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Final Deadlines

March:	January 21
June:	**April 21**
September:	July 21
December:	October 21

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On the Cover: A solar system is forming in the lobby of the main entrance of the Eugenides Foundation in Athens, Greece. Called Genesis, it was created by acclaimed artist Kostas Vartos. See more in International News, page 48. Photo by Yannis Panousis, the Eugenides Foundation.

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This time, it was a ring of fire

With memories of the 22 July 2009 total solar eclipse still fresh in minds, less than six months later we had another major eclipse event in India: the annular solar eclipse of 15 January 2010.

This came close on the heels of the partial lunar eclipse on New Year's Day, which also was seen from India. It has been eclipses galore for India!

My colleagues Kiran Hedukar, Chandrakant Karambelkar (Chandu for short) and I visited Rameshwaram in south India to witness and capture the event as part of our planetarium's official team. Two of our planetarium's honorary guides, Jatin Rathod and Prabhu Velar, came to the same destination on a self-funded private visit. They volunteered to join and help us.

The altitude of the scorching sun at Rameshwaram at the maximum phase was 56 degrees. It created a very awkward angle for shooting through the directly-attached DSLR cameras that had no dockable view-panes. The standard diagonal that we had brought was focusing the image a little short of the reach of the camera, so the only option was to lie on a mattress and then raise your head like a yogi in order to put your eye into the viewfinder.

I readily gave this task to Jatin and I assumed the responsibility of a town crier. My job now was to shout instructions and timings to my team, assembled viewers (both local and from England, Bangkok and Japan) and to the crew of the Zee News television channel, which had somehow traced us here even though we had kept our location and plans quite secret.

I began shouting. "Suno, Suno, Suno! (Oyez, Oyez, Oyez!) The first contact just 30 seconds away! Shoot! Shoot! Begin shooting fast!"

The annularity lasted at Rameshwaram for 10 minutes, 12 seconds. The partial eclipse began at 11:14 IST (Indian Standard Time=UT + 5:30 hrs), with annularity at 13:16 and annularity and eclipse ending respectively at 13:26 and 15:09. It was almost a four hour event.

Many Indian and foreign amateurs and scientists camped near the northern limit of the annularity. Eclipse duration was quite short in such locations, but these were ideal for longer recording of "edge" phenomena, like occurrence of Bailey's Beads.

Unlike the solar eclipse in July, this time most of the eclipse locations had good sunshine.

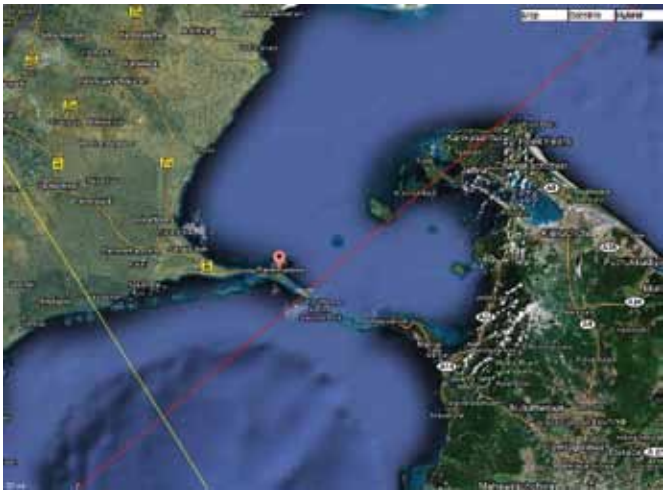
The "yellow" pictures were taken using an 80-mm aperture, 1000-mm focal length Bushnell refractor to which we attached a Sony Alpha 100 DSLR. The f-ratio was 12.5 and the exposures time was 1/160 second. An Inconel™-coated filter capped the objective end of the tube. This system was operated by Jatin.

An h-alpha filter was very kindly lent to us by Dr. Ram Sagar, director of the Nainital Observatory (called ARIES, the Aryabhatta Research Institute of Observational Sciences; you can learn more at www.aries.res.in). This we carried with the hope that if some major prominences showed up at the time of annularity, then it would conjure up with the residual ring to create a grand spectacle. This filter, centred on 6563A0, had a pass band of 3A0.

Prominences did show up in the practice shots I took at Mumbai before the event, but not during the eclipse. There were just small wispy stubs. The filter was fixed at the objective end of a Zeiss 70-mm refractor having a focal length of 850 mm and had a Nikon D-70 DSLR at the business end. This system was operated by Chandu.

Kiran minded the Sony Handycam that was connected to a television so that the gathered crowd could watch the proceedings. Prabhu took off a small finder scope from one of the telescopes and attached an eyepiece adapter and took good pictures of the event. In the end we had good pictures and a dark suntan as bonus.

Another Nehru Planetarium team stayed put in Mumbai to show the partial phase of the eclipse to the public, which came in large numbers. The solar telescope (a coelostat) fixed on the terrace of the planetarium was used to project a large image of the eclipsed sun. A vid-



Previous Page: Three stages of the annular eclipse, with maximum at top, second contact in the center, and the "bitten-off biscuit" at bottom.

This Page: The map above shows the portion of Indian Peninsula where the ASE took place; Map courtesy: eclipse.gsfc.nasa.gov/SEgoogle/SEgoogle2001/SE2010Jan15Agoogle2.html.
At Right: (Top) The curious line up to see the eclipse back at the planetarium; (Center) News crews competed with the crowds to capture the event. (Bottom) A close-up of our location at Rameshwaram.
Bottom: Piyush at the ready. All photos by Nehru Planetarium staff.

eo camera projected the event on a video screen in the planetarium lobby and showed the entire event in air-conditioned comfort. Thousands of people and more than a dozen TV channels thronged the planetarium.

Our Viewing Location

The word Rameshwaram means the Lord of Rama or Shiva. The entire ethos of this small town revolves around the ancient temple of Lord Shiva. It is a pilgrimage centre of Hindus.

The legend (as per the great Hindu epic Ramayana) has it that prince Rama (born around 5114 B.C.) came here searching for his wife, Sita, who had been abducted by demon king Ravana, whose kingdom was in Lanka (modern Sri Lanka). Before launching his war on Lanka, Rama first worshipped lord Shiva and sought his blessings for success in war.

A grand temple now stands at the spot of Rama's worship. It was first erected in the 12th century and has been renovated repeatedly over centuries. Rama's army and engineers created a bridge out of rocks that could float in water and thus annexed Lanka, defeated Ravana and brought Sita back.

Today, several petty trinket shops around Rameshwaram sell pumice stone, which can float in water, passing those off as the original bits from the bridge that Rama built. ☆