

Cover image: By Dave Rolfe M8 & M20



SCORPIUS

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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.



M8 & M20 Nebulas - Briars July.1st 2017 - David Rolfe

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

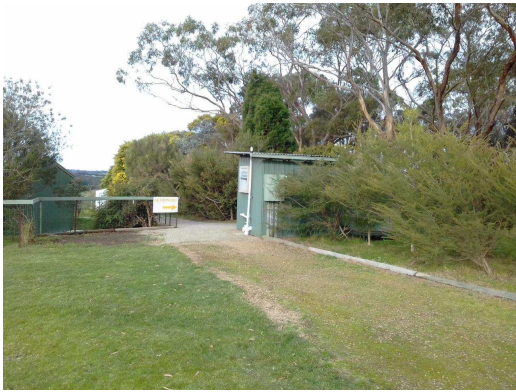
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SOCIETY NEWS

By Greg Walton



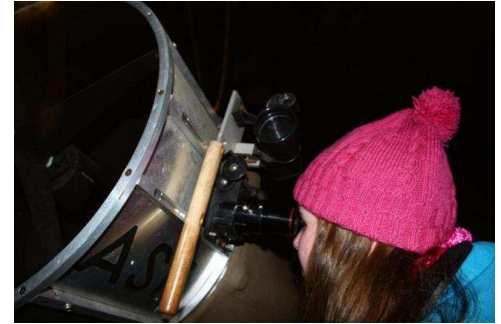
Mornington Peninsula Astronomical Society



Working Bee 26th August - Few final jobs before the astrophotography workshop. Dave Rolfe, Mark Hillen & I spent Saturday installing the new projector & wiring up the sound system donated by Jamie Pole. Also we fixed the path near the toilet levelling the ground & spreading stone. Also we laid the pavers on bricks behind the big shed for the 2 new air conditioning units. Also removed the branches dumped down the lower paddock & filled holes around the site. *Greg Walton*

Narre Warren South Scouts 28th August - It was a chilly evening at Oakgrove Community Centre in Narre Warren South yesterday for our visit to the Farley Cub pack of the Narre Warren South Scouts. There were about 30 present, including the pack leaders. The evening started with the telescopes as the skies were clear, which was quite a contrast to the situation earlier in the day, and was then followed by a talk indoors by Peter Lowe. Jupiter, Saturn and the Moon were easily visible and most of the cubs were shown Crux and Scorpius in the sky towards their badge. Outside in the somewhat boggy field were Dave Rolfe, Tony Nightingale, Mark Stephens, Greg Walton, Heinz Rummel, Inge Marcinkowski and Peter Skilton. One car became bogged and required a helpful tow out of trouble by a 4WD. This is a timely reminder of the normal safety etiquette for astronomy field activities as always practised by mobile observers with occultations, eclipses, grazes and the like over the years, that the last 2 cars must always leave together so that the last car leaving is never stranded (by being bogged, flat battery, illness, accident or no mobile coverage etc). It's an eminently sensible protocol, but sometimes a bit challenging to remember at the end of a long evening (or morning) observing session when the brain is slightly numbed. Regards, *Peter Skilton*

Public Viewing Night September 1st - saw about 80 in attendance, 70 public & 10 members. By around 7pm we had setup all the telescopes, as the sky was clear & we found some members of the public arrived early to get a quick look through the telescopes before the talk at 8pm. The sky did not stay clear & by 8:20 had completely clouded over & that's the way it stayed till 11pm. Trevor Hand did his very popular talk on the planets, using the new big projection screen for the first time. After which the public looked at the telescopes but not through them due to the cloud. A few spots of rain sent us scurrying to close the observatory & cover the telescopes outside. *Greg*



Girl Guides September 6th - The evening went ahead well last night for the visit by the Mornington Girl Guides to The Briars. There were 40 very excited 5-10 year old Guides present, plus a few siblings, parents and of course the troupe leaders. I gave the talk indoors using the new space badge-specific slides that David Rolfe, Jamie Pole and I cobbled together recently, and which no doubt will become more polished as we use it with different groups. This group was the first one also to experience the new visual projection gear inside the auditorium, and it worked flawlessly. Quite a few of the constant barrage of questions from the girls were a little off-topic (from the badge, including about rainbow formation, country boundaries, hydrogen bombs, conservation of angular momentum and others from left field) but I'm happy to have a crack at answering any science question in the Universe if they're keen to ask - just can't guarantee I'll always be right. Despite heavy cloud, the conditions cleared mid-evening and allowed the successful viewing of Jupiter, Saturn and the Moon as the clouds parted around Mt. Martha like magic. Outside in the cool with the instruments, before the clouds returned, were Greg Walton, Tony Nightingale, Peter Lowe (with flashing LED feelers on his head), Mark Stephens, Jamie and Jasmine Pole. Regards, *Peter Skilton*.



Photos By Tony Nightingale

MPAS Astrophotography Workshop - Saturday 9th September



Photos By Rohan Baumann, Tony Nightingale & John Cleverdon



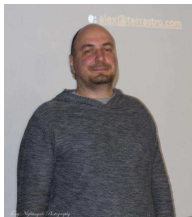
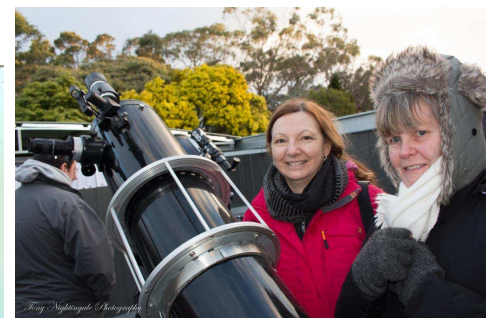
One of the biggest days of the year for MPAS, saw about 100 in attendance, 80 public & 20 members. The astrophotography workshop started at 12:30pm and finished at 10pm. We had 80 paying photographers, wishing to learn about how to image the sky. Presentations covered a wide range of topics with dinner at 6pm. The clouds stopped anyone imaging with the MPAS telescopes, but we impressed everyone with stunning views of Saturn in the 350mm Meade. On the field members showed the public how to setup their cameras. Sales lady Pia sold \$50 worth of red lights.

Alex tried his best to clear the clouds. Many thanks to all those members who helped out on the day, also not to forget the members who worked on the big shed leading up to this event. *VP Greg Walton*

Some of the comments we had. "You are much cheaper than other astrophotography workshops & with a lot more content. An excellent day I have learnt so much. The members here are very helpful. I'm now inspired to try something different. Saturn is beautiful."



It was another great event that runs off the back of strong volunteer commitment. (We had Greg, Pia, Dave, Paul, Rohan, Mark, Tony, Helmuth, Heath, Steve, Alex, Anders, and I'm sure some I've forgotten to mention). Congrats to all the presenters - Paul, Greg, Alex, Anders, Steve - and all the people working hard behind the scenes (especially Pia who managed to turn all the BBQ hacks into master-chefs), and Greg for all the support from start to finish, with everything! The 'Big Shed' was a great facility for the day with the projection and sound systems all utilised and working well - and even in the mild conditions, was getting warm inside with that many human radiators - the insulation was working a little too well! Presenters were able to work through the light rain without being drowned out noise wise - so all the efforts put in by the working bee teams were fully tried out. Very professional. Well done to the whole APW & Working Bee teams. Thanks all for your hard work and commitment. *Jamie Pole.....* also not to forget a big thanks to Jamie Pole, who seemed to be everywhere doing something from giving the first talk to helping out in the kitchen. *VP Greg Walton*



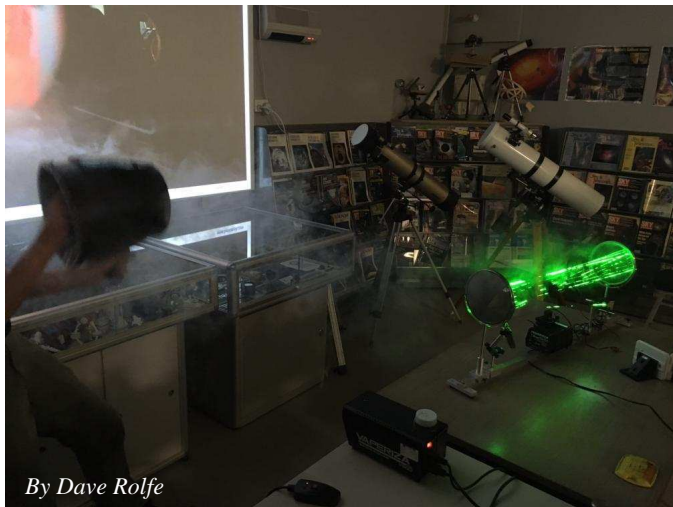
September Society Meeting at the Briars - saw about 25 members in attendance. Peter Lowe (President) chaired the meeting, with our speaker Dr Russell Anderson, a lecturer in the School of Physics & Astronomy at Monash University, talking on **To the Moon and back**: laser detection of astronomical phenomena. New measurements with lasers showed that the Moon may still have a molten core. Then Greg Walton (VP) did sky for the month after which members chatted over coffee. *Greg Walton*

Smoke and Mirrors. On September 20, Dr Russell Anderson, lecturer in the School of Physics & Astronomy at Monash University, gave a presentation in the newly refurbished Don Leggett Hall at the Briars Astronomy Centre. This was the first monthly Society meeting to be held in the new facilities. With the aid of slides and models, Russell demonstrated how scientists have been sending laser light (photons) to the moon and back ever since Apollo astronauts left mirrors on its surface. Consequently, scientists have been able to calculate the exact distance from the Earth to the Moon. Other applications of this scientific principle are sonar signals sent out by bats and whales, submarines and aircraft. Russell demystified scientific facts with humorous anecdotes, and enabled the audience to "see" laser beams rebounding between two mirrors by blowing smoke onto them. *Tony Nightingale*

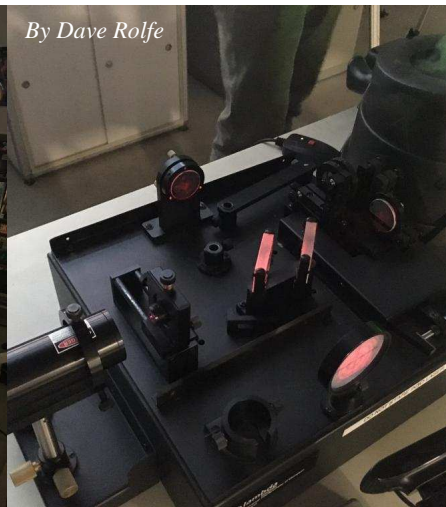


By Tony Nightingale

Tony Nightingale Photography



By Dave Rolfe



By Dave Rolfe



By Dave Rolfe

September Members' BBQ - saw about 20 members in attendance under a cloudy sky, so there was no viewing. We watched an astronomy documentary on the big screen, after which everybody went home by 9:30.



By John Cleverdon

Public Viewing Night October 6th - There were 50 members of the public present at last night's Briars evening. Inside, Trevor Hand gave a talk about Cassini and outside unfortunately it remained under total cloud cover all evening, so attendees were invited to return for free midway through next month's public night, and seemed very pleased about that. Nevertheless, helping outside were Peter Lowe, Fred Crump, Bonnie, John and Marj Cleverdon, Kevin Rossiter, Alan Predjac, Jason and Heath, Peter Skilton, Simon Hamm, Greg Walton, Bob Heale, Anders Hamilton, Jamie and Jasmine Pole, and a couple of recent members who overlooked signing the attendance log book. Regards, *Peter Skilton*

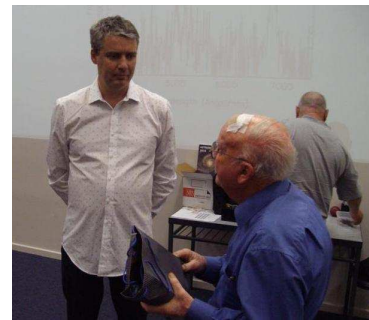


By John Cleverdon

Working Bee October 16th - Few final jobs before the Society Dinner - Heath Lewis, air-conditioner installer & I spent the day installing the 2 new split system air-conditioners. Heath did the wiring, while I worked on fixing the drainage problems behind the big shed & cutting the grass. See photos at right. *Greg Walton*



October Society Meeting - saw about 25 members in attendance. Peter Lowe (President) chaired the meeting. Our speaker was Associate Professor Michael Brown, School of Physics and Astronomy Monash University with the topic - 'Astrophysics with a Small Telescope'. A very interesting & informative talk which gave many members the encouragement to do some science with their telescopes. Then Greg Walton did sky for the month, after which members chatted over coffee. This was our last meeting at the Peninsula school after an association of more than 30 years. Please note that the next society meeting will be at the refurbished MPAS Briars site.



October 21st Society Dinner - saw about 40 members in attendance. Peter Lowe (President) made the usual speeches thanking members for all their hard work throughout the year & the opening of the Don Leggett Astronomy Centre with the unfurling of a plaque. Unfortunately Don could not attend due to another commitment. Don spent many hours negotiating with the Mornington council to lease the MPAS Briars site some 25 plus years ago & plans allowing us to build the big shed in 2005. We back dated the plaque to 2006 as this was when the shed was completed. The room looked at its best mainly thanks to Pia's fancy table cloths, decorations & helpers. At 6:30pm we all tucked into a roast dinner with all the trimmings. Then at 7:30pm we marched outside for a group photo. After we had many different types of dessert to choose from brought along by members, we did open the observatory for about one hour to look at Saturn, but a fine sprinkling of rain forced us to shut the roof.



Many thanks to all who helped out to make this a very memorable day & special thanks to Bruce who somehow got stuck with washing all the dishes. *VP Greg Walton*



All Photos by *John Cleverdon*.

"To the MPAS committee! Therese and I would like to thank you for providing an excellent members dinner tonight. We both had a great time and we both appreciate the effort."
Regards Paul and Therese



Cranbourne gem show - A small group of MPAS members visited the Cranbourne gem show at the Cranbourne community hall. We were mainly on the hunt for meteorites. Happily Norbert & Heike Kammel from **rocks on fire** had an impressive display. They entertained everybody with their stories & had many different reasonable priced meteorites for sale. I ended up buying 14 small meteorites for about \$200.00. If you feel

the need to own meteorites, Norbert & Heike said, MPAS members are always welcome to visit them at Noble Park. *Greg Walton*

www.rocksonfire.com



rocks on fire

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Dave Rolfe has decided he can no longer do the role as President. So we need to say special thanks to Dave for all the great work he has done for the society while he was President. Dave has been the driving force in getting many projects done and dusted, including the building of the Peter Lowe observatory and stocking it with an impressive array of telescopes. Other projects pushed along by Dave was the sound proofing, insulation, lining and painting of the big shed, while at the same time updating the electrics and installing a new projector and sound system. Dave also modernised the web site, making it compatible with all internet devices and setting up tri-booking so the public can now book online for MPAS astronomy events. Dave also publicised MPAS on Facebook bringing in record numbers at the public viewing nights. All these achievements have setup MPAS for the future. Dave attended most of the society events, working bees & school viewing nights, all while holding down a full time job. Once again we wish to say a special thanks to Dave Rolfe on behalf of all MPAS members.



Peter Lowe will stand in as President, while I will stand in as Vice President till the next annual meeting in the middle of next year.
VP Greg Walton

We now have the ASTRONOMY 2018 books in stock. Members can purchase their copies at \$25.00 each at the General Meeting in November. We have only ordered 1 box this year because we seem to always end up with an over supply.



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.

MPAS SUBSCRIPTIONS 2018

The ticking over of the New Year has long past, which means that any unpaid society fees are long overdue. The committee has worked hard to ensure that 2018 fees are still the same as the previous year's prices. So to assist the society in maintaining the facilities and service we share, we appreciate your prompt payment for each and every year ahead. As a reminder, the following structure of the 2017 fees is:

SOCIETY FEES

Subscriptions can be paid in a number of ways:

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

The account details are BSB 033-272 Account 162207. Remember to add your name and details to the transfer so we can identify the payment in the bank records. If you have any concerns please talk to a committee member.

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

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

New Members Welcome

- William Flynn
- Thuy Mathers & family
- Jim Williamson
- Gabriel Thelen
- Mary-Ann Camp

Scorpius editing team.

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

Send them to: **Greg Walton**
gwpmpas@gmail.com
Peter Lowe & Bruce Renowden

CALENDAR		November / 2017					Red Days indicate School Holidays
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
 Please - Note that the November Society Meeting will be at the Briars 8pm 			1	2 Melbourne Cup	3 Public Night 8pm	4 MPAS Observatory open to members Full Moon	
5	6 Moon at 361,438km	7	8 ASV Meeting	9	10	11 Last Quarter MPAS Observatory open to members Remembrance Day	
12 3am Occultation of Regulus by the Moon	13 Venus & Jupiter 0.7 degrees apart Dawn	14	15 Society Meeting 8pm Mars right of the Moon	16	17 Moon, Venus & Jupiter close Dawn Leonid Meteor shower	18 New Moon Members Night BBQ 6pm Astronomy class	
19	20	21	22 Committee 8pm Moon at 406,132km	23	24	25 MPAS Observatory open to members	
26	27 First Quarter	28 Mercury 3 deg's left of Saturn	29	30	Leonid Meteor shower from the 6th to the 30th with maximum on the 17th in the morning hour rate only 10		

Monthly Events Southern Comets website - <http://members.westnet.com.au/mmatti/sc.htm>
Public nights - 8pm start on the 3rd @ the Briars
Society Meeting - 8pm to 10pm on the 15th @ the Briars
Members Night BBQ - 6pm on the 18th @ the Briars also
Astronomy class (AC) - 8pm to 10pm on the 18th @ the Briars (New Moon) (Bring Your Telescopes)
 (Summer Southern Hemisphere Objects **Night Talk : Helmuth Schultes / John Cleverdon**)

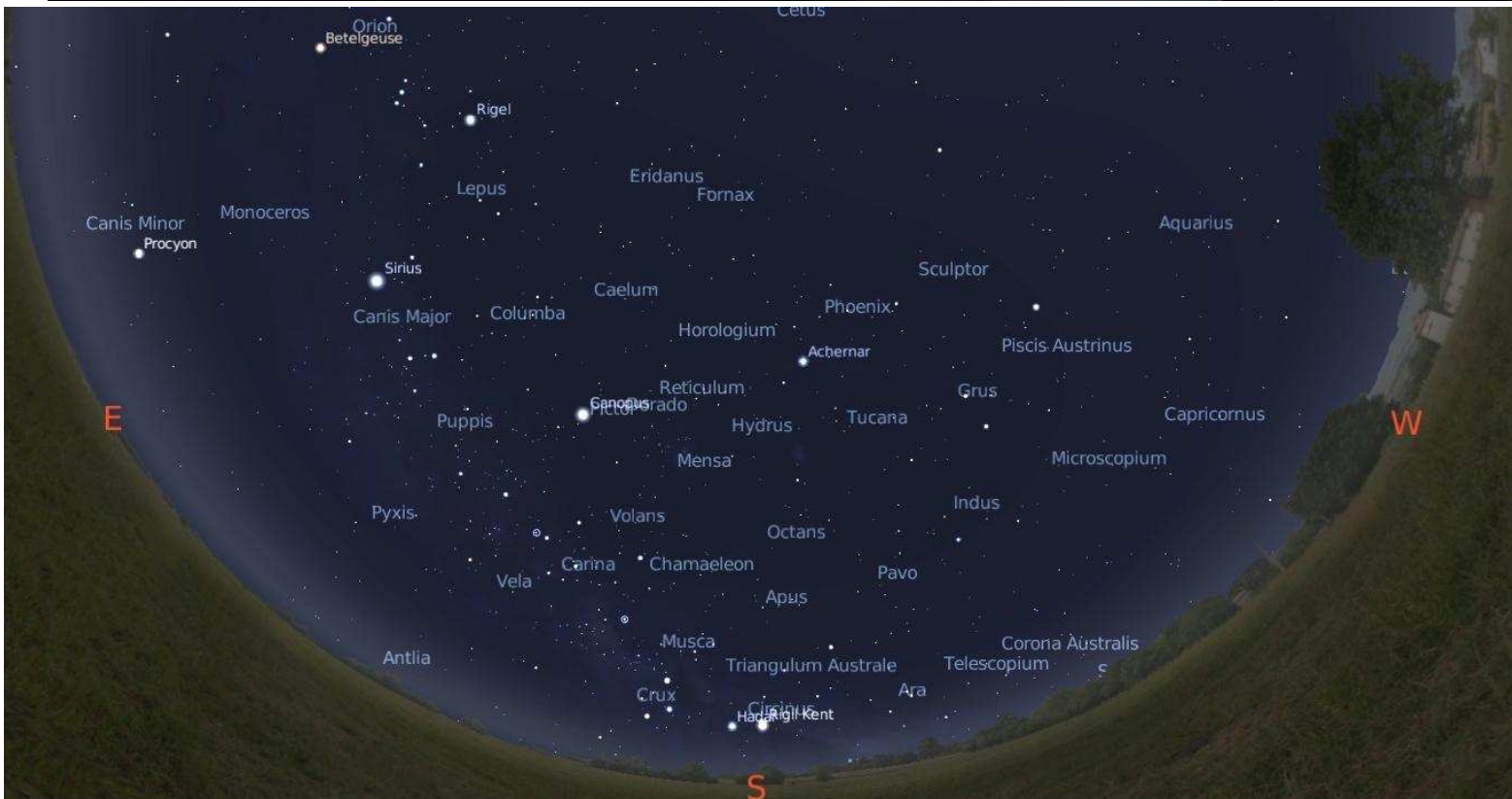
CALENDAR		December / 2017					Red Days indicate School Holidays
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
31 New Years Eve Mars & Jupiter either side of star a2 Libra					1 Public Night 8pm	2 MPAS Observatory open to members	
3	4 Full Moon	5	6	7	8	9 MPAS Observatory open to members	
10 Last Quarter	11	12	13 ASV Meeting	14 Geminid Meteor 1am Radiant at the star Castor	15	16 Members Night Xmas Party	
17	18 New Moon	19	20 Scorpius Deadline	21	22 Solstice (Longest Day)	23 MPAS Observatory open to members	
24	25 Xmas Day	26 First Quarter Boxing Day	27	28	29	30 MPAS Observatory open to members	

Monthly Events
Public nights - 8pm start on the 1st @ the Briars
Society Meeting - No Meeting in December
Members Night Xmas Party - 6pm on the 16th @ the Briars
Geminid Meteor shower 4th to the 17th, best on the 14th at 1am (Possible hourly rate 120)

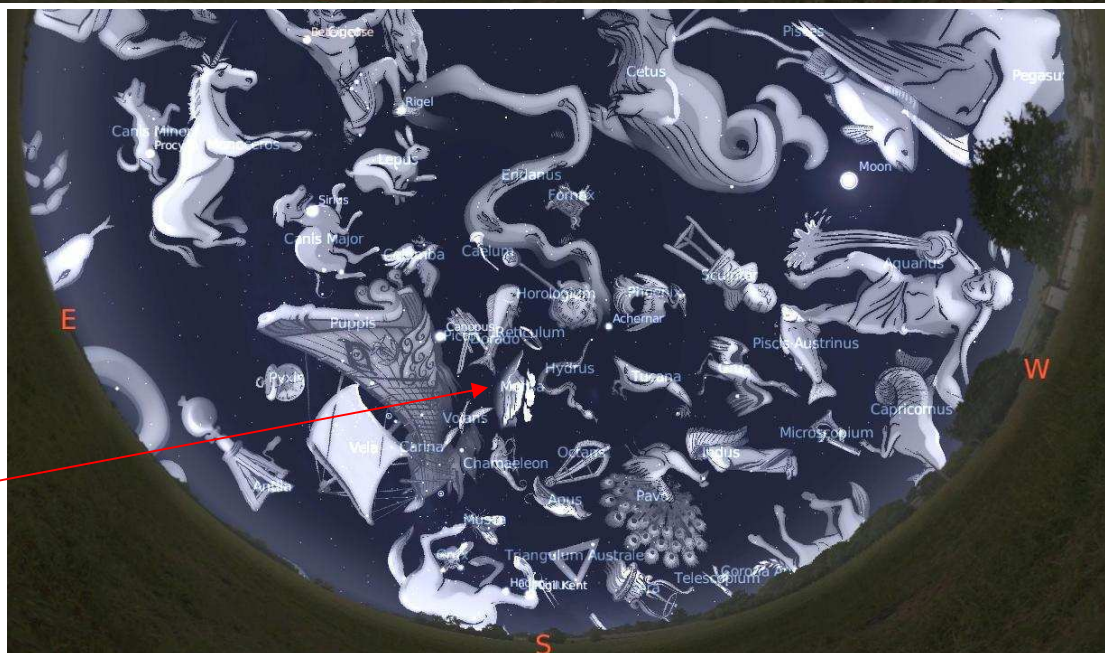
Please... we need helpers to keep the MPAS Observatory open to members on all Saturday nights.
 If you can help, contact Greg Walton on 0415172503 or email - gwmpas@gmail.com

THE BRIARS SKY

By Greg Walton



November / December sees the return of Orion with its great Nebula M42 & Sirius the brightest star in the night sky, while the Large & Small Magellanic clouds are at their highest point above the south horizon & easily seen from the Briars near the constellation of Mensa. The French astronomer Nicolas Louis de Lacaille drew Mensa in the 18th century meaning the table mountain. Presumably named after table top mountain in South Africa where he spent many years. See diagram at right. Nicolas Louis de Lacaille drew & named 15 of the southern constellations. He also measured the position of 10,000 stars.



- 1 Antlia - ancient Greek word for **Air Pump** - no notable deep sky objects
- 2 Caelum - Latin word for **Chisel** - no notable deep sky objects
- 3 Circinus - Latin word for **Compass** for drawing circles - Open Clusters NGC 5823, 5715 & Planetary Nebula NGC 5315
- 4 Fornax - Latin word for the **Furnace** - Galaxies NGC1365, 1316, 1097 & Planetary Nebula 1360
- 5 Horologium - Latin word for the **Clock** - Globular NGC1261 & Super cluster with 5,000 Galaxies including NGC 1512, 1510, 1483
- 6 Mensa - Latin word for the **Table Mountain** - LMC sits on its boarder with Dorado
- 7 Microscopium - the **Microscope** - Galaxies NGC 6923, 6925
- 8 Norma - Latin word for **Right angle** or **Square** - Globular Cluster NGC 5946 & Open clusters NGC 6067, 6087
- 9 Octans - **Octant** similar to a sextant but is one 8th of a circle 45 Degrees - South celestial pole
- 10 Pictor - Latin word for the **Painter's Easel** - Galaxy NGC 1705
- 11 Pyxis - (Nautica) **Mariner's Compass** - Planetary Nebula NGC 2818, Open cluster NGC 2627 & Galaxy NGC 2613
- 12 Reticulum - **Reticle**, Latin word for **Small Net** or **Cross Hairs** in a telescope for measuring the position of stars. Galaxy NGC 1559, 1313
- 13 Sculptor - **Sculptor** - Apparatus **Sculptor** = The Sculptor's studio - Galaxies NGC 253, 247, 300, 55, 24, 10, 7793, 625, 613
- 14 Telescopium - **Telescope** - Galaxies NGC 6850, 6868, 6861 & Globular cluster NGC 6584
- 15 Also Renamed - Musca - the **Fly** - Planetary Nebula NGC 5189 & Globular clusters NGC 4372, 4833



The Great American Eclipse of 2017

Being a self-certified "eclipse chaser", since the Australian solar eclipse in South Australia in 2001, I had been planning for quite some time to attend the total solar eclipse in the USA on 21 August, 2017. The total eclipse path crossed coast to coast, so it was christened "The Great American Eclipse". We are lucky enough to have some Australian friends who now live in Colorado, so we picked out a small town call Glendo in the state of Wyoming, where we planned to see the total solar eclipse. The town normally only has a population of 205, so we were very lucky to get accommodation. Wyoming was a very popular destination for eclipse chases as it had a very high probability of clear skies in August. Predictions of massive traffic nightmares were scaring some people and we even met folks who were happy to just stay home and see a 95% partial eclipse! In my book a 95% partial eclipse equals a 0% total solar eclipse!

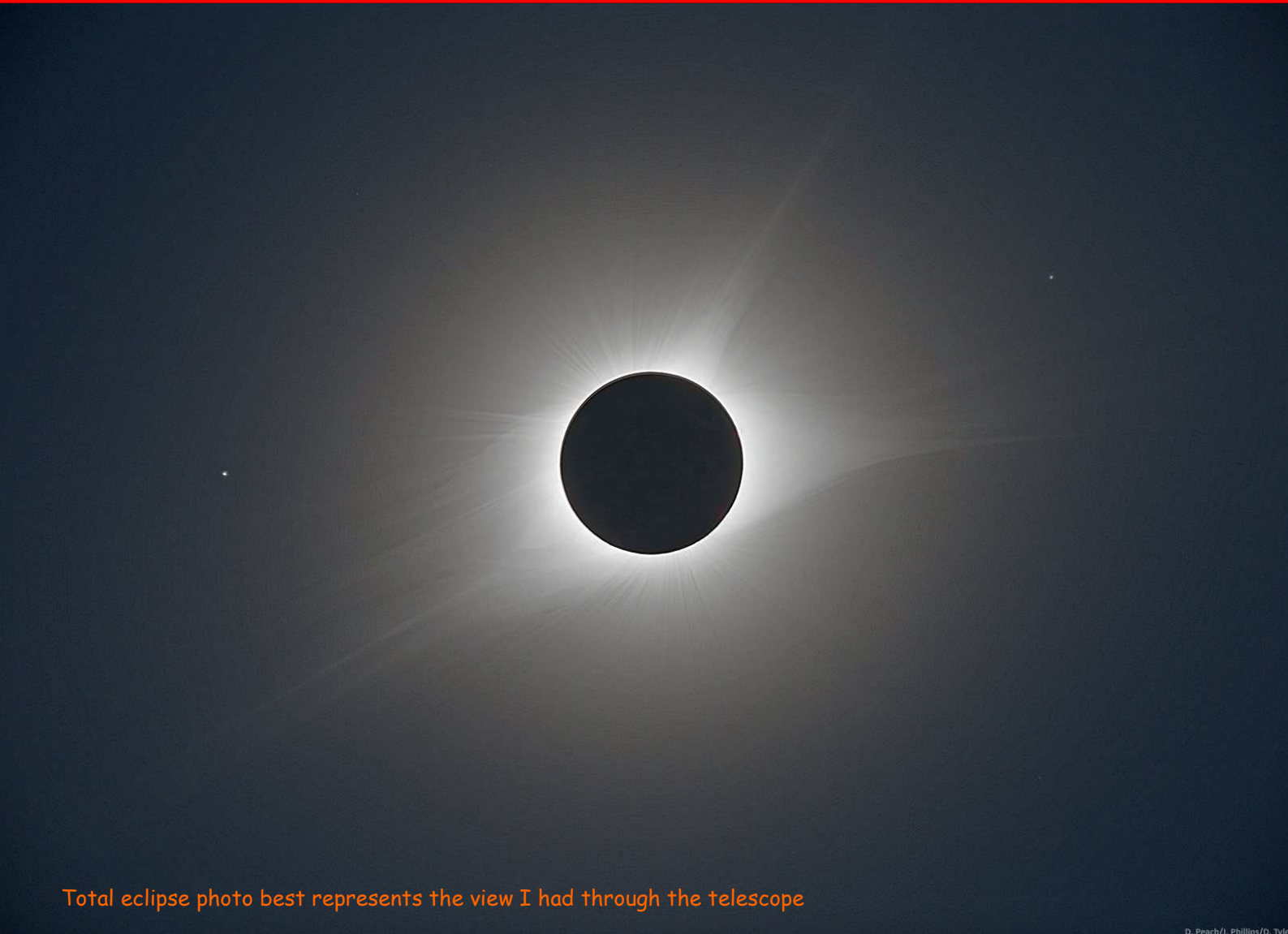
The weather predictions in the lead up to eclipse day were looking a little cloudy, so we were a little worried about being partially clouded out again, like in Port Douglas in 2012. On the morning of the eclipse I awoke to discover that cars had been streaming into town all night and the parking attendant at our Motel had been busy collecting \$50 to park a car in the back paddock! We had already heard stories that it had taken 3 hours to travel the 150 km from Denver that morning, but all I had to do was get up and unpack my telescope and make myself a coffee!

First contact started right on time, of course at 10.24am and I could easily see a small "dent" in the solar limb with my telescope. Family and friends soon could see the moon starting to move in front of the sun with their solar eclipse glasses. It was interesting to watch the moon as it slid pass the many sun spots on the solar disk. The tension built for the next 80 minutes as less and less of the sun could be seen. We were now hearing that the traffic was backed up for 10 miles on the interstate, as all the late comers struggled to get into the path of the shadow of the moon. A telescope typically acts like a people magnet during these types of events so I obligingly allowed people to view the partial eclipse through my scope bringing amazement to many.

With minutes to go there were 100 % blue skies but we saw 2 hot air balloons approaching! Now I was wondering if we would see a total eclipse of the total eclipse by the balloons! People around us were already starting to "ooh" and "aar" as they could notice the sunlight wasn't as bright. A drone was launched behind us, to add to the excitement as I gave a countdown by looking through the telescope with the solar filter attached. When there was just a tiny sliver of sun remaining I gave the signal to remove solar eclipse glasses. We all gasped as we saw the diamond ring (the last bright flash of sunlight) and the beginning of the total eclipse. We were standing in the shadow of the moon! You could see the darken body of the moon and behind it the sun's corona, frozen in the sky. All around the horizon you could see a sunset colour. The view of totality through my 80mm telescope was awesome! I couldn't take my eyes away! There were coronal streamers extending away from the edge that looked like straight lines and pinkish red solar prominences scattered around the edge of the disk!! I could even see the bright star (Regulus) in the same field of view. The 2 minutes and 30 of totality second went quickly as some members of our group even took "selfies". Others in our group finished using the telescope and I had one last close up look. The view of the coronal streamers and solar prominences will be frozen in my mind for life!!

As soon as the total eclipse ended, it was like someone fired a starting pistol and people started jumping in their cars and driving home! There was still another 80 minutes of partial eclipse, including the final contact! I wasn't going to miss a second. We celebrated the event with a toast of Irish whiskey and there were smiles all-round as we shared our experiences. Then discussion turned to the next eclipse with everyone agreeing to all come back to the USA in 2024!

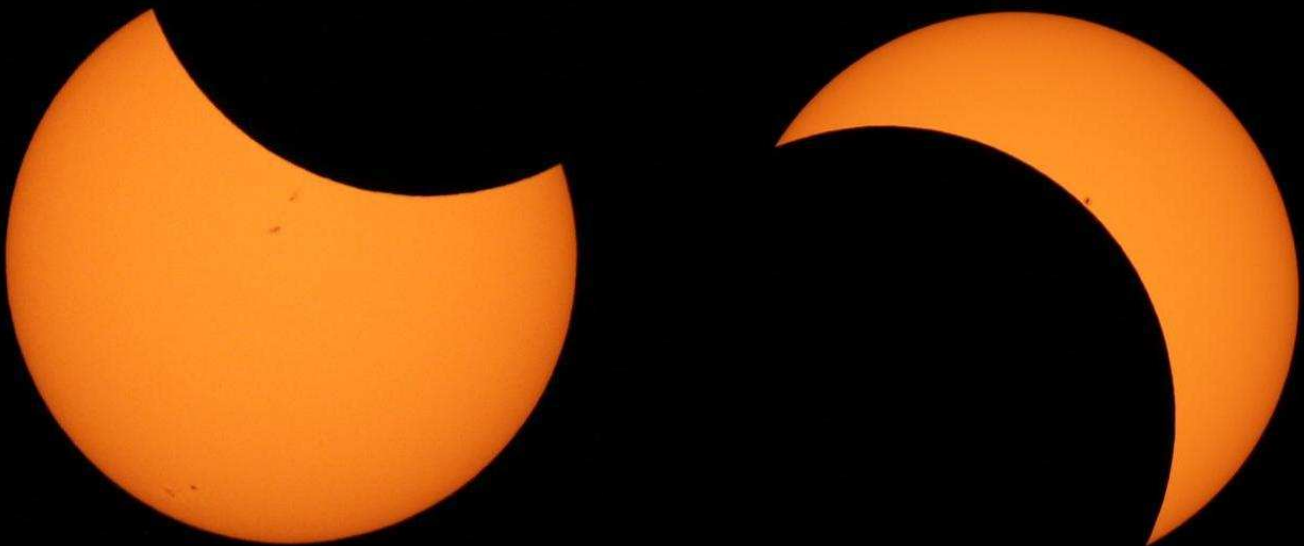
Regards Domenic



Total eclipse photo best represents the view I had through the telescope

D. Peach/J. Phillips/D. Tyke

Taken about 25 minutes after the start of the partial phase



Taken about 25 minutes after Total eclipse phase had finished

MPAS @ ASV Galactic centre star party 16th September, by Greg Walton

Galactic centre star party is held at the ASV's LMDSS site Heathcote in September each year to take advantage of the Milky Way, which is directly over head at this time of year. The centre of the Milky Way lays in the constellation of Sagittarius, its star are in the shape of a teapot (see right) and holds many popular deep sky objects. Near the top of the lid lie 2 bright globular clusters M22 & M28, also the naked eye open cluster M7 lays in front of the spout with the butterfly cluster M6.

Pia & I have gone a bit soft, setting up our caravan in the bush camping area.... Then moving the car down to the astrophotography field, to unload & set up the telescope and time lapse cameras. The rotary club was on hand cooking hamburgers and as usual we had to buy some to support them.



It has been sometime since I have been to LMDSS. There were many new faces and I suppose many thought I was a newbie. I walked around the viewing field looking at all the different telescopes and talking to their owners, while one of the ASV members Neil Creek flew a drone overhead to capture some images of the field (see below left). I snapped a shot of the MPAS logo on my hat down the tube of the ASV's 27 inch Dobsonian telescope.



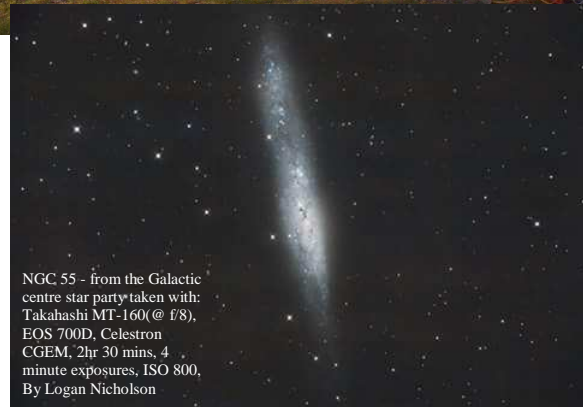
On the astrophotography field there were also many new faces. Some of the setups looked very professional making my humble setup look a bit amateurish. As the sky darkened Perry Vlahos did his sky tour, while the astrophotographers aligned their telescopes and fired up their computers. As usual the gremlins crept in with many saying "Why will my computer not talk to my camera?" First, I set up my time lapse camera pointing between my 2 astrophotography setup's towards the domed observatory, hoping this will make an interesting video. Then I polar aligned my telescopes and set the cameras working. Pia and I then sat back in our chairs and as usual proceeded to look for meteors. There were quiet a number of satellites crossing the sky with Pia spotting most of them before me. There were also some meteors dashing across the sky - all sporadic, some leaving long glowing trails. The sky was mostly clear with only some high level cloud coming in around 10:30pm messing things up. I just had to image objects in the parts of the sky that were still clear. About midnight the sky cleared again, but most had given up and gone to bed. Time lapse video link - <https://vimeo.com/234419814>



Young man on the astrophotography field. I saw his mother drop him off before dark. He setup his 8 inch F5 Newtonian telescope on an EQ Celestron mount and attached a DSLR camera. He then attached a guide camera and connected it to his laptop. I was amazed and inspired; very few young people are capable of such a challenge. I thought I must check up on him later..... While my cameras were running, I used this opportunity to walk around and talk to the other astrophotographers. I found some still struggling with software problems and generally getting things working. Time to check up on the young man ... He said everything was working well and showed me the images he was getting. I was more than impressed, he was working on NGC55 an edge on galaxy (see Logan's finished image at right).

1:30am: temperature was zero degrees. I was feeling tired and went back to our home on wheels to sleep leaving the telescope and time lapse camera running.

Sunday morning I shut down my telescope & cameras, before heading in to town. We went to Murchison a small town where the famous Murchison meteorite fell to earth back in September 1969 not long after when man first walked on the moon. We found a gift shop where we bought a small book on the Murchison meteorite and were told there is Meteorite Park next door with a display board with interesting stories about what happened on that day. We were told the town is planning a 50 year celebration in 2019. We seen some bulls in the park across the road and found one of them had the Murchison meteorite painted on it. Murchison meteorite is one of the most studied in the world. You can find endless stories & videos on YouTube.



NGC 55 - from the Galactic centre star party taken with: Takahashi MT-160 (@ f/8), EOS 700D, Celestron CGEM, 2hr 30 mins, 4 minute exposures, ISO 800. By Logan Nicholson

Story of the **Murchison Meteorite**, by Pam Western - See Link Below

https://drive.google.com/file/d/0ByvkxzZGI9g_REYtRWZxTmxBMHM/view?usp=sharing

When we returned to Heathcote, we were surprised to see everyone had gone. As night fell I repositioned my time lapse camera, and checked my polar alignment before starting the telescopes. The sky was clear and it turned out to be the best night. Pia said, it's too quiet & a bit spooky. We imaged till 1am before going to sleep, as we had to be up at 9am to get ready to image Venus beside the Moon.

Monday morning the sky was clear but it would not last. After breakfast we told the telescope to move to Venus. I looked through the camera viewfinder but Venus was not there, the frosted screen compounded the problem. I tried to spot the thin crescent Moon through the finder scope, but some thin high level cloud made it almost impossible. I waited for a clear patch but it was not much better. What to do? I removed the camera and put my lowest powered eyepiece in the focuser, then I moved the telescope to a small bright cloud on the horizon and focused the eyepiece on that, knowing I would lose the focus for the camera. I picked up the hand control and sent the telescope back to Venus. It was not there! So I moved the telescope round the area while looking in the eyepiece. Then I saw Venus flash past. I tapped the button on the hand controller to position Venus in the centre of the eyepiece. I could just make out the Moon. I showed Pia, she said it's beautiful. All this mucking around meant I did not have much time before Venus slipped behind the Moon. So I removed the eyepiece and re-attached the camera, looked through the view finder, turned the focus knob and Venus jumped into view. I adjusted the iso to 100, set the camera to idiot mode and pushed the shot button. The camera selected a shutter speed of 1/1,250 second. So I set the camera back to manual mode and set the shutter speed to 1/1,000 second, then fired off a few more shoots. It's very hard to see the image on the back of the camera with all that daylight, so I put a coat over my head. I took some more images, changing the shutter speed each time, hoping to get one perfect shot. Time was getting close now, Venus was almost on the edge of the Moon. I kept taking images and checking the view finder. Then I watched Venus fade as it slipped behind the Moon... It's gone. Now that's done, its time to pack up and head back to Melbourne to beat the peak hour traffic.

Venus on the edge of the Moon taken from LMDSS at 10:40am 18th September 2017



8" Newton AG CCI EQ5H Pentax K30 500th sec iso100 crop 50% By Greg Walton



Galactic Centre Star Party
LMDSS 16 September 2017

<https://vimeo.com/234419814>

Bendigo & District Astronomical society (BDAS) has a new home.

Bendigo and District Astronomical society has taken up residence at the ASV's LMDSS Heathcote site, with the winding up of the Bendigo and District Astronomical society, now becoming a section of the ASV. At the recent Galactic centre star party I talked to some of its members & they all seemed to be happy with the arrangement. They said, the facilities at LMDSS are better & the sky a bit darker. They even brought their home with them, a shipping container with ventilation roof, loaded with their telescopes, books, chairs & tables. One of which is a 16 inch Dobsonian. The shipping container is located not far from the main viewing field, making it very easy for them to move their telescopes up onto the field.

The Bendigo section still play an active roll in Bendigo, visiting schools & holding public viewing nights. I recently travelled from LMDSS to Bendigo & it only took me a little over 1/2 hour, a travel time not much different from were I live to the Briars.

The Bendigo and District Astronomical Society (BDAS) hosted 2 VASTROCs (Victorian Astronomical Conference). Both of them I attended & found a very professionally run event & I had a great time.

Anyway we are glad to see them at Heathcote & wish them all the best.

VP Greg Walton



Other changes at LMDSS

The whole electric system is in the middle of getting a complete overhaul in readiness for a new bunk house, large roll off observatory to house a new 40 inch Dobsonian telescope & extra power for the radio astronomy section which is in the middle of installing a 10 metre radio telescope. The concrete foundations are in, but are still waiting for the steel tower to arrive, which will support the radio disk (see photo at right). Also a large water tank has been installed, mainly for fire fighting.

ASV member Neil Creek flew a drone overhead to capture the image of the 2 viewing fields (see below)

Story of the Murchison Meteorite, by Pam Western - Link Below

https://drive.google.com/file/d/0BvYkxzZGI9g_REYtRWZxTmxBMHM/view?usp=sharing



Extremophiles of Western Australia, just south of Monkey Mia, by Greg Walton

Under an interesting sky Pia & I arrived looking for Extremophiles which live on the sea shore. Not just rocks!!! Stromatolites are one of the oldest living things on planet earth: a microscopic life form which uses sunlight to split carbon dioxide, using the carbon to make its home with the oxygen released into the atmosphere, enabling oxygen breathing animals like ourselves to evolve. They also helped to send the planet rusty. Iron that had fallen to Earth could not rust without the oxygen they produced. Stromatolites are not one living organism but a colony of up to 1,000 living organisms working together. Stromatolites have survived on earth for 3 billion years. I asked them one question, if you are so old and grow so slowly, how can you survive when sea levels change, like during an ice age when water was locked up at the poles and the sea level dropped by as much as 50 metres? Do you go into hibernation and wait for the sea levels to return? I got silence, ... they do not give up their secret.... There are few places you can see living stromatolites. In recent times stromatolites have been found in the entrance of some caves, were they get just enough water and light to survive. In Western Australia you can access the stromatolites in any tide condition on the beach by a jetty or boardwalk, with information signs along it length. We spent several hours sitting with the stromatolites sharing the sun.



Extremophiles

Extremophiles live in extreme environments.

In this area the sun's ultraviolet radiation is extreme, Hamelin Pool is almost twice as salty as the sea, and it gets really hot. Also, the area between high and low tides alternates between being exposed to the air and under water.

Few predators and competitors live here to limit the numbers of extremophiles. In fact most plants and animals cannot tolerate such extremes so extremophiles like microbial mat communities have the place mostly to themselves.

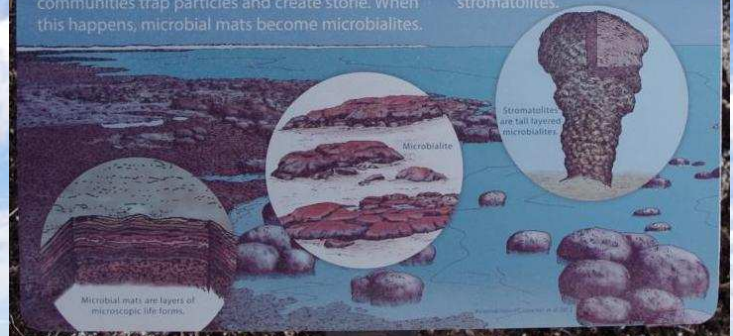
The salinity of Hamelin Pool is 35 to 70 parts per thousand and temperatures can exceed 45°C between December and March.

From mat to stromatolite

The ground here is alive and growing.

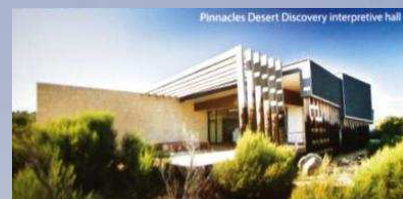
It is covered with microbial mats, communities of microscopic life forms. In certain conditions the communities trap particles and create stone. When this happens, microbial mats become microbialites.

Sometimes microbialites form taller layered structures called stromatolites.



Pinnacles of Western Australia

On our way south, not far north of Perth we came across a signpost pointing to the Pinnacles. On arrival at the Pinnacles Desert Discovery Interpretive Hall, we found an interesting display & café. These formations have been a bit of a mystery. They now think they were formed in a wetter period around 500,000 years ago by dissolved minerals seeping down into the sandy soil and then solidifying over time as the landscape dried out. Then it's thought about 6,000 years ago the pinnacles were uncovered by the wind, exposing them for us to see. The pinnacles number in their thousands and cover a large area. We were surprised that anyone can drive in through them, in any 2 wheel drive car, though we did see a few scrape marks where cars had come in contact with them on some of the narrow parts of the track.



It's a very alien looking landscape. You really think you are on another world. The Pinnacles are a popular place for the time lapse photographers and I believe you can enter the desert park at night. I would have liked to stay and do some time lapses of the night sky but, Pia & I were starting to run out of time and decided to keep moving. See links below for more.

Greg Pinnacles photos https://drive.google.com/drive/folders/0ByvkvxZGI9g_cWNRyJBIYzZ5c00?usp=sharing

The Pinnacles night time lapse <https://vimeo.com/182351386>

The Pinnacles night time lapse https://www.youtube.com/watch?v=wmiKGEyx_VU

The Pinnacles from above <https://www.youtube.com/watch?v=heOL8-WxOPw>

The Pinnacles <https://www.youtube.com/watch?v=Fx-vltJBsEg>

Driving around the Pinnacles https://www.youtube.com/watch?v=gj9zo1j_ydI



The story teller, *by Greg Walton*

In ancient times man would sit around the camp fire and tell stories, like re-enacting the day's hunt and how he cheated death. Man would also make up stories about the stars in the sky, Orion the hunter or Pleiades the seven sisters, to name a few. Why tell the truth for the sake of ruining a good story? These days we know a bit more about the night sky & I would like to continue telling stories about the sky, but with a bit more truth.

At the MPAS public nights standing by my telescope, with Jupiter in the eyepiece, I like to tell, how Jupiter is 10 times the diameter of Earth & it turns once every 10 hours & takes more than 10 years to circle the sun. Actually it's closer to 12 years, but the visitors leave with the number 10 in their mind. The Earth is travelling around the Sun at 30 kilometres per second & the Sun is travelling around our milky-way galaxy at 170 kilometres per second. The Sun is a star & it's 109 times the diameter of the earth.

I find the visitors linger long at the telescope eyepiece listening to my stories.

The Moon has many stories. If you travel around the earth 10 times, you have travelled the 400,000 km distance to the Moon. Light travels at 300,000 km a second, so can travel around the earth 7 times in one second. So light from the Moon takes 1 & 1/4 seconds to get to Earth. The Moon is only about 1/4 the diameter of the Earth & has only one percent the Earth's mass. So the balance point between the Earth and Moon is actually inside the earth. If we were standing on the Moon, the Earth would look almost 4 times larger than the Moon: wouldn't that be a sight(!). The Moon is 3,500 kilometres across so if you divided it by 35, every 35th would equal 100 kilometres, so you can work out the diameter of the craters on the moon fairly accurately. The small craters seen though a 4 inch telescope are about the size of Port Phillip Bay.

When we look out in space, we are looking back in time, the further way an object the further back in time we look.

Light from the Sun takes 8 minutes to get to Earth, so we see the Sun as it was 8 minutes ago.
 Light from Mercury takes 5.5 minutes when it's at its closest & 12 minutes at its furthest distance from us, to reach Earth.
 ... from Venus, light takes 2.5 minutes at its closest & 14 minutes at its furthest distance from us.
 ... from Mars takes 4.5 minutes at its closest & 21 minutes at its furthest distance from us.
 ... from Jupiter takes on average about 43 minutes to get to Earth.
 ... from Saturn, about 1.3 hours ...
 ... from Uranus, about 2 1/2 hours ...
 ... from Neptune, about 4 hours...
 Finally, light from Pluto takes on average about 5 1/2 hours to get to reach us here on Earth.

I'm often asked about aliens visiting our planet. I say, they would need a very special space craft.

The closest star to earth other than the sun is Proxima Centurai which is only 4.2 light years away from us & orbits the bright star Alpha Centurai, not far from the Southern Cross. But to travel to Proxima Centurai, would take the space shuttle one million years, which is 78,000 human generations... Or, in other words 78 thousand people would need to live and die on the space shuttle before it got there. We could fit the shuttle with the latest ion-drive propulsion system and get there in one tenth of the time, meaning only 7,800 people would need to die on the space shuttle. Another problem is space is not empty. There is one hydrogen atom per cubic centimetre of empty space within the milky-way galaxy, so these hydrogen atoms would wear the space shuttle away before it reached its destination.

Sirius is the brightest star in the night sky and is only 8.6 light years away: about the time it takes to age Scotch Whisky!

Alderbaran is 68 light years away. When you get to retirement age, you'll see Alderbaran as it was when you were born.

Pleiades M45 is 380 light years away, so this light started its journey just before Galileo Galilei died in 8 January 1642.

M44 is 580 light years away when Joan of ARC was burnt at the stake.

M7 is 800 light years away just before the Genghis Khan unites Mongols.

Canopus is 1,170 light years away ... just before the battle of Hastings in 1066 AD.

Orion nebula is 1,500 light years away before Muhammad proclaims the Muslim faith.

M8 & M20 are 5,000 light years away ... around the time the pyramids were built.

Eta Carina NGC3272 is 6,000 light years away ... when Stonehenge was built.

NGC104 & NGC5139 are 15,000 light years away ... the end of the last ice-age.

Andromeda is 2,500,000 light years away ... man was starting to learn how to use fire.

So my challenge to you, is to do some research on the object you wish to show & tell its story.

On the next page is my cheat sheet. A list of object with some facts which I use on the public nights.

OBJECT	Distance from Earth	Diameter	Rotation	Around the Earth	Temperature	Speed
MOON	384,392 km	3,476 km	27.32 days	27.32 days	-150C to 150C	0.51
SUN	149,600,000 km	1,402,500 km	29 days	365.256 days	5,800 K	170

PLANET	Distance From SUN	Diameter	Rotation	Around the SUN in	Speed	Moons	Brightness
Mercury	57,910,000 km	4,878 km	58.65 hours	87.97 days	47.86	0	0 Mag
Venus	108,200,000 km	12,012 km	243 hours	224.7 days	35	0	-4.4 Mag
Earth	149,600,000 km	12,750 km	23.93 hours	365.256 days	29.78	1	
Mars	227,940,000 km	6,786 km	24.62 hours	686.98 days	24.12	2	0.4Mag
Jupiter	778,330,000 km	142,984 km	9.8 hours	4,332.71 days	13.06	62	-2 Mag
Saturn	1,426,980,000 km	120,536 km	10.6 hours	10,759.5 days	9.64	65	-0.4Mag
Uranus	2,870,990,000 km	51,118 km	17.9 hours	30,685 days	6.8	22	5.5 Mag
Neptune	4,497,070,000 km	49,500 km	19.2 hours	60,190 days	5.44	11	8 Mag
Pluto	5,913,520,000 km	2,300 km	6.4 hours	90,800 days	4.74	1+2	14 Mag

STAR	Ra	Dec	Distance in LY	Mag	Colour	KEY	N	Nebula
Proxima Centauri	14h30m	-62d42m	4.2	11.0	Red		O	Open cluster
Alpha Centauri	14h40m	-60d50m	4.3	-0.3	Yellow		G	Globular cluster
Beta Centauri	14h4m	-60d22m	460	0.6	White		Gx	Galaxy
Alpha crux	12h27	-63d5m	360	0.9	White		P	Planetary Nebula
Sirius	6h45m	-16d42m	8.6	-1.5	White		d	Degrees
Antares	16h30m	-26d25m	330	1.0	Orange		h	Hours
Betelgeuse	5h55m	7d24m	310	0.5	Red		m	Minutes
Castor	7h35m	31d53m	46	1.6	White		Km	Kilometres
Aldebaran	4h36m	16d30m	68	0.9	Orange		Mag	Brightness
Canopus	6h24m	-52d41m	1170	-0.7	Yellow		LY	Light Years
Rigel	5h15m	-8d12m	910	0.1	White		Speed	Km per Second

OBJECT	Ra	Dec	Degrees	Mag	Distances in LY	Size in LY	Speed
LMC-Gx	5h23.6m	-69d45m	11x9	0.1	180,000	17,000	313
SMC-Gx	0h52.7m	-72d50m	4.6x2.7	2.3	190,000	9,000	175
Coal Sack	12h53m	-63d	6.7x5	none	500	60	
M4-G	16h23.6m	-26d32m	0.57	5.9	10,000	100	
M7-O	17h53.9m	-34d49m	1.33	3.3	800	20	
M6-O Butterfly	17h40.1m	-32d13m	0.5	4.2	1,300	6	
M8-N Lagoon	18h3.8m	-24d23m	1.5x0.65	5.8	5,000	110	
M16-N Eagle	18h18.8m	-13d47m	0.55x0.45	6	5,900	28	
M17-N Omega	18h20.8m	-16d11m	0.75x0.6	7	5,900	300	
M20-N Trifid	18h2.6m	-23d2m	0.46	6.3	5,000	60	
M22-G	18h36.4m	-23d54m	0.55	5.1	7,800	75	
M31-Gx Andromeda	0h42.7m	41d16m	3.2x1	3.4	2,500,000	125,000	-68
M33 - Gx Pin wheel	1h33.9m	30d39m	1.2x0.6	5.7	2,400,000	50,000	
M42-N Great Orion	5h35.4m	-5d27m	1.17x1	4	1,500	30	
M44-O Praesepe	8h40.1m	19d59m	1.7	3.1	580	17	33
M45-O Pleiades	3h47m	24d7m	1.8	1.2	380	12	
M46-O+2438-P	7h41.8m	-14d49m	0.43	6.1	3,200	24	
M57-P Ring Nebula	18h53.6	33d2m	0.02	8.8	1,600		
M83-Gx	13h37m	-29d52m	0.15	7.5	15,000,000	80,000	514
M104-Gx Sombrero	12h40m	-11d37m	0.22x0.07	8.3	41,000,000	100,000	1,083
55-Gx	0h15.1m	-39d13m	0.5x0.1	8.1	4,000,000		125
104-G 47 Tucanae	0h24.1m	-72d5m	0.83	4	15,000	220	
253-Gx Silver Coin	0h47.6m	-25d17m	0.43x0.1	7.6	11,000,000	80,000	250
2070-N Tarantula	5h38.6m	-69d5m	0.8	8.3	180,000	3,000	
3372-N Eta Carinae	10h43.8m	-59d52m	2	6	6,000	200	
3532-O	11h6.4m	-58d40m	0.83	3	1,300		
3621-Gx	11h18.3m	-32d49m	0.15x0.1	9.2	20,000,000	125,000	650
4755-O Jewel Box	12h53.6m	-60d20m	0.17	4.2	7,600	23	
4945-Gx	13h5.4m	-49d28m	0.3x0.08	8.8	16,000,000	100,000	560
5128-Gx Ham Burger	13h25.5m	-43d1m	0.45x0.3	6.7	14,000,000	50,000	545
5139-G Omega Centauri	13h26.8m	-47d29m	0.83	3.9	16,000	230	
6752- G Pavo	19h10.9m	-59d59m	0.3	5.3	13,700	100,000	
7582-Gx Grus Quartet	23h18.4m	-42d22m	0.5	10	62,000,000		
Milky Way has 100,000,000,000 stars			360x360		30,000 to centre	100,000	

MPAS Gallery - Images on this page were taken at the MPAS Briars site.



Helix NGC7293 Briars 350mm Meade F10 with 0.7 focal reductor EQ8 Pentax K30 36x30sec iso12800 By Greg Walton MPAS 14oct17



M16 Briars 127mm refractor EQ6 Pentax K30 15x30sec iso 12800 By Greg Walton MPAS 14oct17



M17 Briars 350mm Meade F10 with 0.7 focal reductor EQ8 Pentax K30 8x30sec iso12800 By Greg Walton MPAS 14oct 17



M17-Briars 127mm refractor EQ6 Pentax K30 15x30sec iso 12800 By Greg Walton MPAS 14oct17

Above 2 images - Taken with the MPAS 350mm Meade

Above 2 images - Taken with the MPAS 127mm refractor



NGC 253 bottom right & NGC 288 Top left
Taken at the MPAS Briars site on the 14th October 2017
With Canon (5D) on ED80 scope & HEQ5 mount.
By Andrew Nilsson

Small Aurora Show on the 1 September 2017.

Taken from the RACV resort Inverloch.

By *Paul Albers*



Messier 8 Also known as the Lagoon Nebula or NGC 6523. It's a giant interstellar cloud in the constellation Sagittarius. It is classified as an emission nebula and as an H II region. The Dark Spots are called "Bok globules". They are isolated and relatively small dark nebulae, containing dense cosmic dust and gas from which star formations may take place.

Taken at the Briars
Astronomical Society's site
Mount Martha.
William Optics FLT110
QHY9m 5 minute Lum x 10
Bin 1x1, RGB 1 minute x10
Bin 1x1.
Processed in CCD Stacker
and PS-CS3.
Regards *Paul Albers*



Messier Eight By Paul Albers

OFFICE BEARERS OF THE MORNINGTON PENINSULA ASTRONOMICAL SOCIETY



Peter Lowe



Greg Walton



Peter Skilton



Jamie Pole



Tony Nightingale



Stewart Gangell



Anders Hamilton



Heath Lewis



Mark Stephens



Dave Rolfe

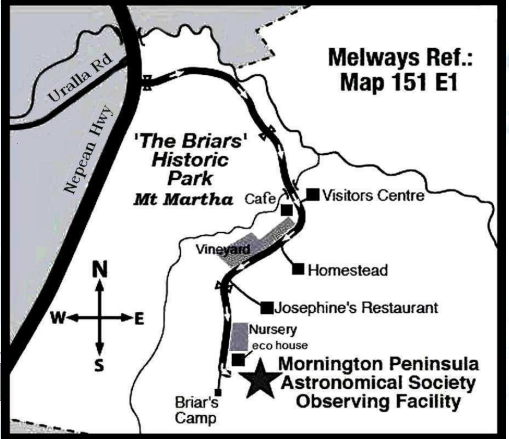
SOCIETY INFORMATION

President: Peter Lowe **Secretary & Phone Contact :** Peter Skilton
Vice President: Greg Walton **Treasurer:** Jamie Pole
Committee: Tony Nightingale, Stewart Gangell, Mark Stephens, Heath Lewis, Anders Hamilton & Dave Rolfe **Web master:** Dave Rolfe
Scorpius editor: Greg Walton
Library: Fiona Murray & Fred Crump

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

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
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 Phone: 0419 253 252
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facebook MPAS members - <https://www.facebook.com/groups/MPAS1/>

LIBRARY

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



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.
 Member forum : http://www.mpas.asn.au/members_forum.html

E-SCORPIUS NEWSGROUP

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

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