

The SARA Observatory

Southeastern Association for Research in Astronomy



SARA - RM OBSERVATORY DIRECTOR'S REPORT

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I. Summary

This report covers the time from mid-April 2022 through mid-November 2023. The two primary continuing issues that will at some point be resolved are the mirror petals and the dome shutter. At present the dome issues are preventing us from using the telescope. Peter Mack visited La Palma in September to further address these issues and is visiting again as this report is being written. We are hoping to have a fully functioning telescope by the end of this month.

II. Telescope Usage

A quick look at the reported observing statistics are as follows:

Total hours reported:	824	100%
Hour of observing:	526	63%
Hours due lost to weather:	223	27%
Hours lost due to software/equipment failure:	74.5	9%

We did have a wildfire close to the observatory in July that contributed to a day or two in these numbers. Of course, these numbers do not take into account the most recent dome failure we had in mid-October. That would perhaps add another 10 to 12% to the last row of equipment failure.

III. Observatory Issues During Reporting Period

Autoguiding

There have been occasional reports of the guiding not working properly. When it does work it seems to work well. I'm not sure whether this is a software, settings, or perhaps sometimes as in my case an operator error.

Slew Limits of the Telescope and Recovery

Several users have reported that when the telescope is tracking and then hitting the western HA limit, they have been unable to recover the telescope. That is when the west HA limits are hit, they have not been able to slew to the East, use the hand paddle to slowly move the telescope to the East, or use the “Z” to move the telescope to zenith. Once again, I’m not sure what the issue is with recovery. In most cases ACE has had to back the telescopes out of the safety limits.

Mirror Aluminizing

As Bill Keel noted in February 2023, the mirror has lost some 40% of its throughput since 2019. Obviously keeping the mirror petals open due to their mechanical issues contributed to this decline in the reflectivity of the JKT. Realuminizing of the mirror will likely take place in the next week (mid-November). New chains had to be purchased, and the crane used to lift the assembly had to be recertified. The cost of the realuminizing will be 21,088 euros. This does not include ACE’s labor and cost of chains.

Dome

In mid-October the gearbox for the dome shutter failed rendering the dome. I want to remind everyone that this dome is the oldest in the SARA fleet of telescopes at approximately 40 years old. Therefore, these failures should not be unexpected since we are dealing with aged equipment. ACE will be replacing the current motor with a more durable stainless-steel motor. The latest estimate I had for this being done was late November.

Mirror Petals

The mirror petals have not been working during the reporting period. Because of this and to prevent dust from settling on the mirror the telescope has been parked at a low altitude. ACE is building a new 8 petal mirror system that specifically will not require a chain as the present petals do. I believe that ACE quoted a rough price of \$10,000 for this.

IV. Reminders:

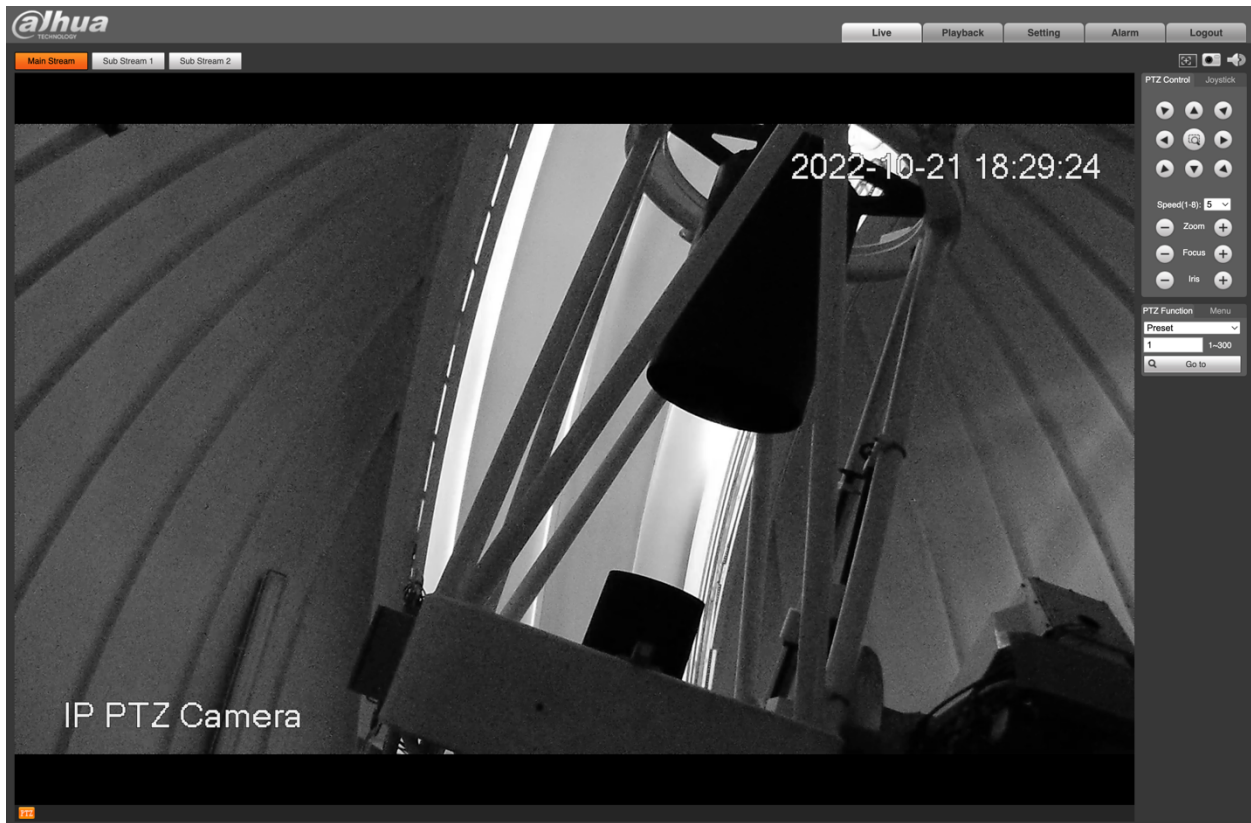
ACE Software – A reminder that are running a new version of the ACE software at SARA-RM. It is similar to the previous version except that all the GUIs are self-contained in a dedicated window on the telescope PC. I suggest that observers use:

- 1) camera-related windows only on the camera PC,
- 2) and telescope-related windows such as position, dome, etc. on the telescope PC.

It is also highly suggested that at the beginning of the evening observers reboot the PCs and the ACE cabinet. I know when I have not done this I usually run into issues.

Typically, these issues are the (auto)focus not working or autoguiding not working. Many of the issues that users have had with SARA-RM is in understanding the software, it's reboot procedures, etc. I'd like to stress to all the graduate student mentors in SARA to please ensure that your students fully understand the basic troubleshooting and rebooting processes for SARA-RM. If they have issues, they should **first contact you for help**, then the directors. The reboot instructions are on the desktop. By following the instructions, the telescope typically comes back online 90% of the time.

Dome Camera –The SARA-RM dome has a camera that is zoomable and steerable. You can run it on your local computer. The IP address is <http://161.72.91.222/>. Username SARA with typical RM password.



Dome Lighting – And since we have a dome camera it is often useful have to have dome lighting. The dome lighting can be found on the JKT DOME PDU. The lights are labeled “NIGHT LIGHT.” Do not turn the lights on when the dome shutter is open otherwise our neighbors will complain!

#	Name	State	OFF / ON	CYCLE
1	SMART DOME (ON)	ON	Switch OFF	Cycle
2	SHUTTER DOOR (ON)	ON	Switch OFF	Cycle
3	AZIMUTH RECYCLE (OFF)	OFF	Switch ON	Cycle
4	ANDOR COOLER	ON	Switch OFF	Cycle
5	NIGHT LIGHT	OFF	Switch ON	Cycle
6	Outlet 6	ON	Switch OFF	Cycle
7	Outlet 7	ON	Switch OFF	Cycle
8	Outlet 8	ON	Switch OFF	Cycle