

webCMS: web content management system for QC pages

old

[top](#) **DARK level**

Box 1 of the [trending plot](#) shows the DARK level measured across a central window, excluding the glow. The value in the plot is the dark current and is given in ADU per hour per pixel. Note that the DARK level is slowly varying with time.

QC1 parameters

parameter	QC1 database: table, name	procedure
"DARK_current": mean dark level (ADU/hr /pixel)	giraffe_dark_current_dark	mean of master_dark, measured in a central window
total exposure time, in sec	giraffe_dark_exptime	total exposure time for all darks, in sec.
number of input raw frames	giraffe_dark_datancom	number of input frames combined in master_dark

Trending

The median bias level is plotted in box 1 of the [trending plot](#).

History

There is a trending plot covering the full DARK history ([here](#)). The mean dark has evolved over the years. For data reduction (glow removal), a master_dark not too far in time should be chosen.

[top](#) **Glow**

This applies to the *old CCD* only. Box 2 of the historical [trending plot](#) (2008 and before) measures the strength of the glow pattern. The flux is summed in a window centered on the glow (ADU per hour).

The QC1 [database for dark frames](#) also stores the X and Y positions of the glow.

QC1 parameters

parameter	QC1 database: table, name	procedure
"GLOW": strength of glow	giraffe_dark_glow_dark	measure the strength of the glow feature (sum of all counts in region X1400..2048, Y 3800..4096), in ADU per hour.
X position of glow maximum	giraffe_dark_glow_posx	find maximum of glow, measure its X and Y position
Y position of glow maximum	giraffe_dark_glow_posy	

History

The trending plot covering the full DARK history ([here](#)) shows that the strength of the glow was slowly varying with time ("old" CCD). It was completely absent between 2003-07 and 2004-07-26.

The "new" CCD used since 2008-05-26 has no glow.

new

DARK level

The dark current is defined as the mean dark level in ADU/hr/pixel. Box 1 of the [trending plot](#) shows the DARK level measured across a central window, excluding the glow. The value in the plot is the dark current and is given in ADU per hour per pixel. The DARK frames should be taken in a template of 3 exposures of 1 hr each.

QC1 parameters

ITS key	QC1 database: table, name	definition	class*	HC plot**	more docs
QC.DARK.CURRENT	giraffe_dark_current_dark	dark current in ADU per hour per pixel (outside glow)	HC	<input checked="" type="checkbox"/>	parameters

*Class: NPI - instrument performance; HC - instrument health; CAL - calibration quality; ENG - engineering parameter
**There might be more than one.

Trending

The median DARK level is plotted in box 1 of the [trending plot](#).

Scoring&thresholds DARK level

The mean dark level is very low and stable. Outliers are likely to occur only if the acquisition pattern is not normal (i.e. less than 3 dark frames taken, or with much shorter exposure times). The upper threshold is set such as to trigger an alert for closer investigation of the data. For SoOps. In those cases it is best to repeat a sequence of 3 darks.

History

Before 2008 (old CCD) the mean dark has evolved over the years, see the [FULL](#) plot. For data reduction (glow removal), a master_dark not too far in time should be chosen.

Algorithm DARK level

mean of master_dark, measured in a central window

Glow

On the old CCD (for data from 2008 or earlier) occasionally (not always) a glow pattern was visible. Its strength scaled with the exposure time. Box 2 of the historical [trending plot](#) (2008 and before) measures the strength of the glow pattern. The flux is summed in a window centered on the glow (ADU per hour).

The QC1 [database for dark frames](#) also stores the X and Y positions of the glow.

giraffe_dark_reproc_glow_dark contains reprocessed historical data (with current pipeline).

The position of the maximum of the glow was monitored for the old CCD, as giraffe_dark_glow_posx and giraffe_dark_glow_posy.

QC1 parameters

ITS key	QC1 database: table, name	definition	class*	HC plot**	more docs
QC.GLOW.LEVEL	giraffe_dark_glow_dark	cumulative counts in glow area	CAL	<input checked="" type="checkbox"/>	parameters
QC.GLOW.LEVEL	giraffe_dark_reproc_glow_dark	cumulative counts in glow area	CAL	<input checked="" type="checkbox"/>	parameters

*Class: NPI - instrument performance; HC - instrument health; CAL - calibration quality; ENG - engineering parameter
**There might be more than one.

History

The trending plot covering the full DARK history ([here](#)) shows that the strength of the glow was slowly varying with time ("old" CCD). It was completely absent between 2003-07 and 2004-07-26.

The "new" CCD used since 2008-05-26 has no glow.

Scoring&thresholds Glow

No scoring is done since there is no glow for the new CCD.

Trending

Trending was done for the old CCD before 2008. Find the glow parameter trending in the [FULL](#) plot, report #2, and by clicking details for 2008 or earlier.

Algorithm Glow

Glow is the sum of all counts in region X1400..2048, Y3800..4096, in ADU per hour. For posx and posy, find the maximum of glow, measure its X and Y position.

http://www.eso.org/qc/GIRAFFE/qc_old/dark_qc1.html

http://www.eso.org/qc/GIRAFFE/qc/dark_qc1.html



Structured

▲ Read noise (raw and master)

[Read noise \(raw and master\)](#) | [BIAS level](#) | [Structure](#) | [Bad pixels](#)

The read noise (RON) is measured as *rms* in a single raw frame and in the master bias frame, using in both cases a small central window 100x100 pixels wide. The RON of the master bias frame is about a factor \sqrt{N} lower than the raw file RON, where N typically is 5. RON is given in electrons, calculated from the ADU value using the *nominal* transformation factor (CONAD = 1/gain) 2.25 e-/ADU. (The *measured* CONAD values are close to that value, check out [here](#).)

QC1_parameters

FITS key	QC1 database: table, name	definition	class*	HC_plot**	more docu
QC.OUT1.RON.RAW	giraffe_bias..sigma_raw	RON value of first raw frame in ADU	KPI		[docuSys coming]
QC.OUT1.RON.MASTER	giraffe_bias..sigma_master	RON value of master bias in ADU	CAL		[docuSys coming]

*Class: KPI - instrument performance; HC - instrument health; CAL - calibration quality; ENG - engineering parameter

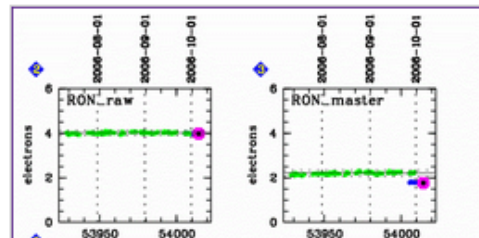
**There might be more than one.

Algorithm [Read noise \(raw and master\)](#)

The read noise (RON) is measured as *rms* in a single raw frame and in the master bias frame, using in both cases a small central window 100x100 pixels wide. Outliers below 100 and above 300 ADU are clipped.

Trending

Box 2 of the [trending plot](#) shows the RON of single raw BIAS frames, box 3 the RON of master bias frames.



RON plots. Box 2 shows the RON of single raw BIAS frames, box 3 the RON of master bias frames, typically constructed from 5 input raw frames.

Scoring&thresholds [Read noise \(raw and master\)](#)

The *sigma_raw* is tightly scored, with dynamic thresholds following the median average of the current period. The thresholds could be made even tighter but due to the relatively small window for the noise measurement the risk of false red scores due to outlier cosmics would then increase. The window size is chosen as to minimize the larger-scale structure of the bias.

The *sigma_raw* is a KPI parameter, with its reference value being 4.2 e- (from the commissioning report of the new CCD), slightly higher than the current value.

History

The *sigma_raw* value is very stable over time.

QC1 parameters: more Docu

▲ Read noise (raw and master)

[Read noise \(raw and master\)](#) | [BIAS level](#) | [Structure](#) | [Bad pixels](#)

The read noise (RON) is measured as *rms* in a single raw frame and in the master bias frame, using in both cases a small central window 100x100 pixels wide. The RON of the master bias frame is about a factor \sqrt{N} lower than the raw file RON, where *N* typically is 5. RON is given in electrons, calculated from the ADU value using the *nominal* transformation factor (CONAD = 1/gain) 2.25 e-/ADU. (The *measured* CONAD values are close to that value, check out [here](#).)

QC1_parameters

FITS key	QC1 database: table, name	definition	class*	HC_plot**	more docu
QC.OUT1.RON.RAW	giraffe_bias..sigma_raw	RON value of first raw frame in ADU	KPI	■	[docuSys coming]
QC.OUT1.RON.MASTER	giraffe_bias..sigma_master	RON value of master bias in ADU	CAL	■	[docuSys coming]

*Class: KPI - instrument performance; HC - instrument health; CAL - calibration quality; ENG - engineering parameter

**There might be more than one.

config.webCMS

classification.txt

automatic: QC1 db (query)

classification.txt:
KPI
HC
CAL
ENG
= role of QC1 parameter in
a given HC plot

QC1 parameters: more Docu

future *webDocuSys*: dynamic queries for QC parameter docu and HC plot docu

- not yet available for instruments other than GIRAFFE
- but implemented there: click, try out, feedback welcome!








in config.webCMS set INCLUDE_WEBDOCUSYS to NO

▲ Read noise (raw and master)

[Read noise \(raw and master\)](#) | [BIAS level](#) | [Structure](#) | [Bad pixels](#)

The read noise (RON) is measured as *rms* in a single raw frame and in the master bias frame, using in both cases a small central window 100x100 pixels wide. The RON of the master bias frame is about a factor \sqrt{N} lower than the raw file RON, where N typically is 5. RON is given in electrons, calculated from the ADU value using the *nominal* transformation factor (CONAD = 1/gain) 2.25 e-/ADU. (The *measured* CONAD values are close to that value, check out [here](#).)

QC1_parameters

FITS key	QC1 database: table, name	definition	class*	HC_plot*	more docu
QC.OUT1.RON.RAW	giraffe_bias..sigma_raw	RON value of first raw frame in ADU	KPI		  
QC.OUT1.RON.MASTER	giraffe_bias..sigma_master	RON value of master bias in ADU	CAL		 

*Class: KPI - instrument performance; HC - instrument health; CAL - calibration quality; ENG - engineering parameter

**There might be more than one, always check the link 'HC'.

Structure 1

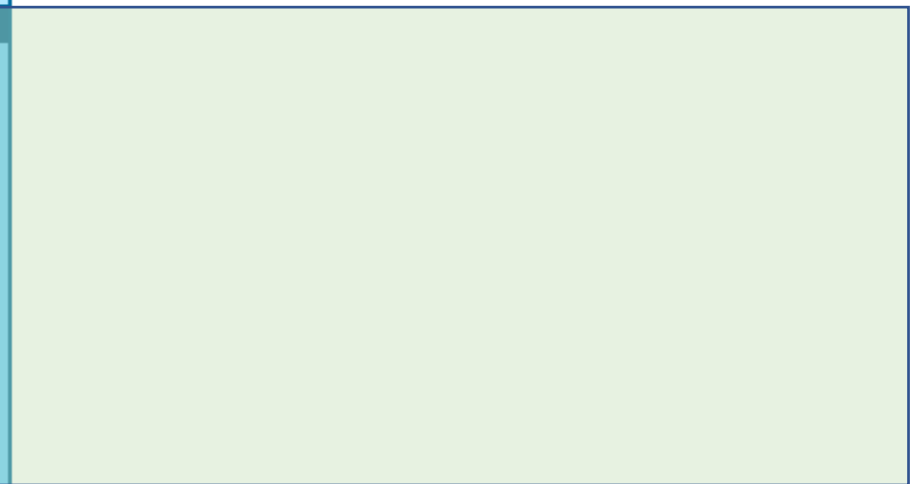
- each website has two branches:
 - QC_PAGE
 - PIPELINE
- plus:
HOME [index_<instr>]
- plus:
 - COMMON [privileged access]
- each BRANCH has PAGES

CAL HC refs QC
QUALITY CONTROL
HOME
GIRAFFE QC
GIRAFFE QC HOME
Trending & QC1
general info
trending & QC1
bias
dark
detector monitoring
grating stability
lamp stability
flat field quality
wavelength solution
fibre stability
fibre efficiency curves
fibre setup
system efficiency
GIRAFFE Health Checks
Pipeline
general info
science data
science recipe
calib data
calib recipes
association map
setups
binary tables
data types
product names
FLAMES: solar spectrum
GIRAFFE ...
Health Checks
Instrument

Instrument components and HC pages

Click any item to find tutorial information and documentation about the corresponding Health

These pages are also linked to the HC monitor.



Structure 2

- each PAGE is created from several COMPONENTS
- here:
 - top_table.txt
 - general.txt
 - temperature.txt
 - grating.txt
 - ...

QUALITY CONTROL

- HOME
- GIRAFFE QC
 - GIRAFFE QC HOME
 - Trending & QC1
 - general info
 - trending & QC1
 - bits
 - calib
 - detector monitoring
 - grating stability
 - lamp status
 - flat field quality
 - wavelength solution
 - core stability
 - core efficiency curves
 - core setup
 - system efficiency
- GIRAFFE Health Checks

- Pipeline
- general info
- science data
- reference recipe
- calib data
- calib recipes
- association map
- setups
- binary tables
- data types
- product names
- FLAMES: solar spectrum
- GIRAFFE ...
- Health Checks
- Instrument
- QC links:
- QC pages
- Data Products
- cal/Checker
- HealthChecks
- Reference Frames
- QC1 database
- Paranal autrep database (ESO Internal)

QC PLOTS

Grating stability

QC1 database (advanced users): [browse](#) | [plot](#)

A set of frames is measured daily to monitor the stability of the gratings and of the fiber system. These frames carry the DPR TYPE SIMLAMP,TAL (TAL = thorium-argon lamp) and are created by the arclamp of the simultaneous calibration unit. The arg lamp is used to illuminate the simultaneous calibration fibres. The signal is correlated both in X (cross-dispersion) and Y (dispersion) against a reference frame. There is a set of six such health check measurements, one (using the LR grating) for each slit system (Medusa1 and 2, IFU1 and 2, Argus), plus one for the HR grating and the Medusa1 slit system.

The data are also used to monitor the [simlamp efficiency](#).

SIMLAMP,TAL frame (closeup). There are five simultaneous calibration fibres, illuminated by the simultaneous arclamp.

Temperature

Temperature | [Grating motions in X and Y](#) | [Correlation of shifts with temperature](#)

The GIRAFFE gratings have some minor thermal motions, and occasional non-thermal jumps. To control the thermal motions, the temperature sensor TEMP53 is monitored here, located on top of the grating table close to the grating.

QC1_parameters

FITS key	QC1 database: table, name	definition	class*	HC_plot**	more docu
INS.TEMP53	giraffe_simlamp..ins_temp53_val	temperature (sensor 53) in degree C	ENG	<input type="checkbox"/>	<input type="radio"/> QC <input type="radio"/> HC

*Class: KPI - Instrument performance; HC - Instrument health; CAL - calibration quality; ENG - engineering parameter
**There might be more than one, always check the link "HC".

Trending

As a comparison evaluate, the temperature TEMP53 is plotted in box 1 and repeated in box 4 of the [trending plot](#).

Scoring&thresholds Temperature

No scoring done.

History

Not applicable.

Algorithm Temperature

Not applicable.

Grating motions in X and Y

Temperature | [Grating motions in X and Y](#) | [Correlation of shifts with temperature](#)

Each of the Health Check data is correlated in X and Y to a reference frame. The set of reference frames is arbitrarily taken from date 2003-07-24. The difference ($X_{new} - X_{ref}$) is plotted v.s. time. The same is done for the Y (dispersion) direction.

QC1_parameters

FITS key	QC1 database: table, name	definition	class*	HC_plot**	more docu
[calculated by QC procedure]	giraffe_simlamp..mean_xdiff	average difference of selected line Y position against reference frame [pix]	HC	<input checked="" type="checkbox"/>	<input type="radio"/> QC <input checked="" type="radio"/> HC

Content of component text files

- TABLES: several types
- ITEMS: few specific tags marking properties of the text file
- TEXT: plain text extracted with copy&paste, with few and simple remaining HTML tags

```
ITEM_TITLE    DARK level
ITEM_ANAME    dark
```

```
TITLE         QC1 parameters
```

```
TABLE_NAME    qc1
TABLE_TYPE    QC1_TABLE
TABLE_ROW1    QC,DARK,MASTER,MEDIAN SEP muse_dark,.master_median
```

```
TITLE         Trending
<p>The <a
href="/qc/MUSE/reports/HEALTH/trend_report_DARK_med_HC.html">
dark current </a> is trended for each IFU detector
separately. The median value computed in ADU/hr/pix is monitored.
```

```
TITLE         Scoring&thresholds
<p>The dark_median is tightly scored, with dynamic
thresholds following the median average of the current
period. The only requirement on the dark current is stability on the calibration timescale.</p>
```

```
TITLE         History
```

```
<p>February 2014: dark calibrations are taken regularly
```

```
<p>2015-03-31: CHAN01 detector vessel exchanged, DET.CHIP.ID changed from psyche to egeria
```

```
<p>2015-10-31: After intervention (detectors warmed up and vacuum recreated in the transfer lines) dark level in all quadrants
```


```
TITLE         Algorithm
Processing trims the raw data and records the overscan statistics, subtracts the bias (taking account of the
overscan, if --overscan is not "none") from each raw input image, converts them from adu to count, scales them
according to their exposure time, and combines them using input parameters. The combined image is normalized to 1 hour
exposure time. The median level of master dark is calculated for
each detector (i.e. channel/IFU).
```

TABLES 1

- Tables are used for structured content
- Example: TOP_TABLE

TABLE_NAME	top_table
TABLE_TYPE	TOP TABLE
TABLE_ROW1	Grating stability SEP HC_LINK /qc/GIRAFFE/reports/HEALTH/trend_report_STABILITY_HC.html
TABLE_ROW2	QC1DB_LINK giraffe_simlamp
TABLE_END	

QC PLOTS

Grating stability 

QC1 database (advanced users): [browse](#) | [plot](#)

SHORT_QC1DB_LINK

Flat_alignment per detector 

[browse](#) | [plot](#)

Interpreted as blue square etc.

Interpreted as </td><td>

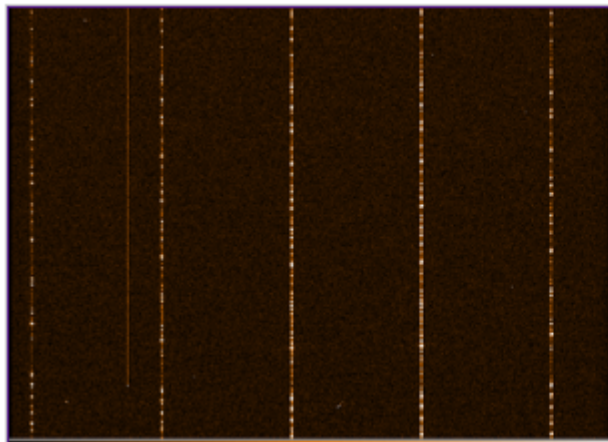
All structure hard-coded in the tool

TABLES 2

Interpreted as ``

- Tables are used for figures
- Example: FIGURE_1A

```
TABLE_NAME      qc1
TABLE_TYPE      FIGURE_1A
TABLE_WIDTH     80%
TABLE_IMG1      AHREF=" ../img/fmt.gif"
TABLE_IMG1      " ../img/fmt.gif" width="362" height="261" border="1"
TABLE_CAP1      <b>SIMLAMP,TAL frame</b> (closeup).  There are five simultaneous calibration fibres,
TABLE_CAP1      illuminated by the simultaneous arclamp.
```



SIMLAMP,TAL frame (closeup). There are five simultaneous calibration fibres, illuminated by the simultaneous arclamp.



All structure hard-coded in the tool

TABLES 3

- TABLES are used for structured content
- Example: QC1_TABLE

```
TABLE_NAME      qc1
TABLE_TYPE      QC1_TABLE
TABLE_ROW1      QC.OUT1.RON.RAW      SEP giraffe_bias..sigma_raw
TABLE_ROW2      QC.OUT1.RON.MASTER SEP giraffe_bias..sigma_master
```

classification.txt

QC1_parameters						
FITS key	QC1 database: table, name	definition	class*	HC	plot**	more docu
QC.OUT1.RON.RAW	giraffe_bias..sigma_raw	RON value of first raw frame in ADU	KPI			[docuSys coming]
QC.OUT1.RON.MASTER	giraffe_bias..sigma_master	RON value of master bias in ADU	CAL			[docuSys coming]

*Class: KPI - instrument performance; HC - instrument health; CAL - calibration quality; ENG - engineering parameter
**There might be more than one.

All structure added by the tool

TEXT

TITLE Trending

The [trending plot](/qc/GIRAFFE/reports/HEALTH/trend_report_FFLOC_HC.html) follows the number of fibres found by the pipeline. The "Health" plot has the HC data only, the "all" plot has all measured data (HC and calibration plan). Usually the "all" plot will have the same, or almost the same number of fibres and just show a denser time coverage. The signal from the last few fibres usually does not fall completely onto the CCD, and is truncated by the pipeline. Depending on wavelength, the index of the last complete fibre may vary.

Another reason for changes of this number may be a broken (or fixed) fibre.

The plot is particularly important for the Medusa fibre systems since they point the fibres to individual targets. A missing fibre means a missing target. For the IFU and the Argus system, a missing fibre results in a missing spatial pixel.

```
TABLE_NAME      fig1
TABLE_TYPE      FIGURE_1A
TABLE_WIDTH     80%
TABLE_IMG1      AHREF="../img/FFLOC_HC1.png"
TABLE_IMG1      "../img/FFLOC_HC1.png" width="132" height="126" border="1"
TABLE_CAP1      Number of fibres located in Medusa1 HC files.
```

Find an overview of the arrangement of the fibres [here](/qc/GIRAFFE/qc/fibre_setup.html).

Trending

The [trending plot](#) follows the number of fibres found by the pipeline. The "Health" plot has the HC data only, the "all" plot has all measured data (HC and calibration plan). Usually the "all" plot will have the same, or almost the same number of fibres and just show a denser time coverage. The signal from the last few fibres usually does not fall completely onto the CCD, and is truncated by the pipeline. Depending on wavelength, the index of the last complete fibre may vary.

Another reason for changes of this number may be a broken (or fixed) fibre.

The plot is particularly important for the Medusa fibre systems since they point the fibres to individual targets. A missing fibre means a missing target. For the IFU and the Argus system, a missing fibre results in a missing spatial pixel.



Find an overview of the arrangement of the fibres [here](#).

Tool documentation

- <http://www.eso.org/~qc/tqs/webCMS.html>
principles, structure
- http://www.eso.org/~qc/tqs/syntax_webCMS.html
complete list of TABLE_TYPES and other structure elements

Who, what, when

VISIR
KMOS
GRAVITY
ESPRESSO

Burkhard

FORS2
HAWK-I
MUSE
OMEGACAM

Danuta

UVES
SINFONI
AMBER
PIONIER
MATISSE

Isabelle

NACO
X-SHOOTER
SPHERE
VIRCAM

Wolfgang

Timeline – till summer

To clean:

qcweb:

- DataManagement/
- ServiceMode/
- instrument specific, e.g. Internal/, gif/, icons/, etc.
- instrument specific, e.g. basics.html, check_links.html
- qc/quick
- e.g. qc/qc_NC_dark.html - old pages
- e.g. qc/zeropoint - old subdirectories

the webNavBar configuration:

- Data Packages
- instrument specific, e.g. History