

Parallaxes and proper motions of star forming regions in the Sagittarius spiral arm

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The spiral structure of our own Galaxy is still not very well known due to our location within the Galactic disk that causes any spiral structure to be superimposed within the line of sight. While kinematics can largely disentangle the various spiral arms, kinematic distances are not accurate enough for precise spiral structure studies. We measure the parallaxes and proper motions of water and 6.7GHz methanol masers associated to star-forming regions in the Sagittarius spiral arm, up to the tangential point at Galactic longitudes of 49 degrees, as part of the BeSSeL program. By combining this new astrometric data with previous measurements, we can study the distribution of masers in this spiral arm to improve measures of the arm height, width, and pitch angle. As the Sagittarius arm is one of the closest spiral arms to the Sun, the parallax uncertainties are relatively small, and we can begin to trace the three dimensional structure and velocities of the star forming regions in the arm and compare that to spiral arm models and observations of other (face-on) galaxies.