



# SCORPIUS

THE JOURNAL OF THE  
MORNINGTON PENINSULA ASTRONOMICAL SOCIETY INC.

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The Mornington Peninsula Astronomical Society (formerly the Astronomical Society of Frankston) was founded in 1969 with the aim of fostering the study and understanding of astronomy by amateurs and promoting the hobby of amateur astronomy to the general community at all levels.

The Society holds a focused general meeting each month for the exchange of ideas and information. Regular public and private observing nights are arranged to observe currently available celestial objects and phenomena. In addition, the Society encourages the service of its members for on-site or off-site educational presentations and observing nights for schools and community groups.



**Cover Image:** Milky Way panorama taken outside Mareeba QLD 28/9/19. 180 degrees from SW to NE. 12 shots taken with Canon 5D III in portrait mode and Samyang 20mm lens @ f2.8, 15 secs, WB4000, stitched and edited in LR. Used Nodal Ninja Pano-rail. *By Tony Nightingale*

**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



**School viewing night September 3rd** - The night was cool and clear down at Merricks Lodge campsite last night, with 33 girls and their teachers visiting from Strathcona Baptist Grammar. Peter Skilton gave the talk indoors and, even though it was at the end of their second busy day on camp, kept the teens engaged and received plenty of questions from the Year 10's. Operating the telescopes across the road, out on a slightly squishy field underfoot, were Robin Broberg, Mark Hillen, Anders Hamilton and Nerida Langcake, with a Schmidt-Cassegrain, reflector, refractor and a Dobsonian in use. The sky remained clear and steady all evening, with great views of the waxing crescent Moon, Saturn and Jupiter and other fuzzy deep sky targets. Anders had his 40mm wide field eyepiece, and an instrument that liked dewing up in the conditions. A predicted pass-over of the International Space Station in the south proved to be a bit of a fizzer, when it couldn't be found in the sky due to its dimness. Better luck next time with that app.

Regards, *Peter Skilton*

**Some feedback** from our recent visit to Merricks for the Year 10 girls' camp there. The school's Head of Outdoor Education, Birch, fed back: "Please convey to your members that this Year 10 Camp September night was an unexpected SMASH hit with students who were otherwise hard to engage. Staff and students alike were so impressed with your high levels of knowledge and passion – the presentation and observing purely fantastic. On this basis – we plan to book once again next year."

Regards, *Peter Skilton*

**Public Night September 6th** - Despite very overcast conditions and some threatening drizzle, 93 optimistic members of the public visited the Briars stargazing evening yesterday. Trevor Hand gave a Saturn talk indoors which was interrupted midway for everyone to move outside to enjoy a large open patch of clear sky for about 15-20 minutes. This enabled the Moon, Jupiter and Saturn to be seen, as well as others, before the clouds encroached again and everyone filed back inside to hear the remainder of the talk. Outside helping with the smooth running of the evening were Ben Claringbold, Mark Stephens, Fred Crump and Bonnie Cass, Simon Hamm, Peter Skilton, Jamie Pole, Nerida Langcake and Piper Grierson on the counter, Jason Heath, Alan Predjak, John Cleverdon and John Goodall who donated some astronomy magazines from his collection. Peter Lowe also attended and gave a 5 minute talk on the recent outburst from the SGR\* black hole. There was a good trade in meteorites occurring during the evening, with the new additions to the counter display. Challenge of the evening was operation Plover. Plover eggs, now three, had appeared next to the lower slab by the observatory building and had to be temporarily fenced off with chairs and reflective tape so that no-one walked over them in the dark during the evening. Trevor also prepped the audience to be aware of the new hazard on-site, that will probably be there for another few weeks. We were told by some members with past experience of the species elsewhere that they can be quite noisy and aggressive while nesting, so try to stay away from them for the time being and wear a hat if nearby. Regards, *Peter Skilton*

**Scouts viewing night September 11th** - The first on Wednesday was in Frankston South for the Baden Powell Joeys and Cubs, with 55 in attendance, plus leaders and some parents. Peter Skilton gave the badge talk indoors then, with the skies being about 20% high-level thin cloud, the group moved out to the telescopes. A good view was had of the Moon, Saturn, Jupiter, Jewel Box and others. Operating the telescopes in the park adjacent to the Scout Hall were Fred Crump, Robin Broberg, Nerida Langcake, Philip Rea, Jamie Pole, Dave Rolfe, Mark Hillen, Phil Holt and Daniel & Jasmine Price, with son James being one of the Scouts in attendance.

Regards, *Peter Skilton*

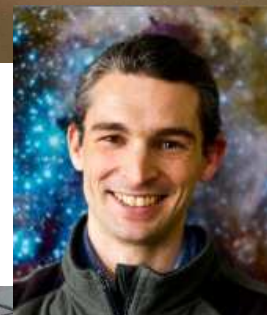




**Scouts viewing night September 13th** - Then on Friday at the Briars, we anticipated 75 to attend the quarterly Scouts & Guides night, but ended up with 102 in the auditorium, given the number of seats that were put out and filled. A lot of parents stayed and there were many group leaders present, and some drop-ins. The biggest group of visitors was the combined 3rd Ringwood East packs, then other smaller ones from Sorrento, Tootgarook and Aspendale. Peter Skilton gave the astronomy badge talk indoors. The skies were wonderfully clear, despite a bit of drizzle and cloud cover on the way. Everyone had a fantastic view of the Moon and planets outside afterwards, carefully avoiding the nest of Plover eggs next to the lower observing slab. Helping at the instruments and ensuring the evening went smoothly were Nerida Langcake, Piper Grierson, Fred Crump & Bonnie Cass, Simon Hamm, Mark Stephens, David Rolfe, Mark Hillen and Jamie Pole. Regards, *Peter Skilton*



**Society Meeting September 18th** - About 50 members attended. Peter Skilton, President, reported on the past and up-coming Society activities. Assoc Prof Daniel Price from the School of Physics & Astronomy, Monash University, presented Planet Hunting, covering the search for planets around other stars, and how his team think they got there. Sky Murphy gave a brief show-and-tell of 'An astro bino. simple rig for bird watching'. Mark Stephens presented Sky for the Month and Peter Skilton explained interesting methods of estimating the number of craters on the Moon, Ref the National Science Week competition. Regards, *Peter Skilton*



**Members BBQ and working Bee September 21st** - To assist spreading the load of maintenance around the MPAS Observatory, we are going to request that members arrive at approximately 4PM to perform some general tidy up and maintenance each month before the members' barbecues. We are hoping that this will reduce the need to schedule whole day working bees unless major works are planned. As we all know Greg and Pia have been doing a superb job of taking on more than their fair share of these tasks alone and are enjoying a well deserved break, it would be appreciated if we could all chip in and keep the society looking neat and tidy. Thanks. *Anders Hamilton, On Behalf of the Committee.*



Photo: John Cleverdon.

**Public Night October 4th** - Rain was unfortunately the word of the evening when we had about 70 guests attend the fully booked October PVN. Peter Lowe gave the presentation inside while about a dozen members were outside performing various cloud parting rituals - with no success. The guests were invited back in the November 1st evening for some telescope viewing which may make that night quite large (as November was fully booked out already). Ironically (and as per normal) as the last few members were locking up; the skies began to clear. Tonight was also the first night with the updated PVN pricing structure. Thank you to all the members who helped out. , *Dave Rolfe*

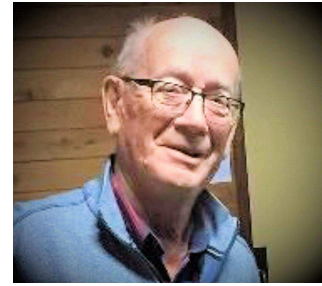
**Saturday Open Observatory October 12th** - Almost full Moon, clear sky and cold northeast winds. Not the best conditions but 12 members showed up to use the telescopes or just have a chat. Lara continued working on organizing the library. While I gave members a refresher course on the telescopes. We also helped newer members learn how their telescopes work. At first the seeing conditions were good but as the north winds increased the seeing got so bad that we could not see any details on Jupiter. Simon did some sales. Steve got his new mount working and took some wide angle images of the Milky-way. *Greg Walton*

**Image at right** - I was playing with the Pentax K1 and the Meade 14" ACF tonight at the Briars. I ended up with a 46MP full moon image (4 Panels joined). Here is a cropped version. 12th October 2019. By *Dave Rolfe*





**Society Meeting October 16th** - Peter Skilton opened the meeting and updated members on recent and upcoming events. Then the President of Birdlife Mornington Peninsula, Max Burrows, talked about "Night Birds on the Peninsula". Max has over 50 years field observing experience and leads the regional chapter with about the same number of members as MPAS and many with STEM backgrounds. If you've ever been at the telescope and wondered what that was you were hearing in the dark, then Max probably knows. Sky Murphy talked on "From Pluto, 4 Minutes to Equinox" (see below), Peter Skilton did Sky for the Month then Ian Sullivan stretched our grey matter with some diabolical Astro-quiz questions, followed by 3 short videos selected by Peter Skilton. Some new members looked at the telescopes in the observatory. There was no viewing due to clouds.



### Communicating Concepts in Astronomy, by Sky Murphy

A brief brainstorming session was trialled on "Pluto has been promoted to..." in its reclassification. Then members from the audience were magnificent in a team effort to demonstrate the observable concept that

**"Stars move 4 minutes ahead per day"**. This was during our Society meeting on W 16-Oct-2019, when stepping forward to risk making mistakes was the go -as was said by the Neil Armstrong character in the movie Apollo 11, slightly adjusted to

**"We need to make mistakes down here so we don't make mistakes up there"**.

On the countdown, 2 members became the Sun and the Earth and half of the audience came up to stand behind us in moral support and as background stars!

Michelle (Earth) leaned towards Anne (the Sun) at the winter solstice point, then revolved to show the daily spin completing 1 solar day every time Earth faces the Sun. Similarly each time Earth spins to face a chosen star, so far away that looking straight towards the back of the room from any position is looking straight at the star, it is 1 star day. (We did not mention 'sidereal' at this stage.) Michelle Earth revolved and advanced in orbit to represent 90 days to complete a quarter orbit into the Equinox position. Facing the chosen star, that meant 90 star days.



Image by Peter Skilton MPAS YouTube channel <https://www.youtube.com/channel/UCm6XOKIcIft4y0XRBXpXuw>

But the Sun was still to the left. Michelle **Earth needed to spin another quarter turn, 6 hours**, to complete the 90 solar days. **6 hours over 90 days means 6 x 60 i.e. 360 minutes over 90 days, or 36 / 9. That's 4 minutes per day. All observable in the night sky.**

Anyone having your own way of illustrating this, **all family included**, please be invited to experiment with play acting during our Society meeting, a minor risk of making mistakes while taking a small step to contribute collectively to some future leap. Bravo all participants.

**School viewing night October 17th** - 84 Year 4 pupils and their teachers from St. Simon the Apostle Primary School, in Rowville, visited Don Bosco Camp in Safety Beach last night. The talk indoors was given by Peter Skilton who fielded dozens and dozens of questions from the kids sitting on the floor in quite a warm room indeed, with a giant overhead fan turning slowly and reminiscent of something from a science fiction horror movie. It took 10 minutes just to get past the first couple of slides, with questions about black holes and meteorites coming almost right away. Unfortunately the few gaps in the clouds did not expand, and the evening saw periods of light rain such that the telescopes couldn't be used outdoors. So this meant a longer talk, which is always very difficult for this age group, especially at the end of a long day on camp. On hand, waiting patiently and ready to go with instruments, were Ben Claringbold, Phil Holt, Greg Walton, Fred Crump and Nerida Langcake. Shown in the picture was a small, curious visitor on the night, peering into the auditorium and keen to increase their knowledge. *Peter Skilton*



**Members BBQ and working bee October 19th** - At the working bee Nerida mowed the grass, Bob whipper snipped around the trees, Anders and Roland fitted air vents to the shipping container, Andrew and I adjusted the tension on the roller door making it much easier to open. Other jobs done: removed the tree stump that has been troubling the mower, cut up the broken chairs so they could fit in the bin, Anne painted the kitchen door. There were also many smaller maintenance jobs done on the observatory and telescopes. Simon made many sales from the MPAS shop while Lara continued organization in the library. Many members pitched in to run the BBQ and clean up afterwards. A big thanks to all who helped out on the day.

*Greg Walton*



Photo: John Cleverdon.





# MEMBER PROFILE



Vision in the stars. Astronomer Peter Norman teaches astronomy at U3A.

He's 87 years of age, and legally blind, but you would be hard pressed to find someone with more vision than Peter Norman, a Mornington astronomer who continues to teach his passion to this day.

"I studied physics at the University of Melbourne but sadly we were never taught astronomy," said Mr Norman from his Mornington home that he has shared with his wife, Doreen, for nearly 60 years.

In 1957 as a science teacher at Casterton high school, Mr Norman received a request from the Astronomical Society of Victoria to report any details of auroras sighted, because the sun was due to be stormy that year. For that same reason, Russia launched the first spacecraft, Sputnik which was accidentally detected by a new radio-telescope in England. It was these events that began the space race, radio astronomy and Peter's interest in astronomy.



Photo: Gary Sissons.

"President Eisenhower immediately ordered the modernising of all science and maths text books. He also established NASA and made all their space movies freely available to all secondary schools of the western allies. When teaching physics and maths at University High School in 1958, I took groups of students to Melbourne Observatory to see the stars of our universe," said Mr Norman, who moved to Mornington with Doreen two years later. "We bought a block of land here and decided this was where we wanted to raise our family. I had discovered Mornington while I was in the army. We had to drive down to Portsea and, on the way back, stopped at Mornington. I wandered down to the pier and looked at the beautiful bay and decided this was where we should live."

When he saw that the Mornington High School had bought a telescope after he started working there, Mr Norman thought it would be a good idea to start an astronomy club with the students.

"I began lecturing science and astronomy at Frankston Teachers College in 1971 and made my own telescope when I joined the Astronomical Society of Frankston," said Mr Norman, who had found his passion in the stars. "I had studied my bachelor of science, bachelor of education and nearly completed a master of arts and history of philosophy but it was when I learnt that trigonometry really started from astronomy that I thought it should be taught in schools."

Always one to take on a challenge, Mr Norman became the president of that society for the next thirteen years, setting up an observatory in the college grounds which was used by the astronomical society.

Mr Norman then went on to gain his PhD in physics and work as a senior physics lecturer at Monash University, but always came back to the sky.

"During the last forty years I have presented many research papers at physics and amateur astronomy conferences throughout Australia, and had articles published in international journals," said Mr Norman who has also published two text books, one with his wife, Doreen as co-author, on Medication Mathematics for nurses.

Becoming legally blind was never going to stop Peter Norman, who teaches astronomy courses at the U3A to this day.

"I was asked to provide a short course in astronomy here in Mornington, and have continued the tradition for the last 27 years," he said with a laugh. "As I was no longer able to drive a car, the students came to my home for classes. When I teach astronomy through the U3A, I teach the story of astronomy starting with the ancient Aboriginal legends. I do eight lectures over two months, and the students are fascinated."

From Peninsula Essence – September 2019 *Story by Melisa Walsh.*

Peter Norman and his interest in astronomy and teaching, online at: <http://peninsulaessence.com.au/vision-in-the-stars/>

Link to Peter Norman book: Our Universe by Peter Norman  
<https://drive.google.com/file/d/12KyTTG3VMImffDEuTXT6KiLB7TnYzZyP/view?usp=drivesdk>



# SCORPIUS FILES

EINSTEIN'S ECLIPSE AND THE BENDY SPACE PROOF.

SCRIBBLED HISTORIES  
BY PHIL HOLT



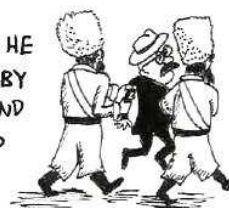
1911 BERLIN,  
ALBERT EINSTEIN  
SUGGESTED THAT  
STARS OBSERVED IN  
A TOTAL SOLAR  
ECLIPSE COULD BE  
A TEST OF CURVED SPACE THAT  
HE PREDICTED IN HIS GENERAL  
RELATIVITY THEORY



IN AUGUST 1914, AN  
ECLIPSE IN THE CRIMEA  
PROVIDED AN OPPORTUNITY.  
BERLIN ASTRONOMER,  
ERWIN FINLAY-FREUNDLICH  
RACED OFF TO BE THE  
FIRST TO PROVE IT.



UNFORTUNATELY,  
WORLD WAR I  
BROKE OUT AND HE  
WAS ARRESTED BY  
THE RUSSIANS, AND  
THEY CONFISCATED  
HIS EQUIPMENT.



THE AMERICAN,  
WILLIAM WALLACE  
CAMPBELL OF THE  
LICK OBSERVATORY WAS  
ALLOWED TO STAY  
AND OBSERVE THE  
ECLIPSE, BUT  
IT WAS  
CLOUDY....



AND THE RUSSIANS CONFISCATED  
HIS EQUIPMENT.... JUST TO  
BE FAIR.

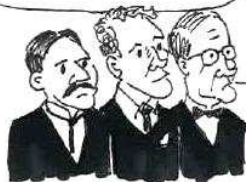
IN WASHINGTON STATE, JUNE  
1918, ANOTHER ECLIPSE WAS  
MISSED, AS THE RUSSIANS  
WERE STILL HOLDING  
CAMPBELL'S GEAR.



ALL ATTENTION NOW  
TURNED TO THE MAY 1919  
TRANSATLANTIC ECLIPSE.  
AT GREENWICH, SIR  
FRANK WATSON DYSON  
OF THE ROYAL ASTRON.  
SOC. WAS HATCHING A  
BOLD PLAN.



DAVIDSON AND CROMMELIN,  
I'M SENDING YOU TO  
GORGEOUS SUNNY  
SOBRAL IN BRAZIL...



AND MY BEST MAN EDDINGTON,  
I'M SENDING YOU TO THE MALARIA  
LADEN SWAMP OF PRINCÍPE  
OFF THE AFRICAN COAST HERE!  
WITH LUCK WE'LL HAVE  
TWO BITES AT THE CHERRY.



IN MARCH 1919 THEY SET SAIL.

BON VOYAGE



ECLIPSE DAY,  
MAY 29,  
SOBRAL



SAD, THE SUN'S  
HEAT MUST HAVE  
DISTORTED THE  
COELOSTAT  
MIRROR

...AND ALTERED  
THE ASTROGRAPH  
FOCUS.



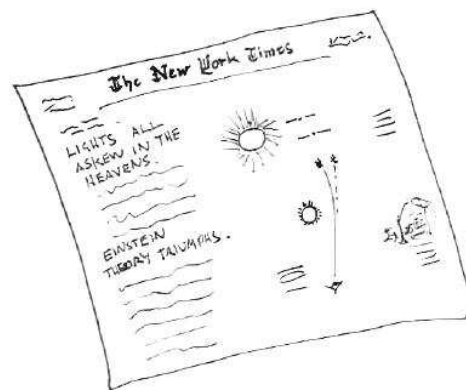
LET'S HOPE EDDINGTON FARES BETTER.

LATER ON PRINCÍPE...



THE MORNING RAIN CLEARED  
JUST IN TIME AND EDDINGTON  
GOT THE NECESSARY SHOTS.  
MONTHS OF MEASUREMENT  
AND CALCULATION FOLLOWED.  
THEY ANNOUNCED THEIR  
FINDINGS SUPPORTING  
EINSTEIN ON NOVEMBER 6  
AT A MEETING OF THE  
ROYAL SOCIETY.

AND SO 100 YEARS AGO...



ALBERT EINSTEIN BECAME  
A HOUSEHOLD NAME.



# Sing your way to the Stars



An initiative of the Mornington Peninsula Astronomical Society

[www.mpas.asn.au](http://www.mpas.asn.au)

Expression of Interest *invited*

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**Night sky theme** incorporating astronomy; fluid in genres incl. pop, old time favourites, Aboriginal and T.I., new arrangements, cross-cultures, ensemble, space movies.



## Performance and appearances:

stargazing events, astronomical societies and community events, or at will.

### Nightjars, a Sing-along band/choir

sometimes with instrumental, dances, or acts, often with astronomy info or demo., always for fun.

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WANTED: Several lively founding member singers/muso's

Beat-y accompanists-singers

1 energetic director (we will find ways to afford you)

and.... and... general members (conditions apply):

*mixed, family, community, schools, organisations. Balanced SATB. Aim to be creative, engage the audience to participate, co-rehearse with other groups, and just to have fun whatever happens.*

Rehearsals: Initially Saturday afternoons TBD, Mt Martha -for MPAS members. Later nearby areas where possible.



Please register your cosmic interest Contact: [music@mpas.asn.au](mailto:music@mpas.asn.au)

Here is a 47 Tuc picture I processed the other night, originally taken in 2009! I had saved it but moved on to the next shiny thing! It would have been from the VC200L and SBIG STL Camera.

Next session I will have to do a supernova search!

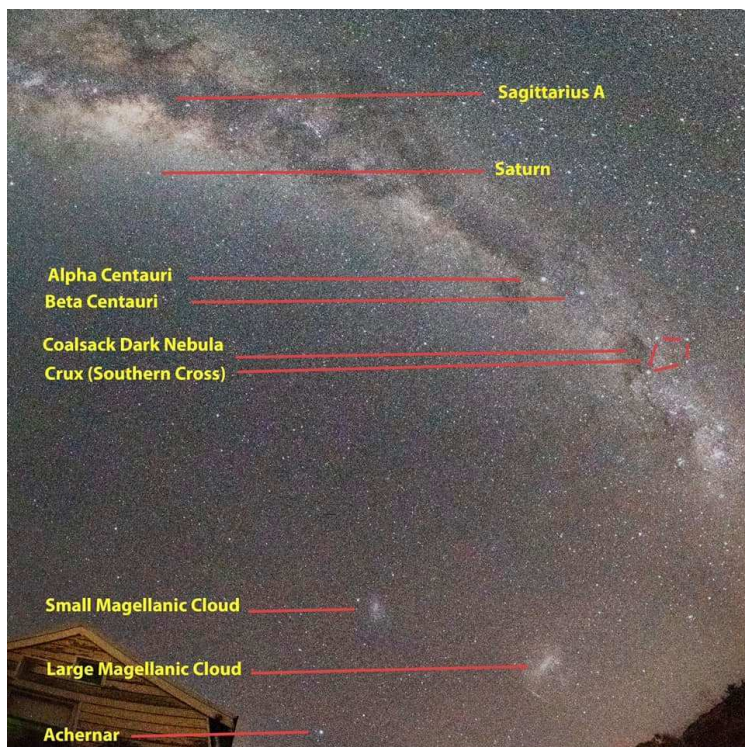
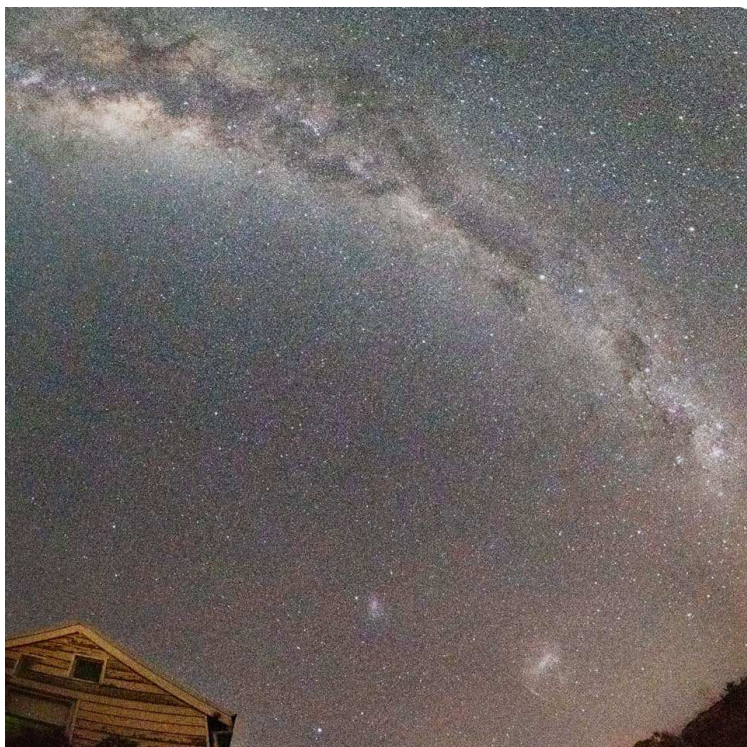
Dave Rolfe





**Steve Wilkins** - First post from a new member. Hope my labels are correct!

The Milky Way shining over our little studio in Blairgowrie on Saturday. Nikon D750 Samyang 14mm f2.8 iso 8000, 16 X 3 sec light frames stitched in PTGui finished in photoshop



First, I would like to congratulate MPAS club for its fabulous, amazing and active fiftieth anniversary year. Thanks to the committee members for all their hard work to make this year an astronomy success. Some memorable astronomy experiences of my own were developed and varied. I remember coming home one night, and quickly settling up my two-inch toy refractor I had at the time. It was to be my first look at Saturn! With amazement and wonder, there was Saturn rings and all. Certainly I was thrilled and had experienced the wow factor! Another memorable occasion was, when I had looked at Rigel or Beta Orionis a few times and failed to see the companion of this binary star. Then one night conditions being right and looking properly with averted vision, wow! , the companion star was there after all. This was with a 4-inch apochromatic refractor that I had this experience. Lots of members would no doubt have had these sorts of first time experiences as part of their journey in astronomy. Happy 50th anniversary to all at MPAS. *From Charlotte Swart.*



## ★ New Members Welcome ★

Melvin Lee  
Ian Argent  
Asad Khan and family  
Martina Quirk  
Russell Thompson  
Nick Axaris and family



### MPAS SUBSCRIPTIONS 2019

Each ticking over of the New Year also means that Society fees are due to be paid. The committee has worked hard to ensure that 2018 fees are still the same as the previous many years' prices. So to assist the society in maintaining the facilities and services we provide and share, we appreciate your prompt payment for each and every year ahead. As a reminder, the following structure of the 2019 fees is:

### SOCIETY FEES

Subscriptions can be paid in a number of ways:

- Cash payments to a committee member
- Send a cheque, made out to "Mornington Peninsula Astronomical Society", to MPAS. P O Box 596, Frankston 3199
- Make a direct electronic payment into the society working bank account.

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

Click on the link for further information - [https://drive.google.com/file/d/0ByvkxzZG19g\\_NXZ4cWxHbERTdEE/view?usp=sharing](https://drive.google.com/file/d/0ByvkxzZG19g_NXZ4cWxHbERTdEE/view?usp=sharing)

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



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

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>



CALENDAR		November / 2019					Red Days indicate School Holidays
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
					1 Public Night 8pm	2 Saturn below the Moon	
3	4 First Quarter	5 Cup Day	6	7 Moon at 405,058km	8 Scout Viewing 8pm	9	
10	11 Remembrance Day	12 Full Moon	13 ASV Meeting	14	15	16	
17	18	19	20 Society Meeting 8pm Last Quarter	21	22	23 Members Night BBQ 6pm Moon at 366,716km	
24 Venus left of Jupiter	25	26	27 New Moon	28 Jupiter above a thin Moon	29	30	

### Monthly Events


MPAS calendar [http://www.mpas.asn.au/Calendar\\_2019.pdf](http://www.mpas.asn.au/Calendar_2019.pdf)

**Public Nights** - 8pm start on the 1st @ the Briars

**Scout Viewing night** - 8pm start on the 8th @ the Briars

**Society Meeting** - 8pm to 10pm on the 20th @ the Briars

**Members Night BBQ** - 6pm on the 23rd @ the Briars

CALENDAR		December / 2019					Red Days indicate School Holidays
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
1	2	3	4 First Quarter	5 Moon at 404,446km	6 Public Night 8pm	7	
8	9	10	11 ASV Meeting Venus left of Jupiter	12 Full Moon	13	14 Members Night Xmas BBQ 6pm	
15	16 Mercury near Antares	17	18 Scorpius Deadline	19 Last Quarter Moon at 370,265km	20	21	
22	23 Mars left of the Moon	24	25 Xmas Day	26 Boxing Day New Moon Partial Solar eclipse	27 Saturn above the Moon low on the west horizon	28	
29 Venus below a thin Moon	30	31 New Years Eve	26th Partial Solar eclipse best seen from Darwin 4:04 pm to Broome 2:14pm 				

### Monthly Events

**Public Nights** - 8pm start on the 6th @ the Briars

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

**Members Night Xmas BBQ** - 6pm on the 14th @ the Briars

**Partial Solar eclipse** - 26th not visible from the Briars (misses by 1/4 degree)



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

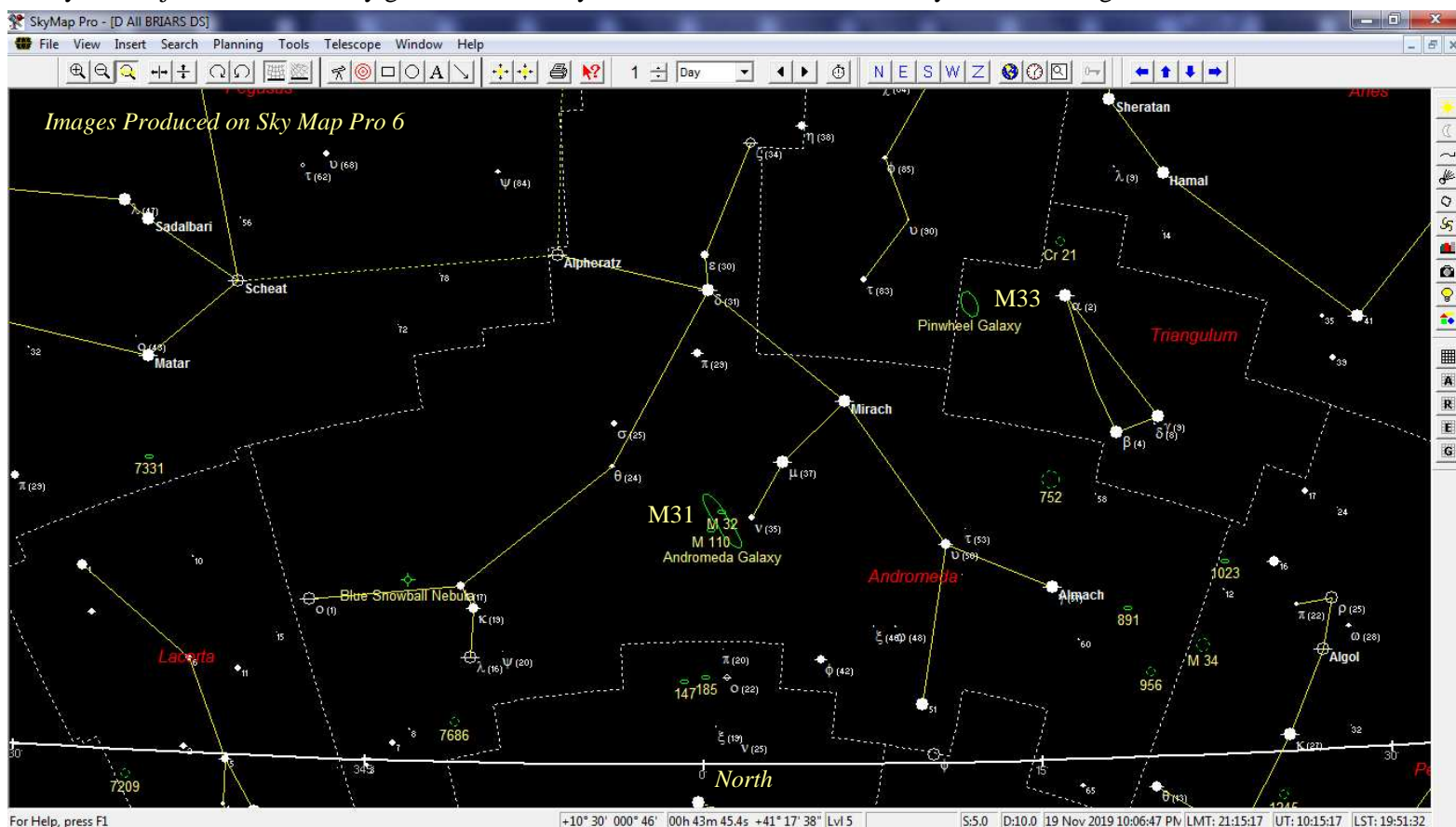


# THE BRIARS SKY

By Greg Walton



November is the time we should be looking for the Andromeda Galaxy M31. I have seen M31 from the Briars with binoculars and an 8 inch Dobsonian sitting only 10 degrees above the northern horizon. It doesn't look as impressive as the image below, you will just see it as a fussy glow. Also see if you can find the Pinwheel Galaxy M33 at 18 degrees above the horizon.



Andromeda Galaxy M31 - this image was taken with an ED80 80mm refractor with field flattener and Pentax K30 DSLR on HEQ5 Go-to mount, field of view 3 x 2 degrees. M31 is 2 million light years away and is just visible to the naked eye from a dark sky site.

By Greg Walton



M31 Yea ED80 refractor 0.85FR EQ5 Pentax K30 108x30sec iso12800 By Greg Walton 30 August 2019



# ASTRO NEWS

By Nerida Langcake



## The First All-Female Space Walk

Two NASA astronauts aboard the International Space Station (ISS) have made history by performing the first ever all-female spacewalk, on Friday, October 18<sup>th</sup>, 2019. Astronauts Christina Koch and Jessica Meir ventured outside the station to replace a power controller that had failed over the previous weekend. This was Koch's fourth spacewalk and Meir's first.

The pair in their U.S. spacesuits went to the far side of the station on the Port 6 truss structure. Once there, the spacewalkers took about five-and-a-half hours to replace the failed power regulator with a spare BCDU (a Battery Charge/Discharge Unit). The BCDU had been in operation since December 2000 and is due to return to Earth on the next SpaceX Dragon resupply ship for inspection. The device regulates the charge to batteries that collect and distribute power to the station.

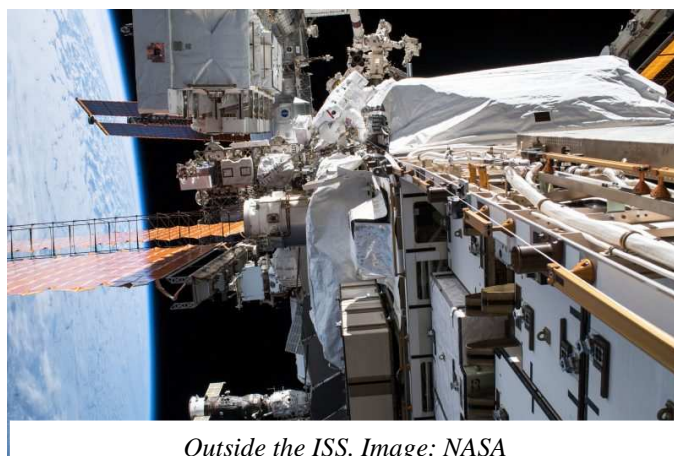
The failure of the power controller had not impacted station operations, safety of the crew, or the ongoing experiments aboard the ISS, according to NASA. The station's overall power supply, which is fed by four sets of batteries and solar arrays, remained sufficient for all operations, NASA said. However, the faulty power unit does prevent a set of batteries installed earlier this month from providing increased station power.

NASA said in a statement "The BCDU's regulate the amount of charge put into the batteries that collect energy from the station's solar arrays to power station systems during periods when the station orbits during night-time passes around Earth. Two other charge/discharge units on the affected 2B power channel did activate as planned and are providing power to station systems.

What would have been the first all-woman spacewalk was controversially postponed in March 2019 because there were not enough medium-sized space suits on the ISS to fit both women.



*NASA astronauts Jessica Meir (left) and Christina Koch are inside the Quest airlock preparing the U.S. spacesuits and tools they will use on their first spacewalk together. Image: NASA*

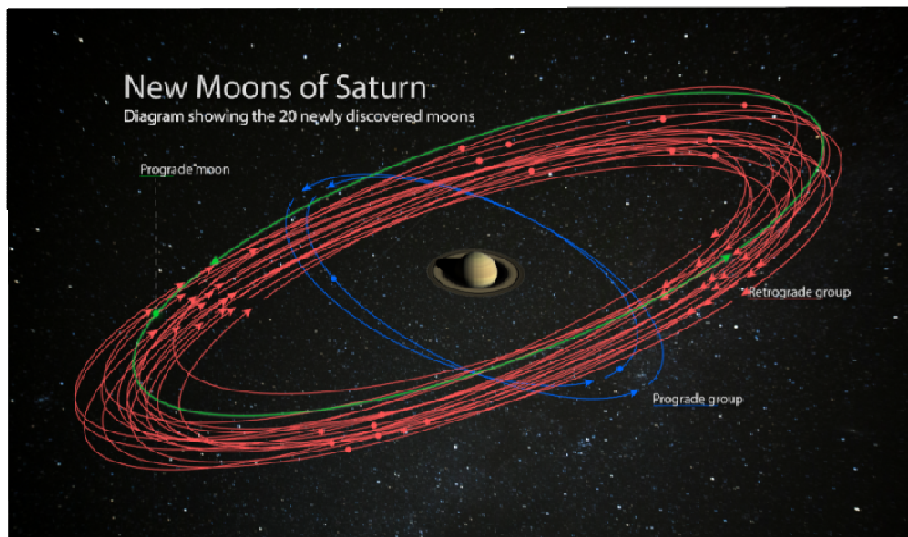


*Outside the ISS. Image: NASA*

## Saturn is our solar system's new Moon king!

On Monday, October 7<sup>th</sup>, 2019, the International Astronomical Union's Minor Planet Center announced the discovery of 20 new moons orbiting Saturn, bringing the planet's total number of moons to 82. That surpasses Jupiter, which has 79, and makes Saturn the planet with the most known moons in our solar system. Scientists discovered the new moons using the Subaru telescope atop Mauna Kea in Hawaii.

According to the researchers, each of the newly discovered moons is about 3 miles (5 km) in diameter. Seventeen of them orbit Saturn backwards, or in a retrograde direction, meaning their movement is opposite to the planet's rotation around its axis. One of the newly discovered retrograde moons is the farthest known moon around Saturn.



*An artist's concept of the 20 newly discovered moons orbiting Saturn. Image via the Carnegie Institution for Science.*

The other three moons orbit in the same direction as Saturn rotates. Two of these three moons are closer to the planet and take about two years to travel once around Saturn. The third, and the more-distant retrograde moons, each take more than three years to complete an orbit.

The outer moons of Saturn appear to be grouped into three different clusters, according to how they orbit the planet. The newly discovered retrograde moons appear to belong to a group of moons, named after Norse mythology, thought to be fragments of a much bigger parent moon that was smashed to pieces in the solar system's violent past.

The Carnegie Institution for Sciences is hosting a contest to come up with names for the newly discovered moons. The moons must be named after giants from Norse, Gallic, or Inuit mythology.



## VI3MOON

MPAS amateur radio 'special call sign'.

MPAS approaching the 50<sup>th</sup> year of the moon landing (and society founding) applied to the ACMA to use a special amateur radio callsign for the duration of the moon landing mission (T+ 50 years!). This was VI3MOON and we opted for a 9 day period of July 16<sup>th</sup> to 24<sup>th</sup>. The station was assigned an amateur advanced licence class directly to the society.

The station was operated from the Briars and on a rotational basis with other licenced radio operators and MPAS members from their homes. Operators were Jamie Pole - VK3JGP, Steven Pemberton - VK3PBJ, Paul Albers - VK3DA and myself VK3JL.

After the 9 Day operation was completed (in poor band conditions) we totalled 542 contacts in 17 countries. We did reach 22 US States with the most contacts being in Washington state.

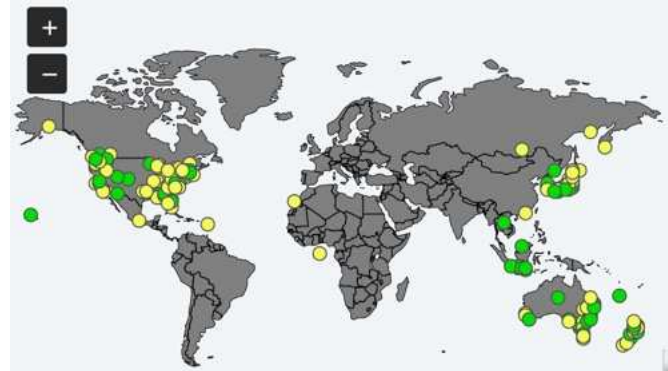
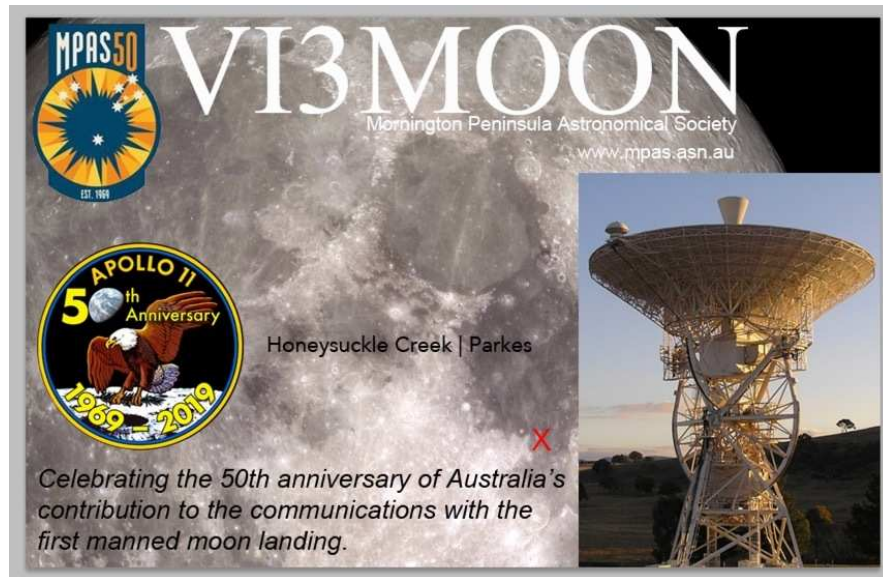
Due to these poor band conditions (some people call it skip) we resorted to using new digital modes for overseas (DX) contacts. Digital modes have the advantage of a lot better signal-to-noise ratio readability than traditional voice or Morse code, meaning contacts can be made where voice would not work. In the end 90% of our contacts were digital. Our station logbook is stored on-line here: [www.qrz.com/lookup/vi3moon](http://www.qrz.com/lookup/vi3moon)

Here is an excerpt of our log (last 22 contacts).

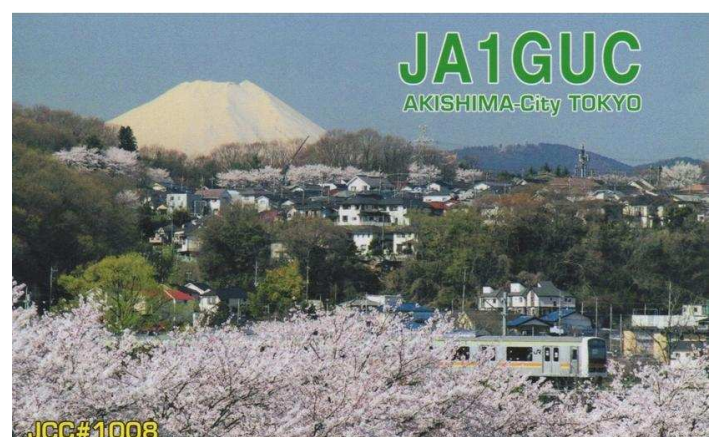
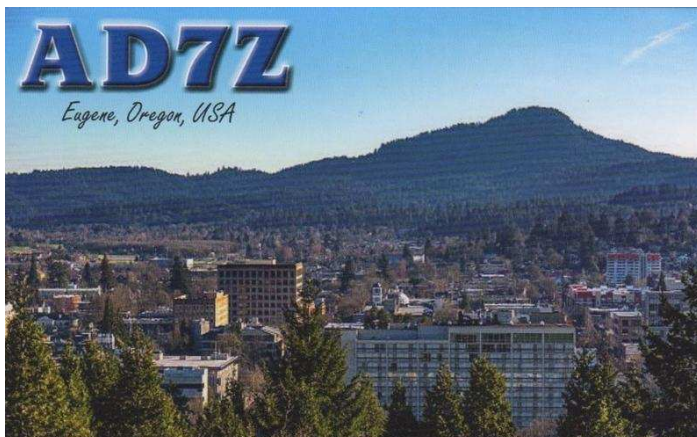
After a contact is made radio operators (or Hams) have a tradition of exchanging card with a signal report and message. Once received the other party returns their own card acknowledging this and adding our return signal report from their log. This signal report acts a bit like a 'secret code' to verifies that the contact was made. We have been receiving cards for the last 2 months and expect to do so for the next year or so. Our VI3MOON card is shown at the top.

Here are some of the cards we have received so far (some with messages or memories of the event). I will add more cards to future Scorpius editions when they arrive.

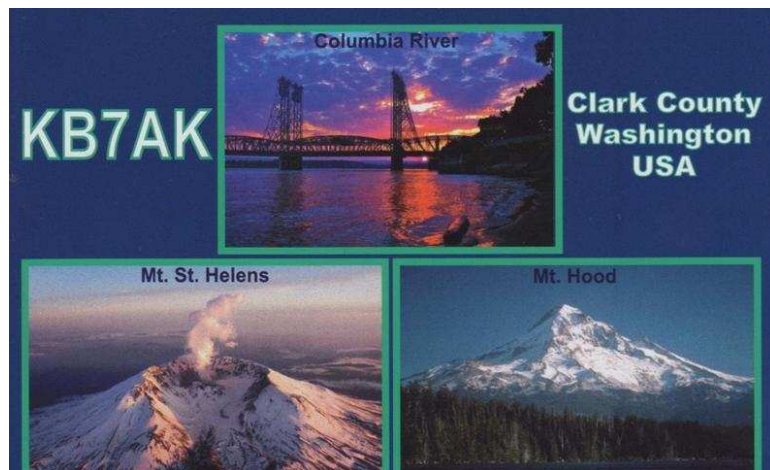
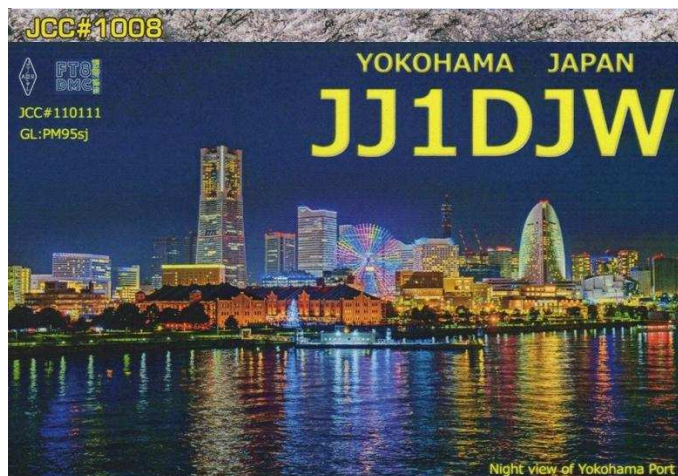
Regards and 73,  
David Rolfe VK3JL



1	2019-07-24	11:26	W4DRK	40m	7.076	FT8	EL95		United States	DANIEL R KUTNY
2	2019-07-24	11:16	VK2QV	40m	7.076	FT8	QF56		Australia	Rasika (Ras) Liyanage
3	2019-07-24	11:14	VK3AFW	40m	7.076	FT8	QF22		Australia	Ron COOK
4	2019-07-24	11:10	W8FIB	40m	7.076	FT8	EN61		United States	Harold T Ruggles
5	2019-07-24	11:08	N4EFS	40m	7.076	FT8	EM94		United States	REBECCA L MILLIGAN
6	2019-07-24	11:05	HS0ZIV	40m	7.076	FT8	OK17		Thailand	Helmut Heindl
7	2019-07-24	11:00	JL1GYZ	40m	7.076	FT8	PM96		Japan	Kazushi Shimizu
8	2019-07-24	10:56	VK3GK	40m	7.075	FT8	QF21pw		Australia	LEE MOYLE
9	2019-07-24	10:54	VK1MIC	40m	7.075	FT8	QF44		Australia	Wade Smith
10	2019-07-24	10:53	KD2RHT	40m	7.075	FT8	FN13VE22		United States	Cliff Reinhard
11	2019-07-24	10:48	K1OF	40m	7.075	FT8	FN31hd		United States	RICHARD L ROZNOY
12	2019-07-24	10:41	KD2A	40m	7.075	FT8	FN13		United States	RICHARD V READ
13	2019-07-24	10:31	VA3DX	40m	7.075	FT8	FN03		Canada	Glenn R Wyant
14	2019-07-24	10:29	WA4CHJ	40m	7.075	FT8	FM16nm		United States	John E Beale, III
15	2019-07-24	10:27	KB4QZH	40m	7.075	FT8	EM78TX26		United States	FRED W MOEVES, JR
16	2019-07-24	10:25	VA3FF	40m	7.075	FT8	FN03		Canada	Igor Mordick
17	2019-07-24	10:24	W1OP	40m	7.075	FT8	FN41		United States	PROVIDENCE RADIO ASSOCIATION INC
18	2019-07-24	10:18	WA4CHJ	40m	7.075	FT8	FM16nm		United States	John E Beale, III
19	2019-07-24	10:11	N2PPI	40m	7.075	FT8	FN30		United States	MICHAEL A CROCE
20	2019-07-24	10:00	N2VXZ	40m	7.074	FT8	EM66		United States	WILLIAM A CARTER
21	2019-07-24	09:59	W1AWB	40m	7.074	FT8	FN51		United States	Andrew W Bullington
22	2019-07-24	09:57	JL1SAM	40m	7.074	FT8	PM95vv		Japan	Toshiyuki Tamura







**N2VXZ**

Bill Carter  
3464 Eastridge Rd.  
Woodlawn, TN 37191

Montgomery County  
Grid: EM66fl

**SK CC**  
Straight Key Century Club  
#19257

QSL?

80 WATTS

Confirming QSO with	Date Day/Mo/Yr	UTC	MHz	RST	Mode	QSL
VI3MOON	24 Jul 19	10:00 Z	7.074	S -19 R -11	FT8	Pse X Tnx

QSLTOONSO cheapqsls.com

DAVID

THANKS FOR THE FT8 QSO ON 40M,  
ALL 9574 MILES OF IT. CONDITIONS  
WERE MARGINAL, GLAD I GOT THROUGH.  
USUALLY THE D LAYER ABSORPTION  
EATS THE SIGNALS GOING THAT WAY.  
ONE SMALL STEP FOR HAM,  
73 OM N2VXZ

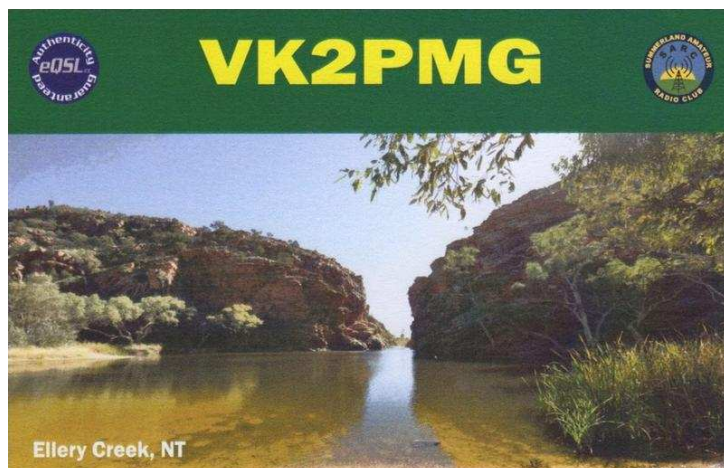
Confirming QSO with VI3MOON

Date 16/7/2019 UTC 09:53

Mode FT8 RST +7 Watts 80

Frequency 7.075 Rig ICOM Antenna Fritzel FT3

Remarks Great QSO in memory of one of humanity's great achievements.



**VK3BDA**

Astronomical Society of Victoria  
Bendigo Section

ASV Net: 3.541 MHz SSB, 10 pm Fridays AEST.  
Simulcast on 1865 KHz AM.  
[www.asv.org.au/asvradio](http://www.asv.org.au/asvradio)

GPO Box 1059  
Melbourne, Victoria  
Australia, 3001  
[VK3BDA@bdas.net](mailto:VK3BDA@bdas.net)  
[www.bdas.net](http://www.bdas.net)

Pse QSL Tnx

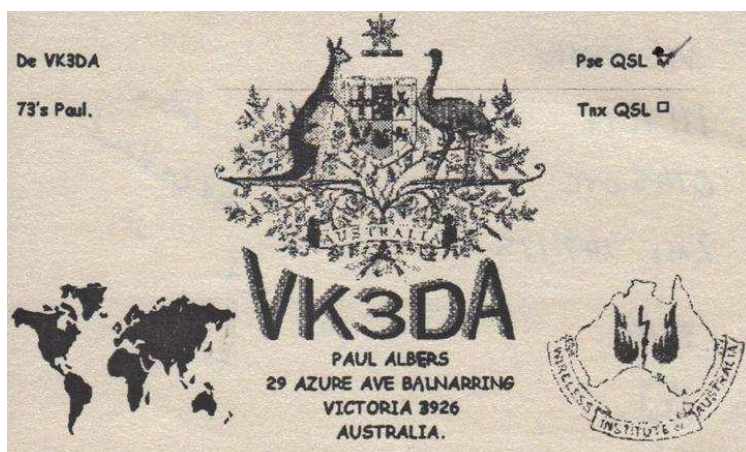
Confirming QSO with	Date	UTC	Frequency	RST	Mode
VI3MOON	17/7/19	8:39	3.610	59	SSB



Hi David,

Thanks very much for the  
contact with VI3MOON on  
this momentous occasion!

73's, Graeme knight,  
for ASV Bendigo section  
members.



# VK3CMZ

Bendigo Amateur Radio and Electronics Club

Nets (AEST):  
147.150 MHz, VK3RCV repeater, Tuesdays, 8 pm.  
3.655 MHz SSB, Thursdays, 8 pm.  
52.250 MHz SSB, Thursdays, 9 pm.

PO Box 2058  
Delivery Centre  
BENDIGO, 3554  
Victoria, Australia  
VK3CMZ@barec.net.au

Pse QSL Tnx

Confirming QSO with	Date	UTC	Frequency	RST	Mode
VI3MOON	17/7/19	8:40	3.610	59	SSB

# VK3EKH

Astronomical Society of Victoria

ASV Net: 3.541 MHz SSB, 10 pm Fridays AEST.  
Simulcast on 1865 KHz AM.  
[www.asv.org.au/asvradio](http://www.asv.org.au/asvradio)

GPO Box 1059  
Melbourne, Victoria  
Australia, 3001  
VK3EKH@bigpond.com

Pse QSL Tnx

Confirming QSO with	Date	UTC	Frequency	RST	Mode
VI3MOON	17/7/19	8:41	3.610	59	SSB

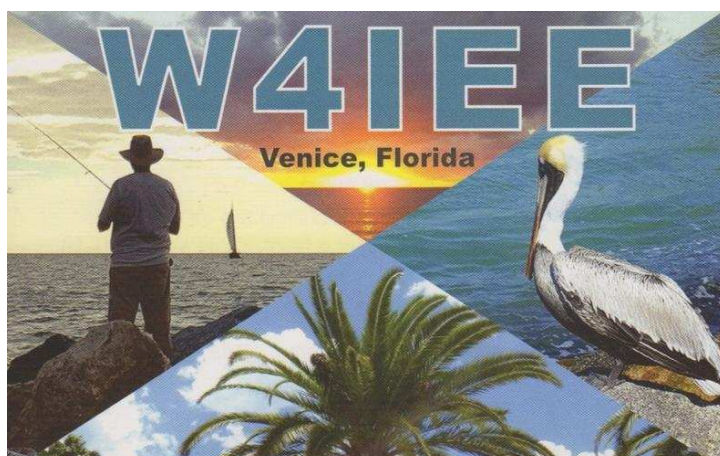
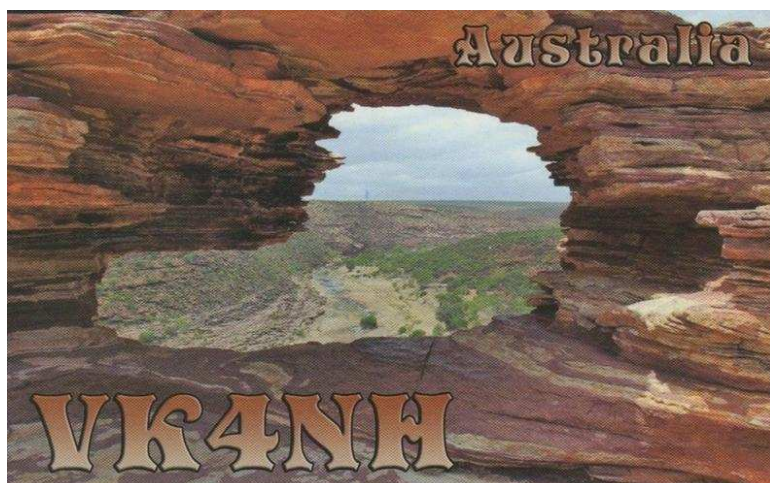
Hi David,

Thanks very much for the  
contact with VI3MOON on  
this momentous occasion!

73's, Graeme knight,  
for ASV members.



Confirming QSO with	Date	UTC	Frequency	RST	Mode
VI3MOON	17/7/19	8:41	3.610	59	SSB





# MY 10 BEST MOMENTS IN ASTRONOMY By Greg Walton

At the public viewing nights I'm often asked, what is the most interest thing I have ever seen in the sky, like an alien spacecraft or maybe a black hole?

I usually say there have been many interesting and memorable moments, but I have never seen an alien spacecraft or a black hole. Then I'd whip out my phone, show then some of my Astro photos. But this question did get me thinking, what is my most memorable moment in astronomy I've had in the pass twenty years. So here's a list of my best.

**1st Best.** I decided watching the 2011 solar eclipse in Queensland would have to be my number one. Just the incredible feeling you get as everything darkens and you get to that moment when the sun's last rays disappear and stars appear across the sky. Being on a hill we saw the Moon's shadow race across the landscape before us. A ripple of very thin clouds gave the moment an eerie feeling with everybody being as quiet as a mouse, trying to soak up this extraordinary event and hoping it can last a bit longer. But within just a few minutes the sun's rays again burst out from behind the Moon. Then there was a loud cheer as if we had achieved something great or maybe we were just happy to see the sun again. Quickly a crescent grew and we could not look at the sun any more.



**2nd Best.** Would be my first look through my 18 inch Dobsonian which I had just finished building in 1999. The stars looked beautiful and there were so many, just in one small patch there were more than I could count. I swung the telescope around and aimed it at the brightest star in the sky, but it was not a star at all, it looked like the crescent moon, it was Venus. I spent most of that night just looking though the eyepiece at all the different star patterns and fuzzy things which I did not know what there were, as I did not own a star chart. It was one of those moments where the closer you look at something the many question it unearthed.





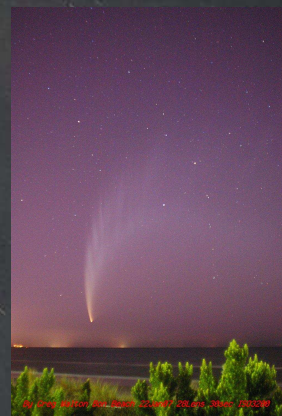


### 3rd Best. Watching comet McNaught night after night as it move across the starry back ground.

This was a once in a life time comet, I would be very lucky if I were to see another as good.

Its tail was bigger then my hand at arms length in the sky. I felt as if we were being visited by something great and powerful, just cruising past on its way to somewhere more important.

Background images taken with 135mm lens no tracking.



### 4th. My fourth best would be seeing an aurora from the Briars in 2001.

Clear skies with about 6 members viewing through telescopes just generally.

As it got darker someone said, "I think there is an aurora happening".

Luckily I always kept a roll of 800iso film in my camera bag just encase.

I quickly set up my camera and took a shot every 5 minutes till the film ran out.

We all forgot about the telescopes and sat back and watched the show.

We didn't see much colour though the whole sky had a brown glow,

as if there was a massive bushfire burning on the peninsula.

Large pillars of light moved back and forth across the southern sky,

reaching to about 45 degrees above the horizon.

I was very happy with my photos when they came back from developing.

*Aurora at the Briars Mt Matha 31Mar2001 11:30pm*

*Pentax SLR ISO800 film 50 lens 15sec By Greg Walton*

### 5th. Seeing Venus pass in front of the sun.

Which only happens twice every 112 years.



*Venus Transit in powerlines taken with Pentax SLR 500mm lens with 2 x convertor  
JMI etx solar filter ISO 400 film 1/125sec By Greg Walton Bainsdale Vic. 8Jun2004*

*( No this is not Jupiter with a moon shadow )*

### 6th. Watching a sunset eclipse over Port Phillip Bay.

The Moon took a bite out of the sun producing a beautiful shark fin eclipse.



*Solar eclipses 4 Dec 2002 8:00pm Pentax SLR 300mm Lens ISO400 film F16 1/125sec  
By Greg Walton Bon Beach scan from print 300dpi*



**7th Best.** Watching stars moving behind craters on the Moon and then reappearing again during a lunar eclipse through my large telescope at high magnification. I have seen this several time now and each time I've been in awe of this chance encounter. Stars pass in and out of the craters on the Moon all the time but the Moon is usually way too bright to see these stars. Even with a thin crescent Moon it's very hard to view as the moon is too low above the horizon, so lunar eclipse is best.

.....Star

Briars Lunar Eclipse

12:11am 1st Feb 2018

Moon ED80 FF EQ5H Pentax Kx 5sec iso400 by Greg Walton Cropped 25%

**8th Best.** A small group of MPAS members went to the Briars early one morning hoping to find comet Lovejoy in the eastern sky just before sunrise. Comet Lovejoy had just swung past the sun and we were hoping it had survived this close encounter. We sat in the bino-chairs looking east hoping to spot comet Lovejoy, maybe if we were lucky it had melted enough to produce a tail. But we didn't see anything. Then someone said, "Looks like there is a powerful searchlight coming up from the naval base near Crib Point. No, that's not a searchlight, that's the comet!" I grabbed my camera and tripod and started shooting. I was very happy with my images. Almost being first to image comet Lovejoy on Earth, only beaten by someone on the international space station.

Comet Lovejoy 22dec2011 by Greg Walton

Pentax Kx 20mm lens 28x10sec iso3200  
Comet Love Joy Briars By Greg Walton 24dec11

Briars MPAS







## MPAS Gallery

Couple of images taken near Yea with my trusty 12 inch Newtonian on EQ6 mount. *Greg Walton*



M27 Yea 12 inch Newtonian F5 CC1 EQ6 Pentax K30 25x30sec iso12800 By Greg Walton 27August2019



NGC2070 Yea 12 inch Newtonian F5 CC1 EQ6 Pentax K30 28x30sec iso12800 By Greg Walton 27August2019

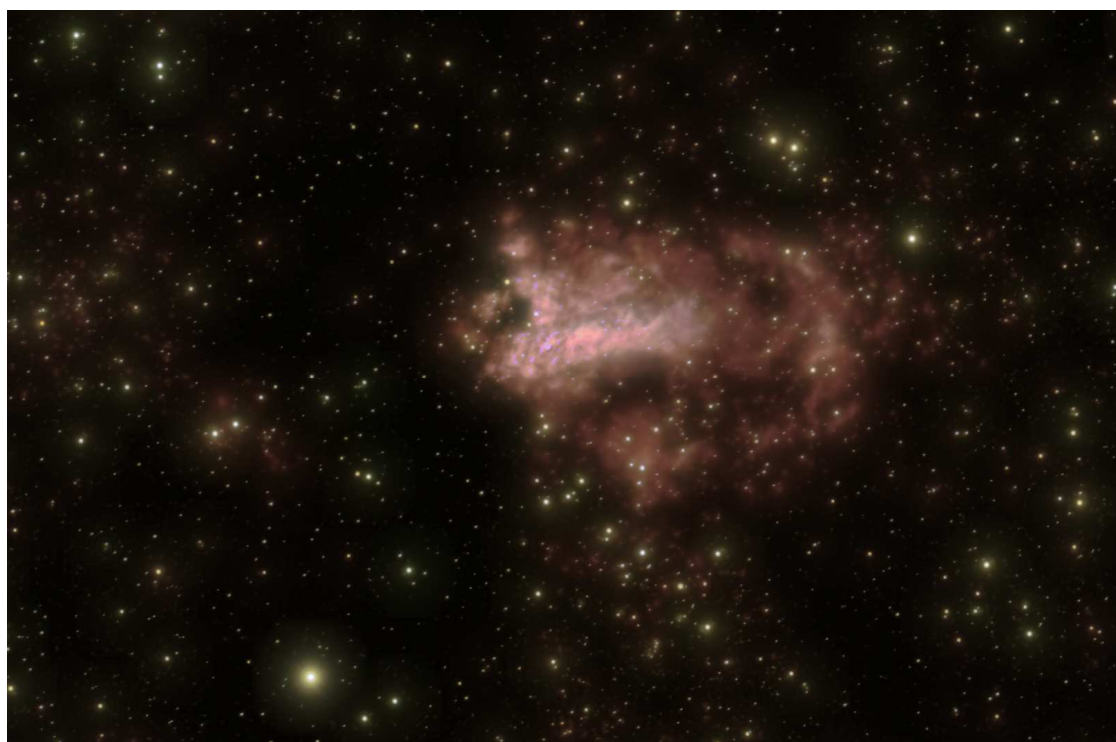
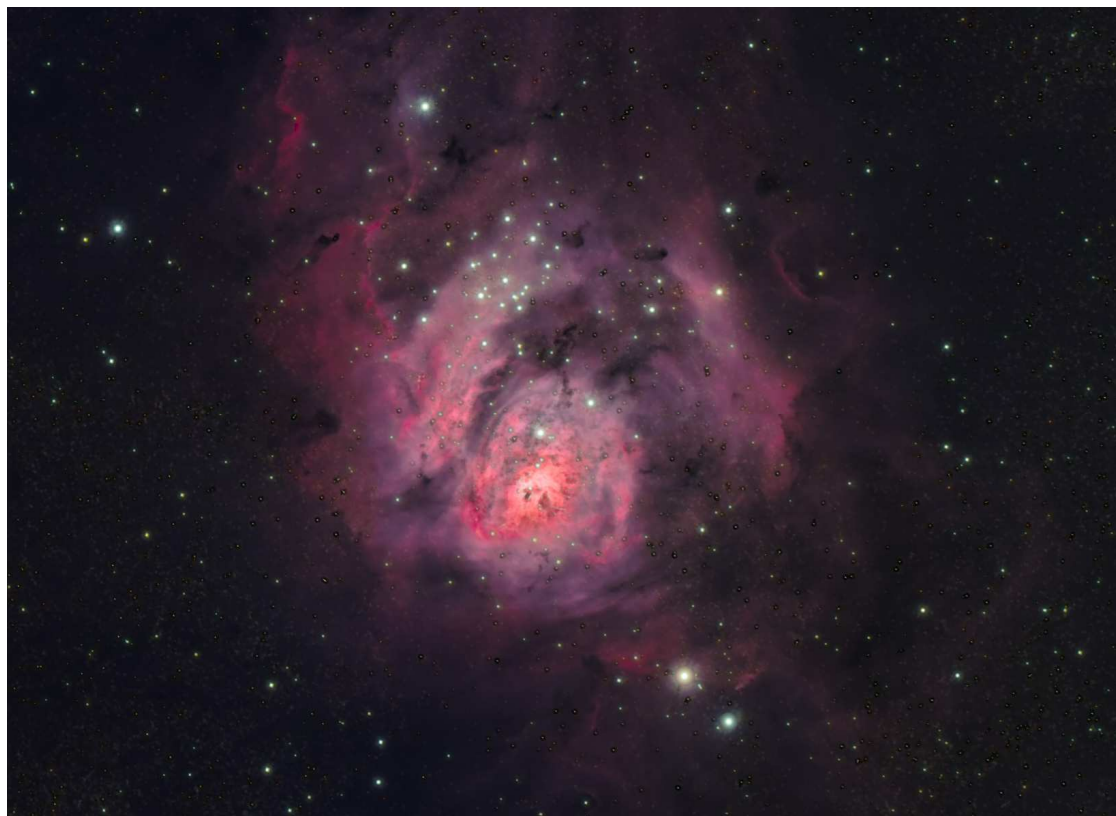


## MPAS Gallery

Clear skies and a day off work on a Friday rarely occur for me! I was therefore motivated to attempt some astrophotography from the Briars for my first time as I usually travel out further into the countryside. After receiving some very well communicated information from Greg, I arrived at the site, before anyone else was there and managed to set up and switch the power on, just in time for sunset! The Moon was set to rise after 1am, so I had a deadline to get accurately aligned, and up and photographing. I used my f/6 Orion apo. refractor and my newish cooled ZWO camera ASI071, which I'm still learning to use. Once drift aligned I took 40 x 2 minute exposures of M8, the Lagoon Nebula, and approx.

20 x 3 minutes exposures of M17, The Swan. I think my images turned out ok considering it was windy all night, and I collected a lot of sky glow which is very rare (green stars, Yuk!). Lucky I do the processing with Deep Sky Stacker and a program called Star tools which works like magic! I've attached my two images, which I hope you like. I'm a visual astronomer mainly and the best part was hanging out with Greg in the dome (in between checking on the gear outside) while we explored deep sky objects east of Sagittarius with the C11. We visited many favourite deep sky objects of mine!

Domenic



Same image on the cover, but processed with different software.

By Tony Nightingale



# OFFICE BEARERS OF THE MORNINGTON PENINSULA ASTRONOMICAL SOCIETY

**President:** Peter Skilton  
**Vice President:** Mark Stephens  
**Committee:** Anders Hamilton, Trevor Hand,  
 Simon Hamm, Dave Rolfe  
 & Peter Lowe

**Secretary:** Nerida Langcake  
**Treasurer:** Jamie Pole  
**Web master:** Rohan Baumann  
**Scorpius editor:** Greg Walton  
**Librarian:** Fred Crump

## SOCIETY MEETINGS

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

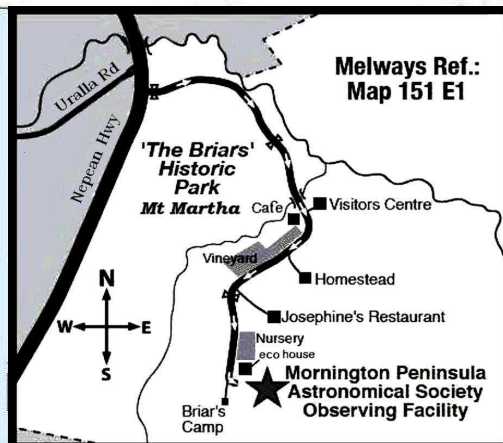
**Society meetings:** Don Leggett Astronomy Centre  
 8pm on the third Wednesday of the month  
 (except December)  
 (See map at right & Below)



**For addition details:**  
**Internet:** [www.mpas.asn.au](http://www.mpas.asn.au)  
**email:** [welcome@mpas.asn.au](mailto:welcome@mpas.asn.au)

**Phone:** 0419 253 252

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



## LIBRARY

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

## E-SCORPIUS NEWSGROUP

M.P.A.S. main line of communication is the online newsgroup called E-Scorpius. Here you will be kept up to date with the latest M.P.A.S. news & events information as well as being able to join in discussions & ask questions with other members. To join, email [welcome@mpas.asn.au](mailto:welcome@mpas.asn.au) say that you want to join E-Scorpius & you will be added to the E-Scorpius list.



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

## VIEWING NIGHTS - MEMBERS ONLY

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

**For additional details:**  
**Internet:** [www.mpas.asn.au](http://www.mpas.asn.au)  
**email:** [welcome@mpas.asn.au](mailto:welcome@mpas.asn.au)

**Phone:** 0419 253 252

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

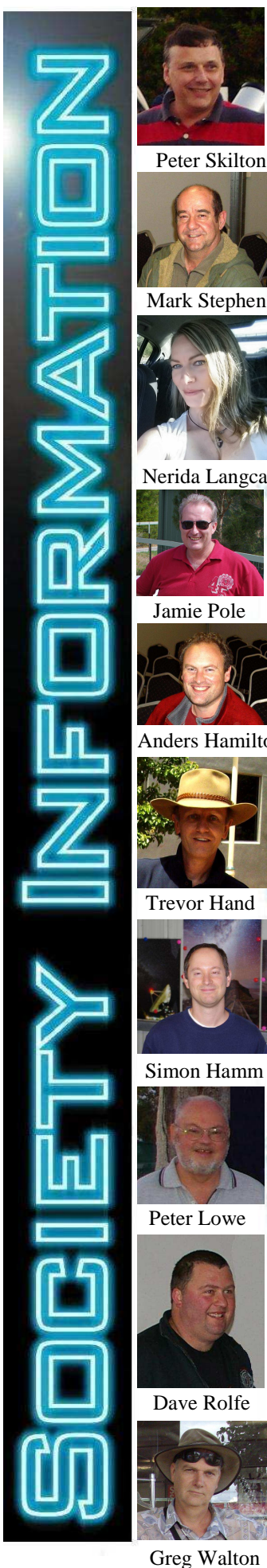


Members please write a story about your astronomy experiences and add some pictures. Send them to the editor: Greg Walton [gwmpas@gmail.com](mailto:gwmpas@gmail.com)

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

## SCORPIUS The journal of the Mornington Peninsula Astronomical Society

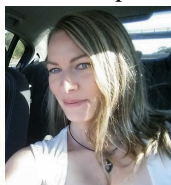
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Peter Skilton



Mark Stephens



Nerida Langcake



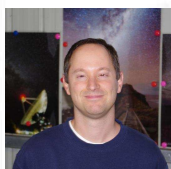
Jamie Pole



Anders Hamilton



Trevor Hand



Simon Hamm



Peter Lowe



Dave Rolfe



Greg Walton