

A NEW GRAVITATIONAL WAVE LECTURE-TUTORIAL FOR "ASTRO 101"

Poster Presentation

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Abstract:

A common approach to infusing interactive teaching methods in the traditional lecture-based introductory college astronomy course ("ASTRO 101") is to use "lecture-tutorials," 15-30-minute group-based workbook activities that are guided by educational research on content-based learning difficulties. This talk introduces a new lecture-tutorial-style gravitational wave activity that has been piloted and refined over 3 semesters at West Virginia University. The activity builds on provided lecture slides to lead students through thought-provoking questions and drawings to learn the methods of gravitational wave detection via ground-based interferometer techniques and pulsar-timing arrays. Student response and interview data are provided to illustrate the effectiveness of the activity. The activity, lecture slides, and an instructor guide will be freely provided.