

# Report from Dust Mitigation Monthly Meeting

*July 2020*

## Notes From Discussion

Question re: whether information about whether the settling rate of particles of different sizes has measured stratification rates yet.

Recommendation to review the lunar source book  
(<https://ntrs.nasa.gov/search.jsp?R=19920057201>)

Question from Pradeep in chat - what is the power requirement of the electrodynamic dust removal system presented here, and what criteria should be kept in mind when designing alternative solutions?

Overall a low power system. High voltages are present but don't create a circuit. Overall power draw from electronics is low (milli watts). Power to the dust shield, including control, are on the order of a couple of watts.

Alternative solutions should work well in a relative environment, low mass, low power, low volume. Dust clearing ability, time and effort input, should all be considered.

Question re: whether partnerships with non-university institutions are possible for the Big Idea Challenge.

Big Idea Challenge is primarily focused on universities.

Question re: concerns about electrical discharge due to dust.

Scientists and engineers are still debating impacts. System dependent. Having a toolbox of options is important for a robust dust mitigation strategy.

Question re: plans for mitigating risk from rocket plumes.

Currently a number of studies underway for rocket plume impingement in entry, descent, and landing (Michelle Monk). Outputs from plume surface interactions become inputs for dust mitigation. Data being collected from existing and planned landers. Technology sensing platforms being developed and used to get data re: plume interaction.

Question re: timeline for dust mitigation efforts with respect to the planned landing in 2024.

STMD is working with HEOMD and SMD to build 'toolbox' of solutions. Some components are long term, others are short term. B/c of quick turnaround for 2024, will likely see significant dust mitigation ramp up as sustained presence continues.

## Notes From Chat

Disappointment that LuSTR solicitation didn't include dust mitigation as a topic (though it was mentioned as part of LSII)

Mention of 'burnt' smell of lunar regolith, need for understanding potential health hazards with regards to a sustained human presence.

Question from Pradeep re: power requirements & criteria, answered in discussion notes

Question re: electrical discharge due to dust, answered in discussion notes

Question re: plans for dust mitigation from rocket plume / surface interactions, answered in discussion notes

Mention of several NASA-funded payloads on CLPS missions in the near future that will measure plume / surface interactions

Suggestion to find info online about aerogel concepts in development and imagers for plume-effects