The many faces of New Mexican flourite

Herwig Pleckmans

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THE MANY FACES OF NEW MEXICAN FLUORITE

HERWIG PELCKMANS
N. Theelenstraat 1, B-3500 Hasselt, Belgium (Europe)
herwig.pelckmans@gmail.com

Fluorite is a very common, widespread mineral. I bet you it can even be found in your collection!

To give you a better idea of how widespread it is, we'll have a look at Mindat for up to date data.

The composition of fluorite is very simple: it is calcium fluoride: CaF_2

Some basic properties of fluorite:
* it comes in about any color
* it has a vitreous = glassy luster,
* if you crush it up, it will be a white powder
* it has perfect cleavage, and no less than 8 cleavage planes
  => like calcite has cleavage rhombohedrons, fluorite has cleavage octahedrons
* its hardness is a standard on the Mohs hardness scale = 4
  => in other words: it is a reference species.

Fluorite is named for the Latin verb fluere, which means to flow. Since the Middle Ages, fluorite has been used as a flux for melting iron ore. It will make the ore melt at a lower temperature.

Fluorite crystals from the Sunshine No. 3 adit, Blanchard Mine, Bingham, Hansonburg District, Socorro County, New Mexico, USA. Field of View: 1.9 mm. Photo & collection Jerry Cone.

Fluorite crystals from the Caballo Mountains Mining District, Sierra County, New Mexico, USA. Field of View: 1.3 mm. Photo & collection Jerry Cone.

It was Georgius Agricola, a German scientist who named it after this property. He also specified in his description: it is similar to gemstones, but not as hard.

In 1747 the Swedish chemist and mineralogist Johan Gotschalk Wallerius named it "glassy spar" referring to its luster and to the fact that it did not contain any ore.

Carlo Napione was an Italian engineer and the first scientist to use the word "fluorite" in his 1797 book on mineralogy.

Fluorite has seven basic crystal forms. Three of those are fixed: the cube, the octahedron and the dodecahedron. The other four are variable: the tetrahexahedron, the trapezohedron, the trisoctahedron and the hexoctahedron. In this talk, we will have a look at each, and then study the combinations of these forms that have been found in New Mexico (and were available to me as digital photographs).