

# WEYMOUTH ASTRONOMY

## Sky Watcher

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### Trips / Events

Ideas for trips and events  
always welcome!

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

**Society Meetings  
cancelled until further  
notice—Please check  
their websites for the  
latest schedule**

In the meantime, the British  
Astronomical Association has  
moved their meetings to an  
online format. Live streamed  
on release and 'catch-up' on  
Youtube available. These  
webinars are Open to All.

<https://britastro.org/>

**BAA live webinars, 7pm  
every Wednesday**

[https://  
www.youtube.com/user/  
britishastronomical](https://www.youtube.com/user/britishastronomical)

If you are interested in giving a  
talk or workshop, let the  
organisers know. They like to  
offer new titles in their  
programme line-up.



Happy New Year to all! Hope you had a safe and relaxing holiday week. Perhaps Santa was good to you and brought a new astronomical toy? Thought this bit of humour would really hit home then!

The Great Conjunction of Jupiter and Saturn on the Solstice really brightened my holidays and encouraged some rarely used equipment to be dusted off for the event. Unfortunately the 21st was as the image shows but the says around the event were decent!



### Check Your Sky's Quality with Orion!

by David Prosper

Have you ever wondered how many stars you can see at night? From a perfect dark sky location, free from any light pollution, a person with excellent vision may observe a few thousand stars in the sky at one time! Sadly, most people don't enjoy pristine dark skies – and knowing your sky's brightness will help you navigate the night sky. The brightness of planets and stars is measured in terms of apparent magnitude, or how bright they appear from Earth. Most visible stars range in brightness from 1st to 6th magnitude, with the lower number being brighter. A star at magnitude 1 appears 100 times brighter than a star at magnitude 6. A few stars and planets shine even brighter than first magnitude, like brilliant Sirius at -1.46 magnitude, or Venus, which can shine brighter than -4 magnitude! Very bright planets and stars can still be seen from bright cities with lots of light pollution. Given perfect skies, an observer may be able to see stars as dim as 6.5 magnitude, but such fantastic conditions are very rare; in much of the world, human-made light pollution

drastically limits what people can see at night. Your sky's limiting magnitude is, simply enough, the measure of the dimmest stars you can see when looking straight up. So, if the dimmest star you can see from your backyard is magnitude 5, then your limiting magnitude is 5. Easy, right? But why would you want to know your limiting magnitude? It can help you plan your observing! For example, if you have a bright sky and your limiting magnitude is at 3, watching a meteor shower or looking for dimmer stars and objects may be a wasted effort. But if your sky is dark and the limit is 5, you should be able to see meteors and the Milky Way. Knowing this figure can help you measure light pollution in your area and determine if it's getting better or worse over time. And regardless of location, be it backyard, balcony, or dark sky park, light pollution is a concern to all stargazers! How do you figure out the limiting magnitude in your area? While you can use smartphone apps or dedicated devices like a Sky Quality Meter, you can also use your own eyes and charts of bright

Night sky on Normal Day



On any Astronomical event



### WAC Upcoming Events:

	Watch website for online options.
12 Feb	Prof Carl Murray - Cassini at Saturn
12 Mar	Mark Radice - Observing the Moon
9 Apr	Dr Claire Davies - The Formation of Stars and Planets

**Orion (more!)**

*The Dark Sky Wheel, showing the constellation Orion at six different limiting magnitudes (right), and a photo of Orion (left). What is the limiting magnitude of the photo? For most observing locations, the Orion side works best on evenings from January-March, and the Scorpius side from June-August.*

constellations! The Night Sky Network offers a free printable Dark Sky Wheel, featuring the stars of Orion on one side and Scorpius on the other, here:[bit.ly/darkskywheel](http://bit.ly/darkskywheel). Each wheel contains six "wedges" showing the stars of the constellation, limited from 1-6 magnitude. Find the wedge containing the faintest stars you can see from your area; you now know your limiting magnitude! For maximum accuracy, use the wheel when the constellation is high in the sky well after sunset. Compare the difference when the Moon is at full phase, versus new. Before you start, let your eyes adjust for twenty minutes to ensure your night vision is at its best. A red light can help preserve your night vision while comparing stars in the printout. Did you have fun? Contribute to science with monthly observing programs from Globe at Night's website ([globeatnight.org](http://globeatnight.org)), and check out the latest NASA's science on the stars you can - and can't - see, at [nasa.gov](http://nasa.gov).

**A Green Flash on Jupiter**

Spaceweather.com on 31 December 2020

You've heard of a green flash on the sun. But a green flash on *Jupiter*? "I've never come across one before," says atmospheric optics expert Les Cowley. Until now, that is. Spanish astrophotographer Juan Manuel Perez Rayego captured the rare phenomenon on Dec. 26th:

"I was taking one last photo of the [Great Conjunction](#) between Jupiter and Saturn, just saying goodbye," says Rayego. "Suddenly, a green fragment of Jupiter split off and floated away from the planet. It was spectacular."

"I've analyzed Juan's image and conclude that it is very likely a [mock mirage](#)--the same type of mirage that can create [green flashes](#) on the sun," says Cowley.

Mock mirages are caused by atmospheric temperature inversions, in which layers of air are warmer than usual. An extra 1 or 2 degrees Celsius is all it takes. Inversion layers can be quite close to ground. Indeed, Jupiter was only 1/3rd of a degree above the horizon of Arroyo de San Serván, Spain, when Rayego recorded the flash.

The low altitude of Jupiter is why the planet looked like a rainbow-colored smear when the flash occurred. The low atmosphere [acts like a prism](#), spreading the light of stars and planets into their R-G-B components. In [this wider-angle animation](#), Saturn may be seen as well (lower right). It too looks like a miniature rainbow, albeit without the green flash.

[https://spaceweather.com/images2020/31dec20/greenflash\\_anim\\_strip3.gif](https://spaceweather.com/images2020/31dec20/greenflash_anim_strip3.gif)

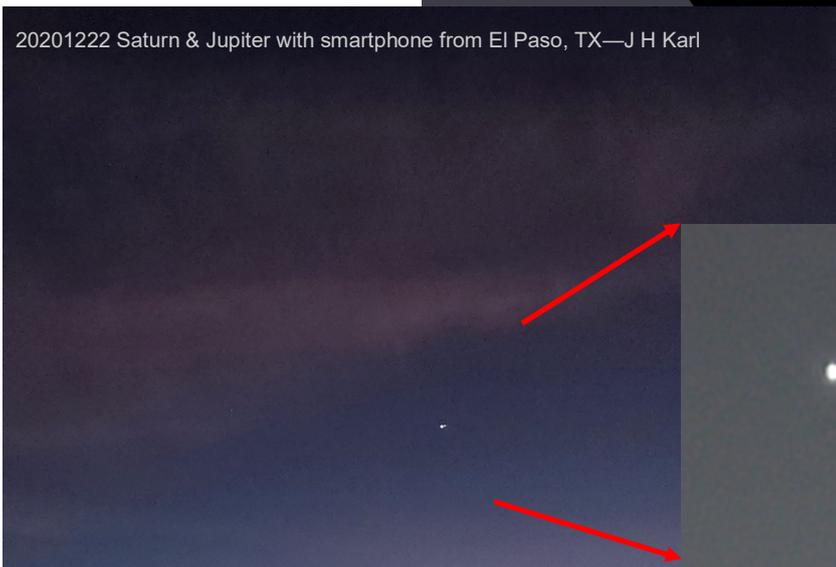


## View through my scope...

Late December brought us the very rare conjunction of Jupiter and Saturn in the dusk sky. These Gas Giants have not been collocated in the sky this close since 1623! At the closet on 21 Dec they were 0.1 degree (6.1arcmin apart) and would look like a very bright 'single' star with the naked eye! As it was clouded over for most of the UK that day, we had an image sent from Texas with ideal skies taken with only a smartphone! On the 20th, images are shown with the planets converging at 0.16 degrees (9.7 arcmin) in separation on the sky.



20201222 Saturn & Jupiter with smartphone from El Paso, TX—J H Karl



A great animation of the event can be viewed on Youtube:

[https://www.youtube.com/watch?v=q-g2Sn7cVnw&feature=emb\\_logo](https://www.youtube.com/watch?v=q-g2Sn7cVnw&feature=emb_logo)

