Penn State scientists involved in an unprecedented telescope project are ecstatic about the $30 million combined donation from technology pioneer Bill Gates of Microsoft and the Charles Simonyi Fund for Arts and Sciences.

On Jan. 3, the Large Synoptic Survey Telescope (LSST) Project announced the reception of the gift, which will benefit the entire endeavor including the work of scientists like Eric Feigelson, a professor in the Department of Astronomy and Astrophysics.

Excited about the scope of the unique project, Feigelson called the project "very revolutionary."

"We all have telescopes that can look at the sky, but LSST is a telescope that will cover the whole sky in three days," Feigelson said. "LSST will do many things for astronomy."

At three billion pixels, the telescope is set to be the world’s largest digital camera and will take its first pictures on the Cerro Pachón Mountain, in Chile, in 2014, according to LSST’s Web site.

In an interview earlier this month, Donald Schneider, Penn State’s representative to the LSST board of directors, estimated the cost of the full project to be at least $400 million.

"Laymen -- non-scientists -- are most excited about mapping killer asteroids," Schneider said. "LSST could give us the potential to save humanity."

The advances of this 21st-century telescope are particularly exciting to Feigelson, who entered college with ambitions of studying chemistry.

"I didn't know anything about astronomy when I was a kid," Feigelson said. "When I was in college, there was an open slot in my schedule for astronomy, so I took it on a lark."

Feigelson is co-director of the Penn State Center of Astrostatistics with G. Jogesh Babu, a Penn State professor of statistics. While the engineering teams of LSST develop the innovative telescope, Feigelson and Babu hope to write software to make sense of the record amount of data expected to be gathered.

LSST is being designed to take a huge database worth of pictures of billions of stars and quasars, Feigelson said.

"Astronomers love looking at pictures but are not used to looking at a database,” he said.
The LSST is being constructed to develop data for both professional astronomers and curious non-scientists to access freely.

"A lot of people know about Google Earth, and now there's Google Sky," Feigelson said. "LSST will be like the ultimate Google Sky."

Lawrence Ramsey, head of the Department of Astronomy and Astrophysics, said he is excited about the democratic nature of the project.

"People will be making maps of the heavens for public use from the unprecedented data LSST will give," Ramsey said.