Paper ID: 80440
student

IAF SYMPOSIUM ON ONGOING AND NEAR FUTURE SPACE ASTRONOMY AND SOLAR-SYSTEM SCIENCE MISSIONS (A7)
Space Astronomy missions, strategies and plans (1)

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"EXPLORING THE UNIVERSE: ONGOING AND NEAR-FUTURE SPACE MISSIONS"

Abstract

The near-future space missions have the potential to revolutionise our understanding of the universe and our place in it. They will provide new insights into the formation and evolution of our solar system and the universe, which can lead to significant advances in scientific research and technology development.

One of the most exciting missions is the James Webb Space Telescope (JWST). The JWST is the successor to the Hubble Space Telescope and is optimized for observing the infrared spectrum. Its advanced instruments will allow us to observe the earliest stages of star formation, study the formation of planetary systems, and observe the first galaxies that formed after the Big Bang. The data collected from the JWST could help us answer fundamental questions about the universe, such as the nature of dark matter and dark energy.

Another mission with significant potential is the Europa Clipper. The Europa Clipper will study Jupiter's moon, Europa, which is believed to have a subsurface ocean of liquid water. The mission's objective is to search for signs of life on the moon, which can revolutionize our understanding of the possibility of life in the universe.

The Mars 2020 mission, which includes the Perseverance rover, is to search for signs of past microbial life on Mars and study the planet's geology and climate. The data collected from this mission could help us understand the potential habitability of Mars and provide new insights into the formation and evolution of planets.

The Lucy mission, will study several asteroids in the asteroid belt between Mars and Jupiter. The mission's objective is to study the early history of the solar system and the formation of planets. The data collected from this mission could help us understand the origins of our solar system and the conditions that led to the formation of Earth.

Overall, the near-future space missions have the potential to revolutionise our understanding of the universe and our place in it. The data collected from these missions could lead to significant advances in scientific research and technology development, which can benefit humanity in various ways.