

The Milky Way Revealed by Gaia: The Next Frontier



Contribution ID: 57

Type: **Contributed e-poster**

Symbiotic stars in Gaia DR3 (poster pitch, online)

Tuesday, September 5, 2023 4:32 PM (2 minutes)

Symbiotic stars are interacting binary systems consisting of a red giant and a hot companion, typically a white dwarf or, in some cases, a neutron star. They constitute unique astrophysical laboratories for the study of various phenomena, including mass transfer and accretion, stellar winds and their collision, formation and collimation of jets, production and destruction of dust, stellar pulsations, or thermonuclear outbursts. These systems also play an important role in stellar and binary evolution and have been proposed as possible progenitors of supernovae Ia.

Despite their significance, many questions regarding the parameters of symbiotic components or evolutionary channels leading to the symbiotic phenomenon remain unanswered. In this contribution, we explore various aspects of Gaia DR3 in the study of symbiotic stars. We focus on the astrometric, photometric, spectroscopic, and astrophysical data presented for known symbiotic systems and compare them with the parameters presented in the literature and collected in our New Online Database of Symbiotic Variables. Additionally, we present the first results of the effort aimed at classifying new symbiotic candidates identified in the Gaia DR3 and introduce a novel method to search for new objects of this class using Gaia observations, supplemented by the data from various other surveys.

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Session Classification: WG2.(II) & WG5: Impact, Inclusiveness and Outreach. Chair: Friedrich Anders