

## High Circular Polarisation In The Star Formation Regions NGC 6334: Implication For Biomolecular Homochirality

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The amino-acids which form the building blocks of biological proteins are all left-handed molecules. By contrast, when these molecules are made in the laboratory equal numbers of the right and left-handed versions are made. This homochirality found in biological material may then well be a prerequisite for the origin of life and a number of processes have been proposed to produce the required enantiomeric excess in prebiotic organic molecules.

We report here on the detection of high degrees of circular polarisation in the star forming complex NGC 6334, in the constellation Scorpius. This important finding suggests the widespread nature of a potentially efficient process to produce biomolecules with large chiral excess, namely selective (asymmetric) photolysis by circularly polarised light. The mechanism, well known in the laboratory, was first suggested to take place in a star forming region by Bailey *et al.* (1998) (*Science*, **281**, 672; and this conference), following our discovery of high degrees of near- infrared circular polarisation in the Orion molecular cloud, OMC-1.

NGC 6334 is a giant HII region and molecular cloud similar to Orion. These two detections of large circular polarisation, among the small number of sources surveyed so far, lead us to suggest that selective photolysis by circular polarisation may be quite widespread in massive star formation regions.