

Trips / Events

Ideas for trips and events
always welcome!

events@weymouthastronomy.co.uk

Society Meetings

BAA meetings planning to go live again! In the meanwhile [Link to Webinars on YouTube](#)

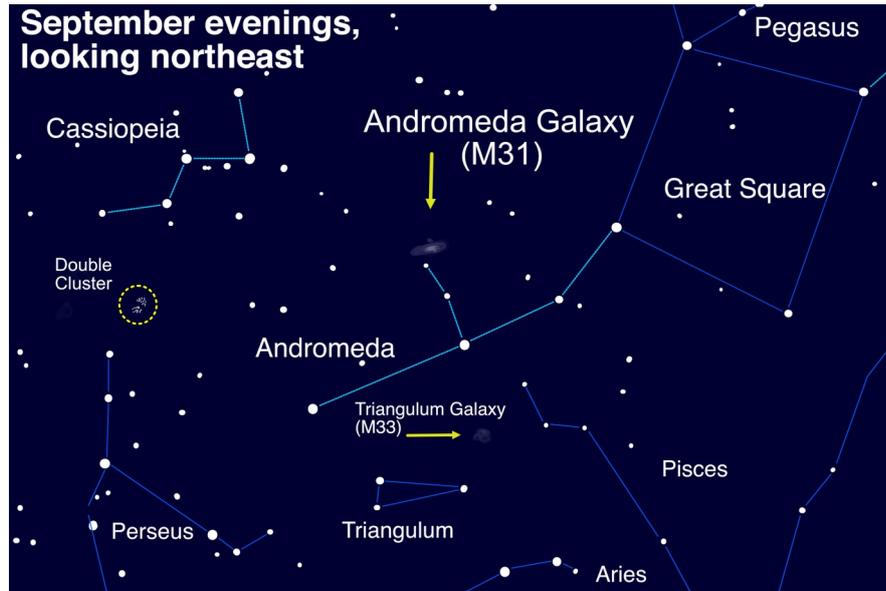
15th September 2021 - 19.00 - Webinar - John Mason will speak - [The Day-light Fireball of 20th March 2021.](#)

18th September 2021 - Radio Astronomy Section - GNU Training Seminar - [Unpacking the Mysteries of GNU Radio.](#) To join, please contact paul@hearn.org.uk

1st October 2021 - 19.15 Radio Astronomy Section - [The Changing Environmental Conditions in Near Earth Space.](#) To join, please contact paul@hearn.org.uk



September evenings, looking northeast



Spot the Andromeda Galaxy! M31's more common name comes from its parent constellation, which becomes prominent as autumn arrives in the Northern Hemisphere. Surprising amounts of detail can be observed with unaided eyes from dark sky sites. Hints of it can even be made out from light polluted areas. *Image created with assistance from Stellarium*



Catch Andromeda Rising

by David Prosper

If you're thinking of a galaxy, the image in your head is probably the Andromeda Galaxy! Studies of this massive neighboring galaxy, also called M31, have played an incredibly important role in shaping modern astronomy. As a bonus for stargazers, the Andromeda Galaxy is also a beautiful sight.

Have you heard that all the stars you see at night are part of our Milky Way galaxy? While that is mostly true, one star-like object located near the border between the constellations of Andromeda and Cassiopeia appears fuzzy to unaided eyes. That's because it's not a star, but the Andromeda Galaxy, its trillion stars appearing to our eyes as a 3.4 magnitude patch of haze. Why so dim? Distance! It's outside our galaxy, around 2.5 million light years distant - so far away that the light you see left M31's stars when our earliest ancestors figured out stone tools. Binoculars show more detail: M31's bright core stands out, along with a bit of its wispy, saucer-shaped disc. Telescopes bring out greater detail but often can't view the entire

galaxy at once. Depending on the quality of your skies and your magnification, you may be able to make out individual globular clusters, structure, and at least two of its orbiting dwarf galaxies: M110 and M32. Light pollution and thin clouds, smoke, or haze will severely hamper observing fainter detail, as they will for any "faint fuzzy." Surprisingly, persistent stargazers can still spot M31's core from areas of moderate light pollution as long as skies are otherwise clear.

Modern astronomy was greatly shaped by studies of the Andromeda Galaxy. A hundred years ago, the idea that there were other galaxies beside our own was not widely accepted, and so M31 was called the "Andromeda Nebula." Increasingly detailed observations of M31 caused astronomers to question its place in our universe - was M31 its own "island universe," and not part of our Milky Way? Harlow Shapley and Heber Curtis engaged in the "Great Debate" of 1920 over its nature. Curtis argued forcefully from his observations of dimmer than expected nova,

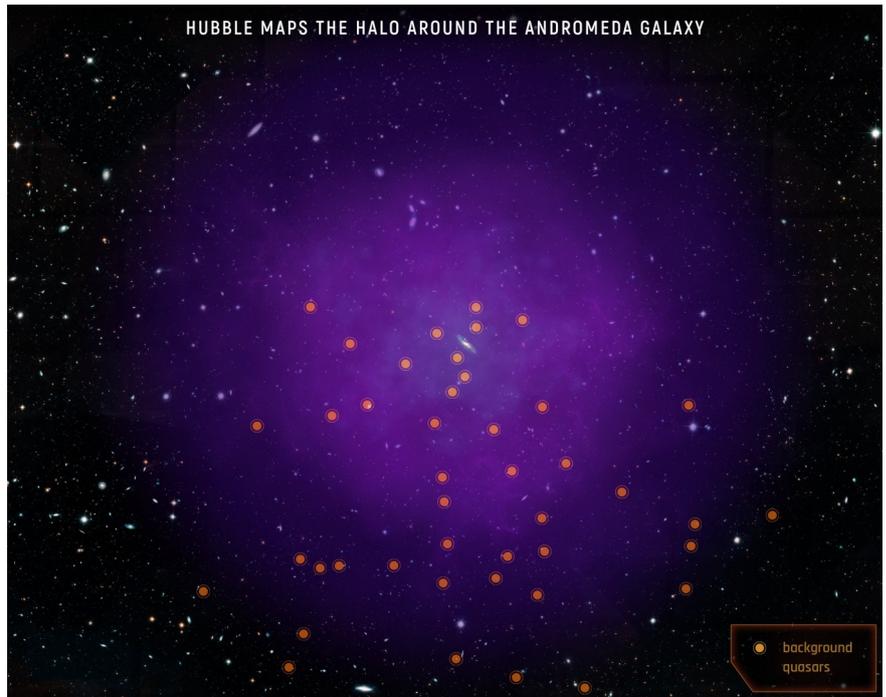
WAC Upcoming Events:

	Watch website for online options.
8 Oct	David Strange - Historic Observation of Mars
12 Nov	Sheri Karl— The Solar Cycle
10 Dec	Winter Social (TBC)

Andromeda (more!)

dust lanes, and other oddities that the “nebula” was in fact an entirely different galaxy from our own. A few years later, Edwin Hubble, building on Henrietta Leavitt’s work on Cepheid variable stars as a “standard candle” for distance measurement, concluded that M31 was indeed another galaxy after he observed Cepheids in photos of Andromeda, and estimated M31’s distance as far outside our galaxy’s boundaries. And so, the Andromeda Nebula became known as the Andromeda Galaxy.

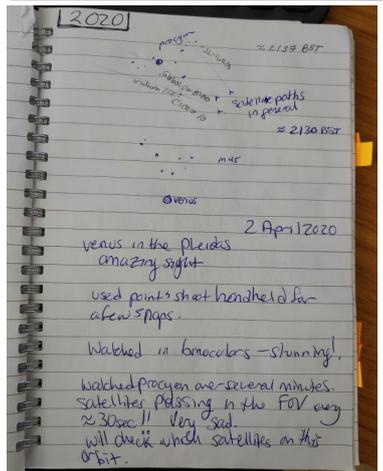
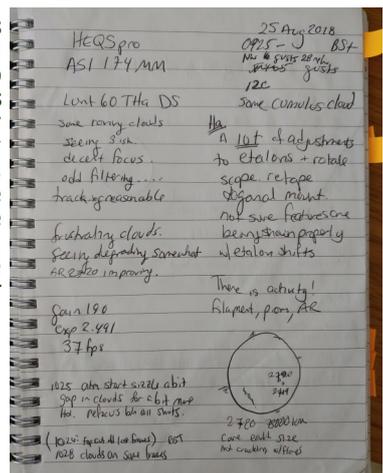
These discoveries inspire astronomers to this day, who continue to observe M31 and many other galaxies for hints about the nature of our universe. One of the Hubble Space Telescope’s longest-running observing campaigns was a study of M31: the Panchromatic Hubble Andromeda Treasury (PHAT): bit.ly/m31phat. Dig into NASA’s latest discoveries about the Andromeda Galaxy, and the cosmos at large, at nasa.gov.



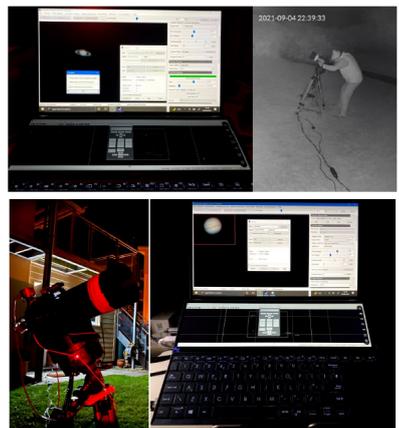
While M31’s disc appears larger than you might expect (about 3 Moon widths wide), its “galactic halo” is much, much larger – as you can see here. In fact, it is suspected that its halo is so huge that it may already mingle with our Milky Way’s own halo, which makes sense since our galaxies are expected to merge sometime in the next few billion years! The dots are quasars, objects located behind the halo, which are the very energetic cores of distant galaxies powered by black holes at their center. The Hubble team studied the composition of M31’s halo by measuring how the quasars’ light was absorbed by the halo’s material. Credits: NASA, ESA, and E. Wheatley (STScI) Source: <https://bit.ly/m31halo>

Observing Notes...

During some recent correspondence regarding observing sessions, it struck me how interesting the variety of observing notes between people can be. For example, Chris Bowden has shared his wonderful observing logs from some recent sessions of Jupiter and Saturn which I found very detailed and interesting. He has setup his observing template to suit his style and what he wishes to record for future reference. They always include images from the current session as well as some setup images which are just as valuable. By contrast, I’ve tried recording my observations on a computer but found it too rigid for my style. To this day, I still use a notebook and pen to jot down notes, sketches, session details, whatever I feel is useful and interesting to reference in future years. Perhaps this is because my initial training was in field geology and a field notebook is most comfortable. These journals extend back near 20 years and have a prominent position in the household library. Whichever method suits you best, I strongly recommend that you use it. These notes capture the events, impressions, conditions and other interesting factors that help you to remember these windows of observing opportunity! ~ SLKarl



01-05 September 2021 - Saturn & Jupiter with & without Barlow - Meade ETX125 - ASI462MC (incl half lo transit)



Date	Conditions	Temp	Humidity	Wind	Visibility	Direction
01-09	18°C	65%	10 km/h	100%	10000m	
02-09	18°C	65%	10 km/h	100%	10000m	
03-09	18°C	65%	10 km/h	100%	10000m	
04-09	18°C	65%	10 km/h	100%	10000m	
05-09	18°C	65%	10 km/h	100%	10000m	
06-09	18°C	65%	10 km/h	100%	10000m	
07-09	18°C	65%	10 km/h	100%	10000m	
08-09	18°C	65%	10 km/h	100%	10000m	
09-09	18°C	65%	10 km/h	100%	10000m	
10-09	18°C	65%	10 km/h	100%	10000m	

Another mild night with little wind to enjoy the splendours of two of the best planets in the night sky near opposition! Best conditions were earlier on, with some haze after midnight.

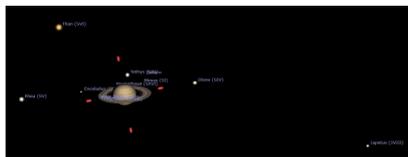
4th September - Saturn

The rings were looking spectacular as always through the scope. Visually I could only see two moons though (Titan and Rhea) but the rings never cease to amaze! I swapped eyepiece for camera and used AstroDMX Capture to take data.

Saturn-Moons-ETX125_000001_data
 Exposure = 801 Milliseconds
 Gain = 449
 Frames Saved = 151
 Average Frame Rate = 1.24891 fps
 Moons galore!



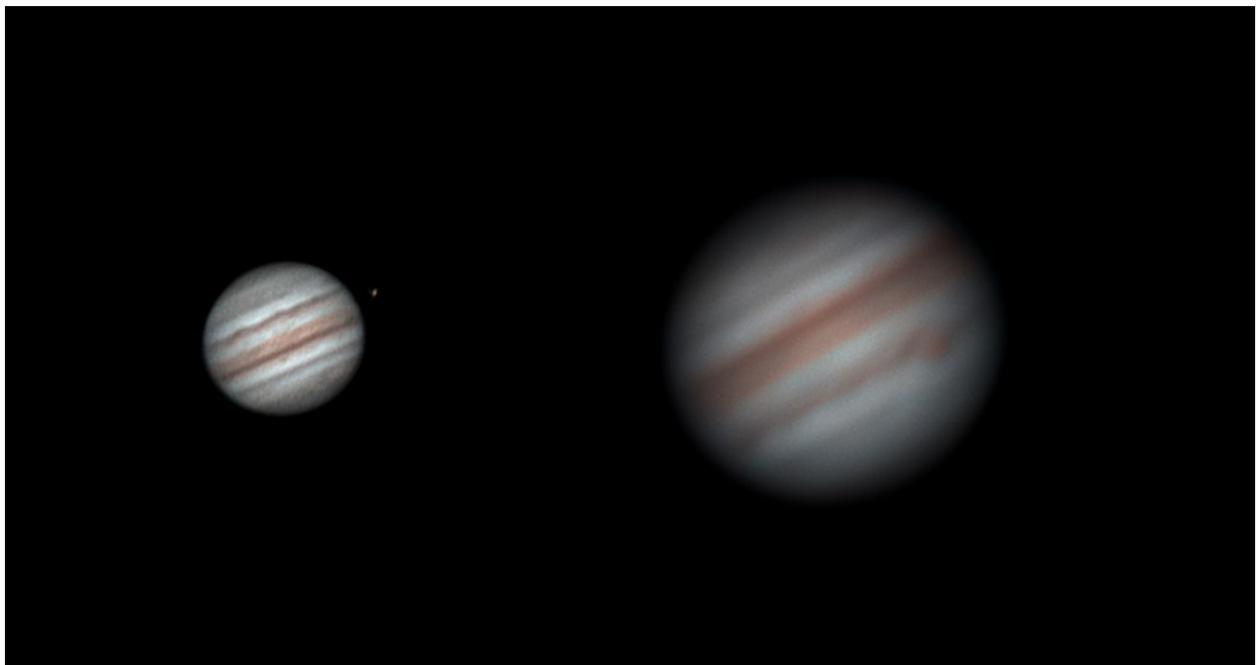
I think the dim point(s) at the far top maybe a star in Capricorn. The brightest moon is of course Titan (mag 8.51), with Rhea below and to the left (mag 9.88), with Enceladus (mag 11.88) to its right close to Saturn's rings. Tethys (mag 10.38) is close to the top of the rings, with Dione (mag 10.58) to the right of them. Iapetus (mag 11.27) is to the far right.



Oh for Stellarium!

On the lighter side...

Noctilucent Clouds taken in the north west on 24 June at 20.27 from Dorchester by Ennio . 'I had a very small window as misty clouds were rolling in. This image was taken with a Pentax KX, hand held at our front door I just pressed the shutter on bulb and hoped for the best about two seconds at ISO 800.'



A Meade ETX125 and ZWO ASI462 were used by Chris B in a comparison test with and without a X2 Barlow lens with for comparison. The image taken on the 29 August with the Barlow, albeit zoomed in, clearly illustrates the turbulence from the Jetstream affecting the image quality.