

**NAME**

deroll\_asol – modify an aspect solution file to remove roll and nominal pointing

**SYNOPSIS**

**deroll\_asol** *options* [input file] [output file]

**DESCRIPTION**

**deroll\_asol** modifies the RA, DEC, and ROLL columns in the input Chandra aspect solution data file so that the observation appears to be at RA = 0, DEC = 0, and ROLL = 0. It also modifies the RA\_NOM, DEC\_NOM, ROLL\_NOM keywords accordingly.

**Note:** The keywords must also be modified in the level one event file in order for the **CIAO** **acis\_process\_events** or **hrc\_process\_events** tools to properly make the aspect correction.

**Stacks**

If more than one aspect file needs to be de-rolled, a stack of files can be operated upon in one invocation of **deroll\_asol**. A file stack (in this context) is a file containing the names files to operate on. Specification of the output files for an input stack of more than one file may be done with either another stack file, or by providing a Perl expression to transform the input file name.

To indicate to **deroll\_asol** that file names are in stack files, pass the stack file names to it as if they were input or output files, but precede their names with the @ character. Alternatively, the filenames may be concatenated into a single string, with commas between them. For example:

```
--input=@input --output=@output
--input=i1.fits,i2.fits --output=o1.fits,o2.fits
```

Instead of specifying a separate output stack, the **--output-pat** and **--output-rep** options allow the creation of output names on the fly from the input names. The **--write-stack** option is useful to capture those names automatically into a file.

```
deroll_asol \
--verbose \
--write-stack output.lst \
--output-pat '(.*) (.fits(.gz)?)' \
--output-rep '${1}.deroll${2}' \
@stack
```

**ARGUMENTS AND OPTIONS**

**deroll\_asol** uses long-style options. Options which take values may be separated from the values by whitespace or the = character.

If a command line argument begins with @ it is taken to be the name of a file containing more arguments. If an option value starts with a @, use = (*not whitespace*) to separate the option name from its value, e.g:

```
deroll_asol --input=@input_stack @more_args
```

specifies that the file *input\_stack* is an input stack and that more arguments are located in the *more\_args* file.

**--input=*file***

The input *asol1* file, or, if the first character is @, the name of a stack file.

Required.

**--output=*file***

The output *asol1* file, or, if the first character is @, the name of a stack file.

Either this option or the **--output-pat** **--output-rep** option pairs must be specified.

**--output-pat** *Perl regular expression*

This specifies a Perl regular expression which will be used to extract strings from the input file names for use in generating the output filenames.

For example, if files end in *.fits* or *.fits.gz*

```
--output-pat='(.*)(.fits(.gz)?)'
```

will extract the basename of file and the extension into the \$1 and \$2 variables.

Must be used with **--output-rep**. Cannot be used with **--output**.

**--output-rep** *Perl replacement expression*

This is used in tandem with the strings extracted with **--output-pat** to construct an output file name.

```
--output-pat='(.*)(.fits(.gz)?)' --output-rep='${1}.deroll${2}'
```

Creates `foo.deroll.fits.gz` from `foo.fits.gz`.

Must be used with **--output-pat**. Cannot be used with **--output**.

**--write-stack** *file name*

Create a stack file with the given name containing a list of the de-rolled output filenames.

**--verbose**

If true, indications of progress will be output.

**--version**

Prints the version and exits

**--help** Prints this notice and exits

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