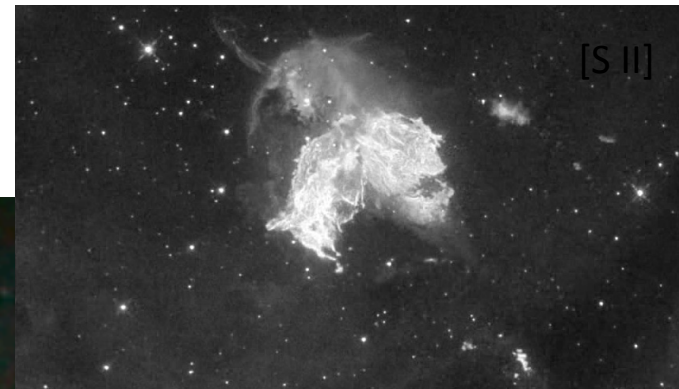




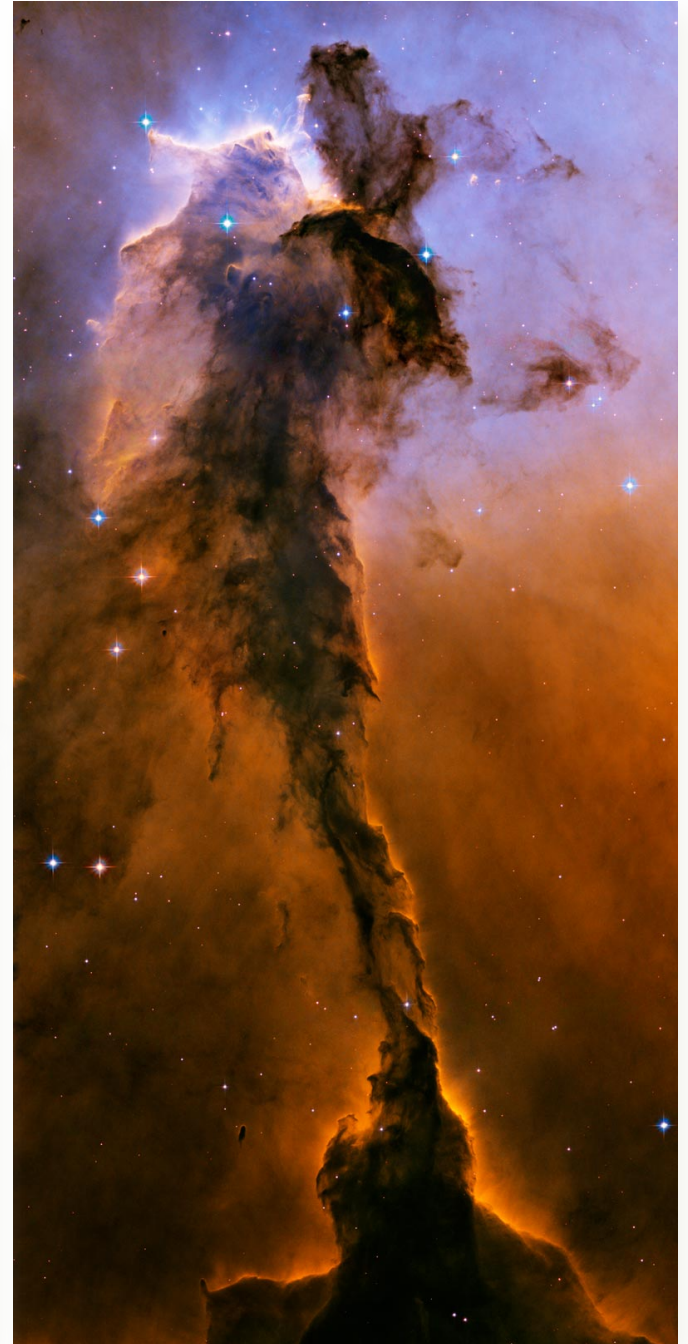
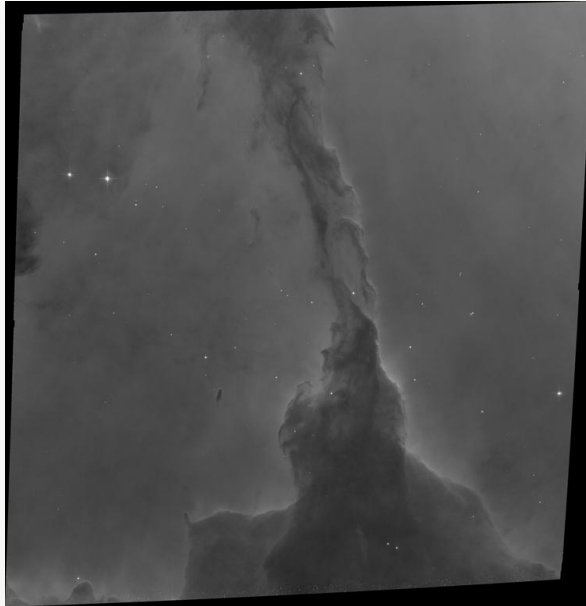
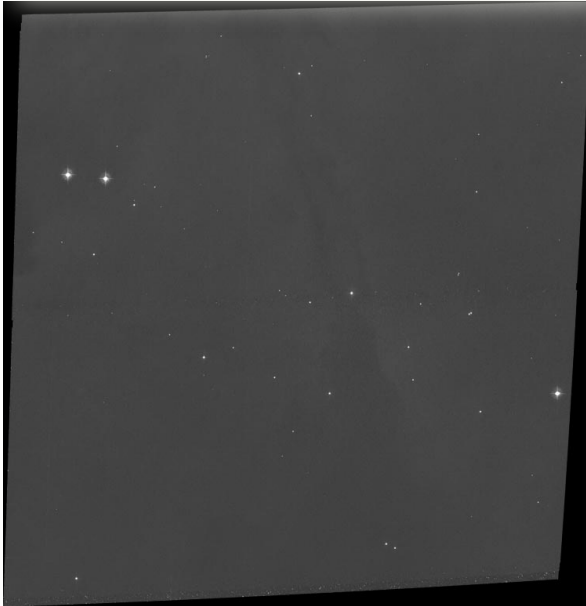
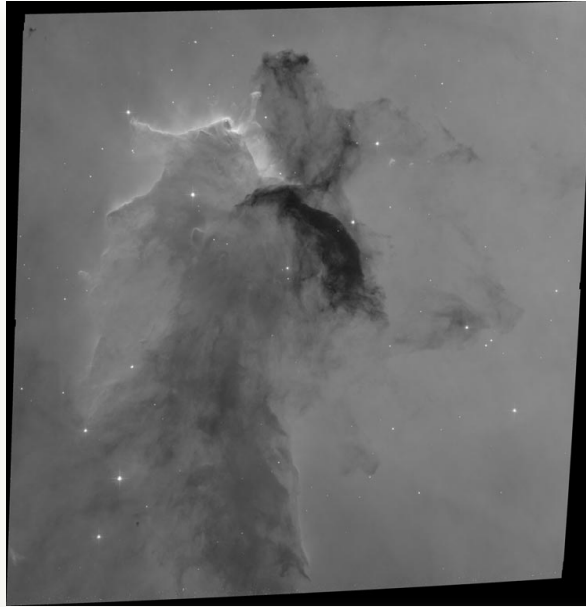
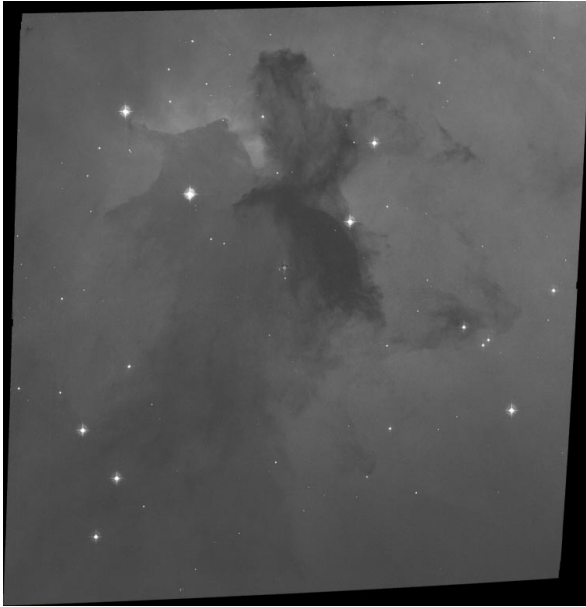
**In Depth:**  
**The Hubble Heritage  
Project and Website**

Lisa Frattare

# Archival Observation



# Heritage Observation

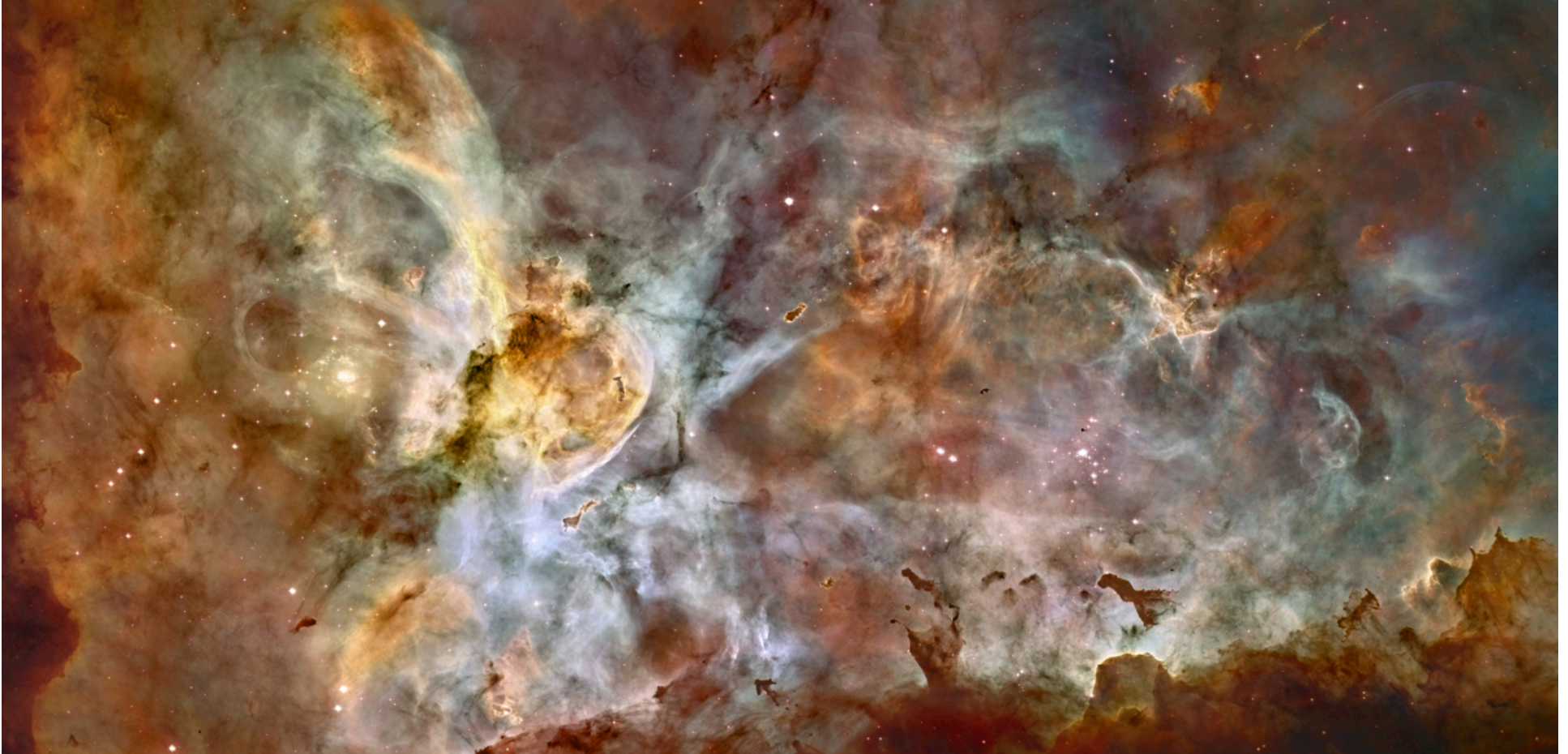


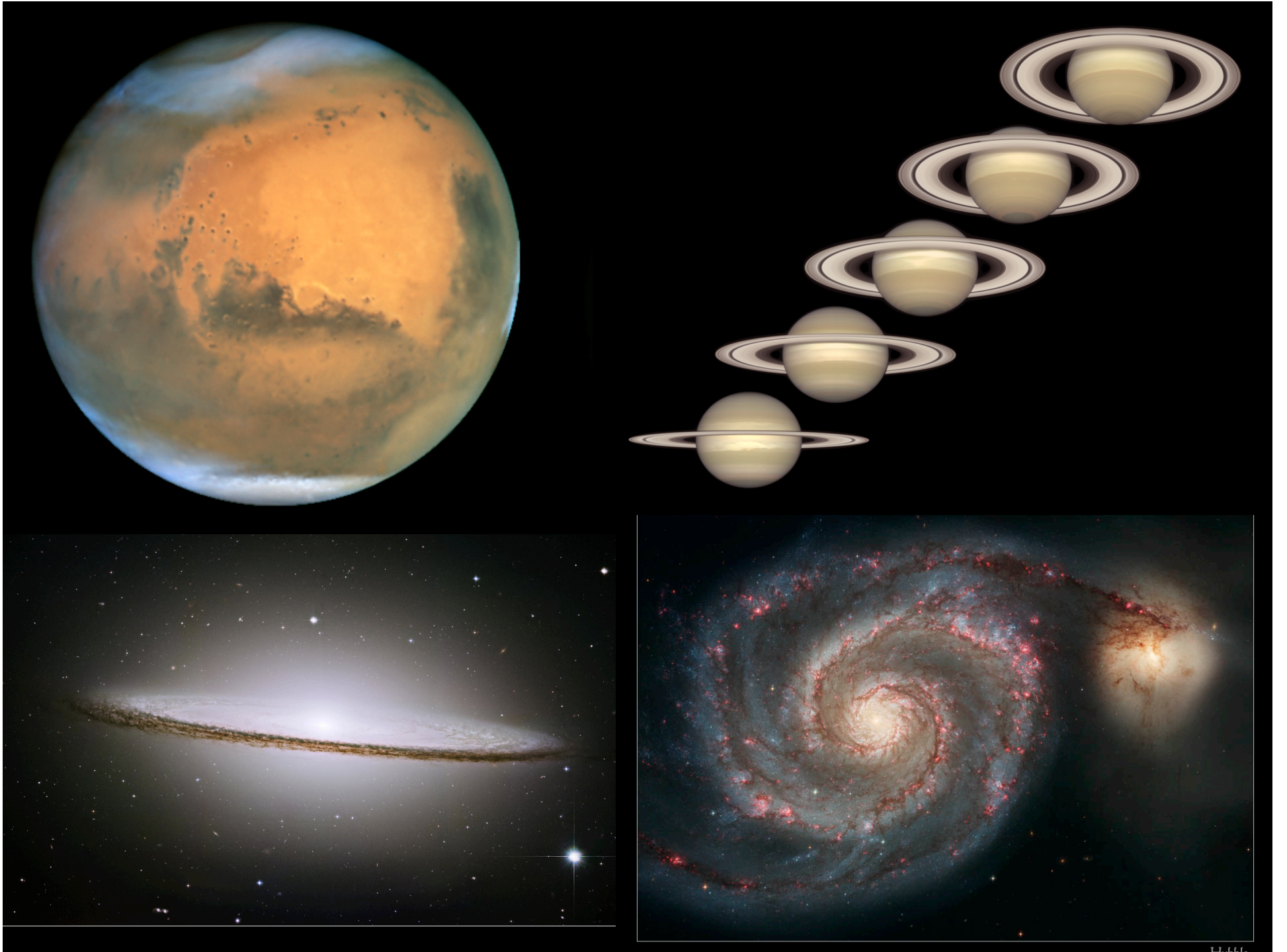
# Heritage Composite

Single Filter (LRGB)

(L) HST/ACS: H-alpha+[N II]

(RGB) CTIO: [S II], H-alpha, [O III]





# Hubble Heritage Project

<http://heritage.stsci.edu>

Releasing an image a month since 1998  
Drive is aesthetics in addition to science  
Small allotment of orbits yearly  
Also add to science data already taken





Richard Whitaker  
Summer 2000



Jonathan Sachsman  
2000 - 2001



Simon Crawshaw  
Summer 2001



Jisoo Lee  
2001 - 2002



Tiffany Borders  
Summer 2002



Eric Masiello  
2002 - 2003



Lindsay Sargeant  
Summer 2003



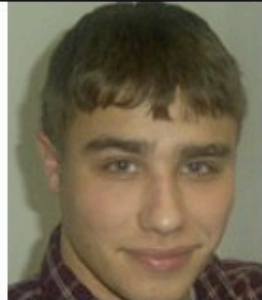
Vitya Blay  
2003-2005



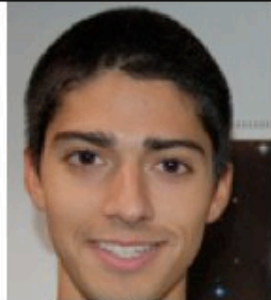
Marie Lu  
Summer 2004



Lisseth Gavilán  
Summer 2005



Michael Hamilton  
2005 - 2006



Amit Kapadia  
Summer 2006



Milad Afkhami  
2006-2008



Brian Ferguson  
Summer 2008



Babak Vint  
2008 - 2009



# the Hubble Heritage project

THIS MONTH'S RELEASE :



information center

gallery

pan & zoom gallery

black & white gallery

hubble art

awards

future of hubble





[monthly image](#)

[image gallery](#)

[information center](#)

[hubble art](#)

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[fast facts](#)

[biographies](#)

[supplemental](#)

[original images](#)

## The Hubble Heritage Project

Supernova Remnant LMC N 49



Hubble  
Heritage

## The Hubble Heritage Project

### **FREEWHEELING GALAXIES COLLIDE IN A BLAZE OF STAR BIRTH**



A dusty spiral galaxy appears to be rotating on edge, like a pinwheel, as it slides through the larger, bright galaxy NGC 1275 in this NASA Hubble Space Telescope image.

These images, taken with Hubble's Wide Field Planetary Camera 2 (WFPC2), show traces of spiral structure accompanied by dramatic dust lanes and bright blue regions that mark areas of active star formation. Detailed observations of NGC 1275 indicate that the dusty material belongs to a spiral system seen nearly edge-on in the foreground. The second galaxy, lying beyond the first, is actually a giant elliptical with peculiar faint spiral structure in its nucleus. These galaxies are believed to be colliding at over 6 million miles per hour.

NGC 1275 is about 235 million light-years away in the constellation Perseus. Embedded in the center of a large cluster of galaxies known as the Perseus Cluster, it is also known to emit a powerful signal at both X-ray and radio frequencies. The galaxy collision causes the gas and dust already existing in the central bright galaxy to swirl into the center of the object. The X-ray and radio emission indicates the probable existence of a black hole at the bright galaxy's center.

While the dark dusty material in the Hubble image falls inward, NGC 1275 displays intricate filamentary structures at a much larger scale outside the image. This is a typical feature of bright cluster galaxies. Additional observational evidence of strong interactions between at least two galaxies, and possibly a few smaller

### About this Object

<b>Object Name:</b>	Carina Nebula, NGC 3372
<b>Object Description:</b>	Bright Neubla in the Milky Way Galaxy
<b>Position (J2000):</b>	R.A. 10h 44m 58.33s Dec. -59° 35' 56.05"
<b>Constellation:</b>	Carina
<b>Distance:</b>	Approximately 8,000 light-years (2,500 parsecs).
<b>Dimensions:</b>	This image is roughly 1.2 arcminutes (2.9 light-years or 0.9 parsecs) wide.

### About the Data

<b>Data Description:</b>	This image was created from HST data from the pure parallel program HST 9318: S. Casertano (STScI) and J. Frogel (OSU).
<b>Instrument:</b>	WFPC2
<b>Exposure Date:</b>	July 4/5, 2002
<b>Exposure Time:</b>	1.6 hours
<b>Filters:</b>	F450W ( <i>B</i> ), F606W ( <i>V</i> ), F814W ( <i>I</i> )

### About this Image

<b>Image Credit:</b>	NASA and The Hubble Heritage Team (STScI/AURA)
<b>Release Date:</b>	November 6, 2003
<b>Orientation/Scale:</b>	

## The Hubble Heritage Project

Megan Donahue  
Biography

Jennifer Mack  
Biography

Mark Voit  
Biography

John Trauger  
Biography

Jon Holtzman  
Biography

### Megan Donahue

Megan Donahue is an astronomer at the Space Telescope Science Institute, working as a research astronomer and as an archive scientist for the Multiwavelength Archive at Space Telescopes (MAST). Her research is mainly on clusters of galaxies: their contents - dark matter, hot gas, galaxies, active galactic nuclei - and what they tell us about the contents of the universe and how galaxies form and evolve. She grew up on a farm in Nebraska and received a bachelor's degree in physics from MIT, where she began her research career as an X-ray astronomer.

She has a PhD in astrophysics from the University of Colorado, for a thesis on theory



Megan Donahue

### Christopher Go

(Cebu, Philippines)

Christopher Go lives on the island of Cebu in the Philippines. He has been an amateur astronomer since 1986, the year of the return of Halley's Comet. He studied at the University of San Carlos where he received a BS in physics. While a student there, Chris and friends organized the University's first ever Astronomical Society.

Starting his amateur career with 10X40 binoculars, Chris Go would later own several different telescopes. He currently uses a Celestron C11 for planetary imaging.



Christopher Go

### Francesco Paresce

IASF, Bologna, Italy

Francesco Paresce is currently a senior astronomer with the Istituto di Astrofisica Spaziale e Fisica Cosmica in Bologna, Italy. He is also a consultant for the European Space Agency (ESA) on the ESA/NASA joint project for the Hubble Space Telescope (HST) and is a member of the Science Oversight Committee for the Wide Field Camera 3 that has been recently installed into the HST by the shuttle Science Servicing Mission 4. His research interest at the moment concerns the physics of star formation in super star clusters in the Milky Way and the Magellanic Clouds. He worked in the past for ESA as the project scientist for the Faint Object Camera on HST and for the European Southern Observatory as



Francesco Paresce

### Elena Sabbi

(ESA/STScI)

Elena was born and raised in Bologna, Italy. She received her PhD in 2005 at the University of Bologna studying the effects of dynamics on stellar evolution in globular clusters.

Elena is interested in the questions of how star formation occurs, how it is affected by local and global conditions, how different dynamic conditions may influence the evolution of a stellar population, and how the evolution of stellar populations impacts the chemical evolution of galaxies. In pursuing these goals, she has investigated simple stellar populations, such as young star forming regions and old globular clusters, and more complex stellar populations, such as those commonly found in nearby dwarf galaxies.



Elena Sabbi with daughter Luce

### Selma de Mink

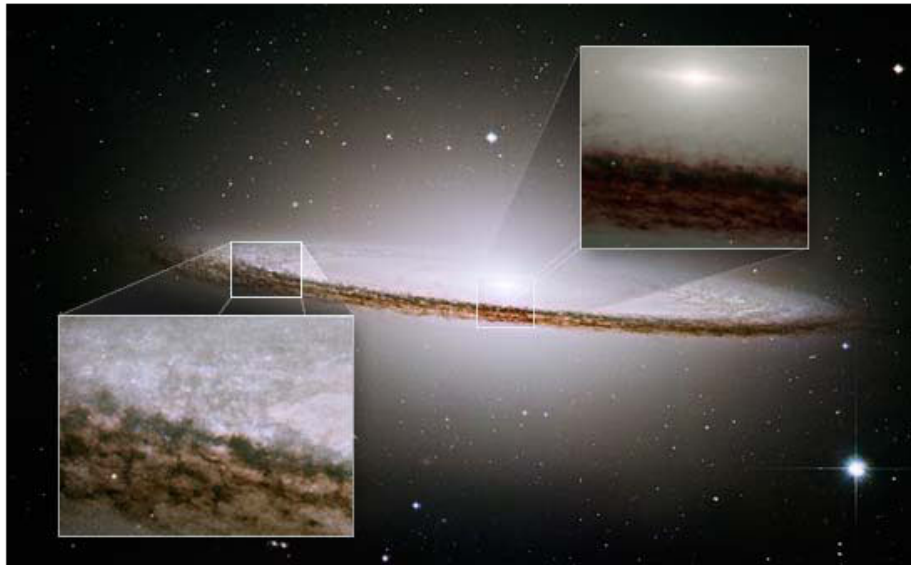
(STScI)

Selma de Mink was born in the Netherlands and studied physics and mathematics at the University of Utrecht. After an internship in Spain at the Instituto de Astrofisica de Canarias, she decided to continue in Astronomy. Before starting the Ph.D. program at Utrecht she took some time off to study Spanish and work as volunteer teaching English and astronomy at a primary school in a small, remote village in Guatemala. In 2010 she graduated cum laude from Utrecht and was awarded a NASA Hubble Fellowship. After spending some time at the Argelander Institute in Bonn, Germany, she moved to the United States.



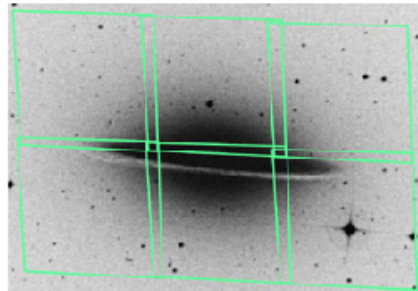
Selma de Mink

## The Resolution of the Advanced Camera for Surveys

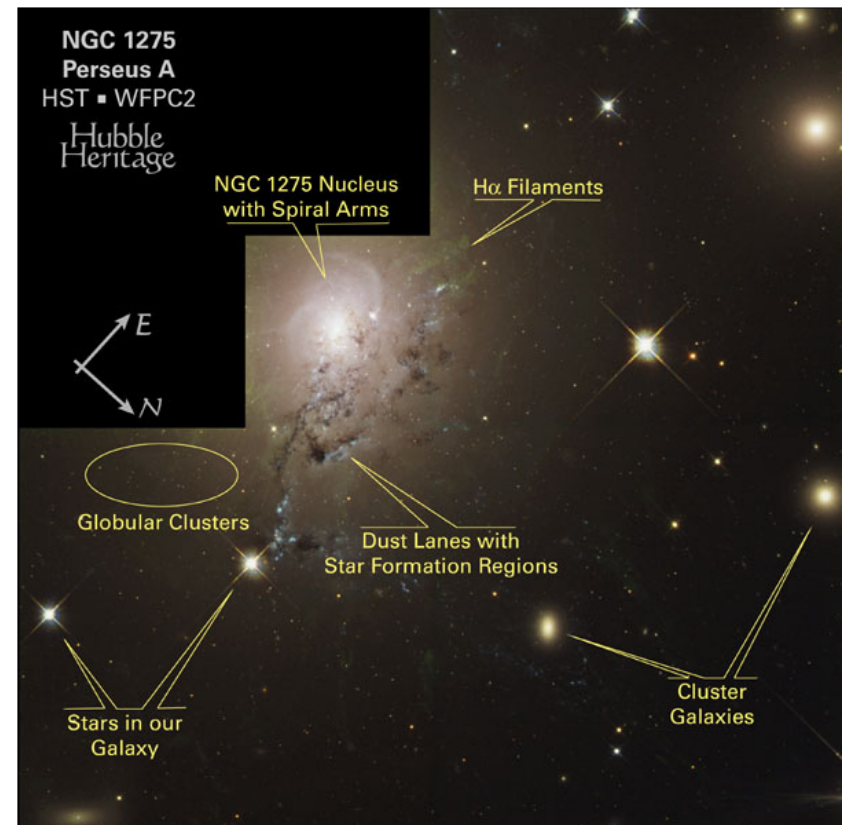


Click on boxes for a "true resolution" image of that detail.

The Hubble Advanced Camera for Surveys (ACS) detector is the largest that has been placed onboard Hubble. Each detector is roughly 4096 x 4096 pixels and each pixel represents a view that is 0.05 arcseconds in the sky. The Heritage image of the Sombrero galaxy is a mosaic of six ACS pointings, (consecutive positions of the telescope arranged in a 3 x 2 matrix. The final result is the highest-resolution image of the Sombrero that has ever been taken with any ground- or



## Supplemental Content





## The Hubble Heritage Project



### ALLURING ALIGNMENTS

BY JOSHUA SOKOL (STSci)

The startling juxtaposition of galaxies in NGC 3314 reminds me of a well-known painting, Rene Magritte's *The Son of Man*. In a radio interview, the Belgian surrealist was asked about his work's iconic imagery. "Well, so you have the apparent face, the apple, hiding the visible but hidden, the face of the person," Magritte replied. He elaborated:

"We always want to see what is hidden by what we see. There is an interest in that which is hidden and which the visible does not show us. This interest can take the form of a quite intense feeling, a sort of conflict, one might say, between the visible that is hidden and the visible that is present."

It may seem strange that Magritte would draw such a distinction between the visible-present and visible-hidden. Shouldn't saying something is "visible" imply that it isn't hidden? But I suspect many astronomers I know might find Magritte a kindred spirit; might notice that he expresses a familiar notion. If you follow Magritte's words, he might as well be describing the psychological and philosophical pressures driving the project of science — and especially astronomy.



Rene Magritte.

# Gallery and Gallery Index



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- [STScI-PRC09-21 Release](#), [Full-Resolution Images](#)



## **Hubble 19th Anniversary Arp 194 (April 21, 2009)**

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- [Original Images](#) and [Supplemental Material](#)
- [STScI-PRC09-18 Release](#), [Full-Resolution Images](#), [High Level Science Products](#)



## **Hubble "You Decide" Winner Arp 274 (April 3, 2009)**

- [Big Display](#), [Photo Caption](#) and [Object Fast Facts](#)
- [Biographies](#), [Original Images](#) and [Supplemental Material](#)
- [STScI-PRC09-14 Release](#), [Full-Resolution Images](#), [High Level Science Products](#)



## **Saturn Moon Transits (March 17, 2009)**

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- [Biographies](#), [Original Images](#) and [Supplemental Material](#)



# Hubble Heritage Image Gallery

Gallery View

Index View

Category View



# Art Inspired by Hubble



## THE FINAL PILGRIMS

High above the oasis of Earth, your belly reflecting  
The dappled azure glow of oceans rolling far below,  
You are waiting patiently for your final pilgrims to arrive.  
Soon they will climb to you on twin pillars of fire –  
Hauling themselves up out of Terra's gravity well  
By their bleeding fingernails – to find you sailing  
So serenely through the void, your mighty wings

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literature **visuals** other art forms

## Hubble Heritage Art

Contemplation (By [Ray Lustig](#))

[click to see Original Hubble Images](#)

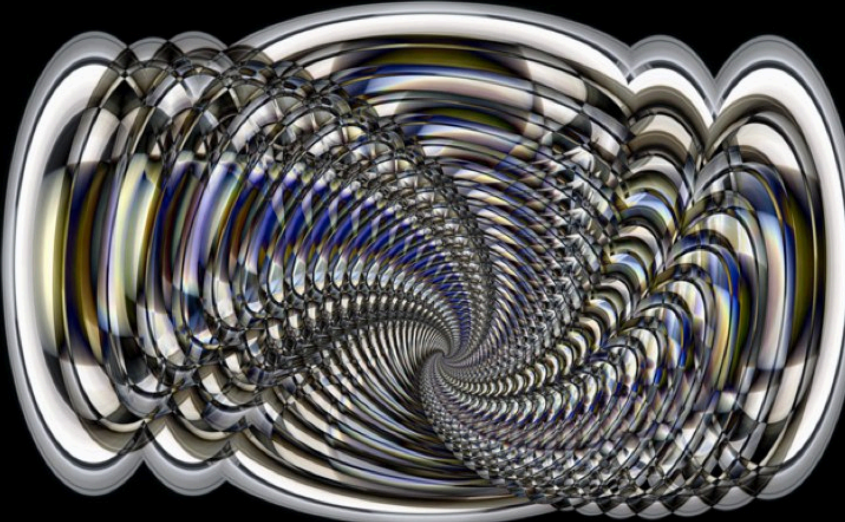
[← Previous Image](#)

[Next Image →](#)

[Heritage Home](#) → [Hubble Heritage Art](#) → [Visuals](#) ⇒ **Abstract Image 31**

literature **visuals** other art forms

# Hubble Heritage Art




Visuals Music Literature Other Art Forms

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literature **visuals** other art forms

# Hubble Heritage Art



Milo Reckow: Art vs Inspiration

"Planetary Nebula NGC 2440" Heritage release 2007-09



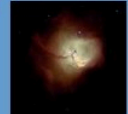
Visuals Literature Other Art Forms


## Musical Composition

### Richard Arnest


Rick Arnest was a Ford Foundation Future Scientist of America (in Junior High School) before he began his musical career. He continues to cherish his love for Astronomy. Ever since the first pictures from HST became available he has been fascinated with their amazing quality and diversity.

"Children of Light" movements:

- 

[At The Beginning](#)  
MP3 1.8MB
- 

[Maia](#)  
MP3 7MB



Richard Arnest

## Quilts

