Keck Institute for Space Studies
Solicitation for 2025 Study Program Proposals

The Keck Institute for Space Studies (KISS) is soliciting proposals for Study Programs to be carried out during the 2025 calendar year.

Timeline

- Solicitation Release Date: **1 October 2024**
- Proposal Concept Due Date: **1 November 2024**
- Feedback provided on Proposal Concepts: **mid-November 2024**
- Study Program Proposal Due Date: **20 December 2024**
- Study Programs Selected: **end-January 2025**

Overview

The goal of the Keck Institute for Space Studies is to develop ideas and concepts that can revolutionize space science and engineering, especially those that have the potential to impact or create future space missions. The Institute does this by convening study programs and workshops that bring together leading scientists and engineers from the external research community along with the best engineers and scientists from JPL and the Caltech Campus.   We are interested in bringing people together in novel ways on in-depth collaborations that will pursue new scientific and technical directions.

We intend to select and support 3-5 Study Programs for the 2025 calendar year. Submitting a concept proposal is the first step in developing a proposal for a 2025 KISS study.

Study program concepts are solicited in the broad areas of space studies including but not limited to planetary science, earth science, astronomy & astrophysics, and engineering. The Keck Institute is looking for programs that would not happen without KISS support. We are looking for technically-oriented studies that significantly advance a field. Proposals for incremental advances are not solicited here.

- We very much encourage proposals from individuals outside the JPL and Caltech communities as well as individuals from JPL and Caltech.

- We especially encourage proposals for studies that might involve a partnership in the study program between KISS and another organization. Potential partners could include commercial industry, private sector organizations including foundations, or government. We encourage innovative concepts in this regard.

2025 KISS Study Program Solicitation

- While we strongly encourage proposals to have a Caltech lead, a JPL lead, and an external lead, this is no longer a strict requirement. It remains a requirement to show involvement of, and benefit, to the Caltech and JPL communities.

We will also consider proposals for 1–2-day symposia that are interdisciplinary in nature and that would highlight the Caltech/JPL leadership in a new or strategically important area. If you are interested in proposing a symposium, please contact Harriet Brettle directly at hbrettle@caltech.edu or 626-395-6630.

Your proposal concept (due 1 November 2024) should include:

- Completed Proposal Concept (2-pages, including participant list; see templates) submitted via email to asoriano@caltech.edu

Your final proposal (due 20 December 2024) should include:

- 6-page Proposal with required appendices (see templates): submitted as a pdf via email to asoriano@caltech.edu
  Please note: Letters of commitment from 18 participants must be included in the final proposal.

The proposal concept process does <u>not</u> have a go/no-go decision associated with it as some other proposal concept phases do. The proposal concepts allow the KISS Steering Committee to understand the breadth of the proposals coming in, and to help proposal teams develop the best proposals possible.

2025 KISS Study Program Solicitation

Characteristics and Components of a KISS Study Program

A KISS Study Program includes:

- One or two workshops
  - If only one workshop is held, it must be a minimum of 5 days duration and up to a maximum of two weeks duration
  - If more than one workshop is anticipated for the study, the first (opening) workshop must be a minimum of 4 days in duration

- A short course at the start of the first workshop for interdisciplinary exchange and building a common vocabulary

- Opportunities for early career members to participate (early career members are nominated into the program by the core participants after the core participants are selected and accepted to the program)

- Recommended study periods for face-to-face interaction between core participants, including visitors (optional)

- An open technical talk or public lecture (optional, during second workshop)

- A required final report or peer-reviewed paper as the product of the study program

Selection Criteria

The selection of the KISS Study Programs will be based on the following criteria:

- Potential for **developing innovative new ideas that can revolutionize space science and engineering**, in particular future space missions and technology

- Compelling case that the proposed study should be undertaken **at this time**.

- Quality and credibility of the **implementation plan**, including technical interactions between the study participants.

- Benefit of JPL-Caltech and Caltech/JPL-external **collaboration** & interactions.

- **Quality of the core-group participants**. **Balance** between, and diversity of, Caltech, JPL, and external participants.

- Quality of the **letters of commitment** indicating willingness to **fully participate** in the study.

- **Opportunities for early career members** to participate in the study program.

- If proposed, quality and credibility of **co-sponsorship, partnerships, or external funding**.

We encourage proposers to look at previously funded [study programs on the KISS website](#).

2025 KISS Study Program Solicitation

Proposal Requirements

[1] Proposal Concept *(due November 1)*

The short concept submission must describe the proposed program and point to significant JPL, Caltech, and external participation. We strongly encourage proposals to have an external lead, a JPL lead, and a Caltech lead, this is no longer a strict requirement. There must, however, be one lead from Caltech or JPL. The Proposal concept submission addresses the following:

- Description of proposed study including scope of study and technical goal
- Proposed Core participants (up to 18, including study leads)
- Potential partner / co-sponsoring organizations (if any)

[2] Full Proposal *(due December 20)*

Proposals for Study Programs should be no more than 6 pages in length plus the required appendices (study at a glance, core participant list, and letters of commitment). The proposal should include the following information:

Program Description and Rationale (i.e. 6-page primary proposal)

- One page 'Study at a Glance' cover page
- Description of the Study Program **scope and technical goals**
- Explain why the proposed study program has the **potential to develop innovative new ideas** that can revolutionize space science and engineering, in particular future space missions and technology
- **Why now?** What are the specific technologies or recent scientific developments that make a compelling case that a major study should be undertaken at this time
- **Implementation Plan**: describe the proposed study program format, including:
  - Proposed dates and schedule for the Study Program
  - Include plans for talks, seminars, and workshop(s)
  - Include plans for formal and informal interaction sessions among participants – note: KISS workshops should be 50% discussion based (either in small groups or plenary lead discussions)
  - Include plans for other proposed events (e.g. social events, public lecture, short course)
  - Plans for team member communication (e.g. team-managed Google doc site or KISS-provided wiki, team teleconferences, etc.)"
- What, if any, **co-sponsorship, partnerships, or external funding** can be leveraged to support the study?
- How with the study program **foster collaboration and technical interactions** between Caltech and JPL, and between external participants and JPL/Caltech
- Describe the **strength of the proposed study team**, including how the diversity of proposed study participants reflects the diversity of the various disciplines required for the study.

- **Letters of commitment** from the 18 core-group participants
- Describe the **opportunities for early career members** to participate in the study program activities (including involvement of graduate students and postdoctoral scholars). *NOTE: early career members are not to be identified in the proposal, they will be nominated after the proposal has been selected and the core participants have been accepted to the study.*

Required Appendices:

A. List of Core Participants and Contact Information *(see template)*

Names of a candidate group of 18 core participants *(including the co-leads)* with institution/affiliation, discipline, e-mail address.

- A final addition of 6 core core-group participants will be negotiated / finalized upon acceptance of the proposal with members of the KISS Steering Committee. The final number of core participants is expected to be around 24.
- Study participants often wish to have young scientists and engineers accompany them when they participate. KISS encourages such participation and will work with the study organizers to provide support and accommodation for early career scientists and engineers. **Six additional spots for graduate students, postdocs and early career members will be filled _after_ the core participants have been accepted into the program.** Only core participants may nominate candidates for these slots. This will bring the total number of study attendees to 30.

B. Letters of Commitment

Letters of commitment from the 18 candidate participants (*including co-leads*) indicating their willingness to fully participate in and/or lead the study are required. One of the selection criteria will be the strength of these letters of commitment, and in particular – the strength of the letters from the co-leads. No more than 18 letters of commitment may be submitted.

Optional Appendix:

C. References

Study programs may submit papers or any other reference material that they think will provide the steering committee with information that will strengthen their proposal.

A proposal concept (see template on website) is requested by 1 November 2024. Proposal concepts will be shared with the Steering Committee and may be shared with JPL Directorate Scientists and Technologists or Caltech Division Chairs.

Proposals are due by **20 December 2024**. Proposal concepts and final proposals should be submitted electronically via instructions located on the KISS website.

2025 KISS Study Program Solicitation

KISS Support for Study Programs

Workshop Costs: The Keck Institute will support on-site costs associated with workshops.

Travel Support: The Institute has limited travel funds for visiting attendees to workshops; it provides partial support travel for the few who need it. The Institute gives funding preference to graduate students, postdocs, and early career scientists, engineers, and technologists who may not have much of a travel budget. Funding preference is also given to those folks who can pay a portion of their travel and share costs with the Institute. Local participants should expect to cover their own costs incurred while attending the workshops.

KISS does not provide labor support to participate in a study program.

Support from Keck Institute personnel: Keck Institute personnel will provide support for organizing the workshop associated with the Study Program as well as support for visiting participants.

Facility Support: The Keck Institute is located at the Keck Center on the NW side of the Caltech campus (just NW of Beckman Auditorium). The center has the 30-person Think Tank, the 10-person Black Hole conference room, the 10-person Oort Cloud lounge and several additional interaction spaces available for use.

Web Support: The Keck Institute will provide web support for a public website for study program activities, a workshop registration site, and archiving of talks. For each study, KISS will set up a shared collaborative workspace on the web for team members.

Final Report Support: A small amount of discretionary support will be provided for illustrations, copyediting, and writing support as deemed necessary by the team leads.

JPL Support for Study Programs

KISS is a joint institute between Caltech and JPL. JPL supports its own participation in KISS activities through the JPL R&TD Program with (limited) funding allocated per selected study. Once study programs are selected, the JPL Co-Lead(s) should contact Christina Richey at JPL for the allocation of the R&TD funding.

2025 KISS Study Program Solicitation

Additional Information and Comments

Study Format:
Successful formats for past study programs include, but are not limited to:

Long-Term Study
- A 4-5 day opening workshop (see requirements in proposal template) to frame the challenge and outline the path of further investigation with an opening short course
- Interim sub-team meetings between workshops
- A 3-5 day closing workshop to finalize the recommendations of the study, with an optional open technical talk or public lecture

Focused Study
A 5-day workshop format where the challenge is extremely clear and little time is required to bring an interdisciplinary team up to speed in order to attack the problem.

Symposium
A 1–2-day symposium format which is interdisciplinary in nature and has a compelling reason why the uniqueness of KISS support is an enabling factor, that also strengthens or maintains Caltech/JPL leadership in this area. Note: to propose a symposium, please contact Harriet Brettle at hbrettle@caltech.edu or 626-395-6630 directly.

Organizers should consider the above formats but are allowed to propose other study formats providing the opening workshop meets the requirement for workshop length.

The Institute is looking for a range of proposals that encompass the various formats described above.

KISS Steering Committee: The KISS Steering Committee is responsible for the technical review of study program proposals and will provide initial feedback on proposed concepts by mid-November. Committee Proposers are encouraged to contact members of the KISS Steering Committee for further information or advice. A list of the members can be found on the KISS website.

2025 KISS Study Program Solicitation

Frequently Asked Questions

Can foreign nationals be included as core-participants in KISS workshops?
Yes - we welcome the best talent globally available.

When I submit my proposal concept, do my 18 core participants all have to finalized?
No. This list of core participants only needs to be finalized when you submit the full proposal. It is helpful, however, to submit as best a list as possible so that the KISS Steering Committee can give you the best feedback possible.

When will I get notified that my proposal concept got the green light and to go ahead and submit a full proposal?
KISS doesn't have a go/no-go policy for the study program call. We use the two-page proposal concepts to get an idea of what proposals are coming into the Institute.

How long can the proposal be?
The proposal itself can be 6 pages long, and there are some required appendices that have no page limit.

How many core-participants can be included in the proposal?
We will only accept letters of commitment from 18 core-participants. You are welcome to list additional people you would like to suggest as core-participants, but only the top 18 listed will be guaranteed a spot in the study should it be selected.

Are the three Co-Leads included in the limit of 18 core participants we may propose?
Yes.

Are letters of commitment from core participants in email format acceptable?
Yes. Concatenate all of the letters (regardless of format) and incorporate that into the required proposal appendix.

Are students considered core participants?
Students are generally not considered core participants, although such is not disallowed. Typically, students are nominated by core-participants to attend the study. This process of nominating the early career participants occurs during the registration process for the study, after the study has been selected for funding.

I am the JPL co-lead, and I understand that KISS cannot provide funding to JPL to participate in the study. How do we go about getting funding to attend the workshop and participate during the study program?
Please contact the Office of the Chief Scientist and Chief Technologist at JPL for their process on how to secure JPL support for a study.

2025 KISS Study Program Solicitation

Does KISS pay for all external visitors to travel to and from the Institute for workshops?
No. We do cover venue, most meals, and staff support for the workshop, but participants are expected to find means to fund their own travel. We have very limited travel funds for attendees, so we can partially support travel for the few who have special need for it. Preference is given to students, postdocs, young faculty, and young researchers. Those who cost share with KISS are also given preference.

Does KISS pay labor for external visitors who are core workshop participants?
No.