EPSC Abstracts
Vol. 10, EPSC2015-235, 2015
European Planetary Science Congress 2015

Sharing knowledge of Planetary Datasets through the Web-Based PRoGIS

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Abstract

The large amount of raw and derived data available from various planetary surface missions (e.g. Mars and Moon in our case) has been integrated with co-registered and geocoded orbital image data to provide rover traverses and camera site locations in universal global co-ordinates [1]. This then allows an integrated GIS to use these geocoded products for scientific applications: we aim to create a web interface, PRoGIS, with minimal controls focusing on the usability and visualisation of the data, to allow planetary geologists to share annotated surface observations. These observations in a common context are shared between different tools and software (PRoGIS, Pro3D, 3D point cloud viewer). Our aim is to use only Open Source components that integrate Open Web Services for planetary data to make available an universal platform with a WebGIS interface, as well as a 3D point cloud and a Panorama viewer to explore derived data. On top of these tools we are building capabilities to make and share annotations amongst users. We use Python and Django for the server-side framework and Open Layers 3 for the WebGIS client. For good performance previewing 3D data (point clouds, pictures on the surface and panoramas) we employ ThreeJS, a WebGL Javascript library. Additionally, user and group controls allow scientists to store and share their observations. PRoGIS not only displays data but also launches sophisticated 3D vision reprocessing (PRoVIP) and an immersive 3D analysis environment (PRo3D).

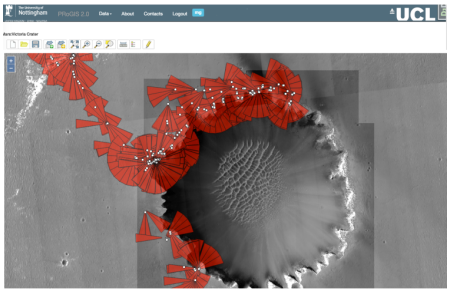

Figure 1. PRoGIS displaying camera footprints.

Acknowledgements

The research leading to these results has received funding from the European Community's Seventh

Framework Programme (FP7/2007-2013) under grant agreement n° 312377 PRoViDE.

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