## C.4. SCIENCE TEAM

There are two key aspects to the selection of a science team. First is to assure that the capabilities are present to complete the development of the flight program. No less important is the need to assure that those with the knowledge and capability to complete the science investigation are committed to the program. The HMI Science Team includes the Co-Investigators and other named individuals referred to as Associated Investigators (AI).

The Science Team as a whole is dedicated to ensuring that the best possible science investigation is accomplished within the SDO-HMI program. The HMI Science Team consists of leading experts in all of the science goals of the HMI investigation.

During Phase-A only the Stanford, LMSAL, HAO, MSSL, and RAL Co-Is have identified tasks. In Phase B-C the HAO definition role is complete. In Phase D a number of Co-Is will provide software for use in the level-1 through level-3 processing pipeline. This software will allow timely calibration of the data from the beginning of the flight phase and the production of higher level science data products required for later science analysis. These data products are those that require substantial volumes of data and processing that can not be expected to be available at Co-I and other science institutions. In the first two years of Phase-E (E-1) the Stanford, LMSAL, HAO, and international investigators will pursue their full science investigation as well as operations, data processing, calibration as appropriate. The US Co-Is who provided code in Phase-D will participate in the calibration to ensure the proper functioning of the code and algorithms and will pursue a reduced science investigation - sufficient to verify that the algorithms developed yield the science insights intended. In the final years, Phase E-2, the Stanford and LMSAL investigators will continue their operations and processing roles but will pursue only similarly limited science investigations. The support for the full exploitation of the HMI science opportunities by US investigators during this phase must come from sources other than the primary HMI program. This plan is consistent with the requirements specified in the AO Section 1.6 paragraph 2. The plan is outlined in Table C.4.1.

The Investigator team is listed in the table in Table C.4.2 on the next page. For each investigator the Phase A-D roles are identified.

| Phase | A | B | C | D | E-1 | E-2 |
|---|---|---|---|---|---|---|
| Stanford | Full | Full | Full | Full | Ops, Data, Calib, Science | Ops, Data, Some Science |
| LMSAL | Full | Full | Full | Full | Ops, Calib, Science | Ops, Some Science |
| MSSL | Yes | Yes | Yes | Yes | Science | Science |
| RAL | Yes | Yes | Yes | Yes | Science | Science |
| HAO | Line Sel. | none | none | Code Develop | Calib, Science | none |
| Other US | none | none | none | Code Develop | Calib, Some Science | none |
| Other Intl | | | | | Science | Science |

**Table C.4.1 - Team Participation in Mission Phases**

| Name | Role | Institution | Phase B,C,D | Phase E |
|---|---|---|---|---|
| Philip H. Scherrer | PI | Stanford University | HMI Investigation | Solar Science |
| John G. Beck | A-I | Stanford University | E/PO Science Liaison | Surface Flows |
| Richard S. Bogart | Co-I | Stanford University | Data Pipeline and Access | Near Surface Flows |
| Rock I. Bush | Co-I | Stanford University | Program Manager | Irradiance and Shape |
| Thomas L. Duvall, Jr. | Co-I | NASA Goddard Space Flight Center | Time-Distance Code | Helioseismology |
| Alexander G. Kosovichev | Co-I | Stanford University | Inversion Code | Helioseismology |
| Yang Liu | A-I | Stanford University | Vector Field Observable Code | Active Region Fields |
| Jesper Schou | Co-I | Stanford University | Instrument Scientist | Helioseismology |
| Xue Pu Zhao | Co-I | Stanford University | Coronal Code | Coronal Field Models |
| Alan M. Title | Co-I | LMSAL | HMI Instrument | Solar Science |
| Thomas Berger | A-I | LMSAL | * Vector Field Calibration | Active Region Science |
| Thomas R. Metcalf | Co-I | LMSAL | * Vector Field Calibration | Active Region Science |
| Carolus J. Schrijver | Co-I | LMSAL | AIA Liaison | Active Region Science |
| Theodore D. Tarbell | Co-I | LMSAL | HMI Calibration | Active Region Science |
| J. Leonard Culhane | Co-I | MSSL, University College London, UK | HMI CCD Cameras | Active Region Science |
| Richard A. Harrison | Co-I | Rutherford Appleton Laboratories, UK | HMI CCD Camera Electronics | Active Region Science |
| Bruce W. Lites | A-I | High Altitude Observatory | * Vector Field Inversions | Active Region Science |
| Steven Tomczyk | Co-I | High Altitude Observatory | * Vector Field Inversions | Active Region Science |
| Sarbani Basu | Co-I | Yale University | * Ring Analysis Code | Helioseismology |
| Douglas C. Braun | Co I | Colorado Research Associates | * Farside Imaging Code | Helioseismology |
| Philip R. Goode | Co-I | NJIT, Big Bear Solar Observatory | * Magnetic and Helioseismic Code | Fields and Helioseismology |
| Frank Hill | Co-I | National Solar Observatory | * Ring Analysis Code | Helioseismology |
| Rachel Howe | Co-I | National Solar Observatory | * Internal Rotation Inversion Code | Helioseismology |
| Jeffrey R. Kuhn | Co-I | University of Hawaii | * Limb and Irradiance Code | Irradiance and Shape |
| Charles A. Lindsey | Co-I | Solar Physics Research Corp. | * Farside Imaging Code | Helioseismology |
| Jon A. Linker | Co-I | Science Applications Intnl. Corp. | * Coronal MHD Model Code | Coronal Physics |
| N. Nicolas Mansour | Co-I | NASA Ames Research Center | * Convection Zone MHD Model Code | Convection Physics |
| Edward J. Rhodes, Jr. | Co-I | University of Southern California | * Helioseismic Analysis Code | Helioseismology |
| Juri Toomre | Co-I | JILA, Univ. of Colorado | * Sub-Surface-Weather Code | Helioseismology |
| Roger K. Ulrich | Co-I | University of California, Los Angeles | * Magnetic Field Calibration Code | Solar Cycle |
| Alan Wray | Co-I | NASA Ames Research Center | * Convection Zone MHD Model Code | Convection Physics |
| J. Christensen-Dalsgaard | Co-I | TAC, Aarhus University, DK | * Solar Model Code | Helioseismology |
| Bernhard Fleck | Co-I | European Space Agency | ILWS Coordination | Atmospheric Dynamics |
| Douglas O. Gough | Co-I | IoA, Cambridge University, UK | * Local HS Inversion Code | Helioseismology |
| Takashi Sekii | Co-I | National Astron. Obs. of Japan, JP | | Helioseismology |
| Hiromoto Shibahashi | Co-I | University of Tokyo, JP | | Helioseismology |
| Sami K. Solanki | Co-I | Max-Planck-Institut für Aeronomie, DE | | AR Science |
| Michael J. Thompson | Co-I | Imperial College, UK | | Helioseismology |

**Table C.4.2 - HMI Science Team** *** Phase D only**