A Japanese-TPF Mission: High Contrast Space Telescope (HCST)

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With the recent enthusiasm toward the direct detection of extrasolar terrestrial planets (ETPs), it has been argued within the Japanese astronomical community that either preparation of a future ETP detection mission or participation in the NASA/TPF mission, if possible, is necessary. We are proposing to launch a 3.5-m class single mirror coronagraphic telescope, which realizes high-contrast optical imaging and spectroscopy. Our design of the telescope also allows wide-field ($\sim$ 10 arcmin) imaging and spectroscopy for extragalactic deep surveys, if appropriate instruments are prepared. The mission will fully utilize the technologies for the SPICA mission, the same aperture telescope but working with mid- and far-infrared wavelengths. SPICA also plans to observe planets away from the central star with an MIR coronagraph. In this contribution, we introduce our design and science of HCST and its role in a roadmap of the future plan among the Japanese optical-infrared big projects.