

Before I forget

For those interested in “instrumentation” (in fact, astronomical techniques, as a whole):

You are welcome to join

ISS7

Instrumentation Group

Thursdays, 4pm, room F-307

Before I forget

Who is into converting the Telescope On Campus

Into

The First Robotic Polarimetric Telescope of the World?

AGA0414

CCD Characterisation

Prof. Alessandro Ederoclite

Characterisation, data quality and trends

You want to know your detector.

You want to know the quality of your data.

You want to make sure that your data are ALWAYS good.

Quality Control and Data Processing

mirror sites: [PL](#) (internal link) [HQ](#) [?](#)

[CAL](#) | [HC1](#) | [refs](#) | [QC](#)

Quality Control

At ESO Headquarters in Garching, the **Quality Control and Data Processing Group** ("QC Garching") processes all calibration data from the Paranal instruments (VLT, VLTI, survey cameras). Their quality is checked and monitored. If certified, master calibrations are archived and offered to the community for reducing science data.

In addition, QC Garching processes [pre-imaging](#) science data.

For selected instruments and instrument modes, we create science-grade data products and offer them through the [Data Products Query Form](#) of the Science Archive.

Find [here](#) information about the VLT/ VLTI pipelines.

Select by instrument for information about data types, QC parameters, trending, and pipeline recipes.

- UT1
 - FORS2
 - KMOS
 - NACO
- UT2
 - FLAMES/GIRAFFE
 - UVES&FLAMES/UVES
 - X-SHOOTER
- UT3
 - SINFONI
 - SPHERE
- UT4
 - HAWK-I
 - MUSE
 - VISIR
- VLTI

FORS2

Quality control of FORS2

<http://www.eso.org/observing/dfo/quality/FORS2/qc/qc1.html>

Trend of bias

http://www.eso.org/observing/dfo/quality/FORS2/reports/HEALTH/trend_report_BIAS_med_master_HC.html

Readout noise

<http://spiff.rit.edu/classes/phys445/lectures/readout/readout.html>

$$\text{RON} = \text{sqrt}[\sum (x_i - \langle x \rangle)^2 / N]$$

http://www.eso.org/observing/dfq/quality/FORS2/reports/HEALTH/trend_report_BI_AS_ron_raw_HC.html

Gain

We get photons which produce electrons in the CCD. An ADC (analog-to-digital converter), converts electrons in “counts”.

The “gain” makes us “go back” to what we actually measured.

Gain = # electron per pixel / # counts per pixel

<http://spiff.rit.edu/classes/phys445/lectures/gain/gain.html>

http://www.eso.org/observing/dfo/quality/FORS2/reports/HEALTH/trend_report_CONAD_HC.html

Linearity

http://www.eso.org/observing/dfo/quality/FORS2/reports/HEALTH/trend_report_DETMON_LIN_HC.html