



Venus Lightning: VEX Measurements over Three Venus Years

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At low altitudes in the magnetized Venus ionosphere, the Venus Express magnetometer observes strong circularly polarized bursts of noise near the Nyquist frequency of 64 Hz. These waves can exceed 1 nT peak to peak. They are not seen when the local magnetic field is horizontal or when it is weak. This indicates that the magnetic conditions at low altitude are important for the propagation and coupling of the waves to the atmospheric source. The statistical properties of the waves are similar over the three years we have examined to date. The combined results of the VEX and PVO measurements suggest that lightning can occur at any local time and latitude. Although the rate of occurrence appears similar to that on Earth, the frequency spectrum is probably not the same.