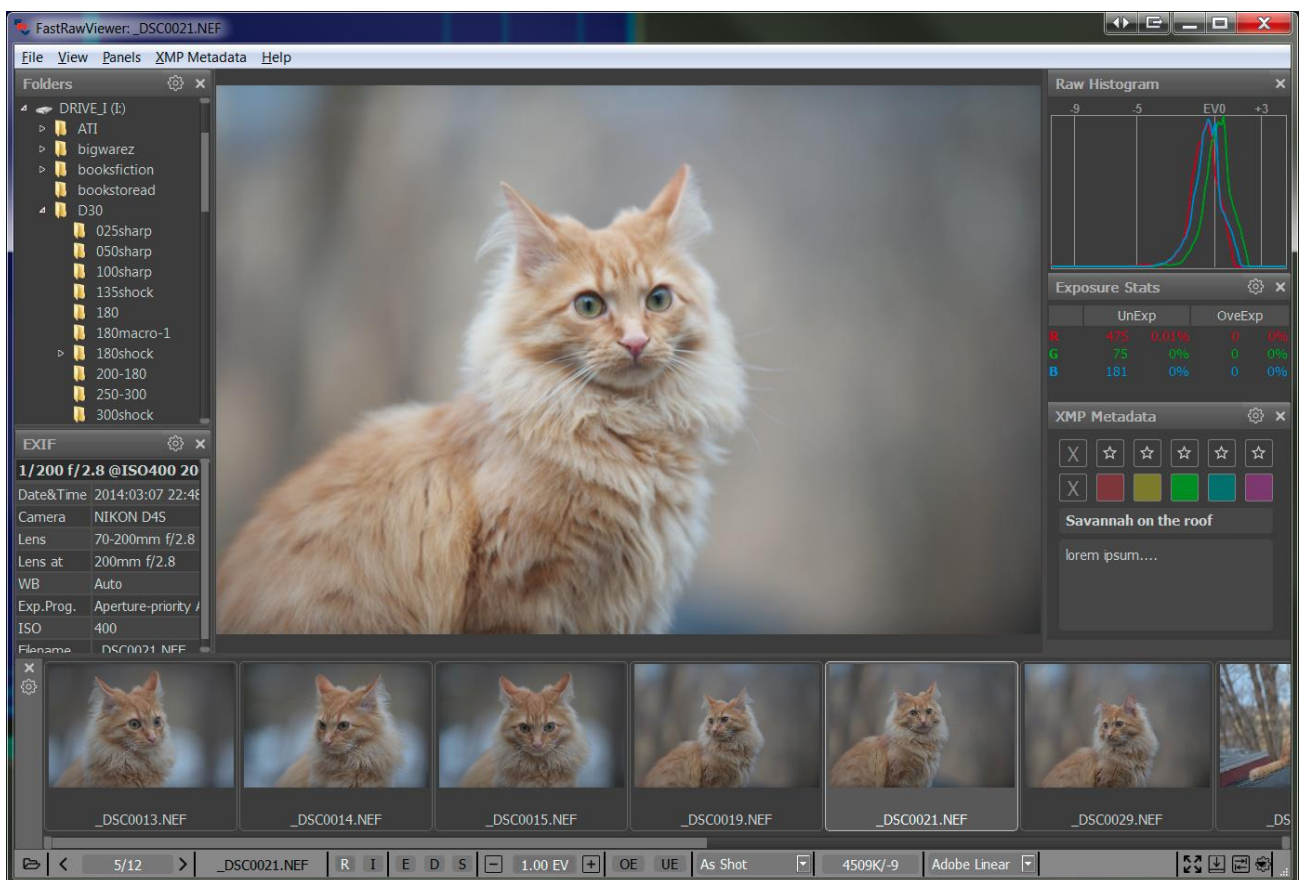*Version 1.1*
User Manual

LibRaw

How FastRawViewer Helps You

FastRawViewer (FRV) is the only solution for those who:

- Shoot in RAW and are tired of wasting hours or days on browsing through piles of shots and sorting them

- Tired of rendering all those RAWs into JPEGs so that you can quickly browse through them with your client, CMO, senior designer, editor in chief; or show them to your friends and family members.

- Are in constant need of very quick viewing, visually and technically analyzing, sorting through hundreds or thousands of RAW shots, and selecting the apt ones for further processing

- Want to shoot in RAW, but don't, fearing to get mired in sorting RAW files

- Are forced to use JPEG format, because your previous experiences tell you that it is impossible to quickly select and show your client the images taken in RAW

- Are in need of tools to instantly adjust white balance and exposure (brightness) right while browsing through the shot

FastRawViewer *is the first and the only dedicated application with the purpose of* **extremely fast culling and pre-processing of RAW images:** *i.e. display, visual and technical analysis, applying basic corrections, sorting and setting aside or directly transferring the selected ones for further processing.*

FastRawViewer Strengths:

- Display of the **actual RAW** as well as the **actual RAW histogram**

- For the first time, a comfortable speed of RAW file viewing *(together with histograms)*, provided by **FastRawViewer** using the power of modern processors and video cards to process RAW images,

  o **6-8 frames per second** on a modern notebook or desktop computer for files from modern photo cameras (16-36 Mpix, testing was conducted on a mix of shots from recent cameras, SSD or RAID recommended for peak performance)

  o **24-30 frames per second** for CinemaDNG 2.5k on the same equipment *(we used Blackmagic Pocket Cinema files for testing)*

- Support of almost **every single existing RAW format** *(that is, almost every known digital camera)*[1], including native out-of-camera **DNG** files as well as the files converted to DNG.

- View **JPEGs** *(including embedded JPEG thumbnails)* – and also display the histograms.

---

[1] With only one significant exception: Foveon cameras are not supported.

- The convenience of working with the shots taken in the RAW + JPEG mode, with two files being paired:

  a) While listing through files, you have the option to ignore the second file in the pair

  b) JPEGs (including embedded thumbnails) are considered to be "additional images" and are immediately accessible for viewing

  c) When you move a file from the RAW + JPEG pair to another folder, the other file follows

  d) And, of course, you can always switch this mode off, if you so choose, and treat the files as separate.

- Instant display of RAW files directly from any memory card or other file storage - without customary delays for importing, creating catalogues, libraries, and temporary databases.

- The possibility of doing a quick visual and technical analysis by:

  a) Examining the **real RAW histogram**

  b) Assessing the exposure based on:

     i. **Spotlighting of over- and underexposed areas** on the shot
     ii. Over- and underexposure **statistics**

  c) Outlining the **in-focus** and **highly detailed areas** on the shot

  d) Assessing **per-channel exposure** and **acutance**

  e) Assessing the **noise level in the shadows**

- Time-saver: **exposure** and **white balance adjustments** can be **made while browsing RAW files** and **are saved in XMP** files so that they can be automatically applied when you open that shot in Adobe Lightroom or Adobe Camera Raw

- Time-saver for series, including panoramas: propagation of white balance, exposure, and image orientation adjustments from one shot to the entire series.

- Highly compatible system of assigning **labels and ratings** to images, including the user-defined labels. Ratings and labels are written into XMP files and are read by Adobe software (and others which acknowledge XMP sidecar files).

- **Moving the selected shots** into folders chosen by the user.

- **Moving the rejected shots** into a special folder, which can be reviewed again later.

- Support for **black and white RAW,** including shots from cameras converted to b/w by removing the color filter array.

- Warnings when **FastRawViewer** comes across a damaged RAW file.

- Monitor color profile support, without the loss of image rendering speed.

- Modifying settings to suite your workflow

  a) You can set your own keyboard *(or keyboard+mouse)* shortcuts for every action.

  b) The settings panel allows you to turn off the ones you don't need, and change the others to your preferences.

Table of Contents

System Requirements

Windows

- Recommended system: Windows 7 – Windows 8.1, 64-bit.
- 32-bit versions Windows: Windows Vista – Windows 8.1
- Windows XP is supported in a separate "Legacy" version of **FastRawViewer**.
- Processor with SSE3 support or later (meaning released 2005+):
  - Intel: Pentium 4 Prescott or later; Celeron D or later, any Core processor, Intel Atom
  - AMD: Athlon 64 or later
  - The complete list of supported processors is available on Wikipedia
- Video card with DirectX 9.0 support or later, or with OpenGL 2.1 or later (see below **Choice of version: OpenGL or DirectX**).
  FastRawViewer will work with practically any video card with 3D acceleration support, released 2006+ (users of older cards may experience some problems).

Mac

- Intel-based Mac
- Processor with 64-bit support (that's every Intel Mac, excluding Mac Mini 2005)
- Mac OS X 10.6 or later
- We recommend a video card with OpenGL 2.1 support (that's **every** native Mac video card, that works with OS X 10.6). An OpenGL emulator will be used if such a video card is not present in the system; some of the advanced features of **FastRawViewer** will take significant time to render.

Software Installation

Windows

Choice of Version: OpenGL or DirectX

FastRawViewer for Windows is available in two versions:

1. **Graphics based on Microsoft DirectX –** this version will work with any video card that supports DirectX 9.0 and higher (DirectX 9.0c support or later is recommended).
   This version is recommended for the majority of users: DirectX drivers are supported by the manufacturers better, and the program will run smoothly as soon as the equipment is compatible (most cases, it is).
2. **Graphics based on OpenGL –** requires a video card with at least OpenGL 2.1 support and (usually) the most current drivers are recommended.
   We suggest OpenGL version be used with the following video cards:
   a. **Nvidia:** GTX4xx and newer, and the corresponding versions of Nvidia Quattro.
   b. **ATI/AMD:** Radeon HD5xxx and newer.

Installation

The program is installed by running the executable file of the distribution package (**FastRawViewer-1.1.0.xxx--Setup.exe)**

If you downloaded **FastRawViewer** from our site on the first program launch, current versions of Windows will display the following security warning:
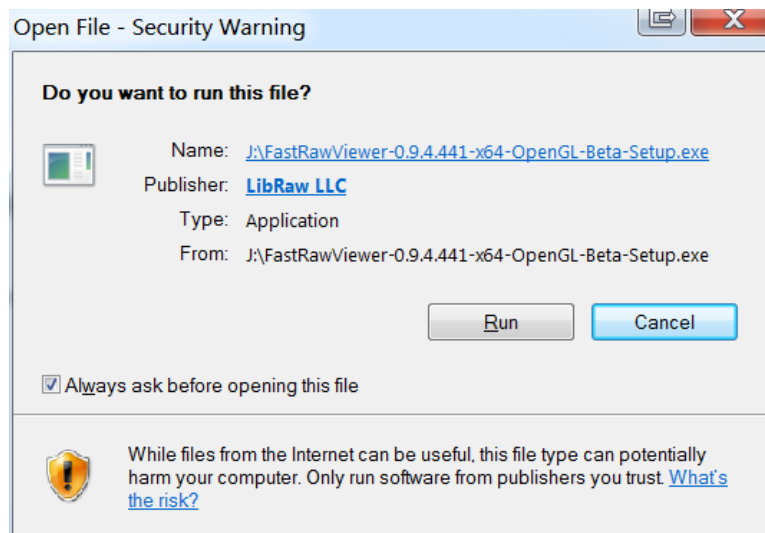
After the "Run" button is pressed, the UAC (Windows User Access Control) system will display a warning once again:
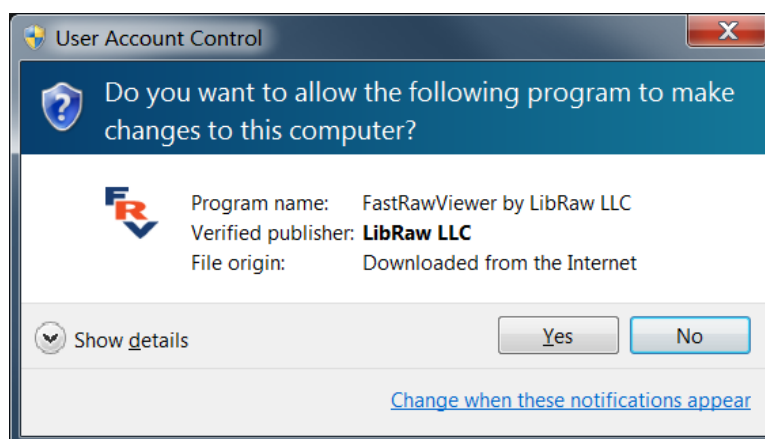
Both dialogs allow you to verify that the setup program is signed with unique LibRaw LLC electronic signature.

To proceed with the installation, you must agree to the dialog above, and the usual Setup Wizard will be launched:
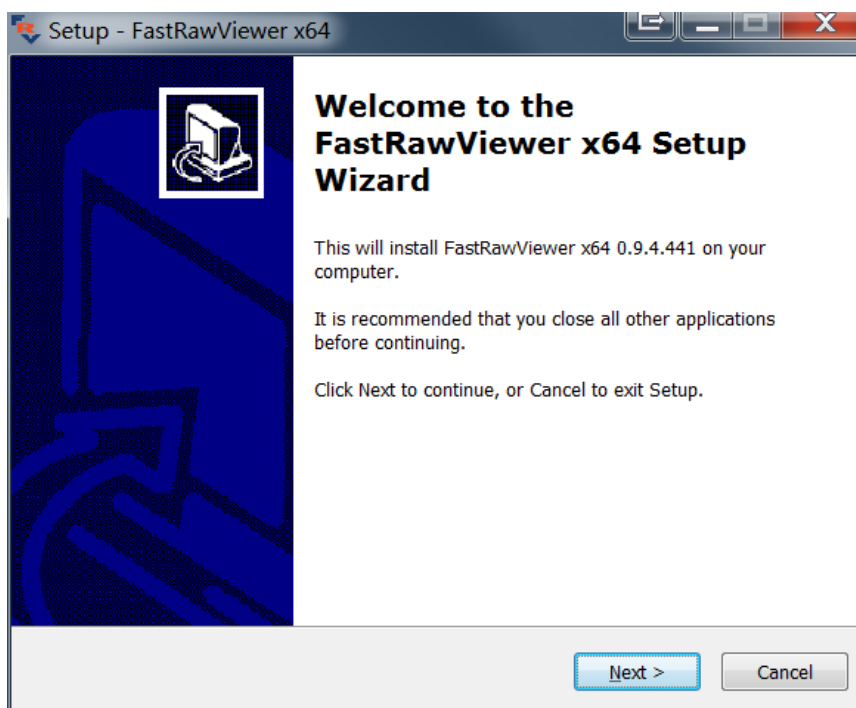
At the next screens of Setup Wizard:

1. The User License is displayed
2. An installation folder is suggested; a different folder may be selected by the user
3. Creating a Group in the Programs menu is suggested

4. A list of possible additional actions is shown: add **FastRawViewer** to desktop right-click menu, add icon to the desktop, add icon to the Quick Launch menu
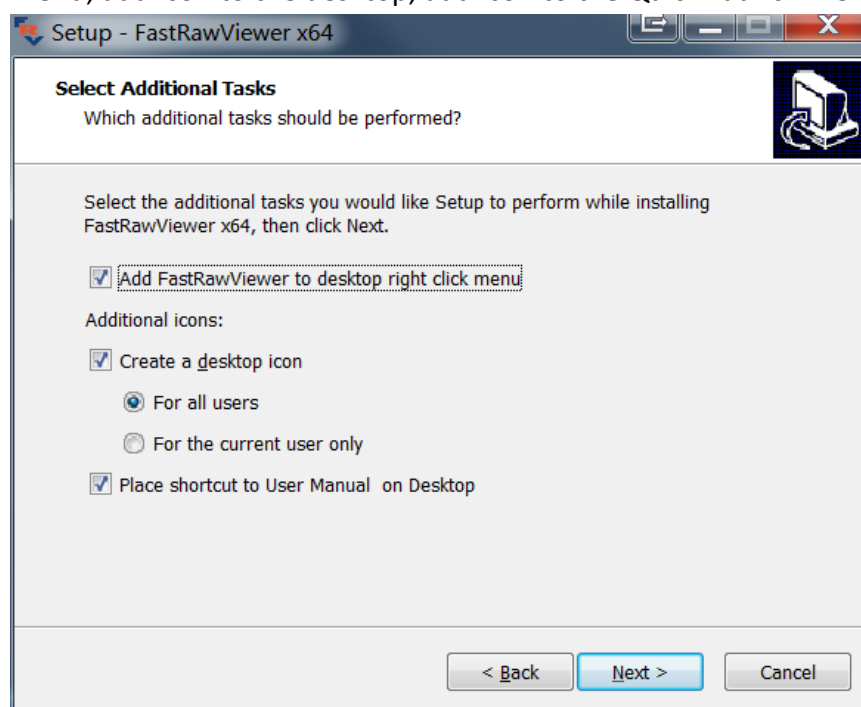
Afterwards, the installation takes place. Upon completion, the following screen appears:
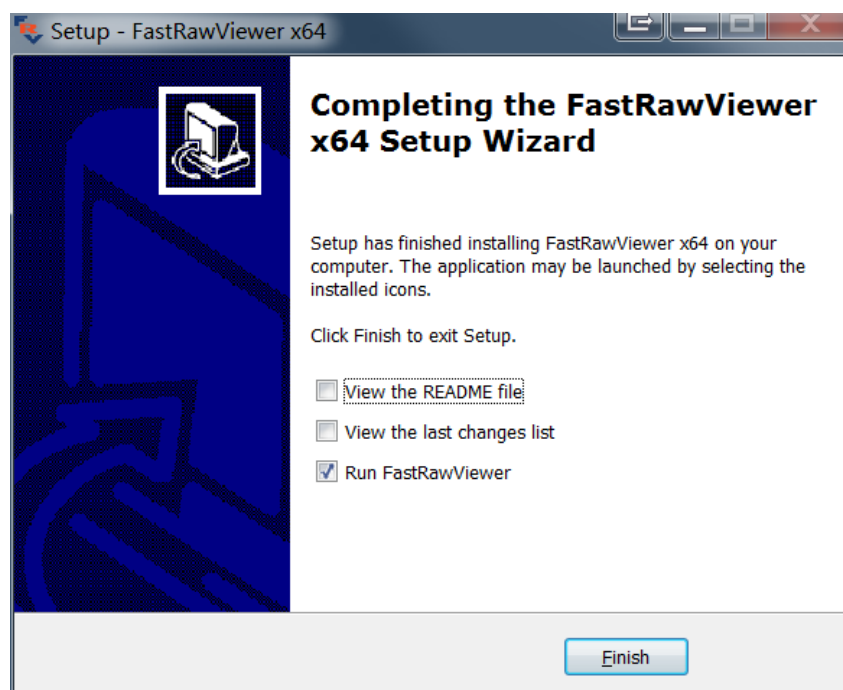
In case of any errors during installation, please contact us via www.fastrawviewer.com/contact or technical support forum at www.fastrawviewer.com/forum.

Mac OS X

Double click on FastRawViewer-1.x.x.dmg to mount the **FastRawViewer** disk image you've downloaded. The content of the disk image will appear like this:
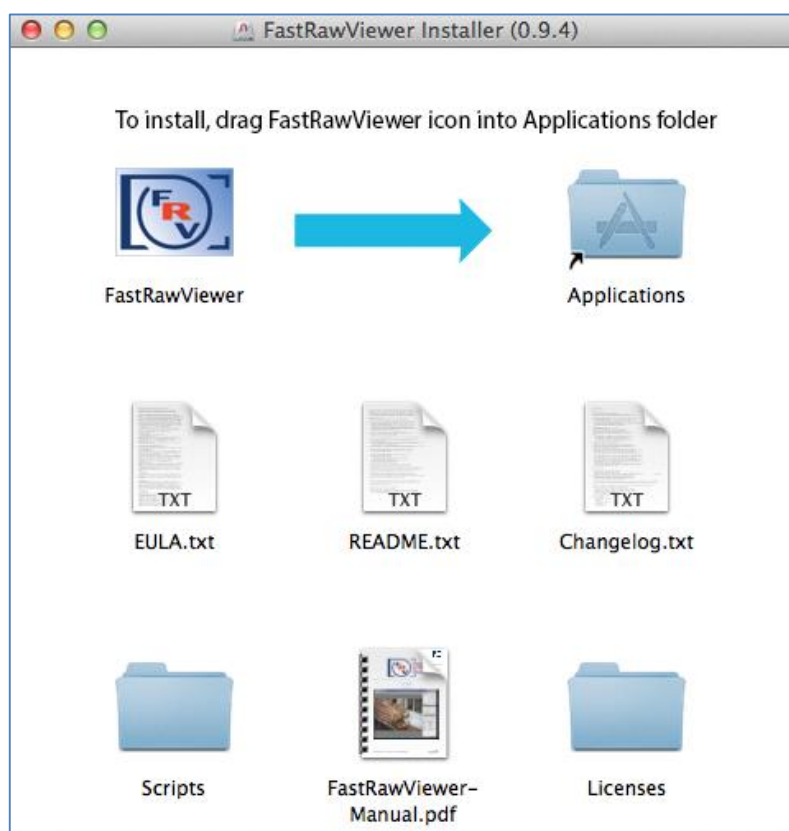
Drag **FastRawViewer** icon onto the **Applications** icon. The program will be copied to Applications folder and ready to run.

Other items contained in the disk image are:

- FastRawViewer Manual (FastRawViewer-manual.pdf)
- Brief description (README.txt) and Changelog (Changelog.txt)
- End-User License Agreement (EULA.txt), Copyright Information (Copyrights.txt)
- Licenses and Copyrights for libraries and components used in **FastRawViewer** (Licenses folder).

Program Activation

During the first launch **FastRawViewer** will display a splash screen suggesting the activation of the trial version

Immediately after that, with the main program screen being opened, **FastRawViewer** will try to connect to Internet to activate the trial version:
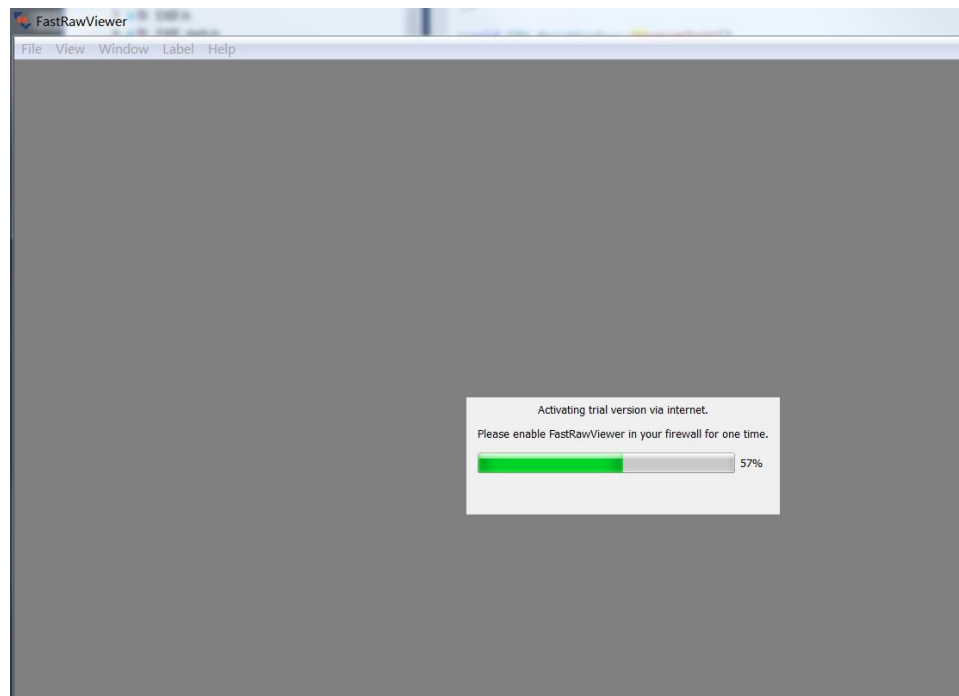
No private data is transferred during the activation process; the only data that is passed through the Internet is FastRawViewer version number and unique non-reversible 64-bit hash code identifying your computer; this code can't be decoded to extract any private or personal data.

After the successful automatic activation the trial period begins; the trial time left is indicated in Help-About window and on the splash screen that pops up when FastRawViewer is started.

In case the automatic activation was impossible for some reason (no Internet access, or FastRawViewer was blocked by firewall) you will be presented with the screen for manual activation:

Here you can allow FastRawViewer a one-time Internet access and press Activate Trial button to start 30-day free trial period.

If after pressing Activate Trial button FastRawViewer still can't access activation server an additional button for Manual Activation will appear:
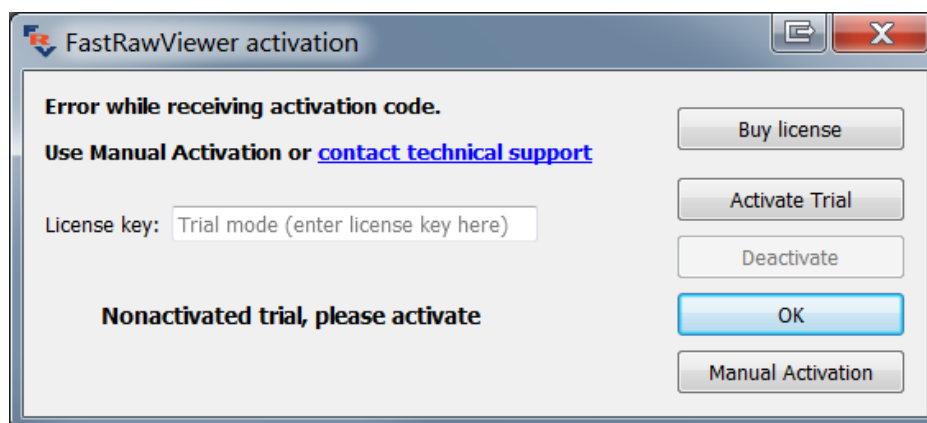
Pressing this Manual Activation button will take you to manual activation dialogue (for more details, please see below, in "Manual Activation" section)

Activation of the License you've purchased

To use **FastRawViewer** after the trial period, the user will need to obtain a full license.

To obtain the license, please click the "Buy License" button or open www.fastrawviewer.com/purchase in your browser. As a result of the transaction, you will be provided with the license key (online and as a separate email). This license key should be entered into the License Key field of the activation dialog, which is also available through **Menu-Help-Purchase/Activate**):
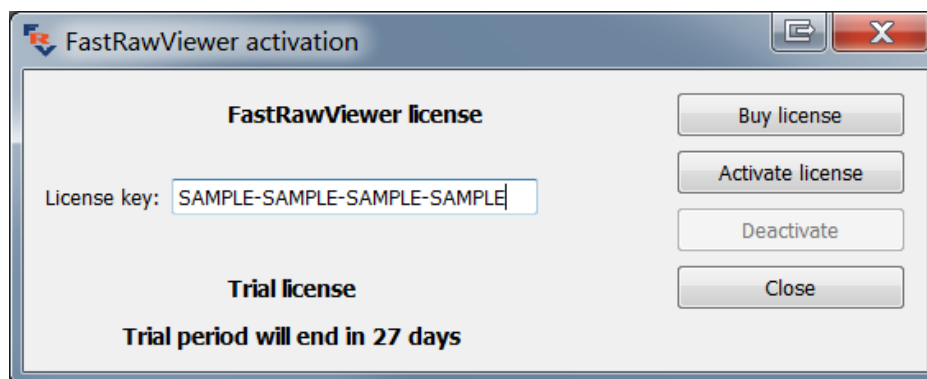
After the license key is entered, please click **Activate license** button. The license will be activated and you will be able to continue using the program.

The Help-Purchase/Activate menu item will now be renamed to Help-Registration data, and the respective dialog will show your registration data:
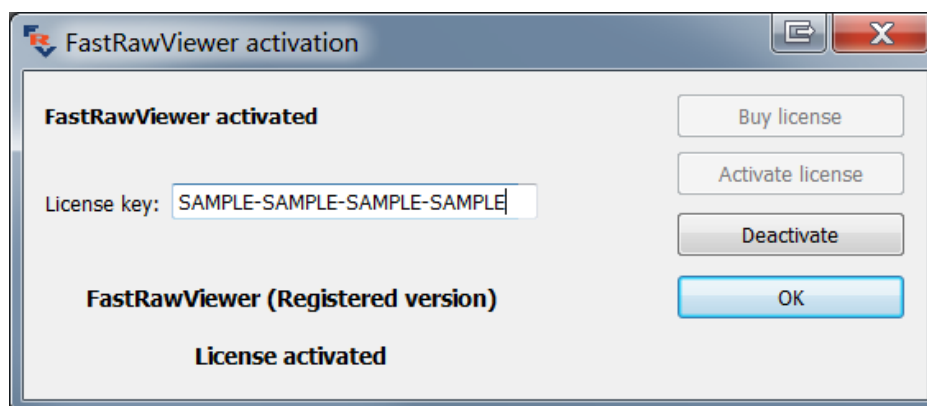
To complete the activation (of both the trial and the fully licensed version) the program needs a one-time access to the Internet. If you cannot grant the appropriate Internet access permissions, you can activate the program manually.

Manual Activation

If the program fails to connect with the activation server (one-minute timeout happens), you will see a pop up alert, with a «Manual Activation» button on the bottom right of the notification window.
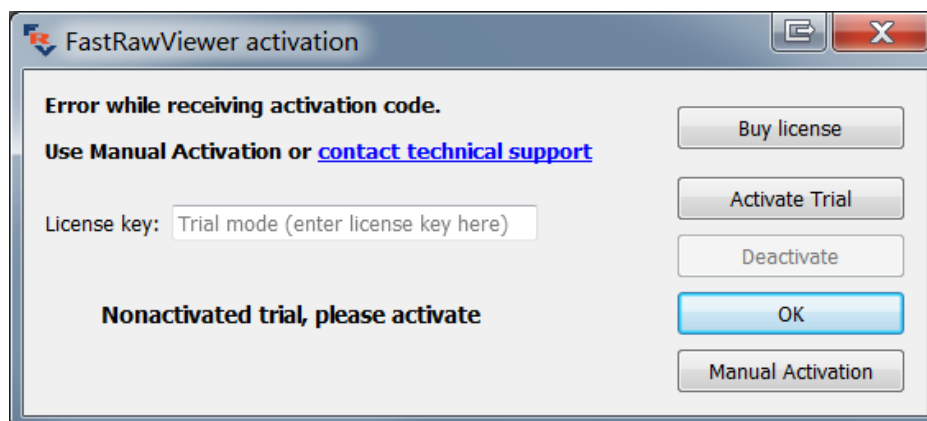
After clicking the «Manual Activation» button, a «Manual Trial Activation» window will pop up:
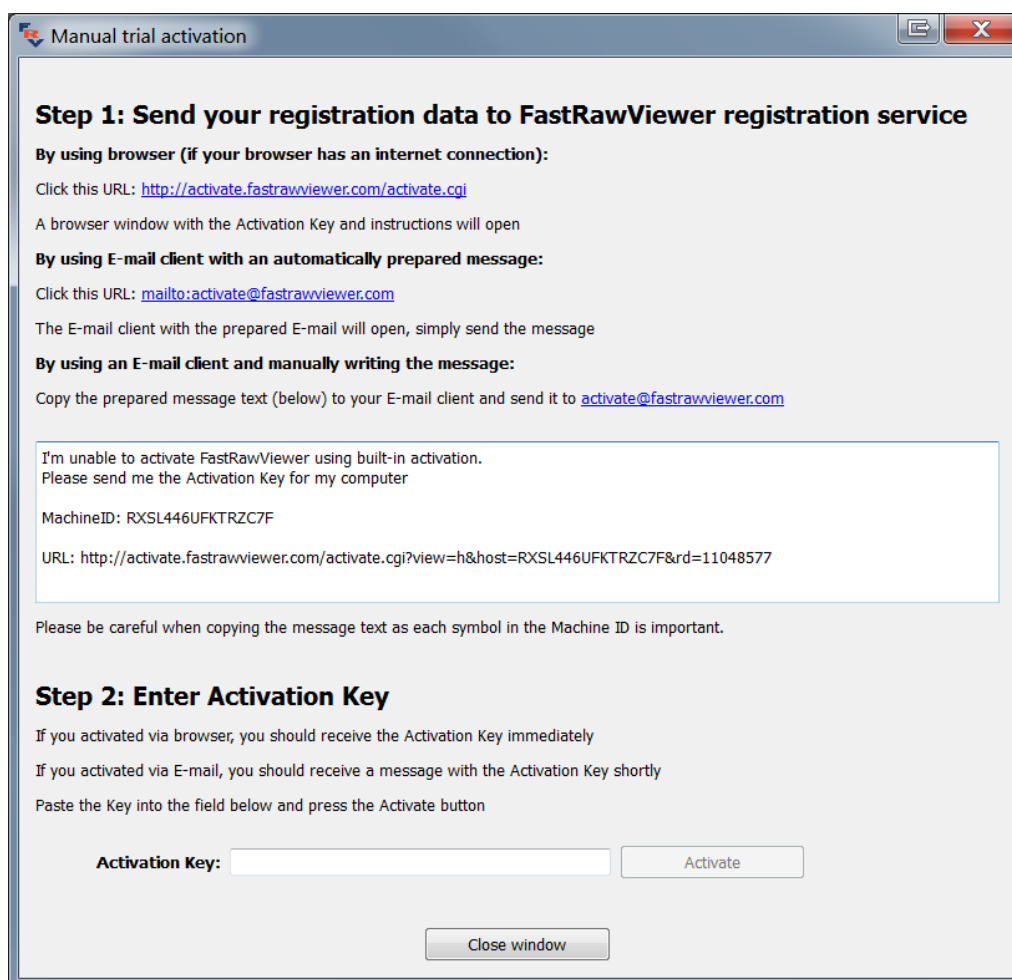
Depending on your Internet access, you can use one of the 3 ways to obtain the activation code:

By using browser (if your browser has an internet connection) – use this if your browser can connect to the Internet.
Simply click this link: http://activate.fastrawviewer.com/activate.cgi and you will see a browser window pop up with your unique activation key:
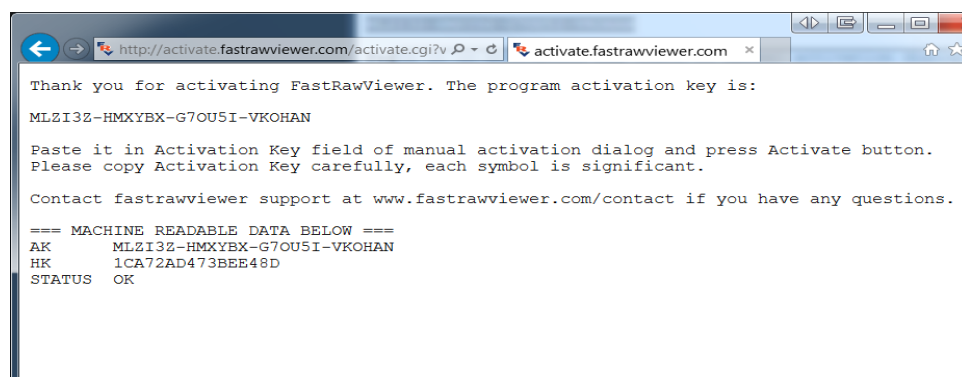
By using E-mail client with an automatically prepared message – click the mailto:activate@fastrawviewer.com link and your mail client will create a new pre-populated email to activate@fastrawviewer.com You will only need to click send.

By using an E-mail client and manually writing the message – you can send an email to activate@fastrawviewer.com using the text in the window below (I'm unable to activate…»
If you choose to obtain the activation key via email, you will receive a reply email with the text identical to that which you would see in the web browser (the activation key, however, will be different.)
You can then use the Activation Key (from the browser or email) and enter it into the Activation Key field (it is best to use Copy-Paste, as every character of the key is important) and press «Activate.»

After clicking the «Close window» button, the window will close and the **FastRawViewer** activation window will display the registration status.
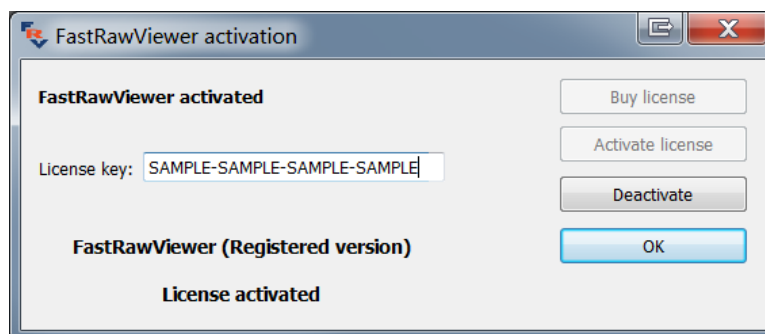
Using FastRawViewer

Conventions in this Manual

The user manual is the same for Windows and Mac versions of FastRawViewer**.**

All of the standard keyboard shortcuts are given in Windows notation (for example, Ctrl-O).

For OS X please use the following substitutions:

- **Ctrl** on Windows – is **Command** on Mac
- **Alt** on Windows – is **Option** on Mac.

All keyboard shortcuts are fully customizable (see below, the "Keyboard Shortcut Settings").
Throughout this text we will be using default program settings for keyboard / mouse shortcuts.

Launching FastRawViewer

To launch the program:

- Start it up the usual way (Double-click the icon)
- Or drag any RAW or JPEG file onto the icon, then the program will open and display that file.
- Or drag a folder (catalogue) onto the icon - the program will start and will open the first RAW file in the folder.

After start-up you will be presented with the program's main screen.

Main Screen
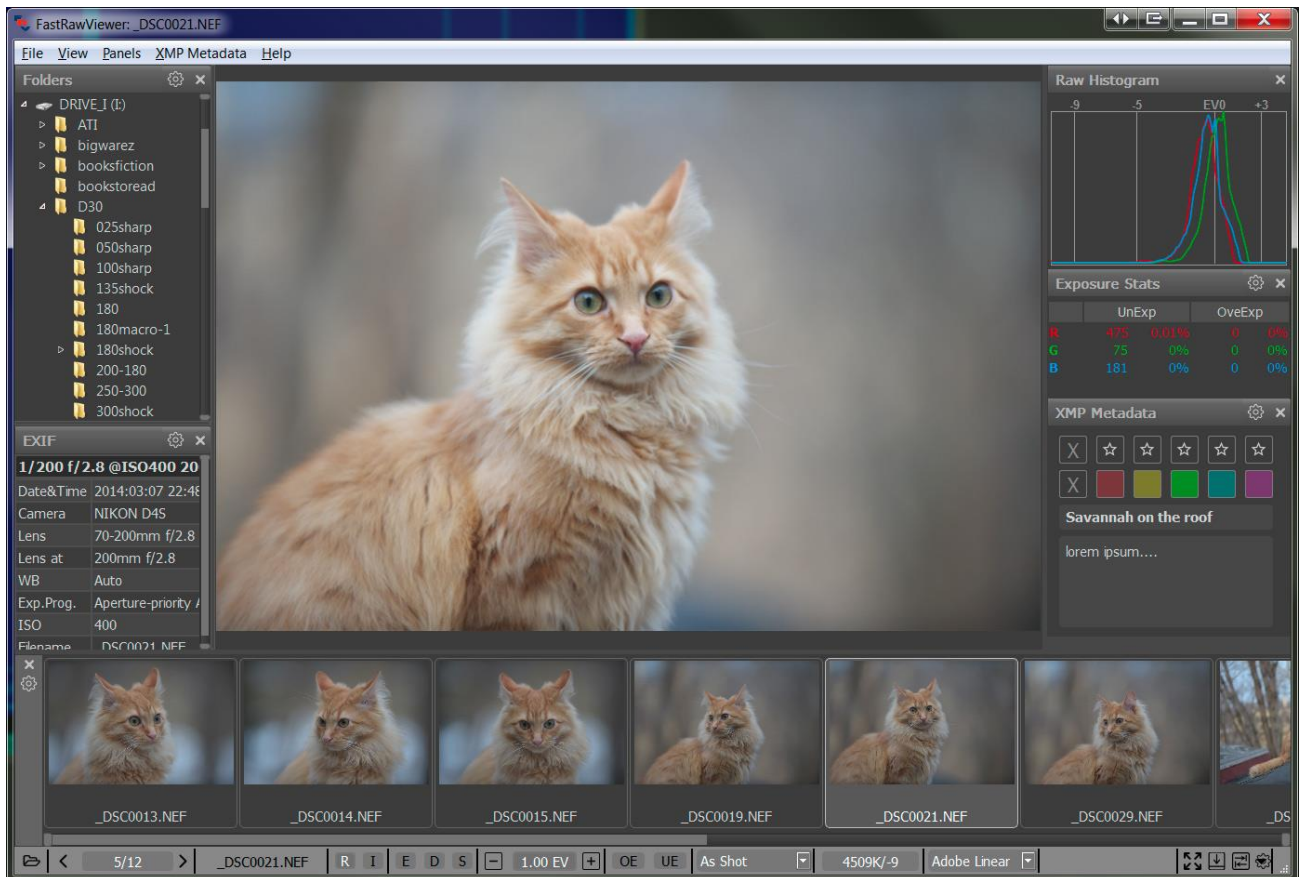
On the program main screen:

- **On top**, as usual, there is the menu that allows access to almost all features, excluding those actions, which can only be performed with the mouse.
  - **File** – navigating through the files (opening files and folders, moving to the next file, moving files to different folders, sending the currently displayed file to an external program / raw converter).
  - **View** – controls image display mode (full-color or per-channel viewing; image orientation; outline the highly detailed areas and areas containing high-contrast edges (focus peaking), perform various adjustments to the image, etc.)
  - **Window** – controls the visibility and layout of information panes; on the above screenshot, those panes are located to the right of the image.
  - **Label** – allows to choose XMP Ratings / XMP Labels
  - **Help** – the name says it.
- The currently displayed RAW file is in the center of the window.
- To the left, the following panels are displayed:
  - Folder tree
  - EXIF data
- **The following panes are located to the right:**

- o **Histogram** (RAW for RAW files, JPEG – for JPEG display)
- o **Over/Underexposure statistics**
- o **XMP Rating and XMP Label**
- The Filmstrip/Thumbnails panel is placed below the window, showing the file previews for the current folder.
- **Additional information and operational elements are placed in the bottom (status) bar. Default elements:**
  - o File open icon
  - o Buttons for navigating through the current folder: previous file, number of file in the file list and the length of the list, next file.
  - o Buttons for switching between RAW-JPEG-external JPEG
  - o Buttons for turning on Focus Peaking and Shadow Boost
  - o Exposure correction control button.
  - o Overexposed and Underexposed area display buttons.
  - o Preset white balance choices drop-down menu.
  - o Buttons for quick control: Fullscreen, hide/show Filmstrip panel/all panels, display and edit settings call-up.
- Aside from the aforementioned, if the window is wide enough, the following buttons will be displayed:
  - o File name
  - o Brief EXIF data for the shot (Exposure settings, ISO setting, applied exposure compensation, use of flash, lens's focal length).
  - o Manual white balance customization button.
  - o Contrast curve selection menu.
  - o Image orientation indicator and rotation buttons.

  Additionally, the following settings can be indicated if desired:
  - o The name of the current folder
  - o Current image zoom factor and the control buttons.
  - o Time spent on the loading and decoding of the current file.
  - o Per-channel display (R-G-B) button and simulated conversion to a black and white version.
  - o XMP rating and label control buttons.

The elements shown in the bottom status bar can be customized according to your needs. For this, press the "Customize FastRawViewer" button on the lower right corner of the screen, choose "Customize bottom bar" and select the necessary display mode for each possible element. For more detail, see below in the "Customizing the status bar" section.

Workspace

The informational panels (Histogram, EXIF, Folders etc.) can be dragged from the main window of the program to the side (for instance, to a second monitor) and be made "floating". Panels can be turned on/off through the Panel menu (or the F2-F7 hotkeys), the statistics and XMP-data panels are fixed in size, but the sizes of the other panels can be changed.
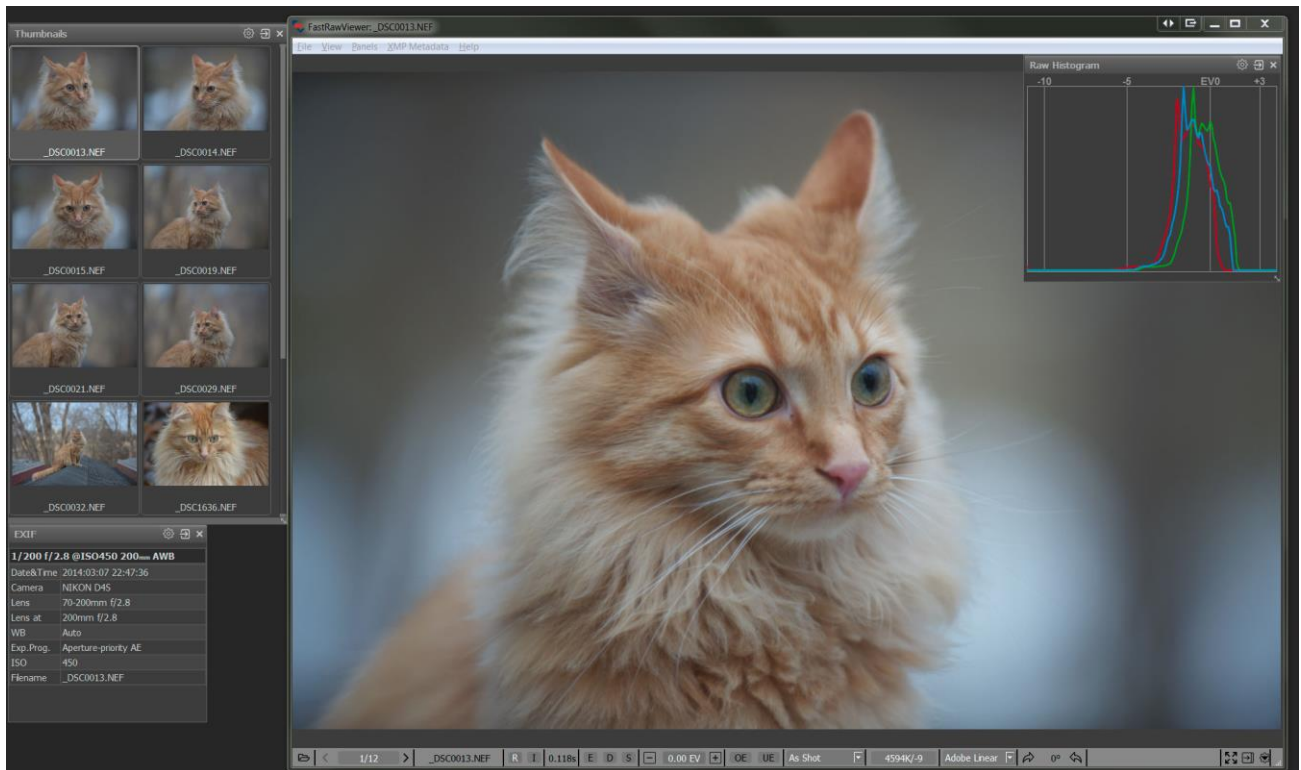
Any floating panel can be made semi-transparent and placed in the workspace, above the image.

Setting **Preferences – Interface – Disable transparency for panels outside of main window** makes a floating panel completely non-transparent when it is placed outside the main program window.
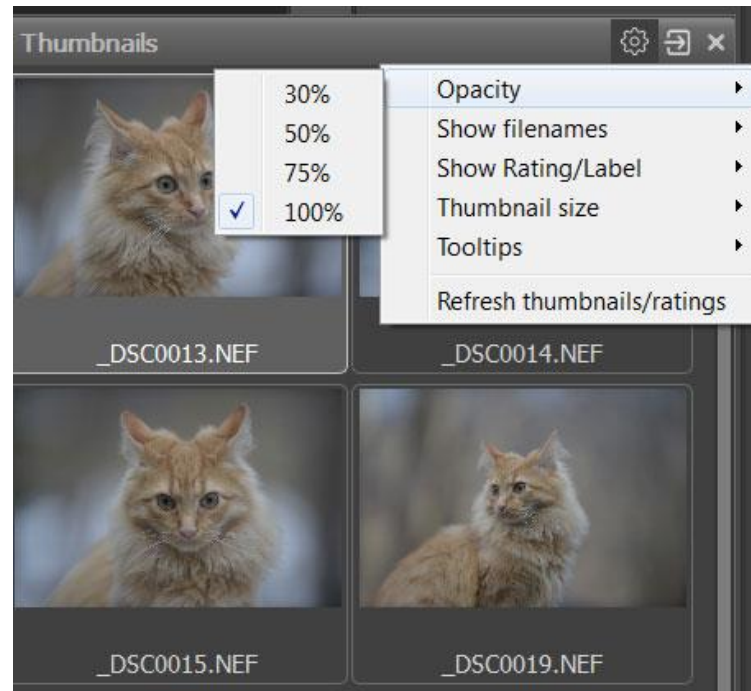
The other panel settings are individualized, and are described in the Preferences – Informational Panel Preferences.

Informational panels can be closed ('x' on the upper right corner of the panel or corresponding item in **Menu – Panels**), and re-opened through **Menu – Panels.** The same menu has the option **Move all panels to dock**, which will restore the standard layout of the program workspace.

Menu–Panels–Hide all panels (or, press **Tab**) – hides all informational panels:
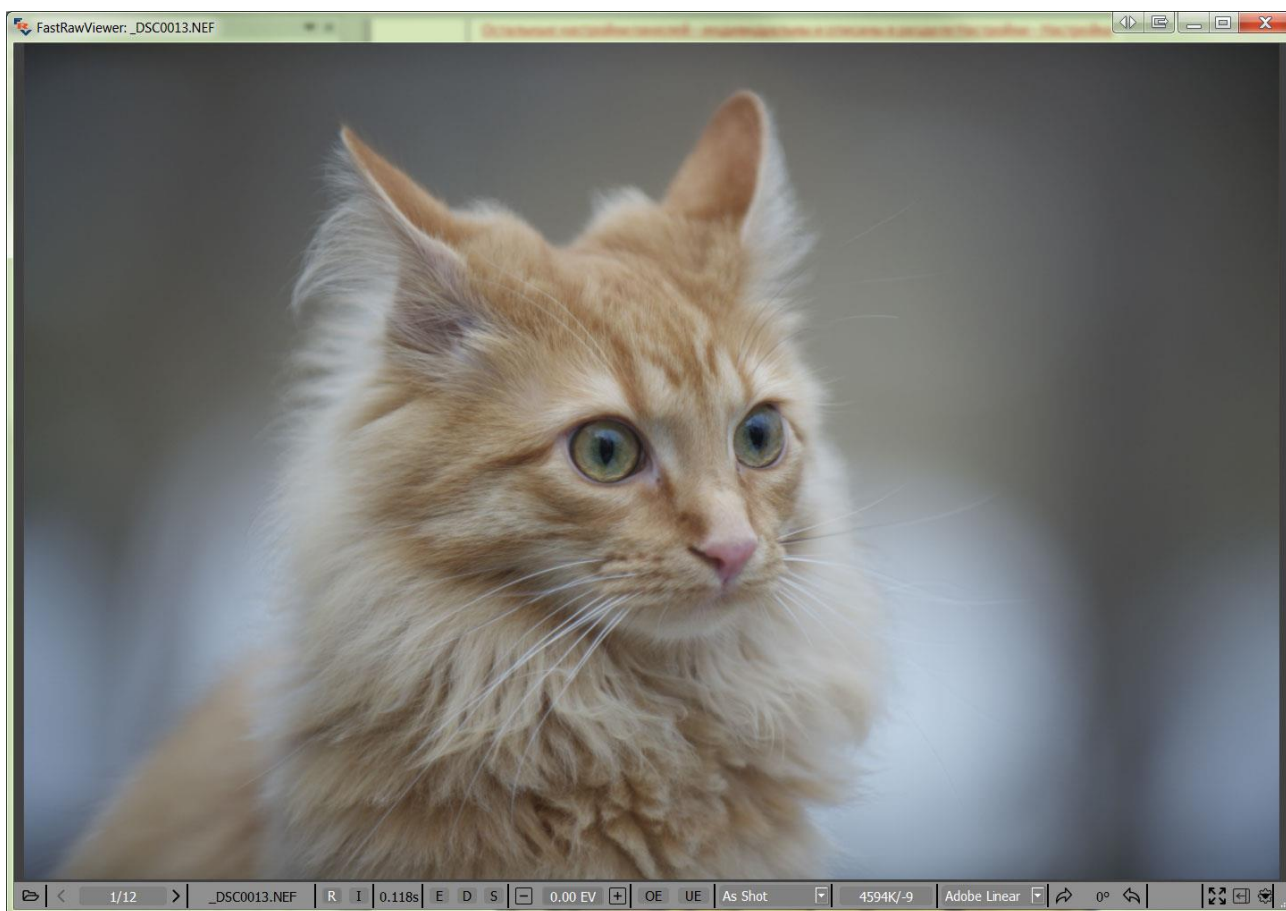
With this, the top menu bar is hidden as well (this can turned off through **Preferences – Interface – Hide menu bar when hiding information panels**). You may, also, hide bottom information bar (status bar) by setting **Preferences – Interface – Hide bottom window bar when hiding information panels**.

Pressing Tab the second time returns everything to the way it was.

You can disable the hiding of informational panels that are outside the program window. This is useful when, for instance, you have moved them to a second monitor: **Preferences – Interface – Do not hide panels outside of main window.**

Menu – View – Fullscreen (or the **F** key, or Fullscreen button on the bottom bar) switches the full screen mode on/off. Choosing this item again or second press of the F key escapes from full screen mode (for Mac OS X 10.6 we have no true full screen mode, instead the main program window will be maximized).

Changing the Settings

To bring up the settings control window, use **Menu–File–Preferences** /Ctrl-P on Windows, Cmd-comma (,) on Mac/. You will be presented with the following:
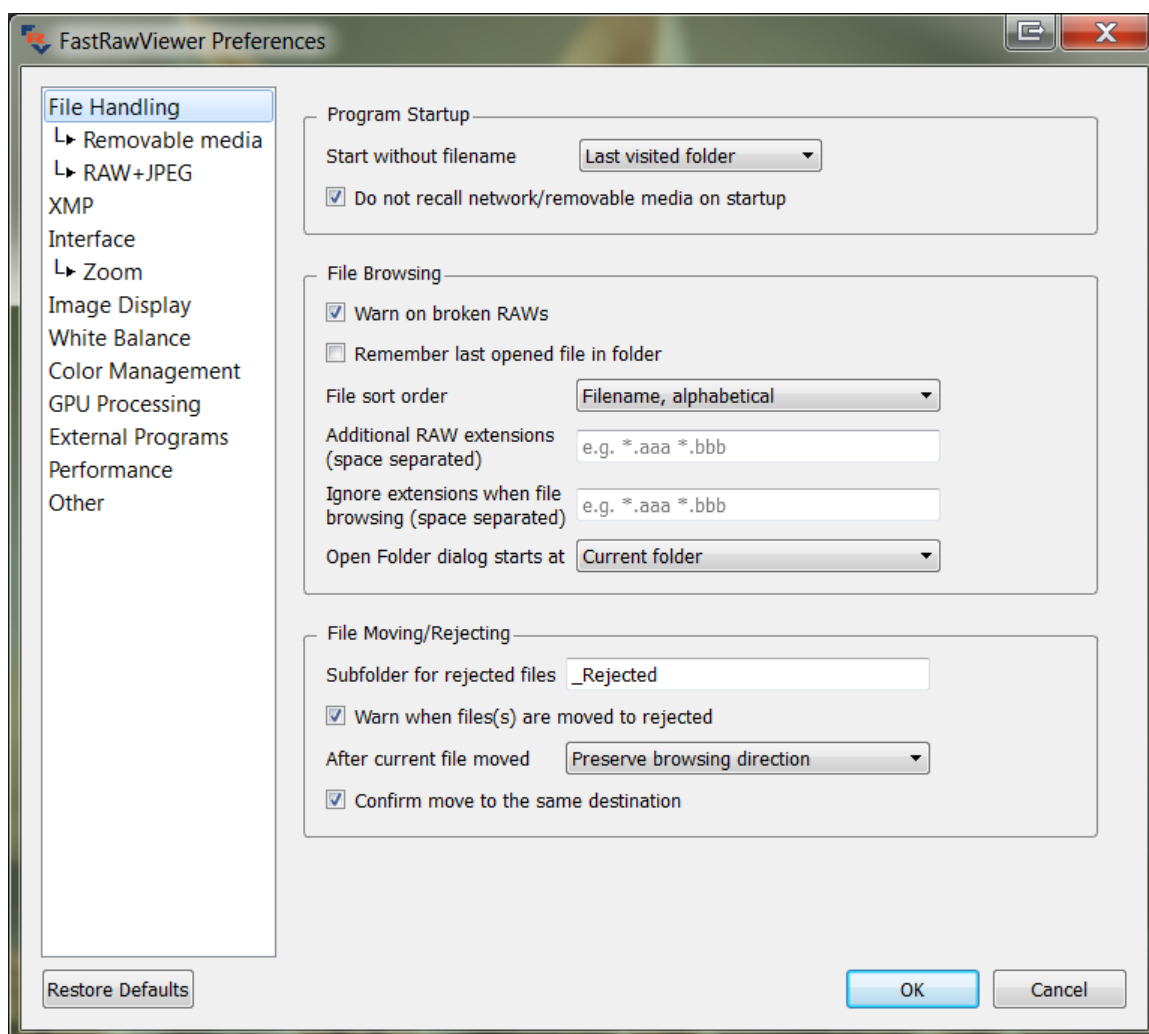
Further in the text, this settings control menu (**Preferences**) is mentioned many times, each time we refer to particular aspects and features of **FastRawViewer**. Furthermore, everything is described again in the **Program Settings** section.

Help with the keyboard Shortcuts

Every keyboard action can be seen in the Keyboard Shortcuts Help window, which can be reached by pressing **F1** function key or through **Menu–Help:**

All keyboard shortcuts can be changed and tuned to your taste. The instructions on how to do this are in the "Adjusting the Keyboard Shortcuts" section below. If the keyboard shortcuts are changed, the help window will show their current state.

The standard list of keyboard macros is given in the «Standard FastRawViewer Keyboard Shortcuts» (at the end of the document

Working with the files

Folder Navigation

Folders can be navigated via the **Folders** panel, the standard location of which is to the left of the main program window:
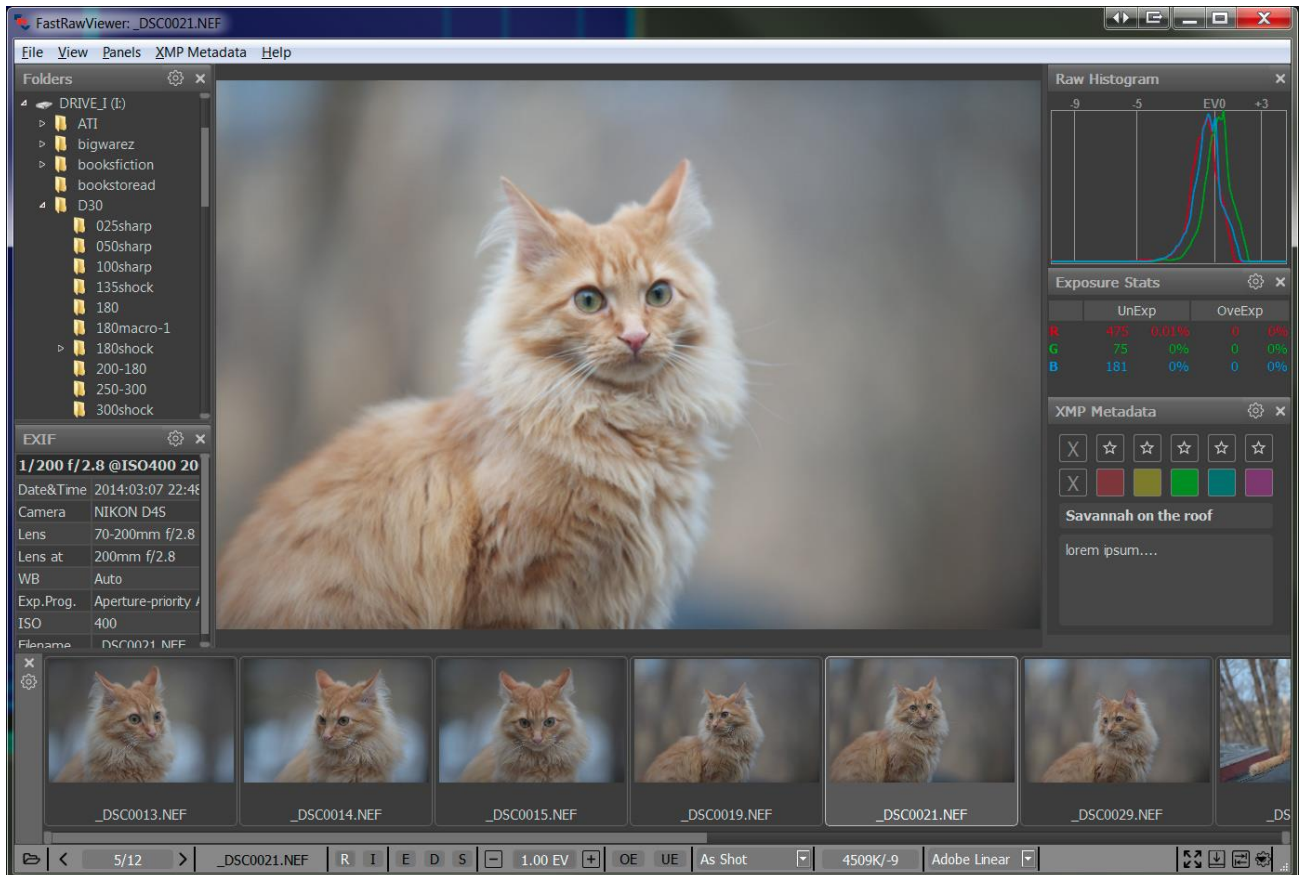
The folders can be navigated with the:

1. Mouse:
   a. Clicking on the triangle to the left of the folder name opens the subfolder tree. A second click on the triangle closes the subfolder tree.
   b. Clicking once on the folder name loads the first preview in the Filmstrip panel.
   c. A double-clock on the folder name loads the first preview and opens the first file of the folder in the main program window.
2. Keyboard:
   a. The up/down arrows, PgUp/PgDn keys, and Home-End moves across the list while loading the previews into the Filmstrip.
   b. Right/Left arrows open/close subfolders.
   c. Enter loads previews and opens the first file in the folder.

Working with removable media (flash cards, etc.)

Automatic recognition of inserted media

Under default settings, FastRawViewer recognizes the removable media (memory card, USB flash drive), and, having recognized it, shows the following dialog:
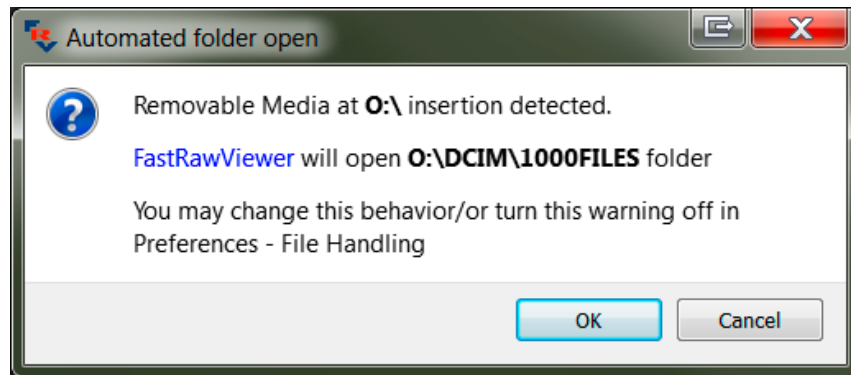
"Removable Media insertion detected, **FastRawViewer** will open the newest folder found on it under the DCIM folder".

The action resulting from detecting removable media can be changed in **Preferences – Removable Media** to one of the following variants:

- Do nothing (Do nothing)

- Open predetermined folder (by default, \DCIM)

- Opens the most recent (by date of modification) folder in the predetermined folder.

You can also turn off the above-shown warning in the same Preferences section.

Unmounting (ejecting) removable media

If the removable media doesn't use any application except **FastRawViewer,** then it can be ejected without closing the program.

For this, one needs to right-click the respective media icon in the Folders panel and to select in the context menu the (only) item, **Unmount MediaName:**
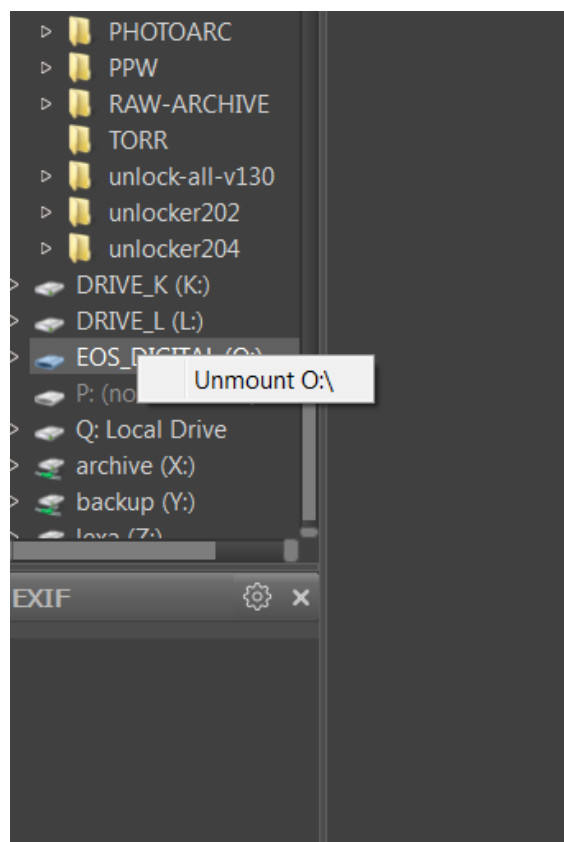
After a successful unmount, the media will be freed up without additional messages. If there are any problems, then the following error message will be displayed:
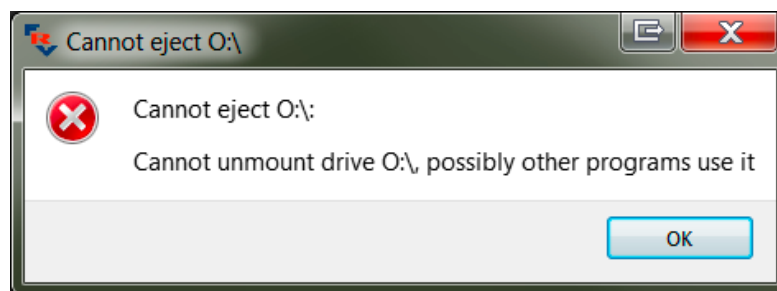
This message means that the removable media is in use by some other program as well, and **FastRawViewer** cannot safely unmount it.

Folder file navigation

Navigation via the Filmstrip/Thumbnails panel:
Choosing a file in the Filmstrip/Thumbnails panel leads to it loading in the main program window.

The Filmstrip/Thumbnails panel can be navigated via:

1. Mouse:

a. Rotating the mouse wheel (if it exists) or using the Scrollbar - scroll through the list.
b. Single or double-click on a preview chooses the file.
2. Keyboard: arrows, PgUp/PgDn, and Home/End navigate through the list, the chosen element loads automatically.

When moving to the next file, zoom is set according to the preferences - **Preferences – Image Display – Image zoom on next file**:

- **Keep zoom ratio** – maintains the current zoom size
- **Keep image width** – maintains the image width
- **Fit to screen** – Turns on the Fit to screen mode.

Additional methods of navigating folder files

FastRawViewer creates a list of files in the folder, including the following file types:

- Files with standard RAW files extensions (the list is pre-defined in the program)
- JPEG files (with .JPG, .JPEG extensions)
- Files with other extensions, as defined in Preferences – File Handling – Additional RAW extensions.

If the RAW+JPEG mode is switched on (Preferences – RAW+JPEG – Handle RAW+JPEG together), the .RAW and .JPG files with identical names will be considered as one "virtual" file with several representations (RAW, embedded JPEG, external JPEG).

Within the above-described alphabetized list, you can navigate:

- Forward (from AAAAA.RAW to ZZZZZ.RAW): through Menu–File–Next File (standard keyboard shortcuts: Spacebar, Ctrl-Right Arrow)
- Backwards: Menu–File–Previous File (Backspace, Ctrl-Left Arrow)
- Setting an arbitrary number in the list: clicking on the file number in the list (the leftmost button in the bottom bar of the program) or Alt-O opens a dialogue to input the file number:
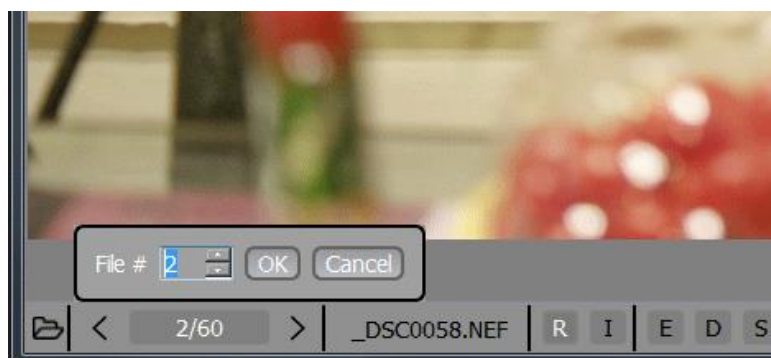
You can enter the number you need in this dialogue (the up-down arrows and PgUp/PgDn allow you to quickly change it with a large/small step) and go to that file by hitting Enter or the OK button.

When moving to the next file, the zoom factor is determined in accordance with the setting in Preferences – Image Display – Image zoom on next file:

- Keep zoom ratio – maintains the zoom factor
- Keep image width – maintains the width of the image
- Fit to screen – turns on the Fit to screen mode.

Opening a file/folder using the menu

To open a file, you can use one of the following:

- **Menu – File – Open** (or **Ctrl-O**)
- Through the list of recently opened files (**Menu – File – Recent Files**)
- Drag-n-Drop the file onto the program icon
- Drag-n-Drop the file onto the program window.

A folder (catalogue) can be opened in similar ways:

- **Menu – File – Open Folder** (**Ctrl-Shift-O**).
- **Menu – File – Recent Folders** – a list of recently visited folders.
- Drag-n-Drop folders onto the icon of the program.
- Drag-n-Drop folders onto the program window.

When opening a folder:

- With default settings the first (in alphabetical order) RAW or JPEG file in the folder is displayed
- If the **Preferences – File Handling – Remember last opened file in folder** setting is on, and the given folder was opened earlier, the file which was viewed last in the folder will be opened first.

Drag and Drop

Files and Folders can be "dropped" onto the window of the program, as well as on the icon on the desktop or the OS X Dock. If so:

1. If you dropped several files, then the first one opens (the order is follows the order of the file selection in the file manager). All others will be ignored.
2. If you dropped several folders, then the first one opens. The others will either be ignored, or remembered for future browsing (see below for the "**Navigating through several folders**" section).

3. If you dropped a mix of files and folders, then the first folder will be opened, while the separate files will be ignored.

Mac OS X: it is recommended that files/folders (if there are a lot of them) be dropped on the opened window, rather than the icon; this way it works a lot faster.

FastRawViewer Start-up Modes

Mac OS X: a single instance of the program is started. Second click on the icon in Applications, or drag-n-drop of the file or folder on the application icon activates the already started instance of the application.

You can start a second instance of **FastRawViewer** through the Terminal Utility with the command `/Applications/FastRawViewer.app/Contents/MacOS/FastRawViewer`

Windows: Several instances of the program can be started by (double-)clicking the icon or performing a drag-n-drop operation. With the start of each instance, a new window (displaying a new file, if started with a drag-n-drop operation) will be opened.

If you prefer to use "single instance" mode in Windows, you may do so by switching on **Preferences – File Handling – Run single program instance** setting. While this setting is on: clicking on a file, which is associated with **FastRawViewer**, will result in displaying the file in the existing program window.

Starting without a filename

If **FastRawViewer** is started without a filename to view (like with double-clicking on the program icon) and the settings under **Preferences – File Handling – Start without filename are at defaults** no RAW file will be initially opened. To change this default behavior, please go to **Preferences – File Handling – Start without filename**:

- **Empty Screen** – **FastRawViewer** starts up "without file".
- **Last opened file** – opens the top (last) file from the Recent Files list
- **Last visited folder** – opens the folder from the list of Recent Folders (from this folder opens either the first file, corresponding to the current file sorting settings, or the last opened, if the 'Remember last opened file in folder' is set)
- **Specified folder** – allows you to set a "start folder".

In the case of **FastRawViewer** being started up over a particular file (through any method; drag-n-drop on the icon, clicking on the file, associated with **FastRawViewer**), this setting is, of course, ignored

This setting is also ignored in the Single instance mode, if the second **FastRawViewer** copy is started up without selecting the name of a file/folder, then nothing happens.

Under default settings, **FastRawViewer** doesn't "recall" files/folders from portable and network media. This behavior can be changed by unchecking Preferences – File Handling – Do not recall removable media on startup.

Creating and reading XMP files

FastRawViewer records all "changes" into separate sidecar XMP files (analogous to Adobe Bridge). The following can be saved/is read from these files

- Image orientation (see below, the "Changing Image Orientation" section).
- White Balance in **FastRawViewer** and Adobe formats (see below "White Balance").
- Exposure adjustment in the **FastRawViewer** Adobe formats (see below, "Working with Exposure").
- Ratings and marks (please see below).
- Title (title) and description (description) image (see below).

XMP files are read for RAW and JPEG files, but written only for RAW files. Recording XMP ratings and marks for JPEG is not possible, because in the "RAW separate from JPEG" (RAW+JPEG mode turned off), the recording of XMP files for JPEG would delete XMP files for RAW.

If the default settings are in use:

- XMP files are always read; if there is no XMP file, we attempt to read the XMP block if it is present in the RAW file (XMP blocks can be present in DNG and several others types of RAW files).
- Only manual changes are recorded into XMP files (for instance, image orientation or exposure are changed from automatic to something else).

This behavior can be changed with the following settings:

- **Preferences – XMP – Use XMP for RAW Files** – turning off these settings leads to a complete disregard of XMP files: they are not read, written, and not moved together with RAW files.
- **Preferences – XMP – Read Only XMP –** blocks any recording of XMP files. Data (ratings, labels, white balance, exposure correction) will be read and used for display, but any changes to it will not be saved.
- **Preferences – XMP – Force XMP file creation** – turns on the creation of XMP files, even if nothing was changed manually. The parameters which were (automatically) set up when opening the file will be set as the parameters in the XMP file

Exposure compensation and white balance are written to XMP files according to the setting of Adobe Process Version in **Preferences – XMP – Adobe process version for newly created XMP files**.

To set color labeling scheme to be compatible with CaptureOne, set **Preferences – XMP – Write photoshop:Urgency tag with color labels (for PhaseOne C1)**. This setting turns on the recording of the XMP-tag photoshop:Urgency, which is used by CaptureOne to recognize and set color labels.

Compatibility with RawPhotoProcessor (.rpps files)

FastRawViewer can create basic .rpps files (those contain conversion settings for RawPhotoProcessor).

The following parameters are recorded:

- Exposure compensation
- White balance

This option is controlled through **Preferences – Other – Write RPPS files** checkbox. Another checkbox, **Preferences – Other – Force RPPS files creation**, forces the creation of .rpps files immediately after a RAW file is opened in FastRawViewer, with automatic exposure compensation and current white balance recorded as initial settings.

To import such .rpps files for further use, while in RawPhotoProcessor navigate to Menu - Settings - Import Multiple settings and select both RAW and .rpps files in the folder that you wish to process. The settings in .rpps files will be imported into RawPhotoProcessor History and the corresponding RAW files will be opened using the parameters you've set in .rpps files.

Copy and Move operations

FastRawViewer offers two types of file operations:

- Relocating the file into **_Rejected** subfolder created automatically in the current folder (instead of deleting the file, it is moved from the current folder to a subfolder) – for rejected files.
- Copying and relocating the file into a folder you choose (for those "chosen" files).

Moving to _Rejected and restoring from _Rejected

- **Menu – File – Move file to _Rejected subfolder** (or **Ctrl-Shift-Del**)– moves the current file to _Rejected subfolder created automatically in the current folder, and **FastRawViewer** will display the next file in the list, following "the direction you were going" (if you were going "backwards" through the files, then after the current file is rejected **FastRawViewer** will continue going "backwards"). The direction of the movement can be changed through **Preferences – File Handling – After current file moved**.
  By default the program will ask you if you actually want to move the file. This question can be turned off in **Preferences – File Handling – Warn when file(s) are moved to rejected**. The name of the _Rejected folder can be changed in **Preferences – File Handling – Subfolder for rejected files.**

The corresponding JPEG file will be also moved if the RAW+JPEG mode is on; so will be the accompanying XMP file (if it exists).

- **Menu – File – Move previous file to _Rejected** (**Ctrl-Shift-[**).
  The file that is moved into _Rejected is not the currently open file, but the one that was displayed before the current one.
- **Menu – File – Move back from _Rejected** (**Ctrl-Shift-]**)
  Restores the last file moved to _Rejected by moving it back to the current folder.
  This procedure can be repeated many times **while you are staying in the current folder. When you go to a different folder, the list of "recently _Rejected" files is reset.**

The _Rejected folder can be set as *global,* for that one needs to set in **Preferences - File Handling – Subfolder for rejected files**:

- **Windows**: the path starts from drive letter, followed by colon (e.g., C:) for local folders; the path starts with \\ for network paths not mounted using drive letters.
- **OS X**: the path starts with /

Clearing out the _Rejected folder
To delete the contents of the _Rejected folder, use **Menu – File – Clear _Rejected folder**.

Clearing the folder with rejected files is irreversible, so

- You cannot set a hotkey for the Clear _Rejected action
- When choosing this action, an additional, un-turn-off-able warning will be displayed:
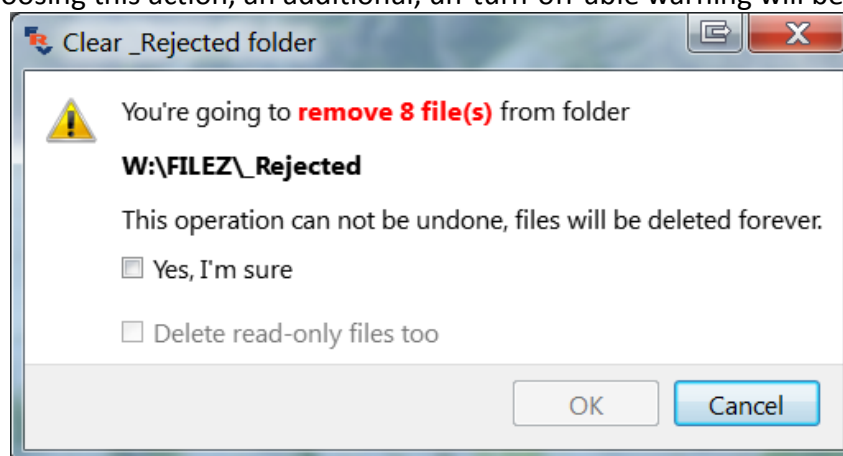
The **OK** button will only be accessible after checking *Yes, I'm sure* checkbox.

The additional **Delete read-only files too** checkmark allows one to delete files with the Read-Only attribute; if this checkmark is not set then those files will be ignored and will remain in **_Rejected**.

Attention: Mac OS X does not support the Read-Only attribute on the FAT/exFAT systems, so on OS X the Read-Only checkmark will only work on local and network drives, but will not work (i.e. checked on) on removable media (memory cards).

Copying and Moving files to an arbitrary folder

- **Menu – File – Move to folder (ask destination)** (or **M**) – a standard system dialogue box for selecting directory appears allowing you to choose the destination folder, and the file is moved into the selected folder.
- **Menu – File – Move to folder (same destination)** (or **Shift-M**) – moves the current file to the same folder as last time.
  By default, the program asks for confirmation, and this request can be turned off through **Preferences – File Handling – Confirm move to the same destination**.
- **Menu – File – Copy to folder (ask destination)** (or С) – will ask for destination folder and perform the requested copy operation (copy includes associated XMP/JPEG files).
- **Menu – File – Copy to folder (same destination)** (or **Shift-**С) – will perform the file copy operation similar to the above; however, the destination folder will be the same as the one used for the previous copy operation.

Both copy and move operations use the same folder in the "same destination" mode.

«Close» File

FastRawViewer background process scans files and receives system signals upon folder updates. This prevents safe ejecting of removable media, including flash memory cards and cameras connected to the computer via a cable.

Menu – File – Close File (or **Ctrl-U**) «closes» the currently opened file:

- All background processes are stopped as fast as possible.
- The monitoring of the current folder is cancelled.
- The current file display is cancelled.
- The current / working folder is changed to %HOME%/Pictures, or, if that one is not present, to %HOME%
- Upon the completion of the **Close File** command the removable media can be safely un-mounted and ejected, as usual.

Unmounting a portable media through the context menu in the folder panel automatically preforms the Close File action

Copyright © 2014-2015, LibRaw LLC, www.libraw.com

Displaying the Image

After a file is opened, the program displays the image stored in the file, as well as its metadata (EXIF, size, rating and label) and the histogram.
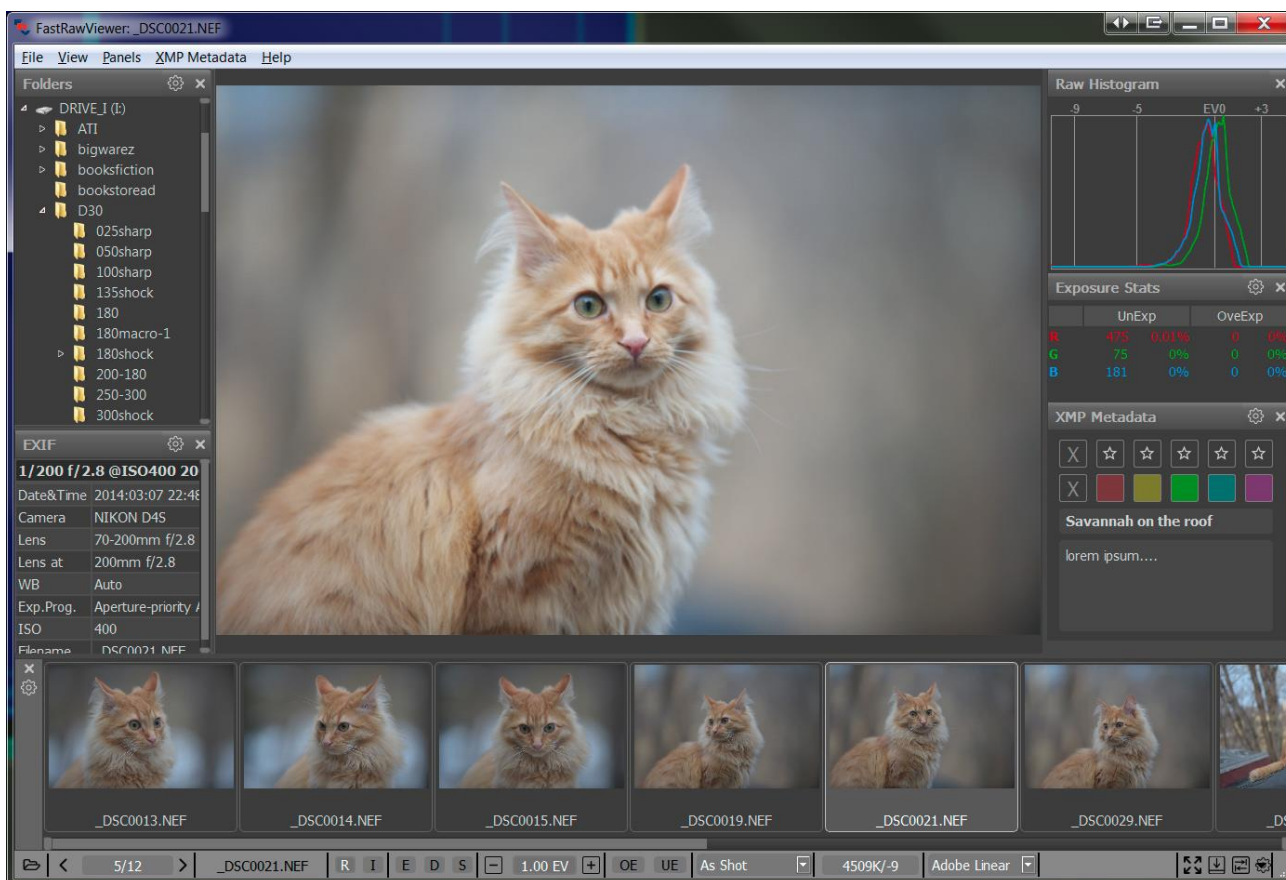
Embedded and External JPEG

For every file, there can be up to three "representations":

- RAW file
- Embedded JPEG preview (Internal JPEG)
- External JPEG file with the same name (if the setting **Preferences – RAW+JPEG – Handle RAW+JPEG together** is on)

The existence of representation is displayed in the status (lower) bar of the program, between the file dimensions in pixels and the EXIF data:
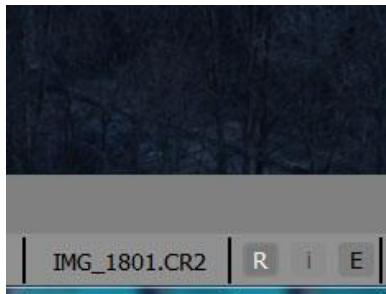
- R I – denotes the existence of RAW and Internal JPEG
- R I E – RAW, Internal JPEG, External JPEG
- J – only JPEG, without a RAW-file

A capital letter indicates that the representation is available for viewing. Lowercase means that it exists, but is unavailable for viewing for one of the following reasons:

- i – the internal JPEG is not shown. This is a default setting for when there is an internal JPEG file and the RAW+JPEG mode is on (Can be changed in settings: **Preferences – RAW+JPEG – Do not show internal JPEG if external JPEG is present**)
- r – RAW representation is not shown. This happens for unsupported RAW formats (Sigma Foveon) or for too large RAW files (limits can be changed in **Preferences – Other – Do not decode RAW files larger than NN Mpix**).
- File representation is damaged (errors while decoding of JPEG or RAW data).

To switch between representation use **Menu – View – Switch RAW/intJPEG/extJPEG** or press the **J** key on the keyboard. The representation that is currently displayed is denoted with letter indicator going white.

Tuning the behavior of the program in regards to the display of embedded/external JPEG files is done through **Preferences – RAW+JPEG** section

- **Handle RAW+JPEG together** – turns on the pairing of the RAW file and JPEG of the same name. If you turn off this setting, the pairing won't happen – the files will be shown separately and treated as separate.
  - **Do not show internal JPEG if external JPEG is present** – disables decoding and displaying of an embedded JPEG when there is an external one

o **Do not show external JPEGs** – disables the decoding and displaying of external JPEGs (still, both RAW and JPEG files will be relocated with a move operation).

- **Ignore internal JPEGs –** disables any processing of embedded JPEGs in all Handle RAW+JPEG modes
- **Default image to Display** (same as Previous/RAW/internal JPEG/external JPEG) – controls what representation will be used for display when opening the next file.

Zooming and Panning

- **Menu – View – Zoom In** or **Ctrl-+** - magnifies the image on the display
- **Menu – View – Zoom Out** or **Ctrl—(Ctrl-Minus)** – zooms out
- **Menu – View – Fit to Window** or **Ctrl-0** – changes the zoom factor in such a manner that the image fits into the current size of the window (and when changing the size of the window, the magnification factor will follow)
- **Menu – View – Actual Pixels (100%)** or **Ctrl-1** – set the image scale to "100%" (each image pixel is displayed as one monitor pixel)

If the image does not completely fit into the window:

- **Pressing and holding the left mouse button** turns on the Drag mode: the image moves with the mouse cursor.
- **Pressing and holding the right mouse button** turns on the fast panning mode: the program window becomes 'Navigation Pane', moving the mouse, for instance, to the top-right corner of the window will show you the top-right region of the image.

Furthermore, the fast combined zoom+panning modes are available as well:

- **Left mouse button + Shift –** turns on temporary zoom and Drag mode.
- **Right mouse button + Shift –** turns on temporary zoom and panning mode.

The zoom factor for these modes is set in the **Preferences-Interface** section:

- Interface – 'Zoom and Drag' zoom to
- Interface – 'Zoom and Pan' zoom to

Changing Image Orientation

When you open the image, its orientation is calculated from the XMP file (if it exists), or from the EXIF data and the image is rotated accordingly.

- **Menu – View – Rotate 90⁰ CCW** (or **Ctrl-7**) Turns the image 90 degrees counter-clockwise.
- **Menu – View – Rotate 90⁰ CW** (or **Ctrl-9**) Turns the image 90 degrees clockwise.

Processing files for the cameras that lack orientation sensors

There is a mode in **FastRawViewer** you can use with the cameras that do not feature an orientation sensor. It is turned on through **Menu – View – Ignore EXIF Rotation data** (or **Ctrl-8**). As the name suggests, in this mode the orientation data coming from EXIF is ignored (but

acknowledged if coming from XMP) and the file is displayed in the same orientation as the previous file.

Together with the **Preferences – XMP – Force create XMP files** mode (see above the XMP section) this setting allows one to quickly set the orientation for a series or vertical shots, taken by a camera without an orientation sensor:

- Manually set the correct orientation for the first file in the series
- Turn on the **Ignore EXIF Rotation data** and **Force create XMP files** settings
- Go through the whole series – on all of the following files, the orientation will be copied from the first file where it was set manually through Ctrl-7 / Ctrl-9
- An XMP file will be created for each of the looked-at files, and the necessary (vertical) orientation tag will be put into that XMP file.

When the rotation mode is "on" the color of the rotation indicator on the bottom bar is set to:

- **Red** – propagation mode: both **Ignore EXIF Rotation data** and **Force create XMP files** modes are turned on**.**
- **White –** the **Ignore EXIF Rotation data** mode is turned on**.**
- **Green –** the **Force create XMP files** mode is turned on**.**
- **Black –** both modes are turned off.

Viewing file channels, viewing in black and white mode

- **Menu – View – R channel** (**Ctrl-3**) Red channel is displayed
- **Menu – View – G channel** (**Ctrl-4**) Green channel is displayed
- **Menu – View – B channel** (**Ctrl-5**) Blue channel is displayed

These modes work with internal RGB image (after demosaicking, exposure adjustment, white balance setting).

In these modes, the RAW and JPEG histograms are shown only for the displayed channel. If the RAW file is not RGB, then the histogram will be for the 1st, 2nd, and 3rd channels respectively.

- **Menu – View – RGB full color** (**Ctrl-2**) – back to RGB display mode
- **Menu – View – BW-conversion full color** (**Ctrl-6**) – will show the black and white variant" of the image (conversion from RGB is performed using the brightness channel formula, same as the one used while coding JPEG).

Boosting the shadows

The Boost Shadows mode is intended to assess the quality of the shadows in the RAW: it **opens up the shadows** at the expense of companding the highlights:

For the image above: on the left part the shadow boost mode is on, on the right, it is off. When the mode is on the indicating S in the **EDS** group on the bottom bar turns bright white.

You can turn the boost on/off through **Menu - View – Boost Shadows** (or by pressing **Shift-S** on the keyboard).

Setting the amount of boost: **Preferences – Image Display – Boost Shadows Amount** controls the additional gamma adjustment, the range is 0.2 to 2.0.

Tonal Curve

Contrast in FastRawViewer is adjusted through the tone (contrast) curve, which you can change by:

- Through Contrast Curve Selector in the Status Bar (See Customizing the Status Bar section)
- Through **Preferences – Image Display – Contrast curve.**

Both settings change the exact same parameter, changing it through different methods doesn't change the effect.

Contrast curves are built into the program; their parameters cannot be changed, and are as follows:

- **Gamma 1.8, Gamma 2.2, sRGB, L*** - - sets one of those typical tone curves used for image processing.
- **Adobe Linear** – a relatively close match to the tone curve in Adobe Camera Raw/Lightroom.
- **BW Movie, Monochrome, Landscape, Portrait, Vivid** – more contrasty tone curves, that can be used for a quick demonstration of the unprocessed images closer to the final image.
- **High Contrast**, **Ultra Contrast** – curves that raise the contrast sharply, intended for viewing photos taken in a specific setting (such as viewing the results of an underwater shoot, where the image contrast is very low).

Support for Cameras Modified to Black and White

FastRawViewer supports black and white cameras that are made from color cameras by removing the color filter array (CFA) from the sensor.

This mode is turned on through **Preferences – Image Display – Force Black-White mode for Bayer images**

In this mode:

- Demosaicking (de-Bayerization) is skipped
- Per-channel viewing is turned off
- White balance preferences are turned off
- RAW histogram and exposure statistics are for one channel
- The image is black and white:

This mode is not applicable to JPEG images; they stay colored.

Customizing Display Modes

FastRawViewer uses the advanced features of modern video cards to display images. In particular, zooming in and out is performed using video card processor, GPU. Depending on the particular set

of features and performance of your video card, you may wish to tune the settings controlling the display:

- **Preferences – GPU Processing – Image Resampling method** sets the method to be used for calculating zoom-in (going above 100% view):
  - ○ **No resampling** – for large zoom factors, the image will look as if it is constituted of small square tiles
  - ○ **Bilinear resampling** – fast, mid-quality method
  - ○ **Bicubic resampling** – high-quality method, a relatively fast vast video card is recommended
- **Preferences – GPU Processing – Downsampling options –** sets the method for zoom-out calculations:
  - ○ **None –** no additional processing is involved
  - ○ **Generate low resolution previews** – most compatible method, but relatively slow.
  - ○ **Suppress downsampling artifacts –** we recommend turning this on when you are viewing a noisy image (high ISO, underexposure, deep shadows bumped, etc.)

Not all of the above-listed modes are available on all video cards. If you have an older video-card, Bicubic and artifact suppression may not be available at all.

In some cases (older video cards, buggy drivers) you may encounter equipment compatibility problems. In this case, you may need to use the compatibility options under the **Preferences – GPU Processing – GPU Compatibility settings** section:

- ○ **Synchronous GPU Operations** turns on a slower but more stable mode operation for the misbehaving video cards.
- ○ **Force Window refresh by slight resize** –the screen refresh is implemented through the slight resize of the window. You may want to turn this mode on if the images on the screen are not redrawn properly.
- ○ **Exit program on OS Sleep/suspend** – some versions of Windows XP video card drivers perform an incorrect wake up and **FastRawViewer** crashes when the computer wakes up after Sleep/Suspend. In this case, you will need to use this mode and start **FastRawViewer** again each time the computer wakes up.

Using Monitor Profile For Display

FastRawViewer supports "Color Management" when showing RAW and JPEG files, however this mode is turned off by default for the following reasons:

- o The majority of modern monitors are sRGB (or close to it) and using sRGB as a workspace when displaying RAW gives very acceptable results.
- o Furthermore, in many cases supplied monitor profiles are inadequate, and they have a negative impact on the image appearance.
- o Moreover, a noticeable number of users have optimized their video settings for computer games, manually turning on the anisotropic filtration of textures. This mode is incompatible with the Color Management function of **FastRawViewer**.

Color Management can be turned on through **Preferences - Color Management - Enable Color management**. Further color management settings are described in the "Settings – Color Management" section below. If the system profile of the monitor is set up properly, then further tuning of settings will, most likely, not be needed.

Working with Exposure

FastRawViewer offers several tools to analyze the exposure on a photograph, recommend exposure adjustments during a shooting session, and select exposure adjustment during RAW conversion:

- RAW-histogram
- Over/Underexposure statistics
- Showing the areas of over- and underexposure on the image.
- Automatic setting of positive (lightening) exposure adjustment
- Manual Exposure adjustment setting.

Histogram

The RAW-data histogram is created based on the unmodified (disregarding any exposure adjustments metadata) RAW data from the file:

Horizontal Scale:

- EV0 – the level that corresponds to the middle gray. If exposure adjustment has not been applied, it's set to 3 photographic stops below the saturation level of a camera.
- -5 – the level that corresponds to normal clean easily workable shadows for the majority of modern cameras.
- +3 (when exposure adjustment is turned on it can be +2 or +1) – extreme highlights.
- The leftmost mark of the scale is the level that corresponds to the value of "1" in the RAW data.

The histogram step on the horizontal axis is 0.1EV, so there will **always** be a "comb" in the shadows, as there are less possible levels than 10 levels per stop.

When applying exposure adjustment (see below) the histogram itself does not change – instead the horizontal axis shifts. During a positive exposure adjustment, the EV0 level shifts in the direction of the shadows (because the shadow sections shifts to brighter ones – closer to middle gray), correspondingly the other vertical marks move as well (and if needed, the numbers for the marks change as well). During a negative exposure adjustment, the axis shift is in the opposite direction.

Exposure statistics

Exposure statistics is calculated for RAW data. It is displayed in the OE/EU Stats table, which by default is in the right part of the program window.

If positive exposure adjustment was not applied to the file, this table will have 3 columns (channel name, pixel overexposure statistics, pixel underexposure statistics):
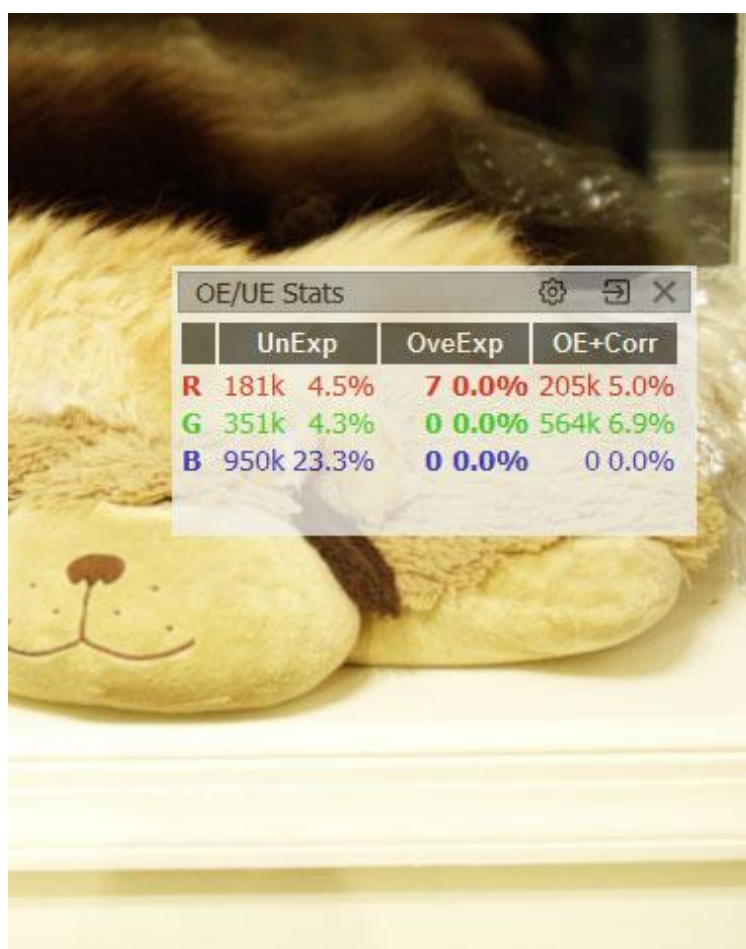
On the shot above:

1. UnExp (underexposure) column: 4.5% of pixels in the red and green channels and 23% of pixels in the blue are in the underexposure zone meaning **8EV** below the saturation point of the camera.
2. OveExp (Overexposure): there is practically no overexposure (7 pixels in the red channels don't really count)

8EV is a default value for the "camera dynamic range", you can change it to the value you prefer through **Preferences – Image Display – Underexposure detection limit.**

If positive exposure adjustment was applied to the file, yet another column appears in the table, **OE+Corr**: showing how many pixels will be blown out after the linear correction.

On the image above, about 5-7% of red and green pixels ended up overexposed (more than likely, the attempted correction is too drastic).

When quickly looking through a large number of files, it may be useful to force the OE+Corr column on (so as to make sure that attention is not distracted by the change of table size). This can be done through the statistics panel gear button**.**

Spotlighting the Areas of Over- and Underexposure

The over/underexposure areas can be identified using a colored overlay.

Spotlighting the overexposure zones can be turned on and off through **Menu–View–Overexposure Display (**or by pressing the **O** key on the keyboard)**:**
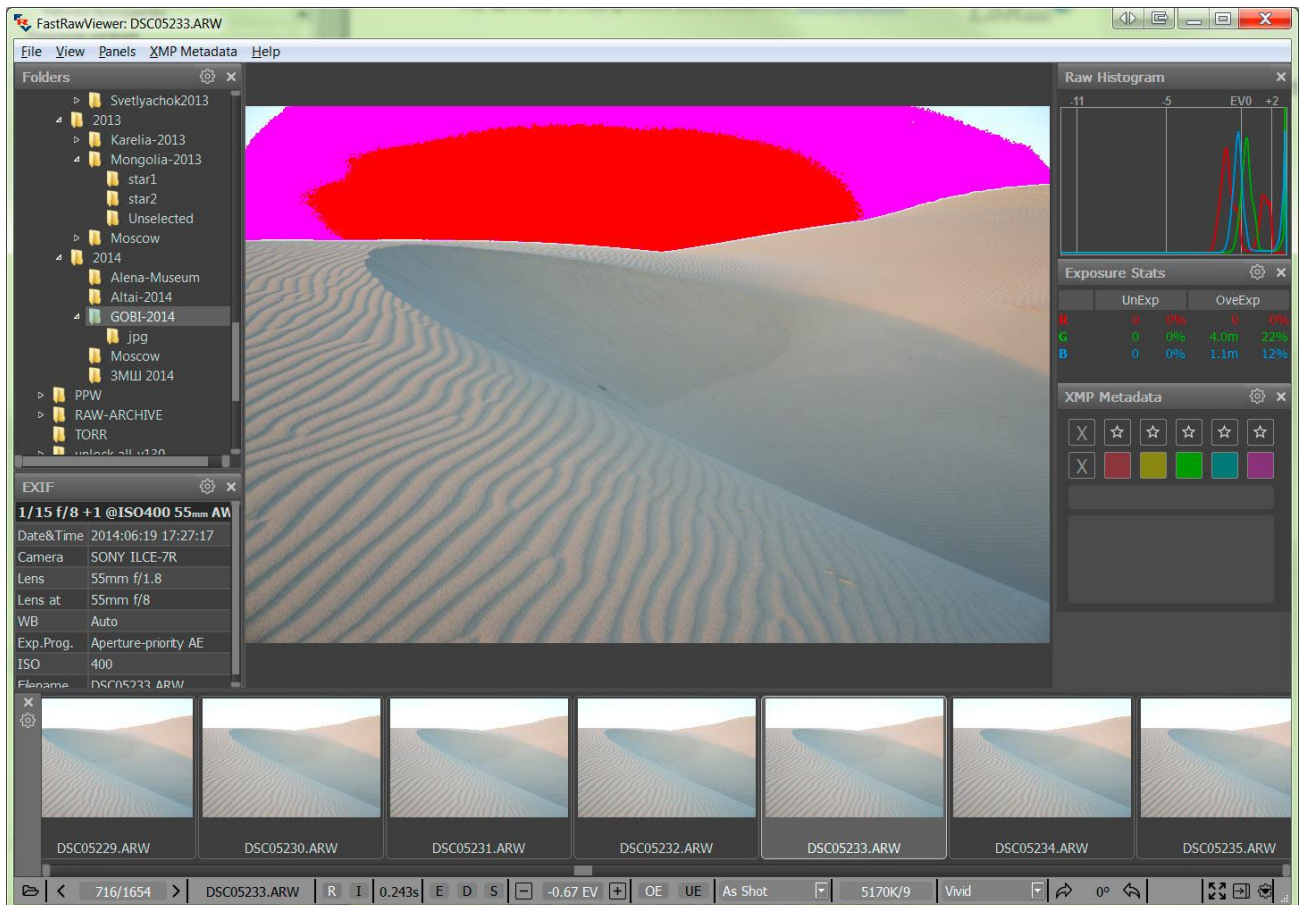
If some pixels of a channel hit the overexposure limit the values for such pixels are clipped.

FastRawViewer is using the following color scheme to spotlight the areas of overexposure:

- **Magenta** – areas where the green channel is clipped
- **Cyan** – areas where only the red channel is clipped
- **Yellow** – areas where only the blue channel is clipped
- **Blue** – areas where both green and red channels are clipped
- **Green** – areas where both blue and red channels are clipped
- **Red** – areas where both blue and green channels are clipped
- **Black** – areas where all 3 channels are clipped.

For this image, we see the blown-out green channel on almost the entire sky over the sand dune; while on the central portion of the sky the blue and green are both blown out. More likely than not, recovering the sky's tone normally via Highlight recover won't be possible.

With standard settings, the positive exposure adjustment has the effect on the overexposure area display: the areas shown are the ones that would be overexposed, if we had taken the shot with this exposure compensation on the camera). This behavior can be changed by turning off the setting **Preferences –Image Display – Exposure adjustments affects OverExposure display**, in this case only those areas that are overexposed (clipped) in the RAW file itself will be shown as the overexposed areas (obviously, the exposure adjustment in **FastRawViewer** has no effect on the content of RAW files).

Viewing the underexposure zone can be turned on and off through **Menu–View–Underexposure Display (**or by pressing the **U** key on the keyboard):
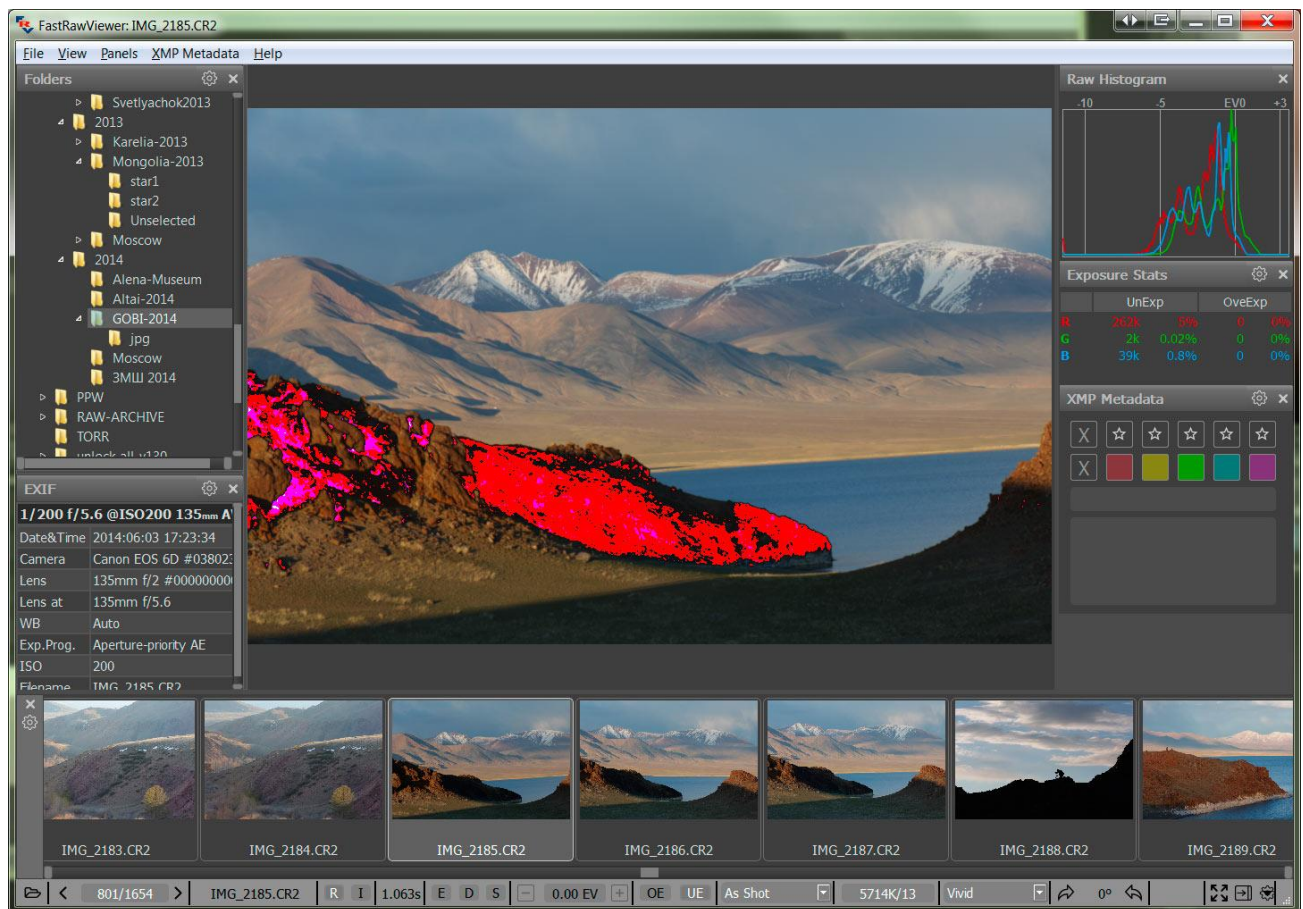
Like in the previous, the underexposed pixels are spotlighted with saturated colors:

- **Blue** – where the blue channel is underexposed
- **Red** – where the red channel is underexposed
- **Green** – where the green channel is underexposed
- **Magenta** – where both red and blue channels are underexposed
- **Cyan** – where both green and blue channels are underexposed
- **Yellow** – where both green and red channels are underexposed

- **White** – where all three channels are underexposed.

Exposure adjustments **do not affect** the display of underexposure areas (or underexposure statistics).

For this shot, part of the foreground is underexposed; also, one can see areas with the red channel underexposed (red), and, also areas where both red and blue channels are underexposed (magenta).

Unlike for overexposure, which is determined fairly unambiguously in digital cameras (by the "blowout" of one or more channels, the channel histogram pressed to the right edge and having a characteristic spike), the limit of the unacceptable underexposure area cannot be exactly determined, because it depends on

- Planned print size

- Planned shadow boost in the current shot.

In **FastRawViewer,** the limit that controls the underexposure warning is set by the user themself in the preferences (Preferences-Image Display – Underexposure detection limit). The default value (8EV) is fairly conservative, and works pretty well for low ISO settings, 100-800 ISO. In the case of using high ISO, or strict demands to the image quality, this parameter may to be set lower (to 6-7EV, and sometimes even lower), according to the technical requirements for the resulting image.

Automatic exposure correction

Adobe 'hidden' exposure correction

By default, an exposure correction equal to the one that is automatically applied by Adobe converters is also applied when a RAW file is opened in FastRawViewer (for more details, please see https://photographylife.com/adobes-silent-exposure-compensation).

As a result, the overall brightness of the rendition on the screen is a close match to a JPEG preview; and, given the contrast curve in Preferences is set to 'Adobe Linear' or 'Standard Tone', it also matches the rendition in Adobe converters with all the sliders there being set to '0'.

The application of this standard exposure offset can be switched off via **Preferences – Image Display – Apply Adobe hidden exposure correction.**

Automatic exposure correction

If Shift-A is pressed, or **Menu – View – Auto Exposure Correction** is enabled, **FastRawViewer** calculates and applies automatic exposure correction in such a way, that 1% of the total amount of pixels in the image are pushed to saturation (receive the value of 255 on the 8-bit scale).

The following settings for the automatic exposure correction are user-adjustable:

- Mode:
    a. Fixed shift by the given amount of stops (EV), the value is controlled through **Preferences – Image Display – Auto Exposure – Fixed Exposure shift**
    b. Automatic calculation of the exposure compensation to shift the histogram 'to the right', controlled through **Preferences – Image Display – Auto Exposure – ETTR-style autoexposure (shift histogram to the right)**
- Fine-tuning of the automatic exposure compensation
    a. **Saturate up to NN% pixels** – controls the per cent of the pixels that will reach the saturation as the result of the automatic exposure correction
    b. Exposure shift limits
        i. Unlimited – no limit, goes all the way to the setting for **Saturate up to NN% pixels**
        ii. Hard limit – no more than the number of stops set in this field.
        iii. Virtual ISO – the limit depends on the ISO setting that was used to take the shot:
            - If the shot was taken at ISO in-camera setting higher that this limit, the maximum exposure correction is 0.
            - For the shots taken at lower than this limit ISO setting in camera, the maximum value for the exposure correction is equal to the difference (in stops, EV) between the ISO setting in the camera and the limit set (for example, if the limit is set to ISO 6400, and the shot was taken at ISO 1600, the maximum amount of exposure correction is 2EV).

To switch off the exposure correction, making it 0 (or, if Apply Adobe hidden exposure correction **is ON, making it equal to that value of hidden correction**), press the 'A' key on the keyboard. Second press of 'A' will restore the previous correction.

Manual Exposure Correction

- Increase exposure adjustment: **Menu – View – Increase Exposure** (**Alt-*Plus key***) or the **+** button in the lower bar of the window.
- Decrease exposure adjustment: **Menu – View – Decrease Exposure** (**Alt-*Minus key***) or - button in the lower bar of the window.

The amount of exposure adjustment change per click / key press can be set through **Preferences – Image Display – Manual Exposure step size**.

Recording of the exposure correction to XMP files: Interaction with Adobe Programs

Exposure adjustment is recorded in XMP-file in the **FastRawViewer** format (if reading/recording XMP is on).

Moreover, exposure adjustment in a format that is compatible with Adobe (Bridge, Camera Raw, Lightroom) is recorded in XMP as well. This recording can be turned off through **Preferences – Adobe Compatible Exposure and White Balance**.

Exposure Adjustment when browsing to the next file

If the value of the exposure correction can be read from an XMP file (the priority is given to the value recorded in **FastRawViewer** format, and if it is not found, we take the value from the record in Adobe format), it will be applied when the file is displayed.

If XMP file does not exist, or the exposure correction records are absent in it, exposure correction will not be applied (however, if **Apply Adobe hidden exposure correction** is **ON**, it will still be applied). This behavior can be altered through the setting
Preferences – Image Display – Exposure correction on file open:

- **No correction** (default) – exposure correction is not applied.
- **Autoexposure** – Automatic exposure correction will be applied, according to the respective settings for this type of correction.
- **Keep from prev.** file – same value of the exposure correction, as it was set for the previous file is applied. If the file is the first one opened during this session, no exposure correction is applied.

White Balance

FastRawViewer offers several methods of setting white balance

- Choose one of the standard presets (As Shot/Auto/Daylight/Tungsten)
- Set it by clicking on the known neutral gray area of the image
- Set it by choosing the color temperature/tint value.

Indication of the white balance

The white balance is displayed:

1. As the name of one of the presets (or Custom) in the drop-down list of white balance presets (see the next picture).
2. As the values shown on the button for manual editing of white balance (to the right of the drop-down list of available white balance presets).
   The available white balance indication modes are chosen through **Preferences – White Balance – White balance display mode**
   a. Color Temperature/Tint – a mode commonly used in RAW converters
   b. Mired/Tint – instead of correlated color temperatures, the value indicated is in Mired.
   c. WB Coefficients – the per-channel coefficients (factors) of white balance are shown.

The calculation of color temperature/tint is not possible for all the cameras. It is also not possible for extreme white balance coefficients. Here are the limitations:

1. **FastRawViewer** must have the color data for the camera (for the vast majority of modern cameras, it does).
2. The camera has to be RGB and tricolor. CMYG, RGBE, and other non-RGB cameras are not supported.

3. A range of color temperatures from 1667 to 25000K is supported. If you set the manual balance (see below) from a deep blue or a dark red area, then calculating the temperature may be impossible.

For those cases where the calculation of color temperature is impossible, the indication of CCT/Tint or Mired/Tint values is changed to "---/--".

White balance Presets

For the majority of modern cameras, **FastRawViewer** contains a large amount of standard presets (settings) of white balance.

Choosing a preset can be done via the drop-down list menu in the lower bar of the program window:
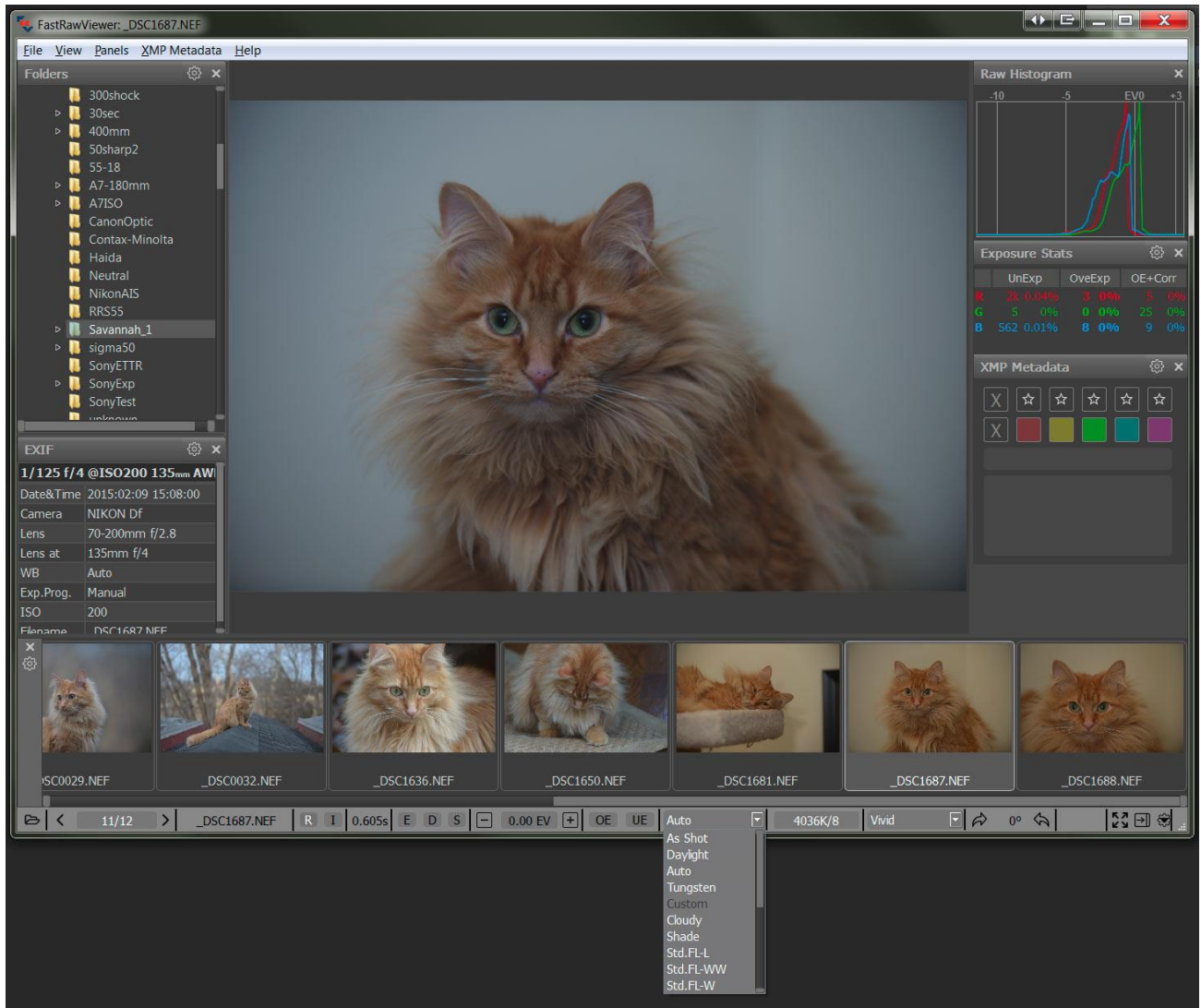
Virtually everything is in this menu:

- As Shot (excluding a small amount of old cameras, which don't record white balance in RAW)
- Daylight
- Auto
- UniWB (sets all coefficients of white balance to 1.0)

The other modes in this drop-down correspond to those individual camera presets, and those vary depending on camera manufacturer and camera model.

Standard white balance modes (As Shot, Daylight, Auto, Custom) can be cycled through using **Menu–View–Toggle White Balance** (or by pressing **W** key on the keyboard).

Controlling which White Balance will be used when opening a file

When opening the next file the White Balance is set in accordance to the settings in **Preferences– White Balance:**

- **White Balance for next file (same camera)** – sets the white balance mode when opening a file coming from the same camera model as the current file is. Choices here are: Same as previous, As Shot, Daylight, Auto, and Tungsten.
- **White Balance for next file (another camera)** – sets the white balance mode when opening a file coming from a different camera model. The choice of "Same as previous" normally does not fit here – all other choices are the same as for the previous.
- **Keep Custom WB for next file (same camera)** – instructs **FastRawViewer** if the current white balance coefficients should be applied to the next file coming from the same camera model).

Setting White Balance by "click-gray" method

To set the white balance using an arbitrary area of the image as a reference, use **Alt-left mouse click**.

The size of the area which is evaluated to calculate the white balance can be set through **Preferences – White Balance – WB Sampler size**

Coefficients will be calculated for the chosen area so as to make whatever is "clicked" gray. The image will change its look (automatically calculated exposure adjustment may change as well).

If the correct color temperature can be calculated with the given coefficients, then it will be displayed on the button for the manual white balance adjustment.

Manually setting the color temperature

When pressing the button with the values of color temperature/shades (to the right of the drop-down list with white balance presets) the manual white balance adjustment dialogue appears:
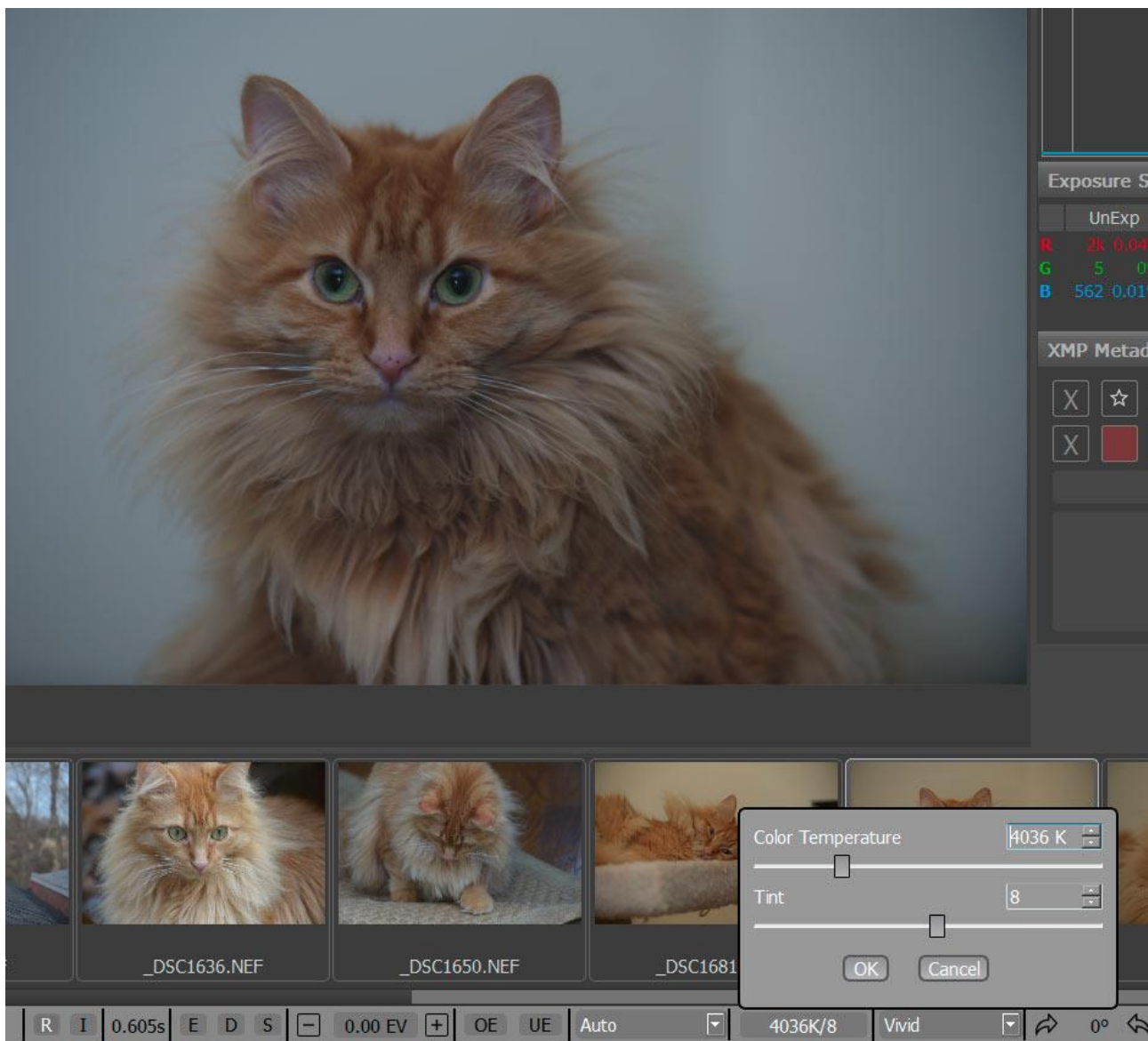
The changes made in this dialogue are applied to the image on the screen on the screen with a slight delay (up to 200ms). If the changes you've made satisfy you, hit OK. If not, continue adjusting, or hit Cancel to disregard any changes.

Outlining In-Focus and Highly Detailed Areas

FastRawViewer can help identifying if the sharp areas are indeed where you wanted them to be on the image. This is accomplished through outlining the following:

- Bold high contrast edges
- Areas containing small ("pixel-level") sharp details
- Additionally, you can turn on the simultaneous display of both types of outlines (not possible for some video cards).

You can cycle through these modes using **Menu–View–Toggle Focus Peaking** (or by pressing the **P** key on the keyboard), like following: Everything off – High contrast edges – Fine details – Both filters – everything off.

Unnecessary/unused modes can be turned off through **Preferences – GPU Processing – Focus Peaking mode**.

The High contrast filter shows contrasting, but not necessarily very sharp areas of the image:
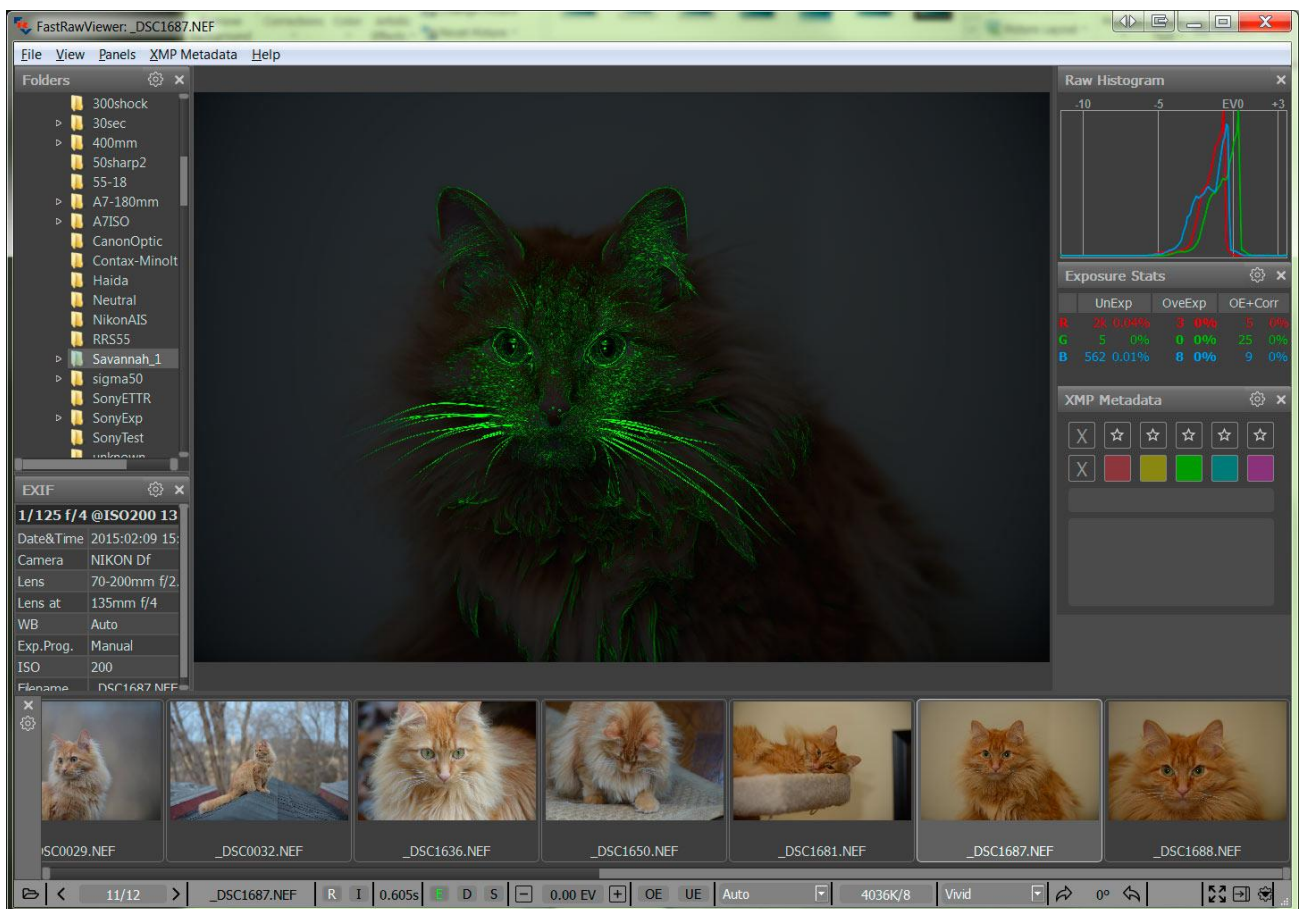
When this filter is on the letter E in the EDS group on the bottom bar takes the same color that is used for the outline (green by default).

The Fine detail filter outlines small, acute, but not necessarily contrasting details:
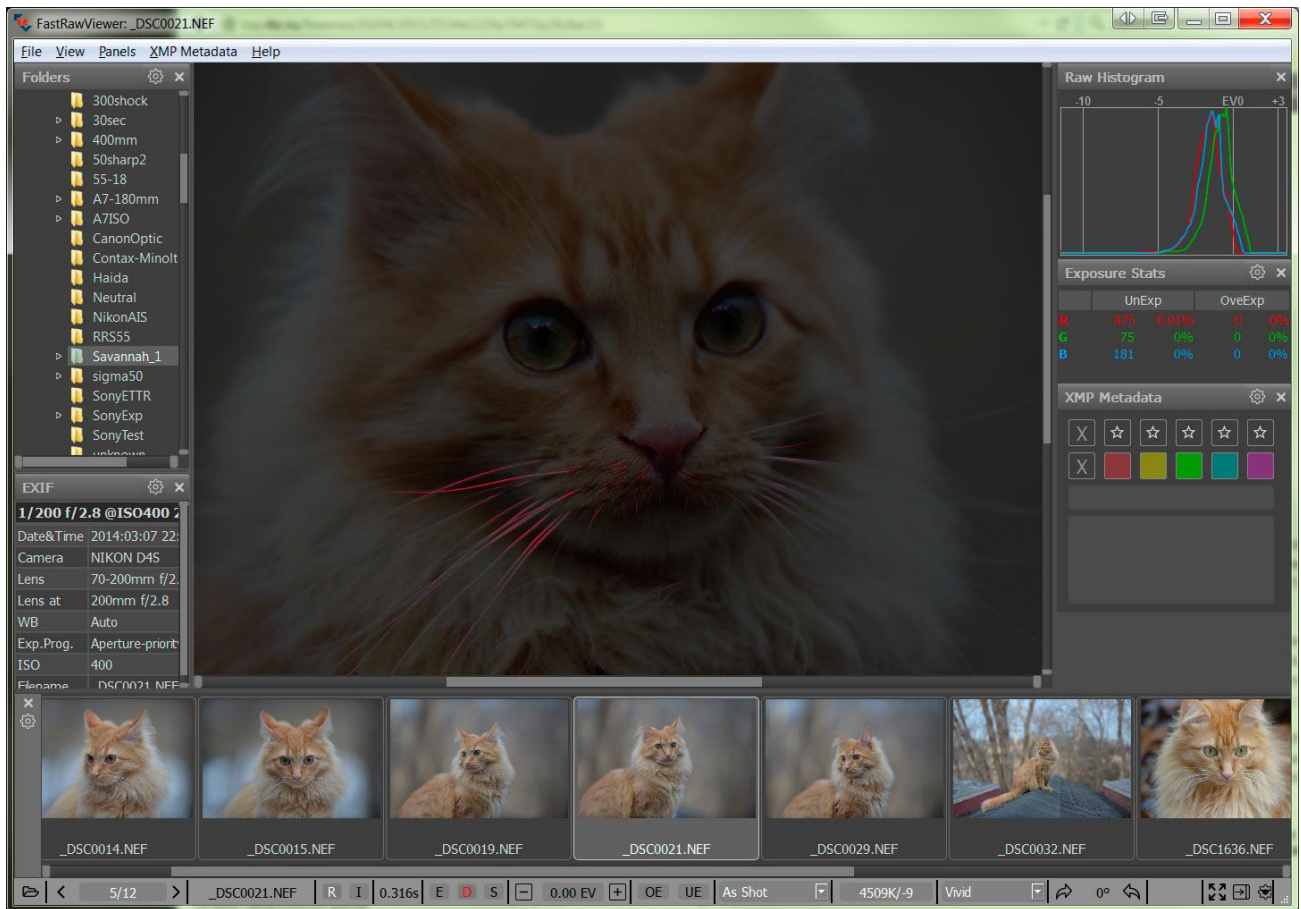
When this filter is on the letter D in the EDS group on the bottom bar takes the same color that is used for the outline (red by default).

The colors that are used outlines for both filters, as well as the opacity of the filter overlay are controlled through the settings in the **Preferences – GPU Processing – Focus Peaking mode** section**.**

Ratings and Labels

FastRawViewer can set XMP ratings and XMP labels that are compatible with Adobe products (and other programs which support XMP).

Ratings are set as a number from 1 to 5. The setting is changed via **Menu– XMP Metadata** or by pressing the 1...5 buttons in the **XMP Metadata** panel.

To clear the rating, please press [X] button in the upper row of the **XMP Metadata** panel, or you can also use **Menu – XMP Metadata – No Rating**.

For the compatibility with Adobe Bridge **FastRawViewer** supports Reject rating (-1). To enable this, set **Preferences – XMP – Use XMP Reject rating** to **ON** (this is also switched on automatically if **XML Label style: Adobe Bridge** is selected).
As the result, the button [R] is displayed in the row for setting the rating, and the action **Reject** appears in the Label menu.

Labels are named with text, and 4 styles of labels are supported:

1. Adobe Bridge style (Select, Second, Approved, Review, To Do)
2. Adobe Lightroom style, color marks (Red, Yellow, Green, Blue, Purple)
3. Adobe Lightroom 'Review Status' style (To Delete, Color Correction Needed, Good to Use, Retouching Needed, To Print)
4. Custom user labels.

You can select the appropriate label style through **Preferences–XMP–XMP Label Style** section. For the Custom style you can also edit the names for the labels.

Setting and changing the label for the image is performed through **Menu– XMP Metadata** or by pressing the colored squares in the **XMP Metadata** panel. To delete the label, press the [X] button in the row for setting the label, or use **Menu – XMP Metadata – Clear Label**.

When turning on the Read Only XMP mode, labels are read from XMP files, but the program prevents any changes to them.

Title and description

FastRawViewer can record the title and description of the image in XMP files.

To call up the editing dialog, use **Menu – Metadata – Edit Title/Description** or the corresponding macro (Alt-D), or double-click on the title or description field in the XMP Metadata panel; this summons the editing dialog:
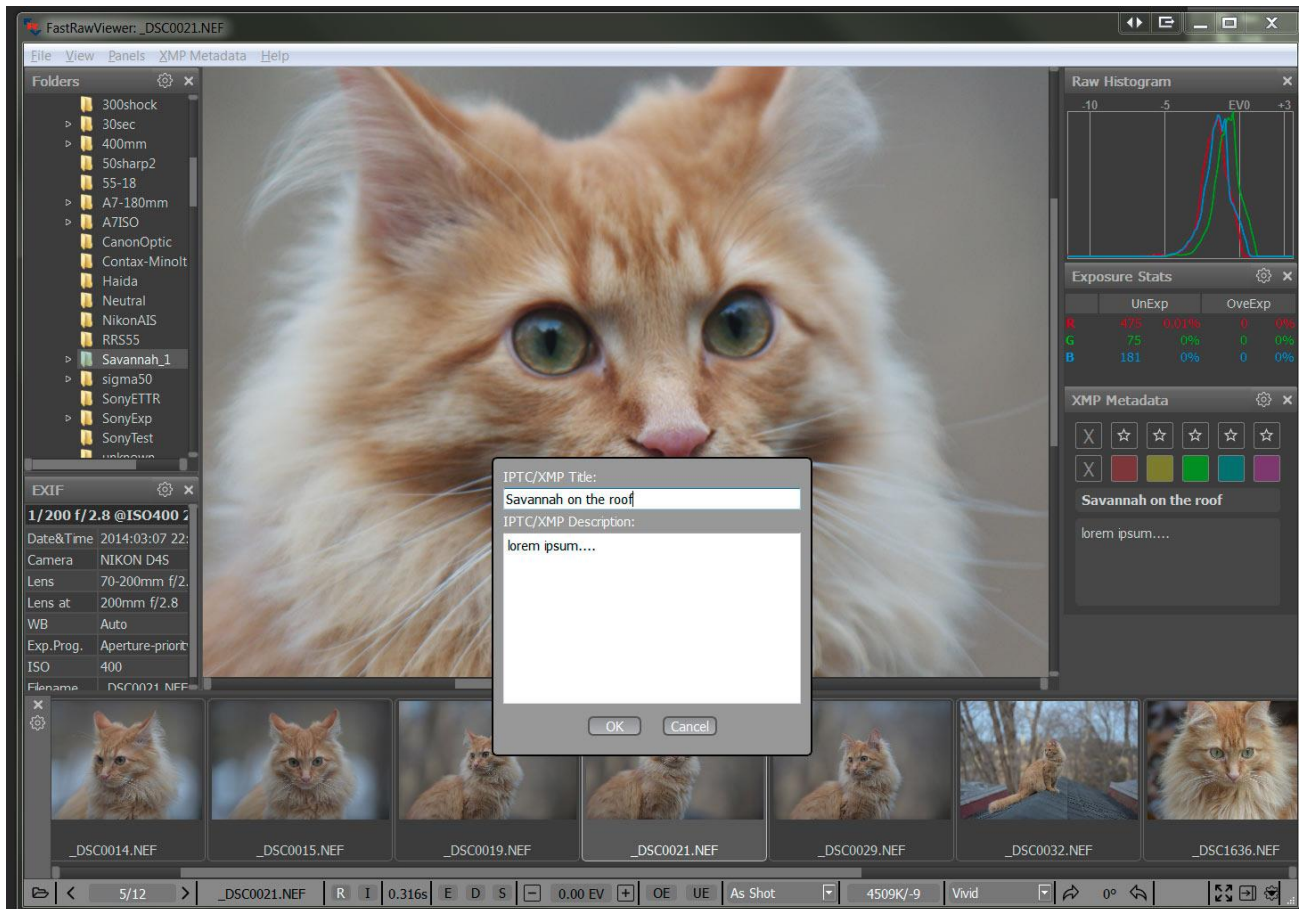
After editing the name and description they are shown in:

1. The floating tooltip in the Filmstrip/Thumbnails panel

2. The XMP Metadata panel:

Integration with External Programs

FastRawViewer can start external programs (up to three different ones), passing them the current RAW file as a parameter.

This way any program that takes the file name as a command line parameter can be launched, be it a RAW convertor, different image viewer, or whatever program you may need.

On the first run, **FastRawViewer** performs a search and automatically configures itself to use three of the following programs:

- RawDigger
- Adobe Photoshop
- Adobe Lightroom

- Raw Photo Processor
- Capture One
- DXO Optics Pro

If, on the first run, **FastRawViewer** was unable to find the program you need, it can be added to the list of external programs manually through **Preferences – External Programs**.

To launch an external program to process the currently displayed image you can use **Menu – File – Run – necessary program** or with press one of **R** for the first external program, **Alt-R** for the second, and **Ctrl-R** for the third.

Display of the current file in Windows Explorer (on Windows) /Finder (on Mac) can be done through **Menu – File – Show in Windows Explorer / - Reveal in Finder.** Default keyboard combination – Ctrl-F.

Performance Settings

Depending on the characteristics of your computer, the most important ones being

- Amount of RAM
- Number of processors and cores per processors
- Type and performance of the video card

You may need to tune the performance settings of **FastRawViewer** to be more comfortable.

FastRawViewer is optimized for work with files on modern high-speed storage devices: SSD drives, disk arrays (RAIDs), fast flash cards (UHS-I and similar in fast USB3 readers).

When using slower media, additional optimization of **FastRawViewer** may be necessary, because the default settings will not be optimal

Hard Disk Drives (HDD)

Hard disk drives, cannot read the data from multiple locations at once: the delays are caused by the time spent on the positioning of magnetic heads.

Accordingly, when using HDDs for optimal performance of **FastRawViewer** it is necessary to decrease the amount of parallel reads:

1. **Preferences - Performance - Memory usage and performance - Number of simultaneous RAW decode threads**
   recommended values for HDD: 2-3
2. **Preferences - Performance - Thumbnail cache - Thumbnail decoder thread count**.
   Set 1-3 for HDD (the higher, the more priority will be given to the preview generation over the other functionality of FRV).

Preferences - Performance - Thumbnail cache - Thumbnail prefetch depth
This parameter can be lowered (down to zero), which will lessen the load on the HDD.

Flash cards and network volumes

Like HDDs, portable media and network volumes work slower than modern SSD storage devices. **FastRawViewer** can additionally limit the parallel functionality when working with such devices.

Default preferences are intended for work with today's typical storage media: Gigabit Ethernet network and flash cards of "average speed" in USB3 readers; for slower devices the default settings ought to be changed:

For Network volumes:

- When using a WiFi-network:
  Lower the preferences values
  Preferences – Removable Media – Prefetch depth on network volumes
  to 2-3
- When using fast network/NAS (1Gb/s and faster, in NAS with 4 and more disks in RAID):
  Raise the preferences values
  Preferences – Removable Media – Prefetch depth on network volumes
  to 6-8

For Flash cards:

- Slow cards (USB2 readers, Class 6 cards and slower):
  Lower the preferences values
  Preferences – Removable Media – Prefetch depth on removable media
  to 2-3

Fast cards (USB3/SATA readers, UHS-I/CFast cards):

Raise the preferences values

Preferences – Removable Media – Prefetch depth on removable media

to 6-8

Video Card Processing Settings

Zooming in and out, rotation, focus peaking, over- and underexposure overlays are all computed using video card GPU.

Default settings are optimized for low performance (older) video cards, but if you happen to have one of modern cards (including those based on Intel HD2xxx and higher), we recommend changing the settings in the following way:

1. Turn on **Preferences – GPU Processing – Image resampling method – bicubic**
2. Set **Preferences – GPU Processing – Image downsampling** to None or to Suppress downsampling artifacts.

In this case, the amount of the data transferred into the video card is minimized, and the image display is faster.

Troubleshooting

OpenGL error warning when starting the application

During the first start-up, **FastRawViewer** may warn the user of an error with the graphics subsystem, showing the following dialog window:
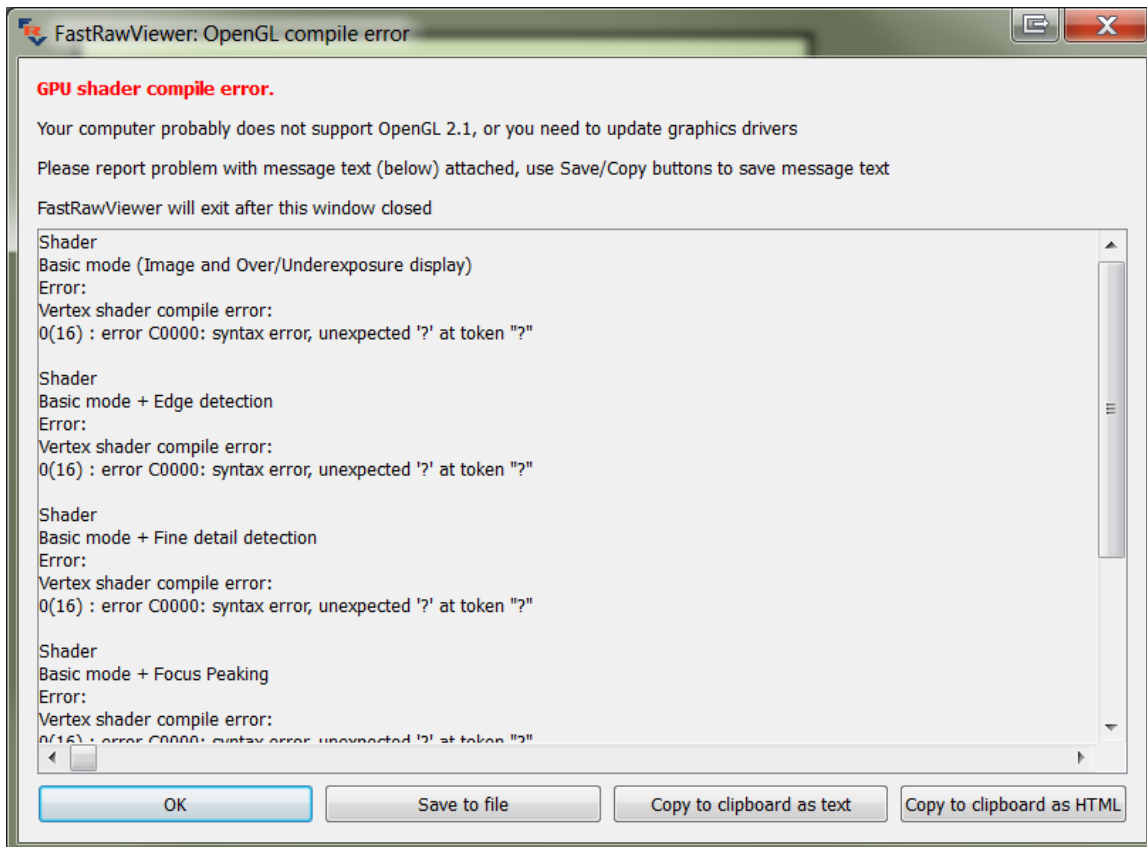
This window indicates that the graphics driver cannot process those sub-routines that **FastRawViewer** needs to execute on the video card.

Possible solutions:

1. Try uninstalling the OpenGL version of FastRawViewer and installing the DirectX version.
2. Update the driver of your video card to the newest version.

If neither of the above-listed helped you, copy the error message using the 'Save to file' or 'Copy to clipboard' buttons and send it to our tech support at
http://www.fastrawviewer.com/contact/Technical-support or support@fastrawviewer.com

Black Screen in Image Display Window

When opening a file, a black screen is shown instead of the image.

This problem is due to some incompatibility between **FastRawViewer** and the installed graphics drivers.

Possible solutions:

1. If you are using the OpenGL version of FastRawViewer, try uninstalling it and installing the DirectX version.
2. Update the driver of your video card to the newest version.

If neither of the above-listed helped you, turn on the debug log (see below «Debug Information»), restart the program, open a RAW file, and send the debug log to tech support at http://www.fastrawviewer.com/contact/Technical-support or support@fastrawviewer.com

Screen does not fully update

When moving to the next file, or when changing the white balance or the contrast curve, the screen does not fully update, and square-shaped areas filled with the previous image remain.

This problem only happens for Windows XP, and only for old Intel graphics cards. (845G and the like)

Solutions:

1. Turn on **GPU Processing – GPU Compatibility settings – Force window refresh by slight resize** in the Preferences
   When turning on this setting, the application window will twitch by one pixel for each image redraw.
2. Upgrade to Windows 7 – Intel graphics drivers for Windows 7 do not have this problem.

Other problems

If your problem is not listed above, then, to make troubleshooting faster, please turn on your Debug Log, (see below) and when contacting support please attach a copy of the debug information.

Debug Information (Debug log)

To turn on the output of debug information, turn on **Other – Enable FastRawViewer debug log** in the Preferences and restart the application.

After turning it on, the **Debug log** appears in the **Help** menu, and pressing it will display a window with the debug info:
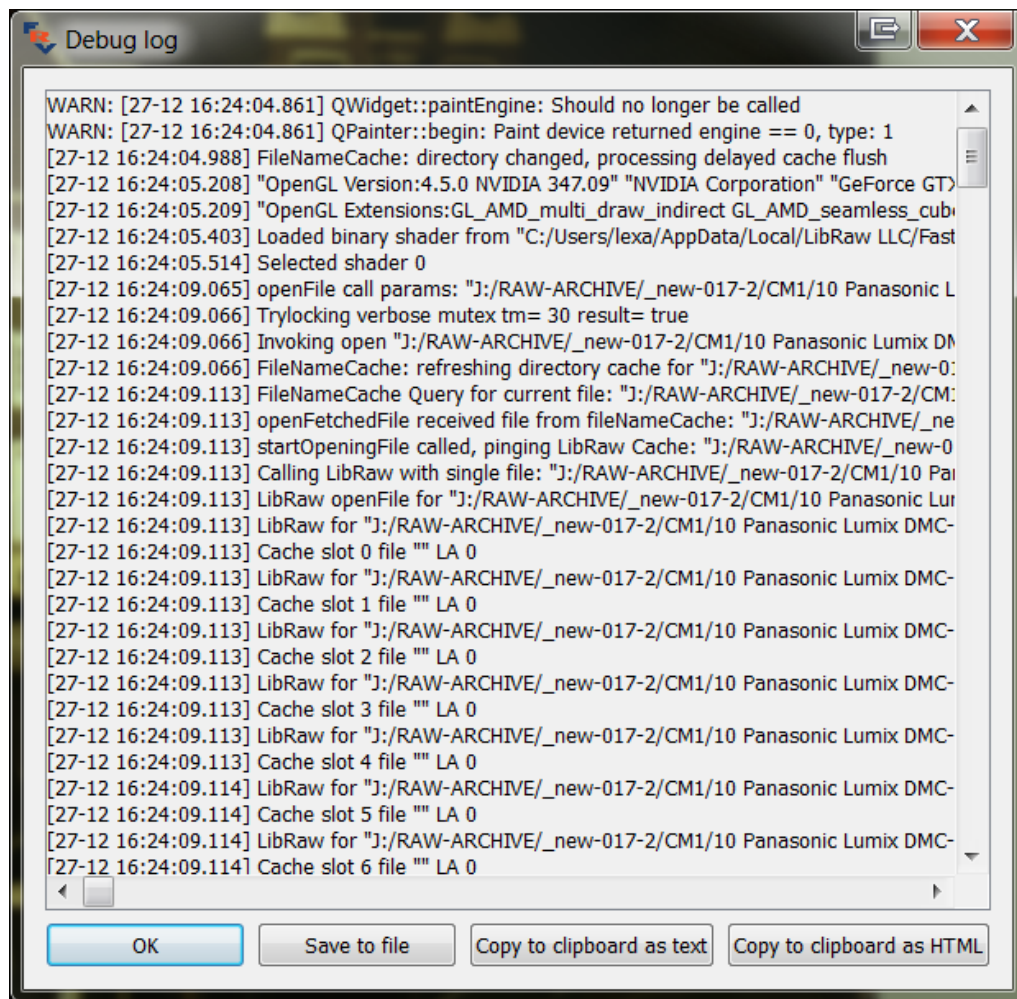
The contents of the window:

- can be saved in a text file (the Save to file button)
- can be copied as text into the clipboard (for applications which expect text in the clipboard: most email applications).
- can be copied as HTML into the clipboard (for applications which expect 'rich text' in the clipboard, like text processors).

When turning to tech support, please remember to attach the debug log.

Program Settings

File Handling

This group of settings controls the file processing rules
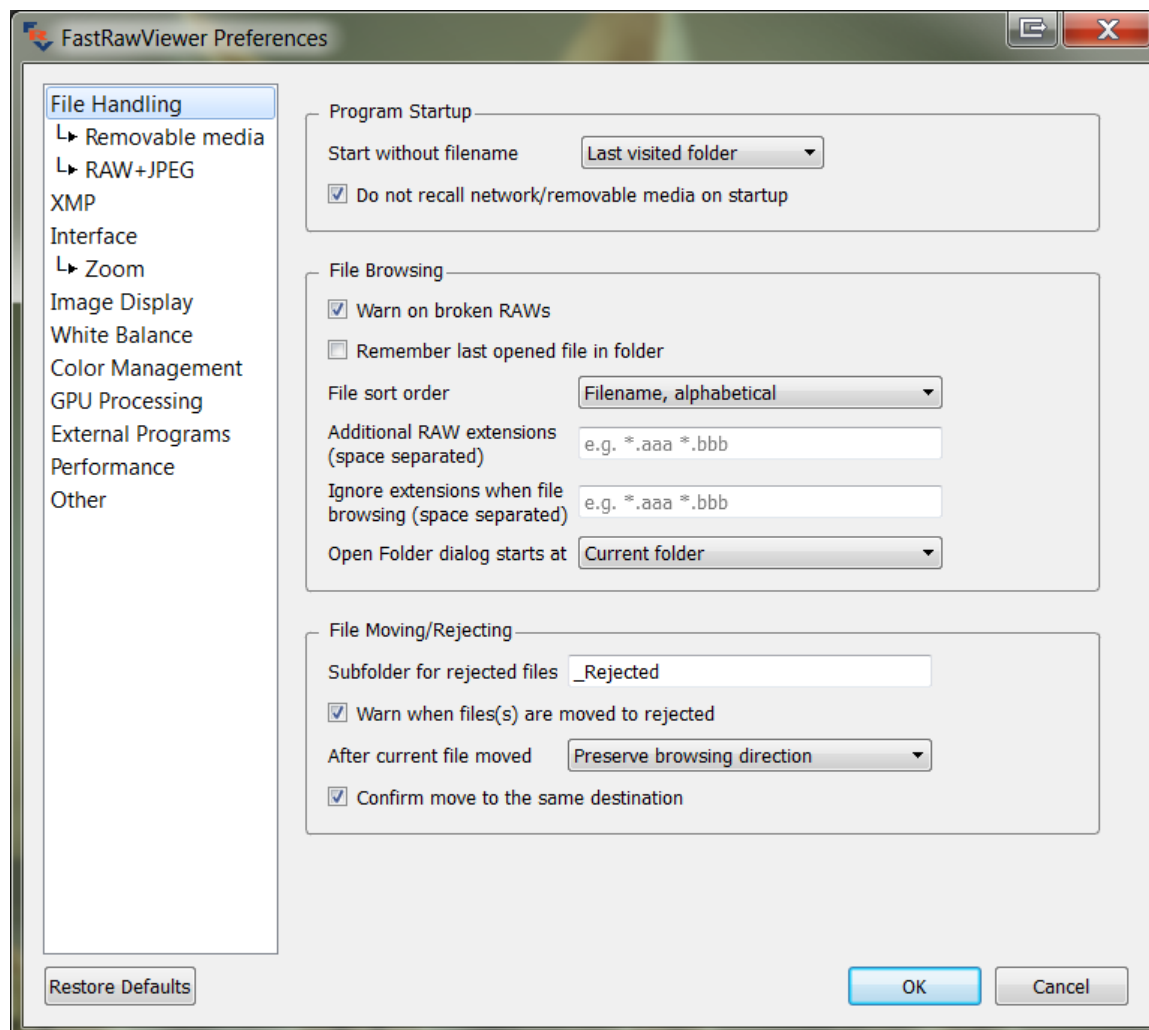
Program startup group:

- **Start without filename** – to set the behavior if **FastRawViewer** was started without passing a filename to view:
    - **Empty Screen** – **FastRawViewer** starts up "without file".
    - **Last opened file** – opens the top (last) file from the Recent Files list
    - **Last visited folder** – opens the folder from the list of Recent Folders (from this folder opens either the first file, corresponding to the current file sorting settings, or the last opened, if the 'Remember last opened file in folder' is set)
    - **Specified folder** – allows you to set a "start folder".
- **Do not recall network/removable media** – forbids the automatic display of files/folders from network volumes and removable media.

File Browsing group

- **Warn on broken RAWs** – turns on the warning if a damaged RAW file is encountered
- **Remember last opened file in folder** – turns on the setting to memorize the last opened file in the folder. A small .fastrawviewer.ini file is created in the folder; this file contains the name of the last opened file. It is safe to delete this file.
- **File sort order** – sets the order of file selection when browsing through the files:
  - **Filename, alphabetical** – by filename, in alphabetical order, without accounting for letter case, accounting the current localization settings (like with previous **FastRawViewer** versions)
  - **Filename, reversed** – the order is opposite to the previous.
  - **Modification time, newest to oldest** – sorts the files by date of creation/last modification of the files, new files in the top of the list
  - **Modification time, oldest to newest** – the order is opposite to the previous.
  - **File type (extension)** – files are sorted by extension; files with the same extension are sorted alphabetically.
- **Additional RAW extensions** – additional extensions for the RAW files **FastRawViewer** should process (appended to the built-in extension list).
- **Ignore extensions when file browsing** – this setting allows the user to supply a list of file extensions. Files having the extensions listed here:
  - will be ignored during file browsing;
  - not displayed in the "Open file" dialogue window.
- Open folder dialog starts at – sets the folder at which the "Open Folder" dialog starts:
  - Current folder – Current folder
  - One level up – One level up
  - Specified folder – the folder specified by the user, always the same (until a different folder is specified here).

File Moving/Rejecting group

- **Subfolder for rejected files** – the name of the subfolder to store the rejected files.
  This field can contain:
  - Relative path (for example, _Rejected). In this case the rejected file subfolder will be created in the current folder.
  - Absolute path (global _Rejected folder):
    - Windows: the folder address starts with L: (any drive letter can be used instead of L) or with \\ (for network paths)
    - OS X: the folder address starts with /
- **Warn when file(s) are moved to rejected** – turns on the warning when moving files into the _Rejected sub-folder
- **After current file moved** – determines what file will be the next to display after moving the currently displayed file to a different folder:

- o **Preserve browsing direction** – keeps the "direction of movement": if you were "going forward", the direction will be forward. If you were going backwards, then backwards.
  - o **Always browse forward** – the direction will always be "forward" (from AAAA.RAW to ZZZZ.RAW).
- **Confirm move to the same destination** – turns on the moving to the "same folder as last time" warning.

Removable Media

This group of settings sets the specifics of work with removable media and network volumes.
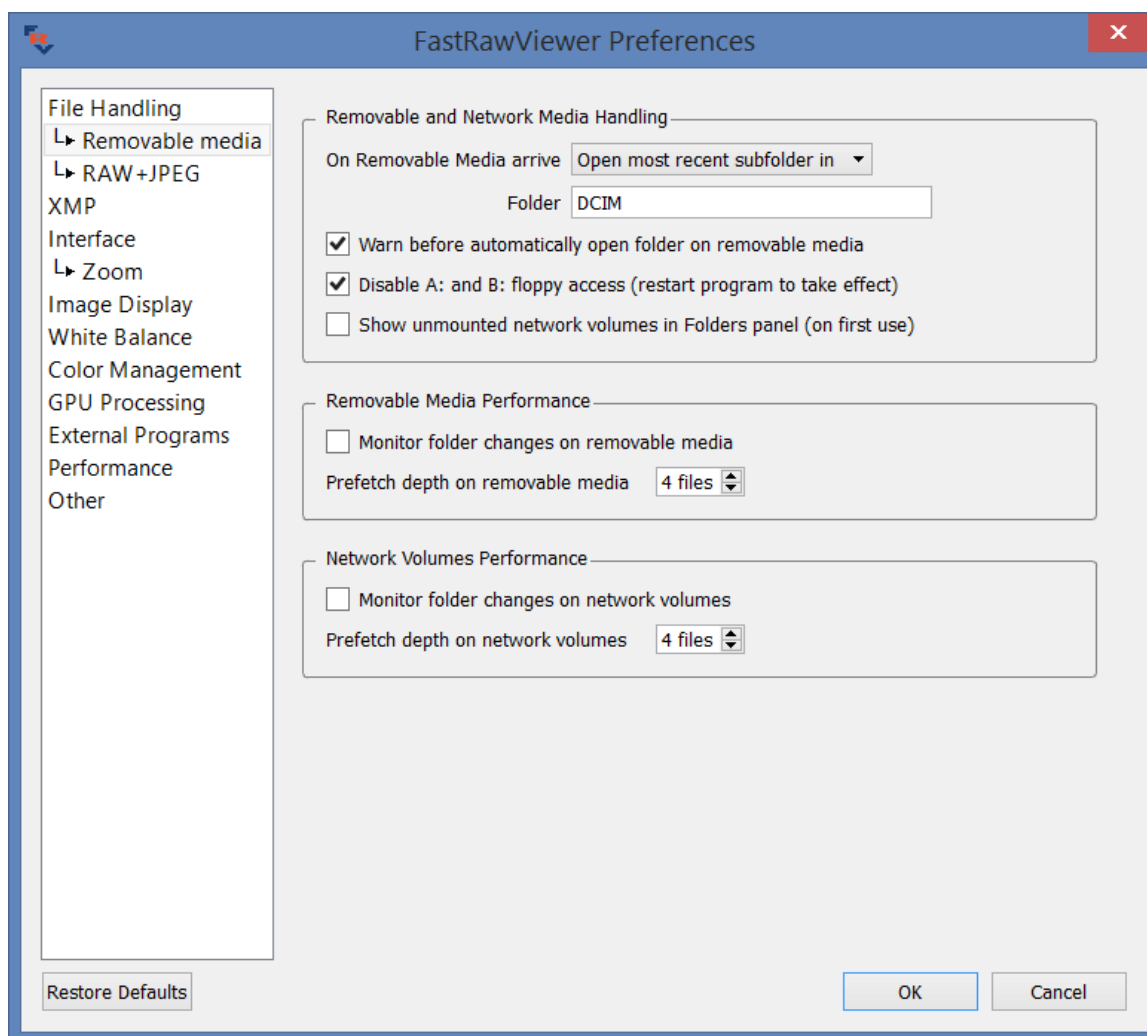
- **On removable media arrive –** what to do when removable media is detected:
  - o **Open most recent subfolder in –** opens the most recent (by date of modification) subfolder in the selected folder (/DCIM by default).
  - o **Open folder –** opens the selected folder.
  - o **Do nothing –** Do Nothing
- **Warn before automatically open folder on removable media –** dispay a warning before automatically opening a folder on removable media**.**
- **Disable A: and B: floppy access –** prevents any access to the A: and B: drives, as well as monitoring of changing media for those drives (**Windows** only)**.**. This preference is intended for the (fairly common in our day) case of a computer having a floppy drive controller, and one or two drives being "visible" to the system, though they're not actually present.
- **Preferences - Removable Media - Show unmounted network volumes in Folders panel –** this setting will switch on the display of the contents of the current un-mounted volume in

this panel (if this setting is Off, the network devices that do not have a drive letter assigned will not be displayed).

- **Monitor folder changes on removable media/network volumes** – Monitor changes in removable media/network volume folders, updating the Folders and Filmstrip panels when new subfolders and files are added.
- **Prefetch depth on removable media/network volumes** – sets how many files to decode before moving to the next file.

RAW+JPEG
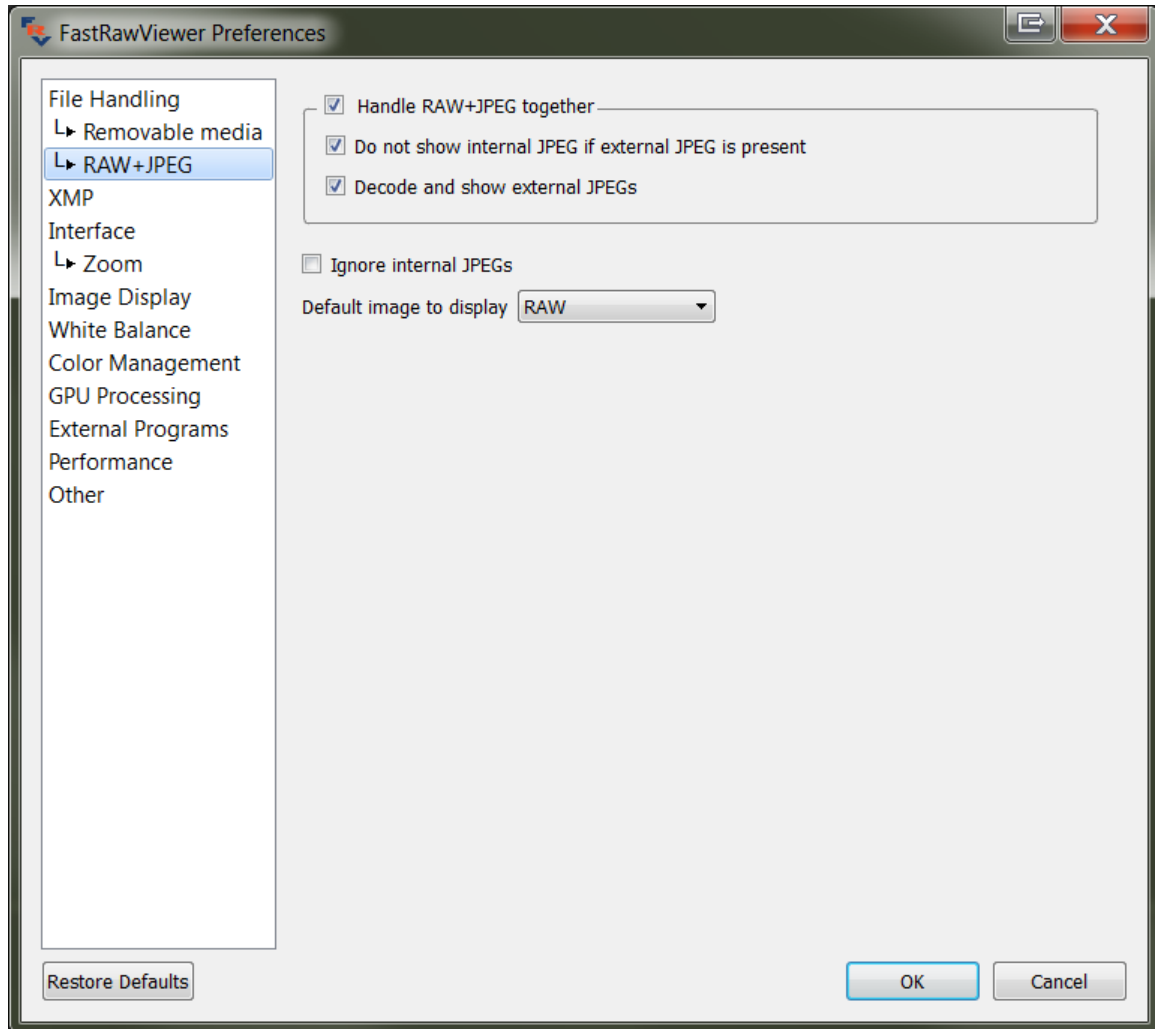
- **Handle RAW+JPEG together** – turns on the pairing of RAW and JPEG of the same name: displaying them as different representations of the same image, and treating them as a single unit for move operations, so that both are relocated to a different folder when a move operation is invoked.
  - o **Do not show internal JPEG if external JPEG is present** – removes the embedded JPEG from the list of available representations if there is an external JPEG (which, usually, has better resolution).
  - o **Decode and show external JPEGs** – enables the decoding and the display of external JPEG files
- **Ignore internal JPEGs** – unconditionally disables decoding of embedded JPEG previews. Automatically turns on and disables changing of **Do not show internal JPEG if external JPEG is present** setting.
- **Default image to display** – which representation to display when switching to the next file:
  - o **Same as previous** – the same as for the current file.
  - o **RAW, internal JPEG, external JPEG** – explicit designation of the representation.

XMP

This group of settings controls the processing of XMP files
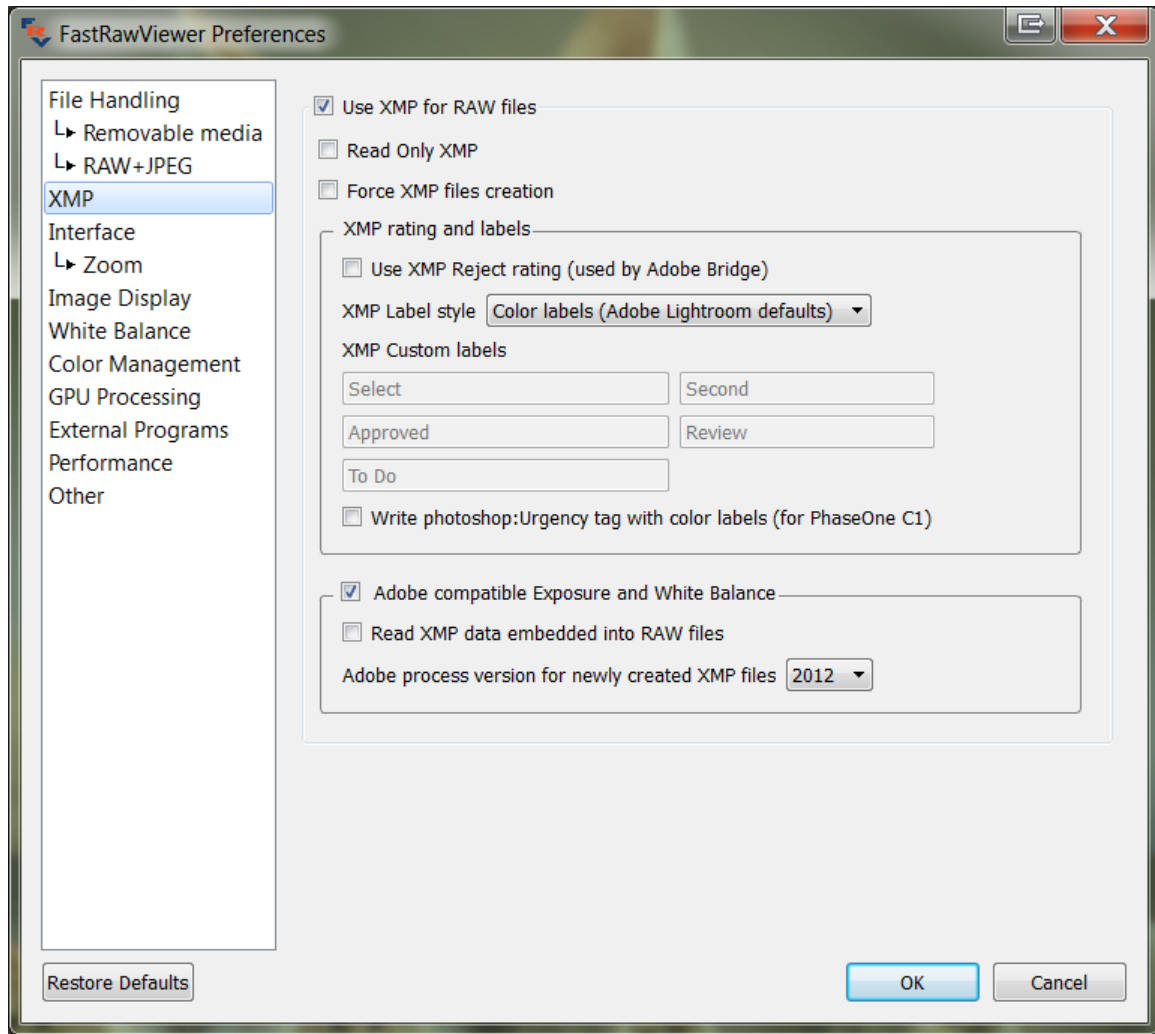
- **Use XMP for RAW files** – turns on/off the use of XMP files.
- **Read Only XMP** – turns on the mode, where XMP files are read, but not changed.
- **Force XMP file creation** – turns on the unconditional creation of XMP files, even if no adjustments were changed manually while viewing the RAW file (those adjustments are orientation, white balance, exposure adjustment, labels and ratings). Useful for automatic propagation of adjustments to the next file
- **XMP rating and labels Section:**
  - **Use XMP Reject Rating** – turns on the possibility of setting the rating to -1. This rating is supported in Adobe Bridge. The setting is turned on automatically when selecting XMP Label Style: Adobe Bridge.
  - **XMP Label Style** – sets the label format in XMP files:
    - **Adobe Bridge**: Select, Second, Approved, Review, To Do
    - **Color labels/Adobe Lightroom**: Red, Yellow, Green, Blue, Purple

- ▪ **Review status/Adobe Lightroom**: To Delete, Color Correction Needed, Good to Use, Retouching Needed, To Print
        - ▪ **Custom** – user labels (any text you choose)
    - o **Write photoshop:Urgency tag with color labels (for PhaseOne C1)** – Turns on the recording of the XMP-tag photoshop:Urgency, which is used by CaptureOne to recognize and set color labels. The setting is activated only if the mode XMP labels is set in 'Color Labels' (this is the default). In other modes, the XMP Labels photoshop:Urgency tag is not modified: if it was in the XMP file, it stays unchanged.
- • **Adobe compatible Exposure and White Balance** – turns on reading and recording into XMP files exposure compensation and white balance in Adobe format:
    - o **Read XMP data embedded into RAW files** – allows the reading of Adobe-compatible data from XMP blocks built into RAW files (priority being given to the block contained in DNG).
    - o **Adobe process version for newly created XMP files.** Default: 2012, can be set to 2010 or 2003.
      Features:
        - ▪ If the tag **crs:ProcessVersion** is set already in XMP file, the version doesn't change and the exposure is written according to the version.
        - ▪ If the **crs:ProcessVersion** tag isn't present in XMP file, then it's added in accordance to the setting (this way, XMP-files created in older versions of **FastRawViewer** and then not changed by ACR/LR will be "upgraded");
        - ▪ For 2012 process, Exposure2012 (equal to expo correction in **FastRawViewer** plus Adobe Shift) and the tags Contrast2012, Whites2012, Blacks2012 (set to 0, if these tags are not present in the file) are recorded
        - ▪ For the 2003/2010 processes the tags crs:Exposure, crs:Brightness, and crs:Contrast are recorded (if the file already had the values for those tags, they are preserved, otherwise they are set to 0).

Interface

The group of settings to control the user interface.
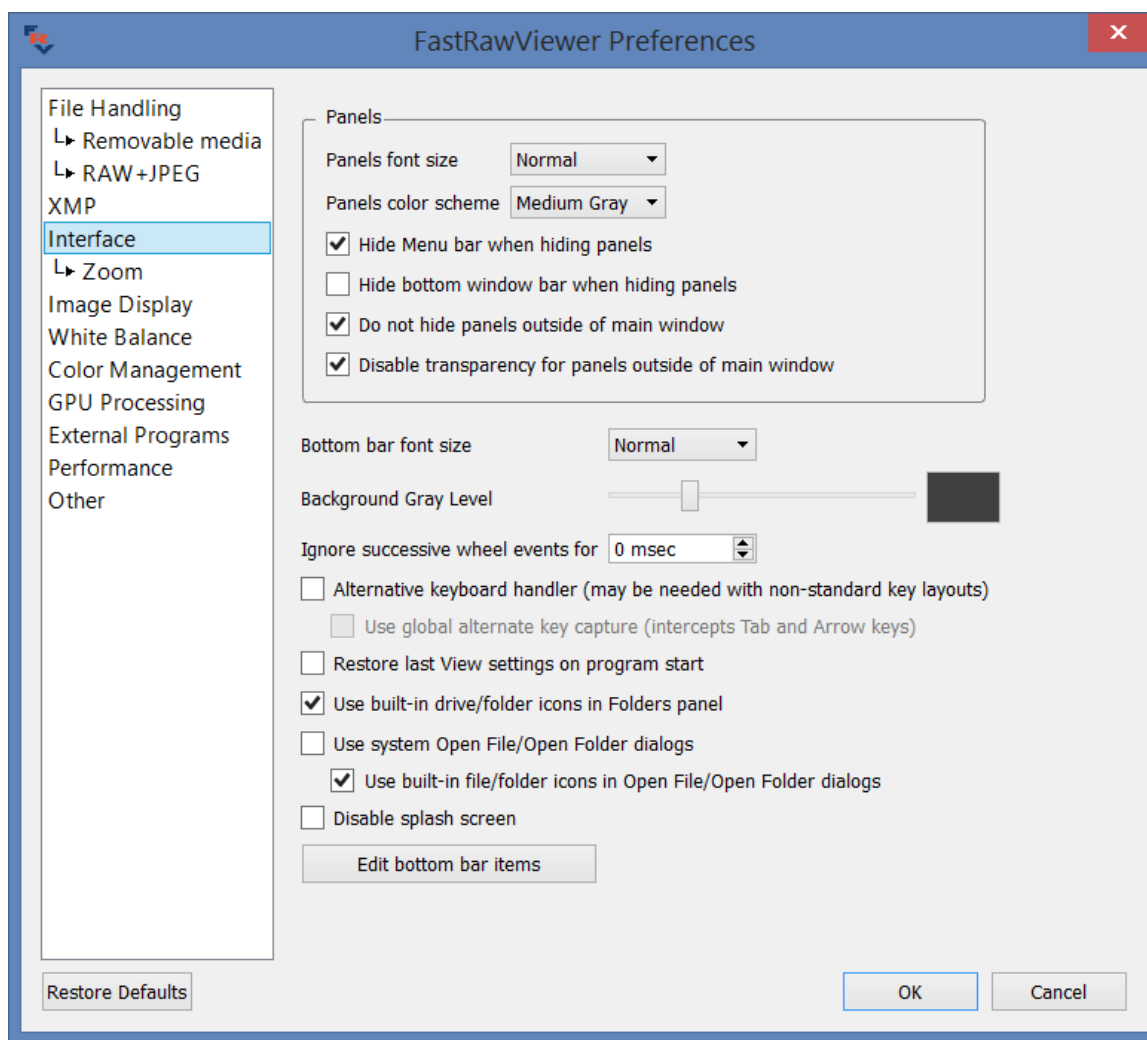
Panels group

- **Panel's font size**: sets the font size in the informational panels.
- **Panels color scheme** – sets the brightness of the panel background
- **Hide Menu bar when hiding information panels** – for the hide informational panels mode (Tab), controls if the menu bar should be hidden too.
- **Hide bottom window bar when hiding information panels** – hide main program window status bar in 'hide information panels' (Tab key) mode.
- **Do not hide panels outside of main window** – for the hide informational panels mode (Tab), controls if the panels that are placed completely outside the main program window should be hidden too.
- **Disable transparency for panels outside of main window** – allows disabling transparency for informational panels that are placed completely outside the main program window.

Further Settings

- **Bottom bar font size** – controls bottom bar font size (Small – Extra Large on Windows and Normal – Extra Large on OS X).
- **Background Gray level** allows you set the brightness of the main program window background.
- **Ignore successive wheel events for NN msec** – this setting is designed to tame the stream of events generated by mouse wheel, Apple Magic Mouse, or trackpad
- **Alternate keyboard handler** (Windows only) – turns on the alternative keyboard shortcuts processing mode. Turn on only if there are problems with the processing of keyboard shortcuts (this happens when using utterly non-standard keyboard layouts, for instance when switching between Qwerty и Dvorak).
- **Restore last View settings on program start** – when closing the program the following image display parameters are saved (independent of the status of the settings):
  Display mode (RGB, per-channel, BW Conversion)
  Focus Peaking mode
  Boost Shadows mode
  Exposure correction on/off
  If 'Restore last View settings' is turned on, then during the next start-up of the program, the above-listed parameters will be in effect.
- **Use built-in drive/folder icons in Folders panel** – show icons built-in into FRV in the Folders panel (in several cases, using the system's icon can lead to problems).
- **Use system Open file/Open folder dialogs** – switches between standard and smaller dialogs when opening files/folders.
  - o **Use built-in file/folder icons in Open File/Open Folder dialogs** – when using non-system dialogs for opening files/folders – use built-in icons.
- **Disable splash screen** – switches off the display of logo at FastRawViewer start.

Zoom
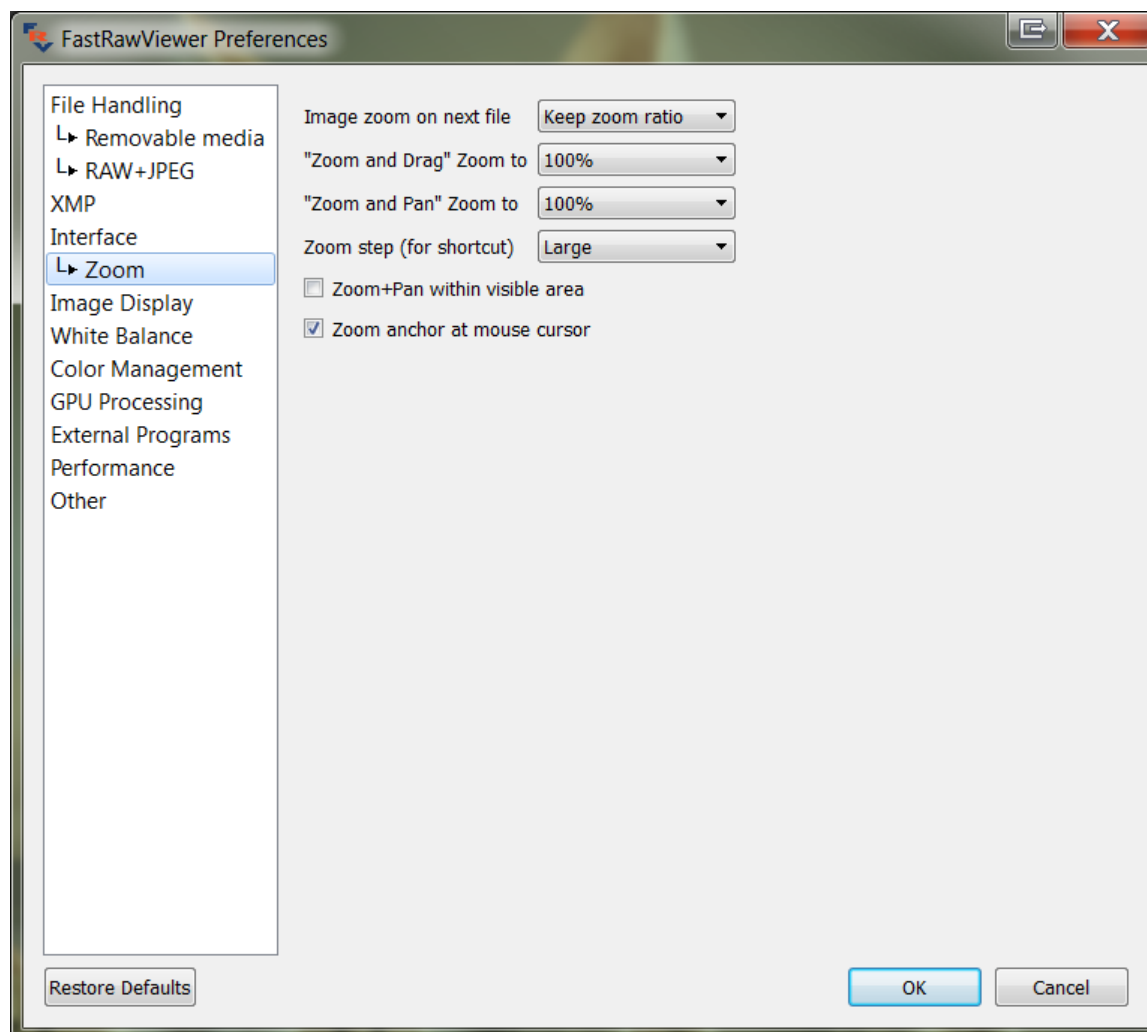
- **Image zoom on next file** – sets the zoom factor to be used when displaying the next file:
    - **Keep zoom ratio** – will keep the zoom factor
    - **Keep image width** – will keep the visible width of the image
    - **Fit to window** – the Fit to screen mode will be turned on.
- **Zoom and Drag Zoom to** – sets zoom factor to use in the Zoom and Drag mode (Shift – left mouse click)
- **Zoom and Pan Zoom to** – sets zoom factor to use in the Zoom and Pan mode (Shift – right mouse click)
- **Zoom step (for shortcut)** – controls the zoom step for keyboard (and mouse) shortcuts:
    - **Large** – fixed zoom step value of about 50%, to be used for keyboard control.
    - **Medium** – zoom step is set to 20%
    - **Small** – zoom step is set to 5%
        the last two settings are designed to be used while zooming with the Mouse Wheel or trackpad.

- **Zoom+Pan within visible area** – if this setting is on, then the panning will take place inside the area visible before the start of the panning. If it is off, then the panning will be over the entire image
- **Zoom anchor at mouse cursor –** zooming will happen taking the position of the mouse cursor into account; the point underneath it will retain its position respective of the window during zooming.

Image Display

The settings in this group control the processing and the display of the images (except for white balancing, as the WB settings are in a separate group)
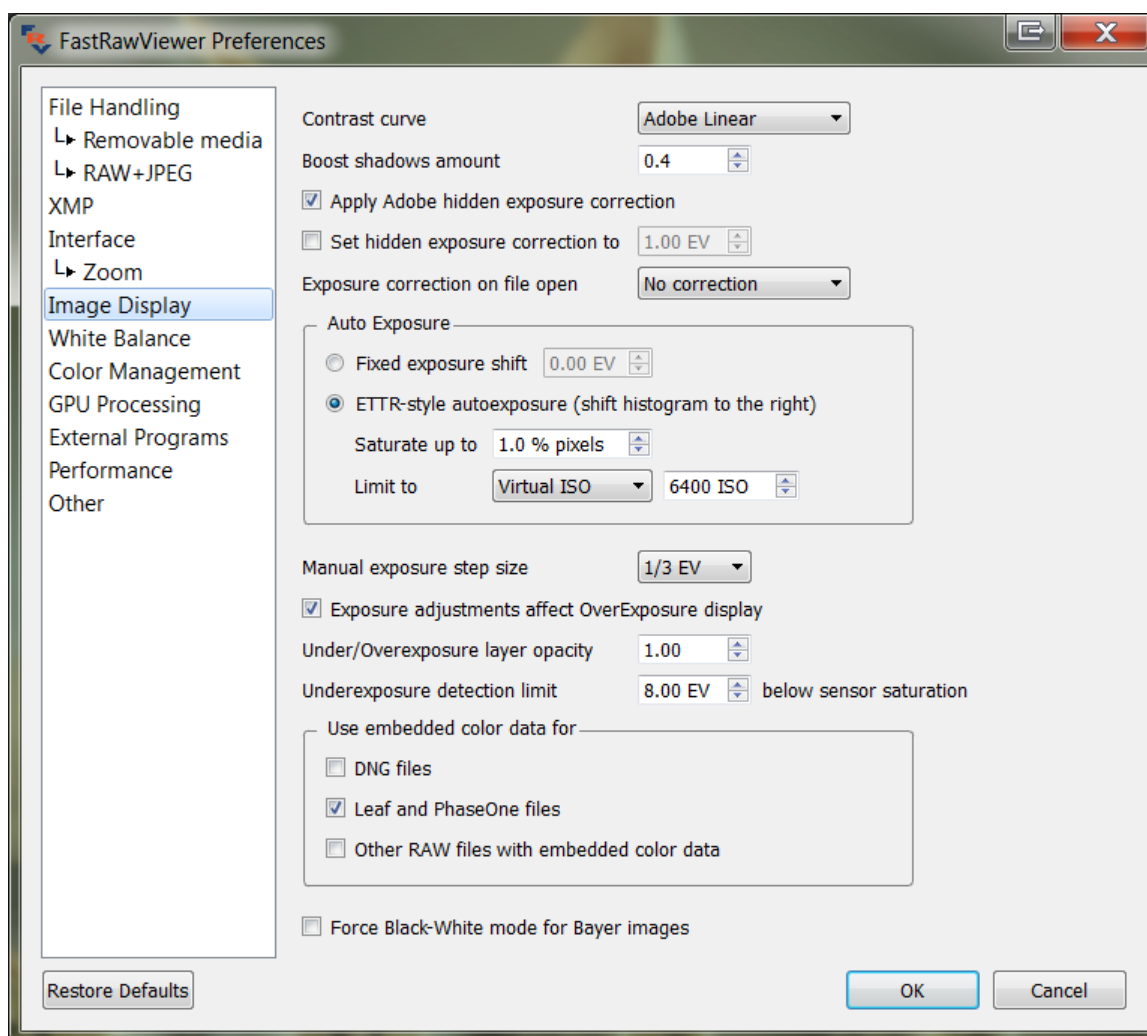
- **Contrast curve** – sets the tone curve to be used when displaying the image:
  - **Gamma 1.8, Gamma 2.2, sRGB, L*** - sets one of the standard tone curves, typically used in image editing.
  - **Adobe Linear** – corresponds to the linear tone curve in Adobe Camera Raw/Lightroom

- o **BW Movie, Monochrome, Landscape, Portrait, Vivid** – more punchy tone curves, may be useful for a quick demonstration of unedited images, adding to a more finished look.
- **Boost shadows amount** – controls the additional gamma adjustment while in Boost Shadows mode, the range is 0.2 to 2.0.
- **Apply Adobe hidden exposure correction** – switches ON the automatic exposure correction similar to the one used by Adobe RAW converters, such as Camera Raw and Lightroom. With this correction ON, same values in exposure correction will result in overall image brightness being similar between Adobe converters and **FastRawViewer**.
- **Set hidden exposure correction to** – allows setting a user-defined value for the hidden automatic exposure correction. Often this is not necessary, as FastRawViewer already comes with the corrections for all cameras supported in Adobe converters.
- **Exposure correction on file open:**
  - o **No correction** – no additional exposure correction (apart from the Adobe-style one, if it is ON) is applied when a file is opened, unless the correction is found in the accompanying XMP sidecar file.
  - o **Autoexposure** – automatic exposure correction is applied, according to the settings listed below.
  - o **Keep from prev. file** – the new file will be opened with the same exposure correction that was set for the previous file (it does not matter here how that exposure correction was set, manually or automatically).
- **Auto Exposure** – controls the automatic exposure correction (the one that is applied when 'automatic correction' action is performed)
  - o **Fixed Exposure Shift** – the exposure is shifted by the fixed value.
  - o **ETTR-style autoexposure (shift histogram to the right)** – positive exposure correction that forces the saturation of the given percentage of pixels (those saturated pixels are having value of 255 on the 8-bit scale); the percentage is controlled through **Saturate up to %NN of pixels** setting.
    The amount of the positive exposure correction shift is limited by the 'Limit to' setting:
    - ▪ **Unlimited** – no limit
    - ▪ **Hard limit** – the limit is set to the given amount.
    - ▪ **Virtual ISO** – limits the automatic exposure correction, taking into account the ISO setting in the camera. For example, if the current shot is taken at ISO 400 setting in the camera, while auto limit is set to ISO 6400 (the default value), the positive exposure correction is limited to (6400/400 =) 16 times, or, in photographic units, to 4EV
- **Manual exposure step size** – sets the step of manual exposure adjustment change.
- **Exposure adjustments affect OverExposure display** – when turning on this setting the change in exposure adjustment (both automatic and manual) will affect the display of overexposed areas.
- **Under/Overexposure layer opacity** – controls the perceived contrast of the highlighting for over- and underexposed areas.

- **Underexposure detection limit NN EV below sensor saturation** – sets the "usable dynamic range" of the camera. Everything below this limit will be displayed as underexposed.
- **Use embedded color data for** – controls the use of color data embedded into RAW files and allows using that data instead of data that comes with **FastRawViewer.**
- **Force Black-White mode for Bayer images** – turns on the black'n'white mode for color cameras. This mode is intended for modified cameras, where the color filter array is removed.

White Balance

This group contains all the white balance processing controls:
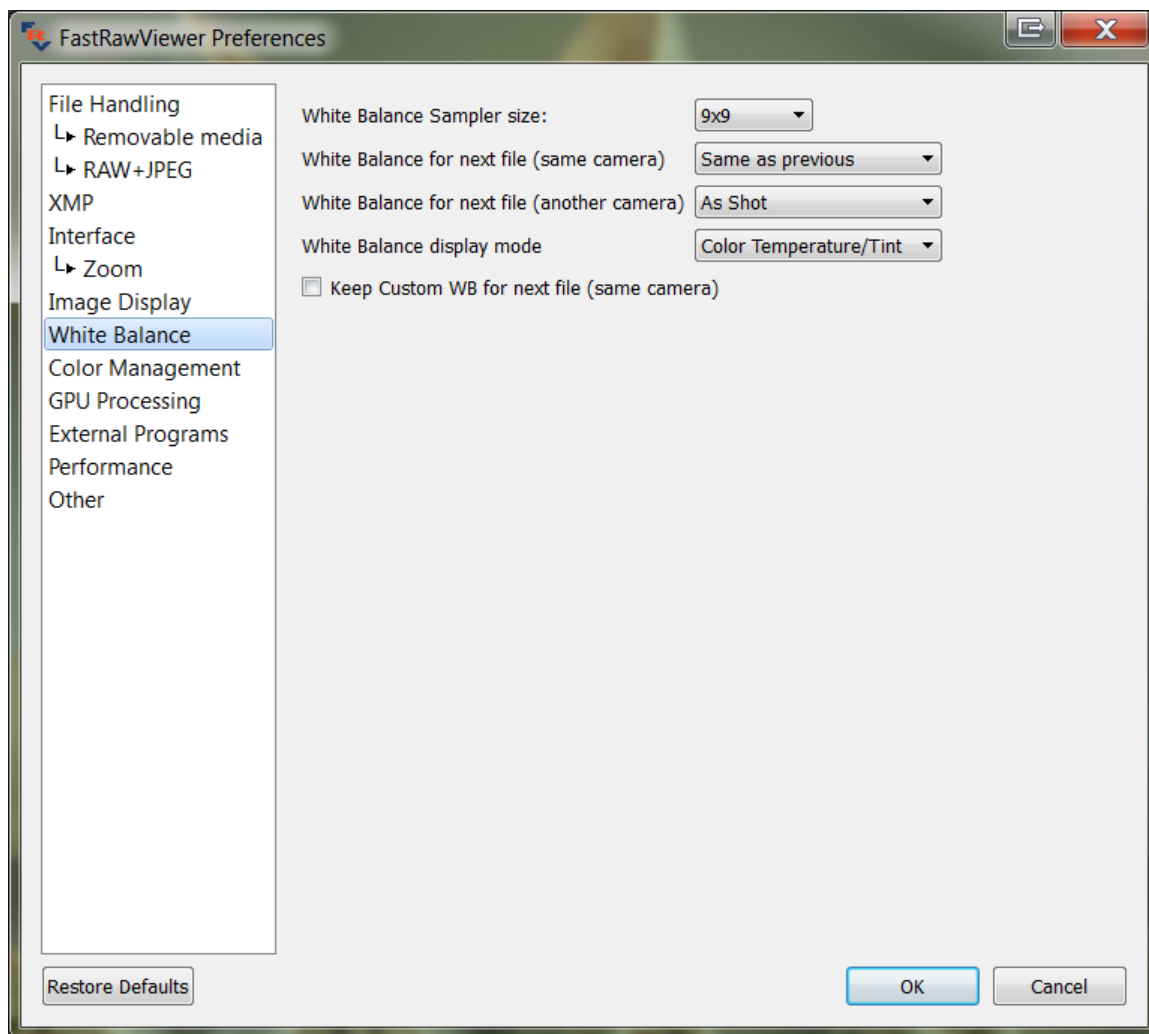
- **White Balance Sampler size** – for "click-on-gray" (Alt-Click) method, sets the size of the area used to evaluate the white balance
- **White Balance for next file (same camera)** – sets the white balance mode when opening a file coming from the same camera model as the current file. Choices here are:
    - **Same as previous** – keep the current white balance choice
    - All others – the respective white balance mode will be in effect
- **White Balance for next file (another camera)** – sets the white balance mode when opening a file coming from a different camera model
- **White Balance display mode:**
    - **Color Temperature/Tint** – a mode commonly used in many RAW converters, including those by Adobe
    - **Mired/Tint** – instead of correlated color temperatures, the value indicated is in Mired. Useful for selecting color filters to be used on the lens and on studio lights.

- o **WB Coefficients** – the per-channel multipliers for white balance are indicated.
- **Keep Custom WB for next file (same camera)** – instructs **FastRawViewer** if the current white balance coefficients should be applied to the next file coming from the same camera model).

Color Management

This group of settings controls the appearance of the color on-screen in respect to color management:
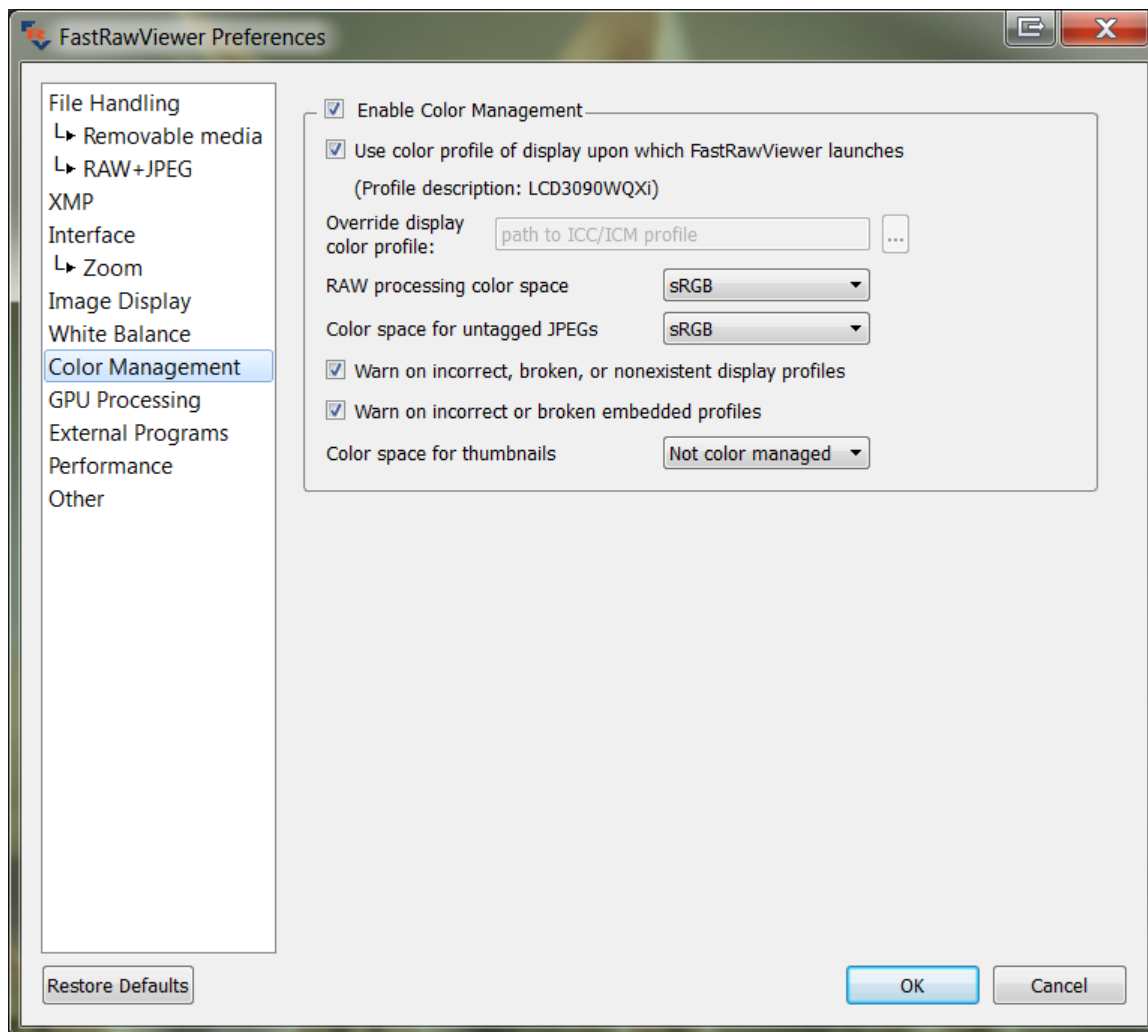
- o **Enable Color Management** – turns on ICC-compatible color management.
- o **Use system profile (for monitor where program starts)** – The ICC profile chosen in the system for that monitor where the program is being started will be used as the profile for the monitor.
- o **Display Color profile** – allows one to specify a file with the ICC profile for the monitor.
- o **RAW processing color space** – allows one to set a color space in which the last steps of the RAW data processing are done (the first steps are performed in the camera's color space).
- o **Color space for untagged JPEGs** – allows one to set a color space for JPEG files for which the color space is not specified (not recorded in EXIF tags or ICCProfile of JPEG sections).
- o **Warn on incorrect, broken or nonexistent display profiles** – turns on a warning for when one tries to use an incorrect display profile.

o **Warn on incorrect or broken embedded profiles** – turns on a warning for incorrect profiles built into the JPEG data.
o **Color space for thumbnails**: sets the mode for color space for previews (thumbnails)

GPU Processing

This group controls the video card modes and how the sharp areas of the image will be displayed.
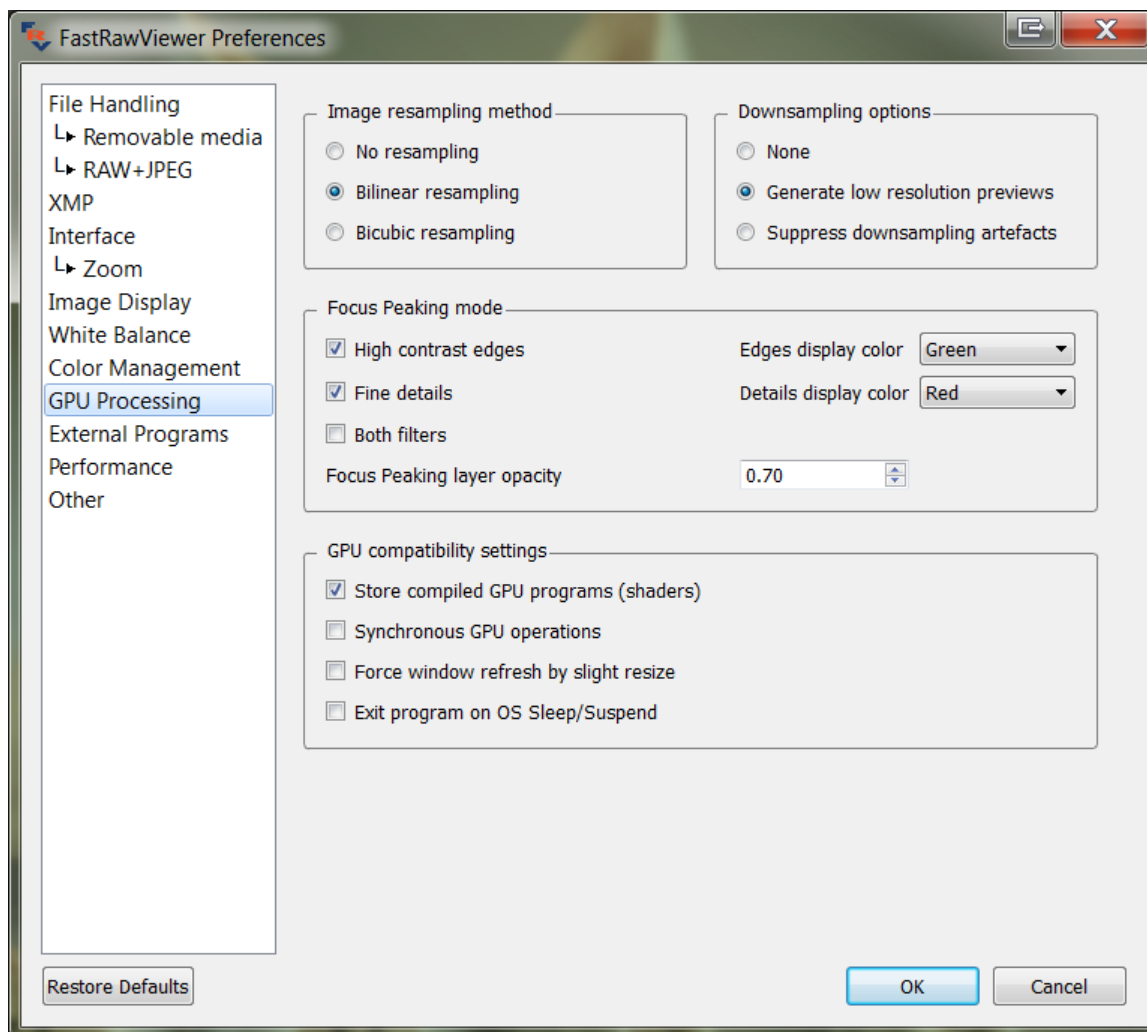
- **Image resampling method**:
  o **No resampling** – for large zoom factors, the image will look as if it is constituted of small square tiles. The fastest method.
  o **Bilinear resampling** – pretty fast, mid-quality method
  o **Bicubic resampling** – high-quality method, can be slow, a relatively fast vast video card is recommended
- **Downsampling options**:
  o **None** – no additional processing, the downsized image may have a low quality look.

- o **Generate low resolution previews** – low-resolution previews are rendered in advance with the help of video card driver. Requires additional memory for the graphic textures, compatible with all video cards.
  - o **Suppress downsampling artifacts** – suppresses the colored noise on the high ISO images. Not supported on all video cards.
- **Focus peaking mode**:
  - o **High contrast edges** – enables the outlines for contrasty details using color contouring. **Edges display color** sets the color for the contours.
  - o **Fine details** – enables the outlines for the areas with plenty of smaller sharp details using color contouring. **Details display color** sets the color for the contours.
  - o **Focus Peaking layer opacity** – controls the fading of the main image for the Focus Peaking contours to be visible better.
- **GPU compatibility settings**
  This group of settings is helps with the cases when certain compatibility problems are encountered (for instance, the image is not completely refreshed):
  - o **Store compile GPU programs (shaders)** – on those video cards on which this is supported, compiled GPU programs will be saved on the disk during the first startup. Program will start faster ever after.
  - o **Synchronous GPU operations** turns on the synchronous mode of video card work (slower, but more reliable).
  - o **Force window refresh by slight resize** – turns on bouncing to force image redraw
  - o **Exit program on OS Sleep/suspend** – forces the program to exit when the computer goes to sleep (that is to address the issue with some older OS being unable to correctly restart OpenGL operations after the wake up).

External Programs
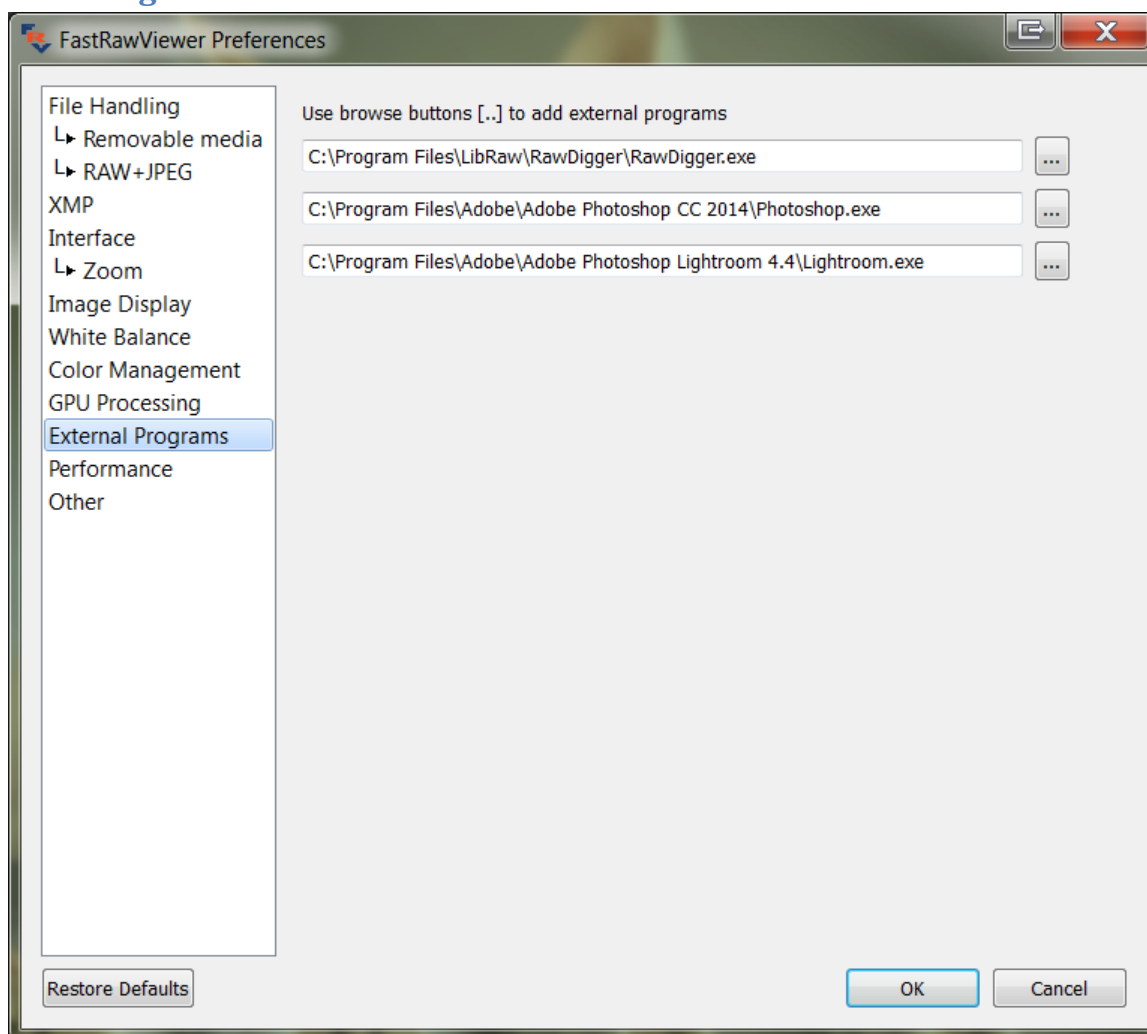
This window displays the paths to external programs. **FastRawViewer** can launch those, passing to them the name of the currently displayed file

Performance
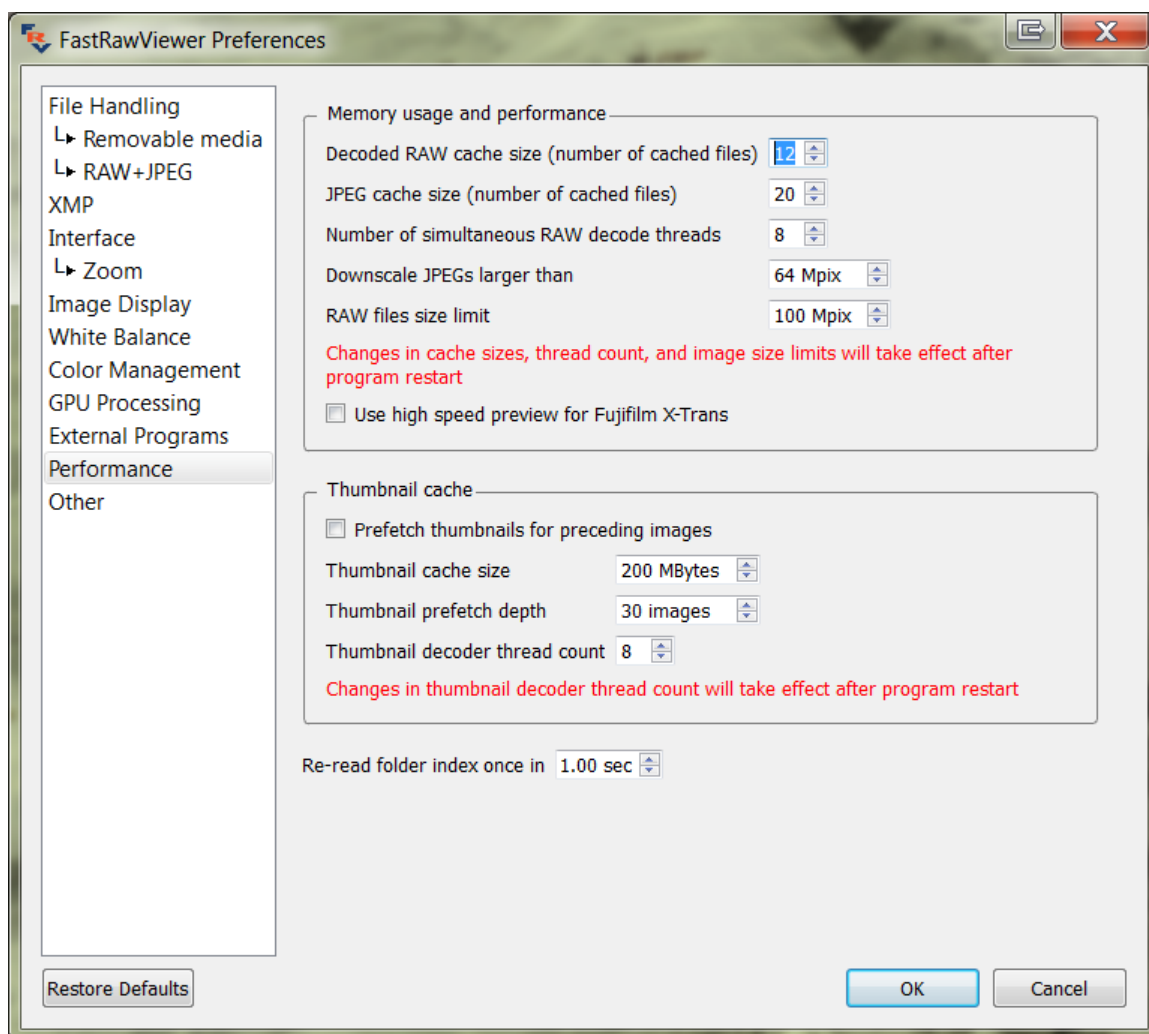
- **Memory usage and performance Group**
  - **Decoded RAW cache size –** the number of decoded RAW files that are kept in the operational memory (RAM) to boost the speed of the browsing.
  - **JPEG cache size –** the number of JPEG files that are kept in the operational memory to boost the speed of the browsing.
  - **Number of simultaneous RAW decode threads –** the number of concurrent processes of RAW decoding.
  - **Downscale JPEGs larger than NN Mpix –** JPEG files larger than the specified size will be down-sampled during the decoding process, so less memory will be required, while decoding and display will happen faster.
  - **Do not decode RAW files larger than NN Mpix –** RAW data with a pixel count more than the specified will not be decoded; only an internal JPEG will be shown (if it exists)

All changes made to this group of settings come into effect only after restarting FastRawViewer.

- o **Use high speed preview for Fujifilm X-Trans –** this preference turns on faster (but lower quality) processing for files created by Fujifilm X-Trans sensors.
  This mode is recommended if you are not satisfied with the display rate of these files in standard mode.
  Automatically turns on during the first start-up, and when resetting to default the preferences if the system has one of the following processors:
  - **Intel Core2Duo** and older.
  - **Intel i7 1st generation** with fewer than 4 cores.

Thumbnail cache Group:

- **Prefetch thumbnails for preceding images**: to decode previews for the files "before" those visible on the screen.
- **Thumbnail cache size**: maximum size of the cached previews in the memory (each preview is stored in 4-byte per pixel format, so standard 200x133 preview is about 100kb, so 200Mbytes cache limit translates to ~2000 images).
- **Thumbnail prefetch depth**: how many files (relative to those viewed on the screen) to read ahead and decode previews.
- **Thumbnail decoder thread count**: how many parallel decode streams (threads) are enabled.

Other settings:

- Re-read current folder in – sets the refresh rate for the list of files in the current folder (if the folder changes, for instance other files are copied into it, then it won't be reread very often).

Other

This section contains other settings that cannot be grouped with any other preceding group:
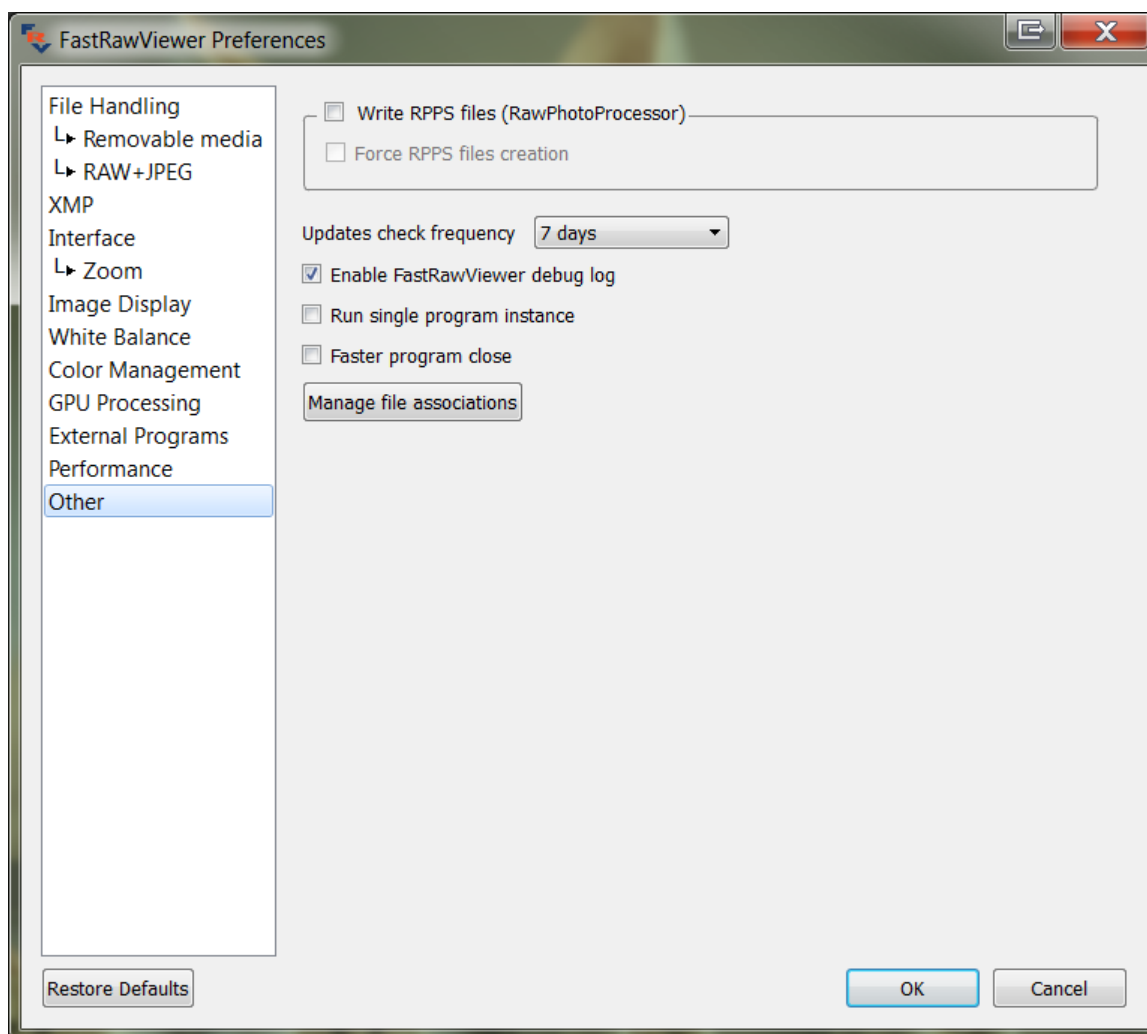
- **Write RPPS files** – saves an .rpps file (for RawPhotoProcessor) if manual changes of WB/exposure are applied to the image
  - **Force RPPS files creation** – saves an .rpps file with automatic settings for WB/Exposure when a RAW file is opened.
- **Check for updates** – this parameter schedules the checks for updates - at each program launch or once in every 1-3-7-15-30 days.
- **Enable debug log** – turns on the debug mode, the debug messages are available through Menu – Help – Debug log.
- **Run single program instance** – (Windows only) turns on the "one instance" mode of the program. At an attempt of starting the second instance, the file is displayed in the already existing program window.
- **Faster program close** – (Windows only) turns on the fast program completion mode.

- **Manage File Associations** – (Windows-only, not supported in Legacy Windows version): activates the system dialogue to edit file association with FastRawViewer:
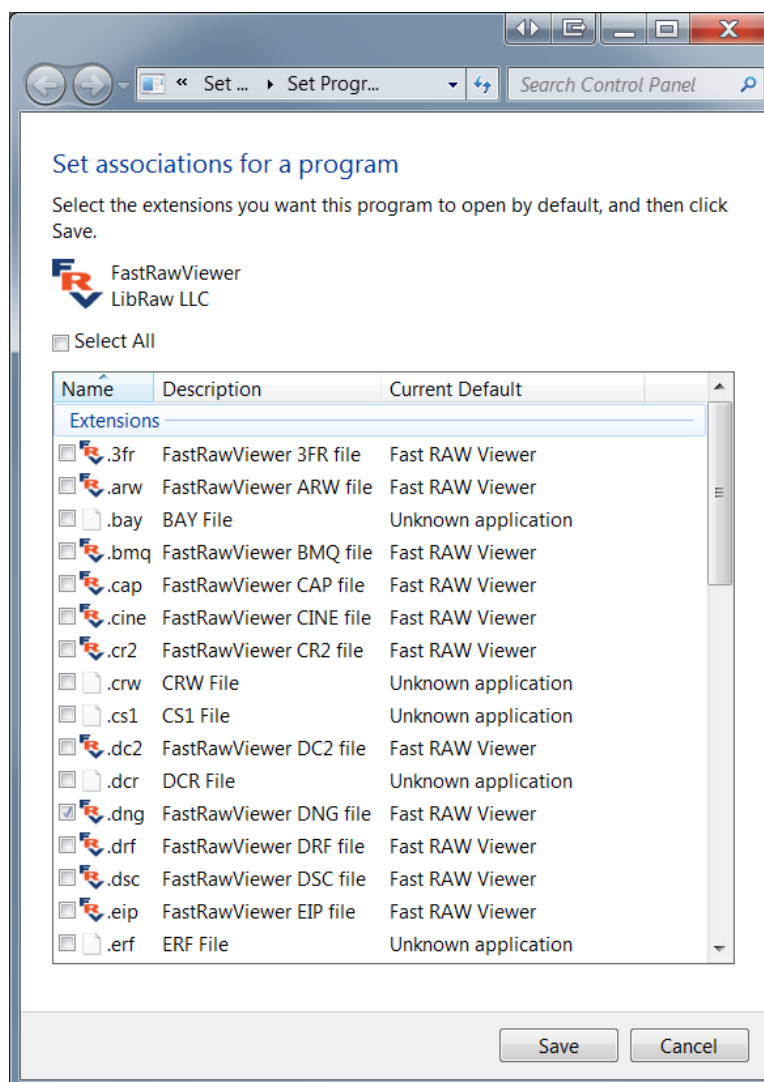
Informational panel settings

The settings icon ("gear") is located in the header of the informational panels, allowing one to perform actions or change preferences for the current panel. These setting can be changed at any moment while the program is running and are effective immediately.

Folders Panel
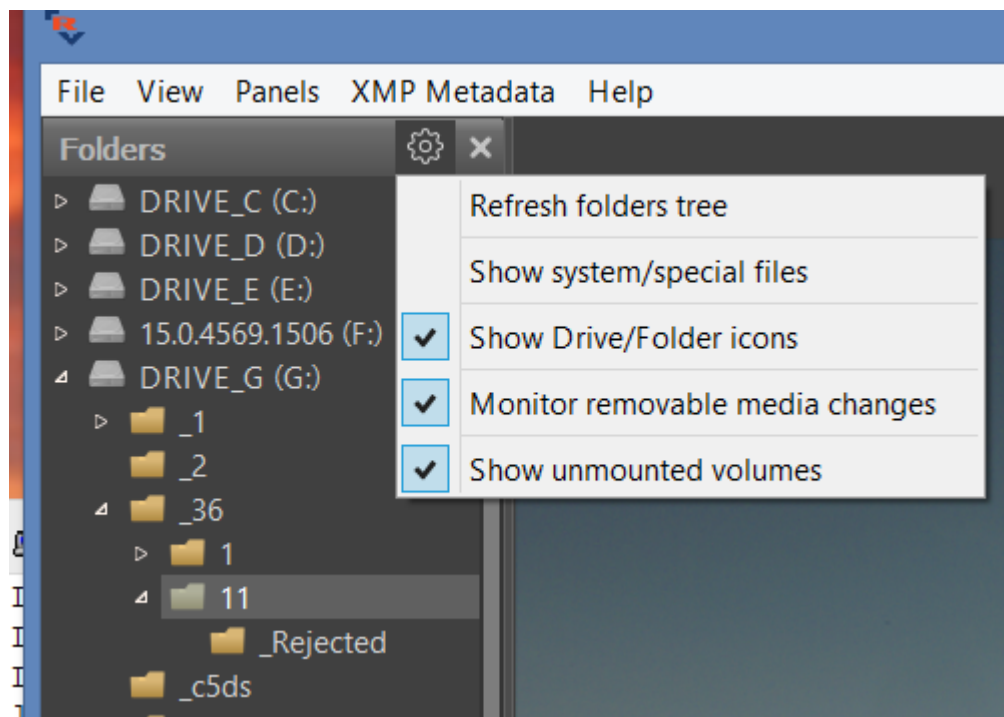
- Refresh folders tree – re-reads the folder tree. This action is intended to sync the displayed file structure with the current one on the disk; useful if the monitoring of the creation of new files/folders (default setting for network collections and memory cards) is turned off.
- Show system/special files: turns on the display of files/folders which are usually hidden:
  - Mac: bundles (applications and disk images); folders, the names of which start with a dot; standard Unix folders like /usr, /bin etc.
  - Windows: C:\Windows folder
  - All systems: Lightroom folders
- Show Drive/Folder icons – allows drive and folder icon display.
- Monior removable media changes – allows automatic discovery and monitoring of removable media.
- Show unmoumted volumes (Windows only) – allows drive letter display when the media is offline

Filmstrip/Thumbnails Panel
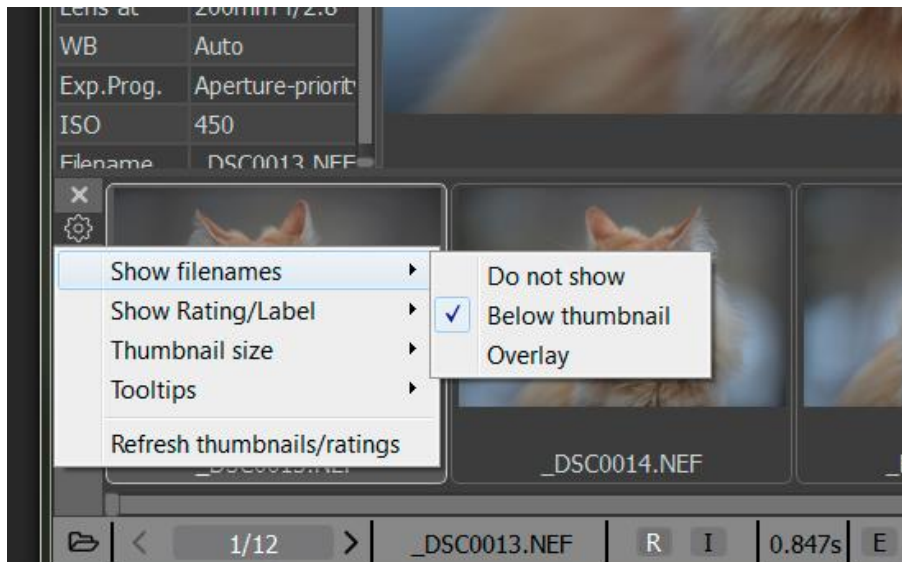
- Show filenames – sets a mode for file name display in the Filmstrip: don't show, show under the icon, or show over the icon.
- Show Rating/Label – sets a mode for XMP Rating/Label display in the Filmstrip: don't show, show under the icon, or show over the icon..
- Thumbnail size: choose the size of the file icons: 5 sizes with aspect ratio 2:3 or 1:1
- Tooltips – what to display in the floating hints: Title, Description.
- Refresh thumbnails/ratings: action for re-reading the file icons in the current folder.

EXIF Panel
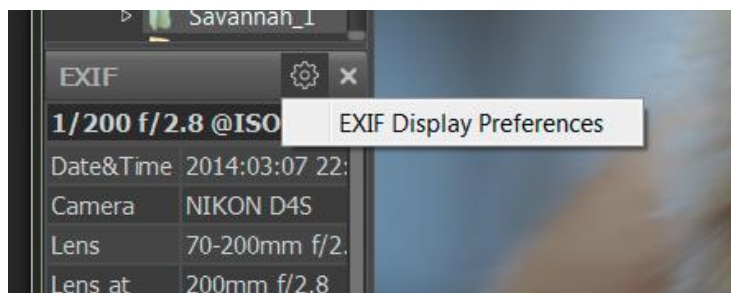
- EXIF Display preferences runs a dialog for editing EXIF display:
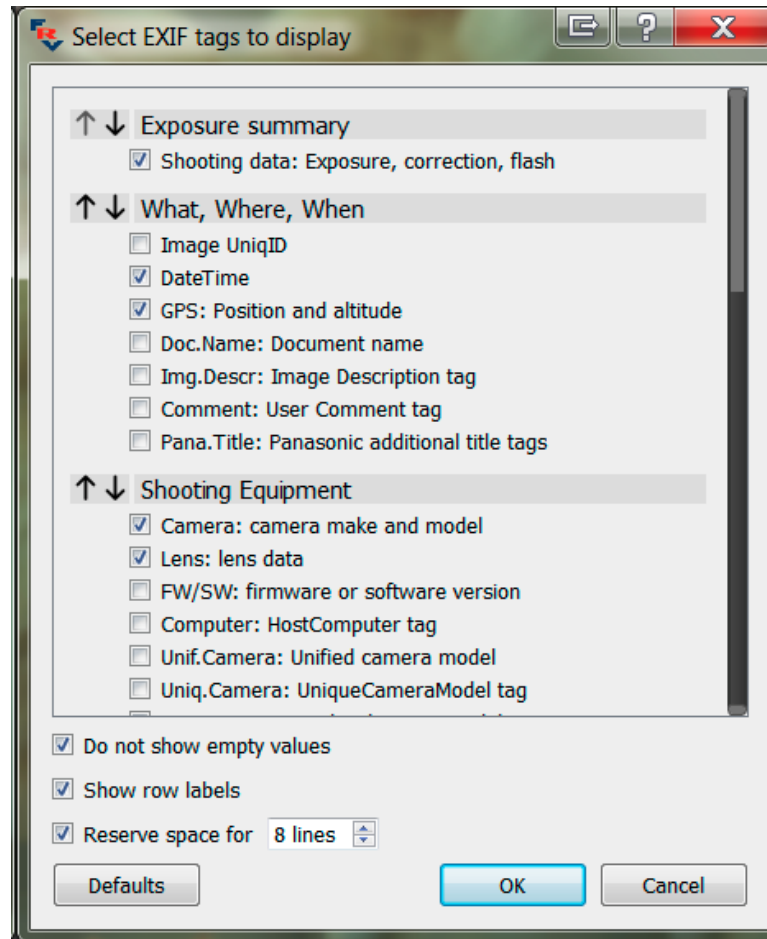
In this dialog:

- The up/down arrows allow one to move the groups of the displayed information.
- In each group, one can choose the elements that are necessary during display
- Do not show empty values – forbids the output of empty lines (for which the displayed RAW has no data).
- Show row labels: turns the left column of the EXIF-table (field names) on/off.

XMP Metadata Panel
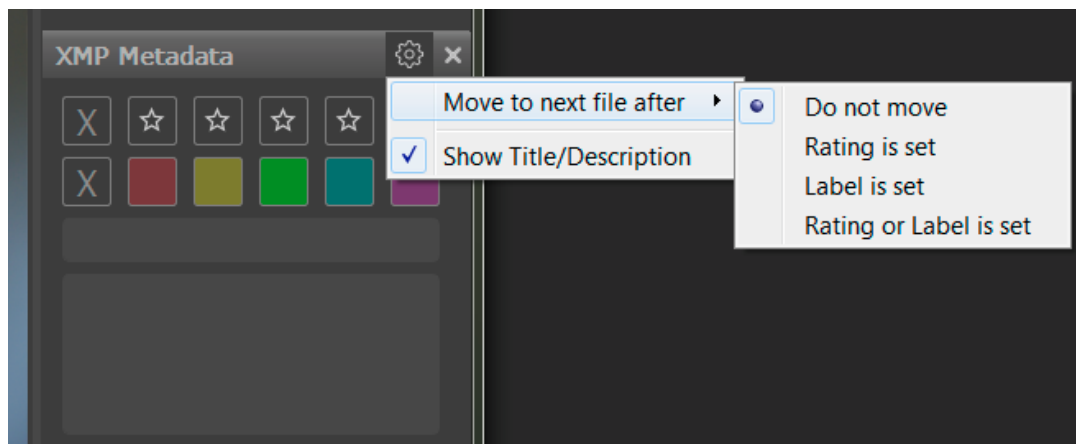
- Move to next file after – sets the automatic progression to the next file after setting a rating or mark:
  - Do not move – doesn't move
  - Rating is set – moves when a rating is set
  - Label is set – moves when a mark is set
  - Rating or label – moves when setting either parameter.
- Show Title/Description – Shows the title and description in the XMP panel

Exposure statistics panel
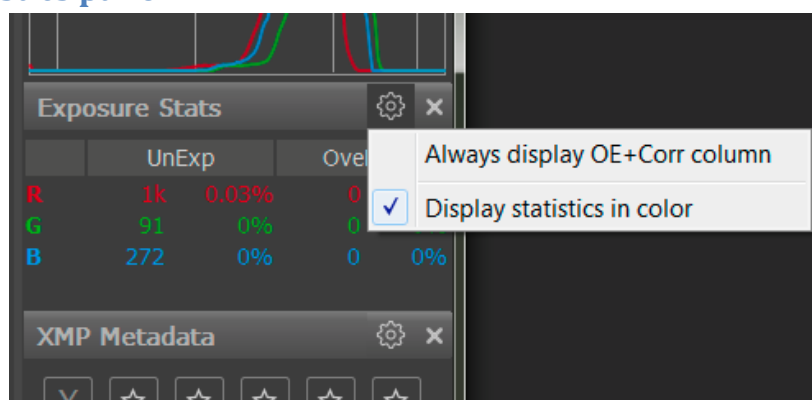
- Always display OE+Corr column: turns on the display of the third column of statistics (OE+Corr), even if it has the same values as the OveExp column.

Display statistics in color: turns on the output of table rows in the color corresponding to the color of the pixels.

Customizing the Status Bar

Many control and information display elements characterizing the displayed image can be placed in the status bar. As a rule, all possible elements are not needed to the user (and they won't all fit on a monitor of average resolution), so the display of these elements can be customized.

For customization choose **File – Customize bottom bar** in the menu**,** or choose Customize Bottom Bar in the menu that pops up when pressing the settings button in the lower right corner of the program window (if you have not switched off the display of this icon).
This settings window pops up:
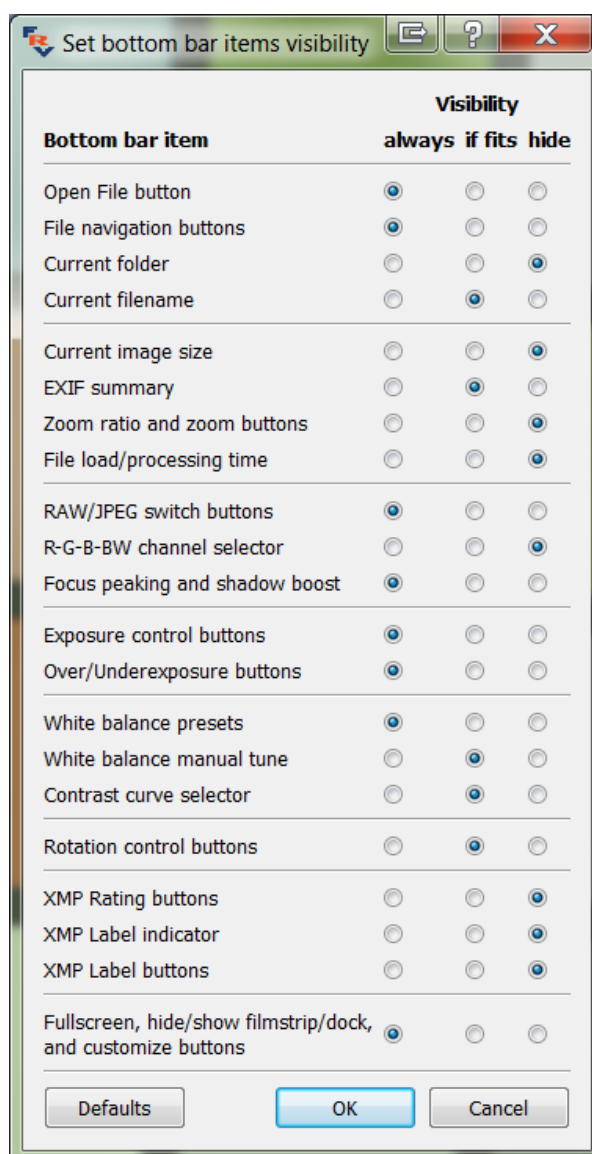
Each line on the table corresponds to one element of the program's status bar, and can be set to one of three positions:

- Visibility always: always shows the element. If the program window size is too small, then the elements will overlap.
- If fits: The element is shown only if the size of the window is such that the elements do not get in each other's way.
- Hide: The element is not shown.

The following elements can be customized:

➢ File Navigation
   o **Open File Button**: Open file icon
   o **File navigation buttons**: Prev File/Next file button and current file number indication (this button opens up the set file by number dialog).
   o **Current folder**: current folder being browsed.
   o **Current filename**: File name (without the name of the folder).
➢ File and Display information
   o **Current image size**: size of the image in pixels
   o **EXIF summary**: shooting data (exposure, flash, lens's focal length).
   o **Zoom ratio and zoom buttons**: current file zoom (clicking causes Fit to Window) Zoom In,/Zoom Out buttons.
   o **File load/processing time**: time spent on reading-decoding-processing the file in **FastRawViewer**.
➢ Controlling the current file display
   o **RAW/JPEG switch buttons**: Buttons for switching between RAW/JPEG
   o **R-G-B-BW channel selector**: Buttons for switching RGB channels and black and white representation.
   o **Focus peaking and shadow boost**: Buttons for turning those modes on
➢ Exposure analysis, exposure compensation control
   o **Exposure control buttons**: current exposure compensation value (clicking on this turns on/off exposure compensation).
   o **Over/Underexposure buttons**: Buttons for turning on/off the display of over/underexposed areas.
➢ White balance and contrast control
   o **White balance presets**: choose preset WB
   o **White balance manual tune**: current white balance indication; pressing on it summons a dialog for adjusting white balance manually
   o **Contrast curve selector**: drop-down list of contrast curve choices.
➢ **Rotation control buttons:** control of the image rotation, current orientation display
➢ Controlling XMP ratings and labels:
   o **XMP Rating buttons**: indication and control of XMP ratings
   o **XMP Label indicator**: indication of current XMP labels.
   o **XMP Label buttons**: indication and control of XMP labels.
   o **Fullscreen, hide/show filmstrip/dock, and customize buttons:** Fullscreen, hide/show filmstrip panel/all panels, and program settings block buttons.

Setting the keyboard shortcuts

FastRawViewer allows you to re-define all keyboard shortcuts, assigning an arbitrary amount of alternative keystroke and mouse button combinations to each of the actions possible in **FastRawViewer**.

To define or modify the sequences for the actions use the editor under **Menu – File – Keyboard Shortcuts (Ctrl-K)**:
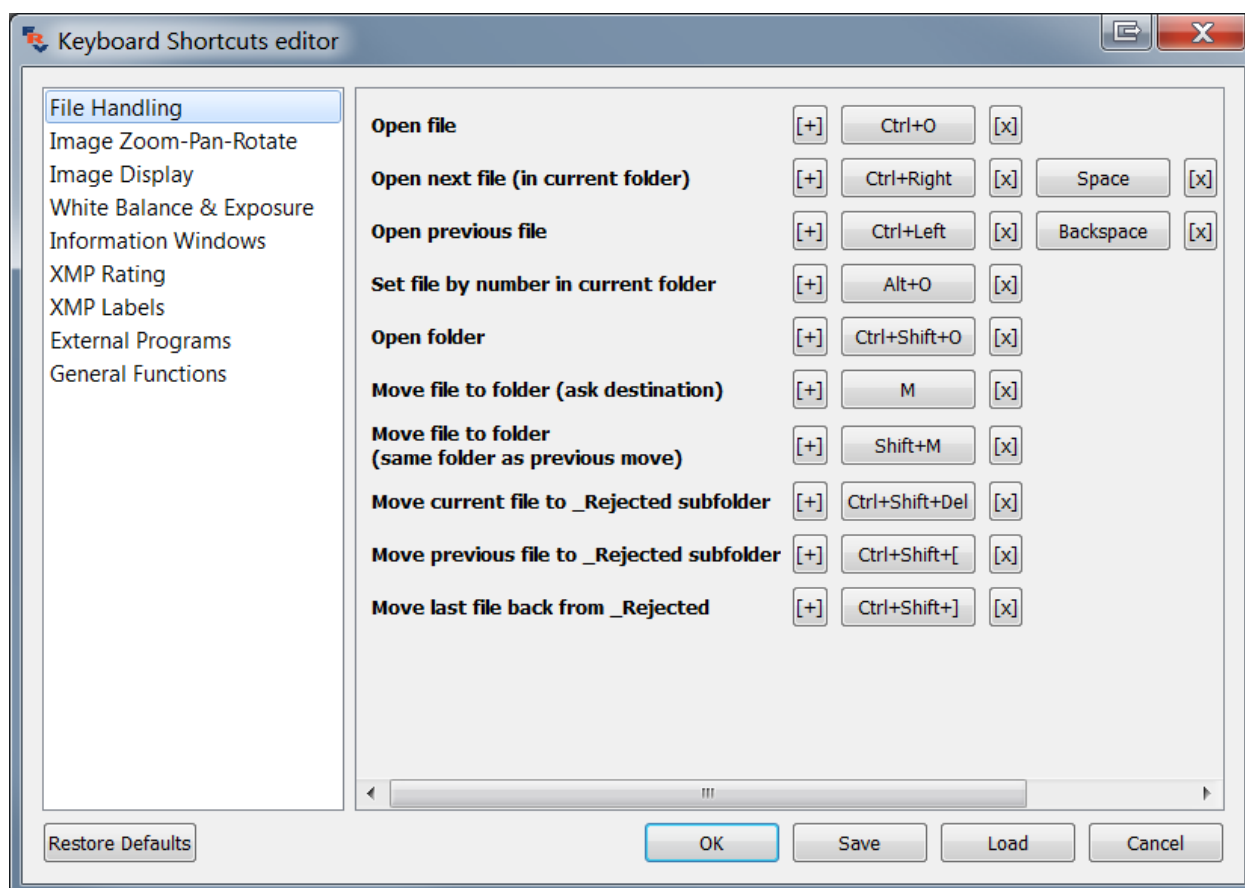
The left pane contains the list of groups of actions. The right pane displays the names of the actions in the highlighted group and current shortcuts for those actions.

Looking to the right of every action name:

- [+] – adds a new keyboard shortcut for the action
- [keyboard combination] – currently assigned shortcut
- [x] to the right of every keyboard combination – deletes this combination.

When pressing the buttons to add or edit the combination the following dialogue appears:
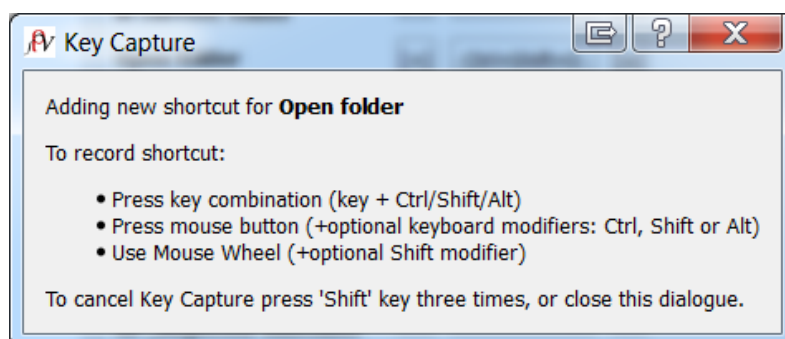
Hit the combination of keys (and mouse buttons), which you want to assign to the action, and it will be memorized. To close the window without modifying the current status (that is, to cancel the assignment), press the Shift key three times.

It is possible that the selected combination is already in use somewhere, and then the program will prompt with the following:
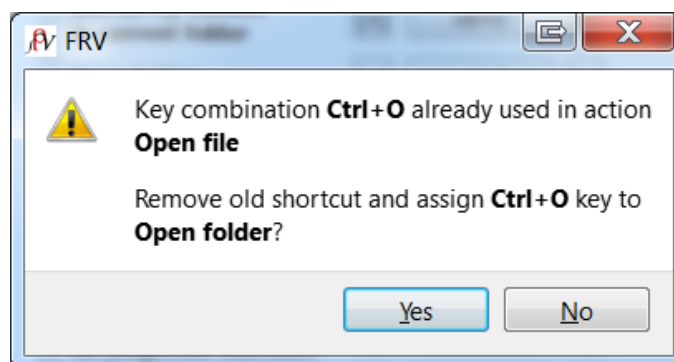
For some actions, only a specific mouse button can be assigned (this applies to the actions, which are done with the mouse: setting the white balance for the "click-on-gray" method, etc.). In this case, the dialogue to assign the combination changes a bit:
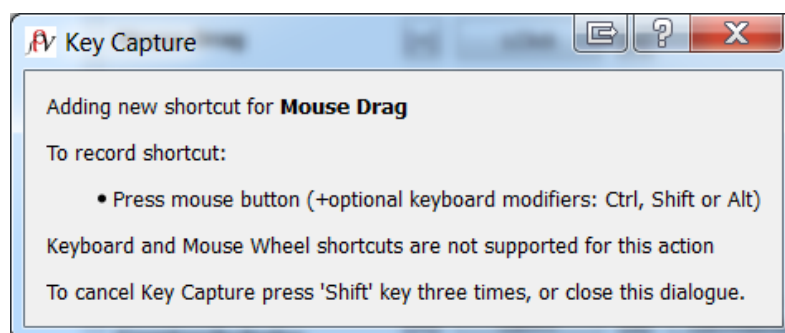
Settings for Apple Magic Mouse/Trackpad

The standard settings for Apple Magic Mouse in OS X 10.9 и 10.10 are designed for smooth scrolling (Natural Scroll). With these settings trackpad and Magic Mouse continue to send scrolling events for some time even after the user stopped moving his finger.

The settings are very suitable for panning; but cause erratic behavior if we want to associate some action to the trackpad or mouse. For example, if we associate "go to next/previous image" to the Magic Mouse with default natural scroll settings several files will be skipped.

To disable Natural Scroll, please visit Accessibility - Mouse & Trackpad and there select Scrolling without inertia and slow scrolling speed:
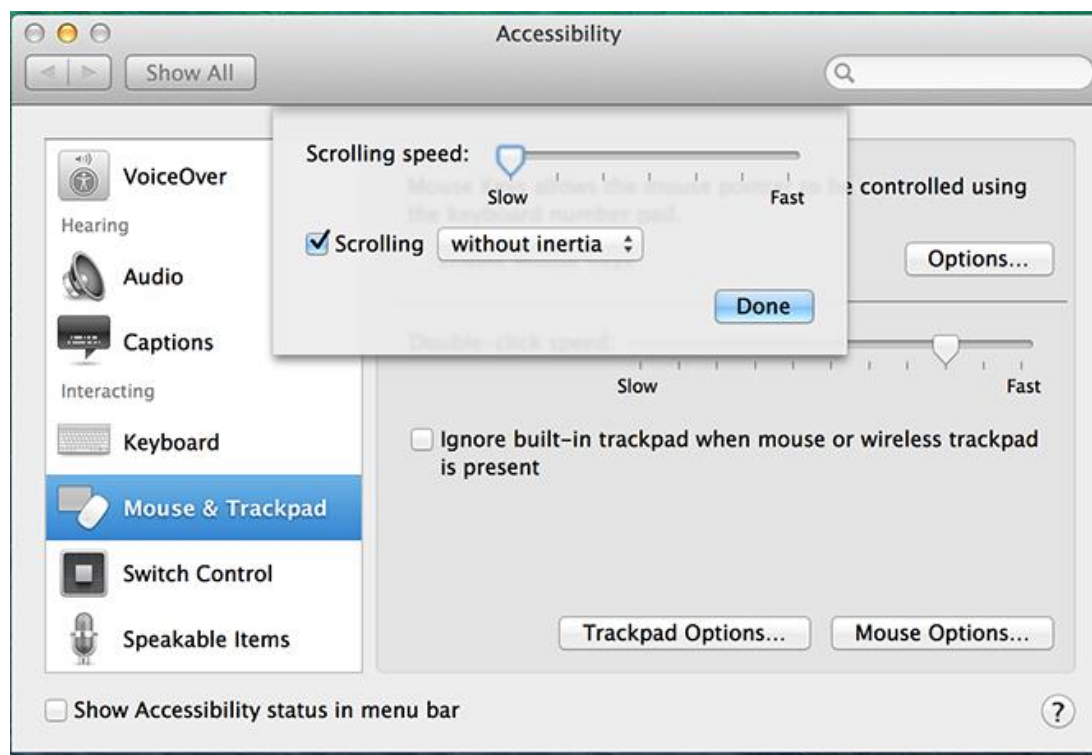
Standard FastRawViewer Keyboard Shortcuts

Action	Key Sequence(s), Windows	Key Sequence(s), Mac
File Handling		
Open file	Ctrl+O	⌘O
Close file (cancel image display and current folder monitoring)	Ctrl-U	⌘U
Open next file (in current folder)	Ctrl+Right Space Ctrl+Num+Right	⌘→Space ⌘+Num→
Open previous file	Ctrl+Left Backspace Ctrl+Num+Left	⌘← ⌫ ⌘+Num←
Open the first file in folder	Ctrl+Shift+Left Ctrl+Shift+Num+Left	⇧⌘← ⇧⌘+Num←
Open the first file in folder	Ctrl+Shift+Right Ctrl+Shift+Num+Right	⇧⌘→ ⇧⌘+Num→
Set file by number in current folder	Alt+O	⌥O
Open folder	Ctrl+Shift+O	⇧⌘O
Move file to folder (ask destination)	M	M
Move file to folder	Shift+M	⇧M

(same folder as previous move)		
Copy file to a different folder (ask destination)	C	C
Copy file to a different folder (same destination)	Shift-C	Shift-C
Move current file to _Rejected subfolder	Ctrl+Shift+Del	⇧⌘⌫
Move previous file to _Rejected subfolder	Ctrl+Shift+[	⇧⌘[
Move last file back from _Rejected	Ctrl+Shift+]	⇧⌘]
Image Zoom-Pan-Rotate		
Zoom In	Ctrl++ Ctrl+= Shift+Wheel Up	⌘+ ⌘= ⇧Wheel Up
Zoom Out	Ctrl+- Shift+Wheel Down	⌘-⇧ Wheel Down
Mouse Panning	Right Click	Right Click
Quick Zoom and Pan	Shift+Right Click	⇧Right Click
Mouse Drag	Left Click	Left Click
Quick Zoom and Drag	Shift+Left Click	⇧Left Click
Actual Pixels (1:1)	Ctrl+1	⌘1
Fit to Window	Ctrl+0	⌘0

Fullscreen mode	F	F
Rotate 90^0 Counterclockwise	Ctrl+7 Ctrl+Home	⌘7 ⌘↖
Rotate 90^0 Clockwise	Ctrl+9 Ctrl+PgUp	⌘9 ⌘⇞
Ignore EXIF rotation data	Ctrl+8 Ctrl+Up	⌘8 ⌘↑
Image Display		
Display full color RGB	Ctrl+2	⌘2
Display R channel	Ctrl+3	⌘3
Display G channel	Ctrl+4	⌘4
Display B channel	Ctrl+5	⌘5
Display BW conversion	Ctrl+6	⌘6
Switch data to display (RAW, embedded JPEG, ext. JPEG	J	J
Toggle Focus Peaking (None/Edges/Fine Details/Both)	P	P
White Balance & Exposure		
Toggle White Balance (Daylight/As Shot/Auto)	W	W
Manual White Balance	Alt+W	⌥W

Custom WB	Alt+Left Click	⌥Left Click
Shadows boost On/Off	Shift+S	⇧S
Exposure correction Off/On	A	A
Increase Exposure	Alt++	⌥+
Decrease Exposure	Alt+-	⌥-
Auto Exposure correction	Shift+A	⇧A
Show Overexposed areas	O	O
Show Underexposed areas	U	U
Information Panels		
Show/Hide Histogram	F2	F2
Show/Hide EXIF	F3	F3
Show/Hide OE/UE Stats	F4	F4
Show/Hide XMP Metadata	F5	F5
Show/Hide Filmstrip/Thumbnails panel	F6	F6
Show/Hide Folders panel	F7	F7
Hide all panels	Tab	⇥
XMP Rating		

No Rating	Alt+0	⌥0
Set Rating to Reject	Alt+Del	⌥⌫
Set Rating to 1	Alt+1	⌥1
Set Rating to 2	Alt+2	⌥2
Set Rating to 3	Alt+3	⌥3
Set Rating to 4	Alt+4	⌥4
Set Rating to 5	Alt+5	⌥5
Decrease Rating	Alt+,	⌥,
Increase Rating	Alt+.	⌥.
XMP Labels (label style: Lightroom color labels)		
Clear XMP Label	*no shortcuts set*	*no shortcuts set*
Red	Alt+6	⌥6
Yellow	Alt+7	⌥7
Green	Alt+8	⌥8
Blue	Alt+9	⌥9
Purple	*no shortcuts set*	*no shortcuts set*
Edit Title/Description	*Alt-D*	⌥D

External Programs		
Run External Program #1	R	R
Run External Program #2	Alt+R	⌥R
Run External Program #3	Ctrl+R	⌘R
Reveal in Finder/Show in Windows Explorer	Ctrl+F	⌘F
	General Functions	
Edit Preferences	Ctrl+P	⌘,
Edit Keyboard Shortcuts	Ctrl+K	⌘K
Customize bottom bar	*No shortcuts set*	*No shortcuts set*
Exit program	Ctrl+Q	⌘Q

Mac keys Legend

⌘ - Command key

⌥ - Option key, A.K.A Alt key

^ - Control key

⇧ - Shift key

⌫ - Delete key, A.K.A. Backspace key

⇥ - Tab key

⇞ - Page Up key

⇟ - Page Down key

↖ - Home key

↘ - End key

List of Supported Cameras (RAW formats)

- ARRIRAW format
- AVT
  - F-080C
  - F-145C
  - F-201C
  - F-510C
  - F-810C
- Adobe Digital Negative (DNG)
- AgfaPhoto DC-833m
- Alcatel 5035D
- Apple
  - QuickTake 100
  - QuickTake 150
  - QuickTake 200
- Baumer TXG14
- BlackMagic
  - Cinema Camera
  - Pocket Cinema Camera
  - Production Camera 4k
  - URSA
- Canon
  - PowerShot 600
  - PowerShot A5
  - PowerShot A5 Zoom
  - PowerShot A50
  - PowerShot A460 (CHDK hack)
  - PowerShot A470 (CHDK hack)
  - PowerShot A530 (CHDK hack)
  - PowerShot A550 (CHDK hack)
  - PowerShot A570 (CHDK hack)
  - PowerShot A590 (CHDK hack)
  - PowerShot A610 (CHDK hack)
  - PowerShot A620 (CHDK hack)
  - PowerShot A630 (CHDK hack)
  - PowerShot A640 (CHDK hack)
  - PowerShot A650 (CHDK hack)
  - PowerShot A710 IS (CHDK hack)
  - PowerShot A720 IS (CHDK hack)
  - PowerShot A3300 IS (CHDK hack)
  - PowerShot Pro70
  - PowerShot Pro90 IS
  - PowerShot Pro1
  - PowerShot G1
  - PowerShot G1 X

- o PowerShot G1 X Mark II
- o PowerShot G2
- o PowerShot G3
- o PowerShot G3 X
- o PowerShot G5
- o PowerShot G6
- o PowerShot G7 (CHDK hack)
- o PowerShot G7 X
- o PowerShot G9
- o PowerShot G10
- o PowerShot G11
- o PowerShot G12
- o PowerShot G15
- o PowerShot G16
- o PowerShot S2 IS (CHDK hack)
- o PowerShot S3 IS (CHDK hack)
- o PowerShot S5 IS (CHDK hack)
- o PowerShot SD300 (CHDK hack)
- o PowerShot SD950 (CHDK hack)
- o PowerShot S30
- o PowerShot S40
- o PowerShot S45
- o PowerShot S50
- o PowerShot S60
- o PowerShot S70
- o PowerShot S90
- o PowerShot S95
- o PowerShot S100
- o PowerShot S110
- o PowerShot S120
- o PowerShot SX1 IS
- o PowerShot SX50 HS
- o PowerShot SX60 HS
- o PowerShot SX110 IS (CHDK hack)
- o PowerShot SX120 IS (CHDK hack)
- o PowerShot SX220 HS (CHDK hack)
- o PowerShot SX20 IS (CHDK hack)
- o PowerShot SX30 IS (CHDK hack)
- o EOS D30
- o EOS D60
- o EOS 5D
- o EOS 5DS
- o EOS 5DS R
- o EOS 5D Mark II
- o EOS 5D Mark III
- o EOS 6D

- o EOS 7D
- o EOS 7D Mark II
- o EOS 10D
- o EOS 20D
- o EOS 20Da
- o EOS 30D
- o EOS 40D
- o EOS 50D
- o EOS 60D
- o EOS 60Da
- o EOS 70D
- o EOS 300D / Digital Rebel / Kiss Digital
- o EOS 350D / Digital Rebel XT / Kiss Digital N
- o EOS 400D / Digital Rebel XTi / Kiss Digital X
- o EOS 450D / Digital Rebel XSi / Kiss Digital X2
- o EOS 500D / Digital Rebel T1i / Kiss Digital X3
- o EOS 550D / Digital Rebel T2i / Kiss Digital X4
- o EOS 600D / Digital Rebel T3i / Kiss Digital X5
- o EOS 650D / Digital Rebel T4i / Kiss Digital X6i
- o EOS 700D / Digital Rebel T5i
- o EOS 750D / Digital Rebel T6i
- o EOS 760D / Digital Rebel T6S
- o EOS 100D / Digital Rebel SL1
- o EOS 1000D / Digital Rebel XS / Kiss Digital F
- o EOS 1100D / Digital Rebel T3 / Kiss Digital X50
- o EOS 1200D
- o EOS C500
- o EOS D2000C
- o EOS M
- o EOS M2
- o EOS M3
- o EOS-1D
- o EOS-1DS
- o EOS-1D C
- o EOS-1D X
- o EOS-1D Mark II
- o EOS-1D Mark II N
- o EOS-1D Mark III
- o EOS-1D Mark IV
- o EOS-1Ds Mark II
- o EOS-1Ds Mark III
- Casio
  - o QV-2000UX
  - o QV-3000EX
  - o QV-3500EX
  - o QV-4000

- o QV-5700
- o QV-R41
- o QV-R51
- o QV-R61
- o EX-F1
- o EX-FC300S
- o EX-FC400S
- o EX-FH20
- o EX-FH25
- o EX-FH100
- o EX-S20
- o EX-S100
- o EX-Z4
- o EX-Z50
- o EX-Z500
- o EX-Z55
- o EX-Z60
- o EX-Z75
- o EX-Z750
- o EX-Z8
- o EX-Z850
- o EX-Z1050
- o EX-ZR100
- o EX-Z1080
- o EX-ZR700
- o EX-ZR710
- o EX-ZR750
- o EX-ZR800
- o EX-ZR850
- o EX-ZR1000
- o EX-ZR1100
- o EX-ZR1200
- o EX-ZR1300
- o EX-ZR1500
- o EX-ZR3000
- o EX-100
- o EX-100F
- o EX-10
- o Exlim Pro 505
- o Exlim Pro 600
- o Exlim Pro 700
- Contax N Digital
- Creative PC-CAM 600
- DJI 4384x3288
- DXO One
- Digital Bolex

- Epson
  - R-D1
  - R-D1s
  - R-D1x
- Foculus 531C
- FujiFilm
  - E505
  - E900
  - F700
  - F710
  - F800
  - F810
  - S2Pro
  - S3Pro
  - S5Pro
  - S20Pro
  - S1
  - S100FS
  - S5000
  - S5100/S5500
  - S5200/S5600
  - S6000fd
  - S7000
  - S9000/S9500
  - S9100/S9600
  - S200EXR
  - S205EXR
  - SL1000
  - HS10
  - HS11
  - HS20EXR
  - HS22EXR
  - HS30EXR
  - HS33EXR
  - HS35EXR
  - HS50EXR
  - F505EXR
  - F550EXR
  - F600EXR
  - F605EXR
  - F770EXR
  - F775EXR
  - F800EXR
  - F900EXR

(Note: the list continues above the FujiFilm heading)

  - D16
  - D16M

- o X-Pro1
- o X-S1
- o XQ1
- o XQ2
- o X100
- o X100S
- o X100T
- o X10
- o X20
- o X30
- o X-A1
- o X-A2
- o X-E1
- o X-E2
- o X-M1
- o XF1
- o X-T1
- o X-T1 Graphite Silver
- o X-T10
- o IS-1
- HTC UltraPixel
- Hasselblad
  - o H5D-60
  - o H5D-50
  - o H5D-50c
  - o H5D-40
  - o H4D-60
  - o H4D-50
  - o H4D-40
  - o H4D-31
  - o H3DII-22
  - o H3DII-31
  - o H3DII-39
  - o H3DII-50
  - o H3D-22
  - o H3D-31
  - o H3D-39
  - o H2D-22
  - o H2D-39
  - o CFV
  - o CFH
  - o CF-22
  - o CF-31
  - o CF-39
  - o V96C
  - o Lusso

- o Lunar
- o Stellar
- o Stellar II
- o HV
- ISG 2020x1520
- Ikonoskop
    - o A-Cam dII Panchromatic
    - o A-Cam dII
- Imacon
    - o Ixpress 96, 96C
    - o Ixpress 384, 384C (single shot only)
    - o Ixpress 132C
    - o Ixpress 528C (single shot only)
- JaiPulnix
    - o BB-500CL
    - o BB-500GE
- Kinefinity
    - o KineMINI
    - o KineRAW Mini
    - o KineRAW S35
- Kodak
    - o DC20
    - o DC25
    - o DC40
    - o DC50
    - o DC120
    - o DCS200
    - o DCS315C
    - o DCS330C
    - o DCS420
    - o DCS460
    - o DCS460A
    - o DCS460D
    - o DCS520C
    - o DCS560C
    - o DCS620C
    - o DCS620X
    - o DCS660C
    - o DCS660M
    - o DCS720X
    - o DCS760C
    - o DCS760M
    - o EOSDCS1
    - o EOSDCS3B
    - o NC2000F
    - o ProBack

- o PB645C
- o PB645H
- o PB645M
- o DCS Pro 14n
- o DCS Pro 14nx
- o DCS Pro SLR/c
- o DCS Pro SLR/n
- o C330
- o C603
- o P850
- o P880
- o S-1
- o Z980
- o Z981
- o Z990
- o Z1015
- o KAI-0340
- Konica
  - o KD-400Z
  - o KD-510Z
- Leaf
  - o AFi 7
  - o AFi-II 5
  - o AFi-II 6
  - o AFi-II 7
  - o AFi-II 8
  - o AFi-II 10
  - o AFi-II 10R
  - o AFi-II 12
  - o AFi-II 12R
  - o Aptus 17
  - o Aptus 22
  - o Aptus 54S
  - o Aptus 65
  - o Aptus 75
  - o Aptus 75S
  - o Cantare
  - o CatchLight
  - o CMost
  - o Credo 40
  - o Credo 50
  - o Credo 60
  - o Credo 80
  - o DCB2
  - o Valeo 6
  - o Valeo 11

- o Valeo 17
- o Valeo 22
- o Volare
- Leica
  - o C (Typ 112)
  - o Digilux 2
  - o Digilux 3
  - o Digital-Modul-R
  - o D-LUX2
  - o D-LUX3
  - o D-LUX4
  - o D-LUX5
  - o D-LUX6
  - o D-Lux (Typ 109)
  - o M8
  - o M8.2
  - o M9
  - o M (Typ 240)
  - o Monochrom (Typ 240)
  - o Monochrom (Typ 246)
  - o M-E
  - o M-P
  - o R8
  - o Q (Typ 116)
  - o S
  - o S2
  - o S (Typ 007)
  - o T (Typ 701)
  - o X1
  - o X (Typ 113)
  - o X2
  - o X-E (Typ 102)
  - o V-LUX1
  - o V-LUX2
  - o V-LUX3
  - o V-LUX4
  - o V-Lux (Typ 114)
  - o X VARIO (Typ 107)
- Lenovo a820
- Logitech Fotoman Pixtura
- Mamiya ZD
- Matrix 4608x3288
- Micron 2010
- Minolta
  - o RD175
  - o DiMAGE 5

- o DiMAGE 7
- o DiMAGE 7i
- o DiMAGE 7Hi
- o DiMAGE A1
- o DiMAGE A2
- o DiMAGE A200
- o DiMAGE G400
- o DiMAGE G500
- o DiMAGE G530
- o DiMAGE G600
- o DiMAGE Z2
- o Alpha/Dynax/Maxxum 5D
- o Alpha/Dynax/Maxxum 7D
- Motorola PIXL
- Nikon
  - o D1
  - o D1H
  - o D1X
  - o D2H
  - o D2Hs
  - o D2X
  - o D2Xs
  - o D3
  - o D3s
  - o D3X
  - o D4
  - o D4s
  - o D40
  - o D40X
  - o D50
  - o D60
  - o D70
  - o D70s
  - o D80
  - o D90
  - o D100
  - o D200
  - o D300
  - o D300s
  - o D600
  - o D610
  - o D700
  - o D750
  - o D800
  - o D800E
  - o D810

- D810A
- D3000
- D3100
- D3200
- D3300
- D5000
- D5100
- D5200
- D5300
- D5500
- D7000
- D7100
- D7200
- Df
- 1 AW1
- 1 J1
- 1 J2
- 1 J3
- 1 J4
- 1 J5
- 1 S1
- 1 S2
- 1 V1
- 1 V2
- 1 V3
- E700 ("DIAG RAW" hack)
- E800 ("DIAG RAW" hack)
- E880 ("DIAG RAW" hack)
- E900 ("DIAG RAW" hack)
- E950 ("DIAG RAW" hack)
- E990 ("DIAG RAW" hack)
- E995 ("DIAG RAW" hack)
- E2100 ("DIAG RAW" hack)
- E2500 ("DIAG RAW" hack)
- E3200 ("DIAG RAW" hack)
- E3700 ("DIAG RAW" hack)
- E4300 ("DIAG RAW" hack)
- E4500 ("DIAG RAW" hack)
- E5000
- E5400
- E5700
- E8400
- E8700
- E8800
- Coolpix A
- Coolpix P330

- Nokia
  - o Coolpix P340
  - o Coolpix P6000
  - o Coolpix P7000
  - o Coolpix P7100
  - o Coolpix P7700
  - o Coolpix P7800
  - o Coolpix S6 ("DIAG RAW" hack)
  - o Coolscan NEF
- Nokia
  - o N95
  - o X2
  - o 1200x1600
  - o Lumia 1020
  - o Lumia 1520
- Olympus
  - o AIR A01
  - o C3030Z
  - o C5050Z
  - o C5060Z
  - o C7070WZ
  - o C70Z,C7000Z
  - o C740UZ
  - o C770UZ
  - o C8080WZ
  - o X200,D560Z,C350Z
  - o E-1
  - o E-3
  - o E-5
  - o E-10
  - o E-20
  - o E-30
  - o E-300
  - o E-330
  - o E-400
  - o E-410
  - o E-420
  - o E-450
  - o E-500
  - o E-510
  - o E-520
  - o E-600
  - o E-620
  - o E-P1
  - o E-P2
  - o E-P3
  - o E-P5

- o E-PL1
- o E-PL1s
- o E-PL2
- o E-PL3
- o E-PL5
- o E-PL6
- o E-PL7
- o E-PM1
- o E-PM2
- o E-M1
- o E-M10
- o E-M10 Mark II
- o E-M5
- o E-M5 Mark II
- o SP310
- o SP320
- o SP350
- o SP500UZ
- o SP510UZ
- o SP550UZ
- o SP560UZ
- o SP565UZ
- o SP570UZ
- o STYLUS1
- o STYLUS1s
- o SH-2
- o TG-4
- o XZ-1
- o XZ-2
- o XZ-10
- OmniVision OV5647 (Raspberry Pi)
- Panasonic
  - o DMC-CM1
  - o DMC-FZ8
  - o DMC-FZ18
  - o DMC-FZ28
  - o DMC-FZ30
  - o DMC-FZ35/FZ38
  - o DMC-FZ40
  - o DMC-FZ50
  - o DMC-FZ7
  - o DMC-FZ70
  - o DMC-FZ100
  - o DMC-FZ150
  - o DMC-FZ200
  - o DMC-FZ300/330

- o DMC-FZ1000
- o DMC-FX150
- o DMC-G1
- o DMC-G10
- o DMC-G2
- o DMC-G3
- o DMC-G5
- o DMC-G6
- o DMC-G7/G70
- o DMC-GF1
- o DMC-GF2
- o DMC-GF3
- o DMC-GF5
- o DMC-GF6
- o DMC-GF7
- o DMC-GH1
- o DMC-GH2
- o DMC-GH3
- o DMC-GH4
- o AG-GH4
- o DMC-GM1
- o DMC-GM1s
- o DMC-GM5
- o DMC-GX1
- o DMC-GX7
- o DMC-GX8
- o DMC-L1
- o DMC-L10
- o DMC-LC1
- o DMC-LX1
- o DMC-LF1
- o DMC-LX2
- o DMC-LX3
- o DMC-LX5
- o DMC-LX7
- o DMC-LX100
- o DMC-TZ60/61/SZ40
- o DMC-TZ70/71/ZS50
- Pentax
  - o *ist D
  - o *ist DL
  - o *ist DL2
  - o *ist DS
  - o *ist DS2
  - o GR
  - o K10D

- o K20D
- o K100D
- o K100D Super
- o K110D
- o K200D
- o K2000/K-m
- o K-x
- o K-r
- o K-01
- o K-3
- o K-3 II (std mode)
- o K-30
- o K-5
- o K-5 II
- o K-5 IIs
- o K-50
- o K-500
- o K-7
- o K-S1
- o K-S2
- o MX-1
- o Q
- o Q7
- o Q10
- o QS-1
- o Optio S
- o Optio S4
- o Optio 33WR
- o Optio 750Z
- o 645D
- o 645Z
- PhaseOne
  - o IQ140
  - o IQ160
  - o IQ180
  - o IQ250
  - o IQ260
  - o IQ260 Achromatic
  - o IQ280
  - o LightPhase
  - o Achromatic+
  - o H 10
  - o H 20
  - o H 25
  - o P 20
  - o P 20+

- o P 21
- o P 25
- o P 25+
- o P 30
- o P 30+
- o P 40+
- o P 45
- o P 45+
- o P 65
- o P 65+
- Photron BC2-HD
- Pixelink A782
- Polaroid x530 (embedded JPEG only)
- Ricoh
  - o GR
  - o GR Digital
  - o GR Digital II
  - o GR Digital III
  - o GR Digital IV
  - o GR II
  - o GX100
  - o GX200
  - o GXR MOUNT A12
  - o GXR MOUNT A16 24-85mm F3.5-5.5
  - o GXR, S10 24-72mm F2.5-4.4 VC
  - o GXR, GR A12 50mm F2.5 MACRO
  - o GXR, GR LENS A12 28mm F2.5
  - o GXR, GXR P10
- Rollei d530flex
- RoverShot 3320af
- SMaL
  - o Ultra-Pocket 3
  - o Ultra-Pocket 4
  - o Ultra-Pocket 5
- STV680 VGA
- SVS SVS625CL
- Samsung
  - o EX1
  - o EX2F
  - o GX-1L
  - o GX-1S
  - o GX10
  - o GX20
  - o Galaxy NX (EK-GN120)
  - o NX1
  - o NX5

- o NX10
- o NX11
- o NX100
- o NX1000
- o NX1100
- o NX20
- o NX200
- o NX210
- o NX2000
- o NX30
- o NX300
- o NX300M
- o NX3000
- o NX500
- o NX mini
- o Pro815
- o WB550
- o WB2000
- o S85 (hacked)
- o S850 (hacked)
- o Galaxy S3
- o Galaxy Nexus
- Sarnoff 4096x5440
- Seitz
  - o 6x17
  - o Roundshot D3
  - o Roundshot D2X
  - o Roundshot D2Xs
- Sigma (embedded JPEG only)
  - o SD9
  - o SD10
  - o SD14
  - o SD15
  - o SD1
  - o SD1 Merill
  - o DP1
  - o DP1 Merill
  - o DP1S
  - o DP1X
  - o DP2
  - o DP2 Merill
  - o DP2S
  - o DP2X
  - o DP3 Merill
  - o dp0 Quattro
  - o dp1 Quattro

- o dp2 Quattro
- o dp3 Quattro
- Sinar
  - o eMotion 22
  - o eMotion 54
  - o eSpirit 65
  - o eMotion 75
  - o eVolution 75
  - o 3072x2048
  - o 4080x4080
  - o 4080x5440
  - o STI format
  - o Sinarback 54
- Sony
  - o A7
  - o A7 II
  - o A7R
  - o A7R II
  - o A7S
  - o A7S II
  - o ILCA-77M2 (A77-II)
  - o ILCE-3000
  - o ILCE-5000
  - o ILCE-5100
  - o ILCE-6000
  - o ILCE-QX1
  - o DSC-F828
  - o DSC-R1
  - o DSC-RX1
  - o DSC-RX1R
  - o DSC-RX10
  - o DSC-RX10II
  - o DSC-RX100
  - o DSC-RX100II
  - o DSC-RX100III
  - o DSC-RX100IV
  - o DSC-V3
  - o DSLR-A100
  - o DSLR-A200
  - o DSLR-A230
  - o DSLR-A290
  - o DSLR-A300
  - o DSLR-A330
  - o DSLR-A350
  - o DSLR-A380
  - o DSLR-A390

- o DSLR-A450
- o DSLR-A500
- o DSLR-A550
- o DSLR-A560
- o DSLR-A580
- o DSLR-A700
- o DSLR-A850
- o DSLR-A900
- o NEX-3
- o NEX-3N
- o NEX-5
- o NEX-5N
- o NEX-5R
- o NEX-5T
- o NEX-6
- o NEX-7
- o NEX-C3
- o NEX-F3
- o NEX-VG20
- o NEX-VG30
- o NEX-VG900
- o SLT-A33
- o SLT-A35
- o SLT-A37
- o SLT-A55V
- o SLT-A57
- o SLT-A58
- o SLT-A65V
- o SLT-A77V
- o SLT-A99V
- o XCD-SX910CR
- o IMX135-mipi 13mp
- o IMX135-QCOM
- o IMX072-mipi
- ptGrey GRAS-50S5C

Copyrights and Acknowledgements

FastRawViewer uses Qt 5.3, LibRaw library, RawSpeed library, LibXML2 and LibJPEG-turbo libraries, and Microsoft Visual Studio 2010 runtime library.

All trademarks mentioned in this manual are the property of their owners.

LibRaw

LibRaw: raw images processing library

Copyright (C) 2008-2014 LibRaw LLC (http://www.libraw.org, info@libraw.org)

Qt 5.3

Copyright (C) 2014 Digia Plc and/or its subsidiary(-ies).
Contact: http://www.qt-project.org/legal

Qt library is used under the terms of GNU LESSER GENERAL PUBLIC LICENSE 2.1, see file LICENSE.LGPL in the FastRawViewer program directory.

Qt uses a number of freeware libraries; their list and copyrights are contained in file QT-Third-Party-Licenses.rtf LGPL in the FastRawViewer program directory.

RawSpeed library

RawSpeed - RAW file decoder.

Copyright (C) 2009 Klaus Post

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

LibJPEG-turbo

Copyright 2009 Pierre Ossman <ossman@cendio.se> for Cendio AB

Copyright 2010 D. R. Commander

Based on x86 SIMD extension for IJG JPEG library - version 1.02

Copyright (C) 1999-2006, MIYASAKA Masaru.

This software is provided 'as-is', without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of this software. Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be   appreciated but is not required.

2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.

3. This notice may not be removed or altered from any source distribution.

LibJPEG
The Independent JPEG Group's JPEG software

This distribution contains a release of the Independent JPEG Group's free JPEG software. You are welcome to redistribute this software and to use it for any purpose, subject to the conditions under LEGAL ISSUES, below.

This software is the work of Tom Lane, Guido Vollbeding, Philip Gladstone, Bill Allombert, Jim Boucher, Lee Crocker, Bob Friesenhahn, Ben Jackson, Julian Minguillon, Luis Ortiz, George Phillips, Davide Rossi, Ge' Weijers, and other members of the Independent JPEG Group.

IJG is not affiliated with the official ISO JPEG standards committee.

LibXML2
Copyright (C) 1998-2003 Daniel Veillard. All Rights Reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR

IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THEDANIEL VEILLARD BE

LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHERIN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of Daniel Veillard shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization from him.

MICROSOFT VISUAL C++ 2010 RUNTIME LIBRARIES

Copyright 2010 Microsoft Corp.

Microsoft runtime libraries are distributed under the terms described in file MSVC-Runtime-EULA.rtf in the FastRawViewer program directory.