



Jet Propulsion Laboratory
California Institute of Technology

Effects of Thermal and Exozodiacal Background on Space Telescope Observations of ExoEarths

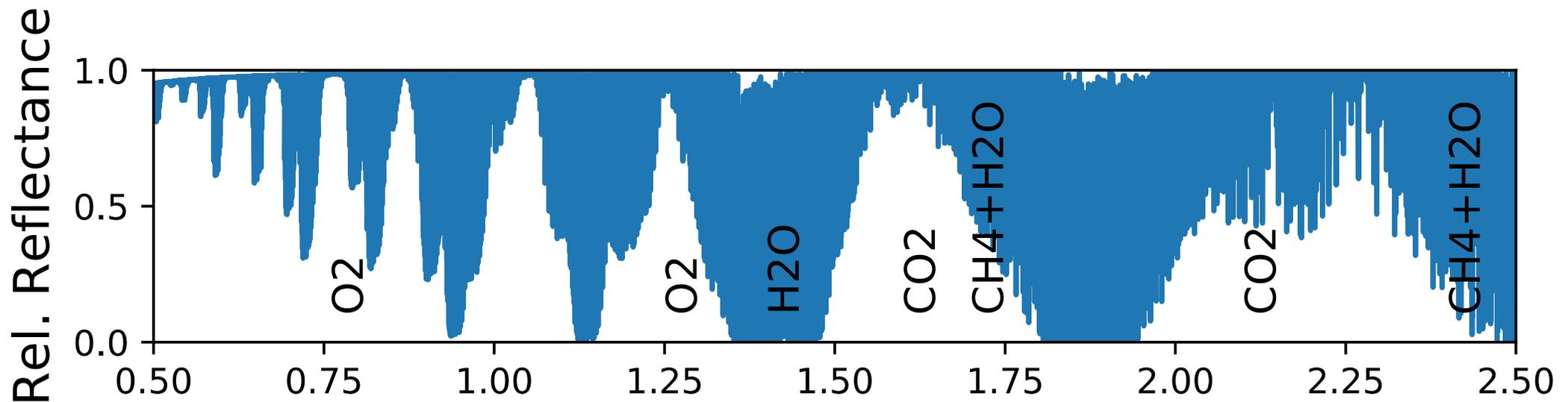
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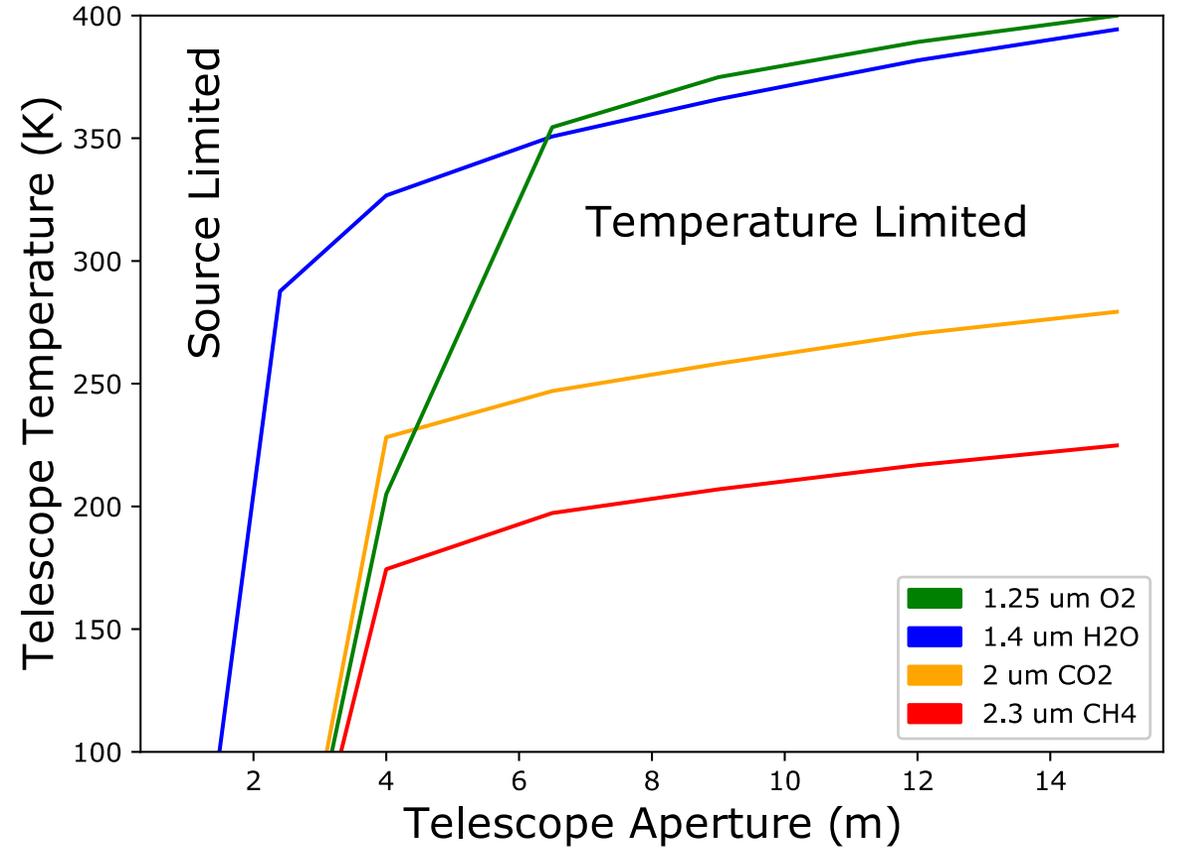
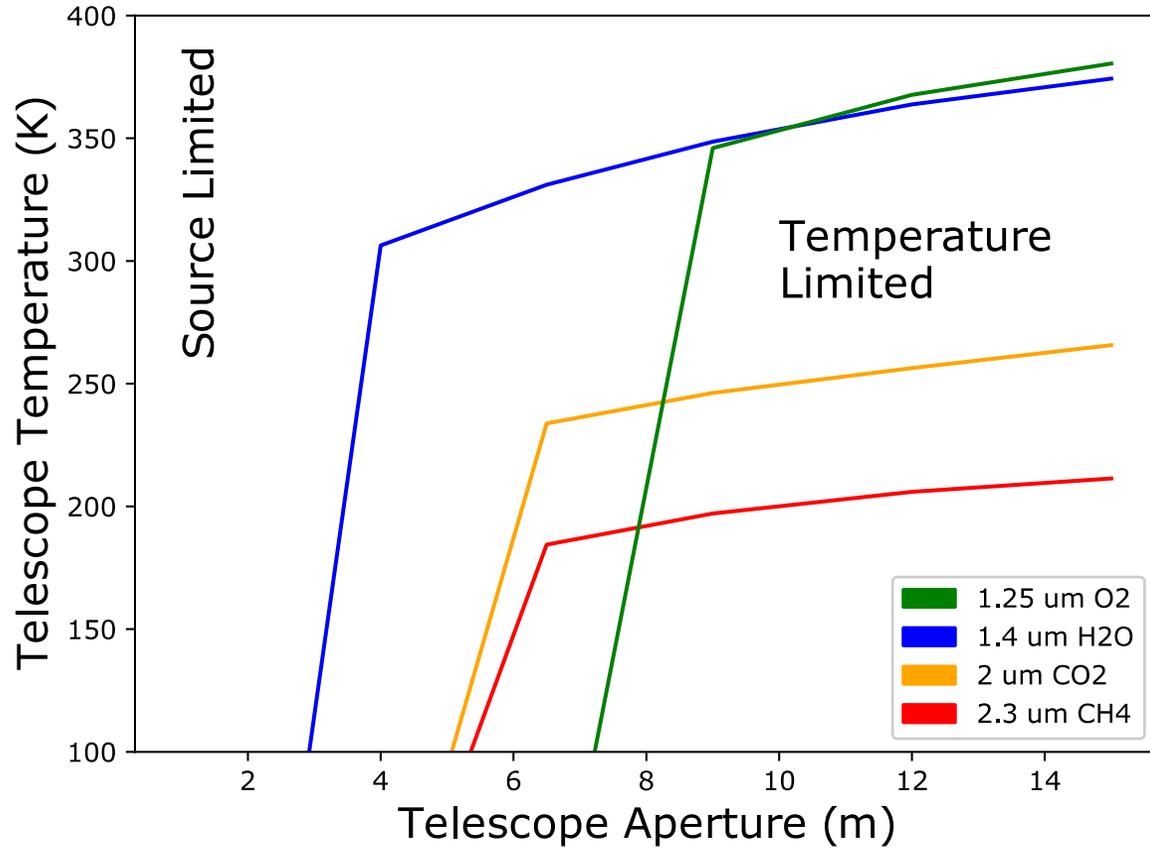
June 18, 2018

Introduction

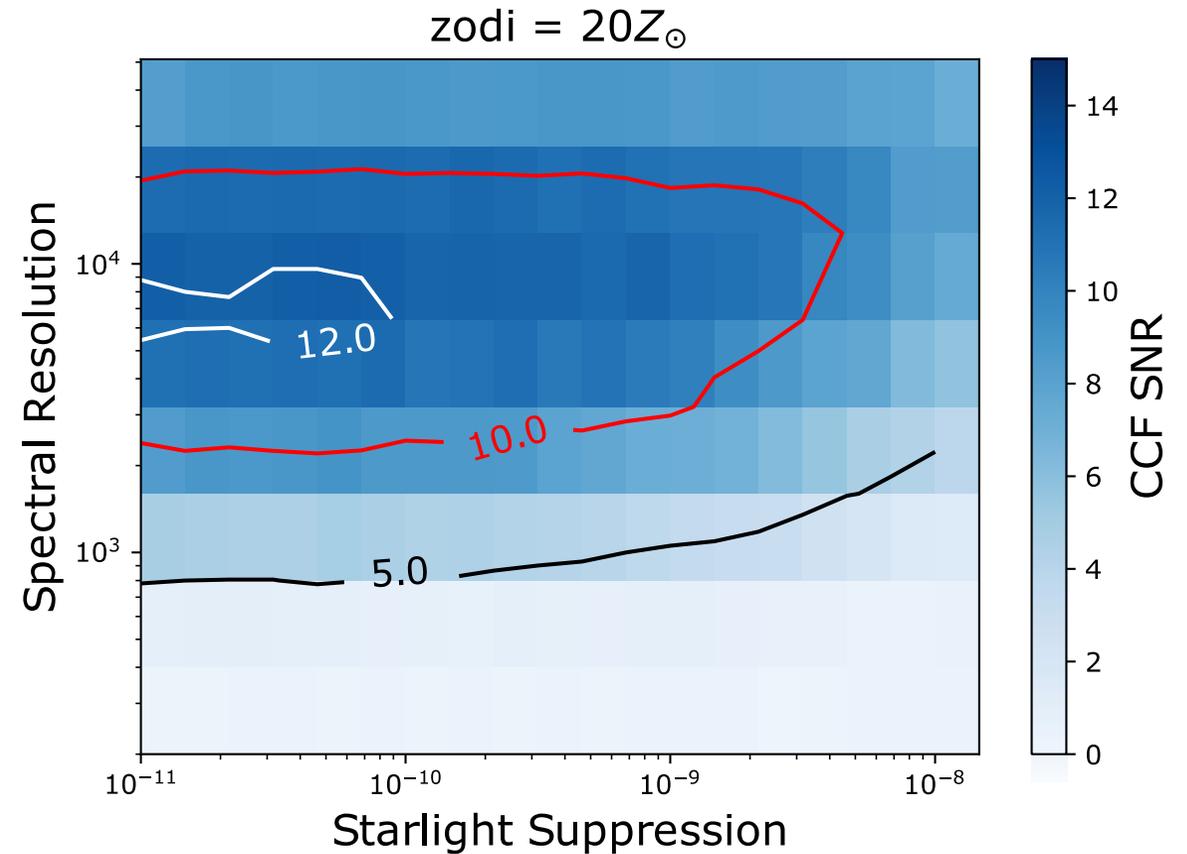
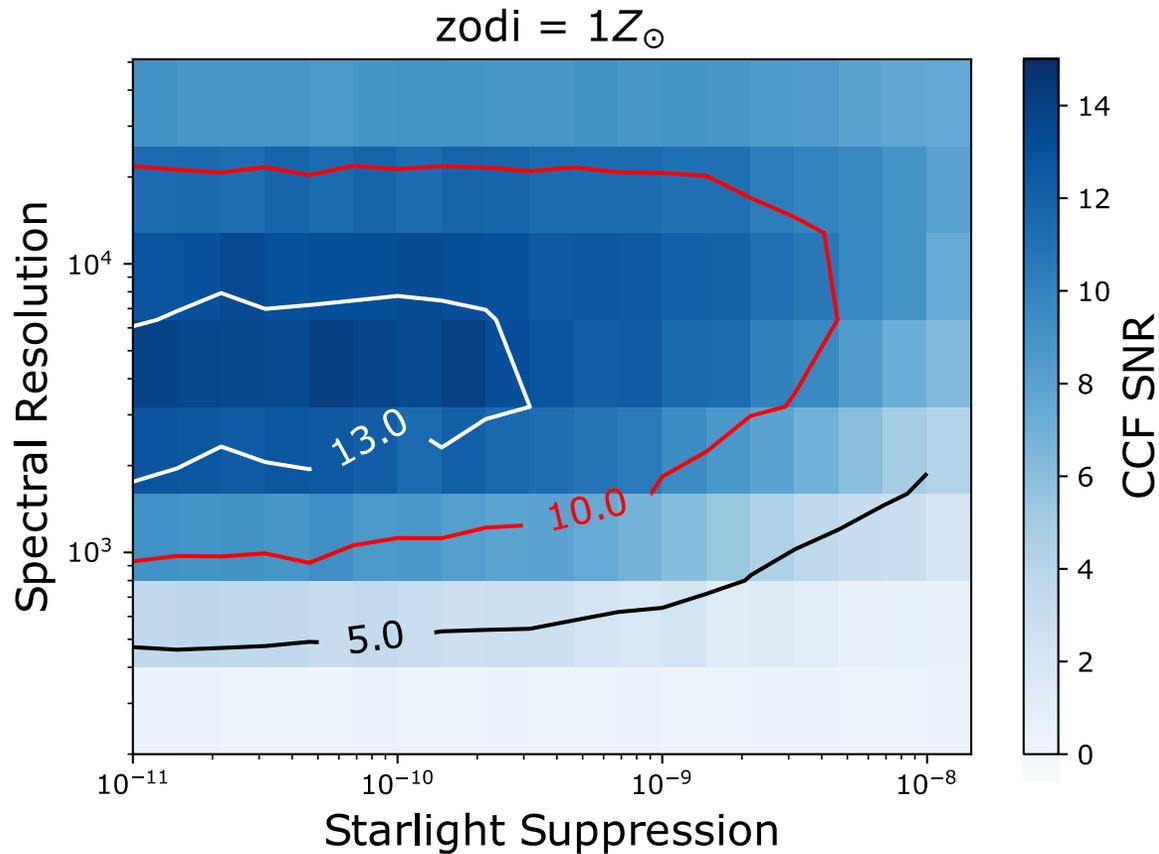
- Effects of thermal and exozodi background not previously quantified for HDC observations
 - How red can we go?
 - Do we need to select targets based on exozodi level?
 - HDC sensitive to either?



Thermal Background



Effect of Exozodi on Optimal Resolution



Summary

- Thermal background not egregious (aperture more important)
- Exozodi can limit which lines visible
 - Depends on line/aperture/exposure time
 - Factor of 3-5 drop in CCF SNR from edge-on disks
- Exozodi weakly affects optimal spectral resolution
 - Factor of ~ 2 increase in R for $20Z_{\odot}$