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## ACIS QE Degradation

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### Spatial Contamination

The ACIS QE degradation model has been enhanced to account for spatial variations in the contamination on the ACIS optical blocking filters. The contamination is now expressed as a function of time, energy, and ACIS chip coordinate.

For imaging analysis of extended sources or point sources far off-axis, there is a significant change in instrument and exposure maps when the new calibration is applied.

The spatial contamination correction is automatically incorporated into exposure maps and ARF files (made by `mkinstmap/merge_all`, `mkarf/psextract`, `mkwarf/specextract`, `mkgarf`).

Additional information on spatial contamination:

- [ACIS Spatial Contamination Effects](#) (PS, 10 pages)
  - [Spatial structure in the ACIS OBF contamination](#)
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The response tools are designed to incorporate corrections for ACIS contamination via ARDLIB and a CALDB contamination file. The necessary calibration files have been available as of CALDB 2.26 (2 February 2004) and were updated in CALDB 3.0.0 (15 December 2004).

The official recommendation of the "ACIS Modeling and Analysis Team" is that [creating a new ARF](#) with the new calibration is the best way to correct for the QE degradation issue. Instructions on how to address this problem in your data analysis are available in the [Correcting Responses for ACIS Contamination](#) thread.

Technical information on the contamination is available from the [ACIS QE degradation memo](#).

Additional information is also available from:

- [Composition of the Chandra ACIS contaminant](#) (PS, 12 pages)  
H. L. Marshall, A. Tennant, C. E. Grant, A. P. Hitchcock, S. O'Dell, P. P. Plucinsky  
[astro-ph/0308332](#)
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