University undergraduate discovers companion star to Beta Canis Minoris

Equipped with only the experience of an undergraduate, third-year physics major Nick Dulaney discovered an unknown astronomical body.

Dulaney analyzed 15 years of archive data collected at UT's Ritter Observatory, which led him to make his discovery.

According to a news release, UT postdoctoral research associate Noel Richardson assisted Dulaney in finding that a highly studied star, featuring a disk around its equator, is actually a binary star, or a double star.

"In my research, I was studying a larger star called beta CMi (Beta Minoris), which is about 3.5 times the size of our sun and much hotter. This has a gaseous disk around its equator," Dulaney said.

Professor of physics and astronomy and Director of the Ritter Observatory Jon Bjorkman provides fieldwork opportunities for undergraduate students like Dulaney on campus.

"Publishing the results of research projects like this brings recognition of our program, and in particular how we involve undergraduates in our research," said Bjorkman.

Richardson credits Dulaney's utilization of the program and tools available to his recent finding.

"This project exemplifies how our one-meter telescope on campus is so useful," said Richardson. "Nick learned how to operate the telescope, analyze the data and discuss the findings with others during his time here. So many universities do not have such resources, and this highlights

the strengths of our program.”

Adding to his recent success in the field, Dulaney was the lead author, alongside 14 others in the published research paper regarding the discovery in “The Astrophysical Journal.”

As stated on its website, “The Astrophysical Journal” is the foremost research journal in the world devoted to recent developments, discoveries and theories in astronomy and astrophysics.

“It will be very helpful to say that I am first author on a published paper,” Dulaney said.

Dulaney recognizes the weight of his discovery and the effect it may have on his future career.

“This is a big deal for me,” Dulaney said. “I got to learn a lot of great skills for the field of astronomy through this. This will be an asset for me, whether it be for graduate school or a job.”