

## Visitor Safety Guidelines

### 1. Medical Alert

- 1.1. The Gemini Telescopes are located on the summits of Cerro Pachon in Chile at an altitude of approximately 2700 meters (8850 feet) and Mauna Kea in Hawaii at 4200 meters (13800 feet). Ascent to this altitude exposes you to a reduction in atmospheric pressure, which can result in a variety of medical conditions. For the majority of visitors, this altitude causes few or no problems. However, some visitors to the Gemini sites may suffer some of the following symptoms: headaches, dizziness, tiredness, irritability, insomnia, reduced intellectual capacity, impaired exercise/exertion tolerance, and vomiting. **In the event of any such problems, you should immediately inform your host.** It is also possible, although rare below 3000 meters (9840 feet), 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 should make sure to seek professional medical advice before planning any trips to the summit.
- 1.2. You should stay rested and ideally **avoid heavy meals and alcohol on the day before your trip** to the mountain.
- 1.3. Please note that you should carry with you and **drink plenty of bottled water** or juice, in order to compensate for the low humidity and avoid dehydration at the summit. Take your time, walk slowly, and be cautious when getting up from sitting while you are at the summit.
- 1.4. Avoid unprotected eye exposure to glare and bright sunlight at the summit by **wearing dark glasses**, preferably with UV-coated lenses (Any visitor driving on the dirt road towards/from the telescope shortly after sunrise, or driving up/down close to sunset, will – apart from the hazardous conditions mentioned above – also have direct sunlight shining into the eyes).
- 1.5. It is recommended that you **have a hat and sunblock**. The sunlight can be very intense, especially in the summer.

### 2. Road Warnings

- 2.1. The Gemini Observatory does not offer transportation for visitors. The drive from the city to Gemini telescopes takes from 1 to 1 ¼ hours. Of this journey time, approximately half is on a standard highway and half is on a dirt road. Whilst the road is maintained in good condition, you should be aware that conditions can change markedly on the mountain at short notice. You should therefore ensure that **the vehicle you will be using to make the trip is adequate** for such a journey (4 wheel drive is strongly recommended).
- 2.2. Before initiating the trip **drivers must have checked tires and levels**, including the spare, have sufficient fuel (not provided by Gemini) and ensured the vehicle is in good condition with basic tools.
- 2.3. Drivers and passengers must **wear their safety belts**.
- 2.4. Roads leading to the summit can be very dangerous and present a hazard to those driving or riding as a passenger. **Drivers must be extremely cautious** of the winding, unpaved road, steep slopes, drop-offs and must be **alert to on-coming traffic**.
- 2.5. Wild life and natural landscape are protected. Do not litter. Do not disturb nor feed wild animals and take care not to run them over.
- 2.6. Drivers must proceed with caution at all times, but particularly so when visibility is poor (e.g. fog, darkness, at sunrise or sunset) or when climatic conditions (such as excess rain, snow or ice) could constitute an increased hazard risk.

- 2.7. **The speed limits are marked by road signs and must be adhered to at all times.** Drivers must reduce their speed accordingly to match the prevailing road and weather conditions at the time of their visit. Excessive speed has been found to be a major factor in most of the accidents that have occurred on summit roads.
- 2.8. Winter conditions may cause particularly hazardous conditions on the road. Drivers must proceed with extreme caution. **Be prepared with chains** and drive slowly at all times.
- 2.9. Please take into account that the brakes on your vehicle must be in very good condition. They could be a lifesaver. Please take into account that when driving down the mountain, you should **use low gears**. Avoid travelling down in automatic or in high gear with your foot constantly on the brake, as doing that could mean you have no brakes left when you get to the bottom. Not adhering to this could result in grave injury or possibly even death, please take it seriously.
- 2.10. Driving too close behind a vehicle making its way up or down the mountain at the same time as you is not only a cause of unnecessary discomfort (caused by dust), it is a significant safety hazard.

### 3. Safety at the Telescope

Gemini Observatory is continuously improving its facilities. Whilst safety is paramount at Gemini, you may encounter potentially hazardous situations. While Gemini works diligently to maintain a safe environment, it is still a dangerous environment. The following, while not an exhaustive list, are examples of some of the hazards that you should be conscious of while at the telescope.

- 3.1. There could be tools and materials on the floor in traffic areas where work is taking place. **Watch where you step to avoid tripping.**
- 3.2. Low-hanging equipment or materials could present a hazard. Some heavy lifting activities might be taking place. You must stay well away from any activity involving the use of a crane and from any other structures in movement. Also, workers may be working in areas above you. Whilst safe working practices are in place, there is a risk of falling tools or materials. Make sure you are aware of what is happening above you. You **must wear a hard hat** in designated areas and if required.
- 3.3. A fire risk always exists during certain operations, particularly welding, soldering, grinding and other work where an open flame is involved. In the event of a fire, some materials may emit dense and highly toxic smoke. It is imperative in such circumstances to carefully and calmly **follow the instructions of your Guide.**
- 3.4. Many of our staff are trained in first aid and as first responders. At Gemini facilities there is basic emergency equipment, including access to an Emergency Evacuation Vehicle (EEV). However, in the event of a fire or injury requiring transport down from the mountain, the telescope's remote location means that no guaranteed time can be given as to when one would reach a full-scale hospital or clinic (especially in cases of earthquakes or very bad weather). Be aware that the information contained in the section "Road Warnings" is a guide for distance and journey times in normal circumstances.
- 3.5. During a tour you **must remain with your designated Host** and follow his/her instructions at all times. You may take photographs and/or video during your visit, but do not become separated from your Host.
- 3.6. Cold weather **Jackets** are recommended for visiting the summit and inside the facility, regardless of the time of year. **Flashlights** are recommended at all times and are required after sunset.
- 3.7. For visitors, closed-toe, sturdy (leather preferred) shoes are required at all times in the summit building. Visitors working on the telescope or instruments must use safety shoes or slip-on steel toe caps. It is required by Gemini that shoes are equipped with an ASTM F-2413-2005 or

ASTM F-2412-2005 safety rating. Visitors going to the dome floor to see the telescope when no work is in progress do not require safety shoes; if engineering work is going on at the time, steel toe caps are required.

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