Mere Shadow Play

Hippos Under an Eclipsed Sun

By J V NARLIKAR

ON June 21, I had the rare opportunity of witnessing the total eclipse of the sun from a game reserve on the banks of the Zambezi in northern Zimbabwe. I had gone in a group of nine to Mana Pools, right on the border with Zambia.

We undertook this trip and enjoyed it immensely, despite advice from well-wishers here that travelling in Zimbabwe was dangerous. One friend went so far as to warn that there was an anti-Indian feeling in Zimbabwe. I could not figure out why, since we could not even beat the Zimbabweans in a test series so as to incur their wrath. Anyway, the people were friendly and the police very polite and helpful.

To an astronomer, a solar eclipse is mere shadow play. This is an occasion when the moon's shadow under the sun falls on the earth, and to an observer from such a shadow region the sun becomes momentarily invisible. The moon not only blocks out the sun, it also prevents sunlight from reaching that part of the earth. To all intents and purposes, it is a somewhat weird kind of nightfall.

We all learn at school that the earth goes round the sun and the moon goes round the earth. Had these orbits been in the same plane, there would have been a solar eclipse at every new moon. Because the orbital planes are inclined at a small angle of around five degrees, the sun-moon-earth alignment required for a solar eclipse occurs very rarely.

Although an eclipse implies a transient cutting off of the light from the sun, the darkness that falls during totality, or even the diminishing of the solar light during the partial covering phase, causes fear in the minds of those who do not know the above scientific reason for the phenomenon. As a result, superstitions have grown around the event, causing people to hide themselves in their houses, especially preventing pregnant women from coming out under the eclipsed sun. Various rituals involving baths, fasts and so on also have sprung up. The irony is that even after the mystery of the eclipse is fully solved, these superstitions continue.

The real danger lies in indiscriminate viewing of the partially covered solar disc. No doubt, a crescent shaped sun is a spectacle well worth viewing. However, the temptation to look continuously at the sun with naked eyes must be avoided. For, there is every likelihood of eyes being damaged by infra-red rays from the partially visible sun.

But enough of these prosaic scientific facts. Even when you know them, you cannot help enjoying this remarkable sight. On June 21, totality was due at a few minutes past 3 pm local time and would be heralded by swiftly passing shadow bands. In anticipation, we had spread a white sheet on the ground and as the shadow advanced we could see it flutter across. Fluttering occurs because of its passage through a restless atmosphere.

By now darkness had descended on the landscape. The covering of the solar disc began with the appearance of Baily's beads and the diamond ring. The corona was in place, but our attention was now drawn back to what was happening on the ground.

IN BRIEF

- Though the mystery of eclipses have been solved, superstitions about them continue
- Animals like hippos don't seem to panic during eclipses
- In Africa, people carry on life as usual during such phenomena, unlike many Indians

There were, of course, the flocks of birds, confused by the sudden nightfall, making their way back to their nests. The drop in temperature certainly added to the effect. However, at the Mana Pools we were rewarded by a sight not normally seen at a typical total eclipse.

On a small island in the Zambezi facing us, there was a flock of hippopotemi enjoying their siesta under the sun. On a normal day, they would be there till sundown and then get into the water to make their way to the grassy banks for grazing. Hippo footprints right where we were standing, showed that they had been here the previous night. The question in our minds was, would they, like the birds, be fooled by this false night?

As we watched anxiously, they slowly got up and made their way one by one into the river. The laziest of the lot waited a second or two longer before following the rest of the group, grunting in protest. Would the lot now come to the bank right where we were standing? We could not see them in the river, but their grunting had increased and was getting closer. What does one do to an advancing hippo? We vainly tried to recall any instructions read somewhere. Keep ourselves still and inconspicuous and hope that they will go their way? Perhaps the returning sunlight would save us.

It did. The eclipse duly ended as magnificently as it had begun. The hippos noticed it too and remained in the water, with the laziest one probably saying: "Why all this fuss? I told you not to move, didn't I? I knew this was no real night."

Given our typical reaction of staying indoors to avoid any sinister influences, I was curious to know how the Africans reacted to such an event. A local newspaper in South Africa had brought out a special supplement sold with special eclipse-viewing glasses, and tips on what to see and how to see, given by experts from a planetarium. It also related some of the myths and folktales from Egypt, China, India, Kenya and Greece. The tale from Kenya is interesting to note.

In the olden times, the sun and the moon lived together as a married couple, with both equally bright. There were complaints from the earth that the nights were too dark; could one of them move over to the night? The kindly moon obliged. However, the earth-dwellers now complained that they could not sleep. Could either the sun or moon reduce his/her shining power? The sun proposed that the two run a race and the loser would shed power. The race track, however, led through water and in her hurry to win, the moon plunged ahead only to find that the water quenched all her fire. She realised that the sun had tricked her, and she now takes revenge by blocking him out whenever possible.

A charming tale with nothing sinister about it. Nor did the locals find anything inauspicious about the occasion. They carried on with their life as usual. No fasting, no hawans, no after-baths — these rituals and *karmakandas* are reserved for us wise Indians.