By means of Fourier transform microwave spectroscopy of a molecular beam, the rotational spectra of two small silicon sulfur molecules, the $\text{H}_2\text{SiS}$ chain and the $\text{Si}_2\text{S}$ ring, have been detected in the centimeter-wave band. Precise rotational and centrifugal distortion constants have been determined for both closed-shell species. Empirical equilibrium $(r^*_{\text{emp}})$ structures have been derived for both from the experimental rotational constants of the normal and rare isotopic species corrected for zero point vibrational effects through a quantum-chemical evaluation of the harmonic force fields. These structures compare very well with high-level theoretical structures obtained using the CCSD(T) method in combination with large basis sets up to cc-pwCVQZ. Because $\text{H}_2\text{SiS}$ and $\text{Si}_2\text{S}$ are closely-related in composition to the abundant astronomical molecule, SiS, and are calculated to be fairly polar, they are good candidates for radioastronomical detection in IRC+10216 and circumstellar shells of other evolved carbon stars.