



LEIDEN UNIVERSITY

# Study of BCG-Subtracted Images of Nearby Clusters

by

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*“We are just an advanced breed of monkeys on a minor planet of a very average star. But we can understand the Universe. That makes us something very special.”*

Stephen Hawking

# *Abstract*

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The mt all.

# *Acknowledgements*

I would like to thank my advisor king on...

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*Dedicated to my parents, whose love and support are my biggest  
motivation. . .*



# Chapter 1

## Introduction

Old

## Chapter 2

# Theoretical Framework

Typ old globular clusters as a whole and then focus explicitly to this Globular Cluster.

### 2.1 Basics of Globular Clusters

Glas.



**FIGURE 2.1:** GlobulASA

T

$$I(R)\sigma_p^2(R) = \frac{2}{\Gamma} \int_R^\infty \left(1 - \beta \frac{R^2}{r^2}\right) \frac{\nu \bar{v}_r^2 r dr}{\sqrt{r^2 - R^2}} \quad (2.1)$$

Whuster.

## Chapter 3

# Observations and Analysis

In er.

## Chapter 4

# Modelling

We used various techniques for the mass modelling of  $\omega$  Centauri, so that we could make a good approximation to its dynamic and stellar mass. In order to do this, we decided to use two components (the stellar and dark matter mass) both following the functional form of the Hernquist profile. In this chapter we present the results of such modelling and hapter.

## Chapter 5

# Conclusions

Thes.

# Bibliography

- [1] Michael J. Kurtz, Douglas J. Mink. *RVSAO 2.0: Digital Redshifts and Radial Velocities*. Harvard-Smithsonian Center for Astrophysics, Cambridge, MA 02138, 1993.
- [2] Roueff F., Salati P., Tillet R. *The velocity dispersion profile of globular clusters: a closer look*. preprint astro-ph/9707174v1.
- [3] Binney J., Tremaine S.. *Galactic Dynamics*. Princeton University Press, 1994.
- [4] <http://news.ucsc.edu/2014/11/globular-clusters.html>
- [5] R. Ibata, C. Nipoti, A. Sollima et. al. *Do globular clusters possess Dark Matter halos?*. MNRAS, Ras 2012.