

“NASA’s Solar System Exploration Research Virtual Institute” – Expanded Goals and New Teams

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Abstract

The NASA Solar System Exploration Research Virtual Institute (SSERVI) has been pursuing international partnerships since its inception as the NASA Lunar Science Institute (NLSI), in order to both leverage the science being done by its domestic member institutions as well as to help lunar science and exploration become a greater global endeavor. The international partners of the Institute have pursued a broad program of lunar science stimulated by scientific partnerships enabled by the SSERVI community. Furthermore, regional partnerships have been formed such as the new pan-European lunar science consortium, which promises both new scientific approaches and mission concepts.

International partner membership requires long-term commitment from both the partner and SSERVI, together with tangible and specific plans for scientific interaction that will produce results of mutual benefit to both the institute's U.S. Teams and the international partner. International partners are invited to participate in all aspects of the Institute's activities and programs, on a basis of no exchange of funds. Through these activities, SSERVI researchers and international partners participate in sharing ideas, information, and data arising from their respective research efforts, and contribute to the training of young scientists.

This talk will present an overview of the Institute and the international nodes. We will also discuss the various processes to become a SSERVI partner as well as the opportunities available for collaborations with the SSERVI national teams.

1. Introduction

Recognizing that science and exploration go hand in hand, NASA is transitioning its successful NASA

Lunar Science Institute (NLSI) to broaden its research base to other science and exploration destinations. SSERVI will continue to address basic and applied scientific questions fundamental to understanding the Moon, and will add investigations related to Near Earth Asteroids, the Martian moons Phobos and Deimos, and the near space environments of these target bodies. SSERVI, supported by NASA's Science Mission Directorate and Human Exploration and Operations (HEO) Mission Directorate, is composed of an administrative office located at NASA Ames Research Center that oversees the operation of several research teams distributed across the United States and a growing number of international partners.

1.1 Mission Statement

SSERVI fosters collaborations within and among competitively selected domestic teams, the broader lunar science community, and multiple international partners in order to:

- Conduct basic and applied research fundamental to lunar and planetary sciences while advancing human exploration of the solar system,
- Conduct and catalyse collaborative research in lunar and planetary science, enabling cross-disciplinary partnerships throughout the science and exploration communities,
- Provide scientific, technical, and mission-relevant analyses for appropriate NASA programs, planning, and space missions as requested by NASA,
- Explore innovative ways of using information technology for scientific collaboration and information dissemination across geographic and contextual boundaries to stimulate inter- and cross-discipline research,
- Train the next generation of scientific explorers

through research opportunities, and encourage global education and public outreach (EPO) through formal education, informal programs, and participatory public events.

SSERVI recognizes the importance of stimulating science throughout the entire community, leveraging additional research by connecting others to the Institutes' currently funded teams. Most notably, SSERVI organizes and sponsors the annual Science Forum, held at Moffett Field, California, which brings together several hundred researchers to discuss topics ranging from modelling to mission science. The Director's Seminar Series brings the community together via monthly videoconferences that are archived for future reference. The Focus Groups mobilize expertise across the community on relevant topics developed at a grass roots level. The Institute's Workshops Without Walls, held in virtual space, provides travel-free conferences with recognized leaders on topics of current interest.

2. SSERVI International Partnerships

The NASA Solar System Exploration Research Virtual Institute (SSERVI) has a program of partnerships with international organizations to provide collaborative research opportunities for all members of the international science community. International partner membership requires long-term commitment from both the partner and the SSERVI, together with tangible and specific plans for scientific interaction that will produce results of mutual benefit to both the SSERVI U.S. teams and the international partner. The NASA SSERVI international partnerships program includes collaborative activities that address any of the objectives defined in the SSERVI Mission Statement. It is preferred that organizations proposing partnership represent a broad range of academic or research groups, able to represent the lunar science activity within a country. International partners are invited to participate in all aspects of the Institute's activities and programs, on a basis of no exchange of funds. Through these activities, SSERVI researchers and international partners participate in sharing ideas, information, and data arising from their respective research efforts, and contribute to the training of young scientists. Non-U.S. organizations can propose to become either Associate or Affiliate Members of the SSERVI, as described below. **Affiliate:** with non-government institutions; the majority of agreements

will be Affiliate. **Associate:** a government-to-government agreement; this includes space agencies.

How to Apply to the International Partners Program

Proposal Development: Proposers to the SSERVI International Partners Program are requested to describe: 1) the organizational nature of the proposing group (e.g., academic, government agency, private, non-profit, consortium); 2) the themes of the scientific work currently being undertaken, together with plans for interacting with the SSERVI community in ways that will advance the goals of the SSERVI while providing mutual benefit to the international partner; and 3) the specific areas where productive near-term exchanges/partnerships are anticipated, and areas for longer-term cultivation of interactions. Proposers are encouraged to include science collaboration plans with existing SSERVI teams, research exchange plans, collaborative field studies, facility sharing opportunities, digital content exchanges, and focus group plans.

Proposal Review at SSERVI: SSERVI Central will review the proposal internally using the following criteria: 1) the relevance of the scientific work being undertaken to the lunar science objectives and its synergy with the SSERVI 2) the nature of funding/endorsement from proposal sponsors 3) the strength and level of government endorsement (Associate Membership) 4) the specific areas where productive near-term exchanges/partnerships are anticipated, and areas for longer-term cultivation of interactions 5) any other issues that the SSERVI deems relevant, including the strategic goals of NASA

NASA Headquarters Review: When the proposal is complete and satisfactory to both your team and the SSERVI, it is then forward it to NASA Headquarters, to both the Office of International and Interagency Relations (OIIR) and to Jim Green, Director of Planetary Sciences.

Extra Review for Associate Partnerships: After approval from OIIR and Jim Green, an additional review is done by the State Department. This review is coordinated by the OIIR. Depending on the

country in question, this portion of the process can take a long amount of time.

Official Exchange of Letters: After the review at NASA HQ for Affiliate partnerships, Yvonne Pendleton (SSERVI Director) and Greg Schmidt (SSERVI Deputy Director) send an official letter of invitation to the primary partner institution. The letter is typically addressed to a senior official at the institution. After receiving this letter, the lead organization sends a formal letter reply accepting our offer, and the partnership is complete. For Associate partnerships, once the additional State Department review is complete, letters are sent between the heads of agencies for NASA and the partner institution and the partnership is complete. At this point, there can make plans for joint press announcements, a formal “signing” ceremony if desired, and other activities.

Learn More To learn more about our international program or to inquire about how to become a partner, contact: Greg Schmidt, Director of International Partnerships or Doris Daou, Deputy Director of International

3. Figures



4. Summary and Conclusions

The NASA Solar System Exploration Research Virtual Institute (SSERVI) is uniquely poised to bring people together via the realm of science, where the pinnacle of success is sharing results with the world. SSERVI's International Partnerships Program provides collaboration opportunities for researchers within the global science community, as well as the international education/public outreach community. International partners are invited to participate in all aspects of the Institutes activities and programs on a no-exchange-of-funds basis. Non-U.S. science organizations can propose to become either Associate or Affiliate members of the SSERVI on a no-exchange-of-funds basis. Affiliate partnerships are with non-government institutions; the majority of agreements will be Affiliate. Associate partnerships are government-to-government agreements; this includes space agencies.