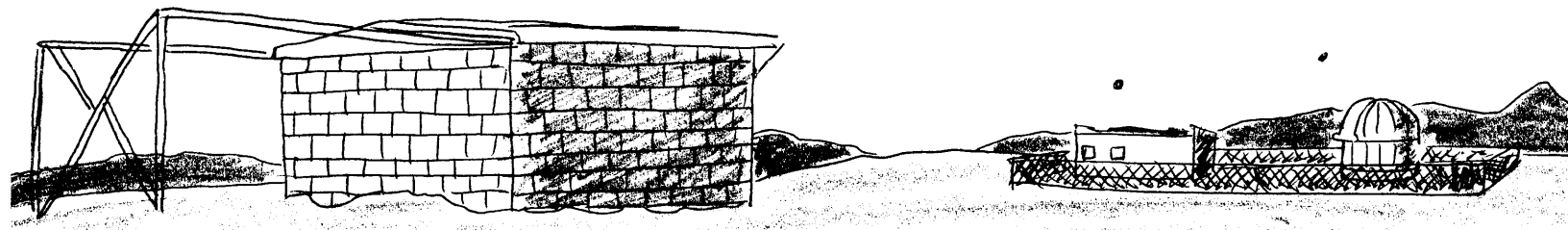


the ECLIPTIC

November-December 1987
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Newsletter of the LACKAWANNA ASTRONOMICAL SOCIETY, Scranton, Pennsylvania

LAS OFFICERS AND BOARD MEMBERS FOR 1987

President - John D. Sabia
 Secretary - Glenn Jacobs
 Junior Vice President - Tom Holeva
 At-Large Members - Esther Friedmann/Steve Gedrich/Ed Sidorski

Vice President - Jo-Ann Kamichitis
 Treasurer - Diane Musewicz

LAS CALENDAR

| <u>DATE</u> | <u>ACTIVITY</u> | <u>PLACE</u> | <u>TIME</u> |
|----------------------------|---|--|---------------------|
| * Dec 7 <u>Monday</u> * | Regular monthly meeting/ Christmas Party | Junior Achievement Bldg, 1007 Capouse Ave, Scr. | 7:30 PM |
| Dec 8 Tuesday | Board of Directors meeting | home of J.D.Sabia | 8:00 PM |
| Dec 12 Saturday | Official Club Observing Night | KJC/LASO, Fleetville | 8:30 PM if clear |
| * Jan 4 <u>Monday</u> * | LAS Annual Meeting | J A Bldg., 1007 Capouse Scranton, PA | 7:30 PM |
| Jan 9 Saturday | Official Club Observing Night | KJC/LASO, Fleetville | 8:30 PM if clear |
| Jan 12 Tuesday | Board of Directors Meeting | home of D. Musewicz 431 Palm St., Scranton | 8:00 PM |

On all clear official club nights, a keyholder to KJC/LASO will be present (either John Sabia or Jo-Ann Kamichitis). Even on club nights, if you must travel any great distance to get to KJCO, please call J. Kamichitis to be certain of the sky conditions and availability of a keyholder. Also, if the weather is at all iffy, call first to make the arrangements definite. On other clear weekend nights, contact J. Kamichitis (343-4006) to see if the place will be unlocked or whether you will 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 at the intersection of Route 107 and Hack Road. Take either Exit 61 or 62 of I 81, and head towards Fleetville.

PRESIDENT'S NOTES

The amount of outstanding business the club has is very small. The largest item on the list is the arrival of the 17" reflector, due soon. We just were notified that it may be in within two weeks. At the last board meeting it was decided to take delivery at my home. Since I am the closest to the KJC Observatory, it would not be such a long haul to transport it there. Next on the agenda is the long awaited revision of the famous LAS Members Packet. As I now understand a limited amount of the new packets will be available at the November meeting. And finally, the new letterhead will be made by December.

Take a close look at the day and date of the December and January meetings. They are all on a Monday night. It seems that Monday is the only available night open at J. A. Because we need a warm weather-proof meeting place in winter, the board agreed to this shift.

This is the last article I shall be writing in the President's Notes. As such I would like to thank all of the membership in the support you have given me in the two years that I have served.

COMET BRADFIELD 1987s

As was announced at the October meeting, this newly discovered member of the solar system made a good showing in the mid October western sky. So far this is the brightest comet seen this year. Easily seen with 7x50 binoculars and conveniently placed near 3rd and 4th magnitude stars, the comet's 10 minute of arc coma obtained a 6.5 magnitude. Comet Bradfield could also be compared to the two globular clusters in Ophiuchus, M10 and M12, for brightness and size. Remarkably, there was a three day stretch of exceptionally clear evenings from Tuesday, October 13, to Thursday, October 15. In that time Joe Kamichitis and I used the 8" Schmidt camera to get two photos a night. We even showed it on the public nights at KJCO on October 7 and October 14. A visual inspection with the larger instruments showed a bright star-like nucleus inside the coma and a stubby faint tail. On most nights the nucleus was displaced towards the tail. The negatives show a beautiful comet with a dust tail that we could just make out visually. Slides should be ready to show at the November meeting. The comet will still be visible during November and December. On October 23, Bradfield passed near the globular M10. This made a fine picture when photographed with the Schmidt camera.

John D. Sabia
President

ELECTION RESULTS ANNOUNCED

We're so late with this issue that we can report on the LAS elections. Following tradition, the turn-out was large for the election, but with only one nominee for each post, there was not much suspense, or debate. The only complaints detected was some muttering by the officers-elect.

Congratulations go out to the new officers and board. Best wishes for a good astronomical year!

President - Diane Musewicz
Vice President - Tom Holeva
Secretary - Glen Jacobs
Treasurer - Steve Gedrich
At-Large Members - Elaine Moore/Don Murray/Ed Sidorski

It was interesting to note that the members in attendance at this election meeting were largely members we hadn't seen in sometime. It was great seeing all of you.

Another unusual feature of this election is that there is no separate Junior Vice President. The few junior members we do have, have difficulty making the meetings. Tom Holeva, who will be making the transition to senior member this year, will act as senior-junior liaison. Tom is both young and a five year LAS veteran.

Jo-Ann Kamichitis, Vice Pres.

CHRISTMAS FESTIVITIES PLANNED

Soon members of the Christmas party committee will be contacting all members to give them their assignments for the party. This Christmas party format has always worked out really well. The scene is informal, casual and affordable to all.

If you will not be able to attend the party, please notify one of the committee members so someone can cover the gap if there is a real need to.

Planned is a movie, more photos of Comet Bradfield, upcoming events and lots of fun.

Say 'yes' to your LAS volunteer.

GUIDING LIGHT OF WALLSVILLE

The shining star of Wallsville.

The LAS's monthly meeting was scheduled for September 1, 1987 at the Fleetville Observatory. Located about two miles from the observatory is Lackawanna State Park, Wallsville, where I have been fortunate to mix my two favorite hobbies, fishing and star gazing.

My plan for this evening was to attend a meeting with my six-year-old daughter, Sarah, and then go fishing for about two hours afterwards. I thought I might have to cancel my fishing trip as Sarah fell asleep during the business portion of our meeting. She did, however, awaken during the monthly calendar and sky talk. She was well received at our meeting, and the pretzels she brought that night went over pretty well, too. Members wished us luck after the meeting ended and we were on the lake by 10:15 PM. The fish weren't biting, my usual excuse, and at 11:30 PM Sarah and I decided to cash it in for the night. It was then I realized the fog had rolled in as thick as pea soup and getting home would not be easy. I tried to follow the shore line, but the boat motor would tangle in seaweed and I would try to free the propeller; the boat would spin and I would lose all sense of direction. At this point at 11:45 PM, Sarah and I decided to settle in for the night. I didn't relish sleeping in a boat for five or six hours, but Sarah didn't seem to mind.

At approximately 1:30 AM as I looked up to the heavens, I noticed a faint light. It was too small to be the moon and yet no other stars could be seen. Recalling Esther Friedmann's sky calendar lecture only a few hours ago, I decided it was Jupiter. At nearly -2 magnitude, what other object would be breaking through the fog! Also, I remembered that Jupiter was going to be rising in the east, northeast. I felt an immediate rush for I realized that that's where my car would be parked. So I pulled up the anchor and in five minutes landed not more than thirty yards from the launch area.

Sarah and I made it home at 2:45 AM. As scared and uncomfortable as we were, this adventure will never be forgotten. Navigating by the stars, I got the full admiration of my daughter and the brunt of numerous jokes from my friends.

I am much less anxious about getting lost due to my knowledge of the stars and the purchase of a \$4.00 compass.

Steve Gedrich

TRIP TO CALIFORNIA

On our trip to California, we went up to Mt. Hamilton to the Lick Observatory. The Lick telescopes were closed due to earthquake damage, so we missed seeing the 120".

Going home, we went out Route 40 and at Tehachapo we saw a hillside with over 2,000 windmill generating stations. Some had three bladed propellers and some were of the aeorele type where the blades of the propellers are parallel to the main support mast.

At Flagstaff, Arizona, we went to see Percival Lowell's telescope (a 24" refractor). We heard a talk about how Lowell designed the dome to rest on pontoon floats in a circular tank that held salt water so it wouldn't freeze. When the wind blew, it would rock the dome and splash this water all over him and he would have to change into dry clothes several times a night to continue observing. As you know, there was no electricity in those days, so the dome had to be pulled into position with a rope.

In later years the dome was modified to rubber wheels and an electric motor to rotate the dome. There are about 40 wheels that have 'Ford' imprinted on them used for this purpose.

The next place we stopped at, was Walnut Canyon, where we saw cliff dwellings. Then off to Barringer Meteor Crater which was our next stop. The interesting part of this was the pipes that they had welded to the railings where, when you looked through them, you could see different features of the crater such as uplifting of the strata and so forth.

All in all we had a great time.

Ed and Charlotte Sidorski

LAS LACANER TELESCOPE PROGRAM

Sure, we have the 12½" now set up for photography and visual use, the 17" is due any day now, you can mount your own camera on the permanent pier, or do piggyback photography or eyepiece projection photography with the Clark. For a beginner, though, or some one trying to open the world of astronomy to a friend or offspring, there's nothing like borrowing the LAS's 6". Dazzle your friends and neighbors with views of the moon, Jupiter and Venus!

The club's 6" f8 Dynascope is available with either the original German equatorial mount or the new Dobsonian altazimuth mount. We recommend the Dobsonian for beginners.

You may borrow the scope for one month at no charge. The telescope is to be picked up at one meeting and returned at the next. Contact either John Sabia or Joe Kamichitis at a meeting, a public night, or call 586-0789, to request the telescope. There may be a waiting list. If when you return it, no one else has requested the scope, you may request a one month extension.

OBSERVE COMET BRADFIELD

The last time a comet Bradfield had really caught the public's attention was in 1974. Since that comet was following the big disappointment of Comet Kohoutek, it's publicity was a bit low-key. This comet Bradfield (#13 for him) has proven to be quite impressive to the public at KJCC. People have remarked on how much better it looked to them than Halley's did. It's nice that some of the survivors of those long lines were not deterred and still come up to KJCC.

Use binoculars to look for the comet, as soon as it gets dark (for the highest view.) We've been following it for a month at least, and have seen it easily from our backyard with binoculars. If you live in a spot like my sister's, with a lot of street and security lighting, you may not have much luck, so move to a place where you can at least see the guardian stars for Altair.

The map that is enclosed should let you find the comet. It is moving higher away from horizon haze all the time, but by Christmas time you may need to use a low power telescope to see it.

Jo-Ann Kamichitis

OBSERVING JUPITER'S SATELLITES

These nights, Jupiter is the most prominent planet in the sky. It's at its closest and brightest in years. Luckily for us, Jupiter not only shows details on its surface, but its prominent satellites with their noticeable motions and interactions make Jupiter as attractive as Saturn and much more dynamic than anything else we view. With Jupiter you have the opportunity to amaze your kids or moderately interested friends. Maybe Jupiter can help you lead them to a life-long interest in astronomy, by showing that you're not really looking at the same old thing, night after night.

These eclipses, occultations and transits of the satellites can be followed even in a 60mm refractor. A 4" or 6" reflector will give spectacular views. Start to observe 5 to 10 minutes in advance of the scheduled event so you will be sure to catch it.

The nights that are spotlighted here were chosen for the number and variety of events occurring, all before 1:00 AM. Weekend nights have phenomena listed at even later hours.

Even by just reading these tables, you can see more clearly the geometry of the Jovian system and the effects of Kepler's laws. Io's transit events take less time to run through than do those of the outermost Galilean satellites. Satellites closer to the planet will go behind the planet, then come out of Jupiter's shadow, while a more distant satellite will go behind and come out from Jupiter and then go into and out of Jupiter's shadow. A close satellite will come in front of the planet, followed by its shadow, and then will move off from the face of Jupiter, followed by its shadow. A more distant satellite, at this particular sun-earth-Jupiter angle, will be seen to move onto and off of the face of the planet before its shadow even moves onto the planet.

Fascinating stuff seeing geometry involved in real life!! Makes you realize these may even be algebra, trig and calculus in real life too.

GEOCENTRIC SATELLITE PHENOMENA
CODE TRANSLATION

- I - Io II - Europa III - Ganymede IV - Callisto
- Tr I - transit ingress (satellite moves in front of the planet)
- Tr E - transit egress (satellite moves off of the planet)
- Sh I - shadow transit ingress (satellite's shadow moves on to the planet)
- Sh E - shadow transit egress (satellite's shadow moves off the planet)
- Oc D - occultation disappearance (satellite moves behind the planet)
- Oc R - occultation reappearance (satellite moves out from behind the planet)
- Ec D - eclipse disappearance (satellite enters the planet's shadow)
- Ec R - eclipse reappearance (satellite comes out from the planet's shadow)

Some sample translations are given in the table of selected nights. All UT times are translated into EST. 0^h = 7PM, 1^h = 8PM, 2^h = 9PM, 3^h = 10PM, 4^h = 11PM, 5^h = 12 midnight, 6^h = 1AM, 7^h = 2AM, 8^h = 3AM, 9^h = 4AM.

OUTSTANDING DECEMBER NIGHTS

December 11-12

23:44 UT (6:44 PM) II Sh I
Europa's Shadow moves onto Jupiter

23:47 UT (6:47 PM) II Tr E
Europa moves off from in front of the planet.

2:03 UT (9:03 PM) II Sh E
Europa's shadow moves off the planet

2:33 UT (9:33 PM) I Oc D
Io moves behind Jupiter and is hidden

5:53 UT (12:53AM) I Ec R
Io appears after being in Jupiter's shadow

December 12-13

23:43 UT (6:43 PM) I Tr I
Io moves in front of Jupiter

0:53 UT (7:53 PM) I Sh I

1:53 UT (8:53 PM) I Tr E

3:03 UT (10:03PM) I Sh E

December 19-20

1:34 UT (8:34PM) I Tr I

2:49 UT (9:49 PM) I Sh I

3:45 UT (10:45PM) I Tr E

4:59 UT (11:59PM) I Sh E

December 26-27

3:27 UT (10:27PM) I Tr I

4:45UT (11:45PM) I Sh I

5:38UT (12:38AM) I Tr E

6:55 UT (1:55AM) I Sh E

December 18-19

23:52 UT (6:52PM) II Tr I

2:15 UT (9:15PM) II Tr E

2:20 UT (9:20PM) II Sh I

4:24 UT (11:24 PM) I Oc D

4:30 UT (11:39PM) II Sh E

7:48 UT (2:48PM) I Ec R

December 25-26

23:32 UT (6:32PM) III Ec D
Ganymede moves into Jupiter's
shadow and fades out

1:51 UT (8:51PM) III Ec R

2:22 UT (9:22 PM) II Tr I

4:45 UT (11:45PM) II Tr E

4:57 UT (11:57PM) II Sh I

6:16 UT (1:16AM) I Oc D

7:15 UT (2:15 AM) II Sh E

9:44 UT (4:44AM) I Ec R

December 27-28

23:06 UT (6:06 PM) II Oc R

23:23 UT (6:23 PM) II Ec D

0:44 UT (7:44 PM) I Oc D

1:44 UT (8:44 PM) II Ec R

4:12 UT (11:12PM) I Ec R

Jo-Ann Kamichitis

FOR SALE

An 8" diameter, 50" focal length Newtonian. Built in a class at the American Museum of Natural History, in New York. Its performance compares favorably to commercially made telescopes, according to the owner.

The Telescope comes with equatorial mount, a 6 x 30 finder, and two eyepieces. He is only selling the scope because he is over 70 and has found it too difficult to set up the scope and stay out late.

If you're interested in the telescope, contact him at (717)686-3484.
Rubin Friedman, Milford, PA

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.

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