Levantite $KCa_3Al_2(SiO_4)(Si_2O_7)(PO_4)$

Crystal Data: Monoclinic. *Point Group*: 2/*m*. As prismatic crystals to 0.2 mm and as later zones on long prismatic crystals of latiumite. *Twinning*: Polysynthetic or simple on (100).

Physical Properties: *Cleavage*: Good on (100). *Tenacity*: Brittle. *Fracture*: n.d.
Hardness = 5 VHN = 550-611, 580 average (50 g load). D(meas.) = n.d. D(calc.) = 2.957

Optical Properties: *Color*: Colorless. *Streak*: n.d. *Luster*: Vitreous.
Optical Class: Biaxial (-). α = 1.608(2) β = 1.618(2) γ = 1.622(2) 2V(meas.) = 70(5)°
2V(calc.) = 64.3° *Dispersion*: *r* > *v*, weak. *Orientation*: *Z* = *b*, *X* ^ *c* = 22-27°. Non-pleochroic.

Cell Data: *Space Group*: $P2_1$. *a* = 12.1006(9) *b* = 5.1103(4) *c* = 10.8252(9) β = 107.237(8)° Z = 2

X-Ray Diffraction Pattern: Har Parsa, Negev Desert, Israel.
3.0762 (100), 2.8551 (96), 2.9704 (92), 2.8573 (83), 2.5552 (66), 2.8228 (48), 2.8893 (40)

Chemistry:

	(1)
SO_3	4.94
P_2O_5	8.86
SiO_2	28.45
Fe_2O_3	2.03
Al_2O_3	18.45
BaO	0.19
CaO	29.15
MgO	0.18
K_2O	7.76
Na_2O	0.05
Total	100.06

(1) Har Parsa, Negev Desert, Israel; average electron microprobe analysis supplemented by Raman spectroscopy corresponds to $(K_{0.94}Ba_{0.01}Na_{0.01}\square_{0.04})_{\Sigma=1.00}(Ca_{2.96}Mg_{0.03})_{\Sigma=2.99}\{(Si_{2.69}Al_{2.06}Fe^{3+}_{0.16}P_{0.06})_{\Sigma=4.97}O_{11}\}[(PO_4)_{0.65}(SO_4)_{0.35}]_{\Sigma=1.00}$.

Polymorphism & Series: Forms a series with latiumite.

Mineral Group: Latiumite group.

Occurrence: In pyrometamorphic gehlenite-wollastonite hornfels.

Association: Gehlenite, wollastonite, clinopyroxene of the esseneite-diopside series, anorthite, Ti-bearing andradite.

Distribution: On the northern slope of Har Parsa, Negev Desert, near Arad, Israel.

Name: For the *Levant* region, a geographical term referring to an area in the eastern Mediterranean that includes parts of Israel, Jordan, Palestine, Lebanon, Syria, Iraq, Cyprus, and Turkey.

Type Material: A.E. Fersman Mineralogical Museum, RAS, Moscow, Russia (4898/1).

References: (1) Galuskin, E.V., B. Krüger, I.O. Galuskina, H. Krüger, Y. Vapnik, A. Pauluhn, and V. Olieric (2019) Levantite, $KCa_3(Al_2Si_3)O_{11}(PO_4)$, a new latiumite-group mineral from the pyrometamorphic rocks of the Hatrurim Basin, Negev Desert, Israel. Mineral. Mag., 83, 713-721.