Bobjonesite  \( \text{V}^{4+}\text{O(SO}_{4}\text{)}\cdot3\text{H}_{2}\text{O} \)

**Crystal Data:** Monoclinic.  *Point Group:* 2/m.  As crusts and efflorescences of intergrown crystals individually <<1 mm.

D(meas.) = n.d.  D(calc.) = 2.28  
Rapidly hydrates on exposure to moist air; consequently, the physical and optical properties were measured partly on the synthetic equivalent.

*Optical Class:* Biaxial (+).  \( \alpha = 1.555(2) \quad \beta = 1.561(1) \quad \gamma = 1.574(2) \)  
2V(meas.) = 72(1)°  
2V(calc.) = 69°  
*Orientation:*  \( X = \text{b}, \ Y \approx \text{a}, \ Z \wedge c = \sim 19° \) in \( \beta \) obtuse.  Nonpleochroic.

**Cell Data:**  *Space Group:* \( P2_1/n \).  
\( a = 7.3940(5) \quad b = 7.4111(3) \quad c = 12.0597(9) \quad \beta = 106.55(1)^\circ \)  
\( Z = 4 \)

**X-ray Powder Pattern:** North Mesa 5 mine, Temple Mountain district, Emery County, Utah, USA.  
5.795 (100), 3.498 (90), 3.881 (48), 5.408 (37), 4.571 (20), 6.962 (11), 6.255 (11)

**Chemistry:** The chemical composition was established by crystal-structure solution and refinement.

**Occurrence:** On fractures surfaces in a silicified log with coalified margins within mineralized conglomerate.  
Oxidation of pyrite and montroseite formed a suite of secondary minerals (Utah).  
As a sublimate at an active volcanic fumarole (Tolbachik volcano).

**Association:** Ferricopiapite, kornelite, rozenite, szomolnokite, native sulfur, minasragrite,  
orthominasragrite (Utah); markhininite, shcherbinaite, pauflerite, karpovite, evdokimovite, microcrystalline Mg, Al, Fe and Na sulfates (Russia).

**Distribution:** From the North Mesa 5 mine, Temple Mountain mining district, Emery County, Utah, USA [TL].  
At the First cinder cone of the North Breach of the Great Fissure Tolbachik volcano eruption, Kamchatka Peninsula, Russia.

**Name:** Honors Robert (Bob) Jones (b. 1926) of Arizona, USA, senior editor of *Rocks and Gems* for contributions to the mineralogical community through his writing, lecturing, and editing books, magazines and videos on minerals and their occurrence.

**Type Material:** Canadian Museum of Nature, Ottawa, Ontario, Canada (CMNMC 83759).

**References:**  
(3) Siidra, O.I., L.P. Vergasova, S.V. Krivovichev, Y.L. Kretser, A.N. Zaitsev, and S.K. Filatov (2014) Unique thallium mineralization in the fumaroles of Tolbachik volcano, Kamchatka Peninsula, Russia. I. Markhininite, \( T\text{lBi(SO}_{4}\text{)}_2 \).  
Mineral. Mag., 78(7), 1687-1698.