B. L.
Alterman
SwRI
J. C. Kasper, BWX Technologies
R. J. Leamon, University of Maryland Baltimore County
S. W. McIntosh, NCAR
Poster
We study the solar wind helium-to-hydrogen abundance’s (AHe) relationship to solar cycle onset. Using OMNI/Lo data, we show that AHe increases prior to sunspot number (SSN) minima. We also identify a rapid depletion and recovery in AHe that occurs directly prior to cycle onset. This AHe shutoff happens at approximately the same time across solar wind speeds (vsw) and the time between successive AHe shutoffs is typically on the order of the corresponding solar cycle length. In contrast to AHe’s vsw-dependent phase lag with respect to SSN (Alterman and Kasper, 2019), AHe shutofff’s concurrence across vsw likely implies it is independent of solar wind acceleration and driven by a mechanism near or below the photosphere. Using brightpoint (BP) measurements to provide context, we infer that AHe shutoff is likely related to the overlap of adjacent solar cycles and the equatorial flux cancelation of the older, extended solar cycle during solar minima.
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