Current Status of the Southern African Large Telescope

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SALT Science Data Manager

SAAO/SALT

How SALT Operates

- SALT is a 10m class optical telescope of similar design to HET.
- 91 1m segments compose the spherical primary
- Tracker at prime focus follows objects on sky and holds the Spherical Aberration Corrector (SAC) and instruments
- 13 partners include RSA, UKSC, IUCAA, GU, UW-Madison, RU, UNC, AMNH, UC, CMU, CAMK, DU, HET

SALT

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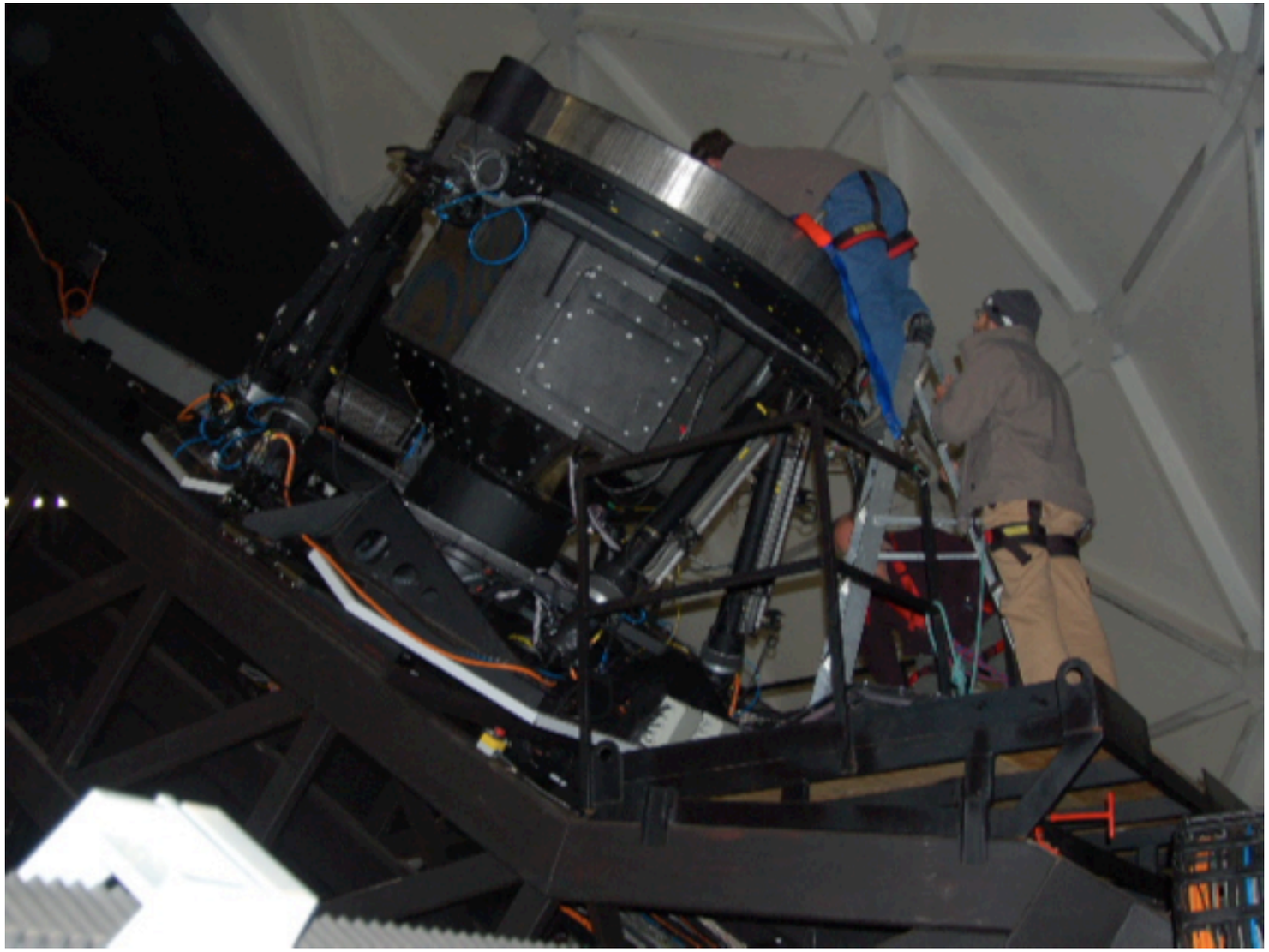

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SALT

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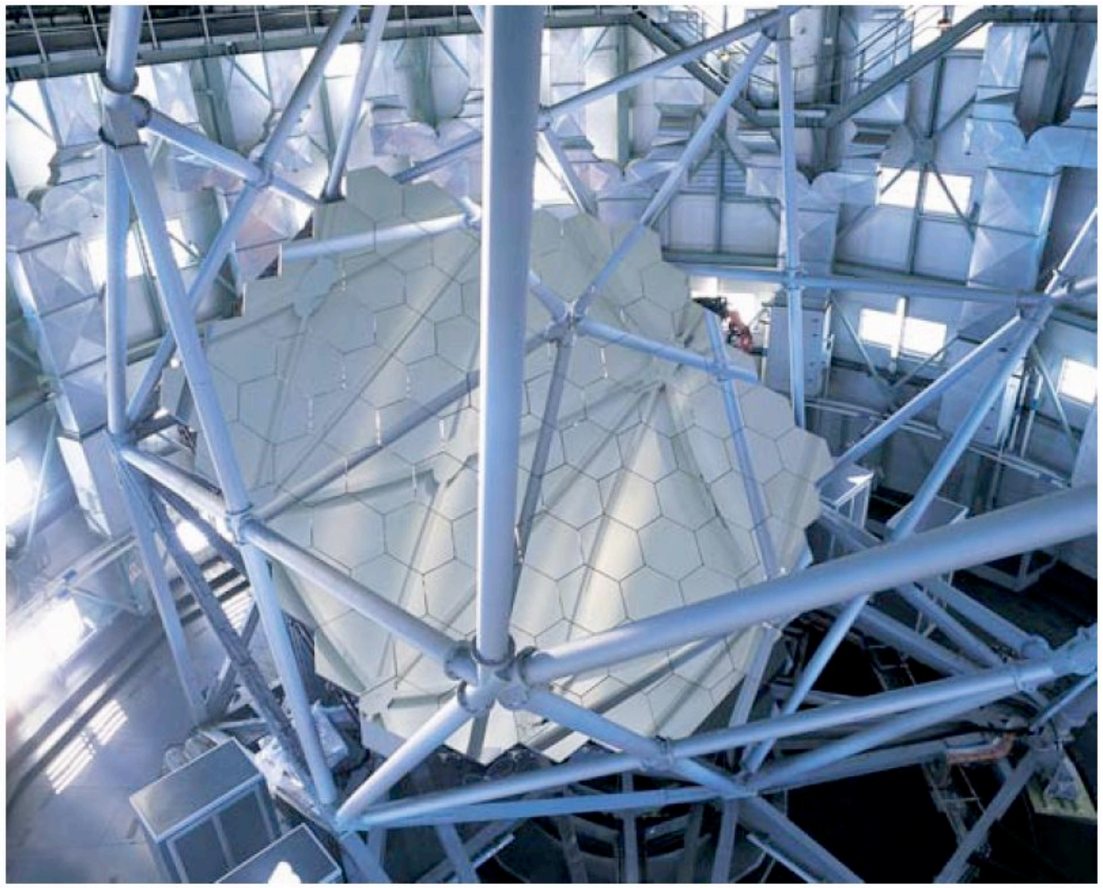
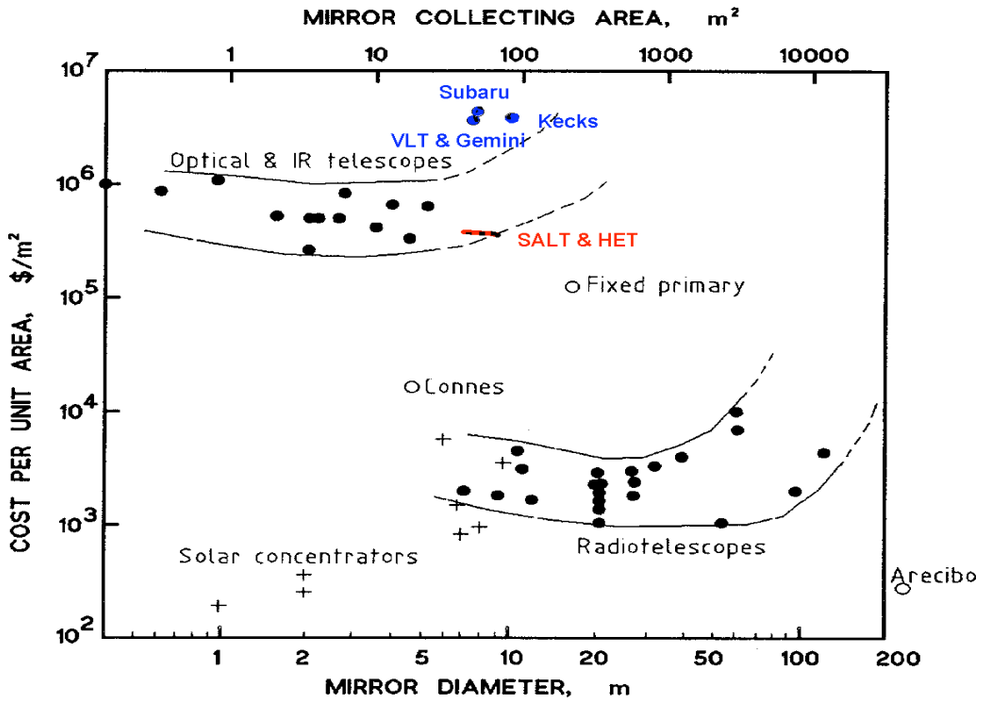
Why SALT is less expensive:

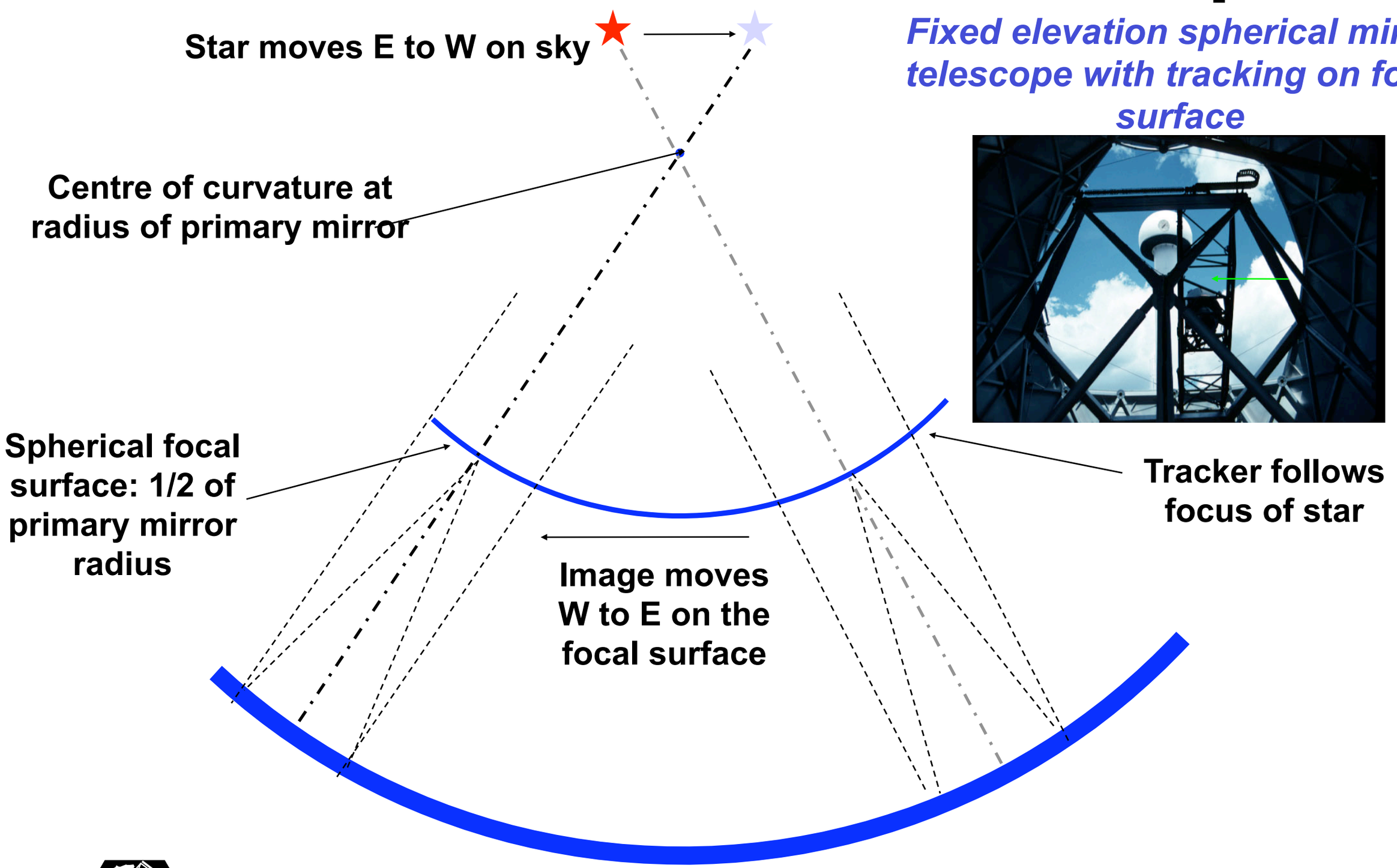
The primary mirror at a fixed angle allows for a more economical design





An optical analog of the Arecibo radio telescope

The Arecibo Concept



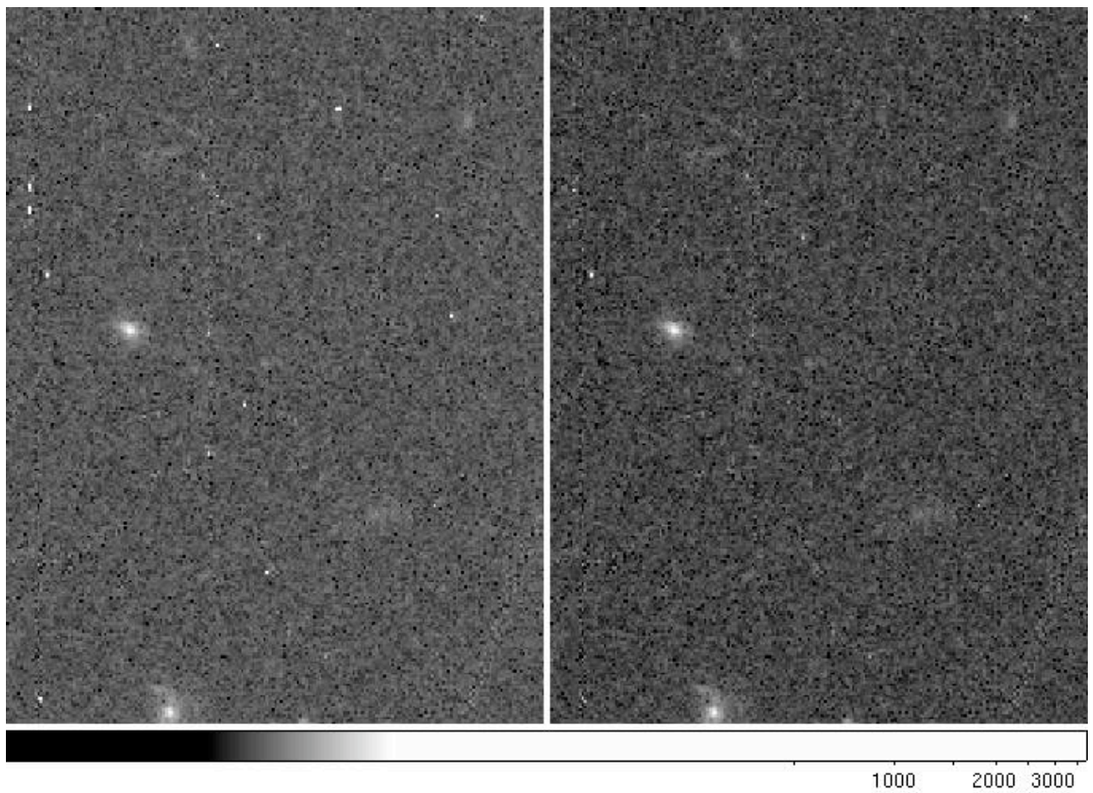
Fixed elevation spherical mirror telescope with tracking on focal surface

Astronomy Operations

- SALT Astronomers: Amanda Gibbs, Alexei Kniazev, Nicola Loaring, Encarni Romero-Colmenero , Timothy Pickering, Petri Vaisanen
- User Software: Steve Crawford, Christian Hettlager
- SALT Scientist: David Buckley
- SALTICAM: Darragh O'Donoghue
- RSS (Optical): Ken Nordsieck, Eric Burgh, Ted Williams

SALTICAM

Multi-mode imaging and acquisition camera. In full-frame mode, it has an 8x8' FOV. In slotmode, high-speed photometry (20 Hz) can be performed over a smaller field of view.



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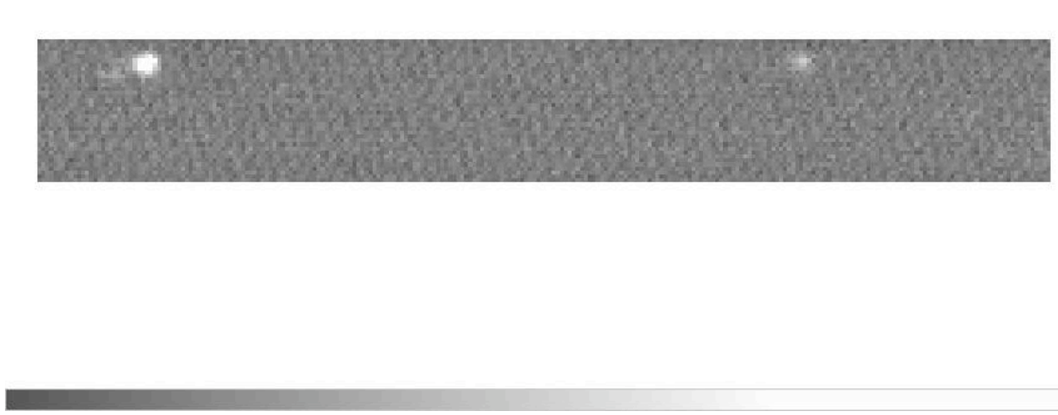
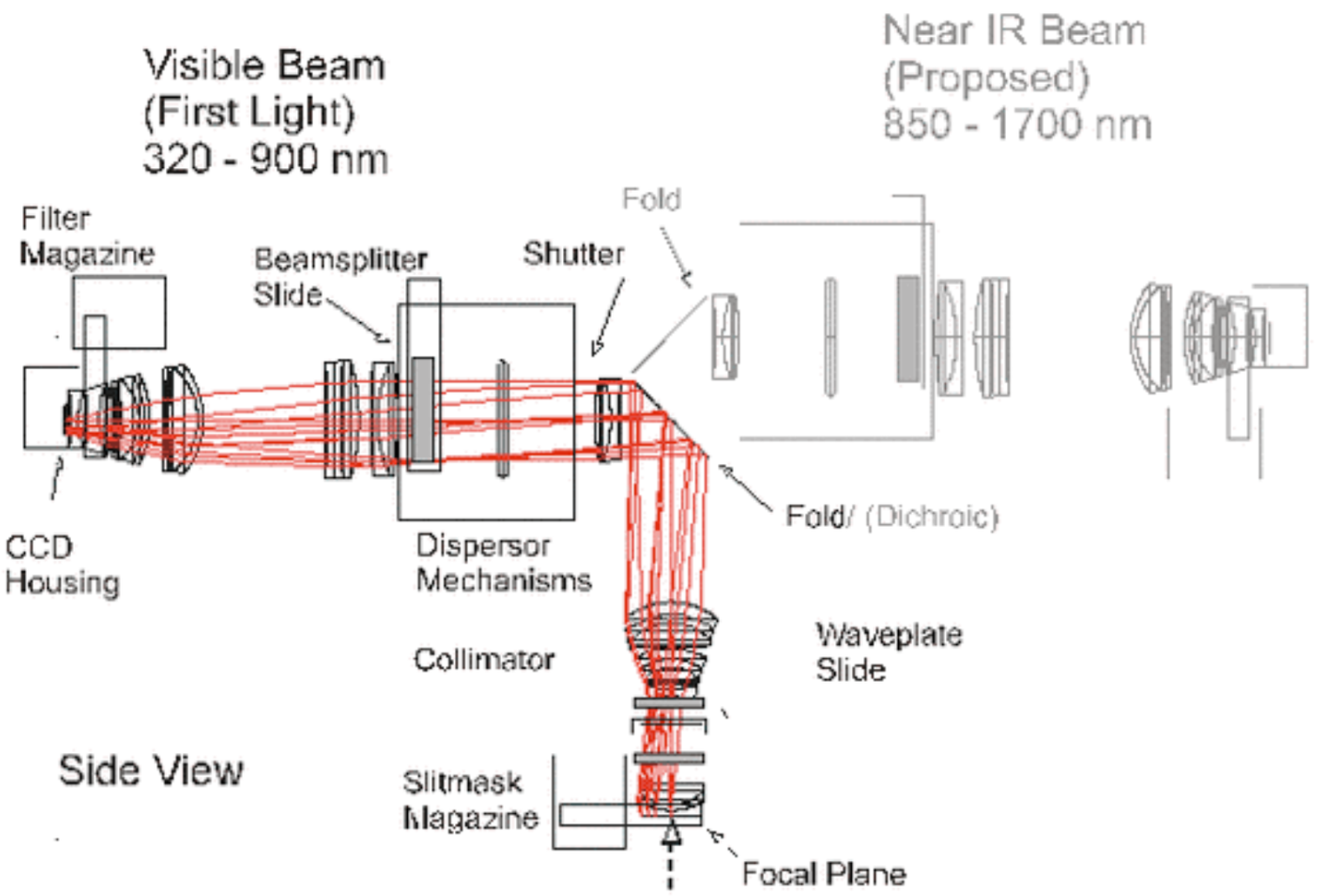


Robert Stobie



Highlights of RSS:

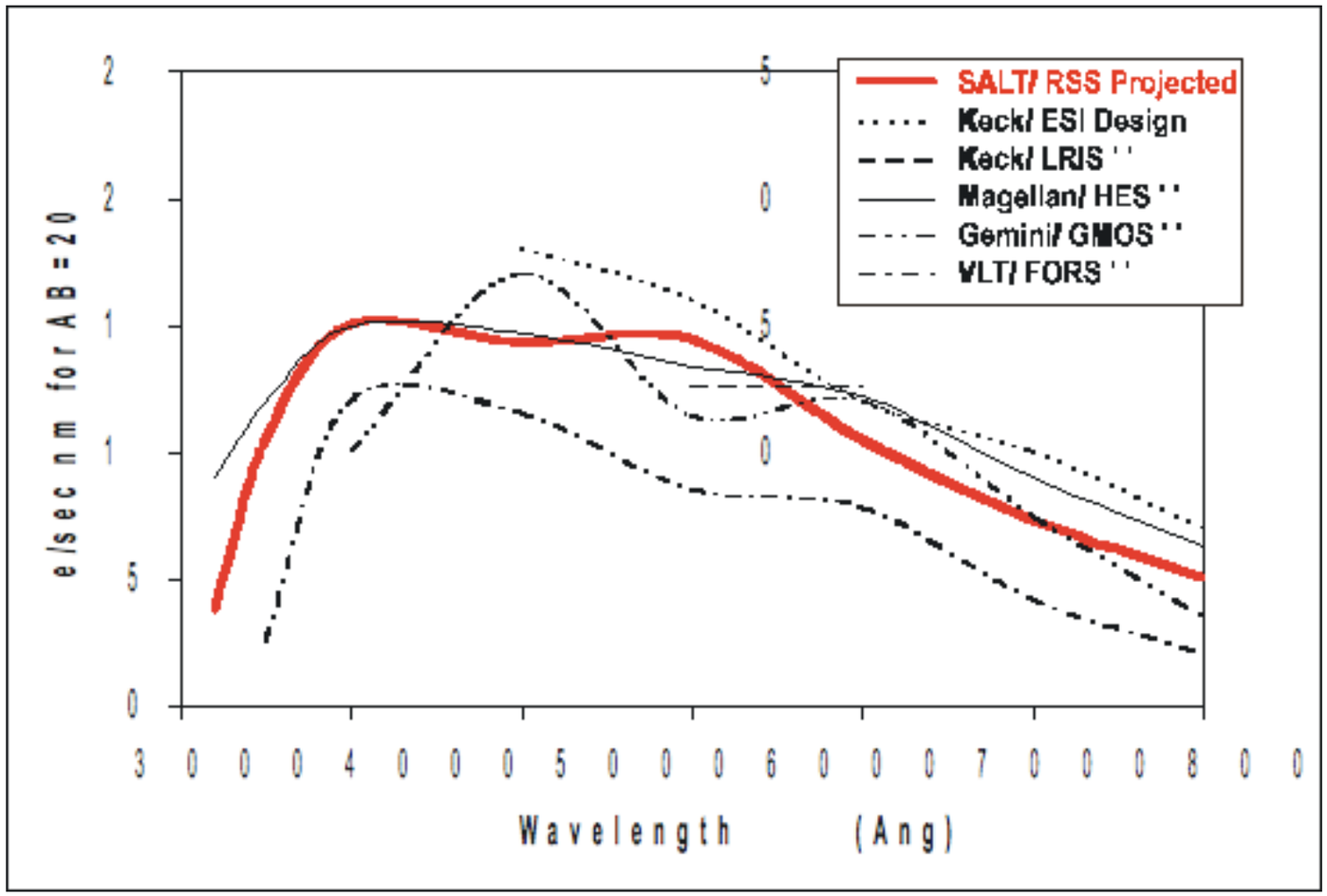
- UV Spectroscopy down to 3200 Å
- High throughput and resolution VPH gratings
- Fabry-Perot Modes
- Polarimetry
- High Speed

NIR beam: 2012

Optics configuration			Detector Configuration			
Config	Pol	Slit	Normal	Hi Spd	Shuffle	Drift
Imaging	No	No	**X**	x		x
	L,C,S	No	x			
		Multislit	**X**		x	
VPH Spectro-scopy	No	No	x			x
		Longslit	**X**	X	x	
		Multislit	**X**		X	
	L,C,S	Longslit	**X**		x	
		Multislit	X			
Fabry-Perot	No	No	**X**		x	
	L,C,S	No	**x**			

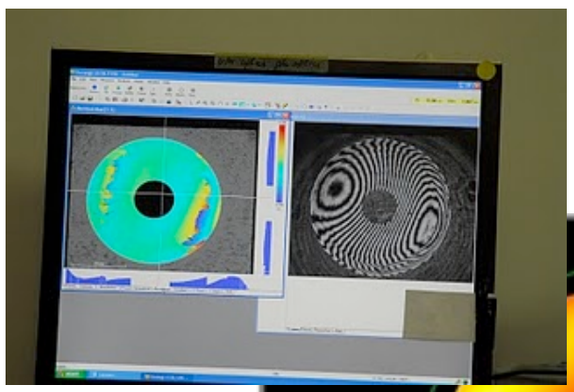
Progress at SALT

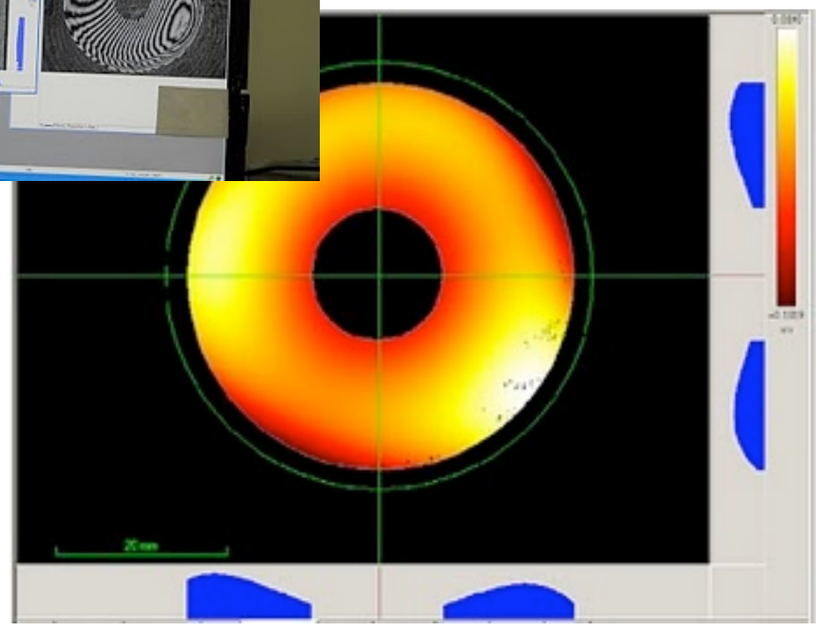
- RSS Throughput: The RSS was suffering from UV throughput issues related to the coupling fluid in the optics. The problem has been fixed and RSS is awaiting re-installation at the telescope



Progress at SALT

Image Quality: SALT has been suffering from variability, astigmatism, and a focus gradient. Significant progress has been made in identifying the issue and the Spherical Aberration Corrector is the primary culprit. The telescope has been offline since April 2009 to fix the problem. More detail can be found at: http://www.salt.ac.za/iq/the-salt-image-quality-story/





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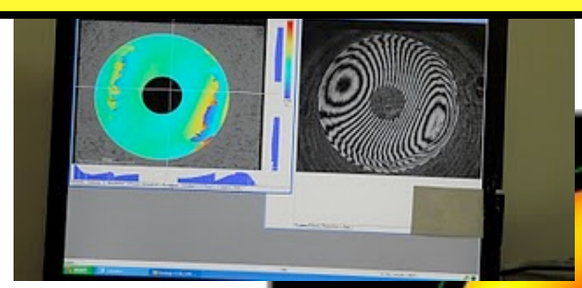
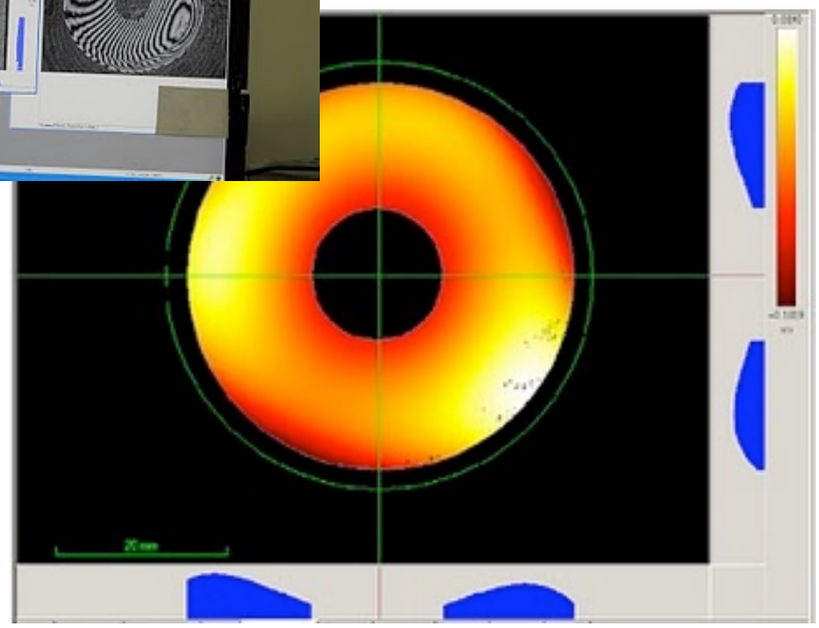
Re-commissioning is expected to begin later this year



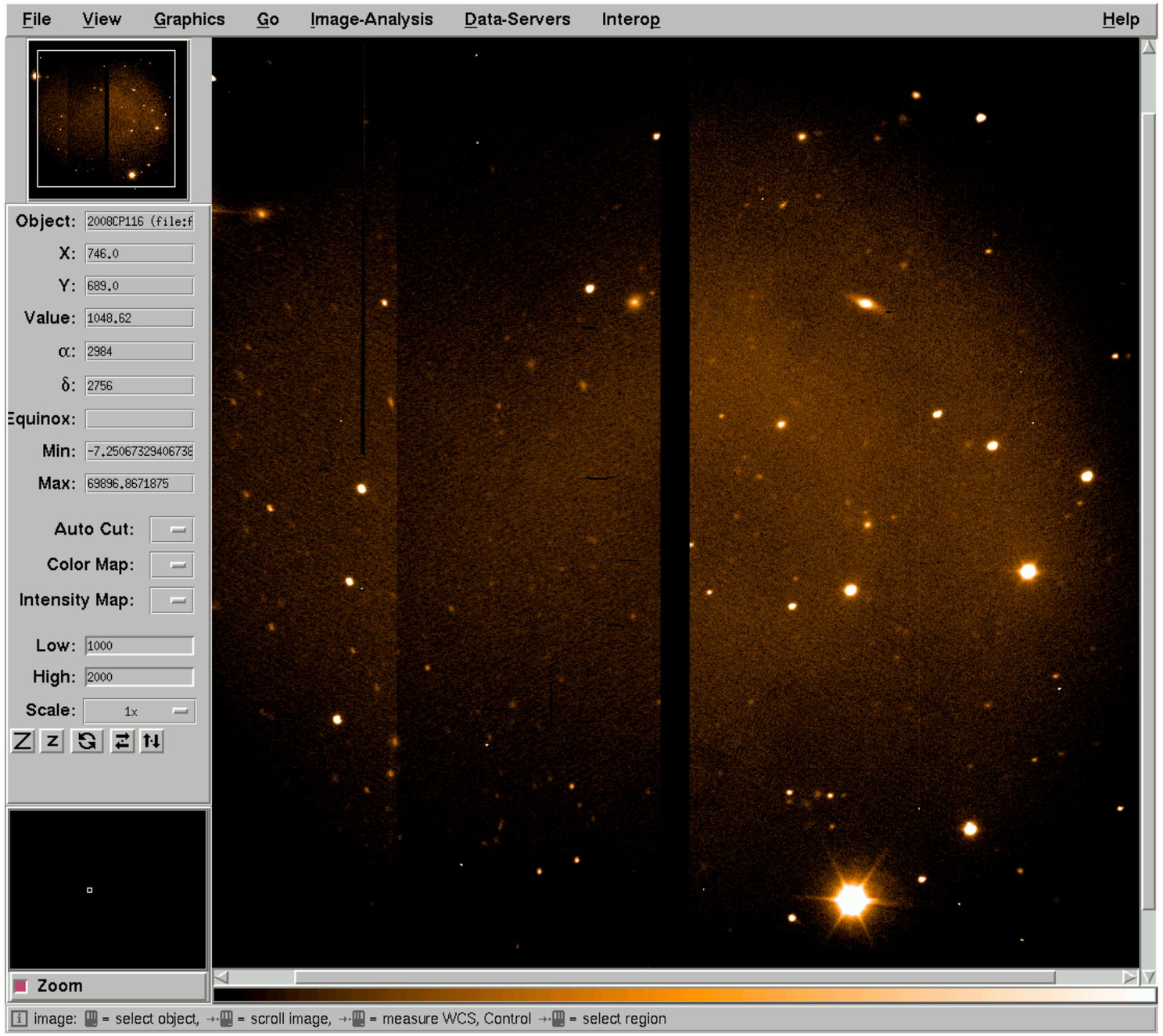


Science with SALT

Despite limited operations, SALT still has produced ~20 refereed papers so far since first light. These papers include papers with SALITCAM high speed modes along with early RSS data.

Near-Earth Asteroids

Kwiatkowski et al.
(2009, 2010)



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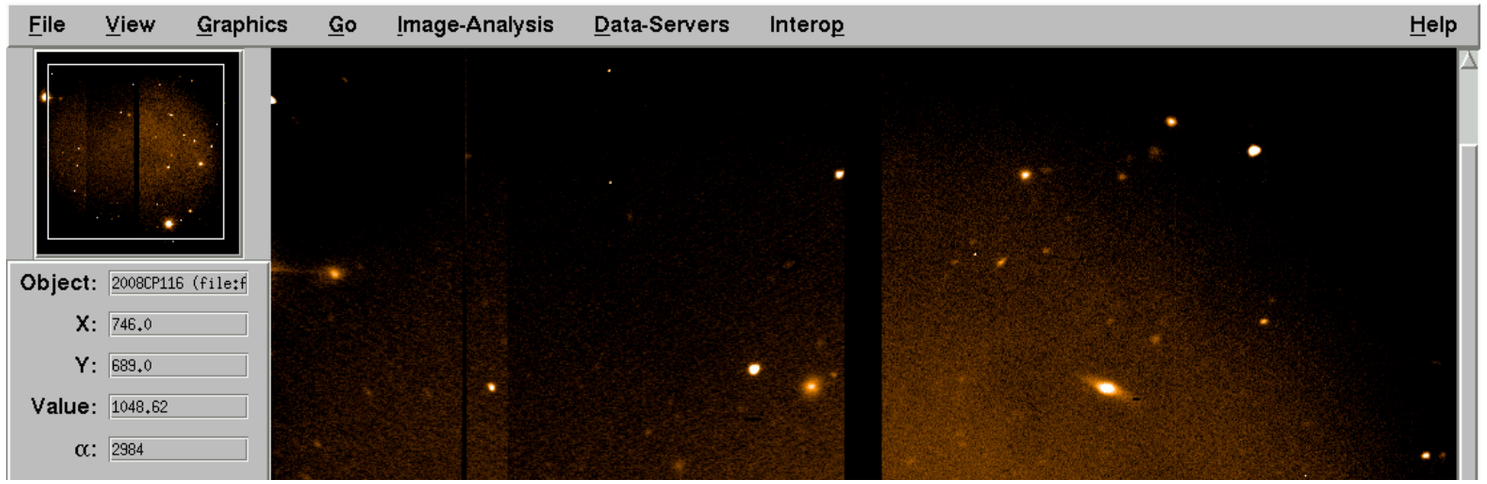

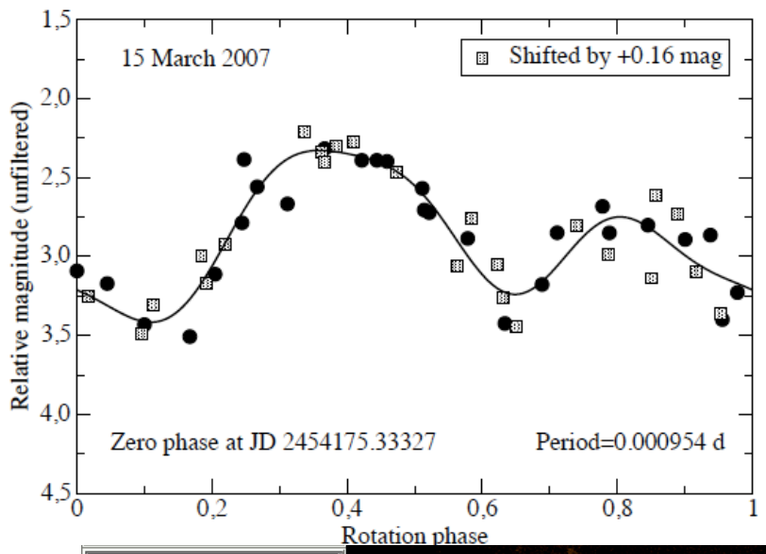

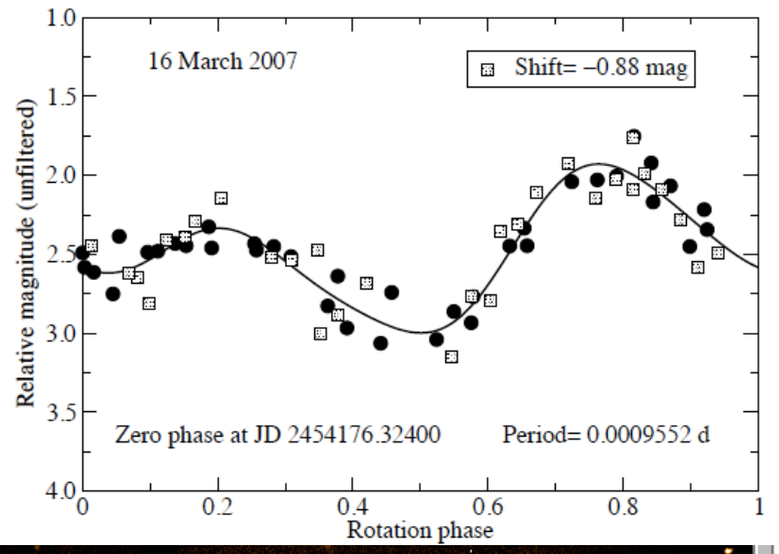

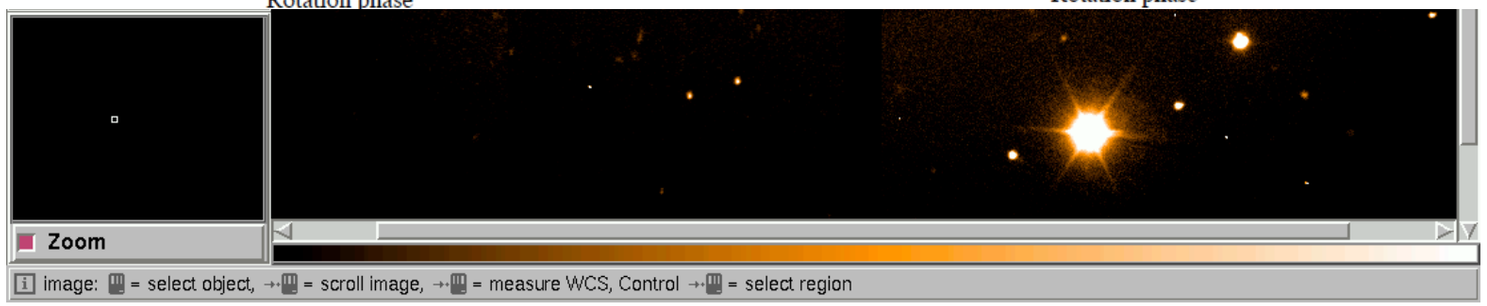

RSS Long Slit Spectroscopy of merging galaxies Vaisanen et al. 2008