

2nd Heidelberg Astronomy Summer School

The Milky Way Galaxy: Dynamics – Evolution – Matter cycle

August 29th - September 5th, 2007

organized by the

***International Max Planck Research School (IMPRS) for
Astronomy and Cosmic Physics at the University of Heidelberg***

Invited Lecturers: Prof. Dr. James Binney, University of Oxford
Prof. Dr. Bruce Elmegreen, IBM Watson Research Center
Prof. Dr. Eva Grebel, Centre for Astronomy, University of Heidelberg
Prof. Dr. Ben Moore, University of Zurich

Location: Max Planck conference center (“Max-Planck-Haus”),
Gerhard-Hauptmann-Str. 36, 69120 Heidelberg, Germany

Summer school programme:

Wednesday, 29th August, 2007

- 14:00 – 14:10 *Welcome address* (Hans-Walter Rix)
14:10 – 14:20 *LOC announcements* (Christian Fendt)
14:30 – 15:30 An observational overview of the Local Group by a theorist (Ben Moore)
15:30 - 16:00 *Coffee break*
16:00 – 16:30 The accretion origin of the Milky Way's stellar halo (Eric Bell)
16:30 – 17:30 Cosmic baryon inventory (Ben Moore)

Thursday, 30th August, 2007

- 09:30 – 10:30 Milky Way: A short historical overview (Eva Grebel)
10:30 – 11:00 Galactic microlensing (Joachim Wambsganss)
11:00 - 11:30 *Coffee break*
11:30 – 12:30 Growth of structure in the Universe (Ben Moore)
12:30 – 14:00 *Lunch break*
14:00 – 15:00 The Solar neighbourhood & the Galactic disk (Eva Grebel)
15:00 - 15:30 *Coffee break*
15:30 – 16:30 Properties of LCDM halos (Ben Moore)
17:00 – 22:00 *Excursion: Tour & reception at the Max Planck Institute for Astronomy*

Friday, 31th August, 2007

- 09:30 – 10:30 More on the Galactic disk and ISM (Eva Grebel)
10:30 – 11:00 Galactic VHE source populations (Gerd Puehlhofer)
11:00 - 11:30 Coffee break
11:30 – 12:30 Satellites and sub-structures (Ben Moore)
12:30 – 14:00 Lunch break
14:00 – 14:30 Open clusters in the Galaxy (Siegfried Roeser)
14:30 – 15:30 The Galactic halo & the thick disk (Eva Grebel)
15:30 – 16:00 Coffee break
16:00 – 17:00 Baryonic processes (Ben Moore)

Saturday, 1st September, 2007

- 09:30 – 10:30 The Galactic bulge, bar & center ; M31 & M33 (Eva Grebel)
10:30 – 11:00 Stars in the Solar neighbourhood & the origin of the Local Bubble
in the ISM (Burkhard Fuchs)
11:00 - 11:30 Coffee break
11:30 – 12:30 The dwarf galaxies in the Local Group (Eva Grebel)
14:00 – 16:00 Excursion: Guided tour at the Castle of Heidelberg
19:00 – 24:00 Pub evening, Schlossbeleuchtung, Fischerfest

Sunday, 2nd September, 2007

- 09:30 – 14:00 Free morning*
14:00 – 18:00 Excursion: Boat trip on the Neckar River

Monday, 3rd September, 2007

- 09:30 – 10:30 Large scale gas flows in galaxies: spirals, instabilities, disk
accretion (Bruce Elmegreen)
10:30 – 11:00 Modelling star formation in disk galaxies (Ralf Klessen)
11:00 - 11:30 Coffee break
11:30 – 12:30 Orbits 1: Integrability (James Binney)
12:30 – 14:00 Lunch break
14:00 – 15:00 ISM Explosions: HII regions, winds, supernovae, super shells,
super winds, quenching (Bruce Elmegreen)

15:00 – 15:30 *Coffee break*

15:30 – 16:30 Orbits 2 : Perturbation theory, resonances & chaos (James Binney)

16:30 – 17:30 Star formation in galaxy disks: star formation rates, empirical laws, CO, IR, H-alpha ... (Bruce Elmegreen)

Tuesday, 4th September, 2007 (Old Auditory of Heidelberg University)

09:30 – 10:30 Equilibrium models 1 (James Binney)

10:30 – 11:00 Spectroscopic surveys of Milky Way satellites (Nicolas Martin)

11:00 - 11:30 *Coffee break*

11:30 – 12:30 Star formation processes: cloud formation, time scales, triggering, morphology, cluster formation (Bruce Elmegreen)

12:45 – 14:00 *Lunch break*

14:00 – 15:00 Equilibrium models 2: Solar neighbourhood & Jeans equation (James Binney)

15:00 - 15.30 *Coffee break*

15:30 – 16:30 Feedback in interstellar gas: energy sources for turbulence, destruction of star-forming clouds, life cycle of a GMC (Bruce Elmegreen)

16:30 – 17:30 Kinetic theory (James Binney)

18:00 – 20:00 *Soccer play at Neckar River park (Daniele Fantin)*

20:00 – 23:00 *Pub evening*

Wednesday, 5th September, 2007

09:30 – 10:30 Stability & spiral structure (James Binney)

10:30 – 11:00 The Gaia Galactic survey mission (Coryn Bailer-Jones)

11:00 - 11:30 *Coffee break*

11:30 – 12:30 Secular evolution of the ISM in galaxies: cosmological accretion, interacting galaxies, downsizing, long-term effects (Bruce Elmegreen)

12:30 – 12:45 *Farewell address* (Stefan Wagner)

12:45 – 14:00 *Lunch break*

13:00 – 15:00 *Departure*