CXC-DM-006

CXC Data Model

Vol. 6

IRAF Kernel Design

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Contents

1 Introduction

This document describes the CIAO DM ('Data Model') IRAF/QPOE kernel design. It gives the mapping between the kernel and the Abstract Design. The current version of the document is a placeholder pending more complete treatment.

2 Datasets

A DM Dataset maps to either a single QPOE file, a single IMH/PIX file pair, or a directory containing multiple QPOE,IMH,PIX files. In the former two cases, the dataset contains a single block and new blocks may not be added to the dataset.

3 Blocks

Each DM Table block corresponds to a QPOE file, which must have a filename ending in '.qp'. Each DM Image block corresponds to an IMH file, which consists of a '.imh' header file and a '.pix' data file.

4 Table columns

In a QPOE file, the table columns are defined by QPOE macros.

4.1 Vector columns

The DM-specific keywords MTYPEn/MFORMn are used to define explicit groupings of columns and coordinate names.

In addition, the presence of a vector coordinate system forces its parent to be a vector column, as in the FITS kernel.

4.2 Coordinates on columns

Coordinates on columns are defined using the mwcs library interface. Only coordinate transformations supported by mwcs are allowed.

5 Images

5.1 Image coordinates

Standard IRAF image coordinates are used.

6 Data Subspace

The Data Subspace uses the deffilt QPOE keyword to record the GTI if there is a single component.

7 Header Descriptors

In general, QPOE header keys map to DM header keys. However, QPOE header keys do not support units and descriptions.

8 The IRAFMLIB library

The IRAF kernel is implemented via a separate library called IRAFMLIB. This library repackages the IRAF internal libraries and the CVOS library, together with some special wrappers. Minor changes are made to certain IRAF files in order to avoid problems. Compilation is done with explicit makefiles rather than the IRAF mkpkg process.