

Ilya S. Khrykin, Ph.D

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🌐 <https://ikhrykin.github.io/>
🚩 citizenship: russian

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Education

- 2012 – 2016 📖 **Ph.D., Heidelberg University / MPIA (Heidelberg, DE)**
Thesis title: *Understanding the Sources of HeII Reionization*
Advisor: Dr. Joseph F. Hennawi
- 2010 – 2012 📖 **M.Sc. Physics, Southern Federal University (Rostov-on-Don, RU)**
Thesis title: *Simulation of global spiral structure of galaxies NGC 3982, NGC 4030 and NGC 5247 in the hydrodynamical approximation.*
- 2006 – 2010 📖 **B.Sc. Physics, Southern Federal University (Rostov-on-Don, RU)**

Academic Experience

- 2019 – 📖 **Postdoctoral researcher** at Kavli IPMU (Kashiwanoha, Chiba, JP)
- 2017 – 2019 📖 **Researcher** at Southern Federal University (Rostov-on-Don, RU)



Research Interests

- 📖 cosmology, cosmic reionization, the inter- and circumgalactic media
- 📖 quasars, co-evolution of supermassive blackholes and galaxies, fast radio bursts
- 📖 statistical methods and machine learning








Research Publications and Preprints

- 1 **Khrykin, I. S.**, Hennawi, J. F., Worseck, G., & Davies, F. B. (2021). The first measurement of the quasar lifetime distribution. *arXiv e-prints*, arXiv:2102.04477. arXiv: 2102.04477 [astro-ph.GA]
- 2 Worseck, G., **Khrykin, I. S.**, Hennawi, J. F., Prochaska, J. X., & Farina, E. P. (2021). Dating individual quasars with the HeII proximity effect. *arXiv e-prints*, arXiv:2101.01196. arXiv: 2101.01196 [astro-ph.GA]
- 3 **Khrykin, I. S.**, Hennawi, J. F., & Worseck, G. (2019). Evidence for short ~ 1 Myr lifetimes from the He II proximity zones of $z \sim 4$ quasars., *484*(3), 3897–3910. [doi:10.1093/mnras/stz135](https://doi.org/10.1093/mnras/stz135). arXiv: 1810.03391 [astro-ph.GA]
- 4 **Khrykin, I. S.**, Hennawi, J. F., & McQuinn, M. (2017). The Thermal Proximity Effect: A New Probe of the He II Reionization History and Quasar Lifetime., *838*(2), 96. [doi:10.3847/1538-4357/aa6621](https://doi.org/10.3847/1538-4357/aa6621). arXiv: 1611.05583 [astro-ph.CO]
- 5 **Khrykin, I. S.**, Hennawi, J. F., McQuinn, M., & Worseck, G. (2016). The He II Proximity Effect and The Lifetime of Quasars., *824*(2), 133. [doi:10.3847/0004-637X/824/2/133](https://doi.org/10.3847/0004-637X/824/2/133). arXiv: 1511.03659 [astro-ph.GA]
- 6 Khoperskov, S. A., Khoperskov, A. V., **Khrykin, I. S.**, Korchagin, V. I., Casetti-Dinescu, D. I., Girard, T., ... Maitra, D. (2012). Global gravitationally organized spiral waves and the structure of NGC 5247., *427*(3), 1983–1993. [doi:10.1111/j.1365-2966.2012.22031.x](https://doi.org/10.1111/j.1365-2966.2012.22031.x). arXiv: 1209.2879 [astro-ph.CO]

Grants

- 2018 – 2019  **PI**, *Co-evolution of quasars and the intergalactic medium at high redshifts*
1 million rubles grant for young scientists from Russian Foundation for Basic Research (RFBR)
- 2017 – 2018  **Co-PI**, *Probing the reionization epoch and the high redshift IGM*
Joint Russian/Indian grant from RFBR, PIs: Vasiliev E./ Sethi S.

Skills & Miscellaneous

- Programming codes  Python, C, Fortran 77/90
- Numerical expertise  MCMC and statistical analysis, radiative transfer algorithms, hydrodynamical codes
- Spoken languages  Russian (native), English (fluent), German, Japanese (both basic)
- Teaching experience  "Introduction to Astronomy" for B.Ss/M.Ss students [Fall 2013]
"Introduction to Astronomy" for high-school students [Fall 2016]
"How to teach astronomy in school" for high school teachers [Fall 2017]
- Observing experience  6 nights at 2.5m DuPont Telescope, Las Campanas Obs., Chile
- Service  **Referee** ApJ
LOC member: "Intergalactic Matters" workshop, Heidelberg, DE [June 2014]
LOC member: "From Wall to Web" conference, Berlin, DE [July 2016]
- Public outreach  Delivered public lectures at Festival of Science, RU [2017/2018]
"Astronomy on Tap" organizer, Rostov-on-Don, RU [2017–2019]
Co-host of the podcast about astronomy on Clubhouse [2021 – ...]

References

Dr. Joseph F. Hennawi

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Dr. Evgenii O. Vasiliev

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