

The European Fireball Network 2010 – Status und Results of Cameras in Germany

J. Oberst (1,2), D. Heinlein (1), T. Grau (1,3), J. Flohrer (1)

(1) Deutsches Zentrum für Luft- und Raumfahrt, Institut für Planetenforschung Berlin, Germany (juergen.oberst@dlr.de / Fax: +49-30- 67055402), (2) Technische Universität Berlin, Institut für Geodäsie und Geoinformationstechnik, Germany, (3) European Research Center for Fireballs and Meteorites, Germany (grau@erfm.eu)

Abstract

The European Fireball Network (EN) has been continuously operating since 1966 (Fig. 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 spherical 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 2010, 15 cameras were in regular operation. 36 fireballs on 82 photographs could be recorded, representing average “fireball yield”. Fireball co-registrations could be made with other EN stations in 20 cases, and in 3 cases with other camera types. Data reduction and orbit reconstruction (carried out at Ondřejov Observatory, P. Spurný and team) was possible for 1 meteor. The brightest meteor that was recorded in 2010 had a magnitude of -13.

Progress has been made in development of a prototype digital camera version. Quite remarkably, in the area monitored by the cameras, 2 meteorite falls were recovered mainly using eyewitness reports to guide the meteorite search. Due to weather and daylight hours, no images from the cameras could be obtained. This contribution will describe the activities and results of 2010.

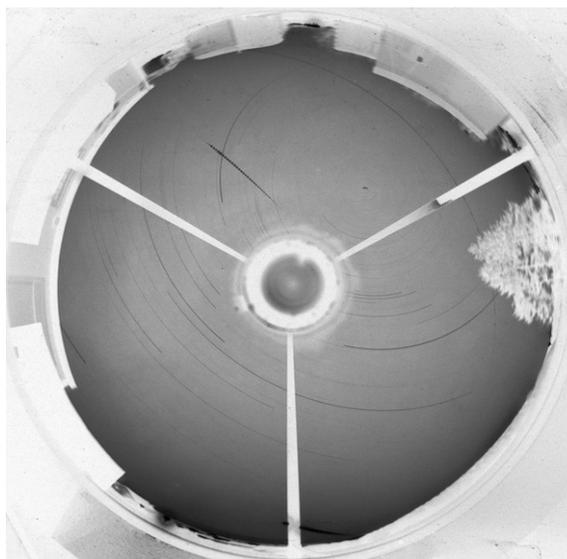
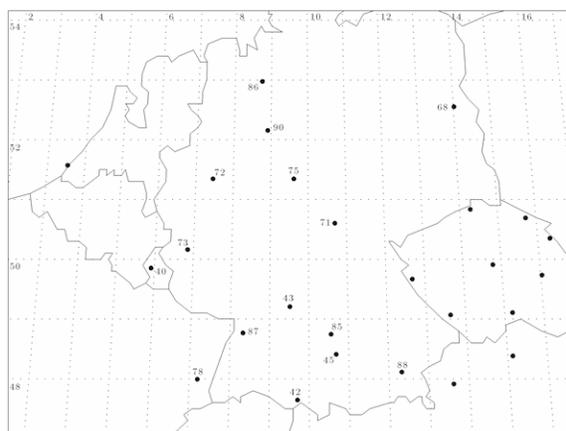


Figure 1: Location of German camera stations, contributing to the European Fireball Network (topmost) and fireball registered by EN station 40 on April 5, 2010 (above).

Acknowledgements

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