rgslccorr

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Abstract

RGS light curve correction task

1 Instruments/Modes

Instrument	Mode

2 Use

pipeline processing	no
interactive analysis	yes

3 Description

rgslccorr is the task that allows the user to create RGS lightcurves. The task corrects the lightcurve from:

- Dead time.
- Background scale.
- Background substraction.

This task needs as mandatory input parameters a RGS event list, the corresponding RGS source list and a timebinsize. It is also possible to create a lightcurve of the two intruments(RGS1+RGS2), if the two events list belong to the same observation and the two instrument exposure were taken simultaneously.

rgslccorr filters the event list file using the source and background region from the source list file and wavelength range or selects a range of CCDs, in case they were enabled. Then, it creates a time serie, corrects for dead time, exposure and backscal. Finally, the source time serie is background subtracted if the user activates the corresponding parameter.

If background subtraction option is enabled, **rgslccorr** task creates an independent background light curve file and also created two columns BACKV and BACKE (background rates and errors) in the background corrected light curve.

4 Parameters

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

Parameter	Mand	Type	Default	Constraints
evlist	yes		list	1-2

RGS event file list.

srclist	yes		list	1-2

RGS source list file.

timebinsize	yes	1	real	> 0

Size of time bins.

outputsrcfilename	no	string		src_rates.ds

Source output file name.

withbkgsubtraction	no	bool	no	

Enable background subtraction

outputbkgfilename	no	string		bkg_rates.ds

Background output file name.

withfiltering	no	bool	no	

Enable wavelength filtering for time serie extraction

filtering	no	string	"wavelength"	"wavelength"|"energy"

Parameter to choose to use either wavelength or energy to filter the event list

lambdamin	no	real		0

Wavelength min value

lambdamax	no	real		0

Wavelength max value

energymin	no	real		0

Energy min value

energymax	no	real		0

Energy max value

withccdselection	no	bool	no	

Enable CCD selection filtering for time serie extraction

ccds	no	int	list	[1:9]

List of CCDs

withtimeranges	no	bool	no	

Use min/max values for time series extraction

timemin	no	time		

Start time for time series

timemax	no	time		

Stop time for time series

orders	no	list	1 2	1-2

RGS orders to be used in the selection expression

sourceid	no	int	1	

Source identifier that appears in the source list file.

5 Errors

This section documents warnings and errors generated by this task (if any). Note that warnings and errors can also be generated in the SAS infrastructure libraries, in which case they would not be documented here. Refer to the index of all errors and warnings available in the HTML version of the SAS documentation.

BinsizeVal *(error)*
The value of the bin size must be an integer.

WrongInputFiles *(error)*
The number of RGS event files and RGS source list must be the same.

EventListSize *(error)*
The number of RGS event files must be one or two.

WrongObservation *(error)*
It is not possible to create a lightcurve of two event files from different observations.

NotOverlappingTime *(error)*
The two RGS event list do not overlap in time.

BinningError *(error)*
Error calculating the number of bins. Check the start time and stop time.

NoFilteredEvents *(warning)*
One of the CCD does not have any event.
corrective action:

6 Input Files

1. RGS event list file.
2. RGS source list file.

7 Output Files

1. Lightcurve file.

8 Algorithm

9 Comments

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References