AstroImageJ Release Notes

Version 1.0 (with ImageJ 1.45l)

Changes in this Version

General

- Updated ImageJ to 1.45l
- Added AstroImageJ version information at ImageJ/Help/About ImageJ…
- Changed ImageJ/Help/Update ImageJ.. to open AstroImageJ webpage
- Now fully compatible with Apple OS X

Image Display

New Features

- Added a new set of "Zoom" buttons above the image. "Fit" fits the image to the window, "Out" zooms out, "In" zooms in, "In x8" zooms in fast. Click at the point on the image where the zoom should be centered before using zooming in, otherwise, the zoom will operate on the center of the image. The image data rotation features are now available in the "Process" menu.
- Double left-click on the image to perform a fast zoom in (i.e. "In x8") at that point. Double left click to zoom out to fill the window with the image. Triple left clip zooms out to fit the entire image in the window leaving white space if the aspect ratio of the image and window are different.
- Added north/east direction indicator arrows with setting to allow user to specify the angle counter-clockwise from the default of north = up
- Added a preferences setting to set the size of the zoom indicator box
- Added view menu settings to disable/enable the display of the zoom box, x-y direction arrows, and the north/east direction arrows
- Added pixel scale setting under preferences menu. When set to a value other than zero, middle click-drag distance measurements are displayed as arclength.
- Added "fixed min and max histogram values" under Preferences menu. Enabling this option allows values to be directly entered in the "min" and "max" boxes below the histogram. In this mode the histogram range will stay at these fixed values until changed by the user. When not in this mode, the values are automatically set to the min and max pixel values of the image.
- Shift left-click drag is a short-cut to draw an oval region of interest (ROI) on the image
- Shift left-click is a short-cut to perform a single aperture measurement
- Control left-click drag is a short-cut to draw a rectangular ROI on the image
- Alt left-click drag is a short-cut to draw a line ROI on the image
- Press and hold "Tab" to move and resize ROIs. Astronomy mode is temporarily exited when "Tab" is held down, so any native ImageJ function can be performed during that time.
- Added several menu items to the "File" Menu to provide various file opening methods and saving formats
- Added "Edit" menu which contains menu items for editing aperture settings, measurement settings, FITS header entries, and stack parameters

- Added “Process” menu which contains various menu items for reducing image data and making various other changes to the data
- Added “Analyze” menu which contains various menu items for making measurements on an image and producing plots and tables

Bug Fixes

- The mouse “aperture” display now updates properly when the aperture settings have been changed
- When opening an image, the window no longer flashes on screen multiple times before finally opening

Multi-Aperture

New Features

- The total number of apertures is no longer required in the setup window. A right click in the image window will end aperture selection, thus setting the number of apertures per image. The number of apertures shown in the set up window is now the maximum number of apertures.
- The setup window now shows the number of stored apertures.
- Left click drag can now be used to pan the image during aperture selection.
- A new option to is available to enable double left-click fast zoom-in and double right-click fast zoom-out while selecting aperture positions. This option introduces a slight delay in aperture placement on the image and can be left disabled if desired.
- The first aperture selected is now displayed in green while the remaining apertures are displayed in red
- The aperture text font size has been increased
- Added a feature to check if Multi-Aperture may already be running since it is easy to erroneously start another Multi-Aperture run when in single-step mode.

Bug Fixes

- Fixed erratic behavior after aborting a run using <escape>
- Fixed erratic behavior after ending a single-step run using a right mouse click

Data Processor

New Features

- Combined the two science image “Filename Pattern” fields into one field with wildcard support (? matches any single character, * matches any number of characters)
- Added a “Browse” button next to the Filename Pattern fields. When a file is opened using this button, the directory path is sent to the Primary Directory field and the filename is sent to the Filename Pattern field. If an underscore character is in the filename, any characters between the underscore and the file type suffix are automatically replaced with a “*”.
- A “File Number Filter” “Exclude” string is now allowed, so that numbers that are common in a set of filenames can be ignored, which simplifies the setting of “Min” and “Max” numbers for filename number filtering. This field can optionally be automatically updated when a new filename pattern is entered directly or opened using the browser.
- Changed bias, dark, and flat "Filename Base" to "Filename Pattern" with wild card support
- Removed .fits file type requirement for both input and output files
- Master calibration files now allow (require) the file type to be specified

- Processed files can now be written to hard drive in any format supported by ImageJ by setting the "Format" to the desired file extension type (i.e. .fits .jpg .tiff etc.)

Stack Aligner

New Features

- Single step mode is now available in stack aligner, allowing image alignment for image shifts larger than the aperture size

Known Problems

- Image Display maximize and return to normal corrupts display (drag window edge instead)
- Image display rotation by 90 and 270 degrees is not implemented
- When image display is flipped or rotated, any text displayed in an overlay is flipped or rotated
- Image display control buttons sometimes lose color
- ROI resizing may require the View options to be set to "Invert None" and "0 degrees" rotation to work properly

Feature Requests in Roadmap but not in this Version

General

- Add light curve detrending and fitting capability

Multi-Aperture

- Label comparison star numbers in image overlay
- Automatic identification and selection of comparison stars

Data Processor

- Implement BJD calculations

Image Display

- Implement directional arrow support according to WCS headers
- Implement image display rotation by 90 and 270 degrees
- Allow aperture radii to be updated directly in image window
- Correct flipped aperture text display in image overlay
- Add "Auto Scale" user settings for customize the resulting contrast and brightness
- Add file type (i.e. 8, 16, 32, RGB) manipulation from menu bar
- Add a menu to the menu bar that combines various RGB image manipulation tools
- Put middle click/drag measurements in a MeasurementsTable rather than a log window

Multi-Plot

- Add x-axis choice to all y-datasets
- Change plot zooming to zoom-in on data range, rather than zoom-in on bit map
- Add ability to save plot settings as a template

MeasurementsTable

- Improve table update speed for large tables
- Allow row selection and cut/copy/paste

Stack Aligner

- Allow user to left- click drag image to manually align with a reference image

Miscellaneous

- Fix various Linux terminal window error messages