

RHESSI Extras Archive

Last Update 28-Jan-2024, Kim Tolbert (kim.tolbert at nasa.gov)

The Reuven Ramaty High Energy Solar Spectroscopic Imager (RHESSI) recorded X-ray data between 3 keV and 17 MeV from the Sun between February 2012 and April 2018. Please see the [RHESSI web site](https://hesperia.gsfc.nasa.gov/rhessi) at <https://hesperia.gsfc.nasa.gov/rhessi> for a complete description of the mission, the instrument, and the software needed to analyze the data.

These directories contain the RHESSI mission archive products that should facilitate analysis of RHESSI observations now and in the future. The primary Level-0 and quicklook archive is located [here](#). (please read the aa_readme_hessidata file there for descriptions of those files).

These directories contain the following files:

detector_health	The detector health database records the status of the 18 RHESSI detector segments on a daily basis for the entire mission. Monthly plots showing the status for all detector segments for each day are in this directory. The information is also stored in .csv (comma separated value) files, one per detector segment per year, in the SSW software distribution in \$SSW/hessi/dbase/det_health. Please see the readme for more details.
eventlist_fits_v2	Eventlist FITS files for each flare time interval containing time and energy information for every photon detected by RHESSI between 3.0 and 310.0 keV. These files were made during the creation of the flare image archive. Each file corresponds to one flare in the image archive. The eventlist FITS files are only useful if used within the SSWIDL RHESSI software. They contain unpacked detector event data and can be used as input to the image or spectrum object instead of the Level-0 files, saving time and the need to download the large Level-0 files.
flare_images_v2	Flare Image Archive. Images and related products were generated for >75,000 RHESSI flares (all identified flares that had sufficient counts, and whose position could be determined) using six image reconstruction methods. Please see the RHESSI Image Archive Strategy for information on how the parameters for imaging, including the time and energy bins, were chosen. Please see Guide to RHESSI Image Archive for an explanation of how to access the archive, and a detailed description of each type of plot shown in the archive.
gamma_ray_templates	Gamma-ray templates for fitting spectra in OSPEX .
goesplots	GOES lightcurve plots (daily, 12 hr, and orbital) and GOES event listings.

imagecube_fits_v2	Imagecube FITS files containing the images in the RHESSI Flare Image Archive.	
sff	Solar Flare Finder (cross-mission synoptic) plots. Please see Solar Flare Finder Document for more information.	
spectra	fits_gamma_ray	For the less than 20 RHESSI gamma-ray flares, count spectrum and SRM FITS files at appropriate energy and time binning, as well as FITS files of suitable background for each flare.
	fits_hires	Count spectrum files for the larger RHESSI flares (events seen above 50 keV). Separate files are available for each functional detector and include the orbit containing the flare (midnight-to-midnight), with 4s time bins and native energy bins (channel boundaries specific to each detector segment). The corresponding Spectral Response Matrix (SRM) files are also provided.
	fits_standard	Count spectrum files for every orbit of the RHESSI mission (midnight-to-midnight) with 4s bins, 77 energy bins 3-250 keV, combining all functional detectors. The corresponding Spectral Response Matrix (SRM) files are also provided.
	flare_plots	Plots of count flux and photon flux spectra for each detector for each RHESSI flare (front detectors only) for one minute centered on peak time of flare, in 138 energy bins from 1.0 to 300.0 keV, .333 keV wide from 1 to 10 keV and then logarithmically spaced up to 300 keV. Photon flux is computed using the semi-calibrated option in the spectrum object - this is a rough estimate of photon flux.
	minute_plots	Plots of counts flux spectrum of each detector (fronts only) for each minute of the mission in 138 energy bins from 1.0 to 300.0 keV, .333 keV wide from 1 to 10 keV and then logarithmically spaced up to 300 keV. These are the plots

	<table border="1"> <tr> <td data-bbox="553 212 805 512"></td> <td data-bbox="805 212 1344 512"> <p>shown in the RHESSI Browser when RHESSI by Time / Per-min. det. spectra is enabled. The spectrum FITS files containing the data used to make those plots are in the minute_plots/fits directory. Each file holds one orbit of data for one front detector. There are no corresponding SRM files.</p> </td> </tr> </table>		<p>shown in the RHESSI Browser when RHESSI by Time / Per-min. det. spectra is enabled. The spectrum FITS files containing the data used to make those plots are in the minute_plots/fits directory. Each file holds one orbit of data for one front detector. There are no corresponding SRM files.</p>
	<p>shown in the RHESSI Browser when RHESSI by Time / Per-min. det. spectra is enabled. The spectrum FITS files containing the data used to make those plots are in the minute_plots/fits directory. Each file holds one orbit of data for one front detector. There are no corresponding SRM files.</p>		
spectrograms	<p>Spectrograms of every front detector for every RHESSI orbit in 4s time bins, 39 energy bins from 3-270 keV, in both counts and count flux units. The spectrum FITS files created to make these plots are also available here.</p>		
visibility_fits_hires_v2	<p>High time and energy resolution visibility FITS files for each flare in the RHESSI Image Archive: 8s time resolution, up to 20 energy bins depending on the energy of the flare. All functional detector (front segments only) are used.</p>		
visibility_fits_v2	<p>Visibility FITS files with the same time bins, energy bins, and detector selection as the images in the RHESSI Image Archive.</p>		