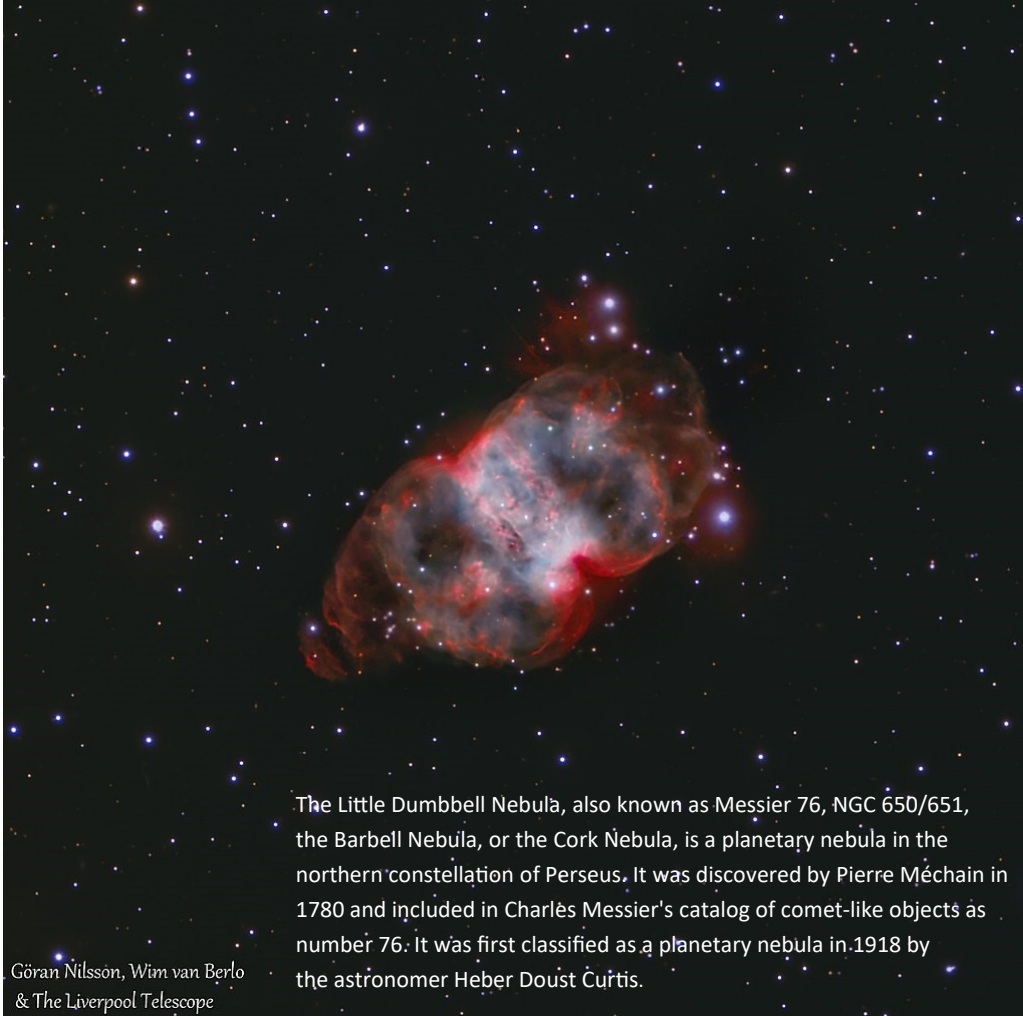


# M76, Little Dumbbell Nebula, Perseus

Continuing a series of photograph's of the Messier Objects



The Little Dumbbell Nebula, also known as Messier 76, NGC 650/651, the Barbell Nebula, or the Cork Nebula, is a planetary nebula in the northern constellation of Perseus. It was discovered by Pierre Méchain in 1780 and included in Charles Messier's catalog of comet-like objects as number 76. It was first classified as a planetary nebula in 1918 by the astronomer Heber Doust Curtis.

Göran Nilsson, Wim van Berlo & The Liverpool Telescope

By Göran Nilsson, Wim van Berlo & The Liverpool Telescope - Own work, CC BY-SA 4.0, <https://>

**Rugby & District Astronomical Society** [www.rugbyastro.org.uk](http://www.rugbyastro.org.uk)

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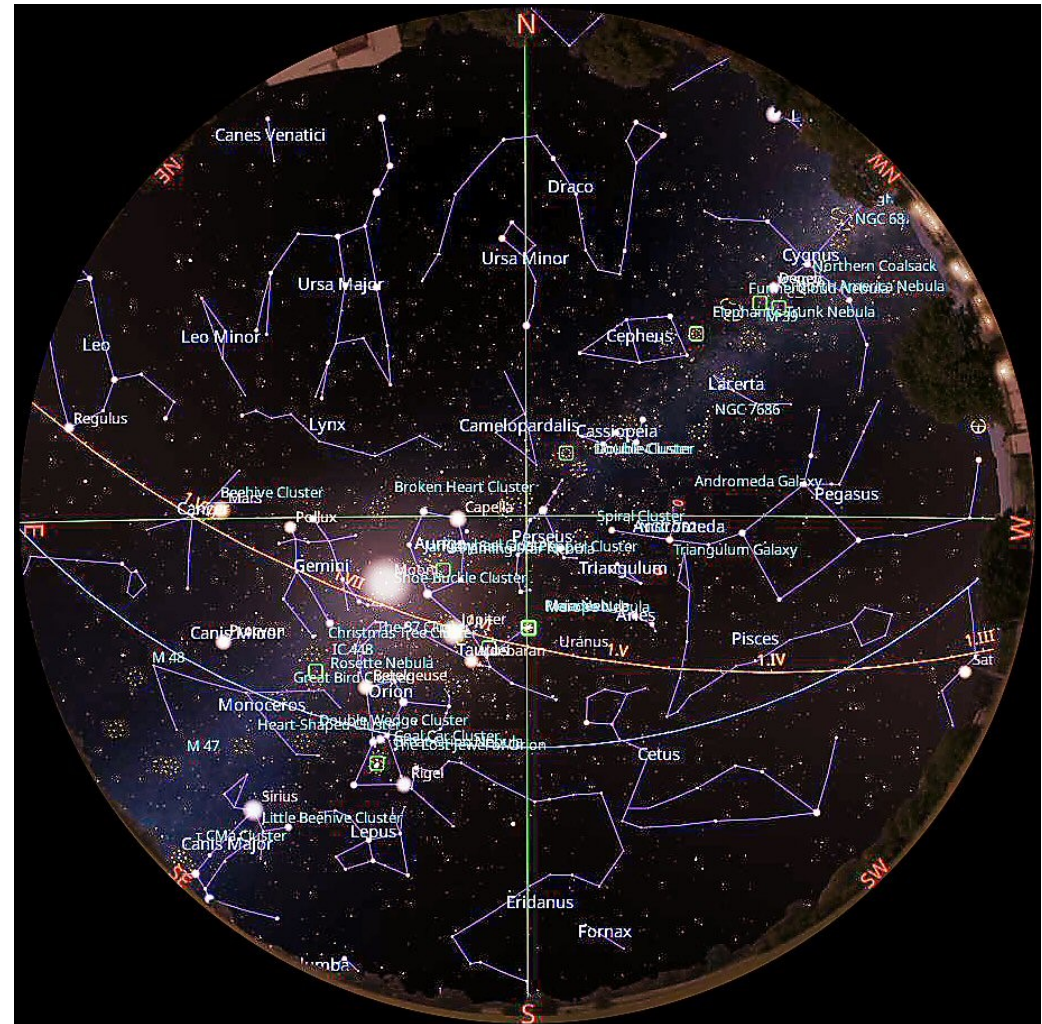
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# Rugby & District Astronomical Society

## Monthly Sky Notes

No. 180, December 2024, by Chris Longthorn



The night sky at 23:00 U.T.C., December 15th,

## Sky Events for December 2024

- 01 06:21 NEW MOON
- 04 22:40 Venus 2.3°N of Moon
- 07 19:30 R&DAS Observing
- 07 20:00 Jupiter at Opposition
- 08 08:49 Saturn 0.3°S of Moon: Occn.
- 08 15:27 FIRST QUARTER MOON
- 08 19:30 R&DAS Observing
- 13 17:13 Pleiades 0.1°S of Moon
- 14 01:00 Geminid Meteor Shower
- 15 09:02 FULL MOON
- 15 19:30 R&DAS Christmas Meal
- 18 07:00 ISS, -3.1, 55°, SSE
- 18 08:46 Mars 0.9°S of Moon: Occn.
- 20 06:52 ISS, -3.7, 73°, S
- 21 06:00 ISS, -3.5, 60°, SSE
- 21 09:20 Winter Solstice
- 22 06:44 ISS, -3.8, 81°, S
- 22 10:00 Ursid Meteor Shower
- 22 22:18 LAST QUARTER MOON
- 23 05:51 ISS, -3.8, 75°, SSE
- 23 07:28 ISS, -3.5, 65°, SSW
- 24 06:35 ISS, -3.8, 76°, S
- 25 02:00 Mercury at Greatest Elong: 22.0°W
- 25 05:43 ISS, -3.4, 61°, ESE
- 25 07:19 ISS, -3.1, 46°, SSW
- 26 06:26 ISS, -3.6, 61°, SSW
- 28 06:17 ISS, -3.1, 42°, SSW
- 30 22:27 NEW MOON

## November Image of the Month



Taken 31 10 2024 with a Seestar telescope., by Peter, who said “The head of comet looks like a streak, this is because the speed of the comet is so fast. I took 216 10 second frames, over a 36 minute period, and the comet moved from right to left away from the Sun, during this time”.

C/2023 A3 (Tsuchinshan–ATLAS) (or Comet Tsuchinshan–ATLAS or simply Comet A3) is a comet from the Oort cloud discovered by the Purple Mountain Observatory in China on 9 January 2023 and independently found by ATLAS South Africa on 22 February 2023. The comet passed perihelion at a distance of 0.39 AU (58 million km; 36 million mi) on 27 September 2024, when it became visible to the naked eye. Tsuchinshan-ATLAS peaked its brightest magnitude shortly after passing the Sun at 9 October, with a magnitude of  $-4.9$  per reported observations at the Comet Observation Database (COBS).



## Object of the Month for December



The Double Cluster (also known as Caldwell 14) consists of the open clusters NGC 869 and NGC 884 (often designated  $\eta$  Persei and  $\chi$  (chi) Persei, respectively), which are close together in the constellation Perseus. Both visible with the naked eye, NGC 869 and NGC 884 lie at a distance of about 7,500 light years in the Perseus Arm of the Milky Way galaxy.

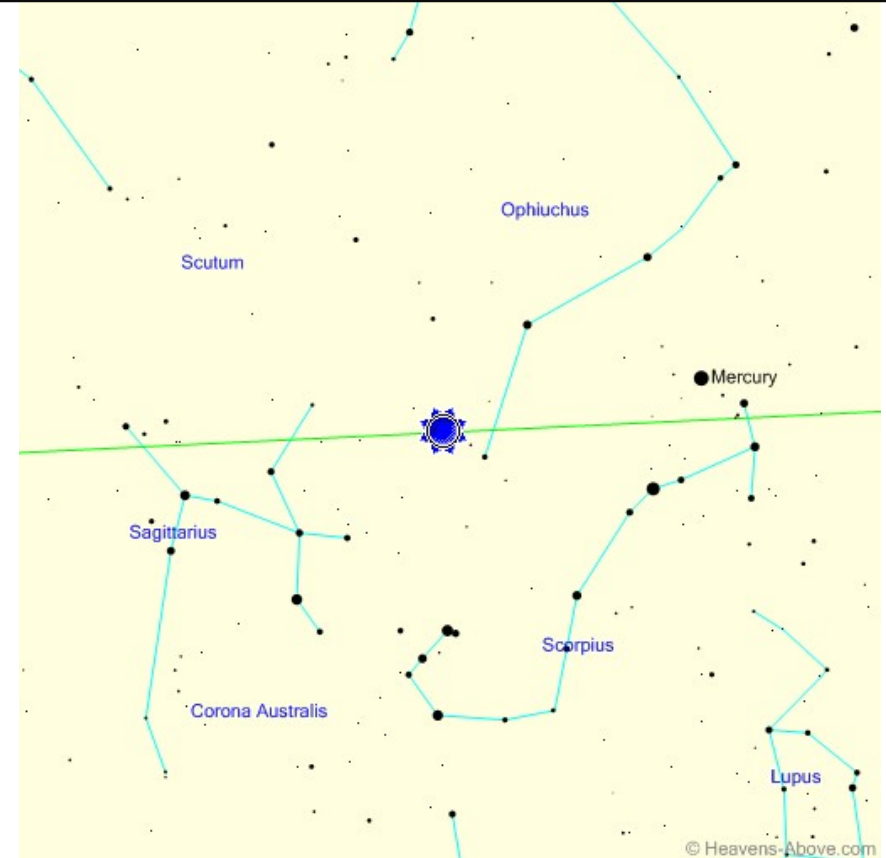
NGC 869 has a mass of 4,700 solar masses and NGC 884 weighs in at 3,700 solar masses; both clusters are surrounded with a very extensive halo of stars, with a total mass for the complex of at least 20,000 solar masses. They form the core of the Perseus OB1 association of young hot stars.

Based on their individual stars, the clusters are relatively young, both 14 million years old.

There are more than 300 blue-white super-giant stars in each of the clusters.

The Double Cluster in Perseus.

## The Sun, mid-December



Event	Time	Altitude	Azimuth
Astronomical twilight begins:	06:02	-18.0°	105°
Nautical twilight begins:	06:44	-12.0°	113°
Civil twilight begins:	07:28	-6.0°	121°
Sunrise:	08:09	-0.8°	129°
Maximum altitude:	12:00	14.3°	180°
Sunset:	15:52	-0.8°	231°
Civil twilight ends:	16:33	-6.0°	239°
Nautical twilight ends:	17:17	-12.0°	247°
Astronomical twilight ends:	17:59	-18.0°	255°
Minimum altitude:	23:59	-61.0°	359°

All data courtesy of Heavens-Above ([www.heavens-above.com](http://www.heavens-above.com))

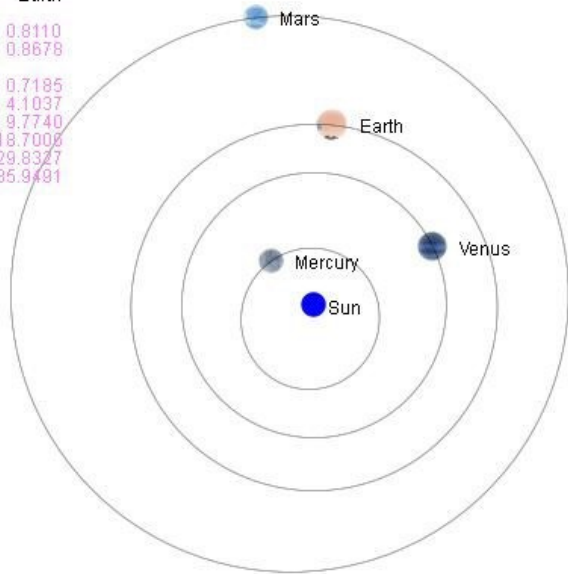
# The Planets, mid December, 2024

## Inner Solar System

2024-12-15 (UTC)

23h00m

	Sun	Earth
Mercury	0.3327	0.8110
Venus	0.7247	0.8678
Earth	0.9841	
Mars	1.5963	0.7185
Jupiter	5.0773	4.1037
Saturn	9.6353	9.7740
Uranus	19.5560	18.7006
Neptune	29.8947	29.8327
Pluto	35.1603	35.9491

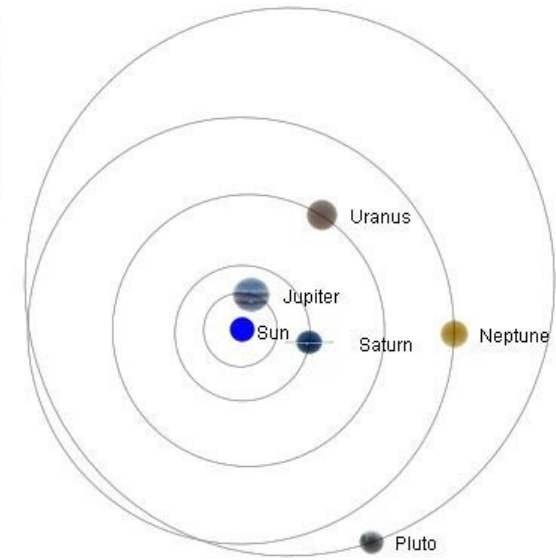


## Outer Solar System

2024-12-15 (UTC)

23h00m

	Sun	Earth
Mercury	0.3327	0.8110
Venus	0.7247	0.8678
Earth	0.9841	
Mars	1.5963	0.7185
Jupiter	5.0773	4.1037
Saturn	9.6353	9.7740
Uranus	19.5560	18.7006
Neptune	29.8947	29.8327
Pluto	35.1603	35.9491



	Mercury	Venus	Mars	Jupiter	Saturn	Uranus	Neptune
Right ascension	16h 18m 46.5s	20h 50m 44.8s	8h 33m 53.6s	4h 54m 22.8s	23h 1m 0.1s	3h 25m 46.7s	23h 50m 19.1s
Declination	-18° 29' 52"	-19° 57' 59"	22° 5' 13"	21° 55' 32"	-8° 28' 58"	18° 27' 36"	-2° 27' 38"
Range (AU)	0.811	0.868	0.719	4.104	9.774	18.701	29.833
Elongation from Sun	18.3°	45.5°	138.8°	170.7°	79.0°	149.6°	92.7°
Brightness	0.4	-4.1	-0.8	-2.6	1	5.6	7.9
Equatorial Diameter	8.30"	19.23"	13.03"	48.04"	17.00"	3.77"	2.29"
Phase Angle	111.8°	75.7°	24.0°	1.8°	5.8°	1.5°	1.9°
Constellation	Scorpius	Capricornus	Cancer	Taurus	Aquarius	Taurus	Pisces
Meridian transit	10:46	15:16	03:02	23:19	17:27	21:51	18:16
Rises	06:29	11:09	18:53	15:15	12:12	14:09	12:30
Sets	15:02	19:23	11:08	07:28	22:41	05:36	00:06
Altitude	-56.0°	-31.5°	35.7°	59.4°	-2.8°	53.5°	9.3°
Azimuth	7.0°	278.0°	100.0°	171.3°	259.7°	208.4°	253.5°