

SALT HRS
Status Report to SALT Board
David Bramall and Ray Sharples, 22nd May 2014

1 Current status

HRS is currently fully available for science operations and, with the new Astronomer GUI available, it can now be operated by the SALT Astronomers without the support of the Instrument Scientist. The instrument was taken out of service briefly in April to investigate and fix a fault that caused a deterioration in the reliability of the mode selection drive.

2 Progress Update

2.1 Commissioning Phase III

Phase III of commissioning took place from 8th-29th May with one CfAI Engineer on site, primarily to complete the observing software system.

- The full software suite (including Astronomer GUI) has been delivered. Two SALT staff are fully trained in its operation and will in turn roll out training to all SAs. The acceptance test plan was not formally completed (due to lack of time) but it will be run remotely in the near future.
- One small piece of functionality, namely windowed read out of CCDs, is still not present in the GUI. However, the 8x8 binned mode (requested by SALT but not in the original specification) has been implemented; it will be left to SALT to empirically determine gain settings for this (likely seldom used) mode from science frames.
- SALT software staff witnessed much of the code development and it is suggested that, in order to gain familiarity with the codebase, they should now be made responsible for minor code changes.

2.2 Outstanding Actions related to Commissioning Phase II

- The documentation pack is undergoing final revisions as requested by M. Wilkinson. Some additional datasheets and supplier information need to be included (mainly for the small optical components).
- The air conditioning unit has settled down and it has been decided not to make any further changes to the control settings. Some improvements to the thermal enclosure (including enclosing the ducting and better wrapping of the dewars) are to be implemented by Tech Ops before a final assessment of the thermal stability is made.
- Three calibrated iodine cells need to be provided. We are in the process of commissioning a new batch of three cells which we plan to calibrate in one go and then retire the existing cell, rather than hot-swapping cells as originally planned
- The dewar hold time is still under investigation. We need to have a 6-month period of uninterrupted operation to check this. At present the red system requires more frequent pumping due to the need to replace a filter/dryer unit on the cold-head compressor (a regular maintenance task that needs to be scheduled). Since we do not want this to delay the final instrument acceptance, we have suggested that SALT hold back the cost of the ion pumps (~£5k for 2 pumps) from the final payment until the vacuum performance is verified or otherwise. Alternatively, if SALT would prefer to purchase the ion pumps earlier as a risk-mitigation strategy, the consortium would be prepared to share the cost 50:50.
- The spare cryo-cooler will be refilled with the same refrigerant as the working systems, now that this has been approved by the BEC.
- An update to the commissioning report will be provided once data taken during Commissioning Phase III has been analysed.