OSCILLATOR STRENGTHS AND PREDISSOCIATION RATES FOR RYDBERG COMPLEXES IN $^{12}C^{16}O$ BETWEEN 92.9 AND 93.4 NM

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We are conducting experiments on the DESIRS beam-line at the SOLEIL Synchrotron to acquire the necessary data on oscillator strengths and predissociation rates for modeling CO photochemistry in astronomical environments. A VUV Fourier Transform Spectrometer provides a resolving power of about 350,000, allowing us to discern individual lines in electronic transitions. Here we focus on results for six overlapping bands seen in spectra of $^{12}C^{16}O$ and compare them with earlier determinations. Absorption from the ground electronic level, $X\ ^1\Sigma^+\ v'' = 0$, to the upper levels 4pπ(2), II $^1\Pi$, 4pσ(2), 5pπ(0), 5pσ(0), and I $^1\Pi$ was analyzed. Our results are the first to provide data on each band. The spectra also reveal a continuum feature that was modeled, but its identification is not known at the present time.