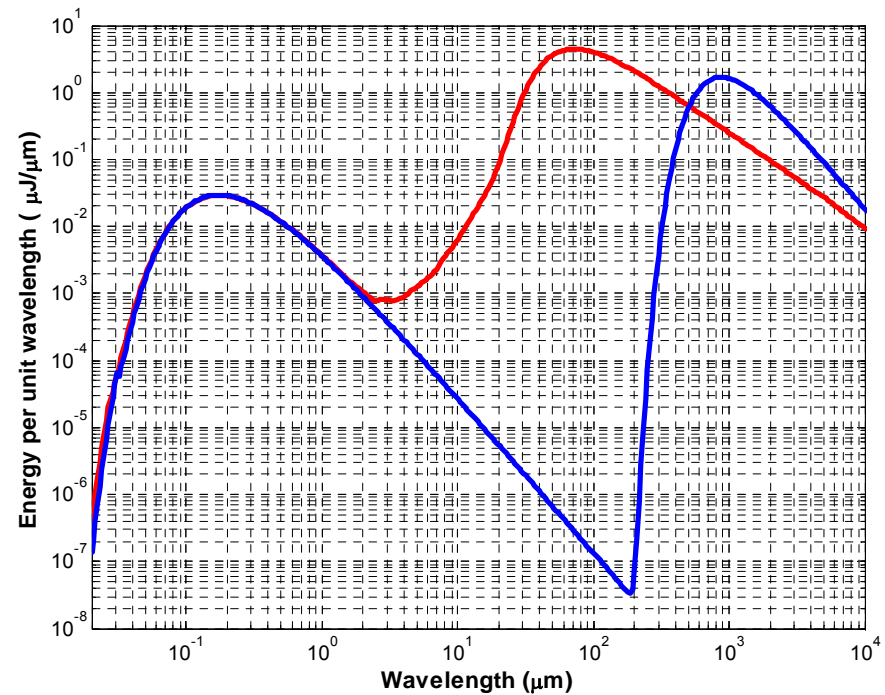
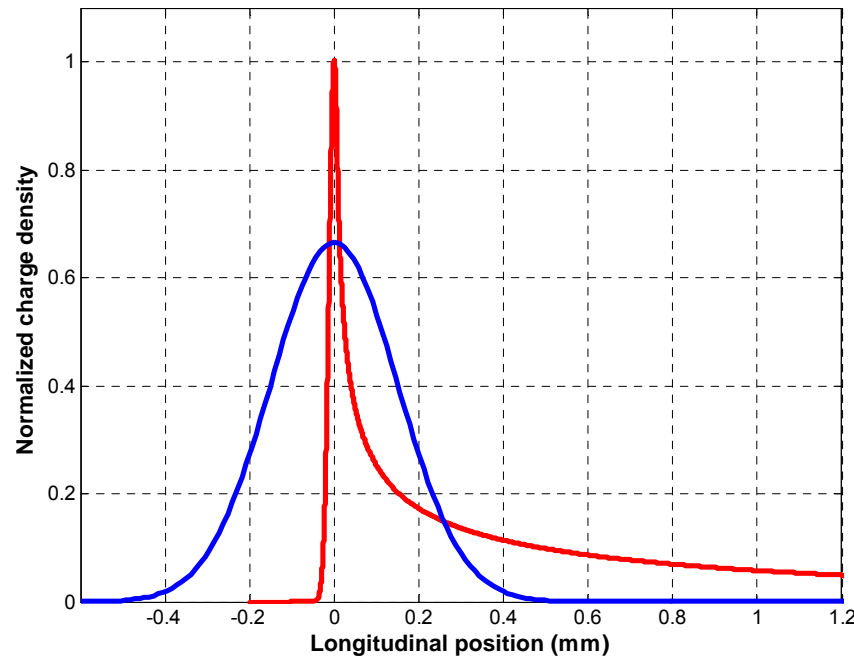
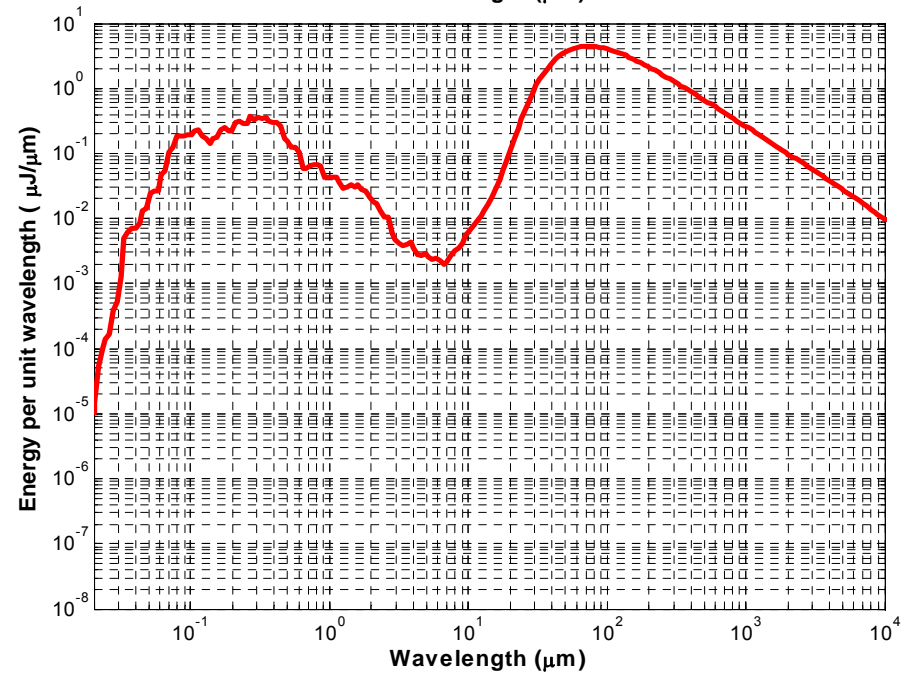
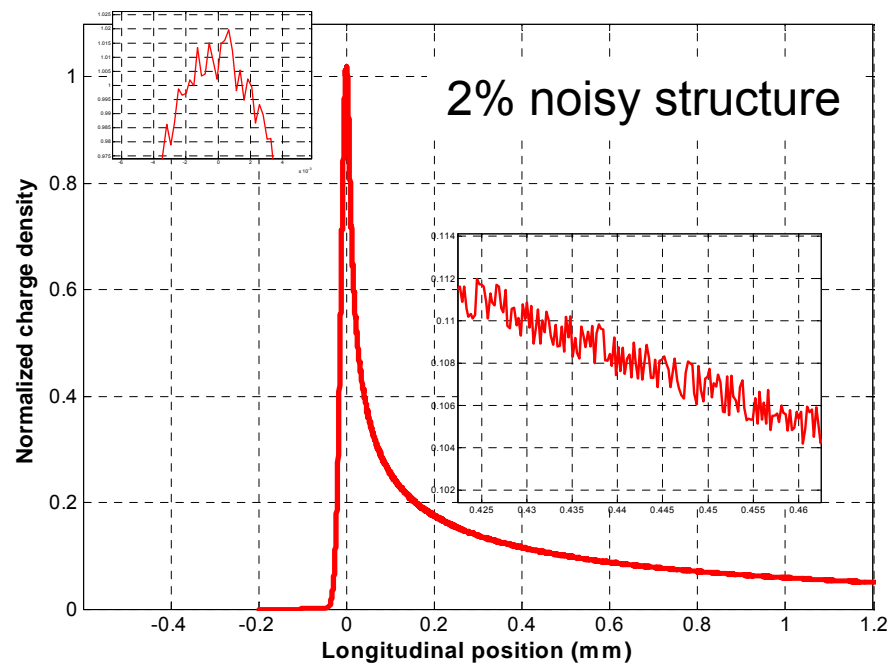
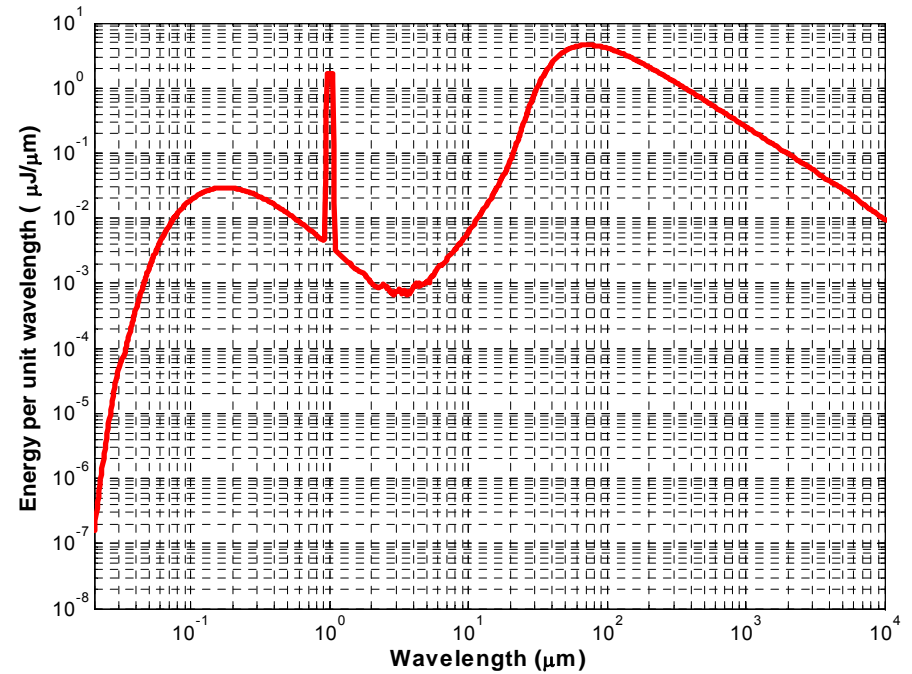
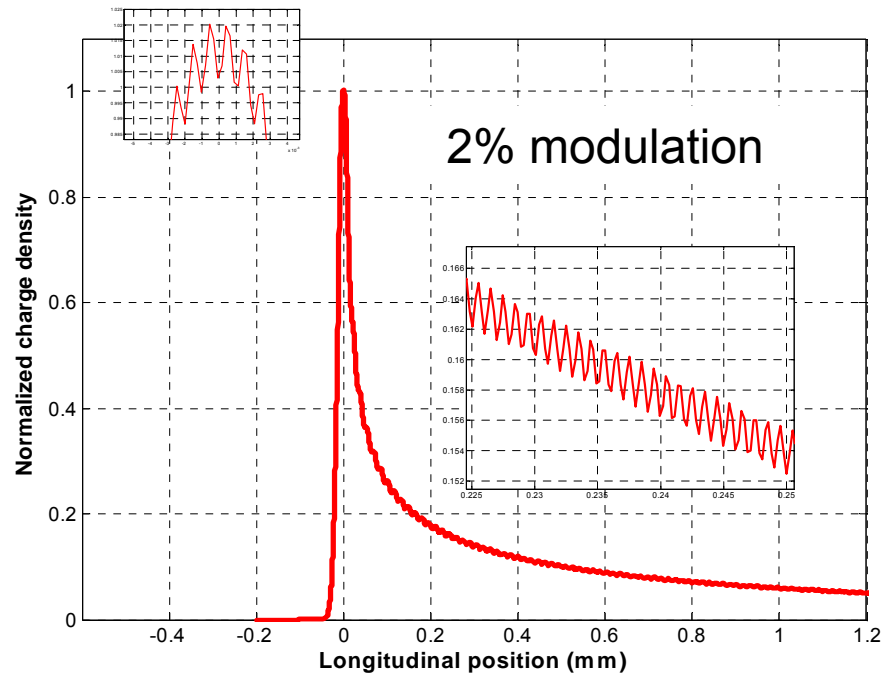


Evidence for 'small-scale structures' through coherent radiation

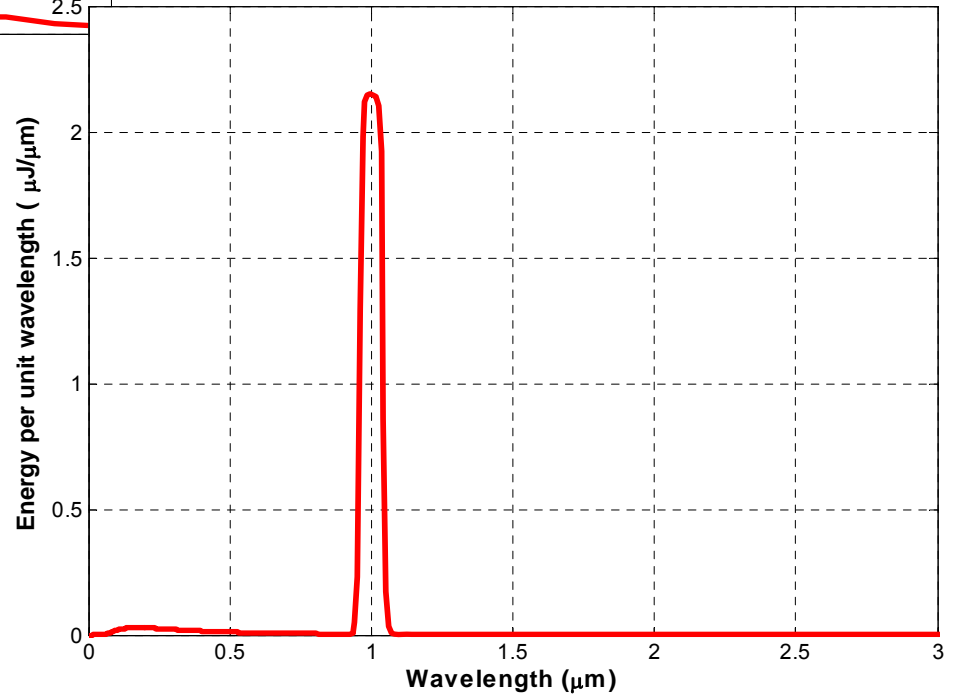
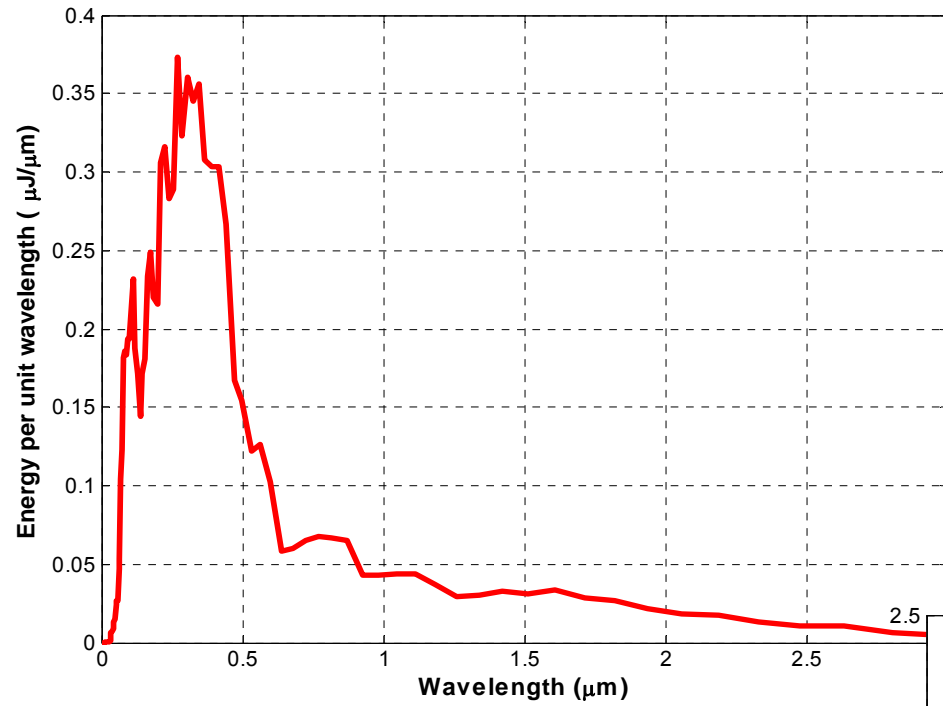
Partly qualitative, partly speculative, partly quantitative

Oliver Grimm, 12 November 2007





...linear scales



Optical replica camera

OS2.CAM1

Info: online TCP: disconnected Camera: 20710338 0

Images: on STOP Help

Brightness: + 1
Gain: + 192
Shutter: + 10

Trigger: on Grab Mode

Rate [Hz]

Tool Box: BG Subtraction, X & Y Spectrum, Histogram, Region of Interest, Camera Toolbox

Status:

Video Mode: Format_0, Mode_6: 640x480 Mono 16bpp

Bits per Pixel:	16	Height:	480	Frame:	537472
ImagePoints:	307200	Width:	640		7.5 fps

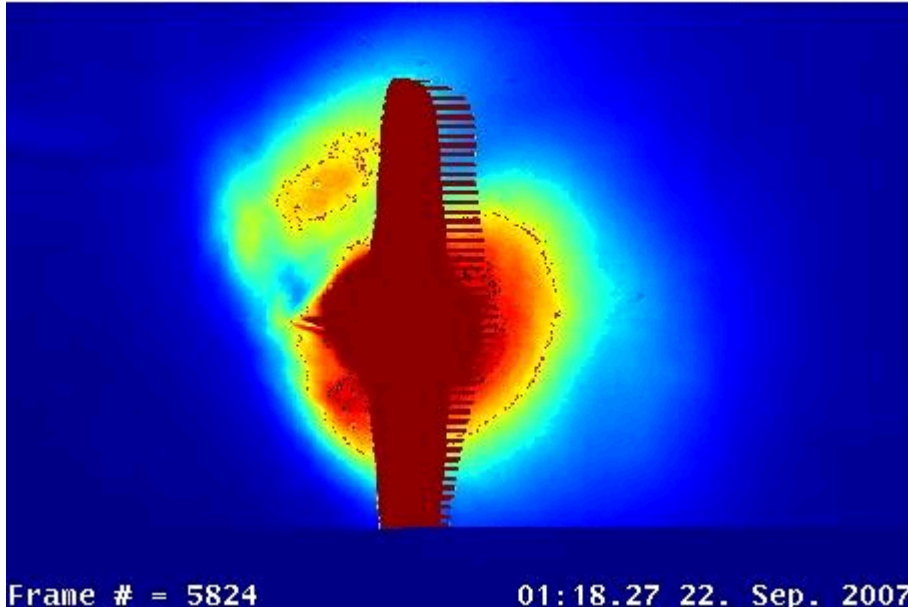
“The camera is saturated. We'll try to decrease the micro bunching by reducing the laser intensity.”

ORS-Team, Monday 29. October 2007 Night

Screen 5SEED

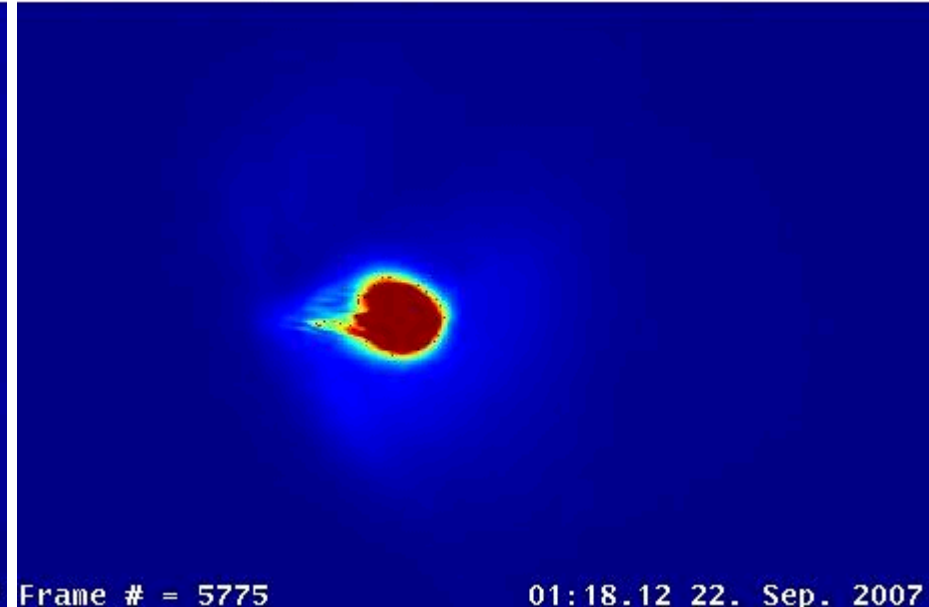
Active Screen Location:

5SEED



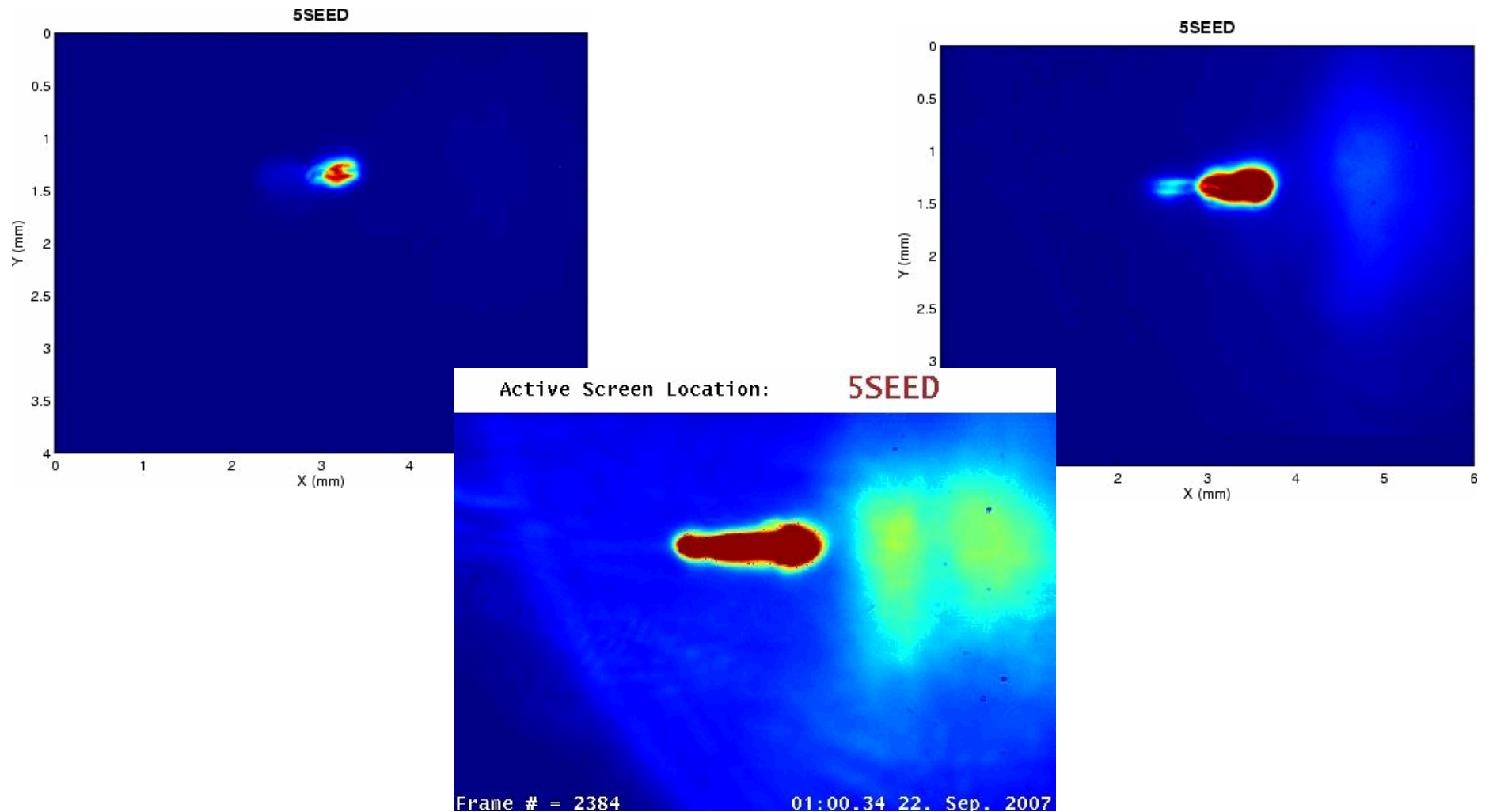
Active Screen Location:

5SEED



- ORS chicane at 0, replica laser off
- SASE compression: 8° ACC1, Pyro 9DBC2 ≈ 70 mV, -10° ACC2
- Camera: OTR1, magnification 1, gain 0, brightness=0, shutter 1

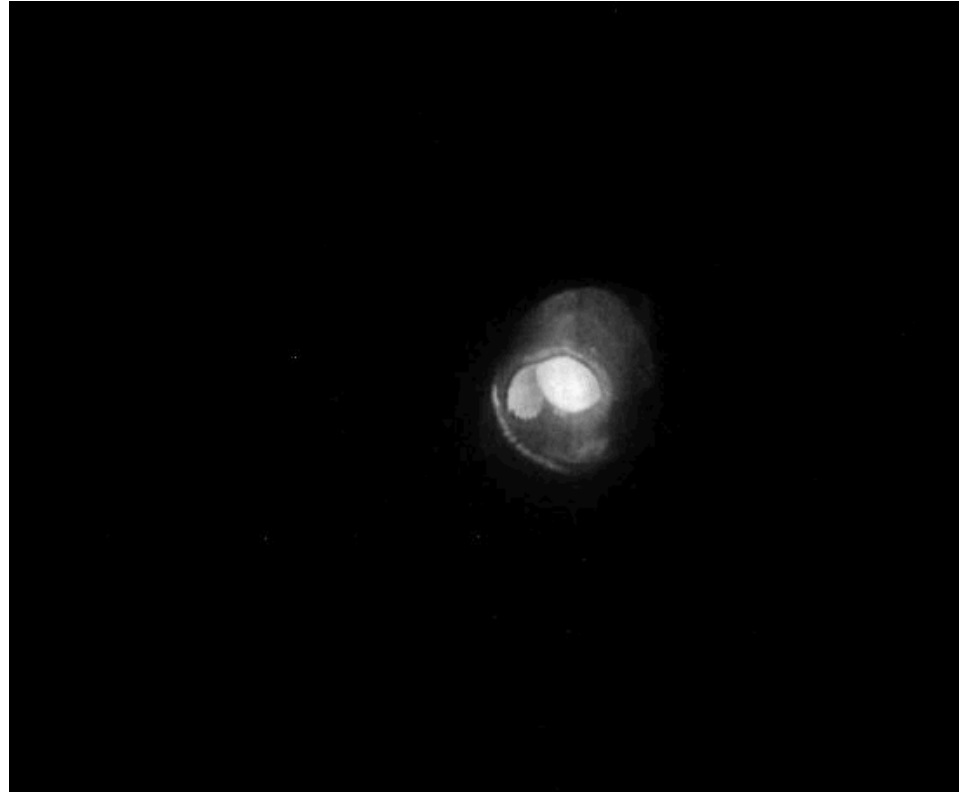
E. Schneidmiller, Friday 21. September 2007 Night



- ORS chicane -3 A, replica laser off
- SASE compression

Images strongly fluctuating; at on-crest image weak and stable

ICCD at IR undulator beam line



- Infrared undulator off
- SASE compression

Intensity strongly fluctuates. On-crest intensity stable.

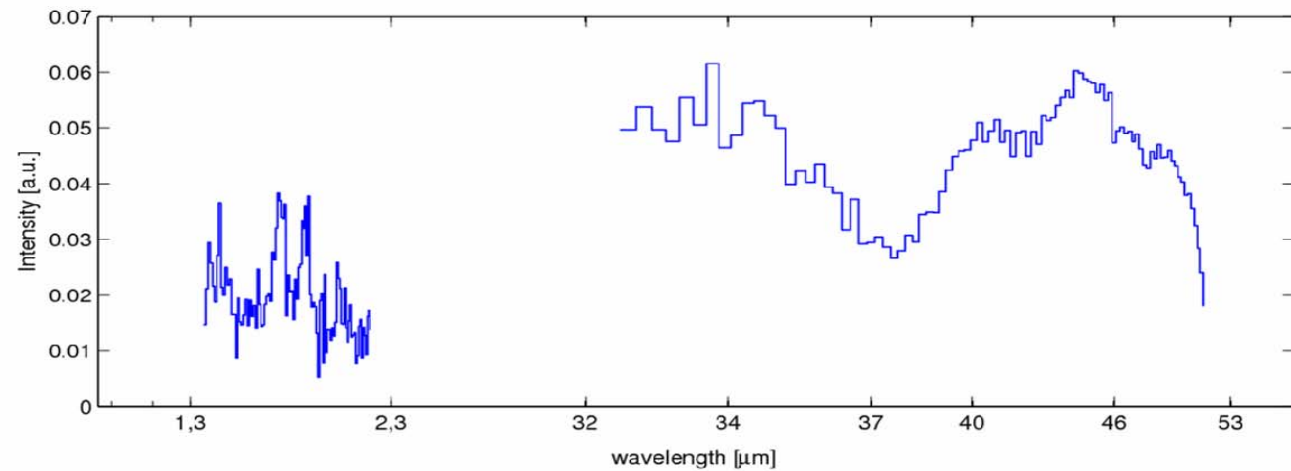
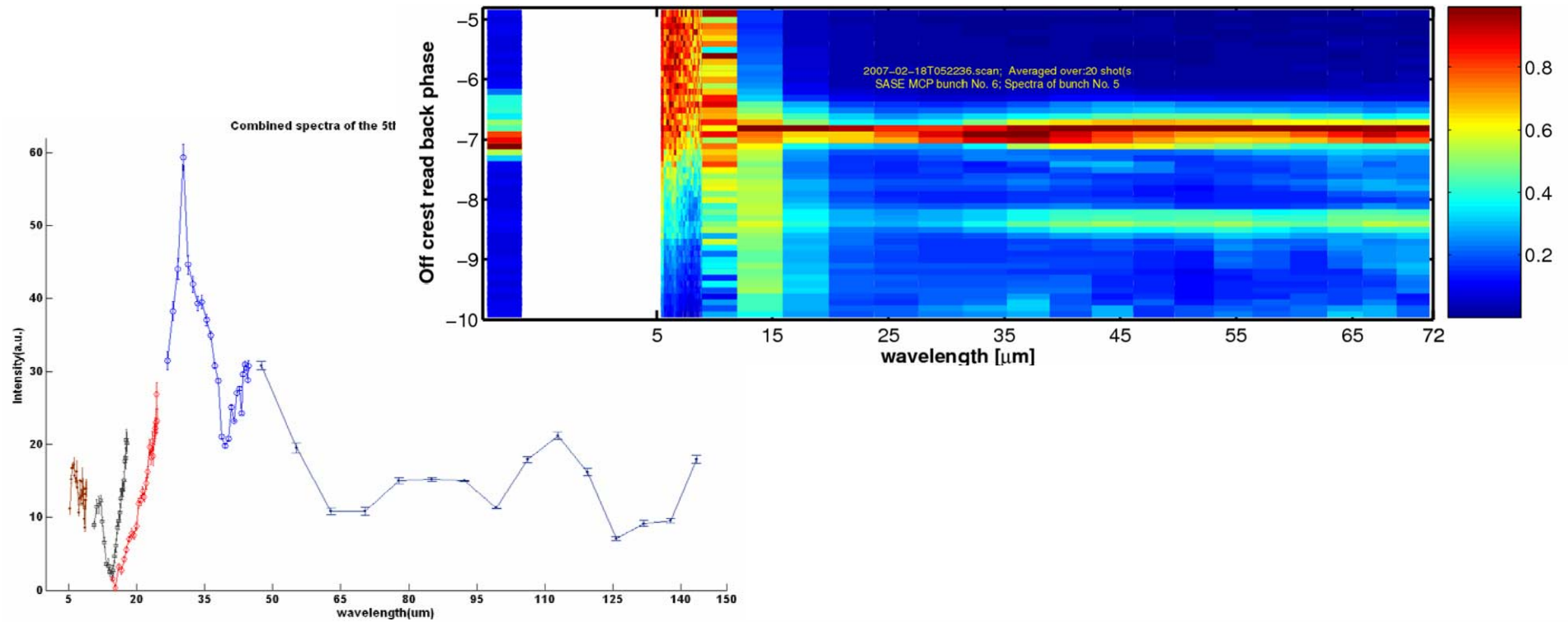
Friday 21. September 2007 Night

At CR140m beam line?

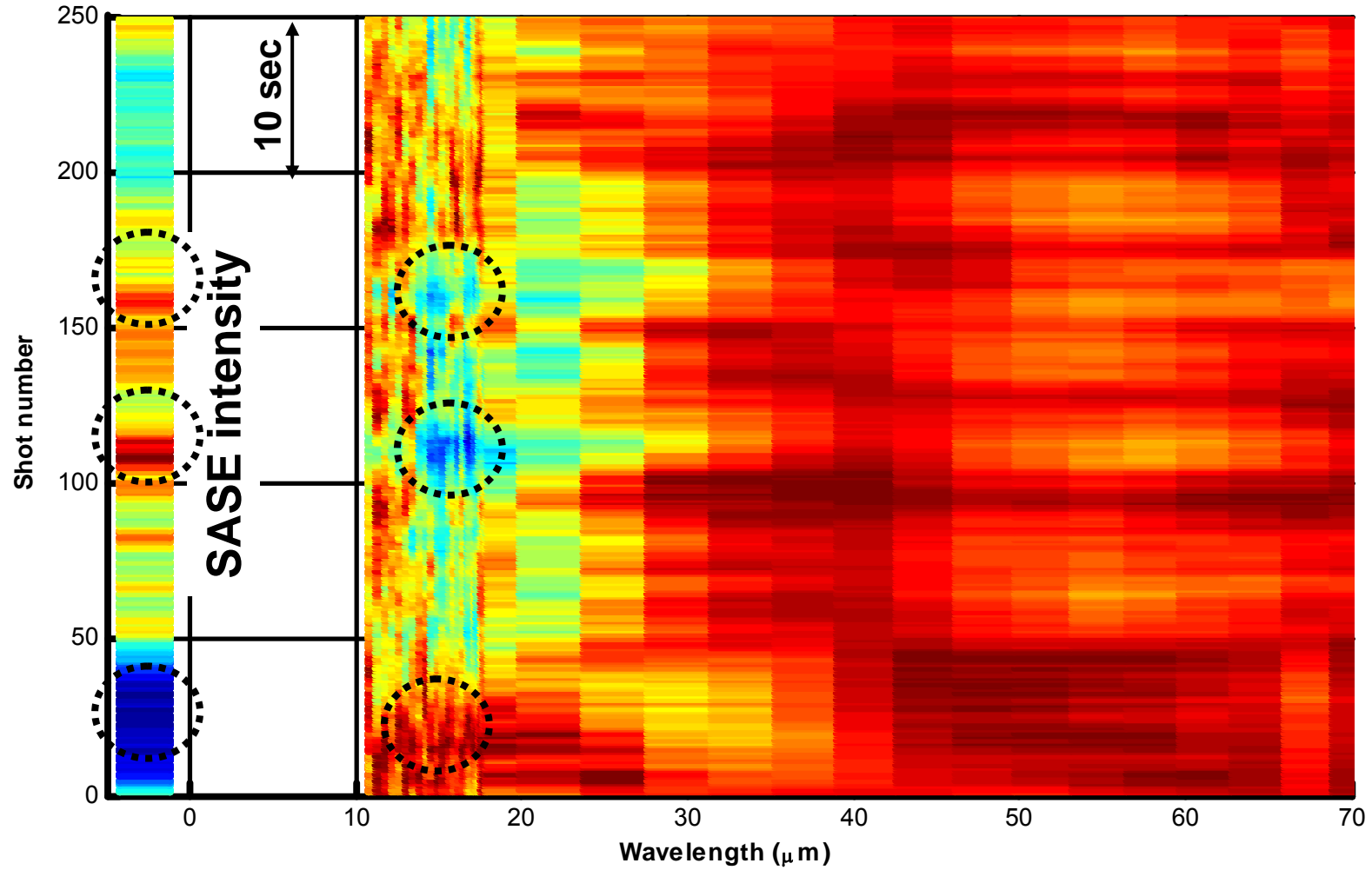
'Twinkling' observed when observed by eye

→ Small, high intensity spots with unstable position

Short wavelength spectroscopy



SASE (Anti-)Correlations



How to proceed?

Intensity studies with OTR

Band-pass filters in visible (could be installed instead of current grey filters)
Dependence on phase, charge, beam size, ...

Spectroscopy

CR140m beamline
Infrared undulator
BC3 SR setup?

