

Imaging Spectroscopy

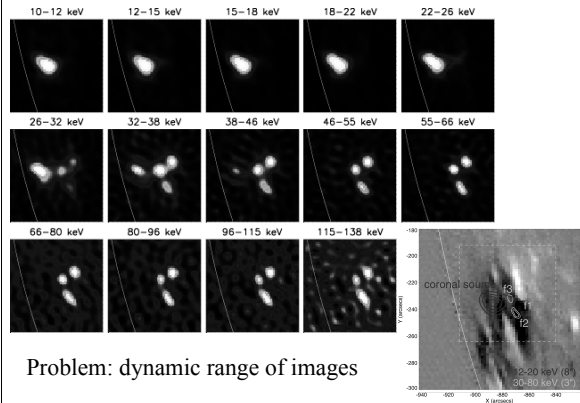
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Get spectrum of individual X-ray sources:

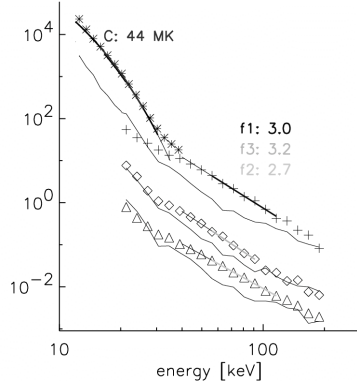
-) compare spectra of different HXR footpoints
-) compare spectra of HXR footpoints and coronal HXR sources (e.g. above-loop-top-source)

- 1) Make images at different energies
- 2) Calculate and plot flux of each source

Example July 23, 2002

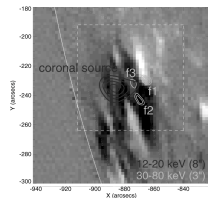


July 23, 00:29 UT



Spectra of HXR footpoints

Difference in γ could be explained with larger column density above harder footpoints. About a factor of 2 is needed.



Enhancements of the hsi_image software

- A new version of the `hsi_image` object allows generating image cubes.
 - Image cubes are 4-dimensional arrays containing images in multiple time and energy intervals.
- The new version of `hsi_image` is an extension of the current image object
 - Old way of generating single images stay the same
- Still experimental software
 - Download it and try it out: hessi.ssl.berkeley.edu/~csillag/rhessi/dasw/rhessi_imagecube.zip
 - Unzip it
 - IDL> `add_path, '/the/place/where/you/unzip/it/rhessi_imagecube'`
 - First release before end of the year
 - Compatibility issues pending
 - All comments more than welcome

How to make images at different energies and time

hessi.ssl.berkeley.edu/~csillag/rhessi/image_cube_script.pro

Changes from the current hsi_image

New control parameters:

- **im_time_interval**: “replaces”
obs_time_interval
 - Can be either 1- or 2-dimensional:
[t1,t2,t3,t4...tn], n>1
[[t1,t2] , [t3,t4] , [t5,t6]]
- **im_energy_binning**: “replaces”
energy_band
 - Also 1- or 2-dimensional

RHESSI input to ospex

- The image file can be used as input to ospex
- The panel display is used to select which image is used to select the source area
- The first selected source area is passed to ospex, but (currently) all the sources need to be selected for error estimation