

# **DARWIN and the search for life**

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The direct detection of an Earth-like planet close to its parent star is challenging because the signal detected from the parent star is between  $10^9$  and  $10^6$  times brighter than the signal of a planet in the visual and IR respectively. Future space based missions like Darwin (ESA) and TPF-I (NASA) concentrate on the mid-IR region between 6 $\mu$ m and 20 $\mu$ m to detect biomarkers like CO<sub>2</sub>, H<sub>2</sub>O, O<sub>3</sub>, spectral features of biological activity in Earth's atmosphere. The design of a free flying interferometer in space like DARWIN is tailored to detect these signatures. We present an update, the challenges faced and an overview of the DARWIN mission and its search for features that can indicate habitability on the detected planets.