

HMI Education & Public Outreach Report

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For period 15 Jan – 14 Feb 2004

1. Partnership with Lockheed's AIA Instrument Team.

The AIA instrument team has asked to coordinate their E/PO activities with ours, to provide better leverage. After multiple meetings and discussions, we have developed a program that extends the existing HMI efforts as well as brings added dimensions from the Center for Astrophysics at Harvard and Montana U. Primary focus for coordination will start with the Haas Science Fellow Program and Montana U's equivalent student outreach program. We hope to have the Science Fellows at both sites share learning activities as well as experiences in the field. We are scheduling monthly AccessGrid videoconferences and are considering possibilities for joint workshops and summer schools.

2. Partnership with Stanford's Haas Center – Science Service Learning Program

Quarter 2 for the Science Service Learning Program began 20 January. Kelly Beck, our Haas course designer, spent the last month negotiating with various community outreach programs in which our students might be involved. Based on interviews with the Science Fellows, arrangements were made with the Boys' and Girls' Club, which serves students in East Palo Alto, Redwood City, and Menlo Park, CA. The Fellows will work weekly, in pairs, at each of the sites. The Fellows have met several times to design their own program and curriculum for the remainder of the year. We have provided a set of resources and activities to supplement the program designed by the students.

One Science Fellow, Liz Phillips, has chosen to develop an E-zine (online magazine) project rather than work with the Boys and Girls Clubs. (Liz is blind and this model takes best advantage of her skills – she hopes to become a professional science writer.) We have paired her with one of our scientists, John Beck, to develop the concept for the magazine. They have chosen a *Sky and Telescope / Scientific American* model, targeted to high school students and science teachers. Each article will be based on an interview with a research scientist, with John helping Liz do the research and obtaining the necessary background. Liz will do the article development and writing.

3. Solar Sudden Ionospheric Disturbance Monitor¹ (SID)

Our teacher interns have improved the design of our solar SID monitor and are now working with the EE Department of Chabot Community College to have them prepare some prototypes. Rick Styner, our teacher intern from San Leandro High School, has written up his teaching program based on SID and is working with an

¹ Cofunded with NSF through the CISM Project.

undergraduate from Chabot Community College to prepare the labs and lessons for availability on the web.

Our two EE graduate students² have designed and are developing a research-quality SID monitor, nicknamed AWESOME (Atmospheric Weather Education System for Observation and Modeling of Effects). Last month they demonstrated a near-complete prototype, which included a GPS chip able to pick up time stamps. This month they described new improvements to the monitor. They expect to have a full-completed receiver available by May.

4. Presentation Bank³

We are working with the AGU Space Physics and Aeronomy Education Committee to develop an updated version of their publicly available “slide set” to introduce the general public to SPA-related fields. Paul Mortfield, contractor on this project, has delivered a prototype version of the slide set, which includes 26 videos, additional still imagery, and commentary, to the AGU/SPA Education Committee for review. A final version of the slide set is targeted for mid-March.

5. Solar Planetarium Program for Small Domes⁴

The Lawrence Hall of Science is still awaiting delivery of their NASA grant funds to begin this project. We are evaluating the imagery and videos on the AGU/SPA slide set for potential inclusion in our solar program.

6. Brief updates on other programs:

- **Sundagger website**, joint collaboration with Anna Sofaer’s Solstice Project.

We are pursuing the possibility of developing a website to support the educational opportunities offered by the Sundagger event in Chaco Canyon, to coincide with NASA’s theme of “Ancient Observatories” for 2005. We are exploring possibilities for funding of the “Solstice Project” to coordination on the development of our website. In turn, we are making the various contacts necessary to coordinate our efforts with those of the SEC in their Ancient Observatories broadcasts next year.

- **4H Astronomy Project**, Alameda County

Students in our 4H Astronomy Project have each developed a presentation for use in the portable Starlab planetarium. The presentations make use of PowerPoint slides as well as the star projection in the dome. Students did their own research and collection of imagery. The students gave a “test-run” presentation for the Del Arroyo 4H Club on 11 February and public

² Funded by NASA/SOHO MDI instrument funds.

³ Project jointly undertaken with the AGU Space Physics and Aeronomy Education Committee and the MDI mission on SOHO.

⁴ Jointly funded with NASA’s LWS, NSF’s CISM project, and done in collaboration with the Lawrence Hall of Science

demonstrations at the Alameda County 4-H Presentation Day on 14 February, where they were formally judged and evaluated. All presenters did well, with 3 earning Gold Stars, meaning they are eligible to enter their planetarium presentations at a state-wide 4H Presentation Day at UC Davis. We will need to research whether UC Davis facilities can accommodate the planetarium.

- **Chabot Community College Partnership**

We continue to collaborate with Chabot Community College in their Integrated Science, English, and Math program. We have also brought onboard a pre-astro physics student from Chabot to gain experiences in working with the research and education/public outreach programs here at the Solar Center.⁵

- **Astronomy for the Blind**

We met with staff at Stanford's Disability Resource Center (DRC) to determine if we could provide any additional support to their program for blind students. We explored some of the problems blind students encounter at Stanford and brainstormed on how to address them. The biggest hurdles seem to come from the attitudes of a few of the professors. We will bring up the issue in various department and faculty meetings to highlight the needs and hopefully encourage adequate support from professors. We expect to continue this relationship with the DRC on a long-term basis.

- **Local outreach activities**

A group of Fremont Unified School District elementary science teachers visited here on 9 February. They received an introduction to solar physics from John Beck, as well as a tour of our Wilcox Solar Observatory. We provided them with armloads of resources to take back to their classrooms.

We have purchased a video attachment for our solar telescope to allow images to be projected on a TV screen. This will come in handy when taking the telescope out to schools – allowing us to show the images to the entire classroom and describe them before each student has a chance to look through the telescope directly. Several scheduled visits to elementary classes with the solar telescopes were rained or clouded out this month.

⁵ Funded by NSF's CISM Project.