Synclite Status

When we last left our intrepid heroes…

- Vertical emittances looked good
- Horizontal emittances split
  - proton high, pbar low
- Pbar dependence on pickoff mirror position?
- Waiting for lattice functions from new BPM's
- Waiting for new cameras (understand intensity difference between p and pbar)

Synclite Status

- Installed new cameras
  - Relative intensities between p and pbar look better
  - Variation of sigma with intensity seems more consistent between the 2 systems

Synclite Status

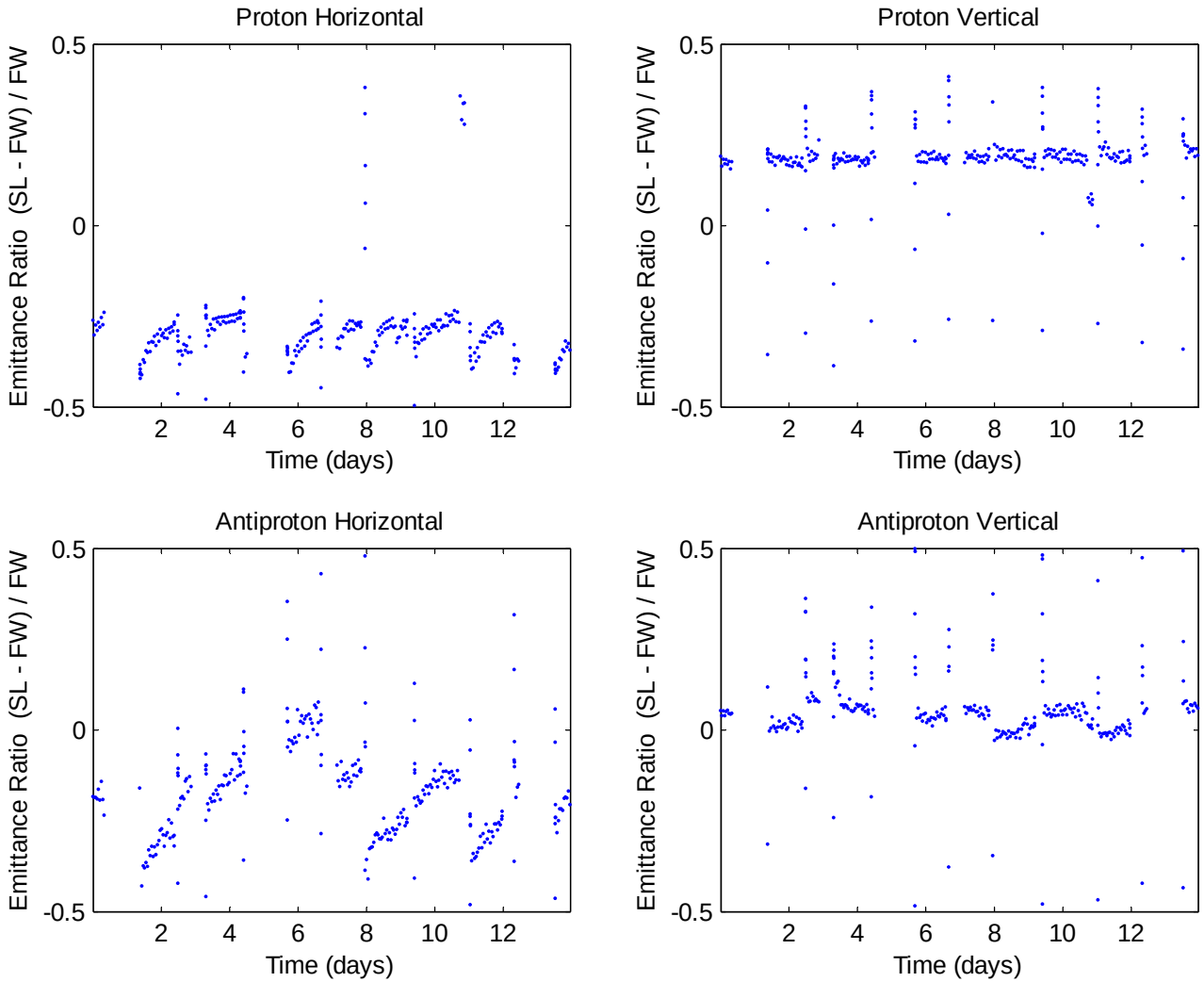
35 cm beta* lattice

Comparison of SL with FW

SL has new cameras

Some features to note:

- Horizontals are low (30%)
- Proton Vert. is high (20%)
- Pbars vary store to store
- Horizontals are not flat over the course of store

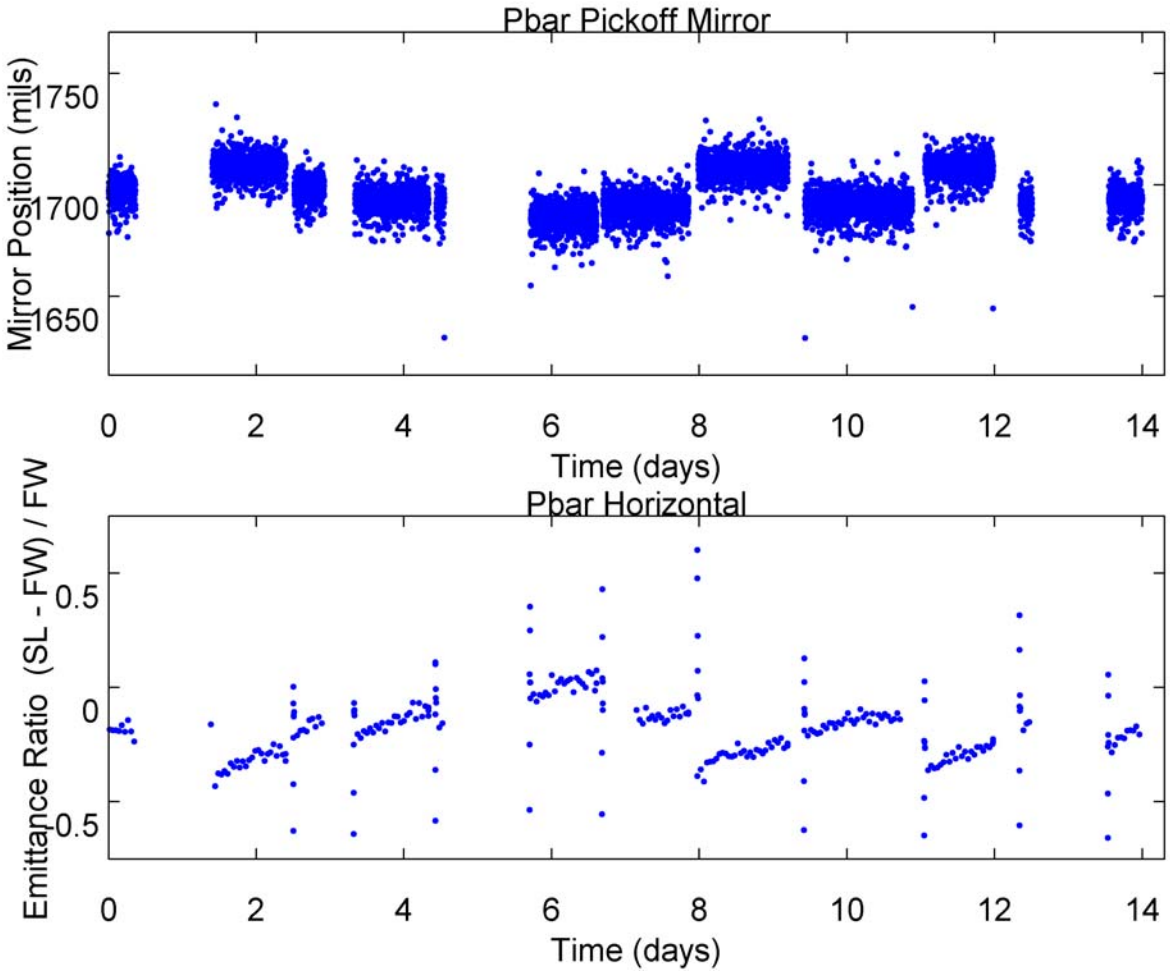


Synclite Status

Pbar variation with pickoff mirror position

Verified this behavior manually

Also found that moving the spot on the intensifier/camera caused significant changes in measured sigma

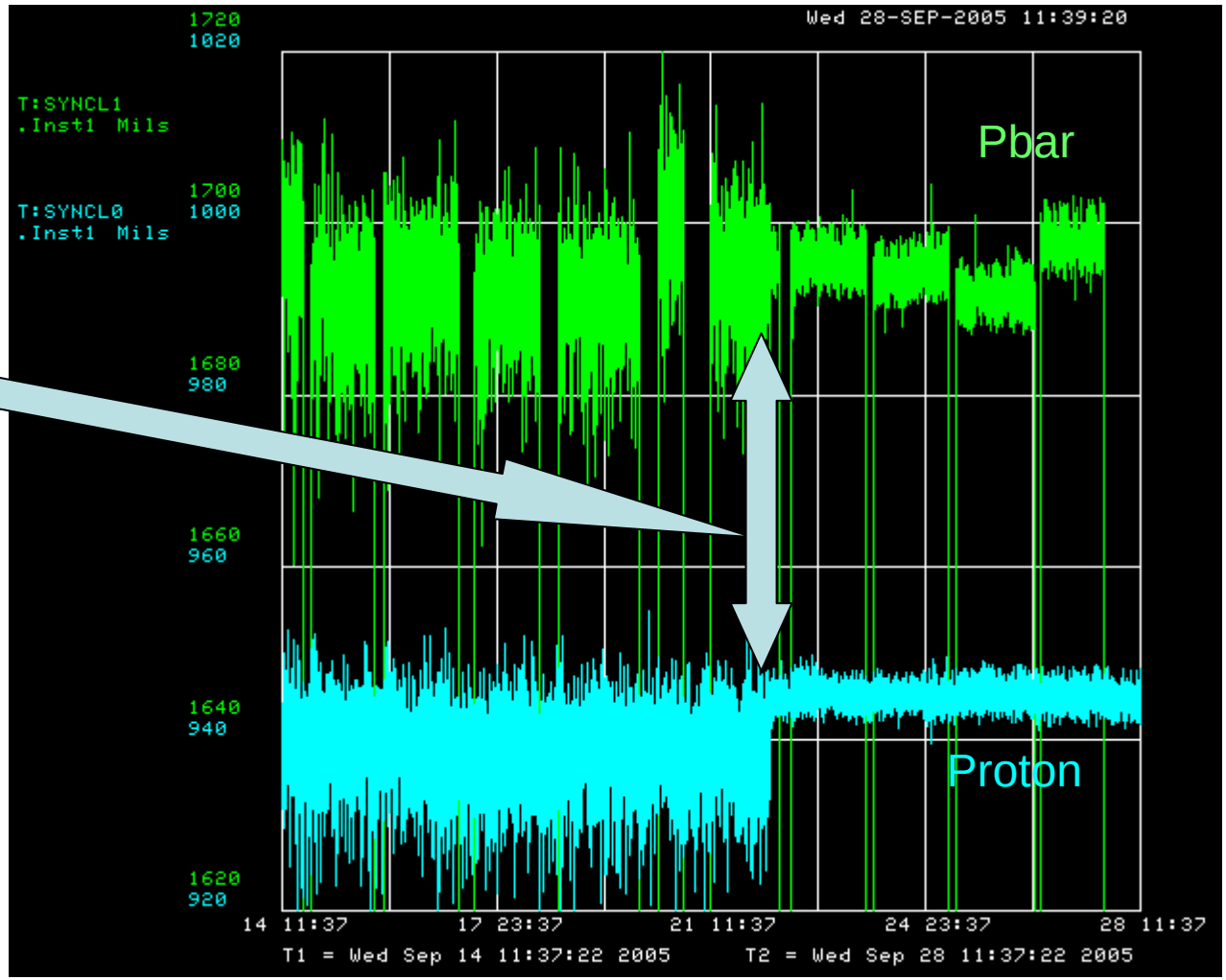


Synclite Status

Pickoff mirror positions

Low pass filter placed on output of linear pot

Success depends on whether the slop is in determining how far to move, or in the motor stopping



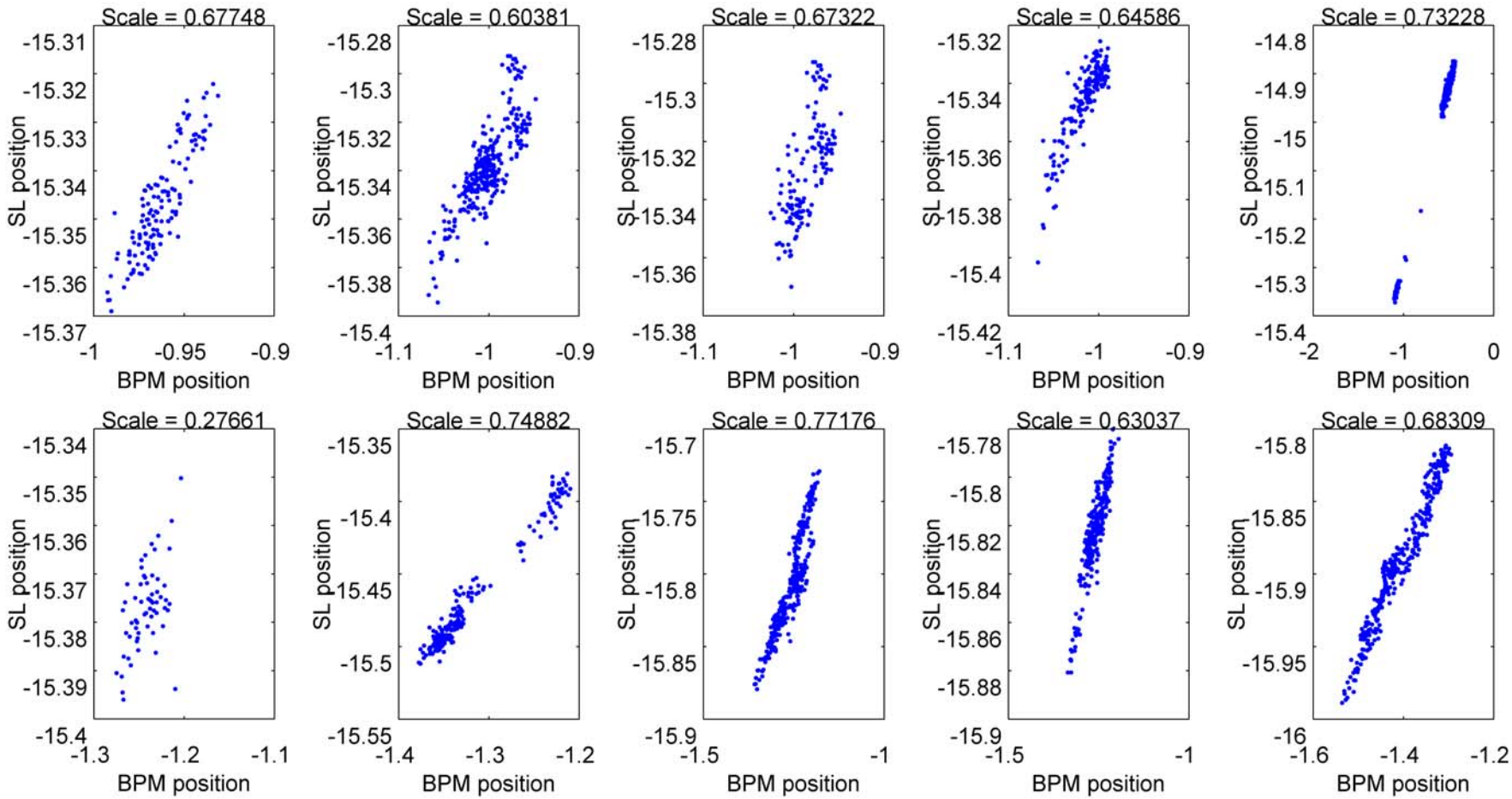
Synclite Status

- Comparison of SL with BPM positions
  - $position_sl = k \cdot position + offset_sl$
  - $position_bpm = position + offset_bpm$
  - $position_sl = k \cdot position_bpm - k \cdot offset_bpm + offset_sl$

- Plot SL vs. BPM positions and slope is k

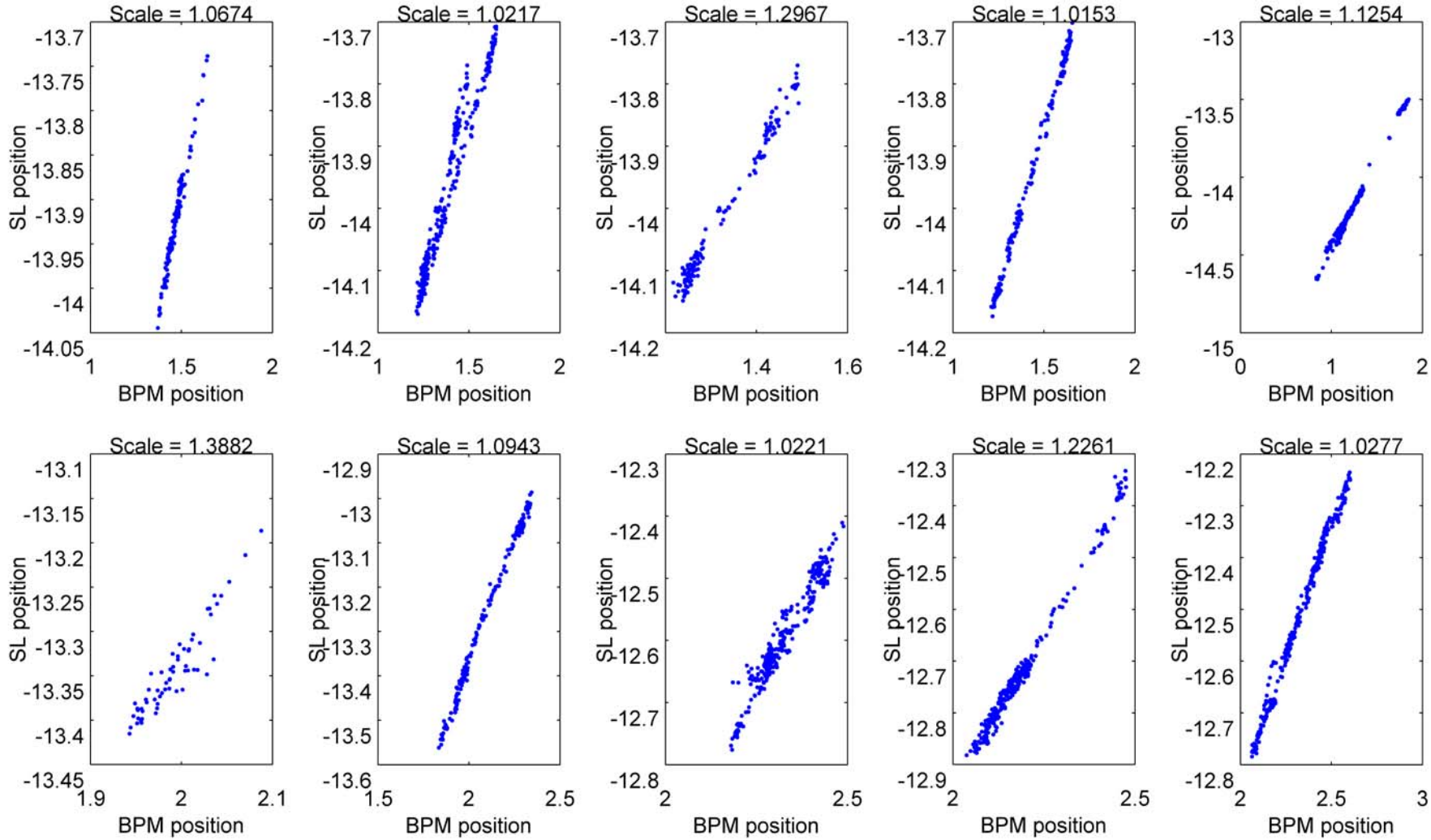
Synclite Status

BPM comparison -- Proton Horizontal



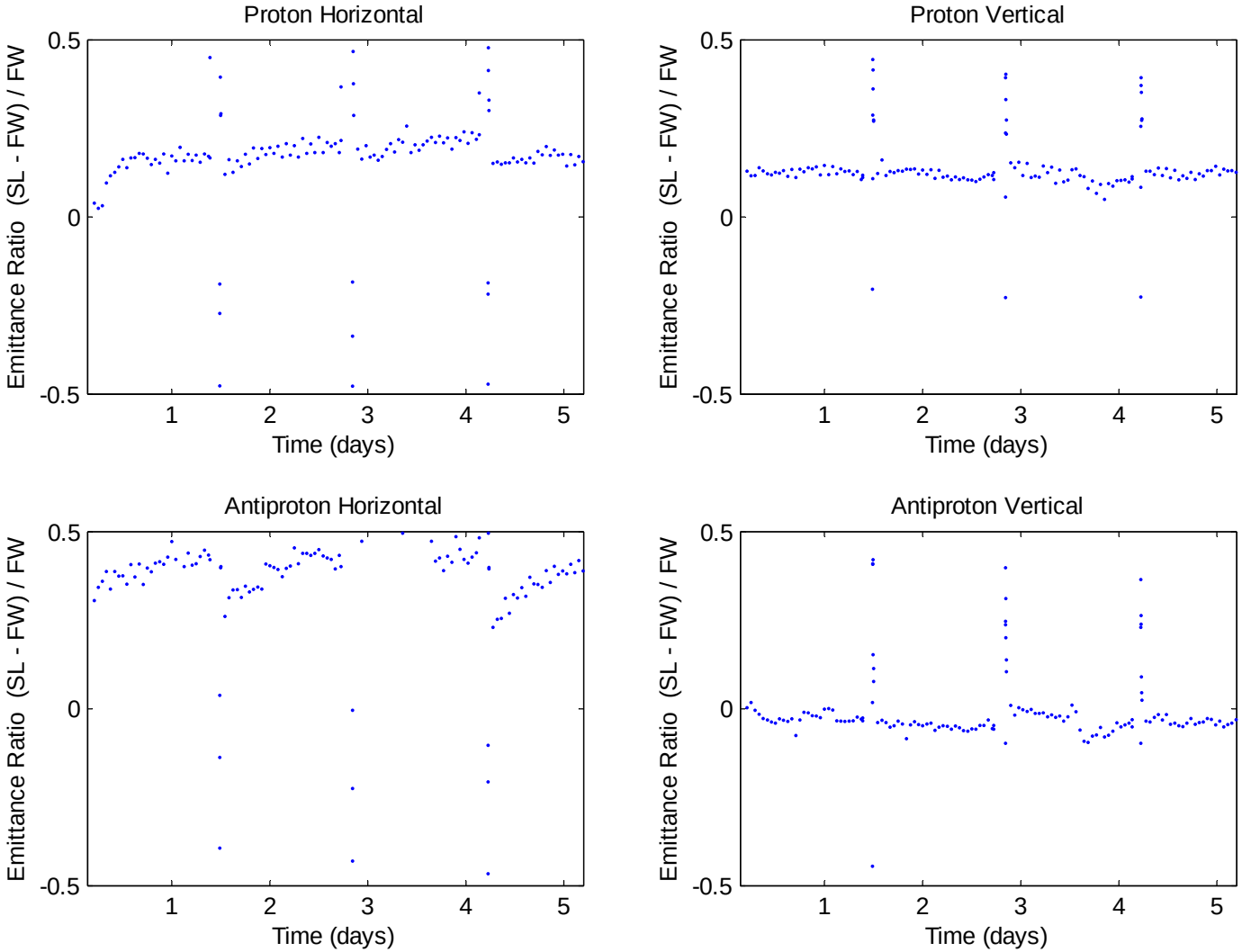
Synclite Status

BPM comparison -- Proton Vertical



Synclite Status

- Camera outputs 753h x 480v over an analog RS-170 video feed
  - RS-170 has 484 visible horizontal lines (vertical pixels)
  - RS-170 specifies a 4:3 aspect ratio
    - Implies ~640 horizontal pixels → 640x480 images
    - Framegrabber card digitizes 640x480
- 753h camera pixels → analog signal → 640h pixels in framegrabber
- SL horizontal scale is too small
  - 640/753 = 85%

Synclite Status

Pixel scaling correct
28cm lattice