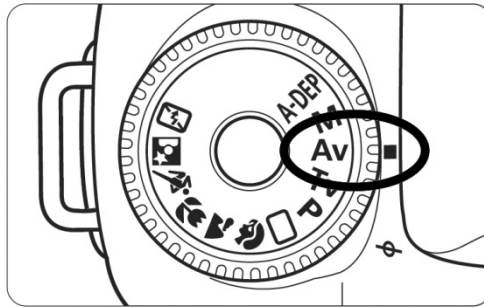


Paleobotany, Micropaleontology, & Mineralogy Collection Sam Noble Oklahoma Museum of Natural History

Photographing Overall Microfossil Slides Procedures

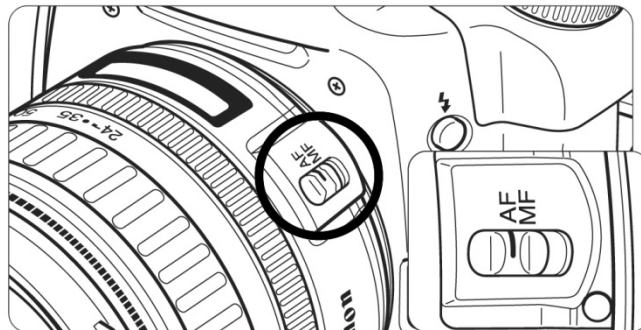
The following procedures are to help assist with making scans of the overall microfossil slides and thin sections (to document labels and overall condition, kind of microfossil slide, and a general idea of how many microfossils may be on each slide; not to show details of the microfossils on the slide); however, if you have any doubts, questions, or need further clarifications at any step, please consult the Collection Manager before proceeding.

1. Carefully gather the microfossil slides you are photographing.
[See “Storage & Retrieval of Microfossil Slides Procedures” for details.]
2. Double check to make sure that all screws on the copy stand are secure, especially those associated with lights.
3. Check, that appropriate lens & filter are attached.
Please, do not remove/change unless told to do so by Collection Manager.
4. Check that the camera mode is set to “Av” (on “top” of camera).



(Illustration of correct setting on camera)

5. Check that the focus is set to “AF” (on the side of the lens).



(Illustration of correct setting on lens)

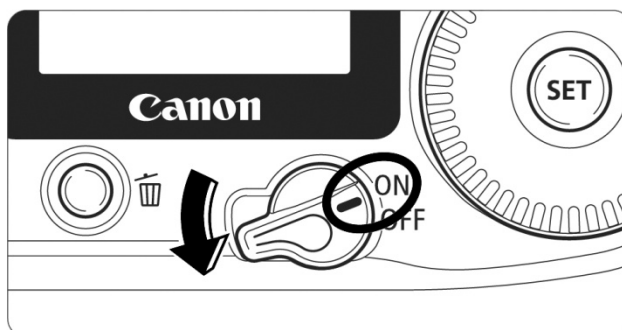
Paleobotany, Micropaleontology, & Mineralogy Collection Sam Noble Oklahoma Museum of Natural History Procedures
Photographing Overall Microfossil Slides Procedures

6. Check that the focus limiter switch on the lens is set to "FULL" (on the side of the lens).



(Illustration of correct setting on lens)

7. Log onto computer using assigned account on the computer with the camera attached.
8. Turn the camera on (on back of camera).



(Illustration of correct setting on camera)

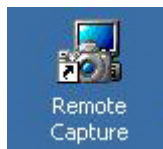
9. Cancel the window that pops up automatically when computer detects camera.



(Section of screenshot of window popped up on SNOMNH computer)

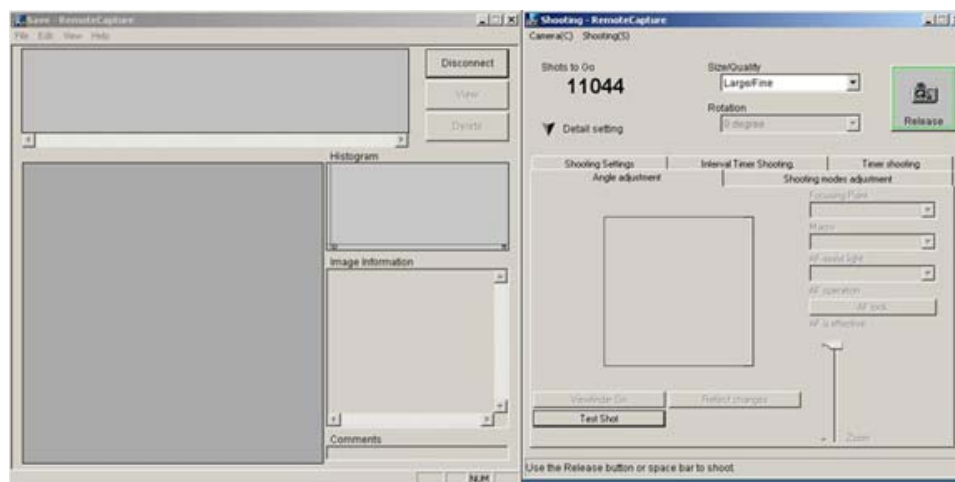
Photographing Overall Microfossil Slides Procedures

10. Start Canon Remote Capture Program by double-clicking on the icon.



(Section of screenshot of Remote Capture Icon on desktop @ SNOMNH)

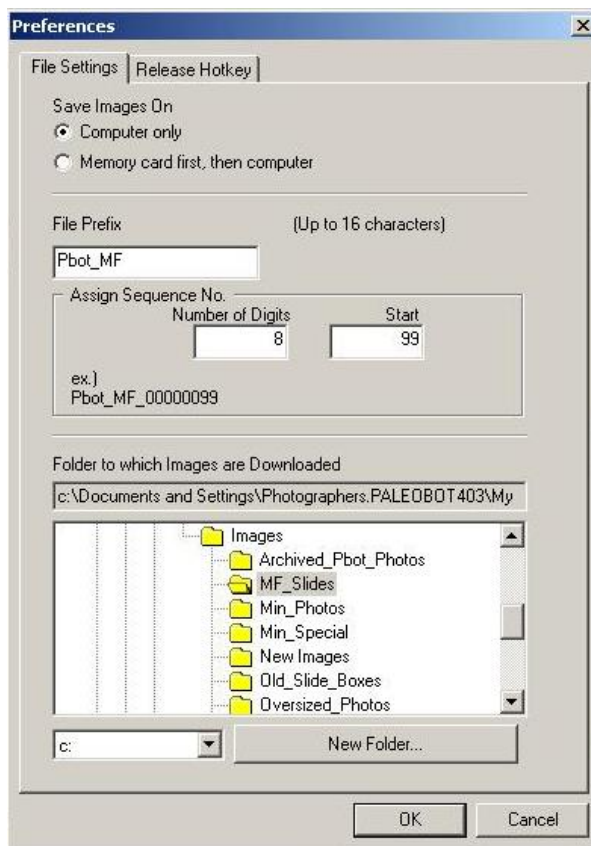
11. Connect to the Camera by selecting the connect button. The program should open and look something like:



(Section of screenshot of Remote Capture program opened on SNOMNH computer)

Photographing Overall Microfossil Slides Procedures

12. Under the File menu, select Preferences. When window opens, check that preferences are set correctly.
- Check to make sure that the File Prefix is “Pbot_MF.”
 - Check to make sure that the Folder to save files in is “MF_Slides.”
 - Select OK once settings correct.



(Section of screenshot of Remote Capture preferences on SNOMNH computer)

Photographing Overall Microfossil Slides Procedures

13. Prepare the background.
 - Use gray fabric.
 - Eliminate dirt/dust/debris/lint from fabric using vacuum on a “low” setting (if it shows signs of wear flip over or replace and let collection manager know).
 - Place gray fabric in middle third of the copy stand (helps avoid having fabric edges visible in picture and allows the autofocus to focus correctly).
 - Make sure the fabric is free from wrinkles.
 - Make sure the fabric is at least 4 inches beyond footprint of where tray will be placed.

14. Prepare the specimens to be photographed (double check labels are all facing same way & that microfossil slides are not double stacked in tray).
 - Check Photo Checklist to make sure microfossil slides have not already been photographed.
 - **Do not clear any dust/debris off the specimens unless told otherwise by Collection Manager or Curator.**

15. Place the microfossil tray onto background on the copy stand along with the SNOMNH Standard 2 cm Scale Bar in the lower left corner.
 - Orient the tray:
 - To fill the frame place long side of tray parallel to front of copy stand
 - Align tray parallel to lens of camera. This entire tray to be in focus at once.
 - Insure that tray is level.
 - Make sure to keep the background smooth.
 - ➔ **Keep fabric clean and wrinkle free.**
 - ➔ Make sure background has little visible dust (**gently brush to eliminate dust/debris, do NOT use the blower**).
 - ➔ **Make sure to portrait-orient the photo.**
 - ➔ Make sure frame is filled as completely as possible with the tray.



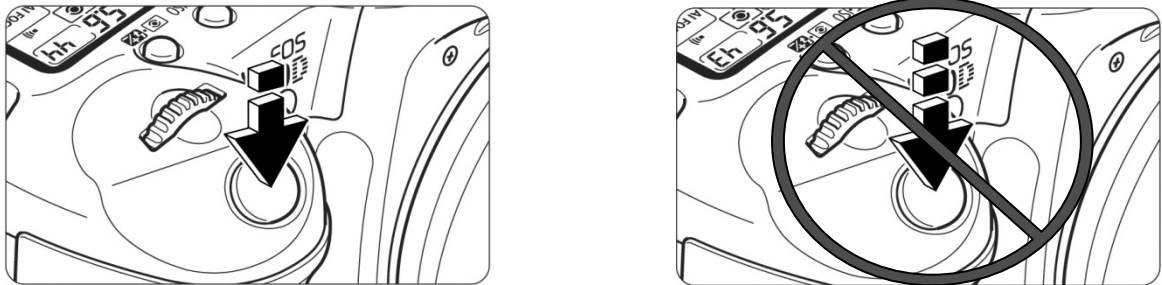
(Example of a properly aligned/setup and framed tray)

Photographing Overall Microfossil Slides Procedures

16. Focus the camera and the side view/extension tube.

Remember that multiple users adjust the camera and that the extension tube has a separate focus from the camera. Make sure camera is in focus and not just the extension tube. Once you focus the extension tube, unless bumped, it will be in focus for that photographing session.

- Press the shutter button down halfway (all the way takes the picture).

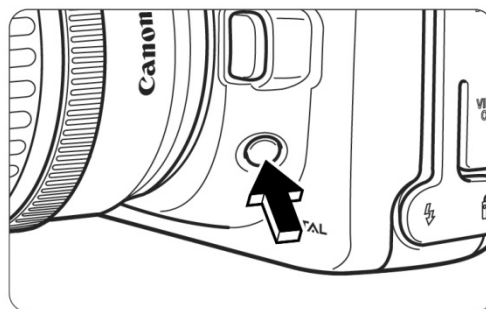


(Illustration of button push on camera needed for focusing)

- Look through the extension tube and adjust the focus wheel.

17. Frame and focus the tray.

- Make sure lock on copy stand (on the left of the column) is unlocked. Then, move the camera (up or down) using the height adjustment knob on the right of the column.
- Check focus by pressing the shutter button down halfway.
- While looking through the viewfinder, the depth-of-field preview button may be pressed to see the range of focus in the viewfinder. (The boxes that light up indicate where it is in focus.)



(Illustration of button push for depth-of-field preview)

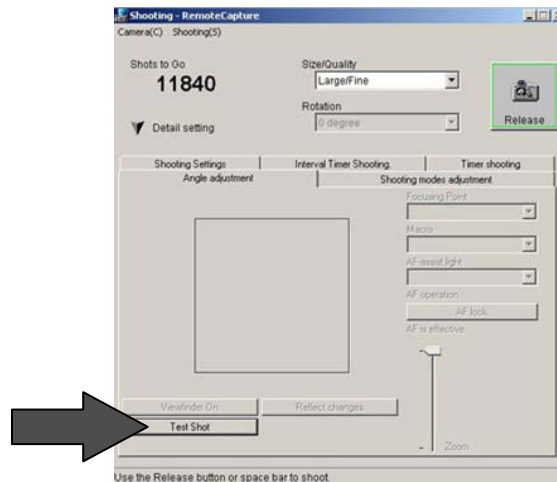
Moving the camera will change both the image size and the focus; you will need to refocus each time you move the camera especially if you use the crank on the copy stand.

- Make sure microfossil slides and labels are in focus.

Photographing Overall Microfossil Slides Procedures

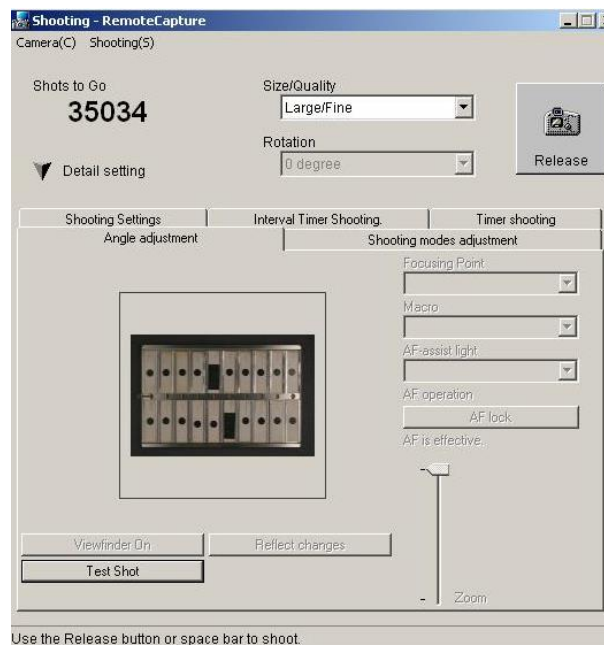
18. Take a test shot to check placement at this point, especially since the image taken by the camera is slightly larger than that seen through the viewfinder (if possible, with lights off even if it is dark).

- Click “Test Shot” button in computer interface.



(Section of screenshot of Remote Capture program indicating Test Shot Button on SNOMNH computer)

- ➔ Use test shots with caution, what you see in thumbnail-sized test shot is just a reasonable approximation, not what the final picture looks like.
- Test shots are not large enough to see details.
 - Gray fabric often looks like wavy lines, even when it has no wrinkles.
 - Will generally show if tray positioned correctly.



(Section of screenshot of Remote Capture program showing Test Shot preview on SNOMNH computer)

Photographing Overall Microfossil Slides Procedures

19. Arrange/ Adjust the lighting using the lights attached to the copy stand.

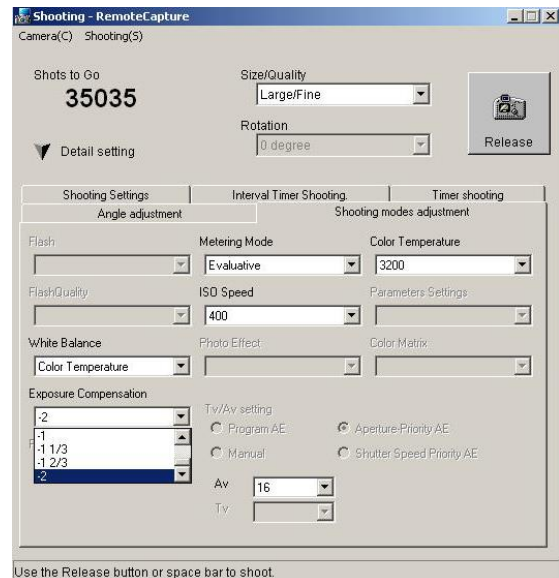
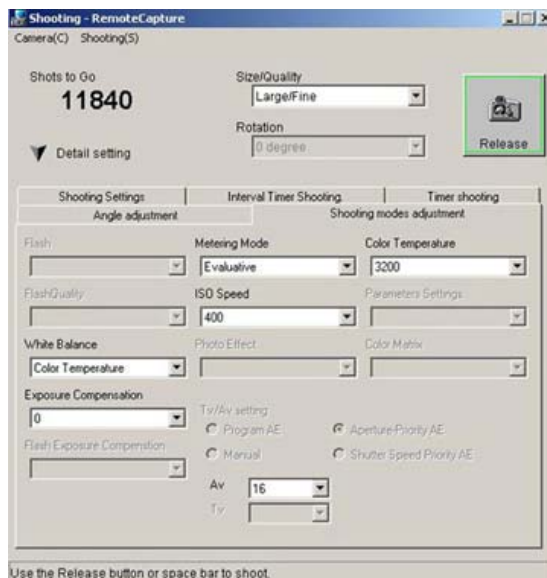
Only adjust/move lights when they are turned off. Use care when adjusting the lights, as **lights heat up quickly and reach 3200° K or 5300° F!!!** In addition, moving a lit photoflood light bulb increases filament breakage/bulb replacement.

Lighting direction and obliquity should be determined and adjusted for every photograph of every tray though if you have already taken a tray *adjustments MAY be minor*. Ideally, lighting should show as much detail as possible, have well-illuminated microfossils and labels, but look natural, and true to what you see without the camera. Check that illumination is even, details are maximized, deep shadows are filled, and there is no glare from the lights. **Using all 4 sides of the “light box” setup will tremendously aid one in obtaining correct lighting of the specimens.**

Use the following standards to set up the lights and then adjust as needed for the best results, which takes practice:

- Main/primary light set to the upper left at a high angle creating a “harsh shadow.”
 - ➔ Note that light falling on a specimen from near the camera lens causes glare and “cooks” the camera.
- One or more fill lights illuminate the shadows of main without creating a second harsh shadow or glare.
 - ➔ Usually fill light is on right side at a low angle, although it can come from any and all other directions.
 - ➔ Usually more diffuse and less intense, causing shadows to appear more soft than sharp.
 - ➔ Used to bring out the details in the label and bring out subtleties in definition of specimens on slide.
- Goal to achieve correct balance is to keep it subtle, as less severe lighting shows more detail while still preserving an acceptable impression of depth. Therefore, watch out for reflections that are so intense as to appear a featureless white in the final image or portions of the specimen unnecessarily placed in total darkness.
- **Make sure to tighten screws on lights and copy stand arms when done; you do not want a hot light to shift and you, without thinking, reach out to catch it.**

20. If necessary, adjust Exposure Compensation



(Section of screenshot of Remote Capture program indicating Exposure Compensation on SNOMNH computer, left set to 0 & right set to -2)

21. Turn on photo lights.

- To see where problem spots are coming from:
 - ➔ Turn each spotlight off and back on or partially block each spotlight with your hand. **(Make sure you do not touch lit bulb or lamp!)**
- To fix problem spots:
 - ➔ Spread out the lighting angle.
 - ➔ Diffuse glare or light by placing additional diffusing material between the light source(s) and tray. **Diffusing material should never touch the bulb or reflector due to flammability and melting concerns.** *Additionally, diffusing material must remain well outside the field of view. That is why the PVC support structure exists.*

22. Make a test shot (from the computer screen "Test Shot" button) to see if shutter speed/lighting needs to be adjusted.

- While test shots should be used with caution, lighting is accurate

23. Turn off lights, and recompose or adjust copy stand height. (While an extra step and more wear on the filament, turning off lights avoids burns and keeps temperature down – as you do not want to cook yourself, camera, or specimen.)

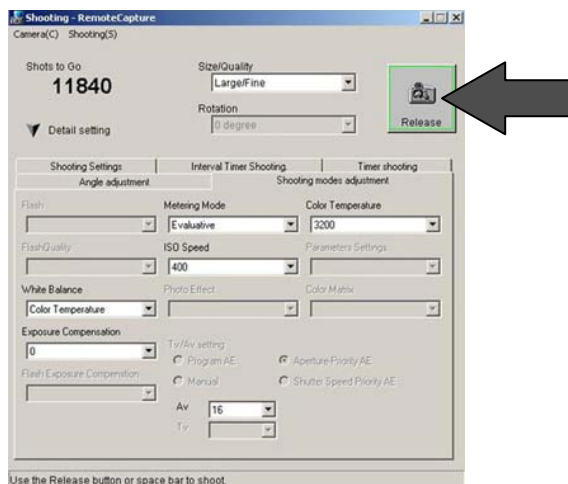
24. Turn on lights again.

Photographing Overall Microfossil Slides Procedures

25. Take another test shot.
- Check one last time to make sure that:
 - ✓ Entire tray is showing
 - ✓ Edge of the gray fabric background not showing
 - ✓ Tray takes up most of frame
 - ✓ Frame is portrait oriented
 - ✓ 2 cm scale bar in lower left corner
 - ✓ Illumination is even
 - ✓ Microfossil slide(s) and label(s) are in focus
 - ✓ All cords, diffusing material, hands, etc. are not in frame or touching the lights
 - ✓ Lights are not too close to the table

Even tiny adjustments can have profound effects on the visibility of individual fossils, surface features, and reflections.

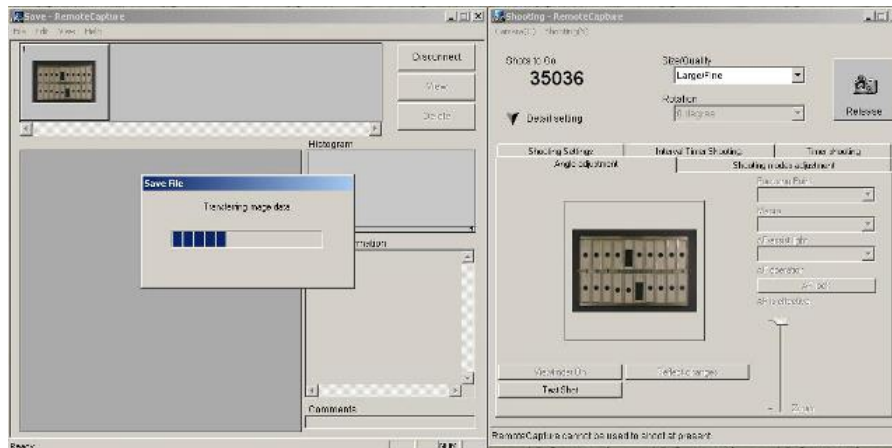
26. Step away from the camera and copy stand, and make sure no part of your body is touching the copy stand or its support.
27. Click the “Release” button (on the computer screen) or press the space bar to take a photograph.



(Section of screenshot of Remote Capture program indicating Release Button on SNOMNH computer)

Photographing Overall Microfossil Slides Procedures

- 28. As the “transferring” message appears turn off lights. (While an extra step and more wear on the filament, turning off lights avoids burns and keeps temperature down – as you do not want to cook yourself, camera, specimen, or table.)



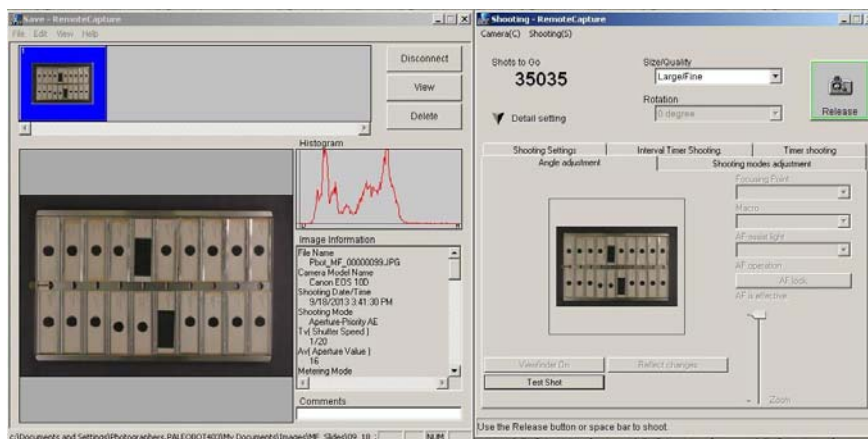
(Section of screenshot of Remote Capture program indicating transferring occurring on SNOMNH computer)

Photographing Overall Microfossil Slides Procedures

29. **Check the photograph that was taken and that the entire image transferred.**

Once the picture is displayed check the full image to see that image turned out as you expected before you move on to the next picture. At this point if the photo taken was not what you expected, you can delete the image and retake the same photo with the appropriate alignment of tray, adjusting microfossil slides, no wrinkles, fingers, etc. Using the delete button in the Remote Capture screen should allow a retake of the same file name (the photo number should not skip). **However, if the file numbers show a skip in numbers, talk to the collection manager immediately.**

Check to make sure that the next file number is the next one in sequence from the previous photo number by comparing it with the previous entry in the Microfossil Slide Photo Log to make sure you know what next number should be.



(Section of screenshot of Remote Capture program indicating transferring complete on SNOMNH computer)

Photographing Overall Microfossil Slides Procedures

30. After adding the comments to the saved image, enter the required information in the Microfossil Slide Photo Log (see example on next page).

In order for the digital images or photographs to be of value, an official Microfossil Slide Photo Log will be filled out legibly & completely with careful annotations.

- In the "Digital Image Filename" column, is where the filename for each individual slide is recorded. Record the complete digital image filename. Pbot_MF_00000001.jpg, Pbot_MF_00000002.jpg, etc.
- In the "OPC Specimen Number" column, is where the specimen number for each specimen is recorded. Record the specimen number without commas, do not record an 8 digit number like from Cardstock Specimen Numbers (e.g. 1...10...100...1000...10000...).
- In the "Photo of" column, circle the appropriate term (specimen, close-up, label) for what the photograph represents.
- In Orientation Number record the number of the orientation taken (usually a "1").
- In the Identification column, record any identification (taxonomic classification/name as reported on specimen label -genus, species, etc.). If none or faunal slide, then record "No ID".
- In the storage location column, record the correct cabinet number, tray number, & slot number in the appropriate boxes (*please always use pencil for this column*).
- In the "Photographer(s) Initials" column, enter your initials. Please include first, middle, and last (e.g. MLL, RAL, BAR) in caps.
- In the special settings column, record any special settings that differed from normal (**only pre-approved & accepted**).
The Special Settings Chart in front of the Microfossil Slide Photo Log lists the pre-approved and accepted special settings and their photo log abbreviations. Any setting not in these lists is not to be used without consulting the collection manager (or curator) and receiving approval and accepted abbreviation. (It is recommended that first use be initialized by approver as well).
- Under "Additional Notes" column, enter any notable issues, concerns, or other information about the image (examples: lose specimens, cracked glass, faunal, slide, retake <include prior photo number>).
- Make sure date image taken is filled in on top of page.
- Make sure the appropriate page number is entered.

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Photographing Overall Microfossil Slides Procedures

Photo Log — SNOMNH Paleobotany & Micropaleontology - Microfossil Slides

Date: 01/07/2013
(mm/dd/yyyy)

Digital Image Filename	OPC Specimen Number (numbers following dash)	Photo of (Circle one)	Orientation Number	Identification (whatever specified or No ID) (prefer genus species, but any taxonomical)	Storage Location			Photographer(s) Initials	Special Settings (approved abbreviations)	Additional Notes
					Cabinet Number	Tray Number	Slot Number			
OPC_00012345 .jpg	12345	<input checked="" type="radio"/> Specimen <input type="radio"/> Closeup <input type="radio"/> Label	1	No ID	1	1	3	MLL & JLA		smaged label
OPC_00012346 .jpg	12346	<input checked="" type="radio"/> Specimen <input type="radio"/> Closeup <input type="radio"/> Label	1	<i>Dizygopleura landesi</i> Roth	1	1	5	MLL & JLA		
OPC_00023457 .jpg	23457	<input checked="" type="radio"/> Specimen <input type="radio"/> Closeup <input type="radio"/> Label	1	<i>Amphissella</i> sp.	10	8	20	MLL		
OPC_00034589 .jpg	34589	<input checked="" type="radio"/> Specimen <input type="radio"/> Closeup <input type="radio"/> Label	1	<i>Bairdiocypris</i> sp.	6	20	8	MLL		
OPC_00034618 .jpg	34618	<input checked="" type="radio"/> Specimen <input type="radio"/> Closeup <input type="radio"/> Label	1	No ID	6	20	19	MLL		faunal slide
OPC_00045689 .jpg	45689	<input checked="" type="radio"/> Specimen <input type="radio"/> Closeup <input type="radio"/> Label	1	<i>Bairdiocypris profusa</i> Lundin	4	5	17	MLL		type
OPC_00056891 .jpg	56891	<input checked="" type="radio"/> Specimen <input type="radio"/> Closeup <input type="radio"/> Label	1	<i>Ehlersia</i> sp.	7	4	12	JLA		
OPC_00078912 .jpg	78912	<input checked="" type="radio"/> Specimen <input type="radio"/> Closeup <input type="radio"/> Label	1	No ID	3	3	3	JLA		faunal slide
OPC_00078913 .jpg	78913	<input checked="" type="radio"/> Specimen <input type="radio"/> Closeup <input type="radio"/> Label	1	<i>Rothella recta</i> (Roth)	3	3	4	JLA		
OPC_00078922 .jpg	78922	<input checked="" type="radio"/> Specimen <input type="radio"/> Closeup <input type="radio"/> Label	1	<i>Rothella recta</i> (Roth)	3	3	14	JLA		

Page: 25

(Example of a filled out SNOMNH Microfossil Slide Photo Log Page)

Note examples do not reflect actual specimens and storage locations but instead illustrate some possibilities on how Microfossil Slide Photo Log would need to be filled out.

[Additional pages can be printed on legal paper from SNOMNH_Slide_Log.pdf or SNOMNH_Photo_Slides_MF_Slides_Log.xlsx]

Photographing Overall Microfossil Slides Procedures

31. Record the information about the scan that was just taken in the Photo Checklist (as it is more of imaging checklist and it helps avoid duplicate specimen numbers being used in imaging). (See Example on next page)

As an aid in determining if a specimen has been photographed, a numerical order list of assigned specimen numbers is maintained. If the checklist indicates that the specimen has already been photographed, then check the Photo Log for location and name of the digital photograph and look at image to make sure it is really the same specimen. **If it is not the same specimen notify the collection manger immediately!**

- Find the appropriate page for the OPC Specimen number that was photographed. If one does not exist create one from the blank checklist pages.
- No subsample exists, so put a dash “-”.
- In the Specimen Photographed column place a checkmark in the appropriate column.
→ “MF Slide” in other-specify column.
- In the date photographed column, record date photograph taken as mm/dd/yyyy.
- In the “Notes” column, record any other useful observations or problems (examples: lose specimens, cracked glass, faunal, slide, retake, etc.)

Photographing Overall Microfossil Slides Procedures

Photo Checklist – SNOMNH Paleobotany & Micropaleontology

OPC Specimen Number	Subsample Letter (1 letter/line) (no letter = dash)	Specimen Photographed (checkmark if yes)			Date Photographed (mm/dd/yyyy) (1 date/line)	Notes Useful Observations or Problems (No Abbreviations)
		Obverse	Reverse	Other - specify		
1230	-	✓	✓		08/26/2006	
	A	✓	✓		08/26/2006	
	B	✓	✓		08/26/2006	
1231						
1232	-	✓	✓		12/14/2012	part to 2345
1233						
1234	-	✓	✓		12/14/2012	2 cm
1235	-			✓ MF slide	11/02/2010	
1236						
1237	-			✓ MF slide	12/14/2012	
1238						
1239						

(Example of a filled out "SNOMNH Photo Checklist Page")

Note examples do not reflect actual specimens photographed but instead illustrate some possibilities on how list would need to be filled out.

[Additional pages can be printed on legal paper from SNOMNH_Photo_Checklist.pdf or SNOMNH_Checklist.xls]

Photographing Overall Microfossil Slides Procedures

32. After the tray has been photographed and recorded in the Microfossil Slide Photo Log & Photo Checklist, return the tray of microfossil slides you were photographing to storage.

[See "Storage & Retrieval of Microfossil Slides Procedures" for details.]