



## **Does the Mantle Impose a Structure on the Geodynamo That Dictates Paleo-Geomagnetic Behavior? New Results from Fish Lake, Oregon**

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Paleo-geomagnetic observations provide fundamental models of the core and the geodynamo that cannot otherwise be obtained. Data and modeling studies are beginning to show that regions of concentrated magnetic flux (flux lobes) on the Core-Mantle boundary, those observed historically and others only hinted at from the short historical record, impose a structure on the geomagnetic field that may govern at least some components of geomagnetic change. Accumulating evidence suggests that this structure reflects the influence of the lower mantle, yet this structure and the evolution of the geomagnetic field within it, even for the Holocene, are only beginning to become apparent. Comparison of specific, well-dated Holocene timeseries of PSV (sedimentary and archeomagnetic) inclination, declination, and paleointensity at key locations can provide intriguing insight when viewed through the lens of the known historical and assumed millennial flux lobes. A limiting factor for these studies is the uneven distribution of high quality data with independent chronologies, with Europe and the North Atlantic having better constrained data sets than North America. To begin to fill this data gap, we present initial results from an ongoing study of the paleomagnetic record from Fish Lake, Oregon. Initial evaluation of directions and intensity along with the construction of an independent chronology allow us to assess and build upon prior results to constrain the evolution of the North American flux lobe and refine our understanding of paleo-geomagnetic change during the Holocene.