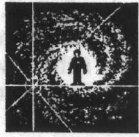


# The Dark Sky Observer



A publication of  
The North Jersey Astronomical Group  
Volume: 2 Number: 4 May 1989



"More Light ! " Van Goethe's last words

## Main Scope Rescued

by Ruth Koenig

On Friday, April 21<sup>st</sup> Public Night at Rifle Camp Park, Grace Casalino was in the dome with the telescope pointed at Jupiter. She decided that, since everyone had seen it, she should move to something else. Everyone on line asked to see the moon.

The telescope was moving and both motors decided to stop working. As we were contemplating what to do, a man waiting on line asked "Do you mind if I take a look, I'm an electrician?" He checked the wire and found a loose one and wished he had a voltmeter. Then he reached into his jacket and proceeded to talk to someone on a Ham radio. He said "Don't mind me but I'm a ham radio operator and I'm looking for someone with tools." He called his friend, asked his location and he said he was on his way to the observatory, of course he was asked if he had his tools.

When he arrived at the steps to the dome with his three tool boxes we figured our problems were probably solved. The two of them proceeded to check out fuses and wires. They soldered the broken wire and replaced a blown fuse in the navigator and we were back in business.

There were several brave souls who waited patiently through the whole process just to see the Moon. The four officers of the club that were present at the public night voted to offer Al and Joe a free membership in the club for a year as a thank you for rescuing our telescope for the public.

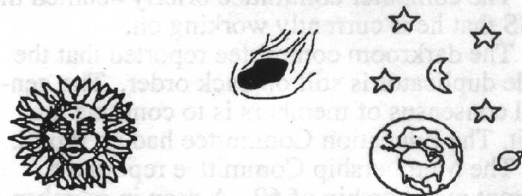
They both said they would accept our offer and said that they are interested in getting a radio astronomy project going here at Rifle Camp Park. This should not be too much of a problem as they are both ham radio operators.

Welcomes to Al Tencsa and Joe Sirotnak and thanks again. ☆

## Earth nearly destroyed

by Roger Sudol

In March of this year, at Palomar Observatory, two astronomers named Henry E. Holt and N.G. Thomas discovered a nearby disturbing chunk of rock. This chunk of rock is a fast moving asteroid who's orbit comes quite close to a particularly familiar small blue-green planet. Too close in fact. On March 23, 1989, this asteroid, traveling at 46,000 mph, came within .005 astronomical units (465,000 miles) of Earth. Very close by astronomical perspectives.



Imagine the devastation that would be caused by a large meteor impact today. Even if it landed in the ocean it would probably create a tidal wave capable of washing out small islands! On land it could even kick up enough dust to cause, what could best be compared to, nuclear winter.

No matter how you look at it, the citizens of Earth were very lucky, this time. This asteroid has a period of 1.04 years! Maybe it's time that orbiting missile satellites be aimed up and not down. This was not the first close shave and by no means will it be the last.

Think about it. ☆

## LAST MEETING

The meeting was called to order by President Glenn Burke at 8:10 p.m. on April 12, 1989 at the Rifle Camp Park Observatory in West Paterson, New Jersey. It was attended by 20 members and 2 guests. The minutes from the previous meeting were read and accepted. Corresponding Secretary Dennis Koenig mentioned that he had sent a copy of the newsletter to ASTRONOMY MAGAZINE and will keep them on our mailing list. Copies will also be sent to other astronomy clubs in the area. A letter has been received from the Cranford Astronomy Club concerning the formation of a light pollution commission. Copies of the information received is available to interested members. A flier concerning the Astronomy Day at the Morris County Museum is posted on the bulletin board.

Treasurer Ruth Koenig reported a new balance of \$647.16. Vice president Grace Casalino detailed the clubs participation in the Earth Science Conference held at Kean College this year. The NJAG was the only participating astronomy club present this year.

The Astrophotography committee reported that May is the best month for Pluto. For best results Pluto should be photographed over a period of several days. It should shine at about 12th magnitude.

The computer committee briefly detailed the BBS that he is currently working on.

The darkroom committee reported that the slide duplicator is still on back order. The general consensus of members is to continue the wait. The Education Committee had no report.

The Membership Committee reported a current membership of 69. A drop in membership can be expected next month as this number reflects the number of members who have not yet renewed there dues.

The Newsletter Committee reported that this month's DSO has been delayed and should be expected shortly.

The Observation Committee reported that several new members have qualified on the Dynascopes. Any member interested in qualifying should contact Glenn or Dennis. The 1989 Messier Marathon was discussed. 103 of 110 objects were spotted! Glenn also believes he detected the supernova in M-66.

The Program Committee announced that a trip to the Hayden Planetarium is scheduled for June 17th, all members who are interested should sign up as soon as possible.

The Project Committee announced that the Hypering chamber is back in full service. A new

pump was made from an old air conditioners' compressor. It appears to be working well.

The Public Night Chairman reminded members of the upcoming public nights scheduled for April 14th, 21st and May 5th. These events will run from 8-10 p.m.

Glenn Burke informed members that a proposed set of new by-laws have been posted and a vote will probably take place in June.

Club librarian John Miksits detailed the most recent additions to the club library. A master list is being made. Also, any books being returned to the library should be placed on the bottom shelf. In related business, Glenn Burke announced that the club has received a bonus certificate from the Astronomy book club. The club voted to purchase a copy of the Cambridge Atlas of Astronomy at a price of \$31.50.

Grace Casalino mentioned that she is trying to get permission to conduct a public night at Wawayanda State Park.

Ruth Koenig read a letter to the club, requesting money to cover expenses, from Jim Levensky. He requested \$30.80, but only presented receipts for \$8.54. The club voted only to reimburse him for the \$8.54 which he had receipts for.

Finally a proposed gas line that could effect the operations at Stellafane this year was brought to the clubs attention.

The meeting was adjourned at 8:45 p.m.

☆☆☆☆☆☆☆☆

## Library Report

### The Club Library

by John Miksits

The North Jersey Astronomical Group has a collection of books, magazines, star guides and more at the Nature Center. Purchases by the NJAG and contributions make collection grow. Every NJAG member can use the library and borrow books for up to 30 days. The collection does not have a Dewey decimal classification but can be browsed. If you are researching, then consult a local or college library for more information. The NJAG collection is for the advancement of the amateur astronomer.

The collection has many items to choose from. First, at least one hundred fifty books are on its shelves. The books consist of star guides, textbooks, telescope making books and more.

Astronomy, Sky & Telescope and Telescope Making are some of the periodicals the NJAG has at the Nature Center. Catalogs from telescope and accessory producers are stored with the collection.

Recently the NJAG has acquired video tapes of various subjects which are also available for loan. If you are interested in taking out any of the above and are unfamiliar with the library, then consult the librarian for help.

The collection's future is fairly clear. The proposed by-laws, which may soon take effect, call for a "Library Committee". The appointed individual will be responsible for the collection. New books, magazines, etc., as well as previously acquired books, magazines, etc., must be cared for. A list of the current holdings is also required by the proposed by-laws. Lastly, overdue book holders will be notified by mail.

Once inside, you will see the size of the collection. It is open to all members in good standing. Even if you do not wish to take books out, come in and look at our collection of Sky & Telescope!

### *To the Comet*

*by Henry David Thoreau*

*My sincerity doth surpass  
The pretence of optic glass*

*Say what are the highlands yonder  
Which do keep the spheres assunder  
The streams of light which centre in our sun  
And those which from some other system run?*

*Distinguished stranger, system ranger  
Plenipotentiary to our sphere  
Dost thou know of any danger  
War or famine near?*

*Special envoy, foreign minister  
From the empire of the sky  
Dost thou threaten aught that's sinister  
By thy course on high?*

*Runner of the firmament  
On what errand wast thou sent,  
Art thou some great general's scout  
Come to spy our weakness out?  
Sculling thy way without a sail  
Mid the stars and constellations  
The pioneer of a tail  
Through the starry nations.  
Thou celestial privateer  
We entreat you come not near.*

## Observation Committee Report

### "Major Amount of Galaxies in Ursa Major

by Glenn Burke

Our winter friends Orion, Gemini and Canis Major are on their way down to the western horizon as May evenings begin, bidding us adieu until next winter. We are now in the heart of the spring observing season. Our viewpoint is directed up and out of the plane of our galaxy. Here we can see galaxies unobscured by the stars, dust and gas of our own Milky Way Galaxy. When spring galaxies come to mind, people usually mention the great Virgo Cluster of galaxies, or the Coma Cluster. Granted, the area of Coma Bernices, Leo and Virgo are brimming over with galaxies. But many people overlook a familiar constellation, Ursa Major.

Ursa Major, the "Great Bear" is visible even in the most light polluted skies. Most people at our public nights, can easily point out the "Big Dipper". The Big Dipper, however, is not the whole constellation of Ursa Major, but just a part. The Big Dipper is actually a cluster of stars like the Pleiades or Hyades, but much closer. It is the closest star cluster to Earth. To see the whole Great Bear, one must get to a fairly dark sky. In West Milford, Ursa Major is easily seen and it looks like this:



Except for the long tail, I think it looks pretty much like a bear.

Robert Burnham in volume 3 of his handbook, lists 113 galaxies in Ursa Major brighter than 13.5 magnitude.



A few of you have probably heard of M-81, M-82, M-101, M-108, and M-109. But did you ever know that the Galaxy NGC-3077 is less than half a degree SE of M-81 and can be seen from Rifle Camp Park. And SW of 81 about 1.5 degrees away is NGC-2976?

Ursa Major is well placed on spring evenings, inviting us to scan through its treasure trove of galaxies. Last year in the Dark Sky Observer B.R. (Before Roger), I threw out a challenge to all N.J.A.G'ers to go out and find as many of the 113 galaxies in Ursa Major as they could. Unfortunately, I had no takers. However, I know a lot more people have their own scopes, Coulter 8's, C-8's and even a few LX6's, so I'll put out the challenge again. On some (hopefully warm) spring evening, Star hop, Setting Circle, Dead Reckon, or even Telrad your way through the Galaxies of Ursa Major.

P.S. Drop your observations off with Roger of Myself, so we can print the results in July DSO.

May your skies be clear,  
and your lenses free of dew!

☆☆☆☆☆☆☆☆

## The esoteric art of polar alignment

by Jim Beirne

Over the years I have heard of many ways to line up a telescope mount onto the earth's polar axis. This is important because as the earth spins on its axis the stars appear to revolve in the opposite direction. Accurate polar alignment is necessary whenever a telescope or camera is to track an object for any length of time, the longer the time, the more accurate must be the polar alignment.

To begin you must make sure that your declination setting circle is set correctly. When the declination reads zero degrees the optical axis must be parallel to the polar axis of the scope. On a Schmidt-cassigrain system this is done by setting the scope on a level table, then set the Dec circle at 90 degrees, place a level on top of the scope and level the optical axis, make any adjustments in your Dec reading.

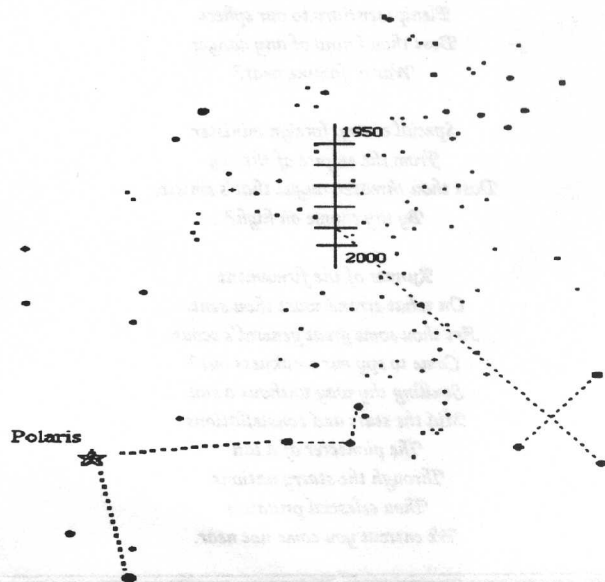
For casual observing you could just "point the leg north", or align on Polaris.

But for astrophotography this won't do because the true pole is about .8 degrees from Polaris. This is more than the diameter of the full moon in the sky (.5 degrees).

I had no patience for the well known star drift method and I kept forgetting which way to adjust and which way was west using a star diagonal.

The first method I had success with was one developed by George Breuer. He figured that 5 clockwise rotations of a C-8 Dec knob was nearly .8 degrees! We would set the Dec to 90° with the forks vertical to get the latitude on Polaris then moved to Alcaid and set the RA to 13 hr 46 min and Dec to 49° 34'. recenter Polaris, turn the dec knob 5 turns, use the mounting adjustments and recenter Polaris. This method is similar to the one Alan Green of the Rockland club "discovered" last year.

I have since moved on to a far simpler method in which I have avoided the use of numbers altogether. At first I took tracked and untracked photographs of the pole area to narrow down the location of the pole. Since then I have found a few maps of the pole area. This one can be found in Burnams on page 2008. In a finder Polaris seems to make a right triangle with



two other stars. One of those stars is part of a smaller right triangle, one leg of the triangle points in the general direction of the pole, but how far? A little farther past the right triangle is another asterism I call "the sword", the hilt of the sword is a bit askew but the blade points directly at the pole! Move along past the blade of the sword, in the pole region there are no stars to speak of. On the other side of the pole there is a star on the line of the blade of the sword the pole is one third of the way between the tip of the sword and this star.

Remember start by setting your Dec circle to 90° and use the adjustments on your mount to point the main optics first to polaris and then star hop to the pole.

As the diagram shows Polaris was exactly one degree from the pole in 1950 and it will be near our little triangle in the late 22nd century so it should be much easier to polar align then.



## Looking Ahead

The next business meeting of the North Jersey Astronomical Group will be held on May 10, 1989. It will be held at the Rifle Camp Park Observatory in West Paterson, New Jersey at 8:00 p.m.

There will be four regular meeting/observing sessions in this month. They will be on May 3th, 17th, 24th and 31st 1989. There will be three public nights this month on May 5th, 12th and 19th. May 5th was originally scheduled as a special night for Mars. This scheduling overlooked the fact that Mars looks terrible at its current distance. Therefore, we will be treating it as a regular public night.

Anyone interested in attending Stellafane this August 4th, 5th and 6th should contact Glenn Burke. Also some members of the club may go there early this year. Those members would assist the Springfield Telescope Makers in setting up for Stellaphane by day, and use breezy hill to observe by night.

## CORRECTOINS

The last newsletter was, unfortunately, riddled with minor errors. There was a slight oversight on the part of the committee. Arrangements were made so we could send the newsletter to Simon Jacob for printing by computer and modem. The file sent to Simon was written on a different version of the same Desktop Publishing program. Therefore his computer could not read it. Once we got word of the problem, it was already quite close to being late. The only hard copy available was an earlier uncorrected version, but it was the best we could do on short notice. Further complicating the situation was the fact that it was an extremely busy time of year for Simon's business. Thanks to Simon's and his secretary, Noreen's, perseverance, the newsletter was only a few days late.



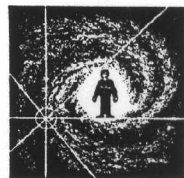
The Dark Sky Observer is a publication of the North Jersey Astronomical Group. All members are invited to write articles for the newsletter. Anyone interested in writing for the DSO, please contact the editor at a meeting or through the mail.

### Editor

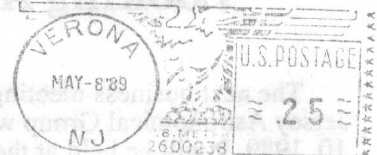
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