1. **SuperSID Hand-off to Society of Amateur Radio Astronomers (SARA) - (HMI, NSF/CISM, IHY, and Stanford)**

Stanford has effectively handed off the SuperSID distribution to the SARA team. Costs for the basic instrument are now down to $48 (from an original $200). Remaining IHY funds will provide a final 100 SuperSIDs to classrooms at reduced or no cost. Continued funding of classroom instruments will come from donations and the sale of instruments to radio-enthusiasts. The very capable SARA team will handle customer contact and support. This is a good example (we hope) of a NASA- and NSF-funded activity being set up to become self-sustaining.

[Contact: Deborah Scherrer, dscherrer@solar.stanford.edu]

2. **Morocco Science Tour (in conjunction with Grove of Hope)**

Stanford’s Deborah Scherrer was one of 10 NASA scientists who toured Morocco for 2 weeks, giving all day science workshop events to middle school Moroccan children. The tour was done under the auspices of the United Nations (International Space Weather Initiative) and authorized by the King of Morocco. Funding for the trip came from Grove of Hope, a non-profit formed by several NASA/JPL (Jet Propulsion Laboratory) scientists. Organizer was Kamal Oudrhiri of JPL.

Our goal was to inspire, enthuse, and excite Moroccan middle school students about science and to give them a chance to meet and talk with real scientists. These students are keenly aware that Morocco’s role in the modern world is dependent upon their successes in science and technology. We hosted 6 events in 3 cities -- Casablanca, Rabat (the capital), and Tangier -- about 1200 kids per day for a total of 7000 students and 1000 teachers!

Each event provided 4 stations through which the students rotated. Stations included Discovery Dome planetariums, telescope viewing, robots, rockets, a space theatre, kinesthetic astronomy, and an assortment of other hands-on activities. Scherrer provided activities and materials relating to:

- Telescope viewing of the Sun in h-alpha and daylight moon viewing with a visible light scope
- A scale model of the solar system based on an 8’ balloon, including sunspots painted on by Stanford sunspot researcher Irina Kitiashvili
- Experiments with ultraviolet-light-sensitive (UV beads.


[Contact: Deborah Scherrer, dscherrer@solar.stanford.edu]
Students “discover” the Sun through eclipse glasses before being presented with the h-alpha scope. (Glasses provided by Emilie Drobnes at GSFC.) The students also received instruction on the need for solar filters and the nature of solar prominences.

The major TV station in Morocco included our imagery and instruction on prominences as part of their TV coverage!

Students view the Moon through an optical telescope (left) and Sun through an h-alpha telescope (right). The optical scope was used in the afternoons after the Sun set behind city buildings (and when it was too cloudy to see the Sun). High school volunteer translator helps with optical scope. Scherrer handled the h-alpha, with translation help from a local teacher.
Lessons and activities were translated into Arabic by teacher volunteers. Here, a Moroccan teacher/translator leads scale model activity. The model and activities were provided by Scherrer, who trained the teachers to give the lessons in Arabic. Each day we had to train a new batch of teachers.

Arabic-speaking teachers give lessons using ultraviolet light sensitive (UV) beads. The students are holding the beads tightly in their hands to allow them to turn back to white.

Several volunteer teachers (who were mostly language, not science teachers) panicked when told they would be teaching the lesson. But after training and a few run-throughs, they became excited about the activity and vowed to include astronomy in their English classes!

Students in Rabat’s Royal National Library line up for a session in Pat Reiff’s Discovery Dome planetariums. The Discovery Domes and Scherrer’s activities constituted one of the 4 main student events.

Note Kitiashvili-painted sunspots on balloon in upper left.
The “pizza Suns” (provided by Steele Hill of GSFC) were a big hit, and coordinated well with our solar system scale model (white balloon with sunspots in background).

Tour participants included (left to right) Cherilynn Morrow (Georgia State), Mike Wilson (JPL), Monique Chyba (U of Hawaii), Deborah Scherrer (Stanford U.), Pat Reif (Rice U.), Ryan Smith (USC), Ian Riddel, Art Hammond (JPL), Rin Scherrer (U of Washington), Chris Miko (JPL), Tanya Silva (JPL), John Smith (JPL), and Linda Rodgers (JPL, not shown).

Organizers were Kamal Oudrhiri and Marisa Cleghorn (not shown).

3. **EPO Teams Gear up for SDO Launch (all)**

All instrument EPO teams are gearing up for the SDO launch, scheduled for February 2010. The HMI EPO team has responsibility for hands-on activities at Kennedy Space Center for several days before the launch. Other instrument teams are hosting local events. The Stanford EPO team will provide solar telescope viewing, the solar system scale model, and activities with UV-sensitive beads. [Contact: Deborah Scherrer, dscherrer@solar.stanford.edu and Emilie Drobnes, emilie.drobnes-1@nasa.gov]

4. **AGU – Exploration Station (SDO, HMI, NSF/CISM)**

This year’s Exploration Station, AGU’s family science event on 13 December 2009, attracted 331 parents, children, and teachers to spend four hours discovering how much fun you can have with, for example, infrared cameras, Slinkys, ice, mud, portable planetaria, and different EM spectrum waves. SDO’s display took visitors deep into the Sun and scientists answered children’s questions via Twitter. HMI’s PI, Philip Scherrer, presented spectroscopy with visible light while Stanford’s SID
engineer Tim Huynh helped with radio waves as part of an entire electromagnetic spectrum series of activities. HMI’s scale model of the solar system was also a big hit. According to the AGU report, “Many visitors spent more than two hours at Exploration Station and one teacher spotted her entire eighth grade class in the room. Exhibitors enjoyed sharing their love of science and watching children become enthusiastic about experiments and scientific tests.” [Contact: Deborah Scherrer, dscherrer@solar.stanford.edu]
Nick Gross (NSF/CISM) and Stanford’s Tim Huynh (shown) put together a radio-waves demonstration that included the SID monitor, antenna, and earphones.

(Note solar system scale model in background.)

HMI PI Phil Scherrer demonstrates wave motion at Exploration Station. Scale model of Sun (big balloon) is in background.