Suppose that $T^*$ is an Aronszajn tree with no stationary antichain. We introduce a forcing axiom $PFA(T^*)$ for proper forcings which preserve these properties of $T^*$. $PFA(T^*)$ implies many of the strong consequences of $PFA$, such as the failure of very weak club guessing, that all of the cardinal characteristics of the continuum are greater than $\omega_1$, and the P-ideal dichotomy. On the other hand, $PFA(T^*)$ implies some of the consequences of diamond principles, such as the existence of Knaster forcings which are not stationarily Knaster. (Received September 12, 2018)