

The 2nd PANDA Symposium on Multimessenger Astronomy - Jets and Shocks in the Universe

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Transient Universe and Gravitational Wave Astronomy

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A number of fascinating phenomena in the Universe produce transient events studied by traditional astronomy in a wide spectrum of messengers: multi-wavelength electromagnetic radiation, neutrinos and cosmic rays.

Gamma ray bursts, supernovae and other violent events are hallmarks of fundamental astrophysical processes which govern the Universe. They may also produce gravitational waves (GW) predicted by General Relativity. Coming from the strong field core of the astrophysical events, gravitational waves will dramatically expand our means to study the transient Universe. This is particularly true if gravitational wave events are unambiguously associated with other messengers. In my talk I'll discuss anticipated scientific benefits of multi-messenger observations, experimental and data analysis challenges of joint experiments and prospects of future GW astronomy.

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