

Report of EISCAT Symposium, EISCAT Radar School, and Field Observation 2024

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Dates: July 27 to August 18, 2023

Stay: Tromsø/Skibotn (Norway), Kilpisjärvi (Finland)

■ International EISCAT Symposium 2024 @ UiT, Tromsø (29 July - 2 August)

At the International EISCAT Symposium 2024 held at UiT the Arctic University of Norway, I gave an oral presentation in English on our research about the relationship between pulsating aurora and magnetospheric density duct. I was very nervous because it was the first time for me to give an oral presentation at an international conference, but I feel I made a big step forward as an experience to grow my internationality. I also had a discussion with Prof. Allison Jaynes of the University of Iowa about the electron density in the magnetosphere, and with Prof. Antti Kero of the Sodankylä Geophysical Observatory (University of Oulu) about EISCAT radar experiments related to our research.

In the afternoon of 31 July, there was an excursion to see the “EISCAT_3D” radar in Skibotn, which is the latest radar system (Fig. 2). The sight of ~10,000 antennas lined up was impressive. The 3D observations of the upper atmosphere are scheduled to begin near future, and I was even more looking forward to the day when we will be able to analyze the obtained data.

■ Setting up optical instruments @ Skibotn & Tromsø (3 – 11 August)

In Skibotn and Tromsø, we set up optical instruments with Prof. Yasunobu Ogawa (National Institute of Polar Research: NIPR), Dr. Mizuki Fukizawa (NIPR), and Mr. Tomotaka Tanaka (SOKENDAI) (Fig. 3). At Skibotn, we mainly checked the instruments and constructing the instruments. It was good opportunity to get an overview of the optical observation system. Also, we checked the optical dome for scratches and dirt and cleaned them.

■ International EISCAT Radar School 2024 @ Kilpisjärvi (12 – 16 August)

We attended the International EISCAT Radar School 2024 held at the Kilpisjärvi Biological Station (Fig. 4). We could have lectures on the history of EISCAT radar, achievements, observation principles, and data analysis methods over a period of five days. In addition, as group works, we proposed experiments of EISCAT radars, conducted it, and analyzed the

obtained data. On the last day, each group gave a presentation on the experiments. There was also an excursion to see the EISCAT_3D radar and the KAIRA (Kilpisjärvi Atmospheric Imaging Receiver Array) imaging riometer facility.

The participants were not only from Norway, Finland and Sweden, but also from the UK, France and Germany. Communication in English was very difficult. The lectures were of course in English, and group works needed the skill of using English. I tried hard to understand the lectures and the group work. By the end of school, I was able to communicate with participants.

I was happy to be able to learn about radar observations from basics and to interact with young researchers from overseas and professors who are deeply involved in the EISCAT radar.

■ Comments

I have been continuously working on pulsating auroras based on simultaneous observations by optical instruments, the EISCAT radar and the Arase satellite. While listening to many presentations and discussing our studies, I got new interests and approaches related to my own research. The visit to the EISCAT_3D radar and the KAIRA's observation facilities also gave me an opportunity to learn how the data to be obtained. Also, it was the third time for me to assist the install of optical instruments, and I felt that I understood the observation system better than before.

This three-week stay in Norway and Finland was a very valuable experience for me.