des Sciences, Route de Laval, 72017 Le Mans Cédex, France. $Na_5Al_3F_{14}$ ($P4/mnc$; a = 7.0138(8); c = 10.402(2)) accurate X-ray structure determination has been carried out from 466 reflections (R = 0.021; $R\omega$ = 0.028). The structure is built with shifted independent $[Al_3F_{14}]_n^{5n-}$ layers perpendicular to the $\vec{c}$ axis according to the previous BROSSET description. The EPR spectrum of Cr^{3+} ion in $Na_5Al_3F_{14}$ is fully analyzed. For Cr^{3+} in orthorhombic site (4c), the EPR spectrum is characterized by a large axial field parameter (b_2^0 = 4200 10^{-4} cm^{-1}). A structural phase transition occurring about 175 K has been detected.

Crystal Structure of an Ammonium Phosphochromate: $(NH_4)_3PCr_4O_{16}$. M. T. AVERBUCH-POUCHOT, A. DURIF,* AND J. C. GUITEL, Laboratoire de Cristallographie, CNRS 166 X, 38042 Grenoble Cédex, France. Ammonium phosphochromate $(NH_4)_3PCr_4O_{16}$ is trigonal ($R3m$) with the following unit cell dimensions: a_H = 12.033 (8), c_H = 10.032 (8) Å, and Z = 3 for the hexagonal cell; a_R = 7.710 (5) Å, α_R = 102.59 (5)°, and Z = 1 for the rhombohedral cell. The crystal structure of this compound has been solved with a final R value of 0.054. The main feature of this atomic arrangement is the existence in the anion configuration of a central PO_4 tetrahedron linked to four CrO_4 tetrahedra.