

# Appendix A

## Thesis data

This appendix contains the majority of the images and spectra of Titan analysed in this dissertation, in their most useful reduced and calibrated form. The data can be obtained from the following websites:

- <http://www.gps.caltech.edu/~antonin/thesis/>
- [http://www.gps.caltech.edu/~titan/bouchez\\_thesis/](http://www.gps.caltech.edu/~titan/bouchez_thesis/)

or directly from the author.

### A.1 Spatially resolved spectra

This section contains the photometrically calibrated AO spectra of Titan which were analysed in Ch. 3. These data are available in the form of reduced long-slit spectra of chords across Titan's disk (two-dimensional FITS files) in which each row represents a spectrum of a distinct location on Titan.

### A.2 20 December 2001 occultation

This section contains MPEG movies of the occultation image sequence, and the astrometric and photometric analysis of each frame as described in Ch. 4. The data are available in the form of a 4100-line ASCII table, whose columns are as follows:

1. Image filename.
2. UTC from image header, **hh:mm:ss**.

3. Interpolated UTC midpoint time of frame, decimal hours.
4. Identifies which star is used as reference (columns 5–10 of this table). 1 = star A (western, brighter), 2 = star B (eastern, fainter).
- 5–6.  $x_{\text{det}}$  centroid location of reference star on detector,  $1\text{-}\sigma$  uncertainty.
- 7–8.  $y_{\text{det}}$  centroid location of reference star on detector,  $1\text{-}\sigma$  uncertainty
- 9–10. Normalized flux of reference star ( $\equiv 1.0$ ),  $1\text{-}\sigma$  uncertainty ( $\equiv 0.0$ ).
- 11–12.  $x_{\text{det}}$  centroid location of near-limb refracted image on detector,  $1\text{-}\sigma$  uncertainty.
- 13–14.  $y_{\text{det}}$  centroid location of near-limb refracted image on detector,  $1\text{-}\sigma$  uncertainty.
- 15–16. Flux of near-limb refracted image relative to reference star,  $1\text{-}\sigma$  uncertainty.
- 17–18.  $x_{\text{det}}$  centroid location of far-limb refracted image on detector,  $1\text{-}\sigma$  uncertainty.
- 19–20.  $y_{\text{det}}$  centroid location of far-limb refracted image on detector,  $1\text{-}\sigma$  uncertainty.
- 21–22. Flux of far-limb refracted image relative to reference star,  $1\text{-}\sigma$  uncertainty

### A.3 Adaptive optics and speckle images at $2\ \mu\text{m}$

This appendix contains the 24 adaptive optics and speckle interferometric images of Titan analysed in Ch. 6, as well as the additional 4 adaptive optics images presented in Ch. 5. They are available as FITS and JPEG format images, with relevant ephemeris information.