

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



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Unveiling the Secrets of Ultra-Faint Dwarf Galaxies with WST

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The upcoming Legacy Survey of Space and Time (LSST) that will be conducted by the Vera Rubin Observatory (VRO) promises to boost the number of new ultra-faint dwarf (UFD) galaxies discovered in the Milky Way halo, providing crucial insights into their nature and their role in the evolution of their host galaxies. However, characterizing these elusive systems and unraveling their unique role in the cosmic puzzle requires unprecedented spectroscopic capabilities. The future Wide Spectroscopic Telescope (WST) offers a transformative opportunity to push the boundaries of UFD research. With its characteristics, WST will enable detailed chemical abundance studies and kinematic mapping of UFDs. By bridging the gap between discovery and characterization, WST will illuminate the fossil record of the earliest stages of galaxy formation and provide critical insights into the smallest building blocks of the Universe.

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Session Classification: Variable objects and their role as tracers of galaxy structure and evolution