

The Electromagnetic Follow-up

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The alert provided by the Advanced LIGO and Advanced Virgo detectors on August 17, 2017 triggered one of the most extensive campaigns in the history of the observational astrophysics. The contemporaneity of the gravitational wave event GW170817, with high energy photons measured by space missions (FERMI and INTEGRAL), was early established and the localization of the electromagnetic counterpart (AT2017gfo) was performed within ~ 11 hours. The characterization of the physical properties of this sources required a large international effort involving 8-m class telescopes and a wide time coverage. The electromagnetic follow-up of GW170817 provided evidences that the merging of two neutron stars give rise to a transient optical/near-infrared source, named “kilonova”. This source is expected to be powered by the synthesis of heavy elements via rapid neutron capture (the r-process). Comparison with spectral models suggests that the observed merger ejected a quantity of matter of the order of 0.03-0.05 solar masses.

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