Interest in the hydroxymethyl radical, CH$_2$OH, stems primarily from its importance as a reaction intermediate. However, this radical is also of interest from a spectroscopic point of view with large amplitude COH torsional tunneling and out of plane CH$_2$ wagging motions. The first IR detection of CH$_2$OH was accomplished via matrix isolation spectroscopy over 40 years ago by Jacox. Reisler and co-workers detected CH$_2$OH in the gas-phase using the sensitivity of double resonance ionization detected IR spectroscopy to probe the OH stretch, asymmetric CH stretch, and symmetric CH stretch vibrational modes with partial rotational resolution (0.4 cm$^{-1}$). Most recently, the Nesbitt group published the first fully rotationally resolved IR spectrum of CH$_2$OH via the $K_a=0\rightarrow0$ band of the symmetric CH stretch. These researchers were able to unambiguously assign the identified transitions to a Watson A-reduced symmetric top Hamiltonian thereby producing improved values for the symmetric CH stretch rotational constants and vibrational band origin. However, in this same work the authors point out a number of remaining unresolved issues. Motivated by these gas-phase observations, we decided to return to the matrix isolation studies of CH$_2$OH, however utilizing solid parahydrogen as a matrix host to improve upon the sensitivity and resolution of the previous matrix isolation studies. Based on our measurements, while the end-over-end rotation of the CH$_2$OH radical is quenched, rotational motion around the a-axis is nearly free permitting both A-type and B-type transitions to be resolved. In the case of the OH stretch mode, both A-type and B-type transitions are observed with an energy difference that makes sense based on the gas-phase CH$_2$OH rotational constants. However, for the symmetric CH stretch mode, the same mode recently assigned by Nesbitt and co-workers, two absorption features are also observed but the energy difference and intensities of the two features do not match predictions based on the rotational constants.

