

**Precursors, Associations and Aftereffects to
Coronal Mass Ejections**

S. F. Martin (Caltech, Div. of Physics,
Math and Astronomy, 264-33, Pasadena, CA
91125; 818-395-3853: email:
sfm@sundog.caltech.edu)
(SPD-AAS Sara F. Martin)

J. Feynman (JPL, Pasadena, CA, 818-354-2881)

Large-scale, slow coronal precursors, called 'bugles' were found by Hundhausen (J. Geophys. Res. 98, 177) to precede many coronal mass ejections by up to 4 days. Feynman and Martin (1994 submitted to J. Geophys. Res.) found evidence of a temporal and spatial association of a bugle with a new and growing active region. The growth of the new region was the only major magnetic flux change beneath or in the vicinity of the inferred, three-dimensional, large-scale envelope of the bugle and CME. Using quiescent disappearing filaments as proxies for CMEs, we also found statistical evidence that the disappearance of a majority of filaments, and hence CMEs, are related to major new active regions emerging on the same time-scales and intervals as bugles. In addition, we demonstrate a much lower incidence of disappearing filaments in the absence of the emergence of major active regions. In this presentation, full disk HeI images from NSO/Kitt Peak are used to illustrate some little-known visible after-effects at 10,830A of the eruption of filaments and CMEs. Possibilities are discussed for relating characteristic signatures of filaments and CMEs at the sun to properties observed in the interplanetary medium.

1. 1994 Spring Meeting
2. Sara F. Martin
3. (a) S.F. Martin, Solar Astronomy 264-33 Caltech, Pasadena, CA 91125
(b) Tel: 818-395-3853
(c) FAX: 818-395-3814
4. SPA Solar and Heliospheric Physics
5. (a) Solar Interplanetary Disturbances
(b) 7509,7524,7835
(c) N/A
6. Oral
7. 0
8. \$60 check enclosed
9. I (by Session Chair, N. Crooker and S. Kahler)
10. None
11. No