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A comet-like ionosphere at Venus in tenuous solar wind

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A very tenuous solar wind regime, following a series of large coronal mass ejections, impacted Venus during early August 2010. STEREO-B downstream from Venus observed that the solar wind density at Earth orbit dropped to $\sim$ 0.1 #/cm3 and persisted over 1 day. A similar low value was observed at Earth in 1999 and had attracted comprehensive attention [Lazarus, Science, 2000], especially its consequences on Earth's ionosphere and magnetosphere [Lockwood, Nature, 2001]. We therefore have an opportunity to examine the response of Venus' ionosphere to such a tenuous solar wind. Venus Express spacecraft observed that the nightside ionosphere extended to at least 2 RV to the Venus center, resembling a cometary ionosphere.