DEEPAK EAPPACHEN

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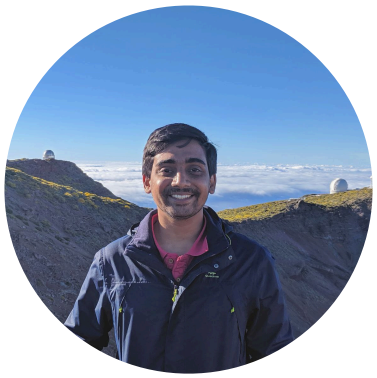

RESEARCH INTERESTS

Fast X-ray Transients, Transient Host galaxies, Electromagnetic counterparts to gravitational wave sources, Observational Astrophysics, Transient Astronomy

EDUCATION

Ph.D. in Astrophysics SRON Netherlands Institute for Space Research and Department of Astrophysics, IMAPP, Radboud University, the Netherlands (Sept 2018—Nov 2023).
Thesis: *The Origin of Fast X-ray Transients*
https://books.ipskampprinting.nl/thesis/614970-Eappachen/
Advisor: Prof. Peter Jonker

M.Sc. Physics (specialised in **Astrophysics)** Department of Physics, University of Pune (2014-2016).

B.Sc. Physics (Mathematics, Chemistry), Newman College, Thodupuzha, Mahatma Gandhi University, Kerala, India (2010–2013).

RESEARCH EXPERIENCE

PhD Research Project at SRON and Radboud University (2018— 2023).
Advisor: Prof. Peter Jonker
Topics: *The Origin of Fast X-ray Transients; Search for electromagnetic counterparts to gravitational waves using Gaia*

Master's Research Project at IUCAA, India (2016).
Advisor: Prof. R Srianand & Dr. Ravi Joshi
Topic: *Reverberation mapping of broad line regions in AGN*

Indian Science Academies' Summer Research Fellowship at ARIES, India (2013)
Advisor: Dr. Santosh Joshi
Topic: *Search for Pulsational variabilities in A-type stars*

OBSERVING EXPERIENCE & ACCEPTED PROPOSALS

OBSERVATIONS:
- *William Herschel Telescope*, La Palma
(ACAM and LIRIS; Jan 19, Jun 19 **,** Dec 19; Total : 15 nights)
-*Keck Telescope* (remotely from Caltech)
(MOSFIRE; Jul 19; Total : 2 nights)

as PI:
- *Very Large Telescope* XSHOOTER & MUSE (2020A; 12 hours)

as CO-I:
- *XMM—Newton* & *VLT* (2023; ToO; PI- Jonker)
- *Gran Telescopio Canarias* OSIRIS (2022B; 4.5 hours, PI —Torres)
- *Baade 6.5m Telescope* FourStar (2022B, 0.5 nights, PI—Quirola)

- *Gemini- South Telescope* GMOS (2021B, 12 hours, PI—Quirola)
- *Baade 6.5m Telescope* FourStar, FIRE, MagE (2022A, 4 nights)
- *Gran Telescopio Canarias* HiPERCAM (2021; 1 hour, PI —Torres)
- *VLT* XSHOOTER & FORS : (4.5 hours Cycle P105; PI— Jonker)
- *TNG*: 1 night, *LT* : 5 Hours (2020A; PI— Cannizzaro)
- *William Herschel Telescope*: 23 days(2019B; PI— Jonker)
- *TNG*: 1 night, *LT* : 5 Hours (2019A; PI— Cannizzaro)
- *William Herschel Telescope*: 8 days(2019A; PI— Jonker)

TALKS (SELECTED)

- *Wonders of Transient Sky,* XIIIth P S Cherian Memorial Lecture, Newman College, India (Feb 2024)
- *XMM—Newton discovered FXTs*, Weekly Astronomy Meeting, Dept of Astrophysics, RU (Dec 2022)
- *Host Studies of FXTs*, FXT meeting, Soeterbeeck, the Netherlands (Nov 2022)
- *The Origin of FXTs*, Netherlands Research School for Astronomy NIII meeting, (Sept2022)
- *Fast X-ray Transient XRT 210423*, Weekly Astronomy Meeting, RU(June 2022)
- *The Fast X-ray Transients*, South Regional Astronomers Meet, India (Sept2021)
- *The Origin of Fast X-ray Transients*, 75th Dutch Astronomers' Conference, (May2021)
- *Deep Optical Search for the hosts of FXTs,* Weekly Astronomy Meeting, RU(March 2021)
- *Reverberation mapping of BLR in AGN,* NOVA Fall School, (Oct 2018)

TEACHING AND OUTREACH

- Teaching Assistant for Master's course "*Black Holes and Accretion*" at Radboud (2018, 2019)
- Teaching Assistant for Bachelors's course "*Introduction to GR*" at Radboud University (2019)
- Teaching Assistant for Bachelors's course "*Introduction to Newtonian Cosmology*" at Radboud (2020)
- Part of the organizing committee for the Netherlands Astronomy Olympiad 2019

VISITS & CONFERENCES (SELECTED)

- Research Visit to *GAIA Transient Alerts Team*, IoA Cambridge (2 Weeks; Feb 2019 & June 2019)
- European Astronomical Society Annual Meeting meeting 2022, Valencia
- Fast X-ray Transients meeting, Soeterbeeck, the Netherlands (Nov 2022).
- Netherlands Research School for Astronomy Network-III meeting, Radboud Univ, (Sept 2022).
- South Regional Astronomers Meet, India, Virtual, Sept 2021.
- Dutch Astronomer's conference 2021 (Virtual).
- BlackGEM Science Meeting - II, Radboud University, Nijmegen, Jun 2019
- NOVA Fall School, ASTRON, the Netherlands (Oct 2018).
- Time domain Astronomy and Cosmology Workshop, Kerala India, 2015
- Radio Astronomy Winter School, IUCAA-NCRA TIFR, Pune, India, 2012
- Pulsar Observing Student program, NCRA, Ooty, India, 2012

LANGUAGES & SOFTWARES

Python, IRAF, SExtractor, C++, Fortran, Latex, Bash Scriptting

REFERENCES

Prof. Peter Jonker, Radboud University and SRON, the Netherlands
p.jonker@astro.ru.nl

Dr. Morgan Fraser, University College, Dublin
morgan.fraser@ucd.ie

Dr. Joe Jacob, Newman College, Kerala, India
drjoephysics@gmail.com

Prof. Andrew Levan, Radboud University, the Netherlands
a.levan@astro.ru.nl

LIST OF PUBLICATIONS

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PUBLICATIONS

D. Eappachen, P. G. Jonker, J. Quirola-Vásquez, D. Mata Sánchez, A. Inkenhaag, A.J. Levan, M. Fraser, M.A.P. Torres, F.E. Bauer, A. A. Chrimes, D. Stern, M. J. Graham, S. J. Smartt, K. W. Smith, M.E. Ravasio, A. I. Zabludoff, M. Yue, F. Stoppa, D. B. Malesani, N. C. Stone, S. Wen, *XMM-Newton-discovered Fast X-ray Transients: Host galaxies and limits on contemporary optical counterparts,* MNRAS, 2024, 527, 11823–11839

D. Eappachen, P.G. Jonker, A.J. Levan, Quirola-Vasquez, M.A.P. Torres, F.E. Bauer, V.S. Dhillon, T. Marsh, S.P. Littlefair, M.E. Ravasio , and M. Fraser, *The Fast X-ray Transient XRT 210423 and its Host* Galaxy, ApJ, 2023, 948 (2), 91

D. Eappachen, P. G. Jonker, M. Fraser, M.A.P. Torres, V. S. Dhillon, T. Marsh, S. P. Littlefair, J. Quirola-Vásquez, K. Maguire, D. Mata Sánchez, G. Cannizzaro, Z. Kostrzewa-Rutkowska, T. Wevers, F. Onori, Anne Inkenhaag and S.J. Brennan, *Probing for the host galaxies of the fast X-ray transients XRT 000519 and XRT 110103* , MNRAS, 2022, 514, 302

J. Quirola-Vásquez, F. E. Bauer, P. G. Jonker, W. N. Brandt, **D. Eappachen**, A. J. Levan, E. Lopez, B. Luo, M. E. Ravasio, Y. Q. Xue, G. Yang, X. C. Zheng, *Probing a Magnetar Origin for the population of Extragalactic Fast X-ray Transients detected by Chandra, accepted for publication in A & A,* https://arxiv.org/abs/2401.01415v1

Sumedha Biswas, Zuzanna Kostrzewa-Rutkowska, Peter G Jonker, Paul Vreeswijk, **Deepak Eappachen**, Paul J Groot, Simon Hodgkin, Abdullah Yoldas, Guy Rixon, Diana Harrison, M van Leeuwen, Dafydd Evans, *Preparing for Gaia Searches for Optical Counterparts of Gravitational Wave Events during O4*, MNRAS, 2023, 525, 406.

J. Quirola-Vásquez, F. E. Bauer, P. G. Jonker, W. N. Brandt, G. Yang, A. J. Levan, Y. Q. Xue,
D. Eappachen, E. Camacho, M. E. Ravasio, X. C. Zheng, B. Luo*, Extragalactic FXT Candidates Discovered by Chandra (2014-2022),* Accepted for Publication in A&A ,2023

Quirola-Vásquez, J, Bauer, F. E, Jonker, P. G, Brandt, W. N, Yang, G, Levan, A. J, Xue, Y. Q, **Eappachen, D**, Zheng, X. C. and Luo, B, *Extragalactic fast X-ray transient candidates discovered by Chandra (2000-2014)*, A&A 2022, 663,168

ST Hodgkin, DL Harrison, E Breedt, T Wevers, Guy Rixon, A Delgado, Abdullah Yoldas, Z Kostrzewa-Rutkowska, M van Leeuwen, N Blagorodnova, H Campbell, **D Eappachen** et. al., *Gaia Early Data Release 3-Gaia photometric science alerts,* A&A, 2021, 652, 76

Z Kostrzewa-Rutkowska, PG Jonker, ST Hodgkin, **D Eappachen**, DL Harrison, SE Koposov, G Rixon, Ł Wyrzykowski, A Yoldas, E Breedt, A Delgado, M Van Leeuwen, T Wevers, PW Burgess, F De Angeli, DW Evans, PJ Osborne, M Riello, *Electromagnetic counterparts to gravitational wave events from Gaia,*
MNRAS, 2020,493,3

Brown et al. [**Gaia Collaboration**], *Gaia early data release 3-summary of the contents and survey properties,* A&A, 2021, 649

Smart et. al [**Gaia collaboration**], *Gaia Early Data Release 3-The Gaia Catalogue of Nearby Stars*, A&A, 2021, 649

Luri et. al [**Gaia collaboration**], *Gaia Early Data Release 3-Structure and properties of the Magellanic Clouds,* A&A, 2021, 649

Antoja et. al [**Gaia collaboration**], *Gaia Early Data Release 3-The Galactic anticentre,* A&A, 2021, 649

Klioner et. al [**Gaia collaboration**], *Gaia Early Data Release 3-Acceleration of the solar system from Gaia astrometry* A&A, 2021, 649

Erik C Kool, TM Reynolds, S Mattila, E Kankare, Miguel A Pérez-Torres, A Efstathiou, S Ryder, C Romero-Canizales, W Lu, T Heikkilä, GE Anderson, M Berton, J Bright, G Cannizzaro, **D Eappachen**, Morgan Fraser et al. *AT 2017gbl: a dust obscured TDE candidate in a luminous infrared galaxy,* MNRAS, 2020, 498, 2