

## MICROWAVE SPECTRUM AND GEOMETRY OF $\text{H}_3\text{P} \cdots \text{AgI}$

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The pure rotational spectrum of the vibrational ground state of  $\text{H}_3\text{P} \cdots \text{AgI}$  has been measured by chirped-pulse FTMW spectroscopy. The complex is generated via laser ablation (532 nm) of a silver rod in the presence of  $\text{CF}_3\text{I}$ ,  $\text{PH}_3$  and argon. It is subsequently stabilized and interrogated in the cold environment of a supersonic jet. The rotational constant,  $B_0$ , and the centrifugal distortion constant,  $D_J$ , have been measured for  $\text{H}_3\text{P} \cdots ^{107}\text{AgI}$  and  $\text{H}_3\text{P} \cdots ^{109}\text{AgI}$ . The spectrum of the complex is consistent with a  $C_{3v}$  geometry and a linear arrangement of the P, Ag and C atoms. The measured rotational constants allow a preliminary determination of the geometry of the molecule. The nuclear quadrupole coupling constant of the iodine atom,  $\chi_{aa}(\text{I})$ , is also established. The experimental results are compared with theory performed at the explicitly-correlated coupled-cluster singles, doubles and perturbative triples level.