GEMINI OBSERVATORY

PG-PM-G0014
Revision 3.3

GUIDE FOR VISITORS TO THE SUMMIT

Melissa Welborn

Safety Operations

March 3, 2003

GEMINI OBSERVATORY
Northern Operations Center

670 N. A'ohoku Place, Hilo, Hawaii 96720

Phone: (808)974-2500 Fax: (808)935-9802

Dear Visitor:

For your personal safety, please read this entire safety policy and information bulletin. Initial each page and then sign page 4, acknowledging you have read and understood the contents of this safety policy. Give it to your Tour Guide at the beginning of your visit to the Gemini North facilities. You are required to acclimatize for at least 30 minutes at Hale Pōhaku.

Aloha,
GEMINI OBSERVATORY

Safety Operations

FOR YOUR PROTECTION

The Gemini North Observatory can pose risks to the visitor. This means that you may encounter potentially hazardous conditions and situations. AURA 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 above sea level, which means that your mental capabilities and judgment will be substantially impaired due to lack of oxygen. 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 cognizant 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. You should be aware of what is happening above you.
- 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 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. Safety glasses (required in the vicinity of grinding or drilling activities), hard hats and closed-toe, sturdy (leather preferred) shoes are required to enter the facility. Jackets and warm clothes are recommended due to cold temperatures.

GUIDELINES FOR MINIMUM RISK AT THE MAUNA KEA SUMMIT

1. *STAY RESTED*...avoid exhausting tasks/fun and short sleep the day before you are scheduled for a trip to the summit. This provides more cardio-respiratory reserves for adjustment to altitude stress.

2. *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.

3. *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.

4. *AVOID TOBACCO CHEWING & SMOKING*...nicotine constricts arteries and further inhibits adjustments to the need for increased blood flow.

5. *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 work with and to cope with losses into the very dry air. If you start to get a pounding, hang-over type headache, drink three or four cups of plain water; it often works in 4-5 minutes.

6. *AVOID HEAVY MEALS*...before ascent to the summit, 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.

7. *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.

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

IMPORTANT MEDICAL ALERT

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

Visitors to the Gemini site 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 may also aggravate pre-existing disease, particularly cardio-vascular 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 summit.

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 site. Minors between 16 and 18 years of age require parental permission to visit the site.

AURA/GEMINI DOES NOT ACCEPT ANY LIABILITY FOR VISITORS TO MAUNA KEA 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.

ACCEPTANCE: I have read and understand the Safety Guidelines and further agree to abide by all safety regulations and the instructions of my guide. I have read and understand the Medical Alert provided by Gemini Observatory concerning the potential harmful effects of altitude. I have been recommended to seek medical advice before proceeding. Further, I give my consent for Gemini Observatory personnel to administer oxygen to me in the event I should require it and from that action, I agree to hold harmless AURA/Gemini Observatory. I accept that AURA/Gemini shall not be held responsible for any adverse effects to me resulting from exposure to high altitude.

PRINT NAME & ADDRESS:

Name Address City/State/Zip

SIGNATURE: _____ *DATE* _____

RELEASE FORM FOR MINORS

NOTICE: No minors under the age of 16 are permitted on the Gemini Observatory summit site.

Minors over the age of 16 will be asked to show proof of age. A parent, legal guardian or a pre-approved chaperone must accompany a minor traveling to the summit. In no case will a minor be allowed to ascend to the summit 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 booklet 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 traveling to the Gemini Observatory summit on Mauna Kea.

_____ _____

PRINTED NAME RELATIONSHIP TO MINOR

_____

ADDRESS

_____ _____

SIGNATURE (Date)