**MS15-P22** Rumsayite, [Pb$_2$OF]Cl$_2$- fluoroxychloride mineral with the parent crystal structure for layered lead oxychlorides. Oleg I. Sidiра, a Rick W. Turner, b Sergey V. Krivovichev, a John Spratt, a Saint-Petersburg State University, Russia.

The structure of rumseyite contains one symmetrically unique Pb position. The Pb$_2^+$ cation is coordinated by four O/F atoms and four Cl atoms. In agreement with previous results on Pb oxychlorides, the general feature of the Pb$_2^+$ coordination in rumseyite is the presence of several short Pb-O bonds located in one coordination hemisphere of the Pb$_2^+$ cation. In the opposite hemisphere, the Pb$_2^+$ cation forms four long Pb-Cl bonds. This distortion is usually interpreted as the influence of the stereoactivity of $s^2$ lone electron pairs on the Pb$_2^+$ cations. Cl atoms have cubic coordination, whereas O/F atoms have tetrahedral coordination, thus being formed by edge- and corner-sharing OPb$_4$ oxocentered tetrahedra.

**MS15-P22** In situ high temperature study of structural transformation of cronstedtite-17. Serena C. Tarantino, b Michele Zema, a Agnès Elmaleh, b Department of Earth and Environmental Sciences, University of Pavia, Italy.

Cronstedtite, (Fe$_2^{II}$Fe$_3^{III}$)(SiFe$_3^{III}$)O$_5$(OH)$_4$, is a trioctahedral 1:1 layer silicate of the serpentine group. It presents spin-glass like properties [1], contrasting with the long-range magnetic order observed in other Fe-serpentines [2]. A deficiency in tetrahedral iron with respect to the ideal formula is often reported, giving a Si:Fe$_3^{III}$ ratio in tetrahedra as high as 2:1. Mg is also known to substitute for iron in octahedral coordination in natural samples. In this mineral, an extraordinary amount of variation in the stacking sequence is possible and a variety of polytypes has been reported. The crystal structures of several polytypes of cronstedtite have been refined [3-5], and coexistence and intergrowths of different polytypes have also been reported [e.g. 6,7].

**Keywords:** cronstedtite; crystal chemistry; high temperature diffraction.