

Turbulence, Waves and Rotation in the Solar Interior

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The Termination of the Supersonic Solar Wind

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Recently the two Voyager spacecraft crossed the first major heliospheric boundary, the solar wind termination shock. Voyager 2, which has an operational plasma instrument, observed the fine-scale details associated with the transition across the shock. One interesting observation is that the solar wind remains supersonic in the post-shock region, known as the heliosheath. This is, of course, not possible since a shock wave is a transition from

supersonic to subsonic flow. The answer to this puzzle comes from recognizing the fact that the Voyager plasma instrument is incapable of measuring an important constituent of the plasma in the outer heliosphere, ionized interstellar atoms. This physics of the structure of the termination shock, and how it accelerates charged particles that ultimately become cosmic rays will be discussed in this talk.

Atmospheric Circulation of Hot Neptune GJ436b

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