


	<h1>Atacama Pathfinder EXperiment</h1> <h2>Safety Plan</h2>	<p>APEX-APX-PLA-0004</p> <p>Revision: 1.2</p> <p>Release: 2019-06-01</p> <p>Category: 1</p> <p>Author: L.-Å. Nyman</p>
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# APEX Safety Plan

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Institute:	



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## Change Record

REVISION	DATE	AUTHOR	SECTIONS/PAGES AFFECTED	REMARKS
0.1	30.04.04	Nyman	new issue	
0.2	05.05.04	Nyman		Minor additions RG
0.3	16.07.04	R. Kurz	All	Editing for APEX
0.3b	25.07.04	Nyman	6	Definition of SCS
0.4	11.8.04	Nyman	All	Incl. comments from R.Güsten & M.Boecker
0.5	18.09.04	Nyman	All	Made the definition of APEX base and APEX telescope site clearer. Changed the references to the LSO Safety engineer to the Paranal Safety Engineer.
1.0	27.09.04			Approved by Board
1.1	March 2019	Nyman	All	Rewrite to agree with LPO/ESO safety documents. Presented to Board
1.2	June 2019	Nyman	All	Updates after Board approval



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## 1 Purpose

The purpose of this document is to outline a comprehensive safety program for the APEX project. The personal safety and health of each APEX employee, contractor employee, and visitor is of primary importance. Prevention of occupationally-induced injury and illness are of high priority.

To be successful, such a program must reflect proper attitudes toward injury and illness prevention on the part of management and employees. It requires cooperation in all safety and health matters among employees, their co-workers, and visitors.

## 2 Scope

This plan defines the safety responsibilities and management practices required to produce a safe environment for work at the APEX Site, but does not describe in detail the safety rules, regulations and procedures. The APEX Partners have established safety programs applicable to activities at their existing facilities (e.g., RD-01 for MPIfR and AD-01 for ESO). The high altitude of the APEX telescope site presents unique hazards that necessitate safety measures beyond the established programs. A common approach will be taken within the APEX project for these additional safety measures. Because the APEX Site is under the operational control of ESO, the ESO safety policies, rules and regulations (AD-01 and AD-02) apply. The additional safety rules, regulations and procedures specifically applicable to the APEX Site are defined in the APEX Safety Regulations (AD-03).

The APEX telescope is located within the ALMA science preserve at Chajnantor where the ALMA Director has overall responsibility for safety. APEX will have an understanding with the ALMA Director that includes:

1. Agreement on safety rules, regulations and procedures regarding transiting in the ALMA concession
2. Agreement on waiver forms for visitors
3. Collaboration between the two organizations (including mutual assistance in case of emergencies, access for APEX staff to the ALMA polyclinic, the use of the ALMA road, road maintenance, collaboration in radio communication on the site, etc.).

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### 3 Acronyms/Definitions

ACHS	Asociacion Chilena de Seguridad
ASM	Acting APEX Station Manager
AoD	Astronomer on Duty
EoD	Engineer on Duty
HSE	High Site Engineer
LPO	La Silla Paranal Observatory
SM	APEX Station Manager

APEX Partners – the signatories of the APEX Memorandum of Understanding:

- Max-Planck-Institut für Radioastronomie (MPIfR)
- European Southern Observatory (ESO)
- Onsala Space Observatory (OSO)

APEX Site – the site of APEX operations in Chile that consists of:

1. APEX Base located in Sequitor near San Pedro de Atacama (altitude 2440 meters)
2. APEX Telescope Site located in the ALMA Science Reserve on the Chajnantor plateau east of San Pedro de Atacama (altitude 5050 meters)

APEX Staff

- The employees of ESO and contractors who are assigned to work at the APEX Site on a regular basis.

APEX Partner Staff

- Staff members from one of the MOU partners or staff that installs equipment in the telescope on behalf of one of the APEX partners, that comes on a mission to work at APEX

Observers on Chilean time (Chile observers)

- Persons sent by CONICYT to perform observations during Chilean time

Visitors

- Persons visiting the APEX Site for the purpose of a visit only (not to work)

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## 4 Documents

### 4.1 Applicable documents

AD-01	ESO Safety Policy and Organisation	SAF-GEN-POL-0001
AD-02	Health, Safety & Environmental Manual - LPO	ESO-201112
AD-03	APEX Safety Regulations	APEX-APX-PRO-0001
AD-04	Procedure for Medical Exams – LPO	ESO-252676
AD-05	APEX Visitor Waiver Release Form	APEX-APX-PRO-0003
AD-06	Contractor Safety Procedure – LPO	ESO-231076
AD-07	Hazardous Material Procedure – LPO	LPO-PRO-ESO-20100-0002
AD-08	APEX List of Safety material	APEX-APX-LIS-0001
AD-09	APEX Safety Training	APEX-APX-PRO-0002

### 4.2 Reference documents

RD-01	MPIfR Safety Regulations	APEX-MPI-PLA-0100
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## 5 Safety Responsibilities

### 5.1 APEX Board

Approves site related safety documentation and agrees on the implementation of LPO Safety documentation as common safety rules described in the APEX Safety Regulations (AD-03).

### 5.2 APEX Station Manager/Acting Station Manager

The APEX Station Manager (SM) or the designated Acting Station Manager (ASM, safety responsible in the absence of the SM) are responsible for all safety related activities on site, coordinating internal and/or external support, communicating with the LPO Director/Site Safety Engineer about situations and follow up on emergencies. Every staff member, APEX partner, Chile observer, contractor or visitor falls under the authority of the SM/ASM in safety related matters.

### 5.3 Staff

The APEX staff shall follow safety rules, identify areas of risks, stop unsafe activities and participate in mandatory and recommended trainings.

APEX Partner Staff shall provide necessary information (dates, description of activities, support from APEX staff) before the start of a mission, comply with the valid safety documentation and follow instructions of the SM/ASM.

All APEX staff and APEX partner staff shall undergo the medical examination as described in AD-10 prior to arriving to APEX. For Chile Observers the persons going to the Telescope Site must have a valid high altitude medical certificate. The names and certificates of all medically-certified staff and Chile observers shall be submitted to the APEX SM. The LPO Site Safety Engineer shall organize the annual High-Altitude Medical Exams for the APEX staff.

### 5.4 Visitors

Requests to visit the APEX Telescope Site must be submitted in writing to the APEX SM. APEX can only authorize visits directly related to the APEX project. The APEX SM will inform the ALMA safety officer about the visit.

All visitors not employed by the APEX Partners must sign a Visitor Waiver and Release Form (AD-12), and submit it to the APEX SM or delegate before visiting the APEX Telescope site. The visitors shall follow the safety rules and instructions given by the APEX staff and be accompanied by an APEX staff member. Visitors employed by an APEX Partner must submit a valid high-altitude medical certificate.

Visits to the Chajnantor site, not related to APEX, will be handled by ALMA. All such visits must be authorized by the ALMA Director and will be taken care of by ALMA staff.

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### 5.5 Contractors

All contractors working at the APEX Telescope site must follow the LPO Contractor Safety Procedures (AD-06). As described the contractor shall provide safety related documentation and medical certificates, including the High Altitude Medical Exam for all staff working at altitudes above 3000 m.

All contractor documentation needs to be available at least 3 (three) days prior to start of work.

## 6 Safety Management

The ESO Safety Policy and Organisation document (AD-01) specifies that the APEX Station Manager (SM) is the deputy Site Safety Responsible, reporting to the LPO Director, and has authority over all safety aspects of the APEX activities at the APEX Site. The ultimate responsibility for safety, however, cannot be delegated to an individual. Adequate attention to safety is the responsibility of all personnel – APEX staff, partner staff, contractors, and visitors. Each person at the site shall comply with all identified safety and health standards, rules and regulations pursuant to the policies for prevention of all accidents.

In the absence of the SM the ASM becomes the safety responsible on the APEX Site. The ASM is normally one of the APEX Group Leads or in their absence one the Astronomers on Duty (AoD).

During work at the APEX Telescope site one of the APEX engineers is assigned as the High Site Engineer responsible for the safety of the ongoing activities. APEX partner staff who have taken the relevant safety training (AD-09) may act as High Site Engineer in the absence of APEX staff and approved by the SM/ASM.

### 6.1 Emergency Services

ESO has an agreement with Clinica El Loa in Calama for medical services. The agreement includes APEX staff, APEX partner staff and visitors. Staff using the services need to bring a copy of the “authorization letter” available at the APEX Base. Staff and visitors also have access to the ALMA polyclinic. The local clinic in San Pedro can also be used but the attention may sometimes be limited.

### 6.2 Safety Regulations

The ESO safety policies, rules and regulations (AD-01 and AD-02) apply. The additional safety rules, regulations and procedures specifically applicable to the APEX Site are defined in the APEX Safety Regulations (AD-03).

The APEX staff, partner staff, visitors and contractors shall be bound by the APEX safety regulations.



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### 6.3 Safety Materials

The APEX SM shall produce a list of safety equipment and materials (AD-08) required to provide a safe working environment at the APEX Site, and shall ensure that these items are acquired, periodically checked and maintained in proper working condition. Storage and use of hazardous materials, including cryogenic liquids, are described in AD-08.

### 6.4 Training

The APEX SM shall define the safety training program, including the preparation of training materials, to be given to APEX staff and partner staff (AD-09). It shall include initial training and periodic retraining.

### 6.5 Safety Budget

The APEX SM shall define a safety budget (for safety material, training etc.) which is part of the operations budget and approved annually by the Board.