How to Align the Telescope:

Step 1: Roughly position the stand feet so that the telescope is near the beamline. This may take a couple of tries. Put metal plates below the feet.

Step 2: Make sure that the square travel stage of the telescope is perpendicular to the beamline.

Step 3: Adjust the scope yoke to position the 4 telescope feet: two parallel and two perpendicular to the beamline.

Step 4: Align the telescope to the beamline using two points (floor markings and bellows alignment tool).

Step 5: Never tighten the telescope feet hard. The feet should always be easy to turn, with little resistance. Tighten the feet so that the bubble gauge at the bottom of the telescope yoke is roughly centered. Lock the swivel adjustment in place.

Step 6: Level the telescope using the telescope bubble gauge. Then adjust the coarse height on the stand using a marker on the wall or the bellows alignment tool.

Step 7: Center the telescope bubble gauge and tighten the up/down adjustment to activate the fine adjustment. Level the bubble using the fine adjustment and the split mirror (on top of the bubble gauge). The two ends of the bubble should be exactly in line with each other.

Step 8: Now re-adjust the height using the fine adjustment.

Step 9: Loosen the swivel adjustment and turn the telescope 180 degrees. The bubble will now not be aligned in the split mirror. Use the fine up/down adjustment to get half way back to centering the bubble. Then use the **opposite** foot to go the other half way.

Step 10: Continue to swivel the telescope back and forth until the bubble stays aligned (2, 3 or 4 times). Repeat steps 8 and 9 for the other two feet. The telescope yoke is now perfectly leveled!

Step 11: Fine tune the alignment to the beamline using two points (floor markings and bellows alignment tool). You should already be very close. Make fine adjustments to the height if needed.

Step 12: Repeat the leveling procedure to make sure you are truly level. Double check you are on target.

Notes: changing the height or the lateral translation will unlevel the telescope.