

Abstract Submitted
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Pulsar J0453+1559, the 10th Double Neutron Star System in the Galaxy JOSE MARTINEZ, University of Texas at Brownsville, KEVIN STOVALL, University of New Mexico, PAULO FREIRE, Max Planck Institute for Radio Astronomy, JULIA DENEVA, National Astronomy and Ionosphere Center, FREDRICK JENET, University of Texas at Brownsville, MAURA MCLAUGHLIN, West Virginia University, UNIVERSITY OF TEXAS AT BROWNSVILLE COLLABORATION, UNIVERSITY OF NEW MEXICO COLLABORATION, MAX PLANCK INSTITUTE FOR RADIO ASTRONOMY COLLABORATION, NATIONAL ASTRONOMY AND IONOSPHERE CENTER COLLABORATION, WEST VIRGINIA UNIVERSITY COLLABORATION — Double neutron star (DNS) systems are valuable physical laboratories that open the doors for many precise experimental tests of gravitational theories. PSR J0453+1559 is a pulsar with a spin period of 45.7 ms. It was discovered and is currently being followed up with the world's largest radio telescope, the Arecibo Observatory. The system has an orbital period of 4.07 days and an eccentricity of 0.1125. The semi-major axis of the orbit is 14.5 light-seconds, which implies, for a pulsar mass of $1.35M_{\odot}$, the minimum and median companion masses are $1.0M_{\odot}$ and $1.2M_{\odot}$, respectively. This strongly suggests this is a new DNS system, only the tenth discovered in the Galaxy.

Jose Martinez
University of Texas at Brownsville

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