XMM-Newton CCF Release Note

XMM-CCF-REL-136

OM Flux conversion factors

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1 CCF components

Name of CCF	VALDATE	List of Blocks changed	CAL VERSION	XSCS flag
OM_COLORTRANS_0008	2000-01-01T00:00:00	COLORMAG		No

2 Changes

Flux conversion factors for U, B, V, UVW1, UVM2 and UVW2 filters are added in the keyword in the colormag extension. These flux conversion factors help users to get a rough estimation of flux (expressed in $erg/cm^2/s/A$) from countrates directly. The zeropoints and color-transformations in this CCF are not changed.

3 Scientific Impact of this update

No SAS task uses these flux conversion factors. Therefore, the scientific outputs from SAS are not changed. The users need to derive the flux using these factors external to SAS.

4 Estimated Scientific Quality

We have derived the flux conversion factors from three white dwarfs (LBB227, BPM16274 and GD153). For each filter, if you multiply the countrates (counts/s) from SAS by the following numbers, you will get the flux ($erg/cm^2/s/A$).

	V	B	U	UVW1	UVM2	UVW2
Flux conversion factors	2.178E-16	1.041E-16	1.776E-16	4.169E-16	1.754E-15	5.242E-15

We should point out, these flux conversion numbers provide an approximate measurement of the flux without a *priori* knowledge of the spectral type. For an accurate determination of the flux, the users are invited to check our SAS watchout page to find flux conversion factors for a given spectral type.

5   Test procedures

This new CCF has been tested using SAS public version 5.3.3. The OM calibration observation in the field of GD153 in the Rev. 472 has been run through SAS "omichain" task. Everything is nominal.

6   Summary of the test results

In the filed of GD153, I randomly took a star with countrates (counts/s) 119.55, 143.79, 73.114, 10.543, 0.210, 0.092 for V, B, U, UVW1, UVM2, UVM2, respectively. Then I multiplied these countrates by the conversion factors shown in section 3 to get the flux. Figure 1 show the flux against effective wavelengths for this star (lower plot) and GD153 (upper plot). From the spectral shape, we can say that this unknown star has spectral type similar to a K star.

7   Expected updates

A update is expected before March, 2003 when the analysis of new white dwarf observations is finished.

8   Acknowledgements

Thanks to OM team members, especially Alice, Elizabeth, Antonio, Simon for their contributions.
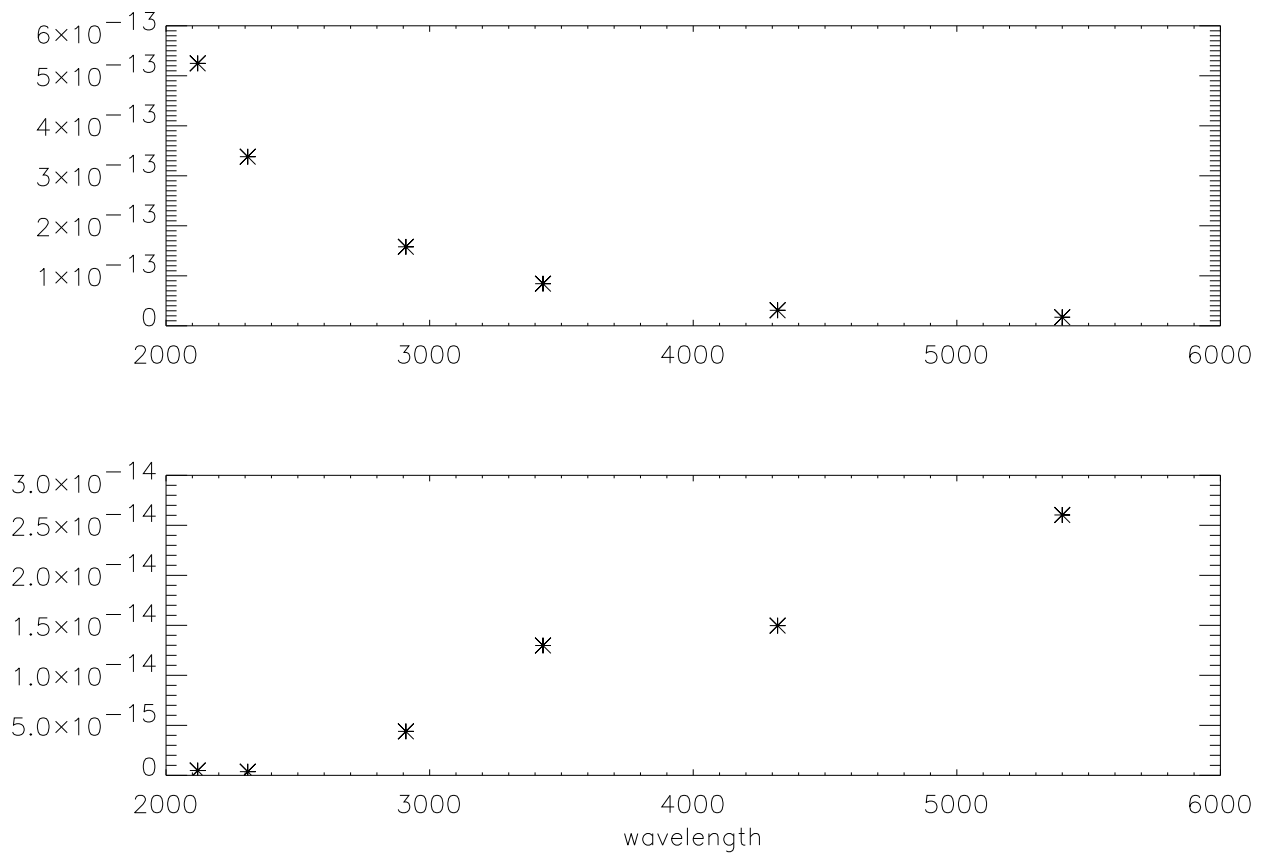
Figure 1: The flux as a function of wavelength for white dwarf GD153 (upper plot) and a randomly chosen star (lower plot) in the field of GD153.