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# **ALMA Observations and Multi-line Modeling of the Galaxy Center of NGC 3351**

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The CO-to-H<sub>2</sub> conversion factor ( $\alpha_{\text{CO}}$ ) is critical to studying molecular gas and star formation in galaxies. The value of  $\alpha_{\text{CO}}$  has been observed to vary in different regions of a galaxy, and it is dependent on environmental parameters such as gas densities and temperatures. Previous observations on ~kpc scales revealed lower  $\alpha_{\text{CO}}$  values in the centers of some nearby star-forming galaxies, including NGC 3351. We present new ALMA Band 3, 6, and 7 observations of <sup>12</sup>CO, <sup>13</sup>CO and C<sup>18</sup>O rotational lines on ~50 pc scales in the center of NGC 3351. Using multi-line modeling and a Bayesian likelihood analysis, we constrain possible values of the H<sub>2</sub> density, kinetic temperature, CO column density, and CO isotopologue abundances at each pixel. The  $\alpha_{\text{CO}}$  distribution can be derived from the CO column densities and then compared with other parameters. We present initial results from this analysis investigating the physical processes that control  $\alpha_{\text{CO}}$  in galaxy centers.