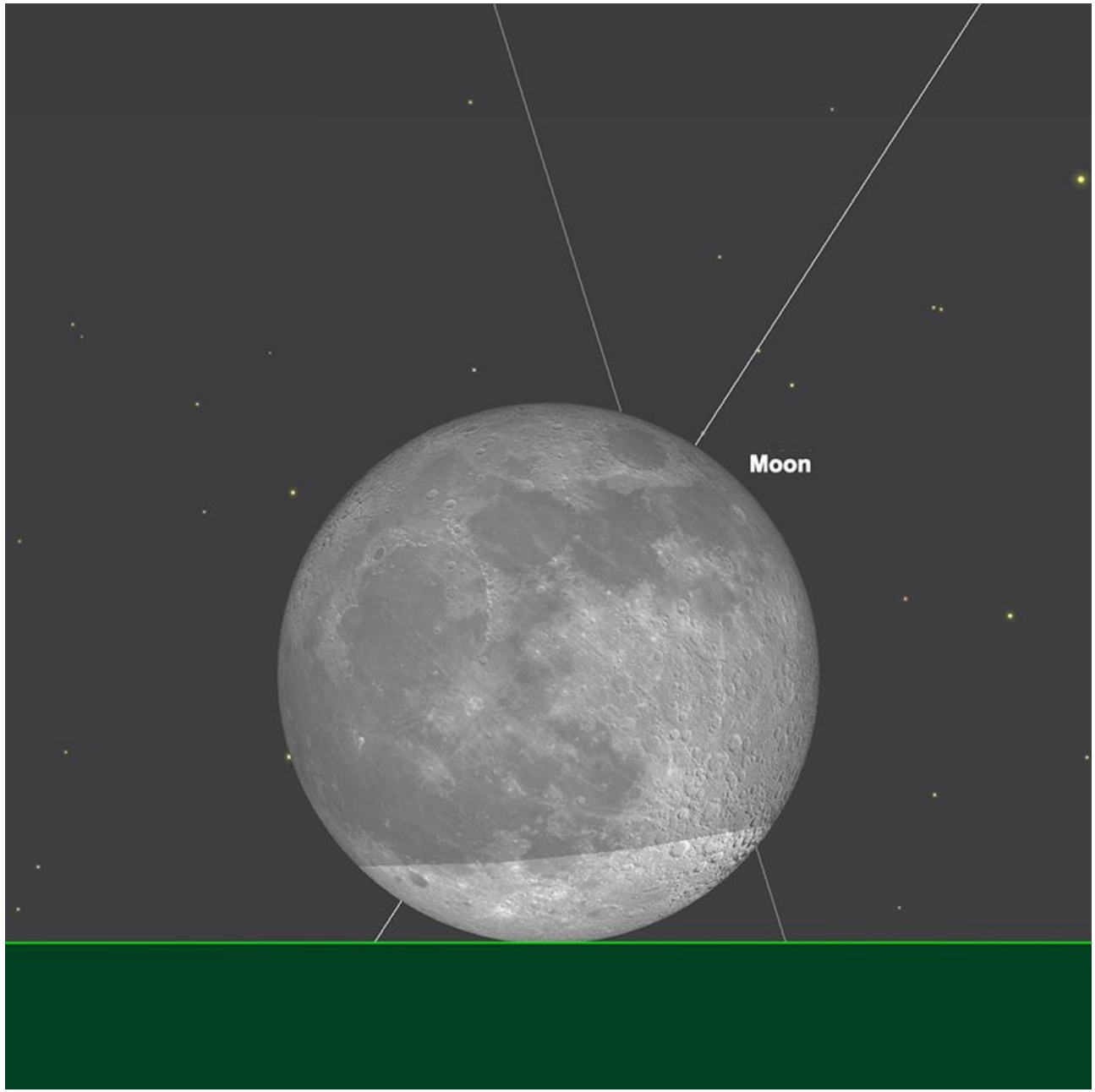
TELESCOPE HOUSE MAY 2023 SKY GUIDE

The Solar System

The Moon

We start May with the Moon at 85% illuminated Gibbous phase in Virgo. Rising at a little before 4pm (BST) and transiting at a little before 10.30pm, it will be around for much of the night. The Moon will take a few days to cross the expanse of Virgo, expanding its phase as it does, until it reaches Full, having crossed over the border into neighbouring Libra. This Full Moon coincides with a lunar penumbral eclipse this month. Sadly, this particular eclipse is not optimally timed for observations from Europe - favouring Australasia, East Asia and the Eastern Pacific, China and the Indian subcontinent. The Moon will rise eclipsed from large parts of Europe and Africa, though the extreme west of Europe (including the British Isles) will only catch the absolute tail-end of the event at moonrise. Still, if you have a decent eastern horizon, it will be interesting to see how deep the eclipse appears. Some penumbral eclipses are barely noticeable, while others are actually quite deep (though never as much as a total lunar eclipse). The depth of a penumbral eclipse can give some indication of the health (or otherwise) of the Earth's atmosphere - with eclipses just after major volcanic eruptions having been noted as especially dark. The whole event will be over by just before 10pm (BST), so while it may be a challenge to observe from certain areas, this eclipse does not fall in the wee small hours, so will at least be observable at a clement hour of the evening.


Moon

The Moon rising eclipsed, 8.49pm (BST), 5th May. Image created with SkySafari 5 for Mac OS X, ©2010-2016 Simulation Curriculum Corp., skysafariastronomy.com.

After the potential excitement of the eclipse, the Moon continues its journey through the southern part of the Ecliptic, waning as it does. The Moon reaches Last Quarter phase on the 12th, when it can be found in Capricornus and can be found sliding to the south of Saturn in the morning sky on the mornings of the 13th and 14th.

On the morning of the 17th, the tiny sliver of the 7% illuminated Crescent Moon joins Jupiter on the Pisces/Aries borders as the Sun rises. Two days later, the Moon joins the Sun in Taurus and becomes New. This would normally be the time we would point out the advantage of this time of the month for deep sky imaging and observations, but the latter part of May, finds many higher northern latitude observers already in a state of permanent astronomical twilight, which curtails the quality of observations and imaging of fainter targets somewhat.

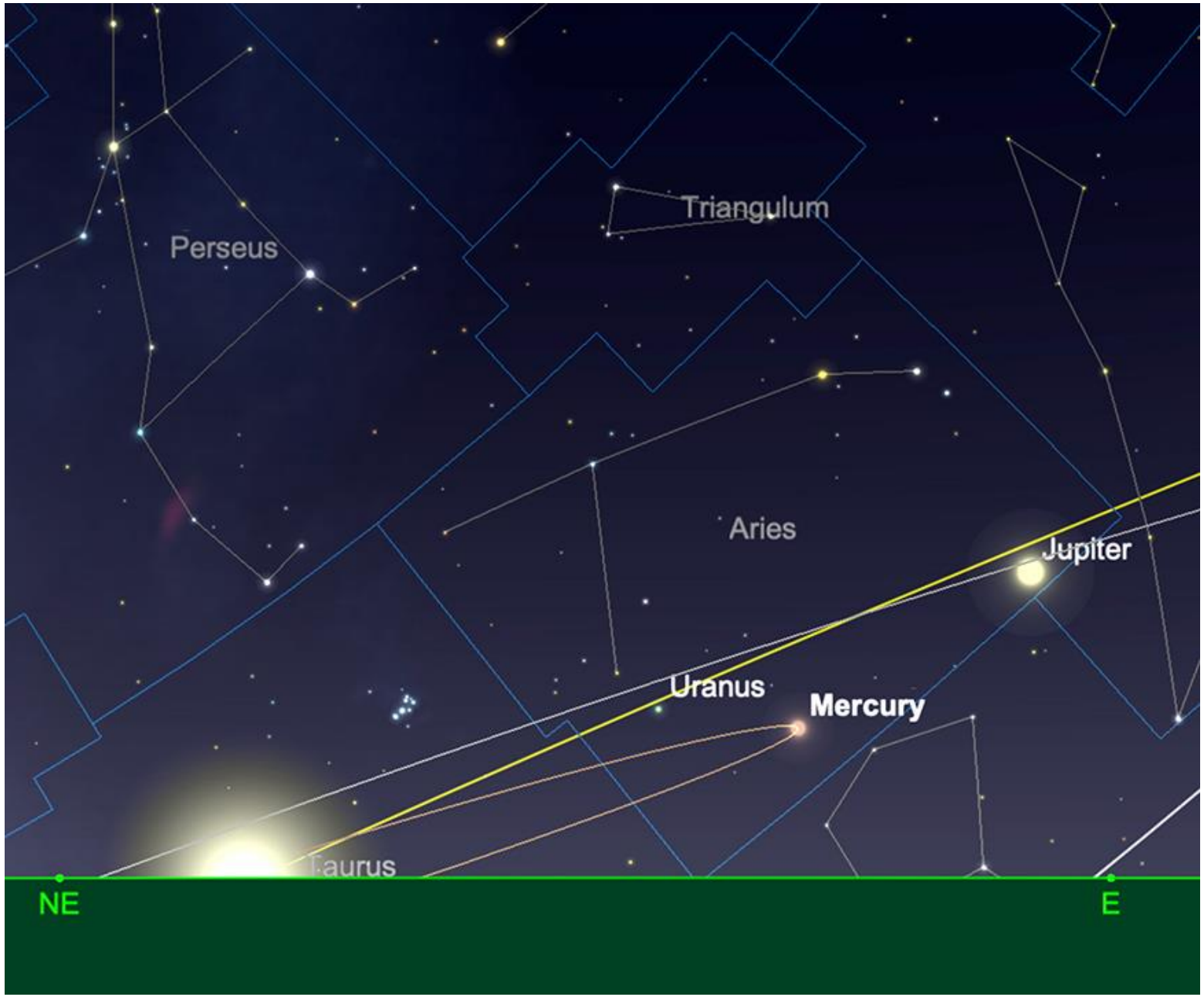
The Moon emerges from New phase as an evening crescent and passes upwards from Taurus into Gemini, where it joins Venus in the twilight sky on the evening of the 23rd. The two will form a very attractive pairing as the Sun goes down, separated from each other by under 3 1/2 degrees. The following evening, the Moon will be found to the north of the very much fainter Mars - the two bodies separated by just over 3 degrees. The Moon is still quite high in the evening sky at crescent phase at this time of year, though a little less pronounced than it has been of recent months.

The Moon reaches First Quarter phase on 27th May, while a resident of Leo. It will transit at just after 7:30 pm (from 51° N), and will set at 2:30, the following morning.
The Moon crosses over the border from Leo into neighbouring Virgo on 29th May, where it will remain for the rest of the month. May ends on the 31st, with the Moon at 87% illuminated Waxing Gibbous phase.

Mercury

The innermost planet begins May a couple of days before Inferior Conjunction (where in inner planet is found between the Earth and the Sun) and as such will be unobservable into the re-emerges from the solar glare.

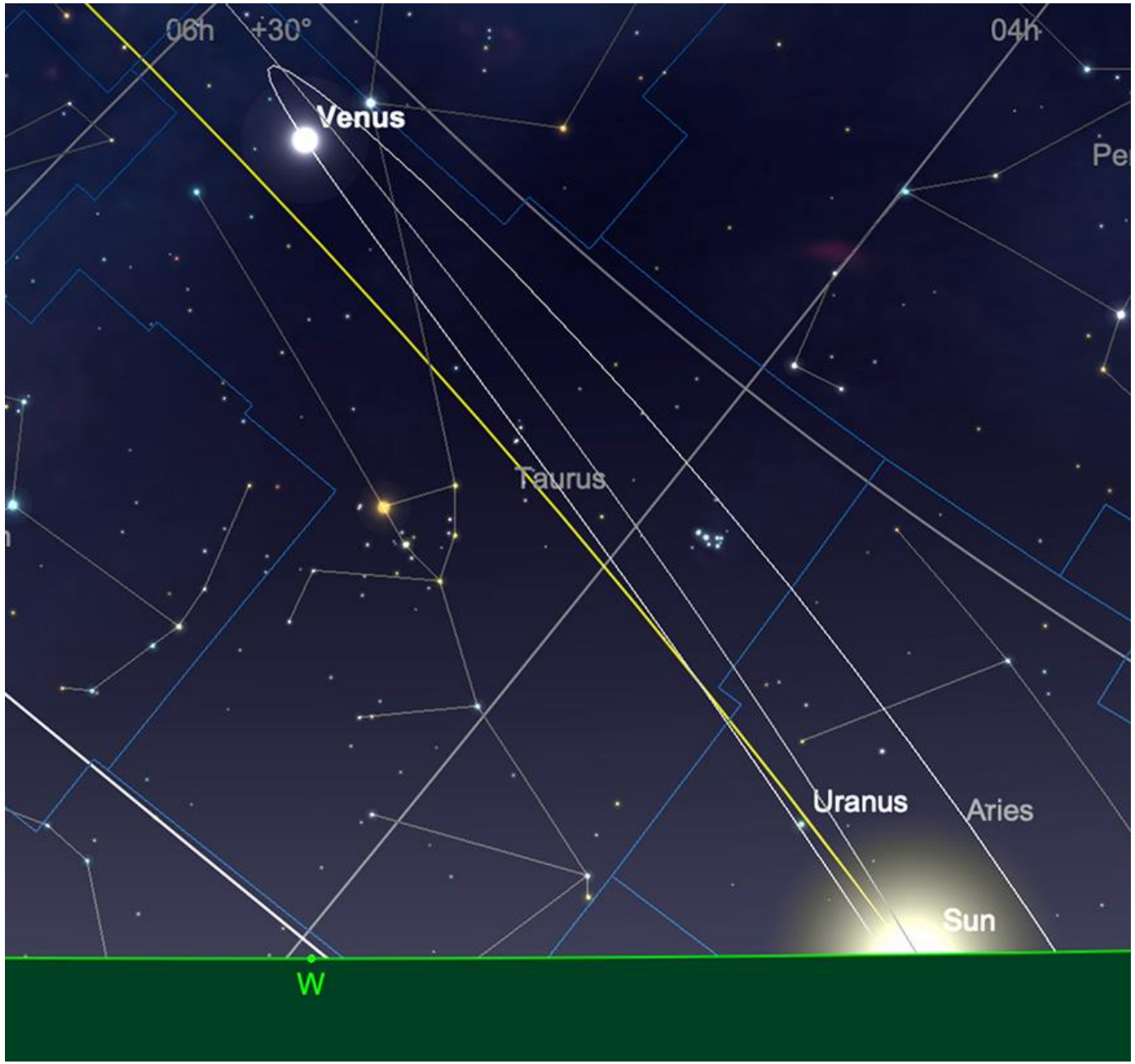
By mid-month, Mercury has increased its angular distance from the Sun to just over 19°, though is still showing a very slight 15% illuminated phase and as such will remain relatively faint at +1.9 magnitude. Compounding this from northern climes, is the fact that Mercury is rising in a very shallow-rising part of the Ecliptic, as seen from temperate northern hemisphere locations, such as Europe. Even after Mercury reaches maximum western elongation on 29th May, the planet is still poorly-placed for observation in the morning. By the end of May, the planet will stand just over 6° in elevation at sunrise (from 51° north), so will be a very challenging target from the temperate northern hemisphere. By this point, it will have brightened somewhat to +0.4 magnitude, but will be much better-seen from the equatorial and tropical regions of the planet. The nearby Jupiter will act as a reasonable guide for the area of sky Mercury is to be found in in late May, but observers will need a very clear easterly horizon and good atmospheric conditions to be able to make a positive identification of the much fainter inner planet, as it remains stubbornly low in the morning sky.


Triangulum
Perseus
Aries
Jupiter
Uranus
Mercury
NE
E

Mercury at sunrise, 31st May. Image created with SkySafari 5 for Mac OS X, ©2010-2016 Simulation Curriculum Corp., skysafariastronomy.com.

Venus

Whereas Mercury is disappointing during May, Venus is anything but. The 1st of May finds Venus standing at over 34° high (from 51° north) at sunset, almost due west, in the constellation of Taurus. At this point in time, the planet will be a dazzling -4.1 magnitude, displaying a 66% illuminated, 17 arc second diameter disc.


06h
+30°
04h
Venus
Taurus
Uranus
Aries
Sun
W

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

Venus is heading towards maximum eastern elongations, which it will reach in early June. The upshot of this is that Venus' phase will start to rapidly diminish over the next few weeks and will shrink further as the planet rounds its orbit towards us here on Earth. The planet's phase should be fairly easy to spot in smaller, telescopes and binoculars and observers are encouraged to keep a track of the changes over the next month, or so. Observing Venus can be a challenge, as it is so bright and condensed as an object. For those with telescopes, we would always recommend filtration, either neutral density filters, which help dial down the glare from the planet and can be useful in revealing its phase in more detail, or coloured filters Such as the Number 47 Minus Violet filter, which those with larger telescopes can use to try and glimpse the elusive cloud detail of Venus, at higher magnifications.

By the time we get to mid-May, Venus will have increased its brightness fractionally, to -4.2 magnitude. The planet will also have increased its diameter to 19 arc seconds, and now displays a phase of 59% illumination. Venus will sit at an altitude of 33° above the horizon at sunset on the evening of the 15th (again, from 51° north). As Venus has now crested over the very highest point in the northern ecliptic, it will slowly start to lose altitude in the evening sky. This will only be a gradual process, but the early part of May really represents the best opportunity this year for those of us in the northern hemisphere to observe Venus at its highest, so readers are encouraged to make the most of this.

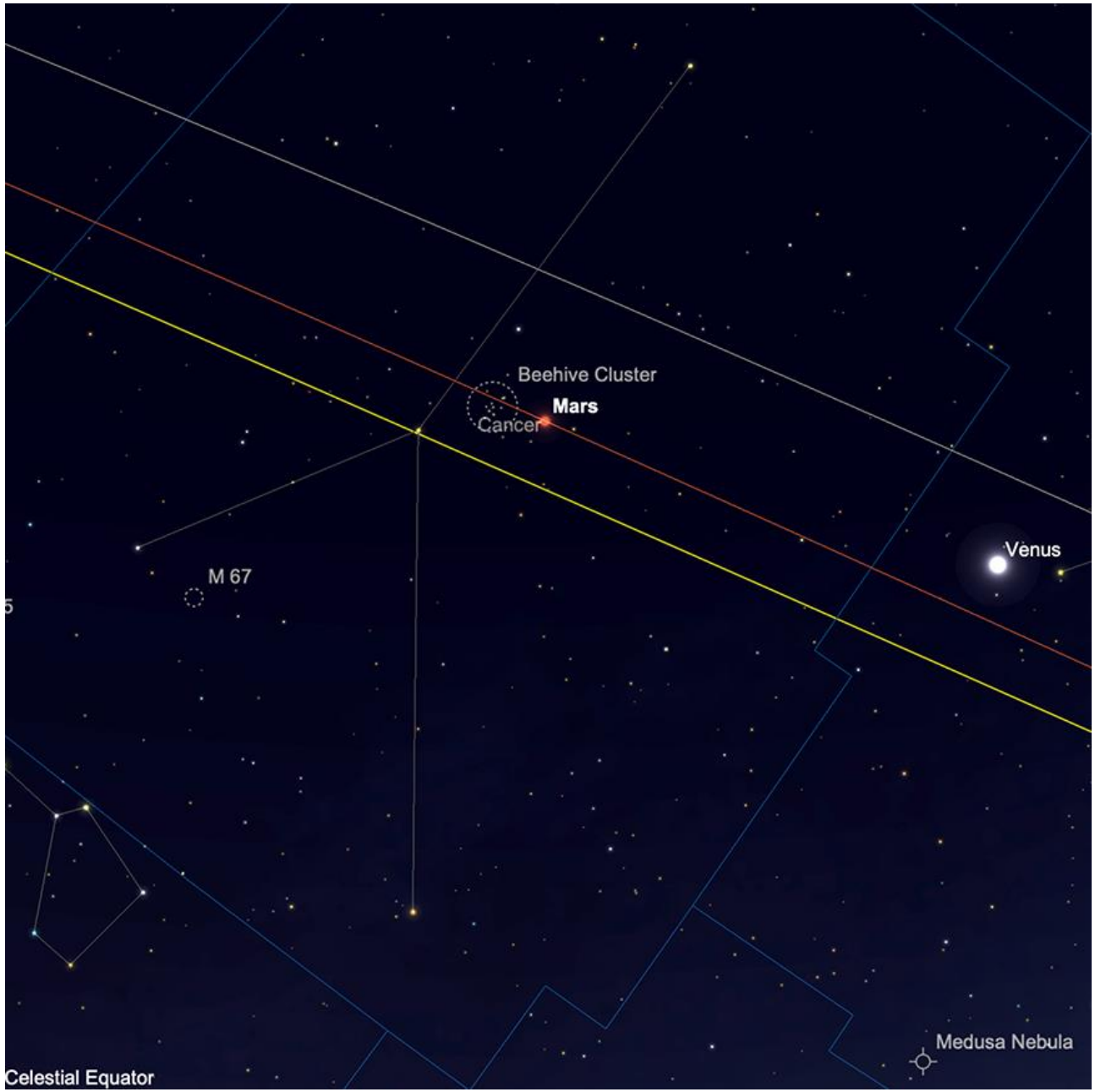
The end of May finds Venus in the constellation of Gemini. It has fractionally increased its brightness yet again, to -4.3 magnitude and now displays a 22.6 arc second diameter disc, which is illuminated by just under 52%. The planet will sit at just over 29 1/2° above the horizon at sunset (from 51° north).

Mars

Where Venus is brilliant and increasing its brightness, Mars, which is to be found a little to the east in Gemini at the month's beginning, is anything but. At +1.4 magnitude, on the evening of the 1st of May, the Red Planet is around the same brightness as Castor, and Pollux, twin stars of Gemini, which are to be found a little to the north of the planet. At just 5.3 arc seconds diameter, Mars is now a very diminutive target and it will require a large telescope and significant magnification to show any surface detail on its tiny disc.

By the middle of May, Mars has dimmed fractionally to +1.5 magnitude and now displays a 5 arc second diameter disc. The planet will be at very reasonable separation from the horizon, as seen from the temperate northern hemisphere. Mid-month sees Mars sitting at just under 43° elevation at sunset (as seen from 51° north). However, despite being well-situated, the planet remains a poor target and the trend is most definitely downwards as far as Mars is concerned.

By the time we get to the end of May, Mars has dimmed yet further to +1.6 magnitude and now displays a 4.7 arc second diameter disc. The brighter Venus can be used as a signpost to where Mars now lies, 11 degrees to the east, in the constellation of Cancer. However, Venus is a much more attractive target at present and observers are advised to concentrate on this. Mars ends May in central Cancer, sitting just half a degree to the west of the famous Beehive Cluster, M44. The two objects will be easily visible in the same binocular field in the early evening.


Beehive Cluster
Mars
Cancer
Venus
M 67
Medusa Nebula
Celestial Equator

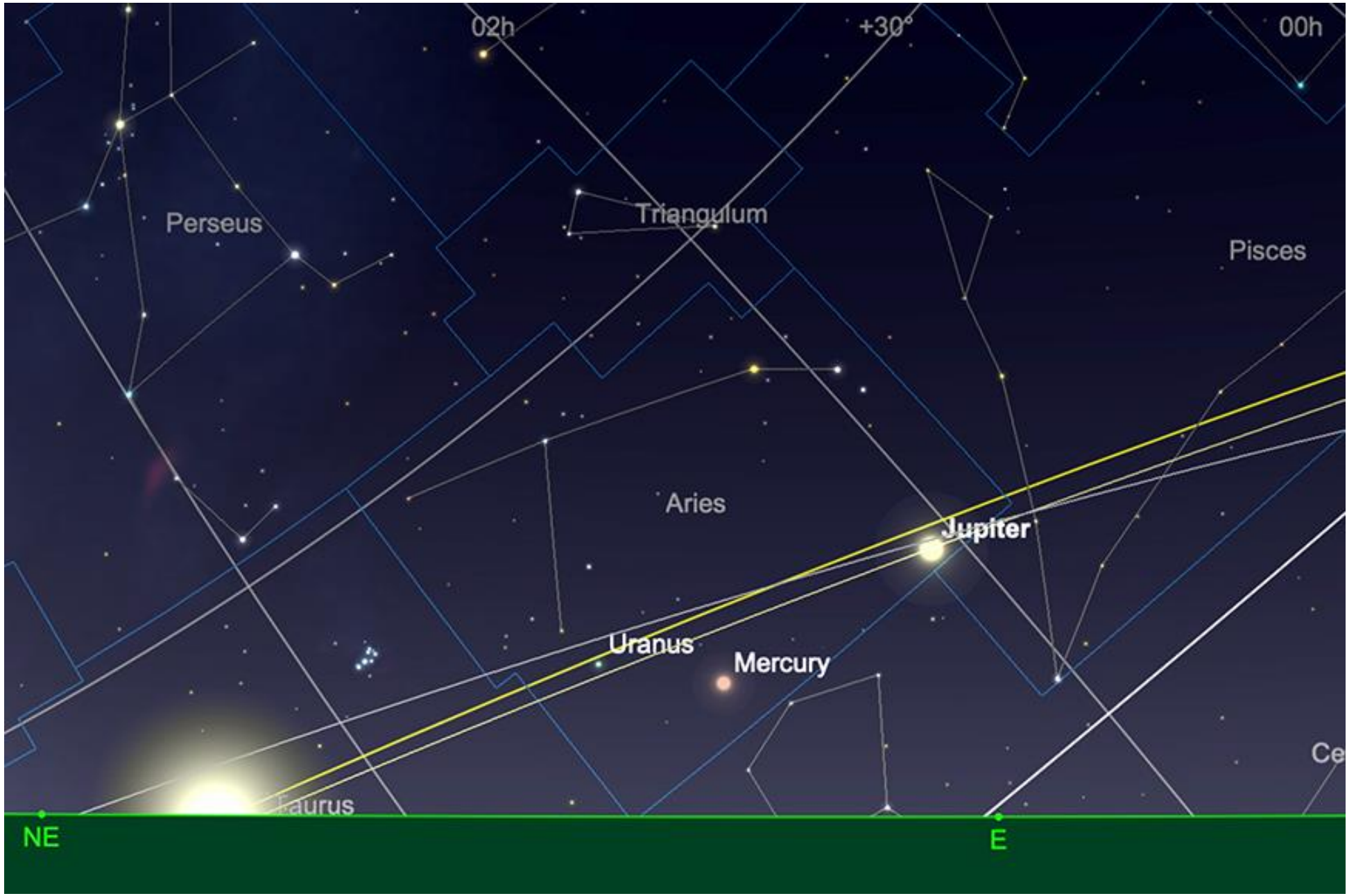
Mars and the Beehive Cluster, 31st May. Image created with SkySafari 5 for Mac OS X, ©2010-2016 Simulation Curriculum Corp., skysafariastronomy.com.

Jupiter

Now emerging from April's Superior Conjunction, Jupiter is a morning target in Pisces at the beginning of May. On the morning of the 1st, Jupiter displays a -2.0 magnitude, 33.3 arc second diameter disc. As seen from 51° North, the planet only rises to an altitude of just under 3° as the Sun rises, so while separated from our parent star by over 14 degrees, will remain a very tricky, if not impossible object to observe from higher northern latitudes.

Moving on a couple of weeks to mid-month, we find Jupiter having increased its angular separation from the Sun to a little over 24°. The planet is also fractionally brighter, at -2.1 magnitude and is now showing a 33.7 arc second diameter disc. It will sit a little higher in the sky at sunrise, at an elevation of just under 7° high (as seen from 51° north).

By the time we make it to the end of May, Jupiter will have crossed over the border from Pisces into neighbouring Aries. The planet will remain static in brightness at -2.1 magnitude, though will have increased its altitude significantly from the month's beginning, to sit at around 12 1/2° elevation (again, as observed from 51° north), as the Sun rises. Jupiter will sit at a separation of just over 36° from the Sun on the morning of the 31st. While the planet has some way to go in terms of gaining altitude, to reach the point where meaningful higher power observations can be easily made, from now on, Jupiter should be relatively easily-observable in telescopes (albeit with a limited observing window). However, observers are encouraged to keep magnifications sensible, so as to avoid the inevitable disruption that atmospheric conditions will wreak upon Jovian observations. Another couple of months and Jupiter will be in a much better position in the morning sky for northern hemisphere observations.


02h
+30°
00h
Perseus
Triangulum
Pisces
Aries
Jupiter
Uranus
Mercury
Taurus
NE
E

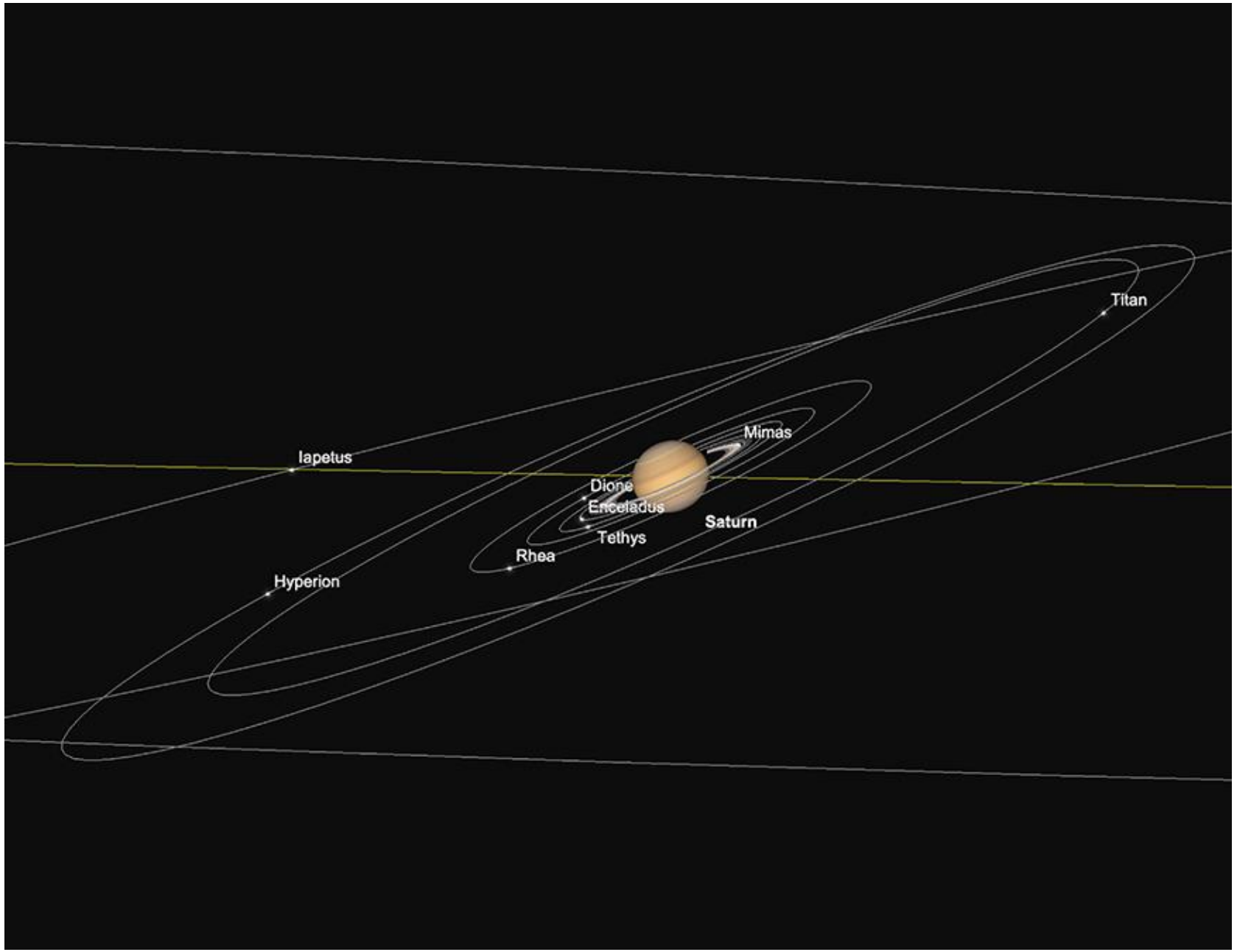
Jupiter, sunrise, 31st May. Image created with SkySafari 5 for Mac OS X, ©2010-2016 Simulation Curriculum Corp., skysafariastronomy.com.

Saturn

Saturn sits much further to the west of the Sun in the morning sky than its neighbour Jupiter and subsequently, rises much earlier and attains a greater height above the horizon before sunrise. The morning of the 1st May finds Saturn sitting a little under 15° elevation in the Southeast, displaying a +1.0 magnitude, 16.3 arc second diameter disc.

By the time we get to mid-month, not much is changed as for Saturn is concerned. The planet is still the same brightness as it was at the month's beginning, though has increased its angular diameter to 16.7 arc seconds. The planet will rise a little after 3am and will attain a height of just over 18 1/2 degrees above the horizon (from 51° North), as the Sun rises.

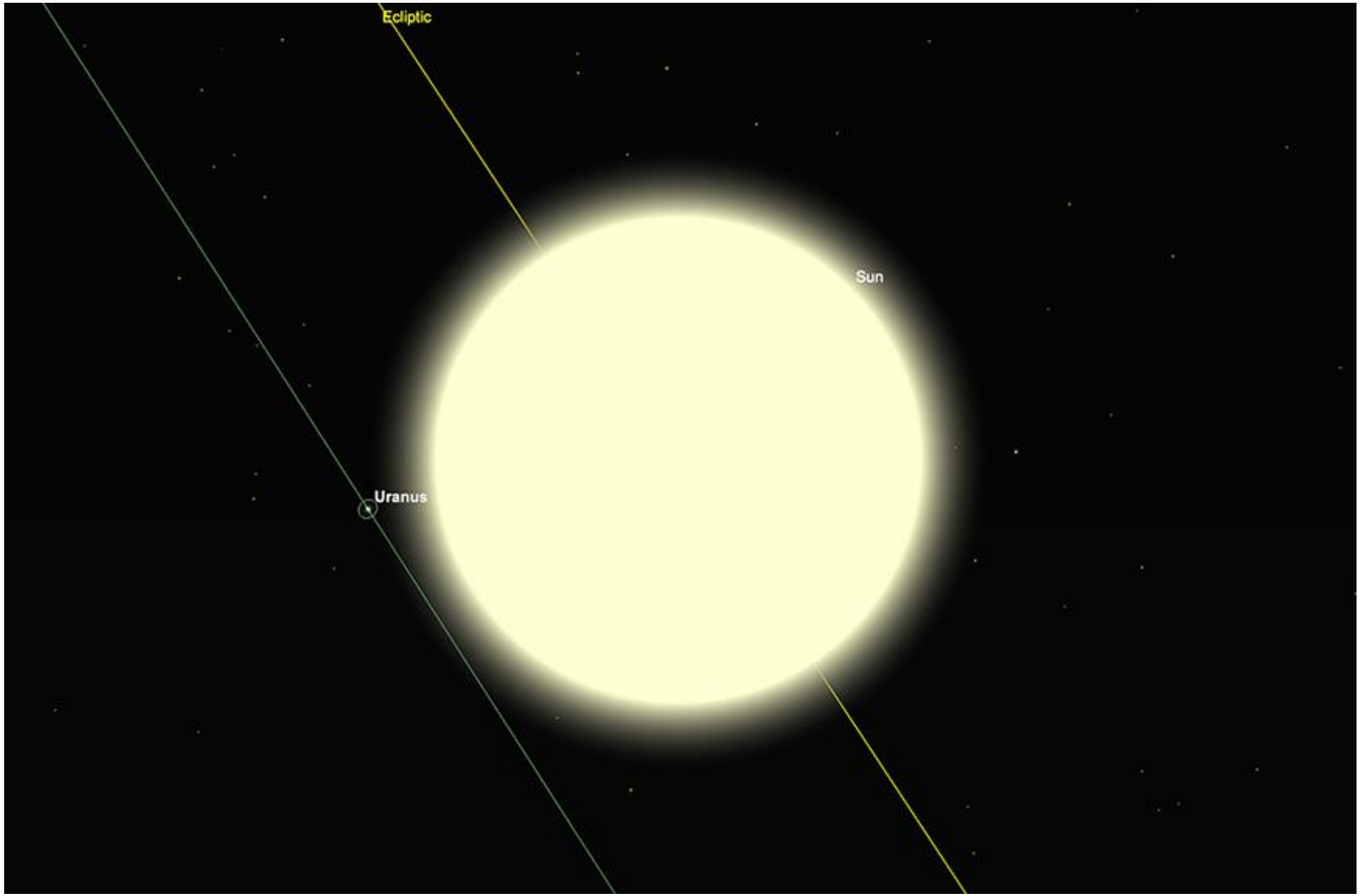
By the time we get to the end of May, Saturn has increased its diameter to 17.1 arc seconds, though remains static in brightness at +1.0. It will stand over 24 degrees above the horizon in the SE as the Sun comes up, as seen from 51° North. Those turning a telescope towards Saturn and picking it up again after its recent Superior Conjunction and subsequent disappearance from view, will notice that its ring system is definitely closing and is noticeably thinner than it has appeared in recent years. This is all part of the natural cycle of how Saturn's rings appear from Earth. In early 2025, we will cross Saturn's ring plane and they will briefly disappear from view.


Titan
Mimas
Iapetus
Dione
Enceladus
Saturn
Tethys
Rhea
Hyperion

Saturn and inner moons, sunrise, 31st May. Image created with SkySafari 5 for Mac OS X, ©2010-2016 Simulation Curriculum Corp., skysafariastronomy.com.

Uranus and Neptune

Uranus will reach superior conjunction on 9th May, and will subsequently be unobservable for most of the month, eventually re-emerging as a morning target. However, it will be sometime after the end of May before it has increased its angular separation from the Sun and can be easily observed again.


Ecliptic
Sun
Uranus

Uranus at Superior Conjunction, 9th May. Image created with SkySafari 5 for Mac OS X, ©2010-2016 Simulation Curriculum Corp., skysafariastronomy.com.

Neptune, being further west in the ecliptic has already been through the process of Superior Conjunction, which it reached in March. A resident of Pisces, it is now closer to being observable again. However, the permanent astronomical twilight at this time of year and the altitude of the planet in the morning still does not favour meaningful observation. It will be a little while yet before Neptune is in a better position to be observed from the temperate northern hemisphere.

Comets

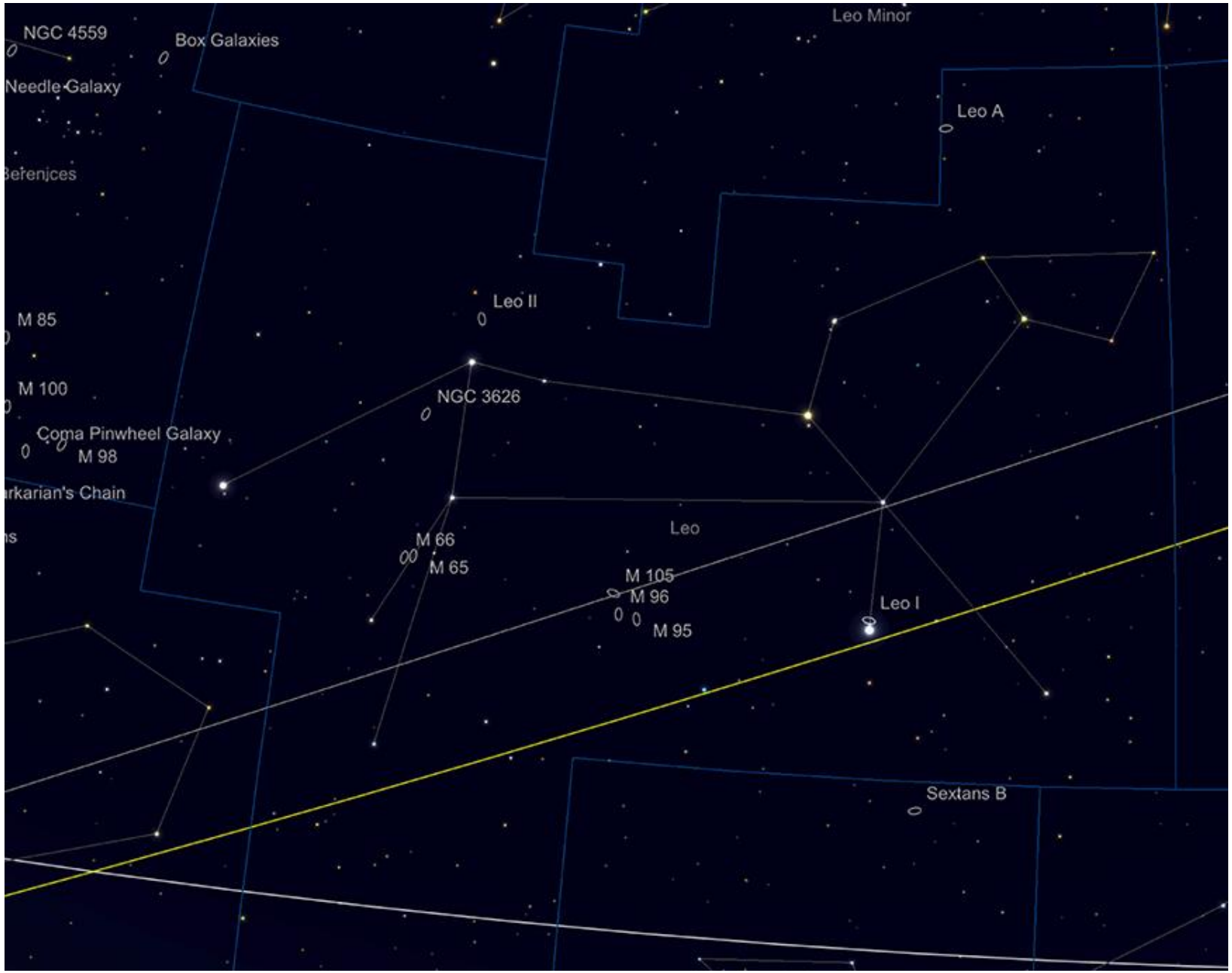
There are no comets brighter than 9th/10th magnitude at present. The brightest of these, C/2017, K2 (PanSTARRS), is fading and is most definitely a southern hemispherical observer's object. The next comet which shows reasonable potential is C/2019 T4 (Atlas), though it will be a good few months before it reaches maximum brightness in the late summer, by which time it will be only observable from the southern hemisphere. While we have potential delights of C/2023 A3 to come, this is still a considerable distance from the Sun and the comet has a long way to go on its journey before reaching the inner solar system. Further observations are needed to be able to determine if it is really going to be a naked eye spectacle, or just a decent binocular comet.

Meteors

Reaching their upper range of activity in early May, the Eta Aquariids meteor shower peaks on the night of May 5th/6th this year. While the zenith hourly rate of this shower - around 50 at maximum, this year - is not as high as some of the major annual showers, this event would be worth staying up for (or at least attempting to record photographically), where it not for the pernicious influence of the Moon, the perennial upsetter of meteor shower observation, which will be at 100% phase - Full Moon - and hanging around all night in Virgo. Sadly, this makes this year's Eta Aquariids, somewhat of a washout. The very brightest meteors will cut through moonlight and scattered glare, but in truth, there will be better opportunities for observing meteor showers this year.

This shower is seeded by the famous Halley's Comet, whose debris is quite fast-moving, resulting in bright, energetic meteors. The best of these will be visible, but this year's shower won't be a classic by any means.

Deep Sky Delights: Galaxy Season Part 2 - Leo


NGC 4559
Box Galaxies
Needle Galaxy
Leo Minor
Leo A
Leo II
M 85
M 100
NGC 3626
Coma Pinwheel Galaxy
M 98
M 66
M 65
Leo
M 105
M 96
M 95
Leo I
Sextans B

The galaxy-rich constellation of Leo. Image created with SkySafari 5 for Mac OS X, ©2010-2016 Simulation Curriculum Corp., skysafariastronomy.com.

When gazing towards Leo, there can be little doubt we are now in the part of the year known as "Galaxy Season", as this area of sky is littered with them. Galaxy hunting is not solely the preserve of those with the supposedly prerequisite "Big Dob". Although to see much in the way of detail in many of the objects mentioned this month, aperture will certainly help, a good deal of these can be seen with smaller telescopes and large binoculars from decent, dark observing sites. However, patience and care will be needed to pick the faint glow of these fantastically distant objects from the background sky. However, to discern structure in many of the galaxies we will cover requires one of two things: a large telescope of at least 10-inches of aperture (preferably more), or reliance on accurate, autoguided long-duration exposure astrophotography. To appreciate the true beauty of these massive, yet seemingly delicate structures, you need one or the other - though their location and observation (yet again), will largely be down to sky conditions - with galaxies, the darker the better! Careful, gentle filtration will help with galaxy observation from more light polluted environments, but narrowband filters like the OIII, H-Alpha and others will rarely help as much for galaxy observation as they do for nebulous objects (except when a galaxy has particular emission regions, peculiar to these wavelengths of light). A good Skyglow, CLS or broader "Deep Sky" filter will help increase the contrast of an object against the background sky, without cutting off many of the useful wavelengths that the galaxy is transmitting on. A galaxy's spectral output is much broader than typical nebulosity, so gentle filtration produces the best results.

The first object on the list for observation is one of the most difficult to see, but probably one of the simplest to locate and the closest, galaxy-wise - the Leo I galaxy. Leo I sits a third of a degree north of Regulus, Alpha Leonis - the principle star of Leo (though some publications rate it as closer). Leo I is an elliptical galaxy of reasonable angular size (12 x 8.5 arc minutes) and of photographic magnitude +11.15. Leo I is a one of its furthest satellite galaxies of our own Milky Way, lying just over 800,000 light years from us. Leo I was first detected in the Palomar Sky Survey, taken with the observatory's 48-inch Schmidt Camera in 1950. Leo I's visual magnitude is deemed to be around +9.8 mag, which should put it easily within the reach of amateur instruments. However, Leo I's easy-to-find location is also its potential downfall from a visual perspective: it lies so close to Regulus that the neighbouring galaxy is almost drowned out by its glare. There are reports of the galaxy being found in 10-12-inch class telescopes, but it is very likely that an observer would have to place Regulus just outside of the field of view, using appropriate magnification, in order to see our galaxy's most distant satellite at all. Leo I will appear as a misty oval of light, with no great discernible structure even in large telescopes. The galaxy appears to have no attendant globular clusters and contains few stars of advanced metallicity, meaning the stellar population is comparatively young - probably little over twice the age of the Sun. The galaxy is surrounded by a halo of attendant gas, which it may (or may not) have formed from.

This unusual object will be a challenge, but if found, you will be witnessing the furthest reaches of our own galaxy's orbital sphere of influence and in all likelihood its youngest attendant.

Roughly nine degrees east of Leo I lie a spectacular grouping of galaxies: the Messier objects M95, 96 and 105 (and its attendant galaxies NGC 3377 and NGC3384). This group occupies a compact area of sky (about 3 x 1.5 degrees of sky) and can be found halfway on a line drawn between Regulus and Iota Leonis - one of the rear legs of Leo. Of the three galaxies, the beautiful M95 is the most Westerly. M95 is a barred spiral galaxy, placed almost face-on from our perspective. M95 was discovered - along with the nearby M96 - in 1781, by Pierre Mechain. Messier catalogued both objects less than a week after Mechain found them. At +9.69 mag, M95 is a relatively easy, compact object at 7.4 x 5 arc minutes in dimension. Lying 31 million light years away from us, it is the closest of its group by a million light years. As M95 is a barred spiral, it is likely that most observers with decent-sized telescopes will see the galaxy's central core region as a slightly elongated object, surrounded by a fainter haze of its arms. Long duration images of the system reveal its structure in all its glory - the two massive spiral arms shedding stars into further outlying feathered lesser arms. If, as it has been suggested, our own galaxy is a barred spiral, it could look much akin to M95 to outside observers, though our galaxy may have more in the way of outlying spiral structure in its arms.


M95 : M96 Galaxies
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M95 and M96 by Mark Blundell. Image reproduced by kind permission.

Next door to M95 by a mere two-thirds of a degree is another lovely spiral, M96. A similar angular size to its neighbour, it is slightly brighter at +9.3 mag. In contrast to M95, M96 appears to be dustier, but has a more compact core. It is often listed as a double barred spiral. This double barring, along with the wide spread of its arms and the galaxy's dusty nature make its spiral structure less well-defined than its neighbour M95's. Similar in angular size to M95, at 7.8 x 5.2 arc minutes, M96 appears as a more compact 3 x 5 arc minute object in a 10-12-inch-class telescope, its bright central core surrounded by a fainter ring of starlight which make up its arms. The reason it also appears slightly brighter than M95 in some listings is that the galaxy is considerably foreshortened in comparison to its neighbour. Some listings incline it as much as 53 degrees to our line of site, whereas M96 is also recorded as being at a less extreme 35 degrees! Whichever listing is correct, M96 is a great target for visual and photographic observations.

Just under a degree to the north of M96 sits the grouping of M105 and the nearby NGC 3384 and 3389. Of the three, M105 is the dominant and brightest at +9.3 mag. It is often described as the analogue of Elliptical galaxies - and as such is much studied. M105 is a later addition to the Messier list (added by 20th Century Astronomer Helen Sawyer Hogg), though discovered in 1781 by Mechain, Charles Messier did not confirm its discovery at the time and it was left out of his original listing. It's difficult to understand why Messier chose not to include M105, as it is prominent enough - a misty patch of light in small telescopes and a condensed glow, with a healthy-size core in larger instruments. Elliptical galaxies, but their nature are not generally thought to be as beautiful or as characterful as their spiral counterparts, but this should not put observers off trying to locate M105. Indeed, many Astronomers now consider Elliptical galaxies to be the ultimate evolution of galaxial structure after two spirals merge - the end result of the Milky Way's potential meeting with M31 may well result in a similar structure to M105. A clue to M105's past is that it contains few areas of star formation and a reasonably elderly stellar population, suggesting it is a more advanced galaxy in terms of age.

The second Elliptical in this close trio, NGC 3384, 7 arc minutes to the NE of M105, is almost as conspicuous as its neighbour at +9.89 mag, but is presented to us at a much more oblique angle. Appearing elongated, even in small telescopes, larger instruments can reveal a clear, bright core and the misty halo of NGC 3384's outer regions. So easy is it in comparison and proximity to M105, it is difficult to believe that Mechain and Messier overlooked it. William Herschel discovered it in 1784. Although listed as the catch-all description of an elliptical galaxy, the more precise description of NGC 3384 should be as a Lenticular. The galaxy has revealed a central bar structure in long duration astrophotography and like M105 shows an older star population than the mean average.

NGC 3389 is the most challenging of this trio to observe - whereas the two previously-mentioned ellipticals are bright and their structure obvious, NGC3389 is a whole two magnitudes fainter than either at +11.89 mag and much more the visual preserve of larger telescopes. NGC 3389 is a spiral galaxy and shows a much more blue, energetic cast in long duration images (maybe somewhat

reminiscent of a mini M33). This is largely due to its disassociation with the group - although close in angular proximity to M105 and NGC 3384, NGC 3389 actually lies round 64 million light years distance, roughly twice that of its neighbours and has no connection to them. Instruments of the 10-inch+ range will show it, though it will be a struggle to observe in less powerful scopes. It appears as a pale misty patch to the SE of NGC 3384 and little detail is to be expected in most telescopes, though those owning larger instruments have reported a certain textured "lumpiness" to its appearance in the eyepiece.

At low power (sub x40) it is possible to squeeze M96, M105 and NGC3384 in the same eyepiece, as it is also possible to do with M95 and M96 - though owners of low focal ratio reflectors should be advised that it is often inadvisable to attempt to use such low magnifications, lest the shadow of the secondary mirror interfere with the view.

Leaving this group of galaxies aside, we return to the aforementioned Iota Leonis and trace a line back up one of the rear "legs" of Leo, until we come across the +3.34 mag star Chertan or Theta Leonis (sometimes known as Chort or Coxa). Tracing the line back to Iota Leonis, stop approximately halfway: here is location of the next group of galaxies, the M65 Triplet, more commonly known simply as the Leo Triplet. This triplet contains the Messier objects M65 and 66 and the elongated NGC 3628. All three objects are spiral structures, though unsurprisingly they present themselves to us in differing aspects.

M65 and 66 were discovered by Charles Messier in 1780, though their discovery is often misattributed to Mechain. Of the two, M65 is slightly smaller and fainter at + 9.30 mag. It has a bright central bulge and pretty luminous arms. Presented at a significant incline to our perspective, occupying an area of 9.8 x 2.9 arc minutes, M64 also features noticeable dusky lanes within its arms, though these may well be made more prominent by foreshortening. M66, on the other hand, is a broader barred spiral, brighter than its neighbour at +8.9 mag and taking up more area in the sky at 9.1 x 4.1 arc minutes. M66's spiral arms are not as regular as M65's, which seems to suggest total interactions with neighbouring NGC 3628 in the past, as does a displaced cloud of hydrogen, which has moved outwards, from its arms and now sits, motionless, around its galactic halo.


Leo Triplet M65, M66 & NGC3628
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The Leo Triplet: M65, M66 and NGC3628, by Mark Blundell. Image reproduced by kind permission.

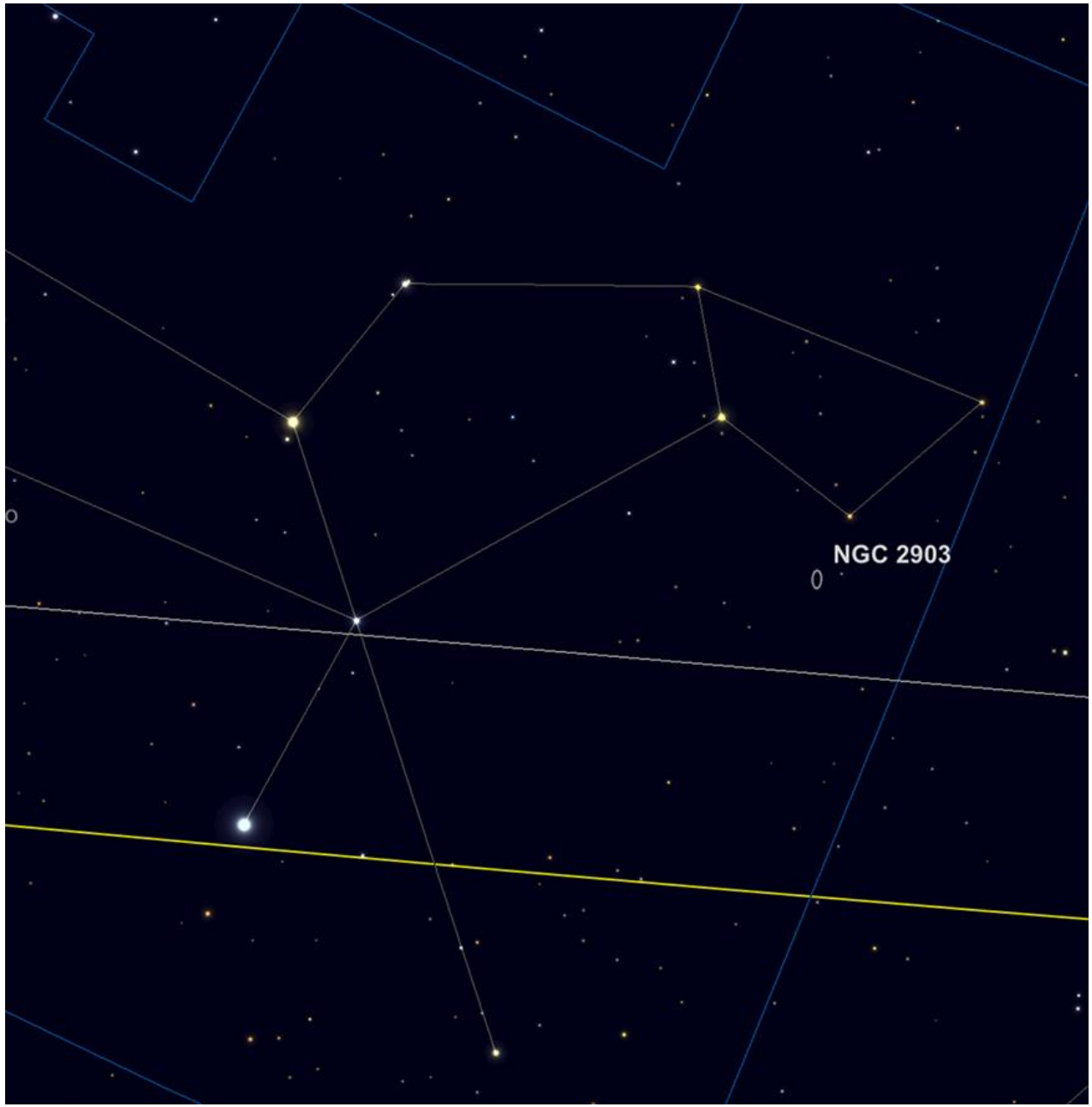
NGC 3628 is the faintest of the three at +9.50 mag and the longest at 13.1 x 3.1 arc minutes in dimensions. This is a fascinating spiral, which is presented edge on to us and is bisected through its centre by a long, dark dust lane. This is difficult in smaller telescopes, but becomes extremely prominent in larger telescopes. 10-12-inches of aperture will show it well, but in a telescope of 14-16-inches of aperture, it is unmistakable (in a similar way to NGC 891). Discovered by William Herschel in 1784, NGC 3628 is pretty obvious in relation to its neighbours, so again, it is mysterious why it wasn't discovered earlier. NGC 3628 has tidally interacted with M66, which has lead to a huge stream of stars breaking away in a staggering 300,000 light year long trail. This feature is only apparent in very long and well-processed astrophotographs, but is amongst the most spectacular and extreme pieces of evidence for gravitational interaction amongst galaxies in the sky.

All three galaxies can sit within the field of view of a low power eyepiece in a rich field instrument, but large binoculars will show them well as a triplet too. Sadly, NGC 3628's dark lanes won't be revealed by binoculars, but the Leo Triplet is well worth your attention, regardless of whatever optical aid you deploy.

All the galaxies mentioned so far, bar the outlying NGC 3384 and (confusingly) the much more local Leo I, are all members of the extended Leo I group of galaxies. For clarification, Leo I the galaxy and the Leo I group of galaxies are completely unrelated! The next group of galaxies we shall come to belong to the Leo II population, an associated, but separate group.

Moving Northwards from the M65 Triplet, we come to another compact triplet of galaxies, the spiral NGC 3632 and a close pairing of elliptical galaxies NGC 3607 and 3608. 2 1/2 degrees S from Zosma, Delta Leonis, (the base of the Lion's tale), the pairing of NGC 3607 (+ 9.89 mag) and NGC 3608 (+ 10.80 mag) can be found. Separated by just 5 arc minutes, the pair are easily located in small instruments, though it is the brighter (4.6 x 4.0 arc minutes) 3607 that is the more conspicuous. NGC 3632 is to be found three quarters of a degree to the east of this pairing. At+10.6 mag NGC 3632 was discovered by Herschel, again in 1784. It is a lovely, if compact, spiral and is also listed at number 40 on Patrick Moore's Caldwell Catalogue. Although recorded as an 11th magnitude object, it appears brighter due to the concentration of this light over its compact 2.7 x 1.9 arc minute area. Larger telescopes are needed to bring out any detail in its outlying spiral arms.

Finally, we come to a rather brighter galaxy, NGC 2903. This is a wonderful spiral structure and at magnitude 8.9, it is easily visible with a small telescope. With dimensions of 12.6 x 6.6 arc minutes, the galaxy is seen from a rather oblique angle, which contributes to its relatively high surface brightness. NGC 2903 is pretty easy to find, located as it is around 1 1/2 degrees below Leo's "chin" or "mouth" star, Lambda Leonis.


NGC 2903

NGC2903 location - under the "chin" of Leo. Image created with SkySafari 5 for Mac OS X, ©2010-2016 Simulation Curriculum Corp., skysafariastronomy.com.

Sitting at a distance of 20.5 million light years, it is still fairly easy to see the dust lanes and emission nebulae. NGC 2905 is a prominent bright area in NGC 2903. NGC 2903 is thought to be about 80% as large as our own Milky Way Galaxy. The similarities continue with NGC2905's spiral structure and noticeable central bar. Hubble images show that NGC 2903's globular clusters seem somewhat brighter and more prominent than our Milky Way's globulars would be if viewed at a similar distance. This suggests they and their parent galaxy may be somewhat younger than our own.

NGC 2903 also appears very efficient in terms of star formation - its notable ring of material around its core being particularly rich in new stars. It is thought that the central bar's tidal forces are compressing this material and this is the driving mechanism behind this formation.


NGC 2903 Galaxy
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