

LISA KALTENEGGER (PhD. MSc. MEng.)

Harvard-Smithsonian Center for Astrophysics, 60 Garden Str. MS20, Cambridge, MA 02138, USA

EDUCATION

Ph.D. , Astrophysics, Karl Franzens Univ Graz / ESTEC	<i>graduated summa cum laude</i>	2004
"Search for Extraterrestrial Planets: DARWIN mission Target Stars & Array Architectures"		
M.Sci. , Astrophysics, Karl Franzens Univ Graz/IAC	<i>graduated summa cum laude</i>	1999
"Extrasolar Planet Search: Formation of Extrasolar Planets and Detection Methods"		
M.Eng. , Physics & Engineering, Univ. of Technology Graz	<i>graduated summa cum laude</i>	2001
"Application of Optical Tweezers in Medicine & Biology"		

EMPLOYMENT & RESEARCH EXPERIENCE

Associated Lecturer, Harvard Astronomy Department	2008- current
Postdoctoral Fellow SAO, Harvard Smithsonian CfA, USA	2005 – current
Consultant to ESA Science Dep. AURORA Technology: Netherlands	2003 – 2004
Young Engineer ESA/ESTEC: Dep. of Future Projects, Netherlands	2001 - 2002
Research fellow, Georgia Institute of Technology, USA	2000 – 2001
LIGO 2000 Summer Undergraduate Research Projects, California Inst. of Technology, USA	2000
United Nations (UNO), Conference moderator, Austria	1999
JHU 1999 Summer Undergraduate Research Projects, JHU, USA	1999
Research fellow, Instituto de Astrofísica de Canarias (IAC), Spain	1998 – 1999

AWARDS & HONORS

America's Young Innovator in Arts and Science Award 2007, Smithsonian Magazine	2007
P. Hertelendy Award and Prize Lecture for Outstanding Young Scientist at CfA 2007	2007
Austrian National Award for Outstanding Academic Achievements	2005
SubAuspices Austrian Academic excellence prize (awarded personally by Austrian president)	2004
National Award of the Ministry of Educations for Outstanding Academic Achievement(PhD)	2004
National Award of the Ministry of Educations for Outstanding Academic Achievement(MSc)	2000
Awards of Academic Achievement, Tech. Univ. Graz & KF Univ Graz	1996 through 2001

RECENT RELEVANT PAPERS

Kaltenegger, L, Traub, W., Can we detect habitability in transiting Earth-like exoplanets, ApJL sub.
 Kaltenegger, L, Traub, W., Kasting, J., Atmospheric Models and Habitability for Gl581, ApJ sub.
 Kaltenegger, L, Eiroa, C., Fridlund, M., The Darwin star catalogue, A&SS in press
 Kaltenegger, L et al., Spectral Evolution of an Earth-like Planet, ApJ, 658, pp.598, 2007
 Kaltenegger, L. & Selsis, F., Biomarkers set in context, in Wiley Book, Extrasolar Planets, 2007
 Kaltenegger, L., Fridlund, M., Interferometric Space Missions for the Search for Terrestrial Exoplanets: Requirements on the Rejection Ratio, Astrophysics and Space Science (A&SS) 2006
 Selsis, F, Kaltenegger, L., Paillet, J, Terrestrial exoplanets: diversity, habitability, Physica Scripta 08
 Cockell, C., Herbst, T., Kaltenegger, L., et al., Darwin – Search for Life on Extrasolar Planets, Astrobiology, in press
 Scalo, J., Kaltenegger, L., Segura, A. et al., M stars as targets for terrestrial exoplanet searches and biosignature detection, Astrobiology 71, 2007
 Lawson, P., Traub, W., et al. 2006, "Earth-Like Exoplanets ", JPL publication 06-5 Rev A

INTERNATIONAL SCIENCE PANELS

TPF-I: Science Working Group: invited external expert	2005 – current
Darwin Science Advisory Committee: member as part of ESA & external expert	2002 – current

PRESS RELEASE

"3 Top Young CfA Astronomers Honored" <http://www.cfa.harvard.edu/press/2007/pr200730.html> Nov 07

“Astronomers reveal first Alien ID chart” <http://www.cfa.harvard.edu/press/2006/pr0625.html> Oct 06

CONFERENCES Organizer

Science Organizer Committee

Cosmic Cataclysms and life ESLAB 08, Frascati, Italy	Nov. 08
Super Earth Workshop, Aspen, USA	Aug. 08
Goldschmidt - Early Life, geochemical and dynamical aspects, Vancouver	July 08
AbSciCon 2008, Santa Clara, CA: Plenary Future Missions and what they can detect	April 08
AbSciCon 2008, Santa Clara, CA: Habitability on Super Earths	April 08
Physics and Astrophysics of Planetary Systems, Les Houches School, France	Aug. 08
European Planetary Science Congress, Berlin: Biomarkers and their detectability	Sept 07
European Planetary Science Congress, Potsdam: Concepts of Habitability	Sept 06
LOC:Harvard Smithsonian Center for Astrophysics: Transiting Planets	May 08
Journal club: Harvard EPS and CfA weekly	2007/08

MEDIA COVERAGE

USA Weekend, The Economist, Smithsonian Magazine, BBC, New Scientist, USA-Today, Christian Science Monitor, Spiegel, Die Zeit, several web-based forums

Interviews:

WUML 91.5 Stargazer Segment (Radio)	April 08
BBC World News (Radio)	Oct 07
Smithsonian Women's Committee Project (webbased TV interview)	Feb 07
Channel 7 News (TV)	Nov 06
National Geographic, New Scientist (podcasts)	Nov 06

OUTREACH ACTIVITIES

Scientific Advisor:

Exoplanets and beyond, CfA (bringing cutting-edge science into the K-12 classroom)	2008
Eye on the sky, CfA education department, dialogue with astronomers	2007
The Habitable Planet Project, Harvard (web based initiative for the classroom)	2007
Science at Stake: webbased Initiative to provide journalists and the general public with insight into the newest developments in science	2006 - current

Public lectures

Christa McAuliffe Planetarium, USA “Finding Fingerprints of life on exoplanets”	Oct. 08
Boston Amateur Astronomers, Boston, USA: “Searching for the pale Blue Dot”	Oct. 07
Skyscrapers Astro Society, USA “How to find Fingerprints of life on exoplanets”	July 07
Willstone Highschool, USA, 8 th grade, lecture at star party	March 07
CfA Observatory Night, USA, “Epochs of Life”	Oct. 06

Lecturer:

Astronomy 1 (full Harvard course (co-lecturer with S. Steels))	2008
Invited Public Lecture series ‘Astrobiology & Sacred’ at Univ. of Arizona (C Impey)	Feb 08
Graduate student seminar Univ. Vienna	Dec 08
MIT Teachers workshop on astronomy and the classroom	Spet 05
ESA/ASA Summerschool Alpbach (15 students, 2 week intense course)	July 07
ESA/ASA Summerschool Alpbach, (15 students, 2 week intense course)	July 05

Mentor: Mucaco Mentor program 2008 (4th and 5th grad student mentor) March 08

Panel Discussion:

Harvard Alumni Conference Panel Discussion “Search for New Earths”	March 08
Harvard Alumni Conference Panel Discussion “Extrasolar planet search”	April 07
Pale Blue Dot III Conference Panel Discussion “Detecting Extrasolar planets”	Nov 07

SPEAKER**Invited speaker:**

ELBA2008 Solar System Space/Ground-based workshop, Italy, "Atmospheric Biomarkers"	Oct 08
Super-Earths, Nantes, France, "Atmospheres of Super-Earths"	June 08
AbSciCon 2008, USA, "Habitability of Super Earths"	April 08
Darwin mtg, IAS, Paris: "Comparative planetology and the search for life"	Dec 07
European Planetary Science Congress, Berlin: "Biomarkers and their detectability"	Sept 07
Alpbach Summer School, Austria, "Signature of life on extrasolar planets"	July 07
ESO symposium, Santiago de Chile: "Exoplanet search, Biosignatures, and targets"	March 07

INVITED COLLOQUIUMS ON

'Spectral evolution of an Earth-like planet, Search for signs of life, Future space missions'

Univ Heidelberg (R Somerville)	May 08
Univ. Colorado (F. Bagenal)	April 08
Univ. of Arizona (C Impey)	Feb 08
Univ. Bordeaux (V. Wakelam)	Dec 07
Univ Vienna (E. Lohinger)	Dec 07
Open Univ. (C. Cockell)	Dec 07
Arizona State University (K. Hodges)	March 07
Museum of Natural History (B. Oppenheimer)	Feb 07
Univ. of Colorado., Boulder (S. Raymond)	Jan 07
CalTech, L.A. (Y.Yung)	Jan 07
Observatory Geneva, Geneva (M. Mayor)	Dec 06
Observ de Paris, Meudon (J. Schneider)	Dec 06
ENS Lyon, Lyon (F. Selsis)	Dec 06
Univ. de Paris Sur, Paris (A. Leger)	Nov 06
Penn State Univ.(J.Kastings)	May 06
Univ. of Vienna (R. Dvorak)	Feb 06

3 rd International TPF/Darwin Workshop, L.A.: "Evolution of Earth's atmosphere over geologic time and observability of various biomarkers at visible and infrared wavelengths"	Nov. 06
European Planetary Science Congress, Berlin: "Evolving Earth: Evolution of Biomarkers and their detectable spectrum" (session chair & convener)	Sept. 06
Pale Blue Dot III, Chicago: "Techniques and future observation of terrestrial planets"	Sept. 06
ESOF2006, Munich: "Possible spectra signature of life in planetary atmosphere"	May 06
AbSciCon 2006, D.C.: "Future missions on extrasolar planets and what they can tell us"	March 06
Colloquium CfA, Boston, "Search for Exo-terrestrial Planets: Decoding Their Spectra"	April 06
ISSI, Bern: "Evolution of Biomarkers over geological timescale"	Feb 06
Colloquium Michelson Science Center, LA: "Search for Exo-terrestrial Planets and biomarkers in their Spectra" (G. van der Belle)	May 05
Colloquium ESTEC/ESA, Leiden: "Updates on the Darwin mission concept and the search for Exo-terrestrial Planets" (M. Fridlund)	Sept 04
COSPAR, Paris: "Darwin and Search for Exo-terrestrial Planets"	July 04

Speaker:

AAS, Seattle, 'Evolution of biomarkers on Earthlike planets'	Jan 07
6th European Workshop on Astrobiology, "Evolving Earth over time: Observability biomarkers at visible and infrared wavelengths"	Oct 06
European Geophysical Union, "Evolution of atmospheric biomarkers over Earth's history and the search for extrasolar planets"	April 06
AbSciCon, 2006, D.C., "Search for Atmospheric Biomarkers & their Evolution over Time"	March 06
IAUC200, Nice, "Biomarkers and their evolution over time"	Nov 05
NAI 2005 mtg, "Darwin and the search for life"	April 05
SPIE: "Requirements on the stellar rejection for the Darwin mission"	July 04