

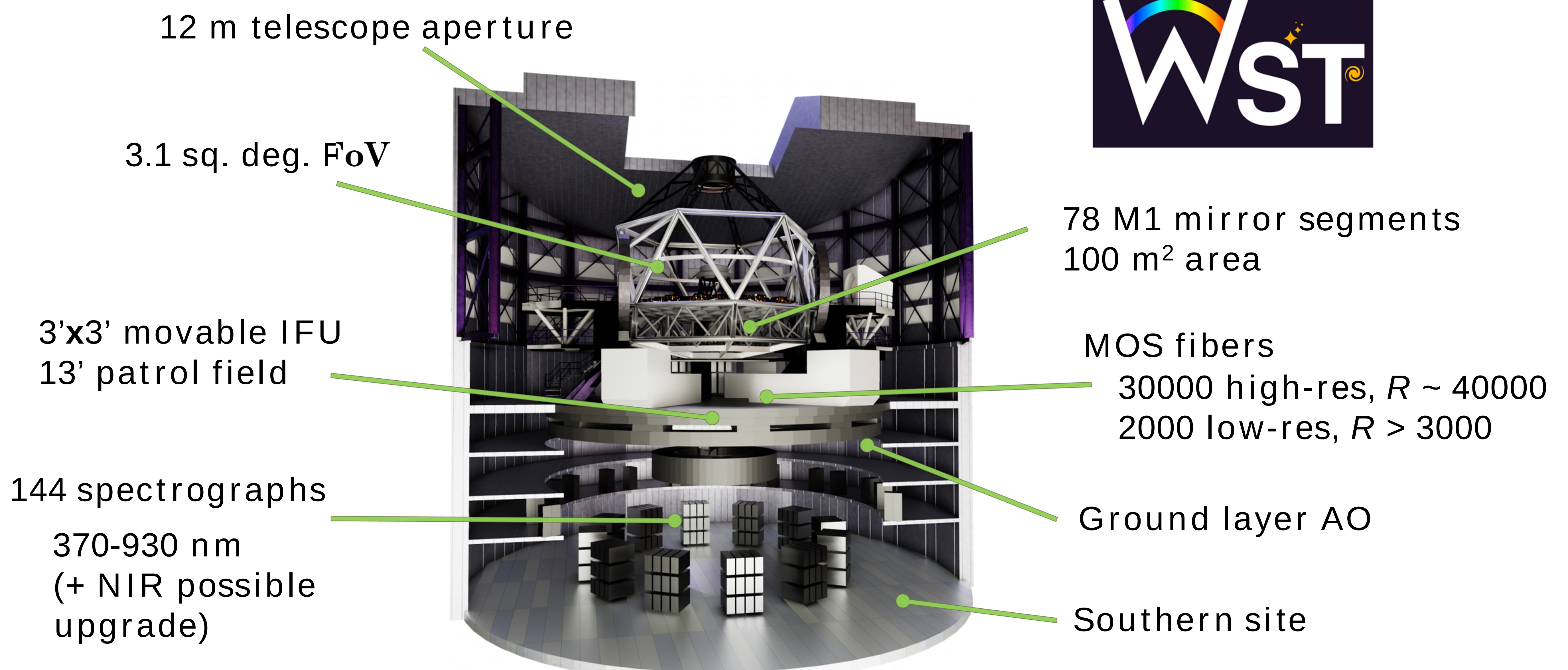
Time-domain and transient astrophysics with the Wide-field Spectroscopic Telescope (WST)

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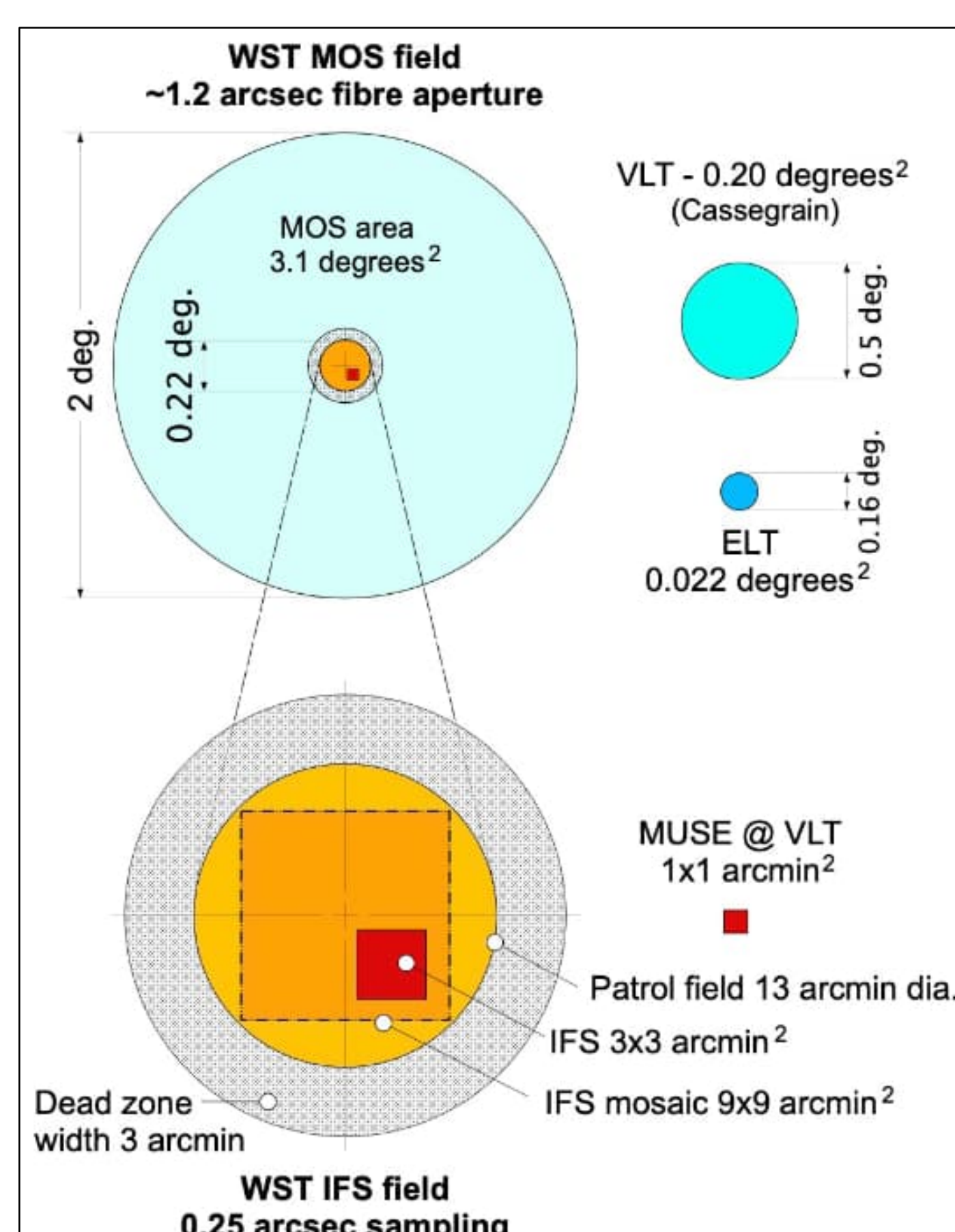
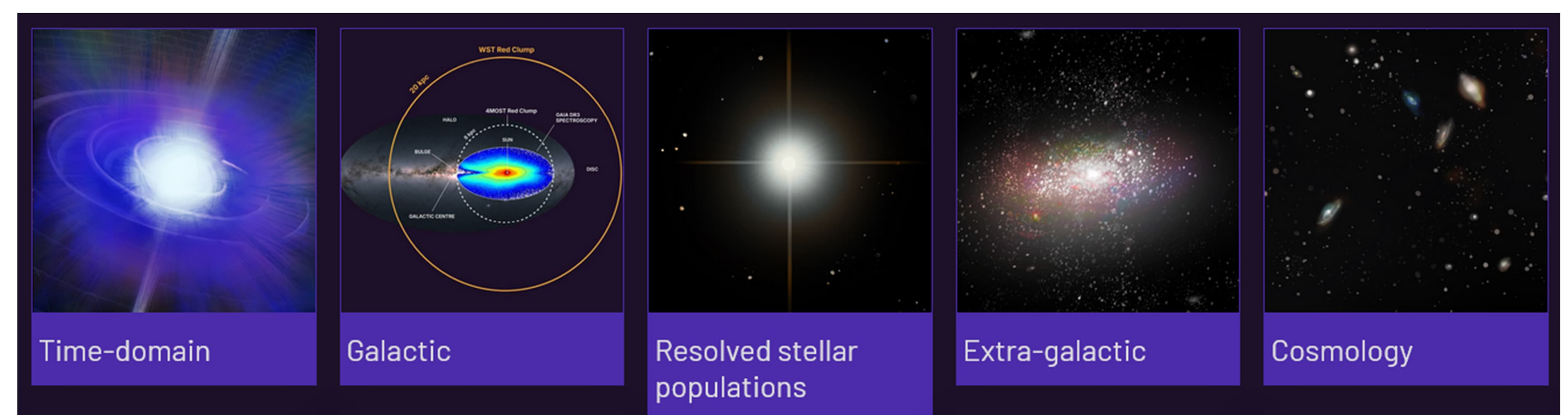
*Science Working Group Lead



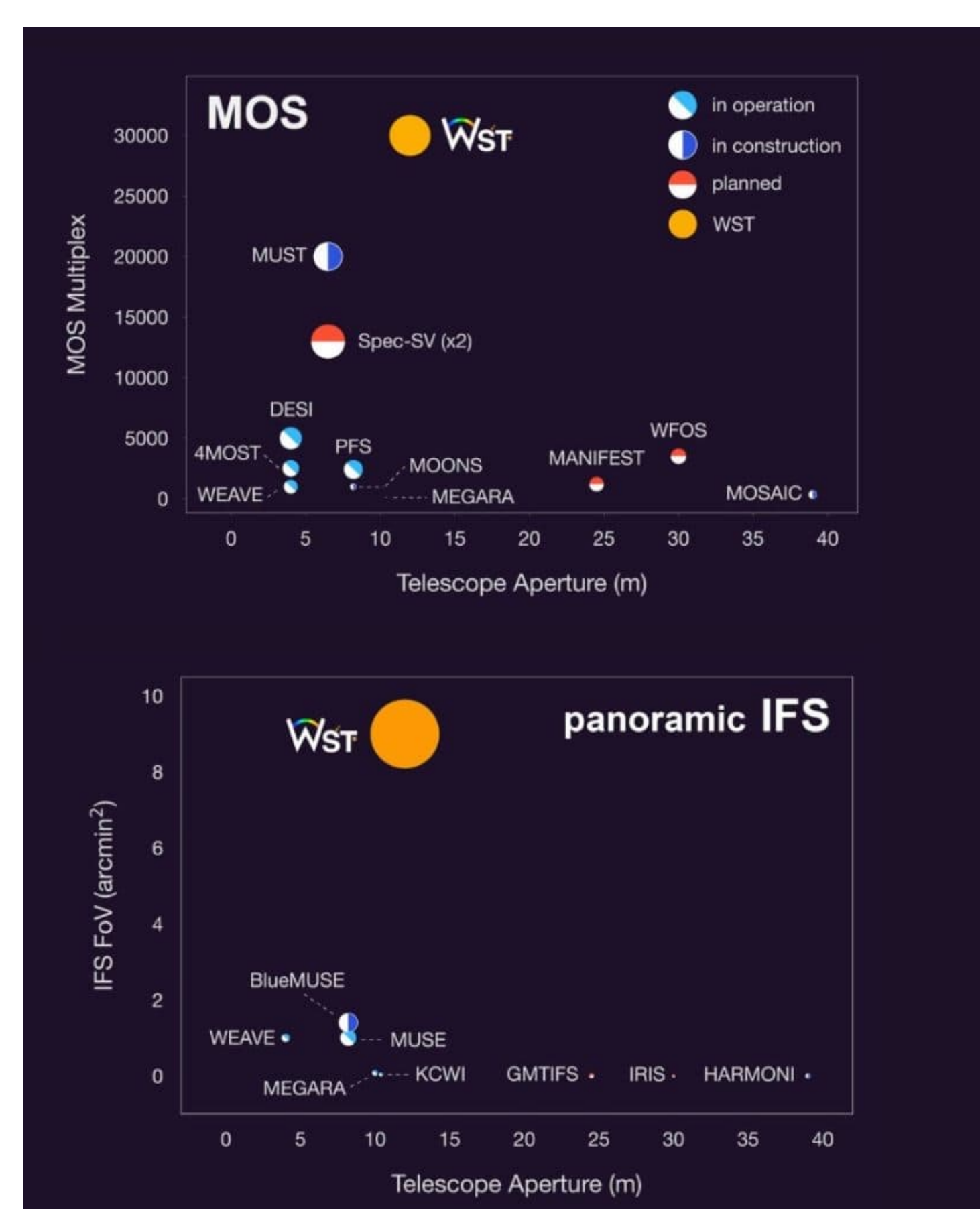
WST is a concept 12 m telescope dedicated to spectroscopy, with simultaneous multi-object spectroscopy (MOS) and integral field spectroscopy (IFS) operation. It is designed with a large-area MOS of 3 sq. deg. with high multiplex of 30000, and a 3'x3' IFS, at the resolutions of $R \sim 4000$ -40000 in the 370-970 nm wavelength range. The science drivers of WST include cosmology, Galactic and extragalactic science, and time-domain astrophysics. Given the large field of view and high multiplex, WST will be able to collect thousands of spectra of live transient objects every night, with ToO response from fiber-level to telescope-level. Additionally, WST will also be able to collect spectra of transient host galaxies, statistically using MOS and panoramically using IFS, and react to multi-messenger sources to discover and follow their electromagnetic counterparts.



Time domain is one of the main science topics of WST



WST MOS and IFU coverage

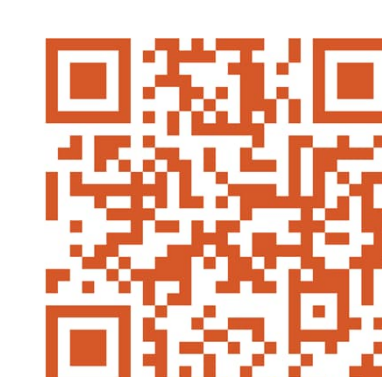


WST MOS/IFU vs other facilities

What can we do with WST?

- ✓ ToO observations, at telescope or fiber level
→ 10³ fibers available for ToO per pointing
- ✓ Followup and classification using dedicated and idle fibers (e.g. Rubin sources) → 10³ transients per night
- ✓ Catch multi-messenger EM counterparts
- ✓ Host galaxy studies (panoramic and statistical)

WST webpage



WST science white paper



Join the science teams!

