

## **Kate Dellenbusch—Professor of Physics and Astronomy**

Professor of physics and astronomy, and Director of the BGSU Planetarium, Dr. Kate Dellenbusch discusses several important aspects of upcoming events and the solar eclipse itself. Dr. Dellenbusch describes the speaker series taking place over this February and March, and its relation to the April 8<sup>th</sup> eclipse. The conversation continues with the plans for a watch party being hosted at the Doyt Perry Stadium, and how many people are to be expected. Dr. Dellenbusch rounds the interview out by describing the different types of eclipses, and what eclipse chasing cruises are.

Interviewee: Kate Dellenbusch

Interviewers: Hope London (HL), Amílcar Challú (AC), Trenton Nelson (TN), Alex Eckhart (AK)

Date: October 19, 2023

Location: Overman Hall, Bowling Green State University

[START OF INTERVIEW]

**KD:** [00:00:01] Thanks for having me today. My name is Dr. Kate Dellenbusch, and I'm a faculty member in physics and astronomy here at BGSU. And I'm an astronomer by training, I did my undergraduate studies at Cornell University, and then went on to the University of Wisconsin for my PhD. And since then I've been here at BGSU since 2008.

**HL:** [00:00:23] Nice!

**TN:** [00:00:24] So you have an upcoming speaker series in February and March. What is the purpose of a speaker series?

**KD:** [00:00:30] Yeah, so with the coming of the April 8th eclipse that will, fingers crossed, weather permitting be able to see totality here in parts of Ohio. We're in a really special place to view the eclipse and one of my big goals in planning for the eclipse is to have an interdisciplinary component to the experience for everyone who comes to BGSU, or from the Northwest Ohio community, because eclipses are really events in and throughout human history that have been experienced in a lot of different ways, right? Positives and negatives and have been an important part of human society, I think, and the mystery of what an eclipse was for a long time. And so I think if we think a little bit about it, we can come up with connections pretty much to any discipline to the eclipses. Whether it be psychology, biology, astronomy, of course, but certainly history. Psychology, many, many, fields [of] music and art as well how eclipses have inspired those kinds of creations. And so, that's one of my goals for the speaker series to present that as much as we can and as folks can talk about connections to the eclipse

**HL:** [00:1:43] That sounds amazing. Do you have any specific plans for the eclipse coming up?

**KD:** [00:01:48] Yeah, so here at BGSU we're gonna have a big watch event. We're still working on the details of exactly what all that's gonna entail, but probably at the stadium there will be a gathering for the eclipse. And certainly, people part of the BGSU and wider Bowling Green community are welcome, as well as folks who happen to be coming down I-75, and maybe they can't get any farther south that day. We expect people might stop off here since it's a easy exit and we hope to have a positive experience, even if the weather isn't ideal. Still, having lots of other events going on, music playing, different exhibits, activities people can participate in, before and after the eclipse so hopefully people come early and stick around and wait out a little bit of the traffic after the eclipse.

**TN:** [00:02:37] On that note, do you have any idea of all progress might perhaps of how many people might show up?

**KD:** [00:02:48] I'm really not sure what to expect. We have eclipse glasses that will be providing to folks who come to the event on that day, and we certainly have enough for the campus and wider community. And we've been giving some to schools as well to help out with the counties around Wood County, but yeah, in terms of a total I really am not sure what to expect. People from Michigan maybe even Canada could be coming this way as they head towards totality, and so we'll just have to see I guess if they end up stopping here.

**HL:** [00:03:21] So what does the business side of this event look like?

**KD:** [00:03:25] So the business side isn't really quite my necessarily my area, but as I said we're planning a lot of events to happen at the watch party. And so I know for example, the Falcon Outfitters will be getting involved, and probably selling eclipse shirts and other things so we can all remember our experience with some memorabilia and items as well. As the experience itself, and certainly the for the community, it likely will have an economic impact if we've got a lot of visitors coming to the area with hotels, and restaurants, and things like that.

**TN:** [00:04:07] So is this going to be your first total eclipse, and do you have any expectations going into it?

**KD:** [00:04:12] Yeah, this will actually be my first total eclipse, hopefully. And I've been doing astronomy outreach even since I was a little kid and so I've always kind of just been where I was and using my telescope to show the public or other viewers to show the public the eclipse. Which, was always a partial and so I'm really looking forward to hopefully getting to experience totality for the first time.

**HL:** [00:04:35] That's exciting! Your emails to Dr. Challu had talked about eclipse chasing cruises. Do you know anything about those or if that's an upcoming thing?

**KD:** [00:04:45] Yeah, so eclipse cruises are kind of a cottage industry. I don't know how much it's the eclipse or how much it's the cruise industry who drives them or kind of astronomy. I think they're sometimes sky and telescope magazine or kind of other public astronomy organizations try to arrange them and they do happen often when there are eclipses and so they're

an opportunity for people to enjoy a cruise. And usually on the cruise there'll be an astronomer, or maybe some amateur astronomers who are avid photographers of the eclipse kind of talking about and teaching people who are part of the cruise about Eclipses. And it's kind of all centered around an eclipse, and they can usually make sure they can sail to a place where it's more likely to be clear that might be harder with traffic and so on on the ground. Yeah, so it's a thing, and I've not been on one myself, but I've heard from people who have before. And I believe there is actually one coming up for the April 8th eclipse, along the western coast of Mexico primarily and making lots of port stops along those sites as well as presumably observing the eclipse as well as it probably just before it makes land.

**TN:** [00:06:08] Okay so, for for extra clarity, can you tell us the difference between a partial and a full eclipse?

**KD:** [00:06:14] Yeah, the difference between a partial eclipse and a total eclipse is about where within the moon shadow you are. So eclipses are all about shadows and for a solar eclipse, it's the moon that's casting a shadow someplace on earth. And if we look closely at a shadow, we can see that there's a dark kind of inner part of the shadow called the umbra and then there's a little bit weaker part of the shadow. We're a little bit of light kind of skims the edge of the moon in this case, and so if we're on the surface of the earth within that dark inner part of the shadow, then we'll get to see a total solar eclipse. For folks who are a little bit away from that dark shadow and kind of in the lighter penumbra part of the shadow then they get to see a partial eclipse and it gets less and less of an eclipse, the farther you get from the dark inner shadow. If you're completely outside the shadow, it's just a normal day and you don't get to see the eclipse at all.

**TN:** [00:07:08] Alright.

**HL:** [00:07:09] Is there anything you'd like to add that we haven't discussed that you want to share?

[MULTIPLE PEOPLE TALKING, LAUGHING, BACKGROUND NOISE]

**KD:** [00:07:59] Yeah, yeah I guess just that so in addition to the stadium event in the speaker series, there are other units on campus like the history podcast who are getting involved in the eclipse and thinking about the eclipse. And so they'll note up the other events on the calendar kind of leading up to the eclipse maybe a bit after the eclipse as well and one of the things that we're also going to do is have a series of eclipse ambassadors, we're calling them. So students primarily, I suspect who are interested in helping out with the public the day of the eclipse maybe going out to schools a little bit before the eclipse, and sharing what they know about eclipses, and how to safely view an eclipse, and making sure people have their eclipse glasses when to wear them when to take them off things like that. And so to train those eclipse ambassadors, we're going to be having a couple of avenues to do that. We're going to have some independent study courses, an honors version for students in the honors college, and an astronomy independent study, as well as a 1 credit course to a, a path to being an eclipse

ambassador potentially if you like. And then also, I think a lot of education students might have interest in doing that as well, but they have a really full schedule and so we're probably going to have a sort of boot camp, you know, one Saturday or something to do a similar thing. So there's also an avenue for them too.

**HL:** [00:09:33] That sounds amazing.

**AC:** [00:09:34] I heard this—the, the fact that we have an eclipse is is like kind of very random because it has to do with the size of the moon, and the distance from the earth being just at the right spot that it's like shadowing the sun right like that. So, if we were in Venus or mars, we would never have the experience of of these kind of solar eclipse.

**KD:** [00:10:07] Yeah, certainly have a total solar eclipse. It just works out perfectly that the size that the sun appears to us in the sky about half a degree is the same as how big the moon appears to us in the sky. Just with how the distances are in the actual physical sizes of the sun and the moon, it works out that they're both about half a degree in the sky. And so, when things line up just right, we have the moon fully eclipsing the sun and so we get to experience this magical totality

**TN:** [00:10:36] Do you know the chances of that happening?

**KD:** [00:10:40] I don't know any particular odds, but, uh, but it's something that hasn't always well, hasn't always worked exactly that way throughout the history of the earth. The moon used to be closer to the earth than it is now and it's continuing to move further away from the earth as well, at a rate of about an inch per year currently. And so eventually the moon will be far enough away that it won't completely block the disc of the sun and so total eclipses won't forever be visible on the earth. And then it would be, yeah, an annular eclipse when everything's lining up just right. Yep. Just like we had, uh, last weekend.

[END OF INTERVIEW]