The Lunar Mapping and Modeling Project Update – S. Noble, R. French, M. Nall, K. Muery

The Lunar Mapping and Modeling Project (LMMP) is managing the development of a suite of lunar mapping and modeling tools and data products that support lunar exploration activities, including the planning, design, development, test, and operations associated with crewed and/or robotic operations on the lunar surface. In addition, LMMP should prove to be a convenient and useful tool for scientific analysis and for education and public outreach (E/PO) activities.

LMMP will utilize data predominately from the Lunar Reconnaissance Orbiter, but also historical and international lunar mission data (e.g. Lunar Prospector, Clementine, Apollo, Lunar Orbiter, Kaguya, and Chandrayaan-1) as available and appropriate. LMMP will provide such products as image mosaics, DEMs, hazard assessment maps, temperature maps, lighting maps and models, gravity models, and resource maps. We are working closely with the LRO team to prevent duplication of efforts and ensure the highest quality data products. A beta version of the LMMP software was released for limited distribution in December 2009, with the public release of version 1 expected in the Fall of 2010.

The Lunar Mapping and Modeling Project Update

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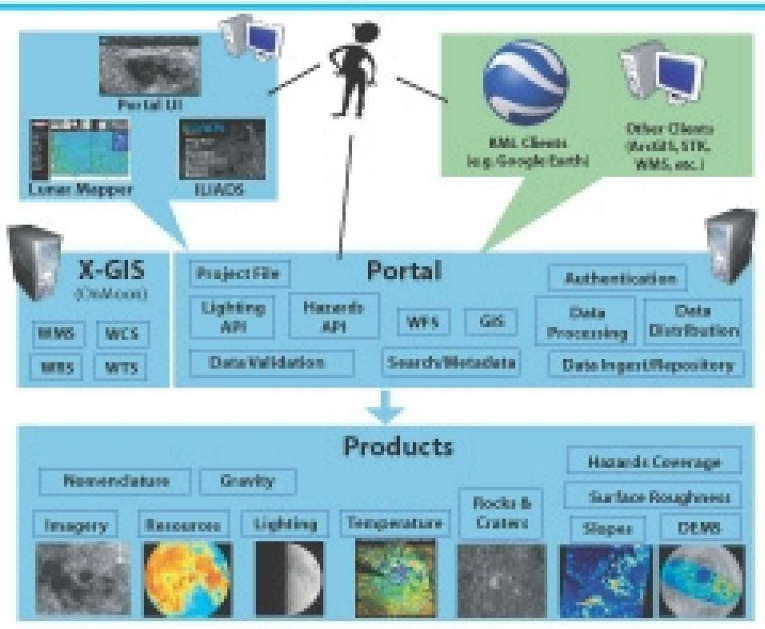
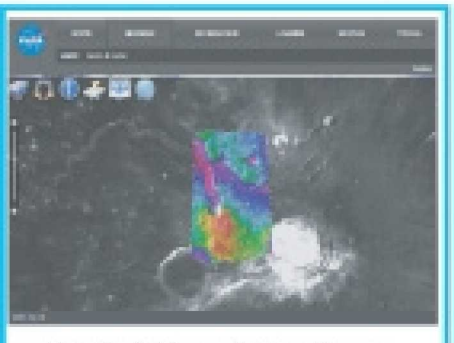
Introduction: The Lunar Mapping and Modeling Project (LMMP) is managing a suite of lunar mapping and modeling tools and data products that support lunar exploration activities, including the planning, design, development, test, and operations associated with crewed and/or robotic operations on the lunar surface. Although the project was initiated primarily to serve the needs of the Constellation program, it is equally suited for supporting landing site selection and planning for a variety of robotic missions, including NASA science and/or human precursor missions and commercial missions such as those planned by the Google Lunar X-Prize participants. In addition, LMMP should prove to be a convenient and useful tool for scientific analysis and for education and public outreach (E/PO) activities.

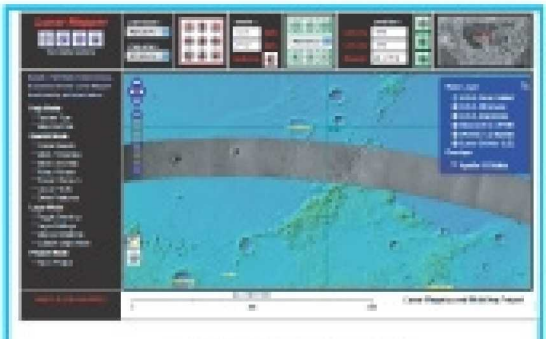
Project Team: LMMP is managed at Marshall Space Flight Center but draws expertise from across NASA and other agencies, including the Ames Research Center, Goddard Space Flight Center, the Jet Propulsion Lab, the US Geological Survey, and the US Army Corps of Engineers Cold Regions Research and Engineering Laboratory. Teams at Arizona State and the University of Arizona are also working with us to produce products. We are working closely with the LRO science team to prevent duplication of efforts and ensure the highest quality data products.



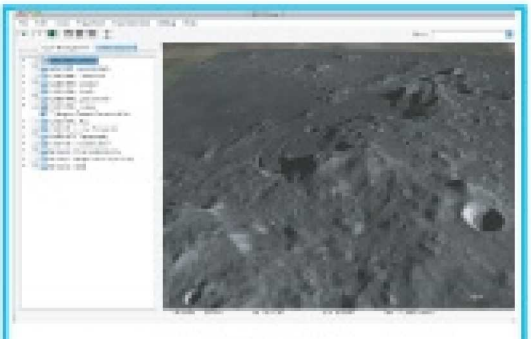
The LMMP System



Portal User Interface



Lunar Mapper



ILIADS

Software: The LMMP system is designed to make data as accessible as possible in order to meet the needs of a wide variety of users. Our system consists of three visualization options: the Portal, which provides limited browsing, data layering and analysis options; Lunar Mapper, a light web-based GIS client; and ILIADS, a downloadable desktop GIS client with more advanced capabilities.

Milestones/Schedule:
Apr 2009 – Formulation review
Sep 2009 – Preliminary System design audit
Dec 2009 – Beta release of Mapper, ILIADS, and Portal
July 2010 - Beta update
November 2010 – Version 1 release (first public release)
Spring/Summer 2011 - Most final products completed
September 2011 - Final software release

LMMP: Mapping the Moon so you don't have to!