



North Jersey Astronomical Group

# THE Dark Sky Observer

A Publication of the North Jersey Astronomical Group

May, 2000

Vol. XII, No. 5

## STARLINE

For a weekly update on the night sky, call the StarLine at **973-680-8420**.

## The Dark Sky Observer

is a publication of the North Jersey Astronomical Group (NJAG), whose purpose is to promote the study and knowledge of the science of astronomy. The Dark Sky Observer is produced monthly for NJAG members by NJAG members.

## From the Editor:

Remember the Dark Sky Observer needs your input! Letters, comments, suggestions, and articles are welcomed and encouraged. Contact the editor at a meeting, at (973)340-5963 or at this address: Editor, Dark Sky Observer North Jersey Astronomical Group P.O. Box 1472 Clifton, NJ 07015-1472.

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## MAY MEETING

The May meeting of the North Jersey Astronomical Group featured Tom Massey of the Rockland Astronomy Club. Mr. Massey gave a presentation "Observing the Sun Is Fun: Our Dynamic Star." This is an appropriate topic, for the solar cycle is reaching its peak this year.

## JUNE MEETING

On Wednesday, June 14, Lonny Buinis of Raritan Valley Community College will present a slide show: "Life In Europa" at 8:00 p.m. Recent information from the Galileo spacecraft indicate a vast ocean beneath the surface of Europa. What mysteries lie beneath the icy crust of this Jovian moon? The meeting will take place in Richardson Hall room 226 on the campus of Montclair State University.

## JERSEY STARQUEST

**June 2-4, 2000**

Participate in one of the premier amateur astronomer gatherings in the Northeast. This year's AAAP starfest is located at the Hope Conference and Renewal Center, Hope, NJ. Featuring stargazing in a very dark sky locale, Deep Sky Observing contest, astronomical swap meets, AAAP observatory field trip and much more!

Admission is \$30 for adults, \$15 for children ages 6 - 12, and children under age 6 are free. Further details are available at: [princetonastronomy.org/starquest.pdf](http://princetonastronomy.org/starquest.pdf) or email Greg Mauro at [k3ea@arrl.net](mailto:k3ea@arrl.net).

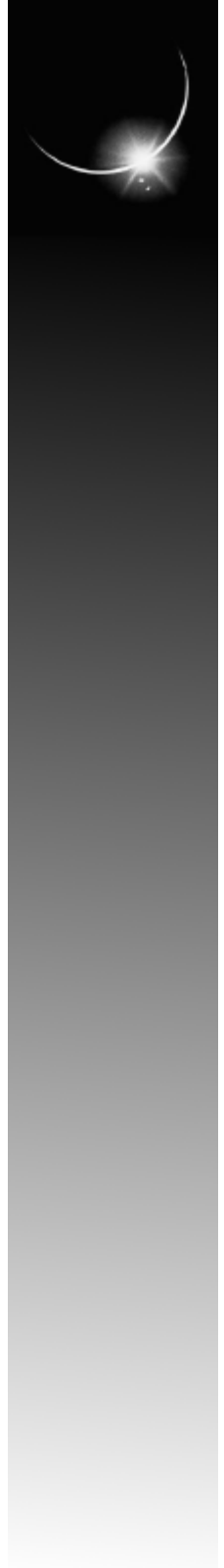
See you there!

## ASTROPHOTOGRAPHY CONTEST

Here are the results from this year's Astrophotography Contest:

CATEGORY	WINNER	SUBJECT
Wide Field	Kevin Conod	Milky Way
General	Kevin Conod	Double Cluster
Solar System	Jim Piombino	Lunar Eclipse
Deep Sky	No entries	No entries
Best of Show	Kevin Conod	Double Cluster

You can view the winning photos in the Photo Gallery on our web page at: <http://community.nj.com/cc/njag>



## THE ARGON CONNECTION

### STUMP THE ASTRONOMERS

Have a question about astronomy? Send it in to Kevin Conod at the address on page 1 or to stargazer@advanix.net and we'll try to have an answer in the next newsletter.

### HUBBLE STAMPS

The post office has a nice set of astronomy stamps. The sheet is twenty 33 cent stamps, four each of ring nebula, lagoon nebula, egg nebula, galaxy NGC 1316, and eagle nebula. To the left of the stamps is a panel showing Edwin Hubble looking through the 48-inch at Palomar. On the back of each stamp is a short description of the object. Nice set%

~ Walter Windish

### TELESCOPES FOR SALE

#### Eight-inch Meade Newtonian

Leo Telesco has an 8-inch Meade Newtonian telescope approximately 25 years old in good condition up for sale. For information and details please call him at 201-228-2922.

#### Ten-inch Newtonian

10-inch diameter Meade Dobsonian. Includes 26 mm and 9.7 Super Ploosl Meade eyepieces, a Meade 2X barlow lens, a counterweight balance system, and a wood carrying cradle for transporting. \$650 for everything. Like new, only used a few times. Contact Frank Grasso at frgr55@aol.com or 201-935-3669.

#### Ten-inch Newtonian

Richard Solensky has a ten-inch newtonian on a dobsonian mount for sale. For more info contact Richard at: 305 Sixth Ave #1D, Pelham, NY 10803, 914-738-BYOB.

The Earth's atmosphere contains argon atoms which are breathed in and out by all living things, connecting us all to each other and to creatures which have lived in past times. Argon is unique in this fashion because it is chemically inert, that is, it does not "stick" to anything. Once you breathe it in, you immediately breathe it out again. Even when you die, you breathe it out with your last breath. It remains always in the atmosphere, never in the sea or the rock or bodies.

Let's calculate how much argon is in one breath. Argon is roughly one percent of the atmosphere on Earth, so there are roughly 1042 atoms of argon in all. A deep breath is a volume of about a half liter. Avogadro found that there were  $6 \times 10^{23}$  atoms in a volume of 22 liters of any gas. One liter of air is then about  $3 \times 10^{22}$  atoms of which one percent are argon, so a breath contains about  $1.5 \times 10^{20}$  argon atoms.

What are the chances of re-breathing any of those particular argon atoms from "breath X"? In general the chance of getting one particular argon atom in the atmosphere is  $1/1042$ , but in one breath the chance is  $1.5 \times 10^{20}/1042 = 1.5 \times 10^{-22}$ . This is pretty small, isn't it? If you want to get any one of the argon atoms in

a particular previous breath then the chances go up to  $1.5 \times 10^{-22} \times 1.5 \times 10^{20} = 2.3 \times 10^{-2}$ , which is still smaller than one.

However, if you continue to breathe all day then the chances of getting one of those particular argon atoms goes way up. Most people take a breath every 10 seconds. So, every hour you would take 6 breaths/minute  $\times$  60 minutes/hour = 360 breaths/hour. The chances of rebreathing any argon atom in "breath X" go up to  $2.3 \times 10^{-2} \times 360 = 8 \gg 1$ . This means that every hour you breathe several argon atoms from some particular previous breath.

The fun comes when you begin to think of "breath X" being from someone else instead of yourself. Your next breath will contain argon atoms "from the conversations at the Last Supper, from recitations of the classic Greek poets, and from the battle cries at Waterloo. Our next breaths will sample the snorts, sighs, bellows, shrieks, cheers, and spoken prayers of the prehistoric and historic past." (Shapley, p 48)

*M.L. West after Harlow Shapley*

*Shapley, Harlow, "Breathing the Future and the Past," Beyond the Observatory, Charles Scribner's Sons, New York, 1967 (Q 171 .S54)*

Shuttle Atlantis just before its May launch



### NORTHEAST ASTRONOMY FORUM

I recently attended the Northeast Astronomy Forum (NEAF) at Rockland Community College in Suffern, NY. In the previous two years I have attended this event, it was held at a local hotel. The move back to Rockland Community College seems like a good one since the college's Field House can accommodate a much larger number of display tables.

Since many people from northern New Jersey attend NEAF, I set up a display table for NJAG. I used color copies of photos from this year's Astrophotography Contest to decorate a display board. I brought along a large supply of membership brochures hoping to "net" some new members. I also devoted a section of the display board to light pollution and provided copies of *The Record's* recent editorial on the subject. A couple of cardboard stars and a dash of star confetti from Party City made our table one of the nicest looking exhibits on the floor (if I don't say so myself%).

This worked quite well. A couple of hundred membership brochures were distributed. In all, NEAF 2000 was a success. The event was well attended and everyone seemed to enjoy the speakers. I'm looking forward to next year's Forum.

*Kevin Conod, Vice President*

## NJAG E-MAIL DIRECTORY

### NEW MEMBERS

We welcome the following to the ranks of the NJAG. Please join us at our upcoming meetings and events.

Marlene Balle  
Rick Brucato  
Vernon Jackman  
Bob & Nancy Sadur  
Erik Weissenborn  
Jason Gowers  
Ken Colgate  
Rodger Ludwig  
Linda Tancredi  
Anthony Barra  
David Scott  
Rick Smith  
Andrea Gaglio & Benjamin Lammers  
Lisa Baroni  
Scott Bennett & Family  
Neil Grant

### PRODUCT REVIEW: SkyTent

I saw an interesting new product at this year's Astronomy Forum. It is called a SkyTent and it is a tent which can be used as a portable observatory. There are other similar products on the market, but this one has some unique features. The SkyTent is quite large. It is big enough to accommodate a 10 or 12-inch Meade LX200 plus an observer or two. It seems quite sturdy: the frame is made of PVC pipes. The fabric covering the frame is very thick and waterproof. This makes it possible to set it up semi-permanently. I wouldn't trust it in a strong thunderstorm, but it would allow you to have your telescope set up and ready for observing for a week or two at a time. It even has a rotating dome just like a real observatory! If you'd like to take it camping with you, it can double as a tent large enough for 2 to 3 people.

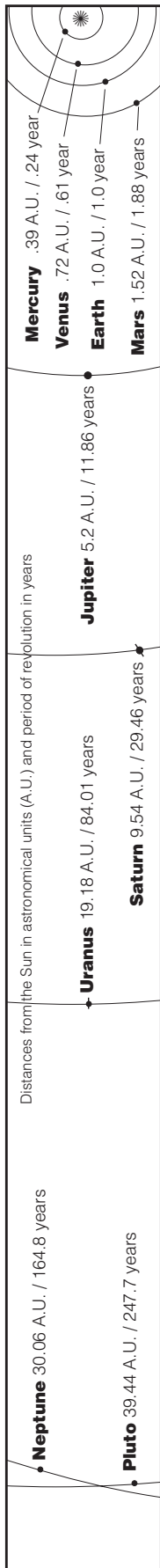
This sturdiness comes at a price. All those PVC pipes and thick fabric make the SkyTent on the heavy side. Total weight is 100 pounds. The cost is steep as well: a 10 foot diameter model goes for \$1795 plus shipping. If you'd like more info on this product, visit the SkyTent website at [www.skytent.com](http://www.skytent.com) or give them a call at 1-877-SKYTENT.

*Kevin Conod*

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# The Dark Sky Observer

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## SUMMER STARGAZING STARTS JUNE 7

Please join us every Wednesday night (except meeting nights) at the Iris Gardens for Summer Stargazing. Weather permitting, we'll have a telescope or two set up after 9:00 pm. The Iris Gardens are on Highland Ave. in Montclair (see directions below).

### Directions to the Iris Gardens

Follow the usual directions to Montclair State University. Instead of turning into the main entrance on Normal Avenue, proceed over the railroad tracks to the traffic light. Go straight through the light and make the first left onto Highland Avenue. Take Highland down a few blocks until you see a park on your left. This is the Iris Gardens. Park on either side of the road (make sure you don't block traffic).



## DOOR PRIZES

Thanks to everyone who donated door prizes for our annual dinner. As you can see just about everyone went home a winner!

DONATED BY	ITEM DONATED	WON BY
Joe Marzullo	Binoculars	CATHERINE
Maja Britton	Astronaut Poster	MARY LOU WEST
Maja Britton	Space Shuttle Poster	DENNIS KOENIG
Maja Britton	Space Poster	KAY GRASSO
Maja Britton	Space Pak	CAROL WAHL
Maja Britton	Stary Key Chain Light	CAROL WAHL
Maja Britton	Solar System T-Shirt	DON POLZO
NJAG	Burnham's 3-Volume Set	DON POLZO
NJAG	Astronomy Calendar	DENNIS KOENIG
NJAG	Astronomy Calendar	MARY LOU WEST
NJAG	Astronomy Calendar	KAY GRASSO
Tele-Vue Optics	20mm Plossl Eyepiece	RUTH KOENIG
Gene Faulkner	Meade Diagonal Prism	TOM VANATTA
Gene Faulkner	Red Beam Flashlight	JACKIE PERKINS
Kalmbach	Book	BOB SADUR
NJAG	Color Filter Set	CLAIRE VANATTA
NJAG	Moon Filter	ROGER WEST
NJAG	Binocular Star Atlas	GRACE CASALINO
NJAG	Deep Map 600	DAVID BERMAN
NJAG	Red Beam Flashlight	CAROL WAHL
NJAG	Red Beam Flashlight	JIM COUGHLIN
NJAG	Optics Cleaning Kit	BARBARA PIOMBINO
NJAG	Optics Cleaning Kit	MIKE CASALINO
Frank Grasso	Stamp Sheet	DENNIS BARLOW
Scope City	\$25 Gift Certificate	ROGER WEST
Scope City	\$25 Gift Certificate	BOB SADUR
Scope City	\$25 Gift Certificate	MATHI POLZO
Edmund Scientific	21mm RKE Eyepiece	GRACE CASALINO
Sky Publishing	Starlight Nights	JIM PIOMBINO
Sky Publishing	Deep Sky Wonders	DAVID BERMAN
Kalmbach	Astronomy Magazine	JIM COUGHLIN
Kalmbach	Astronomy Magazine	MIKE CASALINO
Jim Piombino	Astronomy Painting	TOM VANATTA
Jim Coughlin	Post cards	JOE MARZULLO
Newark Museum	Free Passes	KAY GRASSO
Newark Museum	Free Passes	BOB SADUR
Newark Museum	Free Passes	GRACE CASALINO
Newark Museum	Free Passes	MATHI POLZO
Mary Lou West	Hubble Vision	DOUG KITTEREDGE