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Prof. Anatoliy Tugay, Supervisor of Summer Internships
Prof. Vasyl Ivchenko, Astronomy Department Head
Taras Shevchenko National University of Kyiv

August 23, 2022

Report on Research Internship for Roman Akhmetshyn

Dear Profs. Tugay and Ivchenko,

Roman Akhmetshyn, a student in the Astronomy Department of Taras Shevchenko National University, has been working on a research project under my supervision in the Physics & Astronomy Department at Western University in London, Ontario, Canada between May 31 and August 23, 2022.

Roman's research has entailed the commissioning of science operations with the Colibri Telescope Array. Colibri is a set of three 50 cm telescopes equipped with CMOS cameras for rapid (40 frames per second) imaging. The science goal of the project is to conduct a survey for serendipitous stellar occultations by trans-Neptunian objects.

Roman has been a strong addition to the team. He quickly learned how to operate the observatory hardware and software systems on his own, and has been instrumental in resolving two critical issues on our path to science operations. Specifically, Roman:

- Designed and implemented an event-matching code as part of our data reduction pipeline. This code matches candidate occultation events detected independently by the three telescopes.
- Corrected our implementation of the astrometric distortion solution for the observed images against the Gaia astrometric catalogue.

Roman is now becoming responsible for day-to-day operations and quality checks of the Colibri Telescope Array. Overall, his performance is very good to excellent. I am grateful for the opportunity to work with him.

Sincerely,

Research Project Mark: 90/100

Stanimir Metchev