

The period–luminosity relation of Mira variable stars

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Abstract. We use astrometry to measure the distances to Galactic Mira variable stars. Our purpose is to determine a precise period–luminosity relation (PLR). At present, we do not have a precise PLR for Galactic Mira stars because of the large uncertainties affecting their distance estimates. To reduce the uncertainties, we adopted the Very Long Baseline Interferometry method and measured annual parallaxes of Mira variable stars with *VERA*. In addition to our previous results, we obtained three new distances for Mira variable stars. Based on our observations, the typical uncertainty in a given distance measurement is reduced to below 10%. At this conference, we present the current status of our project. To establish a precise Galactic PLR, we continue to observe more Mira variables. In addition, the apparent magnitudes of the target stars should be studied carefully.

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