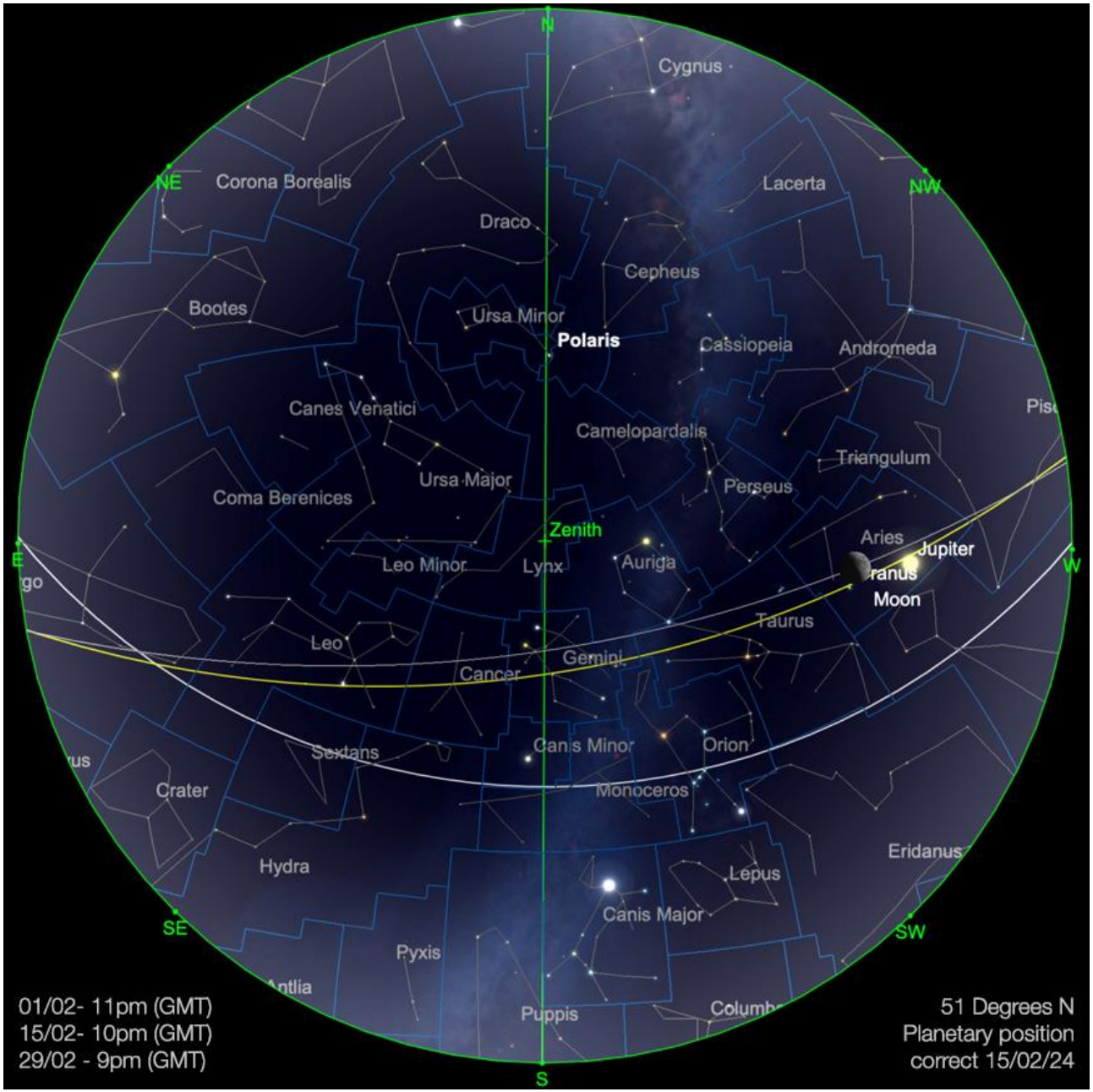
Telescope House February 2024 Sky Guide


N
NE
NW
E
W
SE
SW
S
Cygnus
Corona Borealis
Lacerta
Draco
Cepheus
Bootes
Ursa Minor
Polaris
Cassiopeia
Andromeda
Canes Venatici
Camelopardalis
Triangulum
Ursa Major
Perseus
Coma Berenices
Zenith
Aries
Jupiter
Leo Minor
Lynx
Auriga
Moon
Taurus
Leo
Gemini
Cancer
Sextans
Canis Minor
Orion
Crater
Monoceros
Eridanus
Hydra
Lepus
Canis Major
Pyxis
Puppis
01/02- 11pm (GMT)
15/02- 10pm (GMT)
29/02 - 9pm (GMT)
51 Degrees N
Planetary position
correct 15/02/24

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Telescope House February 2024 Sky Guide

February, typically the shortest month with 28 days, extends to 29 this Leap Year, aligning our calendar with Earth's rotation and orbit. The Gregorian Calendar, introduced in 1582, corrected issues in the previous orbitally inaccurate Julian Calendar. Leap Years maintain accuracy; for instance, 2024 is a Leap Year since it's divisible by 4, not by 100 unless by 400.

The reason for this happening is simple - human imposed segmented time measurement doesn't match up completely with nature. As natural time progresses, our calendar, if left to its own devices, would begin to slip and misalign with the Earth's rotation and path around the Sun. Although this is only a very gradual process, it wouldn't be long before this got rather out of kilter. The process behind this thus; the exact time taken for our Earth to orbit the Sun once is just over 365 days. This period of time is known as - amongst other titles - an Astronomical Year and equates to around 365.242 days. Once these "extra" hours of an Astronomical Year are added up, they equate to a significant period of time, which if left unchecked would cause our Gregorian Calendar to start to slip in relation to Astronomical events such as the Solstices and Equinoxes of the year.

Pope Gregory XIII introduced the Gregorian Calendar in 1582, an improvement over Julius Caesar's Julian Calendar, known for its inaccuracies. Luigi Lilio, the Italian Natural Scientist behind its formulation, never witnessed its implementation. Leap Years, with a 29th February, were crucial for Gregorian accuracy and simpler than the Julian system. Despite its 1582 debut, Britain clung to the Julian Calendar until 1752.

Leap Seconds, like the last one added in December 2016, fine-tune timekeeping due to Earth's rotational changes influenced by factors such as atmospheric drag. Venus exemplifies the impact of atmospheric drag on rotation, with its day now surpassing its year. However, it seems as if the Leap Second's days are numbered, as the international body that oversees weights and measures, the BIMP, voted in 2022 to stop adding leap seconds to Universal Time by 2035. Instead of adding leap seconds on regular intervals, time will be allowed to drift somewhat in relation to the Earth's rotation, until it is corrected by the insertion of a leap minute every 50 to 100 years. How this will ultimately affect fine pointing of telescopes and other tracking equipment remains unclear at present. But as many of these use GPS, which has its own timestamp, separate from Universal Time, the offset of timing to the rotation of the Earth may be less pronounced.

The Solar System

The Moon

Our natural satellite begins February in the expensive constellation of Virgo. At waning gibbous phase, the Moon will rise at a little before 12 am and transit at a little before 5 am on the morning of the 1st. It will set at a little after 10 in the morning.

Over the first week of February, the Moon will drift through Virgo into Libra and Scorpius, (shrinking in phase as it does) and on into the lowest parts of the ecliptic as seen from the northern hemisphere: Ophiuchus and Sagittarius. After this, it will start to rise from its most southerly point, passing Venus and Mars (in eastern Sagittarius) and Mercury in Capricornus, where it joins the Sun on the 9th of February, where it will become New.

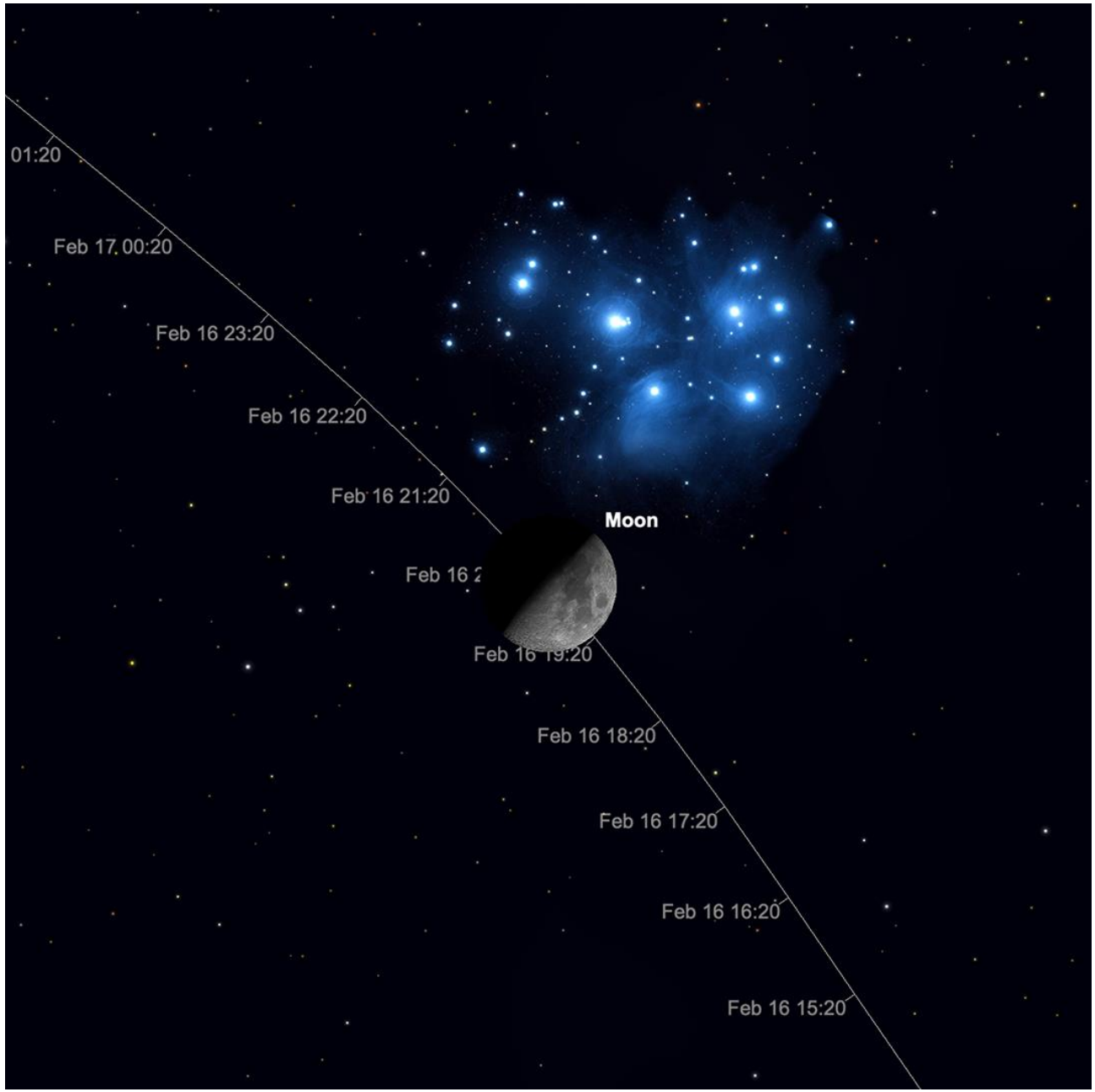
Once past New phase, the Moon becomes an evening object. The first few days after Mew will find the Moon a difficult object to locate in the sky. It will pass Saturn in Aquarius on the evenings of the 10th and 11th and will start to become visible more easily after the 12th when it enters Pisces and gains a little in altitude and in phase.

Although the northern hemisphere is not experiencing Spring as yet, February's waxing crescent phase represents the first of what is commonly known as the Moon's "High Spring Crescent" phase. This occurs for observers in the northern hemisphere during springtime in the evenings. It is caused by the steeply setting Ecliptic plane, as seen from temperate northern climes at this time of the year. The High Spring Crescent phase offers observers some of the best opportunities to view the Moon in the evening time and if the weather is kind should not be missed.

The Moon will continue to rise up through Pisces, skirting over into the borders of Cetus, the whale on the evening of the 13th February and then rejoining Pisces on the 14th. The Moon will enter Aries on the 14th February and pass close to Jupiter on the evening of the 15th. The following evening, the Moon will attain first quarter phase. By this point it will rise at just before 10 am, transiting at a little past 6 pm and setting at a little before 1:30 am the following morning (all times GMT). From just before 8 pm on the 16th, the Moon will be found technically within the boundaries of the Pleiades. While it won't be an occulting any major members of arguably the most famous star cluster, the two objects will be a very pretty pairing in the early-to-mid evening sky.

The moon reaches its most northerly point of the ecliptic on February 19th and will then travel through Gemini and Cancer and on into Leo where it will become Full on February 24th. By this point, the Moon will rise at a little before 6:45 pm (GMT) and transit at a little after midnight, setting at just after 7:30 am the following morning.

The final few days of the month will see the Moon exiting Leo and entering back into Virgo, where we first found it. By the end of February on the 29th – a leap day – it will sit on the borders between Virgo and Libra. Our natural, satellite will be at waning gibbous phase, illuminated by around 80% and rising at just after 11:30 pm (GMT) on the 29th.

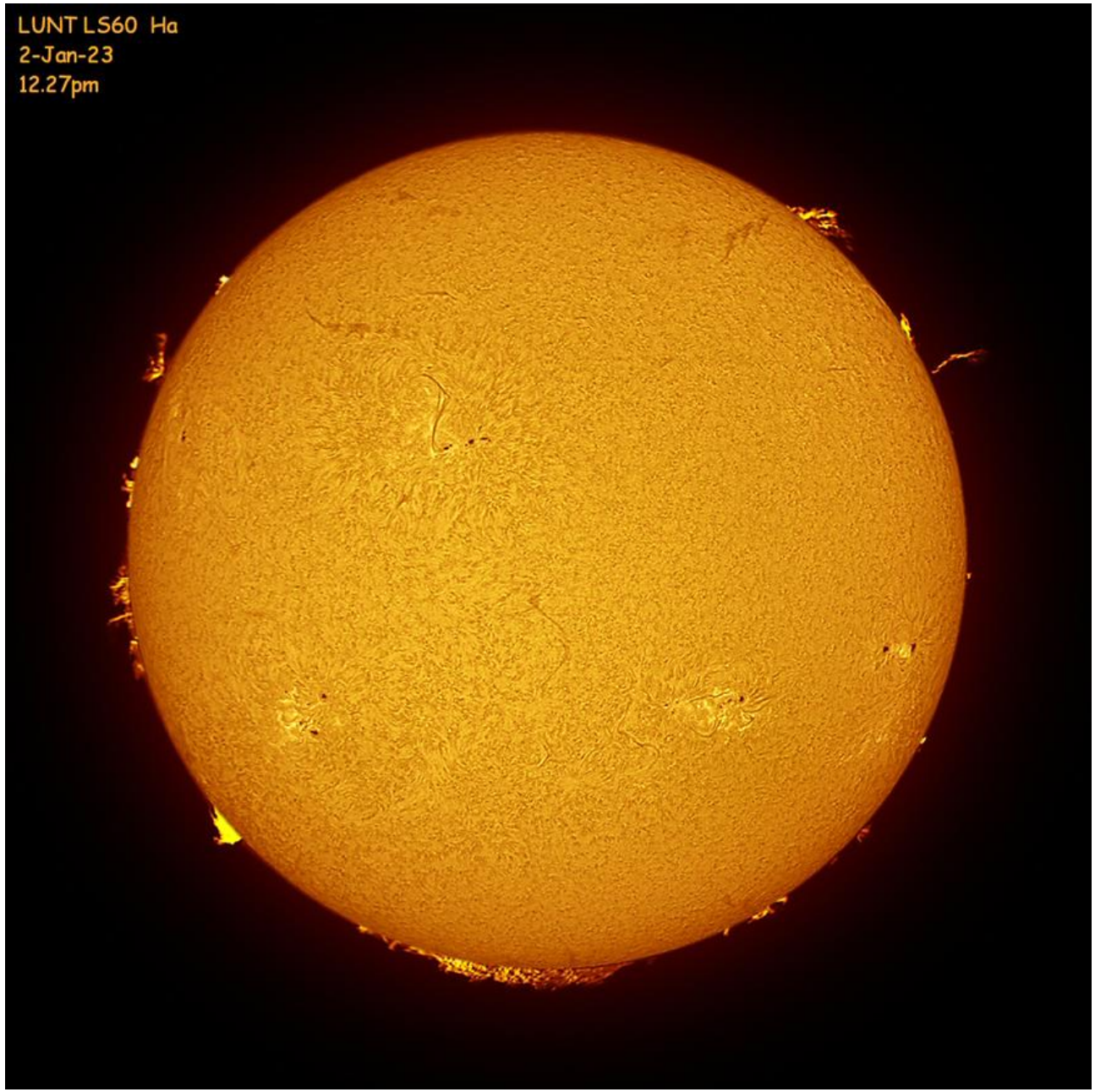

01:20
Feb 17 00:20
Feb 16 23:20
Feb 16 22:20
Feb 16 21:20
Moon
Feb 16 2
Feb 16 19:20
Feb 16 18:20
Feb 16 17:20
Feb 16 16:20
Feb 16 15:20

Moon and Pleiades, 8pm, 16th February. Image created with SkySafari 5 for Mac OS X, ©2010-2016 Simulation Curriculum Corp., skysafariastronomy.com.

The Sun

Although the Sun is low in the sky for northern hemisphere observation, it is becoming more and more active within its 11 year cycle, as Tony Broadhurst's Hydrogen alpha picture below, taken through a Lunt LS60 in early January last year, clearly depicts. Further and more detailed observations of the Sun can be found by referring to Michel Deconinck's monthly newsletter here: https://astro.aquarellia.com/doc/Aquarellia-Observatory-forecasts.pdf - this newsletter also covers occultations and other observations from Europe and is well worth checking out.

Although the Sun is not especially favourably-placed for northern hemisphere observers at this time of year, the very limited wavelengths of Hydrogen Alpha observation can (to a certain extent) ride out poor seeing conditions, caused by low elevation. Even when the Sun is very low in the sky, it is still possible to see and image significant detail on the solar disk and in the atmosphere surrounding it, as Tony's image shows. Latest predictions put the current cycle reaching its peak in July 2025, so we are just under 18 months off peak solar activity in this current cycle. There's certainly plenty to see on, or around the Sun at present - it'll be interesting to see how much more there is to come.

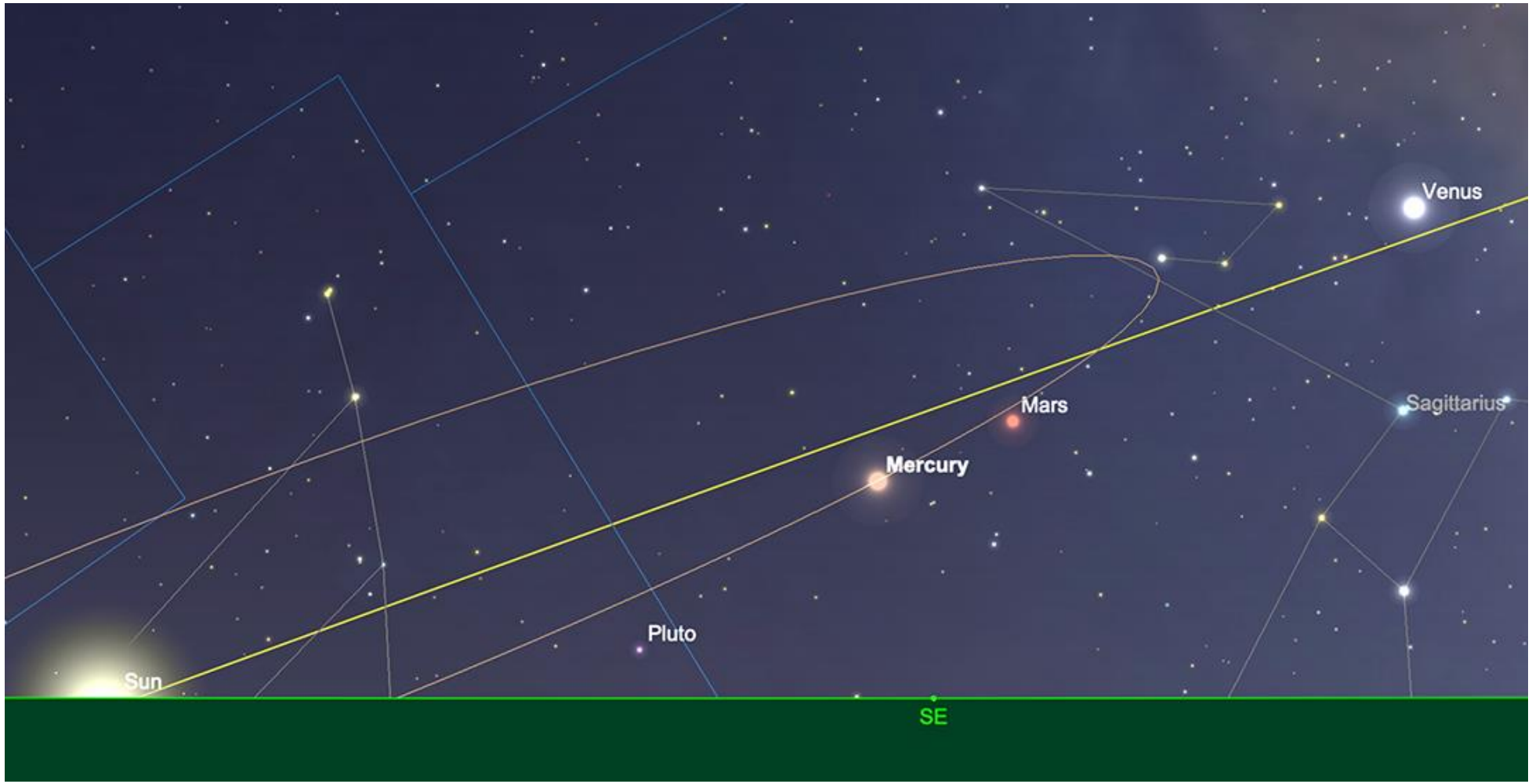

LUNT LS60 Ha
2-Jan-23
12.27pm

Tony Broadhurst's image of the Sun in H-Alpha, taken with an LS60 on 2nd January 2023. Image used with kind permission.

Mercury

The solar system's smallest true planet starts February as a resident of Sagittarius. Found alongside the diminutive Mars and the much brighter Venus in the morning sky, Mercury displays a -0.3 magnitude, 5.2 arc second diameter disc on the morning of January 1st. From a latitude of 51°, Mercury stands just over 4° high above the horizon as the sunrises, making it extremely difficult to see from higher northern latitudes. As the planet is heading sunward, the situation does not improve as the month continues.

Mercury is in descending node, heading below the ecliptic plane and traveling to the south of the Sun. The rest of the month sees Mercury getting closer and closer to our parent star, making it an impossible to observe from the temperate northern hemisphere. Mercury reaches superior conjunction on February 28th when it will be found just under 2° to the south of the Sun in Aquarius. We won’t see much of Mercury until it has gained significant separation from the Sun on the eastern “evening” side of our parent star, which will not occur until later in March. The good news for observers in the northern hemisphere is that Mercury’s March apparition will be one of the best times to observe the planet during 2024. February is extremely poor in comparison!



Mercury, sunrise, 1st February. Image created with SkySafari 5 for Mac OS X, ©2010-2016 Simulation Curriculum Corp., skysafariastronomy.com.

Venus

As previously mentioned, Venus is also a resident of Sagittarius during the first part of February. The morning of the 1st finds Venus standing at around 10° above the horizon (as observed from 51° north) and shining at a brilliant -4.0 magnitude. The planet shows a 12.2 arc seconds diameter disc which is illuminated by around 86%.

While we have been extremely fortunate to observe Venus in the mornings in a very favourable location in the sky for the past few months, as mentioned, in last month's sky guide, this period is drawing to a close. While the planet is still separated from the Sun by just over 30° at the beginning of February, from higher northern latitudes, it appears to be sinking lower and lower in the sky with every coming morning. By the time we get to mid-February, Venus will stand just over 7 1/2° above the horizon as the Sun rises. The planet will have faded fractionally to -3.9 magnitude and now displays an 11.6 arc seconds diameter disk. The reason for this night decline is that Venus is drawing away from us on its faster interior orbit around the Sun though will not come to superior conjunction as seen from earth until early June.

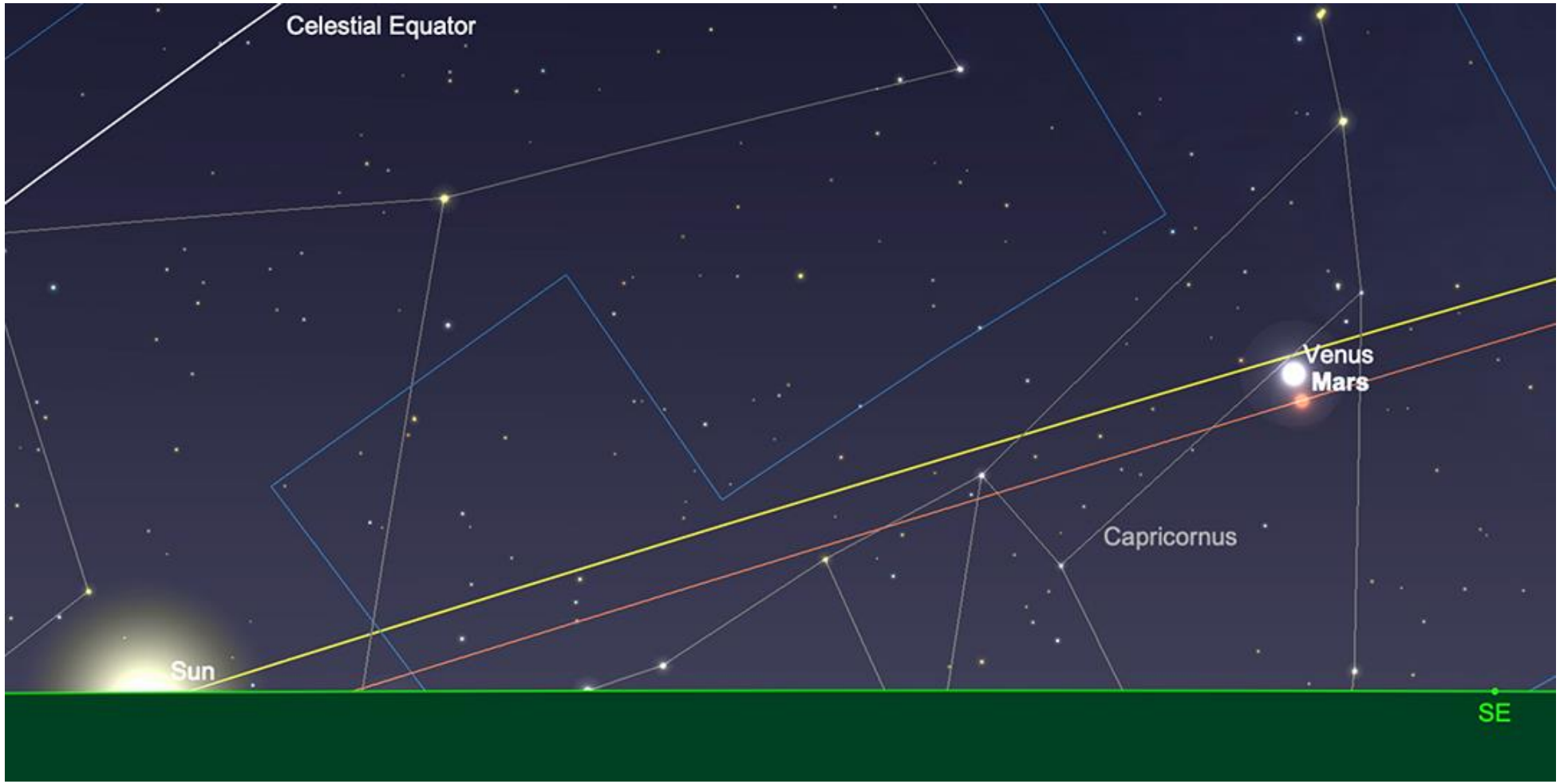
By the time we get to the end of February Venus will be standing Just over 5 1/2° above the horizon at daybreak. It will remain static and brightness at -3.9 magnitude they will now show an 11 second diameter disc. The morning of the 22nd finds Venus and the much fainter Mars separated by just over half a degree in the sky. While it be perfectly possible to see Venus with the naked eye, Mars will be much trickier and will probably require binoculars to see at this point.

Venus, sunrise 1st February. Image created with SkySafari 5 for Mac OS X, ©2010-2016 Simulation Curriculum Corp., skysafariastronomy.com.

Mars

At +1.3 magnitude, showing a four arc second diameter disc, the planet Mars presents less than ideal observational circumstances at the beginning of February. As previously mentioned, like Mercury and Venus, it is a resident of Sagittarius during the early part of the month - though will be very tricky to pick out in the early morning glare, before sunrise. The morning of the 1st sees Mars attain the height of a little over 5 1/2° (from 51° north) as the Sun comes up. Most people will require *extremely* clear skies and binoculars to be able to see

where Mars is at all. Whereas Mercury and Venus are both headed towards the Sun at the beginning of February, Mars has emerged from superior conjunction at the end of 2023 and is steadily drawing away from our parents star, as seen from our perspective here on Earth. By the time we get to mid-month, Mars will be 24 1/2° to the west of the Sun in the morning sky and while it won't be much higher than it appeared at the month's beginning, will be coming into close proximity with the much brighter Venus. The morning of the 22nd is when the two planets are to be found closest together and separated by just over half a degree. As we mentioned previously, while you won't need binoculars to be able to make out Venus, you most certainly will do to be able to see Mars at all – though clouds, atmospheric conditions and catching both planets as early as possible after rising will all play a part in the potential success of observing this conjunction.



Mars and Venus at conjunction, sunrise 22nd February. Image created with SkySafari 5 for Mac OS X, ©2010-2016 Simulation Curriculum Corp., skysafariastronomy.com.

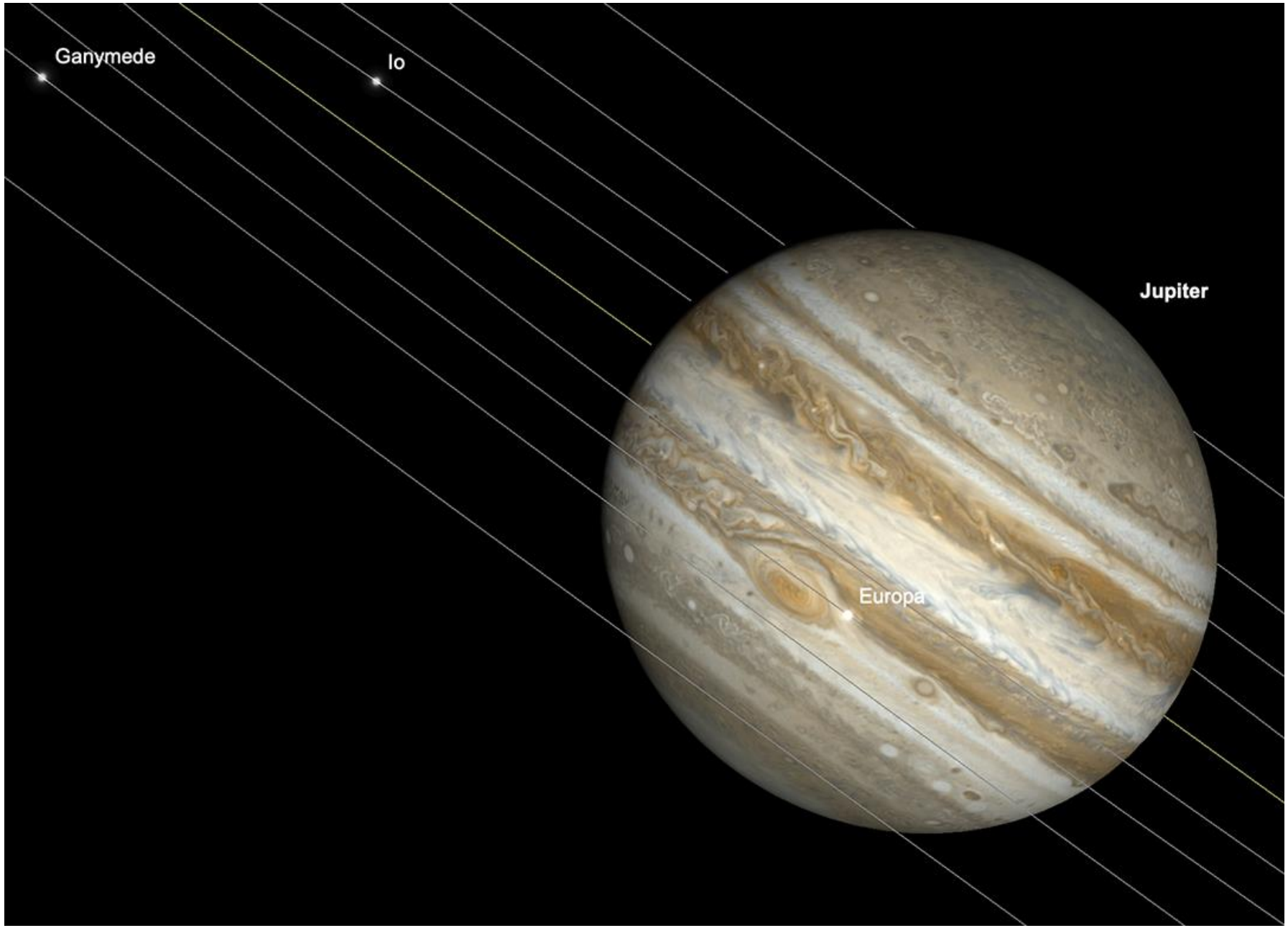
Jupiter

The King of the Planets continues to be extremely well-placed for evening observation during the entirety of February. A resident of Aries, Jupiter will be at -2.4 magnitude and displaying a 39.6 arc second diameter disk at the beginning of the month. It will rise at a little after 10:30 am, transiting at a little before 6 pm and setting at 1 am the following morning.

By the time we get to mid-month, not a huge amount has changed. Jupiter has faded fractionally to -2.3 magnitude and now displays 37.9 arc second diameter disk. At this time of the month, the planet will have transited in the south by the time the Sun goes down and will be standing at around 52 1/2°, above the horizon at Sunset (as observed from 51° north). The 14th and 15th see the Crescent Moon line up alongside Jupiter in Aries - the two forming a very striking pair in the early evening sky.

By the time we get to the end of February, Jupiter will have faded a little further to -2.2 magnitude, now displaying a 36.5 arc second diameter disk. The planet will rise at a little before 9 in the morning, transiting at a little after 4 pm and setting at around 11.30 pm.

As usual, there are some interesting mutual transit events to observe on Jupiter. The evening of the 1st sees a mutual Great Red Spot and Io/Io shadow transit taking place, which peaks at around 5 pm (GMT). Although technically taking place in daylight, there is a mutual GRS and Ganymede transit, which peaks at around 3:30 pm on Feb 4th. There is another GRS and Io transit, which peaks at around 6 pm on the 8th February. The 11th February sees a mutual GRS and Ganymede transit, which peaks at around 5 pm. There's another Io and GRS transit, which peaks at around 7 pm on February 15th. February 22nd sees a mutual GRS IO and Callisto transit, which peaks at around 8:30 pm. February 25th, sees an impressive mutual GRS and Europa transit with moon hanging over the Great Red Spot itself - this peaks at around 5:30 pm.


Ganymede
Io
Jupiter
Europa

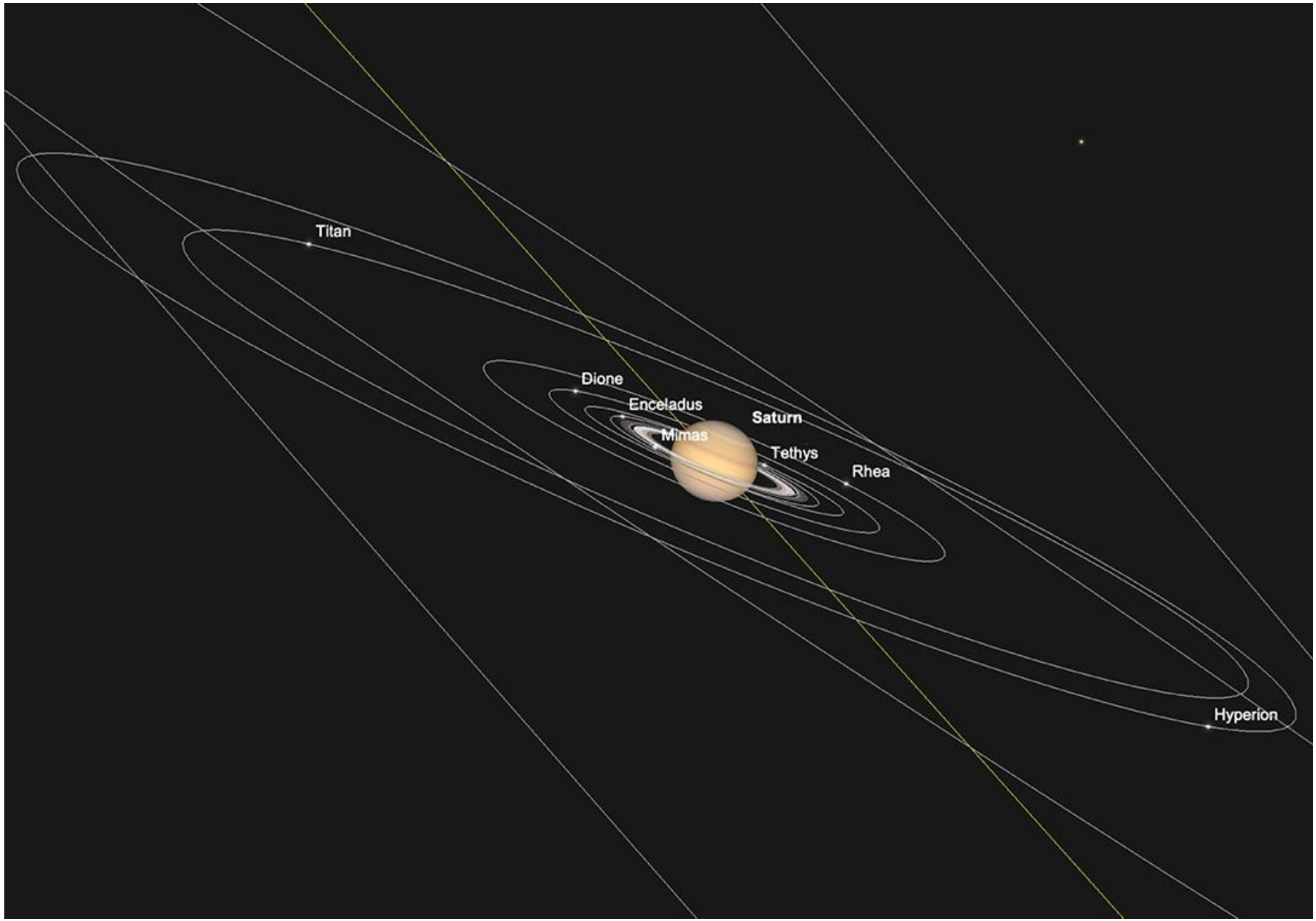
Jupiter, Great Red Spot and Europa Transit, 5.30pm, 25th February. Image created with SkySafari 5 for Mac OS X, ©2010-2016 Simulation Curriculum Corp., skysafariastronomy.com.

Saturn

As mentioned in last month's, sky guide, the window for meaningful observations of Saturn in the evening sky is closing - and indeed, comes to a complete end by the latter part of the month. The 1st finds the planet at a visual magnitude of +1.0, displaying a 15.7 arc second diameter disk. The planet will transit in the south at around 2 pm (GMT) and will set at a little after 7 pm. While it is perfectly possible to observe Saturn once the Sun has set (it stands around 17 1/2° high – as observed from 51° north – in the south-west, in Aquarius), there is only a two hour window for observation in a darkening sky at the beginning of the month. With the Sun setting later and later, as time progresses and Saturn drawing closer to the Sun as the month goes on, evening observations become steadily more difficult.

Mid-February will see Saturn standing around 8° high (from 51° north) in the west as the Sun sets. It will remain at +1.0 magnitude and will start to be difficult to see in the glare of the evening sky. At this point, Saturn will set around hour after the Sun, making it a tricky target at best.

Saturn reaches superior conjunction, the opposing side of the Sun, as observed from Earth, on February 28th and will remain invisible for a period of time until it re-emerges on the morning western side of the Sun.


Titan
Dione
Enceladus
Saturn
Mimas
Tethys
Rhea
Hyperion

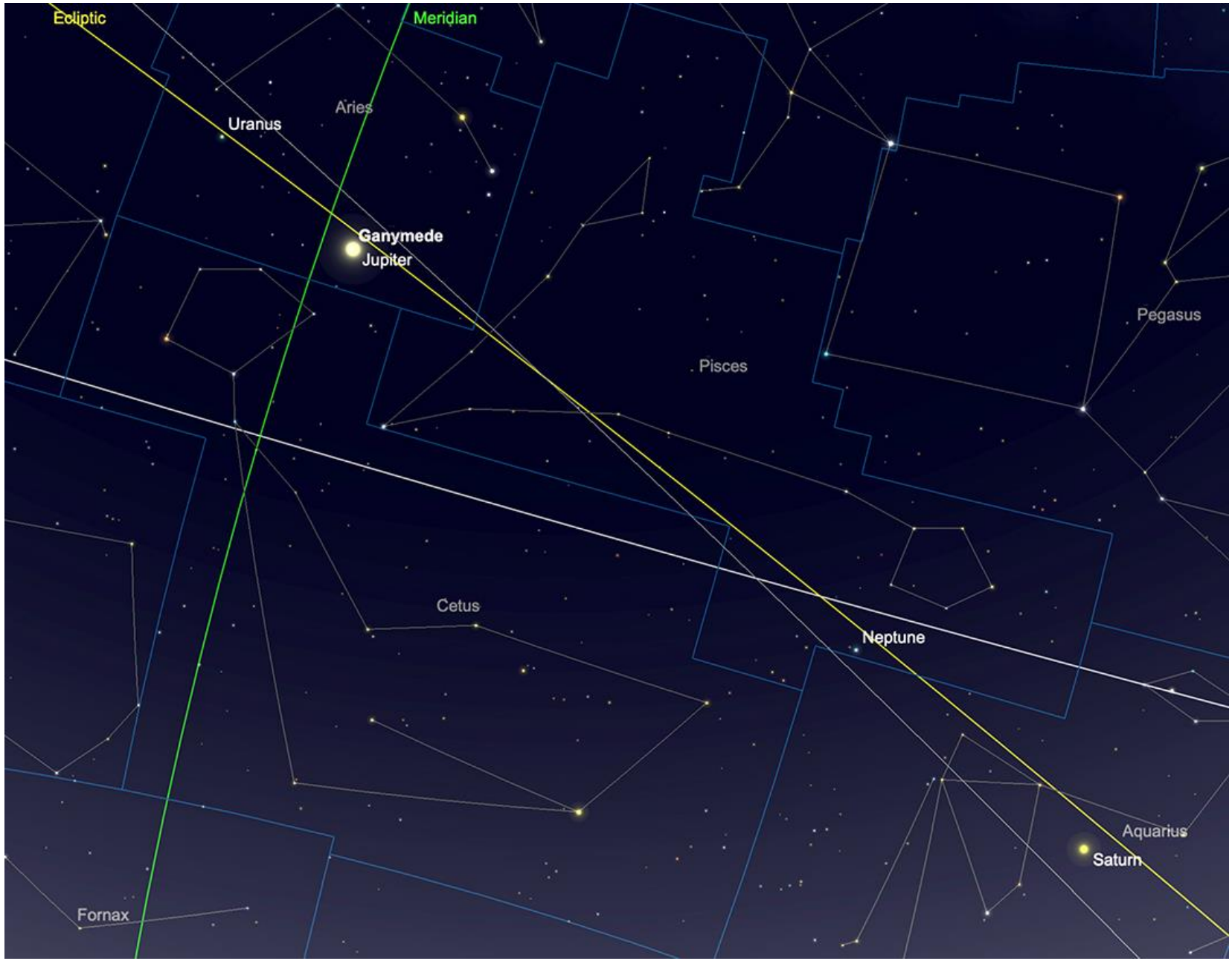
Saturn and inner moons, sunset, 1st February. Image created with SkySafari 5 for Mac OS X, ©2010-2016 Simulation Curriculum Corp., skysafariastronomy.com.

Uranus and Neptune

The outer gas giants are both observable during February, though it is Neptune, which is closer to Saturn in the sky, that presents the larger challenge of the two. Neptune will stand around 31 1/2° high as the sunset on first (as observed from 51° north). At +7.9 magnitude and displaying a tiny 2.2 arc second diameter disk, the solar system's outermost true planet will stand 18 1/2° above the horizon by the time true astronomical darkness has fallen in mid northern latitudes. As the month progresses, the window of observation of Neptune closes to by the time we get to the end of the month, Neptune will sit just 16° from the Sun and will start to become to all intents and purposes, unobservable. Though it will be another 17 days before it reaches superior conjunction in mid-March.

By way of contrast, Uranus is much better situated for evening observation, lying a little to the east of Jupiter in Aries. It is a steady +5.7 magnitude, displaying 3.6 arc second diameter disc at the beginning of the month.

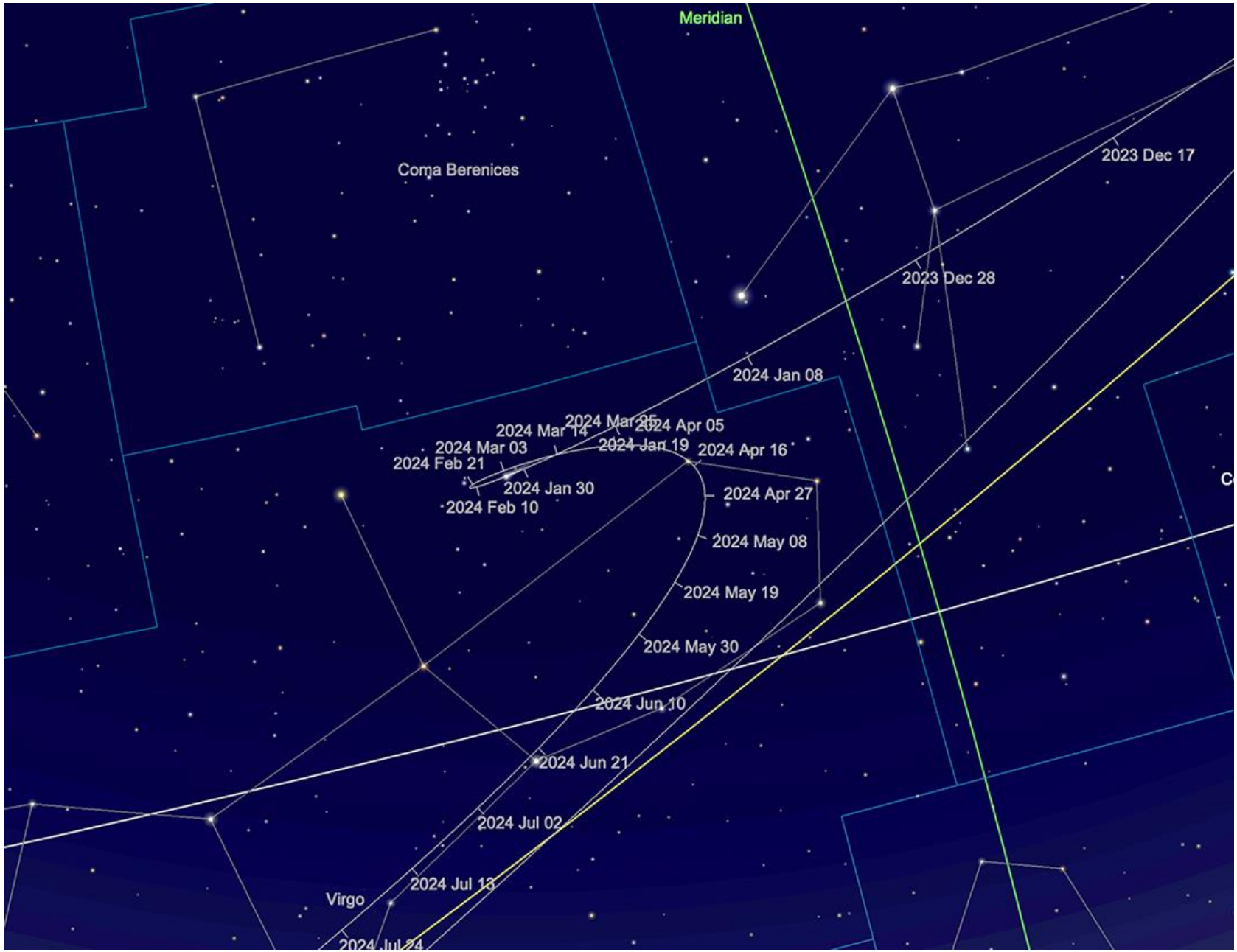
We often remark that Uranus is potentially visible with the naked eye – though only buy those with very keen eyesight, from extremely favourable locations. However, the brilliant Jupiter lying just under 12° to the west of Uranus in the shared constellation of Aries, makes for a useful waypoint to find the mysterious outer world. Those with reasonable size telescopes, using high magnification can in certain circumstances, see albedo features on Uranus. This is a test of observing patience and skill – and also the optics of the Telescope observers are using. Even those with smaller instruments will still see Uranus as a green–grey disc.


Ecliptic
Meridian
Aries
Uranus
Ganymede
Jupiter
Pegasus
Pisces
Cetus
Neptune
Aquarius
Saturn
Fornax

Uranus and Neptune relative positions, February 2023. Image created with SkySafari 5 for Mac OS X, ©2010-2016 Simulation Curriculum Corp., skysafariastronomy.com.

Comets

Periodic comet P/62 Tsuchinshan has been the brightest cometary prospect during the early part of 2024. Peaking at around 8/9th magnitude, it is now fading and won't be particularly prominent, but it will be well- placed for morning observations in Virgo. Once the Moon is out of the way in the early part of the month, the comet should be relatively straightforward to find, tracking slowly through the skies north of the "bowl" of Virgo.


Meridian
Coma Berenices
2023 Dec 17
2023 Dec 28
2024 Jan 08
2024 Mar 25
2024 Apr 05
2024 Mar 14
2024 Jan 19
2024 Apr 16
2024 Mar 03
2024 Feb 21
2024 Jan 30
2024 Feb 10
2024 Apr 27
2024 May 08
2024 May 19
2024 May 30
2024 Jun 10
2024 Jun 21
2024 Jul 02
2024 Jul 13
Virgo
2024 Jul 24

Comet 62P path during February. Image created with SkySafari 5 for Mac OS X, ©2010-2016 Simulation Curriculum Corp., skysafariastronomy.com.

Meteors

Comet 12/P Pons-Brooks has undergone a couple of significant outburst events, increasing brightness beyond predicted levels, While the comet is in a reasonably favourable part of the sky for observation, despite these outbursts, it is still relatively faint at around 8th magnitude at time of writing. Tracking through Cygnus, Lacerta and Andromeda during February, it will still be reasonably high in the sky when astronomical dusk occurs at the beginning of the month.

The comet is still brightening and while definitely the preserve of binoculars and telescopes during February, could reach technical naked eye brightness as it reaches perihelion in April - though naturally, it will be much closer to the Sun when this occurs and more challenging to observe.

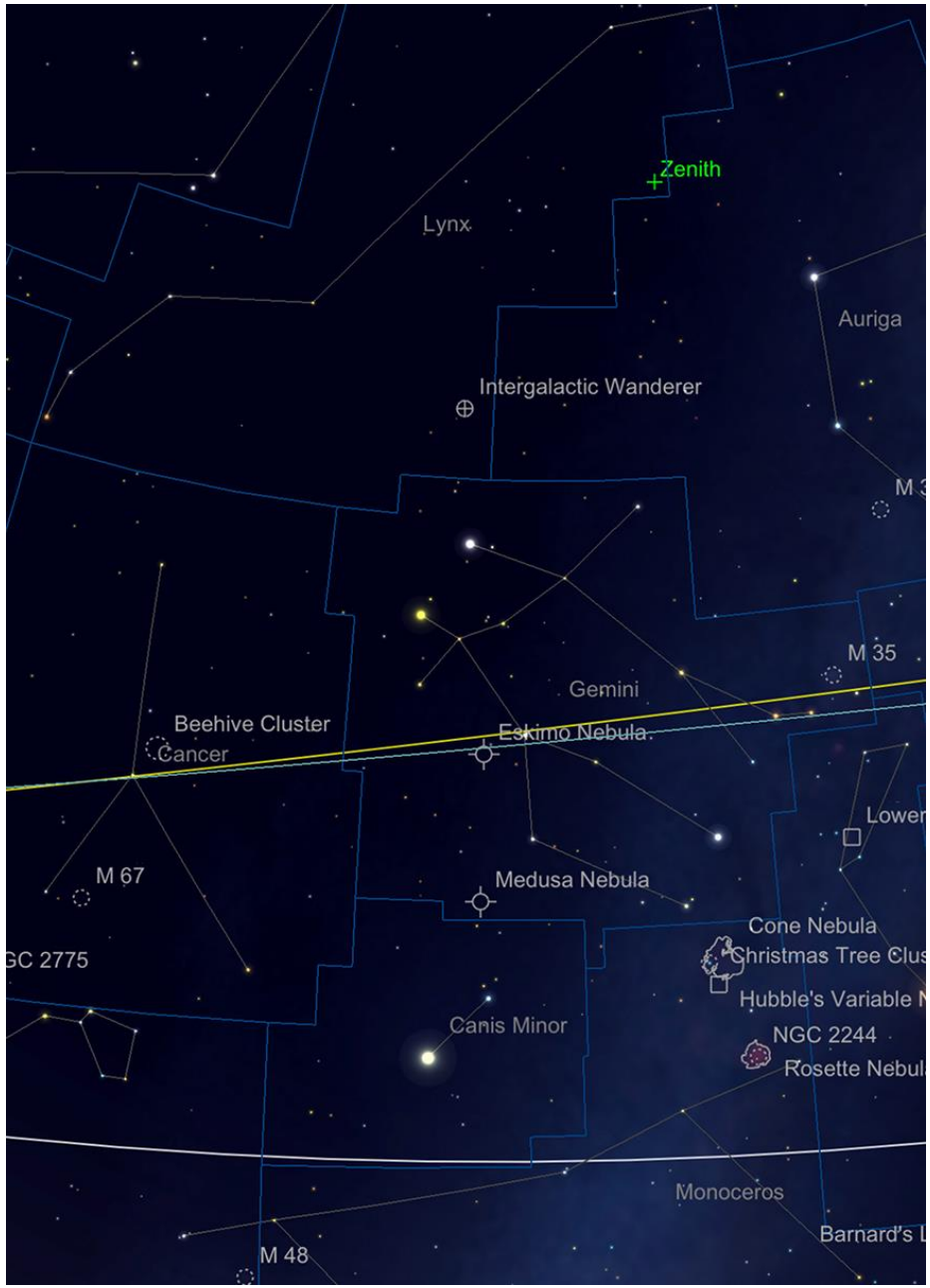

Cepheus
Andromeda
2024 Mar 14
2024 Mar 02
Lacerta
2024 Feb 19
2024 Feb 07
12P/Pons-Brooks
Pegasus
Cygnus
2024 Jan 26
2023 May 07
2023 Apr 25
2024 Jan 14
2023 Apr 13
2024 Jan 02
2023 Apr 01
2023 Mar 20
Vulpecula
2023 Mar 08

12P path during February. Image created with SkySafari 5 for Mac OS X, ©2010-2016 Simulation Curriculum Corp., skysafariastronomy.com.

Meteors

There are no bright or notable meteor showers during February. However, whenever you are out under a clear, reasonably dark sky, there is still the opportunity to see sporadic meteors. These are not necessarily associated with any particular meteor shower and can come from any direction in the sky.

Deep Sky Delights in Canis Minor, Gemini and Lynx


Zenith
Lynx
Auriga
Intergalactic Wanderer
M 35
Gemini
Beehive Cluster
Cancer
Eskimo Nebula
M 67
Medusa Nebula
Cone Nebula
Canis Minor
NGC 2244
Monoceros
M 48

Lynx, Gemini and Canis Minor. Image created with SkySafari 5 for Mac OS X, ©2010-2016 Simulation Curriculum Corp., skysafariastronomy.com.
Canis Minor, the Little Dog, is a compact constellation, notable for its bright star Procyon, which at +0.34 magnitude, is the 8th brightest star in the sky. Procyon is notable as one of the nearest stars to our own solar system, sitting some 11.4 light years away - making it our14th closest stellar neighbour. Procyon is a binary star, whose constituents are the main A star - a white main sequence star of spectral type F5 - and a companion, B - which is a white dwarf (type DA). This companion is a very difficult star to observe, but perturbations in observations of A's proper motion gave it away in 1840 - and by 1861 its orbit had been worked out, yet visual confirmation of B had to wait until a little later. Procyon B was finally observed in 1896 by the Lick 36-Inch Refractor. It remains a very difficult object to observe, even in large telescopes, as its angular separation with the primary star is so small. This and the difference in brightness (+0.4 mag for A +10.8 mag for B), mean it is rarely seen and requires exceptional conditions to even attempt. The two stars are currently separated by 3.9 arc seconds, which roughly approximates to 15 AU actual separation - roughly the distance from the Sun to Uranus.

Procyon is a compound of the Greek for "preceding the dog" - the root meaning of this name comes from the fact that this star was observed to rise just before Sirius, in Canis Major and had great significance to ancient observers because of this. Ancient Arab myth saw the two main stars of both constellations as sisters, the elder of which, Sirius kept over the "river" of the Milky Way, which now runs between them. The younger of the Sisters, Procyon, was afraid and stayed on the original bank and wept. It was these tears that fed the celestial river of the Milky Way and eventually drained into the Nile, causing it to flood. The reappearance of both stars rising in the evening each year precedes this event - and thus the legend was born. Indeed, Beta Canis Minor, to be found to the NW of Procyon is named Gomeisa, which translates from the Arabic "little teary (or bleary) eyed one" - a literal link to this legend

Moving northward into Gemini, we come to the twin stars of Castor and Pollux, Alpha and Beta Geminorum, respectively. Pollux, the Beta star is actually brighter than Castor, the Alpha - and while it has been suggested that when Bayer codified the brightness classification of stars in the 17th century, Castor was the brighter of the two, this is extremely unlikely.

Castor is a fine double star and an easy target in small instruments. Consisting of two stars, A and B, of +2 and +2.9 mag respectively, Castor's elements are currently widening and are separated by 4.5-5 seconds of arc. Castor's double nature was discovered in 1678 by Cassini (he of Saturn's ring division fame, amongst many other discoveries) and bears the distinction of being the first gravitationally bound object to be identified beyond the reaches of the Solar System. Castor A and B's orbit about a mutual gravitational point takes around 467 years to complete, but both stars are also in turn doubles, with much fainter M-class dwarf companions. In addition to these companions there is also present in the system a further pair of gravitationally bound M-class stars. This makes Castor not just a double star, but a sextuple - quite a collection! Sadly, only the primary elements are observable in amateur instruments.

To the westerly reaches of Gemini, is to be found M35. M35 is a very prominent star cluster, at +5 mag, easily picked in small telescopes and binoculars and can also be seen with the naked eye from a reasonable site. Consisting of well in excess of 100 observable stars (mags 6-13th), M35 was first noted by Astronomer Philippe Loys de Cheseaux in 1745. Also included in the Uranographica Britannica by John Bevis in 1750, M35 was catalogued by Messier in 1764, who credited Bevis with its discovery.

Many of the 100+ observable stars are types G and K stars - similar in class to our Sun - though these seem to be of a considerably larger mean size than main sequence. M35 is tentatively aged at about 100 million years - about the age of the nearby M45, (the Pleiades) - though problematically, stellar evolution is thought to be considerably more advanced in the case of M35. Does this mean that M35 is in fact older, or are the Pleiades actually younger? Further observation and theories will be needed to explain this anomaly.

In the background sky to M35 lies the fainter (+8 mag) open cluster NGC2158, though this is nearly six times further away than M35's 2800 light years. In addition to this, there is also the yet fainter and more compact IC2157 cluster (+8.4 mag) - making this an extremely rich area for sweeping with virtually any type of optical aid.

M35 & NGC2158. Image credit: Kerin Smith

Drifting eastward, 2 1/3 degrees east of the star Wasat (Delta Geminorum) is the fabulous Eskimo Nebula, NGC2392. This Planetary Nebula supposedly resembles an Eskimo's head, surrounded by the fur of an Arctic Parka hood. A reasonably compact 0.8 arc minute across (about 2/3rds the size of the Ring Nebula, M57), the Eskimo is only +9.19 mag, though its compact size makes its surface brightness quite high and it takes magnification well. Discovered by William Herschel in 1787, it is perhaps surprising that it wasn't noticed by earlier observers - though this is most likely down to its small size. OIII filters reveal more of the two stages of the object: its tenuous outer shell and the gleaming, brighter interior. Larger instruments reveal more of the complex structure of the internal part of the Eskimo - its radial double shell of expanding gasses and fine dust blown by cosmic winds form its central star. This central star shines at +10.5 mag and is relatively easy to spot in most instruments. The nebula is thought to lie at 2800-3000 light years distance.

The Eskimo Nebula, Hubble Image. Image Credit: NASA/ESA. Public Domain.

Further south from the Eskimo is another older, larger and fainter object - The Medusa Nebula (Abel 21). Whereas the Eskimo is small and comparatively bright, the Medusa is large - at 10 arc minutes across it is a third the diameter of the Full Moon. Telescopes of 8-inches + aperture, coupled with a good OIII filter and a dark site will be needed to see the Medusa. Although listed as being +10.19 mag, this is spread out over a significant area of sky, so it is in long duration astrophotography that the wonders of the Medusa really start to reveal themselves. A modest aperture telescope will be needed and a sturdy equatorial mount, capable of being autoguided, will be needed to attempt to image this object. Images reveal the serpent-like tendrils of nebulosity that give this mysterious object its name - its namesake Medusa being the Gorgon who had snakes for hair in classical Greek mythology. The stare of Medusa was reputed to turn people to stone, though staring at this nebula through a large telescope will be a much more pleasant experience… The Medusa lies about half the distance from us as the Eskimo Nebula - 1500 light years and is around 4 light years in diameter. Opinions were divided on the true nature of the Medusa: George Abel, its discoverer thought it to be an old planetary nebula, whereas many considered its irregular nature to indicate it was a supernova remnant. Narrowband imaging has revealed the true extent of the Medusa's helical hourglass figure - making it much more likely to be, as Abel initially suggested, a planetary nebula.

The Medula Nebula. Image Credit: Joel Schuman, Mt Lemmon Observatory, Creative Commons.

Drifting northward, we come to the large, sparce constellation of Lynx, which contains a couple of interesting objects for Deep Sky enthusiasts.

The first object of note is NGC2419, the Intergalactic Wanderer, a rather dim globular cluster, which lies some way away from the regular haunt of the globular - the shell around the central part of the Milky Way. The Intergalactic Wanderer was nicknamed as such, due to the fact it used to be thought as an extra-galactic cluster, wandering through space. Observations of its motion have revealed it is not - it is indeed a satellite of our galaxy, much as the other major globulars are - in NGC2419's case, just a very outlying one. At 270,000-300,000 light years from us, it is almost twice as distant as the Large Magellanic Cloud, but intrinsically very luminous. It almost matches the King of Globular clusters, Omega Centauri, for true brightness, but appears as a rather feeble +10 mag object at just 1.8 arc minutes across, simply because it is so far away. Larger telescopes will be needed to see much of it, though it is possible to pick out in smaller instruments from dark locations.

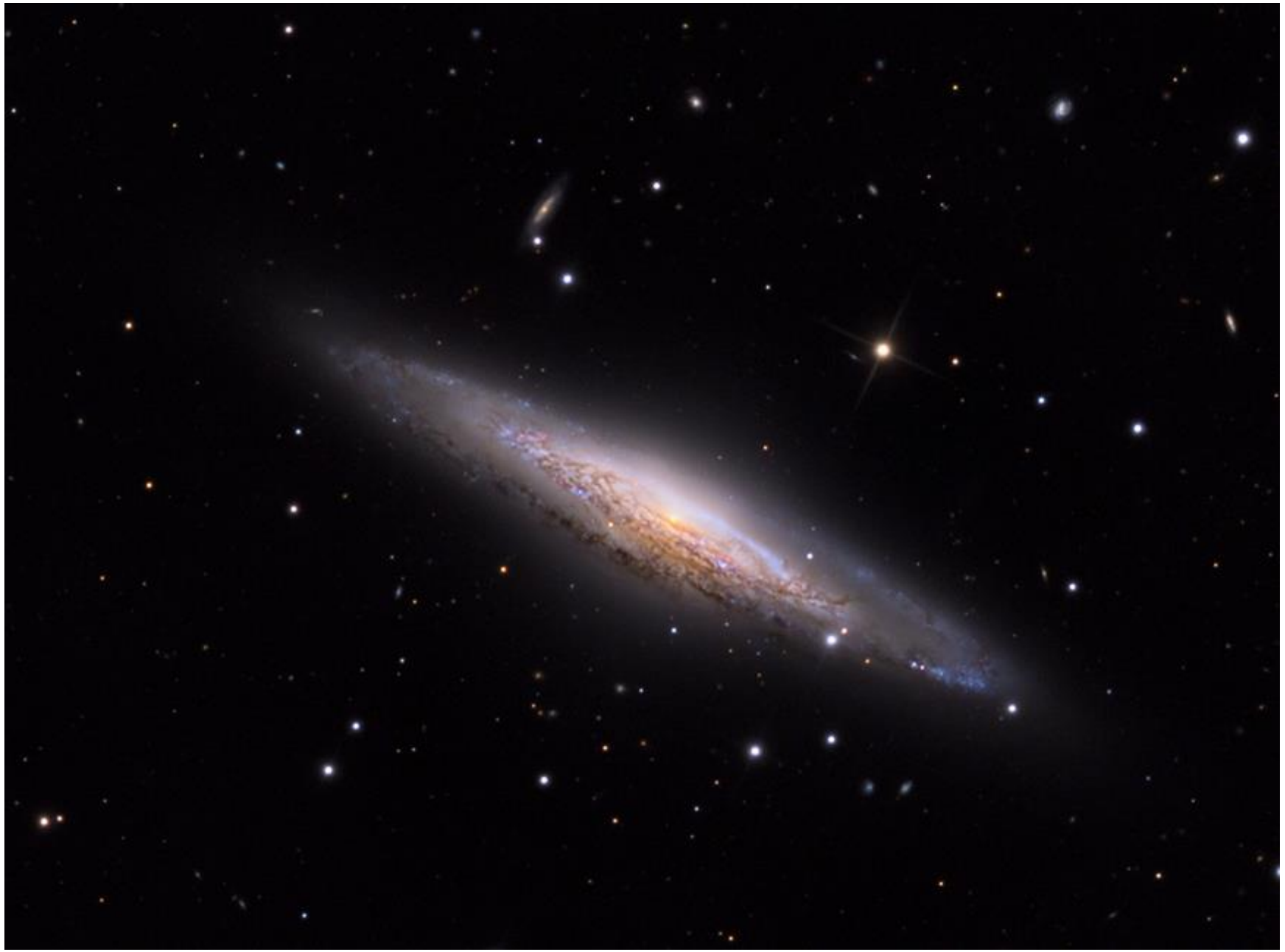
The Intergalactic Wanderer, NGC2419. Image Credit: Adam Block/Mount Lemmon SkyCenter/University of Arizona - Caelum Observatory Creative Commons

Lynx, whilst obscure to the naked eye observer, also contains a couple of galaxies of note, NGC2537, otherwise known as the Bear Paw Galaxy and NGC2683, The UFO Galaxy.

The Bear Paw is a barred spiral is located roughly in the centre of Lynx, 9 1/2 degrees to the north of the Intergalactic Wanderer and some 14 3/4 degrees to the NW of NGC2683 - giving a good idea how large Lynx is as a constellation. The Bear Paw is a very compact object, being some 1.7 x1.5 minutes of arc across - and although officially classed as a +11.69 mag object has a high surface brightness because of its diminutive area and is rather more visible than many objects of similar listed magnitude. The Bear Paw is so-called due to the areas of brightness which form a patchy pattern, which somewhat resemble the paw print of an animal. Whether it is that of a Bear or not, we leave you to draw your own conclusions... NGC2537 is thought to lie some 22 million light years away from our own Milky Way Galaxy.

The Bear Paw Galaxy, NGC2537. Image created with SkySafari 5 for Mac OS X, ©2010-2016 Simulation Curriculum Corp., skysafariastronomy.com.

Discovered in 1788 by William Herschel, NGC2683, otherwise known as the UFO Galaxy (for obvious reasons), is a spectacular object which lies almost edge on to our line of sight on Earth and subsequently has a very reasonable surface brightness. Covering an area of sky 9.3 x 2.1 arc minutes, NGC2683 is easily seen in large telescopes, whereas smaller scopes will just resolve its bright elongated core. The foreshortened spiral arms of the UFO galaxy are laced with dust lanes, one of the major examples of this practically bisects the core from our perspective.



The UFO Galaxy, NGC2683. Image Credit: Adam Block/Mount Lemmon SkyCenter/University of Arizona - Caelum Observatory Creative Commons

It is thought that NGC2683 is reasonably close to the Milky Way group, from a cosmic perspective, though different sources list its distance as a widely variable 16-33 million light years away. The UFO Galaxy's core is often remarked upon as appearing yellow - indeed, it seems that there are a larger population of older yellow and red stars in this galaxy than average and that there is little star-forming activity taking place within the system. Compared to our galaxy, though less massive and luminous, NGC2683 boasts twice the number of globular clusters.

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