

# MARCH PROBLEM CORNER

An arbitrary point  $P$  is taken on the plane of  $\triangle ABC$  with circumcenter  $O$  and reflected over lines  $AB$  and  $AC$  to  $P_B$  and  $P_C$  respectively. Given that  $X$  is the intersection point of lines  $BP_B$  and  $CP_C$ , and  $Y$  is the second intersection point of the circumcircles of  $\triangle XBC$  and  $\triangle XP_BP_C$ , show that

- $\angle AYO = \angle BYP_B$
- $Y, P, O$  are collinear

Proposed by Otutochi Caleb Nwadinkpa

