Theorem 1. Consider two different points $P, U$ on the same plane as $\triangle ABC$. Let $A_0$ be the intersection of lines $BC$ and $AU$. Let $A_1$ be the point of intersection, other than $P$, of line $PA$ and circle $(PBC)$. Let $A_2$ be the point, other than $A_1$, of line $A_1A_0$ and circle $(PBCA_1)$. Define $B_2, C_2$ cyclically.

Then $P, A_2, B_2, C_2$ are concyclic.