

**20190706**

## **CESAR Observations**

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- 3h15: second earthquake in 2 days. The big trees were moving quite impressively.... mag: 6.9, Ridgecrest.
- 3h45: beta Dra, HD159181. Alignment with VEGA, then TipTilt installed and alignment with the VEGA M6 mirrors.
- Initial sequence made on the internal source to validate the algorithm first and to measure the transfer function. OpenLoop/CloseLoop, gain=0.3
- First Sequence: CloseLoop\_200\_0.3 (data and images) 065237 to 065324.
- Second Sequence OpenLoop\_200\_0 (data and images) 065510 to 065557
- Third Sequence OpenLoop 500Hz OpenLoop\_500-0 (data and images) 070424 to 070444
- Fourth Sequence CloseLoop 500Hz CloseLoop\_500\_0.3 (data and images) 070556 to 070617
- UT0510 approximatively: telemetry recorded on S1 and S2 AO in close loop (files telemetry 001). Then telemetry in open loop (files telemetry 002). 1 file is 10000 iterations of the loop.
- Longer sequence 200Hz, gain 0.5: 072040 to 072128 closeloop\_HD159181\_200-0.5 but saturation of the command.
- Longer sequence 200Hz, gain 0.5: 073125 to 073213 closeloop\_HD159181\_200\_0.5
- OpenLoop 200Hz: 073354 to 073441 openloop\_HD159181\_200\_0
- 500Hz, GainAndor=1000 but server crashed again. openloop\_HD159181\_500\_0 074339 to 074359
- 500Hz, GainAndor=1000. closeloop\_500-0.5 074702 to 074723 (issue with the dark which is not done at 500Hz and Gain1000)
- New complete sequence at 200Hz, Gain 300
  - Dark 075032 to 075119
  - closeloop\_200\_0.5 but low flux and poor images: realignment of telescope.
- We finally decided to go back to the lab for a better alignment of the injection. It looks like the tip/tilt mirror is not very stable in its mount. We did the alignment but when coming back to it after starting on the sky the injection was almost lost.
- Recording for transfer function
- 200Hz Gain 1000. Bias 100657
- 200Hz close loop, Gain 0.5. Data and Images. closeloop\_200\_0.5 101005 to 101052
- 200Hz open loop, Gain 0.5. openloop\_200\_0.5 101230 to 101317
- Telemetry on AO CloseLoop (files 003) + CESAR files: 101541 to 101628
- Telemetry on AO OpenLoop (files 004) + CESAR files: 101731 to 101819
- S2AO with Damping=0 AO CloseLoop (file 005 for S2 only) 102753 to 102841

## **VEGA observations V38 Salsi S2P1B1-W2P4B2-W1P1B3**

- 8h30 we set the lab for the VEGA observations LABAO Star HD194093, Alignment....
- 9h10: Target now for fringes. r0=7cm at the beginning. S2=700, W2=1200. BC1=7.6, BC2=4.8. S2W2 fringes on the left (+150), W2W1 fringes on the right (-300). [HD192640.2019.07.06.09.45](#). Tracking

not excellent on CLIMB, r0 9cm. Fringes seen on VEGA. r0 around 12cm now. Probably the three peaks are ok. 25 blocks

- 9h58: Cal2 now: HD191610. Nice fringes well tracked and 3 peaks ok on VEGA. [HD191610.2019.07.06.10.00](#). r0=11cm.
- 10h09 Target again. [HD192640.2019.07.06.10.10](#). Tracking ok on CLIMB, r0=12cm.
- 10h20: Cal1 now. HD193369. Fringes are a little bit fainter on CLIMB and not so much photons on VEGA. [HD193369.2019.07.06.10.21](#). r0=10.5. Fringes ok on VEGA but SNR increase slowly. Good tracking.
- Next one is the target HD195810, with Cal1=HD196544 and Cal2=HD193472.
- 10h30: Checks tar for alignment HD187642
- 10h37: Cal1 Nice fringes on CLIMB. Good peaks on VEGA. [HD196544.2019.07.06.10.41](#). r0=10cm. 3 peaks very rapidly on VEGA. Huge fringes on CLIMB.
- 10h50: target now. [HD195810.2019.07.06.10.55](#). Tracking excellent on CLIMB. Fringes very bright on VEGA, probably not well resolved... maybe a longer baseline should have been used. W2 cart stuck at block around 10. Back at block 18. 30 blocks
- 11h09 Cal2 now. [HD193472.2019.07.06.11.11](#). S2W2 fringes a little bit faint on VEGA. But good tracking CLIMB and peaks ok rapidly on VEGA. r0=9cm.
- Target again. [HD195810.2019.07.06.11.22](#). Tracking really good on CLIMB with huge fringes. Nice peaks again on VEGA.
- 11h31: Cal1. [HD196544.2019.07.06.11.33](#). r0=11cm. Very nice fringes on CLIMB and VEGA. A little bit more piston around the end of the sequence.
- 11h41: Target. [HD195810.2019.07.06.11.43](#). Tracking nice by CLIMB. Fringes with high SNR on VEGA. r0=13cm.
- 11h52: cal1 again. [HD196544.2019.07.06.11.56](#). r0=12cm.
- [D\\_CMR720.2019.07.06.12.06](#)