



# Measured Tones

*Ian D. Johnston*

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Most books concerned with physics and music take an approach that puts physical theory before application. Consequently, these works tend to dampen aesthetic fascination with preludes burdened by an overabundance of algebraic formulae. In *Measured Tones: The Interplay of Physics and Music* Third Edition, Ian Johnston a professor of astrophysics and a connoisseur of music, offers an informal historical approach that shows the evolution of both theory and application at the intersection of physics and music. Exceptionally accessible, insightful, and now updated to consider modern technology and recent advances, the new edition of this critically acclaimed and bestselling classic

Features a greater examination of psycho-acoustics and its role in the design of MP3s

Includes expanded information on the gamelan and other Asian percussion instruments

Introduces detailed discussions of binary notation, digitization, and electronic manipulation of music

We believe that order exists, and we look for it. In that respect the aims of science and of music are identical the desire to find harmony. And surely, without that very human desire, science would be a cold and sterile undertaking.

With myriad illustrations and historical anecdotes, this volume will delight those student required to approach this topic from either a physics and music concentration, as well as anyone who is fascinated with concepts of harmony expressed in nature, as well as in the instruments and composition of human expression s purest form.

A complementary website provides sound files, further reading, and instructional support."

## Measured Tones Details

Date : Published July 16th 2011 by CRC Press (first published July 1989)

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Author : Ian D. Johnston

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Genre : Music, Science, Reference, Physics, History

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## From Reader Review Measured Tones for online ebook

### **Kaylee says**

This guy did a really good job of mixing history, physics, and music theory. It was very readable, and he warns you when he is going to explain more difficult physics concepts that you can skip if you want. And he did a better job at explaining vacuum tubes than my circuits teacher did :) I played in orchestra in high school. Now I understand band instruments much better. I don't know much about music theory, but I really enjoyed learning about it with the historical context provided.

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### **Jason says**

I have a solid science education but am semi-illiterate musically. This book explains the science behind music (and sometimes the music behind science), told as a history of the co-evolution of the two disciplines. Not only does it build a solid intuition for the how and why of musical physics, but it creates a fascination with the subject.

A few things that I learned from the book:

- \* How an opera singer can be heard over a whole orchestra
- \* How the acoustics of a theater work, and how a live audience can screw with them
- \* How standing waves can form in a pipe with open ends
- \* Why words are harder to understand the higher pitched singing becomes
- \* And so many other cool things.

I highly recommend this is you are curious at all about music.

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### **Charl(ie)es says**

Answered a few technical questions I've had about music but overall was mostly too simplistic or on occasion too complex.

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