

90" Trainer's Checklist for Basic Certification

Trainer- What we require you to go cover

- How to request keys and a dorm room

Fire Safety

- Review [Fire Safety Procedure](#) document

Rules in dorms

- Don't leave food behind
- Write your name on the chalk board
- Where the laundry room is and where you get linens
- Quiet hours are until 1 pm
- Keep blinds drawn at night
- How to leave the dorms after your run (strip bed, close windows, draw shades, turn off light, etc)
- How to request a night lunch

TCS-legacy

- Go over the operator password, and how to use TCS-legacy

Azcam & Software on Bart for 90Prime and B&C Users

- Go over how to properly use Azcam
- Go over how to properly use software on Bart (dataserver, galilserver (90Prime), fw-gui (90Prime), optoserver (B&C), IRAF, ds9
- Leave Azcam running at the end of the night/run if not going into lightning shutdown. Closing the program allows the camera to destabilize and may affect the next observers image quality.
- How to remove data after run, and rules about storing data on Bart (no guarantee it will be there after your run is over).

Instrumentation

- Have trainee fill dewar, make sure they know how to tell if dewar is full. **Stress proper PPE use! Recommend wearing long pants and closed toed shoes whenever observing**
- B&C users: show where gratings and filters are for the B&C and how to safely and properly use both. How to set focus, tilt, slit size, and make note of all the manual locks. Demonstrate how to use the IIS properly, and how to use guiding software.
- 90Prime users: Show how to use the filter/focus GUI. Show how to focus both with setting LVDTs, and how to focus with relative moves. Show how to run focus script on Azcam, as well as

any other scripts needed. Show how to use guider software. Explain differences in 90Prime observing modes listed when starting Azcam (90Prime One, 90Prime standard, etc).

Rules for safe operation of telescope

- Mirror covers are the last thing to open
- Know where the platform is in relation to the instrument and yoke
- Make sure ladders, chairs, etc are out of the way
- Lower curtain in warm room and watch telescope move every slew
- Know how to initialize scope
- How to focus instrument and/or telescope (filter IN for 90Prime)
- How to use flat field lamps, or how to take successful sky flats
- If operator for a group of people, no one but certified observer can move scope
- When you leave for the night, make sure you disable the telescope in TCS, turn off telescope power, RA oilpad, preloads, and compressor. Turn off console power.
- Go over how to leave the telescope during nights you don't go into lightning shutdown.
- Where to write fill times and when to fill each instrument
- Limits (hardware limits, software limits, weather limits)
- Must check weather at a minimum of once every hour
- Lightning shutdown- Bring scope in and out of lightning shutdown.
- Trouble reports-Lots of details! Also don't put down lost time to instrument if operator could not focus, or had software/telescope/instrument issues when the weather was bad, etc. Make sure to acknowledge any extra help staff had to give to get the system working for you.
- Rules that must be followed otherwise you lose certification (see below)

Grounds rules

- Lights on every floor are turned off
- Make sure you have your keys and door locks after you leave the 90"
- Headlights off after dark
- Go over emergency phone list (border patrol, Kitt Peak, Bill, Joe, etc)
- Don't turn on dome lights with shutter open
- How to turn on exhaust fan properly

Observer requirements before run

- Need to be certified on telescope, and instrument
- Observer request form must be put in 2 weeks previous to your run, with everything you need from day staff filled out at this time. Additional requests at the time of install may not be granted.

Rules

All of the following must be followed or you will be decertified

- For the B&C the dewar MUST be filled ever 12hrs. For 90Prime it MUST be filled every 24hrs. NO

EXCEPTIONS

- If you give up your run, filling the dewar is still your responsibility. Unless you can arrange with mountain operations prior to calling off your run, you must still come up to the mountain and fill the dewar every 12 or 24 hours. You cannot arrange for another observer to cover for you. It's your responsibility.
- If it is the last day of your run, you must:
 - Make sure the dewar has enough time since the last fill until the next observer arrives (a safe bet is sunset). Filling the dewar is still your responsibility until the next observer arrives. The only time it's Mountain Operations responsibility is during TBS time, or if you arranged with us to have us fill the dewar ahead of time.
 - Check the weather! If there is any chance of thunderstorms during the morning or afternoon of the day you leave, you need to put the telescope in lightning shutdown before you go.
 - If there is a chance of thunderstorms, the scope must be put in lightning shutdown. Failure to do so incompletely or at all can lead to decertification.
- You need to keep on top of the weather. No moisture of any kind should get on the mirror. Staying open when it's unsafe is grounds for decertification. Also watch for dust and smoke.
- Alcohol and drugs are not allowed on site.
- Falsifying any certification records
- Animals/Pets are not permitted on site unless it is a service animal as defined by the DRC. Please find more information at the link. [Animals on Campus](#)

How to get certified

- Contact a certifier and work around THEIR schedule. Observing is a privilege, not a right. If you cannot be certified before your scheduled run, you lose your nights
 - [List of certifiers](#)

Record keeping

- Everyone running the telescope needs the proper documentation, otherwise nights may be lost
- Certification sheet (which can be found in control room, or on wiki:https://lavinia.as.arizona.edu/~tscopewiki/doku.php?id=public:observer:certification_form), filled out and signed by both certifier and newly certified.
- Certification sheets must then be turned into Melanie Waidanz or Joe Hoscheidt where we can file the hard copy and update our database.
- If we cannot find your documentation, and don't provide us with proof of your certification, your night may be lost.

Certification

- If you are certified but have not observed in a year, you now must take a refresher course with any of the certifiers listed above. This goes over the changes that have occurred since the last time you observed. Failure to work around a certifiers schedule to get refreshed could lead to a loss of your nights. This can be done with any of the certifiers.
- Once again being able to observe is a privilege not a right. The rules are in place to keep not only the telescope and instrument safe but the observers as well. We have the right to decertify anyone if they break the rules. Typically, if you are decertified you can become certified again.

Documents to read

- Before headed up to the telescope to meet with your certifier you need to read the following documents.
 - Guidelines for observing (<http://james.as.arizona.edu/~psmith/90inch/guidelines.html>)
 - Telescope Operating Manual (<http://james.as.arizona.edu/~psmith/90inch/90inchManuals/90manual.html>)
 - 90" Instrument Info (<http://james.as.arizona.edu/~psmith/90inch/90finst.html>)
- Documents to read on site
 - Lightning shutdown manual
- [All Sky Cameras](#)

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