Telyushenkoite

\( \text{CsNa}_6\text{Be}_2\text{Al}_3\text{Si}_15\text{O}_{39}\text{F}_2 \)

**Crystal Data:** Hexagonal.  \( \text{Point Group}: \overline{3} \ 2/m \)  As equant anhedral grains to 2 cm.

**Physical Properties:** Cleavage: Distinct on \{100\}.  Fracture: Uneven.  Tenacity: Brittle.  Hardness = 6  VHN = 696-737, 714 average (100 g load).  D(meas.) = 2.73.  D(calc.) = 2.734  Dim dark purple fluorescence under SW UV.

**Optical Properties:** Transparent.  Color: White to colorless.  Streak: White.  Luster: Vitreous.  Optical Class: Uniaxial (+).  \( \omega = 1.526(2) \)  \( \varepsilon = 1.531(2) \)

**Cell Data:** Space Group: \( P\overline{3} \ 1m \)  \( a = 14.3770(8) \)  \( c = 4.8786(3) \)  \( Z = 1 \)

**X-ray Powder Pattern:** Dara-i-Pioz glacier, South Tien-Shan Mountains, Tajikistan.  3.162 (100), 3.382 (75), 4.149 (50), 3.456 (40), 3.113 (36), 6.226 (35), 2.465 (30)

**Chemistry:**

\[
\begin{array}{ccc}
\text{Na}_2\text{O} & 13.53 \\
\text{K}_2\text{O} & 0.47 \\
\text{Cs}_2\text{O} & 7.25 \\
\text{Rb}_2\text{O} & 0.15 \\
\text{BeO} & 3.46 \\
\text{ZnO} & 1.71 \\
\text{Al}_2\text{O}_3 & 7.26 \\
\text{SiO}_2 & 64.32 \\
\text{F} & 2.84 \\
\text{- O = F} & 1.20 \\
\text{Total} & 99.79 \\
\end{array}
\]

(1) Dara-i-Pioz glacier, South Tien-Shan Mountains, Tajikistan; average electron microprobe analysis, BeO by colorimetry; corresponding to \( (\text{Cs}_{0.74}\text{Na}_{0.31}\text{K}_{0.14}\text{Rb}_{0.02})_{1-1.16}\text{Na}_6.00 \) \[\text{Be}_{2.04}(\text{Si}_{15.46}\text{Al}_{3.06}\text{Zn}_{0.39})_{0.2-17.82}\text{O}_{38.84}\text{F}_{2.16} \].

**Occurrence:** In boulders from glacial moraine.

**Association:** Reedmergnerite, microcline, pectolite, hyalotekite, shibkovite, nordite-(Ce), leucophanite, kentbrooksite, polylithionite, albite.

**Distribution:** In moraine boulders, Dara-i-Pioz glacier, South Tien-Shan Mountains, Tajikistan.

**Name:** Honors petrographer and teacher Tamara Matveyevna Telyushenko (1930-1997) for her contributions to understanding the geology of Central Asia and service as head of the Young Geologists’ School of Ashkhabad for over thirty years.

**Type Material:** A.E. Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia.