

Dr. debra fischer
astronomer



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Maryssa Buffano Miss ArnoldScience- Current Astronomer Essay 4/12/2011

JMJ Dr. Debra Fischer - Astronomer An astronomer is an astrophysicist who studies stars, planets and galaxies. Astronomers use the laws of physics to investigate the matter and energy of celestial bodies. They then apply the research findings to solve space navigation and communication problems and even discover new planets and stars. In 1512, Copernicus theorized that the planets orbit the sun and the race to uncover new planets began.

Historically, most of the famous astronomers have been men, such as Galilei Galileo and Johannes Kepler. Other men have made planet discoveries. For example, William Herschel uncovered Uranus, and Clyde Tombaugh found Pluto. Recently, there has been a new "man" on the planet hunting team, and she is a "woman". Dr. Debra Fischer is a professor of astronomy at San Francisco State University. Her quest is to find planets orbiting around distant stars. Debra Fischer completed her undergraduate work in science and physics at San Francisco State.

Her search for planets began when she was a graduate student in astrophysics at the University of California, Santa Cruz. While there, she worked with astronomer Geoff Marcy. Marcy co-founded the California and Carnegie Planet Search Project with Paul Butler in 1983. The purpose of this planet hunting team was to discover extra-solar planets orbiting nearby stars. Swiss astronomers discovered the first extra-solar planet in 1995. Marcy's team validated the existence of three more planets and a multi-planet system in 1996.

Debra Fischer joined the project as a post-doctoral fellow managing the Lick Observatory in 1997. Through her work there, Fischer discovered more three

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planets herself by 1999. In order to unearth extra-solar planets, Fischer and her team at the Lick Observatory use a method known as the Doppler technique. By using an observation procedure that measures the metal content of stars, a star's velocity can be monitored. Fluctuations in the star's velocity that signal the presence of the gravitational pull from an orbiting planet.

Once a potential planet is identified, it is studied for a full orbital cycle. This process can take days or years depending on the planet's distance from the star. Over 300 exoplanets have been confirmed using this methodology. Fischer is credited with over 200 of them. She brought the world's first robotic telescope completely dedicated to finding new planets to the observatory in 2004. She still continues her work at the Lick Observatory today. Fischer's work discovering of exoplanets has led a search to find earth like planets.

She has been a strong force behind the Kepler space telescope. In 2009, NASA launched a spacecraft from Cape Canaveral to search the galaxy for planets that could possibly support life. After three years of orbiting, the Kepler telescope observations should provide a reliable number of earth-like planets that can be further studied. Fischer says the Kepler project, " will chart a course toward one day imaging a pale blue dot like our planet, orbiting another star. " Even if extra-terrestrial life is not found, its implications are profound.

Is life common throughout the galaxy or is earth the only living planet? Debra Fischer is an amazing astronomer and woman. Her quest for knowledge never ends. Her latest efforts include detecting Hot Jupiters and

Neptunes and writing computer programs modeling orbits and star velocity. Her pursuit of study continues today not only planet hunting, but also in educating others. Fischer teaches at several universities and travels as a guest lecturer. She encourages everyone she meets to reach for the stars.