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Digital Photography of Manuscript Pages: Tools, Procedures, & Workflow

The Hill Museum & Manuscript Library has developed tools and methods to allow for the safe and rapid digitization of manuscripts. This guide familiarizes the user with the tools used and provides guidelines for achieving an efficient workflow.



Copy photography setup showing camera, stand, book cradle and computer.

Most the equipment used in HMML's digitization process is standard photographic and computer gear. A few specialty items are also used to make the photography of books and manuscripts easier and more efficient.

Using The Book Cradle (U.S. Patent Pending)

The book cradle used by HMML is a simple, inexpensive device made of foam-board, fabric, and Velcro® material. It folds flat for shipping and is lightweight.



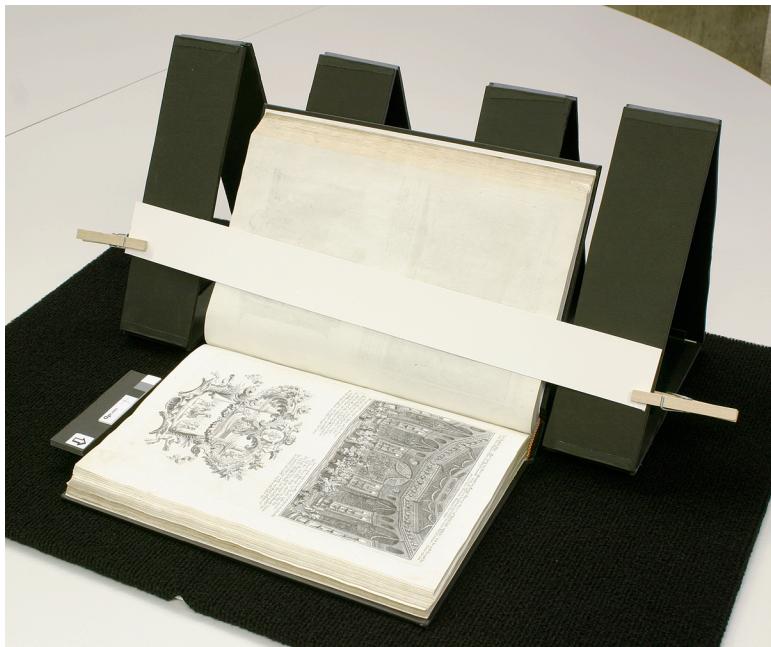
HMML book cradle folded up for shipment and transport

The use of Velcro® material on the foam-board pieces allows them to be configured as triangles of varying shapes. It also allows these triangles to “stick” to the special fabric covering the baseboard. To remove a triangle from the baseboard, simply rock it sideways and pull it free.

Because of the way it is designed, the cradle can be configured in any way needed to safely support a book to be photographed. The triangle pieces can be positioned anywhere on the baseboard and the angles can be adjusted to suit the photographic situation. Holding strips made of acid-free matte-board are used to hold the pages of a book open for photography. It isn’t necessary (and is undesirable) to apply clamps or clips to the books themselves.

The goal is to hold the book open for photography without straining the binding excessively and position it so that the camera can be perpendicular to the page, resulting in an image that is straight and undistorted.

For fine positioning of the image in-camera, the entire baseboard can be moved with the book in place.



Triangles and baseboard used to hold book for “straight-down” photography, as is the case when using a vertical copystand.



Cradle set up to allow the photography of pages at an angle. For tripod-mounted cameras, this might be an easier approach.

Calibration Strip, Ruler, and Hold-Down Devices

When photographing books, the user often wishes he or she had an extra pair of hands! Fortunately, a set of mechanical “helping hands” is supplied with each manuscript photography kit. This small device has mechanical joints that allow the arms to be positioned in a number of ways. Clear plastic tabs (supplied with kit) are held in the device’s “claws” and are used to hold down the edges of manuscript pages. These devices are great problem-solvers and can be adapted to perform other chores (see image above where calibration strip is being held by articulated arm).



Hold-down device, plastic tabs, calibration strip, ruler and “up” arrow

Supplied in each manuscript photography kit are several small color calibration strips containing three gray tone control patches and a short metric scale. The gray, white and black patches are used to adjust color balance settings in the camera and computer software to achieve proper color balance.

A small arrow symbol is also positioned near the manuscript to indicate the direction “up.” In selecting bunches of images for batch rotation using various computer applications, it’s nice to be able to instantly know which way is up on a page, especially if the manuscript is in non-Western script.

Finally, a small piece of paper placed next to the manuscript page indicates the manuscript number. This consists of the project code plus unique numeric identifier (consult the Canon 350D manual for an explanation of this)

These things need to be on every page image, positioned near but not touching the page and at a level to match the page (so that the calibration strip receives the same lighting as the manuscript page). Small black foam-board pieces are supplied to allow the user to get the items to the desired height. In other cases, the items can be placed on a small piece of matte-board and held with one of the small “helping hand” devices. If the items need to be held at an angle, double-stick tape can be used to fix these items in place.

The calibration strip is made from a commercial product called a “QP Card.” The actual product is rather large and would take up too much room in the photograph of a book page. Several small versions have been included in the photography kit; a full-sized card is included for the user to create their own small version if needed.

The QP card needs to be kept clean in order for the user to be able to achieve proper color balance using it as a guide. If the calibration strip becomes dirty, it can sometimes be cleaned with a soft eraser (included). If it’s too dirty to be of use, a new strip should be used.

Work Procedures and Image File Nomenclature

Standardized procedures have been established by HMML, allowing for efficient workflows. The photographer working on-site must make certain decisions as work progresses.

The proper naming of the image files is also critical. When files are named correctly, sorting the files by title will result in the manuscript or book being presented in the correct order.

Folio number, with recto and verso descriptors indicating which side of a folio is referred to, is the usual nomenclature for manuscript study. Printed books usually have page numbers. The filenames for images made from books versus manuscripts will have slightly different naming schemes because of this.

One Page at a Time or Two?

Many smaller manuscripts will lie flat on the cradle baseboard. If this can be done, a manuscript can be photographed in far less time than if the pages must be imaged as singles.

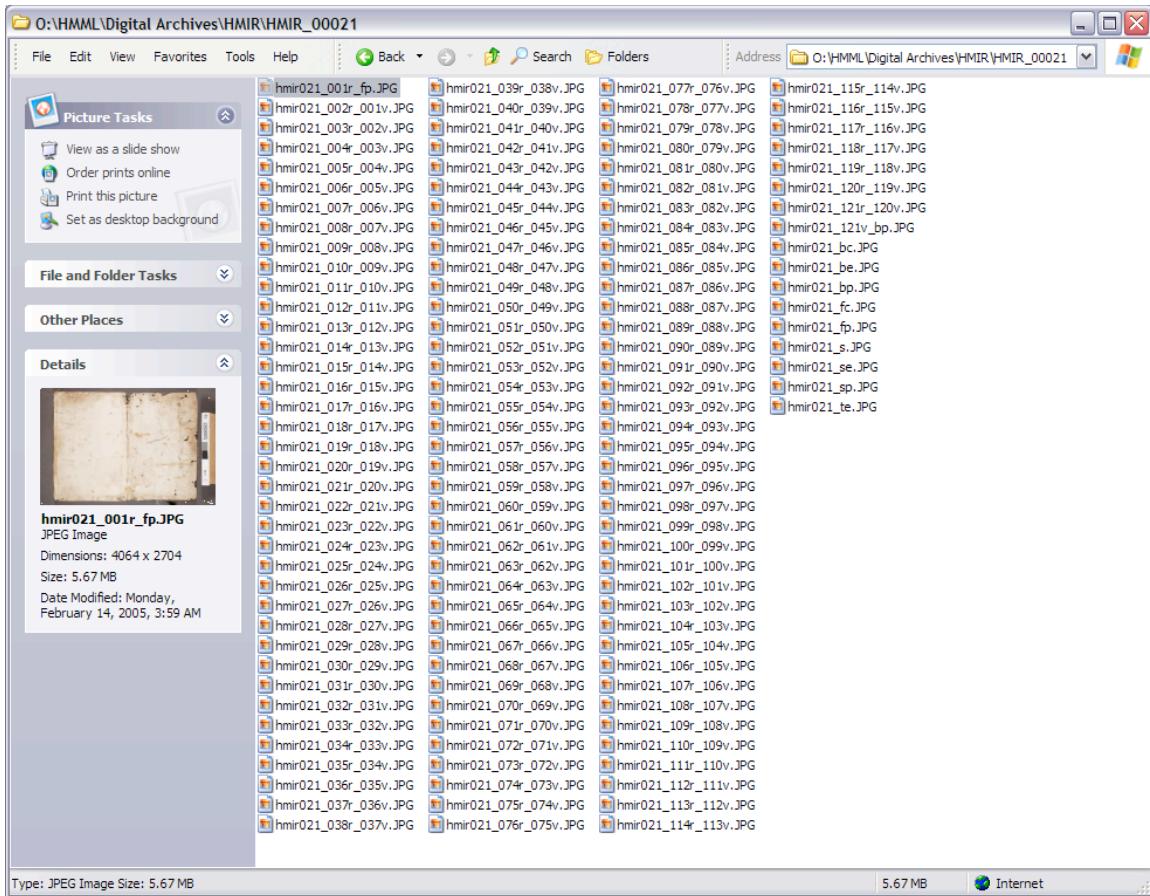


Photographing two pages at a time (two-page spread)

In the filenames for a manuscript imaged in two-page spreads, the proper listing of folios is important. In HMML's method, the rule is:

ProjectCode_manuscript number_folionumber(recto)_folionumber(verso).file type

The following directory listing shows a two-page manuscript with proper foliation.



Two-page manuscript image listing, sorted by title.

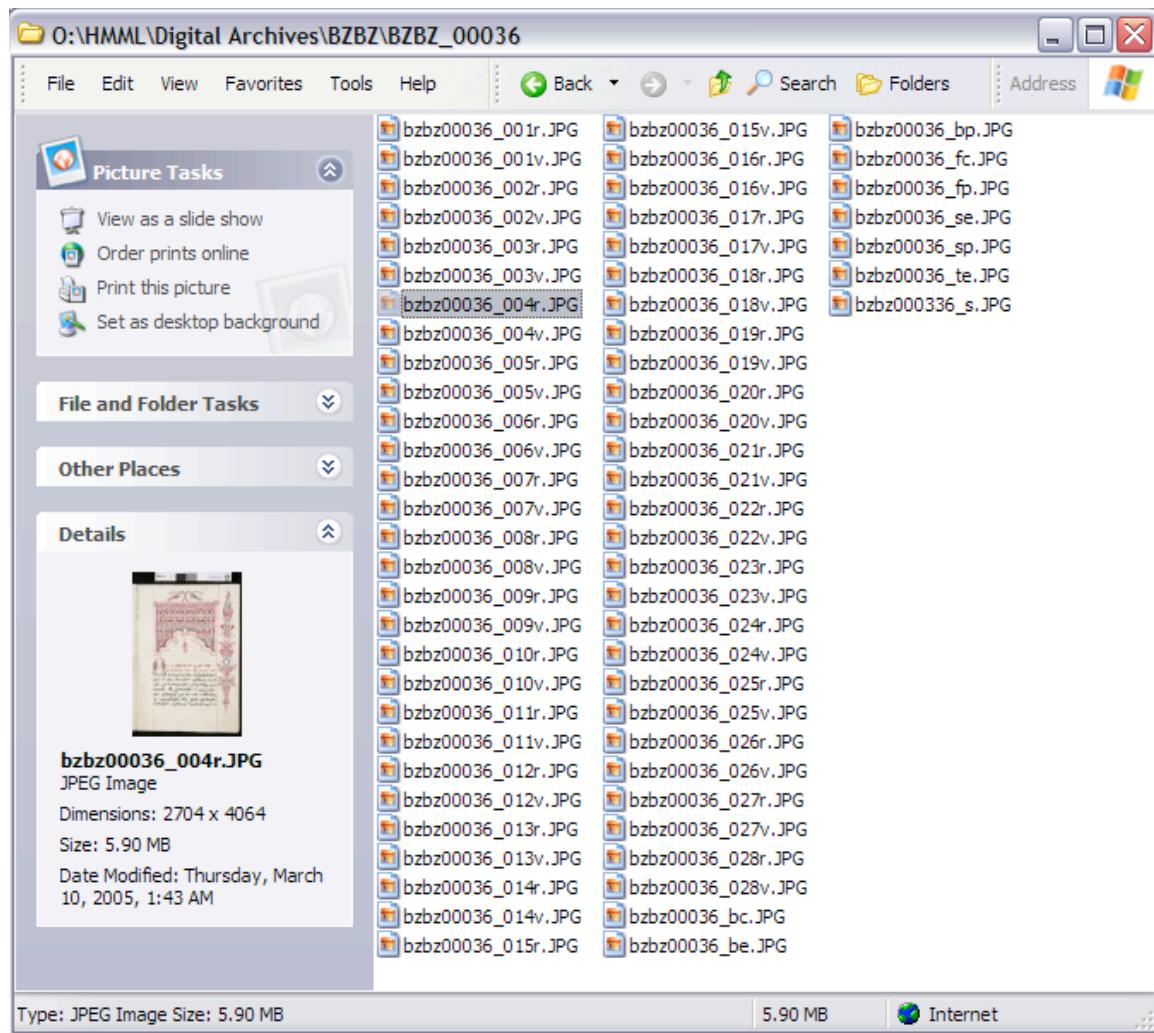
As long as the user makes sure that the “recto” folio number is listed before the “verso” folio number, both Western and Semitic manuscripts will foliate properly.

Books with tight bindings that cannot lie flat must be photographed using the HMML cradle. Large manuscripts (bigger than A4), even if they can lie flat, should be imaged as single pages to avoid the loss of detail that results from having the camera so far from the book.

Printed books that use page numbers instead of folios should have their file-naming scheme bases on page number instead of folio number with recto and verso descriptors.

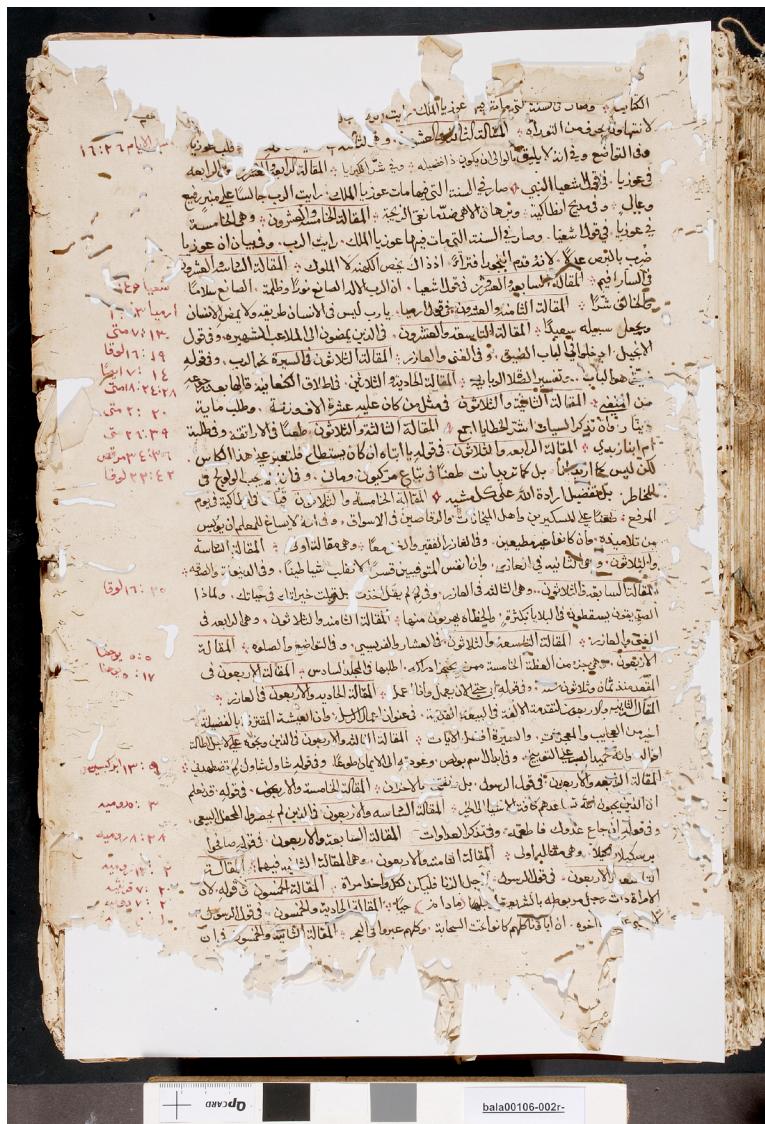


Single page in large-size manuscript



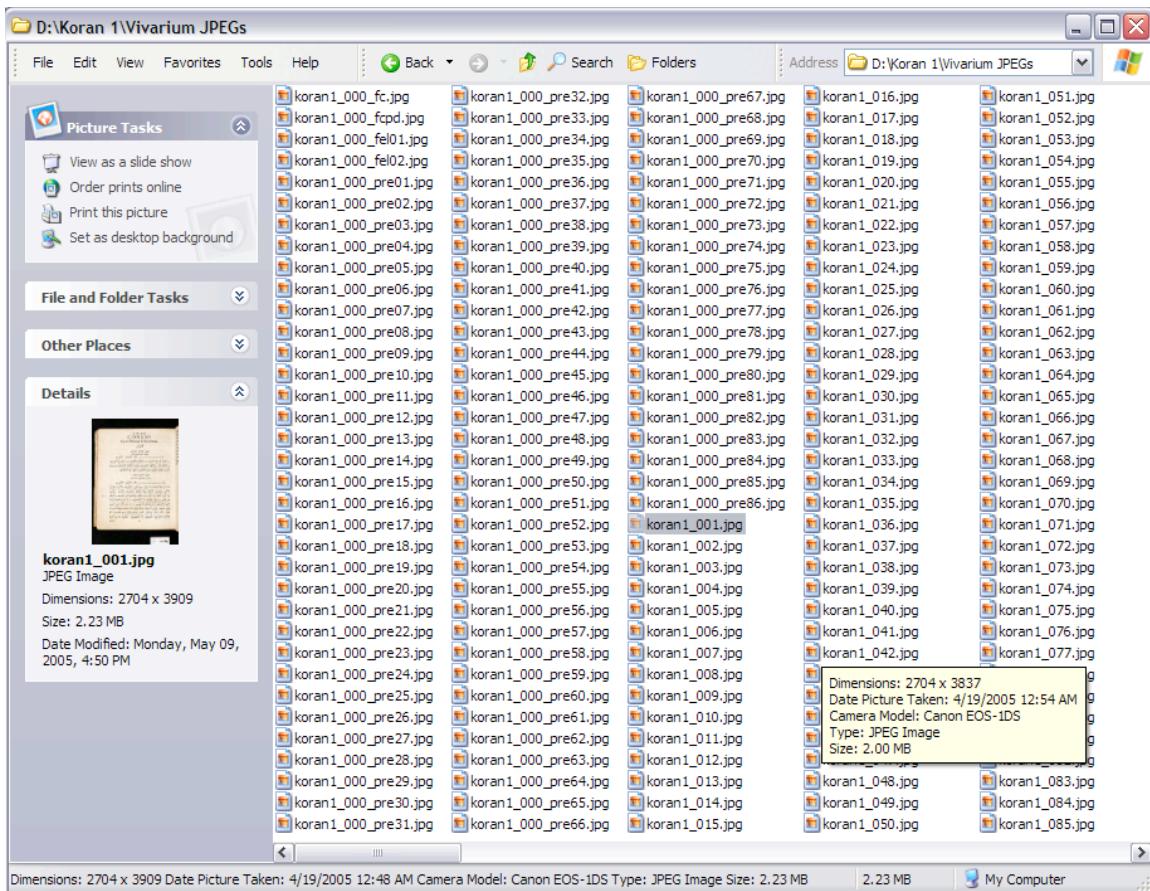
Example of page naming scheme for books imaged as single pages

Sometimes, a manuscript has tears, wormholes, or other page damage that can lead to a confusing situation where the reader can see through the holes in the page on top. If this is the case, slip a sheet of acid-free white paper behind the damaged page to make it less confusing.

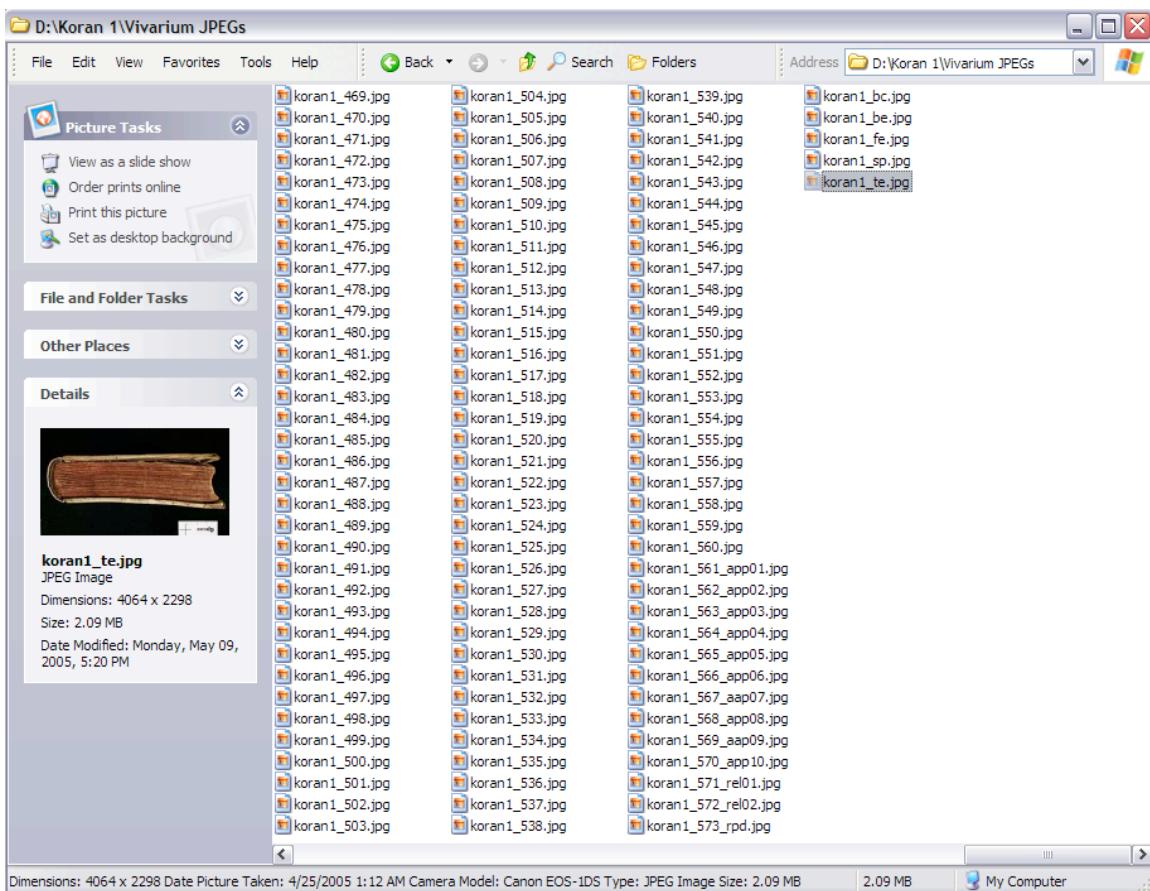


Paper used behind damaged manuscript page

Sometimes, a book or manuscript has pages that come before the “official” page one of the text. In some cases, a manuscript has had its folios numbers by a cataloguer; often these are lightly penciled in the corners of the folios. With printed books, there is often preface material that comes before the actual numbered text pages. The trick in naming these files is to work out a naming system that is true to the pagination of the book but still sorts properly on the computer. The following screenshots present the front and back of a printed book, showing the file naming convention.



File naming with preface material.



File naming with appendices.

In addition to the pages, the external aspects of manuscripts are also photographed by HMML. The following photo array depicts the range of pictures captured and the corresponding file-naming convention:



BO_USJ_00895_bc.JPG



BO_USJ_00895_be.JPG



BO_USJ_00895_bp.JPG



BO_USJ_00895_bp_062...



BO_USJ_00895_fc.JPG



BO_USJ_00895_fp.JPG



BO_USJ_00895_s.JPG



BO_USJ_00895_se.JPG



BO_USJ_00895_sp.JPG



BO_USJ_00895_te.JPG

Explanation of Codes:

- bc=back cover
- be=bottom edge
- bp=back pastedown
- fc=front cover
- fp=front pastedown
- se=side edge
- sp=spine
- te=top edge
- s=slate, the metadata sheet for the manuscript

Working Efficiently

Different photographers work in different ways and will find their best work methods as they proceed with the photographic work. There are some methods, however, that make things much easier and more efficient.

Manuscripts that are photographed as single pages are often photographed in “halves;” the photographer recording the recto pages first, then recording the verso pages. By doing this, the constant flipping of the book back and forth is avoided. The recto and verso image files are placed in separate computer folders. Then, the files have the appropriate letter (“r” or “v”) added to their names using a program called *Flash Renamer* (installed on the computer). After this, the recto and verso files can be placed in the same folder and should sort properly. A typical job might be handled like this:

- Set up cradle, find first page, begin photographing recto pages, placing them in a “recto” folder.
- Turn book around, set into cradle, find first page, photograph all verso pages, placing them in a “verso” folder.
- Photograph the covers, binding, spine, etc. Place these in a third folder.
- Use Flash Renamer to put proper letter behind names in the verso and recto folders.
- Manually add the special letter codes to the spine and cover shots.
- Put all the JPEG files in one folder.
- Put all the CR2 (Canon raw) files in another folder.

When recording DVD disks, it is often a good security idea to have the JPEG files and CR8 (raw) files recorded to different disks. In this way, if a DVD becomes damaged or corrupted, its counterpart can act as an insurance backup.

DVDs are not written on with any sort of pen, grease pencil, or felt-tip marker. Write the manuscript number(s) on the paper sleeve instead.

The Flash Renaming application is loaded on the laptop computer—the user should consult its “help files” for instructions on using it. Load the application (its icon is on the computer’s desktop) and press F1.