

# Łukasz Tychoniec, Ph.D.

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ORCID ID: 0000-0002-9470-2358 Citizenship: Polish

## Research Profile

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Observational astrophysicist with over 10 years of research experience. Expert in using the Atacama Large Millimeter/submillimeter Array (ALMA) and James Webb Space Telescope (JWST) to observe protostars, their disks, and jets. Published 65 peer-reviewed works (6 as the first author) with over 2000 citations (h-index: 25). My research combines studies of early star formation with planet formation and evolution, placing me at the forefront of characterizing young, forming stars and their planet-forming disks with state-of-the-art observatories.

## Education

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### Ph.D. in Astronomy; Leiden University, The Netherlands

*Sept 2016 – Oct 2020*

*Supervisor:* Prof. Ewine F. van Dishoeck

*Thesis:* Protostellar jets and planet-forming disks: witnessing the formation of Solar System analogues with interferometry

### M.Sc. in Astronomy; Adam Mickiewicz University, Poznań, Poland

*Oct 2014 – July 2016*

*Supervisor:* Dr. Agata Karska

*Thesis:* First stages of star formation in Perseus molecular cloud observed in the infrared and radio wavelengths

### B.Sc. in Astronomy; Adam Mickiewicz University, Poznań, Poland

*Oct 2011 – June 2014*

*Specialization:* Artificial Satellites Applications

## Research Experience

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### Postdoctoral Researcher, Leiden Observatory

*Leiden, The Netherlands | Nov 2023 – Present*

- JWST-MIRI Support Scientist (2023 – Present).
- Allegro ALMA Regional Center (ARC) Support Scientist (2024 – Present).
- Independent research on the early stages of star and planet formation with ALMA and JWST

### ESO Fellow, European Southern Observatory

*Garching, Germany | Nov 2020 – Oct 2023*

- Conducted an independent research program on the early stages of star and planet formation using ALMA and JWST.
- Performed functional duties for the ALMA European Regional Center, including Helpdesk support and contact scientist duties for user observing programs.
- Served as Astronomer-on-Duty at the ALMA site in Chile.
- Contributed to the ALMA Development Study BRAIN (Bayesian Reconstruction by Adaptive Image Notion).

## Ph.D. Candidate, Leiden University

*Leiden, The Netherlands | Sept 2016 – Oct 2020*

- Researched observations of forming stars, their disks, and jets, with a focus on planet formation.
- Joined the MIRI European Consortium (JWST) in 2017, preparing scientific observations for the protostars working group and leading the jets working group for Guaranteed Time Observations.
- Served as a Teaching Assistant for the 2nd-year bachelor course "Galaxies & Cosmology" for three semesters.

## Summer Student (LEAPS), Leiden/ESA Astrophysics Program

*Leiden, The Netherlands | June 2015 – Aug 2015*

- "Characterizing Protostellar Disks and Jets with the Very Large Array" as part of the VANDAM Survey. Supervisor: Dr. John Tobin.

## Awards & Scholarships

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### Awards

- **Young Astronomer Award** of the Polish Astronomical Society 2025
- **FINCA Fellowship**, Turku, Finland (declined) 2023
- **ESO Fellowship**, Garching, Germany 2020
- **PSF Fellowship**, Heidelberg, Germany (declined) 2020
- **LEAPS Summer Studentship**, Leiden, The Netherlands 2015
- **Scholarship**, Polish Minister of Science and Higher Education 2015
- **Scholarship**, Rector of Adam Mickiewicz University, Poland 2015

### Funding

- **Lorentz Center** grant for workshop organization 21 000 EUR
- **NOVA** grant for workshop organization 4 000 EUR
- **IAU** Funding for the I-HOW workshop 35 000 EUR
- **Polish Ministry of Science and Higher Education** funding for the I-HOW Workshop 16 000 EUR
- **PROM** funding for the I-HOW Workshop 25 000 EUR

### Telescope time as a Principal Investigator

- **Atacama Large Millimeter/Submillimeter Array (ALMA)** 136 hrs total
- **James Webb Space Telescope (JWST)** 24.5 hrs total

## Professional Services (selected)

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- **Scientific Coordinator:** I-HOW JWST Hands-On Workshop for Central & Eastern Europe July 2025
- **Chair of the Scientific Organizing Committee** Lorentz Workshop: Protostellar accretion and ejection with JWST and beyond May 2025
- **Guest Editor** Frontiers in Astronomy and Space Science 2024-2025
- **External Reviewer** JWST Cycle 4 TAC 2024
- **Scientific Organizing Committee member** European Astronomical Society Session June 2024
- **Panel Member:** NASA ROSES 2023 Evaluation Panel 2023
- **SOC Member:** 6th Shaw Workshop 2024

- **Scientific Assistant:** Observing Program Committee at ESO 2021–2022
- **Mentor:** DUSTBUSTERS School May 2022
- **Peer Review:** Referee for MNRAS, ApJ, and A&A since 2019

## Supervision & Mentoring

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- **Daan de Jong**, Master Student, Leiden Observatory Sep 2025 - present
- **Anete Egline**, Master Student, University of Latvia Sep 2025 - present
- **Chloe Tap**, Master Student, Leiden Observatory Sep 2023 – Aug 2024
- **Adriaan Janssen**, Bachelor Student, Leiden Observatory Feb 2024 – Aug 2024
- **Daria Zaremba**, Summer Student, ESO July 2023 – Aug 2023
- **Tanya Kushwahaa**, Summer student, Leiden Observatory Jun 2022 - Aug 2022
- **Robert Jaros**, Internship, ESO Feb 2022 – Mar 2022
- **Helena Mazurek**, Internship, ESO July 2021 – Aug 2021
- **Paulina Palma Bifani**, Summer Student, ESO July 2021 – Aug 2021
- **Yuan Chen**, M.Sc. Project, Leiden Observatory Oct 2019 – July 2020
- **Micha Heilman**, M.Sc. Project, Leiden Observatory Oct 2019 – July 2020

## Selected Presentations

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### Invited Talks

- *European Astronomical Society meeting*, Padova, Italy (June 2024): "Protostellar disk masses: estimating reservoir of planet-forming material"
- *Raising the veil on star formation near and far*, Cambridge, UK (April 2024) : "Astrochemical diagnostics of protostellar sources: from ALMA to JWST"
- *Star@Lyon 2023*, Lyon, France (June 2023): "Protostellar disc masses: estimating reservoir of planet-forming material"
- *VLTI/ALMA Interferometry Workshop*, Garching, Germany (Jan 2023): "RESOLVE algorithm applied to ALMA observations"
- *MIAPP Workshop*, Garching, Germany (Oct 2021): "Chemical map of the Solar System analogues in the embedded stage"