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### A view of the universe from SIUE's campus

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## Regional

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# A view of the universe from SIUE's campus

Recent discoveries about the universe continue to fascinate the public. Whether dozens of new planets are found in distant solar systems or there is the continued speculation about the possibility of parallel universes, these findings continue to grab the imagination of adults and kids alike. And for one kid born in Kenosha, Wis., this couldn't be truer.

His name is Jeffrey Sabby. His parents bought him a telescope when he was 9 years old. His grandparents instilled a love for science by giving him at least one book on science for every Christmas and on his birthdays. He went on to receive his degrees in physics, including his doctorate, at the University of Arkansas. Today he is an Assistant

Professor at Southern Illinois University Edwardsville where he teaches, among other things, astronomy.

In many ways it is not surprising to hear the story of a kid who is fascinated with astronomy. Together with dinosaurs, these are often the favorite subjects of young people interested in science. However, to grow up and become a professional astronomer is another thing altogether.

"To become a professional astronomer centers on education," said Sabby. "I can see my students evolving in my classes when they get a better picture of what astronomy is all about instead of the bits and pieces they see on TV."

### Dr. Aldemaro Romero College Talk

Recent news included coverage of the Kepler mission, a space observatory that discovered hundreds of planets outside our solar system – also known as exoplanets – many of which are earth-size and located at distances from their suns similar to the one between earth and its sun. These discoveries are spectacular given that the existence of planets outside our solar system was almost unimaginable only a couple of decades ago.

Beyond their discovery, the larger issue remains as to whether those planets contain the right chemical elements and compounds necessary for life. "I think it is possible," said Sabby.

One of the most difficult things to figure out about the universe is its size. For example, we feel that our sun is pretty close, yet it takes light about eight and a half minutes to travel from there to earth. Given that light travels at about 186,000 miles per second, this speed is remarkable, and means that the distance between the earth and the sun is about 93 million miles. But how old is the universe? "We actually know where the boundaries of the universe lie. By looking at the back-

ground radiation we have been able to determine that our universe is 13.72 billion years old," said Sabby.

One of the major misconceptions about the universe is created by Hollywood.

When films portray the asteroids in the asteroid belt between Mars and Jupiter, they appear so close that they seem near to each other. That, according to Sabby, is not correct.

"In fact, asteroids are on average a million miles from each other. It is not like Star Wars," Sabby said. "When I go to a see a movie with friends I have to issue a disclaimer that I will probably rip the movie apart because of its inaccuracy when it comes to physics and astronomy."

In addition to its size, the content of the universe is another issue that still fascinates Sabby. "Even after all these years of studying the universe, its vastness is something that still boggles my mind," he said.

One topic that we hear about from time to time in the news, but that even astronomers do not really fully understand is "dark matter."

"People are surprised when they learn that we can only see four percent of our universe. This shows us that we know virtually nothing about our universe," Sabby added. We know dark matter exists because of its gravitational effects, yet we cannot see it.

Even more mysterious is the concept of "dark energy,"

a form of energy that is increasing the rate by which the universe expands. Many who saw the 1968 movie "2001: A Space Odyssey" as youngsters became fascinated with the possibilities of exploring other planets. However, trips to the moon came to an end following the Apollo 17 mission in 1972. So what happened on our way to space?

"It's very, very expensive," Sabby said. "That is why what we are doing now is to send probes. To go to the moon today would cost about \$20 billion."

Sabby has been involved in the building of an observatory on the SIUE campus with an intriguing name: "roboscope."

"While I was a graduate student was come out with the idea of building a telescope that could operate automatically and whose images could be seen via Internet."

The roboscope, which will operate automatically and be controlled through the Internet, should be fully operational later this year. Its images – collected in Edwardsville – will then be made available to the whole world.

*Aldemaro Romero is the Dean of the College of Arts and Sciences at Southern Illinois University Edwardsville. His show, "Segue," can be heard every Sunday morning at 9 a.m. on WSIE, 88.7 FM. He can be reached at College\_Arts\_Sciences@siue.edu.*