Dear Editor,

We thank you for accepting our manuscript and we thank the referees for their time and contributions. They helped us improve our interpretation and discussion and we hope that they will also like this last version better. Here are our replies to your requests:

The authors revised the manuscript taking into account all the feedback received. I am happy to accept the work for publication. Congratulations!

Thank you very much. We are extremely happy to see this work being published in Biogeosciences.

Just some technical corrections:

1) please add scale bars to Figure 1, panels e and f. In panel c, I believe the scale bar can be aligned to the one in panel d (i.e., moved it to the bottom left of the panel).

Done. We have tried different configurations and hope the ones we came up with is suitable.

2) Figure 3, panel a - it should be (a). Panel f. Can "f" be moved to right, towards the corner (like in the other panels) for consistency?
Done. We tried to have as much consistency as possible without hiding any feature on the different panels.

3) Figure 4, panel i. There is a grey heading on top of the top x-axis. Is this supposed to be there?
We could not see it on the pdf document. We hope it is gone now.

4) The lines in Figure 7 are still present within the figure. There is also a grey 'g' at the corner of the top left panel.
Here again, we could not see it on the pdf document. We have nonetheless edited the figure and hope it is now fixed.

5) Lines 506-524. I understand the reasons why the authors moved this part to Section 3.3 -- however, it really reads more of a discussion of the results rather than a description of data.
We have moved again the text and tried to further reduce it to avoid being too long on discussions regarding the distribution of phosphorus in the cytoplasm.

We also performed extremely minor adjustments on figure 2 to homogenize arrowheads and panel letter positions, as well as on figures 6 and 9 where we slightly readjusted the positions of a few elements in the figure. We corrected a few additional typos in the text and readjusted the title for the supplementary material pdf document, in agreement with the new title (without mention of phosphorus). However, we forgot to change the online title as we submitted the revised version, and it seems that we cannot correct the title anymore as we only submit a corrected version. We apologize for this. We also removed the colors from table 2 as requested.

We thank you again for the time and consideration you, and the referees, gave to our work.

Best regards,

Guillaume Paris, on behalf of all co-authors