

DISCLAIMER:

This is a standard proposal for NOIRLab-SOAR. I have used their LaTeX templates for the attachments (available [here](#)), but since they are not accepting standard proposals now, **the main form is not available**. I did my best to figure out what information is expected in the form using their [instructions PDF](#) and [FAQ](#), as well as an old proposal that I was a part of for SOAR, though it was sent to the Brazilian TAC (slightly different form) and **is not at all related to the topic of the proposal I wrote for this course**. I also used a few resources I found online about proposal writing ([1,2,3,4,5](#)).

Along with the main files for the proposal (form, Standard Proposal and Team Information, as requested by NOIRLab), I have attached a few files. “targets.csv” is a file that could be directly imported into NOIRLab’s Time Allocation System with some relevant info for the observations (coordinates, exposure times, etc). The other files are unprocessed (or partially processed) data about the strong lensing systems. I also added the code to process the data, which includes the calculation of necessary exposure times, following [this](#).

For some context, my master’s thesis was about the use of deep learning based methods to perform fast and automated parameter estimation in strong lensing systems ([here's a repository with some unfinished work](#)), and most of the real data I used to validate my algorithms was from Zaborowski et al. It really sucked that I didn’t have good ground-truth parameters to use, so that’s why I chose this topic. To be clear, my work was mostly on the AI side of things, not so much in the observational astronomy side (even though I painstakingly learned that you can’t get good results without knowing your astronomy), so I don’t really have a strong background in spectroscopy (or any astronomy in general, I’m a Physics PhD student).

Lastly, it felt awkward writing a proposal with only myself as the author, so I added Gautham in the proposal. The Team Information attachment is mostly gibberish. Obviously, if I were writing an actual proposal I would go after the relevant information, but I really don’t think figuring out Gautham’s past experience with NOIRLab was part of the goal for this assignment. Still, it is correctly formatted gibberish, so I hope that’s worth some points.