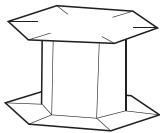


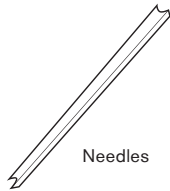
No Two Alike, But How Different?



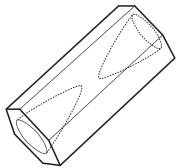
Stellar dendrites



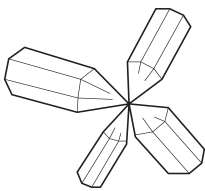
Capped columns



Needles



Hollow columns



Bullet rosettes



Double plates

When you think of a snowflake, you probably picture something like a stellar dendrite—the classic six-armed branching snow crystal that shows up as a decoration everywhere this time of year. But depending on the classification scheme, there are as many as 80 different types of snow crystals, or snowflakes, out there—and you can begin a basic snowflake search to investigate this in snowy regions with little more than a magnifying glass.

In fact, that’s how Caltech physicist and snowflake guru Ken Libbrecht started his hunt, which has turned into the focus of his research. After happening across a journal article that described a type of snow crystal called a capped column, he wondered why he had never noticed one of the miniature icy thread bobbins falling from the sky in his native North Dakota. The next time he was back home, he grabbed a magnifying glass and went outside to take a closer look. “I saw capped columns. I saw all these different snowflakes,” he says. “It’s very easy. It’s just that I had never looked.”

Since that first foray into snowflake hunting in the late 1990s, Libbrecht has published seven books of snowflake photographs and has spent years in the lab trying to understand the molecular dynamics that dictate how ice crystals grow. For example, snowflakes go from forming in thin, flat plates to growing in long, slender needles when the temperature changes by just a few degrees. You can see this change clearly in the laboratory, yet no one knows exactly why it happens.

Among the less recognizable snowflakes on the chart that Libbrecht uses are hollow columns, which are tiny hexagonal columns with hollow spaces at either end; bullet rosettes, which form when multiple crystals grow columns at various angles from a single ice grain; and double plates, which are similar to capped columns but feature one plate that is much larger than the other. —*KF*

For more about snowflake shapes, visit Ken Libbrecht’s website, www.snowcrystals.com.