

# *Celestial Calendar 2025*



*the Irish Astronomical Society*



# Welcome

Welcome to the **Irish Astronomical Society's** calendar of the celestial highlights throughout 2025.

Our own *Sky-High 2025* ([irishastrosoc.ie](http://irishastrosoc.ie)) or *The BAA Handbook* ([www.britastro.org](http://www.britastro.org)) also expand coverage of the year. Subscribing to a monthly magazine will inform you of any transient events. Guides like *Stargazing 2025* (published by Philips) or *Night Sky 2025* (published by Collins) may be picked up online or in bookstores. The *Yearbook of Astronomy 2025* edited by Brian Jones can be bought online, while Guy Ottewell's *Astronomical Calendar 2025*, along with various other useful publications, is available from [www.universalworkshop.com](http://www.universalworkshop.com)

The Irish Federation of Astronomical Societies ([www.irishastronomy.org](http://www.irishastronomy.org)); the British Astronomical Association ([britastro.org](http://britastro.org)); or the Society for Popular Astronomy ([www.popastro.com](http://www.popastro.com)); will have details of nearby clubs if you wish to contact like-minded enthusiasts, seek out advice, or learn about upcoming events. Local clubs can provide speakers to visit schools, or organise observing nights, so do get in touch with them.

Various space flight missions often have their launch dates revised but we have included the most up-to-date information. However, two web sites to regularly check with for any amended plans are [spaceflightnow.com/launch-schedule](http://spaceflightnow.com/launch-schedule) or [en.wikipedia.org/wiki/2025\\_in\\_spaceflight](http://en.wikipedia.org/wiki/2025_in_spaceflight)

The IAS hold regular observing nights and public outreach events. Learn more about these at [irishastrosoc.ie](http://irishastrosoc.ie) or on our social media sites.

Wishing you clear skies for the year ahead! *John Flannery*

## Copyright

You can share this calendar and content provided there is no commercial gain. A nominal fee may be charged to cover any print costs.

**Cover image:** A spectacular display of northern lights was seen countrywide on the evening of 2024 October 10/11. The photo is a self-portrait taken that night and before the display began to intensify around midnight and the entire sky was covered by the aurora.

Canon 700D with a 14mm Samyang lens from Coolbaun Quay, Co. Tipperary (by Lough Derg)

Alerts: "Irish Aurora Chasers" Facebook group

## Words to know

**AU** One astronomical unit is simply the mean Earth-Sun distance, or roughly 149, 597, 870.691 km.

**Angular size** The Sun and Moon have the same apparent diameter in the sky, or a half degree ( $\frac{1}{2}^\circ$ ) across. Degrees are sub-divided into 60 arc-minutes ( $60'$ ) with each made up of 60 arc-seconds ( $60''$ ). This allows us to measure sky angles or the apparent size of a celestial object. See [www.timeanddate.com/astronomy/](http://www.timeanddate.com/astronomy/)

**Conjunction** Mercury and Venus reach inferior conjunction when directly between Earth and the Sun, and superior conjunction when they pass behind the Sun. The other planets can only be at superior conjunction. A conjunction (or *appulse*) also describes when two or more celestial objects appear near each other.

**Easter Sunday** is generally taken as the first Sunday after the first Full Moon after the Spring Equinox. The calculation is slightly more complex than this but it's a useful rule of thumb. This year it falls on April 20th.

**Eclipse** These are generally when the Moon hides the Sun or the Moon passes through Earth's shadow cast in space. Eclipses can also take place of Jupiter's four Galilean moons and times are listed in almanacs.

**Elongation** Mercury and Venus seem to swing from one side of the Sun to the other but viewed from Earth they never get further away than a position known as greatest elongation. This is the point at which they turn the curve of their orbit to dive back sunward. The other planets can lie anywhere in the zodiacal band.

**Greek alphabet** Used to designate the brightest stars in a constellation - though  $\alpha$  (alpha) isn't always the brightest. See [www.skyandtelescope.com/astronomy-resources/names-of-the-stars](http://www.skyandtelescope.com/astronomy-resources/names-of-the-stars)

**Libration** is an apparent "nodding" of the lunar disk that sometimes lets us peer a little beyond its edge. This is when features near the lunar limb are favourably placed to view. The calendar lists opportunities in 2025.

**Magnitude** of an object refers to its brightness, not to its size. The scale of magnitudes is a logarithmic one. The lower the magnitude number, the greater the brightness. The apparent brightness of a star depends on its true brightness and distance. A superscript <sup>m</sup> is used to denote magnitude in some of the calendar boxes. See [www.skyandtelescope.com/astronomy-resources/the-stellar-magnitude-system](http://www.skyandtelescope.com/astronomy-resources/the-stellar-magnitude-system)

**Meteor** Popularly termed a "shooting star", it's the flash of light from a small dust particle or pebble vaporising due to friction on entering our atmosphere. At certain times during the year the Earth ploughs through a trail of particles shed by comets and on these occasions we get a meteor shower. The number seen is gener-

ally lower than the often-quoted theoretical ZHR value as that depends on sky conditions. See [www.imo.net](http://www.imo.net)

**NLCs**, or **Noctilucent Clouds** form in the cold air at altitudes of about 80km and are the highest occurring clouds seen. They can be observed during the summer months low on the northern skyline about 90 mins after sunset or before sunrise. See [www.nightskyhunter.com/Noctilucent%20Clouds.html](http://www.nightskyhunter.com/Noctilucent%20Clouds.html)

**Occultations** are when the Moon briefly passes in front of a star or planet. Disappearance can be sudden due to the lack of a lunar atmosphere. Planets show an appreciable disk so it can take several seconds for them to fully disappear or reappear at the moon's limb. Asteroid occultations of stars are mostly telescopic events.

**Opposition** When the outer planets are in opposition they are opposite the Sun to us and are due south at local midnight. They may be seen right throughout the night around the dates of opposition.

**Perihelion** and **Aphelion** are the points in an object's orbit when it is closest or furthest from the Sun. For the Earth, those points vary from approximately 147 million km in January to 152 million km in July.

**Planet phases** Venus and Mercury show phases like the Moon. Mars can look gibbous, i.e. not quite full. Jupiter and Saturn can show very slightly less than full at **quadrature**, a position in an outer planet's orbit equivalent to that of the First & Last Quarter Moon. It makes a right angle with the Sun from our perspective.

**Retrograde** and **Prograde** motion is a consequence of the outer planets lying further from the Sun than us. Because they orbit more slowly, at opposition Earth can overtake an outer planet causing its apparent movement against the stars to grind to a halt, move back to the right, halt, & then resume direct (prograde) motion.

**Supermoon** is a (non-official) term for the year's biggest full moons. Our Moon's elliptical orbit means each full moon's apparent size varies. The closest full moon this year falls on November 5th while the most distant on April 13th is about 13% smaller than November's. See [www.timeanddate.com/astronomy/moon](http://www.timeanddate.com/astronomy/moon)

**Twilight** Civil Twilight ends after sunset (& begins before sunrise) when the Sun has reached  $6^\circ$  below the local horizon. Nautical twilight is when the Sun is  $12^\circ$  below, while astronomical twilight, when the sky is truly dark, occurs when it is  $18^\circ$  below. The sky is never truly dark during the summer months at IRL/UK latitudes.

**Zodiac** A band of constellations which cuts the sky in half that lies to either side of the ecliptic, and through which the Sun, Moon, & planets move. The **ecliptic** is our orbital plane projected on to the celestial sphere.

# Special events in 2025

The UN has declared 2025 an International Year of Quantum Science and Technology to help raise public awareness of the importance and impact of quantum science and applications on all aspects of life.

## Eclipses

Two solar and two lunar eclipses occur during 2025. Both lunar eclipses are total and we will see some parts of each from here. The two solar eclipses are partial, and the Sun is around 40% covered for us during the March 29th event.

**2025 March 14** - total lunar eclipse: We will only see part of this event from here as moonset (at Dublin) occurs about 20 minutes after the start of totality. It is entirely visible however from North, Central, and most of South America. From Dublin, the penumbral stage begins at 03:57 UT and the partial at 05:07 UT. Totality commences at 06:26 UT, with moonset at 06:44 UT.

**2025 March 29** - partial solar eclipse: This partial solar eclipse reaches a maximum magnitude of 0.938 over the Canadian Arctic but we will also see it from Ireland, with the Sun a little more than 40% obscured for us.

**2025 September 7** - total lunar eclipse: The latter stages of this eclipse will be seen from Ireland. Totality ends at 18:52 UT while the Moon is still below the local horizon but moonrise at Dublin occurs only minutes later at 18:57 UT. The entire eclipse is visible from Russia, Asia, India, W Africa, and most of Australia. The partial phase ends at 19:56 UT and the eclipse is fully over by 20:55 UT.

**2025 September 21** - partial solar eclipse: This partial solar eclipse is only visible from New Zealand, parts of the Antarctic continent (reaching a maximum magnitude of 0.855 off the coast), and the southern Pacific Ocean.

See [www.timeanddate.com/eclipse/2025](http://www.timeanddate.com/eclipse/2025) for more details of these events.

## Comets

No bright comets are forecast for northern hemisphere observers but **C/2024 G3 (ATLAS)** passes 0.09 AU from the Sun when at perihelion on Jan 13th. It might peak at magnitude -2 around this time, but its elongation is poor then. Should it survive perihelion passage then G3 will be a nice visual object for southern hemisphere observers up to mid-February.

The Jupiter-family comet **210P/Christensen** takes only 5.7 years to orbit the Sun and reaches perihelion on Nov 22nd when it should be within the range of large binoculars. It should be picked up in the morning sky from Ireland as a magnitude 8.5 object around that time. The comet is then in Libra and briefly crosses into Virgo before returning to Libra.

Both **24P/Schaumasse** and **2024 E1 (Wierzchos)** do not come to perihelion until Jan 2026, and are probably our best prospects from Ireland this year. 24P was discovered in 1911 and has an orbital period of 8.18 years. It tracks across Leo during December and may be followed in a small scope.

## Meteors

The date given for a meteor shower is the expected date of maximum but the period of visibility can extend a few days either side of this with lower rates.

The **Perseids** (the waxing gibbous moon rises at 10pm) and the **Geminids** (the Moon is absent until 4am) are the richest displays, closely followed by the sharply peaked **Quadrantids** (moonset is at 9pm this year) in early January.

## Asteroids

Opposition dates are listed for all asteroids getting brighter than 10<sup>m</sup>. You can find predictions of occultation events at [www.asteroidoccultation.com](http://www.asteroidoccultation.com)

See [www.minorplanet.info/php/dsoappulses.php](http://www.minorplanet.info/php/dsoappulses.php) for details of the close approaches of asteroids to deep-sky objects during 2025.

## Star and Planet Occultations

Occultation details for the major planets are listed in the calendar but more detailed information is generally found in the *BAA Handbook* or the *Occult* software package provided by the International Occultation Timing Association. We see Saturn (Jan 4th) and Venus (Sept 19th) occulted from Ireland in 2025.

An occultation series of the beautiful Pleiades star cluster (M45) in Taurus continues this year. Some occur during daylight hours for us but the others are quite striking to observe.

*"Moongazing" by Tom Kerss (priced at €11) and published by Collins is an excellent guide for binocular or small scope users. The core of the slim book is a Moon map divided up into sections, with many features labelled.*

## Local circumstances for the partial solar eclipse of March 29th

	Begins	Maximum	Ends	%
Belfast	10h 03m	11h 02m	12h 03m	42.3%
Cork	09h 56m	10h 55m	11h 57m	42.5%
Dublin	10h 01m	11h 00m	12h 00m	41.2%
Galway	09h 58m	10h 57m	11h 59m	44.9%
Limerick	09h 57m	10h 57m	11h 58m	43.6%
Londonderry	10h 02m	11h 01m	12h 03m	44.6%
Sligo	10h 00m	10h 59m	12h 01m	45.3%
Wexford	09h 59m	10h 58m	11h 59m	40.3%

# Useful web sites

[www.skymaps.com](http://www.skymaps.com) - free pdf star charts  
[stellarium.org](http://stellarium.org) - planetarium software  
[www.timeanddate.com](http://www.timeanddate.com) - general sky data  
[earthsky.org/astronomy-essentials](http://earthsky.org/astronomy-essentials) - sky guide

## Skills, news and magazines

[www.astronomynow.com](http://www.astronomynow.com)  
[www.skyatnightmagazine.com](http://www.skyatnightmagazine.com)  
[www.skyandtelescope.org](http://www.skyandtelescope.org)  
[www.astronomy.com](http://www.astronomy.com)  
[www.universetoday.com](http://www.universetoday.com) - astronomy news  
[www.heavens-above.com](http://www.heavens-above.com) - satellite predictions

## The Sun, Aurora, and Eclipses

[www.spaceweather.com](http://www.spaceweather.com) - transitory events  
[aurorawatch.lancs.ac.uk](http://aurorawatch.lancs.ac.uk) - aurora alerts  
[eclipse.gsfc.nasa.gov/eclipse.html](http://eclipse.gsfc.nasa.gov/eclipse.html) - eclipses

## The Moon and Planets

[solarsystem.nasa.gov/planets](http://solarsystem.nasa.gov/planets)  
[www.popastro.com/moonwatch/](http://www.popastro.com/moonwatch/)

## Comets and Meteors

[www.ast.cam.ac.uk/~jds](http://www.ast.cam.ac.uk/~jds) - BAA comet section  
"Comet Watch" page on Facebook  
[www.imo.net](http://www.imo.net) - International Meteor Organisation

## Forums and photography

[www.irishastronomy.org](http://www.irishastronomy.org) or  
[boards.ie/vbulletin/forumdisplay.php?f=267](http://boards.ie/vbulletin/forumdisplay.php?f=267)  
[www.stargazerslounge.com](http://www.stargazerslounge.com) (UK-based)  
[www.cloudynights.com](http://www.cloudynights.com) (US-based)  
[www.nightskyhunter.com](http://www.nightskyhunter.com) (Martin McKenna)

## Gear

[www.astrobuysell.com](http://www.astrobuysell.com) - UK Astro Buy & Sell  
[www.ktetelescopes.ie](http://www.ktetelescopes.ie) - Stephen Kershaw (IRL)  
[www.northdowntelescopes.co.uk](http://www.northdowntelescopes.co.uk) - Andy McCrea  
[www.horizonastronomy.ie](http://www.horizonastronomy.ie) - based in Dublin

## Time in the 2025 calendar

Except when noted, times in the calendar are in Universal Time (UT). This is the 24-hour system starting at mean midnight as measured at Greenwich. It is the same as Greenwich Mean Time (GMT). To translate UT into Summer Time just add one hour. For IRL/UK, Summer Time in 2025 begins on **March 30th** at 01:00 when the clocks go forward one hour, and ends on **October 26th** at 02:00 when clocks go back one hour (remember, "Spring forward, Fall back"). Interesting articles are at [www.rmg.co.uk/explore/astronomy-and-time/time-facts](http://www.rmg.co.uk/explore/astronomy-and-time/time-facts) and [www.timeanddate.com/time](http://www.timeanddate.com/time)

# January 2025

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
		1	2	3	4	5
New Year's Day	Bank Holiday, SCO					
6 	7	8	9	10	11	12
		BT Young Scientist, RDS, Dublin (to 11th)		1975: first <i>Salyut 4</i> station crew (USSR)		
13 	14	15	16	17	18	19
	Orthodox New Year	launch of private lunar mission <i>Blue Ghost</i> and <i>Hakuto-R</i>	<i>New Glenn</i> launch			
20	21 	22	23	24	25	26
Martin Luther King Jr. Day, USA		1775: A-M Ampère, French physicist	2000: <i>Cassini</i> flyby of 2685 Masursky		Burns Night, SCO Robert Boyle Winter School, RDS, Dublin	
27	28	29 	30	31		
		Chinese New Year (Year of the Snake)				

- 3 Quadrantid meteor shower peaks at 15h
- 3 *PM*: Venus is 1¼° to the upper left of the crescent Moon
- 4 Earth at perihelion at 13h 28m (0.98333 AU)
- 4 *PM*: Saturn occulted by the Moon from Ireland/UK
- 6 closest first quarter moon of 2025 (370,409 km)
- 9 *PM*: Moon close to the Pleiades (occultation morning of 10th)
- 10 *PM*: Jupiter is 5° below the Moon after dark
- 10 Venus at greatest elongation (47° 10' E)
- 12 Venus at dichotomy
- 12 Mars crosses into Gemini from Cancer
- 13 4 Vesta (7.9m) lies 5' from iota Virginis (4.08m)
- 13 *PM*: Mars is 5° to the lower left of the Moon as they rise
- 13 comet C/2024 G3 (ATLAS) at perihelion
- 14 *AM*: Mars and the Moon are just a ¼° apart at 3:30am
- 16 asteroid 887 Alinda (9.4m) passes 25' SW of Castor
- 16 Mars (-1.4m) at opposition in Gemini
- 16 *PM*: Moon is approaching the Sickle of Leo before midnight
- 17 *PM*: Mars, Pollux, and Castor rise in a vertical straight line
- 18 *PM*: Venus and Saturn are 2½° apart in the southwest
- 21 most distant last quarter moon of 2025 (404,019 km)
- 22 1 Ceres (9.1m) lies 7' from zeta Capricorni (3.75m)
- 23 *PM*: Mars passes 2.3° south of Pollux
- 30 tonight's thin lunar crescent is 28½ hours old
- 30 Uranus stationary, prograde motion resumes
- 31 *PM*: Mars, Pollux, and Castor form a right-angle triangle
- 31 *PM*: Saturn 6½° to upper left of the Moon, with Venus above

**Mercury's** spark can be found about 5½° above the south-eastern horizon at the beginning of civil twilight on Jan 1st. It then appears a little lower each morning until overwhelmed by dawn's glow towards the end of the second week of January.

**Venus** is spectacular these evenings and does not set until 4½ hours after the Sun at the end of January. Mars is a warm ember amongst the stars of Gemini when at opposition on the 16th and is visible right throughout the night.

Add in **Jupiter** in Taurus and **Uranus** in Aries, along with **Saturn** in Aquarius and **Neptune** in Pisces lower towards the southwest, and you have six of the solar system planets on view these evenings.

A highlight for this month is an **occultation of Saturn** by the Moon on **January 4th**.

# February 2025

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
					1 St. Brigid's / Imbolc UK National Astronomy Week (until 8th)	2 Groundhog Day
3	4	5	6	7	8 Galway Astronomy Festival (new date)	9
Bank Holiday, IRL			iWish, Dublin, IRL	Astrofest, Kensington Town Hall, London		
10 South Downs Dark Sky Festival (to 18th) Nottingham Science and Curiosity Festival runs Feb 10th to 21st	11 Int'l Day of Women and Girls in Science	12	13 Northern Ireland Science Festival begins (until 23rd)	14 Valentines Day 2000: NEAR probe is first to orbit asteroid	15 Galileo Day Norwich Science Festival (to 22nd)	16 Engineers Week, IRL (to Feb 22nd)
17	18	19	20	21	22	23
Presidents Day, USA						
24	25	26 Kielder Forest Star Camp (to Mar 2nd)	27 private lunar missions launch to the Moon's South Pole	28 PUNCH (heliophysics) & SPHEREx (infra-red) launched		

- 1 PM: Saturn is 7½° to the lower right of the Moon
- 1 PM: Venus and Neptune are 3¼° apart - use binoculars
- 1 PM: Venus is 3¾° above the Moon
- 3 Uranus crosses into Taurus, where it stays for the rest of 2025
- 4 Jupiter stationary, prograde motion resumes
- 6 PM: Jupiter is 6° to the lower left of the Moon
- 6 AM: the Moon approaches the Pleiades (M45) as they set
- 9 Mercury at superior conjunction
- 9 PM: Mars and the Moon are ¾° apart - occulted N. Scotland
- 12 29 Amphitrite at opposition (9.2m) in Leo
- 12 PM: Moon is quite close to Regulus in Leo before midnight
- 14 Venus (-4.8m) is at greatest brilliancy
- 19 Venus at perihelion (0.718 AU)
- 24 Mars stationary, prograde motion resumes
- 25 PM: Mercury and Saturn are 1½° apart low in the western sky
- 28 tonight's thin lunar crescent is 17¼ hours old
- 28 PM: Saturn and the Moon are 1¼° apart but it may be a challenge in the twilight. Mercury lies 5½° above the pair

**Mercury** pops up in the dusk during the last week of February and is close to **Saturn** on the 24th and 25th - the ringed planet is setting very soon after the end of civil twilight by the 28th however.





**Venus** is a dazzling lamp in the southwest these evenings and opens the month close to Neptune. It is more than one hundred thousand times brighter than the ice giant then.

**Mars** ends its opposition loop and drops almost a magnitude in brightness from last month as it recedes from Earth, but still burns bright in the Twins. Mars is at its maximum northerly declination for the year of +26° 14' on the 10th.

**Jupiter** rules the long night in Taurus once Venus sets, and the Galilean moons are lined up on February 12th in order of their increasing distance from the planet.

NASA's Scientific Visualization Studio has created a simulated view of the Moon hour-by-hour for the year at [svs.gsfc.nasa.gov/gallery/moonphase](https://svs.gsfc.nasa.gov/gallery/moonphase) and this lets you check visibility of clair obscur effects

# March 2025

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
					1	2
the private <i>Fram-2</i> mission crew will launch this month via a Falcon-9 into a polar orbit					Ramadan starts St David's Day, WAL	Irish Astronomy Week runs from March 1st to 8th
3	4	5	6 	7	8	9
ESB Science Blast, Dublin (to Mar 6th) World Wildlife Day	1675: J. Flamsteed made first Astronomer Royal (at RGO)	Carnival / Ash Wednesday	Festival of Astronomy, UCL, London (runs to March 8th)	British Science Week (runs until Mar 16th)	Int'l Women's Day	DST starts, USA
10	11	12	13	14 	15	16
Ramadan starts				Pi Day Festival of Holi total lunar eclipse	Practical Astronomy Show, Coventry, UK	1975: <i>Mariner 10</i> 3rd flyby of Mercury
17	18	19	20	21	22 	23
St. Patrick's Day, IRL/NIR		Cambridge Science Festival (to Apr 4th)			Earth Hour	optimal Messier Marathon period
24	25	26	27	28	29 	30
Eid-al-Fitr 31	SpaceX launch of ISS Expedition 72/73			Skellig Dark Sky Festival (to 30th)	partial solar eclipse	DST starts, IRL/UK Mothers' Day, IRL/UK

add 1 hour to event times when Summer Time is in effect

- 1 *PM*: Mercury is 6¼° to the lower right of the Moon, with dazzling Venus about 10° to the Moon's upper right
- 2 Jupiter is at eastern quadrature
- 2 *PM*: Mercury and Neptune are less than 2° apart
- 2 *PM*: Venus is 10° to the lower right of the Moon
- 5 *AM*: Moon is approaching M45 (daylight occultation later)
- 6 *PM*: Jupiter is 7½° below the Moon
- 6 opportunity at 23:00 UT to see the lunar X and V effects
- 7 northernmost lunar standstill of 2025 (+28.710°)
- 8 Mercury at greatest elongation (18° 15' E)
- 8 *PM*: Mars is 3° lower left of Moon (gap is ~1° after midnight)
- 12 *PM*: Mercury and Venus are 5½° apart
- 12 Saturn at solar conjunction
- 12 *AM*: the Moon is close to Regulus in Leo as it nears setting
- 14 total lunar eclipse - beginning of totality is visible from here
- 16 Mars now lies 1 AU from the Earth
- 17 *PM*: Mercury (faint) and Venus are 6¼° apart in western sky
- 19 Neptune at solar conjunction
- 20 vernal (spring) equinox, 09h 02m
- 20 Moon occults pi Scorpii (2.9<sup>m</sup>) - reappears 02h 24m 51s
- 22 southernmost lunar standstill of 2025 (-28.719°)
- 23 passage of the Earth through Saturn's ring plane (N to S)
- 23 Venus at inferior conjunction, 01h
- 24 Mercury at inferior conjunction
- 29 partial solar eclipse - the Sun is about 40% covered for us
- 30 Daylight Saving Time starts for Ireland/UK

**Mercury** soars as the month opens and it stands almost 10° high around the 11th and 12th. Mercury is then 5½° from Venus, which guides you to the elusive world - in fact, both remain close until Mercury is lost to view around the 20th.

**Venus** sets three hours after the Sun at the beginning of March but that interval will rapidly diminish as it nears inferior conjunction on the 23rd. Venus is just 1½° high at 7pm on March 22 (20 minutes after sunset) and 2½° up at the start of civil twilight at 05:45am the next morning.

**Mars** lies 1 AU from the Earth on March 16th - the apparent size of its disk shrinks to less than 10" wide.

**Jupiter** is on view until the early hours and blazes bright in Taurus.

**Saturn** is not visible this month as it passes through solar conjunction.

# April 2025

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	1	2	3	4	5 	6
				2000: final crew flies to <i>Mir</i> space station	Cosmos, Ireland (Midlands Astro)	Edinburgh Science Festival runs to 20th
7	8	9	10	11	12	13 
	Soyuz launch of ISS Expedition 72/73		British Society for Literature & Science, Lancaster (to 12th)	BAA Winchester W/end, UK (to 13th)	Yuri's Night ISTA, NUI Maynooth	Palm Sunday
14	15	16	17	18	19	20
					1975: India's first satellite is launched	Easter Sunday <i>Lucy</i> spacecraft flyby of 52246 Donaldjohnson
21 	22	23	24	25	26	27 
Easter Monday Hol., ENG/WAL/NIR/IRL	Earth Day				Starmus, La Palma, Spain (to Apr 30th) Soc. for the History of Astronomy Meet.	
28	29	30				
St George's Day, ENG						

add 1 hour to event times when Summer Time is in effect

- 1 *PM*: Moon occults the Pleiades, passing through their centre
- 1 *PM*: Mars (then near  $\kappa$  Geminorum) passes 3.9°S of Pollux
- 2 *PM*: Jupiter is 5.5° to the lower left of the Moon
- 5 *PM*: Mars is 2° to the lower left of the Moon
- 8 *AM*: the Moon is in the Sickle of Leo as it nears setting
- 9 *PM*: Jupiter passes 1¼° from the asterism NGC 1746 in Taurus
- 11 *PM*: Mars, Pollux, and Castor lie in a vertical line after sunset
- 12 Mars crosses into Cancer from Gemini
- 13 most distant full moon of 2025 (406,006 km / 29' 37.2" wide)
- 16 Mars at aphelion (1.66606 AU)
- 18 Saturn crosses into Pisces from Aquarius
- 21 Mars is at eastern quadrature
- 21 Mercury at greatest elongation (27° 23' W)
- 22 Lyrid meteor shower peaks at 13h
- 24 Mercury at dichotomy
- 24 Venus (-4.5m) is at greatest brilliancy
- 25 *AM*: Venus and the Moon are 2° apart but very low in twilight
- 27 closest new moon of 2025 (357136 km)
- 28 tonight's thin lunar crescent is 24¼ hours old
- 28 *AM*: Venus is 3.7°N of Saturn low in the morning twilight
- 29 *PM*: a lovely scene in the western sky of the thin crescent moon accompanying Jupiter and the winter constellations
- 30 *PM*: Jupiter is 5½° to the lower left of the Moon

**Mercury** is a morning sky object but too deep in the twilight glow to be seen in April.



**Venus** on the other hand is up an hour ahead of the Sun all month. Its crescent shape is initially obvious in steadily held binoculars and the phase fills out as the month progresses.

**Mars** dwindles even more in brightness as the gap continues to widen between us and the red planet. It is still visible for the majority of the night however.

**Jupiter** sets at 1am at the beginning of the month and around 11:30pm on April 30th.

**Saturn** will be a challenge in the morning sky towards the end of April, but Venus acts as a signpost to finding it low in the east.

# May 2025

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
			1 Beltane / May Day 1925: S. Carpenter, American astronaut	2	3 Spring Astronomy Day	4  Star Wars Day
5 Cinco de Mayo, USA Bank Holiday, IRL/UK	6	7	8	9	10	11 Mother's Day, US
12 	13	14	15 Lancashire Science Festival (to May 17th)	16 Int'l Day of Light 1925: N. Roman, US astronomer	17 FAS Meeting, Cambridge, UK	18
19 Pint of Science, IRL & UK venues (to 21st)	20  ESB Science Blast, Limerick, IRL to 22nd	21	22	23	24	25
26 Bank Holiday, UK Memorial Day, USA	27 	28	29	30 1975: founding of the European Space Agency	31	

add 1 hour to event times when Summer Time is in effect

- 2 4 Vesta (5.7m) at opposition in Libra
- 2 AM: Venus and Neptune are 2° apart but extremely low
- 3 PM: Mars is 2¼° to the lower left of the Moon
- 4 3 Juno (10.2m) lies 10' N of μ Serpentis (3.5m)
- 5 opportunity at 01:00 UT to see the lunar X and V effects
- 5 PM: Mars is 0.34° from M44, the Beehive cluster in Cancer
- 5 PM: the Moon is close to Regulus in Leo after dark
- 6 eta-Aquarid meteor shower peaks at 03h
- 6 autumnal equinox in the northern hemisphere of Saturn
- 6 passage of the Sun through Saturn's ring plane (N to S)
- 9 9 Metis (9.7m) at opposition in Libra
- 14 3 Juno (10.1m) at opposition in Serpens (head)
- 15 astronomical twilight now lasts all night until 30 July from here
- 15 PM: Jupiter passes 1° N of M1, the Crab Nebula
- 17 Uranus at solar conjunction
- 23 AM: Saturn is 7° to the right of the Moon
- 24 AM: Venus is 4¾° to the lower right of the Moon
- 26 Mars crosses into Leo from Cancer
- 26 thin lunar crescent this morning is 23 hours from New
- 27 thin lunar crescent this evening is 17½ hours old
- 28 PM: Jupiter is 6½° below the Moon
- 30 northern hemisphere summer solstice on Mars
- 30 Mercury at superior conjunction

**Mercury** is a morning sky object but is too close to the Sun to be seen this month.

**Venus** can be seen in the eastern morning sky and is up about 1½ hours before the Sun on the 31st.

**Mars** does not set until the early hours but fades to magnitude 1.3 by the end of the month, albeit it is then still brighter than the dim stars of Cancer near where it lies.

The lengthening days now see **Jupiter** sink more quickly towards the sunset glow and it sets only a half hour after the end of civil twilight on May 31st.

**Saturn** can be found low in the east at the beginning of civil twilight and it gains in altitude as the month progresses. Saturn's northern hemisphere autumn equinox occurs on the 6th when the Sun crosses its ring plane and we see them backlit.

*noctilucent cloud season usually starts towards the end of May and sightings along the northern skyline can occur up to mid-August.*



# June 2025

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
						1
2	3  ESB Science Blast, Belfast Cheltenham Science Festival (runs to 8th)	4	5 Glasgow Science Festival (to 15th) Robert Boyle Summer School, RDS (to 8th)	6	7	8 1625: G. Cassini, Italian astronomer
9 Bank Holiday, IRL	10	11 	12	13 Solar Eclipse Conf., Leuven, BEL (to 15th)	14	15 Father's Day, IRL/UK/USA
16 Inspiration of Astro. Phenomena Conference, QUB (to 13th)	17 Big Bang Science Fair, Birmingham, UK (until Jun 19th)	18 	19 Juneteenth, USA	20	21 King's Birthday, UK	22
23 Asteroid Day 30	24 European Astro. Soc. Meeting, UCC, Cork (23rd - 27th)	25 	26	27 Muharram / Islamic New Year A.H. 1447	28	29

add 1 hour to event times when Summer Time is in effect

- 1 PM: Mars is 5½° to the lower right of the Moon
- 1 PM: the Moon is in the Sickle of Leo in the western sky
- 1 Venus at dichotomy
- 1 Venus at greatest elongation west (-45° 53')
- 8 PM: Mercury and Jupiter are 2° apart but very low in twilight
- 12 Jupiter crosses into Gemini from Taurus
- 12 Venus at aphelion (0.728 AU)
- 17 earliest sunrise at Dublin, Ireland (03h 56m)
- 17 PM: Mars is 0.73° from Regulus in Leo - it is about the same brightness as the star presently
- 19 AM: Saturn is 3° below the Moon
- 20 summer solstice, 02h 42m
- 22 Saturn at western quadrature
- 22 AM: Venus is 6° below the Moon
- 23 AM: the Moon occults the Pleiades before dawn
- 24 latest sunset at Dublin, Ireland (20h 57m)
- 24 Jupiter at solar conjunction (and is occulted by the Sun's disk)
- 26 PM: Mercury is 5½° to the left of the Moon
- 26 AM: Uranus passes 4° 21' south of Alcyone in the Pleiades
- 27 June Boötid meteor shower peaks at 11h
- 28 Mercury at dichotomy
- 29 PM: Mars is 2° to the upper left of the Moon
- 29 AM: Saturn and Neptune are just over 1° apart

**Mercury** may be seen from the second week of June until the end of the month low in the northwest. It is highest about the 21st when 5° above the horizon at the end of civil twilight.


**Venus** is a glorious sight these mornings but an early rise is required at this time of year to spot the planet - Venus is up just before 2am at the end of June.

**Mars** treks through Leo and is near similarly bright Regulus on the 17th - contrast the tint of both objects.

**Jupiter** might briefly be seen in the evening twilight at the very start of June but is essentially lost to view as solar conjunction is on the 24th.

**Saturn** rises two hours before the Sun on the 1st but just after midnight at the end of June when it is near Neptune in Pisces.

# July 2025

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	1  Canada Day, CAN  Royal Society Summer Science (to 6th)	2 	3	4  Independence Day, US	5	6
7  National Astro. Meet. Durham, UK (to 11th)	8  British Soc. for the History of Science, Cambridge (to 10th)	9	10 	11	12  Battle of the Boyne, NIR	13
14  Bank Holiday, NIR	15	16	17  1975: Apollo-Soyuz Test Project link-up	18 	19	20
21	22	23	24 	25	26	27
28	29	30	31  Stellafane, Vermont, US (runs to the 27th)			

add 1 hour to event times when Summer Time is in effect

- 2 opportunity at 23:00 UT to see the lunar X and V effects
- 3 Earth at aphelion, 21h 00m (1.01664 AU)
- 4 Mercury at greatest elongation (25° 56' E)
- 4 AM: Venus and Uranus are 2° 21' apart near the Pleiades
- 5 Neptune stationary, begins to retrograde
- 10 southernmost full moon of 2025 (declination -28° 05')
- 13 AM: Venus 3.1°N of Aldebaran
- 14 Saturn stationary, begins to retrograde
- 15 PM: Saturn is 5° to the lower left of the Moon
- 18 P/2002 R5 (SOHO) at perihelion
- 20 AM: Moon is close to the Pleiades (daytime occultation later)
- 22 AM: Venus is 7¾° to the lower right of the Moon
- 23 AM: Jupiter is 4¼° to the lower right of the Moon
- 25 Pluto (14.4m) at opposition in Sagittarius
- 26 AM: Venus lies 0.5° from the Crab Nebula in Taurus
- 28 Mars crosses into Virgo from Leo
- 28 PM: Mars is 2½° to the upper right of the Moon
- 30 2 Pallas (9.4m) lies 13' from alpha Delphini (3.78m)
- 30 α-Capricornid meteor shower peaks at 06h
- 31 Mercury at inferior conjunction
- 31 southern Delta-Aquarid meteor shower peaks at 04h

**Mercury** might be seen the first few days of July low in the evening sky but strong twilight could scupper your chances of snaring it.



**Venus** is close to Uranus at the beginning of the month and the ice giant lies between it and the Pleiades. Venus is rising three hours before the Sun at the end of July.

**Mars** is the sole evening sky planet and sets 1½ hours after the Sun all month.

**Jupiter** quickly pulls clear of the solar glare following last month's conjunction and is rising nearly 2½ hours before the Sun by the end of July.

**Saturn** is now rising around midnight and is up by 10pm at the end of July. Look for Saturn's largest moon Titan at eastern elongation at the end of the month.

# August 2025

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
				1  Lughnasadh	2	3
4  Bank Hol., IRL/SCO	5	6	7	8	9 	10
11	12	13	14 Skellig Star Party, IRL, (to 18th)	15	16 	17 Heritage Week, IRL (to Aug 24th)
18	19	20 1975: <i>Viking 1</i> launched to Mars	21 Starfest, Ontario, CAN (to the 24th)	22	23 	24
25  Bank Holiday, ENG/WAL/NIR	26	27	28	29 QiXi Festival Science Festival, Herstmonceaux, Sussex, UK (to 31st)	30	31 

add 1 hour to event times when Summer Time is in effect

- 1 most distant first quarter moon of 2025 (404,091 km)
- 2 30 Urania (9.9m) at opposition in Capricornus
- 2 63 Ausonia (9.3m) at opposition in Capricornus
- 2 AM: Venus is 2½° from M35 in Gemini
- 5 129 Antigone (9.9m) at opposition in Capricornus
- 6 PM: Saturn and Neptune are just over 1° apart in Pisces
- 7 2 Pallas (9.4m) at opposition in Delphinus
- 11 Titan eclipsed by Saturn's shadow in the early hours
- 11 89 Julia (8.5m) at opposition in Aquarius
- 12 Perseid meteor shower peaks at 15h
- 12 PM: Saturn is 7° to the lower right of the Moon
- 12 AM: Venus and Jupiter are 0° 52' apart as they rise
- 16 closest last quarter moon of 2025 (369,900 km)
- 18 kappa Cygnid meteor shower peaks at 01h
- 19 Mercury at greatest elongation (18° 35' W)
- 20 AM: Jupiter 5¼° to the right of the Moon, with Venus 6° below
- 21 AM: Mercury is 7½° to the lower left of the Moon
- 21 Mercury at dichotomy
- 22 thin lunar crescent this morning is 25 hours from New
- 26 6 Hebe (7.6m) at opposition in Aquarius
- 26 PM: Mars is 4½° to the upper right of the Moon
- 26 helical rising of Sirius - rises at 04:24 UT from Dublin
- 30 lunar X and V *clair obscur* effects visible around 22h
- 31 alpha Aurigid meteor shower peaks at 17h





**Mercury** may be seen in the morning sky from the end of the second week of August until the end of the month. It is highest above the northeast skyline around the 17th when a little more than 5° up.

Set an early alarm for the morning of the 12th when **Venus** and **Jupiter** are less than a degree apart. Both rise around 1:45am on that date. Venus is up three hours before the Sun at the end of August, while Jupiter can be seen popping over the horizon in Gemini not long after the witching hour on the 31st.

**Mars** finally loses its attempts to stay ahead of the Sun and is lost to view in the evening sky by the end of August. We will not see it again until next year.

**Saturn** is now rising during the early evening and is up shortly after sunset at the end of the month.

# September 2025

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1   Labor Day, USA	2	3	4	5  BAA Autumn Meet, Orkney (runs to 7th)	6	7  total lunar eclipse 
8	9  1975: <i>Viking 2</i> launched to Mars	10  British Science Festival, Liverpool, UK (runs until 15th)	11	12  1725: J. le Gentil, French astronomer	13	14  
15  Kelling Heath Star Party (to 22nd)	16  Cloud Appreciation Day	17	18	19  Culture Night, IRL	20  AI Star-B-Q, IRL	21  partial solar eclipse 
22	23  Rosh Hashana / Hebrew Year 5786 A.M.	24	25	26	27  Autumn Astronomy Day	28
29	30  					

add 1 hour to event times when Summer Time is in effect

- 1 89 Julia (9.1m) is about 1 arc-minute from 7 Aquarii (5.2m)
- 1 AM: Venus passes just south of the Beehive star cluster (M44)
- 6 Uranus stationary, begins to retrograde
- 7 total lunar eclipse - latter stages are visible from Ireland/UK
- 8 PM: Saturn is 3° to the lower right of the Moon
- 12 PM: the Moon occults the Pleiades
- 13 Mercury at superior conjunction
- 16 1 Ceres (7.7m) is less than 1 arc-minute from 32 Ceti (6.6m)
- 16 AM: Jupiter is 7½° to the lower left of the Moon as it rises
- 19 Jupiter ecliptic passage - goes from S to N
- 19 Jupiter passes < 1° north of NGC 2392 in Gemini
- 19 AM: Venus and Moon are 3° apart - daylight occultation later
- 19 AM: Venus is <1° from Regulus
- 21 partial solar eclipse - not visible from Ireland/UK
- 21 Saturn (0.6m) at opposition in Pisces
- 22 autumnal equinox, 18h 20m
- 23 Mars ecliptic passage - goes from N to S
- 23 Neptune (7.8m) at opposition in Pisces
- 25 4 Vesta (8.0m) is about 1 arc-minute from v Scorpii (3.8m)
- 25 equinox date for Dublin, Ireland
- 29 Saturn crosses into Aquarius from Pisces

**Mercury** lurks low in the morning sky the first few days of September. It can be found quite near the bright star Regulus in Leo on the 2nd.

**Venus** passes through Cancer at the start of the month and is itself near Regulus on the morning of the 19th when the crescent moon is also close by.

Orion heralds the appearance of **Jupiter** in Gemini not long after 11pm at the end of September.

**Saturn** is in Pisces when at opposition on September 21st. The magnitude 0.6 planet is then 8.547 AU from Earth. Saturn's retrograde motion carries back across the border into Aquarius at the end of the month.

**Neptune** (7.7m) also reaches opposition this month in Pisces, but on the 23rd.

# October 2025

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
		1	2	3	4	5
			1925: first time television pictures are transmitted (by Baird)		Int'l Observe the Moon Night World Space Week (runs until the 12th)	
6	7 	8	9	10	11	12
					2000: 100th space shuttle flight made	Maths Week Ireland (runs until the 20th)
13 	14	15	16	17	18	19
			Hamilton Walk, Dunsink Obs., IRL	Exmoor Dark Skies Festival (to Nov 2nd)	New Scientist Live, ExCel, London	
20	21 	22	23	24	25	26
	Diwali / Deepavali	Kielder Forest Star Camp (to 26th)	Mole Day (10 <sup>23</sup> )	1875: H. Plummer, Dunsink Obs. Director		1825: J. Schmidt, German astronomer
27	28	29 	30	31		
Bank Holiday, IRL	ALAN 2025, Mayo, IRL (to 30th)			Dark Matter Day Halloween / Samhain	Mayo Dark Sky Festival runs from Oct 31st to Nov 2nd	

add 1 hour to event times when Summer Time is in effect

- 2 1 Ceres (7.6m) at opposition in Cetus
- 2 Venus at perihelion (0.718 AU)
- 5 Mars crosses into Libra from Virgo
- 5 PM: Saturn is 4.25° to the lower left of Moon
- 6 Jupiter skirts the edge of NGC 2420 in Gemini
- 6 IV is the only Galilean moon visible - I and III transit, II occ.
- 6 Titan transit of Saturn (mid-transit is 04:00 UT)
- 7 Harvest full moon
- 8 Draconid meteor shower peaks at 19h
- 10 AM: the Moon occults the Pleiades before dawn
- 13 PM: Jupiter is 3.5° to the lower right of the Moon
- 16 AM: the Moon is in the Sickle of Leo in the eastern sky
- 17 Jupiter at western quadrature
- 19 AM: Venus is 5¼° to the lower left of the Moon
- 20 thin lunar crescent this morning is 29.5 hours from New
- 21 Orionid meteor shower peaks at 12h
- 22 Titan transit of Saturn (mid-transit is 01:45 UT)
- 26 Daylight Saving Time ends for Ireland/UK
- 28 opportunity at 21:00 UT to see the lunar X and V effects
- 29 Titan occulted by Saturn (begins 20:38 UT)
- 29 Mercury at greatest elongation (23° 53' E)

**Mercury** is an evening sky object but has a poor apparition for Ireland's latitude and will not be seen by us this month.



**Venus** rises 2½ hours before the Sun on the 1st and about 1¼ hours beforehand at the end of the month. It presently shows an almost full phase in a scope.

**Mars** sets soon after the Sun and is not visible this month.

**Jupiter** rises at 11pm at the beginning of the month and a little after 9pm on the 31st. It can be found in Gemini.

**Saturn** is on view in Pisces as soon as darkness falls and does not set until after 3am at the end of October.

# November 2025

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
					1  Int'l Astronomy Show, Warwick, UK	2
3	4	5  Guy Fawke's Day  	6	7	8	9  Science Week Ireland (to 16th) Remembrance Sunday
10	11  Veteran's Day, USA	12  	13	14	15	16
17	18	19	20  	21	22	23
24	25	26	27  Soyuz launch of Expedition 73/74 Thanksgiving, USA	28  	29	30  St Andrew's Day, SCO

- 2 *PM*: Saturn is 6½° to the lower right of the Moon
- 2 *AM*: Venus is 3½° from Spica
- 4 Mars crosses into Scorpius from Libra
- 5 S Taurid meteor shower peaks at 13h ("swarm" year)
- 5 closest full moon of 2025 (356,978 km / 33' 18.2" wide)
- 6 *PM*: the Moon is 1¼° from the Pleiades as it rises
- 6 Titan transit of Saturn (mid-transit is 23:40 UT)
- 9 *PM*: Jupiter is 7° to the lower left of Moon
- 10 471 Papagena (9.1m) at opposition in Cetus
- 11 Jupiter stationary, begins to retrograde
- 12 N Taurid meteor shower peaks at 12h
- 12 *PM*: the Moon is close to Regulus in Leo as it rises
- 16 Mars crosses into Ophiuchus from Scorpius
- 17 Leonid meteor shower peaks at 18h
- 20 Mercury at inferior conjunction
- 21 alpha Monocerotid meteor shower peaks at 18h
- 21 Uranus (5.6m) at opposition in Taurus
- 22 210P/Christensen at perihelion
- 22 Titan transit of Saturn (mid-transit is 22:00 UT)
- 24 *PM*: Uranus passes 4° 22' south of Alcyone in the Pleiades
- 25 *AM*: Mercury and Venus are ~1° apart but low in twilight
- 29 *PM*: Saturn is 3½° below the Moon
- 29 Saturn stationary, prograde motion resumes

**Venus** is visible for the majority of November but will slide back into the dawn glow soon after **Mercury** passes it on the morning of the 25th. The innermost planet gains altitude each day after then, and ends the month nearly eight degrees up at the beginning of civil twilight.

**Jupiter** rises just after 9pm at the start of November and two hours earlier by the 30th.

**Mars** is not visible this month.

**Saturn** is in the southeast as soon as the sky gets dark and does not set until the early hours. The rings are tipped only 0.4° towards the Earth this month and are at their narrowest until next edge-on in 2038/39.

**Uranus** (5.6m) comes to opposition in Taurus and it is possible see it with the unaided eye far from artificial lights during a dark-of-the-Moon period.

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# December 2025

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1  Bank Holiday, SCO	2	3	4 	5	6	7
8	9	10	11 	12	13	14
15	16	17	18	19 1825: first Royal Institution Christmas Lecture in London	20 	21
22	23	24	25 Christmas Day	26 Boxing Day / St Stephen's Day	27 	28
29	30	31 New Year's Eve				

- 4 AM: the Moon occults the Pleiades in the early hours
- 4 Mercury at dichotomy
- 4 supermoon & northernmost full moon of 2025 (decl. +27° 19')
- 7 PM: Jupiter is 3¾° to the Moon's right
- 7 Mercury at greatest elongation (20° 44' W)
- 8 16 Psyche (9.7m) at opposition in Taurus
- 8 Titan transit of Saturn (mid-transit is 20:50 UT)
- 9 PM: the Moon is approaching the Sickle of Leo as it rises
- 10 AM: daylight occultation of Regulus in Leo
- 11 Mars crosses into Sagittarius from Ophiuchus
- 11 Neptune stationary, prograde motion resumes
- 13 earliest sunset at Dublin (16h 06m)
- 14 Geminid meteor shower peaks at 08h
- 17 Jupiter skirts the edge of NGC 2420 in Gemini
- 17 Saturn is at eastern quadrature
- 18 AM: Mercury is 7° to the Moon's upper left
- 21 winter solstice, 15h 03m
- 22 Ursid meteor shower peaks at 10h
- 22 Titan's shadow crosses Saturn (begins 17:36 UT)
- 24 Titan transit of Saturn (mid-transit is 20:00 UT)
- 26 PM: Saturn is 3½° to the Moon's left
- 30 latest sunrise at Dublin (08h 40m)
- 31 PM: the Moon is 2½° from the Pleiades after sunset

**Mercury** continues its good morning sky apparition from last month and is best at the start of December when almost 9° up at the beginning of civil twilight. It will remain visible until just after Christmas.

**Venus** and **Mars** are presently too close to the Sun to be seen.

**Jupiter** rises shortly after 7pm on December 1st and around the time of the end of civil twilight on New Year's Eve. It can be found low above the northeast horizon along with the brilliant winter groups and climbs higher as the night passes.

**Saturn**, on the Aquarius-Pisces border, sets before midnight at the end of the year but is well placed for viewing these evenings.

