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ASTROPHYSICS

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Abstract: Astrophysics is a branch of space science that applies the laws of physics and chemistry to seek to understand the universe and our place in it. The field explores topics such as the birth, life and death of stars, planets, galaxies, nebulae and other objects in the universe. The Astrophysics creates physical theories of small to medium-size objects and structures in the universe.

INTRODUCTION

According to Astrophysics ,"It is a branch of space science that uses physics and chemistry to understand how stars, planets galaxies, nebulae, and other things in the universe are born,live,and die'. The Sun, other stars, galaxies, extra solar planets, the interstellar medium, and the cosmic microwave background are studied throughout the electromagnetic specify including luminosity, density, temperature, and chemical composition Astrophysicist use principles and methods from a verity of physics discipline, including classical mechanics, relativity, nuclear and particle physics, atomic and molecular physics, since astrophysics is such a board subject

History of Astrophysics

Astronomy is an ancient science that has been isolate from the study of terrestrial physics for a long time. It was thought that the celestial sphere was made of a fundamentally different kind of matter than that found on earth; other fire as Plato presumed, or aether as presumed by aristole. Natural philosophers like Galileo, Descartes, and Newton started an argument in 17th century that the celestial and earthly realms were made of identical materials and subject to the same natural rules. The repetitive work of calculating the positions and computing the movements of celestial objects dominated astronomical science for most of the nineteenth century.

By 1860, physicist gust av Kirchhoff and chemist Robert Bunsen had shown that the dark lines in the solar spectrum corresponded to bright lines in the spectra of known gases, with specific lines corresponding to specific chemical elements. In 1890, astronomer had complied a list of over 10,000 stars, categorizing them into thirteen spectral groups. Annie jump cannon expanded he catalogue to nine volumes and over a quarter of a million stars by 1924, following of a million stars by 1942, following pickings vision, and developed the Harvard classification scheme, which use in 1922. By the end of twentieth century, astronomical spectra researched had extended to include wavelengths ranging from radio waves to optical, x-rays, gamma rays. In the twenty-century, it was extended to include gravitational wave observations.

Theoretical Astrophysics

Astrophysics has two sibling sciences, astronomy and cosmology, though the lines between these branches can blur.In the most rigid sense:

Astrophysics creates physical theories of small to medium-size objects and structures in the universe.
Astronomy measures the positions, luminosities, motions and other characteristics of celestial objects.
Cosmology covers the cosmos' largest structures and the universe as a whole.

- Though astronomy is one of the oldest sciences, it was Isaac newton who pioneered theoretical astrophysics.
- Prior to Newton, astronomers used complex mathematical models with no physical basics to explain movements of celestial bodies.
- Newtons demonstrated that the orbits of moons and planets in space and the trajectory of a cannonball on earth can all be explained by a single theory.
- This added to the growing body of evidence supporting the surprising conclusive that the heavens and the Earth are both subject to the same physical laws.

Conclusion

The astrophysics definition states that "a branch of physics that studies astronomical structures and phenomenon using physics methods and principals". In reality, modern astronomical amount of theoretical and observational physics work. Astrophysics are interested in determining the properties of dark energy, black holes, and other celestial bodies, as well as the universe's origin and ultimate destiny the origins of astrophysics can be traced

Reference link

Link 1:https://www.slac.stanford.edu/econf/C041213/proc/sess_12.htm
Link 2 : https://en.wikipedia.org/wiki/Astrophysics