

# THE GALAXIES

A deep field image of galaxies, showing a vast number of galaxies of various shapes and colors (yellow, white, blue, red) scattered across a dark background. The galaxies are of different sizes and orientations, some appearing as bright, smooth blobs, while others show more complex structures like spiral arms or irregular shapes. The overall scene is a rich, multi-colored field of distant celestial objects.

# THE GALAXIES

## ○ What is a galaxy ?

- Ensemble of stars and dust, in gravitational interaction

## ○ Composition of galaxies

- Billions of Stars  
(and likely many planets around some of them)
- Lots of Gas & Molecules
- Lots of Dust
- Dark Matter

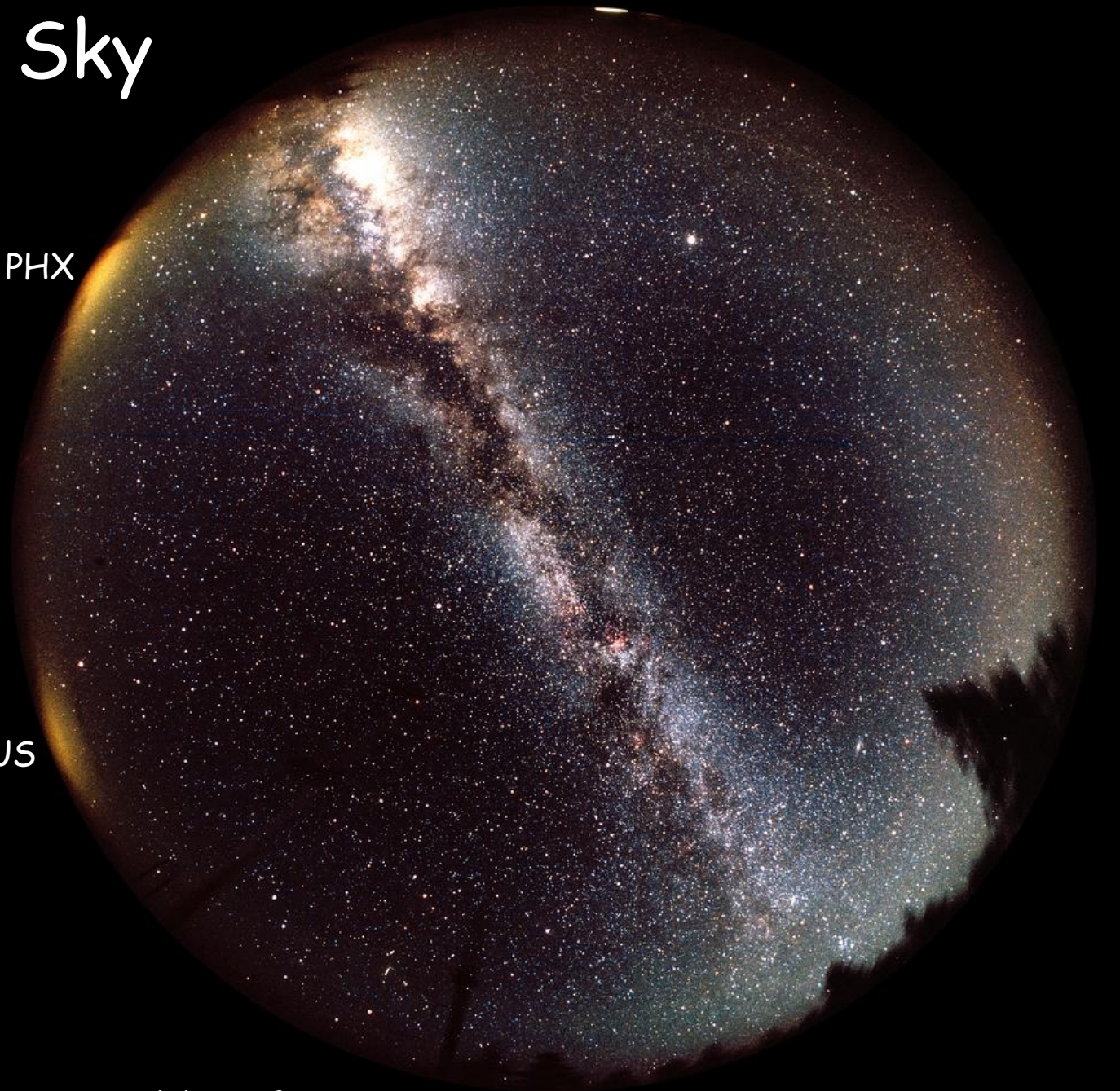
# The Night Sky

PHX

TUS

07-Apr-2003

D. Officer, P. Welch, UofA



# Andromeda Galaxy



07-Apr-2003

C. Barban & H. Dole

# Spiral Galaxy



Spiral Galaxy NGC 1232 - VLT UT 1 + FORS1

ESO PR Photo 37d/98 (23 September 1998)

©European Southern Observatory



# Barred Galaxy



Barred Galaxy NGC 1365  
(VLT UT1 + FORS1)

ESO PR Photo 08a/99 (27 February 1999)

© European Southern Observatory



# Elliptical Galaxy

## The peculiar elliptical galaxy Messier 87



Two Micron All Sky Survey  
– Northern Facility –  
2MASS Atlas Image

# M83 Galaxy



ESO/VLT

07-Apr-2003



Galaxy



ESO/WFI

07-Apr-2003

# Galaxy



ESO/VLT

07-Apr-2003

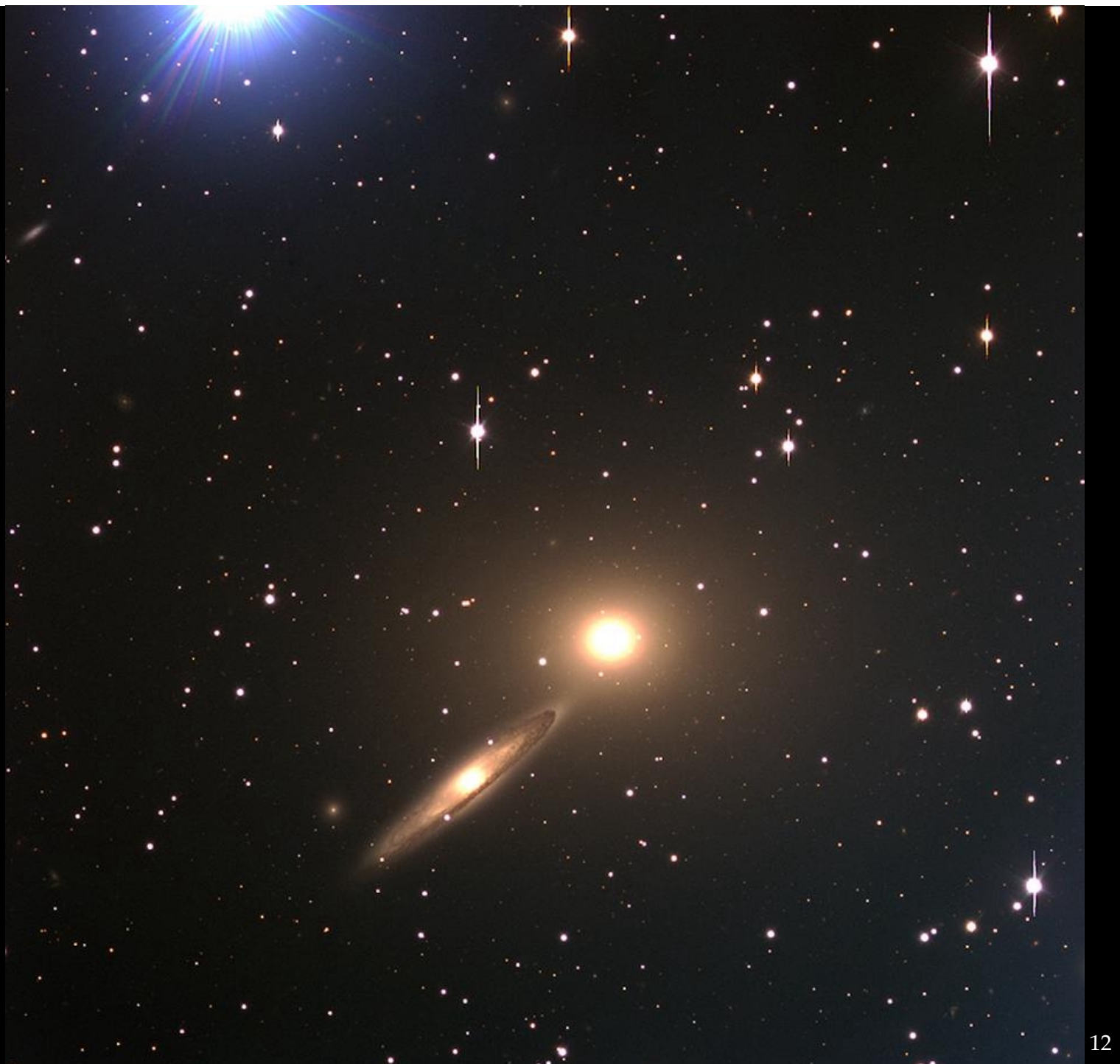
# galaxies



2MASS

07-Apr-2003

# Galaxy Pair



ESO/VLT

07-Apr-2003

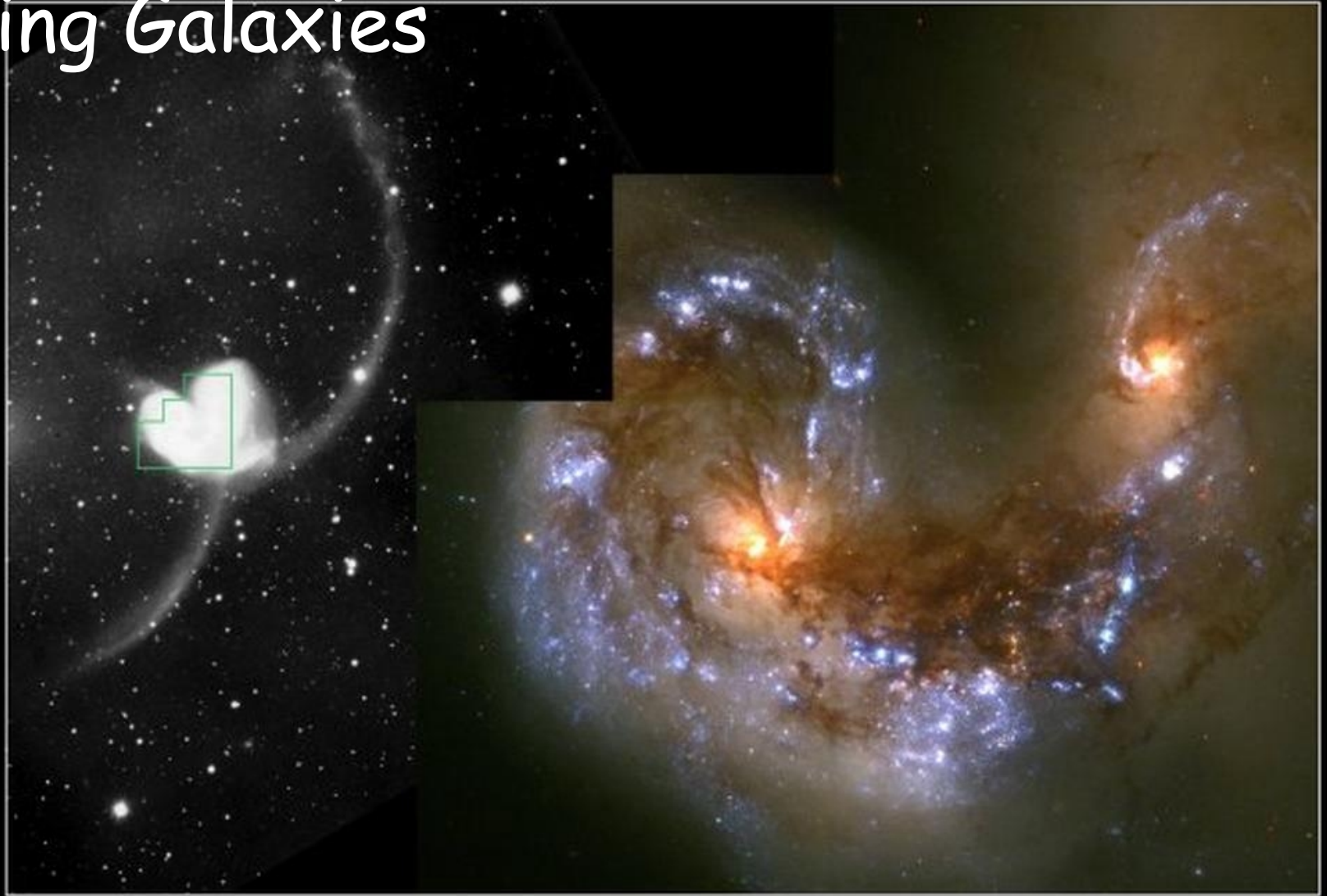
# Interacting Galaxies



ESO/VLT

07-Apr-2003

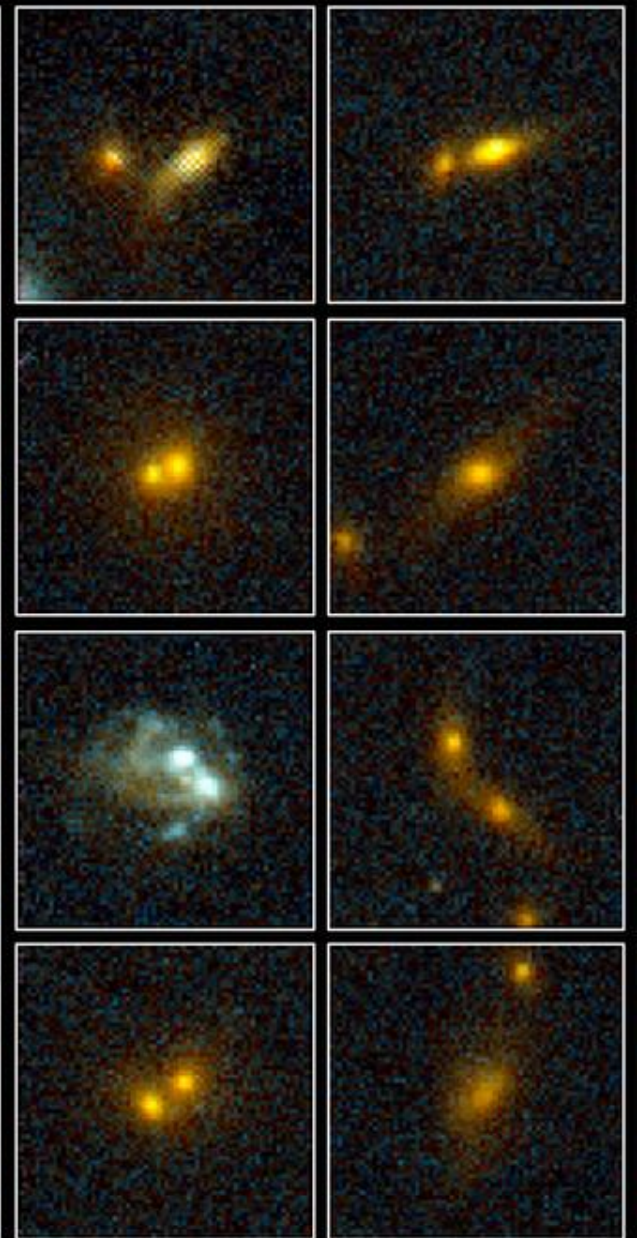
# Colliding Galaxies



**Colliding Galaxies NGC 4038 and NGC 4039**  
Hubble Space Telescope • Wide Field Planetary Camera 2

PRC97-34a • ST ScI OPO • October 21, 1997 • B. Whitmore (ST ScI) and NASA

# Galaxy Cluster



**Galaxy Cluster MS1054-03**

PRC99-28 • STScI OPO • P. van Dokkum (University of Groningen), ESA and NASA

**HST • WFPC2**

07-Apr-2003

C. Barban & H. Dole

15

# One of the Deepest Views Of Galaxies



**Hubble Deep Field**

**HST WFPC2**

07-Apr-2003

ST ScI OPO January 15, 1996 R. Williams and the HDF Team (ST ScI) and NASA

16