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Lights in a sea of darkness: constraining the nature and properties of dark matter using the stellar kinematics in the centres of ultra-faint dwarf galaxies

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LIGHTS IN A SEA OF DARKNESS

Lights in a Sea of Darkness

Constraining the Nature and Properties of Dark Matter using the Stellar Kinematics in the Centres of Ultra-Faint Dwarf Galaxies

Proefschrift

ter verkrijging van
de graad van doctor aan de Universiteit Leiden,
op gezag van rector magnificus prof. dr. ir. H. Bijl,
volgens besluit van het college voor promoties
te verdedigen op woensdag 14 december 2022
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door

Sebastiaan Leonard Zoutendijk
geboren te Leiden
in 1994

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COVER IMAGE: Visualization of member stars of Eridanus 2 that are both used in the analyses of Chapters 3–5 and located within the observational footprint of MUSE-Faint. The sizes of the symbols approximate the expected visible area on the sky, calculated from *HST*/ACS source magnitudes and the MUSE-Faint point-spread function.

FRONTISPIECE: Composite-colour MUSE-Faint image of Eridanus 2, using SDSS *i*, *r*, and *g* colours for the red, green, and blue channels, respectively (Fig. 1.3).

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Ook het pogen is schoon ; zoo ergens, dan geldt dat hier, waar wij de diepten van het Heelal gaan peilen. […] *Neen, laten wij liever zeggen : vooral het pogen is schoon.*
– A. A. Nijland (1924). *De Bouw van het Heelal*. Haarlem, Netherlands: Bohn, pp. 1–2

There is beauty in the attempt, too; if anywhere, that applies here, where we will sound the depths of the Universe. […] No, let us rather say: there is beauty in the attempt, above all.

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