Abstract Submitted
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Solar Magnetism and Effects on Earth[1] E. ZITA, NIGHT SONG[2], Evergreen St. College, Olympia WA 98505, MAUSUMI DIKPATI, ERIC MCDONALD, HAO/UCAR, Boulder CO 80303 — Will the next solar maximum cause the biggest magnetic storms in our lifetime? What is at the heart of the Sun's magnetic dynamics? What effects can this have on Earth? Dikpati's solar dynamo model (2004) shows how flows and magnetic fields interact with each other nonlinearly in the Sun's convection zone, and predicts details of the Sun's magnetic dynamics (Zita et al. 2005). Our current "solar minimum" is the calm before the storm. Around 2011, sunspots, solar flares, and coronal mass ejections will increase in number and intensity, as the Sun reverses its magnetic field. We will discuss why the Sun's magnetic field reverses each decade, and how these reversals affect space weather and life on Earth. Finally, we will address the model's recent prediction that the coming peak in solar magnetic activity could cause the most intense magnetic storms on Earth since 1958 (Dikpati et al. 2006).

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