



UNIVERSITY OF CALIFORNIA OBSERVATORIES/LICK OBSERVATORY
DEPARTMENT OF ASTRONOMY AND ASTROPHYSICS

SANTA CRUZ, CALIFORNIA 95064

January 30, 2012

Secretary Hillary Rodham Clinton
Secretary of State
U.S. Department of State

Dr. John P. Holdren
Director, Office of Science and Technology Policy
Executive Office of the President of the United States

Re: James Webb Space Telescope (JWST) and our International Commitments

Dear Secretary Clinton, Director Holdren:

For over two decades the iconic Hubble Telescope has demonstrated, more than any other science facility, a US commitment to forefront scientific research, to international partnership, and to sustained scientific leadership. The James Webb Space Telescope (JWST) is Hubble's successor. Like Hubble, JWST is a project with international partners, in this case Canada and Europe, who have made substantial commitments to James Webb relative to their national budgets. The James Webb Space Telescope Advisory Committee would like to thank OSTP for recognizing the concerns of the international science community in the recent debate over the future of JWST. The concerns of the international science community had not been widely recognized during that debate, and we would like to further emphasize the importance of JWST both for our international partnerships and for US leadership in science worldwide.

The James Webb Space Telescope Advisory Committee (JSTAC) is an independent committee of senior scientists who offer advice on JWST and its future operations to the Space Telescope Science Institute. The committee includes scientific representatives from our international partners (the JSTAC has ex-officio international space agency members who do not participate in any aspect of letters such as this). The committee expressed its thoughts regarding JWST's unique role in our shared scientific endeavor to Dr. Holdren in January 2011 (see http://www.stsci.edu/jwst/community-advice/JSTAC_Holdren_JWST.pdf). The committee was delighted to see the support for JWST both in the augmented FY2011 NASA budget and in the FY2012 Congressional budget that was signed by the President on November 18, 2011. We fully endorse NASA's commitment to launch JWST in October 2018 within the \$8B cap set by Congress. The committee considers that the revised plan and budget profile from NASA contains appropriate reserves in schedule and funding to overcome the inevitable problems and challenges of building a one-off scientific space mission at the cutting edge of technology.

The committee is looking forward to seeing the five-year funding profile needed in the President's FY2013 budget request to ensure that JWST can launch by October 2018 within the Congressional cap on the funding.

In this letter we wish to reiterate to the Administration the importance of JWST to our international partners and of our commitments to them. Through a series of unfortunate cancellations of planned NASA participation in key space science missions (e.g., Laser Interferometer Space Antenna, International X-Ray Observatory, ExoMars) the long-term US collaborative relationship with Europe through the European Space Agency has deteriorated substantially. JWST remains a key collaborative effort, but the international science community is deeply concerned that the international collaborative effort on space science missions not be further impacted. JWST represents major commitments and investments, relative to their budgets, by the respective space agencies in Europe and Canada. European and Canadian professional scientific societies have expressed their concerns to OSTP through a number of letters. Individual scientists have also given voice to their concerns through national petitions (separately signed by 1400 European scientists, 350 Canadian scientists, and comparable numbers of US scientists). JWST is a crucial and irreplaceable part of the future space science programs for both Europe and Canada.

The European Space Agency (ESA) and the Canadian Space Agency (CSA) contributions are also central to the success of this NASA-led project. ESA is providing the launch vehicle (their largest heavy-lift rocket, an Ariane 5), two scientific instruments, and operations staff for JWST at the Space Telescope Science Institute. In value, this contribution is equivalent to the total cost of a substantial space mission within ESA. The Canadian contribution of the critical fine guidance sensor and a further science instrument constitute the largest space science project supported to date by CSA. The CSA also provides operations staff at the Space Telescope Science Institute. The international contributions have been essential for the development and implementation of JWST. The European and Canadian contributions represent a major commitment of their resources towards a project that will do much to raise the visibility of the US and its technological capabilities.

The US is at a critical point for our international scientific commitments in space and for our sustained presence as a forefront leader in international scientific endeavors. The US has already ceded leadership in other major scientific areas, such as high-energy physics. Unlike high-energy physics though, there is no equivalent of the European CERN with its Large Hadron Collider (LHC) to replace JWST. The loss of JWST would be effectively irreplaceable – setting back progress in space science for the US and our international partners perhaps for a generation. Missions such as Hubble and JWST typically take two decades to implement, and hence success requires sustained and dedicated commitment.

Hubble will most likely reach the end of its life sometime this decade. The excitement and interest that Hubble generates continues to be quite remarkable: beyond its scientific impact, Hubble's education programs reach over 500,000 pre-service and in-service teachers a year in the US, and over six millions school children use Hubble material in their STEM curricula annually. US-led endeavors like the Hubble Space Telescope also generate pride in what we can learn as the dominant species on a small planet about our essentially infinite universe. Because of the continued commitment of this Administration and Congress, the James Webb Space Telescope will continue Hubble's exploration of the universe at a total cost that will be less than that spent to date on Hubble (in comparable dollars). Yet JWST is vastly more powerful, reflecting the technological advances we have made over the last three decades.

The committee asks for your further support in continuing this great endeavor with Hubble's successor, the James Webb Space Telescope. This will ensure that the US will carry through on our obligations to the aspirations and commitments made by our international partners, and, through the excitement of scientific exploration of our Universe, that US leadership will continue to enrich the lives of billions across the globe.

Sincerely yours, on behalf of the committee,



Dr. Garth D. Illingworth,
Chair, James Webb Space Telescope Advisory Committee

JSTAC members: Dr. Roberto Abraham, Dr. Neta Bahcall, Dr. Stefi Baum, Dr. Roger Brissenden, Dr. Timothy Heckman, Dr. Malcolm Longair, Dr. Christopher McKee, Dr. Bradley Peterson, Dr. Joseph Rothenberg, Dr. Sara Seager, Dr. Lisa Storrie-Lombardi, Dr. Monica Tosi

The JSTAC Ex-officio representatives of the space agencies did not participate in the writing of this letter: this letter reflects the views of the scientific community members.

cc:

Dr. E. William Colglazier, Science and Technology Advisor to the Secretary of State, Office of the Science and Technology Adviser

Dr. Eric Bone, Senior Scientist and Policy Advisor, Office of the Science and Technology Adviser

Dr. Carl Wieman, Associate Director for Science, Office of Science and Technology Policy

Sally Ericsson, Associate Director for Natural Resource Programs, Office of Management and Budget

Paul Shawcross, Science and Space Branch Chief, Office of Management and Budget

Senator Barbara Mikulski, Chairwoman, Subcommittee on Commerce, Justice, Science, and Related Agencies, Committee on Appropriations, United States Senate

Senator Kay Bailey Hutchinson, Ranking Member, Subcommittee on Commerce, Justice, Science, and Related Agencies, Committee on Appropriations, United States Senate

Representative Frank Wolf, Chairman, Subcommittee on Commerce, Justice, Science, and Related Agencies, Committee on Appropriations, The U.S. House of Representatives

Representative Chaka Fattah, Ranking Member, Subcommittee on Commerce, Justice, Science, and Related Agencies, Committee on Appropriations, The U.S. House of Representatives

Representative Ralph M. Hall, Chairman, Committee on Science, Space, and Technology, The U.S. House of Representatives

Representative Eddie Bernice Johnson, Ranking Member, Committee on Science, Space, and Technology, The U.S. House of Representatives

Administrator Charles F. Bolden, Jr., National Aeronautics and Space Administration

Deputy Administrator Lori B. Garver, National Aeronautics and Space Administration

Associate Administrator Christopher J. Scolese, National Aeronautics and Space Administration

Dr. John Grunsfeld, Associate Administrator, Science Mission Directorate, National Aeronautics and Space Administration

Dr. Matt Mountain, Director, Space Telescope Science Institute

Dr. Kathryn Flanagan, Deputy Director, Space Telescope Science Institute