

VLF bursty-patches observed at PWING stations

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Recently, the new classification of “VLF bursty-Patches” has been established [1], unifying under a single definition multiple types of waves that were previously thought to be unrelated and that have been referred to with multiple other names (RREs, birds, bursty-patches, VLF bursts or patches, KHF-VLF emissions, etc.).

VLF bursty-patches were reported for the first time as short-duration bursty emissions observed above 4 kHz at subauroral latitudes in Athabasca, Canada [2]. Since 2006 they have been often observed at the Finnish Kannuslehto receiver (KAN, MLAT=64.4° L=5.5). The common trait of VLF bursty-patches is that they were all detected at unusually high frequencies, above both the local half and full electron gyrofrequencies (e.g., $0.5f_{ce} \sim 2.7$ kHz and $f_{ce} \sim 5.4$ kHz at KAN) [3]. This is interesting as it implies that VLF bursty-patches are traveling with oblique wave angles with respect to the local magnetic field lines, that is, unducted propagation in the magnetosphere. We investigated if these emissions were observed at other VLF receivers around the world.

In this presentation, we will show VLF bursty-patches observed at multiple PWING stations (e.g., KAN, OUI, IST, and GAK)

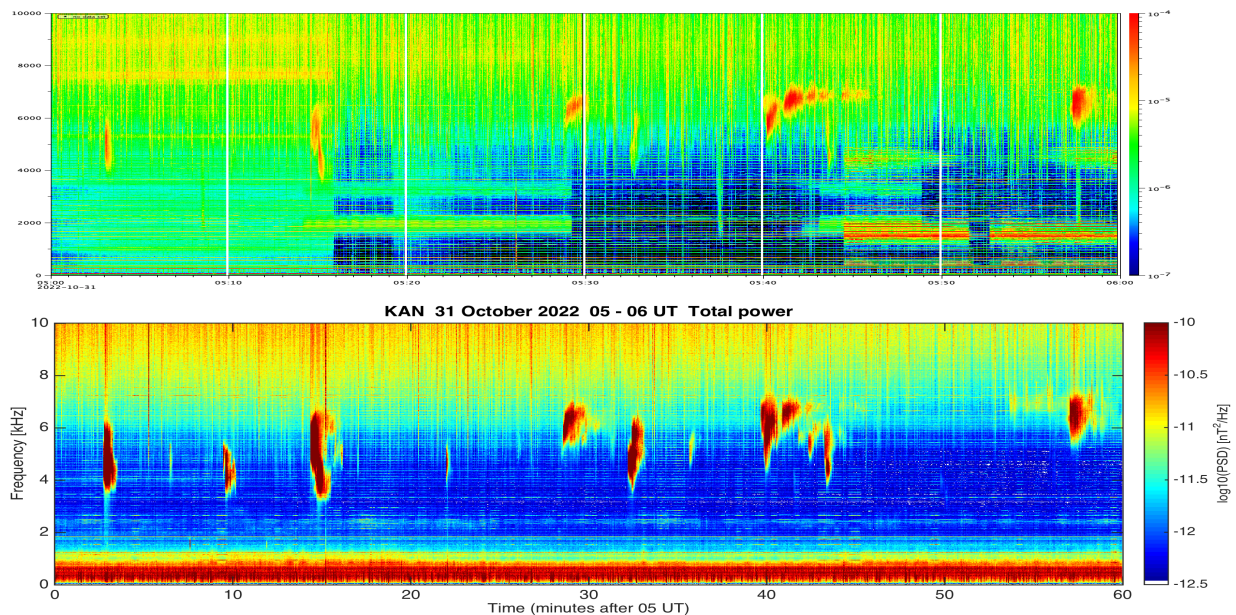


Figure 1. One hour example of VLF bursty-patches observed on 31 Oct 2022 at OUI (top) and KAN (bottom).

References

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