

# Joonas Nättilä

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Sex: Male  
Born: June 25th, 1989, Tornio, Finland  
Nationality: Finnish Citizen  
Languages: Finnish (native), English, Swedish

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## Research Interests

High energy astrophysics, computational physics, neutron stars

## Education

2014–	<b>Ph.D. in Astrophysics (in progress)</b> , University of Turku, Finland. Supervisor: Prof. Juri Poutanen, Director of Tuorla Observatory.
2012–2013	<b>M.Sc. in Astronomy</b> , University of Oulu, Finland.
2008–2012	<b>B.Sc. in Physics</b> , University of Oulu, Finland.

## Professional Experience

2016	<b>Nordita Visiting Ph.D. Fellow</b> , Nordita, Stockholm, Sweden.
Summer 2013	<b>Research Assistant</b> , University of Oulu, Finland. Constraining neutron star mass and radius.
Summer 2012	<b>University Trainee</b> , University of Oulu, Finland. Dependence of X-ray burst spectral evolution on accretion rate.
Summer 2011	<b>Research Assistant</b> , University of Oulu, Finland. Thermonuclear type-I X-ray bursts from neutron stars.

## Teaching

Summer 2015	<b>Lecturer, High Performance Computing Summer School</b> , CSC, Finland. Lecturer & tutor for Finnish IT Center for Science HPC Summer School.
Spring 2015	<b>Lecturer, Software tools in Physics</b> , University of Turku, Finland.
Spring 2016	Lecturer of the “Introduction to Unix” section of the course (3 ECTS).
Summer 2013	<b>Teaching Assistant, Thermophysics</b> , University of Oulu, Finland.
Summer 2012	Exercise assistant of Thermophysics summer course (6 ECTS).
Summer 2011	
Summer 2012	<b>Teaching Assistant, Electricity and Magnetism</b> , University of Oulu, Finland. Exercise assistant of Electricity and Magnetism summer course (4 ECTS).
2011 – 2012	<b>Assistant, Laboratory Exercises in Physics 1</b> , University of Oulu, Finland. Assistant in Laboratory Exercises in Physics 1 (3 ECTS), in the fall and spring semesters.
Summer 2011	<b>Teaching Assistant, Mathematics of Physics</b> , University of Oulu, Finland. Exercise assistant of Mathematics of Physics summer course (6 ECTS).
Summer 2011	<b>Teaching Assistant, Waveforms and Optics</b> , University of Oulu, Finland.
Spring 2011	Exercise assistant of Waveforms and Optics (6 ECTS) in spring and summer courses.

## Mentoring & Supervision

2015–	<b>Tuomo Salmi</b> , M.Sc. thesis research project, University of Turku, Finland. Neutron star mass and radius constraints from pulse profile modeling.
2015–	<b>Jere Kuuttila</b> , M.Sc. thesis research project, University of Turku, Finland. X-ray burst time evolution dependency on the spectral state.
2014–2015	<b>Jere Kuuttila</b> , B.Sc. thesis research project, University of Turku, Finland. X-ray bursts as standard candles.

## Memberships

2015–	Member of ESA XIPE satellite Science Team (SWG2.2 Accreting Millisecond Pulsars)
2014–	Member of organizing committee for CSC HPC Summer Schools
2012–	Finnish Astronomical Society

## Presentations & Talks

2016	<b>Nordita Workshop on accretion onto magnetized neutron stars</b> , Stockholm, Sweden.
2015	<b>Workshop on Relativistic Astrophysics</b> , Kavalto, Finland.
2015	<b>University of Maryland, Colloquium speaker</b> , Washington, USA.
2015	<b>University of Tennessee, Colloquium speaker</b> , Tennessee, USA.
2015	<b>The Neutron Star Radius, And All That Jazz</b> , Montreal, Canada.
2015	<b>40 years of X-ray bursts: Extreme explosions in dense environments</b> , Madrid, Spain.
2014	<b>ESAC (visiting scientist presentation)</b> , Madrid, Spain.
2014	<b>Physics of Neutron Stars Conference</b> , St. Petersburg, Russia.
2014	<b>Astronomers' Days</b> , Savonlinna, Finland.
2013	<b>European Week of Astronomy and Space Science</b> , Turku, Finland.
2012	<b>Astronomers' Days</b> , Porvoo, Finland.

## Funding

### Research

2015–2017	~ <b>82 000 eur</b> <b>UTUGS Physical and Chemical Sciences Ph.D. Funding</b> Funding for Ph.D. thesis work.
2014–2015	~ <b>23 000 eur</b> <b>Väisälä Foundation grant</b> Magnetar atmosphere models: breaking the barrier between observations and theory

### Travel

2016	~ <b>2 000 eur</b> <b>Magnus Ehrnrooth Foundation</b> JINA-CEE symposium (Ohio) and COSPAR 2016 (Istanbul).
2016	~ <b>1 000 eur</b> <b>UTUGS Physical and Chemical Sciences</b> JINA-CEE symposium (Ohio).
2016	~ <b>2 000 eur</b> <b>ESAC</b> Visiting scientist (host: Jari Kajava).
2015	~ <b>500 eur</b> <b>University of Tennessee</b> Research visit (host: Andrew Steiner).
2015	~ <b>500 eur</b> <b>University of Maryland</b> Research visit (host: Cole Miller).
2015	~ <b>1 000 eur</b> <b>UTUGS Physical and Chemical Sciences</b> Neutron star radius, and all that jazz -conference, Montreal.
2015	~ <b>1 000 eur</b> <b>ESAC</b> 40 years of X-ray bursts - conference.
2014	~ <b>1 000 eur</b> <b>ESAC</b> Research visit (host: Jari Kajava).

## Conference organization

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| 2015 | <b>Workshop on Relativistic Astrophysics</b> , Kavalto, Finland.<br>Member of the local organizing committee.   |
| 2015 | <b>PCS Annual Seminar day</b> , University of Turku, Finland.<br>Chairman & member of the organizing committee. |

## Publications

- [4] **J. Nättilä**, A. W. Steiner, J. J. E. Kajava, V. F. Suleimanov, and J. Poutanen. Equation of state constraints for the cold dense matter inside neutron stars using the cooling tail method. *A&A*, *In press*, 2016.
- [3] **J. Nättilä**, V. F. Suleimanov, J. J. E. Kajava, and J. Poutanen. Models of neutron star atmospheres enriched with nuclear burning ashes. *A&A*, 581:A83, September 2015.
- [2] J. J. E. Kajava, **J. Nättilä**, O.-M. Latvala, M. Pursiainen, J. Poutanen, V. F. Suleimanov, M. G. Revnivitsev, E. Kuulkers, and D. K. Galloway. The influence of accretion geometry on the spectral evolution during thermonuclear (type-I) X-ray bursts. *MNRAS*, 445:4218–4234, October 2014.
- [1] J. Poutanen, **J. Nättilä**, J. J. E. Kajava, O.-M. Latvala, D. K. Galloway, E. Kuulkers, and V. F. Suleimanov. The effect of accretion on the measurement of neutron star mass and radius in the low-mass X-ray binary 4U 1608–52. *MNRAS*, 442:3777–3790, August 2014.