Dear Reviewer 1,

We sincerely thank you for your thoughtful and constructive review of our manuscript, *"Framing the Orbital Commons: Public Discourse and LEO Sustainability After the Starlink Gen2 Approval."* We greatly appreciate your positive assessment of the manuscript and are encouraged by your view that the paper would make a useful contribution to discussions of space ethics, Science and Technology Studies, and geoscience communication. We are particularly grateful for your recognition of the clarity of the analytical framework, methods, and discussion.

We have carefully considered all comments and have revised the manuscript accordingly. Below, we respond to each point in detail.

General comment

Reviewer comment:

"The paper would likely make a welcome addition to discussion of space ethics in the Science and Technology Studies and adjacent fields, and may be of interest to the broader public and the media as well. I believe the paper merits publication in EGU GC."

Response:
We sincerely thank the reviewer for this encouraging assessment and for recognizing the potential contribution of the manuscript to discussions surrounding space ethics, Science and Technology Studies, and geoscience communication. We appreciate the positive evaluation of the analytical framework, methods, and discussion sections. The manuscript has nevertheless been revised extensively in response to the reviewer's suggestions in order to further strengthen its methodological transparency, theoretical grounding, and communication relevance.

Comment 1

Reviewer comment:

"It would be helpful to say more about how posts on X were selected. Were the 5 terms listed ("Starlink", "FCC", "approval", "Gen2", "expansion") the only ones used? Or were there others? Was an "and" or "or" logical filter used? It seems surprising that only 268 posts were made matching those search criteria during the 20-day window."

Response:
We thank the reviewer for highlighting the need for greater methodological clarity. Section 3.2 has been substantially expanded to provide a more detailed explanation of the search strategy. The revised manuscript now explicitly states that data collection employed an event-focused keyword strategy centred on the terms *"Starlink," "FCC," "approval," "Gen2,"* and *"expansion."* Because NodeXL's Search Network import relies on keyword-based searches rather than Boolean operators, multiple searches were conducted independently using these event-specific terms, and the resulting datasets were subsequently merged and deduplicated.

The manuscript now further clarifies that the study intentionally adopted a narrow, event-specific approach. Rather than collecting all Starlink- or SpaceX-related posts, only posts substantively referring to the FCC approval of the Starlink Gen2 expansion were retained following manual screening. Consequently, the initial corpus of 268 posts represents approval-related discourse rather than the substantially larger volume of routine launch-related or promotional Starlink discussion.

These revisions have been incorporated into Section 3.2 (Data collection).

Comment 2

Reviewer comment:

"Providing additional sample posts from X earlier in the manuscript would help the reader understand the nature of the data."

Response:
We appreciate this suggestion and agree that illustrative examples improve reader understanding of the dataset. Accordingly, we have added a new table to the Methods section that presents paraphrased examples of the main communication types in the corpus, including institutional announcements, news-style reporting, technological benefit narratives, and sustainability-related posts.

To protect user privacy and reduce traceability, examples are paraphrased rather than reproduced verbatim, while preserving their substantive meaning. This new table is presented in Section 3.2.

Comment 3

Reviewer comment:

"The manuscript would benefit from some additional discussion of possible intrinsic bias of using X. What are known demographics of X users and posters? How could that affect the measurements and conclusions?"

Response:
We thank the reviewer for this important observation. A new discussion has been added to Section 5.7 (Limitations and directions for future research). The revised manuscript now acknowledges that X users do not constitute a representative sample of the broader population and that users are often more politically engaged, technologically oriented, and demographically concentrated than the general public.

The manuscript further discusses how platform algorithms may shape issue visibility and amplify particular narratives, thereby influencing observed framing patterns. We therefore clarify that the findings should be interpreted as reflecting discourse within a specific digital public sphere rather than broader societal attitudes toward orbital sustainability.

Relevant references to Pew Research Center (2024), López-Rabadán (2021), Bucher (2018), and Gillespie (2018) have been incorporated.

Comment 4

Reviewer comment:

"When sustainability risks remain peripheral in public communication, they are less likely to be integrated into policy prioritisation or regulatory design ... Examples from other fields and case studies would help support this assertion."

Response:
We agree with the reviewer that comparative examples strengthen this argument. Section 5.6 has therefore been revised to incorporate examples from climate-change communication and biodiversity governance. Specifically, the revised text now references studies demonstrating that limited public visibility of climate risks contributed to delayed policy responses despite strong scientific consensus, while insufficient salience of biodiversity loss similarly constrained policy prioritization despite extensive ecological evidence.

These additions provide empirical support for the broader claim that communication visibility influences governance outcomes.

Comment 5

Reviewer comment:

"When communication emphasises regulatory procedures and technological benefits while limiting the salience of environmental risks, it constrains the scope of public engagement and reduces opportunities for broader accountability. Examples from other fields and case studies would help support this assertion."

Response:
We thank the reviewer for this suggestion. The discussion has been expanded to include examples from debates surrounding climate mitigation technologies and nuclear energy. Prior research in these fields demonstrates that communication centered primarily on technological performance and institutional procedures can marginalize broader environmental uncertainties and reduce opportunities for public deliberation and accountability.

These comparative examples have been incorporated into Section 5.6 to strengthen the discussion.

Comment 6

Reviewer comment:

"A public that is better informed about both the benefits and risks of space technologies is more likely to participate in discourse that holds institutions accountable and supports policy

approaches aligned with long-term sustainability objectives. Examples from other fields and case studies would help support this assertion."

Response:
We appreciate this recommendation. Section 5.6 has been revised to draw on scholarship from environmental risk governance and climate adaptation. The revised discussion now highlights evidence demonstrating that improved public understanding of scientific risks and uncertainties can facilitate citizen participation, strengthen institutional accountability, and increase support for sustainability-oriented policy measures.

Relevant references to Boykoff (2011) and O'Neill et al. (2015) have been incorporated.

Technical correction 1

Reviewer comment:

"Ostrom 1990: reference is missing."

Response:
Thank you for identifying this omission. The complete bibliographic reference for Ostrom (1990), *Governing the Commons: The Evolution of Institutions for Collective Action*, has now been added to the reference list.

Technical correction 2

Reviewer comment:

"Kohl et al. 2025: DOI link not working."

Response:
We thank the reviewer for identifying this issue. The DOI has been corrected in the revised manuscript and now reads:

https://doi.org/10.22323/151320250630102925

Once again, we thank the reviewer for their constructive comments and positive assessment of the manuscript. We believe that the revisions undertaken in response to these suggestions have substantially strengthened the methodological transparency, theoretical grounding, and overall contribution of the study.

Sincerely,

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