

## Editor's Introduction

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This issue of the Communications of BAO is dedicated to the 110th anniversary of Viktor Ambartsumian – the founder of the BAO. We pointed in the first issue of the renewed ComBAO that Ambartsumian was the founder of this scientific periodical as well. More than 70 years ago, the first generation of Byurakan astrophysicists got a scientific magazine where they published many important scientific papers.

In the occasion of the jubilee, the International Conference “Instability Phenomena and Evolution of the Universe” took place at the Byurakan Astrophysical Observatory during the week 17-21 September 2018. That was a tribute to the memory of Ambartsumian, who was the first to concentrate his attention and attention of his co-workers on the decisive role of instability phenomena in the evolution of cosmic objects. Indeed, establishing the observatory in 1946 Ambartsumian also outlined its scientific priorities. Since that time the study of active or non-stationary phenomena were always among first priorities.

The point is that comparing with the long lasting evolution processes in cosmic objects activity phenomena more easily show the dominant direction of the matter evolution in the Universe. All the physical conclusions require accurate observational data, providing all necessary tools to reveal clear and unambiguous empirical regularities concerning the objects of research and the usage of physical theories well established and approved owing to their reproducible character. That was one of the cornerstones for the research methodology of studies of cosmogonic problems if one stays in the Ambartsumian's ideological frame.

Although some of the ideas stated by Ambartsumian in the field of stellar and galactic cosmogony are referred to have only historical interest, drastic changes in the comprehension of star formation or the role of active galactic nuclei, makes his research methodology rather valuable for the future studies of the relevant issues. One should mention that nowadays are common studies of the star forming regions and active galactic nuclei, any discourse about which considered to be ground less at very beginning. Speakers presented to the attention of participants of the conference many aspects of

instability in the various cosmic objects, belonging to all hierarchical levels of the Universe. Researchers considered observational data concerning the instability phenomena in separate stars, stellar groups and galaxies, which allowed comparative analyses of the types of these phenomena. In parallel, some presentations, stellar configurations consisted of various types of super-dense matter, including quark stars, are considered theoretically. These series of theoretical studies also initiated Ambartsumian in early 60s of the last century jointly with Professor Gurgen Sahakian, is under future elaboration at the Yerevan State University.

All the papers passed relevant peer-review. We are glad that in the magazine established by Ambartsumian we publish papers, which in some way are related to his scientific ideas and results.