

# TESS – NASA's new planet hunter

TESS aims to outperform the crippled *Kepler* space observatory, which has found 30 potentially life-bearing exoplanets\* in nine years

**Fairing:**  
World's largest.  
Can carry payload size of school bus

## Transiting Exoplanet Survey Satellite (TESS)

**Thermal blankets**

**Solar arrays**

**Sun shade**

**Field of view**

**Finding planets:**  
TESS detects tiny changes in brightness caused by transit of planets across face of stars

**TESS**  
Tiles sky in 26 sectors

**Four cameras:**  
Will scan area of space 400 times larger than that covered by Kepler



**Grid fins:**  
Fold up to stabilise first stage on descent for reuse

## KEPLER – Launch: Mar 7, 2009

Candidate exoplanets found: **2,245**

Confirmed exoplanets found: **2,342**

Confirmed exoplanets found, less than twice Earth-size and in habitable zone: **30**

**Jul 2012:** One of four reaction wheels, used to maintain Kepler's position, breaks down

**May 2013:** Second reaction wheel fails

**May 2014:** *K2* extension born, using limited maneuverability to scan smaller red dwarfs

## K2 MISSION

Candidate exoplanets found: **479**

Confirmed exoplanets found: **307**

**Landing legs:**  
Fold down during descent

SpaceX  
**Falcon 9**

Sources: NASA, SpaceX

\*Exoplanet is planet orbiting star outside our solar system

Picture: NASA

Satellites not shown to scale

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