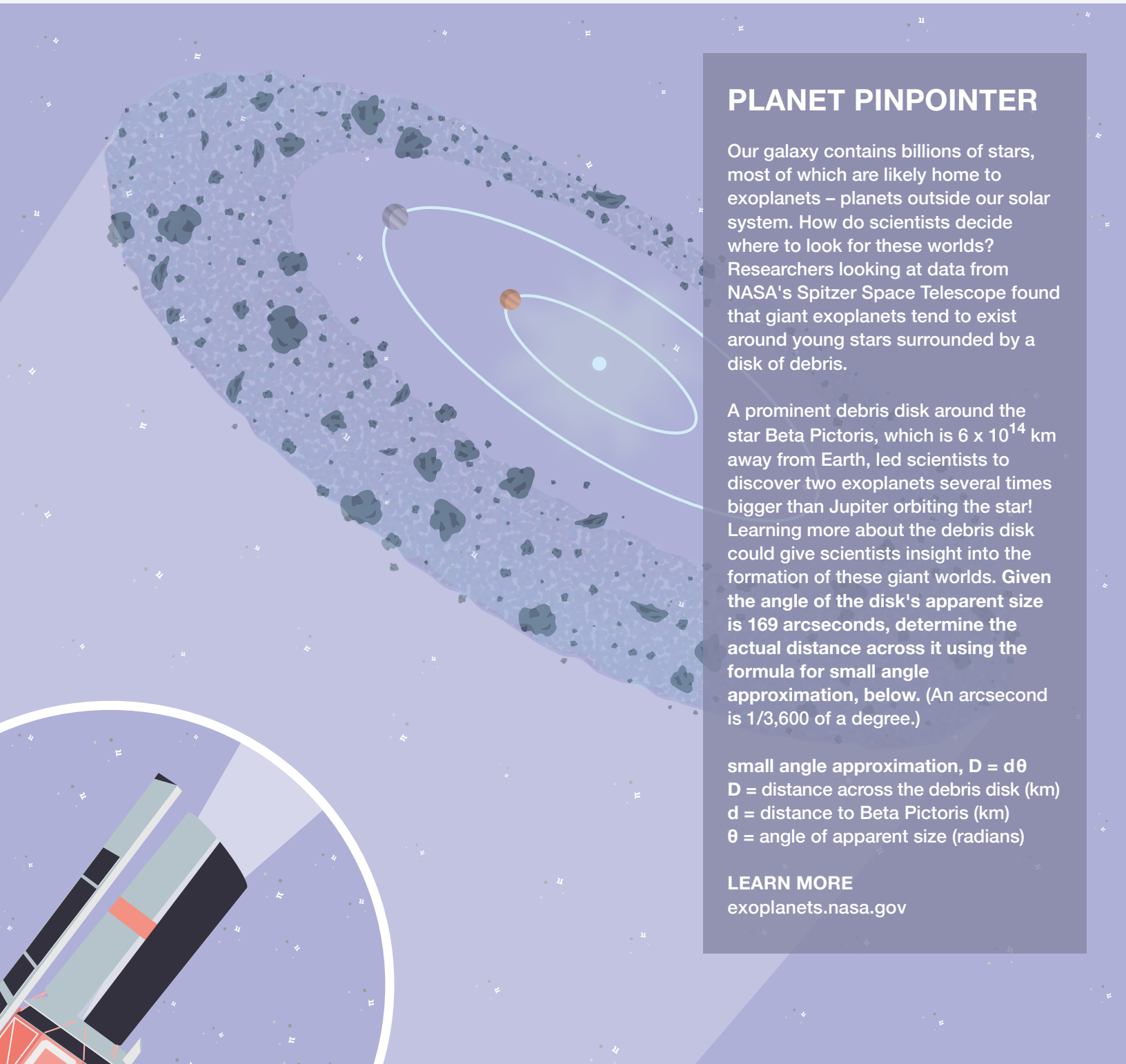




π IN THE SKY⁷

How big is this disk of debris that pointed the way to planets beyond our solar system?

NASA solves this real problem to explore Earth and – with pi as your guide – so can you!



PLANET PINPOINTER

Our galaxy contains billions of stars, most of which are likely home to exoplanets – planets outside our solar system. How do scientists decide where to look for these worlds? Researchers looking at data from NASA's Spitzer Space Telescope found that giant exoplanets tend to exist around young stars surrounded by a disk of debris.

A prominent debris disk around the star Beta Pictoris, which is 6×10^{14} km away from Earth, led scientists to discover two exoplanets several times bigger than Jupiter orbiting the star! Learning more about the debris disk could give scientists insight into the formation of these giant worlds. Given the angle of the disk's apparent size is 169 arcseconds, determine the actual distance across it using the formula for small angle approximation, below. (An arcsecond is 1/3,600 of a degree.)

small angle approximation, $D = d\theta$
 D = distance across the debris disk (km)
 d = distance to Beta Pictoris (km)
 θ = angle of apparent size (radians)

LEARN MORE
exoplanets.nasa.gov