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The Progress in Researches at The Field of Physics and Astronomy Before and After COVID-19 Pandemic Period

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Introduction

The progress in research works at the field of physics and astronomy before and after COVID-19 pandemic period is devoted to all areas due to the well-equipped, modern and advanced tools. Thus developments directly relevant to astronomy may be included to cover the most important parts in the field.

Scientists of the field seeking access to a new or unfamiliar fields, current works are directed on the Large Hadron Collider, the world's highest energy particle accelerator, the brightest sources of light in the world beside the continuous improvements on tools and instruments for the huge telescopes e.g. Hubble Space Telescope, the famous space observatory telescope.

Researches on gravitational physics and gravitational-wave astronomy are understood to be important in detecting gravitational waves in space with the assistance of modern techniques e.g. the Laser Interferometer Space Antenna (LISA) technique. Research fields are now become strong and diverse, the opportunity to the knowledge spread due to the group works of experts in a challenging environment is well established in which the skills are well build.

Great works in Black Holes and High Energy Astrophysics are been concentrating on such good-sized galaxies acquire super-massive black holes at their centers, there are various studies (practically and theoretically) on the active galactic nuclei. The formation and evolution of Galaxies are devoted to define population of galaxies and the surrounding inter-galactic medium across cosmic time. These works are complemented by use the informations from the Milky Way and its nearest neighbors. The efforts focus on the exoplanet atmospheres from super-Earth to Jupiter size planets are constructed to lead the scientists to support the overall goal of illuminating the properties, formation, and evolution of exoplanets.

Astrophysicists before and after COVID-19 pandemic period are responsible from extracting knowledge from extremely large data-sets. The ultraviolet spectrograph, optical and near-infrared instruments for ground-based telescopes beside the studies of theoretical astrophysics are moves rapidly from topic to another.

Experimental and theoretical researches are working in hard and soft and biological matter depending on the knowledge in Condensed Matter Physics. Quantum magnets, superconductors, magnetic nanostructures and quantum nanowires beside synthesize, topological insulators, biological applications of nanostructures and analytic and computer-aided theory of non-equilibrium processes and other

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topics are studied. The efforts continued by largest institutions all over the world (e.g. NASA) are engaged in a broad range of research of topics in Cosmology and Gravity. Satellite experiments are transformed our view of the Universe and the nature of its contents. Rather studies are conducted on general relativity, physical and early-universe cosmology, dark matter and dark energy, cosmic-microwave-background measurements and other related topics.

Large database in elementary particle physics and micro-physical universe, source of spontaneous symmetry breaking, which is responsible for the origin of mass are at an important juncture. The assistance of Artificial Intelligence and Machine Learning (AIML) sciences make rapid strides, more studies are directed to the related systems and incorporate them into physics and astronomy research. Other research programs conducted in the last few years have grown out in the domain of plasma spectroscopy by using various techniques.

It is clear and real able fact the research programs continued before and after COVID-19 pandemic period despite the challenges to succeed in changing the life style of the human beings into the best.