

Dr Phil Davies replies to the legal experts:

Dr Philip De Man's legal report (July 2022) is an excellent critique. There were, however, a few incorrect assumptions (the laser beam encompasses the full diameter of Mars rather than targeting smaller areas; the arriving laser photons have greatest effect upon the surface of Mars – the release of CO₂ is just one of the surface effects). So, Dr Davies replied to Dr De Man with several clarifications (see below). Both Dr Davies and Dr de Man were content that the main thrust of the report was unaltered by these clarifications (so no need to revise the report).

Dr Davies replies to Dr De Man (July 2022)...

"... If I am to proceed with the project, then your report provides great guidance on how any chance of success might be maximized. It also points to elements within the project strategy that would need to be enhanced and highlighted.

For instance, I agree that I must now make it abundantly clear that our desire (communal co-claimants) to possess/control the Martian land is very real. The ultimate goal for safer, responsible and vibrant space exploitation (hopefully via space law development and an agreed light-touch governance body) would surely become more achievable if our primary goal is realised: that being our equitably shared possession/ownership of Martian land and the productive, responsible, equitable use of Martian land resources. Similarly, family happiness/prosperity (and quality food for others) should be more achievable if arable land is first possessed and then responsibly/productively farmed by a farming family.

I also agree with your two options for next steps towards enhancement/consolidation. I intend to do both. If handled well, they could prove synergistic. The second, establishing an actual possessory connection to Martian land, is resource intensive. Although I have suggested that a very powerful space-based laser could display more measurable overt effects to the claimed planet, it brings much complexity ... not just in the technical requirements, but the risk of negative consequences. If mass sublimation of CO₂ is part of any strategy to create and maintain a Martian atmosphere, then it should probably be done within the shortest time period (hence Elon's proposed nukes). A substantial partial release would probably not be helpful and may prove a set-back. It is still an option (access to space is getting cheaper year on year, excepting the current fuel crisis). BUT, I do believe that the Space/STEM-studies scholarships is a good plan and very feasible. These can only happen with a large membership (>5 million), which is achievable. Funds raised from primary and secondary sales (transfers associated with non-fungible tokens) will be invested into multiple annual scholarships awarded to successful student applicants within our member's families. This should create many motivated subject matter experts who become informal ambassadors for the project. Some will remain motivated towards space industry. We will further reward those who become early miners/settlers on Mars (>50 years away?). If space law was to evolve towards tolerance of private celestial land ownership, then with an argument for inchoate title since 2010, those members who become early Martian settlers

might be legally agreed to have perfected the communal claim. I would hope that would then facilitate the automatic perfection of the entire claim, for the benefit of all. A lot of what ifs, I know. I agree that integration with space industry could be instrumental towards the realisation of our goals (whether that is building space-based lasers or delivering claimants/miners/settlers to Mars) ... but that will need careful negotiation to avoid unsatisfactory compromises.

Other matters to clarify ...

Unfortunately, I failed to advise you that Prof Von der Dunk had presumed a more limited, targeted possession of some areas of Mars ... not the entire planet. I did explain this to him (but the report remains as is). It was/is clearly stated in our science page, FAQs and "?" section that the powerful and tightly collimated laser beam diverges (1.5mRad) such that by the time it gets to Mars it is wider than the planet. So, this means that each time we target Mars, we impact almost half of the planet (the facing surface area). Mars rotates on a tilted axis (similar to Earth), so over the 26-month orbital cycle (Earth-Mars opposition to next opposition) there will be a similar experience (wrt intensity of laser photons) for nearly all Martian land. The exception is the polar regions which have rather less exposure to direct laser (less than half - due to axis tilt & view from Earth). Thus, with quadrillions of photons impacting the entire planet Mars (at times >10 quadrillion per second), we affirm that we are claiming "embryonic possession" of the entire planet (land - but also the sparse atmosphere). Given that the planet is clearly a discrete entity, there is no requirement for "fencing" or further demarcation of the land claimed.

The other thing I should clarify is that the physical effects from the impacting photons are multiple. There will be some limited atmospheric absorption and scattering, but most effects are on/within the planetary surface. The powerful photons can break chemical bonds and apply heat/spin to atoms. This may affect H2O ice and create reactive CO2 radicals. It also does liberate CO2 molecules into the atmosphere. The reason I have stressed this trivial CO2 effect is that on a much larger scale, CO2 release is what Elon Musk (and others) propose might deliver a greenhouse effect and the generation of an atmosphere (which would mean easier human settlement - no pressure suits - and feasible surface water/lakes). He has suggested detonating thermonuclear bombs over the poles... but very powerful lasers (including solar-pumped lasers) are also proposed for this. So, the effects, although physically trivial, are mostly @ planetary surface - but the CO2 release was most "news-worthy" because it points to the "way forward." I have termed it a small beneficial effect ... but I accept that the trivial nature might mean it is unacceptable to call it beneficial.

I do not see any need to slightly edit your report ... the explanations above do perhaps address some of your more secondary concerns, but the main thrusts of your report remain clear and unaltered.

Again, I am delighted to receive this great piece of work. I accept that it is critical, as it must be."

Dr Davies forewarns legal experts about future media encounters...

A media piece in the Express (UK tabloid newspaper) in August 2021 was focussed on this Mars Land Claim ... it also captured comments from several elite legal scholars.

Unfortunately, the reporter misunderstood the nature of The Martians' communal claim of possession (early possession of all land on Mars) ... he understood this to be the same as a claim of ownership. This is a huge error. Ownership is not currently possible/legal.... de-facto possession is. Our claim is of de-facto possession.

The scholars were already very aware of our claim, but when asked if they could validate our claim of Martian land 'ownership', the lawyers were compelled to strongly refute any such thing. It made for a messy, confusing article... and yet there are some information gems within the replies from the experts...

'Dr P.J. Blount is an adjunct professor in Air and Space Law at the University of Mississippi School of Law.

He told Express.co.uk how he has been monitoring the "interesting and creative project" and stressed that he agreed with the "underlying philosophy".'

'Prof von der Dunk says that the current activity "potentially might" serve in the future as "giving rise to legal ownership rights," if there is a change in the treaty.'

Dr Davies realised that he needed to remind the experts that most journalists are likely to confuse possession with ownership ... so in early 2022 he wrote to most of them by email. He stressed again that it was early de-facto possession (communal) that is being claimed, and that such possession could not be converted into ownership/property without a change in space law (or at least a shift in the interpretation of core space law). The purpose of this clarification was to guard against a repeat of this confusion in any future media coverage – especially where legal experts are to be interviewed. The credibility of The Martians' project can only be enhanced if such confusion is eradicated.

Dr Philip Davies

Director

Mars Register Ltd

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