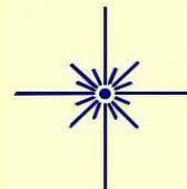




The Guide Star

Newsletter of the Amateur Astronomers Association of Pittsburgh Inc
Founded June 9, 1929 by Chester B. Roe and Leo J. Scanlon
Website: 3ap.org



August 2010

Volume 44, No. 8

August means Perseids

As comet P109 Swift-Tuttle recedes, Perseid rate estimates decline. This year, one prediction is 60 Perseids an hour even under dark, transparent rural skies.

Perseid activity began on July 17 and will last until August 24. The International Meteor Organization estimates a peak during a two and a half hour window beginning 19:30 and lasting until 22:00 local on August 12. Here, on that date, sunset is at 20:21 and astronomical twilight will end at 22:05. Even then, the radiant will be low in our NE. Bottom line, Pittsburgh isn't favored by the peak window.

But, the good news is that our Moon will not interfere with what is our best time for viewing - after midnight and probably from 04:00 to 05:00 on the morning of August 13.

Perseid meteors are described as bright white or yellow disappearing in less than a half second. Brighter members can leave a trail of ionized gas. - **Guide Star Editor**

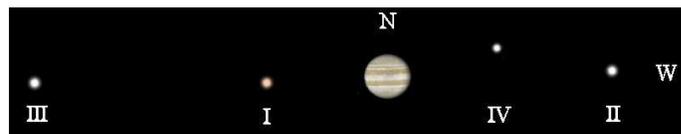
Your Last Chance...for a While

Of the four Galilean moons, Callisto might be called the odd one.

First, it's the dimmest of the quartet. Second, it's almost twice as far from the home planet as any of the others and its orbital period is more than twice as long. It holds the distinction of being "the most cratered and least modified of all the planetary sized bodies in the Solar System" and while the other three are locked into a gravitational embrace that's tearing poor Io apart, Callisto goes its own merry way. But this month there's a Callisto peculiarity that should interest a planetary observer using the smallest of scopes.

It happens that Callisto is the only Galilean moon that's not eclipsed during each of its revolutions. In fact, it has eclipse cycles, each of which lasts about three years, each containing an average of 64 eclipses. The cycles occur at six years intervals. The current Callisto eclipse cycle began on January 8, 2008 and it'll finish September 23, 2010. It includes 60 Callisto eclipses and there are only three left. Two occur this month and are observable from our location. The last, in September, occurs well after Jupiter has set.

The next Callisto eclipse cycle will begin July 28th, 2013, so this month is our last chance to catch something a bit off the main stream - Callisto eclipses. The first eclipse will occur at 04:59 local time on August 4 when the Jovian configuration will look like this just before Callisto fades:



I = Io; II = Europa; III = Ganymede; IV = Callisto

Sadly, Callisto's emergence from eclipse will occur after sunrise.

The second eclipse will occur at 23:19 local time on August 20 when the Jovian configuration will look like this just before Callisto fades:



I = Io; II = Europa; III = Ganymede; IV = Callisto

Callisto's emergence from eclipse will occur a bit less than two hours later at 01:14 local on August 21. Both disappearance and reappearance will take place to the west of Jupiter.

By the way, Roman numeral designations for the moons were used by Galileo. The current names were proposed, at least partly by Kepler to commemorate the extracurricular love interests of the father of the gods, three women and a boy. Jupiter was Greek after all and Kepler was aware of more than planetary motions.

- **Guide Star Editor**

Your First Chance...in a While

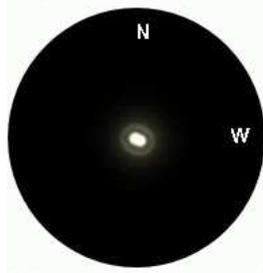
"...one of the most beautiful pairs in the sky when I first started observing in the 1960's..." - Al Paslow

Gamma Virginis or Porrima, is a celebrated double star. The beauty of its almost identical 3.5 magnitude yellow components impressed even Robert Burnham who wrote that it looked:

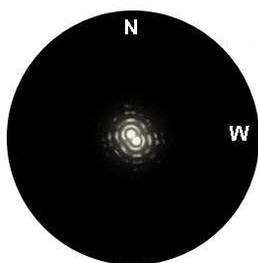
"...like the remote twin head lamps of some celestial auto approaching from deep space..."

Its capacity to show perceptible motion over a relatively short period (when its components are closest, its position angle can change more than 70° in a year) have given it a distinguished history. It was only the second binary star in history to have its orbit calculated.

Over the past decade the separation of the components diminished making it so hard to split that interest in it faded. To make matters worse, a 1937 orbit calculation predicted that the components would get even tighter until 2008. So even observers with larger scopes gave up and Porrima lost much of its audience. But a newer calculation indicated that 2005 was the year of closest approach and observers have reported that splitting the star is once again within the capabilities of many amateur scopes.



26 January 2007

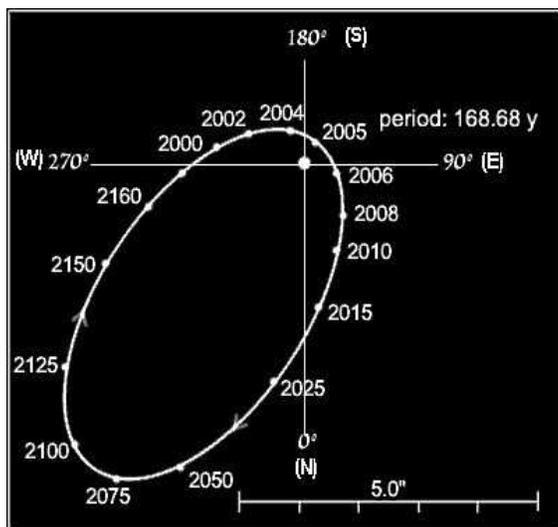


11 April 2008

Drawings showing the increasing separation of Porrima's Components. Jeremy Perez of Flagstaff Arizona used a six inch reflector with magnifications of 240 on the left and 200 on the right.

For the next 70 years or so, the separation and position angle of the two components will continue to change widen. So by all means put Porrima back on the list of showcase doubles.

2010: Position Angle = 24°	Separation = 1.39 arc seconds
2011: Position Angle = 19°	Separation = 1.59 arc seconds
2012: Position Angle = 15°	Separation = 1.77 arc seconds
2013: Position Angle = 11°	Separation = 1.95 arc seconds
2014: Position Angle = 9°	Separation = 2.11 arc seconds
2020: Position Angle = 358°	Separation = 2.92 arc seconds



By the way, Gamma Virginis also recommends itself as a target for observers because, apart from aesthetics, it's one of those rare stellar objects, like the high proper motion Barnard's Star, that exhibits perceptible motion in a reasonable time.

- Guide Star Editor

From the VP's Desk

That time of the year is almost here. The AAAP General Meeting season will begin Friday September 17th, 2010. We have a few speakers already designated for specific dates and others that I am working on finalizing. If you have ideas for topics or specific speakers, be sure to get them to me any way you can.

Have you built your own telescope? Built a device to steady your binoculars? If so, I want to hear from you. We are going to hold a special presentation for one of our winter or spring meetings with presentations from members who have built their own astronomy devices. What a great way to share our hobby than by some "show and tell" type presentations all in a night's meeting. If you are stage shy and do not wish to present, do not fret, we can have someone present your work for you.

Some of our meeting topics scare the pants off of those new to the astronomy. Quasars, pulsars, and the transit method are cool topics, but may be a little much for a newbie. So we are going to have a meeting topic in the spring be aimed at those with limited astronomy knowledge. If you would like to be a part of this presentation in any way, please let me know.

And lastly, I would like to make a call to members to consider your observatories. N. E. Wagman and Mingo Creek Park observatories are available for club member use. Come to a star party and help with outreach to the general public, come to one of our 'members only' star party nights, or talk with an observatory director about just coming up whenever you want. It would be a shame to see these two great buildings and their facilities sit around unused. Not many astronomy clubs can boast having a single observatory, and even fewer can say they have two.

Now get out there and start wondering....

- Craig Lang

September General Meeting Topic

The AAAP general meeting on Friday September 17th 2010 at 7:30 PM at the Carnegie Science Center will feature Dr. Duncan Lorimer, Assistant Professor, West Virginia University.

Dr. Lorimer will be speaking to us on a topic he is passionate about: Wild and wonderful pulsars! He is an astronomer interested in compact objects (black holes, neutron stars and white dwarfs) which he studies using radio pulsars: rapidly spinning, highly magnetized neutron stars.

Upcoming Event Reminder : Mingo Creek Park Observatory Picnic
Mark Your Calendars : August 7, 2010, Start Time 4:00pm

The annual Mingo Creek Park Observatory Picnic, held jointly with the Spectroscopy Society of Pittsburgh, will be Saturday, August 7, 2010, at Mingo Creek Park's Shelter 10, right below the observatory. Come enjoy the food and fellowship with AAAP and SSP friends, and afterwards join us up at the observatory where we will be enjoying a bright Southern Milky Way under a dark moonless sky. As an added bonus, we have scheduled a meteor shower for that night. ;) The Perseid Meteor Shower will be visible for weeks in the late summer.

We will get started around 4:00pm. Hot dogs, hamburgers, condiments, plates, forks, and drinks will be provided. We encourage you to bring a dish to share: potato salad, macaroni salad, cole slaw, fruit salad, or other picnic fare, or drop some money in our collection box to defray the club picnic expenses. Email me, Ann Norman, redmarsmom@aol.com, if you know in advance what you'll be bringing. (This is like the Winter Holiday Party, but with stargazing.)



Recent Mingo picnics and members nights have been well attended. Come join the fun!



Second Quarter Treasurer's Report
1 April 2010 through 30 June 2010

Income		Expenses	
50/50 donations	64	Bank Charge	18
Interest	1410	Raffle prizes	32
Membership Sales	1765	Guide Star printing	421
	528	Mail	53
	70	Merchandise	513
		Supplies	116
Total Income	\$3837.00	Misc. printing	48
		Tax prep and Audit	3157
		Utilities (Wagman)	542
		Utilities (Mingo)	407
		Total Expenses	\$5307.00
		Total Income vs Expenses (4/1/10 through 6/30/10)	- \$1410.00
		Income vs Expenses year to date (7/12/10)	+ \$1513.00

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1 * Mars Saturn Conjunction	2	3 	4 * Callisto Eclipse	5	6 * Moraine State Park Star Party	7 * Joint AAAP SSP Member Picnic Mingo Creek Park, Shelter 10 (2:00pm) *Murrysville Community Park Star Party
8	9 * Venus Saturn Conjunction	10 	11	12 * Crescent Moon joins evening planet group * Perseid Meteor Peak	13 * NEWO & MCPO PUBLIC S.P. (Sunset) * Perseid Meteor Peak * Double Shadow Transit	14 * NEWO & MCPO PUBLIC S.P. (Sunset)
15	16 	17	18	19	20 * Callisto Eclipse	21 * KEYSTONE STAR PARTY (Sunset)
22	23 * Venus Mars Conjunction	24 	25	26	27 * Lewis & Clark Fall Festival AAAP Demo	28 * Lewis & Clark Fall Festival AAAP Demo
29 * Lewis & Clark Fall Festival AAAP Demo	30	31	<p>All times given are local.</p> <p>Details for AAAP Events can be found at:</p> <p>https://nightsky.jpl.nasa.gov/event-list.cfm?Club_ID=675&EventEra=Future</p>			

Some Celestial Highlights This Month

August The month begins with a *Mars-Saturn* conjunction on the 1st. *Venus, Mars* and *Saturn* are grouped low in the western evening sky all month. Depending on gear, they may be within a binocular FOV during the first 12 days. They are within a 6° FOV from the 5th to the 10th. Jupiter and Uranus rise a bit before midnight at the beginning of the month and will be visible throughout the night all month.

For those using programs to predict GRS transits, *Jupiter's System II* longitude is 149°. *Selenographic Colongitude* is 147.51° at 0h UT at beginning of the month. Add 12.2° each day. (All times below are local)

- 4 **04:59 Callisto Disappears into Eclipse**
- 5 - 6 22:32 *Jupiter* Rises (Aug 5)
 23:46 *Ganymede* Shadow Transit Begins
 02:40 *GRS* Transits Meridian (Aug 6)
 02:58 *Ganymede* Shadow Transit Ends
 04:14 *Ganymede* Transit Begins
 04:16 *Io* Shadow Transit Begins
 05:20 *Io* Transit Begins (at this time 1 shadow and two moons are in transit)
- 7 *Mercury* is at greatest eastern elongation 27°
- 12 - 13 *Perseid* Meteor Activity Peak
 International Meteor Org stated peak is 12 August 19h30m to 22h0m local time with Zenith Hourly Rate = 100
 22:04 *Jupiter* Rises (Aug 12)
 03:25 *GRS* Transits Meridian (Aug 13)
 03:47 *Ganymede* Shadow Transit Begins
 06:11 *Io* Shadow Transit Begins (at this time a double shadow transit can be viewed)
- 20 *Venus* is at greatest eastern elongation 46°. *Neptune* is at opposition.
- 20-21 21:31 *Jupiter* Rises (Aug 20)
 22:20 *Europa* Shadow Transit Begins
23:19 Callisto Disappears into Eclipse
 23:55 *Europa* Transit Begins
 00:01 *GRS* Transits Meridian (Aug 21)
 01:07 *Europa* Shadow Transit Ends
01:14 Callisto Reappears from Eclipse
 02:36 *Europa* Transit Ends
 05:25 *Io* Disappears into Eclipse

Keystone Event pictures courtesy of
 Maureen & Bill Moutz

Thanks, Guys !!!

Keystone State Park, 26 June 2010

*"...the best thing that we're put here for's to see;
 The strongest thing that's given us to see with's
 A telescope. Someone in every town
 Seems to me owes it to the town to keep one...."*



*"...Often he bid me come and have a look
 Up the brass barrel, velvet black inside,
 At a star quaking in the other end...."*



*"...his job...
 Was setting out.... planets, evening stars
 That varied in their hue from red to green...."*

*"...To satisfy a life-long curiosity
 About our place among the infinities...."*

Words courtesy....

Robert Frost

Dedication courtesy....

Fred Klein & George Guzik
 (and scores of others)

Astronomy Outreach courtesy....

The AAAP

Amateur Astronomers Association of Pittsburgh, Inc.

2009-2010 Executive Officers:

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membershipsecretary@3ap.org
Guide Star Editor: John Cheng
gseditor@3ap.org

AAAP Member Dues: \$24.00

Student Membership
(K-12 & full time
college student): \$16.00

Family Membership \$40.00

Basic Procedure for Paying Dues:

1. Make check payable to "AAAP Inc."
2. Send check to:

Michael Meteney, Treasurer
1070 Sugar Run Road
Venetia, PA 15367-1514

*** Upcoming Event Reminder: Mingo Picnic Saturday August 7th 2010 at 4pm ***

The 3rd annual Mingo Creek Park Observatory Picnic, held jointly with the Spectroscopy Society, at Mingo Creek Park's Shelter 10, right below the observatory. See Page 3 for more information.

All Guide Star submissions are requested by the 20th day of the preceding month

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