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The CARMA-NRO Orion Survey - Data Release

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ABSTRACT

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With this research note, we are releasing the CARMA-NRO Orion Survey data first presented in Kong et al. (2018), enhanced with additional coverage of the L1641-C region to the south of the integral-shaped filament. We are including position-position-velocity cubes for the molecular lines ^{12}CO (1–0), ^{13}CO (1–0), and C^{18}O (1–0). The original paper includes details of the data reduction and final sensitivity. The mapped region now spans about 2.5 degrees along the Orion A cloud in the north-south direction, providing an unprecedented overview of the extended molecular gas. The associated data cubes are publicly available on the Harvard Dataverse [doi:10.7910/DVN/6Q26PN](https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/6Q26PN) (Version 3). Kong et al. (2018) and this research note should be cited when using these data.

Figure 1 shows the peak intensity maps in the three molecular lines. These maps include the L1641-C region to the southeast that was not covered in the original maps (Kong et al. 2018, hereafter K18). The additional observations were made in May 2019 using the NRO45 telescope with the same setup and resulting sensitivity as described in K18. The new NRO45 data and existing CARMA data for L1641-C were combined as in K18 and then merged with the original cubes. No obvious artifacts are detected in the final combined maps. The velocity coverage is from $V_{lsr} = -2$ to 19 km s^{-1} for the ^{12}CO cube, and from $V_{lsr} = 0$ to 17 km s^{-1} for ^{13}CO and C^{18}O .

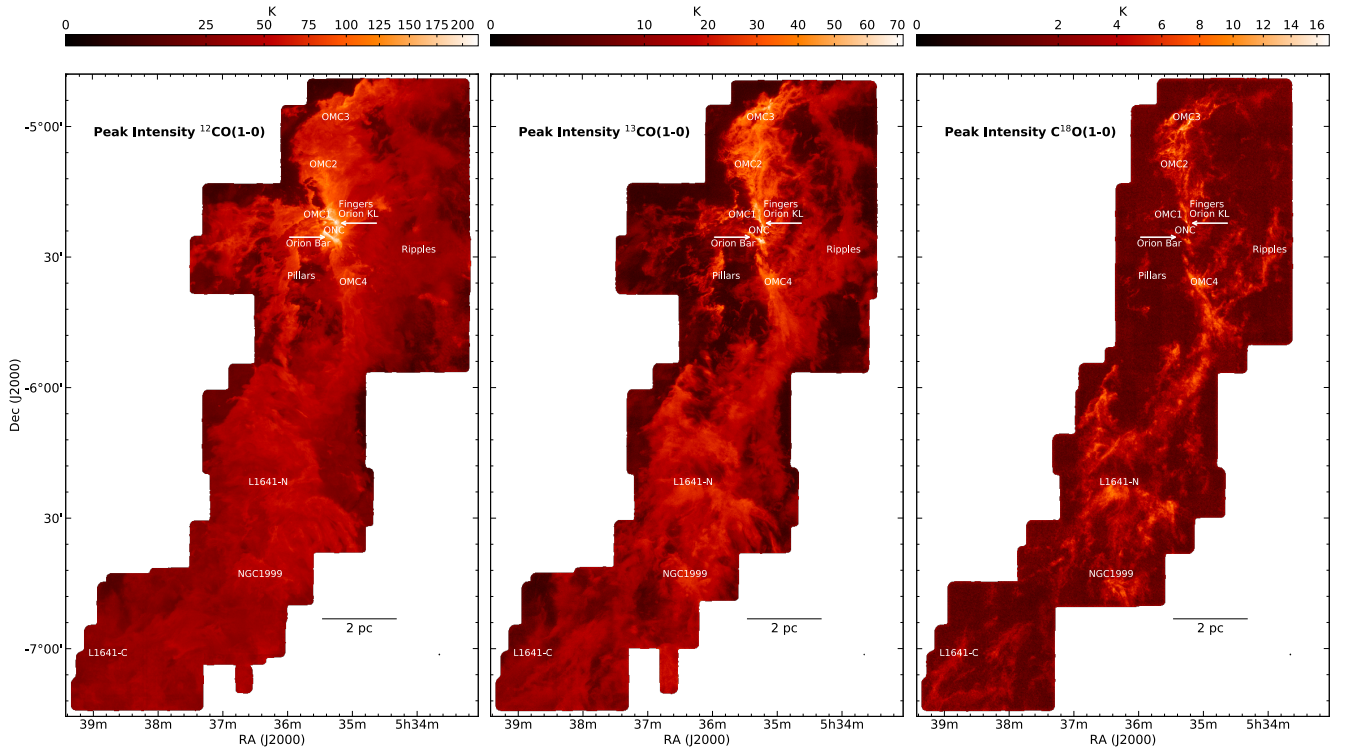


Figure 1. Peak intensity maps in $^{12}\text{CO}(1-0)$ (left), $^{13}\text{CO}(1-0)$ (middle), and $\text{C}^{18}\text{O}(1-0)$ (right). The synthesized beams are shown in the lower-right corner of each panel. The size scales bars assume a distance of 400 pc.

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