Focal-plane wavefront sensors for direct exoplanet imaging: theory, simulations and on-sky demonstrations

Bos, S.P.

Focal-plane wavefront sensors for direct exoplanet imaging

Theory, simulations and on-sky demonstrations

Proefschrift

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	Dr. Sandrine Thomas	Vera C. Rubin Observatory

Voor mijn ouders
&
Voor Charlotte

Don’t quit

“When things go wrong as they sometimes will,
when the road you’re trudging seems all up hill,
when the funds are low and the debts are high
and you want to smile, but you have to sigh,
when care is pressing you down a bit,
rest if you must, but don’t you quit.
Life is strange with its twists and turns
as every one of us sometimes learns
and many a failure comes about
when he might have won had he stuck it out;
don’t give up though the pace seems slow–
you may succeed with another blow.
Success is failure turned inside out–
the silver tint of the clouds of doubt,
and you never can tell just how close you are,
it may be near when it seems so far;
so stick to the fight when you’re hardest hit–
it’s when things seem worst that you must not quit.”

–John Greenleaf Whittier

Cover design: Artistic representations of the metaphorical mountains that I have climbed during my academic career and would clime if I had chosen to stay. On top of these mountains are the telescopes that I (would) have observed with during the different phases in my career. Also shown are two of the (in my opinion) most impressive objects and phenomena in astronomy: the Andromeda galaxy and a solar eclipse.
Back cover: The mountain on the left represents my Bachelor's and has the Isaac Newton Telescope (La Palma) on top. Also placed on this mountain is my personal Meade ETX-125 telescope pointed at the Andromeda galaxy. The mountain on the right represents my Master's with the William Herschel Telescope telescope (La Palma). Shown in the upper left is a solar eclipse with the Minnaert and Van de Hulst neutral points denoted as white points. In the lower right I placed the Leiden Eclipse Imaging Polarimeter, which is the instrument we used to observe these neutral points in polarized light. In the upper right is the Andromeda galaxy, which is the most distant object that can be observed with the naked eye.
Front cover: The mountain on the left represents my PhD. The telescopes placed on top are the Subaru telescope (Hawaii) and the Keck telescopes (Hawaii). Also shown on the top of this mountain is a group of people observing the Andromeda galaxy. The mountain on the right represents the career in astronomy that I would have had if I decided to stay in astronomy. The Extremely Large Telescope (Chile), currently under construction, is placed on top.

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