

Spectacular Solar Eclipses Visible in Odisha in Near Past

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Among the spectacular solar eclipses of Odisha in near past was a Total eclipse on February 16, 1980 and a Partial Eclipse of October 24, 1995. No Annular eclipse has been seen so far in Odisha in near past.

Great Total Eclipse of 1980

The path of totality for the great solar eclipse of 1980 began in the South Atlantic Ocean, travelled across Africa at the South of the Equator, swept over the Arabian Sea, Southern India, the Northern tip of the Bay of Bengal, Southern Bangladesh and a small stretch of eastern India before ending over the South China Sea at sunset. The shadow entered Odisha at Koraput and subsequently passed over Berhampur, Bhubanewar and Puri. The centre of the totality directly passed over the Sun temple of Konark before heading towards the Bay of Bengal. At Puri (Latitude $19^{\circ} 48'$, Longitude $85^{\circ} 49'$), the peak period of the eclipse was 3.46 P.M. in the afternoon when the Sun was at an altitude of 23° over the horizon. The totality of the eclipse was visible for duration of 2 minutes 13 seconds when the Sun completely vanished from the sky lying behind the Moon. Despite the low elevation of the Sun in the sky, the sky was clear and the visibility at Puri was exceptionally good. During the totality, Sun's corona could clearly be seen.

The birds were reportedly confused at the sudden onset of the nightfall and started returning to their nests in flocks.

As not much awareness regarding eclipses has been created at that time, people got perplexed and panicked and kept themselves indoors. Schools and colleges were declared holidays on that day because of the eclipse. However, media interest was not as extensive as the nature and rarity of such an event deserved. Surprisingly, there was little or no interest evinced by students, teachers and the general intelligentsia which included the vast majority of educated people. School science teachers who taught about eclipses using blackboards in their classrooms appeared to show no interest in observing a real one especially one that promised such a great spectacle !

Great Partial Eclipse of 1995

Unlike the previous eclipse, the people were eager to come outside and watch at the progressive stages of the eclipse through special filter specks. As the totality of the eclipse travelled through a narrow belt over North India, from Alwar in Rajasthan to Diamond Harbour in West Bengal, the eclipse was partial in Odisha. The eclipse commenced in the morning and

progressed as per prediction reaching the maximum stage at 8.46 A.M. At the peak of the eclipse, Sun's elevation angle was nearly 39° that means the Sun was quite high in the sky to make eclipse clearly visible. Despite the morning conditions, the sky was clear and the eclipse could clearly be seen. The obstruction of the solar disc was almost 92% and the daylight decreased dramatically bringing down the ambient temperature to some extent during the peak stage of the eclipse. Birds were seen circling in the sky erratically in confusion and trees closing down their leaves in apprehension of the nightfall. Sun's light seemed to be soft resembling a late winter afternoon hue. People tried to have a glimpse of the eclipse through special solar spectacles and large scale propoganda was carried out by various organizations regarding the safe observation of the eclipse.

A solar eclipse usually occurs on a New Moon day when the Moon lies between the Sun and the Earth in a straight line blocking the Sun to cast a shadow on the Earth. While during a Total Solar Eclipse, the Sun completely vanishes from the sky causing a temporary nightfall, a Partial eclipse, on the other hand, is marked by an incomplete obstruction of the Sun by the Moon. However, the most spectacular event is the Annular eclipse when the Moon only obstructs the central part of the Sun leaving its fiery outer ring visible.

Although annular or total solar eclipses are not very rare, very few people have really a chance of witnessing the event in their life time. The reason behind this strange phenomenon is that such eclipses are usually seen over a very narrow strip of path sometimes passing over seas and inaccessible parts of the globe. Hence,

observing a solar eclipse is really a life time experience !

Through the ages, the sudden darkening or disappearance of the Sun has been seen as a sign of displeasure of Gods or an omen of turbulent activities. In Chinese mythology, an eclipse is interpreted as a dragon devouring the Sun in the sky. In our Indian mythology, two hungry demons named Rahu and Ketu are believed to be swallowing the Sun during the eclipse. There are many myths prevalent in our society in Odisha regarding the eclipse. People used to observe penance and fasting during the eclipse as it is believed that the food cooked during the eclipse turn toxic. Pregnant women are advised to stay indoors in the belief of harmful impacts of the eclipsed rays on the unborn baby. People are also advised not to embark on distant journeys during the eclipse. Rituals of deities are generally altered in the temples due to the eclipse. People used to take baths and offer *puja* in temples after the eclipse.

Grand celestial spectacles are not generally welcomed in our dogma dominated Odia society. What really disturbing is the unchanging mindset of the people even in the light of the convincing scientific evidences put forward to explain these celestial phenomena. It is quite ridiculous to shut oneself indoors when a spectacular and a rare natural event is unfolding up in our backyard. We should not only free ourselves from these bizarre beliefs, but also develop a sense of curiosity and scientific mindset to unravel the mystery of nature.

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