Req 5.4.7

Title:

Quick detector responsivity -doit

Objective:

Quickly check the overall health in terms of responsivity by observing the dome screen with the composite filter.

Together with **req. 521** *Read-noise* this item forms the most important day-to-day health check. The expected lamp intensity is characterized in **req. 542** *Dome flat.* This measurement will lead to a go/non-conformance flag and day report. The results will have to be inspected on the site, as this is a daytime health check of the instrument.

Trend analysis on the raw data will be redundant with that of **req. 542** *Dome flat.*

The equivalent of this **req.** on the sky is provided by **req. 562** *Photometric Calibration - monitoring*

Fulfilling or fulfilled by:

Selfstanding

When performed/frequency:

Commissioning, daytime, every day of operations both during CP and RP.

Sources, observations, instrument configurations:

Dome flat with composite key filter

Inputs:

2 raw dome flatfields **CalFile– 541** *Master Bias frame* **CalFile– 542L** *Dome Lamp*

Outputs:

CalFile– 547 *Quick check* **CalFile– 547r** *Quick check - day report*

Required accuracy, constraints:

1%

Estimated time needed:

Observation: 3 min/day. Reduction: 1 min./CCD.

Priority:

very important

TSF:

Mode– Stare N=1
(**TSF– OCAM_img_cal_domeflat,** N=1, filter= composite)
= **TSF– OCAM_img_cal_quick**

Recipe:
```
Quick_Check -i raw_domeflat_1 raw_domeflat_2 -b bias [-oc OVER-
SCAN_CORRECTION]

raw_domeflat_1 raw_domeflat_2 : two raw dome flats
bias                          : master bias frame
OVERSCAN_CORRECTION : overscan correction mode (integer).
                      Description of allowed values:
                          0: apply no overscan correction (default)
                          1: use median of the prescan in the
                             x-direction
                          2: use median of the overscan in the
                             x-direction
                          3: use median of the prescan in the
                             y-direction
                          4: use median of the overscan in the
                             y-direction
                          5: use the per-row value of the prescan
in
                             the x-direction
                          6: use the per-row value of the overscan
in
                             the x-direction
```

Before applying this recipe, use **Recipe– Split**—which is documented in **seq.– 631**—with the -t dome option to split the raw multi-extension FITS input files.

also run on-site

Needed functionality:

image - trim
image - arithmetic
image - statistics

CA:

Process (make):
1. trim, overscan-correct the raw dome flat fields.
2. de-bias the trimmed dome flat fields.
3. divide the de-biased images.
4. compute the image statistics.

Verification (verify) :
1. The median of the divided image should differ from 1 by less than TBD/

A trendanalysis using measurements over a longer time scale and the calibration of the time variation of the lamp has to be done in an interactive analysis.

CAP:

```
# trim, overscan, de-bias
dome_1 = eclipse.trim_and_overscan(raw_domeflat_1)
eclipse.image_sub_local(dome1, bias)
dome_2 = eclipse.trim_and_overscan(raw_domeflat_2)
eclipse.image_sub_local(dome2, bias)

quick_check_image = eclipse.image_div(dome1, dome2)
quick_check_statisics = eclipse.iter_stat(quick_check_image)

# Quality Control
if (quick_check_statisics.median-1) > MAXIMUM_ABS_MEDIAN
    QUICK_CHECK_BAD_MEDIAN = 1
```