

# Visitor's Guide To Gemini South Telescope



## **Introduction**

This guide contains information about the Gemini South Telescope that will be of interest to observers and instrument teams visiting Gemini South and perhaps Chile for the first time. Please direct any comments about this document to Lucía Medina at [lmedina@gemini.edu](mailto:lmedina@gemini.edu)

This document focusses on visitors to the telescope site on Cerro Pachon, but note that currently most of the observations are carried out from the South Base Facility in La Serena. If you are an observer, check with your Contact Scientist or with the Head of Science Operations at Gemini South for more information.

## **Facilities**

The Gemini South Telescope is located on Cerro Pachón, Chile, 20 km on the road, southeast from Cerro Tololo. The altitude at the summit of Pachón is about 2714 meters (8,900 feet). The driving time to the Pachón summit is about 1hr 45min from La Serena and 35 minutes from Tololo.

Lodging and meals for visitors observing from the summit are provided at Cerro Pachon facilities. There is a lodging facility on Cerro Pachon with 12 rooms and any overflow we might have, the 20 Units dormitory near the summit will serve as the spare lodging facility.

Wired and wireless access to the internet is available at the Pachon dormitory. The computer's network settings will be configured via DHCP. Video conference facilities are available with connectivity to La Serena, Pachon and external end-points.

The map below shows the AURA facilities in the La Serena Recinto, or compound. Dormitory rooms are available on the recinto for personnel staying in La Serena (Q). The Gemini Southern Base Facility (SBF) is located at G across the main road from the CTIO offices. The SBF contains support staff offices, visitor offices, conference rooms, the AURA auditorium, and the sea level control room. Internet connections are available for laptops via wired or wireless networks and DHCP. If needed, visitor accounts on Gemini machines may be requested. The AURA library is located in the main CTIO building (H).

### Map of the AURA compound in La Serena



### Contacts

Local arrangements for visitors are handled by staff at the SBF in La Serena. Chile's international telephone access code is 56 and the La Serena city code is 51.

You can find our Staff directory by entering to: <http://www.aurastronomy.org/about/staffdirectory.asp> and go to Gemini directory.

### Preparing for your Visit

**Driving:** Visiting observers are not permitted to drive Gemini vehicles or rental vehicles to the mountain. Note that, effective October 1, 2005; you are able to drive legally in Chile while on a tourist visa, if you have a valid, current driver's license from your home location and your passport. If your visa is not a tourist visa (e.g. staff or medium-long term contractors who are accredited), in order to drive in Chile, you'll need to have either an International Drivers' License which was obtained in your home country or obtain a driver's license in Chile, which Gemini Human Resources can assist you in obtaining.

**Environmental conditions:** Cerro Pachón's altitude of 2714 m (8,900 feet) is not high enough to cause significant health problems for most visitors, although slight shortness of breath and perhaps headaches can occur especially on the first day of a visit. The altitude is high enough that visitors with certain medical conditions may wish to seek medical advice in advance and exercise caution while they are at the summit.

The nighttime temperature on Pachón can vary from a mild 10-20 C during the summer months to below 0 C in the winter. In winter there can be snow, high winds, and very low wind chill temperatures. Gemini does not currently have a supply of winter clothing for visitors, so please bring appropriate clothing and a flashlight of your own.

## Travelling to La Serena

Upon arrival in Chile, you will land at Santiago's Arturo Merino Benitez International Airport; their website is <http://www.aeropuertosingapuerto.cl> which is accessible in both Spanish and English. Both international and domestic terminals are housed in the same building; the domestic terminal is located in the eastern side of the facility. You will arrive at the International Terminal. All passengers with passports from Albania, Australia, Canada and Mexico must pay a Reciprocity tax before entering Interpol control. Once the Entry Reciprocity Fee receipt is attached to your passport, you have to proceed to immigration control.

The fee equals the amount a Chilean national has to pay to obtain a visa or to enter any of the mentioned countries. That is the "reciprocity!" Fortunately, credit cards are now accepted! Although these fees may vary, these are the latest we know of:

Country	Fee
Australia	US \$117
Mexico	US \$23

If you have to pay the fee, save yourself some time: As you come down the stairs into Immigration, look to your left and you will see the payment area. Settle your payment there, before continuing to the line of International Police. The fee has to be paid before. There are now more booths. After exiting Chilean Customs, you will find yourself on Level 1 of the building. To proceed to the domestic terminal, exit international Customs, turn left, take the elevator or stairs to Level 3, and walk to the LAN airline counters for domestic departures (Nacional) to check-in for your flight to La Serena.

## Ground Transportation

There are several options for transportation in and around La Serena. In general ground transportation arrangements are handled by Lucía Medina PH: 56-51-2-205-601 or at [lmedina@gemini.edu](mailto:lmedina@gemini.edu) Lucia should be informed of all travel requirements well in advance.

When arriving by plane at "La Florida" airport in La Serena you can take a taxi to the AURA-O (directions in Spanish for the driver are given in the next paragraph) but you will have to pay for the drive. The cost from the airport to the AURA compound is ~US\$10 (\$5.500 pesos).

*"Lléveme a las oficinas de AURA"*

Gemini does not provide an independent vehicle for observers, but will provide schedule transportation between La Serena and the summit of Cerro Pachon on an 11-seater minibus with two return journeys via Cerro Tololo each day Monday to Sunday including holidays. The Monday to Friday itineraries for the carryall vary depending on the seasons/Daylight saving time (Winter & Summer). The weekend schedule remains constant all year. Following are the carryall timetables:

## Chilean Summer

Leaving La Serena	Leaving Cerro Pachon	Leaving La Serena	Leaving Cerro Pachon
<b>Weekdays</b>	<b>Weekdays</b>	<b>Weekdays</b>	<b>Weekdays</b>
8:00am	11:30am	8:00am	10:45am
3:15pm	5:30pm	2:15pm	5:00pm

## Chilean Winter

### Saturday Carryall

Leaving La Serena	Leaving Cerro Pachon
8:30am	11:00am
2:15pm	4:30pm

### Single Run on Sunday

Leaving La Serena	Leaving Cerro Pachon
10:00am	12:15pm

Classical visitors, NGO observers, or any non-Gemini staff staying at the summit on official business, are allowed to drive Gemini vehicles between the Cerro Pachon hotel and the summit, provided they are in possession of a valid driver's license. Since there are two cars available at the summit, this allows the visitors to keep a different schedule from the night crew without impacting operations or forcing the night staff to "chauffer" them. Remember that keys should be left in the car parked at the CP hotel.

**AURA's Shared Bus:** Visitors wishing to work on Pachón during the day and spend the night in La Serena can ride the bus that transports AURA programs daytime workers. The bus leaves the recinto at **6:30 AM** and the Pachón summit at **4:30 PM** on weekdays only. Seat reservations are limited so please let us know in advance that you will be using the daily crew bus being specific on the period of time you will require this service.

## Cerro Pachon Lodging

**Lodging** for Cerro Pachón visitors is provided at CP dorm. Room keys may be picked up from the key rack placed in the hall area of the building with the name of the user. Please contact [lmedina@gemini.edu](mailto:lmedina@gemini.edu) for reservations.

In the event of unexpected needs, difficulties or emergencies (reservations, room assignment, special needs, etc.) during out of office working hours, please contact any of the following persons:

- **Alex Jeraldo** – Phone: 51-2 205 440 (manned 24/7) – from the hotel x440 only
- **Juan Jose Paleo** – Phone: 51-2 205 440 (manned 24/7) – from the hotel x440 only

**Meals** for Gemini visitors are provided in the CP restaurant. Meal Cards are provided to visitors.

The current meal schedule is:

### Southern summer Time

Breakfast:	08:00 to 8:30
Lunch:	13:00 to 14:00
Dinner:	17:00 to 18:30

### Southern Winter Time

Dinner:	17:00 to 19:00
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## Safety at the Telescope

Like all observatories, Gemini South has a number of hazards of which visitors need to be aware. Cerro Pachón is a remote site, nearly two hours from major medical services, so even minor accidents can place personnel in serious danger. Please note the following procedures and precautions that will help make your visit a safe one.

**Emergency Contacts:** Paramedics are stationed on Pachón clinic and nurses are stationed on Tololo. They should be first contacts in any emergency. They will notify other Chilean authorities if additional aid is deemed necessary.

The Pachón paramedic can be contacted in the following ways:

1. Use the Gemini external Frequency hand-held radios, channel 1.
2. Use the Tololo Repeater Frequency hand-held or vehicles radios, channel 1.
3. Use the Tololo Repeater Frequency emergency radios located on the road.
4. Call the Paramedic clinic on Pachón, dialing **2-205 577** (from the hotel only x577)

The Tololo nurse can be contacted in the following ways:

1. Use the Gemini external Frequency hand-held radios, channel
2. Use the Tololo Repeater Frequency hand-held or vehicles radios, channel 1.
3. Use the Tololo Repeater Frequency emergency radios located on the road.
5. Call the nurse clinic on Tololo, dialing **2-205 440** (from the hotel only x440)

**Telephone numbers:** international callers add 56 51

Person/Location	Number	Person/Location	Number
Pachón Paramedic	2-205 577	Tololo Paramedic	2-205 440
Pachón control room (SOS)	2-205 701	La Serena gate	2-205 282
Pachón control room (Ast.)	2-205 730	ROB office	2-205 440
Pachón reception	2-205 700	La Serena control room	2-205 614
Pachón observing floor	2-205 724/5	La Serena reception	2-205 600
		La Serena FAX	2-205 684

**Closing/opening limits and nighttime evacuations:** During nighttime operations the Science Operations Specialist (SOS) in charge of the telescope is the duty officer and so has responsibility for the safety of both telescope and personnel. Therefore, the SOS has the authority to close the dome if they feel that conditions are unsafe for the telescope and to evacuate the Telescope if conditions are unsafe for people. In general, upper weather limits for closing the telescope are 85% relative humidity and wind speeds of 20m/s sustained winds or gusts of 25 m/s in a dust/snow free environment but conditions may be such that closure may result before these limits are reached. The SOS-operator will wait until conditions are stable before opening again (minimum 30 minutes).

More details can be found under the internal page "[http://internal.gemini.edu/telescope/tel\\_weather.html](http://internal.gemini.edu/telescope/tel_weather.html)" (accessible on site only) which contains detailed guidelines when poor weather conditions arise or check the following document for more information [Night-Crew Evacuation from CP](#)

**14-hour rule:** The maximum amount of time a person may be physically present on the summit of Cerro Pachón at Gemini South is 14 hours in a 24 hour period, counted from arrival at the summit.

Managers, Duty Officers, and Science Operations Specialists must plan work to meet this policy's requirements. The Duty Officer (who may be the SOS at night) is responsible for enforcing the policy.

Exceptions to this policy under extremely unusual circumstances may be granted only with the approval of the relevant Head of Operations, Associate Director, or Director.

**Clothing:** As a minimum, sturdy leather shoes or boots, full length pants, and shirts with minimum four inch sleeves will be worn. Steel-toed shoes are required for those working with instrumentation and other heavy equipment additional protective equipment and clothing will be worn as specific work assignments require. Hard hats may be required when overhead work is occurring at the dome or on designated areas.

**Safety Tour:** First-time visitors must receive a safety tour of the facility from an authorized Gemini employee. The contents of this tour are described in the Appendix A to this document.

## **Appendix A: Gemini South Safety Tour**

First-time visitors to the Gemini South Telescope must receive a safety tour of the facility from a Gemini employee. The tour guide will brief the visitor on the following topics.

**Flashlight and Radio:** Always carry a flashlight and a hand-held radio when you are inside the building. This is particularly important when you are going to the 4<sup>th</sup> level, using the stairs or the elevator.

### **Observatory Grounds:**

- Be wary when walking around the summit; always use the walkways especially at night. There are shears, long drops within meters of Telescope exits.
- **Accessible areas:**
  - Visitors are generally permitted anywhere on level 1 (ground level) and level 4 (the observing floor) if is possible, after they have received a safety orientation from an authorized Gemini employee.
  - Off-limits areas may be declared by Gemini personnel in the event of hazardous operations such as mirror recoating.
  - Visitors are permitted on the telescope structure and the center section (the part that moves in elevation), but approval to enter these areas must be granted by an authorized Gemini employee each time to ensure safety.
  - Levels 2 and 3 are more hazardous and visitors must not enter them without a Gemini escort.
  - The mirror cell is strictly off-limits to anyone but Gemini employees with authorization.

**Emergency Exits:** Emergency exits are located on the east side of the dome area on level 1, and in a special cubicle on level 4 (the observing level), roughly opposite the main entrance. The level 4 emergency exit leads down a separate stairwell and directly out of the dome. Caution must be taken on this stairwell as the steps are narrow and steep.

Signs posted inside the building indicate the emergency exits.

**Safety equipment:** Note the locations of the following safety equipment, especially on level 4:

- Telephones
- Placards listing emergency procedures and phone numbers

- Fire extinguishers
- First-aid kits and other equipment
- Evacuation Exits

**Platform lift:** A large section of the floor on level 4 consists of a moveable platform lift. When the lift is lowered to level 1, there is a 3-story drop from level 4 down to it, with only bolted-down railings to protect against a fall. Note the position of the lift whenever you are on level 4, and exercise extreme caution if the lift happens to be down, especially in the dark.

**Power bars:** The bars that distribute high-voltage electrical power to the rotating dome are at shoulder level around the outer perimeter of level 4. The bars are fairly well shielded with orange plastic covers, but the protection is not absolute. Always maintain a discrete distance from the power bars, especially when carrying tools, ladders, or other metal equipment.

**Oil on floor:** The mirror cell and moving platforms in the dome can leak oil and coolant fluid, especially onto the azimuth platform under the center section. Walk carefully in this area and be alert for oil slicks.

**Telescope motion:** The telescope makes absolutely no sound when it slews in azimuth or elevation. Be alert for sudden, unannounced telescope motions when on level 4, especially at night when observations are in progress. All parts of the telescope that can move are painted blue.

**Pinch points:** Railings and other equipment around the telescope can act as pinch points when the telescope moves in azimuth. One especially dangerous area is just in front of the emergency exit cubicle. Be aware of these areas and avoid them if there is any possibility the telescope may move.

**Access to center section catwalk:** No access to the center section catwalk is permitted unless the elevation locking pins are engaged and permission is given by a Gemini employee. Learn how to check that the locking pins are engaged.