



A.S.E.M. Newsletter

August 2014



SHARPLESS 82

THE LITTLE COCOON NEBULA

PHOTOS BY DAN CROWSON

AUGUST CALENDARS

Social

August 7 - 7pm Beginner Meeting @ Weldon Springs Interpretive Center, 7295 HWY 94 South, St. Charles, MO 63304

August 9 – 6pm Monthly Pot Luck & 7pm General Meeting, at Weldon Springs.

August 19 - DigitalSIG Astrophoto group meeting Weldon Spring, 7295 Highway 94 South, St. Charles, MO 63304.

August 27 - 7PM DIY-ATMSIG For the telescope maker to display his wares or those who wish to see what folks have been doing in their workshops. Weldon Spring, 7295 Highway 94 South, St. Charles, MO 63304

August 1, 8, 15, 22, 29 – 8-9 pm start times Broemmelsiek Park Public Viewing, weather permitting.

Astronomical Calendar

Do you have a pulse? If you're reading this you do. But did you observe the appulse? Just in case you missed the July occurrence check out Bill Sheehy's article this month.

CONTRIBUTORS TO THE AUGUST NEWSLETTER

DAN CROWSON

BILL SHEEHY

GRANT MARTIN

Would you like intergalactic recognition in our newsletter? Send a note to your friendly editor on any astronomy related subject at newsletter@aseonline.org I'll get it posted in the monthly newsletter.

Your editor at large (not large editor),

Jim Curry

Some Astronomical Trivia

by Bill Sheehy

When I viewed Ceres and Vesta on July 3 at Danville they appeared about 15 arc minutes apart, well within the 70 arc minute field of view of my 21 mm eyepiece. On the next two nights they would reach their closest apparent separation this year as seen from Earth before moving apart again (technically, an appulse)—approximately 10 arc minutes. Although they looked just like stars, what fascinated me was the knowledge that I was actually seeing two asteroids. When I

viewed them again on July 23 at Danville their apparent separation had increased to about 1.8 degrees; no longer could I fit both in the same FOV.

Curious about just how rare this event was, I used SkyTools 3 Pro to calculate other appulses between these two objects over a 7,000-year period, from 3500 BC (when the first cities emerged in Mesopotamia) to 3500 AD (when ET returns). As you can see from the accompanying chart, the appulse on July 5 is the twelfth closest one to occur in this time frame. The closest one occurred on March 17, 1448, when the two minor planets appeared just 4 arc SECONDS apart!

That is closer than ninety-nine percent of the stars on the Astronomical League double star list. The next one occurs in 2134 when Ceres and Vesta will be 4.9 arc minutes apart, half their separation this year. Be sure to mark your calendar.

Ceres and Vesta Appulses 3500 BC) 3500 AD

Rank	Year	Month	Day	Separation
1	1448	Mar	17	4"
2	259	Sep	12	30"
3	1486BC	Apr	1	1.8'
4	3386	Mar	1	3.9'
5	829	Jun	23	4.3'
6	2134	Feb	22	4.9'
7	3266	Jul	2	5.8'
8	3252BC	Nov	7	6.7'
9	7	Sep	10	7.4'
10	2511	Oct	1	8.6'
11	423BC	Jun	17	9.3'
12	2014	Jul	5	9.9'
13	234BC	Apr	7	10'
14	2322	Dec	6	10.4'
15	2549BC	Jan	8	11'
16	882	Feb	12	12.8'
17	2308BC	Jun	23	12.9'
18	2000BC	Nov	9	13.1'
19	2738BC	Mar	26	13.4'

JULY'S DIGITAL SIG MEETING NOTES

SUBMITTED BY DAN CROWSON

The theme of July's Digital SIG meeting was enjoying the summer because we didn't have a meeting.

August's Digital SIG will focus on Narrow-Band Imaging. While this is mainly a CCD topic, there are some clip-in filters that can be used on DSLRs. I'll explain what narrow-band imaging, the typical filters used, good targets and how to create images from the data. With any luck, Gregg Ruppel will also chime in with his tips and tricks.

The Tucson Science & Astronomy Expo will be held November 1st and 2nd. The Southwest Astrophotography Seminar will be held October 29th, 30th and 31st. This seminar features some of the best imagers in the world including [Rogelio Bernal Andreo](#), [Ken Crawford](#), [Christopher Go](#) and others. I'm tentatively planning on heading out west with my equipment to image and attend this. There are a lot of really dark places to view and image along with great sites to see during the day. More information can be found here - <http://www.scienceandastronomy.com/>.

We've had some really nice nights recently. It was actually chilly last night in Danville. I'd love to see some people come out.

The latest Digital SIG news can always be found in the [ASEM Digital SIG Yahoo Group](#).

“ALMOST AS GOOD AS NEW”

BY GRANT MARTIN

That’s the assessment of the 16” Jones-Bird after being refurbished by its’ builder, Bill Davis.

For more details on this scope, go to this webpage:

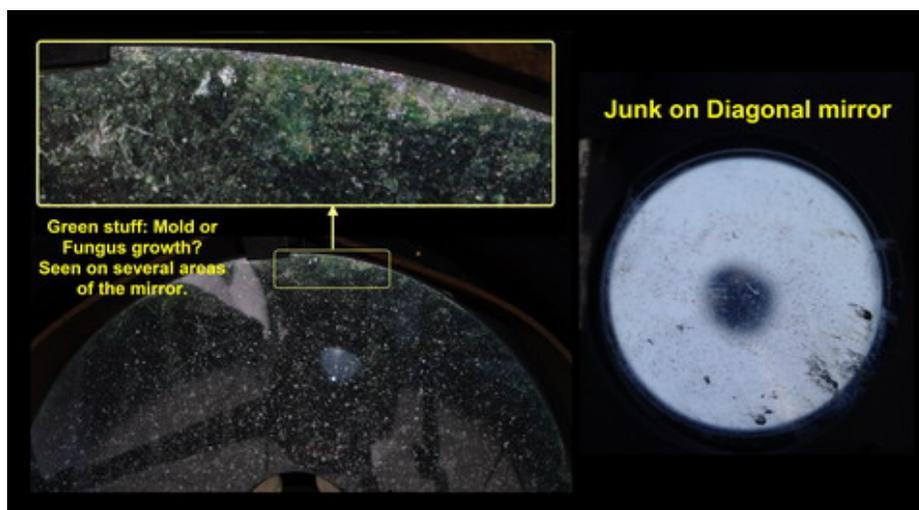
<http://tinyurl.com/jones-bird>

Backstory:

By April of 2013, after several years of use out at Broemmelsiek park, the scope was pretty much unusable. It had seen better days and nights. The cleanliness of the optics had deteriorated over time and several modifications had been made to the scope after it was turned over to AfA.

Between the dust, dirt and collimation errors, the optics gave images no better than a dime-store 60mm refractor. A decision was made to clean the optics and realign the optical train.

As they say, “The operation was a success but the patient did not recover”. The first clear night following cleaning showed that there was a severe misalignment in the optics. This was expected. What was not expected was the inability to achieve a useable image from this scope. Over several nights, many unsuccessful attempts were made to restore optical alignment.



After consulting with Stacy Thater (Executive director of Alliance for Astronomy, the scopes’ owner), and with approval by Bill, the scope was sent back to the “factory” for refurbishment.

[time passes]

On 17 July, 2014, Bill called and said the scope was ready for final assembly and pickup. On arrival, it was like looking at a new scope. Bill had completely disassembled it and cleaned all components (except the optics in the spider assembly – we had already done that). On top of that, the outside of the tube had a brand spanking new powder coat finish!

A special set of thanks goes out to Steve Sands. Steve graciously had the complete tube assembly stripped and powder coated by a company he works with – gratis! When you run into Steve, please offer him a note of gratitude for his efforts!

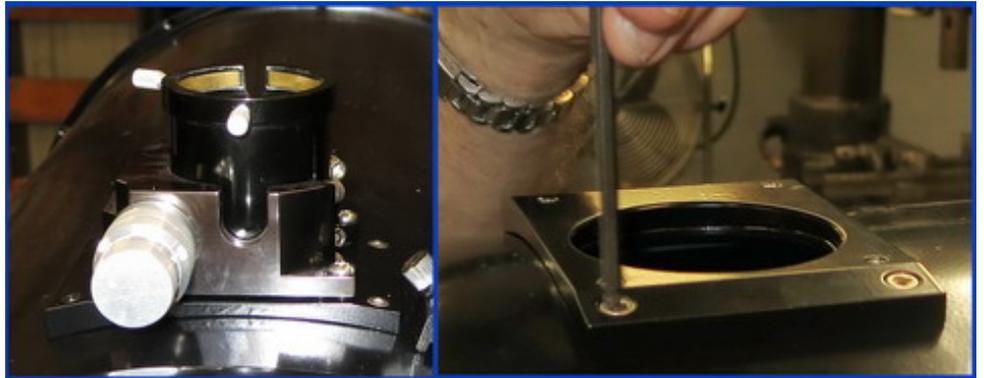
When Bill originally built the scope, he had placed “witness” marks on all mating surfaces. A witness mark is something that shows the proper alignment of two mating components. Bill mentioned that because the marks did not line up on the tube assembly and cell mount, he knew that the tube had been

disassembled and not been reassembled correctly. He did say that we had correctly re-assembled the optics in the spider assembly (*WHEW*).

While the majority of work consisted of just cleaning and checking the parts, a new part was made for this scope. That was not anticipated by us and was quite a surprise. When the scope was made originally, it contained a heliacal focuser assembly. Sometime later, this focuser was removed and a new, Moonlight focuser was installed.

The installation was workmanlike and required new holes be drilled in the tube. This focuser worked well for a number of years. The only problem is that its location and installation introduced alignment errors in the optical train.

To square things up and improve the focuser mounting, Bill built an adapter plate. This plate assured that the center line of the focuser was now in alignment with the optical path.



On 22 July the completed scope was reinstalled at Broemmelseik park. That was no mean feat. The OTA itself weighs more than 75 pounds and its size precluded movement by a single person. Stacy Thater assisted in this reinstallation and he says his back is OK!



The sky was mostly cloudy with a chance of storms later that night. But every now and then, a star would peak through giving us a chance to check performance. That was disappointing. The first images showed the same aberrations as before the refurbishment. The only improvement was that the aberrations were “tack sharp” and crystal clear due to the cleaning of the optical components.

After thinking about the problem some more, it FINALLY occurred to us that the majority of the aberration was being caused by misalignment of the optical assembly in the spider with respect to the primary mirror (we’ll not go into those details here. See the link above for that kind of detail).

Several nights later, a quick shot of a laser collimator and a small adjustment of the spider put the optical assembly on center and a few adjustments of the primary collimation screws brought everything together and the scope showed good focus of stellar images. The planets were a bit soft, as expected. Their image quality was further reduced by the remaining mis-collimation. A cloud band and the Cassini division were definitely seen but the remaining collimation error was visible as a slight fuzziness on one side of the planet. Compared to what Saturn looked like before we cleaned the optics in 2013, this was near perfect.

Later that night, by 00:30 with superbly clear and steady skies, the scope was turned to M22. STUNNING! ABSOLUTELY STUNNING! Very many individual stars were seen against a lighter, indistinct core! Contrast was impressive! At 125x, M22 looked like M13. Moving up to the “Swan” nebula revealed a very bright patch of light resembling a Swan – imagine that! Putting in a UHC filter not only increased the contrast but it revealed subtle shading in the nebulosity itself as well as a more complex border. We left the UHC filter in and dropped down to the Triffid nebula (M20). All three lobes of the nebula were observable and the dust lanes separating them were so distinct that they could be seen with direct vision!!! One last object was viewed to complete a short but glorious tour: M13. At 125x, no words can describe it in this scope at this location. Only owners of quality scopes of this size or larger have seen views like this one. “Diamonds sprinkled on powdered sugar on top of a field of velvet” comes close. You have to see it to believe it.

Capturing deep sky objects is where this instrument excels!

At the beginning, I said the scope was “almost as good as new”. Optically and mechanically, it is. A final tweak of collimation will make it better than new. The Jones-Bird is back and ready for action – Enjoy and make sure you give Bill Davis a hearty “THANKYOU, JOB WELL DONE” when you see him next



DANVILLE REPORTS

Sunday night, July 27th – Danville

There were eight cars including Russ with his 25” dobsonian viewing (and imaging in my case) on this breezy night. The wind impacted the seeing but it was an overall good night. With my limited time staring at the sky, I saw at least 15 meteors including around 7-8 Delta Aquariids.

Dan Crowson

BUY/SELL - SWAP/TRADE - WANTED

Got some astro gear you want to get rid of? Or are looking for? Send me a note at newsletter@asemonline.org I'll get it posted in the monthly newsletter.

ASEM MEMBERS PHOTOGRAPHY

A section for ASEM members to distribute their photographs within the Society. Whether you're shooting digital, film or working in charcoal (hand sketching), this page(s) is for members to show us what you've seen and how you recorded it. Sunsets, supernovas, sundials, Stonehenge. Crepuscular rays, planetary alignments, or Markarian's Chain. If it's something we have to look up to see it will probably interest this crowd of inquisitive folks.

CLUB CONTACTS

Membership

Membership issues can be addressed through our executive director Stacey Thater (pronounced “totter”) at these addresses:

Email: stthater@stchas.edu

Snail mail:

Alliance for Astronomy (ASEM)
PO Box 141
New Melle MO 63365

Committees

Comments, questions, suggestions and money (just kidding) may be sent to the following addresses:

program@asemonline.org

Use this address to communicate with the program committee. If you have something to present at a meeting or wish to contribute and let someone else perform, send it here. Questions and/or suggestions about programming etc. Remember, they are here to help you. This is a user friendly society and we like to see members get up and share.

equipment@asemonline.org

This address is used to find out about ASEM loaner equipment. If you find something amiss at BPark by all means report it here. If you are curious about borrowing an item, put in a request via this address.

hospitality@asemonline.org

Got a main dish you’d like to bring to the potluck? We sure could use it AND you will be reimbursed for your expenses.

newsletter@asemonline.org

Primary contact for the newsletter. Got an article or notice you’d like to see published? Send it here and be famous!

Outreach@asemonline.org

Special requests for groups at Broemmelsiek Park including:

- Notice of large party (more than groups of twenty)
- Request for specific requirements needed (school assignment, merit badge requirements, etc.)
- Requests for Star Party / Telescope event at another location

webmaster@asemonline.org

Kirk Steinbruegge is now our webmaster. Shoot him anything you want posted on our Web page

ENTERTAINMENT

Late breaking news and member adventures (or shenanigans as the case may be) can usually be found at

STLAstronomy in yahoo groups. If you aren’t a member, you should join. Go to

<http://tech.groups.yahoo.com/group/STLAstronomy/>

and click “Join”

Think Clear, dark skies