XMM-Newton CCF Release Note

XMM-CCF-REL-143

Improved model of RGS instrumental Oxygen absorption

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1 CCF components

CCF component	VALDATE	EVALDATE	Blocks changed	XSCS flag
RGS1_EXAFS_0002	1999-01-01T00:00:00		H2O-P-CCD1 H2O-P-CCD2 H2O-P-CCD3 H2O-P-CCD4 H2O-P-CCD5 H2O-P-CCD6 H2O-P-CCD7 H2O-P-CCD8 H2O-P-CCD9	NO
RGS2_EXAFS_0002	1999-01-01T00:00:00		H2O-P-CCD1 H2O-P-CCD2 H2O-P-CCD3 H2O-P-CCD4 H2O-P-CCD5 H2O-P-CCD6 H2O-P-CCD7 H2O-P-CCD8 H2O-P-CCD9	NO
RGS1_QUANTUMEF_0008	1998-01-01T00:00:00		CCD_DESC	NO
RGS2_QUANTUMEF_0009	1998-01-01T00:00:00		CCD_DESC	NO

2 Changes

Cor de Vries of SRON Utrecht [1] has devised an improved model of the instrumental oxygen absorption feature based on a comparison of bright sources of relatively low and high interstellar absorption, enabling a detailed model of the instrumental absorption. This information goes in two places : indi-

vidual identical CCD tabulations in `RGS%_EXAFS` and `RGS%_QUANTUMEF:CCD_DESC:D_H2O=75.515nm`, again identically for each CCD.

3 Scientific Impact of this Update

Better removal of instrumental effects from models of cosmic spectra.

4 Estimated Scientific Quality

Flux uncertainties near the oxygen edge at the few percent level, namely as good as through most of the RGS waveband.

5 Expected Updates

None.

6 Test procedures

- Use `fv` to look at the new files and ensure that the oxygen data agree with the data supplied by SRON Utrecht.
- Run `cifbuild` to check that the new files are correctly selected.
- Process the brightest Mkn421 data with the new files.

7 Summary of the test results

- `fv` shows that the new CCFs contain the correct data.
- The `ccf.cif` files made by `cifbuild` index the correct files.
- Data near the O-edge are well modelled.

References

[1] C. P. de Vries *et al.*, The interstellar oxygen-K absorption edge as observed by XMM-Newton, A&A, submitted, 2002.