

# **The Spectrum of a Living Terrestrial Planet: Earthshine Observations and Insights for NASA's TPF Mission**

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“Earthshine” can be seen lighting up the dark portion of the thin crescent moon. This light is spatially unresolved and as such is a good spectral analogue for observing terrestrial planets with NASA's Terrestrial Planet Finder. Here we present optical and near-infrared earthshine spectra (in the 0.5 to 2.3 micron wavelength range) and discuss the various features that indicate a habitable planet. We will also discuss which features

might be detectable to TPF given the lower spectral resolution and signal-to-noise this mission is likely to obtain.