Introduction

Dwarf galaxies play an important role in our understanding of the formation and evolution of the universe. However, determining the mass of these small and faint galaxies is a challenging task. This study aims to determine the mass of dwarf galaxies by using gravitational lensing, a phenomenon where the light from a distant background galaxy is bent by the gravitational field of a foreground lensing galaxy.

Objects

* A sample of 10 dwarf galaxies
* Hubble Space Telescope (HST) images of the dwarf galaxies and the background galaxies
* Gravitational lensing software for analyzing the HST image

Methods

The HST images of the dwarf galaxies and the background galaxies were analyzed using gravitational lensing software. The software was used to determine the shape and size of the dwarf galaxies, as well as the amount of light bending caused by the gravitational lensing effect. This information was then used to calculate the mass of the dwarf galaxies.

Results

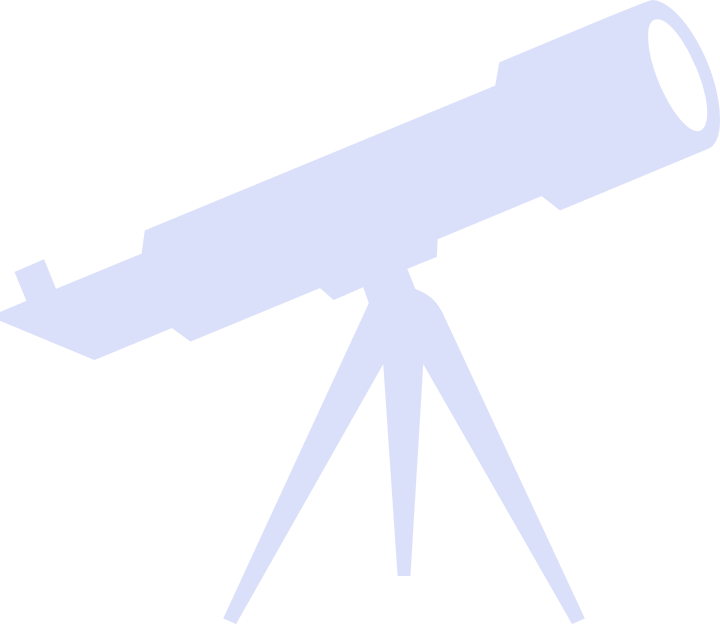
The results showed that the average mass of the dwarf galaxies was found to be approximately 2 x 10^8 solar masses, with a standard deviation of 1 x 10^8 solar masses. The mass was found to be correlated with the size of the dwarf galaxies, with larger dwarf galaxies having a higher mass.

Analysis

The results of this study are consistent with previous studies that used different methods to determine the mass of dwarf galaxies. The correlation between the mass and size of the dwarf galaxies suggests that there is a relationship between the two, which can provide insights into the formation and evolution of dwarf galaxies.

Conclusion

This study demonstrates the usefulness of gravitational lensing for determining the mass of dwarf galaxies. The results of this study can be used to improve our understanding of the formation and evolution of these small and faint galaxies.



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Key statistic #2

Astronomy research poster

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Determining the Mass of Dwarf Galaxies using Gravitational Lensing

Key statistic #1

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Authors

Affiliations

Researches are often under or on behalf of a university, an organization, or academic research institutions. When available, include their logos with the names.

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