Combining Images with Image Combine Widget

From Main Display Widget Images Menu

Images that are loaded into IDP3 may be combined using the **Image Combine** Widget. Only "**ON**" Images may be combined. Any translation, rotation, scaling, etc. are performed on the images before they are combined. All masked pixels are excluded from the combination.

Images may be **mean** or **median** combined with or without **sigma clipping**. The Sigma Clipping limits may be set in the widget or the default values from the idp3_preferences file will be used.

In addition to the combined data image there are 3 optional files that may be computed and saved:

- A 2-D **standard deviation image** which shows the RMS of each resultant pixel in the output image.

- A 2-D image showing the **number of pixels** that contributed to each pixel in the output image.

- A 3-D image representing the **number of sigma** each pixel in each input image deviates from the mean or median for the associated output pixel.

The mean/median image may be saved to a file on disk and/or IDP3 memory. The standard deviation image and the number of pixels image (if selected) may also be saved to files on disk and/or IDP3 memory. The 3-D image of the number of sigma deviations may only be saved to a file on disk (which may be subsequently loaded into IDP3 with the **Load Image** function in the **Load Images** sub-menu of the Main Display **File** Menu).

Image Combine Widget
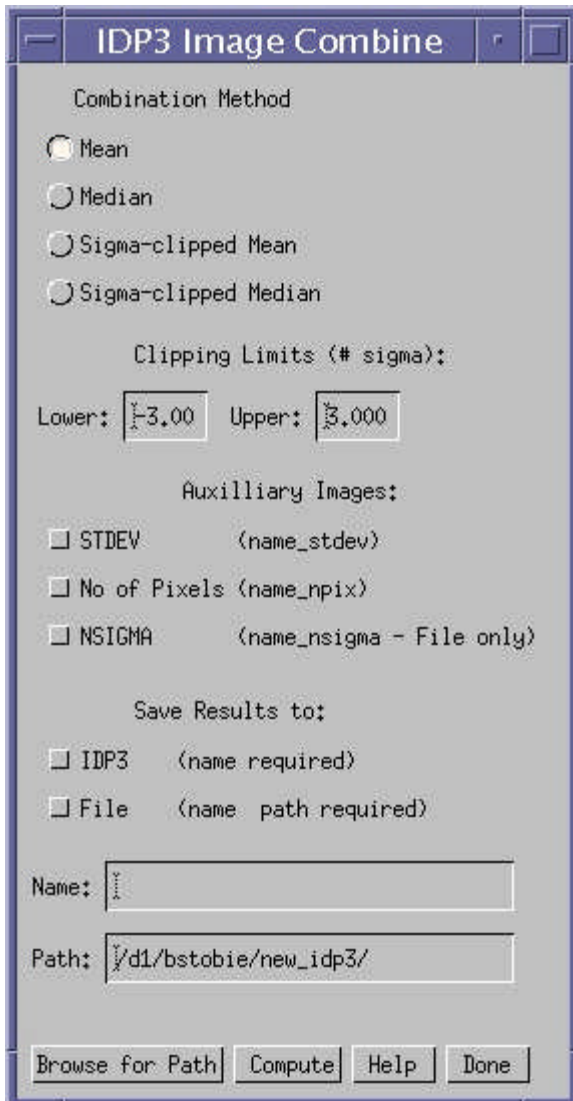
Method of Image Combination: Mean, Median, Sigma-clipped Mean or Sigma-clipped Median.

Clipping Limits (Lower and Upper) for computing Sigma-clipped Mean or Median in units of number of sigma. Default values from idp3_preferences.

Auxilliary Images to be computed and saved: Standard Deviation image (2-D), Number of Pixels image (2-D), and NSIGMA image (3-D).

Results may be saved to IDP3 which requires a name and/or to a file on disk which requires both a name and path. Images will be saved in **FITS format**. If no extension is given for the output file **".fits"** is appended to the file name. The files are named:

- "**name**".fits – output combined image

- "**name**"**_stdev**.fits - standard deviation

- "**name**"**_npix**.fits – number of pixels

- "**name**"**_nsigma.**fits – number of sigma

The user must give a name for the output file/s in the **Name Field** and if the image/s are written to disk, a path is also required in the **Path Field**. The **Browse for Path** button brings up a **Dialog_Pickfile** widget to allow the user to search the disk for the appropriate directory and populates the **Path Field**. **Compute** computes the desired image combination and saves the desired results. **Help** displays this file. **Done** exits the widget.