

# Proseminar Astrophysik, Wintersemester 2013/14

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January 8, 2014

- Termine: **Freitag 24. Januar + Samstag 25. Januar 2014**
- Ort: Hamburger Sternwarte, Bergedorf, Besucherzentrum (Fr.) / Bibliothek (Sa.)
- Vortragsdauer: 20 Minuten + 10 Minuten Diskussion + Nachbesprechung
- Sprache: Deutsch/Englisch
- evtl. Gliederung/Folien im Vorfeld mit dem Dozenten absprechen (min. zwei Wochen vorher Termin vereinbaren).
- Lehrbücher (Auswahl)
  - Weigert, Wendker & Wisotzki, *Astronomie und Astrophysik*, 2009
  - Unsöld & Baschek, *Der Neue Kosmos*, 2006
  - Shu, *The Physics of Astrophysics, II*, 1992
  - 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
  - Armitage, *Astrophysics of Planet Formation*, 2010
  - Klahr & Brandner (Eds.), *Planet Formation*, 2011
  - Binney & Tremaine, *Galactic Dynamics*, 2008
  - Kolb & Turner, *The Early Universe*, 2005
  - Liddle, *Einführung in die moderne Kosmologie*, 2009
  - P. Schneider, *Extragalaktische Astronomie und Kosmologie*, 2007
  - S. Weinberg, *Cosmology*, 2008

**Programm: Freitag, 24. Januar 2014 im Besucherzentrum**

Date	Topic	Literatur (z.B.)	Name
9:30	Das Interstellare Medium	Weigert et al. (2009) Breitschwerdt (1998)	Julia Gerecke
10:00	Molekülwolken und Turbulenz	Ballesteros-Paredes et al. (2007) Ballesteros-Paredes (2004) Blitz et al. (2007)	Urs Schäfer
10:30	Gasausflüsse aus protostellaren Scheiben	Blandford & Payne (1982) Pudritz & Norman (1983, 1986) Seifried et al. (2012)	Andriy Borovkov
11:00	Kaffeepause		
11:15	Eigenschaften und Entwicklung von Sternhaufen	Weigert et al. (2009) Binney & Tremaine (2008) Portegies Zwart et al. (2010)	Katharina Westenberg
11:45	Initial Mass Function (IMF)	Kroupa (2002) Kroupa & Boily (2002) Bonnell et al. (2007)	Myriam Wertz
12:15	Mittagspause		
13:30	Entstehung massereicher Sterne	Zinnecker & Yorke (2007) Beuther et al. (2007) McKee & Ostriker (2007)	Ute Schäning
14:00	Endstadien von Sternen		Frederic Madesta
14:30	Gammablitz	Janka (2011) Janka et al. (2011)	Lars Hübner
15:00	Kaffeepause		
15:15	Inter-/Extragalaktische Magnetfelder	Neronov & Semikoz (2009); Neronov & Vovk (2010) Tavecchio et al. (2010) Taylor et al. (2011)	Stefan Hackstein
15:45	Gravitationslinsen	Hartle (2003) Schneider et al. (1992)	Fiona Prodöhl

**Programm: Samstag, 25. Januar 2014 in der Bibliothek**

Date	Topic	Literatur (z.B.)	Name
10:00	Suche nach Exoplaneten: Methoden und Techniken	(Dvorak, 2007) Ollivier et al. (2009) Seager (2011)	Leonard Jaffé
10:30	Planetenenstehung	Armitage (2010) Klahr & Brandner (2011)	Friederike Albrecht
11:00	Entstehung der Ersten Sterne	Bromm et al. (2009) Abel et al. (2002) Glover (2005)	Thomas Lässer
11:30	Kaffeepause		
11:45	Kosmische Hintergrundstrahlung (CMBR): Entstehung, Fluktuationen	Weinberg (2008) Kolb & Turner (1994) Schneider (2006) Durrer (2008)	Bastian Osterloh
12:15	Ergebnisse der ESA PLANCK Mission	Übersichtsartikel: Planck Collaboration et al. (2013)	Cassian Plorin
12:45	Entstehung der ersten Elemente: Big-Bang-Nukleosynthese	Weinberg (2008) Kolb & Turner (1994) Pospelov & Pradler (2010) Iocco et al. (2009)	Tamme Witte
13:15	Mittagspause		
14:00	Supernovae–Dunkle-Energie Projekte	Perlmutter (2003); Perlmutter & Schmidt (2003); Perlmutter (2005) Riess (2000)	Christoph Leonhardt
14:30	Der Komet ISON: Aufbau, Herkunft & Flugbahn		Kai Fröhlich

## References

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- Breitschwerdt, D., Introductory Lecture: The Local and General Interstellar Medium. 1998, in *Lecture Notes in Physics*, Berlin Springer Verlag, Vol. 506, IAU Colloq. 166: The Local Bubble and Beyond, ed. D. Breitschwerdt, M. J. Freyberg, & J. Truemper, 5–16
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