Ca\(_2\)TWO\(_6\) (T = Co, Ni) perovskites have been prepared in polycrystalline form by thermal treatment, in air, of previously decomposed citrate precursors. These materials have been studied by X-ray (XRD) and neutron powder diffraction (NPD) data. Our results show that these compounds crystallize, at room temperature, in the monoclinic space group \(P2_1/n\). The two perovskites contain divalent \(T\) (T = Co, Ni) cations. The low temperature antiferromagnetic ordering has been followed from sequential NPD data. Peaks of magnetic origin appear at the NPD patterns below temperatures of \(T_N = 36\) K and \(T_N = 56\) K for the Co and Ni compounds, respectively. The magnetic structures are both defined by a propagation vector \(\mathbf{k} = (1/2, 0, 1/2)\), and can be described as an array of ferromagnetic layers of Co(Ni) moments, perpendicular to the [101] directions, coupled antiferromagnetically.

**Key words:** Perovskites, X-Ray Data