



Hot and cool polar coronal jets - coordinated SOHO and TRACE observations

D. Dobrzycka (1), J. Raymond (2), E. DeLuca (2), J. Gurman (3), D. Biesecker (4), A. Fludra (3)

(1) European Southern Observatory (Danuta.Dobrzycka@eso.org/+49 (89) 3202362), (2) Harvard-Smithsonian Center for Astrophysics, (3) NASA Goddard Space Flight Center, (4) NOAA/Space Environment Center

The polar coronal jets were first observed by SOHO instruments (EIT, LASCO, UVCS) during the last solar minimum. They were small, fast ejections originating from flaring UV bright points within large polar coronal holes. The polar holes disappeared at solar maximum and the jets were not visible anymore. Currently, however, as the Sun's activity reaches minimum, the polar holes again became permanent structures. In order to study origins and dynamics of the jets throughout the solar cycle the special SOHO Joint Observing Program (JOP 155) was designed. It involves a number of SOHO instruments (EIT, CDS, UVCS, LASCO) as well as TRACE. The coordinated observations have been carried out since April 2002 with latest observing run in February this year. The data enabled to identify counterparts of the 1996-1998 solar minimum jets. Their frequency of several events per day appear comparable to the frequency from last solar minimum. Also, the speed of 400 km/s at 1.6 Rs is consistent with typical velocities of originally observed polar jets.

The ejections are believed to be triggered by field line reconnection between emerging magnetic dipole and pre-existing unipolar field. Current models predict that the hot jet is ejected together with another jet of a cool material. The coordinated SOHO and TRACE observations provide unique opportunity to test this prediction.

We will present the JOP 155 observations and discuss evidence supporting the model.