

## Near-Infrared Circular Polarization Images of NGC 6334-V: Implication for Astrobiology

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We present results from deep imaging linear and circular polarimetry of the massive star-forming region NGC 6334-V. These observations show high degrees of circular polarization (CP), as much as 22% in the Ks band, in the infrared nebula associated with the outflow. The CP has an asymmetric positive/negative pattern and is very extended (~80" or 0.65 pc). Both the high CP and its extended size are larger than those seen in the Orion CP region. Three-dimensional Monte Carlo light-scattering models are used to show that the high CP may be produced by scattering from the infrared nebula followed by dichroic extinction by an optically thick foreground cloud containing aligned dust grains. Our results show not only the magnetic field orientation of around young stellar objects, but also the structure of circumstellar matter such as outflow regions and their parent molecular cloud along the line of sight. This is the second case to support the large CP in scattering protostellar nebulae as a possible explanation for the extraterrestrial origin of homochirality of life on Earth.