



PDF VERSION

Volume XIX, No. 1 (February/March 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.

Fred Waton receives an AM in the Australia Day Honours lists

WHO knew? The first real star that the astronomer Fred Watson came to know was not a beaming gas giant in a galaxy far, far away but a grinning hairy banjo player and comedian in Scotland in the late 1960s: Billy Connolly

"In the early '60s and '70s the folk revival happened. I played in folk clubs with a friend and we always used to run up against this other band who got more gigs than us, and did really well. They were the Humble Bums, which was Billy Connolly and Gerry Rafferty.

"You knew Rafferty was going to make it as a musician. Billy was never much of a muso, but he just had that patter."

Fred Watson is one of Australia's best-known science communicators. The astronomer-in-charge at the Anglo Australian Observatory in Coonabarabran for the past 15 years, he was born in England, near Bradford, in 1944. There he attended a school named Belle Vue Boys, where he first became gripped by astronomy.

"You couldn't see the stars for all the grime and smoke," he says. "But when I grew up science was in the ascendancy. We'd won a world war on the strength of our science and technology. The space age had just started. The first artificial satellite was launched in 1957, so it was all around us.

"But I remember very well an outside broadcast of Sir Patrick Moore's [TV program] The Sky At Night for a solar eclipse, in 1961. It was completely clouded over, and so he did an entire commentary without any visuals. It was inspiring. I was 16 and I got thinking about what was happening out there, not just the moon passing between the Earth and the Sun but the other things happening as well."

Watson, who is overseeing the international Radial Velocity Experiment or RAVE survey of a million stars, is hailed as a pioneer of fibre optics in astronomy. But it is his gift for making difficult aspects comprehensible to the layman in broadcasting and publishing that has won him renown, royalties and, today, recognition - with his AM.

"I'm thrilled," he says. "I keep thinking they must have made a mistake. But really, astronomy is one of the easiest sciences to communicate. All the basic questions like what brought the universe into being? Are there living organisms elsewhere? The science is easy to understand, and it's just so exciting."

©Article extract appeared in the Sydney Morning Herald, January 26th, 2010. Article written by Matt Buchanan.



Society Calendar

Upcoming Events in February

Friday 5th of Feb.: Public Viewing Night at The Briars (8pm).

February'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 13th of Feb.: Members Viewing Night at The Briars.

This month's members viewing night has been organised for the 13th of February. Intensity of incident light from our Lunar neighbour is negligible with a near New 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.

Monday 15th of Feb.: CSIRO BHP Science Prize Winners Viewing Night at The Briars (8pm).

As many scopes and interesting things as possible for this one please as this is the first time we've been put on their agenda for this prize. Anticipating about 25-30 present.

Wednesday 17th of Feb.: February's General Meeting at the Briars (8pm).

***** Note Change of Venue ***.**

Session 1 - Speaker & Topic: To be Confirmed.

Session 2 - Open Forum and 'Sky for the Month'

Saturday 20th of Feb.: Public Telescope Learning Day at The Briars.

Will begin from 4pm, onwards. An afternoon (and into the evening) when we can pass on some of our telescope knowledge to the general public and members alike. Tea, coffee & soft drinks available.

Wednesday 24th of Feb.: February Committee Meeting at The Briars (8pm).

Friday 26th of Feb.: Australian Geographic Rooftop Carpark Viewing Night in Frankston (6:30pm to 9pm). To Be Confirmed - Check E-Scoprius closer to date.

Hard to know how many to expect - may be a couple of dozen as in past nights, or more substantial as it should be broad daylight this time with moon visible. We would anticipated free car park tokens again for attending members.

Upcoming Events in March

Friday 5th of Feb.: Public Viewing at The Briars (8pm).

March'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.

Wednesday 17th of Mar.: March's General Meeting at the Peninsula School (8pm).

Session 1 - Speaker & Topic: To be Confirmed.

Session 2 - Open Forum and 'Sky for the Month'

Saturday 20th of Mar.: Scope Day and CSIRO Double Helix Club Viewing Night at The Briars.

Scope Day starting at around 4pm, is designed for members to bring their scopes to show other members, or fix any problems they might have. Later that evening we will be having a visit from the CSIRO Double Helix Club. We may anticipating up to 100 school age kids present in the evening, but most likely 50.

***** Please Note: this is no longer a listed Members Night *****

Wednesday 24th of Mar.: March Committee Meeting at The Briars (8pm).

Saturday 28th of Mar.: Lunar Night at the The Briars.

A Members Lunar viewing night has been organised for the 28th of March. Intensity of incident light from our Lunar neighbour is moderate with Waxing Gibbous Moon. This should be a great night. So why not bring your scopes along for a great night's viewing (weather permitting of course).

Late Mar.: Forest Lodge Retirement village in Frankston North.

To Be Confirmed - Check E-Scoprius closer to date.

On last week of March is still only unconfirmed by the requestor. If confirmed it'll be for around 20-30 people from 8pm on a day of the week yet to be negotiated.

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-Scoprius, the MPAS website: www.mpas.asn.au, or the latest "What's On" for the latest information.

Society News

2010 Society Fees

As mentioned in the last newsletter, this coming year and onwards, we will be offering the option of multi-year society memberships. We are offering these multi-year memberships for their convenience and security against possible future membership fee increase. The memberships on offer can be seen on the table to the right.

You will need to specify which membership type you are purchasing when you renew. Society renewals for 2010 (and onwards) are now due.

Please note, once purchased these memberships are not refundable, so please consider these multi-year options carefully prior to purchase.

If there are any queries you may have about the fees, please speak to one of the society committee members.

1 year option:	Full Membership - \$50 Pensioner Membership - \$45 Family Membership - \$65 Family Pensioner Membership - \$60 Newsletter Subscription Only - \$22
2 years option:	Full Membership - \$100 Pensioner Membership - \$90 Family Membership - \$130 Family Pensioner Membership - \$120 Newsletter Subscription Only - \$44
3 years option:	Full Membership - \$150 Pensioner Membership - \$135 Family Membership - \$195 Family Pensioner Membership - \$180 Newsletter Subscription Only - \$66
5 years option:	Full Membership - \$200 Pensioner Membership - \$180 Family Membership - \$260 Family Pensioner Membership - \$240 Newsletter Subscription Only - \$88

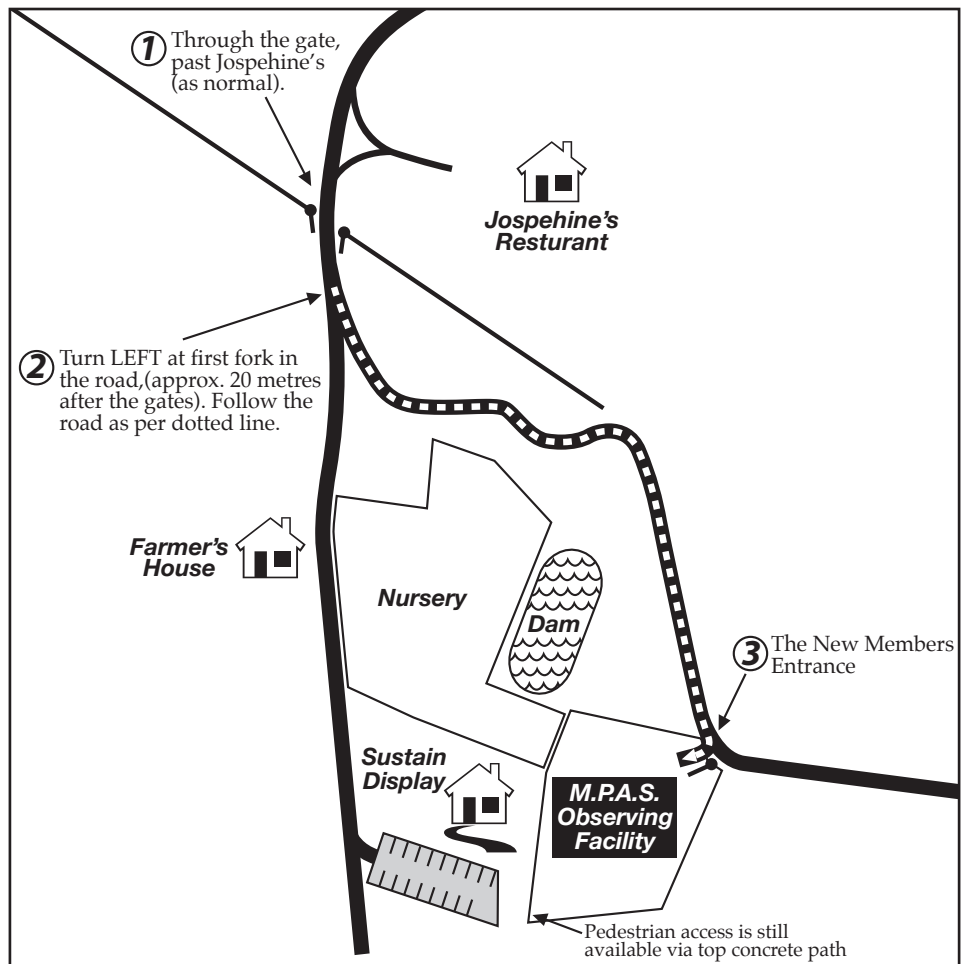
20% Discount Offer *Pay for 4 years, and be a member for 5 years!*

Briars Site Access Update

As of 2010, vehicular access to our Briars observing site is now only possible via the lower gate. The upper vehicular access entry no longer exists. Pedestrian access is still available via the concrete path.

Please note the road to the lower vehicular access entry is unsealed and quite narrow. Please take care when using this road. For first time visitors to the Briars, it is suggested that you may want to arrive prior to night fall to better navigate around the observing site. See map for directions details

Also, a reminder that the farmer at the Briars currently has cattle on the Briars property. Please drive responsibly and alert when entering and exiting the Briars over the next couple of months. We don't want you to have a cow of a day!



Society News

2010 Astronomy Australia — MPAS Merchandise



Once again, the society is fortunate enough to secure your guide to the astronomical year ahead with the **2010 ASTRONOMY AUSTRALIA**. This practical guide to all things astronomical in the Australian skies is a wonderful reference for all levels of star-gazers, from newcomer to expert. Pricing is \$27 to the public, though society members can get it at the discounted rate of \$24.

Orders and payments can be made in person at any M.P.A.S. gathering, by cheque to P.O. Box 596, Frankston 3199, or by phone by leaving a message on 0419 253 252. These sky almanacs will be available at any society gathering.

Hurry! The society only orders in a specific quantity each year, and it's first come, first served.

Snake Warning for the Briars

With Summer now here, we wish to remind all members that it is that time of the year again when we must be aware of snakes at the facility. Usually there are a few sightings reported each Summer.

If anyone does come across a snake on the site or in any part of the grounds at the Briars then the best thing to do is to walk away and alert other people of the presence of the snake.

Do not disturb the snake or attempt to kill the snake under any circumstances as they are a protected species on the Briars site.

The committee will shortly be re-ordering more polo shirts and beanies with the society logo embroidered on them. You may have seen around the society a couple of the committee members with these shirts on.

If you would like to register your interest in purchasing some of these shirts or beanies, then just fill out your details on the form opposite and a committee member will get in contact with you about your order.

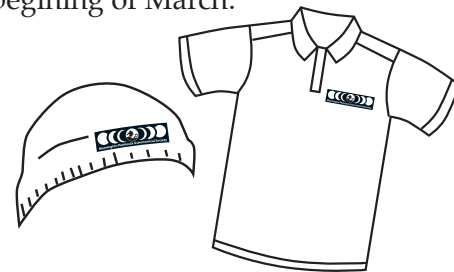
Alternatively, you can also just send the committee an email at: welcome@mpas.asn.au with your order details.

We will require people to book and pay for clothing before placing any orders. Buying stock on spec really never works and we still have some T-shirts left from the last buy.

Approximate costs are T-Shirts \$29, Polo shirts \$44, and Woollen lined jackets \$64. Beanies - we didn't get a price but I think it was about \$16

These are the prices for single purchases. Members can always go in anytime and organise to buy clothes with our logo as single items. The society can get a lower price for

a bulk buy but that depends upon numbers. We would adjust the price when we have the numbers. We will be taking orders up until the beginning of March.



Name: _____

Contact Number: _____

Polo Shirt (Qty): _____

Colour/s: _____

Size: S M L XL XXL

Beanie (Qty): _____

Colour/s: _____

NACAA 2010

The 24th National Convention of Amateur Astronomers will be held in Canberra over the 2010 Easter weekend, April 2-5. The theme for this NACAA is "Astronomy in the On-Line Age".

The venue for most of the technical sessions will be the Rydges Capital Hill hotel, which is only a short distance from both the old and new Parliament Houses. Some NACAA events will also be held at venues such as the Mount Stromlo Observatory.

At this time there is a call for Presentations for this event. The core of the convention is of course its presentations, and they are asking you to consider making a

contribution, by yourself or in a group. There are no restrictions on topics or themes, so long as the contribution is likely to be interesting to other astronomers.

NACAA are looking for posters, oral presentations, round-table meetings, workshops, symposia... or any other presentation.

Further information about NACAA XXIV can be found at <http://nacaa.org.au/2010>. To see what sorts of activities to expect, please look at <http://nacaa.org.au/2008> to see what happened at the 2008 event.

Looking forward to meeting you in Canberra next year.

Society Reports

Sidings Springs & The Virtual Solar System Drive.

Over the Christmas period we received an email article from Barbara and Calum. In it they asked how everyone was and hoped Santa was kind to us all.

They made it to Townsville, though haven't done much astronomy there yet due to the wet season is about to start, (people pack the scopes away until it's over).

Anyway, they thought they would write a small article for Scorpius, and wish everyone clear skies!!

A couple of months ago, Calum & I set out on our move to Townsville – a drive of nearly 3000 km. we had a choice of driving the long, boring 'short' route up the Hume highway and beyond, or breaking up the trip with something more scenic.

I had always wanted to do the "Astronomy Run" up the Newell highway, taking in visits to observatories at Parkes, Gilgandra, Narrabri and Coonabarabran, and to Sidings Springs and do the "Virtual Solar System Drive". Unfortunately, we were on a bit of a schedule, so we couldn't spend as much time as I wanted. I usually stop at Parkes and visit the Radio Telescope when I'm passing, but I don't think I will bother anymore – the visitor centre is more like a gift shop now, and the staff aren't friendly or helpful and don't even seem to be interested in Astronomy. From now on, I will make the extra effort and just go straight to Sidings Springs Observatory, near Coonabarabran.



Parked at Sidings Springs Observatory.

The visitor centre there is bigger with more in depth information for those that want it, as well as some nice interactive stuff for the kids. It is well worth the side trip off the highway and up the 'hill', and the view from the top is just wonderful.



Warrumbungle Ranges.

The Sidings Springs Exploratory – great name – had plenty of offerings including informative movies and lots of static displays on various topics ranging from spectroscopy to Mayan astronomy. One of Calum's favourites was the "How much would a 1L carton of milk weigh on other planets". A different way of showing kids (and adults) how heavy things would be on, say, Saturn – this time the kids can try to pick up a carton of milk filled with different things to simulate the weight on other planets.

Another great interactive display introduced kids to the concept of parallax by rotating a mobile (like you hang from your ceiling) with small balls representing the different stars of Crux. By pressing a button (don't kids love pressing buttons), you could rotate the mobile until all the balls looked like the Southern Cross. Just goes to show you don't need lots of flash computer screens to demonstrate basic concepts.

There was the usual scale model of the main telescope building, but you could also walk up to the top (very short walk), go inside and have a look at it. It was all behind glass, but you do get a good view. While you're there, go around the back of the building and have a look at the view of the Warrumbungle Ranges. ANU sure picked a beautiful place to put an observatory.

When we were visiting, there was only one lady tending the centre/gift shop (How rude of me to forget her name – sorry!!). Although she admitted that she didn't know much about astronomy, she was happy to talk to visitors about astronomy. I don't think she realised that she actually did know something about Astronomy! Anyway, she was happy, friendly and made a great cup of coffee – her pancakes were fabulous too!! Needless to say, I was happy to spend way too much money there.

The "Virtual Solar System Drive" starts at Coonabarabran and goes off in several directions – we were off to Queensland, so we took the northern route. It was a good bit of driving fun – Calum taking the post as Planet Spotter – looking for the large signs on the side of the road with the name and details of each planet, located at positions representative of the relative distances across the solar system. (www.solarsystemdrive.com)



Calum at the Sun.



Calum at Mercury.

Society Reports

Sidings Springs & The Virtual Solar System Drive (cont.)



Calum visiting Venus... ..and Earth...



...and Mars...



...and Jupiter...



...and Saturn...



... and finally visiting Neptune.

The Siding Spring Observatory arrived it was too dark to get a good photo – how ironic!! We pressed on to Moree and stayed the night at the Gwydir Caravan Park and Thermal Pools – I thoroughly recommend anyone passing this way do the same. The Pools are lovely and open til 10pm – just lie in the warm pools, relax and watch the stars – life doesn't get much better than that! ★

The Siding Spring Observatory taking position as the centre of the Solar System – the Sun. Mercury, Venus and Earth are all pretty close by – situated on the Observatory road. Mars is situated just after turning onto the road back to Coonabarabran and Jupiter is on the same road just before you get to Coonabarabran. Calum spotted Saturn just after Coonabarabran but for all of Calum's joking and sniggering – we missed Uranus!! We found Neptune just south of Narrabri. Pluto was nearly 2 hours away in our slow bus so when we

arrived it was too dark to get a good photo – how ironic!! We pressed on to Moree and stayed the night at the Gwydir Caravan Park and Thermal Pools – I thoroughly recommend anyone passing this way do the same. The Pools are lovely and open til 10pm – just lie in the warm pools, relax and watch the stars – life doesn't get much better than that! ★

Article & Photos by Barbara and Calum.

M.P.A.S. at the A.S.V. 2009 Christmas Party.

Once again the MPAS commandeered the ASV's LMDSS at Heathcote on the 11, 12, 13 December 2009 when they held their annual Xmas party. All the usual suspects turn up Kevin Rossiter, Steve Mohr, Fiona & Pearl Murray, Big Dave, Rowan Smith, Domenic, Joe Mahindru and myself.

On Friday the first night we all set up on the photograph field, where we could get some pointers from Phil Hart and Morris Valimberti, they are some of the leading astrophotography guys in the ASV. Steve unpacked a new scope we thought this was a bit risky for this usually brings the clouds in, but Steve did his usual trick and braking the control wire that goes between the scope and computer rendering it useless, this was to insure we all got clear skies and it worked, so



Relaxing before the night's viewing.



Setup time on the Field...



... and Greg's setup for the evening.

Steve used his camera on the EQ6 that night so it was not a total loss.

On the Saturday about 120 ASV members turn up and about 100 members of the public. Big Dave also turn up with a new gas powered soldering iron and quickly rejoined Steve's control wire, Steve was very happy. Fiona and Pearl also arrived with a new scope, this was Pearl's Xmas present, which was bought at Bintel on the way to Heathcote, it was call the First-scope and it worked surprising well, usually new toys equal's cloudy skies. But I was also guilty, for I had bought along a new camera, the Pentax K-x which worked well and churned out 100's of photos, which took me 2 weeks to stack and edit.

Rowan battled with his 16inch Light-Bridge; the Argonavis was misbehaving but it did not matter,

Society Reports

M.P.A.S. at the A.S.V. 2009 Christmas Party (cont.)

there was just too many easy to find deep sky objects to look at anyway. Domenic was impressed with the detail that could be seen in spiral galaxies through his 11 inch Celestron. Kevin was also out there ploughing the sky with his 12inch LX200.

We all went for a wonder around both viewing fields, they were a lot of interesting scopes, especially the home made ones. There was a wooden calculator which converted Latitude & Longitude into Ra & Dec, it was way too complicated for most of us, but it did work. There was a rare 14inch Celestron F1.7 Schmidt camera, with a built in image intensifier added by Barry Clark who bought it on eBay. We were all

glad to see the chuck wagon arrive. This is run by the local Loins club; we all feasted on hamburgers and sausages. Some Local wineries also turn up. Perry Vlahos did the astro trivia quiz and the sky tour for the public. Then it was time settle in and seeking out our quarry.

On the Sunday we slowly arose to survey the damage to ourselves and equipment, recharged batteries in readiness for the coming night. We also reviewed the photos we had taken and tried to stay cool. Later in the day, as the Sun hit the trees, Steve and Dave made a dash for the pizza shop. Once the pizzas were gone it was time to crank up the scopes.

We had clear skies all 3 nights except for 1 hour around midnight

on the Sunday, when some clouds moved in from the south, we all though it was over for us and start looking for the port bottles. Some of as started packing up and putting covers over scopes to trick the cloud Gods, and this worked, and the clouds disappeared. We were all up and running again in no time. We were told there was to be a meteor shower after midnight at about 120 per hour [Geminids], we all saw many meteors - this just capped of a perfect weekend.

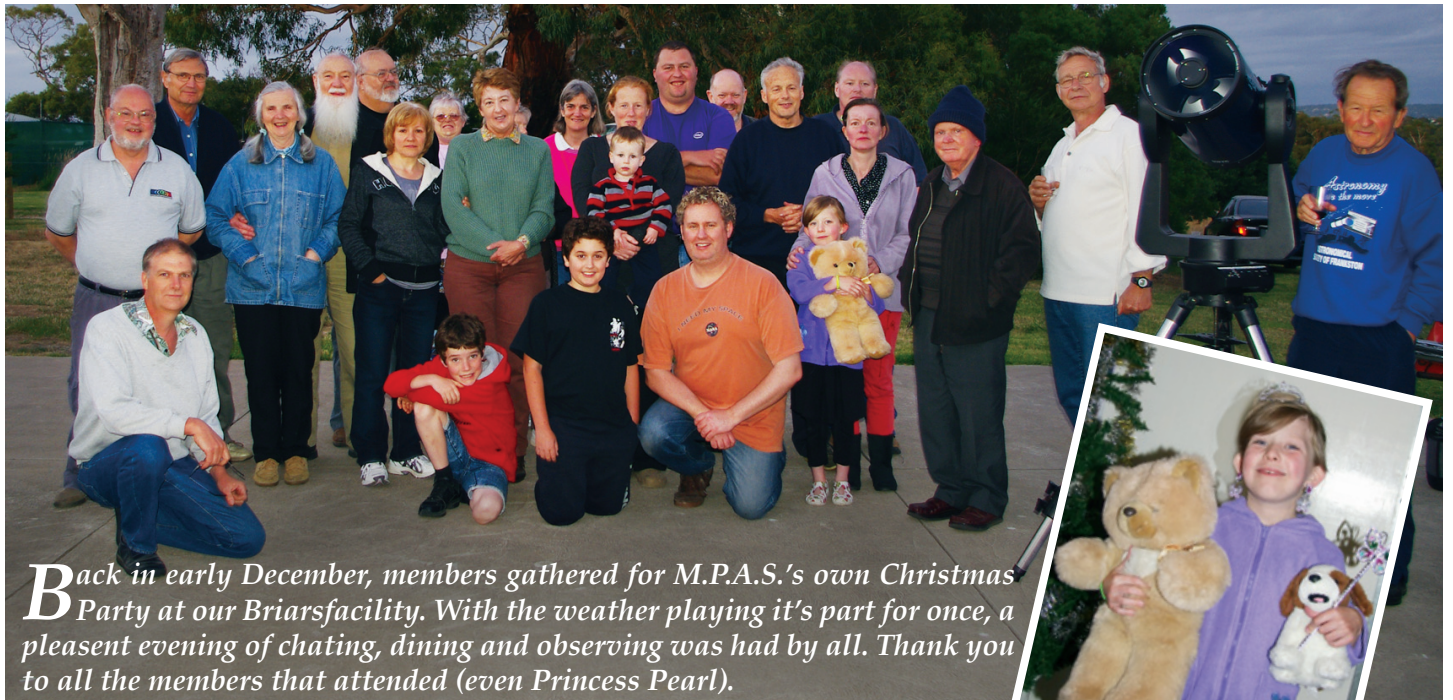
Monday morning we slowly packed up and headed home, but soon we will be planning our next trip across the universe.

Clear skies,

Greg Walton

26 Dec 09

M.P.A.S. 2009 Christmas Party.



Back in early December, members gathered for M.P.A.S.'s own Christmas Party at our Briars facility. With the weather playing it's part for once, a pleasant evening of chating, dining and observing was had by all. Thank you to all the members that attended (even Princess Pearl).

Astro News

Unfortunately again this issue we've had to cut Astro News a bit short, but I couldn't finish off Scorpius without mentioning the release of the images of the first commercial spacecraft to take paying passengers (for a cheap \$250,000 that is) just beyond the Earth

Sir Richard Brason's Virgin Galactic has unveiled the designs for the lifting ship and actual space craft that will take paying passengers into a suborbital trajectory (like the first couple of Mercury flights) to briefly experience spaceflight

Set to fly sometime early this

new decade, the first 2 spaceship 2's are to be called 'Enterprise' and 'Voyager'. That should keep the trekers happy.

More details and images about these new spacecraft, can be found at: www.virgingalactic.com

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).

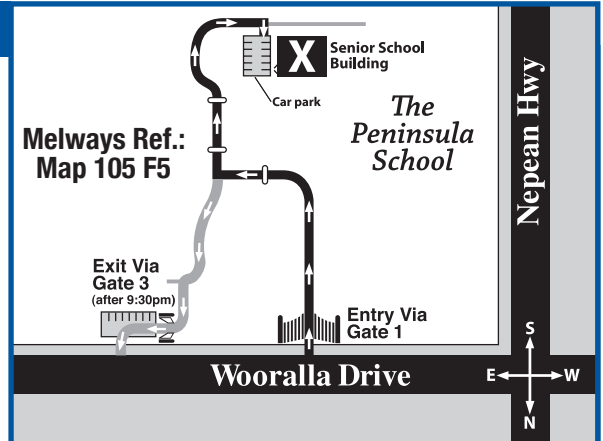
For additional details:

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 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.yahoo.com> and sign up to Yahoo

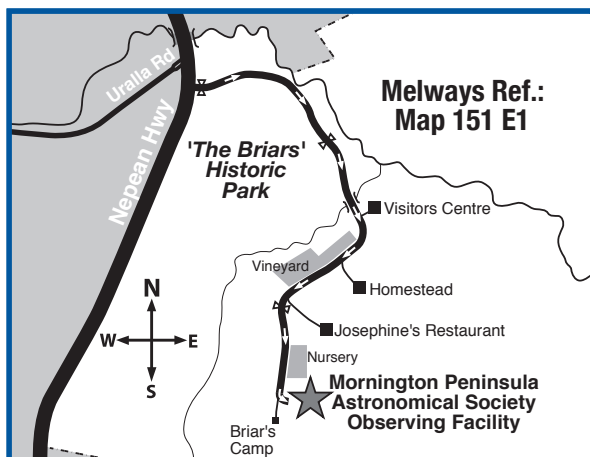
groups. You require to sign up to Yahoo groups to join E-Scorpius.

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. If you would like to know if others are observing at the site, then call the society's site mobile on 0408 127 443.

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: February's Rise & Shine Times

The following times are calculated for the Eastern Daylight Savings 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
Feb 1 (Mon)	06:03	06:32	20:34	21:03	☉	21:35	08:38	04:34	19:10	06:55	20:53	20:37	06:15	08:19	21:35	22:52	10:57	07:42	21:12
Feb 2 (Tue)	06:04	06:33	20:33	21:02	☉	22:05	09:52	04:36	19:11	06:57	20:53	20:31	06:09	08:16	21:31	22:48	10:53	07:38	21:08
Feb 3 (Wed)	06:05	06:34	20:32	21:01	☉	22:35	11:04	04:37	19:13	06:59	20:53	20:26	06:03	08:13	21:28	22:44	10:48	09:56	22:18
Feb 4 (Thu)	06:07	06:36	20:31	21:00	☉	23:06	12:15	04:39	19:14	07:02	20:52	20:21	05:57	08:10	21:25	22:40	10:44	09:52	22:14
Feb 5 (Fri)	06:08	06:37	20:30	20:59	☉	23:40	13:23	04:41	19:15	07:04	20:52	20:16	05:51	08:08	21:21	22:36	10:40	09:48	22:11
Feb 6 (Sat)	06:09	06:38	20:29	20:58	L.Q.	D.N.R.	14:30	04:43	19:17	07:07	20:52	20:11	05:45	08:05	21:18	22:32	10:36	09:45	22:07
Feb 7 (Sun)	06:10	06:39	20:28	20:57	☉	00:19	15:32	04:45	19:18	07:09	20:51	20:06	05:39	08:02	21:15	22:28	10:32	09:41	22:03
Feb 8 (Mon)	06:12	06:40	20:27	20:56	☉	01:03	16:30	04:47	19:19	07:11	20:51	20:00	05:33	07:59	21:11	22:24	10:28	09:37	21:59
Feb 9 (Tue)	06:13	06:41	20:26	20:54	☉	01:52	17:21	04:50	19:21	07:14	20:50	19:55	05:28	07:57	21:08	22:20	10:24	09:34	21:55
Feb 10 (Wed)	06:14	06:42	20:25	20:53	☉	02:46	18:05	04:52	19:22	07:16	20:50	19:50	05:22	07:54	21:05	22:16	10:19	09:30	21:51
Feb 11 (Thu)	06:15	06:44	20:24	20:52	☉	03:44	18:43	04:55	19:23	07:19	20:49	19:45	05:16	07:51	21:02	22:12	10:15	09:26	21:48
Feb 12 (Fri)	06:17	06:45	20:23	20:51	☉	04:43	19:15	04:58	19:25	07:21	20:48	19:40	05:11	07:48	20:58	22:08	10:11	09:23	21:44
Feb 13 (Sat)	06:18	06:46	20:22	20:50	☉	05:42	19:43	05:01	19:26	07:23	20:48	19:35	05:05	07:46	20:55	22:04	10:07	09:19	21:40
Feb 14 (Sun)	06:19	06:47	20:20	20:48	New	06:41	20:09	05:04	19:27	07:26	20:47	19:30	04:59	07:43	20:52	22:00	10:03	09:15	21:36
Feb 15 (Mon)	06:20	06:48	20:19	20:47	☉	07:39	20:33	05:07	19:28	07:28	20:46	19:25	04:54	07:40	20:48	21:56	09:59	09:12	21:32
Feb 16 (Tue)	06:21	06:49	20:18	20:46	☉	08:37	20:56	05:11	19:30	07:30	20:46	19:20	04:49	07:37	20:45	21:52	09:54	09:08	21:29
Feb 17 (Wed)	06:23	06:50	20:17	20:44	☉	09:35	21:20	05:14	19:31	07:33	20:45	19:15	04:43	07:35	20:42	21:48	09:50	09:04	21:25
Feb 18 (Thu)	06:24	06:51	20:15	20:43	☉	10:34	21:45	05:18	19:32	07:35	20:44	19:10	04:38	07:32	20:38	21:44	09:46	09:01	21:21
Feb 19 (Fri)	06:25	06:53	20:14	20:42	☉	11:35	22:14	05:22	19:33	07:37	20:43	19:05	04:33	07:29	20:35	21:40	09:42	08:57	21:17
Feb 20 (Sat)	06:26	06:54	20:13	20:40	☉	12:38	22:47	05:25	19:34	07:40	20:42	19:00	04:28	07:26	20:32	21:35	09:37	08:53	21:13
Feb 21 (Sun)	06:27	06:55	20:12	20:39	☉	13:43	23:27	05:29	19:35	07:42	20:42	18:55	04:23	07:24	20:28	21:31	09:33	08:50	21:10
Feb 22 (Mon)	06:28	06:56	20:10	20:38	F.Q.	14:47	D.N.S.	05:33	19:36	07:44	20:41	18:51	04:18	07:21	20:25	21:27	09:29	08:46	21:06
Feb 23 (Tue)	06:30	06:57	20:09	20:36	☉	15:50	00:15	05:38	19:37	07:46	20:40	18:46	04:13	07:18	20:22	21:23	09:25	08:42	21:02
Feb 24 (Wed)	06:31	06:58	20:08	20:35	☉	16:47	01:13	05:42	19:37	07:49	20:39	18:41	04:08	07:15	20:18	21:19	09:21	08:39	20:58
Feb 25 (Thu)	06:32	06:59	20:06	20:33	☉	17:37	02:20	05:46	19:38	07:51	20:38	18:36	04:03	07:13	20:15	21:15	09:16	08:35	20:54
Feb 26 (Fri)	06:33	07:00	20:05	20:32	☉	18:20	03:34	05:50	19:39	07:53	20:37	18:32	03:58	07:10	20:12	21:11	09:12	08:31	20:51
Feb 27 (Sat)	06:34	07:01	20:03	20:30	☉	18:57	04:51	05:55	19:40	07:56	20:36	18:27	03:54	07:07	20:08	21:07	09:08	08:28	20:47
Feb 28 (Sun)	06:35	07:02	20:02	20:29	☉	19:30	06:08	05:59	19:40	07:58	20:35	18:23	03:49	07:05	20:05	21:03	09:03	08:24	20:43

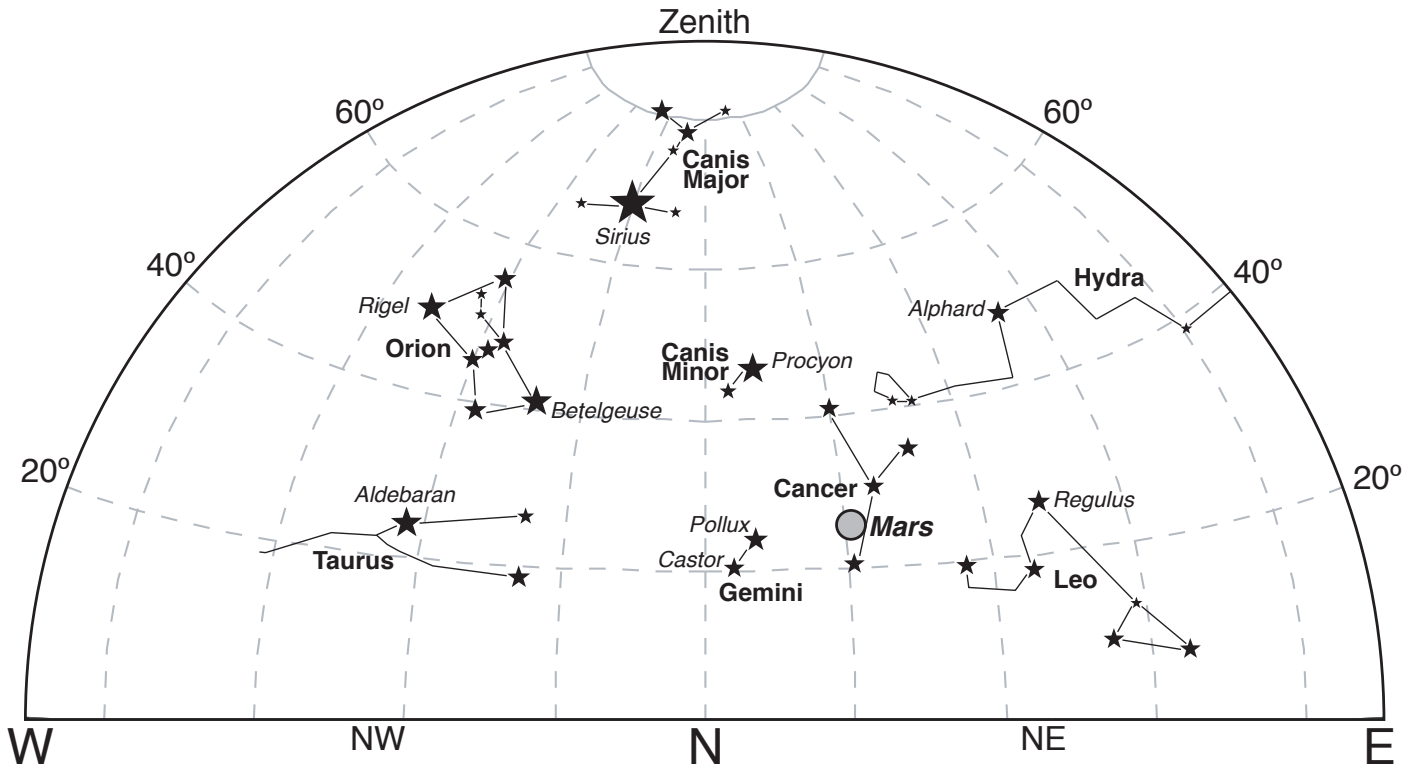
Full - Full Moon L.Q. - Last Quarter Moon New - New Moon F.Q. - First Quarter Moon D.N.R. - Moon Does Not Rise D.N.S. - Moon Does Not Set

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

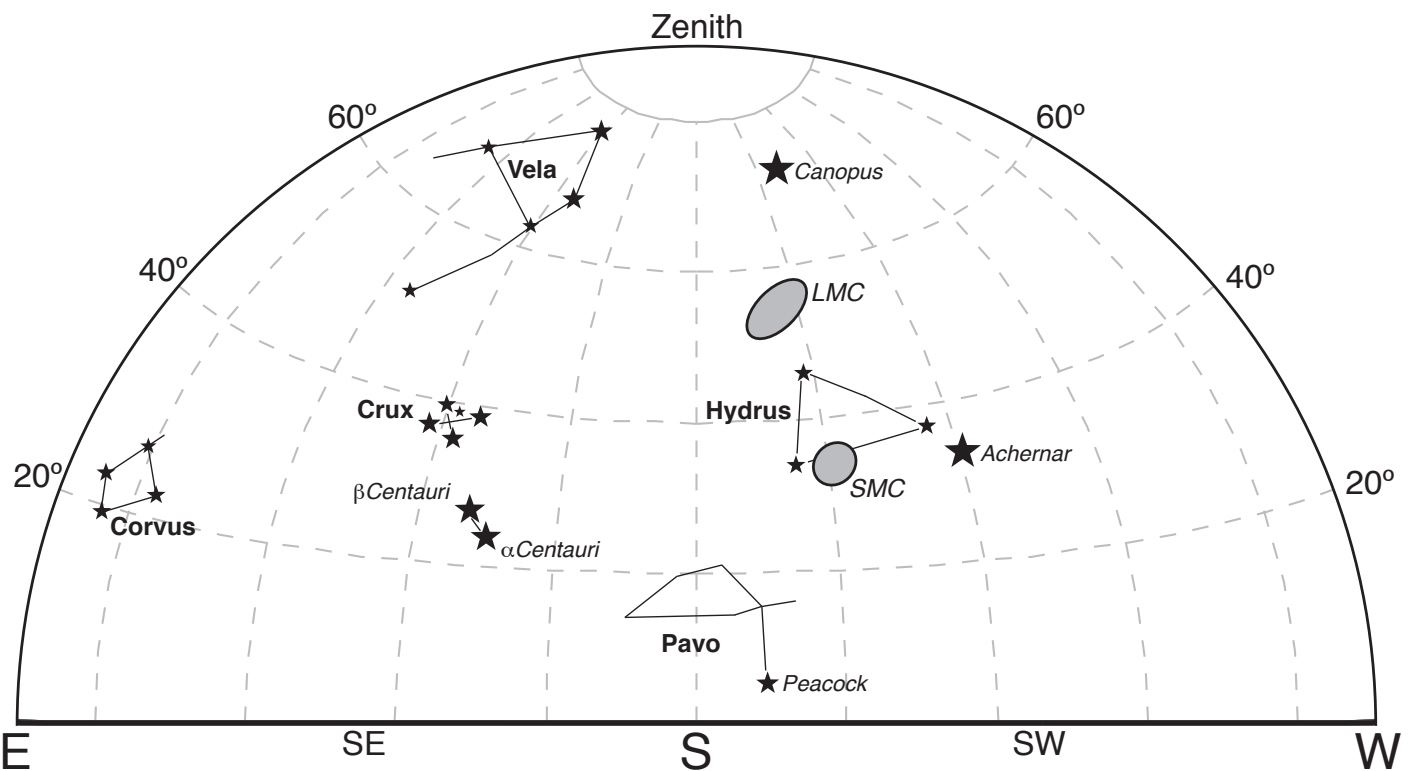
Skywatcher: In February's Sky

The following hemispherical positionals for February is calculated for The Briars Observing Facility, at approximately 10:30pm Eastern Daylight Savings Time. This can be used throughout February along the Mornington Peninsula and surrounding areas.

Looking North



Looking South



Skywatcher: March's Rise & Shine Times

The following times are calculated for the Eastern Daylight Savings 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.

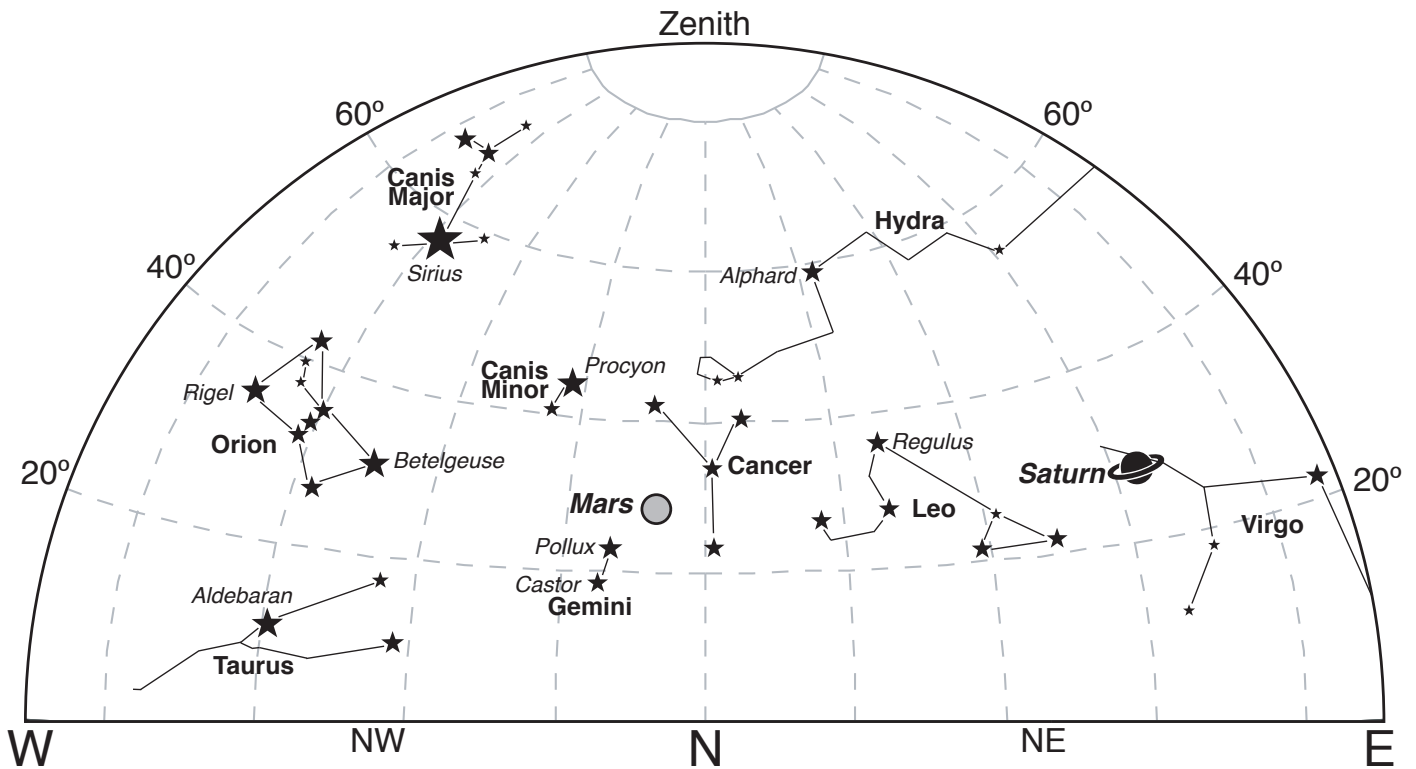
Date	☀ Sun		☾ Moon		♀ Mercury		♀ Venus		♂ Mars		♃ Jupiter		♄ Saturn		♅ Uranus		♆ Neptune		
	Civil Twilight Begins	Sunrise	Sunset	Civil Twilight Ends	Phase	Rise	Sets	Rise	Sets	Rise	Sets	Rise	Sets	Rise	Sets	Rise	Sets	Rise	Sets
Mar 1 (Mon)	06:36	07:03	20:01	20:28	Full	06:04	19:41	08:00	20:34	18:18	03:44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

☾ - 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
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 beginning or end of the day's useable light. The first of the evening stars are visible at this time.

Skywatcher: In the March Sky

The following hemispherical positionals for March is calculated for The Briars Observing Facility, at approximately 10:00pm Eastern Daylight Savings Time. This can be used throughout March along the Mornington Peninsula and surrounding areas.

Looking North



Looking South

