

National Aeronautics and
Space Administration



EXPLORE SCIENCE

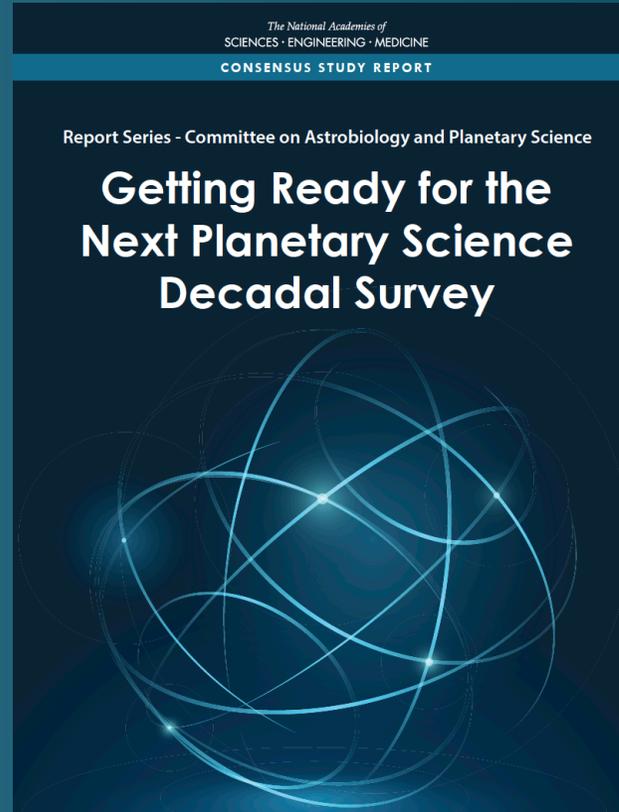
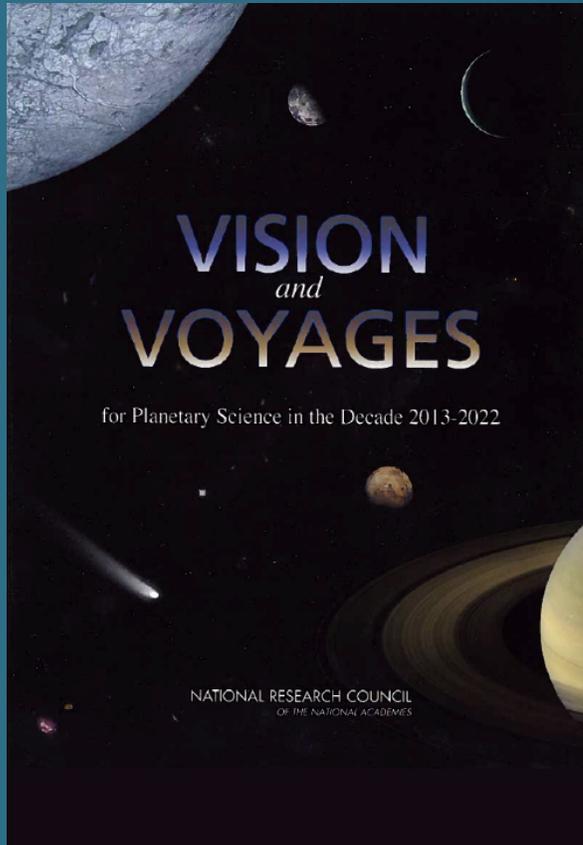
Doris Daou

Planetary Science Division

Executive Scientist

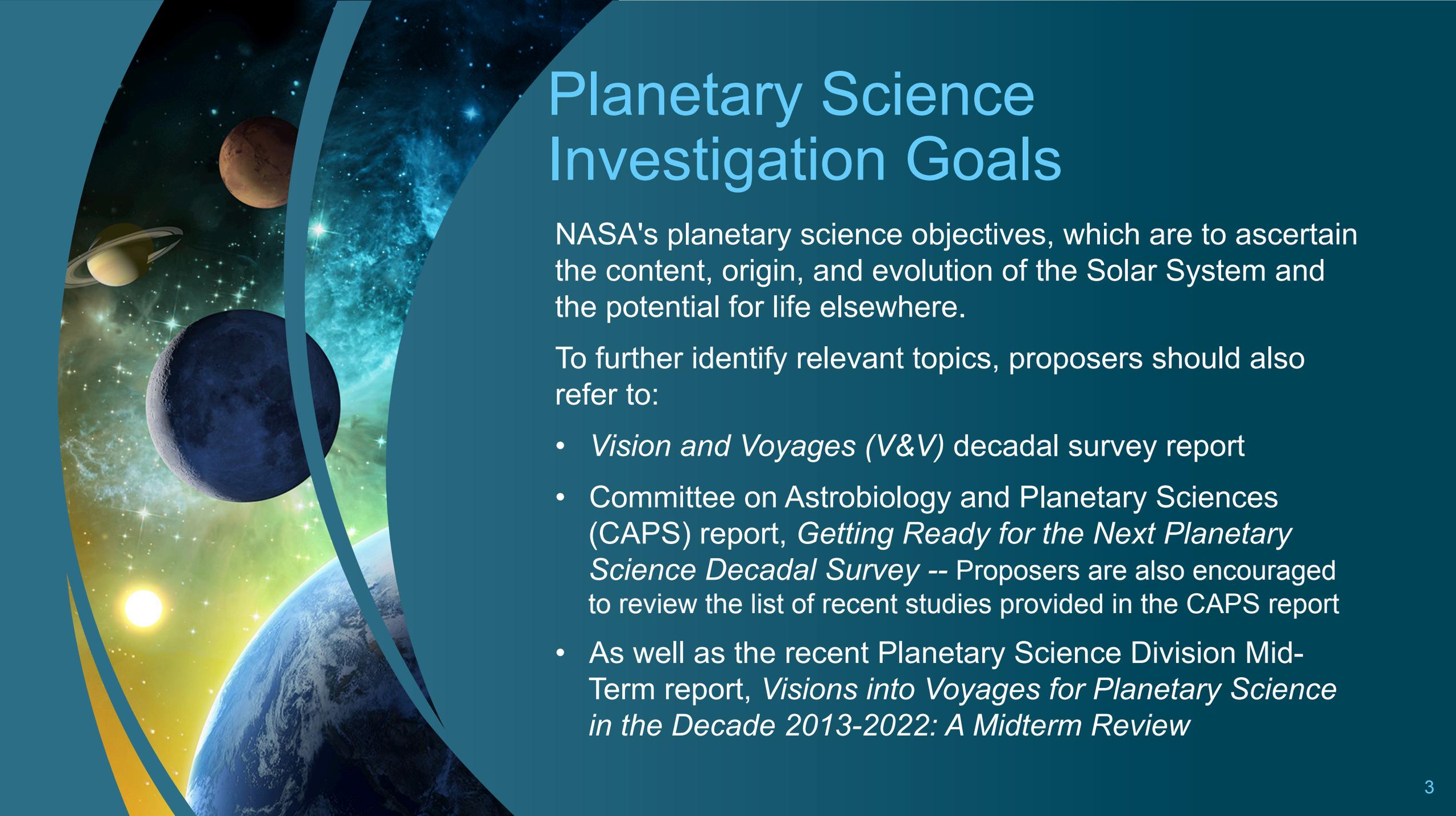
Outer Planets Assessment Group

April 2019



Decadal Survey Mission Concept Studies

- Conduct mission concept studies for the next decadal Survey
- Solicitations released February 14, 2019
- Notice of Intent due by April 01, 2019
- Proposals due by May 31, 2019
- Study report due by June 30, 2020

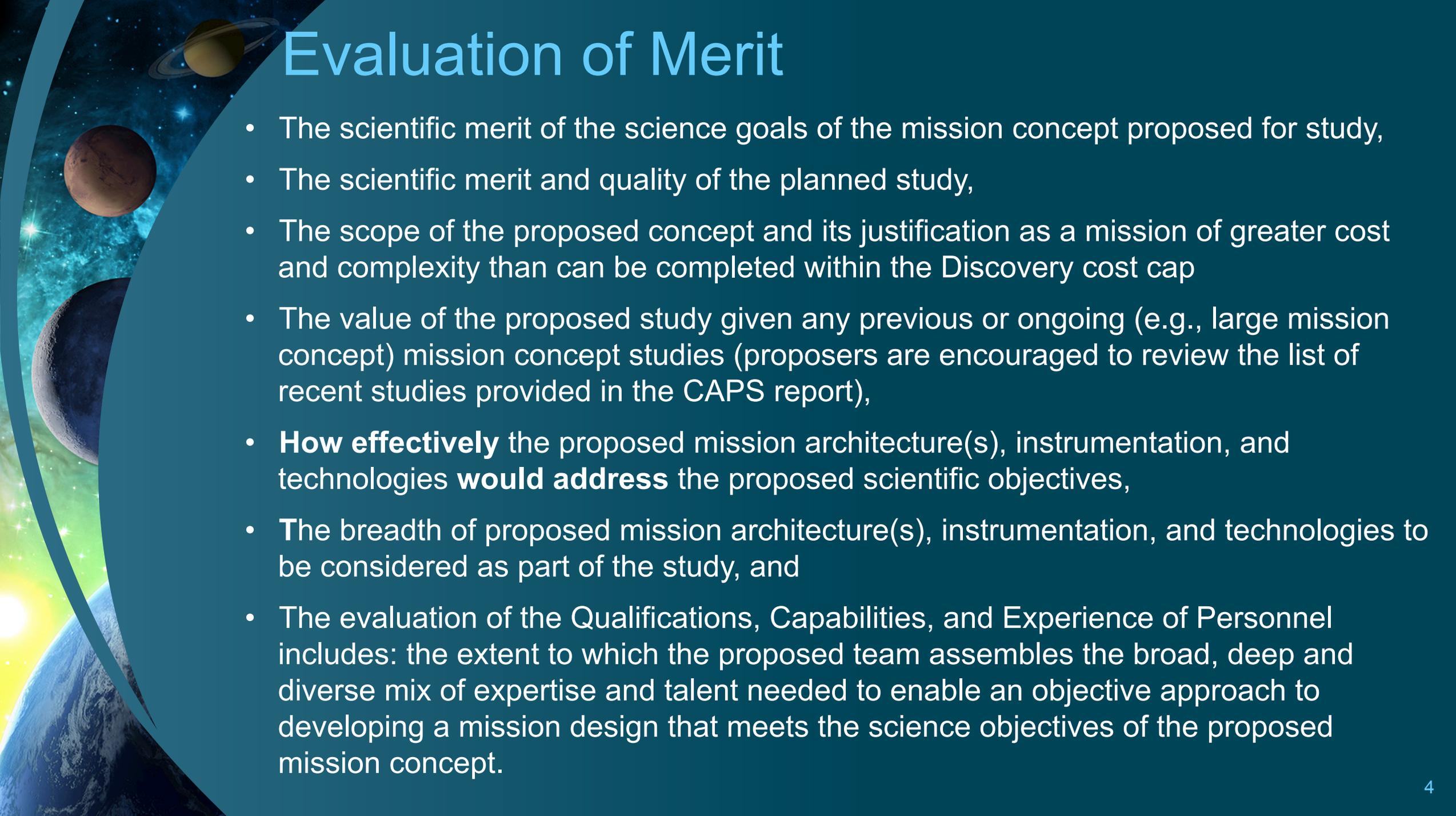


Planetary Science Investigation Goals

NASA's planetary science objectives, which are to ascertain the content, origin, and evolution of the Solar System and the potential for life elsewhere.

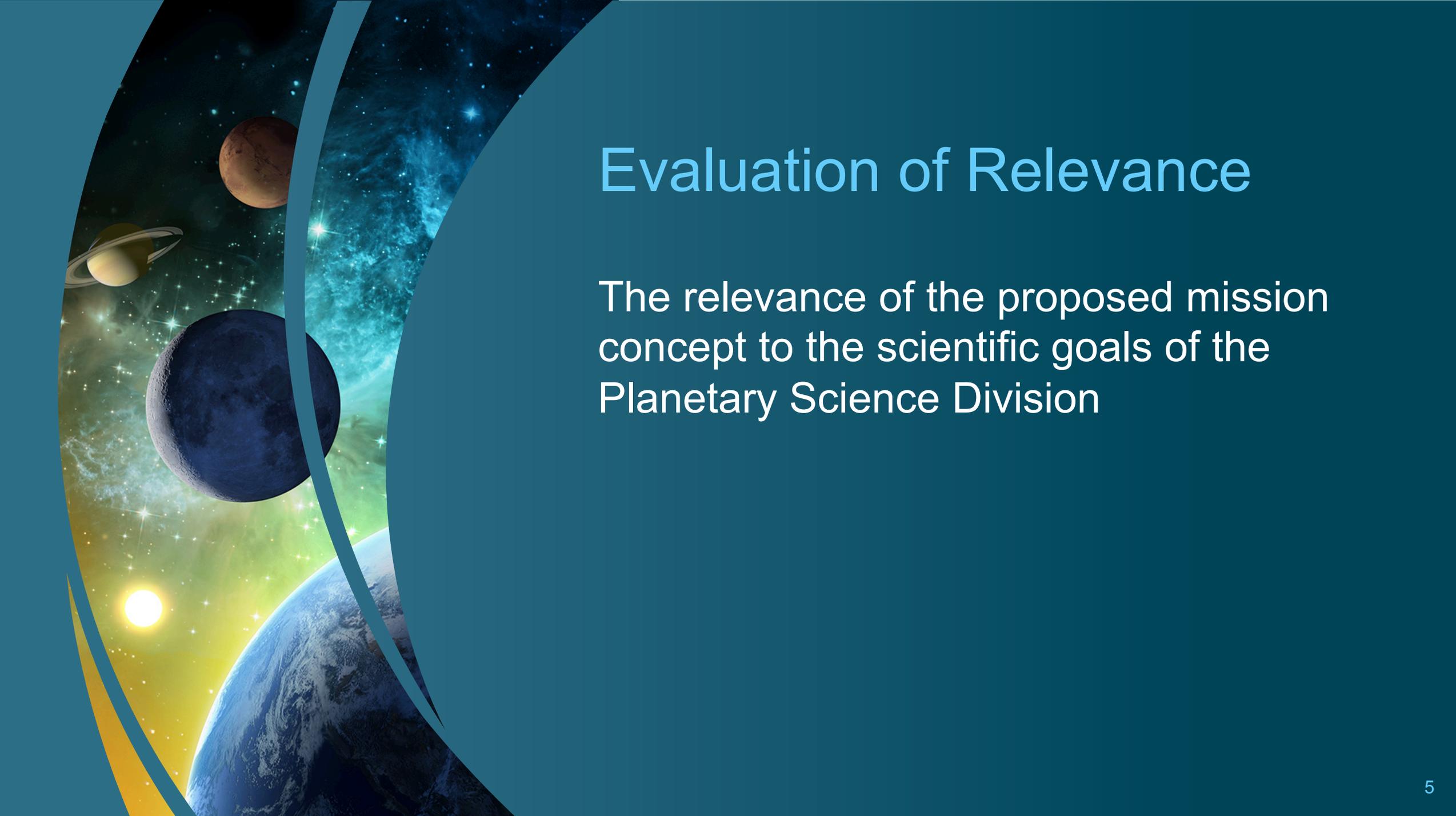
To further identify relevant topics, proposers should also refer to:

- *Vision and Voyages (V&V)* decadal survey report
- Committee on Astrobiology and Planetary Sciences (CAPS) report, *Getting Ready for the Next Planetary Science Decadal Survey* -- Proposers are also encouraged to review the list of recent studies provided in the CAPS report
- As well as the recent Planetary Science Division Mid-Term report, *Visions into Voyages for Planetary Science in the Decade 2013-2022: A Midterm Review*

The background of the slide is a vibrant space scene. It features a curved blue arc on the left side. Within this arc, there are several celestial bodies: a yellow planet with a ring system (resembling Saturn) at the top, a reddish-brown planet (resembling Mars) in the middle, and a dark, cratered moon (resembling the Moon) below it. The background is filled with a starry field and a bright yellow sun or star in the lower-left corner, creating a colorful nebula-like effect.

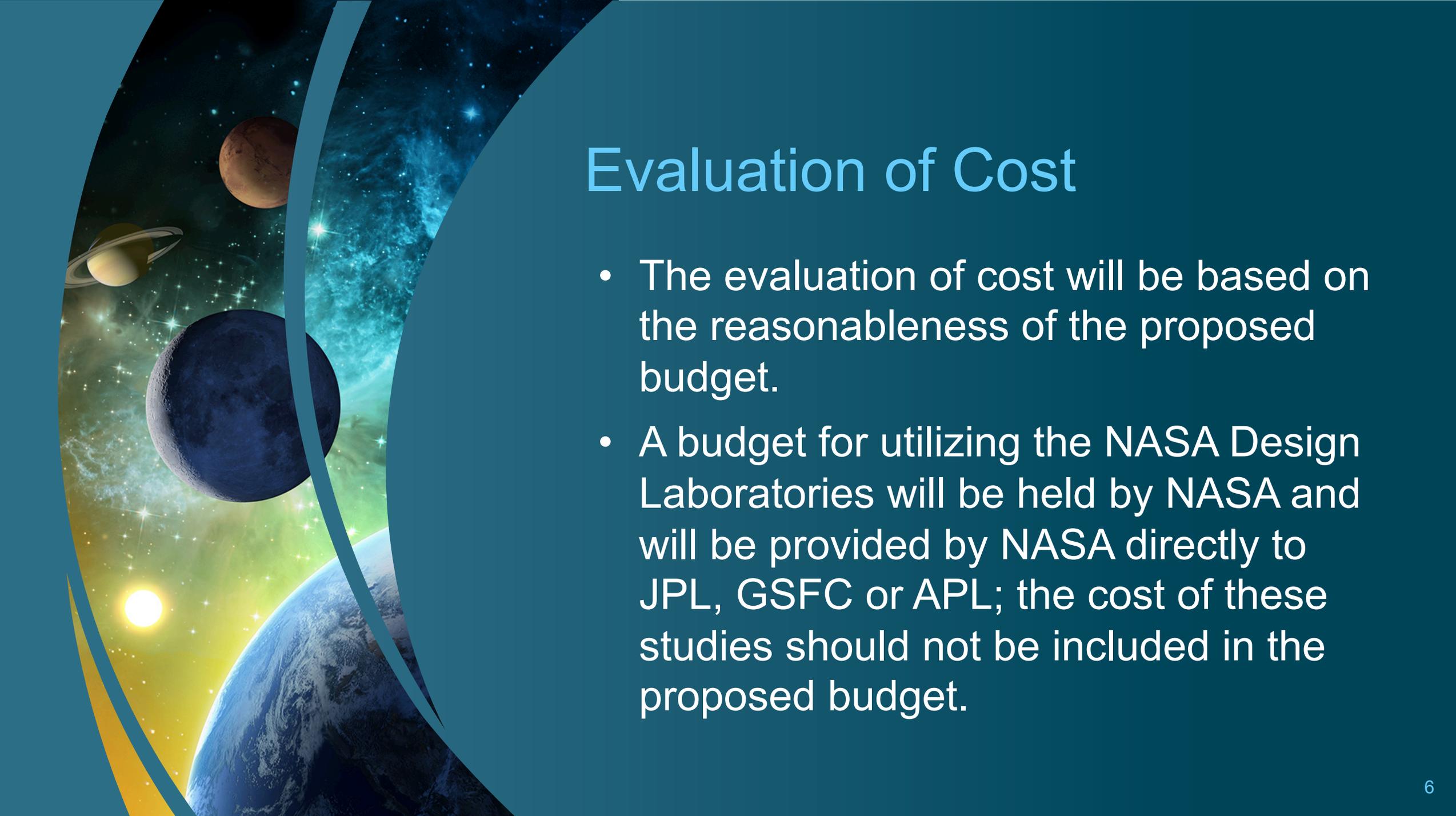
Evaluation of Merit

- The scientific merit of the science goals of the mission concept proposed for study,
- The scientific merit and quality of the planned study,
- The scope of the proposed concept and its justification as a mission of greater cost and complexity than can be completed within the Discovery cost cap
- The value of the proposed study given any previous or ongoing (e.g., large mission concept) mission concept studies (proposers are encouraged to review the list of recent studies provided in the CAPS report),
- **How effectively** the proposed mission architecture(s), instrumentation, and technologies **would address** the proposed scientific objectives,
- The breadth of proposed mission architecture(s), instrumentation, and technologies to be considered as part of the study, and
- The evaluation of the Qualifications, Capabilities, and Experience of Personnel includes: the extent to which the proposed team assembles the broad, deep and diverse mix of expertise and talent needed to enable an objective approach to developing a mission design that meets the science objectives of the proposed mission concept.



Evaluation of Relevance

The relevance of the proposed mission concept to the scientific goals of the Planetary Science Division

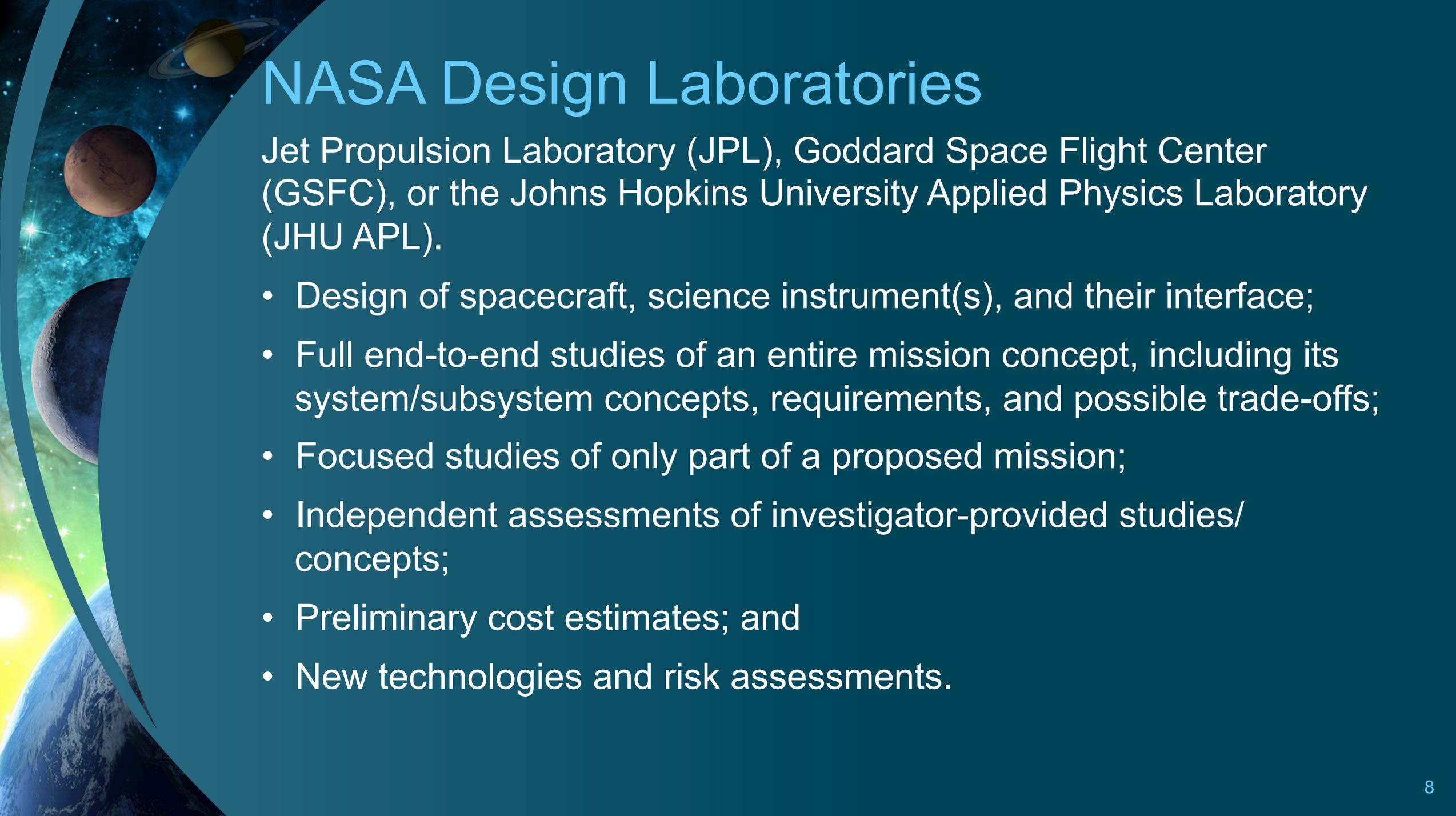
The background of the slide is a vibrant space scene. It features a large, dark blue planet in the foreground, a bright yellow sun or star in the lower left, and various other celestial bodies including a ringed planet and a reddish planet. The background is filled with a colorful nebula in shades of blue and green, and numerous stars of varying brightness. The overall aesthetic is futuristic and scientific.

Evaluation of Cost

- The evaluation of cost will be based on the reasonableness of the proposed budget.
- A budget for utilizing the NASA Design Laboratories will be held by NASA and will be provided by NASA directly to JPL, GSFC or APL; the cost of these studies should not be included in the proposed budget.

Proposal Guidelines

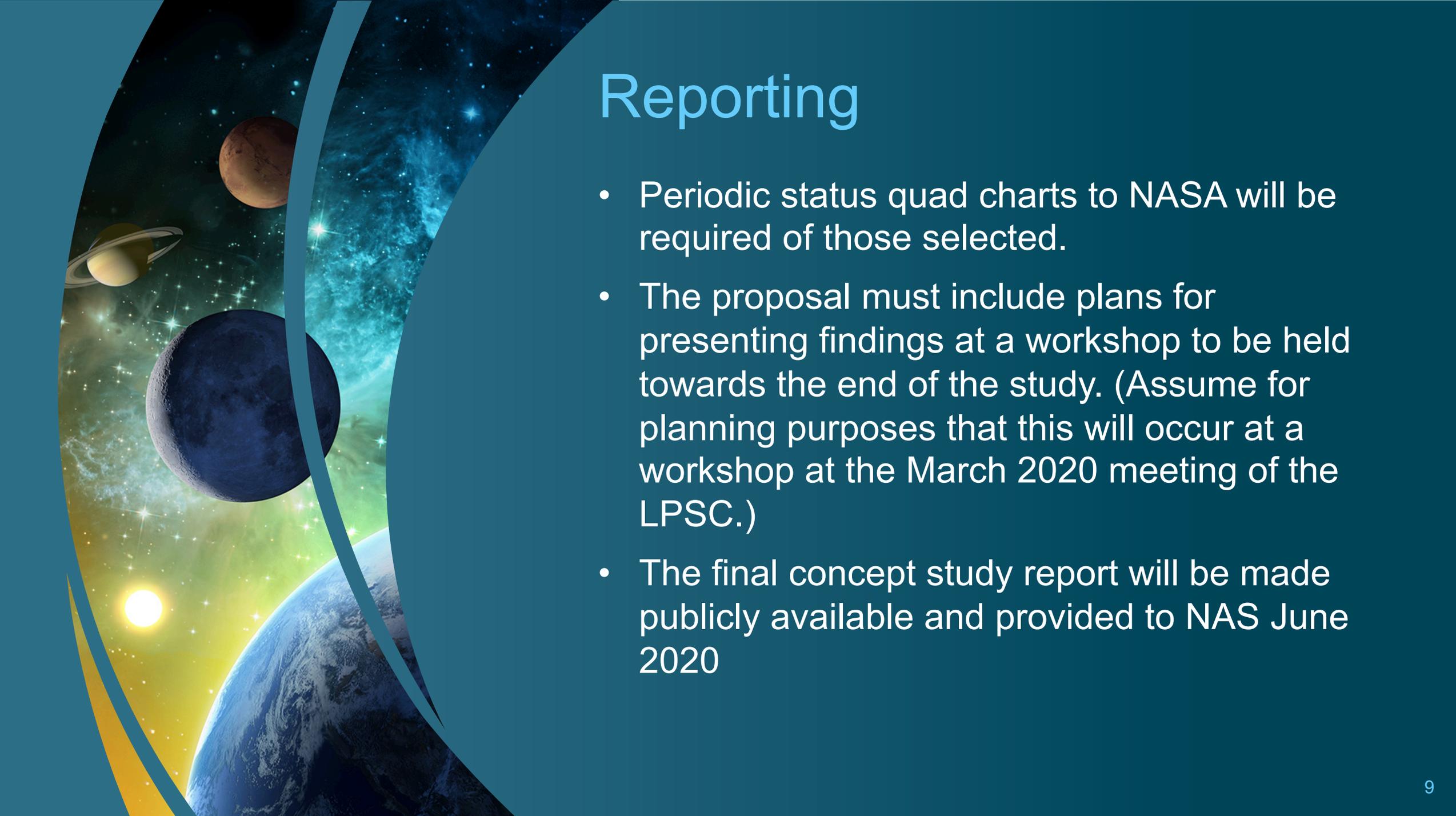
1. A clear description of the scientific objectives and how these are met and how they relate to NASA's strategic objectives in planetary science.
 - In addition, the relationship of the proposed science investigation to the present state of knowledge in the field, to the current readiness of needed technologies, and to any other relevant missions currently operating or under development, and synergies with current and future missions, should be addressed;
2. A clear description of the current readiness levels for mission critical technologies, especially those not currently under development at NASA, and the rationale supporting the stated readiness levels in the proposal, including, where possible, laboratory or field demonstrations of the technologies;
3. A sound justification for why a mission that is larger than Discovery-size is required to address the science goals;
4. Explicit description of how the mission concept science goals relate to NASA's objectives in Planetary Science.
5. For mission concepts already studied in the past or ongoing, a robust justification of the value of the proposed additional study;
6. A detailed management plan and schedule, including a statement of work to be undertaken over the proposed period of performance.

The background of the slide is a vibrant space scene. It features a bright yellow sun in the bottom left corner, partially obscured by the blue and white horizon of Earth. Above the Earth, the dark grey, cratered surface of the Moon is visible. Further out, the reddish-orange planet Mars and the yellowish planet Saturn with its rings are shown against a deep blue and green nebula filled with white stars. A large, semi-transparent blue circle is overlaid on the right side of the image, framing the text.

NASA Design Laboratories

Jet Propulsion Laboratory (JPL), Goddard Space Flight Center (GSFC), or the Johns Hopkins University Applied Physics Laboratory (JHU APL).

- Design of spacecraft, science instrument(s), and their interface;
- Full end-to-end studies of an entire mission concept, including its system/subsystem concepts, requirements, and possible trade-offs;
- Focused studies of only part of a proposed mission;
- Independent assessments of investigator-provided studies/concepts;
- Preliminary cost estimates; and
- New technologies and risk assessments.

A vibrant space-themed background featuring a large blue planet in the foreground, a bright yellow sun, and various other celestial bodies like Saturn and Mars against a starry sky with nebulae. The scene is framed by curved blue and yellow lines.

Reporting

- Periodic status quad charts to NASA will be required of those selected.
- The proposal must include plans for presenting findings at a workshop to be held towards the end of the study. (Assume for planning purposes that this will occur at a workshop at the March 2020 meeting of the LPSC.)
- The final concept study report will be made publicly available and provided to NAS June 2020



Together in the Next Decade





QUESTIONS?