# XMM-Newton CCF Release Note

XMM-CCF-REL-24

## OM PSF

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## 1 CCF components

| Name of CCF | VALDATE | List of Blocks changed | CAL VERSION | XSCS flag |
|---|---|---|---|---|
| OM_PSF1DRB_0003 | 2000-01-01T00:00:00 | PSF-U | | No |
| | | PSF-B | | No |
| | | PSF-V | | No |
| | | PSF-UVW1 | | No |
| | | PSF-UVM2 | | No |
| | | PSF-UVW2 | | No |
| | | PSF-WHITE | | No |
| | | PSF-MAGNI | | No |

## 2 Changes

First release

The CCF file *psf1drb* describes the OM PSF of the non-dispersive filter elements at different count to framerate ratios (CFRR).

The current analysis is limited by a number of factors, these include:

- only preflight gaussian approximations are used,
- only one PSF per filter is available, i.e. the CFRR dependence is not yet parametrized.
- the inflight adjustment of the focus is not reflected in the current release of the *om_psf1drb*
- no data for the UVW2 PSF were available from CSL. The UVW2 PSF is assumed to be identical to the UVM2 PSF.

Before an OM inflight PSF can be provided a correct description of the combined effect of instrument PSF and coincidence loss must be found. It was found that coincidence losses (detector linearity) and the PSF shape are tightly coupled. Further analysis is required before a combined description can be provided.

We expect the *psf1drb* file to be updated, once further progress in the PSF/coincidence loss calibration is made.

## 3 Scientific Impact of this Update

First release

## 4 Estimated Scientific Quality

While the current approximation is sufficiently good at low count rates (approximately less than 10 cts/sec), the PSF description becomes more and more inaccurate with increasing count rate.

## 5 Acknowledgements

Thanks to OM team members, especially Alice Breeveld (MSSL) for her input.