

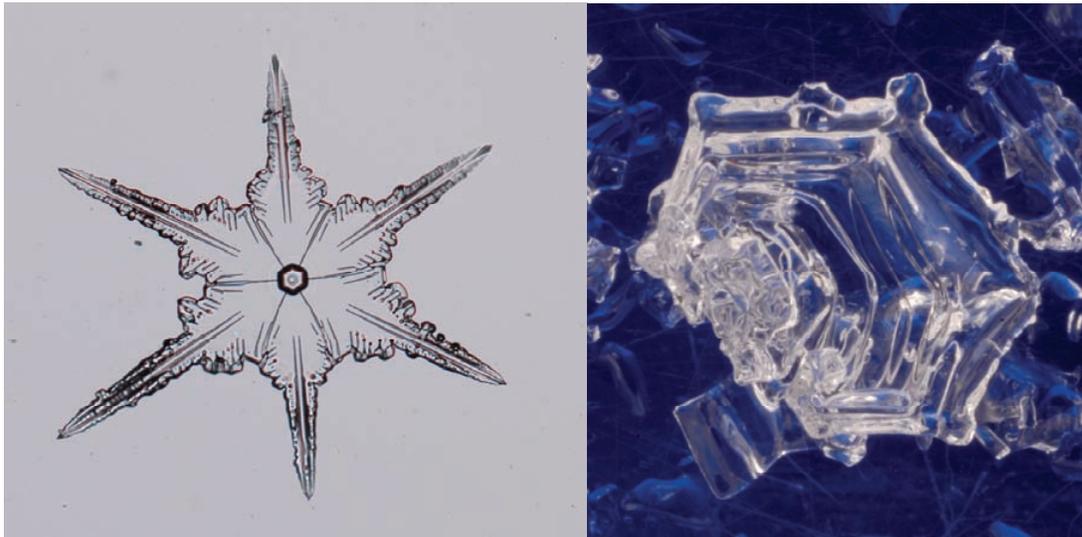
METHODS OF PHOTOGRAPHING SNOW CRYSTALS

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ABSTRACT: Photography has been used to capture images of snow crystals for over a century. Microphotography and macrophotography allow quantification of shape and structure (habit) and size, as well as processes such as formation, sublimation, and riming. Most attention has been focused on atmospheric forms because of their geometric appeal and stark beauty. Snow incorporated into the snowpack on the ground quickly metamorphoses into radically different forms, which may also be appealing to the eye. Images of snowpack grains allow researchers to quantify form and structure, which gives insight into mechanical, optical, hydrological, and chemical properties of the snowpack. A variety of possibilities for photographing snow crystals exist, from simple to relatively complex. Four different methods are described, along with advantages and problems with each. All four methods use modern digital photography, which has greatly increased the utility of images due to hardware and software developments. At the simplest end of the spectrum, modern point-and-shoot cameras with a macro option have great utility. At the other end of the spectrum microscope lenses may be incorporated into a system to give highly magnified images that can detail even the smallest crystals or portions of crystal surfaces. Simplicity is inversely proportional to cost and transportability, however, all examples shown are relatively robust and perform well at cold temperatures.

KEYWORDS: Snow crystals, macrophotography, microphotography



A.

B.

Figure 1: A) Stellar photographed with 5X microscope lens – long axis is 2 mm;
B) Mature depth hoar photographed with close-up tubes and macro lens – long axis is 6 mm.

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