



## SARA South Observatory Director's Report

October, 2010

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### Introduction

The SARA South 0.6 m telescope became fully operational in May of 2010 after two months of "shake-down." I want to thank Todd Hillwig, Bill Keel and Brian Murphy for acting as test pilots. It quickly became apparent that this telescope will be very productive. The SARA Board sent me to Chile last December to check out the final stages of the telescope renovations and the first sky tests. Peter Mack and Yadav worked long hours to produce a very fine telescope. Many thanks go to both of them.

### Telescope Usage

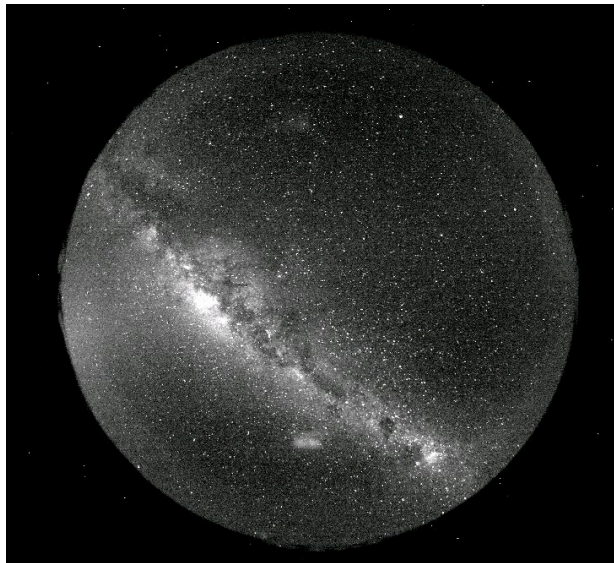
This report will cover the operation of the telescope from May through the end of September 2010. March and April were used for telescope testing and as a result the statistics from these two months are not representative; many nights were not scheduled or only partially used.

Of the first 5 months of full operation a total of 139 nights were scheduled. Unfortunately, reports were missing for 31 nights making the statistics incomplete. Observations were conducted on 88 nights, while 17 nights were lost due to weather conditions. In June the telescope was closed for 14 days because of a failure of a safety switch that prevents the telescope from slewing below the horizon. This failure was due to a simple connection problem that didn't show itself during the testing period. Since that time the telescope has operated remarkably well. Even when the 15 down-days are included, the telescope operated at an efficiency of 63%.

Month	Nights reported/Nights scheduled	Nights observations were made	Nights lost to weather	Nights lost to technical problems <sup>1</sup>
May	22/24	15	6	1
June	24/27	10	0	14
July	29/31	23	4	0
August	21/29	18	3	0
September	26/28	22	4	0
Totals	122/139 = 88%	88 63% used	17	15

<sup>1</sup>Does not reflect actual hours lost, just full nights lost to technical problems.

Using the SARA-South telescope without an ROA or even the “domes-open” message from the 4-meter operator takes some getting used to. So far this has not been a significant issue. We have a working all-sky camera and several cameras both inside and outside the dome. CTIO has a mountain environment web page that it is very useful for SARA observers ([www.ctio.noao.edu/environ/environ.html](http://www.ctio.noao.edu/environ/environ.html)).



A policy decision will need to be made as to the humidity and wind speed limits for safe operation. Wind speed is more of an issue at SARA-South because the telescope is low to the ground and located on a dusty road.

A note about focusing: Because the f-ratio of SARA-South is almost twice that of SARA-North you need to be more aggressive when searching for focus by taking larger step sizes. If the stellar profiles look even slightly triangular it means you are out of focus. A focused star image is nicely circular.

### **Usage by others**

Both Lowell observatory and Chilean astronomers have the right to request telescope time on the SARA-South telescope. In August of 2010 Jeff Hall, the director of Lowell Observatory, was notified that the telescope was operational and that train time was available. He recently notified Bill Keel that Lowell would have no time requests for the coming semester.

Bill is in discussion with Chris Smith, CTIO director, about the mechanism for alerting the Chilean astronomy community about the telescope availability.

### **First Light (for a student)**

The first usage of the SARA-South telescope by a student was an unplanned event. On the night of March 6, 2010 my doctoral student, Dennis McClure, was observing with the SARA-North

telescope. I was in the same room running some early sky tests on the SARA-South telescope. Over time clouds rolled in over Kitt Peak. At that point I offered the southern telescope to Dennis and we continued the rest of the night. So the first use of the SARA-South telescope by a student in our consortium was a night where he observed in **both hemispheres**. Even more interesting is the fact that Dennis is *legally blind!*

### **Telescope Problems**

At this time there are no significant problems with the telescope. However, there is an annoying issue of scattered light with the autoguider optical assembly. If the autoguider mirror is positioned on the east-side *and* if there are bright stars on the east side of the field of view, there can sometimes be a bright horizontal streak of light in the images from the science camera. One solution is to keep the autoguider mirror on the west side whenever possible.

### **Camera**

We continue to thank Brian Murphy and Butler University for the loan of their Apogee E6 camera. The SARA Finger-Lakes camera died after shipment to CTIO. Without the Butler camera we would not be able to do research with the SARA-South telescope.

### **Future**

Peter suggested we purchase one or more storage cabinets for the dome. There is a gap of about 1 inch between the bottom edge of the dome and the wall of the observatory building. This prevents a good weather seal against dust and rain. Peter thought it was odd that a flashing skirt was not included with the dome and he was going to contact Ash Domes to see if this was an error. In any case some provision should be made to weather seal the dome.