fitsstat

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Abstract

This task calculates the statistical information of the input FITS and prints it to STDOUT.

1 Instruments/Modes

fitsstat is not XMM-specific: it can be applied to any FITS file.

2 Use

pipeline processing	no
interactive analysis	yes

3 Description

This task calculates the statistical information of the input FITS for the given conditions (area, values etc) and prints it to STDOUT. See the section of 'General-purpose FITS-processing utilities' in the document of **ssclib** for detail.

4 Parameters

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

Parameter	Mand	Type	Default	Constraints
set	yes	dataset		

Name of the input FITS data set. If `datatype`='column', the table name should be added, following the ':', such as, 'input1.ds:SRCLIST'.

datatype	no	string	image	image—column

The datatype of interest in the input FITS file.

column	yes	string		

This parameter is read only if `datatype`='column'. This specifies the name of the column of interest.

withregion	no	boolean	no	

If set, the task reads `regionstyle` and relevant parameters to determine the region to calculate the statistics. Note the two parameters `minareacoords` and `maxareacoords` are completely independent of this switch.

regionstyle	no	string	circle	circle—annulus

This parameter is read only if `withregion`=yes. This specifies the shape of the region. At the moment, only `circle` and `annulus` are allowed, and they mean practically identical.

centrecoords	yes	real list		

This parameter is read only if `withregion`=yes. It is the list of the image pixel coordinates for the (x,y) axes.

radii	yes	real list		

This parameter is read only if `withregion`=yes. It specifies a radius (or maybe radii in the future) of the region.

radiiinner	no	real list	0.0	

This parameter is read only if `withregion`=yes. It specifies a inner radius (or maybe radii in the future) of the annuluar region.

withmincoords	no	boolean	no	

If set, the task reads `minareacoords`.

minareacoords	no	real list		

This parameter is read if `withmincoords`=true. The area where the coordinates are equal to or larger than these will be taken into account in the calculation of the statistics.

withmaxcoords	no	boolean	no	

If set, the task reads `maxareacoords`.

maxareacoords	no	real list		

This parameter is read if `withmaxcoords`=true. The area where the coordinates are equal to or smaller than these will be taken into account in the calculation of the statistics.

withvallower	no	boolean	no	

If set, the task reads `vallower`.

vallower	no	real		

This parameter is read if `withvallower`=true. The pixels of which the value is equal to or larger than this value will be taken into account in the calculation of the statistics.

withvalupper	no	boolean	no	

If set, the task reads `valupper`.

valupper	no	real		

This parameter is read if `withvalupper`=true. The pixels of which the value is equal to or smaller than this value will be taken into account in the calculation of the statistics.

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.

wrongNumberMinAreaCoords *(error)*
`set` and `minareacoords` have different dimensions.

wrongNumberMaxAreaCoords *(error)*
`set` and `maxareacoords` have different dimensions.

inconsistentMinMaxAreaCoords *(error)*
One or more elements in `minareacoords` is smaller than those in `maxareacoords`.

wrongParamNumberCentreCoords *(error)*
Not enough number of values are specified in `centrecoords`. It has to be 2 values, namely (x,y).

largerInnerRadiusThanOuter *(error)*
The specified `radii` are smaller than `radiiinner`.

invalidRegionStyle *(error)*
The specified `regionstyle` is not supported.

convertToDouble *(warning)*

corrective action: Unsigned Integer or Boolean data are converted into Double in the calculation.

6 Input Files

The input FITS needs not be XMM images and can be of any numeric data type output by **evselect**, eg int8, int16, int32, real32 or real64.

1. (Mandatory) `set`: the input FITS.

7 Output Files

Nil (all the outputs are printed to STDOUT).

8 Algorithm

9 Comments

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References