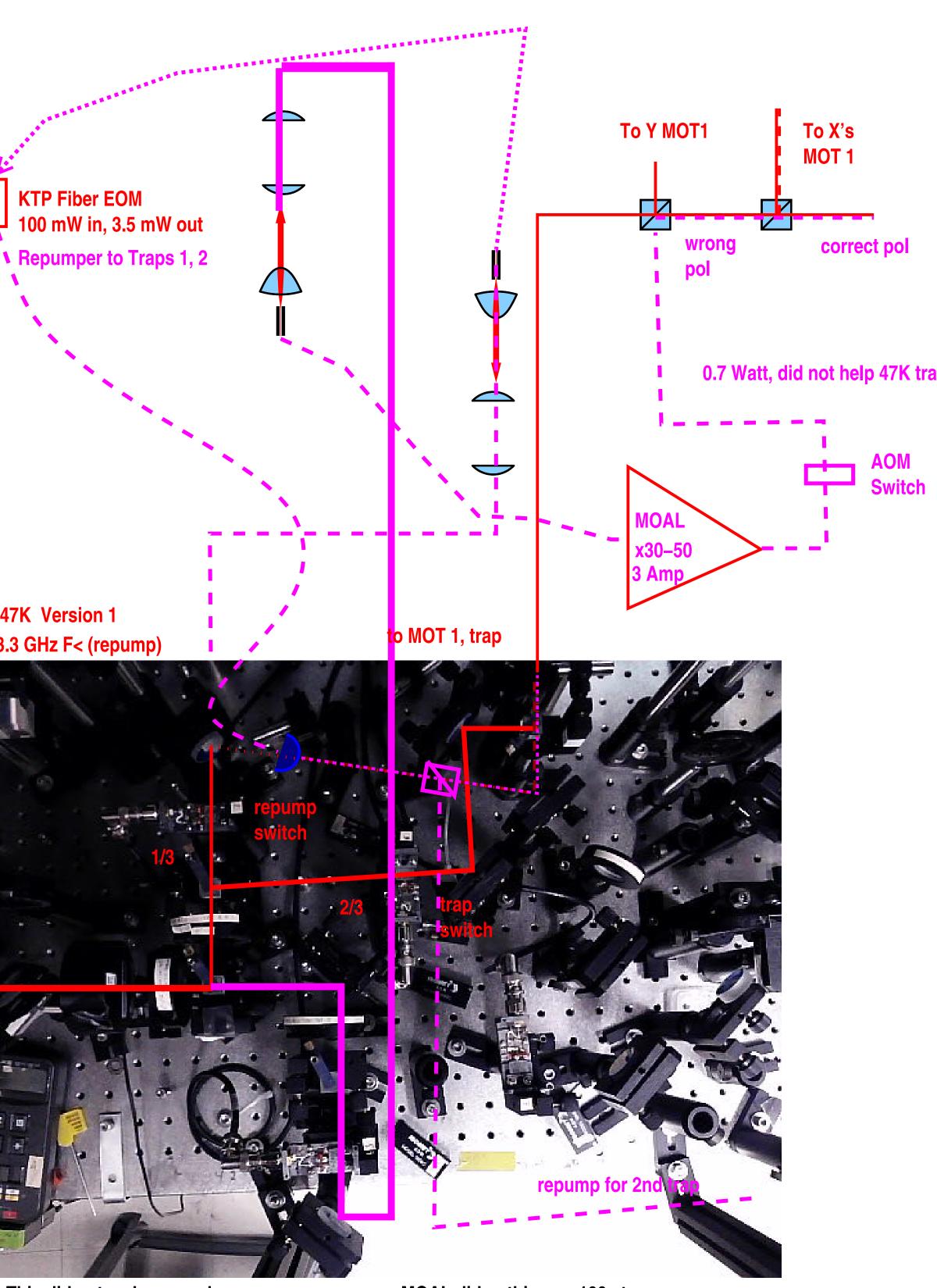


Plan: restore this now

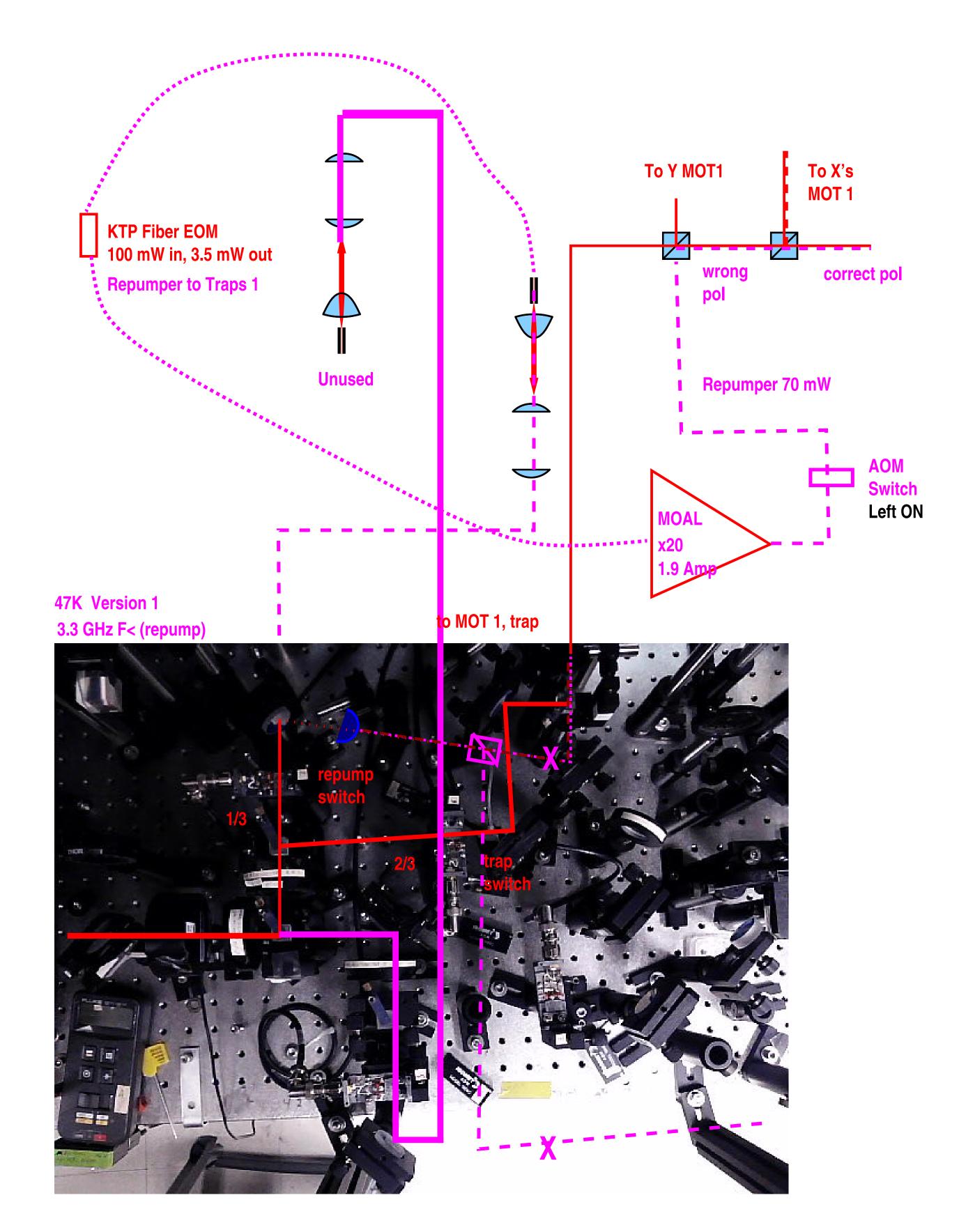
Plan: join the repumper and trap light in a 2:2 -> 2:2 fiber splitter/combiner, and send to both BoosTA and MOAL.



This did not make enough repumper power: e.g. MOAL did nothing –> 100 atoms So we moved repumper EOM fiber to MOAL and left it on all the time We also left OB light on all the time to be a repumper for 2nd trap

- We also left OP light on all the time to be a repumper for 2nd trap.
- Even with no repumper light in the funnels (which works on paper depending on hyperfine pumping upstream,
- this produced 1,000 atoms trapped.

But only while the OP lithium niobate EOM lasted



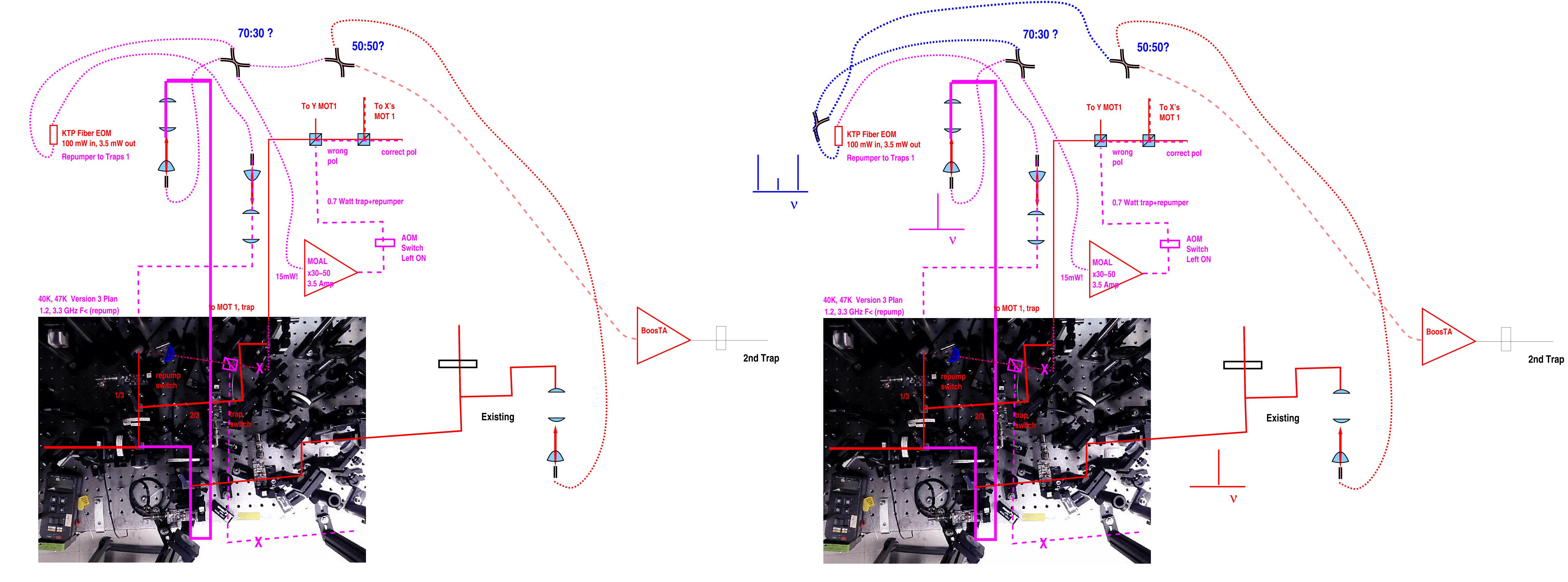
1,000 atoms 47K trapped.

But using OP light CW at 1.5 milliWatt (2x more is available) as 2nd trap repumper -> photorefractive effects, power dropped with time, photoions, decays, and likely polarization were compromised

No repumping light for funnels (maybe this is working)

## V2 will trap 1,000 atoms reliably if

direct RF to this OP diode works, as in the lower-power 2014 OP diode



V4 might be able to trap 10,000 atoms

V3 was trying to use trap and repump light more efficiently, but sending a 1st trap beam to 2nd trap seemed hard to make frequencies consistent I'm uncertain V4 fixes this feature. This should be simpler with new laser diode to feed MOAL along with extra higher-power EOM. I may only return to 40K after 37K.