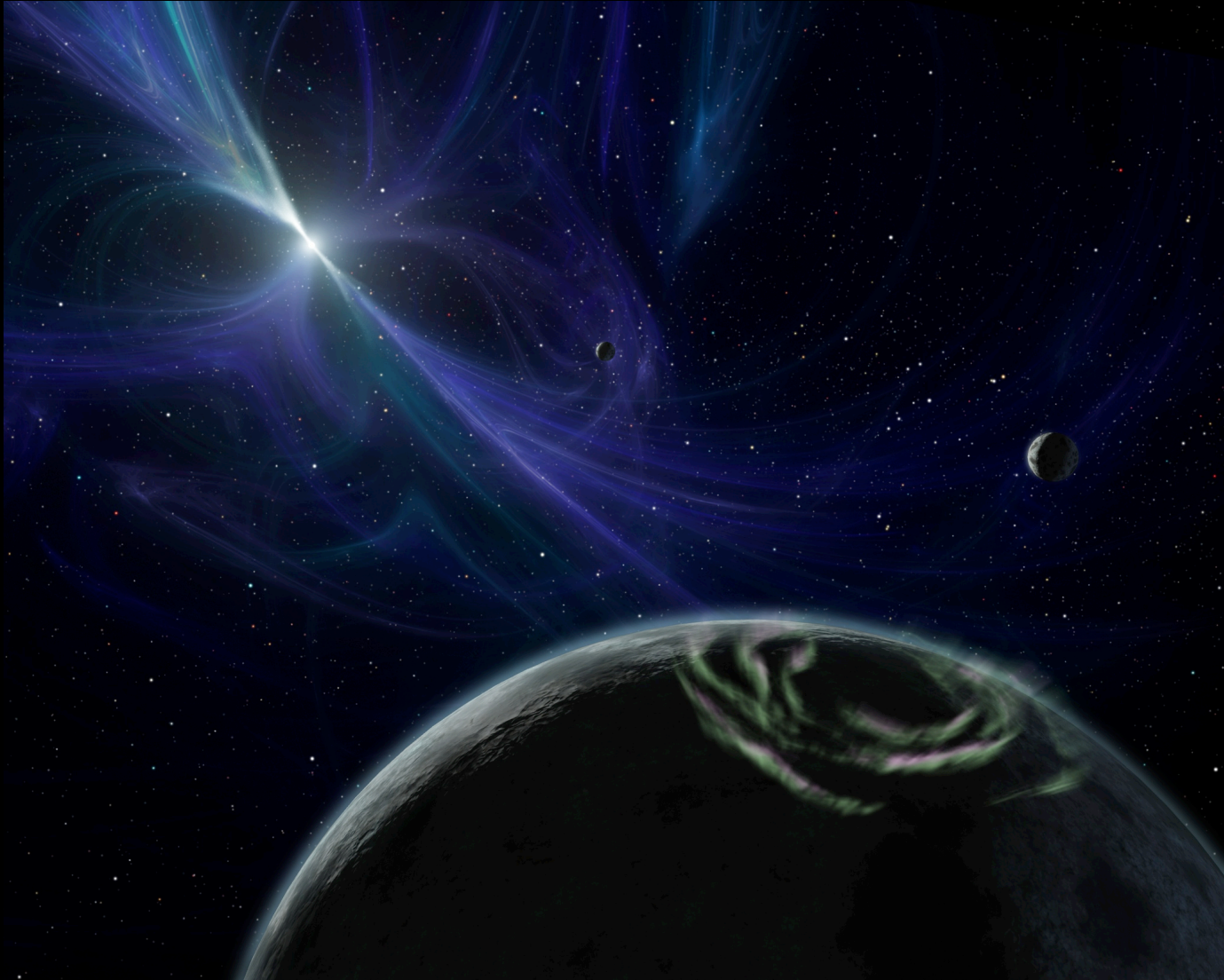
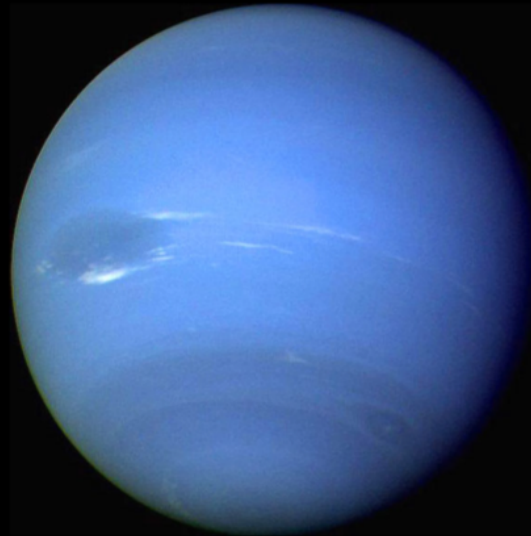
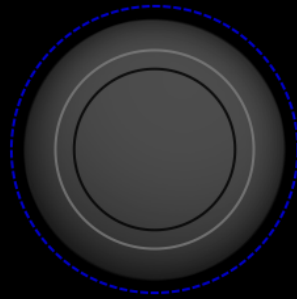
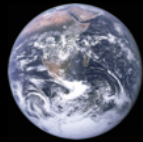


Week 7: Exoplanet Discoveries Today and Beyond

The First Exoplanet(s): PSR B1257+12



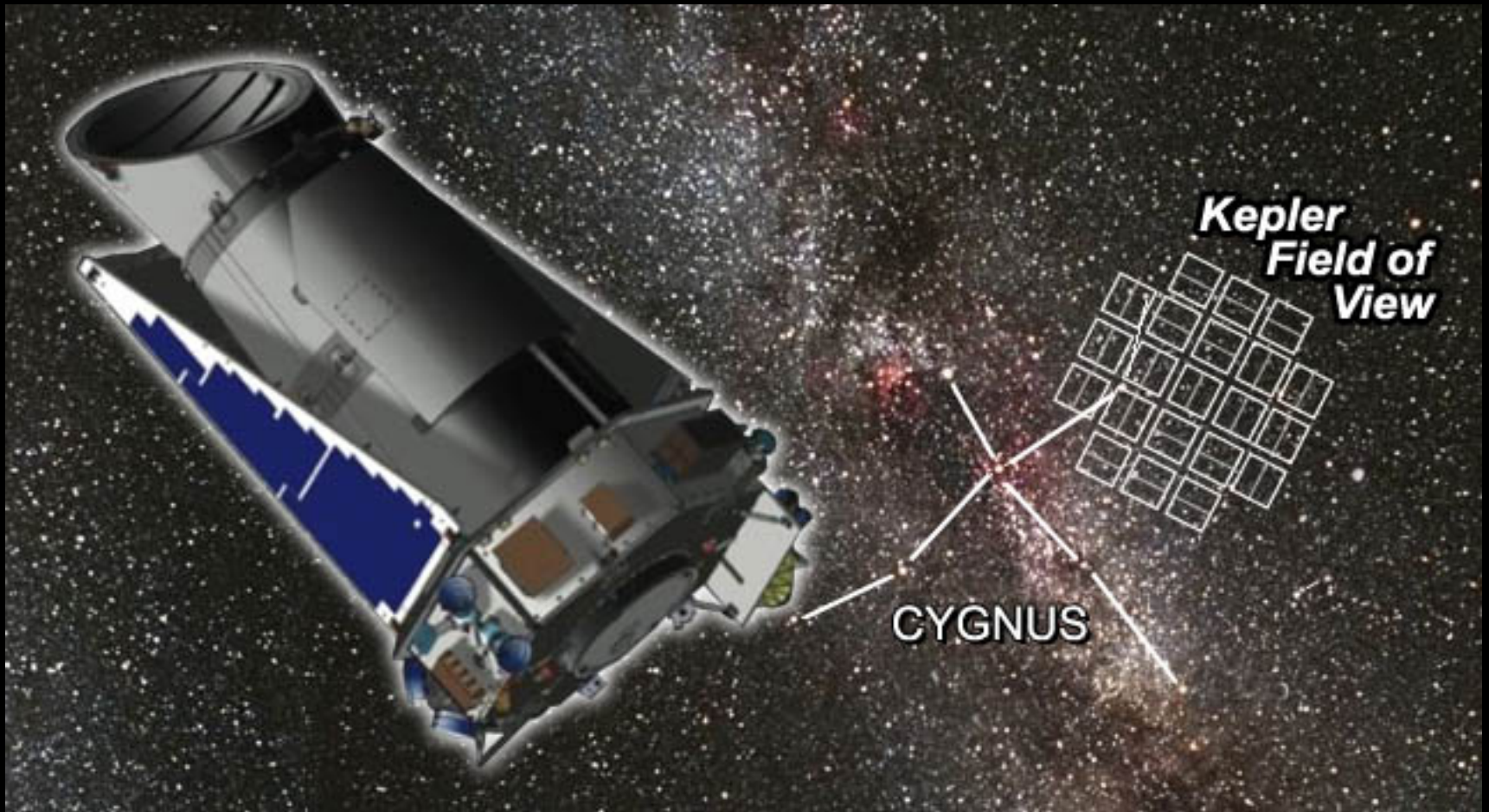
Draugr, Poltergeist and Phobos



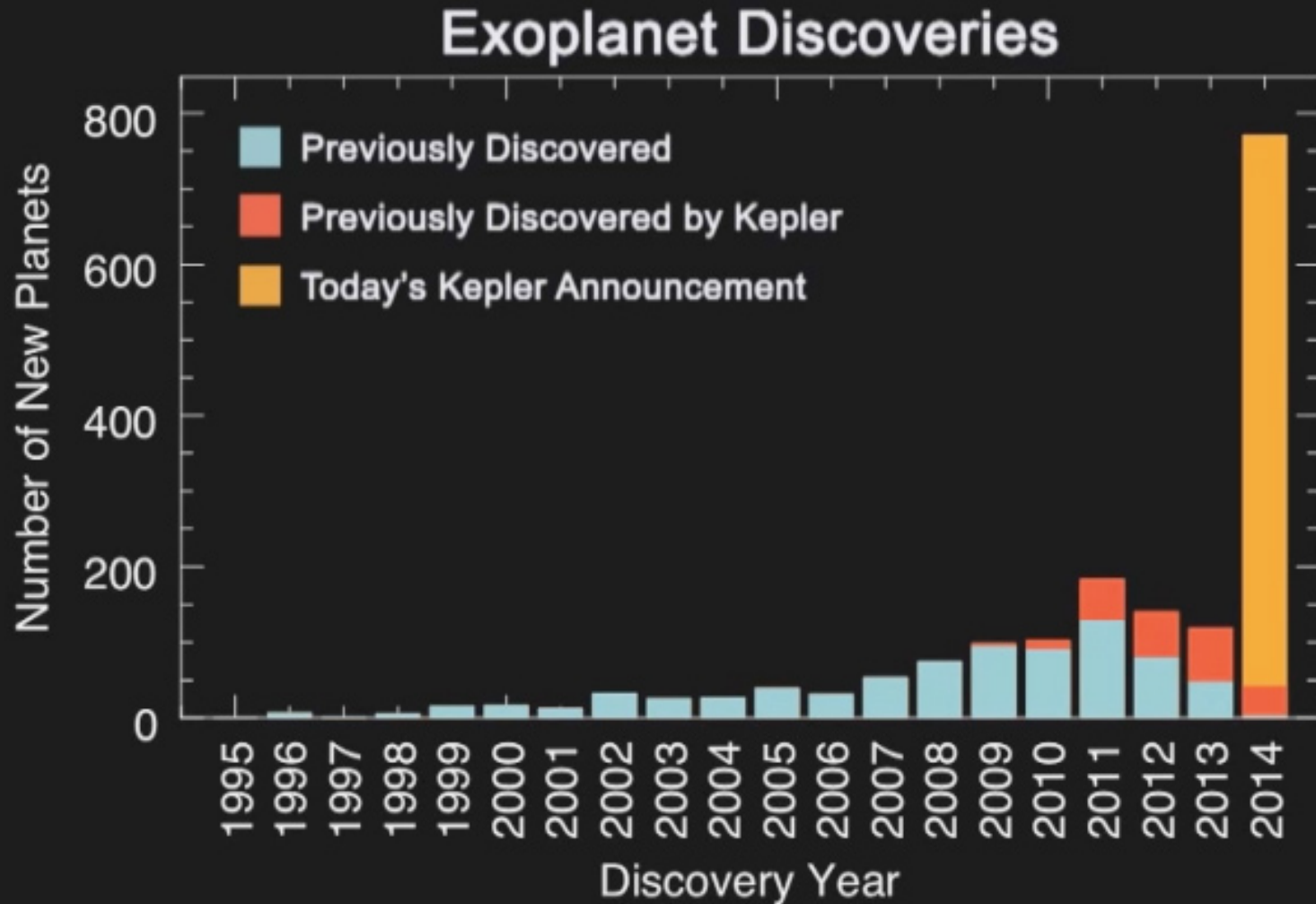
51 Pegasi b



Kepler Space Telescope

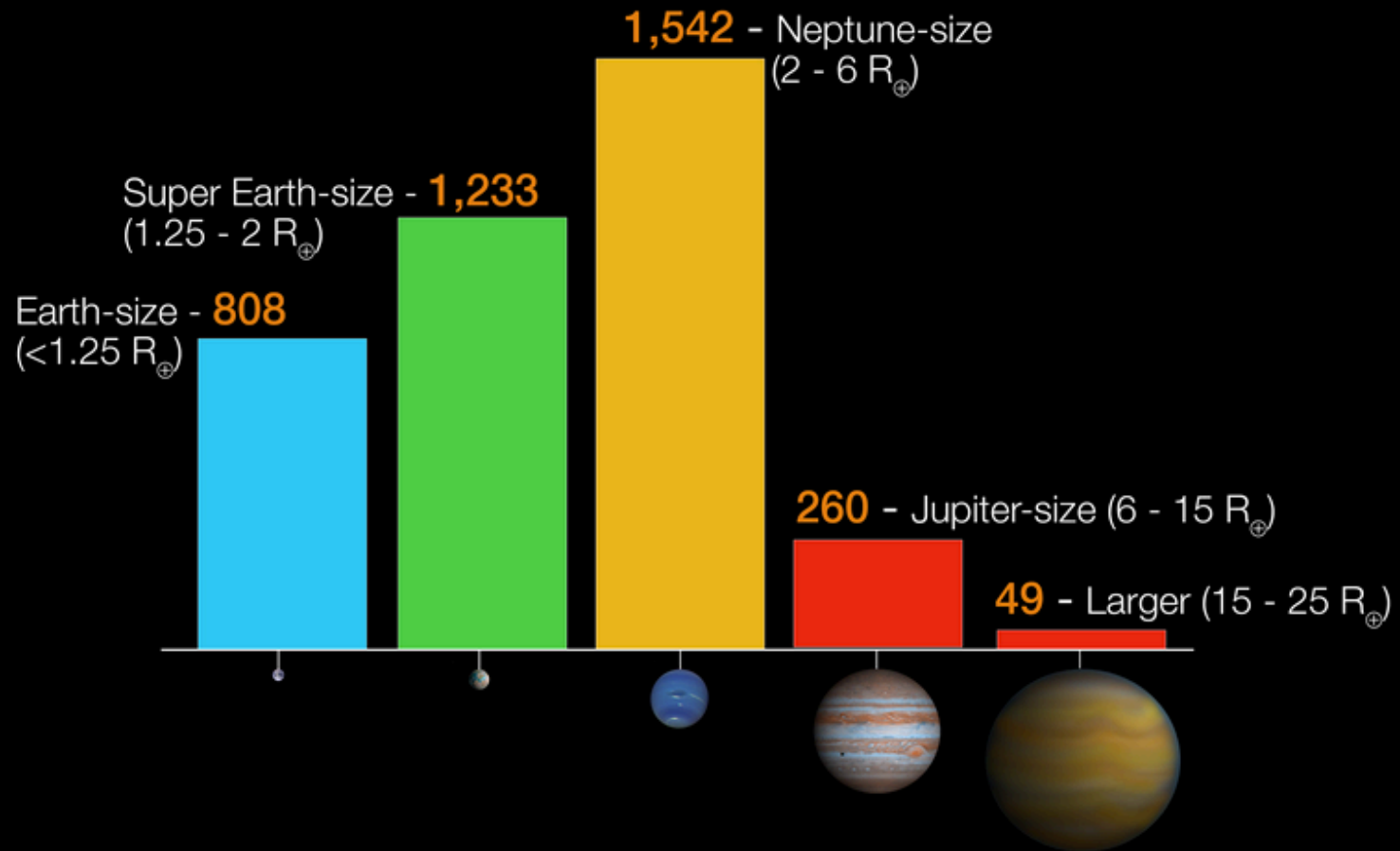


Exoplanet Discovery Timeline



Sizes of Kepler Planet Candidates

Totals as of January 6, 2015



What have we found?

Habitable planets: ~30

**Planets that could host
habitable exomoons: ~30**

What are we missing?

~20% of **Sun-like** stars might
host **habitable “Earth-like”** planets

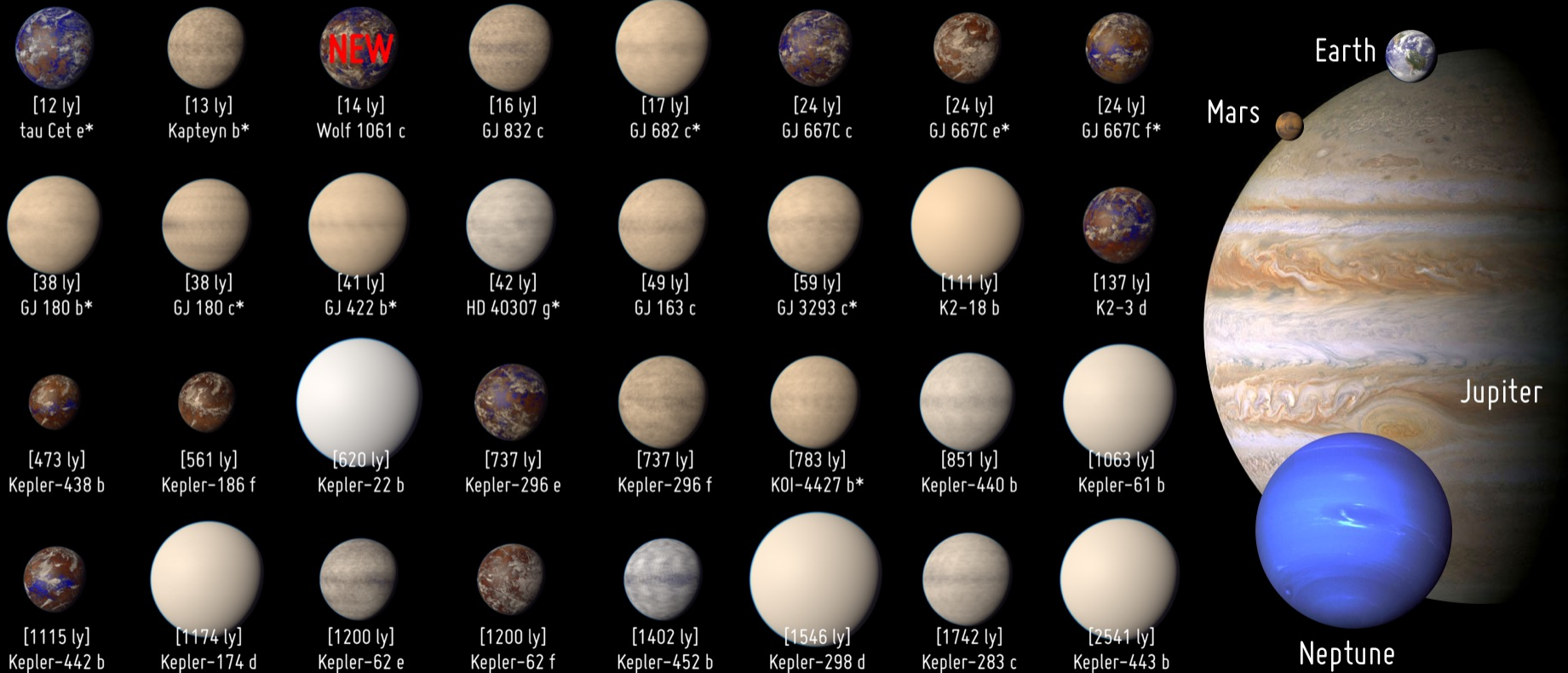
Petigura 2013

Transiting **Earth-size** planet in HZ
of **M dwarf** within 30 lyrs

Dressing 2013

Potentially Habitable Exoplanets

Ranked by Distance from Earth (light years)

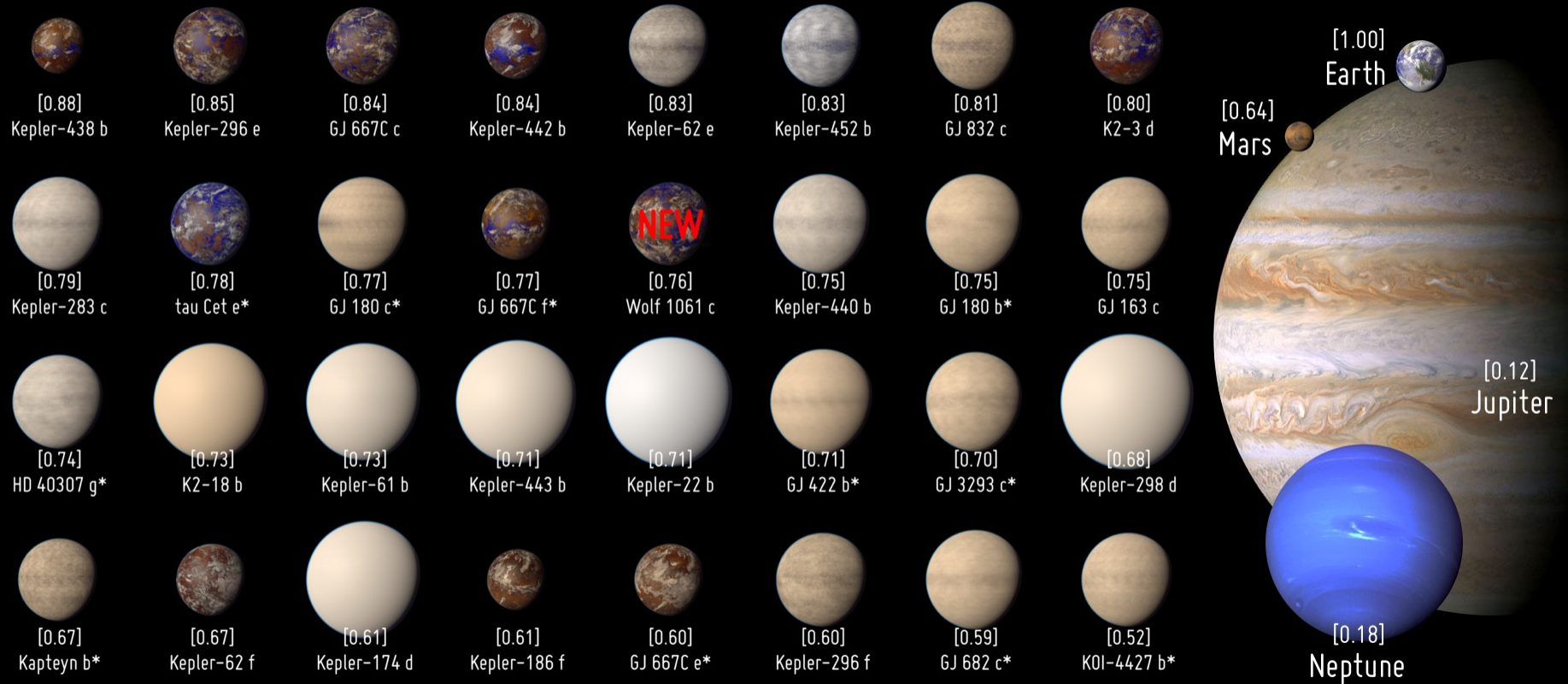


Artistic representations. Earth, Mars, Jupiter, and Neptune for scale. Distance is between brackets. Planet candidates indicated with asterisks.

CREDIT: PHL @ UPR Arecibo (phl.upr.edu) January 8, 2016

Potentially Habitable Exoplanets

Ranked by the Earth Similarity Index (ESI)



Artistic representations. Earth, Mars, Jupiter, and Neptune for scale. ESI value is between brackets. Planet candidates indicated with asterisks.

CREDIT: PHL @ UPR Arecibo (phl.upr.edu) January 8, 2016

NASA Kepler's Hall of Fame:

Small Habitable Zone Planets

As of January 2015

NEW



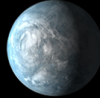
Kepler-186f



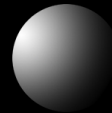
Kepler-62f



Kepler-62e



Kepler-296e



Kepler-296f

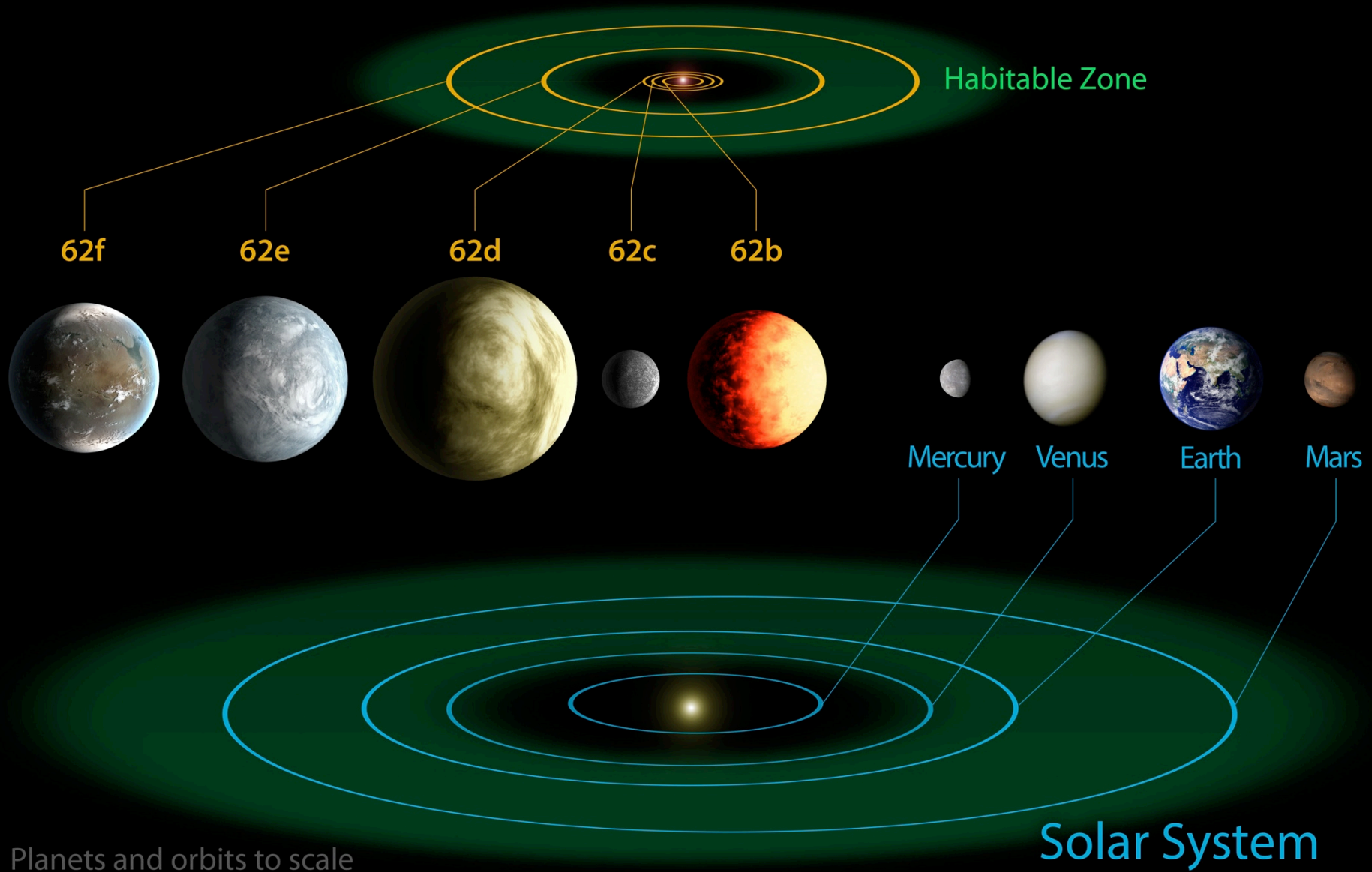


Earth

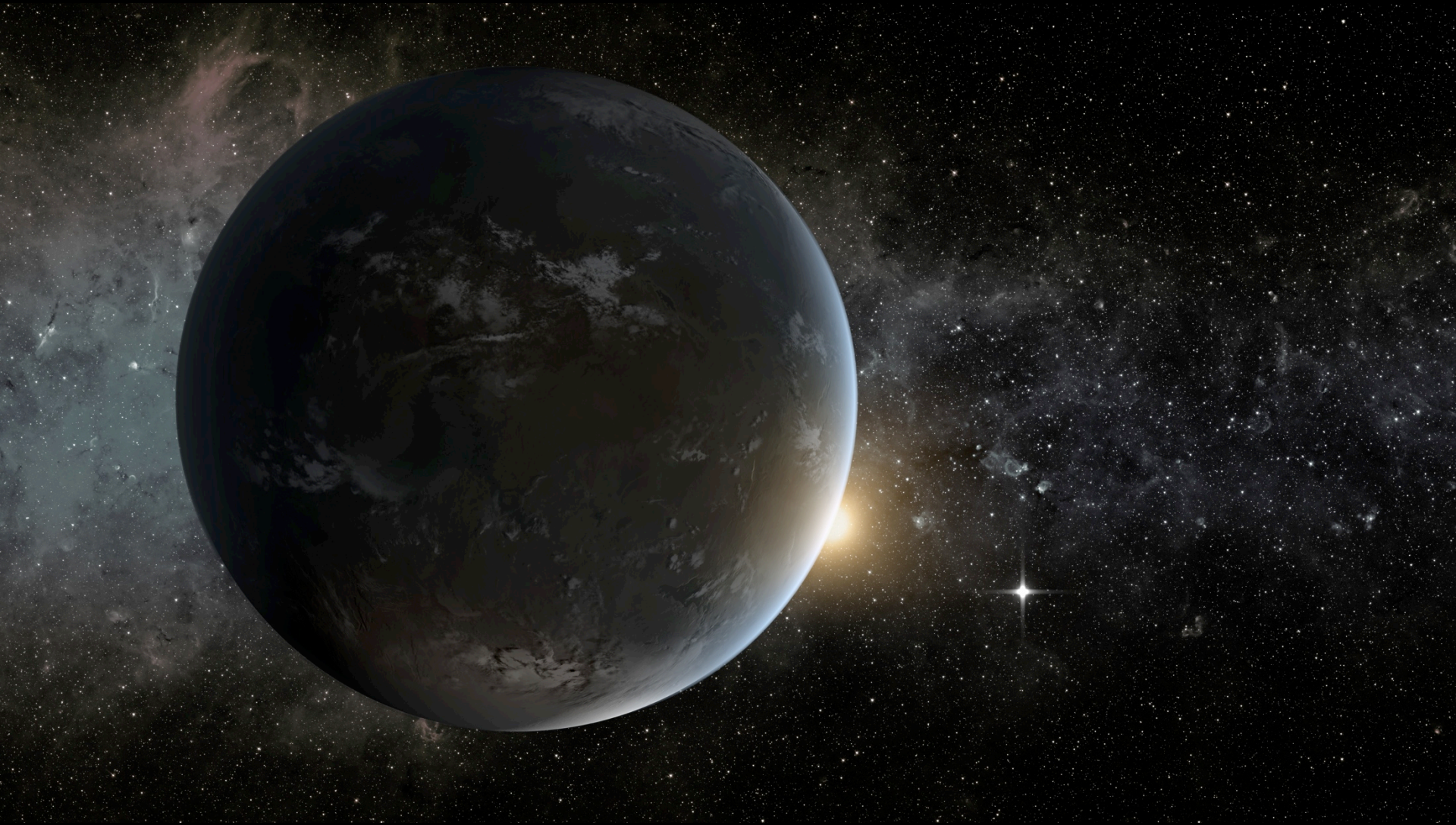
Kepler-62f



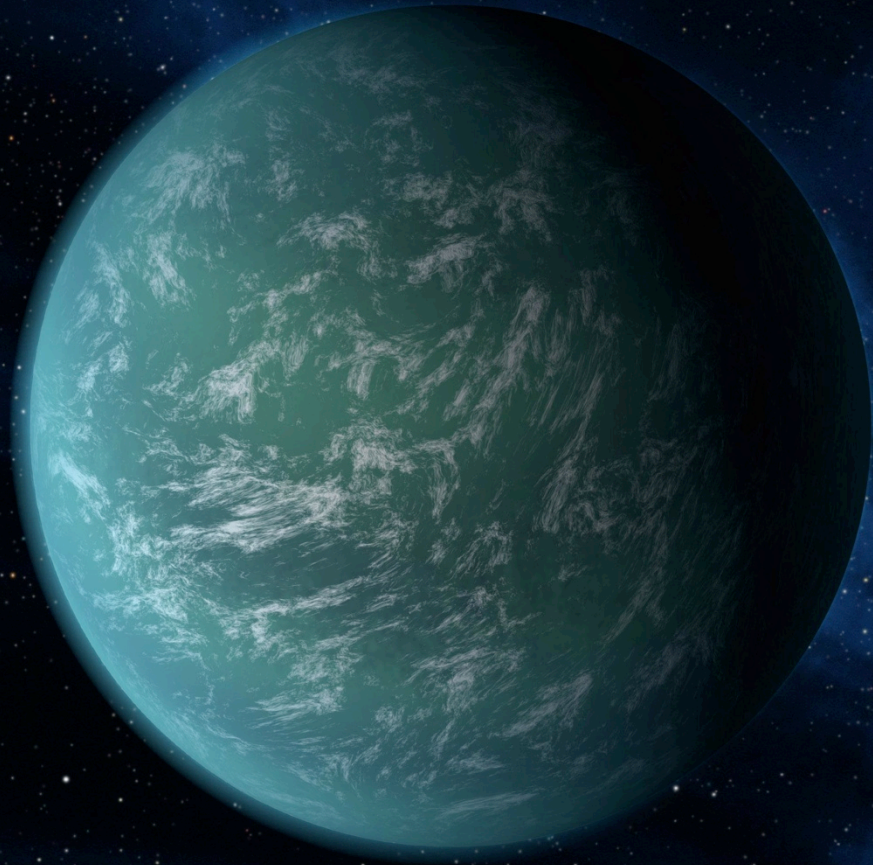
Kepler-62 System



Kepler-62f



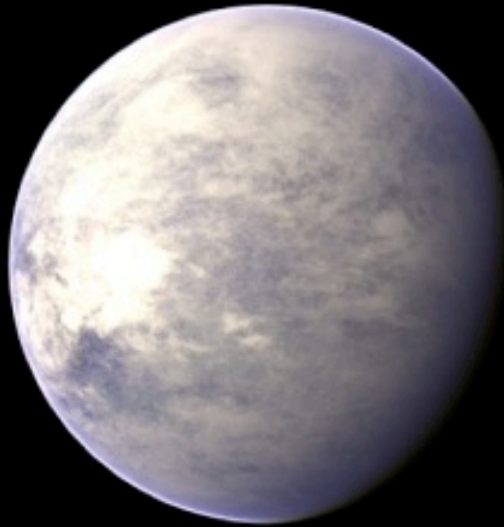
Kepler-22b



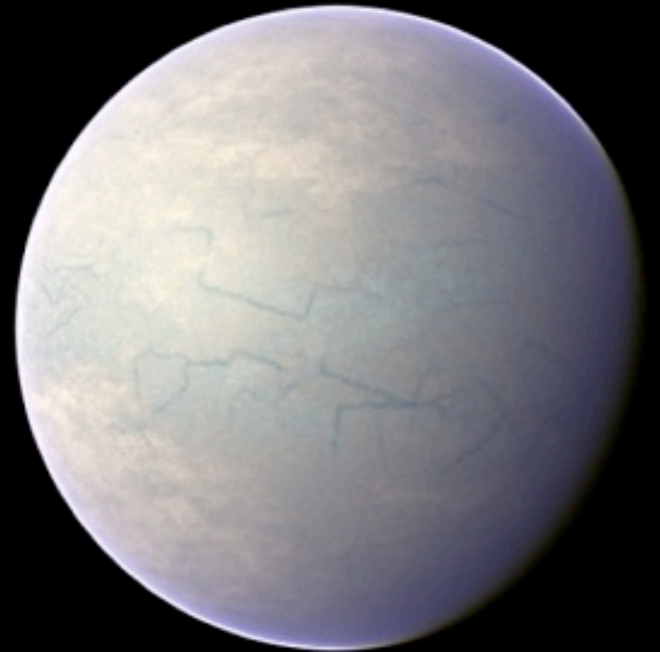
Tau Ceti e



Earth



Tau Ceti e



Tau Ceti f

Future Missions: TESS



Future Missions: JWST

