$mIE_{rBC}$

Typical $mIE_{rBC} = 150 - 300$ ions/pg

Laser power here is what is read after passing through the chamber and lenses/neutral density filter.
Since “incident” laser replaced and black carbon sensitivity has been greatly reduced

- mIE Nitrate 1000 ions/picogram, mIE BC 25-50 ions/picogram
- We have a new laser
- Optics are new on one side and were cleaned on the other
- We are able to get a TEM00 image
- I did the particle beam/laser beam alignment
- After alignment black carbon sensitivity still really weak 25 ions/picogram
- So do the jig alignment
Jig Alignment

3 Main Steps

1 Align Jig laser
2 Align Crystal side
3 Align Mirror Side

After jig sensitivity
Still low got it up to 45 ions per picogram
For a next step decided to test the pump laser itself

Secure this carefully don’t let laser light bleed through and only go up to LDC = 3 AMPS

Ophir Laser Power Monitor

Laser Power Experiment

Laser Image Experiment

Mightex Camera
Pump Laser Power (mW) vs Laser Current (Amps)
Aerodyne #2
MIT Pump laser at 0.35 LDC setting

Exposure time = 100 us
Skipping 10 frames
• So pump laser is OK
• Also new filament multiple ion chambers
• Ideas next steps?
• Reclean/Replace Lenses
• Install different SP unit is? this somehow a chamber issue
Contact me for

• Laser beam/Particle Beam Alignment ppt/manual
• SPAMS manual which contains the jig alignment procedure
• efortner@aerodyne.com