

Rime and snow crystals

Snowflakes come in a broad variety of shapes, not just the dendritic planar crystals popularized in holiday decorations. As described in the Quick Study on page 70, a crystal's shape depends on the temperature and humidity where it forms. And as a crystal falls or gets blown to different regions of clouds, its structure can shift as it grows. Such a shift produced this crystal, whose columnar center has been capped with platelike ends.

As a snow crystal passes through clouds, it may also encounter supercooled droplets of water. Contact between the droplets and the crystal can cause the droplets to freeze on the crystal surface. The accreted droplets, like those seen on the outer surfaces of the plates here, are called rime. Crystals may become so rimed that their underlying structures are no longer identifiable, in which case they are termed graupel.

In this low-temperature scanning electron micrograph, the planar ends of the snow crystal are about 500 μm across. (Image by Eric Erbe and Christopher Pooley, US Department of Agriculture Agricultural Research Service.)

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