

Eclipsed

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People will travel half-way around the world to see a solar eclipse. It seemed natural to make the effort to see the closest eclipse to home there would be in my lifetime. The following is my personal account of this 'eclipse expedition'.

In diaries across Britain, the date had been flagged for months: Saturday the 31st of May, 2003. The time, too, had been written in: close to 4.45 am BST. It will be the last time the Moon will be seen covering the face of the Sun anywhere in mainland Britain until 2090. The eclipse is to be an 'annular eclipse', for at the height of the eclipse the Moon will leave a thin annulus of the Sun's disk uncovered. At least that's the text-book description but the media came up with more dramatic wording: the 'ring-of-fire' eclipse. It was certainly true that I was going as much for the drama of seeing an unusual natural phenomenon as for any scientific motive. To experience nature on a grand scale doing exactly what's predicted, on time to a fraction of a second, is pretty convincing evidence that we understand some of what's going on around us. That, in one respect, is what science is all about.

Eclipse visibility paths are usually narrow strips across the Earth but this eclipse is exceptional. The annular eclipse is potentially visible over a swathe of the northern Atlantic from Greenland, covering Iceland to the northern extremities of Scotland. We chose to go to Orkney, where the eclipse will last a little longer than on the mainland, the Sun will be a little higher and the Moon will be a little more central over the Sun. One more thing, this eclipse is to take place so near sunrise that the Sun will rise already partially eclipsed. The annulus will be visible a little time later, provided you're far enough North. As for the likely weather, every choice of site in northern Britain will be a lottery.

To catch the lunchtime, short-crossing ferry to Orkney needed an early start from Aberdeen. I set the alarm at 5.45 am on Thursday morning but woke up minutes before it went off. My lottery numbers weren't coming up yet, for I left by car under granite grey skies accompanied by the rhythmic beat of wind-screen wipers. There were, though, almost two days to go. On the other side of town, Rhona came out of her house when I arrived, to make up the second of a party of ten heading North from the Aberdeen and District Astronomical Society. We left Rhona's at 7 am. It's a long way to the Orkney ferry at Gill's Bay. The rain, fortunately, cleared up before Huntly. Inverness beckoned and then passed us by as we sped across the Kessock bridge. Tain, Dornoch, Golspie, Brora, Helmsdale, names almost from another land, invited us to stop and look around. We did at Helmsdale. With about 150 miles on the 'clock', well north of Inverness, we passed a sign saying 'John O' Groats 76 miles'. There was almost 80 miles to the ferry, still to go. 233 miles in all it proved to be, but no hardship.



Helmsdale harbour

All ten of us reached the Gill's Bay terminus of the St Margarets Hope ferry in plenty of time. There was a refreshing absence of formalities and no attempt to sell us anything. There wasn't anything there to sell. The *Pentalina B* arrived and unloaded a full cargo of cars, vans and lorries. We duly drove on, paid in cash, found a seat outside to enjoy the sun, the sea-birds and the scenery in a freshening south westerly. There's nothing like a ferry trip to raise one's spirit of adventure. Arriving in Orkney on a fine day is an added bonus.

We drove to the intended eclipse site at Deerness, picked out on the map a few months earlier, in the South East corner of Mainland. The car-park



Passing the oil terminal at Scapa Flow



Inside the 'Italian Chapel' constructed by POWs in a Nissen hut



Orkney's mix of fields and water



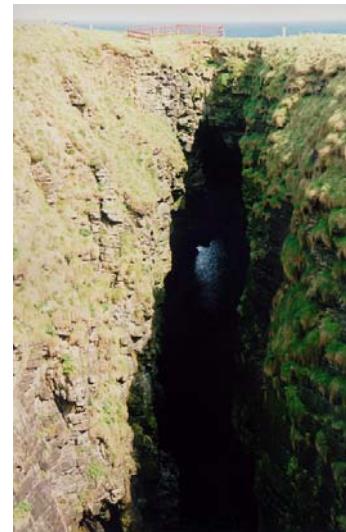
At the Deerness peninsular

wasn't far from the cliff-top, the path there was easy, there was room for hundreds, either on the grass or on the rocks, and the scenery was magnificent. A compass check showed that the low-lying island of Auskerry, some 7 miles distant, provided a natural line-of-sight to the eclipse sunrise. No fiddling with the compass would be needed to align the telescope at around 4 am on Saturday morning, just before sunrise.

We had a day or so in hand to stock up in sleep, to explore, to check film, solar filters and equipment. I bought myself a bacon roll for sustenance while on eclipse watch. Some of the party mocked the prospect of a cold bacon roll. On Friday evening we repaired to the Deerness Community Hall at the invitation of Gill Russell, Secretary to the British Association of Planetaria, the BAP who had organised two excellent talks. The first, *The Magic of Solar Eclipses*, was given by Francisco Diego, veteran of more than a dozen total eclipses, solar physicist and populariser of astronomy from UCL. His enthusiasm and personal interest in eclipses came across to everyone in the hall. The second talk was by the duo of Heather Couper and Nigel Henbest, on the hot topic of *Evidence of Life on Mars*. Hot because the following Monday would see the launch of the Mars Express carrying the British Beagle 2 lander and searcher for life on Mars, and shortly after that the launch of two NASA landers with their rovers. Heather and Nigel's personal commitment to Mars came across too. Even sooner than these launches, though, our eyes would be on the Sun and it was time for a drive back to the Albert Hotel to get a few hours sleep. If you hadn't already got a pair, 99p would buy you a set of eclipse sunglasses from Francisco. The skies had been clearing and the sunset, someone said, was good.



My alarm went off at 2.30 am and this time I hadn't woken without it. We rendez-vous'd at 2.40 and a look outside wasn't encouraging. At 59° 09' N, the latitude of the hotel, the sky was visible in outline at 2.40 am at the end of May. It looked as if a dark grey cover had been draped over us. Darren, Rhona, Kim and I piled into the car with cameras, binoculars, tripods, a telescope and accessories and headed to the Deerness car-park, about 20 km away. Phil and his crew tailed us there. We arrived just after 3 am to find the little car-park almost full. It was 14° Celsius and dry, but a chilling SE force 4 was blowing straight off the sea over the flattened, yellowed, cliff-top grass. It was time for that Orkney wool hat and the scarf and gloves thrown into the car at the last minute. Sunrise was in an hour's time but the sky looked as grey as Aberdeen granite and in no hurry to change. We set off to our chosen site. I put my little Astroscan telescope in a rucksack and lugged a heavy tripod and camera passed 'the gloup', a local blowhole, through the swing gate, passed some hardy campers, with their ground-hugging pyramidal tents fit for the foothills of Everest, and onto the cliff top. Rhona lent a hand. We all decided that the only place with a little shelter from the wind was where we'd been on Thursday afternoon. "Not much chance of a good photograph in this wind", someone said. That wasn't our real problem, though. The cloud was. Optimistically, we all set up our cameras, binoculars and telescopes; solar filters on hand.



The gloup, Deerness

We were ready with half-an-hour to spare but the weather wasn't. There was just about time for the cloud cover to break in the right place. Clusters of other spectators appeared on the slightly higher ground behind us. A man with a video camera came down and filmed our little group. I rather hoped he wasn't the press, for it was a time to concentrate on making the right decisions, not finding a sound-bite. 4 am isn't a good time for sound-bites. He wasn't the press. Nothing was happening in the sky and I'd time enough to realise I'd left the



Auskerry light flashes under a grey sky



Waiting for a break in the clouds

sustaining bacon roll in the car. It was only a few hundred metres away so I set off to get it. The little car-park at the end of the road was overflowing now and cars were turning back. Up on an overlooking hill, about half a kilometre away, a marquee had been erected and some of the 40 strong BAP group with other locals could be seen on the skyline. They weren't getting a better view. Anything times zero is still zero. Our cliff-top scenery was better.

Sun-rise at 4.12 approached. Was 4.12 the time of first light, or the time the mid-point of the Sun was on the horizon? Did the time include an allowance for atmospheric refraction, which makes sunrises earlier than they'd otherwise be and sunsets later? It didn't matter. There wasn't a glimmer of red behind the Auskerry lighthouse. The brightest light we'd see was someone's flash as we posed for a group photo. I clicked the camera on the telescope as it pointed towards a grey island just visible riding above a grey sea capped by a grey sky. Somewhere, 150 million kilometres distant, the Sun was disappearing behind the Moon. You never see the new moon in the sky, well almost never. This was to be the exception. The Moon passing directly in front of the Sun, made visible like a Chinese puppet in front of the light. Sadly, someone had forgotten to raise the curtain of cloud and the show played to an unseeing audience.

What the computer simulations had shown of the event was the Moon moving across the face of the Sun, gradually obscuring more and more of the solar disk until, at 4.47 am, it sat right on top of the Sun, a little above centre and too small to hide the whole Sun. As 4.47 approached, we became resigned to the inevitable. The wind blew steadily across us; it got darker, as it should have done, and I ate the bacon roll without much elation. Above the clouds the Sun was eclipsed and below them so were our hopes of seeing a fabulous natural spectacle. A fable it would remain, at least for all the Orcadian spectators. Someone over the brow of the hill was beating bongo drums but it didn't make any difference to the appearance of Sun. It never has. We got together for a last group photo and reflected that you have to make an effort to have any chance of seeing an annular or total eclipse. And chance it always was, with not quite as long odds as the lottery but definitely with the odds stacked against us. How did megalithic man align his monuments or design his great eclipse predicting sites in a land so cloudy? With patience, the patience of generations. The next solar eclipse visible in Scotland is in ninety years time. The date for the diary: Thursday 23rd July 2093; the time, 12.39 UT. I hope someone will be watching for it. I won't. My children will be 113 years old, give or take a year. Maybe they won't either.

My thanks to Darren Moody, Phil Hart and the other Aberdeen and District Astronomical Society members for their organisation and for their stimulating company throughout.

JSR
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*What we'd have seen if
we'd stayed in Aberdeen
(courtesy Gary Skinner)*

