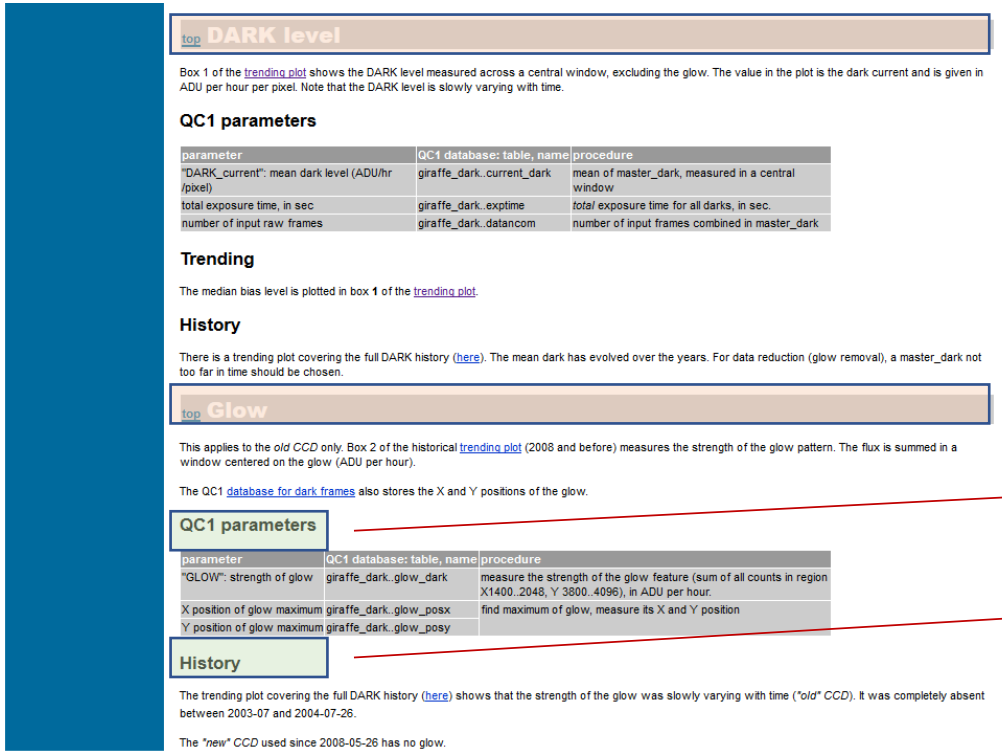
webCMS:
web content management system for QC pages

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.

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

new

DARK level

DARK level | Glow

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

FITS key	QC1 database: table, name	definition	class*	HC_plot**	more docu
QC.DARK.CURRENT	giraffe_dark..current_dark	dark current in ADU per hour per pixel (outside glow)	HC		

*Class: KPI - 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 SciOps: 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

DARK level | 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

FITS key	QC1 database: table, name	definition	class*	HC_plot**	more docu
QC.GLOW.LEVEL	giraffe_dark..glow_dark	cumulative counts in glow area	CAL		
QC.GLOW.LEVEL	giraffe_dark_reproc..glow_dark	cumulative counts in glow area	CAL		

*Class: KPI - 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/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]

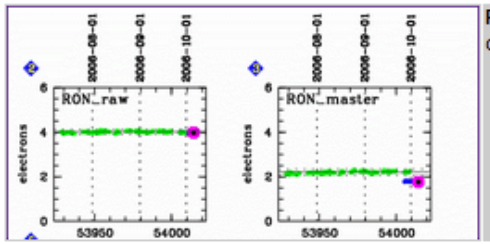
*Class: KPI - instrument performance; HC - instrument health; CAL - calibration quality; ENG - engineering parameter
**There might be more than one.

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 el- (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 HC KPI
QC.OUT1.RON.MASTER	giraffe_bias..sigma_master	RON value of master bias in ADU	CAL		QC HC

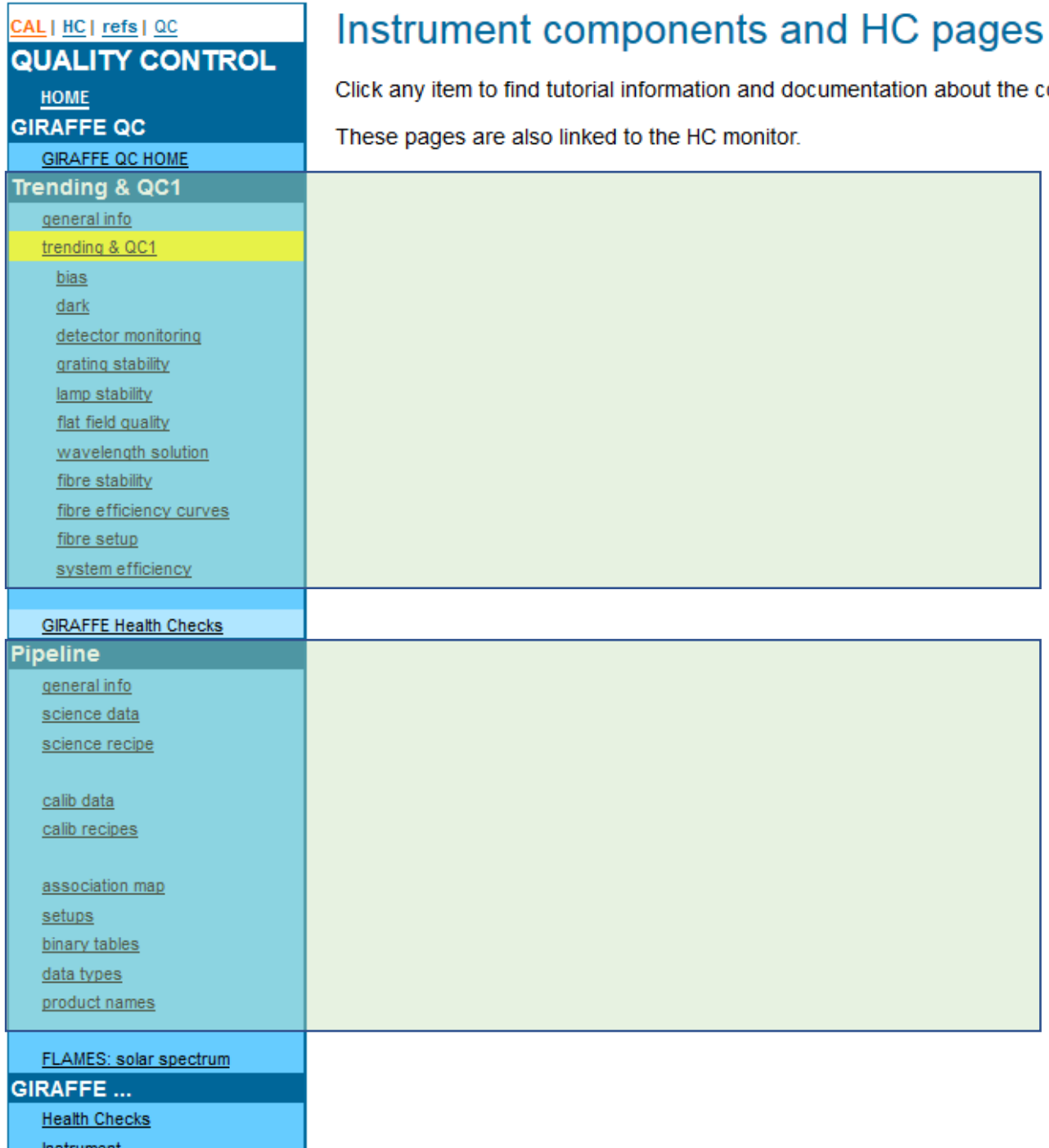
*Class: KPI - instrument performance; HC - instrument health; CAL - calibration quality; ENG - engineering parameter
**There might be more than one, always check the link 'HC'.

Structure 1

- each website has two branches:
  - QC_PAGE
  - PIPELINE
- plus:

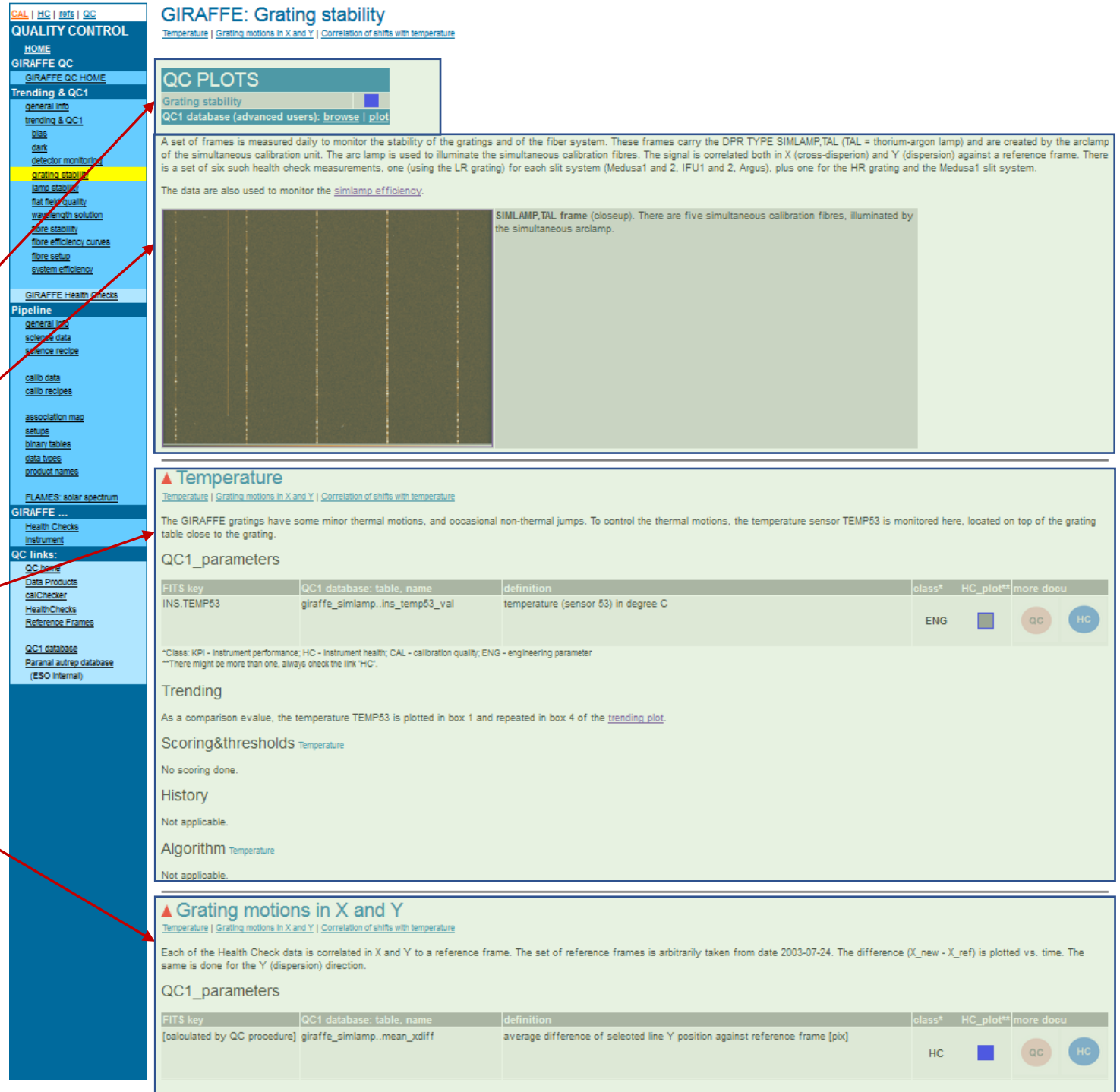
  HOME [index_<instr>]
- plus:
  - COMMON [privileged access]

- each BRANCH has PAGES



Structure 2

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



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
```

Interpreted as blue square etc.

Interpreted as </td><td>

SHORT_QC1DB_LINK

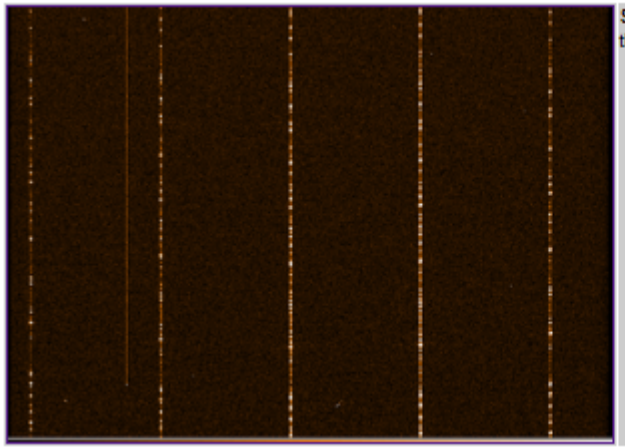
All structure hard-coded in the tool

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.

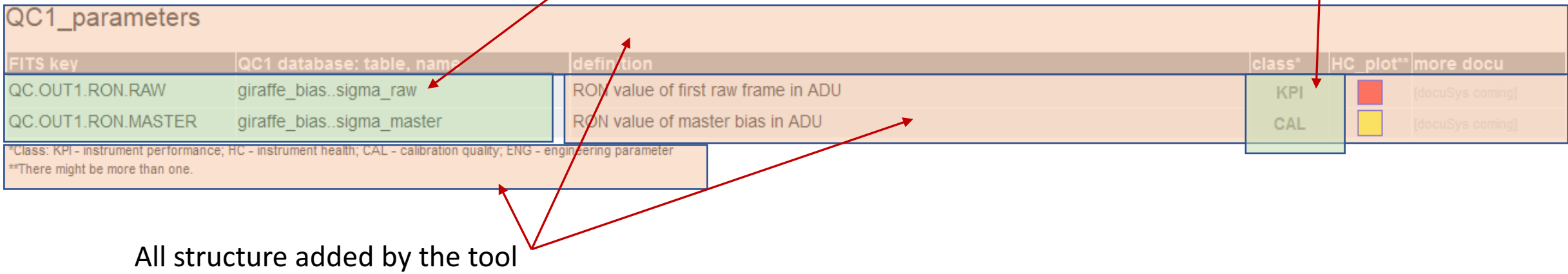
All structure hard-coded in the tool

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



All structure added by the tool

TEXT

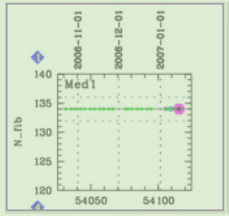
```
TITLE     Trending

<p>The <a href="/qc/GIRAFFE/reports/HEALTH/trend_report_FFLOC_HC.html"
target="_blank">trending plot</a> 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.

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

<p>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. <p>


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.

<p>Find an overview of the arrangement of the fibres
<a href="/qc/GIRAFFE/qc/fibre_setup.html">here</a>.
```

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.



Number of fibres located in Medusa1 HC files.

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