XRTpy is a Python package being developed for the analysis of observations made by the X-Ray Telescope (XRT) on the Hinode spacecraft. The first public release will be announced at the site, expected Fall 2022. We invite review and comments on our documentation at any time.

Purpose

XRTpy's purpose is to enable XRT data analysis for Python users. Official Hinode analysis routines are written in IDL (Interactive Data Language), but NASA and the science community are moving towards Python. XRTpy is carefully developed to replicate results from the official IDL routines. Visit our site for more information about XRTpy.

Site Information

The XRTpy documentation site will guide you through installing XRTpy, briefly reviewing the X-Ray Telescope, functionalities offered by XRTpy, jupyter notebook example guides, bibliography, glossary, and methods of communicating. XRTpy's initial functionalities are motivated by the SolarSoft XRT Analysis Guide. Specified to address the most common analysis needs for XRT data.

Capability

XRTpy includes an object-oriented representation of the instrument configuration for a set of XRT channel filters. Effective areas are calculated that pair channels with a contamination model for a given date and time. In addition, the temperature response is calculated for each channel (including the time-dependent contamination calibration) for a specified spectral emission model. In progress: derivation of electron temperature and emission measure using the filter ratio method.