Ad ASTRA
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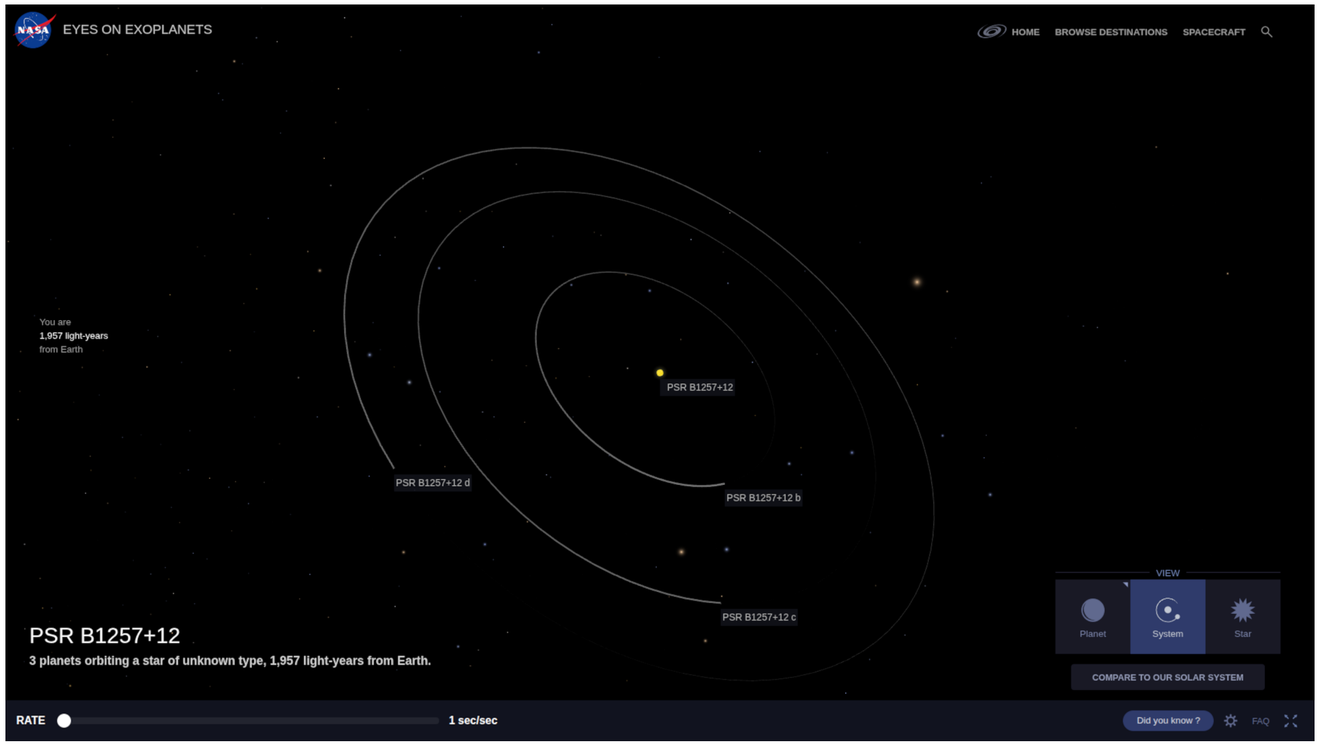
EXOPLANET LANDING AND ROBOTIC SURFACE EXPLORATION MISSION

Abstract

It is fair to say that if we take into consideration current scientific explanation of how the Universe was created and the principles of inflation, galaxies, stars, planet formation and other celestial entities, each entity is created with a unique set of attributes that differentiate it from the others, as in DNA with life as we know. Planet Earth's DNA is intelligent life; my question is: what are the DNA of other celestial entities? Could one be an Advanced Intelligent (AI) life form that humans and their technologies (including artificial) are not able to detect? To address this hypothesis, I propose an Exoplanet landing and robotic surface exploration mission using the 3 Astrophysics fundamental questions: 1 - How does the universe work? 2 - How did we get here? 3 - Are we alone? To execute the mission, we develop the Cis-Lunar Space Neutrino Laboratory, which is a proposed next-generation spacecraft-based facility designed to study the origins, properties, and applications of Multi-Messenger neutrino, presented at the 235th American Astronomical Society NASA Physics of the Cosmos session. The spacecraft will auto-develop its propulsion system in orbit around the Moon from nucleosynthesis in order to reach a "solar system escape velocity", selected exo-system entry, exo-planetary body of interest selection, descent, landing and surface exploration.



Example Exosystem	PSR B1257+12
Number of rocky exoplanets confirmed	3
Star type	Unknown
Distance from solar system	1,957 light-years

Spacecraft configuration	Light Speed	Solar System Escape Velocity
Travel speed	671 million miles per hour	262 billion miles per hour
Travel time	2000 years	5 years

Key Spacecraft Technologies

Detectors:
- Atom-based Quantum Sensing

Computing:
- Atom-based Quantum Computing

Propulsion:
- Nucleosyntesis Electromagnetic Propulsion

Key Infrastructure for technologies development

- Quantum Material Development Laboratory
- Quantum Computing Development Laboratory
- Solar System Escape Facility
- Autonomous Robotic Spacecraft Development Facility