

Shanku Yantra

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The safest and easiest way to observe the position of the sun is to observe shadows. It allows us to observe and accurately measure the altitude, azimuth and also the declination of the sun.

Shanku Yantra is one of the simplest yantras in Jantar Mantar. Shanku (शङ्कु) means a cone or gnomon. The gnomon is placed in the center of a horizontal platform. There are markings for the shadow cast by the tip of the gnomon. These correspond to special days of Sankrantis, i.e, Sun entering different tropical zodiacs. These include the days of two equinoxes and the two solstices.

The tropical zodiac is an equal division of the ecliptic in 12 parts and is different from the sidereal zodiacs.

There can be two instances during a year when the sun is at the same declination, one during Uttarayan and other during Dakshinayan. One has to know which of the two is ongoing, i.e, the sun is moving northward or southward. Then by just glancing at the tip of the shadow one can tell the current month or even the week of the year.

Shanku Yantra tells the declination of the Sun!

And therefore the time of the year and the season.

Indian national calendar

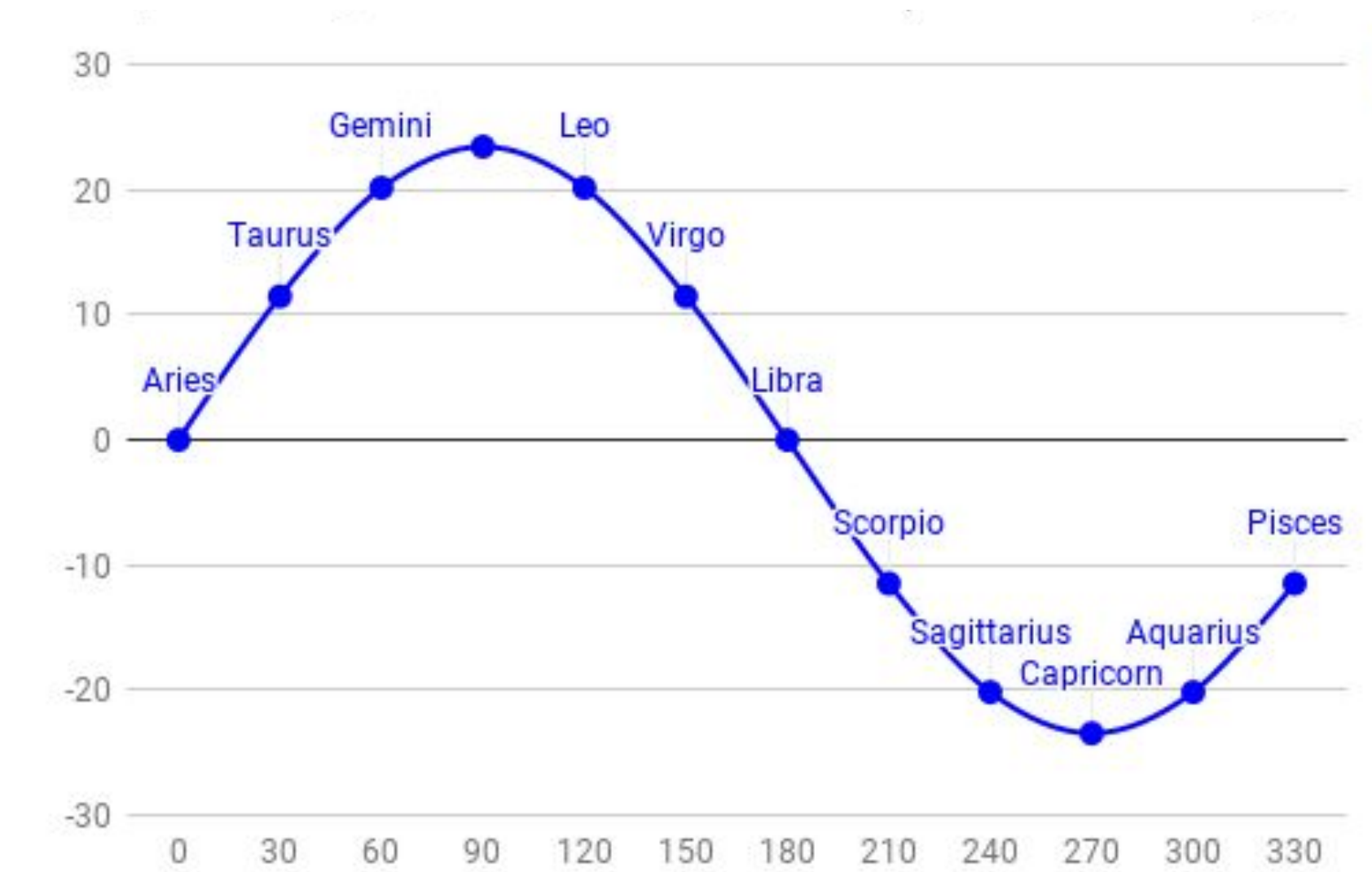
The Indian National Calendar, also called the Saka Calendar is the official calendar of India. It was recommended by the Calendar Reform Committee headed by Prof. Meghnad Saha and adopted by the Parliament of India in 1957. It is based on the tropical solar months and its months align directly with those of Shanku Yantra.

Seasons and months

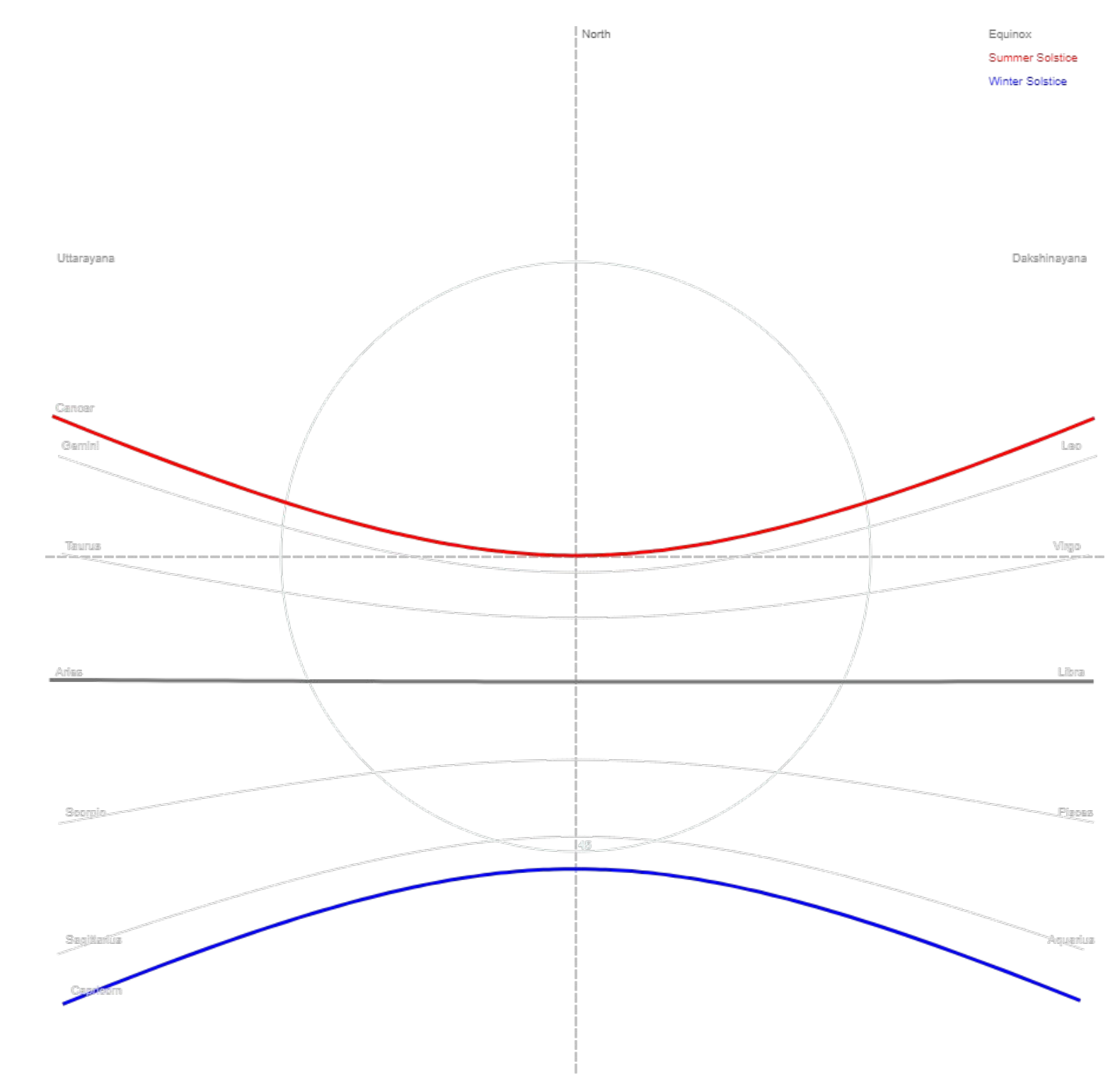
There are 6 ritus (ऋतु) or seasons in traditional Indian Calendars. They have been linked to the tropical solar months with each ritu spans two months. Here is a table that shows the relation between them. Corresponding positions of the sun, vedic month and gregorian dates are also shown alongside.



Shanku Yantra at Jantar Mantar Ujjain



Division of Ecliptic in Topical Zodiac



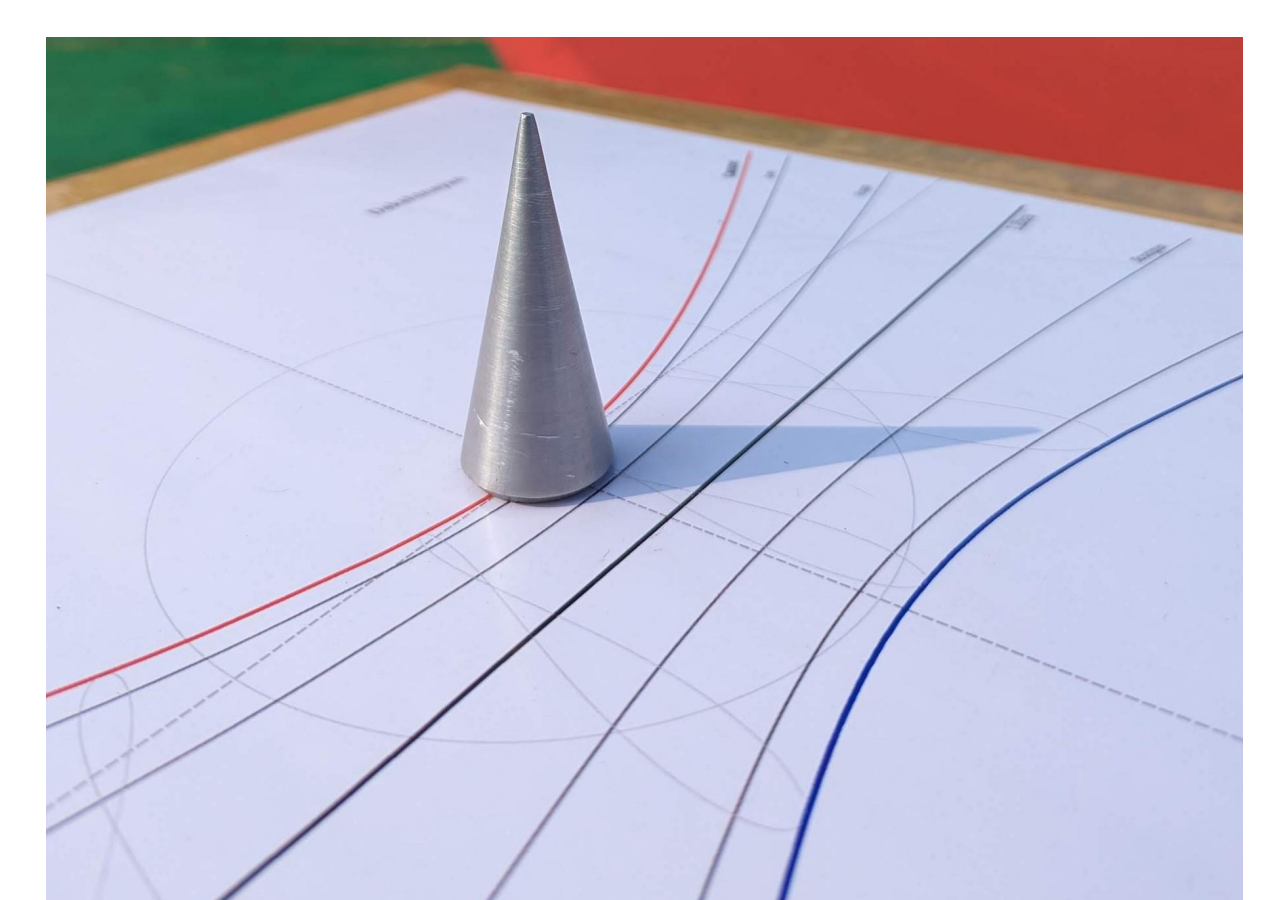
Top view of a generated Shanku Yantra

Tropical Zodiac of the Sun	Ritu (Season)	Sun Declination Range (°)	Solar Months Indian National Calendar	Vedic Month	Gregorian Dates
Mesha (Aries)	Vasanta (Spring)	0 , 11.5	Saur Chaitra	Madhav	21/22 March - 20 April
Vrishabh (Taurus)	Grishma (Summer)	11.5 , 20.2	Saur Vaishakha	Shukra	21 April - 21 May
Mithun (Gemini)	Grishma (Summer)	20.2 , 23.5	Saur Jyeshtha	Shuchi	22 May - 21 June
Kark (Cancer)	Varsha (Rainy)	23.5 , 20.2	Saur Ashadha	Nabah	22 June - 22 July
Simha (Leo)	Varsha (Rainy)	20.2 , 11.5	Saur Shravan	Nabhasya	23 July - 22 August
Kanya (Virgo)	Sharad (Autumn)	11.5 , 0	Saur Bhadrapad	Ish	23 August - 22 September
Tula (Libra)	Sharad (Autumn)	0 , -11.5	Saur Ashwina	Urja	23 September - 22 October
Vrischika (Scorpion)	Hemanta (Pre Winter)	-11.5 , -20.2	Saur Kartik	Sahas	23 October - 21 November
Dhanu (Sagittarius)	Hemanta (Pre Winter)	-20.2 , -23.5	Saur Agrahayana	Sahasya	22 November - 21 December
Makar (Capricorn)	Shishir (Winter)	-23.5 , -20.2	Saur Paush	Tapah	22 December - 20 January
Kumbha (Aquarius)	Shishir (Winter)	-20.2 , -11.5	Saur Magha	Tapasya	21 January - 19 February
Meen (Pisces)	Vasanta (Spring)	-11.5 , 0	Saur Phalguna	Madhu	20 February - 21 March

Shanku yantra generator

If one has to make a shanku yantra for their location, either you wait for the specific dates throughout the year and trace out the shadow paths of the gnomon, or you can generate the yantra using this online tool and place it alongside the gnomon of appropriate size. The radius of the circle in the graphic should be equal to the gnomon height.

alokm.com/astro/shanku.html



Shanku Yantra created using generator