

# Updates and Additions to EPIC Background Products

<http://www.sr.bham.ac.uk/xmm3/BGproducts.html>

A&A 409, 395 (2003)

Update to talk presented at Tuebingen BG workshop

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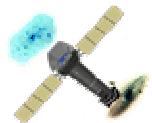
## *XMM-Newton EPIC Background Analysis*

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XMM-Newton background Events files for the 3 EPIC instruments in their different instrument mode/filter combinations have been constructed using a superposition of many pointed observations. Background maps in several different instrument/mode/filter combinations and in several energy bands have also been constructed. On these pages, details can be found on how to obtain these background products together with related software and the paper on their construction and usage.

Contents:

- [Latest updates to these web pages](#)
- [XMM-Newton background subtraction](#) (brief introduction)
- [Available XMM-Newton background files](#)
- [Software available relating to background files](#)
- [Production of Background Maps and Event Files](#)
- [Using these Background Files](#) (some brief guidance)
- [Jump straight to main ftp site](#)



XMM  
EPIC  
MOS

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Blank sky event files essential for BG subtraction of e.g. extended objects filling FOV  
 Extremely useful as alternative BG comparison method for semi-extended sources

- Thick filter blank-sky background event files now available

Instrument	Mode	Filter	N <sub>OBS</sub>	Exp.time (s)
MOS1	FF	Thin	49	1055905
MOS1	FF	Medium	21	488422
MOS1	FF	Thick	14	403938
MOS2	FF	Thin	46	1004709
MOS2	FF	Medium	26	592975
MOS2	FF	Thick	14	404717
PN	FF	Thin	18	351549
PN	FF	Medium	12	188159
PN	FF	Thick	12	242110
PN	FFext	Thin	32	416739
PN	FFext	Medium	8	82957
PN	FFext	Thick	5	87525



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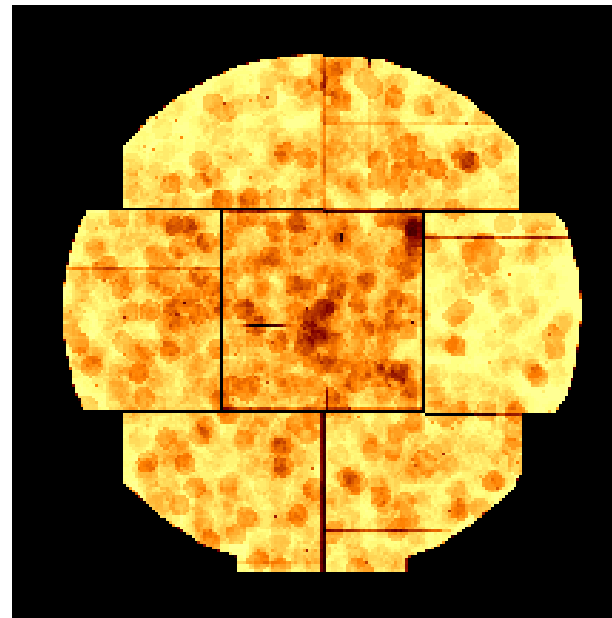
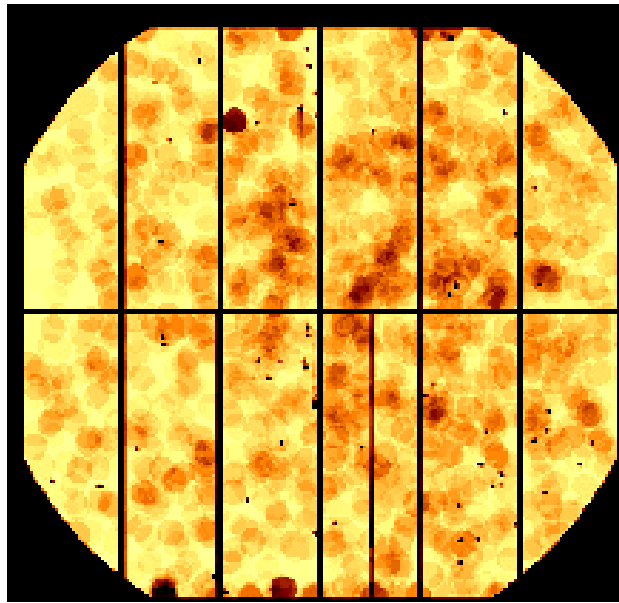


Many users now making use of these BG event files

## Other Updates

- Many due to requests & suggestions from users
- See web site for details
- Site linked from main ESA website (Vilspa)
- Event files without (E1) and with (E2) the exposure extensions
  - Exposure extensions contain correct exposure times
- Exposure maps with and without the effects of source removal
- Source lists (position, obs.ID, TSTART/STOP) of each removed source for each (of the 12) blank sky event files (allows re-filtering of event files)
- BGrebinimage2SKY\_4arcs – Script+program to rebin and reproject the 4" resolution exposure maps – Transformation recently improved

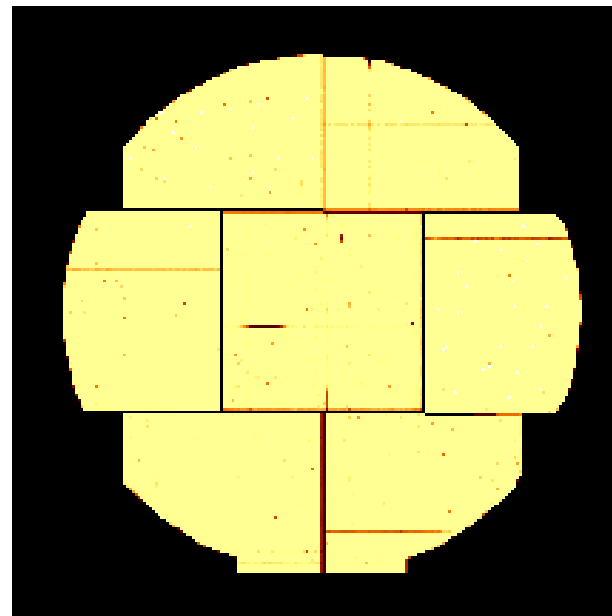
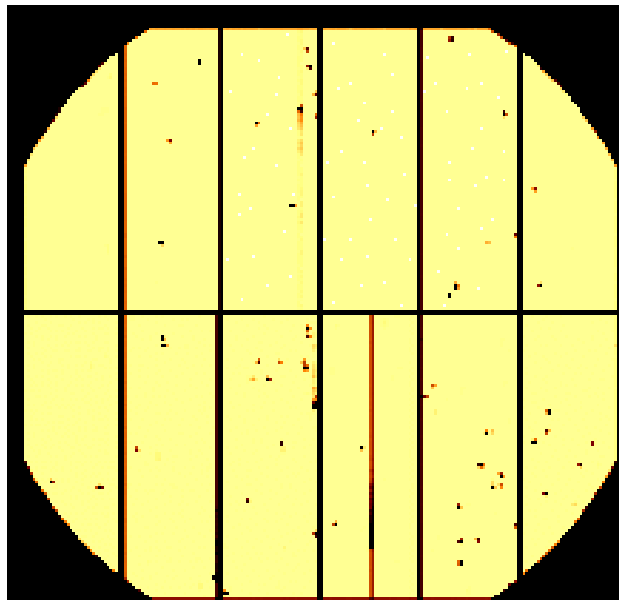




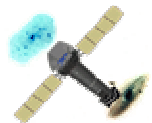
## Exposure Maps

- With source removal

(av. ~ 30ks exp.)



- Without source removal



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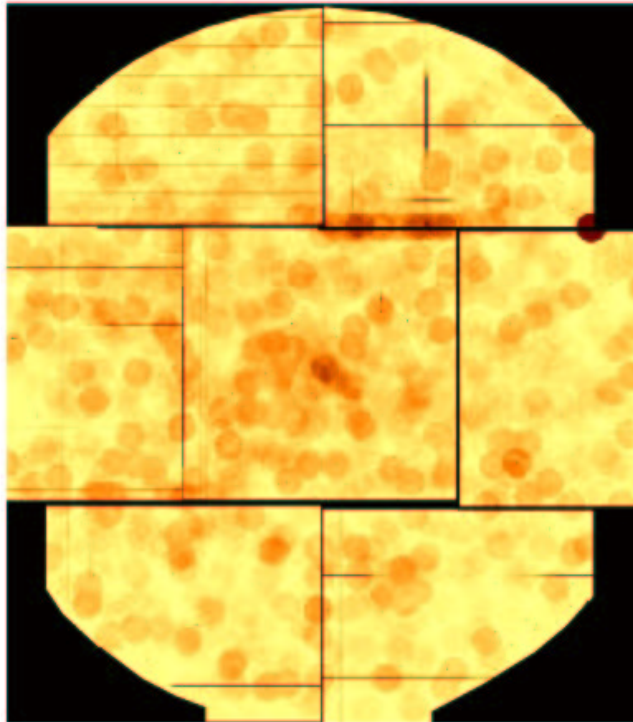
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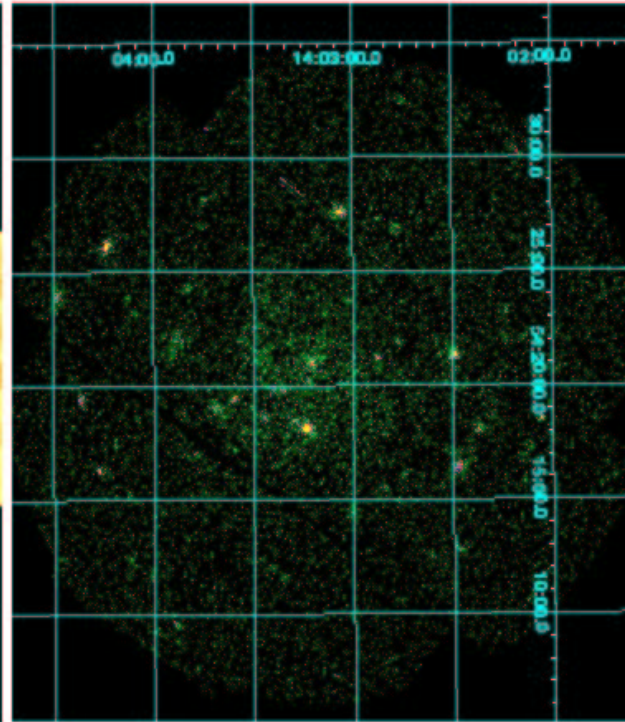
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- Use of BGrebinimage2SKY\_4arcs to transform/rebin from DET to SKY
- Can now do all BG analysis in DET or SKY coordinates

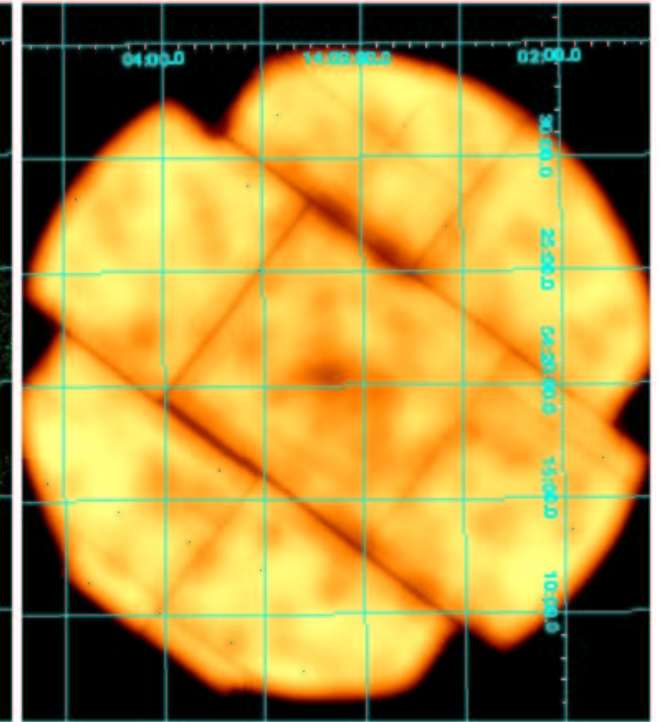
BG Exposure map (4") in detector coordinates



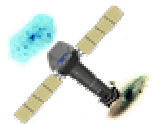
User's image (??") in sky coordinates



BG Exposure map (??") in user's sky coordinates



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