

Interactive comment on “Atmospheric drag effects on modelled LEO satellites during the July 2000 Bastille Day event in contrast to an interval of geomagnetically quiet conditions” by Victor U. J. Nwankwo et al.

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We are particularly thankful to the reviewers for their time and effort. To begin our response to their highly esteemed comments we want to note (as they also noted) that the goal of this paper is very clear and without ambiguity. The title, abstract and conclusion also conveyed the specific accomplishments and what makes it differ from previous work. The statement that ‘our findings are not particularly surprising’ is not intended to make light of the accomplishment of this work. Neither does it imply or suggest that the ‘work does not contain any new ideas’. Besides preceding the inclusion of a very im-

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portant analysis, the statement is meant to ‘whet the appetite’ of the readers/scientific community preparatory to anticipated more profound findings that can lead to improved satellite ephemeris estimates using a new model that is now under formulation (which includes the results of analysis made in this paper).

We now highlight some important scientific contribution of this work (1) Given the great scientific interest in the Bastille Day great geomagnetic storm and its space weather consequences (particularly on orbital drag), this paper increases the visibility and better contribute to the scientific body of knowledge surrounding the Bastille Day events (2) this work also doubles as a strong review paper because it presented extensive details/review on atmospheric drag (and its relevance) in relation to solar activity, against properly referenced background of existing work. The significant number of readers who have interacted with this manuscript on this platform (and others) certainly did because of its relevance to them or their research. I am also aware of authors who have cited this paper in their new manuscript (3) the latter analysis (in this paper) that contrasted the interval of quiescent solar-geomagnetic activity with the Bastille Day event/perturbed condition is very instructive and important. This analysis motivated the development of new method and indices for description and estimation of drag effects on satellite ephemeris (comparing 2 regimes). We are now in the process of combining satellite drag model with high-fidelity atmospheric specification to produce such realistic estimation model (beginning with the results in this work).

Therefore, we do not agree that our paper does not provide significant scientific contribution. We would rather appreciate that the reviewer be generous to suggest content-wise inclusion or modification that will increase quality or form the ideas that the reviewer deems ‘new’ as an expert in lone with the purpose/goal of paper review. Thank you very much.