

# Far-IR Surveyor

- Wavelength coverage: 25--500  $\mu\text{m}$  in 6--8 log-spaced bands with  $R \sim 500$
- Monolithic telescope - diameter  $\sim 5$  m.
- Telescope actively cooled to  $< 4$  K, instruments cooled to  $< 100$  mK.
- Field of View = 1 deg at 500  $\mu\text{m}$
- Mission: 5 years + at Earth-Sun L2
- High-resolution (heterodyne) spectroscopy also compelling, possibly for warm phase.

# Habitable-Exoplanet Imaging Mission

- <~8m monolith or segmented
- Optimized for exoplanet direct imaging.
- ExoEarth detection and characterization:
  - Needs  $\sim 10^{-10}$  contrast
  - Coronagraph and/or starshade
  - Camera
    - Optical and near-IR for planet characterization
    - IFU, R>70 spectrum of 30 mag exoplanet
    - 1" FOV
- Potential for an instrument for spectroscopic characterization of transiting planets.
- UV-capable telescope/instrument suite would enable compelling COR science.
- L2 orbit or Earth-trailing

# Large UVOIR Surveyor

- ~8–16m
  - likely segmented, obscured primary.
- Cosmic origins science
  - HST-like bandpass (FUV to Near IR)
  - Suite of imagers/spectrographs
- ExoEarth detection and characterization:
  - Needs  $\sim 10^{-10}$  contrast
  - Coronagraph (likely), perhaps with a starshade
  - Camera
    - Optical and near-IR for planet characterization.
    - IFU, R>70 spectrum of 30 mag exoplanet
    - 1" FOV
- L2 Orbit

# X-ray Surveyor

per Astrophysics Visionary Roadmap

- Effective area  $\sim 3 \text{ m}^2$
- Sub-arcsecond angular resolution
- High-resolution spectroscopy ( $R \sim \text{few} \times 10^3$ ) over broad band via micro-calorimeter & grating spectrometer instrumentats
- FOV  $\gtrsim 5'$
- Energy range  $\sim 0.1\text{--}10 \text{ keV}$