



Brian Ventrudo

Keep Looking UP!



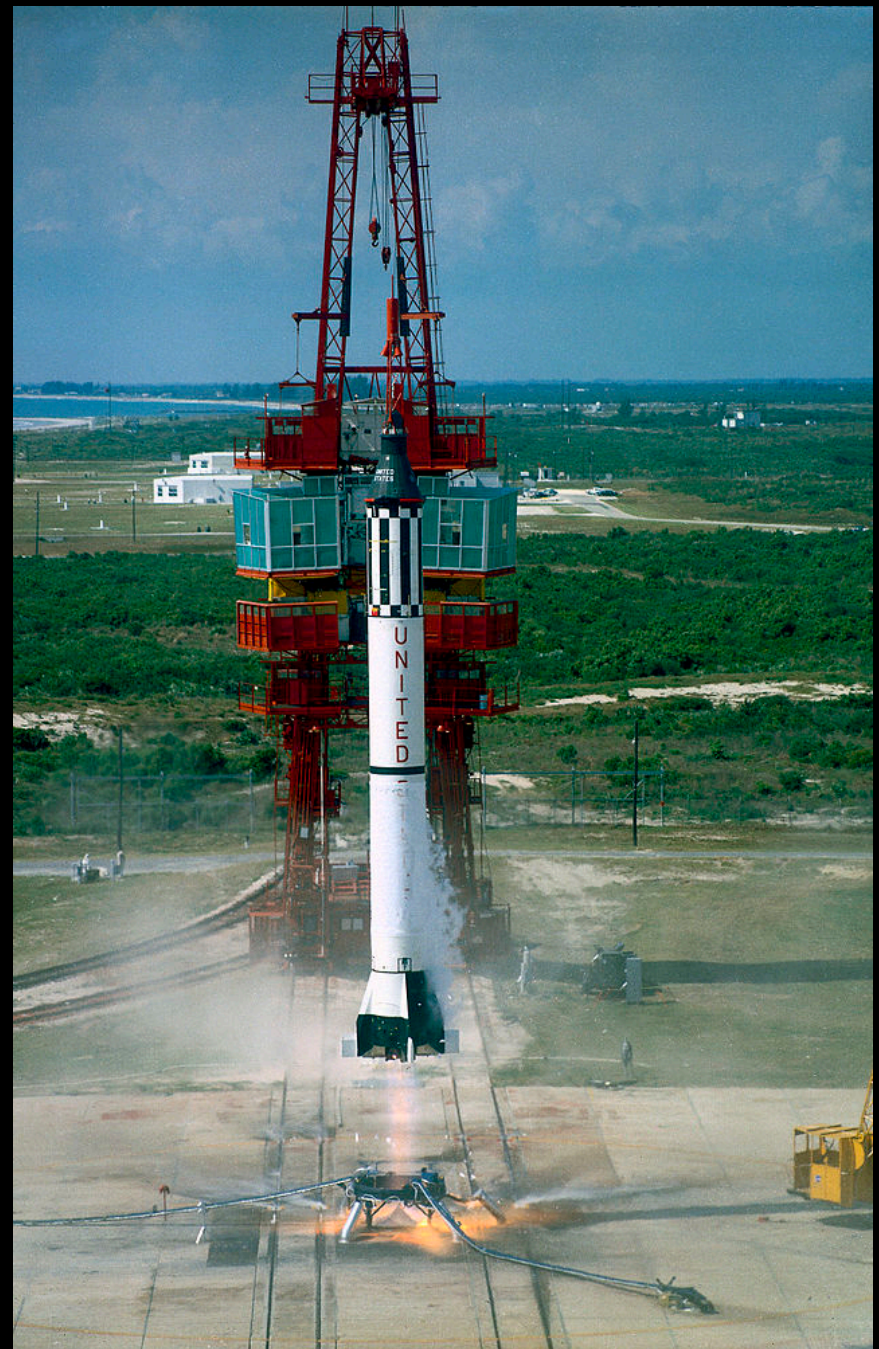
Why we do what we do...

Dr. Mike Reynolds

Professor of Astronomy, Florida State College
Executive Director, Association of Lunar & Planetary Observers









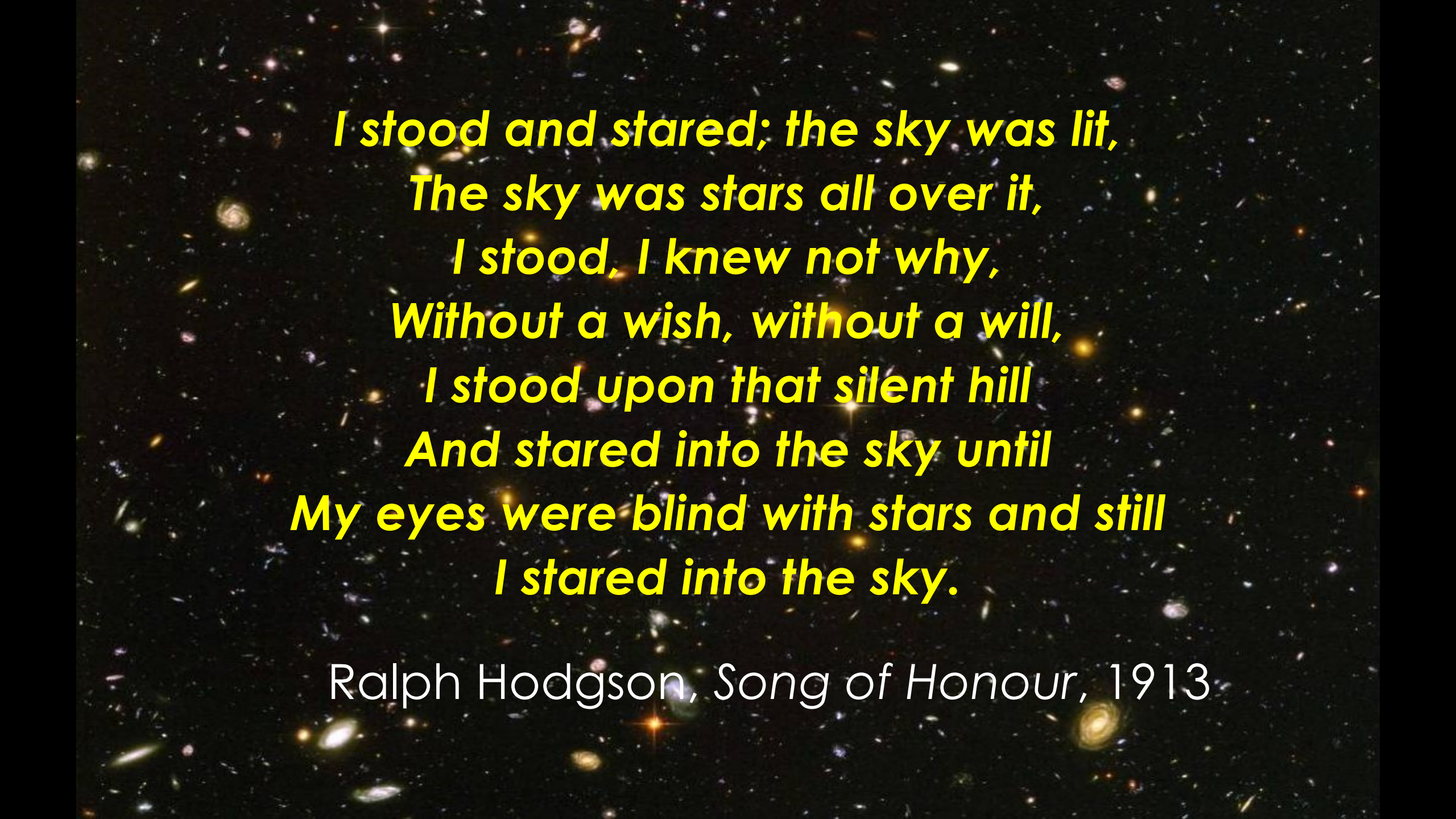










The background of the entire image is a deep space photograph, likely from the Hubble Space Telescope, showing a dense field of galaxies and stars. The galaxies are of various shapes and sizes, some appearing as bright, glowing clouds, while others are more distant and faint. The stars are scattered throughout the field, some appearing as sharp points of light and others as more diffuse, hazy patches. The overall color palette is dominated by deep blacks and greys, with occasional bright yellows, oranges, and blues from the celestial bodies.

*I stood and stared; the sky was lit,
The sky was stars all over it,
I stood, I knew not why,
Without a wish, without a will,
I stood upon that silent hill
And stared into the sky until
My eyes were blind with stars and still
I stared into the sky.*

Ralph Hodgson, *Song of Honour*, 1913



WANTED DEAD OR ALIVE



Comet ISON

Contact your local astronomer if
you have information leading to
the capture of this cosmic villain



SPACE CONQUEROR 3" REFLECTOR 60X TO 180X



... Only
\$29.95 Ppd.

OUTSTANDING FEATURES

- ★ 3" ALUMINIZED MIRROR
- ★ 3X FINDER TELESCOPE
- ★ 1/2" F.L. EYEPIECE
- ★ BARLOW LENS
- ★ FORK-TYPE EQUATORIAL MOUNT
- ★ LIGHTWEIGHT TUBE
- ★ HARDWOOD TRIPOD
- ★ 1 BOOK, 1 BOOKLET, STAR CHART
- ★ DIRECTIONS

EXCELLENT "FIRST TELESCOPE"

This wonderful telescope is the ideal, low-cost introduction to astronomy and the wonders of space and the stars. With it you can pursue a fascinating hobby. You can show your children the universe that will play such an important part in their future.

See Saturn's rings, Jupiter's moons, Mars, craters of the moon and the other wonders of the heavens. You will enjoy many hours of educational fun. From a construction standpoint, the Space Conqueror embodies so many features that experienced telescope enthusiasts consider essential for viewing the heavens. You'll have all the magnification power you can use effectively. This telescope is sturdily made, easy to use, and will provide years of enjoyment.

MIRROR... HEART OF YOUR TELESCOPE

Since the mirror is the heart of the telescope, it must be of fine optical quality. We are proud of this 3" aluminized, overcoated, 1/4" wave mirror. It has a focal length of 33", f/30, provides true viewing quality, easily aligned by means of three spring tension adjustment screws. Resolving power enables you to observe faint stars separated by as little as 3 seconds of arc. As for light gathering power, this quality mirror permits you to see stars to 10 1/2 magnitude.

3X FINDER... LOCATE STARS QUICKLY

Included with the Space Conqueror is a 3X finder telescope to help you quickly locate stars, planets, etc., for observation. See illustration.

60X EYEPIECE

You receive a 1/2" focal length 60X Ramsden eyepiece which provides more than enough magnification for viewing the wonders of the sky. In addition a Barlow lens which, when used with the 60X eyepiece, brings power to 180X... about maximum effective magnification for this size of telescope.

TUBE MOUNT AND TRIPOD

The tube is strong, spiral-wound Kraftboard with an attractive white covering. The inside is dull black to prevent glare and reflections.

Fork-type equatorial mount has a 40° polar axis, a feature not found on other telescopes in this price range. It allows an observer to follow a star's movement with only one movement of the telescope... easy to keep the star in view. Tripod sturdily constructed of durable hardwood, 36" high.

Also included, "How To Use Your Telescope" (36 page book); "Handbook of the Heavens" (272 page book); Star Finder; "Star Paths" booklet.

No. 85,050 \$29.95 Postpaid



ACCESSORY EYEPIECES

1/4" F.L. gives 120X with Space Conqueror. 320X with Barlow.

No. 30,195 \$3.75 Ppd.

1" F.L. (31X) Excellent for terrestrial or lunar observation.

No. 30,194 \$3.50 Ppd.

1/4" F.L. (41X) War surplus, mounted, symmetrical eyepiece. Fine for wide field viewing and astro photography.

No. 30,315 \$5.95 Ppd.

DELUXE 4 1/4" PALOMAR - TYPE REFLECTOR SPACE CONQUEROR 45X TO 270X

Only **\$84.50**

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Charges
Collect



OUTSTANDING FEATURES

- ★ 4 1/4" Spherical Mirror
- ★ 6X Finder Telescope
- ★ Two 1 1/4" Eyepieces
- ★ Rack & Pinion Focusing
- ★ Mounted Barlow Lens
- ★ 46" Aluminum Tube With Beautiful White Finish
- ★ True Equatorial Mount
- ★ 3" Setting Circles
- ★ Counter Balance
- ★ 24" Metal Pedestal
- ★ Full Instructions

COMPARE THE DELUXE SPACE CONQUEROR WITH ANY OTHER MAKE

You'll find it's the ideal telescope for quality-minded beginners and serious amateurs who want the features of ultra-expensive, professional telescopes, but at a bargain price. Schools all across the U.S.A. are buying it for space-age educational programs.

This American-made telescope gives all the power that can be used effectively in a 4 1/4" scope. It's so powerful you can read a newspaper headline 1 mile away! You'll see the moon's craters and seas, Saturn's rings, double stars, Jupiter's moons, etc. And it's easily portable... takes only a few minutes to mount.

MANY OUTSTANDING FEATURES

4 1/4" SPHERICAL MIRROR. 45" F.L., f/10. Accurate to 1/4 wave, resolves detail right to the theoretical limit. Pyrex, aluminized, overcoated, and in adjustable mount. TRUE EQUATORIAL MOUNT. Track the moon, sun and stars with only 1 movement. Adjusts to your latitude. Counterbalanced, two 3" setting circles, ultra-smooth movement, and large locking knobs.

2 EYEPIECES AND BARLOW. We include a 1" F.L., 45X Kellner achromatic eyepiece and a 1/2" F.L., 90X eyepiece, plus a mounted achromatic Barlow lens which doubles and triples the powers of the eyepieces. This gives you all the power you need; 135X, 180X & 270X.

46" LIGHTWEIGHT ALUMINUM TUBE provides a rigid mounting base that lasts a lifetime. Beautiful white finish.

6X FINDER TELESCOPE has achromatic objective with light shade, Ramsden eyepiece in spiral focusing mount, crosshair reticle, adjustable mount.

PEDESTAL BASE. A sturdy, 24" high support of heavy-gauge steel tubing. Reduces wobble and vibration.

FREE BONUS. "How To Use Your Telescope" (36 pages), "Handbook of the Heavens" (272 pages), Star Finder and "Star Paths".

No. 85,105 \$84.50 Shpg. wt. 42 lbs. Transp. Chgs. Coll.

DELUXE SPACE CONQUEROR WITH CLOCK DRIVE

As above but with electrical clock drive (pg. 137) added. Shpg. wt. 45 lbs.

No. 85,187 \$134.50 T.C.C.

IMAGE ERECTOR FOR DELUXE SPACE CONQUEROR

For terrestrial use. 2 fine-quality, coated achromats in chrome-finished brass tube (3 1/2" long) that fits any standard 1 1/4" eyepiece holder. Attach to eyepiece holder, insert eyepiece, and focus. Image is right side up and correct as to right and left.

No. 50,276 \$14.75 Ppd.

4 1/4" TELESCOPE WITHOUT MOUNT & PEDESTAL

Telescope tube, finder telescope, mirror, mirror mount, eyepieces... everything but equatorial mount, cap, and pedestal. Assembled. Shpg. Wt. 30 lbs.

No. 85,113 \$66.00 T.C.C.

WANT 540 POWER?

This 1/2" F.L. eyepiece gives powers of 180X and 540X when used with Barlow supplied with telescope.

No. 30,284 \$4.75 Ppd.

UNITRON



It takes only \$12.50 down to own this 2.4-inch UN

Little wonder that the UNITRON 2.4" Altazimuth Refractor has long been America's most popular low-priced refractor.

For UNITRON and only UNITRON combines unexcelled optical and mechanical performance with exclusive features designed to increase your observing pleasure. As an example, take UNIHIX — the Rotary Eyepiece Selector which relieves you of the burden of fumbling with eyepieces in the dark. Or, perhaps your observing situation may call for the DUETRON Double Eyepiece, the erecting prism system, the Astro-camera 220, or the sun screen.

Optically speaking, UNITRON Refractors duplicate the performance of larger telescopes of other types. Furthermore, there are no mirror surfaces to become tarnished, no secondary optics to

cause diffraction patterns, and no folding itself with consequent loss of definition. you see more and see better with a UNI

The UNITRON 2.4" Altazimuth Refractor complete with tripod, sturdy mounting, motion controls, four eyepieces, carrying including the new Achromatic Amplifier. Plan, a mere 10% down payment of UNITRON to you.

Write today for a free UNITRON catalog. With interest in astronomy at an all-time treat yourself to a UNITRON. After all, yo

See page 371 for more about Unitron.

UNITRON

INSTRUMENT COMPANY — TELESCOPE SALES DIV.
66 NEEDHAM STREET, NEWTON HIGHLANDS 61, MASS.



ENGINEERED FOR THE LAST WORD IN BREATHTAKING PERFORMANCE . . . PRICED FOR FIRST CHOICE IN VALUE . . . FULLY EQUIPPED WITH MANY EXTRA FEATURES!

You'll Marvel At How
The Superb Optics Of
This Portable RV-6

6-inch DYNASCOPE®

Gives The Same Exquisite Definition
As Far More Expensive Instruments!

This new addition to the Dynascope line has won immediate recognition from schools, colleges, and professionals, as an outstanding achievement in a 6-inch telescope. Although it was only recently introduced, our files are already filled with complimentary letters from excited amateurs and professionals all over the country. Each one is truly amazed at the superior optical performance of this new RV-6 6-inch Dynascope! Here is large aperture in a quality instrument at a price that compares with many 4-inch telescopes. And this low cost includes such exclusive extra features as electric drive (patented), setting circles, and rotating tube! There are no "extras" to run up your cost!

The superb optical system resolves difficult objects with definition that is absolutely breathtaking. The close tolerance of the precision construction assures an accuracy and smoothness of operation once associated only with the finest custom models. The heavy-duty mount, complete with electric drive, provides the stability so essential for satisfactory viewing, yet there is easy portability because in a matter of minutes the entire telescope can be dismantled into three easy-to-handle sections.

Only Criterion's engineering ingenuity, coupled with volume production and modern manufacturing methods, makes this handsome 6-inch model available at such reasonable cost. You can order it with complete confidence that it will live up to your expectations in assurance is guaranteed under our full-refund warranty or money order today. Or use our liberal and take months to pay.

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TURES (Except on Another Dynascope)

SYSTEM INCLUDES F/8 6-INCH PARABOLIC PYREX
than 1/2 wave, silicon-quartz coated, and guaran-
teed limits of resolution and definition. Temed
mounted in 4-vane adjustable spider.

ELECTRIC DRIVE with smooth self-acting clutch that
automatically as you seek different objects. Will
and operation is desired. Entire drive housed in
into ordinary household socket.

EYEPieces from the following: 65X 18-mm. Achrom-
7.7-mm. Achromatic Ramsden; 150X 9-mm. Achrom-
100X 10-mm. Orthoscopic; 220X 4-mm. Orthoscopic. All are
very images to extreme edges.

RIAL MOUNT extra-rigid design to provide
snapping side play or wobble. Adjusts easily to

both right ascension and declination. Handsomely
fine aluminum.

ACHROMATIC, COATED, with accurate crosshairs
cast-aluminum bracket with 8 adjusting screws

MAXIMUM VERSATILITY AND VIEWING COMFORT
rings are generous 1 1/2" wide with felt lining
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and allows for quick disassembly and portability.

WE WHITE 50" BAKELITE TUBE with porcelainized
at light. Walls are 1/8" thick, completely insulated
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ION EYEPiece HOLDER has precision-cut rack and
4 more positive focusing. Takes standard 1 1/4"

FREE, ALL-METAL TRIPOD with easily removable
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Including . . . • **ELECTRIC DRIVE (Patented)**
• **SETTING CIRCLES** • **ROTATING TUBE**

A Complete Instrument, No Costly Accessories Needed!

Model RV-6 Complete
with Dyn-O-Matic Electric Drive
and All Features Described Below

\$194⁹⁵

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ENJOY IT NOW FOR
ONLY \$74.95 DOWN

No need to put off the thrills
of owning this magnificent in-
strument! Send your check or
money order today for only
\$74.95 as full down payment . . .
pay balance plus small carrying
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or even 24 monthly payments.
Same unconditional guarantee
applies, of course. Or order
today by sending your check or
money order with coupon below.

Sound too good to be true?
Then read what these delighted
DYNASCOPE owners have to say:

"I never dreamed such a brilliant, clear image could be had with a telescope costing under \$200. It is one of those rare bargains that you find only once or twice in a lifetime."
B.S. — New Jersey

"A friend of mine has a 6-inch telescope without electric drive, for which he paid over \$100. He agrees that my new DYNASCOPE not only outperforms it, but is a much better-looking and better-built instrument!"
J.L. — New York

"Congratulations on the excellence of your workmanship. The optics are truly amazing. I never expected such wonderful performance."
L.W.N. — Massachusetts

Criterion Manufacturing Co.
Dept. STR-11, 331 Church St., Hartford 1, Conn.

☐ Please send me, under your MONEY-BACK guarantee, the RV-6, 6" Dynascope. Full payment of \$194.95 is enclosed.

☐ I prefer your easy terms! Enclosed \$74.95 as down payment with understanding that I will pay balance (plus small carrying charge) over 6, 12, 24 months (check choice).

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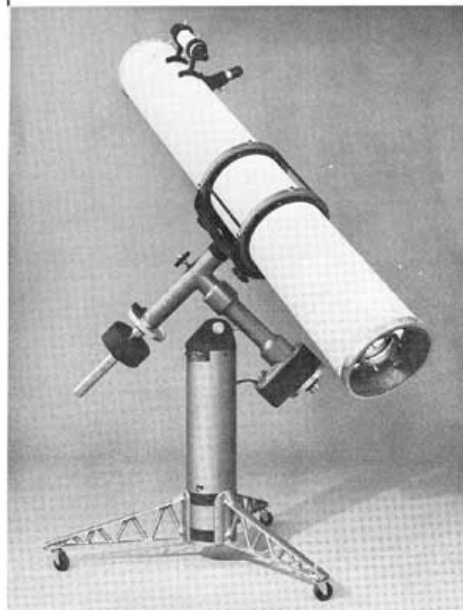
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8" MODEL "B" DELUXE NEWTONIAN — \$665

For detailed study of the planets, their moons, and other spectacles of the solar system, no instrument can match the cost-performance ratio of the classical Newtonian reflector. The very small size of the secondary mirror in a long-focus Newtonian means high effective aperture and minimum diffraction, for better planetary detail and contrast and for fine double-star resolution. The Newtonian optical system permits use of a convenient Barlow lens to multiply effective focal length for high magnification with comfortable, medium-power eyepieces. The system's classic simplicity results in higher light-gathering power, unmatched visual resolution — more performance for the dollar.



8" DELUXE CASSEGRAIN — \$995

On the other hand, if your interests are in special optics and astro-instrumentation, the Cassegrain configuration is more compact, and its focus location is suitable for a variety of instrument mountings. When equipped with the highest-quality optics, it, too, can be a fine performer for the serious amateur astronomer. Why not consult Cave Optical Company before making a final selection? Our advice is free. We build them all, and our optical department has figured more than 21,000 large optical surfaces. No job is ever hurried at the sacrifice of quality. That's why you can rely on Cave ASTROLA, as amateurs, professionals and industry all have done for many years.

ASTROLA NEWTONIAN REFLECTORS

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| 6" Student | \$ 235.00 |
| Student Deluxe | \$ 330.00 |
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| Model "A" Deluxe | \$ 495.00 |
| 8" Lightweight Deluxe | \$ 530.00 |
| Model "B" Standard | \$ 420.00 |
| Model "B" Deluxe | \$ 665.00 |
| 10" Standard | \$ 535.00 |
| Deluxe | \$ 860.00 |
| 12-1/2" Transportable | \$1350.00 |
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(Includes diagonal and aluminizing)

| | New | Refiguring |
|---------|----------|------------|
| 6" | \$ 75.00 | \$ 45.00 |
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| 12-1/2" | \$310.00 | \$160.00 |
| 16" | \$925.00 | \$550.00 |

Exclusive manufacturers and distributors of
MAGNUSON setting circles.

Eyepieces — \$24.50 each
Abbe Orthoscopic Orthostar
26.6, 20, 16, 10, 6.6 mm.

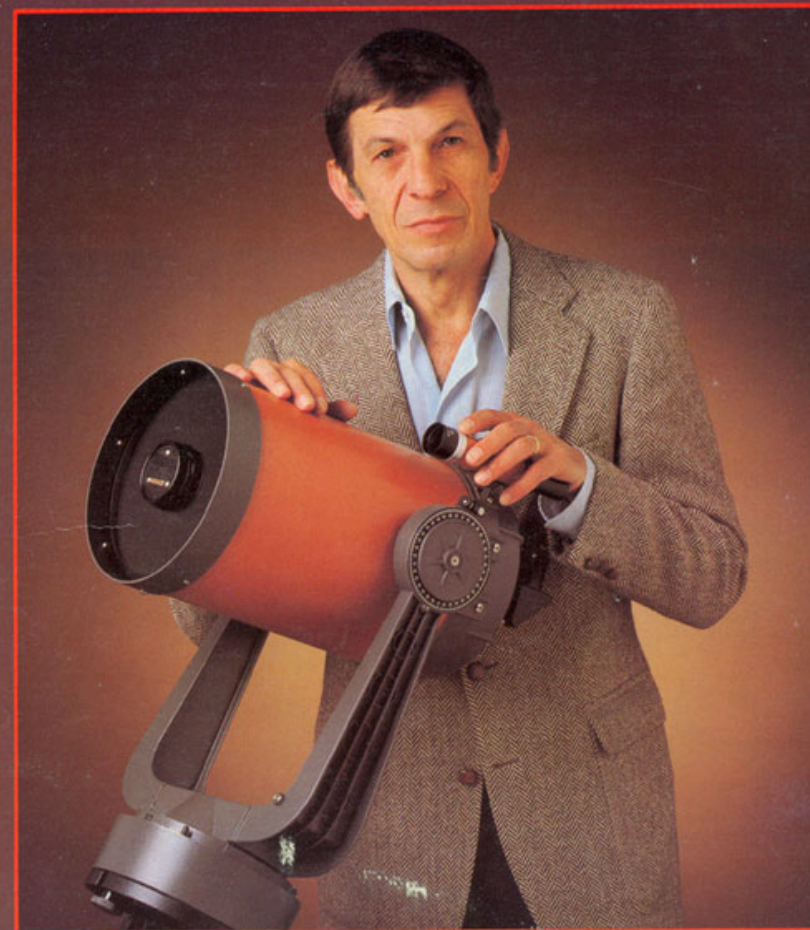
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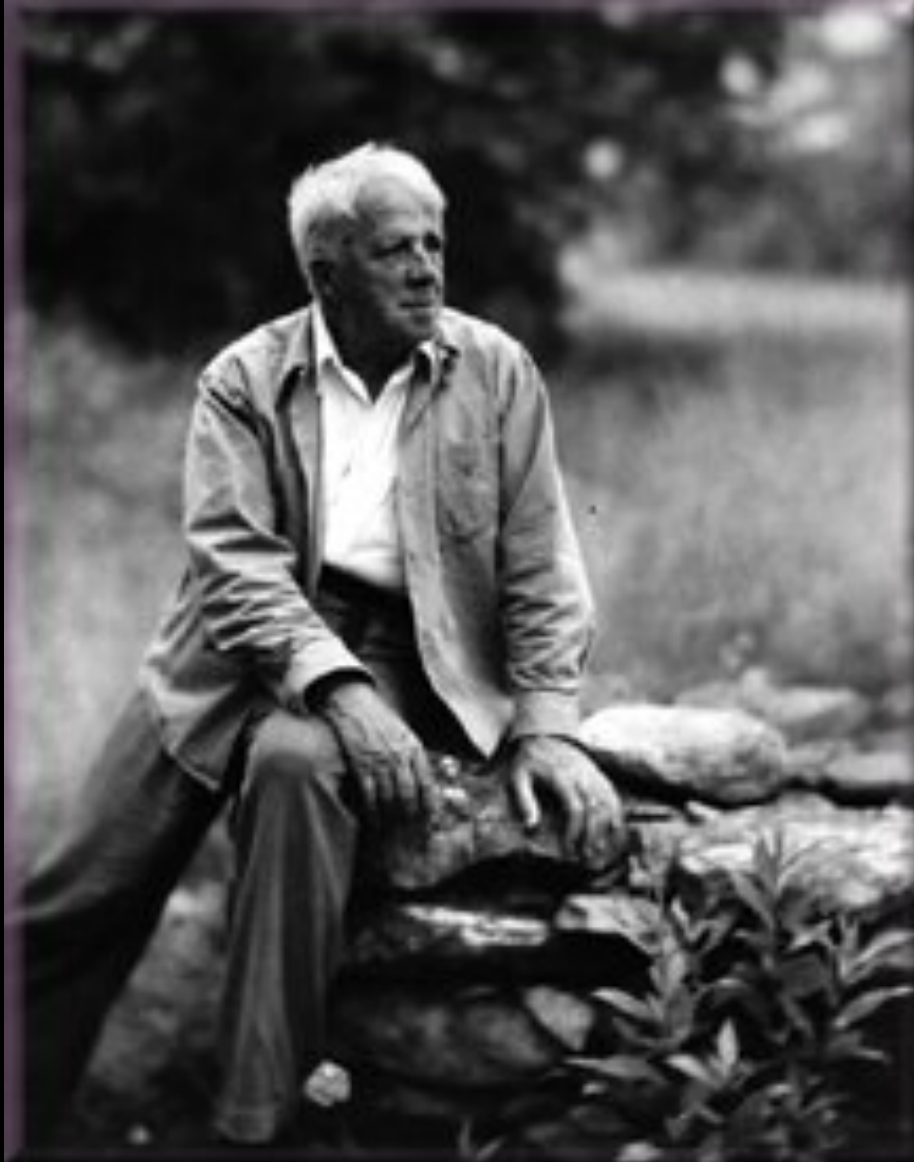
Leonard Nimoy and the Celestron C8 Telescope

TELESCOPES from CELESTRON®

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He burned his house down for the fire
insurance

And spent the proceeds on a telescope

To satisfy a lifelong curiosity

About our place among the infinities

...

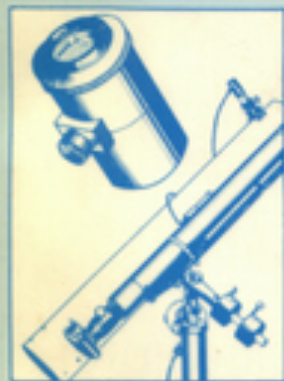
The strongest thing that's given us to see with's

A telescope. Someone in every town

Seems to me owes it to the town to keep one.

In Littleton it may as well be me.

Robert Frost
The Star-Splitter



All About Telescopes

by Sam Brown

No. 9094

Popular Optics Library

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OUR LENSES ARE UNEQUALED

So say the many purchasers at universities, laboratories, and government institutions. Prices and quality defy comparison.

Air-Spaced .. ASTRONOMICAL OBJECTIVES .. Air-Spaced

Specifically designed for those who demand an objective lens for genuine astronomical observation.

WHY BUY FROM US?

On the premise that the objective lens is the heart of the telescope, any prospective builder would certainly expect one that will perform to exacting specifications. Some may ask, "Why a refractor over a reflector telescope?" In the first place, a refractor is much easier to build and cheaper to maintain over the years. A reflector contains many small parts that are subject to wear or loosening, while the refractor is generally more compact, easy to store or carry, and needs little attention. When exploring the possibility of building an astronomical refractor telescope, the question is, "Which objective lens is best?" The answer is simple, and answered to by thousands of satisfied people in the know. "A Jaegers Astronomical Objective" is the only answer. Examine these pertinent facts:

Each lens is thoroughly tested and guaranteed to resolve to Dawes' limit. All are corrected for both the C and F lines (secondary chromatic aberration). The axial spherical aberration and the chromatic variation of spherical aberration are negligible. The cells are machined to close tolerances so that they fit directly over or into our standard aluminum tubing, eliminating any mounting problems. Test a lens, or have any qualified person test it; we are certain that you will be satisfied. If not, take advantage of our money-back guarantee. We offer the lowest-priced, hand-corrected, precision, American-made astronomical objective, mounted in an aluminum cell. Our reputation for high-quality lenses has established us as the most reliable source in the industry. All sent postpaid.



2960
1862
1860



1473



1471

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| 3 1/4" APERTURE f/15 — 48" F. L. | Cat. No. S1447 Mounted and Not Coated \$32.00 | 6" APERTURE f/10 — 60" F. L. | Cat. No. S1861 Unmounted and Coated \$170.00 |
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| 4 1/4" APERTURE f/15 — 62" F. L. | Cat. No. S1472 Mounted and Not Coated \$60.00 | 6" APERTURE f/15 — 90" F. L. | Cat. No. S1863 Unmounted and Coated \$170.00 |
| | Cat. No. S1473 Mounted and Coated 69.00 | | Cat. No. S1862 Mounted and Coated 165.00 |
| 6" APERTURE f/8 — 48" F. L. | Cat. No. S2961 Unmounted and Coated \$170.00 | NOTE: Dewcap (4" long) for mounted 6" objectives Cat. No. S2663, \$8.50 ppd. | |
| | Cat. No. S2960 Mounted and Coated 185.00 | Dewcap (6" long) for mounted 6" objectives Cat. No. S3101, \$10.50 ppd. | |







May 1974
Pages 338-339

AN OBSERVATORY MADE FROM A PREFABRICATED TOOLHOUSE

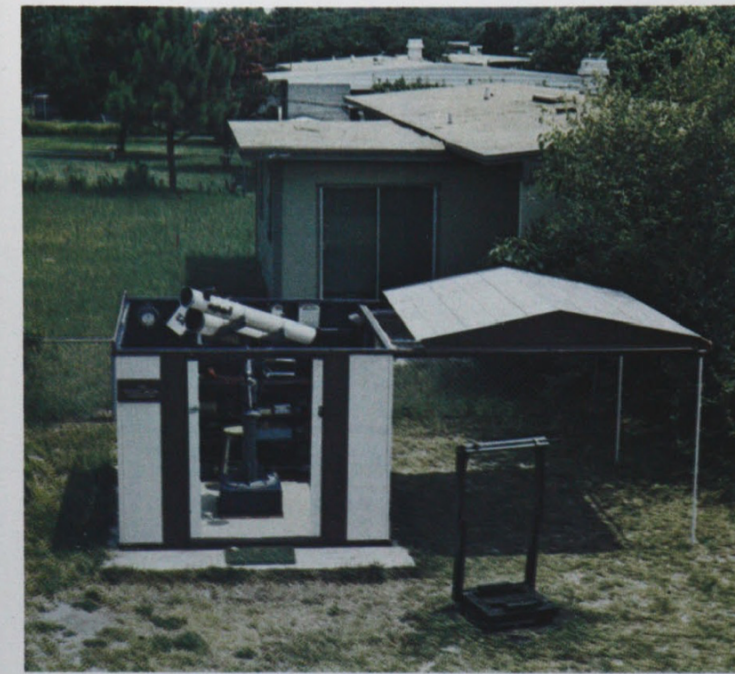
MANY AN AMATEUR would like an observatory of his own, but has not tried to build one because of expected high costs or design complexity. Yet the roll-off-roof project pictured opposite was quite inexpensive and very simple to put up.

The secret was in finding a slightly used prefabricated toolhouse for only \$50. Measuring 8 by 8 feet, this building is large enough for a short-focus 12-inch reflector, although at the time the project took shape my only instrument was a 4 1/4-inch reflecting telescope.

...

The observatory is named in honor of Michael Collins, command module pilot on Apollo 11, for he helped make possible the first manned landing on the moon.

MIKE REYNOLDS
1836 Birchwood Rd.
Jacksonville Beach, Fla. 32250



The Michael Collins Observatory in Jacksonville Beach, Florida, viewed from the north. Through the door can be seen the shelves along the south wall, where a shortwave radio is kept. The two telescopes, used together for astrophotography, are mounted high for better access to stars low in the sky.



Total Solar Eclipse of 1970 Mar 07

Geocentric Conjunction = 18:03:13.7 UT J.D. = 2440653.252242
 Greatest Eclipse = 17:37:51.4 UT J.D. = 2440653.234623

Eclipse Magnitude = 1.0414 Gamma = 0.4473

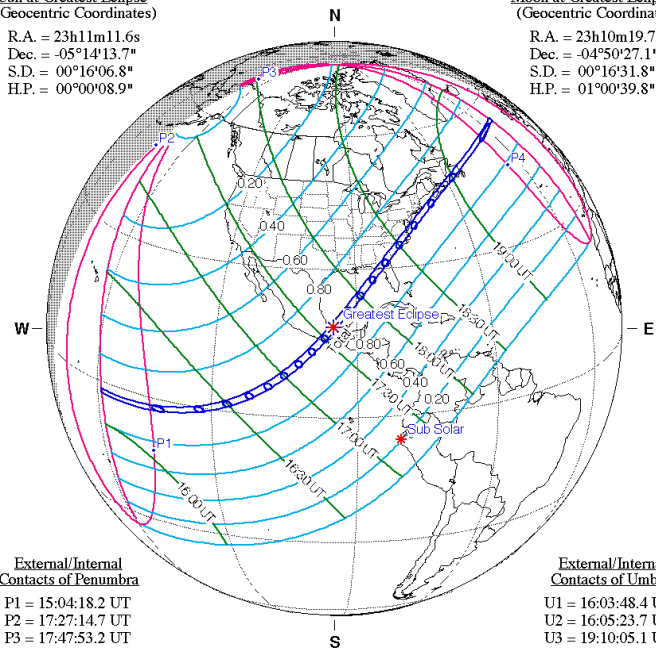
Saros Series = 139 Member = 27 of 71

Sun at Greatest Eclipse (Geocentric Coordinates)

R.A. = 23h11m11.6s
 Dec. = -05°14'13.7"
 S.D. = 00°16'06.8"
 H.P. = 00°00'08.9"

Moon at Greatest Eclipse (Geocentric Coordinates)

R.A. = 23h10m19.7s
 Dec. = -04°50'27.1"
 S.D. = 00°16'31.8"
 H.P. = 01°00'39.8"



External/Internal Contacts of Penumbra

P1 = 15:04:18.2 UT
 P2 = 17:27:14.7 UT
 P3 = 17:47:53.2 UT
 P4 = 20:11:17.6 UT

External/Internal Contacts of Umbra

U1 = 16:03:48.4 UT
 U2 = 16:05:23.7 UT
 U3 = 19:10:05.1 UT
 U4 = 19:11:37.6 UT

Local Circumstances at Greatest Eclipse

Lat. = 18°09.4'N Sun Alt. = 63.3°
 Long. = 094°40.9'W Sun Azm. = 150.1°
 Path Width = 153.3 km Duration = 03m27.6s

Ephemeris & Constants

Eph. = Newcomb/ILE
 $\Delta T = 40.4$ s
 $k1 = 0.2724880$
 $k2 = 0.2722810$
 $\Delta b = 0.0'' \Delta l = 0.0''$

Geocentric Libration (Optical + Physical)

$l = 2.57^\circ$
 $b = -0.60^\circ$
 $c = -21.36^\circ$

Brown Lun. No. = 584

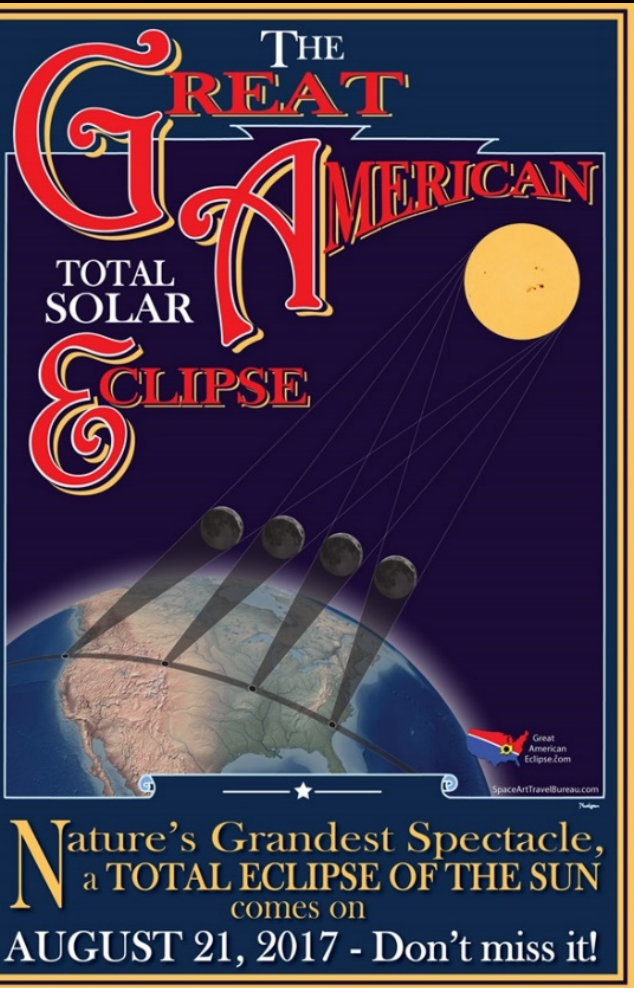


F. Espenak, NASA's GSFC - 2004 Jul 07
sunearth.gsfc.nasa.gov/eclipse/eclipse.html



Total Solar Eclipse of 2017 August 21





T-minus

| | | |
|------|-------|---------|
| 30 | 16 | 9 |
| Days | Hours | Minutes |

But who's counting?

Memphis Memorandum

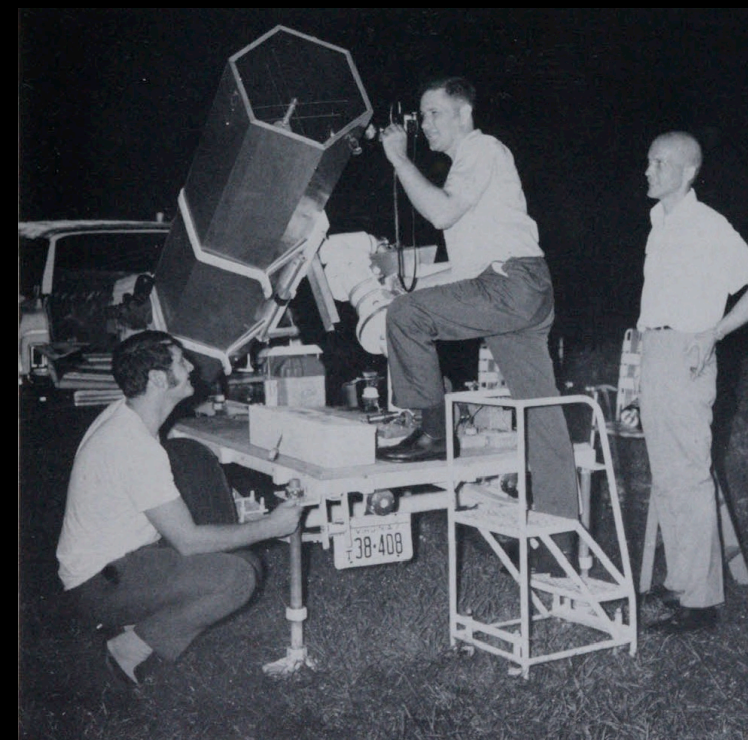
November 1971

Pages 266-269



Six ALPO members at a meeting of the comets section included three from Florida, at left: Karl Simmons, Richard Sweetsir, and Mike Reynolds. At right are Saturn recorder Julius Benton, Savannah, Georgia, Charles Morris, and John Bortle.

Jean P. Prideaux from Richmond, Virginia, demonstrated his camera setup for Mars photography with his 12 ½-inch trailer-mounted reflector. Kneeling at left is Astro-Gator Mike Reynolds, who told of work with a cooled-emulsion camera. At right is J. M. Henry, North Little Rock.





**Riverside Telescope
Makers' Conference
2006**
← Shelley Bonus
Dave Rodrigues→





Winter Star Party 2007



**Antique Telescope Society
2006
Ft. Davis, Texas**





**Royal Astronomical Society of Canada
Association of Lunar and Planetary Observers
Astronomy Round-Up 2007**



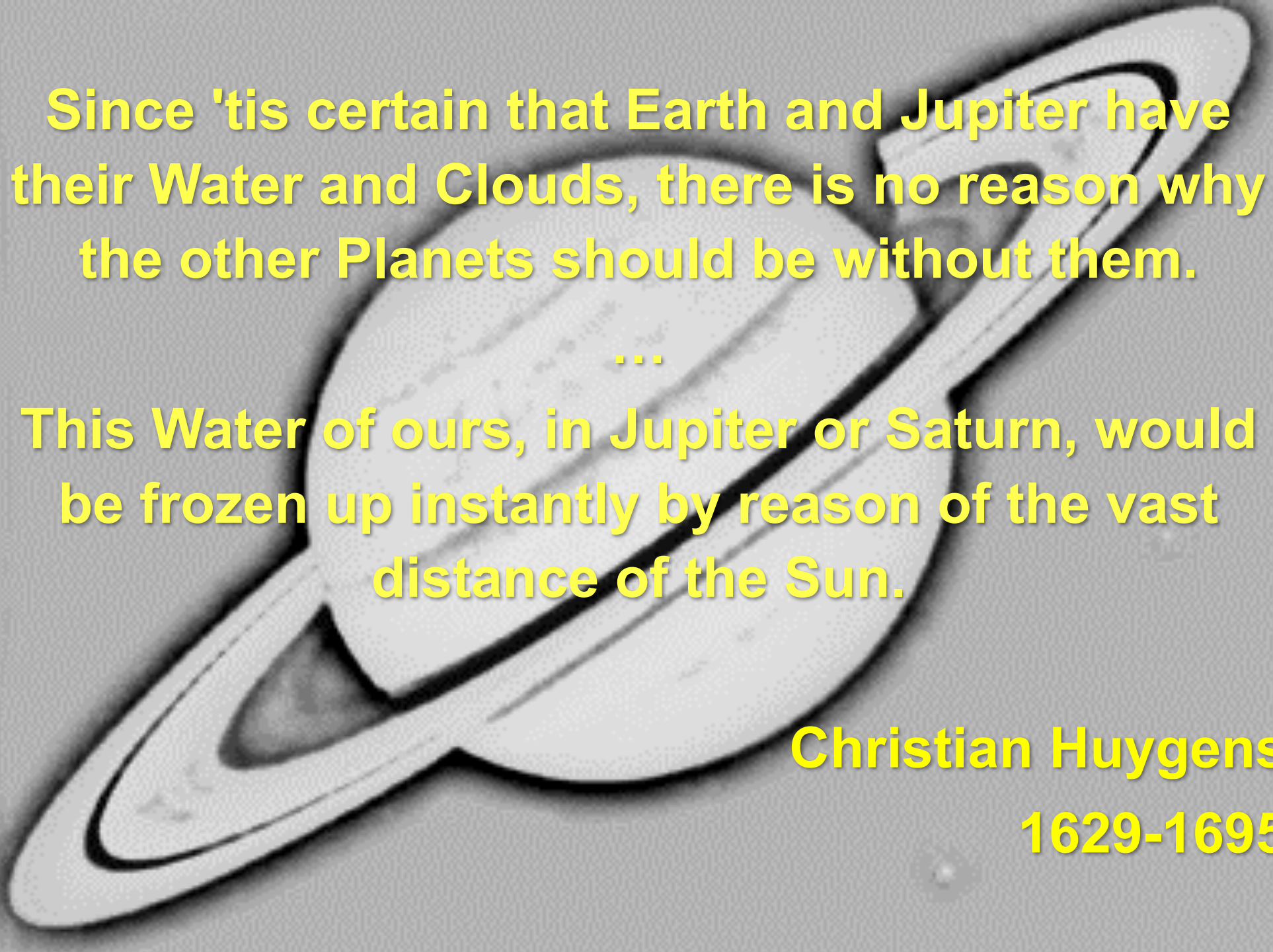


Each webcast has 3 segments



1. **Sun science 101** tinyurl.com/eclipsecast1
✓ An introduction to a solar/eclipse topic
2. **Eclipse Tips** tinyurl.com/eclipsecast2
✓ A fun activity that relates to the science topic
3. **Straight from the Scientists** tinyurl.com/eclipsecast3
✓ Professional scientist expert describes their research in this science field

**AAS-NASA Eclipse Workshop V
2017
South Carolina State Museum**



Since 'tis certain that Earth and Jupiter have
their Water and Clouds, there is no reason why
the other Planets should be without them.

...

This Water of ours, in Jupiter or Saturn, would
be frozen up instantly by reason of the vast
distance of the Sun.

Christian Huygens
1629-1695



Keith Spring
Galaxy Smartphone – 10-inch Dob

D. Parker
Coral Gables, FL
16-in Newt @ f-22
Skynyx 2-0 camera

17 Mar. 2011
04:38:37 UT

Infrared 715 nM
Long Pass
Peak=780nM

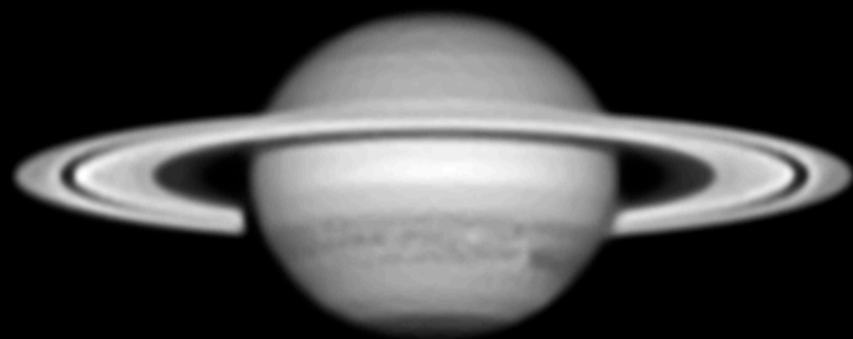
Seeing poor: 3-5
Trans: 5
No Wind
Temp: 64.8 F
Dewpoint: 43.0
Alt: 48 degs.

D. Parker
Coral Gables, FL
16-in Newt @ f-22
Skynyx 2-0 camera
45 frames

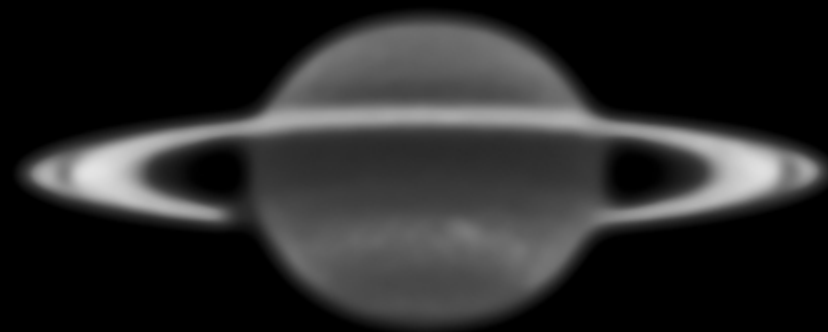
17 Mar. 2011
04:43:42 UT

Astrodon Johnson-Cousins
UV Photometric Filter

Seeing poor: 3-5
Trans: 5
No Wind
Temp: 64.8 F
Dewpoint: 43.0
Alt: 49 degs.



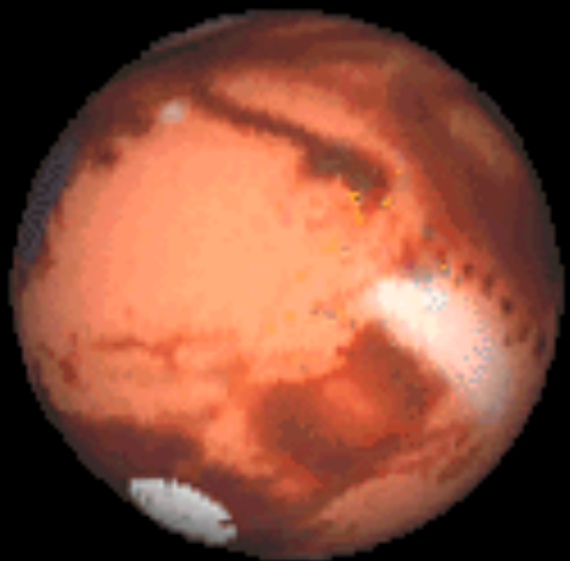
CM1=122.7 CM2=287.8 CM3=325.8



CM1=125.6 CM2=290.7 CM3=328.7



Hubble Space Telescope



Dan Troiani
ALPO



Christopher Go
ALPO

























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| My love and my best friend, Debbie... | |
|--|---|
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***Keep
Looking
UP!***

