

Tri L. Astraatmadja

Curriculum vitae

Space Telescope Science Institute
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Profile

I am currently a postdoctoral fellow at the Space Telescope Science Institute (STScI). I have 12+ years of experience in statistical data analysis, machine-learning algorithms, data simulations, and building pipelines. I collaborate with groups with varied scientific interests, which thus far have ranged from exoplanets to cosmology. With over 300 citations, my published researches are in big data analysis and machine-learning in astronomy, astrometry, and high-energy astrophysics.

Education

- 2013 **PhD in Astroparticle Physics**, Universiteit Leiden, The Netherlands.
Dissertation titled *Starlight beneath the waves: In search of TeV photon emission from Gamma-Ray Bursts with the ANTARES Neutrino Telescope*, advised by Prof. dr. Maarten de Jong.
- 2008 **MSc in Astronomy**, Universiteit Leiden, The Netherlands.
Master's thesis titled *Kinematics and stellar population studies of the galactic bulge*, advised by Prof. dr. Koenraad Kuijken. Minor research project titled *Detecting hypervelocity star candidates using astrometric data*, advised by dr. Anthony G.A. Brown and dr. Yuri Levin.
- 2006 **BSc in Astronomy**, Institut Teknologi Bandung (ITB), Indonesia.
Bachelor's thesis titled *Local stellar kinematics based on Hipparcos data*, advised by dr. Moedji Raharto.

Professional appointments

- 2020–current **Postdoctoral Fellow**, Space Telescope Science Institute (STScI), Baltimore MD, United States.
Supervisors: Dr. Susana E. Deustua and Dr. Andrew S. Fruchter.
- 2016–2020 **Thompson Postdoctoral Fellow**, Earth and Planets Laboratory (EPL), Carnegie Institution for Science, Washington DC, United States.
Supervisors: Dr. Alan P. Boss and Dr. Alycia J. Weinberger. EPL was formerly called Department of Terrestrial Magnetism (DTM).
- 2012–2016 **Postdoctoral Fellow**, Max Planck Institute for Astronomy (MPIA), Heidelberg, Germany.
Supervisor: Dr. Coryn A.L. Bailer-Jones.
- 2008–2012 **PhD candidate**, National Institute for Subatomic Physics (Nikhef), Amsterdam, The Netherlands.
Supervisor: Prof. dr. Maarten de Jong.

Scientific skills

- Statistics Probability theory, statistical inferences, hypothesis testing in Frequentist and Bayesian paradigm.
- Data analysis Model fitting (general least-squares regression, poisson regression, robust fit) and selection (e.g. cross-validation, likelihood ratio tests), optimization techniques, various Markov Chain Monte Carlo techniques, and machine-learning algorithms e.g. Support Vector Machine (SVM).

Instruments Instrument modelling and simulations, particularly convolution of input spectra with instrument profile to generate observable images and spectra.

Computer skills

Programming Software development experiences in Java; fluency and experiences in C++, Python, FORTRAN, Root, and IDL. Eclipse IDE and vi user.

Astronomy `astropy`, `photutils`, `specutils` in Python

Machine Learning `scikit-learn` in Python, Weka in Java

Querying Experiences in SQL, ADQL, and TOPCAT as a part of software development, or to execute queries of the SDSS Catalog Archive Server (CAS) or the *Gaia* Archive.

Versioning Experiences in `git` (`github` and `gitlab`) and SVN for version control.

Issue tracking Experiences in using Mantis and JIRA in managing bug-related issues.

Dependencies Experiences in using Apache Ivy for dependency management.

Scripting Daily usage of `bash`, `awk`, `sed`, `grep`, `cron`, and other Unix tools for various tasks.

Computing Experiences with batch processing (e.g. `qsub`, `slurm`), grid computing, and Amazon Web Services (AWS).

Image processing Experiences in IRAF and DAOPHOT for image reduction and aperture photometry, experiences with the `fitsio` package in Python and the `nom.tam.fits` package in Java.

Languages

Indonesian (native), English (fluent), Dutch (fluent), French (fluent), and German (fluent).

Research experiences

2020–current **Cosmology with *Roman* prism**, STScI.
Simulations of Type Ia Supernovae spectra as observed by *Roman* slitless prism. Developing algorithms to infer the datacube using Gaussian process.

2016–2020 **Ground-based astrometric detection of exoplanets**, Carnegie EPL.
Managing and developing the entire Carnegie Astrometric Planet Search (CAPS) data analysis pipeline. Conducting observation runs with a cadence of roughly 4–5 nights every two months.

2013–current **Estimating distances from parallaxes**, MPA Heidelberg & Carnegie EPL.
Developing Bayesian estimation method of distances from parallaxes and also in combination with photometric data. Distance estimation of stars in the *Gaia* Data Release 1 catalog.

2012–2016 **Software development for the *Gaia* mission**, MPA Heidelberg.
Managing and developing a work-package used for analysis of unresolved physical binaries detected by *Gaia*. Building and developing a software to simulate spectra as observed by *Gaia*.

2008–2012 **Detecting TeV γ -rays from GRBs with the ANTARES Neutrino Telescope**, Nikhef.
PhD research project. Exploring the possibility of operating a neutrino telescope as a γ -ray telescope. Estimation of the expected number of events and studies of the detector sensitivity.

2008 **Kinematics and stellar population studies of the galactic bulge**, Leiden Observatory.
MSc's thesis. Photometric and kinematical analysis of stars in one of the selected *Hubble* WFPC2 images of the Galactic Bulge. Decontamination of bulge stars from foreground stars.

2006–2007 **Detecting hypervelocity stars in astrometric catalogs**, Leiden Observatory.
MSc minor research project. Using knowledge of the kinematics of Hypervelocity Stars (HVS) to develop search criteria for HVS within an astrometric catalog, and applies them to *Hipparcos*.

2006 **Astrometry of visual binaries**, Bosscha Observatory, Indonesia.
Unpaid internship. Assisting in the observation and image reduction of visual binaries, using the Zeiss 60 cm Double Refractor at the Bosscha Observatory.

Observing experiences

- 2016–2020 **Irénée du Pont 100-inch telescope, Las Campanas Observatory, Chile.**
17 observing runs totalling 66 nights of CAPS observations, including 1 on-site run.
- 2008–2012 **ANTARES Neutrino Telescope, shore station in La Seyne-sur-Mer, France.**
6 shifts (1 week each), including 2 on-site shifts.

Recent talks (past 5 years)

Invited talks

- Oct 2018 **Ground-based astrometric search for exoplanets with CAPSCam**, *Astronomy Colloquium*, Institut Teknologi Bandung (ITB), Indonesia.
- Apr 2018 **The *Gaia* mission: How it works and an overview of the second data release**, *Astronomy Seminar*, Dept. of Terrestrial Magnetism (DTM), Carnegie Institution for Science, Washington DC.
- Mar 2018 **Detecting exoplanets with ground-based astrometry**, *Carnegie DTM Seminar*, Dept. of Terrestrial Magnetism (DTM), Carnegie Institution for Science, Washington DC.
- Sep 2016 **Estimating distances from parallaxes**, *Astronomy Seminar*, Dept. of Terrestrial Magnetism (DTM), Carnegie Institution for Science, Washington DC.

Contributed talks

- Jan 2021 **Cosmology with the *Nancy Grace Roman* Space Telescope prism**, *237th Meeting of the American Astronomical Society*.
- Oct 2019 **Ground-based astrometric detection of exoplanets with CAPSCam**, *Brown Dwarf to Exoplanet Connection (BDExoCon) III*, University of Delaware, Newark DE.
- May 2019 **Ground-based astrometric detection of exoplanets with CAPSCam**, *Chesapeake Bay Area Exoplanet Meeting (CHEXO) Meeting*, Applied Physics Laboratory (APL), Laurel MD.
- Mar 2018 **Ground-based astrometric detection of exoplanets with CAPSCam: The data analysis pipeline**, *Science with Precision Astrometry Workshop*, Space Telescope Science Institute (STScI), Baltimore MD.
- Jan 2017 **Estimating distances from parallaxes**, *229th Meeting of the American Astronomical Society (AAS)*, Grapevine TX.

Media interviews

- May 2018 **New Scientist**, *We've mapped 90 per cent of the stars in our bit of the galaxy.*

Awards

Fellowships and scholarships

- 2016 **Thompson Postdoctoral Fellowship**, \$200 000.
Fellowship donated by the David W. Thompson Family Fund for support of the Carnegie Astrometric Planet Search (CAPS) program.
- 2006 **Leids Universiteits Fonds (LUF) Scholarship**, €9000.
Awarded to excellent international students who want to pursue a Master studies at Leiden University. One of four recipients.

Awards and honors

- 2015 **Global Neutrino Network (GNN) Dissertation Prize**, €300.
Awarded by a partnership of four neutrino telescope experiments (ANTARES, Baikal, IceCube, and KM3NeT) for the best PhD dissertation. Shared with two other winners.

2005 **Dean's List of Academic Excellence**, Faculty of Mathematics and Natural Sciences, Institut Teknologi Bandung (ITB).

Professional services

- 2021 **JWST Cycle 1 Panel Support**
Panel Support Staff (PSS) for the JWST Cycle 1 Peer Review Meetings.
- 2017–present **NASA proposal reviewer**
Regular proposal reviewer for the NASA Earth and Space Science Fellowship Program (NESSF), panelist for the 2017 NASA Astrophysics Data Analysis Program (ADAP).
- 2017 **Chambliss Judge**, American Astronomical Society (AAS).
Judge for the Chambliss Astronomy Achievement Student Awards for the best student poster presentation at the American Astronomical Society (AAS) meetings.
- 2013–present **Referee**, Monthly Notices of the Royal Astronomical Society (MNRAS) and The Astrophysical Journal (ApJ).
Reviews papers about high-energy astrophysics, data analysis, and galactic structure.

Public outreach activities

- May 2018 **DC Passport**, Chilean Ambassador's Residence, Washington DC.
Participates in the promotion of astronomy in Chile as a part of the DC Passport Day, a day where embassies in Washington DC open their doors to the public.
- 2017–current **Regular contributor**, Science section of Indoproggress.
Indoproggress.com is a web-based media of progressive thoughts in Indonesia. Average monthly readership is ~2700 000 views.
- Jun 2015 **MPIA open day**, Max Planck Institute for Astronomy (MPIA), Heidelberg, Germany.
- 2007–current **Co-founder, editor, and regular contributor**, langitselatan.com.
langitselatan.com is a popular astronomy website in Indonesia and is a part of the Universe Awareness (UNAWA) network. Average monthly readership is ~100 000 views.

Professional memberships

- 2016–present **American Astronomical Society (AAS)**
Member of Division for Planetary Sciences (DPS), High Energy Astrophysics Division (HEAD), and Historical Astronomy Division (HAD)
- 2015–present **International Astronomical Union (IAU)**
Member of Division B (Facilities, Technologies and Data Science), Division C (Education, Outreach and Heritage), Division D (High Energy Phenomena and Fundamental Physics), and Division H (Interstellar Matter and Local Universe)
- 2007–present **Royal Netherlands Astronomical Society**
Known in Dutch as Koninklijke Nederlandse Astronomenclub (KNA), the organization was formerly known as the Netherlands Astronomical Society or Nederlandse Astronomenclub (NAC) until May 2019.

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List of publications

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Publication summary

Author of 7 peer-reviewed papers in international journals, including 2 as a first author and 1 as a single author. Co-author of 11 *Gaia* peer-reviewed papers and 26 ANTARES peer-reviewed papers. As of 30 April 2021, 218 citations and h-index of 2 as first and single author; 364 citations and h-index of 6 as first, single, and co-author (*Gaia* and ANTARES papers excluded).

Refereed publications with significant contributions

- Dieterich S. B., Weinberger A. J., Boss A. P., Henry T. J., Jao W.-C., Gagné J., **Astraatmadja T. L.**, Thompson M. A., Anglada-Escudé G. 2018. *Dynamical Masses of ϵ Indi B and C: Two Massive Brown Dwarfs at the Edge of the Stellar-substellar Boundary*. **ApJ** **865(1)**: 28, doi:10.3847/1538-4357/aadadc
- Boss A. P., Weinberger A. J., Keiser S. A., **Astraatmadja T. L.**, Anglada-Escudé G., Thompson I. B. 2017. *Astrometric Constraints on the Masses of Long-period Gas Giant Planets in the TRAPPIST-1 Planetary System*. **AJ** **154**: 103, doi:10.3847/1538-3881/aa84b5
- Astraatmadja T. L.**, Bailer-Jones C. A. L. 2016a. *Estimating Distances from Parallaxes. II. Performance of Bayesian Distance Estimators on a Gaia-like Catalogue*. **ApJ** **832**: 137, doi:10.3847/0004-637X/832/2/137
- Astraatmadja T. L.**, Bailer-Jones C. A. L. 2016b. *Estimating Distances from Parallaxes. III. Distances of Two Million Stars in the Gaia DR1 Catalogue*. **ApJ** **833**: 119, doi:10.3847/1538-4357/833/1/119
- Soto M., Zeballos H., Kuijken K., Rich R. M., Kunder A., **Astraatmadja T.** 2014. *Proper motions for HST observations in three off-axis bulge fields*. **A&A** **562**: A41, doi:10.1051/0004-6361/201117339
- Bailer-Jones C. A. L., Andrae R., Arcay B., **Astraatmadja T.**, Bellas-Velidis I. et al. 2013. *The Gaia astrophysical parameters inference system (Apsis). Pre-launch description*. **A&A** **559**: A74, doi:10.1051/0004-6361/201322344
- Astraatmadja T. L.** 2011. *On the detection of TeV γ -rays from GRB with km^3 neutrino telescopes - I. Muon event rate from single GRBs*. **MNRAS** **418**: 1774–1786, doi:10.1111/j.1365-2966.2011.19598.x

Gaia refereed publications

- Gaia Collaboration, Eyer L., Rimoldini L., Audard M., Anderson R. I. et al. 2019. *Gaia Data Release 2. Variable stars in the colour-absolute magnitude diagram*. **A&A** **623**: A110, doi:10.1051/0004-6361/201833304
- Gaia Collaboration, Babusiaux C., van Leeuwen F., Barstow M. A., Jordi C. et al. 2018a. *Gaia Data Release 2. Observational Hertzsprung-Russell diagrams*. **A&A** **616**: A10, doi:10.1051/0004-6361/201832843
- Gaia Collaboration, Brown A. G. A., Vallenari A., Prusti T., de Bruijne J. H. J. et al. 2018b. *Gaia Data Release 2. Summary of the contents and survey properties*. **A&A** **616**: A1, doi:10.1051/0004-6361/201833051

- Gaia Collaboration, Helmi A., van Leeuwen F., McMillan P. J., Massari D. et al. 2018c. *Gaia Data Release 2. Kinematics of globular clusters and dwarf galaxies around the Milky Way*. **A&A 616**: A12, doi:10.1051/0004-6361/201832698
- Gaia Collaboration, Katz D., Antoja T., Romero-Gómez M., Drimmel R. et al. 2018d. *Gaia Data Release 2. Mapping the Milky Way disc kinematics*. **A&A 616**: A11, doi:10.1051/0004-6361/201832865
- Gaia Collaboration, Mignard F., Klioner S. A., Lindegren L., Hernández J. et al. 2018e. *Gaia Data Release 2. The celestial reference frame (Gaia-CRF2)*. **A&A 616**: A14, doi:10.1051/0004-6361/201832916
- Gaia Collaboration, Spoto F., Tanga P., Mignard F., Berthier J. et al. 2018f. *Gaia Data Release 2. Observations of solar system objects*. **A&A 616**: A13, doi:10.1051/0004-6361/201832900
- Gaia Collaboration, Clementini G., Eyer L., Ripepi V., Marconi M. et al. 2017a. *Gaia Data Release 1. Testing parallaxes with local Cepheids and RR Lyrae stars*. **A&A 605**: A79, doi:10.1051/0004-6361/201629925
- Gaia Collaboration, van Leeuwen F., Vallenari A., Jordi C., Lindegren L. et al. 2017b. *Gaia Data Release 1. Open cluster astrometry: performance, limitations, and future prospects*. **A&A 601**: A19, doi:10.1051/0004-6361/201730552
- Gaia Collaboration, Brown A. G. A., Vallenari A., Prusti T., de Bruijne J. H. J. et al. 2016a. *Gaia Data Release 1. Summary of the astrometric, photometric, and survey properties*. **A&A 595**: A2, doi:10.1051/0004-6361/201629512
- Gaia Collaboration, Prusti T., de Bruijne J. H. J., Brown A. G. A., Vallenari A. et al. 2016b. *The Gaia mission*. **A&A 595**: A1, doi:10.1051/0004-6361/201629272

ANTARES refereed publications

- Adrián-Martínez S., Albert A., André M., Anghinolfi M., Anton G. et al. 2014b. *A search for time dependent neutrino emission from microquasars with the ANTARES telescope*. **Journal of High Energy Astrophysics 3**: 9–17, doi:10.1016/j.jheap.2014.06.002
- Adrián-Martínez S., Albert A., Al Samarai I., André M., Anton G. et al. 2014a. *A search for neutrino emission from the Fermi bubbles with the ANTARES telescope*. **European Physical Journal C 74**: 2701, doi:10.1140/epjc/s10052-013-2701-6
- Adrián-Martínez S., Albert A., Samarai I. A., André M., Anghinolfi M. et al. 2013b. *Search for muon neutrinos from gamma-ray bursts with the ANTARES neutrino telescope using 2008 to 2011 data*. **A&A 559**: A9, doi:10.1051/0004-6361/201322169
- Adrián-Martínez S., Albert A., Al Samarai I., André M., Anghinolfi M. et al. 2013a. *Measurement of the atmospheric ν_{μ} energy spectrum from 100 GeV to 200 TeV with the ANTARES telescope*. **European Physical Journal C 73**: 2606, doi:10.1140/epjc/s10052-013-2606-4
- Adrián-Martínez S., Samarai I. A., Albert A., André M., Anghinolfi M. et al. 2013c. *Search for a Correlation between ANTARES Neutrinos and Pierre Auger Observatory UHECRs Arrival Directions*. **ApJ 774(1)**: 19, doi:10.1088/0004-637X/774/1/19
- Tamburini C., Canals M., Durrieu de Madron X., Houpert L., Lefèvre D. et al. 2013. *Deep-Sea Bioluminescence Blooms after Dense Water Formation at the Ocean Surface*. **PLoS ONE 8(7)**: e67523, doi:10.1371/journal.pone.0067523
- Adrián-Martínez S., Samarai I. A., Albert A., André M., Anghinolfi M. et al. 2013d. *A first search for coincident gravitational waves and high energy neutrinos using LIGO, Virgo and ANTARES data from 2007*. **J. Cosmology Astropart. Phys. 2013(6)**: 008, doi:10.1088/1475-7516/2013/06/008

- Adrián-Martínez S., Samarai I. A., Albert A., André M., Anghinolfi M. et al. 2012f. *Search for Cosmic Neutrino Point Sources with Four Years of Data from the ANTARES Telescope*. **ApJ** **760(1)**: 53, doi:10.1088/0004-637X/760/1/53
- Adrián-Martínez S., Ageron M., Aguilar J. A., Samarai I. A., Albert A. et al. 2012a. *The positioning system of the ANTARES Neutrino Telescope*. **Journal of Instrumentation** **7(8)**: T08002, doi:10.1088/1748-0221/7/08/T08002
- Adrián-Martínez S., Al Samarai I., Albert A., André M., Anghinolfi M. et al. 2012d. *Search for neutrino emission from gamma-ray flaring blazars with the ANTARES telescope*. **Astroparticle Physics** **36(1)**: 204–210, doi:10.1016/j.astropartphys.2012.06.001
- Adrián-Martínez S., Al Samarai I., Albert A., André M., Anghinolfi M. et al. 2012e. *Measurement of atmospheric neutrino oscillations with the ANTARES neutrino telescope*. **Physics Letters B** **714(2-5)**: 224–230, doi:10.1016/j.physletb.2012.07.002
- Adrián-Martínez S., Aguilar J. A., Al Samarai I., Albert A., André M. et al. 2012b. *Search for relativistic magnetic monopoles with the ANTARES neutrino telescope*. **Astroparticle Physics** **35(10)**: 634–640, doi:10.1016/j.astropartphys.2012.02.007
- Aguilar J. A., Al Samarai I., Albert A., André M., Anghinolfi M. et al. 2012. *A method for detection of muon induced electromagnetic showers with the ANTARES detector*. **Nuclear Instruments and Methods in Physics Research A** **675**: 56–62, doi:10.1016/j.nima.2012.01.060
- Adrián-Martínez S., Al Samarai I., Albert A., André M., Anghinolfi M. et al. 2012c. *Measurement of the group velocity of light in sea water at the ANTARES site*. **Astroparticle Physics** **35(9)**: 552–557, doi:10.1016/j.astropartphys.2011.12.003
- Ageron M., Aguilar J. A., Al Samarai I., Albert A., André M. et al. 2012. *The ANTARES telescope neutrino alert system*. **Astroparticle Physics** **35(8)**: 530–536, doi:10.1016/j.astropartphys.2011.11.011
- Adrián-Martínez S., Aguilar J. A., Samarai I. A., Albert A., André M. et al. 2011. *First Search for Point Sources of High-energy Cosmic Neutrinos with the ANTARES Neutrino Telescope*. **ApJ** **743(1)**: L14, doi:10.1088/2041-8205/743/1/L14
- Ageron M., Aguilar J. A., Al Samarai I., Albert A., Ameli F. et al. 2011. *ANTARES: The first undersea neutrino telescope*. **Nuclear Instruments and Methods in Physics Research A** **656(1)**: 11–38, doi:10.1016/j.nima.2011.06.103
- van Haren H., Taupier-Letage I., Aguilar J. A., Albert A., Anghinolfi M. et al. 2011. *Acoustic and optical variations during rapid downward motion episodes in the deep north-western Mediterranean Sea*. **Deep Sea Research Part I: Oceanographic Research** **58(8)**: 875–884, doi:10.1016/j.dsr.2011.06.006
- Aguilar J. A., Al Samarai I., Albert A., André M., Anghinolfi M. et al. 2011a. *A fast algorithm for muon track reconstruction and its application to the ANTARES neutrino telescope*. **Astroparticle Physics** **34(9)**: 652–662, doi:10.1016/j.astropartphys.2011.01.003
- ANTARES Collaboration, Aguilar J. A., Al Samarai I., Albert A., André M. et al. 2011. *Time calibration of the ANTARES neutrino telescope*. **Astroparticle Physics** **34(7)**: 539–549, doi:10.1016/j.astropartphys.2010.12.004
- Aguilar J. A., Al Samarai I., Albert A., Anghinolfi M., Anton G. et al. 2011b. *AMADEUS—The acoustic neutrino detection test system of the ANTARES deep-sea neutrino telescope*. **Nuclear Instruments and Methods in Physics Research A** **626**: 128–143, doi:10.1016/j.nima.2010.09.053

- Aguilar J. A., Samarai I. A., Albert A., André M., Anghinolfi M. et al. 2011c. *Search for a diffuse flux of high-energy ν* with the ANTARES neutrino telescope. **Physics Letters B** **696(1-2)**: 16–22, doi:10.1016/j.physletb.2010.11.070
- Aguilar J. A., Al Samarai I., Albert A., Anghinolfi M., Anton G. et al. 2010a. *Performance of the front-end electronics of the ANTARES neutrino telescope*. **Nuclear Instruments and Methods in Physics Research A** **622(1)**: 59–73, doi:10.1016/j.nima.2010.06.225
- ANTARES Collaboration, Aguilar J. A., Albert A., Anton G., Anvar S. et al. 2010. *Zenith distribution and flux of atmospheric muons measured with the 5-line ANTARES detector*. **Astroparticle Physics** **34(3)**: 179–184, doi:10.1016/j.astropartphys.2010.07.001
- Aguilar J. A., Al Samarai I., Albert A., Anghinolfi M., Anton G. et al. 2010b. *Measurement of the atmospheric muon flux with a 4 GeV threshold in the ANTARES neutrino telescope*. **Astroparticle Physics** **33(2)**: 86–90, doi:10.1016/j.astropartphys.2009.12.002
- Aguilar J. A., Albert A., Anghinolfi M., Anton G., Anvar S. et al. 2010c. *Rapid subduction in the deep North Western Mediterranean*. **Ocean Science Discussions** **7(2)**: 739–756

Gaia internal Publications

- Astraatmadja T. L.**, 2015a, *Astrometry and photometry in Ulysses*. Technical Report GAIA-C8-TN-MPIA-TLA-003, Max Planck Institute for Astronomy, Heidelberg
- Astraatmadja T. L.**, 2015c, *Ulysses user's manual*. Technical Report GAIA-C8-TN-MPIA-TLA-002, Max Planck Institute for Astronomy, Heidelberg
- Astraatmadja T. L.**, 2015b, *Ulysses: Principles and practice*. Technical Report GAIA-C8-TN-MPIA-TLA-001, Max Planck Institute for Astronomy, Heidelberg

Dissertation

- Astraatmadja T. L.** 2013. *Starlight beneath the waves: In search of TeV photon emission from Gamma-Ray Bursts with the ANTARES Neutrino Telescope*. PhD thesis, Universiteit Leiden, doi:10.5281/zenodo.48199

ANTARES internal Publications

- Astraatmadja T. L.**, 2012a, *On the detection of TeV γ -rays from GRB with km^3 neutrino telescopes: ANTARES's responses to downgoing muons*. Technical Report ANTARES-PHYS-2012-005, Nikhef, Amsterdam
- Astraatmadja T. L.**, 2012b, *On the detection of TeV γ -rays from GRB with km^3 neutrino telescopes: Simulation and optimization of three selected GRBs*. Technical Report ANTARES-PHYS-2012-006, Nikhef, Amsterdam

Conference proceedings

- Astraatmadja T. L.** 2012a. *Detecting TeV γ -rays from GRBs with km^3 neutrino telescopes*. In *Death of Massive Stars: Supernovae and Gamma-Ray Bursts*, volume 279 of *IAU Symposium*, pp. 321–322. doi:10.1017/S1743921312013154
- Astraatmadja T. L.** 2012b. *Neutrinos from GRBs and their detection with ANTARES*. In *Death of Massive Stars: Supernovae and Gamma-Ray Bursts*, volume 279 of *IAU Symposium*, pp. 323–324. doi:10.1017/S1743921312013166