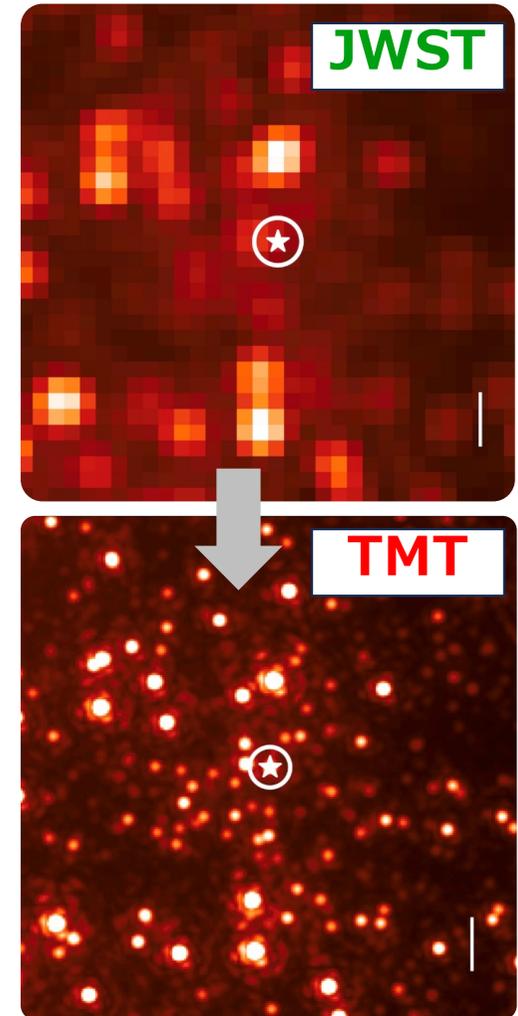
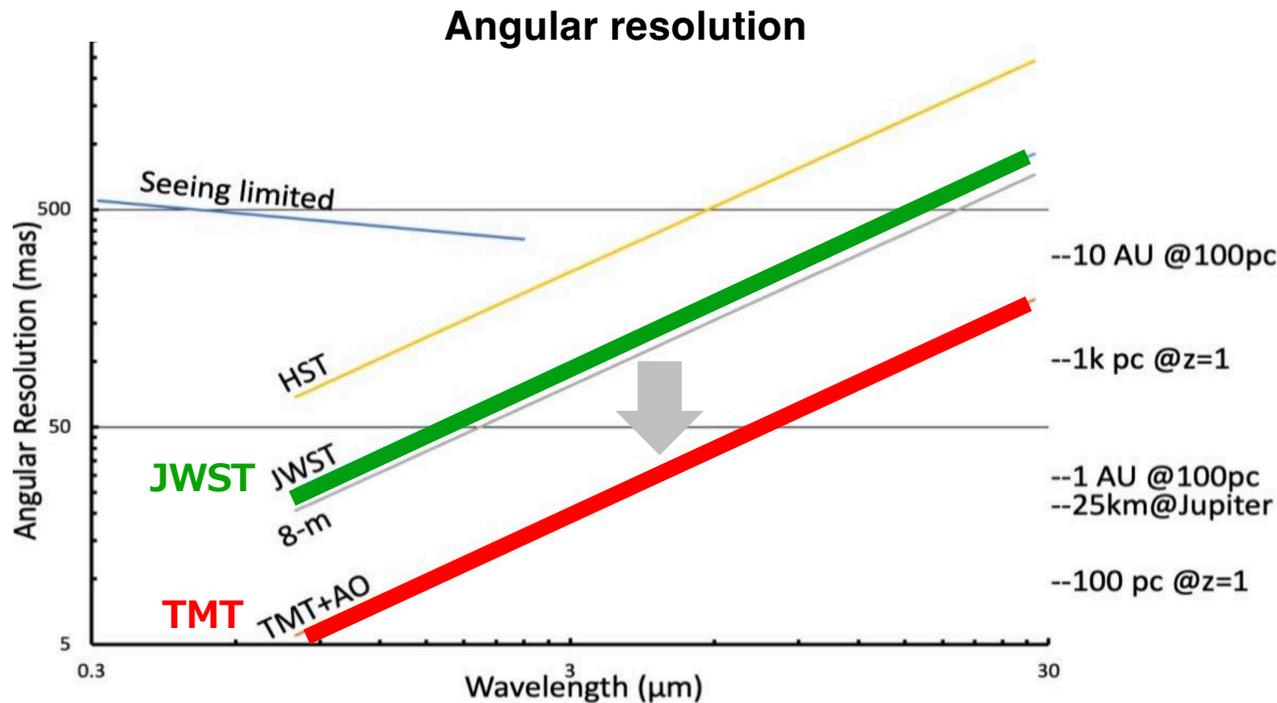


1. High Angular Resolution

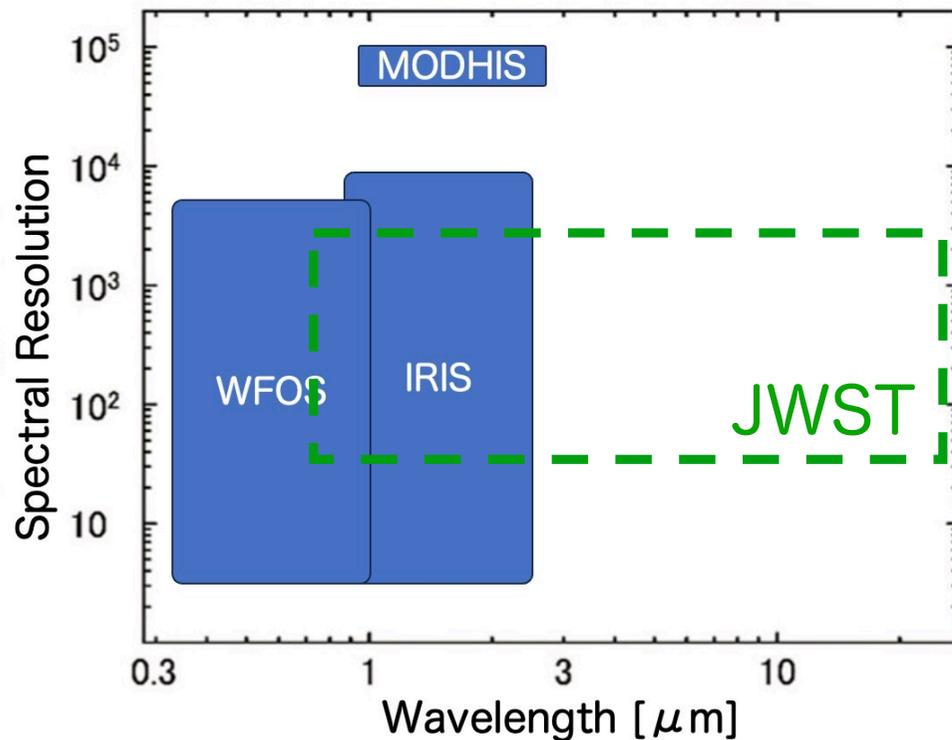


TMT provides

- ▶ 5x sharper images than JWST
- ▶ 3x sharper images than 8-10m class telescopes

2. High Spectral Resolution

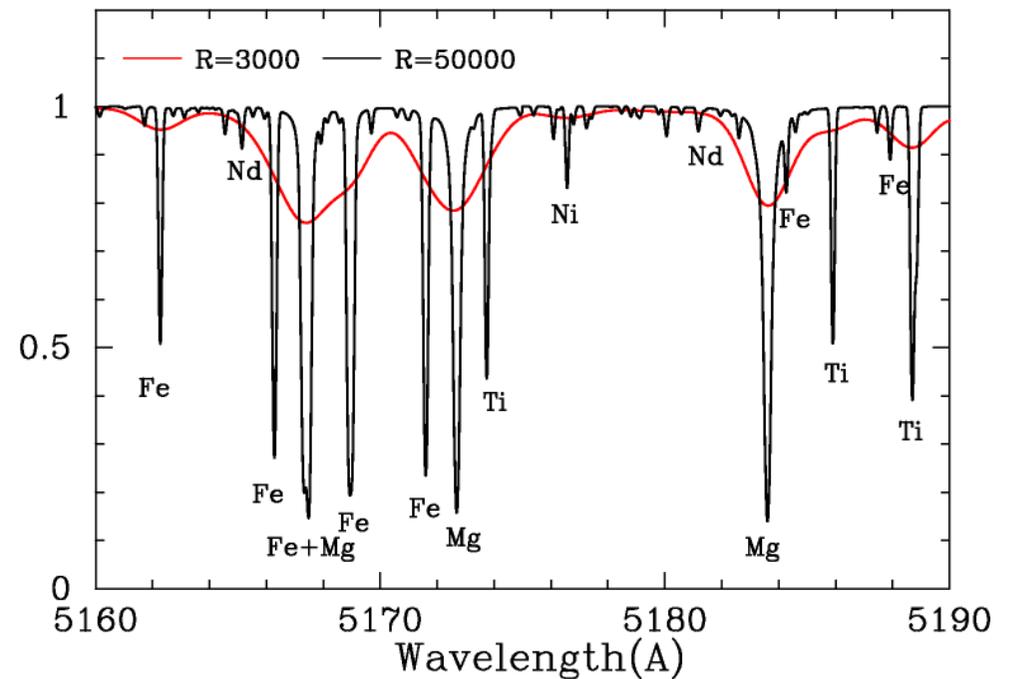
First light instruments



TMT provides

- ▶ a wide range of spectral resolution
- ▶ up to $R \sim 10^5$

JWST ($R=3000$) \Rightarrow **TMT** ($R > 50,000$)

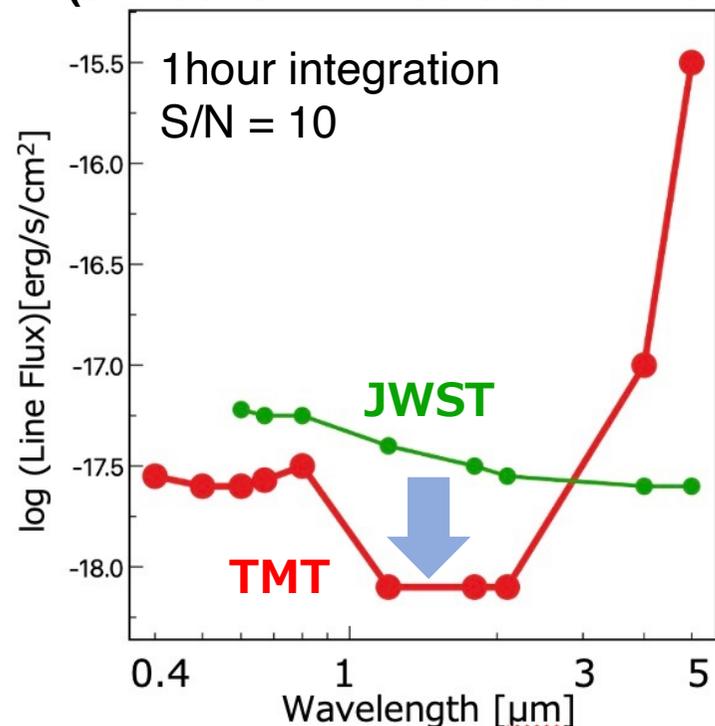


With higher resolution,

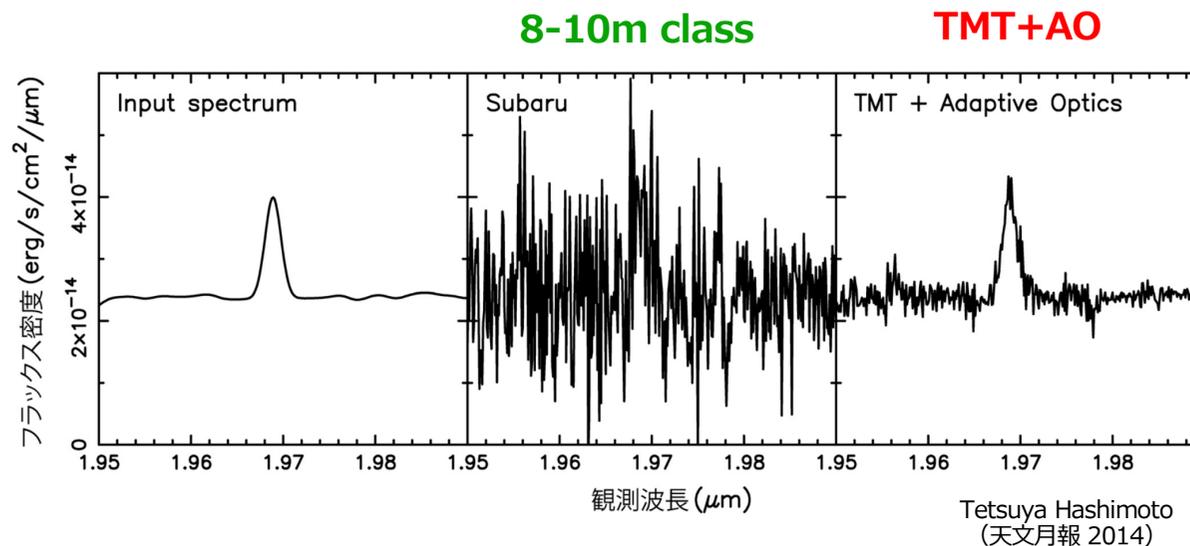
- ▶ many elements are identified
- ▶ precise velocity structure is determined

3. High NIR sensitivity and access to UV

Point source, line spectroscopy (diffraction limited observation)



Simulated spectra for Subaru and TMT observations targeting an extremely faint emission line of $\sim 1.4 \times 10^{-17}$ erg/s/cm². This emission line is equivalent to the CIV emission from a faint galaxy at $z=11.7$.



TMT provides

- ▶ high NIR spectral sensitivity thanks to Adaptive Optics (5x better than JWST)
- ▶ high sensitivity in UV (higher throughput than GMT)