Review of “The boundary of nighttime ozone chemical equilibrium as an indicator of local chemistry disturbances in the polar mesopause region” by Kulikov et al.

The authors have revised the manuscript in response to comments from the two reviewers. I appreciate the improved discussion of the general response to major dynamical disruptions in the Northern Hemisphere winter. While the manuscript is much improved, additional minor revisions are suggested before final publication.

Minor & Editorial Comments

1. l. 197: “exited” -> “excited”
2. After describing plots for individual years (Figures 6 and 7), the paper turns to a discussion of a few anomalous years (l. 322-365). Only after that does it address what, to this reader, is the notable result from the paper, viz. the sharp and persistent changes in z_{eq} that results from elevated stratopause events (l. 366-403). Wouldn’t it make sense to rearrange the text in order to highlight the stronger, more notable results first?
3. l. 453: I think “и” should be “and”
4. Eq. (7) and (8): These are confusing because of difficulty distinguishing *O* (oxygen) and *0* (zero, indicating the initial time). Please consider different nomenclature. Also, just below this, it is confusing to see *T* used as a temporal duration when it was earlier used as temperature.
5. l. 463: “regim” -> “regime”
6. l. 472: “… imposes strong constraints on the O concentration…” Do you mean to say it imposes constraints on the derivation of the O concentration? The criterion is used for evaluation and does not, of course, control the O itself.
7. l. 489: For the benefit of readers who did not see the earlier draft of the paper, please be explicit about what the “previous” rate constants are.