



Society of Physics Students presents:



2024 ECLIPSE SEMINAR SERIES

PHYSICS ALUMNI SERIES SEMINAR



NANOGrav – Discovering the Gravitational Hum of the Universe

**Dr. Joseph Glaser '14, Scientific Computations
Specialist @ NANOGrav, West Virginia University**

In June 2023, the North American Nanohertz Observatory for Gravitational Waves (NANOGrav) achieved a groundbreaking astronomical milestone with the unveiling of strong evidence for the Stochastic Gravitational Wave Background (SGWB). Pulsar Timing Arrays, such as NANOGrav, harness the precision of millisecond pulsar observations to detect low-frequency gravitational waves. Over a span of 15 years, NANOGrav meticulously "timed" 68 millisecond pulsars, effectively constructing a galactic-scale, multi-armed interferometer to discern the predicted gravitational hum originating from the inspiral of supermassive black hole binaries in merging galactic cores. In this talk, we'll delve into not only the scientific breakthroughs underpinning this first set of compelling evidence for the SGWB, but also the profound personal journey of participating in such a monumental public release. From the unprecedented international academic coordination to preparing for a fully public release of all of our telescope and analytical data, every member of the collaboration put in countless hours to make this scientific achievement possible. While this kind of effort isn't always typical of our academic journeys, the lessons we learned through this process should be applicable at all scales for our united and enduring pursuit to unravel the mysteries of our Universe.

Tuesday April 9th, 2024

11:30 am in SR 151

Pizza and Refreshments Provided