

Abstract Submitted
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Long Term Variations in the Obliquity of the Earth GREGORY NEWSTADT, AMY GIRKIN, S.G. ALEXANDER, Miami University — A Hermite integrator with individual time steps (HITS) was used to simulate the orbital and rotational dynamics of the Earth. The Earth's obliquity was calculated including and not including the effects of the other planets and the Moon. Without the Moon, the Earth's obliquity was found to vary between 8.7° and 35.3° with a general period of about 500 kyr. With the Moon though, the Earth's obliquity was found to be much more stable with variations of only $\pm 0.5^\circ$ and a period near 36 kyr. Thus, the Moon can be thought of as a climate regulator as suggested by Laskar (1993). Further study is planned to study the effect of the Earth's oblateness on its obliquity, as well as the effect of each individual planet on Earth's obliquity.

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