

WST - the Wide-field Spectroscopic Telescope: surveying the Universe in the 2040's and beyond



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Einstein Telescope: the next generation European Gravitational Wave observatory

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The current generation of gravitational wave (GW) detectors, Advanced Virgo and Advanced LIGO, have opened a new window on the Universe by detecting GW signals in the Hz-kHz frequency range. Monumental scientific goals have been achieved thanks to their observations.

A new generation of terrestrial and space-based interferometric GW observatories is being prepared to replace the current generation of GW detectors in the next decade. This will make it possible to search almost the entire Universe for GW signals. Einstein Telescope (ET) is leading the design, preparation and implementation of next-generation terrestrial GW observatory in Europe. ET aims to detect all stellar or intermediate-mass black hole mergers throughout the Universe, testing general relativity in the presence of a strong gravitational field. ET will detect a large fraction of the coalescences of binary neutron star systems in the Universe, shedding light on the equation of state that governs the physics of these compact bodies. ET will contribute to the understanding of dark matter and dark energy by looking at the gravitational side of this puzzle.

An overview of the scientific objectives, the observatory design, the required technologies and the project organisation of Einstein Telescope is presented.

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