

# Advanced Seminar Astrophysics: Star clusters and associations

Prof. Dr. Ralph Neuhäuser

Fall term 2024/25, **Thu 8:30h s.t. - 10:00h s.t.**

## Schedule

- 16 Oct – RN: Introduction
- 7 Nov – Prof. Ernst Paunzen (Masaryk Univ. Brno): Introduction to star clusters
- 14 Nov – Prof. Ernst Paunzen (Masaryk Univ. Brno): Star clusters in the Gaia era
- **Wed 20 Nov, 10-12h** – Prof. Ernst Paunzen (Masaryk Univ. Brno): Extragalactic star clusters
- 5 Dec – Lara Dürrenberg: Star clusters in the Hertzsprung-Russell and color-magnitude diagrams for determination of mass, age, and extinction
- 12 Dec – Sreevarsha Srinivasan: Introduction to the Orion nebula (cluster) (Bally 2008, Overview of the Orion Complex, Star Formation Handbook)
- 19 Dec – Mariya Jory: Formation of clusters and associations (Lada & Lada 2003, Embedded Clusters in Molecular Clouds, A&A Rev. 41, 57)
- 9 Jan – Tobias Morgner: The Initial Mass Function of star clusters (Chabrier 2003, Galactic Stellar and Substellar Initial Mass Function, PASP 115, 763; Kroupa 2002, The Initial Mass Function of Stars: Evidence for Uniformity in Variable Systems, Science 295, 82)
- 16 Jan – Gabriel Augsten: OB associations with high-mass stars (Garmany 1994, OB Associations: Massive Stars in Context, PASP 106, 25; Ratzenböck et al. 2023a, Significance mode analysis (SigMA) for hierarchical structures. An application to the Sco-Cen OB association, A&A 677, 59; Ratzenböck et al. 2023b, The star formation history of the Sco-Cen association. Coherent star formation patterns in space and time, A&A 678, 71)
- 23 Jan – Baha Dincel: Young OB associations and clusters near supernova remnants
- 30 Jan – Ralph Neuhäuser: Runaway Stars from OB associations
- 6 Feb – Valeri Hambaryan: Flare stars in the Pleiades cluster

Each student should give one talk of 30-45 min duration with a hand-out of 1-3 pages (most important results, literature used, and possibly positive or negative critique of literature used)