

The Manx Night Sky 2021

Highlights 2021

Jan 4 - Quadrantids maximum.
Mar 5 - Jupiter and Mercury conjunction 0.19' apart.
Apr 22. - Lyrid meteor shower maximum.
May 29 - Venus and Mercury close in PM sky.
Jun 10 - Annular eclipse, Partial (25%) from IOM.
Jul 13 - Venus and Mars conjunction 0.24' apart.
Aug 2 - Saturn at opposition.
Aug 12 - Perseid meteor shower maximum.
Aug 20 - Jupiter at opposition.
Oct 3 - Grazing occultation of η Leonis (mag 3.5).
Nov 19 - Partial lunar eclipse, Visible at Moonset IOM.
Dec 7 - Venus at brightest in evening sky (Mag -4.7).
Dec 14 - Geminids meteor shower.
Dec 29 - Venus and Mercury close in PM sky.

The January 2021 Manx Night Sky

January 2 - Earth at perigee. 147,093,163 km from Sun.
January 3, 4 - Quadrantids Meteor Shower (80 ZHR).
The shower runs to 12 January, peaking on the 3rd/4th. The Moon is full on Dec 30th so will interfere but minimally as the shower is in the north. Meteors tend to leave fine trains.
January 9 to 14 – Moon, Mercury, Jupiter and Saturn close.
January 11 - Venus and waning crescent Moon conjunction.
January 13 - New Moon. This is the best time of the month to observe faint objects as there is no moonlight to interfere.
January 24 – Mercury at Greatest Eastern Elongation (PM) The planet Mercury reaches greatest eastern elongation of 18.6 degrees from the Sun. Look in western sky after sunset.
January 25 – Moon occults M35 cluster in Gemini.
January 28 – Full Moon at 19:18 UT.

The February 2021 Manx Night Sky

February 1 to 3 – Mercury just visible in dusk sky.
February 11 - New Moon (19:08 UT) This is the best time of the month to observe faint objects as there is no moonlight.
February 11 - Venus and Jupiter close in AM sky.
February 12 – IOMAS Open night at the observatory.
February 18 - Moon joins Mars. Mars is above the Moon.
February 19 – Moon is left of the Moon and Hyades cluster with the Pleiades to the right.
Mid Feb on – UAE, China and NASA spacecraft expected to reach Mars.
February 20 – Mercury at inferior conjunction.
February 26 – Moon near Regulus in Leo.
February 27 - Full Moon (08:19 UT).
February 27 - Mercury joins Jupiter & Saturn in the dawn sky rising at about 6.00am.

The March 2021 Manx Night Sky

March 5 – Jupiter and Mercury close, just 0⁰17' apart.
March 6 - Mercury at Greatest Western Elongation (AM sky).
The planet Mercury reaches greatest western elongation, 27.3 degrees from the Sun. Above and right of Jupiter.

March 10 - Crescent Moon below Mercury, Jupiter and Saturn.

March 13 - New Moon (10:23 UT) This is the best time of the month to observe faint objects such as galaxies and star clusters because there is no moonlight to interfere.

March 20 - March Equinox (09:27 UT). The Sun will be directly on the equator and there will be nearly equal amounts of day and night throughout the world. This is also the first day of spring (vernal equinox) in the Northern Hemisphere.

March 28 - Full Moon. 1st Supermoon of 2021 (19:50 UT).

The April 2021 Manx Night Sky

April 6 - Moon below Saturn, with Jupiter left in AM sky.

April 7 - Moon near Jupiter, Saturn to the right in AM sky.

April 12 - New Moon (03:32 UT) This is the best time of the month to observe faint objects such as galaxies and star clusters because there is no moonlight to interfere.

April 14 – Crescent Moon just below Pleiades.

April 17 – Mars to right of the Moon.

April 22 - Lyrids Meteor Shower. (15 ZHR) The Lyrids run from April 14-30. Peaking on the night of the night of the 21/21. The full Moon on 27th means that prospects this year are poor. Meteors will radiate from the constellation Lyra; Lyrids tend to be fast and bright.

April 25 – Mercury just to right of Venus, in PM sky.

April 27 - Full Moon - 2nd Supermoon of the year (04:23 BST).

The May 2021 Manx Night Sky

May 3 - Mercury and Pleiades above Venus, in PM sky.

May 4 - Jupiter and Saturn close to Moon, in AM sky.

May 5/6 - Eta Aquarids Meteor Shower. (35 ZHR). Shower runs from 19/4 to 28/5, from comet Halley. Peaking on the night of May 5-6. Moonlight not an issue in 2021.

May 11 - New Moon (20:01 BST) This is the best time of the month to observe faint objects as there is no moonlight.

May 14 - Mars above Moon with Mercury and Venus below.

May 17 - Mercury at Greatest Eastern Elongation (PM) The planet Mercury reaches greatest eastern elongation of 22 degrees from the Sun. Look in the western after sunset.

May 26 - Full Moon, Supermoon and Total Lunar eclipse, closest supermoon of the year, 357,314km away. The eclipse is visible around the Pacific coast. Not from the IOM.

May 29 - Venus and Mercury in conjunction just 0^o24' apart.

The June 2021 Manx Night Sky

June 10 - New Moon (11:54 BST) This is the best time of the month to observe faint objects as there is no moonlight.

June 10 - Annular Solar Eclipse (10:04-12:26 BST) Visible as partial from IOM. Solar disc will be approx. 25% eclipsed.

June 11/12 - Venus close to crescent Moon in evening sky.

June 21 - June Solstice (04:32 BST). This is the first day of summer (summer solstice) in the Northern Hemisphere and the IOM.

June 22 - Venus close to Castor and Pollux in Gemini.

June 23 - Mars in front of Prasepe in Cancer.

June 24 - Full Moon, Supermoon (19:40 BST).

June 28 - Moon lies between Jupiter and Saturn in AM sky.

June 29 – Moon very close to Jupiter in AM sky.

The July 2021 Manx Night Sky

July 2/3 – Venus passes Prasepe cluster in Cancer.

July 4 - Mercury at Greatest Western Elongation (AM sky).

The planet Mercury reaches greatest western elongation of 21.6 degrees from the Sun. Look east just before sunrise.

July 5 - Earth at apogee (furthest from Sun) at 152,100,527 km.

July 10 - New Moon (02:17) This is the best time of the month to observe faint objects as there is no moonlight to interfere.

July 13 - Venus and Mars just 0°29' apart.

July 24 - Full Moon (03:37 BST).

July 24 - Moon just below Saturn, with Jupiter left in AM sky.

July 25 - Moon passes just below Jupiter in AM sky.

July 30/31 - Delta Aquarids Meteor Shower. (20 ZHR) Runs from July 12 to August 22.

Peaking this year on July 29/30. The Moon will cause some interference being full on 24th.

The August 2021 Manx Night Sky

August 3 - Saturn at Opposition. The ringed planet will be at its closest approach to Earth, but low in the south as seen from the IOM. A telescope will allow you to see Saturn's rings

August 8 - New Moon (14:50 BST) This is the best time of the month to observe faint objects as there is no moonlight.

August 9/11 - Crescent Moon, Venus and Mercury close.

August 12/13 - Perseids Meteor Shower. (80+ZHR) The shower runs from July 17 to August 24. It peaks this year on the night of August 12/13. The new moon on the 8th will make viewing favourable. Perseids can be bright/numerous.

August 19 - Jupiter at Opposition. Jupiter will be at its closest approach to Earth and will be visible all night long. Binoculars will allow Jupiter's four largest moons, to be seen

August 19 - Mercury and Mars very close, just 0°04' apart.

August 22 - Full Moon, Blue Moon. (13:02 BST) near Jupiter.

The September 2021 Manx Night Sky

September 5 - Venus very close to Spica in Virgo.

September 7 - New Moon (01:52 BST) This is the best time of the month to observe faint objects with no moonlight.

September 9 - Moon close to Venus, Mercury below right.

September 14 - Mercury at Greatest Eastern Elongation (PM) The planet Mercury reaches greatest eastern elongation of 26.8 degrees from the Sun. Look in the western after sunset.

September 17/18 - Moon left of Jupiter, Saturn to right.

September 21 - Full Moon, Harvest Moon (00:54 BST).

September 22 - Equinox (20:21 BST) There will be nearly equal amounts of day and night throughout the world. This is the first day of autumn (autumnal equinox) in the Northern Hemisphere.

September 25/26 - Moon close to Pleiades/Hyades in Taurus.

The October 2021 Manx Night Sky

October 6 - New Moon (12:05 BST) This is the best time of the month to observe faint objects as there is no moonlight. **October 8** - Draconids Meteor Shower. (10 ZHR) Runs from

October 6-10 - Peaking on the 8th. Favourable in 2021.

October 9 - Crescent Moon, Venus and Antares close in SW.

October 20 - Full Moon (15:57 BST).

October 22/23 - Orionids Meteor Shower. (25 ZHR) Runs from Oct 2 to Nov 7. Peak this year is on Oct 22/23. The Full Moon on 20th will interfere but fast meteors may be visible

October 25 - Mercury at Greatest Western Elongation (AM) The planet Mercury reaches greatest western elongation of 18.4 degrees from the Sun. Look east just before sunrise.

October 29 - Venus at Greatest Eastern Elongation (PM sky)

Venus is at its maximum angular distance from the Sun (47 degrees) and will be easily seen in the evening sky

The November 2021 Manx Night Sky

November 4 - New Moon (21:15 UT) This is the best time of the month to observe faint objects such as galaxies and star clusters because there is no moonlight to interfere.

November 7 - Crescent Moon just right of bright Venus.

November 5 & 12 - Taurids Meteor Shower. (5 ZHR) Two peaks on 5 & 12/11. They can be seen from 10 Sep to 10 Dec. radiating from Taurus. The New Moon will enhance viewing.

November 18/19 - Leonids Meteor Shower. (15 ZHR) This shower has a cyclonic peak about every 33 years. That last of occurring in 2001. The shower runs from November 6-30. It peaks this year on the 18th and morning of the 19th. Meteors radiate from Leo.

November 19 - Full Moon (08:59 UT) Partial Lunar eclipse. (06:02 BST) This partial eclipse will be seen from the IOM just prior to Moonset.

The December 2021 Manx Night Sky

December 4 - New Moon (07:44 UT) This is the best time of the month to observe faint objects as there is no moonlight. December 4 - Total Solar Eclipse (07:44 UT). Visible in Antarctica & Australia. Not visible from the IOM.

December 6 - Venus at Max brightness (mag -4.7) close to thin crescent Moon.

December 13, 14 - Geminids Meteor Shower. (ZHR 100+) Best shower of 2021, the shower runs from December 4-17. Peaking on the night of the 13th and morning of the 14th.

December 19 - Full Moon (04:37 GMT).

December 21 - December Solstice (15:59 UT) GMT. The Sun reaches its southernmost position in the sky.

December 22 - Ursid meteor shower (10 ZHR) tends to be missed. Visible from 17-26/12. Full moon on 19 will interfere.

December 29 - Venus and Mercury 4⁰13' apart.

The Planets in 2021

Mercury

Best seen in 2021 in the evening sky in late January and in May.

- Mid-Late January : In the evening twilight in the west.
At greatest eastern elongation (PM) on 24/1 (19°)
- Mid May : In the evening twilight.
At greatest eastern elongation (PM) on 17/5 (22°)
- September: In the evening twilight.
At greatest eastern elongation (PM) on 14 (27°).
- Mercury will also be visible in the **morning** sky at greatest Western elongation on 6/3 (27°) 4/7 (22°) & 25/10 (18°)

Venus

Visible in the morning sky until late February. Then visible in evening sky from April onwards.

Venus will be very bright and will dominate the evening sky in autumn and winter 2021.

- At superior conjunction on 24/3 , then will be in the evening sky throughout the rest of 2021.
- At greatest eastern elongation on 29/10 (47°).
- At greatest brilliance on 9/12 at magnitude -4.7.

Mars

- In 2021 Mars does not reach opposition.
- It will be visible in evening sky until August.
- Following conjunction on 8th October it will be visible low in the east before sunrise from late November in Scorpio.

Jupiter

- Jupiter will be visible low in the west at sunset until conjunction on 29th Jan, following which Jupiter will be visible in the morning sky until August.
- Following opposition on Aug 20th Jupiter will be visible in the evening sky for the remainder of 2021.
- In December Jupiter will retrograde back into Capricorn.

Saturn

- Saturn will be visible low and right of Jupiter at sunset until conjunction on 24th Jan.
- After which Saturn will be visible in the morning sky until August.
- Following opposition on Aug 2nd Saturn will be visible in the evening sky for the remainder of 2021 in the constellation of Capricorn.

	Jan	Feb	Mar	Apr	May	Jun
Moon	New 13th	New 11th	New 13th	New 12th	New 11th	New 10th
Mercury	GEE 24th	IC 8th	GWE 6th	SC 19th	GEE 17th	IC 11th
Venus	AM	AM	SC 26th	PM	PM	PM
Mars	PM	PM	PM	PM	PM	PM
Jupiter	PM SC 29th	AM	AM	AM	AM	AM
Saturn	PM SC 24th	AM	AM	AM	AM	AM
	Jul	Aug	Sep	Oct	Nov	Dec
Moon	New 10th	New 8th	New 7th	New 6th	New 4th	New 4th
Mercury	GWE 4th	SC 1st	GEE 14th	IC 9th GWE 24th	SC 29th	PM
Venus	PM	PM	PM	PM	PM	Max. bright 9th
Mars	PM	PM	N/V	SC 8th	AM	AM
Jupiter	AM	Opp 20th	PM	PM	PM	PM
Saturn	AM	Opp 2nd	PM	PM	PM	PM
	Key			Key		
	N/V	Not easily visible		IC	Inferior conjunction	
	GWE	Elongation (AM)		SC 21st	Superior conjunction	
	GEE	Elongation (PM)		Opp	Opposition	
	AM	Visible in the morning sky		PM	Visible in the evening sky	

Eclipses in 2021

There are 4 eclipses in 2021, 2 Solar & 2 Lunar

- Total Lunar – May 26th - Not visible from IOM.
- Annular Solar June 10th - Visible IOM -10:04, Max 11:12, Ends 12:55.
- Partial Lunar – November 19th - Visible IOM at Moonset, start 06:02, sets 07:54.
- Total Solar – December 4th - Not visible IOM, visible Antarctica, South Africa.

Close Planetary Conjunctions in 2021

<u>Date</u>	<u>Planets</u>	<u>Min separation</u>
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9/1/21	Mercury and Saturn	1° 39'
11/1/21	Jupiter and Mercury	1° 28'
5/3/21	Jupiter and Mercury	0° 19'
29/5/21	Venus and Mercury	0° 24'
13/7/21	Venus and Mars	0° 29''
19/8/21	Mercury and Mars	0° 04'
29/12/21	Venus and Mercury	4° 13''

Meteor Showers in 2021

Shower	Peak	ZHR*	Parent.	RAS status
Quadrantid's	Jan 3-4	80	Ast. 2003EII	Unfavourable.
Lyrid's	Apr 20-22	10	Thatcher	Favourable.
Eta Aquarid's	May 6	40	Halley	Quite favourable.
Delta Aquarid's	Jul 26-31	20	Macholtz	Favourable.
Perseid's	Aug 12	80	Swift-Tuttle	Very favourable.
Orionid's	Oct 22	20	Halley	Unfavourable.
Taurid's	Nov 5&12	5	Encke	Favourable.
Leonid's	Nov 18.	15	Tempel-Tuttle	Unfavourable.
Geminids'	Dec 14	100+	Ast. Phaeton	Quite favourable.
Ursids	Dec 22	10	8P/Tuttle	Unfavourable

(* assumes radiant overhead)

Seeing the ISS in Manx Skies 2021

Visible in the AM sky	Visible in the PM sky
19 th Dec to 5 th Jan 2021	19 th Jan to 4 th Feb 2021
19 th Feb to 9 th Mar 2021	17 th Mar to 1 st Apr 2021
	26 th Apr to 27 th May 2021
	29 th Jun to 27 th Jul 2021
25 th Aug to 7 th Sep 2021	7 th Sep to 1 st Oct 2021
19 th Oct to 4 th Nov 2021	16 th Nov to 3 rd Dec 2021
13 th Dec to 31 st Dec 2021	

The max magnitude of the ISS in IOM skies in 2021 is -3.8, This compares to Venus, which will be brighter in December 2021 at -4.3.

Enjoy your stargazing in 2021.

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January 2021