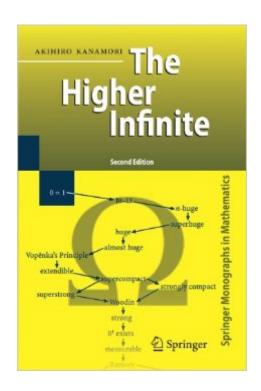
## The book was found

# The Higher Infinite: Large Cardinals In Set Theory From Their Beginnings (Springer Monographs In Mathematics)





# **Synopsis**

This softcover reprint of a popular reference provides a comprehensive account of the theory of large cardinals from its beginnings and some of the direct outgrowths leading to the frontiers of contemporary research.

### **Book Information**

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### Customer Reviews

This book is for set theorists, budding set theorists, and mathematicians with an avid interest in large cardinal theory. Kanamori's book updates and for the most part replaces his two earlier well-known surveys that he co-authored with Magidor, Reinhardt, and Solovay. While most of that earlier material does appear in this new book, he also includes recent developments in those same areas as well as a great deal of new material that emerged in the 1980s (most notably, the profound connection between large cardinals and descriptive set theory). Well, as a researcher in the theory of large cardinals, I feel Kanamori's book is unquestionably a "must-have". Since I got the book, I have used it as an important reference in every paper I've written. It's filled with fine points, excellently explained, concerning virtually every area of importance in large cardinal research. And so far, I haven't found any errors (needless to say, this is quite phenomenal for a book of this size and technical depth). Here's an overview of the topics covered: Weak compactness, partitions, trees, and 0#. Forcing and sets of reals (introducing descriptive set theory and forcing in an excellent way). Saturated ideals, measurability and forcing, iterated ultrapowers. Supercompacts and strong

cardinals, extendibles, almost huge and huge cardinals, axioms I\_3 to I\_0, and combinatorics of P\_.

He concludes with a treatment of the celebrated Martin-Steel-Woodin results on the consistency of PD and AD with many Woodin cardinals.

I'm a graduate student in set theory and I'm finding Kanamori an excellent follow-up to Kunen. The book manages to combine detailed technical exposition with historical insight which is actually useful to understanding the material (not just a list of dates) and gives one a "feel" for the subject. Occasional excersises are contained which are good to help check if you're keeping up (though sometimes the hints are a little too complete: it might be better if these were relegated to an appendix). More exercises would have improved this book. I believe this is pretty much the only book in which much of this material is collected together, so it's pretty much essential to any-one seriously interested in Set Theory. I await the promised second and third volumes with anticipation!

This book deals with large cardinals and their connection with the axiom of determinacy. The author put a lot of thought into presenting an important part of set theory in a very well written form. The disappointment comes with what is not written. The book fails short of presenting the current state of the art in the field of large cardinals, or even presenting material which has been known for quite a while. Particularly thin is the presentation of forcing. Combinatorial set theory does not figure in the least in this book, as if large cardinals did not have anything to do with it. It is true that a future volume is promised in which "a wide range of forcing consistency results" will be presented, but it is also true that the book claims to have been written as a "genetic account through historical progression", and without much more forcing- well, this simply is not the case. A book which claims (both explicitly and implicitly) to record history, should do so without pushing the interests of the author over the truth of mathematics.

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