

We thank the referee for their report and appreciate the thorough reading of the paper. We have addressed each item and provide details below. Referee requests are in black, while our replies are in blue.

We note a minor change beyond that requested by the referee: A revised CaT calibration was published by Navabi+25, which is an update to the Carrera+13 calibration that we used in the original manuscript. This updated calibration uses the same functional form with revised coefficients. We have implemented this calibration which largely affects metal-rich stars ($[\text{Fe}/\text{H}] > -1.5$), at the 0.1-0.2 dex level. This does not meaningfully affect our memberships or published metallicity for W1.

- > Abstract
- > -‘handful’ of binaries — please be more precise
- > -‘clear non-members’ — quantify.

We have specifically quantified the number of binaries and non-members in the abstract.

- > Intro
- > -page2: “ . At the time of discovery, “ ... unclear if this is referring to the 2023 HST observations or 2006 Willman paper ... please add a date.
- > — also this sentence seems out of place Why are you saying this at the end of all the analysis and followup papers over 18yrs? Should be stated up front in this section or somewhere else.

We specified the date of discovery with a reference and moved this sentence for logical flow.

- > sec2.1:
- > “Four of these masks were published in Willman et al. (2011), and a fifth mask was first presented in Martin et al. (2007). “
- > — the earlier 2007 data be presented first in this sentence
- > — please list the 4 data PIs in this section in brackets for completeness -Rich, Geha, Brodie, Chapman (even though I understand they are listed in the table).

We reversed the sentence as suggested and added the PI names in brackets for completeness.

“We have photometry and were able to measure radial velocities for of these sources. “ — why is there not photometry for all sources?

“a handful of broad-line quasar spectra. “ — Please avoid ‘handful’ and just state how many.

Photometry is not available for six stars with measured radial velocities, all of which are automatically non-members based on their velocities. There are 14 broad-line extragalactic sources and we have added this number to the text.

Sec3.1 - membership determination section is well done, exploiting the author’s past careful and

well calibrated work in this domain ... I don't have any suggestions or concerns

We appreciate this comment!

Sec4: “. We first determine the velocity dispersion of W1 and infer the dynamical mass if this system is in equilibrium (§4.1). Next, we measure the mean metallicity and metallicity spread for W1 (§4.2). “

— please cut this from sec4 preamble ... it's not needed, wasted space, and isn't normal scientific presentation. The two subsections describing the same thing suffice.

We have removed these lines from the preamble as suggested.

4.2: the CaT metallicity analysis seems very conservative to me ... and leads to statistics based only 6 stars! Can stacks of spectra be adopted, and other approaches to include more of the DEIMOS data to reinforce the Metallicity spread found from these 6 RGB stars?

The CaT calibration is only valid for RGB stars ($M_V < 3$). Stacks of spectra cannot be adopted because this empirical calibration explicitly depends on the absolute magnitude of the individual star.

Metallicities can be estimated with higher S/N data or from other wavelength regions (e.g., bluer CaHK); however, this would require a significant investment of additional observing resources and is beyond the scope of this current work. The current S/N is insufficient to perform reliable spectral synthesis for the metal-poor MSTO stars.

Sec5 — should conclude something about there being no credible evidence for mass segregation, and reinforce the implications.

We have added a concluding sentence to Sect 5.

Sec7.2: “While these simulations are not quantitatively perfect ...”

— rephrase and expand on this to be more precise about the implication here

“These structural properties are consistent with other tidally disrupted dwarf galaxies (e.g., Kirby2015)” — please be more specific about what ‘consistent’ means here. This statement is too loose for the discussion.

We have modified the discussion in Sect 7.2 to be more specific and clear.