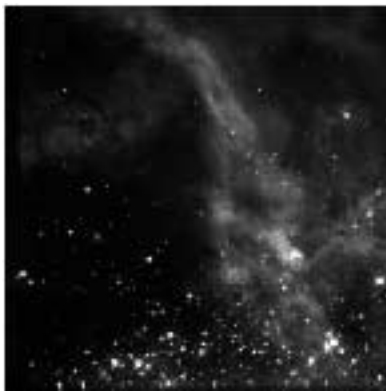


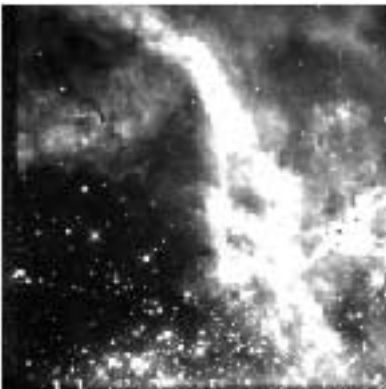
Image scaling renders maximum visible detail



Full data range
Black: -207
White: 16143



Clipped
Black: 0
White: 600



Clipped
Black: 0
White: 150



Logarithmic scale
Black: 5
White: 550



Automatically setting the smallest image value to be black and the highest value to white can force important areas of the image to be rendered invisible.

By selecting a minimum and maximum data value to render as black and white, respectively, (clipping) the significant regions of the image can be made visible.

Clipping the bright end to a lower pixel value shows some detail, but fainter details still may not be visible.

Clipping to still lower levels brings out fainter details but "saturates" (forces larger areas to be white) the bright regions.

Applying a non-linear (log, square root, etc.) transformation can compress the dynamic range so that more detail becomes visible. Fainter details can become visible without saturating the brightest regions.

Histograms—plots of the numbers of pixels at each brightness value, showing the relative distribution of intensities—can be useful to guide the selection of clipping and intensity scaling.

A flatter histogram reflects more detail visible in all intensity levels. Intense peaks indicate a concentration of values at a particular brightness.

R136 (30 Doradus), F555W (V), WF2
HST • WFPC2