

# Proseminar Astrophysik, Wintersemester 2012/13

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December 5, 2012

- Termine: Freitag 7. Dezember + Samstag 8. Dezember 2012
- Zeit: 10:00 – 16:00
- Ort, 7.12.: Jungiusstr., Bibliothek, AP
- Ort, 8.12.: Hamburger Sternwarte, Bergedorf, Seminarraum (“Sonnenbau”)
- Vortragsdauer: 20 – 25 Minuten + 10 Minuten Diskussion
- Sprache: Deutsch/Englisch
- evtl. Gliederung/Folien im Vorfeld mit dem Dozenten absprechen (min. zwei Wochen vorher Termin vereinbaren).
- Lehrbücher
  - 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
  - Shu, *The Physics of Astrophysics, II*, 1992
  - Kolb & Turner, *The Early Universe*, 1994
  - Peebles, *Principles of Physical Cosmology*, 1993
  - Liddle, *Einführung in die moderne Kosmologie*, 2009
  - P. Schneider, *Extragalaktische Astronomie und Kosmologie*, 2007
  - S. Weinberg, *Cosmology*, 2008

**Programm: Freitag, 7.12.2012, Jungiusstr. Bibliothek AP**

Date	Topic	Literature	Name
10:00	The interstellar medium (ISM)	e.g. Weigert et al. (2009) Breitschwerdt (1998)	Melanie Krieger
10:30	Molecular clouds	Ballesteros-Paredes (2004); Ballesteros-Paredes et al. (2007) Blitz et al. (2007)	Maximilian Fester
11:00	Collapse of cores	Larson (1969); Penston (1969) Shu (1977) Bonnor (1956), Ebert (1955)	Yannic Ristau
11:30	Initial Mass Function (IMF)	Kroupa (2002) Kroupa & Boily (2002) Bonnell et al. (2007)	Rene Chaeib
12:00	<b>Mittagspause</b>		
13:30	Properties and evolution of stellar cluster	Weigert et al. (2009) Binney & Tremaine (2008) Portegies Zwart et al. (2010)	Melanie Schenk
14:00	Protostellar jets and outflows	Blandford & Payne (1982) Pudritz & Norman (1983, 1986) Bally et al. (2007); Fernandes et al. (2004)	Daniel Wehrheim
14:30	Formation of massive stars	Zinnecker & Yorke (2007) Beuther et al. (2007) McKee & Ostriker (2007)	Julia Siegmund
15:00	<b>Kaffeepause</b>		
15:20	Structure formation / formation of the first galaxies I	Weinberg (2008) Kolb & Turner (1994) Peebles (1993) Liddle (2003) Schneider (2006)	Christian Henkel
15:50	Structure formation / formation of the first galaxies II	Weinberg (2008) Kolb & Turner (1994) Peebles (1993) Liddle (2003) Schneider (2006)	Dominik Hintz

**Programm: Samstag, 8.12.2012, Sternwarte Bergedorf, Sonnenbau**

Date	Topic	Literature	Name
10:00	Dark Matter: evidence, reasoning	Weinberg (2008) Kolb & Turner (1994) Peebles (1993) Schneider (2006) Bartelmann (2009)	Indra Repeck
11:30	Direct search for Dark Matter		Ole Brandt
11:00	Supernovae–Dark-Energy Projects	Perlmutter (2003); Perlmutter & Schmidt (2003); Perlmutter (2005) Riess (2000)	Jascha Zander
11:30	Big-Bang Nucleosynthesis (BBN)	Weinberg (2008) Kolb & Turner (1994) Peebles (1993)	Abbas-Ali Said
12:00	<b>Mittagspause</b>		
13:30	The Cosmic Microwave Background Radiation (CMBR)	Weinberg (2008) Kolb & Turner (1994) Peebles (1993) Durrer (2008)	Martin Schlederer
14:00	Gravitational Lenses	Hartle (2003) Schneider et al. (1992)	Florian Müller

## References

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- Bally, J., Reipurth, B., & Davis, C. J., Observations of Jets and Outflows from Young Stars. 2007, in *Protostars and Planets V*, ed. B. Reipurth, D. Jewitt, & K. Keil, 215–230
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