

Photography in the Field: Faux Pas to Phenomenal

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Introduction

Pictures of scientists and instruments “at work” in the field go a long way in helping to communicate the progress of research sponsored by the Atmospheric Radiation Measurement (ARM) Program. While any photo is usually better than none, knowing what to look for while composing your picture will help you move from taking “okay” pictures to taking publication-quality photos. This paper discusses the various techniques to progress from photo faux pas to taking effective, professional photographs.

Things You Can and Can't Control

Conditions

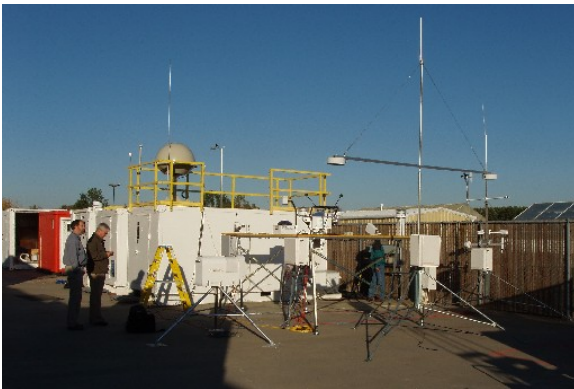


Figure 1. Too much contrast.

When taking photographs, there are certain conditions to keep in mind. These include proper lighting, weather conditions, and even the location where the photo is to be taken. While you can't control the weather, or where your subject is located, you may be able to take advantage of lighting conditions for optimal results.



Figure 2. Even lighting.

A bright sunny day may be nice for a picnic, but not for taking pictures. This is mainly due to the dark shadows that result, particularly in the morning, late afternoon, and evening. In general, the optimal conditions for technical photography are light overcast skies, which block the direct sunlight and virtually eliminate dark, distracting shadows. Figure 1 is an example of too much contrast resulting from a cloudless sky. Figure 2 is a photo of the same subject, but on a day with some cloud cover that provides nice, even lighting. If the weather is not cooperating or if there is too much or too little sunlight, pictures may have too much (See Figure 1) or not enough contrast (see Figure 3).

For more dramatic images, shadows and dark contrast can provide interesting nuances to the photo. However, the line between a dramatic photo and one that ceases to communicate the subject should not be crossed lightly. A striking image is interesting only to the point that the viewer can appreciate the subject. Figure 3 is an example of a subject obscured by darkness; the sunset is very nice, but what is that thing in the foreground? Figure 4 is the same subject photographed a few moments later, but with a flash used to “fill” in the foreground with light. The dramatic lighting is still apparent, but the additional fill light greatly enhances the viewer’s ability to appreciate the subject of the photograph.

Composition

Composition is one of the most important and time consuming elements of photography. It involves knowing your subject, the angle of your photo, background features, and—in this age of digital media—the quality (resolution) of your camera settings.

Some of the best photographs suffer from the “oops” factor—everything about the image looks great, but a fatal flaw is obvious to an informed observer. In most cases, the photographer isn’t the expert on the subject of the photo. However, care should be taken to ensure the subject is captured appropriately for the audience. Figure 5 is a beautiful picture; but the instrument happens to be turned off, as indicated by the position of the downward facing arm. To communicate the appropriate message, people and instruments should be shown “working” rather than just “standing around” if at all possible. Figure 6 is a better picture of the same instrument in Figure 5, but in operational mode.



Figure 3. Not enough light.



Figure 4. Fill light to enhance subject.



Figure 5. Equipment is turned off.



Figure 6. Equipment is operating.

In addition, effective field photos call for natural settings and poses. Unless the goal is a publicity photo or “mug shot” (just head and shoulders), subjects should not be posed or smiling at the camera, as in Figure 7. Instead, photograph researchers as they are conducting their work or demonstrating how instruments are used, as in Figure 8. Great field photos show their subjects engaged or absorbed in what they are doing, and as a result, subjects will have a more natural, relaxed facial expression, and it keeps their eyes off the camera!

Good composition also takes into consideration elements other than the subject of the photograph. Extraneous equipment, such as ladders and chairs, can create clutter and detract attention from the subject of the photo. When composing (or “framing”) the shot, the photographer should consider items in the background and foreground around the subject, as shown in Figure 9. Look for a background that has clean, simple lines that showcases the subject or draws the eye to the important aspects of the photo, as in Figure 10. Aiming the camera from a different angle is sometimes all that is necessary to eliminate unwanted elements from the photo. Also, consider whether a better shot will be taken by moving closer or further away to the subject or by off-centering (avoiding dead center) the subject.



Figure 7. Posing is discouraged.



Figure 8. Show people working.



Figure 9. Extraneous equipment in the background.



Figure 10. Good example of composition.

And lastly, digital photos should be taken at a high resolution (300 dpi, 4 megapixels or better). If using traditional film, i.e., negatives, be sure to scan the photo at 300 dpi. Take the time to become familiar with the camera; read the manual if it is available. Today's cameras offer a wide range of settings and features previously unavailable. High quality photographs offer more options for use by ARM researchers and communications staff in ARM publications. The size of an original can be easily reduced, but it can't be increased without losing quality.

Awareness and Screening

Social

Other considerations to keep in mind when framing a picture include political correctness and unflattering angles. While "social" photographs, such as Figure 11, are acceptable for specific uses, these types of photos should be screened carefully, depending on the product and intended audience.

Also, try to avoid angles that lead to awkward positions that someone may be uncomfortable with or that obscure the subject of the photo, as in Figure 12. Instead, try to frame your photos so that they show everyone's faces, as in Figure 13.



Figure 11. Screen social situations carefully.



Figure 12. Avoid the back.



Figure 13. Show faces.

Another consideration in taking and selecting research photographs is the mix of maturity, gender, and culture. The ARM Program involves scientists and engineers from around the world in various levels of expertise, from graduate students to world-renowned subject matter experts. As shown in Figure 14, a good mix of people will help to represent the depth and diversity of the ARM Program.



Figure 14. Look for diversity.

Safety

Make sure photos are taken with safety in mind. Be aware of situations that present a potential safety violation, or a perceived violation. Ensure that everyone in your picture is safe and using the appropriate safety equipment (see Figures 15 and 16).



Figure 15. Even perceived safety is important.



Figure 16. Take proper precautions.

Conclusion

Knowing how to take effective photos can help contribute to the communication of your research. We encourage all ARM team members to submit their images, videos, and presentations for inclusion in the ARM Image Library. The ARM Image Library is a valuable and useful resource for all members of the ARM Program as well as the broader scientific community.

Images can be submitted to the ARM image library at <http://images.arm.gov> or sent directly to Lynne Roeder (lynne.roeder@pnl.gov) or Rolanda Jundt (rolanda.jundt@pnl.gov). Hard copy photographs are

also welcome. Please mail them to ARM Climate Research Facility Technical Coordination Office, Pacific Northwest National Laboratory, PO Box 999, MS K9-38, Richland, Washington 99352.

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Recommended Resources

Books

How to Take Good Pictures, Revised Edition, by Kodak
Absolute Beginner's Guide to Taking Great Photos, by Jim Miotke
Photography for Dummies, Second Edition, by Russell Hart
Take Great Pictures: A Simple Guide, by Lou Jacobs, Jr.
Digital Photography Hacks, by Derrick Story
Digital Photography Pocket Guide, 2nd Edition (O'Reilly Digital Studio), by Derrick Story
Digital Photography: Top 100 Simplified Tips & Tricks, by Gregory Georges

Websites

[HP Digital Photography, Photography made easy](#)
[Taking Great Pictures](#) from Kodak, includes interactive demos
[Nikon Education Series](#)
[Adobe Digital Kids Club](#), includes lessons and activities