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**ALMA Observations of the IR-bright Merger VV114**

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We present preliminary  $^{12}\text{CO}(1-0)$ ,  $^{13}\text{CO}(1-0)$ ,  $^{12}\text{CO}(3-2)$ ,  $\text{HCO}^+(4-3)$  and  $\text{HCN}(4-3)$  maps of the IR-bright late stage merger VV114 obtained during cycle 0 of ALMA. The main objective is to understand the response of the diffuse and dense gas when two gas rich galaxies collide and merge. We find new  $^{12}\text{CO}(1-0)$  tails and arms emanating from both galaxies with a significantly broader emission at the overlap region of the two galaxies, and this also coincides with high  $^{13}\text{CO}/^{12}\text{CO}$  ratio. The nucleus of VV114E shows a compact and broad  $\text{HCO}^+$  and  $\text{HCN}$  emission that also coincides with the bright submm continuum peak, suggesting the existence of a buried AGN surrounded by dense gas. VV114E also shows significant evidence for extended dense gas that is consistent with the star formation region traced in Pa alpha emission. Furthermore, We show preliminary  $\text{CN}(1-0)$ ,  $\text{CS}(2-1)$ ,  $\text{CH}_3\text{OH}(2-1)$ , and  $\text{CS}(7-6)$  images detected at the nucleus of VV114E and the overlap region. These new ALMA data demonstrate the importance of observing both the diffuse and dense gas in order to obtain a comprehensive view of the physical processes that occur during a major merger event.