



# Single Conjugated Adaptive Optics Upgrade for LBT

## Call for commissioning science programs and targets

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Observational period 1-6 November, 2020

SOUL-LUCI1 is a high resolution imager (LUCI1) in NIR assisted by a single conjugated AO system (SOUL) using a single natural guide source. Currently, it is in advanced commissioning phase. The instrument has been demonstrated to be effective in technical observations using a wide range of AO reference source brightness and for a sample of scientific targets. In particular, the instrument has shown significantly improved correction for guide sources of  $10 < R < 14$ . Details about the instrument and its performance can be found in the document SOUL-T06 (see links below).

In order to exploit the new instrument niche and assess its scientific capabilities at this commissioning stage, the project will devote 6 nights of commissioning time to the execution of short scientific demonstration programs. In this call we request the LBT astronomical community to submit proposals for observation to be carried out within this context.

### *Rules*

- The PI must be affiliate to an institution member of LBT
- The proposal selection will be done by the SOUL PI, in concert with LBTO, following the best fit to the project's needs.
- Collected data will be owned by the LBTO partnership, and the proposal PI will have the first opportunity towards publishing any results in collaboration with the SOUL PI.
- SOUL team members and relevant LBTO staff must be included as authors in any publications describing the results, should there be any.
- Maximum open shutter/on-sky time 2.5h per proposal
- A single proposal can include a maximum of 3 different targets, while maintaining the maximum open shutter/on-sky time of 2.5h
- AO reference source is required to have  $R(\text{vega}) < 15$
- The final schedule of any selected program will be subjected to last minute changes because of the current atmospheric and observational conditions



## Selection preference

- The ability to obtain a successful set of observations for the conditions and time
- Exploitation of the system's unique capabilities (when the AO reference source is in the range  $10 < R < 14$ )
- Observing efficiency leading to shorter open shutter/on-sky time
- Likelihood of publication

## Timeline

- **October 8** – proposal deadline
- **October 15** – proposal selection  
the project will communicate to PIs their ranking
- **October 22** – Observing block deadline  
the PIs of the selected proposals must deliver the observing block for review
- **October 30** – OB reviewed by LBTO astronomers
- **November 1-6** – Scheduled nights

## Submission

The proposal form (attached here and available at the link below) must be filled-in and sent in PDF format via email to [soul\\_com@lbto.org](mailto:soul_com@lbto.org) with subject "SOUL-PROPOSAL" no later than October 8, 2020 – 18.00 UT.

For any information about the proposal drafting and submission, please write to [soul\\_com@lbto.org](mailto:soul_com@lbto.org)

Any Technical questions, both AO and LUCI related, should be addressed to [soul\\_info@lbto.org](mailto:soul_info@lbto.org)

## Links

Proposal form

Word - [http://soul.arcetri.astro.it/wp-content/uploads/2020/09/SOUL-LUCI1\\_proposal\\_form.docx](http://soul.arcetri.astro.it/wp-content/uploads/2020/09/SOUL-LUCI1_proposal_form.docx)

PDF - [http://soul.arcetri.astro.it/wp-content/uploads/2020/09/SOUL-LUCI1\\_proposal\\_form.pdf](http://soul.arcetri.astro.it/wp-content/uploads/2020/09/SOUL-LUCI1_proposal_form.pdf)

SOUL-LUCI1 Performance (SOUL-T06)

[http://soul.arcetri.astro.it/wp-content/uploads/2020/09/SOUL-T06\\_SOUL-LUCI1\\_performance\\_V1.0\\_20200918.pdf](http://soul.arcetri.astro.it/wp-content/uploads/2020/09/SOUL-T06_SOUL-LUCI1_performance_V1.0_20200918.pdf)

SOUL web page - <http://soul.arcetri.astro.it/>

SOUL SR Calculator – <http://adopt.arcetri.astro.it/strehl.html>

LUCI user manual - [https://sites.google.com/a/lbto.org/luci/documents-and-links/LUCI\\_UserMan.pdf?attredirects=0](https://sites.google.com/a/lbto.org/luci/documents-and-links/LUCI_UserMan.pdf?attredirects=0)

LUCI ETC - <http://luci-etc.lbto.org/calculator.py#MIDDLE>