URANOGRAPHOS

Newsletter for the
Shoreline Amateur Astronomical Association

President- Dr. Robert Wade **Vice President**- Peter Burkey **Secretary**- Michael Coté **Treasurer**- Mark Logsdon

Robert Wade, Editor *February 1990*

February Meeting

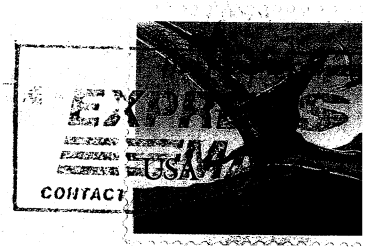
The February meeting of the Shoreline Amateur Astronomical Association will be held on February 15, at 7:30 PM in the West Ottawa Middle School Planetarium in Holland, Michigan. The agenda will be as follows:

7:30-7:35	The February Night Sky Tour.
7:35-7:45	The Observer's Log - A review of objects to observe in the constellations Lepus (lē´pŭs) and Cetus (sē´tŭs) presented by Mark Logsdon.
7:45-9:00	*Lunar Geology* - is the title of a program to be presented by Michael Coté, our club secretary and district geologist for the Department of Natural Resources. Don't miss this one!

Membership Renewal

If you have not renewed your membership and still intend to do so, please fill out the back page and mail it to Mark Logsdon together with a check for the appropriate amount of money. Note the new membership options and dues.

3882 62nd Street
Holland, Michigan 49423



January Meeting Highlights

On January 18 our meeting was started by Sandy's tour of the January sky. Bob followed with a presentation of interesting objects to observe in the constellations Triangulum and Auriga. We then had a general business meeting.

Our first item of business was revising the constitution. We voted to form two types of membership: *Full* and *Contributing*. These are further subdivided into: *Senior*, *Regular*, and *Junior* categories based on age (and thus dues amount charged). The difference between Full and Contrib-

uting lies in receiving an astronomical publication and eligibility for club office.

We **voted** to pursue IRS tax-exempt status. This option is available to non-profit organizations within 15 months of incorporation. Mark will obtain the necessary paperwork and keep us informed. We will be able to hold significant fundraising activities (public observatory, anyone?).

We discussed the plan for club star parties this year. There will be two a month, held either at Bob Wade's or Mark Logsdon's home. They are scheduled for Friday evenings, with the following Saturday reserved in case of poor observing conditions. The dates for February are Feb 16 at Bob's, Feb 23 at Mark's.

We also talked about inter-club star parties and potential club field trips. The executive committee will take care of some of the details.

January Executive Meeting

The meeting was called to order at 6:30 pm, January 25th by Bob Wade. Peter Burkey, Michael Coté, and Mark Logsdon were also present. Sandy Plakke was absent.

Peter Burkey talked about Astronomy Day on April 28th. We will host a public star party that evening in Kollen Park, contact Michael Coté or Arlin Ten Kley for details. Since Herrick Public Library is not available on that date, plan on meeting there on Monday, April 30 starting at 6:30 or 7:00 pm until 9:00pm. Contact Peter Burkey if you can display a telescope or otherwise contribute to making this year's program a success. Last year we obtained some new members as a result!

Mark Logsdon agreed to look into getting membership cards made up for the club. They will feature the club and Astronomical League logos. They will be available for distribution at the February meeting. Distinction between Full and Contributing memberships will be based on card color.

We decided to make 1990 a year dedicated towards increasing club membership and having lots of star parties to get our astronomers out of their armchairs. Towards that end we are going to experiments with a membership incentive plan. ***Please Note:*** for every new member you introduce to the club in 1990 and who rejoins in 1991, we will decrease your 1991 basic dues by 25%, up to and including a 100% reduction of your basic dues! So get cracking, bring them to a club meeting or star party.

Bob talked to Michael Galvin, the editor of the Muskegon Astronomical Society about their proposed field trip to Chicago's Museum of Science and Industry on March 31. The cost will be $20/person and includes charter bus transportation and admission to the Omnimax theater. There will probably be room for some SAAA members if anyone is interested.

Mark also will be hosting our **1st Annual Messier Marathon** during the star party on either March 23 or 24. Come on out for the entire night or part of the night and enjoy seeing more deep sky objects in one night than you have probably done before.

Hubble Space Telescope

The long-awaited launch of the Hubble Space Telescope (HST) will be taking place, if all goes according to schedule, on March 26. It seems appropriate, then, to review some of the fascinating aspects of this one-of-a-kind optical instrument.

When finally launched, the HST will have cost over $2 billion, a price exceeding that of the 5 largest optical telescopes in the world combined. It will see seven times farther into space than any telescope has before and will be able to detect objects 50 times fainter than the largest ground based telescope can. Its 94 inch diameter is relatively small (Palomar's Hale telescope is 200 inches), but it contains the finest large optical system ever built.

The 94 inch primary mirror, 12 1/2 inch secondary mirror, and the scientific payload that receives the images are held precisely in place by a framework called the metering truss. Because HST will undergo large and frequent temperature changes in space, the entire structure's coefficient of expan

sion must be essentially zero. The truss, measuring 210 inches by 115 inches and made of graphite epoxy, weighs a mere 252 pounds. In contrast, the tube of the 200-inch Hale telescope is 60 feet long and weight 120 tons. Despite temperature changes of over 280 degrees Fahrenheit in space, the truss will not expand or contract more than 1/10,000th of an inch. Supporting the mirror has been compared to securing a soap bubble at six points, but not deforming it in any way.

Next month: constructing the most precise mirror ever built.

Peter Burkey

As I Remember

From about 1957 to 1960 there was some interest in star gazing in the Holland area. Henry Engelsman owned a 6" Newtonian type reflector. Sid Risselada, another friend of mine, made a 6" reflecting telescope which he mounted in his garage. Both friends are now deceased.

Sid ground and polished his own mirror, an *f* 10 with a focal length of about 60". He made an opening in the flat roof of his garage with a sliding cover and used a short polar axis mounting which was hung from the ceiling! This was driven with an electric phono motor (an old 78 rpm) which had a flyball-type governor for adjusting the speed. This operated through a large worm gear drive and believe it or not seemed to work quite well. He observed double stars and liked to look at the moons of Jupiter. However his view was somewhat limited at his west 19th street location. Sid was the chief machinist at Buss Machine Co., on west 8th street.

Henry purchased his telescope complete with a tripod and a clock drive. It was a really nice instrument. He worked at the Holland Evening Sentinel as an engraver.

In order to get away from city lights, Henry and Sid used to come to my house at 778 W 32nd street (which is now the Knollcrest subdivision). At that time I had a 10" *f* 13 mirror mounted in a 12.5' long tube in a rotating building. I ground the mirror myself and silvered it. This was an alt-azimuth mounting and the scope was great for planetary work. The 134" focal length meant w observed from the second floor!

We weren't organized as a club but w enjoyed looking at the stars and planets as well a the good old moon. One night in the early part c May 1957 I believe it was, Henry brought along th Sentinel photographer and so our picture made th Sentinel Tulip Time Edition. How about that!

Thanks for letting me share my memorie with you.

Jarvin Kleim

SKY CALENDAR FEBRUARY 1990

CURRENT SKY INFORMATION:
Call (517) 332-STAR

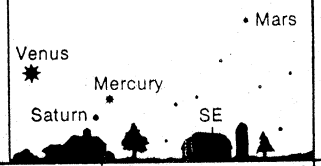
An aid to enjoying the changing sky

tances between objects on diagrams below.
0° 10° 20°

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY

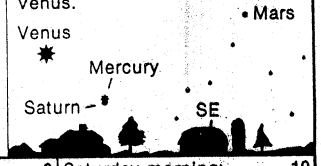
Evening Planet: Jupiter is brightest "star" in evening, very high in E to SE at dusk. It reaches its high point in S 4 hours after sunset Feb 1, and just after end of eve twilight at month's end. **Four bright morning planets in compact gathering: Venus** rises in ESE just before start of morn twilight Feb 1, and over 2 hours before sunup at month's end. Venus gleams brilliantly in ESE to SE ¾ hour before sunup. **Mercury** is 8° LR of Venus Feb 1, closing to 7° LR of Venus Feb 4. (In early Feb don't confuse Mercury with nearby fainter Saturn; see Feb 1, 3, 7.) Mercury passes about 9° below Saturn on Feb 8 & 9, and is increasingly lower left of Venus thereafter. From N states, Mercury becomes difficult to see around midmonth; viewers from S states can follow it a few days longer. **Saturn,** within 6°-8° LR of Venus all month, appears very near Mercury on Feb 3 and near Mars on Feb 28; see calendar. **Mars** is UR of Saturn most of month and fainter. **Two faint morning planets:** See left margin.

Thurs Feb 1, morning:
Note Saturn 2° lower left of Mercury. Watch changes in next few days.

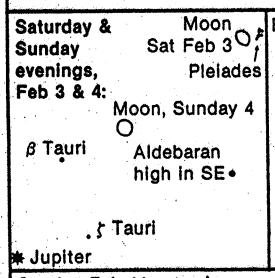


Fri Feb 2
Moon near First Quarter phase in afternoon & evening.
Moon near Pleiades Saturday evening. See next Sunday's box.

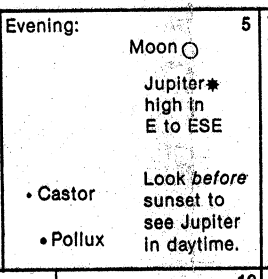
Sat Feb 3, morning:
Mercury passes Saturn; 0.3° apart from E Coast, 0.2° from West and Hawaii. Look 7° LR of Venus.



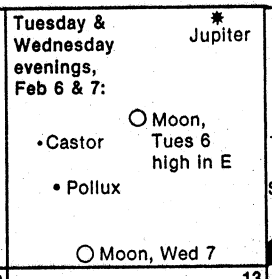
Saturday & Sunday evenings, Feb 3 & 4:



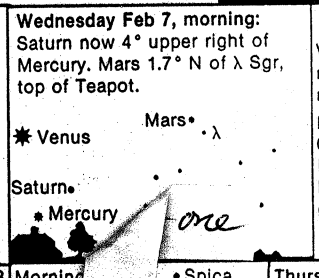
5
Evening:



Tuesday & Wednesday evenings, Feb 6 & 7:

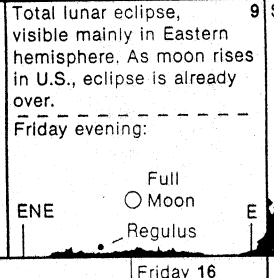


Wednesday Feb 7, morning:
Saturn now 4° upper right of Mercury. Mars 1.7° N of λ Sgr, top of Teapot.

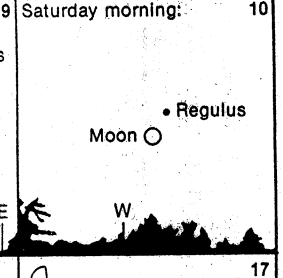


8
Venus ends retrograde; lingers near Saturn all month.
Mars will pass only 0.2° S of Uranus Friday morning. See left margin notes for details.

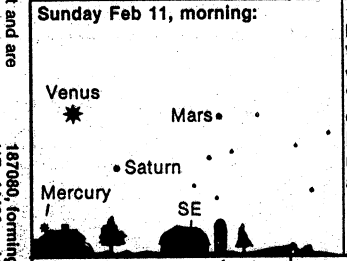
9
Total lunar eclipse, visible mainly in Eastern hemisphere. As moon rises in U.S., eclipse is already over.
Friday evening:



10
Saturday morning:



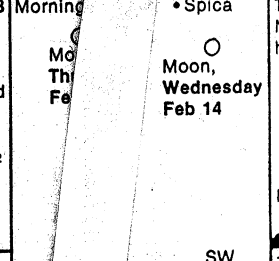
Sunday Feb 11, morning:



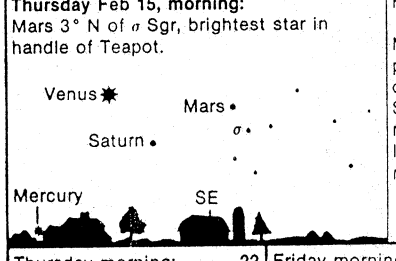
12
It's easy to see Venus in daytime when it's a morning "star": Just keep track of it until sunrise! Binocs show crescent, now 0.8 arcminute across, 1/6 illuminated.

13
Mars 10° W of Saturn and closing in. Watch for their conjunction at month's end. This is a good date to begin a series of photos showing changing pos'ns of planets about 1½ hours before sunrise.

Morning



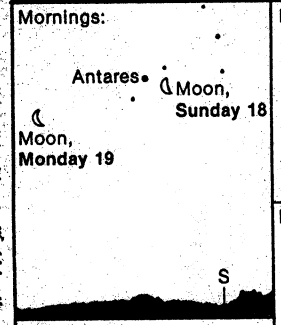
Thursday Feb 15, morning:
Mars 3° N of σ Sgr, brightest star in handle of Teapot.



Friday 16
Mars will pass 1.5° S of Neptune Saturday morning. See left margin notes.

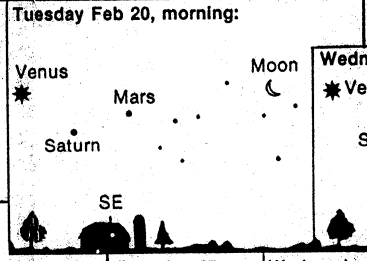
17
Moon approaching Last Quarter phase in morning sky. Look before and after sunrise.

Mornings:

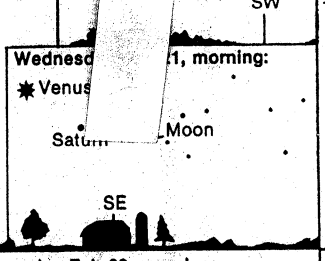


Monday Feb 19
Venus & Saturn appear closest this morning, 6.3° apart.

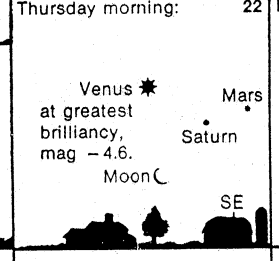
Tuesday Feb 20, morning:



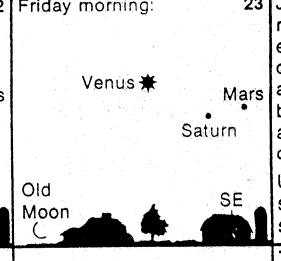
Wednesday Feb 21, morning:



Thursday morning: **22**

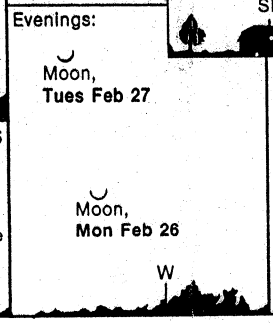


Friday morning: **23**



24
Jupiter ends retrograde. For several evenings, Jupiter lingers only 0.8° E of the *solstice* at the Taurus-Gemini boundary, where Sun will appear as summer begins on Jun 21.
Uranus will closely pass a star next Monday morning; see left margin notes.

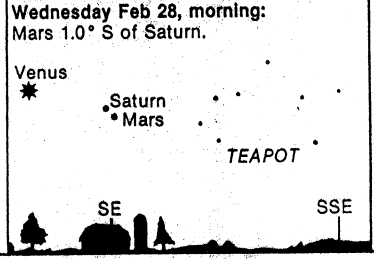
Evenings:



New Moon 3:54 a.m. EST (12:54 a.m. PST). **25**
Using binoculars 20-30 min after sunset, try for extreme young Moon. If seen, calculate age.

Tuesday 27
After tomorrow morning, your next chance to observe Mars passing Saturn won't come until March 6, 1992. Don't miss this one!

Wednesday Feb 28, morning:
Mars 1.0° S of Saturn.



Planet magnitudes:
Venus −4.5 to −4.6
Jupiter −2.6 to −2.4
Mercury −0.1 to −0.2
Saturn +0.6
Mars +1.4 to +1.2
Uranus 5.8 to 5.7
Neptune 8.0

Diagrams on this calendar show sky in midtwilight from lat 40° N, about ¾ hour before sunrise or ¾ hour after sunset, except Feb 25, as noted.

Telescopic views: Jupiter shows disk 0.7′ across at midmonth. **Ganymede undergoes eclipse** Feb 6 7:26-10:32 EST, and Feb 15-16 11:27 pm to 2:34 am EST. **Venus shows** crescent, 0.9′ across on Feb 1 and 7% full. By Feb 28 it shrinks to 0.6′, and waxes to 30% full. **Saturn's rings extend** 0.6′ Feb 28 and are tilted 23°.

Uranus and Neptune on Feb 1 rise just before start of morning twilight and are very difficult to see, but both improve as Feb progresses. **On Feb 9, Mars passes 0.2° S of Uranus.** That morning 1½ hours before sunrise, note **Mars** very low in SE, and 3rd-mag λ (Lambda) **Sagittarii** (top star of Teapot) 2.4° right of Mars and slightly lower. Binoculars show three "stars" of mag 5.6 to 5.8 surrounding Mars, all within 1° of Mars. They are: **24 Sgr,** 0.4° lower right of Mars and 2° NE (left) of λ; **SAO 187080,** 0.8° lower left of Mars and 3° NE (left) of λ; and **Uranus,** within ¼° N (upper left) of Mars. Globular cluster M22, within ½° below these planets, may be too hard to see in the full moonlit sky on Feb 9, but might be seen by Feb 14 as Uranus passes 0.4° N of it in somewhat diminished moonlight. **On Feb 26 Uranus passes only 4′ (arcminutes) N of the above-mentioned 5.7-mag star SAO 187080, forming a very striking "double star" of identical brightnesses;** look 0.6° NE of M22 and 3° NE of λ Sgr. The "double" will be easy to split in 7X binoculars in good seeing; a telescope would show Uranus' disk. **Neptune,** over 2 mags fainter than Uranus and farther east, isn't easy until later in the month. **On Feb 17, Mars passes 1.5° S of Neptune.** 1½ hours before sunrise that morning, look for Neptune 1.5° N of Mars and 1.2° W of the 4th-mag star Omicron Sgr. A telescope then shows Neptune within a few arcminutes of the 8.3-mag star SAO 187546; Neptune is the brighter and more southerly. By Feb 28 Neptune moves to within 0.9° W of Omicron Sgr. **In coming months** Uranus and Neptune will be seen higher in darker skies and will shift into the evening. **Watch for finder charts** in future issues of *Sky Calendar.*

Robert C. Victor, Jenny L. Pon, Robert D. Miller

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