

# Sky Scanning

Howard County  
Recreation and  
Parks

Howard  
Astronomical  
League



September 19th, 2015



# Introductions

# Welcome to HALO

## Howard Astronomical League Observatory at Alpha Ridge Park



Image Courtesy of HAL  
member Chris Miskewicz

# HALO Information

- HAL was founded in 1999 with the goal of building an observatory in Howard County for the Watson Telescope
- Built in cooperation with Howard County
- Construction began in February 2015
- Grand opening held on July 25, 2015

# Watson Telescope Information

- The Watson telescope was hand made in 1937 by machinist Joseph Woods for Dr. Paul Watson
- Classic Newtonian telescope with a 12 inch mirror and F6 focal ratio
- Restoration of the telescope was completed in 2005
- Restoration of the mount was completed in 2011

# Modern Additions to the Telescope

- HAL uses a video assist camera to capture the images from the telescope and display on a television for public viewing.
- The mounts original clock drive was replaced with a modern motor drive

# Finding Objects

- There is no computer guiding or movement of the telescope
- Except for a motor to track the sky all pointing must be done manually

The image features a dark, star-filled night sky as a background. The stars vary in size and brightness, with some appearing as distinct points of light and others as soft, glowing clouds. The text "Lets Use It!" is centered in the middle of the frame, rendered in a blue, serif font. The overall composition is simple and visually appealing, with the text standing out clearly against the dark, textured background.

**Lets Use It!**

# Our Closest Neighbor

- The moon is 240,000 miles away
- It is the largest satellite relative to the planet it orbits
- Tidally locked to Earth
- Dark areas are called “Seas” and represent ancient areas of lava
- White streaks or “Rays” are ejecta from relatively new impact craters

# The Moon



Crater Endymion

Crater Atlas

Crater Hercules

Mare Crisium (Sea of Crisis) – Ancient meteor impact early in the life of the moon

Taurus –Littrow– Apollo 17 Landing Site

Mare Tranquilitatis (Sea of Tranquility) – Apollo 11 Landing Site

Crater Theophilus – 100 KM across & central mountain 2 KM high

Crater Cyrilius – 98 KM across

Image Courtesy of HAL  
Watson Telescope

# A Little Farther Out

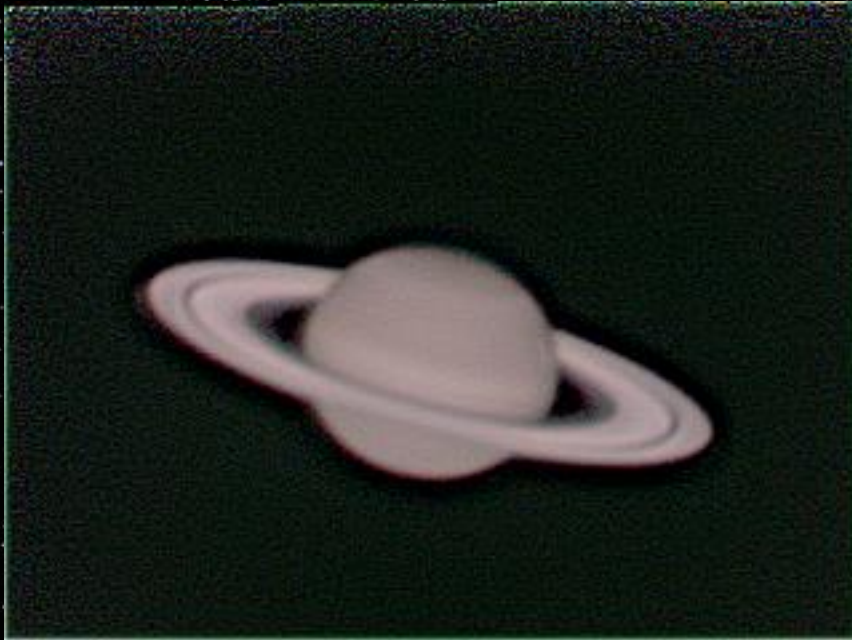
- The solar system consists of 8 major planets and several dwarf planets
- 4 Rocky inner planets – Mercury, Venus, Earth Mars
- 4 Gas/Ice outer planets – Jupiter, Saturn, Uranus, Neptune
- Only 1 major planet is visible right now

# Saturn

The image shows a vast field of stars of varying brightness against a black background. In the upper center, the word "Saturn" is written in a large, white, serif font. In the lower right quadrant, there is a small, faint white dot representing the planet Saturn. The stars are scattered throughout the frame, with some appearing as bright, multi-pointed flares.

Image Courtesy of HAL  
Watson Telescope

# Saturn



- Currently located below and to the left of the Moon
- Bright and orange in color.
- Saturn “Spins” like a top causing the rings to change positions in relation to the Earth
- The rings of Saturn were edge on in 2009 and will be again in 2024

# Tonight's Sky

- Lets Take a look at what is in the night sky right now
- Rising in the East is 2 constellations
  1. Pegasus
  2. Andromeda

# Tonight's Sky - East



# East

- The body of Pegasus is called “The Great Square”
- Andromeda shares one of the corner stars of the great square
- The Andromeda Constellation contains the Andromeda Galaxy
- The Andromeda Galaxy is the closest Galaxy to the Milky Way

# Andromeda Galaxy



Image Courtesy of HAL  
Watson Telescope

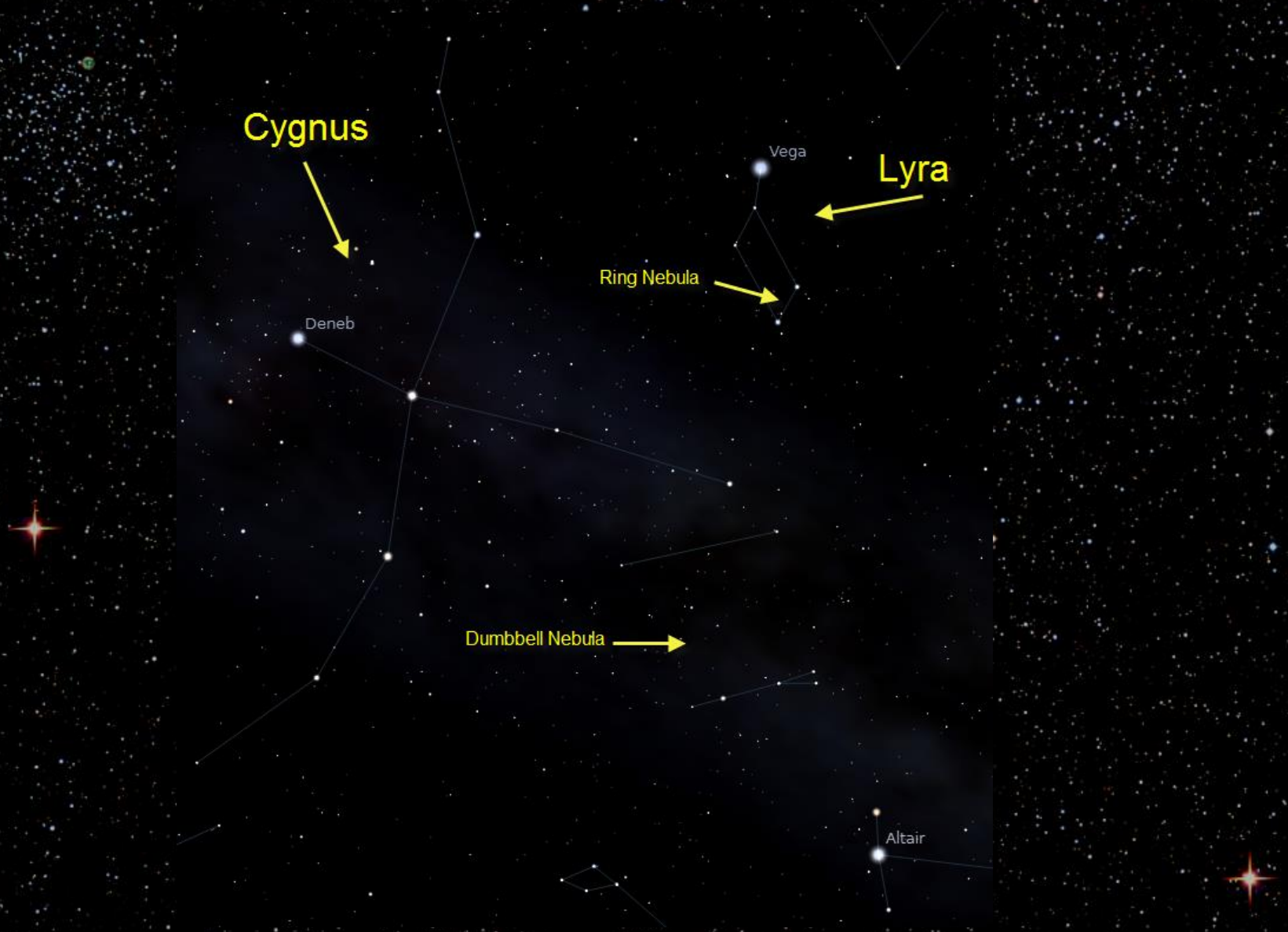
# Andromeda Galaxy



Image Courtesy of HAL  
member Chris Miskewicz



# Tonight's Sky - Zenith



# Zenith

- Cygnus rules the top of the sky tonight
- Lyra is just past zenith
- Deneb in Cygnus, Vega in Lyra and Altair in Aquila make up the “Summer Triangle”
- 2 bright planetary nebula are nestled in this area of the sky

# M57 – Ring nebula



Image Courtesy of HAL  
Watson Telescope



# M57 – Ring nebula



Image Courtesy of HAL  
member Victor Sanchez



# M27 – Dumbbell nebula



Image Courtesy of HAL  
Watson Telescope



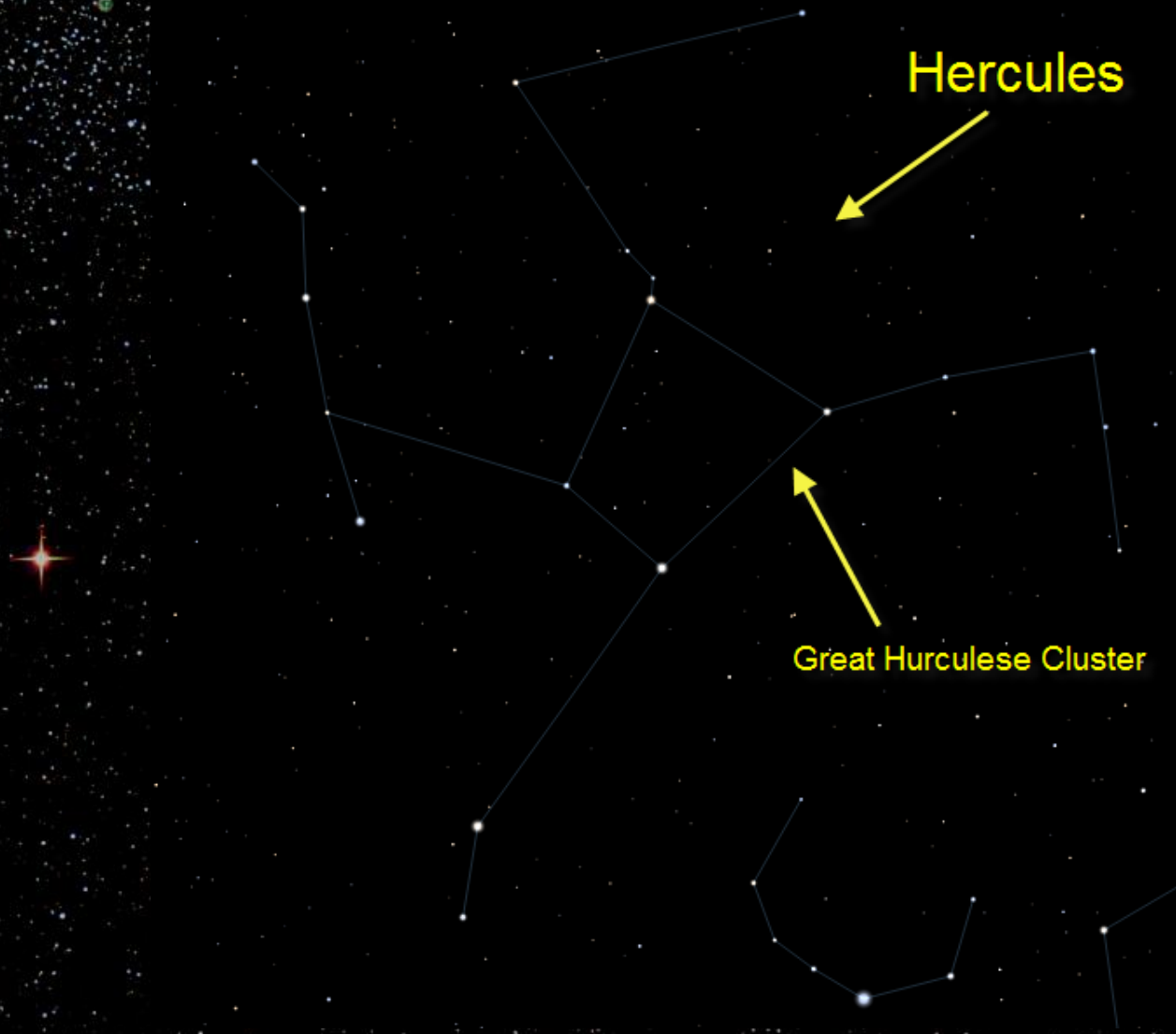
# M27 – Dumbbell nebula



Image Courtesy of HAL  
member Mike Krauss



# Tonight's Sky - West



# West

- The great hero Hercules is starting to descend in the west
- The body of Hercules is called the “Keystone”
- The great Hercules globular cluster is the brightest cluster in the Northern Hemisphere

# M13 – Hercules Cluster



Image Courtesy of HAL  
Watson Telescope



# M13 – Hercules Cluster



Image Courtesy of HAL  
member Mike Krauss



Thank You!

Please enjoy the rest of your evening  
Remember to keep scanning the sky!

Questions?