

MODS Optical Performance Figures

2001 June 11

This document presents a series of diagrams illustrating the performance of the MODS optics. For each camera and mode (imaging and spectroscopy), we present plots of D_{80} (80% encircled energy diameter) as a function of field/slit position and wavelength and more traditional “spot” diagrams.

1.1 Imaging Performance

Imaging performance is evaluated in standard UBVRI filter bandpasses. Optimal focus is chosen for 4×4' and 2×2' “AO” fields of view (the latter Red channel only).

Unless otherwise noted, Blue camera imaging performance is evaluated in the UB filters, while the Red camera performance is evaluated for the VRI filters.

1.1.1 MODS Blue Camera

14:23:09

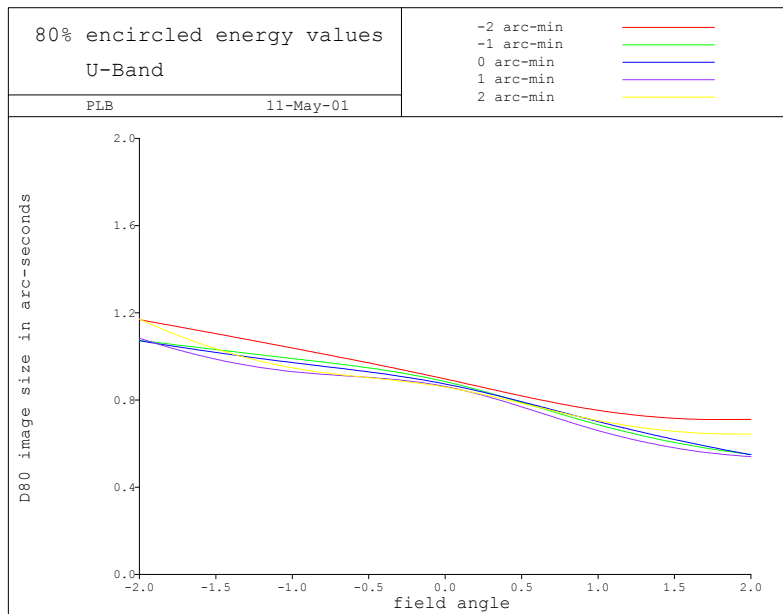


Figure D.1: D_{80} for the U-band (340nm) at optimal focus for 4x4' FOV.

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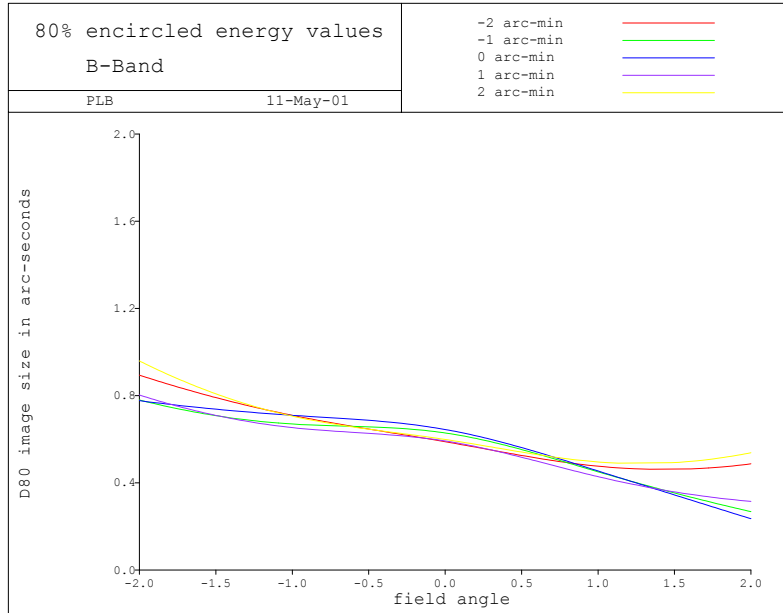


Figure D.2: D_{80} for B-band (440nm) at optimal 4x4' FOV focus.

14:29:37

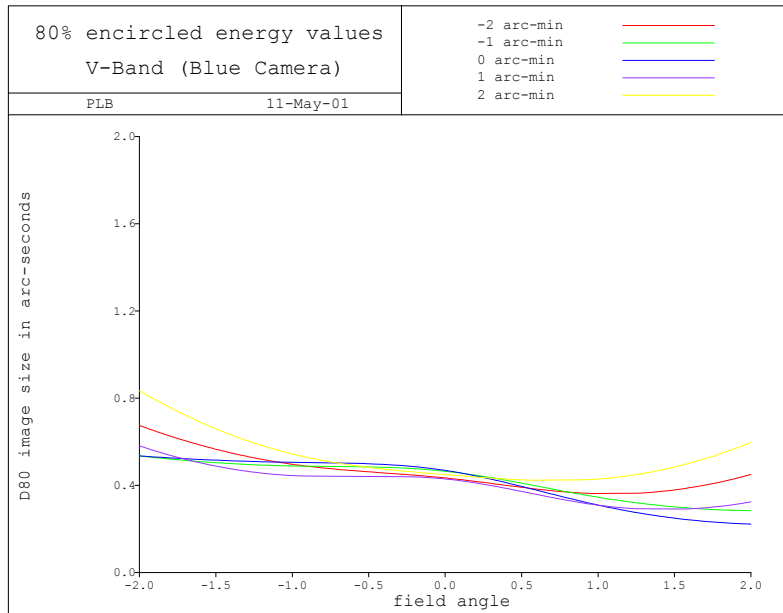


Figure D.3: D_{80} for V-band (550nm) at optimal 4x4' FOV focus.

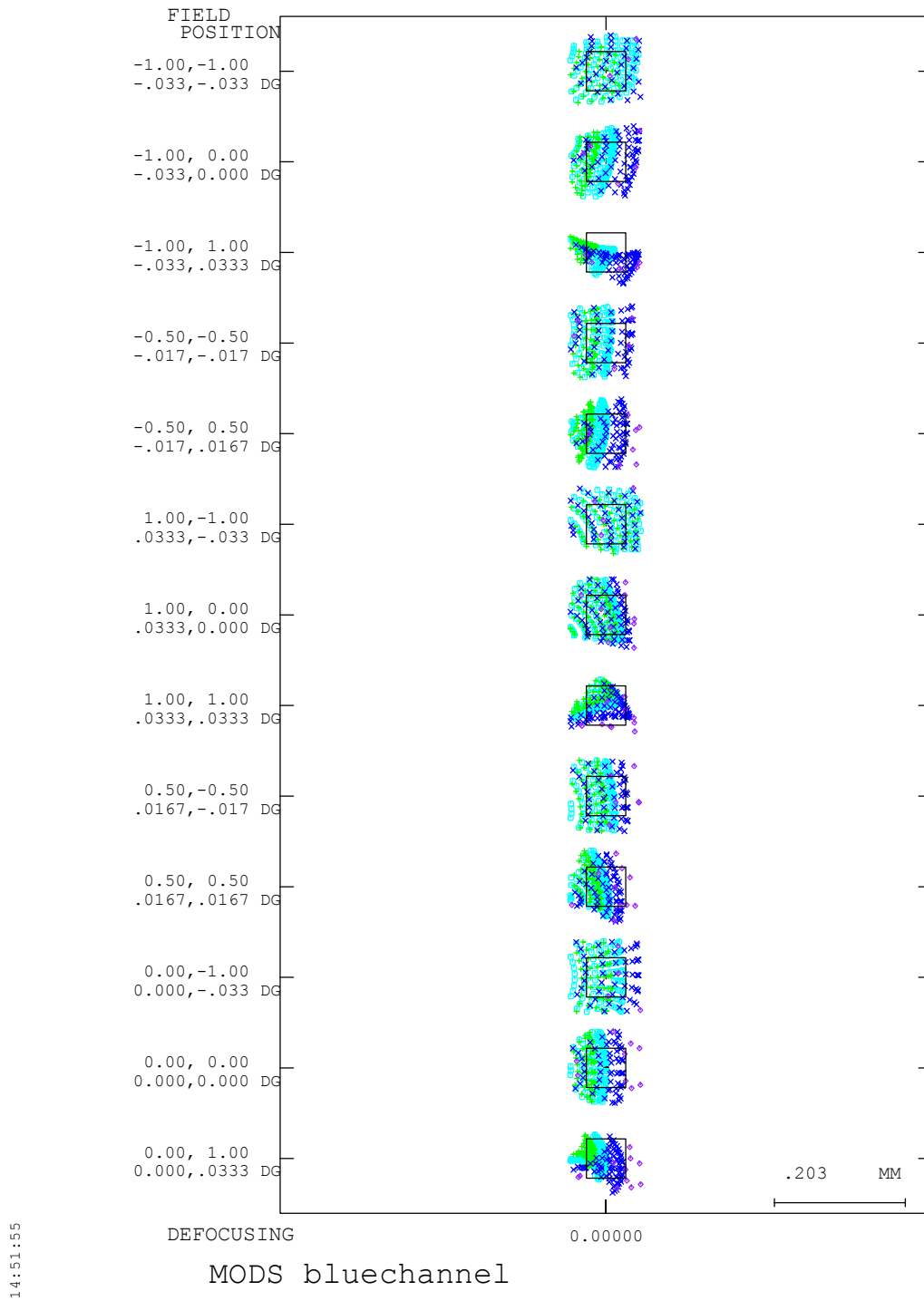


Figure D.4: Spot diagrams for the U-band imaging

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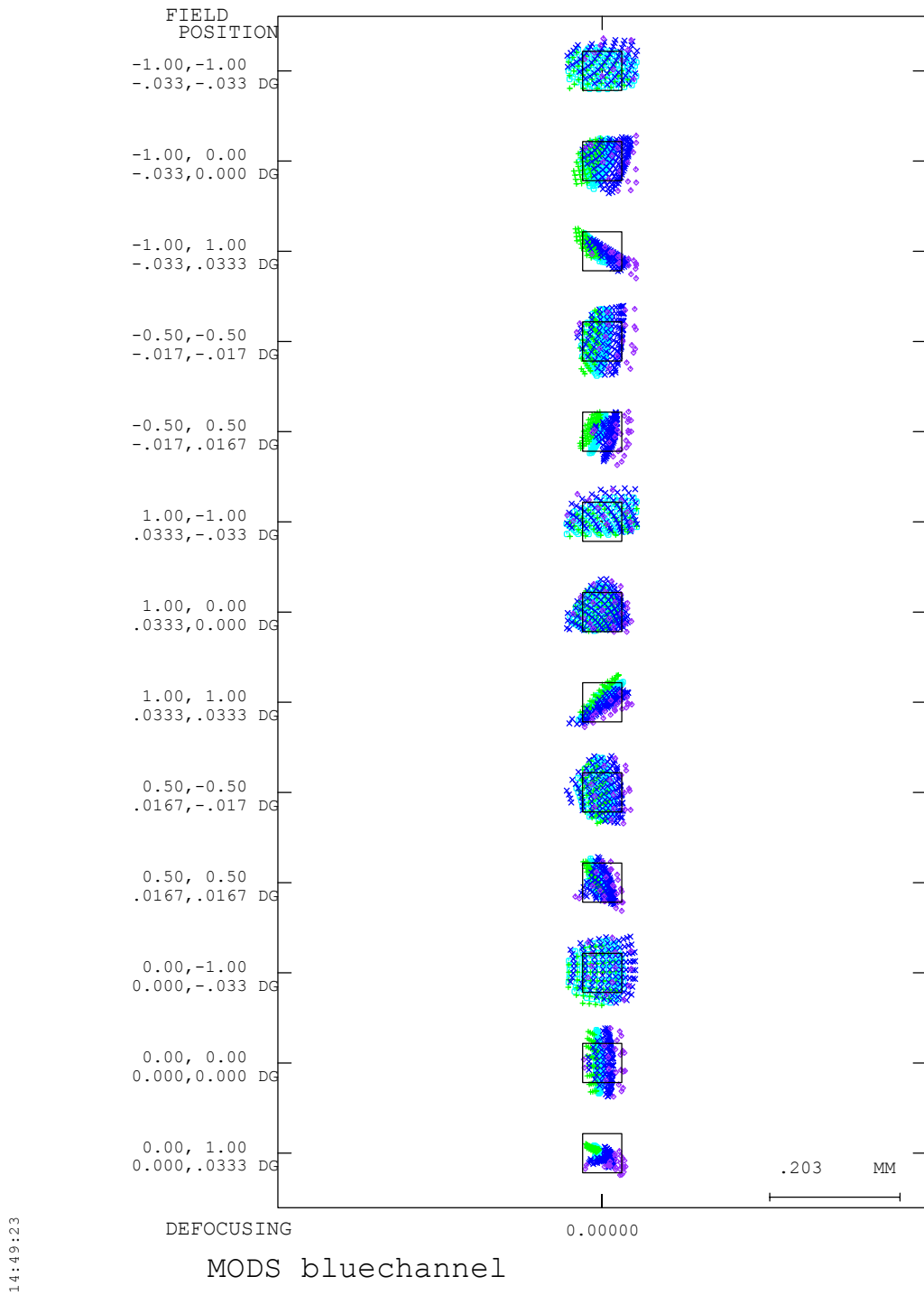


Figure D.5: Spot diagrams for B-band imaging.

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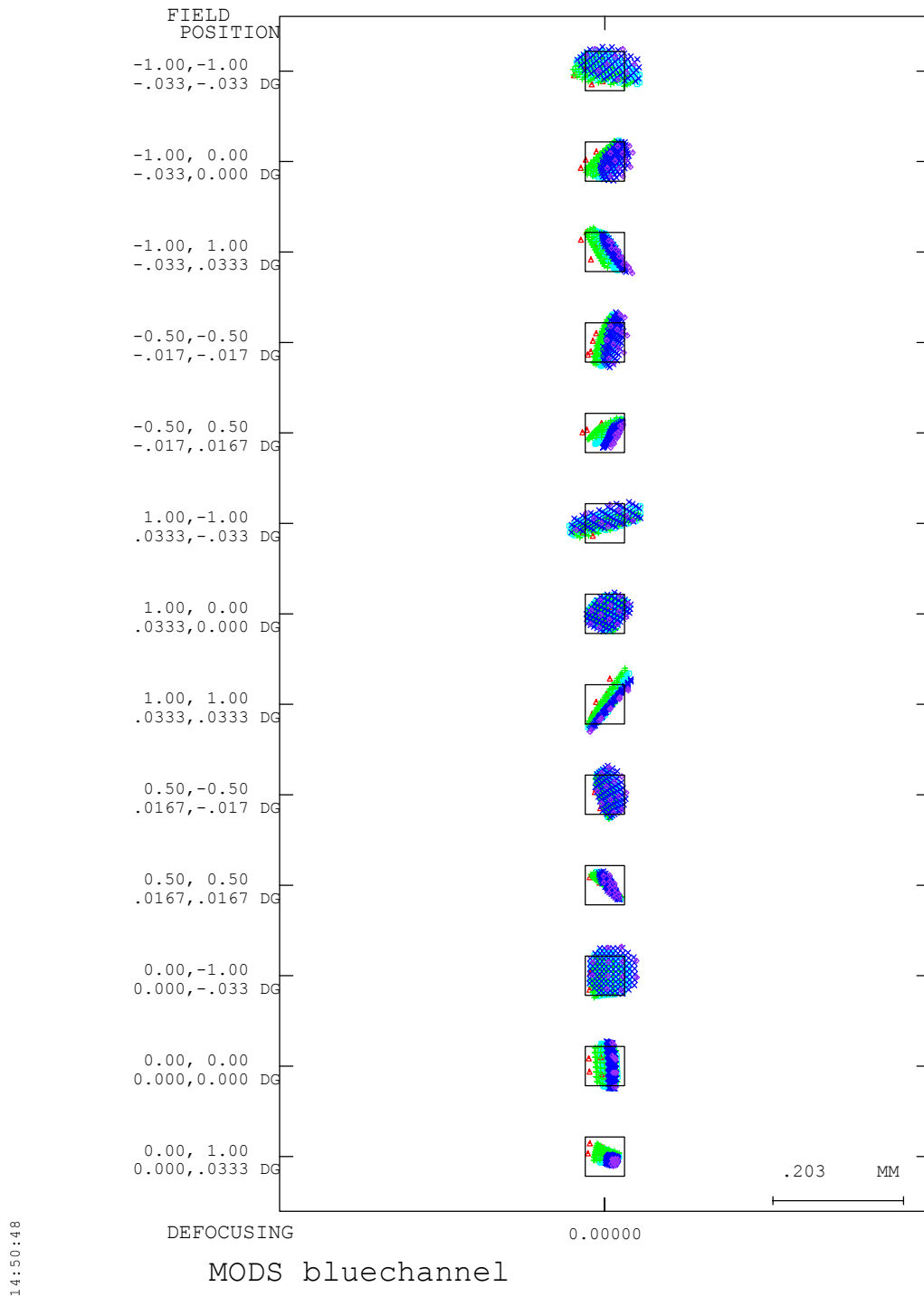


Figure D.6: Spot Diagrams for V-band imaging.

1.1.2 MODS Red Camera

14:33:59

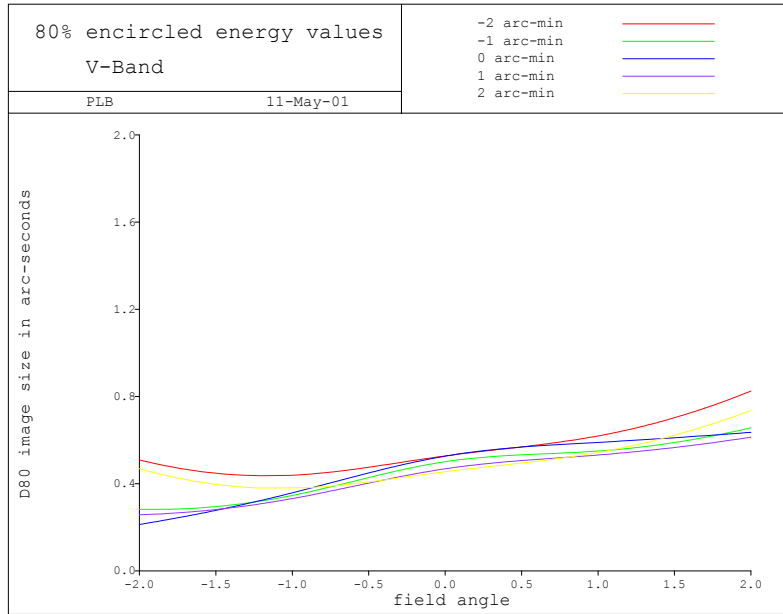


Figure D.7: D80 for MODS Red camera in V-band (550nm) at optimal 4x4' FOV focus.

14:36:03

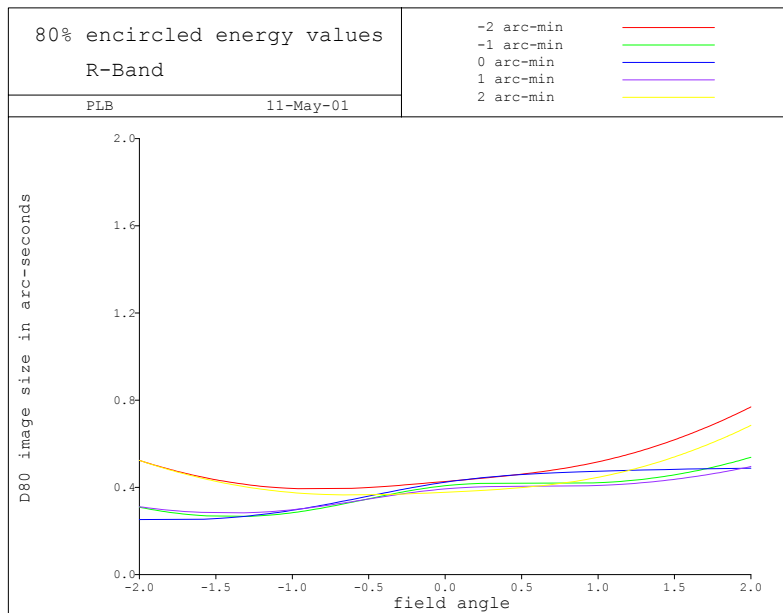


Figure D.8: D80 for the R-band (640nm) at optimal 4x4' FOV focus.

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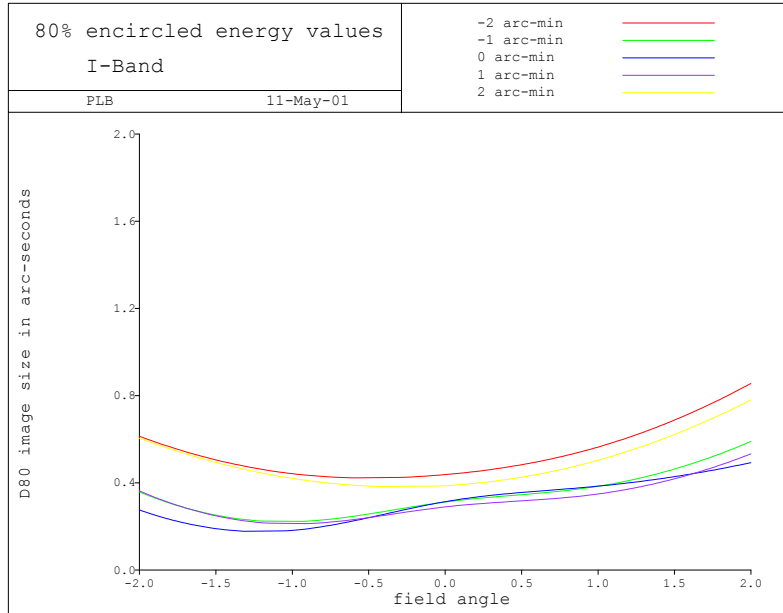


Figure D.9: D80 for the I-band (790nm) at optimal 4x4' FOV focus.

15:30:11

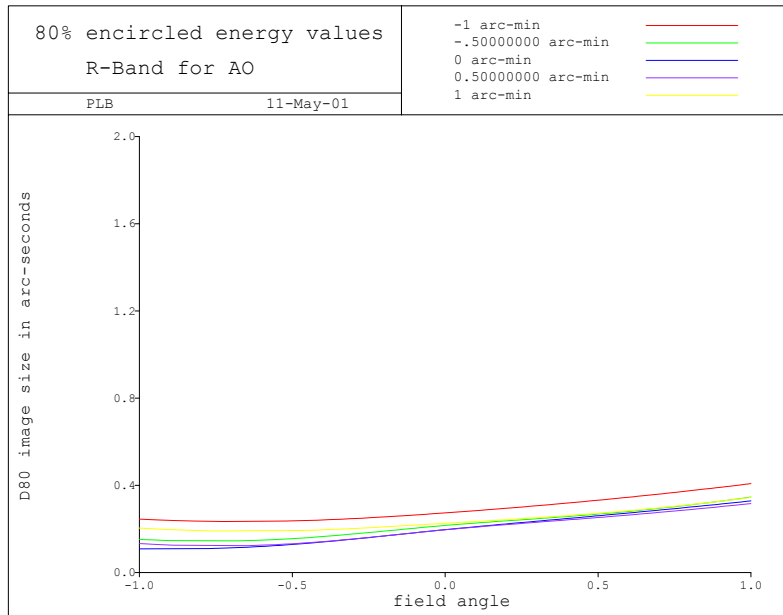


Figure D.10: D80 for R-band at the best-focus for a 2x2' FOV "AO" imaging mode.

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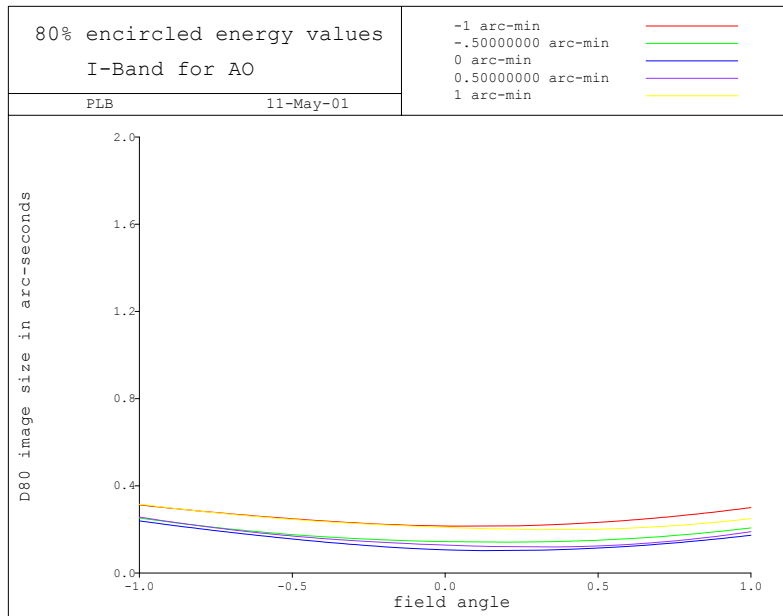


Figure D.11: D80 for I-band for the 2x2' FOV "AO" best-focus.

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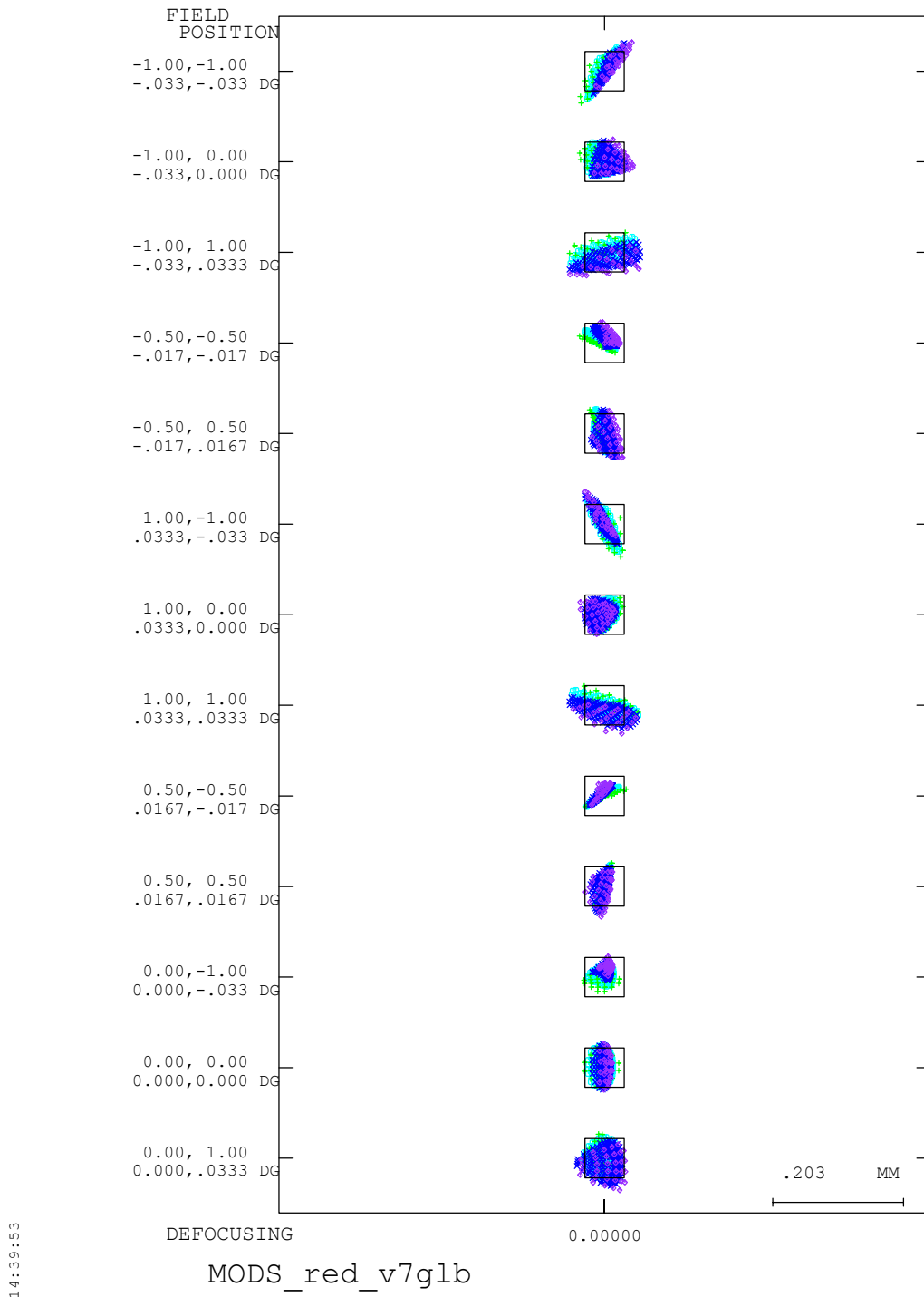


Figure D.12: Spot diagrams for the Red Camera in the V-band (optimal 4x4' FOV focus).

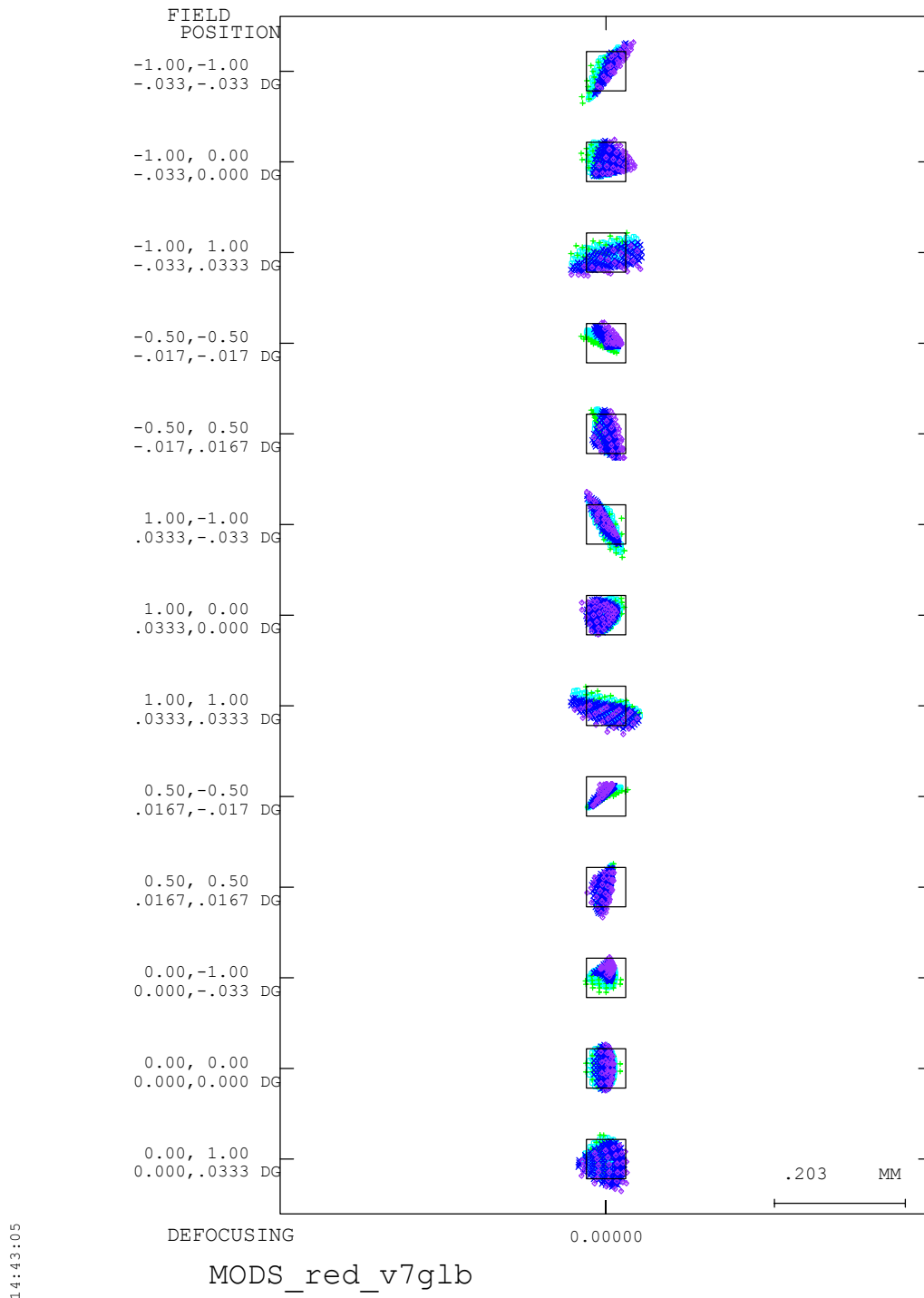


Figure D.13: Spot diagram for the R-band.

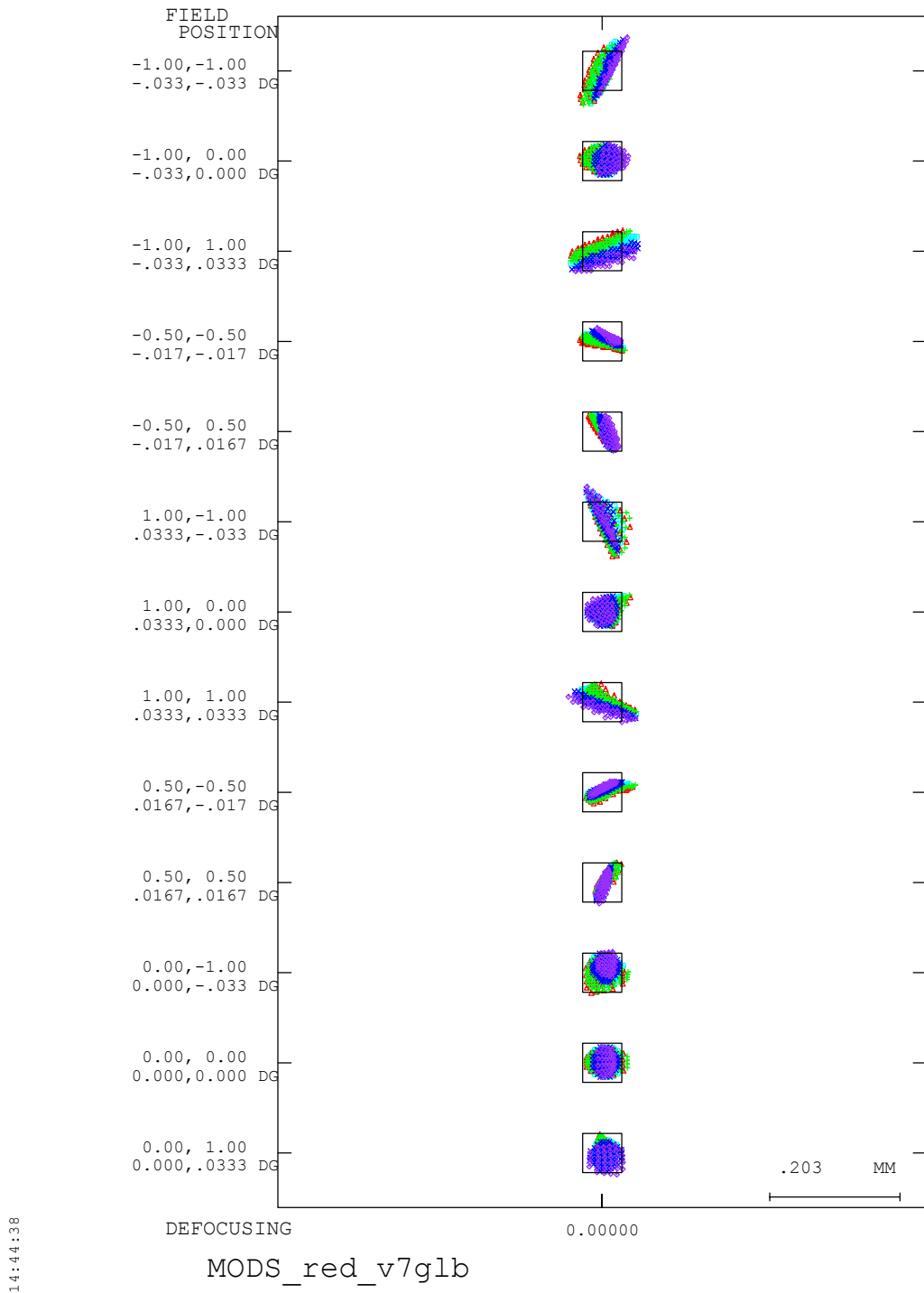


Figure D.14: Spot diagram for the I-band.

1.2 Spectroscopic Performance

Spectroscopic performance is show graphically in two ways:

1. D80 as a function of wavelength measured along the slit at optimal focus for 6', 4', and 2' long-slits.
2. Monochromatic Spot diagrams as a function of slit position.

1.2.1 MODS Blue Channel

10:18:08

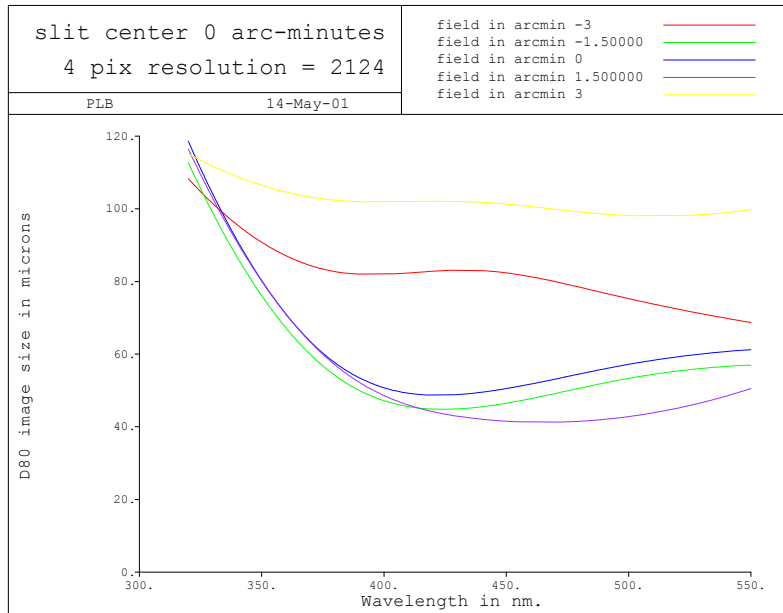


Figure D.15: D_{80} as a function of wavelength for the blue camera and an optimally focused 6' long slit.

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10:16:47

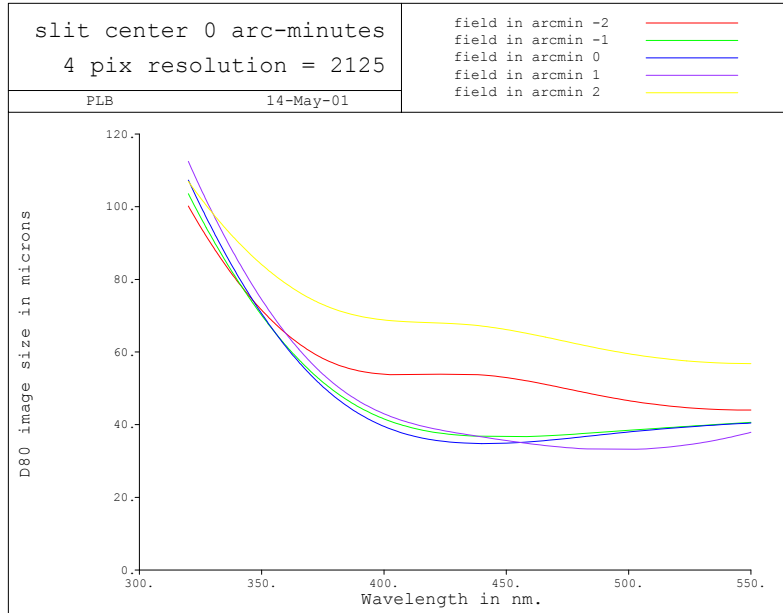


Figure D.16: D_{80} with wavelength for the blue camera and an optimally-focused 4' long slit.

10:14:36

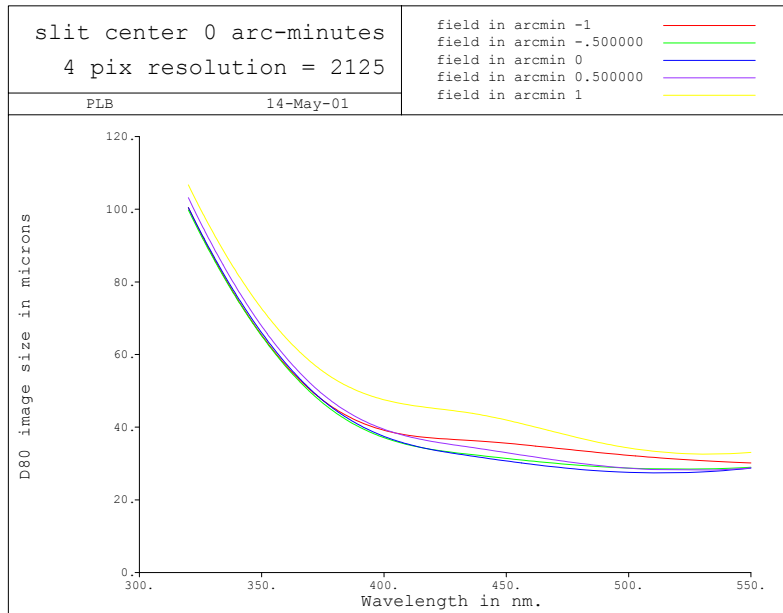


Figure D.17: D_{80} with wavelength for the blue camera and an optimally-focused 2' long slit.

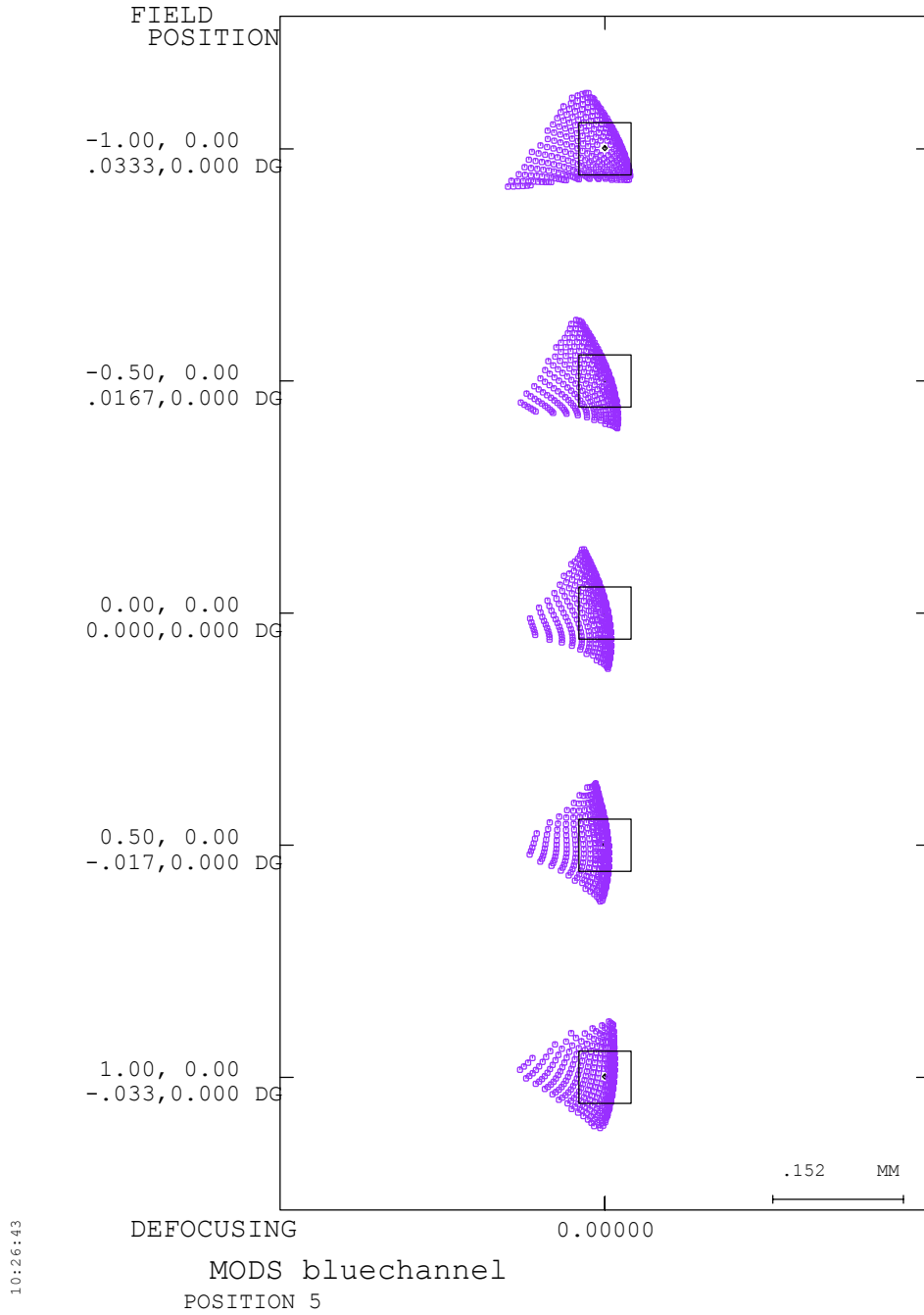


Figure D.18: Blue Camera spot diagrams for $\lambda=320\text{nm}$ and an optimally-focused 4' long slit.

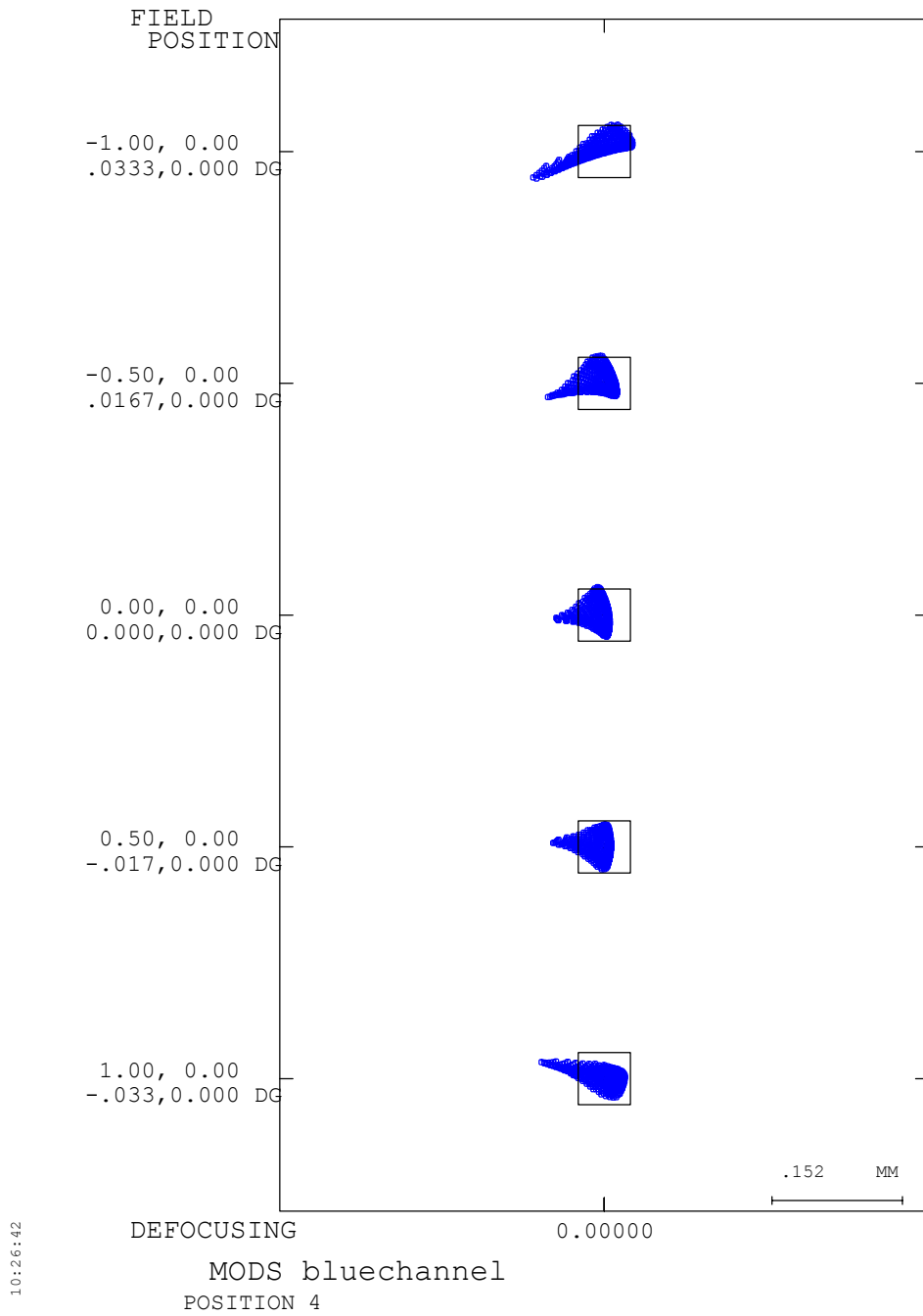


Figure D.19: Blue Camera spot diagrams for $\lambda=377\text{nm}$ and an optimally-focused 4' long slit.

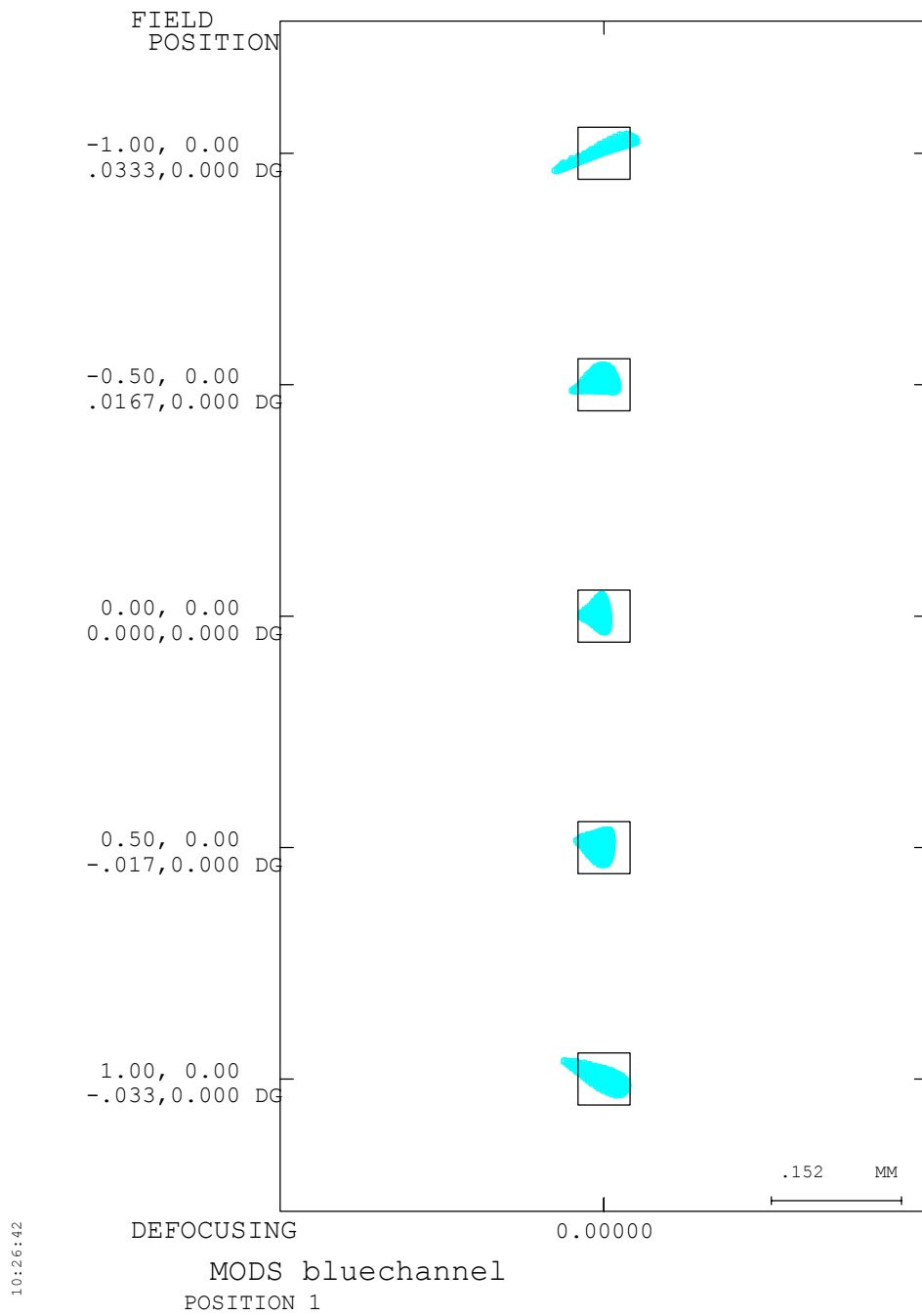


Figure D.20: Blue Camera spot diagrams for $\lambda=435\text{nm}$ and an optimally-focused 4' long slit.

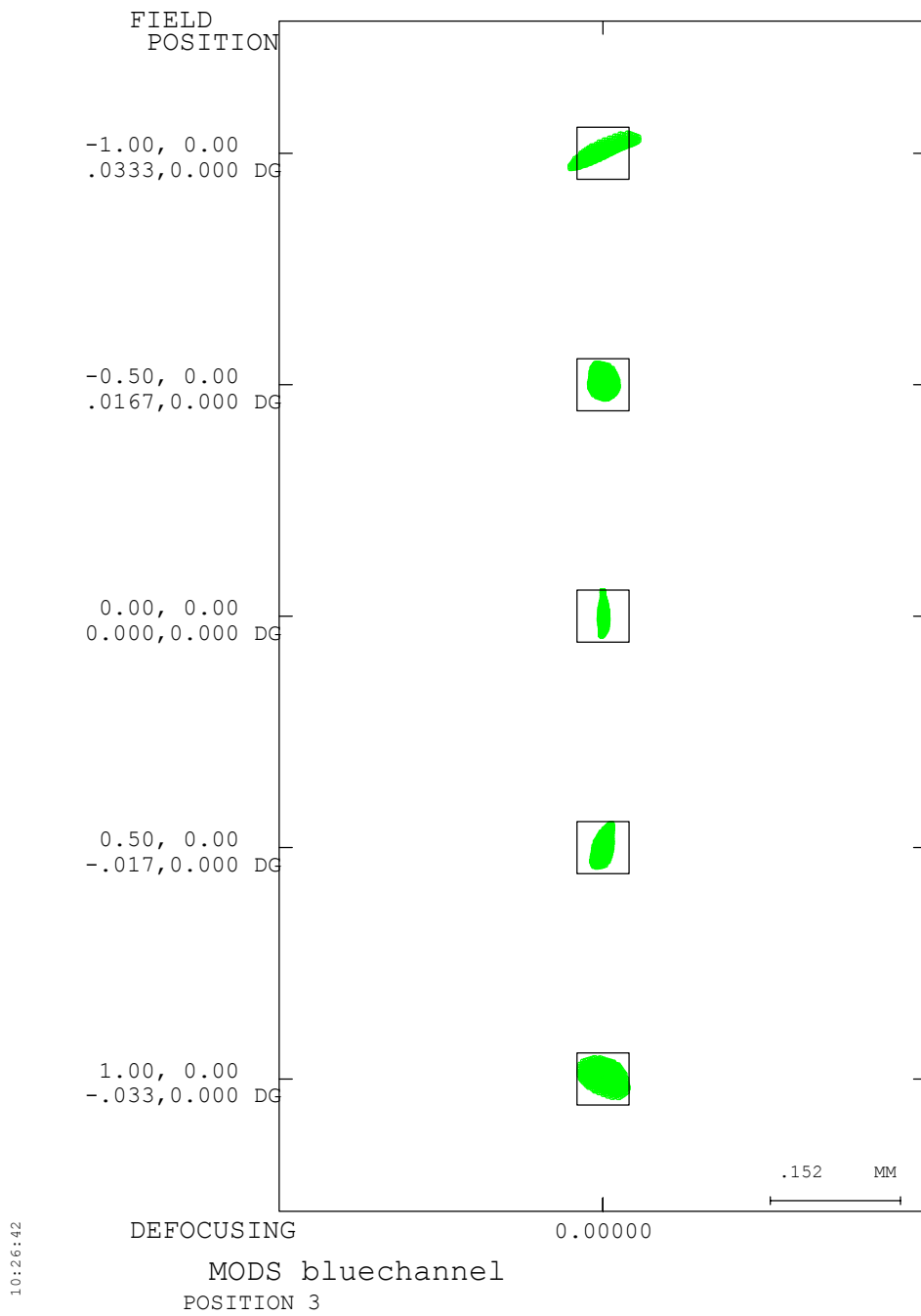


Figure D.21: Blue Camera spot diagrams for $\lambda=492\text{nm}$ and an optimally-focused 4' long slit.

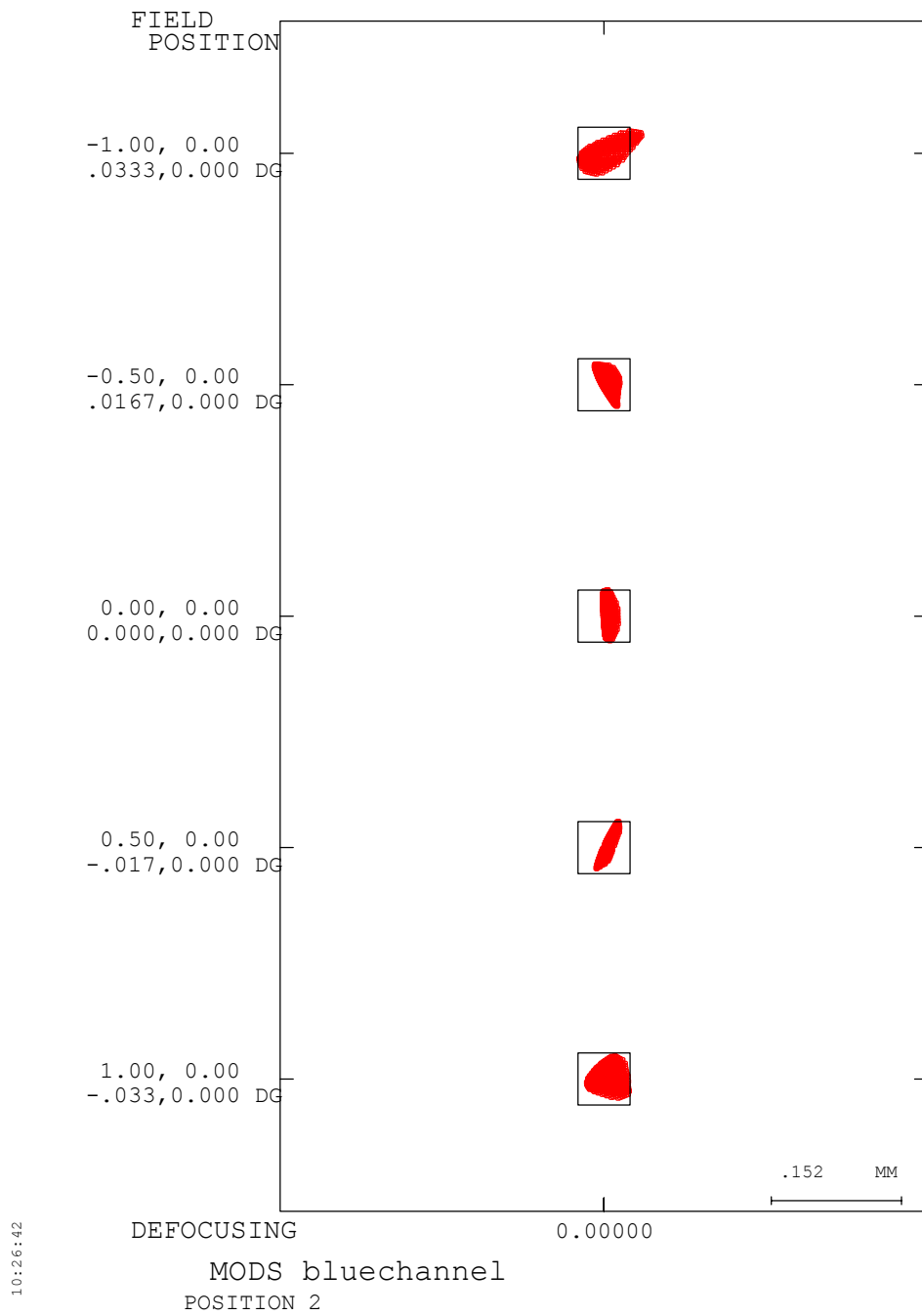


Figure D.22: Blue Camera spot diagrams for $\lambda=550\text{nm}$ and an optimally-focused 4' long slit.

1.2.2 MODS Red Channel

09:49:15

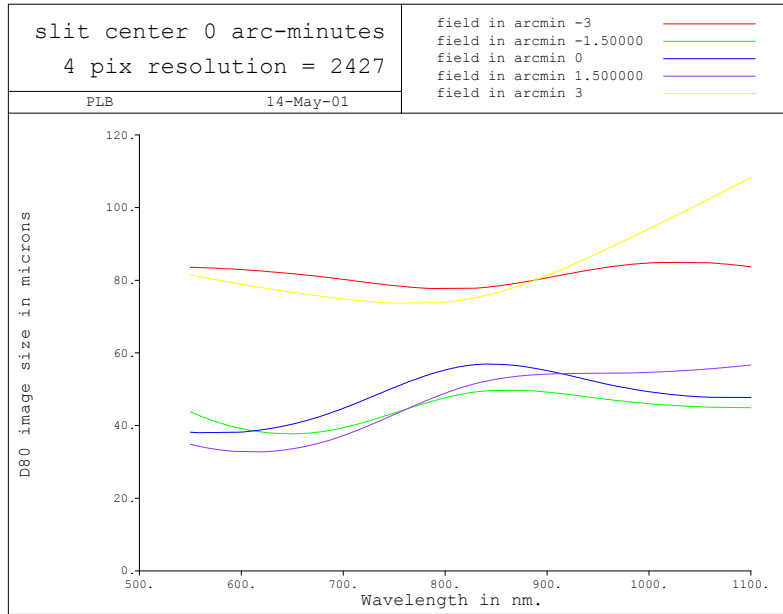


Figure D.23: D_{80} with wavelength for the red camera and an optimally-focused 6' long slit.

09:47:11

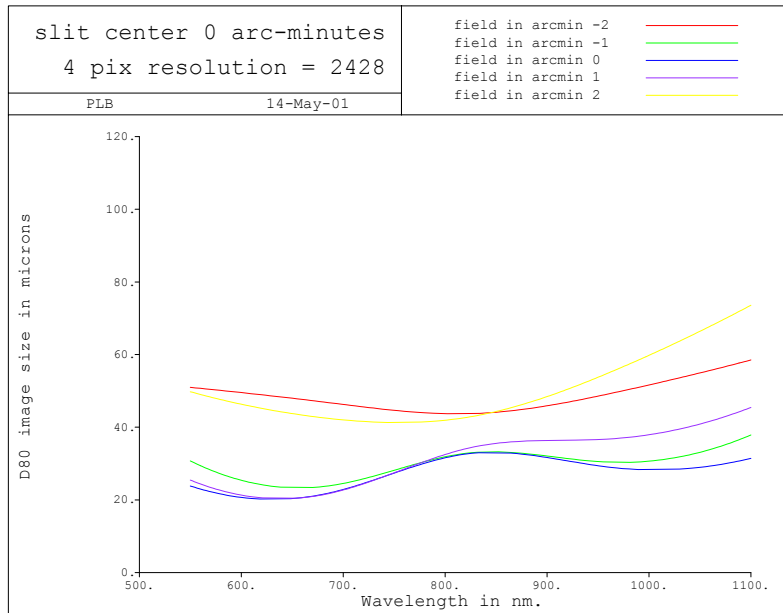


Figure D.24: D_{80} with wavelength for the red camera and an optimally-focused 4' long slit.

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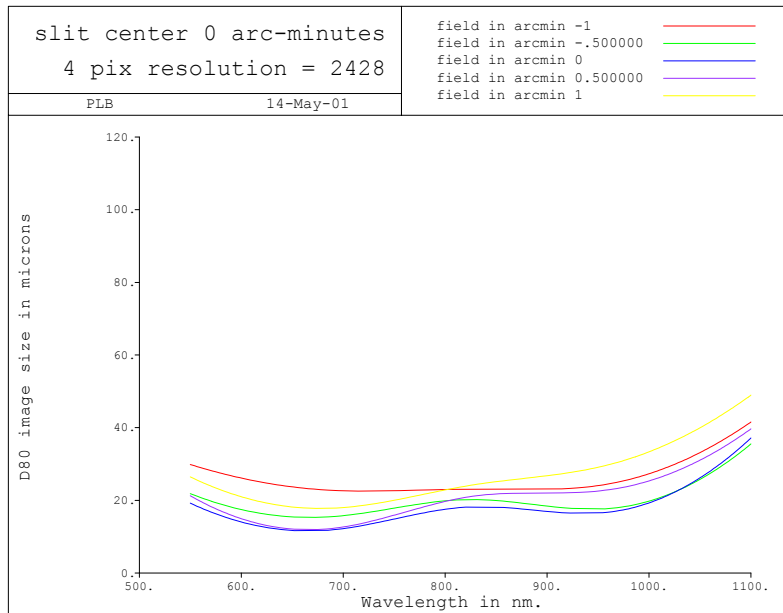


Figure D.25: D_{80} with wavelength for the red camera and an optimally-focused 2' long slit.

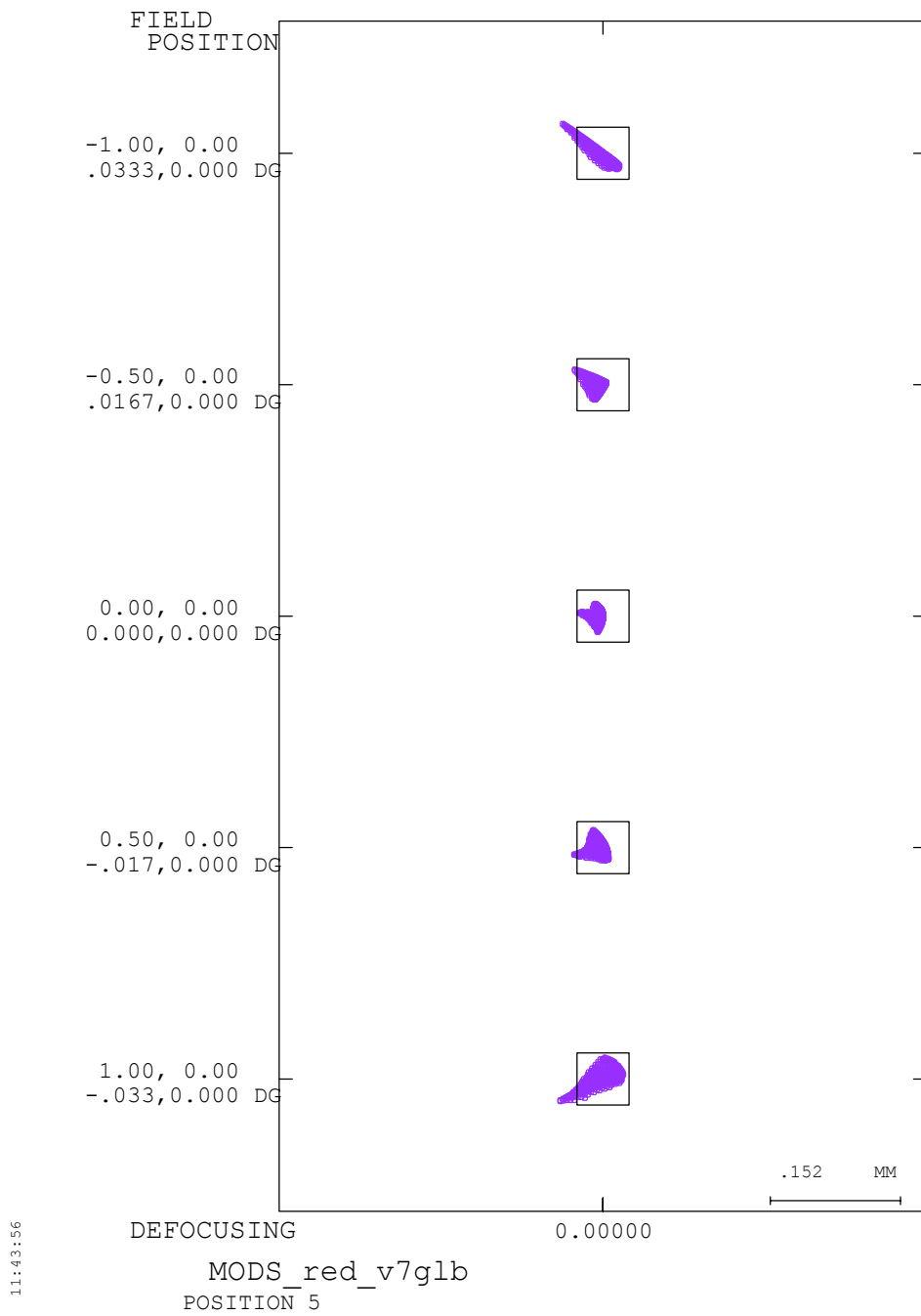


Figure D.26: Red Camera spot diagrams for $\lambda=550\text{nm}$ and an optimally-focused 4' long slit.

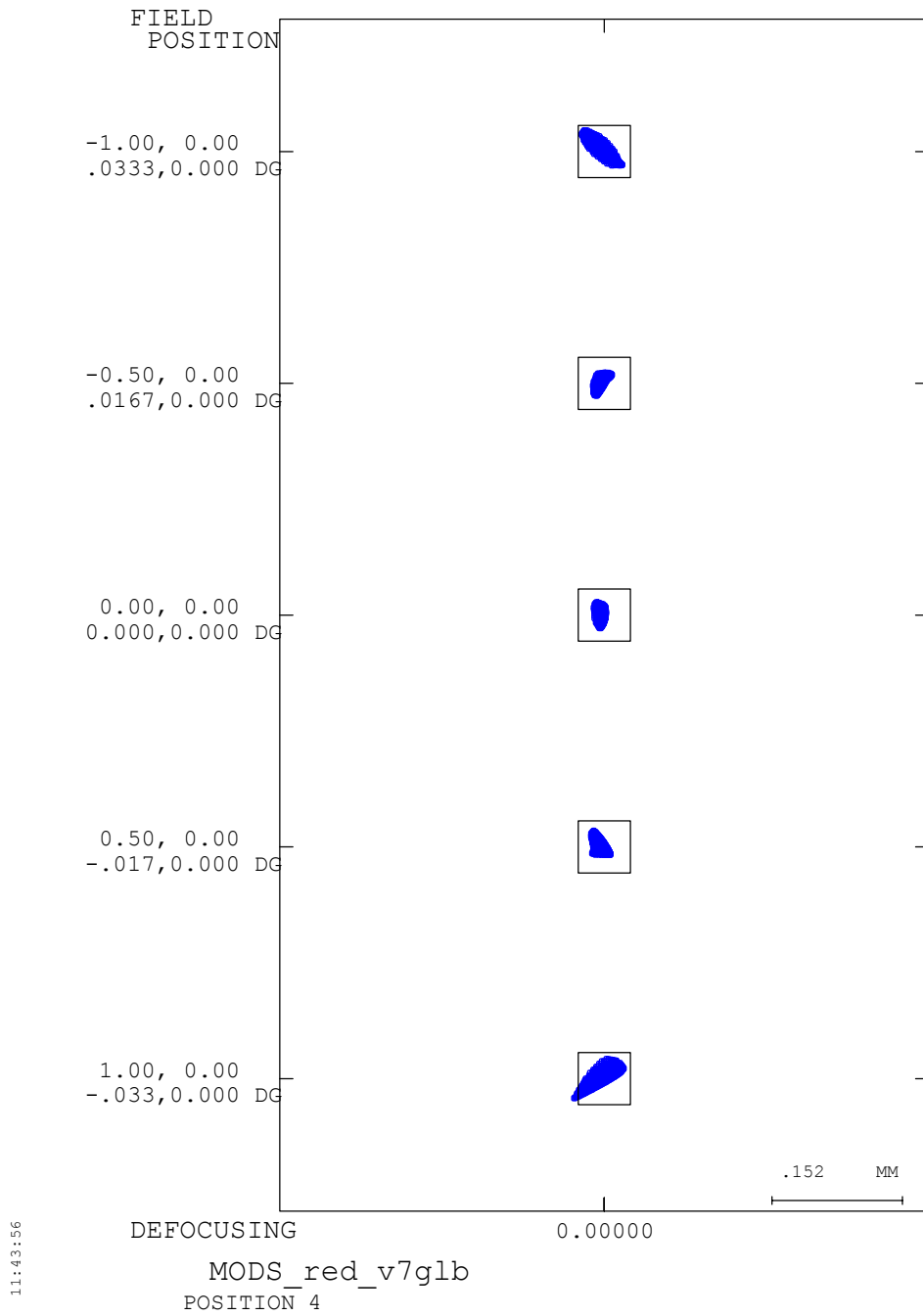


Figure D.27: Red Camera spot diagrams for $\lambda=687\text{nm}$ and an optimally-focused 4' long slit.

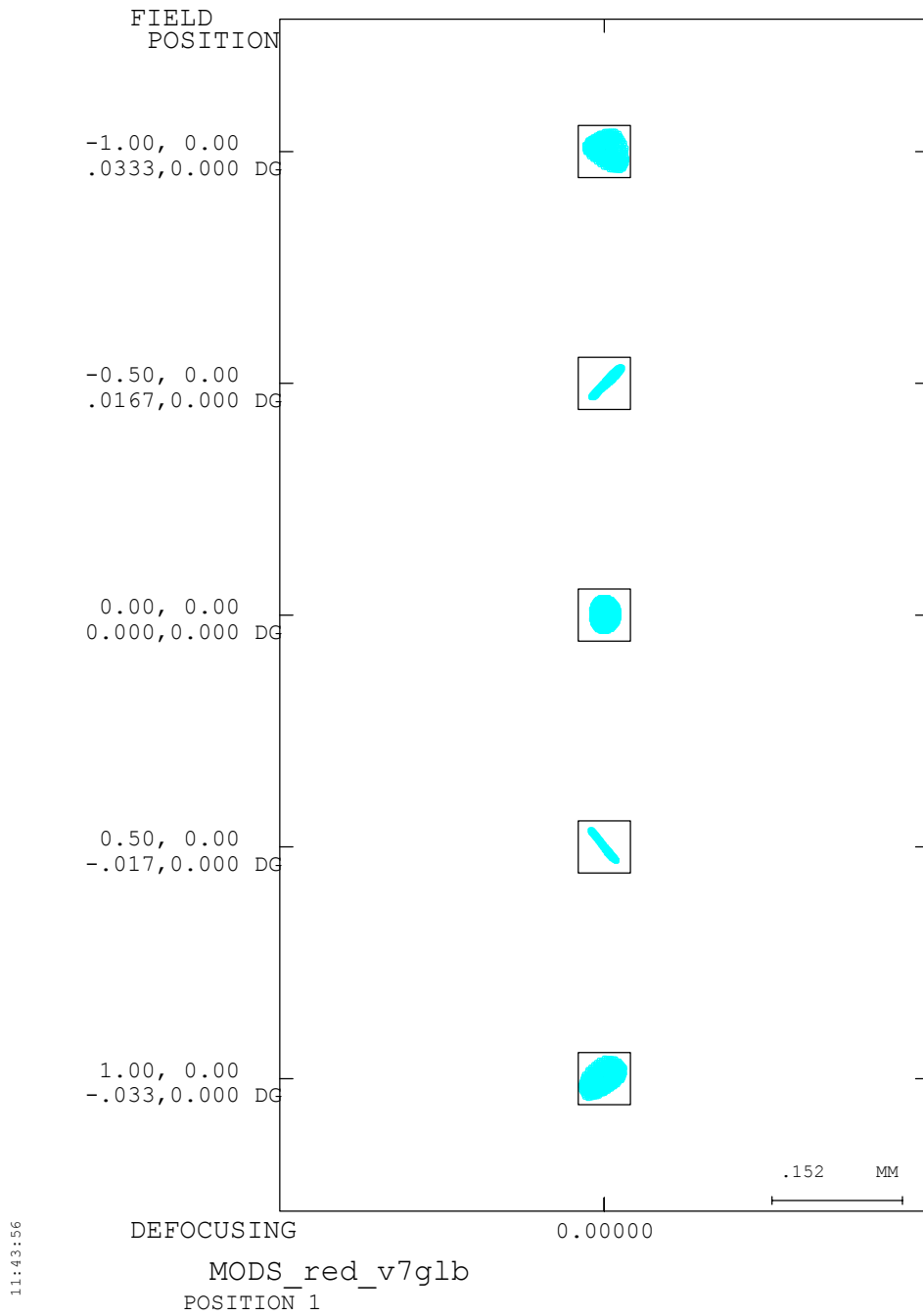


Figure D.28: Red Camera spot diagrams for $\lambda=825\text{nm}$ and an optimally-focused 4' long slit.

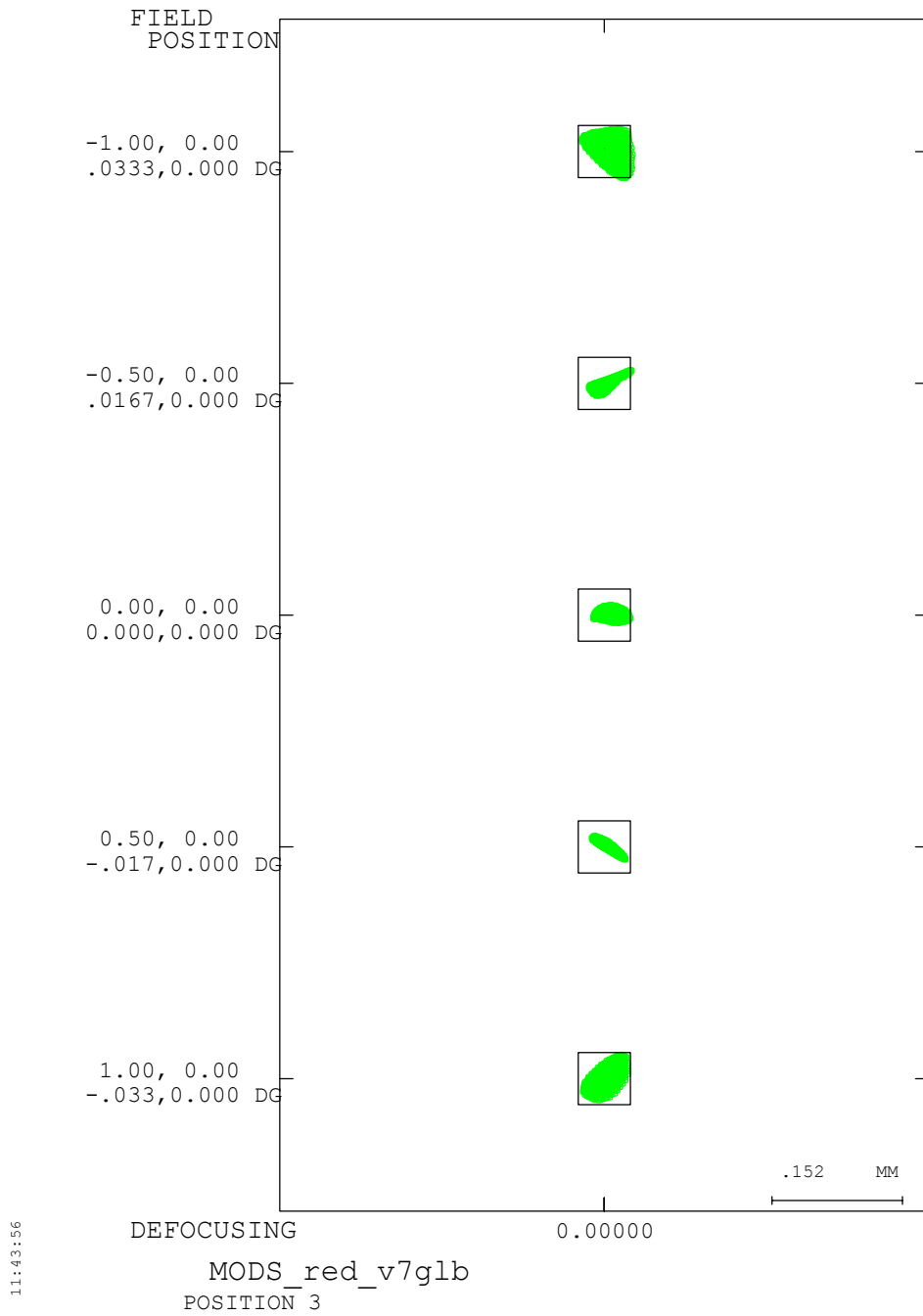


Figure D.29: Red Camera spot diagram for $\lambda=962\text{nm}$ and an optimally-focused 4' long slit.

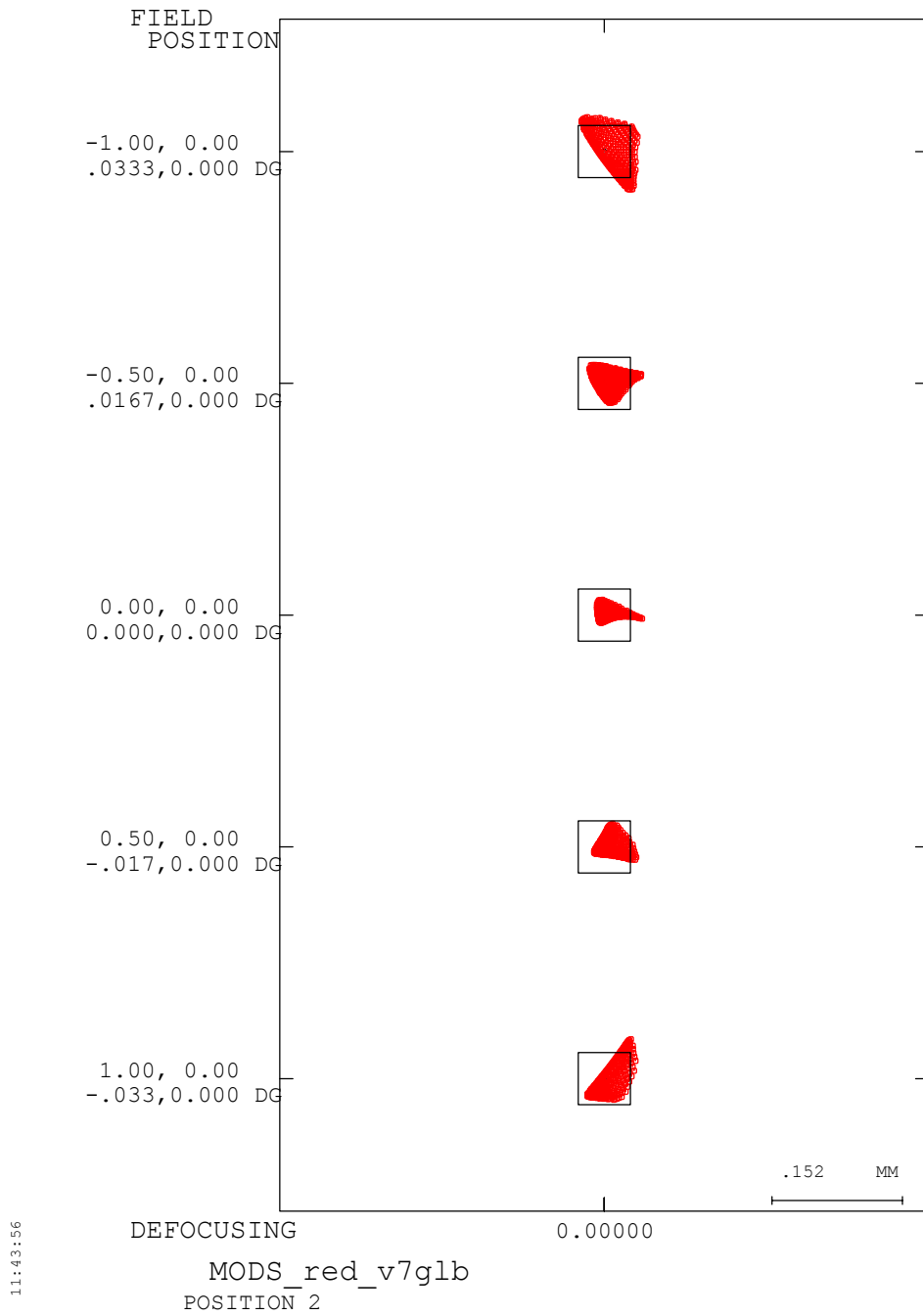


Figure D.30: Red Camera spot diagrams for $\lambda=1100\text{nm}$ and an optimally-focused 4' long slit.