



December 15, 2016

Dr Ken Sembach, Director
Space Telescope Science Institute
3700 San Martin Drive
Baltimore, MD 21218

Re: JSTAC recommendation for laboratory astrophysics measurements in direct support of JWST scientific investigations

Dear Director Sembach:

At its November 29-30 2016 meeting JSTAC discussed the role of laboratory astrophysics measurements and calculations in interpreting JWST data. For certain scientific areas, particularly when the interpretation of spectroscopic measurements in the mid-IR is required, it is expected that needed atomic, molecular and other information will often not be available (based, for example, on experience from Spitzer and Herschel). Yet such information can be crucial for the interpretation of the data from missions, particularly in the mid-IR. While large laboratory astrophysics experiments and large-scale computational activities are supported through NASA's APRA program, the measurements or calculations needed for interpretation of JWST datasets are expected often to be focused and quite specific.

After some discussion the JSTAC agreed that it would be scientifically-valuable to allow, as a component of JWST proposals, the support of specific laboratory astrophysics measurements or calculations that are directly related to the primary scientific goals of the proposal. This was seen as playing a very important role in the interpretation of certain JWST datasets.

To clarify, unlike the situation in APRA, this component of the proposals is not intended to be used as broad support of a particular laboratory or computational program, but is to allow a JWST scientific investigation to get the fundamental measurements or calculated numbers needed for the proposed JWST science objective. The JSTAC saw this opportunity as complementary to the support of laboratory astrophysics through APRA. It differs both in scale, involving smaller funding levels, and in its goals, being focused on measurements or calculations that are in direct support of a particular scientific investigation.

Given this, the JSTAC has the following recommendation:

The JSTAC recommends that the JWST Call for Proposals for Cycle 1 and future Cycles allow, as a secondary component of the proposal, for the funded support of specific laboratory astrophysics measurements or calculations that are directly related to the primary scientific goals of the JWST proposal.

The JSTAC feels that this will provide a valuable opportunity that will enhance the scientific value of a broad class of observations with JWST in many of its key science areas, particularly in the mid-IR.

Sincerely yours, on behalf of the Committee,



Garth Illingworth
Chair, JSTAC

JSTAC members:

Roberto Abraham	University of Toronto
Neta Bahcall	Princeton University
Natalie Batalha	NASA Ames Research Center
Roger Brissenden	Smithsonian Astrophysical Observatory
Timothy Heckman	Johns Hopkins University
Kelsey Johnson	University of Virginia
Heather Knutson	Caltech
Malcolm Longair	Cavendish Laboratory, University of Cambridge
Christopher McKee	University of California Berkeley
Lisa Storrie-Lombardi	Spitzer Science Center, Caltech
Monica Tosi	INAF – Osservatorio Astronomico di Bologna
Tommaso Treu	University of California Los Angeles

JSTAC Ex-officio observers from the Agencies:

(whose contributions to this letter were limited to factual input)

Hashima Hasan	NASA HQ
John Mather	NASA GSFC
Mark McCaughrean	ESA
Alain Ouellet / Jean Dupuis	CSA
Eric Smith	NASA HQ