



PDF VERSION

Volume XIX, No. 2 (April 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.

Spacecraft Hits Midpoint on Flight to Pluto

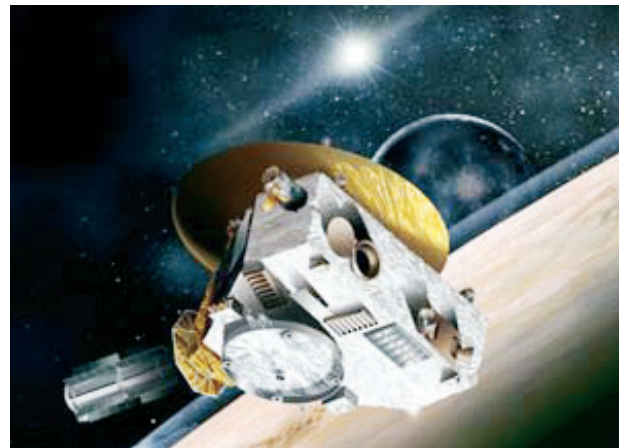
For the eagle-eyed visitors to the Briars AWF, you may have noticed a small certificate on the wall that registers our support of the New Horizons spacecraft on its mission all the way out to Pluto. Some of you may have even forgotten about it, as we have had it in our possession for almost 5 years now! Well, it has officially covered half the distance of its trip to Pluto and its moons.

On Thursday the 26th of February, NASA's New Horizons probe zoomed past the 1.48 billion-mile (2.39 billion-km) mark, completing half the travel distance between Earth in 2006, when it launched, and where Pluto will be when the spacecraft arrives in July 2015. "From here on out, we're on approach to an encounter with the Pluto system," said New Horizons principal investigator Alan Stern of the Southwest Research Institute in Boulder, Colo. "The second half of the journey begins."

New Horizons has been billed as NASA's fastest mission to visit another world. It is zooming across the solar system at about 36,000 mph (nearly 58,000 kph). Next month, *(by the time you read this)* it will cross the orbit of Uranus. The spacecraft is headed to study the dwarf planet Pluto and its three moons - Nix, Hydra and Charon. New Horizons will not stop and orbit Pluto. Instead, it will record detailed observations during a flyby and then head out into the Kuiper Belt on the edge of the solar system to study the icy objects lurking in that cosmic realm.

Thursday's distance marker is the latest in a string of mission milestones for New Horizons. In December 2009, the probe hit its first way-point directly between the sun and Pluto's location. On April 20, the spacecraft will be at the midpoint between the sun and where Pluto will be in 2015. On Oct. 17, New Horizons will have completed the first half of its decade-long trip, by flight time.

Pluto is an oddball world that was discovered 80 years ago this month by astronomer Clyde Tombaugh. In 2006, it was downgraded from a planet to dwarf planet.'



Artist's concept of the New Horizons spacecraft during its planned encounter with Pluto and its moon, Charon. Image credit: © NASA/JHUAPL/SwRI



Our Society's name is on a CD aboard New Horizons spacecraft.

© Article Extracts by SPACE.com Staff. Posted: 26 February 2010, 04:28 pm ET

Society Calendar

Upcoming Events in April

Friday 2nd to N.A.C.A.A. in Canberra

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

Friday 9th of Apr.: **Public Viewing Night at The Briars (8pm).**

April's revised 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 21st of Apr.: **April'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 24th of Apr.: **Working Bee and Members Viewing Night at The Briars.**

Prior to the evenings members viewing night, we will be holding a society Working Bee at the Briars facility. This will kick off at around 1pm. See details below. Afterwards the usual Members Viewing Night has been organised. Intensity of incident light from our Lunar neighbour is moderate with a near 1st 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 28th of Apr.: **April Committee Meeting at The Briars (8pm).**

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 the latest information.

Society News

Working Bee, Saturday 24th of April

It has been a while since we last got together to do some tidying up at the Briars. So before the cold weather sets in for another year, we have decided to have a Working Bee on Saturday the 24th of April, from 1pm onwards.

The main items for the working bee are:-

1) Trimming the eastern tree line back to the horizon to give the observers on the lower slab a better view. While the society has a supply of gardening tools, any specific tools you would like to bring would be appreciated.

2) Painting the shed. While the society has some brushes available, if you intend to help with this repainting, please dress and prepare accordingly for painting.

3) Re-arrange the fence around the large tree to give pedestrian access across the field. This will involve relocating a few of the posts, so we need someone with a post-

hole digger, if you are out there?!?! So if you could spare some time this day to come down and give us a hand, it would be greatly appreciated.

Oh, and I forgot the bribe (yes, how else can we get these things done). As this leads into our Members Viewing Night, don't forget after the afternoon's work, we will be putting on our regular Member's night BBQ for all those that attend.

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Daylight Savings Ends



DON'T Forget! On Sunday 4th of April at 3am, clocks go back one hour for the end of daylight savings. Your gotos might be a bit off otherwise.



2010 Astronomy Australia

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.

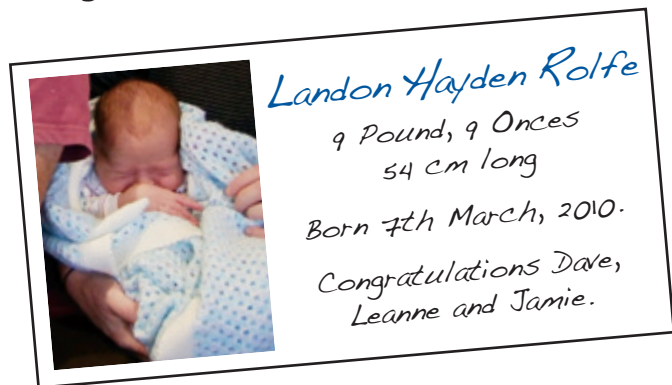
Society News



Melissa & Sean de Clercle, Craig Hewitt, Julie Foster, Irena Muchewicz, Paul Lepp, Vittal Subramaniam, Stuart Groves, Yi Bin Chen, Paul & Therese Albers, Domenic Lucarelli, Andrew & Cameron Yarnold, and a big welcome to our littlest new member....

The Committee and Society welcome the following new members.

Wishing you all clear skies.



Society Shirts

In our last edition of Scorpius we asked for interest in the society shirts. Unfortunately we didn't get the numbers to justify any great discount. For those who expressed interest, if you still want to find out more about MPAS clothing, check out the shop where we get them from at

T-Printz, 58 Young Street, Frankston (opposite Frankston Railway Station). Ph: (03) 9781 1721, email: print@tprintz.com.au, and on the web at: www.tprintz.com.au

When contacting them, mention you are from the society and want the society logo place on the clothing (they have this on file). You will

find they have plenty of different sizes and styles to suit what you require.

Briars Redevelopment

Over the next couple of months, those utilising the Briars AWF will notice some landscaping and concreting works occurring at the property. These works will see the site's undulations smoothed out and additional concrete being place at the lower observing platform and in front of the Main shed.

These works will unfortunately cause some disruptions to members and the publics usual viewing. Most notable, driving around the observing site may be restricted for

a short period of time. The committee apologise for the inconvenience these works will cause, and ask at this time if you could please be patient and careful around these work areas. Your co-operation during this time would be appreciated.

Along with these works, we hope to reassemble a couple of telescopes that previously belonged to society member Bruce Tregaskis. These telescope have been donated to the society from Bruce's estate. We hope to be setting up at least one of the telescopes for members to use and for the members of the public to look through. Hopefully in a future issue of Scorpius we can show pictures of the reassembly.

BORDER STARGAZE



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 kilometer frontage 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



Society Articles

SETI - Where the Bloody Hell Are They?

Article by PETER LOWE

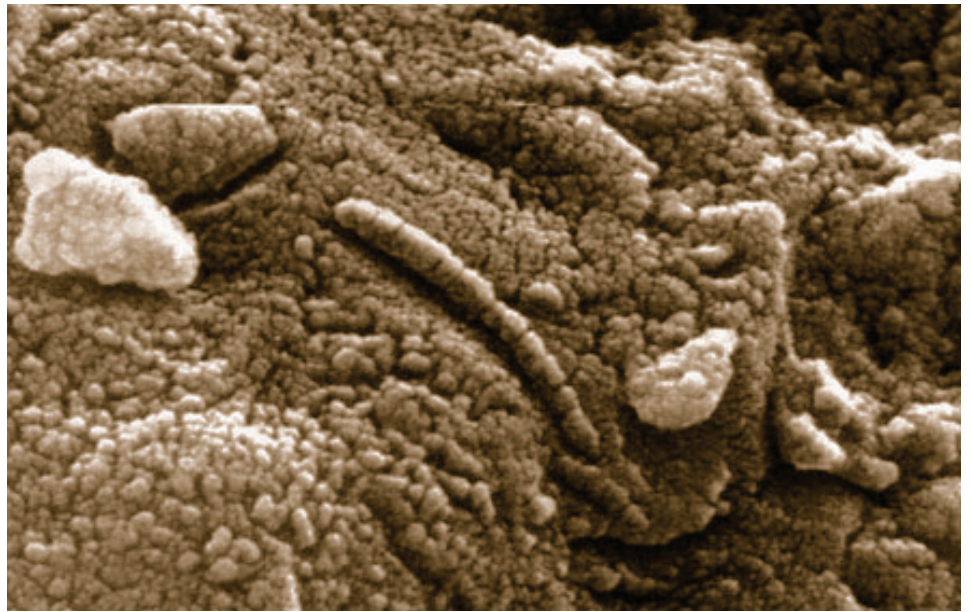
Over the past two hundred years there have been several attempts to communicate with extraterrestrial beings. Early attempts involved lighting signal fires at regular intervals and looking for corresponding replies from the Moon and Mars. The first serious attempts at interplanetary communication assumed technically advanced beings existed on the other planetary bodies. These attempts might seem quaint by today's standards but current Search for Extraterrestrial Intelligence (SETI) programs are really not all that different.

Today's signal fires involve radio telescopes and lasers to send messages into space and search for any message being sent to us. The original SETI searches assumed life is probably very common in space and given the right conditions for long enough will steadily evolve into intelligent life that will eventually develop technical civilisations capable of interstellar communications.

This has certainly happened on Earth but it has hardly been a slow steady evolutionary process. In fact the path to mankind has been highly erratic based upon many random events and the probability of replicating these events is exceedingly low. So low in fact that Earth might conceivably be the only place in our galaxy where technical, intelligence has appeared.

So far our SETI searches have turn up nothing. A null finding is actually useful because it set the boundaries on our search. We can say with a little bit of certainty that there are no Earth-level extraterrestrials transmitting towards us out to about 4,000 light years and there are no blindingly obvious radio messages from Super-Civilisations out to about ten times that distance. This covers about one third of our galaxy.

While non-terrestrial life,



Lifelike Structures on Martian ALH84001 meteorite

intelligent or otherwise has yet to be found, our understanding of star and planetary formation plus recent advances in the biological sciences suggest that life should develop as soon as conditions stabilise sufficiently. We would thus expect life to be exceedingly commonplace and for this reason alone I expect we should be finding our first Martian life or at least its fossils in the not too distant future.

If life is commonplace but technically developed life is not being detected by SETI searches this suggests there is something wrong with the underlying assumptions behind these searches. To paraphrase the nuclear physicist Enrico Fermi who in 1950 first raised these concerns "Where the Bloody Hell Are They?"

The lack of detection suggests two possibilities, either we are the only (or least the most advanced) civilization to have developed in the galaxy or civilizations are common but they don't exist long enough to communicate or explore the galaxy.

It is estimated that it would take about 5 million years to colonise our galaxy using currently conceivable technologies. While this is a long time in human life terms it is essentially instantaneous in astronomical terms.

Statistically the number of civilizations existing anyone time is the (formation rate X mean lifetime). Based upon a formation rate of 1 civilization per 1 billion cubic light years volume and a mean lifetime of 1000 years from the formation of technology we concluded that some 12 billion or so technological civilisations have existed over the history of the galaxy with roughly 1000 existing today. Yet we have not detected anything out to 4000 light years (or 10 billion cubic light years).

Either civilisation is exceedingly rare although life is exceedingly common or civilisations are forming in vast numbers but do not survive long enough to make contact by radio, laser or even physical visitation. If out of all those billions of civilisations that ever existed, only one had decided on a policy of exploration they could have occupied the galaxy long ago yet there is no physical evidence to suggest any contact.

If we take the one known example here on Earth which has not yet self destructed, shows every sign of being expansionist and is not particularly reticent about interfering with others then I suggest we had better start our expansion before someone else beats us to it.

Astro News

April's Shuttle Mission



Commander Alan Poindexter will lead the STS-131 mission to the International Space Station aboard space shuttle Discovery. Jim Dutton will serve as the pilot. Mission Specialists are Rick Mastracchio, Clay Anderson, Dorothy Metcalf-Lindenberg, Stephanie Wilson and Naoko Yamazaki of the Japan Aerospace Exploration Agency.

Discovery will deliver a multi-purpose logistics module filled with science racks to be transferred to laboratories on the International Space Station. The mission will feature three spacewalks.

Mastracchio and Anderson will

conduct three six-and-a-half-hour-long spacewalks on flight days 5, 7 and 9 to replace an ammonia tank assembly, retrieve a Japanese experiment from the station's exterior and switch out a rate gyro assembly on the S0 element of the station's truss.

STS-131 is the 33rd shuttle mission to the station. More details about this mission, can be found at: www.nasa.gov/externalflash/131_flash/

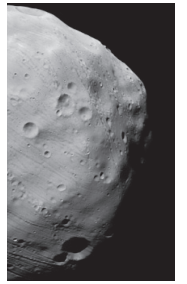
© Article Extract & Image by NASA.com

Phobos Flyby Images

Images from the recent flyby of Phobos, on 7 March 2010, are released today show Mars' rocky moon in exquisite detail, with a resolution of just 4.4 metres per pixel. They show the proposed landing sites for the forthcoming Phobos-Grunt mission.

ESA's Mars Express spacecraft orbits the Red Planet in a highly elliptical, polar orbit that brings it

close to Phobos every five months. It is the only spacecraft currently in orbit around Mars whose orbit reaches far enough from the planet to provide a close-up view of Phobos.



Like our Moon, Phobos always shows the same side to the planet, so it is only by flying outside the orbit that it becomes possible to observe the far side. Mars Express did just this on 7, 10 and 13 March 2010. Mars Express also collected data with other instruments.

In 2011 Russia will send a mission called Phobos-Grunt (meaning Phobos Soil) to land on the martian moon, collect a soil sample and return it to Earth for analysis.

More details about this article and mission, can be found at: www.esa.int/esaCP/SEMk17CKP6G_Life_0.html

© Article Extract & Image by www.ESA.int

For Sale

One old homebrew 6 inch F6 newtonian with purchased optics, 1981 vintage. Galvanised iron tube, pipe fitting mount. Would best be converted to a Dobsonian for stability and ease of use. The focuser will also need to be updated to 1.25 inch for modern eyepieces. Comes with 3 x old style 0.9 inch eyepieces, Kellner, and Orthoscopic. Prepared to separate. Make an offer.

Also available and FREE to a good home, a Canon D660U USB scanner (purchased in 2001), flatbed with adaptor to enable scanning of 35mm slides and negative strips up to 600dpi. Comes with manuals and software. Runs under Windows 98 and probably later versions, and Mac OSX via classic interface.

If interested, please contact Phil via scorpius@mpas.asn.au



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).

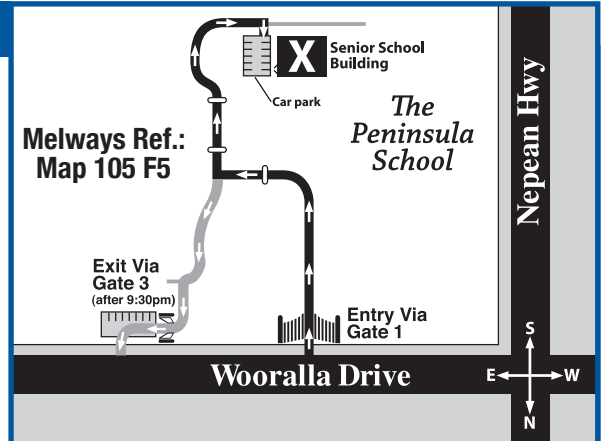
For additional details:

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

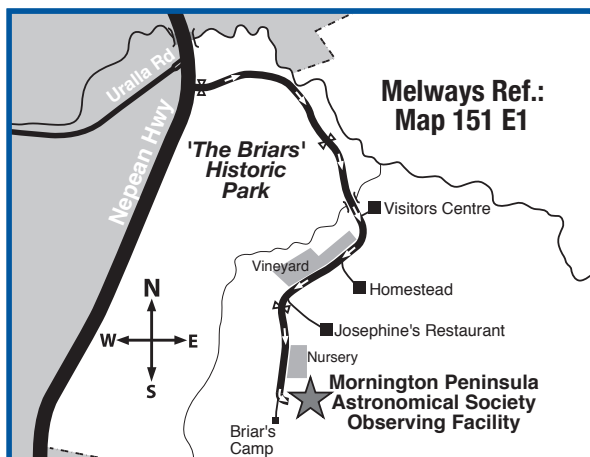
groups. You require to sign up to Yahoo groups to join E-Scorpius.

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

----- Daylight Savings Ends. At 3am, Sunday 4th of April, clocks go back 1 hour to 2am.

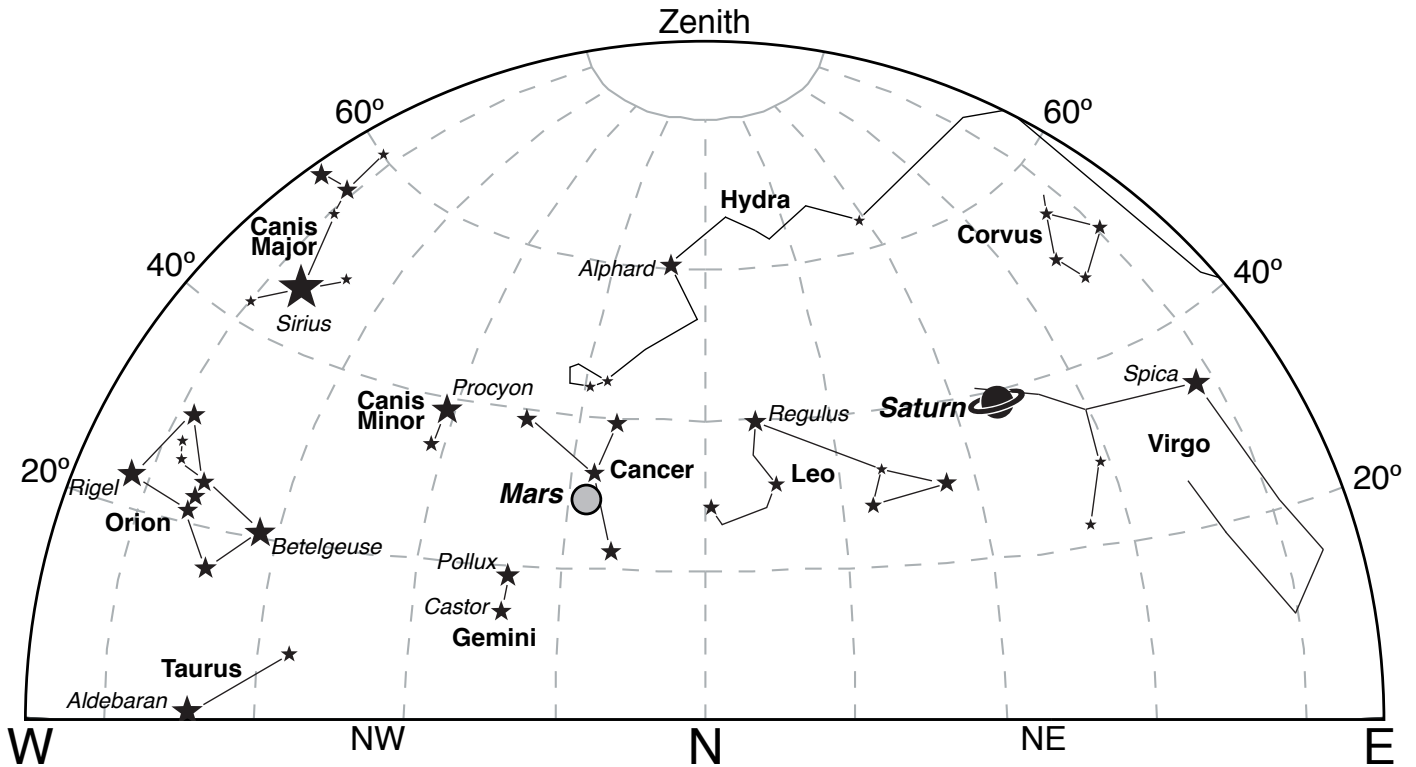
L.Q. - Last Quarter Moon New - New Moon F.Q. - First Quarter Moon D.N.R. - Moon Does Not Rise D.N.S. - Moon Does Not Set

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 April Sky

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

Looking North



Looking South

