

Heliosphere/ISM Interaction

Terminology

- Termination shock: where the supersonic solar wind (400-800 km/s) becomes subsonic and heated (94 AU for Voyager 1)
- Heliopause: Interface around the Sun between the subsonic solar wind and ISM plasma (~150 AU)
- Bow shock: where the incoming ISM (26 km/s) becomes subsonic (~250 AU). May not shock depends on magnetic field.
- Hydrogen wall: Pileup of neutral H gas mostly in upwind direction with charge exchange (150-250 AU)
- Plasma models: include electromagnetic and gravity forces on all ionized particles (either as one or multifluid models)
- Kinetic models: treat neutral particles (e.g. H) with long path lengths by Boltzmann equation or Monte Carlo techniques.
- Pickup ions: interstellar neutrals that are ionized (photoionization or charge exchange) and captured by the solar wind magnetic field and accelerated at the termination shock.