III. ROLE AND RESPONSIBILITIES OF CENTER DIRECTORS

NATIONAL OPTICAL ASTRONOMY OBSERVATORY (NOAO) DIRECTOR

A. ORGANIZATIONAL PURPOSE OF NOAO

The National Optical Astronomy Observatory (NOAO) is managed by AURA under a cooperative agreement with the NSF. Tasks under the Cooperative Agreement include maintenance, support and access to high-quality optical/IR telescopes, auxiliary instruments, data reduction facilities, and software to users chosen on the basis of scientific merit from the astronomical community. NOAO is a leading center in developing state-of-the-art, innovative instrumentation and techniques for astronomical observations at visible and infrared wavelengths. NOAO maintains a first-class scientific staff, which provides leadership for developing such facilities and instruments and to carry out forefront research in support of the observatory's mission.

B. NOAO DIRECTOR'S ROLE

The NOAO Director:

1. Reports through the President to the Board of Directors of AURA, and is responsible for the National Optical Astronomy Observatory, and more specifically for assembling, maintaining, and providing scientific leadership to a first-class scientific staff; for maintaining, operating, and developing high-quality astronomical facilities for use by the astronomical community; for initiating a program of state-of-the-art instrumentation for optical and infrared astronomy; and responsibility for the design and development, as new public optical facilities;

2. Is responsible for selection of Associate Directors and other key personnel through whom this program is planned, conducted, and monitored; for assignment of authority and resources to these staff members consistent with AURA policy; and for overseeing their performance and providing guidance; and,

3. Is responsible for conducting the program of NOAO in a manner consistent with the policy guidelines provided by AURA and NSF and, as appropriate, to recommend extension or modification of such policy.

C. SPECIFIC RESPONSIBILITIES

The NOAO Director will:

1. Establish and maintain a structure within NOAO, which will foster a spirit of scientific inquiry and service to the science of astronomy;

2. Supervise, encourage, and provide for the development of the staff of NOAO;

3. Respond to and support AURA Board committees including the Observatory Council and Visiting Committees;

4. Establish and administer procedures for allocation of resources within NOAO;

5. Subsequent to AURA approval, prepare and submit to the NSF annual program and long-range plans which reflect the needs of the astronomical community;

6. Implement approved program plans consistent with AURA policies;

7. Report on the status of the program to the AURA President, and, via the President, to the AURA Board and the Member Representatives;

8. Submit salary recommendations to the OC and the Board of Directors;

9. Recommend candidates for tenure to the OC;

10. Serve as principal interface for programmatic matters between AURA and the appropriate NSF program office, and exercise substantial delegated responsibility for such interface in contractual matters;

11. Serve as AURA's principal spokesperson to the scientific community on matters relating to NOAO;

12. Maintain contact with the scientific community in order to remain informed on community needs to represent AURA's plans, and to obtain an evaluation of activities proposed and under way in NOAO;

13. Participate in a program of individual research as time permits; and,

14. Maintain a safe and effective work environment.

III. ROLE AND RESPONSIBILITIES OF CENTER DIRECTORS (continued)

NATIONAL SOLAR OBSERVATORY (NSO) DIRECTOR

A. ORGANIZATIONAL PURPOSE OF NSO

The National Solar Observatory (NSO) is managed by AURA under a cooperative agreement with the NSF. The tasks under the cooperative agreement may include maintenance, support and access to high-quality optical/IR solar telescopes, auxiliary instruments, data reduction facilities, and software to users chosen on the basis of scientific merit from the astronomical community. NSO is a leading center in developing state of the art, innovative instrumentation and techniques for solar observations at visible and infrared wavelengths. NSO maintains a first-class scientific staff, which provides leadership for developing such facilities and instruments and carry out forefront research in support of the observatory

B. NSO DIRECTOR'S ROLE

The NSO Director:

1. Reports through the President to the Board of Directors of AURA, and is responsible for the National Solar Observatory, and more specifically for assembling, maintaining, and providing scientific leadership to a first-class scientific staff; for maintaining, operating, and developing high-quality astronomical facilities for use by the astronomical community; for initiating a program of state of the art instrumentation for optical and infrared astronomy; and responsibility for the design and development, as new public optical facilities;

2. Is responsible for selection of Associate Directors and other key personnel through whom this program is planned, conducted, and monitored; for assignment of authority and resources to these staff member consistent with AURA policy; and for overseeing their performance and providing guidance; and,

3. Is responsible for conducting the program of NSO in a manner consistent with the policy guidelines provided by AURA and NSF and, as appropriate, to recommend extension or modification of such policy.

C. SPECIFIC RESPONSIBILITIES

The NSO Director will:

1. Establish and maintain an organizational structure within NSO, which will foster a spirit of scientific inquiry and service to the science of astronomy;

2. Identify individuals for senior positions in NSO, which report directly to the Director, and provide guidance, encouragement, and supervision for them;

3. Supervise, encourage, and provide for the development of the scientific staff of NSO;

4. Respond to and support AURA Board committees including the Solar Observatories Committee (SOC) and visiting committees;

5. Establish and administer procedures for allocation of resources within NSO;

6. Prepare and submit to NSF, subsequent to AURA approval, annual and long-range program plans to reflect the needs of the astronomical community;

7. Submit Salary recommendations to the SOC and the Board of Directors;

8. Recommend candidates for tenure to the SOC;

9. Implement approved program plans consistent with AURA policies.

10. Promote a program of training in NSO;

11. Report on the status of the program to the AURA President and, via the President, to the AURA Board and Member Representatives;

12. Serve as principal interface for programmatic matters between AURA and the appropriate NSF program office, and exercise substantial delegated responsibility for such interface in contractual matters;

13. Serve as AURA's principal spokesperson to the scientific community on matters relating to NSO;

12. Maintain contact with the scientific community in order to remain informed on community needs to represent AURA's plans, and to obtain an evaluation of activities proposed and under way in NSO; and,

13. Participate in a program of individual research as time permits.

14. Maintain a safe and effective work environment.

III. ROLE AND RESPONSIBILITIES OF CENTER DIRECTORS (continued)

GEMINI OBSERVATORY DIRECTOR

A. ORGANIZATIONAL PURPOSE OF THE GEMINI OBSERVATORY

The Gemini Observatory is an international partnership that operates two state-of-the-art 8-meter telescopes, one in Hawaii and one in Chile. The partners in Gemini are designated agencies of the United States of America, Canada, Chile, Argentina and Brazil. The scientific program of the Gemini Observatory is governed by the Gemini Board as provided in the Gemini International Agreement. The U.S. National Science Foundation (NSF) is the Executive Agency for the Gemini partnership as outlined in the International Agreement.

The central mission of the Observatory is to provide access to the Gemini telescopes and ensure they are equipped with the highest quality, advanced instrumentation so that scientists in the partner user communities are able to carry out forefront research in optical/infrared astronomy at maximum effectiveness and efficiency. The Observatory works in partnership with its communities to maintain excellence and cost effectiveness in the facilities, instrumentation, and support it provides to the entire Gemini user community.

Major current objectives of the Observatory include:

- Deliver data that can enable high-impact science in a timely and competitive fashion;
- Operate high-quality instruments that represent the priorities of our community;
- Provide a high fraction of queue operations with appropriate data quality control and completion fraction; and
- Interface with the partner communities.

The NSF, as Executive Agency, has selected the Association of Universities for Research in Astronomy, Inc. (AURA) to act as the Managing Organization for the observatory working under a Cooperative Agreement with NSF. The selection of the Managing Organization and the terms of the Cooperative Agreement are subject to the approval of the Gemini Board. In recognition of its intrinsically international character, AURA has established a Gemini management team to operate the two 8-meter telescopes. The team's tasks include, but are not limited to: integration of scientific, technical, and administrative activities; design, construction, operations, and/or procurement of instruments; placement of major procurements; and other activities as needed, in accordance with the Cooperative Agreement.

At the request of the NSF and in collaboration with NSF, AURA has developed a plan for an NSF-sponsored Federally Funded Research and Development Center (FFRDC) known provisionally as NSF's National Center for Optical-infrared Astronomy (NCOA). NCOA would operate as a matrix-managed organization. Upon NSF approval of the NCOA plan, AURA would operate Gemini within NCOA. Under that arrangement, the Gemini Director would lead

the Gemini Observatory and collaborate in the overall strategic management and development of NCOA under the supervision of the NCOA Director. The Gemini Board of Directors retains all authority and responsibility as defined within the Gemini International Agreement, including its relationship with the Gemini Director. Subject to final NSF approval, NCOA is planned to commence during U.S. fiscal year 2019.

B. GEMINI DIRECTOR APPOINTMENT

The Gemini Director is appointed through a free and open competition led by AURA. The appointment is subject to approval by the Gemini Board through the Executive Agency. The Director is designated as "Key Personnel" in the NSF agreement pertaining to Gemini. The Gemini Board participates in the evaluation of the Gemini Director. AURA evaluates the Gemini Director's performance against the job description approved by the Gemini Board and seeks the Gemini Board's input in this evaluation.

The Director is expected to be located at the NCOA Headquarters in Tucson, Arizona, and to be part of the NCOA Executive Council. As part of her/his responsibilities, the Director is expected to spend at least 4 weeks a year at each of Gemini's sites in Hawaii and Chile.

The Director is encouraged to carry out individual research, and collaborate with colleagues and postdocs both within and external to Gemini Observatory.

C. GEMINI DIRECTOR'S ROLES

The Gemini Director:

1. Ensures the efficient and effective operation of the Gemini telescopes and prepares for the future through strategic analysis and planning. The Director is responsible for the overall scientific productivity and cost effectiveness of Gemini in all aspects of the operation of the telescopes and for keeping Gemini at the forefront in science, technology, operations and instrumentation. In carrying out this role, the Gemini Director exercises strong scientific leadership and promotes the fulfillment of the Gemini mission.

2. Is responsible to the Gemini Board, through the Executive Agency and AURA, for the overall conduct of Gemini. The Gemini Board, through the Executive Agency and AURA, will ensure that the Director is delegated the authority commensurate with that responsibility. The Director must provide clear leadership and direction of a scientific and technical management team.

3. Communicates freely and directly with the Gemini Board, the Executive Agency, AURA, members of the NCOA Executive Council and other entities in Gemini.

4. Maintains effective communications between Gemini and the scientific communities of the partner countries, maintains effective communications with Gemini related science and user advisory bodies, ensures that the management of Gemini is sensitive to the needs and aspirations of all the partners, and establishes and maintains good working relationships with the host sites in

Hawaii and Chile and with the national observatories and offices of each partner country. The Director will work with these national entities so that Gemini optimally serves the science communities of the partner countries.

D. GEMINI DIRECTOR'S SPECIFIC RESPONSIBILITIES

The Gemini Director will:

1. Keep the Gemini Board, Executive Agency, and AURA leadership informed and advised of aspects or issues affecting the success of Gemini;

2. Work with the NCOA Director to ensure Gemini is supported by a high quality, internationally recognized scientific and technical staff;

3. Advocate for resources and programs that will ensure Gemini remains a competitive and cutting edge scientific facility;

4. In collaboration with the Gemini Board, develop, articulate and implement a vision for the future of Gemini; act to maintain Gemini at the state of the art of science, technology, and instrumentation; and propose initiatives to build upon Gemini;

5. Communicate and work cooperatively, effectively, and in a timely fashion with stakeholders (including oversight, advisory, and users' committees and with the national observatories of the partners) to resolve issues and to develop initiatives that may affect them;

6. Work with NCOA Executive Council to motivate the scientific and technical staff to remain at the forefront of science. This can include but is not limited to carrying out personal programs of scientific research in astronomy or astrophysics;

7. Set technical, and managerial strategy as required for the effective execution of Gemini subject to overall strategy set by the Gemini Board, in consultation with the NCOA Director;

8. Set and implement financial strategy in alignment with the recommendations of the Gemini Board;

9. Make financial commitments and payments within the limits that are set and reviewed from time to time by the Gemini Board, and implement and administer subawards (subcontracts) in support of Gemini; and,

10. Work with the NCOA Director to administer Gemini within the NCOA organization, and within the budget approved by the Gemini Board.

Additional responsibilities of the Gemini Director include (but are not limited to):

1. Prepare annual operating plans and budgets subject to the overall policy and strategic guidance of the Gemini Board and the Executive Agency;

2. Prepare annual reports on the state of Gemini;

3. Keep the Gemini Board Chair, the Executive Agency, and the NCOA Director informally apprised in a timely manner of major issues that may affect Gemini;

4. Participate in meetings of the Gemini Board providing such input as may be required or necessary to manage Gemini;

5. Participate in meetings of appropriate management oversight committees and the Gemini Science Committee;

6. Implement AURA policies and procedure, and support audits by AURA to assess compliance; recommend changes as appropriate to the NCOA Director;

7. Maintain a safe and effective work environment;

8. Work with the NCOA Executive Council to establish salary recommendations for NCOA personnel assigned to the Gemini Program;

9. Work with the NCOA Executive Council to identify and recommend candidates for tenure to the NCOA Director; and,

10. Negotiate and/or facilitate Memoranda of Understanding for collaborative arrangements with other organizations as needed.

III. ROLE AND RESPONSIBILITIES OF CENTER DIRECTORS (continued)

SPACE TELESCOPE SCIENCE INSTITUTE (STSCI) DIRECTOR

A. ORGANIZATIONAL PURPOSE OF STScI

The Space Telescope Science Institute (STScI) is an organization established, operated, and maintained by AURA, to perform scientific tasks in support of contracts with the National Aeronautics and Space Administration (NASA). These contracts may involve an integrated science program and include: solicitation, selection, and support of observers and archival researchers; detailed science planning; science observation operations; archiving operations; routine science data calibrations; and science data analysis or some combination.

B. STScI DIRECTOR'S ROLE

The STScI Director:

1. Has the key responsibility to provide scientific leadership to the Institute. The Director has responsibility for the operation, management, and planning at the Institute within AURA and NASA policies and guidelines. The Director will conduct a program to encourage visiting scientists and to establish a scientific staff of the first rank to carry out the mission of the Institute and to conduct their own research. The Director is responsible for the production and implementation of STScI plans and programs to carry out the assigned task. In addition, the Director will keep AURA, and the NASA Program Offices informed of STScI progress in meeting contractual obligations;

2. Is responsible for providing AURA, advice and/or action alternatives on those matters which might have an impact on the STScI but which are outside the STScI purview. This might include but is not limited to such items as: Board of Directors, STIC, and STScI Visiting Committee composition and membership; negotiations with NASA; operational methodology of the AURA oversight structure for the STScI; AURA (other than STScI) interaction with NASA and others involved in the overall NASA programs; and major modifications to AURA's contracts with NASA;

3. Is responsible for technical direction and administration of subcontracts; and,

4. Is accountable to the President for the performance of the STScI and will bring to the attention of the AURA Board and STIC issues and opportunities, which might impact on the success of the Institute in carrying out its delegated contractual responsibilities.

C. SPECIFIC RESPONSIBILITIES

The STScI Director will:

1. Direct and manage the operations and personnel of the STScI in accord with the terms of the NASA contracts, within AURA and NASA policy, to include the effective integration of personnel from the several cultures, which do or will comprise the STScI (AURA, ESA, Computer Science Corporation and Visiting Fellows) into a unified whole dedicated to the success of the scientific effort;

2. Make commitments and expenditures in support of the STScI tasks within delegated authorization levels;

3. Exercise technical direction and administration of the NASA contracts, informing and advising the AURA President of those aspects, which are beyond the purview of the Director;

4. Prepare an annual report to be forwarded to the AURA Board of Directors and Member Representatives;

5. Submit annual operating plans and budgets for review by STIC and the AURA Board of Directors at their regular meetings;

6. Seek advice and counsel of STIC on matters affecting science policies of the STScI;

7. Aid the STIC Chair in setting the agenda of STIC meetings;

8. Provide support for the STScI Visiting Committee (VC); provide its Chair with information as requested; respond to the STIC on VC Reports;

9. Keep the AURA President and the STIC Chair apprised of major issues which may affect operations of STScI;

10. Submit salary recommendations to the STIC and the Board of Directors;

11. Recommend candidates for tenure to the STIC;

12. Implement AURA policies and procedures;

13. Maintain a working relationship with the Johns Hopkins University (JHU);

14. Identify opportunities in new areas of research; and,

15. Maintain a safe and effective working environment.

III. ROLE AND RESPONSIBILITIES OF CENTER DIRECTORS (continued)

LARGE SYNOPTIC SURVEY TELESCOPE (LSST) DIRECTOR

A. ORGANIZATIONAL PURPOSE OF THE LSST PROJECT

The LSST Director is employed by AURA. All AURA Directors are expected to exercise scientific leadership for both the scientific community and AURA. The LSST is supported by a variety of stakeholders including the National Science Foundation, the Department of Energy, and private and international partners. Over the next decade, the LSST Project Office (LPO), led by the Director, must carry out a successful construction program for the telescope and site, camera, and data management systems within cost and schedule, and transition to a fully functioning observatory.

The LSST Project has been established in order to construct a telescope, camera and data delivery system that will enable a ten-year survey of the southern sky. The data from the survey will be made available to U.S. and Chilean astronomers without proprietary period and to international partners who make contributions to the operations costs under terms to be determined. The LSST project was selected as the highest priority ground-based project by the 2010 astronomy and astrophysics decadal survey.

In 2011, the LSST Corporation Board and AURA reached an agreement under which the LSST construction project is being carried out as a discrete AURA unit under a dedicated cooperative agreement with the NSF. Under the agreement with AURA, the LSST Board recognizes AURA's final authority with respect to ensuring compliance with the terms and conditions of the Cooperative Agreement with NSF for construction of the LSST project. The tasks under the cooperative agreement are aimed at reducing the principal items of risk during the completion of the design and development phase, and carrying out a construction project within cost and schedule.

The LSST will soon begin a seven year construction phase where a high priority for the Director is leadership of a construction project with attention to technical performance, schedule and budget. Frequent interactions with federal funding agents and their business auditors will be required.

The Large Synoptic Survey Telescope Project Office (LPO) is a Center of the Association of Universities for Research in Astronomy, Inc. (AURA). The LPO provides the program management, budget control, and system engineering necessary to design, construct, integrate, and commission the LSST Project. The LSST Director directs and is responsible for all activities by the LPO. Subject to funding provided by the Department of Energy (DOE), SLAC will undertake the design, construction and delivery of the LSST camera. Subject to funding provided by the National Science Foundation (NSF) and private sources, the LPO will directly undertake the design, construction and commissioning of all other components of the LSST Observatory; this includes but is not limited to the telescope, site facilities, data management,

education and public outreach (EPO), and data access centers. DOE and

NSF have established a Joint Oversight Group (JOG), which will coordinate the interaction between LPO and SLAC and the two federal agencies. The Director, together with the Deputy Director, and Project Manager will be responsible for establishing and maintaining high-level, coordinating schedule milestones that may be approved or changed only by the JOG.

B. LSST DIRECTOR'S ROLE

The LSST Director:

1. Is responsible for the LSST Project management and reports through the President of AURA to the Board of Directors of AURA, with oversight carried out by the AURA Management Council for LSST (AMCL)

2. Is responsible for selection of the Project Manager and other key personnel through whom this program is planned, conducted, and monitored; for assignment of authority and resources to these staff members consistent with AURA policy; and for overseeing their performance and providing guidance.

3. Is responsible for conducting the program in a manner consistent with the policy guidelines provided by AURA and NSF and, as appropriate, to recommend extension or modification of such policy.

C. SPECIFIC RESPONSIBILITIES

The LSST Director will:

1. Ensure that the science requirements as documented at the time of the Final Design Review are met.

2. Recommend and implement data access policies in accordance with Federal Guidelines.

3. Establish and maintain the organizational structure of the LPO in order to carry out the design, development, and construction activities in a manner meeting NSF contractual requirements;

4. Coordinate the work being done with NSF funding and with DOE funding to ensure that there is a single, unified LSST project.

5. Respond to and support the AURA Management Council for LSST and other pertinent AURA Board committees.

6. Prepare and submit to NSF, subsequent to AURA approval, all required plans and reports including, if appropriate, annual and long-range program plans to reflect the needs of the project.

7. Submit salary recommendations to the AMCL and the AURA Board of Directors;

8. Serve as principal interface for programmatic matters between AURA and the appropriate NSF program office and exercise substantial delegated responsibility for such interface in contractual matters.

9. Serve as the principal spokesperson to the astronomical and physics scientific communities on matters relating to LSST.

10. Maintain a safe and effective work environment.

11. Carry out the LSST project in a manner that advances NSF goals for broadening participation, advancing technology, and developing future human resources.

D. ADDITIONAL RESPONSIBILITIES RELATED TO LSSTC

In recognition of the role of the LSSTC, the LSST Director will:

1. Keep the LSSTC Board and AURA informed and advise them of aspects or issues affecting the success of LSST.

2. Participate in meetings of the LSSTC Board providing such input as may be required or necessary for the LSSTC Board to be fully informed of the status of the project and to carry out their responsibilities as described in the MOU between AURA and LSSTC, including specifically ensuring that the interests of both the physics and astronomy communities are represented in the governance of the project and in the establishment of scientific policies.

3. Keep the AURA President, the LSSTC Board Chair, and AMCL Chair informally apprised in a timely manner of major issues that may affect LSST.

4. Work with the LSST Science Collaborations to engage them in the LSST project to ensure that they are prepared to use LSST data effectively as soon as observations become available.

LSST Organizational Chart