

**ASTROGIES**

ENGLISH / 2027

**United Kingdom**

London | GMT &amp; BST

# Night sky

# 2027

**A year of observing and discovery**

12 monthly guides | 365 lunar discs | 12 star charts





# January / A stellar nursery in Orion



## M42 / Orion Nebula

Optical composite from the VLT Survey Telescope, combining different filters.

Below the three stars of Orion's Belt hangs a small sword. Within it lies the Orion Nebula, a region where gas and dust are forming new stars. Binoculars reveal a soft glow; a telescope shows more structure around the bright centre. This photograph reveals far more than the eye can see, because a sensitive camera collects light and combines observations through different filters.

### TRY IT YOURSELF

Start with the Belt using your unaided eyes. Find the sword with binoculars and compare the nebula with a nearby star. Choose an evening with little moonlight and describe its shape and variations in brightness. The orange-red colour of Betelgeuse and the blue-white light of Rigel offer a separate observation.

The Quadrantids are a morning target around 4 January. An unobstructed, dark sky and patience matter more than magnification.

Image: ESO/G. Beccari. Full credits and sources on pages 57-58.



01 MONTHLY CALENDAR

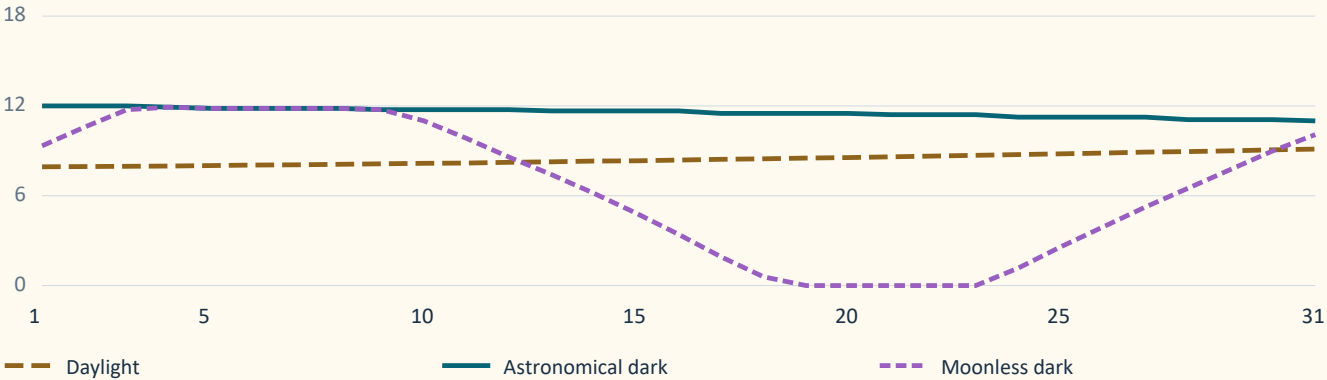
# January 2027

Moon at 12:00 | London sunrise / sunset | local GMT/BST

| MON                                | TUE                 | WED                 | THU                            | FRI                             | SAT                 | SUN                 |
|------------------------------------|---------------------|---------------------|--------------------------------|---------------------------------|---------------------|---------------------|
|                                    |                     |                     |                                | 1<br>08:06 / 16:02              | 2<br>08:06 / 16:03  | 3<br>08:06 / 16:04  |
| 4<br>08:06 / 16:05<br>Quadrantids* | 5<br>08:05 / 16:06  | 6<br>08:05 / 16:08  | 7<br>08:05 / 16:09<br>NM 20:24 | 8<br>08:04 / 16:10              | 9<br>08:04 / 16:12  | 10<br>08:03 / 16:13 |
| 11<br>08:03 / 16:14                | 12<br>08:02 / 16:16 | 13<br>08:01 / 16:17 | 14<br>08:00 / 16:19            | 15<br>08:00 / 16:20<br>FQ 20:35 | 16<br>07:59 / 16:22 | 17<br>07:58 / 16:24 |
| 18<br>07:57 / 16:25                | 19<br>07:56 / 16:27 | 20<br>07:55 / 16:28 | 21<br>07:54 / 16:30            | 22<br>07:53 / 16:32<br>FM 12:17 | 23<br>07:52 / 16:34 | 24<br>07:50 / 16:35 |
| 25<br>07:49 / 16:37                | 26<br>07:48 / 16:39 | 27<br>07:46 / 16:41 | 28<br>07:45 / 16:42            | 29<br>07:44 / 16:44<br>LQ 10:55 | 30<br>07:42 / 16:46 | 31<br>07:41 / 16:48 |
|                                    |                     |                     |                                |                                 |                     |                     |

|    |               |           |                                                                                                              |
|----|---------------|-----------|--------------------------------------------------------------------------------------------------------------|
| 07 | New Moon      | 20:24 GMT | NM new Moon · FQ first quarter<br>FM full Moon · LQ last quarter<br>* See the monthly feature and pp. 53-54. |
| 15 | First Quarter | 20:35 GMT |                                                                                                              |
| 22 | Full Moon     | 12:17 GMT |                                                                                                              |
| 29 | Last Quarter  | 10:55 GMT |                                                                                                              |

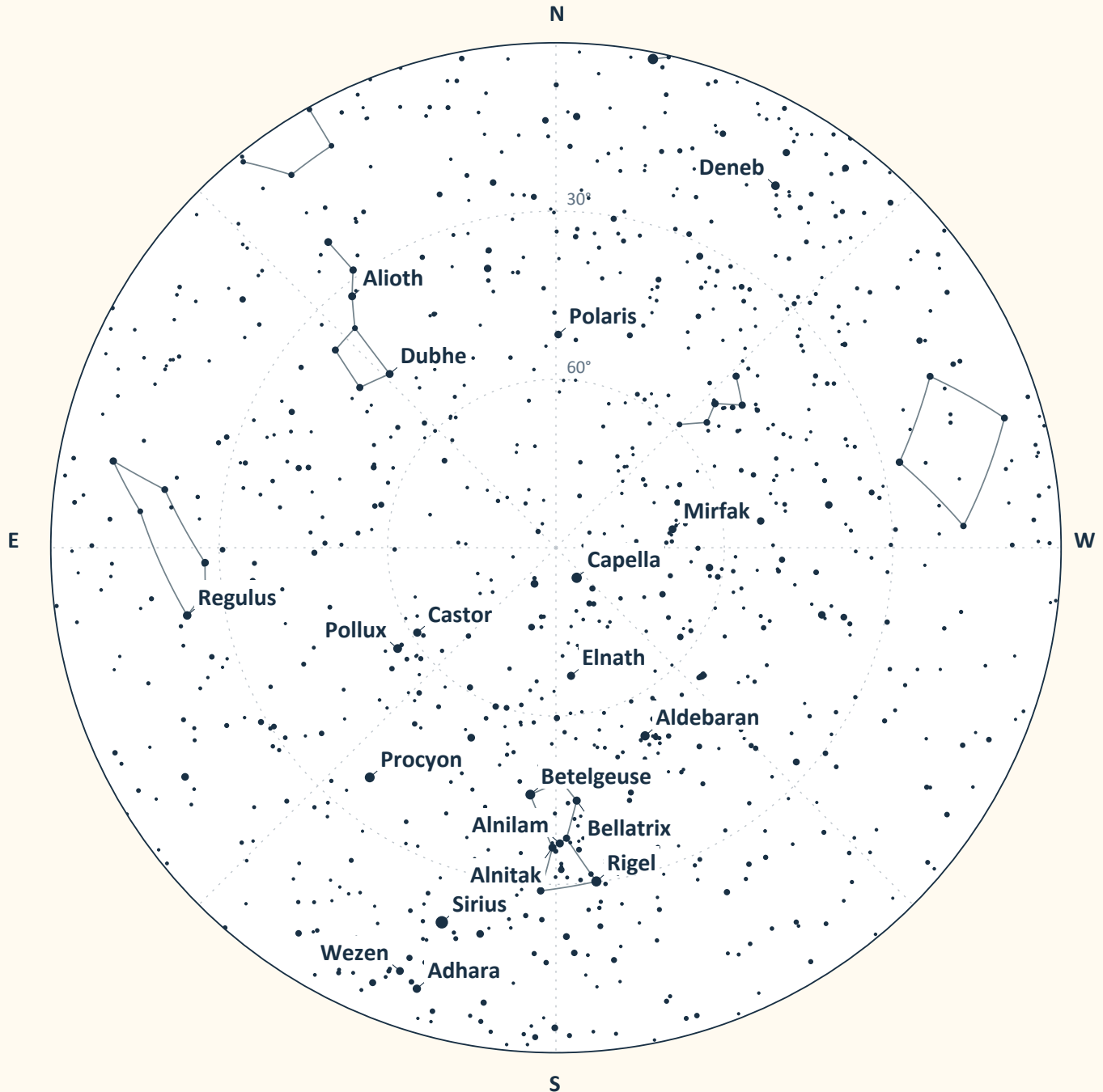
Available hours: daylight and the following night





# Star chart / January

15 January 2027, 22:00 GMT | London | limiting magnitude 5.2



## IMAGE OF THE MONTH

### M42 / Orion Nebula

Optical composite from the VLT Survey Telescope, combining different filters.

Feature: p. 5. Guidance and planets: next page.

Image credits and sources: p. 58.



# Calculations and verification

## Calculation basis

Skyfield 1.55 with JPL DE440s. Apparent topocentric positions are calculated for London; altitude graphs exclude atmospheric refraction. Stars use HYG 4.1 (J2000), with proper motion and precession to 2027. Close multiple-star components are combined at this chart scale. Projection: azimuthal equidistant, centred on the zenith.

## Independent comparisons

All 49 lunar phase events were compared with the US Naval Observatory: maximum difference 39 seconds. Comparison with PyEphem gives a maximum of 6.7 seconds. The four seasonal events differ by less than one minute from Fred Espenak's AstroPixels table.

## Sun, darkness and precision

Sunrise/set use the Sun's centre at -50 arcminutes, a standard approximation for radius and refraction at a level horizon. All 730 solar times were compared with PyEphem; maximum difference 30 seconds from the rounded table. Night duration is sampled every five minutes. A real horizon and variable refraction change rise/set times.

## Charts and limits of verification

All 11,704 plotted star positions were checked in altitude and direction against PyEphem: maximum separation  $0.041^\circ$ . That comparison uses J2000 positions without proper motion; the chart calculation includes it. A further 11,690 positions were checked against the original Hipparcos catalogue: maximum 13 arcseconds. Two additional systems were checked with Yale BSC. Atlas reference: IAU / Sky & Telescope. Also checked: all 10,140 planet-curve points (maximum difference  $0.0005^\circ$ ), 365 nightly darkness durations and all daily lunar illumination values.

[UK Government / clock changes](#)

[USNO / lunar phases 2027](#)

[JPL / DE440 and DE441](#)

[Skyfield / definitions and algorithms](#)

[Fred Espenak / equinoxes and solstices](#)

[NASA / eclipses in 2027](#)

[Local solar eclipse / London](#)

[NASA / eclipse safety](#)

[AMS / meteor showers](#)

[IAU / Sky & Telescope star atlas](#)

[Hipparcos / original catalogue](#)

[Yale / Bright Star Catalogue](#)

Atlas, source and digital print checks: 14 October 2026. British edition 1.1, based on Dutch edition 1.5. Future time-zone changes or revised meteor forecasts may require updates. No physical printer proof has been made.



## PUBLICATION DETAILS

# Images, credits and use

## January / M42 / Orion Nebula

ESO/G. Beccari. [Source and original image.](#)

## February / Tycho / central peak

NASA/Goddard/Arizona State University. [Source and original image.](#)

## March / M44 / Praesepe, the Beehive Cluster

NOIRLab/NSF/AURA. [Source and original image.](#)

## April / M51 / Whirlpool Galaxy

NASA, ESA, S. Beckwith (STScI), Hubble Heritage Team (STScI/AURA). [Source and original image.](#)

## May / M13 / Hercules Globular Cluster

ESA/Hubble and NASA. [Source and original image.](#)

## June / M57 / Ring Nebula

NASA, ESA, C. Robert O'Dell (Vanderbilt University). [Source and original image.](#)

## July / M27 / Dumbbell Nebula

ESO/I. Appenzeller, W. Seifert, O. Stahl, M. Zamani. [Source and original image.](#)

## August / 2 August / partial solar eclipse

NASA Scientific Visualization Studio / Ernie Wright; LRO data. [Source and original image.](#)

## September / M31 / Andromeda Galaxy

ESO/S. Brunier. [Source and original image.](#)

## October / NGC 869 + NGC 884 / Double Cluster

ESO/S. Brunier. [Source and original image.](#)

## November / M45 / Pleiades

ESO/S. Brunier. [Source and original image.](#)

## December / Full Moon / a world of contrasts

NASA Scientific Visualization Studio / Ernie Wright; LRO data. [Source and original image.](#)

Cover: Orion Nebula, ESO/G. Beccari. Images retain their proportions; no stars or objects have been added. Photographs are historical observations, not exposures from 2027. SVS Moon images are scientific visualisations based on LRO data.

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Pattern connections checked against [Stellarium Western](#). Star charts: AstroGies, derived from HYG 4.1 by David Nash / Astronexus (CC BY-SA 4.0). These twelve derived charts are also offered under CC BY-SA 4.0. Original text, calendar design and other graphs: © 2026 AstroGies. Source-material rights remain with their creators.

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