



SARA-CTIO Observatory Director's Report

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I. Introduction

The SARA-CTIO telescope operation this semester was very stable, with one significant exception. There has been a limit switch issue with the telescope which has resulted in the largest loss of reported time. The back-up Andor camera was delivered and installed (so not the back-up any more) and continues to work well. The main issues at this point are primarily related to routine maintenance that has been delayed due to the pandemic and limited travel. Getting the spectrograph installed, aluminizing the mirror, and improving the VPN connection continue to be primary goals. A few other issues are described below.

II. Telescope Usage

The table below indicates that weather was the primary cause of nights lost. Only about 5% of reported time lost was due to technical issues.

Month	Nights reported	Fraction of reported time observations were made	Fraction of reported time lost to weather	Fraction of reported time lost to technical problems
October	26/31	88%	10%	2%
November	19/30	83%	9%	8%
December	15/31	93%	7%	0%
January	10/31	77%	6%	17%
February	18/28	94%	5%	1%
March	15/31	83%	5%	11%
April	17/28	64%	0%	36% (limit switches)
Averages	57%	83%	6%	11%

III. Usage by others

Lowell and Chilean observers continue to make use of their time allotments.

IV. Observatory Problems

The majority of reported time lost this semester was due to technical problems, primarily an issue, likely a short somewhere, of the horizon limit switches which have caused the telescope to lock in place even when not below the set limits. This was addressed by essentially removing the connection that leads from these switches. Software limits are still in place. Reported weather time loss was only about 6% of the time. However, 43% of all nights did not have an observing report submitted. Of those submitted, almost none reported the total loss of a night due to weather. It is likely that many of the unreported nights were entirely lost due to weather (or some other issue). However, if all of that time was lost due to weather this would have been a record (in a bad way) semester for poor weather.

V. Instrumentation

1. Science Camera

The twice-repaired Andor camera operated reliably while it was installed. When the new “back-up” Andor camera arrived it was installed and has been on the telescope since. It continues to operate without issue and the camera properties are essentially indistinguishable from the other camera.

2. Spectrograph

Once Peter is able to travel to CTIO and can schedule a trip he will install the spectrograph.

3. Other

The guider has worked pretty reliably this semester. There have been a few scattered issues, but they have worked reliably the majority of the time. Pointing issues continue to occur on occasion. However, when they occur the offset is nearly always too far north by about 10 arcminutes and can be corrected by simply hitting Send one additional time.

The tracking has been less reliable recently with some noticeable large (several arc-minute) north-south oscillations and times, and E-W drift that is at times present over a large portion of the sky.

Most of the issues we are seeing are likely due to delayed routine maintenance.

The VPN connection continues to be an issue for Windows 10 users. I have made some inquiries about this, but have not followed those up in a timely way. I will make it a high priority to deal with this in the near-term.