

# GALACTIC OPEN CLUSTERS

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## **Aims:**

Photometry and Spectroscopy of a sample of galactic open clusters in order to study their internal dynamics and provide a modern test to the model of the galactic disk rotation proposed by Hron on 1987.

Observational data on the about 1100 galactic open clusters presently known, as distances, physical members and radial velocities, are still scanty. This prevents a reliable test to theoretical models regarding not only the internal structure and dynamical evolution of these objects but also the structure of the Galaxy itself and especially its rotation curve. In fact, the most recent (2000) galactic rotation curve has been traced using HIPPARCOS data and it is valid only up to 2 kpc from the Sun. By measuring and analysing radial velocities of open clusters it is possible to trace the rotation curve up to the point of visibility of these objects, i.e. up to the limits of the star formation zone within the galactic disk., thus following the work of Hron (1987) still based on photographic material, and which needs updating through the use of modern CCD detectors which, besides better quality, may provide data for 10-20 stars per cluster compared to Hron's 3 - 5.

## **Project 1: Reduction and analysis of the data on the open cluster NGC 5617**

### **Personnel:**

R. Barbon (PO),  
G. Carraro (RU),  
U. Munari (INAF-OAPD) ,  
L. Tomasella (INAF-OAPD),  
C. Boeche (contract INAF-OAPD)

### **Collaborations:**

Collaboration with INAF – Osservatorio Astronomico di Padova (contact : U. Munari)

### **Research Products:**

2000: 1 refereed paper  
2002: 1 refereed paper and 1 IBVS circular  
2003: 1 refereed paper  
2004: 1 refereed paper

### **List of most representative publications:**

R. Barbon, G. Carraro, U. Munari, T. Zwitter, L. Tomasella  
SPECTROSCOPY AND BVI PHOTOMETRY OF THE YOUNG OPEN CLUSTER NGC 6604  
Astron.& Astrophys. Suppl. Series 144, 451, 2000

G. Carraro, R. Barbon, .C. Boschetti  
THE INTERMEDIATE AGE OPEN CLUSTER NGC 2112  
Mon. Not. R.A.S. 336, 259, 2002

C. Boeche, R. Barbon, A. Henden, U. Munari, P. Agnolin  
NGC 6738: NOT A REAL OPEN CLUSTER  
Astron. & Astrophys. 406, 893, 2003

C. Boeche, U. Munari, L.: Tomasella, R, Barbon  
KINEMATICS AND BINARIES IN YOUNG STELLAR AGGREGATES II: NGC 6913  
Astron & Astrophys. 415, 145, 2004