

STELES Science Verification Proposal Guide: Scientific and Technical Justification

Version 1.0
Semester 2026C

This document provides a guide for preparing the **Scientific and Technical Justification** document accompanying proposals submitted to the STELES Science Verification (SV) campaign. It describes the purpose and expected content of each section of the proposal template, with the goal of helping applicants prepare clear, concise, and complete proposals for scientific and technical evaluation.

The proposal consists of two components: (i) the online submission form, which contains the administrative information and target list (not described in this document, see the independent Guide - [link](#)), and (ii) the Scientific and Technical Justification document, prepared using the provided LaTeX template.

The document begins with a short administrative section used to facilitate proposal review and queue scheduling. Applicants are asked to provide:

- **TAC Partner:** Select the observing partner through which observing time is being requested (Brazil, NOIRLab, MSU, UNC, or Chile).
- **Collaboration with the STELES Team:** Indicate whether you are interested in collaborating with members of the STELES team during the scientific analysis of the observations. This information is used solely to facilitate potential collaborations and has no impact on the proposal evaluation process.
- **STELES Science Verification Summary Paper:** the STELES team will prepare a publication summarizing the performance of the instrument during the Science Verification campaign, including representative scientific observations demonstrating its capabilities. Please indicate whether you would be willing to allow your observations to be considered for inclusion in this publication. Participation in this publication is entirely optional and does not affect the proposal evaluation process or the proprietary period of the observations.
- **Special Observing Requirements:** Indicate whether the proposed observations require any of the following:
 - use of the SOAR Atmospheric Dispersion Corrector (ADC);
 - time-critical scheduling;
 - multiple visits to the same target.

These selections help the STELES team assess the technical feasibility of the program and optimize queue scheduling during the SV campaign.

1. Scientific justification (limit: one page)

Provide a concise description of the scientific objectives of the proposed program. Applicants should explain:

- the scientific motivation;
- the importance of the proposed observations;
- the expected scientific outcomes;

- why STELES is particularly well-suited to address the proposed science case;
- how the proposed observations exploit STELES capabilities.

2. Technical justification (limit: one page)

Describe the observational strategy and technical requirements of the proposed program. Applicants should explain how the requested observations will achieve the scientific goals of the program.

Because this is a Science Verification program, applicants should also clearly describe which scientific or technical capabilities of STELES will be demonstrated or validated by the proposed observations. Examples include radial velocity stability, achievable signal-to-noise ratios, sensitivity limits, near-ultraviolet performance, broad wavelength coverage, or other aspects of instrument performance relevant to the proposed science.

The Technical Justification should include and justify:

- desired signal-to-noise ratio;
- wavelength regions and spectral features of interest;
- number of science targets;
- number of visits per target (if applicable);
- Scientific and/or technical capabilities of STELES to be demonstrated or validated;
- any additional calibration requirements beyond the standard STELES calibration plan (e.g., radial velocity standards or specific telluric standard star);
- ADC requirements;
- timing or scheduling constraints;
- any other observational requirements relevant to the successful execution of the program.

3. Observing Time Request (limit: one page)

Describe the method used to estimate exposure times. Acceptable approaches include:

- the STELES throughput curves presented in this call (Figures 2 and 3);
- the usage of Exposure Time Calculator of similar instruments (e.g., Gemini/GHOST at <https://www.gemini.edu/instrumentation/ghost/exposure-time-estimation>). Please describe the adopted assumptions and input parameters;
- previous observations obtained with comparable facilities;
- other methods (please describe).

Applicants should clearly distinguish between the total science exposure time and the total requested observing time, including all operational overheads. **Applicants should also inform a minimum acceptable time for achieving their scientific goals and justify it.**

4. Figures and Tables (limit: two pages)

Figures and tables supporting the scientific and technical justification may be included in this section. Please provide informative captions and ensure that all figures are referenced within the proposal text.

5. Visibility information (limit: one page)

Provide a visibility plot covering the entire target list and ensure they are observable within the scheduled SV runs. The visibility plot should allow the review committee to identify the most appropriate observing window for the proposed program.

Useful online tools include:

- <https://astro.ing.iac.es/staralt/index.php>
- <https://airmass.org/>

An example visibility plot is shown in Figure 4.

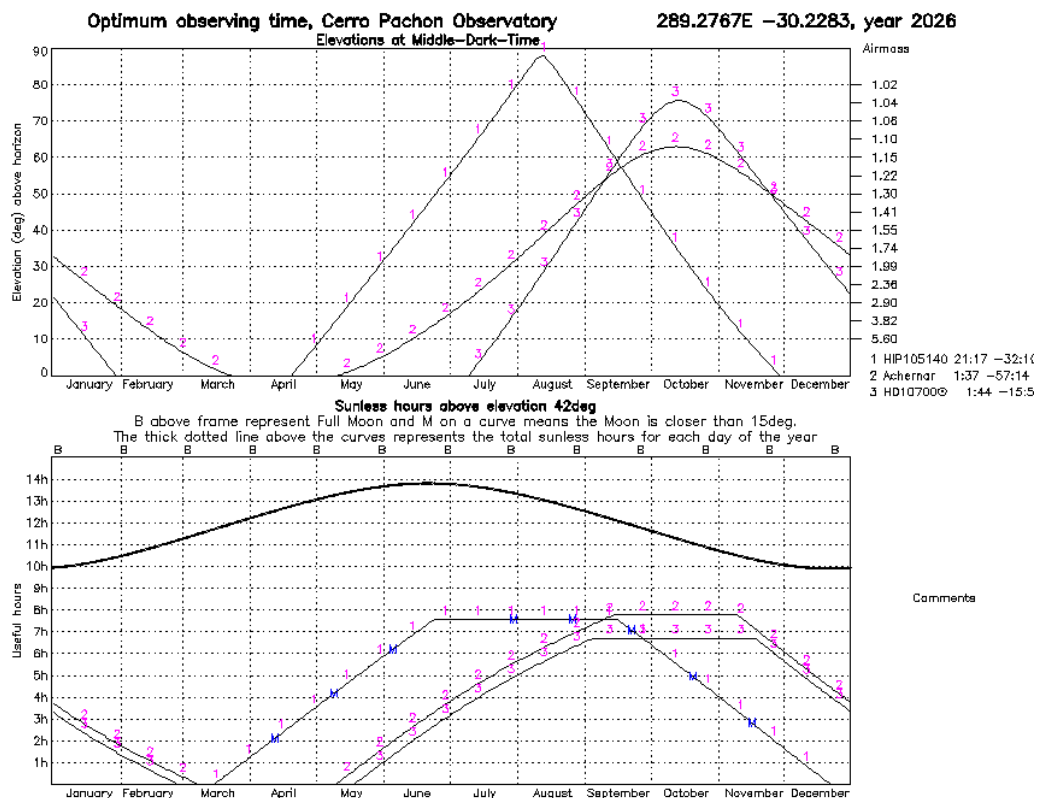


Figure 4. Example of a target visibility plot from <https://astro.ing.iac.es/staralt/index.php>.

6. References (no page limits)

List all references cited in the proposal.

7. Team information (no page limits)

Briefly describe the expertise of the investigators relevant to the proposed scientific program. Applicants may highlight previous experience with high-resolution spectroscopy, prior analyses or other expertise directly related to the proposed science case.

This section may also identify team members responsible for specific aspects of the project or provide additional information relevant to the successful scientific exploitation of the proposed observations.

Given the collaborative nature of the STELES SV campaign, previous experience with instrument commissioning, pipeline development, or early-science observations may also be described, although such experience is not required.

Target list (Online submission)

The target list is submitted through the online proposal form and is not part of the proposal document.

Applicants should provide all science targets, backup targets, and any specific calibration or standard stars required for the scientific program that are not part of the standard STELES calibration plan.

For each target, provide:

- target name (preferably with a SIMBAD reference);
- right ascension and declination (J2000) with at least one decimal digit;
- target magnitude and photometric band (preferably V-band);
- target classification (Science, Standard, or Backup);
- optional comments (e.g., scientific priority or special observing requirements).

A downloadable template is available through the online submission system. Target lists may be uploaded as a comma-separated text file (*.txt), with one target per line. For example:

```
OBJECT1, 00:00:00.00, -00:00:00.00, 9.5, V, Science, HighPriority
OBJECT2, 16:00:33.14, -30:02:32.11, 12.5, V, Science, LowPriority
HD10700, 01:44:04.08, -15:56:14.9, 3.49, V, Standard, RadVelStandard
BkpTarget1, 05:12:34.56, -22:45:11.2, 5.8, V, Backup, Backup Program
```

Applicants are encouraged to verify the uploaded target list before final submission to ensure that all information has been correctly loaded by the submission system.