

SPACE EXPLORATION SYMPOSIUM (A3)
Moon Exploration – Part 1 (2A)

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MOON TREK: AN INTERACTIVE WEB PORTAL FOR CURRENT AND FUTURE LUNAR
MISSIONS**Abstract**

This presentation will highlight Moon Trek (<https://moontrek.jpl.nasa.gov>), a web based portal that has been built to support lunar exploration activities, lunar scientific research and education outreach. It will provide an overview of Moon Trek's uses and capabilities, and demonstrate its use in 2D and 3D views.

Moon Trek is an interactive portal that serves the best available lunar data to date, from the Apollo era to the latest instruments on the LRO spacecraft, via a single intuitive portal for lunar scientists, mission engineers and the general public. Data sets include DEMs generated from stereo imagery and laser altimetry, as well as spectrometry, thermal, and gravity models. Derived products include rock and crater distribution, slope and hazard maps.

Many space agencies are looking ahead, planning new missions to the Moon. Prior to embarking on such a mission, architectural trades and system designs must be facilitated by well-characterized and geo-registered maps and models of the Moon such as those easily accessible through Moon Trek. Moon Trek's generalized suite of tools facilitates a wide range of exploration activities including the planning, design, development, test and operations associated with lunar sortie missions; robotic (and potentially crewed) operations on the surface; planning tasks in the areas of landing site evaluation and selection; design and placement of landers and other stationary assets; design of rovers and other mobile assets; developing terrain-relative navigation (TRN) capabilities; deorbit/impact site visualization; and assessment and planning of science traverses.

Moon Trek's visualization and analysis tools allow users to perform analysis such as lighting and local hazard assessments including slope, surface roughness and crater/boulder distribution. In addition, Moon Trek fosters outreach, education, and exploration of the Moon by educators, students, amateur astronomers, and the general public. While Moon Trek's interface and tools provide great utility, it also provides particular value through its ability to serve data to a variety of other applications.