

## DETECTION OF SiOH ( $X^2A'$ ) BY FOURIER TRANSFORM MICROWAVE SPECTROSCOPY

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The rotational spectrum of the free radical SiOH in its  $X^2A'$  ground electronic state has been observed by Fourier transform microwave spectroscopy. The  $1_{0,1} - 0_{0,0}$  transition has been detected for the main species  $^{28}\text{Si}^{16}\text{OH}$  and for the rare isotopic species  $^{30}\text{Si}^{16}\text{OH}$ ,  $\text{Si}^{18}\text{OH}$ , and SiOD. The same transition has also been observed in the excited vibrational states  $v_2 = 1$  and  $v_3 = 1$  for the most abundant species. From this data, precise spectroscopic constants have been derived for this plausible astronomical molecule, as has an experimental structure ( $r_0$ ).

In addition, the  $1_{0,1} - 0_{0,0}$  transition of HNSi has been detected at high spectral resolution by the same technique, yielding a precise value for the nitrogen quadrupole coupling constant.