CHARA Lab
Setup/Alignment
Jason's Notes
Version 1.3 2005 June 21[1]

1. **In Control Room, restart Xserver. (Or not... ask an expert)**
2. **Turn on White Light (to 90 Volts, no more!)**
3. **Turn on OPLE Rack. Start at the left top with the VME. Wait for red light to go out. Then turn on the Amps for the appropriate rails.**
4. **On the computer Central Scrut, start the OPLE server.**
5. **To the Pump House (Club VP)!**
   (a) **Turn pump power ON. Wait for blower.**
   (b) **Open valve, parallel to pipe.**
   (c) **Turn on fan.**
6. **Open vacuum lines for the telescope pair. Vertical is open.**

[1] This document is not to replace proper lab training, just to jog Jason's memory when he forgets what to do next... see the Lab Rules on the CHARA internal docs.

7. **Turn NIRO on.**
   (a) **Black box on top.**
   (b) **Sliver box on side.**
   (c) **NIRO PC on.**
   (d) **Enter FLUOR one-liner command**
   (e) **Turn off NIRO PC monitor.**
8. **Open Laser slide shutter. Set ND=1=Empty.**
9. **Set/Check IRIS is at 20 (units?).**
10. **Install Six-Hole Mask**
11. **Turn on Pico #3 (lower left rocker switch)**
12. **At the Laptop 'Dolly' (the mousepad is very sensitive, be careful!)**
    (a) **Shutters**
        i. **Bring up shutter GUI.**
        ii. **Click 'Align Configure' button.**
        iii. **Make sure TTB5, TTB6, ENG, SPEC, REF closed.**
    (b) **OPLE Carts**
        i. **Check for NO OBSTRUCTIONS.**
        ii. **Send carts BACK.**

iii. **When they reach back. Turn the carts OFF.**

13. **Beam Samples GUI (Just Click ALL OUT)**
    (a) **Select S1 OUT, then SET**
    (b) **Select E2 OUT, then SET**
14. **Turn on the two metrology boxes (push for orange).**
15. **Take key from top of next metrology box, put key in left side, turn.**
16. **Turn on Pico #1 and Pico #2.**
17. **Start with Beam 6 (For S1, dial in Slot 1, Comm 1 on Pico #1).**
18. **Bring hand paddle to last row opposite the East lines. Center laser on B6 (right spot).**
19. **Next with Beam 5 (For E2, (see top of on Pico #1)).**
20. **Bring hand paddle to last row opposite the East lines. Center laser on B5 (left spot).**
21. **E2 dichroic.**

(a) **Dial in E2 dichroic code on Pico #1.**

(b) **Slide dichroic into place.**

(c) **Use hand paddle to adjust laser spot.**

22. **Install rail target over E2 home sensor. Check front and back targets.**

23. **S1 dichroic.**

(a) **Dial in S1 dichroic code on Pico #1.**

(b) **Slide dichroic into place.**

(c) **Use hand paddle to adjust laser spot.**

24. **Install rail target over S1 home sensor. Check front and back targets.**

25. **Place E2 corner cubes. Cube A and Cube B**

26. **Place S1 fold mirror (magnetic mount). (select "S fringe" on Pico #1).**

27. **Take out Six-hole mask.**

28. **Align "Jig".**

(a) **Position against stop.**

(b) **Align back first. Center laser spot exactly half-way between open hole**

and lower circular target. Get as close as you can manually, then use knobs.

(c) Close slightly the iris for better diffraction pattern on back target.

(d) then Align front secong. Using hand paddle with pico #1 moter set the "fringe" for the appropriate beam. For W1, "W-fringe".

29. Put in the IR table target.

(a) Bring up Pico #2 GUI.

(b) Select E2IR

(c) Click Move. Step size 25. Center laser on E2 (spot to the right).

(d) Select S1IR

(e) Click Move. Step size 25. Center laser on S1 (spot to the left).

30. Remove periscope covers from E2 and S1.

31. Reference Alignment (INSIDE LAB)

(a) Ask an expert for help... (doesn't have to do this each evening.)

32. Take out IR Table Target.

33. Reference Alignment (OUTSIDE LAB)
All lab lights out!

- **(a) Close White Light shutter.**
- **(b) Open laser shutter.**
- **(c) Open WOBBLE server.**
- **(d) Set ND=6 on the laser filter GUI.**
- **(e) On POWER GUI, turn REFCCD power ON.**
- **(f) On WOBBLE GUI, click REF CAM (TV pops up).**
- **(g) Click SET ORIGIN.**
- **(h) Click STOP.**
- **(i) On POWER GUI, turn REFCCD power OFF.**
- **(j) 'Quit' out of WOBBLE server.**

34. On to FLUOR Alignment!

35. Make sure the ND are out for M10 alignment.

36. M10 Alignment

- **(a) Bring up the appropriate telescope servers.**

(b) **Make sure acquisition mirrors are OUT.**

(c) **Turn TVs ON on telescope GUI.**

(d) **Click M10 ALN**

(e) **Use Pico #1 GUI to find the appropriate telescope M10 pico motor.**

(f) **Click MOVE and adjust the laser spot to center on the central cross.**

37. **Don't forget to take out Corner cubes, fold mirrors, six-hole mask, and IR target!**