

Triangulation of Sprites Excited by Wintry Lightning in the Hokuriku Region

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An image intensified CCD camera(IICCD) with a field of view of 30x38 and a VLF receiver were installed in Dodaira Astronomical Observatory(139.2N,36.0E),and a CCD camera with a field of view of 8.7x11.2 and a VLF receiver are installed in Sendai (140.9 N, 38.3 E) to capture sprites excited by wintry lightning in the Hokuriku region.

At 19:09:13 UT on 27 January,1999, we succeeded in taking CCD images of sprites from both sites. The location of the sprites is estimated to be above the Sea of Japan near the Noto Peninsula. The obtained altitude profile of sprites will be compared with those of sprites observed in Colorado in summer.

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At 19:09:13 UT on 27 January ,1999 , we succeeded in taking CCD images of sprites from both sites. The sprites occurred at a rang of the ~300 km from Dodaira in the northwest direction and at a range of ~400 km and in the west direction from Sendai. Therefore, the location of the sprites is estimated to be above the Sea of Japan near the Noto Peninsula. The spatial resolution of CCD cameras used at Dodaira and Sendai are 400 m and 90 m, respectively, for 300 km range. Sharp images of background stars were used to determine the exact field-of-view of CCD camera. Then, we have calculated the horizontal distance and the altitude of the sprites by triangulation. The obtained altitude profile of sprites will be compared with those of sprites observed in Colorad in summer.