

**Crystal Data:** Monoclinic. *Point Group:*  $2/m$ . Prismatic crystals to 150  $\mu\text{m}$  form randomly oriented aggregates to >1 cm. *Twinning:* By penetration of three individuals separated by  $\sim 60^\circ$  rotation around [100] to form six-legged stars.

**Physical Properties:** *Cleavage:* Good on {100}. *Tenacity:* Brittle. *Fracture:* Uneven. Hardness =  $\sim 4$  D(meas.) = n.d. D(calc.) = 7.64(6)

**Optical Properties:** Transparent. *Color:* Bright orange. *Streak:* Pale orange. *Luster:* Vitreous. *Optical Class:* Biaxial.  $n(\text{min}) = 1.807$   $n(\text{max}) = 1.891$   
*Pleochroism:* Strong, pale yellow to dark orange.

**Cell Data:** *Space Group:*  $C2/c$ .  $a = 28.355(9)$   $b = 11.990(4)$   $c = 13.998(4)$   $\beta = 104.248(5)$   $Z = 8$

**X-ray Powder Pattern:** Radium Ridge, near Arkaroola, Northern Flinders Ranges, South Australia. 3.10 (100), 3.46 (80), 6.92 (60), 1.918 (60), 6.02 (30), 2.74 (30), 2.01 (30)

<b>Chemistry:</b>	(1)
UO <sub>3</sub>	70.90
PbO	25.51
CaO	0.14
BaO	0.25
<u>H<sub>2</sub>O</u>	<u>[2.98]</u>
Total	99.78

(1) Radium Ridge, near Arkaroola, Northern Flinders Ranges, South Australia.; average electron microprobe analysis supplemented by FTIR spectroscopy, H<sub>2</sub>O calculated from stoichiometry; corresponds to  $(\text{Pb}_{2.77}\text{Ca}_{0.06}\text{Ba}_{0.04})_{\Sigma=2.87}\text{U}_6\text{O}_{19.9}(\text{OH})_2 \cdot 3\text{H}_2\text{O}$ .

**Occurrence:** Secondary mineral from the supergene alteration of U-Nb-REE-bearing hydrothermal hematite breccia.

**Association:** Beta-uranophane, soddyite, kasolite, Ce-rich francoisite-(Nd), metatorbernite, billietite, Ba-bearing boltwoodite, schoepite, metaschoepite, weeksite,

**Distribution:** At the Number 2 workings on Radium Ridge, near Mt. Painter, near Arkaroola, Northern Flinders Ranges, South Australia.

**Name:** Honors geologist and conservationist Reginald Claude *Sprigg* (1919-1994), founder of the Arkaroola Tourist Station.

**Type Material:** Musée géologique cantonal, Lausanne, Switzerland (MGL68937) and South Australian Museum, Adelaide, South Australia (G27305).

**References:** (1) Brugger, J., S.V. Krivovichev, P. Berlepsch, N. Meisser, S. Ansermet, and T. Armbruster (2004) Spriggite,  $\text{Pb}_3[(\text{UO}_2)_6\text{O}_8(\text{OH})_2](\text{H}_2\text{O})_3$ , a new mineral with  $\beta\text{-U}_3\text{O}_8$ -type sheets: Description and crystal structure. *Amer. Mineral.*, 89, 339-347.