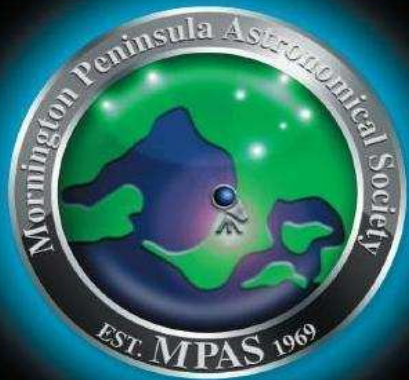


Cover image - Aurora at the Briars 11th May 2024

By Greg Walton



SCORPIUS

THE JOURNAL OF THE
MORNINGTON PENINSULA ASTRONOMICAL SOCIETY INC.

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

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



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

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

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

Mornington Peninsula Astronomical Society



SOCIETY NEWS



School Viewing Night May 1st - Moriac Primary School, near Geelong, was on camp at Cowes last night, with 75 year-3/4 pupils, plus teachers as well. They'd arrived on 2 coaches that had travelled clockwise around Port Phillip earlier in the day. MPAS visited them on day 1 of the camp for some stargazing, after they'd just returned from the Penguin Parade and had their dinner. While it's uncommon for us to do nights at Phillip Island, we have done so several times in the past with much appreciation from those we've visited.

Indoors, the talk was given by Peter Skilton, with many very informed questions arising from the kids. The questions seemed to be from those who perhaps were less inhibited to ask while others may have tired themselves out during the day. The thin cloud cover at the start of the talk had all dissipated by the end of it when the classes went outside for the telescopes. The skies were nicely clear, though nearby strong floodlighting to the southeast did interfere with the contrast somewhat, though Omega Centauri and the Jewel Box were easily visible by eye. There was neither Moon nor planets visible that evening, due to their orbital positions at the moment.

Operating the telescopes under fairly mild evening conditions were Phil Peters, Jamie Pole, Sylvie Grandit (whose partner, Robert, kindly drove her and her scope there and back), Pia Pedersen and Greg Walton who were very sensibly making a mini-holiday of it by having stayed on the island for a few days already. An enjoyable evening was had by all. Regards, *Peter Skilton*

Public Viewing Night May 3rd - We had another full house with 90 booked in. The public saw many meteors racing across the sky and lots of satellites seen crossing in the eyepiece. We looked at the usual suspects M7 Hyades, M6 Butterfly, Jewel Box, Pin cushion, Omega Centauri, Alpha Centauri, and tail of the Scorpion -but no planets. The skies started off clear and as the night progressed high level clouds moved in. Finished at 10:40pm

We had a good turnout of members including Jamie Pole, Sylvie Grandit, John Goodall, Chris Kostokanellis, Neil Thompson, Katherine McCoy, Rod Brackenridge, Nerida Langcake, Simon Hamm, Dave Rolfe, Fred Crump, Liam Laube, Alan Predjak, Jason Heath, Leigh Hornsby, Ben Claringbold and Greg Walton.

Before the public arrived I imaged comet Pons-Brooks from 6pm to 6:30pm with the 127mm refractor in the observatory. *By Greg Walton*



Comet 12P/Pons-Brooks imaged with 127mm Refractor F7EQ8 Pentax K30 8sec iso6400 5may2024 by G Walton

Sporadic Members-Viewing Night May 11th - A very eventful Saturday night at the Briars. Arriving before 6pm under 60 percent cloud cover. We opened the observatory and aligned the telescopes, and then loaded the fresh coordinates for comet Pons-Brooks. The comet is slowly moving towards Orion. But as the comet climbs higher in the west each night, Orion gets 1 degree lower. So comet Pons-Brooks stays at the same height above the horizon each evening.

The aurora Kp index was showing Kp8, so I set up 2 time-lapse cameras pointing south. The MPAS Briars site isn't the perfect location for imaging aurora, as the trees block out a large part of the southern sky. So I placed one of the cameras in the paddock to the east.

Then I returned to the observatory to view comet Pons-Brooks. By then about 10 members had arrived. I selected the comet on the hand controller and the telescopes moved to the location of the comet. Looking in the eyepiece we could see comet Pons-Brooks and as the sky darkened the comet started to show its tail. We used the 350mm Meade and 80mm and 127mm refractors till the comet went below the trees or observatory wall. We were all happy to catch comet Pons-Brooks even though the clouds occasionally got in the way.

We all watched the sky and clouds turned a crimson pink. We started to wonder if it's an aurora or could it be the Harry Potter show. I checked my cameras and it definitely looked like an aurora. By then other members had set up camera, while others were getting a few good shots with their mobile phones. Early on the aurora was just a general pink glow and died down over time. So we went back to the telescopes and fished out a selection of deep sky objects. I continued to check the camera while many members decided to drive to the ocean beach, hoping to get some better images of the aurora. It wasn't long before more members and some public started to arrive. I was also getting many phone calls from members and friends, all wanting to know if the aurora was happening.

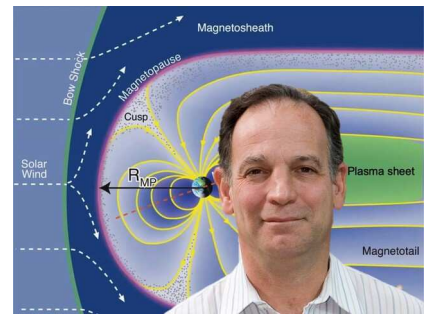
Then the aurora took off, with bright beams shining up very high and moving across the sky and jumping from place to place. We forgot about the telescopes and headed outside for a better view. And then a row of bright Starlink satellites came up over the western horizon. Everyone was getting very excited by now. The satellites disappeared when they got up to 45 degrees. The aurora continued to come and go, each time the aurora returned it was brighter than before. More members came and went. All very grateful to have seen and imaged the aurora. We closed the observatory at midnight and headed home, knowing the aurora will probably return, but tiredness was winning out. I saw a big crowd with cameras at Oliver's Hill. I thought, Yes everyone is out tonight.

Regards Greg Walton



On Sunday I put together a little time-lapse of the aurora. Briars Aurora - https://youtu.be/d4-IMbspokg?si=m75JM89GK2e_d982

Society meeting May 15th - The meeting features Dr. Stan Solomon, Senior Atmospheric Scientist and Section Head of Geospace Frontiers, High Altitude Observatory, National Centre for Atmospheric Research in the USA, speaking about "Space Storms in the Upper Atmosphere and Ionosphere". I also do a quick demo of auroral fluorescence using Uranium glass and a COVID-19 test-kit torch. Also covered was AstroMoPho with a lot of local aurora images and videos and, of course, Sky for the Month. Also shown was why the lunar missions always go in a figure-8 shape, presented by Canadian spaceflight historian, Amy Shira Teitel, who visited us at the Briars in 2016 as part of her international tour to Australia. We close with an explanation of why there is life on Earth, courtesy of the NFP BBVAOpenMind organisation, and set to the stirring "True Moments" by the composers known as Infracation and OddVision, from the No Copyright Music channel. *Regards, Peter Skilton*



Society meeting May 20th: <https://www.youtube.com/channel/UCm6XOKIcIflt4y0XRBXpXuw>
MPAS site once it's refreshed for this month: <https://www.mpas.asn.au/meeting-recordings/>

Members Night BBQ and working bee May 18th - The members monthly working bee and BBQ turned out really well on Saturday, being a nice, although chilly day, in an otherwise rainy week. About 15 members attended all up.



All the lawns were mowed as usual, the edges were done, a few tree branches were trimmed, and we even had time to weed the garden. Inside and the observatory also got a once over to keep everything clean and tidy, but it was a pretty casual affair as not much needed doing.

As the sun was setting, we packed up outside to join the others, who were cooking the BBQ and preparing the salads for dinner. We had quite a nice variety of food to choose from, including some lovely desserts that were brought by our members. It was nice to be inside in the warmth, with an extended video of the latest Astro Mo pho playing on the big screen, and plenty of good company.

Being a bit of a cloudy night, some but not a lot of observing was done, with Chris trying out a few things, and Alex brought along his new 8 inch Dob. There was a nice view of the Moon and other objects in-between the clouds. A big thank-you to everyone who attended, and hopefully we see you all next time! *Warm regards, Phil Peters*

Scout Viewing Night May 24th - Cancelled due to no bookings.

Briars staff viewing night May 31st - May 31st saw 27 Shire staff and families from the Briars for a stargazing night at the Briars, with the Harry Potter exhibit simultaneously pouring its light skyward over in the west.

Guido Tack gave a tailored talk indoors for the audience before everyone moved outside for some telescope viewing. While the skies were about 90% clouded on average, most were able to see objects on show, including even the Tarantula Nebula that Guido had talked to them about earlier in the evening by good luck.

Members present and helping on the evening were Phil Peters, Sylvie Grandit, Peter Skilton, Maria Remova, Finn Munnelly, Anders Hamilton, David Rolfe, Ben Claringbold, Fred Crump, Jamie Pole, Greg Walton & Pia Pedersen, Chris Kostokanellis, Alex Richardson, John Goodall and Stewart Gangell.

Among the visiting families were a couple of Lego fanatics who'd proudly made the Saturn V some time ago. They were really pleased when I informed them about the Artemis SLS rocket just released, the Tellurian Earth-Moon model and Perseverance Mars rover as well. And I didn't even mention about the lunar rover coming later in the year. Who knows, they may even decide to join up.

One visitor at the telescopes on the upper slab asked to be shown "the firmament" in the instrument. Impressively, Guido then waved his arms open and explained that it meant the expanse of the heavens and that'd be too wide a field of view for the instrument, so just look up. If only Phil Holt had his shiny truck hubcap as used for aurora photography there, we could have put it on the ground and used that instrument.

I haven't heard the term used since probably my school days from old books, so you never know what you might learn or re-learn at these nights.

Regards, Peter Skilton



Public Viewing Night June 7th - With clouds mostly blanketing the suburbs north of Frankston, the public night for June went ahead last night under clear skies all evening at the Briars for 84 visitors. This circumstance is common at the Briars, and that is why we always tell people to turn up regardless of what the sky conditions might be in the suburb where they live.

With no Moon on display, the biggest intrusion was the Harry Potter bright lights over the hill. And for a couple of early-arriving public night attendees, unfortunately the Warner Brothers' security guards on duty directed them up the hill to that event, before they had to backtrack to come and locate us. Hopefully that sort of forced detour won't happen again; we're not aware of it having occurred previously at our other events.

So the evening began with telescopes outdoors as a precaution just in case the cloud cover to the north migrated towards us later in the evening. It didn't, with the skies remaining clear at 0% cloud cover all evening for the Briars. While there were no planets or Moon on display, this meant the deep sky objects received a good workout at the telescopes.

After half an hour, the attendees moved indoors to hear Trevor Hand give a new eclipse talk following his arrival back from North America.

Being clear and windless in winter, it's no great surprise that it became a chilly night, with dew forming on exposed telescope tubes and on the cars as well. Nevertheless, I overheard universal praise from all those who passed me on the way out, including a couple who'd driven from North of Melbourne who said it was such a wonderful and unique experience they wished they'd known about a long time ago, and would be telling their friends.

Members present, rugged up, and helping run the evening were Sylvie Grandit, Simon Hamm, Katherine McCoy, Phil Peters, Fred Crump, John Goodall, Dave Rolfe, Mike Smith, Jamie Pole, Peter Skilton, Ingrid Pinkerton, Greg Walton, Guido Tack, Ben Claringbold and Ross Berner. A reminder to members attending to sign the logbook at the reception area, otherwise we might not recognise you were there. I'd venture to say that the evening saw the most beanies worn that I recall in a long time. *Regards, Peter Skilton*

Cosmology meeting June 15th 1:45pm - While I cannot attend it due to being at work at the time, I hear there was a good turnout of members at the Cosmology discussion group gathering at the Briars last Saturday, with about 2 dozen there. Being a daytime and weekend event, pleasingly it means the range of members present can be quite different to those who attend other MPAS meetings that are necessarily held at different days and times.

For newer members to MPAS, this is a free, specialty interest group who share specific information and discuss about fundamental aspects of the Universe. It requires no previous knowledge and is suitable for all ages. They have a separate email group to this one. So if you are interested in wrapping your mind around some of their fascinating topics, and aren't yet in the email group, just send a blank email from the address you wish to use to "cosmology+subscribe@E-Scorpius.groups.io" so as to add your email address.

As a bit of a flavour, below is a recent posting to that group. *Regards, Peter Skilton*

Society meeting June 19th - Wednesday's MPAS meeting at the Briars, 8pm, will have Guido Tack with Sky for the Month. Chris Kostokanellis' AstroMoPho segment was deferred until next month.

The monthly topic were then be given by long time member and committee member, Trevor Hand, about his recent big adventure overseas at the Solar Eclipse; A Mexican Encounter. We'll also look at from where exactly did the dinosaur-killing asteroid originate, and take a look at the ripples from the mega tsunami generated.

Closure we looked at the latest supercomputer simulation of flying into a black hole's event horizon and down to the singularity. Spoiler alert – it's a one-way journey.

Those unable to attend, and assuming the tech works on the night, can watch it at their leisure at a later date on the MPAS website or YouTube channel. *Regards, Peter Skilton*

School Viewing Night June 20th - Karingal primary school viewing night was one of the biggest group we have done in a long time with about 300 students. Beforehand the school had hotdogs, cakes and pop corn on sale. Katherine McCoy and Peter Skilton gave the talk, while members setup telescopes on the basketball court. Dew to cloud cover, most deep sky object couldn't be seen. Luck we had an almost full moon shining through the clouds for the students to view. Members on the field were Phil Peters, Phil Holt, Mark Stephens, Steve Lomax, Anne & Geoff Danne, Greg Walton, Pia Pedersen, Sylvie Grandit, Alex Richardson, Fred Crump, Landon & Dave Rolfe. *By Greg Walton*



Photos by Dave Rolfe



Eco House Viewing Night June 21st - On Friday we had the pleasure to host Jacqui, Rebecca, and the rest of the staff from the Eco Centre, which is located right next to MPAS.

The Centre had organised a winter solstice celebration earlier, with families bringing vegies to make a nice big pot of soup in their kitchen, and some lovely lanterns. This turned out to be quite a success, and I even got to sample the soup haha!

At around 6pm, they then wandered over to our observatory to do some complimentary stargazing, and what started out as a fully clouded sky with only short glimpses of the almost full moon, cleared up just long enough for everyone to see the Jewel Box, Gem Cluster, Alpha Centauri and Omega Centauri. The moon even decided to stay behind the clouds at times to increase the viewing. We got lucky!

All up I think about 20 people, including the Eco Centre staff and visitors attended, in what ended up being a great night celebrating the winter solstice together. Members attending and manning the telescopes were Sylvie Grandit, Ben Claringbold, Greg Walton and Pia Pedersen, Jamie Pole, John Goodall and myself. A big thanks to all! *Warm regards, Phil Peters*

Members Night BBQ and working bee June 22nd - Saturday's working bee and BBQ turned out to be quite a gathering, considering it being almost the shortest day of the year, with 19 members attending all up.

Leigh and Marlene arrived early, with Leigh jumping on the ride-on mower, and Marlene getting started on various chores around the place, as well as organising the rest of the troops as they arrived. The lawns aren't that long at this time of the year, but they do come up nice.

Others soon joined us, including Geoff and Anne, who brought some lovely food and started things happening in the kitchen. Greg was down in the observatory with Roland, fitting a finder scope to one of our 8 inch Dobsonians, and even had time to fix the whipper snipper for me that wasn't feeding properly.

Andrew was whizzing around with the leaf blower, cleaning up the paths after the mowing, along with all the rest of the crew, helping inside and out.

Jamie soon arrived with the BBQ goodies, and his usual grocery shop to keep our kitchen, etc well stocked with much needed supplies. He was joined by Chris on the BBQ, and together with the great efforts in the kitchen, we all sat down to a lovely meal at around 6pm, followed by the many various desserts on offer.

We also had a new member attend her first BBQ, who has only just joined us a few days ago. A very special welcome to you, Stephanie Ng. It was lovely chatting to you, and your help was very much appreciated, along with Ingrid and all the others in attendance.

Sorry I couldn't name each and every one of you. We all had a great time and look forward to next month! *Warm regards, Phil Peters*

Sky shed pod observatory - Long time member Dave Girling passed away several years ago. His dome observatory at Rosebud has laid idle ever since. A few weeks ago Dave's widow offer the Plastic dome observatory with all the assemble instructions to MPAS.

Mark Hillen, Phil Peters and myself gathered some tools and went to collect the dome. We had to cut off all the rusty dyna-bolts which held it to the concrete slab and remove all the bolts holding the 2 roof dome sections together. Then cut the silicon which joined the 6 wall segments together. After which it come apart very easily.

We placed the 2 roof dome parts and wall pod on the back of Mark's small truck and the remaining 5 wall segments went in the back of my ute. Then it was back to the MPAS site to unload.

We will reassemble the dome observatory at one of the further MPAS working bees. Until then, we will decide on the appropriate location and what telescope it will house.

On behalf on the MPAS committee and members, we wish to thank Dave's family for such a generous donation. *By Greg Walton*



<https://skyshedpod.com/>



TIPS AND TRICKS

By Greg Walton



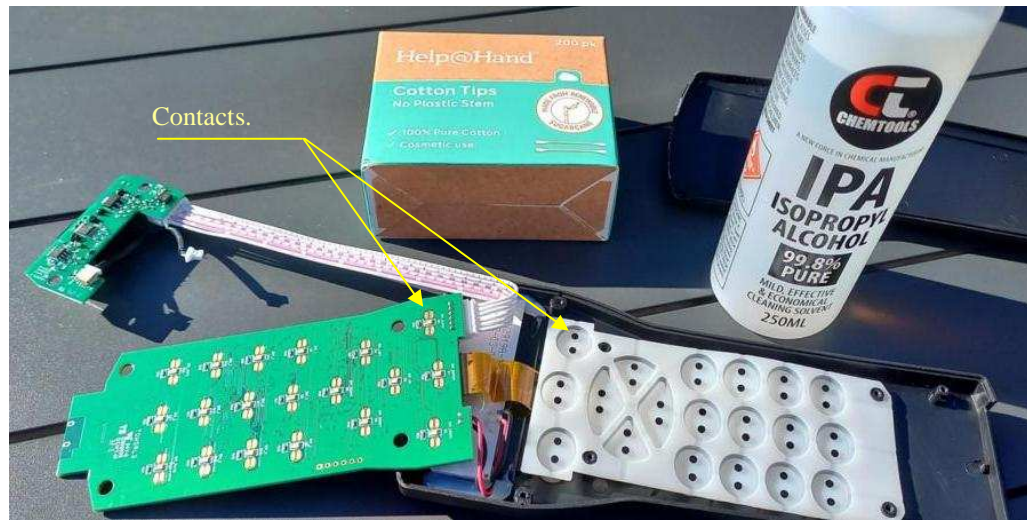
Repairing Go-To hand controller buttons.

When you press a button on a hand controller, 2 pieces of black rubber impregnated with graphite make a contact on the circuit board.

But after many years of use, the hand controller buttons can stop working. Usually because of dirt or the surface of the rubber has degraded.

Most hand controllers can be dismantled by removing 4 screws on the back face. Then remove the 4 screws holding the circuit board in place. Carefully move the board to one side, exposing the rubber keypad.

Using a cotton tip, wash all the black contact on the back of the rubber keypad and brass contacts on the circuit board with isopropyl alcohol. Reassemble and you should find this will have fixed the problem.



MPAS - Society AGM

The AGM is in July each year.

Current Committee

- President:** Peter Skilton
- Vice President:** Chris Kostokanellis
- Secretary:** Nerida Langcake
- Treasurer:** Jamie Pole
- General Committee:** Anders Hamilton, Trevor Hand, Simon Hamm, Guido Tack & Phil Peters.

**MPAS members
please consider a
position on
committee, as we have
much work to be done
for the year ahead.**

AGM Invitation
 17th July 2024 at 8PM
 The MPAS Briars site
 Don Leggett Astronomy Centre
 Nepean Hwy, Mt Martha
 (Melway ref. 151/E1)

Agenda

1. Apologies
2. Confirm Minutes of previous AGM
3. President's Report
4. Treasurer's Report
5. Election of Incoming Committee
6. Special Business (Constitution updates – details to follow)
7. Special thanks
8. Close of AGM.

Have you considered joining the MPAS committee?

If you feel you would like to get involved in the society business or have a particular skill you think would be useful to the society, please give some thought to becoming a committee member.

The Annual General Meeting will be held on Wednesday 17th of July, 2024. In this edition of Scorpius there is a 'Committee Election Form' that can be used for the submission of nominations for the next committee. This can be posted to MPAS, 450 Nepean Hwy, Mt Martha 3934 or handed to the Secretary. Alternatively, nominations can also be submitted electronically to welcome@mpas.asn.au, stating which position on the committee you would like to nominate for. Please note that voting will occur if there are more nominations than positions available.

2024 AGM Committee Position Nomination -
 (Leave blank if not applicable)

I

..... would like to nominate for the position of
 (circle)

PRESIDENT VICE PRESIDENT
 SECRETARY TREASURER
 GENERAL COMMITTEE

for the Mornington Peninsula Astronomical Society
 committee of 2024/2025.
 Seconded
 by

..... Dated/...../.....
 2024

Both the nominee and the seconder need to be financial members of MPAS at the time of the AGM. Nominations must reach the Secretary by the 10th July 2024.

WHAT'S ON



The 2024 timetable of events.

JULY

Friday 5th, 8pm Briars. Public stargazing night. Speaker TBD. 91 booked.
 Friday 19th, 7pm Briars. Wolseley Car Club stargazing night for 30 visitors. Speaker TBD.
 Friday 26th, 8pm Briars. Scout, Cubs, Guides & Joeys night. Speaker Katherine McCoy & Peter Skilton. 90 anticipated.

AUGUST

Friday 2nd, 8pm Briars. Public stargazing night. Speaker TBD. 90 booked.
 Friday 16th, 8pm Briars. Public stargazing night for National Science Week. Speaker TBD. 76 booked (90 anticipated).
 Wednesday 28th, 7pm. Strathcona Baptist Girls. 30 Year 10 pupils, held at Merricks Lodge (aka Peninsula Outdoors), 3670 Frankston-Flinders Rd, Merricks. Speaker Katherine McCoy & Peter Skilton.

SEPTEMBER

Friday 6th, 8pm Briars. Public stargazing night. Speaker TBD. 43 booked (90 anticipated).
 Monday 9th, 7pm Briars. Our Lady Help of Christians Primary on camp. Speaker Peter Skilton. 50 year 5/6 pupils.
 Saturday 14th, 1pm Briars. Astrophotography Workshop (public & members). Speakers various. 80 anticipated. Bookings not yet open.

OCTOBER

Friday 4th, 8pm Briars. Public stargazing night. Speaker TBD. 23 booked (90 anticipated).
 Saturday 19th, 4pm Briars. Telescope Learning Day (public & members). Speakers various. 10 booked (85 anticipated).
 Friday 25th, 8pm Briars. Scout, Cubs & Guides night. Speaker TBD. 90 anticipated. Bookings not yet open.

NOVEMBER - Friday 1st, 8pm Briars. Public stargazing night. Speaker TBD. 90 anticipated.

DECEMBER - Friday 6th, 8pm Briars. Public stargazing night. Speaker TBD. 90 anticipated.

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

★ New Members Welcome ★

Fiona Holmwood and family

Aaron Li

Jane Suffield

Fionnuala Munnely & Richard Cusack

Vivek Seshadiri & Chitra Brindavanam

Alex Dermatis and family

Christopher & Veronica Collingwood

Stephanie Ng

Sharon & Barry Mason and grandkids

MPAS SUBSCRIPTIONS 2024

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 2024 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 2024 fees is:

Subscriptions can be paid in a number of ways:

- On-line (preferred, see at right)
- Cash payments to a committee member
- Send a cheque, made out to "Mornington Peninsula Astronomical Society", to MPAS, The Briars, 450 Nepean Highway, Mount Martha VIC 3934 (The P.O. Box in Frankston is no longer used).
- Make a direct electronic payment into the society working bank account (state your name clearly).

SOCIETY FEES

- \$50 – Full Member
 - \$45 – Pensioner Member
 - \$65 – Family Membership
 - \$60 – Family Pensioner Membership
- See more options on-line*

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.



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

CALENDAR		July / 2024					Red Days indicate School Holidays
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
	1 Check out Saturn's rings	2 Mars above the Moon dawn	3 Jupiter right of the Moon dawn	4	5 Public night 8pm	6 New Moon Cosmology 1:45pm	
7	8 Mercury below a thin crescent Moon	9	10	11	12 Moon at 404,362km	13	
14 First Quarter	15	16	17 AGM Society Meeting 8pm	18	19 Wolseley Car Club	20 Working Bee 4pm BBQ 6pm	
21 Full Moon	22	23	24 Moon at 364,917km Saturn below Moon	25 Ceres next to M54	26 SCAG & Joes	27	
28 Last Quarter	29	30 Mars right of the Moon dawn	31 Jupiter right of the Moon dawn				

Monthly Events

Public night - 8pm to 10pm on the 5th @ The Briars
Cosmology - 2pm to 4pm on the 6th @ The Briars
Society Meeting - 8pm to 10pm on the 17th @ The Briars (Public & members)
Working Bee 4pm, Members night BBQ - 6pm on the 20th @ The Briars
SCAG & Joes - Scout, Cubs & Guides - 8pm to 10pm on the 26th @ the Briars

CALENDAR		August / 2024					Red Days indicate School Holidays
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
			Note - 28th Strathcona Baptist Girls viewing night	1	2 Public night 8pm	3	
4 New Moon	5 Mars right the Moon dawn	6 Venus below a thin crescent Moon and Mercury is left of the Moon	7	8	9 Moon at 405,297km	10	
11	12	13 First Quarter	14	15 Mars and Jupiter only 0.3 degrees apart	16 NSW Public night 8pm	17 Cosmology 1:45pm	
18	19	20 Full Moon Saturn below the Moon	21 Society Meeting 8pm Moon at 360,196km	22	23	24 Working bee 4pm BBQ 6pm Moon at 364,917km	
25	26 Last Quarter	27 Scorpius Deadline	28 Mars right of the Moon dawn. Jupiter above the Moon	29	30	31	

Monthly Events

Public night - 8pm to 10pm on the 2nd @ The Briars
National science week public night - 8pm to 10pm on the 16th @ The Briars
Cosmology Meeting - 1:45pm on the 17th @ The Briars
Society Meeting - 8pm to 10pm on the 21st @ The Briars (Public & members welcome)
Working Bee 4pm, Members night BBQ - 6pm on the 24th @ The Briars
Watch your emails, as on any clear nights the Observatory may be opened for members-only viewing.

THE BRIARS SKY

By Greg Walton



Find the dwarf planet Ceres

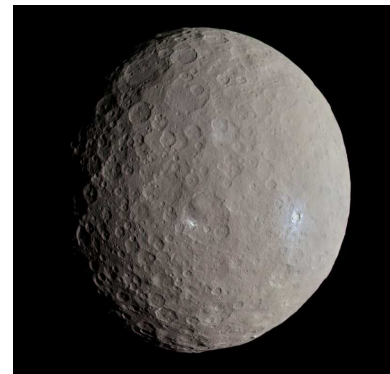
Once you have bought your telescope, most dedicated amateur astronomers seek out all eight planets. Then usually hit a brick wall at the once ninth-planet Pluto. The main reason is because, Pluto is at a distance of 39 AU to the Sun or 39 times farther than the Earth, making Pluto very faint at only 14th magnitude. And to make things worse it often sits amongst stars with the same brightness, making it almost impossible to determine which one is Pluto. No wonder Pluto was not discovered until nearly 100 years ago on 18th February 1930. Pluto's diameter is 2,376km that's about 2/3 the diameter of the Earth's Moon. At 5.2 billion km away Pluto appears only 0.12" in diameter.

A much easier target is Ceres at between 6.7 to 9.3 magnitude depending on where Ceres is in its orbit around the Sun. The difference between 14th & 8th apparent visual magnitude, is that 14th magnitude Pluto is 251 times fainter than 8th magnitude Ceres.

Every step up in visual magnitude is 2.512 times fainter. So doing the math we get $160,945 / 640 = 251$ time fainter than Ceres.

Magnitude	1	2	3	4	5	6	7	8th	9	10	11	12	13	14th
Times fainter	1	2.5	6.25	16	40	100	255	640	1,609	4,042	10,153	25,505	64,070	160,945

Ceres orbits the Sun once every 4.6 years and Earth overtakes Ceres every 1.28 years 15.5 months. Ceres has a diameter of 939.4 km and Earth's is 6,000 times heavier than Ceres and you would only weigh 1/40th on Ceres. Ceres is at a distance of only 2.77 AU from the Sun or 2.77 times farther than from the Sun to Earth. Ceres was discovered 70 years before Pluto, on 1st of January in 1801, by Giuseppe Piazzi at Palermo Astronomical Observatory in Sicily.

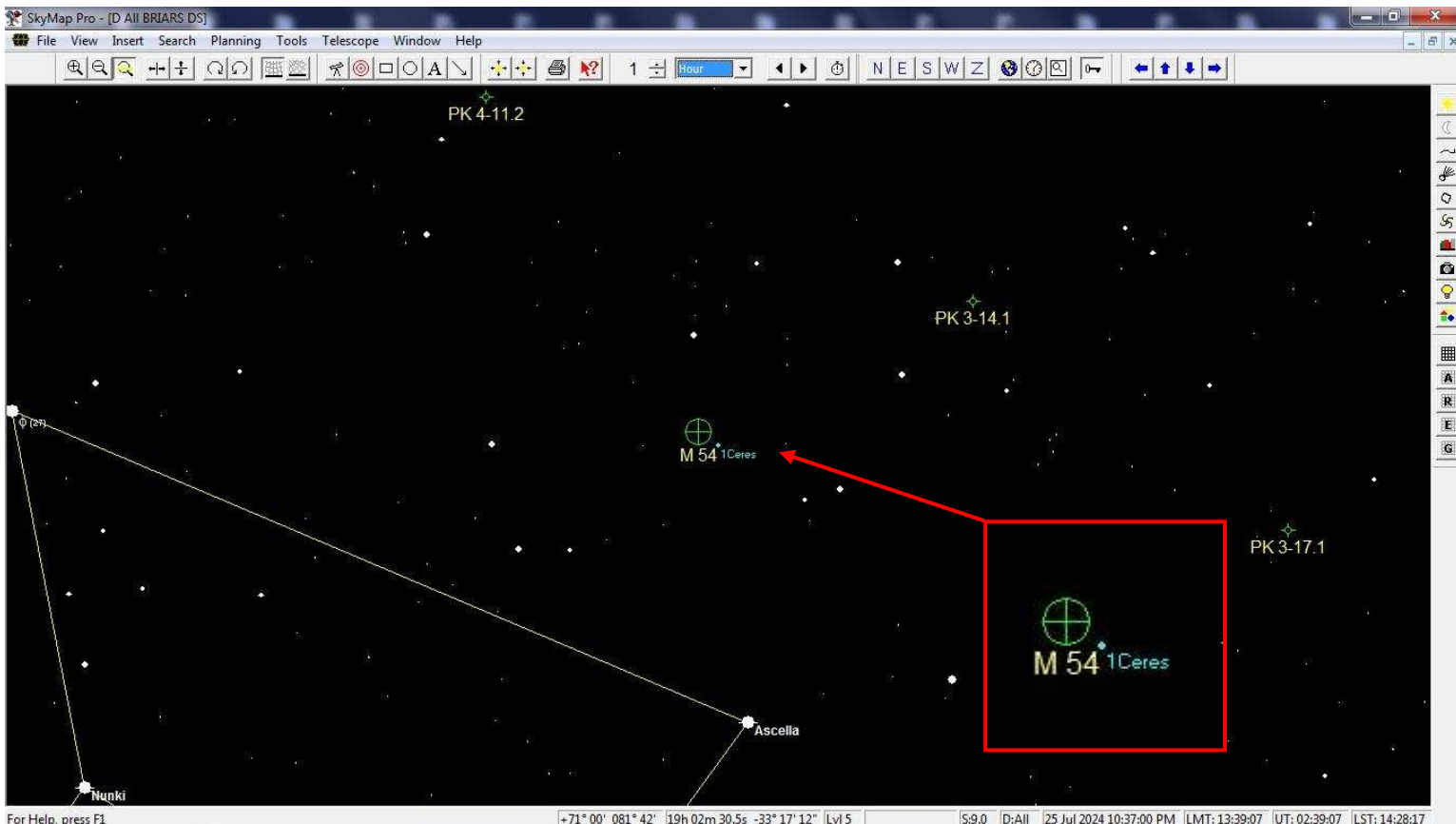


Ceres is a mixture of ice and salts: about 25% ice by mass with areas of salt crust from underground brine, and has a rocky core. It's thought that Ceres formed on the outer edge of the solar system and then was kicked in towards the Sun by a larger planet or passing star, putting Ceres in the asteroid belt between the orbits of Mars and Jupiter. Ceres is the closest dwarf planet to Earth and it always stays inside Neptune's orbit. The Dawn spacecraft found Ceres had a mantle made of mud (ice-rock).

Can you see any surface features on Ceres with an amateur telescope? NO

Ceres would look like a star, as it's slightly less than 1 second of arc and would be only 1/6 the diameter of Neptune as viewed through a telescope on Earth. But Ceres' 0.8" second of arc would be 7 times larger in diameter than Pluto's 0.12" second of arc.

On the 25th of July 2024, Ceres will be sitting next to the globular cluster M54 and being at opposition will shine at 7.7 magnitude. At 10:30pm Ceres will be 70 degrees above the horizon. This will be your best opportunity to view and image Ceres. Of course Ceres can be viewed the months before and after, but you will need to know where to look or add Ceres Ra / Dec to your telescopes hand controller.



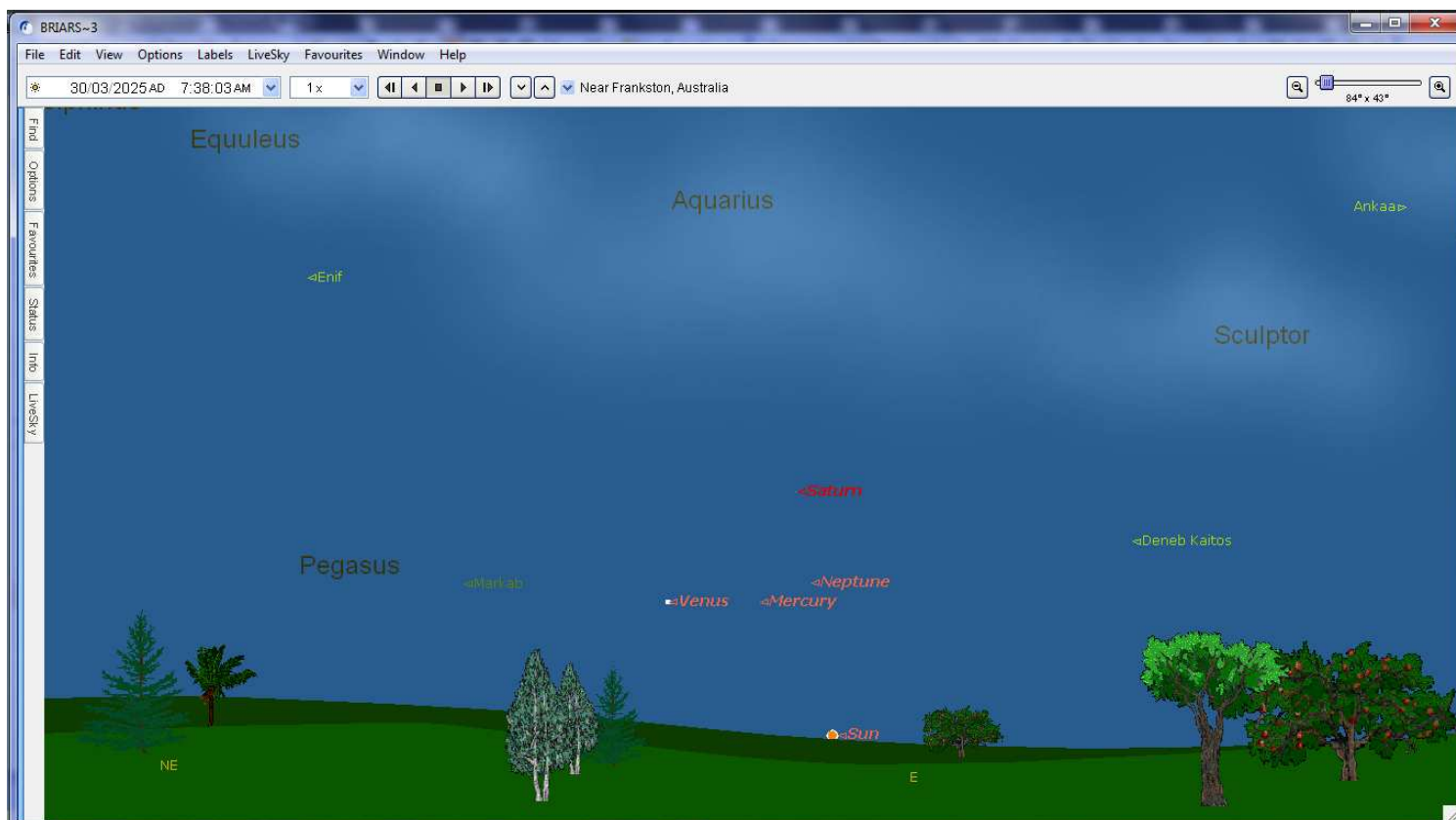
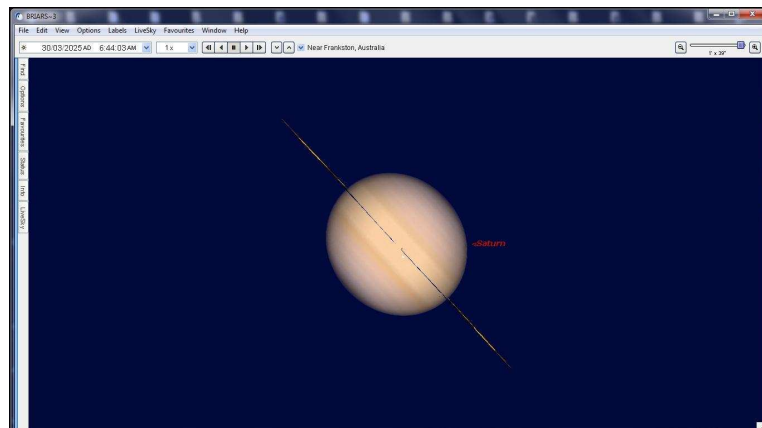
Saturn's rings will be edge-on, Monday 30th March 2025

This only happens once every 14 years and the next time will be in 2039. So we should make an effort to witness this event.

Unfortunately on 30th of March 2025, Saturn will be only 15 degrees away from the Sun, 17 days after superior conjunction (when Saturn will be on the opposite side of the Sun and at its greatest distance from Earth) on the 13th of March 2025.

Sunrise is at 7:30am on 30th of March 2025, so we need to attempt to catch Saturn before then. It so happens that Venus and Mercury will be below Saturn that morning. Venus will be shining very brightly at - 4 magnitude.

The biggest problem will be clouds sitting on the horizon. We will need some diligence around the 30th March 2025 and be prepared to jump in the car and head to the Briars or find somewhere with a clear eastern horizon.



Dangerous option.

Saturn can be seen during the day, but it's not recommended to point a telescope anywhere near the Sun.

The closer Saturn gets to the Sun, the more difficult it will be to see due to the background sky glow.

A sky glow filter may help.

Saturn can be imaged with any type of telescope with or without tracking, as Saturn is a very bright object and will only need a very short exposure time. You will need a telescope with a long focal length or add a Barlow lens or teleconverter between your T ring and DSLR.



Backup plan number 1.

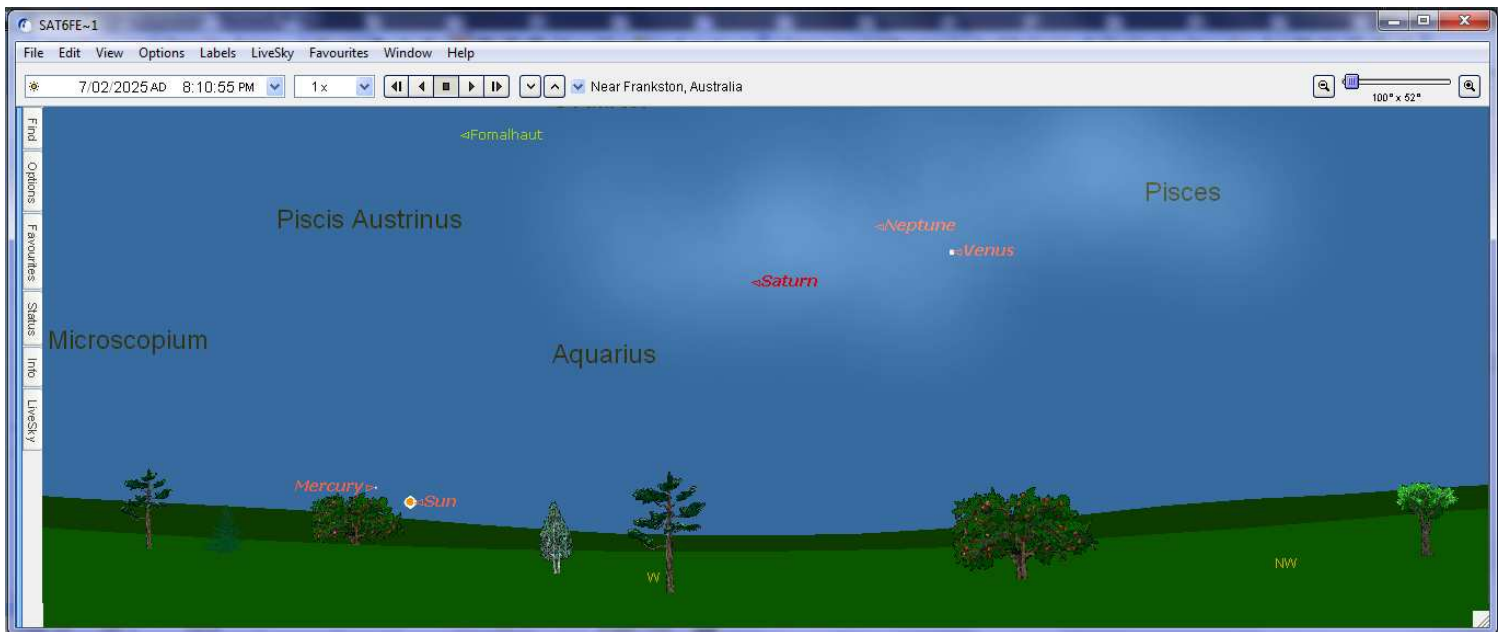
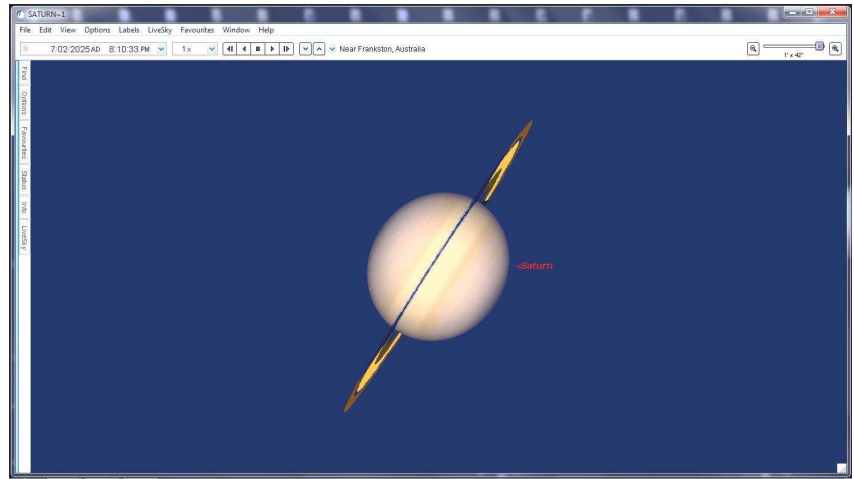
Before Saturn goes around the other side of the Sun, we should be able to view Saturn's rings close to edge on. *See image at right and below.*

On the evening of 7th February 2025 at 8:20pm, Saturn will be setting about an hour after sunset in the west. Again clouds will be a problem, so I would attempt this on the days leading up to the 7th February 2025.

The MPAS Briars site may not be the ideal place to view this event, as the trees block a large part of the sky.

Oliver's Hill on the other hand should be perfect.

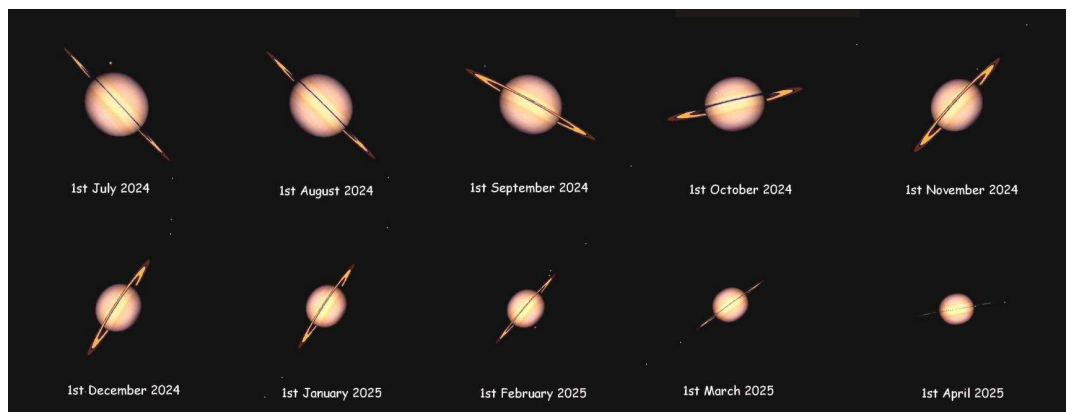
Venus will also be in the sky, shining at magnitude -4.6.



Backup plan number 2.

If we watch Saturn over the whole year, you would notice that Saturn wobbles on its axis, with the rings appearing to tilt back and forth. This happens because Saturn is tilted at 27 degrees on its axis. On one side of the orbit the Earth is looking down on the rings and on the other side of the orbit the Earth is looking up to the rings.

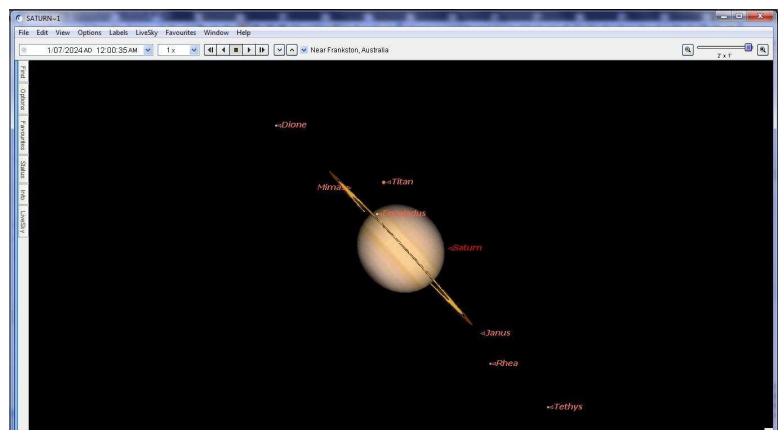
See image at right



It so happens that around the 1st July 2024, viewed from Earth, Saturn's rings will be almost edge-on. At midnight Saturn will be 14 degrees above the horizon in the east -which is high enough to get a reasonable view. The main problem will be finding a cloud-free night around this time.

See image at right.

By Greg Walton



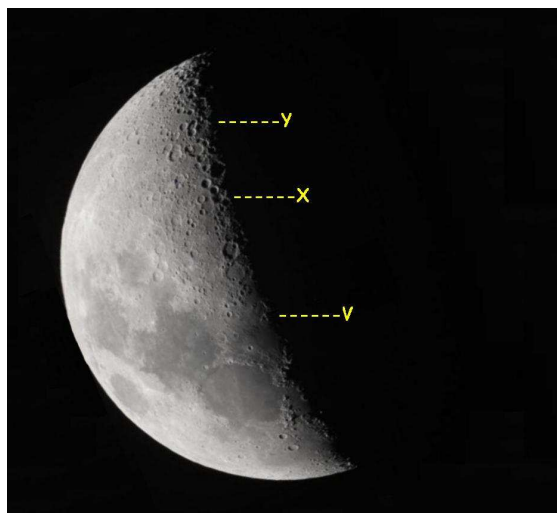
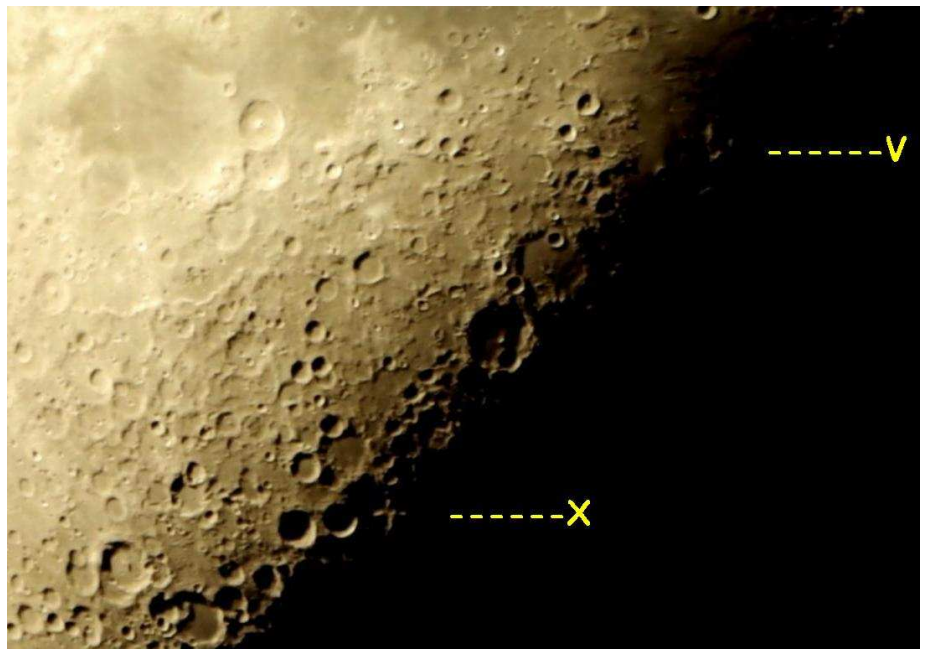
X & V on the Moon, by Greg Walton

Between the sixth and seventh day after the New Moon, you have the opportunity to see X & V on the terminator (where day and night meet). These features are only seen for a few hours each month and can take many attempts before you succeed. As the changing tilt of the Moon can help or hinder finding the X & V.

Conveniently six days after the New Moon, just after sunset the Moon is almost directly overhead, which provides good seeing conditions. Best to use a telescope with a magnification of between 100 and 150 times.

The X is formed by 3 closely grouped craters between Werner and Purbach craters. At the right time, sunlight catches the top of the rims of the 3 craters, while the surround is in darkness.

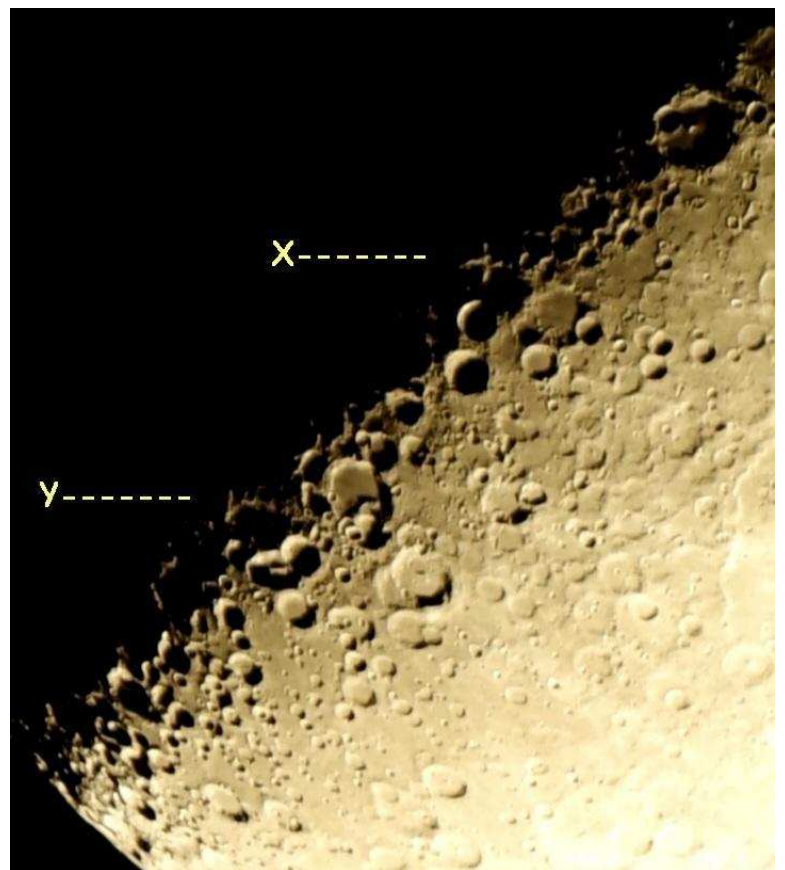
The V shape can be found in the Mare Vaporum near Murchison/Pallas craters, or near the neck of the rabbit.



Also at this time I have seen a Y on the terminator. The Y shape is formed by 2 closely grouped craters between Maginus and Licetus craters.

On the eighth day after the New Moon, the X, V & Y will have disappeared, as sunlight will have reached the Mare or crater floor making it impossible to see the X, V & Y.

The image at right and above were taken with the 350mm Meade in the MPAS observatory and Pentax K30 DSLR on the 1st July 2017, by Greg Walton.



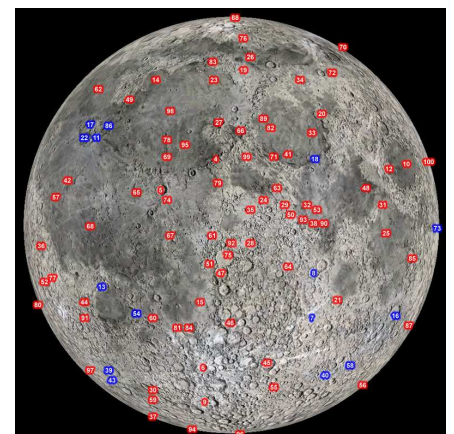
For more interesting features on the Moon, you can check out.

The Lunar 100 (L100) is a list of one hundred of the most interesting features to observe on the Moon. The list was first described by Charles A. Wood in the article The Lunar 100 in Sky & Telescope magazine, April 2004.

<https://skyandtelescope.org/observing/the-lunar-100/>

<https://www.cloudynights.com/topic/616156-the-lunar-100-spreadsheet/>

https://en.m.wikipedia.org/wiki/Lunar_100



Chang'e 6 moon mission returns 1st far side sample to Earth

In another success for the burgeoning Chinese space industry, the Chang'e 6 lunar probe touched down successfully on Tuesday, June 25, 2024 in the Inner Mongolia Autonomous Region, a province in the north of the country. The craft was launched by the China National Space Agency (CNSA) on May 3. It reached the moon June 1, and completed the lunar sample return mission 53 days later.

The probe made landfall in the Apollo Basin, a region in the South Pole-Aitken Basin, an enormous crater on the moon's far side. This site is one of the oldest and largest impact features found in the solar system. It is 4 billion years old.

The sample is expected to contain 2.5 million-year-old lunar dust, aka regolith. It is reported China intends to share the sample with international researchers. The sample of the little-studied far side of the moon will be of great interest to lunar geologists, as an ongoing international effort to return to Earth's natural satellite continues gaining momentum. China is one of many countries – including the United States, Japan, South Korea, India and Russia – currently focused on establishing a long-term human presence on the lunar surface.

Primarily, the sample will provide insight into how the moon's two faces differ. And it may offer clues to early solar system history hidden in ancient meteorite debris. But the real achievement of Chang'e 6 is technological. This is a global first in the sense that it's the first time anyone has been able to take off from the far side of the moon and bring back samples.

This wasn't an easy assignment. NASA described Chang'e 6's mission objectives: The mission objective was to collect about 2 kg of material from the far side of the moon and bring it back to Earth. A scoop and drill were used in order to obtain samples from the surface and from as deep as 2 meters below the surface. The samples were placed in the ascent vehicle, which was mounted on top of the lander.

The lander also deployed a small rover, which snapped a picture of its mothership (see below). Once aloft, the ascent vehicle mated with the Chang'e 6 orbiter, transferred the lunar sample and crashed back into the lunar surface. The return vehicle left the moon's orbit around June 21.



The China National Space Administration's (CNSA) Chang'e 6 lunar lander sits on the southern portion of the Apollo crater on the moon. The craft touched down there at 6:23 a.m. Beijing time, on June 2). On Tuesday, June 25, 2024, the mission's sample return capsule landed in the Siziwang Banner province of China's Inner Mongolia Autonomous Region. Credit: CNSA via NASA.

YOUR ASTRO QUESTIONS



At a recent public night, someone asked, what is a constellation and how many are there in the sky? *By Greg Walton*

I could not remember, so I thought we'd better learn a few basic facts about constellations.

A constellation is a group of stars, as seen from Earth, that make up the shape of an animal, human, object, chimera or from geo nature.

One hundred years ago the International Astronomical Union defined the 88 constellations:

42 Animals constellation (See table at right)

14 Humans (See table below)

28 Objects (See table below)

2 from geo nature - Mensa, for Table Mountain in South Africa, and Eridanus, a river.

2 Chimeras (made from 2 animals) - Pegasus, the winged horse - Capricorn, the sea-goat.

36 Northern constellations, which are mainly humans, Gods and Greek mythical beasts.

52 Southern constellations, which are mainly objects and animals.

12 Zodiac - these are the constellations that the planets, Sun & Moon visually pass through.

Smallest southern constellation - Crux 68.4 square degrees in area.

Smallest northern constellations - Equuleus - 71 square degrees in area.

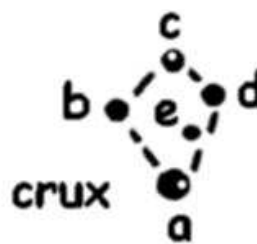
Sagitta - 80 sq. deg., Triangulum - 132 sq. deg. and Canis Minor - 183 sq. deg.

Largest constellation - Hydra, Sea Serpent, 1303 sq. deg., extends 100 deg. across the sky.

In a constellation, A is the brightest star, B is the second brightest star and C is the third brightest star and so on. For example, A Crux is the brightest in the constellation Crux.

By Greg Walton

	Object
1	Antlia Air pump
2	Ara Altar
3	Caelum Engraving tool
4	Carina Keel of Argonauts' ship
5	Circinus Compasses
6	Corona Australis Southern crown
7	Corona Borealis Northern crown
8	Crater Cup
9	Crux Cross (southern)
10	Fornax Furnace
11	Horologium Clock
12	Libra Scale or balance
13	Lyra Lyre or harp
14	Microscopium Microscope
15	Norma Carpenter's Level
16	Octans Octant
17	Pictor Easel
18	Puppis Stern of the Argonauts' ship
19	Pyxis (or Malus/mast) Compass on the Argonauts' ship
20	Reticulum Net
21	Sagitta Arrow
22	Sculptor Sculptor's tools
23	Scutum Shield
24	Sextans Sextant
25	Telescopium Telescope
26	Triangulum Triangle
27	Triangulum Australe Southern triangle
28	Vela Sail of the Argonauts' ship



42 Animal constellation

1	Apus	Bird of Paradise
2	Aquila	Eagle
3	Aries	Ram
4	Camelopardus	Giraffe
5	Cancer	Crab
6	Canes Venatici	Hunting dogs
7	Canis Major	Big dog
8	Canis Minor	Little dog
9	Capricornus	Sea goat
10	Cetus	Sea monster (whale)
11	Chamaeleon	Chameleon
12	Columba	Dove
13	Corvus	Crow
14	Cygnus	Swan
15	Delphinus	Porpoise
16	Dorado	Swordfish
17	Draco	Dragon
18	Equuleus	Little horse
19	Grus	Crane
20	Hydra	Sea serpent
21	Hydrus	Water snake
22	Lacerta	Lizard
23	Leo	Lion
24	Leo Minor	Little lion
25	Lepus	Hare
26	Lupus	Wolf
27	Lynx	Lynx
28	Monoceros	Unicorn
29	Musca	Fly
30	Pavo	Peacock
31	Pegasus	Winged horse
32	Phoenix	Phoenix
33	Pisces	Fishes
34	Piscis Austrinis	Southern fish
35	Scorpius	Scorpion
36	Serpens	Serpent
37	Taurus	Bull
38	Tucana	Toucan
39	Ursa Major	Big bear
40	Ursa Minor	Little bear
41	Volans	Flying fish
42	Vulpecula	Fox

Human

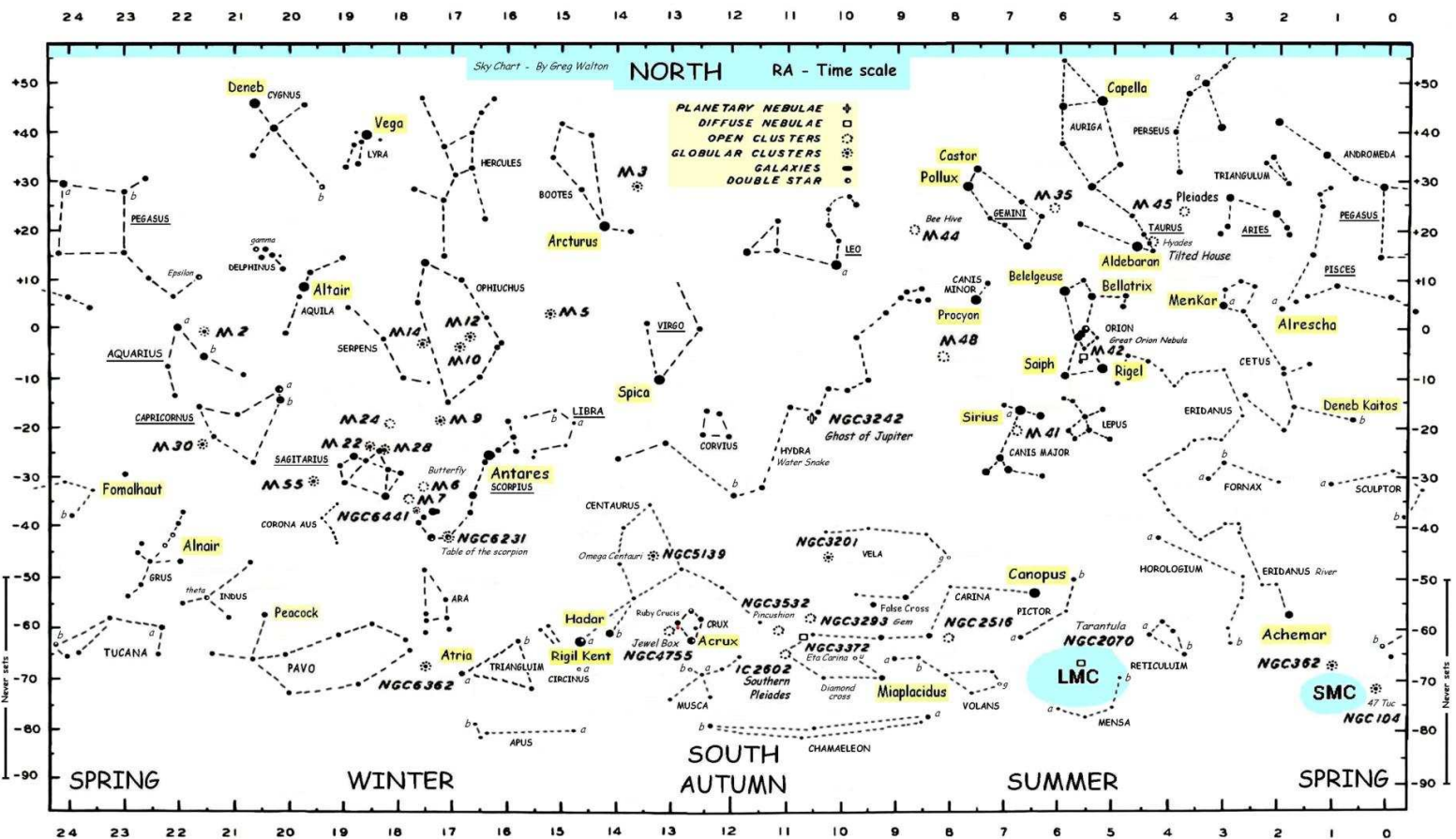
1	Andromeda	Princess of Ethiopia
2	Aquarius	Water bearer
3	Auriga	Charioteer
4	Bootes	Herdsman
5	Cassiopeia	Queen of Ethiopia
6	Cephus	King of Ethiopia
7	Coma Berenices	Berenice's hair
8	Gemini	Twins
9	Hercules	Hercules, son of Zeus
10	Indus	Indian
11	Ophiuchus	Holder of serpent
12	Orion	Orion, the hunter
13	Perseus	Hero who saved Andromeda
14	Virgo	Virgin

What are the best objects to view when the Moon is Full? *By Greg Walton*

MPAS Public and school viewing nights often happen at a time when the moon is full or under bright city lights, making it difficult to find a deep sky object, which look good in the eyepiece of your telescope. Galaxies and nebulae are the most challenging objects which are best avoided in these conditions. This only leaves us with open star clusters, globular clusters, double stars and of course the planets. I have included a few objects that are often overlooked. The table of scorpion NGC6231, Southern Pleiades cluster IC 2602, Carina open cluster NGC2516 and the Vela globular cluster NGC3201.

Below I have put together a list of object which can be view during a full moon.

Catalogue	Common name	Telescope & magnification	Mag	Distance L/Y	Best time to view
M 45	Pleiades cluster	70mm telescope @ 40 times	1.6	444	Summer
M 42	Orion Nebula	200mm telescope @ 50 times	4	1,344	Summer
M41	Canis Major open cluster	200mm telescope @ 70 times	4.5	2,300	Summer
M48	Hydra open cluster	200mm telescope @ 70 times	5.8	2,500	Summer
IC 2602	Southern Pleiades cluster	70mm telescope @ 40 times	1.9	550	Autumn
NGC 3532	Pin Cushion open cluster	200mm telescope @ 70 times	3	1,320	Autumn
NGC 5139	Omega Centauri globular	200mm telescope @ 70 times	3.9	15,800	Autumn
NGC 4755	Jewel Box open cluster	200mm telescope @ 70 times	4.2	6,440	Autumn
NGC 3293	Gem open cluster	200mm telescope @ 70 times	4.7	9,000	Autumn
NGC3201	Vela globular cluster	200mm telescope @ 80 times	6.9	16,300	Autumn
NGC 3242	Ghost of Jupiter planetary	300mm telescope @ 100 times	8.6	4,800	Autumn
Alpha Centauri	Double star	100mm telescope @ 100 times	-0.27	4.3	Winter
M7	Ptolemy open cluster	100mm telescope @ 40 times	3.3	980	Winter
NGC 6231	Tail of the Scorpion OC	100mm telescope @ 40 times	2.6	5,600	Winter
M6	Butterfly open cluster	100mm telescope @ 40 times	4.2	1,590	Winter
M5	Serpens globular	200mm telescope @ 80 times	6.7	25,000	Winter
NGC6362	Ara globular	300mm telescope @ 100 times	8.3	25,000	Winter
NGC2516	Carina open cluster	100mm telescope @ 60 times	3.8	1,300	Spring
NGC 104	47 Tuc globular	200mm telescope @ 80 times	4	14,500	Spring
NGC362	Globular	300mm telescope @ 80 times	6.4	30,000	Spring
NGC2070	Tarantula Nebula	300mm telescope @ 80 times	7.2	157,000	Spring

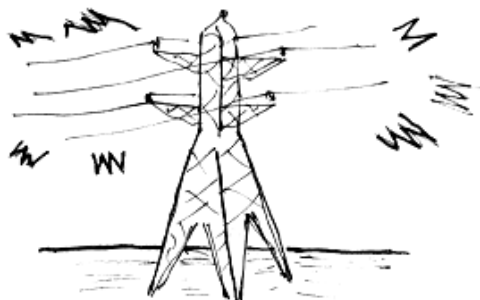


THE SCORPIUS FILES



—⚡— SCIENTIFIC SCRIBBLINGS BY PHIL HOLT

YOU KNOW AN AURORA IS COMING WHEN...



THE POWER GRID FLUCTUATES AS EVERYONE STARTS TO CHARGE THEIR CAMERAS AND PHONES.



HUNDREDS OF LOST SOULS GATHER AT DESOLATE SOUTH FACING BEACHES.



SACRIFICES ARE MADE TO THE WEATHER GODS,



AND TRUCKS START LOSING HUBCAPS.

A SMALL TRIBUTE TO THE CHRIS SCHUR ALL-SKY-HUB-CAP-CAM.



MO PHO CHALLENGE

Chris Kostokanellis



Astro Mo Pho #15: Delta T, yielded a large amount of time-lapse photography by members, thanks to the geomagnetic storm and aurora on the 11th May. The summary video is available at the link below, and contains Astro Mo Pho submissions, as well as a collection of photos of the Aurora by MPAS members around the Mornington Peninsula.

https://drive.google.com/file/d/1dhznoScd6sYQkw3_uAgiN1H1sDbFU7zU/view?usp=drive_link

Clear skies! Chris Kostokanellis.

Below - Set of 4 aurora images taken from Tooradin with a mobile phone on 11th May 2024, by *Chris Kostokanellis*



Chris Kostokanellis

Below - Set of 4 aurora images taken from Tooradin with a DSLR on 11th May 2024, by *Chris Kostokanellis*



Chris Kostokanellis



Chris Kostokanellis



Chris Kostokanellis



Chris Kostokanellis

Below - Aurora imaged from the Briars with 10mm f2.8 sigma lens and Pentax Kx 1600iso @ 15 sec on the 11th May 2024.
We were very lucky to have had clear skies with no Moon or dew to contend with, *by Greg Walton*



Greg Walton



Greg Walton



Greg Walton



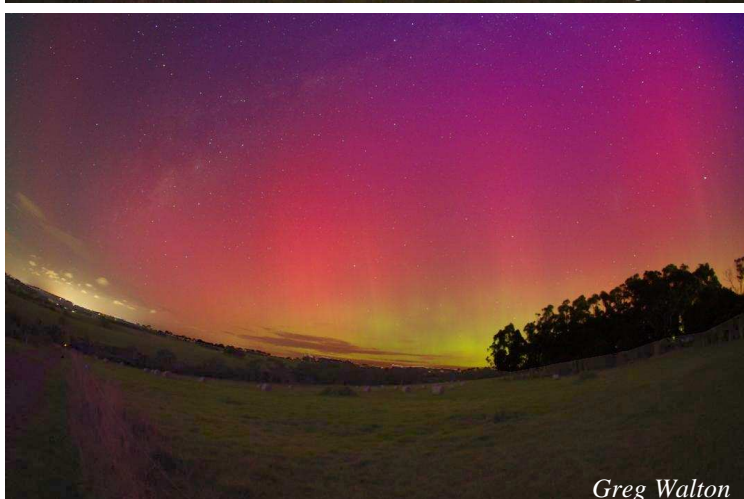
Greg Walton



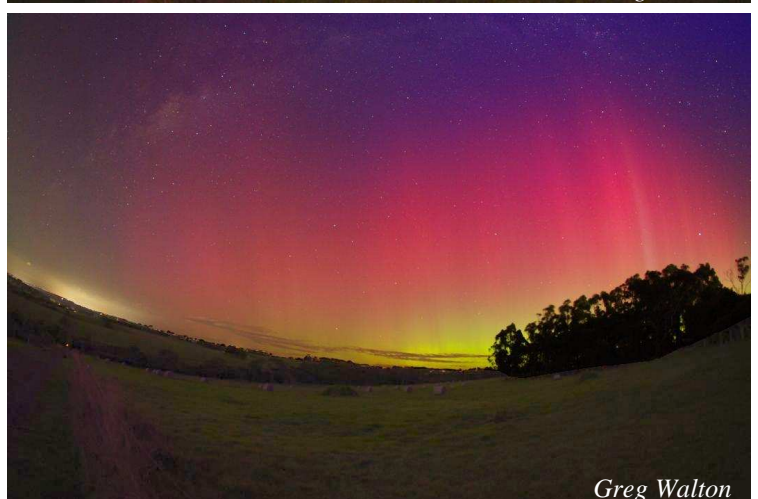
Greg Walton



Greg Walton



Greg Walton



Greg Walton

Aurora fish-eye view imaged from Frankston, by using a chrome-plated truck wheel cap placed on the ground. With a DSLR camera on tripod pointing down at the wheel cap, as you can see in the image at right. See time-lapse <https://flic.kr/p/2pVVq7G>

By Phil Holt



Phil Holt

Left - Aurora up and running! This is just my phone hand-held in Frankston South, due south, night setting, no edits. Time to quickly set up something else. By Chris Black. Time-lapse <https://www.facebook.com/share/v/hC4Z7mchHdmxSYbc/?mibextid=oFDknk>



Chris Black

Right - Aurora imaged from McCrae, by Simon Cottrill



Simon Cottrill

Left - Aurora australis as captured with a mobile, location Cranbourne East, by Gurneet Singh Jolly



Gurneet Singh Jolly

Below - 3 Aurora images taken from the Briars around 10:30pm, captured with an iPhone, by Neville Drake



Neville Drake



Neville Drake



Neville Drake

Below - 2 Aurora images from Ferntree Gully, by *Charmaine Compton*



Below - Aurora from Stony Point and the Briars, where we could easily see the aurora with our naked eye, by *Phil Peters*



Below - 5 images of the aurora taken on Gunnamatta Beach with hundreds watching the light show, by *Steve Gercovich*.





Kax Smith

Right - Aurora imaged from Cape Schanck, by *Liam Laube*

Left - Spent a few happy hours down at Flinders, took some awesome pictures. Got home and pulled out the phone...who knew we could see it over the trees? *By Kax Smith*



Liam Laube

Guess it was everyone for themselves tonight!

Below left - First up I got some pink on my camera from the back deck at home in Endeavour Hills (even got a Starlink photo bomb!).
 Below right - So I decided to head down toward the beach and got some green at Hastings' Westernport Marina (mobile phone pic).
 Heading home, I stopped at Canons Creek and... that's when it went off! (pink-on-green pic is also mobile phone pic).
 The photos on the camera are much better than the mobile (the really vivid pic shows back of camera).
 Hope everyone else had fun too!!! *By Rohan Baumann*



Rohan Baumann



Rohan Baumann



Leigh Hornsby

Right - Image taken at The Briars on Saturday night 11th May. Aurora on the left, Harry Potter on the right and a Starlink photo bomb centre, by *Leigh Hornsby*.



Leigh Hornsby

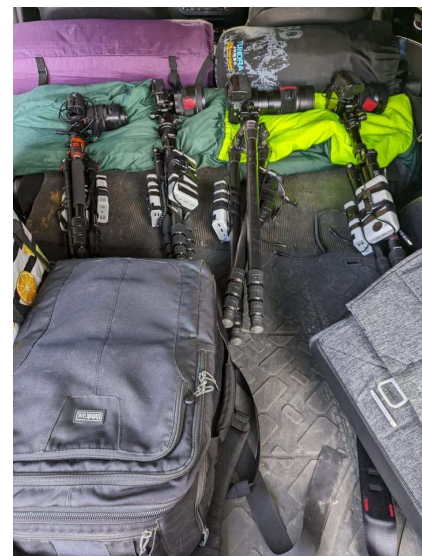
Above left - Thought I would join the party and share a Time-lapse from last Saturday, taken at Cape Schanck. *By Leigh Hornsby*
 MPAS Facebook link - <https://www.facebook.com/share/v/klBH3a1aBoBKWqwj/?mibextid=oFDknk>

Right - I woke up unusually early last Saturday – around 6am – and could not get back to sleep after checking the geomagnetic conditions. So I packed 4 cameras and went to Port Campbell with Elina. Naturally I started to buzz an hour before sunset. The words ended as soon as it got dark enough and here is the time-lapse from the most memorable Aurora Hunt ever.

<https://youtu.be/JfhuiviYK7A>[\]\(https://youtu.be/JfhuiviYK7A](https://youtu.be/JfhuiviYK7A)

When reviewing the footage with the SAR arc I noticed that the sky got bluer NW of the arc as the aurora got brighter (around 1:30-1:50 mark in the video). Rayleigh scattering was the first thought but there is no blue in the monochromatic Oxygen emissions. What could it be?

I wish I had a fisheye lens with me... *Alex Cherney*



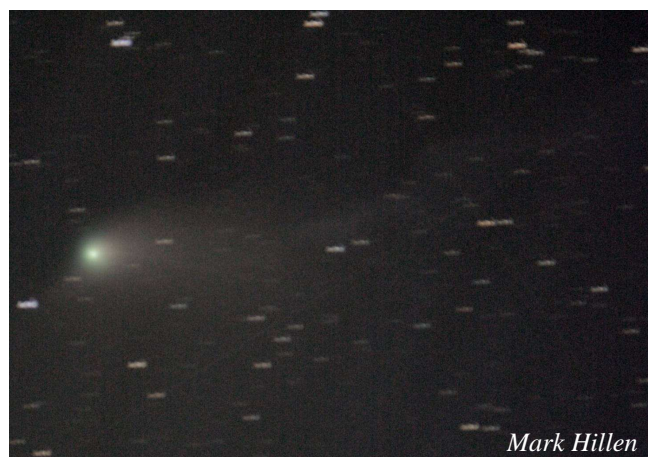
Left - From the paddock just behind the MPAS observatory at the Briars, by *Ben Claringbold*

Right - Aurora from Tooradin area 11th May 2024
From dusk until about 9:00pm.
Lots of action to see! By *Jamie Pole*

See time-lapse on Vimeo -
<https://vimeo.com/945256030>



Below - Comet Pons-Brooks images with Sky-Watcher 90mm refractor and Canon DSLR from Rye, by *Mark Hillen*
Single image left and stacked image right, which shows more tail structure.



Below - The Devil's Comet, imaged at the Briars Observatory on 6th June 2024, by *Greg Walton*



Comet 12P/Pons- Brooks imaged with 127mm Refractor F7 EQ6 Pentax K30 30sec iso6400 6June2024 by Greg Walton

Right -

Moonrise over Arthurs Seat, from McCrae Beach, by *Liam Laube*

Hi members.

As I wasn't able to present the Mo Pho Challenge summary at the last members meeting, I'm letting the current theme, the "Cosmic Zoo" continue for another month. There are plenty of wide field targets to image, such as the giant Scorpion that's in our night sky at the moment, a Centaur, Serpents, Eagles (Aquila), Goats (Capricorn), and many more. Many of these can be captured with a smart phone or standard DSLR, and hunting them down is a great way to learn the constellations, and where they are in the sky. So I'm hoping you will help to increase our Zoo collection by the next meeting. If you have any questions about settings and techniques, feel free to post them on our e-Scorpius Astrophotography group, and bring your equipment to the members meeting today for some practice and help from other members. *Clear skies. Chris Kostokanellis.*



Liam Laube

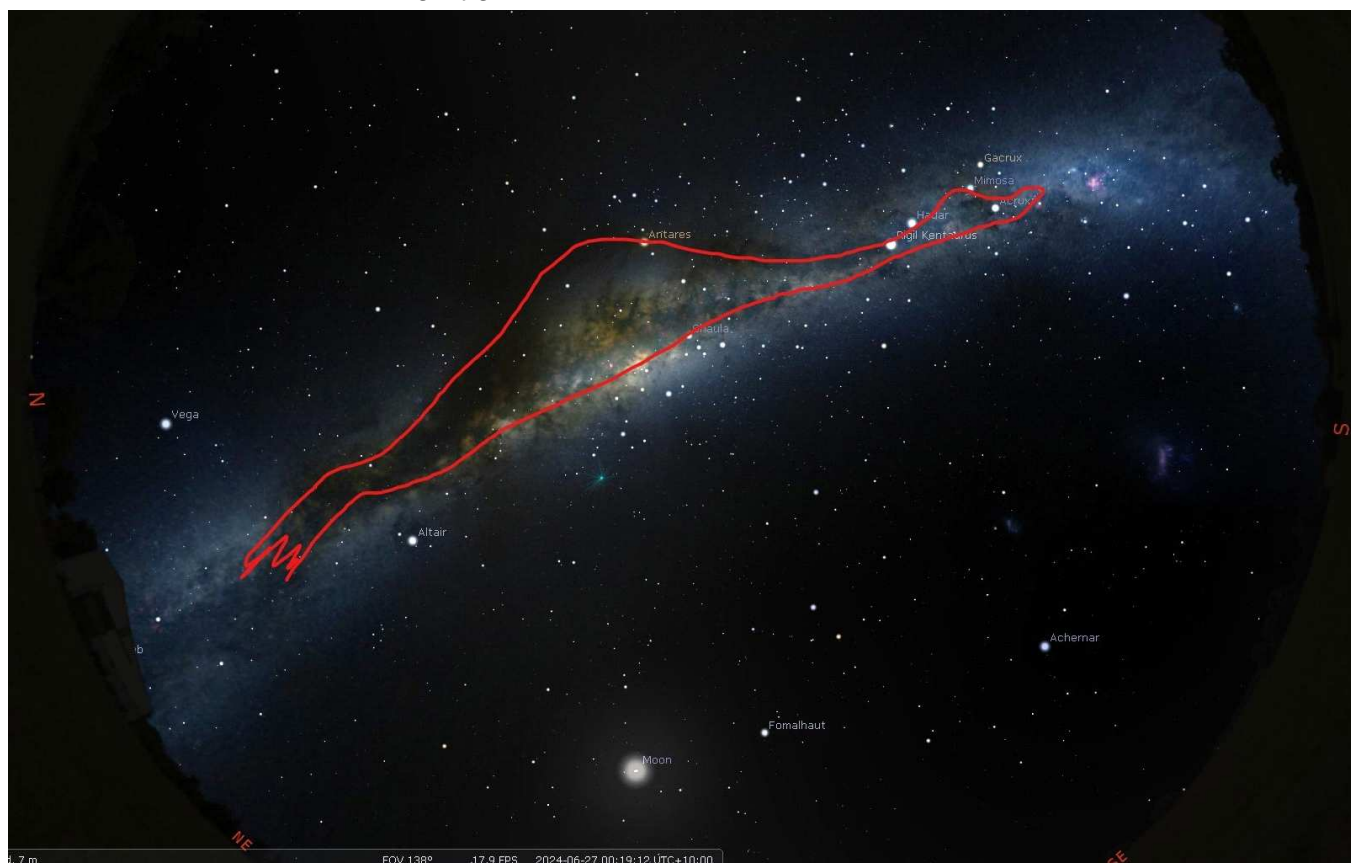
Astro Mo Pho. The Cosmic Zoo.

Since the dawn of time, pareidolia has caused humans to perceive images of objects, where no such object exists, and looking at the stars is no exception. We've been naming patterns of stars and shadows in the night sky after animals since we first had names for them.

Taurus, the Bull, is widely considered to be the oldest constellation to be recognised as an animal, with it thought to be depicted in 17,000 year old cave paintings discovered in the Lascaux caves in France. Over history, we have filled the sky with animals, real and mythical. Centaurs, dogs, foxes, Unicorns, goats, crabs and scorpions to name a few.

The invention of the telescope, and later the camera, allowed us to see an entirely new type of cosmic animal, the Nebula, and our members have gone on safari and managed to capture images of cosmic chickens, Tarantulas, Dragons and Swans to name a few.

But the naming of animals in the sky is not unique to Northern Hemisphere cultures. Indigenous Australians have been heralding the arrival and departure of seasons with the appearance of cosmic animals for millennia. The Emu in the sky is one of the most easily recognisable Aboriginal constellations. It is made up by the shadows of the Milky Way, and stretches across most of the entire span of the Milky Way during the night from Autumn to Spring, with the Coal Sack nebula in Crux forming the Emu's head, The central bulge of the Milky way its body, and its toes stretched out almost touching Cygnus, the swan.



Screenshot from Stellarium.

In July, Ingalpir (the Crocodile) is prominent, and is recognised by Northern Australian Indigenous cultures in the position of what we see as Scorpius, and Totyaguil (The Eagle) is prominent in August as recognised by the Boorong people of Victoria in what is more commonly known as Aquila. We have no way of knowing how long these astronomical features have been recognised by Australian indigenous cultures.

The Cosmic Zoo Astro Mo Pho Challenge will be extended through to the July Members Meeting, so if you haven't already gone on your cosmic safari and snapped your animal photo, you still have time. It's also a great way to get to know the constellations.

Clear skies.

Chris Kostokanellis

Mo Pho # 16. Topic month is "The Cosmic Zoo part 1".

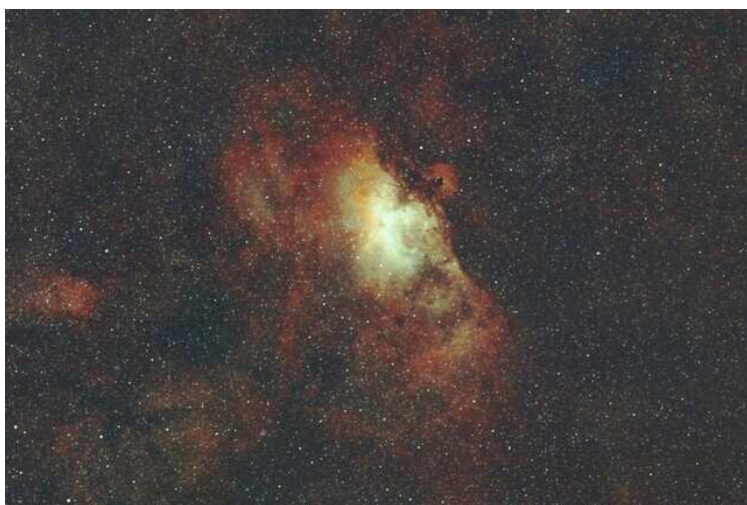
Space cats, dogs, centaurs, lobsters, spiders, scorpions and the various objects that reside on them are all valid targets for this challenge.

Right - An emu's head (Coalsack Nebula) and a Chicken IC2944 running around the hind legs of a Centaur.

This field of view captures the entire Southern Cross with the Jewel Box on the far left, Emu Head / Coal Sack on the bottom left, Running Chicken Nebula right of centre and the Pearl Cluster above it, and the Statue of Liberty Nebula at the top right. I shot this on the 21st May under a 95% illuminated Moon using a 2nd hand 70-210mm lens at 70mm FL, attached to my ASI294 MC Pro camera, and an Antlia Tri-Band filter, which did a great job of taming the moonlight, mounted on my little AZ-GTi tracking mount.

This was 59 x 2min frames, stacked with darks and flats in Deep Sky Stacker, and processed in Siril.

By Chris Kostokanellis.



Left - The Eagle Nebula, M16.

I imaged this over 2 nights last week. This is 215 Minutes with my 80mm refractor and ASI294 camera, using the Optolong L-Extreme filter. 43 frames stacked in DSS and processed in Siril.

By Chris Kostokanellis 2-Jun-2024.



Right - The Fighting Dragons of Ara, NGC 6188.

I had 1 hr of exposure on it from last year, and added another 4 hrs to it earlier this week, so this is 5 hrs exposures in total.

The "Dragon's egg" at the bottom is a large star that has blown off part of its atmosphere in previous outbursts.

This was taken using my 80mm refractor, 0.8 reducer/ Flattener, Optolong L-Extreme dual band filter and ASI294MC PRO camera. Processed in Siril.

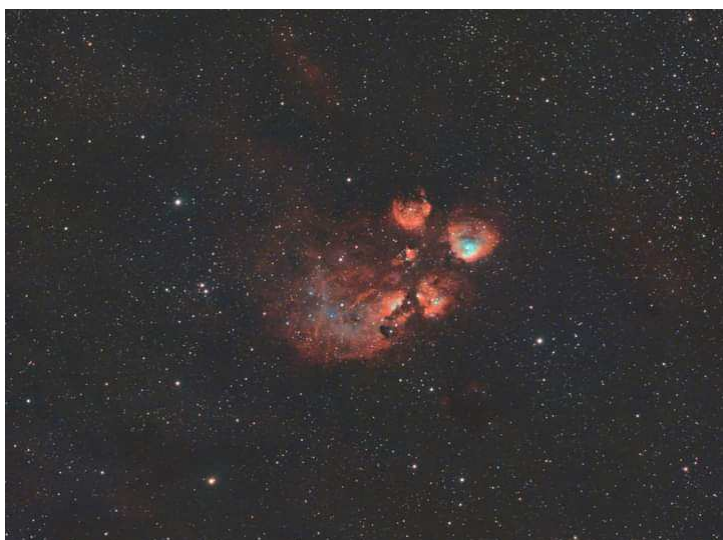
By. Chris Kostokanellis



Left - NGC 6334, The Cat's Paw Nebula at the tip of the Scorpion's tail. Imaged with my Sharpstar CF80, 0.8 Reducer, Optolong L-Extreme filter and ASI 294 MC Pro camera.

Stacked in DSS and Processed in Siril.

By Chris Kostokanellis



Right - The Swan Nebula, M17. This is a combination of 13 x 5 minute frames I captured 12 months at the South Pacific Star Party using a UVIR filter, combined with 10 x 5 minute frames captured from my back yard last week using the Optolong L-Extreme filter. 135 minutes total exposure. All with my 80 mm refractor, 0.8 Flattener / Reducer and ASI294 MC Pro camera.

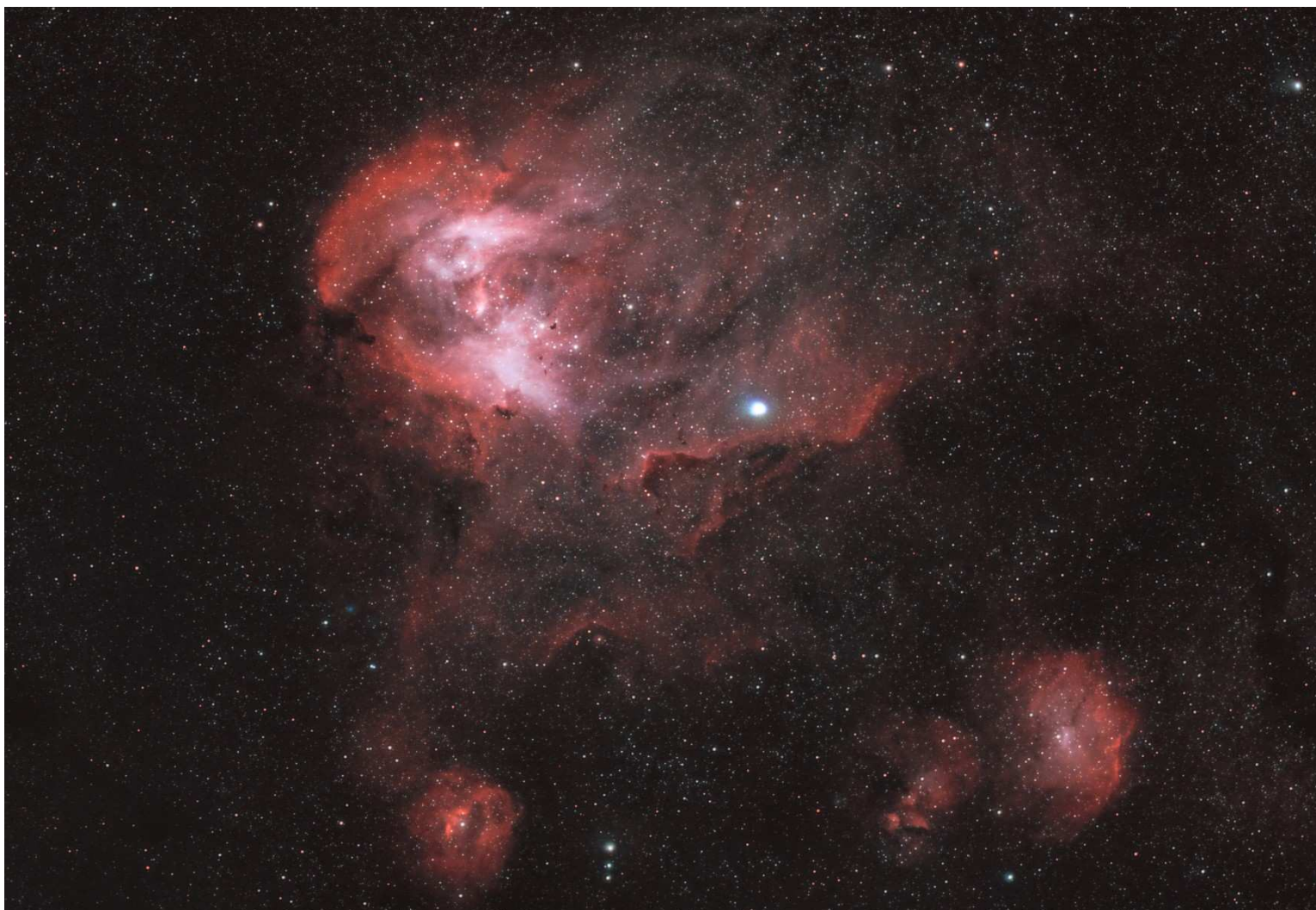
By *Chris Kostokanellis 2-Jun-2024.*



Below - Cosmic Chicken, IC 2944.

This is IC 2944, the Running Chicken Nebula. I imaged this over 3 nights last week, and managed 7.5 (5 min subs) hrs on it with my 80mm refractor and L-Extreme dual band filter. The wider photo was taken previously with a 70mm lens, and shows the Chicken's location relative to Crux.

By *Chris Kostokanellis 4-Jun-2024.*



Left - My take on the Eagle Nebula M16 for Astro Mo Pho. Taken over many nights and 2 seasons with 2 different cameras, over 7 and 4 hours of 3 minute subs (ZWO 533MC) and 3 hrs of 120 sec. subs ZWO (294MC) with the L-ultimate and L-enhance filters, *by Nik Axaris.*

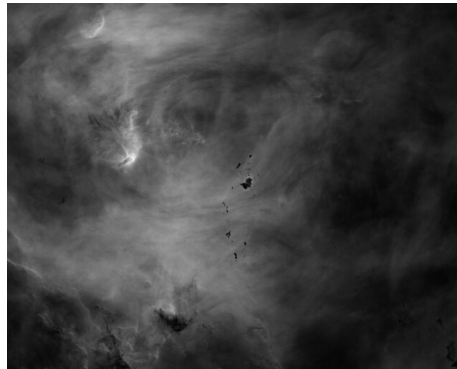
Right - Lobster Nebula NGC6357 complete with the Koala in the middle, *by Nik Axaris.*



Below Left - NGC 6188 Fighting Dragons of Ara (SHO) - this image was taken some years ago at Martin Pugh's (one of the best astrophotographer's going around!) remote telescope service where a group of us paid to access his equipment and expertise (RC 12.5" f9 / SBIG SRXL 11002 / Astrodon filters, software Bisque Paramount ME II). *By Russell Smith*

Below Centre - The second I took some years ago - Hydrogen alpha of the Running Chicken Nebula - (12" Newtonian f4 - Baader Ha 7nm / EQ8, QHY22M. it is a close-up of the Bok globules. I kind of see a celestial space fox in there too. *By Russell Smith*

Below Right - Third image the Prawn Nebula IC 4628 - TS 130 mm APO, 0.79 flattener, SHO QHY163m less than 2hrs data - I've thrown in to include a tropical crustacean. *By Russell Smith*



Right -

Running Chicken nebula, IC 2944
 20 stacked photos, 30 sec each
 20 darks
 Telescope - Redcat51

By Sylvie Grandit

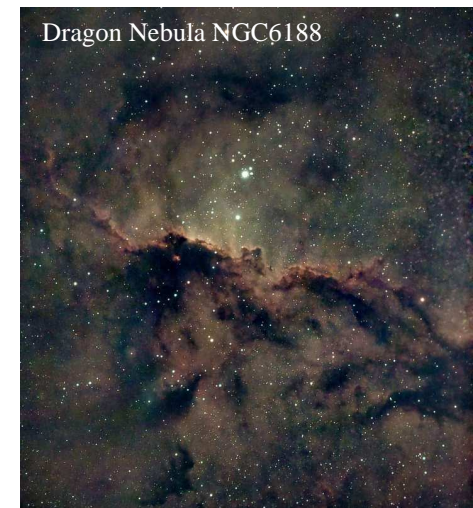
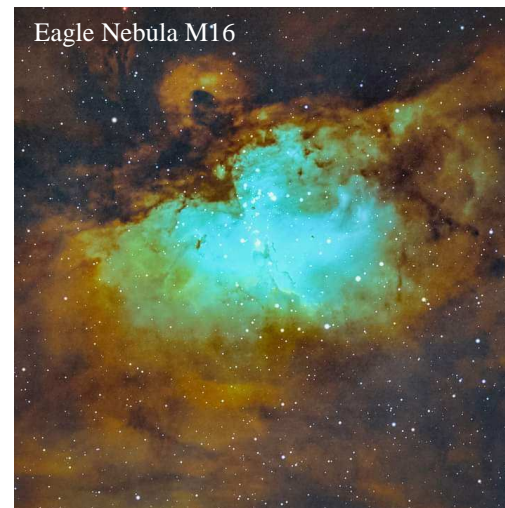
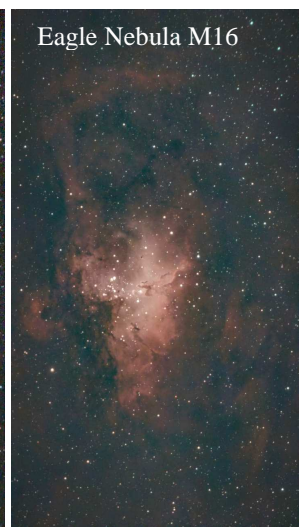
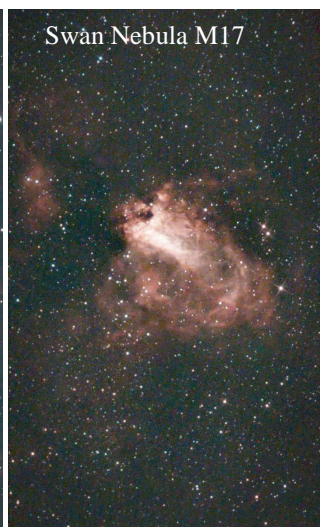
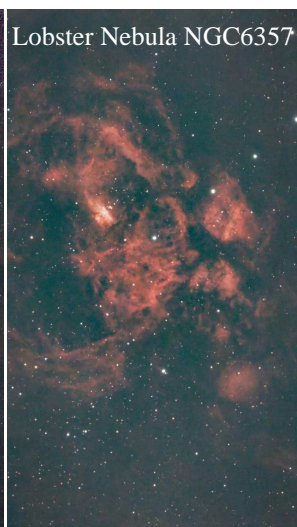
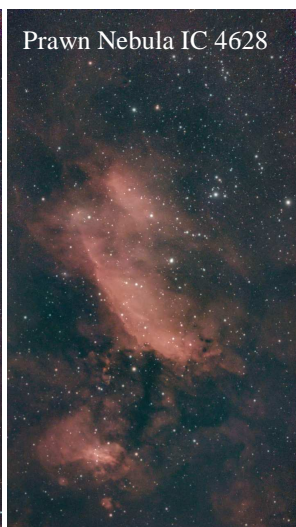
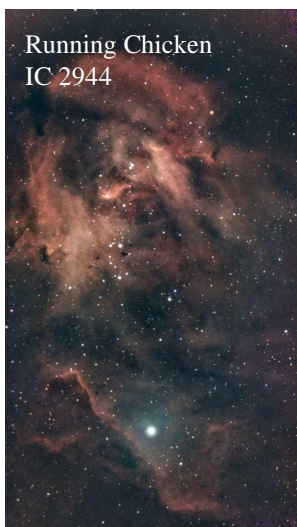
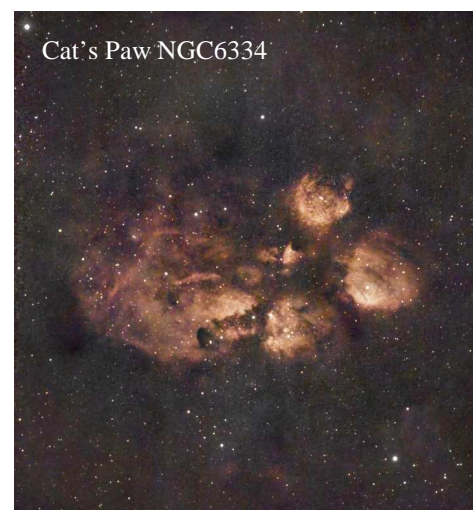
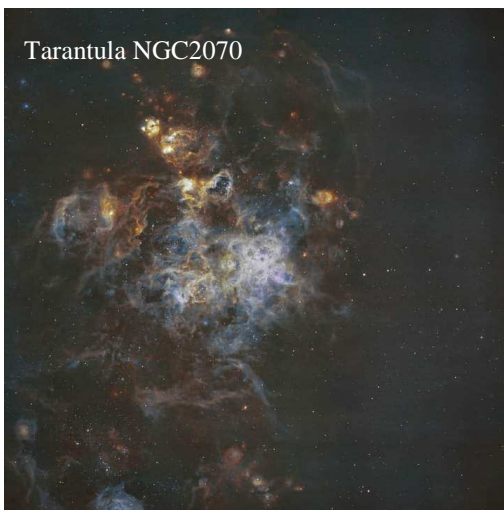


On this page is a collection of images for the Astro Mo Pho Zoo challenge, taken by *Kelly Clitheroe*

Right - Emu imaged with fisheye lens from the ASV's LMDSS near Heathcote.

Below -

Tarantula NGC 2070, Running Chicken IC 2944, Cat's Paw NGC6334, Prawn Nebula IC 4628, Lobster Nebula NGC6357, Swan Nebula M17, Eagle Nebula M16, Blue Horsehead Nebula IC 4592 and Dragon Nebula NGC6188.

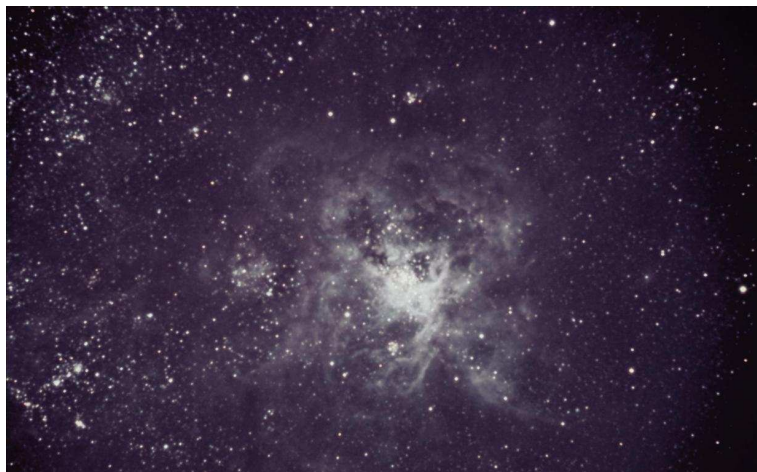


For my Astro Mo Pho #16, I imaged the Tarantula NGC2070, Butterfly cluster M6, Bug Nebula NGC6302, Cat's Paw Nebula NGC6334 and the Lobster Nebula NGC6357 on the 6th June 2024 using the telescopes in the MPAS observatory. I attached DSLR cameras to 3 of the telescopes.

I had to contend with the colourful lights from the Harry Potty show, with degraded many of the images. With Photoshop I was able to rescue most of the images.

I also imaged Comet Pons-Brooks on the same night, see page 23.

By Greg Walton



NGC2070 imaged with Meade 350mm F10 EQ8 Pentax K30 30x30sec iso6400 6 June 2024 by Greg Walton



M6 imaged with Meade 350mm F10 EQ8 Pentax K30 30x30sec iso6400 6 June 2024 by Greg Walton



NGC6302 imaged with Meade 350mm F10 EQ8 Pentax K30 30x30sec iso6400 6 June 2024 by Greg Walton



M6 imaged 8 inch Newtonian EQ6 Pentax K30 30x30sec iso3200 6 June 2024 by Greg Walton



NGC6334 imaged 8 inch Newtonian EQ6 Pentax K30 30x30sec iso3200 6 June 2024 by Greg Walton



NGC6357 imaged with 127mm Refractor F7 EQ6 Pentax K30 30x30sec iso6400 6 June 2024 by Greg Walton



NGC6334 imaged with 127mm Refractor F7 EQ6 Pentax K30 30x30sec iso6400 6 June 2024 by Greg Walton

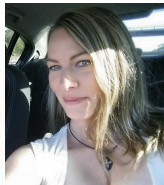
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Nerida Langcake



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Anders Hamilton



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Simon Hamm



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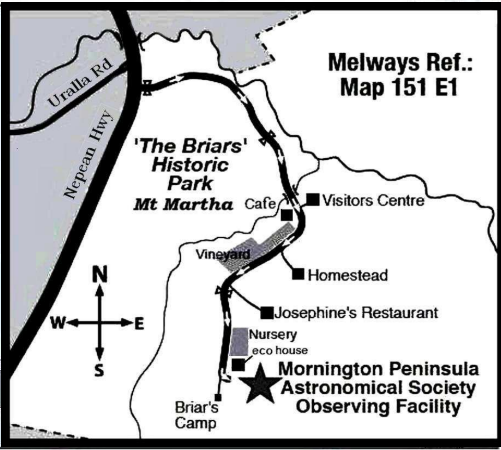
SOCIETY MEETINGS

Meeting Venue: MPAS Astronomy Centre
 The Briars, 450 Nepean Hwy, Mt Martha
 (Melways ref. 151/E1)
Society meetings: Don Leggett Astronomy Centre
 8pm on the third Wednesday of the month
 (except December)
 (See map at right & Below)



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

Phone: 0419 253 252
Mail: Mornington Peninsula Astronomical Society
 450 Nepean Hwy, Mount Martha, Victoria, 3934



LIBRARY



Fred Crump

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

E-SCORPIUS NEWSGROUP

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

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VIEWING NIGHTS - MEMBERS ONLY

Members only Viewing Nights - any night at The Briars, 450 Nepean Hwy, Mt Martha. 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
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Phone: 0419 253 252
Mail: Mornington Peninsula Astronomical Society
 450 Nepean Hwy, Mount Martha, Victoria, 3934



Members please write a story about your astronomy experiences and add some pictures. Send them to the editor: Greg Walton gwpas@gmail.com
 MPAS newsletters online - https://drive.google.com/folderview?id=0BvykxzZG19g_SUNmZVhkZTFGWTA

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