Japanese Research Title（First line, Align on center）
Report on the campaign observation at Athabasca, Canada on Sept 7th to 16th, 2023

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From September 7th to 16th, 2023, Prof. Shiokawa, Rei Sugimura and I made a campaign observation at Athabasca, Canada. We set up a ZWO all-sky camera (Z007) and a Nikon camera (C002) with an all-sky lens at Athabasca University Geophysical Observatory I (AUGO-I) for the campaign observation during our stay. We restored the ZWO camera before we come back to Japan, and leaved the Nikon camera at AUGO-I for continuous two-points observation with another Nikon camera at AUGO-II. During our stay, we successfully observed a minor auroral substorm, isolated proton aurorae (IPAs) and stable auroral red (SAR) arc.

We leave for Athabasca from Tokyo on September 7th. After about 20 hours of fighting and driving, we finally arrived at AUGO-II on September 8th, where we would stay for 7 nights during our field observations. AUGO-II is a wild observatory, which is ~25 km away from the nearby town Athabasca. At AUGO-II, we met and talked with Prof. Martin Conners, the director of AUGO-II. On September 9th, we checked the status of instruments at AUGO-II, and restarted the EMCCD camera and the Nikon camera. We also restored the broken riometer outside of AUGO-II. Then we drove to Athabasca University and met with Dr. Raju Aryal, and together we set up a ZWO camera with 630 filter and a Nikon camera at AUGO-I. After that, we started our campaign observation. We observed auroral activities during a minor substorm on September 10th. In the early evening of September 14th, we observed IPAs in the south and southwest sky at AUGO-II, though unfortunately it was cloudy at AUGO-I and thus the observation there was not well, Luckily, just after the clouds fade away, we successfully observed the appearance of a SAR arc from both sites. We will analyze the observational data in the future and summarize the results into a research paper if possible.

Finally, I would like to give my special thanks to PBASE project for supporting us to make field observations. I sincerely appreciate my supervisor for his navigation and valuable introductions. I also want to thank the local faculties, Prof. Martin Conners and Dr. Raju Aryal, for giving us places to set up instruments and other helps.

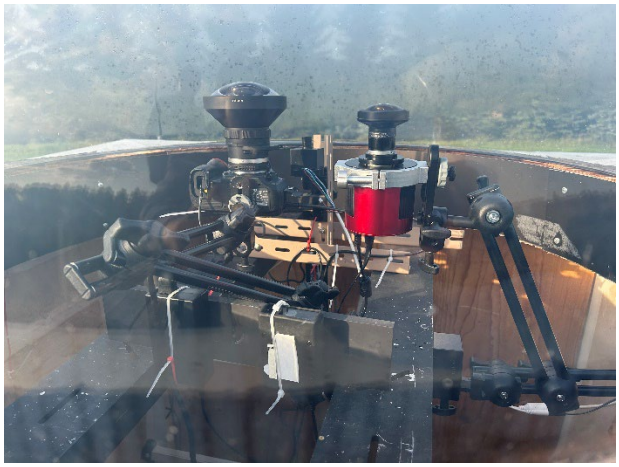

Figure 1. Nikon camera (C002, left) and ZWO camera (Z007, right) at AUGO-I

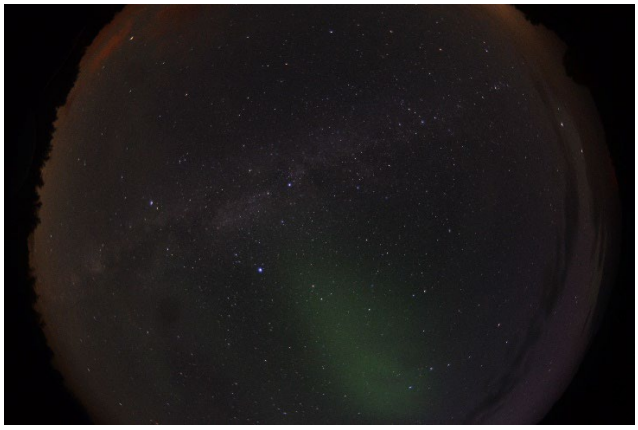

Figure 2. IPA observed at AUGO-II at 0348 UT on September 14th, 2023

Figure 3. SAR arc observed at AUGO-II at 0818 UT on September 14th, 2023

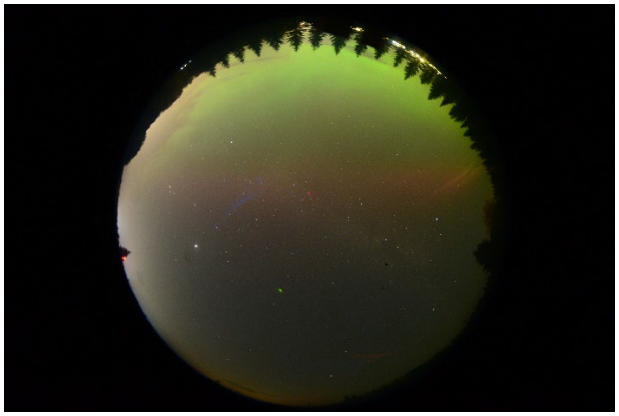

Figure 4. SAR arc observed at AUGO-I at 0818 UT on September 14th, 2023