

20190705, CESAR Observations

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CHARA: Theo, Matt, Chris

Difficult start after the problem encountered on the TipTilt rack during the afternoon. Finally the rack is repaired and tests could start. However the time lost during the afternoon has not permitted to finish the work on the control loop. So many tests during the night. However the poor conditions $r_0=6\text{cm}$ are not sufficient to permit the AO to give an acceptable image in the visible for the optimisation of the injection.

- First sequence
- GAIN=900, DIT=5ms, SIZE=90, $r_0=7\text{cm}$
- File 070450: AO ON S2, HD141003, $mV=3.67$
- File 070830: AO OFF S2, HD141003, $mV=3.67$
- FILE 070922 DARK
- Second sequence
- 092639: AO ON S2 HD184006, $r_0=6\text{cm}$ (10x1000 frames) 092725 (last block). No TT
- 094223: AO OFF (10x1000 frames) 094402 (last block)

8h00: switch to VEGA, conditions are too bad for valuable tests of AO+injection. Chris & Denis for the rest of the night

V70 Klement, S2P5B1 – S1P4B2 (REF) Full AOs on S1S2 + VEGA&CLIMB

- Deneb HR656 first. (Fringes on the left at $+580\mu\text{m}$). [HD197345.2019.07.05.08.25](#). 40 blocks. AO On on S1 and S2. Nice fringes on CLIMB well tracked. Nice peak on VEGA also. $AH\sim-1H$.
- [D_CHR656.2019.07.05.08.45](#)
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- Targets: HD193237, HD198478 Cal1=HD197392, Cal2=HD201834 (MR656)
- Cal1: [HD197392.2019.07.05.09.08](#). Hard time to cophase the fringes. Poor tracking on CLIMB and difficult to see them on VEGA. offset = $-380\mu\text{m}$, $BC1=6.6565$. But position not fully guaranteed. Fringes are probably not at the right position. Elles sont en faits probablement à $900\mu\text{m}$ de la position. A confirmer sur la target avant recentrage.
- [HD193237.2019.07.05.09.37](#). Fringes are in fact at offset 1190, $BC1=8.4563$. Very nice tracking on CLIMB with TELAO ON on the two telescopes. Nice fringes on VEGA. So the previous point on Cal1 is probably not usable at all.
- Cal1 again. [HD197392.2019.07.05.09.57](#). fringes ok on CLIMB and VEGA but more fainter (few photons on VEGA-RED: almost 200 only). So probably hard to calibrate correctly the good point on the target.
- Next target [HD198478.2019.07.05.10.12](#). Nice fringes with good tracking by CLIMB. Nice peak on VEGA.
- First target again but long way to slew and thus new alignments are necessary. Finally nice fringes on both CLIMB and VEGA. Offset=1520. [HD193237.2019.07.05.10.38](#). Exceptional waterfall on CLIMB! Really nice fringes.

- Next target HD198478. S2 pupils appear vignette. M10 check for control. Small adjustment. Many crashes of the LABAO servers & guis. NIRO Alignment. [HD198478.2019.07.05.11.02](#). S2 lost around blocks 13&14. Back at block 16. 24 blocks as a compensation. r0 is closer to 10cm now.
- Cal1 for concluding this series on these two targets. [HD197392.2019.07.05.11.17](#). The fringes are much better now on CLIMB and on VEGA, probably thanks to the seeing improvement. The tracking is not as good as on the targets however. Improvement in the middle of the sequence.
- [Spectral calibration D-CMR656.2019.07.05.11.28](#).
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- Back to Deneb HR656 for a second point at a different hour angle (baseline rotation AH=+2H). Nice fringes again on this bright target. [HD197345.2019.07.05.11.38](#). r0 around 8cm.
- Same thing but now with TELAO in FLAT mode only and Telescope Tip/Tilt. The difference on CLIMB is obvious and this is the same on VEGA. It was necessary to adjust S1 and S2 pupils for this by an amount that is larger than the usual drift. It will be interesting to test the difference of quality on these two data sets. [HD197345.2019.07.05.11.51](#). r0 a little bit lower now, closer to 7cm. The contrast of the waterfall is clearly different.
- [Spectral calibration: D_CHR656.2019.07.05.12.01](#)
- Note: AO Gain on S2 was 0.4, S1 was on 0.25 (nominal value).