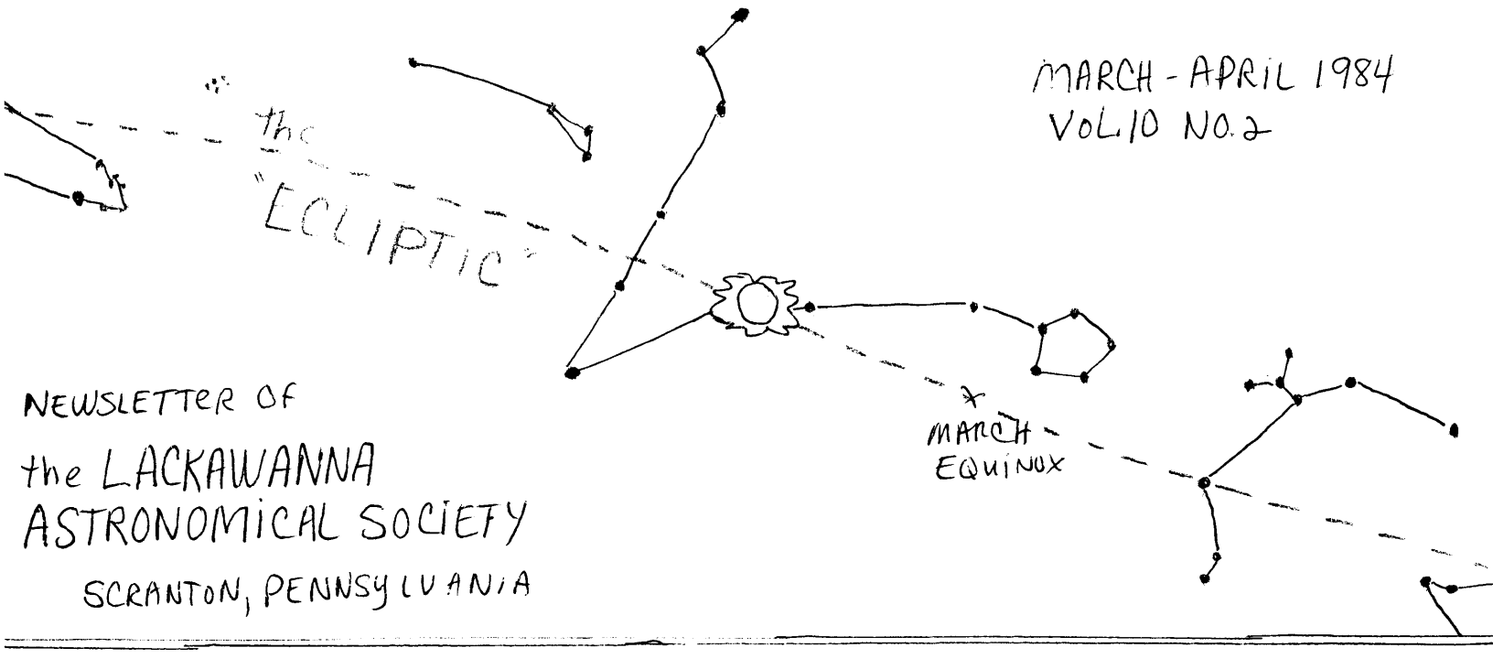

MARCH - APRIL 1984
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NEWSLETTER OF
the LACKAWANNA ASTRONOMICAL SOCIETY
SCRANTON, PENNSYLVANIA

LAS OFFICERS AND BOARD MEMBERS FOR 1984

President - Jo-Ann Pluciennik
Vice President - John D. Sabia
Secretary - J. Michael Schirra
Treasurer - Joe Kamichitis
Junior Vice President - Robert Bolock
At-Large Members - Debbie Holmes/Frank Maros/LuAnn Naughton

LAS CALENDAR

DATE	ACTIVITY	PLACE	TIME
1984 March 6 Tuesday	Regular monthly meeting	Everhart Museum	7:30 PM
March 10 Saturday	Official club observing night	KJC/LASO, Fleetville	9 PM & on
March 20 Tuesday	Board of Directors Meeting	home of J. Pluciennik	8:00 PM
April 3 Tuesday	Regular monthly meeting	Everhart Museum	7:30 PM
April 7 Saturday	Official club observing night	KJC/LASO, Fleetville	9 PM & on
April 17 Tuesday	Board of Directors meeting	home of J. Pluciennik	8:00 PM
May 1 Tuesday	Regular monthly meeting	Everhart Museum	7:30 PM
May 5 Saturday	Official club observing night	KJC/LASO, Fleetville	9 PM & on
May 15 Tuesday	Board of Directors meeting	home of J. Pluciennik	8:00 PM

On all official club nights, a keyholder to KJC/LASO will be present (either John Sabia or Jo-Ann Pluciennik.) On other clear weekend nights, contact J. Pluciennik (346-3268) to see whether the place will be unlocked or will you have to bring your own 'scopes and warm up in your car. KJC Observatory's phone number is 945-3665, but people are not always near to the phone to hear it. KJC/LASO is on Route 107, about halfway from Exit 61 of I 81, as you head to Fleetville Corners. You take a left on Hack Road.

MEETINGS

LuAnn Naughton's slide-talk about her trip to Florida should brighten things for us at our last meeting in Astronomical Winter. Naturally, being good LAS members, she and Ron Benjamin concentrated on Cape Canaveral, and timed their trip so they could witness the most recent Space Shuttle launch. (At least they had a valid excuse for missing the February LAS meeting, did you?)

In April the main feature will be a constellation talk. The choice of constellation mainly depends on how good the observing weather is from now until then. At both meetings we'll also be discussing further plans for the 25th Anniversary observance and national Astronomy Day, which this year is scheduled for May 5. We'll be needing suggestions and volunteers for all these events.

See you all at the meetings.

Jo-Ann Pluciennik
President

SECOND DUES REMINDER

If you find a yellow dues slip in the envelope with your newsletter, it means we do not have a record of your renewal for 1984. Failure to renew soon will mean that this will be your last "Ecliptic" and you will not be listed when the 1984 membership list is published in the May-June newsletter.

If you have already renewed and still have received a dues reminder in this mailing, please notify the treasurer, Joe Kamichitis, so he can correct our records.

FROM THE LAS LOGBOOK
(OBSERVATORY UPDATE PART I)

At the December '83 meeting it was announced that our 12½" drive was not operating. This is an update to that problem for those who did not attend the last two meetings. The problem was determined to be a faulty drive motor (Hurst model CA). We found a replacement in a catalog supplied to us by Tom Cupillari. This cost us a mere $25.00.

On one of those cold winter evenings Joe and I dismantled the motor and electrical circuitry and replaced the motor. It worked perfectly. While putting the dust cover back on the housing, we discovered the reason for the motor burnout. A 2" gear was rubbing against the dust cover eventually jamming. This caused the motor to overload and burn out. It appears that too many spacers were installed on the assembly moving the unit away from the base toward the dust cover. All is remedied now.

The next clear evening the roof was rolled off, the drive turned on and the 12½" was aimed at a star, which promptly moved through the field of view. In our haste we neglected to re-engage the clutch. This done, the star continued to move slowly out of view. With so much work done on it, the mount had become out of polar alignment. The photographs of M42 attest to this fact.

On the next opportune weekend evening (1:00 AM Saturday morning) Joe carefully performed the alignment. It now holds a star in the field of view very well.

So to summarize, the 12½" is working fine, polar aligned and only needs the finder reattached for full usefullness. As of this writing our only finder is a 4" f/15 refractor. Very soon the 12½" will be in full operation, ready for visual and photographic uses.

John D. Sabia

DID YOU KNOW...

From "Pegasus" newsletter of Roberson/Kopernik Observatory, Binghamton, NY.

That sunsets are much more colorful than sunrises? At both sunrise and sunset the Sun lies at an oblique angle to the Earth, forcing the light from the Sun to pass through a layer of air which is thicker than the midday layer. Dust particles which are suspended in the air scatter the Sun's light, affecting the blue wavelengths of light more than the red wavelengths. This scattering allows the Sun's red light wavelengths to pass on to our eyes. During the day, solar radiation creates air turbulence and winds which stir up dust particles on the Earth. Human and animal activity is also greater during the day, creating more dust and dirt particles and stirring these particles into the atmosphere. After a busy and windy day, the sunset will be more stunning thanks to the scattering effect of dust and dirt particles in our atmosphere.

OBSERVATORY UPDATE PART II

Keystone Junior College has recently made another addition to the serious, working instrumentation at the Observatory. With the purchase of a Meade equatorial mount, there will soon be a permanently installed, polar-aligned, clock-driven mounting available for use with telescopes or cameras.

Most of us are familiar with the 6" diameter steel pier embedded in the ground near the 9" dome, in fact, some of us may have been at the receiving end of the old "Zenith Telescope" joke. This pier was put in some years ago to hold the 10" reflector but was little used for that purpose. The 10" is now happily mated to a Dobsonian mount and is used quite frequently on public nights and by LAS members.

Now, a Meade equatorial head can just about disappear into a 6-1/8" I.D. pipe so the Club's contribution to the project is fabricating an adapter plate to accept the mount properly. To this end, we obtained a 7/8" thick, 6" dia. round plate of solid aluminum into the center of which Bill Mecca, famous LAS member and tool expert, during many hours of precision lathe work, bored a hole 3-3/4" dia. Future users of the mount will surely appreciate Bill's fine workmanship. Still to be done is drilling and tapping of the pier and plate to secure both the plate in the pier and the mount in the plate and then constructing a removable shelter for weather protection.

When the mounting is completed it will be convenient and easy to use telescopes up to 8". It will make time consuming set-ups, shaky mountings, and frustrating polar-aligning a thing of the past. Hassle-free, clock-driven, wide-field astrophotography will be routine even for the inexperienced.

Along with the mount, the College has obtained an illuminated guiding eyepiece and a nebular filter not to mention a maximum-minimum thermometer. With the new apparatus and with the 12" back in business, the Observatory is the place to go if you're looking for a way to shake off a couple of months of cabin fever.

Joe Kamichitis

CLOSE ENCOUNTERS OF THE MARS KIND

by

Rodger W. Gordon

From "The Observer", newsletter of the LVAAS Inc., Allentown, PA.

Starting in 1984, the planet Mars will once again be coming nearer in our skies. On May 11, the planet will come to opposition and have an apparent disc diameter of 17.4 seconds/arc. Closest approach will take place on May 19, with Mars about 50,000,000 miles away and a diameter of 17.6 seconds/arc.

The seasonal aspects of Mars at this time will be very similar to the May 1, 1952 and May 31, 1969 oppositions. The Southern Hemisphere of the planet will be experiencing late winter. The Southern Polar Cap should reappear in late June or early July as Martian Spring approaches, however, some temporary frosts on cloud canopy in the southern regions should be observable

from time to time. The Northern Polar Cap will be quite small and temporary mists and clouds may also be visible near its borders.

Syrtis Major, the most prominent (usually) dark marking on Mars, looked like a drop of black ink during the 1969 opposition and its appearance should be similar in 1984.

As Mars will be some 18 degrees south of the celestial equator near the Libra-Scorpio border in 1984, it will require fairly good seeing to get good views of the planet since it will never get more than 32 degrees above the horizen for an observer at +40 degrees north latitude. I highly recommend apertures of 3" to 8" for the most useful results as this range of aperture is less affected by atmospheric turbulence than larger instruments. Closed tubed instruments such as Catadioptric or Refractors are likely to give steadier images than open tubed reflectors. The possessor of an optically excellent Catadioptric or Refractor in the above aperture range is in for some outstanding views if the "seeing corditions" cooperate.

The May 1984 opposition is considered an "intermediate" one as Mars is about halfway between the perihelion and aphelion parts of its orbit. Generally speaking, a perihelic opposition takes place when the planet is somewhere between 35 and 43 million miles away or in that part of its orbit within ±35 degrees of its perihelion point. Intermediate oppositions take place when Mars is about 44 to 53 million miles away and an aphelic opposition when the planet ranges from 54 to 63 million miles from us.

Perihelic oppositions occur from late June through early October and aphelic oppositions between the latter half of December through early April. The cycle of oppositions averages 25-27 months, but perihelic oppositions take place only after every 15 or 17 years, the last being in 1971.

As Saturn will come to opposition on May 2 of 1984 and Mars on May 11, the two planets will be located in the same part of the sky only a few degrees apart. Both will be in Libra, but Mars will far outshine Saturn; Mars being 1.8 magnitude or considerably brighter than Sirius. Telescopically, however, Saturn's disc will be slightly larger at 19 seconds/arc. A power of about 105X or so will make either planet appear to be about the same size as the full moon as seen with the unaided eye, but Martian studies of a reasonable disc size.

The Mars 84 event will be just a preliminary warmup to the main attractions in store for 1986 and 1988, as the 86 and 88 events will give us back-to-back perihelic oppositions. Usually a complete cycle of Mars oppositions gives us one perihelic opposition in the 15 year period, and one or two near perihelic ones.

1986 and 1988 will be different as opposition dates will be July 10 in 86 and September 28 in 88. Closest approaches will be on July 16 and September 22 with Mars being 37 million miles away in 1986 and 36 million miles distant in 1988. Disc diameters will be 23.2 seconds/arc and 23.8 seconds/arc on these dates.

In 1986, Mars will be in Sagittarius and will vary between 25 degrees to about 29 degrees south of the celestial equator. Mars will never get more than 21 degrees to 25 degrees off the southern horizen. Consequently "seeing conditions" will play an even greater role in your seeing detail on Mars in 86, much more so than 1984, and it may do well to dust off that 2.4" or 3" refractor for any kind of viewing if you live at +40 degrees North Latitude or more. Before you feel sorry for yourself, however, pity the poor British observers who will only see Mars some 8 degrees or 9 degrees off the horizen! If you want a good view of Mars in 1986, now might be the time to start saving up for that Florida or Bermuda vacation you always wanted.

Things will get better in 1988 though and Mars will be near the celestial equator and thus fairly high in the sky. But 1988 may well produce a Martian dust storm anytime from mid-August through early October and if this happens you won't see any detail on Mars no matter how powerful your telescope. It seems that Mars was created just to frustrate amateur astronomers!! The 1971 dust storm did not start until mid-September and as opposition was on August 10, it did not interfere too much, but the 1956 storm started on August 24 and as the opposition was on September 10; if you did not start observing Mars earlier than August 24, you saw no surface detail at all except perhaps a vague smudge or two.

By 1990, Mars will be starting another outward cycle of oppositions. In late November, Mars will be 17.9 seconds/arc and about 49 million miles away. After that, we won't see any close oppositions of Mars until 2001 and 2003 and that's a long time to wait. Perhaps by then, there will be an Earth expedition on Mars looking back at us. As one who has observed Mars at every opposition since 1954 (at age 13+), that would prove to be the real culmination of our efforts in Space.

Heard recently on National Public Radio: People in California are being warned not to be taken by an ad saying that a star will be named after them for a fee. A spokesman for the Astronomical Society of the Pacific said, "Anyone who sends money in response to the ad may as well throw their money down a black hole."

LOG BOOK REVIEWS

Whenever I observe, I preserve a written record of the night's sighting in a log book. By reviewing your log book an insight can be gained into the progression of your ability to see all that is visible in the eyepiece. In addition, the amount and type of records put down on paper can be thought over. For instance, review a planetary observation, say for Mars. In your notebook you find a drawing of all visible marking on a certain night; plus the time and some information about the clarity of the image. Thinking this over, what else could you have noted down? Well how about the telescope used and description at various magnification, the type eyepiece and filter used. Even more basic, the date and time itself, EST, EDT or UT? The amount of time spent on any drawing and the seeing conditions that night, transparency, moon phase and altitude? There's always a way to improve the scientific value of your observations.

Consider another log entry, a bright meteor seen by Jim Filipski and me in the summer of 1975. My notes show the time and date of the event, but what made it significant was the long enduring train left in its wake. We saw the train for a few seconds. Jim had a pair of 7X50 binoculars that we used to look at the train after it faded from naked-eye visibility. What Jim and I saw through the binoculars was a long nebulus patch. (I did not state size in my records.) We also watched it with a 5" f/5 with a 5° field of view. The upper atmosphere wind began to distort the train into a lazy "S" shape (I did record the time.)

We also saw it begin to drift across the sky. (We could have timed its direction and rate of drift!) Other items we did not note were whether or not stars were occulted behind what had now become a circular patch. Had we thought about it, we could also have taken a photograph of it.

These are some of the things we could have done, had we had more experience in observing. Today, most of the knowledge of observing can be found in the amateur handbooks on the market. The LAS membership package contains a list of some of the best. However, reading must also be accompanied by frequent observing in order to hone your observing skills so they become second nature.

John D. Sabia

WHERE TO WRITE FOR SERVICES

Publication lists, film lists, and information about other services are available from the Education Services office at the NASA center serving your state. There are special resource centers for educators at the Kennedy Space Center, Lewis Research Center, and Alabama Space and Rocket Center (Huntsville, AL 35807).

NASA Goddard Space Flight Center
Greenbelt, MD 20771

Also: Office of Public Information
Jet Propulsion Laboratory, California Institute of Technology
NASA, Pasadena, CA 91107

SPRING (AND PUBLIC NIGHTS) RETURNS

The Spring series of public nights at KJCO resume on March 21. Each of the free public sessions consists of a slide lecture, followed by observing through the 9" Clark refractor, along with various other instruments including the 10" Dobsonian. As usual, the public nights will be held on Wednesdays, until May 30 when brightness delays the observing sessions too much.

OBSERVATORY ASIDES

It's funny how much better things look while you are anticipating them, than they do while you're stuck in the midst of the reality. Take winter, for example. As it heads for you, the migrating flocks of geese give you a thrill, Christmas festivities loom, and Orion and his cohorts sparkle so brightly that the skies look good even from your backyard in town. Ah winter!

By now though, the glow is off the season. How did I ever forget the aggravation of dressing for cold, the worry of driving on iffy nights, (assuming the car has started at all!) What has happened to change the scenery! At first it was a big relief to go out in the spacious big-sky landscape, no longer hemmed in by tree foliage. So restful to walk around without fighting through all that fussy clutter of herbaceous plants and the ants, flies, mosquitoes, hornets and bees that are always nearby. Now the same scene is just bleak and lifeless. Besides the snow wasn't even all that good, mostly being mixed with sleet and rain. It's probably just that any good thing can last too long. By now most of us are ready to get really active again.

In winter you just don't take advantage of good nights as much as you should. It's either so cold your face is freezing off, or the best nights are mid-week. I'm glad the groups and the public nights are starting up. Once I have the responsibility of slide shows and manning the telescope for the public I won't miss those mid-week nights. We've had four beautiful Wednesday nights lately that I hadn't planned to leave free for astronomy, the way I have to in spring and fall, so I've missed them. I guess I need the extra push of deadlines and schedules to get anything done.

Jo-Ann Pluciennik

NOTE FROM THE PRESIDENT

I realize that the officers and the board of directors tend to harp on the idea of active participation by our members. It is not that we fail to appreciate your moral and financial support given to us even if your interest is mainly intellectual and not observational, and you find it difficult to attend the meetings. It is just that the officers and board members are concerned that the needs of the membership are not being met by the offerings of the society. Recently we've had new people added to the very active group. LuAnn Naughton and Mike Schirra have each given a program at a meeting. Just ask them and they'll be happy to tell you how much more you get out of your hobby when you take an active role in the doings of the society. If you can not, then we thank you for your loyalty and look forward to the day when we can do more for you.

Jo-Ann Pluciennik

The "Ecliptic" is the bimonthly newsletter of the Lackawanna Astronomical Society. A subscription to the "Ecliptic" is one of the benefits of membership in the LAS. No permission is needed for nonprofit use of any material published in the "Ecliptic" provided it is properly credited.

Articles, cartoons, news items, may be sent to:

Jo-Ann Pluciennik, Editor
313 East Elm Street
Scranton, PA 18505

Staff: Diane Musewicz
Joe Kamichitis
Julie Musewicz