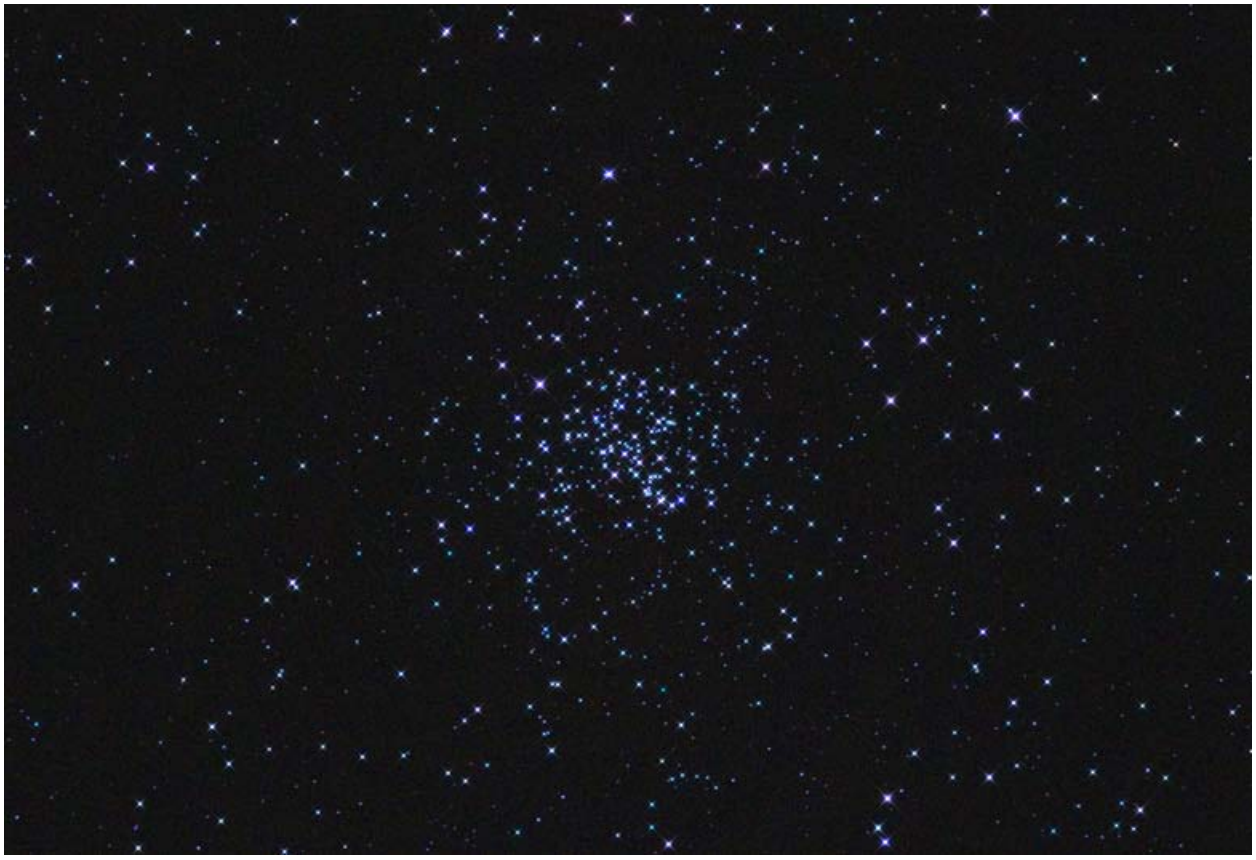
Current Astronomy

RIVER BEND ASTRONOMY CLUB NEWSLETTER

MARCH/APRIL 2013



M67, the Little Beehive Cluster in the constellation Cancer, is high in the sky during March and April, and is about 2,700 light-years from Earth. It appears about the same size as the full Moon in the sky, but is much fainter. This is a wide-field image obtained on March 1, 2011 using a modified Canon T2i attached to an 8-cm refractor. One minute and 30 second exposure. Photo by Gary Kronk.

INSIDE THIS ISSUE

River Bend Astronomy club serves astronomy enthusiasts of the American Bottom region, the Mississippi River bluffs and beyond, fostering observation, education, and a spirit of camaraderie.

Elected Officers

PRESIDENT	Jeff Menz
VICE-PRESIDENT	Joe Lopinot
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River Bend Astronomy Club is a member of the Astronomical League, dedicated to fostering astronomical education, providing incentives for astronomical observation and research, and assisting communication among amateur astronomical societies. *www.astroleague.org*

River Bend Astronomy Club is a member of the NASA Night Sky Network, a nationwide coalition of amateur astronomy clubs bringing the science, technology and inspiration of NASA's missions to the general public. See our **online calendar** on the NASA Night Sky Network at *http://nightsky.jpl.nasa.gov/*

Monthly Meetings

Saturday, March 9, 2013 • 7:00 PM
Saturday, April 13, 2013 • 7:00 PM
Saturday, May 11, 2013 • 7:00 PM
For meeting locations, please see our calendar at www.riverbendastro.org.

Looked Up Lately?

Join River Bend Astronomy Club

Want to learn more about astronomy? The members of River Bend Astronomy Club invite you to join. You won't need expensive tools or special skills – just a passion for observing the natural world.

- Meetings offer learning, peeks through great telescopes, and fun under the stars.
- You will receive the club newsletter, *Current Astronomy*, packed with news and photos.
- Get connected with our member-only online discussion group.
- Borrow from the club's multimedia library.
- Borrow from the club's selection of solar telescopes.
- And that's not all! Through club membership you also join the Astronomical League, with its special programs and colorful quarterly newsletter *The Reflector* to enrich your hobby.
- We meet monthly, observe regularly, email news and quips constantly, and generally have a good time. Won't you join us?

Name_____
Address_____
City_____State_____Zip_____
Phone_____
Email address_____
Where did you hear of our club?_____
_____
How long have you been interested in astronomy?_____
Do you have optical equipment?_____
Are you afraid of the dark? ___Yes ___No (just kidding)
I am submitted my application for:
_____Adult Membership(s) ___Youth Membership(s)
$20/year each $15/year each
(18 yrs. and up) (17 yrs. and under)
I enclose a check for $_____ made out to:
Mike Veith, Treasurer, RBAC
Signature_____
Date_____

Mail to: **River Bend Astronomy Club**
c/o Mike Veith, 1121 St. Louis St., Edwardsville, IL 62025.

Questions? Contact us by email at rbac@riverbendastro.org.

See Comet C/2011 L4 (PANSTARRS) in March

By Bill Breeden

Now is the time to look for comet C/2011 L4 (PANSTARRS). It is expected to be at its brightest between March 8 and March 12. Its closest approach to the Sun will be on Sunday, March 10, when it will be just 0.3AU (about 28 million miles) from the Sun.

Look for the comet just after sunset between March 8 and March 24. You will need a very flat and clear western horizon, and a darker location will help you see the comet.

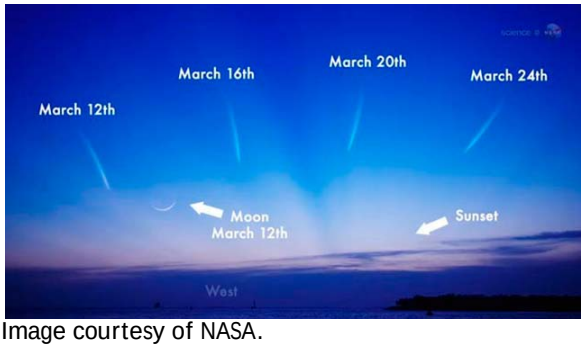

Image courtesy of NASA.

The comet will be just 15 degrees from the Sun March 8-14, so you will need to look for it in twilight just after sunset. The ecliptic is tilted at a favorable steep angle this time of year, so the comet will stay above the horizon for over 30 minutes after sunset. This should make it easier to spot, but it will still be a challenge.

It is not known if the comet will display a long tail, a short tail, or any tail at all. It depends upon how much the comet reacts to the Sun's radiation. It is expected to display a tail, but comets are known to be unpredictable at best!

The comet's name, PANSTARRS, refers to the survey telescope in Haleakala, Hawaii that discovered the comet in June 2011. This is a 1.8-meter Ritchey-Chretien telescope that discovered the comet on four CCD images while the comet was at a faint magnitude 19.

The chart below (ephemeris) lists the comet's position and magnitude from February 27 through March 24, 2013. RBAC

EPHEMERIS FOR COMET C/2011 L4 (PANSTARRS)

Date	TT	R. A. (2000)	Decl.	Delta	r	Elong.	Phase	Mag.
2013 02 27		23 07 40.0	-31 01 47	1.1265	0.4512	23.5	61.1	2.3
2013 02 28		23 16 38.0	-29 13 55	1.1180	0.4306	22.5	61.9	2.1
2013 03 01		23 25 17.4	-27 18 38	1.1109	0.4107	21.6	62.5	1.9
2013 03 02		23 33 35.6	-25 16 03	1.1052	0.3915	20.6	63.0	1.6
2013 03 03		23 41 29.8	-23 06 24	1.1010	0.3735	19.7	63.3	1.4
2013 03 04		23 48 57.2	-20 50 01	1.0983	0.3567	18.8	63.4	1.2
2013 03 05		23 55 55.0	-18 27 24	1.0970	0.3415	17.9	63.3	1.0
2013 03 06		00 02 20.5	-15 59 13	1.0971	0.3283	17.1	63.0	0.9
2013 03 07		00 08 11.1	-13 26 23	1.0985	0.3174	16.5	62.4	0.7
2013 03 08		00 13 24.7	-10 49 58	1.1011	0.3091	15.9	61.7	0.6
2013 03 09		**00 18 00.1**	**-08 11 18**	**1.1047**	**0.3038**	**15.5**	**60.9**	**0.5**
2013 03 10		**00 21 56.9**	**-05 31 49**	**1.1092**	**0.3016**	**15.2**	**60.0**	**0.5**
2013 03 11		**00 25 16.0**	**-02 53 01**	**1.1145**	**0.3026**	**15.1**	**59.1**	**0.5**
2013 03 12		00 27 59.3	-00 16 19	1.1204	0.3069	15.2	58.2	0.6
2013 03 13		00 30 09.9	+02 17 02	1.1267	0.3142	15.5	57.5	0.7
2013 03 14		00 31 51.4	+04 46 07	1.1334	0.3242	15.9	56.9	0.9
2013 03 15		00 33 08.0	+07 10 14	1.1404	0.3366	16.4	56.4	1.1
2013 03 16		00 34 03.4	+09 29 01	1.1476	0.3511	17.0	56.0	1.3
2013 03 17		00 34 41.4	+11 42 21	1.1550	0.3674	17.7	55.7	1.5
2013 03 18		00 35 05.2	+13 50 15	1.1625	0.3850	18.6	55.3	1.7
2013 03 19		00 35 17.6	+15 52 53	1.1701	0.4038	19.4	55.1	1.9
2013 03 20		00 35 20.8	+17 50 30	1.1779	0.4235	20.3	54.8	2.1
2013 03 21		00 35 16.7	+19 43 24	1.1858	0.4439	21.3	54.5	2.3
2013 03 22		00 35 07.0	+21 31 51	1.1937	0.4648	22.2	54.3	2.6
2013 03 23		00 34 52.8	+23 16 12	1.2017	0.4861	23.2	54.0	2.8
2013 03 24		00 34 35.1	+24 56 43	1.2098	0.5078	24.2	53.7	3.0

Meet-A-Member: Dan Brandon

By Dan Brandon

Hello my name is Dan Brandon. I have been a member of the River Bend Astronomy Club since July of 2012. I am 45 years old and repair office equipment for a living. I enjoy playing PC video games and I manage the 2 game servers and website for the clan/team I play for. I have two grown kids and was blessed with my first grandchild in September of 2012.

I have been interested in astronomy for many years but have only recently been able to resume exploring the wonders of the night sky. I have gained an interest in astrophotography so I am currently saving up for this expensive hobby. My current equipment consist of a 70mm Power Seeker from Celestron on an EQ-1 mount . I have added a clock drive to it and have also built my own remote control focusing drive (I have too much free time) an I have a Celestron Neximage 5 camera that I use for solar system imaging (see photos below). I am planning on buying an Orion Atlas 10 and I am hoping to have it by the end of the summer of 2013.

Images by Dan Brandon.

I have enjoyed the few outreaches that I have attended and look forward to attending more in the future. I look forward to sharing my knowledge and gaining new knowledge and insights into the world of astronomy. I look forward to meeting all the members of River Bend Astronomy Club. RBAC

Linking Earth-bound Martians

By Sarah Milkovich
Science Operations Systems Engineer

Every spacecraft requires engineers to build and operate, and scientists to determine what information the spacecraft will gather and to study the data once it is on the ground. Engineers and scientists are very different groups of people, with different priorities, and so they need someone who sits in-between them to help them work together successfully. That's where I come in.

I am a scientist at the Jet Propulsion Laboratory who works embedded in the engineering teams for two different spacecraft, Mars Reconnaissance Orbiter and Mars Science Laboratory, which you may know better as the Curiosity rover. My science background lets me understand the concerns, priorities, and language of the science team, while my engineering experience lets me understand the limitations that our hardware and software place on the operations team.

For Curiosity, most of my work has involved making sure that the science team has the tools and the training to allow them to assemble a plan of the science activities for the rover to carry out each day. This responsibility included putting together the procedures that a science team member follows to get an activity into the plan. What are each of the steps involved? What exact information is provided to the engineering teams at what time, and in what format is that information? These were all questions that had to be considered, and the answers had to be fine-tuned as we went through our practice runs at rover operations (called Operational Readiness Tests) before Curiosity landed on Mars in August.

Using its robotic arm camera, Curiosity took a set of images that scientists stitched together to create this "self-portrait."

During the first 90 days of the mission, all of the science team moved to Pasadena and worked in the same building as the rover operations team. The scientists were able to debate face-to-face over what observations to take, work directly with the engineers that turned those decisions into commands for the rover, and to cheer as the data came down from Mars.

However, no matter how awesome it is to be telling a laser-shooting robot on the surface of Mars what to do, at some point you want to go home, see your family, and

sleep in your own bed. We needed to make sure that when our scientists returned home (all around the U.S., and also many countries including France, Spain, Canada, and Russia) that they were still

Curiosity performs series of tests with the robotic arm on a rock nicknamed "John Klein" to prepare for the first drilling to collect a sample of rock material on Mars.

able to do all the things that they had done here in Pasadena. How could scientists scattered across the world look over each other's shoulders as they built a plan, and make suggestions and changes and quibble with each other's decisions?

Ultimately we turned to a variety of web-based tools, including desktop sharing programs and teleconference lines to replicate individual meeting rooms, and a chat server to simulate being able to run around the floor to find someone who can answer your question. Getting our 400 scientists and 300 engineers switched over and comfortable with these tools was my job. It took a lot of troubleshooting and required patience, but the team has been operating under these new conditions since the start of November and it seems to be working well.

While my work on Curiosity is done and I'm moving on to another project, I'm pleased to know that my efforts will help the rover operations team do amazing things on the surface of Mars for years to come.

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

RBAC's Monthly Observing Lists

These lists include brighter deep-sky objects that transit near 10:00 PM each month.

March Observing List
Prepared by Bill Breeden

Double Stars (Astronomical League's Double Star List)
_____ 38. Zeta Cancri SAO 97645 Const. CAN Type DS RA 08 12.2 Decl. +17° 39' Mag. 5.6 6.0
_____ 39. Iota Cancri SAO 80415 Const. CNC Type DS RA 08 46.7 Decl. +28° 46' Mag. 4.2 6.6
_____ 40. 38 Lyncis SAO 61391 Const. LYN Type DS RA 09 18.8 Decl. +36° 48' Mag. 3.9 6.6
Carbon Stars (Astronomical League's Carbon Star List)
_____ 48. X Cancri SAO 98230 RA 08 55 22 Decl. +17 13 52 Mag. 5.6 – 7.5 Per. 195 Class C5 (N3)
_____ 49. T Cancri SAO 80524 RA 08 56 40 Decl. +19 50 56 Mag. 7.6 – 10.5 Per. 482 Class C3 – C5 (R6 – N6)
_____ 50. Y Hydrae SAO 178088 RA 09 51 03 Decl. -23 01 02 Mag. 6.5 – 9.0 Per. 303 Class C5 (N3)
Messier Objects
_____ M44 NGC2632 Preseape or Beehive Cluster Const. CNC Type OC RA 08 40.1 Decl. +19 59 Mag. 3.7
_____ M48 NGC2548 Const. HYA Type OC RA 08 13.8 Decl. -05 48 Mag. 5.3
_____ M67 NGC2682 Little Beehive Cluster Const. CNC Type OC RA 08 50.4 Decl. +11 49 Mag. 6.1
_____ M81 NGC3031 Ursa Major Galaxies Const. UMA Type GAL RA 09 55.6 Decl. +69 04 Mag. 7.9
_____ M82 NGC3034 Ursa Major Galaxies Const. UMA Type GAL RA 09.55.8 Decl. +69 41 Mag. 8.8
Caldwell Objects
_____ C48 NGC2775 Const. CNC Type SG RA 09 10 18.00 Decl. +07 02 00.0 Mag. 10.3
_____ C54 NGC2506 Const. MON Type OC RA 08 00 12.00 Decl. -10 47 00.0 Mag. 7.6
_____ C85 IC2391 Omicron Vela Cluster Const. VEL Type OC RA 08 40 12.00 Decl. -53 04 00.0 Mag. 2.5
_____ C90 NGC2867 Const. CAR Type PN RA 09 21 24.00 Decl. -58 19 00.0 Mag. 9.7
Royal Astronomical Society of Canada Objects
_____ 36. NGC2539 Const. PUP Type OC RA 08 10.7 Decl. -12 50 Mag. 6.5
_____ 38. NGC2655 Const. CAM Type G-Sa RA 08 55.6 Decl. +78 13 Mag. 10.1
_____ 39. NGC2683 Const. LYN Type G-Sb RA 08 52.7 Decl. +33 25 Mag. 9.7
_____ 40. NGC2841 Const. UMA Type G-Sb RA 09 22.0 Decl. +50 58 Mag. 9.3
_____ 51. NGC3003 Const. LMI Type G-Sc RA 09 48.6 Decl. +33 25 Mag. 11.7
_____ 54. NGC2903 Const. LEO Type G-Sb RA 09 32.2 Decl. +21 30 Mag. 8.9

April Observing List

Prepared by Bill Breeden

Double Stars (Astronomical League's Double Star List)

_____ 41. Alpha Leonis SAO 98967 Regulus Const. LEO Type DS RA 10 08.4 Decl. +11° 58' Mag. 1.4 7.7

_____ 42. Gamma Leonis SAO 81298 Algieba Const. LEO Type DS RA 10 20.0 Decl. +19° 51' Mag. 2.2 3.5

_____ 43. 54 Leonis SAO 81583 Const. LEO Type DS RA 10 55.6 Decl. +24° 45' Mag. 4.5 6.3

_____ 44. N Hydrae SAO 179967 - Const. HYD Type DS RA 11 32.3 Decl. -29° 16' Mag. 5.8. 5.9

Carbon Stars (Astronomical League's Carbon Star List)

_____ 51. U Hydrae SAO 156110 RA 10 37 33 Decl. -13 23 04 Mag. 4.5 – 6.2 Per. 450 Class C6.5 (N2)

_____ 52. VY Ursae Majoris SAO 15274 RA 10 45 04 Decl. +67 24 40 Mag. 5.9 – 7.0 Per. Irr. Class C6 (N0)

_____ 53. V Hydrae SAO 179278 RA 10 51 37 Decl. -21 15 00 Mag. 6.5 – 12.0 Per. 531 Class C6 – C7 (N6e)

Messier Objects

_____ M65 NGC3623 Const. LEO Type GAL RA 11 18.9 Decl. +13 05 Mag. 9.3

_____ M66 NGC3627 Const. LEO Type GAL RA 11 20.2 Decl. +12 59 Mag. 8.2

_____ M95 NGC3351 Const. LEO Type GAL RA 10 44.0 Decl. +11 42 Mag. 10.4

_____ M96 NGC3368 Const. LEO Type GAL RA 10 46.8 Decl. +11 49 Mag. 9.1

_____ M97 NGC3587 Owl Nebula Const. UMA Type PN RA 11 14.8 Decl. +55 01 Mag. 9.9

_____ M105 NGC3379 Const. LEO Type GAL RA 10 47.8 Decl. +12 35 Mag. 9.2

_____ M108 NGC3556 Const. UMA Type GAL RA 11 11.5 Decl. +55 40 Mag. 10.7

_____ M109 NGC3992 Const. UMA Type GAL RA 11 57.6 Decl. +53 23 Mag. 10.8

Caldwell Objects

_____ C40 NGC3626 Const. LEO Type SG RA 11 20 06.00 Decl. +18 21 00.0 Mag. 10.9

_____ C53 NGC3115 Spindle Galaxy Const. SEX Type EG RA 10 05 12.00 Decl. -07 43 00.0 Mag. 9.1

_____ C59 NGC3242 Ghost of Jupiter Const. HYA Type PN RA 10 24 48.00 Decl. -18 38 00.0 Mag. 8.6

_____ C74 NGC3132 Const. VEL Type PN RA 10 07 42.00 Decl. -40 26 00.0 Mag. 8.2

_____ C79 NGC3201 Const. VEL Type GC RA 10 17 36.00 Decl. -46 25 00.0 Mag. 6.7

_____ C91 NGC3532 Const. CAR Type OC RA 11 06 24.00 Decl. -58 40 00.0 Mag. 3

_____ C92 NGC3372 Eta Carina Nebula Const. CAR Type BN RA 10 43 48.00 Decl. -59 52 00.0 Mag. 6.2

_____ C97 NGC3766 Const. CEN Type OC RA 11 36 06.00 Decl. -61 37 00.0 Mag. 5.3

_____ C100 IC2944 Lamda Centauri Cluster Const. CEN Type OC RA 11 36 36.00 Decl. -63 02 00.0 Mag. 4.5

_____ C102 IC2602 Theta Carina Cluster Const. CAR Type OC RA 10 43 12.00 Decl. -64 24 00.0 Mag. 1.9

_____ C109 NGC3195 Const. CHA Type PN RA 10 09 30.00 Decl. -80 52 00.0 Mag.

Royal Astronomical Society of Canada Objects

_____ 41. NGC3079 Const. UMA Type G-Sb RA 10 02.2 Decl. +55 41 Mag. 10.6

_____ 42. NGC3184 Const. UMA Type G-Sc RA 10 18.3 Decl. +41 25 Mag. 9.7

_____ 43. NGC3877 Const. UMA Type G-Sb RA 11 46.1 Decl. +47 30 Mag. 10.9

_____ 44. NGC3941 Const. UMA Type G-E3 RA 11 52.9 Decl. +36 59 Mag. 9.8

_____ 45. NGC4026 Const. UMA Type G-S0 RA 11 59.4 Decl. +50 58 Mag. 10.7

_____ 49. NGC3115 Const. SEX Type G-E6 RA 10 05.2 Decl. -07 43 Mag. 9.2

_____ 50. NGC3242 Ghost of Jupiter Const. HYA Type PN RA 10 24.8 Decl. -18 38 Mag. 8.6

_____ 52. NGC3344 Const. LMI Type G-Sc RA 10 43.5 Decl. +24 55 Mag. 9.9

_____ 53. NGC3432 Const. LMI Type G-SBm RA 10 52.5 Decl. +36 37 Mag. 11.3

_____ 55. NGC3384 Const. LEO Type G-E7 RA 10 48.3 Decl. +12 38 Mag. 9.9

_____ 56. NGC3521 Const. LEO Type G-Sb RA 11 05.8 Decl. -00 02 Mag. 8.7

_____ 57. NGC3607 Const. LEO Type G-E1 RA 11 16.9 Decl. +18 03 Mag. 10

_____ 58. NGC3628 Const. LEO Type G-Sb RA 11 20.3 Decl. +13 36 Mag. 9.5