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Herbig Ae/Be Signatures in the AUKR Spectra of V700 Mon and LP Ori

Content

Herbig Ae/Be stars are pre-main-sequence stars that exhibit distinctive visual emission features as well as infrared excess. Both provide valuable information about the physical conditions, kinematics, and composition of the circumstellar material surrounding the Herbig Ae/Be stars. The high-resolution (R $\sim$ 30 000) spectra of V700 Mon and LP Ori were obtained using the échelle spectrograph attached to the 0.8-m Prof. Dr. Berahitdin Albayrak telescope at the Ankara University Kreiken Observatory (AUKR), covering a wavelength interval from 4000 to 7600 Å. LP Ori was observed on February 25, 2023, and V700 Mon on January 23, 2024. We investigated the spectral emission signatures arising from the circumstellar material surrounding both of these young Herbig Ae/Be stars. In both spectra, emission in the core of the Balmer profiles as well as in the neutral helium line at λ5875 are visible. The other indication, which is emission in the He I line at 6678 Å, is only present for LP Ori. Furthermore, the spectral energy distribution of V700 Mon was constructed to derive its extinction factor and to confirm the infrared excess caused by its circumstellar disk. Finally, both Herbig Ae/Be stars are placed on the H-R diagram to estimate their mass and age.

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