

THE COF<sub>2</sub> ROTATIONAL SPECTRUM NEAR 1 THz; IMPROVED MOLECULAR CONSTANTS FOR THE GROUND AND FIRST EXCITED STATES OF  $\nu_2$ ,  $\nu_3$ ,  $\nu_5$ , and  $\nu_6$

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The rotational spectrum of COF<sub>2</sub> has been observed near 1 THz as part of a continuing program to precisely characterize the spectra of atmospheric molecules. Spectra of the ground,  $\nu_2$ ,  $\nu_3$ ,  $\nu_5$ , and  $\nu_6$  states have been assigned, combined with other available data, and fit up to  $J \approx 90$  for a wide range of  $K_c$ . The spectrum of naturally abundant <sup>13</sup>COF<sub>2</sub> in its ground vibrational state has also been observed and fit, although the range of quantum states is smaller due to interference from the nearby normal species. These results allow more accurate prediction of high  $J$  infrared spectra of the fundamental vibrations below 1000 cm<sup>-1</sup>. The fits will be described and some examples of rotational and infrared spectra will be shown.