

PROPOSALS FOR SWINBURNE KECK TIME POLICY AND PROCEDURES

SCOPE

This document provides policy guidelines and procedures for applicants wanting to apply for Swinburne time on the Keck telescopes. Swinburne's Keck investment has been critically reviewed and has been renewed for another 5-year period for 10 Keck nights per year until the end of 2023A.

The Vice Chancellor has invested in Keck time for CAS astronomers with the specific aim of achieving greater research output for Swinburne, particularly high-impact papers in Nature and Science. All applicants for Keck time must realize the seriousness of this investment, which is illustrated by the value of each Keck night, i.e. approximately one staff member's annual salary.

The STACK (Swinburne Time Allocation Committee for Keck) assesses Swinburne Keck proposals and puts forth time allocation recommendations to be approved by the CAS Director and Caltech. When assessing Keck proposals, the STACK will focus on **maximizing the scientific return for Swinburne**. Thus, the STACK assessments are not based purely on scientific merit but will reflect a balanced consideration of how each proposal maximizes the scientific outcomes for Swinburne. As a result, higher-risk/higher-payoff proposals may have a higher chance of being awarded Swinburne Keck time.

DIRECTOR'S DISCRETIONARY TIME

One night per year from SUT's allocation and one night per year from Caltech's allocation may be used as Director's Discretionary Time (DDT) aimed to encourage collaborative projects between the two universities. The Directors of SUT and Caltech can each award one night towards collaborative projects between the two institutions. It is expected that the collaborative projects will seek nights through both partners. Proposals for DDT will be considered separately by Caltech and SUT Directors. If there is a lack of competitive proposals for the collaborative night(s), the night will be allocated through the general pool.

Proposers need to contact a Caltech PI well in advance of the proposal round and agree upon the nature of the collaboration, ensuring that a significant proportion of the work will be led by Swinburne and likely to lead to a program of more than one semester. In advance of submission, the Caltech and Swinburne PIs need to advise both Directors of their intention to submit a collaborative proposal. The proposal needs to be reviewed by both TACs and agreed to by both directors. If DDT is not approved, the proposal can still be submitted for SUT time.

FOR OBSERVERS

CALL FOR PROPOSALS

A call for proposals (CfP) will be issued by the STACK Technical Secretary (TS) once the number of nights available on each Keck telescope and their lunation distribution and any other restrictions has been determined by Caltech and Keck. **These restrictions will be stated in the CfP and should be carefully considered by proposers.** The CfP will also include a strict deadline for proposal submission.

APPLICANT ELIGIBILITY

CAS staff and postdocs who have a PhD in astronomy/physics may act as PIs of STACK proposals. For PIs on fixed-term contracts, the contract end date must be stated clearly on the proposal form. Postdoc PIs are required to have a permanent CAS staff member as a CoI who must accept responsibility for the data and outcomes of the observations. The staff guarantor will be listed on the internal Keck publication database. Students are encouraged to apply but must have a permanent CAS staff member as PI. Applicants should consider that Keck observations cannot be guaranteed **and student theses should not be designed to rely exclusively on Keck data obtained through the STACK**. The role of the proposal in the student CoI's thesis work should be detailed in the proposal. In addition, the role of all SUT and non-SUT Co-Is must be fully specified in the proposal.

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PUBLICATIONS

Any publications related to STACK-awarded time must have SUT as an affiliation on the publication. Even if the CAS staff member moves to a different institution, SUT must be listed as an affiliation. All publications using data from STACK allocations, regardless of lead author, must include the Keck observing code, e.g., 2018B_W0123D, in the Acknowledgements. It is expected that data acquired via STACK allocated time is to be published in a timely manner, with submission to a refereed journal to occur no later than 1.5 years after the last date of observations for a given project. The lack of publications for completed projects will be considered in the ranking of the PI's and Co-Is' future proposals and will impede their chances of getting more Keck time.

PIs are requested to update the observation, data status and publications on the internal Keck publication data base one month prior to each new CfP. The technical secretary will make initial entry based on scheduled nights. The SACK chair and Director will contact PIs and staff member guarantors with outstanding data (taken more than 1.5 years prior to the CfP) in advance of the CfP to discuss any mitigating circumstance and to assist with developing a plan to ensure data is published in a timely manner. PIs may be advised to postpone further proposals until their plan has been implemented.

PROPOSALS

THE PROPOSAL FORM

The proposal form consists of two parts. The first part is an online cover sheet that is obtained from the Keck Observatory user-based webpage (i.e., the Keck user login page). The second part is a simple LaTeX pro-forma that can be found on the Keck CfP webpage or from the TS. The PDF version of the proposal (cover sheet and pro-forma) should be submitted via email to the TS by the advertised deadline. The proposal pro-forma includes specific instructions on information that is to be included in each section.

Proposers should include all relevant information in the proposal. Any significant information relevant to the proposal that emerges after the proposal submission deadline must be submitted to the TS in writing and assessed by the STACK Chair. No discussion of submitted proposals is permitted between proposers and STACK members.

SCIENTIFIC JUSTIFICATION

The pro-forma Scientific Justification section is typical of proposals and should clearly set out the scientific background, importance, and expected/possible scientific outcomes of the proposed observations. In addition, the Scientific Justification of STACK proposals must include the scientific reasons why the proposal should be granted time on the Keck telescopes.

TECHNICAL FEASIBILITY

The Technical Justification section is crucial for evaluating technical feasibility of the proposed science and will be carefully considered by the TS and STACK. This section should explain and detail how the science proposed in the Scientific Justification would be undertaken with Keck. It should not be used to explain, for example, target selection, sample definition, etc.

It is crucial that PIs **carefully justify** the telescope time, lunation and instrument requirements. The PIs must include a justification on why the number of hours or nights of telescope time is requested and why the lunation is required. Equally important is a discussion of whether or not the science can be done during other lunations. Finally, a clear description is required of the various instrument set-ups, filters, grisms/grating, etc. that are needed to achieve the proposed science. Any aspects of flexibility, in scheduling, lunation, instrument, wavelength range, resolution etc., should be justified in the proposal. In addition, a backup program must be presented (in the Backup Program section) in the event of bad weather or technical problems at the telescope. The backup program must include the science goals, choice of instrument, instrument set-up, and basic details of the observations for technical feasibility assessment.

It is the PI's responsibility to ensure that the submitted proposal includes all information relevant to assessing its technical feasibility "as is", with no further assumptions required by the STACK for

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proper assessment.

If the STACK cannot establish the feasibility of a proposed program of observations, **or proposed variations on it** (e.g. with respect to lunation, instrument etc.) then it is clearly difficult for the STACK to award that proposal time on Keck. Proposers are strongly encouraged to discuss technical feasibility issues with CAS staff, including the TS, and/or Keck staff and/or Caltech staff when preparing their proposals, i.e. **before the submission deadline.**

MINIMUM TIME REQUEST

The minimum time request is 0.5 night. PI's are encouraged to consider half night requests in order to maximize the distribution of lunations available for each telescope.

MAXIMUM TIME REQUEST

There will be no limit to the total amount of time requested by any applicant. Per the terms of the agreement with Caltech, there are 4 or 6 nights allocated to Swinburne each semester (10 nights per year). Applicants should carefully consider larger requests for a single proposal given the limited number of nights. Nevertheless, all allocations, regardless of their size, will be considered against their likely scientific outcomes.

LONG TERM STATUS

Long Term Status requests (i.e., proposals mandating Keck nights over multiple semesters) are not allowed. If a project is likely to require time in more than one semester, the amount of time required in future semesters should be noted in the proposal, including the Keck proposal cover sheet, and a new proposal should be submitted for the next relevant semester(s). Approval of a proposal in one semester does not imply that it will be favoured in subsequent semesters. **Reasons for future requests should be made clear in the current proposal. The outcomes of previous allocations for the same project should be made clear as well.**

SCHEDULING OF SUCCESSFUL PROPOSALS

Once the final recommended time allocations are determined, the successful proposals will be put forward to Caltech for approval and sent to Keck. After Caltech approves the proposals, PIs will be notified of the recommended allocations as soon as possible. It is possible that Keck will not be able to schedule some proposals in their submitted form, or during their requested dates, thus the STACK allocated time is not guaranteed.

KECK SCHEDULING

It is very important that PIs carefully select the “preferred” and “acceptable” dates on proposal cover sheets and provide the largest effective date range(s) to fully achieve their science. The TS receives a preliminary telescope schedule from Keck and if a Swinburne proposal has not received scheduling during the marked “preferred” or “acceptable” date range(s), as entered on that proposal's Keck cover sheet (i.e., the proposed science may be compromised by the scheduling constraints), the TS will inform the PI prior to the release of the official telescope schedule. If such proposals have some degree of flexibility, then the PIs and TS may liaise with the Keck schedulers to find a mutually satisfactory solution. It may also be possible to trade nights with other scheduled users of Keck (from any institution). However this option typically needs to be done prior to proposal submissions for either institution. If, after exhausting these possibilities, a successful proposal cannot be scheduled, the TS will inform the STACK members who will then offer the time to the next best proposal(s) that can properly make use of the available time.

Considering the above, **it is important that proposers detail the flexible aspects of their proposal.** Failure to do so may mean that their otherwise highly ranked proposal cannot be put forward to Keck for scheduling.

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FEEDBACK

The TS will distill the STACK comments (reviewed by the STACK Chair) to provide feedback on proposals but this will be limited to a brief summary relating to their clarity, scientific merit and, on a best efforts basis, their feasibility. Feedback will be made available as soon as possible to PIs after the final recommended allocations have been sent to Caltech and proposal outcomes have been made available to all applicants.

TARGET OF OPPORTUNITY

Target of opportunity (ToO) observations can now be triggered on all classically scheduled programs at Keck. Further information is provided here: https://www2.keck.hawaii.edu/inst/common/too_policies.html
For convenience point (13) of the policy is copied here:

13) Time imbalances between partners arising from Partnership ToOs will be corrected through each partner's semester time allocations and/or WMKO's giveback science time. Because ToOs are likely triggered in suitably good weather, their time usage will be charged at a rate of twice the normal observing time, i.e., 2 hours. Any compensation to individual PIs interrupted by ToOs will be left to the discretion of the individual institutions.

The compensated time will be awarded to the interrupted PI, or the responsible staff member in the case of a postdoc PI who is no longer employed by Swinburne. Shortly after a ToO occurs the interrupted PI must email the TS a brief (1 paragraph) summary containing the following: 1. Time lost (proposal ID, duration, instrument, object position, lunation), 2. Flexible plan for compensation time (duration, instrument, object position, lunation). The information will be provided to WMKO and Caltech for scheduling.