



## ♪ All The Planets In The Sky, Parlez-vous... ♪

December is always a month that is associated with festivity, since it is the last month of the year. This year, the heavens too have joined in the festivity by treating us to a delightful spectacle. The second half of December 2024 and the first half of January 2025 will offer excellent opportunities to observe all the planets in the sky and learn what they have to say.

If you are a member of an amateur astronomers' group or involved in public outreach, this is an excellent opportunity to invite people to observe the planets through telescopes. Novice amateurs will have ample opportunity to develop their observing skills.

We present below a short guide to observe the planets. The perfect night to see all the planets is 24 December. If you are planning an outreach programme or a star party, please email the details to [astronomydiy@gmail.com](mailto:astronomydiy@gmail.com). We will post the information online. Readers who are interested may click [here](#) to access the details.

**Mercury**, the planet closest to the Sun, will be in inferior conjunction on 6 December. It will reappear above the eastern horizon from mid-December. It will be nearly  $10^\circ$  above the horizon on 15 December. It reaches its maximum western elongation on 25 December. On 29 December, the thin lunar crescent can be seen about  $6^\circ$  south of Mercury.

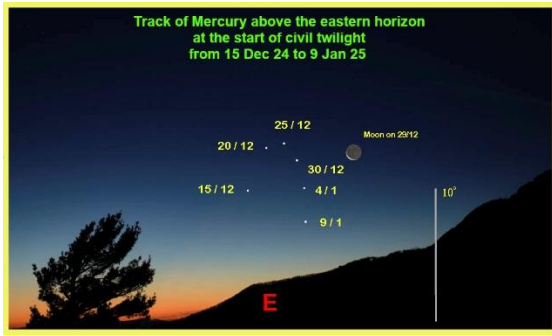
All the other planets are visible soon after sunset. The positions of these planets are plotted on the all-sky map for 25 December 2024 (see the map on page 2). Starting with the western horizon at the end of nautical twilight, we see Venus (Ve) about 50 minutes after sunset. Saturn (Sa) can be seen above Venus. Half-way between the horizon and the zenith is Neptune (Ne). East of the zenith, near the Pleiades, is Uranus (Ur). Jupiter (Ju) shines brightly further to the east, well above the eastern horizon. Mars (Ma), with its distinct copper-red disc, will be just above the eastern horizon.

Those who have not 'found' Uranus or Neptune by themselves may use this occasion as an incentive to find these planets that were discovered after the invention of the telescope.

The pointers on the map show the precise locations of Uranus and Neptune. Uranus is about  $7^\circ$  southwest of the famous star cluster Pleiades (*Kruttika*). While there are not many stars to facilitate star-hopping, Uranus is at magnitude 5.6, which is the limiting magnitude for naked-eye observations. It appears like a 'dot' with a bluish-green tinge through a pair of good binoculars.

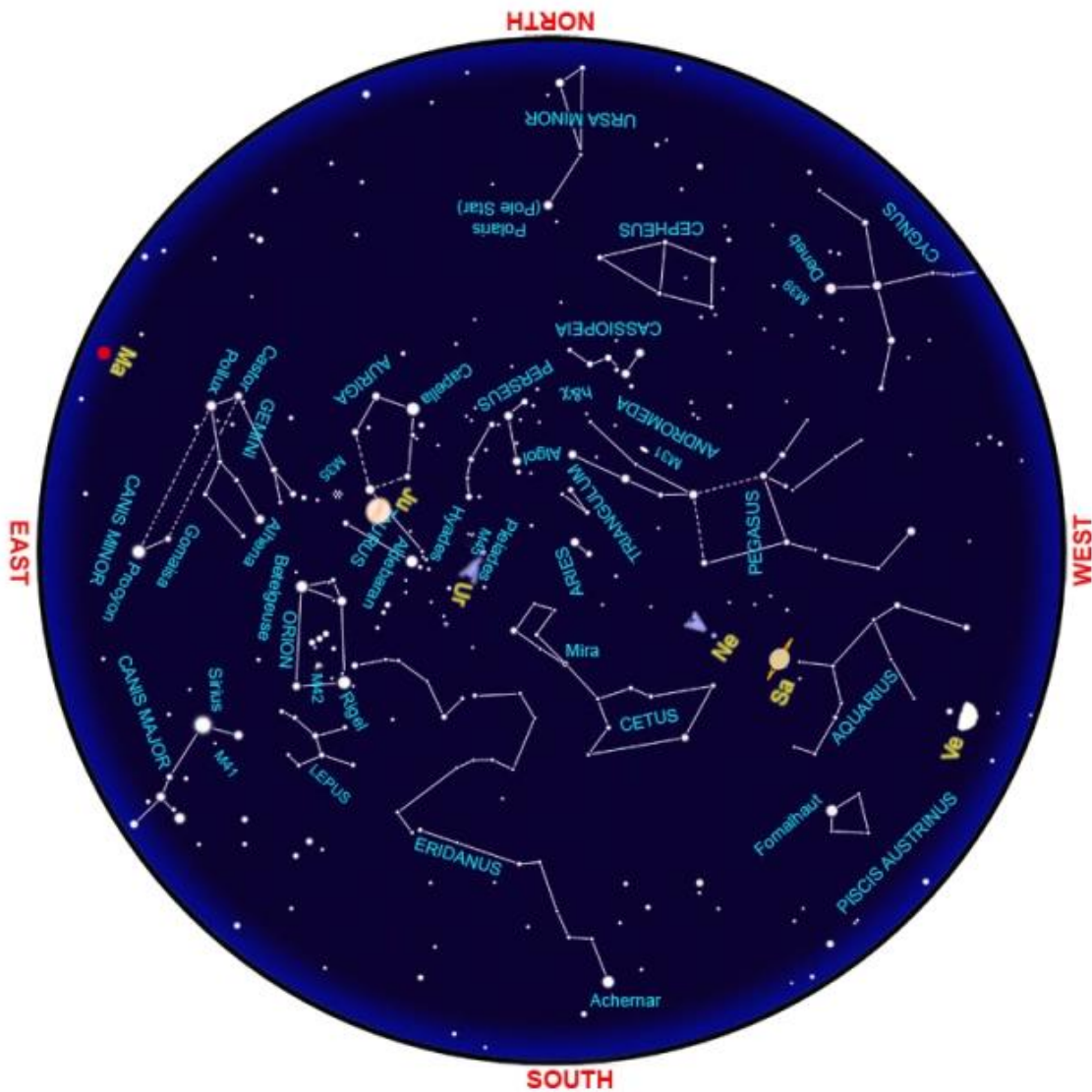
Neptune is about  $14^\circ$  southeast of Saturn. It will be at magnitude 7.9 and can be spotted with a pair of binoculars. About half a dozen surrounding stars can help you navigate to Neptune.



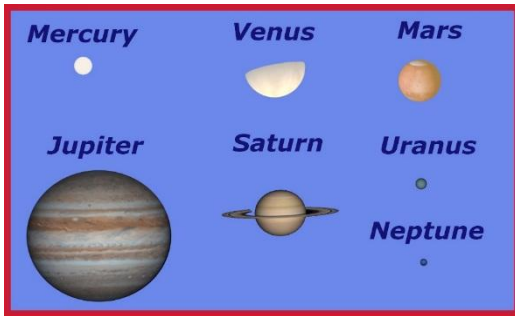


Track of Mercury above the eastern horizon from 15 December 2024 to 9 January 2025.  
Mercury's position is shown at intervals of five days

This sky map for the end of December is drawn for about 20° N latitude. The map shows a little extra sky beyond the horizon; the horizon circle is 220° instead of the usual 180°. The map can be used at 20° +/- 10° latitudes at about 20:30 hours local time.

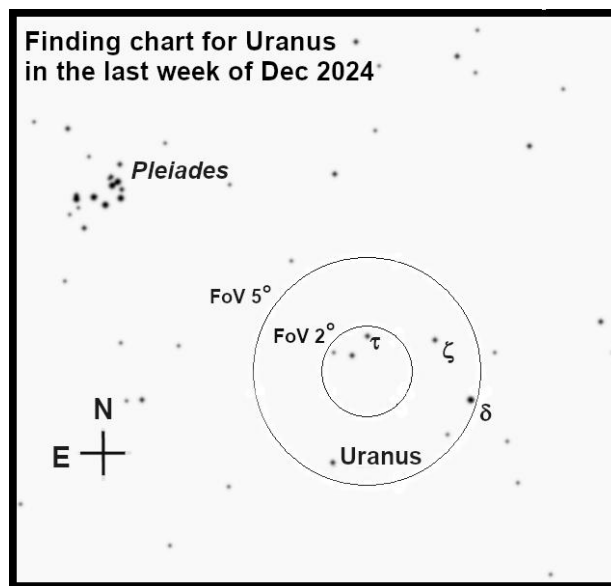


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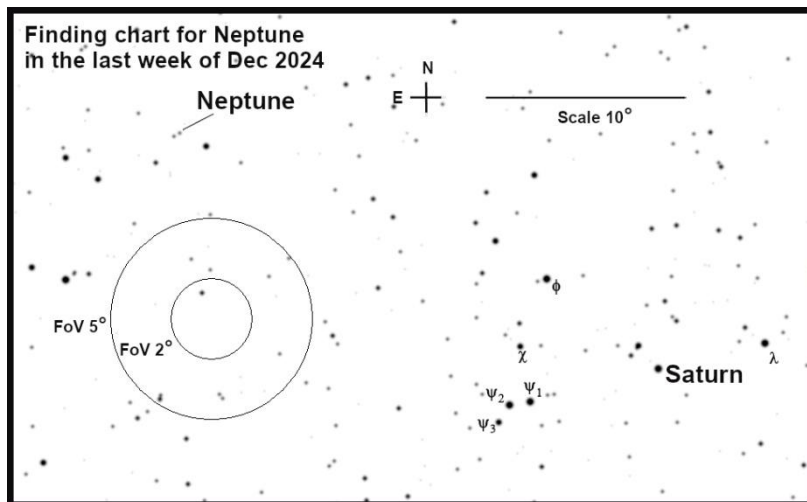


← This figure shows the planets' relative sizes as seen from the Earth. The actual image of a planet will depend on the telescope and magnification that you use.

Finding charts for Uranus and Neptune are given below. FOV = field of view.



Magnitudes:  $\tau$  Arietis = 5.3;  $\zeta$  Arietis = 4.9;  $\delta$  Arietis = 4.2; Uranus = 5.6  
 Magnitude of the faintest star on the map is 6.5



Magnitudes:  $\lambda$  Aquarii = 3.7;  $\phi$  Aquarii =  $\chi$  Aquarii =  $\psi_1$  Aquarii = 4.2;  $\psi_2$  Aquarii =  $\psi_3$  Aquarii = 5.0; Neptune = 7.9  
 Magnitude of the faintest star on the map is 8.0