



Samples of Coronal Mass Ejections (CMEs) in the Declining and Minimum Phase between Solar Cycles 23 and 24

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Observations of interplanetary scintillation (IPS) can provide velocity and g -level values for the solar wind structure and allow for the possibility of reconstructing the inner heliosphere in three dimensions in both velocity and density, but coverage is not always complete. The Solar Mass Ejection Imager (SMEI) observes Thomson-scattered white light from heliospheric electrons across the sky much of the time, and observes heliospheric structure throughout a very large portion of the inner heliosphere almost all year round. IPS data have been used from the Solar-Terrestrial Environment Laboratory (STELab) IPS observations to provide velocity and g -level values (a proxy for density), in conjunction with the University of California, San Diego (UCSD) three-dimensional (3D) tomographic reconstruction program, to yield velocities and densities of the inner heliosphere out to around 3 AU. A second determination substitutes SMEI brightness information for the g -level values to derive the heliospheric density. The global structure of the heliosphere throughout this time was studied, and a sample of some CMEs was taken and here a brief summary of the results is shown. Attempts are made to isolate the particular portion(s) of the heliosphere attributed to different events, and then estimates of their masses are undertaken. The results are also compared with the STEREO Heliospheric Imager data where and when possible.