

A Brief Exploration of Astrophysical Applications for Terahertz Spectroscopy

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Abstract

Terahertz spectroscopy is a relatively new technology in the field of observational astrophysics. This project began by learning the uses and history of this field before applying data processing methods to data collected by ALMA. Three studies that looked at different astronomical objects/phenomena were chosen for analysis. Data was taken from the ALMA project archive and analyzed using CARTA. Methodologies were carefully recorded and further research questions were presented upon project conclusion. Areas of study include analysis of the evolution of the early universe, dust production in supernovae, and planetary atmospheres.

Due to different registration schedules amongst team members, the full report for this project was in draft form at the time of this submission (April 2021). The final project report will be submitted in May of 2021 and can be found in the WPI e-projects archive by searching the title, co-authors, or advisors. The archive can be searched [here](#).