SAAO DIRECTOR'S REPORT

SALT BOARD MEETING #38

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1. SALT after Darragh

As we are all aware, Darragh O'Donoghue passed away in June after an extended struggle with pneumonia and other infections. This is a devastating loss to all of us personally, and to SALT corporately. There is no individual who can replace Darragh's widely varied expertise or his deep commitment to SALT. We will all dedicate ourselves to following his shining example, and endeavor to make SALT everything that he wished it to be. As I said at his memorial service, we shall all strive to follow our "inner Darragh" in both our professional and our personal lives.

We have begun to organize ourselves to pick up the tasks that Darragh was working on. SALTICAM and RSS (visible) are fully documented and the operations team has the capacity to maintain these instruments. The project to replace elements of the RSS collimator (now on hold) has progressed to a point where Darragh's optical design input has been completed and Ockert can finish the project. Eric Depagne has taken over HRS acceptance procedures. Petri Vaisannen has taken the lead on the priority project management. The calibration system upgrade is done and working properly. Janus Brink has taken the lead on the RSS guider upgrade project; some additional optical design is needed, but can be done by in-house SAAO/SALT talent. Jack Hughes has agreed to take over supervision of the SALT Risk Register with the assistance of Lizette Labuschagen. David Buckley will supervise the production of the SALT annual report with the collaboration of IUCAA colleagues. Jack Hughes will continue the development of the SALT strategic Plan.

Some of the biggest holes that remain to be filled are the NIR collimator design and the new spherical grating spectrograph. We hope that Wisconsin can provide support for the NIR collimator and the fiber IFU to feed it. We will explore the possibility of hiring an astronomer at SAAO with fiber experience. Lisa Crause will take the lead on continuing the STGS project, with close collaboration with Chris Clemens.

2. FINANCIAL ISSUES

One of Darragh's greatest concerns was that SALT would move into what he referred to as "oil refinery mode": without adequate development funding from the partners, the observatory would continue to function with its current suite of instruments and turn out data, but with no strategy or resources to provide the continuous renewal required to stay at the forefront of modern astronomy, SALT would stagnate and atrophy. It will take a serious commitment from all the partners to avoid this fate. As I pointed out in my previous report to Board Meeting 37, SALT is hugely underfunded compared to other major observatories. In the past six months we have struggled mightily to deal with the constrained budget, the defaults of two partners, and the failure of most partners to contribute to the development fund. These problems cannot be avoided any longer, and at this Board meeting the partners need to finally find a real solutions to these issues. LIzette will outline the situation fully in her reports and propose ways forward. I encourage everyone to come to this meeting with creative solutions that will address our problems and that will keep SALT a powerful resource for the future.

3. SALT OPERATIONS

The telescope is highly productive and operations have settler into a routine. Poor winter weather has taken its toll, but the 2015-1 semester has set a record for number of blocks successfully completed!

The HRS acceptance committee completed its review and recommended to the Board that the instrument be accepted, which was approved. This is a major milestone, and the SALT operations group is now free to implement software upgrades that should improve the operation of the instrument. There is still no formal pipeline for reducing HRS data, and this continues to hamper productivity of scientific results. Anja Schroder has been contracted for three months of work to apply the ad-hoc code that Steve Crawford has produced to all the HRS data in the archive and deliver the processed data to the PIs. We have recently received a proposal from Heriot-Watt University in Edinburgh to provide a demonstration of a laser comb for HRS calibrations. The equipment would be installed by H-W in January-March of the coming year, and then used for three months of shared-risk science observations.

All the components for RSS polarimetry have been restored to the instrument, and commissioning is now proceeding under the direction of Steve Potter. We expect routine polarimetric operations to commence soon. Ken Nordsieck and Steve P are collaborating on a polarimetric reduction cookbook that should allow users to reduce their polarimetric data more easily. The project to design and implement a new guider for RSS has been started, with Janus Brink leading. This would provide two guide probes, to stabilize rho guiding and greatly improve MOS performance. The guiders are based on the HRS guider, and should be much more sensitive than the current guider. The RSS medium resolution Fabry-Perot etalon has significantly degraded in spectral resolution, and has been removed from the telescope for more evaluation in the lab. It may well need major repair by the vendor with new coatings and other upgrades. There is no cost estimate yet, but it will likely be in the range of $30K or more.

Ismail Osman resigned his position as SALT Business Manager and Company Secretary in June, due to family matters. Lizette Labuschagne has been appointed to take over Ismail's duties, in addition to her role as SALT CFO. She is working from an office in her home in Pretoria, with regular visits to Cape Town. This arrangement is working well, and we have concluded a contractual agreement with her.

The NRF has named Lisa Crause of the SAAO to the open South African position on the SALT Board of Directors. Her extensive experience with SALT will be a strong asset for the Board.

4. SAFETY and SECURITY

There was an auto accident driving staff from Sutherland town to the observatory. The vehicle skidded on a patch of ice on the road, went off the pavement, and turned on its side. One of the (non-SALT) SAAO passengers had arthroscopic surgery at the Worcester hospital for a torn knee meniscus. The surgery was successful, and the employee has returned to work after full recovery. The other five occupants had only minor bumps and bruises and were examined and released for duty. The vehicle has been written off and will be replaced under insurance coverage. There were no indications of improper driving or vehicle malfunction. We will consider acquiring equipment and materials to deice/sand the observatory roads in winter. The Sutherland clinic could not supply crutches and a knee brace for the injured passenger, so these had to be sent from Cape Town the following day. This indicates the poor state of the clinic in town. SAAO and the NRF continue to pursue ways to upgrade emergency services at the observatory. A number of observatory staff received first aid training recently. SAAO anticipates receiving additional NRF funding to equip one of its vehicles as an ambulance and to provide advanced first aid training for several Sutherland staff. This should address the long-standing problem of emergency medical care and evacuation from the observatory.

5. PUBLICIZING SALT

The Science with SALT 2015 Conference that followed the previous Board meeting was a great success. The Minister of Science and Technology opened the event, and we have had very positive feedback about her impressions. A wide variety of SALT science was presented, demonstrating the increasing productivity and effectiveness of the telescope. Thanks to the members of the Scientific Organizing Committee and the Local Organizing Committee for their efforts to organize a first-class event.

There was a significant South African presence at the IAU General Assembly in Honolulu in August, but no formal SALT booth or presentation. Since SALT is suffering from reputational dysfunction, the Board should consider a more active public face for the telescope at future major meetings.

The draft 2013 SALT Annual Report has been circulated and looks great! Many thanks to all who have worked on it. The lack of response by Directors to the repeated requests for input to the 2014 annual report is very disturbing. The DST and NRF view this report as an important tool for SALT self-publicity, and will raise serious concerns if a full report is not produced in a timely manner. Every partner should produce at least one science highlight for the report as soon as possible, and seek other ways to contribute to the publication.

6. SOUTH AFRICAN MATTERS

The SA Astronomy Advisory Council held a meeting on June 27, followed by a South African Astronomy Town Hall meeting on June 28/29. The major item at both meetings was the South African Strategic Plan for Astronomy, which has not yet been released by the Minister of Science and Technology, but which now appears to have been finalized. The Astronomy Sub-Agency is developing an implementation plan to carry out the strategy. The SALT Task Team met at SAAO on July 28, with an extended discussion on SALT after Darragh, and also discussion of financial problems due to partner defaults and underfunding of the development fund. The NRF will propose a Darragh O'Donoghue SALT Research Chair, to be located at a SA university jointly with SALT/SAAO. The NASSP Winter School was held at SAAO in June; 40 students from historically black universities attended and received an introduction to astronomy; the goal is to attract larger numbers of black students into the NASSP program and eventual astronomy careers.

The South African proposal to host the 2021 IAU-GA in Cape Town was not accepted (the meeting will be held in Korea that year). South Africa had put together a strong bid package, with key support from the Minister of DST, and this outcome was a big disappointment. The IAU Office of Astronomy for Development, hosted at SAAO, was warmly supported by the GA. The office received a very positive recent independent review, and the IAU renewed the

OAD contract for 6 more years.

The NRF has just completed a major external review. The astronomy review panel was strongly supportive of the optical and radio activities of the NRF, but noted that SALT is suffering from a poor international reputation that needs to be addressed. The appointment of a new CEO for the NRF has been announced: Molapo Qhobela, a biologist with significant government experience. We anticipate positive relations with the new CEO.

The Parliamentary Portfolio Committee visited SAAO in September. The meeting was very positive. After the visit, the committee posed two formal questions, one of which concerned SALT. The question, and our response, was:

> Parliamentary Question 3424
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> Whether any measures have been put in place to ensure that there is further growth of the Southern African Large Telescope and its instruments; if not, why not; if so, what are the relevant details?
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> The Southern African Large Telescope (SALT) is an international facility with South Africa having a 33% share, all decisions on Strategy, operations etc. is therefore made by the Board of Directors of SALT. SALT has a Development Fund for the purpose of providing the resources necessary for continued development of the telescope and its instruments. In 2012, the Board resolved to seek contributions from the partners to a total of R75m after South Africa took the lead and contributed R25m. Each of the partners in the telescope consortium had committed to pay a pro-rata share of the fund in proportion to its shareholding in the telescope and a deadline for contributions of May 2016 has been set. IUCAA (India) had paid half of its share of R4m in 2014 whilst the once-off VAT refund of R1,3m to non-South African partners has also been transferred to this fund. The University of Wisconsin is developing the Near-Infrared Arm (NIR) of the prime focus spectrograph as an in-kind contribution to the fund; this instrument is scheduled for delivery within the next 2 years and will satisfy Wisconsin's share of the development fund. The National Science Foundation of the USA has contributed some $2m to the development of the NIR arm, the other US partners in SALT propose use this as partial fulfillment of their contribution to the fund. The NRF has requested the DST, through its country bilateral meetings, to encourage the other partners to contribute their share to the development fund to ensure that the current upgrade projects such as the Mirror Alignment System and the Tracker upgrade, are not prejudiced.

SAAO and SALT staff with management responsibilities underwent a 2-day training session in diversity and cultural sensitivity issues. The session was very productive and will help us address the transformation goals that are highly important for both organizations. The full staff will be trained in several more sessions by the end of the year. We anticipate that transformation and diversity considerations will play a leading role in all future SAAO and SALT appointments.

A group of Mexican astronomers visited SAAO, SALT, and the SKA during the last week of September. They had strong interest in SALT, and we discussed opportunities for them to purchase observing time and/or partnership shares in the telescope.

The SALT staff held discussion in September to develop a strategic plan for the telescope and to review and update the priority plan for projects to be undertaken. Both meetings were very productive, and will inform the Board meeting in November.

The South African Strategic Plan for Astronomy has (still) not been released by the DST Minister, but this is anticipated soon. The NRF Astronomy sub-agency is preparing an implementation plan that will specify the funding needed to put the strategy into effect. SALT should see benefit from the strategy, when it is accepted and funded.