

R005-16

B会場 : 9/25 AM1 (9:00-10:30)

9:15~9:30

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Triangulation of a STEVE observed at Athabasca, Canada on Sept 3rd, 2022

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The Strong Thermal Emission Velocity Enhancement (STEVE) is a purplish westward surging arc which attracts much attention from the scientific community since 2016. In this presentation, we present a unique triangulation campaign of a STEVE observed on Sept 3rd, 2022, at Athabasca, Canada. For the first time we show the profile of STEVE altitude variation over time in 1-min resolution, for both the visible purplish arc and the green fence structures. All these STEVE altitude properties are obtained from triangulations made by several different cameras which were operated at two ~24 km separated observatories at Athabasca, Canada. We used two Nikon cameras to make the campaign observation. We also compare the images from Nikon cameras and an Optical Mesosphere Thermosphere Imager (OMTI) to see the difference between emissions at different wavelengths. The temporal profile of the visible STEVE arc shows that emission height around the zenith of Athabasca was stable at 150-170 km during its presence (~0546-0633 UT), except for a short elevation to ~200 km at 0600 UT. The green fence structures appeared at 0549 UT when the intensity of the STEVE arc started to intensify and only lasted for 7 minutes, and their altitude was maintained at ~110 km. In this presentation, we compare these results with previous STEVE studies about STEVE common properties, its possible generation mechanism, and its relationship with other subauroral phenomena.