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## ABSTRACT VOLUME

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### Waimirite-(Y), orthorhombic YF<sub>3</sub> from Pitinga Mine, Presidente Figueiredo, Amazonas, Brazil

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Waimirite-(Y), orthorhombic YF<sub>3</sub> (IMA 2013-108), occurs in thin hydrothermal veins crosscutting the albite-enriched granite facies of an A-type Madeira granite (~1,820 Ma), Pitinga mine, Presidente Figueiredo, Amazonas, Brazil. Directly associated minerals are dickite and quartz. Other minerals in granite are "alkali feldspar", albite, riebeckite, biotite, muscovite, cryolite, zircon, polythionite, cassiterite, pyrochlore group minerals, "columbite", thorite, lead, galena, fluorite, "xenotime", gagarinite-(Y), fluocerite-(Ce), genthelvite-helvite, topaz, "illite", kaolinite and "chlorite" [1]. The mineral occurs as thin veins (up to 3 cm thick) of platy crystals up to about 1 μm in size. Forms: not determined, but synthetic YF<sub>3</sub> displays pinacoids, prisms and bipyramids [2]. Colour: pale pink. Streak: white. Lustre: nonmetallic. Transparent or translucent. Density (calc.) = 6.092 g/cm<sup>3</sup> using the empirical formula. It is biaxial, mean n = 1.54 - 1.56. Microprobe (WDS) analyses (24): F 29.27, Ca 0.83, Y 37.25, La 0.19, Ce 0.30, Pr 0.15, Nd 0.65, Sm 0.74, Gd 1.86, Tb 0.78, Dy 8.06, Ho 1.85, Er 6.38, Tm 1.00, Yb 5.52, Lu 0.65, Al 0.10, Fe 0.07, Si 0.12, total 95.77 wt%. The empirical formula (based on 4 apfu) is (Y<sub>0.78</sub>Dy<sub>0.09</sub>Er<sub>0.07</sub>Yb<sub>0.06</sub>Ca<sub>0.04</sub>Gd<sub>0.02</sub>Ho<sub>0.02</sub>Nd<sub>0.01</sub>Sm<sub>0.01</sub>Tm<sub>0.01</sub>Lu<sub>0.01</sub>Si<sub>0.01</sub>Al<sub>0.01</sub>)<sub>Σ1.15</sub>F<sub>2.85</sub>. The simplified formula requires: Y 60.93, F 39.07, total 100.00 wt%.

Orthorhombic, *Pnma*, *a* 6.386(1), *b* 6.877(1), *c* 4.401(1) Å, *V* 193.28(7) Å<sup>3</sup>, *Z* 4 (powder data), *a:b:c* = 0.929:1:0.640. X-ray powder diffraction data [*d* in Å (*hkl*): 3.707 (26) (011), 3.623 (78) (101), 3.438 (99) (020), 3.205 (100) (111), 2.894 (59) (210), 1.937 (33) (131), 1.916 (24) (301), 1.862 (27) (230)]. The name is for the Waimiri-Atoari Indian people of Roraima and Amazonas. Type material is deposited in the collections of the Museu de Geociências, Universidade de São Paulo, Brazil, specimen number DR919, and the Museu de Mineralogia Luiz Englert, Universidade Federal do Rio Grande do Sul, Brazil, specimen number 3620. The synthetic orthorhombic YF<sub>3</sub> has previously been obtained and its crystal structure was studied [3, 4]. The Y ion is coordinated by 9 F ions to give a slightly deformed trigonal prism with atoms opposite each of the lateral faces. Eight of the nearest neighbours lie at distances between 2.281 and 2.310 Å. The ninth distance is 2.538 Å.

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At the 2006 Kobe IMA meeting, the IMA council authorized the RRUFF project to produce an interactive website of the IMA approved mineral names and selected properties on behalf of the IMA outreach committee. This website is found at RRUFF.info/ima and contains the names and formulas of the CNMNC approved minerals, as well as links to the American Mineralogist Crystal Structure Database for structural data, the RRUFF project database for selected laboratory measurements of chemical, crystallographic and spectroscopic properties, and an extensive suite of pdfs of relevant articles from the literature. In this presentation, new data fields will be introduced, including cell parameters especially useful for searches on minerals without reported crystal structure data, enhanced chemical searches that include valence states and string recognition, and locality age dating that is being integrated into the website as part of the mineral evolution project that is led by Dr Bob Hazen. In addition, in order to promote private use of the IMA list of minerals, the software for the database has included an option to create links from the RRUFF.info/ima page to any independent database that will accept queries based on mineral names. These new features will be presented and their uses will be reviewed.