

## ***Interactive comment on “Tree-grass phenology information improves light use efficiency modelling of gross primary productivity for an Australian tropical savanna” by Caitlin E. Moore et al.***

**Anonymous Referee #3**

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The utility of phenology information for improving GPP modeling results is an important research objective and I find the present work interesting and relevant. The paper is well written, methods are sound and results are carefully discussed. However, descriptions are generally very (too) detailed and several sections would benefit from a slightly more concise format. The structure of parts of the methods section should also be improved for improved overview, flow and clarity.

Some detailed and relatively minor comments:

1. Page 1 L32: An R2 of 0.09 – 0.23 does not constitute a well correlated relationship

C1

as I see it.

2. Page 2 L16: I believe fire should be capitalized as in “..2015). Fire..”
3. Page 3 L19: What does the A2/A3 refer to? Is this information needed here?
4. Page 3 L20: MOD17 is mentioned to provide the most reliable means of estimating large-scale productivity. In comparison to what other products/estimates? MOD17 is known to be associated with significant uncertainty (related predominantly to the specification of the effective LUE), and I'm not convinced it will outperform other products given a full suite intercomparison.
5. Page 3 L23: “Core issues surrounding...”; Odd sentence. Suggest rewording. The full sentence structure (L23 to L28) should be rewritten for better language and clarity.
6. Section 2 introduction (Page 4): This intro piece doesn't outline the overall methodology well and/or the sub-division of the methods sections. I would probably leave it out completely or provide a more elaborate and cohesive piece.
7. Page 6 L2: I don't think that it is necessary to know the type of coding language (Python) used..
8. Page 6 L31: “f/stop”?
9. Sections 2.3 and 2.4: The methods are described in great detail. I would suggest reducing the wordiness as much as possible only including the most essential elements.
10. Section 2.4: I would include separate sub-sections for the phenocam and radiation data processing for improved flow and readability. Line 13 on page 8 could be the start of the LUE sub-section.
11. Page 7 L24-26: I feel that this information is redundant.
12. Page 8 L22: Shouldn't leaf absorptance be considered in the APAR calculation? You are using fPAR and not fAPAR, right?

C2

13. Page 8 L24-: The information on LAI collection, clumping etc is out of place. You will need a separate section on this.
14. Page 10 L1-4: Is it valid to adopt the default MOD17 savanna values for your study site? Did you verify these against the tower observations?
15. Section 3.1 is very detailed and would benefit from a more concise format, if possible.

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