



Cover image: Scale model of the space shuttle at Queensland Museum.
By Greg Walton

SCORPIUS

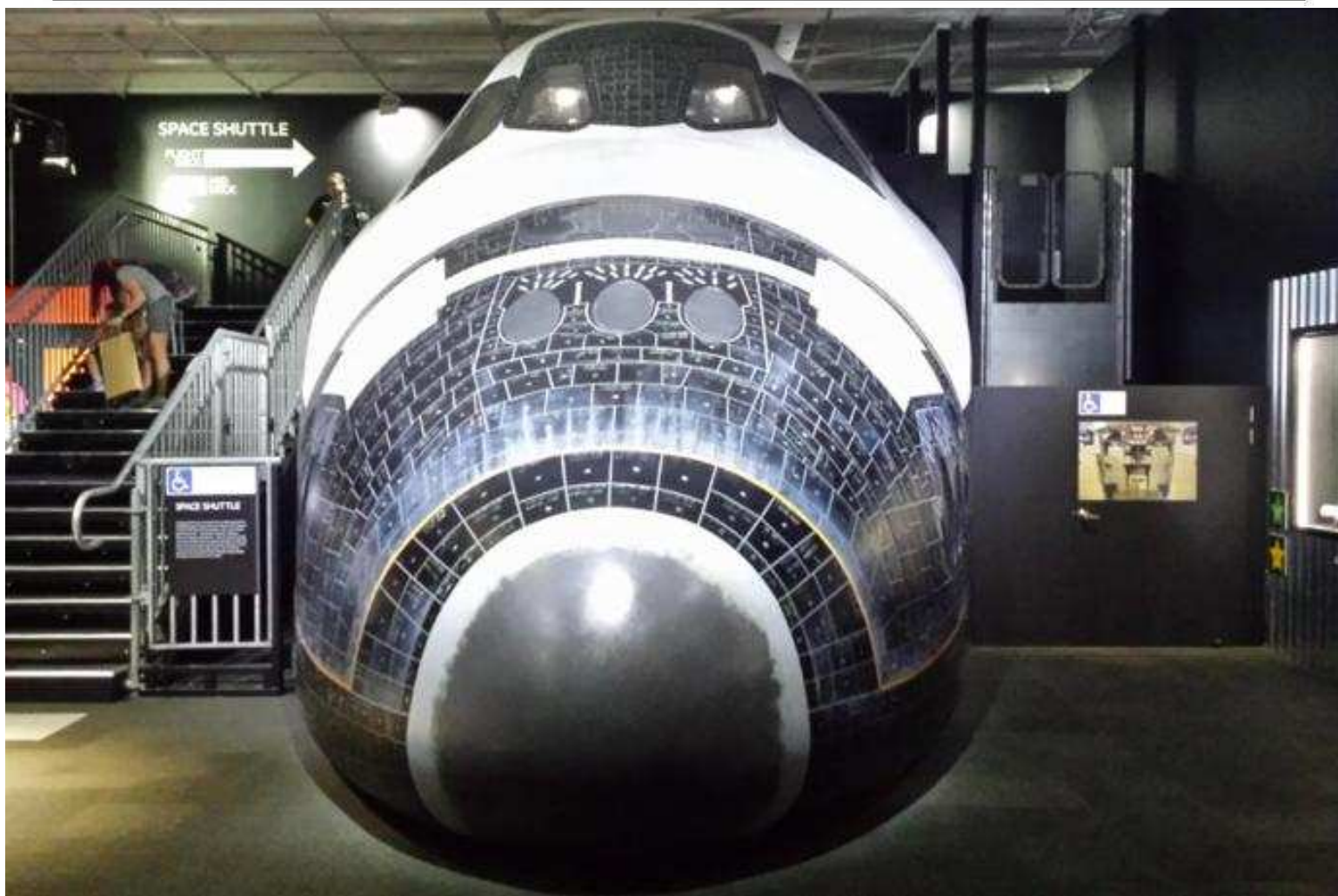
THE JOURNAL OF THE
MORNINGTON PENINSULA ASTRONOMICAL SOCIETY INC.

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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



Public Night May 3rd - The May public stargazing night held at the Briars went ahead with 78 visitors plus many members present, though some had bafflingly travelled interstate for a star party in the rain instead. This was about a third more visitors than actually booked, which was a little surprising given the overcast weather, though at least it was dry at the Briars. Trevor Hand gave the talk indoors on Stars. Outside, unfortunately, the evening was under total cloud cover so a few visitors may return next month to get a view of the skies. Members present as per the log book were Mark Stephens, Fred Crump & Bonnie Cass, Ashley, Jamie & Piper Grierson (all three of whom looked after new arrivals), Nerida Langcake, Bob Heale, Peter Skilton, Phil Holt, Peter Lowe, Coleen & Peter Conboy, John & Marj Cleverdon, Simon Hamm, Kathryn Hand, Lara Conway, Katherine McCoy and Philip Rea. *Regards, Peter Skilton*



School Viewing Night May 9th

The school stargazing evening for Balcolme Grammar in Mt. Martha started off with the venue being unexpectedly moved from the school hall to a classroom at the last moment, then the technical difficulties getting our laptop linked to their large format television in the new room. So the proceedings started on an unsteady footing.

While the teachers were grappling with that, Peter Skilton began the talk with his meteorite and corner cube reflector, followed by Fred Crump sharing his Apollo 11 poster and recollections with the kids.

One young lad there asked Fred

how he knew so much. Once the gremlins were sorted and everything was up and running, a shorter solar system talk was given by Peter Lowe, who didn't quite make it to Mars before parents' collection time. The kids were Year 5 buddied up with a companion pupil from probably Year 1 or thereabouts. Lots of questions arose and the Year 5's were noticeably knowledgeable in solar system matters. The age disparity no doubt made the talk very difficult for the very younger ones to follow at times. Alas, the skies were completely overcast all evening until (of course) everyone had departed and the cars were about to leave, when a hole opened up with views of Spica, Crux, Centaurus and surrounds. Nerida Langcake brought along a borrowed Dobsonian set it up in the classroom. Mark Stephens, Philip Rea and Phil Holt were perched at the ready with instruments for that break in the clouds that just didn't eventuate in time. Given the school is very close to the observatory, it's possible some of the pupils may visit us in the future with their parents. *Regards, Peter Skilton*



Society Meeting May 15th - We had 30 in attendance at the Briars last night, chaired by Peter Lowe. The main speaker for the evening was Prof. Jeremy Mould from Swinburne University, speaking about dark matter and the new underground physics facility, in Stawell, coming online. It will use large amounts of sodium iodide crystals to detect dark matter passing through it over the background noise. It is now fully funded by a combination of State and Federal government backing, and is the only underground particle detector in the southern hemisphere, outside of a cosmic ray one in Antarctica. It is collaborating with a similar detector already operational in Italy, in order to rule out any effects due to Earth's orientation in space. The detector resides in a large man-made cavern excavated 1 kilometre underground so as to block out cosmic ray interference, and is reached via a 10km long underground helical 1-way driveway with a working gold mine beneath it. This means at noon everyday the detector must be muted while blasting occurs! So this is a detector that isn't interested in that kind of big bang. And the Melbourne University staff and students are not exactly taking zero risk being there! Ian Sullivan then presented his traditional wine thankyou gift for the speaker. Unfortunately, due to technical issues, only the first 30 minutes and the last 5 minutes of the main talk were successfully recorded, and none of the report afterwards by Greg Walton on his recent visit to Brisbane Museum to see the NASA artefacts exhibition. Perhaps Greg might be persuaded to give an encore delivery at the BBQ on Saturday and we capture it successfully this time. *Regards, Peter Skilton*



Scout Viewing Night May 17th - It was a last minute booking by the 1st Tootgarook Cubs, but the 40 boys and girls in their pack, and their parents and pack leaders, enjoyed the night at The Briars immensely. Skies were clear with only some thin cloud later in the evening, despite the valley filling with mist and possibly some smoke from local wood fires as the temperature was fairly cool. Jupiter put on a magnificent show and Saturn rising in the East did not disappoint. Couple that with a predicted possible aurora that night, it just added to the excitement. Inside, Peter Skilton gave the astronomy badge talk and handed around one of his meteorites, with Fred's Apollo 11 poster on display. Outside on the instruments on the slabs and inside the observatory, pointing out interesting things in the sky were Fred Crump, Bonnie Cass, Bob Heale, Simon Hamm, Jamie Pole, Mark Stephens, Greg Walton, Robin Broberg, Phil Holt, Nerida Langcake and Ashley Grierson. Hopefully I remembered all members that I saw. There was also a fair bit of interest in the toys on display indoors, especially the Star Wars and Star Trek ones. *Regards, Peter Skilton*



Members BBQ May 18th - Saw about 25 members in attendance. After the BBQ I opened the observatory as we had many new members wishing to look through the telescopes. Mark Hillen was running the 14-inch Meade. Jupiter was showing its Great Red Spot which looked redder than usual through the 14 inch. The red spot does change its colour from time to time. Once all the members had left the observatory, I returned to the big shed (clubrooms) and found that the old kitchen had been almost totally removed in readiness as we had tradesman booked in to start installing a new kitchen in a week. Thank you to all those helping out. *Greg Walton*



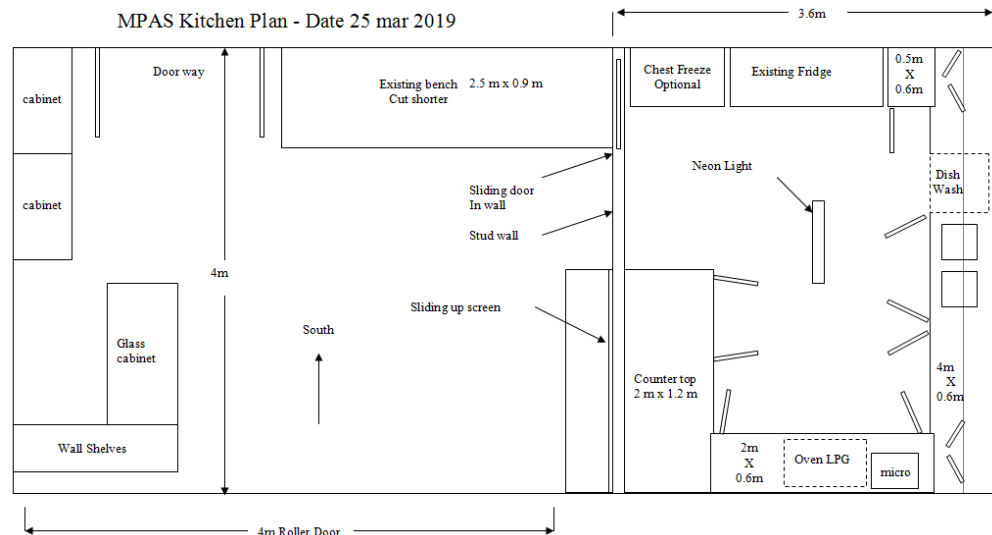
MPAS gets a new Kitchen.

Some months ago the committee decided the kitchen needed replacing and allocated \$15,000 for the project.

The first stage was to make a plan and a budget. Most importantly I was asked to include a dishwasher and an oven if possible. Also, this work should be completed before the MPAS 50 years anniversary; so to speed up the job, we would get tradesmen in to do most of the work towards the end of May.

Pia & I spent the week gathering materials for the project, then washed and painted the floor before work started.

Greg Walton



Wash the floor



Timber delivered

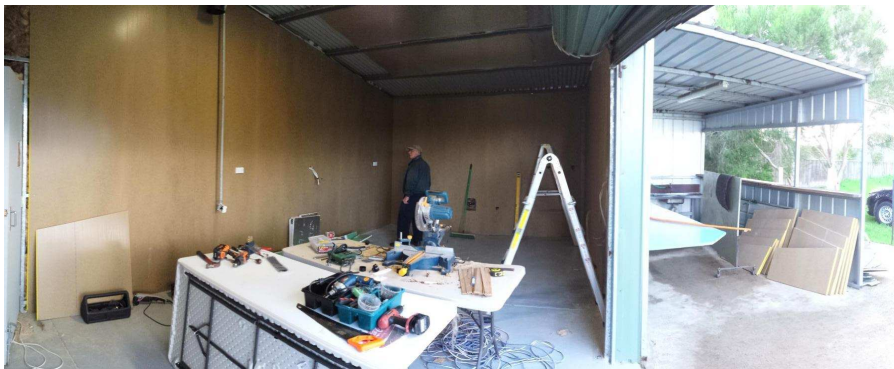


Kitchen delivered

Tradesmen started work at 7am on Monday hoping to get most of the work finished by the end of the week.



Day 1 - Removed tin from wall & assembled kitchen so we could measure where new power points were to be placed.



Day 2 - Lined walls with yellow tongue boards & roughed in electrical cables.



Day 3 - Built ceiling & started fitting cabinets.



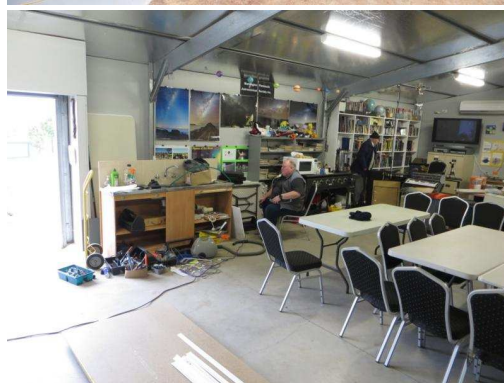
Day 4 - Finished fitting cabinets & bench tops.



Day 5 - Built walls, cut and glued tiles.

MPAS Working Bee 1st June - Saturday, the day after the tradesmen left, we still had many jobs that had to be finished. There was a larger than normal turn out of members for the working bee. It was good to see so many new members helping out. We completed many jobs on the list. We did not get the painting done, but maybe next week. Everyone seemed to have a good time. The BBQ after went well, finishing up at 7:30pm. A big thank-you to all who helped out on the day. The site looks neat and tidy now. *Greg Walton*

Photos by John Cleverdon



Sunday - Pia & I returned to paint the walls and fit the coffee-making table. *Greg*



Over the next few days Pia and I painted the walls in the kitchen, fitted wood around servery window, oiled the bench tops, adjusted the cupboard doors, tested the gas stove top and cleared the meeting hall as we would need it for a scout viewing night on the coming Thursday and public night on the Friday.



Wednesday - Dave Rolfe finished up the electrical wiring and tested the oven.



Above: 3-position switch on kitchen wall.

This is to reduce the risk of overloading the circuit. 1 = Hot water, 0 = Off & 2 = Oven. All lighting switches are now near the kitchen door.

Scout Viewing Night June 6th - We had 20 scouts and 10 leaders and parents from the 1st Mornington Scout group at the Briars that night. The evening started with the skies being totally overcast and even a bit drizzly to start with. Driving to the site the crescent Moon was visible, but then had disappeared behind cloud by the time I'd arrived. The astronomy badge talk inside in the warmth was given by Peter Skilton, with those braving the elements outside being Nerida Langcake, Fred Crump with his Apollo-11 poster, Greg Walton, Phil Holt and, initially, Phillip Rea. As is often the way at the site, the skies dutifully parted about a quarter of an hour before the end, and everyone was able to go outside and see Jupiter and Saturn through the telescopes. So they were all chuffed. Their cub packs leader was also present. And it looks like they'll be booking a night with us later in the year as well, plus a few will attend the public night for June with the rest of their families. *Regards, Peter Skilton*



By Nerida Langcake

Public Night June 7th - The public night that Friday saw 138 in attendance, plus members on top of that number. So it was a busy, busy, busy evening, especially since only 97 were booked via all avenues! Clear skies that evening, and some strange hype in the media over Jupiter's opposition this week, probably contributed to the many drop-ins. Trevor Hand gave the talk indoors in the warm to standing room only. Outside on the telescopes in cooler conditions and offering moral and other support were Fred Crump & Bonnie Cass, David & Jamie Rolfe, Coleen and Peter Conboy, Peter Skilton, Simon Hamm, Gavin Curnow, Nerida Langcake & Piper Grierson, Jim Johnston, Katherine McCoy, Ben Claringbold, Tamara Dennett & Stephen Edwards, Mike Smith, John & Marj Cleverdon, Jamie Pole, Anders Hamilton, Greg Walton, Heath Lewis, Jason Heath and Alan Predjak, and possibly some others who forgot to sign the members' log book near the glass cabinet. There was an impressively long queue on the Dobsonian being operated by Jamie and Piper on the upper slab. *Regards, Peter Skilton*



School Viewing Night June 11th - The visit to Benton Junior College in Mornington on Tuesday went extremely well, with 63 year-5 pupils sitting on the floor, plus teachers overseeing them from around the room. Space is on their curriculum at the moment, so they were all well briefed for the visit. The solar system talk inside was given by Peter Skilton, with Fred's Apollo poster on display. Outside next to the basketball court on telescopes were Nerida Langcake, Greg Walton, Phil Holt, Mark Hillen, Simon Hamm, Mark Stephens and Fred Crump. The skies were clear and the temperature not too low for a June evening. Everyone was able to enjoy views of Jupiter and its moons, Saturn and its rings low in the East, a first quarter Moon, Omega Centauri and other delights. One of the pupils was also a Mornington Scout who'd come to the Briars last week with their visit and for a different talk. *Regards, Peter Skilton*

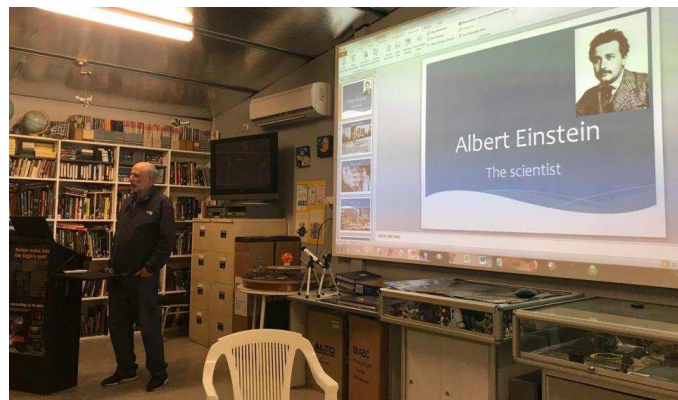


Scout Viewing Night June 14th - The cubs night on Friday for the 1st Somerville, Tyabb and Hastings packs together went ahead with 95 visitors, including 54 cubs, parents and the leaders. The evening started on the telescopes and binocular chairs outside while the Moon and Jupiter were visible, then moved indoors to hear Peter Skilton give the astronomy badge talk. There were lots and lots of questions. After the talk, the group moved back outside onto the telescopes to see Saturn and other objects. The skies had been threatening to cloud over earlier but, as often happens at the Briars, they then cleared nicely as the cloud parted to give good seeing conditions. Helping outside were Greg Walton, Pia Pedersen, Fred Crump, Bonnie Cass, Simon Hamm, Philip Rea, David Rolfe, Jamie Pole, Ashley Grierson, Nerida Langcake, Tischa Biddle and Shaoheng Yong. *Regards, Peter Skilton*

Society Meeting June 19th - For those who didn't brave the cold and damp weather that evening, the society meeting at The Briars, with Ross Berner speaking about the life and discoveries of Albert Einstein, is now online on YouTube.

<https://www.youtube.com/channel/UCm6XOkIcIfIt4y0XRBXpXuw/videos>

Remember, if you wish YouTube to inform you of new additions to the MPAS channel, then you need to subscribe to that channel. Subscription is free and just gives us a distribution list so we know who is interested in the videos. *Regards, Peter Skilton*



Members BBQ May 22nd - Saturday night, there was a big turn up - about 40 people. It was also the Winter Solstice that night. An ISS pass-over was observed early in the night. The new kitchen worked well and was well received by the members. *Regards, Dave Rolfe*

School Viewing Night June 24th - Monday evening saw 66 year 5&6 pupils from St. Augustine's Primary School in Keilor visiting Camp Manyung. Skies were clear and Jupiter and Saturn gave a very steady viewing on a cool evening. This was their first night on camp. The talk indoors was given by Peter Skilton, followed by telescopes outside on the camp's oval being operated by Greg Walton, David & Jamie Rolfe, Nerida Langcake, Simon Hamm, Phil Holt and Mark Hillen. The teachers and kids were really pumped up about this night, with astronomy being on the curriculum in the next few weeks. *Regards, Peter Skilton*

School Viewing Night June 25th - Tuesday evening then saw 46 year 5 pupils from Benton Junior College in Mornington visited by the Society at the school. Again, skies were clear and Jupiter and Saturn gave a good show, together with NGC4755, Omega Centauri and other delights. It was a Moonless evening though. The talk was given by Peter Skilton, and the telescopes were guided by Greg Walton, Pia Pedersen, Mark Hillen, Phil Holt, Simon Hamm, Mark Stephens and Nerida Langcake. *Regards, Peter Skilton*



By Nerida Langcake

VASTROC 17th & Astrophotography Workshop 2019



The Victorian Astronomy Convention, VASTROC, is a biennial conference for all amateur astronomers in Victoria. It is hosted in odd years by the different astronomical societies around the State. MPAS is excited once again to be hosting VASTROC, with 2019 being the 17th since its inception. Set for the weekend of 9th to 11th August 2019, aligning with the 50th Anniversary year of MPAS and National Science Week, it will be held at the regional Briars Astronomical Observatory and surrounding facilities in Mount Martha.

This event will be open not only to members of astronomy groups, but also to other community groups with common interests and, indeed, to all members of the public with a fascination about the Universe. This year MPAS' successful Astrophotography Workshop will be run in conjunction with this event. The convention will contain workshops, talks, displays and interactive forums in a social atmosphere. Its broad theme will be the Moon (with recent 50 year anniversary of the Moon landing), and all things Apollo will be encouraged and celebrated.

The \$100 ticket price includes;

- Dormitory accommodation Friday & Sat night (limited to the first 50, BYO pillow & blanket.)
- Saturday & Sunday mornings' toast & coffee.
- Lunch and Dinner Saturday only.
- APW Talks, Telescope Viewing
- Guided Bushwalk for Wildlife Photography.
- Talks ranging from 25-40 mins with a break between talks (or Q&A).

Please note: This itinerary is subject to change.

Friday - 9th August

5PM Arrival registrations.
 7PM BBQ Dinner.
 8PM Telescope Viewing / Trivia / Open Forum



Saturday - 10th August

Don Leggett Astronomical Centre

9AM Guided nature walk at the Briars - Wildlife photography
 10.30AM Welcome Introduction to VASTROC 2019
 11AM Antarctica Presentation (Anders Hamilton)
 12 Noon Lunch
 1PM Introduction to Astrophotography (Jamie Pole)
 2PM Aurora Photography (Alex Cherney)
 3PM Time Lapse Photography (Greg Walton)
 4PM Deep Sky Photography (Paul Albers)
 5PM Vendors Stall, Briars Observatory Tour, Group Photo
 6PM Dinner (Included / BYO alcoholic drinks)
 7PM Keynote Speaker - Dr Brad Tucker The Universe and the Future of Space
 8PM Astrophotography Field Practice / Telescope Viewing / Trivia / Open Forum / Social

The Briars Camp (next door)

Peter Lowe (Topic & abstract TBA)

Ken Harrison : Spectroscopy

Ian Sullivan (Topic & abstract TBA)

(a) Clint Jeffrey : Radio Astronomy

(b) Dr Russell Cockman : Solar & IDA

Peter Norman : Dark Matter & Dark Energy

Sunday - 11th August

9AM Nature walk at the Briars - Wildlife photography. Open till 5PM
 'Science in the Park' at Coolart Homestead, Lord Somers road, Somers.
 45 minutes from the Briars. Open till 4PM
 10.30AM Pack up & Clean up
 12 Noon Event concludes



For bookings - <https://www.mpas.asn.au/vastroc.html>

MPAS needs members' help to run this event!!!!

Some of the jobs - Setting up chairs and tables, Kitchen duties, General cleaning, Directing attendees, Monitoring check-in lists, etc. Just talk to a committee member.

Also we have planned 2 working bees on the 3rd & 4th August to make sure everything is shipshape. BBQ after 6pm.

MPAS AGM has now been moved.

When: Wednesday 21st August 2019 from 8pm

Where: Don Leggett Building, Briars Historic Park, 450 Nepean Hwy, Mt. Martha

Chair: Peter Lowe

Agenda

1. Apologies
2. Confirm Minutes of previous AGM
3. President's Report
4. Treasurer's Report
5. Election of 2019 Committee
6. Special Business - none
7. Other: Thanks
8. Close of AGM



Note: Any financial member who wishes to apply for a position on the 2019 Committee should notify the Secretary at least 7 days prior to the AGM. A form is published in the preceding e-Scorpius edition, and submission of nominations by email or snail mail is acceptable. Positions available each year are: President, Vice President, Treasurer, Secretary and 5 "Ordinary" Committee members.

VI3MOON Call Sign. The Mornington Peninsula Astronomical Society is pleased to announce the activation of VI3MOON the special event call sign to celebrate the 50th anniversary of the Moon landing by Apollo 11.

The call sign will be active from the 16th July 2019 through 24th July 2019.

Members can see how it works during the society dinner evening where we will be broadcasting from the Briars. Any licensed radio hams in the society can email d.rolfe@mpas.asn.au if you can help out with the activation. *Regards, Dave Rolfe*

Society dinner. The society will turn 50 years old on the 20th of July, which coincides with the Apollo 11 landing. MPAS will have this event fully catered so we need to know final numbers before Wednesday the 17th of July (next society meeting). There will be a \$5 contribution per attendee to help with the catering costs, book here. <https://www.trybooking.com/MWDU> This event will replace the normal BBQ night. VI3MOON will be running from the Briars as well. BYO Alcoholic Drinks. Members can book beforehand (and pay cash) at the next public night, or the society meeting or any of the school viewing nights. Limited to 100 places, bookings required. *Regards, Dave Rolfe*

Music of the Heavens Concert - Southern Peninsula Concert band playing for MPAS on the 17th of August at our Briars observatory, start time 7:30pm. To celebrate the Moon landing this unique evening for the public features a selection of space-themed tunes performed live by the Southern Peninsula Concert Band, woven together with informative space talks by the Mornington Peninsula Astronomical Society. Weather permitting, this will be followed by stargazing with telescopes. Proudly supported by National Science Week, Inspiring Australia, Royal Society of Victoria and the International Astronomical Union. Bookings are required for members not actively helping out on the night, entry is \$10. There are also raffle tickets for sale (same link). Bundled in the hamper are: 1st Prize has a small piece of the Moon; 2nd Prize a piece of lunar mineral; 3rd Prize a 3D-printed lunar globe. Members who are not operating telescopes will need to book online here: <https://www.trybooking.com/BDMNW>

2019 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 2019/2020.

Seconded by

..... Dated/...../2019

Both the nominee and the second need to be financial members of MPAS at the time of the AGM. Nominations must reach the Secretary by the 14th September 2019.



Gem Exhibition

Sat 31st Aug - Sun 1st Sep
9am to 5pm

Corner of Nepean Hwy &
91 Wilson road, Mornington

Adults \$5
Concession \$4
Children under 12 Free

Minerals
Raffles
Demonstration
Jewellery
Food & Refreshments

Frankston & Peninsula Lapidary Club Inc.

New Members Welcome

Robyn and Jett Glavanic
Jim Johnston
Shaohen Yong

Scorpius editing team.

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

Send them to: Greg Walton
gwmupas@gmail.com

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/0ByvkvxzZG19g_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		July / 2019					Red Days indicate School Holidays
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
Note 17th Io transit 9:08pm S Io shadow 9:56pm S Io transit 11:20pm F	1 Io transit 11:10pm S Io shadow 11:36pm S	2 Io transit 1:20am F Io shadow 1:50am F	New Moon 3 Io transit 5:36pm S Io shadow 6:05pm S Io transit 7:45pm F Io shadow 8:17pm F	4	5 Moon at 363,726km Public Night 8pm	6 Eu transit 6:05pm S Eu shadow 7:14pm S Eu transit 8:27pm F Eu shadow 9:41pm F	
7	8	First Quarter 9 Io transit 12:55am S Io shadow 1:32am S Io transit 3:05am F Io shadow 3:44am F	ASV Meeting 10 Saturn at opposition Io transit 7:22pm S Io shadow 8:01pm S Io transit 9:31pm F Io shadow 10:11pm F	11	12	13 Eu transit 8:23pm S Eu shadow 9:50pm S Eu transit 10:48pm F	
14 Eu shadow 12:15am F Jupiter above Moon	15	16 Saturn above evening Moon	Full Moon 17 Society Meeting 8pm Io shadow transit	18 Io shadow 12:07am F	19	20 Members 6pm Society Dinner Eu transit 10:42pm S	
21 Moon at 405,481km Eu shadow 12:25am S Eu transit 1:09am F Eu shadow 2:54am F	22	23	24 Io transit 10:56pm S Io shadow 11:51pm S	25 Last Quarter Io transit 1:06am F Io shadow 2:01am F	26 Io shadow 6:19pm S Io transit 7:33pm F Io shadow 8:30pm F	27	
28	29	30	31				

Monthly Events

Public nights - 8pm start on the 5th @ the Briars

Society Meeting - 8pm to 10pm on the 17th @ the Briars

Members Society Dinner - 6pm on the 20th @ the Briars \$5.00 pp Booking <https://www.trybooking.com/MWUDU>

Jupiter's moons and shadows transit. (S = start F = finish Eu = Europa Gan = Ganymede)

CALENDAR		August / 2019					Red Days indicate School Holidays
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
Note 2nd August Io transit 7:12pm S Io shadow 8:13pm S Io transit 9:22pm F Io shadow 10:25pm F	Note 9th August Io transit 9:02pm S Io shadow 10:08pm S Io transit 11:12pm F 10th Io shadow 12:20am F			1 New Moon Gan shadow 5:23 pm S Gan shadow 7:52 pm F	2 Moon at 359,398km Public Night 8pm	3 Working Bee & Members BBQ	
4 Working Bee & Members BBQ	5	6	7 Eu shadow 6:58pm S Eu transit 7:09pm F Eu shadow 9:26pm F	8 First Quarter Gan transit 6:30pm F Gan shadow 9:20pm S Gan shadow 11:50pm F	9 VASTROC 5pm Welcome BBQ	10 VASTROC & APW 9am to Late	
11 Coolart VASTROC 9am to 12pm	12 Saturn next to the Moon 7pm	13	14 ASV Meeting Eu transit 7:11pm S Eu shadow 9:34pm S Eu transit 9:37pm F Eu shadow 12:00pm F	15 Full Moon	16 Public Night 8pm	17 Astro Concert Neptune left Moon Moon at 406,245km	
18 Io shadow 6:30pm S Io transit 7:30pm F Io shadow 8:42pm F	19	20	21 AGM Society Meeting 8pm	22 Scorpius Deadline	23	24 Last Quarter	
25 Io transit 7:15pm S Io shadow 8:37pm S Io transit 9:23pm F Io shadow 10:37pm F	26	27	28	29	30 New Moon	31 Gem Exhibition^ 31st Aug - 1st Sep 9am to 5pm	

Monthly Events

MPAS calendar http://www.mpas.asn.au/Calendar_2019.pdf

Public nights - 8pm start on the 2nd & 16th @ the Briars

Working Bee & Members BBQ - 6pm on the 3rd & 4th @ the Briars

NSW - Nation Science Week - 10th to 18th **Astro Concert** - 7:30pm 17th @ the Briars <https://www.trybooking.com/BDMNW>

VASTROC - Meet and greet BBQ 5pm on Friday 9th, 9am start 10th & 11th @ the Briars <https://www.mpas.asn.au/vastroc.html>

APW - Astrophotography Workshop - 9am start 10th till late @ the Briars <https://www.mpas.asn.au/apw.html>

AGM Society Meeting - 8pm to 10pm on the 21st @ the Briars.

^Gem Exhibition, see page 8.

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

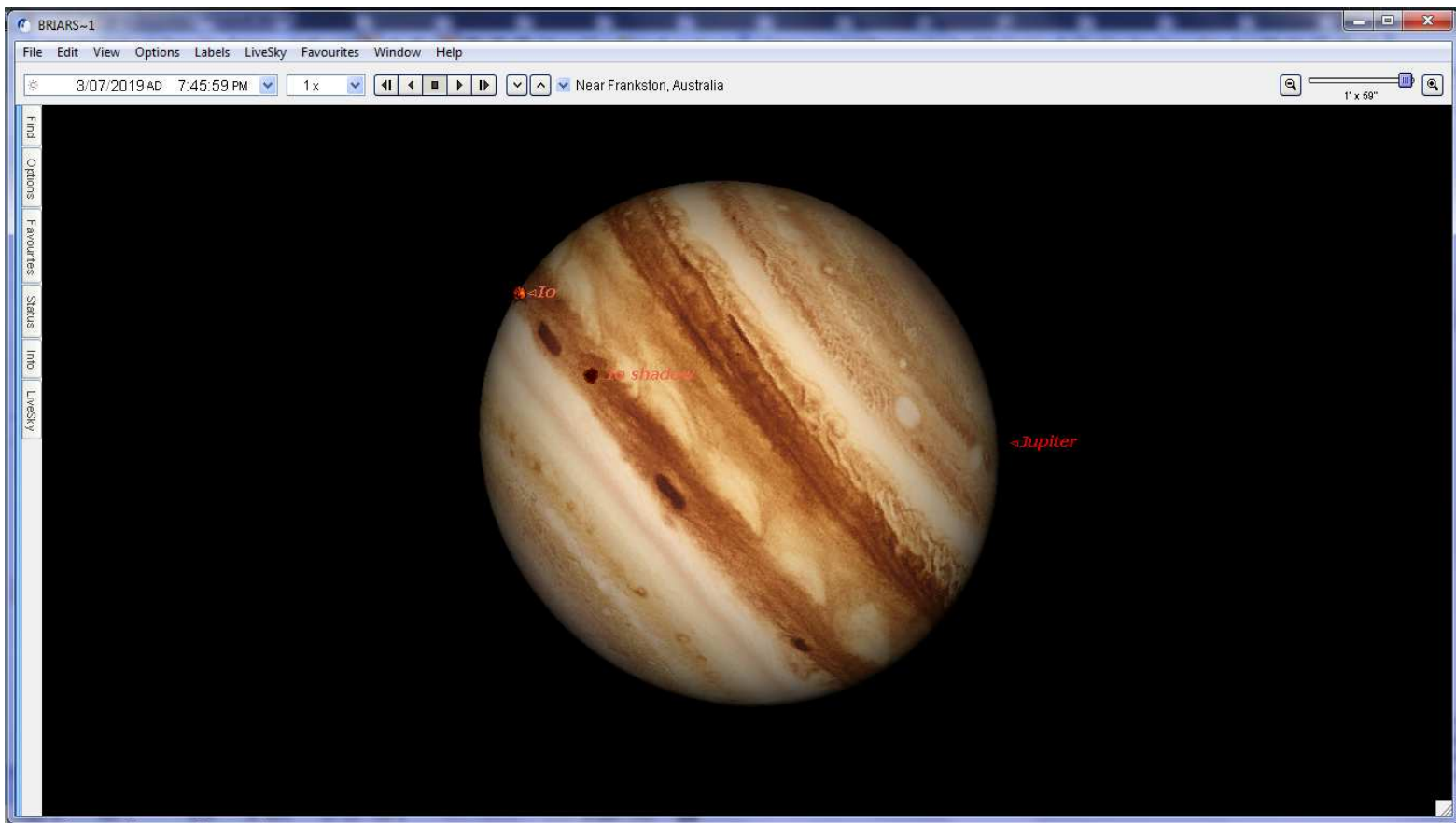
THE BRIARS SKY

By Greg Walton



A couple of photo opportunities.

Io shadow transit 7:45pm on the 3 July 2019



Saturn next to the Moon on 12 August around 7pm.



Images Produced on Starry Night

SpaceX's Starlink Megaconstellation

The 60 internet satellites SpaceX recently launched is just the beginning, if all goes according to plan.

On May 23, SpaceX sent the first five dozen members of its Starlink broadband constellation to low-Earth orbit (LEO) using one of the company's Falcon 9 rockets. Starlink is designed to provide internet connectivity to people around the world, and it will do so using a truly enormous number of satellites.

Starlink won't be able to provide "minor" coverage until about 400 spacecraft are up and running, and "moderate" coverage requires about 800 operational satellites, SpaceX founder and CEO Elon Musk has said. But the company doesn't plan to stop at "moderate."

"In a year and a half, maybe two years, if things go well, SpaceX will probably have more satellites in orbit than all other satellites combined - a majority of the satellites in orbit will be SpaceX," Musk said.

That milestone will come around Starlink launch number 30, with 1,800 satellites delivered to orbit, he said.

But the number could rise higher still - much higher, in fact. The Federal Communications Commission has granted SpaceX permission to launch a total of nearly 12,000 Starlink satellites.

Elon Musk said SpaceX has taken great pains to ensure the constellation doesn't pose a collision risk to the other occupants of LEO. For example, he said the Starlink satellites can automatically navigate around other spacecraft and larger pieces of orbital debris, using tracking data provided by the North American Aerospace Defence Command (NORAD).

The first batch is headed for an operational altitude of 550 kilometers - low enough that they'll get pulled down to Earth by atmospheric drag in a few years even if SpaceX doesn't manage to de-orbit them intentionally.

"So, I think we've got a really solution for making sure that we do not create orbital debris," he said. "And, worst-case scenario - the good news there is, the atmosphere cleans it up."

Starlink is a key part of Musk's long-term plan to help humanity colonize Mars. SpaceX hopes to use Starlink revenue to fund the development of Starship and Super Heavy, the spaceship and rocket the company is building to carry people to Mars, Earth's moon and other solar system destinations.



A view of SpaceX's first 60 Starlink satellites in orbit, still in stacked configuration, with the Earth as a backdrop on May 23, 2019.



Inside the fairing of the Starlink satellite payload section, 60 Starlink satellites are sandwiched together in a colossal tower.



An amateur astronomer's image of the Starlink satellite train in the Earth's night sky.

The launch of the first Starlink satellites featured a Falcon 9 whose first stage had already flown twice. It launched from Cape Canaveral Air Force Base in Florida, with the booster acing its third-ever landing, touching down on SpaceX's ship.

Each Starlink satellite weighs about 227 kilograms. Together, the 60 spacecraft made up the heaviest payload that SpaceX has ever launched, Musk said. Unlike more traditional satellite launches, in which satellites are deployed one at a time in succession, SpaceX released all 60 satellites at one time, letting them bump into each other as they slowly drifted away and apart.

Star Show Review

I took the family down to see the inaugural Star Show sound and visual spectacular last Saturday night at Fed square. The event was billed as a 'ROCK & CLASSICAL JOURNEY THROUGH THE UNIVERSE' with Matthew Fagan (Lord of the Strings) leading an orchestra with Perry Vlahos (ABC's 'National Treasure') with the pre-show talk.

The walk-in pre-show visuals were amateur images ranging from Aurora and Deep sky photos (quite a few from Neil Creek and Mt Burnett) to timelapses and zooms. Michael opened the show in a space suit with a short solo before introducing Perry.

Perry then chaired the event with a 45-minute myth busting talk, focussing on Astrology flaws, the sky rising from the east (and explaining procession) while doing a sky tour with the Starry night software. He also took a couple of people from the audience for some crowd participation work.

Perry's talk seemed a little 'flat' or maybe the crowd were just there for the music part. When his talk concluded after a few questions the band entered the stage. I was hoping for an orchestra (like on the bill) but we just had an 8-piece band with string section!

Now the music show was under way, starting with some Pink Floyd blending into the War of the Worlds. On the screen (which should have been bigger) there were videos playing with animations, rocket footage, mission flyby time-lapses and so on from the NASA's achieves. Apart from Holst's 'the planets' suite the visuals and the music were not really connected. I will note the Strings section and the Grand piano were quite good here. Most pieces were shortened to a few minutes.

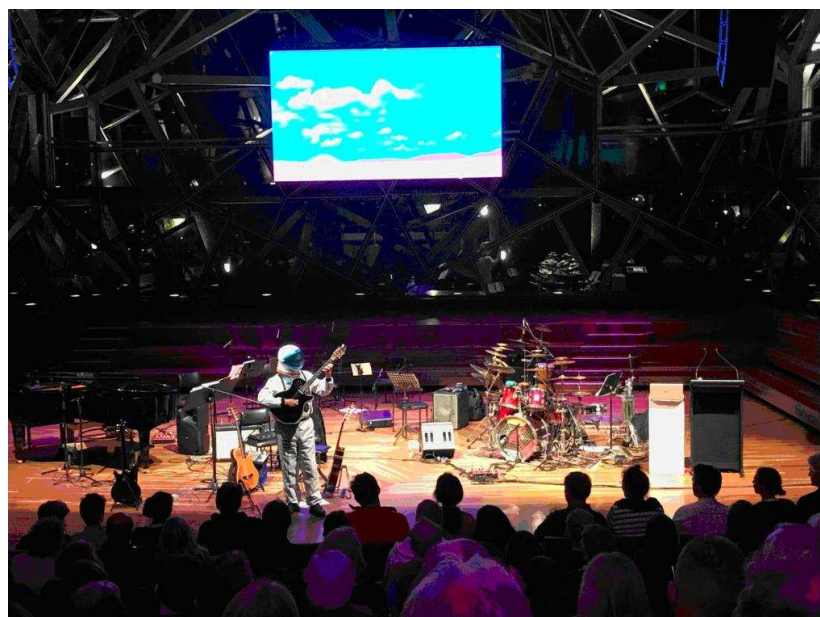
Following this Michael did a bit of a jam with his famous 10 string guitar, however there was nothing too special with fairly basic songs - played well. This guitar was then put away and a bit of a mix of Queen, Zeppelin & Floyd to close out the performance after completing a few of his Celtic inspired original works. These Celtic songs were ok however I did not really flow with the genre of the show in my opinion. A program would not have gone astray either. Would I go again, probably not.

I think members will get more out of the Southern

Peninsula Concert band playing for MPAS on the 17th of August at our Briars observatory. Members who are not operating telescopes will need to book online here.

<https://www.trybooking.com/BDMNW>

Regards, Dave Rolfe



Link to star show review

https://australianmusician.com.au/report-star-show-a-rock-classical-journey-through-the-universe/?fbclid=IwAR2L3lgX5p5q7Sd9zzK-3iu1dZDSOXAVmNNn5CSOQWtgPoy_HZ7YLxMi7Lk



Recently I found this front page of the THE AGE news paper in a junk shop for \$140.00, I did not buy it I just took a photo. It was printed on the day man first walked on the Moon and the same day the Mornington Peninsula Astronomical Society was formed. If I squint a bit I can just read it. Greg Walton



LAWRENCE KING OF NEW GUINEA
and a responsible man
LAWRENCE KING OF NEW GUINEA
and a responsible man

THE AGE

Melbourne, Monday, July 21, 1969

MOON SOUVENIR EDITION

GIVE YOUR OFFICES THE
KISS OF BEAUTY LOOK by
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"I would equate man's first landing on the Moon with aquatic life crawling on to land for the first time" — Wernher von Braun

DOWN TO THE MOON

Spacemen set for walk into history

From ROY MACARTNEY

Man is about to land on the Moon—right on target in the Sea of Tranquility.

Early today astronauts Neil Armstrong, 38, and Edwin Aldrin, 39, were ready to start their epic descent.

They will touch down in their moonship at 6.15 this morning—four minutes, 39 seconds ahead of schedule.

The spacemen started their historic last step at 11.20 last night.

Aldrin, without his outer spacesuit, first crawled into Eagle—the landing ship—no start an exhaustive systems check. Commander Armstrong, wearing full spacesuit, joined him an hour later.

Aldrin, excited, later put on his spacesuit and joined Armstrong through the Moonship's airlock, which connects the Moonship to the lunarcraft.

Together they activated and checked the intricate systems of the Moonship. They reported no problems and said they were about 30 minutes ahead of schedule.

Sixty miles below them stretched the airless, jagged, hostile face of the Moon.

The Moon walk could be as early as 9 a.m. Melbourne time today.

This would be nearly seven hours earlier than officially planned.

A decision on the walk time will be made at 7.30 this morning.

Armstrong will undock Eagle at 2.42 a.m. today—as the ships pass behind the Moon on their 13th orbit.

Eagle and Columbia, the mother ship, will fly in formation for nearly half an hour before Michael Collins, 38, the third astronaut, manoeuvres his ship out of the way of the Moon landing module.

Then Armstrong will fire Eagle's engine to take it down to orbit within 50,000 ft. of the Moon.

A spacecraft computer, fed with information from a powerful landing radar antenna, will control the flight to the surface. The crew can take over control at any point from the computer.

Emergency fuel

It will enable the astronauts to hover 200 ft. above the Moon like helicopter pilots until they find a level landing site, free of big rocks and craters.

Two hours, 32 minutes after Eagle separates from Columbia, the Moon landing ship will settle on to the surface. Its crew will feel a jolt less than that felt by a parachutist.

The 23 ft. high lunar module can tilt 30 degrees from the vertical before it is in danger of tipping over.

If it lands at a dangerous angle, mission controllers will probably order the crew to take off and rendezvous with Collins in Columbia.

The landing ship's flight plan gives Armstrong two minutes remaining fuel to descend to the surface.

His reserve fuel then is equivalent to another 81 seconds flying time—just enough to hold if he decides not to land, and to abort the mission by firing the ascent engine.

It will be a life or death decision, which only Armstrong can take.

It will be just like a bleak winter's day in Melbourne when the spacemen land.

The Moon's reading will be between 40 and 50 degrees.

But the landing craft's shadow will quickly drop the temperature to minus 150 degrees.

Later, when Armstrong and Aldrin take their historic walk, it will be 60 degrees in the sun and still minus 140 degrees in the moonship's shadow.

But it will be no problem for the astronauts—their space suits can be regulated at temperatures between 45 and 80 degrees.

Watch for the bunny girl — Page 2
Moon Film offer — Page 6

Other news today

Girl dies in Kennedy car

Junior Senator's home a charge
of an accident involving the
death of a young girl, 12, who
was killed when she was struck
by a car driven by a Kennedy
family member.

Girl, 12, abducted

An 11-year-old girl was
abducted from her home in
Melbourne on Sunday night.
The girl was last seen near
her home in the suburb of
St Albans.

Matriculation gradings

A new grading system for
matriculation examinations
will be introduced at the end
of the year. The new system
will be based on a scale of
1 to 10, with 10 being the
highest grade.

Talks may end port strike

Union officials will meet for
talks with the Government
today to end the strike of
dockworkers. The strike has
been in progress since
Monday.

STOP PRESS

Russian Luna craft landing?

Reports from Moscow
suggest that a Russian
Luna craft may have
landed on the Moon
on Sunday night.

They said it meant the

end of the world.
But now it's clear that
the world is still here.
The reports of a Russian
Luna craft landing on
the Moon were
unfounded.

Some 100,000 people in

the Melbourne area
will be able to see the
Moon landing on
Sunday night. The
Moon will be visible
in the sky from about
8.30 p.m. onwards.

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Astronauts to carry tool kit

BIRMINGHAM — America's Moon men will have their own tool kit. The Moon module is equipped with a storage unit, or "tool kit," in the lower stage of the lander. This kit will contain a variety of tools, including a hammer, screwdriver, and wrench. The astronauts will use these tools to set up their lunar camp. The tool kit is designed to be compact and easy to handle. It will be used to collect lunar samples and to set up the lunar module. The tool kit is a vital part of the Apollo 11 mission. It will enable the astronauts to perform a variety of tasks on the Moon. The tool kit is a testament to the ingenuity of the Apollo program. It is a key element of the Moon landing mission. The tool kit is a symbol of the human spirit's quest for knowledge. It is a reminder of the challenges we face as we explore the unknown. The tool kit is a source of pride for the Apollo program. It is a symbol of the achievements of the American space program. The tool kit is a testament to the power of human ingenuity. It is a reminder of the challenges we face as we explore the unknown. The tool kit is a source of pride for the Apollo program. It is a symbol of the achievements of the American space program. The tool kit is a testament to the power of human ingenuity. It is a reminder of the challenges we face as we explore the unknown.



Aldrin, Edwin, Colonel U.S.A.F. 38, Bore New Jersey. Flew 66 combat missions Korea, was DFC, West Point graduate. Doctor of Science, Ph.D. Married, two sons, one daughter.

TV, Briefing	2
MOON SCENE	3
Down, down, down	3
SO CHEAP	4
Magnificent Journey	5
Target Mars	5

WEATHER

CITY: Occasional showers. Cloudy. Windy. Expected top temp. 55 (yesterday 60).

Details — 13

Brash's

A new piano for \$590

A piano is a family decision, and Brash's is the place to make that decision. Quiet surroundings. Expert advice. Only if you want it. And a huge range to choose from, including: Kawai, Warrimoon, Rodar, and Concord from \$590, and \$2,500 a week. It costs no more at Brash's!

2nd Floor, 108 Elizabeth St., City, 63 6701
Also at: Chesham, Northcote, Southgate, Reservoir, Sandhurst, Ringwood, St. Albans, Geelong, Werribee, and Ballarat.



Omega Speedmaster with chronograph, date, and subdial in stainless steel. £170

You can own today the same Omega Speedmaster that the Apollo astronauts will wear when they reach the moon.

The Omega Speedmaster is a standard item of equipment for all American astronauts in the Gemini and Apollo space programs.

Its precise movement and clear graduations give accurate readings to 1/5 of a second. It's a chronograph. A press button, calculating watch that will help you determine seconds, minutes, and even a patient's heartbeat. It will serve you more fully in your daily life than any other watch. See the Speedmaster — and other fine watches for men and women — in the new Omega collection, now on display at your Omega jeweller.

OMEGA

Registered at GPO. Reproduction by post is a misdemeanor.

MPAS @ the South Pacific Star Party NSW

A small group of MPAS members usually make the trip to the South Pacific Star Party which is held at Ilford NSW each year. This was the 27th year this event was hosted by the Astronomical Society of New South Wales. Pia and I set off a few days earlier as it's about a 900 km journey. The day before the event we all met up at the Bathurst RSL for dinner.

From left Kevin Rossitter, Me, Pia Pedersen, Steve Mohr and Dave Rolfe.



Next day we did our mandatory lap around Mount Panorama racing circuit. The circuit is a normal road with a speed limit of 60km per hour and speed cameras. The view from the top of the circuit is very nice, but you need to keep an eye on the road as it has unforgiving concrete walls on either side.



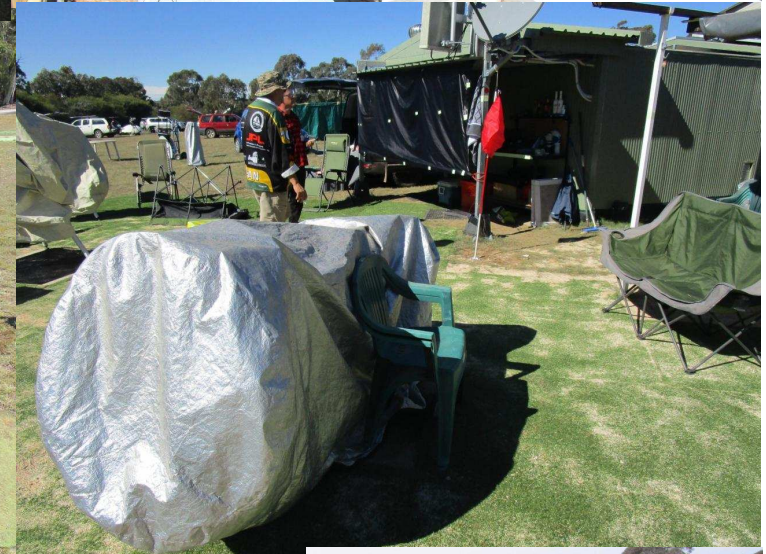
Then we set off through some very picturesque countryside for the ASNSW Wiruna dark sky site, which is only about 70km north of Bathurst. The picture at the top of this page was taken near the front gate. We set up camp at the rear of the site on the astrophotography field near the House / Barry Gerdes Lodge. This year there

were fewer astrophotographers and more visual astronomers; could be because the weather forecast looked bad for most of the event.

My setup at left. *By Greg Walton*



There were many different types of telescopes on the viewing field, some in their own permanent observatories and roll off sheds.



The 27th Annual South Pacific Star Party was held on the 2nd – 5th May 2019. Most aspects of the running of the Star Party now go pretty smoothly. The tweaks to the systems are minor and I appreciate all the helpful suggestions that I received from volunteers and participants during the event. The final participant count was 293 in attendance for at least some part of the event. The weather pretty much followed the forecast with some cloud in the lead-up, showers with a brief period of heavy rain on Friday, and cloud and drizzle into Friday evening. Puddles that formed in the Pavilion were alleviated with interlocking rubber mats and a few flattened cardboard boxes (underneath). This worked satisfactorily.

The talks were well attended on Friday afternoon, with the audience of 50 to 60 participants at each session, but rain prevented observing on Friday night. Saturday dawned clear and sunny. A cool change arrived on Saturday afternoon, accompanied by heavy cloud for a few hours. There was a good roll-up for the keynote speaker, filling the Meeting Hall. The AI comp presentations and Lucky Prize Draw also saw “full” attendances. This year, with extra offerings from our wonderful sponsors, approximately half the children received prizes.

The Scouts were also very grateful to receive the proceeds of the raffle (prize donated by Bintel). Barbara Murray took the microphone and explained that this event is their major fundraiser for the year, allowing them to keep down membership fees for their members and to provide funding for the bulk of their activities.



Scouts selling food

between the Lower Camp Ground and the Main Observing Field, throwing announcements to both areas. Feedback so far indicates that this was a good move.

DIY cleaning in the toilets and showers – I consider this a success. There were no complaints, and facilities were in good condition every time I went to them.

Getting the internal gable in the Pavilion effectively blocked the white light from the Scouts’ area, and the AI comp display lights were turned off at 7.30pm, so there was much less white light around than last year.

The main problem this year was experienced by the “gate” volunteers trying to slot in the last few caravans and motor homes on Saturday. Thinking back even five years ago, we were dealing mainly with tents, caravans and camper vans with a scattering of larger camping vehicles. Now, it seems, the motor homes and caravans get bigger every year. Occasionally, there is a trailer with an extra car. Then, there are the awnings, annexes, porticos, porta-loos, porta-showers and solar panels! Some participant sites end up with quite a spread. Organisation of camping and camper-vehicle sites will see some changes next year, from the registration process through to marking-out of the allocated areas. There will also be some tweaks to the competitions, and updates to safety protocols.

Dates have been set for next year’s star party: Thursday 21 to Sunday 24 May 2020. Mark it in your diary and expect an email in February advising of the opening of registrations, which are likely to run for a two-week period only as we expect, once again, to be over-subscribed.

Thanks to all the participants who came along, enjoyed the skies and activities, and helped make the event such a success. Thanks to our speakers, members and associates who gave talks or workshops, and our absolutely amazing sponsors who donate so generously to make this such an exciting event each year. Thanks, too, to all the volunteers, without whom the event could not run. Hope to see you all again next year! *Cheers Lesa - ASNSW Treasurer*



TESTAR from Italy were demonstrating their new mount.

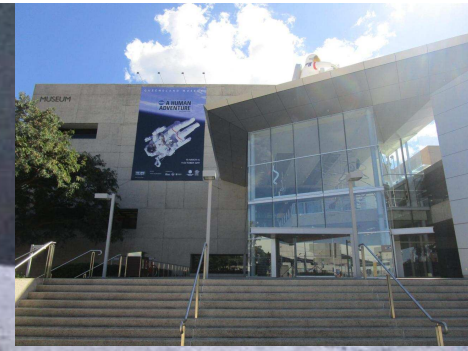


Steve Mohr took out first prize in the deep sky section.

NASA in Queensland, by Greg Walton

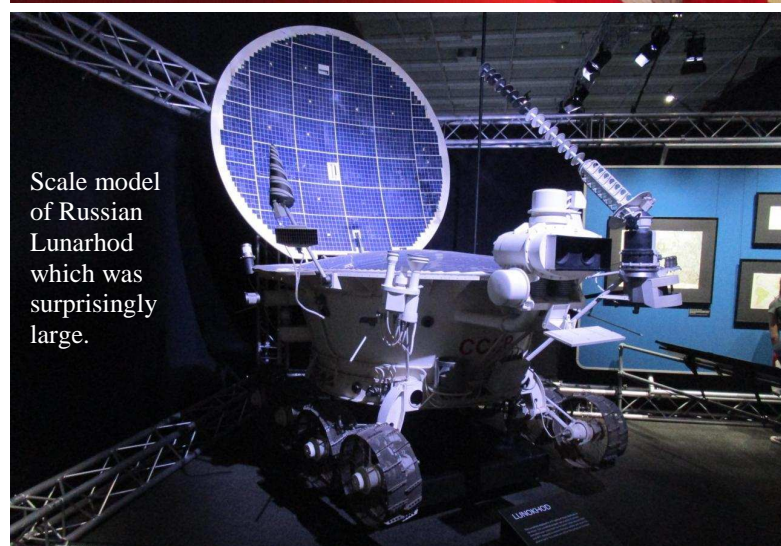
After we left the SPSP we headed north to Queensland as Brisbane Museum have an expo of NASA artefacts, which will be in town till October. On arrival we found we were pretty much the only ones ther. If this expo was in Melbourne, we would have had a long wait to get in.

I'd better fix this Moon buggy.

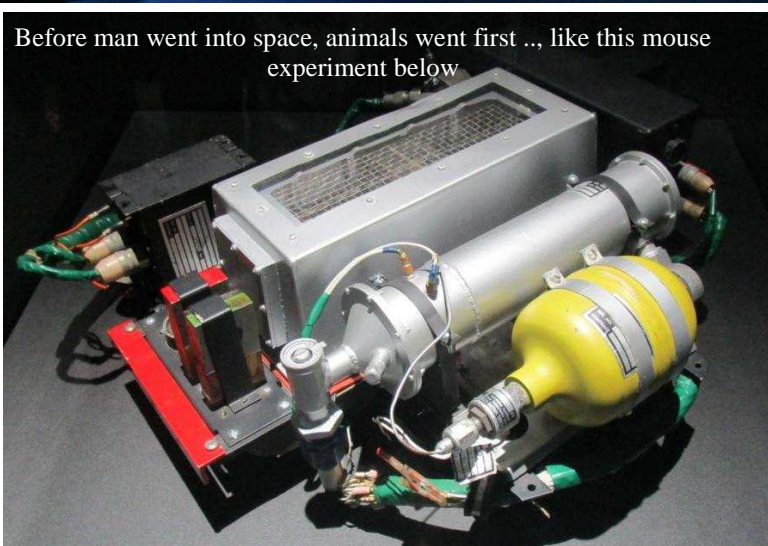


There were more than 200 artefacts on display and sorry, I can't show them all here.

We entered through a display of dreamers around a large Orrery, a time before space travel. We then moved to large wall displays on the space race between America and the Soviet Union. Displays also had newspapers, postcards & toys of the day.



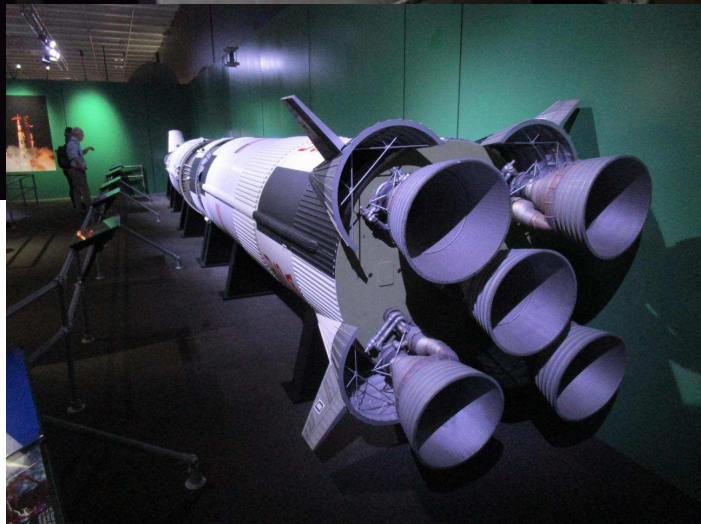
Scale model of Russian Lunarod which was surprisingly large.



Before man went into space, animals went first ..., like this mouse experiment below

Apollo

All
Systems
Are
Go!



Top - 1/10 scale model of a Saturn 5 rocket.

Right - 5 engines which lifted the Saturn 5 rocket.

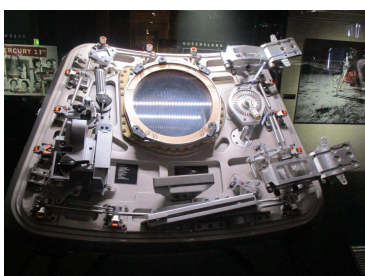
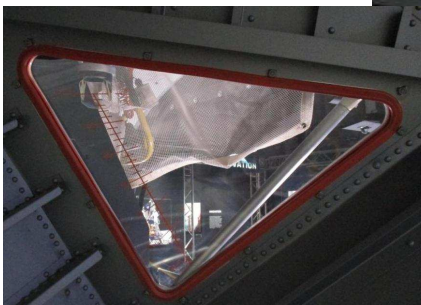
Above - Scale model of the Apollo capsule.

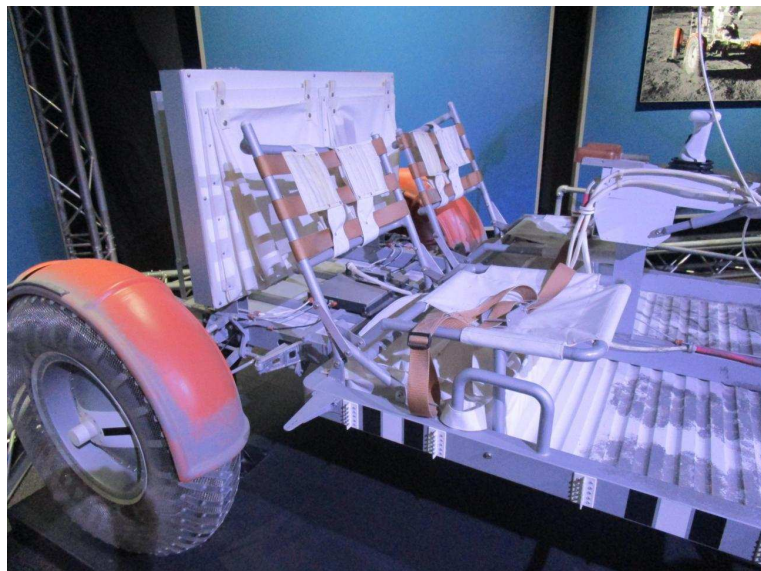
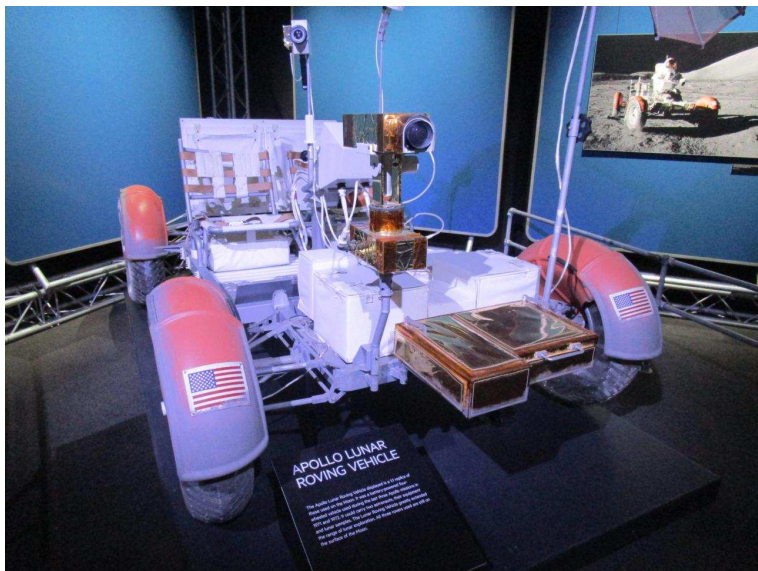
Right - Apollo Parachute covers most of the ceiling in the hall.

Below right - Inside the Lunar Lander. Check the lines on the window.

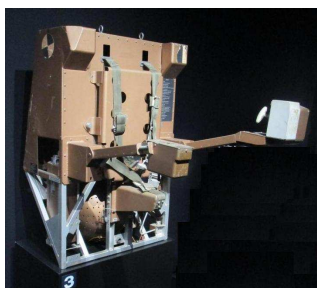
Below - Lander elevation lines marked on the window seen from outside.

Bottom - Apollo capsule door.





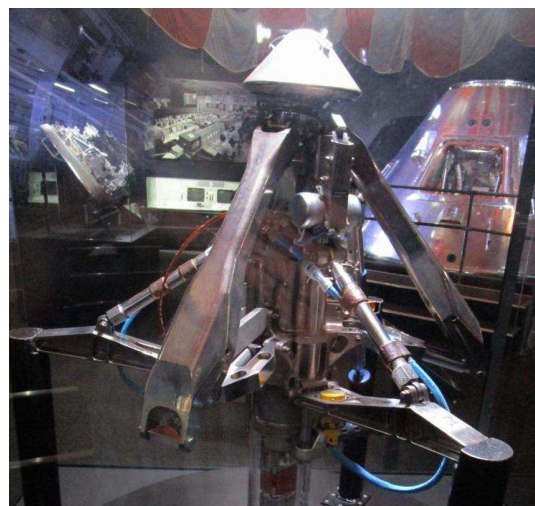
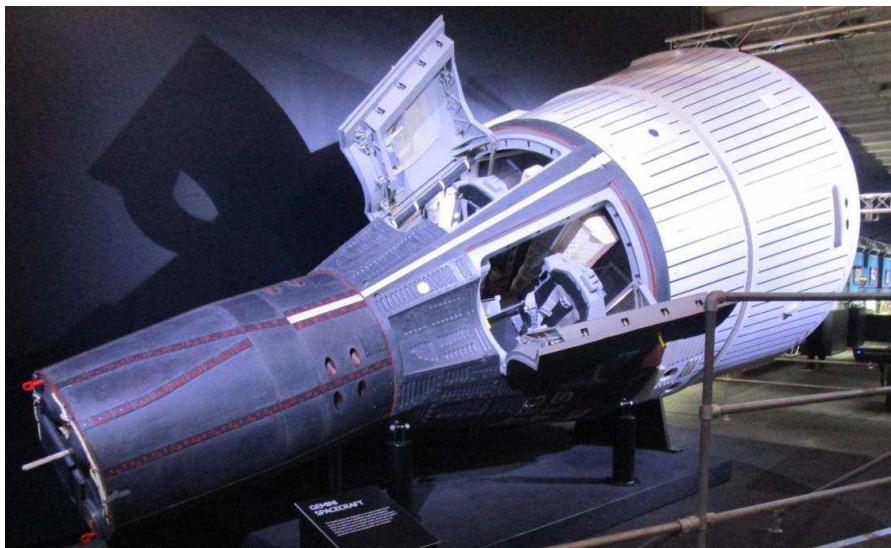
Above - Lunar rover replica.
Right - Titan rocket engines.
Below - Basket which retrieved astronauts;
and Jet Pack.



Left & Above - Mercury capsule.

Below left - Gemini capsule 2-seater.

Below - This is the device which captured and locked the Lunar Lander to the command module.



Space Shuttle

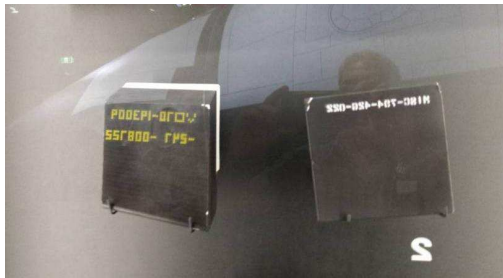
Towards the end of the exhibition was a full-scale model of the space shuttle which has been outfitted with some of the real components. As the shuttles no longer fly, NASA most likely had plenty of spares just lying around.

Right - Upper deck is surprisingly roomy.

Below - No 2 tiles from the shuttle are alike, the most expensive jigsaw puzzle ever.

Below centre - 2 real tiles.

Below right - Sun roof.



Above - Scale model of front half of the space shuttle.

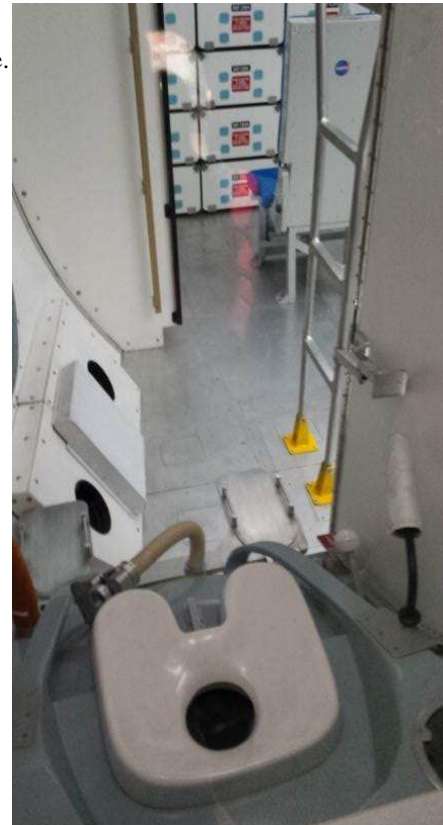
Left - Space shuttle tyre; looks more like a Frankston hoons tyre.

Above right - Downstairs, the passengers do not get a window.

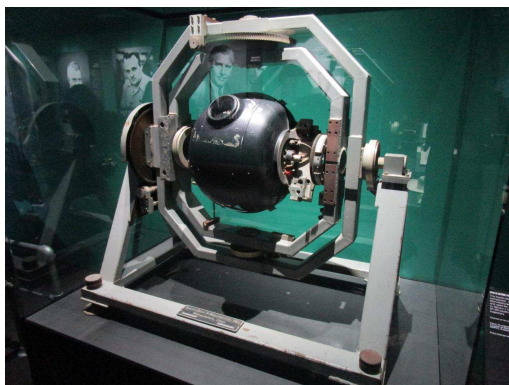
Right - Downstairs we have the space toilet, I didn't see a door.

Below - On the joystick we have the mandatory red button.

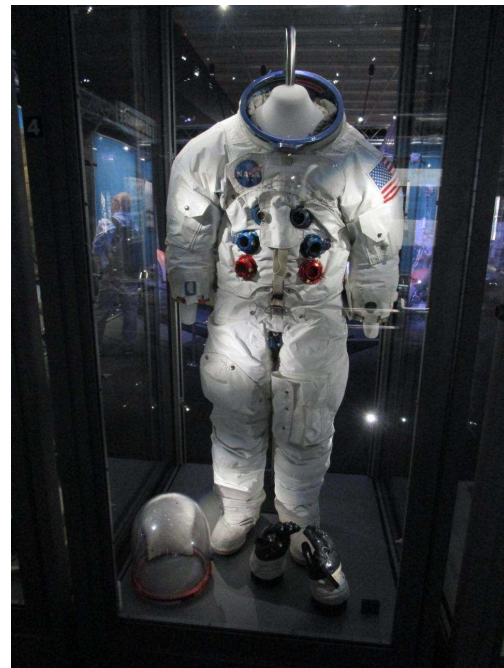
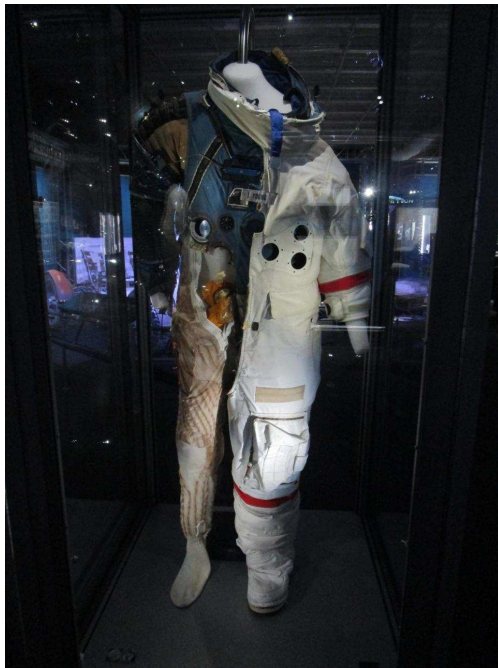
Could it be to fire a laser at an alien craft, or maybe ejector seat.



This device monitors the movement of a rocket as it travels through space. If the rocket moves off course, it sends a signal to the Actuators that adjust the angle of the rocket engine, therefore keeping the rocket moving in the right direction. Right - Looks like a BBQ.

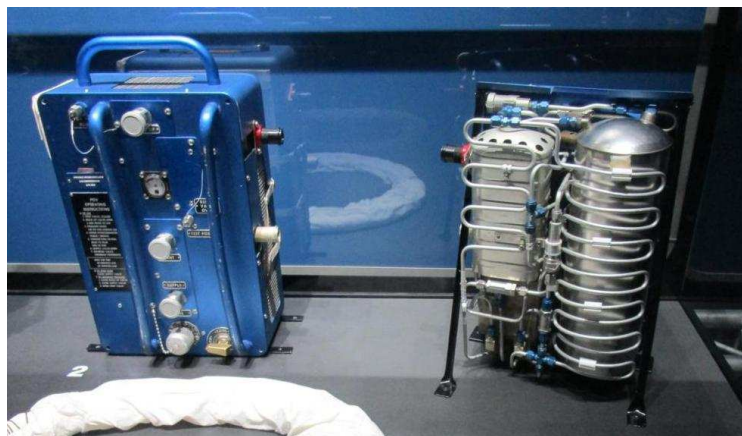


Many different space suits on display. Layer upon layer, upwards of 6 layers to control temperature and air pressure.



Right - Other bits you would need to venture into space.

Below - Dinner is served.



So many things to look at and not enough room to show them all here. You will just have to make the trip to Queensland to check it out. The exhibition will close in October and head back to the USA. Link - <https://space.qm.qld.gov.au/>

Along the Wheelbarrow Way *by Tony Nightingale.*

In May this year I travelled 209 kms west of Cairns out to Chillagoe (pop. 192). The Wheelbarrow Way is named after the men who trudged 145 kms from Mareeba to Chillagoe pushing wheelbarrows loaded with their belongings to work in the mines there. The Chillagoe Smelters operated from 1901 employing up to 1000 people, mining copper, lead, silver and gold. By 1908, there were ten hotels and a population of more than 1500. The smelters finally closed in 1943. Nowadays there are only a small zinc mine, some marble quarries, one hotel and 200 people. The weekend after I left, the annual "Great Wheelbarrow Race" took place where teams pushed an empty wheelbarrow from Mareeba to Chillagoe over three days, stopping at Dimbulah and Almaden overnight.

The bitumen ends at Almaden and the last 30 kms are gravel and red bulldust where horses and cattle wander freely across the unfenced road. The surrounding countryside is dry savannah with spindly trees and rocky outcrops. On arriving at Chillagoe, I drove out to the old smelters and reconnoitred some good vantage points for astrophotography that night. Again, fortune smiled upon me and PhotoPills showed the Milky Way rising directly behind the old smelter chimneys. I was staying at the Eco-Lodge which has an observatory but unfortunately the manager didn't have time to show me around as he was also the cook! If I'd had the necessary attachments, he said I could have used the scopes for imaging. About 7.30 I drove out to the smelters and set up my camera facing east. Scorpius was rising with Antares very clear. The Coal Sack and Crux were already high in the sky and I waited until about 8.30 when the core became visible over the hills preceded by Jupiter. I took numerous shots with a 50mm, 20mm and 14mm lens. At 10.30, I moved to a position in front of a nearby chimney where the core was rising directly behind the top of it. For this shot I light painted the chimney, stacked the background shots and blended them in Photoshop. The sky was very clear but the images out of the camera contained a very strong red airglow possibly due to the amount of red dust in the atmosphere. Some of it remained in the edited images. I had intended to stay up until after midnight to try a panorama shot of the Milky Way but after driving from Cairns to Chillagoe in the morning, walking around for a couple of hours in the midday sun and staying up late taking shots of the night sky I decided to call it a day (or a night!) It was intensely satisfying standing on the hill alone under the stars, the only annoyance being the light planes taking off from the aerodrome a couple of kilometres away and flying across the frame every five minutes!

The next morning, I drove out to the Mungana aboriginal rock paintings. These were fifteen kilometres north of Chillagoe on the unsealed Burke Developmental Road which leads to Normanton 560 kms away. Because of poor signposting I finished up driving thirty kms before I realised that I had missed the turn-off! I turned around and eventually found the rock paintings. Three road trains passed me on the way to the more remote parts of the Cape York Peninsula and the Gulf country. I returned to Chillagoe and after lunch I joined a tour of the Royal Arch Cave. There are up to 1000 limestone caves in the area containing weird and wonderful shapes formed by seepage and movement of the rock layers. We saw fossils trapped in the caves that were up to two million years old. Unfortunately, it was a cloudy day and so the colours of the cave lit by the sinkholes were dull and subdued. Nevertheless, it was an interesting experience. Millions of years ago the Chillagoe-Mungana area was under the sea and compression brought the coral reefs to the surface where they were folded and upended into limestone bluffs. Rising magma carried metals with it and these formed the basis of the Chillagoe mining industry. Volcanic heat converted the limestone into white marble which is still mined today. Huge blocks are exported to Italy where it is cut into gravestones and sold back to Australia! I awoke early the next day and drove back to Cairns where the first thing I did was to wash about an inch of red dust from my car.

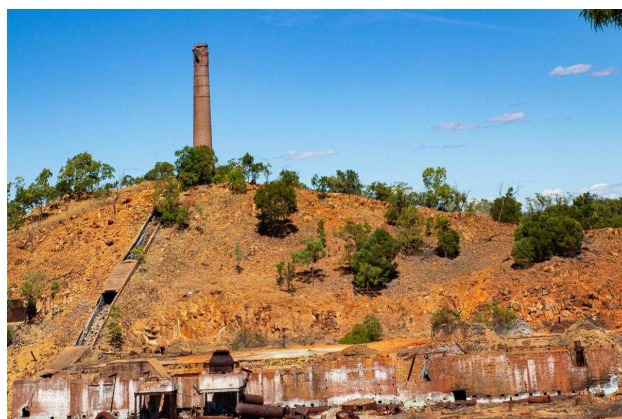
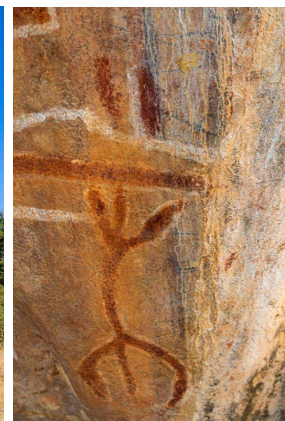
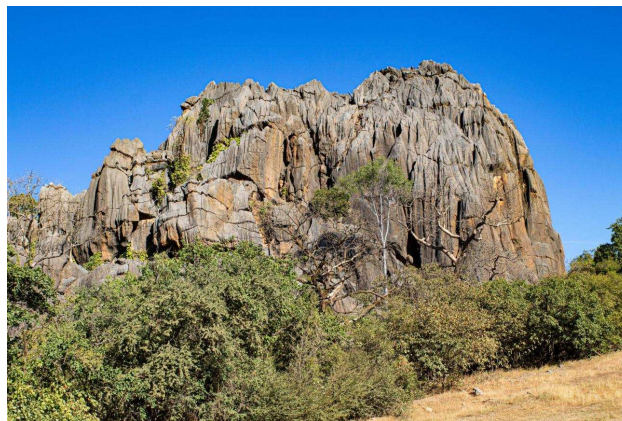




Image above By Steve Mohr - NGC5128 | Centaurus A | Hamburger Galaxy

This is a different view of the incredibly bright galaxy NGC5128, known as Centaurus A, or commonly named as the Hamburger Galaxy. In this view of Centaurus A, I have tried to allow us to peer into this bright glow to reveal the hidden dust surrounding this galaxy. Part of the disclosure, are a number of brighter shells [however faint] and plumes of ejected material, noticeably seen diagonally to the left lower centre, and out to the right upper centre. These being the effects of a super massive black hole that is also the source of the visible relativistic jet emerging out to the lower left. Through image processing techniques, we can try to show details of an object not always seen in the normal light or glow of the object. Hope you like this different rendition, and thanks for looking!

Instrument: Planewave CDK 12.5 | Focal Ratio: F8 - Camera: STXL-11000 + AOX | Mount: AP900GTO

Camera Sensitivity: Lum & Ha: BIN 1x1, RGB: BIN 2x2 - Exposure Details: Total: 43.92hours

Viewing Location: Central Victoria, Australia. Observatory: ScopeDome 3m. Date: April-May 2019

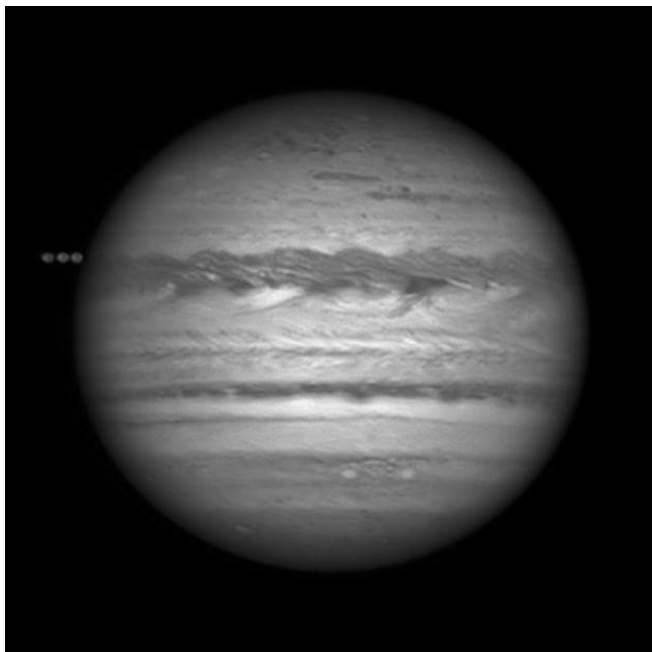


Image Left By Steve Mohr - I'm trying to figure this planetary game out - it's really tough! John Kay's results are just fantastic, and have really got me fired up late in this season to try again. This was taken on the 24/06/2019.

I have Io coming into view in this one, which transited the face later, leaving a nice shadow. From the Winjupos stacking, you can see the three Io moon positions from each video, so its moving really fast! What is interesting is that you can see detail on the face of Io rotating around too. Coolio!

Using a modified C14, ASI290MM, with gratefully received advice from John on camera settings, I finally have something that's not a big blurry blob.

I used FireCapture to capture the sequences, Auststakkt to process the videos to TIF, then Winjupos to combine 3x 60 sec tif files from the RED channel. So this is just the red channel, which is the cool looking channel, with blue being the not so interesting one.

Camera=ZWO ASI290MM

Filter=R Profile=Jupiter Diameter=45.72"

OFFICE BEARERS OF THE MORNINGTON PENINSULA ASTRONOMICAL SOCIETY



Peter Lowe



Greg Walton



Peter Skilton



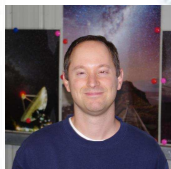
Jamie Pole



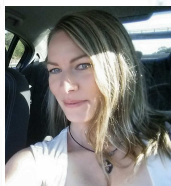
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Trevor Hand



Simon Hamm



Nerida Langcake



Rohan Baumann

President: Peter Lowe
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 Simon Hamm, Nerida Langcake
 & Rohan Baumann

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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)

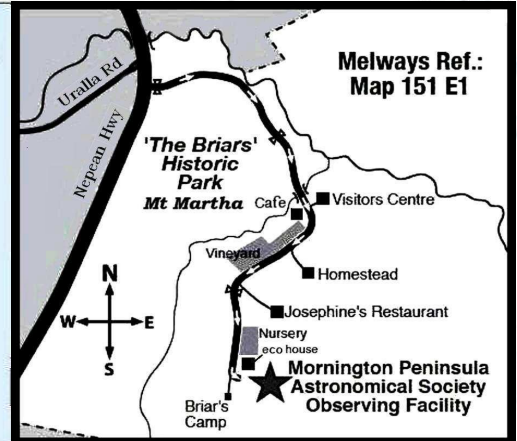
Society meetings: Don Leggett Astronomy Centre
 8pm on the third Wednesday of the month
 (except December)
 (See map at right & Below)



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

Phone: 0419 253 252

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



Melways Ref.:
Map 151 E1

LIBRARY

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

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.



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

VIEWING NIGHTS - MEMBERS ONLY

Viewing Night - Members only

Any night, at The Briars, Nepean Hwy,
 Mt Martha, starting at dusk.

Members visiting The Briars for the first time
 must contact Greg Walton on 0415172503
 if they need help getting to The Briars site.

Upon arrival at the site, remember to sign
 the attendance book in the observatory building.

For additional details:

Internet: www.mpas.asn.au
email: welcome@mpas.asn.au

Phone: 0419 253 252

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



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

Send them to the editor: Greg Walton gwpas@gmail.com

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

SCORPIUS The journal of the Mornington Peninsula Astronomical Society

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