

P115a **ALMA Observations of Circumbinary Disks in Protostellar Binary Systems L1551 IRS 5 and NE**

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We will report our latest ALMA results of the Class I protostellar binary systems L1551 IRS 5 and NE in the 0.9-mm dust-continuum and  $C^{18}O$  (3–2) line emission at an angular resolution of  $\sim 0.20$  arcsec (= 25 AU). Between L1551 IRS 5 and NE, there are two interesting differences of the binary properties, binary mass ratio  $q$  (=1 in L1551 IRS 5 and 0.2 in NE) and the centrifugal radii of the circumbinary disk (= 60 au in L1551 IRS 5 and 300 au in L1551 NE). Our ALMA observations of L1551 NE show that the circumbinary disk shows two-arm features and infalling gas motion. Furthermore, the western parts of the spiral arms are brighter than the eastern parts, suggesting the presence of an  $m = 1$  spiral mode. On the other hand, ALMA observations of L1551 IRS 5 found a rotating circumbinary disk but no clear arm feature. From comparisons between these ALMA results and our theoretical simulations, we will discuss these differences of the internal structures and gas motions of the circumbinary disks as a function of the binary properties.