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The Great Collapse

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Propositions associated with the thesis

“The Great Collapse”

1. When setting up initial conditions for an N-body simulation, careful attention must be paid to the chosen virial ratio. (*Chapter 2*)
2. If HLX-1 and M82 X-1 are intermediate mass black holes, then there are likely to be of order one hundred million such black holes within 100 Mpc. (*Chapter 4*)
3. Rapid mass segregation in collapsing clusters occurs primarily as the system becomes very dense. (*Chapter 3*)
4. The supernova progenitor of a millisecond pulsar can cause interesting dynamical interactions and lead to unexpected companion configurations. (*Chapter 5*)
5. Classifications often outline our own ignorance.
6. There are no such things as software bugs, only functions that execute as programmed.
7. With simulations, the devil is in the initial conditions.
8. One of the greatest challenges facing astronomy today is not how to get the data, but what to do with it.
9. Over-reaching and unchecked surveillance leads to a suppression of freedoms, not a protection of them.
10. Raising children is an immense challenge, but worth much more than every effort required.
11. God and science are not at odds with one another, rather they are in harmony, though the same is not always true of religion.

Daniel P Caputo,
Leiden, January 2015