

European Space Agency's Ariel Space Mission

Ariel Space Mission is a European Space Agency adopted missions to study the composition, nature and evolution of exoplanets.

What is the Ariel Space Mission?

- The Atmospheric Remote-sensing Infrared Exoplanet Large-survey (ARIEL), is a space telescope mission of the European Space Agency's Cosmic Vision program
- This mission aims at studying the exoplanets, their nature, formation, composition and evolution over the years
- The mission is a four year long project and is expected to launch in 2029
- As of 2020, approximately 4000 exoplanets have been discovered to be present in space. Yet there are more which haven't been discovered yet and may have a scope of further research and exploration
- Through the Ariel Space Mission, a large scale survey of over a thousand exoplanets will be conducted for a period of four years
- European Space Agency intends to explore the exoplanetary systems and study about the formation of planets

Candidates willing to know more about the [Indian Space Research Organisation \(ISRO\)](#), can visit the linked article.

Significance of the Ariel Space Mission

The Ariel Space Mission upholds a great significance in terms of International Space Mission. Given below are the few points as to how this mission is important:

- This mission is first of its kind where a well defined survey will be conducted to measure the chemical composition of hundreds of exoplanets
- The answer to the biggest question by the European Space Agency - "What are the conditions for planet formation and the emergence of life?" can also be achieved by thorough study of these exoplanets

UPSC aspirants can also check the links to the various other Indian and International space missions in the table given below and upgrade their knowledge of the space research programs across the world:

Mars Orbiter Mission (MOM)	Gaganyaan Mission
Mission Shakti	NASA's OSIRIS-REx Mission
Aditya L1 – India's First Solar Mission	Juno Mission

What are Exoplanets?

Exoplanets are the planets that orbit around other stars located outside our solar system. Exoplanets are also called extrasolar planets. All the stars have at least 1 planet revolving around them. Most of the exoplanets discovered so far are located in the Milky way galaxy.

Proxima Centauri b is said to be the closest exoplanet from Earth and inhabits the habitable zone of its stars. Scientists also believe that there is a possibility of water and other mineral resources on the surface of this exoplanet.

To know more about the [Exoplanet](#), its definition, and other important facts, candidates can visit the linked article.

What is the need to study Exoplanets?

Scientists have started studying Exoplanets to discover existence and life beyond Earth. Thus, space agencies have started in-depth analysis of the exoplanets and their composition.

Also, the answer to the existence of mankind can be discovered through a deep understanding of exoplanets, and also will help in apprehending the entire functioning of stars and planets in the solar system.

Questions based on space missions, satellites and other space agencies are included in the Science and Technology part of the IAS exam. Thus candidates can also visit the [Science & Technology Notes](#) page to get the latest study material for UPSC exam preparation.

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