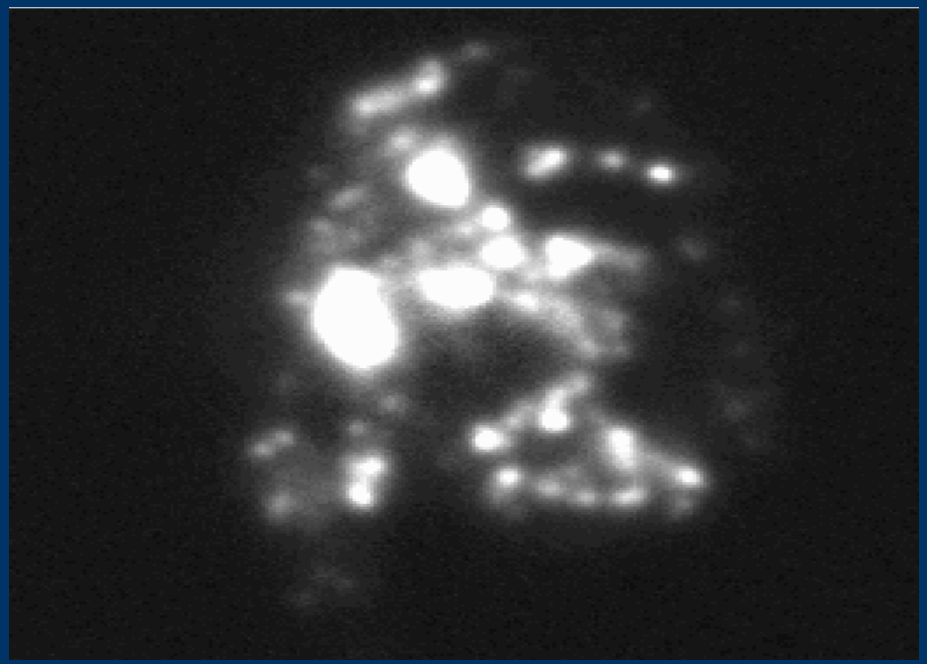
Starburst Knots in BCDs



I. M. Delgado (Instituto de Astrofísica de Canarias)

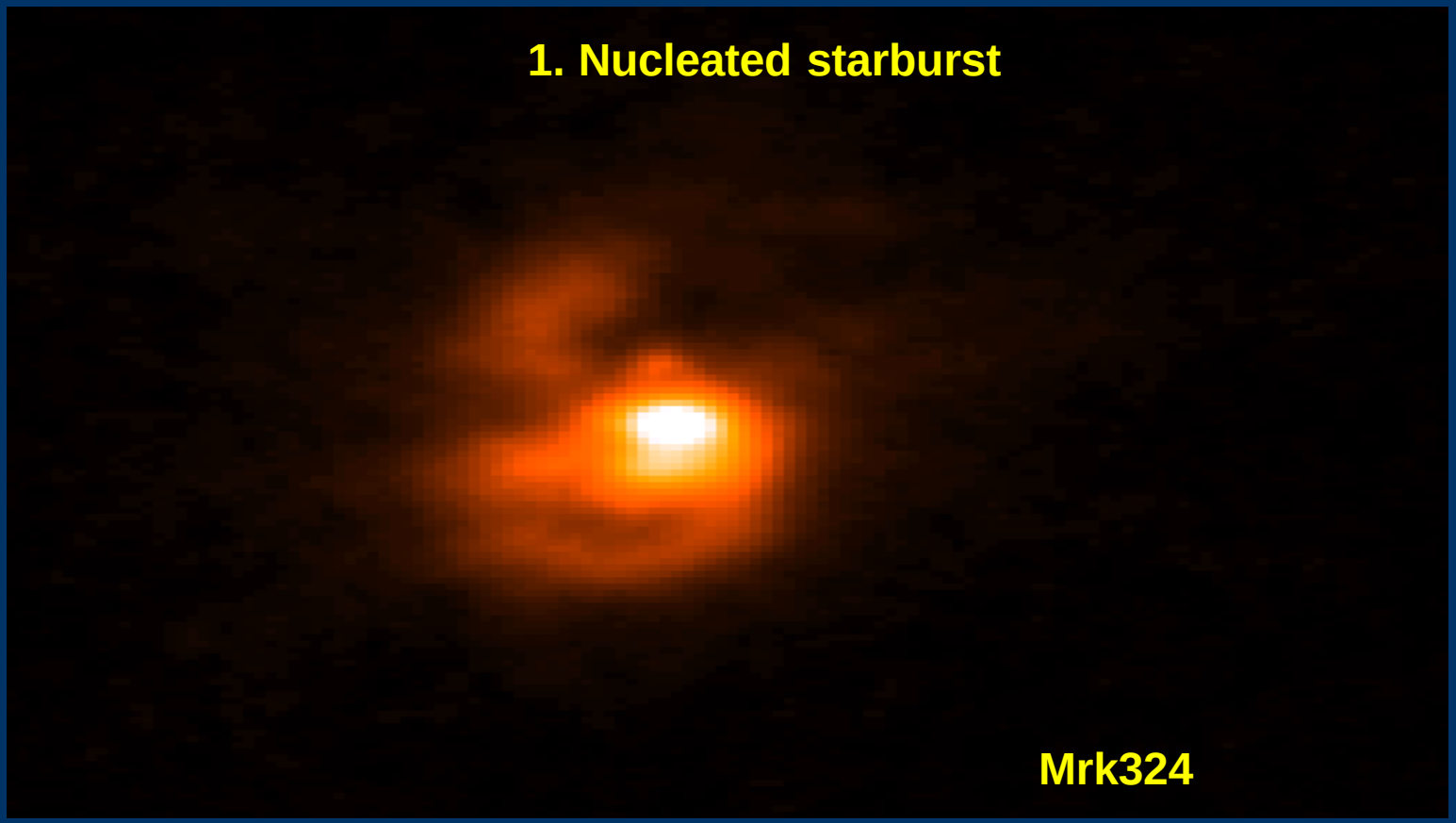
C. Muñoz Tuñón (Instituto de Astrofísica de Canarias)

L. M. Cairós (Universitäts Sternwarte Göttingen)

Background

Cairós BCDs Sample:

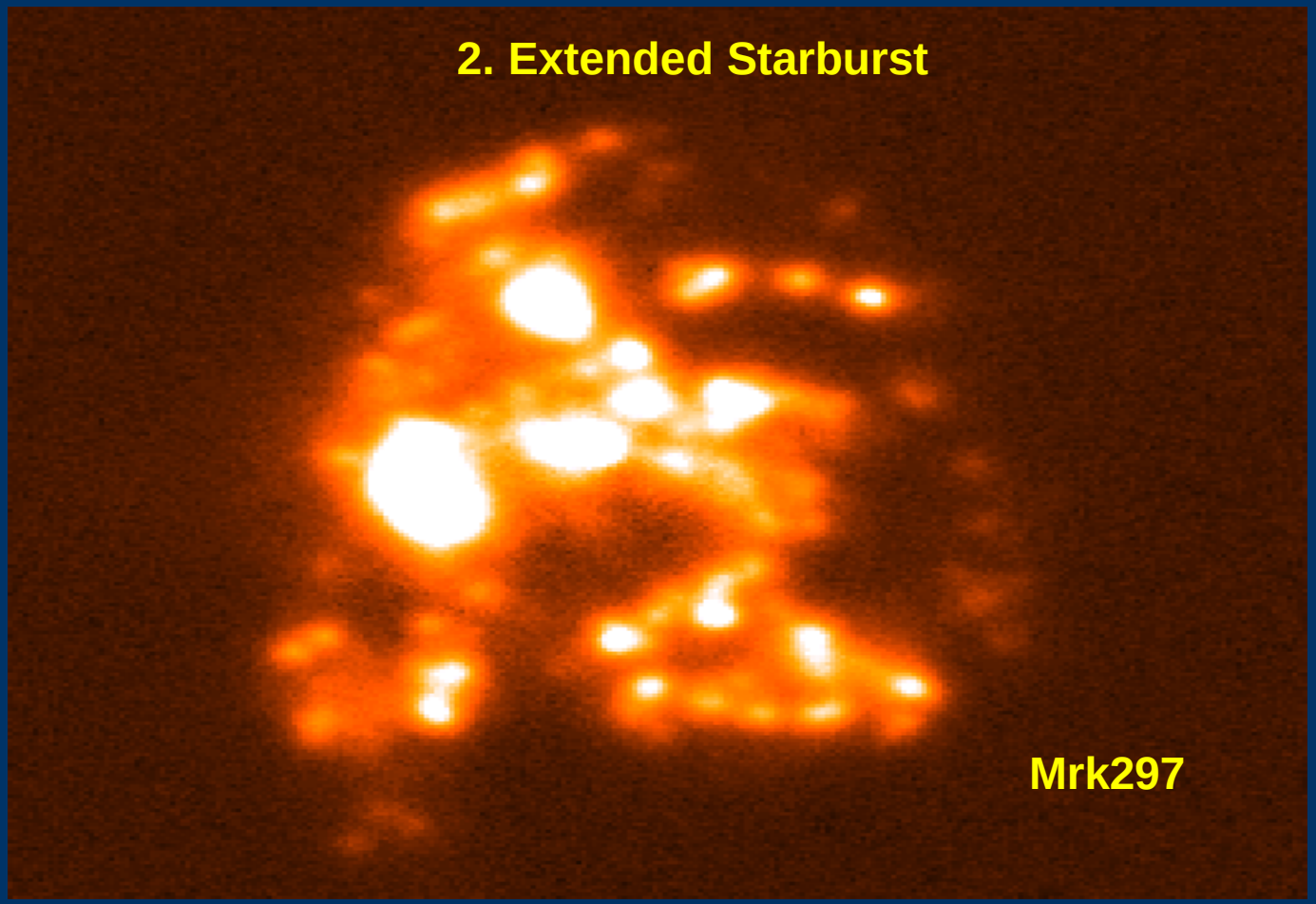
- Morphology Classification:



Background

Cairós BCDs Sample:

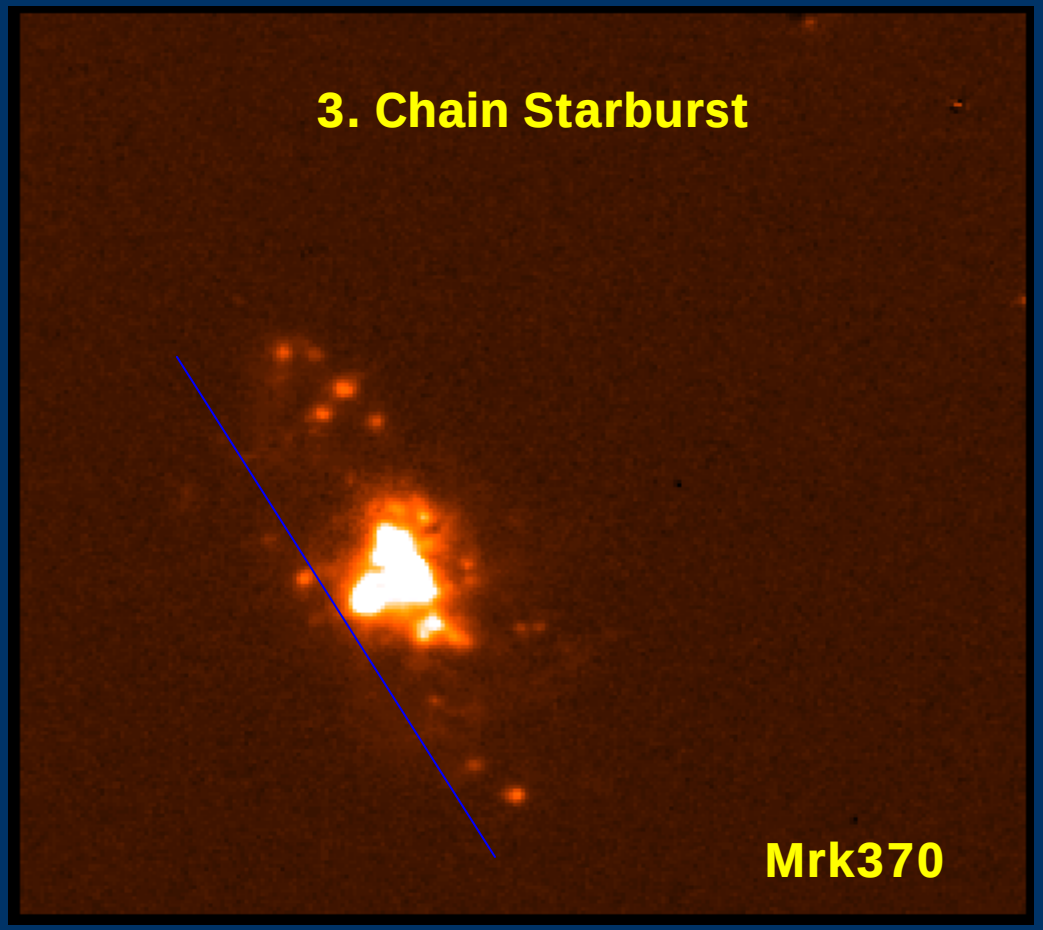
- Morphology Classification:



Background

Cairós BCDs Sample:

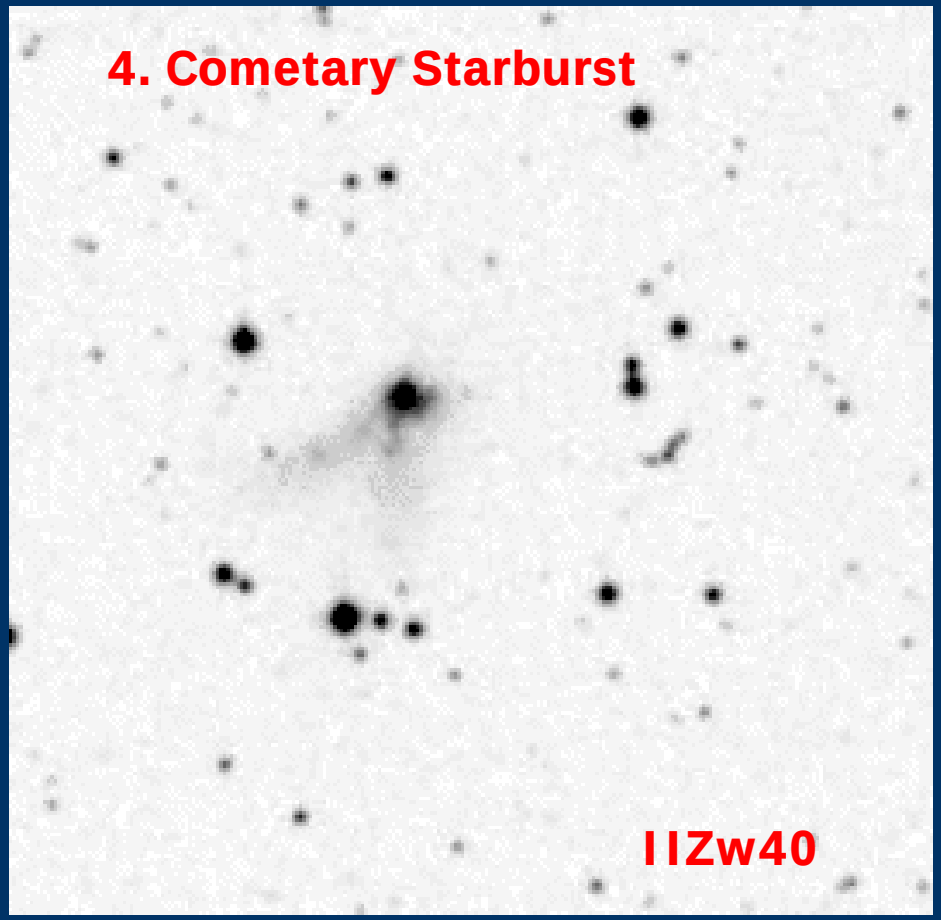
- Morphology Classification:



Background

Cairós BCDs Sample:

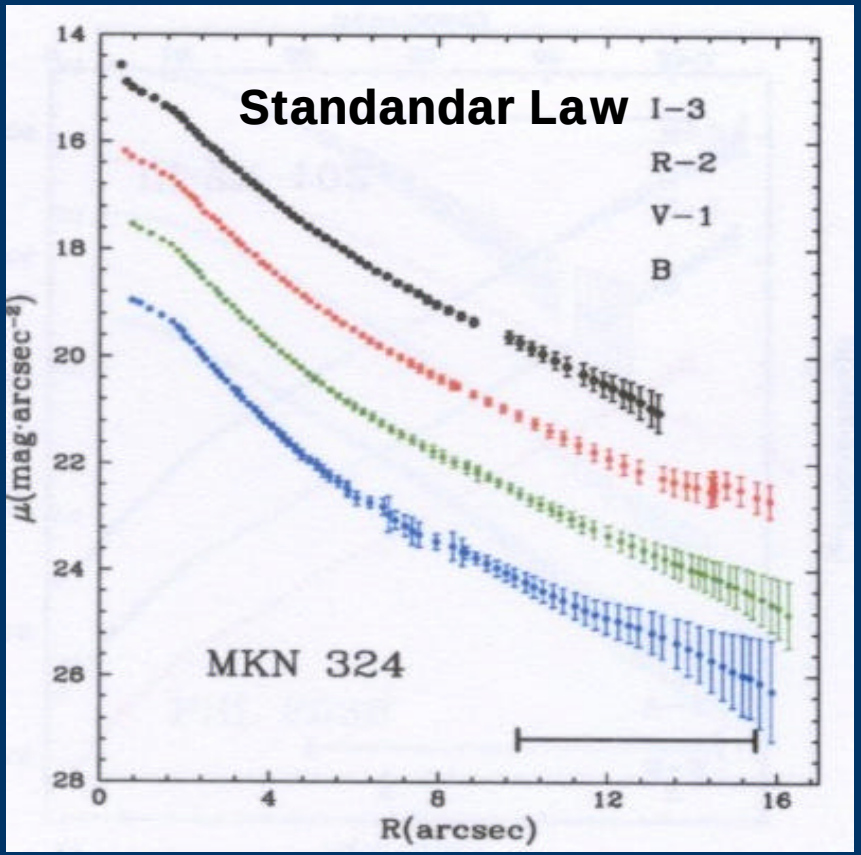
- Morphology Classification:



Background

Cairós BCDs Sample:

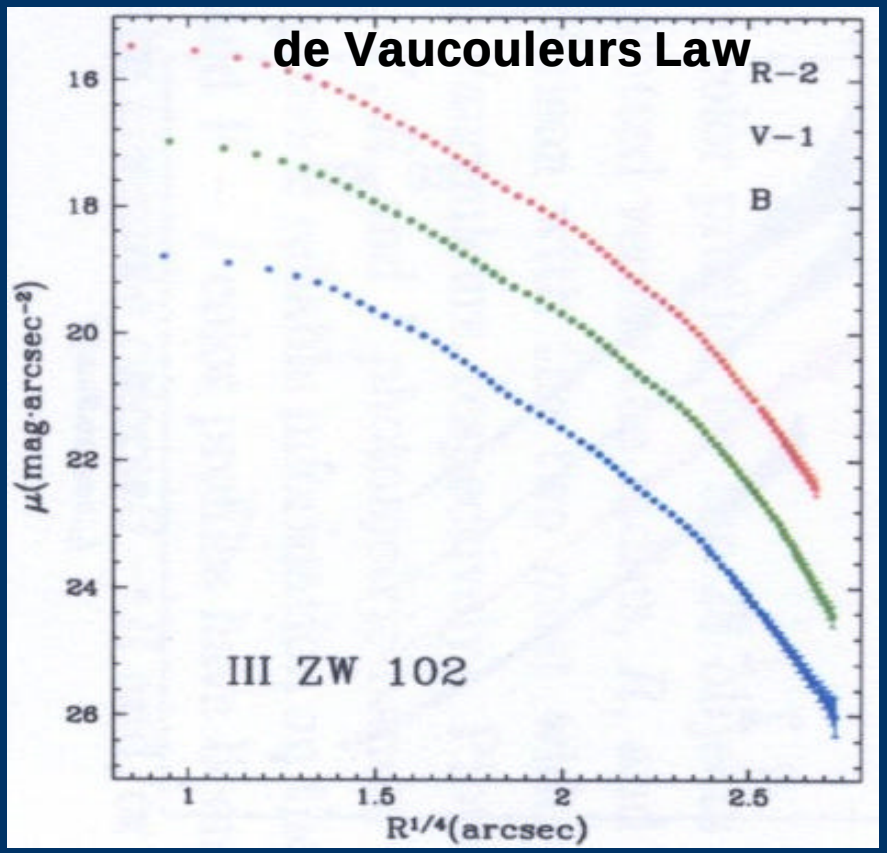
- Surface Brigthness Profile Classification:



Background

Cairós BCDs Sample:

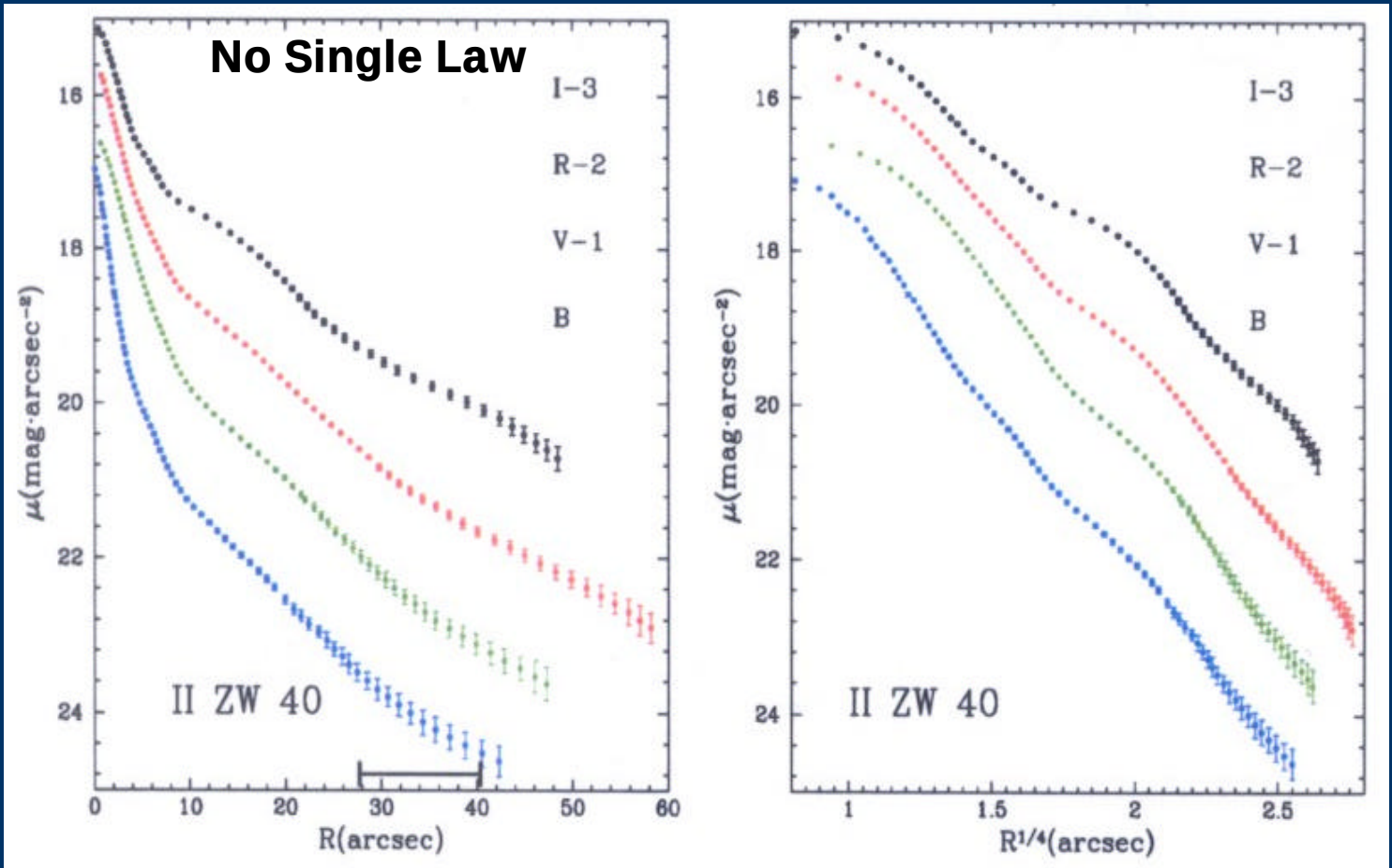
- Surface Brigthness Profile Classification:



Background

Cairós BCDs Sample:

- Surface Brigthness Profile Classification:



Background

Cairós BCDs Sample:

- **Morphology Classification:**
  1. **Nucleated Starburst**
  2. **Extended Starburst**
  3. **Chain Starburst**
  4. **Cometary Starburst**

- **Surface Brightness Profile Classification:**
  1. **Standard Law**
  2. **de Vaucouleurs Law**
  3. **No Single Law**

GAlaxy - GALAXY COLLISION

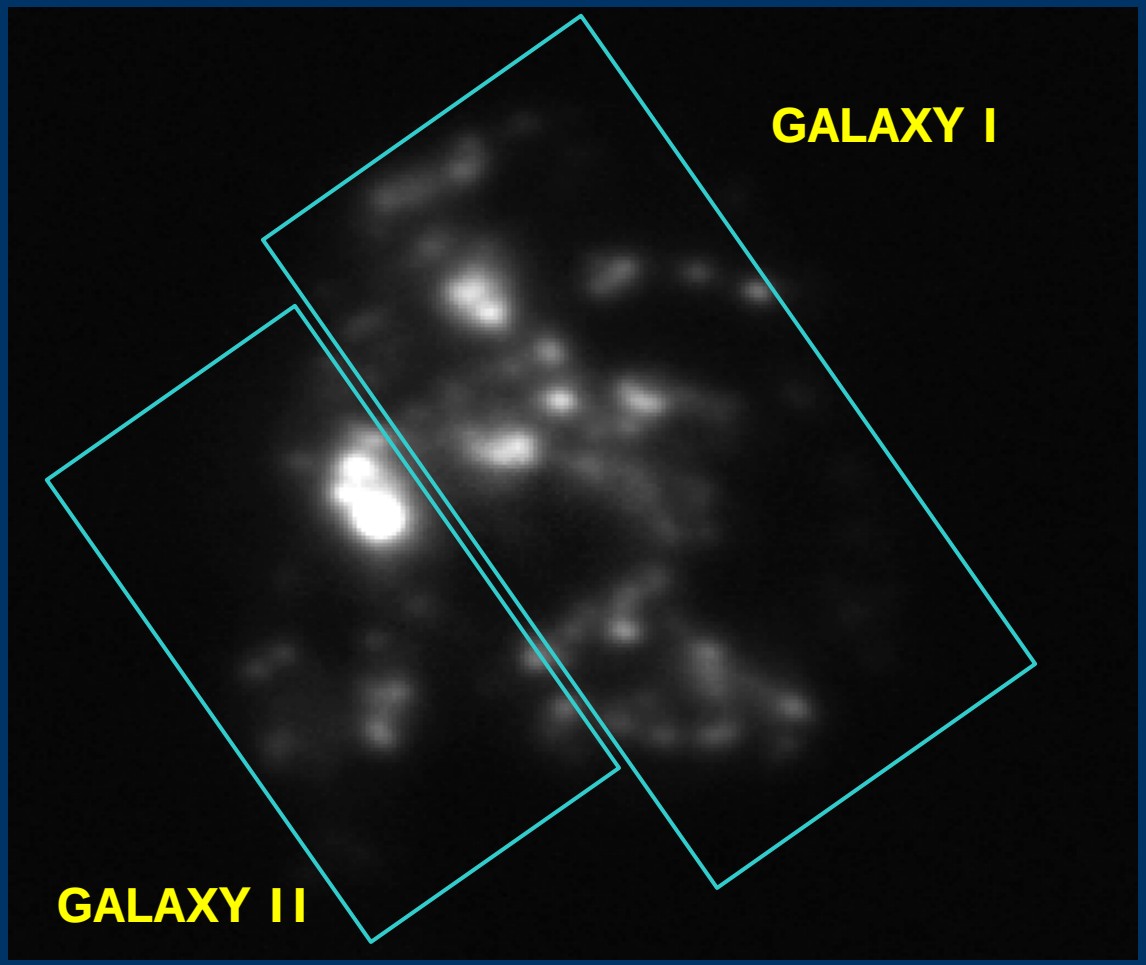
- **Alloin & Duflot (1979)** is a ***colliding system*** between two disk galaxies, one in the NW and the other in the SE

Mrk 297

Ha CCD imaging

NOT 2.6 m

ALFOSC

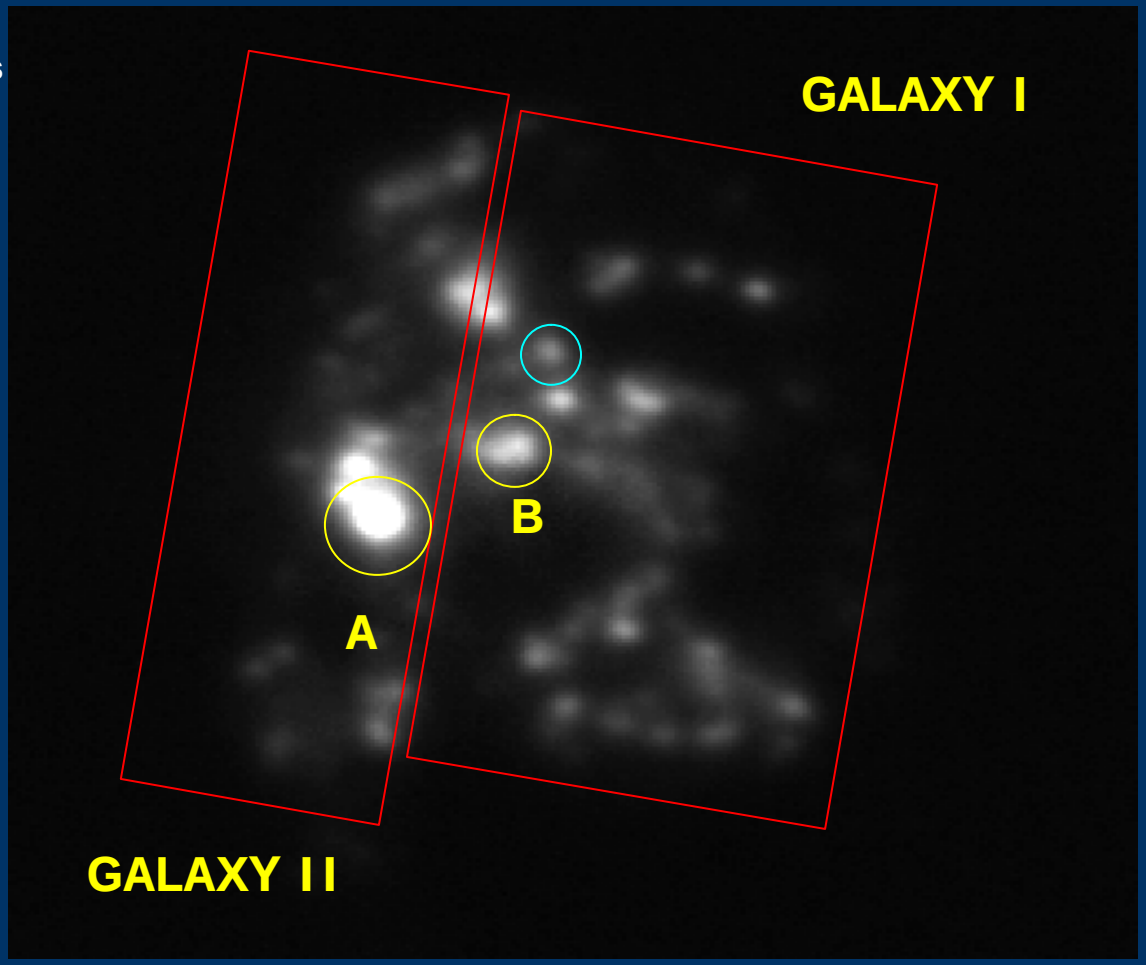


GAlaxy - GALAXY COLLISION

- **Taniguchi et al (1991)** A co-planar radial penetration collision between two disk galaxies

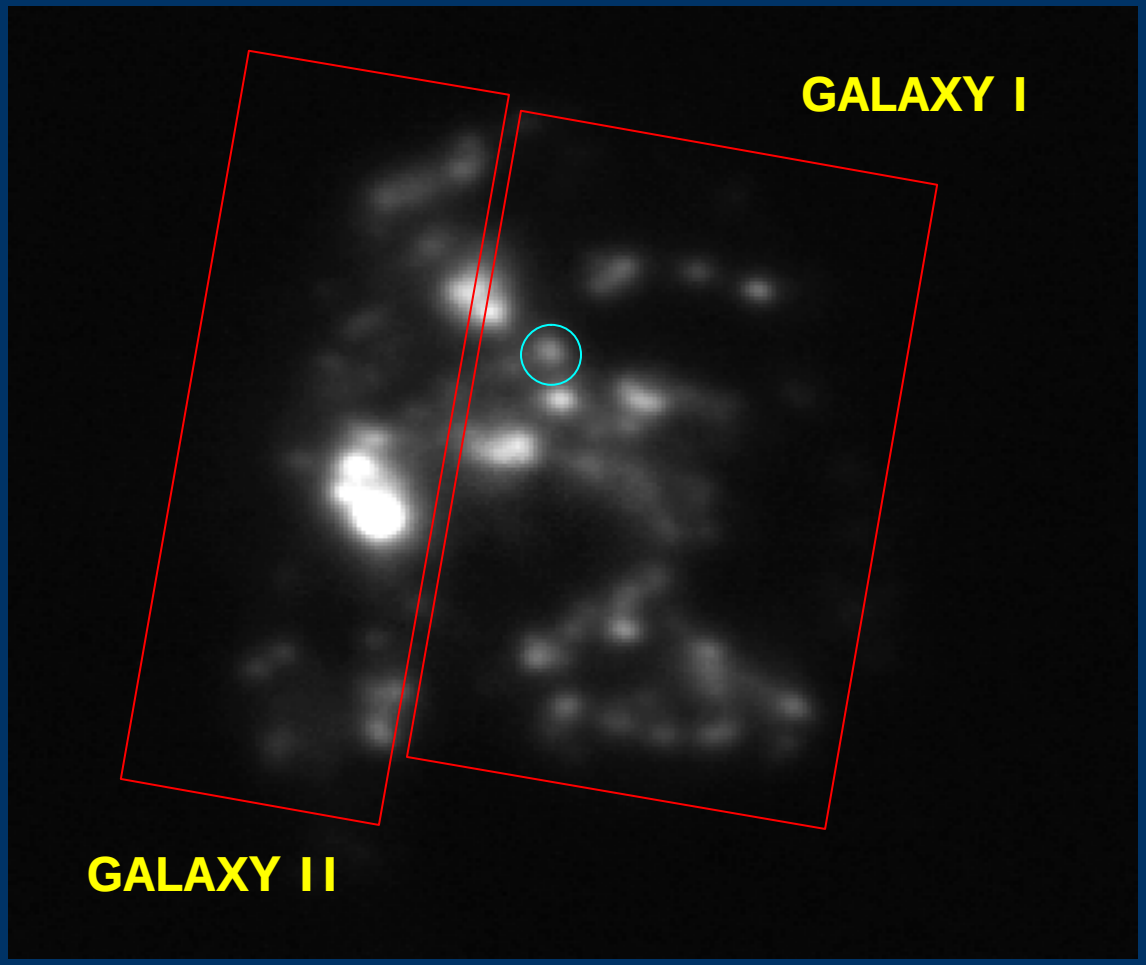
A=GalaxyII Nucleus

B=GalaxyI Nucleus



GAlaxy - GALAXY COLLISION

- **Heeschen et al. (1983) discovered a *Variable Radio Source***



OTHER PROPERTIES:

- The ***FIR luminosity*** is larger by a ***factor of 3*** than that of a typical starburst galaxy such as M82 **(klein et al. 1986)**

- SFR ~ 23.5 $M_{?}$ yr^{-1} using FIR luminosity given in Fullmer & Londsdale 1989 **(Taniguchi et al. 1991)**

- SFR per unit area ~ $4 \cdot 10^{-7}$ $M_{?} yr^{-1} pc^{-2}$ **(Taniguchi et al. 1991)**

OTHER PROPERTIES:

- M(HI) ~ (22.3 ± 0.2)·10^8 M? (Gordon & Gottesman 1981)
- SFR ~ 23.5 $M_?$ yr^{-1} using FIR luminosity given in Fullmer & Londsdale 1989 (Taniguchi et al. 1991)
- SFR per unit area ~ 4·10^{-7} $M_?yr^{-1}pc^{-2}$ (Taniguchi et al. 1991)

Mrk297 Starburst Knots Catalogue

FOCAS

IMPORTANT PARAMETERS:

a) The ***detection threshold*** sigma

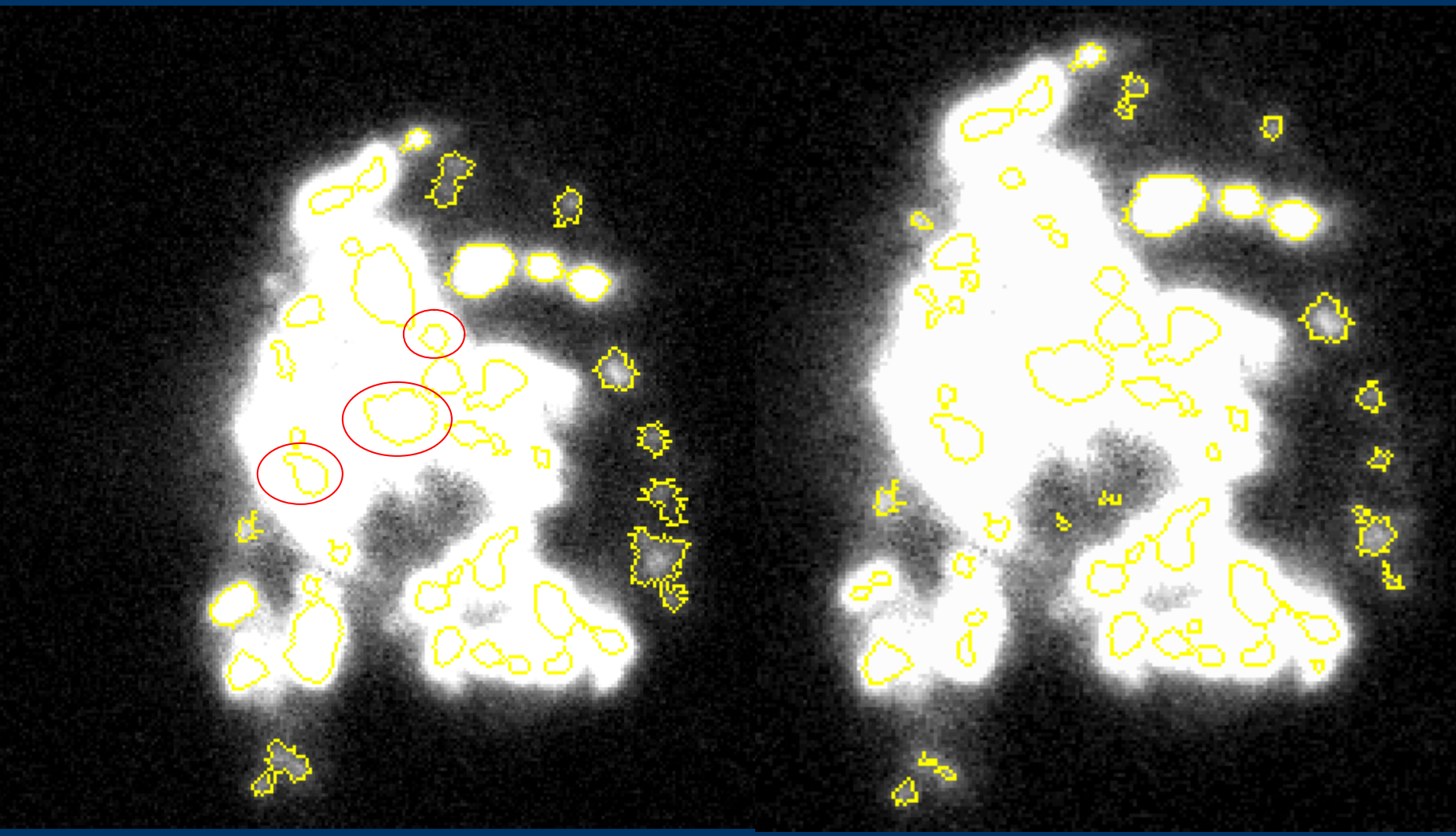
$(2 - 3)\ s_{sky}$

b) The ***minimum detection*** size:

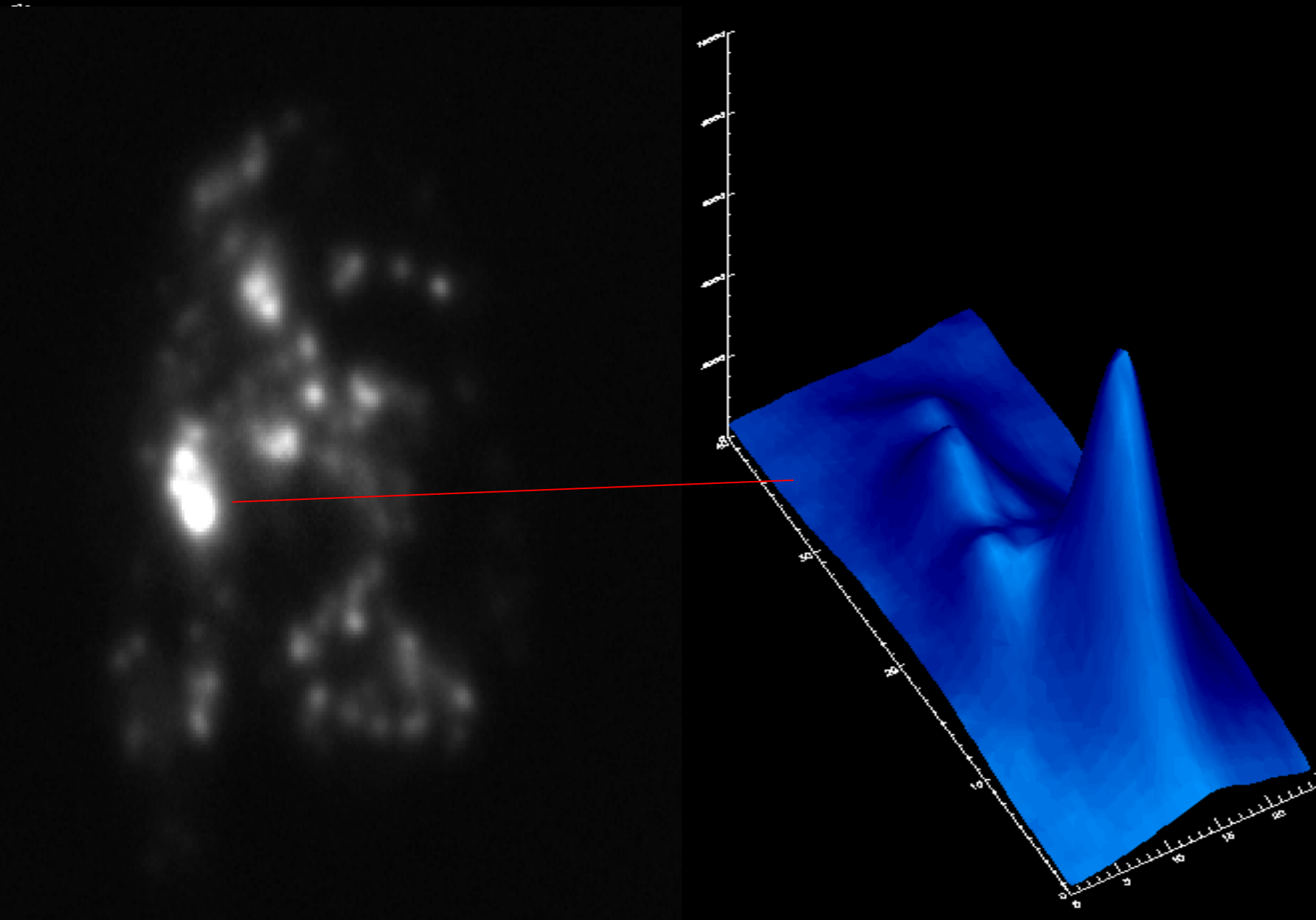
$a_{min} = ? (fwhm/2)^2$

c) The ***detection filter***

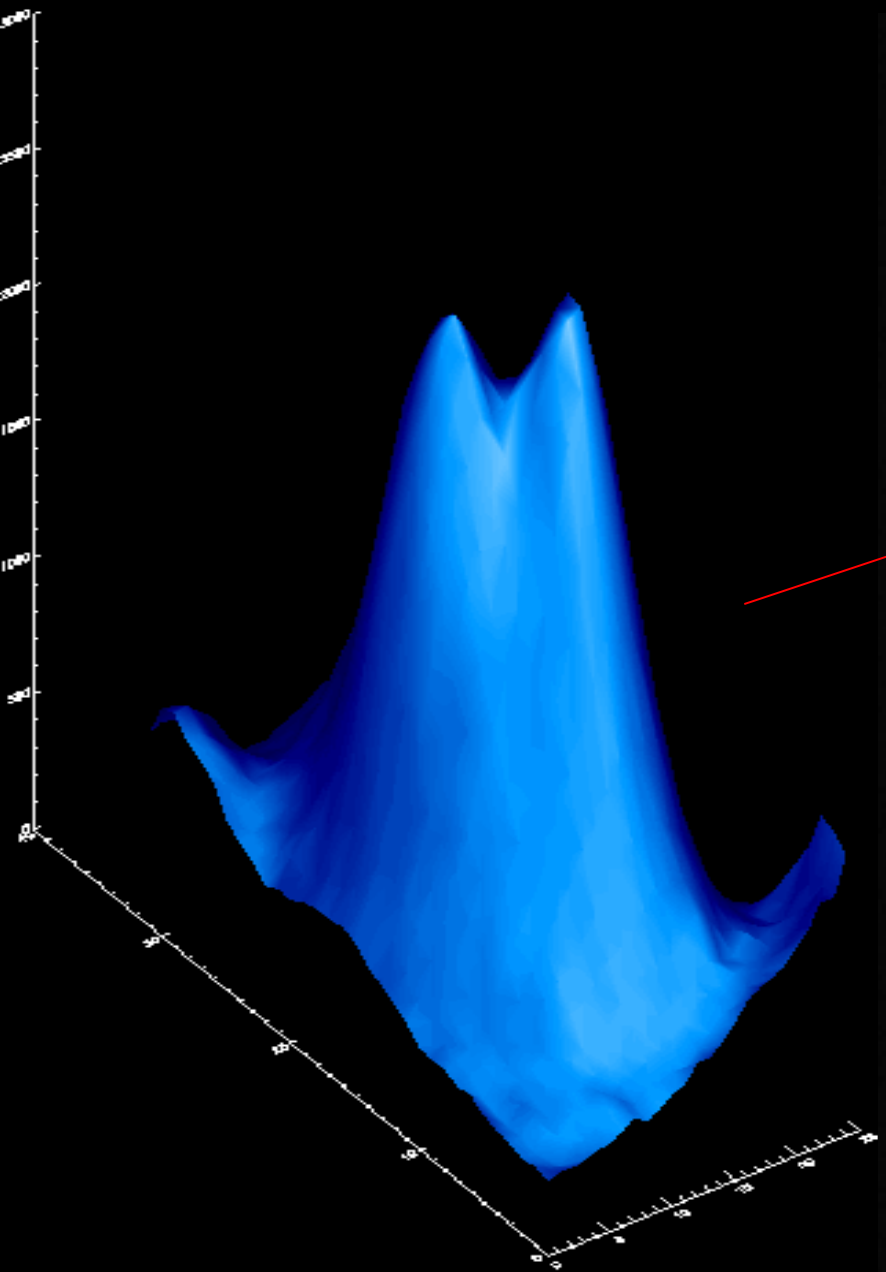
MRK297 Starburst CatalogUe

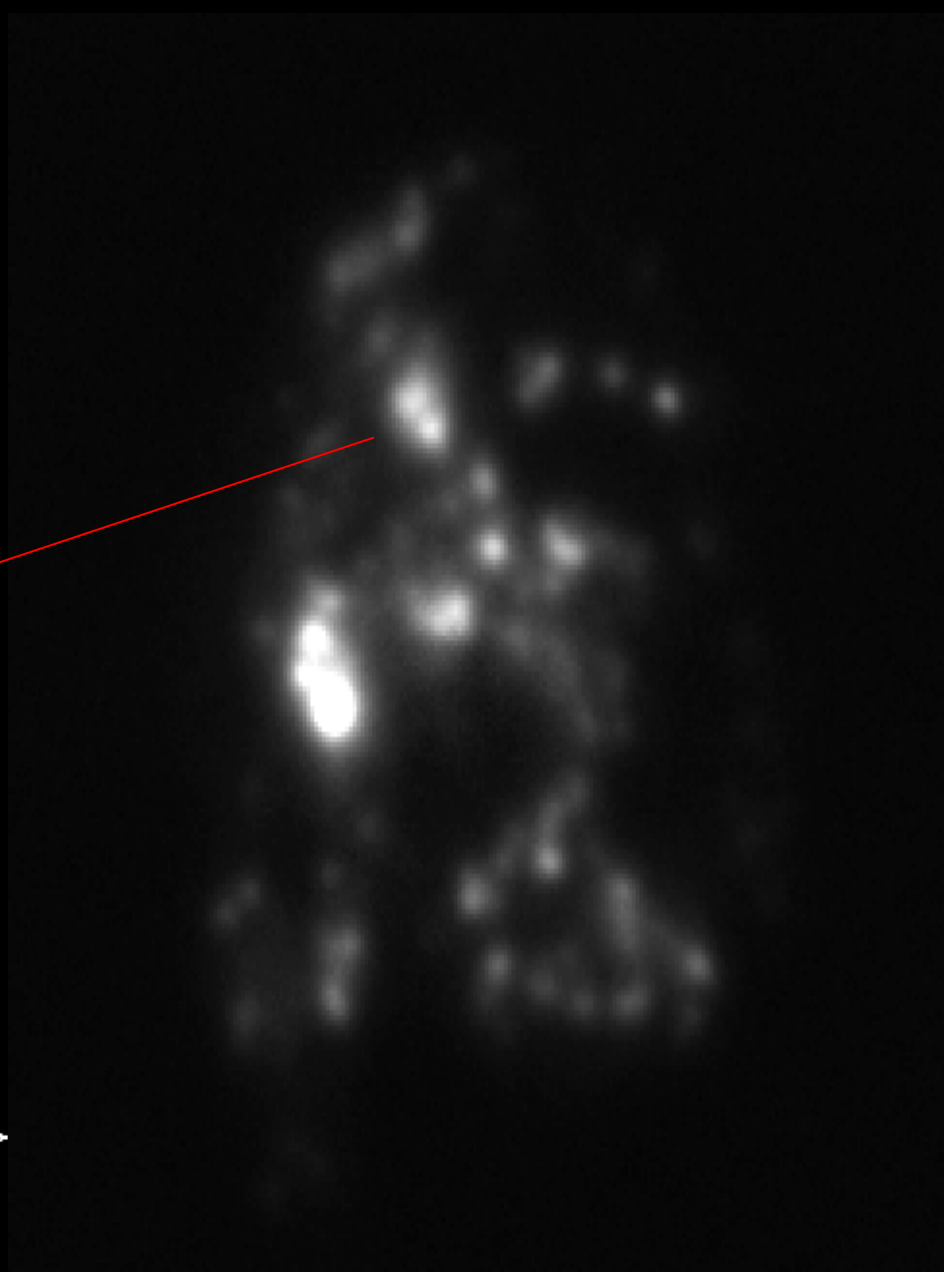


No Resolved knots



No Resolved knots





MRK297 D=63.4 Mpc

R(pc)	$\log F_{Ha}$ (erg·s^{-1}cm^{-2})	$\log L_{Ha}$ (erg·s^{-1})	SB(erg·s^{-1}·pc^{-2})
368	-12.23	40.37	34.7
568	-12.62	39.98	34.0
168	-13.06	39.54	34.6

NGC4449 D= 5 M pc (Oriol et al. 2000)

113	-11.70	39.80	35.6
102	-12.0	39.00	35.2
13.2	-13.7	37.80	35.4

Thesis

1. Wich is the Mechanism that trigger the starburst in BCDs?

2. It is a Single Mechanism?

3. Is there exist any correlation between the trigger mechanism and the morphology of BCDs?

4. Are more likely that Nucleated BCDs generate galactics winds than the other morphologycal types?

5. In case that exist the galactic wind wich is its impact in the Interstellar Medium?

FIRST STEPS

- ***Sample selection*** **in which we have chosen** ***2 galaxies from each morphological type*** **which aim is to determine the existance of galactic winds in BCDs and its impact in the Intergalactic Medium**

- ***Detection and Clasification*** **with deep Ha CCD imaging of the** ***starburst knots*** **and the different kind ionized structures asociated with the kinematics of the gas, like bubbles, cones, champagne fluxes, etc.**

- ***Study of Luminosities*****, fluxes and sizes of the knots and determine the percentage radiation that escape from the knots (diffused light estimate) and the impact in the galaxies**

FIRST STEPS

- **Broad Band Study of all the sample of objects:**
  - ✓ Color Maps
  - ✓ Stellar Population Age
  - ✓ SFR

- **Multiband Study of the Underlaying Main Stellar Body using both, Brigthness Profiles in optical bands and IR**

These results will be presented at Universidad de La Laguna to take the test call DEA which is linked to the Graduate Program of the Department of Astrophysics in June 2003

Forthcoming years

- **High Resolution (0.2 Å/pixel) Spectroscopical Fabry-Perot data will be obtained and analyzed**

  - ✓ ***PUMA***
  - ✓ **Fabry-Perot from the *6 m Telescope* of Crimea Observatory in *colaboration* with *Dr. Silich & Dr. E. Terlevich***

- **X Ray imaging will be obtained and analyzed in *colaboration* with *Dr.Mas-Hesse & Dr. M. Santos***

- **Intermediate Resolution Spectroscopical data will be obtained wich aim is to derivate the ages, abundaces and metallicities of the starburst knots. *Colaboration* with *Dr. Vílchez.***

Forthcoming years

- **Study and aplication of Hidrodynamics Models to the sample of galaxies in *colaboration* with Dr. Silich & Dr. Tenorio-Tagle.**

- **Thesis Writing, results and conclusions.**

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