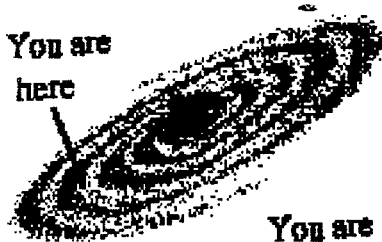


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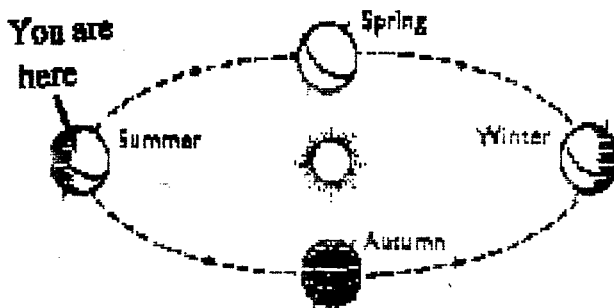


the ECLIPTIC

Vol. 18 No. 4

JULY-AUGUST 1992

**SPEND
THE
SUMMER
WITH**



PICTURE YOURSELF HERE

THE LAS



Newsletter of the LACKAWANNA ASTRONOMICAL SOCIETY, Scranton, Pennsylvania

LAS OFFICERS AND BOARD MEMBERS FOR 1992

PRESIDENT Steve Gedrich	VICE PRESIDENT Jo-Ann Kamichitis
SECRETARY Joe Kamichitis	TREASURER Diane Musewicz
AT-LARGE MEMBERS: Phil Cruikshank / Bernie Gillot / Don Murray	

LAS CALENDAR

LAS MEETINGS: Summer Dates Cookouts/monthly meetings/ observing Saturdays, at KJC/LAS Observatory, Fleetville, PA at 5:30PM
July 11, 1992 *August 8, 1992*

BOARD OF DIRECTORS MEETINGS: Tuesdays, at the home of Steve Gedrich, Charles St., Throop, PA at 8:30PM. Any interested member may attend - call 383-0184 for directions.
July 14, 1992 *August 18, 1992*

LAS PUBLIC STAR PARTIES: Fridays, at KJC/LAS Observatory, Fleetville, PA. Members, please show up at 8:30PM. Bring your own instrument or help man one of the clubs. Public is invited to attend at 9:00PM.
July 10, 1992 *August 7, 1992*

LAS PUBLIC STAR PARTIES: Thursdays, at Promised Land State Park, Greentown, PA. Members, please show up at 8:30PM. B.Y.O.T. Public is invited to attend at 9:00PM.
July 23, 1992 *August 20, 1992*

PERSEID METEOR WATCH: Tuesday-Wednesday, at KJC/LAS Observatory, Fleetville, PA. Call to see if anyone will be up there on either night.

August 11, 1992

August 12, 1992

KJC SUMMER LECTURE SERIES: Mondays and Wednesdays, at KJC Observatory, Fleetville, PA. Wednesdays lecture is a rerun of Mondays lecture. (Just like television.)

July 6 & 8, 1992:

Tom Cupillari "The Observable Universe"

July 13 & 15, 1992:

Jo-Ann Kamichitis "Comets & Meteors"

July 20 & 22, 1992:

Bill Speare "The 1992 Solar Eclipse from the Air"

July 27 & 29, 1992:

John D. Sabia "How to Observe"

SUMMER MEETINGS: *Please note the day and date changes.*

Join us at 8:00PM for the **meetings** covering club plans and activities, constellation talks, observing tips, reports, up coming events (and of course the famous LAS coffee.)

Join us at 5:30PM for the **picnic**. Bring your own food (we usually have enough to share). A grill will be available. We hope to do solar observing along with frisbee tossing.

LAS STAR PARTIES: The Friday night sessions at **KJCO** will feature a slide show (rain or clear) followed by observing. We'll be heavily promoting these at Lackawanna State Park hoping to lure the campers there to take the short drive to KJCO to view the moon and Saturn as they should be seen -- through a large long focus refractor.

Everyone's welcome. Bring a friend or two!

At **Promised Land State Park**, you'll find the best skies in the area. These Thursday night sessions are generally attended by 200 or so public so we will need LASers and scopes to help us out after the slide show. We meet at the auditorium near the Nature Museum. We'll need scopes to be displayed even if it turns out to be cloudy.

Dark-of-the moon nights were chosen to reward ourselves. If you have trouble finding the constellations at KJCO because there's too many stars, Promised Land, which does not have the glare of Scranton to the south, will dazzle you!!

PERSEID METEOR WATCH

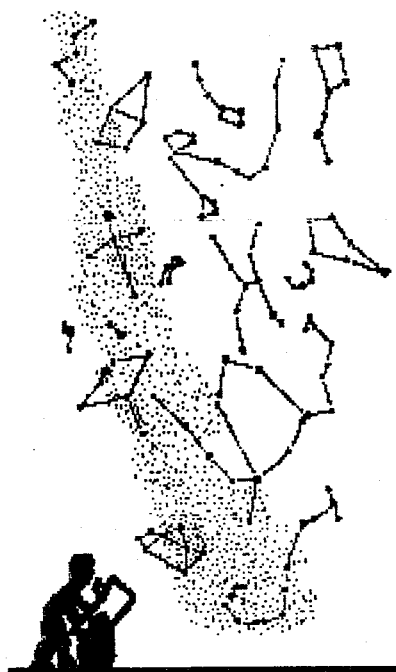
It's likely that you'll catch many early Perseids at any of the LAS July activities, however we expect to be set up for major observing on the night of August 11-12 even though the moon will be nearly full. The comet associated with the Perseids is nearing opposition and it is anticipated that the shower will put on a better-than-average show. (Remember that you can't witness a surprise meteor storm if you're inside sleeping or watching T V!)

Assume that it will be colder than common sense would expect. Bring a lounge chair or blanket, warm jacket, hat, gloves, binoculars (just for browsing), wear socks, long pants, and in case it is warm, bug repellent. We'll have coffee brewing and cocoa and tea as well.

For photography, you'll need fast film, a tripod, a locking cable release, and a camera capable of taking long time exposures.

On all clear official club nights, a KJC/LASO keyholder will be present. If the weather is at all questionable, please call either John D. Sabia at 586-0789, or Joe and Jo-Ann Kamichitis at 343-4006, in order to be sure that someone will be there (and maybe inspire them to take a chance on an "iffy" night!) On other clear nights, check with the keyholders or call the Observatory number (945-3665). Let the phone ring long since we may be outside, and may not hear it right away.

* TO GET TO KJC/LASO, TAKE I-81, EITHER EXIT 61 OR 62 AND HEAD TOWARDS FLEETVILLE. THE OBSERVATORIES ARE LOCATED AT THE INTERSECTION OF ROUTE 107 AND HACK ROAD. IF YOU FIND YOURSELF AT FLEETVILLE CORNERS, YOU'VE GONE TOO FAR!! *



IF YOU CAN'T IDENTIFY ALL THE
CONSTELLATIONS SHOWN ON THE
RIGHT MAYBE YOU NEED THE

LAS

OBSERVING PROGRAM!!

(SEE THE NEXT PAGE FOR DETAILS)

LAS OBSERVING PROGRAM

The LAS is starting a observing certificate program to aid our members in their enjoyment of the night sky. The program is divided into two sections depending upon the skill and equipment of the participants. But, you are not restricted in involvement of either. As you may have guessed the first section is composed of objects that can be seen without the use of a telescope. Binoculars are helpful but not essential. Along with the objects is a reading list of books in the LAS Library. The books contain information on observing techniques and background information. We have been building up the library with enough titles to cover all aspects of observing from beginner to advanced topics.

Section two is for members who own a scope; or you can borrow the 6 inch f/8 alt/az mounted reflector. Objects in the Deep Sky category are covered along with solar system events. When putting this program together we have included a variety of objects, some that require different observing methods. To cite an example -- variable star observing vs planetary observing.

To participate in the year long program use the forms provided and keep a LOG BOOK of your observations. Mark down the date, time, and a short remarks on the observing conditions and appearance of the object. Bring the LOG BOOK to the monthly meetings where your observations will be examined. Also at each monthly meeting a Sky Calendar program is presented detailing observing times for most of the objects in the first section.

An Events Calendar is available for most of the periodic events in the second Section. For example the transit, occultation, and eclipses of Jupiter's moons or the times of minimum for eclipsing variable star. Lunar phases and special events are also noted. Some months will contain more information than others.

All events on the Events Calendar are coded in a basic form and all events are given in Universal Time (U.T.). For example a listing of

RED SPOT 0 12 means that the Red Spot of Jupiter is on the planet's meridian at 0 hours and 12 minutes U.T. Likewise 1 SH E 0 46 is interpreted as "Io's shadow will egress (leave) the planet Jupiter surface at 0 hours 46 minutes". Note that each of the Galilean moons are assigned a number and the type of event is abbreviated to a two letter code. The following table will help:

MOON	EVENT CODES
1 IO	SH Shadow D Disappearance
2 Europa	TR Transit R Reappearance
3 Ganymede	EC Eclipse E Egress (exit)
4 Callisto	OC Occultation I Ingress (enter)

A full explanation can be found in many of the books in the LAS library. Time is reckoned from 0 to 24 hours and is expressed as Universal Time. Zero hours U.T. is midnight at the Greenwich meridian; 0 degrees longitude. A more detailed explanation can be found in SKY & TELESCOPE and other sources. But for now you can remember that 8:00 PM. EDT is 0:00 hours UT and IT IS THE NEXT CALENDAR DATE. For EST 7:00 PM. is 0:00 UT. *10:00 PM EDT JUNE 5, 1992 is 2hrs 00min UT on JUNE 6, 1992.*

For example if the Red Spot of Jupiter crosses the meridian on June 9 at 1:00 UT, you would look on June 8 at 9:00 pm.

The event will be under June 8 on the calendar and listed as Red Spot 1 00.

The minimum of eclipsing variable stars (EB) are also listed in Universal Time. In addition to Algol the stars U Sge, U Cep, RS CVn, RZ Cas and BM Ori will be noted. Only Algol can be viewed without optical aid, the rest require a binocular or low power telescope. Star charts for the rest including the Long Period Variables (LPV) can be obtained at the meetings. Copies of the Events Calendar will also be available.



JOHN D. SABIA

MORE ON THE LAS OBSERVATION PROGRAM

SECTION I. BEGINNER'S PROGRAM

*Naked Eye and Binoculars
for all include date/time and comments*

The Planets

Mercury Venus Mars
Jupiter Saturn Uranus

Solar /Lunar

SUNSPOTS (CAUTION - USE PROPER FILTER)

LUNAR MARE

Mare Imbrium Mare Crisium Sinus Iridum

CRATERS

Tycho Copernicus Aristarchus Atlas

ANY LUNAR ECLIPSE

ANY METEOR SHOWER

ANY COMET

THE CONSTELLATIONS

Ursa Major	Cassiopeia	Bootes
Leo	Pegasus	Ursa Minor
Cygnus	Lyra	Aquila
Delphinus	Sagittarius	Scorpius

STARS

Capella	Regulus	Arcturus	Vega
Albireo	Deneb	Antares	Pollux
Castor	Rigel	Sirius	Procyon

SECTION II MODERATE APERTURE TELESCOPES

LUNAR FEATURES (Date / Comment)

Straight Wall	Apennine Mountains
Archimedes	Theophilus
Rima Hyginus	Bulliadus
Copernicus	Messier A & B

SOLAR SYSTEM

Jupiter's Moons in Transit or Eclipse
Jupiter's Red Spot
Saturn's Rings
Uranus Neptune

An Asteroid
A Comet
Venus as Crescent

DEEP SKY

<i>Double Stars</i>	Magnitude	Separation
Albireo (Beta Cygni)	3.2 - 5.4	34.4"
Alpha Herculis	3.2 - 5.4	4.7"
Gamma Arietis	4.6 - 4.7	7.8"
Iota Trianguli	5.3 - 6.9	4.0"
Gamma Delphini	4.3 - 5.2	9.8"
Iota Cancri	4.0 - 6.6	30.4"

<i>Variable Stars</i>	Type	Magnitude Range
R Corona Borealis	Irregular	5.9 - 15
Y Canes Venatici	LPV 182 days	5.2 - 6.6
g Hercules	LPV 80 days	4.4 - 6.0
RZ Cassiopeia	EB 1.195 days	6.4 - 7.8

Deep Sky

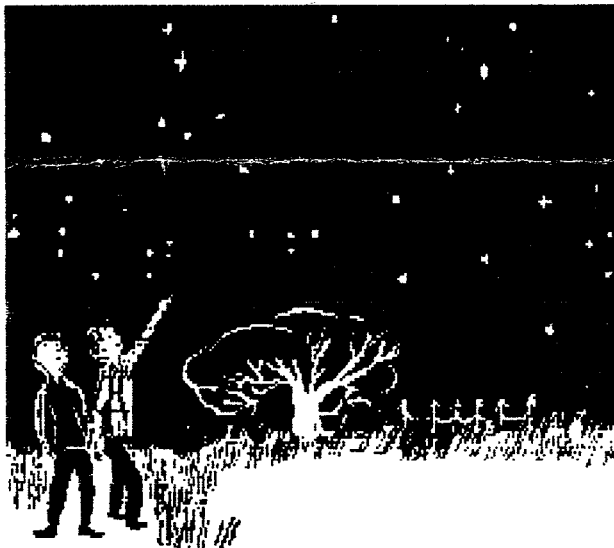
- M4 M8 M13 M22
- M27 M31 M38 M41
- M42 M57 M65 M66
- M81 M82 M97 M108

SUGGESTED BOOKS

To help locate the items in the LAS Observer's Achievement Program the following list of books in the LAS library will be of great assistance. Books can be taken out of the library at each of the monthly meetings of the Society.

- 1000+ The Amateur Astronomer Guide to Deep Sky Observers*
- The StarGazers Bible*
- The Star Guide*
- The Moon Observers Handbook*
- The Guide to Observing the Moon*
- Universe Guide to Stars and Planets*

PREDICTING AURORAS

*Guide to the Stars**Astronomy with a Small Telescope**The Monthly Sky Guide**Turn Left at Orion**Edmund MAG 5 Star Atlas**Books for those with a Telescope :**How to use a Astronomical Telescope**The Guide to Amateur Astronomy**The Universe Next Door**Through the Telescope**A Complete Manual for Amateur Astronomy**Deep Sky Observing with a Small Telescope**Atlas of the Night Sky**WEBB Society Handbooks**VOL. 2 Planetary and Gaseous Nebula**VOL. 3 Open and Globular Clusters**VOL. 6 Variable Stars*

Reprinted from **Reflector**, the *Astronomical League Newsletter*, May 1992 issue. (Originally from *NEWSTAR*, journal of the Northeast Wisconsin Stargazers, Oshkosh, WI, April 1992)

I have become an aurora chaser. But finding an aurora to view is not as easy as it sounds. To help predict the appearance of an aurora, I now listen to WWV, thanks to an article I found in the February 1990 issue of *SKY & TELESCOPE*.

At 18 minutes after each hour, WWV gives a solar report listing three values, Solar flux, the A index, and the K index.

Solar flux can range from a low of 67 to as high as 300 or more. I look for values around 200 for an alert. If I were in the South, I would not try until the Solar flux reaches 300 or more.

The A index is a measure of geo-magnetic activity, and reaches as high as 400. Once the value is near 100, I start looking. In the South wait until the A index is at least 300.

Finally, there is the K index. This index is a measure of the current conditions, and is updated every three hours. I start looking once the value is 5 or more. For you southerly types, wait until it is 9 or 10.

The K report also gives the status of solar-terrestrial conditions for the past 24 hours, and a prediction for the next 24. Key words to listen for are: "A large solar flare occurred at ...UT" or "A major geo-magnetic storm is in progress" or "Photon absorption is in progress."

All this information in only one minute gives me everything I need to chase down an aurora. I concentrate on the K index more than anything else.

Tim Printy

David Levy, well-known amateur astronomer, comet hunter (and a very successful one at that) astronomy popularizer, writer and excellent speaker at numerous amateur astronomy conventions was recently featured in SMITHSONIAN magazine. That is not, however the source of this reprint!

CANADIAN ASTRONOMER IN DISGRACE

Reprinted from R.A.S.C. Bulletin, newsletter of the Royal Astronomical Society of Canada. Originally from Ridiculous, newsletter of the Kingstone Centre.

A severe blow was dealt to the Canadian astronomical community in January when Centre Honorary President David Levi tested positive for parabolic steroids. Levi, who has discovered twelve comets, has been banned from comet hunting for two years and will be stripped of his discoveries. Parabolic steroids artificially enhance the ability of the user to find solar system objects, especially those in parabolic orbits.

Levi's comet hunting career began in the late 1960's but he didn't meet with success until 1984. Since then he has discovered comets at an astonishing rate. Over the last few years Levi has been the target of allegations of steroid use by other comet hunters. Says William Liller, "Here's a guy who can't find a comet for twenty years and then finds twelve in seven years. That should have been a dead giveaway."

Steroid use is believed to be rampant at many astronomical institutions. An I.A.U. commission into steroid use in astronomy has been set up. It will conduct hearings around the world and report back to the I.A.U. in September.

In his own defence, Levi says "I'm not the only one! Look at [Robert] Evans -- he lives on steroids."

Walter MacDonald

WHY DOES THE SUN COME UP IN THE MORNING?

"Why does the sun come up in the morning?" This is one of the questions mankind has been trying to find out since the first time that light came peering into their caves.

There have been many different answers offered, ranging from the mystical to the scientific. Here are but a few.

There was a tribe that believed they were responsible for the sun coming up over the horizon. The tribal members would head out to the ceremonial spot when the sun was below the horizon, knowing that the god of the sun would become lost if they didn't chant and call the sun to rise up into the sky. They would begin their chants and symbolically pull the sun into the day. This worked nearly everyday.

From time to time the sun would get lost and allow the darkness to take over the day and the rains would come, although not unwelcome this did not look good for the wise ones. The wise ones would soon learn to read the clouds and decide that some days it would be best not to call the sun, but allow the sun to find its own way to the sky, allowing the rain to come and give a new life to the soil. Thus giving us our first weather readers.

I, on the other hand, think that the reason the sun comes up has to do with my working for a living. The reasoning is quite easy to understand. First, the sun is not too smart! I get up about the same time every day that I go to work. The sun knowing this (I told it) comes up to greet me (of course shining in my eyes) and wishes me a good day. Of course I did tell you the sun isn't too smart and doesn't realize the days I take off, and sometimes it forgets to come up. (This usually happens on a day I don't go to work.)

Bernie Gillot (official LAS myth person)