

## Current status of Iceland-Syowa conjugate observation in 2019

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Current status of the upper atmosphere physics observation between Iceland and Syowa Station, Antarctica (geomagnetic conjugate observation) as of 2019 will be explained. Table 1 lists the instruments at the conjugate stations as of 2019. In the presentation, observation results especially during the conjugate observation period, March - April and September - October in 2019 will be shown.

Table 1. Instruments at Syowa Station, Antarctica, Husafell and Tjornes in Iceland for upper atmosphere physics observation.

Instrument	Syowa Station	Husafell	Tjornes
Fluxgate magnetometer	○ H,D,Z: s20Hz	○ H,D,Z: s20Hz	○ H,D,Z: s20Hz
Induction magnetometer (ULF)	○ H,D,Z: s20Hz	○ H,D: s20Hz, s64Hz (PWING)	○ H,D: s20Hz
VLF wave receiver (100–10kHz)	○ NS,EW: s20kHz	○ NS,EW: s40kHz	
Riometer (RIO)	○ 30MHz,38.2MHz: s20Hz	○ 30MHz: s20Hz s64Hz (PWING)	○ 30MHz: s20Hz
Imaging Riometer (IRIO), 8x8	○ 38.2MHz: s1Hz	○ 38.2MHz: s1Hz	
All-sky TV camera (Night viewer)		○ s30fps	
All-sky TV camera (Watec)	○ s3Hz, s7Hz	○ s7Hz	○ s7Hz
All-sky Color Digital Camera (CDC)	○ s30s		
All-sky monochromatic Imager	○ s15sec EAI (427.8,557.7), PAI (485.0,480.5)	○ s1.5min OMTI (557.7, 630.0, OH, 486.1) (PWING)	
Meridian Scanning Photometer (SPM)	○ s20Hz, 10sec/180deg 482.5,483.5, 484.5, 485.5, 486.5, 487.5, 670.5, 844.6	○ s20Hz, 10sec/180deg 482.5,483.5, 484.5, 485.5, 486.5, 487.5, 670.5, 844.6	
All-sky High-speed Aurora Imager (HAI) (EMCCD)	○ s100Hz		○ s100Hz
Proton Aurora Spectrograph (PAS)	○ s60sec, 417-579nm, Δ2nm, 180deg		○ s60sec, 417-579nm Δ2nm, 180deg
MF Auroral radio emission		○ 1–6 MHz, s1Hz	
Atmospheric Electric Field detector	○ s2Hz	○ s2Hz	