

Abstract Submitted  
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**C<sub>2</sub> Swan Bands Measurements Using Laser-Induced Breakdown Spectroscopy** MICHAEL WITTE, CHRISTIAN PARIGGER, University of Tennessee Space Institute — Laser Induced Breakdown Spectroscopy (LIBS) is used to analyze carbon-containing substances without significantly affecting the material being studied. In this study, we address C<sub>2</sub> diatomic molecular spectra that were recorded following optical breakdown generated with pulsed, nanosecond laser radiation. Our focus is on the  $\Delta\nu = -1, 0, +1$  transitions in the wavelength range of 450 nm to 565 nm, and for delay times on the order of 10-100 microseconds from optical breakdown. Measurements are conducted with the following, typical equipment for nanosecond LIBS: A Nd:YAG laser producing 190-mJ, 14-ns, pulsed 1064-nm radiation; a Jobin-Yvon HR 640 Czerny-Turner spectrometer; and an intensified linear diode-array and optical multichannel analyzer, or an ICCD camera. We compare recorded and computed, wavelength- and intensity- calibrated spectra.

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