PURE ROTATIONAL SPECTRUM OF THE TRANSITION METAL SILICIDE PtSi

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Laser vaporization of a Pt target rod in the throat of a supersonic expansion of Ar seeded with 1% SiH_4 has produced the diatomic PtSi in sufficient abundance to allow the J=1-0 and J=2-1 pure rotational transitions in the v = 0 level of $^{194}Pt^{28}Si$, $^{195}Pt^{28}Si$, and $^{196}Pt^{28}Si$ to be recorded in the $^1\Sigma^+$ ground state. The measured line positions have allowed the rotational constant for each of these isotopic modifications to be determined as B($^{194}Pt^{28}Si$)=4854.3637 MHz, B($^{195}Pt^{28}Si$)=4851.2175 MHz, and B($^{196}Pt^{28}Si$)=4848.1152 MHz. Work is currently under way to determine the dipole moment of PtSi.