



Gola – Autumn 2022

*By Julene Louis,
Jyotish Visharada, ISAR-CAP
ACVA Provost*

Gola is the observational astronomy limb of Jyotish. For most of the autumn we can observe Shani and Guru in the evening sky. Mangala will have late night and early morning visibility until opposing Surya in December and becoming visible at sunset. Budha, whose cycle around Surya is 88 days will make a morning appearance in October and evening appearance in December. Shukra's morning visibility ends as autumn begins. Shukra will then travel too close to the sun to be observed until becoming an evening planet in December. 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.

*Autumn kicks off with Shani and Guru visible in the **evening sky**. In late-September and early October, locate Guru in the east and Shani in the south-east at sunset. **Guru** will be among the dim stars of Mina, below Algenib of Pegasus marking Uttara Bhadrapada Nakshatra. **Shani** will be east of Danab Algedi in Makara and below and east of Sadulsuud in Kumbha – the stars marking Dhanistha nakshatra. **Mangala** in Vrishabha will rise before midnight and be visible until dawn. At the beginning of autumn, Mangala will be above Bellatrix in Orion, marking Mrigashira Nakshatra. In early December, retrograde Mangala will dip back into Rohini Nakshatra as he moves westward toward Aldebaran.*

*Chandra joins the **evening grahas** in October. Observers in India will find Chandra below **Shani** on the evening of October 5th. For USA observers, Chandra will be below and west of Shani on the night of October 4th, and below and east of Shani on the night of October 5th. On October 8th, observers in India can watch Chandra pass beneath **Guru** while observers in the USA will find Chandra below and east of Guru on October 8th. Observers in India will find Chandra above and west of **Mangala** on October 14th and above and east of Mangala on October 15th. On October 15th, the USA can observe Chandra passing above Mangala.*

Fig. 1: India, 11:00 p.m., October 8, 2022



Fig. 2: USA east coast, 11:00 p.m., October 8, 2022



Budha makes an appearance in the **morning sky** between September 30th and October 24th. Depending on your viewing conditions, you may not be able to observe Budha for this entire time frame. During Budha's 88-day elliptical orbit around Surya, it makes two greatest elongations: one while it is visible in the morning and one during its evening visibility. The furthest Budha and Surya can be from each other is 28° , but their greatest separation isn't always the maximum distance. This greatest western elongation of Budha on October 8th will only reach a distance of 18° from Surya which does not give Budha much height above the eastern horizon before Surya rises. However, after October 8th Budha will continue to grow brighter, increasing your odds of locating the graha in the pre-dawn sky. On October 17th and 18th Budha passes by Porrima, the star in Kanya that marks Hasta nakshatra though the star will likely be too dim to appear. On October 24th, observers in India and the USA alike can locate Budha below Chandra.

Fig.3: India, dawn., October 24, 2022

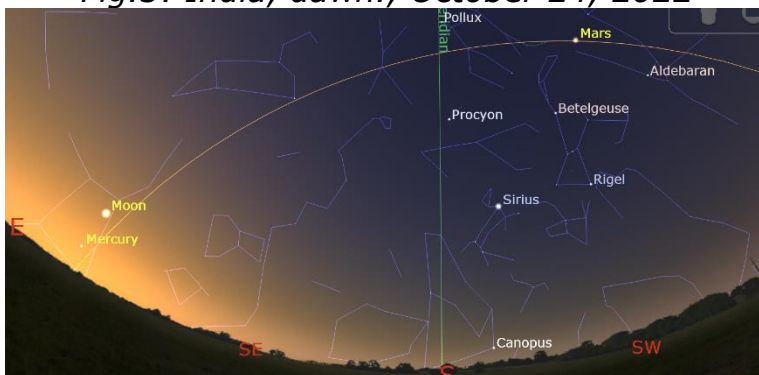
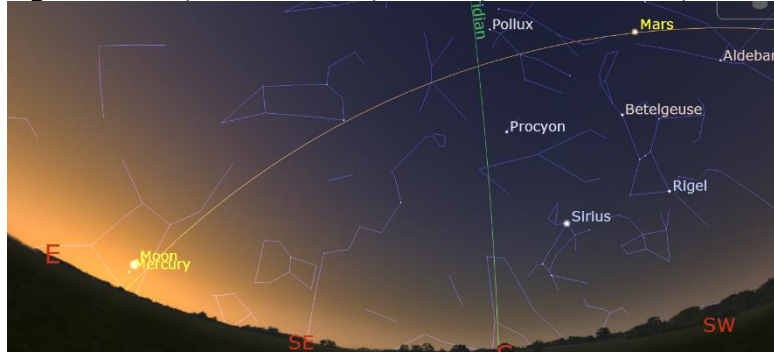


Fig. 4: USA, east coast, dawn, October 24, 2022



In November locate **Guru** in the south-east and **Shani** in the south at sunset. **Mangala** will rise around 9:00 PM. Chandra joins three starry grahas in the **evening sky** in early November. Observers in India can locate **Shani** above and slightly west of Chandra on November 1st, while those in the USA will observe Shani above and slightly east of Chandra on November 1st. On November 4th, observers in India will find **Guru** above and slightly east of Chandra while USA observers can locate Guru directly above Chandra. On November 11th observers in India can locate **Mangala** very slightly below and west of Chandra. USA observers can locate Mangala east of Chandra on November 10th and west of Chandra on the 11th.

Fig. 5: India, 11:00 p.m., November 1, 2022



Fig. 6: USA, east coast, 11:00 p.m., November 1, 2022



As the sunsets at the end of November and beginning of December, locate **Mangala** low to the eastern horizon, **Guru** in the south-east and **Shani** in the south. Chandra joins the **evening starry grahas** at the end of November. Indian observers will find Chandra below **Shani** on November 28th and directly east of Shani on November 29th. Observers in the USA can locate Shani above and east of Chandra on November 28th and above and west of Chandra the following evening. Observers in India can locate **Guru** east of Chandra on November 1st and west of Chandra on November 2nd, while observers in the USA can locate Guru above Chandra on November 1st. On December 7th Chandra passes directly over **Mangala** creating an occultation that blocks Mangala from view for a couple hours. Observers in the USA will find Mangala east of Chandra at sunset and west of Chandra at sunrise. India will not witness the occultation as it occurs during daylight hours. Observers in India will notice Mars to the east of Chandra on December 7th and to the west of Chandra on December 8th.

Fig. 7: India, 10:30 p.m., Dec 7, 2022



Fig. 8: USA, east coast, 10:30 PM, Dec 7, 2022



In mid to late December watch for **Budha** and **Shukra** to climb out of the western sky during sunset as they make their debut as **evening planets**. On the evening of December 24th, USA observers can look slightly left of Chandra to locate the two newcomers to the evening sky. Over India's horizon Chandra will not be visible on December 24th to help you locate Bhuda and Shukra, look left on Chandra on December 25th to find them.

Fig. 9: India, sunset, Dec 25, 2022

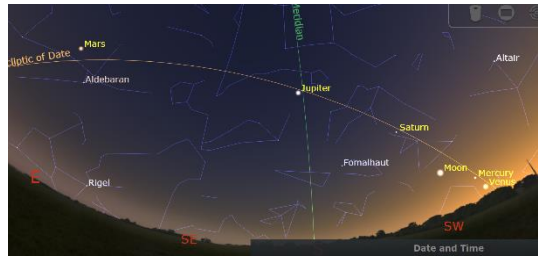
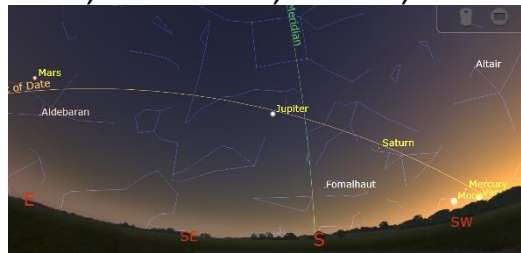


Fig.10: USA, east coast, sunset, Dec 24, 2022



Don't miss the Orionid meteor shower on the night of October 21/22 or the Leonid meteor shower on the morning of November 18th. Happy Stargazing and Planet Tracking!