

The Transient program of the Cherenkov Telescope Array

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The Cherenkov Telescope Array (CTA) will be the next generation very high-energy (VHE) gamma-ray observatory. It will improve the sensitivity of current VHE instruments up to an order of magnitude and will cover the energy range from 20 GeV to at least 300 TeV. With its sensitivity, it will explore high redshift sources and extreme accelerators and will give access to the shortest timescale phenomena. CTA will be then a uniquely powerful instrument for the exploration of the transient universe. Thanks to its capabilities, CTA will play also a central role in the era of multi-messenger astrophysics.

In this presentation, we will outline the CTA Transient program that includes follow-up observations of a broad range of multi-wavelength and multi-messenger alerts, ranging from Galactic transient objects to novel phenomena like Fast Radio Bursts. A very promising case is that of gamma-ray bursts (GRBs) where CTA will for the first time enable high-statistics measurements above ~ 10 GeV, probing new spectral components and shedding light on the physical processes at work in these systems. Dedicated programs searching VHE gamma-ray counterparts to gravitational waves and high-energy neutrinos complete the CTA transients program.

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