



Bow-shocks in transit observations of extrasolar planets

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The close-in, giant planet WASP12b has shown an early ingress in the near-UV wavelength during the transit of its F-type host star. This is a detection of an asymmetric circum-planetary environment for which two possible scenarios were put forward: forward-directed accretion stream in analogy to close binaries, and the interaction of the planetary environment with the stellar wind. We have investigated under which conditions a bow-shock can form in the second scenario. Depending on the relative velocity of the planet to the star, this shock will be ahead of the planet, day-sided (as on Earth) or it might trail the planet as observed from Earth.

With the observational determination of the stand-off distance between the shock and the exo-planet, one can infer the planetary magnetic field intensity, provided the stellar magnetic field is known.