Review of: "The Milky Way Radial Metallicity Gradient as an Equilibrium Phenomenon: Why Old Stars are Metal-Rich"

Chris Flynn[1,2]

1 Centre for Astrophysics and Supercomputing, Swinburne University of Technology, Australia
2 ARC Centre of Excellence for Gravitational Wave Discovery, Melbourne, Australia

Potential competing interests: No potential competing interests to declare.

This is the first time I am using Qeios.

Comments on the paper: “The Milky Way radial metallicity gradient as an equilibrium phenomenon: Why old stars are metal-rich”

by Johnson et al

This was a very enjoyable paper to read and comment on – there are excellent and very interesting results on both the observational and theoretical fronts. I have somewhat of an outsider's view as I've been working in other areas of astrophysics for about a decade, and it was wonderful to see how far the field has come. My comments are shown directly on the attached PDF of the paper. They are all pretty minor and are mostly suggestions for clarification based on what wasn't fully clear to me, especially on the first read-through. I am most familiar with the observational side of the paper, which is where most of my comments are made. My knowledge of GCE models is quite limited and definitely out of date compared to the detailed models being discussed, so I have fewer comments in that part of the paper. For a number of the figures, I've suggested adding legends, as they were a little hard to tease implications from the captions alone (or some info was missing in the captions; I've indicated where I think that's the case). The conclusions of the paper are very clearly drawn and fully justified by the analysis, caveats about the study are well made, and there are good prospects for future work. I hope my comments are useful. Well done to the authors!