

Abstract Submitted  
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**The effect of sunspots cycle on satellite orbit** M.A.K. LODHI, Texas Tech U — A satellite, traveling through the atmosphere, experiences a drag directly dependent on the atmospheric density. The fluctuation in the density thus affects the satellite's orbit. The effect of solar modulation, via Earth's atmospheric density, is experienced the satellite. A test case of a satellite orbit has been worked out to demonstrate this effect. The altitude of the satellite SSN 2909 for a period starting from 1970 to 2007 has gone down from 7290 km to 7170 km with a variation in the fall for certain periodic intervals. The satellite fall is much steeper for certain intervals and very gentle for the other intervals for about the same durations. The variations for those intervals correspond to the rate of change of altitude with respect to time for the same intervals. This shows that the fluctuations in the density do affect the satellite's orbit, which in turn are in exact agreement with fluctuations in the sunspots cycle. It is thus concluded that steep falls in the satellite's altitude occur when the sunspots activity is high and gentle changes occur during the low sunspots activity.

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