

====MLSC Snow Cleaning Procedures Version 03/22/19

====Authorized trainers: Jim Grantham, Joe Hoscheidt, Gary Rosenbaum, Melanie Waidanz

Authorized MLSC Staff: Alan Strauss and Travis Deyoe PPE Required: eye protection, leather or insulated gloves; hearing protection recommended====

1. Locate Operations staff and check out tank, hose and cleaning kit from the Powerhouse.
 2. Only transport tanks in the bed of a truck which are strapped-in and upright. Do not transport tanks in an enclosed vehicle.
 3. Leave door to observatory propped fully open.
 4. Position telescope so that mirror is accessible; clear work area of possible trip hazards.
 5. Cover baffle tube to prevent accidental flow of CO2 and stirred up dust into instrument/camera.
 6. Remove any jewelry, and any loose items from pockets such as keys/phones, etc.
 7. Inspect fittings, hose and nozzle for obvious wear or abrasions or debris.
 8. Ensure tank has a New/In-service/Empty tag which is properly dated and displayed.
 9. Inspect tank nozzle and threads for debris or damage.
 10. Point tank nozzle away from operator and BARELY CRACK OPEN tank to flush nozzle.
 11. Verify nylon washer is in end of hose fitting and then attach hose to tank, using wrench to snug.
 12. Be sure valve on hose is closed.
 13. Slowly open tank to pressurize system while checking for leaks.
 14. Briefly open then close valve on hose, to flush hose and nozzle head.
 15. If it is a new tank, discharge hose into a Kimwipe and examine for contamination. CO2 snow should be white, not discolored.
 16. Connect ground clamp to unpainted metal surface on telescope mount.
 17. Open valve on hose to achieve correct flow rate and verify "snow" is being discharged from end of hose by discharging onto fabric material. Tank may still have pressure while not producing "snow" as all the liquid CO2 may have been expelled while only gaseous CO2 remains.
 18. Recommend cleaning secondary mirror first, then primary.
 19. Approximately 8-12 inches from surface, blow across mirror, from top to bottom, without pausing at any spot.
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1. After closing valve on hose, close tank valve, then re-open hose valve to purge hose pressure
 2. Remove hose from tank, remove ground clamp, return items to Powerhouse and store all supplies.
 3. Notify operations as soon as a tank has been "emptied" (when it no longer produces "snow").
 4. Record what optics and which scopes have been cleaned in logbook.

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