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RADIO EXPLORATION OF THE TRANSIENT SKY: BINARY MERGERS AND PECULIAR CORE-COLLAPSE SUPERNOVAE

16 May 2023 • 3:30 pm ET • TSI Conference Room

OBSERVATIONS OVER THE LAST FEW DECADES HAVE SHOWN THAT THE RADIO SKY IS VERY DYNAMIC ON SHORT TIMESCALES. RADIO STUDIES OF TRANSIENTS UNIQUELY UNVEIL KEY INFORMATION ON THE PHYSICS AT PLAY IN THESE EVENTS, AS WELL AS IMPORTANT CLUES ON THE PROPERTIES OF THEIR SURROUNDINGS; COMPLEMENTING WHAT WE CAN LEARN FROM OBSERVATIONS IN OTHER WAVELENGTHS OF THE ELECTROMAGNETIC SPECTRUM. I WILL SPEAK ABOUT THE PHYSICAL INSIGHTS WE CAN OBTAIN FROM RADIO OBSERVATIONS OF A FEW INTERESTING TRANSIENTS: (A) THE RADIO AFTERGLOW FROM THE BINARY NEUTRON STAR MERGER EVENT GW170817; AND (B) A PECULIAR REBRIGHTENING OF THE RADIO AFTERGLOW OF CORE-COLLAPSE SUPERNOVA, SN2004DK; WHICH I STUDIED DURING MY PHD WORK AT TEXAS TECH UNIVERSITY.