

## **Charter for the Mission Concept Study Science and Technology Definition Teams**

### **1. Preamble**

In January 2015 the NASA Astrophysics Division (APD) initiated a community-based process for identifying large mission candidates for prioritization by the 2020 Decadal Survey<sup>1</sup>, to follow JWST and WFIRST. The following four mission concepts are considered as possible future strategic missions:

- The Far Infrared Surveyor
- The Habitable-Exoplanet Imaging Mission
- The Large Ultraviolet, Optical, and Infrared Surveyor
- The X-ray Surveyor

These four missions were recommended by the Program Analysis Groups (PAGs) and endorsed by the NAC's Astrophysics Subcommittee as the four mission concepts that NASA should study in preparation for the 2020 Decadal Survey.

To that end, NASA is assembling Science and Technology Definition Teams (STDTs) for each of the four large mission candidates to enable detailed Mission Concept Studies, which will be used as input to the 2020 Decadal Survey. NASA defines a successful outcome of these studies to be four compelling and executable mission concepts, which will subsequently be prioritized by the 2020 Decadal Survey.

This document contains the Charter for the STDTs and other pertinent information. The study management is described in the Management Plan available at <http://science.nasa.gov/astrophysics/2020-decadal-survey-planning/>. Each of the four Study Offices will be located at a NASA Center as detailed in the accompanying memorandum available at <http://science.nasa.gov/astrophysics/2020-decadal-survey-planning/>.

### **2. The Science and Technology Definition Team**

#### **2.1 Charge to the STDT**

The STDT shall provide science parameters, investigation approaches, key mission parameters, and any other scientific studies needed to support the definition of a space mission concept (Design Reference Mission). Working with the corresponding Center Study Office, the STDT shall provide the following:

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<sup>1</sup> [http://science.nasa.gov/media/medialibrary/2015/08/10/White\\_Paper-Planning\\_for\\_the\\_2020\\_Decadal\\_Survey-signed.pdf](http://science.nasa.gov/media/medialibrary/2015/08/10/White_Paper-Planning_for_the_2020_Decadal_Survey-signed.pdf)

1. A compelling science case for identifying critical science questions across various scientific areas to be addressed in the following decades and the technical parameters necessary to achieve these goals. The STDT is not constrained by previous studies but it may consult previous community inputs or work performed on notional missions or architecture for guidance.
2. Mission and observatory performance parameters that deliver these science capabilities, which will include:
  - i. Design Reference Mission, including straw-man payload trade studies conducted to arrive at the mission concept in the final report.
  - ii. Technology assessments, as detailed in the Management Plan (see the slide “Study Deliverables - All products delivered to APD Deputy Division Director”)
  - iii. Cost assessment, major technical issues, and risk reduction plans as a function of science capability.
  - iv. Top-level schedule for major phases of development including a notional launch date and top schedule risks, assuming entering into Phase-A not earlier than FY2022.

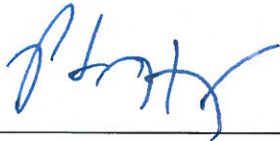
## 2.2 Timeline and deliverables of the STDT

- i. The primary deliverables of the STDT are listed in the Management Plan with the corresponding timelines. All the STDT reports will be made public and accessible to the community to the extent that is consistent with Federal export control regulations (e.g., ITAR).

## 2.3 Organization and Functions of the STDT

- i. The STDT will establish proposed mission concept goals, science parameters, and observation scenarios. The STDT will work in close coordination with the NASA Center-provided Study Office to provide the STDT with design trades and analysis directions, as specified in the Management Plan.
- ii. The STDT may also seek input from scientists and technologists external to the STDT or utilize existing NASA analysis groups (PAGs and associated SIGs); although permission is not required, the STDT will inform the Center Study Office and the cognizant NASA Headquarters Program Scientist. Any external scientific inputs and discussions needed by the Center Study Office should flow through the STDT only. The Study Office may seek internal technical perspectives from NASA scientists for help in developing mission concepts based on the findings of the STDT. The STDT Chair will act as the official point of contact between the STDT members and NASA Headquarters for any issue of programmatic, technical, or budgetary nature.
- iii. The initial meeting of the STDT will occur on a schedule determined by the Chair in consultation with the corresponding NASA Headquarters Program Scientist and the Center Study Office. The STDT can also have teleconferences on a regular basis. Meetings will be called by the STDT Chair, and the agendas will be set by the Chair in coordination with NASA Headquarters and the Center Study Office to ensure that planned activities are aligned with programmatic needs and expectations. All meetings of the STDT are open to nonmembers as observers to the maximum extent permitted under US export control regulations. Sessions which include the presentation or discussion of

- export controlled information will be open only to US citizens or US permanent residents, or those with applicable Technical Assistance Agreements, as required by US export-control regulations (see <http://oiir.hq.nasa.gov/nasaecp/Webbrfg/tsld018.htm>).
- iv. NASA envisions holding joint telecons with the Chairs of the four STDTs on a regular basis as needed in order to promote exchange of information and cross-pollination of ideas among the STDTs of the four Mission Concept Studies. Collaboration among the four STDTs is strongly encouraged in order to find points of commonality and optimize NASA resources.
  - v. NASA will provide financial support for travel to the STDT members through the Center Study Offices. No other financial support will be provided for STDT members or for other members of the community.
  - vi. The STDT will be disbanded after providing all necessary input to the 2020 Decadal Survey.



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