MOLECULAR ASTROPHYSICS

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DESCRIPTION

Molecular Astrophysics is a peer-reviewed journal containing full research articles, selected review articles, and thematic issues.

Molecular Astrophysics is a new journal where researchers working in planetary and exoplanetary science, astrochemistry, astrobiology, spectroscopy, physical chemistry and chemical physics can meet and exchange their ideas. Understanding the origin and evolution of interstellar and circumstellar molecules is key to understanding the Universe around us and our place in it and has become a fundamental goal of modern astrophysics. Molecular Astrophysics aims to provide a platform for scientists studying the chemical processes that form and dissociate molecules, and control chemical abundances in the universe, particularly in Solar System objects including planets, moons, and comets, in the atmospheres of exoplanets, as well as in regions of star and planet formation in the interstellar medium of galaxies.

Observational studies of the molecular universe are driven by a range of new space missions and large-scale scale observatories opening up. With the Spitzer Space Telescope, the Herschel Space Observatory, the Atacama Large Millimeter/submillimeter Array (ALMA), NASA's Kepler mission, the Rosetta mission, and more major future facilities such as NASA's James Webb Space Telescope and various missions to Mars, the journal taps into the expected new insights and the need to bring the various communities together on one platform.

The journal aims to cover observational, laboratory as well as computational results in the galactic, extragalactic and intergalactic areas of our universe.

Topics that the journal intends to cover include (this list is not exhaustive):
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- Chemical models of astrophysical and planetary environments
- Dust formation
- Experimental techniques
- Laboratory instrumentation
- Ion-molecule chemistry
- Gas and surface chemistry
- Laboratory astrochemistry
- Mass spectra of organic molecules
- Molecular excitation processes
- Photochemistry
- Physics and chemistry of large carbonaceous molecules and aggregates
- Quantum chemistry
- Radical chemistry
- Reaction mechanisms, kinetics, and dynamics
- Space and ground based instrumentation
- Spectroscopy

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- Early universe
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- Novae and
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