

Highlights of the September Sky...

... 1st ...

AM: Beehive Cluster (M44)
1° north of Venus.

... 2nd ...

PM: Jupiter below the Moon.

... 3rd ...

AM: Jupiter has no moons visible from 12:43 am to 2:29 am.

... 4th ...

Full Moon

... 11th ...

Last Quarter Moon

... 13th ...

AM: Mars is about 3° below the Moon.

... 16th ...

AM: Vesta (magnitude 8.4) just south of Beehive Cluster (M44).

Dawn: Waning Crescent Moon about 4° to right of Venus.

... 17th ...

Uranus at opposition

... 18th ...

New Moon

... 20th ...

Dawn: Regulus is ½° lower right of Venus.

PM: Jupiter passes ⅓° north of magnitude 4.3 star Iota Capricorni. (Continues until 24th.)

... 23rd ...

PM: Antares is a few degrees to upper left of Moon.

... 26th ...

First Quarter Moon

... 29th ...

PM: Jupiter below Moon.

Prime Focus

A Publication of the Kalamazoo Astronomical Society

☆ ☆ ☆ September 2009 ☆ ☆ ☆

This Months KAS Events

General Meeting: Friday, September 11 @ 7:00 pm
Kalamazoo Area Math & Science Center - See Page 8 for Details

Observing Session: Saturday, September 12 @ 8:00 pm
Jupiter & Summer Triangle - Kalamazoo Nature Center

Board Meeting: Sunday, September 13 @ 5:00 pm
Sunnyside Church - 2800 Gull Road - All Members Welcome

Public Star Party: Saturday, September 19 @ 8:00 pm
Kiwanis Youth Conservation Area - See Page 7 for Details

Observing Session: Saturday, September 26 @ 8:00 pm
Overwhelming Open Clusters - Kalamazoo Nature Center

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Perseid Potluck Picnic Report

The fifteenth annual Perseid Potluck Picnic was again held at the Kalamazoo Nature Center on Saturday, August 15th with a start time of 6:00 pm. Attendance for this year's picnic was 32 members and guests.

Skies were mostly clear and temperatures were in the mid to upper 80's. This allowed us to do some more solar observing this year. Richard Bell was the only one to bring a solar equipped telescope; his Tele Vue Pronto and Coronado SolarMax 40 hydrogen-alpha filter. Perhaps the other solar observers were wise not to bring their gear. The Sun was as dull as it can get. No sunspots, filaments, or even prominences were visible. The century-level solar minimum was in full force.

Dinner was served shortly after 7:00 pm. Special thanks again go to Jim Kurtz for bringing his grill and doing all the cooking for the fifth year-in-a-row. The hamburgers were as juicy and tender as last year, so our compliments to the chef! We'd also like to thank all the members that brought the many fantastic side dishes and deserts. You folks help keep the "potluck" in Perseid Potluck Picnic!

Several members assisted with clean-up while others got ready for the Public Observing Session at 8:30 pm. Dan Morgan setup his 18-inch truss tube Dobsonian. Don Stilwell brought his Hardin 12-inch Deep Space Hunter Dobsonian. Roger Williams brought his custom-built trischiefspiegler (folded reflector). A couple members that were unable to attend the picnic did managed to attend the observing session. Bill Nigg setup his 5-inch Astro-Physics refractor. Finally, Kerry Robbert brought his new Celestron CPC 1100 GPS (11-inch Schmidt-Cassegrain).

Members and guests gathered in the Nature Center's amphitheater (next door to Owl Observatory) at 9:00 pm. Long-time member Eric Schreur traveled to the far east to witness the longest total solar eclipse of the century on July 22nd. Eric first traveled to Beijing and Tinjin, China; Cheju, South Korea; and Kagoshima and Kobe, Japan. He shared several great images along the way. The eclipse itself was observed from the deck of Costa *Classica* just off the shore of the island Iwo Jima. Eric's eclipse shots were taken with a 300mm lens on loan from fellow eclipse chaser Bill Nigg.

Everyone then headed back up to the field around Owl Observatory for the Public Observing Session. Skies were clear, but the transparency wasn't nearly as good as last year. Attendance was still pretty high, so that always makes for a great night. Several attendees caught a glimpse or two of stray Perseid meteors and a magnitude -6 Iridium Flare. Another highlight included Comet C/2006 W3 Christensen. It was another great picnic for the history books!



Board Meeting Minutes

The KAS Board met at Sunnyside Church on August 9, 2009 at 5:00 pm. Besides President Jack Price, members present were Richard Bell, Jean DeMott, Dick Gillespie, and Roger Williams.

Plans were reviewed for the September General Meeting. Dr. Dale Mais is still on the program for a presentation on amateur spectroscopy. September also includes Public Observing Sessions on the 12th and 26th, a Kiwanis Star Party at the Calhoun Conservation Area on the 19th, and WMU Education Day September 26th from 5 – 6:30 pm.

In the category of New Business, Kingman Museum has asked for support of its Spooky Science Saturday on October 24th, 11 am – 5 pm. This would be a suitable activity for the fall edition of 100 Hours of Astronomy, also called Galilean Nights. Richard agreed on our behalf to provide the usual table displays and activities that we use for such events. A brief update was given on the idea of a writing contest as a means of giving away our belatedly-received Galileoscopes. No one could think of a better essay topic than how Galileo's use of the telescope changed astronomy. A target group of 4th – 6th graders is being considered, and Richard is working on rules for the contest. Some discussion was held of the number of scopes that should be awarded in the contest, and the consensus was that it should be at least \$1,000 worth, to conform to the conditions of our grants.

On another New Business topic, Jack had received a request from the Public Media Network (formerly Community Access Center) for astronomy-related material. Richard felt that making a tape of the *Introduction to Amateur Astronomy* lectures that he already presents would be the best way to provide content. Jack will talk with PMN. A final topic was the idea proposed by Richard of a field trip to the Neil Armstrong Air & Space Museum in Wapakoneta, Ohio. Admission is \$8, with the possibility of group discounts yet to be explored. What is currently lacking is a good idea of how much there is to see and whether it would justify a 3-hour drive each way. November was suggested as the best month for such outings, and there was agreement that a charter bus would be the best way to handle transportation for a trip of this length. Richard will check whether the Grand Rapids and East Lansing clubs might be interested in joining such a trip. On a final topic, the Board voted to authorize Richard to buy file boxes badly needed to store old issues of *Astronomy* and *Sky & Telescope*, which need protection from dust and mold.

The meeting was adjourned at 6:10 pm. The next meeting date was set for September 13th, same time and place.

Respectfully submitted by Roger Williams

Observe Pluto This Year!

by Tom Koonce



How many planets have you observed? How many minor planets and dwarf planets? Even though this month's International Year of Astronomy (IYA) theme is "Planets and Moons" our new Dwarf Planet, Pluto, offers an interesting challenge. Let's not debate the terms "Planet" or "Dwarf Planet", but instead ask if you have ever observed faint Pluto? It's a difficult object to see and to verify.

Pluto can be observed through an 8-inch telescope, but in my opinion it is **HARD** to do for an intermediate-level observer. In Greek mythology, Pluto was named after Hades, the god of the underworld, and you'll think about sending this challenge to the same location, but stick with it because spotting Pluto on your own for the first time is an extremely rewarding experience.

You need exceptionally dark skies, a decent telescope and a lot of patience! There is an equation to help you work out how far down the magnitude scale you can get with a telescope (Remember big magnitudes = fainter objects):

$$M_L = M_V - (5 * \log d) + (5 * \log D)$$

where M_L is the telescope limiting magnitude, M_V is the visual limiting magnitude, d is the aperture of the human eye in meters, and D is the aperture of the telescope in meters. So to give some examples, let's consider a normal sky where the visual limit is around magnitude 4.5 and using a 3-inch (76 mm) refractor telescope. We'll use 6 mm as an example aperture of the dark-adapted human eye (young eyes can get to 7 mm):

$$M_L = 4.5 - (5 * \log(0.006)) + (5 * \log(0.076)) = 10.0$$

So with a small refractor you can theoretically see down to a limit of about Magnitude 10.0 under these conditions. **Pluto however is at magnitude 13.8** so this is well out of the range of such a small telescope. Under very good skies with a limiting magnitude of 7.0 and using a telescope of 10 inches (254 mm) aperture, the limiting magnitude becomes.

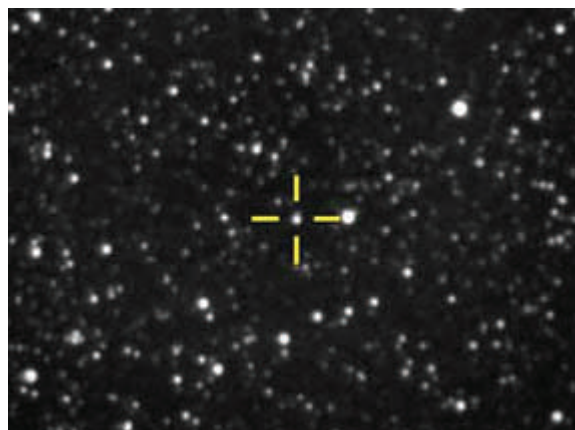
$$M_L = 7.0 - (5 * \log(0.006)) + (5 * \log(0.254)) = 15.1$$

This puts Pluto easily into "realistically observable" status. Why not set the goal of observing all the planets, and Pluto – just for fun?

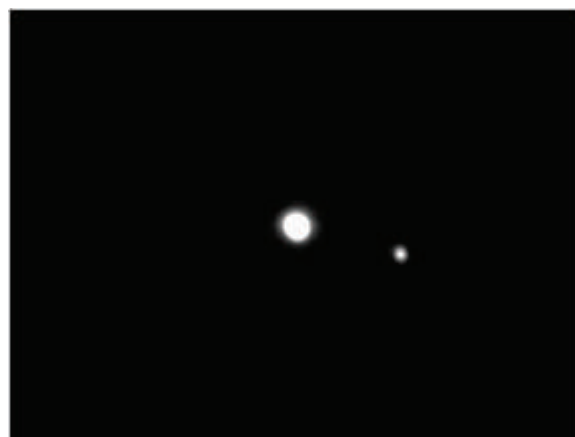
Depending upon the type of telescope you have and if you have astrophotography skill, you may choose to image Pluto instead of working on the drawing recommended here. Either way you'll have to know where to look. It's recommended that you determine (and memorize) the field of view that you will use during your observation. You can utilize the

"[12DString FOV Calculator](#)" online to help figure out the field of view you will see in the eyepiece. You can use a Go-To telescope or you can star-hop to the location of Pluto. Either way you must use your telescope's clock drive to keep the field around the suspected position of Pluto and carefully draw the field of stars. It is critical to spend a lot of time making this drawing because you'll use it over the next two nights to determine which of the faint dots of light is moving and which are static. Fixed = background stars...moving = Pluto!

You will see something like this in your eyepiece:



NOT something like this:



Take the Pluto Observing challenge! Try to observe all of the planets and at least one dwarf planet within the next twelve months! Maybe you'll be able to see or image Charon, Pluto's moon!

Tom Koonce is a member of the Antelope Valley Astronomy Club in Lancaster, California.

Membership of the KAS...

1. Rick Ainsworth	Regular	2010	64. Richard Mather	Senior	2010
2. Cesar C. Almeida	Senior Family	2010	65. Cary & Sarita Mannaberg	Family	2009
3. Ted Allen Anderson	Senior	2009	66. Dayton Maynard	Senior	2010
4. David & Judith Andrews	Family	2010	67. Travis Mazer	Family	2009
5. Paul Asmus	Regular	2010	68. Michael J. Melwiki	Regular	2009
6. Richard Bell	Regular	2009	69. Lynn C. Meyer	Regular	2009
7. Karen & Peter Berzins	Family	2009	70. William Millar	Regular	2010
8. Jack Bley	Regular	2009	71. John Miller	Regular	2010
9. Susan Bond	Senior	2010	72. Mark & Ninah Miller	Family	2009
10. Jacqueline Bonn	Regular	2009	73. Dan Morgan	Regular	2010
11. Joseph & Patti Borrello	Family	2011	74. Katie Morgan	Regular	2010
12. Donald Brezinski	Regular	2009	75. Kim & Pat Morgan	Family	2009
13. Angela Brooks	Regular	2009	76. Elizabeth Morison	Regular	2009
14. Rick Brumbaugh	Family	2009	77. Connie Myres	Family	2009
15. Phil Brylowski	Family	2010	78. Brendan Nagler	Student	2010
16. Phyllis Buskirk	Lifetime	n/a	79. Bill Nigg	Regular	2009
17. Beverly Byle	Senior	2010	80. Robert Norton	Regular	2010
18. Bonnie Covert & Mike Chaffee	Family	2009	81. Amy Ohrstrom	Regular	2009
19. Mike Cook	Family	2009	82. John & Teri Olbrot	Family	2010
20. Harry Cotterill	Regular	2009	83. Richard Olsen	Regular	2010
21. Greg Cowles	Family	2010	84. Jim Oorbeck	Family	2009
22. Robert & Grace Cox	Family	2010	85. Alan & Cathy Otterson	Family	2009
23. Kalman & Becky Csia	Family	2010	86. Mike Patton	Regular	2010
24. Jean DeMott	Family	2010	87. Chris A. Paynich	Family	2009
25. Ireneo Diaz	Regular	2010	88. Paul Pellerito	Regular	2011
26. David Doan	Regular	2009	89. Donald A. Peterson	Senior Family	2010
27. Fred E. Dutton	Senior Family	2011	90. John L. Pettit	Regular	2009
28. Emily French	Regular	2010	91. Daniall Poulsen	Regular	2009
29. Diane & Niels Garlick	Family	2010	92. Jack & Ruth Price	Family	2009
30. Dave & Bonnie Garten	Family	2010	93. Sam Qualls	Family	2010
31. Tom George	Family	2009	94. Adrian Quint	Regular	2009
32. Dick & Jackie Gillespie	Senior Family	2010	95. Jack Roach	Regular	2009
33. Royce Goodchild	Regular	2009	96. Kerry Robbert	Regular	2009
34. John Grace	Regular	2009	97. Christopher Roberts	Regular	2010
35. Tony Gurczynski	Regular	2010	98. Andrew C. Robins	Regular	2010
36. Alexander Hanchar	Regular	2010	99. Thomas Roland	Regular	2009
37. Jason Hanflik	Regular	2009	100. Alvin & Judy Rosenthal	Family	2009
38. Mark Hansen	Regular	2009	101. Eric Schreur	Regular	2009
39. Amie Harpe	Regular	2009	102. Jennifer Sellers	Regular	2011
40. Bill Haug	Regular	2009	103. Jeanne Serne	Family	2009
41. Robert & Barbara Havira	Senior Family	2010	104. Frank Severance	Regular	2010
42. Michael James Higgins	Family	2010	105. Norma J. Simmons	Senior Family	2009
43. James, Ruth & Joseph Hill	Family	2009	106. Michael & Karen Sinclair	Family	2009
44. Kim Hill	Regular	2010	107. Greg Sirna	Family	2009
45. Keith Hoekwater	Senior	2009	108. Lorraine Monica Stanek	Regular	2009
46. Geoff Howe	Family	2010	109. Don Stilwell	Family	2009
47. Arya Jayatilaka	Family	2009	110. Stephanie Stratton	Regular	2009
48. Kevin Jung	Regular	2010	111. Dennis Stuart	Regular	2009
49. John Kapenga	Family	2009	112. Eric R. Sullivan	Regular	2010
50. Dan Keto	Regular	2009	113. Oxnar Theealien	Family	2010
51. Theresa M. Kohler	Regular	2009	114. Norm Terry	Senior	2009
52. Kirk & Angela Korista	Family	2009	115. Gary Theisen	Family	2010
53. Jim Kurtz	Regular	2010	116. Henry L. Upjohn II	Family	2009
54. Tim Kurtz	Regular	2010	117. Michael Vandevveer	Regular	2009
55. Cal & Jean Lamoreaux	Senior Family	2009	118. Carol & Bill Van Dien	Family	2009
56. David & Sandra Latimer	Family	2009	119. Philip B. Wareham	Regular	2010
57. Gary & Jeanne Leadley	Family	2010	120. Bob White	Regular	2009
58. Christopher Lebeda	Family	2009	121. Roger & Molly Williams	Family	2010
59. James Lilley	Regular	2009	122. Susan Worsnop	Regular	2009
60. Gary & Phyllis Lubbert	Family	2009	123. David Woolf	Family	2009
61. Chuck Lund	Regular	2009	124. Brenda Zielinski	Regular	2009
62. Scott Macfarlane	Regular	2009	125. Sharon Zordan	Regular	2009
63. Christopher Marttila	Regular	2010			



A Planet Named Easterbunny?

You know Uranus, Neptune, and Pluto. But how about their smaller cousins Eris, Ceres, Orcus, and Makemake? How about Easterbunny?

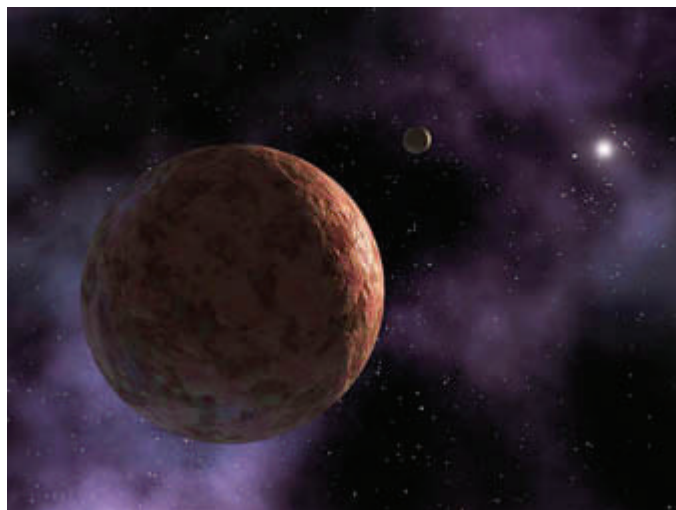
These are all names given to relatively large “planet-like” objects recently found in the outer reaches of our solar system. Some were just temporary nicknames, others are now official and permanent. Each has a unique story.

“The names we chose are important,” says Caltech astronomer Mike Brown, who had a hand in many of the discoveries. “These objects are a part of our solar system; they’re in our neighborhood. We ‘gravitate’ to them more if they have real names, instead of technical names like 2003 UB313.”

Nearby planets such as Venus and Mars have been known since antiquity and were named by the ancient Romans after their gods. In modern times, though, who gets to name newly discovered dwarf planets and other important solar-system bodies?

In short, whoever finds it names it. For example, a few days after Easter 2005, Brown and his colleagues discovered a bright dwarf planet orbiting in the Kuiper belt. The team’s informal nickname for this new object quickly became Easterbunny.

However, ever since its formation in 1919, the International Astronomical Union (IAU) ultimately decides whether to



Artist’s rendering of dwarf planet MakeMake, discovered around Easter 2005. Unlikely to gain acceptance their nickname Easterbunny, the discoverers named it for the god of humanity in the mythology of Easter Island.

accept or reject the name suggested by an object’s discoverers. “Easterbunny” probably wouldn’t be approved.

According to IAU guidelines, comets are named after whoever discovered them — such as comet Hale-Bopp, named after its discoverers Alan Hale and Thomas Bopp. Asteroids can be named almost anything. IAU rules state that objects in the Kuiper belt should be given mythological names related to creation.



So Brown’s team started brainstorming.

They considered several Easter-esque names: Eostre, the pagan mythological figure that may be Easter’s namesake; Manabozho, the Algonquin rabbit trickster god.

In the end, they settled on Makemake (pronounced MAH-kay MAH-kay), the creator of humanity in the mythology of Easter Island, so named because Europeans first arrived there on Easter 1722.

Other names have other rationales. The dwarf planet discovered in 2005 that triggered a fierce debate over Pluto’s status was named Eris, for the Greek goddess of strife and discord. Another dwarf planet with an orbit that mirrors Pluto’s was dubbed Orcus, a god in Etruscan mythology that, like Pluto, ruled the underworld.

Brown says he takes “this naming business” very seriously and probably spends too much time on it. “But I enjoy it.” More tales of discovery and naming may be found in Brown’s blog MikeBrownsPlanets.com.

Constellations have also been named after ancient gods, human figures, and animals. Kids can start to learn their constellations by making a Star Finder for this month at:

<http://spaceplace.nasa.gov/en/kids/st6starfinder/st6starfinder.shtml>

There you will also find a handy explanation of why astrology has no place in science.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

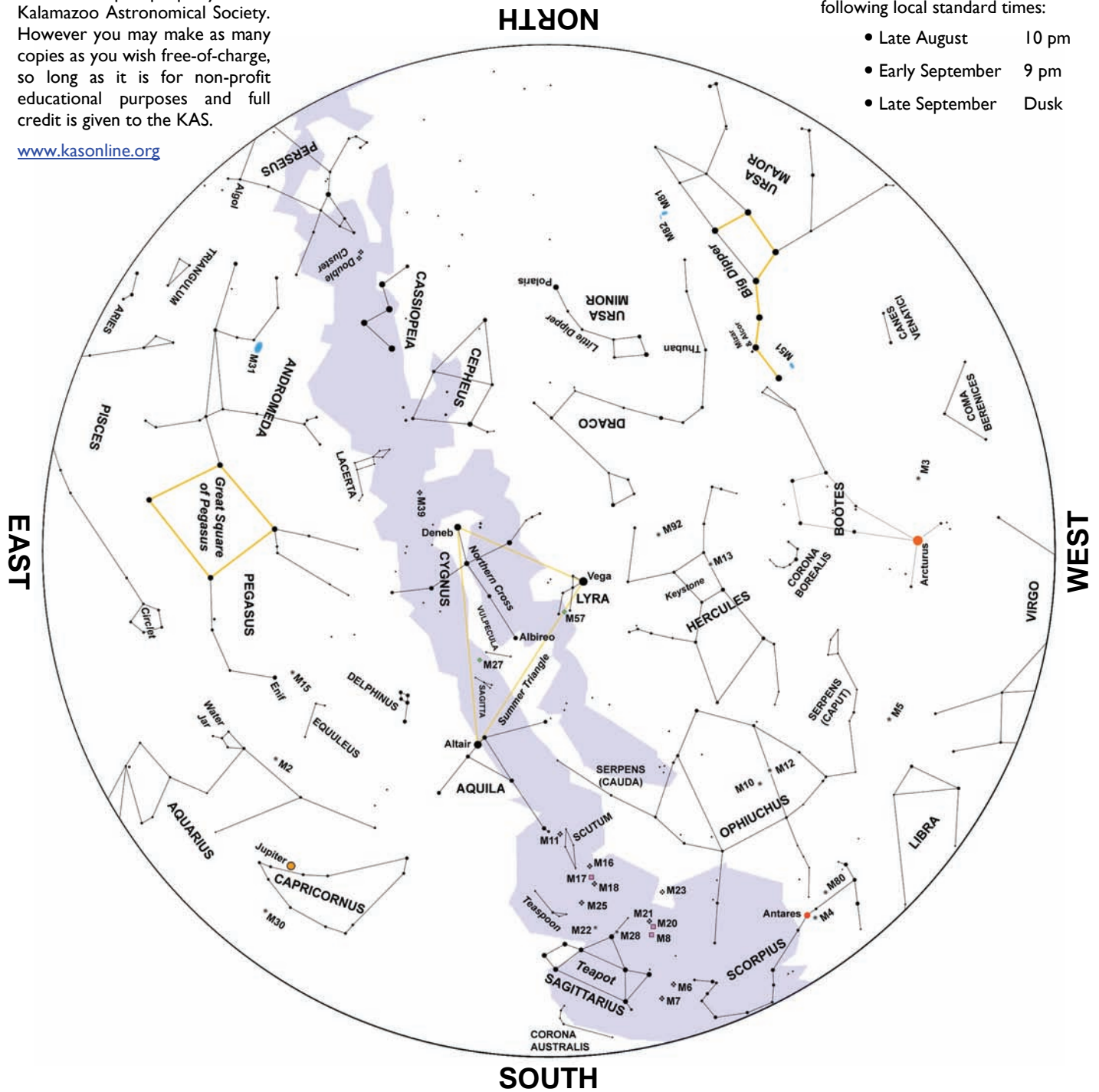
September Night Sky.....

This star map is property of the Kalamazoo Astronomical Society. However you may make as many copies as you wish free-of-charge, so long as it is for non-profit educational purposes and full credit is given to the KAS.

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This map represents the sky at the following local standard times:

- Late August 10 pm
- Early September 9 pm
- Late September Dusk



A rare occurrence takes place during the early morning hours of September 3rd. None of the four Galilean Moons of Jupiter will be visible between 12:43 am and 2:29 am EDT. Ganymede and Europa will be in front of Jupiter. Callisto is lost in shadow and Io is

behind the giant planet. Io will be the first Galilean moon to reappear. This will not happen again until 2019.

Vesta, the brightest asteroid (on average) will pass just south of the Beehive Cluster (M44) before dawn on

September 16th. A thin Waning Crescent Moon will be almost 4° to the right of brilliant Venus that same morning.

Asteroid 3 Juno will be at opposition on September 21st. Look for it ½° south of 5th-magnitude 27 Piscium.

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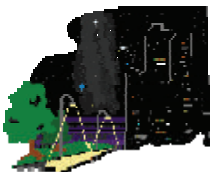
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E-MAIL a BOARD MEMBER



September 2009

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Lecture at Notre Dame

[Dr. Seth Shostak](#), Senior Astronomer at the SETI Institute, will be at the University of Notre Dame on **Tuesday, September 8th**. He'll join a panel discussion to talk about the likelihood of extra-terrestrial intelligence. It will take place at **4pm** in Jordan Science Hall. Dr. Shostak will also give a talk, tentatively entitled *When Will We Find E.T.?*, and is scheduled for **8pm** in Debartolo Hall. Admission is free and open to the public.



Kiwanis Star Party



The KAS and Battle Creek Kiwanis Club of will co-host a public star party on **Saturday, September 19th**. Gates open at 8:00 pm. It'll be held at the Kiwanis Youth Conservation Area on 15th Avenue, 3.6 miles north of Turkeyville in Calhoun County. Admission is free. For more information or to volunteer your time and telescope, contact [Dick Gillespie](#) (269-966-9653).

Field Trip Proposal

The KAS Board recently discussed possible destinations for our annual Fall Field Trip. One idea was to travel to Wapakoneta, Ohio and visit the [Neil Armstrong Air & Space Museum](#). The museum chronicles Ohio's contributions to the history of space flight. One concern is that it might not be worth the 3+ hour drive (both ways). If there's enough interest, we'd likely take the trip on November 7th or 14th. [Contact](#) the KAS if you're interested in traveling to Wapakoneta. We'll take a poll at the September General Meeting.



General Meeting Preview

Amateur Spectroscopy

Presented by **Dr. Dale E. Mais**



The Self-Guided Spectrometer (SGS) by SBIG appeared on the market about a year and a half ago aimed at a sub group of amateurs. The SGS allows spectra to be obtained with only modest aperture instruments of stars down to 10-12 magnitude. The resolution and sensitivity of the instrument is such that Dr. Mais has been able to identify the unstable element technetium in certain S and C type stars along with anomalous $^{12}\text{C}/^{13}\text{C}$ ratios as measured by absorption bands of diatomic carbon (C_2). Measurements of certain line intensity ratios in planetary nebula allows for the calculation of both the nebula temperature and electron density.

Dr. Mais' presentation will go into detail on the use of the SGS, its calibration and some of the kinds of measurements that can be made with an amateur sized telescope equipped with such "off the shelf" instrument.

Friday, September 11 @ 7:00 pm

*Kalamazoo Area Math & Science Center
600 West Vine, Suite 400 • Use Dutton St. Entrance
- Dutton Entrance Locked by 7:15 pm -*

Kalamazoo Astronomical Society
c/o KAMSC
600 West Vine, Suite 400
Kalamazoo, MI 49008

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