

## Proper Motion Study of the Orion Nebula Cluster

Sabine Frink, Astronomisches Rechen-Institut Heidelberg  
Pavel Kroupa, Institut für Theoretische Astrophysik, Heidelberg  
Siegfried Röser, Astronomisches Rechen-Institut Heidelberg

Motivated by a recent investigation of binary properties in the Orion Nebula Cluster (ONC), in which, among other models, a rapidly expanding ONC is studied (Kroupa et al. 1998), we re-investigate the kinematical state of the cluster.

Earlier investigations claimed to have found evidence for expansion (Strand 1958) as well as for an overall contraction (Fallon, Gerola & Sofia 1977) of the ONC. Both results have been questioned later on by other authors. More recent proper motion studies of the ONC focused primarily on the selection of new member candidates, determining relative proper motions of the stars which are in general more accurate than absolute proper motions, but make it impossible to detect any systematic motions like expansion, contraction or rotation of the cluster stars.

Here we use absolute proper motions taken from various catalogues (Hipparcos, PPM, ACT, STARNET) for several dozens of stars probably belonging to the ONC to put upper limits on any possible systematic motion.