



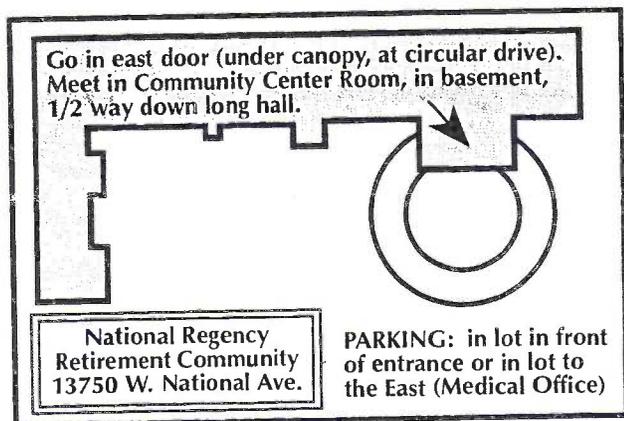
The Newsletter of the Milwaukee Astronomical Society

April 1995

"FRIED EGGS WITH RAINBOWS", APRIL 21 AT NATIONAL REGENCY

The age of the universe is the current "hot topic" in astronomy. One of the fundamental difficulties astronomers have in reconciling their observations and theories concerning the origin and evolution of the universe lies in the lack of mass they see in space vs. what is needed to support their current thinking. In her talk "Fried Eggs With Rainbows: Polar Ring Galaxies", Dr. Linda Sparke, Professor of Astronomy at UW-Madison will describe how observations of distant spiral galaxies – containing bizarre rings of gas, dust, and stars that orbit at right angles to their plane -- are helping to detect and measure the mysterious "dark halo" that surrounds these galaxies. Could this be the "missing matter" that astronomers are looking for? Join your fellow members on Friday evening, April 21, at the National Regency Retirement Home, Community Meeting Room, for this most intriguing discussion.

-★Tom Renner



Use the main entrance on the east end of the building and facing south toward National Avenue. Upon entering the complex, turn right and proceed downstairs to the Community Meeting Room located about one-half of the way down the long corridor, on the left. Please arrive by 8:00 p.m. (the start of the business meeting) as the exterior doors are locked shortly thereafter for security purposes. Our speaker's presentation will begin immediately following the business portion of the meeting, at about 8:25 p.m.

DUES INCREASE SLATED FOR A VOTE AT THE MAY MEETING

After conducting an examination of the state of financial affairs within the Society, the newly formed Finance Committee has recommended a dues increase to the Board of Directors to take effect before the beginning of the 1995/6 fiscal year on September 1. At its March meeting, the Board voted in favor of recommending the Committee's proposed dues structure to the full membership. Members will be asked to vote on the issue of raising our current dues rates at the May 19, 1995 meeting at National Regency. The last dues increase took effect on December 1, 1988.

The Finance Committee examined financial records for the past three complete fiscal years, made a projection of income vs. expense for the current fiscal year, and concluded that the Society operated at a deficit of over \$3,600 over the past three fiscal years, and will show a deficit of nearly \$1,600 again this year. In past years, the Society's Endowment Fund has made up the difference between revenue and expense. Interest and dividends earned by the principle balance of the Fund was designated, by an article written into the Society's by-laws, to be available only for funding of construction projects and equipment purchases at the Observatory, not for general membership expenses. It is the opinion of the Finance Committee and the Board of Directors that membership dues, contributions to the general treasury by members and others, and revenue produced by tours and Open House programs at the Observatory should fund the day-to-day operations of the Society and the Observatory.

Given the current membership structure of the Society, a dues increase would raise about \$850 per year, or about half of the projected deficit for the 1994/5 fiscal year. The remainder of deficit would be eliminated through savings accumulated by placing all operations of the Society on a budget, as determined by the Board of Directors with the assistance of the Finance Committee.

The proposed dues structure is as follows:

REGULAR INDIVIDUAL membership would be increased 17% to \$28/year from the current \$24/year.

REGULAR FAMILY membership would be increased to \$32 from the current \$24 plus \$1 per family member, a 28% increase assuming 1 regular member and 1 family member. Article II and Article IV, Section 2, of the new by-laws approved by the membership in November set forth the provisions for Family Memberships. The new family rate will take the place of the "\$1 per family member" rate that has existed since nearly the beginning of time in our organization.

NON-RESIDENT INDIVIDUAL membership would be increased 29% from \$14 to \$18.

NON-RESIDENT FAMILY membership would increase to \$22 from the current \$14 + \$1 per family member, similar to the changes proposed for the Regular Family membership rate. This would be a 47% increase assuming 1 non-resident member and 1 family member.

STUDENT membership would increase 33% from \$9 to \$12.

President Matthew McNeely will conduct an open discussion of the proposed dues increases at both the April 21 and May 19 membership meetings at National Regency. A complete analysis of revenue and expense for the past four years will be available at the meetings. If you are unable to attend either meeting, you can obtain a copy of the analysis by contacting me at W248 S7040 Sugar Maple Drive, Waukesha, WI 53186.

★*Dan Koehler*

CANDIDATES FOR THE BOARD OF DIRECTORS

The Nominating Committee is pleased to present the following slate of candidates for the four positions on the Board of Directors to be filled by election at the May 19 general membership meeting at National Regency:

Scott Laskowski has been a member of the M.A.S. since 1986. He is very active at the Observatory. He has been the grounds keeper for the past 5 seasons, contributed to the construction of the new garage several years ago, helped rebuild the old garage two years ago (the building commonly referred to as the "tool shed" in the back of the lot), assisted with construction work on the 26-inch telescope building, and has worked at many Open Houses over the past several years. His observing

interests include grazing and standard occultations, making nightly magnitude estimates of Beta Lyrae each year for a four to five month period, and eclipses. Scott is the new Assistant Librarian and is an avid reader of astronomy and science fiction works. He will assume the duties of Librarian this summer. His interest in astronomy dates to at least the sixth grade when, with a 60-mm refracting telescope set up on a sidewalk, he showed passers-by a 30% partial eclipse. He is a volunteer at Yerkes Observatory with the CARA and Woodstock (IL) school programs, and assists with the Observatory's weekend tour programs. This is Scott's first candidacy for a Board position

Scott Jamieson has been a member of the M.A.S. since 1992, and is running for his first full term on the Board. He was appointed last May to fulfill the final year of an unexpired term. In December he accepted the position as the first Chairman of the newly formed Finance Committee. Scott is an avid telescope maker and received a citation at last year's Astrofest for the design and construction of a very sturdy mounting for a refracting telescope. His design of a "Dobsonian-style" Newtonian telescope was featured in the "Telescope Making" column of the May 1994 issue of *Sky and Telescope*. Since then, his design has encouraged several people to try building a copy, and he has heard about successful projects in Norway and Saudi Arabia, to mention but two. He is employed by Johnson Controls as an electrical engineer. Scott hopes to build his own observatory in the backyard of his Waukesha home and begin to pursue the Messier list very soon.

Rudy Poklar joined the M.A.S. in 1994 and would like to become more active in helping our organization by assuming a position on the Board. He is relatively new to the hobby of amateur astronomy, but gained some interest and expertise in the science from working for GM in Oak Creek for 35 years as a systems design engineer on inertial guidance systems for missiles, the Apollo command module and lunar excursion module, and for jumbo jets. He retired in 1989. He is learning to observe the night sky from a new summer home in the Upper Peninsula of Michigan. Since retiring, Rudy has also taken up the hobby of woodworking, and he sings in his church choir.

Jim Mayer has been a member of the M.A.S. on several occasions, most recently rejoining the Society in 1993. He is employed by Johnson Controls in Milwaukee at the Repair Center as an electronics technician in the area of building automation systems. He is an avid reader of astronomical books and

literature, and will be taking an active part in the Observatory Library program as the Assistant Librarian later this year. Jim's interest in astronomy, like that of many current members, was kindled as a youngster during the 1960's U.S. space program. He would like to pursue programs and policies within the M.A.S. that foster an interest in astronomy among children and families.

Nominations will remain open until election time at the general meeting. Additional candidates are welcome until then. Contact: **Matthew McNeely**, 354-5357, **Ken Waraczynski**, 321-0918, or **Brian Ganiere**, 961-8745 if you wish to nominate someone, or if you wish to be nominated yourself.

ON THE LIGHTER SIDE

I have received a second release of the 1995 Wisconsin "dark sky" bill, sponsored by **Rep. Jim Baumgart** of Sheboygan. The bill, previously known as LRB-2483/1, is now known as **1995 Assembly Bill 249** (or "AB 249" for short), and should be referred to by this designation in all correspondence with state legislators in Madison. AB 249 is dated March 23, 1995, and, in addition to Baumgart, is being introduced into the Wisconsin State Legislature by Representatives (party affiliation-District) **Eugene Hahn** (R-47), **Spencer Black** (D-76), **Peter Bock** (D-7), **John La Fave** (D-23), **Annette Williams** (D-10), **Rosemary Potter** (D-20), and **Rebecca Young** (D-76). It is co-sponsored by State Senator **Lynn Adelman** (D-28) of New Berlin, and has been referred to the Assembly's Committee on Environment and Utilities. A copy of AB 249 can be obtained by mailing a self-addressed, stamped envelope to me at W248 S7040 Sugar Maple Drive, Waukesha, WI 53186.

The members of the committee are (party affiliation, office, phone -608 area code):

Sheryl Albers (R, 136 South, State Capitol, 266-8531)

Peter Bock (D, 208 North, State Capitol, 266-8580)

Marc Duff, Chairman (R, 306 North State Capitol, 266-1190)

Doris Hansen (D, Room 301, 100 North Hamilton, 266-5342)

Tim Hoven (R, Room 305, 119 M. L. King Jr. Blvd., 267-2369)

Scott Jensen (R, Room 102, 119 M. L. King Jr. Blvd., 266-2401)

Judith Klusman, Vice-Chairman (R, 11 North State Capitol, 266-7500)

Barbara Notestein (D, 218 North State Capitol, 266-0650)

Alvin Ott (R, 318 North State Capitol, 266-5831)

May 1995

Milwaukee Astronomical Society Event Calendar*

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3 07:30 PM First Wednesday at the Observatory	4	5 08:00 PM Open House #2, "Amateur Astronomy"	6 Keyholder: Dan Koehler (662-2987) National Astronomy Day
7 04:44 PM First Quarter Moon	8	9	10	11	12 08:00 PM Open House #3, "Constellation Tales"	13 Keyholder: Jim Kube (453-8858)
14 03:48 PM Full Moon	15	16	17	18	19 07:30 PM Board Meeting at Nat'l Rgncy. 08:00 PM Memb. Mtnng. at Nat'l Rgncy.	20 Keyholder: Scott Laskowski (421-3517)
21 06:36 AM Third Quarter Moon 09:00 PM Canis Major Observing at Ottawa Site	22 03:00 AM Earth passes thru Saturn's ring plane	23	24	25	26	27 Keyholder: John Pfannerstill (475-6494)
28	29 04:27 AM New Moon Memorial Day	30	31			

April 1995

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June 1995

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*Consult the Focal Point each month for event details

June 1995

Milwaukee Astronomical Society Event Calendar*

Sun Mon Tue Wed Thu Fri Sat

				1 09:30 PM Canis Major Observing at Ottawa Site	2	3 Keyholder: Terry Ross (784-2093)
4	5	6 05:25 AM First Quarter Moon	7 07:30 PM First Wednesday at the Observatory	8	9	10 Keyholder: Gerry Samolyk (529-9051)
11	12 07:30 PM Board Meeting at the Observatory 11:03 PM Full Moon	13	14	15	16	17 Keyholder: Tom Schmidt-kunz (352-1674)
18	19 05:00 PM Third Quarter Moon	20	21 03:36 PM Summer Solstice	22	23 23rd and 24th 49th NCRAL Convention, Moorhead, MN	24 107th ASP Meeting, College Park, MD 24th & 25th Keyholder: Virgil Tangney (327-7976)
25	26	27	28 07:50 PM New Moon	29	30	

May 1995

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July 1995

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23	24	25	26	27	28	29
30	31					

*Consult the Focal Point each month for event details

Mike Powers (R, Room 307, M. L. King Jr. Blvd., 266-1192)

Judith Robson (D, 124 North State Capitol, 266-9967)

Rebecca Young (D, 119 North State Capitol, 266-3784)

Addressing example for letters (P. O. Box and ZIP are the same for all):

Rep. Sheryl Albers
136 South, State Capitol
P. O. Box 8953
Madison, WI 53708

Of the twelve committee members, Albers, Bock, Duff, Klusman, Ott, and Robson heard arguments for and against AB 344 (Baumgart's first dark sky bill defeated in February 1994) as members of the Environmental Resources, Energy, and Utilities Committee in the previous legislature. Therefore, Hansen, Hoven, Jensen, Notestein, Powers, and Young are probably unfamiliar with the nature of prior debate on this issue.

I urge everyone with an interest in astronomy to act now by writing a short letter (i. e. no more than two pages) to at least one of the members of the Environment and Utilities Committee. It would be preferable to contact all twelve members. Alternatively, you can phone them and ask for their support of the bill, or leave a message with a staff member should the representative not be available when you call.

Remember to mail a copy of your letter to your Assembly representative. You can obtain his or her name, address, and phone number by calling the Legislative Hotline at 1-800-362-9472.

Your letter urging support of AB 249 could include (but not be limited to) the following points:

Wisconsin has lots of bad lighting that produces dangerous glare directed at motorists and pedestrians. Urban sprawl has increased bad lighting at an alarmingly rapid pace. There are very few ways currently available to control bad lighting.

Bad lighting is not necessary and can be eliminated over time by requiring the installation of well shielded fixtures at the time of relamping, replacement, or other redesign in all existing lighting installations around the state.

Well shielded lighting saves consumer and taxpayer dollars with fewer fixtures needed for adequate illumination, thereby reducing the demand for electricity in commercial and public areas. Good lighting is aesthetically pleasing and very functional. Bad lighting is trashy

and obnoxious, and wastes environmental resources and money.

Lighting levels can be reduced with time of day (or rather, time of night) regulations. There is a big difference between the level of illumination required at a commercial site at 8:00 p.m. vs. 2:00 a.m. (think of an auto dealer's lot, a shopping center parking lot, or even the average city street).

There is no reason to illuminate outdoor advertising with "bottom up" lighting. "Top down" lighting should be the standard for all billboards in Wisconsin. Also, there's little or no reason for outdoor signs to be illuminated after 12:00 midnight. There is also no reason for illuminated commercial signs to be erected on poles 50 or more feet in the air.

There is no correlation between the level of crime in a given area and the level of illumination, and no studies have ever proven otherwise. Criminals are active at all times of the day and night, regardless of the amount of lighting present. As has been said before, if lots of lights really reduced crime, then our cities should, by now, be crime free, or nearly so!

Of course, don't forget to mention the loss of our birthright as humans: the view of our nighttime sky. Our young people are growing up without an appreciation of the beauty and wonder of the night sky simply because bad outdoor lighting has proliferated without any type of regulation. It is difficult, if not impossible, for members of the M.A.S. to teach the general public about observational astronomy in an urban area because the problem of light pollution is so bad. Often the best we can do is direct those people truly interested in viewing at least a facsimile of the true night sky to a planetarium! Amateur astronomers have great difficulty enjoying their hobby, and professional astronomers in Wisconsin (at UW-Madison's Pine Bluff and the University of Chicago's Yerkes observatories) are limited in the research work they can perform, because of light pollution.

These are some of the major points to cover in your letter. I'm sure there are other good points to make that you can think of. Use your own words and express your own thoughts on the subject. AB 249 is a bill to require the Department of Industry, Labor, and Human Relations (DILHR) to set the standards for regulating the design and installation of outdoor lighting to improve energy efficiency and reduce inappropriate lighting. Legislators need to be convinced that this type of

regulation is necessary and will accomplish something worthwhile.

Stay tuned to this column for further developments concerning AB 249. A public hearing in Madison may take place in the very near future. I plan to attend, and testify, if on behalf of the amateur astronomical community. I of course would encourage as many other M.A.S. members and amateur astronomers from around the state to attend the hearing.

-★Dan Koehler

THE 2ND ANNUAL NEBRASKA STAR PARTY

The 1995 edition of the Nebraska Star Party (NSP) will be held at Merritt Reservoir, 27 miles south of Valentine (in dark-sky north-central Nebraska) Jul 25 - 30. Merritt Reservoir is described in the information brochure as the "pearl of Nebraska's lakes, with its pure water and sugar sand beaches that offer great swimming and fishing". Attendees can sightsee, hike, canoe, golf, horseback ride, and boat (rentals available) in the Merritt Reservoir area.

Lodging consists of sixteen cabins that accommodate 1 - 4 people each at Merritt Resort, where a limited number of RV/camper hook-ups are available also. One hundred twenty-five motel rooms have been reserved for the event in Valentine. Most of these rooms will be released Jun 01. An unlimited number of tent campsites can be had at the state park or at the observing site. A Nebraska state park permit (\$15/vehicle/year or \$2.50/day) is required to camp. A 1/2-day long canoe and tubing trip (rentals available) down the scenic Niobrara River near Valentine is planned for Jul 27. You may also view Nebraska's meteorite crater near Merna, NB on your return trip home!

A paper session is planned for Friday afternoon, Jul 28. Invited speaker presentations are planned but have not yet been announced. Door prizes will be awarded following the buffet dinner on Friday evening. Registration is \$15/single or \$20/family. T-shirts will be available to those who pre-order.

The information brochure and registration form will be available at the April 21 Membership Meeting at National Regency, or send a self-addressed, stamped envelope to me at W248 S7040 Sugar Maple Drive, Waukesha, WI 53186 and I'll send one to you. The NSP hotline number is 402-466-4170. They promise to return all phone calls.

-★Dan Koehler

EYE ON THE SKY FOR MAY

The six-month period of May through October is usually the best and busiest for sky watchers in Wisconsin. The warm evenings during this time of year beckon amateur observers to break their telescopes out of winter storage and turn them toward the sky. And this year, May offers us several fabulous opportunities to observe some rare and unique solar system phenomena.

As was mentioned in this column last month, **Mercury** puts on its best evening showing of 1995 for mid-northern observers during May. This elusive planet is at greatest eastern elongation (22 degrees) on the evening of **May 11**. It makes a nice arrangement on the western horizon with the crescent moon and the Pleiades on **May 01**, just after sunset, with the stars of Perseus, Taurus, and Orion not far away as you view from north to south. Of course you will need an unobstructed view of the western horizon and clear skies to observe this conjunction, but you will be well rewarded for your efforts. The conjunction is a prime opportunity to experiment with astrophotography since a simple 35-mm SLR camera mounted on a tripod with a 50-mm lens will do a great job of capturing the grouping, and the foreground scenery, on film. Try using 100 to 400 ISO film (either slide or print) exposed in "bracketed" frames from 1/2 to 10 seconds. This type of photography is very forgiving, and you are sure to get at least a few good shots. Mercury will continue to be a showpiece object in the west throughout most of May. It will gradually sink lower toward the horizon each evening until it is nearly unobservable at the close of the month. Telescopically, Mercury will present a 70% illuminated disk at the beginning of May, and a very slim 2% crescent by the end. This correlates well with the planet's brightness during May which ranges from -0.8 to +4.2 from the 1st to the 31st. It reaches inferior conjunction (between the Earth and Sun) on **Jun 05**. Our next good opportunity to observe Mercury in 1995 will come during the early mornings of mid-October.

As Earth continues to pull away from **Mars**, the red planet fades further during the month from magnitude +0.5 to +0.9, and in apparent diameter from 8.1 to 6.7 arc seconds. Telescopic observation of Mars is now essentially finished until the end of 1996. Mars appears close to Regulus (Alpha Leonis) from the 19th through the 29th, and is only 1 degree north of the star at 1:00 a.m. CDT on **May 25**. Mars is at eastern quadrature at 9:00 p.m. CDT on **May 17**, positioned

exactly 90 degrees east of the Sun in our evening sky on that date.

Pluto, at magnitude +13.7, is in Libra and is at opposition at 2:00 p.m. CDT on **May 20**. There is a finder chart on page 62 of the *May Astronomy*. This is the best time to find the smallest planet in the solar system, something the vast majority of amateur astronomers (including myself) have never done.

Jupiter is on the Ophiuchus / Scorpius border, near Antares, and is not far from Pluto in our evening sky. It reaches opposition on **Jun 01** when it will be 45.5 arc seconds in diameter at magnitude -2.6. The giant planet's southerly declination this year will hamper observations, however. It is 2.3 degrees north of the Moon on the evening of **May 15**.

A "must view" event that should be on all solar system observer's calendars this year is the passage of Earth through the ring plane of **Saturn**. There will be three such events during the next nine months: **May 22**, **Aug 10**, and **Feb 11**. Such a "triple" passage is relatively rare, and won't reoccur until 2038/9 (I'll be 81!). Single crossings will occur again in 2009 and 2025, but these are not nearly as interesting or exciting. The last ring plane crossing occurred on March 3, 1980, and was the final one in a set of triple crossings that dazzled observers in 1979/80. The May event is on a Monday and happens around 3:00 a.m. CDT, as Earth glides through the plane of Saturn's orbit and passes to its south. Saturn will be about 23 degrees high less than an hour before sunrise. The Sun will still be to the north of the plane, illuminating the ring system from above. We will thus see the rings effectively disappear, or possibly appear as a thin broken dark/light band across the face of the disk and at the rings' extension on either side of the planet. The rings' shadow should appear prominently as a black band across the equator of the planet. We'll then begin viewing the rings from "below" our accustomed vantage point. This is commonly referred to as viewing the rings from "the dark side". The August ring plane passage will take the Earth from "south" to "north", and we'll again view the sunlit northern side of the ring system. On **Nov 19**, the Sun will pass through Saturn's ring plane while we stay north of it. The effect of this is the earthly equivalent of turning off a light. We'll be looking slightly down on the ring system as it is lit from below. In February, we'll pass from "north" to "south" for the final time, and the rings will begin to "open" to us and will be lit again for all to view for the next 13 years. Consult the excellent article on this phenomenon in the *May Sky and Telescope*, pages 68-72.

Venus appears low in the east before sunrise in May. On the morning of **May 27**, it appears less than one degree from the waning crescent Moon. Here will be another opportunity for wide-field photography of a planetary conjunction. Save some film from the Mercury event on the 1st! We'll miss the occultation that occurred earlier that day and witnessed by observers in most of Europe and the north Atlantic.

The **Eta Aquarid** meteor shower peaks at 6:00 p.m. on **May 03**. The Moon will not be a factor this year, but this is a tough shower to observe in comparison to, say, the Perseids in August. The radiant is in the "Y" shaped Water Urn asterism of Aquarius, and only reaches a decent altitude for observing after the start of morning twilight. Try observing them on the mornings of the 3rd and 4th. The peak ZHR is 40-50, the meteors are swift (66 km/sec) and bright, frequently leaving trains. This is one of two showers associated with **Comet Halley**, which had a perihelion passage in 1986. The other is the **Orionids** that occur in October.

LUNAR EVENTS FOR MAY

(Times are Central Daylight)

- May 07** -- First Quarter Moon at 4:44 p.m.
- May 14** -- Full "Planting" or "Milk" Moon at 3:48 p.m.
- May 21** -- Third Quarter Moon at 6:36 a.m.
- May 29** -- New Moon at 4:27 a.m.

DON'T FORGET! -- National Astronomy Day is **May 06**! There is an Open House at the Observatory **May 05** and **May 12**.
-★DLK

MESSIER OBJECTS FOR MAY

Here's the list of the best placed M Objects observable in May during the early evening hours as determined by M.A.S. Observing Clubs Coordinator **Lee Keith**:

- M-65**, Spiral Galaxy in Leo (R.A.11 h 18.9 m / Dec.+13 d 06 m)
- M-66**, Spiral Galaxy in Leo (R.A.11 h 20.3 m / Dec.+13 d 00 m)
- M-68**, Globular Cluster in Hydra (R.A.12 h 39.5 m / Dec.-26 d 45 m)
- M-83**, Spiral Galaxy in Hydra (R.A.13 h 37.7 m / Dec.-29 d 52 m)
- M-95**, Spiral Galaxy in Leo (R.A.10 h 44.0 m / Dec.+11 d 42 m)
- M-96**, Spiral Galaxy in Leo (R.A.10 h 46.8 m / Dec.+11 d 49 m)
- M-104**, Spiral Galaxy in Virgo (R.A.12 h 40.0 m / Dec.-11 d 37 m)
- M-105**, Elliptical Galaxy in Leo (R.A.10 h 47.9 m / Dec.+12 d 35 m)
- M-108**, Spiral Galaxy in Ursa Major (R.A.11 h 11.6 m / Dec.+55 d 40 m)
- M-109**, Spiral Galaxy in Ursa Major (R.A.11 h 57.7 m / Dec.+53 d 22 m)