

SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)  
Lift-Off - Secondary Space Education (2)

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INTERACTIVE MAPPING OF THE PLANETS: AN ONLINE MARS MAPPING ACTIVITY USING  
GOOGLE EARTH

**Abstract**

With funding from the Natural Sciences and Engineering Research Council of Canada's PromoScience program and support from the Department of Earth Sciences at The University of Western Ontario, the Centre for Planetary Science and Exploration (CPSX) has developed a new web-based initiative called Interactive Mapping of the Planets (IMAPS). The general objective of the online activity is for participants to plan and design a rover mission to Mars – utilizing the free Google Earth plug-in – and based on a given mission goal (e.g., to find evidence for past water flow).

The interactive online activity involves users passing a series of increasingly complex mission scenarios and collected badges along the way for successful completion of individual missions. Ultimately, users are able to select and plan their own mission. Training in image analysis and the recognition of landforms is provided through a series of tutorials that feature images and descriptions of various classes of landforms (e.g., volcanoes, impact craters, etc.) and quizzes to test the user's learning. In addition to this online activity, inquiry-based classroom workshops, a week-long summer camp, and pre-prepared rock kits kits will also be developed.

Once a mission is "launched", a mission control blog provides updates on the status of a mission and a "choose your rover" option provides the opportunity to unlock more advanced rovers by collaborating

with other scientists and rating their missions. Indeed, evaluation of missions will be done using a crowd-sourcing method.

In addition to being fully accessible online, CPSX will also target primary- and secondary-school grades in which astronomy and space science is taught. Teachers in K-12 classrooms will be able to sign-up for the activity ahead of time in order to receive a workshop package, which will guide them on how to use the IMAPS online activity with their class. Teachers will be able to set up groups for their classroom so that they can evaluate their students based on pre-determined criteria.

The IMAPS activities are developed in partnerships with the Department of Earth Sciences at Western University, Sports Western, the Thames Valley District School Board, and Dimentians Web Marketing and Design. We are continually looking for new collaborators to help design or test our inquiry- and web-based activities. Please contact [cpsxoutreach@uwo.ca](mailto:cpsxoutreach@uwo.ca) if you are interested.