

The Focal Point

The Atlanta Astronomy Club
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Editor: Tom Faber

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Charlie Elliott May Meeting & Observing

Saturday, May 4, 2024

Once more, as we always do every month of May, it's time for our annual officers election. Plus we are honored to have a very special guest speaker when we gather at 6:30 p.m., on Saturday, May 4, 2024, at the Charlie Elliott Wildlife Center Campbell Aquatics Building.

Our Program — “When We All Fall Asleep, Where Do Stars Go?” Our Milky Way is a dynamic system – everything moves. Stars travel through space at speeds of tens to hundreds of kilometers per second! Even our Sun moves around the Galaxy as part of a grand cosmic carousel. As a result, the patterns of the constellations on the sky are ephemeral, and our local stellar neighborhood is always changing, as stars incessantly migrate in and out of our sight. Thanks to modern instruments – notably the European Space Agency’s GAIA space telescope – astronomers have now measured the 3D spatial locations and 3D motion vectors of millions of stars within 3,000 light-years of the Sun.

This evening, Dr. Lepine will share with you this new 3D map of the nearby stars, and show some of the intricate and surprising patterns that are revealed when studying their collective and individual motions. We will see that stars are all indefatigable travelers, and that stars currently near the Sun in fact come from very diverse locations in the Milky Way, with a wide variety and ages and origins.

Our Speaker — Dr. Sebastien Lepine, Professor and Department Chair of Physics & Astronomy at Georgia State University. Dr. Lepine worked for 13 years as a research scientist for the American Museum of Natural History and Hayden Planetarium in New York City before moving to a professor position at Georgia State University in 2013. He has carried out various observational projects, spending over 400 nights at various

Continued on next page.

The May AAC Meeting

The next AAC meeting will be on Saturday May 18 at 7:00PM at our new location in Sandy Springs. The speaker and topic are TBD.

Lost Cottage at Lost Corner Preserve, 7300 Brandon Mill Road Northwest, Sandy Springs, GA 30328

<https://www.sandyspringsga.gov/places/lost-corner-preserve>

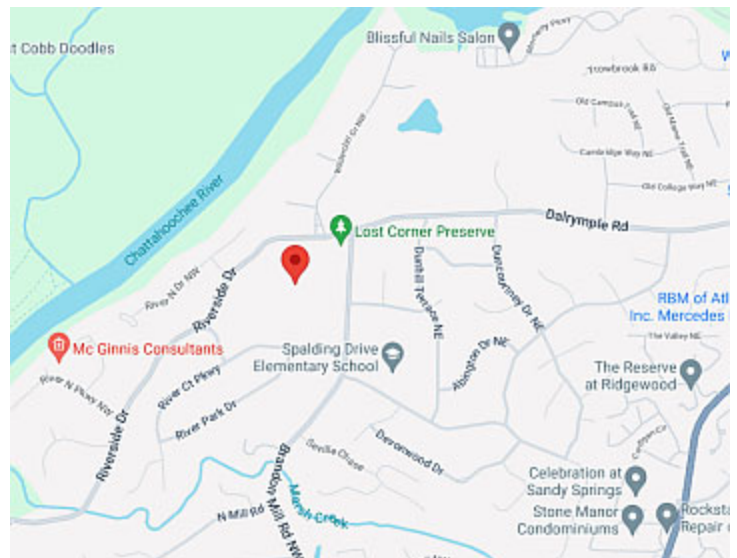
Although the Lost Cottage at Lost Corner Preserve will be our meeting venue for the rest of the year, here is the meeting schedule (Guest speakers and topics still need to be determined) thru November:

May 18th 7-9pm, June 15th 7-9pm, July 20th 7-9pm, August 17th 6-8pm, Sept 14th 6-8pm, Oct 19th 6-8pm, Nov 16th 6-8pm.

We need volunteers for speakers and topics so let's do it this way:

- * If you have a topic you want to hear about let us know we may find a speaker for it.
- * If you have a topic and would like to talk let us know.
- * If you know a student or anyone that may like an audience let us know.

After the talks we will handle club business, Q&A, and meet & greets. If you have any equipment questions or need help, bring your scopes and we will also try to help.



Credit: Google Maps

observatories, notably MDM (Michigan-Dartmouth-MIT) Observatory and Kitt Peak National Observatory in Arizona, and Lick Observatory in California. (The MDM Observatory is an optical astronomical observatory located adjacent to Kitt Peak National Observatory on Kitt Peak, west of Tucson, Arizona, in the United States.)

Meeting Agenda — Opening remarks and general introductions by our club director Steve Siedentop, then “What’s Up” in the sky this (and part of next) month by Observing Supervisor Dennis Ruzeski followed by any questions/comments from those who wish to share any of their own observing experiences. Next will be the official presentation of who this year’s candidates are and a request for any last-minute nominations from the floor. Afterwards will be the actual voting and announcement of the results.

Following the election results will be Dr. Lepine and all you’ll need to know about “When We All Fall Asleep, Where Do Stars Go?”

Weather-permitting, we’ll then head out (by car) to the nearby Jon Wood Astronomy Field; all are invited to bring your own telescopes or binoculars — or at least your interest in astronomy. Sunset on our meeting night will be at 8:22 p.m. and the Elliott Trail sliding gate for incoming traffic closes at 7 p.m., so be sure to be on the observing field before then. The sooner, the better. Club members already have the Elliott Trail gate lock digital combination, so others should already be on the field by 7 p.m. The gate opens automatically for all exiting traffic no matter what time it is.

A few items to note:

Plan to treat this outing like you would a camping trip and be prepared. Dress appropriately for the weather and the environment, bring snacks and drinks if needed, and plan to take your trash with you.

There is a regularly serviced Porta-Potty on the field.

The main gate on Elliott Trail closes to new entry by vehicle at 7 p.m., but will automatically open for exiting traffic at all times. If you are not a member and plan to arrive after 7 p.m., please make arrangements with a club member for access at least a day in advance.

Please refrain from using white light on the field. Red headlamps are cheap and easy to find at your favorite store. They’re even cheaper to make with a spare flashlight and red nail-polish on the lens.

For more information about Charlie Elliott Wildlife Center, please visit the Charlie Elliott website.

<https://georgiawildlife.com/charlie-elliott-wildlife-center>

Observing on the Jon Wood Astronomy Field

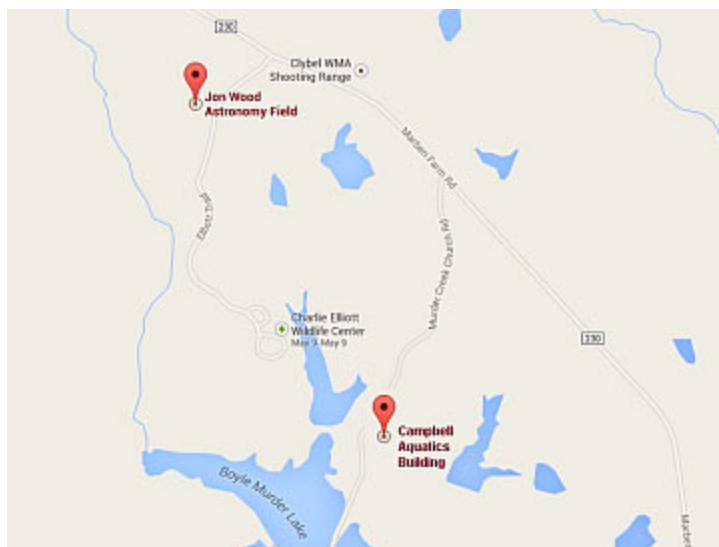
Please refrain from using white lights on the observing field to preserve night vision. Red lights are readily available at department and sporting goods stores in the Atlanta area. As stated above all are invited; however, to bring their own telescopes or binoculars or at least their interest in astronomy. For more information about Charlie Elliott Wildlife Center, visit: <https://georgiawildlife.com/charlie-elliott-wildlife-center>

Our Monthly Meetings and Public Observing Nights

Our monthly meetings and public observing nights are free and open to the public. Visit the “Our Calendar” tab at the top of the page for our 2024 meeting, observing, and outreach schedule. Start times vary through the year so please check back for details. View our Full Calendar of all meetings & outreach events here:

<http://ceastronomy.org/blog/outreach/charlie-elliott-astronomy-calendar>

It’s easy to become a member of Charlie Elliott Astronomy! Pay dues here: <http://atlantaastronomy.org/membership/>



Credit: Google Maps

2024 Zombie Party

Zombie Party 2024 (Observing Event)

Date: Thursday May 9 - Sunday May 12 (Come for 1 night or all 3 nights)

Time: Begins 4:00 PM Thursday - Ends Noon Sunday

Location: Deerlick Astronomy Village, Aaron Grier Rd SE, Crawfordville, GA 30631

A no frills, three night, mini star party. A nice introduction to star parties for beginners. Held At the Deer Lick Astronomy Village (DAV) near Crawfordville, GA, one of the darkest locations within a 2-hour drive from Atlanta (magnitude 6 - 6.5 skies).

A great time to do that Messier Marathon. Observe from dusk to dawn and you are officially a ZOMBIE!!!

DAV has plenty of camping, showers & flush toilets, electricity, Wi-Fi & a large picnic shelter. Camping fee is \$10 a night.

You are responsible for practicing any state mandated COVID safety protocols (i.e. masks & social distancing) while on the field.

(Editor’s note: This event is called a “Zombie Party” because of the appearance many of the attendees have after being up all night observing and/or imaging).



Journey into Shadow

By Tom Faber

A late change of our plans due to the weather forecasts sent us to Muncie, Indiana instead of Texas (where we had hotel reservations since last fall) for the total solar eclipse. Amazingly, I was able to find a hotel room in the path of totality in Muncie on the Monday before the eclipse! Before we left Atlanta on Thursday, April 4th, I did some scouting on-line for eclipse viewing sites in the Muncie area. I found the National Model Aviation Museum. They hosted eclipse viewing on the hundreds of acres they have just east of Muncie for flying model aircraft and rockets. Although on eclipse day there were some high cirrus in the sky it did not seriously hamper eclipse viewing and imaging. Here is a sampling.



Left column: About a minute after first contact, about 40 minutes later, 2.5 minutes before totality. Right column: Just past mid-totality, about a minute past mid-totality RAW image processed to bring out the prominences, diamond ring about 4 seconds after third contact.

All images taken with a Canon T5i with a 300mm lens (Thousand Oaks solar filter for the partial phases) on an iOptron SkyTracker Pro.

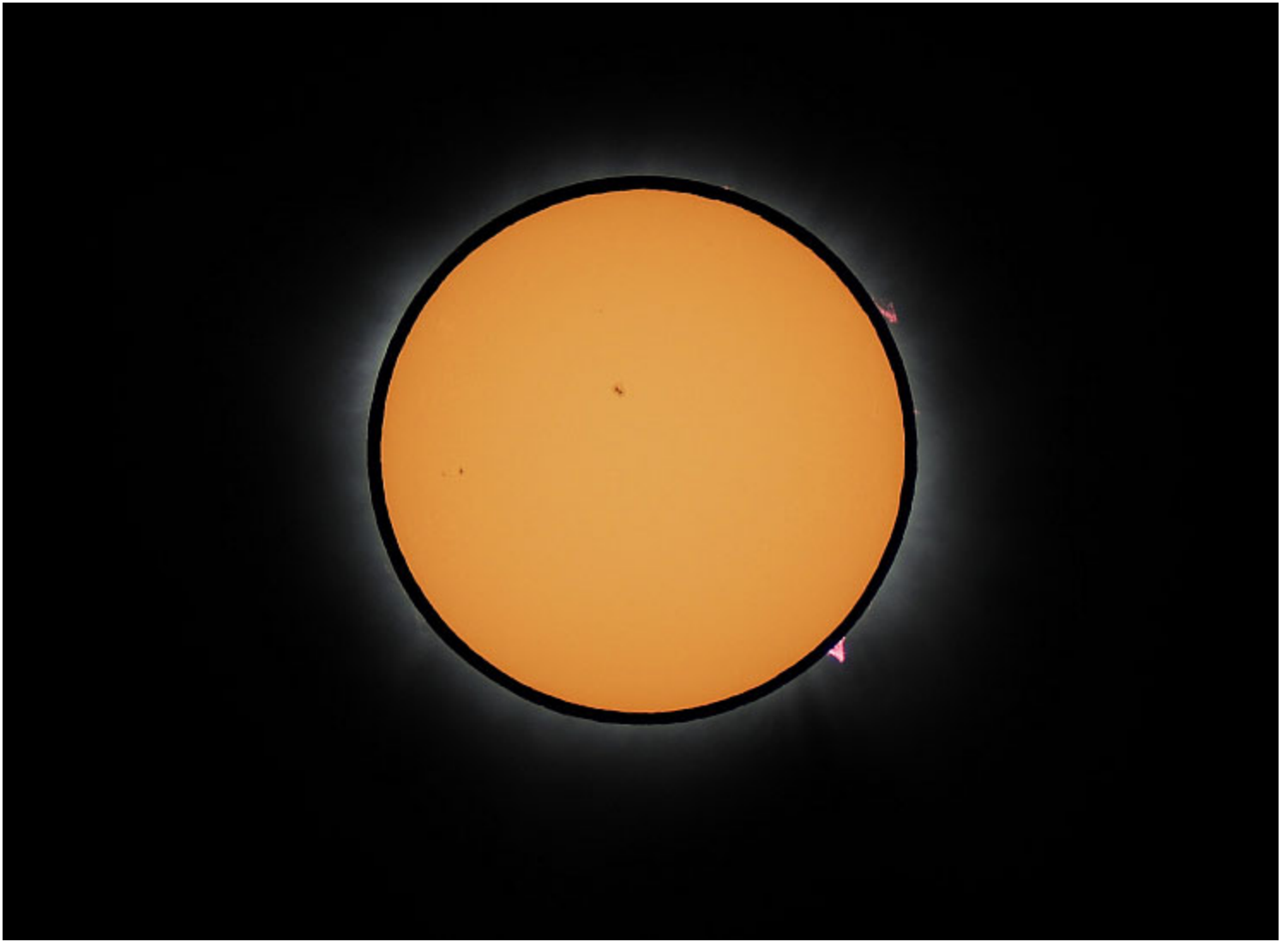


Eclipse Photos by Richard Jakiel

Editor's note: Rich took these images from Erie, PA.

Totality! By the time of totality, the clouds had built up again, so I had to shoot through high and middle clouds. Even so, the images with my 400 mm telephoto were still pretty cool!





Why are some eclipses are longer than others?

By Daniel Herron

The 2017 eclipse had about 2 minutes 20 seconds of totality while the 2024 eclipse had about 4 minutes of totality. Why the difference?

The Earth's orbit around the Sun is not exactly a circle, so sometimes the Earth is a bit closer to the sun in it's orbit than other times.

Likewise the Moon's orbit around the Earth is not exactly a circle and sometimes it is closer to the Earth than other times. It can change about 12% in size in our sky from farthest to closest in it's orbit.

This affects Solar Eclipses. Due to the Earth's distance from the Sun and the Moon's distance from Earth the apparent size of the Moon and Sun in our sky varies, so sometimes during an eclipse the moon may not be big enough in our sky to cover the entire Sun and we get an angular (ring of fire) eclipse like last October. Other times it may be large enough to cover the Sun but how close the Moon is to the Earth and how far away the Earth is from the Sun during an eclipse affects how long totality will be.

In 2024 the Moon was closer to Earth and the Earth farther from the Sun than in 2017 so we got a longer totality!

Below is a composite of two images I took of the 2024 eclipse. One showing the Sun right before the Eclipse began superimposed on top of an image during Max totality. This shows the apparent difference in size of the Moon (seen as the Black "ring") compared to the Sun during this eclipse and why it was much longer than in 2017.

BTW, the longest totality can get is about 7 minutes 32 seconds but this only happens about every 10,000 years with the next one being on July 16, 2186, over mostly the Atlantic Ocean and Northern South America.



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Fire and Diamonds in the Sky

Clay Turner took this image of the Diamond Ring from the 3rd contact during the eclipse. A nice large solar prominence can also be seen. Caly took this image from Patten, Maine.

The "Great American Eclipse"

By Jane Kuehn

Among the 30 million Americans who viewed the Total Solar Eclipse (TSE) on April 8th, were several Deerlick Astronomy Villagers. The preferred sites in Texas were visited by Peter Macumber and Sharon Carruthers, Eric Benner, and Ed and Nancy Albin, where Ed was giving a Smithsonian tutorial on TSE. Dan Llewellyn favored Arkansas, while Dave and Pam Lacko and John and Jane Kuehn found clear skies in Poplar Bluffs, MO.

Although thousands of miles were traveled, the Missouri site was only a 9 hour drive, broken by a pleasant overnight in Tennessee. On eclipse day, the Lackos and Kuehns enjoyed a leisurely breakfast, followed by an easy 3 hour jaunt to the pristine, sunny skies above a Walmart parking lot in Poplar Bluffs, MO. Parked alongside 200 or so other TSE chasers, they met people from Utah, Oregon, Florida, New York, and Georgia, all with the same passion. Some had telescopes, cameras, makeshift viewing apparatus, or commercial eclipse glasses. In lawn chairs and on grassy adjoining slopes, or perched high on RV roofs, a festival atmosphere percolated through the crowd.

At the appointed time, the Moon took a small nibble from the Sun's lower left face. First contact went unnoticed by many, but like clockwork, it continued to inexorably advance. Soon, people noticed the slightest dimming of the mid-day brilliance. Eyes were riveted on a sunspot, a tiny freckle, slowly being engulfed by the advancing Moon. Soon, only a lovely crescent remained. Walmart employees crowded the sidewalk and ooh'ed and aww'ed at the gorgeous phenomenon.

With a dazzling crescendo, a flash of the obscured Sun peeked through one of the Moon's craters, producing a stunning diamond ring. Second contact brought a cooler, quiet, dusk-like stillness. The temperature dropped, birds were silent, business signs and street lights spontaneously lit and people gasped and applauded. For almost four minutes, totality carried the day as onlookers pointed out Venus, Jupiter, and Mars, marveling that they were there all along, yet outshone by the Sun's greater light.

All too quickly, small red beads of light announced the Moon's retreat as the Sun again rightfully began to dominate the day. The stages were reversed at a painfully slow pace as the crowd dispersed, returning to normal, daily routines.

The majestic sight of God's celestial mechanics won't occur again over the continental US until 2044, but enjoying the splendor of a TSE on foreign soil adds another dimension to this once-in-a-lifetime phenomenon.

The **Atlanta Astronomy Club, Inc.**, one of the South's largest and oldest astronomical society, meets at **3:00 P.M.** on the 3rd Saturday of each month at the Fernbank Science Center in Decatur, or occasionally at other locations or times. Membership fees are **\$30** for a family or single person membership. College Students membership fee is **\$15**. These fees are for a one year membership.

Magazine subscriptions to *Sky & Telescope* or *Astronomy* can be purchased through the club for a reduced rate. The fees are **\$33** for Sky & Telescope and **\$34** for Astronomy. Renewal forms will be sent to you by the magazines. Send the renewal form along with your check to the Atlanta Astronomy Club treasurer.

The Club address: Atlanta Astronomy Club, Inc., P.O. Box 76155, Atlanta, GA 30358-1155. AAC Web Page: <http://www.AtlantaAstronomy.org>. Send suggestions, comments, or ideas about the website to webmaster@AtlantaAstronomy.org. Also send information on upcoming observing events, meetings, and other events to the webmaster.

Atlanta Astronomy Club Online

While this newsletter is the official information source for the Atlanta Astronomy Club, it is only up to date the day it is posted. So if you want more up to date information, go to our club's website. The website contains pictures, directions, membership applications, events, updates, and other information. <http://www.atlantaastronomy.org> You can also follow the AAC on Facebook by joining the AAC group, and on Twitter at <http://twitter.com/atlaastro>.

AAC Officers and Contacts

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PSSG Co-Chair: Open

Sidewalk Astronomy: Open

sidewalkastronomy@AtlantaAstronomy.org

Light Tresspass: Ken Edwards, Contact info TBA

Woodruff Observ. Coordinator: Sharon Carruthers

Treasurer@AtlantaAstronomy.org

AAC Webmaster: Daniel Herron

Calendar by Tom Faber (Times EDT/EST unless noted)

AAC Events are listed in BOLD

- May 1st, Wednesday: Moon Last Quarter.
- May 4th, Saturday: **CE Chapter Meeting, 6:30PM.** Eta Aquariids Meteor Shower peaks.
- May 7th, Tuesday: New Moon.
- May 9th, Thursday: **AAC Zombie party at DAV begins - see p 6.**
- May 12th, Sunday: **AAC Zombie party at DAV ends.** Mercury conjunction with Sun.
- May 15th, Wednesday: Moon First Quarter.
- May 18th, Saturday: **AAC Meeting, 7:00PM.** Jupiter conjunction with Sun.
- May 23rd, Thursday: Full Moon.
- May 30th, Thursday: Moon Last Quarter.
- June 4th, Tuesday: Venus at superior conjunction.
- June 6th, Thursday: New Moon.
- June 8th, Saturday: **CE Chapter Meeting and Potluck, 6:30PM.**
- June 14th, Friday: Moon First Quarter.
- June 15th, Saturday: **AAC Meeting, 7:00PM.**
- June 20th, Thursday: Summer Solstice at 4:51PM
- June 21st, Friday: Full Moon.
- June 28th, Friday: Moon Last Quarter.
- July 5th, Friday: New Moon.
- July 13th, Saturday: Moon First Quarter.
- July 20th, Saturday: **AAC Meeting, 7:00PM.**
- July 21st, Sunday: Moon First Quarter.

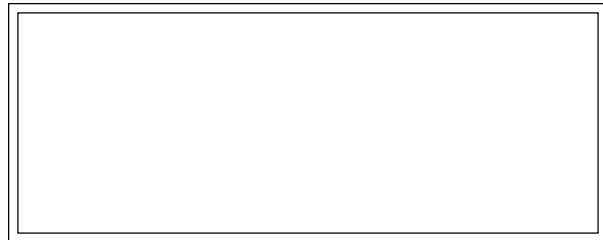
For more event listings and updates see the calendar at www.atlantaastronomy.org

Atlanta Astronomy Club Listserv

Because of the shutdown of Yahoo Groups, the Atlanta Astronomy Club Mailing List has been moved to IO Groups. You can visit the group, start reading messages and posting them here: <https://groups.io/g/AtlantaAstronomyClub>.

Focal Point Deadline and Submission Information

Please send articles, pictures, and drawings in electronic format on anything astronomy, space, or sky related to Tom Faber at focalpoint@atlantaastronomy.org. Please send images separate from articles, not embedded in them. Articles are preferred as plain text files with images separate but Word documents or PDFs are okay. **The deadline for June is Saturday, May 25. Submissions received after the deadline will go in the following issue.**



FIRST CLASS



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The Focal Point
Atlanta Astronomy Club, Inc.
Newsletter of The Atlanta Astronomy Club, Inc.
We're here to help! Here's how to reach us:

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