Petrovskaite **AgAu(S, Se)**

Crystal Data: Monoclinic. *Point Group:* $2/m$, 2, or m. As fine-grained rims, to 20 μm, on gold.

Physical Properties: *Tenacity:* Brittle. Hardness = 2–2.5 VHN = 39.9–47.8
D(meas.) = n.d. D(calc.) = 9.5

Optical Properties: Opaque. *Color:* Dark gray to black. *Streak:* Dark gray. *Luster:* Dull metallic. *Anisotropism:* Slight.
R_1–R_2: n.d.

Cell Data: *Space Group:* $P2/m$, $P2$, or Pm. $a = 4.943(9)$ $b = 6.670(9)$ $c = 7.221(9)$ $\beta = 95.68(7)^\circ$ Z = 4

X-ray Powder Pattern: Maikain deposit, Kazakhstan (intensities from synthetic AgAuS).
2.77 (10), 2.63 (5), 2.39 (4), 2.254 (4), 1.471 (4), 7.25 (3), 3.87 (3)

Chemistry:

	(1)
Au	58.6
Ag	31.0
S	9.54
Se	1.35
Total	100.5

(1) Maikain deposit, Kazakhstan; by electron microprobe, average of seven analyses; corresponding to $Ag_{0.96}Au_{0.99}(S_{0.99}Se_{0.06})_{\Sigma=1.05}$.

Occurrence: At a depth of about 60–65 m in a gold deposit.

Association: Gold, chlorargyrite.

Distribution: In the Maikain gold deposit, Pavlodar district, northeast Kazakhstan [TL].

Name: In honor of Nina Vasil'evna Petrovskaya (1910–1991), Russian mineralogist, Institute of Geology of Ore Deposits, Petrology, Mineralogy, and Geochemistry, Moscow, Russia, specialist in gold deposits.

Type Material: Central Siberian Geological Museum, Novosibirsk, III-70/1; Mineralogical Museum, St. Petersburg University, St. Petersburg, 17109; Mining Institute, St. Petersburg, Russia, 2006/1.

References: (1) Nesterenko, G.V., A.I. Kuznetsova, N.A. Pal'chik, and Y.G. Lavrent'ev (1984) Petrovskaite, AuAg(S, Se), a new selenium-containing sulfide of gold and silver. Zap. Vses. Mineral. Obshch., 113, 602–607 (in Russian). (2) (1985) Amer. Mineral., 70, 1331 (abs. ref. 1).