

Tech issues affecting science productivity

1. No active alignment, unstable PSF

- Deep imaging impossible, hurts spectroscopy, science done in non-optimal conds, time spent aligning.
- **Critical**. Cannot do 10-m science. *SAMS*.

2. RSS throughput

- Factor 2 light lost everywhere, factors of many in blue.
- **Critical**. Cannot do 10-m science. *The Fix*.

3. Telescope (Primary+SAC) throughput

- Perhaps 20-30% lower than optimal
- **Important**. Would help the faintest/fastest science. *??*

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4. Lack of rotation guidance, Rho drift

- About 2 arcsec at edge of field per hour, better in S.
- **Important**. Cannot do 10-m class MOS. *New guider??*

5. RSS straylight

- 20-100% extra light on detector, up to 0.4 mag in depth
- **Important**. Hurts 10-m class faint source spectroscopy, wastes time in up to factor of 2 longer exposures. *Fix??*

6. Difficulty of flat-fielding.

- Moving pupil affects not understood well, can't flat-field.
- **Important**. Accurate photometry at <5% (scam,rss,fp) impossible. *Models?? New cal method??*

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7. Unresponsive fine tracker movements (acquisition). [+ other slow-response buttons on SOMMI and SCAM, e.g. focus]

- wasting on average 3 mins per pointing.
- **important**. 2 weeks p.a. lost, + frustration. *Software fix pls?*

8. Poor performance of calibration unit

- uv/blue RSS and full-mode HRS calibs impossible.
- **important**. Some science can't be done, time lost. *New unit?*

9. Stability of calibrations forcing night time cals

- using avg of 4 min per RSS target.
- **important**. 2.5 weeks p.a. lost. *Tests & new scheme??*

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10. RSS guide probe efficiency

- **important.** Losing flux outside slit. *..the HRS one is better!*

11. Unstable slitmask magazine mechanics

- **important.** 2-3 breaks p.a., 3-5 RSS nights lost. *??*

12. Humidity limit

- **difficult.** could gain 1-2 months open time if could go to 90% or 95% external RH.

13. Tech. standby in town

- losing 20 mins per call. This also adds up ... Difficulties especially in the beginning of the night.

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14. Checklists when returning to nominal instrument (etc.) status, or starting out with new ones.

a) After changes and fixes.

b) Regular daily late afternoon.

15. Accessible lists of nominal temperature limits for various systems (detectors, igloos, etc.) - (to avoid unnec. callouts)

16. Better tech.issue logging and tracking system

Astro inefficiencies

- Optimal scheduling: making sure best programs are finished.
- Optimize calibrations
- Some procedures may not be fully streamlined
- TACs: efficient and/or high profile programs
- All in all, I think we are better than ~1yr ago due to better alignments, and software upgrades.