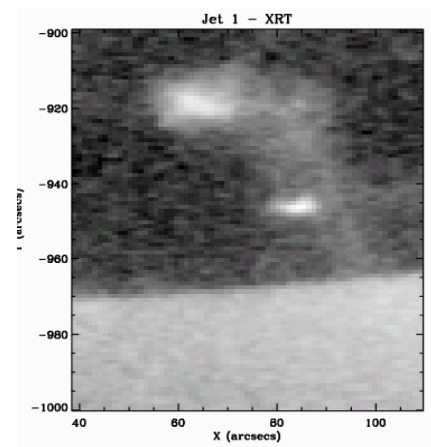
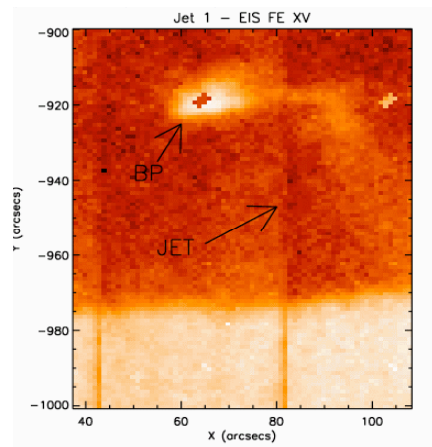


# *Hinode/EIS and XRT Observations of Hot Jets - A Failed Escape Attempt?*

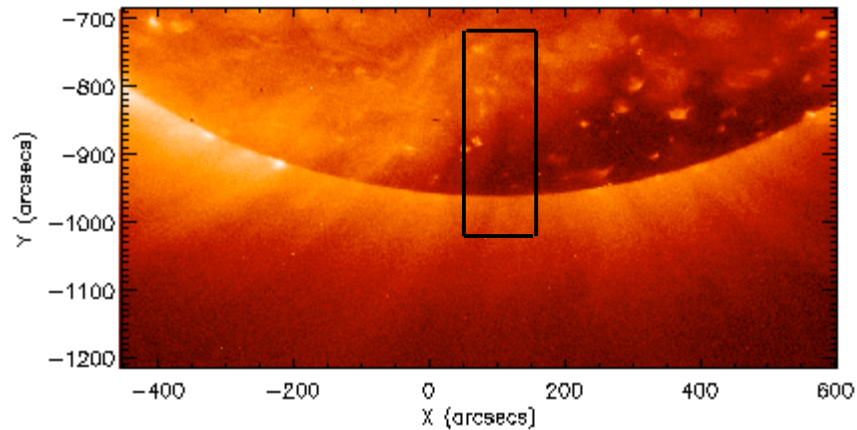


**Deb Baker**<sup>1</sup>, L. van Driel Gesztelyi<sup>1,2,3</sup>, L. Culhane<sup>1</sup>, S. Kamio<sup>4</sup>, L. Harra<sup>1</sup>, J. Sun<sup>1</sup>, P. Young<sup>5</sup>, G. Doschek<sup>6</sup>,  
D. Brooks<sup>6</sup>, L. Lundquist<sup>7</sup>, V. Hansteen<sup>8</sup>

- 1) UCL-Mullard Space Science Laboratory, UK, 2) Observatoire de Paris, LESIA, 3) Konkoly Observatory, Hungary, 4) NAOJ, Japan,  
5) STFC, RAL, UK, 6) NRL, USA, 7) SAO, USA, 8) U. of Oslo, Norway

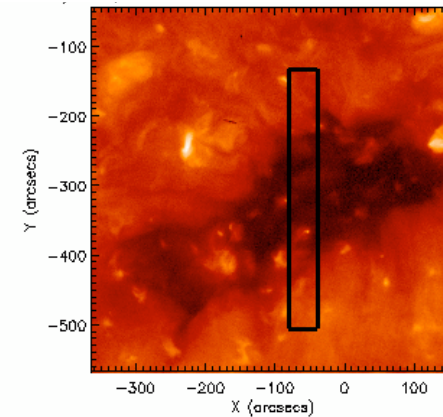
## Hot Jets in Coronal Holes - 2 Observing Campaigns

Polar Campaign - 20 Jan 2007



- Study Number - 47
- 14 Lines
- Temperature Range: 0.4 MK to 5.0MK (+ He II)
- 40" Slot

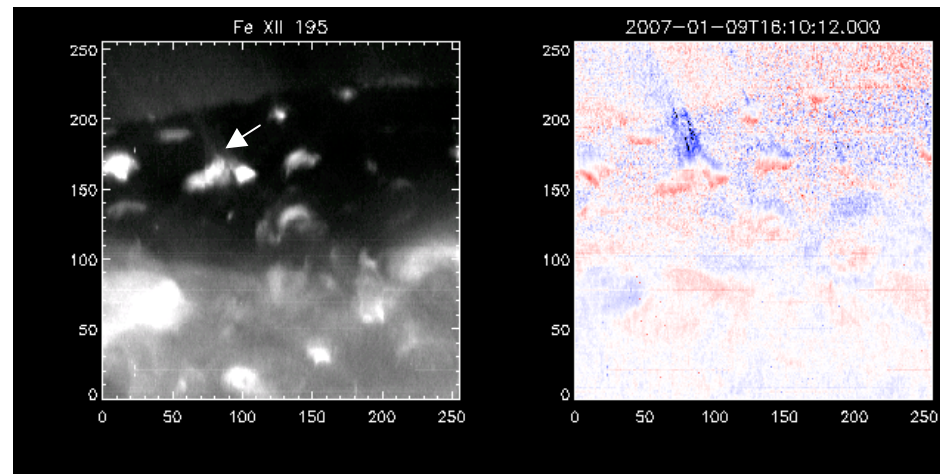
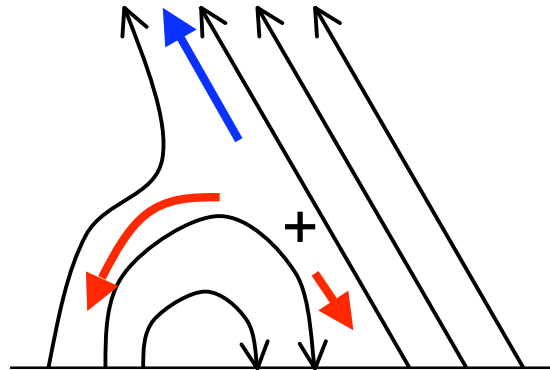
On-Disk Campaign - 19 June 2007



- Study Number - 173
- 22 Lines
- Temperature Range: 0.3 MK to 12.6 MK (+ He II)
- 2" Slit

# The Reconnection Jet Model

Kamio et al., 2007  
(Submitted PASJ)

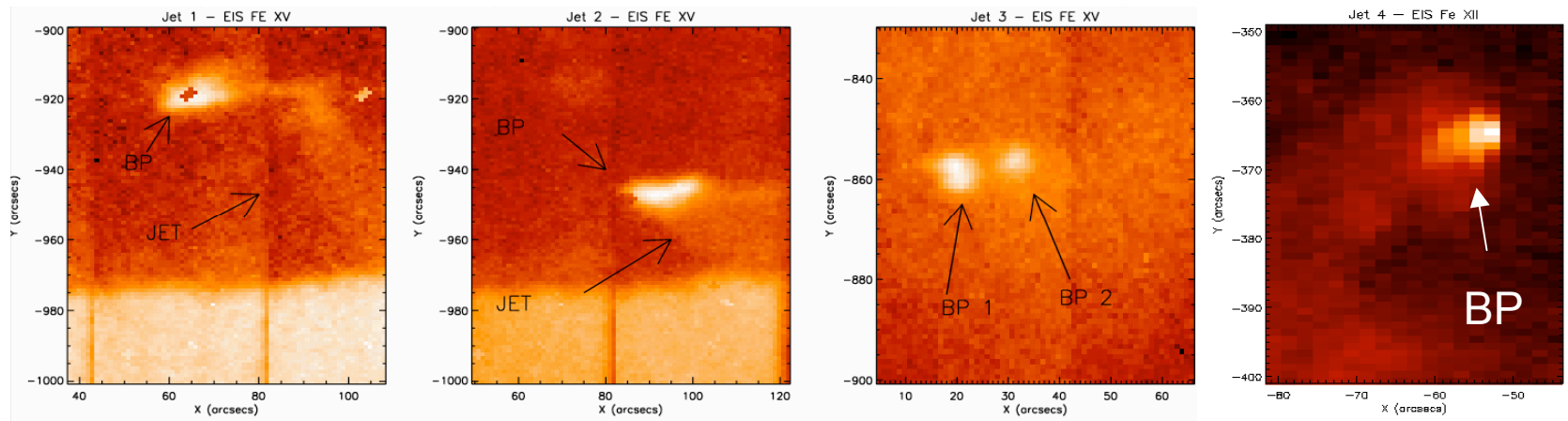


Fe XII Intensity

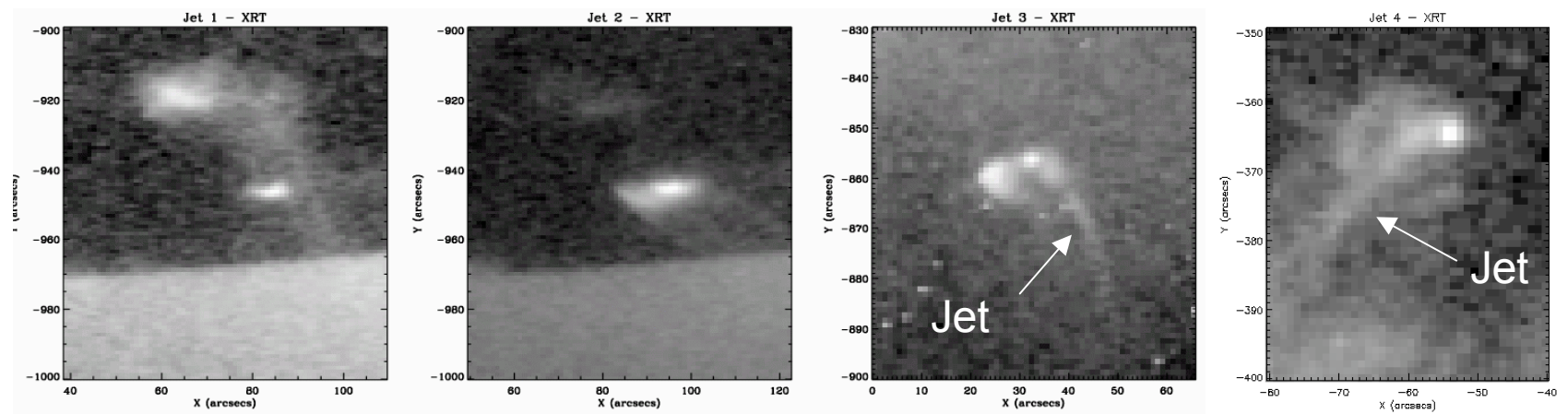
Fe XII Velocity

# The Jets

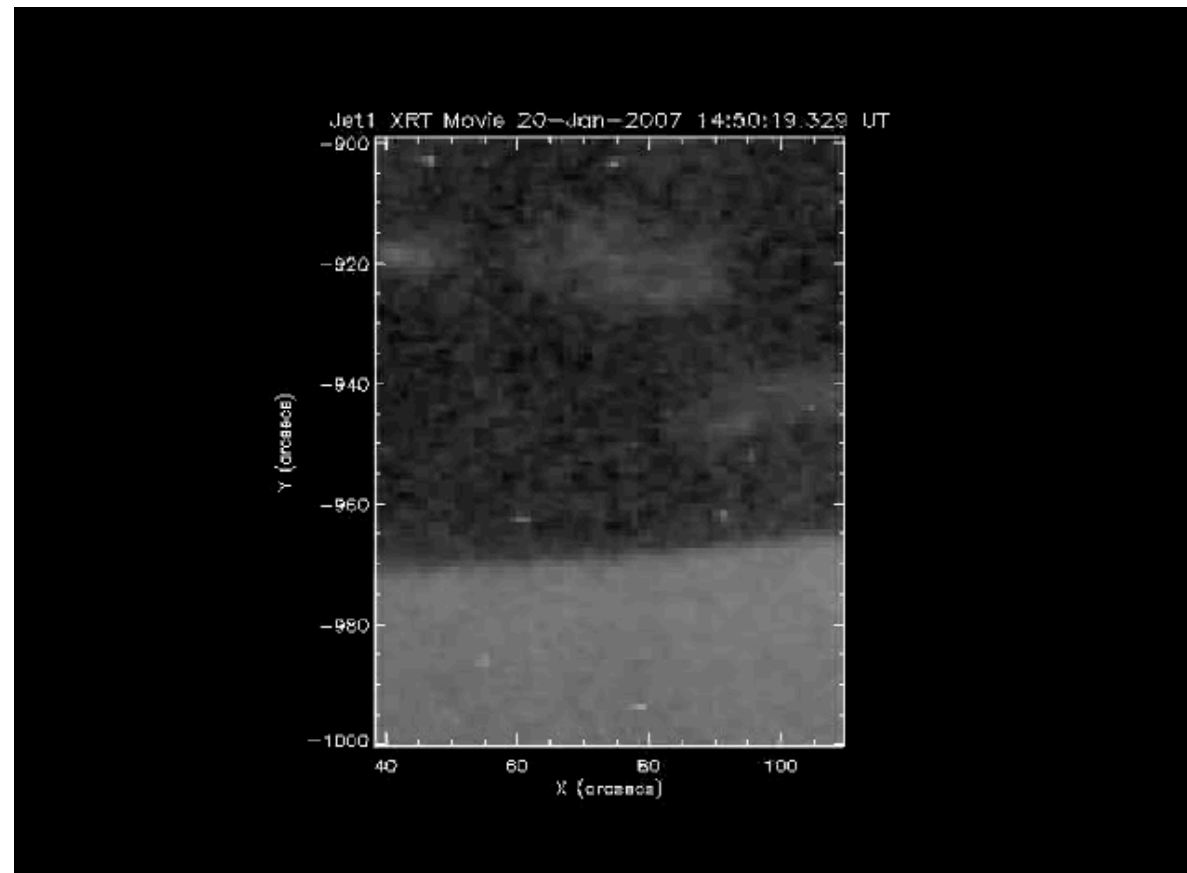
EIS



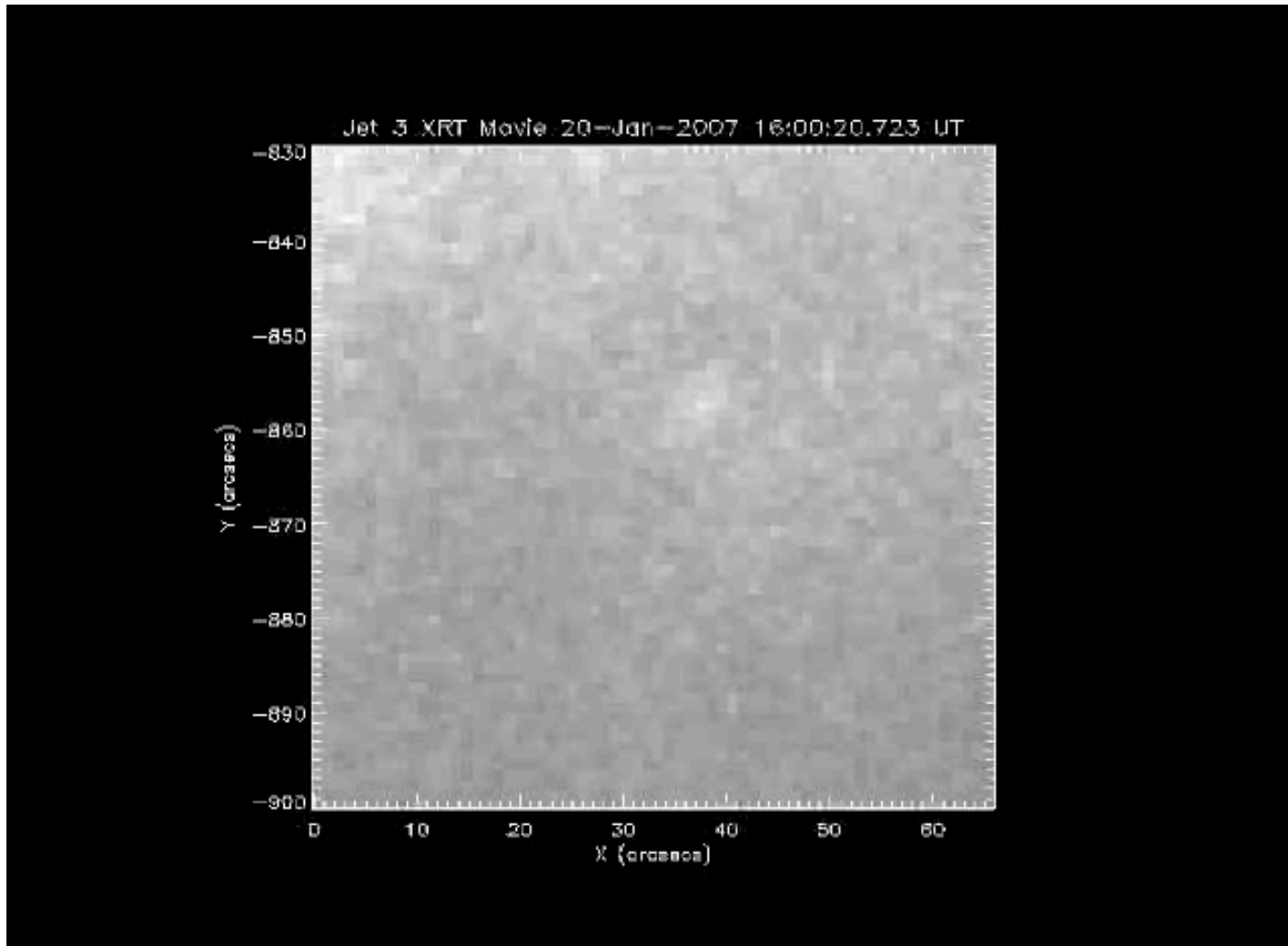
XRT



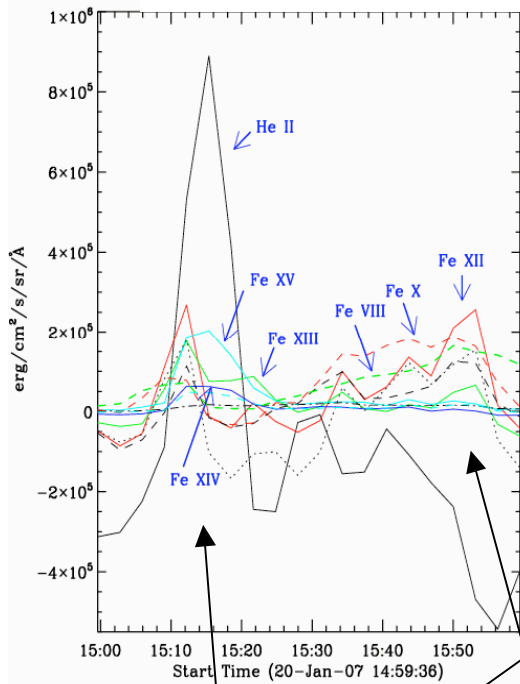
# Jet 1 - The Movie



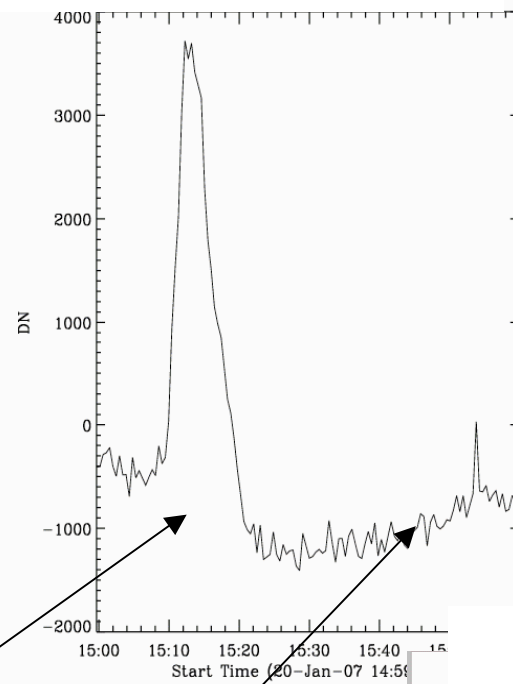
## Jet 3 - The Movie



### Jet EIS LCs



### Jet XRT LC

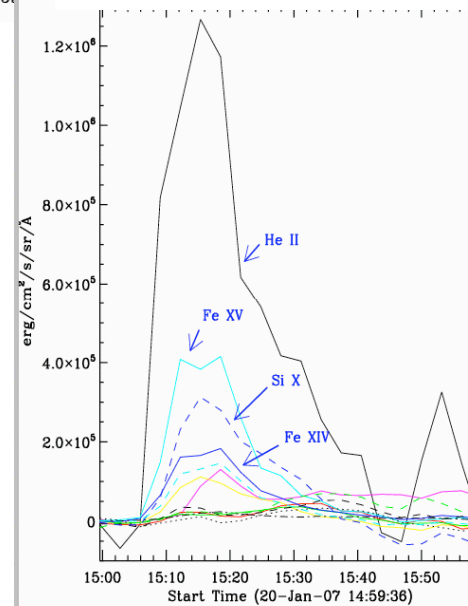


## Jet 1: Jet & BP Light Curves

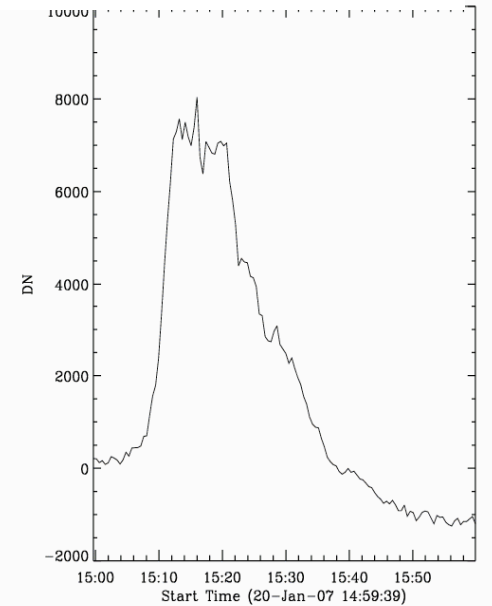
Jet Main Phase

Post-jet Enhancement

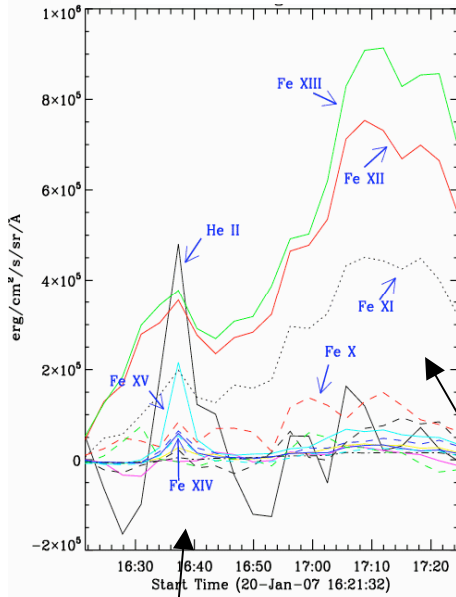
### BP EIS LCs



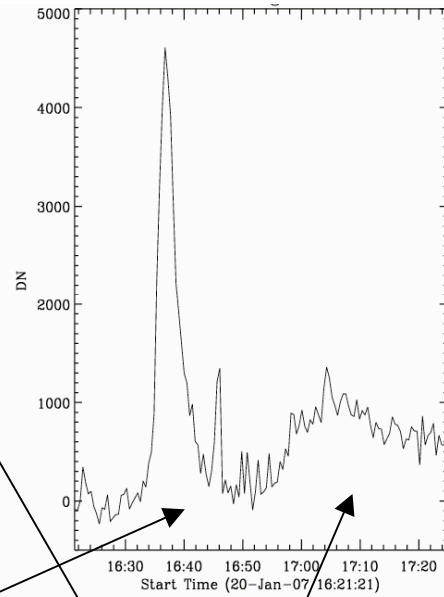
### BP XRT LC



### Jet EIS LCs



### Jet XRT LC

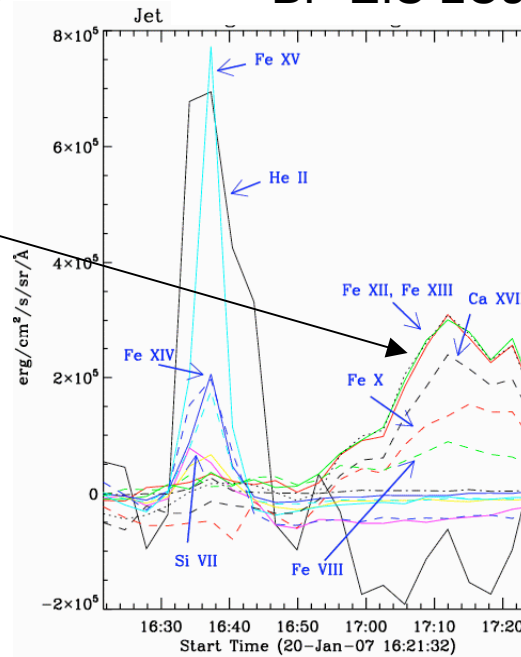


## Jet 2: Jet & BP Light Curves

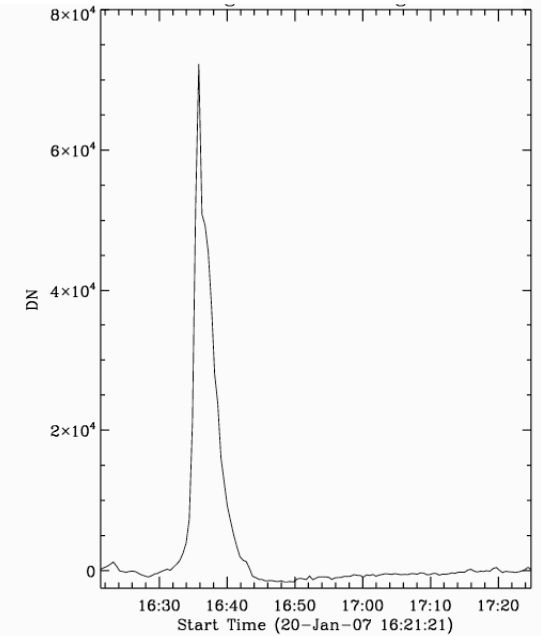
Jet Main Phase

Post-jet Enhancement

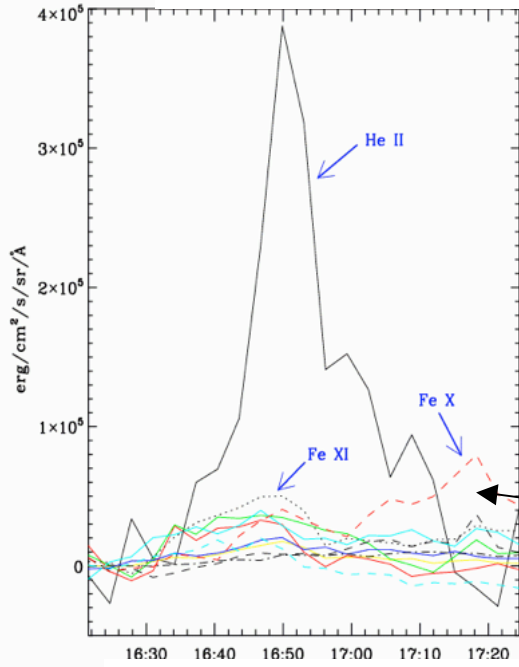
### BP EIS LCs



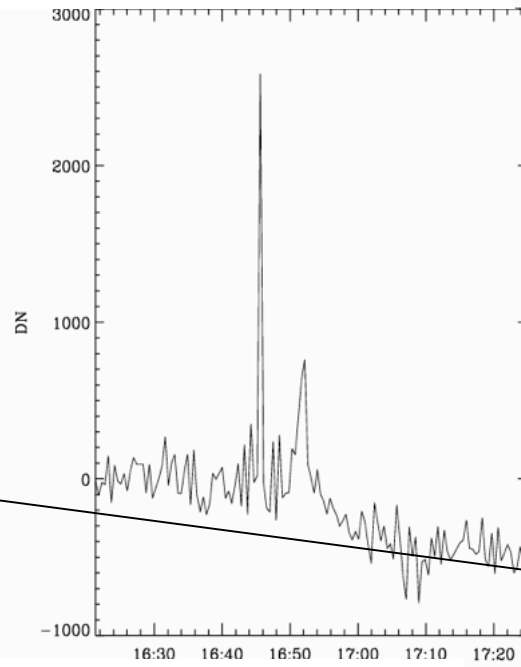
### BP XRT LC



### Jet EIS LCs



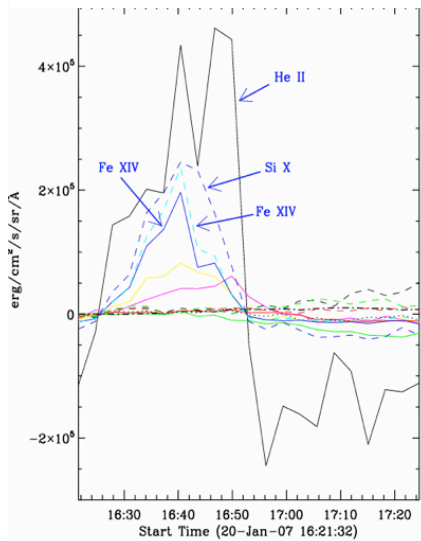
### Jet XRT LC



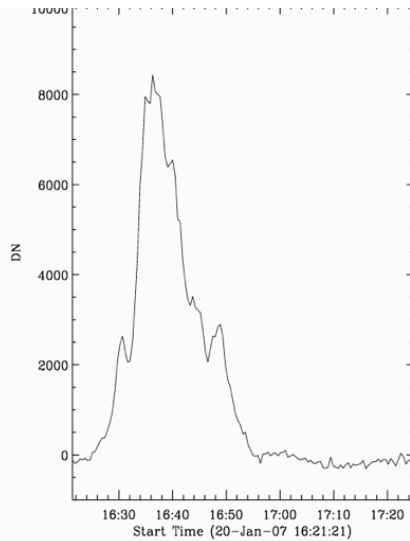
## Jet 3: Jet & BPs Light Curves

Post-jet Enhancement

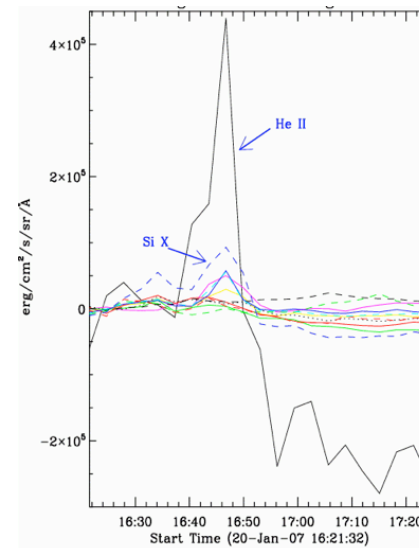
### BP EIS LCs



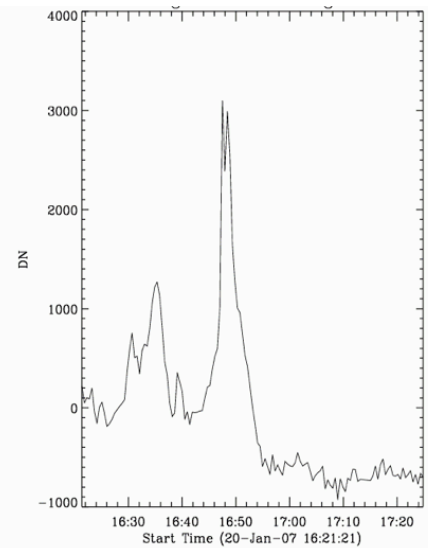
### BP XRT LC



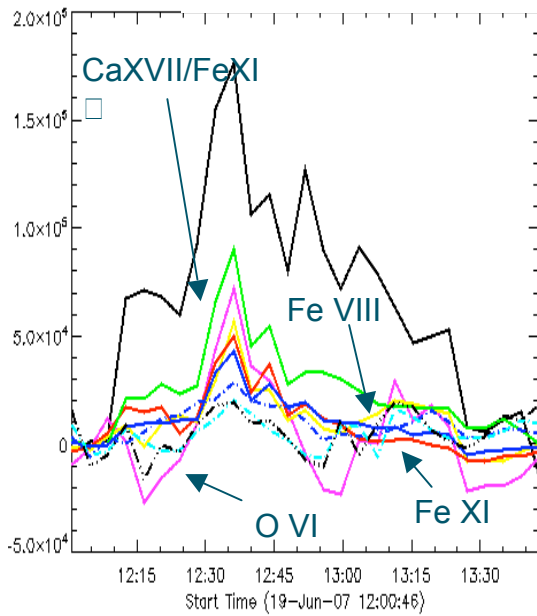
### BP EIS LCs



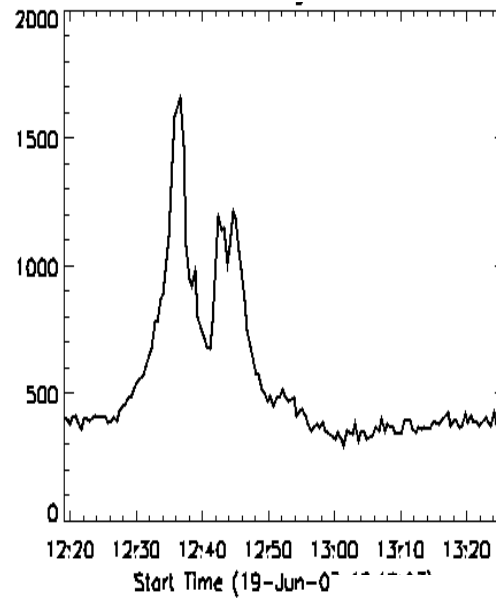
### BP XRT LC



### Jet EIS LCs



### Jet XRT LC

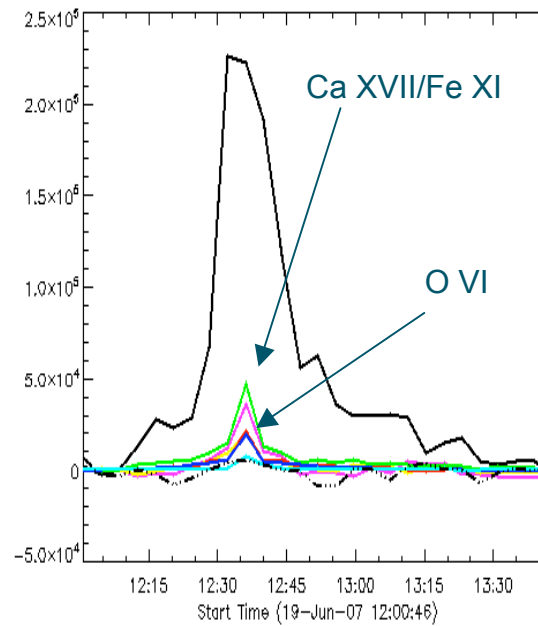


## Jet 4: Jet & BP Light Curves

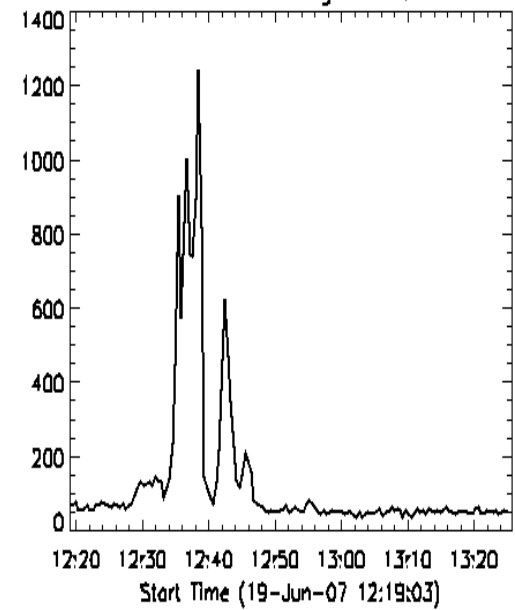
Post-jet Enhancement



### BP EIS LCs

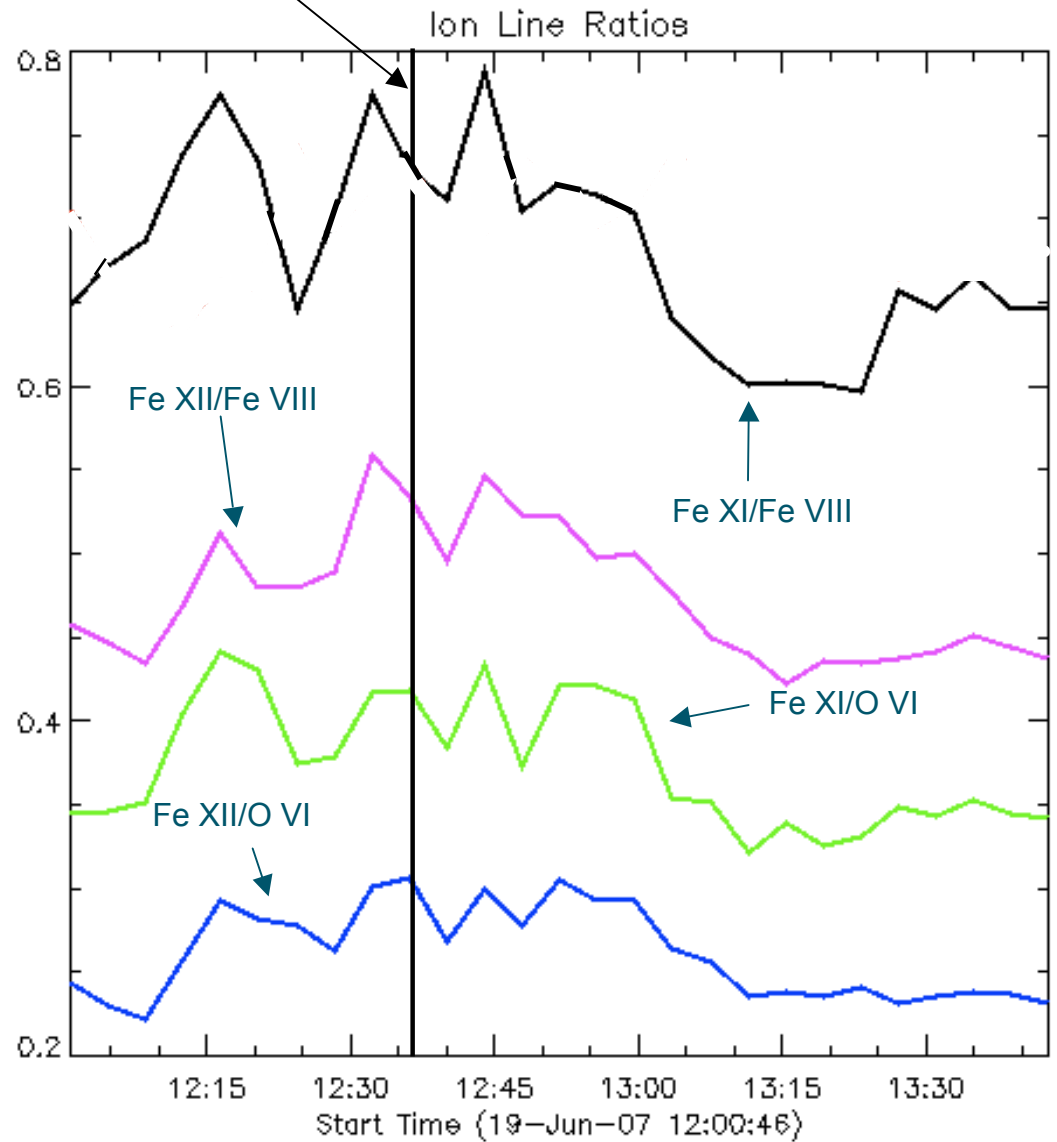


### BP XRT LC



# Jet 4 Ion Ratios

Max jet 4 pulse (12:36)



## Post-Jet Enhancements:

### Failed Escape Attempt!

Jet Velocities	Speed (km/sec)
Jet 1	360
Jet 2	150
Jet 3	63
Jet 4	26
Escape	618

## SUMMARY

- All jets and bright points show impulsive behavior.
- Jets and bright points have coincident start and peak times in EIS and XRT light curves providing support for the interchange reconnection scenario (Yokoyama and Shibata, 1995 *Nature*, **375**, 42-44).
- Bright points appear hotter than their associated jets and the post-jet enhancements, seen for the first time by Hinode, are cooler than the jets they follow.
- Jet EIS light curves show **post-jet enhancements in cooler lines** interpreted to be due to the **fall back of material** to within the contour region in the studied jets as the jet plasma was below escape velocity.