



Gola – Winter 2022-2023

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Gola is the observational astronomy limb of Jyotish. Throughout winter we can observe Guru, Mangala and Shukra in the evening sky. Shani has evening visibility until early February and will appear in the morning sky in mid-March. Budha appears in the evening sky until early January, then appears in the morning sky from late January to mid-February. Chandra's 27.5-day cycle through the zodiac provides opportunities to witness conjunctions with each visible graha every month. Go out and locate the grahas in the night sky as they travel through rashis and pass the primary stars of nakshatras. Commune with them in the heavens and experience a level of Seeing, beyond a computer screen, that deepens your understanding and practice of Jyotish.

*Winter kicks off with all five visible grahas present in the **evening**. Look low along the western horizon to locate Budha and Shukra as sunset begins to darken the sky. Guru will be high and bright above the southern horizon. Mangala will be bright and reddish in color high above the eastern horizon. Shani, currently the dimmest of the evening planets, will be the last to pop into view above the WSW horizon. On the evening of December 24th USA observers can look slightly left of Chandra to locate Budha and Shukra. Observers in India can locate Bhuda and Shukra to the left on Chandra on December 25th.*

Fig. 1: USA west coast, dusk, December 24, 2022

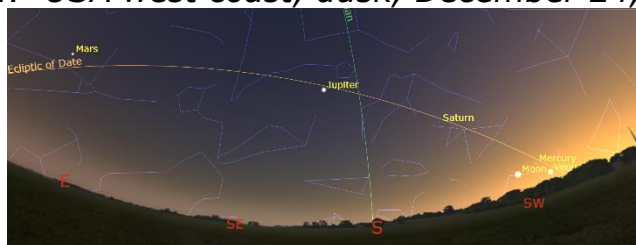


Fig. 2: India, dusk, December 25, 2022



On the **evening** of December 26th observers in the USA can locate **Shani** slightly above and west of Chandra while observers in India can locate Shani above Chandra. The star below Shani is Deneb Algedi in Makara rashi and the star above Shani is Sadalsuud in Kumba rashi. These stars mark Dhanistha Nakshatra. On the evening of December 29th observers in the USA can locate **Guru** slightly west of Chandra while observers in India can locate Guru above Chandra. Guru is travelling among the dim stars of Meena rashi below the bright stars of the Great Square of Pegasus which mark the Bhadrapada Nakshtras. Guru, is travelling through Uttara Bhadrapada marked by Pegasus's lower east star, Algenib and upper east star Alpheratz.

Fig.3: USA west coast, dusk, December 26, 2022

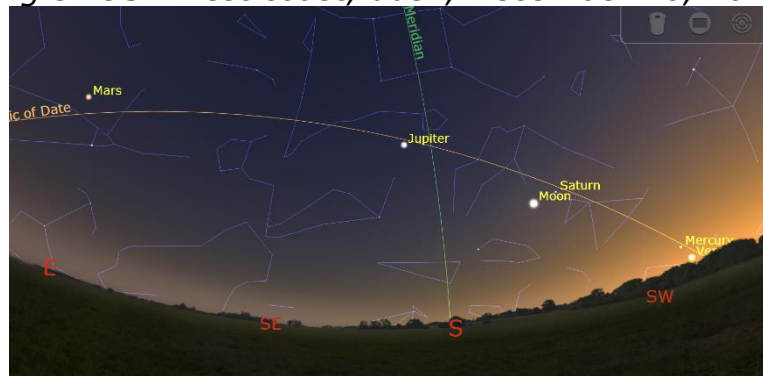
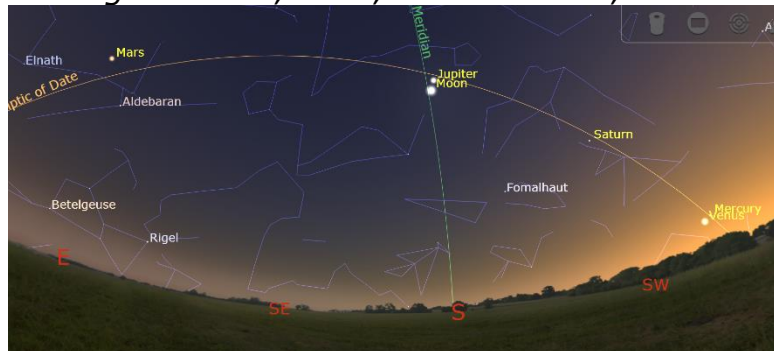


Fig. 4: India, dusk, December 29, 2022



On the **evening** of January 3rd observers in the USA can locate Mangala slightly west of Chandra while observers in India can locate Mangala slightly east of Chandra. The bright star below **Mangala** is Aldebaran of Vrishabha rashi that marks Rohini Nakshatra. By this point Budha will no longer be visible unless you have a clear and dark horizon where you may see the planet for a couple more days.

Fig. 5: India, dusk, January 3, 2023

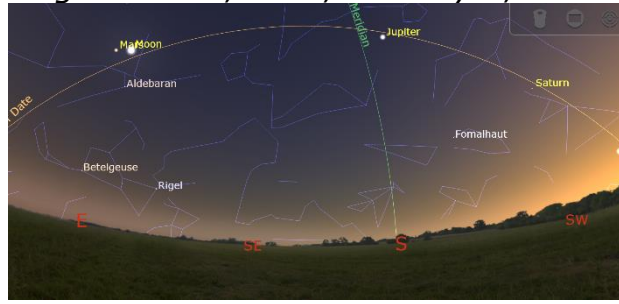
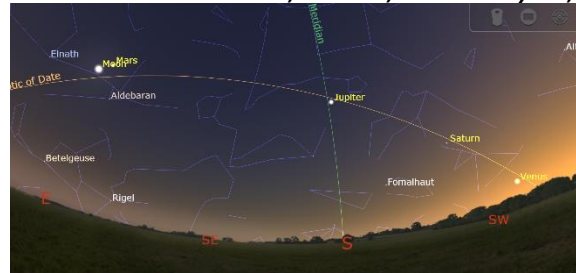


Fig. 6: USA west coast, dusk, January 3, 2023



Budha makes its first **morning** appearance around January 13th and will remain visible for about one month. Chandra joins Budha early on to help you locate and keep an eye on this starry graha. However, due to the slant of the ecliptic (apparent path Surya that all grahas follow) and Budha having north latitude above the ecliptic while Chandra has south latitude below, the grahas will not visually come close for their conjunction or yuti. On January 19th observers in India can locate Budha east of Chandra and on January 20th Budha will be above and east of Chandra. Meanwhile, observers in the USA can locate Budha below and east of Chandra on January 18th and east of Chandra on January 19th. Budha will be above the three bow stars of Dhanus rashi that mark Purva Ashada Nakshatra.

Fig. 7: India, dawn, January 19, 2023



Fig. 8: USA west coast, dawn, January 19, 2023



On January 22nd **Shukra** joins **Shani** in the **evening** sky. They are at the same celestial latitude and longitude and will appear to touch each other from our point of view. Chandra joins them shortly afterwards. On January 23rd, observers in India will find Shukra slightly above Shani with Chandra to the east of them and observers in the USA will find the starry grahas below Chandra on this date.

Fig. 9: India, dusk, January 23, 2023

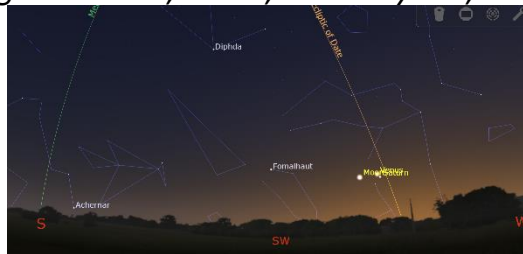


Fig. 10: USA west coast, dusk, January 23, 2023

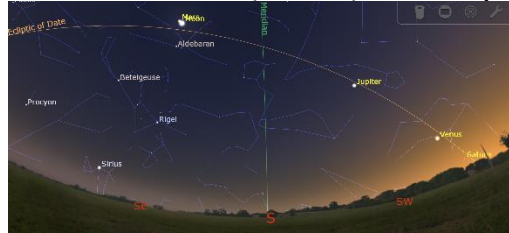


On January 25th observers in the USA will find **Guru** directly above Chandra while observers in India will find Guru above and east of Chandra on this night. On January 30th Chandra and **Mangala** make a very close conjunction or yuti as they share the same latitude and longitude. For observers in the USA Chandra will occult Mangala which means Chandra passes in front of Mangala and obscures the starry planet from view for about two hours. Observers in India will find Mangala east of Chandra on January 30th and west of Chandra on January 31st.

Fig. 11: India, dusk, January 30, 2023



Fig. 12: USA west coast, dusk, January 30, 2023



Shani disappears from the **evening** sky in early February and **Shukra** heads toward **Guru**. On February 21st observers in the USA will find Chandra below Shukra. Chandra will be slightly east of Guru the following evening. On February 22nd observers in India will find Shukra slightly east of Chandra. The following evening Chandra will be above and east of Guru.

Fig. 13: India, dusk, February 22, 2023



Fig. 14: USA west coast, dusk, February 22, 2023



On February 27th observers in the USA can witness Chandra passing slightly above **Mangala** in the evening sky while observers in India will find Mangala slightly east of Chandra. On March 1, observers in both the USA and India will find **Shukra and Guru** side by side so close they appear to

touch because they share the same celestial latitude and longitude. The following evening Shukra will be slightly above Guru.

Fig. 15: India, dusk, March 1, 2023



Fig. 16: USA west coast, dusk, March 1, 2023

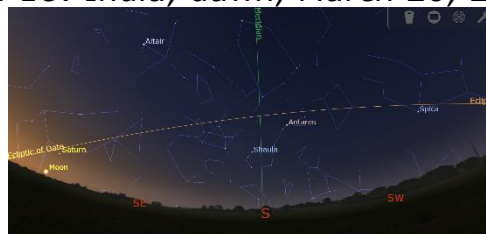


As winter comes to its end, **Shani** makes its appearance through the sunrise in the **morning** sky. Observers in the USA can locate Shani east of Chandra on March 18th and below Shani on March 19th. Observers in India can locate Shani east of Chandra on March 19th and below Shani on March 20th.

Fig. 17: USA west coast, dawn, March 19, 2023



Fig. 18: India, dawn, March 20, 2023



Happy stargazing and planet tracking! If you see shooting stars up until January 12th that appear to come from the area of sky above the

constellation Boötes you are witnessing the Quadrantids that peak on January 3rd. Most meteor showers are named after the constellation they radiate from and this one is too - except the constellation is no more. Here's the fun story on that. A French astronomer created a constellation called Quadrans Muralis in 1795. It borrowed stars from Boötes, Draco, and Ursa Major to depict a quadrant, the ancient instrument used to plot stars. In 1922, the International Astronomical Union (IAU) removed some constellations from our crowded sky maps to give us our current, modern 88. The Quadrans Muralis constellation was among those removed but its shower retained its name. Tune in to the spring issue of The Comet for more meteor showers and Budha's return to the evening sky.