A TeraHertz Balloon-Borne facility: ASTHROS

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Abstract

ASTHROS is a 1.5-3 THz balloon-borne project led by JPL and funded by NASA for a flight in December 2023 from the McMurdo Antarctica facility. It will carry a 2.5m dish, two 4-pixel heterodyne cameras to observe simultaneously NII fine structure transitions at 122 and 205 $\mu$m in the ISM and in M83. It will also observe the HD J:1-0 transition at 112 $\mu$m towards a protostellar disk. The flight should last 21 days (nominal) and could extend up to two months, weather permitting. An extended flight would allow to perform other observations in various sources.