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The HII region G35.673-00.847: another case of triggered star formation?

S. Paron, A. Petriella, M. E. Ortega

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As part of a systematic study that we are performing with the aim to increase the observational evidence of triggered star formation in the surroundings of HII regions, we analyze the ISM around the HII region G35.673-00.847, a poorly studied source. Using data from large-scale surveys: Two Micron All Sky Survey, Galactic Legacy Infrared Mid-Plane Survey Extraordinaire (GLIMPSE), MIPS GAL, Galactic Ring Survey (GRS), VLA Galactic Plane Survey (VGPS), and NRAO VLA Sky Survey (NVSS) we performed a multiwavelength study of G35.673-00.847 and its surroundings. The mid IR emission, shows that G35.673-00.847 has an almost semi-ring like shape with a cut towards the galactic west. The radius of this semi-ring is about 1.5' (~1.6 pc, at the distance of ~3.7 kpc). The distance was estimated from an HI absorption study and from the analysis of the molecular gas. Indeed, we find a molecular shell composed by several clumps distributed around the HII region, suggesting that its expansion is collecting the surrounding material. We find several YSO candidates over the molecular shell. Finally, comparing the HII region dynamical age and the fragmentation time of the molecular shell, we discard the collect and collapse as the mechanism responsible for the YSOs formation, suggesting other processes such as radiative driven implosion and/or small-scale Jeans gravitational instabilities.

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