



Annual Highlights: Feb 1, 2018 – Jan 31, 2019
Center for Transient Astrophysics, Niels Bohr Institute

This year our group focused on reaping the benefits of the discovery of GW170817. For our center, the discovery of the GW170817 event was a vindication of our past work yet we continue constructing the theoretical framework behind element synthesis in neutron star mergers and the associated electromagnetic signatures for years to come. At the same time continue our work on the interpretation of other transients sources and in particular the tidal disruption of stars by supermassive black holes. Black holes occasionally reveal themselves when passing stars get ripped apart by their gravity. These tidal disruption events have created a new way for astronomers to map the hidden cosmos and our group has establish as one of the key leaders in the field, as highlighted by the recent [Quanta](#) magazine article on the subject. This article also received the 2019 David N. Schramm Award for high-energy astrophysics science journalism. Our group wrote during the review period two important articles on the subject titled “A Unified Model for Tidal Disruption Events” and “Weighing Black Holes Using Tidal Disruption Events” both of them receiving significant press coverage.

We are grateful that our work has been recognized, both monetarily and collegially to enable this. During the review period we have been PI and co-PI on successful grant proposals totaling well in excess of 2.5 million, we have authored 72 papers, gave colloquia at many of the most renowned astronomy departments in the world and have been asked to present review talks at almost all international symposia and workshops whose main scientific focus is astronomical transients and explosive phenomena. The work of the NBP has been recognized internationally. For example, the NBP received the Mid Career HEAD Prize from the American Astronomical Society "for his key contributions to our physical understanding of transient phenomena involving compact objects" and was elected as Fellow of the American Physical Society. While individual accolades for the NBP are wonderful to receive, we have been even more gratified to see our students and postdocs achieving their own recognition. At NBI, postdocs and students have won the Block Award from the Aspen Center for Physics for transformative work on common envelope physics (Rosa Wallace), SNSF Eccellenza Professorship (Anastasios Fragos), Young Investigator Award (Katie Auchettl) and NASA Fellowship (Brenna Mockler).