THE ELECTRONIC SPECTRUM OF SiB

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An electronic spectrum of the SiB molecule has been observed for the first time. The SiB molecule was produced in a Corona Excited Supersonic Expansion source using a mixture of diborane and silane gases seeded in helium. The emitted light was dispersed with a 1.3m spectrometer and recorded with a CCD camera. The region from 200nm to 800nm was examined and a single electronic system, $A^4\Pi - X^4\Sigma^-$ observed with a 0-0 origin at 18432cm^{-1}. Supersonic cooling results in a rotational temperature of 20K and most emission is from the lowest Ω=5/2 component. Observation of the Ω=3/2 component gives the spin-orbit splitting as -23.9 cm^{-1}. The 0-0, 0-1, 0-2, 1-0, 1-2, and 1-3 bands have been analyzed.