

D I S I T A N T *L I G H T*

Rockland Astronomy Club Journal ~ September 2006

HUBBLE SPOTS A RARE ECLIPSE

DETAILS ON PAGE 2



SAVE THE DATE
RAC SOLAR & STAR
PARTY/BBQ
SEPTEMBER 16TH
FREE FOR MEMBERS

DETAILS ON PAGE 3



DISTANT LIGHT

is published 10 times a year by the Rockland Astronomy Club, 225 Route 59, Suffern, NY 10901-5203. Subscriptions are included with annual RAC membership dues. Send address changes to Bill Thys at the address above. Contributions to and inquiries about this journal can be emailed to the Editor/Design Director Mies Hora: Editor@rocklandastronomy.com

©2006 Rockland Astronomy Club. All rights reserved.

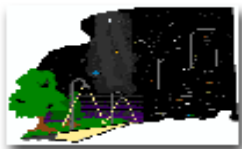
RAC MEMBERS ONLY:

GET DISTANT LIGHT VIA EMAIL

(requires Adobe Acrobat): send an email to Memberships@RocklandAstronomy.com

BECOME A RAC MEMBER

Complete and mail the Membership



International Dark Sky Association

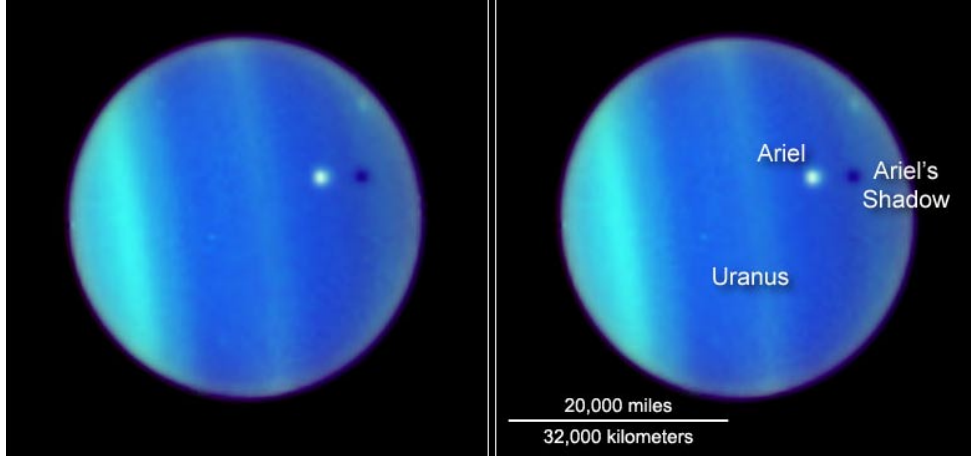


PLEASE NOTE OUR NEW ADDRESS:

Rockland Astronomy Club,
225 Route 59, Suffern, NY 10901-5203

[CLICK HERE FOR MONTHLY SKYDATA: P. 6](#)

[CLICK HERE FOR RAC MEETINGS SCHEDULE AND ADVISORY COMMITTEE: P. 7](#)



Hubble Spots Rare Eclipse on Uranus

This NASA Hubble Space Telescope image is a never-before-seen astronomical alignment of a moon traversing the face of Uranus, and its accompanying shadow. The white dot near the center of Uranus' blue-green disk in the photos above is the icy moon Ariel. The 700-mile-diameter satellite is casting a shadow onto the cloud tops of Uranus. To an observer on Uranus, this would appear as a solar eclipse, where the moon briefly blocks out the Sun as its shadow races across Uranus's cloud tops. Though such "transits" by moons across the disks of their parents are commonplace for some other gas giant planets, such as

ON THE COVER

Jupiter, the satellites of Uranus orbit the planet in such a way that they rarely cast shadows on the planet's surface. Uranus is tilted so that its spin axis lies nearly in its orbital plane. The planet is essentially tipped over on its side. The moons of Uranus orbit the planet above the equator, so their paths align edge-on to the Sun only every 42 years. This color composite image was created from images at three wavelengths in near infrared light obtained with Hubble's Advanced Camera for Surveys on July 26, 2006. ★

Credit: NASA, ESA, L. Sromovsky (University of Wisconsin, Madison), H. Hammel (Space Science Institute), and K. Rages (SETI)

RAC MEMBERSHIP APPLICATION

Club members receive this journal, enjoy special prices for annual subscriptions to S&T and ASTRONOMY magazines, discounts to club events and much more. Make checks payable to RAC and mail with this form to: Rockland Astronomy Club, Attn: Memberships, 225 Route 59, Suffern, New York 10901-5203.

Name _____

Address _____

City _____ State _____ Zip _____

Home Phone () _____

Email _____

Note: The Journal is sent to Members via email. For mailed hard copies, add \$18/year.

Membership Type	1 Year	2 Year (Save \$2)	3 Year (Save \$5)	5 Year (Save \$10)	Hard Copy (by US Mail)	Total
Family	\$30	\$58	\$85	\$140	+\$18/yr.	_____
Individual	\$20	\$38	\$55	\$90	+\$18/yr.	_____
Senior Citizen (65+)	\$15	\$28	\$40	\$65	+\$18/yr.	_____
High School Student	\$10	\$18	\$25	\$40	+\$18/yr.	_____
Grand Total						_____

RAC SPECIAL EVENT

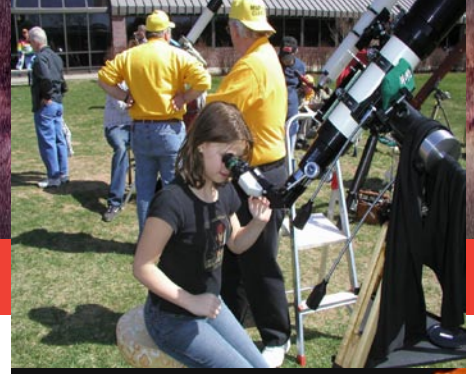
RAC Solar & Star Party Barbeque: Join Us for a FUN Family Get-Together

Saturday, September 16th*, 12PM –12AM
(Alternate Date: September 23rd)
Lake Sebago, Harriman State Park
FREE Admission for all Club members and their families. (General public is welcome, admission is only \$10 for the BBQ.)
**Subject to weather or schedule change.
To confirm, 2 days before event, please visit our website or call Hotline: 845-47STARS or 201-768-2238, Box 4.*

- > Great Catered BBQ
- > Music and Entertainment
- > Daytime solar observing (H-Alpha & white light)
- > Night time Joy of the Universe Star Party

Don't miss out on this exciting event, enjoy great food and entertainment, view the Sun in all its glory, see sun spots, solar flares and prominences larger than the planet earth!
When the sun goes down get ready for a great nighttime star party as club members supply telescopes large and small to view the wonders of the night sky. ★

Please RSVP by email prior to September 9th:
JoseAlvira@RocklandAstronomy.com



IT'S ALL RELATIVE DEPARTMENT

Earth



Mars



Mercury



Venus



Pluto



Jupiter

Saturn

Uranus

Neptune

Earth

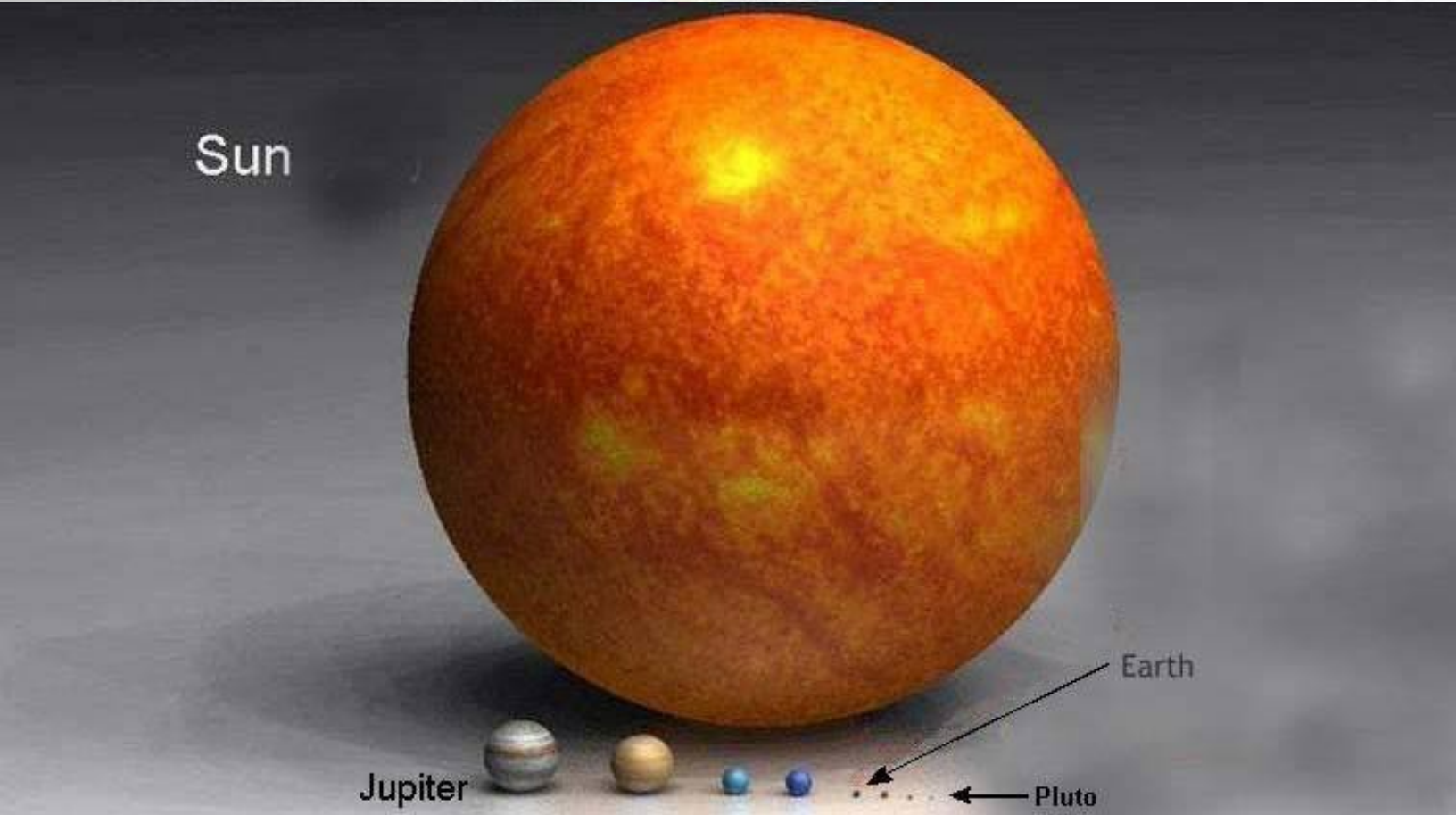
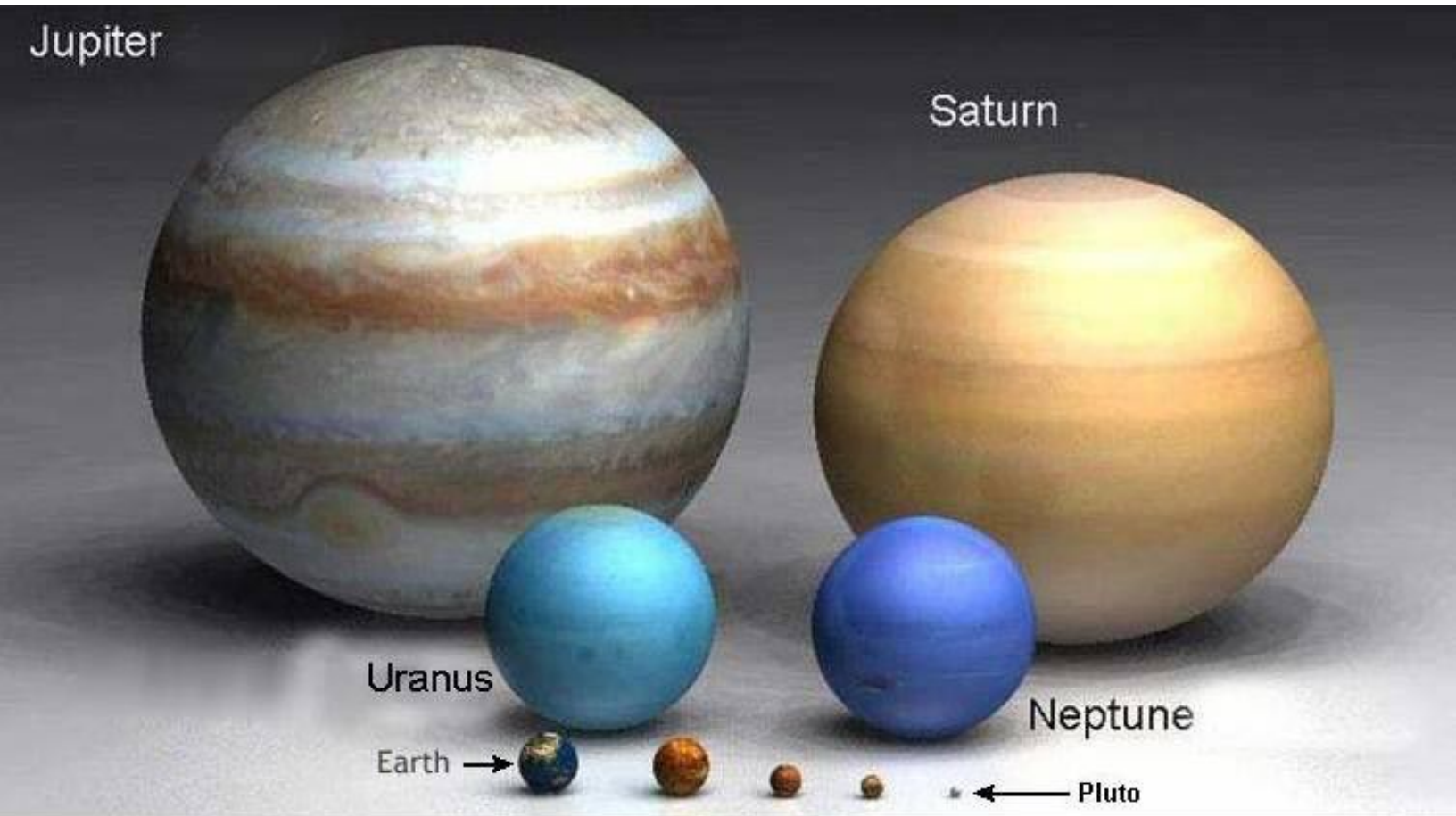
Pluto

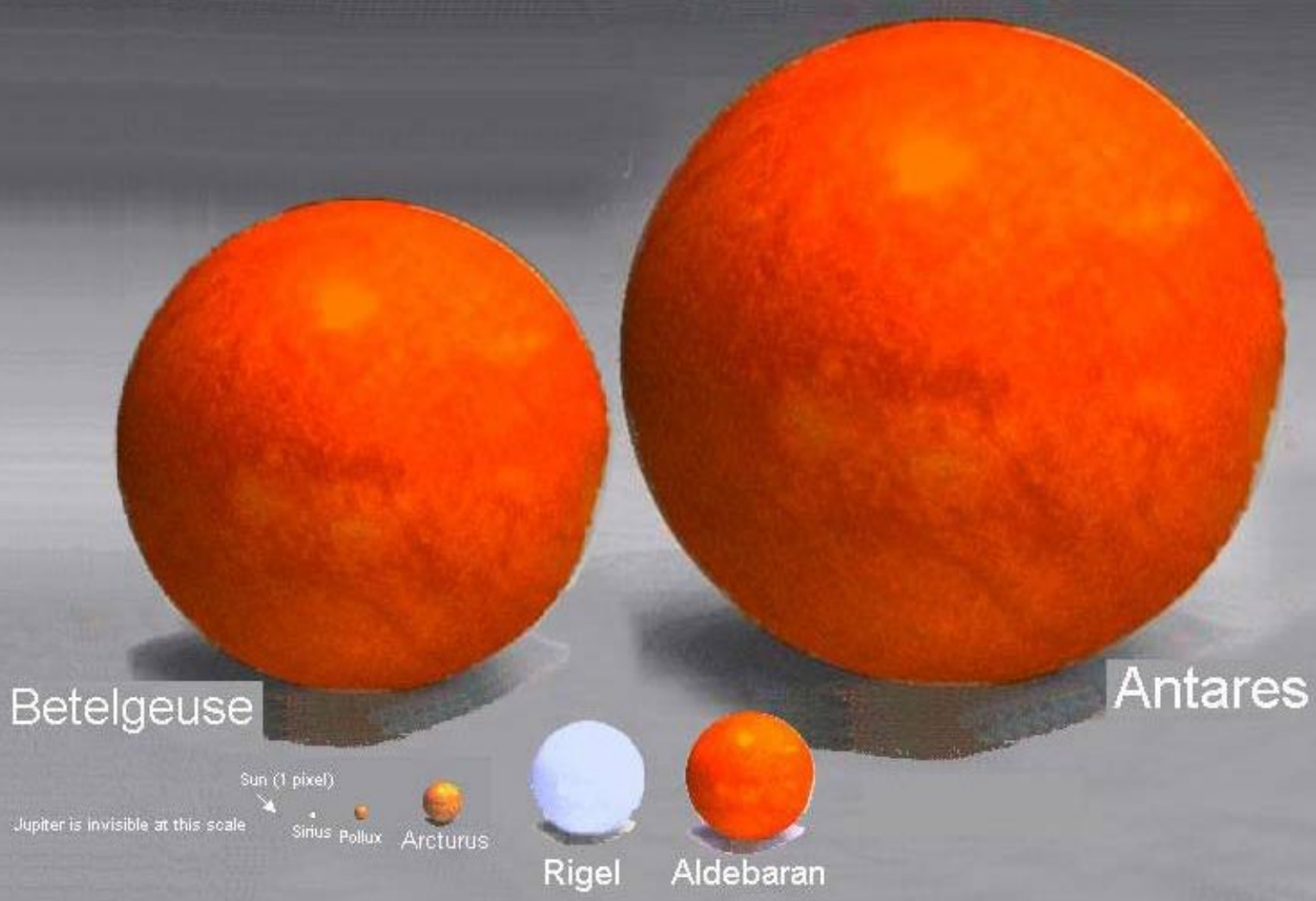
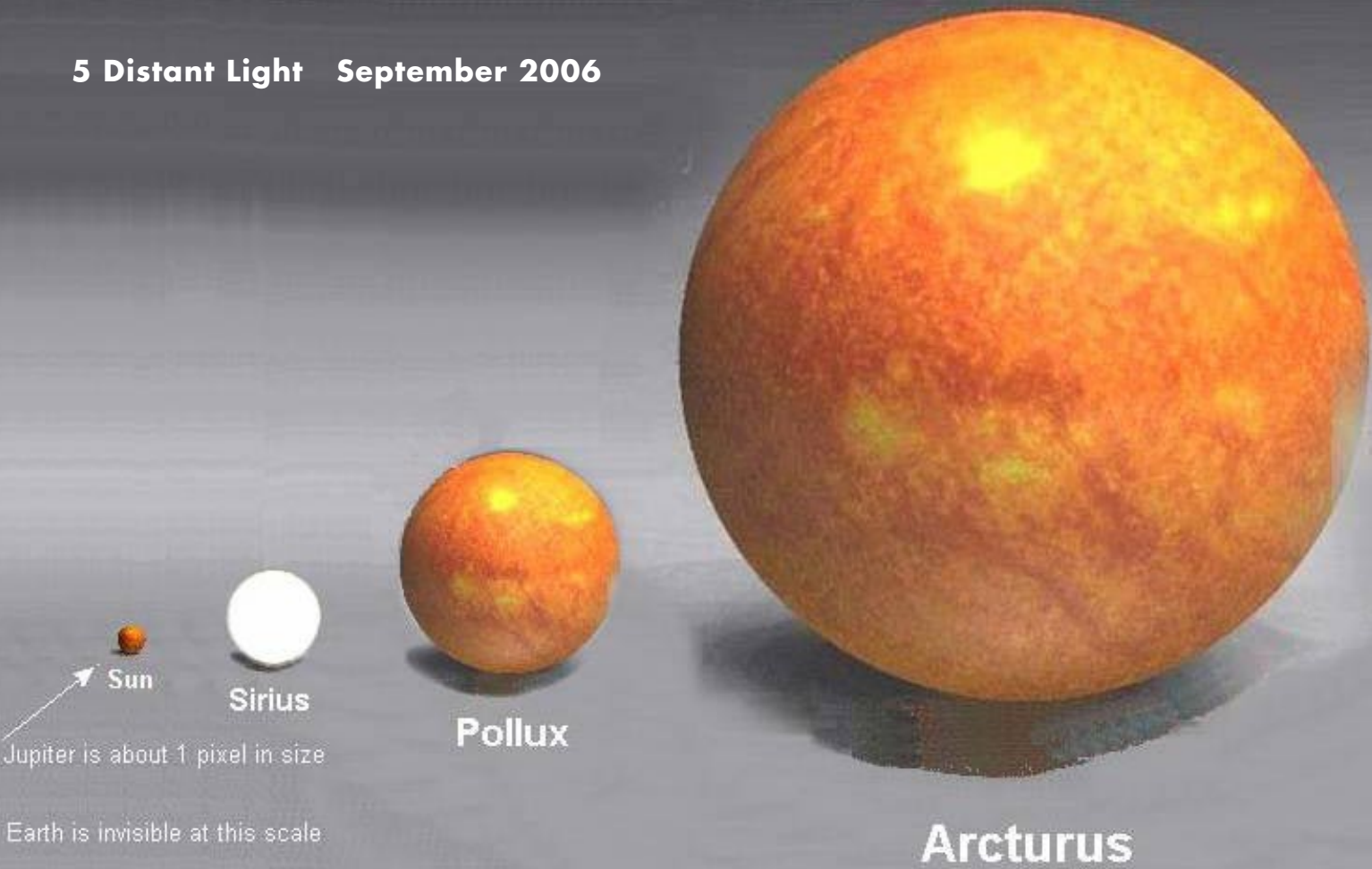
Sun

Jupiter

Earth

Pluto







Full Sept 7 Last Qtr Sept 14 New Sept 22 First Qtr Sept 29

SEPTEMBER SKYDATA

Highlights

- Sept 5 Venus 0.8° north of Regulus
- Sept 15 Mercury 1.8° north of Moon
- Sept 18 Jupiter 5° north of Moon
- Sept 22 Annular eclipse 7:45 A.M. EDT
- Sept 23 Mercury 0.2° south of Mars
- Sept 23 Autumnal equinox 12:03 A.M. EDT
- Sept 24 Spica 0.5° north of Moon
- Sept 26 Saturn 2° south of Moon
- Sept 27 Mercury 1.3° north of Spica
- Sept 28 Antares 0.5° north of Moon

The Autumnal Equinox

The Autumn Equinox occurs this year on September 23 at 12:03AM EDT.

What is an equinox? It is simply a geometrical alignment; it is one that reminds us about the passage of time, the motion of the Earth, and the changing of the seasons. Equinox occurs two times each year, the Vernal Equinox marking the first day of spring, and the Autumnal Equinox marking the first day of Autumn.

The Autumnal Equinox is the point, presently lying in the constellation Virgo, where the Ecliptic crosses the Celestial Equator. Equinoxes occur because the Earth's axis of rotation isn't aligned with the plane of its orbit around the Sun: it tilts over by about 23½°. The direction of this tilt is effectively constant, relative to the stars, such that the Earth's north pole always

points towards Polaris, and the south pole always points at the constellation of Octans.

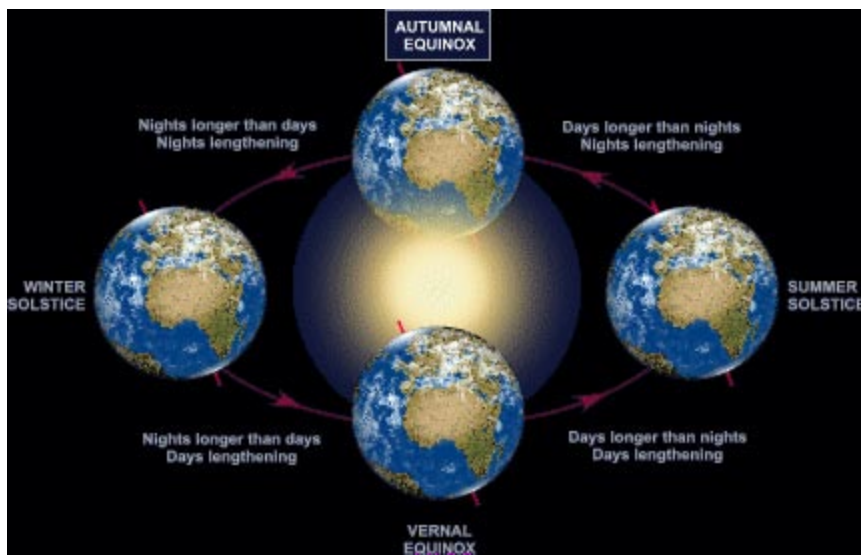
Each year, the Earth completes one orbit of the Sun, and for its poles to remain fixed against the stars, their direction must rotate relative to the Sun. This effect gives us the seasons. When a pole is angled towards the Sun, its hemisphere receives more hours of sunlight, and when a pole is turned away from the Sun, its hemisphere experiences long cold nights.

The equinoxes are the points where the direction of the poles are at a right angle to the Sun. In other words, if you were to draw a line from the Sun to the center of the Earth, the Equinox occurs when that line passes through the equator.

As summer wears on, the nights have been growing longer and the days shorter. When the Sun passes Autumnal Equinox, the nights begin to grow longer than the days, and they continue to do so until the Winter Solstice in December. In the Southern hemisphere, it is reversed, the Spring is just beginning. There are other significant occurrences that take place as a part of the equinox:

At the South Pole the Sun will begin to rise after six months of darkness and it will now be daytime there for the next six months. On the day of the equinox, the Sun rises directly in the East, and sets directly in the West.

At sunrise and sunset, the shadow of a Sun Dial will point exactly in those directions. ★



Prime Observing Window

Sunday Sept 17 through Tuesday Sept 26

Sun & Moon Rise & Set Times

Date	Sunrise	Set	Moonrise	Set	Phase
Sept 7	19:25	06:04	19:25	06:04	Full
Sept 14	06:35	19:08	23:28	14:56	Last Qtr
Sept 22	06:43	18:54	06:47	18:57	New
Sept 29	06:51	18:42	14:08	22:39	First Qtr

Planetary

Visible Planets in the Night Sky

September 1

	Rise	Transit	Set	Mag
Mercury	06:22	13:00	19:38	1.6
Venus	05:06	12:01	18:57	-3.9
Mars	07:48	13:59	20:10	1.8
Jupiter	11:50	16:58	22:06	-2.4
Saturn	04:36	11:37	18:38	0.4

September 15

	Rise	Transit	Set	Mag
Mercury	07:38	13:36	19:35	4.6
Venus	05:39	12:12	18:46	-3.9
Mars	07:39	13:37	19:35	1.8
Jupiter	11:06	16:11	21:17	-2.2
Saturn	03:49	10:48	17:47	0.4

September 31

	Rise	Transit	Set	Mag
Mercury	08:40	14:01	19:22	1.6
Venus	06:15	12:22	18:30	-3.9
Mars	07:30	13:14	18:58	1.8
Jupiter	10:21	15:23	20:26	-2.3
Saturn	02:58	09:55	16:53	0.3

The RAC Essentials

MONTHLY CALENDAR

**201-768-2238
or 845-47STARS**

Message Hotline: The latest information or last minute changes to club events.

Prime Observing

Tues, September 12, 8pm

September 17 thru 26

Advisory Committee Meeting LHVCC, Airmont, N.Y.

Fri/Sat, September 15, 22 & 23

Observing at Wawayanda (members night)*

Sat. September 16 Noon - Midnight

RAC Season Finale Solar & Star BBQ at Lake Sabego, Harriman State park (details: see page 3)

Sat, September 23

Up all night Observing at Taghkanic State Park (members night)*

LOCATIONS

North Rockland

High School Planetarium

Hammond Road, Thiells, NY

Rockland Community College

College Road, Suffern, NY

Lower Hudson Valley

Challenger Center

Rt. 59, Suffern, NY

Anthony Wayne

Recreation Area*

Exit 17, P.I.P., NY

Silvermine Ski Area*

Exit 18, P.I.P., NY

Wawayanda State Park*

973-853-4462,

Highland Lakes, NJ

Taghkanic State Park*

Taconic State Parkway,
Ancram, NY

ADVISORY CMTE.

Jose Alvira

Frank Bifulco

Jim Burnell

Mark Hettinger

Mies Hora

Rob Lyons

Keith Murdock

Al Nagler

Dr. Jack Rosen

Audry Salvatore

Len Salvatore

Ed Siemenn, *Chair*

Bernie Sokolowski

Bill Thys

Alan Traino

Life & Honorary Members

Tom Massey (L)

Al Nagler (L)

Don Urban (L)

Dr. Saeed Safaie (H)

Andrew Warrington (H)

KEY PERSONNEL

Contact any person on this list for advice on a specific topic:

Membership Services

Bill Thys, 201-797-9553

Memberships@RocklandAstronomy.com

Journal Editor & Design Director

Mies Hora, 845-429-0923

Editor@RocklandAstronomy.com

Special Events & Observing

Frank Bifulco, 914-523-6548

Observing@RocklandAstronomy.com

Northeast Astronomy Forum

Alan Traino, 973-427-2020

NEAF@RocklandAstronomy.com

Summer Star Party

Jose Alvira, 845-446-4336

SummerStarParty@RocklandAstronomy.com

Media Services & Lecture Series

Keith Murdock, 845-786-5645

Media@RocklandAstronomy.com

Accounting

Mark Hettinger, 201-768-5720

MarkHettinger@RocklandAstronomy.com

Program Director

Jose Alvira, 845-446-4336

JoseAlvira@RocklandAstronomy.com

Club Library

Audrey Salvatore, 845-928-6697

Library@RocklandAstronomy.com

Webmaster

Rob Lyons, 201-679-7404

Webmaster@RocklandAstronomy.com

Educational & Children's Programs

Ed Siemenn, 845-461-4799

EdSiemenn@RocklandAstronomy.com

Astrophotography

Bill Thys, 201-797-9553

BillThys@RocklandAstronomy.com

CCD Imaging

James Burnell, 845-986-3332

JimBurnell@RocklandAstronomy.com

Senior Advisor

Al Nagler

*Special permits required to observe at these locations. Contact Frank Bifulco for permit info.