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SCORPIUS

THE JOURNAL OF THE
MORNINGTON PENINSULA ASTRONOMICAL SOCIETY INC.

PDF VERSION

Volume XIX, No. 4 (July/August 2010)

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 services of its members for educational presentations and observing nights for schools and community groups.

ABN:34569548751

As per previous years, our society is once again participating in August's National Science Week. While officially only running for the duration of a week, this year's scheduling of Science Week (Saturday 14th to Sunday 22nd of August) means we end up having a full month of activities for members of the public to sample some astronomy

For our Friday public viewing nights in August, the theme for these evening is "*Get Totally Spaced*". With the addition of some short space films from this year's CSIRO SCINEMA (Science Cinema), attendees to this year's viewing nights will once again be able too experience the universe as we do, and learn about the cosmos.

And in what has become a traditional National Science Week event with us, we will once again be inviting the public to join us in learning how to photograph the night sky, with our "*Capturing the Night Sky with Your Digital Camera or Phone*". It is planned to have numerous members images on display, as well as encouraging the public to get outside and try imaging at night. This 'Astrophotography night' for the public is on Saturday the 21st of August, running from 6pm to 9pm, or onwards.

We realise this asks a lot of our members to participate in these events, however any assistance you could give over this period would be greatly appreciated. A full schedule of our National Science Week events in August can be found on page 2 of the Newsletter.

The public enjoying an evenings viewing.

Reg No: A268

Society Calendar

Upcoming Events in July

Friday 2nd of July.: **Public Viewing Night at The Briars (8pm).**
July's regular Public Viewing Nights at The Briars, starting at 8pm, and held regardless of the weather. As usual, a large turnout is expected so we will need at least 6 scopes.

Saturday 17th of July.: **Members Viewing Night at The Briars.**
This month's members viewing night has been organised for the 17th of July. Intensity of incident light from our Lunar neighbour is slight with a First Quarter Moon. So why not bring your scopes along for a great night's viewing (weather permitting of course). As with all member viewing nights, there will be a free BBQ Sausage-Sizzle prior to viewing.

Wednesday 21st of July.: **July's General Meeting at the Peninsula School (8pm).**
Session 1 - Speaker & Topic: To be Confirmed.
Session 2 - Open Forum and 'Sky for the Month'

Wednesday 28th of July.: **July Committee Meeting at The Briars (8pm).**

Upcoming Events in August

national science week 2010

*All events run in August are advertised as National Science Week events. Our theme for most viewing nights this year is '**Get Totally Spaced**'*

Friday 6th of Aug.: **Regular Public Viewing Night at The Briars (8pm).**
August's regular Public Viewing Night at The Briars, starting at 8pm, and held regardless of the weather. As usual, a large turnout is expected so we will need at least 6 scopes.

Friday 13th of Aug.: **Special National Science Week Public Viewing Night at The Briars (8pm).**
A special Public Viewing Night has been organised as part of National Science Week. This will be held at The Briars, starting at 8pm, and held regardless of the weather. As this has been advertised, a large turnout is expected so we will need at least 6 scopes.

Wednesday 18th of Aug.: **August's 'National Science Week' General Meeting at the Peninsula School (8pm).**
Session 1 - Speaker & Topic: To be Confirmed.
Session 2 - Open Forum and 'Sky for the Month'

Friday 20th of Aug.: **Special National Science Week Public Viewing Night at The Briars (8pm).**
A special Public Viewing Night has been organised as part of National Science Week. This will be held at The Briars, starting at 8pm, and held regardless of the weather. As this has been advertised, a large turnout is expected so we will need at least 6 scopes.

Saturday 21st of Aug.: **Special National Science Week Public Viewing Night at The Briars (6pm-9pm).**
Theme: 'Capturing the Night Sky with Your Digital Camera or Phone'
A special Public Viewing Night has been organised as part of National Science Week. The above theme for this night is to entice members of the public to try some astrophotography This will be held at The Briars, starting at the earlier time of 6pm to 9pm, and will be held regardless of the weather. As this has been advertised, a large turnout is expected so we will need at least 6 scopes. This is no longer our monthly members viewing night as indicated on this year's calendar

Wednesday 25th of Aug.: **August Committee Meeting at The Briars (8pm).**

Friday 27th of Aug.: **Special National Science Week Public Viewing Night at The Briars (8pm).**
A special Public Viewing Night has been organised as part of National Science Week. This will be held at The Briars, starting at 8pm, and held regardless of the weather. As this has been advertised, a large turnout is expected so we will need at least 6 scopes.

ADVANCE NOTICE - September's Public Viewing Night at The Briars (Friday 3rd of September @ 8pm)
September's regular Public Viewing Night at The Briars will see many regular volunteers unavailable due to the another event occurring this weekend. Any assistance that could be offered for this evening would be greatly appreciated.

While all care is taken to ensure the above dates are correct, these can change at late notice. To be up-to-date on the latest society happenings, check either E-Scorpius, the MPAS website: **www.mpas.asn.au** , or the latest "What's On" for up-to-date information.

Society News

Ongoing Briars Site Works

Anyone who has been to the Briars over these past couple of months would have noticed the works going on around the Briars Observing site. These works have included slabs of concrete being laid, extending the main shed area and lower slab areas. Also additional power pole outlets have been added, to provide for the automated telescopes

Unfortunately with these works, some disruptions to the normal viewing practices may occur. Rest assured, the site can be used for observing but please be careful when driving or walking around the site.

We especially ask that members that are **not** setting up equipment on the observing field, please refrain from driving through the site, and preferably use the upper public carpark, in front of the Sustainability Display Home. This will assist greatly with the recovery of the observing site, as we lead into Spring.

We thank members for their understanding during these works, and hope to have the observing area back to normal quite soon.

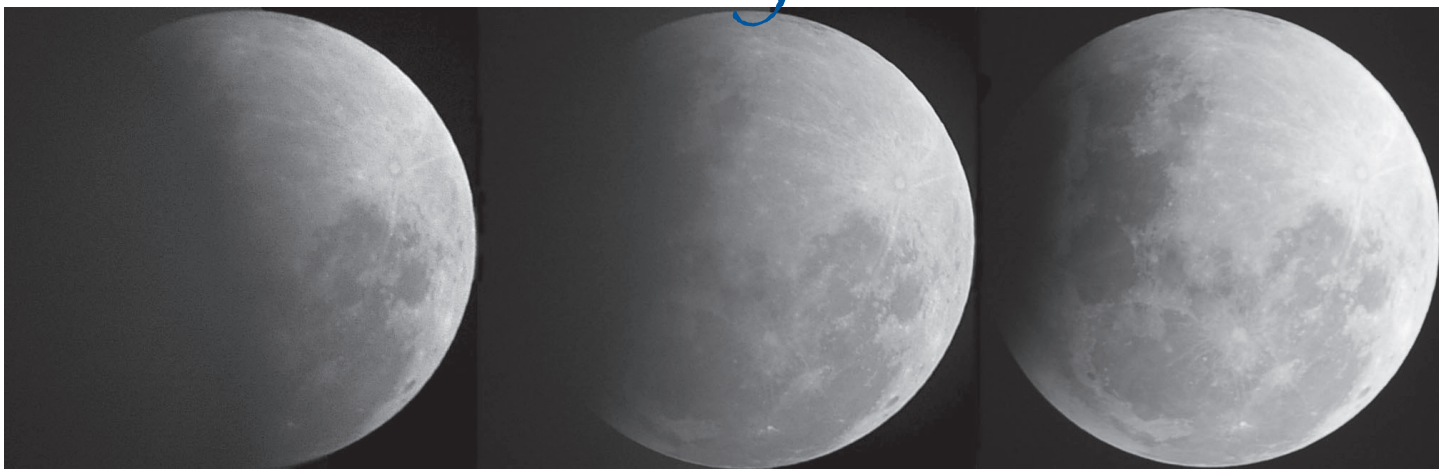
Speed Cameras

The Road Traffic Authority has recent installed Speed and Red Light Cameras at some of the major intersections in and around the Mornington area. These cameras can still catch you speeding through an intersection, even if you have the green light.

We ask that all our members be aware of them and take your time when travelling to the Briars.

Besides, instead of paying government fines, the money you save can go towards more important items like telescopes, eyepieces, accessories, etc.

Society Pics



Back on Saturday the 26th of June, we in Victoria had the opportunity to observe a Partial Lunar Eclipse. I say '*had*' the opportunity, but the clouds had a different idea on what we would see for most of that night. However breaks did appear from time to time and some images like Dave Rolfe's were able to be taken.

Dave explains "When I got home there was driving rain, then the clouds become patchy after the maximum, but did get the retraction as imaged here through the clouds." Dave's montage images were taken on with a ED80 Scope and Pentax *ist digital camera. Touched up and combined in Photoshop.

Dave dedicates this image to Bob.

BORDER STARGAZE
September 1st to 5th 2010

REGISTRATIONS for Border Stargaze 2010 (1st – 5th Sept. 2010) are NOW OPEN.

ASAW is proud to announce that Border Stargaze 2010 will again be held at The Wymah Valley Retreat, located in the Greater Hume Shire. The Retreat boasts a 300 acre property with a 2 kilometerfrontage to Lake Hume. It is the ideal site for hosting a star party offering high standards of accommodation and supported by a great management team. Only 30km from the twin cities of Albury and Wodonga we are also ideally located to the major cities. Event highlights include:

- Guest Speakers
- Astro/Science Activities
- Astrophotography
- Astro (general) Trivia and more….
- Cosmodome (Mobile Planetarium).
- Free Registration for children 13 and under - (Standard accommodation rates will still apply)
- Vendors
- Free Breakfast to registered guests on the Sunday will be returning courtesy of ASAW
- Giveaways and door prizes, and so much more……

Check out our website - **www.asaw.org.au** for the most current information. As always we welcome your feedback on the registration process or questions about the event itself. Importantly, we would like to express our thanks to the many volunteers from around Australia that supported us in 2009 and invite you to be a part of the 2010 team.

Clear skies, Petra de Ruyter

Secretary - Astronomical Society of Albury - Wodonga, Secretary - Border Stargaze 2010 Committee Mobile: 0431 535 417 Email: borderstargaze@iprimus.com.au

ASAW ASTRONOMICAL SOCIETY OF ALBURY WODONGA

Society Reports

MPAS weather the Queens Birthday week end at ASV LMDSS at Heathcote.

Friday (11/6) in Melbourne was a total wash out so we all decided to go to the A.S.V. LMDSS at Heathcote on the Saturday.

When Steve and I arrived we sat in our cars in the rain wondering why we are here. After ½ hour the rain stopped and we opened up the shed and turned the power on. Steve started setting up his scopes under thick black clouds, while I sat and watched because I thought there was no chance to see anything.

After 3 hours of feeling sorry for Steve, I set up my new F4 Newton astrograph scope on a EQ6 mount which I had bought second hand a month earlier. When it's cloudy there, its very dark and we had trouble finding our way around the site. Then Fiona Murray, Phil Hart, Morris Valimberti and 6 other ASV members showed up. That night we only got 15 minutes of clear skies which gave us just enough time to poler align the scopes. So we all had an early night.

Out of the car, and onto the field.

Sunday we sat around and talk about telescopes under a cloudy skies, it was looking like a repeat of Saturday and some people decided to leave. Dave Rolfe and Domenic arrived to find cloudy skies. After dinner we watch the sky at night TV program on a laptop till 11:00pm when the sky cracked open.

We uncovered the scopes and powered them up, because we got them polar aligned the night before we were able to start photographing straight away knowing the clouds could roll in again and shut us down. But they did not and we viewed and photographed till 4:00am, I had a thermometer on the roof of my car and it was showing zero.

When the clouds finally parted, a crescent Moon put on a show.

Monday we slowly arose to a sunny day, we were all happy with the night we had and were hoping for another clear night. We played on our computers looking for new objects and editing the photos we took. The phone companies were making a lot of money with everyone checking the weather on there iPhones ever 5 minutes. The sun set at around 5:00pm so we all had dinner early, so we could get all the scopes running that evening before dark.

...'The weather forecast is for what???'

A very thin crescent Moon sat on the horizon with Venus shining brightly just above it. Phil Hart pointed out a Zodiacal light which went half way across the sky, which was the best one I had every seen. The thermometer was already showing zero, ice was already forming on the cars and it was not fully dark.

The viewing field was very quiet because we were all a bit tired by now and there was a high level of concentration. We were in overdrive, all trying to get as much done as possible. There was a steady stream of meteors lighting up the sky, then about 12:30 the clouds roll in and it was all over.

Surprisingly the thermometer went up to 3 degrees, which meant the scopes instantly dewed over. Some stayed up hoping the sky would clear but most of us went to bed happy with there night.

Tuesday we all packed up and head home, back to reality of working and paying bills. At lest we have good memories and lots of photos, thanks to the Queen.

Clear skies,

Greg Walton

14th June, 2010.

Abbe de Lacaille and the Southern Sky

The Astronomical Society of South Africa have lately reported the theft of a bronze plaque (for scrap metal), commemorating the work of the French priest Lacaille during his short stay in Capetown in 1751-3. The plaque, installed in 1903, was on a pillar near the house from where he observed (unimpeded by light pollution), and charted, about 10,000 Southern stars, Southern nebulae, and named 14 new constellations.

One of them, MENSA he named after the nearby Table Mountain which dominates the city. The other constellations were not named after animals, or mythological characters, but mostly instruments. Latin then was still the international language of scholars.

Abbe de Lacaille

The stolen bronze plaque

The complete list is as follows -

ANTLIA air pump - after a pump invented by Frenchman Papin and Robert Boyle
CAELUM engraving tool - in honour of the arts and engraving on copper and fine metals
CIRCINUS pair of compasses - as used by surveyors and chartmakers of the time

FORNAX furnace - originally ***FORNAX CHEMICA*** or chemist's furnace
HOROLOGIUM clock - orig. ***HOROLOGIUM OSCILLITORUM*** after Huyghens pendulum
MENSA table - orig **MONS MENSA**, Latin for Table Mountain which overlooks Capetown
MICROSCOPIUM microscope - it bears no resemblance to the instrument

NORMA level - orig ***NORMA ET REGULA*** , the set square and the ruler
OCTANS octant - navigation instrument which preceded the sextant
PICTOR painter's easel - more recognition of the arts

PYXIS compass - magnetic compass of the mythical ship, ***ARGO NAVIS***
RETICULUM net - this was meant to be a reticle or telescope crosshairs
SCULPTOR sculptor's studio - orig. ***APPARATUS SCULPTORIS***
TELESCOPIUM telescope - it bears no resemblance to the instrument

He also renamed the constellation **MUSCA**

Lacaille followed the Dutch sailors Keyser and de Houtman who after sailing to the East Indies added the first Southern constellations to be included in Bayer's catalogue of 1603. Some more were added in the 1600's, seven by Hevelius in 1687. After Lacaille the only change was the breakup of ARGO NAVIS into CARINA, PUPPIS and VELA.

With fewer distraction imposed by holy orders this Frenchman worked at a terrific pace in a suburban location with just a small refractor. Because these constellations are mostly small and faint, they are often omitted from simple maps and planispheres they provide a challenge for keen observers.

Incidentally the missing plaque will be replaced; this time made of a non metallic, low value material which will nevertheless perpetuate his memory just as effectively in the locality where he worked in South Africa. More widely his name is now also borne by a lunar crater and an asteroid.

Ian Sullivan

June '10

General Society Information

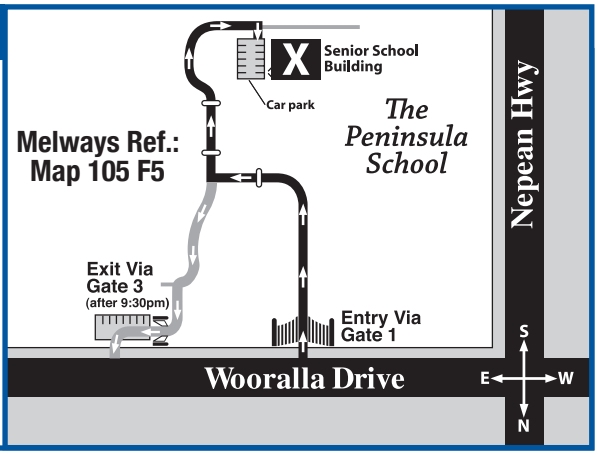
Office bearers of the Mornington Peninsula Astronomical Society

President: Peter Lowe
Vice President: Brett Bajada
Committee: Ian Sullivan, Trevor Hand, David Rolfe, Bob Heale, Fiona Murray, Greg Walton.
Phone Contact: Peter Skilton - 0419 253 252
Secretary: Peter Skilton
Treasurer: Marty Rudd
Public Officer: Rhonda Sawosz
Web Master: Steven Mohr
Scorpius Editor: Brett Bajada

General Meetings

Meeting Venue: ***The Peninsula School***, Wooralla Drive, Mt. Eliza, (Melways map 105/F5) in the Senior School at 8pm, on the 3rd Wednesday of each month, except December.
Entry is via the main gates or Gate 3, off Wooralla Drive.
Exit is via Gate 3 Only after 9:30pm (see map).

For additional details:
Phone: 0419 253 252
Mail: P.O. Box 596, Frankston 3199, Victoria, Australia.
Internet: **http://www.mpas.asn.au**
email: **welcome@mpas.asn.au**



Loan Equipment

The Society has a variety of telescopes including an 8-inch reflector, 80mm refractor and binoculars, all available for loan.

Contact a committee member to arrange the loan of equipment. The Society also has books and videos for loan from it's library, made available during General Meetings.

Contributions to Scorpius

If you would like to submit an article or written contribution to Scorpius, then please send your submission to M.P.A.S., P.O. Box 596, Frankston 3199, or you can now email to **scorpius@mpas.asn.au** .

Any astronomical events that you have witnessed or tales you would like to tell, things you have for sale (eg: telescopes, eyepieces, etc.) then please send them in. All contributions and any feedback you wish to make about the newsletter are welcome.

E-Scorpius Newsgroup

M.P.A.S. has an online news-group 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.

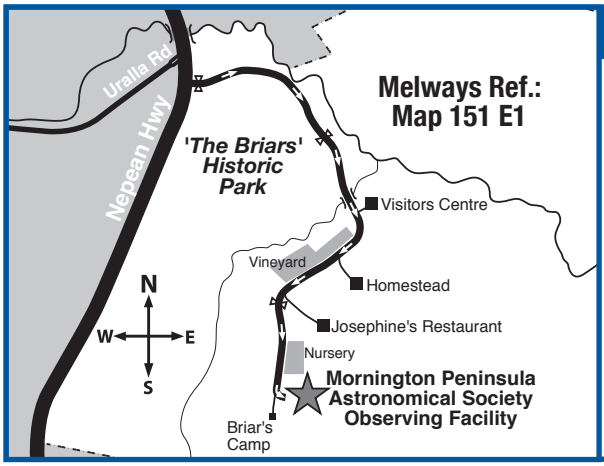
To join, go to **http://groups.yahoo.com** and sign up to Yahoo groups. You require to sign up to Yahoo groups to join E-Scorpius.

Once you have signed up at Yahoo groups, email **skywatch@iprimus.com.au** saying that you want to join E-Scorpius and you will be added to the E-Scorpius list. Come on, join up. The more people in the group the better.

Scorpius as PDF

A PDF version of this edition of Scorpius is online at our society website **www.mpas.asn.au**

The PDF version is in colour and has hyper links available in the document so you can get more from the articles featured. Just follow the links from the main home page.



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 9773 0098 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 to verify that the mobile is turned on.

For additional details: **http://www.mpas.asn.au**

Skywatcher: July's Rise & Shine Times

The following times are calculated for the Local Time at
The Briars Observing Facility: Latitude 38° 16′ South, Longitude 145° 02′ East.
These times can be used throughout the Mornington Peninsula and surrounding areas to within +/- 1 minute.

Date	Sun				Moon			Mercury		Venus		Mars		Jupiter		Saturn		Uranus		Neptune	
	Civil Twilight Begins	Sunrise	Sunset	Civil Twilight Ends	Phase	Rise	Sets	Rise	Sets	Rise	Sets	Rise	Sets	Rise	Sets	Rise	Sets	Rise	Sets	Rise	Sets
Jul 1 (Thu)	7:08	7:38	17:10	17:39		21:47	10:10	07:57	17:19	10:05	20:22	11:03	22:21	23:50	11:59	11:48	23:35	23:41	11:51	21:02	10:30
Jul 2 (Fri)	7:08	7:37	17:10	17:40		22:44	10:34	08:02	17:25	10:04	20:24	11:01	22:20	23:47	11:55	11:44	23:32	23:37	11:48	20:58	10:26
Jul 3 (Sat)	7:08	7:37	17:11	17:40		23:41	10:58	08:07	17:31	10:03	20:26	10:58	22:19	23:43	11:51	11:40	23:28	23:33	11:44	20:54	10:22
Jul 4 (Sun)	7:08	7:37	17:11	17:41		D.N.R.	11:22	08:12	17:37	10:02	20:28	10:56	22:18	23:39	11:47	11:37	23:24	23:29	11:40	20:50	10:18
Jul 5 (Mon)	7:08	7:37	17:12	17:41	L.Q.	00:40	11:48	08:16	17:43	10:01	20:30	10:53	22:17	23:36	11:44	11:33	23:21	23:25	11:36	20:46	10:14
Jul 6 (Tue)	7:07	7:37	17:12	17:42		01:40	12:17	08:19	17:49	10:00	20:31	10:51	22:16	23:32	11:40	11:29	23:17	23:21	11:32	20:42	10:10
Jul 7 (Wed)	7:07	7:37	17:13	17:42		02:43	12:52	08:23	17:55	09:59	20:33	10:48	22:14	23:28	11:36	11:25	23:13	23:17	11:28	20:38	10:06
Jul 8 (Thu)	7:07	7:36	17:14	17:43		03:48	13:34	08:26	18:01	09:58	20:35	10:45	22:13	23:25	11:32	11:21	23:10	23:13	11:24	20:34	10:02
Jul 9 (Fri)	7:07	7:36	17:14	17:43		04:53	14:24	08:29	18:07	09:57	20:37	10:43	22:12	23:21	11:29	11:18	23:06	23:09	11:20	20:30	09:58
Jul 10 (Sat)	7:06	7:36	17:15	17:44		05:56	15:25	08:32	18:13	09:56	20:39	10:40	22:11	23:17	11:25	11:14	23:02	23:05	11:16	20:26	09:55
Jul 11 (Sun)	7:06	7:35	17:15	17:45		06:52	16:34	08:34	18:19	09:55	20:40	10:38	22:10	23:13	11:21	11:10	22:59	23:01	11:12	20:22	09:51
Jul 12 (Mon)	7:06	7:35	17:16	17:45	New	07:42	17:48	08:36	18:24	09:54	20:42	10:35	22:09	23:10	11:17	11:06	22:55	22:58	11:08	20:18	09:47
Jul 13 (Tue)	7:06	7:35	17:17	17:46		08:24	19:04	08:38	18:30	09:53	20:44	10:32	22:08	23:06	11:13	11:02	22:52	22:54	11:04	20:14	09:43
Jul 14 (Wed)	7:05	7:34	17:17	17:47		09:00	20:19	08:40	18:35	09:51	20:46	10:30	22:07	23:02	11:09	10:59	22:48	22:50	11:00	20:10	09:39
Jul 15 (Thu)	7:05	7:34	17:18	17:47		09:32	21:32	08:41	18:41	09:50	20:47	10:27	22:06	22:58	11:06	10:55	22:44	22:46	10:56	20:06	09:35
Jul 16 (Fri)	7:04	7:33	17:19	17:48		10:03	22:44	08:42	18:46	09:49	20:49	10:25	22:05	22:55	11:02	10:51	22:41	22:42	10:52	20:02	09:31
Jul 17 (Sat)	7:04	7:33	17:19	17:48		10:33	23:54	08:43	18:51	09:47	20:51	10:22	22:04	22:51	10:58	10:47	22:37	22:38	10:49	19:58	09:27
Jul 18 (Sun)	7:03	7:32	17:20	17:49		11:04	D.N.S.	08:44	18:55	09:46	20:52	10:20	22:03	22:47	10:54	10:44	22:34	22:34	10:45	19:54	09:23
Jul 19 (Mon)	7:03	7:32	17:21	17:50	F.Q.	11:38	01:03	08:44	19:00	09:45	20:54	10:17	22:02	22:43	10:50	10:40	22:30	22:30	10:41	19:50	09:19
Jul 20 (Tue)	7:02	7:31	17:22	17:51		12:16	02:11	08:45	19:04	09:43	20:56	10:15	22:01	22:39	10:46	10:36	22:27	22:26	10:37	19:46	09:15
Jul 21 (Wed)	7:02	7:30	17:22	17:51		12:59	03:17	08:45	19:09	09:42	20:57	10:12	22:00	22:35	10:42	10:32	22:23	22:22	10:33	19:42	09:11
Jul 22 (Thu)	7:01	7:30	17:23	17:52		13:49	04:18	08:45	19:13	09:40	20:59	10:09	21:59	22:31	10:39	10:29	22:20	22:18	10:29	19:38	09:07
Jul 23 (Fri)	7:00	7:29	17:24	17:53		14:43	05:13	08:44	19:17	09:39	21:00	10:07	21:58	22:27	10:35	10:25	22:16	22:14	10:25	19:34	09:03
Jul 24 (Sat)	7:00	7:28	17:25	17:53		15:41	06:01	08:44	19:20	09:37	21:02	10:04	21:57	22:23	10:31	10:21	22:13	22:10	10:21	19:30	08:59
Jul 25 (Sun)	6:59	7:28	17:26	17:54		16:41	06:42	08:44	19:24	09:36	21:03	10:02	21:56	22:19	10:27	10:17	22:09	22:06	10:17	19:25	08:55
Jul 26 (Mon)	6:58	7:27	17:26	17:55	Full	17:42	07:17	08:43	19:27	09:34	21:05	09:59	21:55	22:15	10:23	10:14	22:05	22:02	10:13	19:21	08:51
Jul 27 (Tue)	6:58	7:26	17:27	17:56		18:41	07:47	08:42	19:31	09:32	21:06	09:57	21:54	22:11	10:19	10:10	22:02	21:58	10:09	19:17	08:47
Jul 28 (Wed)	6:57	7:25	17:28	17:56		19:39	08:14	08:41	19:34	09:31	21:08	09:54	21:53	22:07	10:15	10:06	21:58	21:54	10:05	19:13	08:43
Jul 29 (Thu)	6:56	7:24	17:29	17:57		20:36	08:38	08:40	19:37	09:29	21:09	09:52	21:53	22:03	10:11	10:02	21:55	21:50	10:01	19:09	08:39
Jul 30 (Fri)	6:55	7:23	17:30	17:58		21:33	09:02	08:39	19:39	09:27	21:11	09:49	21:52	21:59	10:07	09:59	21:51	21:46	09:57	19:05	08:35
Jul 31 (Sat)	6:54	7:22	17:30	17:59		22:30	09:26	08:37	19:42	09:26	21:12	09:47	21:51	21:55	10:03	09:55	21:48	21:42	09:53	19:01	08:31

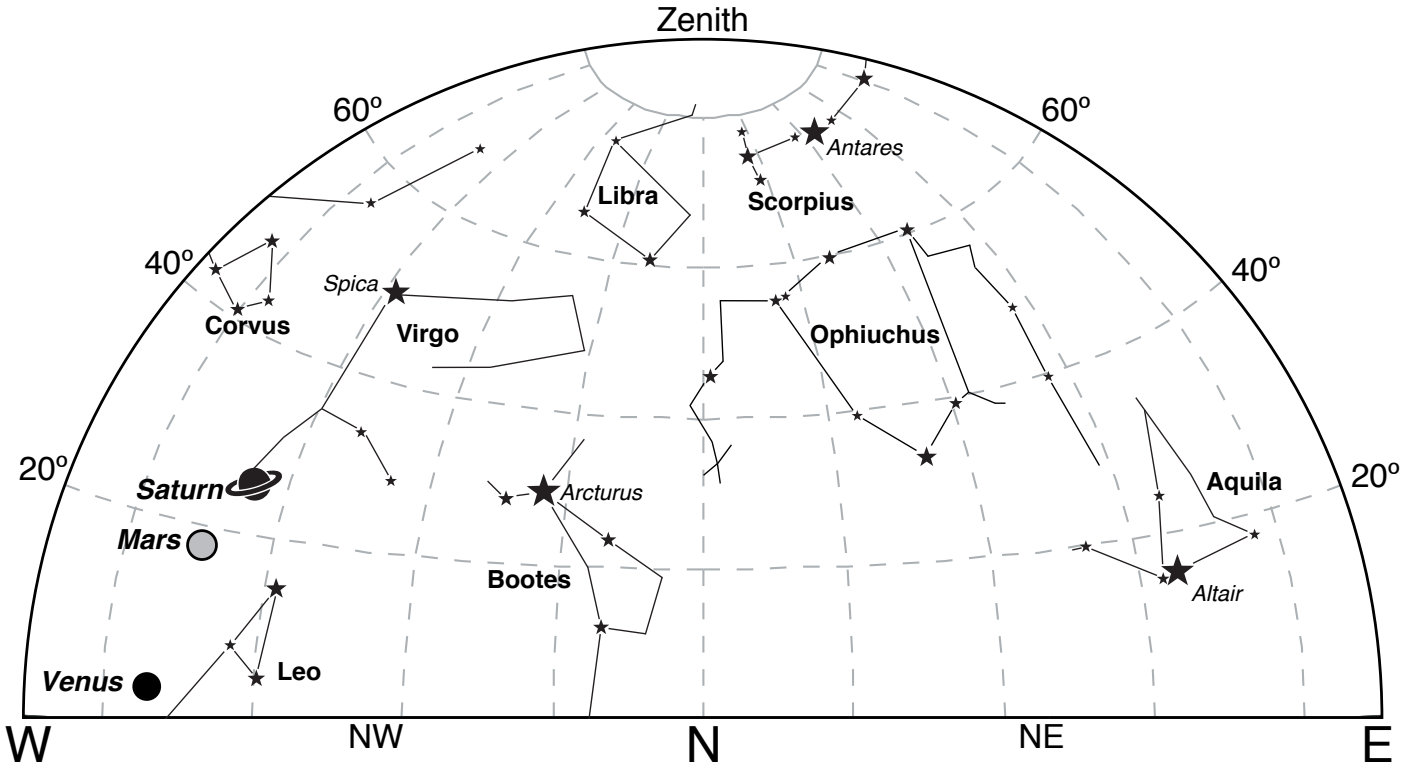
Full - Full Moon **L.Q.** - Last Quarter Moon **New** - New Moon **F.Q.** - First Quarter Moon **D.N.R.** - Moon Does Not Rise **D.N.S.** - Moon Does Not Set

Civil Twilight is calculated when the Sun is 6° below the horizon, and is practically marked as the begining or end of the day's useable light. The first of the evening stars are visible at this time.

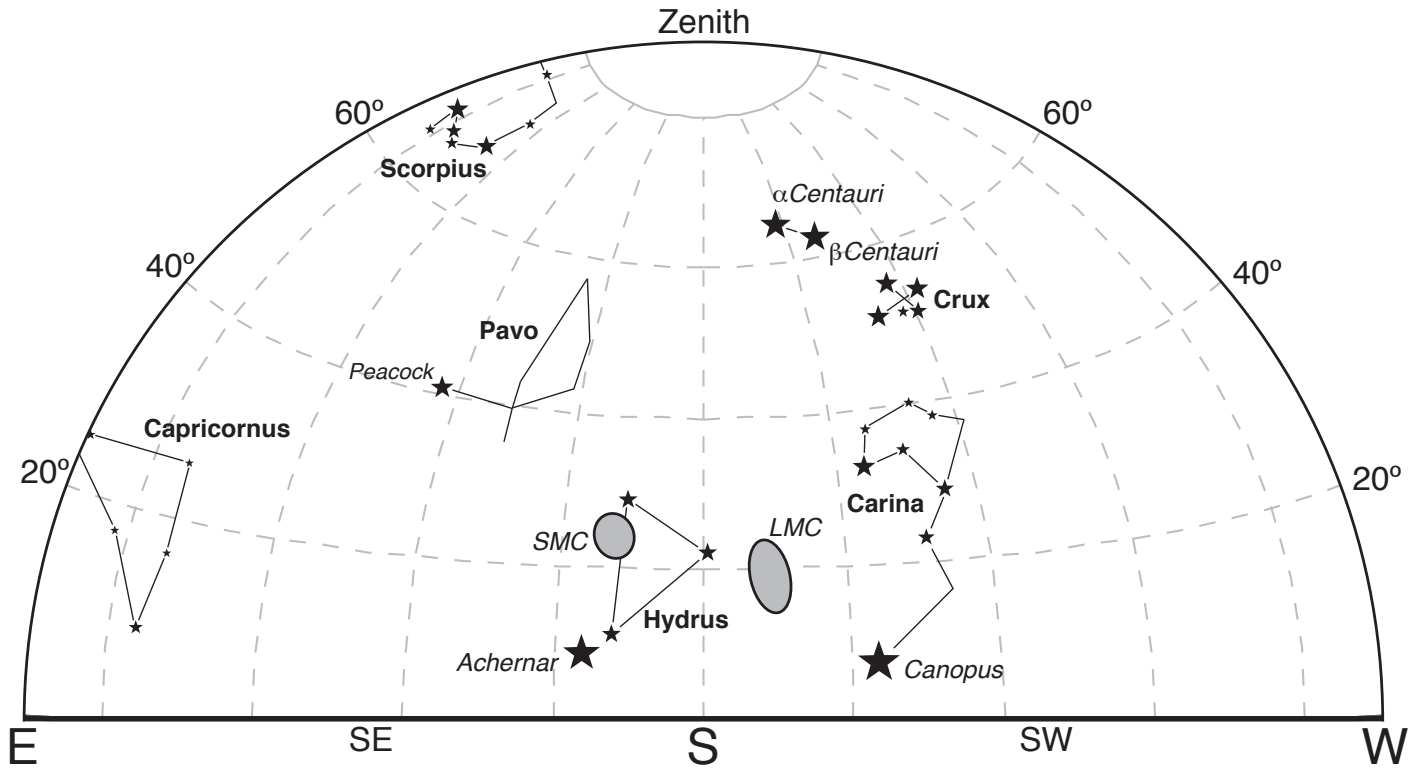
Skywatcher: In the July Sky

The following hemispherical positionals for July is calculated for
The Briars Observing Facility, at approximately 8:30pm Eastern Daylight Time.
This can be used throughout July along the Mornington Peninsula and surrounding areas.

Looking North



Looking South



Skywatcher: August's Rise & Shine Times

The following times are calculated for the Local Time at
The Briars Observing Facility: Latitude 38° 16′ South, Longitude 145° 02′ East.
These times can be used throughout the Mornington Peninsula and surrounding areas to within +/- 1 minute.

Date	Sun				Moon			Mercury		Venus		Mars		Jupiter		Saturn		Uranus		Neptune	
	Civil Twilight Begins	Sunrise	Sunset	Civil Twilight Ends	Phase	Rise	Sets	Rise	Sets	Rise	Sets	Rise	Sets	Rise	Sets	Rise	Sets	Rise	Sets	Rise	Sets
Aug 1 (Sun)	06:53	07:22	17:31	17:59		23:29	09:51	08:36	19:44	09:24	21:13	09:44	21:50	21:51	09:59	09:51	21:45	21:38	09:49	18:57	08:27
Aug 2 (Mon)	06:53	07:21	17:32	18:00		D.N.R.	10:18	08:34	19:46	09:22	21:15	09:42	21:49	21:47	09:55	09:47	21:41	21:34	09:45	18:53	08:23
Aug 3 (Tue)	06:52	07:20	17:33	18:01	L.Q.	00:30	10:50	08:32	19:48	09:21	21:16	09:39	21:48	21:43	09:51	09:44	21:38	21:30	09:41	18:49	08:19
Aug 4 (Wed)	06:51	07:19	17:34	18:02		01:32	11:27	08:30	19:50	09:19	21:18	09:37	21:47	21:39	09:47	09:40	21:34	21:25	09:37	18:45	08:15
Aug 5 (Thu)	06:50	07:18	17:35	18:03		02:36	12:12	08:28	19:51	09:17	21:19	09:34	21:46	21:35	09:43	09:36	21:31	21:21	09:33	18:41	08:11
Aug 6 (Fri)	06:49	07:16	17:36	18:03		03:38	13:07	08:26	19:53	09:15	21:20	09:31	21:45	21:31	09:39	09:33	21:27	21:17	09:29	18:37	08:07
Aug 7 (Sat)	06:48	07:15	17:36	18:04		04:37	14:10	08:24	19:54	09:13	21:21	09:29	21:44	21:26	09:35	09:29	21:24	21:13	09:25	18:33	08:03
Aug 8 (Sun)	06:47	07:14	17:37	18:05		05:29	15:22	08:21	19:54	09:11	21:23	09:26	21:44	21:22	09:31	09:25	21:20	21:09	09:21	18:29	07:59
Aug 9 (Mon)	06:46	07:13	17:38	18:06		06:15	16:37	08:19	19:55	09:10	21:24	09:24	21:43	21:18	09:27	09:21	21:17	21:05	09:17	18:25	07:55
Aug 10 (Tue)	06:44	07:12	17:39	18:07	New	06:54	17:54	08:16	19:55	09:08	21:25	09:22	21:42	21:14	09:23	09:18	21:13	21:01	09:13	18:21	07:51
Aug 11 (Wed)	06:43	07:11	17:40	18:07		07:29	19:10	08:13	19:55	09:06	21:26	09:19	21:41	21:10	09:19	09:14	21:10	20:57	09:09	18:16	07:47
Aug 12 (Thu)	06:42	07:10	17:41	18:08		08:01	20:25	08:10	19:55	09:04	21:27	09:17	21:40	21:05	09:15	09:10	21:06	20:53	09:05	18:12	07:43
Aug 13 (Fri)	06:41	07:09	17:42	18:09		08:33	21:38	08:07	19:54	09:02	21:29	09:14	21:39	21:01	09:11	09:07	21:03	20:49	09:01	18:08	07:39
Aug 14 (Sat)	06:40	07:07	17:42	18:10		09:04	22:50	08:04	19:53	09:00	21:30	09:12	21:39	20:57	09:07	09:03	21:00	20:45	08:57	18:04	07:35
Aug 15 (Sun)	06:39	07:06	17:43	18:11		09:38	D.N.S.	08:00	19:52	08:58	21:31	09:09	21:38	20:53	09:03	08:59	20:56	20:41	08:53	18:00	07:31
Aug 16 (Mon)	06:38	07:05	17:44	18:11		10:16	00:01	07:57	19:50	08:56	21:32	09:07	21:37	20:48	08:59	08:56	20:53	20:37	08:49	17:56	07:27
Aug 17 (Tue)	06:36	07:04	17:45	18:12	F.Q.	10:58	01:08	07:53	19:48	08:54	21:33	09:04	21:36	20:44	08:55	08:52	20:49	20:33	08:45	17:52	07:23
Aug 18 (Wed)	06:35	07:02	17:46	18:13		11:46	02:12	07:49	19:46	08:52	21:34	09:02	21:35	20:40	08:50	08:48	20:46	20:29	08:41	17:48	07:19
Aug 19 (Thu)	06:34	07:01	17:47	18:14		12:39	03:09	07:45	19:43	08:50	21:35	08:59	21:35	20:35	08:46	08:44	20:43	20:25	08:37	17:44	07:15
Aug 20 (Fri)	06:33	07:00	17:48	18:15		13:36	03:59	07:40	19:40	08:48	21:36	08:57	21:34	20:31	08:42	08:41	20:39	20:20	08:33	17:40	07:11
Aug 21 (Sat)	06:31	06:58	17:48	18:15		14:35	04:42	07:36	19:36	08:46	21:37	08:55	21:33	20:27	08:38	08:37	20:36	20:16	08:29	17:36	07:07
Aug 22 (Sun)	06:30	06:57	17:49	18:16		15:35	05:18	07:31	19:32	08:44	21:38	08:52	21:32	20:22	08:34	08:33	20:32	20:12	08:25	17:32	07:03
Aug 23 (Mon)	06:29	06:56	17:50	18:17		16:34	05:50	07:26	19:27	08:42	21:39	08:50	21:31	20:18	08:30	08:30	20:29	20:08	08:21	17:28	06:59
Aug 24 (Tue)	06:27	06:54	17:51	18:18		17:32	06:18	07:22	19:22	08:39	21:40	08:47	21:31	20:13	08:26	08:26	20:26	20:04	08:17	17:24	06:55
Aug 25 (Wed)	06:26	06:53	17:52	18:19	Full	18:29	06:43	07:16	19:16	08:37	21:40	08:45	21:30	20:09	08:22	08:22	20:22	20:00	08:13	17:20	06:51
Aug 26 (Thu)	06:25	06:51	17:53	18:20		19:26	07:07	07:11	19:10	08:35	21:41	08:42	21:29	20:05	08:17	08:19	20:19	19:56	08:09	17:15	06:47
Aug 27 (Fri)	06:23	06:50	17:54	18:20		20:23	07:31	07:06	19:03	08:33	21:42	08:40	21:28	20:00	08:13	08:15	20:15	19:52	08:05	17:11	06:43
Aug 28 (Sat)	06:22	06:49	17:54	18:21		21:21	07:55	07:00	18:56	08:31	21:43	08:38	21:28	19:56	08:09	08:11	20:12	19:48	08:01	17:07	06:39
Aug 29 (Sun)	06:20	06:47	17:55	18:22		22:21	08:22	06:55	18:48	08:28	21:43	08:35	21:27	19:51	08:05	08:08	20:09	19:44	07:57	17:03	06:35
Aug 30 (Mon)	06:19	06:46	17:56	18:23		23:22	08:52	06:49	18:40	08:26	21:44	08:33	21:26	19:47	08:01	08:04	20:05	19:39	07:53	16:59	06:31
Aug 31 (Tue)	06:18	06:44	17:57	18:24		D.N.R.	09:26	06:43	18:32	08:24	21:45	08:31	21:26	19:42	07:57	08:00	20:02	19:35	07:49	16:55	06:27

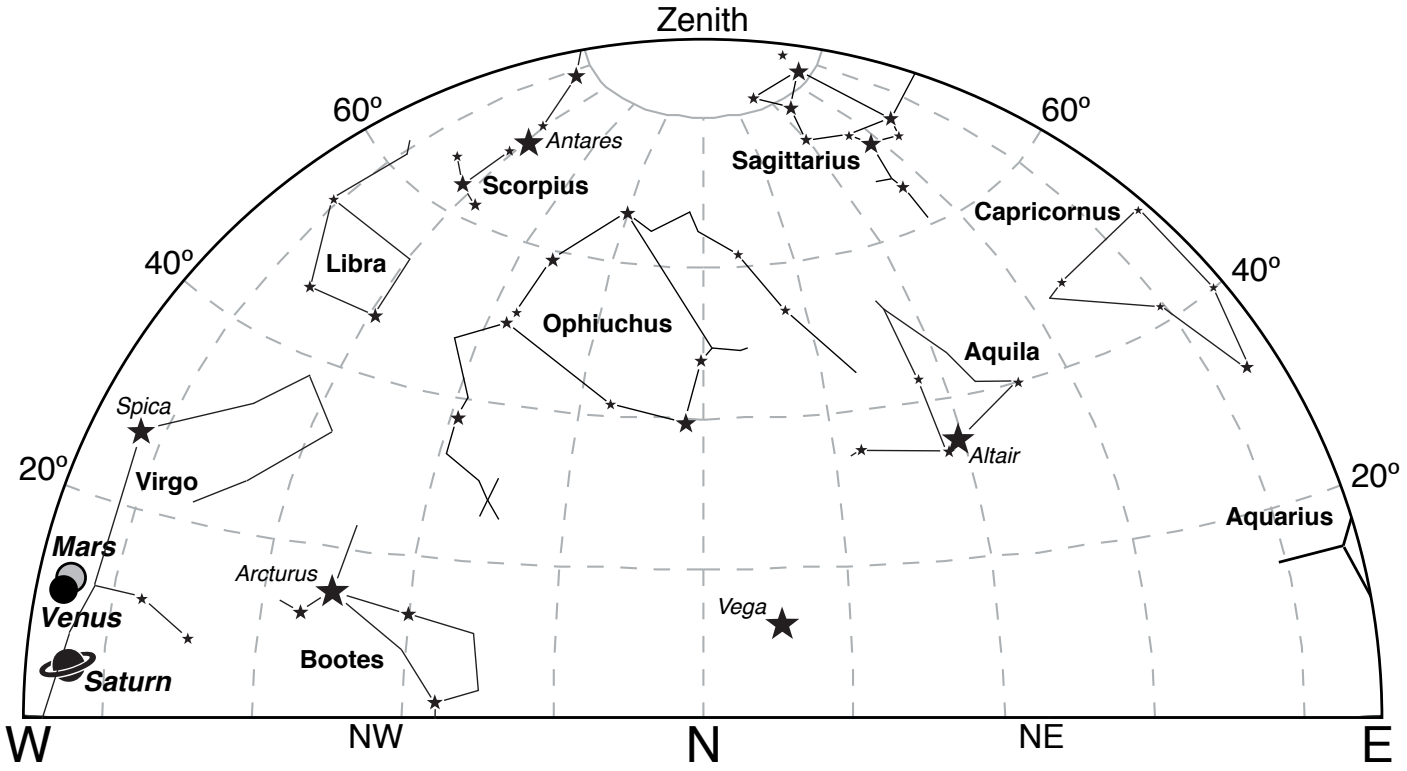
Full - Full Moon **L.Q.** - Last Quarter Moon **New** - New Moon **F.Q.** - First Quarter Moon **D.N.R.** - Moon Does Not Rise **D.N.S.** - Moon Does Not Set

Civil Twilight is calculated when the Sun is 6° below the horizon, and is practically marked as the begining or end of the day's useable light. The first of the evening stars are visible at this time.

Skywatcher: In the August Sky

The following hemispherical positionals for August is calculated for
The Briars Observing Facility, at approximately 8:30pm Eastern Daylight Time.
This can be used throughout August along the Mornington Peninsula and surrounding areas.

Looking North



Looking South