IUCAA's Science Programmes with SALT

Astronomy research @ IUCAA

- QSO absorption lines and IGM: SDSS spectra upto r$\leq$20 mag available

- Deep field and high-z galaxies: Objects are usually compact and faint

- GRBs and host galaxies: Objects are usually compact and faint

- Morphology of galaxies: Mostly low-z bright galaxies

- Rapid variability of compact objects (X-ray connections)

- Followup of GMRT targets: mainly redshift measurements

- Open clusters & stellar spectral libraries: bright sources but good flux calibration required

Cycle-1 (1/5/2012 - 31/10/2012)

|	Title/PIs	Allocated hrs	completed %
1	Detailed studies of Unusual BALQSOs (RS & Patrick Petitjean)	12.0	38%
2	Time variability of complex BALQSOs (RS, Vivek & Petitjean)	32.5	41%
3	Searching for associated Galaxies at z~ 0.7 (Rahmani, Pushpa Khare & RS)	10.0	88%
4	Observing GRB host galaxies (Dipankar Bhattacharya, Rahmani & RS)	13.0	0%
5	High resolution imaging observations of galaxies (M. K. Patil & S.K. Pandey)	8.0	0%
6	Spectroscopy of LBG analogs at $z \sim 0.7$ (Swara Ravindranath)	2.0	0%
7	Starformation histories of Pseudobuldges (Ajit Kembhavi, Waghmare et al.)	4.5	78%
	Total	82	37%

Cycle-2 (1/11/2012 - 31/4/2013)

|	Title/PIs	Allocated hrs	completed %
1	Probing the Lyman-α emission in the proximate DLAs (RS, Petitjean & Hayley Finley)	30	40%
2	Spectroscopy of Spitzer/MIPS 24 μ galaxies... (Swara, Mobasher & Green)	10	0%
3	Observing GRB host galaxies (Dipankar Bhattacharya, Rahmani & RS)	6.0	0%
4	Spectroscopy of LBG analogs at $z \sim 0.6$ (Swara)	6.75	50%
5	Probing the unusual AGN... (Biju & Joe Jacob)	4.0	0%
6	Starformation histories of Pseudobuldges (Ajit Kembhavi, Waghmare et al.)	6.75	100%
	Total	63.5	35%

Cycle-1 (1/5/2013 -   )

|	Title/PIs	Allocated hrs	completed %
1	Probing the Lyman-α emission in the proximate DLAs (RS, Petitjean & Hayley Finley)	25	14%
2	QSO Galaxy pairs at $z < 0.3$ (RS, Vivek & Rahmani)	25	10.7%
3	Probing the unusual AGN... (Biju & Joe Jacob)	4.0	0%
4	Time variability of complex BALQSOs (RS, Vivek & Petitjean)	31.0	10.5%
	Total	85	11%

Spectrum of bright objects
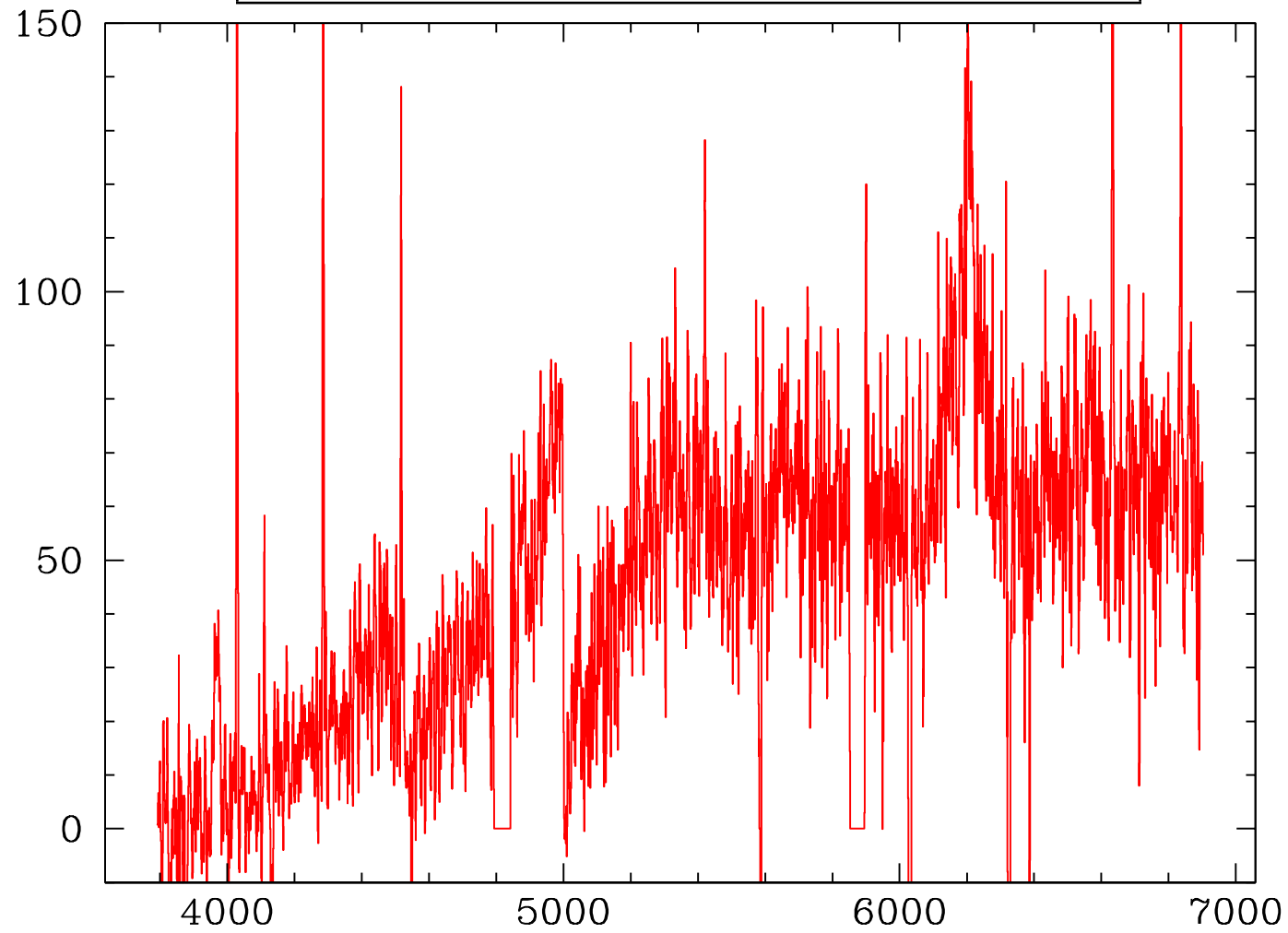

SDSS J1333
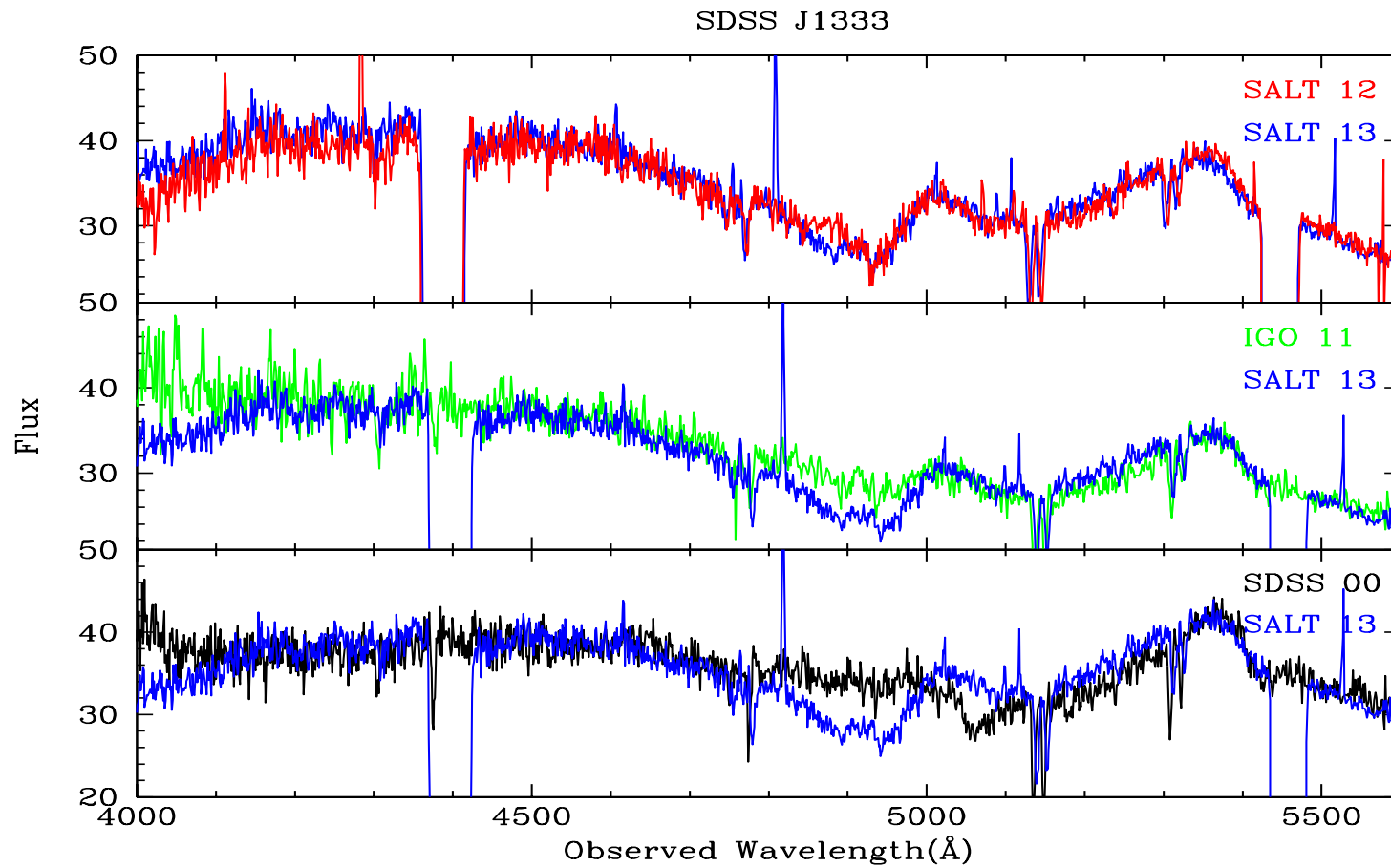
Spectrum of bright objects
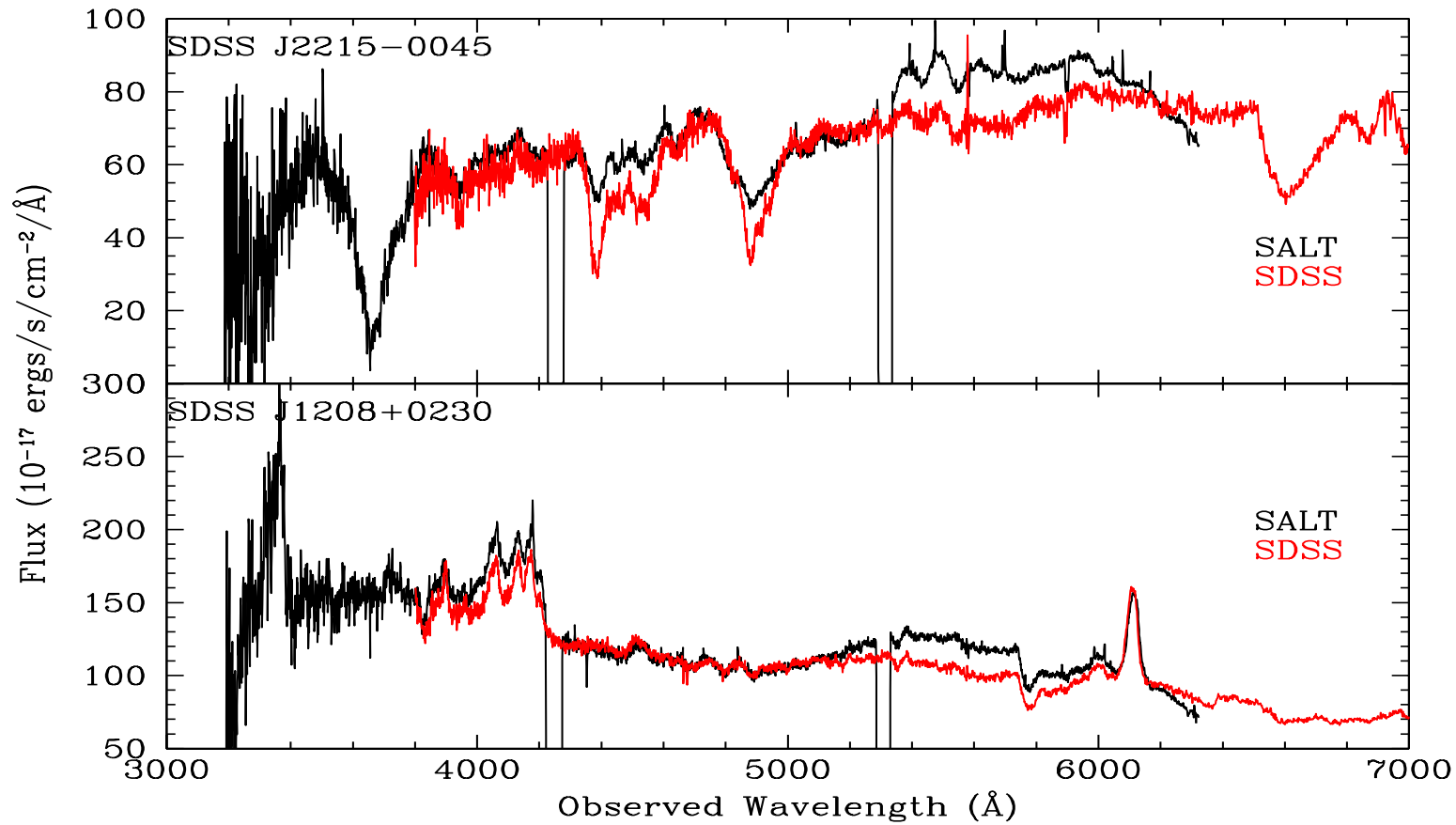
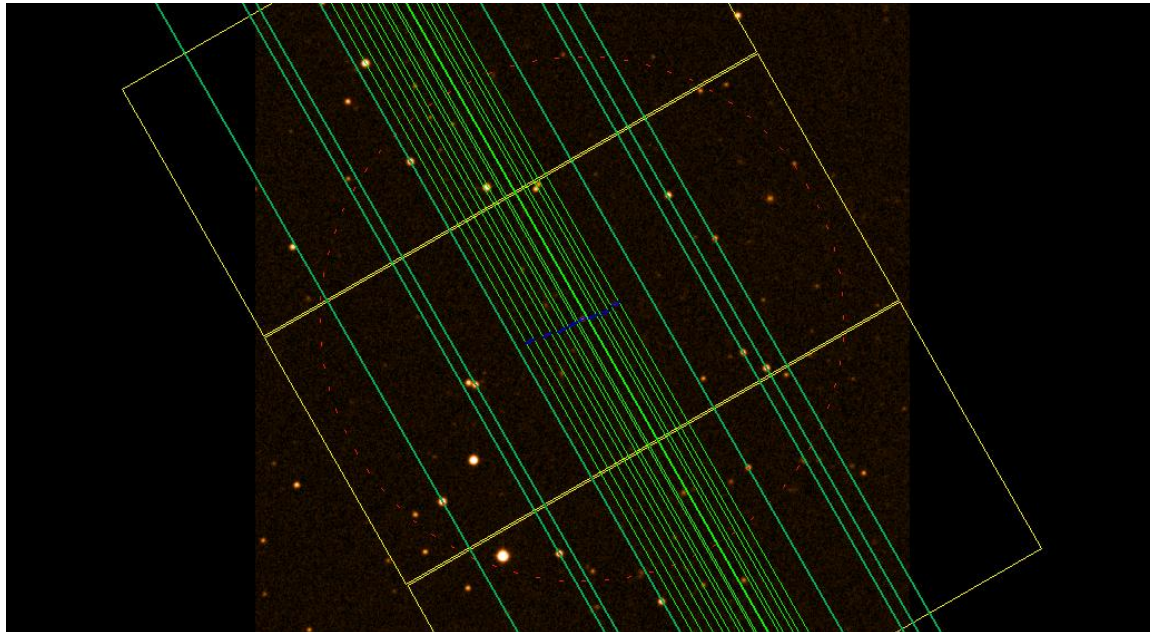# Strong associated Ly-α emitter
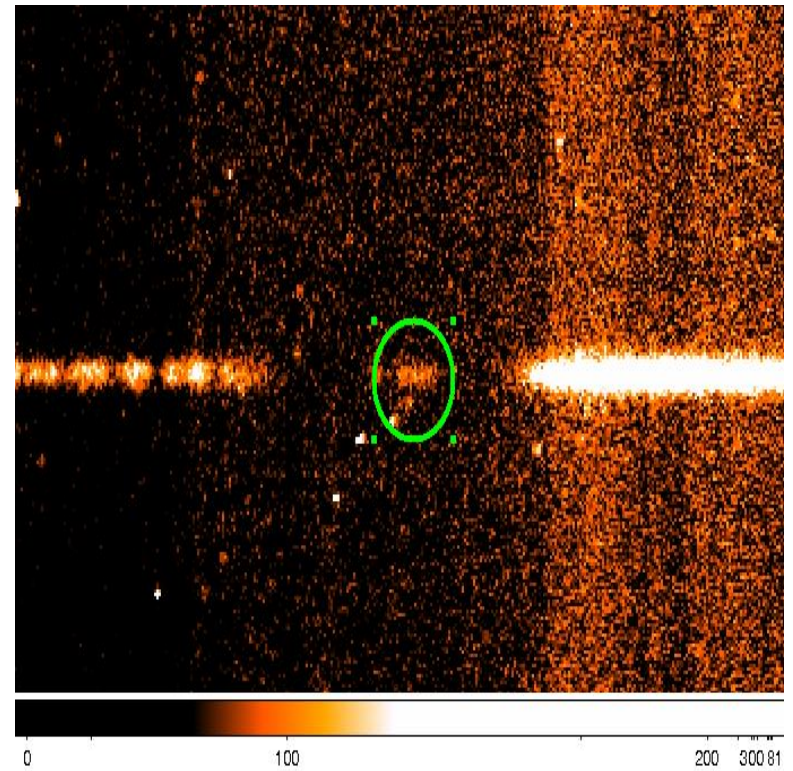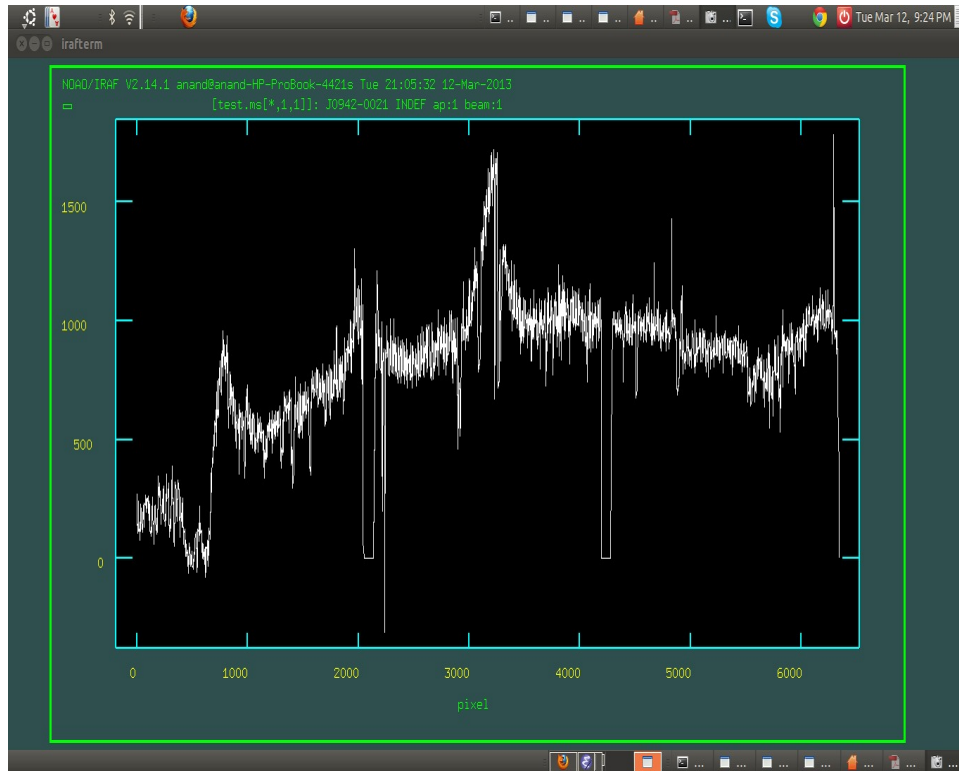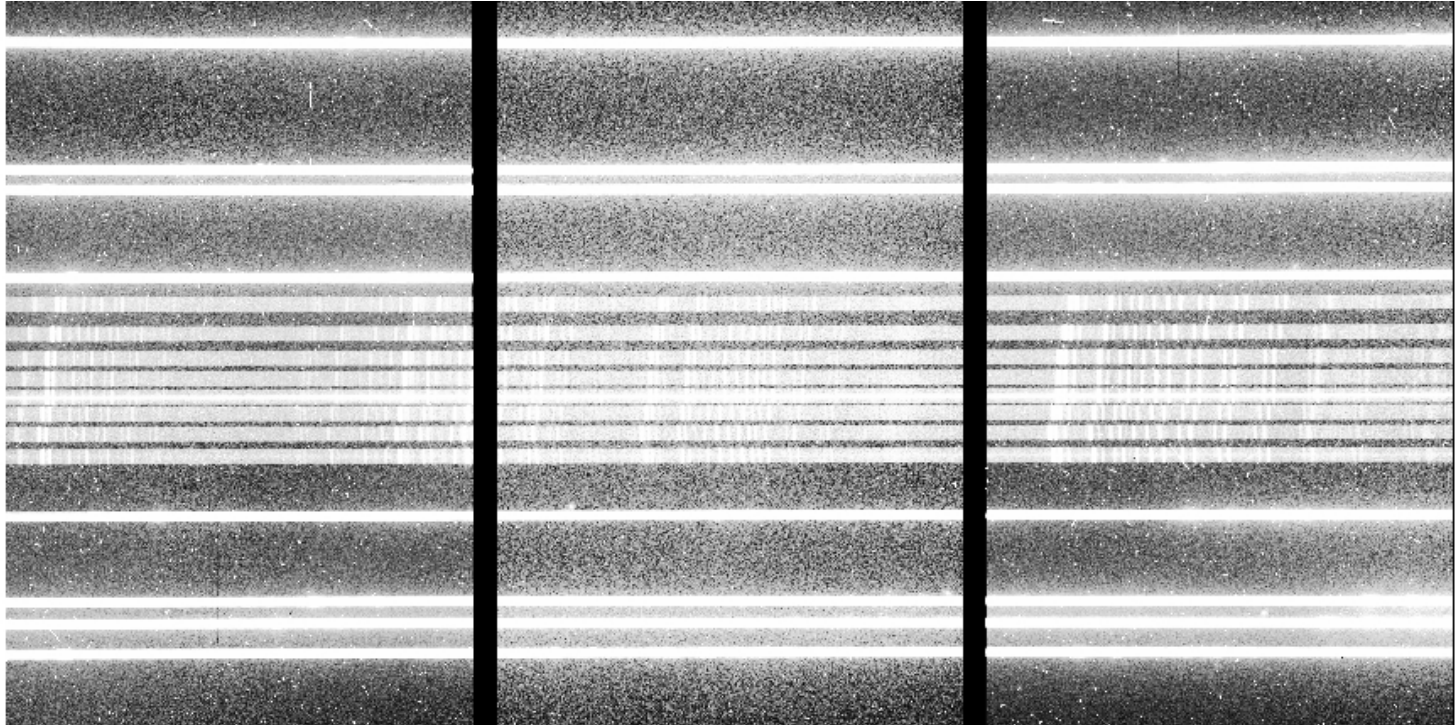
Faintest continuum spectrum

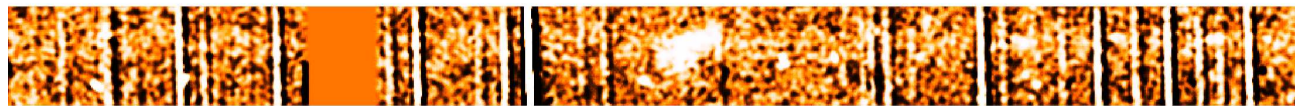# SALT: outflowing galaxy
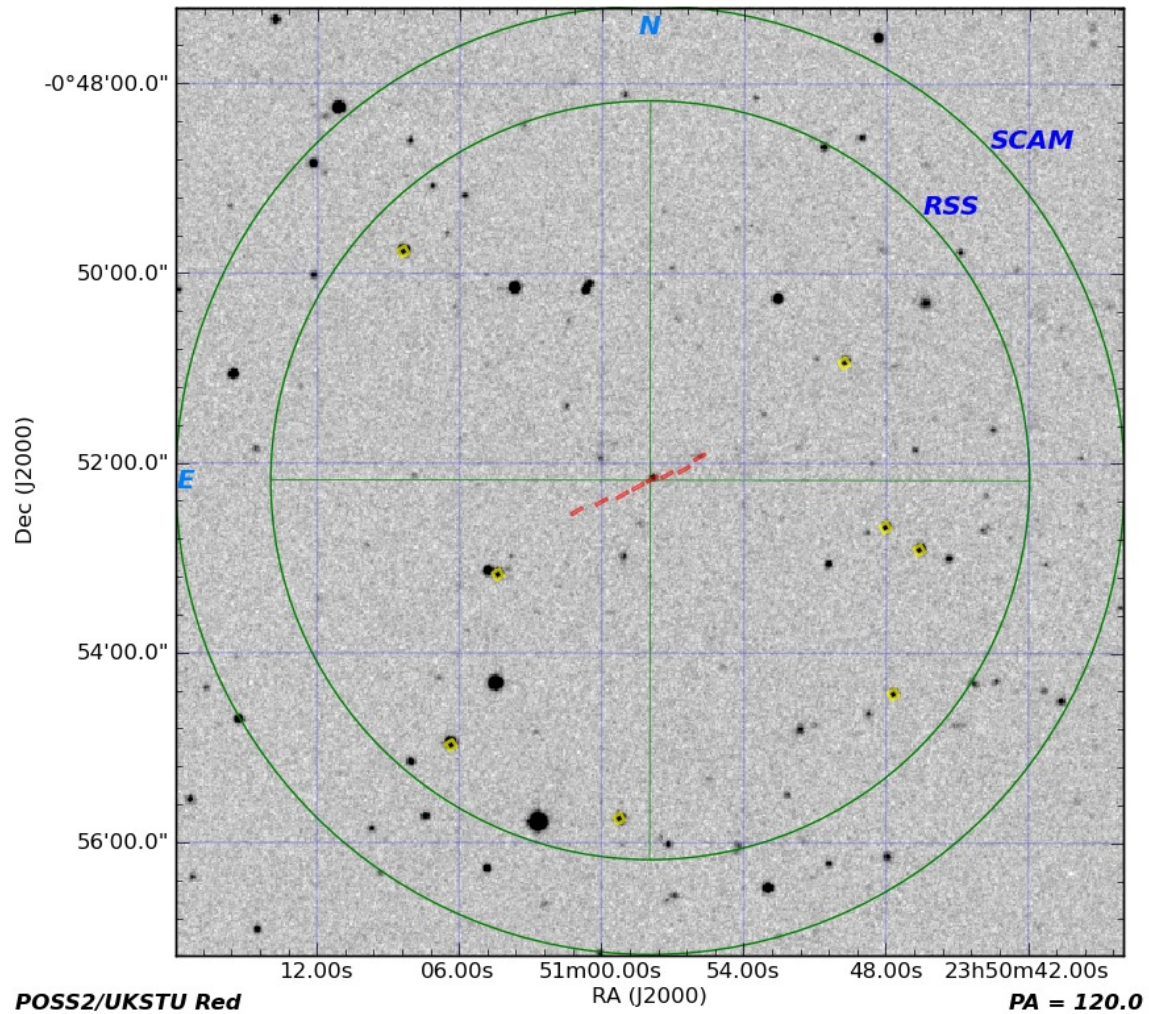
SALT: outflowing galaxy

SALT: MOS data

SALT: outflowing galaxy

Summary

- Extra-galactic Astronomy, In particular high redshift galaxies is one of the main observational programmes at IUCAA. At present SALT/RSS is not providing good quality data.

- As far as QSO spectroscopy is concerned, for r$\leq$20 mag objects we get spectra comparable to that obtained with SDSS. In addition the low free spectral range means lots of observing time to cover reasonable wavelength range with good spectral resolution.

- Better Blue sensitivity will help complementary spectra below 4000Å.

- Inability to detect even strong emission lines (probably due to bigger PSF) is another issue to make progress.

- At present at IUCAA we begin to focus on the repeated observations of bright sources (not that competitive) but publishable.

- We try use SALT for observations of our GMRT sources.