Bill McGeeney: 0:06

light pollution news april 2025. Typewriters and candle snuff. Today, our e-ink outdoor displays the wave of the future, more proof that shielded street lights do more than just keep the light out of your bedroom. And have you ever wanted to stargaze but live in a bright night city, hogwash? We help you find something great to look at tonight. This month, we welcome back author and travel writer Stephanie Vermillion, dark Sky Ohio's Tracy Cardinal, and the actual astronomy podcast, shane Luque. A new episode of Light Pollution News begins right now.

Bill McGeeney: 0:53

Thank you again for joining us on Light Pollution News. I'm your host, bill McGeaney, and each month we gather the news together, along with three great guests, to talk about the things going on. I want to welcome any first-time listeners that may be with us today. We publish the show twice a month, diving into the topics around nighttime preservation in our highly dynamic societies. Hey, before we begin, I just want to make you aware of a few things. First, you can find anything we discussed today over in the show link on our website that includes the actual article links and a page that is dedicated strictly to ecology news. Next, we have many ways for you to reach out and ask questions, share comments or otherwise. Just connect with us. We love hearing from you guys. You can find all of those in the show notes via whatever podcast player you're using right now, but, to quickly summarize, you can also find us on Instagram, linkedin, tiktok and Facebook.

Bill McGeeney: 1:42

Finally, we have a good chunk of costs and effort that go into bringing you to the show twice a month. Some of that is covered by our gracious listeners, but we still have many big gaps we're looking to fill. Costs involve show production that's largely me, including research and show builds. Show engineering that's our man, caden. And a robust social media program that's my wife, caitlin. If you like what we do, why not consider becoming a supporter? You can learn more about the benefits of being a supporter via today's show notes. The cost is very low. It starts at $3 a month, which makes it one of the cheapest ways you can help to continue to expand awareness and communication around the topic of a sustainable night.

Bill McGeeney: 2:21

If you are able to and you find the show valuable, why not support the show For you to listen to? Who already supports light pollution news? Thank you very much. Your assistance really does help us pay down our fixed costs each month. So thank you once more Now. That said, I'm very glad that you at home can join us for this episode. With me today are

three great guests. I think we're going to have real fun one today. First up, I want to welcome back to the show Stephanie Vermillion, who just put out a new book 100 Nights of a Lifetime the World's Ultimate Adventures After Dark. Stephanie, welcome back to the show. I didn't know what to expect when I picked up this book. I honestly didn't know what I was getting myself into. But would it be a fair assessment to consider it to be a coffee table book? It's not one you can like read from start to finish, right?

Stephanie Vermillion: 3:05

Well, my mother-in-law is actually reading it start to finish, which is the sweetest thing ever, but it is designed to be pick it up and read a section and get inspired, which is great for today's attention spans.

Bill McGeeney: 3:17

What continent is she on? I know this is broken.

Stephanie Vermillion: 3:19

I think she's in it.

Bill McGeeney: 3:21

It's broken the chapters or I guess the hierarchy is broken out by continent.

Stephanie Vermillion: 3:27

Yeah, when I went over to her house around Christmas she had a little bookmark in the Asia section, so she's working her way through. Yeah.

Bill McGeeney: 3:34

It seems like a pretty fun section. Fair enough, there's a lot going on there. So, next up from a way out in the woods of Ohio, the president of dark sky Ohio, Tracy Cardinal Tracy, very glad to have you with me today. We didn't have a chance to really dive in to too much in Ohio. I know you guys have a lot of work out there and it's not just from the places you would think, because Ohio is a pretty populated state. It's got a lot going on. But I know, like, for instance, Cleveland, there's battles back and forth on the new light projection they were putting up. So how about some big wins? What are some big wins that you guys have had recently?

Traci Cardinal: 4:11

Yeah, no, I think that the biggest thing that I can say is that I'm happy to report that we have really beefed up our volunteers, our core group. So, again, like you said, ohio isn't a place

that you think of when you think of dark sky, but it could be, and so that's kind of the inspiration of our volunteers right now is that we want to change that narrative. So number one is outreach, so just getting people out there, getting our name out there, so going to community events, going to schools, going to colleges and kind of introducing the idea of dark sky policies. And then number two policy, so speaking to government leaders, city leaders, to tell them about light pollution ordinances.

Traci Cardinal: 4:56

This year we've added four regional captains and our volunteers have varying backgrounds. We have scientists and astronomers, we have someone that works in the state park, so we have people from all different backgrounds that have kind of taken up the cause on a regional level so that if we have things going on in the south side of the state, we have a captain down there that can coordinate things. The other big win is that we have a director of government affairs and he's such a go-getter and he's put together a symposium for government leaders in the Dayton region. So we're really excited about that. We're kind of looking at it as a regional effort instead of just pockets of change here and there.

Traci Cardinal: 5:41

We're kind of putting together a big program for the Dayton region itself. We're hoping it's going to catch on. We're also looking at three different sites in Ohio to become dark sky certified, so a couple of parks and maybe even a city. So that should be here to come and again just getting the word out. So people are hearing about it and want to join our cause. So stay tuned for big things in Ohio.

Bill McGeeney: 6:06

I think one of the most impressive things you guys do is you have this hierarchy, you have a focal point of interested individuals and you guys are able to manage your time, which I think is probably one of the hardest things for any of these small organizations. How did you guys go about to, I guess, recruit or to pull in individuals to actually hold these positions, because everyone's probably working a daytime gig right, like it's not not everyone's retired, I should say.

Traci Cardinal: 6:34

Right, we started with just a few core members and then, as people wanted to hey, what can I do?

Traci Cardinal: 6:42

We kind of said you know, if you would like, you can be a regional captain, and what that means is as much as you want to put into it, so I can. You can field emails of interested people about that, want to know more about light pollution. You can go down to your local library and do a presentation, and once we've kind of given those people free range to do what they wanted to do and given them a title, they've just gone crazy with it. So that again, I give it all up to my volunteers. They are just so excited about changing what the sky in Ohio looks like. So again, I I can't say why that it's working so well, other than just we have such dedicated, excited volunteers and their motivation has, you know, it's contagious, I guess, and so the more people we talk together and it gathers more excitement. So again, ohio has just, you know, done really well as far as their excitement to change the narrative in our skies here.

Bill McGeeney: 7:45

What is Columbus? The Silicon Midwest? What is the catchphrase for it?

Traci Cardinal: 7:51

That's a good question. I know that they're planning on the new chip manufacturing plant Maybe, maybe not. I think it's up in the air at this point and Columbus, for whatever reason. We have a few volunteers there, but it isn't as exciting as, we'll say, the Cleveland area, the Dayton area, cincinnati Maybe they don't have a big astronomy group there, I don't know. So if anybody's listening in the Columbus area wants to be more involved, we'll take you.

Bill McGeeney: 8:22

I'm shocked you haven't got any students from Ohio State.

Traci Cardinal: 8:25

We do. We do have some students in Ohio State, but the government leaders there haven't been real proactive about changing their light laws. So hopefully they're listening today and they may want to talk to us because again, having smart lighting is a big win. You know it's something you can say to your constituents that I'm putting in smart lighting.

Bill McGeeney: 8:45

You know that's, that's something you can do for them yeah, I can't wait for the first mayor to go out and say we have neighborhood friendly lighting exactly sounds good that'd be amazing.

Bill McGeeney: 8:57

Welcome back, shane lukey as well. Shane, you are the host, you and chris becker, the host of the actual shami podcast. One of my favorite places to just kind of nerd out with with some of your Shane, you are the host, you and Chris Beckett are the hosts of the actual Xiaomi podcast. One of my favorite places to just kind of nerd out with some of your tech reviews, some of the stuff that you specifically are always checking out, building and playing with. So on that, I don't know. Have you ever dealt with Mark Wagner over at Astro Goods? No, I have not.

Bill McGeeney: 9:23

So this guy got a custom mount built for my 12-inch Skywatch Adopt because the original base mount. If you've ever seen it, it is massive. It's probably about four feet Well, not four feet, it's like two and a half feet high probably and it's wide as all hell and it's almost impossible to get in a vehicle just in one try. You have to kind of wiggle it around and do some stuff to get it in there. So I wanted something smaller, because I'm not going to get a new big telescope. This is going to be it, that's it. That job is going to last forever.

Bill McGeeney: 9:52

He builds custom mounts. It's all wood and he engineers it in a brilliant way. By adding hinges and certain screw holes, you can take a tall mount and crunch it down to a pancake. That's probably I don't know maybe a foot high, maybe less than that, and it's perfect for travel. There's a lot of little smart engineered pieces to it. It gives you locking screws that you can screw into the center when you're not using them. It's brilliant. Definitely check it out. I can show you pictures. I can send over pictures of what I have, but highly recommend it. If you are looking for a new Dobsonian out there, anyone you want a good base for it? Mark Wagner, I'm going to give that guy a plug. He did some great work for me.

Shane Ludtke: 10:33

Yeah, good to know. I'm just on his website. Lots of really neat designs there. It's one of the parts of the hobby I really enjoy is kind of the, the, the DIY, or you know, or DIY something like that, do it yourself. There's just so much creativity and when you have someone you know that is really skilled in in being able to create cool things like this.

Bill McGeeney: 10:59

I'm always in admiration. So thanks for sharing that bill. Yeah, yeah, definitely. Well, let's jump into it. Let's, let's kick off the second show for April. I'm sure you've heard the news when it came out, but I didn't have a place to put it in a regular lineup. But I wanted to cover this piece because it just is great. I thought I'd make a nice warm-up article. Here we go by, crooked Joe. It always makes you feel good when the presidents respect one another,

doesn't it? So what do you guys think? Will the LED revolution be stymied by nostalgia for a price tag of a 120 watt light bulb? Is that going to suddenly come to a halt?

Traci Cardinal: 11:57

I don't think LEDs are going anywhere. Most of the industry had realized that LEDs are more efficient. They don't have the filament in them, so they're just, they're sturdier. So the whole industry has moved to LEDs. So I don't think that one statement made by our current president is going to really change things. I mean, typewriters are still good, they're still useful, but in the words of one of my famous authors, stephen King, the world has moved on. So again, I don't think we're going back.

Bill McGeeney: 12:29

We don't want to make typewriters great again. I mean that clicking sound right Exactly. Well, in the realm of technology, I have one article here. It's from New Atlas and it discusses bringing e-ink technology to the big time via 75 inch outdoor displays. The technology boasts significantly less power draw than the led billboards, signs or whatever you have currently out on the market. In addition to messaging, it's just easier to read in daytime light due to the anti-glare attributes, ie you don't have to jack up the power source toa brightness of 11. There's an additional added bonus to this technology it is significantly less impactful on a nighttime ecosystem for which we humans are a part of as well. It even caught the eye of Dark Sky International, which certified it in 2023.

Bill McGeeney: 13:19

If you're not familiar with E-Ink technology or you're not aware of how it works, it generally relies on ambient light. In cities, we all have new blinding streetlights. Surely we have plenty of that to work with. So at the end of the day, advertising is going to be advertising. It's not going to go away. How do you guys feel about taking an e-ink approach to exterior digital advertising versus having a pure LED billboard type approach? How does that?

Shane Ludtke: 13:44

feel for you guys. First, I've heard of it but sounds intriguing. Yeah, I don't know. I do like my e-reader and e-ink and it seems like it's easier on my eyes.

Bill McGeeney: 13:54

Yeah, I think this would be for right now, kind of debuting, for it's small cases, right, like for small signs. I know they have like test examples of parking signs. But one of the places that was mentioned we actually covered this on this show a couple of years back it was trying to sell new digital license plates. The technology won't replace, you know, the big multi-story

LED screens you have out on, say like a sporting event, a ballpark or a football game or anything like that. But it might be a safer alternative, say like for a highway or for digital ads in such a space where it's not putting out as much abject bright light. Obviously it's backlit, but not to the degree that you would get an LED screen.

Traci Cardinal: 14:37

I think it might be interesting to see that in a place like Tucson, or places that really have well-established light pollution ordinances that you know, could this even be something that they could regulate in the future. That you know. Moving forward, can we have more advertising that uses this technology? I think it looks like the upfront costs might be more than digital, but long-term savings looked like you would have less electricity, so it's long-term savings. So again, it could be a win-win because over time you would save money and it's less light. So again, maybe out West, in those places that you already have well-established dark sky areas, could they regulate it? It'd be interesting to see.

Bill McGeeney: 15:23

I would assume that all up those having a billboard that would be like an E-ink would be cheaper, because those big billboards have to cost a ton of money just to run the electric bill, I mean you have so much light coming out of there that I can't imagine that being a cheap proposition.

Bill McGeeney: 15:38

Yeah, I don't know. That's just me guessing and not much there. On my end I have a piece of some good news for this. April, Tracy, you undoubtedly appreciate this. The residents of Portsmouth, Rhode Island, were able to overcome a two-year battle over hideously unneighborly lighting by the Safe Harbor Boatyard. According to local radio station Fund 107, the business sitting across the water lit up 18 homes as if it were midday. Community members attempted to connect with the marina, but the owners and management shockingly never returned their calls or they were strangely absent. That was until the radio station Fund 107 published an article on February 10th detailing the plight of the community and within a day of that article going live, the boatyard turned off the lights. Well, Tracy, I know last episode you mentioned that it was very difficult to convince a shipping company like a truck company to turn off their lights. Did that ever get resolved? Is that still an ongoing issue?

Traci Cardinal: 16:42

They're actually grandfathered in. Did that ever get resolved? Is that still an ongoing issue? They're actually grandfathered in, so I have to wait till they change their lights for us to make

a difference. So again, it's hopefully eventually someday going to make a difference, but no, they still have terrible lights.

Traci Cardinal: 16:55

When you have a big issue like lights and there's lights on every corner Unfortunately, sometimes it is just case by case basis and one person has to be that person to make the difference. So again, stephanie, I know you said there's a light outside your house that you are going to have to be the person that stands up and does something about it. I do have. We have an advocate that lives up in the Lima area that heard that a shopping center was coming into his area. So he called, I'm assuming, the architects of the of the shopping center and got them to put in, you know, better lighting. So down, shielded, less bright lighting. He also did that with a gas station. So until this is a wider movement, it is just going to be an individual basis or, you know, maybe a group of individuals that can make a difference. It's, again, it's tough to think about, but again, you start with your local area and over time, hopefully that movement can grow.

Bill McGeeney: 17:52

I feel like a shopping center would have had a better setup right Like is this a strip mall?

Traci Cardinal: 17:58

Yeah, I think it was a strip mall that he said that he was able to get them to change their lights. He's a member of an astronomical society, so he's very passionate about the lights that affects the observatory, and so he heard about it and called them and he was able to get them to change their lights.

Bill McGeeney: 18:13

It always helps to have an observatory in your backyard.

Traci Cardinal: 18:15

That makes the job a lot easier.

Bill McGeeney: 18:17

Us here in Pennsylvania we don't get the push from observatories, quite like some other places.

Traci Cardinal: 18:24

You just need to get a bigger telescope right.

Bill McGeeney: 18:26

Yeah, that's it.

Traci Cardinal: 18:27

I just got a big telescope in my backyard.

Bill McGeeney: 18:31

And then start doing some science with it. But hey, you know, kicking off ecology this month, there was a great article in the Conversation that looked at how important nocturnal insects are to the world. The article cited the importance of the tiny leaf flower moth to nocturnally pollinate over 500 species of tropical flower trees across three continents and Oceania. Then there's one of my favorite spring traditions. It was written about in Stephanie's book Fireflies, whom, when adults spend their time cutting down the snail population, there are also these flying insects, known as lacewings, that feed on aphids and mealbugs. However, the insect apocalypse is upon us and in rather dramatic time we've witnessed astounding population declines. Whereas in as recently as the 2000 Sydney Olympics, authors claimed that famous moth swarms that had become all but unheard of Australian Christmas beetles so named that they regularly arrived on the scene right around Christmas have too become victims of a current insect decline.

Bill McGeeney: 19:36

In a similar vein, a study in Scientific Reports provides evidence of the benefit of shielding streetlights. The study looked at how streetlights affected peristoid wasps, that is, a wasp that prey on other insects. In an effort of population control, the researchers compared shielded LED lights of 4,000 Kelvin white color temperature, 2,000 Kelvin warm color temperature, 2,000 amber color temperature against unshielded 4,000 Kelvin LED lighting and unshielded 2,000 Kelvin temperature high pressure sodium lights. They sampled results over the course of 55 nights spanning two years and found that shielded lamps do indeed reduce the WASP attraction. So regular listeners will be familiar with how upset I get about municipalities and government agencies that fail to use a shield-first mentality on street lighting. And yet again we have further proof of the benefits, at least in the ecology side, on just using good streetlights. You know, and, tracy, do you have any good stories about streetlights anywhere in Ohio? Do you guys have any implementations anywhere?

Traci Cardinal: 20:46

Ohio is kind of an interesting case. I can't say that in general. I have good examples of streetlights, unfortunately a lot of which. I think this is true in Pennsylvania, maybe. I know West Virginia. The lighting companies, the electric companies own a lot of our streetlights. Is that the case in your?

Bill McGeeney: 21:05

area it depends. It depends on the municipality.

Traci Cardinal: 21:09

Okay. So when we spoke we actually got ahold of one of the executives for the regional area. He covered Ohio, pennsylvania, west Virginia and we said, well, what makes the determination of the lights that you use? And he said, really like, there's a couple of things. The first thing is what do we have on hand? So what's going to be the cheapest? If no one cares, we're going to put in the cheapest lights and right now 4,000 Kelvin people made. You know, these lighting companies made a ton of them, so those are going to be your cheapest. And if a community doesn't specify what kind of lights, that's kind of what goes up.

Traci Cardinal: 21:46

So we've been battling the energy companies and the municipalities number one for cost and then just again getting them to change their mind. Because again, if you as a municipality, as a government leader, say, look at these beautiful lights, look how bright they are, again, that's something they say. That when I bright, they are, again, that's something they say. That when I talked to the energy company that's what he said More bright light meant that they were doing something for their community. And he was really surprised that after our conversation we had told him we're not saying we don't want any lights. He said he was actually afraid to talk to us. He's like well, I have a meeting with the dark sky folks and he thought that's what it what we meant of we don't want any lights. And we said, no, it's.

Traci Cardinal: 22:27

We realized that lighting is important and we need lights. We're not going to go back from that. However, there's better choices that you can make. We asked him about 2,700 Kelvin and 2,200. And he said oh, I'll have to look into that. That's just not widely produced right now because that's what you know, government leaders aren't asking for that. They're saying we want the brightest we can to prove to the people in the community that we're doing something. So again, it goes back to talking to the people in your community, talking to those government leaders, outreach and advocacy, just telling people that there's a better way, that light pollution is bad, as we all know here. But yeah, in Ohio and I don't have any, unfortunately, big wins on that aspect just to, I guess we can. We've identified the problem. Now we're working on the solution.

Stephanie Vermillion: 23:15

Stephanie you will soon with my streetlight outside of my window. There we go.

Bill McGeeney: 23:20

That's right. Look at that citizen activism right there of my window. There we go. That's right. Look at that citizen activism right there. Stephanie, there are a handful of pieces of your book that dealt with insects. Insects were the prime reason you went on these night adventures. Do you think we're going to still have these insects in the next 20 years? Is this book going to? You're going to have a new version coming out and you're going to have to rip those pages out and find some like nighttime street market festival in that area or an insect museum?

Stephanie Vermillion: 23:47

I hope not, I. I mean, there is a lot of doom and gloom and there is a lot hurting the ecology of the world from so many different angles, whether it's light pollution, pollution, climate change, everything. So, yeah, I might have to write a new version, but I also, as I mentioned before, do try to live with a mindset of positivity, because I feel like that keeps us going and keeps us fighting, and there are a lot of examples of good things happening in my book and what I think is really cool is that it shows also how travel can play a role in protecting these ecosystems. A really good example is in the Philippines. There's this eco tour company. They offer kayaking trips to go out into these mangrove forests to see this really rare species of firefly. And one problem they have there is there is a lot of illegal theft of the mangroves, you know, cutting them down, taking them for timber. But because they have their tour guides out there and they're all really big kind of fierce advocates of this ecosystem, their guides, while they're out there leading these tours, they're also doubling as kind of guardians of these forests and they're keeping an eye, they're making sure there's a presence, they're reporting any illegal theft and it's. I mean, there's no hard data on whether or not this is working or any of that, but I think just that that's one thing that's cool about astro tourism or Knox tourism, the whole night adventure market is that you're getting more people in these places at night, which can kind of minimize some of the things that could perhaps be hurting ecosystems, like cutting down trees, like poaching, all of that. So I think, yeah, there's a lot of doom and gloom, but there is a lot of hope and it is. I think those stories are just as important to share.

Stephanie Vermillion: 25:36

And then one other thing I wanted to say, and this is just a case study from my own backyard, but I have been really into the leave the leaves movement lately, where instead of raking and making sure your lawn is spick and span and keeping up with the Joneses which has never really been something I've done but there's a movement now to leave the leaves,

to not get rid of them, not send them to landfills, and that is helping fireflies, that helps several different insects. I know bees are a big part of that because they live in the leaves and that's where they. They need the leaves to be protected over winter into the spring. And just in the last year I noticed and I don't have a specific case study, I didn't do like science observations, but I was out like every night in June watching more fireflies than I've ever seen in my backyard because I started doing that. So I do think there are things we can do at home that can give the insects the legs up that they need.

Bill McGeeney: 26:34

And fireflies are incredibly good allies. I mean, they do a lot of good work for us, so that's great to hear. Where did it even start? When did we start having yards that had to be perfectly green and you know, with one, only one type of grass and you have to make sure it looks like a golf green. If it doesn't, then you're a horrible person. Where did this all begin?

Stephanie Vermillion: 26:56

I know I get so excited when I see other people not just like you know removing all of their debris from their yard. It's, I feel, like there's a few of us and the more people who do it, the more people feel okay to relax and also like who has time that's true.

Bill McGeeney: 27:12

That's a great point. You know, and you mentioned it before. You know, it's all this, this whole ecosystem, right, like there's so many different dependents, and light is one piece of it. It's not the end, end all. In your case, you may have pesticides or habitat promoting the right kind of habitat, so it all comes together. So, since we're still talking about insects, there was an article in the Journal of Experimental Biology that found artificial light at night, namely always-on lighting changes, sounds crickets make, namely always-on lighting changes, sounds crickets make. In a natural environment void of artificial light at night, crickets make longer and more nuanced chirps when compared to crickets in a more constant light environment. My last article on insects this month comes from Oceologia, whereby it was found that a blended red streetlight collects less insects than a 3,000-color temperature streetlight, which seems in line with other research that we've spoken about.

Bill McGeeney: 28:07

On the show. We're almost upon it and I know it's already starting. As we record this, bird migration is starting to take off. We saw our first pine warbler the other day. Stephanie, do you have any experiences seeing birds? I know you write a lot about noctow tourism and different travel, but about birds, do you have any experiences seeing that migration movement?

Stephanie Vermillion: 28:30

I have so many I want to see, but I haven't specifically gone out of my way for bird migrations. But one place that I have been during a bird migration is up again on the Keweenaw Peninsula. They have a huge migration of hawks and so I think it's from May to June or April to I think it's April to May. If you go up onto this mountain called Brockway Mountain, they have volunteers up there who are helping you find and look for the hawks, but you're up basically at a bird's eye level, so the birds are flying, the hawks are flying by you, like at your a bird's eye level, so the birds are flying, the hawks are flying by you, like at your eye level for this migration in the spring, and so that's really cool and that I mean that's also a really great place to watch the Northern Lights while you're up there.

Bill McGeeney: 29:15

So that's the theme here.

Stephanie Vermillion: 29:16

Yeah, yeah, always bring it back to the Northern Lights. But yeah, brockway Mountain is a really good place and I've seen more bald eagles up there than anywhere in the world, so highly recommend the Keweenaw in April to May.

Bill McGeeney: 29:29

Yeah, you get a lot of tips on these shows. Guys, you've got to be writing these down and planning your trips. I have another article here that discusses how birds are affected by artificial light at night. As we've seen in past shows whereby light influences how birds decide where to rest up, light imparts the cognition challenges on certain bird species. Zoological science an article in there found that artificial light at night also affects how diligently a bird incubates an egg overnight, and increased restlessness when incubating results in an estimated 60% reduction of hatchling success. That's something to keep in mind. So light actually reduced hatchling success. I will note that over on our ecology page on lightpollutionnewscom you'll find many articles similar to this, but one of them is from conservation science and practice that weren't able to put in the show this month, so it's discussing the impacts of marine light pollution on birds and bats in the North Sea. Very much worth the read. Before we finish up on the ecology side, do any of you guys do any citizen science? Tracy's nodding.

Traci Cardinal: 30:34

I've done Globe at Night, so have you.

Bill McGeeney: 30:37

Globe at Night.

Traci Cardinal: 30:38

Yeah, Globe at Night?

Bill McGeeney: 30:39

Yeah, of course.

Traci Cardinal: 30:40

So I wanted to get the middle of ohio on the map for that. So we've definitely done globe at night, and I think that citizen science is a great way. I I think it's a good lead-in to to stephanie's book too is that night is an unexplored environment, that that that our ecology is night, that that's in. You know, things that you haven't seen.

Traci Cardinal: 31:05

So my daughter and I were just walking out in our woods and we found here I wrote it down we found a glowing fungus called candle snuff, which is like a bioluminescent. It's been raining all week. We just found this, like three days ago, and I thought you know, how cool is it that I have this fungus in our backyard, that we've not known about that? You know you could maybe find a new species, because no one's out there at night without a flashlight, right, we don't go out there looking for bioluminescence, but it's probably there, it's probably in your backyard. So we can find new species if we just walk in your woods at night without a flashlight, and how exciting would that be. So again, another opportunity to talk about light pollution.

Bill McGeeney: 31:53

Wow, that's amazing. That's an awesome find.

Traci Cardinal: 31:57

Yeah, we're excited about it. So again, hopefully one night, when it gets a little warmer, we can go out there and see if we can find it in our own backyard flowing.

Stephanie Vermillion: 32:06

Yeah, so one thing that's really exciting about travel is a lot of people are increasingly interested in getting more experiential travel on their itineraries. Citizen science is a great way to do that. To do that. So a lot of companies, especially kind of adventure focused companies I've seen are adding citizen science experiences to their roster. One example I was in Southern Tanzania in this one park, ruaha National Park, and it's I forget how big it is,

but it's massive, and we were in this tiny corner of it where a new safari camp opened. They basically had done zero research on any inventory of how many animals are there, what's there. So this whole camp is focused on citizen science and from day one they work with you to start an iNaturalist account. You help them set up camera traps throughout their area. You then work with them and you get to see what your camera trap captured and it's just such a really cool way to experience a place because you feel like you're playing a little bit of a role in helping it. So I've seen that in Tanzania where I've experienced it firsthand.

Stephanie Vermillion: 33:21

But then I also wrote an article last year Time to the Eclipse. There is so much buzz around the eclipse I was trying to find different angles to write about it, and one thing I found was that NASA was hosting this huge citizen science project where they invited the public to submit audio from Totality Well, I guess it was the whole time, but they were really focused on what was happening during totality, because they were trying to see how animals respond to eclipses, and so I think they received like thousands upon thousands of audio clips. They're currently in the data processing phase, but they're trying to see through audio how animals respond to eclipses, cause it hasn't been studied that much because, of course, we don't have that many opportunities. So that's really exciting too to see the different ways that that astronomy can play a role in citizen science as well yeah, and you have technology now where you can just record something, send it over.

Bill McGeeney: 34:21

It's really easy to do. Well, from bmc ecology and evolution, they actually suggest that utilizing citizen science as a way to draw awareness and collect much needed data on nocturnal related ecologies. Tracy, when you found this, this fungi did you use? I naturalist, or how did you identify?

Traci Cardinal: 34:41

so my daughter saw it she's closer to the ground and obviously super observant and it looked like little dark hairs growing up out of the tree. And so I have my smartphone because I would have told her it's just a fungus, keep moving. But I used Google Images and I Googled it and that's what it was. I was shocked. I was like, oh my gosh, it's a bioluminescence. And I have also read Night Magic Leanne Heenan Is that how you say her last name. That was so exciting because she found like something that you've never found. So I again I have to look it up to see if we've, you know, if there's other areas that have it. But I just Google imaged it. So who knows what could be growing in people's backyards that you would otherwise just move right past?

Bill McGeeney: 35:26

Yeah, yeah, this is a great little outreach, like outreach hikes. You could be leading right there, tracy.

Stephanie Vermillion: 35:32

Right right.

Bill McGeeney: 35:34

I mean, I'd join it. That sounds pretty amazing.

Traci Cardinal: 35:38

Ohio's not that far from you.

Bill McGeeney: 35:39

Yeah, I drove out your way last year going out to the Indy 500. That's right, just swing right by. The best part about Ohio is you never have to turn. I drove out your way last year going out to the Indy 500.

Traci Cardinal: 35:46

So you know like that's right.

Bill McGeeney: 35:47

Swing right back. The best part about Ohio is you never have to turn Just go straight.

Bill McGeeney: 35:51

Shane, here's something for you. You're a little more familiar with this stuff. So HowToGeek published in a recent article can you still stargaze under light pollution? The author, tony Phillips, suggested that city dwellers like myself follow certain rules. So first, it pays to be up high. Secure a rooftop if you can. If not, maybe a hilltop somewhere. You'll be much higher above all that dense light pollution from the get-go. And then he suggests maybe looking for visual light pollution filters or digital light pollution filters. I know here I can still see the Orion Nebula under magnification. It's not brilliant, but I can still see it right. Star clusters aren't as rich. Good luck trying to find anything moderately faint. But as a side plug for the Astronomical League which I am a regional representative, you can knock out fun asterisms. I think we spoke about this last time. You can look at aroisms in a dense, light-polluted area. What about any tips on your end? What would you say for anyone living, say, in Cleveland? What would you do? What's some good tips for stargazing?

Shane Ludtke: 36:54

Yeah, it's a great question, Bill. A lot of my observing is actually in my backyard and it is fairly light-polluted in my city. But one of the reasons for observing back there is just to get more time under the stars. And you know, if I waited for dark skies to be my only observing, I just wouldn't get that much done. So what I try to do when I'm in the backyard is if I can just use like natural light shields that exist. So, for example, maybe a tree or a shed in your backyard, position yourself so that that object is maybe blocking a bright light from your neighbor or, you know, a street light or whatever it might be. Because even if you are in the middle of a light polluted area, if you can create your own sort of little dark bubble in your backyard, it does help a little bit because your eyes will become a little bit more dark, adapted, which is a benefit.

Shane Ludtke: 37:48

Probably the biggest tip, I think, is just to adjust what you're searching for, what you're trying to observe, because not all objects are going to be very fun in light pollution. Like you mentioned, you can see the Orion Nebula, but if you start trying to chase other diffuse things like galaxies, other nebula, globular clusters, you're probably going to be disappointed. They just aren't that great. But if you look for double stars, they're phenomenal and light pollution does not disrupt those views. Variable stars, so stars that will have a periodic variance in their magnitude or their brightness, are great from the city as well. And then anything in the solar system. So planets, you know our moon is phenomenal there's nothing that has more detail than the moon. But also asteroids in the asteroid belt, you know you're able to observe a number of those. So those are all kind of I guess my tips for observing under light pollution are all kind of, I guess my tips for observing under light pollution. The other thing too, I guess, is if you have an opportunity to drive just a little ways to maybe get away from the main light sources, it can make a pretty profound difference.

Shane Ludtke: 38:56

You know the city that I live in. There's, I don't know, 250,000 people, so it's not a large city. But if I even drive 10 to 15 minutes just outside of the city limits, it is a different sky and it's still light, polluted, but it's way different than my backyard in a good way. So that's also, you know, an option for some folks. Anyway, I'm just going to see here.

Shane Ludtke: 39:18

Oh, I broke down a few things. You can always ask your neighbors to turn off their lights. You know, I've done that as well. You get to know them and hopefully you have good relations. And then you know, maybe they'll oblige you by. You know turning off a light when

they see you out there trying to take in the stars. And then you know buying the right house too.

Shane Ludtke: 39:38

When we bought the house that we live in, we made a list of must haves and deal breakers, just so that we would stay married throughout the entire endeavor, because the third time we've done it, and the first two times were a little stressful. But one of my must-haves was that I had to have a house that was conducive to astronomy so good views of the southern sky as well as the eastern sky and we found a house that was pretty much the dream house, other than the only place that I could see the southern sky, there was a streetlight directly like kind of at the curb, right in front of that spot. So I said I'm sorry, but we're not. You know, this is a deal breaker and we didn't buy that house. We're quite happy where we are now, but you know as an astronomer, that was part of some of the decisioning that went into selecting a location.

Bill McGeeney: 40:29

There you go. Be very observant. Variable stars. You mentioned variable stars, so are you actually keeping measurement of the variability of these stars?

Shane Ludtke: 40:38

Not in any meaningful way. So there's the AAVSO. The Amateur Association of Variable Star Observers is like the predominant body or organization that if you're interested in variable star observing, go there. They have all the resources you could ever imagine. And if you do want to get into the citizen science part of this, you can submit your light curves. Essentially is what they're called. Light curves, essentially is what they're called. So you monitor the variable star over a period of time and record the magnitude variance during that time. Most people will do that with a camera and then you're able to capture a magnitude light curve as it changes over time. Some people will do the magnitude estimation visually, but that's a little bit more challenging and probably not quite as accurate. When you're doing a visual magnitude estimation you'll try to get other stars in that field of view that have constant magnitudes and then compare your variable star to some of those constants to try to determine how bright it really is Right yeah, yeah, it's an old school method.

Bill McGeeney: 41:45

Yeah, it's old school method.

Bill McGeeney: 41:47

Yeah yeah that's right, yeah. Well, you probably haven't seen this, but I know. When guest Stephen Hummel was on, he mentioned the ionospheric holes. What happens? They're rocket related. He was quoted, actually in Space News saying when I saw my first ionospheric hole I thought okay, aliens are real. The effect creates a luminous red glow as the burns from the actual rockets interact with the ionosphere. You may recall me talking about an effort to create a center of excellence, to create the industry standards for protecting our dark and quiet skies. Well, that bill, introduced by Senator Hickenlooper of Colorado and Mike Crapo of Idaho, hit the trash can in 2024. So hopefully that will come back in line and, I don't know, maybe actually gain some attention in a positive way. Shane, have you seen anything interesting up there? Have you seen any interesting man-made phenomena besides a train of Starlinks going across in your B? One portal, two skies you have out there.

Shane Ludtke: 42:47

You know mostly starlink type of stuff like satellites in general.

Shane Ludtke: 42:50

When you're under a dark sky, if you spend even 10 minutes just looking up, you'll probably be surprised how many streaks of light go by which are satellites.

Shane Ludtke: 43:01

It really is incredible how many there are up there, you know, and if you're out for a few hours and doing astronomy you'll see dozens to hundreds, you know, depending on the night it's just nonstop. But some other neat things, like the space station when it goes by it's kind of neat, you know it's super bright. And if you do have a telescope I've tracked it multiple times just manually and you know, looking through the eyepiece you can start to see some of the detail of the International Space Station, which is pretty cool. And then there's been a couple times where there's been a docking at the space station and you can see the Soyuz or whatever it's been in the past, sort of you see the space station and then you see the spaceship, I guess, trailing it and then you know you watch it over time and you know eventually it sort of disappears because they become one. But I think that's about it, bill. I don't think I've really seen any other. You know, human-made stuff up there.

Bill McGeeney: 43:55

That's high action for astronomy. Oh yeah, that's real-time action. It's just kind of like and not to get too far on the side here it's kind of like when you have the transits of Jupiter and you get to see the moon in real time cast that shadow over Jupiter over the course of an

hour, which, in astronomical terms, I guess the best way to put it is, you know, it's like practically a F1 race right there.

Shane Ludtke: 44:18

So yeah, you don't get to see too much moving up there, so when I really enjoy solar system movement, so yeah, that kind of stuff, as you described, as a lot of fun.

Bill McGeeney: 44:28

All right, I want to close things out. I think tonight so as we record this, we're in the throngs of March madness, but I know you, the listener, won't get this until champions already been crowned, and Northern Arizona university is most definitely not that champion. But they debuted a new alternate identity jersey which you know seems to be the rage with across all sports these days. As teams try and temporarily rebrand themselves, get more attention, start selling new products, everyone's happy. Well, nau's new move is away from their typical lumberjacks uniform to become the Astro jacks, the photo shoot. You'll like this, shane.

Bill McGeeney: 45:07

The photo shoot actually will make any stargazer sports fan kind of nerd. Out here, sitting behind the player models essentially the players are wearing a three-tone blue jersey are multiple telescopes one is a celestial eight inch, another is a mead god rest their souls six inch, and another is a Meade God rest her soul six inch, and another is a Celestion eight inch reflector and one other refractor sitting over on the right side. Perhaps the only time in history period when a telescope made it into sports related photo shoots. So I'm sure we'll never see that again and just appreciate the moment. For you at home, shane, you might want to put that on the wall. That's a classic.

Shane Ludtke: 45:47

I I like it, I like it there.

Bill McGeeney: 45:50

We have it for april. I want to thank my guests today. Stephanie vermillion, stephanie, how do folks learn about your new book? Where can they find it? How do they pick it up?

Stephanie Vermillion: 45:59

it's available at all of the major book retailers, but I would also encourage you to look at your local bookshops, because a lot of the local indie shops are selling my book or can order it, so support indie bookshops.

Bill McGeeney: 46:13

I hear that and that's a hundred nights of a lifetime, the world's ultimate adventures after dark. Shane Lukey got it right that time of the actual astronomy podcast. Shane, how do people learn more about you and Chris, what you guys are doing at the Actual Astronomy Podcast?

Shane Ludtke: 46:32

Yeah, folks can check out our website, actualastronomycom, or really any podcasting software. You'll find us. We're on YouTube as well, so pretty much all of the normal spots is where you'll find us if you're into podcasts.

Bill McGeeney: 46:51

And Dark Sky, ohio's Tracy Cardinal pretty much all of the normal spots is where you'll you'll find us if you're into podcasts, and dark sky, ohio's tracy cardinal tracy. Where do folks go if they're more interested in learning about dark sky ohio, about helping out, about finding these? What? What did the fungi? Fungi call it? Again, I never know what the plural is supposed to be and we'll snuff.

Traci Cardinal: 47:02

I guess is the the common name for it. Don't ask me the scientific, scientific name, because it was too hard for me to pronounce when did that name come from? I don't know. I didn't research that enough. That'll be in the next episode. I'll get back to it.

Bill McGeeney: 47:18

Sounds good.

Traci Cardinal: 47:18

You can find us on Facebook at Dark Sky Ohio. We're also on Instagram, dark Sky Ohio. You can email us at ohiodarksky at gmailcom, so reach out to us. We're always looking for excited volunteers. We have a great group of people right now. Whatever you're interested in so we have a park naturalist, you know an engineer, we've got government people. So whatever your talent is, we'll take you. So, stephanie, that includes you Next book. Hopefully you can add some places in Ohio.

Stephanie Vermillion: 47:52

Yes, absolutely, I'm already thinking on them, but yeah.

Bill McGeeney: 47:55

All right, I like the little brainstorming right there, guys. It's a great collaboration, tracy, thank you again, and it sounds like you guys are doing amazing work out there in Ohio. Really look forward to hearing more about all the great things you're doing as they come out. As a reminder, light Pollution News is a listener support show, which means that we take no outside advertising and solely rely on the support of you, the listener. If you like what we do, why not consider helping us get back into black this year and continue pushing forward with our mission to keeping you, the listener, informed? If you heard anything on the show that makes you want to shoot over a comment or question, feel free to either text us via the text link in the show notes or send an email bill at lightpollutionnewscom. You can find us online at lightpollutionnewscom socials, instagram, linkedin, tiktok, facebook and more, and today's show was recorded on March 23rd 2025. I'm your host, bill mcginney, thanking you once again for listening today. Remember to only shine the light where it's needed.