

IAF SPACE EXPLORATION SYMPOSIUM (A3)
Moon Exploration – Part 2 (2B)

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NASA'S SOLAR SYSTEM EXPLORATION RESEARCH VIRTUAL INSTITUTE: MERGING
SCIENCE AND EXPLORATION ON THE MOON

Abstract

Abstract The NASA Solar System Exploration Research Virtual Institute (SSERVI) is a virtual institute focused on research at the intersection of science and exploration, training the next generation of lunar scientists, and community development. As part of the SSERVI mission, we act as a hub for opportunities that engage the larger scientific and exploration communities in order to form new interdisciplinary, re-search-focused collaborations. This paper will describe the research efforts of the nine domestic teams that constitute the U.S. complement of the Institute and how we are engaging the international science and exploration communities through workshops, conferences, online seminars and classes, student exchange programs and internships.

1. Introduction NASA's Solar System Exploration Research Virtual Institute (SSERVI) represents a close collaboration between science, technology and exploration that will enable deeper understanding of the Moon and other airless bodies as we move further out of low-Earth orbit. The Institute is centered on the scientific aspects of exploration as they pertain to the Moon, Near Earth Asteroids (NEAs) and the moons of Mars. The Institute focuses on interdisciplinary, exploration-related science centered around all airless bodies targeted as potential human destinations. Areas of study reported here will represent the broad spectrum of lunar, NEA, and Martian moon sciences encompassing investigations of the surface, interior, exosphere, and near-space environments as well as science uniquely enabled from these bodies.

We will provide a detailed look at research being conducted by each of the domestic US teams as well as our international partners. The research profile of the Institute integrates investigations of plasma physics, geology/geochemistry, technology integration, solar system origins/evolution, regolith geotechnical properties, analogues, volatiles, ISRU and exploration potential of the target bodies.

2. Summary and Conclusions As the new Institute's teams continue their proposed research, new opportunities for both domestic and international partnerships are being generated that are producing exciting new results and generating new ideas for scientific and exploration endeavors. SSERVI enhances the widening knowledgebase of planetary research by acting as a bridge between several different groups and bringing together researchers from: 1) scientific and exploration communities, 2) multiple disciplines across the full range of planetary sciences, and 3) domestic and international communities and partnerships.

This paper will focus on these opportunities as well as highlights of recently published work that demonstrates the importance of interdisciplinary, collaborative research.