

# The Total Solar Eclipse of August 11, 1999

To my dear friends in Europe

*August 10, 1999*

I hear that you are all getting a rare treat there: the total eclipse of the sun. Our paper says it is passing through Plymouth, Munich, Graz, and the South of Belgium. May be also through Darmstadt, so that all the people at ESOC can see it. Please let me know how things work out. Here, on my side, I will pray for good weather. That is probably all I can do.

*Roger Broucke, Department of Aerospace Engineering, University of Texas at Austin*

Dear Roger

*August 12, 1999*

Thanks for the good wishes. At least they worked out for us (Irène and myself). Unfortunately, the weather forecast for the Munich/ Stuttgart area as well as for the Black Forest was not too good. We decided to try it with the Karlsruhe/Strassburg area; the cold front was predicted to have moved further East by Wednesday noon. We left Zürich at 5 a.m. (no problem; a rather late start for mountaineers) in order to avoid the heavy traffic that was to be expected.

After a painless three-hour-drive through the Black Forest we found Offenburg (at the Southern boundary of the totality strip) under cloudy skies with frequent thunder showers roaming around. We visited relatives of mine in the area and later worked ourselves some 40 kilometers to the North, only using back roads. Even there traffic jams were all over, but we still were moving at a good pace. The question was just where to stop in order to be under one of the few blue holes of the cloudy sky at 12:32. At 11:45 we stopped at the roadside North of a farm village called Ulm (about half-way between Strassburg and Rastatt). Many other people had gathered there already. The partially eclipsed sun was visible somewhat more than half the time. Sometimes the clouds played the role of the protective Mylar sun glasses that had been sold out in all of Europe already a week ago.

As totality was approaching everything was clearly visible: the bright rim of the sun narrowed to a thin arc. Later the arc itself became shorter and transformed into a line segment. Finally the segment degenerated into a bright dot which immediately disappeared altogether. Suddenly the entire scene was in complete darkness. Only contours were visible, and even the traffic on the road stopped completely. Stars became visible between the clouds (mainly Venus), and everything was absolutely quiet. The solar corona appeared a few times, then it was covered again by moving clouds. The corona seemed to be more or less the same width all the way around, as it is typical for the time before the solar activity maximum.

In a way those two minutes of totality were frighteningly long, but also disappointingly short. When the corona appeared again between the clouds it started brightening up on the opposite side, and a chain of tiny dots was visible for a split second. The bright dot re-appeared, and the light turned on again as quickly as it had been shut off two minutes earlier.

I hope this brief account will give you an idea of what we did and what we saw. Have you ever experienced a total eclipse of the sun?

*Jörg Waldvogel, Seminar for Applied Mathematics, ETH Zürich, Switzerland*