JPL Telecon

NRAO: Kerr, Pan, Webber

JPL: Vasquez, LeDuc, some management people

Quartz + e-beam: some JPL people have tried low-dose e-beam, but it needs development

Alignment: ±1μm was done with stepper. Expect run-out on wafer using direct contact photolithography – wafer deformation is the problem, so masks don't line up. Stepper compensates. Don't expect better than ±1.5μm over the whole wafer. Lots of overhead setting up the stepper, so it's inefficient. ±0.7μm is resolution, can do very well. Would have to go to etching instead of lift-off

Jc tolerance: Major work to make more wafers to get ±10% — don't know how to control process well enough to do better than ±20% wafer-to-wafer

Resistance ratio: looking for 4X photon temperature (SSB) so need low subgap leakage; modelling Andreev reflections shows this is more important than previously thought. Consistent with JPL results (>20 @ 5 kA/cm²; >10 @ 10 kA/cm² ; 0K)

Similarity with SAO, CSO, OVRO — all using quartz, current densities are similar. Don't know if SAO will want to use Si and quasi optics for highest frequencies. FIRST uses Si.

With mixture of SiO_2 and Si wafers, more problems keeping things straight - lots of calibration.

Personnel: how long to train a new person? JPL claim is about 6 months - but it varies. Hired a new person for "production" work - couldn't deal with development aspects of SAO jobs.

Schedule: can't switch people off FIRST - would be a slow start, concern for JPL people too.

Asked about new SSB mixer - predict 4 months with bringing a new person up to speed.

They would start up hiring process immediately to find someone at the senior level - let contract come later.