The inner Solar System is filled with zodiacal dust grains originating from the Main Asteroid Belt and the disruption of comets.

Exo-zodiacal dust disks are detected around a large fraction of nearby Main Sequence stars using near- and mid-infrared interferometry.

Detailed exozodiacal disk models:
- Vega Flur, KINC: ~8x10^-8 M⊙/au, of hot dust in a 0.1-0.3 AU ring (Defrère et al. 2011)
- PSR1806-17: ~1x10^-8 M⊙/au, over hot dust + cold dust (Defrère et al. 2012)
- Fomalhaut KIN: ~1x10^-8 M⊙/au, a warm dust belt at 2 AU (Lebreton et al. 2013)

Observations:
- Mid-infrared photometry + Spitzer/IRS spectroscopy
  - Careful recalibration of SL/SH/LH excess spectrum (background subtraction, photosphere fitting)

Keck Interferometer Nullery:
- 4 nulls measurements dispersed across the N-band for 4 different baseline lengths and orientations

Models:
- Detailed modeling with the GiaTer radiative transfer code (Augereau et al. 1999, Lebreton et al. 2012, 2013)
  - Inner disk / exodisk
  - Outer disk / cold belt

Modeling strategy:
- 6 free parameters for each component:
  1. Grain composition
  2. Grain size distribution: a(s) = a1(a/b)α
  3. Density profile: ρ(r) = ρ1(r/b)β
  4. Total dust mass

Herschel far-infrared and sub-millimeter observations:
- Resolved imaging with PACS:
  - 70 μm (FWHM: 14.3" × 10.7" = PSF: 4.6")
  - 100 μm (FWHM: 16.7" × 12.0" = PSF: 5.8")
  - 160 μm (FWHM: 17.6" × 14.6" = PSF: 9.5")

PACS and SPIRE photometry:
- 70, 100, 160, 250, 350 and 500 μm

Conclusions:
- The cold belt is a classical, likely ice-free debris disk in collisional equilibrium with a mass comparable to much younger disks.
- The hot belt has an extreme mass and it is dominated by small olivine grains.
  - Delayed stirring and LHB-like event?

An interesting target for JWST:
- Cold belt in scattered light with NIRCam

Large Binocular Telescope Interferometer:
- Thermal light imaging with MIRI (ongoing work)

Inner disk
- SED and IRS spectrum
- KIN nulls
- Best models (χ² = 2.52 – 1.89)

Outer disk
- SED
- Herschel radial profiles
- Best model (χ² = 1.34)