Log CHARA/VEGA 2018-07-01

Observateurs: Fred, Elisson et Norm

UT03h00: arrival and setup, humidity is up to 50-60%.

V16 W1POP1B3-W2POP5B2

UT03h13: we start with program V16 (PI: Perraut). Target = HD 148898, CAL = HD 145607. For LABAO, we use HD 138905. For checking fringes, we use HD 134759.

UT03h35: LABAO is finished. We slew to the check star.

UT03h50: fringes are found on our check star, we are cophased.

UT03h52: we slew to the calibrator star. We record with 40 blocks.
HD145607.2018.07.01.03.55. Offset W2 = -5155 microns, CLIMB_B1 = 7.76692 mm, CLIMB_B2 = 5.4889 mm. Good fringes on CLIMB and VEGA. The seeing is about 8 cm. Pic is intense on VEGA with SNR up to ~ 12-14.

UT04h15: we slew to the target now. Recording with 20 blocks.
HD148898.2018.07.01.04.21. Offset W2 = -5754 microns. B2 = 5.508 mm. Fringes on CLIMB are intense and with a good stability, good tracking. Intense pic on VEGA with SNR up to 30.

UT04h30: to the calibrator. We record with 40 blocks. **HD145607.2018.07.01.04.33.** Offset W2 = -5110 microns. Seeing around 10 cm. Low piston in the CLIMB fringes. Nice pic in VEGA with SNR up to about 21. It is probably also a good record as the last ones.

UT04h50: to the target. Record with 20 blocks. **HD148898.2018.07.01.04.53.** W2 = -5660 microns. B2 = 5.518 mm. Good fringes on CLIMB/VEGA. SNR in W1W2 reaching up to ~ 31.

UT05h04: to the calibrator. **HD145607.2018.07.01.05.06.** 40 blocks. W2 = -5055 microns. Fringes on CLIMB are fairly stable, intense pic on VEGA. Seeing around 8 cm.

UT05h25: last target point. **HD148898.2018.07.01.05.25.** 20 blocks. W2 = -5625 microns. B2 = 5.528 mm, CLIMB_B2 = 5.5288 mm. SNR on VEGA ~ 27. Good point too.

UT05h35: we slew to the calibrator and finish this program tonight.
HD145607.2018.07.01.05.36. Offset W2 = -5164 microns. We record with 20 blocks since there is good SNR up to 20 on VEGA and in reason of schedule for the night.

Spectral calibration: D_CMR720.2018.07.01.05.47

V67 W1POP5B3- E2POP1B2

We switch to program V67: target = HD 124553, CAL1 = HD 123255, CAL2 = HD 129956, LABAO = HD 130109, check = HD 134759. POP in W1 changed from 1 to 5.

UT05h45: we slew to the star for LABAO, it is finished the procedure.

UT06h00: we slew to the check star. Hard to find fringes, but found at the end.

UT06h20: CAL1. We record with 20 blocks. **HD123255.2018.07.01.06.31.** Offset E2 = -6240 microns. B1 = 7.669 mm and B2 = 5.308 mm. Bad tracking on CLIMB, strong piston, lost of fringes sometimes. Faint pic on VEGA. SNR on VEGA is about 2-2.5. Seeing ~ 8 cm.

UT06h41: target. **HD124553.2018.07.01.06.42.** Offset E2 = -6300 microns. Fringes on CLIMB keep with strong piston, moving very much. Faint pic on VEGA with SNR around 2-2.5. Average number of photons/image in the red camera is ~ 100-150.

UT06h52: CAL1. We record. **HD123255.2018.07.01.06.54.** Offset E2 = -6545 microns. Bad tracking on CLIMB again. It is quite difficult the fringe stability on CLIMB for the target and calibrator. VEGA pic is somewhat better reaching SNR up to 2.5-3.0. Average seeing about 7 cm.

UT07h04: target. Last record on target. **HD124553.2018.07.01.07.07.** Offset E2 = -6500 microns. Very bad tracking on CLIMB...no tracking at all. Bad record.

UT07h20: CAL2. CAL1 lost its observability. Recording with 20 blocks too. **HD129956.2018.07.01.07.22.** Offset E2 = -6196 microns. Better tracking on CLIMB (not great). VEGA pic is reaching up to SNR = 3.0 too. Last record for this star tonight. It is necessary to observe this target earlier to improve the observation quality, it is very low.

Spectral calibration: D_CMR720.2018.07.01.07.32

V01 S2POP3B1-W2POP5B2

We change to the program V01 with target HD 189733. We use CAL1 = HD 190993 and CAL2 = HD 196740. LABAO star is HD 186791 and check is HD 195810. We aim to do 2/3 points in this program.

UT07h40: LABAO finished.

UT07h45: locked on check star. Nice fringes on CLIMB/VEGA. Cophased.

UT07h53: slew to the calibrator 1. 30 blocks. **HD190993.2018.07.01.07.57.** Offset S2 = -940 microns, B1 = 7.3493 mm, B2 = 5.7389. Seeing ~ 6-7 cm. CLIMB tracking is not excellent. Intense pic on VEGA with SNR up to about 20. Tracking appears better at the end (around block 20-30).

UT08h11: slew to the target star. 40 blocks. **HD189733.2018.07.01.08.12.** Offset S2 = -1019 microns. Medium quality tracking on CLIMB. Seeing around 6 cm. Average number of photos/image is around 60-100. We do not see a pic on VEGA. SNR in W2S2 is around 1.5-2.0. From block 25 to block 40: we see a faint pic on VEGA. Tracking on CLIMB is somewhat better.

UT08h32: to the calibrator 2 now. 30 blocks. **HD196740.2018.07.01.08.33.** Offset S2 = -1030 microns. Seeing around 6-7 cm. CLIMB tracking is reasonable, not great. Intense pic on VEGA for the calibrator with W2S2 SNR up to 11.

UT08h46: back to target. 40 blocks. **HD189733.2018.07.01.08.48.** Offset S2 = -960 microns. Stable tracking on CLIMB, we see pic on VEGA. Seeing ~ 7 cm. Fringes on CLIMB/VEGA are very stable during all the record (up to the block 20). Good record here.

UT09h06: back to calibrator 1. 30 blocks. **HD190993.2018.07.01.09.09.** Offset S2 = -977 microons. B1 = 7.3593 mm. Stable fringes on CLIMB. Well bright pic on VEGA with SNR up to 20-25. Stable seeing in 7 cm.

UT09h23: back to the target. Last record on the target. 40 blocks. **HD189733.2018.07.01.09.25.** Offset S2 = -960 microns. Tracking is not terrible but the fringes are not very stable. Until block 20: maybe there is a faint pic on VEGA (SNR ~ 1.5-2.0).

UT09h44: back to calibrator 2. 30 blocks. **HD196740.2018.07.01.09.45.** Offset S2 = -920 microns. Seeing is still stable around 7-8 cm. Track on CLIMB is stable. Bright pic On VEGA with SNR ~ 40.

Spectral calibration: D_CMR720.2018.07.01.10.00

V67 W1POP5B3- E2POP1B2

We finish the night with the program V67 with target HD 171384. We use calibrator HD 171301. For LABAO and check we use HD 160762. We will do 30 blocks for the target and 20 blocks for the calibrator.

UT09h58: LABAO and check with HD 160762.

UT10h11: LABAO flats finished. Aligning VEGA.

UT10h20: we find nice fringes on CLIMB/VEGA for our check star. We slew on the calibrator. Problem to slew with E2. Issue with pointing to the calibrator is solved, we lost about 10-15 minutes.

UT10h35: recording CAL with 20 blocks. **HD171301.2018.07.01.10.34.** Offset S2 = -5640 microns. Bright and stable pic on VEGA with ~ 8. Tracking on CLIMB is not excellent but the fringes are there. Seeing is stable about 8 cm.

UT10h47: to the target with 30 blocks. **HD171384.2018.07.01.10.49.** Offset S2 = -5650 microns. B1 = 7.6692 mm and B2 = 5.2489 mm. Good fringes on CLIMB, it is reasonably stable. Flux level is about 100-150 photons/image in the red camera. We see fringe pic on VEGA since block 20, SNR ~ 3.0-3.5. Before block 20 SNR < 2. Fringes on CLIMB are more stable since block 20.

UT11h04: to the calibrator. **HD171301.2018.07.01.11.06.** Offset S2 = -5850 microns. B2 = 5.2589 mm. Strong and stable pic on VEGA. SNR ~ 12. Tracking on CLIMB is reasonable too.

UT11h16: to the target. **HD171384.2018.07.01.11.18.** Offset S2 = -5755 microns. Around the block 10: fringes on CLIMB are good, it is stable. There are fringes on VEGA. We see a pic on VEGA with SNR ~ 3.5. Seeing is fairly stable around the value r0 ~ 7-8 cm. From

the block 20 to 30: better pic on VEGA, SNR ~ 6. Good record!

UT11h32: to the calibrator. **HD171301.2018.07.01.11.34.** S2 = -6010 microns. B2 = 5.2689 mm. Good tracking, nice pic on VEGA reaching ~ 16.

UT11h44: we slew on the target. **HD171384.2018.07.01.11.56.** S2 = -5875 microns. We aborted the record around block 9 due to problems with the directory name. We restart to register with 30 blocks again. Tracking is not good on CLIMB. SNR level up to ~4 on VEGA.

UT12h10: we slew on the calibrator. Last point of this program and of this night. We record. **HD171301.2018.07.01.12.16.** S2 = -6207 microns. We are recording a little bit after the observability limit...it is dawning. VEGA pic up to ~ 25. Fringes on CLIMB are ok.

Spectral calibration: D_CMR720.2018.07.01.12.27

É o fim da noite. As observações continuam amanhã em Mont-Wilson.