

# PHAROS Conference 2019: the multi-messenger physics and astrophysics of neutron stars



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## Electromagnetic signatures of neutron star mergers

Observations and theoretical modelling of the first confirmed neutron star merger event, GW170817, have allowed us to probe for the first time the electromagnetic signatures of this catastrophic event. I will present an overview of the extensive multi-wavelength follow-up that was obtained for the ‘kilnova’ event that occurred with GW170817 (and any others that may have occurred by the time of this meeting!). I will highlight the major results of these studies and the many outstanding questions that remain. I will also discuss the leading European electromagnetic follow-up campaign for gravitational-wave sources, ENGRAVE, that is currently operating at European Southern Observatory facilities in Chile. The aim of ENGRAVE is to study the diversity of neutron star mergers and give insights into the yields of heavy elements, as well as measure the structure of their jets, how they produce gamma-ray signals, and how these events can be used to measure distances in the Universe.

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