

LES GALAXIES

HISTOIRE - CLASSIFICATION - STRUCTURATION

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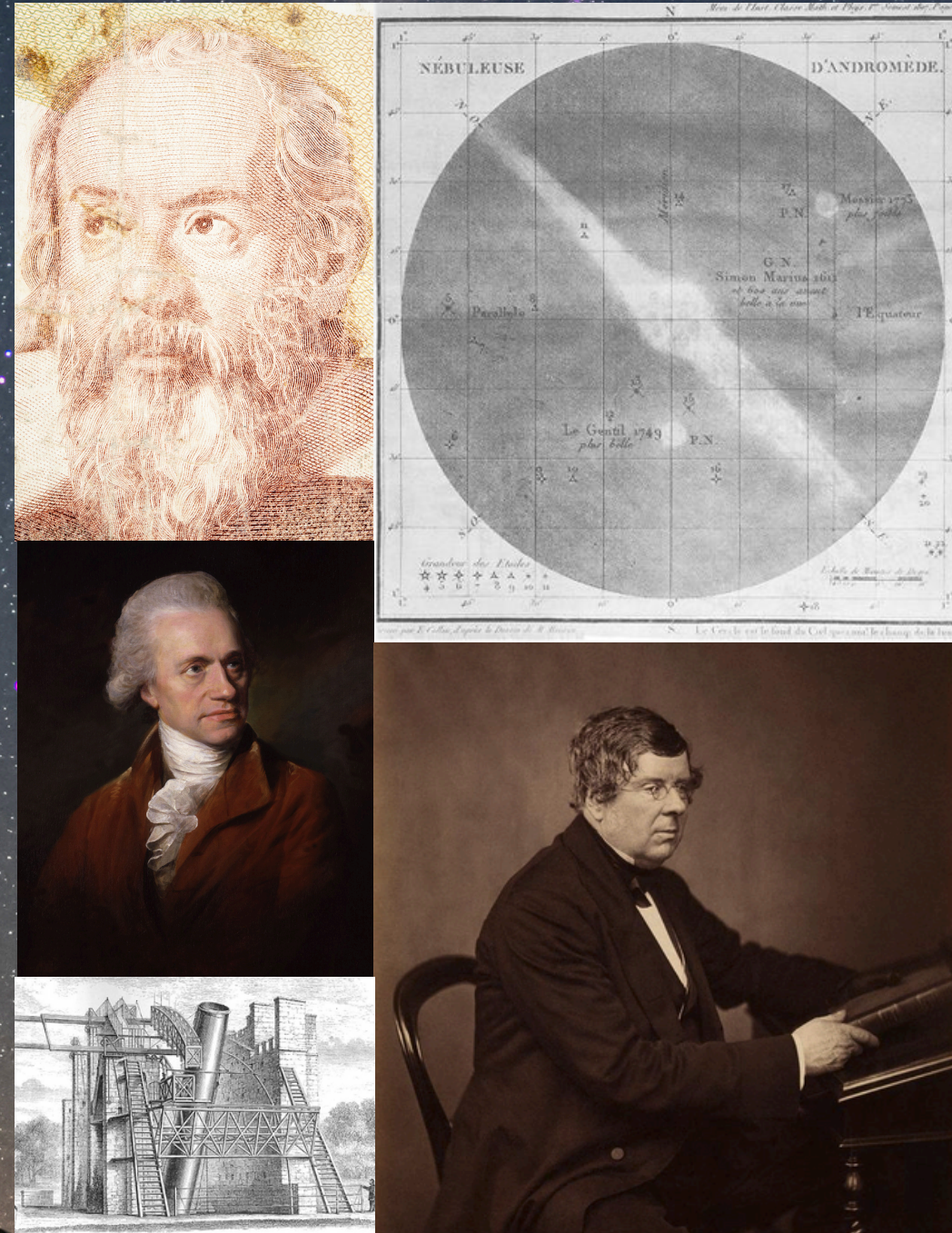
- PETIT HISTORIQUE
- MORPHOLOGIE
- DISTANCES
- CONTENU
- CINÉMATIQUE
- INTERACTIONS ET FUSIONS
- GALAXIES À NOYAU ACTIF
- FORMATION ET ÉVOLUTION
- DISTRIBUTION À GRANDE ÉCHELLE DANS L'UNIVERS
- GROUPES ET AMAS

PETIT HISTORIQUE

ANTIQUITÉ



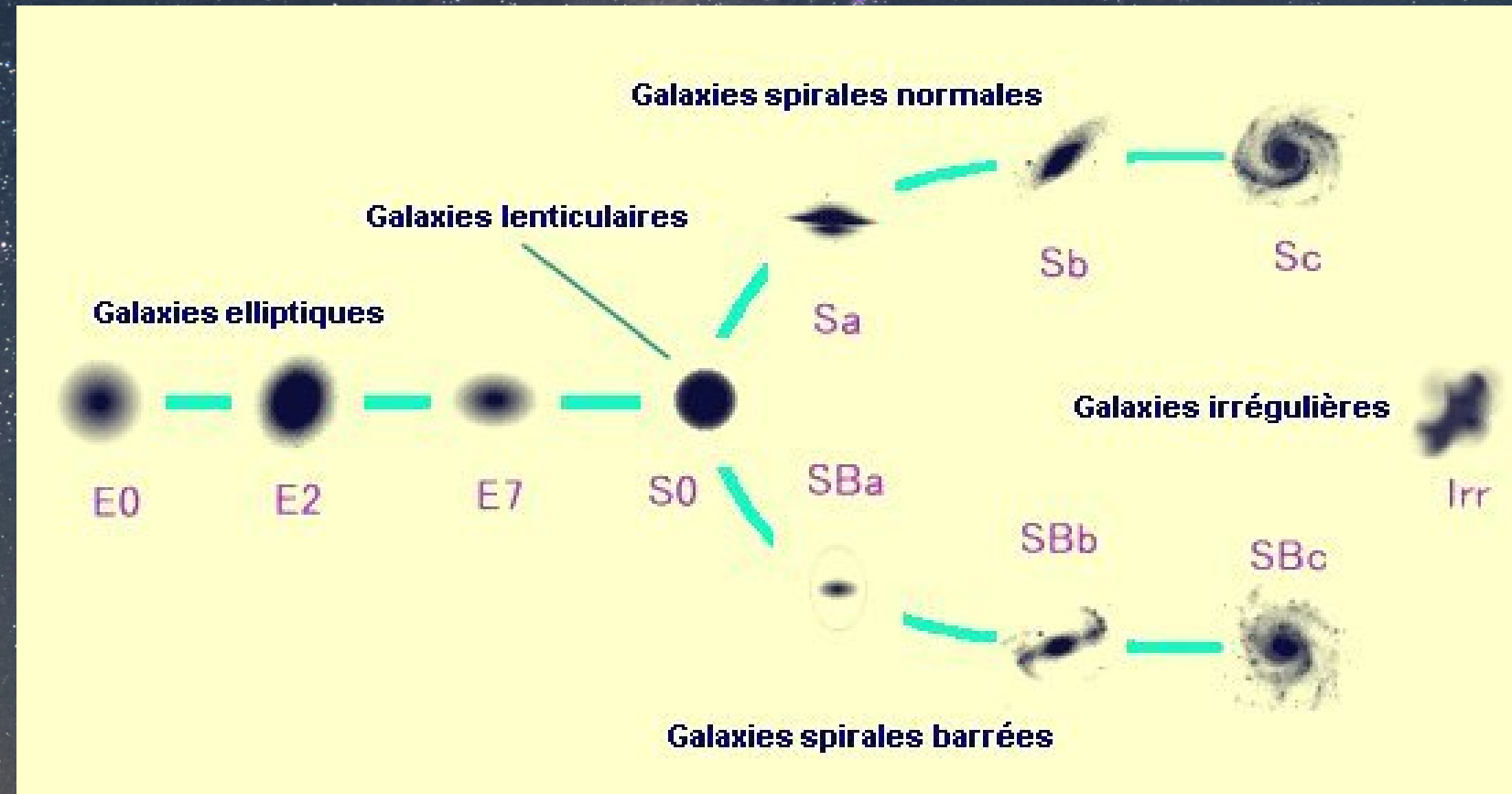
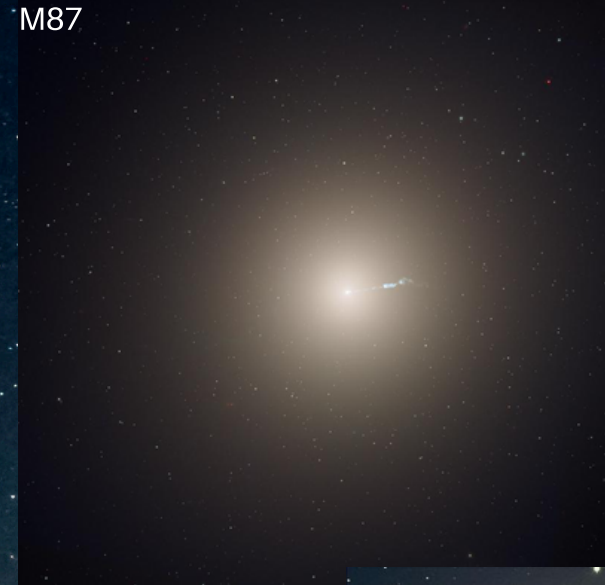
DU XVIÈME AU XIXÈME SIÈCLE



LE XXÈME SIÈCLE

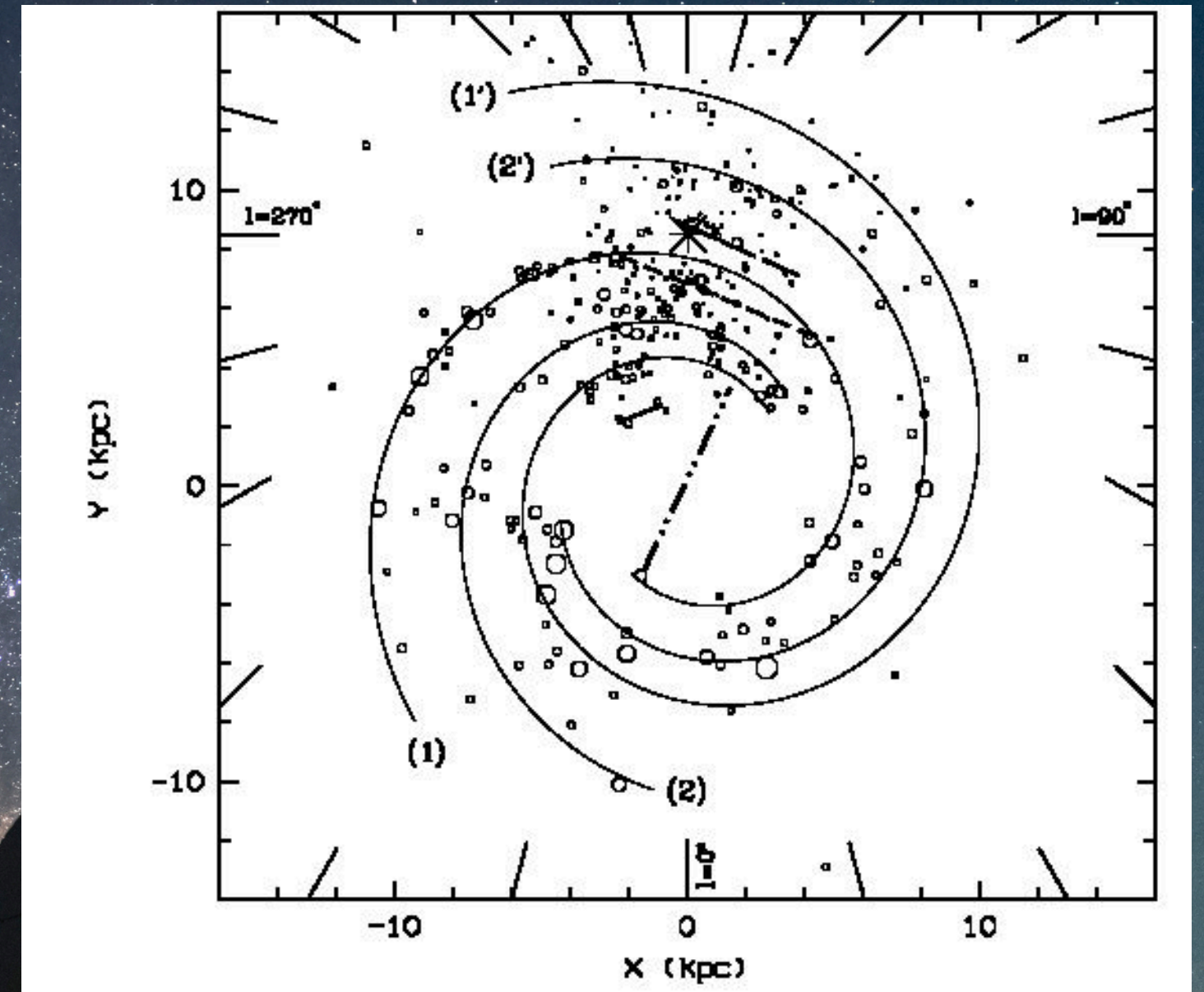


MORPHOLOGIE



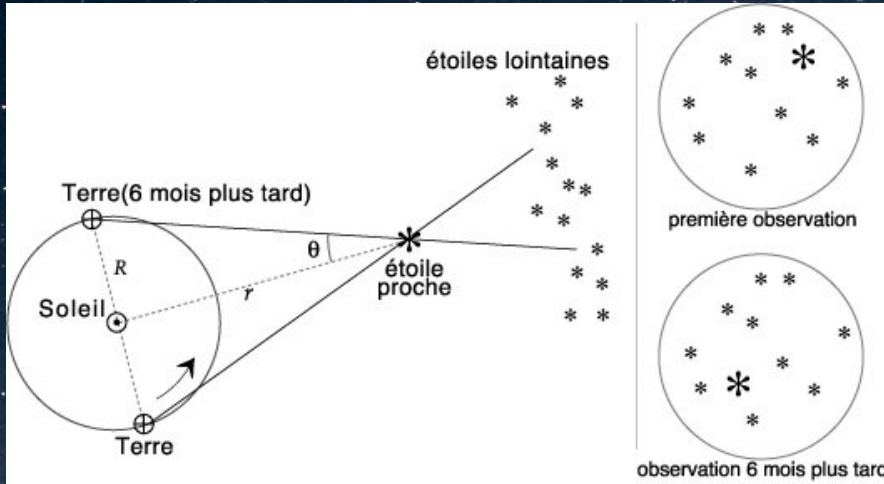
ET LA VOIE LACTÉE ?

DIRBE 1.25, 2.2, 3.5 μm Composite

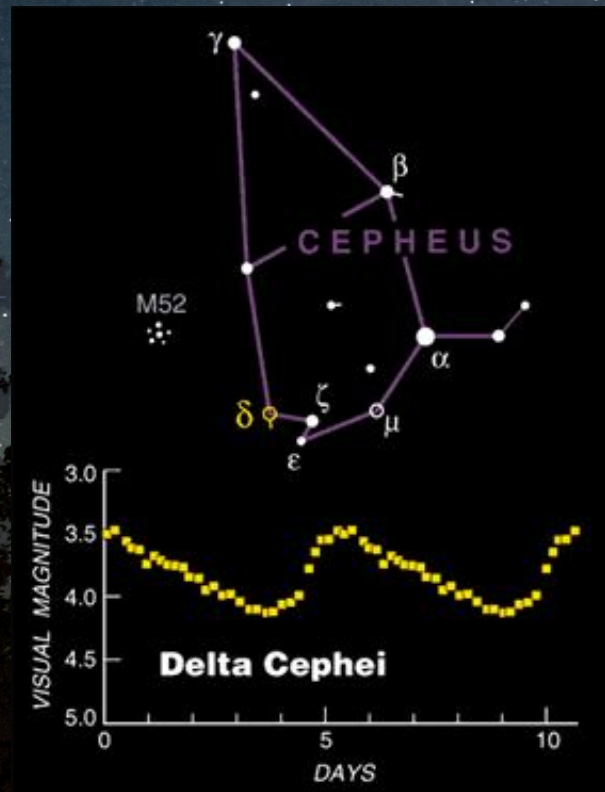
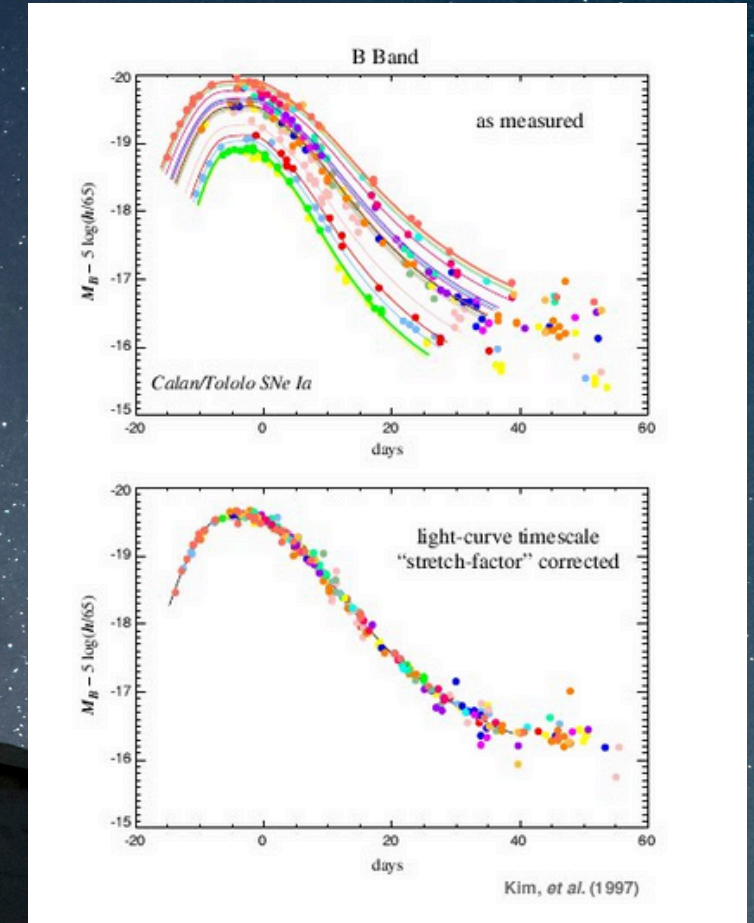
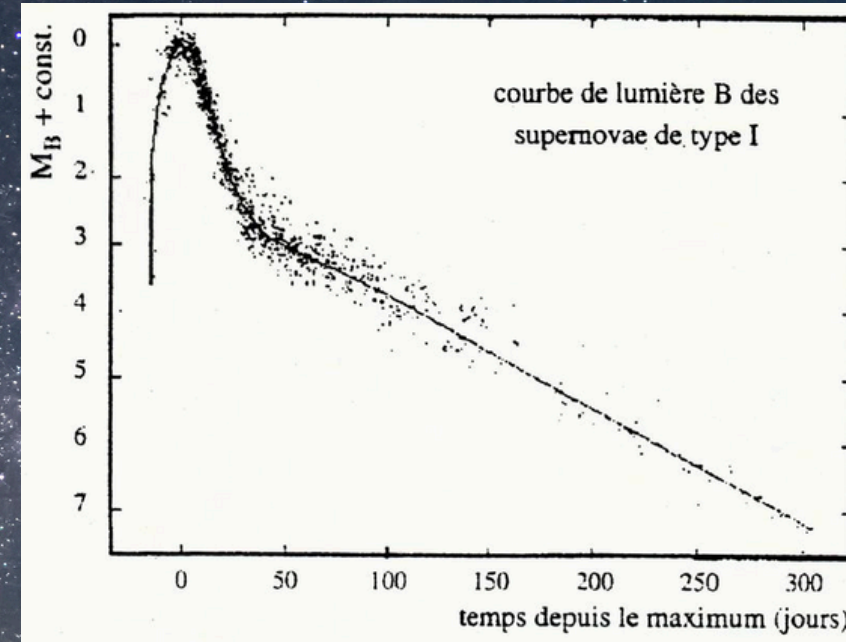


DISTANCES

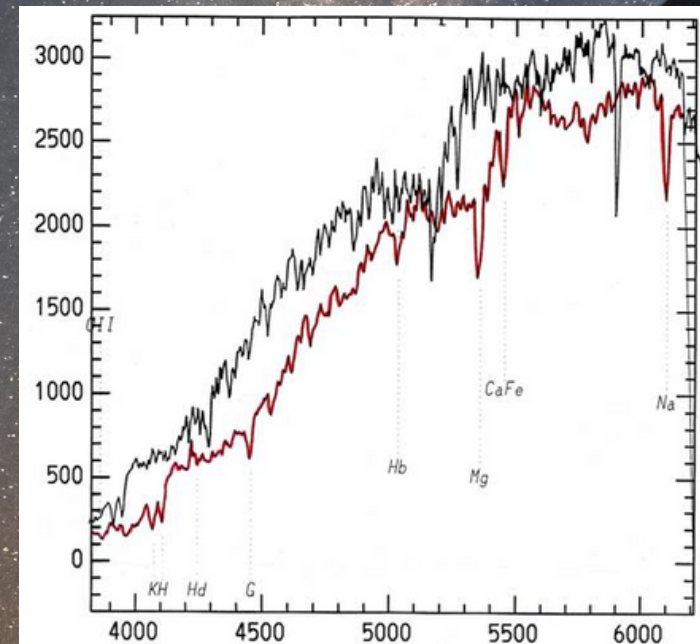
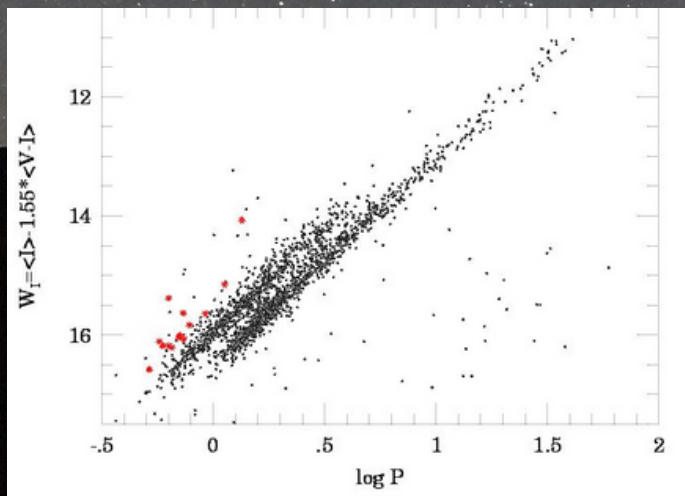
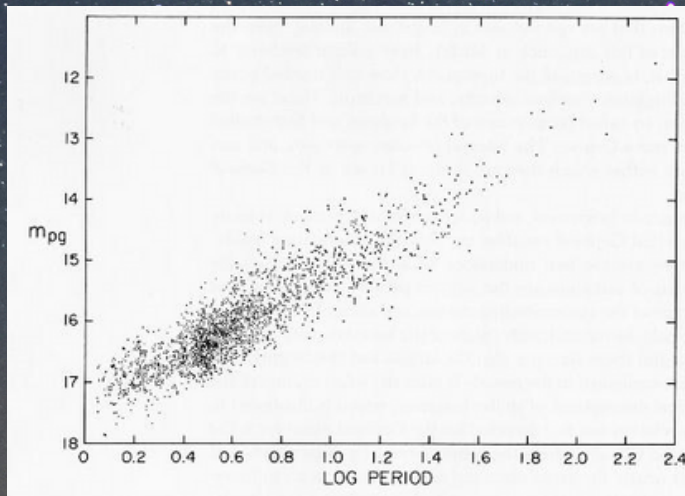
Parallaxe



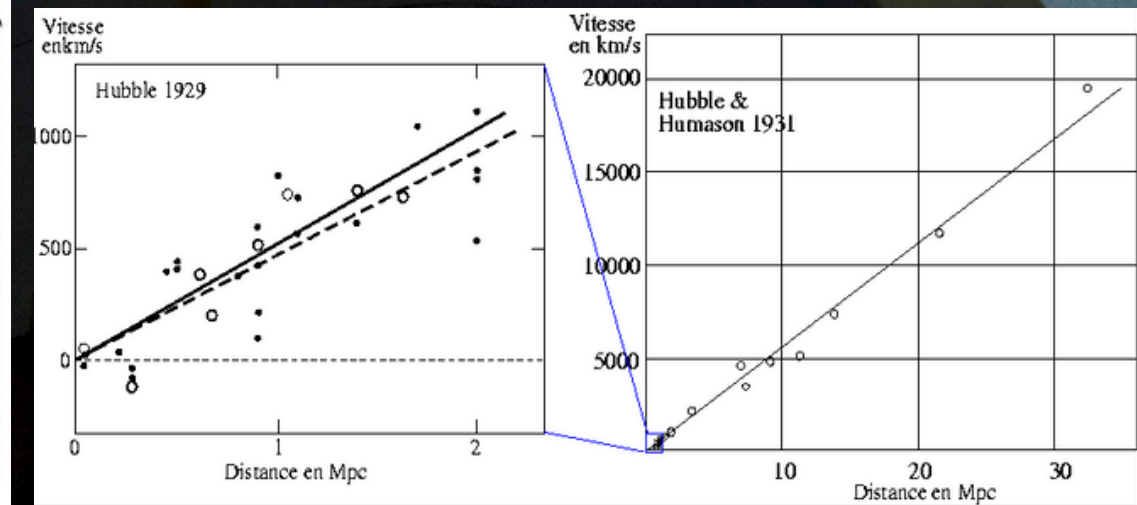
Supernova



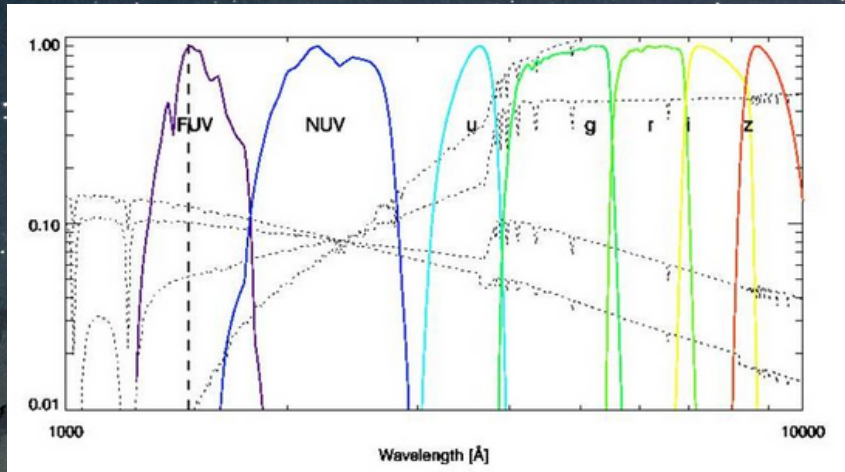
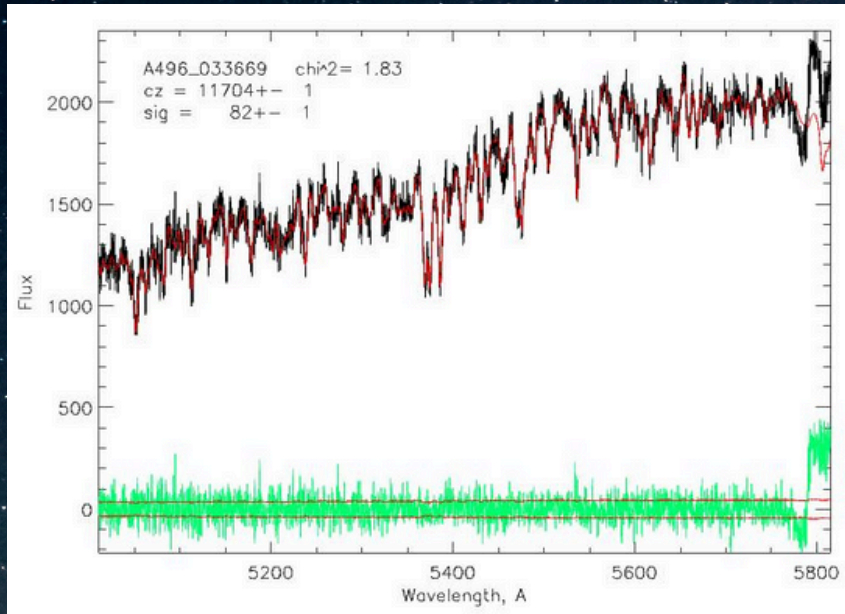
Céphéides



Spectroscopie



CONTENU

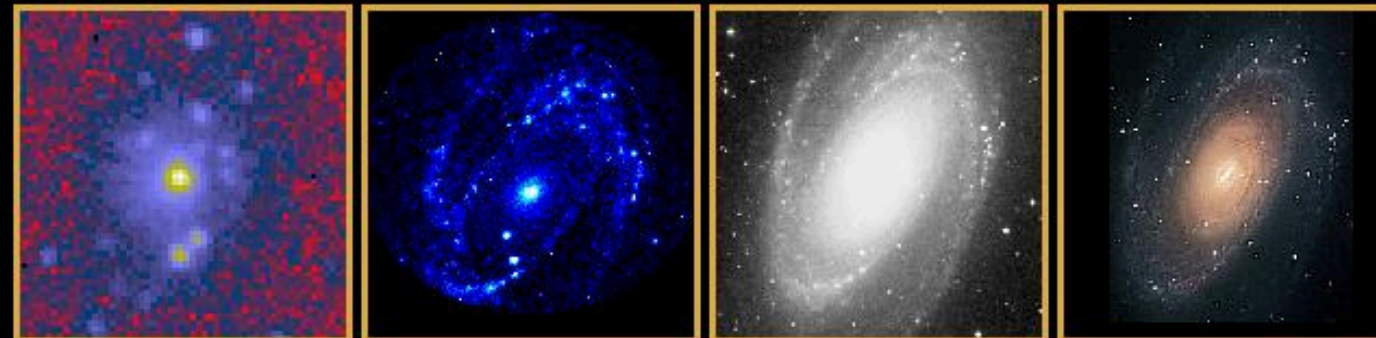


M81 – Spiral Galaxy (Type Sb)

Distance: 12,000,000 light-years (3.7 Mpc)

Image Size = 14 x 14 arcmin

Visual Magnitude = 6.9



X-Ray: RCSAT

Ultraviolet: ASTRO-1

Visible: DSS

Visible: R. Gendler

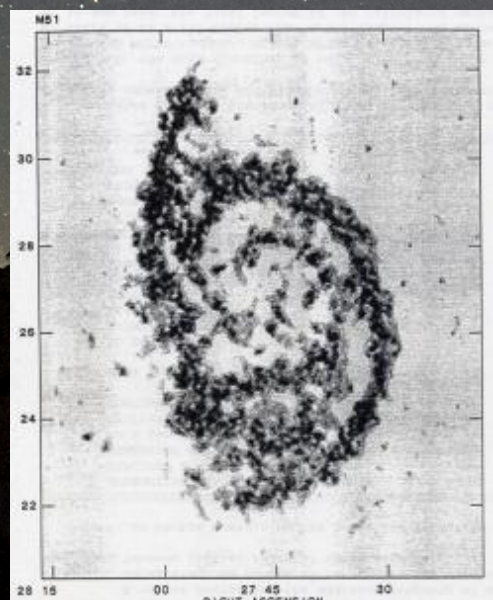
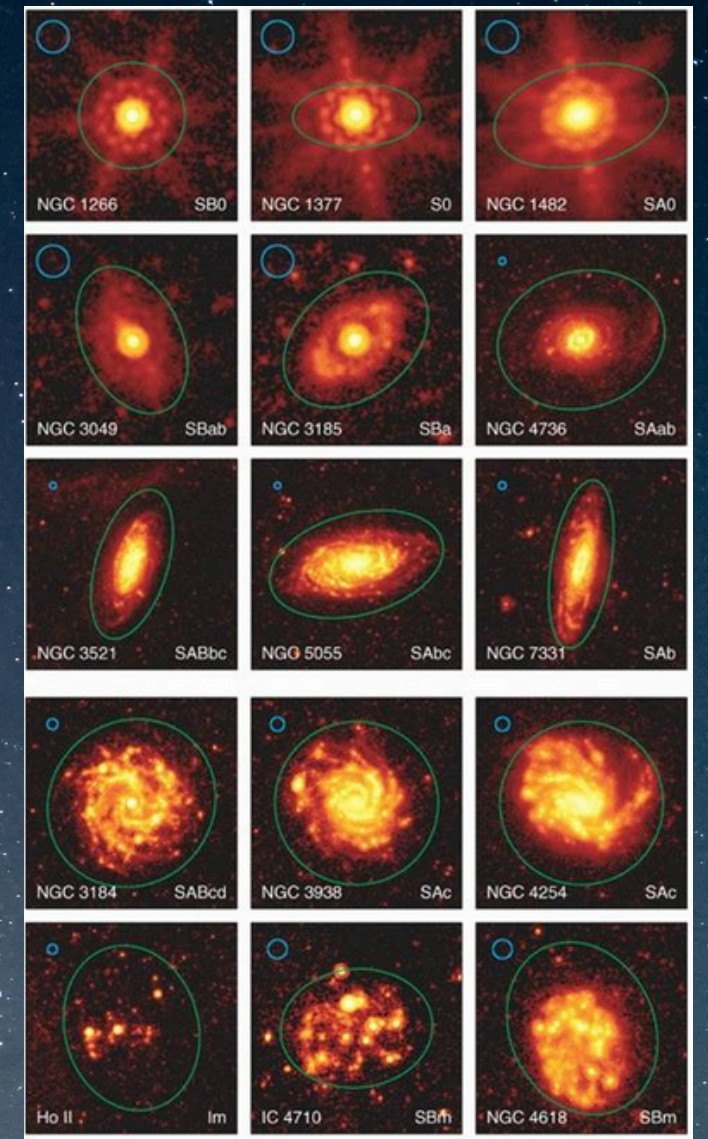


Near-Infrared: Spitzer

Mid-Infrared: Spitzer

Far-Infrared: Spitzer

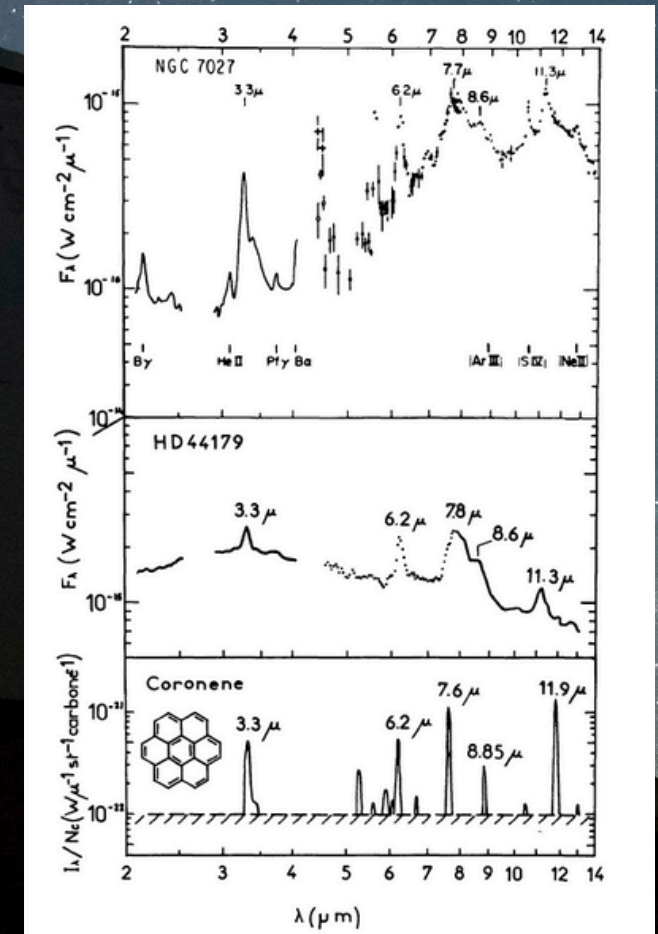
Radio: VLA



Infrared Triangulum Galaxy (M33)
 NASA / JPL-Caltech / J. Hinz (Univ. of Arizona)



Spitzer Space Telescope • IRAC • MIPS
 ssc2009-08a



CINÉMATIQUE

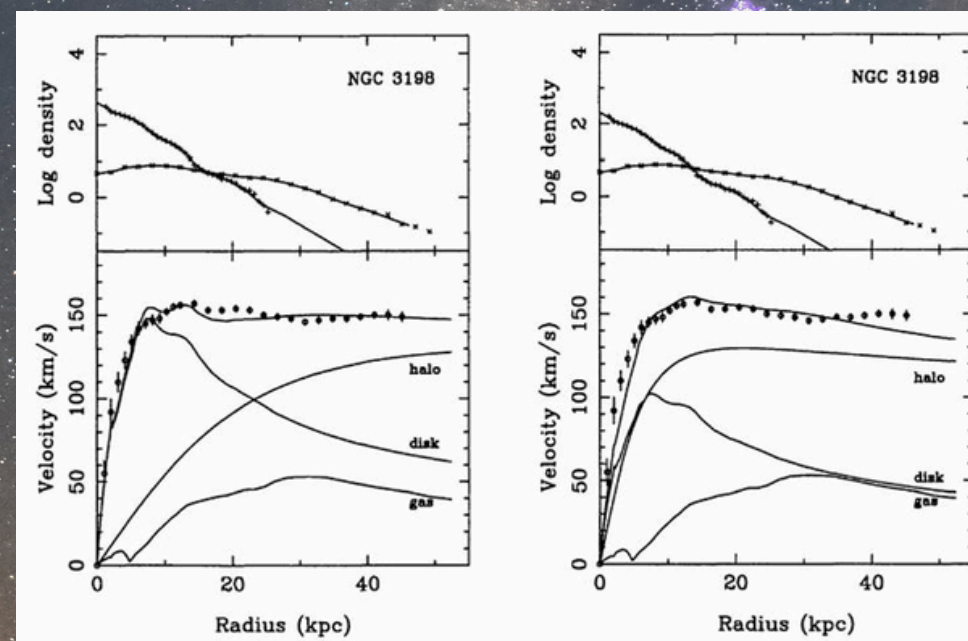
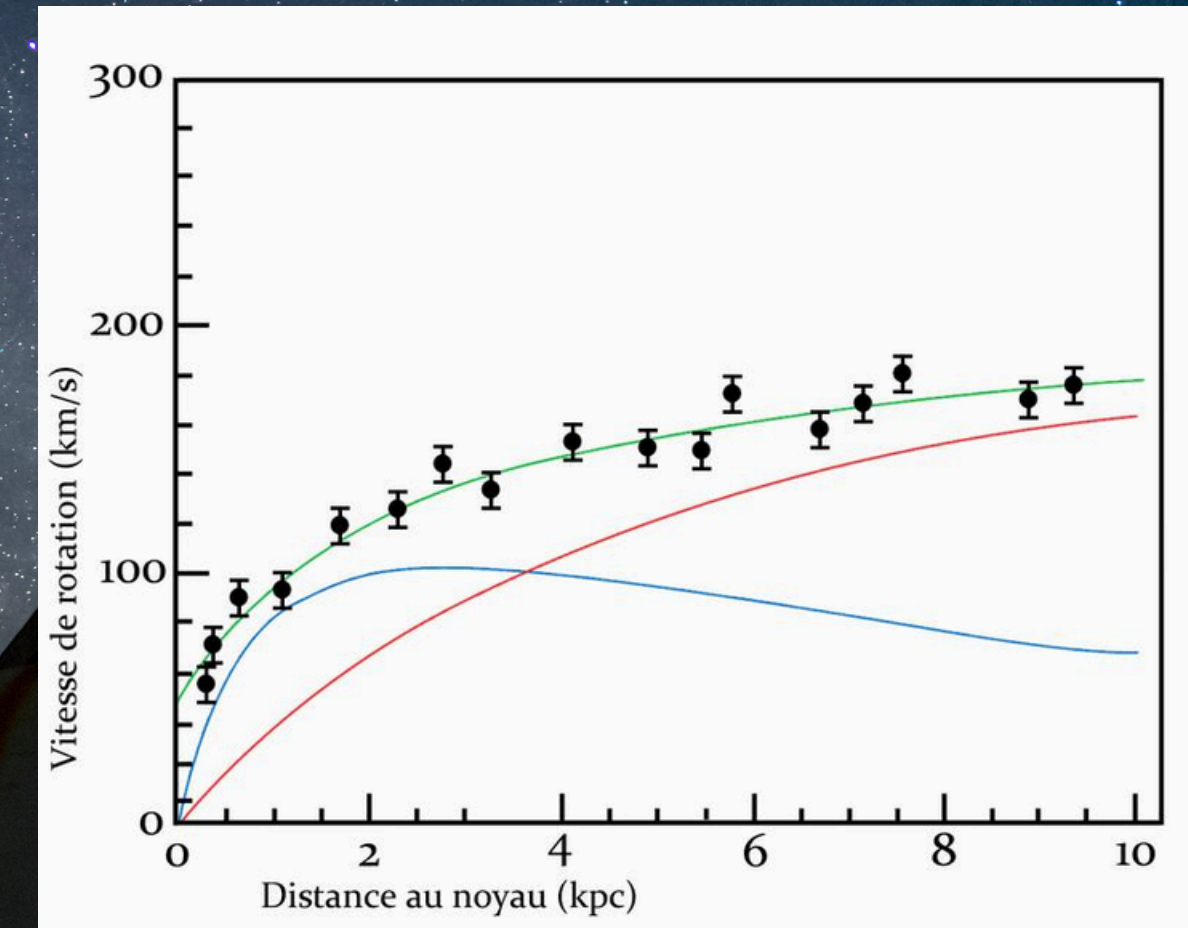
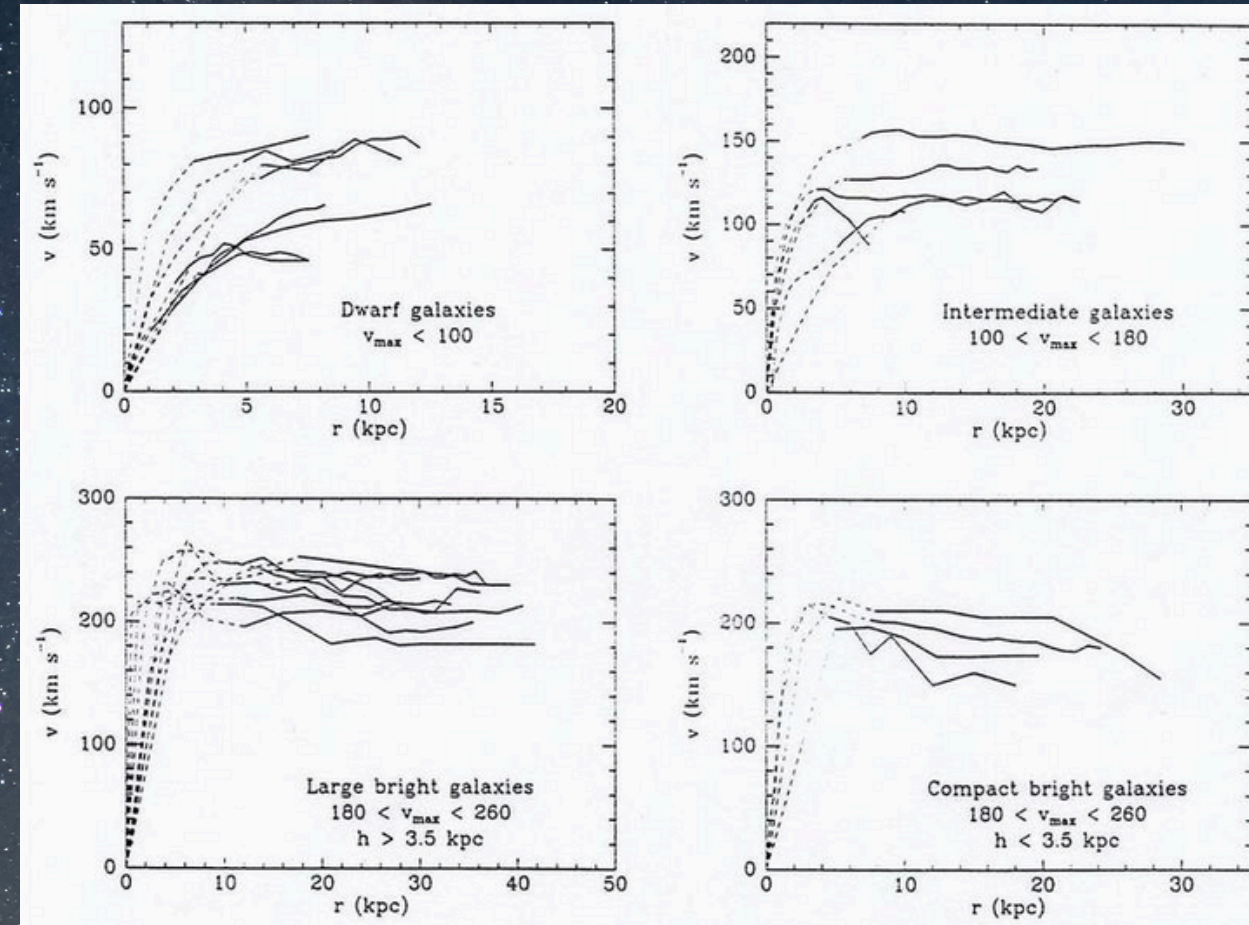
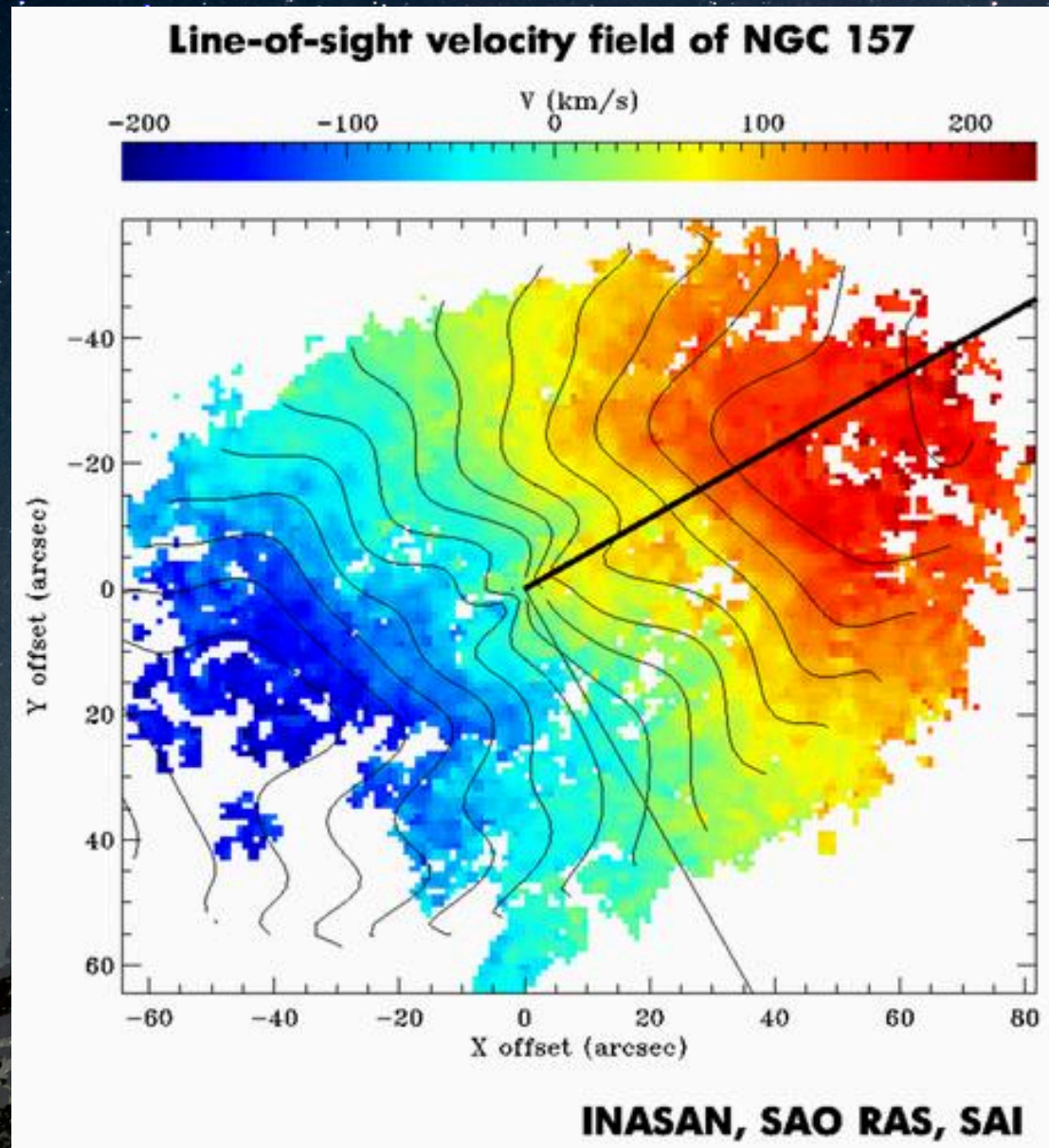
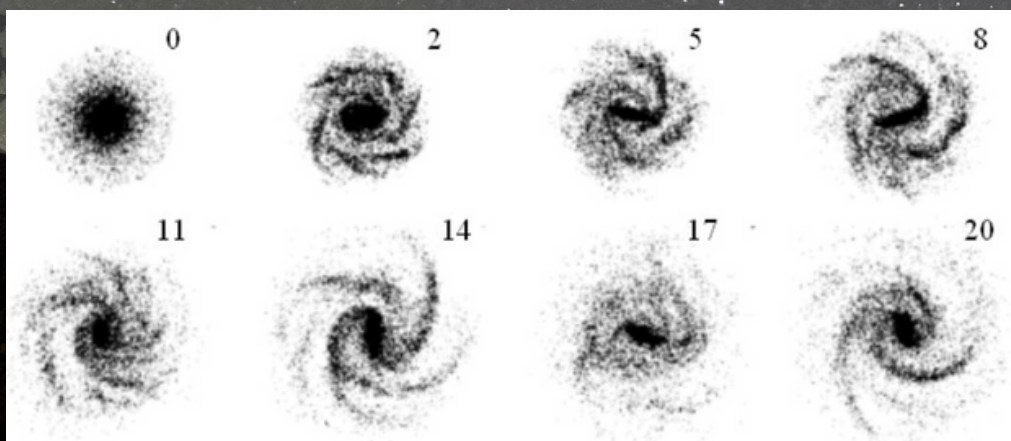
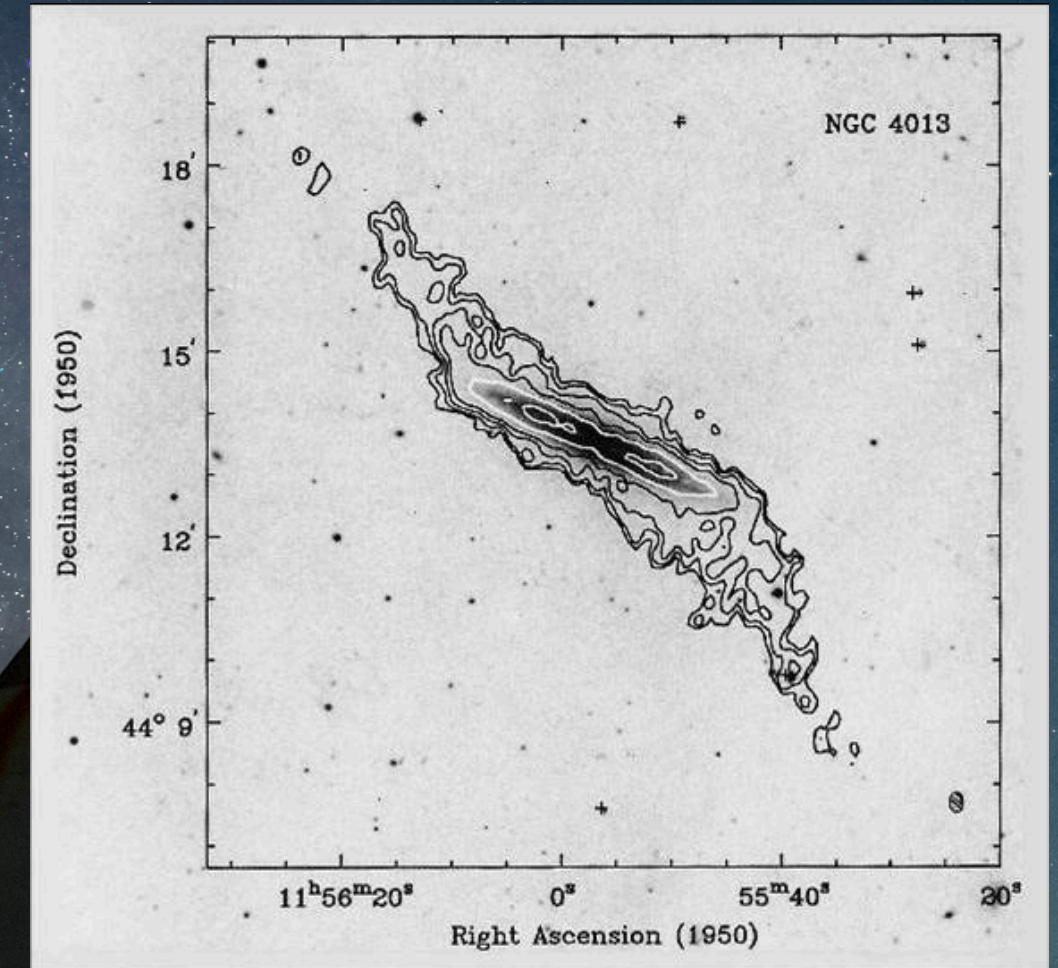
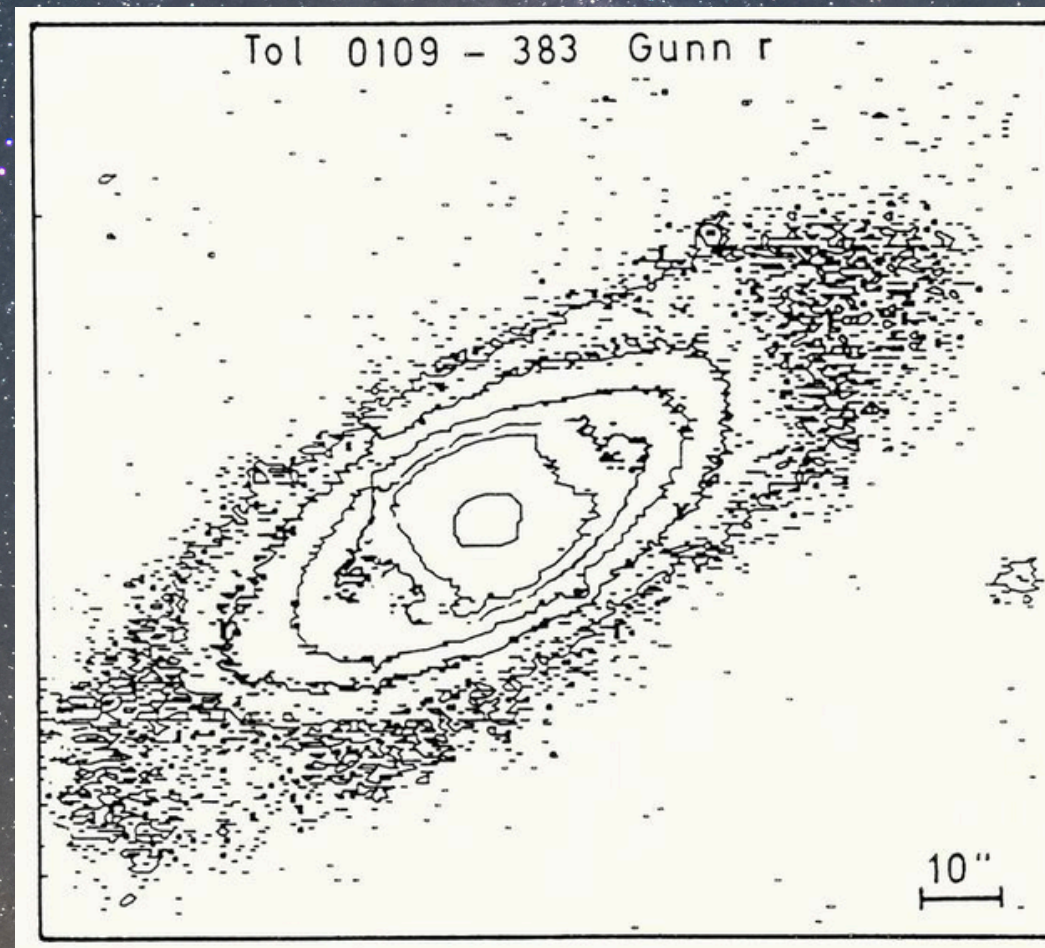
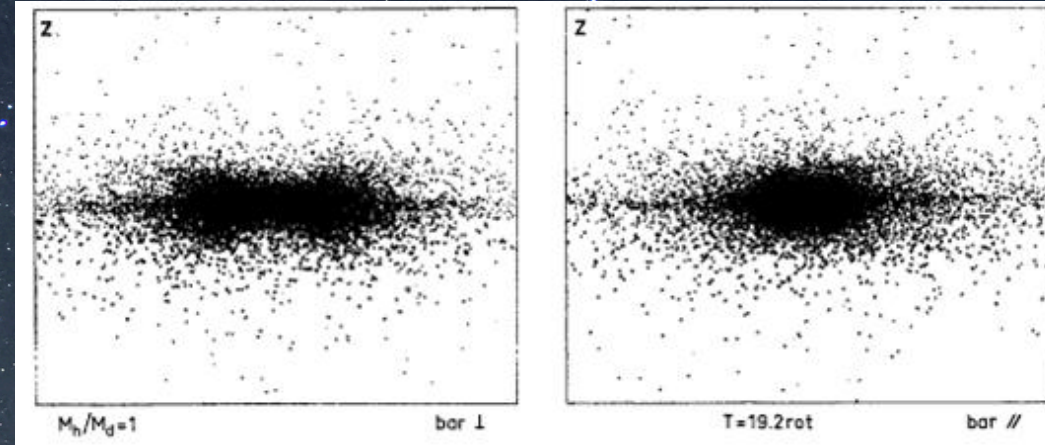
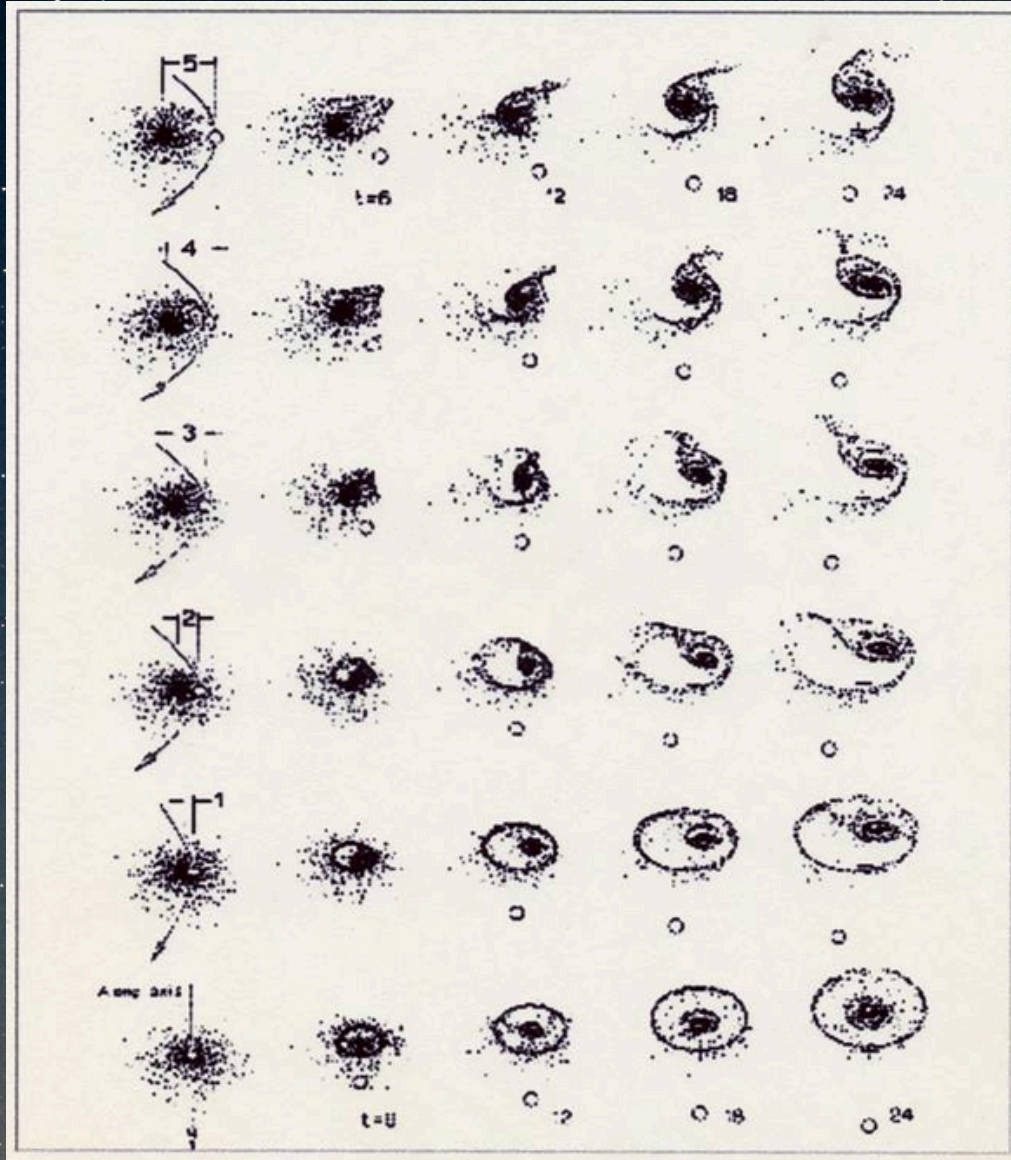
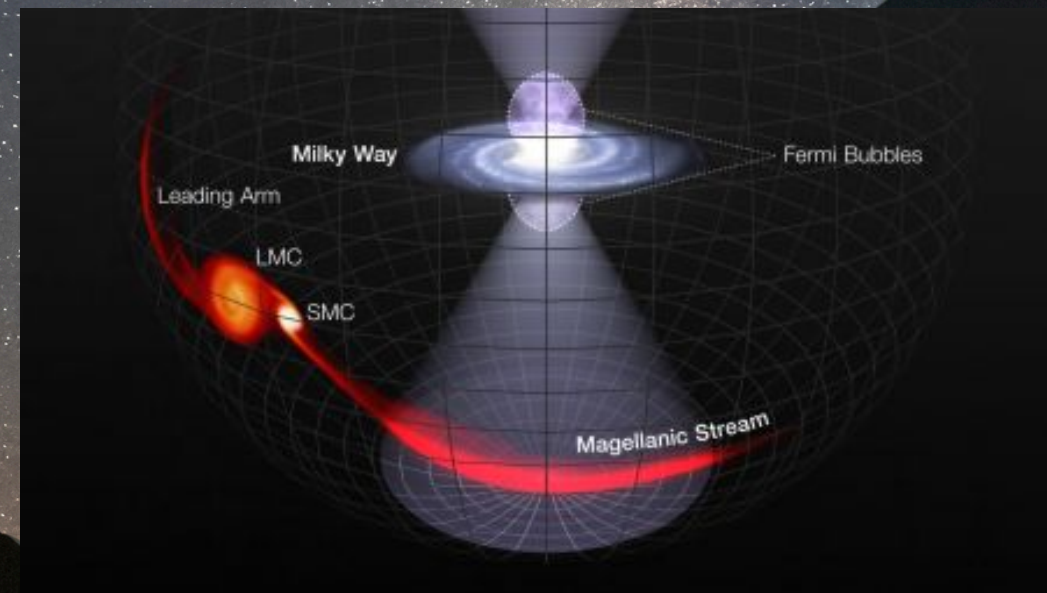
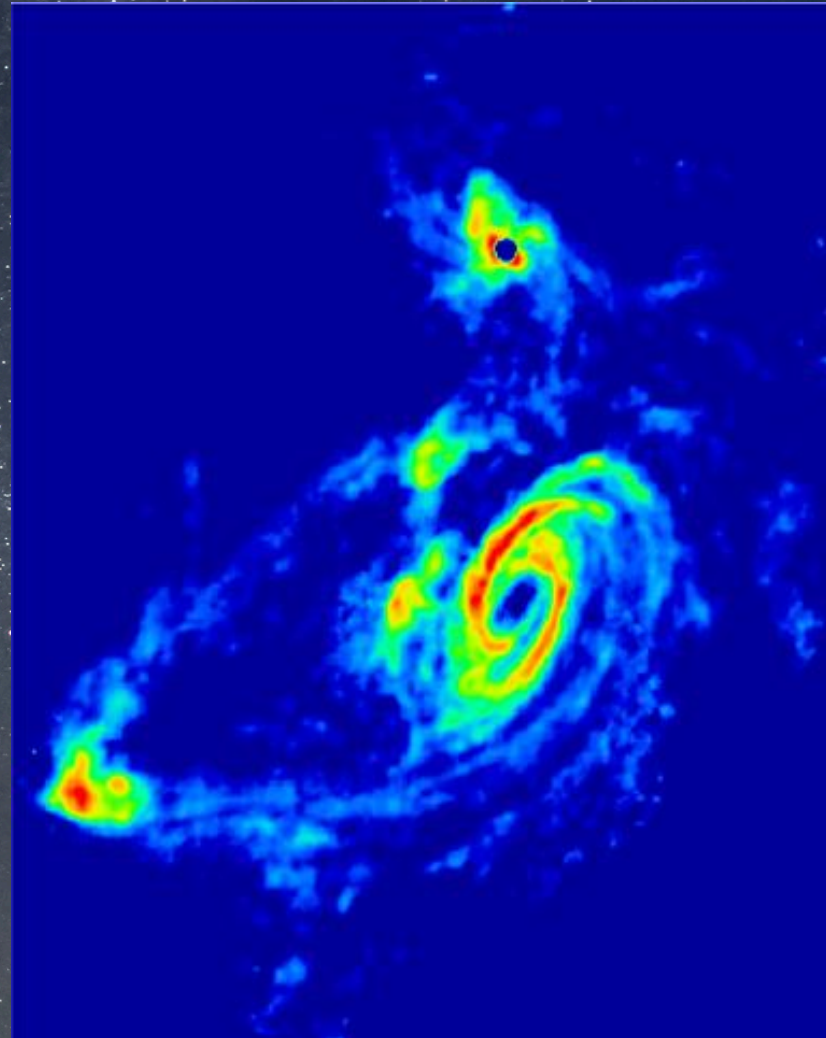
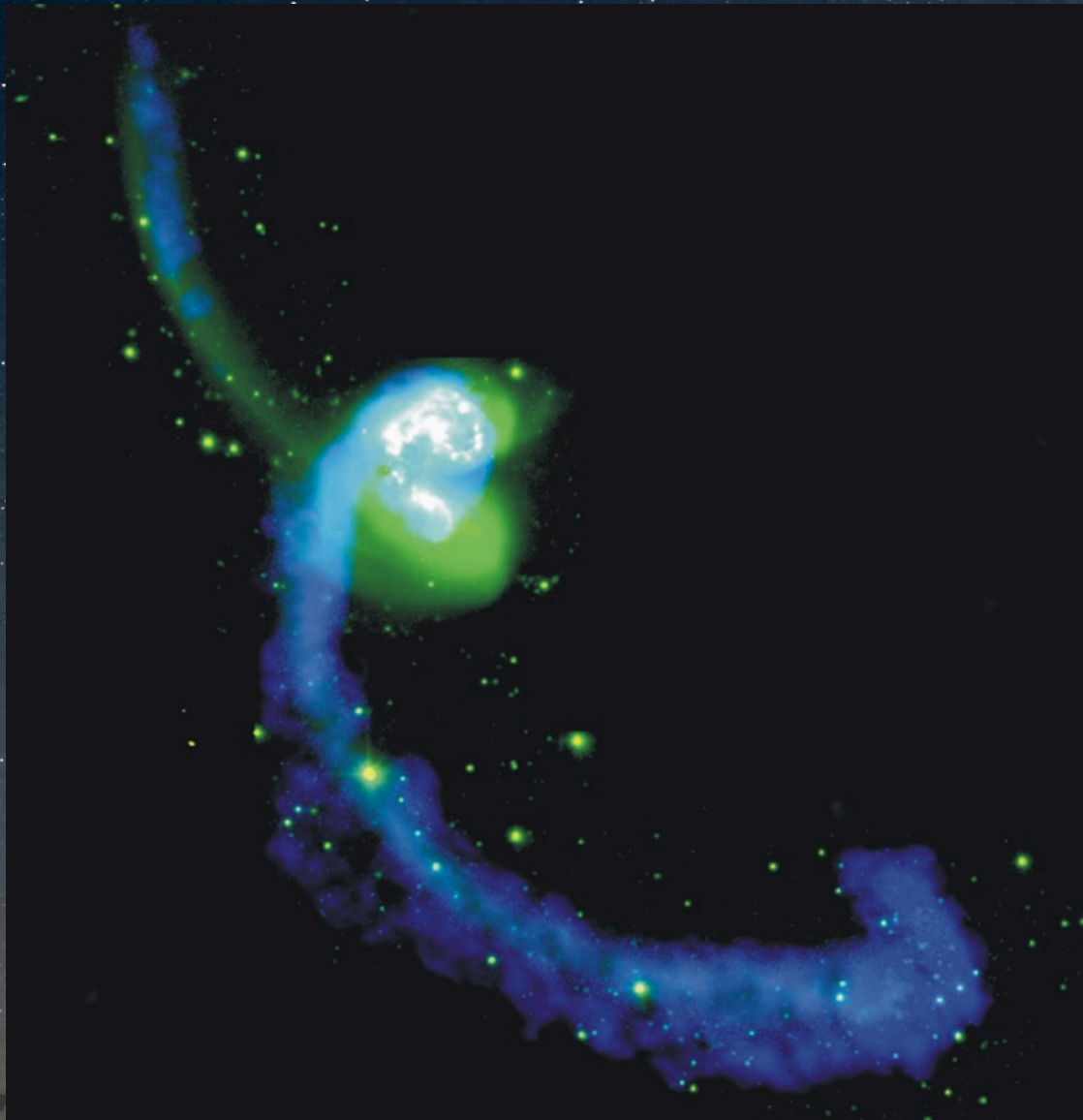


Figure 1. Mass models for NGC 3198. At left a “maximum disk” model, at right a “no $m = 2$ ” model. Data from Wevers *et al.* (1986) for the photometry, and Begeman (1989) for the rotation curve. A Hubble constant of $50 \text{ km s}^{-1} \text{ Mpc}^{-1}$ is assumed.

INTERACTIONS ET FUSIONS

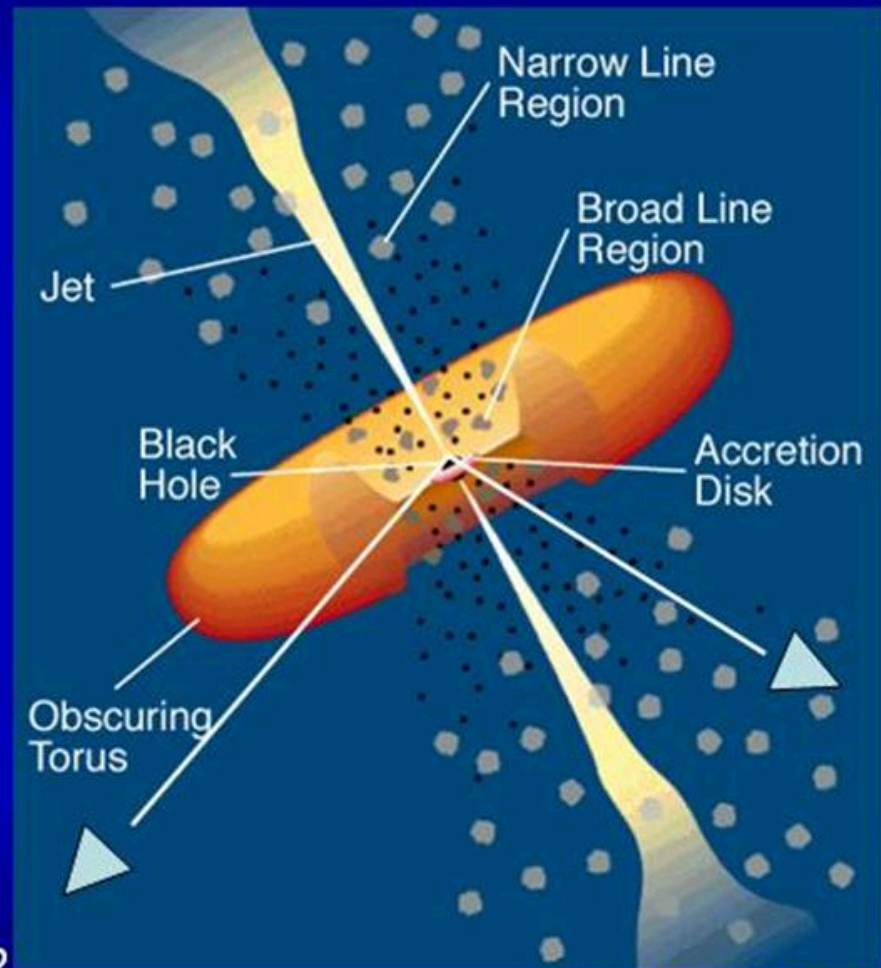


INTERACTIONS ET FUSIONS



GALAXIE À NOYAU ACTIF

THE PRESENT PARADIGM

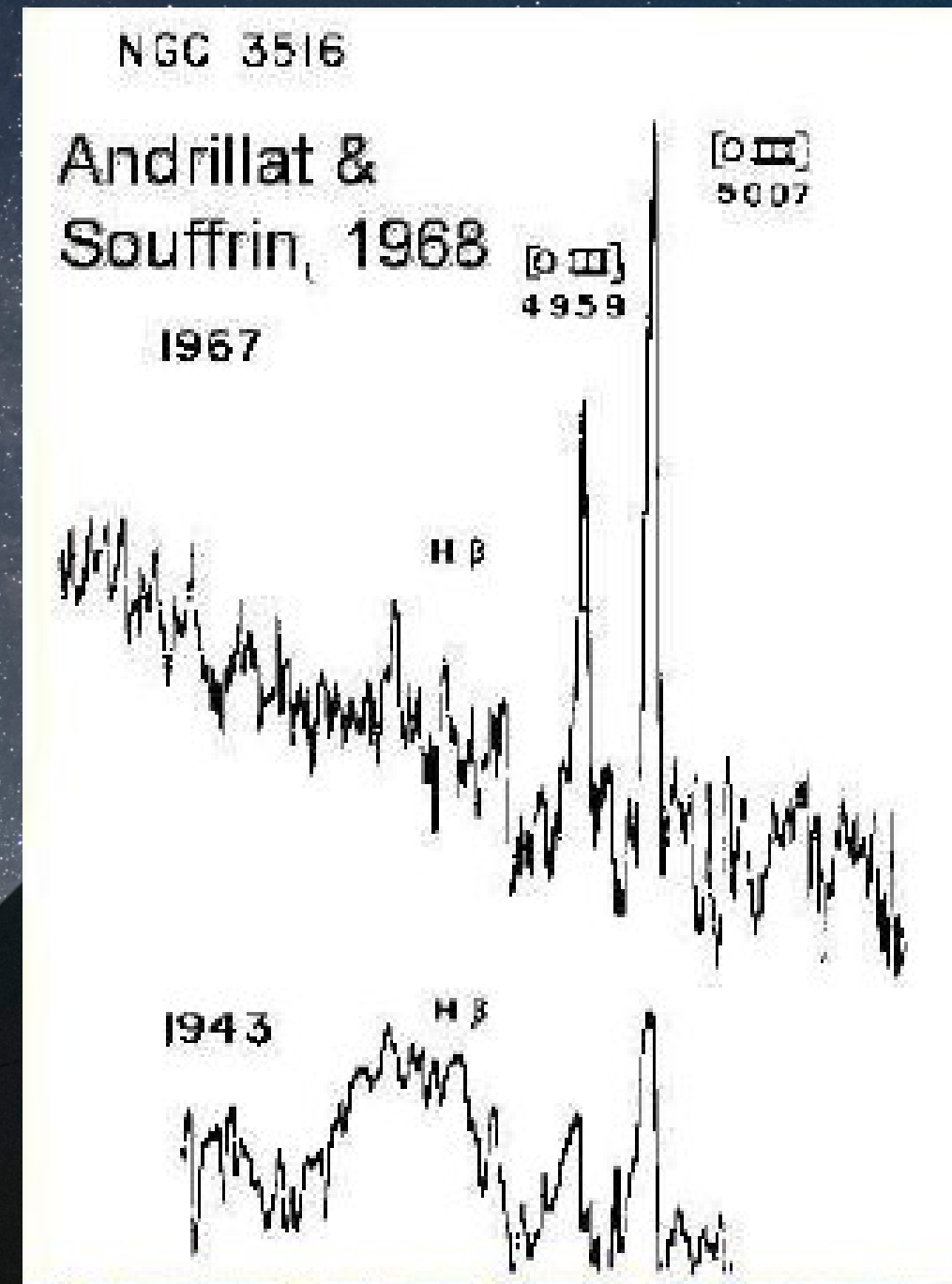


Urry & Padovani 1995

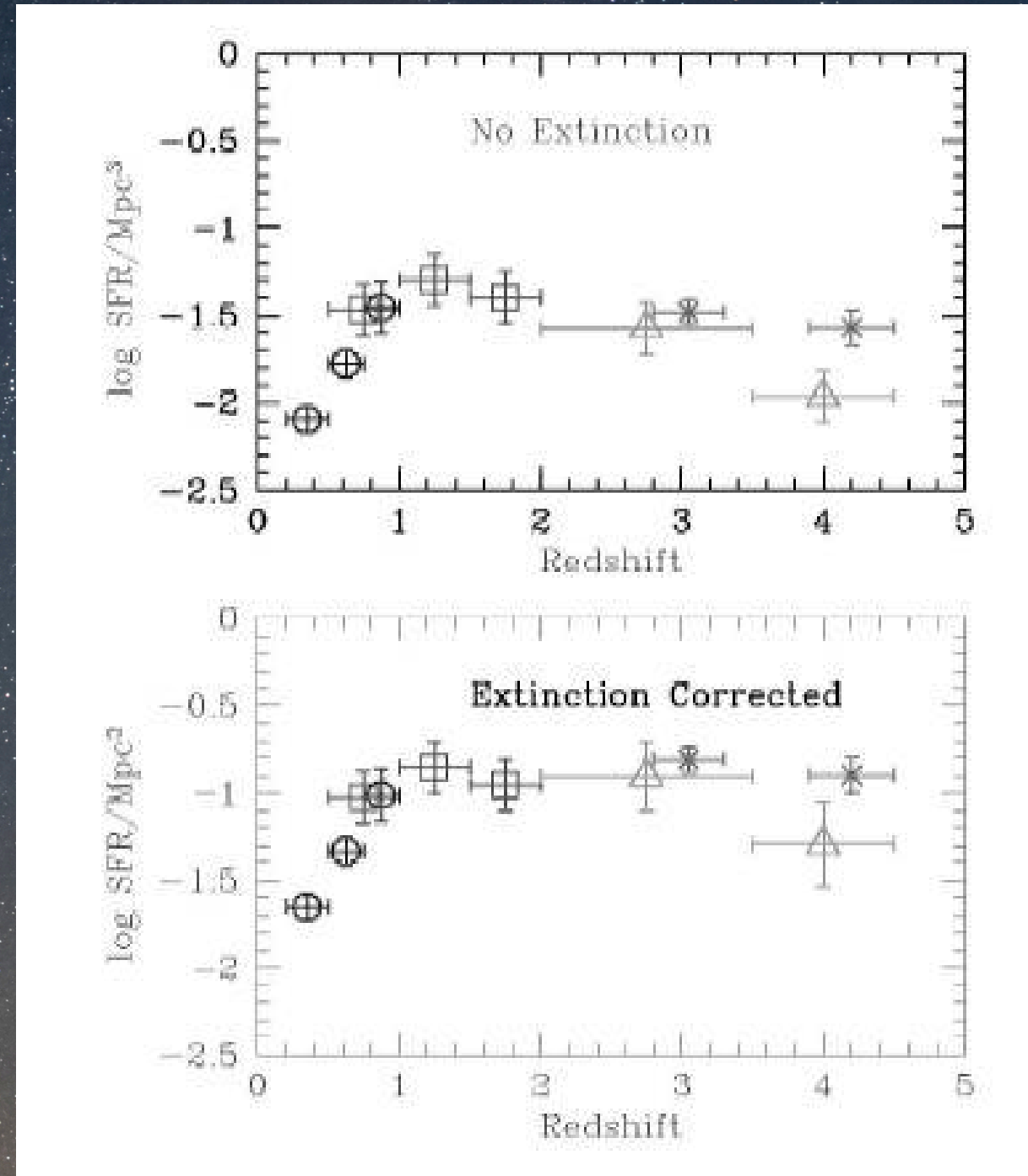
Seyfert 1
Quasar
(radio ou non)

Seyfert 2,
radio galaxies

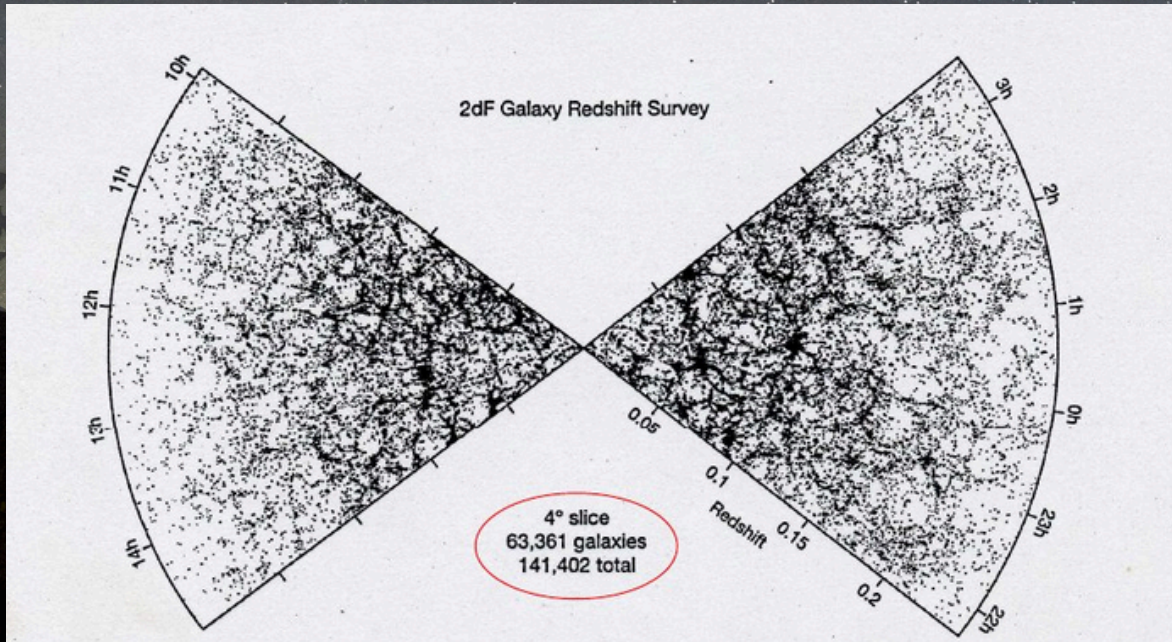
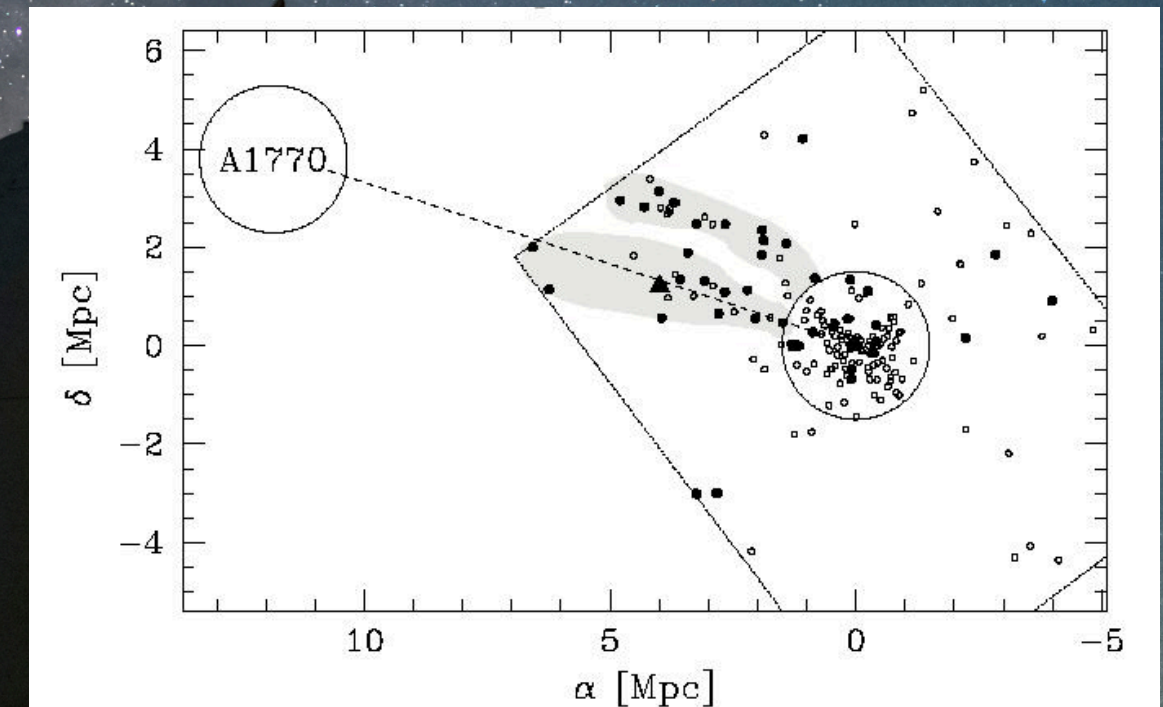
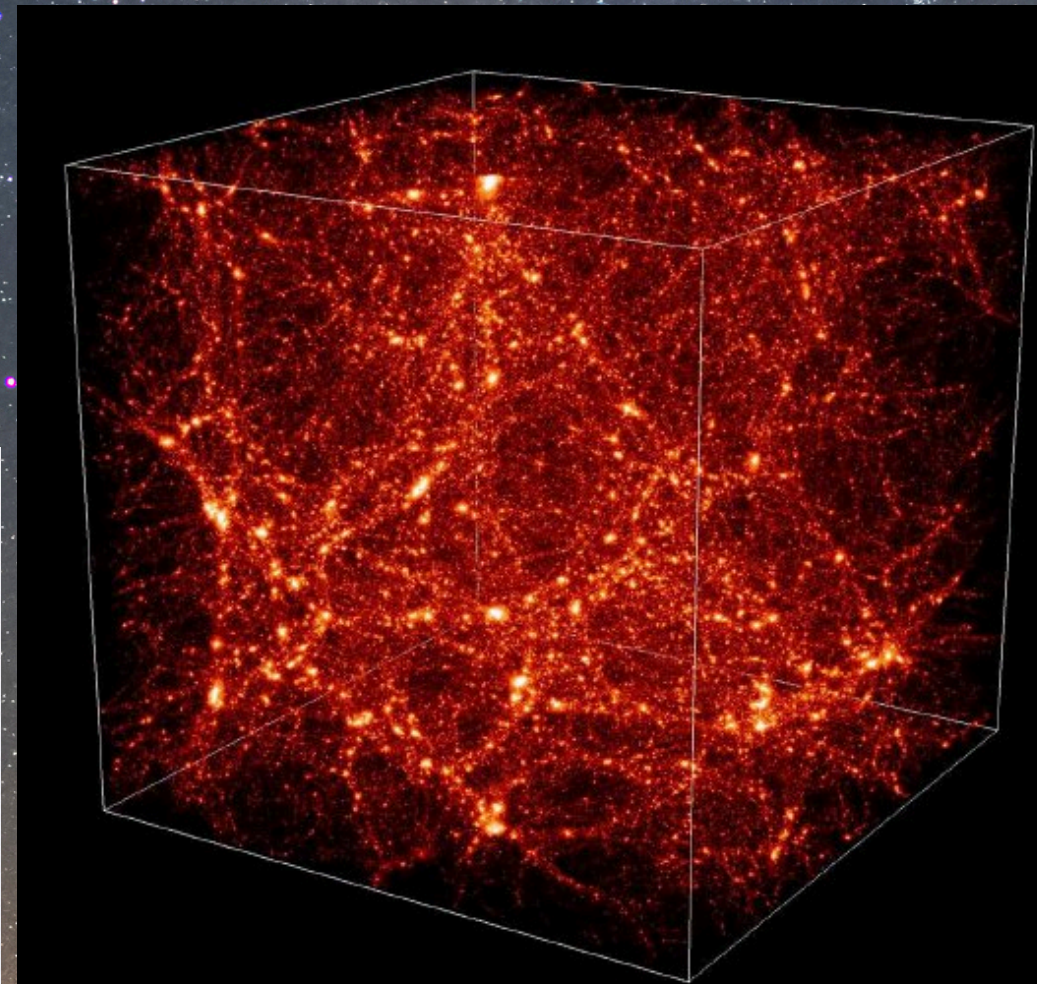
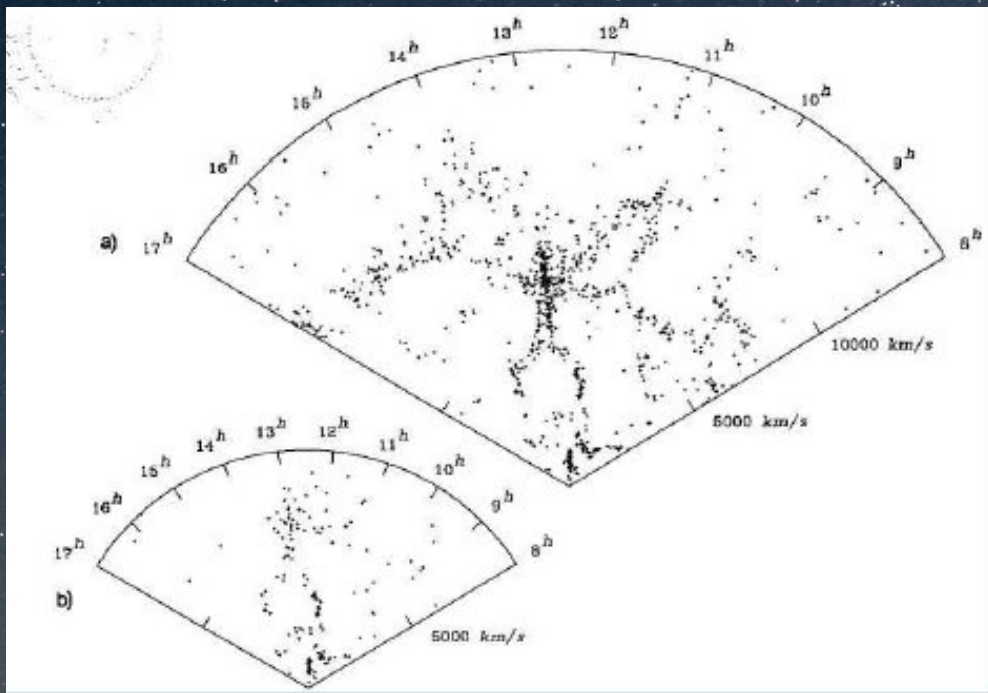
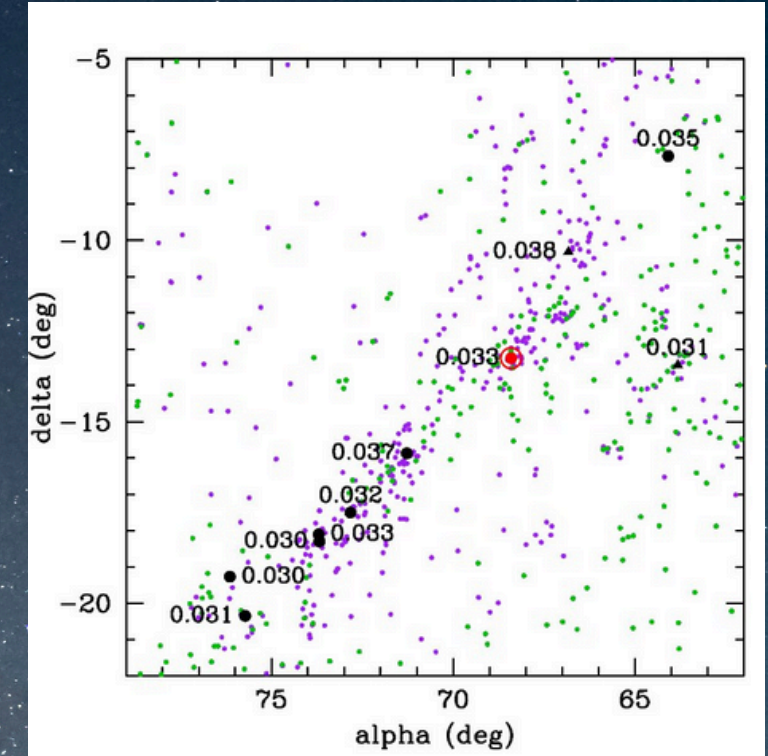
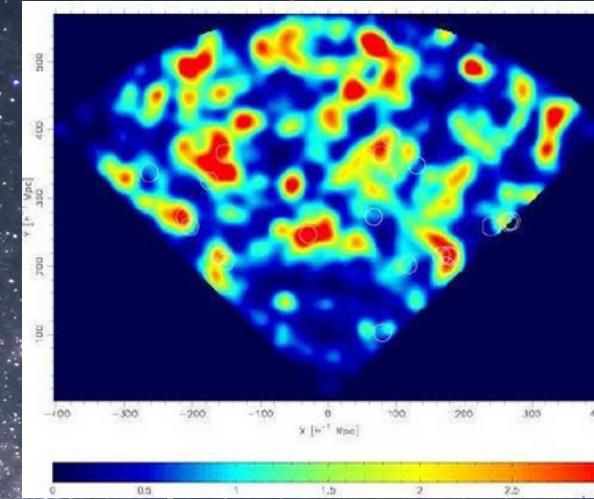
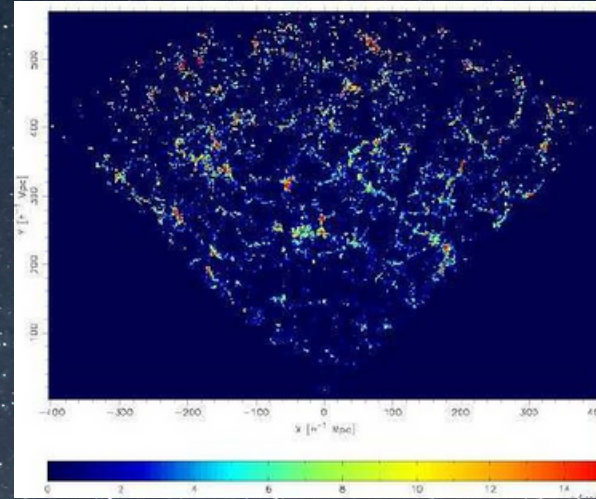
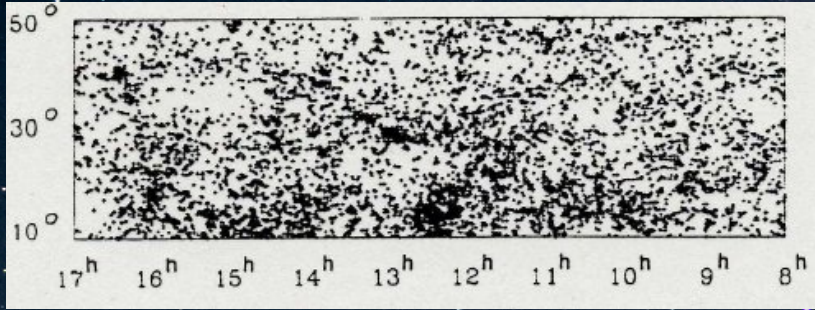
Blac, Blazars



FORMATION ET ÉVOLUTION

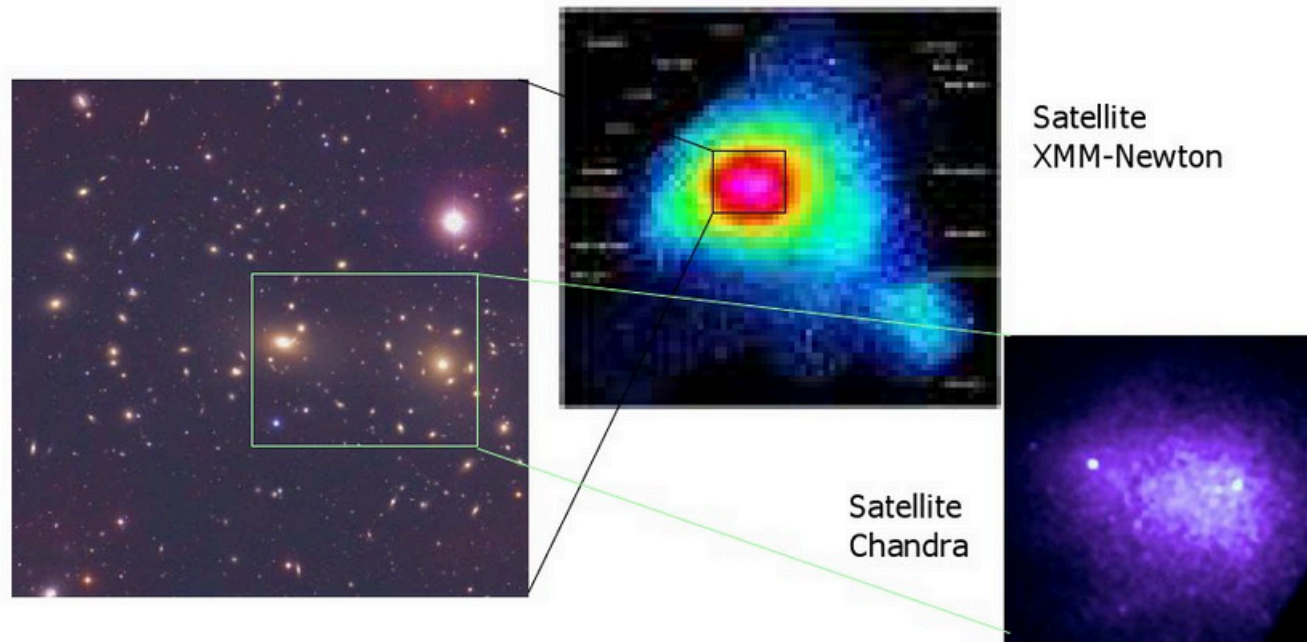


DISTRIBUTION À GRANDE ÉCHELLE DANS L'UNIVERS



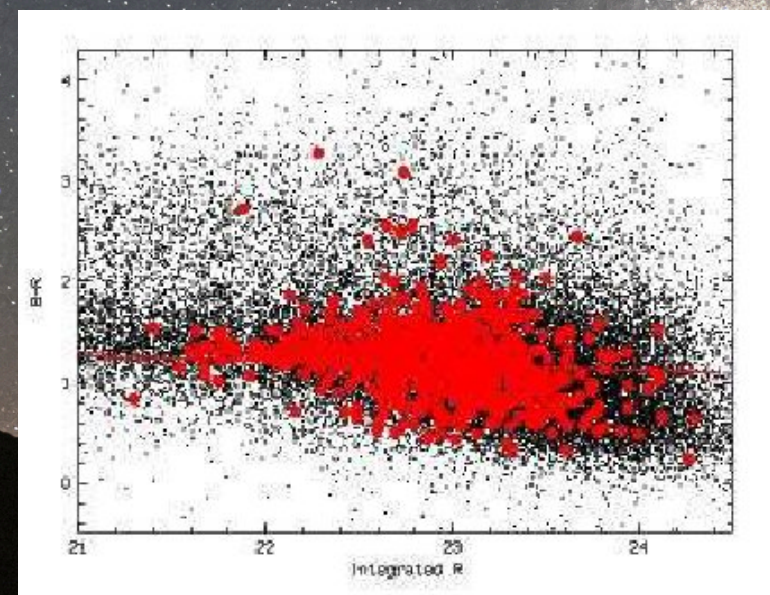
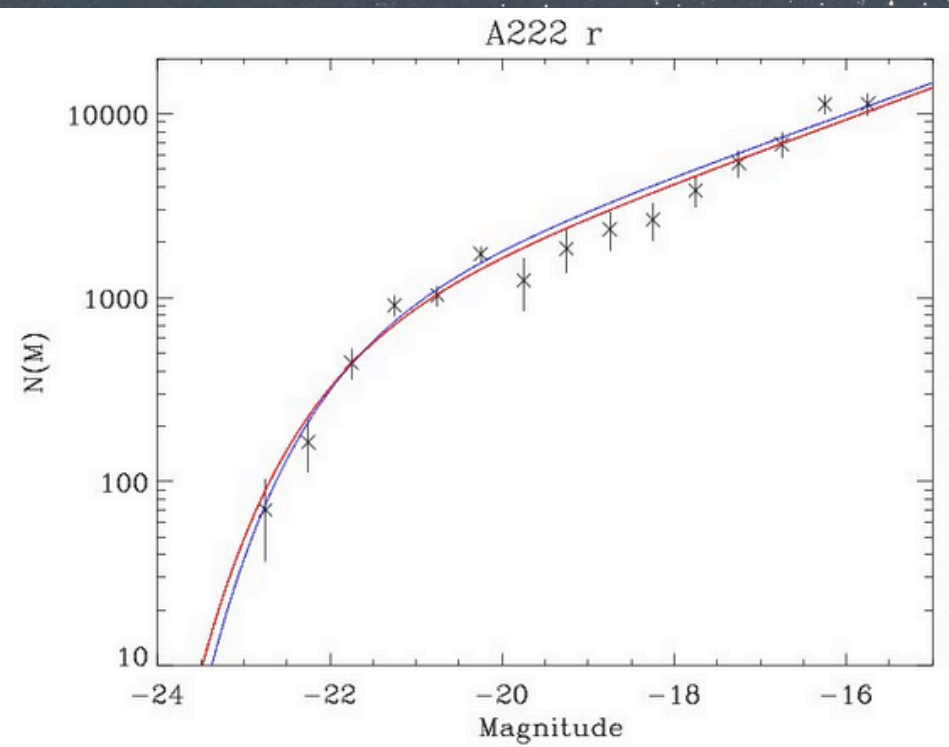
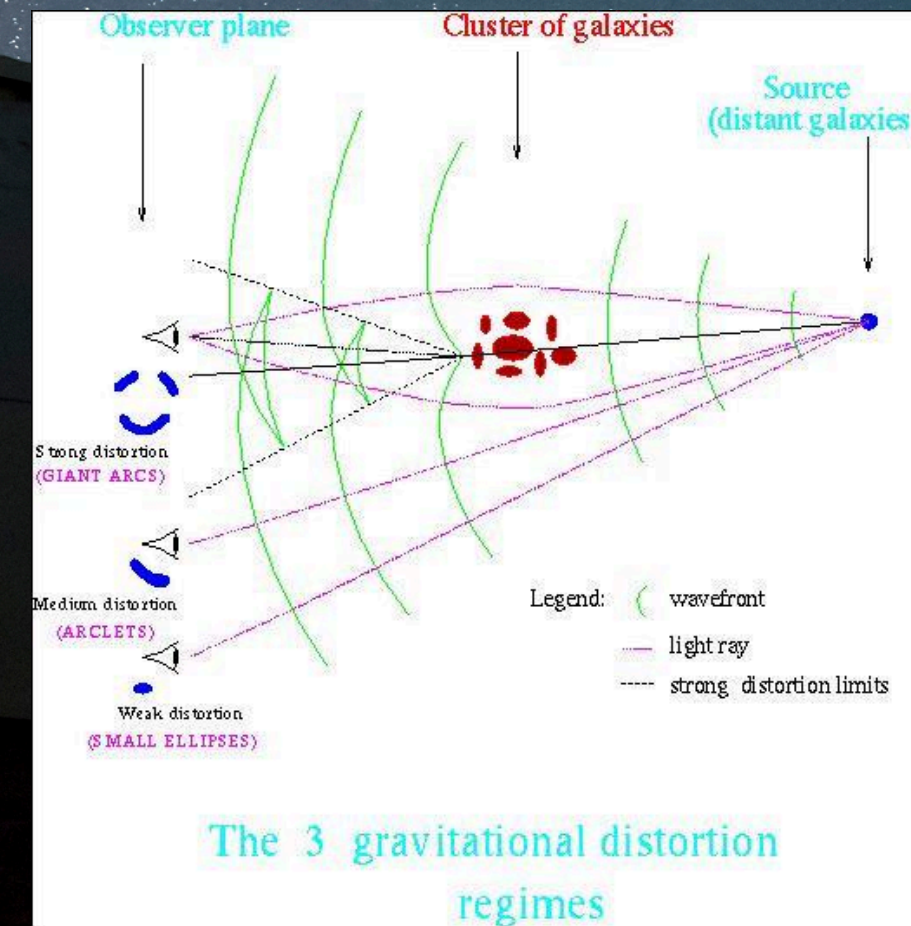
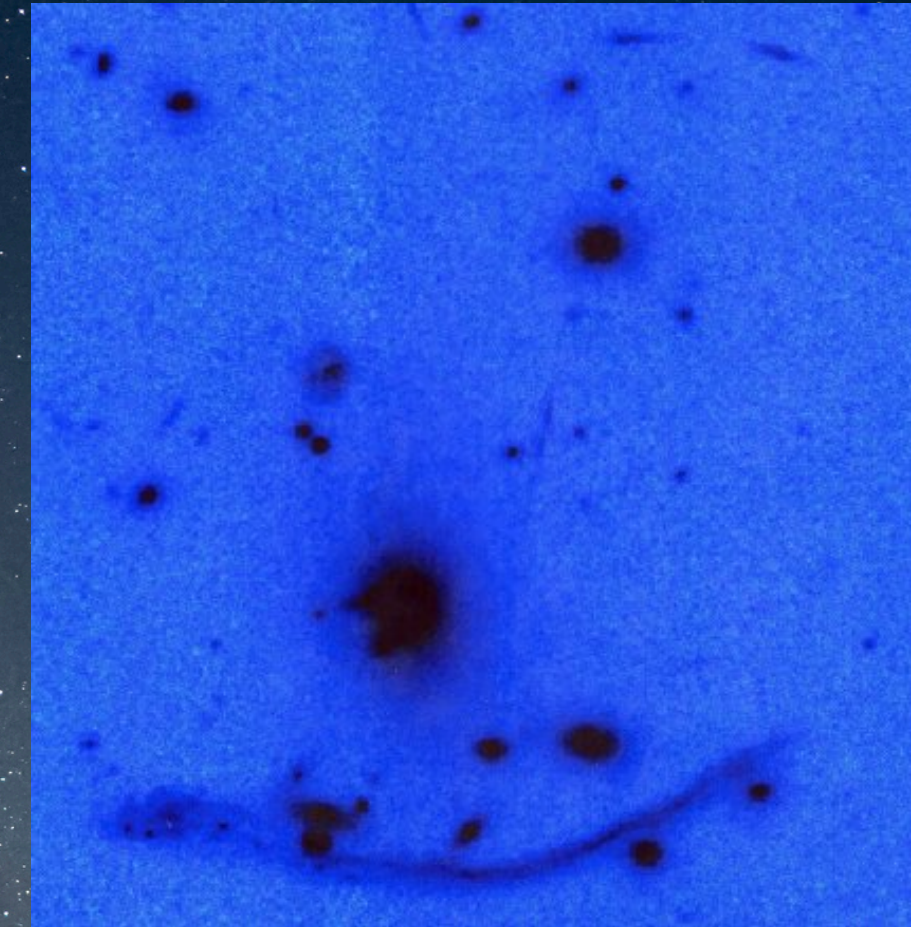
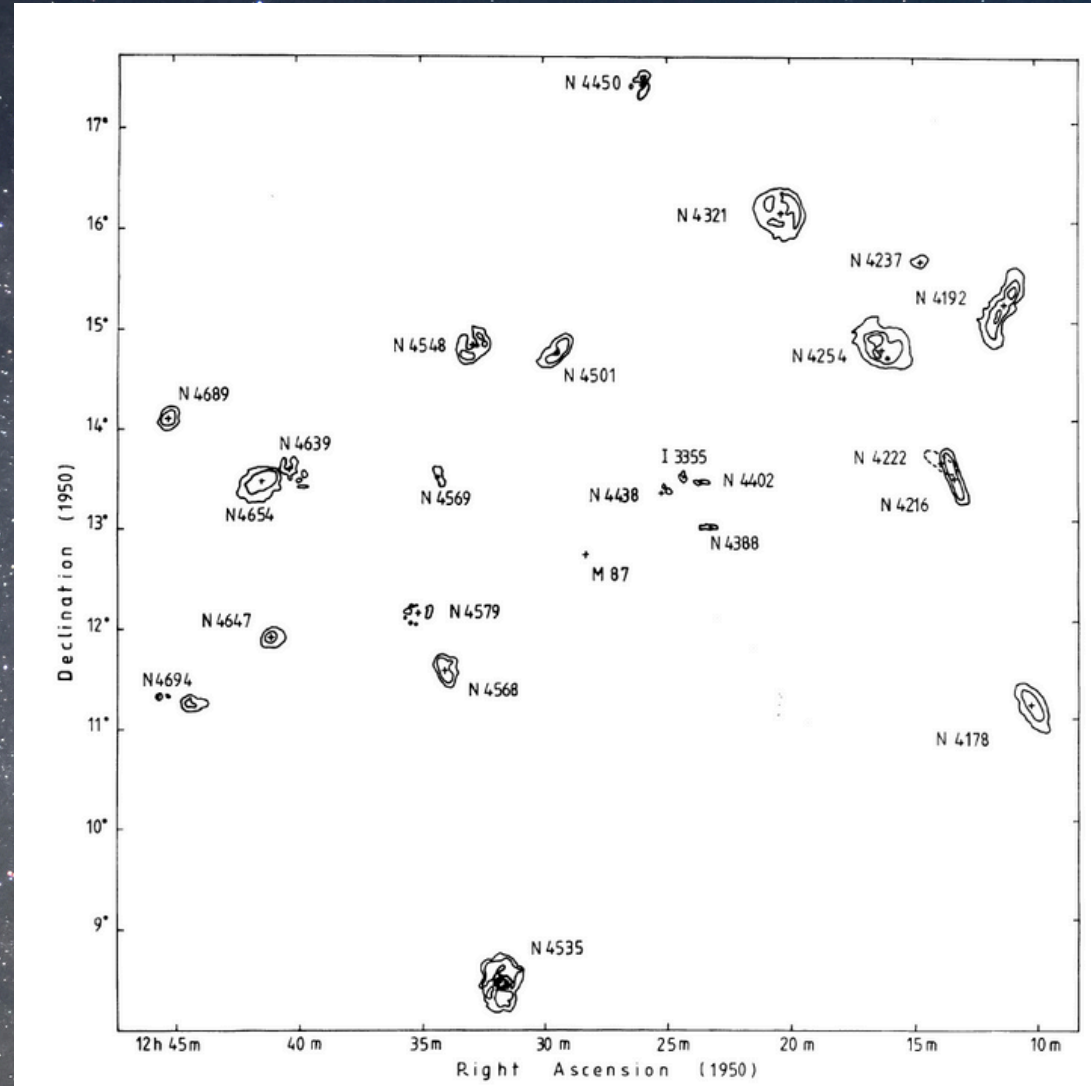
GROUPE ET AMAS

Un amas célèbre : Coma
(la chevelure de Bérénice)

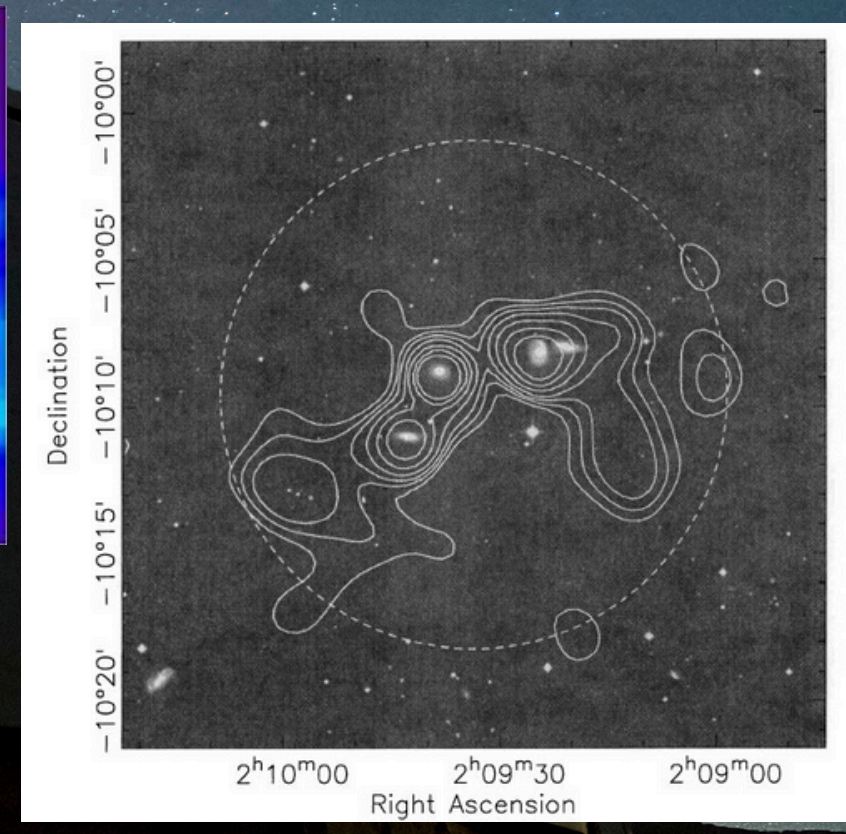
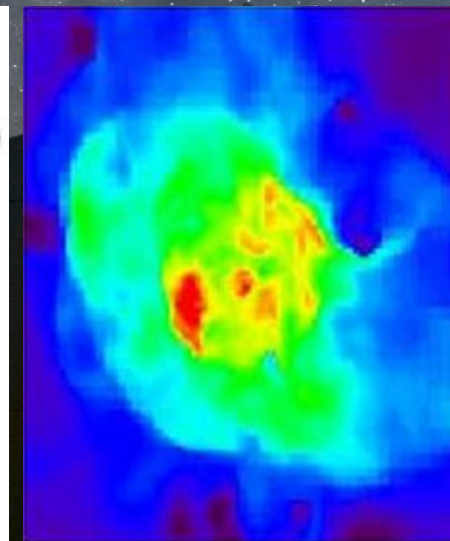
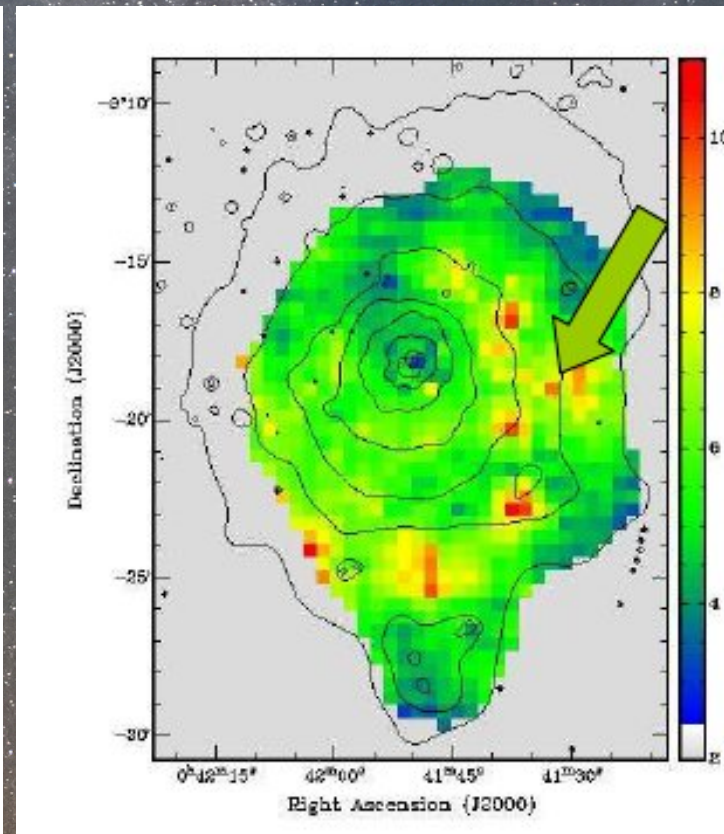
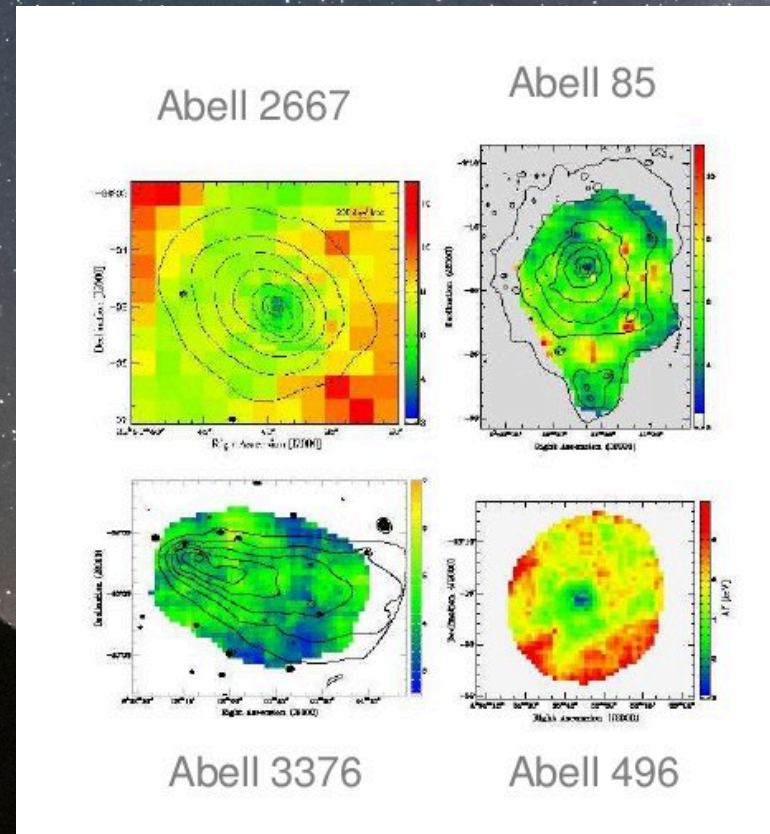
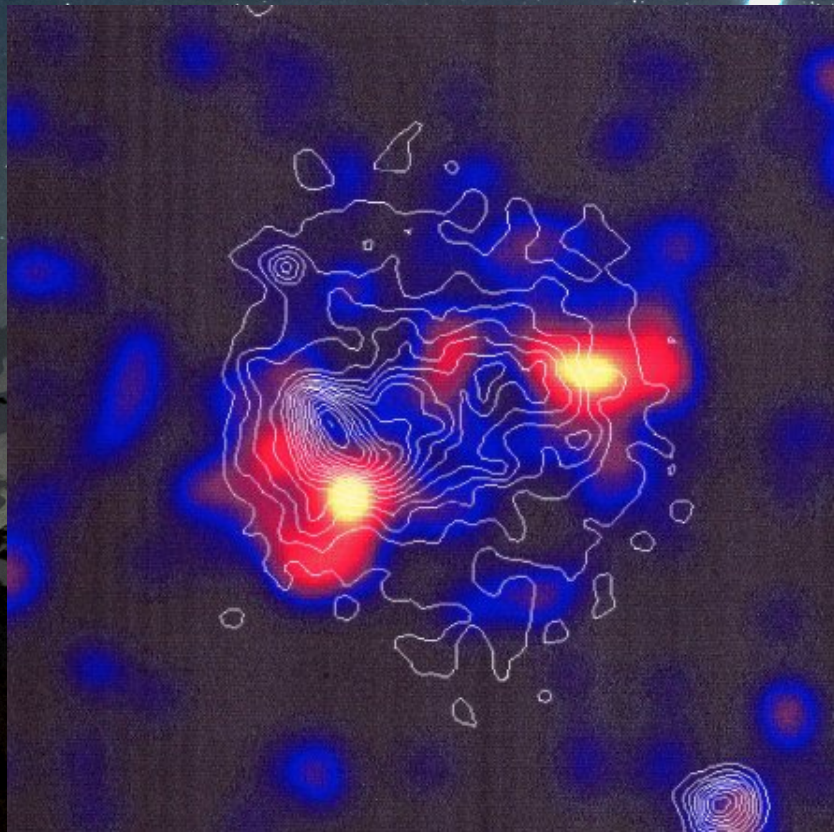
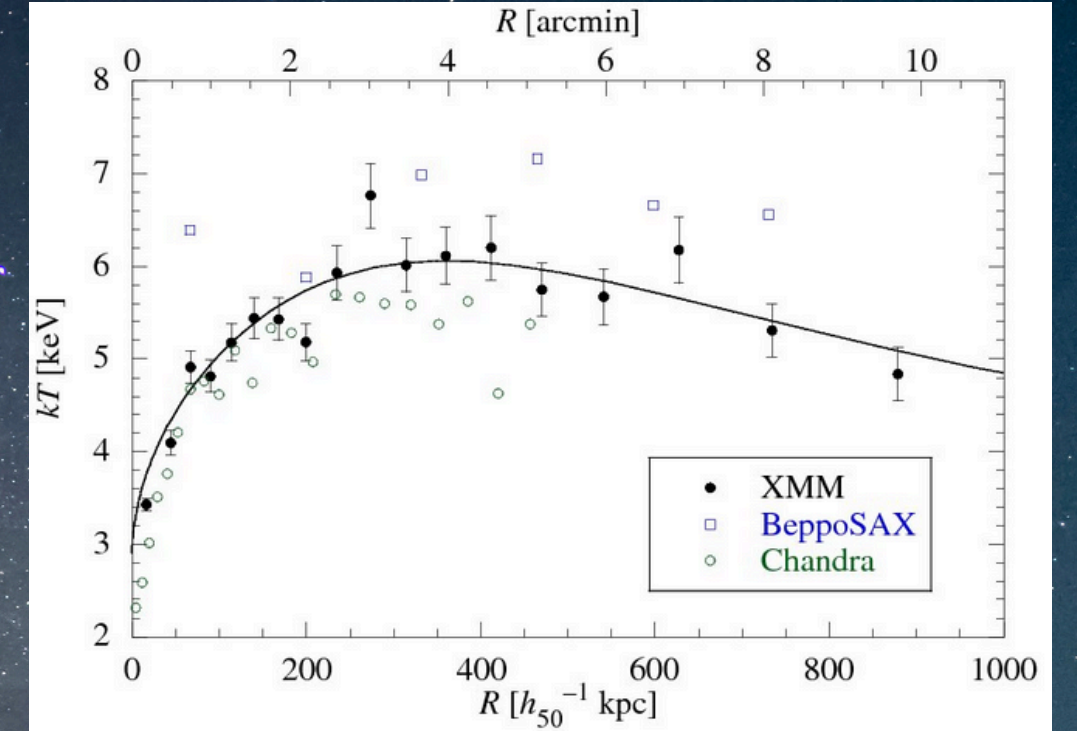
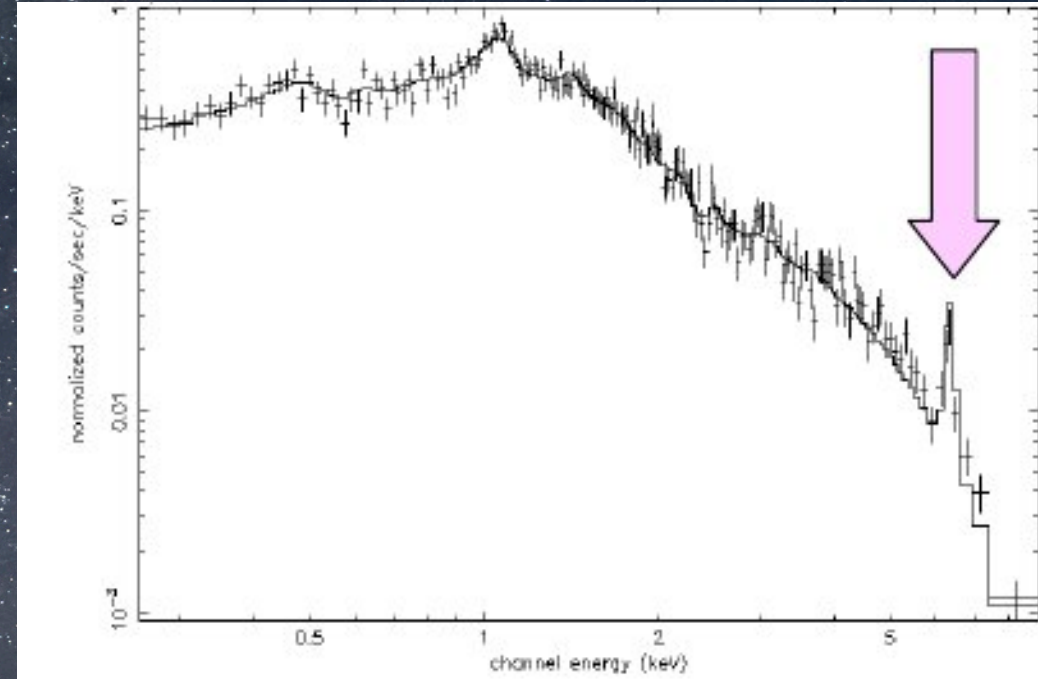


Coma en lumière visible

Coma en rayons X



GROUPE ET AMAS





BALCON DES ÉTOILES

MERCI