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Author: Dr. Ding Chen
Shanghai Academy of Spaceflight Technology (SAST), China Aerospace and Technology Corporation (CASC), China

Dr. zongming liu
Shanghai Aerospace Control Technology Institute(SACTI), China

STEP I:THE PATHFINDER MISSION TO SEARCH FOR TERRESTRIAL EXO-PLANETS

Abstract

Exo-planet detection has taken a rapid progress after the Kepler and several ground-based missions, thanks to the improvements of the observational techniques, more and more giant planets or short-period planets are found according to the latest statistics of the exoplanets, but few of them are rochet planets orbiting in the habitable zone (HZ) of their host stars. Search for Terrestrial Exo-Planet (hereafter STEP) mission aims at the nearby earth-alike planets detection, comprehensive research on the planetary system and some astrometry research with micro-arcsecond precision level in the space, which will get the fruitful achievements in the exo-planetary and astrometry research fields. A pathfinder mission, STEP I, will be launched to demonstrate the main technique this year before the formal scientifical mission. In this paper, we will describe this demo mission and introduce our critical technique aiming at the micro-arcsecond space astrometry on nearby bright F,G,K stars.