Olga Borodina

+7 9164378564
ol.borodina@icloud.com
Github: olgaborodina

Education

2019 – 2020 **Moscow Institute of Physics and Technology, Russia (MIPT)**,
B.S. in Applied Mathematics and Physics **GPA 4.98/5.0**
- Machine Learning, Data Analysis in Space Experiments, Plasma physics
- Thesis: "Unresolved Binaries in Open Clusters"

2015 – 2019 (transferred to MIPT) **Ural Federal University, Russia (UrFU)**, Astronomy
- General Math (Calculus, Linear Algebra etc.) and Physics
- Astrophysics, Galactic Astronomy, Astrometry, Observational Astronomy, Celestial Mechanics etc.
- Pedagogy & Psychology

Work Experience

July 2019 – now **Junior Researcher**, Institute of Astronomy, Russian Academy of Sciences (INASAN)
- Developed 2 methods for binary stars fraction measurement (using GAIA DR2)
- Researching clusters stability by running N-body simulations on GPUs

Feb 2016 – May 2018 **Junior Researcher**, Ural Federal University (UrFU)
- Estimated open clusters' hidden mass caused by unresolved binaries

Feb 2017 – May 2019 **Astronomy Teacher**, KantrSkrip school
- Developed Astronomy & Astrophysics courses for high school students
- Trained all-Russia Astronomy contest winner (2019)

Other Experience

May 2020 **Course "Data-driven astronomy"**, Coursera
- Practiced SQL, Astropy, ML tools with real data (SDSS, NASA Exoplanet Archive)

July 2018 **Internship**, Kourovka Astronomical Observatory
- Conducted spectroscopic observations using solar telescope and calculated gas velocity in prominences
- Learned how to service and point reflecting telescope
- Observed variable stars on the MASTER-II-Ural telescope and processed images

Publications

2020 **Borodina et al.**, Unresolved Multiples and Galactic Clusters' Mass Estimates, **ApJ** in press

2019 **Borodina et al.**, Unresolved Binaries and Galactic Clusters' Mass Estimates, **ApJ**

Conferences

2019 – 2020 **Annual conference for young scientists**, INASAN

2016 – 2019 **Annual conference "Physics of the Space"**, Kourovka Astronomical Observatory
- Coordinated entertainment activities (contests, intellectual games, excursions etc. for 100 attendees)

2018 **Poster presentation**, Ural Federal University

Skills

Astrophysics
- Photometric and spectroscopic data analysis, working with astronomical databases

Computer science
- Python (NumPy, SciPy, Pandas, Matplotlib, Scikit-learn), AstroPy, SQL, C++, TopCAT, Git, LaTeX

Soft Skills
- Teaching, management, presentation