

あかつき電波シンチレーション観測による太陽近傍の太陽風速度 Solar wind velocities near the sun observed by Akatsuki radio scintillation measurements

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Radio scintillation observations of the solar wind velocity at the heliocentric distances of 1.5-20.7 solar radii were conducted during the solar conjunction of the Japanese Venus explorer AKATSUKI during June 6-July 8 in 2011. One-way, X-band down-link signal stabilized by an onboard ultra-stable oscillator was transmitted from the spacecraft and received by an open-loop recording system at the Usuda Deep Space Center. Spectral analyses of the intensity fluctuation (scintillation) provides the velocity of the solar wind. Velocities were derived even in the 'strong scattering' regime near the sun for the first time by comparing the observed scintillation spectra with theoretical ones for strong scattering conditions. Simultaneous observations with a space solar telescope HINODE were also conducted over 4 days around the period of the minimum solar offset distance.

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