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CORONAL DIAGNOSTIC SPECTROMETER

**SOHO**

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## STUDY DURATIONS

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## 1 Overview

When a raster is defined in MK\_RASTER, then an estimate is made about how long this raster takes to run. This estimate is then used in estimating the duration of any study built with this raster, together with whatever information can be determined about pointing delays at that time. Finally, when the plan is put together, the final duration is calculated, using the final pointing values and any other information, such as the need to load a GIS lookup table.

## 2 Raster durations

The raster durations are stored in a parameter called DURATION in the raster database. The routine UPDATE\_RAS\_DUR can be used to modify this parameter if the method used for estimating the durations has changed. However, a more important technique for maintaining the raster values involves observing the actual durations as seen on the flight instrument.

The FIND\_DURATION routine produces a report of raster durations as read from the FITS file headers. For example, entering the command:

```
IDL> find_duration,'s3398r*.fits'
```

produces the output

Filename	Study	Raster	Duration
s3398r00	SYNOP_F	10/ 7	2508
s3398r01	SYNOP_F	10/ 7	2506
s3398r02	SYNOP_F	10/ 7	2506
s3398r03	SYNOP_F	10/ 7	2502
s3398r04	SYNOP_F	10/ 7	2505
s3398r05	SYNOP_F	10/ 7	2503
s3398r06	SYNOP_F	10/ 7	2506
s3398r07	SYNOP_F	10/ 7	2504
s3398r08	SYNOP_F	10/ 7	2512

This shows that the raster given by RAS\_ID=10, RAS\_VAR=7, which is used by the SYNOP\_F study, has a duration of a little over 2500 seconds.

Once the duration of the study is established, it is possible to enter this value into the database. The routine to do this is called FREEZE\_RAS\_DUR. When you enter this command, a widget appears as shown in Figure 1. The user can then do one of three things:

1. If known, the raster ID and variation number can be entered into the appropriate boxes, together with the new duration.
2. The raster can be selected by browsing through the raster database.

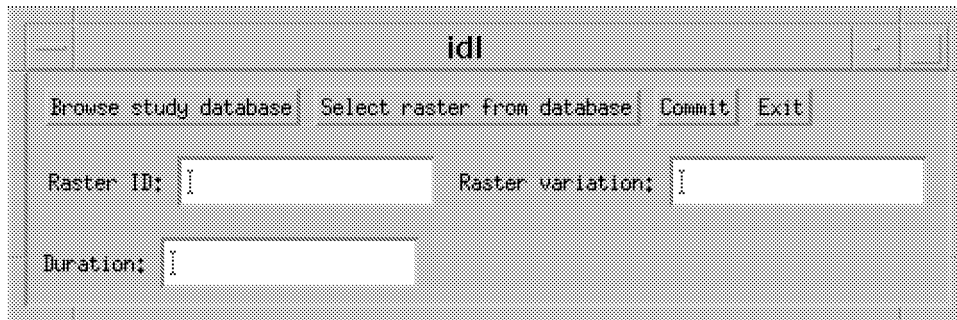


Figure 1: The FREEZE\_RAS\_DUR widget program.

3. The raster can be selected by browsing through the study database. This only really works for studies that consist of single (possibly repeated) rasters. For studies which use multiple rasters, only the first raster in the study is selected.

When either of the last two options are used, then the current value of the duration is displayed. The user can then enter in the new duration and put it in the database with the `Commit` button.

When a new raster duration is committed to the database, it is set negative to signal that it is a measured value rather than an estimated one. Negative values are not modified by the `UPDATE_RAS_DUR` routine. In the widget box, however, always enter in a positive value.

### 3 Study durations

There are two parameters in the study database related to duration, called `DURATION0` and `DURATION1`. After modifying the raster duration with `FREEZE_RAS_DUR`, the routine `UPDATE_STUDY_DUR` should be called to update the study durations. Calling `UPDATE_STUDY_DUR` without any parameters will update all studies—optionally, one can pass a study ID number as a parameter.

However, it may not be absolutely necessary to call `UPDATE_STUDY_DUR`, since it appears that `MK_PLAN` recalculates the study durations from the raster durations (**TBC**).