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The current observational landscape of ultra-long period transients

Tuesday, 9 July 2024 15:00 (25 minutes)

Ultra-long period (ULP) radio transients are one of the most recent mysteries in compact object astrophysics. Theories suggest that these could be slowly spinning neutron stars or white dwarfs. However, the confirmation of either (or both) would be a giant leap toward understanding the evolution of compact objects and the physics of coherent radio emission. This has led to large-scale image-plane searches for this emerging population at various radio facilities around the globe. In this talk, I will give a brief overview of the observational constraints we have on the currently known population of ULP transients. I will go over the various search techniques and selection biases that exist in archival searches and provide a description of new image-domain techniques being used to discover this new population. I will also briefly discuss the various observed properties of the sources and compare them to some of the other similar astrophysical phenomena. I will conclude by presenting a new ULP transient discovery with the LOFAR telescope and an outlook toward the future of this exciting emerging field.

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