



# pn-filter

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## Abstract

*pn-filter* is the initial task to be run on the data within the *esas* package for PN. It calls *espfilt* to identify good time intervals. Filtering is also done using the standard parameters for PATTERN, etc. *pn-filter* will process all of the PN imaging exposures for both detectors for the observation pointed to by \$SAS\_DIR.

## 1 Instruments/Modes

Instrument	Mode
EPIC	Imaging

## 2 Use

pipeline processing	no
interactive analysis	yes

## 3 Description

*pn-filter* is the initial task to be run on the data within the *esas* package for PN. It calls *espfilt* to identify good time intervals. Filtering is also done using the standard parameters for PATTERN, etc. *pn-filter* will process all of the PN imaging exposures pointed to by \$SAS\_DIR.

**Warning and requirements:** *pn-filter* is part of the *esas* package integrated into SAS, but it is limited to work within the *esas* data reduction scheme.

## 4 Parameters

This section documents the parameters recognized by this task (if any).

Parameter	Mand	Type	Default	Constraints
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None.



## 5 Input Files

The task will filter data reduced either with `emproc` or `emchain`, present in the working directory.

## 6 Output Files

- `pnprefix-cc-ori.fits` – The cal-closed photon event files produced by *emchain*
- `pnprefix-clean.fits` – The filtered photon event files
- `pnprefix-corn.fits` – Event list of data from the corners of the detectors
- `pnprefix-corn-image.fits` – Image of the filtered data from the unexposed corners in detector coordinates
- `pnprefix-gti.fits` – Fits file list of good time intervals identified by the task *espfilt*
- `pnprefix-gti.txt` – Ascii list of good time intervals identified by the task *espfilt*
- `pnprefix-hist.qdp` – QDP plot file of the light curves showing the filtered intervals and a histogram of the `pnprefix-rate.fits` showing the filtering selection.
- `pnprefix-obj-image-det.fits` – Image of the filtered data in detector coordinates
- `pnprefix-obj-image-det-soft.fits` – Image of the filtered data in detector coordinates in the 0.2 – 0.9 keV band
- `pnprefix-obj-image-det-unfilt.fits` – Image of the unfiltered data in detector coordinates
- `pnprefix-obj-image-sky.fits` – Image of the filtered data in sky coordinates
- `pnprefix-ori.fits` – The photon event files produced by *emproc* / *emchain*
- `pnprefix-ratec.fits` – Light curve of the data from the corners of the detectors in the 2.5 – 12.0 keV band
- `pnprefix-rate.fits` – Light curve of the data within the open area of the detectors in the 2.5 – 12.0 keV band

## 7 Algorithm

## 8 Comments

## References