

## Development of a ULF/ELF observation system in the 1-100Hz range at Syowa station

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From recent optical and magnetic observations of sprites and elves, it was found that ULF and ELF transients in the frequency range of 1-100 Hz are highly correlated with strong lightning discharges producing these luminous events. It is suggested that these waves can be observed in Antarctica since ULF and ELF transients can propagate within the ionospheric wave guide and within the entire Earth-ionosphere cavity, respectively. To observe these ULF/ELF transients at Syowa station in Antarctica, we are developing the observation system using search coil sensors.

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