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Curriculum Vitae

Education

- B.Sc. 2008 • Copenhagen University, Denmark. Physics/Astronomy. B.Sc.
Project advisor: Prof. Johan Fynbo, DARK Cosmology Centre.
- M.Sc. 2011 • Copenhagen University, Denmark. Physics/Astronomy.
Thesis advisor: Prof. Johan Fynbo, DARK Cosmology Centre.
- Lic. Phil. 2015 • Stockholm University, Sweden. Astronomy.
Advisors: Prof. Göran Östlin and Dr. Matthew Hayes.
The Licentiate is a degree offered in Sweden between Master and Ph.D.
- Ph.D.* *Expected June 2016 • Stockholm University, Sweden. Astronomy.
Advisors: Prof. Göran Östlin and Dr. Matthew Hayes.

Peer-reviewed publications

- First author* **Rivera-Thorsen, T. E.**; (17 coauthors): *The Lyman Alpha Reference Sample. V. The Impact of Neutral ISM Kinematics and Geometry on Ly α Escape*. The Astrophysical Journal, Volume 805, Issue 1, article id. 14, 26 pp. (2015). [ADS](#)
- Co-author* **Duval, F.**; (10 coauthors); **Rivera-Thorsen, T.**; (7 coauthors): *The Lyman alpha Reference Sample VI: Lyman alpha escape from the edge-on disk galaxy Mrk1486*. Astronomy & Astrophysics, Volume 587, id.A77, 24 pp. [ADS](#)
- Herenz, E. C.**; (18 coauthors); **Rivera-Thorsen, T. E.**; (2 coauthors): *The Lyman alpha reference sample. VII. Spatially resolved H α kinematics*. Astronomy & Astrophysics, Volume 587, id.A78, 27 pp.. [ADS](#)
- Guaita, L.**; (16 coauthors), **Rivera-Thorsen, T.**; (6 coauthors): *The Lyman alpha reference sample. IV. Morphology at low and high redshift*. Astronomy & Astrophysics, Volume 576, id.A51, 44 pp (2015). [ADS](#)
- Pardy, S. A.**; (3 coauthors); **Rivera-Thorsen, T. E.**; (14 coauthors): *The Lyman Alpha Reference Sample. III. Properties of the Neutral ISM from GBT and VLA Observations*. The Astrophysical Journal, Volume 794, Issue 2, article id. 101, 19 pp. (2014). [ADS](#)
- Östlin, G.**; (3 coauthors); **Rivera-Thorsen, T. E.**; (18 coauthors): *The Lyman-alpha Reference Sample: I. Survey outline and first results for Markarian 259*. The Astrophysical Journal, Volume 797, Issue 1, article id. 11, 23 pp. (2014). [ADS](#)
- Kruehler, T.**; (3 coauthors); **Rivera-Thorsen, T. J.**; (2 coauthors): *GRB 140301A: NOT afterglow candidate*. GRB Coordinates Network, Circular Service, 15899, 1 (2014). [ADS](#)
- Hayes, M.**; (16 coauthors), **Rivera-Thorsen, T. E.**; (1 coauthor): *The Lyman Alpha Reference Sample. II. Hubble Space Telescope Imaging Results, Integrated Properties, and Trends*. The Astrophysical Journal, Volume 782, Issue 1, article id. 6, 22 pp. (2014). [ADS](#)
- Stritzinger, M. D.**; (3 coauthors); **Rivera-Thorsen, T. J.**; (19 coauthors): *VizieR Online Data Catalog: SN 2010ae optical spectra (Stritzinger+, 2014)* VizieR On-line Data

Catalog: J/A+A/561/A146. Originally published in: 2014A&A...561A.146S [ADS](#)

Stritzinger, M. D.; (3 coauthors); **Rivera-Thorsen, T. J.**; (19 coauthors): *Optical and near-IR observations of the faint and fast 2008ha-like supernova 2010ae*. Astronomy & Astrophysics, Volume 561, id.A146, 22 pp. [ADS](#)

Fynbo, J. P. U.; (9 coauthors); **Rivera-Thorsen, T.**; (1 coauthor): *On the two high-metallicity DLAs at $z = 2.412$ and 2.583 towards Q 0918+1636*. Monthly Notices of the Royal Astronomical Society, Volume 436, Issue 1, p.361-370. [ADS](#)

Sandberg, A.; (5 coauthors); **Rivera-Thorsen, T.**: *Neutral gas in Lyman-alpha emitting galaxies Haro 11 and ESO 338-IG04 measured through sodium absorption*. Astronomy & Astrophysics, Volume 552, id.A95, 8 pp. [ADS](#)

Fynbo, J. P. U.; (13 coauthors); **Thorsen, T. J.**; (2 coauthors): *Galaxy counterparts of metal-rich damped Ly α absorbers - II. A solar-metallicity and dusty DLA at $z_{\text{abs}}=2.58$* . Monthly Notices of the Royal Astronomical Society, Volume 413, Issue 4, pp. 2481-2488. [ADS](#)

Talks, seminars etc.

Meetings & Conferences

Results of HST-COS Spectroscopy of the LARS galaxies. *Lyman Alpha Reference Sample collaboration meeting*, 40 minutes, Paris, France; October 2014.

The Lyman alpha reference sample: Empirical inferences on the Lyman alpha output from high-resolution ultraviolet spectroscopy, *European Week of Astronomy and Space Science*, 15 min., Geneva, Switzerland; June 2014. [Session program](#)

Neutral ISM in young, star-forming galaxies, *Ph.D. days*, 20 min., Uppsala University, Sweden; April 2014

ISM dynamics and geometry in LARS galaxies *Lyman- α As An Astrophysical Tool*, 15 min., Stockholm, Sweden; September 2013. [Workshop schedule](#)

Invited seminars

The impact of ISM kinematics and geometry on Lyman- α escape in the Lyman Alpha Reference Sample, *Cosmology seminar*, University of Oslo, Norway; September 2015. [Program](#)

How Kinematics & Geometry of the ISM Affects Lyman- α Radiative Transfer and Escape, *Seminar*, University of Minnesota, Minneapolis, USA; April 9th 2015.

How Kinematics & Geometry of the ISM Affects Lyman- α Radiative Transfer and Escape, *Physics & Astronomy Seminar*, Macalester College, St. Paul, Minnesota, USA; March 2015. [Event calendar](#)

Outreach

Telescope shows, The AlbaNova Telescope, Stockholm, Sweden. *A number of 45-minute guided tour and demo observations with Cassegrain focus eyepiece for the Public; including a general astronomy talk*. 2012-present.

External research project advisor, Secondary School students (12th grade) at *Falkonergårdens Gymnasium & HF*, Copenhagen, Denmark. Project: Determining Dark Matter mass in Abell 2052 by comparing the baryonic mass of intracluster gas as inferred from *Chandra* X-ray profiles, to a mass profile obtained from gravitational lensing. November-December 2011

General cosmology talks for *Fysiklærerforeningen*, the Danish Society of secondary school physics teachers, and for the *Science Talenter* (Science Talents) program for 10-15

year old students with a special interest in Science. Typically 1 hour, 4 events through 2009-2010

Physics StackExchange: I am active on the Physics StackExchange Q&A site. [Profile](#)

Teaching experience

- 2009-2011 Secondary school teacher.** *Falkonergaardens Gymnasium & HF, Frederiksberg, Denmark.* While studying for my Masters degree from August 2009, and until starting my Ph.D. in Stockholm in November 2011, I taught basic and intermediate level physics and basic level mathematics for students in 11th-12th grade on half time (ca. 18 hours/week).
- 2012 - 2014 Teaching assistant.** *Stockholm University, Sweden.* Mainly assisting computer lab sessions and grading reports.
- 2012 - 2014 Computer lab teacher.** *Stockholm University, Sweden.* Developing and running the late-stage undergrad level workshop *Computer Tools for Astronomers*, which ran over 3×3 hours once a year. Introducing LaTeX, the Unix command line, and a number of useful Python-based tools including NumPy, SciPy, Asdtrpy, Matplotlib, and LMFit. [Website](#)

Summer/ winter schools

- 2012** Nordic Millimeter and Optical/NIR Astronomy Summer School 2012: Observational cosmology and the formation and evolution of galaxies. [Website](#)
- 2014** Penn State Summer School of Astrostatistics. [Website](#)
- 2015** North-European Radio Astronomy School. [Website](#)
- 2016** The 46th Saas-Fee Course: Lyman-alpha As An Astrophysical And Cosmological Tool. [Website](#)

Observing/reduction experience

Nordic Optical Telescope (2.5m.), *La Palma, Canary Islands.*

Two runs of each around 8 nights, the first in February 2012, the second in February 2014. Multiband imaging with MOSCA, spectroscopy with FIES.

Hubble Space Telescope – Cosmic Origins Spectrograph

Analysis of HST-COS data, including vignetting corrections.

VLT – X-Shooter

Reduction and analysis only. Reduction of several datasets, beginning when the esorex based pipeline was still in Beta (summer 2010).

AlbaNova Telescope (1m.), *Stockholm, Sweden.*

The AlbaNova Telescope is a 1m science-grade telescope mounted on top of the AlbaNova building in Stockholm. Various demonstrations to the general public and leisure observations with eyepiece.

Scientific software

- Extensive* Python-based science tools including NumPy, SciPy, AstroPy, Pandas, Matplotlib, IPython, Traits(-UI), Chaco, and Lmfit; X-Shooter pipeline (Esorex-based), VPfit, vpguess.
- Good* IDL, Python-Statsmodels, Source Extractor, Gnuplot, SAO ds9, CXC Sherpa.
- Basic* R, Casa, GILDAS/CLASS, Healpix/Healpy, IRAF, Fortran, Julia.
- Other* More than a decade of experience using and managing GNU/Linux and Mac OSX systems. I know my way around Windows XP/7/8 but am no power user. Some experience with Bash/sh scripting. Git/GitHub for version control.