

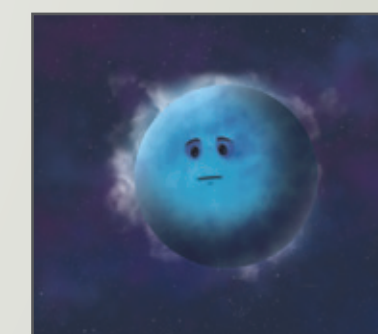
# STORY OF A LONELY PLANET

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ASTRONOMERS THINK THAT MOST STARS IN OUR GALAXY ARE ENCIRCLED BY A FAMILY OF PLANETS. YOUNG PLANETS ARE SWADDLED IN A DISK OF GAS AND DUST THAT SURROUNDS THEIR PARENT STAR.



THE PROCESS OF PLANET FORMATION IS A MESSY AFFAIR. SOMETIMES BURGEONING PLANETS COLLIDE WITH EACH OTHER AND SHATTER, FLINGING DEBRIS INTO SPACE.

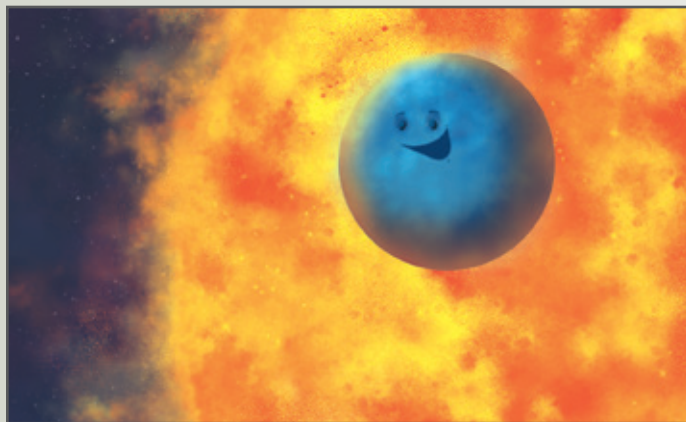


AND IT IS THOUGHT THAT SOMETIMES THE COLLISIONS IN YOUNG SOLAR SYSTEMS EJECT PLANETS INTO SPACE.





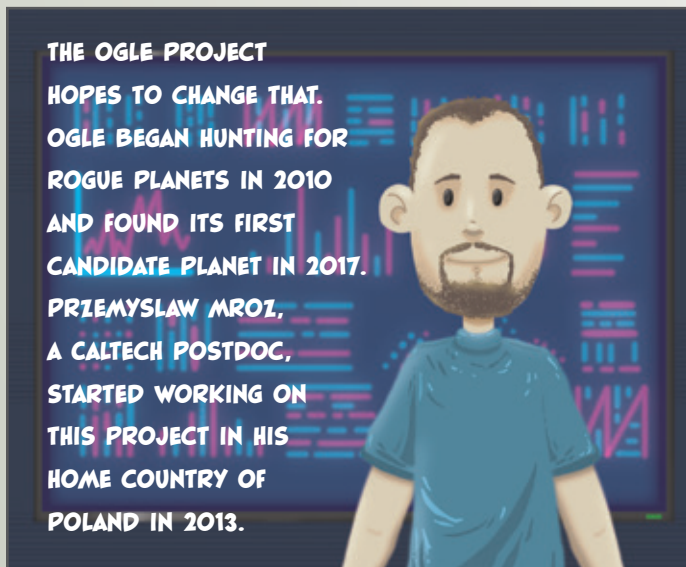
ASTRONOMERS ESTIMATE THERE ARE BILLIONS OF THESE LONELY PLANETS IN OUR GALAXY. THEY ARE SOMETIMES CALLED FREE-FLOATING OR ROGUE PLANETS.



TYPICALLY, PLANETS WITH STARS ARE DETECTED INDIRECTLY THROUGH EFFECTS ON THEIR STARS: THEY CAUSE STARS TO WOBBLE OR BLINK.



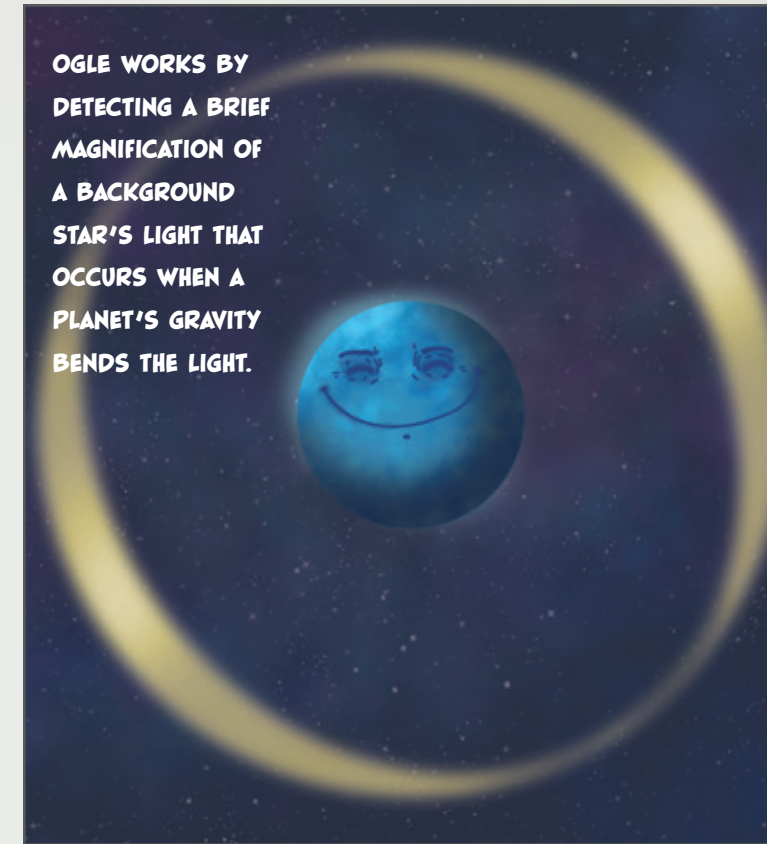
BUT ROGUE PLANETS DO NOT HAVE STARS TO INFLUENCE, SO THEY ARE HARDER TO FIND.



THE OGLE PROJECT HOPES TO CHANGE THAT. OGLE BEGAN HUNTING FOR ROGUE PLANETS IN 2010 AND FOUND ITS FIRST CANDIDATE PLANET IN 2017. PRZEMYSŁAW MROZ, A CALTECH POSTDOC, STARTED WORKING ON THIS PROJECT IN HIS HOME COUNTRY OF POLAND IN 2013.



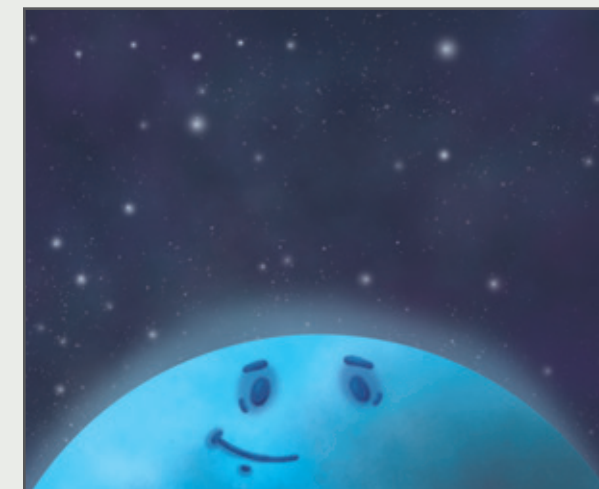
MROZ AND HIS OGLE TEAM RECENTLY FOUND EVIDENCE FOR THE SMALLEST KNOWN ROGUE PLANET.



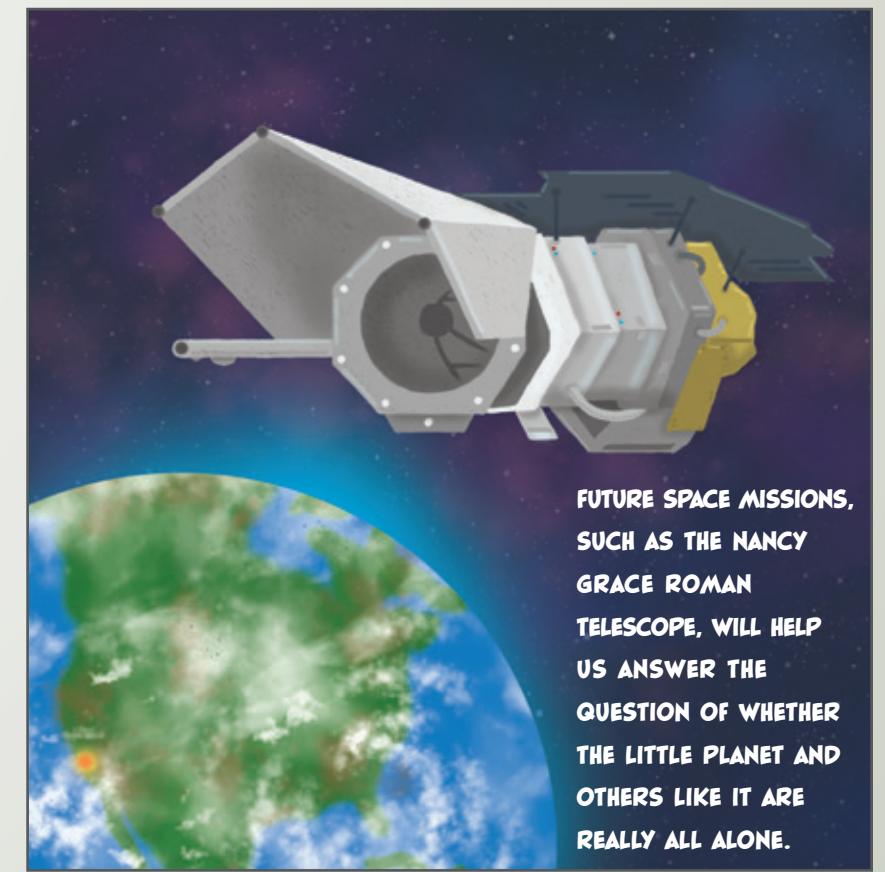
OGLE WORKS BY DETECTING A BRIEF MAGNIFICATION OF A BACKGROUND STAR'S LIGHT THAT OCCURS WHEN A PLANET'S GRAVITY BENDS THE LIGHT.



SO FAR, THE PROJECT HAS FOUND EVIDENCE FOR 12 ROGUE PLANETS.



AS FOR MROZ AND HIS TEAM'S NEWFOUND LITTLE PLANET, THEY THINK IT IS ALL ALONE BUT HAVE NOT BEEN ABLE TO RULE OUT THE POSSIBILITY THAT IT HAS A PARENT STAR THAT IS JUST REALLY FAR AWAY FROM IT.



FUTURE SPACE MISSIONS, SUCH AS THE NANCY GRACE ROMAN TELESCOPE, WILL HELP US ANSWER THE QUESTION OF WHETHER THE LITTLE PLANET AND OTHERS LIKE IT ARE REALLY ALL ALONE.