

Department of Physics and Astronomy Colloquium Series

Tuesday, January 16, 2024 at 2:30pm in PSE 317

Speaker: Thankful Cromartie

Institution: Cornell University

Title: Detecting Gravitational Waves With Pulsar Timing: Updates from NANOGrav and the IPTA

Abstract:

The North American Nanohertz Observatory for Gravitational Waves (NANOGrav) collaboration recently published its 15-Year Data Set, providing substantial evidence for a nHz background of gravitational waves and marking an exciting milestone for pulsar timing arrays. Since the publication of our 12.5-Year Data Set, which strongly suggested the presence of a common red noise process in NANOGrav's millisecond pulsar (MSP) timing data, we have added 21 new MSPs and 3 years of data. This colloquium will touch on the improvements between our 12.5 and 15-year data releases, results from the 15-year gravitational wave search, and exciting synergistic science results. NANOGrav's participation in the International Pulsar Timing Array's Third Data Release effort, as well as what lies on the horizon for pulsar timing array experiments, will also be discussed.

There are some nice images here if that's helpful: <https://nanograv.org/press/image-gallery>