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**Sr<sub>2</sub>Au<sub>6</sub>Al<sub>3</sub> and Eu<sub>2</sub>Au<sub>6</sub>Al<sub>3</sub> — First Representatives of the Sr<sub>2</sub>Au<sub>6</sub>Zn<sub>3</sub> Type with Aluminum Triangles.** — Sr<sub>2</sub>Au<sub>6</sub>Al<sub>3</sub> (I) and Eu<sub>2</sub>Au<sub>6</sub>Al<sub>3</sub> (II) are prepared by melting the elements in a molar ratio of 3:7.2:3 in a muffle furnace for (I) (sealed Ta tube in a silica tube, 1. 1300 K, 10 min, 2. 800 K, 8 h) and in an induction furnace for (II) (sealed Ta tube in a H<sub>2</sub>O-cooled sample chamber, 1300 K, 5 min, cooling to room temperature with a rate of 35 K/min). The samples are characterized by powder and single crystal XRD. They crystallize with the Sr<sub>2</sub>Au<sub>6</sub>Zn<sub>3</sub>-type structure in space group R $\bar{3}c$  (Z = 6). Au atoms form diamond-related networks of slightly distorted tetrahedra in the stacking sequence of the 6R polytype. Voids left by this network are filled in an ordered manner by both Sr/Eu atoms and the rare motif of Al<sub>3</sub> triangles. The Al<sub>3</sub> triangles in Sr<sub>2</sub>Au<sub>6.18</sub>Al<sub>2.82</sub> show a small degree of Al/Au mixing. — (GERKE, B.; POETTGEN\*, R.; Z. Naturforsch., B: Chem. Sci. 69b (2014) 1, 121-124, <http://dx.doi.org/10.5560/ZNB.2014-3300> ; Inst. Anorg. Anal. Chem., Westfael. Wilhelms-Univ., D-48149 Muenster, Germany; Eng.) — J. Schramke