Association of Universities for Research in Astronomy

Statement by

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Chairman, AURA Board of Directors

To
HST-JWST Transition Plan Review Panel

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I am writing to you on behalf of the Association of Universities for Research in Astronomy to provide input on the issue of the future of the Hubble Space Telescope and its associated science programs.

AURA's mission is to advance astronomy and related sciences, primarily through the operation of centers and facilities, but also through the development of policy based on broad community input. Over the past decade, we have sponsored many studies such as "The Future of Space Imaging," "HST and Beyond", "Future Directions for the National Optical Astronomical Observatory," and most recently "Hubble's Science Legacy: Future Optical-Ultraviolet Astronomy from Space."

It is clear from these and other studies that astronomical research has undergone an extremely positive sea change with the launch of NASA's Great Observatories, particularly the Hubble Space Telescope. The pace of astronomical discovery increased dramatically, and HST led the charge with discoveries and results ranging from spectroscopy of a transiting planet, though black holes in nearby galaxies, through the first secure determination of the extragalactic distance scale. These are described in other materials you have received.

The most remarkable feature of Hubble's success is that it's most significant contributions were not envisioned during the early planning and development phases. The burgeoning of scientific productivity and public interest following each servicing mission has far outstripped our collective view of these activities as simple maintenance and housekeeping. In effect, a brand new observatory has been delivered to the community on each such mission and the community has responded with a full intellectual commitment to exploiting this resource. Unlike our early expectations, HST is not gradually declining in its productivity and scientific appeal--it is increasing.

The National Academy study, "Federal Funding of Astronomical Research," found that nearly 40% of American astronomers (as described by full members of the AAS) are UV-Optical observers. Our best estimate at the time was that HST provided core support for

a quarter of all US astronomers. This past spring, before the annual meeting of the AURA Member Representatives from our 37 member institutions, I asked each MR to confer with their colleagues on how we could best proceed with implementing the Decadal Survey, including the instrumentation for JWST, development of the GSMT, and the issue of a fifth servicing mission for HST. The response, based on the expected scientific programs of scientists at AURA institutions, was overwhelmingly in favor of maintaining and improving our ability to make space-based UV-Optical imaging and spectroscopic observations.

The community also recognized not just the possibility of loss of access during the transition between HST and JWST, but also that the current timeline for NASA missions does not include any significant community access to the space UV-Optical for deep imaging and spectroscopy until the 2020 timeframe or later. Such a gap would have an enormous negative impact on American astronomers and astronomy and would eliminate the grand synergy we have seen between HST's high-resolution imaging and observations at so many other wavelengths and with so many other facilities and missions.

I urge you and your committee to consider as a primary driver the maximization of science in your recommendations to NASA. . Clearly, safety, budget and other operational considerations will, in the end, need to be considered. However, it is important that we maintain science as the core criteria in this important decision.

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