

Title: The 2024 Halloween flare and transiting two ghosts

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The Sun was eerily active during the week of Halloween 2024.

A vigorous region appeared from the Northeast limb on 10/28 with a few M-class flares and was given a name of NOAA 13878.

This region evolved to have a highly complex magnetic configuration and was classified as a beta-gamma-delta type on 10/31.

Appropriately for this classification, NOAA 13878 produced an X2.0 flare at the night of Halloween (10/31 21:12 UT)!

What is more remarkable is that NOAA 13878 formed a reverse-S shape, looking like a ghost floating in the corona! In reality, this S-shape is called a 'sigmoid', known as a flare-prone structure of active regions. East of the sigmoid is its neighbor, NOAA 13879, which somehow looks like another ghost facing NOAA 13878.

After the X class flare on Halloween night, these two ghosts face-to-face have flown to the West until disappearing behind the Northwest limb.