

TOTAL ECLIPSE SAFARI 2001: An African Eclipse

by Peter and Evon Anderson

The eclipse was observed from high land adjacent to the village of Drumarda near St Albert's Hospital north of the settlement of Centenary in Northern Zimbabwe. Its GPS position was 16° 29' 13.9" South, 31° 15' 32.0" East, Altitude 1360 metres. (GPS World datum). Conditions were perfect and a time of 3 minutes 04 seconds was recorded between disappearance of the last of the Baily's Beads and the first appearance of the 'Diamond Ring' though the nominal length of the eclipse from our site was 3 minutes 10 seconds.

Our Astronomical Association of Queensland group of 20, including the tour operator Dick Cijffers from Journeys Worldwide of Brisbane, travelled to northern Zimbabwe for a rendezvous with the moon's shadow, and for some of us it was to be a first-time experience. Although the tour was planned around the solar eclipse, we had included in the itinerary the top tourist attractions in Zimbabwe as well as some game parks. Half of the group stayed longer and continued with a tour of the northern part of South Africa including Kruger National Park.

Our excitement built towards eclipse day when we left our hotel in Harare very early and drove north. Because of an extreme shortage of fuel in Zimbabwe there was very little traffic on the roads, but what there was all seemed to be travelling in the same direction as ourselves. We joked that if we had a mechanical breakdown or some other catastrophe befell us we would all be out on the side of the road trying to hitch a ride. We tried to make light of the cloudy sky by saying "Often the clouds burn off during the day" or "It is quite a few hours until the eclipse and the weather can change". In fact it did, and we had a cloudless sky for the eclipse. We had decided unanimously to head north past the township of Centenary and selected a site near the Mission Hospital of St. Alberts. It was a beautiful location, being an enormous grassy knoll with a clear view to the north-west and adjacent to the village of Drumarda which added an African element to the eclipse.

We had a few hours for those with equipment to set up and for most of us to tour, by invitation, the local village. In return for this privilege we will each send copies of our photographs taken that day as most of the villagers have never seen photos of themselves.

The local people were exceptionally friendly and welcoming and had been informed about the eclipse and the danger of looking at the sun without protective lenses. We handed out some eclipse glasses and the youngsters enjoyed looking at the partial phases of the eclipse through my telescope. As totality approached the villagers sat in a circle around our group and prepared to watch the show - us!

During the partial phases there were several large sun spots as well as a group towards the centre of the disc clearly visible (see Figure 1). The gradual dimming of the sunlight was very noticeable as was the drop in temperature. Immediately before totality, we noticed a flickering of the dim light and then the most incredible shadow bands racing across the ground. I felt these looked like a school of fast-swimming fish visible through a rippled water surface. At first I couldn't see the shadow bands because they were moving much more swiftly than I had expected.

When the perfect alignment of earth, moon and sun was complete, and the sun was in total eclipse, we were all struck with a feeling of awe. Half of the circle of villagers had their backs to the sun and were watching us. I called out to them to look upwards and their screams of excitement echoed our own feelings. All this was captured on an audio cassette recorder. From our observing site, it was truly an African eclipse with a typical acacia tree, and just beyond it the circular thatch-roofed huts of the village, all in silhouette in the north-west under a totally eclipsed sun.

The magnificent corona (see Figure 2) extending like fine strands of silver hair about one "diameter" all around the black disc of the moon was awe-inspiring. Extending beyond the solar disc were incredible pink prominences included one particularly large one. Jupiter, Sirius and some other stars were visible, but I didn't take too much notice of these as these are commonplace - the novelty is having them visible during the day. I couldn't take my eyes away from the incredible spectacle of the sun. I had the impression that it was not as dark as during other eclipses we have witnessed. I theorize it could have been because of the haze in the atmosphere which would have scattered some of the light from the sun as compared with the crystal-clear conditions in the Caribbean.

As the clock ticked towards the end of our 3 minutes 10 seconds of totality, we noticed a brightening at the '9 o'clock' position on the disc and the diamond ring phenomena (see Figure 3) blazed across the sky. This was greeted by yells and sounds of exclamation.

As the sun slowly emerged from hiding and we experienced in reverse sequence the partial phase with all its attendant phenomena, most of us were on too much of a 'high' to photograph or observe this phase. I took photographs during the eclipse using a 90mm Meade ETX operating at F14 using the appropriate solar filter during the partial phases. The telescope, having a 'flip mirror' was also able to be used visually without losing time for the change-over. Others in our group had a C90, digital video cameras, long telephoto lenses and modified binoculars.

After treating the villagers to drinks and biscuits, we reluctantly said our farewells to these lovely people. Earlier in the day we had been invited to meet the local farmers at the Centenary Country Club where we had a relaxing drink and met a group of Hash House Harriers who, by all appearances, had thoroughly enjoyed the eclipse. They described themselves as "drinkers with a running problem". We arrived back at our hotel in Harare very tired but happy after a 14 hour day and sincerely thanked our driver for his efforts on this day in particular. As it inevitably does after an eclipse, discussion turned to plans to observe future eclipses.

After such a spectacular event, the rest of the trip could easily have been an anti-climax but this was not the case as Dick Cijffers had put together a superb itinerary and it ran flawlessly. As a South African, his personal knowledge of Zimbabwe and South Africa made for a fascinating tour.

In Zimbabwe we visited Victoria Falls, one of the three most spectacular waterfalls in the world, which was enhanced by rainbows spanning the tumult. Our visit included a close encounter with a herd of elephants and a sunset cruise on the Zambezi where we had a close-up view of hippo near the boat. Most of us went on a helicopter flight over Victoria Falls and some walked into Zambia to view the other side of the falls.

One of our favourite places was the Elephant Sands Safari Lodge adjacent to Hwange National Park. The atmosphere of the Lodge was 'Africa circa early 1900s' as there was no electricity, no glass in the windows and the staff heated our water in a wood-fired boiler. This hot water was then plumbed into the bathroom in each of the rondavels which were very comfortable. In Hwange we had close-up views of the prolific animal and bird life, and for nearly all of us this was our first chance to see them in the wild - a very special experience. We saw elephants, giraffes, zebra, warthogs, hippo, sable deer, kudu, crocodiles, wildebeeste and ostriches as well as the birds which were all new to us. Next morning some of the group went on another game drive while most of us visited a local village and school. One of our game guides took us through his family village where he explained details of village life and we met the senior woman. We were very impressed with the school where education is carried out in English and the curriculum appeared to be very extensive and also relevant to their lives. The biros, pencils and writing pads we had brought with us were gratefully received.

Another highlight of our trip to Zimbabwe was our tour of the stone ruins of Great Zimbabwe, the centre of the powerful Shona empire in the 14th and 15th centuries. In Matopos National Park we visited Cecil Rhodes grave, saw pre-historic Bushmen cave paintings and were lucky enough to have a close-up view of a family of rhino.

We all flew from Bulawayo to Johannesburg where we farewelled some of our group who were either returning to Australia or continuing their tour elsewhere. Ten of us, with our tour guide Dick, collected our 2 minibuses and our other driver/guide, Sid McKinley, a former New Zealander who is now a South African.

The highlights of the South African section of our tour were undoubtedly Kruger National Park and Hluhluwe National Park as the stars of any tour of this part of the world have to be the animals.

We enjoyed a magical day in Kruger where, in addition to the usual close sightings of animals and birds (giraffe, zebra, wildebeeste, elephants, impala, baboons, warthogs, yellow billed hornbill, lilac breasted roller, vultures), we had some very interesting experiences. We saw a brief fight when a dominant male impala expelled an intruder into his harem; we saw impala "kicking up their heels" as they leapt and ran; there was a male vervet monkey sitting on our windscreen and displaying his spectacularly blue genitalia; we watched a hippo draped with water hyacinth rising out of a pond; and a lion and lioness sleeping off a big meal close to the road.

We travelled through Swaziland, which was very interesting, to visit Hluhluwe National Park. We stayed within the park and, once again, enjoyed observing the giraffes, zebra, warthogs, impala, nyala, wildebeests, buffalo, rhino and numerous birds. We had got so used to seeing these that we called out to the driver not to slow down as "It's only giraffe" or "It's only zebra" etc. We were hoping to see a leopard but were not successful. Can't win 'em all, but we came close.

And then after we returned home, half a lunar revolution later, we were able to see the 49.95% partial lunar eclipse on the evening of 5/6th July. To see two eclipses in a fortnight is pretty rare.

But what of the future? After the success of this African trip, the AAQ is sponsoring a further visit to Zimbabwe for the next eclipse on 4 December 2002 again through Journeys Worldwide of Brisbane. This time the eclipse will be observed from Plumtree near Bulawayo. The duration of totality there will be 1 minute 16 seconds, much better than the 32 seconds in Ceduna, South Australia at the other end of the track, but although the altitude of the sun in Zimbabwe at eclipse time is much higher (38° compared with 9° for Ceduna), the weather is not as promising. However it is a morning eclipse and the locals say it usually rains in the afternoon. The itinerary involves visits to Victoria Falls, Great Zimbabwe and Hwange and Matopos National Parks as did our last trip, also includes the Eastern Highlands, and has an identical South African extension.

I am also organising a trip to Ceduna on behalf of the AAQ. Here the eclipse occurs in the late afternoon just prior to the moon's shadow leaving the earth. The main segment of this is a four day bus trip from Adelaide which visits the Barossa Valley, Stockport Observatory of the Astronomical Society of South Australia, various scenic areas and spends two nights in the heart of Ceduna in the Foreshore hotel/motel before returning to Adelaide. Ceduna, a town of 4,000 at the eastern end of the Nullabor, is gearing up for an influx of visitors which some estimates put at 25,000, so understandably all the regular accommodation has long been booked out.

It would be premature at this stage to mention plans for 2003, 2006, but we are working on them!



Figure 1: Sunspots And Partial Eclipse

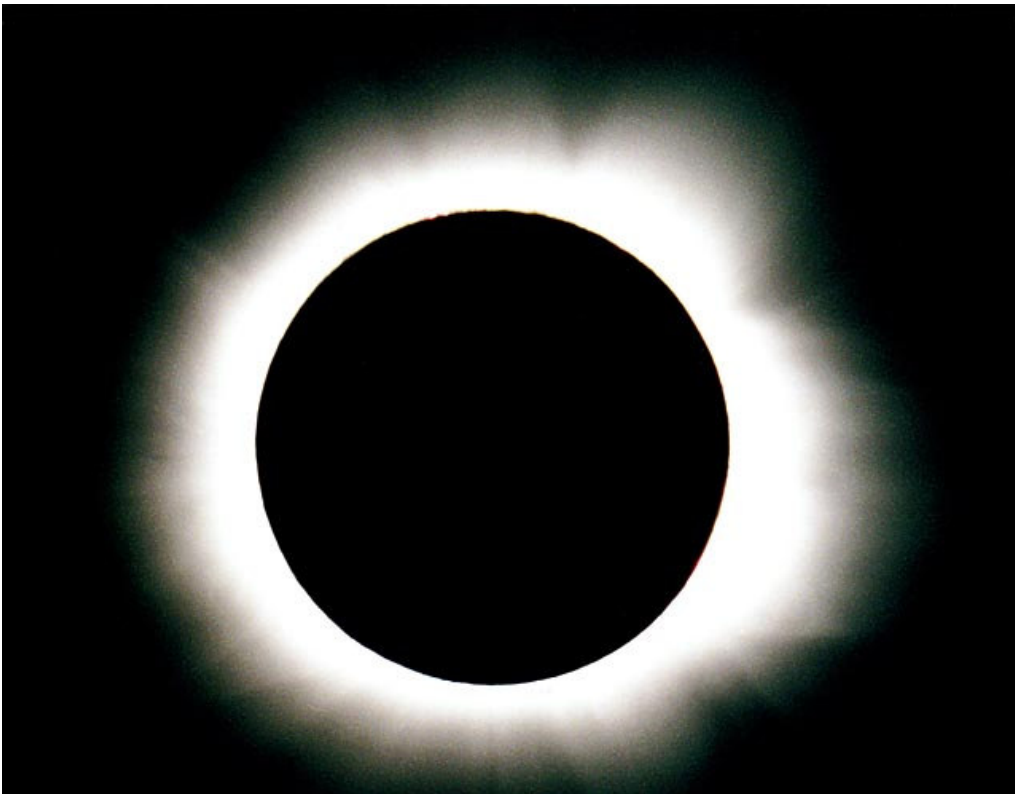


Figure 2: Solar Corona During Totality

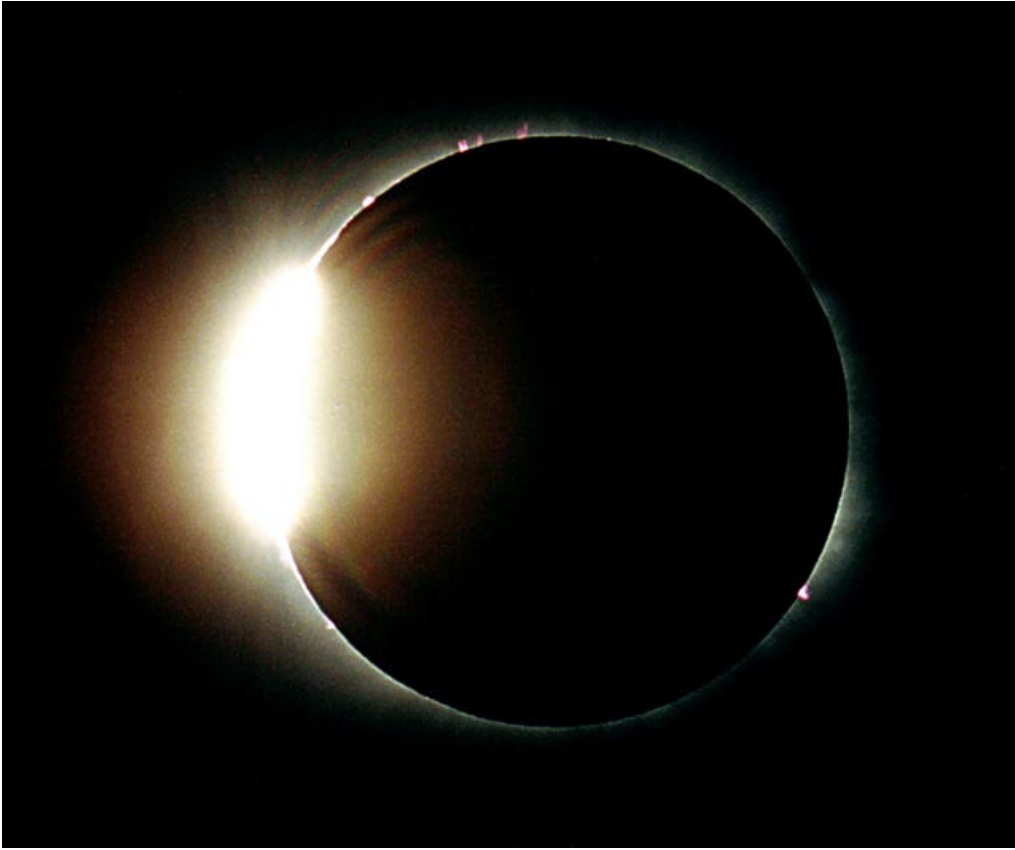


Figure 3: Diamond Ring Prior To Totality

All photographs by Peter Anderson