

## Appendix I

### State of Hawaii University of Hawaii Institute for Astronomy

#### FUNCTIONAL STATEMENTS

##### OFFICE OF THE DIRECTOR

The primary mission of the Institute is the production of the highest possible quality astronomical research; world leadership in the development of ground- and space-based instrumentation; the development and stewardship of the Mauna Kea and Haleakala Science Reserves; and provision of facilities and professional guidance to graduate students of astronomy to enable them to meet curriculum requirements and to gain hands-on experience in current astronomical research techniques.

To accomplish these mission elements, the Director:

- initiates, directs and controls all Institute activities.
- maintains liaison with, and serves on, steering committees in the Federal funding agencies, Hawaii Congressional Delegation, State agencies, National and International astronomical community.
- initiates scientific projects deemed relevant to the Institute's overall program.
- provides policy guidance for his staff.
- establishes priorities for use of available resources.
- coordinates planning for staff and facilities development.
- reviews and evaluates IFA programs.
- chairs the IFA Executive Committee.
- is a Principal Investigator on proposals for Federal funding.
- stimulates scientific staff efforts toward significant research achievements.
- coordinates the development of facilities at sites designated by the State Government for astronomical research.
- directs and conducts scientific research.

- coordinates among Division and Facility Heads, the scheduling of research projects and utilization of research facilities at the Mauna Kea and Haleakala Observatories.

The Associate Director, in addition to conducting personal research, provides general management assistance to the Director in the functions described above, assists in recruiting of scientific staff, chairs or serves on various IFA committees, undertakes special projects, and has specific responsibilities in the following areas:

- Long range planning
- Recruitment of scientific staff
- Serves on the IFA Executive Committee
- Serves as Acting Director in the absence of the Director
- Coordination of staff research activities

#### MAUNA KEA - HALEAKALA DEVELOPMENT OFFICE

A separate staff function in the Director's Office is the Mauna Kea - Haleakala Development Office, required to assure that the rapid growth in the number of facilities on Mauna Kea, and to a lesser extent, Haleakala proceeds in an orderly way, and to the maximum long-term benefit of UH and the State. Mauna Kea, recognized as the premier world site for an astronomical observatory, is in demand internationally for facility development. Therefore proper attention to State and Federal regulations, the environment, and to the place of these areas in the history of Hawaii, as well as to the best advantage of the development of astronomy at the University of Hawaii is mandatory. The wide international interest in the site has created the need for this office in the Institute to coordinate applications for use of the mountain, the CIP projects on the mountain, and the harmonious relationship between international scientific users.

This office, due to the sensitivity and confidentiality associated with interaction with existing and future National and international users of Mauna Kea and Haleakala, and with high University and Government officials, requires a position with a scientist possessing a strong management and technical oversight background reporting immediately to the Director with responsibility for:

- coordinating with Federal agencies, agencies within the State government, other universities and research institutes, and representatives of foreign governments plans for the construction of new facilities, and facilities improvements and negotiation of agreements within policy guidelines established by the Director.
- coordinating with State offices requests for use of land on Mauna Kea and Haleakala.

- development of Environmental Impact Statements, complex development plans, position statements, facilities planning documents, and similar reports and documents for the IFA Director.
- coordinating with State and University offices the design and implementation of State Capital Improvement Projects on Mauna Kea and Haleakala.
- serving on the IFA Executive Committee.
- convening meetings of the Mauna Kea Users' Committee.
- convening meetings of the Haleakala Development Committee.
- proposes initiatives relating to UH management of Mauna Kea and Haleakala.
- preparing and negotiating site complex agreements, memoranda of understanding, and similar documents with national and multi-national groups and organizations regarding Observatory developments and related activities; works with the University administration and other UH officials to see these through the University.

The Assistant to the Director has staff responsibilities primarily in public information and relations, and providing administrative assistance to the Director.

Duties and responsibilities in public information and relations include:

- writing press releases, arranging press conferences, conducting informational workshops, handling outside inquiries by the public and news media, drafting speeches for the Director, developing informational pamphlets and brochures.
- preparation and publication of the IFA newsletter.
- arranging, and as appropriate, accompanying tours for visiting dignitaries at the Mauna Kea and Haleakala Observatories.
- coordinating the public information activities of the Ellison Onizuka Visitors Center at Hale Pohaku, including summit tours, exhibits within the Center, planning for Center expansion, and special events.
- coordinating IFA Industrial Associates and Community Board Programs with UH Foundation.
- provides interface between IFA scientific staff and press/public.

Duties and responsibilities in the area of administrative assistance to the Director include:

- participation in the preparation of reports and similar correspondence.
- coordination of special projects as assigned.
- serving on IFA Executive Committee.
- serving as recorder and providing logistical support of Executive Committee and other meetings as assigned.

The IFA Executive Committee is comprised of IFA Division and Facility Heads and members of the Director's Office staff. It is an advisory body to the Director which advises and participates in policy making, long range planning, program development, and overall IFA administration.

The Director's Secretary functions as an Executive Secretary in maintaining the Director's calendar, managing and booking his travel, and provides office management services which include:

- distribution of mail and correspondence to Division and Facility Heads.
- supervision of secretarial and student help staff within the Director's Office.
- provides and/or assures telephone services to Director and his staff.
- assures maintenance of Director's files.
- coordinates Director's correspondence.

#### OFFICE OF THE ASSISTANT DIRECTOR FOR PROGRAM SUPPORT

The IFA research program is supported by the Office of the Assistant Director for Program Support, which is comprised of the following elements: the Administrative/Fiscal Support Division; the Engineering Support Facility; Mauna Kea Support Services; the Haleakala Support Services; and the Staff Support Services Office. These activities, under the direct line management of the Assistant Director, are responsible for the provision of programmatic support to all operational elements of IFA in the areas of administrative, fiscal, logistical and project management support to all IFA Divisions and facilities; and for planning and development and preliminary implementation of new initiatives selected by the Director for new and augmented IFA program elements. Responsibilities include overall planning; management of administrative and budgetary aspects of proposal activities; preparation of program plans, management plans, schedules and budgets; negotiations with collaborative institutions and funding

entities; management of the IFA Personnel Matrix Management System; and initial project management. The Assistant Director also provides the IFA Director with project management and monitoring of Capital Improvement Projects at the Manoa complex, Mauna Kea Observatory, and Haleakala in all phases from design through completion in coordination with the UH Planning Office, DAGS, DLNR, and other appropriate agencies.

Staff functions of the Assistant Director include:

- consulting with and advising the Director in matters of planning, organization, and policy, relative to administrative, fiscal, and appropriate operational issues.
- service on the Board of Directors of the Canada-France-Hawaii Telescope Corporation.
- developing and maintaining contact with Federal government, and outside agencies which provide grant and contract support to the IFA, and ensuring that the contractual obligations and responsibilities of IFA are met.
- establishing and maintaining contact with RCUE and such UH offices as Personnel, Contracts and Grants, Procurement, and Budget to represent the Institute's needs as these are established by the Assistant Director in consultation with the Director.
- service on the IFA Executive Committee.

The Assistant Director also has line management responsibility for the IFA involvement in the UH Revenue and issues financing certain improvements at the Mauna Kea Observatory, and certain of the program support elements of IFA comprised of the following divisions; Administrative/Fiscal, Engineering Support, Mauna Kea Support Services, Haleakala Support Services, and in coordination with scientific staff, the Scientific Support Services Group.

Administration/Fiscal Support Division. This division is comprised of four sections: Fiscal and Accounting; Personnel; Contracts and Grants; and Procurement and Property Management. The Assistant Director is responsible through the supervisors of these sections for controlling:

- General fund allocations.
- Contract and Grant Administration.
- Purchasing functions and property management.
- Job Order, Administrative Recharge, and Computer System Recharge systems.
-

- Personnel administration.
- Preparation of fiscal and administrative aspects of contract and grant proposals and funding agencies.
- Logistic support services to staff and maintenance of building and grounds at the Manoa facility.

Engineering/Instrumentation Support Facility. This facility is responsible for providing engineering and instrumentation development and maintenance, and machine shop services to the scientific programs, and IFA physical plant maintenance support. The Assistant Director is responsible for the administrative and financial management of the Engineering/Instrumentation Support Facility. In coordination with the Flight Projects and Instrumentation/Detector Development Division Heads, the Assistant Director ensures maintenance of the administrative and fiscal aspects of the Division, and develops staffing plans and procurement requirements to provide adequate technical resources to users on a matrix basis to user groups as required by Principal Investigators. (A more detailed description of the IFA Personnel Matrix Support System is given in Appendix III.)

Under direction of the Assistant Director. with the technical direction of Project Managers or Principal Investigators, the Section Heads of the Mechanical Engineering, Electronic Engineering, and Facility Maintenance sections:

- coordinate project requirements and personnel temporarily assigned to individual Principal Investigators and Project Managers involved in instrumentation development projects.
- evaluate the maintenance programs for equipment at the observatories and at the Manoa facilities, and lends technical assistance and direction as required.
- assist in the evaluation of scientific systems, equipment and instrumentation requirements presented by the Instrument/Detector Development and Flight Projects Divisions, scientists, and other staff members, and develop engineering manpower and scheduling requirements to facilitate project management.
- develop engineering staffing plans and the preliminary Facility budget to accomplish authorized and projected work, and monitor the application of resources temporarily allocated to other divisions under the matrix system.
- provide training programs for engineering and technical staff members.
- assures light building maintenance and modification tasks are completed on a timely basis and in accord with regulations and policies of the Facilities Management Office.

Mauna Kea Support Services. Mauna Kea Support Services is responsible for provision of services to all the Mauna Kea Observatory facilities and at the new Ellison Onizuka Visitor Center on Mauna Kea. Under the direction of the Assistant Director, the Support Services Superintendent at Hale Pohaku

- ensures the availability and adequacy of electrical telephone service, water supply and other utilities user groups on the mountain.
- ensures that the access road from Hale Pohaku to the summit facilities is maintained, and that snow is removed expeditiously.
- provides for and maintains vehicles as requested by the facilities.
- ensures the availability of accommodation and meals at Hale Pohaku and, as requested, at the summit facilities.
- maintains fiscal accounting records for purposes of billing the benefiting groups.
- maintains the library at Hale Pohaku.
- oversees the purchasing functions associated with the provision of the support services, recommends personnel actions relative to MKSS staff.
- oversees property accountability for MKSS.
- analyzes resource requirements, develops plans and operating budgets for the MKSS.
- provides support services to visiting astronomers and other authorized persons as may be required and as available.
- maintains liaison with local government agencies and the public on operational matters relating to the Observatory within established policy guidelines as delegated by the Assistant Director.

Haleakala Support Services. The Haleakala Observatory, consisting of the Mees Facility and the Laser/Satellite Ranging Facility, derives support from Haleakala Support Services. The Observatory Superintendent, under the direction of the Assistant Director:

- ensures the availability and maintenance of vehicles for the Observatory.
- ensures the availability and adequacy of electrical power, telephone service, water, and other utilities to user groups on the mountain.



- ensures the maintenance of the Institute's facilities on Maui, oversees purchasing functions and property accountability for the Haleakala Observatory.
- oversees the preparation of operating budgets for Haleakala Observatory.
- provides for administrative/fiscal support for the Observatory.
- oversees, in coordination with the Head of the Solar Physics Research Division, the scientific support staff in the Mees Observatory.
- maintains liaison with local government agencies and the public on operational matters relating to the Observatory within established policy guidelines as delegated by the Assistant Director.

**Scientific Support Services:** This division, managed by the Assistant Director, in coordination with scientific staff which sets priorities, provides the following program support to all IFA Divisions:

- staff secretarial services.
- manuscript preparation, including typing and illustration services.
- project management services as required by other Facilities and Divisions.
- library services in coordination with a member of the scientific staff designated by the Director.
- provision of matrixed temporary administrative and technical staffing requirements to all IFA Divisions as required through the IFA Job Order and Administrative Recharge Systems.

#### **INDIVIDUAL RESEARCH DIVISION**

The needs of the IFA individual staff Divisional research drive other IFA Divisions and Facilities, and provide the basic thrust of the IFA program. The mission of staff within this Division is to develop and carry out research programs of importance to the astronomical community, provide appropriate public service, seek financial support for such work from interested governmental agencies and other organizations, and to report their findings through professional meetings and publications. Additionally, the scientific staff maintains close contact with UH graduate students in astronomy providing professional, scientific guidance, counseling and assistance. The research scientists report to the Director.



Individual research is conducted by all IFA scientific staff on an independent basis with complete latitude without regard for the divisional structure, which is in place for coordination and administrative purposes only.

The Planetary Division utilizes the Telescope facilities at the Mauna Kea Observatory as well as the common facilities contained within the IFA complex.

The Planetary Division Head, reporting to the Director, provides staff coordination of planetary research in a wide range of solar system bodies including Uranus, Neptune, Pluto, the asteroids, the comets and satellites of the outer planets. Responsibility for the Lunar Ranging Program also resides within the Division. The Planetary Division Head through support staff:

- coordinates planetary research program initiatives developed by divisional staff and selected by the Director.
- represents divisional staff in administrative matters to the IFA Director.
- serves as Principal Investigator of the NASA sponsored Planetary Research Grant.
- maintains liaison with local governmental agencies and the public on matters related to the division.
- serves on the IFA Executive Committee.

The Solar Physics Division carries out a program of observational and theoretical research in solar physics and utilizes and maintains research facilities at the Mees Solar Observatory at the summit of Haleakala.

The Solar Division Head, through support staff:

- coordinates solar research program initiatives developed by divisional staff and selected by the Director.
- represents divisional staff in administrative matters to the Director.
- maintains liaison with local governmental agencies and the public in matters related to the division.
- serves on the IFA Executive Committee.

The Mees Solar Observatory Superintendent under the direction of the Program Support Division and in coordination with the Solar Physics Division Head:

- coordinates and supervises all operations and maintenance activities at the Observatory.

- supervises such observation programs as may be directed by the Director.
- prepares and supervises the preventive maintenance program.
- provides support services to Solar Research Division scientists, visiting astronomers, and other authorized persons as may be required and as available.
- oversees the administrative and operational management functions of the Observatory in support of the research programs including developing operating plans, budgets, staffing requirements, and controls over the application of available resources.
- provides on-the-job training for support staff members.

#### UH MAUNA KEA TELESCOPE FACILITIES

The mission of the UH Mauna Kea Telescope Facilities Division is to efficiently maintain and operate all observatory facilities to ensure maximum availability to scientist-observers.

To accomplish this mission, the Facility Head, reporting to the Director, individually or through his staff:

- coordinates and supervises all operations and maintenance activities at the Observatory.
- conducts such observation programs as may be directed by the Director, serves on the Telescope Time Allocation Committee and is responsible for scheduling UH Telescopes.
- prepares and executes the preventive maintenance program.
- oversees the administration of the Observatory including developing operating plans, budgets, staffing requirements and controls over the application of available resources.
- provides on-the-job training for staff members.
- serves on the IFA Executive Committee.

#### INFRARED TELESCOPE FACILITY

This facility is a nationally-available 3-meter aperture infrared telescope in the summit area of Mauna Kea operated under contract with the National Aeronautics and Space Administration (NASA). The facility mission is to efficiently maintain and operate all observatory facilities to assure maximum availability to all scientists-observers.

To accomplish this mission, the Facility Head, reporting to the Director, through his staff:

- Implements the facility management plan.
- coordinates and supervises the work of the staff.
- plans, budgets and schedules all work elements incident to the project and carries them out.
- reports to and coordinates with NASA, NASA representatives, and other organizations and groups involved in the facility as contractually required.
- coordinates use of the facility with scientists from outside institutions and ensures necessary supporting services are available, serves on the Telescope Time Allocation Committee and is responsible for scheduling of the IRTF.
- develops staffing and resource requirements for the project.
- serves on the IFA Executive Committee.

#### INSTRUMENTATION/DETECTOR DEVELOPMENT DIVISION

The mission of this Division is the development of high quality ground- and space-based instrumentation in direct support of the research divisions.

This Division is headed by an Engineer/Scientist who advises the Director in the thrust of such developments, institutes development projects, and assists scientists and Principal Investigators in their individual development projects. Such assistance includes developing manpower requirements and direction of engineering and technical resources allocated on a matrix basis as required by the Office of Program Support.

The Division Head is responsible for:

- the development of Facility instrumentation requirements generated by the Telescope Facilities.
- prototype instrumentation development requirements generated by scientific staff within the research divisions.
- special instrumentation maintenance and/or development programs as may be designated by the IFA Director.
- service on the IFA Executive Committee.

## IFA COMPUTER FACILITY

This facility provides programming services to research staff, central data reduction computer facilities, computer programming for telescope operations, and assistance to staff in software development. It is headed by a research scientist, and is an integral function in the support of scientific staff research.

The Facility Head responsibilities include:

- designation and procurement of computer hardware required by all Divisions and Facilities.
- design and development of software for all Divisions as required.
- design and development of software for all telescope facilities.
- maintenance of the Central Data Reduction Computer Facility.
- maintenance and update as required of all IFA common-use computer facilities.
- undertakes special projects initiated by the IFA Director.
- service on the IFA Executive Committee.

## FLIGHT PROJECTS DIVISION

The Flight Projects Division is responsible for space vehicle instrumentation development. This Division is headed by a research scientist who reports directly to the IFA Director. The current major task of this Division is the development of a NASA space science mission and an associated flight instrument which would be installed in the Hubble Space Telescope by astronauts in 1995. This program is currently one of the most important within IFA inasmuch as it is in direct competition with a similar program being directed by the University of Arizona. At the end of the first phase (Definition Study Phase), the institution which demonstrated superior scientific, technical, and management capabilities will be awarded the contract for development of the flight instrument and execution of the scientific mission (Phase II and III). IFA has committed to a stringent schedule for deliverables under this competitive initiative and, therefore, has elevated this, and similar programs to be proposed to divisional status.

The Division Head is responsible for delegated coordination and/or implementation of IFA contractual responsibilities assumed under contracts for flight projects.

These responsibilities include:

- coordination of UH technical and administrative elements in conjunction with the Office of Program Support.
- oversight of Jet Propulsion Laboratory technical and management performance under subcontract.
- supervision of project personnel located in Hawaii and California.
- service as a member of the project Science Team.
- service on the IFA Executive Committee.