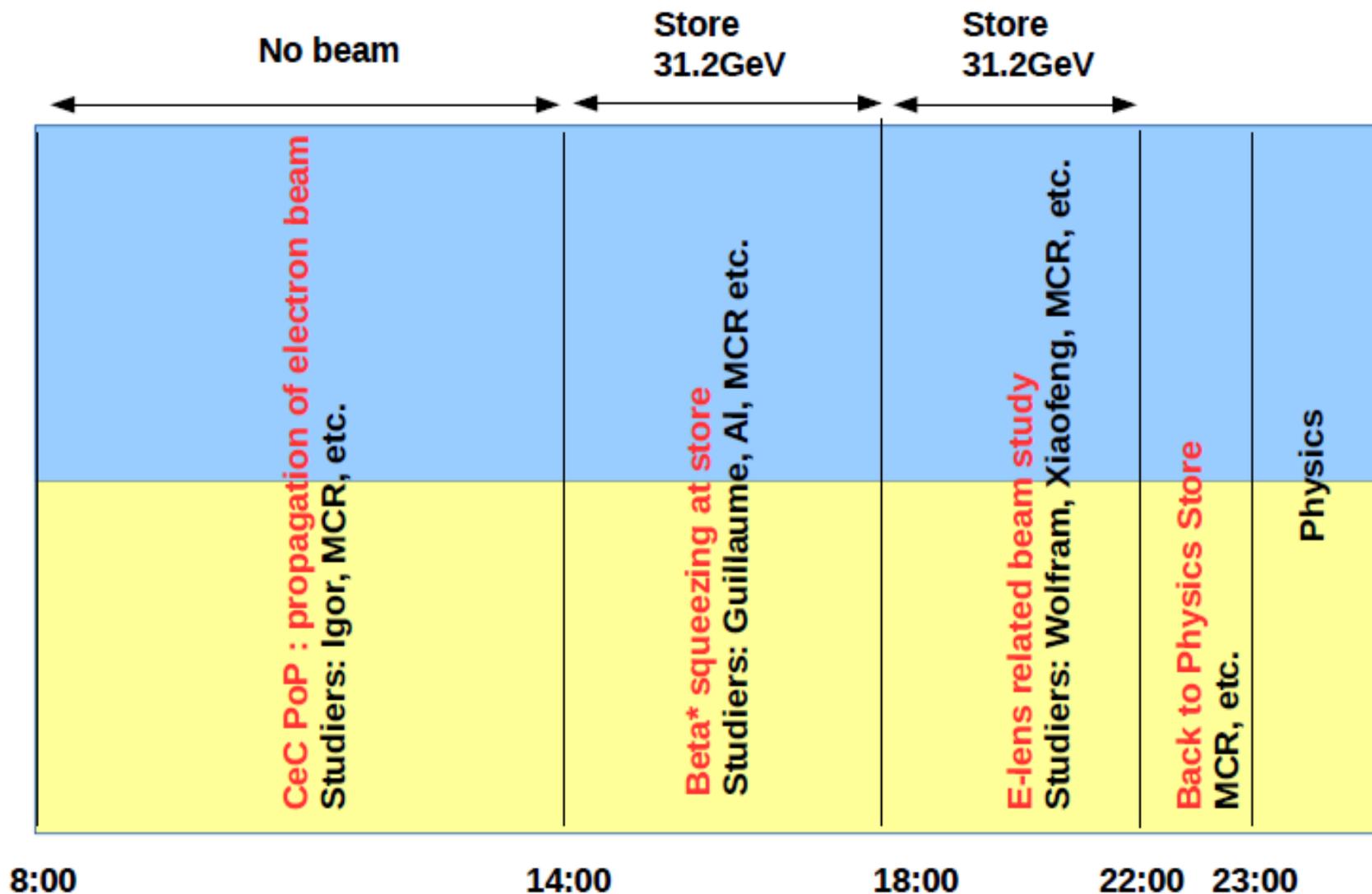
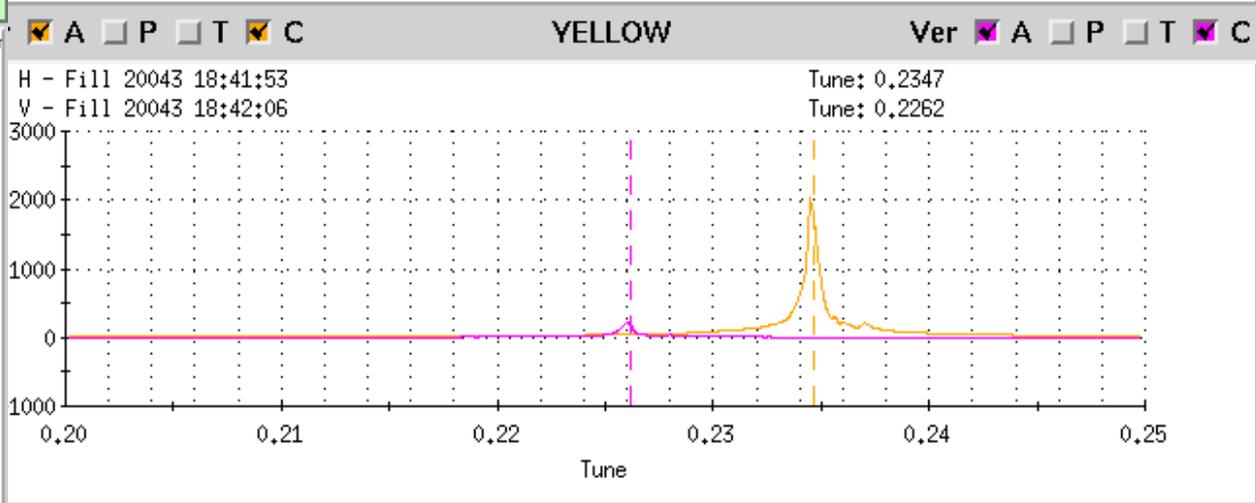
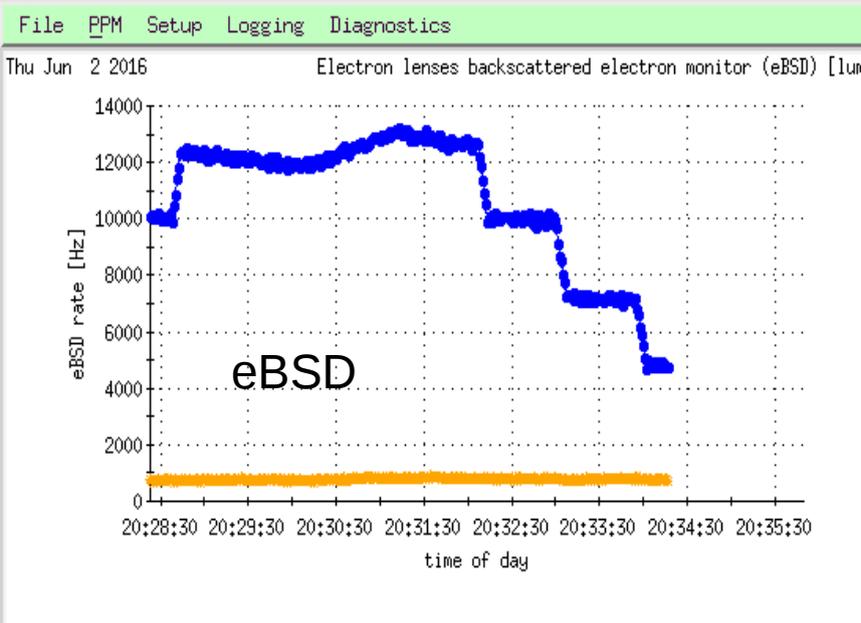
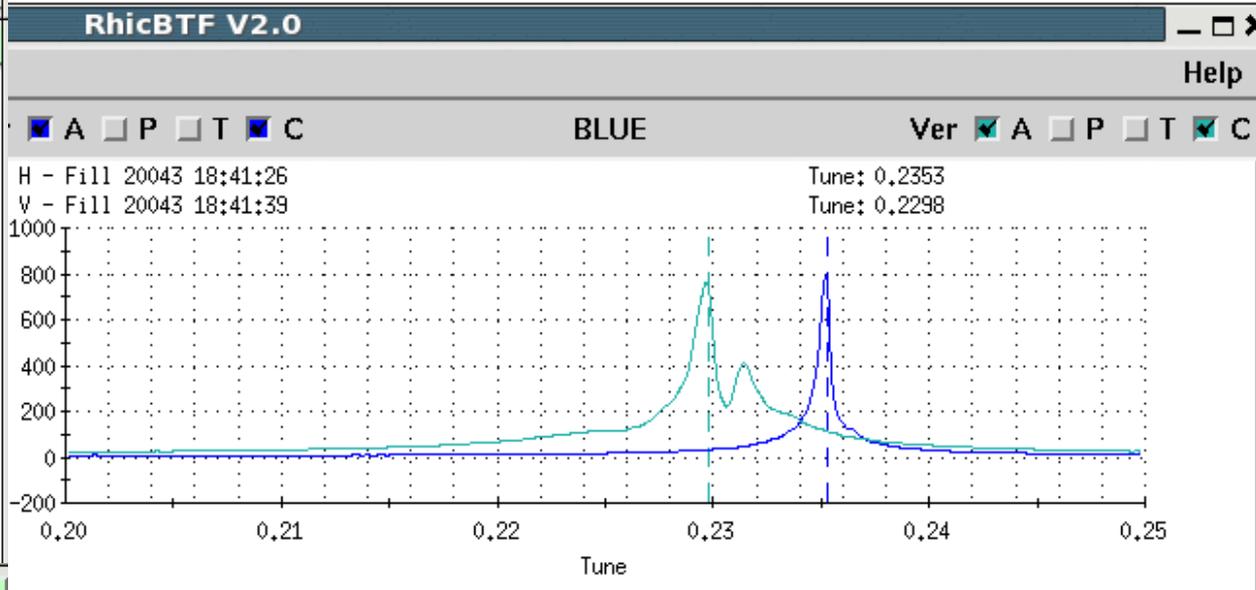
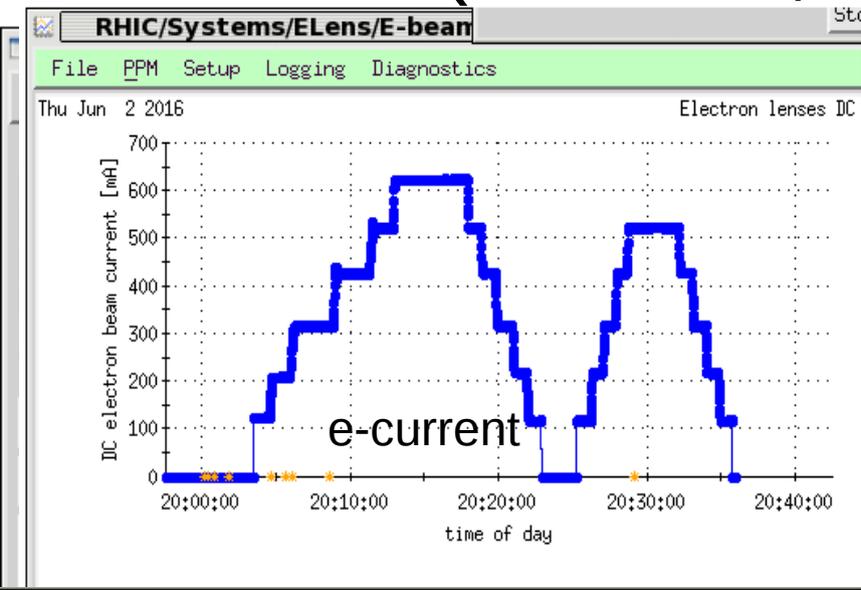


APEX Schedule for June 02, 2016



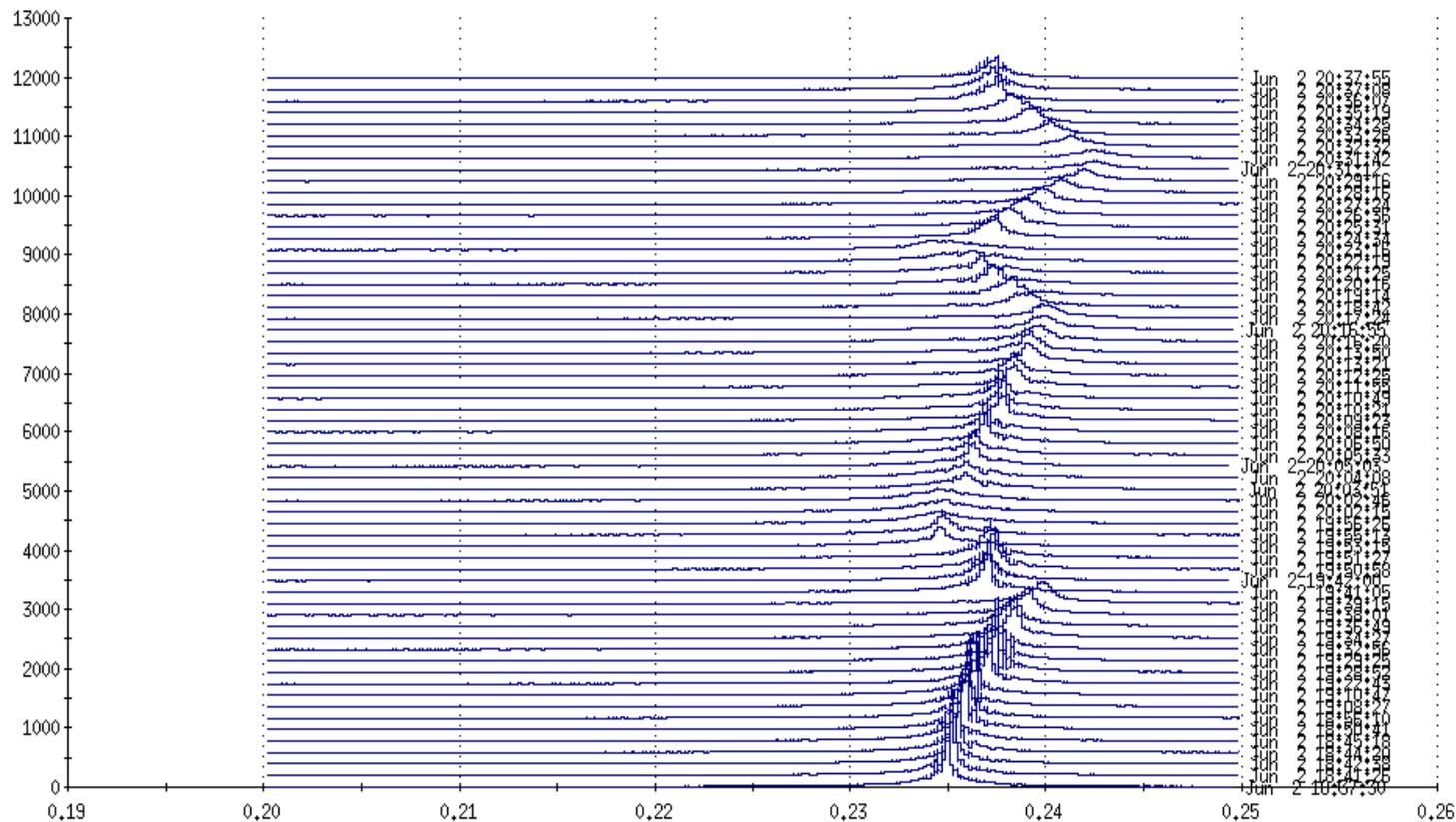
E-lens Related Beam Studies

(Wolfram, Xiaofeng, PeterT, etc.)



A successful experiment, everything works beautifully.

Window



63 arrays successfully read and displayed

Summary:

1. E-lens main solenoid fields were ramped to 5 T this morning. Tested Blue lens up to 650 mA electron beam current, and Yellow lens up to 530 mA.
2. Accelerated 28x28 bunches (dxAu) to 31.2 GeV/nucleon; rebucketed and turned on stochastic cooling in Yellow. Stochastic cooling approximately maintained the transverse emittance of the Au beam.
3. Reduced horizontal angle in IR10 from 9 to 4.5 mrad to allow for alignment of d beam with the Blue electron lens.
4. Using eBSD aligned **Blue e-lens** with d beam with 100 mA e-beam current. Main change was -2.5 mm in horizontal d beam position. Only small changes in vertical plane. Had good guidance from e-lens BPMs.
5. **Scan #1**: $\sigma_e = 0.71$ mm, no bb collisions, e-beam current 0 - 480 mA (~100 mA step size), BTFs.
6. Small angle adjustment in Blue lens (+0.25 mrad in hor, zero in ver).
7. **Scan #2**: $\sigma_e = 0.71$ mm, 2x bb collisions, e-beam current 0 - 600 mA (100 mA step size), BTFs.
8. **Scan #3**: $\sigma_e = 0.59$ mm, 2x bb collisions, e-beam current 600 - 0 mA (100 mA step size), BTFs.
9. **Scan #4**: $\sigma_e = 0.59$ mm, no collision, e-beam current 0 - 500 mA (100 mA step size), BTFs.
10. **Scan #5**: $\sigma_e = 0.52$ mm, no collisions, e-beam current 500 - 0 mA (100 mA step size), BTFs.

Comment: d+Au lattice not built for head-on beam-beam compensation, i.e. phase advance between IP8 and e-lens is not multiple of pi.