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LATEST UPDATES ON DETECTING EXOPLANETS

An exoplanet is any planet located outside of our own solar system, orbiting a star other than our sun or floating independently in space. Once detected, scientists can analyze their size, mass, and even their atmospheres to infer their composition, temperature, and the presence of potentially life-supporting elements. The first discovery of exoplanets occurred in 1992 when astronomers Aleksander Wolszczan and Dale Frail found two planets orbiting a pulsar (a type of neutron star) named PSR B1257+12.

Transit method, it detects the dip in starlight that is dimmed brightness of the star when a planet passes in front of it's host star. Both Kepler and TESS use the Transit method to detect exoplanets. Kelper introduced the method with deep, long-term observations, while TESS expands the search to the whole sky, targeting nearer and more easily studied systems. Direct imaging method detects exoplanets by capturing actual images of the planets. While challenging, it provides valuable information about a planet's atmosphere, temperature, orbit and the sizes of the planets using coronagraph and star shade method. The astrometry method finds exoplanets by measuring the tiny wobble in a star's position caused by the gravitational tug of orbiting planets. Challenges that we are facing are, it requires ultra-precise instruments, the motion is very small, especially for the distant stars, making it a difficult method to use from the earth.

Authors: NGANGOM, Leoria (Jain deemed-to-be university); SHRI K, Thathreka (Jain (deemed-to-be) university)

Co-authors: GURUMATH, Shashanka R; M N, Sundar (JAIN (Deemed-to-be University))

Presenters: NGANGOM, Leoria (Jain deemed-to-be university); SHRI K, Thathreka (Jain (deemed-to-be) university)

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