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To: EDGES group

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Subject: Solar emissions for 20 days in 2024 compared with same days in 2025

Memo 494 summarizes the emissions seen in the EDGES-3 data from the WA averaged over one hour data blocks when sun's elevation is between -20 degrees and the horizon. In this memo the data from the WA in 2025 for two sets of 20 days are compared with the same day of the year numbers in 2024.

The data is averaged over the frequency range 55 to 102 MHz with 5 loglog terms removed. The solar emission feature observed from day 40 to 60 in 2025 was present every day with a peak of about 4 K at about 64 MHz from day 40 to 49 and 59 to 60 but more than doubled in strength from day 50 to 58 except on day 51. This result is shown in the left plot in Figure 1 while the plot on the right shows the data the same day numbers in 2024. The same days are shown to reproduce the same foreground geometry for comparison which might correspond to a change propagation of the signal around the globe. It is interesting that a strong signal is seen on day 60 peaking at about 66 MHz. Unfortunately there is no data after day 60 in 2024 until day 73.

A similar 20 day comparison between 2025 and 2024 days 251 to 271 shown in Figure 2 shows that the strength of the 64 MHz peak is fairly constant from day to day and significantly stronger in 2025 than in 2024.

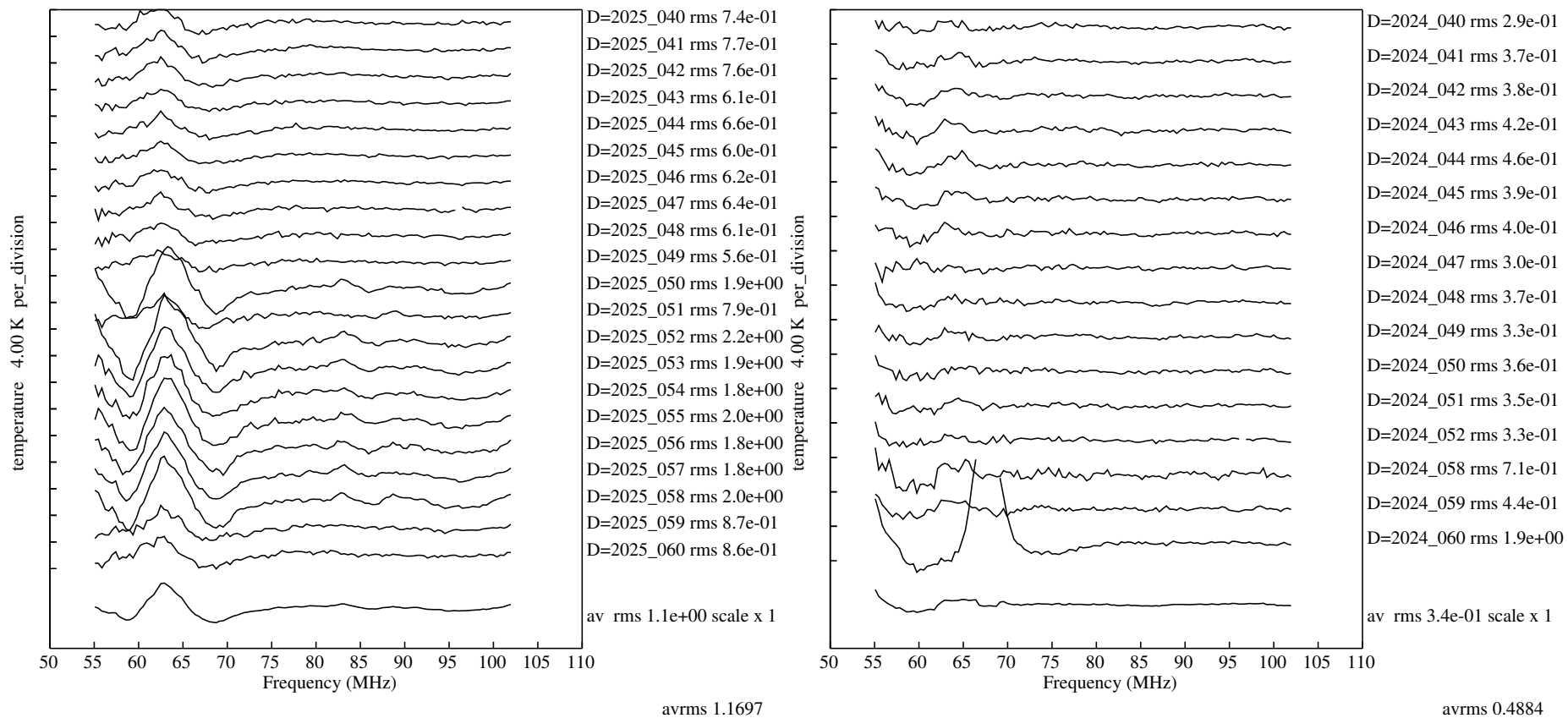


Figure 1. Comparison of EDGES-3 data from the WA averaged over one hour blocks with sun's elevation -20 deg to 0 deg.

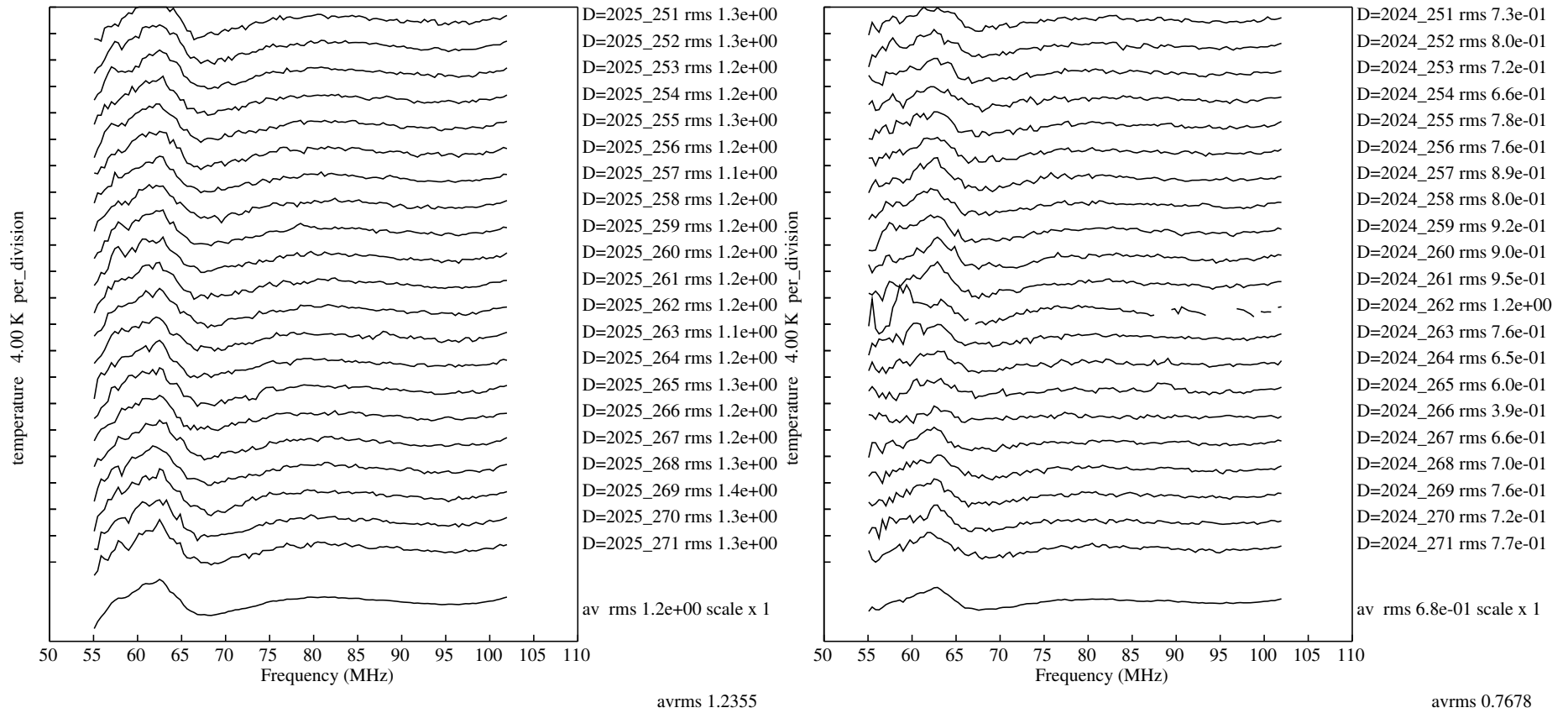


Figure 2. Comparison of EDGES-3 data from the WA averaged over one hour blocks with sun's elevation -20 deg to 0 deg.