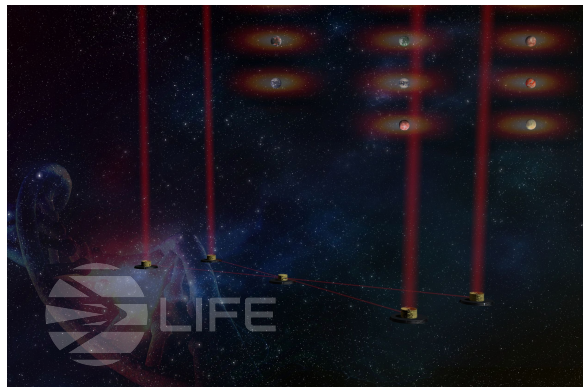


The **LIFE** mission and its technosignature applications

Daniel Angerhausen (ETH, BMSIS) and the LIFE team

The Mission Concept



Large Interferometer For Exoplanets

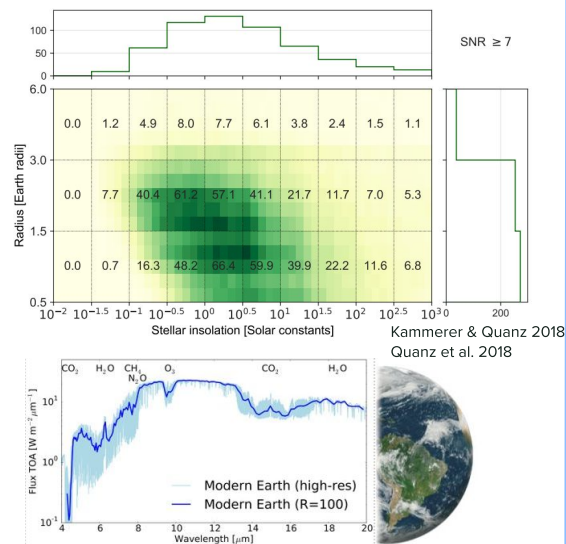
a formation-flying nulling interferometer in space working at MIR wavelengths

Homepage: www.life-space-mission.com/

Twitter: [@LIFE_Telescope](https://twitter.com/LIFE_Telescope)

Further reading: Quanz et al. 2019 (ESA WP) <https://arxiv.org/abs/1908.01316>
Quanz et al. 2018 (SPIE) <https://arxiv.org/abs/1807.06088>
Defrere et al. 2018 (ExAst) <https://arxiv.org/abs/1801.04150>

Yields and Science

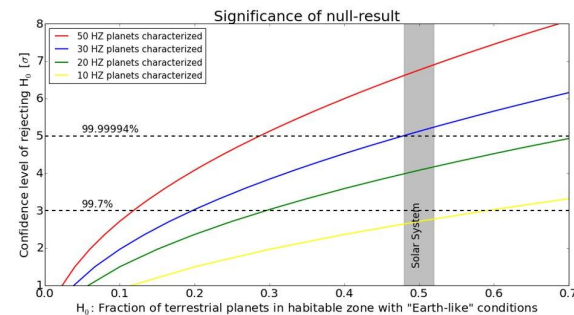


Kammerer & Quanz 2018
Quanz et al. 2018

LIFE will be able to get MIR spectra of dozens of rocky planets in the habitable zone

($0.5 R_{\oplus} \leq R_p \leq 1.75 R_{\oplus}$ and $200 \text{ K} \leq T_{\text{eq}} \leq 450 \text{ K}$)

Technosignatures



LIFE can search for **imprints of technology in planetary atmospheres** (e.g. CFC, PFC), which are only observable in the MIR.

LIFE will enable **comparative studies** of potentially habitable environments and constrain the fraction of habitable or even inhabited planets (i.e. η_{Hab} , η_{Life} in the **Drake Equation**). Sample size is large enough for **significant null results**.