## Polezhaevaite-(Ce) $NaSrCeF_6$

**Crystal Data**: Hexagonal. *Point Group*: 6/*m*. As parallel and sheaf-like aggregates of extremely thin fibers to 1 mm, which fill leaching voids within burbankite crystals in natrolite and mantle partially dissolved burbankite crystals in intimate association with strontiofluorite.

**Physical Properties**: *Cleavage*: None. *Tenacity*: Ductile. *Fracture*: Splintery (aggregates). Hardness = ~3 (aggregates) D(meas.) = > 4.2 D(calc.) = 4.646

**Optical Properties**: Transparent (fibers) to translucent (aggregates). *Color*: Snowy-white. *Streak*: White. *Luster*: Silky (aggregates).
*Optical Class*: Uniaxial (+). $\varepsilon$ = 1.497(5) $\omega$ = 1.490(5)

**Cell Data**: *Space Group*: $P6_3/m$. $a$ = 6.207(7) $c$ = 3.801(9) Z = 1

**X-ray Powder Pattern**: Mt. Koashva, Khibiny massif, Kola Peninsula, Russia.
3.120 (100), 1.796 (90), 2.198 (70), 1.173 (70), 5.416 (40), 1.554 (30), 1.387 (30)

**Chemistry**:

| | (1) |
|---|---|
| Na | 5.27 |
| Ca | 3.08 |
| Sr | 29.72 |
| Ba | 0.48 |
| La | 11.76 |
| Ce | 14.12 |
| Pr | 0.49 |
| Nd | 3.09 |
| F | 31.95 |
| Total | 99.96 |

(1) Mt. Koashva, Khibiny massif, Kola Peninsula, Russia; average electron microprobe analysis, charge imbalance is +0.05; corresponding to $(Na_{0.82}Ca_{0.18})_{\Sigma=1.00}(Sr_{1.21}Ce_{0.36}La_{0.30}Ca_{0.09}Nd_{0.08}Ba_{0.01})_{\Sigma=2.06}F_6$.

**Mineral Group**: Gagarinite group.

**Occurrence**: In a natrolitized microcline-aegirine-sodalite lens in apatite-rich urtite. Formed by hydrothermal alteration of peralkaline pegmatite.

**Association**: Aegirine, albite, arfvedsonite, astrophyllite, burbankite, catapleiite, chlorbartonite, djerfisherite, elpasolite, fluorapatite, fluorite, galena, hydroxylapatite, ilmenite, lamprophyllite, lorenzenite, leucophanite, microcline, natrolite, nepheline, orickite, pectolite, pyrochlore, sodalite, sphalerite, strontiofluorite, tainiolite, titanite, vinogradovite, villiaumite.

**Distribution**: From Mt. Koashva, Khibiny massif, Kola Peninsula, Russia.

**Name**: Honors Lyudmila Ivanovna *Polezhaeva* (b. 1935), an expert in electron microprobe analysis of minerals, Geological Institute, Kola Science Center, Russian Academy of Sciences, Apatity, Russia, for her contributions to the mineralogy of alkaline rocks. The suffix for the dominant rare earth element, *ce*rium.

**Type Material**: Mineralogical Museum, Geological Institute, Kola Science Center, Apatity (no. 6454) and the Mineralogical Museum, St. Petersburg State University, St. Petersburg, Russia.

**References**: (1) Yakovenchuk, V.N., E.A. Selivanova, G.Yu. Ivanyuk, Y.A. Pakhomovsky, J.A. Korchak, and A.P. Nikolaev (2010) Polezhaevaite-(Ce), $NaSrCeF_6$, a new mineral from the Khibiny massif (Kola Peninsula, Russia). Amer. Mineral., 95, 1080-1083.