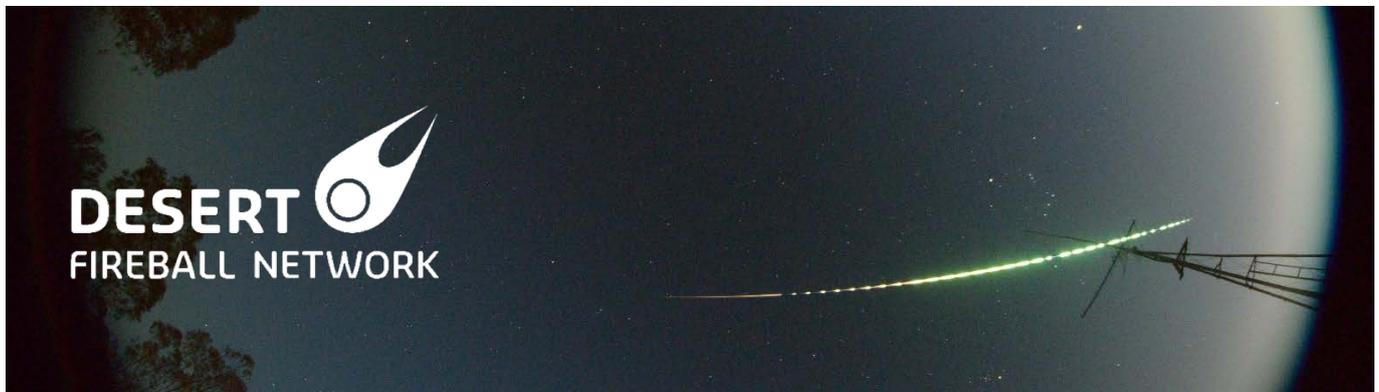


## PhD Opportunities with the Desert Fireball Network



Meteorites contain a record of the formation and evolution of the Solar System, but they're a random sample set – we have no context information to aid us in interpreting that record. The Desert Fireball Network is designed to provide that context. With autonomous observatories across the Australian Outback we can triangulate the trajectory of fireballs in the atmosphere, which allows us to derive fall positions for the meteorites, to enable later recovery by field parties, and orbital information that relates meteorites to their starting location within the Solar System.

Currently, the network stands at 32 fireball observatories. Each one is a fully autonomous intelligent imaging system, capable of operating for 12 months without maintenance, and storing all imagery collected over that period. When complete, ~70 stations will observe the sky across ~1/3 of Australia. We are also extending coverage to other continents. In addition to fireballs, our imagery data contains re-entering space debris, and energetic stellar events.

We are seeking PhD candidates who will be working within the team as part of the larger DFN project to analyse this massive dataset. A partial list of potential projects includes: statistical analysis of asteroidal material arriving at 1AU; fireball modelling; probabilistic orbital dynamics of meteorites (and their parent asteroids); tracking space debris; fitting orbital and compositional data into an overall model of the compositional structure of the Solar System. There will be opportunities to become involved in all other areas of the project, including meteorite recovery in Australia, and sample analysis.

We currently have two fully-funded PhD opportunities available. Candidates from a range of backgrounds in the physical sciences (geology and geophysics, physics, astronomy or planetary science) are encouraged to apply. We are looking for numerate students. Previous experience in programming would be advantageous, but is not a requirement.

To apply, please send an email (with subject heading DFN PhDs) including a CV and a one-page summary of your research interests to **Professor Phil Bland** ([p.a.bland@curtin.edu.au](mailto:p.a.bland@curtin.edu.au)) by 10<sup>th</sup> February 2016

### Literature and links:

<http://fireballsintthesky.com.au/>

<https://www.facebook.com/fireballsintthesky>

Bland P. A., Benedix G. K. and the Desert Fireball Network (DFN) Team (2015) Catch a falling star (or meteorite) – fireball camera networks in the 21<sup>st</sup> century. *Elements* **11**, 160-161.