



The LYOT+ UV/EUV instrumentation for measuring the magnetic field in the corona

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The solar corona is the seat of a variability which involves basic processes of plasma-magnetic field interaction in the universe, while also being a source of disturbances for spacecraft, technology, and possibly for human beings. Of special interest are coronal mass ejections (CMEs) with their associated Eruptive Prominences (EPs). Since they are basically driven by instabilities of the magnetic field in the corona, the measurement of the magnetic field before, after (and during) the event is critical in the corona. Also of interest for these studies and the source of the solar wind, the radial velocity of the plasma is a critical parameter to be determined. We present a new proposal to CNES called LYOT+ which meets the above-mentioned objectives: measurement of the coronal magnetic field up to 2 solar radii, of the electron density and the radial velocity. These measurements are complemented by EUV images of the underlying corona providing plasma diagnostic and magnetic field morphology. We describe the proposed combination of EUV imager and VUV and visible coronagraph. A main feature of the proposed instrumentation is the extended overlap of the fields-of-view of both instruments. In our presentation, we focus on the polarimetric concept which leads to the determination of the magnetic field through the Hanle effect. We also mention the extensive studies already performed in designing the instrumentation and testing parts of it. In summary, science, instrumentation and constraints on missions on which LYOT+ could be implemented, are presented.