Eringaite $Ca_3Sc_2(SiO_4)_3$

Crystal Data: Cubic. *Point Group*: $4/m\ \bar{3}\ 2/m$. As growth zones or irregular grains < 10 μm.

Physical Properties: *Cleavage*: None. *Fracture*: Irregular. *Tenacity*: Brittle. Hardness = n.d. D(meas.) = n.d. D(calc.) = 3.654

Optical Properties: Transparent. *Color*: Light brown to yellow. *Streak*: Creamy white. *Luster*: Vitreous.
Optical Class: n.d.

Cell Data: *Space Group*: $Ia\bar{3}\ d$. $a = 12.255(1)$ $Z = 8$

X-ray Powder Pattern: Wiluy River, Sakha-Yakutia Republic, Russia. (calculated pattern)
2.740 (100), 1.638 (82), 3.064 (69), 2.502 (68), 1.670 (30), 1.119 (29), 1.370 (20)

Chemistry:

	(1)
SiO_2	29.39
TiO_2	7.17
ZrO_2	5.28
HfO_2	0.14
Al_2O_3	3.15
Sc_2O_3	10.67
Y_2O_3	0.20
V_2O_3	0.14
Cr_2O_3	1.05
Fe_2O_3	8.48
FeO	0.50
MnO	0.01
CaO	33.19
MgO	0.95
Total	100.31

(1) Wiluy River, Sakha-Yakutia Republic, Russia; average of 8 electron microprobe analyses, corresponding to $(Ca_{2.98}Y_{0.01}Mg_{0.01})_{\Sigma=3.00}(Sc_{0.82}Ti^{4+}_{0.44}Fe^{3+}_{0.30}Zr_{0.21}Mg_{0.10}Al_{0.09}Cr^{3+}_{0.08}Fe^{2+}_{0.05}V^{3+}_{0.01})_{\Sigma=2.01}(Si_{2.48}Al_{0.30}Fe^{3+}_{0.22})_{\Sigma=3.00}O_{12}$.

Mineral Group: Garnet group.

Polymorhpism & Series: Continuous solid solution series with andradite, uvarovite, goldmanite.

Occurrence: An accessory mineral in metasomatic rodingite-like rocks; it forms regular growth zones and irregular spots in complex garnet crystals.

Association: Grossular, vesuvianite, serpentine, melilite-group minerals, kimzeyite.

Distribution: Wiluy River, Sakha-Yakutia Republic, Russia.

Name: For the Eringa River, the tributary of the Wiluy River directly across from where the first specimens were collected.

Type Material: A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia (3837/1).

References: (1) Gałuskina, I.O., E.V. Gałuskin, B. Lazic, T. Armbruster, P. DzierżAnowski, K. Prusik, and R. Wrzalik (2010) Eringaite, $Ca_3Sc_2(SiO_4)_3$, a new mineral of the garnet group. Mineralogical Magazine, 74, 365-373. (2) (2014) Amer. Mineral., 99, 552 (abs. ref. 1).