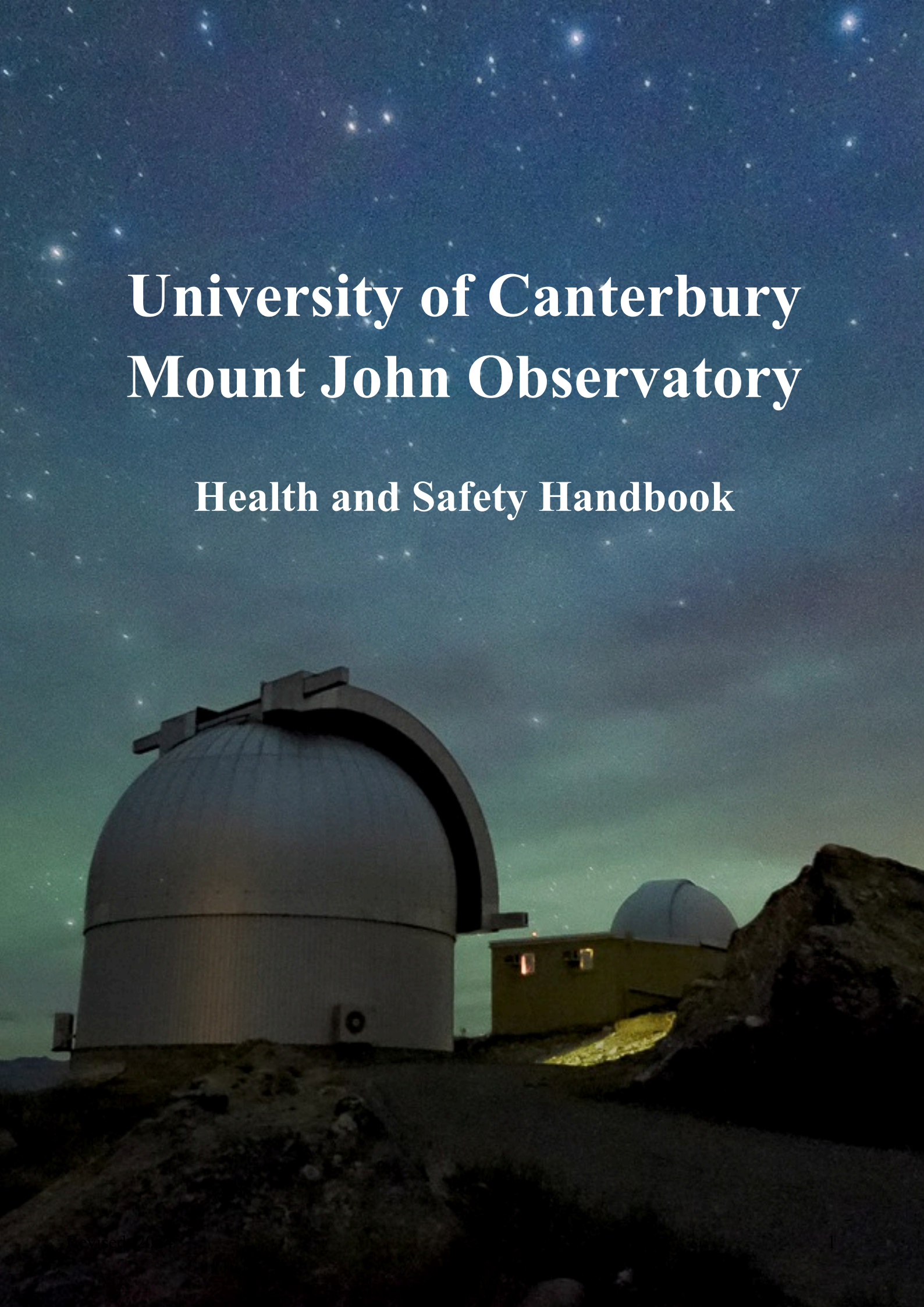
University of Canterbury
Mount John Observatory

Health and Safety Handbook



MOUNT JOHN UNIVERSITY OBSERVATORY

Health and Safety Rules

"Rules alone will not prevent accidents...users [should cultivate] a 'common sense' approach of proceeding with caution going about their business (especially in the dark)." D.J. Sullivan.

DIAL 1-111 FROM ANY TELEPHONE TO CONTACT EMERGENCY SERVICES

State location as 'Mt John Observatory, 422 Godley Peaks Road, Lake Tekapo'. The 'Observatory' is important to avoid confusion with Mt John Station.

DIAL 2777 FROM ANY TELEPHONE WHEN URGENT ASSISTANCE IS NEEDED but is not appropriate to summon the emergency services.

This will sound all Observatory sonalerts.

If a sonalert sounds, dial *43 on the nearest telephone to pick up the call.

Observatory Superintendent/Technician – Nigel Frost, Ext 2700, 2705, 027 680 3491

Observatory Health and Safety Rep – Nigel Frost, Ext 2700, 2705, 027 680 3491

Departmental Safety Officer (in Christchurch) – Chris Fitchett, 03 369 5344

Departmental Health and Safety Administrator (in Christchurch)- Sharlene Wilson, 03-369-4324

University Health and Safety Director – Natasha Barnett, Ext 91419

Current first aid certificates: Nigel Frost, Fraser Gunn

This document comprises three parts:

All staff, students and visitors to the Observatory are required to be familiar with all Health and Safety requirements.

SAFETY

Short Safety Rules:

1. Students, staff and visitors are morally and legally required to participate in ensuring the highest practicable standards of safety at the Observatory. (See Legal Obligations, Hazard Logs, Reporting Hazards, Reporting Accidents)
2. Vehicles must be driven prudently, especially on ice and shingle, a 20KPH speed limit where indicated, must be observed and dipped beam headlights must be used at night. (See Safety in Vehicles)
3. Check ladders and stepladders before using them.
4. Inspect plugs and cabling for damage. High-tension and mains voltages can kill.
5. In a fire, the over-riding consideration is to preserve life. (See Fire)
6. Make allowance for the stresses of night work. Move slowly near telescopes in darkened domes to minimize head injuries. (See Working at Night)
7. Note that domes may turn at any time due to observer operation, electrical or computer faults, or wind loading. Disconnect motor power before working on any dome.
8. Be prepared for the hazards of high-country weather. (See Weather)

9. Read each building's Hazard Register to become aware of any unusual hazards.
10. Evaluate whether you can lift an object safely. (See Lifting)
11. If alone at the Observatory, take special care and periodically report your continued survival. (See Working Alone)
12. Proper footwear must be worn while working with telescopes and other equipment, protecting the whole foot and preferably with non-skid soles.
13. Smoking is prohibited in vehicles and in buildings, especially the domes. If you smoke outside dispose of the butts carefully in summer and during dry spells to avoid grass fires.
14. Work with hazardous or toxic materials must be done with proper precautions - e.g. with flammable liquids, gases such as hydrogen, oxygen and acetylene, pesticides or weed killers. Read the relevant Material Safety Data Sheet.
15. All accidents or near accidents must be reported. (See Reporting Hazards, Events and Near Misses)
16. All users are encouraged to take first aid training. (See First Aid)
17. Medical attention: Fairlie Medical Centre, phone 685 8211. (See Non-Urgent Medical Problems)
18. No one may work in a room with its major access door locked.
19. Doors of all buildings should be locked if they are empty. Do not leave buildings unlocked while temporarily absent.
20. No electrical wiring may be done by students.
21. Power tools may not be used by students.
22. Supervisors are responsible for ensuring that their students are familiarized with the Observatory's safety procedures and safe working practices.

FIRE

Because Mt John is at least half an hour away from any kind of Fire Service, the prevention of fire is a major safety concern. Smoke detectors are installed, and fire extinguishers are located in all buildings. Please inform yourself of where to find extinguishers in the places you will be frequenting at the Observatory.

1. Keep doors closed as much as possible to minimise the spread of smoke, especially in the 1-M building.
2. Be aware of the nearest exit wherever you may be.
3. Fire extinguishers are provided for fighting small fires. Anyone may use them, but only if the user judges that the fire can safely be extinguished. All other fires should be left to trained Fire Fighters. The large fire hoses and pumps both at the 1-M building and on the summit are to be used only under the supervision of trained Fire Fighters.
4. When using an extinguisher, first ensure a safe line of retreat. Never turn your back on an apparently-extinguished fire.
5. If a fire occurs that you cannot fight with an extinguisher:

    - leave the room with the door closed
    - operate the nearest fire alarm
    - find a safely distant telephone to call the emergency number which is **1-111**
    - evacuate yourself from the burning building (if not required earlier). Ensure that the deaf and disabled are evacuated too.

FIRE ALARM SYSTEMS

The 1-M building and the rest of the Observatory are on two different but connected alarm circuits. They are set off by smoke detectors, heat sensors and manual alarm switches.

The fire horns in the rest of the Observatory will sound wherever the fire is located. In the 1-M building the fire bells will sound if the fire is in the 1-M building, while the bleepers will sound if the fire is elsewhere. The bleepers can be switched off at the grey box on the side of the fire alarm panel in the north foyer. Do this before attempting to use the phone.

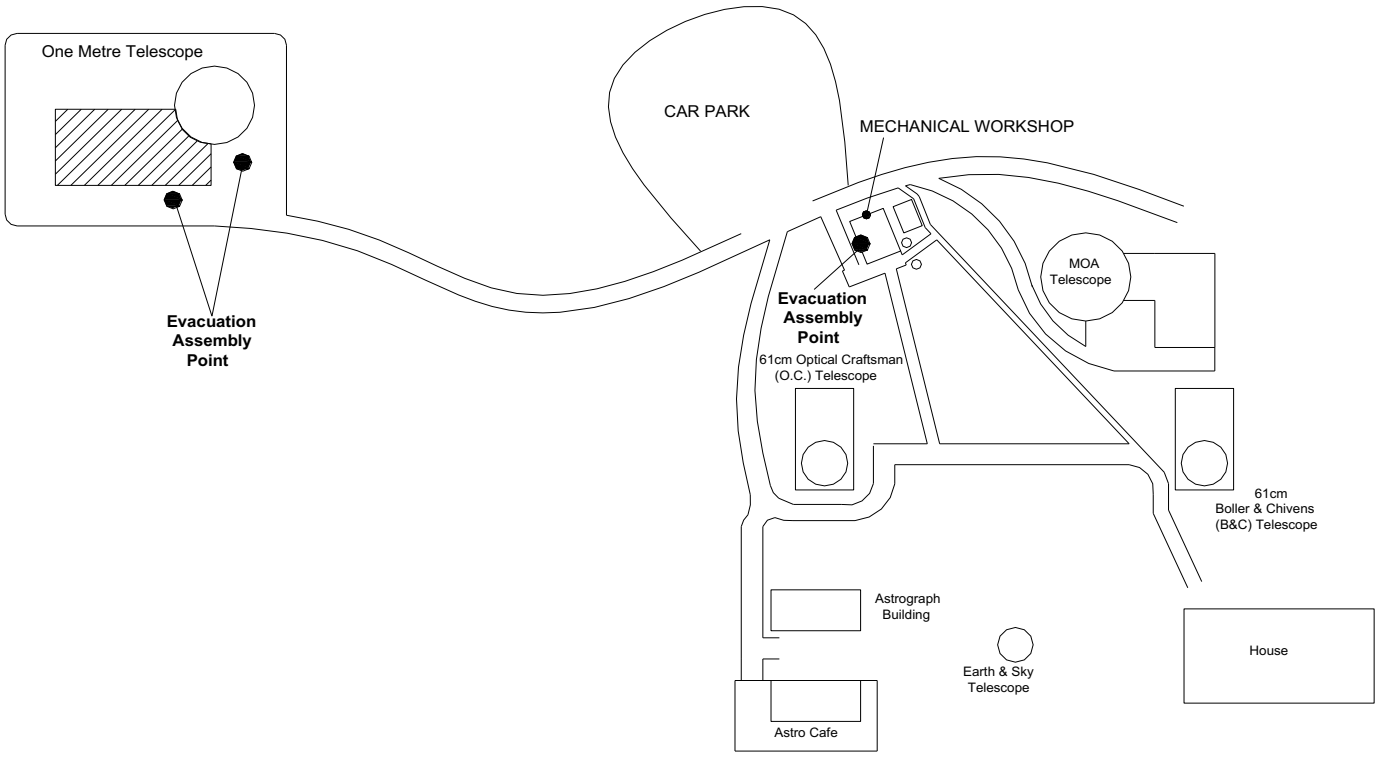
EVACUATION PROCEEDURES

If ANY fire alarm sounds occupants of ALL buildings must evacuate and first gather at the building's assembly point. THEN move to the assembly point appropriate for the location of the fire. This is essential for ensuring everyone is accounted for.
For the 1 Metre Building please refer to the 1 Metre Building Plan (rear of this document) and familiarise yourself with the location of the building EXITS.

For the 1-M building the assembly point is the sealed area EAST or NORTH of the building (depending on weather).

For the rest of the Observatory the assembly point is on the south side of the MECHANICAL WORKSHOP. (Refer to diagram below)

Mount John Observatory Layout



The Fire Warden checks the location of the fire. For the 1-M building this is indicated on the box in the foyer at the north end of the building. For the rest of the Observatory, the indicator is visible through the south window of the workshop.

If a fire is confirmed, the Warden rings **1-111** from a safe telephone to advise the emergency services. The call will be taken in Christchurch so the caller must state "Mount John Observatory, 422 Godley Peaks Road, Lake Tekapo" [the 'Observatory' part is important -- to avoid confusion with Mt John Station.]

The Fire Warden is usually an Observatory staff member but in their absence it is the most appropriate person -- this can be a visitor. The Fire Warden's job is to ensure the buildings are safely evacuated and everyone is accounted for, and to give the arriving fire fighters details of the fire's location etc.

The red cape stored in the blue box at the outside end of the north foyer in the 1-M building should be worn by the Fire Warden to identify him/her at once to the fire fighters and other arrivals.

Trial evacuations will be held periodically, once every six months, and within 24 hours of any field party taking up residence.

EARTHQUAKES

In the event of a strong earthquake take cover under any desk, table, doorway or solid structure available, away from windows.

Leave the building as soon as possible using the same route and assembly procedure as for fire evacuation.

DEAF and DISABLED PEOPLE

A register of disabled people in residence is kept on the notice board at the exit end of the north foyer of the 1-m building and should be updated as necessary. Ensure deaf and disabled are evacuated when fire alarms ring.

REPORTING HAZARDS, EVENTS and NEAR MISSES

Hazard identification & management: The purpose of hazard management is to prevent harm or damage to people, plant or property by effectively identifying hazards and applying appropriate controls to eliminate (E), isolate (I), or minimise (M) the hazard. This applies to all employees, self-employed people, contractors, students and other visitors. All staff and research students are encouraged to report to Mt John Superintendent or H&S Rep, any perceived or suspected hazardous situation or practice, including a "Near Miss"! A Hazard Form, available from the H&S Rep should also be completed and returned to H&S Administrator. These forms are also available from the folder in the 1 Metre lounge.

An annual work area Hazard ID is initiated by the DSO in April each year; continuous Hazard ID is a part of new equipment purchase; new environment or task and the Field Activity Planning process.

HAZARD REGISTER

A copy of the Hazard register (green plastic binders) are available in the OC, B&C, MOA domes, Superintendents House and in the Health and Safety Folder located in the 1 Metre building lounge. Persons using them should read the register on first entry and make themselves aware of any unusual hazards that may be present.

LIFTING

There is a potential for injury in lifting more than 16 kg from a standing position or 4.5 kg from a sitting position. Evaluate carefully whether you are acting safely when lifting objects of greater weight.

MATERIALS SAFETY DATA SHEETS

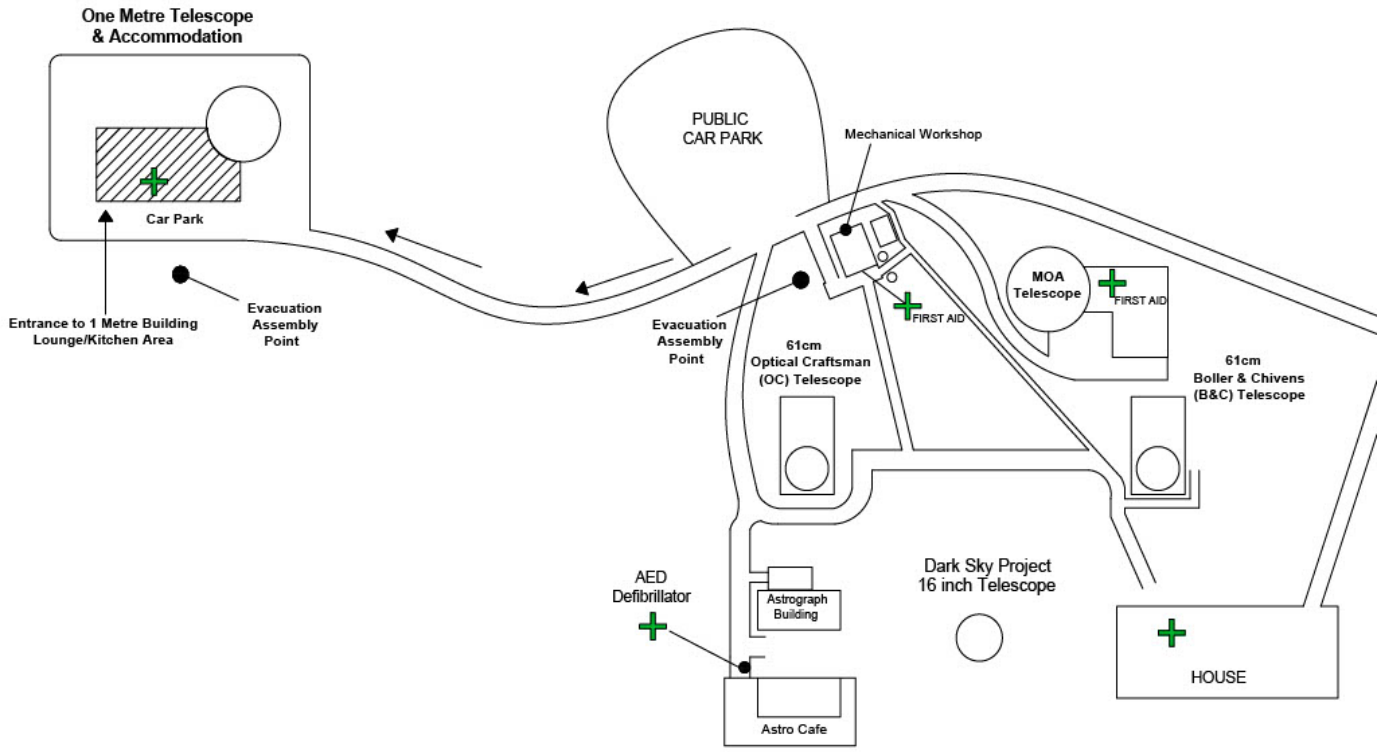
These are available for all hazardous substances used in the Observatory. Copies are kept near the substances themselves and in the Health and Safety Folder located in the 1-Metre Lounge.

FIRST AID

All users of the Observatory are encouraged to hold current First Aid Certificates. Tekapo staff are required to hold First Aid Certificates. The cost of first-aid training will be borne by the Group or Department.

FOR SERIOUS INJURY PHONE : 1-111

LOCATION OF FIRST AID BOXES AT MT JOHN



First Aid Boxes are located as listed

Automated External Defibrillator (AED) Sited on the South Side of the Astro Café.

1-M BUILDING – Lounge Area.

MECHANICAL WORKSHOP - on the wall by the entrance door.

MOA TELESCOPE CONTROL ROOM

HOUSE - kitchen, bottom drawer by laundry door.

Non-urgent medical problems
Consult the Resident Superintendent if he is around. If not:

Fairlie Medical Centre, phone 685 8211, hours Mon-Fri 9am-5pm EXCEPT Wednesday afternoon, will deal with any medical requirements that are not of the 'dial **1-111**' emergency type. There are two doctors, male and female, and a practice nurse. Appointments are necessary. Out of regular hours, service is available (but there is a sizable surcharge) There is a pharmacy in Fairlie, hours 9am-5.30 pm Mon-Fri.

WEATHER

At 1019 metres the weather poses hazards seldom encountered at lower altitudes.

Winds can come up fast, sometimes to gale speeds.

Never leave a dome open unattended. Wind can also rotate closed domes.

Don't leave doors and windows open unattended.
It is wise to carry warmer clothing if possible when out for a walk.

Snow: may build up quickly on the road surface especially if it is cold (an overcast winter day) and present a hazard for leaving or returning to the Observatory. Plan excursions with the weather forecast in mind.

Ice: forms on the sealed area especially just outside the dormitory doors. Take care with footing there. Prevent the formation of icy patches by shovelling away the snow around the doors BEFORE anyone walks on it -- footprints will be preserved much longer than deserved by you, or your unwary colleagues... Ice builds up in shady places. Be very careful if exiting the 1-m building by the door at the south end of the dormitory passage. Also watch for ice at side door of the garage.

Cars: should have antifreeze in the radiator whatever season.

Driving in snowy conditions:

Drive slower; use the handbrake rather than the foot brake to slow down; if you have the choice stay home. Anti-skid courses advise depressing the clutch not the brake to regain control during a skid.

The Godley Peaks road has now been sealed, but there are still a considerable number of shingle roads in the Mackenzie.

The safe speed on shingle is 50 kph. Change down a gear to decelerate if opposing traffic means you must move to the side of the road -- that is where all the speedsters ahead of you have shifted most of the gravel. Braking hard in gravel has the same result as braking hard in snow & ice -- the car skids. Use the handbrake rather than the foot pedal.

SAFETY IN VEHICLES

Before driving a Department van or the Observatory station wagon make a visual inspection of the vehicle's condition, including tyres.

The observatory road will be closed to public access if the wind at the top of the mountain reaches 70 kph or higher, and closed to all UC personnel when it reaches 80 kph.

Respect the legal speed limits:

100 kph on the open road;

90 kph towing a trailer;

50 kph in Tekapo village

50kph on gravel; slow for ice/snow/wet conditions

WORKING AT NIGHT

Expect to be tired and slow to react
Take time for refreshment
Try to have things to do during long exposures
Beware of hitting your head against the telescope

WORKING ALONE

It is judged that there is only slight risk of an injury so severe that you cannot telephone the emergency services. Nevertheless, it is undesirable that anyone should be alone on the mountain top for an extended period. If you are likely to be in such a situation, discuss this with the Observatory Director. Alleviating measures include daily calls to a friend or relative, or being accompanied.

1 METRE DOME & RISING FLOOR

Memorise the location of the red stop buttons -- south wall at stair foot, north end of data room, etc. They stop the dome and floor, but do not stop the telescope, which you must switch off via the buttons on the north side of the pier.
DO NOT get snagged by the dome. The dome may turn at any time due to observer operation, electrical or computer faults, or wind loading.
Check before raising or lowering floor for people or equipment in the way.
WALK UP AND DOWN THE STAIRS -- NEVER RUN -- AND ALWAYS USE THE HANDRAIL.
Check stepladders before use, especially the catch. Don't climb ladders in the dark.
Wear comfortable nonslip footwear.

Emergency lighting and heating

The 1-M building is provided with emergency lighting in case of power failure. The lights last for about 20 minutes.

A portable gas heater is available in case of a long power cut in winter. The heater is stored in the garage. Carefully follow the instructions on its top.

Duties of the Resident Superintendent and the Health and Safety Rep.

Ensuring all long or short term visitors including University staff, students, visitors and contractors complete and sign off the Physics and Astronomy, Mt John Observatory Health and Safety Induction for Long Term Visitors.
Short Term Visitors read the Short H&S Induction document and sign the Visitor Sign In/Out Sheet.
All visitors are to be given a copy of the Mt John H&S Handbook to read before working or staying at the facility.

Ensuring that a warning of any new hazard is promptly communicated to all staff and visitors to the mountain, and passed on to the Director. Ensuring that such hazards are eliminated as quickly as possible.
Controlling the behaviour of any person at the Observatory when necessary for safety of personnel or protection of equipment.

POLICE

The Police Station is on the south side of State Highway 8 by the Tekapo Auto Centre. Telephone (03) 680 6855.

Dark Sky Project,
State Highway 8,
Lake Tekapo,
Tel No. 03 6806 960
Astro Café: 03 6806 007 or Int No. 2707

General Manager: Victoria Campbell
Operations Manager: James Barber.

Dark Sky Project run tours of the site.