

MISSOURI **S&T** Physics - The Effects of Earthquakes on Gravitational Wave Data from LIGO

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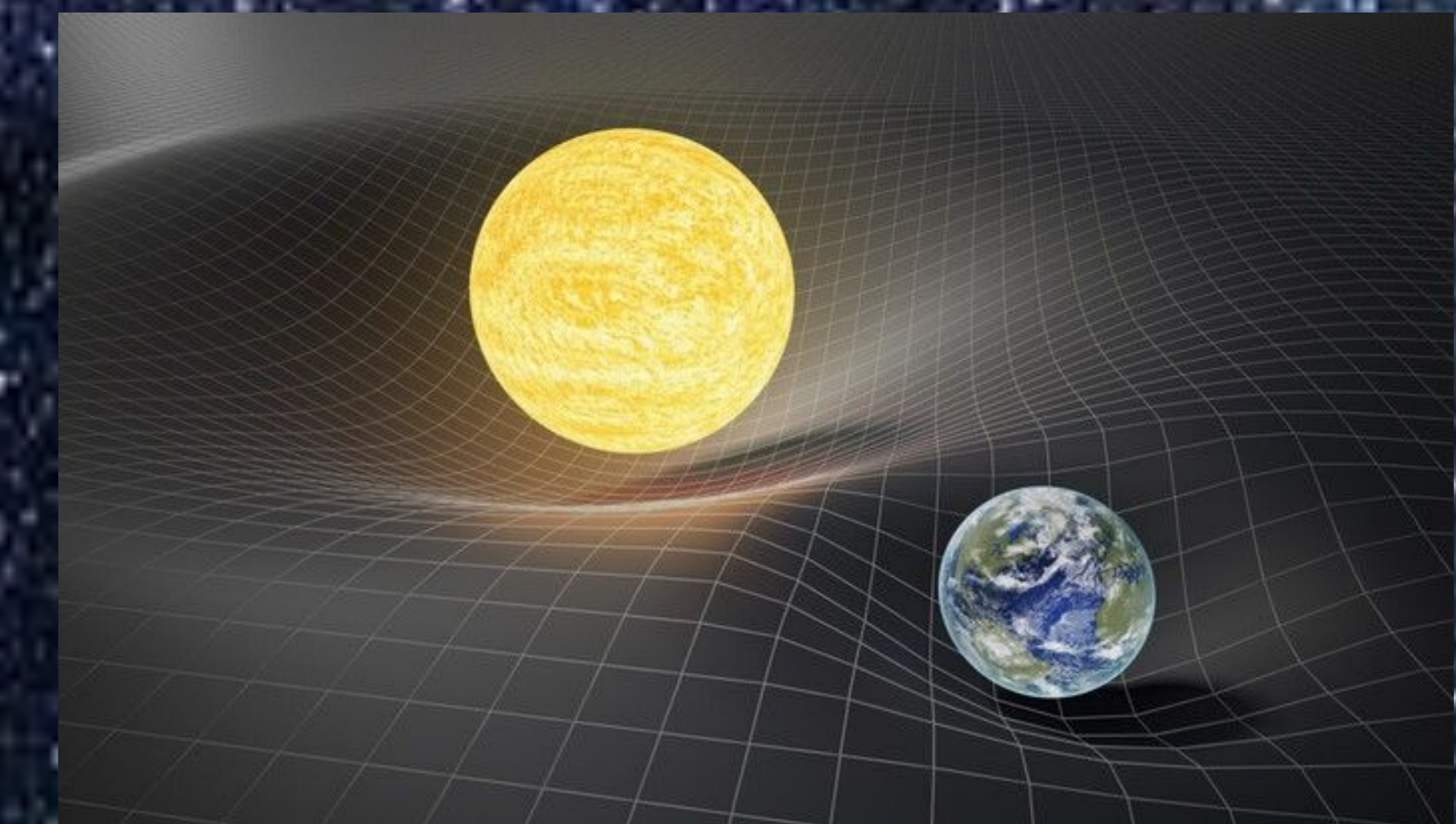
Presenter: Jackson Marlett



Project Description: LIGO is an acronym for Laser Interferometer Gravitational-Wave Observatory. LIGO is used to detect gravitational waves from the collision of two black holes orbiting each other and can detect black holes. This project investigates the impact of earthquakes on LIGO gravitational wave data.

Goals: This project aims to determine whether seismic activity impacts the accuracy of gravitational wave data during the most recent LIGO run.

Facts & Findings: I extracted a CSV file that contains earthquake data from the timeframe of the most recent LIGO run and used Python to create another CSV file that contains a GPS time column in which the UTC time column from the original file is converted to GPS time. Then, I used that file to take a sample of data that have certain characteristics and create another CSV file that contains that data.



Outcomes: Two CSV files have been created. The first one contains the data from the timeframe of the most recent LIGO run, and the other contains a sample from that data. These files make the data more accessible to Dr. Cavaglia in his research. In the future, I will use Python to make the data even more accessible.

