The meteor image below is *by Alex Cherney*. The camera timestamp is 2015-07-22 T11:25 UTC and the meteor can possibly be from the Alpha-Capricornids meteor shower. The sky is blue because the Moon was lighting up the sky.

SCORPIUS

THE JOURNAL OF THE
MORNINGTON PENINSULA ASTRONOMICAL SOCIETY INC.

Volume XXIV, No 5 (September / October)

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 amateurs 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 arranges to observe currently available celestial objects and phenomena. In addition, the society encourages the service of its members for education presentations and observing nights for schools and community groups.

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SCORPIUS The journal of the Mornington Peninsula Astronomical Society

Newsletter Disclaimer

Society News

By Greg Walton

Photo below by Dave Rolfe

July public night - Hi All, We had quite a successful public night last night. Despite the 100% cloud and cold weather we had a good turn up of visitors. Trevor gave a talk on the Moons of the Solar System. This was our first night using our new chairs and a big thanks to Dave and Jamie for collecting them while Paul and I cleaned the Briars building for their arrival. We even mopped the floor !!
Given it was "World UFO Day" on the 2 July I expected to see at least a few alien visitors. However everyone looked decidedly human although I was a bit unsure about Dave given we had a few Jedi knights running around. Thanks to those members who braved the weather. *Cheers Peter Lowe*

July Society Meeting - The July General Meeting did not have an invited speaker. The planned speaker was unable to attend so the President stood in. After a general discussion of current astro-news, he gave an update of the latest New Horizon results. This was followed by a general discussion on the progress of the mission and a lively discussion about what this meant for future manned exploration. Greg Walton had transmitted his “The Sky for the Month” section - not from Pluto, but almost as far ... West Australia. Included in the presentations were a number of astronomical related shots of craters, rocks and strange aliens. Members then settled in for discussions over coffee. *Cheers Peter Lowe*

July members BBQ - A successful if small BBQ last night. I think the cold might have deterred some of the regulars.
I hope the new members enjoyed themselves. The sky was crisp and clear with a promise of dew. One of our new members set up an image intensifier camera feeding a large screen monitor. Very impressive. I was able to watch very faint satellite transits and the occasional meteor. Special thanks to Simon who mower the grass and set up things in the afternoon and Paul/Jamie for getting the BBQ supplies. As usual Paul was up to his excellent chef BBQ standards. We missed Jamie’s pavlova however. Fiona filled in with cheese cakes. This was the first time we used our new BBQ shelter. It’s definitely better than our old arrangements. The evening settled into an astrophotography session. When I left, things were still in full swing. *Cheers Peter Lowe*

August Scouts viewing night 4th August - The evening for 23 of the First Ranelagh Scouts and their pack leaders was held last night at their Scout Hall at the back of the Mt. Eliza shops. The Scouts, both male and female, were probably around the 10-12 age level. Weather conditions were cold and totally overcast so they didn't get to see the night sky. Inside the hall, which was thankfully a lot warmer, the talk and questions were handled by Peter Lowe and Peter Skilton, and there were lots of questions. The meteorite was slowly passed around the group during the evening. During set up, the 240V power extension cord was hopelessly twisted and tangled and, yes, an MPAS member who shall remain anonymous was heard to say, while trying to untangle it, "there's never a Scout around when you need one". Well, one promptly stepped forward and proceeded to de-spaghettify it. To earn their Astronomy badge the Scouts had to be able to do two things.... One was to be able to identify two constellations; the other was to know how to tell the time by using the stars. This is quite challenging to explain when you don't have a night sky visible. For the constellations, they all felt confident being able to find in the sky Crux and Centaurus (including the Pointers), but not so confident with Orion or Scorpius. As for telling the time, we explained about using the Sun during the day (it's a star) to get a very approximate time between sunrise and sunset (assumed 12 hours) by the fraction of the arc it had travelled across the sky. They didn't seem to have the background knowledge yet to introduce the notion of the ecliptic and the analemma to get a more accurate time. As for night time, we explained about the Southern Cross tracing out a full circle in the sky over 24 hours (a 24-hour clock face), enabling you to tell the time approximately if you notice where it was on the circle soon after sunset, and then where it is when you want to know the time. Of course, it's no good if the sky is totally clouded. We almost resisted saying that some of what appear to be stars in the sky are actually satellites and all you need is your GPS unit or smart phone day or night to tell you the time after synchronising with them. Case closed, QED. All in all, a successful night judging by all the questions and a very polite and well-controlled pack. *Regards, Peter Skilton*

August public night - Despite mostly overcast conditions, 43 members of the public turned up for the viewing night at The Briars last night. Trevor Hand gave a talk on Pluto that he'd prepared, and the new comfy chairs were put to good use as it had to be a longer than usual session inside. There were lots of questions that extended the entire length of evening. Pluto mugs were also on sale, care of a small order on the night from Ballaarat Astronomical Society. No telescope observing was possible in the few gaps that did appear in the cloud cover. Nevertheless some positive members turned up with much hope, including Rohan Baumann, Fred Crump, Fiona Murray, Peter Skilton, Peter Lowe, a few new members and a cameo appearance by Simon Hamm sporting a cold. If I missed your name then I didn't see it in the observatory log book (hint). *Regards, Peter Skilton*

Right - Very recent aerial photo of the MPAS Briars site, sent in *by John Cleverdon*

August Rosebud Cub/scouts viewing night 14th August - We had around 150 people at the Briars last night. Mostly 12 year old cubs. Unfortunately the weather was not kind and we had a longer talk with many, many questions. Despite the weather everyone had a great time and they all passed their astronomy badge test. (honest) Peter Skilton tried to explain how to tell the time by the Sun. I explained it was easy. If it's light, It's daytime !! Thanks to the volunteers who helped out. Cheers *Peter Lowe*

August Society Meeting - 24 members were in attendance. Peter Lowe (President) chaired the meeting & talked on the ESA Rosetta space crafts rendezvous with comet #67P & showed images of the comet out gassing. Peter Skilton talked on the Guinness Book of Records event for the most number of simultaneous lunar observers looking through a telescope. Then Peter Norman gave a talked on dark mater. Then Paul Albers showed his images & time lapse of the recent southern Aurora. Members chatted over coffee.

Viewing night at the school for Harrisfield Primary in Noble Park" 20th 7pm - Lucky the sky was clear & everybody got to see Saturn & the Moon, the clouds rolled in just when we were packing up. About 150 students & teachers were present. Peter Lowe did the talk, while Peter Skilton, Fiona Murray, Robert Dahni, Sky, Jamie Pole, Greg Walton & Pia Pedersen manned the telescopes.

Special public viewing night at the Briars for National Science Week this year
Friday 21st - Despite total cloud coverage outside as I write this, the forecast is for it to break up and clear later this evening and overnight. Hmm, is that a clear spot I see over in the west low on the horizon? So we may, or may not, be joining the other 49 sites across Australia for the Guinness World Record attempt at skygazing tonight. Even Macquarie Island has a site participating. Things will start happening from around 7:30pm onwards, with actual timing attempt between 8:30 and 8:40pm. Members should drive in the back entrance and park near the dam - not near the concrete pads. The gate should be closed around 8pm as we have to limit the site to 1 entrance/exit or be disqualified, and no cars must obscure view of the gathered telescopes (or smuggle extra hidden people in or out during the timing). We definitely need member instruments (telescopes, binoculars or finder scopes) of any size/shape/condition for visitors to borrow. Unfortunately some smaller instruments sent from ANU in Canberra on Monday have not arrived at many sites (including ours) thanks to the postal services. So we need member help here or numbers will be very limited. It may be a bit chilly, but we need to reach at least 25 instruments on site otherwise we're disqualified. *Regards, Peter Skilton*

After observing the Moon last night at the Briars for the Guinness World Record attempt, I then went and found Comet C/2013 US10 Catalina, after noting on Heavens-Above during the day that it might be worth trying for It is near Alpha Triangulum Australe so should be fairly easy to find by star-hopping. Heavens-Above suggests 7th-magntidue whereas Skymap software suggests 10th-magnitude. In the 18-inch scope I reckon there was almost a hint of a tail. *Regards, John Cleverdon*

August Members BBQ Saturday 22nd - about 20 member in attendance. There was no viewing as it was almost 100% cloud cover. Members planned the up & coming Symposium on "Wide View Astrophotography". Thank you to Peter Lowe (President) for buying in all the food. And thanks guys for help with the cooking and thanks to the girls for setting up the food and the cleaning up afterwards.

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

New Members Welcome

Wu family

Doherty family

Charmaine & Ashley Cameron

Anthony Nightingale

Ted Lee

Alan Predjak

James Miller

Jason Heath

Pemberton family

Lara Conway

Camera Clubs Please Take Notice! We Now Have Classes On Astrophotography!

The Mornington Peninsula Astronomical Society is proud to announce a Symposium on "Wide View Astrophotography".

The day will have array of lectures given by experienced and acknowledged astrophotographer's. A practical hands on session will be also held during the night at our club rooms. We will be providing Tea, Coffee and biscuits during the day. A BBQ and refreshments will be supplied so to gear you up for the cool night ahead.

When: The 5th of September 2015.
Where: The Briars MPAS club rooms Mt Martha
Time: 13:30 till late. Weather pending
Contact Number [Person]: 0418 574 370 [Paul]

2015 SUBSCRIPTIONS DUE

The ticking over of the New Year also means that society fees are now due to be paid. The society has worked hard to ensure that 2015 fees are still the same as last years prices.
So to assist the society in maintaining the facilities and service we provide, we appreciate your prompt payment for the 2015-year ahead.
As a reminder, the following structure of the fees are:

SOCIETY FEES

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

Subscriptions can be paid in a number of ways:
- **Direct Cash payments to a committee member**
- **Send a cheque or mail order to the society mail box MPAS. P O Box 596, Frankston 3199**
- **Make a direct electronic payment into the society working bank account.**

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

Under the new government regulations, a list of financial member is required for insurance purposes, so please make certain your membership renewals are on time.

CALENDAR September / 2015

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4 **Public Night 8pm**	**Last Quarter** 5 Camera Club Astrophotography Workshop & BBQ
6 Fathers Day	7	8	9 ASV Meeting	10	11 Dawn - Venus, Mars & Moon	12
13 **New Moon**	14	15 Mercury Left on the Moon	16 Society Meeting 8pm	17	18	**19** Members Night BBQ 6pm
20	**21** **First Quarter**	**22** **Equinox**	**23** Committee Meeting 8pm	**24**	**25**	**26**
27	**28** **Full Moon**	**29**	**30**			

Monthly Events & High Lights. **- Watch out for Auroras - Red Days** indicates School Holidays
Public nights 4th, 8pm start - **Society Meeting** at 8pm on 16th @ the Peninsula School
Members Night BBQ 6pm @ the Briars 19th **Camera Clubs** Astrophotography Workshop & BBQ on the 5th
Evening - Mercury Left on the Moon on the 15th
Dawn - Venus, Mars & Moon on the 11th

CALENDAR October / 2015

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	**2** **Public Night 8pm**	**3**
4 Day Light Savings Starts	5 **Last Quarter**	6	7	8	9 **Dawn - Venus Occultation by the Moon 5:36am**	10 Dawn - Mars, Jupiter & the Moon
11	12	13 **New Moon**	14 ASV Meeting	15	16 Saturn above the Moon	17
18 Dawn - Mars & Jupiter 0.4 degrees apart	19	20	21 Society Meeting 8pm **First Quarter**	22	23	24 Members Night BBQ 6pm
25	26 Dawn - Mars, Jupiter & Venus 1 degree apart	27 **Full Moon**	28 Committee Meeting 8pm	29	30	**Halloween** 31 Dawn - Mars & Venus close with Jupiter

Monthly Events & High Lights. **- Watch out for Auroras - Red Days** indicates School Holidays
Public nights 2nd 8pm start **- Society Meeting** at 8pm on 21st @ the Peninsula School
Members Night BBQ 6pm @ the Briars 24th
Evening - Saturn above the Moon on the 16th
Dawn - Venus Occultation by the Moon on the 9th @ 5:36am
Dawn - Mars with Jupiter & Venus 1 degree apart on the 26th **also** - Mars & Venus close with Jupiter on the 31st

Note this years the Members night BBQ's will be the first Saturday after the Society Meeting.
Also General Meetings will be called Society Meetings under the new regulations.

Sky for October we will look at the Venus Occultation by the Moon on the 9th @ 5:36am in the morning & reappears @ 6:52am but the sky will be light as the sun will have already risen @ 6:45am making it harder to see.

From the MPAS Briars site it will be in the east about 10 degrees above the horizon.

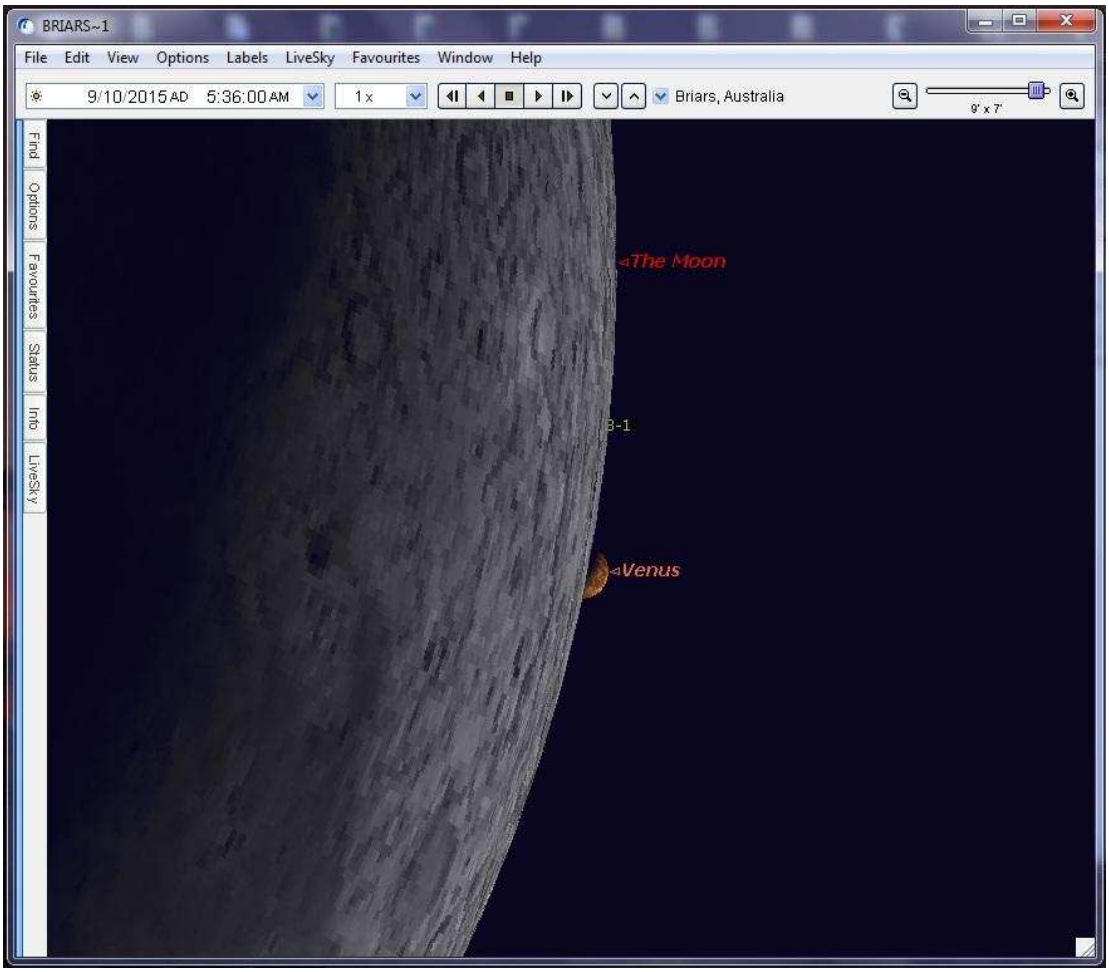
Mars & Jupiter will also be low on the horizon just below & to the right of the Moon.

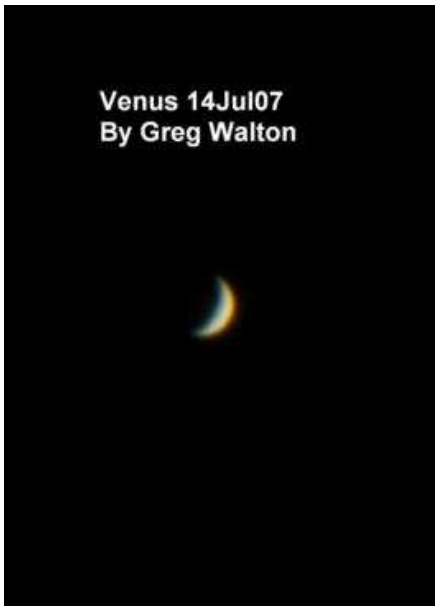
The Briars site will be well suited for this event, as the trees on the east boundary have been shortened.

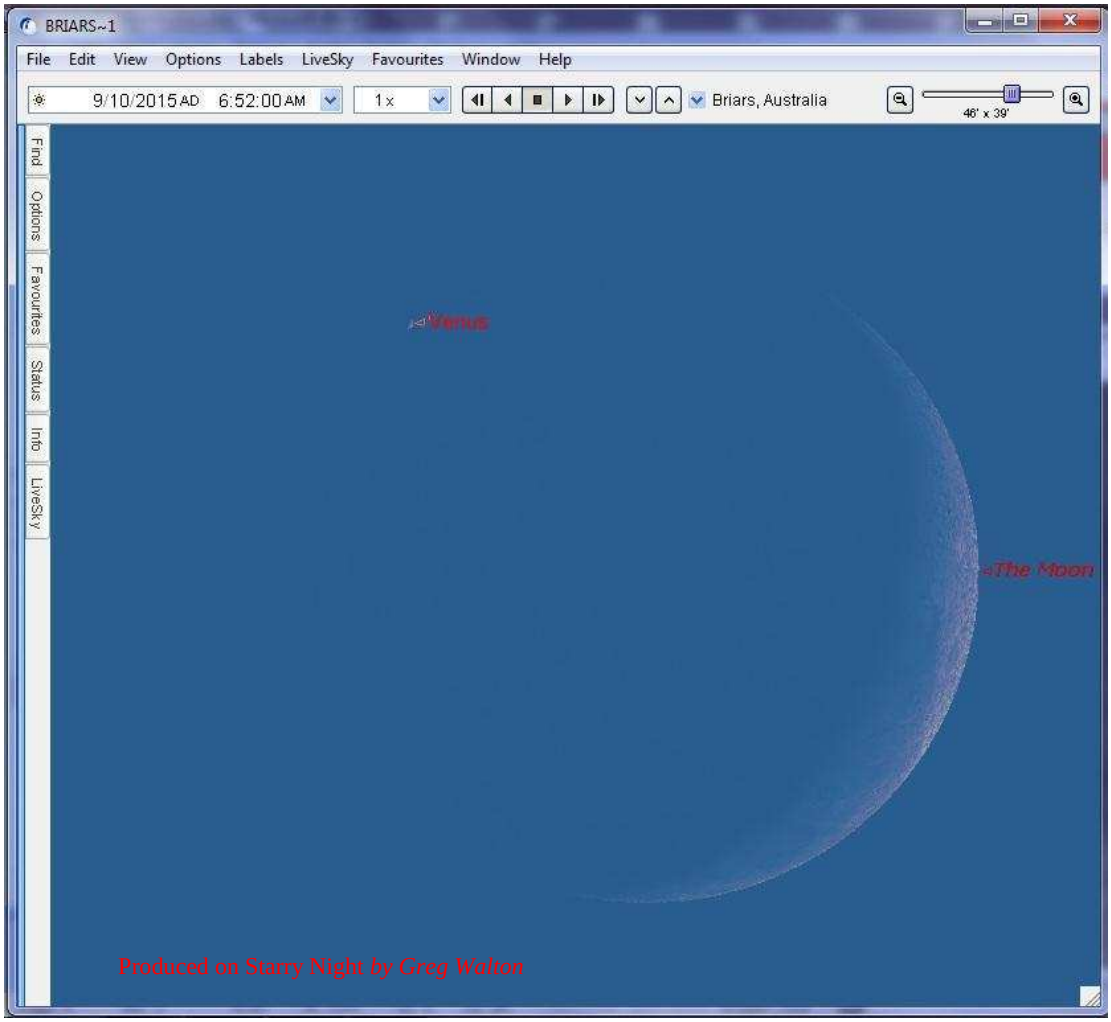
For the more adventurous, this will be an excellent photo opportunity through one of the MPAS telescopes.

As there will be no Moon for most of the night, this will also be a good time to catch up on some deep sky objects.

Below - Image of a crescent Venus I took with my 21.5 inch Dobsonian - Sky Dancer on 14 July 2007
Should look about the same on the night.







A word from the Scorpius editing team.
Members please write a story about your astronomy experiences and add some pictures.

Send them to:
Greg Walton
gwmpas@gmail.com

Brett Bajada
Peter Lowe
Bruce Renowden

ASTRO NEWS

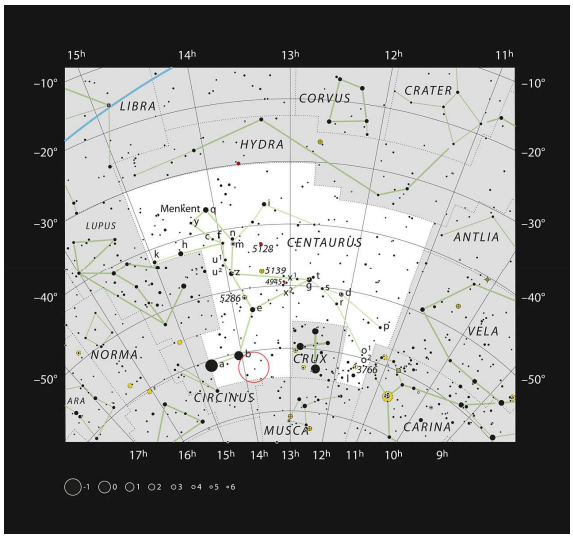
By Peter Lowe

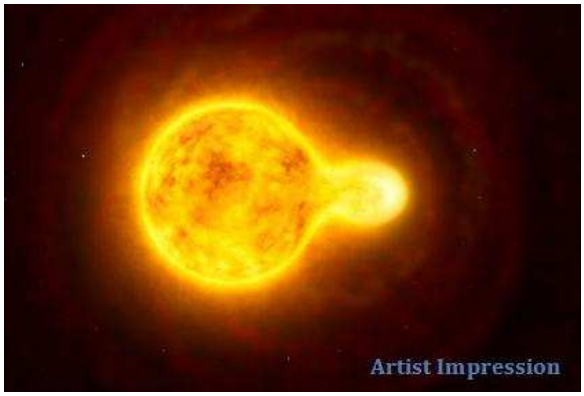
Explaining The Clouds of Venus

In visible light Venus presents a bland featureless, yellowy coloured face however in UV light we see striated Y-shaped cloud bands suggestive of rapid planet rotation. In the 1960's Earth based radar observations revealed that Venus was in fact hardly rotating at all taking some 243 Earth days per rotation. So one Venusians day is roughly 8 months long. Interestingly the cloud patterns take only four days to circulate the planet. The global cloud pattern is super rotating the planet. Why: has been one of the mysteries of Venus? On Earth the atmosphere is dragged around by the planet and thus shares the same daily circulation combined with the north-south cell circulations that on Earth give Melbourne its consistent, stable variable weather. The Venusian atmosphere is quite different from Earth's however in that it is much denser. At the surface of Venus the atmosphere is better described as soupy and a bit thick. If you sweep your hand quickly back and forth on Earth you can feel the air resistance. On Venus it takes considerable energy to perform the same task. The surface pressure is the same as being a kilometer under water. The lower atmosphere thus to some extent acts as a global ocean. It is now postulated that the pattern of clouds visible in the upper atmosphere is determined by essentially air (gravity) waves traveling around the planet and dragging the upper atmosphere with them. The speed of these waves is determined by the physical conditions in the atmosphere and not by the planet's underlying bulk rotation (or non-rotation). The mechanism for driving these global atmospheric waves is still being researched. It is thought these waves are dragging up material from the lower reaches that are more reflective in the UV and hence visible in UV photographs. What this material might be remains a mystery.

Largest Yellow Hypergiant Star

Earlier this year the ESO Very Large Interferometer Telescope discovered the largest yellow hypergiant star known called HR5171A. (also known to variable star observers a V776 Cen) One of the ten largest stars found so far, it is more than 1,300 times the diameter of the Sun. If it replaced the Sun it would extend to somewhere between Jupiter and Saturn. This makes it the largest yellow star known, some 50% larger than the famous red supergiant Betelgeuse and about one million times brighter than the Sun. More interesting was the discovery that it consists of a double star system, with the secondary component so close that it is in contact with the main star. The secondary's orbital period is 1,300 days placing it at roughly the same distance as Jupiter's orbit. Observations spanning over sixty years, mostly from amateur observers show that this rare and remarkable object is changing very rapidly and has been caught during a very brief phase of its life. More interesting still, the interferometer observations reveal the star is rapidly expanding. The star is getting larger in size over time and furthermore is one of the very few stars that have been found to be changing its temperature: HR 5171 is getting cooler as it grows. This type of star has evolved from an initial mass of around 40 Solar masses into a red hypergiant and is now shedding its remaining outer layers in a series of dramatic explosions on its way to possibly becoming a blue supergiant variable before declining in luminosity into a late type Wolf–Rayet star, but it is expected to explode as a supernova before reaching that stage. The visual magnitude of HR 5171A varies between mag 6 – 7 and is thus an easy binocular object in the constellation of Centaurus (The Centaur) making it an excellent target for a southern observing project. It's not everyday we get to observe a star heading for a supernova. It should be a regular observing target for our visual and astrophotographic members.

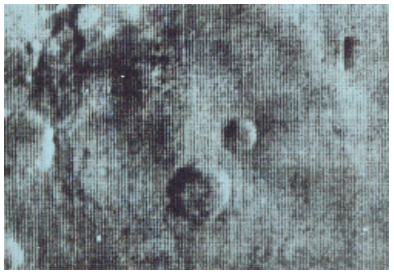




Kepler Mission Discovers a Bigger, Older Cousin to Earth

NASA has released further data from the Kepler Spacecraft, now operating in its limited pointing mode after the failure of its precision pointing system. Data from before the failure is still being analyzed. While numerous giant planets have been discovered in various orbits around different stars the hunt is on for smaller, Earth like planets in particular in orbits conducive to the presence of liquid water. (The so-called habitable zone) Such planets are considered ideal locations for the long-term development of living organisms and would greatly extend our search for extraterrestrial life. A newly discovered planet Kepler-452b is the smallest planet found to date orbiting in the habitable zone - the area around a star where liquid water could pool on the surface of an orbiting planet - of a G2-type star, like our sun. The confirmation of Kepler-452b brings Kepler's total count of confirmed planets to 1,030. While Kepler-452b is not a perfect match to Earth it is the best candidate so far. It is only 60% larger than Earth and it thus likely to be a rocky planet. It orbits the G2 Sun-like star over a period of 385 days. The star is 6 billions years old, 1.5 billion years more than the Sun and about 20% brighter but has the same surface temperature as our Sun which places Kepler-452b squarely inside the habitable zone. While the exact mass, composition and orbit of the new planet are unknown, this is as close to Earth 2.0 as we've found so far. The star is located 1,400 light-years away in the constellation of Cygnus and follow up observations are planned. An Earth-like planet in the stars habitable zone does not guarantee that life has formed and flourished but it is at least a good start.

How Time Flies and How Times have Changed



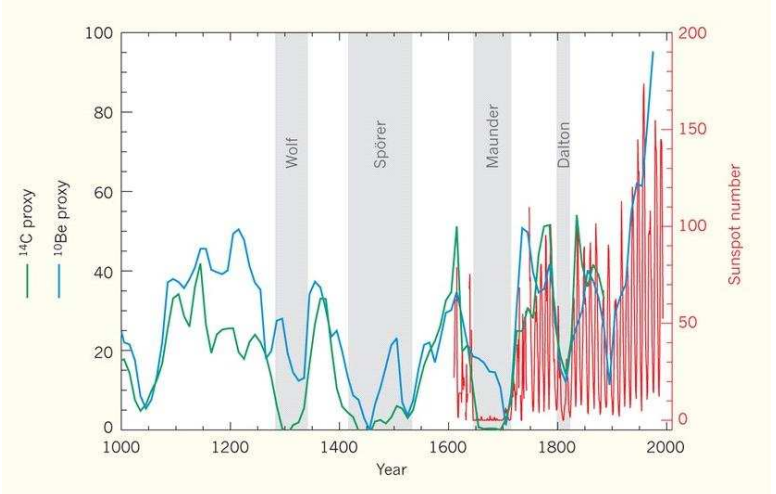
Fifty years have now passed since the first Martian fly-by mission. In much the same way that New Horizons just flew past the Plutoian system, in 1965 Mariner 4 flew past Mars sending back the first pictures of the Martian surfaces. These first pictures were recorded on four-track magnetic tape and slowly transmitted back fax-fashion to Earth. It took four hours to fax back the first picture. In all twenty-two (22) pictures were recorded, a far cry from the many hundreds of thousands taken by New Horizons. Researcher wondered what the Mariner pictures would reveal. Some speculated about ancient Martian cities and Martian forests but the first pictures showed a barren, cratered landscape. Any pictures were an exciting boom for the astronomers but something of a let down for the Lowell crowd who still hoped for Martians. Today we are still looking for Martians but our expectations of Martian life has been somewhat downgraded.

The Sun's Current Solar Cycle the Weakest in a Century

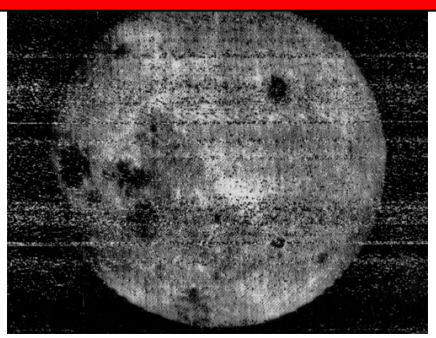
The Sun is now starting on the downside of the current solar cycle 24, which is proving to be the weakest in more than a century. While the number of coronal mass ejections CME's does not appear to have changed, their effects on Earth have been curtailed.

Why is a matter of contention? It is suggested there is correlation between gas pressure in Sun's heliosphere envelope and how gas ejected inside CME's expands. At higher levels of solar activity the heliosphere gas pressure may be higher with a corresponding higher magnetic field, which limits the rate of expansion of a CME bubble. At lower activity levels CME's can expand faster leading to milder geomagnetic storms thereby reducing their effect upon the Earth. The unusual slow start to the current cycle 24 is thought to be associated with a reduction in the strength of the polar magnetic field that occurs at minimum. The polar magnetic field strength is thought to be a factor in sunspot stimulation and a lower magnetic field thus leads to lower sunspot numbers.

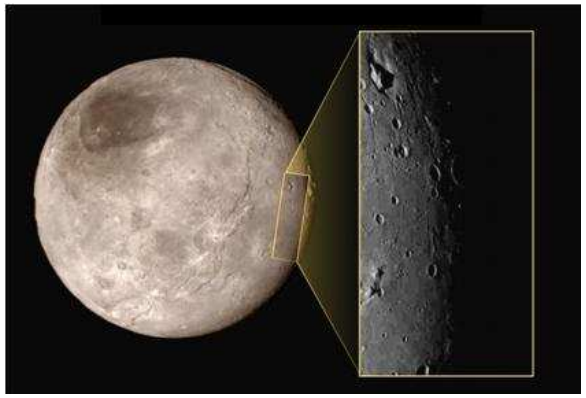
While the sunspot cycle has been known since the 1600's it has become apparent that this cycle waxes and wanes sometimes leading to active and sometimes inactive periods. Geologic records as well as historic sunspot counts show past periods when solar activity was quick different. Since the early 1900's we appear to be in an active period however this may be starting to change and a period of lower activity perhaps similar to the famed Maunder Minimum is speculated. Only time will tell.



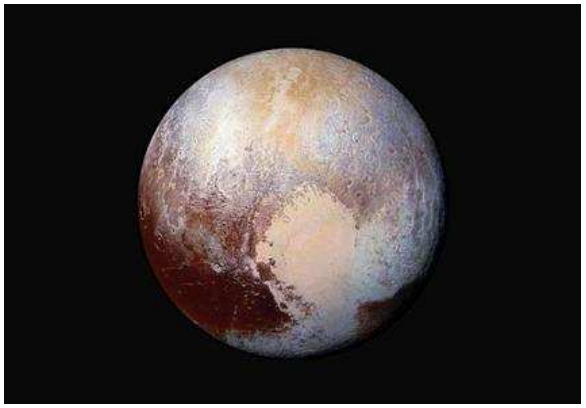
Pluto At Last



The exploration of Pluto is particularly exciting for me. When I was born Pluto was still a planet and represented the boundary between the solar system and the great outer space. Apart from the odd comet that lay beyond Pluto was nothing more than speculation. I am old enough to just (just) remember the early space missions. Without understanding why, I can just remember the fuss about the first Earth satellite Sputnik 1 but I can clearly remember my father showing me a newspaper picture of the far side of the Moon. We sat at the kitchen table and explored it together. Luna-3 was also a fly-by mission and now 56 years later we can explore the most distant planet of the day with same level of intrigue and imagination. Humans explored the entire solar system of the day within a human lifetime It is a triumph of human imagination and willpower that this has been achieve comparable with the global discovery voyage of Vasco da Gama in the 1450's. NASA and its associates must be recognised and congratulated on achieving this stunning result with many more results still to be returned in the coming years.



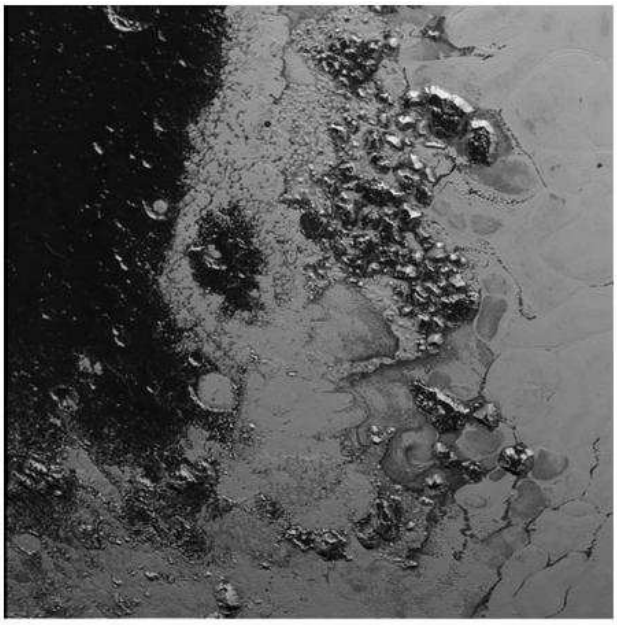
The solar system is much larger these days, as we have learnt more about planets, comets, asteroids and now the dwarf planets of the Kuiper Belt. The fly-by of Pluto brings us our first close-up look at a Kuiper Belt object although some of the moons of the other giant planets have given us a glimpse into what we might have expected. Of course there's nothing like being there. We have six new worlds to explore. (Pluto, Charon, Nix, Hydra, Kerberos, Styx) The first pictures as might be expect are reinforcing our expectations yet bringing new surprises as more details are revealed. I well remember the phrase from the first Jupiter fly-by that "There's no such thing as a boring Jovian moon". Well we can now say "There's no such thing as a boring Kuiper Belt world"



Firstly it was found that Pluto is a bit larger than believed which affects our understanding of the Plutonian orbital dynamics. We know the mass of Pluto and that has not changed but it means there is a different mix of iron, rock and ice which in turn suggests Charon might be smaller. The ratio of metal, rock and ice is a determinant in our understanding of how these bodies formed. The surface of Pluto is dominated by nitrogen ice. We see extensive nitrogen ice fields and ice mountains. At these surface temperatures we do not expect much atmosphere thus no weather. We have seen cryo-volcanism on other bodies but we're not sure if these processes might apply.

The question is "Does Pluto have a hot core that could drive cryo-volcanism?"

After the fly-by the craft turned to photograph Pluto backlit by the Sun. This showed Pluto does have an atmosphere that is very thin and mostly concentrated at the surface. No surprise there. The surface of Pluto and Charon appear surprising devoid of craters. Whether this is a remnant of their formation or the result of more recent surface geological reworking is unknown. There is evidence of change such a mountain formation and glaciations. Only the medium resolution pictures of Pluto and Charon have been transmitted back. Some low-resolution pictures of the Nix and Hydra have been sent. Pictures of the other bodies will have to wait.



As with all explorations there are many questions and mysteries still to explore and it will be a few years before all the data is recovered. While Pluto will never become a planet again it will remain a fascination for science and the public until the next visit (whenever)

	Orbit Size (Kms)	Orbital Period (Days)	Size (kms)
Pluto	--	--	1,185
Charon	19,600	6.4	604
Nix	48,700	24.9	42 x 36
Hydra	64,750	38.2	55 x 40
Kerberos	57,750	32.2	13 x 34
Styx	42,400	20.2	10 x 25

The Best Aurora seen in a long time. Images taken on 15th August 2015

"We first noticed a post on the Facebook page "Aurora Hunters Victoria". I knew there was some Aurora activity and I took some images with Therese my wife on the legendary Veranda of ours. We were both able to visually see and image the Aurora quite easily. Therese took most of the images and some were shown on the ABC morning show by the Weather Presenter Vanessa O'Harnlon. We both decided to head down to the local beach and did another session for an hour or so. Dave Rolfe called me and said he was heading down. He asked if we could meet up with him? After dropping Therese off at home Dave and I headed to Point Leo and imaged over three hours until 12.30 am the next morning. The light show was the best we had both seen with flares and columns dancing across the sky we were in Aurora imaging heaven. Dave had some dew issues but my trusty dew control setup, thanks to Greg Walton's idea, worked a treat. *By Paul & Therese Albers*

Phil Holt - see image below right - I managed to get some photos of the Aurora last night (15 August 2015).
It came a day earlier than predicted. It goes to show, you have to stick your head outside, just in case! It wasn't that impressive from Mornington, but maybe some other members were ready and photographing it from further South. Link to photo album on flickr is https://www.flickr.com/gp/11002628@N08/99r404

The 2015 CWAS AstroFest

"The David Malin Awards"

MPAS members at the 2015 David Malin Astrophotography Awards

This event takes place at Parks NSW each year.

MPAS member Alex Cherney won the Animated Sequences - Aesthetic

"Turn" by Alex Cherney https://player.vimeo.com/video/133893399

Citation: "Making interesting movies of essentially static or slow moving objects offers many technical and aesthetic challenges. Doing it as well as it is done in this production requires special skills - and much patience. This is an engaging and artfully constructed compilation of footage obtained at two observatories on almost exactly opposite sides of the world."

MPAS member Steven Mohr, pick up a honourably mention in the deep sky category.
"The Mighty Cosmic Web" see right NGC 2070

NGC 2070

All photos & comments from David Malin Astrophotography Awards web site

All of the 2015 "David Malin Awards" Winners.
(Back L-R): Peter Patonai, Alex Cherney, Steven Mohr, Marcus Davies, Phil Hart, Greg Priestley, Peter Ward, Kate Guaran of Canon Australia, Andrew Campbell, Stefan Buda, Saeed Salimpour, Scott Carnie-Bronca.
(Seated L-R): Troy Casswell and David Malin.
Not Present: James Garlick, Matthew Cherubino, Paul Haese, Robert Kaufman, Kevin Diletti, Steven Saffi, Judith Conning, Mark Slater, Andrew Cool.

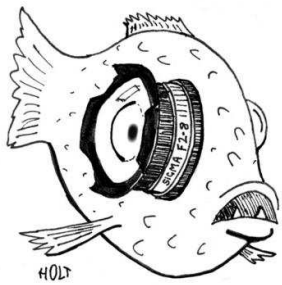
With Kate Guaran from Canon Australia and the Mayor of Parkes, Cr Ken Keith
Presenting the major prize, a Canon camera.

The category winners with Dr David Malin.
(L-R): Alex Cherney, Phil Hart, Dr David Malin, Peter Ward, Andrew Campbell and Troy Casswell (seated).
Not Present: Matthew Cherubino and James Garlick.

For more information about this event click on this link - http://www.parkes.atnf.csiro.au/news_events/astrofest/awards/

Photographing the whole sky with a hub-cap camera, or *piscium oculus pro pauperibus*

By Phil Holt



"I got this man-eye lens for Father's Day."

How do you photograph the entire night sky from horizon to horizon? You could sell your car and buy a fish-eye lens for your SLR camera or.....maybe there is another way. This 'do it yourself' adventure was inspired by a Sky and Telescope article by Chris Schur in June 1982, (Vol 63, pp621-624 and also two other articles, August 1982, and an earlier article in August 1980. He used a Volkswagen chrome plated convex hub-cap under his SLR camera to make images of the whole sky. I remember reading it at school at the time and thought it was a great idea. It wasn't until I was doing some astrophotography experiments in the 1990s that I thought I'd give it a go. In 1999 I bought a shiny chrome plated truck hub-cap, for about $10, which wasn't quite spherical enough but was suitable for early experiments. The shop assistant looked bemused when I explained that it wasn't to go on a truck.

First find your convex mirror.

I built a simple timber stand to hold the hub-cap mirror with a single strut to hold the camera above it facing down. Placing the mirror under a tripod mounted camera worked just as well but you get more legs in the photo. I used a fast 50mm f1.4 lens on the camera, stopped down to f2. The camera to mirror distance was about 750mm which allowed the whole sky image to fit in the frame. I learned that focussing in daylight was necessary as the stars can't be seen through the camera viewfinder at night. The other trick I learned was to display the images flipped so the viewer gets the correct orientation of the sky as if looking directly at it, instead of the mirror image.

One of the first rolls of slide film exposed with this set up had lots of pink sky frames (see fig. 1). I thought at first there was something wrong with the film. I then realised that only some of the frames were a bizarre colour, so it wasn't the film, and the sky must have been coloured pink. Yes it was a whole sky covering aurora. I did remember that on the night the sky did look a bit odd, but dismissed it as just my eyes adjusting after indoor lighting. After back tracking through NOAA satellite data on the web I could confirm the aurora at the date and time of the photograph.

Fig.1 Aurora 2000, April 7, 1111UT, F2 4 min 400ASA

After seeing the possibilities I bought a more spherically shaped hub-cap. This gave a better image and was used to capture the aurora of October 2003. My picture (figure 2) now graces the society shed wall. The new mirror still has some flaws and in parts of the sky the stars always spread into short streaks. This can appear ugly but the constellations are still identifiable.

In 2012 I went digital and bought a Pentax K-r SLR camera which brought the possibilities of time-lapse within my reach. This meant I could take hundreds of photos and survey the whole sky for as long as the batteries would last, or the lens fogged with dew. My aim in addition to aurora was to capture meteor streaks. In the 2014 Geminid meteor shower I set up the camera and mirror and ran a few survey periods of a 15 second exposure every 17 seconds for up to an hour. During the sessions I observed several meteors of magnitude 2-3, but none of these recorded in the photos. One image (figure 3) from December 15, has what appears as another star but is obviously transient as it is not in the prior or succeeding image. This was not long after midnight when Iridium flares should not have been visible, so maybe it was a bright short path meteor. I didn't observe that particular event so can't confirm it. My suspicion is that the extreme wide field of view makes the regular meteor streaks too narrow and such fine faint lines can't be recorded in the shot. It never records the thin streaks of aircraft, but it can record the comparatively slower and brighter space station. Also the lens in combination with a convex mirror may behave as a much slower, higher F number lens, and so struggle to record brief events unless they are very bright. Surveying meteors at this stage is still a work in progress.

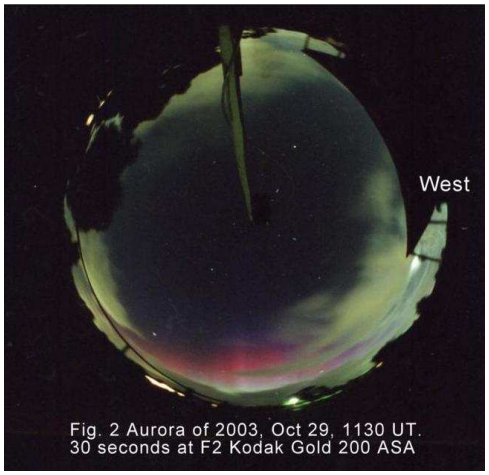


Fig. 2 Aurora of 2003, Oct 29, 1130 UT.
30 seconds at F2 Kodak Gold 200 ASA

Fig. 4. hub-cap mounted on the base of dobsonian telescope.

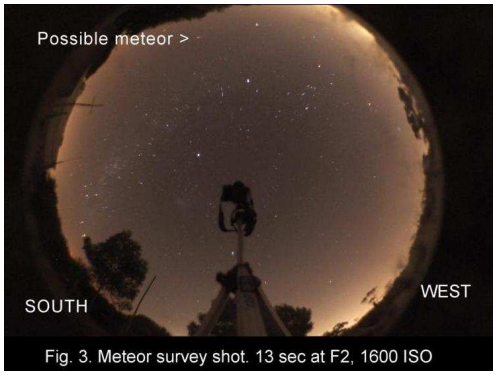
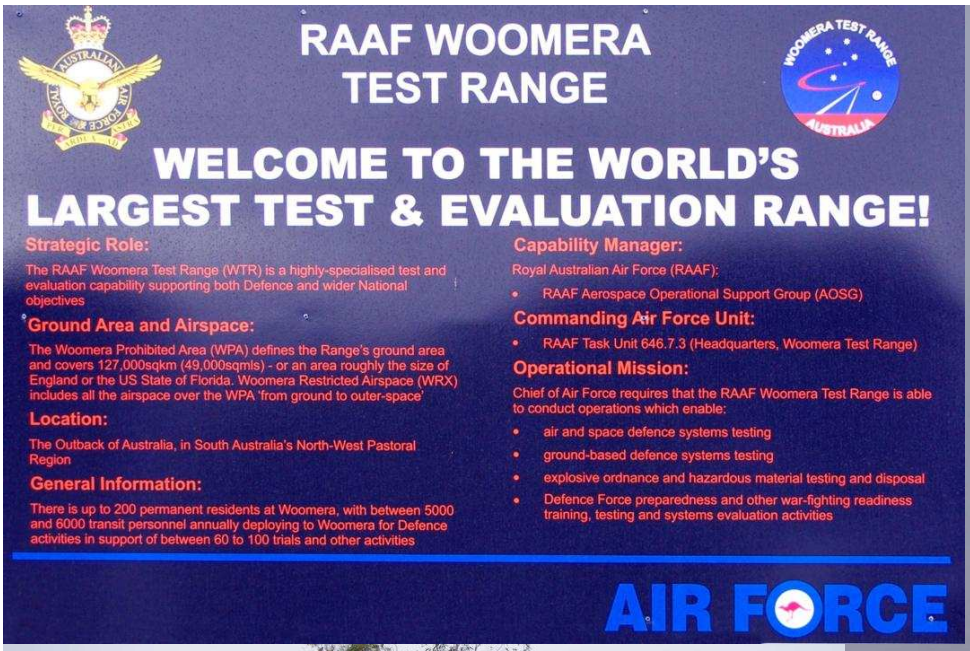


Fig. 3. Meteor survey shot. 13 sec at F2, 1600 ISO

Recently for something a little more dynamic in a time-lapse movie I tried mounting the hub-cap camera to the base of my Dobsonian telescope (see figure 4) and shooting during an observing session. The swirly chaotic movie can be found on the web at https://flic.kr/p/w8nKPY.
So I have found that plenty of fun can be had with a poor man's fish-eye.



The Woomera Rocket Range, *by Greg Walton*

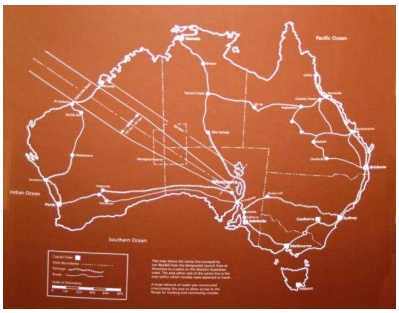
Pia & I did a road trip north, looking for warm sunny days & clear nights. Along the way, we called in to the Woomera Rocket Range. There we found a large display of rockets & much more. They have added an information centre & café in recent years. I have always wanted to see Woomera because of a book I have: "*Rockets in the desert"* (...the story of Woomera).

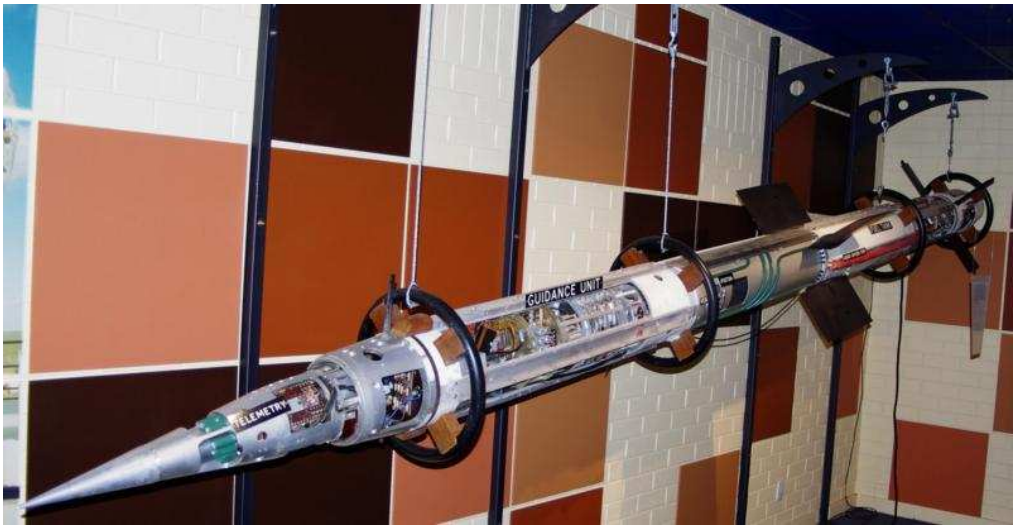
I wondered around looking at the many different rockets- most of them were failures crashing back the earth. It looked more like a case of boys with expensive toys. Today, they are still finding parts of rockets scatted over Western Australia. Woomera had just about everything, including hospital, bowling alley & observatory... But the town itself did not have an inviting feel about it. Lifeless & empty, the feeling only government towns can achieve. Maybe it's because they also tested atomic bombs nearby.

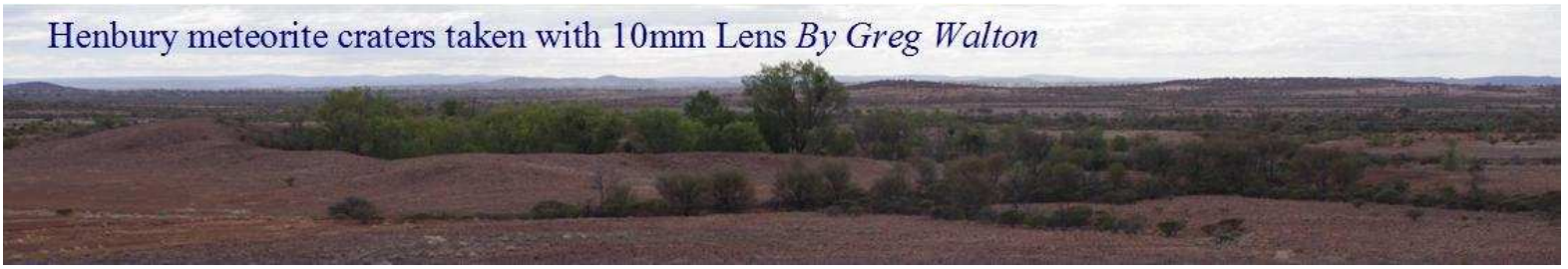
Woomera was named after a device the aborigines used to launch there spears.

More photos from Woomera

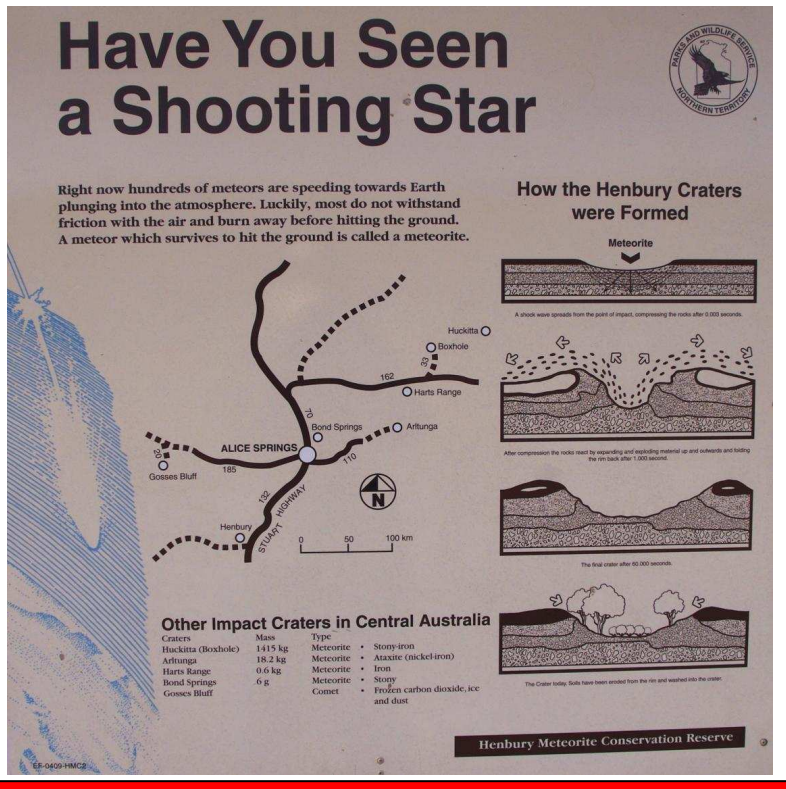
Top - The observatory
Top right - Blue Streak parts found
Above - Plane for testing rockets
Centre - Rocket range
Below - Red stone parts found
Bottom left - The insides of a rocket
Bottom right - Range finder







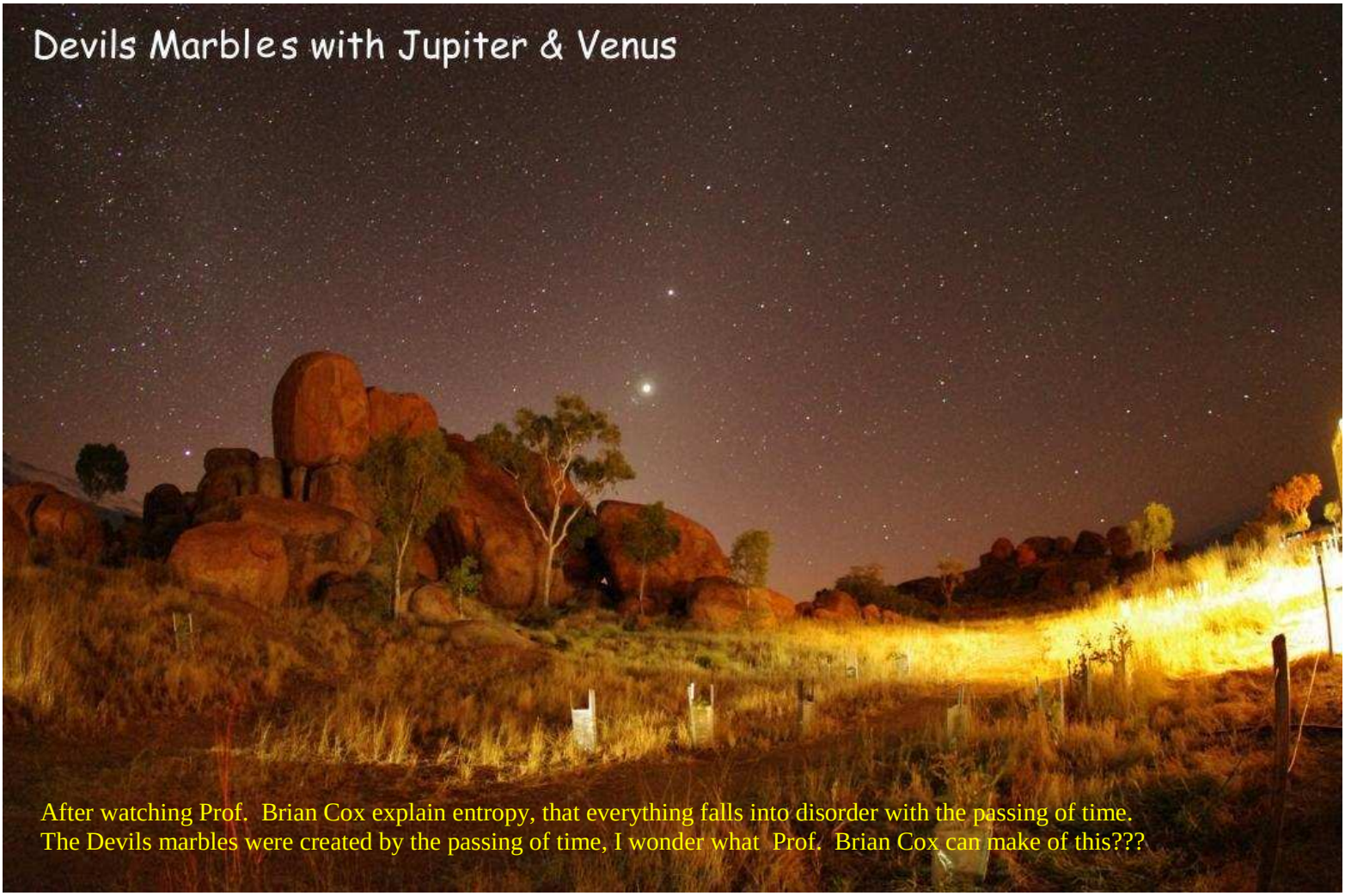
Henbury meteorite crater is only about 30km of the Stuart highway & has a low cost camp site, $3.30 per person. We wandered around looking at the ground to see if we could find any meteorite fragments, but it's not easy, having been been picked over by people with metal detectors. Also the ground is covered with small stones that look like meteorites. Pia has good eyes & picked up a few, I tested them with a magnet & they stuck. Well done Pia! There is 3 larger craters close to each other with some smaller craters further away. The countryside around the crater has very few trees. Most of the trees are in the crater. Well I can strike this of the bucket list.

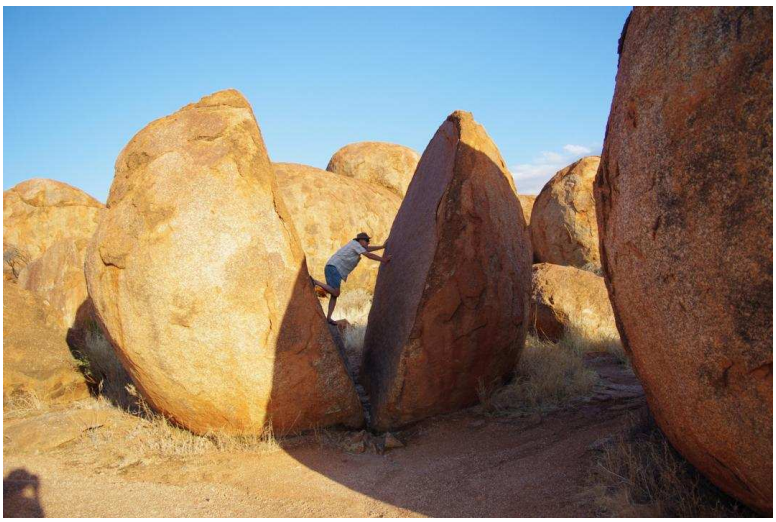


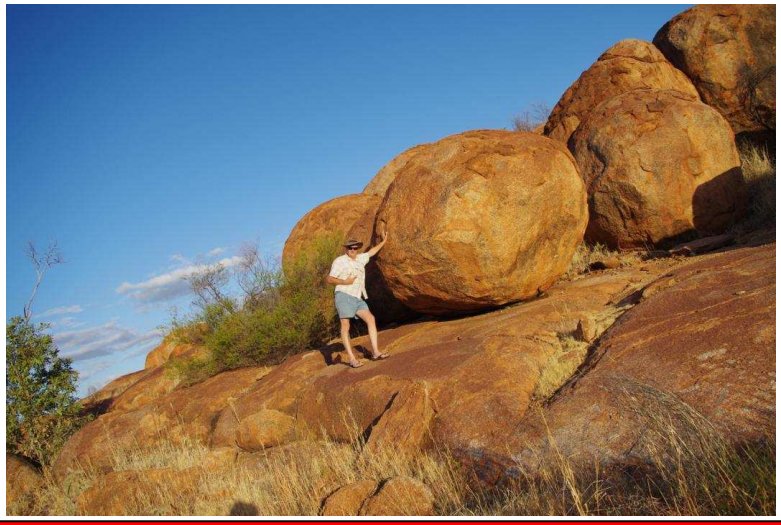
On the map we saw that just before the Devils Marbles in the Northern Territory, is **The UFO Centre of Australia,** at a place call Wycliffe Well. We stopped for a look. It was really only a Roadhouse & Caravan park trying to drum up some extra business. Though they did have a lot of aliens status around the caravan park & souvenirs on sale.

UFO Centre

We spent the night at Devils Marbles & lost our marbles... see time lapse @ https://vimeo.com/135656577







We arrived in Darwin for the 38th Northern Territory Day, which was to be quite a show with a concert staring Jessica Mauboy & fireworks on the beach. Also the famous night market was run that night, with lots of tasty food & nick-knacks; even an amateur astronomer selling a look at the planets! He was operating 3 Meade XL200s. NT Day is a wild time, with most of the shops selling fire works. I liked there names too: Big Thunder Missile, Operation Big Bang, V2 Rocket, Buzz bomb & Three fingered Freddy. We read in the paper most people spent $100, so we thought we would be in for quite a show. The firework went all night, but they did not rival the professional fire works which went for 20 minutes. The fireworks were set up on a row of barges in the sea & as the tide went out the barges got very close to the shore, as you can see in the photos on the next page.

Every night we would watch the planets Venus & Jupiter getting closer & by chance they were at there closest on NT Day. So I aimed to image them with the sunset or fire works on the beach, which I did, as you can see... Venus & Jupiter in the above photo. I also caught Venus & Jupiter in centre of the fire works, *see next page*. After the professional fire works it was total gridlock. Lucky Pia & I got on the first bus out. It felt like we were leaving a war zone; fireworks exploding all around us. *By Greg Walton*

Geoff Carr
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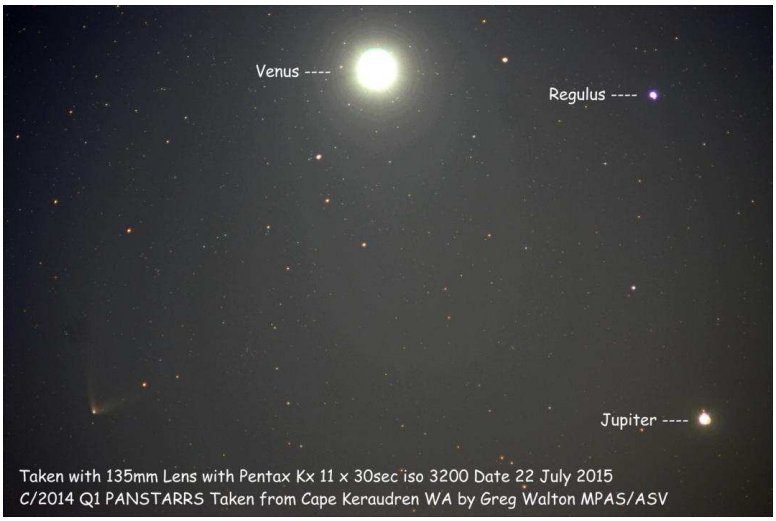
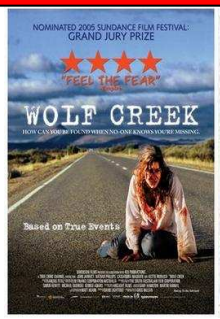
starsafaris@bigpond.com

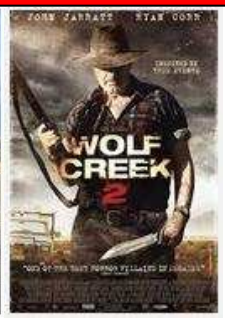
Looks a bit like the movie “Close Encounters Of The Third Kind” ... or was it “Starman”???



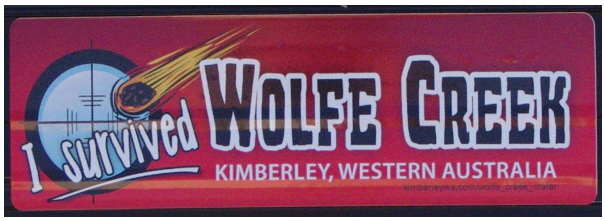
Comet Q1Panstarrs 2014 was spotted last year heading towards the sun. Then on the 16 July 2015 it was spotted & photographed. The comet had 2 tails & was about 6th magnitude, easily spotted in binoculars.
These are some of my photos. Centre right, 21st July with a tail separation.
Taken with camera setup below.

Wolfe Creek crater *by Greg Walton & Pia Pedersen*





I said to Pia, “We need to see Wolfe Creek Crater”. Pia said, “Does that place really exist, I thought that place was just in the movies... I watched a movie called Wolfe Creek & it's the scariest movie I have ever seen & I do not want to go there”. I said, there is a free camp site there next to the crater. Pia said, we are not staying there & that’s that! I decided not to mention it again till we got closer.(I have not seen the movie). Wolfe Creek Crater is 20km of the Tanami track, which is a Dirt Highway that runs 700km between Alice Springs & Halls Creek in Western Australia. A must do if you have a 4 wheel drive. I thought it best to drive in from the Halls Creek end, as that would mean we would only need to drive 135km of corrugated dirt road. I secretly talked to people who had been there & asked what the road was like, most said very tiring, watching the road for sharp rocks that would puncture the tyres & that dust gets into everything. I checked the tyres on the car & the tread was almost gone. The Northern Territory roads are new & sharp, sometimes looking like ground glass. So we fitted new tyres just before Halls Creek & had the car checked over. Probably should have done this before we left Melbourne! We arrived at Halls Creek caravan park & I said to Pia, Wolfe Creek Crater is only 150km from there, I think we should go tomorrow. Pia said, I want you to watch the movie before we go!!! We went for a walk around the town. We saw that all the shops & houses had iron bars or security grills on all there windows. This did not help my case for going to the crater. Morning soon came & we packed up camp & headed for the crater. The Tanami track turn off is about 20km out of town, were we stopped & gaffer taped up the back door on the car, to stop that very fine red dust from getting in. At first the Tanami track was not too bad, with only small corrugations but this did not last, with the corrugations becoming 150mm high & our speed went down to 15km per hour, we carefully picked our way through them. The Tanami track is very wide & surprisingly busy. Young guns flew past us out of control & in a cloud of dust! The road was littered with shredded tyres. 3 hours later we arrived at the crater... a very impressive sight & so round - about 800 meters across. We walked up the path to the crater rim & took many photos. I decided to climb down to the crater floor & walk to the centre. There is a round patch of small trees in the centre. Pia stayed on the rim & photographed my progress, I took a selfie & walked back out of the crater. I still remember the Leyland brothers driving the first car (beach buggy) around in the crater, maybe 40 years ago. Then I walked back up to the crater rim. I mentioned the free camp site next to the crater. Pia said NO... so we headed back to Halls creek Caravan park. We were both glad to be back on the made road, with the car still in one piece. All up a 7 hour trip, the dust did gets in the car & I still have not seen either of the movies. Pia bought me a sticker for the back of the car, see right



Northern Constellations, DSOs and PAS

With very bright lights just about everywhere it had to wait till one organised event at an a-little-less-bright venue before I could make out a few stars the pattern of which I felt enormously happy to recognise immediately (mainly from books!) as the handle half of Big Dipper. The rest later made an apparition and I had to say *My!!! Big Dipper is Massive!*

From star charts or books to real sky it was often like that too for people who saw Scorpius etc for the first time. That evening Jim McClure organised astronomers from various Societies including the Peninsula Astronomical Society (PAS) to again become part of the annual Tech Trek Science, Maths, and Computer Camp at Stanford University, California, USA –with a high-interest week-long astronomy class. This program, which I think addresses the still existing gender-based upbringing and social experiences, hosts several camps at various universities for 600 girls entering 8th grade (whose teachers recognised their relevant interest), sponsored by the American Association of University Women. We were on a field not far from 'The Enchanted Broccoli Forest'. There was a detailed instruction of a circuitous route that avoided new roadblocks, at night on this humungous town-size campus. But I loved the lat. long. 37.420348 N, -122.173359 W as the format is a link to my sea life and with just my 'present' binoculars and a tripod I was dropped off nearby and simply walked onto the field.

Scheduled were 84 scholars and 20 staff members to attend that 'GO' evening when the weather became clear as was amazingly typical for California, unlike the previous week's 'NO-GO' of very unusual 40-90% clouds. I could perhaps wonder if my movement was to blame for causing such weather there and such record cold in Melbourne but that would be a claim of significance by just a pile of (star)dust.

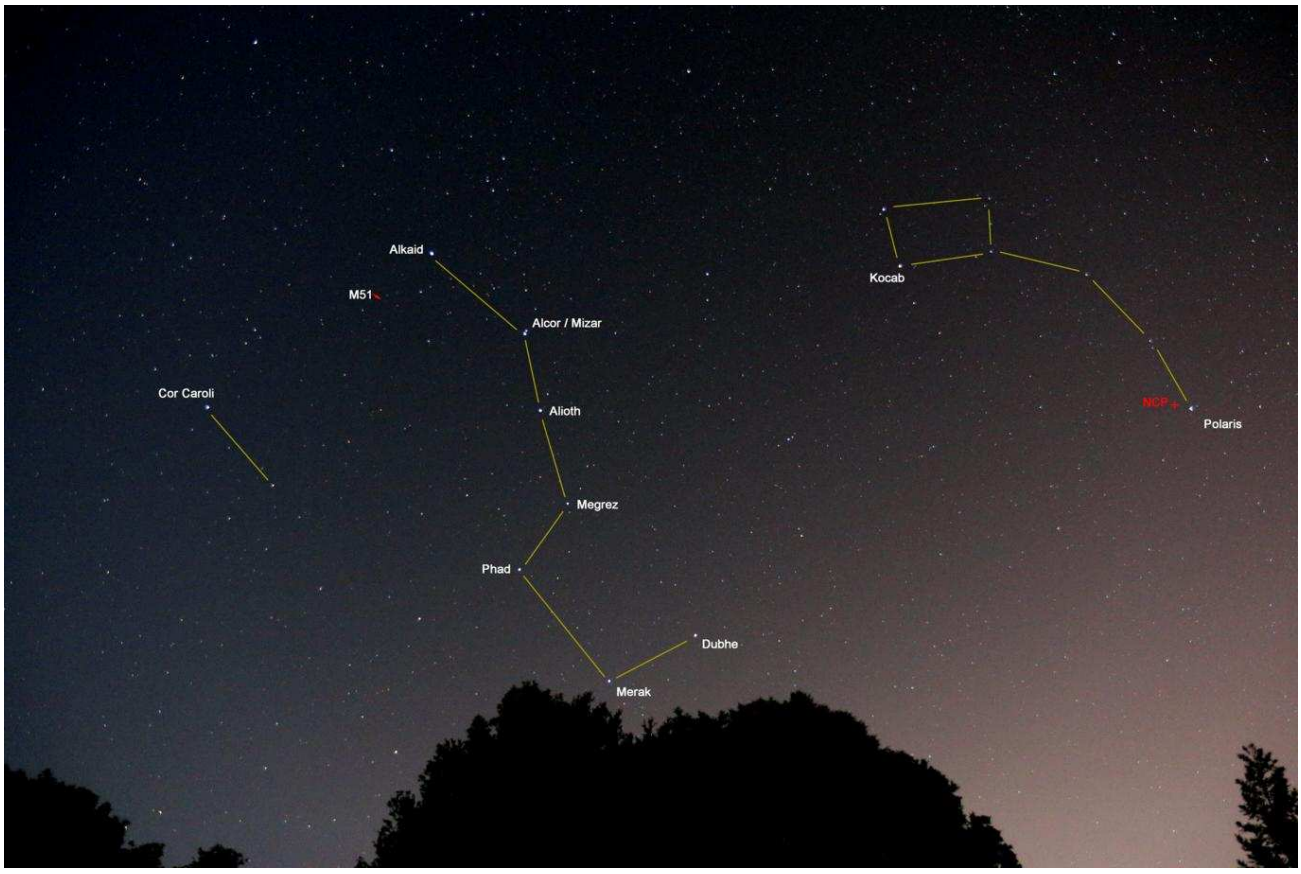


Image 1: Around the NCP, from Santa Cruz Mountains, courtesy of Rick Baldridge

Talking about weather, I had an odd experience when there some time ago. After several days of super perfect weather I stopped short and thought '*Hey, something's wrong here. Something feels really weird'* then realized '*The weather doesn't change!'* I guess it was somewhat disturbing for a Melbournian. This time there was a mag 4.0 earthquake centred near Fremont, as opposed to the multitudes of daily minor tremors. Someone on the 4th floor above me felt it. I'd noticed some emergency kits, packaged as backpacks, hung on various walls of one public building complex, otherwise there appeared no visible sign of preparedness. I asked someone who allowed such pertinent questioning why they would choose to live where there's a high probability of major earthquakes. The answer was that they'd rather be in such a nice area than cram up somewhere else with some other risks, also real and high. I can understand that perfectly, recalling when I stepped into Hawaii's Volcano Village and saying to myself "*Now I understand*". The place was magic; I felt very at one with it.

Someone showed me my top-of-wish-list Albireo that was truly stunning. The colours looked more intense than H3945 in Canis Major but I cannot say how much equipment and viewing conditions played a part. I tried to contribute in my own little peculiar way and was able to show the attendees some constellations, including Big Dipper –yes, strange but true. Scorpius and Saturn appeared a bit at a time, at the still-bright venue with sky glow, so even though I expected a weird angle it took a little while to see that my darling Scorpius plastered the Palo Alto early evening sky at a VERY weird angle! Some attendees were very excited, jumping up and down, seeing all these and spotting Sagittarius teapot followed by the smile of Capricorn rising. I also spun a yarn about how things looked from the southern hemisphere and what else we down under (or up over, relatively, on this spinning top) feast or keep our popping eyes on. But relevant for this camp I encouraged students to go for it in any field of study or interest and not be held back by social norms and obstacles.

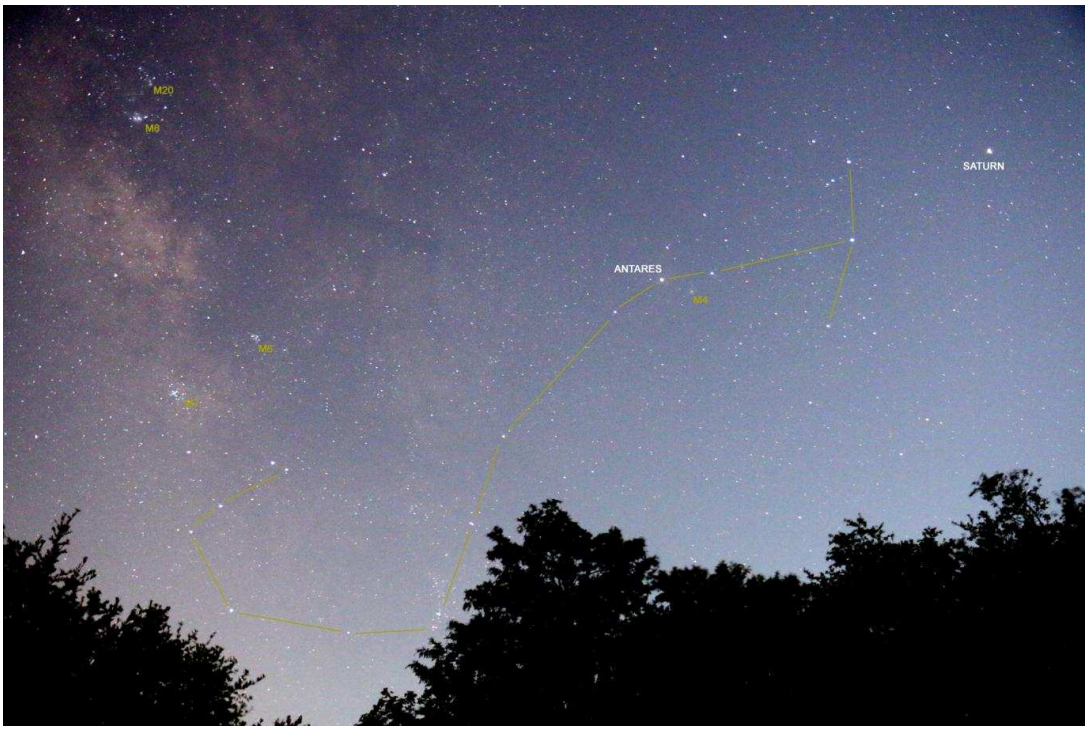


Image 2: Scorpius, this image in moonlight from Santa Cruz Mountains, courtesy of Rick Baldridge

Having some months ago joined PAS as a member, word got to the very kind Vice President of PAS, Rick Baldridge, who broadcast my visit, calling it 'by our only international member', and a request for a lift/ride. (I was too chicken to drive on the wrong side especially up mountains on winding switchback roads. Rick understood and he related a story of a well known astronomer who was killed in a road accident when driving in a foreign country and the reflex got him onto their wrong side.) I didn't have any expectation but communicated anyway and gave up on any possibility. But with members' kindness, I was able to join a super delicious speakers-dinner and attend presentations at Foothill College, Los Altos Hills, by 3 members on their 'Faroe Island / Norwegian Total Solar Eclipse of 2015'. PAS Meeting program is very impressive, with speakers also from JPL, NASA, Lick Observatory, and numerous other notables. Here I really wonder whether videos of such educational talks could be made available for viewing by people further away, even if limited to trusted circles –this is a topic I think relevant for any consideration of forming Affiliated Societies. Later on at the Foothill Observatory, where PAS members operate the 16-inch computer-controlled Schmidt-Cassegrain reflector for public viewing, I saw Big Dipper again as well as Jupiter and quarter-phase Venus. Significant for me was how just a mobile phone of Rick's can capture this picture of my soul 'star'.

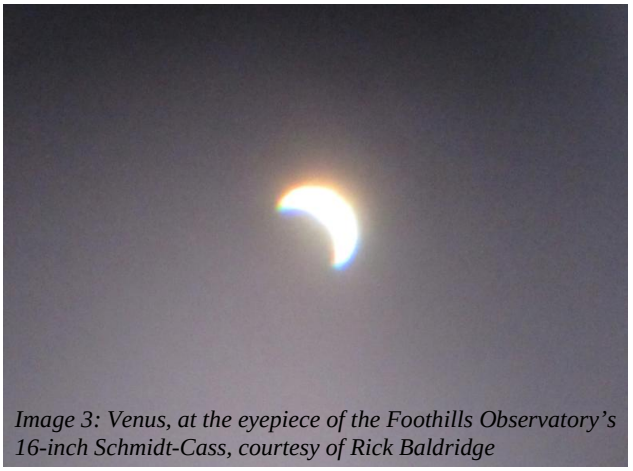
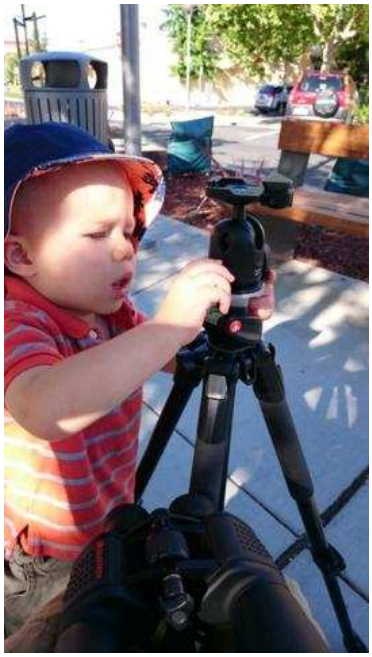


Image 3: Venus, at the eyepiece of the Foothills Observatory's 16-inch Schmidt-Cass, courtesy of Rick Baldridge

I could not believe my lucky stars, but could believe in Rick's kindness. On two occasions I was driven up Santa Cruz Mountains to visit PAS' dark sky site with 2 observatory domes at 2,400 ft elevation. One houses 12" Meade LX200, and the other a 16" but with the dome requiring restoration. The annual fee for members to use these facilities is only USD18 and even if as a casual visitor one would not need to contribute I would recommend that we all do contribute. I really think the fees ought to be higher as I believe in fair contribution –for all over the world, which means fair exchange rates, fair trade and equitable pays for work otherwise all progress in science and technology is valueless against the continued human tribal dog-eat-dog and pillage-Earth stagnancy. For anyone preferring to hear words only through famous personalities just listen to astronomers Carl Sagan and Neil De Grasse Tyson.

During the first drive up we saw 3 beautiful deer gracing and grazing in the giant redwood forest. There were reports of bears, I think black grizzly, and Rick told of once looking up to see a mountain lion when he, being alone, very quickly packed up gear and left. During this regular 'Prime Night' for members (apparently when called star party people arrived with party gear, noise, and lights) there was training on how to use the equipment after which members could sign up for an 'access to the 12" telescope' (this really should be a must anywhere). The second trip was when we stared up for the forecast re-entry of satellite 15035B / 40745 (that would break up as bright trail) –but it decayed earlier, visible in NZ, The Cook Islands and possibly French Polynesia http://www.satobs.org/seesat/Jul-2015/0119.html Both times there was a serious setup outside by Richard, an avid astro-photographer, who I think usually stayed there through the night. Nearly equally serious was Rick's fondness of a red he introduced me to: 'old vine Zinfandel' (it was exceptionally good) and my fondness of a white. I took a favourite Marlborough –*so there, my Kiwi friends, I promoted Aotearoa wine to Californians*.



Images 4A and 4B: A 2 year old astronomer-maybe, earnestly adjusting "(s)crew" then his first light. Courtesy of family

I cannot describe adequately what these 2 trips to Oak Ridge on Santa Cruz Mountains meant for me. Perhaps massive appreciation would express some and another part was being 'home' -at one with the sky, all with Andromeda and the Milky Way hurtling toward each other and the gravity dance with the moon overhead. Missing for me was the sea all around but Hey I was at the edge of the Pacific; and Monterey Bay was just visible. Besides, Earth crust cracks, colliding plates, and molten rocks were right beneath me with giant trees all round; what more could make one feel at home and at peace –true peace of accepting and appreciating changeability.

Rick allowed me time alone to gape, explore, and play with my binoculars (apologies to those offended when I say 'toy' to describe all my serious and sometimes very expensive equipment; I didn't know others had unpleasant experiences associated with the word). With generosity of heart, knowledge and expertise, he then showed me and explained many things. First up was the particular area not seen from Melbourne at approx. 38 south. Where we were was approx. 37 north so the focus area was the spinning disc pivoted 1 degree off Polaris. It was beautiful to observe this spinning, the W of Cassiopeia, the Great Square of Pegasus, the Summer Triangle with Aquila The Eagle and Cygnus flying towards each other. And darling Delphinus! All in some moonlight and sky glow. Locating for myself, from Rick's advice, and seeing M31 Andromeda Galaxy through my own binoculars was overwhelmingly a major personal connection. I remember a description and artists' impression of when (!) eyes on Earth will see this galaxy rising and traversing Earth's sky.

Through the 12" Meade LX200 I was shown the Double-Double Epsilon Lyrae, Albireo not-had-enough-of-ever, M51 Whirlpool Galaxy another-top-of-the-list… at last!!, and the amazing M57 The Ring Nebula in Lyra. It was very special to view the carbon star Mu Chephei (Herschel's garnet star, B-V index 2.26) and beautiful M13 globular cluster in Hercules. Whereas Omega Centauri is well known I wish that more people can see DY Crucis (EsB 365) in Crux. I saw it at MPAS, shown by Greg Walton, as very RED with a B-V index of +5.8 (noting that colour is reddest at a variable's minima). Not 'ours' though; even as a shorthand word I think that it stems from and exacerbates the claim-as-possession and mine-is-better-than-yours operatives at the roots of human conflicts. As for images I was utterly surprised that just a few stacked shots could turn out so amazingly gorgeous. I have decided to curb my activities and spending to mainly visuals but find that the astrophotography bug is worming its way in rather successfully –but I like terrestrial photography anyway, so….

Image 5: M51 The Whirlpool Galaxy, courtesy of Rick Baldridge

Image 6: M57 The Ring Nebula, courtesy of Rick Baldridge

I tiptoed home after 3 am, with my heart and spirit expanded. The universe is so vast, beautiful and amazing; I cannot see why any would choose the pettiness of one-up put-down take-more between individuals and between groups on Earth.

My experiencing and understanding have been aided by uncountable resources but notable among them was 'The Stars, A New Way to See Them' by H A Rey. Even for the experienced I'm very sure that the material will still be useful if only to show one way to explain science very well. I took with me the small-size star chart from the back of the book as it made complete sense of constellations.

Next, the internet community helped me discover excellent Star Charts by Toshimi Taki http://www.geocities.jp/toshimi_taki/ , in pdf and ppt, two sets to mag 6.5 and 8.5, the most sensible and practical I've come across –and I've researched several. I have thanked the author and hope to contribute in some humble ways. His generosity in sharing them keeps candlelight aglow for me in some dark hours of despair witnessing the goings on among earthlings. On this tangent, the famous Stanford sculpture garden may express what this means.

Lastly, after a fair bit of assessing various references, I bought the 3 volumes of 'The Night Sky Observer's Guide', being the most logical and practical material –for me, as they bridge completely from unaided visuals right through to DSOs totalling 7,935 objects with applicable sections of detailed star charts. Excellent, although some disappointment is on missing or incorrect crucial info in Vol 3 but we can all help improve it. Members are welcome to look through mine to assess for yourself. Also retailed locally. One thorough review is at http://www.iceinspace.com.au/46-627-0-0-1-0.html and the publisher's at http://www.willbell.com/HANDBOOK/INDEX.HTM

Some fantastic news came that Rick was appointed a Lick Observatory's astronomer for the public viewing program, outside of his work and other commitments. I can hardly imagine anyone being more suitable. Congratulations again to Rick, PAS, the public, and astronomy.

I missed PAS' Yosemite star party later in August. A star party camping under the dark sky of Yosemite and touring around daytime, how cool is that! Apparently various astronomy societies also have their star parties there where the public are welcome.

So many incredibly awesome memories for me. I cannot thank Rick and other PAS members enough –still thinking what did I do to deserve such rich experiences. I sent a note on the idea of 'Affiliated Societies at Four Corners of the World' to PAS, being from an individual not representing any Society's view; things will happen or not between whichever Societies that are interested. Some promised to keep in touch. Some may visit; I hope they do as I sure intend to help them range the southern sky –any sky undivided really.

Sky - Member MPAS (http://www.mpas.asn.au/ , ASV (http://asv.org.au/), PAS (http://www.pastro.org/) Aug 2015

SOCIETY INFORMATION


Peter Lowe


Dave Rolfe


Peter Skilton


Jamie Pole


Trevor Hand


Paul Albers


Paula Ritchens


Clemens Unger


Greg Walton

OFFICE BEARERS OF THE MORNINGTON PENINSULA ASTRONOMICAL SOCIETY

President: Peter Lowe
Vice President: David Rolfe
Committee: Trevor Hand, Fiona Murray, Paul Albers, Paula Ritchens, Clemens Unger.
Phone Contact: Peter Skilton - 0419 253 252

Secretary: Peter Skilton
Treasurer: Jamie Pole
Web Master: Steven Mohr
Scorpius Editor: Greg Walton
Library: Fiona Murray

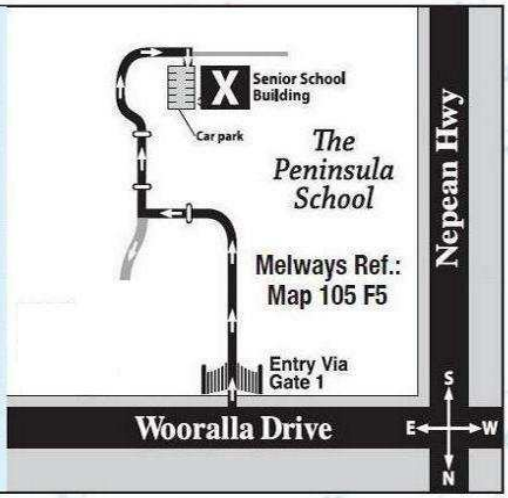
SOCIETY MEETINGS

Meeting Venue: **The Peninsula School**, Wooralla Drive, Mt. Eliza, (Melways ref. 105/F5) in the Senior School at 8pm, on the 3rd Wednesday of each month (*except December*). Entry is via the main gate, off Wooralla Drive. (*see map*).

For additional details:

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

Phone: 0419 253 252
Mail: P.O. Box 596, Frankston 3199, Victoria, Australia.



LIBRARY


Fiona Murray

The Society also has books and videos for loan from it's library, made available on most members nights at The Briars site, contact Fiona Murray.

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 and event information as well as being able to join in discussions and ask questions with other members.

To join, go to: http://groups.com/group/e-scorpius and sign up to Yahoo groups - *You require to sign up to Yahoo groups to join E-Scorpius.* Once you have signed up at Yahoo groups, email welcome@mpas.asn.au saying that you want to join E-Scorpius and you will be added to the E-Scorpius list.

VIEWING NIGHTS - 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 either 9776 2074 or 0415 172 503 if they need help in getting to the site. Upon arrival at the site, remember to sign the attendance book in the observatory building.

For additional details:

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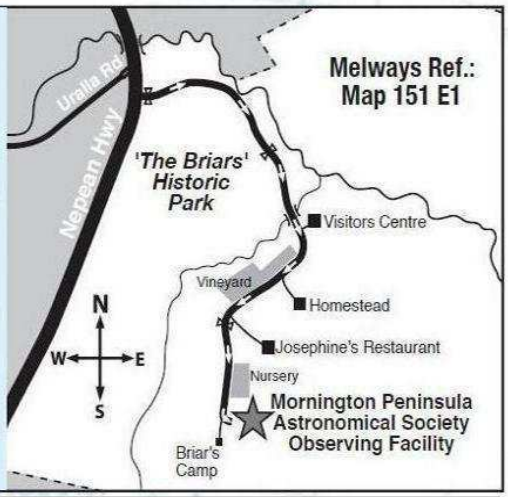

Members please write a story about your astronomy experiences and add some pictures.
Send them to: Greg Walton gwmpas@gmail.com