



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

SANTA CRUZ, CALIFORNIA 95064

June 21, 2010

Dr. Matt Mountain, Director  
Space Telescope Science Institute  
3700 San Martin Drive  
Baltimore, MD 21218

Dear Dr. Mountain:

At its recent meeting the James Webb Space Telescope Advisory Committee (JSTAC) continued to discuss ways in which the science return from JWST could be optimized and maximized. Meeting this goal requires that the GO and GTO science user community has access to early data demonstrating instrument and telescope performance, and is informed, involved and well-prepared to “hit the ground running” as soon as science observations begin. In particular, the JSTAC began to appreciate the need for the community to be well-informed about JWST’s capabilities soon after the 6-month commissioning period ends, since the deadline for Cycle 2 Proposals occurs just a few months later.

Such community involvement and access must continue over the subsequent years. As the JSTAC noted in a previous letter (*JSTAC\_Science-Operations\_Capabilities.pdf*), the interplay between the short, five-year required lifetime of JWST, the TAC cycles, and a one-year proprietary period for data has a dramatic impact on the ability of the science community to implement follow-up observations. The greatest benefit from observations made by JWST will occur when the delay between initial observations and follow-up observations is minimized. However, Figure 1 in that letter (reproduced below) showed that, for data with a one-year proprietary period, the Call for Proposals for Cycle 4 is the first wherein the full Cycle 1 dataset is public and so can be used as the basis for follow-up proposals by *all members of the science community*. Such a long delay before the community has full access to key observations and datasets, and can carry out follow-up programs, will have a dramatic impact on the overall scientific productivity of JWST.

Given this context and the JSTAC’s focus on maximizing the science return from JWST, the JSTAC recommends three approaches that will help develop a sophisticated science user community as quickly as possible, and provide data and results that can be rapidly utilized for subsequent proposals and observations. The three recommendations build on experience with the current three Great Observatories and are a natural extrapolation from TAC procedures and processes that have developed over the lifetime of these missions. In particular, they arose from discussions at our last

two meetings with the Institute, and suggestions based on their experience. They have been developed within the context of the previous JSTAC letter (mentioned above) and its Figure 1 (see below).

The JSTAC's recommendations are:

**First-Look Program** – *The JSTAC recommends that the Institute develop a “First-Look” program, similar to that carried out by Spitzer in its first year, to obtain images and spectra that would be used to demonstrate key modes of the JWST instruments. The goal of this program is to enable the community to understand the performance of JWST prior to the submission of the first post-launch Cycle 2 proposals that will be submitted just months after the end of commissioning. To meet this goal, science data need to be released as soon as commissioning activities allow. The data from this “First-Look” program would complement the Early Release Observations (ERO) and the Science Verification (SV) datasets. The First-Look data should have no proprietary period. The JSTAC recommends that the First-Look data be released both in raw form and with any initial calibrations as soon as possible; the key aspect is speed. Subsequently processed and calibrated versions of the data should also be made available through the archive, as quickly as practical, as the quality of the relevant calibrations improves. The targets could be chosen initially by the Institute and announced as “preliminary first-look targets”, with the understanding that the list may be modified if any of the initial targets were selected by the GTOs in their Cycle 1 science program or in the Cycle 1 GO proposals. This program is expected to utilize part of the Director’s Discretionary time for Cycle 1.*

**Open access for data from Large Programs** – *The trend for large programs at all the Great Observatories has been towards zero or small proprietary periods. This increased emphasis on open access to data has been reinforced on HST where data from programs granted Director’s Discretionary time has had zero proprietary period regardless of program size, and on the other Great Observatories where the proprietary period for Director’s Discretionary time has been zero or short (<3 months). The first-cycle Spitzer Legacy Science programs were established with zero proprietary periods to help ensure that optimal use was made of Spitzer during its limited life. Since that ground-breaking step, HST Treasury, Chandra VLP and subsequent Spitzer Legacy Science programs have explicitly been non-proprietary, with full and open access. This has benefited the broad science community through increased utilization of unique and costly resources. These open datasets have also provided incentives for timely publication through increased competition.*

*Given these trends, the success of the wholly non-proprietary HST Treasury, Chandra VLP and Spitzer Legacy Science programs, and the value of unrestricted access to large datasets, especially given the limited lifetime of JWST, the JSTAC recommends that all JWST Large programs have zero proprietary period. The JSTAC extensively discussed the issue of proprietary time and recognizes that some classes of observations, even in Large programs, would benefit from a scientifically-justified proprietary period. To accommodate observational programs of this nature, the JSTAC further recommends that proposers of Large programs could request and justify a proprietary period in their proposal to the Time Assignment Committee (TAC). If so recommended by the TAC, the proposing team could be allocated a proprietary period by the Director, consistent with current procedures and policies.*

**Community Fields** – *The Great Observatories space missions have established a number of fields whose multi-wavelength, multi-mission datasets represent an enormous investment of public resources and have extraordinary value for a wide range of science programs. These Great Observatory datasets have typically been non-proprietary and so are accessible quickly by the international research community, thereby enhancing their scientific impact. The value of these fields has been further reinforced by spectroscopic and imaging observations from a range of international telescope facilities, and observations by other space missions, leading to coverage across much of the spectrum. The numbers of such fields are not large. Examples of such fields that were discussed by the JSTAC included the Chandra Deep Field–South (CDF-S) and the Hubble Deep Field North (HDF-N), and a field or two in low redshift galaxies or key star-forming regions.*

*Fields such as these have become a community resource and as such are key for maximizing the science return from Observatory-class missions like JWST. Particular emphasis has been placed on the importance of open access for JWST because of the limited life and the large impact that a one-year proprietary period has on the ability to carry out follow-up observations. Given the value of such fields for research across a broad range of science areas, the JSTAC endorses the concept of “community fields”. The JSTAC further recommends that any JWST data obtained on these fields have zero proprietary periods (covering both GO and GTO data), reflecting common practice for allocations made by current TACs. While these fields are very important, the number of fields with such attributes is not large, and so the actual number designated as “community fields” should be modest.*

*Since the selection of fields that are designated to have this significant status is primarily a scientific issue, the JSTAC recommends that the Director convene a committee with diverse science background to evaluate which fields should fall into this category. This should occur expeditiously given the increasing realization within the astronomical community that current projects on existing facilities need to plan for the impact of JWST. The JSTAC further realizes that a recommendation for such status for JWST allocations of time would need the endorsement and approval of NASA HQ, and so understands that the Director will need to request approval of the concept. Following the recommendations of the “community fields committee” the Director could then request NASA HQ approval that all data taken with JWST on the modest number of selected fields be made immediately available to the astronomy community.*

Note that our recommendations use the well-established and widely-used terminology “proprietary period”, but we are aware that the JWST Science Policies document uses a different phrase, “exclusive access”, that will eventually replace “proprietary period” in the JWST context. In addition, these recommendations emphasize a reduction in the proprietary period for certain observational programs and regions. The JSTAC would like to note that this should not be taken to be a general statement regarding the role and value of proprietary periods. The Committee has not taken a position pro or con on this issue. Our recommendations relate to the particular circumstances associated with a limited lifetime Great Observatory.

As noted above, these three recommendations are consistent with policies adopted for the current Great Observatories, or formalize what has become the increasing trend towards open data access, particularly for large programs, as reflected through the community-driven, peer-review TAC process. We expect that the implementation of these three recommendations for JWST will enhance the scientific productivity of our next Great Observatory.

Sincerely yours, on behalf of the Committee,



Garth D. Illingworth,  
Chair, JSTAC

JSTAC Committee Members: Roberto Abraham, Neta Bahcall, Stefi Baum, Roger Brissenden, Tim Heckman, Malcolm Longair, Christopher McKee, Bradley Peterson, Joe Rothenberg, Sara Seager, Lisa Storrie-Lombardi, Monica Tosi

JSTAC Ex-officio representatives of the space agencies: Luc Brule (CSA), John Mather (GSFC), Mark McCaughrean (ESA), Eric Smith (NASA HQ)

Cc. STScI: Kathryn Flanagan, Massimo Stiavelli, Peter Stockman

