Table 1: Summary of the components within the XMM-Newton Background; temporal, spatial and spectral properties

	PARTICLES			PHOTONS	
	SOFT PROTONS	INTERNAL (Cosmic-ray induced)	ELECTRONIC NOISE	HARD X-RAYS	SOFT X-RAYS
Source	Few 100 keV solar protons	Interaction of High Energy particles with detector	1) Bright pixels 2) Electronic overshoot near pn readout	X-ray background (AGN etc)	Local Bubble Galactic Disk Galactic Halo
Variable? (per Obs) (Obs to Obs)	Flares (>1000%) Unpredictable. More far from apogee. Low-E protons seen pre-flare	±10% ±10% No increase after Solar flares	±10% 1) >1000% (pixels come and go, also meteor damage)	Constant Constant	Constant Variation with RA/Dec (±35%)
Spatial Vignetted? Structure?	Yes (scattered) Perhaps, unpredictable	No Yes. Detector + construction MOS: outer 6 CCDs more Al, CCD edges more Si PN: Central hole in lines (esp. around Cu)	No Yes 1) Individual pixels & columns 2) Near pn readout (CAMEX)	Yes No	Yes No, apart from real astronom. objects
Spectral	Variable Unpredictable No correlation between intensity + shape Low-E flares turn on before high-E	Flat + flourescence + detector noise MOS: 1.5 keV Al-K 1.7 keV Si-K det.noise<0.5 keV. High-E − low-intensity lines (Cr, Mn, Fe-K, Au) PN: 1.5 keV Al-K no Si (self-absorbed) Cu-Ni-Zn-K (∼8 keV) det.noise<0.3 keV	1) low-E (<300 eV), tail may reach higher-E 2) low-E (<300 eV)	∼1.4 power law. Above 5keV, dominates over internal component	Thermal with $\lesssim$1keV emission lines