

## **Student Participation in Earth and Space Science Programs in Washington, DC**

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### *Hands-on experiences for high school and college students*

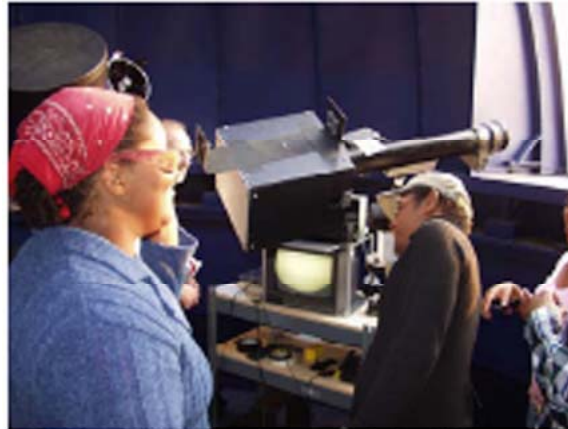
Howard University and the University of the District of Columbia, as well as local pre-college schools, have benefited from the presence of several government agencies dealing in Earth and Space Science and related areas of engineering and technology. These include the NASA Goddard Space Flight Center and the Naval Research Laboratory.

Among these benefits is that pre-college, as well as college, students can obtain "hands-on" experiences by working in these laboratories as summer or part-time interns. Also, NASA, NRL, and other government agencies encourage their professionals to engage in informal education and public outreach activities.

In turn, the participation of students with members of these organizations has helped to enlighten their mentors as to what are the most appropriate topics and technical levels of activities that contribute most efficiently to their education.

Students working at NRL have, for example, assisted in developing hardware for, and analyzing data from, several space flight missions, and also worked on projects involving public outreach and educational programs in the local schools.

Such projects have included building a solar telescope, a solar spectrograph, and a polar aurora simulator, all of which have yielded data that has been used in video and PowerPoint presentations at both high school and college levels.



**Solar telescope in use at the Howard University on-campus observatory, for public viewing of the transit of Venus in front of the Sun on June 8, 2004**



**Students assembling spectrograph for solar and astronomical observations at NRL**



**Students and teacher viewing solar spectrum**



**Solar telescope, with videotaping capability, constructed at the Naval Research Laboratory with summer student assistance**



**College student interns working at the Naval Research Laboratory participated in the development and testing of a space flight instrument, Global Imaging Monitor of the Ionosphere (GIMI), which was one of several provided by NRL and other DoD agencies, flown on the DoD Space Test Program's ARGOS satellite, launched in February, 1999.**

Earth System Science at Howard University

[http://esse21.usra.edu/ESSE21/esse21\\_howard.html](http://esse21.usra.edu/ESSE21/esse21_howard.html)