



SARA - RM OBSERVATORY DIRECTOR'S REPORT

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I. Summary

This report covers the time period from late March through mid-September 2021. Peter Mack made a visit to the La Palma in July for scheduled maintenance, to address some needed fixes, and discovered that some issues others will have to wait until another visit. Peter is hoping to return to La Palma sometime between December and February. It should be noted that Cumbre Vieja volcano began erupting on September 19th. The volcano is roughly 15 km from the observatory. But even at that distance ash can still settle over the observatory. Because of the difficulty in monitoring wind direction and location of the volcano's ash plume at night most observatories on the mountain remain closed including the JKT. In the past these eruptions seem to have typically lasted roughly 3 months. So the JKT may not be in use again until the end of the year.



The volcanic plume of Cumbre Vieja hitting a temperature inversion over La Palma

II. Telescope Usage

Below are the observing statistics for the JKT in this reporting period (Thanks to Bill Keel for tabulating these numbers). The numbers do not include losses due to the recent volcano eruption:

- 61% (713 hrs) Observed
- 25% (287 hrs) Lost to weather
- 14% (164 hrs) Lost to technical losses.

III. Observatory Issues

So let's go through the primary issues one by one. Tomomi Otani at ERAU has been keeping a running tabulation of issues with all of the SARA telescopes.

1. Dome Shutter – There have been very few occasions when the shutter of the dome won't close completely. This is a mechanical issue that often requires ORM staff to help out. On Peter Mack's July visit he inspected the dome and hopes to have a local company address the issue.
2. Mirror Petals – During his visit to the JKT Peter Mack installed a new mirror petal motor. The job was more awkward than planned because the gearbox was not the same size as the old box. And the motor differed electrically. So it took more time than planned and Peter did not have ample time to test the setup. As a result the new chain that was installed likely stretched after a few days of being under tensions. Also it appears the mirror petals may be binding preventing remote opening of them. So once again as a temporary fix, the mirror petals have been left open. Because of this the telescope must be parked at HA 0 hrs and Dec of -35. This is to prevent dust from collecting on the mirror surface. So during his next visit, hopefully the mirror petals will be fixed.
3. Dome Cameras – During Peter's A dome camera was installed but lighting is needed so that the observer can actually see the scope at night to make sure it is doing what it is supposed to.
4. Tracking – Recently observers have reported tracking errors that are quite appalling! 100 to 200 arcseconds per hour. Peter told me that He and Brian Brondel are trying to address the issue hoping that it is a software issue. But with the JKT presently closed we may have to wait a couple of months.
5. Telescope Stopping – It has been reported that the tracking stops well before the software limit at roughly HA=2 to 3. I'm not sure what declination this was at though.
6. Filter wheels –I assuming they are working fine since the last report. I believe Peter installed new belts on each wheel.
7. Other issues – There are several other somewhat more minor issues listed in Otani's list for ORM. The primary perennial complaint seems to be with the ACE software itself. In all likelihood going back to the old software will not happen for some time. In the meantime I suggest that all observers restart both ACE node service and client prior to observing. I've noticed that multiple ACE Clients have been running on the PCs. This obviously can cause issues with the telescope performance. I also suggest that observers use:
 - a. camera-related windows only on the camera PC,
 - b. and telescope-related items only on the telescope PC.