

NASA SSERVI: Bridging Science and Human Exploration

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Abstract

The NASA Solar System Exploration Research Virtual Institute (SSERVI) is a virtual institute focused on research at the intersection of science and human exploration, training the next generation of exploration scientists, and developing the broad scientific and technical community. Part of SSERVI's mission is to act as a hub for opportunities that engage the larger scientific and exploration communities in order to form new interdisciplinary, research-focused collaborations.

This talk will describe the research efforts of the SSERVI domestic teams that constitute the U.S. complement of the Institute and how the Institute engages the community through workshops, conferences, online seminars and classes, student exchange programs and internships. In addition, this talk will discuss SSERVI's current international partnerships, a key part of its global mission.

1. Introduction

NASA's Solar System Exploration Research Virtual Institute (SSERVI) represents a close collaboration between science, technology and exploration, and was created to enable a deeper understanding of the Moon and other airless bodies. SSERVI is supported jointly by NASA's Science Mission Directorate and Human Exploration and Operations Mission Directorate. The Institute currently focuses on the scientific aspects of exploration as they pertain to the Moon, Near Earth Asteroids (NEAs) and the moons of Mars, but the institute goals may expand, depending on NASA's needs, in the future.

Recently, SSERVI selected new teams and added JAXA as an international partner and we will provide an overview of the new research being conducted by each of the domestic US teams. Currently, 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 human exploration potential of the target bodies as well as numerous other research areas.

SSERVI calls for proposals are issued every 2-3 years to allow overlap between generations of institute teams, but the intent for each team is to provide a stable base of funding for a five-year period. SSERVI's mission includes acting as a bridge between several groups, joining together researchers from: 1) scientific and exploration communities, 2) multiple disciplines across a wide range of planetary sciences, and 3) domestic and international communities and partnerships.

2. Summary and Conclusions

As the Institute's teams build upon their proposed research, new opportunities for both domestic and international partnerships will be generated that will produce exciting new results and generate new ideas for scientific and exploration endeavours. 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.

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