



Chabot Community College  
25555 Hesperian Blvd.  
Hayward, CA 04545

## **SUMMARY OF PROPOSAL**

The Astronomy and Physics Department of Chabot College is pleased to offer our proposal to produce and test a lab exercise which would allow students to measure and analyze data from some or all instruments on SDO.

### **1.0 Background and Relevant Experience**

Our Astronomy Instructors have over 50 years of accumulated teaching and curriculum development experience. Additionally, in the past we have formulated and administered numerous internal and national grants like that from ATE (National Science Foundation) to foster multidisciplinary learning communities. We have worked with a varied number of partners from Lawrence Livermore National Laboratory and Sandia Labs to the Hayward, Union City, and San Leandro Unified School Districts. Since we have worked with the requestor, Stanford University W.W. Hansen Experimental Physics Laboratory, in a recent NSF grant we would like to specify the bid requestor as our reference.

### **2.0 Statement of Work**

**Purpose: Develop a community college-level laboratory exercise to enable student analysis of SDO data. An SDO scientist will be available for consultation with the instructors.**

#### **Tasks and Deliverables:**

- 1. Professors Scott Hildreth and Tim Dave will jointly with Stanford develop a laboratory exercise (possibly to be explored over two or more lab sessions) that uses SDO data in a meaningful and effective way for community college students.**
- 2. Hildreth and Dave will test run the lab in an introductory astronomy lab class, and possibly a physics class, observing students as they work with the lab and tuning the procedures as needed.**
- 3. Hildreth and Dave will produce written materials for the lab so that the lab can be sent out for formal evaluation and testing elsewhere.**

**It is understood that additional supporting effort such as the development of software tools to enable student access to data, and adapting the laboratory to high school environments may be necessary, but are outside the scope of this RFP. Additional steps in the formal assessment of the lab, distribution of the lab for further testing by other institutions, review of those results, and revision of the labs would also be beyond the scope of this initial proposal, as would developing a space weather unit.**

### **3.0 Proposed Costs**

The following budget narrative breaks down the budget for the term 1 June 2011 - 30 May 2012, and totals \$20,000.

Months 1-3 (1 June to 30 Aug 2011)

The first two months of the grant will be designated as research and planning and development months, starting the development of labs and appropriate additional curriculum.

Costs: Senior Personnel (Hildreth and Dave) – \$4,000

Months 3-7(15 August to 30 Dec 2011 – Fall Semester)

Development of the lab activities and supporting student materials, and alpha testing of the lab in one laboratory section of Astronomy 30 to be led by Hildreth.

Costs: Senior Personnel (Hildreth) – \$12, 500 (salary/benefits reassignment from 1 class at Chabot College, to paid to the college at the start of the semester.)

Months 8-12 (1 January 2012 to 30 May 2012 – Spring Semester)

Continued testing of the lab by both Hildreth and Dave in two Astro 30 courses at Chabot College, revision of student materials, and summary of initial student reactions. Preparation of materials for the next stage of assessment.

A. Senior Personnel (Hildreth and Dave) – \$3,500