

Erkki Kyrölä CURRICULUM VITAE

22.4. 2016

Name	Erkki Tapani Kyrölä
Place and date of birth	Tampere, Finland; 13th April, 1951
Nationality	Finnish
Present employer	Finnish Meteorological Institute, Earth Observation Unit
Position	Research Professor Earth Observation Unit Finnish Meteorological Institute
Home page	https://dl.dropbox.com/u/27559790/Erkki/ Home.html
Home address	Kaskenpolttajantie 23 A, 00670 Helsinki

Education:

Matriculation examination	Sammon yhteislyseo 29.5.1970 (coeducational secondary school)
Bachelor of Science	University of Helsinki 2.10.1975
Master of Science	University of Helsinki 31.3.1977
Licentiate of Philosophy	University of Helsinki 24.5.1979
Doctor of Philosophy, title: "Theoretical Study of Coherent Excitation of Quasicontinua"	University of Rochester 21.9.1984
Docent (optical physics)	University of Joensuu 23.1. 1991

Positions held:

Acting assistant, Department of nuclear physics, University of Helsinki	1.4. - 30.4.1975
Acting assistant, Department of theoretical physics, University of Helsinki	1.10. - 31.12.1976
Assistant of technical physics,	1.1. - 31.5.1977

Helsinki University of Technology

Junior research associate, Research Institute for Theoretical Physics, University of Helsinki	1.6.1977 -10.2.1980
Assistant, Department of physics, University of Helsinki (appointment for 5 years)	1.1.1980 - 31.12.1984
Graduate research assistant, University of Rochester	10.8.1981 - 31.7.1984
Research associate, University of Rochester	1.8. - 31.8.1984
Senior research assistant, Research Institute for Theoretical Physics, University of Helsinki	1.9.1984 - 31.7.1986
Visiting scientist, Max-Planck-Institute for Quantum Optics	25.3. - 21.4.1985
Assistant, Department of physics, University of Helsinki (appointment for 5 years)	1.9.1985
Senior scientist, Finnish Meteorological Institute, Department of Geophysics (permanent position)	1.7.1987-
Head of the Aeronomy group, Geophysical Research and Earth Observation, Finnish Meteorological Institute	16.1.1996 - 31.1. 2005
Research Professor, Finnish Meteorological Institute	1.4. 2006-

Relevant professional experience:

Co-proposer and Co-Investigator of SOHO/SWAN (accepted)
Co-proposer and Co-Investigator of GOMOS/Envisat (accepted)
Co-proposer of COALA for ESA and NASDA
Co-proposer of ARIEL for NASA
Principal proposer of OLIVIA experiment for ESA Earth Explorer program 2002 and 2005
Principal proposer of SIMACC experiment for ESA Earth Explorer program 2010
Member of GOMOS/Envisat validation team
Leader of FMI GOMOS Scientific Group
Member, GOMOS Science Advisory Group and Quality Working Team
Member of Odin Science Team
Aeronomy representative of Odin in Finland
Co-investigator in SPICAM/Mars Express
Guest investigator in ESA-NASA Ulysses
Project manager in several ESA/FMI contracts and subcontracts
Convener and co-convener at EGU and ESA Envisat-meetings + other meetings
Member of ESA Earth Science Advisory Committee (ESAC) 2006-2009
Special issue editor (Limb observations, 2010-2011 and 2013-) in Atmospheric Measurements Techniques

Supervised academic work

Ph.D. thesis:

- Tuula Summanen, 1996: Interplanetary Lyman alpha measurements as a tool to study solar wind properties, University of Helsinki
Liisa Oikarinen, 2002: Modeling and data inversion of atmospheric limb scattering measurements, Helsinki University of Technology

Viktoria Sofieva, 2005, Inverse problems in stellar occultation, Helsinki University of Technology
Pekka Verronen, 2006, Ionosphere-atmosphere interaction during solar proton events, University of Helsinki
Annika Seppälä, 2007, Observations of production and transport of NO_x formed by energetic particle precipitation in the polar night atmosphere, University of Helsinki

Phil. Lic and Master of Science thesis supervised: About 10.

External funding (last five years)

Academy of Finland:

Middle atmosphere dynamics and chemistry in climate change (MIDAT) 2010-2013

ESA:

GAV, continuous GOMOS algorithm support project

DRAGON project and DRAGON trainee program, 2005-2007 and 2009-2011

GOMOS Bright Limb Retrieval, 2007-2009

GOMOS Aerosols, 2009-2010

ESA Ozone CCI 2010-2013

ESA SPIN, 2012-2013

ESA GEO-HR, 2012-2013

ESA ALGOM, 2014-2015

ESA MesosphEO, 2014-2017

Refereed scientific publications: 128 on quantum optics, astrophysics, inversion theory and atmospheric sciences.

Most important publications:

Kyrölä, E. and S. Stenholm, Velocity Tuned Resonances as Multi-Doppleron Processes, *Opt. Comm.*, 22, 123, 1977.

Kyrölä, E. and J.H.Eberly, Quasicontinuum Effects in Molecular Excitation, *J. Chem. Phys.*, 82, 1841, 1985.

Kyrölä, E., N Levels and the Continuum, *J. Phys. B: At. Mol. Phys.*, 19, 1437, 1986.

Kyrölä, E., et al., Inverse Theory for Occultation Measurements 1. Spectral Inversion, *J. Geophys. Res.*, 98, 7367-7381, 1993.

Kyrölä, E., T. Summanen, and P. Råback, Solar cycle and interplanetary hydrogen, *Astron. Astrophys.*, 288, 299-314, 1994.

Brasken, M. and E. Kyrölä, Resonance scattering of Lyman alpha from interstellar hydrogen, *Astron. Astrophys.*, 332, 732-738, 1998.

Kyrölä, E. et al., Preliminary retrieval of solar wind latitude distribution from Solar Wind Anisotropies/SOHO observations, *J. Geophys. Res.*, 103, 14523-15538, 1998.

Oikarinen, L., E. Sihvola, and E. Kyrölä, Multiple scattering radiance in limb-viewing geometry, *J. Geophys. Res.*, 104, 31261-31274, 2000.

Mäkinen, T., et al., Discovery of a comet by its Lyman- α emission, *Nature*, 405, 321-322, 2000.

Tamminen, J. and E. Kyrölä, Bayesian solution for nonlinear and non-gaussian inverse problem by MCMC method, *J. Geophys. Res.*, 106, D13, 14377-14390, 2001.

Seppälä, A., et al., Solar Proton Events of October-November 2003: Ozone depletion in the Northern hemisphere polar winter as seen by GOMOS/Envisat, *Geophysical Research Letters*, 31, L19107, 2004.

Kyrölä, E., et al., GOMOS on Envisat: An overview, *Advances in Space Research*, Volume 33, Issue 7, p. 1020-1028, 2004.

Kyrölä, E., et al., Nighttime ozone profiles in the stratosphere and mesosphere by GOMOS on Envisat, *J. Geophys. Res.*, 111, D24306, 2006.

Kyrölä, E., et al., GOMOS O₃, NO₂, and NO₃ observations in 2002-2008, *Atmospheric Chemistry & Physics*, 10:7723–7738, August 2010.

Kyrölä, E., et al., Retrieval of atmospheric parameters from GOMOS data, *Atmospheric Chemistry & Physics*, 10: 11881-11849, 2010.

Kyrölä, E., M. Laine, V. Sofieva, J. Tamminen, S.-M. Päivärinta, S. Tukiainen, J. Zawodny, and L. Thomason. Combined SAGE II - GOMOS ozone profile data set for 1984–2011 and trend analysis of the vertical distribution of ozone, *Atmospheric Chemistry and Physics*, 13(21):10645–10658, 2013.