

B31a **Trigonometric distance to IRAS 20056+3350: Massive star forming region on the Solar circle**

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We measured the annual parallax and proper motions of 22 GHz H₂O masers in the IRAS 20056+3350 massive star forming region (MSFR) using multi-epoch VLBI observations with VERA. Our new distance of $D = 4.68 \pm 0.58$ kpc, which is ~ 3 times further than the values frequently adopted in the literature, places IRAS 20056+3350 at the furthest point along the Local Arm than any other MSFR with a known trigonometric distance.

Using our distance, IRAS 20056+3350 is found to be much more luminous, massive and energetic than previously thought, as we show by revision of past works. Furthermore, we investigate the nature of this MSFR by extensive use of public archive data from WISE, IRAS and UKIDSS.

Using the parameters obtained in our observations we evaluated the angular velocity of Galactic rotation at the location of the Sun, Ω_0 , by exploiting the special geometry of Solar Circle objects. Our value of $\Omega_0 = 28.04 \pm 0.20$ km s⁻¹ kpc⁻¹ is consistent with similar studies of this kind.