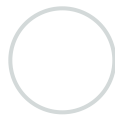




Published



Edit

**This is a graded discussion: 10 points possible**[Show Due Dates](#)**Z4 Zoom Chat with Scientist/Alumni, 1 pm Thrs Feb 10**

Feb 3 at 1:21pm

[Erin O'Connor](#)

20

**Zoom Chat with Scientist / Alumni, Thursday Feb 10 at 1 pm (Optional Attendance)****Meeting ID: 977 5426 1438, Passcode: 873684**<https://sbcc.zoom.us/j/97754261438?pwd=MINJZXBpcGRNVk5XNjh5MG5sYjFSQT09>[\(https://sbcc.zoom.us/j/97754261438?pwd=MINJZXBpcGRNVk5XNjh5MG5sYjFSQT09\)](https://sbcc.zoom.us/j/97754261438?pwd=MINJZXBpcGRNVk5XNjh5MG5sYjFSQT09)

- Dr. Philip Lubin, Professor, Researcher, UCSB Experimental Cosmology and Directed Energy. Phil has been a principal investigator with both the COBE and PLANCK CMB Mapping Missions and has worked with high altitude balloon projects and South Pole projects. Click here to see [Exp Cosm Lab Current Projects](https://www.deepspace.ucsb.edu/) [\(https://www.deepspace.ucsb.edu/\)](https://www.deepspace.ucsb.edu/), including many cutting edge and innovative experimental endeavors with directed energy Planetary Defense, using lasers to deflect or destroy meteoroids, asteroids and comets (before they get us), and to use lasers to propel microchip sized spacecraft to nearby stars at 20% the speed of light (and maybe with microorganisms hitching a ride). [Click here for more info on Phil's education, teaching, and research background.](#) [\(http://www.fieldstudy.com/Courses/Earth106BlackHoles/OnLineMaterials/LubinCV.html\)](http://www.fieldstudy.com/Courses/Earth106BlackHoles/OnLineMaterials/LubinCV.html)

**We had a great Zoom Meeting. Here is the recording:**<https://youtu.be/mp4g0DQQnIE> [\(https://youtu.be/mp4g0DQQnIE\)](https://youtu.be/mp4g0DQQnIE)

**Since the talk was much longer than usual, you are only required to watch 30 minutes of the talk (any 30 minutes you want). Here is a breakdown of topics in the talk so you can skip around if you wish.**

VIDEO TIMINGS (So you can jump to what you want to hear about):

- |                   |  |
|-------------------|--|
| 0 - 0:47          | Introductions  |
| 0:47 - 53:28      | Cosmology with COBE and PLANCK   |
| 53:40 - 1:09:11   | Student Question: STARLIGHT, WATERCRAFT, and ET (sending microchip spacecraft to nearby stars) |
| 1:09:11 - 1:23:24 | Student Question: What about relativistic mass?  |
| 1:23:24 - End     | Discussion with class about talk   |


Each week we will set up a Zoom meeting with a scientist working with astronomy, astrophysics, cosmology, or science and engineering, or an alum of SBCC from our astronomy program to see what they are doing now with school, education, or their lives and careers. Some of our former

students are doing amazing things. I will be reaching out to contacts I've made over my teaching career so that we can personalize and humanize the material and create more of an "in person" classroom environment.


These Zoom meetings are optional. You are not required to attend, but you are certainly invited. These meetings will be at random various times during the week, subject to the availability of our prestigious guests. The meetings are not lectures. I'm more interested in chatting with our guests to have them tell you a bit about their school, work, and interest in astronomy and to give you an opportunity to ask questions and interact with them yourselves.


If you can not attend, that is fine, you will still get full credit by watching the recording and participating in a discussion about the Zoom meeting.


After participating in the Zoom Meeting and/or watching a recording of the Zoom Meeting, please post your reaction to the meeting. What did you find most interesting about what they are doing or what they had to say? How is it relevant to your life or educational pursuits? What qualities about their approach or perspective to education (or life) do you think has helped them succeed and to get to a place where a Black Holes Class teacher would want to invite them for a Zoom Meeting with their class (haha).




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**Sarah Savage** (<https://canvas.sbccc.edu/courses/46681/users/375381>)

Feb 13, 2022



Wow, just wow. I find it extremely exciting that such advanced cosmology programs are happening right here in our little city. The fact that Erin has arranged access for us students to actually meet these scientists who are changing the way humans understand our universe and hear about their work directly from them is just unreal. Thank you, Erin!

My first time through college, I took advantage of exactly zero of this kind of opportunity. It might "only be zoom" but it's a chance to practice your communication skills with professionals. Even if you don't go into science, this experience will help make you more comfortable and confident when you are interviewing for jobs post-graduation. Beyond that, in my 20 years of professional working experience, 100% of all my jobs and professional opportunities have come through both professional and personal connections I've made over time and some of those opportunities have come through unexpected people. I'm not

exaggerating. I've witnessed friends struggle professionally as a result of not taking advantage of opportunities right in front of them. So in the spirit of wanting my classmates to succeed, whether I know you or not, I encourage you attend these guest lectures, turn your camera on, and make your voice heard. Only good can come of it.

Dr. Lubin's presentation gave me so many new things to think about and I greatly appreciate his explanation for the image he showed us of the Cosmic Microwave Background. That image has perplexed me for some time and I feel I have a better grasp of it now. He certainly has a way of explaining very complex things in a very clear and easy to understand manner. I would love to tour his lab to discover more!

← [Reply](#)



**Erin O'Connor** (<https://canvas.sbccc.edu/courses/46681/users/24247>)

4:29pm

Originally Posted 2/27/22

It's great to see you attending the zoom chats regularly and taking advantage of these opportunities. I agree, I think taking advantage of getting involved with school functions and clubs and getting to know the teachers and your fellow students can really make a difference and really create a sense of community and motivation to succeed.

← [Reply](#)



**Brian Wolden** (<https://canvas.sbccc.edu/courses/46681/users/274832>)

Feb 13, 2022

This was a very exciting and interesting meeting and I am happy I was able to attend it live! One of the things I appreciated most about Dr. Lubin was his blending of physics with philosophical implications of the subject matter he was discussing. This was evident from the beginning of the meeting when he talked about the meaning of the beginning of everything. The conceptualization of the very strange and complicated concepts found in cosmology, and the thought experiments that go along with it, is one of my favorite things about astrophysics and cosmology. Hearing Dr. Lubin talk about things like the CMB was great!

It was also very interesting to hear about all the different projects he has worked on. The prospect of getting small interstellar vehicles up to 25% the speed of light is kind of amazing. Having access to all of his publications and being able to read about all the work he and his lab are doing is a huge resource that I intend to take advantage of. I would love to visit his lab

at some point and just hear more of what he has to say on a wide variety of topics. I feel like we explored just a small area of his expertise.

← [Reply](#)



**Erin O'Connor** (<https://canvas.sbccc.edu/courses/46681/users/24247>)

4:30pm

Originally Posted 2/27/22

Glad you enjoyed Dr Lubin's talk. As we have discussed, he's always looking for computer programmers, and it might be a good opportunity for you to use your current and existing skills but in an application that will help you branch off into your newfound interests in science and astronomy.

← [Reply](#)



**Abigail Jacobs (She/Her)** (<https://canvas.sbccc.edu/courses/46681/users/367167>)

Feb 20, 2022

I really enjoyed this recording as Dr. Lubin has some super awesome ideas in the making, the idea that we could one day perform interstellar travel is mind-boggling to me as well as far beyond my imagination. I have also never thought about how chemistry is such a huge part of space travel, the 40-year voyage out of our solar system must have involved an extensive amount of careful chemistry, I find that to be such an interesting part of aerodynamics and the crossing paths with chemistry!

These zooms have really pushed me to think outside of the box when looking at everyday things such as the idea of time, light, and how chemistry is such a huge part of everyday life. I think that having the meetings is a really amazing way for us to learn new things in a way that we aren't necessarily being lectured at but getting to explore certain topics that the speakers are very interested in.

Edited by **Abigail Jacobs** (<https://canvas.sbccc.edu/courses/46681/users/367167>) on Feb 20 at 6:54pm

← [Reply](#)



**Erin O'Connor** (<https://canvas.sbccc.edu/courses/46681/users/24247>)

4:28pm

Originally Posted 2/27/22

Yes, the human species will be traveling to space and the moon and Mars and the planets. Whether we travel to distant Stars, that's hard to imagine at the present time but it's amazing that Dr Lubin is going to put microbes on a tiny chip and send them to the nearest star within 25 years. That's the plan, but they're still a long way to go and a significant amount of funding to be applied for before that can happen.

← Reply



(https://

**Luke Rutherford** (<https://canvas.sbccc.edu/courses/46681/users/373514>)

Feb 20, 2022

I found Dr. Lubin's explanation of the CMB very thorough, and his analogy comparing fog and electrons helped make things clearer. I also am amazed at Erin's memory and his ability to recall what he was doing when he first met Dr. Lubin. I think a quality Dr. Lubin has that has helped him succeed is the ability to explain things and convey a message without a presentation or additional resources.

← Reply



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**Erin O'Connor** (<https://canvas.sbccc.edu/courses/46681/users/24247>)

4:29pm

Originally Posted 2/27/22

Glad you enjoyed the talk, and Dr Lubin is and unusually easy going and easy to talk with. He always makes time for students and I find him to be very talented and very inspiring. As for my memory, I do my best but I certainly am having a harder time finding my keys... haha, oh... and I never remember where I put my glasses.

← Reply



(https://

**Alak Fryt (He/Him)** (<https://canvas.sbccc.edu/courses/46681/users/354278>)

Feb 20, 2022

There were plenty of things in which Dr. Lubin discussed that were intriguing but I really thought the topic of what happened before the universe was born was most interesting to me. I like to think of things like this on my own quite a bit so hearing someone such as Dr. Lubin talk about this was interesting. It's even more compelling to hear the topic of the multiverse be

discussed as something of a possible explanation for what came before. And then there was also the idea that there was a time loop in the beginning. It was almost frustrating trying to understand how if you were to travel back far enough in time, that eventually you'd travel forwards in time.

← [Reply](#)

○



**Erin O'Connor** (<https://canvas.sbccc.edu/courses/46681/users/24247>)

4:27pm

⋮

Originally Posted 2/27/22

Great that you like these interesting and advanced topics. I think physics and astronomy can be very philosophical. I'm drawn to that aspect of Science and astronomy and cosmology as well.

← [Reply](#)



**Victor Jensen** (<https://canvas.sbccc.edu/courses/46681/users/416476>)

Feb 20, 2022

⋮

I liked Dr. Lubin's quote "The more you think about it, the more distressed you become" on the beginning of the universe.

The most interesting thing from this Zoom was the ET project. It's an incredible sci-fi method of propulsion. I was confused as to how the laser would be able to be aimed and constantly adjusted enough to continuously push the micro-voyager, but then he pointed out it would only need to be pointed for about five minutes. I believe that this is more than plausible to achieve in the next few decades.

I believe Dr Lubin has been my favorite Zoom meeting host.

← [Reply](#)

○



**Erin O'Connor** (<https://canvas.sbccc.edu/courses/46681/users/24247>)

4:28pm

⋮

Originally Posted 2/27/22

Glad you enjoyed the zoom talk. Dr Lubin is certainly our highest profile guest yet. There's another astrophysicist who is very talented and well-known, International type, currently full professor at Tel Aviv University in Israel, but he lived and worked here for some time

and I got to know him personally. I hope he'll be joining us later this semester so I think you'll enjoy that talk as well.

← [Reply](#)



(<https://>

**Franco Diaz Campo** (<https://canvas.sbccc.edu/courses/46681/users/403036>)

Feb 20, 2022

Hi everyone!

Before starting, I want to say that this is one of the best conferences we have ever had in this class! I think it is exciting what he is doing, and I find a lot of passion from Dr. Philip Lubin in all his work! I have to thank Professor O'Connor for all the good meetings he is doing every week.

I liked this one because I like all the projects he has, we can see that he is interested in all his work, and it is something I appreciate a lot because the meeting doesn't feel boring because of it! Also, I was curious about all his other research, such as the COBE and PLANCK CMB Mapping Missions; because of it, I read a little bit of it, and I have to say it is pretty impressive all the hard work he is doing with it. I also liked that he used many compelling images, which was an easier way to understand precisely what he was trying to say.

← [Reply](#)



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**Erin O'Connor** (<https://canvas.sbccc.edu/courses/46681/users/24247>)

4:26pm

Originally Posted 2/27/22

Glad you liked the Zoom Chat. Dr Lubin is a really amazing scientist and a really good person, always willing to make time for students.

← [Reply](#)



(<https://>

**Lukas Gott** (<https://canvas.sbccc.edu/courses/46681/users/417976>)

Feb 20, 2022

After listening to the portion on COBE and PLANCK, I found it incredibly interesting and somewhat frustrating trying to understand the idea of sending a 3-D object on a 1-D plane all while having 4-D factors. I don't believe that right, I think that's okay though, because I still found it incredibly interesting. Either way though I sadly don't think Dr. Lubin's ideas apply to my life all that much as he's on a bit of a different level of understanding than me.

← Reply



**Erin O'Connor** (<https://canvas.sbccc.edu/courses/46681/users/24247>)

4:27pm

Originally Posted 2/27/22

Yes, the study of the beginnings of the universe is very abstract and not really applicable to Everyday Life. That's what's great about the human species, that we have people working on very different things all the time and most of them probably are not of interest to everyone, but you never know what specific things you yourself might fall into and or get interested in later as you continue with your education.

← Reply



**Malcolm Tircuit** (<https://canvas.sbccc.edu/courses/46681/users/427388>)

Feb 21, 2022

The whole meeting with Dr. Lubin was very insightful and made me really excited for what's to come in my lifetime. At the beginning of the talk, Dr. Lubin mentioned how the universe's beginning might be a sort of loop to the so-called end of said universe. That idea really intrigued me. His talk about how we might be able to achieve interstellar travel using high-powered lasers was really exciting to me as well. Just the fact that we might be able to reach Proxima Centauri in the next few hundred years is so mind-blowing. I also really liked hearing him talk about the other possibility for achieving interstellar travel such as solar sails and antimatter engines. All of those possibilities are very interesting to me.

← Reply



**Erin O'Connor** (<https://canvas.sbccc.edu/courses/46681/users/24247>)

4:30pm

Originally Posted 2/27/22



Glad to hear that you are inspired by the many projects in Dr Lubin's lab. I too was very inspired and ended up working with him for many years, and if you continue to find this interesting, I'll be sure to introduce you personally and maybe you can get more involved with his many projects.

← Reply



**Naomi Xu** (<https://canvas.sbccc.edu/courses/46681/users/27955>)

Wednesday

I wonder what apple hit his head to make him think every thing is powered about chemistry, why can't it be powered by something else. The way he talks makes the talk feel more like a conversation. Unrelated, I just though it was funny that Erin started with we'll talk for 15 minutes then ask some questions, and it ended up being over an hour and a half lol. Speaking of which, I didn't think I was going to watch the whole thing, but I just figured I'll watch as much as I can, I ended up finishing it, all in one sitting too, great talk.

← Reply



**Erin O'Connor** (<https://canvas.sbccc.edu/courses/46681/users/24247>)

4:31pm

Haha... yes... I was only asking him to talk for 15 minutes, but he is so interesting that he just kept talking and we ended up going for 5 times longer. Yikes!

← Reply