

Scientific articles and books published by the ISSI team 2011 - 2014

Peer reviewed articles

1. Lammer, H., K.G. Kislyakova, M. Holmström, M.L. Khodachenko, J.-M. Grießmeier: Hydrogen ENA-cloud observation and modeling as a tool to study star-exoplanet interaction, *Astrophys. Space Sci.*, 335, 9-23, doi:10.1007/s10509-011-0604-2, 2011.
2. Lammer, H., K.G. Kislyakova, P. Odert, M. Leitzinger, R. Schwarz, E. Pilat-Lohinger, Y.N. Kulikov, M.L. Khodachenko, M. Güdel, A. Hanslmeier: Pathways to Earth-like atmospheres extreme ultraviolet (EUV)-powered escape of hydrogen-rich protoatmospheres, *Orig. Life Evol. Biosphere*, 41, 503-522, doi:10.1007/s11084-012-9264-7, 2011.
3. Lammer, H., V. Eybl, K.G. Kislyakova, J. Weingrill, M. Holmström, M.L. Khodachenko, Y.N. Kulikov, A. Reiners, M. Leitzinger, P. Odert, M. Xiang Grüß, B. Dorner, M. Güdel, A. Hanslmeier: UV transit observations of EUV-heated expanded thermospheres of Earth-like exoplanets around M-stars: Testing atmosphere evolution scenarios, *Astrophys. Space Sci.*, 335, 39-50, doi:10.1007/s10509-011-0646-5, 2011.
4. Khodachenko, M.L., I. Alexeev, E. Belenkaya, H. Lammer, J.-M. Grießmeier, M. Leitzinger, P. Odert, T.V. Zaqarashvili, H.O. Rucker: Magnetospheres of "Hot Jupiters": The importance of magnetodisks in shaping a magnetospheric obstacle, *Astrophys. J.*, 744, 70, doi:10.1088/0004-637X/744/1/70, 2012.
5. Krauss, S., B. Fichtinger, H. Lammer, W. Hausleitner, Yu.N. Kulikov, I. Ribas, V.I. Shematovich, D. Bisikalo, H.I.M. Lichtenegger, T.V. Zaqarashvili, M.L. Khodachenko, A. Hanslmeier: Solar flares as proxy for the young Sun: Satellite observed thermosphere response to an X17.2 flare of Earth's upper atmosphere, *Ann. Geophys.*, 30, 1129-1141, doi:10.5194/angeo-30-1129-2012, 2012.
6. Lammer, H., M. Güdel, Y.N. Kulikov, I. Ribas, T.V. Zaqarashvili, M.L. Khodachenko, K.G. Kislyakova, H. Gröller, P. Odert, M. Leitzinger, B. Fichtinger, S. Krauss, W. Hausleitner, M. Holmström, J. Sanz-Forcada, H.I.M. Lichtenegger, A. Hanslmeier, V.I. Shematovich, D. Bisikalo, H. Rauer, M. Fridlund: Variability of solar/stellar activity and magnetic field and its influence on planetary atmosphere evolution, *Earth Planets Space*, 63, 179-199, doi:10.5047/eps.2011.04.002, 2012.
7. Antonov, V. M., E. L. Boyarinsev, A. A. Boyko, Yu. P. Zakharov, A. V. Melekhov, A. G. Ponomarenko, V. G. Posukh, I. F. Shaikhislamov, M. L. Khodachenko, H. Lammer: Inflation of a dipole field in laboratory experiments: toward an understanding of magnetodisk formation in the magnetosphere of a hot Jupiter. *Astrophys. J.*, 769, article id. 28, 10 pp., 2013.
8. Bisikalo, D., P. Kaygorodov, D. Ionov, V. Shematovich, H. Lammer, L. Fossati: Three-dimensional gas dynamic simulation of the interaction between the exoplanet WASP-12b and its host star, *Astrophys. J.*, 764, 19, 2013.
9. Koskinen, T. T., M. J. Harris, R. V. Yelle, P. Lavvas: The escape of heavy atoms from the ionosphere of HD209458b. I. A photochemical-dynamical model of the thermosphere, *Icarus*, 226, 1678-1694, 2013.
10. Koskinen, T. T., R. V. Yelle, M. J. Harris, P. Lavvas: The escape of heavy atoms from the ionosphere of HD209458b. II. Interpretation of the observations, *Icarus*, 226, 1695-1708, 2013.
11. Lammer, H., E. Chassefiere, O. Karatekin, A. Morschhauser, P.B. Niles, O. Mousis, P. Odert, U.V. Möstl, D. Breuer, V. Dehant, M. Grott, H. Gröller, E. Hauber, L.B.S. Pham: Outgassing history and escape of the Martian atmosphere and water inventory, *Space Sci. Rev.*, 174, 113-154, 2013.
12. Lammer, H., N. V. Erkaev, P. Odert, K. G. Kislyakova, M. Leitzinger, M. L. Khodachenko: Probing the blow-off criteria of hydrogen-rich 'super-Earths', *MNRAS*, 430, 1247-1256, 2013.
13. Lammer, H., Blanc, M., Benz, W., Fridlund, M., Foresto, V. C. du, Güdel, M., Rauer, H., Udry, S., Bonnet, R.-M., Falanga, M., Charbonneau, D., Helled, R., Kley, W., Linsky, J., Elkins-Tanton, L.-T., Alibert, Y., Chassefière, E., Encrenaz, T., Hatzes, A. P., Lin, D., Liseau, R., Lorenzen, W., Raymond, S. N.: The science of exoplanets and their systems, *Astrobiology*, 13, 793-813, 2013.
14. Erkaev, N. V., H. Lammer, P. Odert, Yu. N. Kulikov, K. G. Kislyakova, M. L. Khodachenko, M. Güdel, A. Hanslmeier, H. K. Biernat: XUV exposed non-hydrostatic hydrogen-rich upper atmospheres of terrestrial planets. Part I: Atmospheric expansion and thermal escape, *Astrobiology*, 13, 1011-1029, <http://arxiv.org/abs/1212.4982>, 2013.
15. Kislyakova, G. K., H. Lammer, M. Holmström, M., Panchenko, M. L. Khodachenko, N. V. Erkaev, P. Odert, Yu. N. Kulikov, M. Leitzinger, M., Güdel, A. Hanslmeier: XUV exposed, non-hydrostatic hydrogen-

rich upper atmospheres of Earth-size planets. II: Hydrogen coronae and ion escape, *Astrobiology*, 13, 1030-1048, <http://arxiv.org/abs/1212.4710>, 2013.

16. Erkaev, N. V., H. Lammer, L. Elkins-Tanton, P. Odert, K. G. Kislyakova, Yu. N. Kulikov, M. Leitzinger, M. Güdel: Escape of the martian protoatmosphere and initial water inventory, *Planet. Space Sci.*, in press, 2014.
17. Kislyakova, G. K., C. Johnston, P. Odert, N. V. Erkaev, H. Lammer, T. Lüftinger, M. Holmström, M. L. Khodachenko, M. Güdel, Stellar wind interaction and pick up ion escape of the Kepler-11 “super-Earths”, *Astron. Astrophys.*, 562, A116 2014.
18. Lammer, H., P. Odert, M. Leitzinger, H. Gröller, M. Güdel, K. G. Kislyakova, M. L. Khodachenko, A. Hanslmeier, Origin and solar activity driven evolution of Mars` atmosphere, ISPS2011, *Terra Scientific Publishing Company*, Tokyo, in press, 2014.
19. Lammer, H., A. Stökl, N. V. Erkaev, E. A. Dorfi, P. Odert, M. Güdel, Yu.N. Kulikov, K. G. Kislyakova, M. Leitzinger, Origin and loss of nebula-captured hydrogen envelopes from `sup`- to `super-Earths` in the habitable zone of Sun-like stars, *MNRAS*, in press, doi:10.1093/mnras/stu085, 2014.
20. Lammer, H., S.-C. Schiefer, I. Juvan, P. Odert, N. V. Erkaev, C. Weber, K. G. Kislyakova, M. Güdel, G. Kirchengast, A. Hanslmeier, Origin and stability of exomoon atmospheres: Implications for habitability, *Orig. Life Evol. Biosphere*, submitted, 2014.
21. Shematovich, V. I., D. E. Ionov, H. Lammer, Heating efficiency in hydrogen-dominated upper atmospheres, *Astron. Astrophys.*, submitted, 2014.
22. Stökl, A., E. A. Dorfi, H. Lammer, Hydrodynamic simulations of captured proto-atmospheres around Earth-like planets, *Astron. Astrophys.*, submitted, 2014.

Edited Scientific Books

1. Lammer, H.: Origin and Evolution of Planetary Atmospheres: Implications for Habitability, Springer Publishing House, Heidelberg, New York, 2013.
2. Lammer, H., and M. L. Khodachenko: *Characterizing stellar and exoplanetary environments*, Springer Publishing House, Heidelberg, New York, – in preparation 2014.

Proceeding Articles, Reports, and Articles in Books

1. Lammer, H., K.G. Kislyakova, P. Odert, M. Leitzinger, M.L. Khodachenko, M. Holmström, A. Hanslmeier: Exoplanet upper atmosphere environment characterization, In: From Interacting Binaries to Exoplanets: Essential Modeling Tools, Proceedings IAU Symposium No. 282, 2011, Eds. Richards, M.T., I. Hubeny, Cambridge University Press, Cambridge, 525-532, doi:10.1017/S1743921311028316 , 2012.
2. Lammer, H., K. G. Kislyakova, M. Güdel, M. Holmström, N. V. Erkaev, P. Odert, M. L. Khodachenko: Stability of Earth-like N₂ atmospheres: Implication for habitability, In: The early evolution of the atmospheres of terrestrial planets, *Astrophys. Space Sci. Proc.*, Eds. Muller, C., Nixon, C. A., Raulin, F., Trigo-Rodríguez, J. M., Springer Publishing House, Heidelberg, New York, 33-52, 2013.