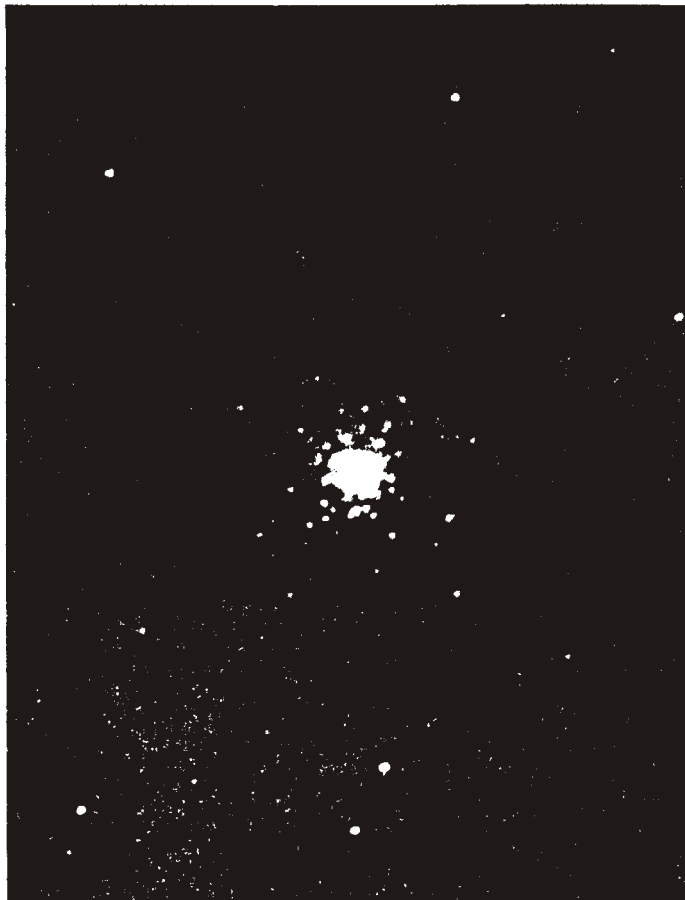


THE  
CELESTIAL OBSERVER  
newsletter of  
the

Oshawa Astronomical Society

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One of the more famous Messier objects, M13, is 21 thousand light-years distant and is easily seen in binocular. Photo by Mike Cook, Dynamax 8, f/10, 30 minutes, Tri-X.

## OAS NOTES

Welcome to the Oshawa Astronomical Society. As the society is comprised of members from the Lake Ontario Astronomical Association and the Durham Region Astronomical Society, it is hoped that the combined strengths of these members will provide for a long lasting astronomical organization. The first meeting is solely to get acquainted with old and new members. Future meetings will consist of talks by fellow members on observing, astrophotography, or any topic that a member may wish to present that would benefit other members. As such, it is important that each and every member get involved. In addition to regular monthly meetings, star parties and perhaps film and or slide presentations can be incorporated. Thank you for your support and may the nearest clouds depart!

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The next meeting of the OAS will be held at the same time and place on January 7, 1982. Until then Merry Christmas and a Happy New Year!

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Do you have any photos that you might want included on the front cover? Contact Walter MacDonald, 000-0000.

## THE SKY THIS MONTH

Tues 7	15 53 UT	Last quarter Moon
Wed 8	13 00	Mercury 3° South of Neptune
Sat 11	02 00	Saturn 3° South of Moon
Mon 13	05 00	Jupiter 2° South of Moon
	22 00	Uranus 2° South of Moon
Tues14	10 00	Geminid Meteors
Wed 15	09 18	New Moon
Fri 17		Mercury at greatest hel. lat. South
Sat 18	02 00	Moon at Apogee
Sun 19	00 00	Neptune in conjunction with Sun
	01 00	Mars 1.6° North of Moon
Tues21		Mars at perihelion
Wed 22	04 39	Winter Solstice; winter begins
	19 00	Ursid meteors
Thur23	14 17	First Quarter Moon
Wed 29	23 00	Ceres in conjunction with Sun
Thur30		Venus at aphelion
	11 33	Full Moon; Eclipse of Moon
	19 00	Mercury at greatest elong. East, 20°
	22 00	Moon at perigee

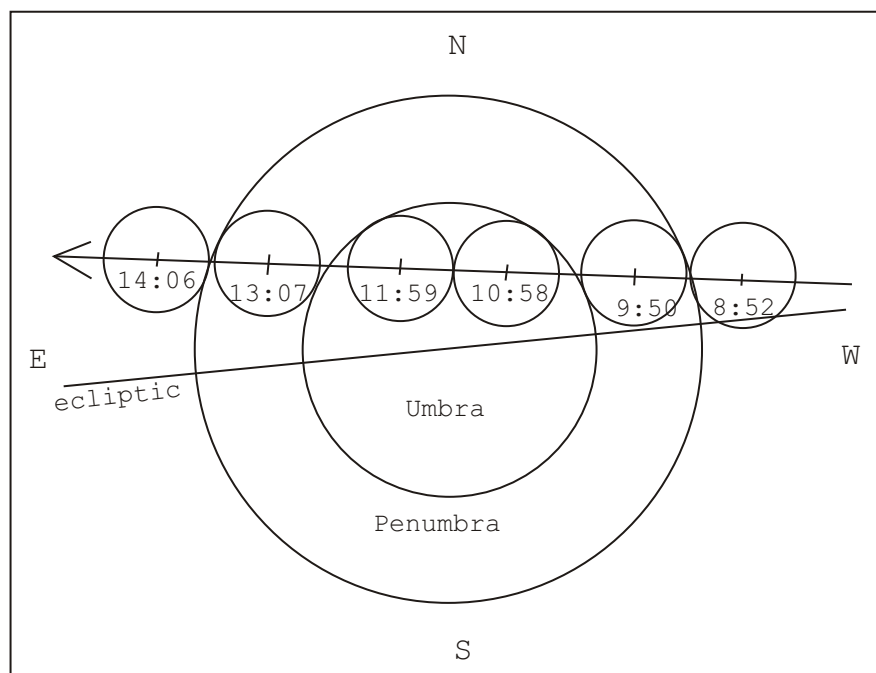
Note: Our time zone is 5 hours behind UT or Greenwich time.

## TOTAL LUNAR ECLIPSE DECEMBER 30, 1982

Event	EST	UT
Moon enters penumbra	3:52 a.m.	8:52
Moon enters umbra	4:50	9:50
Total eclipse begins	5:58	10:58
Middle of eclipse	6:29	11:29
Total eclipse ends	6:59	11:59
Moon leaves umbra	8:07	13:07
Moon leaves penumbra	9:06	14:06

On the morning of the 30th the Sun rises at 7:34 EST. However, twilight may interfere with observations near the end of totality. (More on the lunar eclipse on page 7).

The chart below gives times of the Moon's passage through the earth's shadow.



Additional activities for the Lunar Eclipse are crater timings and lunar occultations. Since the moon will be much darker, occultations of very faint stars may be timed.

## EVENTS THIS MONTH

## Occultations by the Moon

December 25	9:27.9 EST	Z.C.208	7mv	Disappearance
	11:02.4 EST	Z.C.210d	6.6mv	Disappearance
27	8:00.0 EST	Z.C.454	5.8mv	Disappearance
	2:04.3 EST	Z.C.475	7.4mv	Disappearance

Note: Z.C.210d is a double star.

## Occultation by an Asteroid

On December 21, 1982 at 00:52 +/- 3min, there may be an occultation of the star SAO 110157 by the asteroid Emita. The data is given below for the star and asteroid. Although the path of visibility is still quite uncertain, attempting to observe this event may prove to be a rewarding experience.

SAO 110157 9.4mv 01h 49m 13s R.A. +06°52' 48" DEC.

Emita 481 12.7mv

The total change in light intensity of this occultation will be 3.2mv and the duration of the event may be up to 16 seconds. Plotting the star on a star atlas will greatly aid in locating the area of the sky where this event will occur.

Mike Cook.

## TIMING ASTRONOMICAL EVENTS

This first issue of the Celestial Observer contains 4 lunar occultations visible from the Oshawa area. In addition, a possible occultation of the star SAO 110157 by the asteroid Erita may be seen. The most valuable contribution an amateur can make to the field of astronomy is the timing of such events.

Use a telescope with a medium power eyepiece, (binoculars are fine for the lunar occultations), and tune-in to a radio time signal such as WWV, 2.5, 5.0, 10.0, 15.0, or 20.0 Mhz, or CHU, 3330, 7335, or 14670 kHz. With a stopwatch, observe the time the star disappears behind the Moon or asteroid and start the stopwatch upon disappearance (or reappearance). The stopwatch is stopped at a time signal and the elapsed time subtracted to obtain the time of occultation. All timings should be recorded to 0.1 seconds and all errors held to within 0.5 seconds. Of course these occultations can be observed just for the fun of it; seeing a star suddenly wink-out is an interesting experience in itself!

## DECEMBER 30TH LUNAR ECLIPSE

The total lunar eclipse on the morning of December 30 will be a somewhat shortened version of what was seen last July 6th. The reason for the shortening of this eclipse is that for observers in eastern North America the end of totality will occur at 7:30 a.m. EST. In effect, just over half of the eclipse will be seen in our area.

It has been predicted that this eclipse, like the last, will be a dark one. The magnitude of the eclipse is given as 1.188. This value is the fraction of the lunar diameter within the umbra of Earth's shadow at greatest phase, measured along the common diameter.

The reason for the darkening at this eclipse is due to the presence of large amounts of volcanic dust in the atmosphere which will tend to disperse the light from the Sun that would normally pass through the atmosphere and illuminate the Moon's disk.

Note: Moonset occurs at 7:30 a.m. Est for our area.

Scott Ramsey.

An expedition to photograph and observe the eclipse will be arranged. Contact Walter MacDonald, 000-0000.

## THE SKY FOR JANUARY

Sun	2	16 00	UT	Earth at perihelion
Mon	3	20 00		Quadrantid meteors
Wed	5			Mercury at ascending node
Thur	6	04 00		Last Quarter Moon
		18 00		Mercury stationary
Fri	7	10 00		Mercury 2° North of Venus
		12 00		Saturn 2° South of Moon
Sun	9			Mercury at perihelion
		22 00		Jupiter 2° South of Moon
Mon	10	07 00		Uranus 2° South of Moon
Wed	12	01 00		Neptune 0.6° South of Moon
Fri	14	05 00		Moon at apogee
		05 08		New Moon
Sat	15	19 00		Venus 1.8° North of Moon
Sun	16	03 00		Mercury at inferior conjunction
Mon	17	04 00		Mars 3° North of Moon
Tues	18	13 00		Vesta 0.8° South of Moon
Thur	20			Mercury at greatest hel. lat. South
Sat	22			Venus at greatest hel. lat. South
		05 33		First Quarter Moon
Thur	27	10 00		Mercury stationary
Fri	28	11 00		Moon at perigee

22 16 Full Moon

Next meeting: February 4, 1983.

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In 1975 an optically invisible galaxy was discovered with a radio telescope. This galaxy is about 8° north-east of Betelgeuse. It is the nearest known galaxy to our own and has been given the name Snickers because it's like the Milky Way, but only peanuts.

From Scraps.