

Detection of Venus Tail Rays Near Earth

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In June, 1996, the planet Venus passed through a very close inferior conjunction with the Sun, At that time the CTOF detector of the CELIAS experiment on SOHO was measuring heavy ions in the solar wind from near the Earth's L1 Lagrangian point, 45 million km downstream of Venus, Close to the time predicted by simple geometric arguments for passage of SOHO through the Venus wake, CTOF detected cold beams of O^+ and C^+ ions moving with approximately the solar wind speed. Three such events were detected, each lasting less than a minute, with a mean flux of $\sim 3 \times 10^3$ ions/cm²s. The ratio C^+/O^+ was ~ 0.1 . It is argued that these beams are Venus tail rays, as distinct from pickup ions which would be traveling on large cycloidal trajectories.