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How dark matter came to matter

A history of missing mass, 1930-1974

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A History of Missing Mass, 1930-1974

JACO DE SWART

HOW DARK MATTER CAME TO MATTER

How Dark Matter Came to Matter
A History of Missing Mass, 1930-1974

ACADEMISCH PROEFSCHRIFT

ter verkrijging van de graad van doctor
aan de Universiteit van Amsterdam
op gezag van de Rector Magnificus
prof. dr. ir. Karen Maex

ten overstaan van een door het College voor Promoties ingestelde commissie,
in het openbaar te verdedigen in de Aula der Universiteit
op vrijdag 4 februari 2022, te 11.00 uur

door Jacobus Gerardus de Swart
geboren te Groesbeek

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100% agricultural waste and is fully compostable.

Whereas the role of science is to reveal what we do not see,
the role of philosophy is to let us see what we see.

– Michel Foucault 1994: 3.540-541

A process cannot be understood by stopping it. Understanding
must move with the flow of the process, must join it and flow
with it.

– The First Law of Mentat (Frank Herbert 1984: 34)

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This thesis is about things in the cosmos that we cannot see. But it is not only the cosmos that goes largely unseen. Much of what constitutes one's existence is often hidden from view, and so too are many things that helped constitute this thesis. Friends, family, colleagues, neighbours and others have supported, inspired and helped me in the writing of this manuscript over the past five years. They have my immense gratitude and deserve to be visible.

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I have been roaming around the Institute of Physics for over ten years. And although I was the odd philosopher out, I have always felt at home – not the least due to Joost and the lovely secretariat. Thank you! Thanks to the wonderful people at GRAPPA for having me around and letting me bother them with my many peculiar questions. And I am grateful to my former colleagues (and students!) at the Institute voor Interdisciplinaire Studies, the most warmhearted place on Science Park.

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J.G. DE SWART

Amsterdam
January 2022

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