

# Proseminar Astrophysik, Wintersemester 2012/13

*Infos:* Robi Banerjee (Hamburger Sternwarte, banerjee@hs.uni-hamburg.de)

- Termin: ?
- Vortrag: 20 – 25 Minuten, Vortragsfolien werden als Zusammenfassung/Ausarbeitung gewertet
- Lehrbücher
  - Schulz, *The Formation and Early Evolution of Stars*, 2012
  - Bodenheimer, *Principles of Star Formation*, 2011
  - Ward-Thompson & Whitworth, *An Introduction to Star Formation*, 2011
  - Stahler & Palla, *The Formation of Stars*, 2004
  - Bally & Reipurth, *The Birth of Stars and Planets*, 2006
  - Larson, *The physics of star formation*, Report 2003
  - Weigert, Wendker & Wisotzki, *Astronomie und Astrophysik*, 2009
  - Unsöld & Baschek, *Der Neue Kosmos*, 2006
  - Binney & Tremaine, *Galactic Dynamics*, 2008
  - Shu, *The Physics of Astrophysics, II*, 1992
  - Kolb & Turner, *The Early Universe*, 2005
  - Liddle, *Einführung in die moderne Kosmologie*, 2009
  - P. Schneider, *Extragalaktische Astronomie und Kosmologie*, 2007
  - S. Weinberg, *Cosmology*, 2008
- Mögliche Themen (Sternentstehung/Galaktische Astrophysik):
  - **Instellare Medium (ISM): Zusammensetzung, Dynamik, Geschichtliches** (Weigert et al., 2009; Breitschwerdt, 1998)
  - **Molekülwolken und Turbulenz** (Ballesteros-Paredes et al., 2007; Ballesteros-Paredes, 2004; Blitz et al., 2007)
  - **Initial Mass Function (IMF)** (Kroupa, 2002; Kroupa & Boily, 2002; Bonnell et al., 2007)
  - **Kollaps von Gasklumpen** (Larson, 1969; Penston, 1969; Shu, 1977; Bonnor, 1956; Ebert, 1955)

- **Entstehung massereicher Sterne** (Zinnecker & Yorke, 2007; Beuther et al., 2007; McKee & Ostriker, 2007)
- **Magnetfelder (ampipolare Diffusion)** (Spitzer, 1998; Mouschovias & Spitzer, 1976)
- **Gasausflüsse von Protosternen** (Blandford & Payne, 1982; Pudritz & Norman, 1983, 1986)
- **Eigenschaften und Entwicklung von Sternhaufen** (Weigert et al., 2009; Binney & Tremaine, 2008; Portegies Zwart et al., 2010)
- Mögliche Themen (Extragalaktik / Kosmologie):
  - **Entstehung der ersten Sterne** (Bromm et al., 2009; Abel et al., 2002; Glover, 2005)
  - **Extragalaktische Sternentstehung** (Kennicutt-Schmidt Law,... Schneider, 2006)
  - **Dunkle Materie: warum? Evidenz** (Weinberg, 2008; Kolb & Turner, 1994; Schneider, 2006)
  - **Kosmischen Hintergrundstrahlung (CMBR): Entstehung, Fluktuationen** (Weinberg, 2008; Kolb & Turner, 1994; Schneider, 2006; Durrer, 2008)
  - **Entstehung der ersten Elemente: Big-Bang-Nukleosynthese** (Weinberg, 2008; Kolb & Turner, 1994)
  - **Strukturbildung, Entstehung von Galaxien** (Schneider, 2006; Kolb & Turner, 1994; Weinberg, 2008)
  - **Supernovae–Dunkle-Energie Projekte** (The Supernova Cosmology Project, High-Z SN search Team: Perlmutter, 2003; Perlmutter & Schmidt, 2003; Perlmutter, 2005; Riess, 2000)
  - **Inter-/Extragalaktische Magnetfelder**(Neronov & Semikoz, 2009; Neronov & Vovk, 2010; Tavecchio et al., 2010; Taylor et al., 2011)
  - **Gravitationslinsen** (Hartle, 2003; Schneider et al., 1992)

## References

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