Stumpflite $Pt(Sb, Bi)$

Crystal Data: Hexagonal. *Point Group:* $6/m\ 2/m\ 2/m$. Massive grains, to a few tenths of a mm, intergrown with geversite.

Physical Properties: Hardness = n.d. VHN = 385 (50 g load). D(meas.) = n.d. D(calc.) = 13.52

Optical Properties: Opaque. *Color:* In polished section, cream. *Luster:* Metallic. *Pleochroism:* Perceptible. *Anisotropism:* Strong, in brownish yellow.

R_1–R_2: (400) —, (420) 45.9–49.3, (440) 49.1–52.2, (460) 52.0–54.7, (480) 54.6–57.3, (500) 56.6–59.5, (520) 58.2–61.5, (540) 59.3–63.0, (560) 60.2–64.5, (580) 61.1–65.7, (600) 62.1–66.7, (620) 62.9–67.6, (640) 63.7–68.5, (660) 64.5–69.3, (680) 65.0–70.0, (700) 65.1–70.7

Cell Data: *Space Group:* $P6_3/mmc$ (probable). $a = 4.175(2)$ $c = 5.504(2)$ $Z = 2$

X-ray Powder Pattern: Driekop mine, South Africa.
3.027 (10), 2.192 (10), 2.088 (8), 3.618 (6), 1.512 (5), 1.720 (4), 1.224 (4)

Chemistry:

	(1)
Pt	57.0
Sb	26.1
Bi	16.3
Total	99.4

(1) Driekop mine, South Africa; by electron microprobe, corresponding to $Pt_{1.00}(Sb_{0.73}Bi_{0.27})_{\Sigma=1.00}$.

Mineral Group: Nickeline group.

Occurrence: In platinum concentrates from an ultramafic pipe deposit (Driekop mine, South Africa).

Association: Geversite, Pt–Fe alloys (Driekop mine, South Africa).

Distribution: From the Driekop mine, on the Merensky Reef, Bushveld complex, Transvaal, South Africa [TL]. From near Nizhni Tagil, Ural Mountains, Russia. In the Kelvon Grove prospect, near Fifield, New South Wales, Australia.

Name: Honors Professor Eugen Friedrich Stumpfl (1931–), University of Hamburg, Hamburg, Germany, who first described the mineral.

Type Material: Bureau de Recherches Géologiques et Minières (B.R.G.M.), Orléans; National School of Mines, Paris, France.

References: (1) Johan, Z. and P. Picot (1972) La stumpflite, Pt(Sb, Bi), un nouveau minéral. Bull. Soc. fr. Minéral., 95, 610–613 (in French with English abs.). (2) (1974) Amer. Mineral., 59, 211 (abs. ref. 1). (3) Criddle, A.J. and C.J. Stanley, Eds. (1993) Quantitative data file for ore minerals, 3rd ed. Chapman & Hall, London, 540.