THE METEORITE

BODE'S GALAXIES
M-82 & M-81
IN URSA MAJOR

Newsletter of the Mahoning Valley Astronomical Society, Inc.

IN THIS ISSUE:

MAY 2010

Meteorite Editor: Phil Plante
1982 Mathews Rd. #2
Youngstown OH 44514

THE METEORITE

Newsletter of the Mahoning Valley Astronomical Society, Inc.

MVAS CALENDAR

MAY 15	OTAA Scenic Vista Stargaze
MAY 29	MVAS meeting at MVCO. 8:00 PM.
JUN 26	MVAS meeting at MVCO. 8:00 PM.
JUL10/11	YSU Summer Festival of Arts. Planetarium, noon.

NATIONAL & REGIONAL EVENTS

JUN 5 StarConn 2010, Wesleyan University, CT
http://www.asgh.org/starconn/index.htm

JUN 10-13 Cherry Springs Star Party, Cherry Springs Pk. PA
http://www.astrohbg.org/CSSP/Information.html

JUN 25-26 ALCON 2010 & IDA Meeting, Tuscon, AZ
http://www.alcon2010.astroleague.org/

JUL 7-10 Green Bank Star Quest, Green Bank, WV
http://www.greenbankstarquest.org/

OTAA MEETINGS 2010

MAY 15 OTAA Scenic Vista Stargaze: Rockets at noon.

JUN 12 Chagrin OTAA at Indian Hill Observatory. 8 PM

JUL 10 Cuyahoga OTAA at Letha House. 6 PM

YSU WARD BEECHER PLANETARIUM

MAY 7 & 8 Two Small Pieces of Glass. 8:00 PM

MAY14 - 29 (weekends) Black Holes: The Other Side of Ininity.

MVAS, P.O. BOX 564 NEWTON FALLS, OH 44444-9998
MVAS Homepage- http://mvobservatory.com

MAY 2010

NEWS NOTES

A New Plan. On April 15, 2010, President Obama announced a new plan for NASA and U.S. space exploration. The plan is based on the conclusions of the non-partisan *Review of U.S. Human Space Flight Plans Committee*. The Committee determined that the current Constellation program is over budget and behind schedule. It is based on old technology. Having been dubbed "Apollo on steroids" the program will be cancelled. The program was on a path that had no funding for development of a lunar landing vehicle and surface support systems. There were no guarantees it would ever get us back to the Moon in a reasonable time after the 2020 proposed return date passed. The panel noted that the operating expense of this Ares/Orion system would force its cancellation anyway, even if it were magically delivered ready for launch right now. However, the development/investment in the Orion crew capsule will continue so that it may be used as a rescue vehicle for the International Space Station.

With the Shuttle progam set for retirement in three more missions, the private sector is being asked to take over low-Earth orbital flights for astronauts. In essence, jump-starting the beginning of a space transportation industry. NASA will support development and launch of these new commercial spacecraft which will bring humans and cargo into low orbit. In the past, NASA has used commercial rockets for all military and most NASA satellites. This new space industry will create new high tech jobs and my even open-up space travel to hundreds, perhaps even to thousands of tourist. Meanwhile NASA engineers will now be free to develop new deep-space crew vehicles and technologies to be used in a new heavy lift vehicle. These will carry large payloads into deep space- beyond the Moon. They would take fuel to distant orbiting storage depots to be used for refueling during crewed missions. This is a bold new direction from returning to the Moon using the Constellation program and its old technology.

About $3.1 billion of additional funding would go into research and development of the heavy-lift rocket. A design for this large booster would be chosen in 2015 with the goal of launching spacecraft a few years later. In all, NASA's budget will increase $6 billion over the next 5 years. The first human missions beyond the Moon are hoped to begin by 2025, with astronauts eventually landing on an asteroid. By the mid-2030's, getting humans onto a Martian moon and retuned safely to Earth is the goal. A Mars landing mission would follow. Many former astronauts and NASA managers co-signed an open letter to the President stating their opposition to abandoning NASA's current astronaut launch duties and the apparent by-pass of going back to the Moon as a first step to Mars. Others applauded the new plan and new vision for NASA, with a planned increase in robotic missions to explore the solar system. The plan also hopes to create about 2,500 jobs along Florida's Sapce Coast, a region of high un-employment. This should help off-set the expected job losses due to the Shuttle's retirement. Included in the plan is a $1.9 billion upgrade to the Kennedy Space Center, which will also be in charge of NASA's commercial rocket venture.

Sources: Space News Daily, April 16, 2010

MINUTES OF THE APRIL MEETING

APRIL 24, 2010 at the MVCO

The first meeting at the MVCO in 2010 was indoors due the rainy conditions. Secretary Phil Plante presided as both the President and Vice President were unable to attend. The meeting came to order at 8:08 PM. It took a while for some members to come inside from inspecting a sample of the 90mm refractor many had ordered. *Roll Call* showed 19 members on hand. Members of the Bartos and Boyer family also attended.
A Call for the Reading of the Minutes was made. Greg Higgins moved to suspend the reading. Larry Plante seconded the motion. By voice vote, all were in favor of suspending the reading. The March minutes are accepted as published.

TREASURER'S REPORT: The Report was read by Steve Bartos. It was pointed out that the transferred funds from the Wells Fargo account will be re-invested in a new investment vehicle such as a Bank Certificate of Deposit and would not be available for "spending spree" activity. On a motion from Rosemary Chomos and a second from Larry, the Report was accepted by a unanimous voice vote.

General Fund	**3/1 thru 3/31 2010**	
OPENING BALANCE:	$ 8,124.77	
CLOSING BALANCE:	$ 12,247.11	
AVAILABLE FUNDS:	$ 8,082.99	
INCOME:		
WELLS FARGO FUND TRANSFER (OAD FUND)		$ 3,914.12
DUES		160.00
RASC HANDBOOKS		60.00
DONATION		30.00
ASTRONOMY CALENDAR		10.00
INTEREST		1.17
TOTAL INCOME		$ 4,175.29
EXPENSES:		
CK# 2717 REFUND FOR HOODIE		$ 20.00
2718 SKY & TELESCOPE RENEWAL		32.95
TOTAL EXPENSES		$ 52.95
Reserved Funds		
KEY DEPOSITS		$ 250.00

MEMBERS IN ARREARS: JEAN BURDETTE, ROSEMARY CHOMOS, STACI DANKO, PAT DURRELL, T.J. GRAHAM (NEW), HARRY HARKER, GREG HIGGINS, PAT HOUK, CHUCK & DEBBIE ILIFF, BILL PATCH, DAN SCHNEIDER, SHARON SHANKS, AMELIA TSILIMOS (NEW), BILL WHITE.
PLEASE MAKE A DUES PAYMENT AS SOON AS POSSIBLE OR CONTACT THE MVAS WITH YOUR INTENTIONS. OTHERWISE YOU WILL BE DROPPED FROM THE MAILING LIST AND REMOVED FROM THE ROSTER AT THE END OF MAY, 2010. THE LIST ABOVE IS ACCORDING TO RECORDS ON HAND.

CORRESPONDENCE: A Scenic Vista Program Guide made it to the mail box. All of our public events there were listed correctly. We were credited as contributors to the Park. No other mail was reviewed or presented.

COMMITTEE/OFFICER REPORTS: *OAD FUND:* With the temporary transfer of these funds into the General Account, the OAD Fund Report is on hiatus until these monies are re-invested. A new managing Committee (if needed) will resume reports at such time as the OAD Fund is resumed.

OBSERVATORY DIRECTOR'S REPORT: Larry Plante thanked all those that came out to work on the spouting and trench digging earlier in the month. He noted that Steve has done much of the digging for the drain. Getting the 16" building repaired is of utmost urgency and needs to be done before the OTAA Meeting. We were still waiting for a recommendation from Dan Schneider's father on how to proceed; either a block replacement or fill gaps with concrete. Greg pointed out that we will need an excavator to trench around the building. It was also noted that we will need to lift the pad or break it up as there is block damage under it as well.

The MVAS has purchased 9 folding tables, each 6ft long for use at the OTAA and other events. A few more may be bought down the road, along with some extra chairs. Building a storage shed for these items has been discussed. In the long run, it is hoped these will eliminate the annual expense of renting tables and chairs. Even when we were able to borrow these for free, there was the hassle of transportation to and from the MVCO. The well pump should left be on for continuous use by the May meeting. For now it will be used (on/off) as needed. Everything else was in good shape at the observatory.

OLD BUSINESS: Jodi McCullough spoke about the planned Imax Movie trip set for May 1st. So far she had only 8 people signed on- not enough for a group rate (need 10). It was too late to get these rated tickets anyway. The plan would be to leave the MVCO via car pool/caravan around 12:30 PM, drive to Cleveland and attend the 2 PM show. She gave the various ticket prices and would send out an email to see who else would like to join the group. Phil reminded everyone that we have the OTAA Stargaze in a few weeks (May 15). There will be rockets as usual starting around noon. Various plans were discussed about coffee and refreshments. Larry will bring a microwave oven to warm any snacks or drinks that need it. The winner of the chili cook-off was Bill Prewitt- a 2 time champ. Notably, none of the chilies were hot.

NEW BUSINESS: Bill Prewitt had a model of the 90mm Meade finder scope on hand; complete with homemade mounting rings, enough for others to use. Jodi has already ordered 13 scopes for various members. The MVAS has also ordered three. One will be an OTAA door prize- OTA only. The other two will be used as MVAS loaner scopes, once mounts are built. The units come with cheapie 1-¼ diagonal and two eyepieces. A good deal for about $58! The scope itself will be either blue or silver and has a 90mm, 800mm FL achromat. It gives fairly sharp images and preliminary tests on the Moon showed minimal color fringing (chromatic aberration). These scopes are light enough to mount on a sturdy photo tripod. Jodi took 4 more orders this meeting and this was the last call for orders. One could deal directly with the distributor (eBay) if they want to get one.

Rosemary suggested that the MVAS acquire several power strips to use for such events as the cook-off and for OTAA food tables. She also reported that those "Gravity chairs" were going on sale the following week at Big Lots, but she expected them to be sold out by the time this is read. A few attending the meeting found this as useful info.

GOOD OF THE SOCIETY: There was a discussion on the Apollo 13 crew interview-panel discussion that was broadcast over the internet (Tony Mehle had sent the link to the group). Greg noted it was very interesting and informative. A NOVA 2 part series called "The Edge of Space" is also available online for viewing. Having either Pat Durrell or John Fieldmeier (both YSU Profs) as keynote speaker at the OTAA will be investigated. ADDENDUM: Tony Mehle has donated two self-closing (magnetic) screens for use on the doorways of the 16" building. Hopefully these will keep the bugs and "skeeters" outside during summer meetings. Larry had them in his car but forgot to present them during the meeting. Phil also forgot to

mention that Chris Stephan plans to give a PowerPoint presentation at the MVCO on July 10, 2010. It is entitled "Citizen Sky" and he gave this at the AAVSO meeting last summer. Start time is 8 PM and we will likely fire-up the grill afterwards, and hopefully a few telescopes.

VISUAL REPORTS: Bill Pearce has been posting Moon photos to the group. Larry has been observing planets and Phil has 23 variables this month. Many enjoyed the Galaxy Quest April 10th. No one reported seeing any of the Lyrids.

ADJOURNMENT: Adjournment came at 8:42 PM. We thank our hosts Mike and Lisa Boyer for the great rigatoni and meatballs. Very, very tasty even for a non-pasta person. The dessert cakes were equally yummy. The next meeting will be at the MVCO on May 29, 2010. Meeting begins at 8:00 PM. Scheduled hosts are Rich and Lisa Mattuissi. PASSWORD: name a Messier object by number. And tell us what type it is (e.g. globular, planetary, galaxy, super nova remnant, etc.). *-minutes by Phil Plante*

MVAS REMINDERS

The 5th OTAA SCENIC VISTA STARGAZE
May 15, 2010

Pupose: The first organizational meeting of the Ohio Amateur Astronomers Association was on January 25, 1956, in Akron OH. Representatives from the Akron, Mahoning, Black River, Elyria and Youngstown clubs were present. A series of annual summer meetings was established, each hosted by a member club, in turn. Once the turnpike came on line in the 70's, the organization was re-badged as the OTAA. The annual summer "OTAA Meetings" were a great success. It's hoped these conventions will continue, serving to strengthen the tenuous nature of the OTAA as it stands today. The MVAS introduced the OTAA Scenic Vista Stargaze in 2006. Held at Scenic Vista Park just west of Lisbon, OH. It is hoped that this can serve to strengthen the OTAA as an organization. We hope many OTAA club members will participate. This is an excellent opportunity for member clubs to meet and discuss OTAA goals and announce upcoming events.

If you arrive after dark please use parking lights only (if possible). NOTE: If the weather is totally cloudy in the Lisbon area, no event will take place. With partial clouds or clearing skies, the public event will still be on. OTAA members are of course welcome to still give it a try under these conditions. Check the Internet or other weather forecasting resources covering Columbiana County, OH to help you to decide if you'll make the trip.

SCHEDULE OF ACTIVITIES

12:00 PM Rocket, model plane flying and solar observing are planned for the afternoon. You may arrive early and set-up scopes. Camping overnight is permitted (no camp fires please). There are no RV electric or sanitary connections availailable. A Port-a-John is on site. There are NO fees, door prizes, pot-luck dinners, and no lectures. Just observing.

6:00 PM Informal meeting of OTAA members convenes in the pavilion. OTAA representatives may then pass along information that may be of interest to other OTAA clubs. Let's get the convention season off to a good start.

9:00 PM Sunset is around 8:30 PM. A public star party will begin once it gets dark enough. Planetary views will get us through twilite. In past years, public observers rarely excede 25 and usually leave by 12AM. The pavilion is available for observing breaks, all night long. The MVAS coffee pot will be hard at work too. Please be rested for a safe drive home. A few hours' nap in your vehicle is very appropriate. Someone from MVAS will be there, into the early morning for company.

Sunday, May 16…..End of Stargaze 12:00 PM

MVAS ACTIVITIES

Get 'er Done. Work on the 16" building had begun in April. Bill Pearce and Roy McCullogh, with the help of a dozen others, have installed the spouting around the 16" roof. Steve Bartos has pretty much single handedly dug a trench for the drain pipe which will channel away the water from the spouting. A hole for the main drain sump needs to be dug next. Block work (replacement) still needs to be done to the base of the west wall of the building. Many of these below-ground level blocks have crumbled away. Look for an announcement (email) for forthcoming work sessions.

Galaxy Quest. It was a healthy turn-out on April 10th for the Galaxy Quest. Perhaps 18 people and 8 telescopes enjoyed the unusually warm temps and clear skies. The McCullough's had their 25" Obsession ("The Owl") on the field; Titan had kindred spirit on hand. The MVCO 12" and 8" also saw observing action. Early looks at Venus and Mercury before they set was followed by views of Mars and Saturn. All a fitting prelude to the deep sky stuff once the sky got dark. This scribe used Titan to catch several NGC galaxies in the Bowl of the Dipper as well as the M-galaxies. Using the 12", Rosemary swept-up a nice ("unknown") golden colored, wide double star in Puppis. After some detective work it was deemed to be Knott 4. It was a night of observing that was long overdue. Standing at the top of the ladder looking into the 25", I could hear the enthusiasm rising from across the observing field below. Those various M-numbers being called out with excitement, as each observer got it in view. It was a delightful night for eye and ear.

Chili Cook-off. With weather more like fall this April 17th weekend, it was perfect chili eatin' weather. About 24 people showed up to sample the chili. Only six pots this year but the completion was good. There were no spicey hot ones, even though that was the theme. Bill Prewitt (8 votes) won the binocular prize for best chili. The Cappello's came in a close second with 6 votes. The Bartos family brought chili dogs and salad, Don Durbin had the traditional corn bread, the Boyer's had pineapple upside down cake, Maryanne had yummy bean dip (white chili), Rosemary supplied us with four pies. During early tasting, a music DVD played on the 42" monitor for background music (of J. Bonamassa). In a while, the movie Star Trek replaced this and all enjoyed the show. Thanks to all that made this a wonderful event and to those that made chili or brought other tasty treats…

Observer's Notes.....

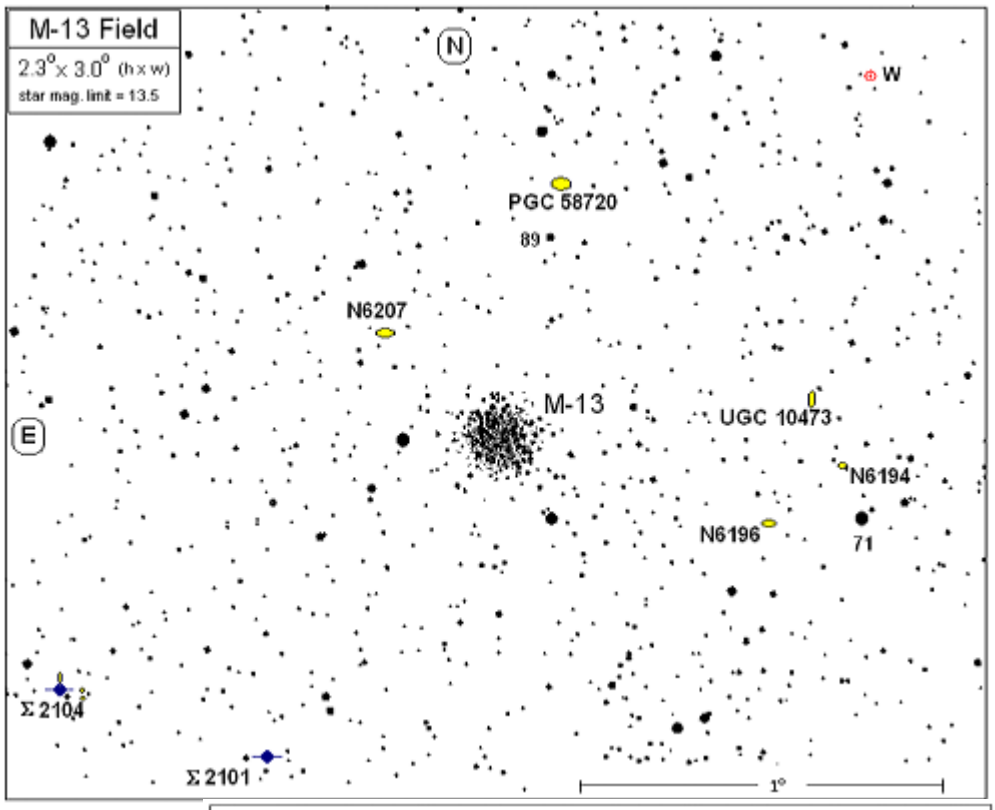
Herculean Task

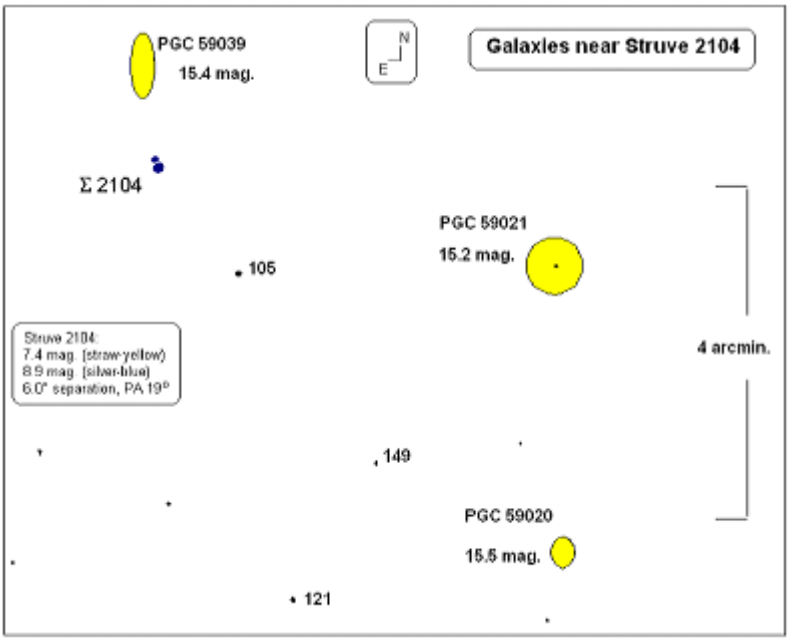
In the spring we can find galaxies galore. Summer nights will give us gobs of globulars. During May and June we have a transition season: galaxies giving way to the globulars. Perhaps the most often looked at globular in the northern hemisphere is M-13- the Great Hercules Cluster. The casual observer will most likely stop here for a look. In keeping with last month's theme of exploring the neighborhood of a bright deep sky object, we will try for a really tough one this month. The reference target will be the aforementioned M-13. It's easy to find in finder scopes. It's a fine opening act for the globulars to come (in Ophiuchus, Sagittarius, etc). After your usual 2 or 3 minute gaze, don't move on to something else. Stop and consider the things nearby. There are galaxies! But, hiding in the background glow.

Our first stop is the spiral galaxy NGC 6207 about a half degree NE of M-13. Many veteran observers know this one. At 12th magnitude, it is usually glimpsed in an 8" telescope under dark skies. There is no structure seen with the eye and it lacks a bright nucleus. But still- it's a 12th magnitude galaxy! Not your everyday object and it will likely drive away people at public star parties, while scratching their head… "huh?". But they don't know astronomers enjoy the privilege of having ancient photons fall on their retina. And being perhaps, the only human at that instant, connecting to such a distant object in both time and space. It is this esoteric spirit that drives us to bigger and heavier telescopes. Often it becomes a Herculean task for muscle, scope and eyeball. The trade-off: we get to search the sky for those tiny, unremarkable smudges of light-- The stuff of the cosmos.

Indeed the task this month calls for telescopes of 12" or bigger. There are three at the MVCO that stand a chance of providing success. Of course sky conditions will have the last word so wait for a dark and transparent sky (no haze). Get to the darkest place you can to try these. If you have a scope smaller than 12" you can still look at M-13, and NGC 6207 should be tried. The two double stars that are charted are easy in 6" scopes. Σ 2104 (Struve 2104) has been noted as having yellowish and bluish colors. A bonus is that there are three 15th magnitude galaxies right next to it (see diagram). If you can spot these three, go ahead and try for the others we have plotted to the west of M-13. Most are in this range with a few around 14th magnitude. In the *Gallery* Section of this newsletter (PDF), you'll find images of these galaxy fields, taken from the Digitized Sky Survey. Two stars on the main chart, one labeled 71 and one 89 are reference stars which are also labeled on the DSS plates. These plates will serve as a much better guide at the eyepiece. You won't know what you can see unless you try. Keep at it, make it a lifetime project. You'll be adding objects from such exotic sounding catalogs such as UGC, PGC, LEDA. *-P. Plante*

Main Chart to the Field of M-13

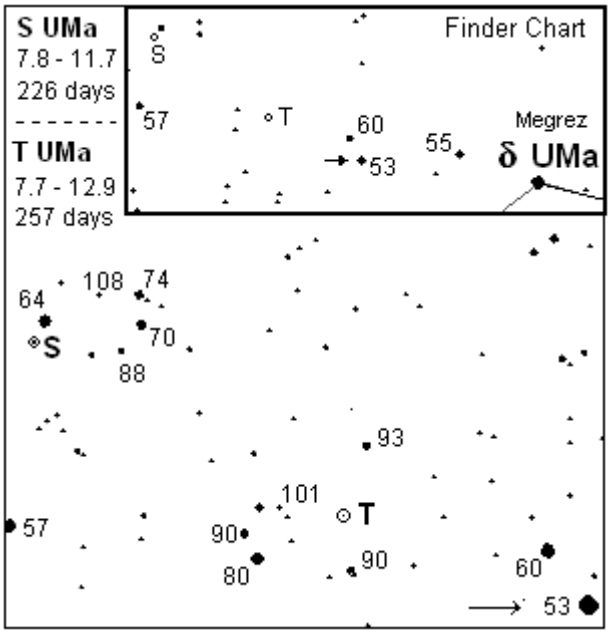




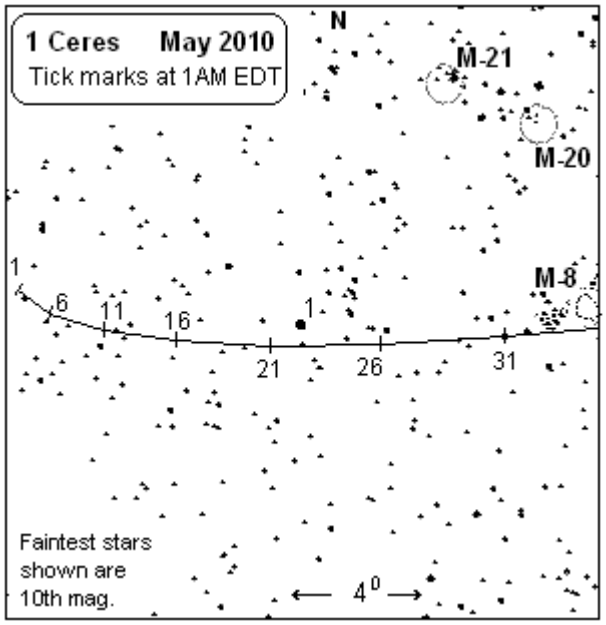
The above close-up chart of Struve 2104 approximates the field seen in an eyepiece with a standard 50° apparent field of view, working at 250x. Your eyepiece focal length will need to give this power with the scope you are using. Under Ohio skies- that is likely a scope bigger than 16". Check the Gallery *section for a list of galaxies with magnitudes, RA and Dec., etc. The galaxies plotted on the main chart above* MAY *just be accessable with a 10 incher.*

MVAS OBSERVER CHARTS

Variable star of the month: **T Ursa Majoris** (*abbrev:* T UMa). Find the star connecting the handle and bowl of the Dipper. That is δ UMa. Hop to the 5.3 mag. star (arrowed below), with a 6th mag. star just north of it. From this obvious pair move east to the semi-circle of two 9th and an 8th mag. stars. T Uma is mid-way on a line connecting the 9.0 and 9.3 mag. stars. By mid April it was rising, and brighter than 11.5 mag. It should peak at 7.7 around June 8th. Just bright enough for 10 x 50 binoculars.



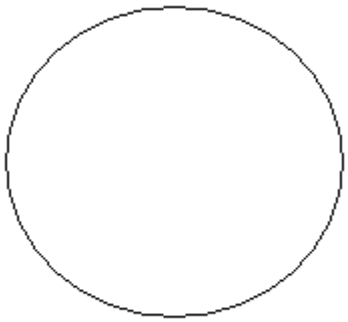
Asteroid of the month: (**1) Ceres.** When you pull your first "all nighter" of the season, you'll be up for the Lagoon Neb. (M8) after midnite. Watch Ceres approach M-8 during May. It will be getting brighter by 0.6 magnitude during the month. It peaks at 7.5 by May 30. A good photo-opt against the Lagoon? Give it a try. You'll never know how good it could turn out.



MVAS OBSERVATIONS - DUE JUNE 2010

OBSERVER_____

Featured object: M-81 . Please try a sketch. You should know the routine by now. Use the side of the pencil to shade, then smudge with your finger to blend. Use darker (heavier) graphite for brighter areas. Essentially make a negative image.



M-81 Observation:

Date:_____ Time(EDT)_____ Scope_____

T UMa magnitude estimates:

Date:	Time:	estimate:	Instrument:
_____	_____	_____	_____
_____	_____	_____	_____

(1) Ceres Observations:

Date:	Time:	Instrument:	magnification:
_____	_____	_____	_____
_____	_____	_____	_____

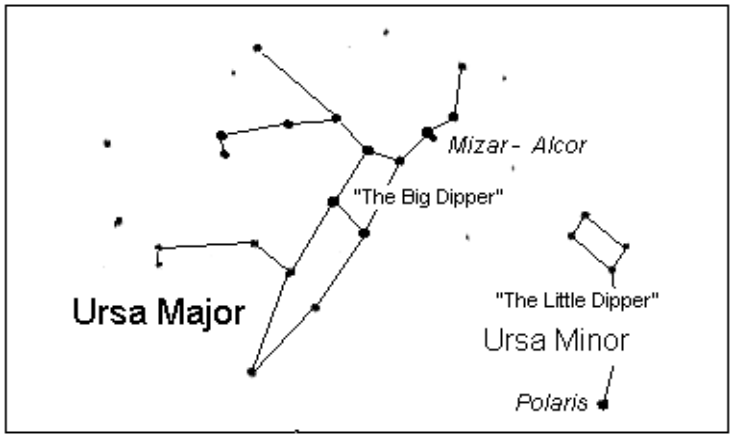
Other Objects in Ursa Major to observe

Object	Date	Scope	Object	Date	Scope	Split?
M- 82	_____	_____	ζ UMA	_____	____ SEP. 14.3"	Y / N
M- 97	_____	_____	Σ 1415	_____	____ 16.7"	Y / N
M- 108	_____	_____	23 UMa	_____	____ 23.2"	Y / N

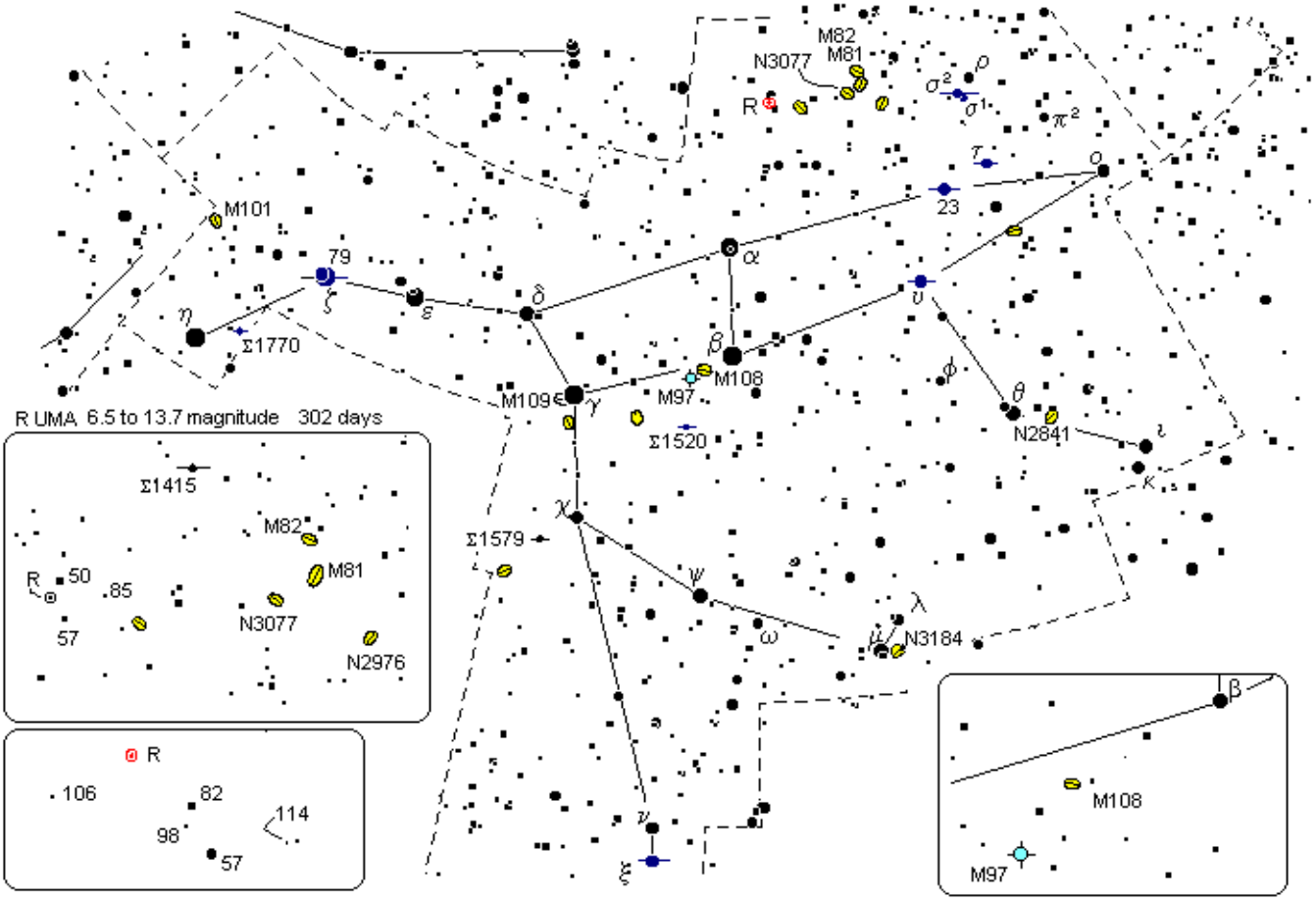
Lunar Occultations (see Sky Almanac):

Date (UT):	Time(UT):	Scope/magx	Phenom (circle)
_____	_____	_____	_____x R D
_____	_____	_____	_____x R D
_____	_____	_____	_____x R D

Constellation of the Month — Ursa Major



Everyone can find the Big Dipper. Most seem to know the Dipper is not a constellation, but is in fact only a part of Ursa Major. It's the hind quarter and tail of the great bear. In dark skies try to trace out the outline of the entire constellation. It seems this isn't done so often because the Dipper draws all the attention. Ursa Major is comfortably placed high in the NW at mid- May around 11pm. With naked eye, try to split Miza and Alcor. Using binoculars makes it an easy split. With larger binoculars (50+mm) you might detect M81/82 in dark skies. These are the two brightest galaxies in Ursa Major. You'll need a scope for the rest. The chart below shows about a dozen galaxies brighter than 10.9 magnitude. If your scope can reach 12th magnitude galaxies then you have over 60 from which to work on. Use a good atlas! Note that M101 is known as the "Pinwheel Galaxy" and M97 is the "Owl Nebula". There are enough doubles to keep any scope busy if galaxies are out of reach. It's easy work splitting Mizar and Alcor with optical aid. Look closer at Mizar (the brighter star) and you'll see it's a close double too. When you look for M81/82, pan over to find the variable R UMa. You might follow it with binoculars when it's near maximum light. A scope will have to be used as it fades.



DEEP SKY			
M81	GAL	7.9 mag.	23' x 12'
M82	GAL	9.3	10' x 4'
M97	PN	12.0	2.8'
M101	GAL	8.3	25" x 23'
M108	GAL	10.7	7' x 2'
M109	GAL	10.6	6' x 4'
N2841	GAL	10.1	7' x 3'
N3077	GAL	9.9	5" x 3"
N3184	GAL	10.4	6' x 6'

DOUBLE STARS			
σ^2	4.9 - 7.9 mg.	3.5" sep.	gm & orng.
ξ	4.3 - 4.8	1.8"	- - -
ν	3.8 -11.5	11.3"	yell. & orng.
23	3.7 - 9.2	22.8"	yell. & lilac
79	2.3 - 4.0	14.4"	Mizar
Σ1415	6.7 - 7.4	16.7"	yell. & blue
Σ1520	6.5 - 8.0	12.7"	yell. & purple
Σ1579	6.5 - 8.4	4.0"	white & blue
Σ1770	6.7 - 8.1	1.8"	yell. & ash

Check list

- ____ M81
- ____ M82
- ____ M97
- ____ M101
- ____ M108
- ____ M109
- ____ N2841
- ____ N3077
- ____ N3184
- ____ σ^2
- ____ ξ
- ____ ν
- ____ 23
- ____ 79
- ____ Σ1415
- ____ Σ1520
- ____ Σ1579
- ____ Σ1770

Instruments used:

____ on ____

____ on ____

____ on ____

____ on ____

R UMa was ____ mag. on ___/___/____

2010 JUNE SKY ALMANAC

Solar and Lunar (EDT).

Date	Sunset	Moonrise	Moonset
1	8 : 50	12 : 01A	x : xx
5	8 : 53	01 : 40A	x : xx
9	8 : 56	03 : 23A	x : xx
13	8 : 58	6 : 50A	x : xx
17	8 : 59	x : xx	12 : 10A
21	9 : 00	x : xx	02 : 02A
25	9 : 01	x : xx	04 : 52A
29	9 : 01	10 : 57P	x : xx

PLANET WATCH

Date	SATURN Sets	JUPITER Rises	Pluto Transits
1	2:55A	2:46A	3:05A
5	2:39A	2:32A	2:49A
9	2:24A	2:17A	2:33A
13	2:08A	2:03A	2:17A
17	1:53A	1:48A	2:01A
21	1:37A	1:34A	1:44A
25	1:22A	1:19A	1:28A
29	1:06A	1:04A	1:12A

June 2010

S	M	T	W	T	F	S
		1	2	3	4 ☾	5
6	7	8	9	10	11	12 ●
13	14	15	16	17	18	19 ☽
20	21	22	23	24	25	26 ○
27	28	29	30			

Asteroid for June 2010 (1) Ceres

Date	Rises	RA hr. min (topocentric)	Dec. deg.	Alt.	Azm	Magnitude
1	10 : 18 PM	18 : 05.7	−24.4	19º	153	7.5
7	9 : 50 PM	18 : 00.5	−24.8	21	160	7.4
13	9 : 23 PM	17 : 54.9	−25.2	22	167	7.2
19	8 : 55 PM	17 : 49.0	−25.5	23	174	7.0
25	8 : 27 PM	17 : 43.1	−25.8	23	181	7.2
1	7 : 59 PM	17 : 37.5	−26.0	22	189	7.4
	EDT	*(at 1:00 am)*		*(at 1:00 am)*		

Variable Star of the Month: **T UMA** 7.7 - 12.9mag 257 day period

Celestial Highlights

Date	hr. UT	
2	4.5	Dione Transit ingress
2	4.9	Titan Transit ingress
2	5.6	Titan shadow ingress
4	22.2	**LAST QUARTER MOON**
6	8.0	Uranus 0.5º N. of Jupiter
12	11.2	**NEW MOON**
18	0.0	Ceres at opposition
19	4.5	**FIRST QUARTER MOON**
20	2.6	Venus 0.7º N. of Beehive
25	0.0	Pluto at opposition
26	11.5	**FULL MOON**

LUNAR OCCULTATIONS FOR: JUNE 2010

Civil (24hr) EDT date	hr	min	sec	UT date	hr	min	sec	Ph	Moon % illum.	Moon alt	Moon azimuth	Star name	Star Mag.	event PA	dbl./ sep.
1	2	22	37	1	06	22	37	r	82-	20º	141º	ZC 2940	5.5	213º	0.20"
4	2	50	26	4	06	50	26	r	56-	16	113	ZC 1344	7.9	251º	NA
6	3	07	06	6	07	07	06	R	27-	11	87	ZC 89	6.5	272º	0.100"
14	22	16	49	15	02	16	49	D	09+	7	288	ZC 1203	7.1	085º	0.050"
15	23	08	37	16	03	08	37	D	17+	4	283	ZC 1344	6.5	256º	NA
16	23	08	35	17	03	08	35	M	27+	4	276	ZC 1457	6.8	091º	NA
16	23	41	55	17	03	41	55	D	27+	7	288	ZC 1203	7.1	085º	0.050"
24	21	44	20	25	01	44	20	d	98+	14	145	ZC 2455	6.6	052º	NA
27	4	36	34	27	08	36	34	r	99+	17	216	ZC 2777	6.9	286º	8.00"
16	23	08	37	17	03	08	37	Grz	ZC1457	Graze path 56km south of MVCO at 206º azimuth Graze path 38km south of S. Vista at 205º azimuth					Path runs NW-SE

at MVCO M= miss at MVCO. N. limb

D= disappearance. Good occultation event.

d= disappearance, the star's magnitude approaches the observing limits of 200mm objective

R= reappearance. Good occultation event

r= reappearance, the star's magnitude approaches the observing limits of 200mm objective

All disappearances (D) occur on the eastern limb (left side in the sky). Reappearances (R) always occur on the western limb.

Position Angle (PA): tells where along the west limb to watch for a reappearance.

PA is referenced to celestial north: North=0º East=90º South=180º West=270º

Occultations computed using Occult v3.6 (I.O.T.A.)

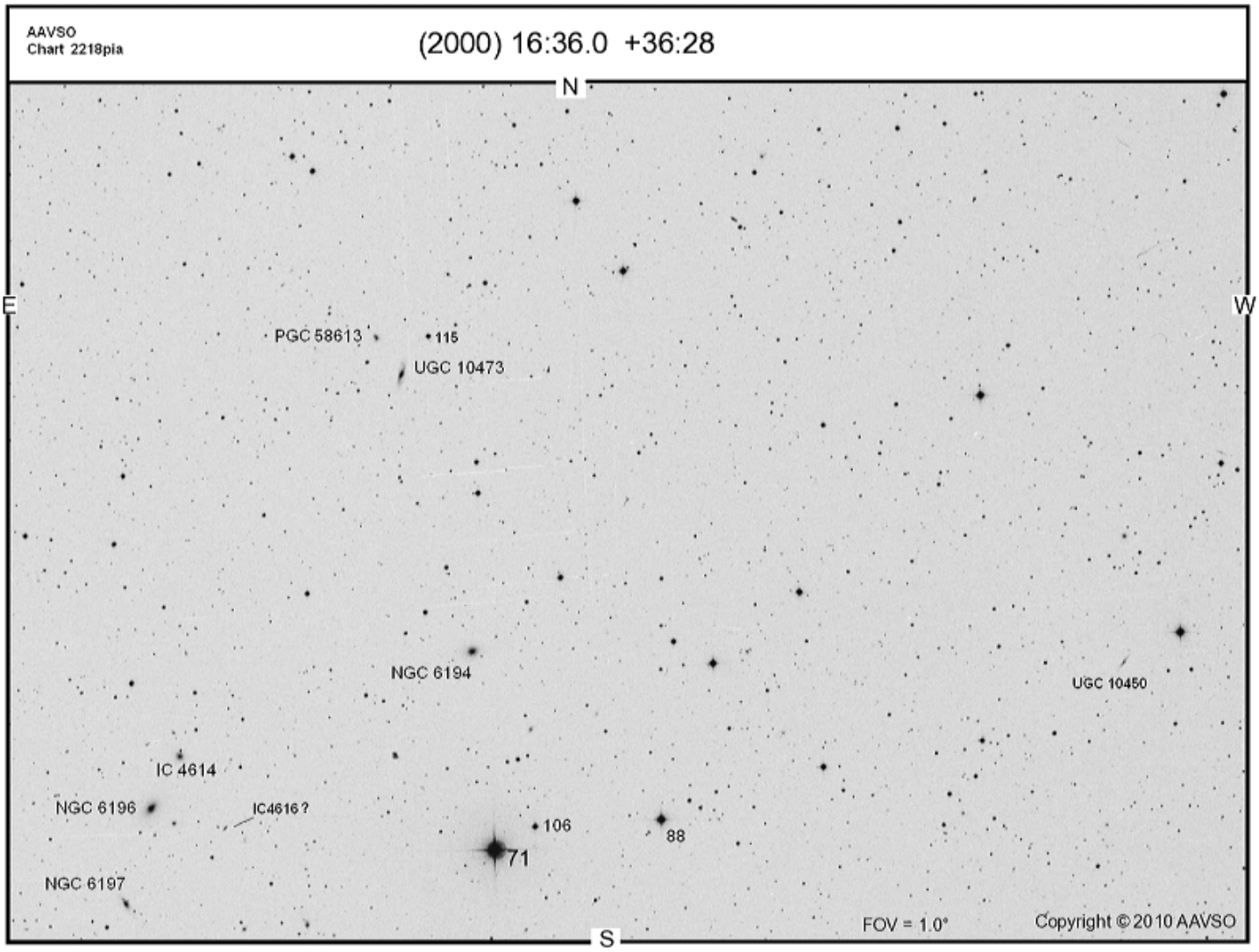
Variable star data from AAVSO. All other data computed with MICA 1800-2050 (Willman-Bell)

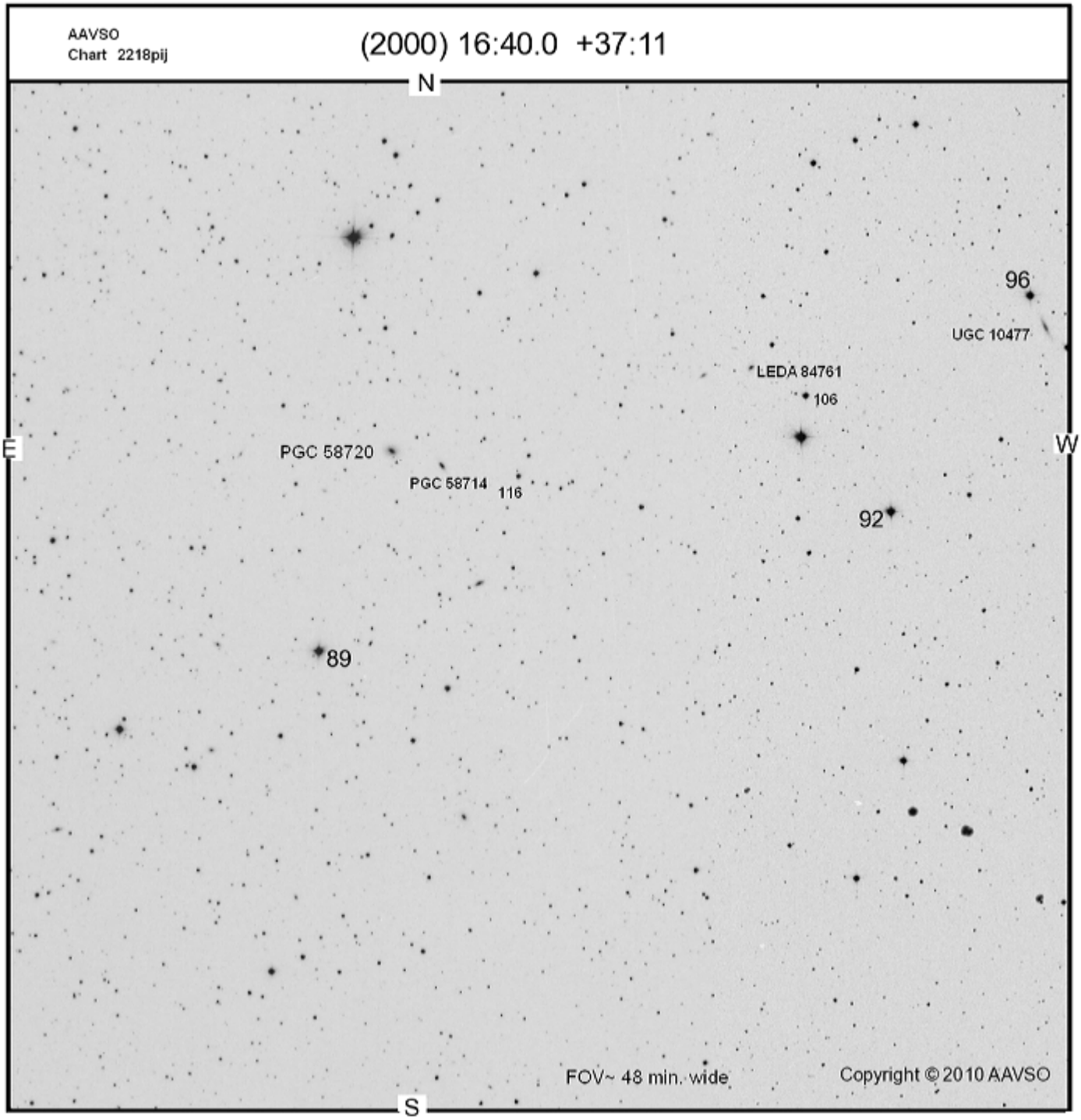
GALLERY…..

Herculean Task List…..

Obj.	magn.	Size/sep.	R.A.	Dec.
STF 2104	7.5, 8.8	6"	16h 48m 41s	35 55' 19.3"
STF 2101	7.5, 9.8	3.9"	16h 45m 48s	35 37' 51.9"
M13	5.6	16.6'	16h 41m 41s	36 27' 32"
NGC 6207	11.6	3.3' x 1.0'	16h 43m 04s	36 49' 58.5"
NGC 6196	12.9	1.4' x 1.0'	16h 37m 54s	36 04' 26.1"
NGC 6194	13.6	0.6' x 0.5'	16h 36m 37s	36 12' 02.0"
PGC 58720	13.8	0.8' x 0.7'	16h 40m 06s	37 11' 30.3"
UGC 10473	13.9	1.5' x 0.4'	16h 36m 54s	36 25' 26.2"
NGC 6197	14.5	0.6' x 0.3'	16h 37m 20s	36 00' 56.8"
UGC 10477	15.3	1.6'	16h 37m 34s	37 17' 07.6"
IC 4614	15.3	0.4'	16h 37m 47s	36 06' 54.6"
PGC 58714	15.3	0.4'	16h 39m 55s	36 10' 46.3"
PGC 58613	15.5	NA	16h 37m 00s	36 27' 12.6"
IC 4616	15.5	0.6'	16h 37m 59s	36 59' 43.5"
LEDA 84761	15.7	0.5'	16h 38m 43s	37 15' 14.6"
UGC 10450	16.3	0.9'	16h 34m 01s	36 11' 36.3"

At left is a listing of the objects around the Great Hercules Cluster, M-13. The list starts with the two doubles, then continues with deep sky stuff starting with M-13. They are listed by decreasing brightness. The farther down the list you go, the harder the target becomes. Galaxy NGC 6207 is plotted on general star atlases such as *The Pocket Sky Atlas, Sky Atlas 2000*, *The Double Star Atlas* and even the *AAVSO Variable Star Atlas* (not labeled tho.). The galaxies in blue are on *Uranometria 2000*, chart 114. PGC 58720 is labeled as ZWG197-002 (Zwicky Catalog). PGC 58720 is not plotted on *Milleniam Star Atlas*. NGC 6199 has been deleted from recent editions of *Uranometria* and IC 4616 may be the closest match to what an older planetarium program displays. In any case, objects below 14th magnitude will be a real challenge with any scope smaller than 18" and under very dark skies. Most magnitudes listed are from *Uranometria Deep Sky Field Guide*, others from *Guide 7.0* software. For the fainter galaxies, you'll need to use an actual photo of the area as your guide. The Digital Sky Survey charts were downloaded from the AAVSO chart generating program. You may obtain your own by typing in the chart numbers, upper left. There will be no labeling, however. These were added, as best as possible, by cross-checking data from all above sources that are mentioned. Photocopy these charts for use at the eyepiece. Use the reference stars (71 & 89) to get to the fields.





Star hop north from the 7.1 magnitude reference star on the first chart, to the 8.9 magnitude star on the second chart above. Be very aware of the field orientation your optics are giving. Turn these charts to match if you are not using a star diagonal. If you do, east and west are switched. This can be very frustrating. Using a correct image diagonal is highly recommended, if you can get one. They help with all types of observing so it wouldn't be just for this project. Good Luck!

MVCO: ACTIVE APRIL

The venerable 16" Building, serving as our home base since 1962, is in need of critical repair work. Discovered the morning after last year's OTAA, the foundation is in bad shape due to water damage. Shown below, the west wall (at the bottom of the hill). Blocks are crumbling and it's likely the same way all around the perimiter. Looks like professional expertise will be needed.

Spouting was installed this past April to keep rain away from the walls. Thanks goes to Bill, Roy, and a bunch of others.

Steve was the main ditch digger. A drain is being installed to carry away water from the spouting. Preliminary plans have a new drain tile system also connected. But plans are changing as more information unfolds on what actually needs to be done. It is preferred to do this right.

April's Chili Cook-off 2010

About 24-26 folks came with an appetite. Six crock pots of the spicy stuff were in competition. Well, there wasn't any real "atomic" heat this year, but it was all good. Congratulations to Bill Prewitt as the winner. He claims his wife made it, he just did the chopping. Either way, everyone was a winner. Good chow, good company, good entertainment and good chili eating weather. You have a year to practice for the next try.

Above: Larry digs in.

Linda seemed to enjoy her first chili-fest.

It was "TV-Land" after the damage was done.