

## Conference Summary

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The results presented at this conference demonstrate convincingly that SALT is producing excellent science after its recommissioning, and can do the cutting-edge research that its partners expect. I discuss a few of the most encouraging trends at SALT, and take note of the opportunities and challenges in the next few years.

*SALT Science Conference 2015*

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*Stellenbosch Institute of Advanced Study, South Africa*

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\*Speaker.

Summarizing all of the approximately 55 papers and 25 posters presented at this conference in just 10 minutes would allow me about 7.5 seconds per presentation. Rather than attempt that pointless exercise, I want to step back and look at what is making SALT the remarkable and successful telescope it is.

Unlike every other large telescope on Earth, SALT was built to be both a cutting-edge astronomical observatory AND an agent of change in South Africa. Before any science results were presented, Sivuyile Manxoyi described the enormously successful outreach and education efforts associated with SALT and SAAO, touching the lives of many thousands of learners of all ages, all over South Africa. Equally remarkable is the tourist mini-boom in Sutherland due to SALT. Dozens of bed-and-breakfasts have opened, providing much-needed local employment. The B and B's resident astronomers and not-so-small telescopes show off the wonders of the sky to about 5,000 tourists every year. No one predicted this infusion of jobs and tourists to Sutherland before SALT was built.

A change that WAS predicted, and that is being fulfilled, is the transformation of the demographics of South African astronomers. South African astronomical conference photos of a decade or more ago are heavily dominated by white men. Contrast that description with the conference photo of 2015 here in Stellenbosch. The young, multi-racial society that is South Africa is mirrored in this conference's photo of nearly 100 active researchers. Young Africans, men and women, are succeeding as astronomers.

The South African Minister of Science and Technology, the Honorable Naledi Pandor, took careful note of these developments and gave SALT and astronomy in South Africa a strong vote of confidence. Her government's grasp of the science that SALT and SKA are doing, and of their transformative effects on South African society, are extremely positive and essential to SALT's continuing success.

The scientific presentations covered essentially every active field in modern astrophysics. Asteroids, QSOs, and everything in between are being studied with SALT. I lost track of the number of times the word "multiwavelength" was used by speakers. Objects discovered by surveys from the radio to high energy gamma rays are regularly being characterized by SALT. The synergies with ongoing radio surveys were particularly gratifying, and it was noted by multiple speakers that South African radio astronomers and their international partners could easily absorb 100% of SALT's time if it were available. The coming synergies with SKA were obvious to all.

A critical metric that will be watched by the astronomical community is the rate of publication of refereed SALT papers. The first two years' observed numbers are comparable to those of other large telescopes in their early days, though at lower costs per paper. It's clear that a lot of hard work will be needed to get SALT to the 50+ papers per year that it must produce to compete with the best in the world. There was a sense of confidence in the conference hall that this will happen.

The coming few years will see the installation on SALT of the primary mirrors' edge sensors, near-infrared spectrographic capability on RSS, and many upgrades and improvements to

the telescope and its initial suite of instruments. Multiple speakers noted that SALT could play critical roles in the era of JWST, LSST, CTA and SKA, but that a wider field of view and multi-object characterization capabilities would be critical. The SALT Board has taken note of this, and begun forward-looking discussions about SALT's capabilities after 2020.

There was widespread agreement that another SALT science conference should be organized in a few years. By then the telescope and its instruments will be producing results and papers at a rate comparable to those of all other 8 - 10 meter class telescopes.