



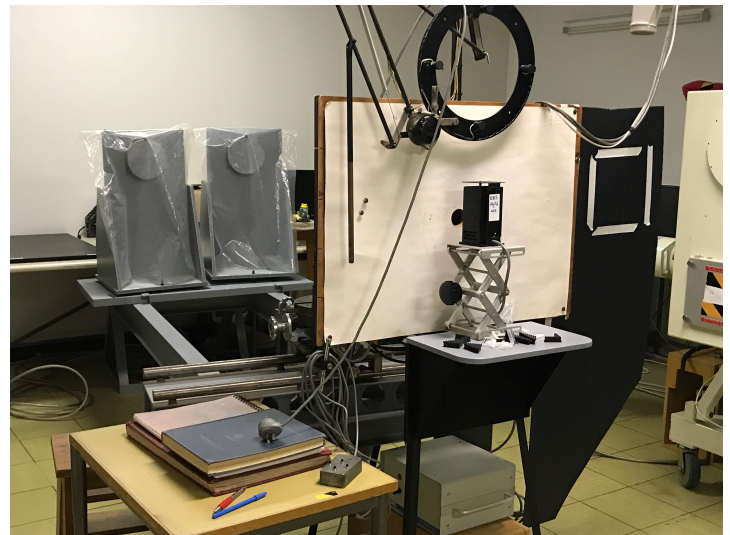
UNIVERSITY of
TASMANIA

Physics

Teaching Laboratory Safety Information

Heliostat: Optics Lab (Room 140) & Roof

- Laboratories are potentially dangerous places. To maximize the safety of everyone in the laboratory and minimize the risk of injury, it is critical that you understand the appropriate procedures and practices for safe operation of all the equipment you will use *before* you undertake any experiment. **It is your responsibility to know the correct operating procedures and the proper response in the event of an incident or emergency.**
- You should have been provided with the **General Physics Lab Safety** information sheet. If not, copies are available from the MyLO page for your unit or in hardcopy form from your lab demonstrator. Learn the evacuation routes and emergency procedures before continuing.
- The Heliostat (Solar Calcium Abundance) experiment has been designed to be as safe as possible for staff and students. The safe operating procedures for the experiment are contained in the lab instructions from staff. Your introduction to the experiment by the lecturer or lab manager also acts as your safety induction.



Above: Spectrograph (room 140). The experimental data are taken here, under reduced light conditions.

Left: Heliostat tower (roof). The heliostat is accessed by the 2.8 metre caged ladder.

Heliostat: Safety Information

In addition to the general rules of laboratory safety, be aware of the following potential hazards specific to this lab.

Medical Disclosure: If you have a medical condition that could impact your ability to safely complete this experiment, especially with regard to mobility, heights, or visual acuity in low light, please alert the lab manager and lecturer in charge so that an alternative or mitigation strategy can be developed.

Optics Lab: Working in Reduced Light:

Be aware of tripping hazards or obstacles to your walking path. Give yourself time for your vision to become dark-adapted, move slowly, and use a small torch if required. Keep surfaces clear of objects that may be bumped or knocked over. Do not step or walk on the steel rails comprising the spectrograph optical bench. As far as it is possible, do all of the work that you can do under ordinary lighting, and only dim the lights when required for the data-taking parts of the experiment. Ambient light from the physics building foyer will be present even should the door be closed; keep the path between yourself and the doorway clear in case an evacuation is needed.

Optics Lab: Electrical Hazards:

It should not be necessary to access any electrical equipment apart from standard toggle switches for the heliostat drive, and mains-power plugs for the digital camera calibration lamp power supplies. Inspect all cabling and plugs before use. In the unlikely event of an electrical fault, damaged cable, tripped circuit breaker, or sparking, leave the area quickly and contact the lab manager without delay.

Roof: Working at Heights:

The heliostat is on the roof of the building, which can only be accessed by a staff member with a master key to the building. The lab manager or lecturer in charge has discretion to decide who is allowed to access the heliostat tower. The deck of the heliostat tower is 2.8 metres above the roof. Access is via a fixed, caged ladder that has been stalled in compliance with Australian Standards (2020). No special training or equipment is required for work on this fixed, permanent structure. However, you must obey the following rules:

- The tower may only be accessed in favourable weather conditions. If there is rain, high wind, fog, thick smoke, or the threat of any of these, do not ascend the ladder or attempt the experiment.
- You must only wear solid, non-slip, closed-toe shoes as a minimum standard of footwear.
- Never work alone, so that immediate assistance is available if a hazardous situation arises.
- No bulky items, backpacks, or tools are allowed on the tower. Only bring items with you that are necessary to record results and communicate to other members of your experimental team.
- The heliostat cover **must** be closed and secured with the strap when work is finished, to prevent a hazardous condition from arising. Contact the lab manager or lecturer in charge when you are finished.