MICROWAVE SPECTRUM OF BIPHENYL ETHER

M. ONDA, *Department of Chemistry, Sophia University, 7-1 Kioicho, Chiyoda-ku, Tokyo, Japan 102*; F. J. LOVAS, *Optical Technology Division, National Institute of Standards and Technology, Gaithersburg, MD 20899*.

The microwave spectrum of biphenyl ether has been measured with a pulsed-nozzle Fourier-transform microwave spectrometer. Biphenyl ether, a solid at room temperature (m.p. 300 K), was placed directly in the nozzle which was operated at ambient temperature. Each of the assigned rotational transitions consisted of closely spaced multiplets with either three or four components. The spectra were fit with an asymmetric top Hamiltonian, including rotational and centrifugal distortion terms. The multiplets arise from internal rotation of the equivalent phenyl groups. The measurements, internal rotation, and structure will be discussed.