



GEMINI VISITOR'S GUIDE
Gemini North

VISITOR'S VERSION



June, 2008

Gemini Observatory
Northern Operations Center
670 N. A'ohoku Place, Hilo, Hawaii 96720
Phone: (808) 974-2500 Fax: (808) 974-2589

Dear Visitor,

For your personal safety, please read this entire safety policy and information bulletin. **Initial each page (2-4) and then sign page 5, (parents (or legal guardians of minors between ages 16-18 (inclusive) please sign page 6)** acknowledging you have read and understood the contents of this safety policy.

Please note that this document should be read, understood and signed before going to the observatory and it is not acceptable to acknowledge the contents or warnings contained in this document once at/on Mauna Kea.

Visitors please give this completed, **signed and initialed** document to your Tour Guide at the beginning of your visit to the Gemini North Observatory. You are required to **acclimatize for at least 30 minutes** (one hour if possible) at the 9,200-foot (2,800 meter) midpoint (Hale Pōhaku or the Onizuka Visitor Information Station).

Aloha,

GEMINI OBSERVATORY
Safety Leadership Team



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FOR YOUR PROTECTION

Visiting the Gemini North Observatory can pose risks to the visitor. This means that you may encounter potentially hazardous conditions and situations. Gemini works diligently to maintain a safe environment for workers and visitors, yet each person bears responsibility for his/her own safety.

The Observatory is located at almost 14,000 feet (4,200 meters) above sea level, which means that your mental capabilities and judgment will be substantially impaired due to diminished oxygen availability. This impairment will increase your risk of being injured. The following, while not an exhaustive list, are *examples* of some of the hazards of which you should be aware of while in the Observatory:

- There are floor areas that may be slightly uneven and there may be an occasional temporary electrical cord or hose lying on the floor in traffic areas. Watch where you step to avoid tripping.
- During inclement weather, some water may leak inside the facility and freeze on the floor. Watch carefully for ice on floors and also watch your step when descending or climbing the outside stairs to the main entry doors.
- There are vertical drops that are separated by guardrails or handrails throughout the facility and telescope. Be watchful and careful in these areas.
- Workers may be working in areas above you, and there is a risk of falling tools or materials. In circumstances like this access to a particular area may be restricted.
- Be aware of and stay completely away from pinch points when the telescope is in motion. This is generally in the area of the emergency exit and Instrument Platform Lift guardrail at the north side of Level 5. These pinch points can be encountered by standing either on the stationary floor or the rotating telescope floor.

In the event of a fire or injury, transport down the mountain may take as long as an hour and a half or similar time will elapse before any emergency services can reach the Observatory because of its remote location.

You must remain with your designated guide and follow his/her instructions at all times throughout the tour. *All visitors are to stay in designated walkways and wading areas. Closed-toe, sturdy (leather preferred) shoes are required to enter the facility. Jackets and warm clothes are recommended due to cold temperatures.*



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GUIDELINES FOR MINIMIZING RISK NEAR THE MAUNA KEA SUMMIT

1. **CHECK WITH YOUR DOCTOR FIRST...**before you venture to the summit area, you are strongly advised to check with your doctor if you take any kind of medication, as to the advisability of proceeding to the summit area. Altitude may have an adverse effect on individuals who are taking certain medications.
2. **STAY RESTED...**avoid exhausting tasks/fun and lack of sleep the day before you are scheduled for a trip to the summit area. This provides more cardio-respiratory reserves for adjustment to altitude stress.
3. **AVOID ALCOHOL...**for at least 10 hours prior to ascent. This avoids dehydration and irritation of the arteries of the brain that will be forced to adjust to hypoxia.
4. **AVOID MARIJUANA...**it stays with an individual for several days and can be an unpredictable, extremely potent constrictive agent for the coronary arteries. It has caused sudden death by unpredictably shutting off the blood supply in the hearts of even young, healthy people without warning.
5. **AVOID TOBACCO CHEWING & SMOKING...**nicotine constricts arteries and further inhibits adjustments to the body's need for increased blood flow.
6. **AVOID DEHYDRATION...**the human body shifts large volumes of body water and dumps some of it to help with short-term adjustments to altitude. Give your body water to stay hydrated and cope with losses into the very dry air. If you start to get a pounding, hangover-type headache, let your guide know and drink three or four cups of plain water; it often works in 4-5 minutes.
7. **AVOID HEAVY MEALS...**before ascent to the summit area, since this tends to tie up a significant part of the available blood flow for longer than light meals (of high-carbohydrate items such as pasta, rice, or other starch). Avoid skipping meals or eating or drinking nothing but sugared snacks or drinks; sharp changes in blood sugar can trigger increased altitude stress.
8. **AVOID UNPROTECTED EYE EXPOSURE...**to glare and bright sunlight by wearing dark lenses, preferably UV-coated lenses. This reduces fatigue and will prevent the loss of 50% of night vision for up to two nights after glare exposure of only 1 hour. It also blocks out the significantly greater ultraviolet exposure that Hawaii's ideal astronomical conditions permit, possibly leading to early cataracts. You may wish to wear sunscreen, as the sun can burn even in cold temperatures.
9. **PREGNANT WOMEN; UNDER SIXTEEN YEARS OF AGE; AND SCUBA DIVERS** with less than 24 hours after their last dive will NOT be allowed to visit the Gemini Observatory.

Excerpted from:
"High Altitude Safety Protocol" By Mountain Medical Services



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IMPORTANT MEDICAL ALERT

The Gemini Observatory is a facility operated by the Association of Universities for Research in Astronomy, Inc. (AURA). Since the telescope site is located on the summit area of Mauna Kea, at approximately 14,000 feet (4,200 meters), ascent to this altitude exposes you to a reduction in atmospheric pressure, which can result in a variety of medical conditions related to the reduced intake of oxygen by your body. In certain cases, severe illness and even death can result.

Visitors to the Gemini North telescope may suffer headaches, tiredness, irritability, lack of appetite, insomnia, reduced intellectual capacity, impaired exercise/exertion tolerance, and possible vomiting. It is also possible to develop one or more of the more severe mountain sicknesses, pulmonary or cerebral edema, both of which can be fatal. The altitude is likely to aggravate pre-existing disease, particularly cardio-vascular, diabetes, and respiratory diseases. Individuals with these conditions are advised to seriously consider the advisability of proceeding.

Gemini *strongly* urges all visitors to bring the above information to the attention of his/her medical practitioner and to seek medical advice and clearance before visiting the Gemini North telescope.

In some cases, if a member of a group becomes ill during a tour it might be necessary for the entire group to descend from the summit area if alternate transportation is not available for the affected individual(s).

AURA/Gemini does not undertake a duty properly to warn or otherwise to relinquish its rights, immunities or other protections under Hawaii Revised Statutes, Chapter 520. This WARNING is given freely *without* legal obligation. Under NO circumstances will Gemini allow visitors under the age of sixteen (16) to visit the Gemini North Observatory. Minors between 16 and 18 years of age (inclusive) require parental/legal guardian's permission to visit the site and proof of age will be requested prior to ascending the mountain.

AURA/GEMINI DOES NOT ACCEPT ANY LIABILITY FOR VISITORS TO THE GEMINI NORTH OBSERVATORY WITH RESPECT TO THE POTENTIAL ADVERSE EFFECTS OF ALTITUDE OR FOR ANY ADVERSE EFFECTS FROM THE ADMINISTRATION OF OXYGEN, IF REQUIRED. IF YOU INTEND TO VISIT THE TELESCOPE SITE, YOU ARE REQUIRED TO SIGN THE DECLARATION PROVIDED. YOU THEREFORE ASSUME ALL RISKS.



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RELEASE FORM FOR MINORS

NOTICE: No minors under the age of 16 are permitted in the Gemini North Telescope.

Minors over the age of 16 will be asked to show proof of age. Minors between 16 and 18 years of age (inclusive) require parental permission to visit the site.

A parent, legal guardian or a pre-approved chaperone must accompany a minor travelling to the summit area. In no case will a minor be allowed to ascend to the summit area without a signed consent form from his/her parents and/or legal guardian and unless accompanied by the appropriate adult as aforementioned.

CONSENT: I am the parent and/or legal guardian of

_____ and I have read this *Guide for Visitors to the Summit* and understand the risks associated with high altitude. I release AURA/Gemini Observatory from any and all liability stemming from **any** consequence of my child or legal ward travelling to the Gemini Observatory summit area of Mauna Kea.

 PRINTED NAME

 RELATIONSHIP TO MINOR

 ADDRESS

 SIGNATURE

 (Date)