

XMM-Newton CCF Release Note

XMM-CCF-REL-210

OM Photometry: time dependent sensitivity degradation correction

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1 CCF components

| Name of CCF | VALDATE | List of Blocks changed | CAL VERSION | XSCS flag |
|-------------------|---------------------|------------------------|-------------|-----------|
| OM_PHOTTONAT_0004 | 2000-01-01T00:00:00 | DEGRADATION | | No |

2 Changes

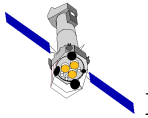
A new table extension “DEGRADATION” is introduced to contain the coefficients of the time dependent sensitivity degradation correction.

Since time dependent sensitivity variation is due in part to sensitivity degradation of the photocathode, it is wavelength dependent and therefore it is different in each of the OM lenticular filters.

The degradation is linear with time, and the new CCF table extension contains the coefficients of such a variation for all filters (except the white one). There is place in the table for three coefficients per filter, which will allow us to use a quadratic correction if this is necessary in the future.

3 Scientific Impact of this Update

The time dependent sensitivity degradation correction is implemented in SAS since version 6.5, but the coefficients are hard coded. This new CCF will allow SAS to obtain them through the CAL system. There is no scientific impact.



4 Estimated Scientific Quality

The correction coefficients were thoroughly tested before releasing the SAS code that performs the correction. The results were fully satisfactory. Further testing was made by processing with SAS 6.5 a number of photometric standard stars observed at different epochs.

5 Expected Updates

If the degradation trend changes in the future, then a new version of the correction coefficients will be implemented.

6 Test procedures

New testing will be done when the SAS code has been changed to make use of the coefficients through the CAL.

7 Summary of the test results

Tests results will be reported here in a future update of this release note.

References