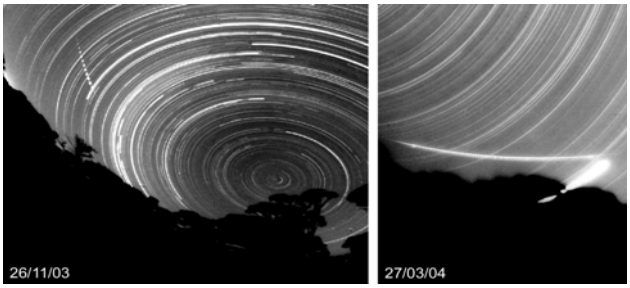
THE DESERT FIREBALL NETWORK: A NEW CAMERA NETWORK IN THE WESTERN AUSTRALIAN NULLARBOR. P. A. Bland[1,2], P. Spurny[3], A. W. R. Bevan[4], T. Smith[4], J. Borovicka[3], T. McClafferty[5]. [1]IARC, Dept. Earth Sci. & Eng., Imperial College London, SW7 2AZ, UK. (p.a.bland@imperial.ac.uk); [2]IARC, Dept. Mineralogy, Natural History Museum, London SW7 5BD, UK; [3]Ondrejov Observatory, Astron. Inst. Acad. Sci. Czech Republic, 251 65 Ondrejov, Czech Republic; [4]Dept. Earth Planet. Sci., Western Australian Museum, Francis Street, Perth, WA 6000, Australia; [5]Western Australian Museum - Kalgoorlie-Boulder, 17 Hannan St., Kalgoorlie, WA 6433, Australia.

Introduction: Camera networks, designed to observe fireballs, calculate orbits, triangulate fall positions, and recover meteorites, have been set up in several nations at various times in the past e.g. [1]. Although the primary motive behind these projects was the recovery of meteorites with orbital information, only 4 samples have been obtained. The reason is related to the chosen field areas: any vegetation makes looking for small meteorites extremely difficult. We are establishing a preliminary network of 3 cameras in the Nullarbor Region of Australia, a desert that has proved eminently suitable for locating meteorites. The aim is to deliver numbers of samples with accurate orbits, providing a spatial context to aid in interpreting meteorite composition.

The Project: We have developed an automatic fireball camera designed to operate in a desert. The camera began autonomous observations from a test site in Australia on 27/10/03 and has performed flawlessly since that date, observing dozens of fireballs (see figure). Operations are monitored via a satellite link, and the camera is maintained by collaborators at the Western Australian Museum (WAM). Two additional cameras are being constructed. Deployment in the Nullarbor will be late ’05, and full network operations will begin at that time. Orbits will be calculated from observed fireballs, and meteorite fall positions accurately determined for later recovery by field parties. The network will detect meteorites falling over a 400,000km^2 area. We originally anticipated viewing 8 fireballs dropping recoverable meteorites per year (given estimated fall rates [1,2], hours of darkness, and cloud cover). But data from our single camera suggests a higher rate of 10-12 meteorites (cloud cover is lower at night than predicted). Given recovery efficiency in the Nullarbor [2], even with a small network we could expect to recover ~4 new meteorites per year, dramatically increasing the total number of meteorites with orbits.



References: [1] Halliday I. *et al.* (1996) *Meteorit. Planet. Sci.* **31**, 185. [2] Bland P.A. *et al.* (1996) *MNRAS* **283**, 551.