



Singlet Delta Oxygen: A Quantitative Analysis Using Off-Axis Integrated-Cavity-Output-Spectroscopy (Paperback)

By Jeffrey E Gallagher

Biblioscholar, United States, 2012. Paperback. Condition: New. Language: English . This book usually ship within 10-15 business days and we will endeavor to dispatch orders quicker than this where possible. Brand New Book. A new spectroscopic technique applicable to the detection of ultra-weak and forbidden molecular transitions is presented. The method is based on off-axis integrated-cavity-output spectroscopy (ICOS) and has been applied to the detection of singlet (a¹g) oxygen in the (1,0) band of the electric-quadrupole allowed Noxon system (b₁ + g a¹g) of oxygen. The details of the method as well as spectroscopic data concerning the absolute line positions of twenty-one lines in the (1,0) band of the b₁ + g a¹g have been completed to within 0.004 cm⁻¹. A Boltzmann analysis verified previously calculated and unproven integrated cross sections for each of the lines. Ten lines were also pressure broadened from 25 Torr to 100 Torr, and pressure broadening coefficients were determined from $\nu = 3.61 \times 10^6 \text{ cm}^{-1} = \text{torr}$ to $5.81 \times 10^6 \text{ cm}^{-1} = \text{torr}$. These coefficients illustrate that rotationally-inelastic collisions are the dominant mechanism in molecular pressure broadening. The singlet oxygen was...



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