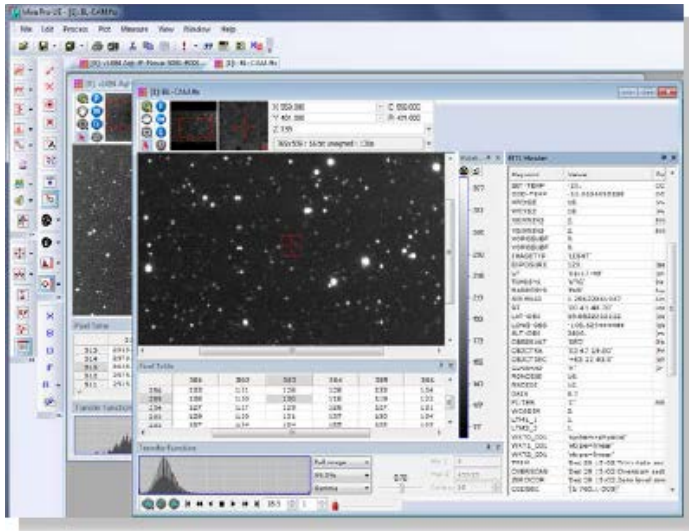


# Mira Pro Version 8 — Release Notes

Version 8.011



Mira Pro 8 showing two image windows with several extra components including the Image Toolbar, Animation Toolbar, and several Docking Panes. Image windows can range from this level of detail to simple window outlines having no extra panes or toolbars. Also shown are the main toolbars docked along the left vertical border.

This document describes basic features of Mira and contains a list of recent changes. [Click here](#) to jump to the log of bug fixes and new features.

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## Sample File Locations

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Sample files are installed into the "Documents" area in the folder `Documents\Mira Pro`. Images may be located anywhere on your computer but the included samples are located in this particular folder. In previous Mira installations, the sample files were located in a folder inside your `Pictures` area. This occasionally created complications so the location has been moved to the `Documents` area. This folder contains the following subfolder:

### Sample Images and Related Files:

`Documents\Mira Pro\Sample Images`

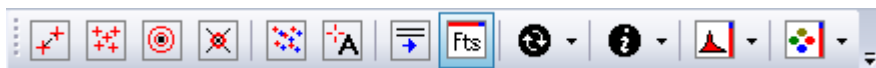
## User Interface Tips

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### Toolbars

Mira has two types of toolbars: 1) Several main toolbars that dock along the borders of the Mira application frame, and 2) private toolbars that open only for a view window, like those for the Image Window that displays images.

Main Toolbars include the **Mira Tools**, **Image Tools**, **Plot Tools**, and **Cursor Tools** toolbars. Here is the **Image Tools** toolbar as one example:



These toolbars dock along the borders of the Mira application frame. After the first installation of Mira AL, the main window toolbars open bunched together at the top of the Mira frame. You need to drag and re-position them at desired locations along the borders of the Mira frame. Since computer screens are usually wider than tall, we recommend moving the main toolbars to a vertical border, such as on the left side, to maximize your working space.

View windows which show data, like images and plots, can have their own private toolbars. These toolbars are opened for the window using buttons on the main toolbars (see previous paragraph) or from menu commands. Main toolbar buttons and menu commands that open private toolbars act as "toggles" which alternately open and close the private toolbars. For example, to close a private toolbar that is open in an Image Window, re-click its button on the main toolbar or re-click its menu command.

### Confirming to Close Windows


To prevent losing your work, Mira always prompts for confirmation when closing a modified document such as an image or edited text. However, other windows can be created containing new data including measurements ("report" windows), plots, and 3-D plots. Mira can be configured to prompt for confirmation before closing these "data" windows using default configuration settings. To change the settings, use the menu command `View > Default Settings > General Preferences` to open the General Preferences dialog. The dialog has check

boxes for confirming closure of reports, plots, and 3-D plots. If you uncheck one of these preferences, Mira will close the window without confirmation. At least for report windows, it is usually best to leave the box checked.

## Docking Panes

Docking panes are used for several Image window components. Panes are provided for the Transfer Function, Palette Adjustment, FITS Header, and Pixel Table. In release 8.006, docking panes were added for some toolbar measurements, including aperture photometry and astrometric calibration. Docking Panes are opened and closed by toggling their button on one of the main toolbars. Pane buttons are indicated by a rectangular outline on the icon. Buttons on the docking panes themselves allow them to be closed, aligned to a different window border, or shrunk to a tab. You also can drag them away from the window to float on the desktop.

### Saving the Docking Pane Layout

To save the layout for a given window type can be saved or modified using the Docking Pane toolbar  button or commands in the [View > Docking Panes](#) menu. The toolbar button and its drop menu are shown at right. The button (icon) saves the layout. The drop button offers additional commands for working with panes.

### Tips for Using Docking Panes

- When a docking pane is activated, the main view section of the window loses focus for input from the mouse and keyboard. Without focus in the main section, you cannot use keyboard shortcuts (like Tab) or mouse thumbwheel operations to adjust the image or image set. To return focus to the main view section click inside it. If an Image Windows has an active marking mode for placing markers (example: aperture photometry), this would mark a new point; to avoid marking a new point when marking mode is active, do one of the following:
  1. Disable the toolbar mode using the Disable Modes command in the right-click popup Image Context Menu.
  2. Click the arrow button on the Image Toolbar to disable all interactive command modes.
  3. Click the scrollbar or on the black view background outside an image that does not fill the entire view area. This keeps the current marking mode active.
- To conserve screen space, several panes can be combined into a row or column of icon tabs. To do that, drag a pane by its title bar onto another pane and release it there. To save the new layout, use the **Save Pane Layout** button or command on the main toolbar and menu.
- To restore a pane from a tab, open the pane, pin it, then drag its title bar to a different border.
- To save the docking pane layout, use the **Save Pane Layout** button on the main toolbar.

## Tear-off Menus

Submenus having "....." along the top may be torn off the parent window and floated in the workspace or docked to a border. This can be useful if you want to use the submenu commands frequently.

- To tear off a submenu, open it, then grab its "....." and drag the menu to a desired location. You can leave it free-floating in the workspace or dock it to a Mira window border.
- To close a tear-off menu, first grab its "gripper" (dots along the left edge if horizontal, or top edge if vertical) and move it to undock it to a free floating state on the desktop. Release the mouse and click its [X] button.

## Changing Default (Global) and Local Settings

Settings for controlling image display and interactive image measurements are available in two menus of commands:

- [View > Default Settings](#):  
Commands in this menu control the default behavior of image windows when they open. You can create different profiles to set specific properties for each of these commands, then select profiles as needed for different situations. The current profile properties apply to all future image windows that may be opened. After an image window opens, you can modify the behavior of these properties using commands in the following menu:
- [View > Change Window Settings](#)  
Commands in this menu change properties specific to the top-most image window. The changes cannot be saved for future use. To change the default properties for new image windows, use commands in the [View > Default Settings](#) menu.

## Working with Image Sets and Single Images

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An image window can contain a single image in the traditional way, or can contain multiple images as an "image set". This is a very powerful feature. A collection of images to be used as an Image Set can be stored in a "File List" type file having an ".axs" extension. Here are some tips for working with Image Sets and File Lists:

- To open an image set, select multiple images in the [File > Open](#) dialog. Before clicking [Open] to open the highlighted images, you may wish to create a File List, which is a text file that Mira interprets to contain the names of multiple files. The File List will become a file in the same folder as the selected images and has its own icon. You will also see the File List among the "Recently used files" under the "Files" menu.
- When an image window contains an image set, the [Animation Toolbar](#) appears at the bottom of the window. Use this toolbar to step among the images or to animate them.
- To create a File List, click the [\[File List >>\]](#) button at the lower right of the [Open](#) dialog to open the [Mira File List Editor](#) dialog. In the [Mira File List Editor](#) dialog, enter a name for the File List or select/view existing names using the [\[...\]](#) button on the right end of the [File List Name](#) field; this name will become the name of a File List type file with an ".axs" extension. You can also open an existing File List by double clicking it in Explorer or by selecting it from the File Open dialog. If you select a File List in the Open dialog and press [\[File List >>\]](#) you can see the contents of the File List or edit its contents.
- To save an image set, use one of the commands in the "[Files > Save Image Set](#)" menu.
- When an image window contains a single image, a processing command (for example, add images, add noise, rotate, etc.) obviously applies to that image. However, when the window contains an image set you can choose whether a command applies to only the top-most image or to the entire image set. The choice is controlled by the state of the (P) button on the image toolbar of the image window. The image set will be processed if the button appears as (P). To change to processing only the top-most image, click the button to change it to (P1) meaning "Process one". Similar buttons are available for measurements (M) and Graphs (G). For example, to make a graph along the same vector for all 100 images of an image set, make sure the Graph button shows (G) and use the [Line Profile](#) command in the normal way. These buttons also have single image versions that appear as (M1) and (G1). The default state of the (P) (M) and (G) buttons is specified for new image windows using check boxes in the "[View > Default Settings > Image Window > Default Image Window](#)" dialog. For an existing image window, they are changed by clicking to change their state.

## Changes in Recent Releases

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### Important Notice about Drag & Drop

There is a Windows bug in the control that Mira uses for its **Text Editor** window. Until a work-around is uncovered, you can avoid it as described here: If a Mira Text Editor window is open and you drag and drop a file onto Mira, then Mira will crash because Windows cannot determine what kind of document is being dropped. This happens because Mira supports multiple document types (image, plot, text, etc.). The confusion occurs only if a text editor is already open. You can safely drag the first text file onto Mira, and you can drag other document types onto Mira in any number if no text editor is already open.

### Version 8.011

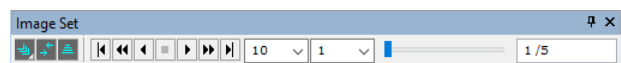
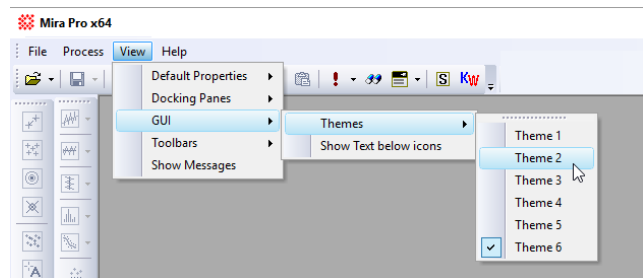
New Features:

- **Express Calibration dialog:** The **Save to File** check box automatically prompts you to save the verbose messages created during processing. This option opens a **Save as Text File** dialog at the end of processing. At the bottom of the Save dialog is a check box for appending the messages to a text file that already exists. If you do not check this box, then the text can still be saved from the Text Editor or Messages field but must be done separately using the command in their menu.

### Version 8.010

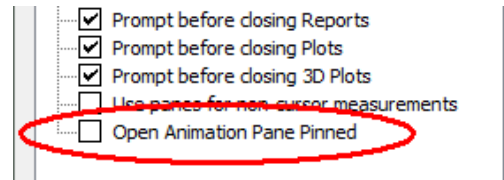
New Features:

- **Tip of the Day:** The Tip window is now resizable and its size and position are remembered between Mira sessions. Remember that the text which appears in the Tip of the Day window can be changed by editing the tips file in the **Params** subfolder inside the Mira installation folder. When editing tips, be sure to leave one blank line between each tip. Default installation settings install Mira Pro x64 in the folder **C:\Program Files\Mirametrics\Mira Pro x64**
- **User Interface Themes:** Added user interface themes which change the "skin" used by Mira windows. To change the theme, close all windows inside Mira to expose the fundamental main menu, as shown at right, and select the **Themes** menu. Currently 6 themes are provided. The theme change is automatically saved for future Mira sessions.
- **Pane version of Image Set Toolbar:** This new toolbar spans the entire width of the Image Window, allowing a larger scrollbar for working with large image sets. When you open an image set, this pane opens as a tab on the Image Window border. Like other panes, it can be tabbed, pinned open, closed, or undocked to float freely. The left-most button (Register Images) has a notch in its lower right corner, indicating that a right-click on the button opens a menu of image registration commands (this hint is also used for the Magnified and Image Cursor buttons on the Image Toolbar at the top of the Image Window). If you close the Image Set Toolbar pane, it can be re-opened from the list in the Docking Pane button menu (see version 8.009 "New Features"). The pane opens either fully displayed (shown here) or pinned to the window border as a tab. The default is to open fully displayed



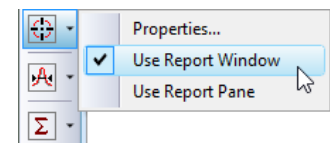
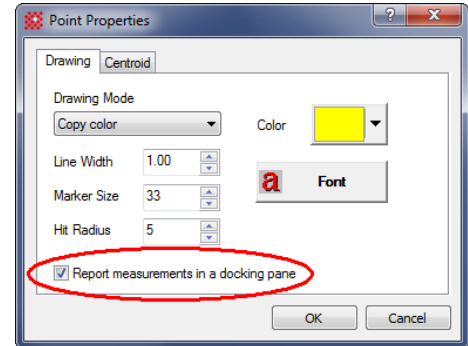
but you can change the default behavior using the **Open Animation Pane Pinned** checkbox in the **General Properties** dialog (Ctrl+R).

- **Open Animation Pane Pinned:** This new option in the **General Properties** dialog (Ctrl+R) controls whether the **Animation Pane** for the Image Window opens "pinned" (closed to a tab). If the option is unchecked, the **Animation Pane** opens fully displayed as shown in the previous bullet point.

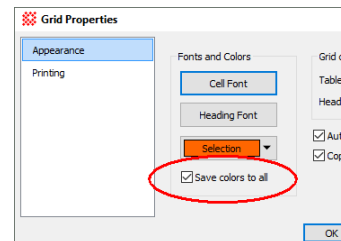


- **Measurement Reports in a Window or Docking Pane:** This version of Mira adds an option to "Report measurements in a docking pane" or report measurements in a top-level **Report** window. The advantage of using a docking pane is that the measurements are kept local to the **Image** (or **Plot**) window specifically for images in that window. The advantage of using a top-level **Report** window is that it holds measurements from any image in any window, which facilitates comparing values between images in different windows.

For measurements that use an Image Window Toolbar, the setting for that measurement type can be changed using a check box in its **Properties** dialog. For measurements that use the Image Cursor (Statistics, Centroid, FWHM), the setting for that measurement type can be changed using a command in its toolbar button's drop-menu. Both of these methods are shown in the pictures at right.



**Setup Grid, Appearance Page:** Added a "Save colors to all" option to the Appearance page. Colors for fonts and selection may now be saved to the current grid or to all open grids. The current grid is the grid from which the Setup dialog was opened (using the command in its right-click menu).



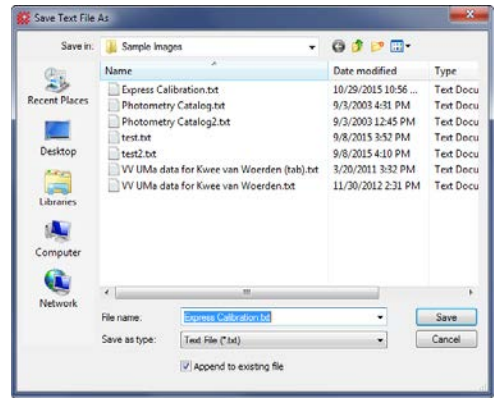
Bugs Fixed:

- **Removed [?] Button from some Dialog Title Bars.** This button did nothing other than direct you to a Microsoft website about deprecated Help.
- **AAVSO Report (Apphot Properties) Crash Bug:** Mira would crash if you clicked [Create] to prepare a report when no objects had been measured.
- **Status Bar Show / Hide Command:** The **View > GUI > Status bar** command toggles visibility of the status bar at the bottom of Mira's main window. The status bar lists command messages and the image cursor properties (bounding coordinates and size) for the current image.
- **Create Synthetic Image:** When creating more than 1 image as an Image Set, the Animation Pane was left at the last image rather than the first image of the image set.

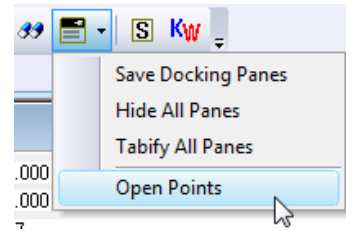
## Version 8.009

New Features:

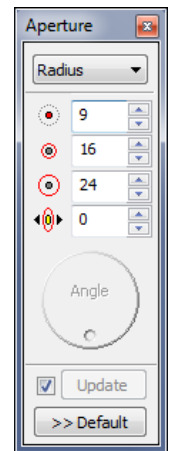
- Saving Processing Messages:** This enhanced feature is related to fixing the **Text Overflow Crash** bug (see below). In addition to listing the processing messages in a the message pane or a **Text Editor** window, this option allows the messages to also be saved to a text file. The option is provided as a "Save to File" check box above the right edge of the text message area in the processing dialog. If this check box is checked, then a **Save Text File As** dialog opens at the end of processing to query a file name for saving the messages. An option to "Append to existing file" is provided at the bottom of the File dialog.



- Closed Panes listed in Menu:** Closed panes can be re-opened from the list of closed panes which appears in the drop menu of the **Docking Panes** button on the main toolbar. A pane is closed using the [x] button on its title bar. The closed pane continues to accrue measurements but is not visible. To re-open the closed pane, pull down the menu from the button and select it from the list as shown in the picture at right.



- Import Photometry Catalog:** Changed several items on the window layout. Removed the "Auto Import" check box so that "Import" must be pressed to import the catalog
- Aperture Photometry Options, Points page:** Changed button labels: "Import" changed to "Import Catalog", "Reset ZP" changed to "Reset Zero Point", and "Recenter" changed to "Recenter All".
- Aperture Photometry Apertures Tool:** Added "auto-update" checkbox and a manual **[Update]** button near the bottom of the window. Disabling "auto-update" is useful when setting several aperture parameters with a large number of marked objects as updating each parameter causes a complete recalculation of all aperture photometry measurements. Alternately, disabling (un checking) "auto-update" holds all changes in the **Aperture Tool** until you manually click the **[Update]** button, thus making a single recalculation based on all parameter changes. Enabling (checking) "auto-update" disables the manual **[Update]** button, and vice versa. Remember that parameter changes apply only to the current aperture photometry session (image window). Click **[>> Default]** if you want to apply the current settings as default values for future aperture photometry sessions.



Bugs Fixed:

- Text Overflow Crash:** Fixed a bug that caused a crash when more than 32,000 characters were written to a message pane, such as accumulated messages at the end of image calibration, creating master calibration frames, or using the **MExtract** package. This was a user interface limitation.
- Text Editor Crash on Zero length file:** Fixed.
- Points Measurement Pane:** Fixed an intermittent problem with the **Points** measurement pane not opening when the first point was marked on a plot.

- **Palette Changes for Image Sets:** Fixed a bug which that applied palette changes only to the current displayed image but not to the other images of the image set.
- **Statistics calculations:** Fixed a bug that sometimes calculated the mean after you selected a statistic other than the mean.
- **Import Photometry Catalog:** Changing the coordinate method between (x,y) and (RA,Dec) did not change the coordinate labels.
- **User Interface Crash on Toolbar Customization Button:** Mira sometimes crashed when you clicked the small arrow at the end of a toolbar to select command buttons and menus.

## Version 8.008

New Features:

- **Go To Object Command in Apphot Menu:** Added a "Go to Object" command to the right-click menu for the **Apphot** measurements pane. This command centers the object at the currently highlighted grid row in the Image Window. The target image is displayed at a specified zoom factor in the Image Window with the Image Cursor is centered on the object. The zoom factor is selected on the **Other** page of the **Aperture Photometry Properties** dialog.

Bugs Fixed:

- **Saving Grid Data to a Text File:** When the grid cell contained a " (double quote) character, the cell would be saved to a text (".txt") format file (tab separated values) as a quoted string and with the double quote doubled, as in "". This is correct for a CSV file (comma separated values) but not for the TXT file. For example, a grid cell with the declination value  $-14^{\circ}46'21.618''$  should be saved to a CSV file as `"-14°46'21.618''"` and to a TXT file as `-14°46'21.618''`. Mira was saving as `"-14°46'21.618''"` for both formats. This has been fixed. Both file formats import correctly into a spreadsheet such as Microsoft Excel.

## Version 8.007

New Features:

- **Changes to Catalog command:** Added "Display Selected Images" command to the right-click popup menu for the **File > Catalog** command. This command works with a new checkbox selection column added to the catalog grid.
- **Added "Add" and "Delete" Buttons to History Lists:** Add [+] and Delete [x] buttons were added to dialogs containing history lists to make it easy to add new values and clear unwanted values from history lists. The buttons are located to the right of the history drop list.
- **Minimum and Maximum Filter commands:** Increased speed by about 2 orders of magnitude.
- **Tabbed Setup dialogs:** Several of them were revised to be easier to use and look better.
- **Set Linear Coordinate Units command:** This new command appears in the **Process > Coordinates** menu. Use this command to assign units to images that show physical quantities but are not labeled so. For example, the image may be a radio astronomy image with flux versus time or a numerical simulation showing a 2-D map of velocity versus density.



- **View > Image Toolbar submenu:** This new submenu was added to the **View** menu for images. It shows commands for changing the display of coordinates, pixel values, and image information on the image toolbar. These commands are also available from buttons on the image toolbar.
- **Author Information command** was added to the main toolbar using a copyright symbol for its icon. This command is also available in the **Process > Utilities** submenu.
- **Astrometric Calibration Marking:** Added two button commands above the coordinate entry box which keeps a history list of coordinates you have entered. These buttons are **Delete** and **Open from Text File**. They are used to delete a line from the history list and to replace the history list with coordinates loaded from a text file. The coordinates in the text file have the same format as shown in the history box, one coordinate pair per line.
- See revisions to the section [Tips for Using Docking Panes](#).

#### Bugs Fixed:

- **Default Properties:** Some default properties in the View > Default Properties menu did not update the default property profile correctly. This caused image windows to always open using the same set of properties. Now the default properties correctly update the property profiles you save to, and the current profiles are loaded into the local window properties when a new image window is opened.
- **FITS Header:** Fixed a bug inserted by the compiler which (rarely) caused the FITS Header pane to lose the header display.
- **Image Toolbar:** Fixed bug that might cause a crash when closing the Image Window.
- **Image Window in Marking Mode:** When a measuring tool was active and the cursor was in marking mode, clicking in the window background but outside the image could create a false marker. The marker was ignored as being outside the image but the marker count was incremented. This has been fixed.
- **File List loading:** When opening a File List from the [Select] button on a dialog, some image combining commands used for image calibration would stop processing the file list when a file in the file list did not actually exist.
- **FITS Header Pane:** Horizontal scroll bar did not appear.
- **Re-organized Calibration > Create... dialogs:** Changed dialogs to put the main controls for the task at the top.
- **View > Coordinates:** This submenu was removed because it was redundant with the **Process > Coordinates** menu.
- **Go To Coordinates command:** This command was moved from the **View > Coordinates** submenu to a top-level position in the **View** menu. This also appears in the image context menu (right click on image).
- **Astrometric Calibration command:** Moved from the **View > Coordinates** submenu into a top-level position in the **Measure** menu.
- **Tool Tips:** Fixed some missing tooltips on the Image Toolbar.

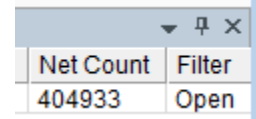
#### Version 8.006

#### New Features:

- **Measurement Grids:** Some grids showing measurement results, as for commands like **Aperture Photometry**, were moved from report windows to docking panes owned by the specific Image

Window (so that each Image Window has its own panes). Changes in this version have been made for aperture photometry, distance measurements, and point measurements. Other grid types will be changed in a future release.

- **Docking Pane Menu Buttons:** A menu button has been added to the title bar of most docking panes, as shown at right. The menu button is a black triangle beside the stickpin and close buttons. The menu button opens the pane's command menu, the same as right-clicking inside the pane. If the pane has no menu button then it does not have a menu. Also see [Tips for Using Docking Panes](#).



Bugs Fixed:

- **Saving Transfer Function Properties:** There was no way to save default transfer function properties after being changed in the **Transfer Function** pane. In addition, there was no way to manage multiple transfer function profiles. A **[Save]** button was added to the **Transfer Function Pane** and a **Transfer Function Properties** window was added to the main **View > Default Properties** menu.
- **Measurement Panes:** In previous versions of Mira, windows that showed measurements in a grid format (i.e., Report windows) had a left-side column showing the line number and also a first column of data which contained the sequential index of the measurement. These gave identical information so both were not needed. The left side column has been removed so that the index is shown only in the first column. This index column is useful for returning sorted measurements to their original order. To do so, click on the column heading the same as for sorting other columns.
- **Save** and **Save As** options for grids (report windows) did not remember their settings.
- **Apphot Report:** The magnitude column name was changed in the previous release and that prevented the AAVSO report tool from working correctly.
- **Blank Rows and Columns:** Removed blank leading rows and empty left column from the CSV and TXT files used to save grid data from a report window.

## Version 8.005

New Features:

- **Status Bar Changes:** Upgraded status bar at bottom of main window frame. The help messages, cursor properties, and progress indicator now have separate panels and do not share the same space as in previous versions. The image cursor and progress panels may be configured to be hidden or displayed using by right-clicking on the status bar and selecting their new status from the menu. The image cursor properties switch as the mouse is moved over different image windows.

Bugs Fixed:

- **WCS coordinate zero crossing:** WCS calibrated images having a very wide field of view and centered on 0h right ascension displayed 24h rather than 0h in the RA coordinate.
- **Double save request:** When closing a grid window (photometry, centroids, etc.) without it being saved to a file, you were asked twice whether to save.

## Version 8.004

New Features:

- **Resource Usage:** Reduced Mira's usage of Windows GUI resources.

Bugs Fixed:

- **Sporadic crashing:** These was a crash bug in the **Rotate Image** dialog and **Apply Pixel Mask** dialog.
- **Button [...]** in **Edit Pixel Mask** and **Edit Blemish Mask** dialogs would not always open after closing and reopening the editor. The fix required the dialogs to be "modal", meaning that they have control of the user interface until they are closed.

## Version 8.003

Bugs Fixed:

- **Crash Bug:** Fixed sporadic crash bug in FWHM measurements.
- **Problem exiting Mira:** Unable to exit program after opening 1-D image or attempting to open a non-existent image from the list of recently used files.
- **Rotate Image dialog issue:** The rotation options bullet list (list out of order).
- **General Properties:** Items in the **General Properties** dialog were not always remembered after changes.
- **About Mira window:** The window appeared transparent on some machines using an active desktop.

## Further Information

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Several documents are available on the Mirametrics web site. These are in continual development as changes are needed:

On-line User's Guide: [http://mirametrics.com/help/mira\\_pro\\_8/](http://mirametrics.com/help/mira_pro_8/)

Getting Started: [http://mirametrics.com/gs\\_mira\\_pro.htm](http://mirametrics.com/gs_mira_pro.htm)

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