NASA SSERVI: Merging 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 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, research-focused collaborations.

This talk will describe the research efforts of the thirteen domestic teams that constitute the U.S. complement of the Institute and how we will engage the community 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, 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.

We will provide an overview at research being conducted by each of the 13 domestic US teams. 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.

NASA anticipates additional team selections in early 2019 with a further Cooperative Agreement Notice (CAN) likely to be released in 2017. 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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