

THE DETROIT ASTRONOMICAL SOCIETY
NEWSLETTER

FEBRUARY/MARCH 1980

GENERAL INFORMATION

The D.A.S. is a non profit organization with membership open to any individual who is interested in astronomy upon payment of the annual dues. Guests are always welcome without charge or obligation. Our purpose is to encourage and promote the study of astronomy and related sciences.

The D.A.S. meets each Friday evening at the Crowell Recreation Center located at 16630 Lasher Road, Detroit, Michigan. The center is 1/4 mile south of McNichols (Six Mile Road), on the east side of Lasher Road at the traffic signal light. This facility is a modern well-equipped building with ample off street lighted parking. It is operated by the City of Detroit Recreation Department and it is their finest facility serving this side of the city. Since we are their guests it is important to be considerate in the use of the Crowell Recreation Center to insure our continued welcome.

The meetings consist of talks, lectures, films, slides, mirror making, sharing and fellowship with Astronomy as our common denominator. There will generally be someone present to assist those who are grinding and polishing a mirror starting at 7:00 p.m. most members arrive at 7:30 p.m. and when there is a feature presented it will begin promptly at 8:30 p.m. The regular business meeting for the general membership is held on the second Friday of the month and at starts promptly at 8:30 p.m. The officers and Board of Directors meet privately on the first Friday of each month at 7:00 p.m. in the mirror polishing room. In all cases we ask that the last person be out of the building by 10:30 p.m. to accommodate the building custodian.

Annual dues are as follows and most categories include SKY AND TELESCOPE magazine mailed to your home. Regular \$20.00, Junior \$10.00, Family \$25.00, Regular Associate \$13.00, Junior Associate \$3.00. Also included in the membership is "The Reflector", a newsletter of the Astronomical League.

CALENDAR OF COMING EVENTS

FEB. 1	Film; Universe / Board of Directors Meeting 7:00 P.M.
FEB. 8	Regular business meeting
FEB. 10	(Second Sunday) Lecture at the University of Detroit 3:15 P.M. at the Engineering Building, Room 206. Richard Lloyd Program Chairman
FEB. 15	Afocal and Eyepiece Projection, Gary Frey
FEB. 22	Film; Who's out There
FEB. 29	Open
MAR. 7	Film; Jupiter Odyssey / Board of Directors Meeting 7:00 P.M.

MAR.14 Regular business meeting
MAR. 16 (second Sunday) Lecture at the University of Detroit, 3:15
P.M. at the Engineering Building, Room 206. Richard Lloyd
Program Chairman.
MAR.21 Film; Life Beyond Earth, and The Mind of Man.
MAR. 28 North star Polar Axis Alignment of the Telescope, Method
No.1, Gary Frey.
MAY 3 (Saturday) Annual Banquet

ACTIVITIES

...Jupiter Opposition Group--Coordinator Gary Frey
...Mars Opposition Group-----Coordinator Claude McEldery
...Lunar Eclipse Group-----Coordinator Open for visual
March 1, August 25, 1980 Open for photographic
...Occultation Group-----Co-Chairman Ken Eskovitz
Paul Paluzzi

A warm welcome to new member Art Ward and "old" new member Bob Knoll.

JUPITER OPPOSITION

On February 24, 1980, Jupiter will be at opposition (closest approach to Earth for a superior planet) with the Earth and within 4.4 AU (1 AU = 93,000,000 miles). This will be the best time to observe or photograph Jupiter since it will be getting smaller for the next 6½ months after February 24.

The opposition of a superior planet (all planets beyond the Earth) occurs every year. Since the Earth orbits the Sun once each year, it passes or has opposition with each superior planet every year. The length of time between oppositions varies due to the movement of a superior planet and the earth through their orbits.

The interval from one opposition to the next for Jupiter is a little over 13 months. The time required for the Earth to complete one orbit and gain one lap on Jupiter and pass it (opposition) is on an average of 34 days later from one year to the next. Since the planets move in elliptical orbits, their orbital speed is not constant and the range of values is 30-38 days.

There are two (2) types of opposition: 1) Perihelion {Closest approach 2} Aphelion (farthest approach). The Perihelion oppositions are the most useful because they result in the largest object to be viewed and the greatest detail to be seen on a planet. The best (Perihelion) Opposition occurred October 8, 1963, while the worst (Aphelion) opposition will occur March 26, 1981. After 1981, opposition conditions will continue to improve. To photograph Jupiter your maximum f-ratio (longest focal length) should be used to obtain the best results for planet detail. An f-ratio of "120" will require

approximately 1 second exposure on ASA 200 with other f-ratio's and film requiring appropriate modifications. The "LFK-Exposure Guide" will be a good start.

Observations are best made at 200 power which will tend to resolve cloud detail. In observing, there are many items which can be "seen" but due to their short time of presence cannot be photographed. It is therefore very important to record observations in your sketch book so that they can be reviewed at a later date. A good observer can "see" many fleeting details that an astrophotograph may not be able to capture on film.

Attached is a small information sheet which will give you some data related to Jupiter. For a 2 month period the size (seconds of arc), magnitude and distance from Earth will not change very much. This will give you plenty of time for good observations and astrophotography which can be compared over several months.

As Jupiter Opposition Coordinator, I hope that those who observe or photograph this event can get together, compare results and make a presentation (as a group) to the club. If you need help or have questions, feel free to contact me. I have an observing site if you wish to use it for observing or astrophotography.

Article submitted by, Gary Frey

JUPITER OPPOSITION

DATE	MAGNITUDE	DIAMETER		DISTANCE FROM EARTH	E.S.T. MERIDIAN TRANSIT
		EQUATOR	POLAR		
FEB 3	-2.0	44.00"	41.07"	4.48 AU	2:22 AM
7	-2.0	44.24"	41.29"	4.45 AU	2:05 AM
11	-2.0	44.43"	41.47"	4.43 AU	1:48 AM
15	-2.0	44.58"	41.61"	4.42 AU	1:30 AM
19	-2.1	44.68"	41.70"	4.41 AU	1:10 AM
23	-2.1	44.73"	41.75"	4.40 AU	12:54 AM
27	-2.1	44.72"	41.75"	4.40 AU	12:37 AM
MAR 2	-2.1	44.67"	41.69"	4.41 AU	12:15 AM
6	-2.0	44.57"	41.60"	4.42 AU	11:57 PM
10	-2.0	44.41"	41.45"	4.43 AU	11:39 PM
14	-2.0	44.21"	41.27"	4.45 AU	11:22 PM
18	-2.0	43.97"	41.04"	4.48 AU	11:04 PM
22	-2.0	43.69"	40.78"	4.51 AU	10:47 PM
26	-2.0	43.37"	40.48"	4.54 AU	10:30 PM
30	-2.0	43.02"	40.15"	4.58 AU	10:13 PM