

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



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Tracing the Evolution of Young Stellar Populations with the Wide-field Spectroscopic Telescope

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Young stellar populations hold the key to understanding the early phases of star formation, the impact of stellar feedback, and the processes that shape galactic structure over time. By mapping the kinematics and chemical compositions of stars across different environments, we can trace their origins, dynamical evolution, and eventual dispersal into the field. The WST will provide an unprecedented opportunity to study these populations on a large scale, enabling us to connect their formation conditions to their long-term evolution.

In this talk, I will discuss how WST will revolutionize our understanding of young stellar populations by probing their motion, chemical signatures, and interactions with their surroundings. I will also highlight the key instrumental requirements necessary to achieve these goals, including the resolution and the radial velocity precision

for kinematic measurements. Additionally, I will explore the potential for extending the instrument into the infrared, which would enhance our ability to study embedded young stars and populations in highly extincted regions. These advancements will open new pathways for understanding the fundamental processes driving star formation and galactic evolution.

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