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The European Fireball Network 2009 – Status and Results of Cameras in Germany

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Abstract

The European Fireball Network (EN) has been continuously operating since 1966 (Figure 1). Beginning in 1995, observing stations in Germany have been operated by the DLR Institute of Planetary Research.

The stations in Germany are of the classical type, consisting of cameras on a tripod, looking down and taking images of a paraboloidal mirror. Rotating shutters mounted in front of the camera lens provide velocity information for the fast-moving meteors. Cameras are equipped with film. Typically, one long-exposure image is taken every night.

In 2009, 15 cameras were in regular operation. 29 fireballs on 43 photographs could be recorded, representing average "fireball yield". Fireball co-registrations could be made with other EN stations in 9 cases, and in 5 cases with other camera types. Data reduction and orbit reconstruction (carried out at Ondřejov Observatory, P. Spurný and team) was possible for 2 meteors. The brightest meteor that was recorded in 2009 had a magnitude of -11.

Progress has been made in development of a prototype digital camera version, which is currently being tested on the roof top of the DLR building, Berlin-Adlershof. Quite remarkably, in the area monitored by the cameras, 2 meteorites were recovered in Lolland, Denmark and near Jesenice, Slovenia. Due to weather, daytime hours, and moonlight, no images from the cameras could be obtained for the two meteorite falls. Instead, the specimens were recovered mainly using eyewitness reports and acoustic data to guide the thorough search.

This contribution will describe the activities of our team and results for 2009 and, finally, will make recommendations on how to improve meteor observing strategies and chances for meteorite recoveries.

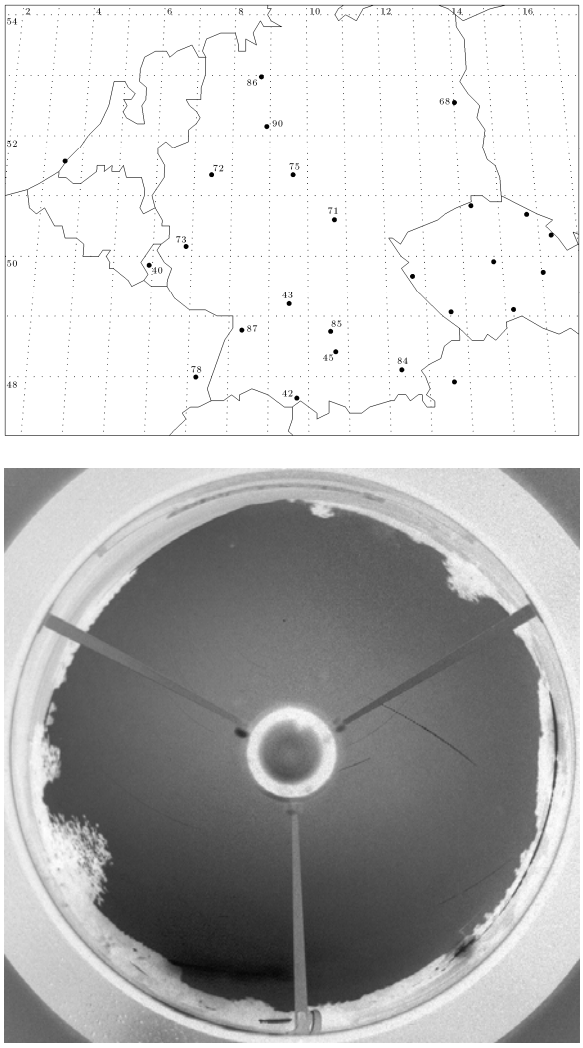

Figure 1: Location of German camera stations, contributing to the European Fireball Network (topmost) and fireball recorded by EN station 42 on July 3, 2009 (above).

Acknowledgements

We wish to thank the fireball station operators for endurance, patience, and dedicated work.