

# Contents

<b>1. Introduction</b>	<b>1</b>
1.1. Motivation . . . . .	1
1.2. Stellar and planet formation . . . . .	2
1.3. Substructures in planet-forming disks . . . . .	4
1.4. Observational strategy: technique and sample . . . . .	7
1.4.1. The DSHARP sample . . . . .	7
1.4.2. Direct Imaging . . . . .	10
<b>2. Observations</b>	<b>13</b>
2.1. L' observations with VLT/NaCo . . . . .	13
2.2. ADI reduction . . . . .	16
<b>3. Detection limits of the sample</b>	<b>20</b>
3.1. Mass and contrast detection limits . . . . .	20
3.2. Detection Probability Maps . . . . .	21
<b>4. Point-source detections</b>	<b>23</b>
4.1. RU Lup . . . . .	24
4.2. Elias 24 . . . . .	25
<b>5. Discussion</b>	<b>28</b>
5.1. Planet-Disk interaction . . . . .	28
5.2. Circumplanetary disk effects . . . . .	32
5.3. Extinction from planet-forming disk material . . . . .	34
<b>6. Conclusion</b>	<b>35</b>
6.0.1. Future work . . . . .	36
Acknowledgements . . . . .	37
<b>Bibliography</b>	<b>38</b>
<b>Appendix A. ADI reductions</b>	<b>52</b>