



## merge\_source\_list

June 2, 2019

### Abstract

*merge\_source\_list* creates a master list of sources detected from a list of observations which have been processed to the point of a creating an emldetect source list. Sources are compared and those within 2" of each other have the one with the lower flux thrown out. It assumes that the source detection has been in two bands, 0.4-1.25 keV and 2.0-7.2 keV, which can be produced by cheese-bands in the default mode.

## 1 Instruments/Modes

| Instrument | Mode    |
|------------|---------|
| EPIC       | Imaging |

## 2 Use

|                      |     |
|----------------------|-----|
| pipeline processing  | no  |
| interactive analysis | yes |

## 3 Description

*merge\_source\_list* creates a master list of sources detected from a list of observations which have been processed to the point of a creating an emldetect source list. Sources are compared and those within 2" of each other have the one with the lower flux thrown out. It assumes that the source detection has been in two bands, 0.4-1.25 keV and 2.0-7.2 keV, which can be produced by cheese-bands in the default mode.

**Warning and requirements:** *merge\_source\_list* is part of the *esas* package integrated into SAS, but it is limited to work within the *esas* data reduction scheme. This is specially true wrt the structure and names of the input files. In particular, *merge\_source\_list* assumes that other tasks from the package, *mos-spectra* / *pn-spectra* and *cheese-bands* have been successfully run for the lists to be used.

## 4 Parameters

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

| Parameter | Mand | Type | Default | Constraints |
|-----------|------|------|---------|-------------|
|-----------|------|------|---------|-------------|



|                |     |        |       |  |
|----------------|-----|--------|-------|--|
| <b>dirfile</b> | yes | string | mydir |  |
|----------------|-----|--------|-------|--|

File containing the list of ObsID directory strings for source lists to be merged. For instance, if the merging processing is being done in the directory `/DATA/merge` and the individual observations are located in the parallel directories `/DATA/obs1/proc` and `/DATA/obs2/proc`, the file *dirlist* could have entries such as:

```
/DATA/obs1/proc/  
/DATA/obs2/proc/
```

|                   |     |      |  |  |
|-------------------|-----|------|--|--|
| <b>maxlikelim</b> | yes | real |  |  |
|-------------------|-----|------|--|--|

Minimum accepted value for the maximum likelihood detection parameter.

|                |    |         |     |     |
|----------------|----|---------|-----|-----|
| <b>clobber</b> | no | boolean | yes | T/F |
|----------------|----|---------|-----|-----|

Clobber existing files?

## 5 Input Files

Maximum likelihood source list from `emldetect`, `emllist.fits`, for all ObsIDs to be merged.

## 6 Output Files

`merged-source-list.fits`

## 7 Algorithm

## 8 Comments

## References