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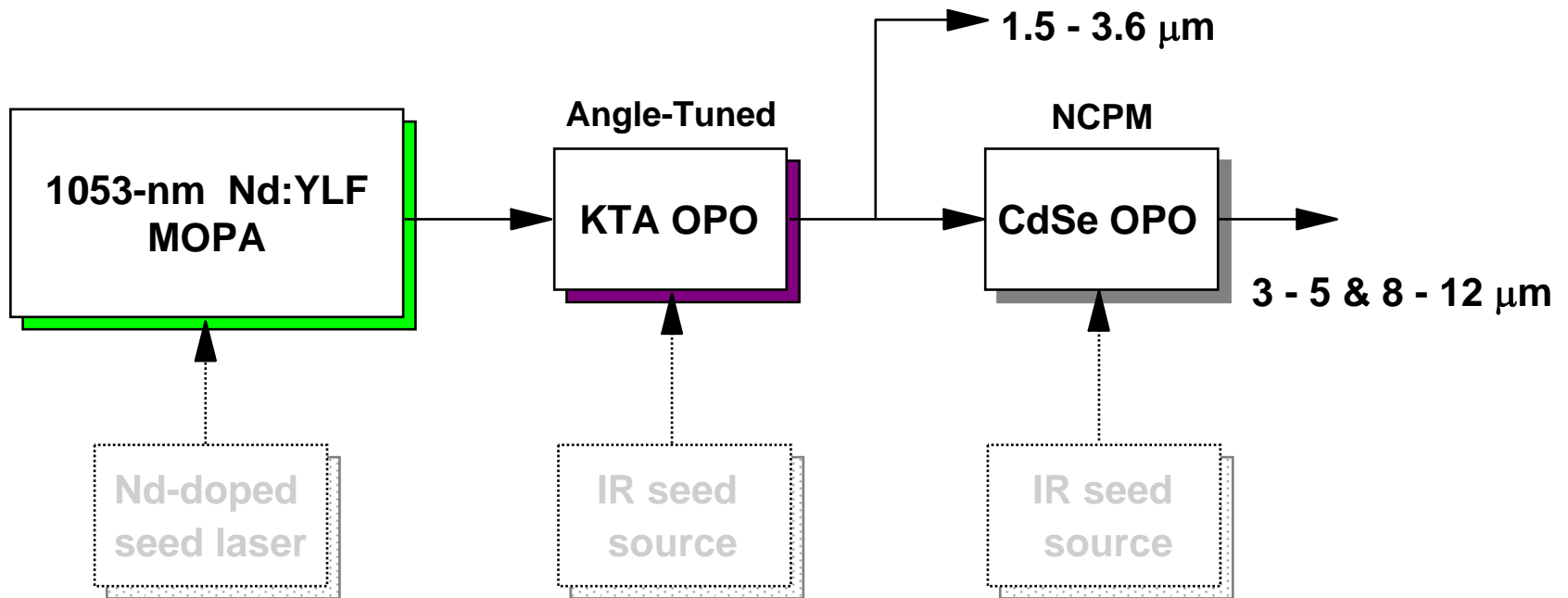
□ **Injection-seeded, pump-enhanced,  
tunable KTA OPO**

□ **Yelena Isyanova and Peter F. Moulton**

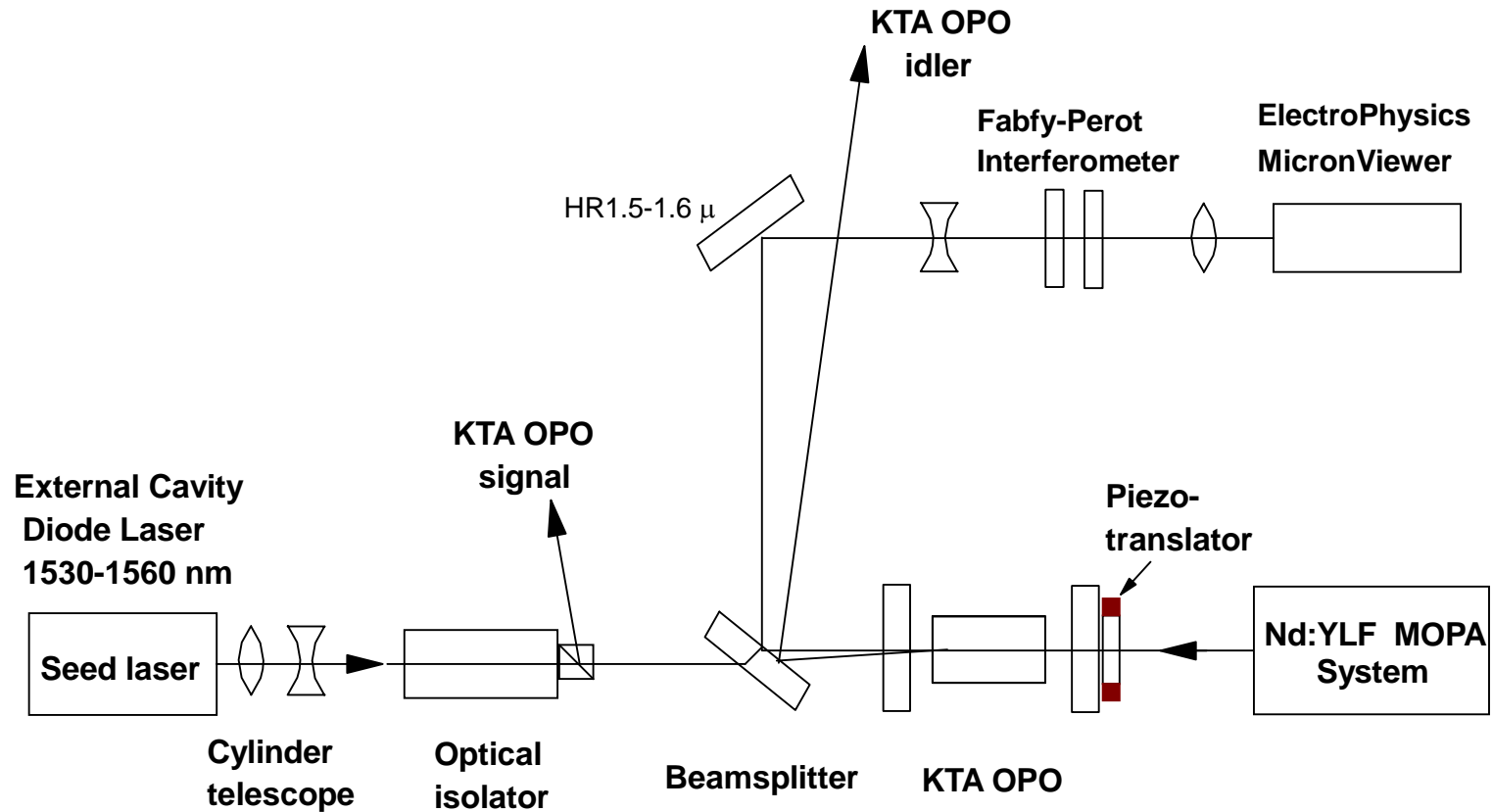
□ *Q-Peak, Inc.,*

□ *135 South Road, Bedford, MA 01730*

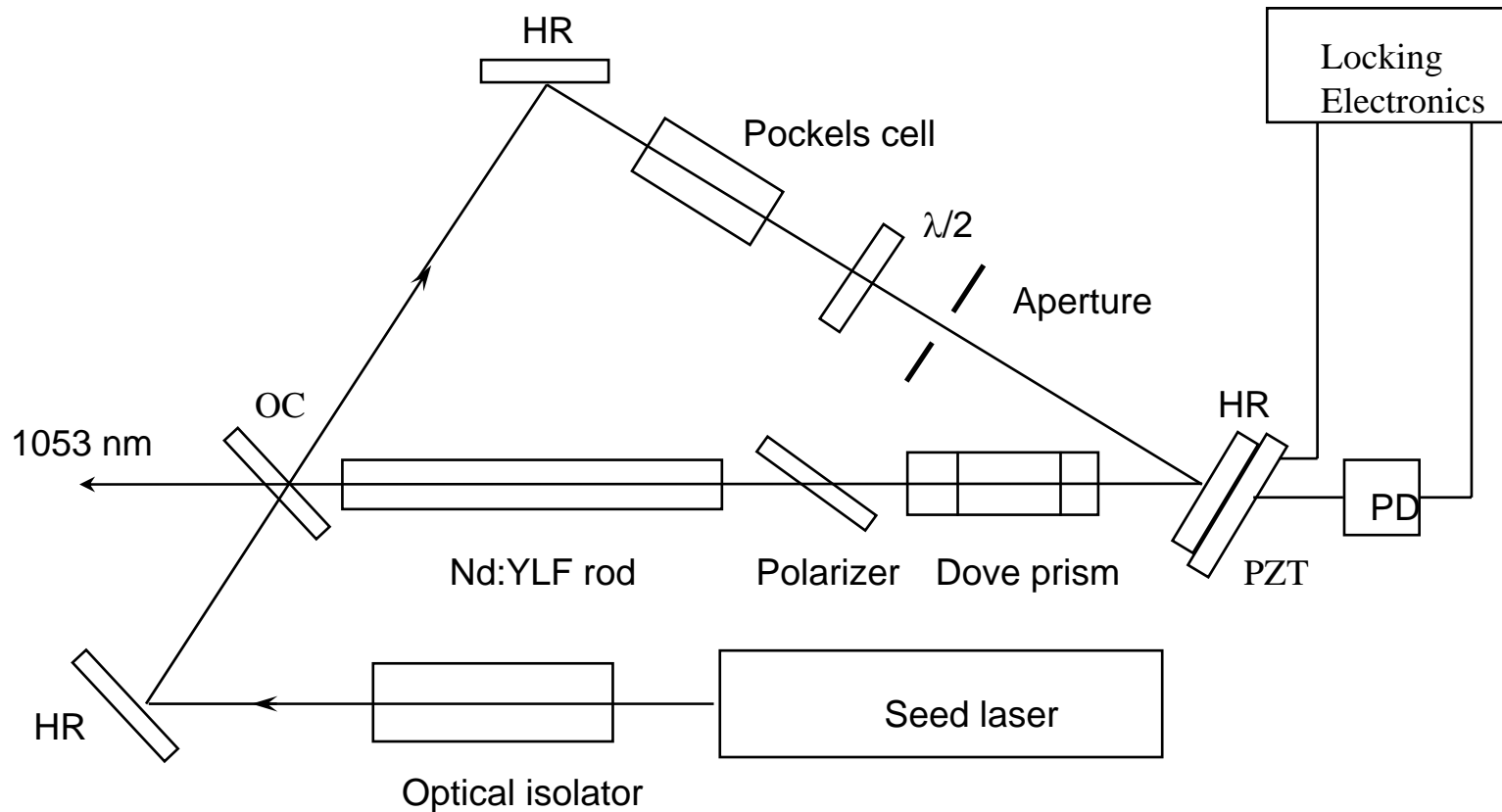
# Tandem OPO design



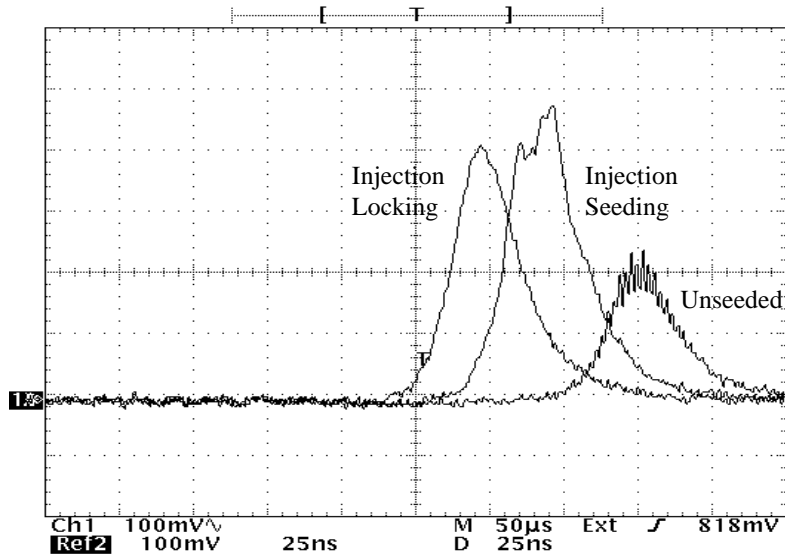
# Injection Seeding Experiment



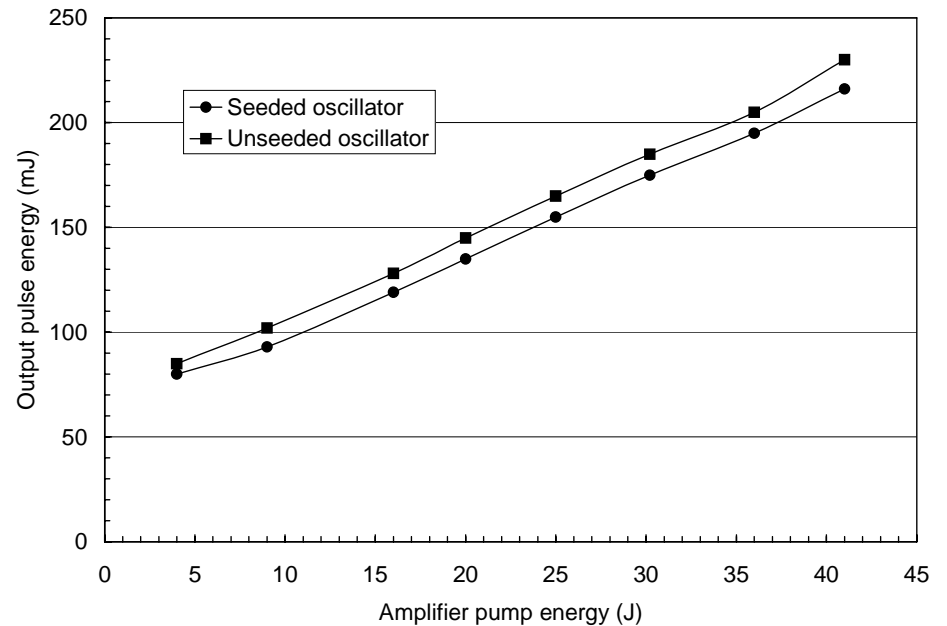
# Q-switched Nd:YLF ring laser with image rotation and injection locking



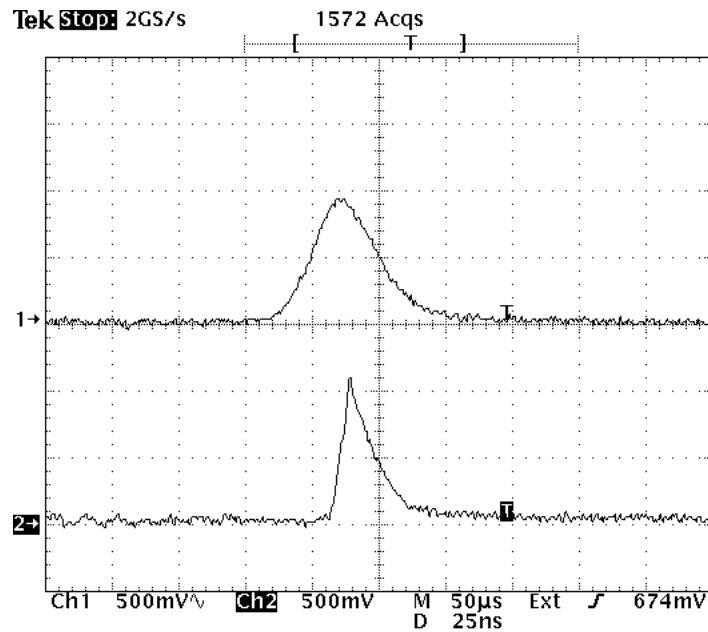
# Pump Laser Performance



- Oscillator : Up To 75 mJ Output Pulse Energy
- Single-Frequency, TEM<sub>00</sub> Beam
- 10-30 Hz Repetition Rate

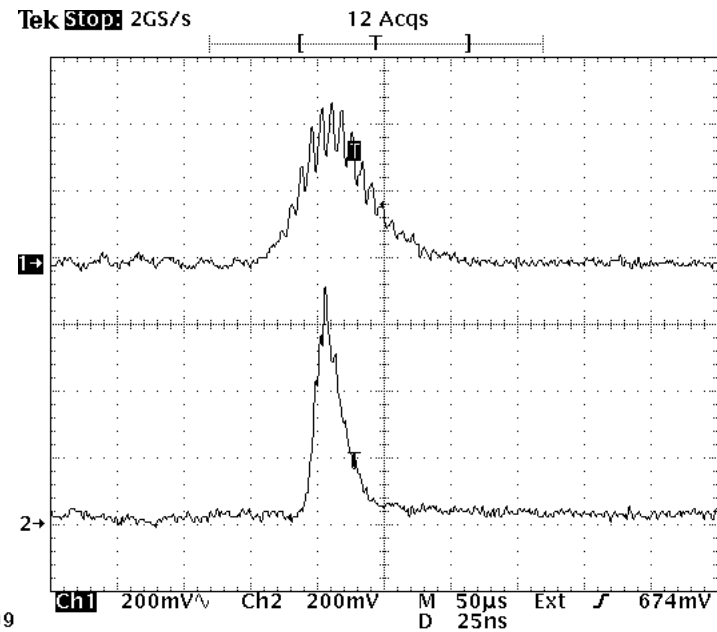


# KTA OPO pump and signal pulse profiles



29 Jan 1999  
14:26:01

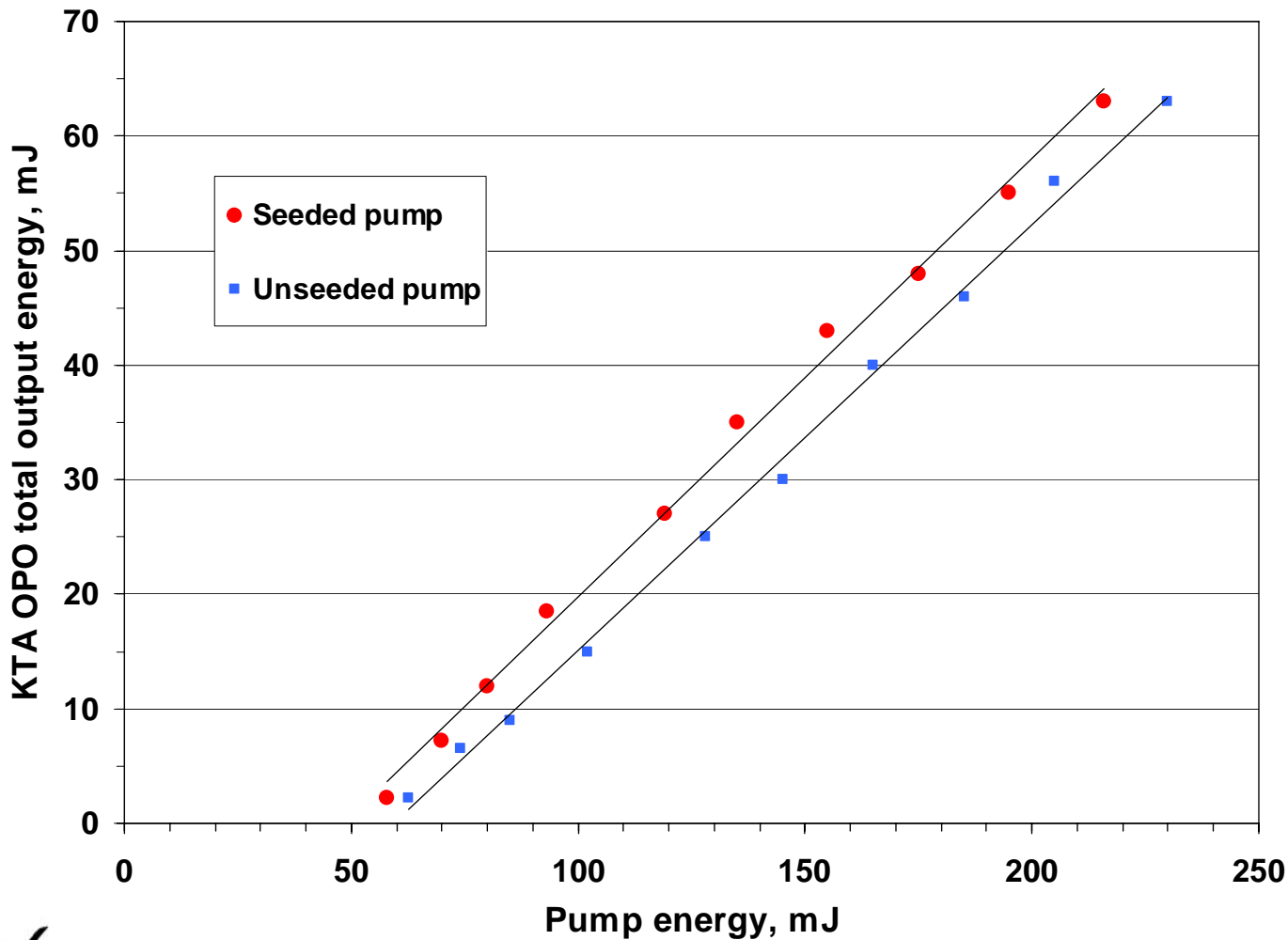
Seeded pump



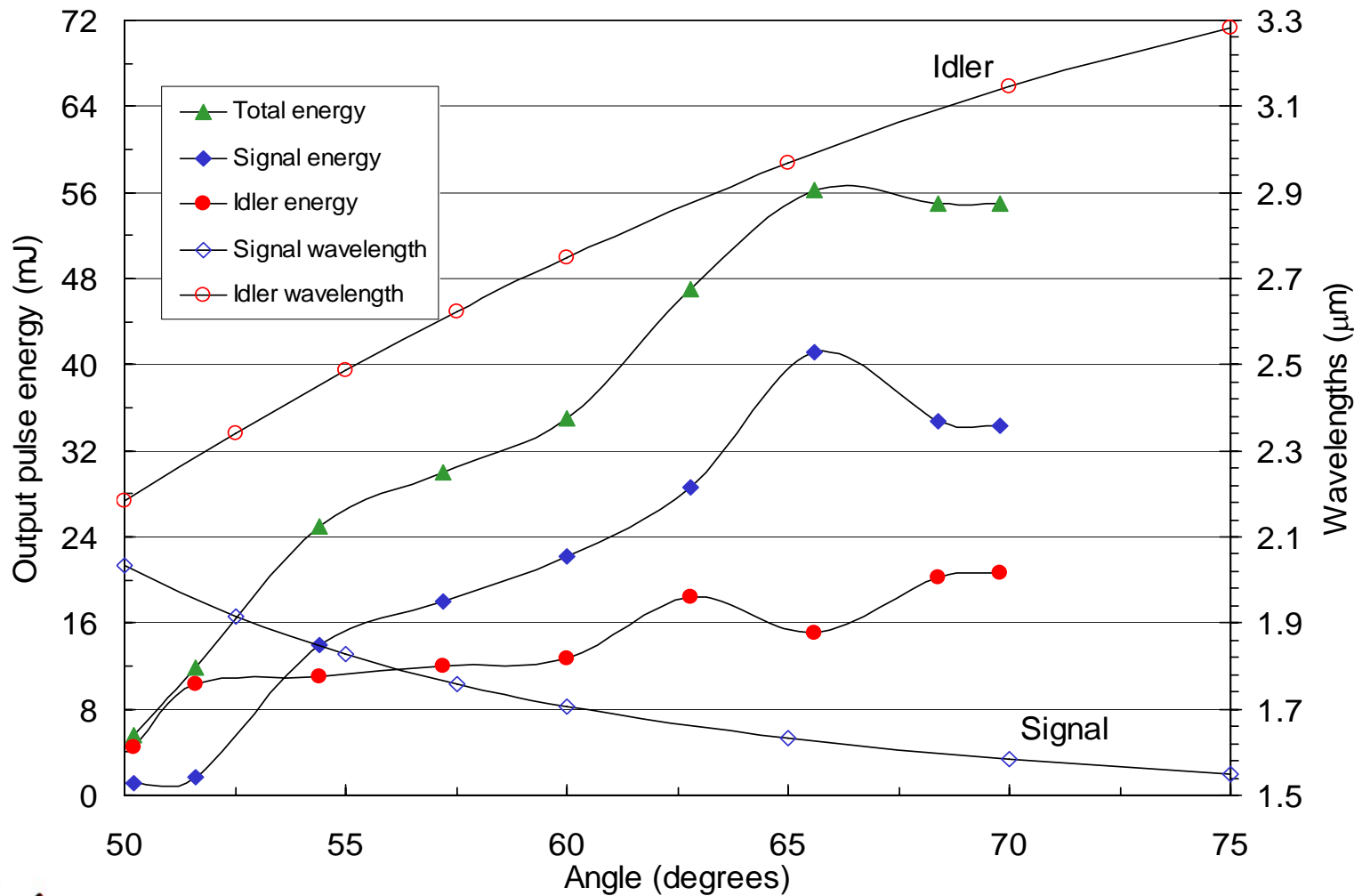
29 Jan 1999  
14:42:26

Unseeded pump

# KTA OPO pumped by seeded and unseeded MOPA



# KTA OPO wavelengths and output energies at 200-mJ pump



# Inteferograms of KTA OPO Signal Beam

KTA OPO cavity mode spacing  
Fabry-Perot interferometer:

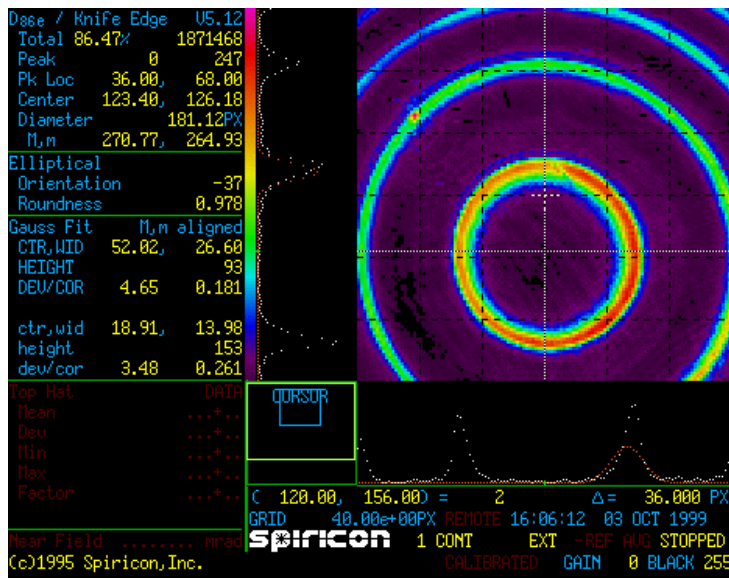
3.75 GHz

Resolution

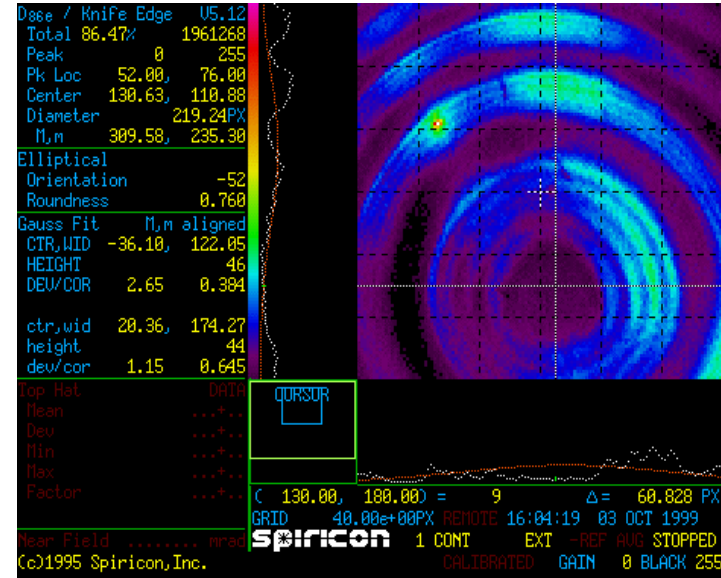
0.75 GHz

Free Spectral Range

21.5 GHz



KTA OPO seeded  
 $\delta\nu < 0.75$  GHz



KTA OPO unseeded  
 $\delta\nu \sim 10$  GHz

# Oscilloscope traces of the idler output pulses.

