

Hearing the Universe



Throughout the history of humankind, we have learned about the universe by **looking** at it: first with our eyes, then with telescopes, and more recently with radio telescopes and x-ray satellites. What we see in all of these cases is some form of **electromagnetic radiation** produced by the stars, by the galaxies, or by other material in the universe.

We are now on the threshold of learning about the universe by a totally different means: by detecting **gravitational radiation**. We know this stuff is there, and we know that (unlike electromagnetic radiation) it is produced by just about everything out there in the universe, but we haven't detected it yet. That should change very soon, in the next few years. Many of us think that gravitational radiation will become perhaps the dominant means by which we will explore and "hear" the universe this century, and on into the future.

My aim in this talk is to help the audience understand a bit about what gravitational radiation is, how we will detect it, and why it will tell us so much about the universe. In the course of doing this, I plan to give the audience a bit of a primer on general relativity, with short excursions to think about black holes, gravitational lenses, and the big bang.



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~COLLOQUIUM~

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3:00 p.m. in Boyle 155, COCC Campus

Presented by **Dr. James Isenberg**

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