

# REALTIVITY, GRAVITY AND THE QUANTUM

Loop Quantum Gravity and the Search  
For the Structure of Space, Time, and  
The Universe --- Jim Baggott

Please note the GLOSSARY, which will come in  
very handily, and some of the NOTES are  
explanatory rather than just source citations.

- 1.) Preface and Prologue and Chapter One  
*The Laws of Physics are the Same for Everyone*  
Pages ix to 26, total 29 pages
- 2.) Chapters Two and Three *There's No Such  
Thing as the Force of Gravity and Why  
Nobody Understands Quantum Mechanics*  
Pages 27 to 64, total 34 pages
- 3.) Chapters Four and Five *Mass ain't What  
It Used to Be and How to Fudge the  
Equations of the Universe*, pages 65 to  
106, total 41 pages.
- 4.) Chapters Six and Seven *To Get There I  
wouldn't Start from Here and A Gift From*

*The Devil's Grandmother*, pages 107 to 140, total 33 pages.

- 5.) Chapters Eight and Nine *Our Second or Third Guess Solved the Equations Exactly and I Used Every Available Keyring in Verona*, pages 141 to 182, total 41 pages.
- 6.) Chapters Ten and Eleven *Is There Really No Time like The Present and Gravitons, Holographic Physics and Why Things Fall Down* pages 183 to 222, total 39 pages.
- 7.) Chapters Twelve and Thirteen *Fermions, Emergent Particles and the Nature of Stuff and Relational Quantum Mechanics and Why 'Here' Might Actually be 'Over There'*, pages 223 to 262, total 39 pages.
- 8.) Chapters Fourteen and Fifteen *Not With a Bang: The 'Big Bounce', Superinflation and Spinfoam Cosmology and Black Hole Entropy, the Information Paradox and Planck Stars*, pages 263 to 306, total 43 pages.

9.) Chapter Sixteen and the Epilogue *Close to the Edge: The Reality of Time and the Principles of the Open Future and Like Being Roped Together on a Mountain*, pages 307 to 336, total 29 pages.

10.) The chances that the above nine subject matters will be presented and discussed in exactly 810 minutes is negligible, so very likely we will 'catch up' during the last meeting and reprise the course contents.

My email address is [jbjread@gmail.com](mailto:jbjread@gmail.com). If you have questions feel free to email.

*SCIENTIFIC NOTATION:*

*One thousand (1,000) is  $1 \times 10^3$*

*One trillion (1,000,000,000,000) is  $1 \times 10^{12}$*

*One billionth (0.000000001) is  $1 \times 10^{-9}$*