

# Euoplanet TNA Report

## PROJECT LEADER

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<b>Date of TNA visit:</b>	11-16/06/2012
<b>Host laboratory:</b>	PEL-DLR Berlin

## Project Title –

**Mineral phases, analogues to basaltic composition, emissivity at Mercury's surface conditions**

### - Report on the outcomes of the TNA visit (approx 1 page)

During this week of measurements we had measured a set of seven mineral samples at two different grain size as possible minerals analogues to those present in basaltic rocks. From each mineral sample we produced two different grain-size powders, a coarse grain-size (<250 µm) and a thin grain-size (< 125 µm). All samples were measured in a wide range of wavelength from 1 to 14 µm at two different temperatures, as scheduled. The wavelength range were covered using one detectors. All the samples were heated using 2.85, 5.00 ampere, with all the powder samples we achieved ~250°C and 480°C temperatures. After the measures of the samples the blackbody was measure at the different temperatures reached by the mineral powders to calibrate the data. Each sample was measured following always the same procedure: first we warmed up the samples at 75°C then we put the samples in the chamber. The chamber and instrument were then evacuated and one sample heated at 2.85

ampere, after one hour with a stable current, we took the measure, then we moved to the next level of ampere (5.00 A) until to complete all the range of intensity. The sample in the chamber was then rotated and other two samples was measured each days, once all the three samples were measured the chamber was cooled to room temperature. Then this set of operation was repeated for other samples.

Once finished the measurements a preliminary correction of the data was obtained considering the blackbody measurements and sample radiance for both the detectors.

This set of data will be used to fit basaltic rock spectra measured in a previous TNA visit and deep our capability to quantified the mineralogy of those rocks.

Please include:

- Publications arising/planned (include conference abstracts etc)

We plan to show these new data at international congresses (probably at EGU, EPSC, AGU...) next year, and produce one paper on international Journals, integrating these data with those obtained in a previous TNA visit.

The basalts measurements obtained in a previous visit were showed at Geotalia2011 (Torino 19-23/09/2011) and at EGU2012 (Vienna 22-27/04/2012).

- Host approval The host is required to approve the report agreeing it is an accurate account of the research performed.