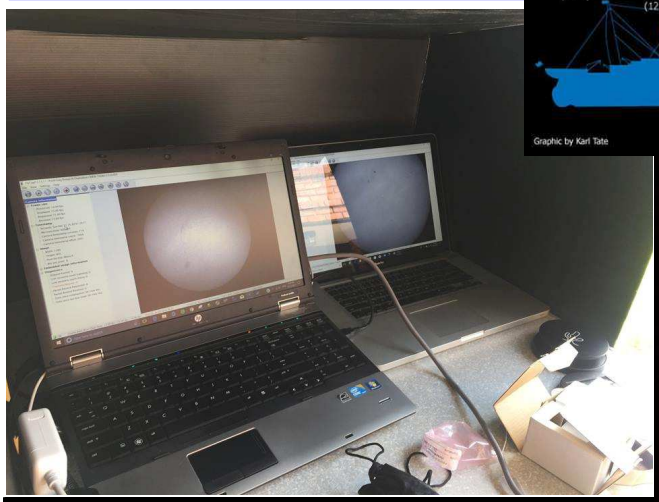
Attached is a slowed down video of the transit, a static image of the ISS mid transit, and the system used to capture it.
Mono Timelapse - https://vimeo.com/249271372 - best viewed in HD.
Colour Timelapse - https://vimeo.com/249280509 - best viewed in HD.

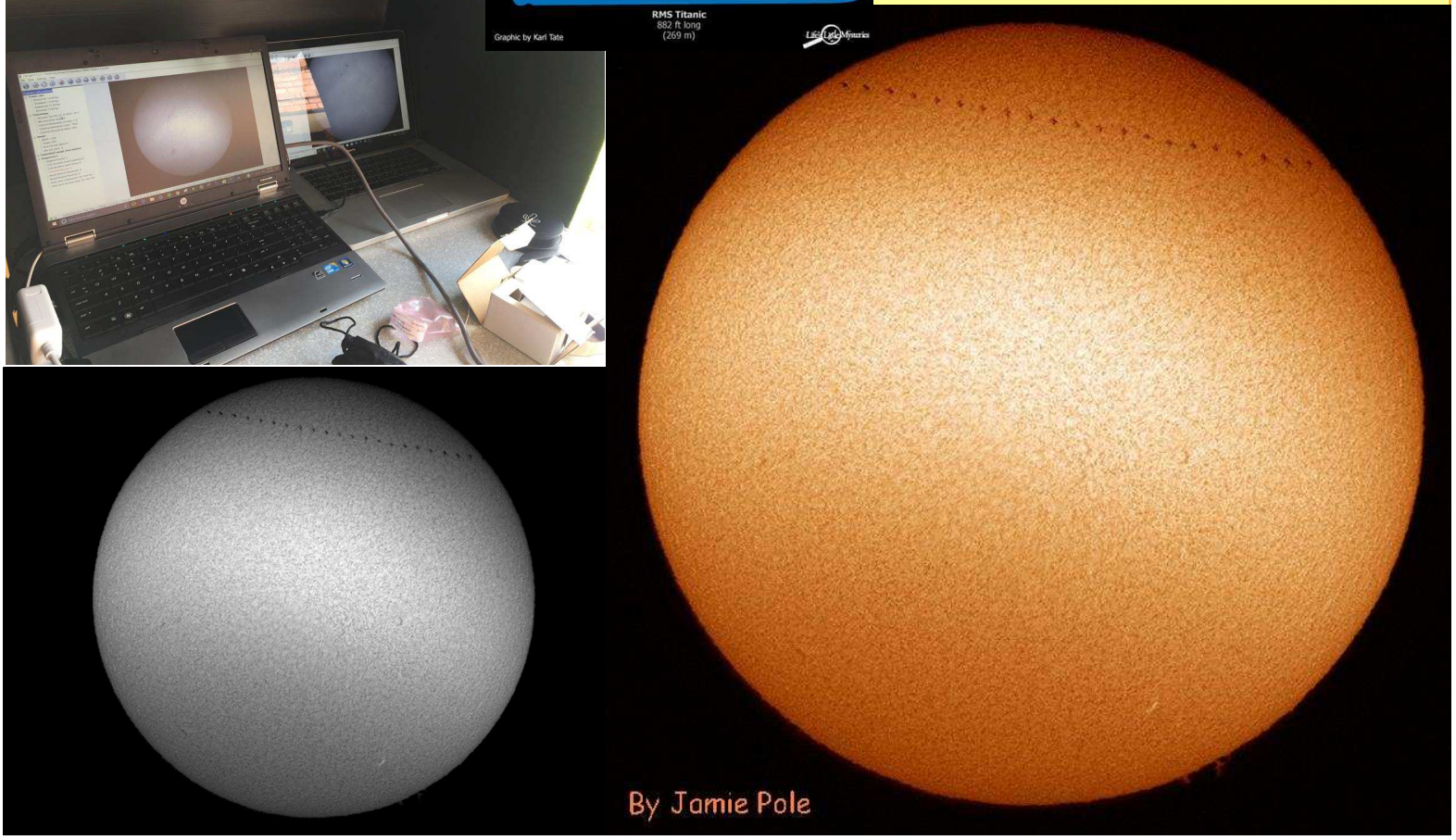




As a little bit of background, the ISS is nearly 110m long, 75m wide, and 20m deep. It's orbiting at an average height of around 405km, and is moving on average at over 27,600km/h, so it completes an orbit of the earth in about 92 minutes!!

If you're interested in learning a little more about the Sun - please feel free to come along to the Mornington Peninsula Astronomical Society Solar Day (free event!)
https://www.facebook.com/events/2023588044564284/

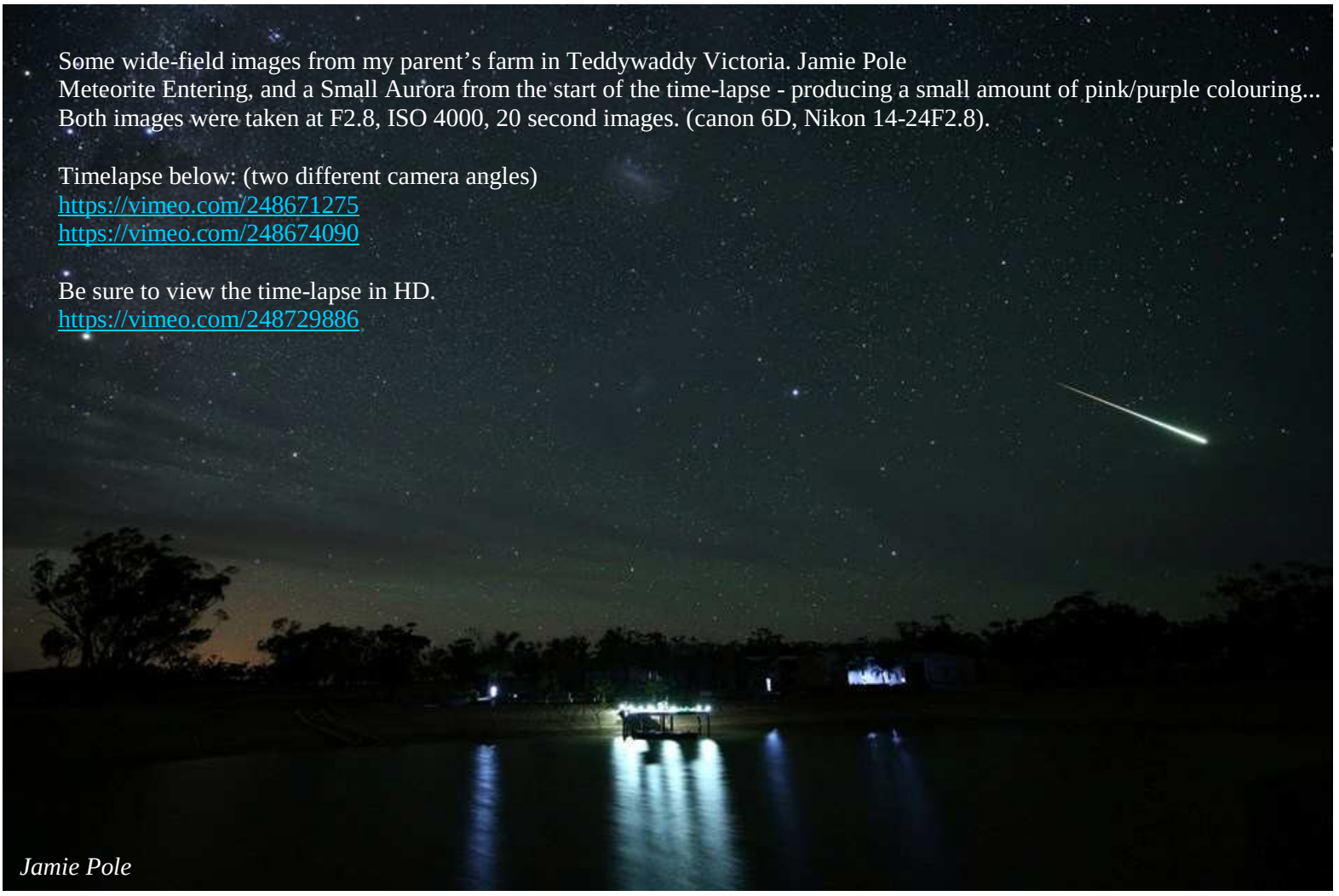




Some wide-field images from my parent's farm in Teddywaddy Victoria. Jamie Pole
Meteorite Entering, and a Small Aurora from the start of the time-lapse - producing a small amount of pink/purple colouring...
Both images were taken at F2.8, ISO 4000, 20 second images. (canon 6D, Nikon 14-24F2.8).

Timelapse below: (two different camera angles)
https://vimeo.com/248671275
https://vimeo.com/248674090

Be sure to view the time-lapse in HD.
https://vimeo.com/248729886

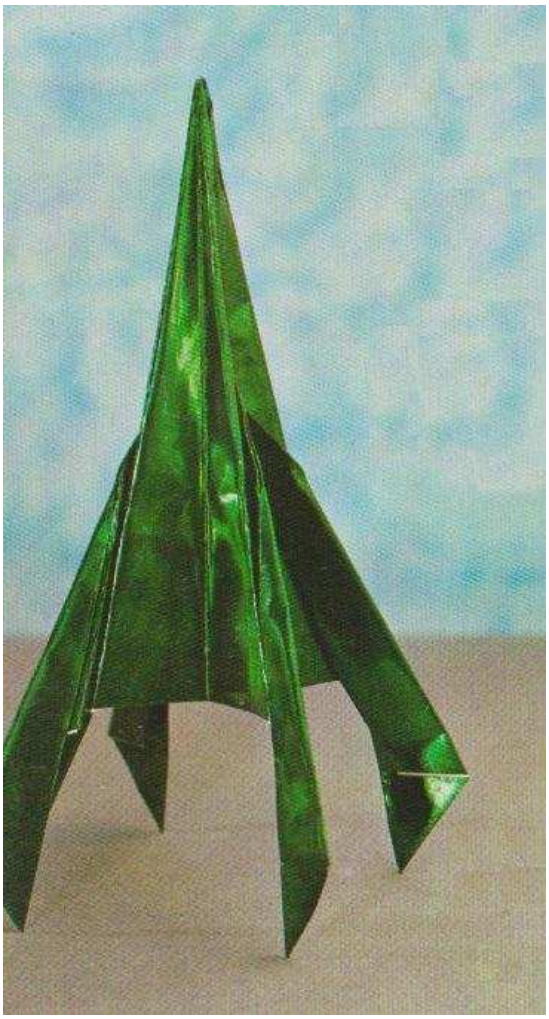


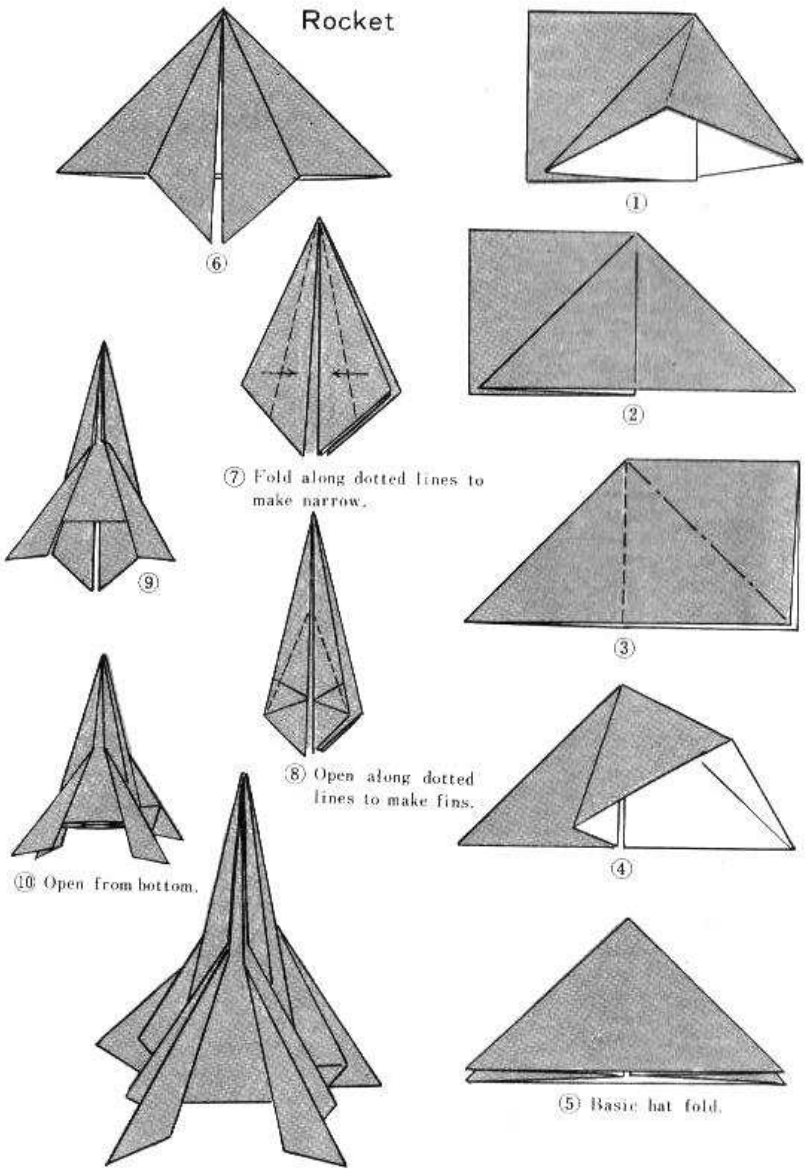
Jamie Pole

Jamie Pole

Origami the art of folding paper.

See if you can make this rocket. You start with a square piece of paper about 300mm x 300mm.





While driving along Peninsula Link, I noticed some new artwork beside the road. My first thought was a meteor had landed on a high-voltage pylon. As Pia was driving I snapped this image with my mobile phone. After looking on Google I found this.

Smashed' pylon - High voltage: New sculpture on display alongside Peninsula Link. Sculpture installed alongside Peninsula Link. Iconoclast — a mock electricity pylon smashed by what looks like a meteor. The artwork by Brisbane-based Michael Riddle is based on "the idea of collapse". Peninsula Link artworks are rotated every two years.

I'm sure if a meteor hit a pylon there would be little left to look at. Large meteors travel at such high speeds there would be no way a pylon could catch a meteor of that size. Maybe if it bounced and then landed on the pylon, but I don't think so. *Greg Walton*

THE PETER LOWE OBSERVATORY BECKONS.

The excellent facilities at the MPAS observatory are currently being underutilised by members. There are four telescopes for viewing and three telescopes for imaging, two of which have computerised go-to mounts. Lately we have had excellent weather for viewing and yet hardly anyone is taking advantage of the conditions. Understandably, people are reluctant to go out during winter and stay up late stargazing, but there is nothing more pleasant for the dedicated astronomer than to enjoy exploring the night skies in the natural surroundings of the Briars on a balmy night. There are two telescopes with go-to mounts that are easy to operate and eminently suited for imaging with your camera; the 127mm refractor and the 14inch Meade. With a little practice and helpful advice from experienced MPAS members, you too can produce images such as those below. The image of the Flame Nebula was taken on the refractor, and the one of the Tarantula Nebula was taken on the Meade. When I joined the club several years ago, I had some intermediate experience as a photographer but absolutely no idea about astrophotography. It is only through practice and guidance from other more experienced members that I can now produce some images that I am proud of. *Tony Nightingale*

HOW TO USE A DSLR CAMERA WITH A TELESCOPE, *by Tony Nightingale*

1 Start up telescope according to instructions.

2 Find a known bright star, use the four-way arrow buttons to centre the star. Slewing speed can be changed by pressing button number 2 for rate, then 3 for slow, 5 for medium and 8 for fast.

3 Turn focus knob until star is small and tight.

4 Follow steps to successful alignment.

5 Remove telescope diagonal.

6 Attach camera using T-ring and focal reducer.

7 Switch off shake reduction.

8 Set ISO to 12800, switch on live view.

9 Zoom in to check focus and centre.

10 Switch off live view.

NGC2070 Tarantula nebula taken on the Meade 15/12/17 at the Briars, *By Tony Nightingale*.

11 Set camera to 2-second delay and 10-second exposure and take a shot.

12 Press the preview button and check the shot.

13 If OK, go to desired object.

14 Look through the camera view finder to check if the object is in view.

15 If not, centre with the four-way arrow buttons.

16 If OK, set exposure time to 30 seconds and take shot.

17 Press preview button to check shot.

18 If over exposed, lower ISO to 6400.

NGC2024 Flame nebula taken on the 127mm refractor 16/1/18at the Briars, By Tony Nightingale.

19 If OK, place cover on camera view finder, switch off preview to save battery, set camera to long exposure noise reduction ON, this will cause the camera to take a dark frame after every shot.

20 Use interval timer to set delay 2 seconds, number of shots (minimum 20), exposure 30 seconds, interval 37 seconds.

21 Press the shoot button and wait until finished. This will take about 25 minutes.

22 Use Deep Sky Stacker and editing program such as Photoshop to process images.

23 See *Astro imager plus* by Greg Walton for more information. http://gwmpas.wixsite.com/astroimagerplus

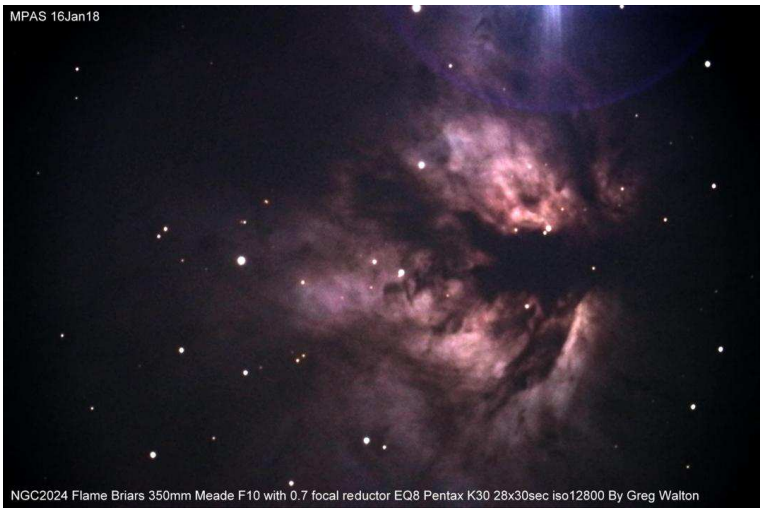
Astro images *by Steve Mohr*

NGC 1365, also known as the "Great Barred Spiral Galaxy", is of course a barred spiral galaxy located about 56 million light-years away in the constellation Fornax.
56 MILLION LIGHT YEARS AWAY! I cannot even process that distance; like looking through a time machine, we see the galaxy as it once looked at a time when dinosaurs roamed the Earth. For us to see this object in this size it has to be big, having a size of 200,000 light years across, at roughly twice the size of our own Milky Way galaxy. Thanks for looking! I found the inner section of this galaxy to be really amazing.

Information about the image:
Instrument: Planewave CDK 12.5 | Focal Ratio: F8
Camera: STL-11002 + AOX | Mount: AP900GTO
Camera Sensitivity: Lum: Bin 1x1, RGB: Bin 2x2
Exposure Details: Lum: 40 x 900 sec [10hrs], RGB 450sec x 12-17 each [13+12+17: 5.25hrs]
Viewing Location: Central Victoria, Australia.
Observatory: ScopeDome 3m
Date: November - December 2017
Software Enhancements: CCDStack2, CCDBand-Aid, PS, Pixinsight

NGC1398. To me, this is a beautiful and intriguing galaxy. It has that “eye” appearance that seems to stare at us across the void of space. From the COSMOS series, the Helix Nebula was made famous in their introductory scene, although being slightly edited, it too looks just like a celestial eye. According to the Wikipedia, NGC1398 is an isolated barred spiral galaxy exhibiting a double ring structure. It is located 65 million light years from the Earth, in the constellation of Fornax. The galaxy, with a diameter of 135,000 light years, is slightly larger than the Milky Way. Over 100 billion stars are in the galaxy. It was first discovered by Friedrich Winnecke of Karlsruhe, Germany, on 17 December 1868, while he was searching for comets.

MPAS Gallery - Imaged at MPAS Briars observatory on 16th January 2018, by *Greg Walton*



SOCIETY INFORMATION


Peter Lowe


Greg Walton


Peter Skilton


Jamie Pole


Tony Nightingale


Stewart Gangell


Anders Hamilton


Heath Lewis


Mark Stephens


Dave Rolfe

OFFICE BEARERS OF THE MORNINGTON PENINSULA ASTRONOMICAL SOCIETY

President: Peter Lowe
Vice President: Greg Walton
Committee: Tony Nightingale, Stewart Gangell, Mark Stephens, Heath Lewis, Anders Hamilton & Dave Rolfe

Secretary & Phone Contact : Peter Skilton
Treasurer: Jamie Pole
Web master: Dave Rolfe
Scorpius editor: Greg Walton
Library: Fiona Murray & Fred Crump

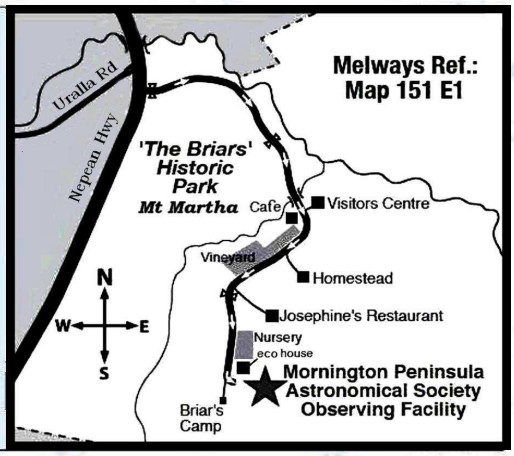
SOCIETY MEETINGS

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)

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

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

Phone: 0419 253 252
Mail: PO Box 596, Frankston 3199, Victoria, Australia



LIBRARY


Fiona Murray


Fred Crump

The Society also has books & videos for loan from it's library, made available on most public & members nights at The Briars site, contact Fiona Murray or Fred Crump

E-SCORPIUS NEWSGROUP

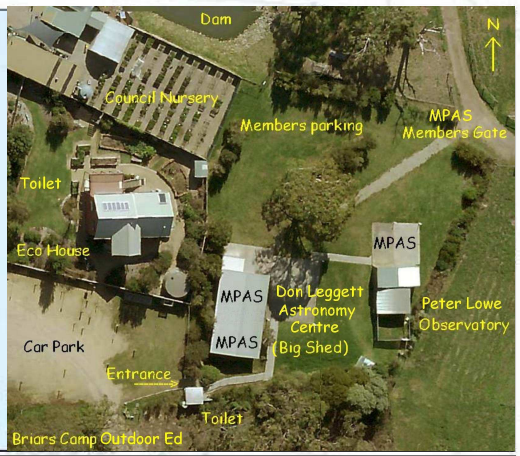
M.P.A.S. main line of communication is the online newsgroup called E-Scorpius.
Here you will be kept up to date with the latest M.P.A.S. news & events information as well as being able to join in discussions & ask questions with other members.
To join, to go: www.groups.yahoo.com/e-scorpius and sign up to Yahoo groups - you are required to sign up to Yahoo groups to join E-Scorpius. Once you have signed up at Yahoo groups, email welcome@mpas.asn.au say that you want to join E-Scorpius & you will be added to the E-Scorpius list.
facebook MPAS - https://www.facebook.com/mpas0/ MPAS members - https://www.facebook.com/groups/MPAS1/

VIEWING NIGHTS - MEMBERS ONLY

Viewing Night - Members only
Any night, at The Briars, Nepean Hwy, Mt Martha, starting at dusk.
Members visiting The Briars for the first time must contact Greg Walton on 9776 2074 or 0415172503 if they need help getting to The Briars site. Upon arrival at the site, remember to sign the attendance book in the observatory building.

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

Phone: 0419 253 252
Mail: PO Box 596, Frankston 3199, Victoria, Australia



Members please write a story about your astronomy experiences and add some pictures.
Send them to the editor: Greg Walton gwmpas@gmail.com
MPAS Scorpius on face book - https://www.facebook.com/Scorpius-MPAS-1694951307446763/

SCORPIUS **The journal of the Mornington Peninsula Astronomical Society**