Abstract Evaluation

Name of Editor: \_\_\_Shiloe Fontes\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Identify the below sections in the abstract – if you identify them, copy and paste the text/summarize as instructed. In all cases, add comments if: something is missing, the text could be made clearer and/or the arguments stronger.

* Started with one or two facts that relate to the problem statement (copy them here)

The Large Magellanic Cloud (LMC) is on its first infall to the Milky Way (MW) and is expected to significantly perturb the MW’s dark and stellar halos due to its large mass (~10% of the MW).

*Is there another fact that you could add as to why understanding the infall would be important?*

* Explained why these facts are important (copy line here)

The proximity of the interaction between the LMC and MW presents a crucial opportunity for studying the dynamics of galaxy mergers.

*What might be an opportunity to really drive home why its important?*

* Introduced the problem (rewrite the problem in your own words)

*Recent dark matter (DM) only N-body simulations of the LMC/MW interaction predict that the passage of the LMC has formed non-equilibrium structures in the MW’s halo, however this phenomenon has not been confirmed observationally.*

As the LMC begins its infall into the MW, recent N-body simulations of dark matter (DM) have shown that non-equilibrium structures have formed; however, it has yet to be observed.

* Stated the goal (copy it here)

Using these stars as tracers, we will construct a novel map of the LMC-induced structure in the density field of the MW’s halo. Our map will constrain the orbit of the LMC and by extension the LMC and MW masses.

* What is the key component? (your words)

The all-sky surveys

* What is the target? (your words)

A map of the LMC’s effect on the MW’s halo

* Explained the strategy. (copy here)

We propose to conduct the first-ever observational search for the effect of the LMC on the MW’s halo by utilizing the all-sky coverage and best-available astrometric accuracy of the *Gaia* and *WISE* surveys. To maximize the chance of a detection, we will select a sample of giant stars at 60 < Rgal < 100 kpc where the LMC’s effect is strong and contamination from other effects is minimized.

* Stated the importance of the solution *to the subfield*  (copy here)

Our results will also establish whether the common assumption that the MW’s halo is in dynamical equilibrium is valid, which has important consequences for any study of MW dynamics.

* Explained the broader implications of results to *other subfields*  (copy here)

Furthermore, comparisons to *N*-body simulations can be used to probe the physics of the DM particle

*Overall, this reads well but I am wondering if you need to be as specific as the types of stars/their distances/etc in the strategy of the abstract versus being more vague here and more specific further on in the paper. I might suggest putting more emphasis on why the data would be important versus being more specific on some of the details (but I could be wrong!).*