

Minutes of SHARK-NIR Planning Meeting

October 12, 2023

(version 2)

Attendees: Luca, Jacopo, Alessandro L., Daniele, Davide R., John, Fulvio, Glenn, Joe, James, Jenny, Al, Brandon, Xianyu, Dave, Elena, Pat, Sam, Simone, Tania, Matthieu

1. Run Summary

- a. Oct 1: Lost to weather.
- b. Oct 2: Opened, but poor and variable seeing.
- c. Oct 3: Good conditions; at or below one arcsecond and stable.
- d. On that third good night, good progress was made commissioning long-slit spectrography.
- e. There are two slits: 100 and 200 mas, respectively.
- f. More information about SN spectrography is covered in section 7.3 of the [SN Description](#).

2. Issue with large offsets

- a. On the third night of the run, skip frame and loop opening problems occurred following large offset commands.
- b. More detail is given in [this report](#) from Juan Carlos.
- c. After discussion, the following path forward was agreed on:
 - i. For Z offsets, continue using the AO command that moves the bayside stages.¹
 - ii. For XY offsets, switch to using the TCS command (which moves the telescope in coordination with the bayside stages) instead of the AO command (which moves the bayside stages).²

3. Presets

- a. The LBTI user interface being used to send TCS presets is not capable of sending those presets in position angle mode. (Having no rotator, LBTI typically issues parallactic angle presets.)
- b. For the last run, the OSA produced an IRAF script to work around the problem.
- c. The LBT software group is developing a generic user interface, for use by both SHARKs and potentially other instruments, that will allow users to issue IIF commands, including presets in position angle mode.
- d. The LBT software group will work with the night operations staff on layout and design for this new tool.
- e. The new user interface should be available in the near term, but not necessarily in time for the next run (in which case, the IRAF workaround will again be used for issuing parallactic angle presets).

4. Spectroscopy

- a. Several AO and TCS efforts are underway to enable AO spectroscopy with LUCI (e.g., improve dither accuracy, reduce pupil wobble, etc).

¹ The implementation for Z AO offsets properly handles making small steps when necessary.

² When using the TCS to make a large XY offset, a single command is sufficient; there is no need to break the offset into smaller intervals.

- b. Will these same improvements be required for SN spectroscopy?
 - c. The SN rotator is independent of the AGW (i.e., no derotator for the AO path is required), which could be relevant.
 - d. More will be known after analysis of the spectroscopic data collected on Oct 3.
5. SN during INAF block (14-20 Oct)
- a. SV will be using second halves when conditions are good for AO.
 - b. SN will share on those occasions.
 - c. LBT is working to arrange the additional AO support that will be required.
6. Fourier Mode
- a. The software changes are ready, but scheduling on-sky testing before the run starting on Oct 24th will probably not be possible.
 - b. The SN team agreed to use some of the commissioning time during the run for the on-sky testing of the Fourier command.
7. Next SN run
- a. 24-29 Oct (6 nights).
 - b. Shared with LBTI (not SV).
 - c. A mix of commissioning and science is planned.
 - d. Commissioning can take place both:
 - i. Toward the end of a given science observation.³
 - ii. After the Taurus-Auriga field has set (approx. 3:00 AM).
 - e. Who, where, when
 - i. Seven-person team: Jacopo, Luca, Simone, Tania, Alessandro, Fulvio, and Daniele
 - ii. Full team at the summit for all 6 nights.
 - iii. First time participants (Fulvio and Alessandro) should coordinate with David Carroll to receive the required safety orientation.
8. Computer system administration
- a. Alessandro is the lead person for system administration of the SN computers on the mountain.
 - b. The LBT IT group is in the process of checking all summit computer systems to be sure network configurations are correct.
 - c. SN team will provide Stephen Hooper with the login credentials required to perform this check.
9. December run
- a. 29-Dec - 2-Jan; 4-Jan
 - b. Most of the team will participate remotely from Italy.
 - c. Two persons (Tania and Simone) will be at LBT, plus possibly one other.
10. Next Meeting: November 16th, 0900 MST.

³ More time on each target is required by LBTI than SN to achieve the science goals. So, during the first (science) portion for SN they can use already-commissioned masks (gaussian and shaped). Afterward, on the same target, the being-commissioned masks (e.g., four quadrant) can be used.