

# WEYMOUTH ASTRONOMY

## Sky Watcher

Volume 16, Issue 8  
14 January 2022

### Trips / Events

Ideas for trips and events  
always welcome!

[events@weymouthastronomy.co.uk](mailto:events@weymouthastronomy.co.uk)

### Society Meetings

19 Jan—CADAS Kate Earl  
*Stowaways* followed by  
Bob Mizon *Winter Objects*

1 Feb—WAS *Anglo-Saxon Astronomy*  
Martin Lunn

16 Feb—CADAS James  
Fradgley Title *Life in the Universe – are the Aliens out there?*



Latest News:

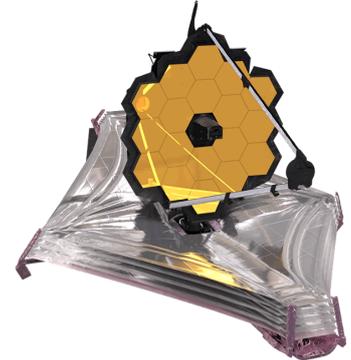
Happy New Year to All!

The biggest news at the end of 2021 was the long awaited launch of the James Webb Telescope. As of 12 Jan, the Webb has the primary mirror deployed commencing deployment of the individual mirror segment deployment.

NASA has an excellent timeline site to monitor the deployment progress and distance en route to the final Lagrange 2 orbital location.

<https://www.jwst.nasa.gov/content/webbLaunch/whereIsWebb.html>

Hope you all have a great 2022! Until next month...Clear Skies! ~SLKarl



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Early Deployments

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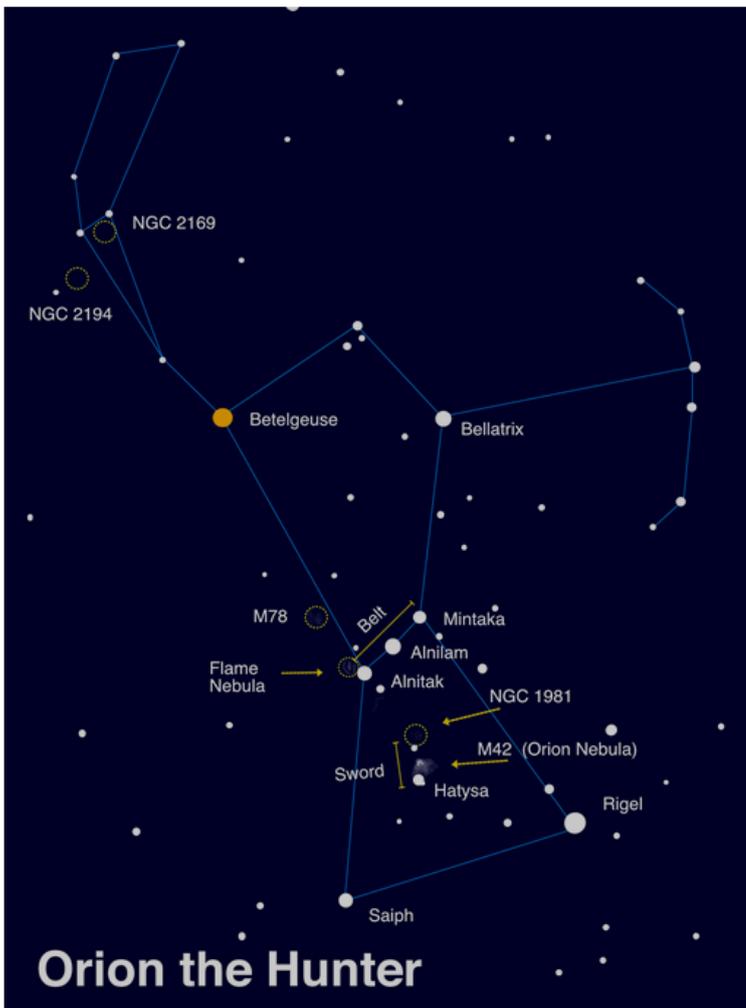
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### Orion the Hunter (more!)

star" Betelgeuse to find the stars making up Orion's "club," then move across from Betelgeuse towards the bright star Bellatrix (Orion's other "shoulder") and the stars of his bow and arrow - both essential tools for the Hunter. Many interesting sights lie near Orion's "belt" and "sword." Orion's belt is made up of three bright giant stars forming an evenly spaced line: Alnilam, Alnilam, and Mintaka. Move from the belt stars towards the stars Rigel and Saiph (Orion's "feet" or "knees") to arrive at Orion's distinctive Sword, parts of which may appear fuzzy to your unaided eyes. Binoculars reveal that fuzz to be the famed Orion Nebula (M42), perched right next to the star Hatysa! Diving in deeper with a telescope will show star clusters and more cloud detail around the Nebula, and additional magnification brings out further detail inside the nebula itself, including the "baby stars" of the Trapezium and the next-door neighbor nebula M43. Want to dive deeper? Dark skies and a telescope will help to bring out the reflection nebula M78, the Flame Nebula (NGC 2024), along with many star clusters and traces of dark nebula throughout the constellation. Very careful observers under dark clear skies may be able to spot the dark nebula known as the Horsehead, tracing an equine outline below both the Belt and the Flame Nebula. Warning: the Horsehead can be a difficult challenge for many stargazers, but very rewarding.

This is just a taste of the riches found within Orion's star fields and dust clouds; you can study Orion for a lifetime and never feel done with your observations. To be fair, that applies for the sky as a whole, but Orion has a special place for many. New telescopes often focus on one of Orion's treasures for their first test images. You can discover more of NASA's research into Orion's stars - as well as the rest of the cosmos - online at [nasa.gov](https://nasa.gov).



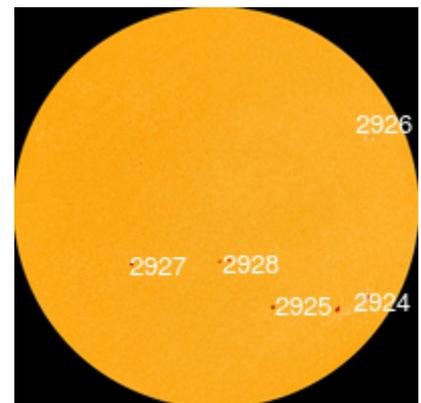
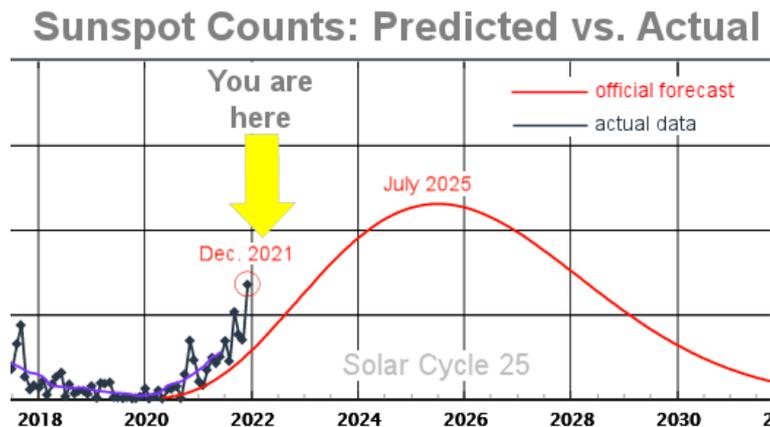
Northern Hemisphere observers can find Orion during January evenings in the east/southeast skies. Can you spot the Orion nebula with your naked eye, in Orion's sword? How does it look via binoculars or a telescope? What other details can you discern? Please note that some deep sky objects aren't listed here for clarity's sake. For example, M43, a nebula located directly above M42 and separated by a dark dust lane, is not shown. Orion's Belt and Sword are crowded, since they star-forming regions! You can read more in our November 2019 article *Orion: Window Into a Stellar Nursery*, at [bit.ly/orionlight](https://bit.ly/orionlight).

Image created with assistance from Stellarium.



## Spaceweather.com [12 Jan 2022]

**SOLAR CYCLE UPDATE:** Solar Cycle 25 is heating up. New sunspot counts from NOAA confirm that the young solar cycle is outperforming the official forecast. You are here:



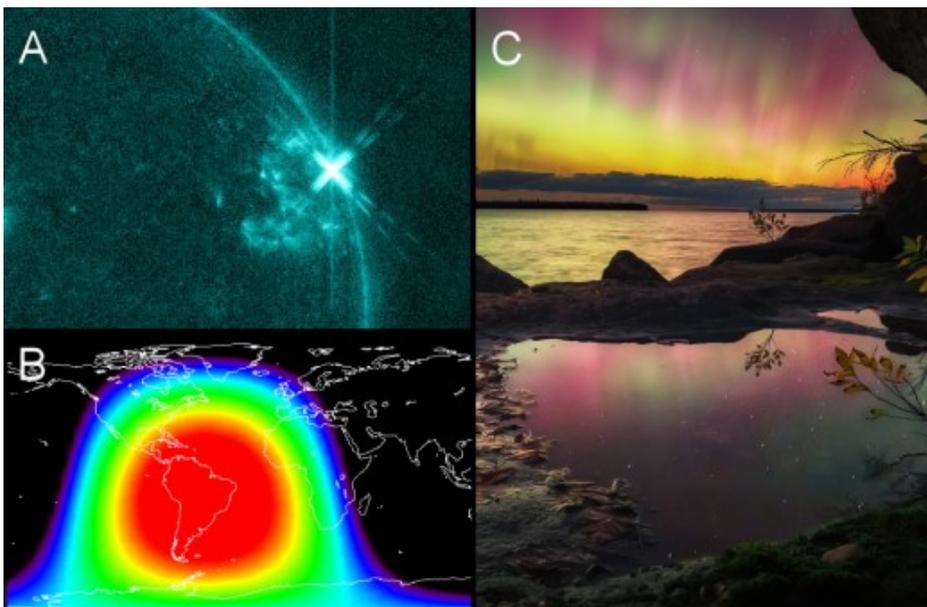
SDO—13 Jan 2022

[See the complete labeled plot](#) or [play with an interactive version](#) from NOAA.

Sunspot counts have exceeded predictions for 15 straight months. The monthly value at the end of December 2021 was more than twice the forecast, and the highest in more than 5 years.

The "[official forecast](#)" comes from the Solar Cycle Prediction Panel representing NOAA, NASA and International Space Environmental Services (ISES). Using a variety of leading indicators, the Panel predicted that Solar Cycle 25 would peak in July 2025 as a relatively weak cycle, similar in magnitude to its predecessor Solar Cycle 24. Instead, Solar Cycle 25 is shaping up to be stronger.

Sky watchers have already noticed the change. "We are definitely seeing the effects on the ground in the Arctic!" reports Chad Blakley of the Swedish tour guide service Lights over Lapland. "Auroras now are the best in years."



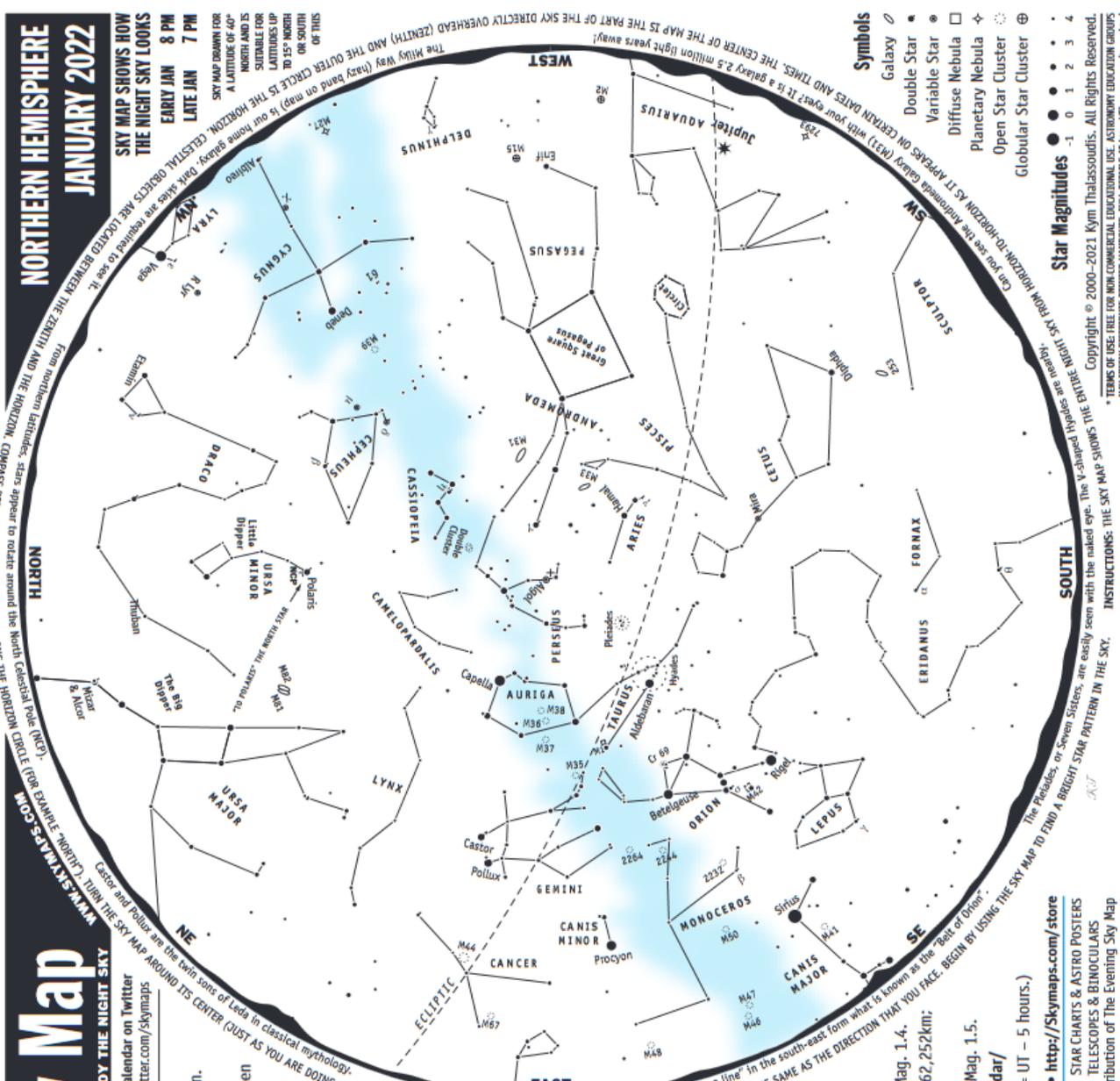
Images to the left: **(A)** The first X-flare of Solar Cycle 25 on [July 3, 2021](#); **(B)** A radio blackout caused by an X-flare on [Oct. 28, 2021](#); **(C)** Auroras over Wisconsin photographed by Marybeth Kiczinski on [Nov. 4, 2021](#).

Indeed, geomagnetic activity has nearly tripled since the new solar cycle began. In 2020, the first full year of Solar Cycle 25, there were 9 days with at least minor ([G1-class](#)) geomagnetic storms. That number skyrocketed to 25 days in 2021. One of those "storm days" (Nov. 4, 2021) was a borderline [G4-class](#) (severe) event with auroras sighted as far south as California and New Mexico.

Another sign of increasing solar activity is the X-flare. X-flares are the most powerful type of solar flare. They can cause strong radio blackouts, pepper Earth's atmosphere with energetic particles, and herald intense geomagnetic storms. The sun produced *zero* of these flares from late 2017 until mid-2021. Solar Cycle 25 busted the drought on July 3, 2021, with an X1.6 category explosion, followed by an X1-flare on Oct. 28, 2021.

**Two down, 98 to go? Typical 11-year solar cycles produce more than 100 X-flares during the years around Solar Max. Stay tuned for updates as Solar Cycle 25 intensifies.**

Skymaps.com—Feel free to download the full article directly each month.



- FREE - EACH MONTH FOR YOU TO EXPLORE, LEARN & ENJOY THE NIGHT SKY**
- The Evening Sky Map**
- Get Sky Calendar on Twitter  
<http://twitter.com/skymaps>
- Sky Calendar - January 2022**
- 1 Moon at perigee (closest to Earth) at 22:53 UT (distance 358,033 km; angular size 33.4'). 20 hours before New Moon.
  - 2 New Moon at 18:35 UT. Start of lunation 1225.
  - 3 Quadrantid Meteor Shower peaks at 21h UT. Active between December 28 and January 12. Produces up to 120 meteors per hour. Radiant is in northern Boötes.
  - 4 Moon near Mercury at 3h UT (19° from Sun, evening sky), Mag. -0.7.
  - 4 Earth at Perihelion (closest to Sun) at 7h UT. The Sun-Earth distance is 0.983337 a.u. or 147.1 million kilometers.
  - 4 Moon near Saturn at 19h UT (evening sky). Mag. 0.7.
  - 6 Moon near Jupiter at 4h UT (evening sky). Mag. -2.1.
  - 7 Moon shows maximum libration for the year (9.9°) at 5h UT.
  - 7 Mercury at greatest elongation east at 11h UT (19° from Sun, evening sky). Mag. -0.6
  - 9 Venus at inferior conjunction with the Sun at 1h UT. The brightest planet passes into the morning sky.
  - 9 First Quarter Moon at 18:12 UT.
  - 13 Moon near the Pleiades at 5h UT (evening sky).
  - 13 Moon near Aldebaran at 23h UT (evening sky).
  - 14 Moon at apogee (farthest from Earth) at 9h UT (distance 405,805 km; angular size 29.4').
  - 17 Full Moon at 23:50 UT.
  - 18 Moon near Beehive cluster M44 at 20h UT (morning sky).
  - 20 Moon near Regulus at 15h UT (morning sky).
  - 23 Mercury at inferior conjunction with the Sun at 10h UT. Mercury passes into the morning sky.
  - 24 Moon near Spica at 19h UT (morning sky).
  - 25 Last Quarter Moon at 13:42 UT.
  - 28 Moon near Antares at 2h UT (morning sky).
  - 29 Moon near Mars at 16h UT (36° from Sun, morning sky). Mag. 1.4.
  - 30 Moon at perigee (closest to Earth) at 7:09 UT (distance 362,252km; angular size 33.0').
  - 31 Moon near Mercury at 3h UT (16° from Sun, morning sky). Mag. 1.5.
- More sky events and links at <http://Skymaps.com/skycalendar/>**
- All times in Universal Time (UT). (USA Eastern Standard Time = UT - 5 hours.)
- Skymaps.com**
- SAVE ON RECOMMENDED PRODUCTS • <http://Skymaps.com/store>**
- STAR ATLASSES & PLANISPHERES
  - STAR CHARTS & ASTRO POSTERS
  - BOOKS FOR SKY WATCHERS
  - TELESCOPES & BINOCULARS
- Help support the production and free distribution of The Evening Sky Map

**NORTHERN HEMISPHERE JANUARY 2022**

**SKY MAP SHOWS HOW THE NIGHT SKY LOOKS**

**EARLY JAN 8 PM**

**LATE JAN 7 PM**

SKY MAP DRAWN FOR A LATITUDE OF 40° NORTH AND IS SUITABLE FOR LATITUDES UP TO 15° NORTH OR SOUTH OF THIS

THE MILKY WAY (HAZY BAND ON MAP) IS OUR HOME GALAXY. TEST IT BY POINTING TO THE CENTER OF THE MAP IS THE PART OF THE SKY DIRECTLY OVERHEAD (ZENITH) WITH YOUR FINGER. THE CENTER OF THE MAP IS A GALAXY 2.5 MILLION LIGHT YEARS AWAY!

FROM THE CENTER OF THE MAP, THE CENTER OF THE MILKY WAY (HAZY BAND ON MAP) IS OUR HOME GALAXY. TEST IT BY POINTING TO THE CENTER OF THE MAP IS THE PART OF THE SKY DIRECTLY OVERHEAD (ZENITH) WITH YOUR FINGER. THE CENTER OF THE MAP IS A GALAXY 2.5 MILLION LIGHT YEARS AWAY!

THE PLEIADES, OR SEVEN SISTERS, ARE EASILY SEEN WITH THE NAKED EYE. THE V-SHAPED STAR PATTERN IN THE SKY. INSTRUCTIONS: THE SKY MAP SHOWS THE V-SHAPED STAR PATTERN AS IT APPEARS ON CERTAIN DATES AND TIMES. CAN YOU SEE THE ANDROMEDA GALAXY (M31) WITH YOUR FINGER? IT IS A GALAXY 2.5 MILLION LIGHT YEARS AWAY!

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