



Exposure Maps

A Chandra imaging effective exposure map [units: cm²s] is made by dithering an instrument map across the sky using the aspect solution (binned into an aspect histogram by the tool asphist).

The instrument map includes detector quantum efficiency (QE) and non-uniformities across the face of a detector (QEU), mirror (HRMA) vignetting, and bad pixels (including those at ACIS node boundaries).

The aspect histogram gives the amount of time the Chandra optical axis dwelt on each part of the sky, while the instrument map provides the instantaneous effective area across the field of view. The product is the exposure map, from which flux or surface brightness can be readily calculated.

The Introduction to Exposure Maps (PS, 12pp) gives a more detailed explanation.

The CIAO tool mkexpmap is used to generate exposure maps for Chandra data, as illustrated in the CIAO Imaging Threads.

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URL:
<http://cxc.harvard.edu/ciao3.4/dictionary/exposure.html>
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