

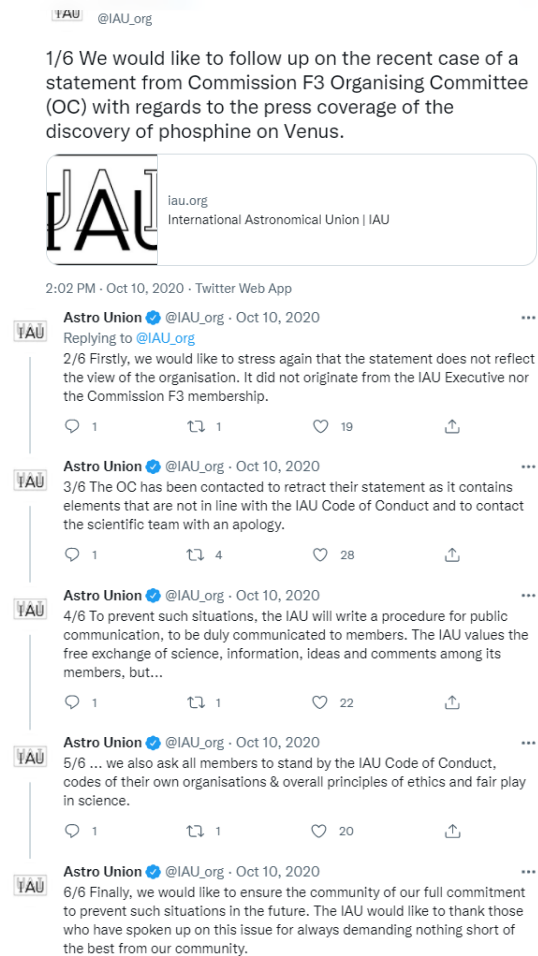
EXPERIENCES OF “OUTSIDERNESS” IN PLANETARY SCIENCE. J. S. Greaves¹, ¹Cardiff University, School of Physics & Astronomy, 4 The Parade, Cardiff CF24 3AA, UK; greavesj1 at cardiff.ac.uk.

Introduction: The unexpected finding of a phosphine signal in the atmosphere of Venus was announced through an event designed by science communication experts from multiple organisations. The resulting public response was one of excitement, and the media reports that were seen by the discovery team were balanced, mentioning that phosphine was a candidate biosignature but other explanations were possible and further exploration is vital. Unfortunately, the response to these unexpected results from the professional scientific community was less welcoming. The original science team was led by radio astronomers, not well known to the planetary science community. This raises the question *are outsiders to planetary science welcome in doing planetary science?*

The phosphine results were released with with a clear declaration by the team that “we are not claiming to have discovered life”. Nevertheless, the team was publicly rebuked for their announcement by the IAU, in a statement that turned out not to reflect the views of IAU members, and had to be retracted (see figure) with apologies. Subsequently, NASA’s “Standards of Evidence of Life Detection” workshop was reported in news outlets as “aimed” at the phosphine-discovery team (who were not invited to participate).

The scientific community’s response to the publication raises issues over whether it is wise to adopt Open Science principles, in particular when many team members are from minoritised groups. The phosphine team released all their materials publicly, perhaps to an unusual extent, including links to all data processing scripts and offering data-products accessible to citizen scientists. In particular the release of scripts seems to have eased the way to some mis-use (unsuitable manipulations), disparaging comments when bad results were then obtained (“sorry for this bad news”), and follow-up work that was not accompanied by openly released methods.

One software insight was contributed anonymously from the wider community that led to improved data-products, as the discovery team had hoped by their Open Science approach. Further, a successful search for further open data was made, contributing to one aspect of interpretation. However, assumptions that the original team lacked expertise seem to have become widespread in some parts of the community, and the toll on the discovery team due to reported “bad faith actors” has been considerable. A major concern is how junior team members’ careers might be impacted.



Implications: Contributing to planetary science while coming from another discipline may be unwelcome. The phosphine team followed the principle of inclusion of everyone contributing, with an author list spanning a junior telescope operator and a senior NASA consultant. As a result, only ~10% of the paper’s authors were familiar to the planetary science community. Even having decades of professional attainments appeared not to convey credibility. Factors in such disrespect may have included the team’s data-experts being women, or being employed outside the US, or working primarily on non-planetary objects.

This abstract is submitted under the conference goal to “identify opportunities for improvement by listening to those most impacted in our community”. It is hoped that discussion in a respectful environment will promote a more inclusive planetary science community in the future, where “outsiders” feel welcome to investigate any topics that inspire them.