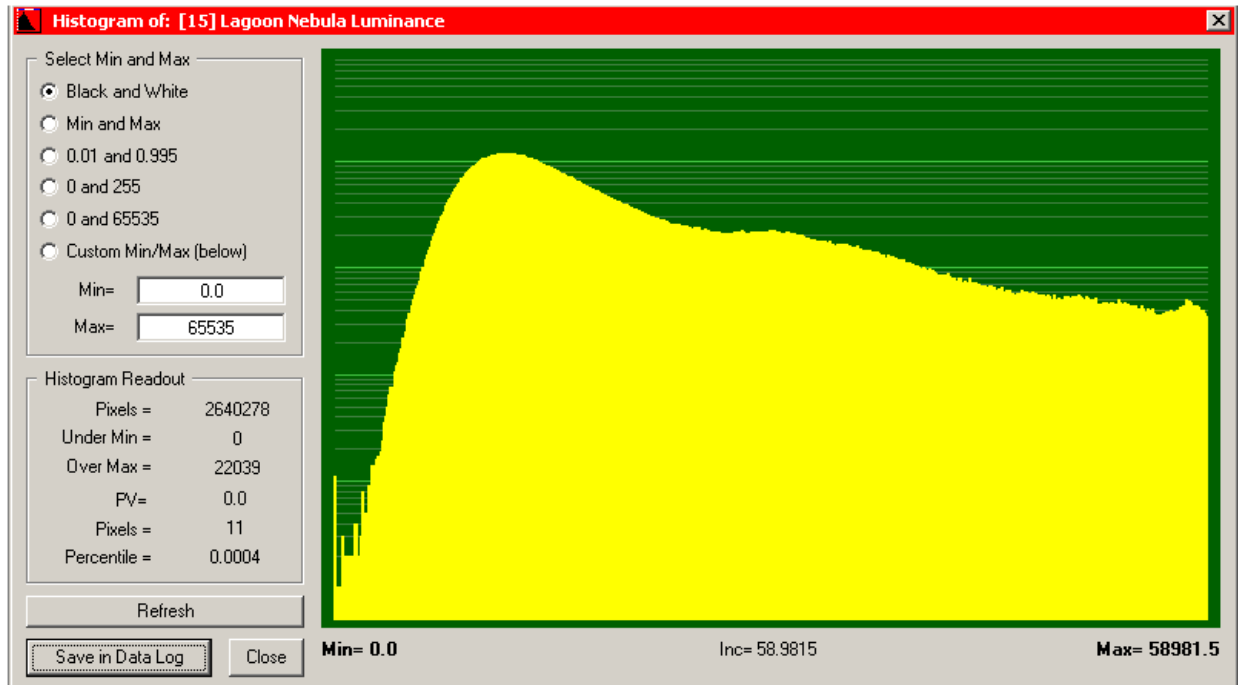


The histogram is a graph of pixel value *versus* the number of pixels having that value.



The Histogram Tool displays the histogram of the Currently Active Image. Because the image consists of floating point values, if actual pixel values were plotted it is conceivable that as many pixel values could exist as there are pixels in the image. Because of this the pixel values are sorted into bins which are evenly spread between the minimum and maximum pixel values found in the image.

Select Min and Max Allows you to select the range of values that you want to explore.

Black and White Sets the range of the histogram to the current Black and White display values. This is the default option.

Min and Max Sets the range of the histogram to the minimum and maximum values found in the image.

0.01 and 0.995 Sets the range of the histogram to pixel values determined by the 0.01 (1%) and 0.995 (99.5%) percentile values.

0 and 255 Sets the range of the histogram to 0 and 255, the standard values found in 8-bit images.

0 and 65535 Sets the range of the histogram to 0 and 65535, the standard values found in 16-bit FITS images.

Custom Min / Max (below) Sets the range of the histogram to values that you enter.

Min= The minimum pixel value of the custom histogram.

Max= The maximum pixel value of the custom histogram.

Histogram Readout Gives information in response to movements of your **mouse** across the

histogram.

Pixels = The total number of pixels in the image.

Under Min = The number of pixel less than the minimum value, i.e., off the left side of the histogram.

Over Max = The number of pixels greater than the maximum value, i.e., off the right side of the histogram.

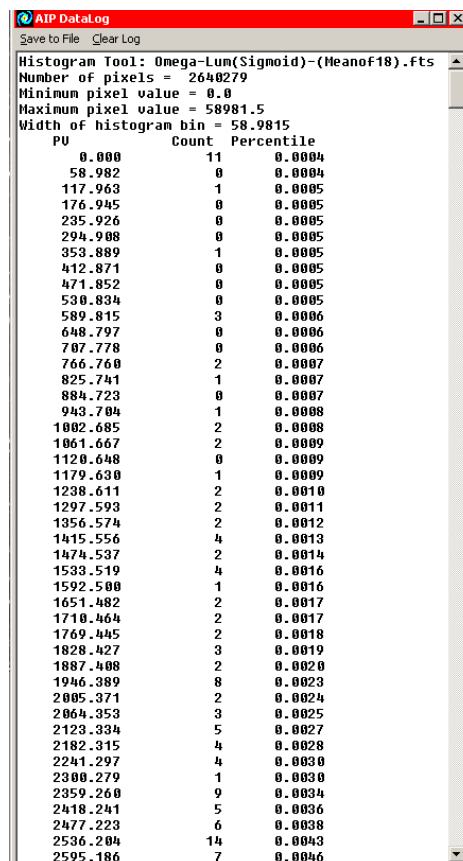
PV = The central pixel value of the bin currently under the **mouse cursor**.

Pixels = The number of pixels contained in the bin currently under the **mouse cursor**.

Percentile = The percentage of pixels with values less than the central pixel value under the **mouse cursor**.

Refresh - Updates the histogram if you change to a new Currently Active Image.

Save in DataLog Save the histogram as a table of values in the DataLog. This table can be exported to Excel or other spreadsheet software.



The screenshot shows a window titled "AIP DataLog" with a menu bar containing "Save to File" and "Clear Log". The main text area displays the following information:

Histogram Tool: Omega-Lum(Sigmoid)-(Meanof18).fts
Number of pixels = 2640279
Minimum pixel value = 0.0
Maximum pixel value = 58981.5
Width of histogram bin = 58.9815

Below this information is a table with three columns: "PU", "Count", and "Percentile". The table contains 30 rows of data, showing a distribution of pixel values across different bins.

PU	Count	Percentile
0.000	11	0.0004
58.982	0	0.0004
117.963	1	0.0005
176.945	0	0.0005
235.926	0	0.0005
294.908	0	0.0005
353.889	1	0.0005
412.871	0	0.0005
471.852	0	0.0005
530.834	0	0.0005
589.815	3	0.0006
648.797	0	0.0006
707.778	0	0.0006
766.760	2	0.0007
825.741	1	0.0007
884.723	0	0.0007
943.704	1	0.0008
1002.685	2	0.0008
1061.667	2	0.0009
1120.648	0	0.0009
1179.630	1	0.0009
1238.611	2	0.0010
1297.593	2	0.0011
1356.574	2	0.0012
1415.556	4	0.0013
1474.537	2	0.0014
1533.519	4	0.0016
1592.500	1	0.0016
1651.482	2	0.0017
1710.464	2	0.0017
1769.445	2	0.0018
1828.427	3	0.0019
1887.408	2	0.0020
1946.389	8	0.0023
2005.371	2	0.0024
2064.353	3	0.0025
2123.334	5	0.0027
2182.315	4	0.0028
2241.297	4	0.0030
2300.279	1	0.0030
2359.260	9	0.0034
2418.241	5	0.0036
2477.223	6	0.0038
2536.204	14	0.0043
2595.186	7	0.0046

Note: Under the histogram, you will see the minimum, bin size, maximum values displayed.

Note: AIP4Win's Histogram display plots the logarithm of the number of pixels having each pixel value. This lets you see the full range of pixel values in the image, even if there are only a very few

pixels having those values. Before jumping to the conclusion that a small peak means that many pixels have some value, check the relative numbers. You may see that there are only a few dozen high-value pixels versus 50,000 or more pixels having low to medium values.

The histogram is a powerful tool for evaluating images. Consult the *Handbook of Astronomical Image Processing* for more about histograms.