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## **Starlight beneath the waves : in search of TeV photon emission from Gamma-Ray Bursts with the ANTARES Neutrino Telescope**

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# *Curriculum vitae*

IT WAS not really clear in the beginning that I was going to become an astronomer. In 1983, when I was 2 year old, a total solar eclipse passed through Java. My family, against the dictatorial New Order regime's warning to remain at home and not observe the eclipse, went to the countryside and observed the eclipse. My two-year-old self was unable to appreciate the significance of this event, and later on photos of a whining and crying two-year-old me adorned the family album along with the neatly taken photos of the eclipse.

My family's second attempt to fascinate me with the universe also failed spectacularly. During a trip to the Jakarta Planetarium, my fear of darkness overcame me and I cried so hard that the show narrator had no other choice but to politely ask my parents to take me out of the show. My father took me out and I can still remember my father comforting me at the steps of the Planetarium, possibly whispering to me that darkness is not something to be feared, but something to be understood.

It was years later, at age 14, after reading so many books on the solar system, the night sky, and the universe, that my fascination with astronomy grew. I did manage to overcome my fear of darkness and to go back to the Planetarium and watched all 16 episodes, which changed weekly. In my high-school years, Carl Sagan's inspirational TV series *Cosmos* and novel *Contact* gave me the final push towards my decision to pursue a career in astronomy.

I WAS admitted in 1999 to the Department of Astronomy of the Bandung Institute of Technology (ITB), the only place in Indonesia to pursue a higher education in Astronomy. I graduated in 2006 after writing a Bachelor thesis on the kinematics of the solar neighborhood, under the supervision of Moedji Raharto. In the same year I was admitted to the two-year Master program of Leiden Observatory. The Leids Universiteits Fonds provided me with a scholarship for the first year of my study.

The international environment of the Observatory and the high-traffic of astronomers passing through to give colloquia and lec-

tures provided me with an excellent opportunity to experience state-of-the-art astronomical research, on top of the courses given by the excellent faculty members. In Leiden I performed two research projects. The first one involved a search for hypervelocity stars using astrometric catalogues, supervised by Anthony G.A. Brown and Yuri Levin. In the second project I performed a kinematic study of stars in the Galactic bulge, supervised by Koen Kuijken.

IN 2008, a newly-appointed Leiden professor, Maarten de Jong, offered me to become his PhD student and work with the data from the then nearly-completed ANTARES neutrino telescope. I accepted his offer and started to investigate the prospect and possibility of operating ANTARES as a  $\gamma$ -ray observatory, which has now become this dissertation. I was attached to the Department of Physics of Leiden University as well as the National Institute for Subatomic Physics (Nikhef) in Amsterdam.

Working within the ANTARES Collaboration allowed me to work together with other European scientists and to report my results within the Collaboration in several European cities. As a member of the Collaboration I was also required to do shift duty, which involved managing the data taking of ANTARES for a full week. I did this duty numerous times, both remotely and on-site. I was also given the chance to participate in schools such as the Nijmegen Astroparticle Physics School in 2009 and the 40th Saas-Fee Advanced Course in 2010 on astrophysics at very-high energies. I also presented my research in two international symposia, the TeV Particle Astrophysics (TeVPA) 2011 in Stockholm, Sweden, and the International Astronomical Union (IAU) Symposium No. 279 in Nekkō, Japan.

WHEN my PhD research was nearly concluded, I was happy to accept the offer made by Coryn Bailer-Jones from the Max Planck Institute for Astronomy (MPIA) in Heidelberg, Germany, to become his postdoctoral researcher and work with him to develop machine-learning algorithms for automatic classification of objects to be observed by the *Gaia* satellite. From September 2012 onward I am involved in this exciting research project.