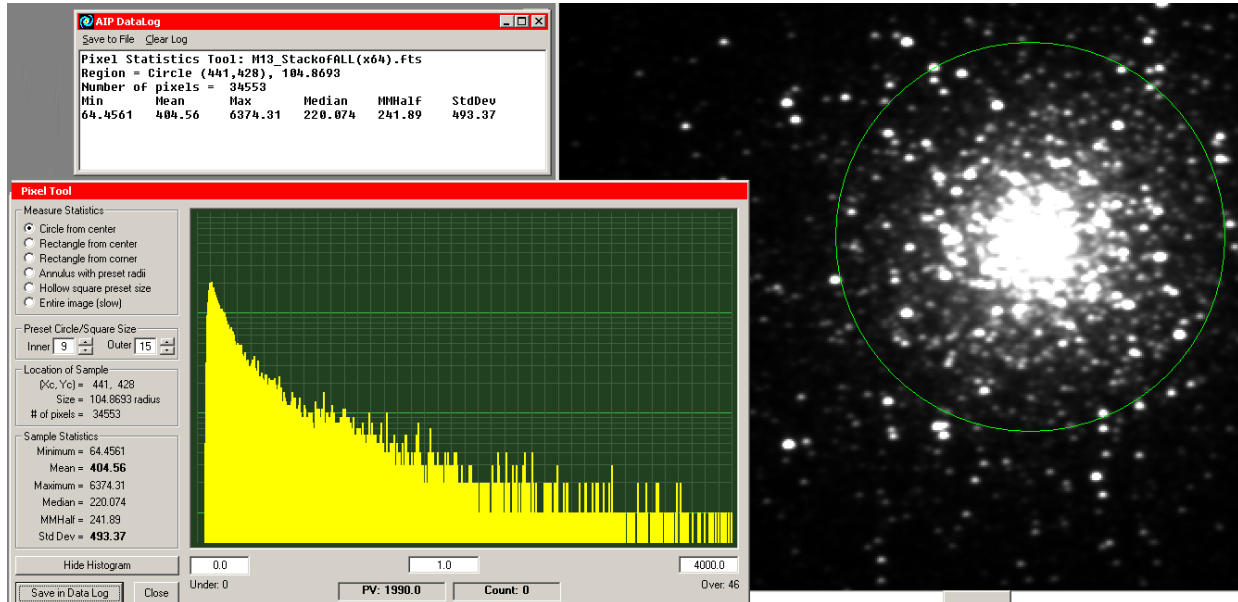


# Pixel Tool

Computes the statistical properties of a small selected region.



This tool collects statistical information on a region of an image selected by the user. To use this tool, activate this menu item and select the shape of the region you wish to gather statistics for. The annulus or hollow square settings are used if you wish to exclude an inner region of an area (e.g. such as gathering information on a region just outside a star).

To set the size and location of the region, the following settings are used:

## Measure Statistics

- Circle from center** - Region is a circle, centered on the location the mouse button is pressed.
- Rectangle from center** - Region is a rectangle, centered on the location the mouse button is pressed.
- Rectangle from corner** - Region is a rectangle, with one corner set at the location the mouse button is pressed.
- Annulus with preset radii** - Region is a set of concentric circles, with the region enclosed by the inner circle excluded.
- Hollow square preset size** - Region is a set of concentric squares, with the region enclosed by the inner square excluded.
- Entire Image (slow)** - Region is set to the entire image. If the image is large, this option may be slow. If that is the case, use the regular Histogram Tool instead.

## Preset Circle/Square Size

- Inner** - Sets the size of the inner circle or square for the last two options listed above.
- Outer** - Sets the size of the outer circle or square for the last two options listed above.

All you do then is to **click on the region of the image**, and a green circle or rectangle will be drawn to indicate the boundaries of the region of interest. The following information will then be displayed:

## Location of Sample

**(Xc,Yc)** - The center coordinates of the selected region.

**Size** - The radius of the selected circle, or length of one side of the selected square.

**# of pixels** - Number of pixels in the selected region.

## Sample Statistics

**Minimum** - Minimum pixel value in the region.

**Mean** - Mean (average) pixel value in the region.

**Maximum** - Maximum pixel value in the region.

**Median** - Pixel value for which an equal number of pixels have lower or higher values.

**MM Half** - Mean of Median Half, the average of the 50% of pixels closest to the median value. This is the most reliable way to measure the true brightness of the sky background in an image.

**Std Dev** - Standard Deviation, a statistical measure of the variation of pixel values in the region equal to the square root of the variance. Used to measure the noise in the image.

**Show Histogram** Clicking this button opens the Histogram display. This display gives a histogram of the selected region.

**Left Text Box** Shows the Black endpoint when the tool is opened. You can enter any pixel value into this text box. A new histogram will be generated.

**Middle Text Box** Show the bin size used to create the histogram. You can set this to any reasonable value, including values smaller than 1.0.

**Right Text Box** Shows the White endpoint when the tool is opened. You can enter any pixel value into this text box. A new histogram will be generated.

**Under Box** Shows the number of pixels with values smaller than the Left Text Box.

**Over Box** Shows the number of pixels with values smaller than the Right Text Box.

**PV:** Shows the pixel value of the bin currently under the **mouse cursor**.

**Count:** Shows the number of pixels in the bin currently under the **mouse cursor**.

**Hide Histogram** Closes the Histogram display.

The form also contains two buttons:

**Save in Data Log** - Each time you click on this button, the information for the region is saved in the Data Log.

**Close** - This button dismisses this window