Ilya S. Khrykin, Ph.D

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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. 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. 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. 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. 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, Russian Foundation for Basic Research (RFBR)

2017 – 2018 **Co-PI**, *Probing the reionization epoch and the high redshift IGM*
Joint Russian/Indian grant, RFBR, PIs: Vasiliev E./ Sethi S.

Selected Meetings

2019 Talk at "Cosmic Evolution of Quasars: from the First Light to Local Relics", Beijing, CH

2018 Talk at "IGM2018: Revealing Cosmology & Reionization History with the IGM", Tokyo, JP

2017 Talk at "National Russian Astrophysical Conference", Yalta, RU

2016 Talk at "From Wall to Web" conference (member of LOC), Berlin, DE

2015 Talk at "The Olympian Symposium: Cosmology and the EoR", Paralia Katerinis, GR

2014 Talk at "Intergalactic Matters" Workshop, Heidelberg, DE

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]
Co-organizer: Kavli IPMU Astro Lunch Seminar [2021 – · · ·]

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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