

# Howard Astronomical League

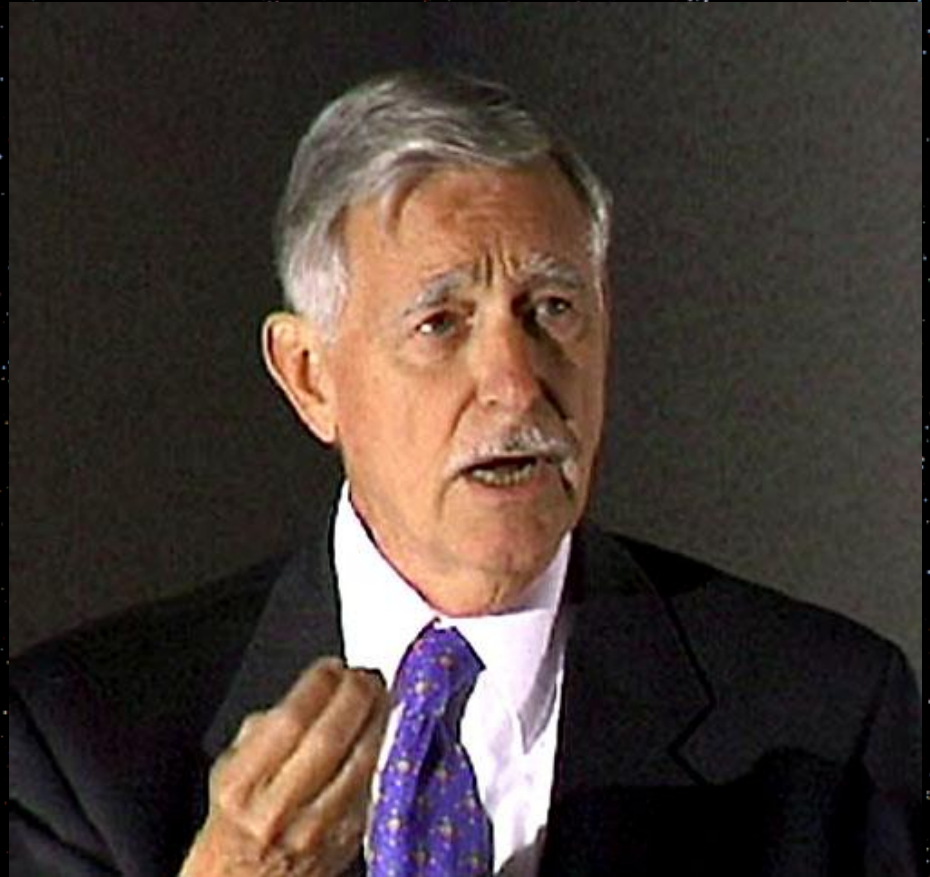


January 16<sup>th</sup>, 2014


# Passed Celestial Pioneers



John Dobson,  
1915-2014



Halton "Chip" Arp,  
1927-2013



**Astronomical  
League Observing  
Club Awards**

# Chris Todd

## Meteor Observers Club





# Upcoming club activities

# Star Parties and public outreach!

None until March.



**Member's  
astrophotos and  
sketches**



Richard Orr

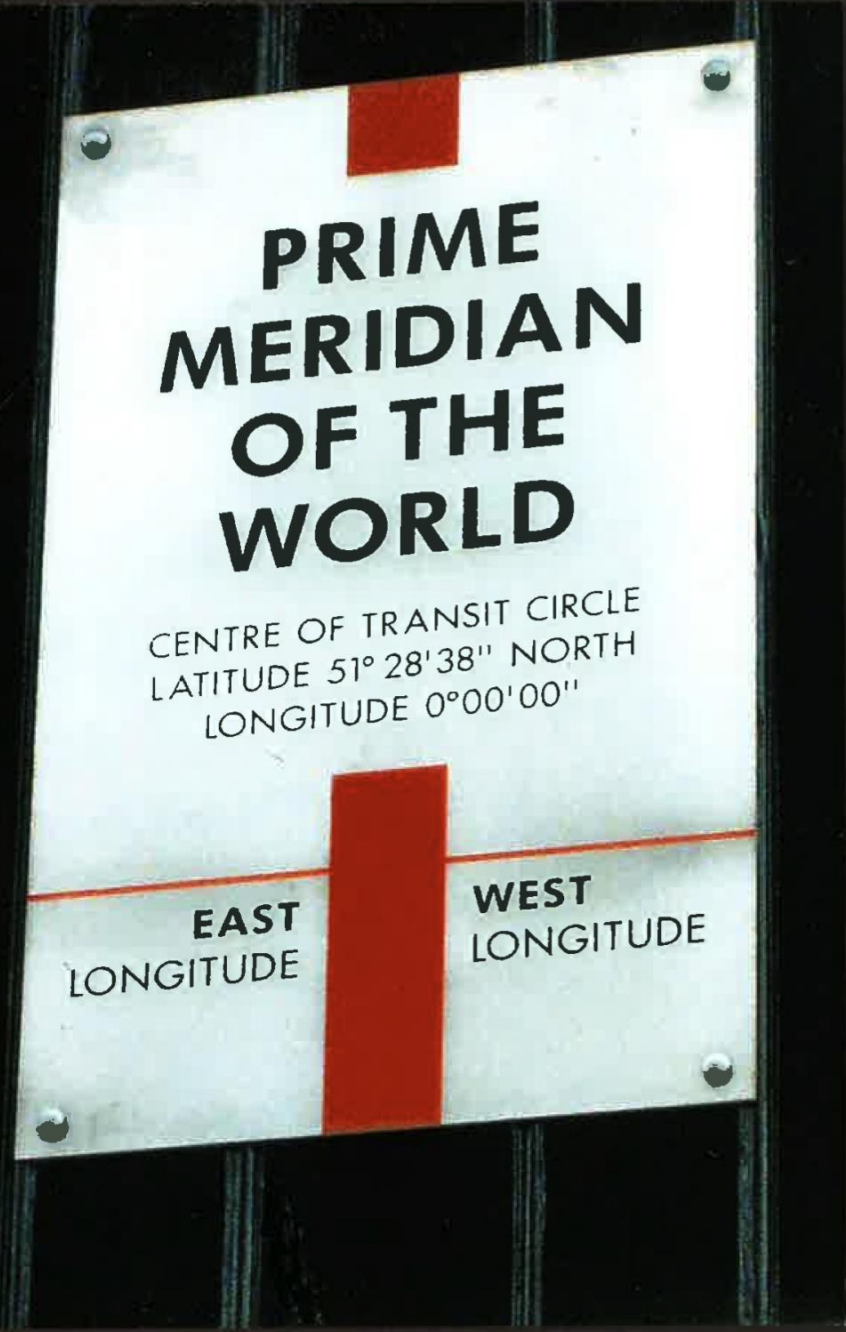


Richard Orr

Victor Sanchez



Herman Heyn





**Orion Widefield**  
**Chris Miskiewicz**  
Carrs Mill Park, MD  
December 27, 2013  
Canon T3i  
Canon 70-300mm IS-ISM Lens @70mm  
Meade ETX Fork Mount  
ISG 1600 (59s x 122)  
Astronomiks GLS Clip-In EOS Filter  
Total Stacked 1h 59m 58s in DSS  
Post Processed in PS CS4

# Chris Miskiewicz

Kemble's Cascade & NGC 1502  
Chris Miskiewicz  
October 4, 2013  
Orion ST-80 & Atlas Mount  
Canon XSi Ful Spectrum Modified  
1.25" Baader Moon & Skyglow Filter  
ISO 400 20s x 22 Total 7m 22s in DSS  
Post Processed In PS CS4



# Chris Miskiewicz



Triangulum Galaxy (M 33 / NGC 598)  
8" Orion Newtonian & Atlas Mount  
Orion Awesome Autoguider & PHD  
Canon T3i  
ISO 800 (119s x 36)  
No Filter Used

Chris Miskiewicz  
Alpha Ridge Park, MD  
November 2, 2013  
No Moon/Poor Sky Conditions  
1hr 11m 24s Total Stacked in DSS  
Post Processed In PS CS4

Joe Bohanon



Joe Bohanon





**Going Deep:  
Stars in M31**

# M31 Mosaic



*M31  
November 29, 2013  
Carr's Mill Park, Howard Co., MD*

*8-inch F/5 Newtonian  
15 x 4 minutes (1 hour)  
ISO 400*

*Canon Digital Rebel  
Coma Corrector  
Wayne Baggett*

# Initial Assertion

Assertion: My M31 mosaic contains images of individual stars within the Andromeda galaxy itself.

This was questioned, so why did I make the statement?

# Morphological Evidence

Faint blue stars are visible in regions  
with OB Associations in M31

Similar faint stars are missing from  
general field population

# M31 Mosaic



*M31  
November 29, 2013  
Carr's Mill Park, Howard Co., MD*

*8-inch F/5 Newtonian  
15 x 4 minutes (1 hour)  
ISO 400*

*Canon Digital Rebel  
Coma Corrector  
Wayne Baggett*

# M31 Close Ups



# Photometric Evidence

Previous observations showed I could reach  $V=13.5$  easily in 45 seconds

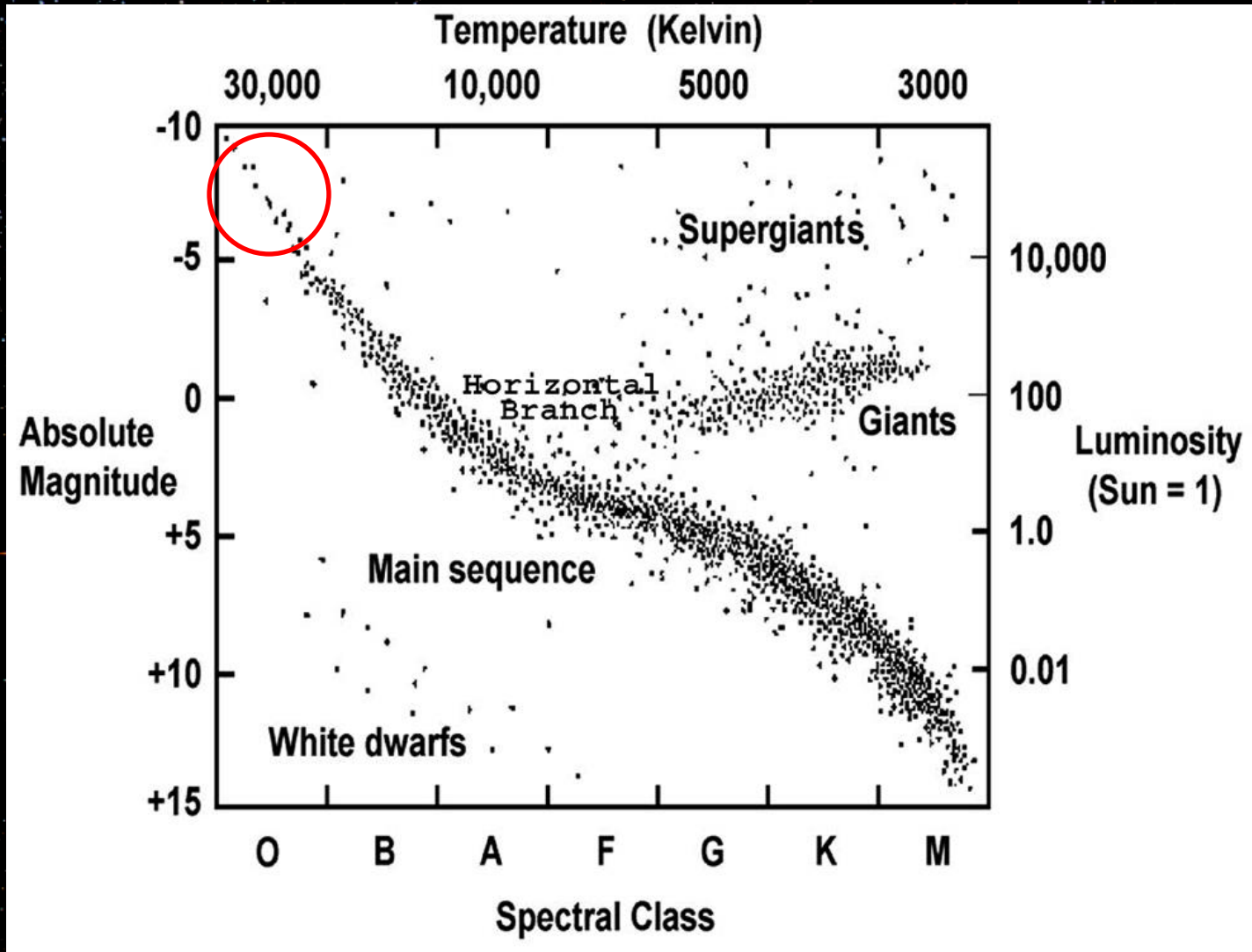
M31 mosaic was 60 minutes =  $80 \times 45$  seconds ( $\sim 3 \times 3 \times 3 \times 3$ )  $\rightarrow$  4 mags deeper or 17.5 should be easy

# Photometric Evidence

How bright are the brightest blue stars?

Look at an H-R diagram!

# Photometric Evidence



# Photometric Evidence

How bright are the brightest blue stars?  $M \sim -7.5$

Distance Modulus Equation:

$$m - M = 5 \log(d) - 5$$

For  $d = 2.2 \times 10^6 \text{ly} = 6.75 \times 10^5 \text{pc}$ ,

$m = 16.7 \rightarrow$  Easy in an hour!

# M31 Close Ups

Brightest blue stars in M31 should be easily visible in my mosaic!



A dark blue background filled with numerous small, bright white and yellow stars, creating a starry night sky effect. The stars vary in size and brightness, with some appearing as distinct points of light and others as soft, glowing halos. The overall composition is centered and balanced.

# HAL Treasurer's report

# HAL Treasurer's Report

Income		Expenses	
Individual memberships	\$2,100	PayPal fees	\$107.79
Family memberships	\$1,290	Overpayment	\$20.00
Contributions	\$1,290	Website renewal	\$120.87
Key deposit	\$50	UPS Store renewal	\$240.00
		Key deposits refunded	\$100.00
		Astronomical League dues	\$377.50
		Insurance	\$320.00
		IDA Membership	\$100.00
<b>Total income</b>	<b>\$4,730</b>	<b>Total expenses</b>	<b>\$1386.16</b>

# HAL Treasurer's Report

Current account balances:

PayPal account: \$714.67

Operating account: \$5,740.53

Observatory fund: \$14,487.63

Total monetary assets: \$20,942.83

A dark blue, starry night sky background with numerous small white stars and several larger, bright orange and yellow stars with prominent four-pointed diffraction patterns.

# HAL Board Elections

# HAL Board Elections

Nominees:

President: Chris Todd

First Vice President: Wayne Baggett

Second Vice President: Chris Miskiewicz

Treasurer: Joel Goodman

Secretary: Josh Farquhar

Events Coordinator: Open

**What's new for  
2014?**

# More Speakers

The image features a dark blue, starry background with numerous small, bright white and light blue stars scattered across the field. The text "Solar Max continues" is centered in a light blue, serif font. There are several prominent, larger stars with four-pointed diffraction patterns, including one bright orange star on the left and a cluster of blue and white stars on the right. The overall aesthetic is that of a deep space or night sky.

**Solar Max continues**



**More public  
outreach**

**The observatory  
gets built!**

**(No, really, we mean  
it this time)**

A dark blue background filled with numerous small white stars of varying sizes and brightness, creating a starry night sky effect. Some stars have prominent diffraction spikes.

**HAL Observatory  
project and Watson  
Telescope**



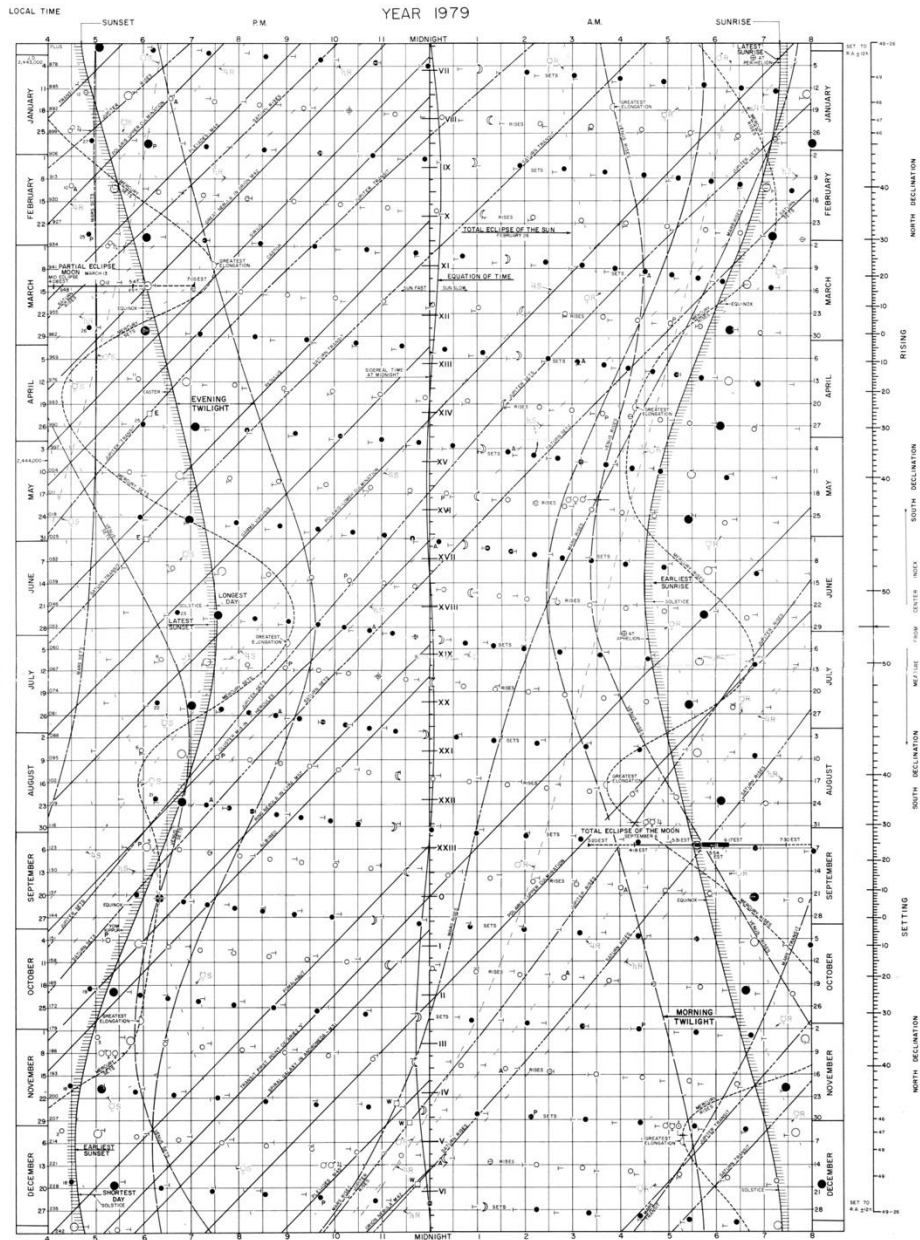
**Paul Watson, 1905-1986**

**Polaroid picture taken circa 1960**

# GRAPHIC TIME TABLE OF THE HEAVENS

## MARYLAND ACADEMY OF SCIENCES

YEAR 1979



LOCAL TIME

P.M.

A.M.

CALCULATION AND MASTER DRAWING: MICHAEL JAY JONES

DRAWINGMAN: JOSEPH W. RUTTER, JR.

ORIGINATOR: CARROLL F. WERRIAM, 1957

TIME SCALE

1 DIVISION = 5 MINUTES

1 DIVISION = 10 MINUTES

**SYMBOLS:**

☽ GREATEST ELONGATION

☾ FIRST QUARTER

☽ QUADRATURE

☾ OPPOSITION

● NEW MOON

☾ FULL MOON

☽ LAST QUARTER

☾

♃ URANUS

♄ JUPITER

♅ SATURN

♁ MARS

♂ MERCURY

♁ VENUS

♁ EARTH

♁ MARS

♂ MERCURY

♁ JUPITER

♁ SATURN

☉ THE MARYLAND ACADEMY OF SCIENCES

# Watson Telescope



# Watson Telescope



# Watson Telescope

1986: Paul S. Watson dies

1988: BAS receives donation of Watson scope

1999: Restoration project stalls, Howard  
Astronomical League formed

2000-2013: HAL develops relationship with  
Howard County Dept. of Parks and Recreation

2014: Observatory construction begins

# Observatory Project

15 foot ProDome purchased

20 foot wide accessible building, with storage

Telescope restoration completed (including  
optical testing)

Marty Cohen from Company 7 refurbished and  
motorized the mount

# Observatory Project



# Observatory Project



# Observatory Project









# Observatory Project



Map

Traffic

Alpha Ridge  
Community Park



50 ft

20 m

Thank You!

Next month's meeting is on Thursday,  
February 20<sup>th</sup>, 2014  
7:30 PM

Meeting theme:

I don't know yet