

VATT Instrumentation and Computers

Current instruments and computing equipment available at the Vatican Advanced Technology Telescope are:

VATT CCD Imager - Vatt4k

- [VATT4k](#)

Galway Ultra Fast Imager - GUFI

- This L3CCD system, based on an Andor iXon back-illuminated CCD camera, gives a readout time of only 2ms, extremely high time resolutions of up to 400 images a second (subframed), and very low light level sensitivity.
- Field of view on VATT, 3 arcmin with current focal reducer.
- On loan from NUI Galway, currently until June 2011.
- Consult Richard Boyle for technical details, and see the [NUI Galway "Brown Dwarfs and Substellar Objects" group](#).

VATT CCD Spectrograph - VATTSpec

- [VATT Spectrograph](#)
- This optical region spectrograph has AR coated refractive optics, with a beam size at its camera of 125 mm, giving ...
- slit length: 30 arcsec
- wavelength range: 360 - 950 nm
- spectral coverage: 100 nm at 0.1 nm resolution
- spectral resolutions: 0.1, 0.2, and 0.4 nm with 1 arcsec wide slit
- detector: back illuminated, low noise CCD STA0520A, with very nice cosmetics.

ITL Serial Number 8228

2688x512 pixels, 15x15 microns

Detector operating temperature -110C

Gain: 1.3 e/DN with setting 10; 2.6 e/DN with setting 5

Full well, both gains: ADC limited (65k DN) = 85,000 or 170,000 electrons

Noise: 3.4 electrons (3.2 in overscan region)

QE Curve

- [efficiency](#): determined by Mark Wagner for telescope plus spectrograph
- further details are under the [Instructions for use of the VATT Spectrograph](#).
- bandpass filters available: S8612 (red blocking); GG-400, GG-475, OG-550 (cut-offs to the blue in nm).

Instrument Interface (a.k.a. the Guider Box)

- provides interface to derotator for all the above instruments, as well as offset and slit-viewing guiding with guide cameras
- effective back focal distance, from guide box to focal surface, is 2.000".
- contains two filter wheels, each holding four 3.48" square filters. Adapters to accommodate 2" and 3" square filters are available.
- UBVRI, uvby, Vilnius, Sloan, ECAS, and Order Blocking filters are currently provided.
- integrating sphere with continuum and calibration lamps.

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