



DARK ENERGY  
SURVEY

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# PreCam Focus

Douglas L. Tucker & Sahar Allam

DES-Calib/PreCam Telecon

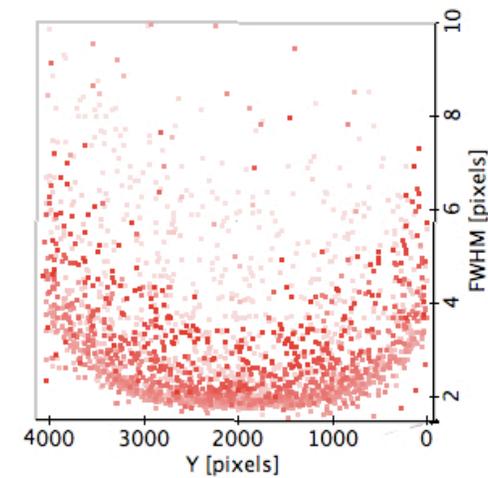
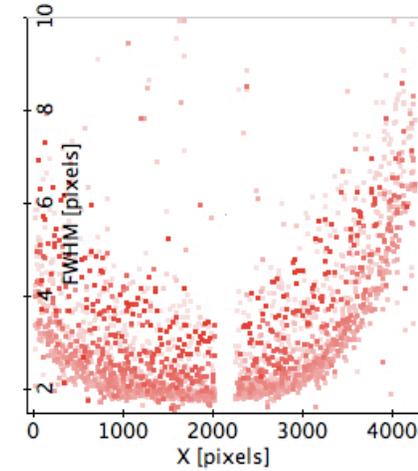
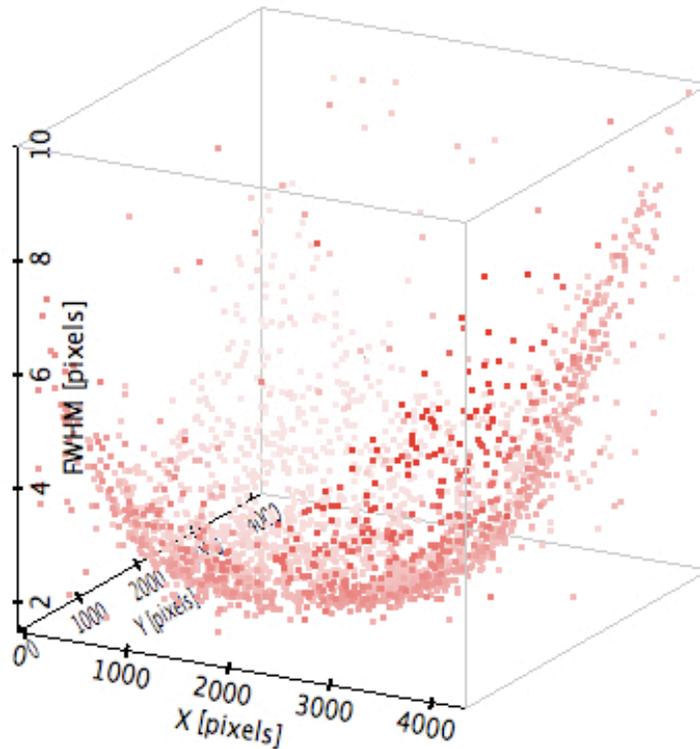
2 December 2011



# Focus Sweep from 2011-01-13UT: FWHM vs. X,Y

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Image 21829  
Focus Value=7700 microns





# Focus Sweep from 2011-01-13UT: FWHM vs. X,Y

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Image 21829  
Focus 7700

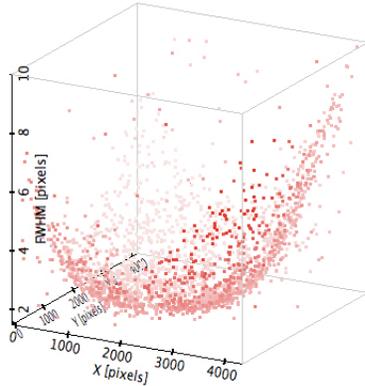


Image 21830  
Focus 7800

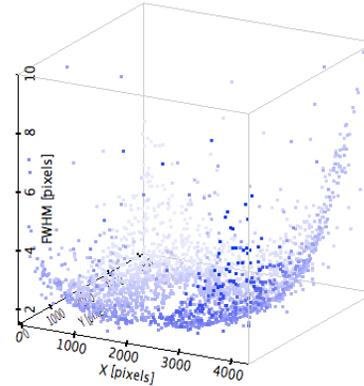


Image 21831  
Focus 7900

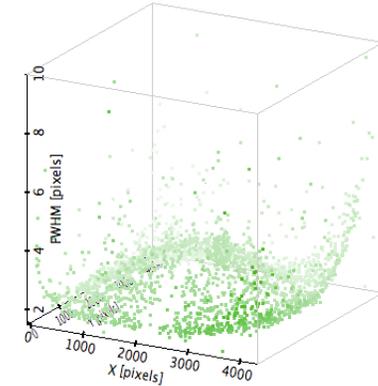


Image 21832  
Focus 8000

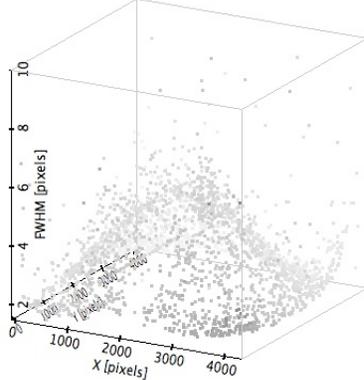


Image 21833  
Focus 8100

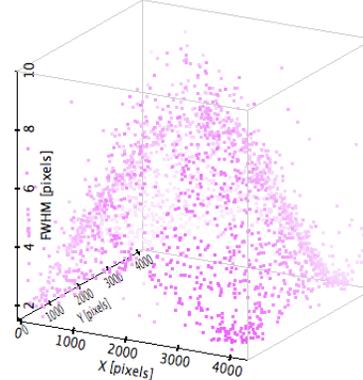
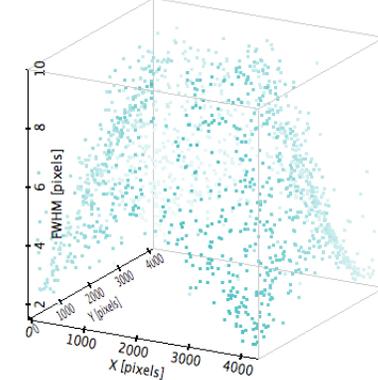


Image 21834  
Focus 8200

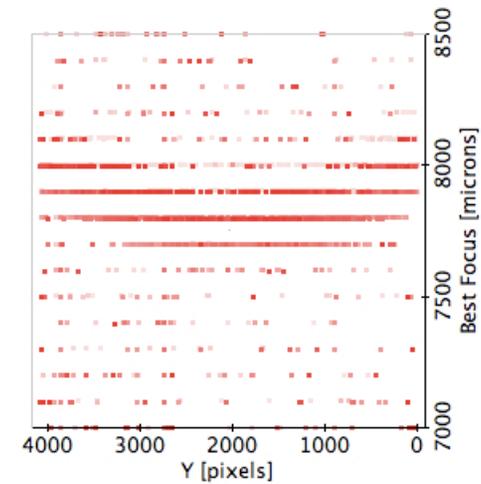
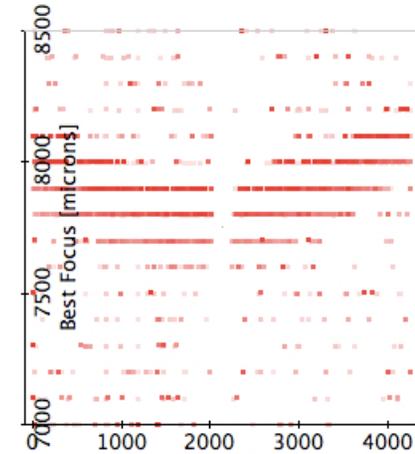
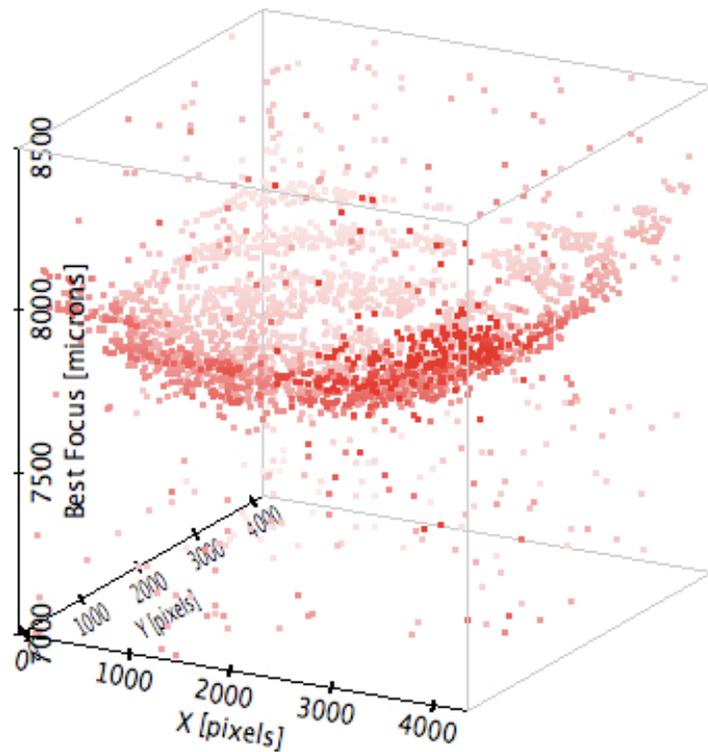




# Focus Sweep from 2011-01-13UT: Surface of Best Focus

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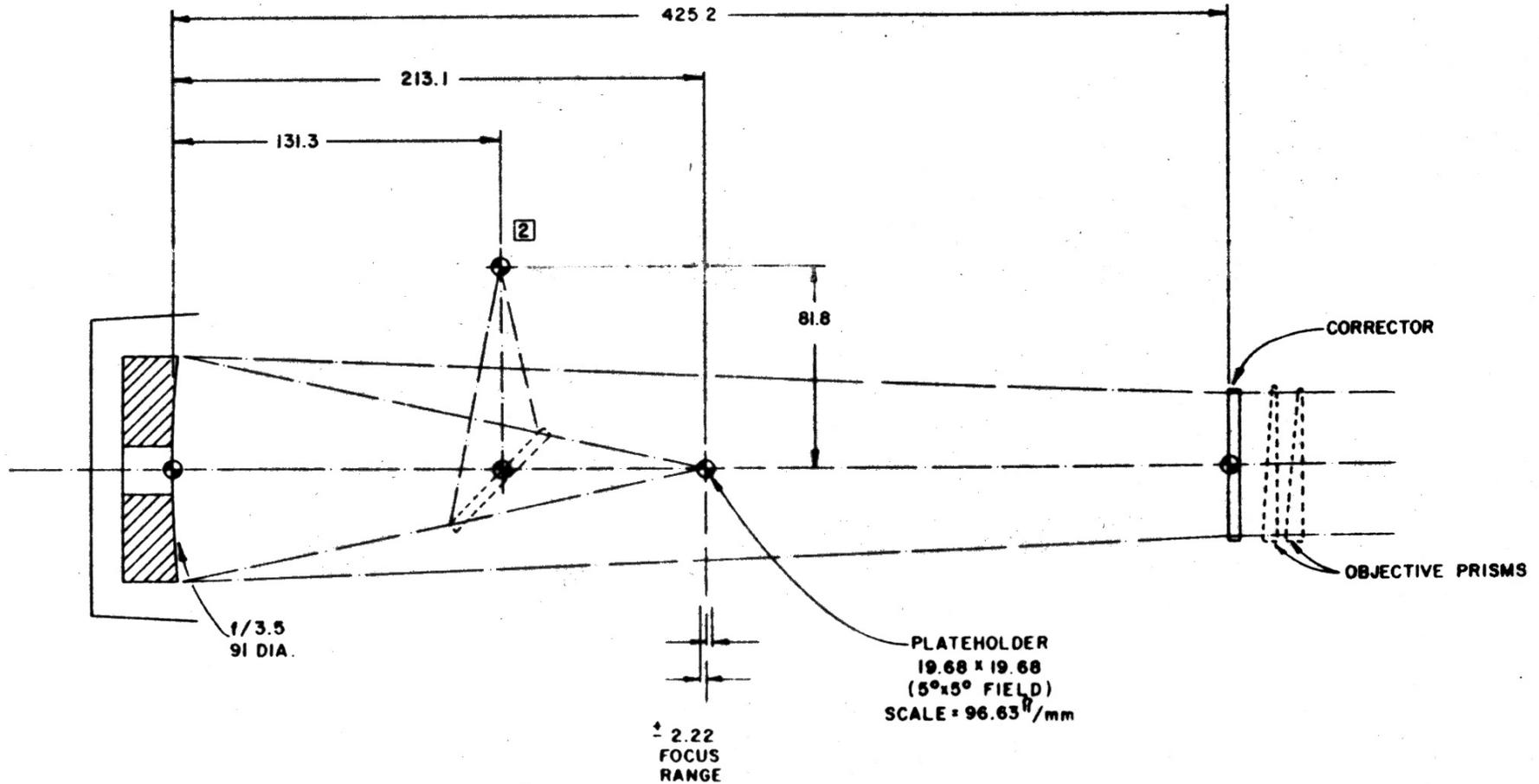
Best Focus vs. XY





# Curtis-Schmidt Optical Layout

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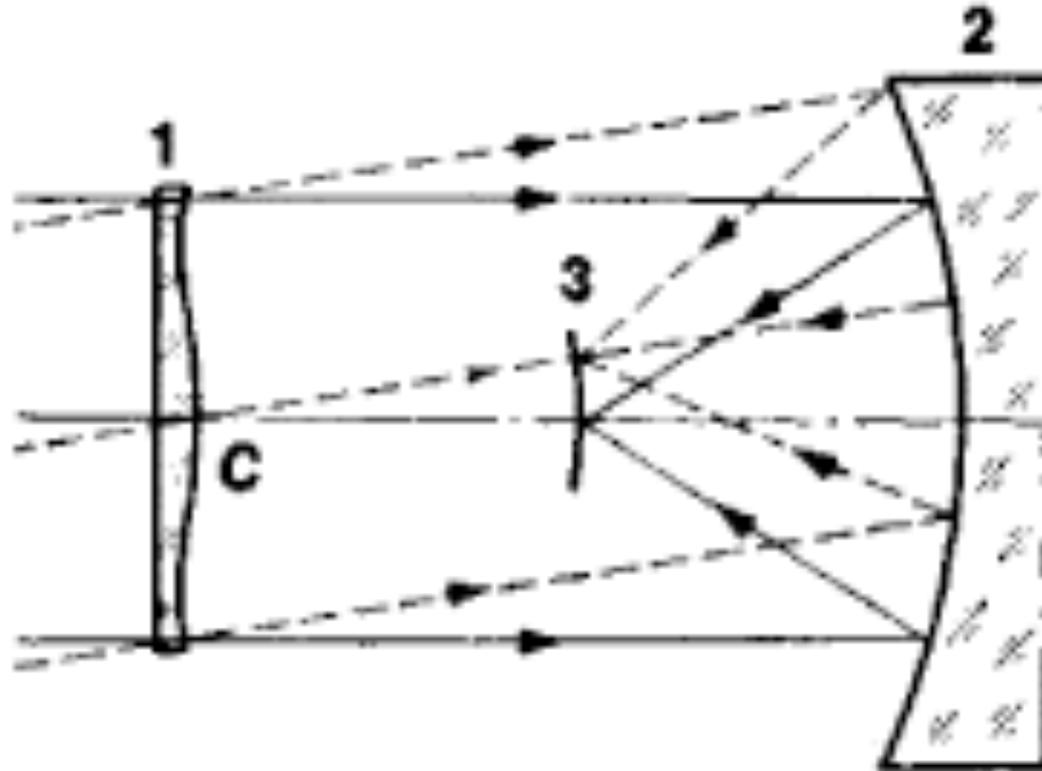


**NOTES** 1. ALL DIMS. IN cms  
2. OPTIONAL FOCUS - RARELY USED



# Schmidt Telescope Optical Layout

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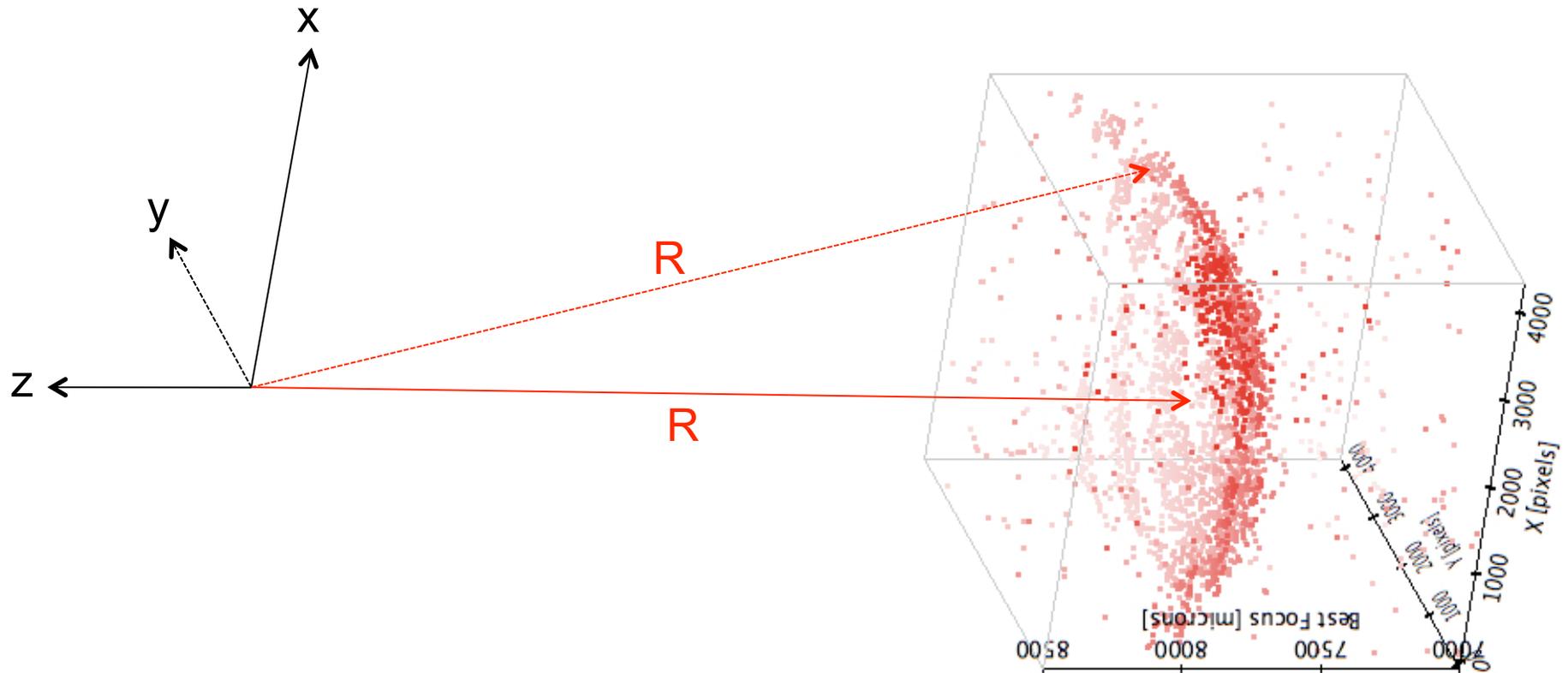


*“The focal surface, on which the image of a segment of the sky is formed, has a spherical shape, whose radius of curvature is equal to the focal distance of the telescope.”* -- The Great Soviet Encyclopedia (1979)  
(<http://encyclopedia2.thefreedictionary.com/Schmidt+Telescope>)



# Focus Sweep from 2011-01-13UT: Best-fit Sphere

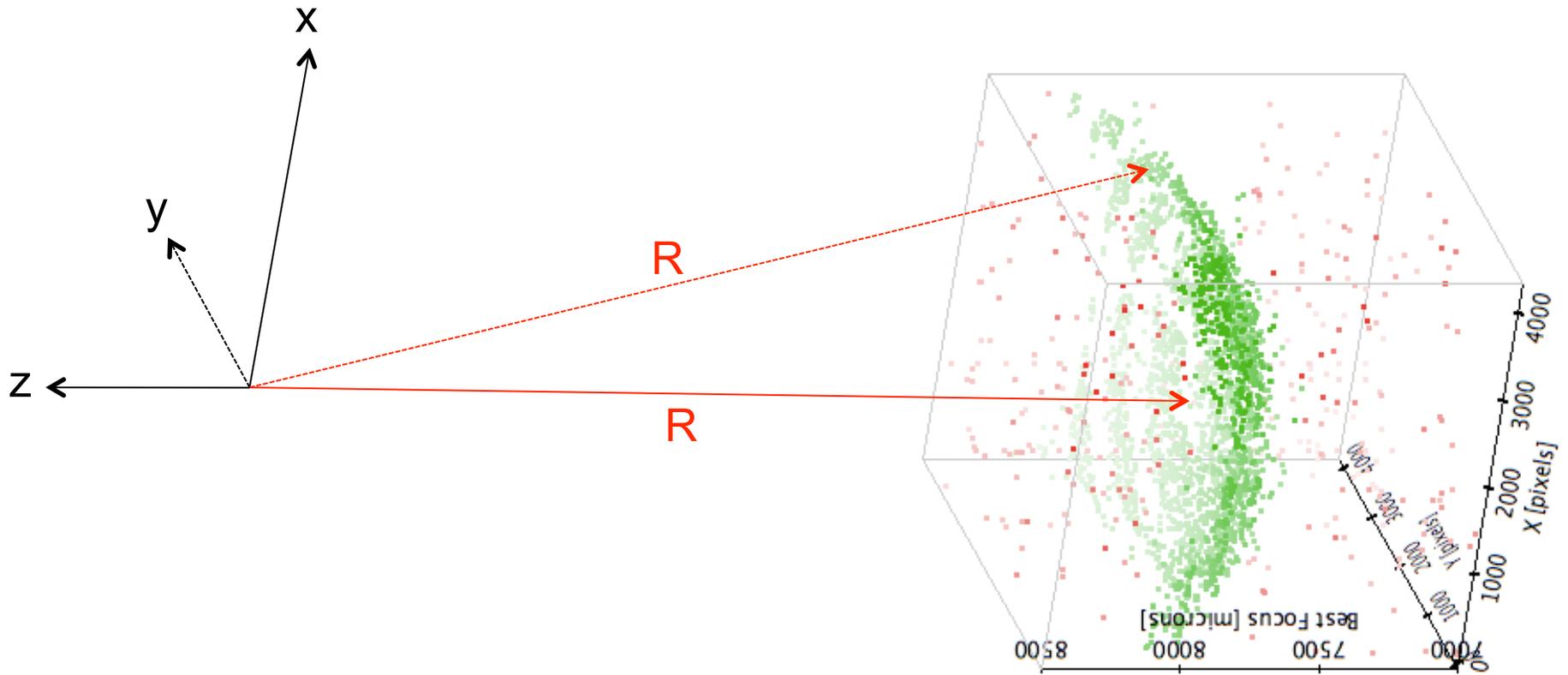
DARK ENERGY  
SURVEY





# Focus Sweep from 2011-01-13UT: Best-fit Sphere

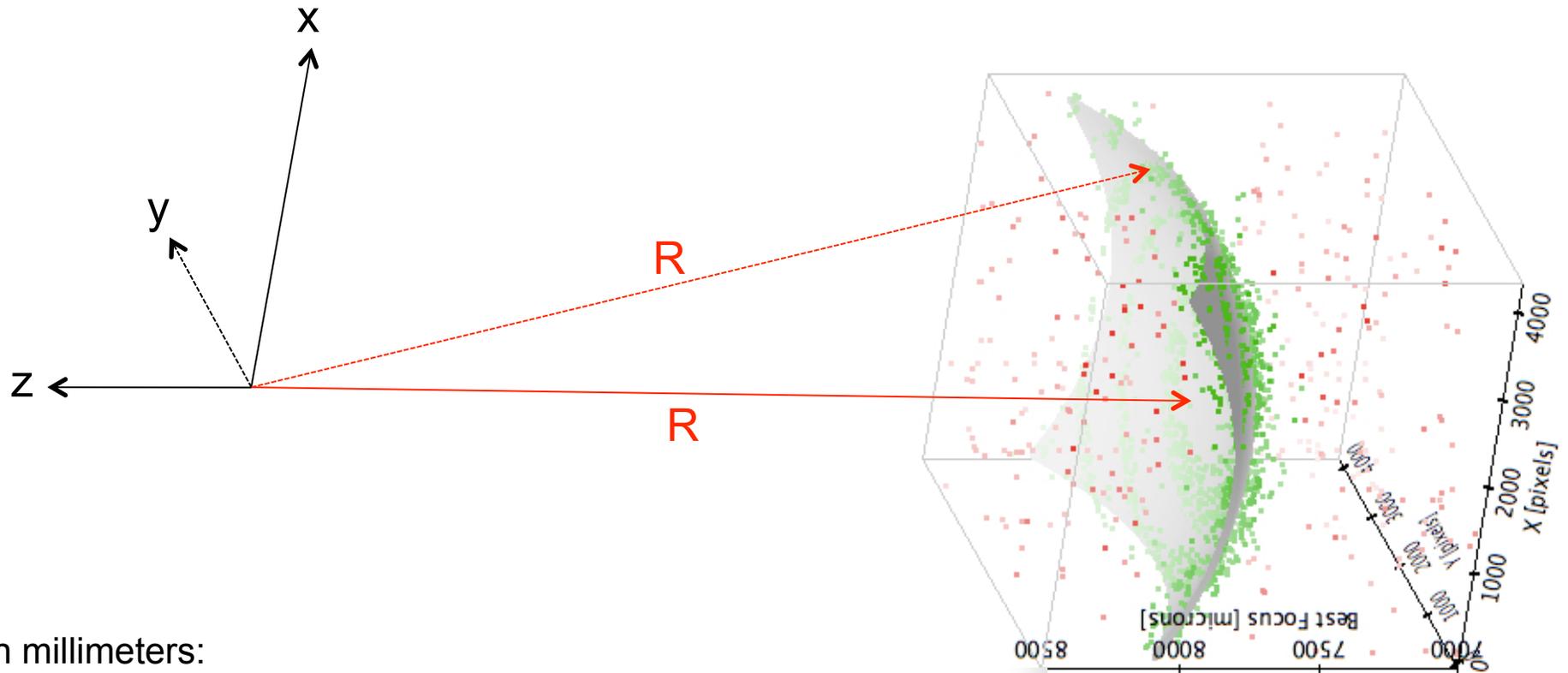
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# Focus Sweep from 2011-01-13UT: Best-fit Sphere

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In millimeters:

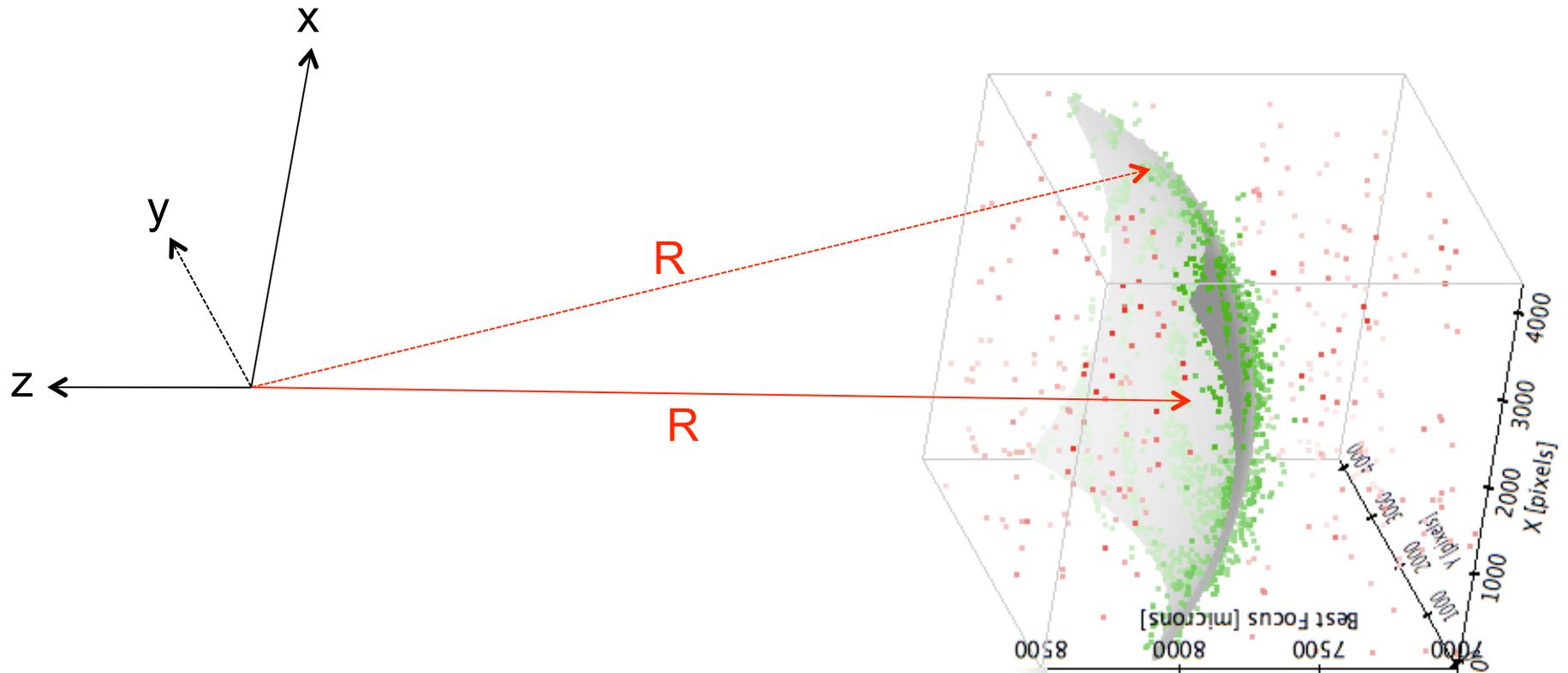
Fitted parameters at minimum, with 68% C.I.:

xc	27.9584 +/-	0.112497	(0.402373 percent)
yc	29.5839 +/-	0.113986	(0.385299 percent)
zc	2103.77 +/-	19.6186	(0.932545 percent)
R	2096.08 +/-	19.6172	(0.935902 percent)



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Compare with 2131mm  
from Curtis-Schmidt  
optical layout drawing



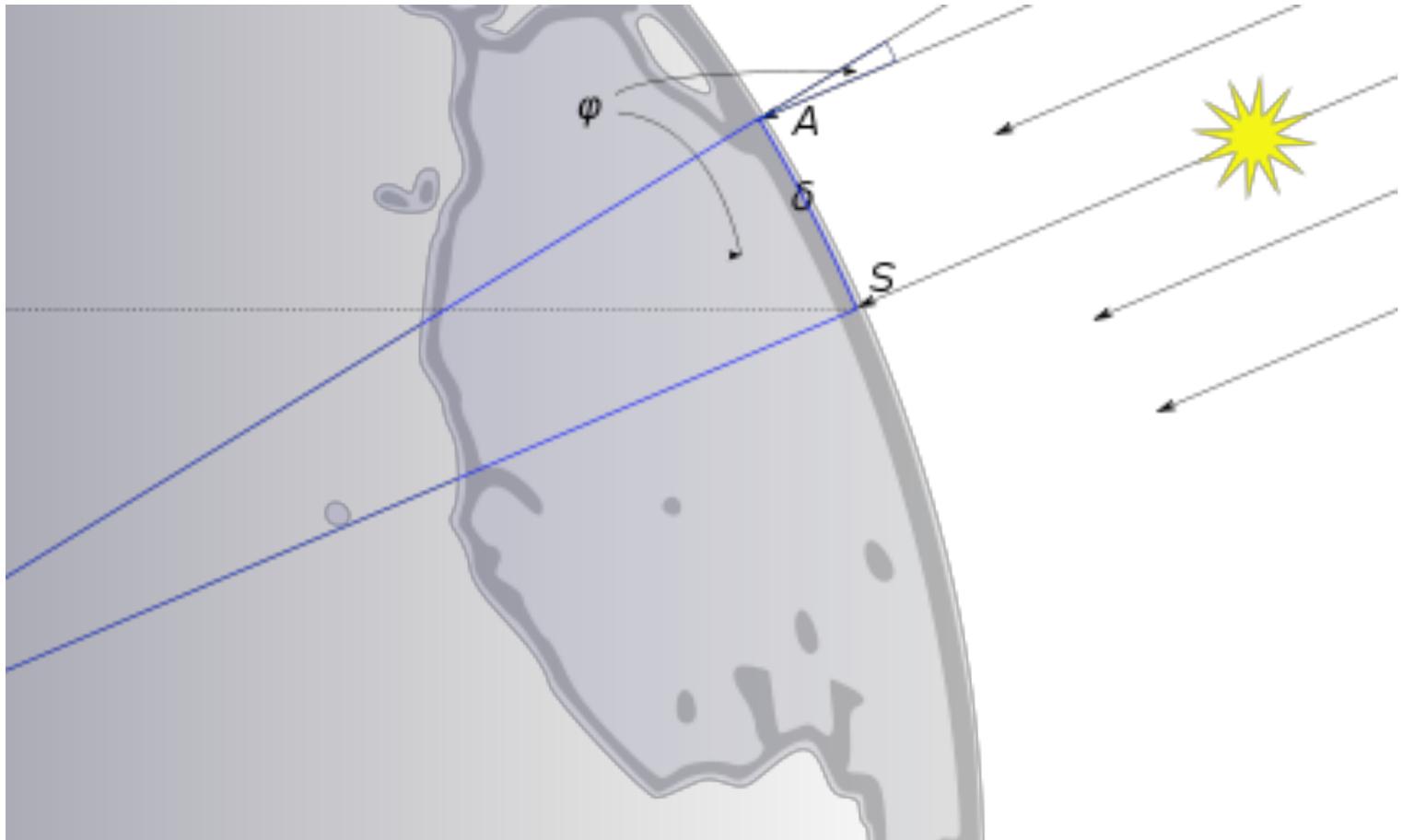
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# Extra Slides



# Erastosthenes' Measurement of the Earth's Circumference (c. 240 BC)

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Measurement taken at Alexandria (A) and Syene (S) (modern-day Aswan).  
Image courtesy of Wikipedia.