Cryptophyllite $K_2Ca[Si_4O_{10}]\cdot 5H_2O$

Crystal Data: Monoclinic. *Point Group*: 2/*m*. As distorted and/or split platelets to 0.2 mm or as rosette-like intergrowths with shlykovite to 1 mm.

Physical Properties: *Cleavage*: Perfect on {001}. *Fracture*: n.d. *Tenacity*: n.d. Hardness = n.d. D(meas.) = n.d. D(calc.) = 2.185

Optical Properties: Transparent. *Color*: Colorless. *Streak*: White. *Luster*: Vitreous. *Optical Class*: Biaxial (+). α = 1.520(2) β = 1.523(2) γ = 1.527(2) 2V(meas.) > 70° 2V(calc.) = 82° *Orientation*: $X = c$.

Cell Data: *Space Group*: $P2_1/n$. a = 6.4934(14) b = 6.9919(5), c = 32.087(3) β = 94.680(12)° Z = 4

X-ray Powder Pattern: Mt. Rasvumchorr, Khibiny massif, Kola Peninsula, Russia. 16.01 (100), 2.903 (84), 6.24 (48), 2.995 (47), 3.197 (27), 7.98 (24), 3.228 (22)

Chemistry:

	(1)
Na_2O	1.12
K_2O	17.73
CaO	11.59
Al_2O_3	0.08
SiO_2	50.24
H_2O	[19.24]
Total	100.00

(1) Mt. Rasvumchorr, Khibiny massif, Kola Peninsula, Russia; average of 4 electron microprobe analyses, H_2O by difference, OH/H_2O calculated for charge balance; corresponding to $(K_{1.80}Na_{0.17})_{\Sigma=1.97}Ca_{0.99}Al_{0.01}Si_{3.99}O_{9.94}(OH)_{0.06}\cdot 5H_2O$.

Occurrence: A late-stage hydrothermal mineral along fractures in a high-potassium peralkaline pegmatite in urtite rocks near the contact with nepheline-apatite rock.

Association: Shlykovite.

Distribution: At the Central mine, Mt. Rasvumchorr, Khibiny massif, Kola Peninsula, Russia.

Name: Derived from the Greek words "κρυπτοζ"- *concealed* (*crypto*) and "φυλλον" - *leaf* as an allusion to its occurrence in intimate intergrowths with visually indistinguishable shlykovite and to its layered structure.

Type Material: A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia (3753/2).

References: (1) Pekov, I.V., N.V. Zubkova, Ya.E. Filinchuk, N.V. Chukanov, A.E. Zadov, D.Yu. Pushcharovsky, and E.R. Gobechiya (2010) Shlykovite $KCa[Si_4O_9(OH)]\cdot 3H_2O$ and Cryptophyllite $K_2Ca[Si_4O_{10}]\cdot 5H_2O$ - new mineral species from the Khibiny alkaline pluton (Kola Peninsula, Russia). Zap. Ross. Mineral. Obshch., 139(1), 37-50 (in Russian with English abstract); and Geology of Ore Deposits, 52, 767-777. (2) Zubkova, N.V., Ya.E. Filinchuk, I.V. Pekov, D.Yu. Pushcharovsky, and E.R. Gobechiya (2010) Crystal structures of shlykovite and cryptophyllite: comparative crystal chemistry of phyllosilicate minerals of the mountainite family. Eur. J. Mineral., 22, 547-555. (3) (2012) Amer. Mineral., 97, 1526-1527 (abs. refs. 1 and 2).