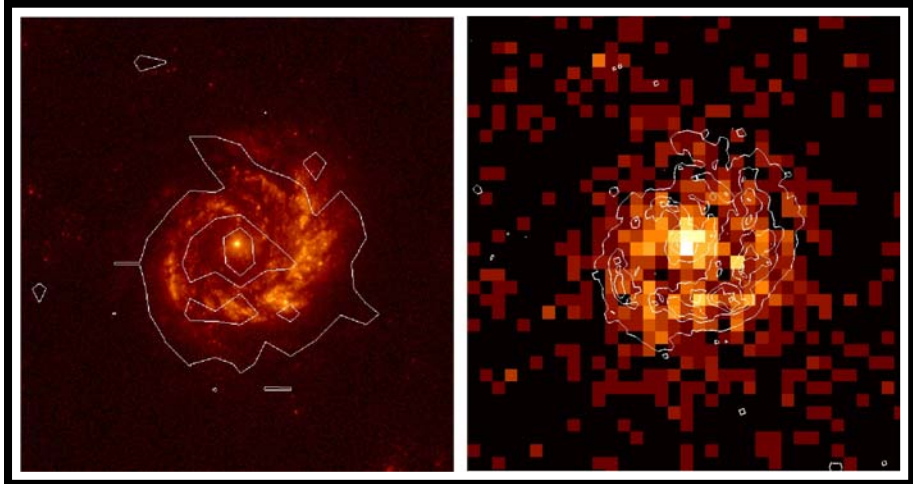
# Starburst Activity in Active Galactic Nuclei: The High Energy View






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Jose Miguel Mas Hesse
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**Collaborators:** Matteo Guainazzi, Matthias Ehle, Michael Dahlem


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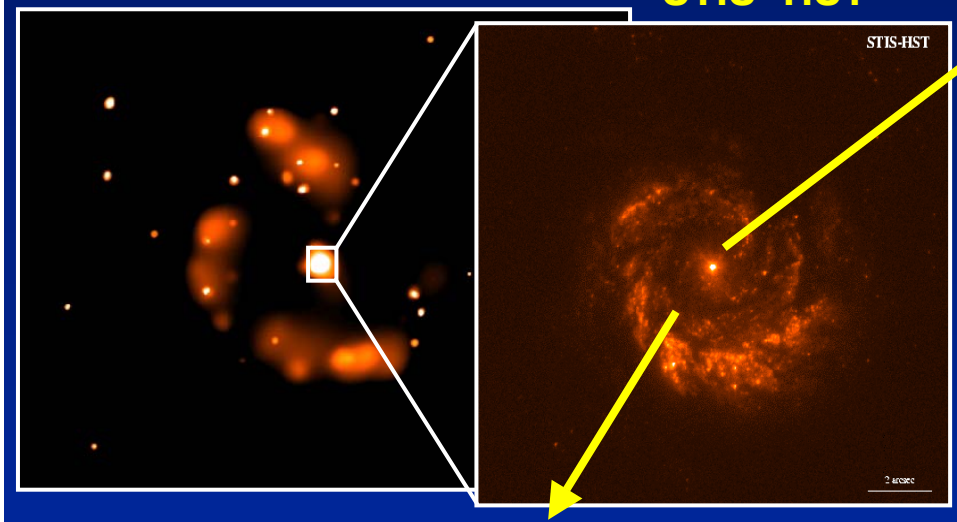
# Starburst Activity in Active Galactic Nuclei

- Analysis of the optical to X-ray emission of the Seyfert 2 galaxy NGC 4303
- Analysis of the optical to X-ray emission of the Seyfert 2 galaxy NGC 1808
- Analysis of the X-ray emission of the galaxy pair ESO509-IG066
- Analysis on a sample of Seyfert 1 Galaxies

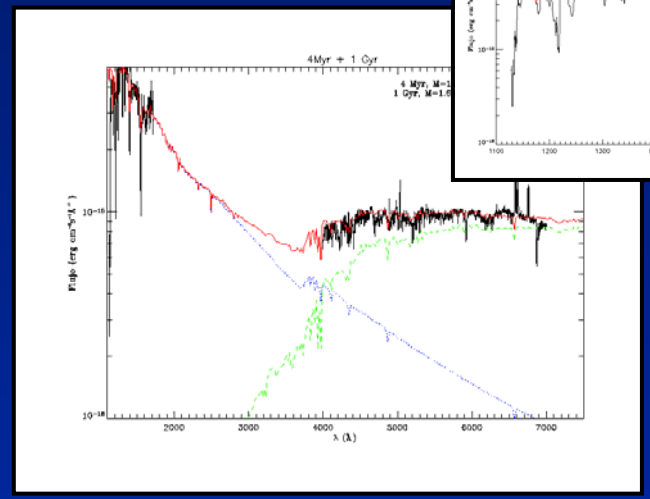
# Results on NGC 4303

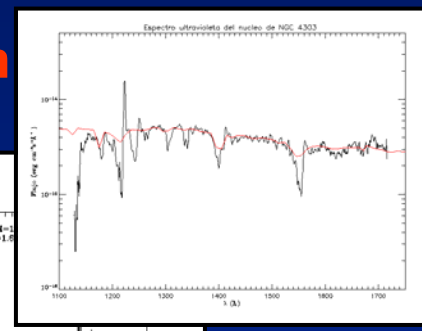
Chandra ACIS

STIS- HST



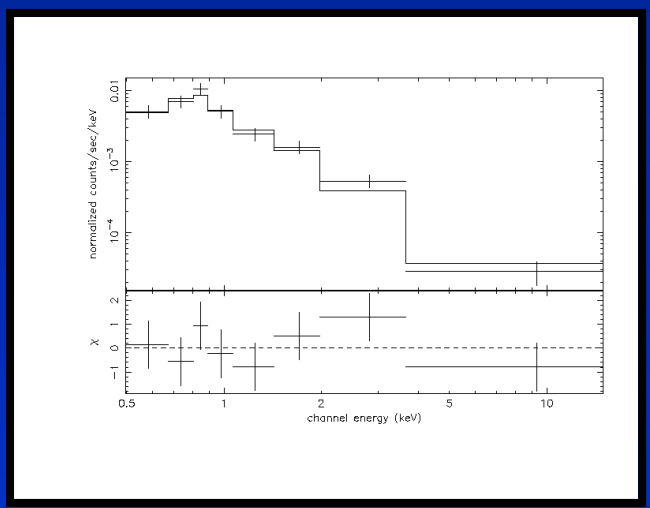

Optical-UV spectrum



STIS- HS

X-ray spectrum



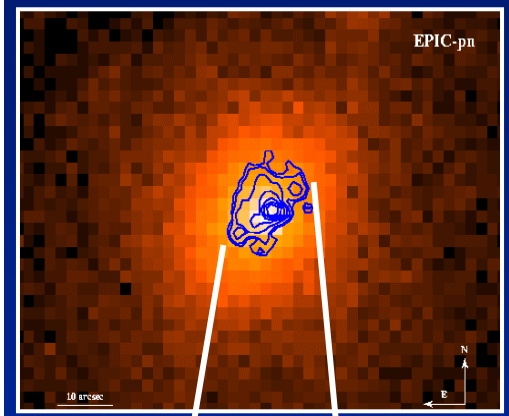

Chandra ACIS

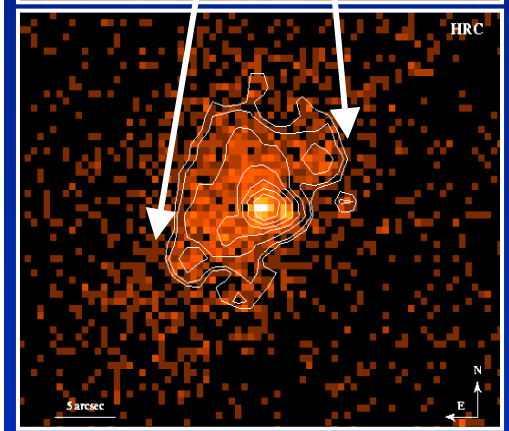
- The X-ray nuclear emission suggests the coexistence of an AGN (or an ULX) with SFR
- The nuclear opt-UV emission can be explained with SF processes
- The presence of an additional source is necessary to explain the hard X-ray emission

Jimenez-Bailon E. et al. ApJ, 593, 2003

# Results on NGC 1808

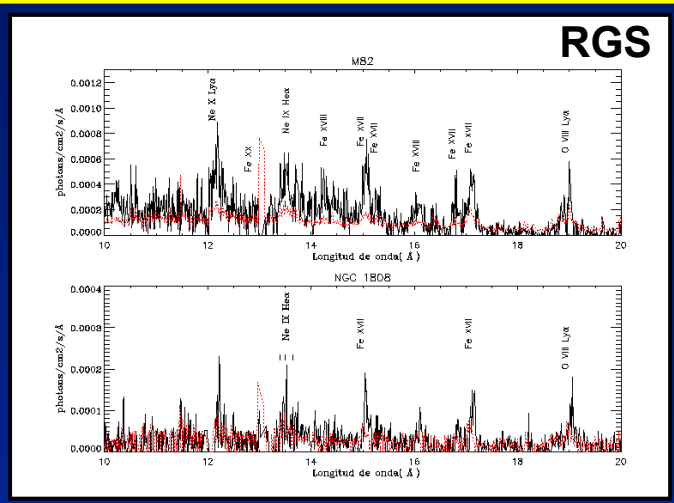
## XMM-Newton



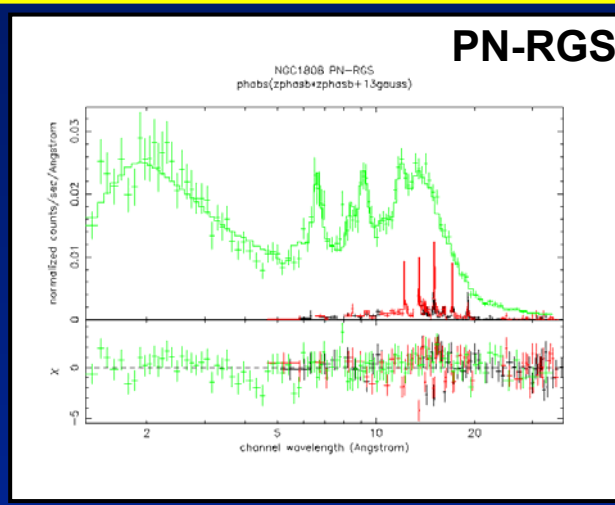




Chandra

## RGS

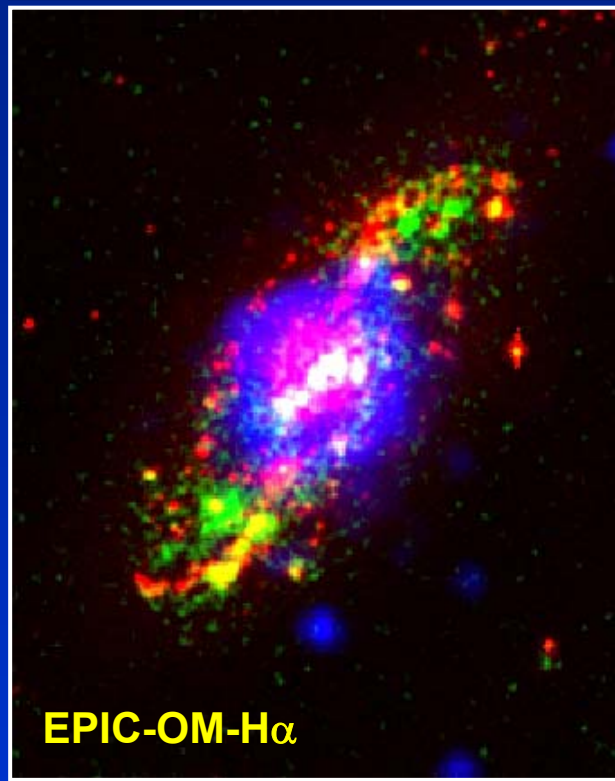



## PN-RGS




## EPIC

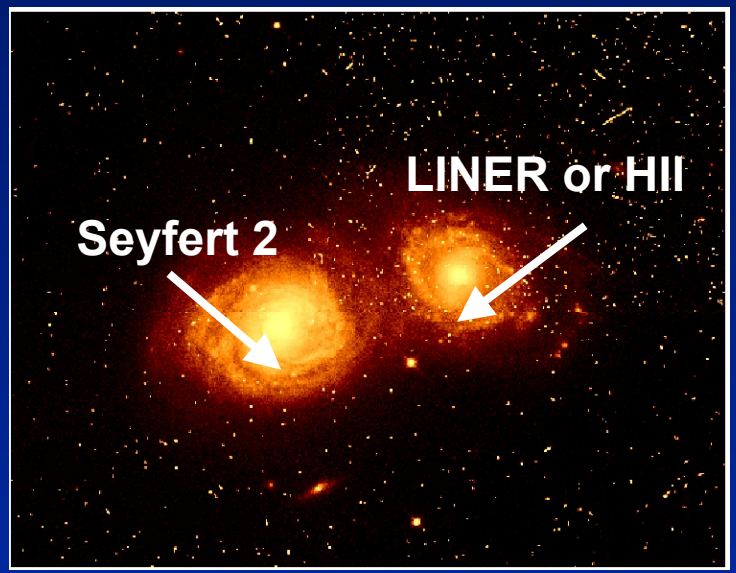
- The X-ray nuclear emission suggests the coexistence of an AGN (or an ULX) with SFR
- The soft X-ray emission is consistent with being originated in a collisionally ionized plasma associated to SRF



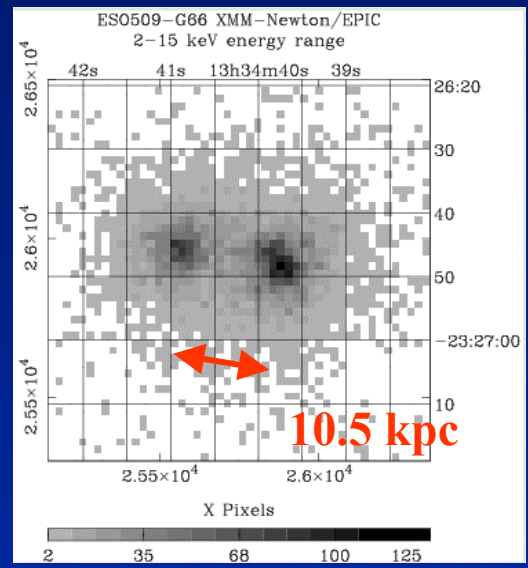

Jimenez-Bailon E. et al. A&A, 2004 (in preparation)

# Results on ESO509-IG066

## XMM-Newton discovery of AGN pair in an interacting system




WFPC2- HST




XMM-Newton PN

- Interacting galaxy pair with mild surface brightness disturbances: early stage of merging
- Only one component was optically identified as a Seyfert but both X-ray spectra present properties of AGNs
- X-rays are a powerful tool to accurately probe the nuclear activity of obscured galaxies
- Merging systems are likely to host AGN

Guainazzi M. et al. A&A, 2004 (accepte