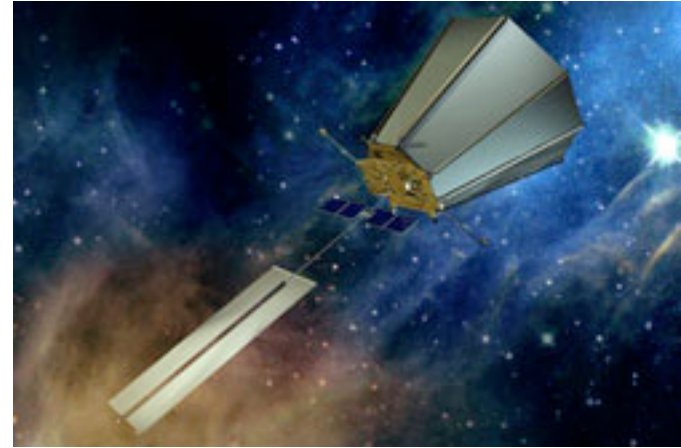




## **TPFVTWO**

Three Point Five-meter, Visible-light,  
Terrestrial World Observatory

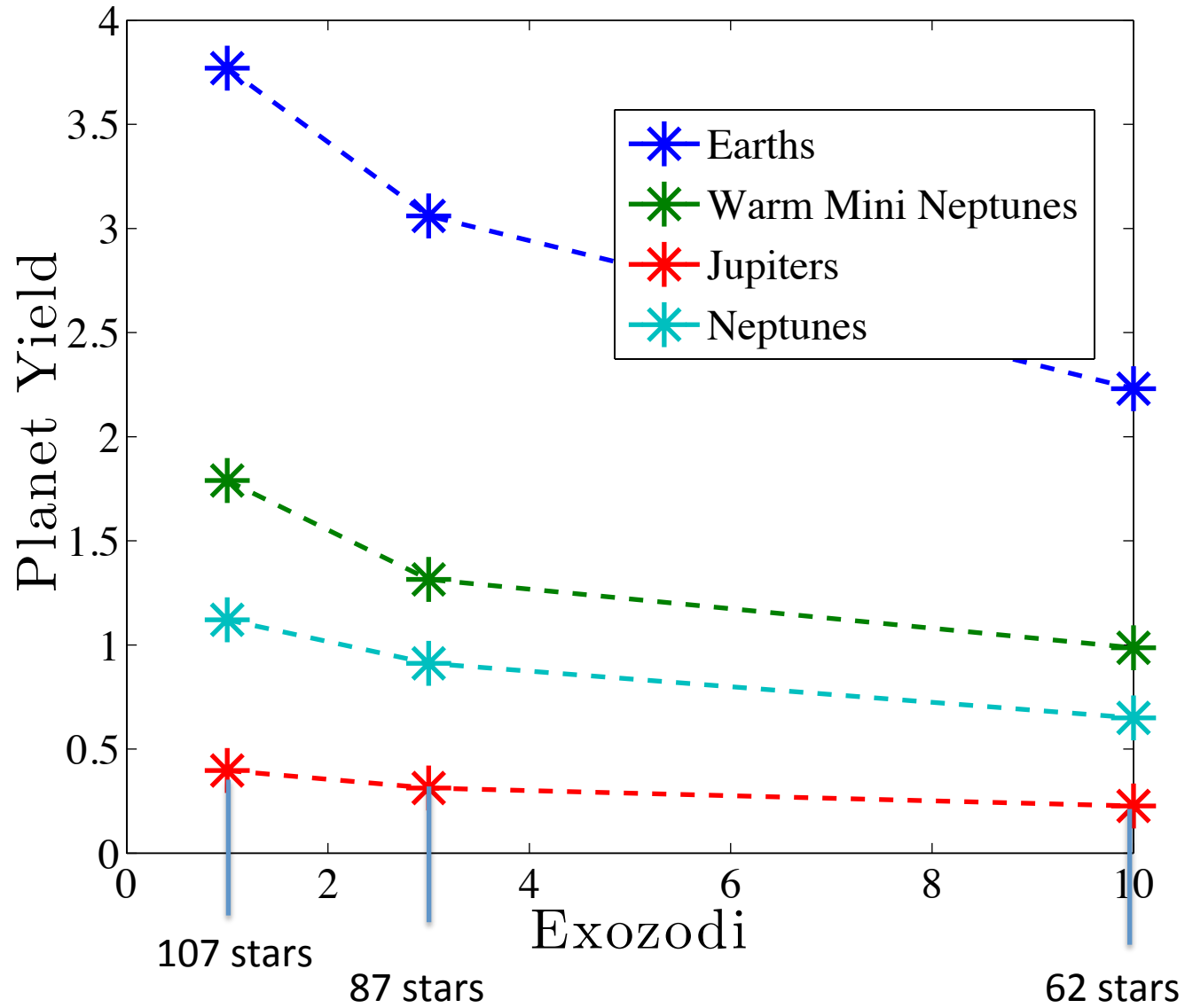
Goal:

Image exo-earths in a blind search mission

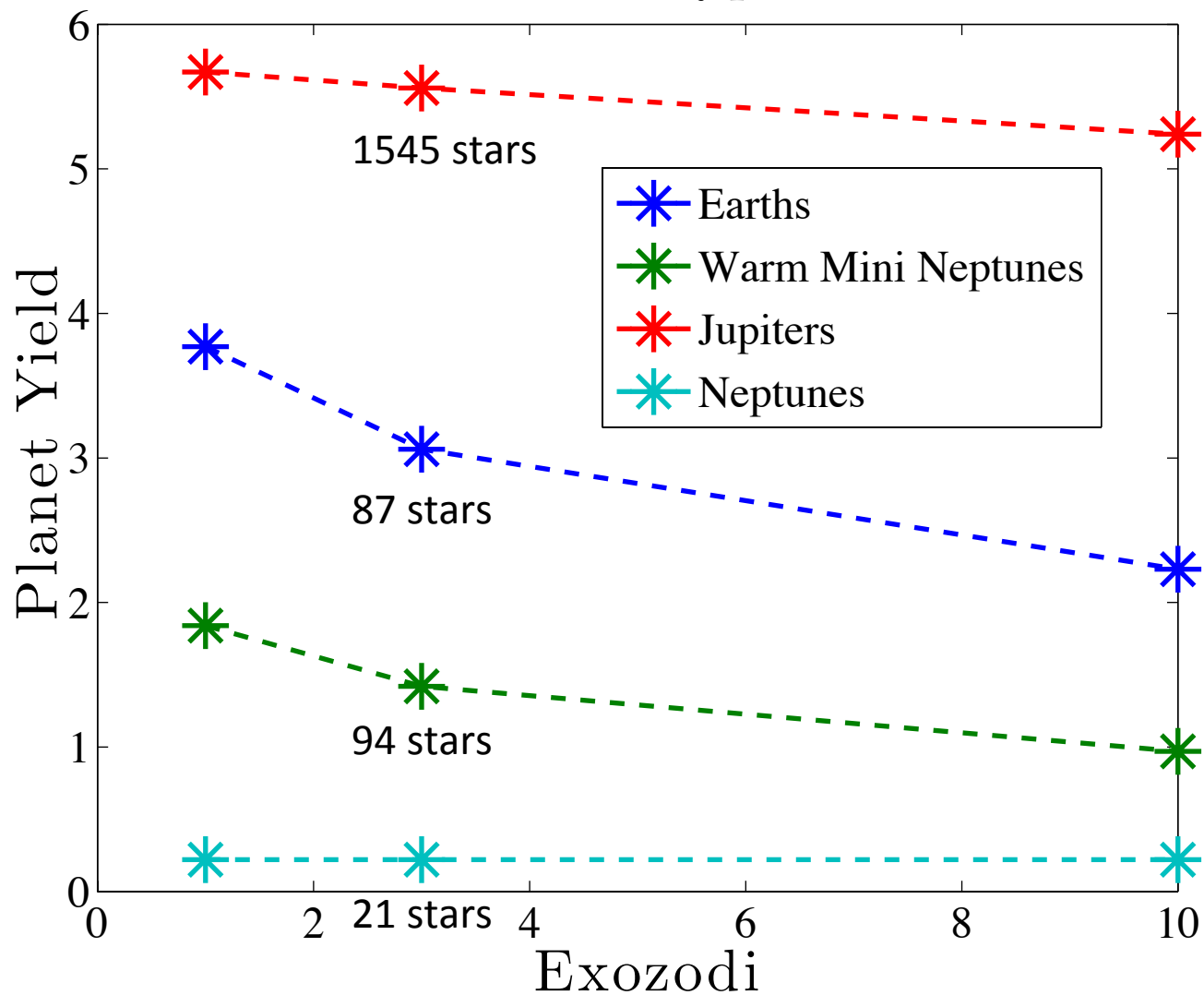
# Overview

- **Cost = \$3.082 B < \$4B**
  - Set overwhelmingly by mirror diameter, spacecraft, and launch vehicle
  - **D=3.5m**, Spacecraft F, L/V F
- Other parameters negligible to cost, so set to best allowed
  - IWA=2  $\lambda$ /D = **65 mas**, OWA = 650 mas
    - $\lambda$  = 550nm
  - 1e-10 contrast, 3x 20% bandpasses
  - 1 year of 5-year mission used
- Blind search

# Earth-Only Mission



# One Planet Type Mission



# Conclusions

- Blind search a bad idea
  - Not enough time, even with  $D=3.5\text{m}$
- Better to target 1 type of planet for discovery only
- Improvements to DRM model
  - *Calculate planet yield of multiple types of planets concurrently*
    - *Can't choose number of stars*
  - Type of star →
    - Affects type of imageable planet
    - Affects contrast of planet
  - Time for spectroscopy