



MINUTES

Minutes of the regular meeting of Nov. 1, 1977:

The meeting was held on the first Tuesday in November in the auditorium of the Science Museum of Minnesota, St. Paul.

The speaker for the evening was the president of the club, Andrew Fraser. His lecture concerned the Local Group. It was accompanied by many slides of the members of that group.

The members of the group, some of little evidence, are: Galaxy, Larger Magellanic Cloud, Smaller Magellanic Cloud, M31 (NGC 224), M32 (NGC 221), M33 (NGC 598), NGC 205 (M110), NGC 6822, IC 1613, NGC 185, NGC 147, Ursa Minor System, Sculptor System, Draco System, Fornax System, Leo I, Leo II, IC 10, Sextans A (A1009), Sextans B (A0957), Sextans C (A1003), Leo A, Ursa Major (A1127), Serpens (A1513), Capricornus (A2144), Pegasus (A2304), Wolf-Lundmarck-Mellotte, Maffei 1, Maffei 2, Andromeda III, Snickers, Simonson 1976 and NGC 6946.

Fraser counts the following in this population: six spirals, seven irregulars, seven ellipticals and eleven dwarfs.

PRESS MAKES MOUNTAIN OUT OF MOLEHILL

Evidence of 10th planet is announced

The Associated Press carried news in early November of the discovery of the 10th "planet" of our solar system. The planet is an object approximately 300 miles in diameter and 1.5 billion miles from Earth, between the orbits of Saturn and Uranus. Its period is calculated at 115 years. The announcement came from Charles Kowal, who is using the 48-inch 'scope belonging to Cal Tech to detect anything moving at other than sidereal rate.

At that distance, the angular diameter is about .04 seconds of arc.

Event of the Month

by Bill Larson

I am beginning a new column this month. Before describing this month's event I would like to take a moment to explain the intent of this column.

Every month there are a great many celestial sights to see - too many to attempt to view them all. Thus many amateurs stay in their own niche - say deep sky object observation and never quite manage to find the time to sample the other facets of amateur astronomy.

Each month I will choose from the dozens of possibilities one of the most interesting and spectacular events in hopes that my readers will take the time for at least this one new adventure.

Now, as to what kind of event I will be picking: it must be rare enough that many amateurs have not observed a similar event. This eliminates the appearance of most of the best deep sky objects. It must be predictable. This eliminates novae and spectacular aurorae. Furthermore it must be visible with the naked eye or a small (10 cm) telescope so that almost all amateurs can have access to it. This eliminates Pluto and faint variable stars.

In practice this leaves mostly solar system events such as meteor showers, elongations of Mercury, grazing occultations, occultations involving a solar system object other than the moon, close conjunctions (less than one degree - the widest field of an average telescope), oppositions of Mars and interesting apparitions of Venus, Uranus, Neptune and the planetoids.

The Geminid Meteor Shower

As mentioned in the October issue of the *Gemini* the Geminids are perfectly timed this year, occurring just after new moon. With an average rate of 50 meteors per hour for a single observer, the Geminids are one of the best meteor showers.

The peak will probably occur during the day of Monday December 13th this year. At 7h 32m, +32°, the radiant will transit at about 2 am.

Since hourly rates are usually higher in the morning and when the radiant is highest, you may wish to observe in the morning of the 12th - 13th. On the other hand, the fireballs which the Geminids usually provide are more likely to come in on the evening of the 13th - 14th. Thus you may wish to observe on both nights.

Try to record the time of the meteor, its approximate magnitude and whether it was a shower meteor or a sporadic.

Remember to dress very warmly and bring a lawn chair so that you can observe the sky for a couple of hours in relative comfort.

LOCAL NOTES

The next meeting of the Tcac will be Tuesday, December 6, at the Minneapolis Planetarium.

EDITOR'S CORNER

Well another month has come and gone. The weather is colder and the skies clearer (it's about time!). We are now beginning the season were only the hardiest, and most dedicated observers observe. As the Mercury in the thermometers freeze and as Carbon Dioxide (as dry ice) forms on optics, only those people who are totally insane (true Minnesotans) venture out at night. When the season is over and those who dared are chipped out, the rest of us cowards come out of hibernation.

The editor is looking for "Letters to the Editor", please submit any article, typed 48 characters wide, to John Mlinar, 11311 50th St. No., Lake Elmo, MN 55042

GEMINI

Editor---- John Mlinar

Gemini is issued monthly by the Twin City Astronomy Club (TCAC), an affiliate of the Science Museum of Minnesota, St. Paul, Minn.

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