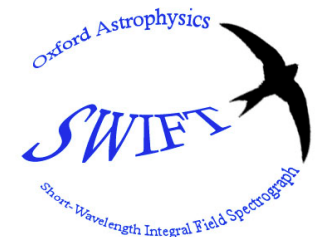


# Arp 147 Ring System - First Science from SWIFT

Lisa Fogarty, University of Oxford.

SWIFT Team: **Niranjan Thatte**,  
Matthias Tecza, Fraser Clarke, Tim  
Goodsall, Graeme Salter, **Susan  
Kassin.**



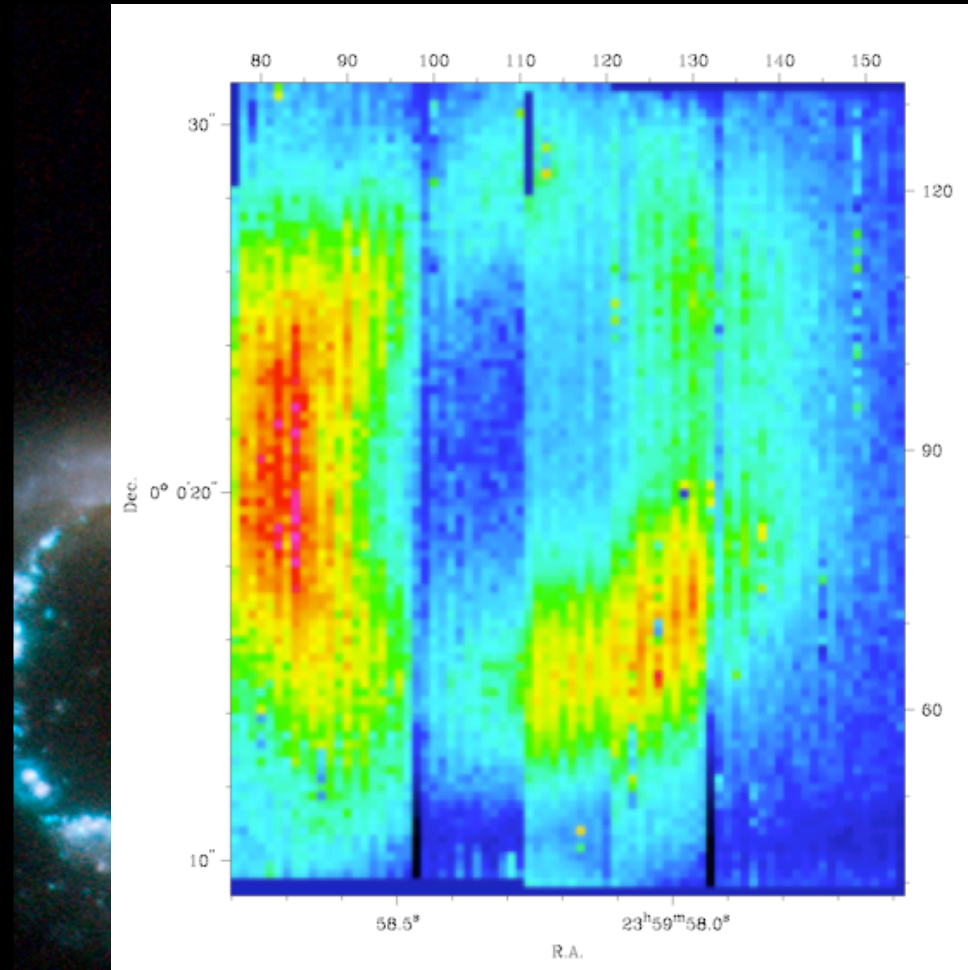


# The Data.

- Arp 147 - Galaxy pair with ring.
- Bad weather back-up - seeing  $\sim 2.5''$
- SWIFT datacubes -  $10'' \times 20'' \times 650\text{nm} - 1050\text{nm}$ .
- 2-3 5min exposures in 3 different positions.

# SWIFT Kinematics

- H-alpha line map.
- Strong H-alpha in blue object.

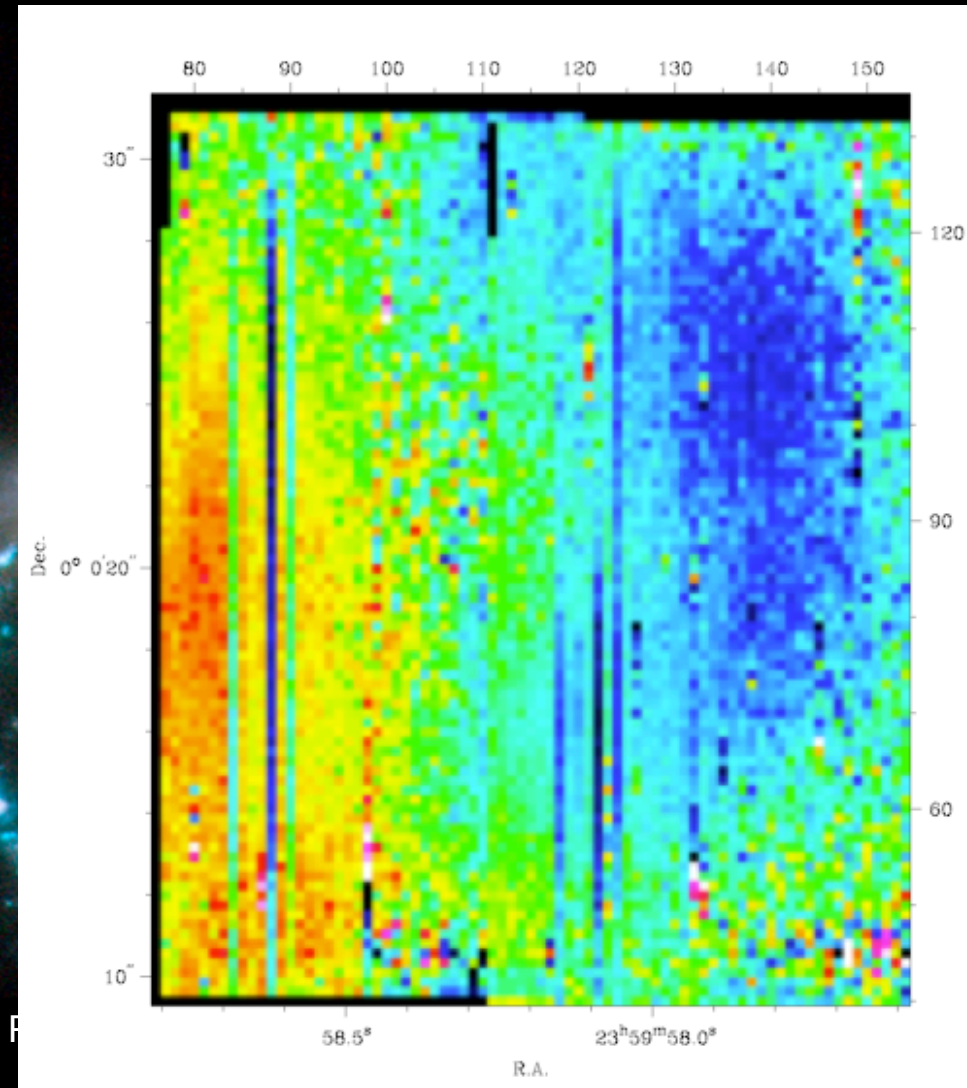


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# SWIFT Kinematics

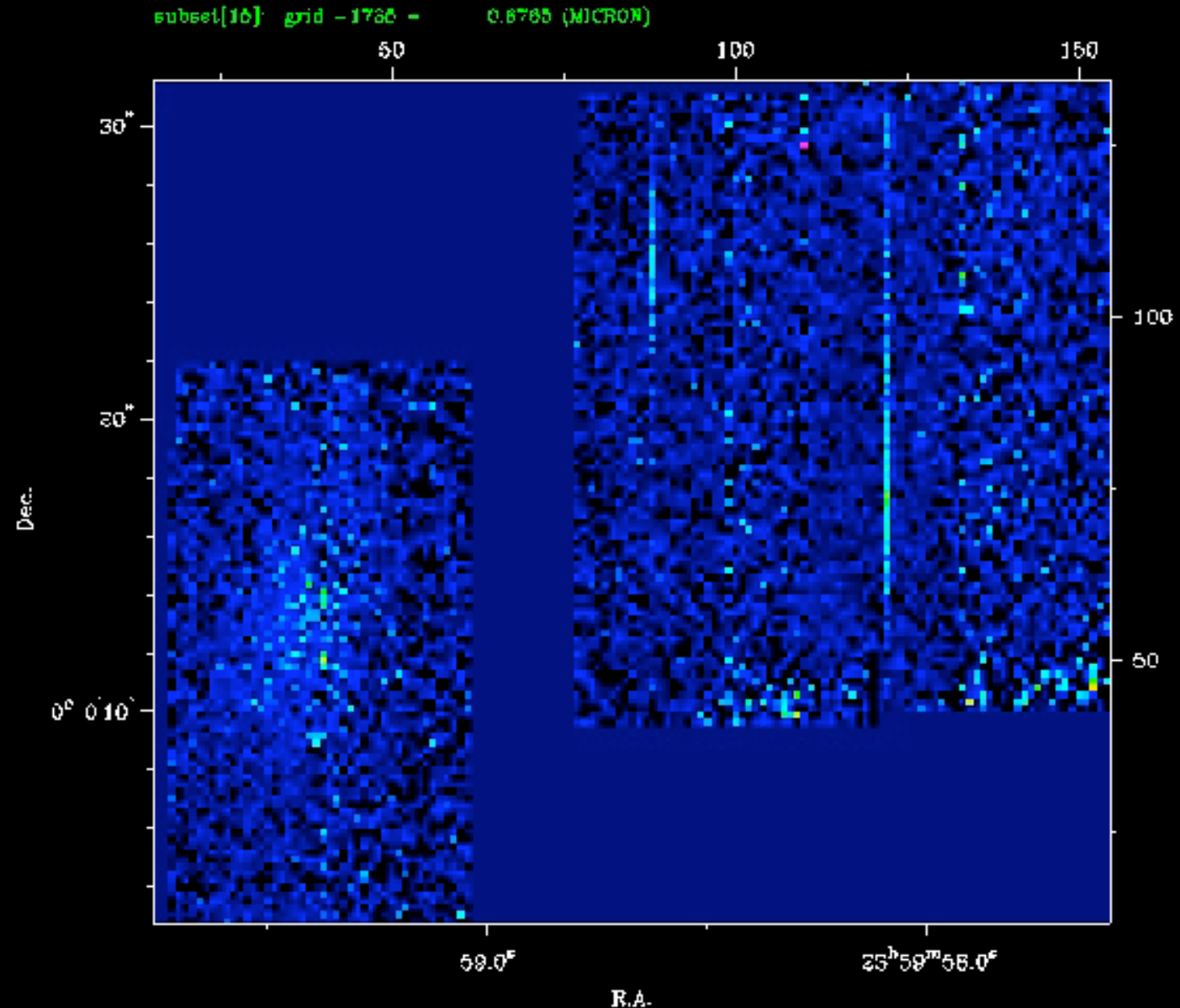
- H-alpha velocity map.
- See strong velocity gradient in the ring.



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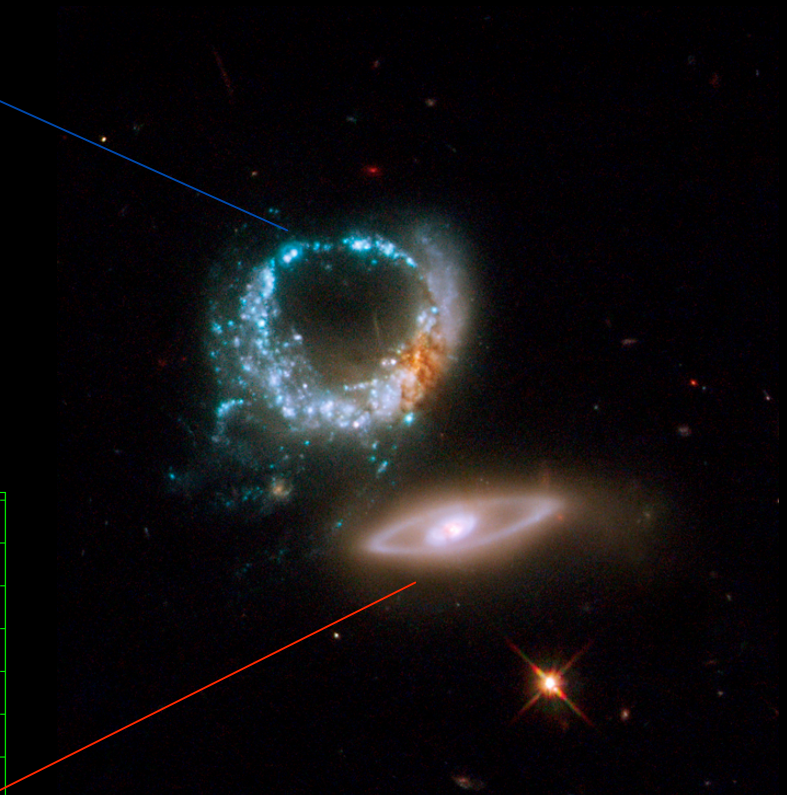
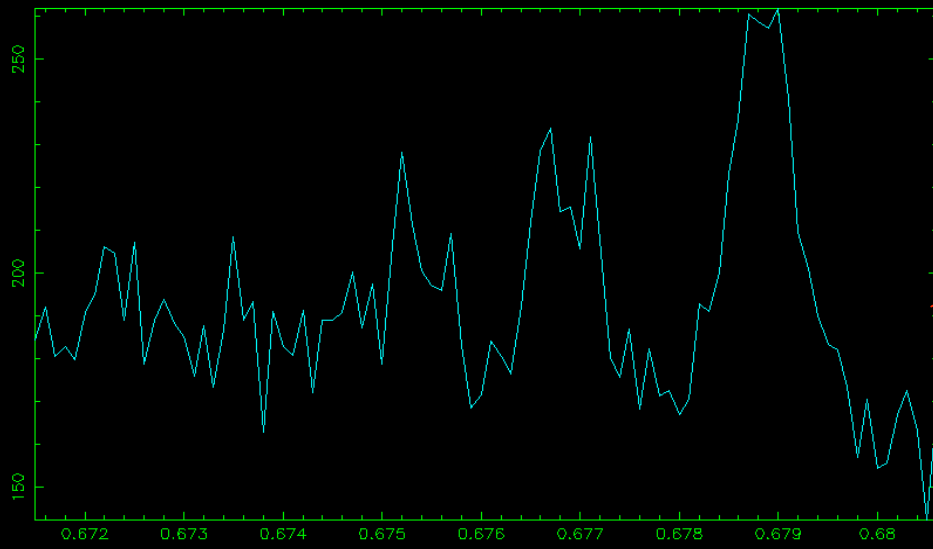
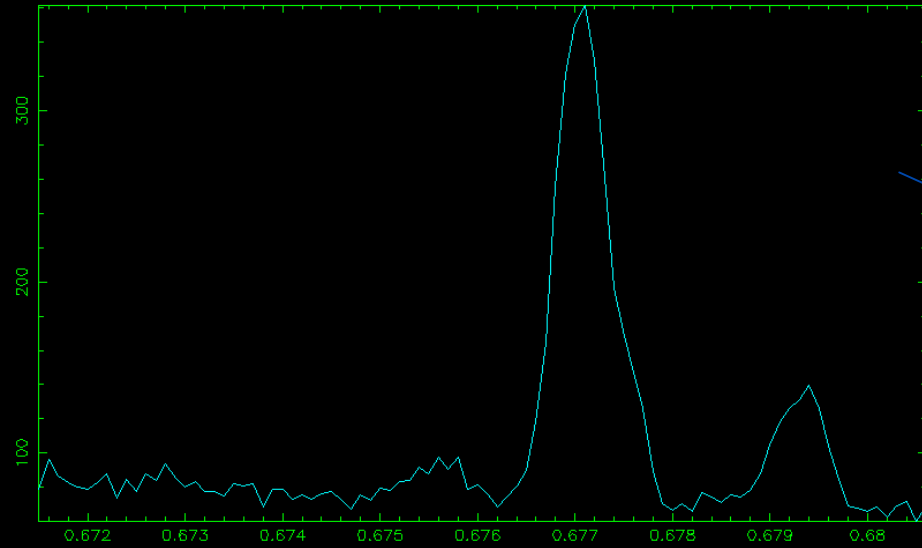
# SWIFT Kinematics.

- Easier to see in a movie!



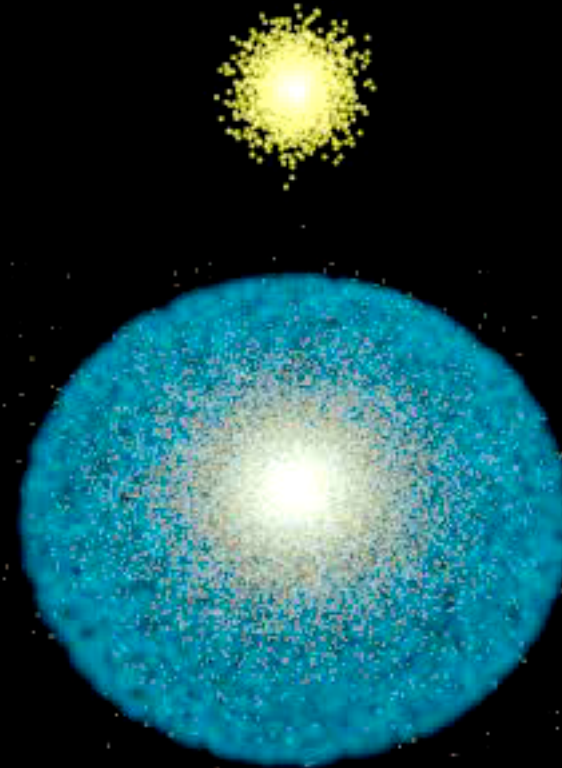
01-May-2009

# Line Ratios



# The Formation Scenario

- Collisionally created ring.
- But ours is an empty ring...



# Formation Timescales.

- Expansion Vel: **302.25 kms<sup>-1</sup>**
- Diameter of Ring: **9.25 kpc**
- Rough Expansion timescale (from half current size): **7.85 Myrs**
- Distance to companion: **12.7 kpc**
- Qualitative match to starburst age?



# Further Work!

- Quantify NII/H $\alpha$  ratio - measure starburst age and match to expansion timescale from kinematics.
- Measure spatially resolved SFR in ring.
- Paper in preparation!



Thanks!

