Fast and slow solar wind

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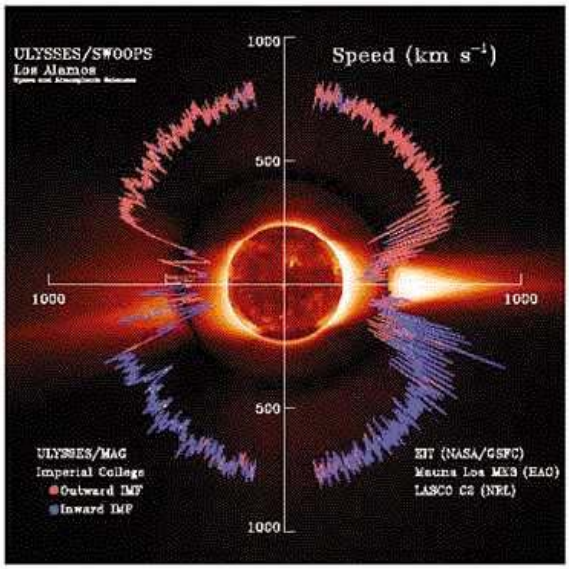
The solar wind escaping from the coronal holes has a speed of about 800km/s. Near the heliospheric current sheet (HCS), the contact area between the solar wind coming from the northern and the southern poles, the speed is lower, some 400 km/s. One speaks of fast and slow solar wind.

There where fast solar wind catches up with slower wind that was emitted earlier, a collision zone or shock front is produced.



McComas, D.J., et al., Geophys. Res. Lett., 25, 1-4, 1998

As slow wind is connected to the HCS, we only find such collision zones near the HCS. The fast solar wind pushes the slow wind and compresses it. The structure of the solar wind can therefore be very irregular near the HCS. This kind of collision region generally arises only after a while, mostly when the solar wind passed the Earth's orbit. Since the streams with fast and slow wind can last for months, one can follow these collision regions during successive solar rotations. Therefore one speaks of corotating interaction regions (CIRs).