

## Engineering tests of CESAR + OPLE

UT03h15: We continue the tests on OPLE (ramp of positions and recording the metrology) and we start E1 for CESAR alignment and tests. Slew to Arcturus (higher than Vega). LABAO 300fps but coma is strong: spots are not well centred into the boxes.

- 725/50nm filter at the entrance of CESAR.
- max looked for over -20+20 and then photocenter around 3x3
- init all devices
- change parameters (1000 for bias), apply
- dark
- white source. Start. Reference Pixel=(75, 62)
- switch off source and open shutter
- Start acquisition pour voir
- change gain (16000 saturation)
- 3000 frames, 10 blocs. (files in Datatest)
- recording
  - Arcturus-wLABAO-wOTT
  - Arcturus-wLABAO-wTT
  - Gain 0.3 to 0.8 with servo-on and start acquisition. 0.8: oscillations are visible. On the other the injection seems really good.  $r_0=10/11\text{cm}$ .
- Reference pixel done again after =75-63: (0.5 pixels).
- New record without TipTilt
- max looked for over -3x3 and then photocenter around 3x3.
- Reference matrix 75-62.6
- New records with gain 0.5 to 0.7
- Slew to Vega (different position in the sky and possible better alignment of LABAO). Back to box 20x20 for the photocenter calculation.
- New matrix 75-62
- recording G=0.5
- Filter 625 on the direct image, filter 725 on the fiber output.
- Matrix 75-62.  $r_0$  on Vega is 11cm.
- Recording G=0.5 and without tip/tilt.
- Filter 825 on the direct image now. Without and With tip/tilt.
- Filter 725 at the entrance of CESAR and SOLIS recording with and without LABAO.

## V52 E1P1B1-E2P2B2-W2P5B3 E1=+150, E2=-300

UT6h10: ready to start on the LABAO star HD189319.

UT6h25: slew to the cal HD187811. BC1=6.55, BC2=4.57.  $r_0$  around 10cm.

**HD187811.2018.07.05.06.33**. Nice fringes well tracked by CLIMB. Ok on VEGA. The 5 first blocks of ALGOLB do not contain photons. 3 peaks seen on Vega. BC1=6.55, BC2=4.57

UT06h42: target. E1=-2310, E2=-2340. **HD187921.2018.07.05.06.44**. Good tracking. E1E2 Ok, E2W2 show up quite rapidly but the contrast is clearly low.  $r_0=11\text{cm}$ .

UT06h54: It is necessary to check the pupil at each time. **HD187811.2018.07.05.06.55**. BC1=6.53, BC2=4.58. Nice fringes. E1=-2270, E2=-2320. 3 peaks clearly seen.

UT07h07: SV Vul. **HD187921.2018.07.05.07.08**. Good sequence on CLIMB.

UT07h17: cal. **HD187811.2018.07.05.07.19**. Nice peaks on VEGA. Good tracking.

UT07h28: SV Vul. [HD187921.2018.07.05.07.30](#). CLIMB ok. E2W2 do not show up but this seems coherent with the prediction by ASPRO. Only E1E2 usable.

UT07h39: cal. [HD187811.2018.07.05.07.41](#). Nice peaks on VEGA. Good tracking CLIMB. Stop at block 19 (this one has to be discarded: end of delay). We change the position of the reference cart.  $r_0=13\text{cm}$ .

UT07h50: SV Vul. [HD187921.2018.07.05.07.52](#). CLIMB ok, nice fringes. E1E2 ok but E2W2 very faint.

UT08h03: cal. [HD187811.2018.07.05.08.06](#). Nice peaks on VEGA.  $BC_1=6.63$ ,  $BC_2=4.62$ .

UT08h15. SV Vul [HD187921.2018.07.05.08.17](#). CLIMB ok (a little bit more piston),  $r_0=12\text{cm}$ . E1E2 fringes ok but E2W2 not seen. 20 blocks but longer time as I forget to start the recording of data. This Cepheid program is really repetitive...

UT08h35: NIRO alignment on the cal.  $BC_1=6.66$ ,  $BC_2=4.54$ . E2 cart has some oscillations. We try a different reference cart position. in fact  $r_0=8\text{cm}$  now and the behaviour of fringes in CLIMB is worst than previously. Nice fringes in VEGA however but not as nice as before on the E2W2.

[HD187811.2018.07.05.08.38](#).

UT08h55: SV Vul. [HD187921.2018.07.05.08.57](#). Nice fringes on CLIMB.  $r_0=8\text{cm}$ . E1E2 ok, E2W2 faint but present.

UT09h06. Cal. [HD187811.2018.07.05.09.08](#). Nice data set.

UT09h19. SV Vul: **crash control**. [HD187921.2018.07.05.09.24](#). Good tracking by CLIMB,  $r_0$  still 8cm. same situation as previously for the VEGA fringes. E2W2 highly resolved but the peak appear after 6 blocks.

UT09h34: Cal. [HD187811.2018.07.05.09.35](#). CLIMB tracking not terrible but fringes ok anyway. Nice peaks on VEGA. Delay on E1 will be too short to conclude the 20 blocks probably.  $r_0=9\text{cm}$ . Stop after 14 blocks (bloc 14 is not good).

UT09h42. SV Vul. [HD187921.2018.07.05.09.44](#). Good sequence on CLIMB.  $R_0=10\text{cm}$ . Fringes E1E2 ok on VEGA. E2W2 hard to see on VEGA.

UT09:55: Spectral calibration [D\\_CMR720.2018.07.05.09.57](#)

### V01 S2P5B1-E2P2B2-W2P5B3 S2=+150, E2=-300

UT09h55: we reopen S2Cal and start with the AO star HD204075. Check star HD205637. Easy cophasing.  $S_2=3280$ ,  $E_2=-2139$ .  $BC_1=6.83$ ,  $BC_2=4.67$ . We slew to the cal.  $S_2=3230$ ,  $E_2=-2260$ .

[HD210424.2018.07.05.10.25](#). The W2E2 fringes are ok. E2S2 does not really show up. They are jumping in CLIMB.  $r_0=7\text{cm}$  (low declination).

UT10h34: slew to the target. S2 fringes hard to find.  $r_0=7\text{cm}$ . [HD206893.2018.07.05.10.36](#). Hard for CLIMB on S2E2 but fringes are here. E2W2 ok on VEGA. S2E2 do not exist.

UT10h54. Back to cal.  $S_2=3460$ ,  $E_2=-2270$ . [HD210424.2018.07.05.10.56](#). Again W2E2 ok rapidly in VEGA but hard to see the E2S2 fringes (the ones on left).  $r_0=7\text{cm}$ . It seems that we can see the E2S2 fringes.

UT11h07: target again. [HD206893.2018.07.05.11.10](#).  $S_2=3870$ ,  $E_2=-2310$ . E2W2 ok on VEGA. S2E2: a peak seems to appear at the same position than on the cal...  $r_0$  close to 6cm now.

UT11h24. Cal now.  $S_2=3460$ ,  $E_2=-2270$ . [HD210424.2018.07.05.11.10](#). (**Pb UT time of control central**). Always the same situation. Fringes on CLIMB are weak.

UT11h37: target [HD206893.2018.07.05.11.38](#). (**same issue on the UT time**).  $S_2=3920$ ,  $E_2=-2220$ .  $r_0$  continues to decrease. Less than 6cm now. W2E2 ok, Nothing seen on VEGA for E2S2. Maybe S2W2 fringes? We continue to record up to the end of delay. 30 blocks.

UT11h53: cal. [HD210424.2018.07.05.11.54](#).  $S_2=3910$ ,  $E_2=-2200$ . Better fringes on CLIMB. E2W2 ok. 30 blocks also.  $r_0=8\text{cm}$ . Maybe E2S2 ok... And possibly also S2W2.

UT12h15: Spectral calibration: [D\\_CMR720.2018.07.05.12.17](#)