LOTUS

a low-cost UV spectrograph on the Liverpool Telescope

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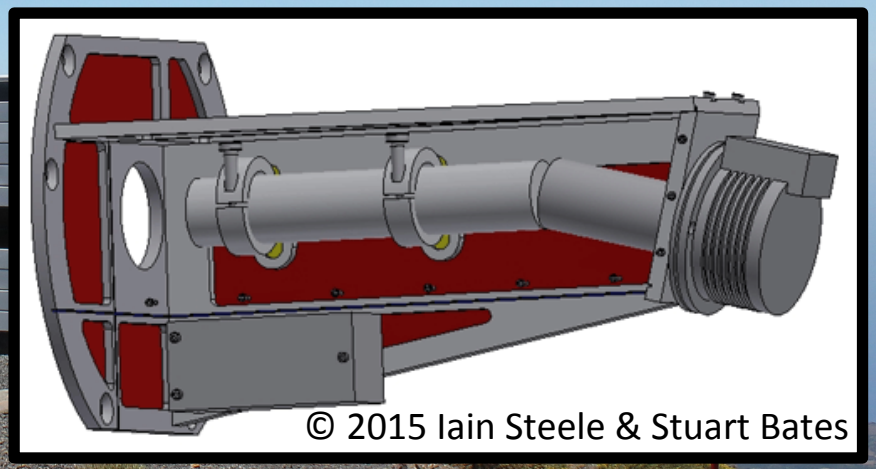
C. Snodgrass; A. Fitzsimmons; G. Jones.



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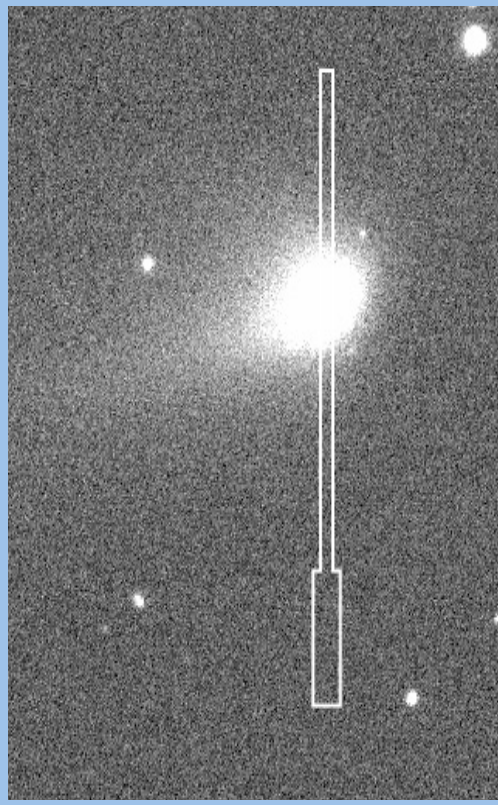
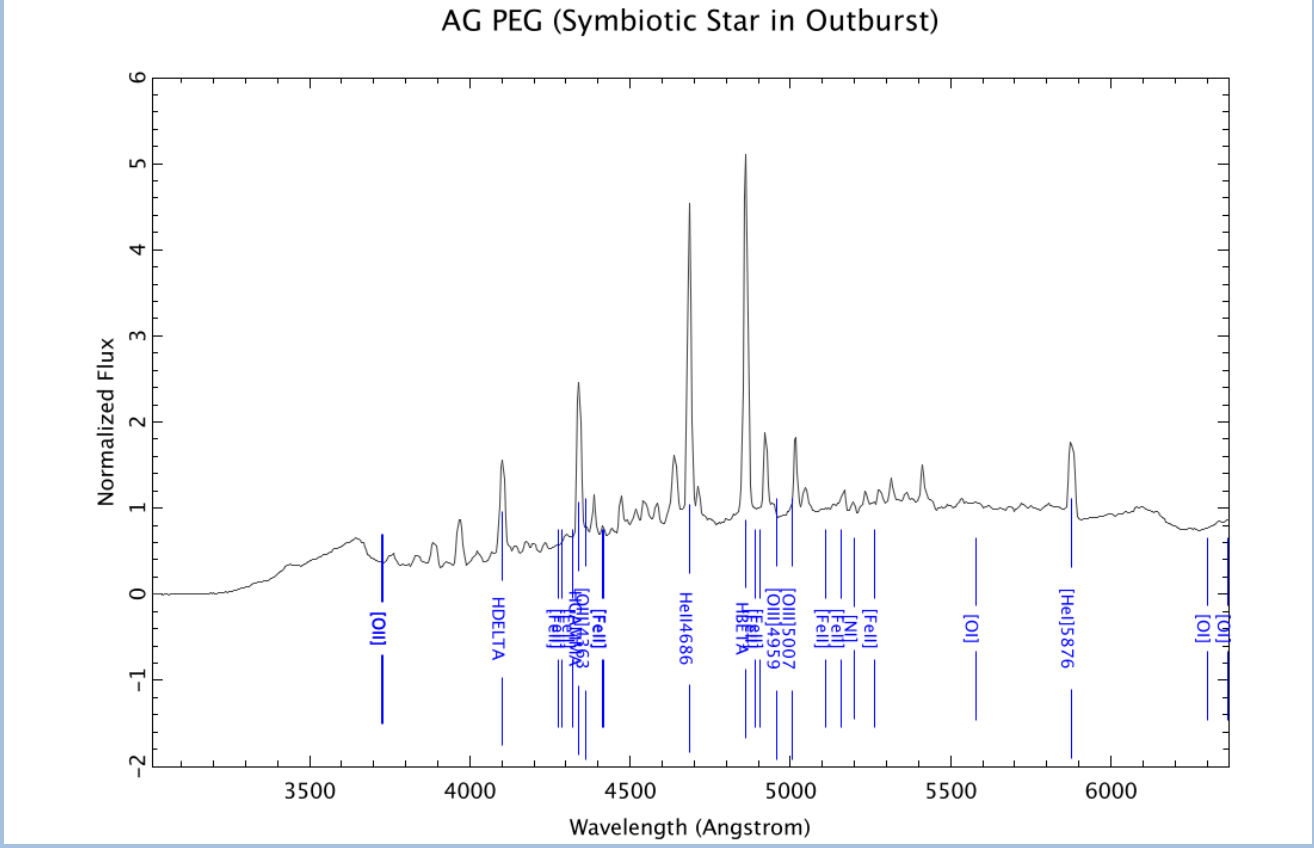
Instrument specifics

- **L**iverpool (**O**ptical) **T**elescope near-**U**V **S**pectrograph
- Low-resolution (R~350)
- Design and build performed in ~6 months
- Low budget - commercial off-the-shelf parts.
- No moving parts
- Wavelength coverage from 3200-6300 Å.
- Slit has a narrow (2.5 arcsec x 95 arcsec) and wide (5 arcsec x 25 arcsec) regions allow optimal spectral resolution or flux calibration.



Wavelength calibration

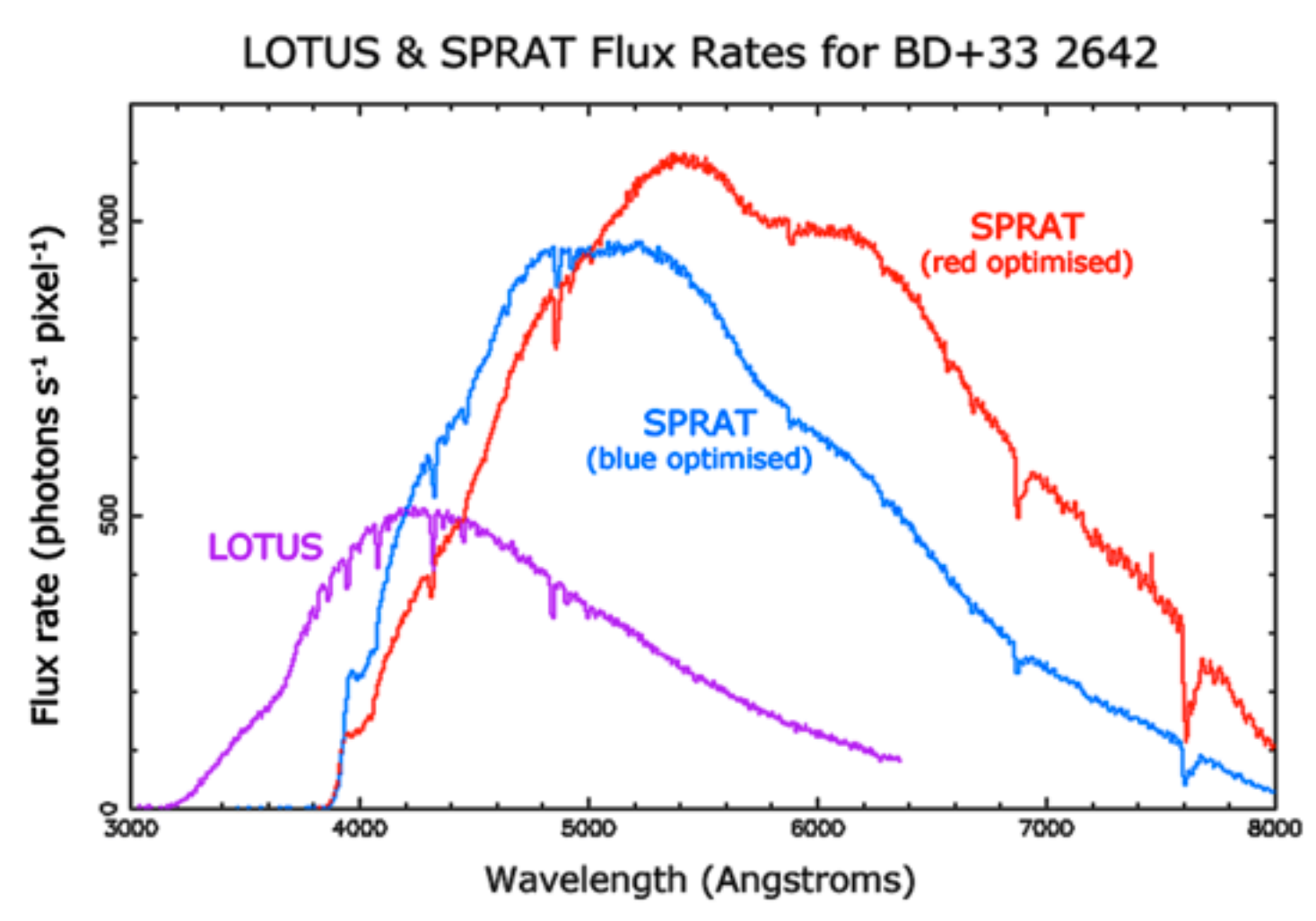
- No arc lamp, a default wavelength calibration spectrum is applied to all data at commissioning, giving a repeatable calibration to ~4Å rms.



Robotic source acquisition

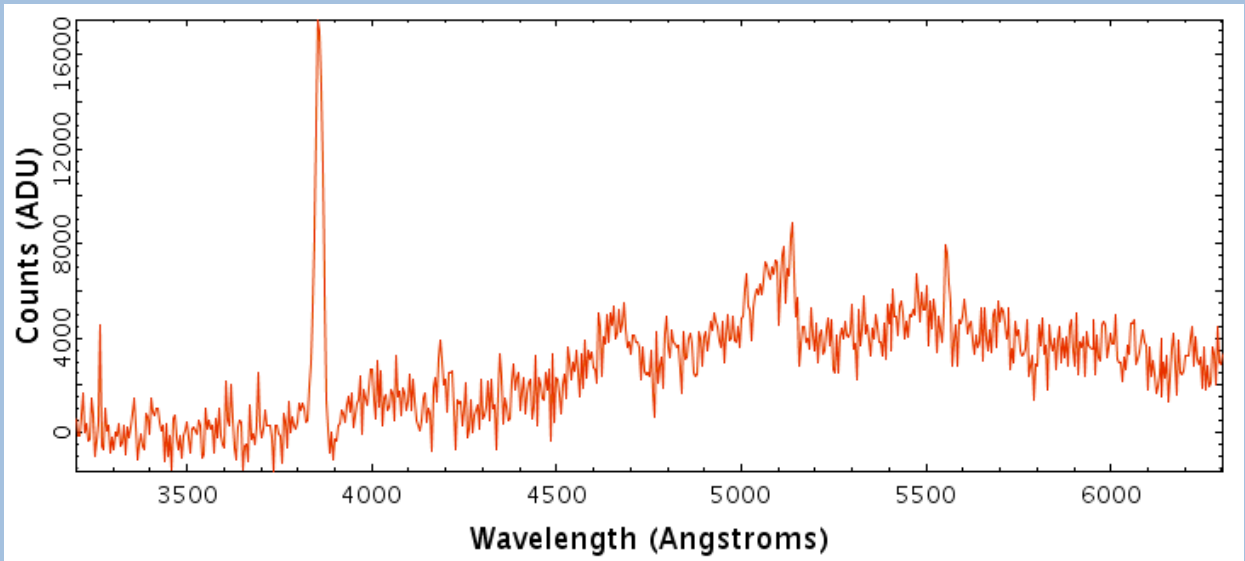
- Magic pixel identified during commissioning.
- Use IO:O to identify pixels of the source
- Position slit at magic pixel location.
- Iterative procedure of WCS fitting to IO:O images and telescope offsets to place target on the magic pixel
- Moving the fold mirror into the beam and taking a “blind” spectrum.

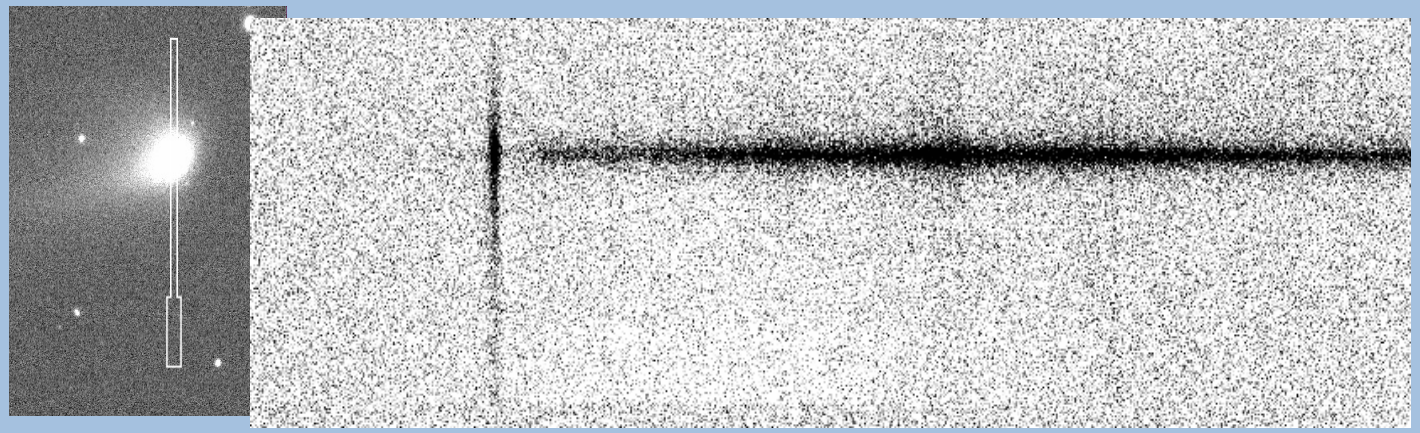
Reaching into the blue



Comet 67P


ESA ROSETTA mission


Counts (ADU)
0
4000
8000
12000
16000
3500
4000
4500
5000
5500
6000
Wavelength (Angstroms)



Future instruments