

**Crystal Data:** Triclinic. *Point Group:*  $\bar{1}$ . As prismatic crystals elongated along [100], to 200  $\mu\text{m}$ .

**Physical Properties:** *Cleavage:* None. *Fracture:* n.d. *Tenacity:* Brittle. *Hardness* = n.d.  
 $D(\text{meas.})$  = n.d.  $D(\text{calc.})$  = 5.911

**Optical Properties:** Transparent. *Color:* Colorless to white, pale brown. *Streak:* White.  
*Luster:* Vitreous.  
*Optical Class:* n.d.  $n(\text{calc.})$  = 2.09

**Cell Data:** *Space Group:*  $P\bar{1}$ .  $a = 6.7386(3)$   $b = 11.1844(5)$   $c = 14.1754(7)$   $\alpha = 80.082(2)^\circ$   
 $\beta = 88.462(2)^\circ$   $\gamma = 89.517(2)^\circ$   $Z = 6$

**X-ray Powder Pattern:** La Fossa crater, Vulcano, Aeolian Islands, Italy.  
3.146 (100), 3.486 (21), 3.409 (12), 3.366 (7), 5.562 (4), 5.433 (4), 1.856 (4)

<b>Chemistry:</b>	(1)	(2)
$\text{Bi}_2\text{O}_3$	68.68	74.43
$\text{SO}_3$	23.73	25.57
Total	94.41	100.00

(1) La Fossa crater, Vulcano, Aeolian Islands, Italy; average of 10 electron microprobe analyses;  
corresponding to  $\text{Bi}_{1.99}\text{S}_2\text{O}_9$ . (2)  $\text{Bi}_2\text{O}(\text{SO}_4)_2$ .

**Occurrence:** A high-temperature (600 °C) sublimate at an active volcanic fumarole.

**Association:** Anglesite, leguernite, lillianite, galenobismutite, bismoclite, Cd-sphalerite, wurtzite,  
pyrite, pyrrhotite.

**Distribution:** From La Fossa crater, Vulcano, Aeolian Islands, Italy.

**Name:** Honors Tonci Balić-Žunić (b. 1952), Professor of Mineralogy, Natural History Museum,  
University of Copenhagen, Denmark, for his contributions to crystal structure determination by  
single-crystal and powder techniques and to the theoretical crystal chemistry of minerals.

**Type Material:** C.L. Garavelli Museum, Department of Earth Sciences and Geoenvironment,  
University of Bari, Italy (17/nm-V28).

**References:** (1) Pinto, D., A. Garavelli, and D. Mitolo (2014)  $\text{Bi}_2\text{O}(\text{SO}_4)_2$ , a new fumarole mineral  
from La Fossa crater, Vulcano, Aeolian Islands, Italy. *Mineral. Mag.*, 78(4), 1043-1055.  
(2) (2016) *Amer. Mineral.*, 101, 1240 (abs. ref. 1). (3) Pinto, D., A. Garavelli, and T. Balić-Žunić  
(2015) The crystal structure of balićžunićite,  $\text{Bi}_2\text{O}(\text{SO}_4)_2$ , a new natural bismuth oxide sulfate.  
*Mineral. Mag.*, 79(3), 597-611.