Heliospheric Current Sheet

Two views of the Heliosphere: Left: seen from above the Sun’s North Pole; the Equator is in the plane of the Figure. Right: a meridional cut from pole to pole with the Equatorial plane perpendicular to the cut in the middle of the Figure.

The magnetic field, $B$, is a box near the outer limit of the heliosphere is in the equatorial plane, thus shows as red arrows on the left and red arrowheads and tails on the right.

The electric current, $J$, of the HCS in the same box is perpendicular to the magnetic field, thus shows as blue arrows on the right and blue arrowheads and tail on the left.

An observer at the green dot will see the magnetic field carried by her by the solar wind, changing sign every 1-2 weeks and the current will then switch direction too, alternating between pointing North and pointing South.