FREE PREVIEW

ASTROGIES

ENGLISH / 2027

Netherlands & Belgium

Utrecht | CET & CEST

Night sky 2027

A year of observing and discovery

12 monthly guides | 365 lunar discs | 12 star charts

DIGITAL PDF / ENGLISH / 56 P.

01 MONTHLY FEATURE

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 55-56.

01 MONTHLY CALENDAR

January 2027

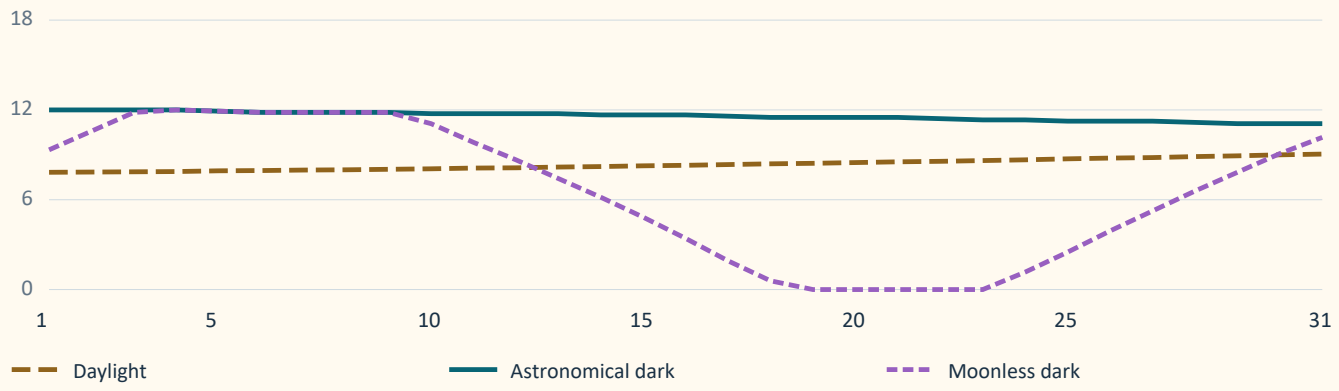
Moon at 12:00 | Utrecht sunrise / sunset | local CET/CEST

MON	TUE	WED	THU	FRI	SAT	SUN
				1 08:48 / 16:38	2 08:48 / 16:39	3 08:48 / 16:40
4 08:48 / 16:41 **Quadrantids***	5 08:47 / 16:43	6 08:47 / 16:44	7 08:46 / 16:45 **NM 21:24**	8 08:46 / 16:46	9 08:46 / 16:48	10 08:45 / 16:49
11 08:44 / 16:51	12 08:44 / 16:52	13 08:43 / 16:54	14 08:42 / 16:55	15 08:41 / 16:57 **FQ 21:35**	16 08:40 / 16:58	17 08:39 / 17:00
18 08:38 / 17:02	19 08:37 / 17:03	20 08:36 / 17:05	21 08:35 / 17:07	22 08:34 / 17:08 **FM 13:17**	23 08:33 / 17:10	24 08:32 / 17:12
25 08:30 / 17:14	26 08:29 / 17:16	27 08:28 / 17:17	28 08:26 / 17:19	29 08:25 / 17:21 **LQ 11:55**	30 08:23 / 17:23	31 08:22 / 17:25

07	New Moon	21:24 CET
15	First Quarter	21:35 CET
22	Full Moon	13:17 CET
29	Last Quarter	11:55 CET

NM new Moon · FQ first quarter
FM full Moon · LQ last quarter
* See the monthly feature and pp. 53-54.

Available hours: daylight and the following night



01 STAR CHART

Star chart / January

15 January 2027, 22:00 CET | Utrecht | limiting magnitude 5.2

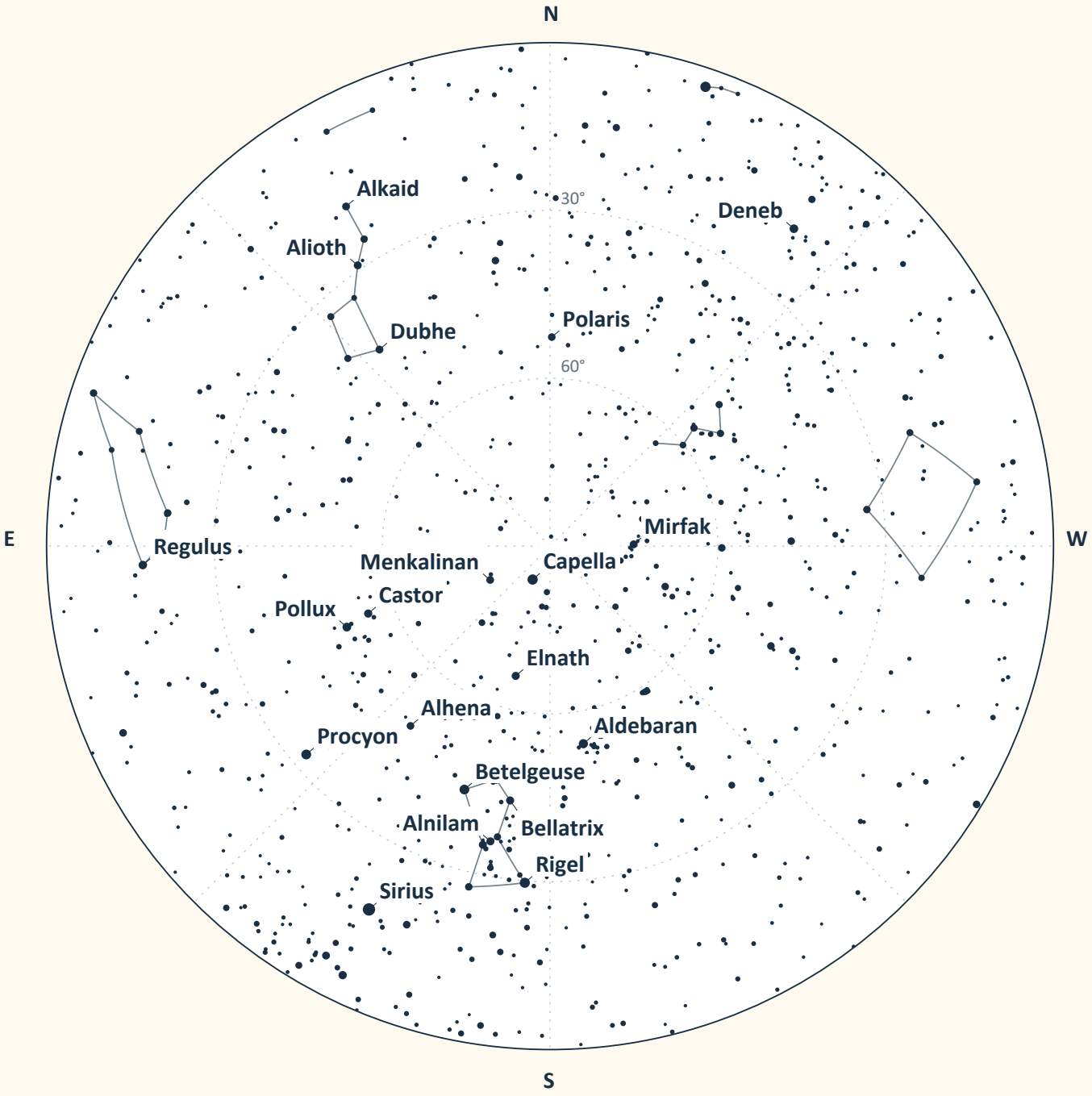


IMAGE OF THE MONTH

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. 56.

METHODS & SOURCES

Calculations and verification

Calculation basis

Skyfield 1.55 with JPL DE440s. Apparent topocentric positions are calculated for Utrecht; 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 11,694 plotted star positions were checked in altitude and direction against PyEphem: maximum separation 0.041°. That comparison uses J2000 positions without proper motion; the chart calculation includes it. A further 11,680 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: 900 planet altitudes, with maximum difference 0.0005°.

USNO / lunar phases 2027

JPL / DE440 and DE441

Skyfield / definitions and algorithms

Fred Espenak / equinoxes and solstices

NASA / eclipses in 2027

Local solar eclipse / Utrecht

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. English edition 1.0, 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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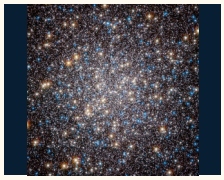

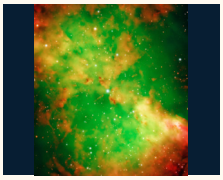

Images from this edition; credits above.