Office hours with Richard Kron

WHY ASTRONOMY MATTERS

Richard Kron, professor of astronomy and astrophysics, is chair of the science advisory committee for the Giant Magellan Telescope under construction in Chile. A Quantrell Award winner, he teaches Stellar Astronomy and Astrophysics and European Astronomy and Astrophysics, both Core courses, at the University's Center in Paris. Kron is so beloved by students that many nonscience majors do research with him at Yerkes Observatory, where he holds a faculty affiliation and is the former director.

What's the key to teaching science to allegedly nonscience people?
That's why I enjoy teaching, because it's a challenge to figure out: why would somebody want to know about astronomy, and why does it matter? Students who take an astronomy course get to grapple with ideas that they might not have known existed before. It's about thinking about science as a human endeavor and how scientific theories grow or evolve. What happens when data don't agree with a theory? Do you just abandon the theory, or do you abandon the data? Many of the ways you might think about these things can apply to other things in your life.

So why *does* astronomy matter?
We like to think of it as really pure research. Nobody is saying that because we're discovering planets around other stars, you will have more success in your career. Whether or not stars have planets around them is a universal question that people have been asking for millennia. It's incredibly exciting to have arrived at the time when this question is being addressed. The same is true for the origin of galaxies. People should be interested for just basic reasons of learning about the world.

It does get to the larger question: why are we here?
Right. My last lecture in this class I'm teaching in the spring quarter, Origin of the Universe and How We Know, is the search for life elsewhere. It's not because there's a whole lot to say about it, but the ideas are really interesting. How do you think about setting up an experiment that would allow you to make some progress on that?

What will the Giant Magellan Telescope, when it's completed around 2020, allow us to see that we can't see now?
Much fainter things. We can now go back well over 10 billion light-years, and the farther back we go, the closer we can get to seeing the epoch when galaxies formed.

The other thing that's a very important gain is the sharpness of the images. We can look closer to a star to see the planet going around the star.

Do you think there is life out there somewhere?
I haven't the foggiest notion. There's no reason why not. We do not yet know enough about completely fundamental things, like how life originated in the first place, to even start to grapple with that.

Do you like science fiction?
I enjoy some of the 1950s movies, the classics like the original *War of the Worlds*. I recently started to look into the history of how this all started: the concept of an invasion of Earth from interstellar origins. You can put H. G. Wells's novel, on which the movie was based, in the context of how, on the astronomical side, Percival Lowell was making arguments that Mars had to be inhabited because of the canals he was seeing, and therefore there was a whole logic built up right in the 1890s. Wells's novel was published in 1898.

The 20th-century movies had more to do with fear of Russians, right?
Yes, responding to Cold War hysteria.

That would make a great interdisciplinary course.
I've been thinking about that.

—Edited and condensed by Jeanie Chung

Photo courtesy Richard Kron and NASA