DEPARTMENT OF SPACE RESEARCH
BIRMINGHAM UNIVERSITY
Asterix Data Analysis
ASTERIX Programming Note 010

PROG/010

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4 July 1990

The AXIS_ routines

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1 Introduction

The AXIS_ routines perform manipulations specific to Asterix axis structures and data.

The first five of these routines use the AXIS LABELs in a binned dataset to obtain the index number (for use in BDA_ routines) of an axis with a particular label.

If the specified axis is found, then AXDIM (or X_AXIS, Y_AXIS, T_AXIS) is set to the index number of that axis. If no matches are found, then a value of 0 is returned. If N matches are made (N > 1), then a value of -N is returned.

The new routines are:- N.B. arguments to the left of the ';' are imports and to the right are exports.

2 Routine Descriptions

AXIS_GET - Finds axis; asks user if can't do it automatically.

```
      SUBROUTINE AXIS_GET (LOC, SUB_STRING, PARNAME, NDIM; AXDIM,
     :                                                      STATUS)
```

This routine calls AXIS_FIND. If the axis is NOT found, or more than one match is made, then the relevant axis labels are displayed together with their index numbers, and the user is asked to choose which axis to use.

AXIS_FIND - Returns index number of axis with label containing SUB_STRING.

```
      SUBROUTINE AXIS_FIND (LOC, SUB_STRING, NDIM; AXDIM, STATUS)
```

This routine looks for the axis label containing the sub string SUB_STRING. SUB_STRING must therefore be chosen carefully!

AXIS_FINDXYT - Find the X, Y, and T axes, if possible.

```
      SUBROUTINE AXIS_FINDXYT (LOC, NDIM; X_AXIS, Y_AXIS, T_AXIS,
     :                                                      STATUS)
```

This routine looks for X_CORR, Y_CORR, and TIMETAG labels. If it fails it will look for the X_RAW, Y_RAW, and RAW_TIMETAG labels as appropriate.

AXIS_LIST - Lists the axes of the data array with their labels.

```
SUBROUTINE AXIS_LIST (LOC, NDIM; STATUS)
```

This routine displays to the user the axis labels, together with their index numbers.

AXIS_LISTMATCH - Lists axes with labels containing SUB_STRING.

```
SUBROUTINE AXIS_LISTMATCH (LOC, SUB_STRING, NDIM; STATUS)
```

This routine displays to the user the axis labels containing the sub string SUB_STRING, together with their index numbers.

AXIS_VAL2PIX - Translates range spec to pixel values

```
SUBROUTINE AXIS_VAL2PIX( DIM, AXVAL, RLO, RHI ; PLO, PHI, STATUS )
```

Locates a range specified in axis values in pixels. The bound specified by RLO is inclusive, that by RHI is exclusive.