1. **Partnership with Stanford’s Haas Center – Undergraduate Students as Outreach Partners**

Our joint Haas/HMI service-learning/communicating science class has been launched and is in full swing. The 1 unit course, which meets once a week, includes 11 Stanford undergraduate students, mostly juniors and seniors, plus 2 graduate student guests. One student is sight-impaired so we are learning to adjust our techniques to accommodate her needs. We have arranged to include Cheri Morrow, Broker/Facilitator and E/PO expert, as a key participant in the class. Cheri addressed the students on the class’s opening day, recently gave them a full-day Saturday workshop on insights into how people learn, how to communicate science, the content and meaning of the National Science Education Standards, and concrete experiences of effective instructional techniques. She has also presented an interactive lecture and introduction to the universe and the Sun to prepare students for more in depth studies on the Sun. Additional guest speakers for the course have already included Donald Kennedy, previous President of Stanford and currently Editor of “Science” magazine, and Steve Schneider, Stanford professor, science advisor in Washington, DC, and an expert on the global warming issues.

2. **Solar SID**

Our Solar Sudden Ionospheric Disturbance (SID) monitor is in beta-test at nearby San Leandro High School, a government designated inner-city school. Two teachers there are working directly with the monitor and a third is developing additional activities. Our SID teacher intern closely monitors the teachers, instrument and resulting data, providing support whenever necessary. The team has had some exciting experiences tracking the effects from active region 486 that produced several gigantic flares during the early part of November!

The project has received the donation of a Universal Networking Evaluation Kit from Ubicom, Inc., valued at $3,000. The Kit will allow us to evaluate the use of embedded chips within the SID monitor, rather than requiring the schools to provide an accompanying PC.

The Solar SID project was featured in a presentation during a recent All-Hands Meeting for the NSF-funded Center for Integrated Space Weather Modeling (CISM), which cofunds this SID program. The performance of the monitor was quite intriguing to the scientists and generated much enthusiasm. We expect to use the CISM participants as resources throughout the nation for further testing and distribution of our SID monitors, once they are available in quantity.

* Indicates a project with multiple funding sources.
Thanks to our teacher intern, Ray Mitchell, arrangements have been made with 2 Computer Science graduate students at the California State University at Hayward to develop the data handling and user interface software for the SID project. In addition, the EE Department of Chabot Community College has agreed to build the SID monitor in their classes as special projects for the students.

3. Presentation Bank*
Work has begun on our project, in collaboration with the AGU, to develop a space-physics-based generic “slideseet” presentation for use by scientists when giving presentations to the public. Animations, videos, and stills are being evaluated and experts in the field are being targeted for interviews. The AGU Space Physics and Aeronomy Education Committee has appointed an Editorial Board to serve as the peer-review entity and consulting body for the project. Current schedules have the presentation announced at the AGU in December and available for distribution in early spring.

4. Upgrade of Solar Video*
We have a video originally developed some time ago to accompany our poster-format spectrographs, which are distributed to schools and groups world-wide. The video has been in need of update and the addition of subtitles for the hearing-impaired. We have taken the opportunity to add a translation in Spanish, plus improve a few sections that students felt were not clear. Working with an artist at Lockheed, the needed animations and film shots have been completed, as have the Spanish translation and subtitling for hearing impaired. The new version is targeted for completion by the beginning of December.

5. Solar Planetarium Program for Small Domes*
NASA funding has been arranged and the Lawrence Hall of Science is awaiting the necessary paperwork for our joint solar planetarium program. Once funding is in place the development can begin.

Stanford has received a new FibreArc projector for our Starlab planetarium. The new projector functions considerably better than the original projector provided with the system. The Starlab is being made available to our Hass science students as well as the 4H Astronomy Project for use in their outreach programs.

6. Collaboration with AIA E/PO Efforts
The Lockheed AIA instrument has replaced the NRL instrument for SDO, and we have been meeting with AIA personnel to discuss opportunities for collaboration in E/PO programs.
7. **4-H Astronomy Project**  
The first meeting of the year for the Palomares 4H Astronomy Project took place 2 November. In attendance were 30 kids and people (i.e. interested parents), including many new members from 4 different 4H clubs. Focus this year will be on the Sun and on use of the Starlab planetarium by the kids in outreach presentations.

8. **Miscellany**  
We met with Alex Tung, a Stanford EE graduate student who heads up a graduate science outreach program called “The Science Bus.” This group is primarily run by grad students who devote one day a week to visiting underserved schools and presenting science education programs. We explored ways the Solar Center could support, collaborate with, and/or contribute to their efforts.

The exciting flares of last month gave us some unplanned opportunities to educate the public on the importance of the Sun and the Sun-Earth connection. Scientists in the group were interviewed for TV, radio, and other sources, and there were multiple occasions to talk with students about the events. We even had the unique opportunity to view and show off a flare, as it was happening, through our small h-alpha telescope!

9. **Evaluation**  
On 14 October, the Haas Science Program Coordinator and the Solar Center Coordinator met with Professor David M. Fetterman of the Stanford School of Education. Professor Fetterman is widely considered to be one of the top experts in evaluation techniques. We discussed evaluation needs for the Haas course as well as the other projects within the HMI E/PO scope. We also looked at needs for evaluation of the program as a whole. Professor Fetterman suggested approaches and techniques relevant to our program and provided pointers to necessary information to get started. He has offered to continue to serve as an advisor for our Evaluation needs. In addition, we are considering the use of one of his graduate students to assist with the development of specific evaluation plans and materials.