

THE SUMMER SEARCH FOR GALAXY CLUSTERS

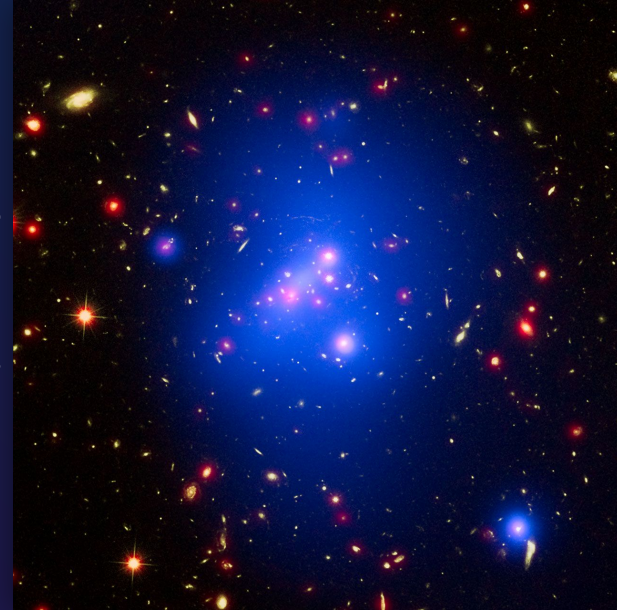


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GALAXY CLUSTERS

- ★ Galaxies are not uniformly distributed in space
- ★ Groups vs. clusters



IDCS J1426.5+3508 (IDCS 1426 for short), in X-rays from the NASA Chandra X-ray Observatory in blue, visible light from the NASA/ESA Hubble Space Telescope in green, and infrared light from the NASA Spitzer Space Telescope in red.

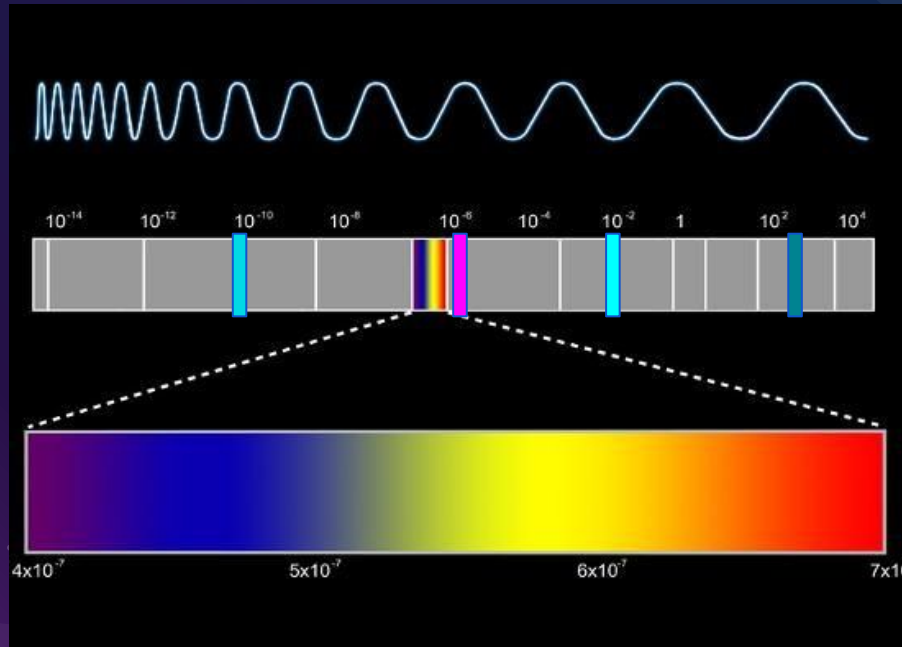
GALAXY CLUSTERS

- ★ Most massive gravitationally bound and relaxed structures in the Universe
- ★ Cosmological evolution is directly related to the growth of cosmic structures
- ★ Study of galaxy formation, evolution, and dynamics

Studying galaxy clusters provides unique insight into what might be happening in the sky as our universe ages

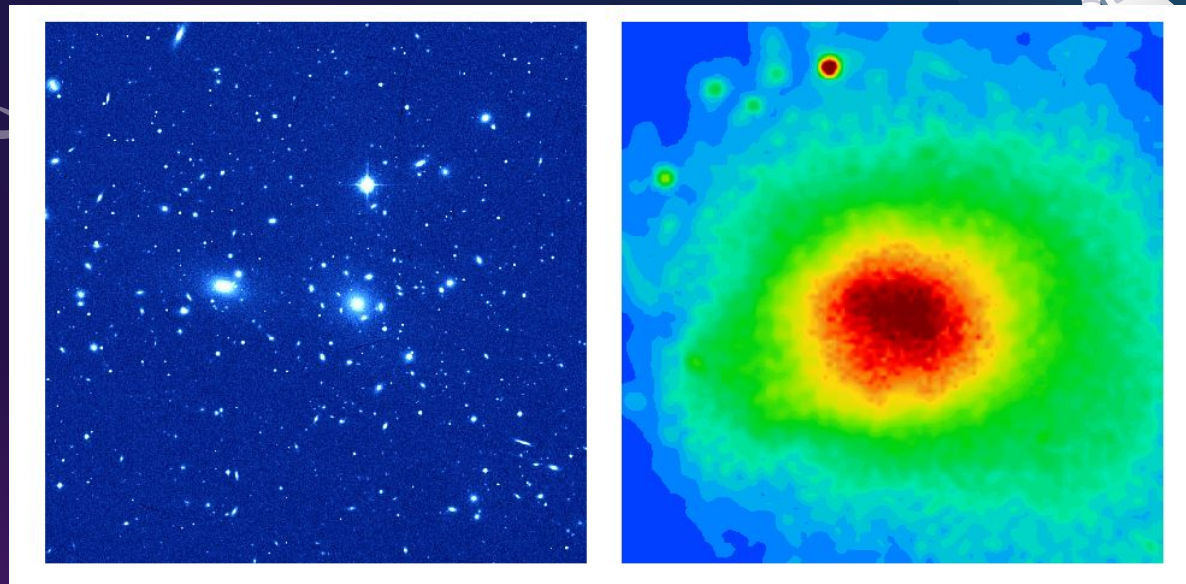
GALAXY CLUSTERS

X-Ray
Infrared
Microwave
Radio



GALAXY CLUSTERS

- ★ One of the brightest extragalactic x-ray sources that are resolvable
- ★ Several x-ray cluster surveys have been conducted with varying depth, energy range, and coverage area
- ★ Essential to follow up with optical observations
- ★ Red Sequence Method



Coma Cluster of Galaxies Optical (left) and X-ray (right)

THE RESEARCH

- ★ Our data comes from:
 - ☆ Swift AGN and Cluster Survey
 - ☆ Dark Energy Survey (DES)
- ★ We started with over 400 sources from the Swift Survey
- ★ 75 are in the range of the DES - expected

THE RESEARCH

Radius 1 ~ 1-3 arcmin

Radius 2 ~ 10-25 arcmin

Radius 3 ~ 30-40 arcmin





THANKS!

ANY QUESTIONS?



The background is a dark blue and purple gradient representing space. It is filled with numerous small white stars of varying sizes and shapes, some appearing as simple dots and others as four-pointed stars. There are also larger, more detailed celestial bodies: a ringed planet (like Saturn) in the upper left, a cratered moon or planet in the middle left, and a striped planet (like Jupiter) in the lower right. Large, soft, wavy shapes in shades of teal and purple represent nebulae or interstellar clouds, adding depth and color to the scene.

REFERENCES

- ★ Bhatiani S., 2017
- ★ Schneider P., 2006