

Mika Juvela: Curriculum Vitae, 27.4.2016

1. Basic information

Nationality: Finnish
Birth date and place: 23.1.1967, Parkano, Finland
Address: Kuismantie 75, 04660 Numminen, Finland

Education

- Master of Science, Helsinki University, Faculty of Science, 18.12.1992
- Doctor of Astronomy, U. of Helsinki, 12.9.1997 (thesis *eximia cum laude approbatur*)
- Astronomy Docent, University of Helsinki, 15.5.2000

Work history

1.1.2010-present	University Lecturer, Department of Physics, University of Helsinki
19.4.-19.8.2016	Professeur Invité, Univ. Franche-Comté, Besançon
1.5.-30.6.2014	Visiting researcher (Postes Rouges), IRAP, Toulouse
1.8.2004-31.7.2009	Academy Research Fellow, Academy of Finland
1.4.2002-31.12.2009	University Lecturer, Helsinki University Observatory
3.1.1994-31.3.2002	Researcher, Observatory, University of Helsinki
1.9.-31.12.1992	Amanuensis, Observatory, University of Helsinki

2. Research and researcher training

Research interests

- Star formation, interstellar molecular clouds, interstellar dust
- Numerical modelling of interstellar medium, interstellar chemistry, and radiative transfer; parallel computing and statistical methods

Main scientific activities

- Some 200 refereed publications, including 31 first author journal articles
 - NASA ADS lists 298 publications (including 40 first author papers) with a total of over 18000 citations; 133 papers with 20 or more citations, of these 13 first author papers and 41 papers *not* related to the Planck project
- Leader of the Academy of Finland funded research project *From Filaments to Stars - Star formation in the Milky Way* (2015-19)
- Principal Investigator (PI) of Herschel Key Programme *Galactic Cold Cores*
- Member of Planck Consortium (ESA Planck Surveyor satellite), *Planck Scientist* status since 2009, *Scientific Associate* since 2001
- PI programs on ground-based telescopes: VLT/ESO, APEX/ESO, NTT/ESO, SEST/ESO, NOT, UKIRT, Onsala 20m, Effelsberg 100m, VLA, Nobeyama 45m radio telescope; PI program on the AKARI satellite
- Co-investigator in the large Spitzer satellite program *Hunting for Coreshine* (PI R. Paladini, cycles 8 and 9); member of Sub-millimeter Array (SMA) legacy program *Gas Morphology and Dynamics in Infrared-Luminous Galaxies* (PI C. Wilson); co-

investigator in an ESO/ALMA project on the dark cloud Lynds 183 (PI J.-Ph. Bernard); co-investigator in SCUBA legacy project SCOPE and ESO public survey *Probing the early stages of star-formation*

- Co-investigator in the PRACE programme *Extreme Star-Formation Modeling: From the Galactic Fountain to Single Stars in One Run*, 16.9 million core hours, PI P. Padoan
- Member of ESO Observing Programmes Committee and panel chair (2007-2008)
- Member of organizing committee of IAU Division VI, Interstellar Matter (2006-2012)
- Member of steering committee of ESF program ASTROSIM (2006-2011)
- Member of ESA European Time Allocation Committee, ASTRO-F satellite (2006)
- Member of management committee of COST action *Our AstroChemical History* (2014-), national substitute member in MC of COST action *The Chemical Cosmos* (2010-2013)
- Organiser of Special Session, “Galactic molecular clouds and their chemistry”, EWASS 2013, Turku, Finland
- Debuty member in the board of the Finnish Centre for Astronomy with ESO (2010-)
- Board member and vice chairman of Finnish Astronomical Association (2009-2010)
- Regular refereeing for journals, including Astronomy and Astrophysics, Astrophysical Journal, Astrophysical Journal Letters, MNRAS, PASJ, and Nature
- Reviewer of applications for Partnership for Advanced Computing in Europe (PRACE), 2011-2014, member of the review panel (2013)
- Refereeing of ESF funding applications (2009) and applications for the national funding agencies of Canada (2011-12, 2015) and Belgium (2011-12); assessment of researchers for promotion, Indian Institute for Astrophysics (2012, 2014)
- Research visits
 - Univ. Franche-Comtè, Besançon, 2016, four months
 - IRAP, Toulouse, France, 2014, two months.
 - Nordita, Stockholm, Sweden, two weeks in 2013 and 2008
 - Eötvös Lorand university, Budapest, 2011 and 2012, two weeks as guest lecturer
 - Kavli institute, Santa Barbara, USA, 2009, one month

External funding (past five years)

- Academy of Finland projects 2015-19 624508€, 2011-15, 623670€, 2009-11, 240000€

Researcher training

- Supervisor of eight Master of Science theses and one laudatur thesis
- Supervision of completed PhD theses: J. Kainulainen (2008, currently MPI Heildelberg), V.-M. Pelkonen (2009, currently post doc at Univ. of Helsinki), T. Lunttila (2012, currently post doc at Onsala Space Observatory), J. Malinen (2014, currently post doc at Florida State University). Current principal supervisor of four PhD students. Previously assisting supervisor of three PhD students. Supervision of one licenciate thesis.
- Supervision of post doctoral researchers: Nathalie Ysard (2009-11, currently at IAS, Paris), Julien Montillaud (2011-2013, currently at Besancon, France), and V.-M. Pelkonen (2013-, currently post doc in Besancon, France)
- Supervision of foreign students: two French MSc summer trainees (3 months, 2012-13), two Hungarian MSc students and one PhD student (two months, 2013-14, Campus Hungaria and ERASMUS programmes)
- Pre-examination:
 - Pre-examination of two PhD theses in Finland
 - Pre-examiner and a member of the panel for the PhD theses of Jaime Forero (Ecole Normale Supérieure de Lyon, 2007), Heddy Arab (IAS, Paris, 2012), Peter Camps (Univ. Ghent, 2016)

- Lecturer at the *Nordic-Baltic Optical/NIR and Radio Astronomy Summer School*, Tuorla 2009, and the *Nordic-Baltic Research Training Course (Young Stars across Time and Wavelengths)*, Tuorla 2011
- Tutor at the ESA Alpbach school *Star Formation Across the Universe*, Austria, 2011
- lecturer at the summer school of the Finnish graduate school of Astronomy and Space Physics, 2000, 2004, and 2006
- visiting lecturer at Eötvös Lorand University, Budapest, October 2011 and May 2012 (ERASMUS teacher exchange)

Pedagogical studies and teaching

- Pedagogical studies *University Pedagogics I*, 10 credits, approved with distinction; courses on teaching in web-based environments (e.g., *Moodle basics for teachers* and *Pedagogical planning and implementation of web courses*); course *Practical Teaching Skill* (autumn 2011)
- Astronomy courses lectured regularly since 2000, from basic studies to doctoral studies
 - Interstellar medium (advanced studies, 5cr): 2014
 - Radio astronomy (advanced studies, 5cr): 2014
 - Fundamental Astronomy I and II (basic studies, 5+5cr): yearly 2010-14
 - Basic course in Observational Astronomy II (basic studies, 5cr): 2001-04, 2013-
 - Molecular clouds and star formation (advanced studies, 5cr): 2011
 - Radiative Transfer (advanced studies, 5cr): 2011, 2013
 - Mathematical Methods in Astronomy (interm. studies, 8cr): 2001, 2003, 2005-2012
 - Data-Analysis Methods in Astronomy (advanced studies, 7cr): 2002, 2006, 2010
 - Data analysis and inversion methods (advanced studies, 7cr): 2012
 - Advanced Course of Theoretical Astrophysics (adv. studies, 7cr): 2000, 2004, 2008
 - Theoretical Astrophysics (intermediate studies, 7cr): 2000
- Organisation and participation in seminar series at the Helsinki Observatory 1994-2009 and Department of Physics 2010- (1-2 seminar lectures per year)
- Visiting lecturer in Eötvös Lorand university, Budapest (October 2011, May 2012); lectures at international summer schools (see above)
- Student advisor and a member of the work group for the development of astronomy teaching, Department of Physics, University of Helsinki, 2010-; supervision of laboratory works and student guidance at the Observatory, University of Helsinki, 1992, 2002–2009
- Teaching material:
 - Harju J., Juvela M., Kontinen S., Heikkilä A., Wiik K. 2001, Johdatus radioastronomiaan, Report 1/2001, Observatory, University of Helsinki
 - Juvela M., Kaasalainen M., Tähtitieteen matemaattiset menetelmät I, Report 1/2003, Observatory, University of Helsinki
 - Mattila K., Juvela M.: Tähtienvälisen aineen fysiikkaa (lecture notes, 2004)
 - Lecture notes and on-line material for the course *Astronomical Data-analysis Methods*, the course *Advanced Course of Theoretical Astrophysics*, and courses *Fundamental Astronomy I and II*

Other merits

Administrative work

- Student advisor in astronomy, a member of the work group for the development of astronomy teaching, Department of Physics, University of Helsinki, 2010-
- Debuty member of directive board of Department of Physics, University of Helsinki

(2014-)

- 1.1.2007–31.12.2009 vice chairperson and a member of the directive board of the Observatory, University of Helsinki; 1.1.2004–31.12.2006 substitute member
- Member of work group preparing the merge of the Department of Astronomy and the Department of Physics; University of Helsinki, Faculty of Science, 2009
- Chair of work group on telescopes and laboratory equipment, Faculty of Science, 2009
- Member of work group on the Observatory library collections (2010-12)
- Student advisor and contact person for international affairs, Observatory, University of Helsinki, 2002–2009
- Member of work group on syllabus reform, Faculty of Science, Helsinki, 2003-2004
- Several courses in staff training attended (including administration and project finances)

Popularisation of science

- Over ten public lectures arranged by the Ursa Astronomical Association; a public lecture at 'Tieteen päivät', Helsinki 1996
- Astronomy lectures at Espoo Adult Education Center, yearly 2007-2013, 2016
- ESO Press release (eso0806); press releases on studies with the Planck and Herschel satellites (2009, 2011); participation in ESA web releases on Planck (2010-11)
- Interview on national radio (1997); two articles in the Ursa Astron. Association magazine *Tähdet ja Avaruus*; a presentation in the University of Helsinki web series *Young Researchers*; interview in the on-line journal *Tiede ja teknologia* (2010)
- A computer simulation prepared as a part of the program *History of radio astronomy*, Hungary, 2010
- Web pages:
 - research oriented site www.interstellarmedium.org
 - Pages of the Planck and Herschel project *Cold Cores*, <http://wiki.helsinki.fi/display/PlanckHerschel>
 - Own homepage <http://www.helsinki.fi/~mjuvela>

Language and programming skills

- Languages: Finnish and English fluent, Swedish good, German fair, some knowledge of Spanish, Italian, French, and Latin
- Programming languages: C, C++, Python, Fortran; parallel programming with the MPI, OpenMP, and OpenCL libraries.
- Mathematical and astronomical software: Matlab, Octave, Julia, R, Gildas, Hipe, IRAF/PyRAF, some knowledge of IDL, BoA and CASA

Memberships

- International Astronomical Society (IAU)
- Suomen tähtitieteilijäseura (Finnish Astronomical Society)
- The Finnish Physical Society
- Tähtitieteellinen yhdistys Ursa (Ursa Astronomical Association)
- IEEE Computer Society
- COSPAR associate