

Simultaneous 630.0 nm and 557.7 nm HF-pump enhanced airglow

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This report presents the first simultaneous images of HF-pump enhanced airglow at 630.0 nm and 557.7 nm caused by HF radio wave pumping in the ionosphere from the EISCAT-Heating facility.

The images show co-located enhancements implying that there are OID and OIS emissions from the ionospheric F region.

The maximum enhancement in the 630.0 nm patch is between 40 and 60 Rayleighs and the maximum enhancement in the 557.7 nm patch is between 10 and 20 Rayleighs for five different HF-pump pulses. The intensity ratio between 557.7 nm and 630.0 nm of 0.3-0.4 implies that the excitation is caused by a nonthermal electron population.