

The Spectrum

January/February

Volume 19, Issue 1

Obs Report	2
BAA Schedule	5
2017 Moon Phases	6
Moon Phases	7
J. Kepler	8
2017 Calendar	13
2017 Star Chart-	
Pages 17-29	
Map	30

The Newsletter for the Buffalo Astronomical Association

Annual Events Issue:

Hi All,

Welcome to the annual everything issue. In this issue you will find a listing for 2017 astronomical events and a phases of the moon calendar. I also added 12 star charts to cover each month of 2017. Enjoy!

Announcement

College of Fellows Meeting

The annual College of Fellows meeting will be held at 7:30 PM on Thursday, February 23, 2017 at my house at 132 Burroughs Drive, Amherst, NY.

Please give me a call at 839-1842 to let me know if you're coming or not.

Rowland A. Rupp

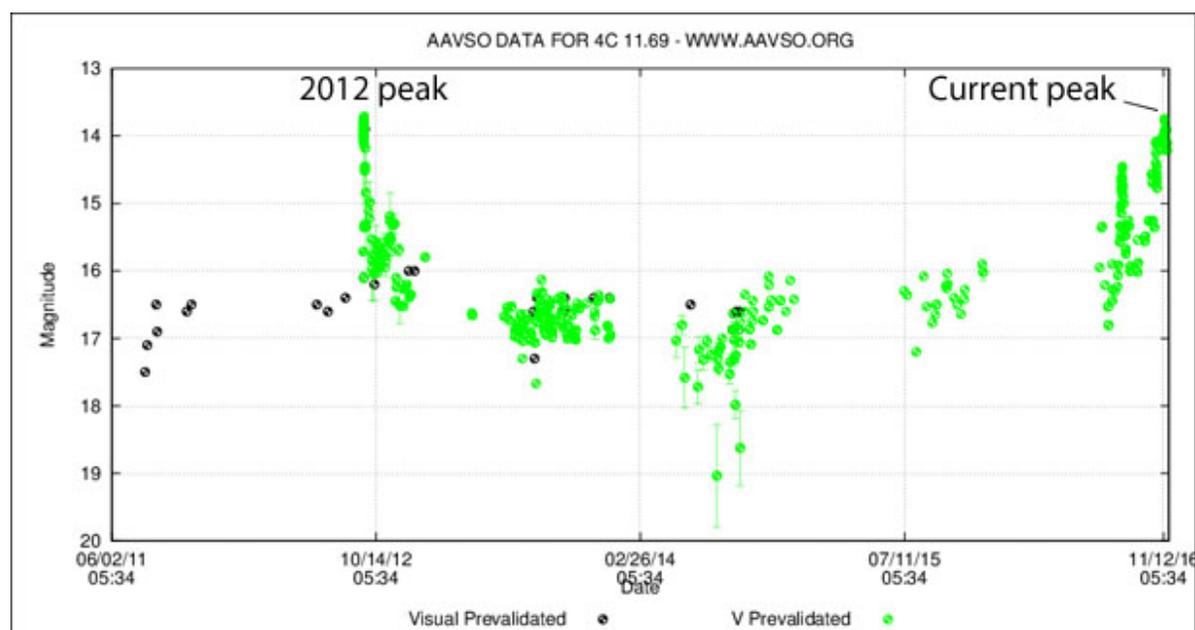


Observatory Report

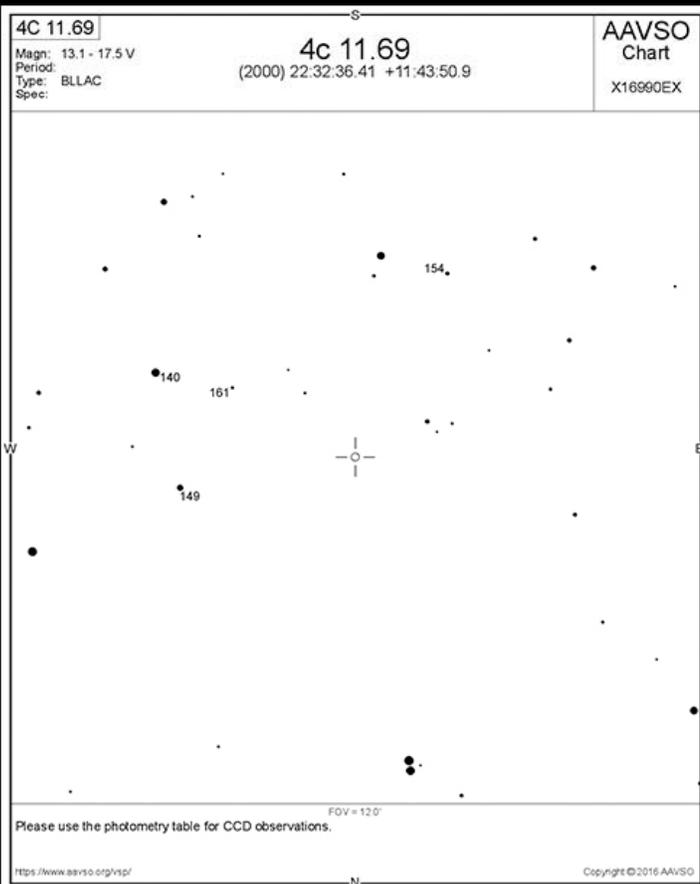
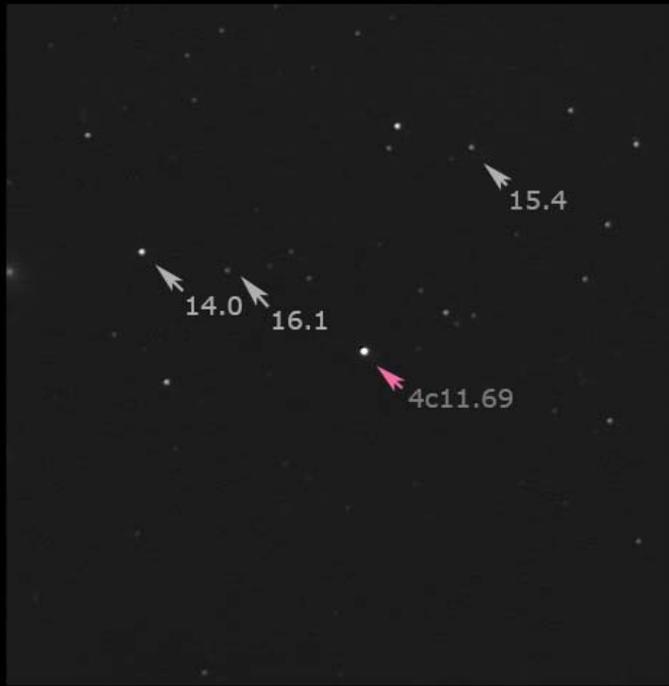
We have begun using the new rail covers. So far they seem to be working fine at keeping the ice and snow off the outrigger rails. We still have an issue with the roof gluing itself to the new warming room roof due to the melting and refreezing of the snow drifts so it still takes two to get the roof open. But on that note, it sure is NICE not to have to scrape the rails in preparation to rolling off the roof. When you do get the roof off, you need to shovel the snow away from the edge of the roll off roof. Please do NOT walk on the flat roof of the new warming room! I do NOT want any leaks. We finally have the mildew smell almost cured, and a leak will only bring it back.

Tues Night Imaging group: Tues nights will continue during the winter. The only thing that will change is I will not go out any week it is snowing. On those weeks if someone wants to hold an image processing night at their house or at a place like the Library, or Panera/Tim Hortons we can do that instead. There is no point in driving the 400 in a blinding snow storm just to meet.

It has been mostly cloudy for the Tues night sessions. So we have taken advantage of the bad weather to service computers, work on an image or two as well as take some new dark frames for the ST-9 camera. Even with the bad weather we were able to watch a Quasar having “lunch” and get an image of M-42. It seems that Quasar 4C 11.69 has been eating matter since about November and went from around 16th mag to about 13th mag when we took the image. Here is a light curve for the Quasar:



AAVSO give you charts of all the variable objects at WWW.AAVSO.ORG. Below is our image taken with the C-14 and ST-9 camera.

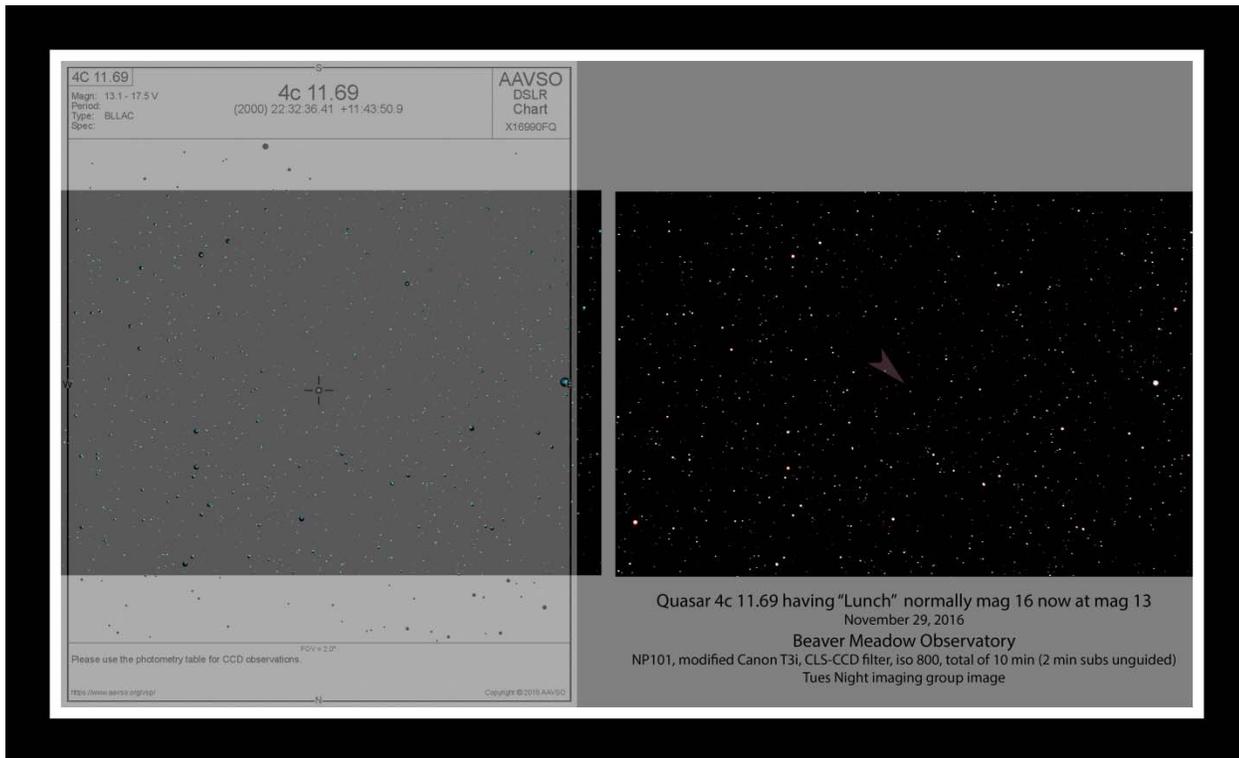


Quasar 4c11.69 having Lunch

normally 16 mag
Brightened to 13 mag October/November of 2016

Imaged by the Tuesday Night Observatory group
11/29/2016 using the Clubs C-14, ST-9 camera
with focal reducer
Sum of about 30 1 min subs unguided images

The next image is with the NP101is and the clubs Canon T3i camera



It was way fun processing the images and comparing them to the AAVSO charts. The other image we were able to have some fun with was M-42 the Great Nebula in Orion. Even though there was a thick haze in the sky, we imaged anyway and had fun combining a bunch of 30 sec subs with some 120 sec subs to get this image of M-42. I do have to admit Dennis B. took a better image the week before, but in our defense, his skies were MUCH better.



Observatory Report (cont.)

So to continue the Fun there are two comets that make close approaches to Earth that the professional astronomers would like amateur astronomers to image this winter. See <http://www.skyandtelescope.com/observing/worldwide-4p-comet-campaign-needs-your-photos/> Comets - **41P/Tuttle-Giacobini-Kresak**, **45P/Honda-Mrkos-Pajdusakova**, will be at close approach till around end of March. So if we get any good clear nights, I will try and image them even if just for fun.

Loaner Scopes - The Observatory has several loaner scopes you can check out for 4 weeks. We have a Celestron 8" on a tracking German Equatorial Mount and a 6" Dobson. If you wish to borrow one of these scope's see Daniel Marcus on a "Tues" night.

The usual schedule for BAA events:

Jan 13: BAA meeting † V h

Feb 10: BAA meeting at Buffalo State 7:30pm

Feb 11: Beaver Meadow Obs 6:00pm to 7:30pm Nature Center is having a Moon walk asked if we could be open.

March 10: BAA meeting at Buffalo State 7:30pm

March 24 or 25: Messier Marathon Party at the Obs weather permitting - stay tuned to the Egroups

April 1: Beaver Meadow Observatory – first public night of the 2017!

April 8/9: NEAF

Aug 21: Total Solar Eclipse – You had better be on the Center Line or ELSE!!!

Sept 22-24: Black Forest Star Party

See you at the Observatory

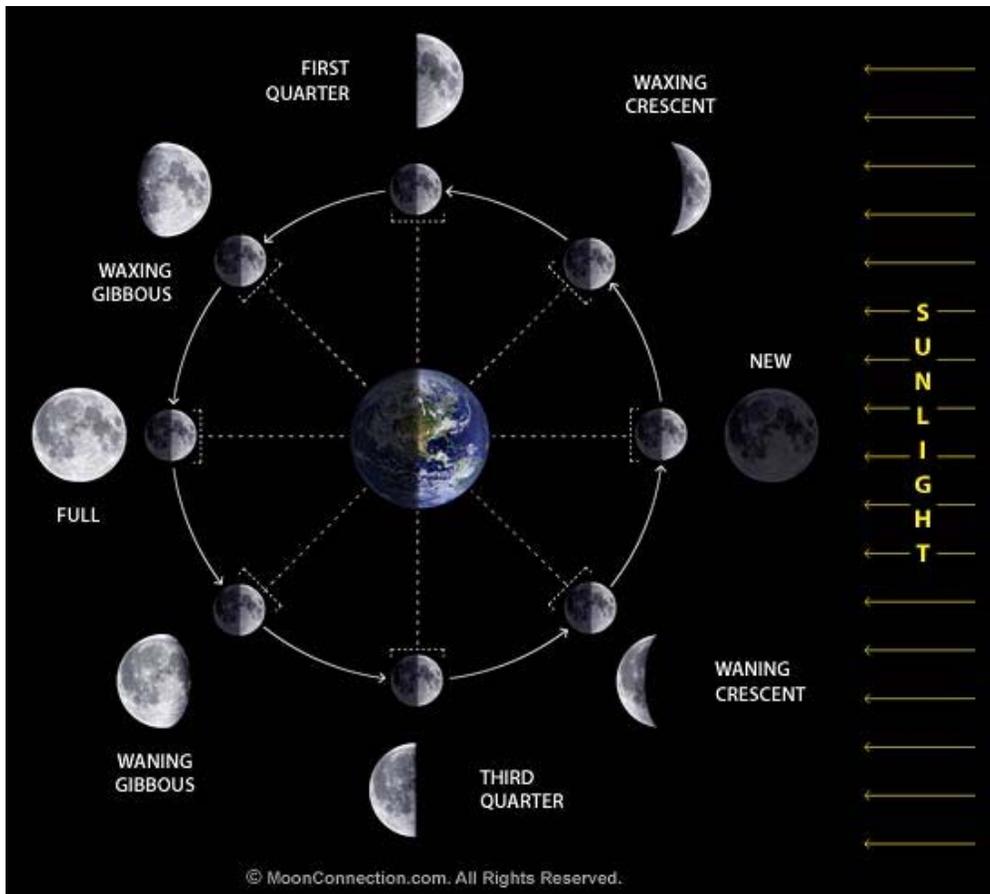
Daniel Marcus



Moon Phase Calendar

2017

On the next page is a handy nightly calendar for the phases of the Moon in 2017. You can feel free to print or distribute the calendar as long as you keep all acknowledgements intact and do not charge. You can also rescale the page for wallet sized cards. Let me know if you need an original PDF file for your use.



2017 CALENDAR

Month	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	31
JANUARY	MOON																														
FEBRUARY	MOON																														
MARCH	MOON																														
APRIL	MOON																														
MAY	MOON																														
JUNE	MOON																														
JULY	MOON																														
AUGUST	MOON																														
SEPTEMBER	MOON																														
OCTOBER	MOON																														
NOVEMBER	MOON																														
DECEMBER	MOON																														

 New Moon
  First Quarter Moon
  Full Moon
  Last Quarter Moon
  Solar Eclipse

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What You Did Not Know About Johannes Kepler

By

Randy Boswell

Johannes Kepler (1571-1630) was born in the town of Weil der Stadt, Germany. As a young child Kepler was prone to illnesses and at the age of three contracted smallpox, which permanently impaired his eyesight [1]. The young Kepler showed an exceptional mathematical ability. His elders were astonished at his ability to solve math problems that they gave him.

Kepler was reared by his mother, his father having been killed in battle as a mercenary fighter when Kepler was five years old. Early on his mother sparked an interest in astronomy by pointing out things in the night sky. Kepler obtained a scholarship from the Duke of Wurtemberg to attend the University of Tubingen. Brought up a Lutheran, Kepler intended to become a Lutheran minister when he completed the required courses in mathematics, his forte', along there that he was intro-



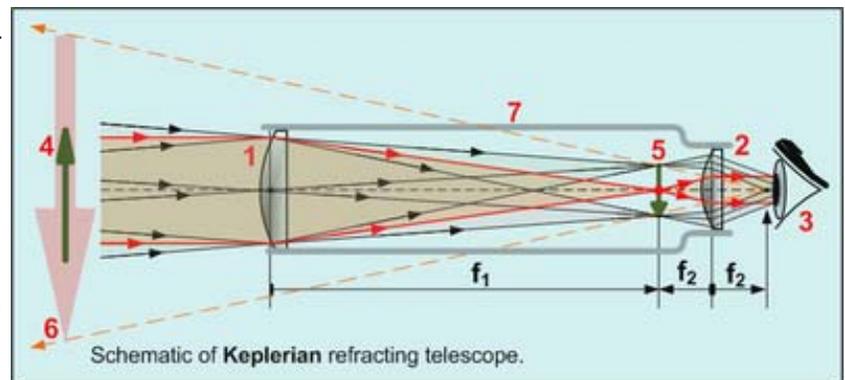
duced to the ideas of Copernicus and delighted in them [2]. Becoming a Lutheran minister, however, was not to be. Before completing his theological degree, Kepler was asked in 1594 to replace a mathematics teacher in a Lutheran high school in Graz, Austria who had recently died. Kepler felt obligated and took up the teaching position where he lectured in astronomy as well. It was there that he wrote the first outspoken defense of the Copernican system, the *Mysterium Cosmographicum* (Mystery of the Cosmos), which came out in 1596 [2][3]. In 1600, Kepler was forced to leave his teaching post and move to Prague due to the Counter Reformation where he be-

came an assistant to the famous Danish astronomer, Tycho Brahe (1546-1601).

Kepler soon set about analyzing Tycho's data on the observed positions of Mars. The result was that Kepler determined that Mars orbited the Sun in an elliptical orbit. And, it was from this starting point that Kepler subsequently concluded that all the planets revolve around the Sun in some kind of oval or elliptical paths. This discovery and his related laws of planetary motion is what made Kepler famous. However, Kepler is scarcely credited with other significant scientific achievements as well. These included:

The Keplerian Telescope

Kepler lived during the same time period as Galileo and was acquainted with his astronomical work using the newly invented telescope. For example, Kepler knew about Galileo's discovery of the four moons of Jupiter that Galileo outlined in his pamphlet, *Starry Messenger* (1610). This prompted Kepler to verify Galileo's discovery using a telescope himself. Kepler, through an influential nobleman asked Galileo if he could make one available, but the request was ignored [4]. However,



Kepler obtained one of Galileo's telescopes from the Duke of Bavaria. He confirmed Galileo's discoveries in a pamphlet, *Observer's Report on Jupiter's Four Wandering Satellites* (1610).

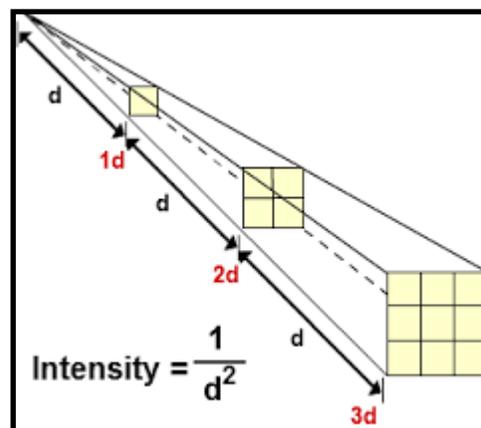
Kepler soon set about designing a superior telescope. In 1611 he perfected its design. It consisted of two convex lenses - a convex objective lens and a convex lens as the eyepiece. This differed from Galileo's telescopes, which used a plano-convex objective lens and a plano-concave eyepiece lens. The advantage of this design is that it provided a wider field of view, which enabled Kepler to better track the movement of the planets [1]. This design also provided greater eye relief and allowed for significantly higher magnifications. And, unlike Galileo's

telescope, the image in the eyepiece was inverted. The tradeoff was that the telescope needed a very high f-ratio to overcome the chromatic aberration caused by the simple objective lens [5]. This was later overcome in 1733 by the invention of the achromatic lens by the amateur English optician, Chester Moore Hall. A combination concave and convex lens, the achromatic lens significantly limited chromatic aberration. *Still, Kepler's basic design is now the standard for refracting telescopes, now called the "astronomical" or "Keplarian" telescope* (emphasis) [1][6].

Regarding this, Kepler published the first detailed explanation of how a telescope works in his *Dioptrice* (1611).

Light Intensity

Another milestone in astronomy was Kepler's discovery in 1604 of the inverse square law of light intensity [1]. Kepler proposed light spreads out from a point, and that its intensity decreases the farther it travels from its source [4]. An illustration of this is that Jupiter being about five times more distant from the Sun than the Earth is, each square meter on Jupiter gets only one twenty-fifth of the Sun's rays in relation to a square meter on Earth. Or, to state it mathematically, light intensity is inversely proportional to the square of its distance from its source. That is, double your distance from a light source and its intensity decreases by a factor of four, triple your distance and the intensity decreases by a factor of nine, and so forth. *This was a vital discovery because this law is an essential rung on the distance ladder that astronomers use in determining cosmic distances* (emphasis).



Rudolphine Tables

Yet another of Kepler's major accomplishments was his compilation of a star catalogue along with a set of planetary tables. After the death of Tycho Brahe, the Holy Roman Emperor Rudolph II appointed Kepler to be in charge of Tycho's astronomical instruments and ongoing



research as well to the position of new imperial mathematician. Kepler's new responsibilities included compiling tables for the positions for the stars and planets based on Tycho's observational data. These tables were the first to make use of Kepler's laws of planetary motion and therefore were significantly more accurate than previous ones, including the widely

used Copernican Tables. Names after Rudolph II, the Rudolphine Tables are credited with paving the way for the acceptance of Kepler's laws of planetary motion [7].

Conclusion

These are among Kepler's most influential accomplishments. Yet, there are still other firsts that are due to Kepler. The list includes the first to deduce that the tides are caused by the Moon, the first to suggest that the Sun rotates on its axis, the first to attempt to use stellar parallax due to the Earth's orbit around the Sun to measure the distance to the stars. And, those of you reading this article who happen to be wearing eyeglasses, you have Johannes Kepler to thank. It is Kepler who improved the state of eyeglasses to enable those who were both near and far-sighted to have their vision corrected [8]. End.



Notes

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ASTRONOMY CALENDAR
OF
CELESTIAL EVENTS
FOR
YEAR 2017



January

January 3, 4 - Quadrantids Meteor Shower. The Quadrantids is an above average shower, with up to 40 meteors per hour at its peak.

January 12 - Full Moon. The Moon will be located on the opposite side of the Earth as the Sun and its face will be fully illuminated. This phase occurs at 11:34 UTC..

January 12 - Venus at Greatest Eastern Elongation. The planet Venus reaches greatest eastern elongation of 47.1 degrees from the Sun.

January 19 - Mercury at Greatest Western Elongation. The planet Mercury reaches greatest western elongation of 24.1 degrees from the Sun.

January 28 - New Moon. The Moon will be located on the same side of the Earth as the Sun and will not be visible in the night sky. This phase occurs at 00:07 UTC.

February

February 11 - Full Moon. The Moon will be located on the opposite side of the Earth as the Sun and its face will be fully illuminated. This phase occurs at 00:33 UTC.

February 11 - Penumbral Lunar Eclipse

February 26 - New Moon. The Moon will be located on the same side of the Earth as the Sun and will not be visible in the night sky. This phase occurs at 14:59 UTC.

February 26 - Annular Solar Eclipse

March

March 12 - Full Moon. The Moon will be located on the opposite side of the Earth as the Sun and its face will be fully illuminated. This phase occurs at 14:54 UTC.

March 20 - March Equinox. The March equinox occurs at 10:29 UTC.

March 28 - New Moon.

April

April 1 - Mercury at Greatest Eastern Elongation. The planet Mercury reaches greatest eastern elongation of 19 degrees from the Sun.

April 7 - Jupiter at Opposition. .

April 11 - Full Moon. The Moon will be located on the opposite side of the Earth as the Sun and its face will be fully illuminated. This phase occurs at 06:08 UTC.

April 22, 23 - Lyrids Meteor Shower.

April 26 - New Moon. The Moon will be located on the same side of the Earth as the Sun and will not be visible in the night sky. This phase occurs at 12:17 UTC.

May

May 6, 7 - Eta Aquarids Meteor Shower.

May 10 - Full Moon. The Moon will be located on the opposite side of the Earth as the Sun and its face will be fully illuminated. This phase occurs at 21:42 UTC.

May 17 - Mercury at Greatest Western Elongation. The planet Mercury reaches greatest western elongation of 25.8 degrees from the Sun

May 25 - New Moon. The Moon will be located on the same side of the Earth as the Sun and will not be visible in the night sky. This phase occurs at 19:45 UTC.

June

June 3 - Venus at Greatest Western Elongation. The planet Venus reaches greatest eastern elongation of 45.9 degrees from the Sun.

June 9 - Full Moon. The Moon will be located on the opposite side of the Earth as the Sun and its face will be fully illuminated. This phase occurs at 13:10 UTC.

June 15 - Saturn at Opposition.

June 21 - June Solstice. The June solstice occurs at 04:24 UTC.

June 24 - New Moon. The Moon will be located on the same side of the Earth as the Sun and will not be visible in the night sky. This phase occurs at 02:31 UTC.

July

July 9 - Full Moon. The Moon will be located on the opposite side of the Earth as the Sun and its face will be fully illuminated. This phase occurs at 04:07 UTC.

July 23 - New Moon. The Moon will be located on the same side of the Earth as the Sun and will not be visible in the night sky. This phase occurs at 09:46 UTC.

July 28, 29 - Delta Aquarids Meteor Shower.

July 30 - Mercury at Greatest Eastern Elongation. The planet Mercury reaches greatest eastern elongation of 27.2 degrees from the Sun

August

August 7 - Full Moon. The Moon will be located on the opposite side of the Earth as the Sun and its face will be fully illuminated. This phase occurs at 18:11 UTC..

August 7 - Partial Lunar Eclipse.

August 12, 13 - Perseids Meteor Shower.

August 21 - New Moon. The Moon will be located on the same side of the Earth as the Sun and will not be visible in the night sky. This phase occurs at 18:30 UTC.

August 21 - Total Solar Eclipse.



September

September 5 - Neptune at Opposition.

September 6 - Full Moon. The Moon will be located on the opposite side of the Earth as the Sun and its face will be fully illuminated. This phase occurs at 07:03 UTC.

September 12 - Mercury at Greatest Western Elongation. The planet Mercury reaches greatest western elongation of 17.9 degrees from the Sun.

September 20 - New Moon. The Moon will be located on the same side of the Earth as the Sun and will not be visible in the night sky. This phase occurs at 05:30 UTC.

September 22 - September Equinox. The September equinox occurs at 20:02 UTC

October

October 5 - Full Moon. Moon will be directly opposite the Earth from the Sun and will be fully illuminated as seen from Earth. This phase occurs at 18:40 UTC.

October 7 - Draconids Meteor Shower.

October 19 - New Moon. The Moon will be located on the same side of the Earth as the Sun and will not be visible in the night sky. This phase occurs at 19:12 UTC.

October 19 - Uranus at Opposition.

October 21, 22 - Orionids Meteor Shower.

November

November 4 - Full Moon. The Moon will be located on the opposite side of the Earth as the Sun and its face will be fully illuminated. This phase occurs at 05:23 UTC.

November 4, 5 - Taurids Meteor Shower.

November 13 - Conjunction of Venus and Jupiter.

November 17, 18 - Leonids Meteor Shower.

November 18 - New Moon. The Moon will be located on the same side of the Earth as the Sun and will not be visible in the night sky. This phase occurs at 11:42 UTC.

November 24 - Mercury at Greatest Eastern Elongation. The planet Mercury reaches greatest eastern elongation of 22.0 degrees from the Sun

December

December 3 - Full Moon, Supermoon. The Moon will be located on the opposite side of the Earth as the Sun and its face will be fully illuminated. This phase occurs at 15:47 UTC..

December 13, 14 - Geminids Meteor Shower.

December 18 - New Moon. The Moon will be located on the same side of the Earth as the Sun and will not be visible in the night sky. This phase occurs at 06:30 UTC.

December 21 - December Solstice. The December solstice occurs at 16:28 UTC..

December 21, 22 - Ursids Meteor Shower.

Star Charts

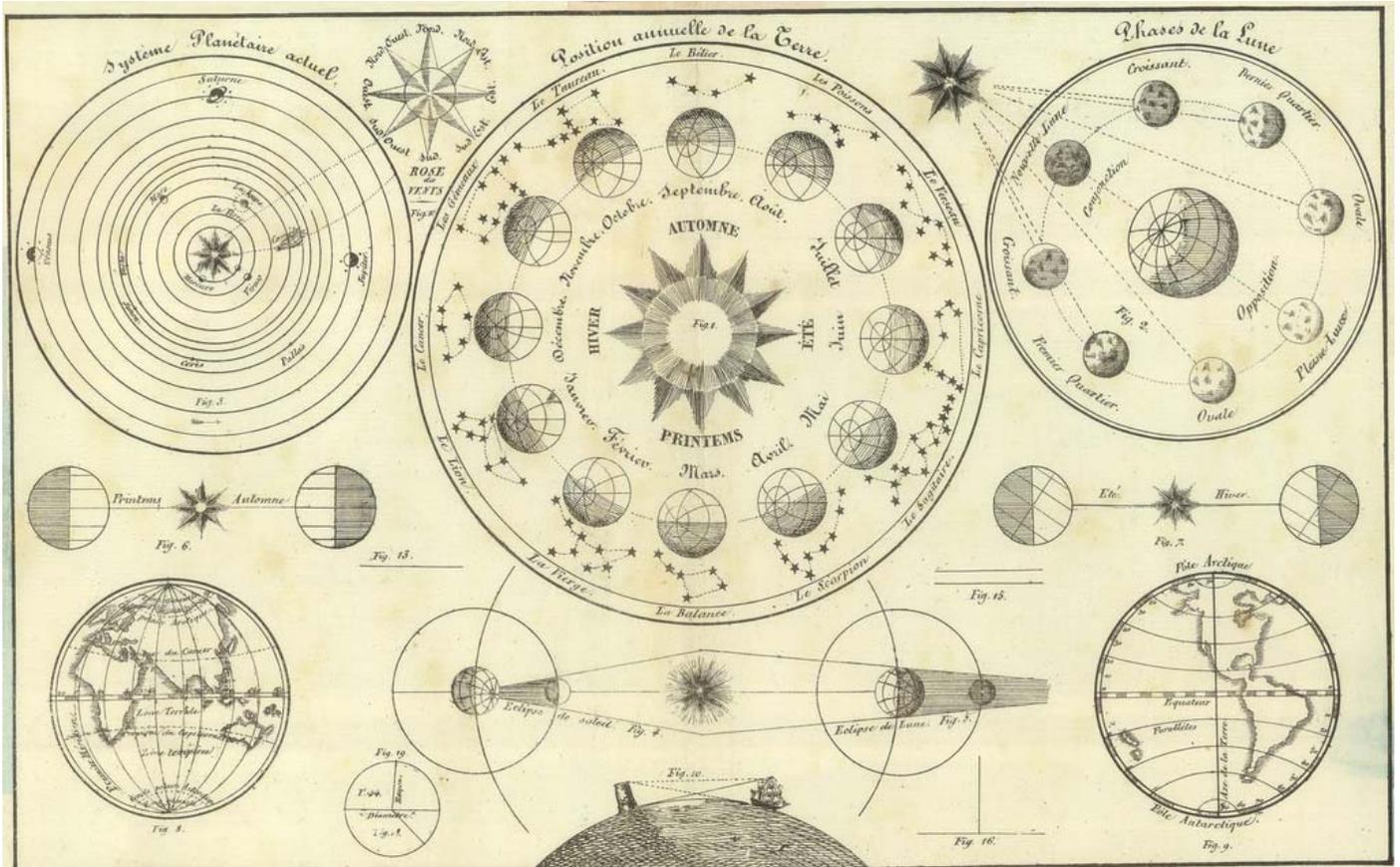
January 2017 thru December 2017

On the following pages are 12 charts covering
the new moon sky at 23:00:00.

Latitude: 42.5248 N

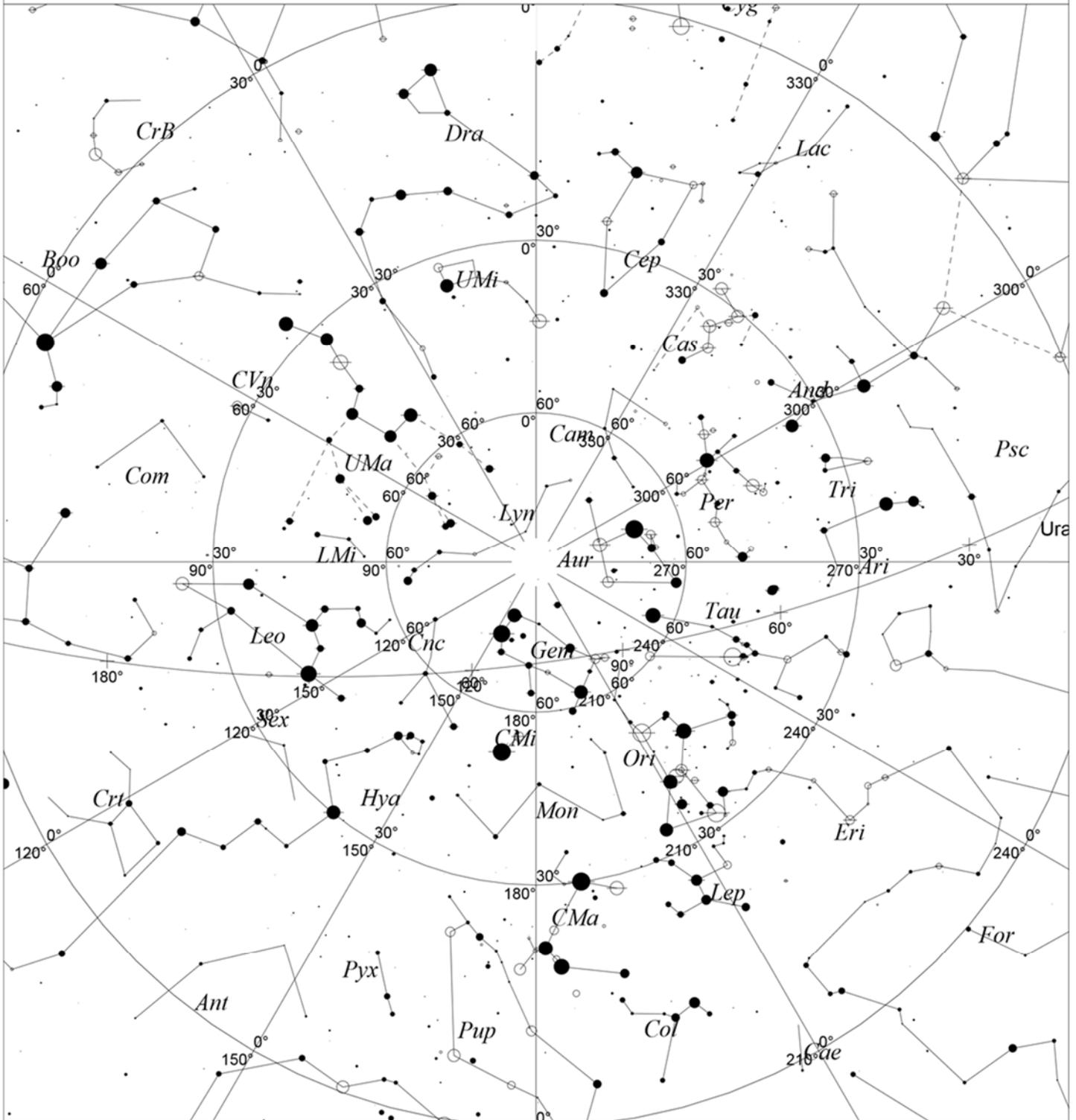
Longitude: 78.5212 W

Clear Skies!



Jan 27, 2017

23:00:00



STARS

- <1
- 1.5
- 2
- 2.5
- 3
- 3.5
- 4
- 4.5
- >5

SYMBOLS

- Multiple star
- Variable star
- ☄ Comet
- ☉ Galaxy
- ☐ Bright nebula
- ☒ Dark nebula
- ⊕ Globular cluster
- ⊙ Open cluster
- ⊕ Planetary nebula
- ⊕ Quasar
- △ Radio source
- × X-ray source
- Other object

Local Time: 23:00:00 27-Jan-2017

UTC: 04:00:00 28-Jan-2017

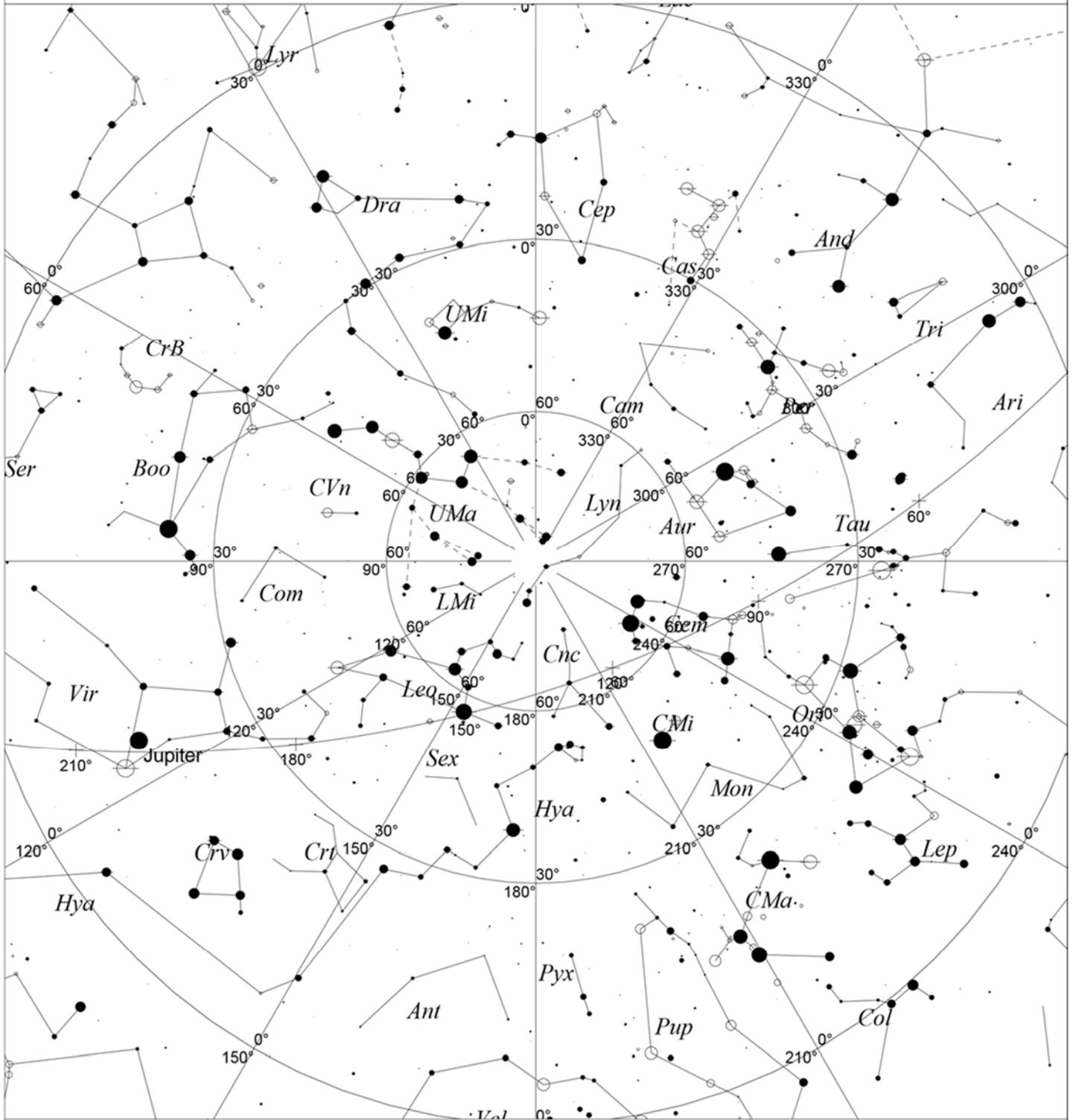
Sidereal Time: 07:14:58

Location: 42° 52' 48" N 78° 52' 12" W RA: 7h14m58s Dec: +42° 52' Field: 180.0°

Julian Day: 2457781.6667

Feb 26, 2017

23:00:00



STARS

- <1
- 1.5
- 2
- 2.5
- 3
- 3.5
- 4
- 4.5
- >5

SYMBOLS

- Multiple star
- Variable star
- ☄ Comet
- ☐ Galaxy
- ☐ Bright nebula
- ☐ Dark nebula
- ⊕ Globular cluster
- Open cluster
- Planetary nebula
- ☉ Quasar
- △ Radio source
- × X-ray source
- Other object

Local Time: 23:00:00 26-Feb-2017

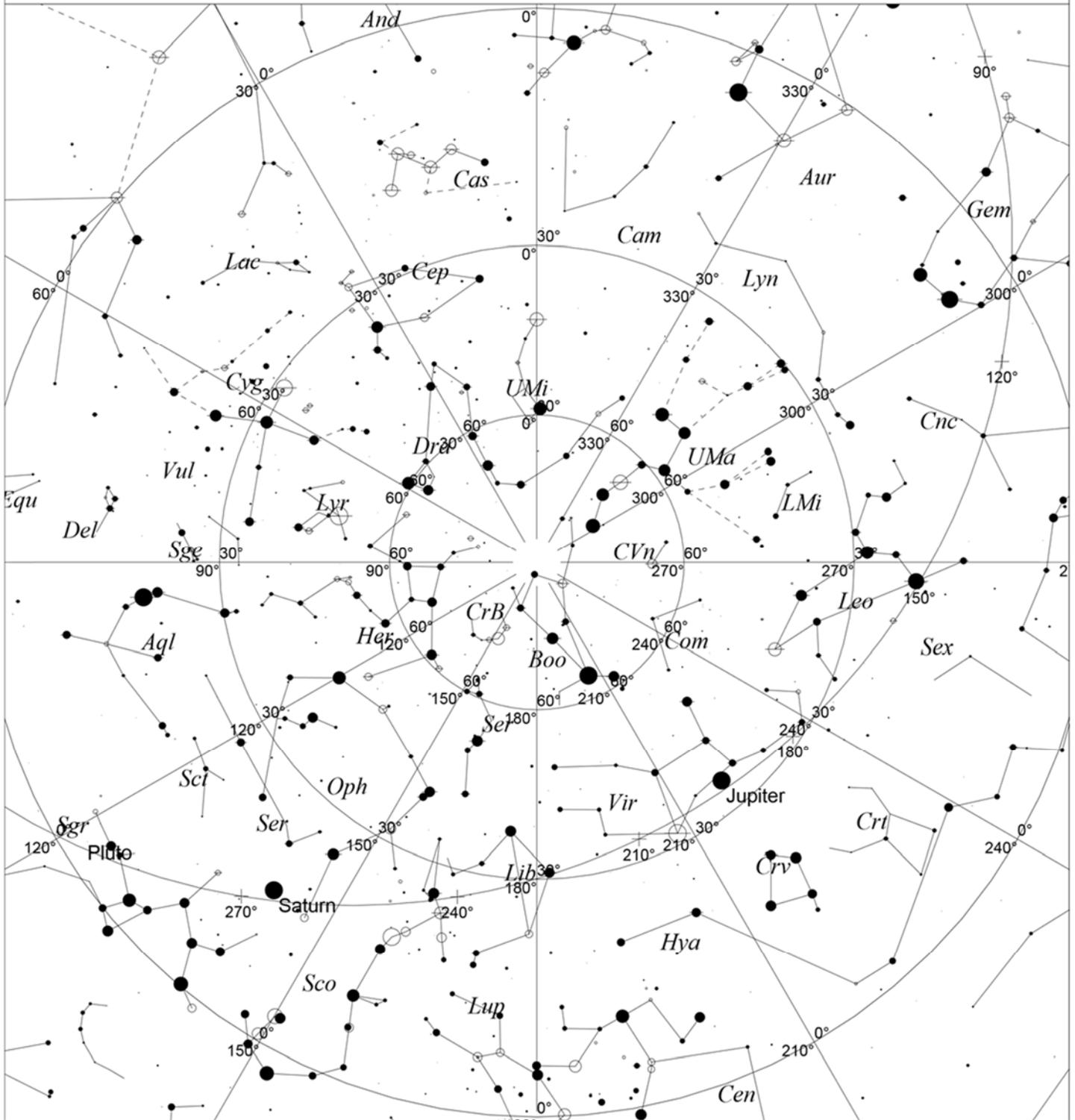
UTC: 04:00:00 27-Feb-2017

Sidereal Time: 09:13:14

Location: 42° 52' 48" N 78° 52' 12" W RA: 9h13m15s Dec: +42° 52' Field: 180.0°

Julian Day: 2457811.6667

May 25, 2017 23:00:00



STARS	SYMBOLS		
● <1	● Multiple star	☐ Dark nebula	△ Radio source
● 1.5	○ Variable star	⊕ Globular cluster	× X-ray source
● 2	☄ Comet	○ Open cluster	○ Other object
● 2.5	☄ Galaxy	○ Planetary nebula	
● 3	☐ Bright nebula	☉ Quasar	

Local Time: 23:00:00 25-May-2017

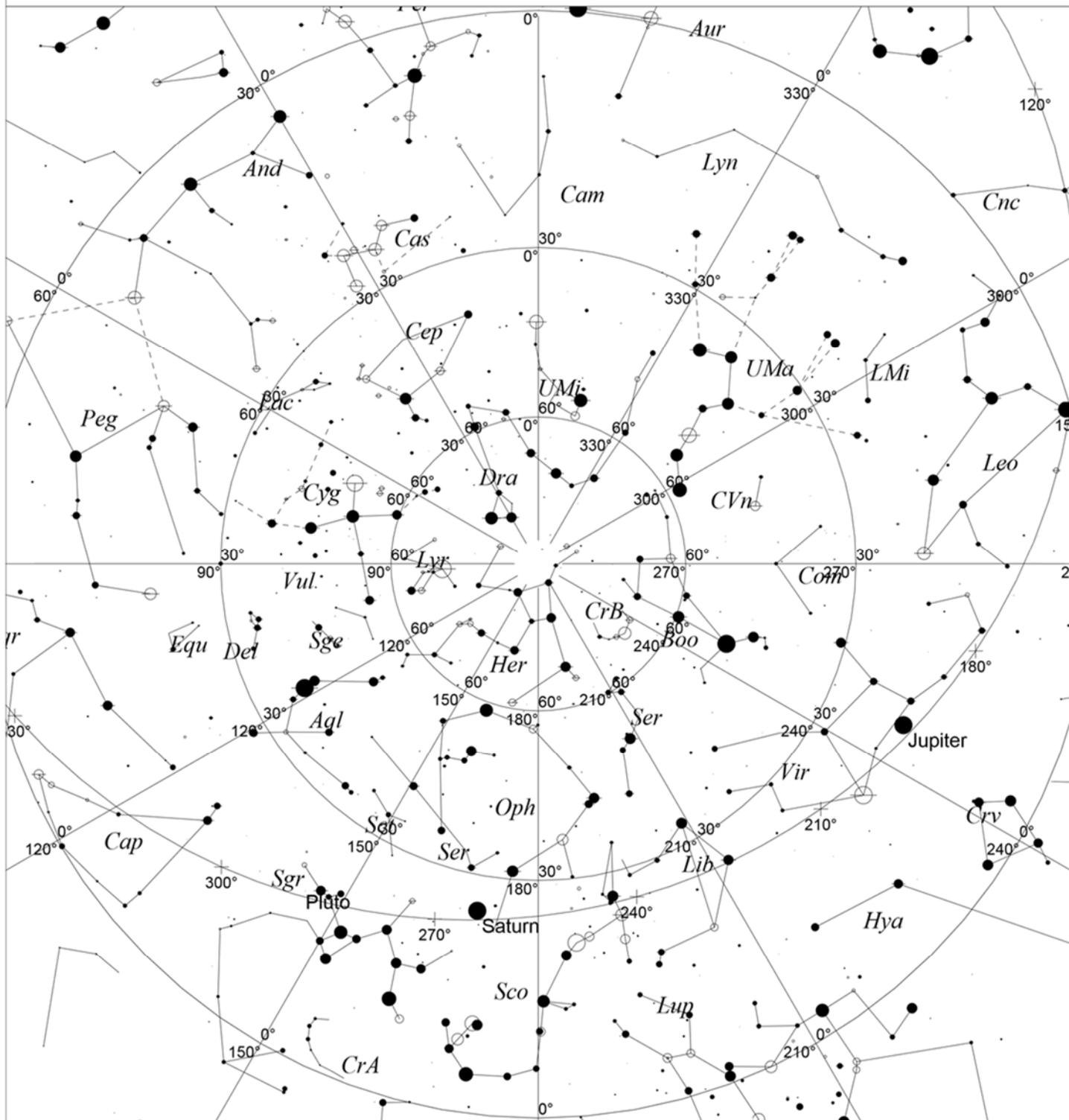
UTC: 04:00:00 26-May-2017

Sidereal Time: 15:00:11

Location: 42° 52' 48" N 78° 52' 12" WRA: 15h00m12s Dec: +42° 52' Field: 182.0°

Julian Day: 2457899.6667

Jun 23, 2017 23:00:00



STARS		SYMBOLS			
● <1	● 3.5	● Multiple star	☐ Dark nebula	△ Radio source	
● 1.5	● 4	○ Variable star	⊕ Globular cluster	× X-ray source	
● 2	● 4.5	☄ Comet	○ Open cluster	○ Other object	
● 2.5	● >5	☄ Galaxy	○ Planetary nebula		
● 3		☐ Bright nebula	☄ Quasar		

Local Time: 23:00:00 23-Jun-2017

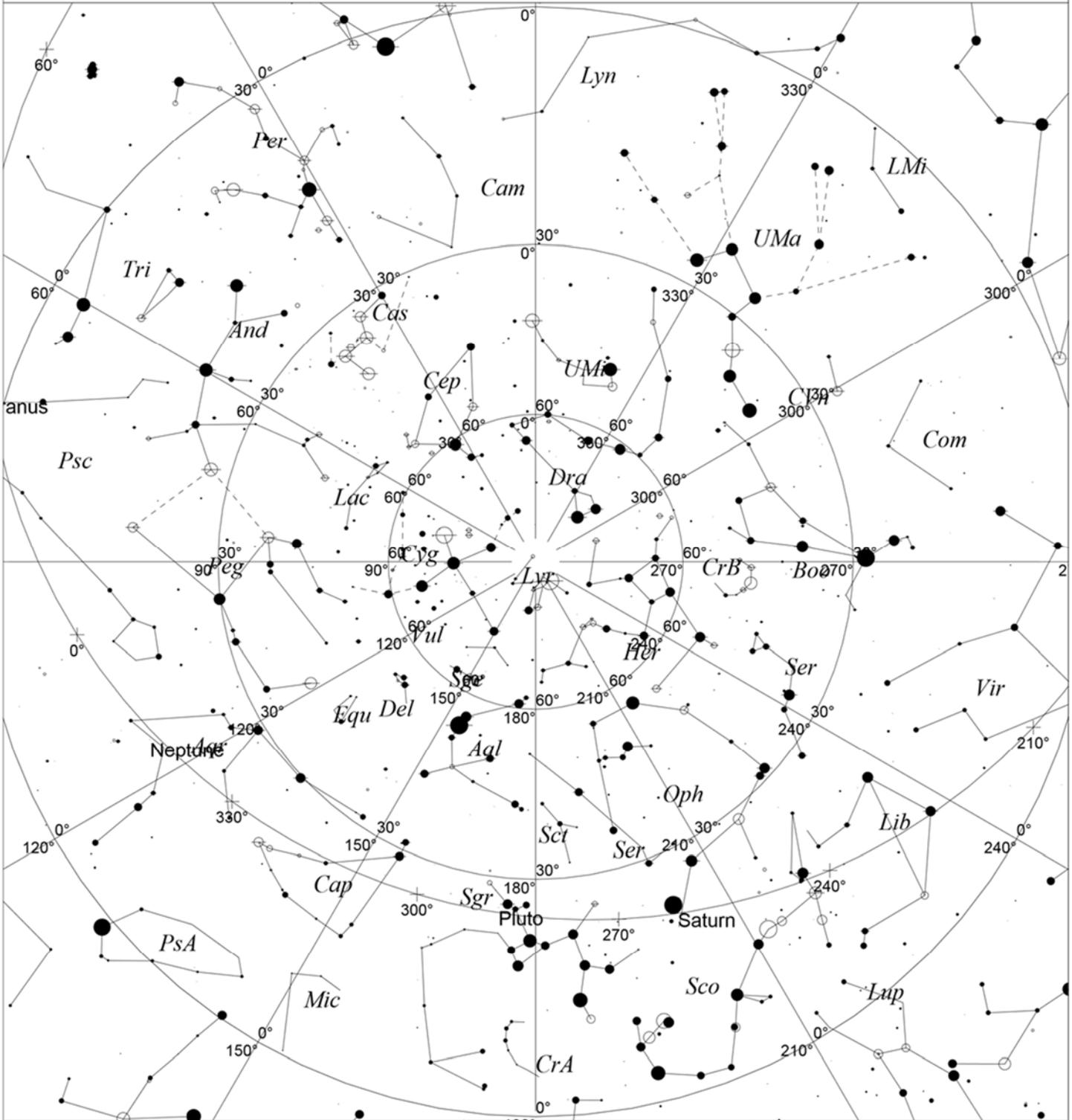
UTC: 04:00:00 24-Jun-2017

Sidereal Time: 16:54:31

Location: 42° 52' 48" N 78° 52' 12" WRA: 16h54m32s Dec: +42° 52' Field: 182.0°

Julian Day: 2457928.6667

Jul 23, 2017 23:00:00



STARS		SYMBOLS		
● <1	● 3.5	● Multiple star	☐ Dark nebula	△ Radio source
● 1.5	● 4	○ Variable star	⊕ Globular cluster	× X-ray source
● 2	● 4.5	☄ Comet	⊙ Open cluster	○ Other object
● 2.5	● >5	☄ Galaxy	⊕ Planetary nebula	
● 3		☐ Bright nebula	☄ Quasar	

Local Time: 23:00:00 23-Jul-2017

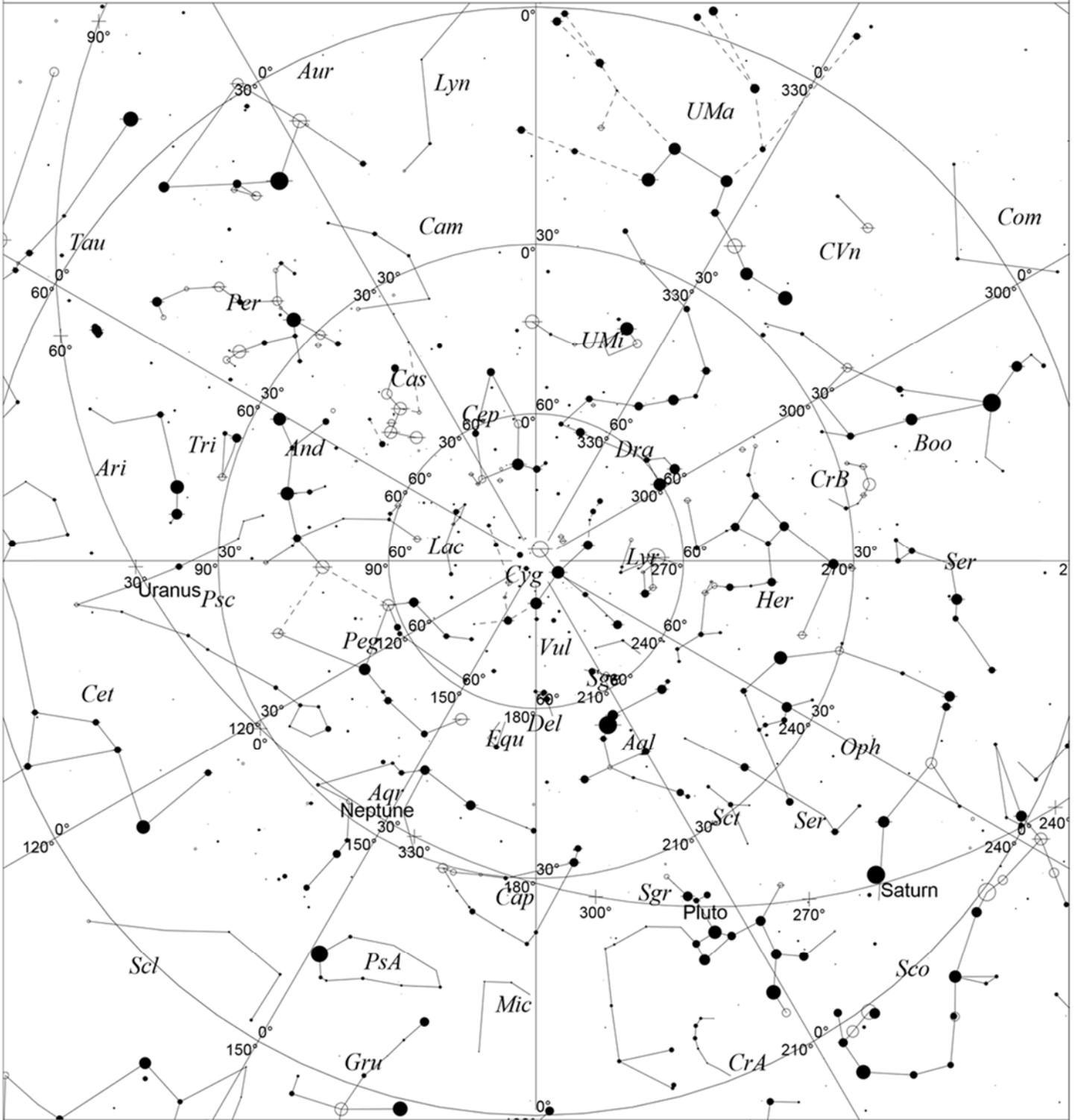
UTC: 04:00:00 24-Jul-2017

Sidereal Time: 18:52:48

Location: 42° 52' 48" N 78° 52' 12" WRA: 18h52m49s Dec: +42° 52' Field: 182.0°

Julian Day: 2457958.6667

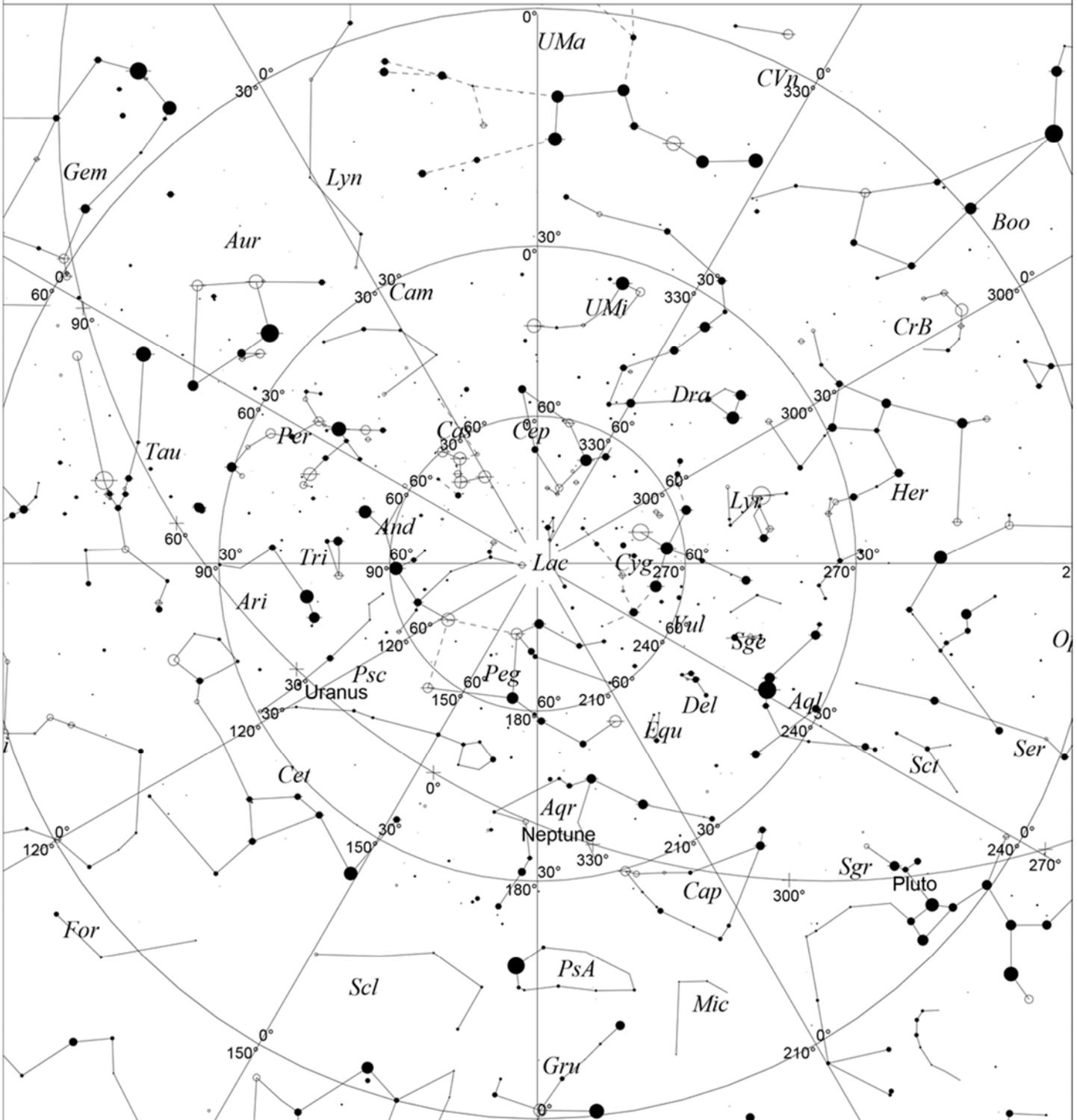
Aug 21, 2017 23:00:00



STARS	SYMBOLS	
<ul style="list-style-type: none"> ● <1 ● 3.5 ● 1.5 ● 4 ● 2 ● 4.5 ● 2.5 ● >5 ● 3 	<ul style="list-style-type: none"> ● Multiple star ○ Variable star ☄ Comet ☉ Galaxy ☐ Bright nebula 	<ul style="list-style-type: none"> ☐ Dark nebula ⊕ Globular cluster ○ Open cluster ◇ Planetary nebula ⊞ Quasar △ Radio source × X-ray source ○ Other object

Local Time: 23:00:00 21-Aug-2017 UTC: 04:00:00 22-Aug-2017 Sidereal Time: 20:47:08
 Location: 42° 52' 48" N 78° 52' 12" WRA: 20h47m09s Dec: +42° 52' Field: 182.0° Julian Day: 2457987.6667

Sep 20, 2017 23:00:00



STARS

- <1
- 1.5
- 2
- 2.5
- 3
- 3.5
- 4
- 4.5
- >5

SYMBOLS

- Multiple star
- Variable star
- ☄ Comet
- ☉ Galaxy
- ☐ Bright nebula
- ☒ Dark nebula
- ⊕ Globular cluster
- Open cluster
- ◇ Planetary nebula
- ⊞ Quasar
- △ Radio source
- × X-ray source
- Other object

Local Time: 23:00:00 20-Sep-2017

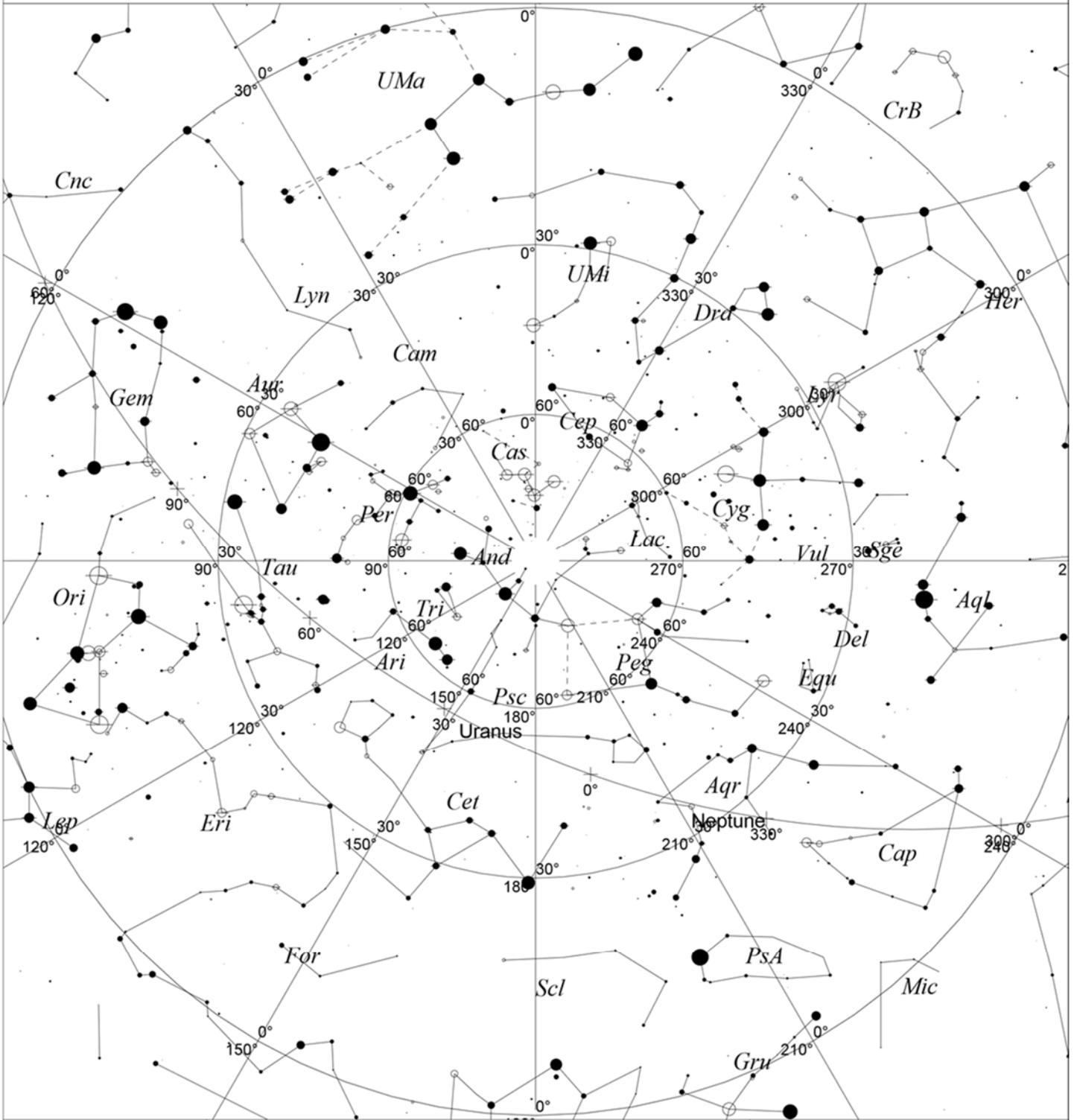
UTC: 04:00:00 21-Sep-2017

Sidereal Time: 22:45:25

Location: 42° 52' 48" N 78° 52' 12" WRA: 22h45m25s Dec: +42° 52' Field: 182.0°

Julian Day: 2458017.6667

Oct 19, 2017 23:00:00



STARS

- <1
- 1.5
- 2
- 2.5
- 3
- 3.5
- 4
- 4.5
- >5

SYMBOLS

- Multiple star
- Variable star
- ☄ Comet
- ☄ Galaxy
- ☐ Bright nebula
- ☐ Dark nebula
- ⊕ Globular cluster
- ⊕ Open cluster
- ⊕ Planetary nebula
- ⊕ Quasar
- △ Radio source
- × X-ray source
- Other object

Local Time: 23:00:00 19-Oct-2017

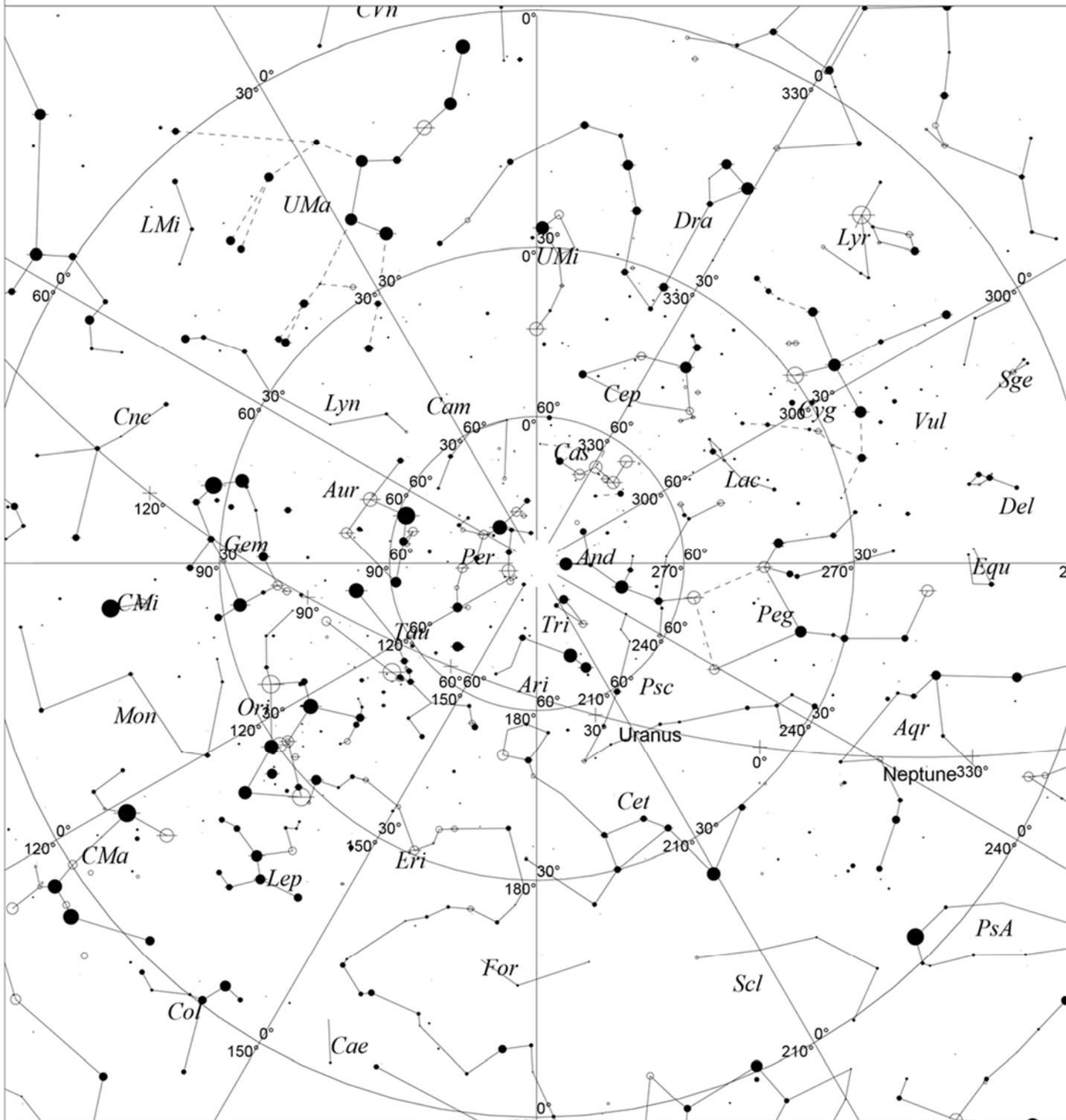
UTC: 04:00:00 20-Oct-2017

Sidereal Time: 00:39:45

Location: 42° 52' 48" N 78° 52' 12" W RA: 0h39m45s Dec: +42° 52' Field: 182.0°

Julian Day: 2458046.6667

Nov 18, 2017 23:00:00



STARS		SYMBOLS		
● <1	● 3.5	● Multiple star	☐ Dark nebula	△ Radio source
● 1.5	● 4	○ Variable star	⊕ Globular cluster	× X-ray source
● 2	● 4.5	☄ Comet	○ Open cluster	○ Other object
● 2.5	● >5	☄ Galaxy	⊕ Planetary nebula	
● 3		☐ Bright nebula	⊕ Quasar	

Local Time: 23:00:00 18-Nov-2017

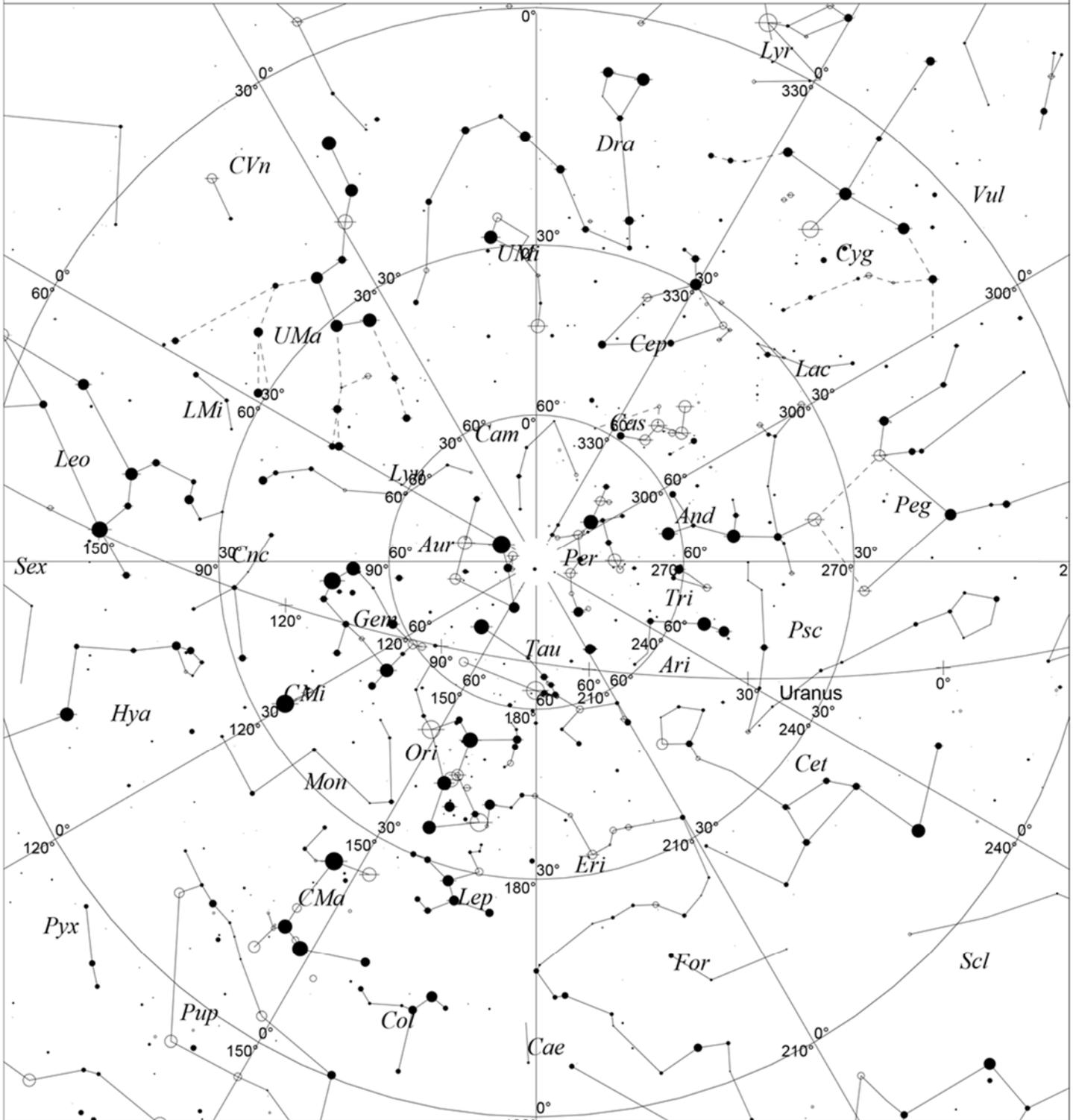
UTC: 04:00:00 19-Nov-2017

Sidereal Time: 02:38:01

Location: 42° 52' 48" N 78° 52' 12" W RA: 2h38m02s Dec: +42° 52' Field: 182.0°

Julian Day: 2458076.6667

Dec 18, 2017 23:00:00



STARS		SYMBOLS		
● <1	● 3.5	● Multiple star	☐ Dark nebula	△ Radio source
● 1.5	● 4	○ Variable star	⊕ Globular cluster	× X-ray source
● 2	● 4.5	☄ Comet	○ Open cluster	○ Other object
● 2.5	● >5	☄ Galaxy	◇ Planetary nebula	
● 3		☐ Bright nebula	⊞ Quasar	

Local Time: 23:00:00 18-Dec-2017

UTC: 04:00:00 19-Dec-2017

Sidereal Time: 04:36:18

Location: 42° 52' 48" N 78° 52' 12" W RA: 4h36m18s Dec: +42° 52' Field: 182.0°

Julian Day: 2458106.6667

BAA Officers and General Information

President: Mike Anzalone

AstronomyRocks@roadrunner.com

Vice President: Michael Humphrey

Secretary: Neal Ginsberg

Treasurer: DaRand Land

At Large Directors:

Steve Smith

Taylor Cramer

Dennis Bartkowiak

Observatory Co-Directors:

Dan Marcus (716) 773-5015

Gene Timothy

College of Fellows: Rowland Rupp

(716) 839-1842

Spectrum Editor: Michael Humphrey

Submissions: jetpac@iname.com

Star Parties: Dan Marcus

BAA Yahoo E Group: Dennis Hohman

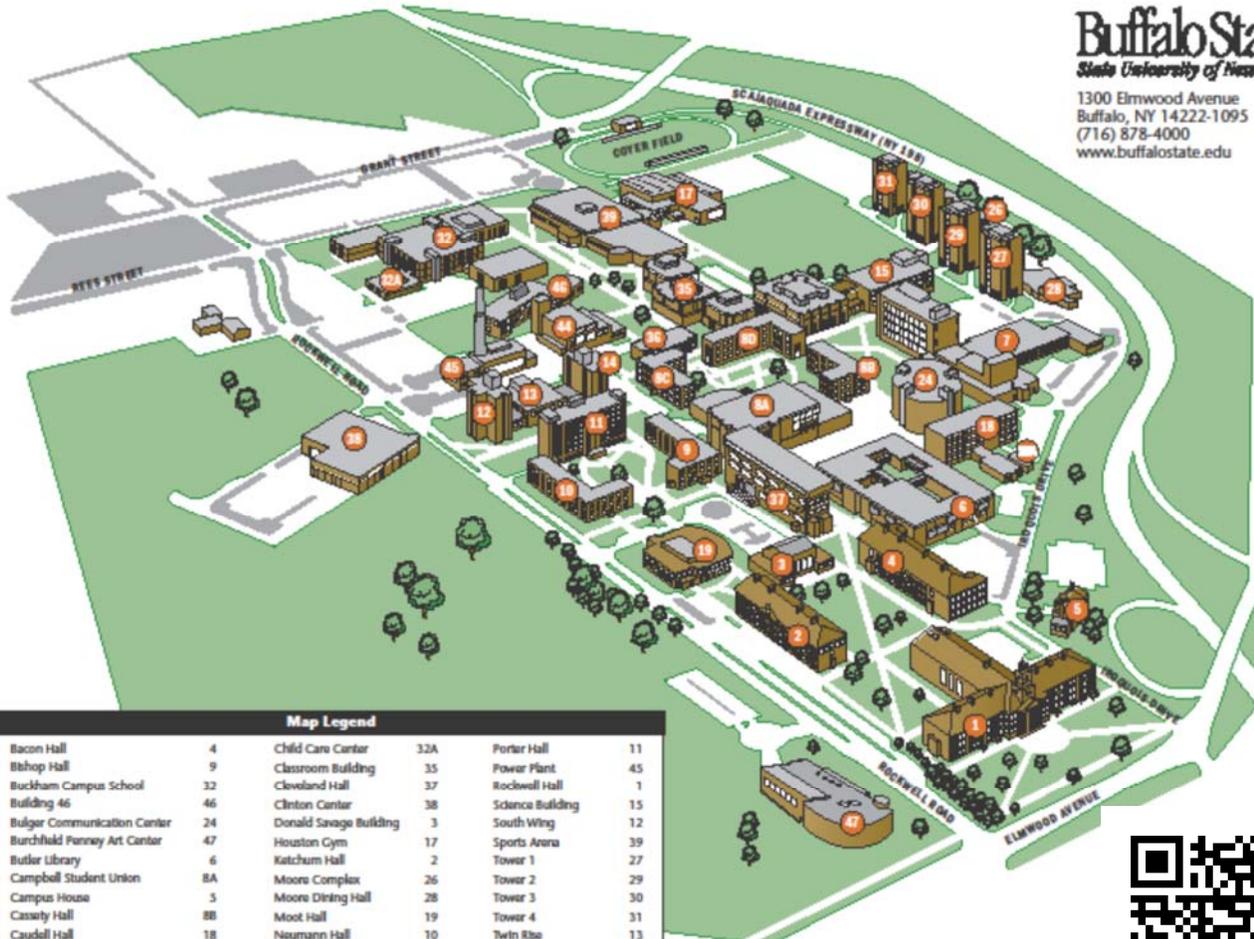
BAA Website Webmaster: Gene Timothy

BAA voice mail box: (716) 629-3098

Website:

www.buffaloastronomy.com

Location / Time of Meetings: BAA meetings are held on the 2nd Friday of the month from September to June starting at 7:30pm. Our meetings are held in room C122 of the Classroom Building at the Buffalo State Campus. See map below, building 35.



Buffalo State
State University of New York
 1300 Elmwood Avenue
 Buffalo, NY 14222-1095
 (716) 878-4000
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Map Legend					
Bacon Hall	4	Child Care Center	32A	Porter Hall	11
Bishop Hall	9	Classroom Building	35	Power Plant	45
Buckham Campus School Building 46	32	Cleveland Hall	37	Rockwell Hall	1
Bulgar Communication Center	46	Clinton Center	38	Scienza Building	15
Burchfield Pinney Art Center	24	Donald Savage Building	3	South Wing	12
Butler Library	47	Houston Gym	17	Sports Arena	39
Campbell Student Union	6	Katchum Hall	2	Tower 1	27
Campus House	8A	Moore Complex	26	Tower 2	29
Cassidy Hall	5	Moore Dining Hall	28	Tower 3	30
Caudell Hall	8B	Moot Hall	19	Tower 4	31
Caudell Hall Annex	18	Neumann Hall	10	Twin Ribs	13
Central Receiving	18A	North Wing	14	Upton Hall	7
Chase Hall	44	Perry Hall	8D	Weigel Health Center	36
	8C				

