



2023 RESEARCH INFRASTRUCTURE WORKSHOP

JUNE 27 - 30, 2023 • WASHINGTON, D.C.

Safety Plans for Extreme Climate Events
NOIRLab Facility At Tololo and Pachon Summit Sites
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PROJECT MANAGEMENT. FACILITIES AND OPERATIONS. AWARD MANAGEMENT. EHS. EDUCATION AND PUBLIC OUTREACH. CYBER (CI & CS).



Cerro Tololo and Cerro Pachon



This observatory sites are located in Chile in the north-central Coquimbo Region, with facilities located on Cerro Tololo (7,217 feet elevation) and Cerro Pachón (8,907 feet elevation) about 6.2 miles (10 kilometers) to the southeast. It is within the Coquimbo Region and approximately 50 miles (80 kilometers) east of La Serena, where support facilities are located. The road is composed of approximately 31 miles (50 kilometers) of paved public highway from La Serena to the entrance of the AURA property. The road then changes to a maintained dirt and gravel road for 25 miles (40 kilometers) from the AURA security gate to the Cerro Pachón summit, with occurrences of deep curves and steep grades along the way.





July 2022

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The winter storm start on Thursday July 14th night and all day Friday 15th dropped ~1m of snow on Tololo and more on Pachon.

The commercial power to Pachon went down during the morning and that to Tololo later in the day leaving everything on generator power. The problem was somewhere on the AURA property, likely posts down in the upper sections of the lines.





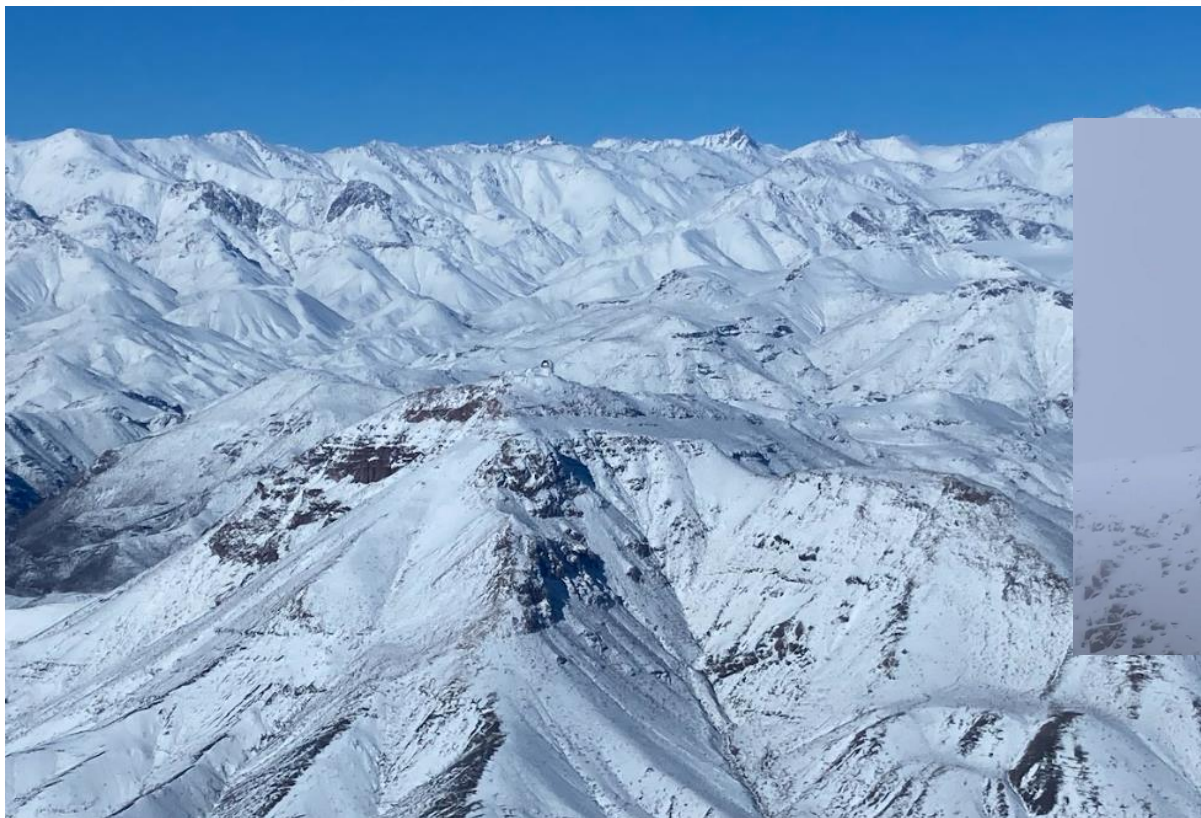
Due to the complex climatic conditions that have affected the mountain facilities, it was decided to evacuate the personnel on duty on both hills as soon as possible. The main objective was to guarantee the safety of everyone on the mountain.



At the summit of Tololo was 11 people on duty and at Pachón 5 people.



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Due to time issues, it is not possible to clear the road from Quisco to Pachón. The 5 people (cook, paramedic, ambulance driver and 2 SOAR operators), must stay at the Pachón hotel until the Civil Works staff can work on this.

An Helicopter rescue is decide





Monday July 18th the Facility Operations road team worked to improve access to Tololo Summit and clear the roads on the summit. In parallel they worked on the road to Pachon getting to within 4Kms of the summit (but the hardest 4). On Tuesday 19th the Facility Operation reach the Summit of Pachon



Consequences

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- More than 14 days out of operation
- Power line damage
- Radio Communication Support equipment damaged
- Water Supply utility damage





Lesson Learned actions

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Was the July 2022 storm a unique event ?

Historical perspective suggests that this is not the case, and that we should suppose such events are likely to recur due the global climate change.





Lesson Learned Actions

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- Define a Committee of Emergency , Empowered the committee of a full power in terms of decisions during emergency, resources, a Budget, a Procurement special process
- Design a set of Safety Inductions (tailored for each type of employees, contractors , visitors (especially tenants), etc., regarding emergency response protocols)
- Add Emergency response protocols for pre planning Winter season (check of items and emergency key elements , define responsibility and timing for adequate preparation. after Red Alert has been declared . Who will be the Emergency Leader , how the instruction will be communicated . Under What circumstance we will move forward with a rescue and evacuation (different that a road evacuation)
- During the emergency , several AURA/NOIRLab Staff communicated with Mountain Staff , mainly the unofficial information shared was not so clear . A reinforce about the formal channels of communication.



Questions ?

