VOYAGER RESULTS ON THE TERMINATION SHOCK AND HELIOSHEATH

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Voyager 1 crossed the termination shock in December 2004 and Voyager 2 in August 2007. Each spacecraft entered the foreshock region about 2.5 years before their respective termination shock crossings. Both spacecraft are now the region of shocked solar wind called the heliosheath. This talk will review the pre-encounter expectations for the regions near the termination shock based mainly on modeling.
The observations will be shown and compared to these predictions. The new picture of the outer heliosphere modified by the recent observations and augmented by models will be described. Many findings were not generally expected, although in some cases they had been predicted by some in the literature. The termination shock is blunt, flattened near the nose region and may be larger in the azimuthal than meridional directions. The shock itself was fairly weak, with a shock strength near 2, and the energy dissipation at the shock went primarily into the heating of pickup ions. The heliosphere seems to be asymmetric, pushed in at the south by the magnetic field in the local interstellar cloud. Contrary to expectations, the source of the anomalous cosmic rays was not found where the Voyager spacecraft crossed the termination shock; new theories as to the source region will be discussed. The exploration of the heliosheath has provided many surprises; recent data will be shown and how these data fit into current theories will be discussed.

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