far IR wavelengths, while active cores have extended and enhanced 4.5μm emission.

In this work, we analyze CO(2-1), 13CO(2-1), and CO(2-1) lines, and mid- and far-infrared data towards the EGOS (Extended Green Objects) G341.23-0.27 and G341.22-0.26(a), projected onto the IRDC G341.24-0.27.

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FINDING PROTO-SPECTROSCOPIC BINARIES: PRECISE MULTI-EPOCH RADIAL VELOCITIES OF 7 PROTOSTARS IN ρ OPHIUCHUS

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Stars in the solar neighborhood are mostly found in multiple systems. While the existence of stellar companions at visual distances can be easily explained as a normal outcome of the star formation process itself, it is still unclear how spectroscopic companions are actually formed. If they are a by-product of the initial fragmentation of molecular clouds, or resultant from dynamical evolution within pristine multiple systems is still an open question in star formation. To uncover a young spectroscopic binary would be therefore an invaluable clue for understanding the mechanisms and the time scales involved in their formation. Aiming at finding such young spectroscopic companions, we present a near-IR high resolution (R $\sim$ 60000) multi-epoch radial velocity survey of 7 young stellar objects in the star forming region ρ Ophiuchus. The radial velocities of each source were derived using a 2-D cross-correlation function designed to deliver the radial velocity of the target relative to the zero-point established by the earth's atmosphere. We found that the spectra of the protostars in our sample agree reasonably well with predicted stellar photospheric profiles indicating that the radial velocities uncovered are of stellar nature. Three of the targets analyzed give us hints that the first proto-spectroscopic binaries might have been found. If confirmed, it will bring an important piece into the (binary) star-formation puzzle, namely, that multiplicity at sub-AU scale starts (or not) at birth. Our preliminary binary fraction of $\sim$71% is also in line with the notion that multiplicity is very high at young ages and therefore it might be a product of star-formation.

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STAR AND PLANET FORMATION IN THE ERA OF THE SUBMILLIMETER OBSERVATORIES SMA/ALMA

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I present the recent advances and challenges on the star and planet formation studies in era of the submillimeter observatories: the Submillimeter Array (SMA) and the Atacama Large Millimeter/Submillimeter Array (ALMA). These observatories now provide angular resolutions similar to those obtained in the optical regimen allowing to study the obscured innermost parts of the circumstellar disks where the planet and star formation are taken place. When ALMA is finished, its sensivity and high angular resolution might reveal planets around closeby young stars just in the process of formation. This will open a new venue for the understanding on the origin of our own solar system.

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STARS & STELLAR SYSTEMS

THE BIOSUN PROJECT: AN ASTROBIOLOGICAL APPROACH TO STUDY THE ORIGIN OF LIFE

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During the early ages of the Earth the magnetic activity of the young Sun was much stronger than that of the present Sun, in particular for radiation emitted below 1700 Å. Such enhanced radiation fluxes could play a role in the evolution of planetary atmospheres, their surface conditions and in the origin and evolution of life. Solar stellar analogs could provide information about the characteristics of the young Sun, and therefore this radiation environment.

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