

Proseminar Sternentstehung, Sommer 2011 (66-530)

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

- Termin: 1. August 2011
- Zeit: 9:00 – ca. 15:15
- Ort: Jungiusstr. 9, SmR 4
- Vortragsdauer: bis 20 Minuten anschließend 5 Minuten Fragen + Antworten
- Gliederung/Folien können im Vorfeld mit dem Dozenten abgesprochen werden.
- Literatur (Abriss)
 - 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

Themen & Zeitplan ¹:

Time	Topic	Literature	Name
9:00 – 9:45	Overview		Robi Banerjee
9:45 – 10:10	The interstellar medium (ISM)	e.g. Weigert et al. (2009) Breitschwerdt (1998)	Marco Stumper
10:10 – 10:35	Initial Mass Function (IMF)	Kroupa (2002) Kroupa & Boily (2002) Bonnell et al. (2007)	Niels Petersen
10:35 – 10:50	Pause		
10:50 – 11:15	Collapse of cores	Larson (1969) Penston (1969) Shu (1977) Bonnor (1956), Ebert (1955) (stability)	Marlies Meyer
11:15 – 11:40	Formation of massive stars I	Zinnecker & Yorke (2007) Beuther et al. (2007)	Florian Blumendorf
11:40 – 12:05	Formation of massive stars II	Zinnecker & Yorke (2007) Beuther et al. (2007)	Manuel Schreiber
12:05 – 13:30	Mittagspause		
13:30 – 13:55	Magnetic fields (ambipolar diffusion)	Spitzer (1998) Mouschovias & Spitzer (1976)	Philipp Layer
13:55 – 14:20	Outflows from proto-stars	Blandford & Payne (1982) Pudritz & Norman (1983); Pudritz & Norman (1986)	Tobias Behrendt
14:20 – 14:45	Formation of the first stars I	Bromm et al. (2009) Abel et al. (2002) Glover (2005)	Sebastian Freund
14:45 – 15:10	Formation of the first stars II	Bromm et al. (2009) Abel et al. (2002) Glover (2005)	Peter Flügge

¹Kann sich noch ändern, da nicht alle Teilnehmer bestätigt sind

References

- Abel, T., Bryan, G. L., & Norman, M. L., The Formation of the First Star in the Universe. 2002, *Science*, 295, 93
- Beuther, H., Churchwell, E. B., McKee, C. F., & Tan, J. C., The Formation of Massive Stars. 2007, in *Protostars and Planets V*, ed. B. Reipurth, D. Jewitt, & K. Keil, 165–180
- Blandford, R. D. & Payne, D. G., Hydromagnetic flows from accretion discs and the production of radio jets. 1982, *MNRAS*, 199, 883
- Bonnell, I. A., Larson, R. B., & Zinnecker, H., The Origin of the Initial Mass Function. 2007, in *Protostars and Planets V*, ed. B. Reipurth, D. Jewitt, & K. Keil, 149–164
- Bonnor, W. B., Boyle's Law and gravitational instability. 1956, *MNRAS*, 116, 351
- 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
- Bromm, V., Yoshida, N., Hernquist, L., & McKee, C. F., The formation of the first stars and galaxies. 2009, *Nature*, 459, 49
- Ebert, R., Über die Verdichtung von H I-Gebieten. Mit 5 Textabbildungen. 1955, *ZAp*, 37, 217
- Glover, S., The Formation Of The First Stars In The Universe. 2005, *Space Sci. Rev.*, 117, 445
- Kroupa, P., The Initial Mass Function of Stars: Evidence for Uniformity in Variable Systems. 2002, *Science*, 295, 82
- Kroupa, P. & Boily, C. M., On the mass function of star clusters. 2002, *MNRAS*, 336, 1188
- Larson, R. B., Numerical calculations of the dynamics of collapsing proto-star. 1969, *MNRAS*, 145, 271
- Mouschovias, T. C. & Spitzer, Jr., L., Note on the collapse of magnetic interstellar clouds. 1976, *ApJ*, 210, 326
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- , Bipolar hydromagnetic winds from disks around protostellar objects. 1986, *ApJ*, 301, 571
- Shu, F. H., Self-similar collapse of isothermal spheres and star formation. 1977, *ApJ*, 214, 488
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- Weigert, A., Wendker, H. J., & Wisotzki, L. 2009, *Astronomie und Astrophysik* (Wiley-VCH 2009)
- Zinnecker, H. & Yorke, H. W., Toward Understanding Massive Star Formation. 2007, *ARA&A*, 45, 481