Forward Model Fitting of Silicon X-ray Diffraction Microscopy Data: Real Space Map and Detector Images

$f = 0.25$ peak threshold

$F_{min} \geq 0.5$ Bragg overlap convergence criterion

R.M. Suter,[1,2] *D. Hennessy,*[1] *C. Xiao,*[1] *U. Lienert*[3]

[1]*Department of Physics, Carnegie Mellon University*

[2]*Department of Materials Science and Engineering, Carnegie Mellon University*

[3]*Advanced Photon Source, Argonne National Laboratory*

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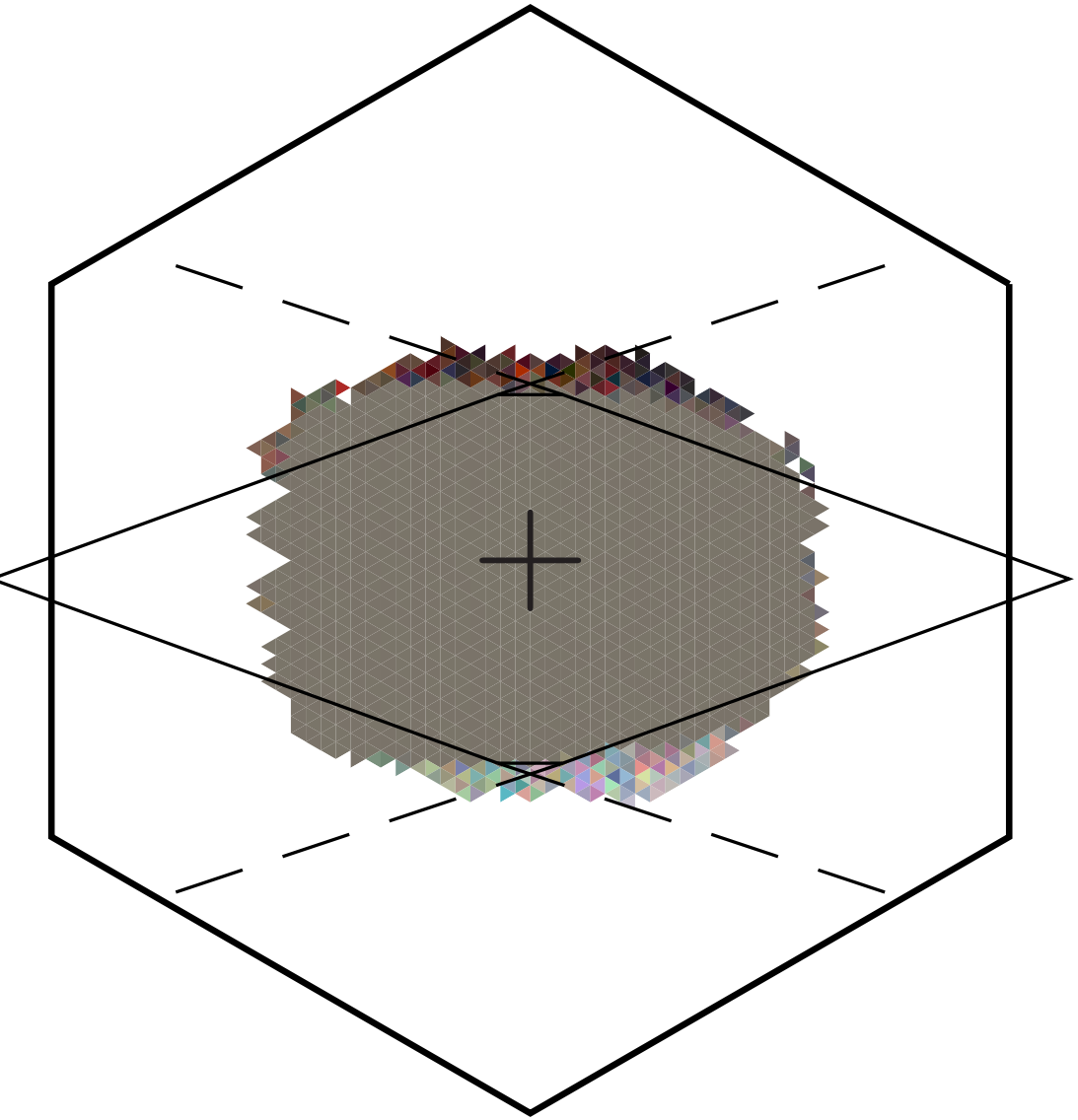
Sample Space Map

$f = 0.25$ peak threshold

$F_{min} \geq 0.5$ Bragg overlap criterion



Hexagon: 150 micron side length showing simulated area

Dashed lines: Illuminated sample region over ± 20 rotation

Solid diamond: Always illuminated region

Colors: Area elements with converged orientations

White space: Area elements with no converged orientation

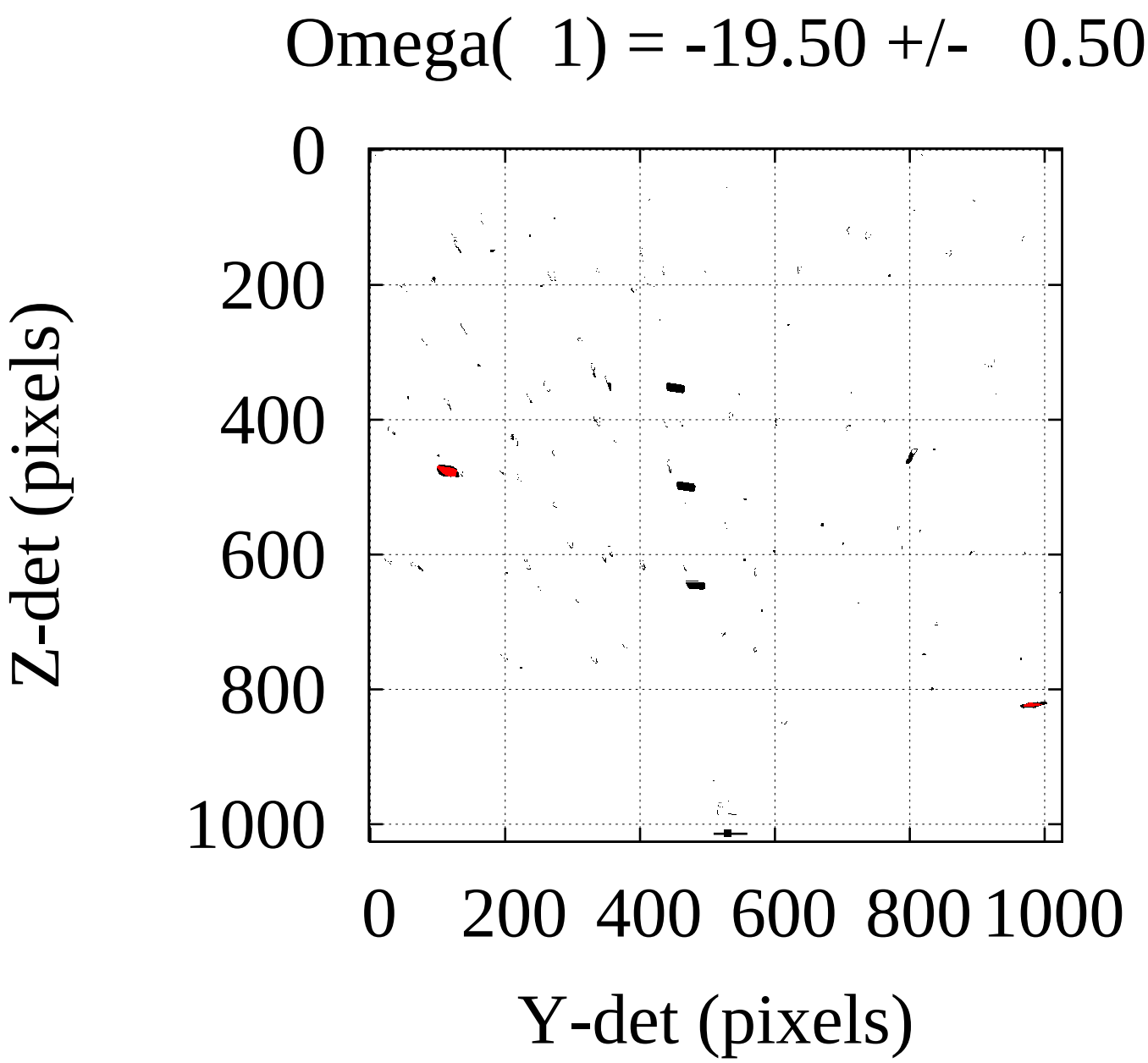
+: rotation axis

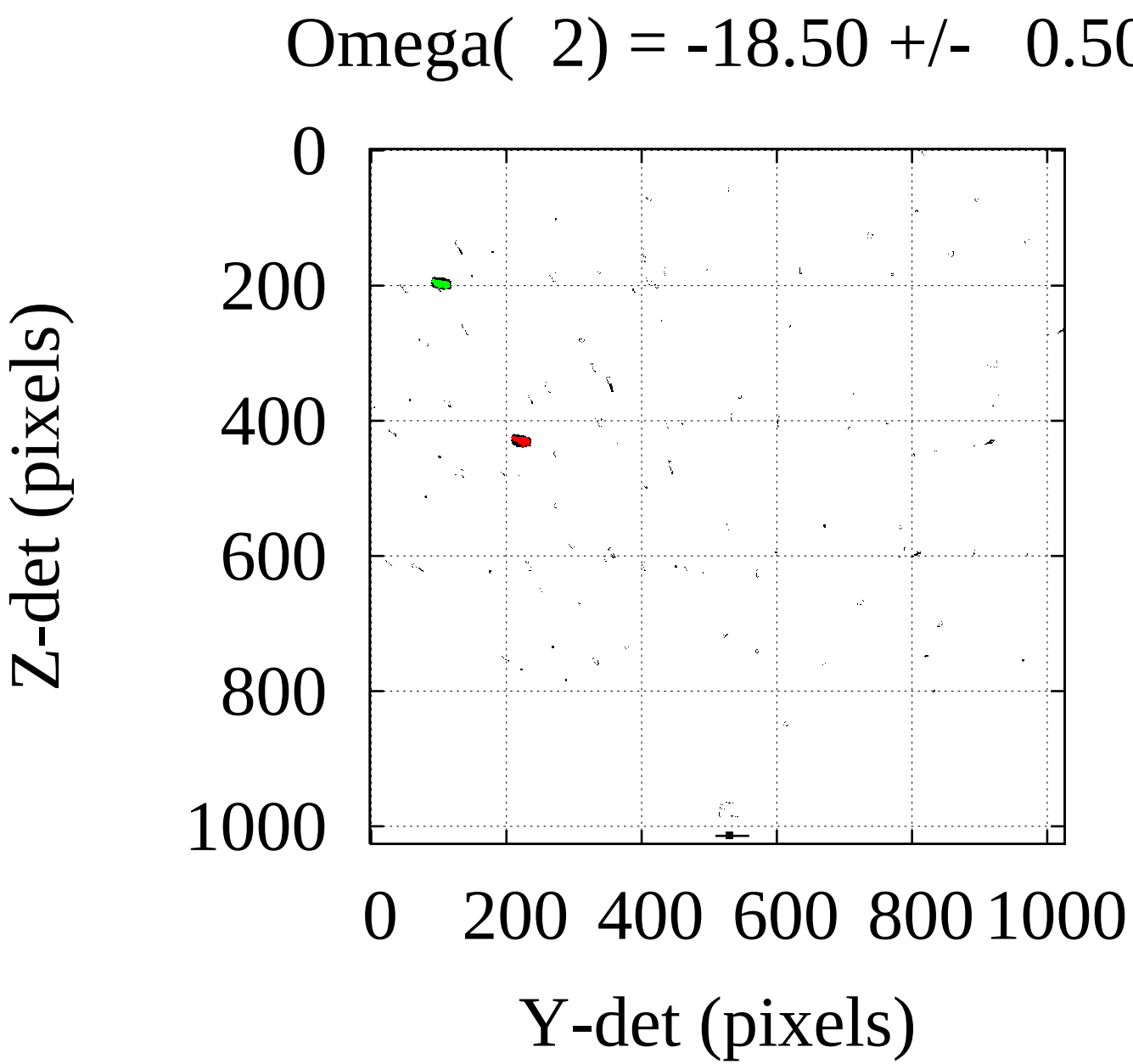
Note increased partially illuminated region convergence compared to $F_{min} \geq 0.75$ case.

The following pages show 120 CCD detector images collapsed onto 40 plots. Each plot superposes the three images, collected at different sample-to-detector distances, which were taken as the sample was rotated through the same interval, $\delta\omega$. The center of this interval is specified in each plot title.

Bare experimental intensity is shown in black. Pixels struck by the simulation of the sample are shown in color: aqua for pixels not overlapping experimental intensity; red, green, and blue for overlap at L_1, L_2, L_3.

The projected incident beam position and detector origin are indicated near pixel (532,1013).


Omega(1) = -19.50 +/- 0.50
Z-det (pixels)
0
200
400
600
800
1000
0 200 400 600 800 1000
Y-det (pixels)


Omega(2) = -18.50 +/-   0.50
Z-det (pixels)
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200
400
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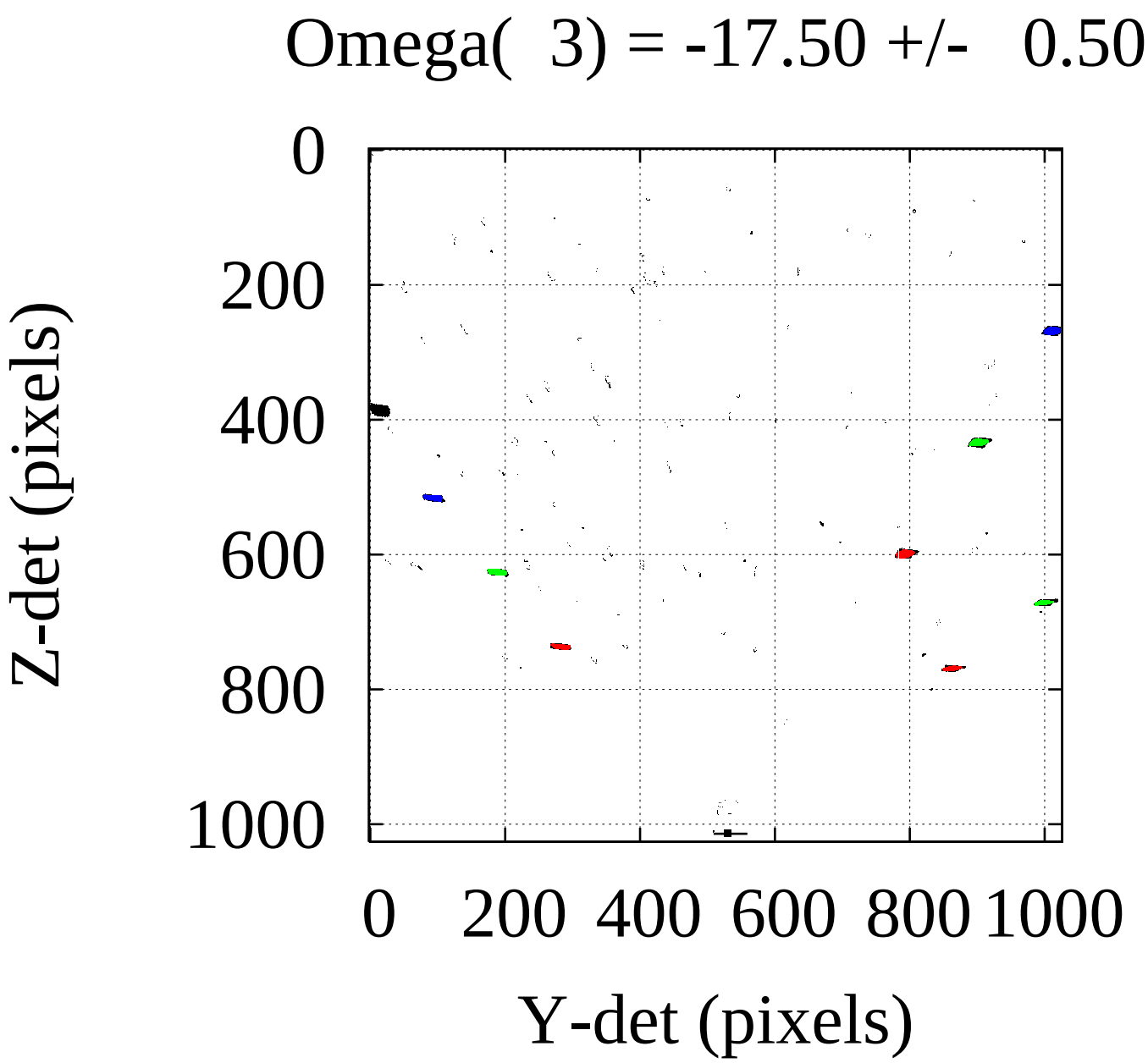
1000
0
200
400
600
800
1000
Y-det (pixels)


Omega(3) = -17.50 +/- 0.50
Z-det (pixels)
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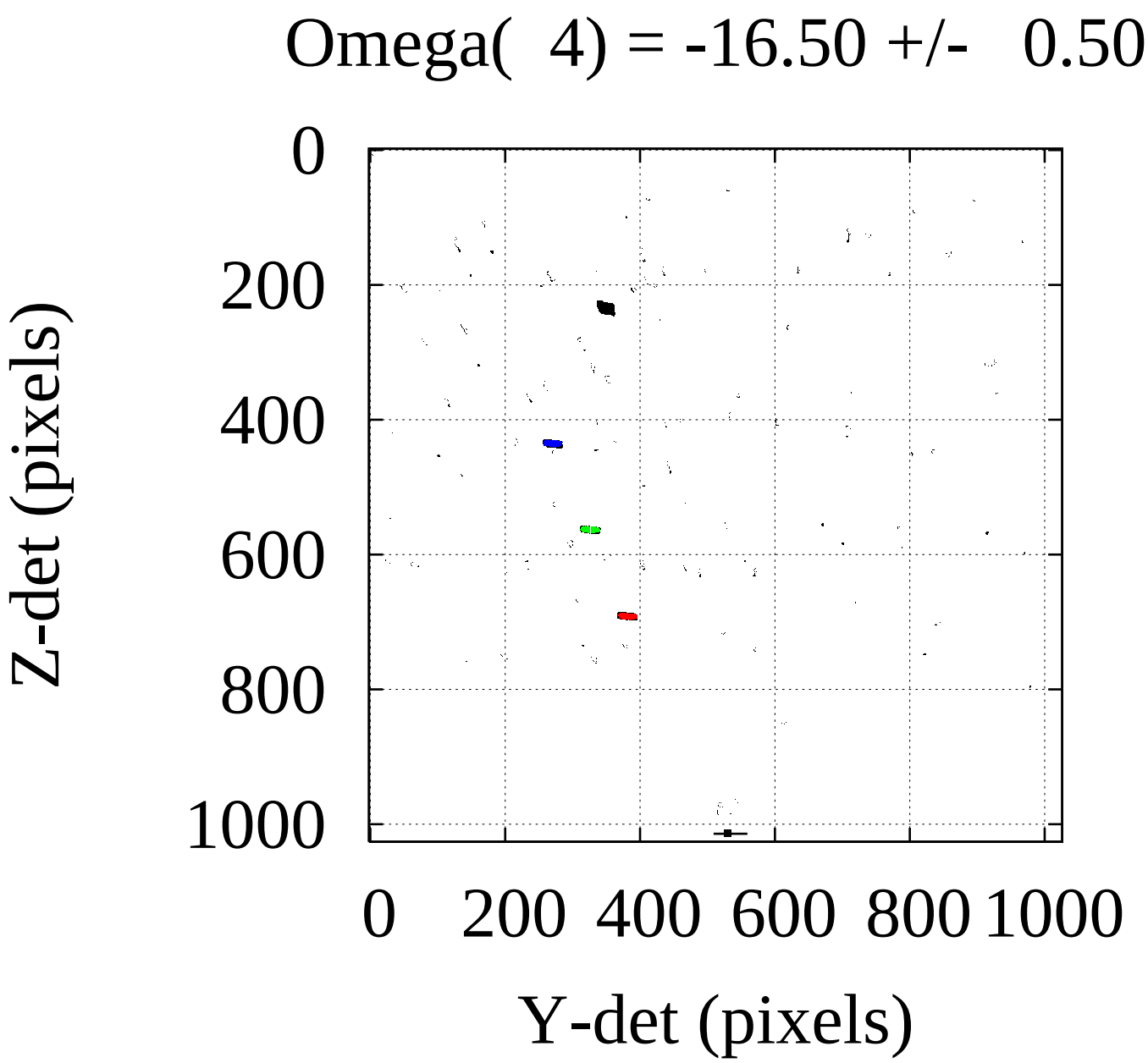
200
400
600
800
1000
0 200 400 600 800 1000
Y-det (pixels)


Omega(4) = -16.50 +/-   0.50
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400
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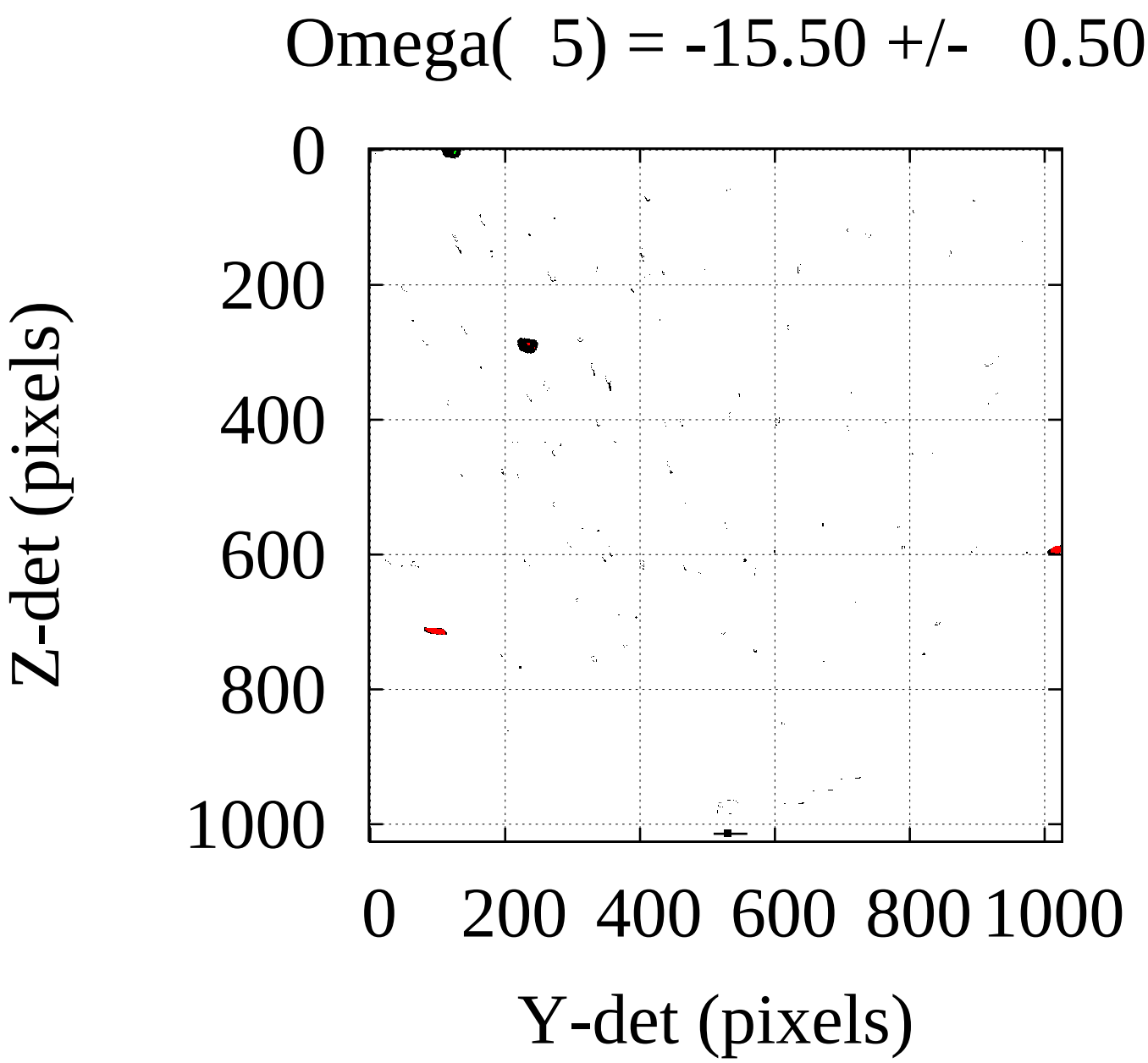
800
1000
0
200
400
600
800
1000
Y-det (pixels)


Omega(5) = -15.50 +/- 0.50
Z-det (pixels)
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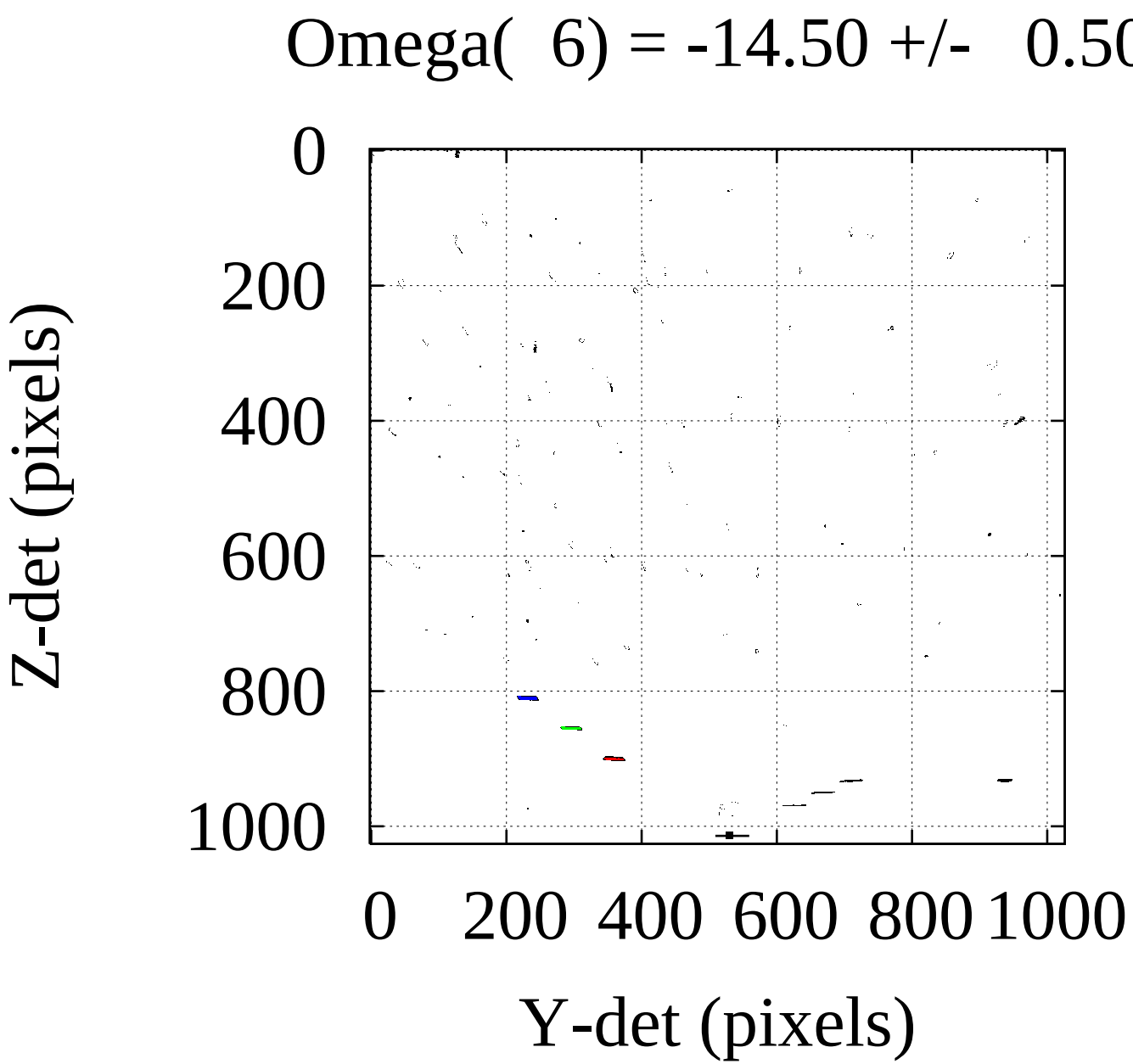
200
400
600
800
1000
0 200 400 600 800 1000
Y-det (pixels)


Omega(6) = -14.50 +/-   0.50
Z-det (pixels)
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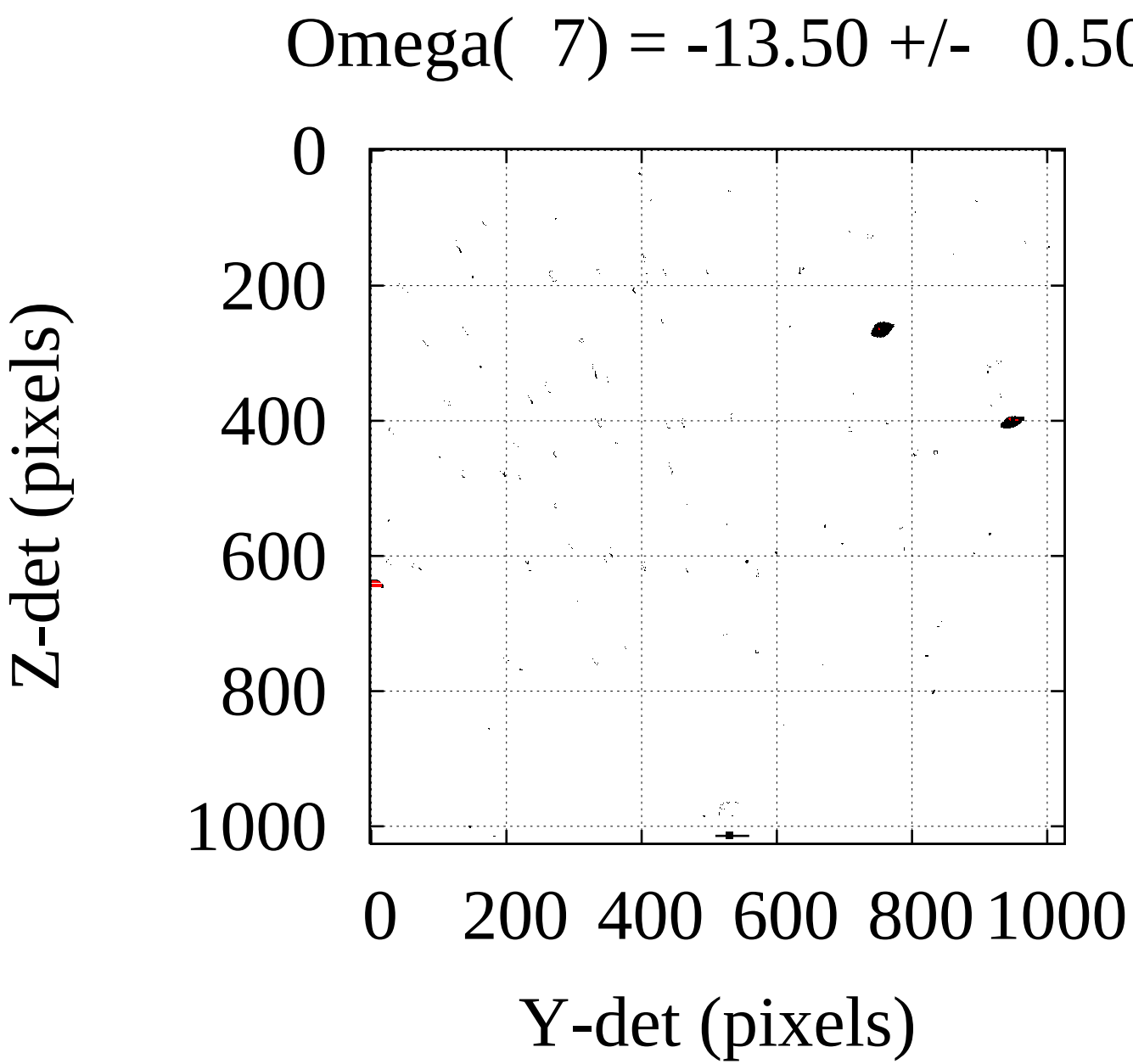
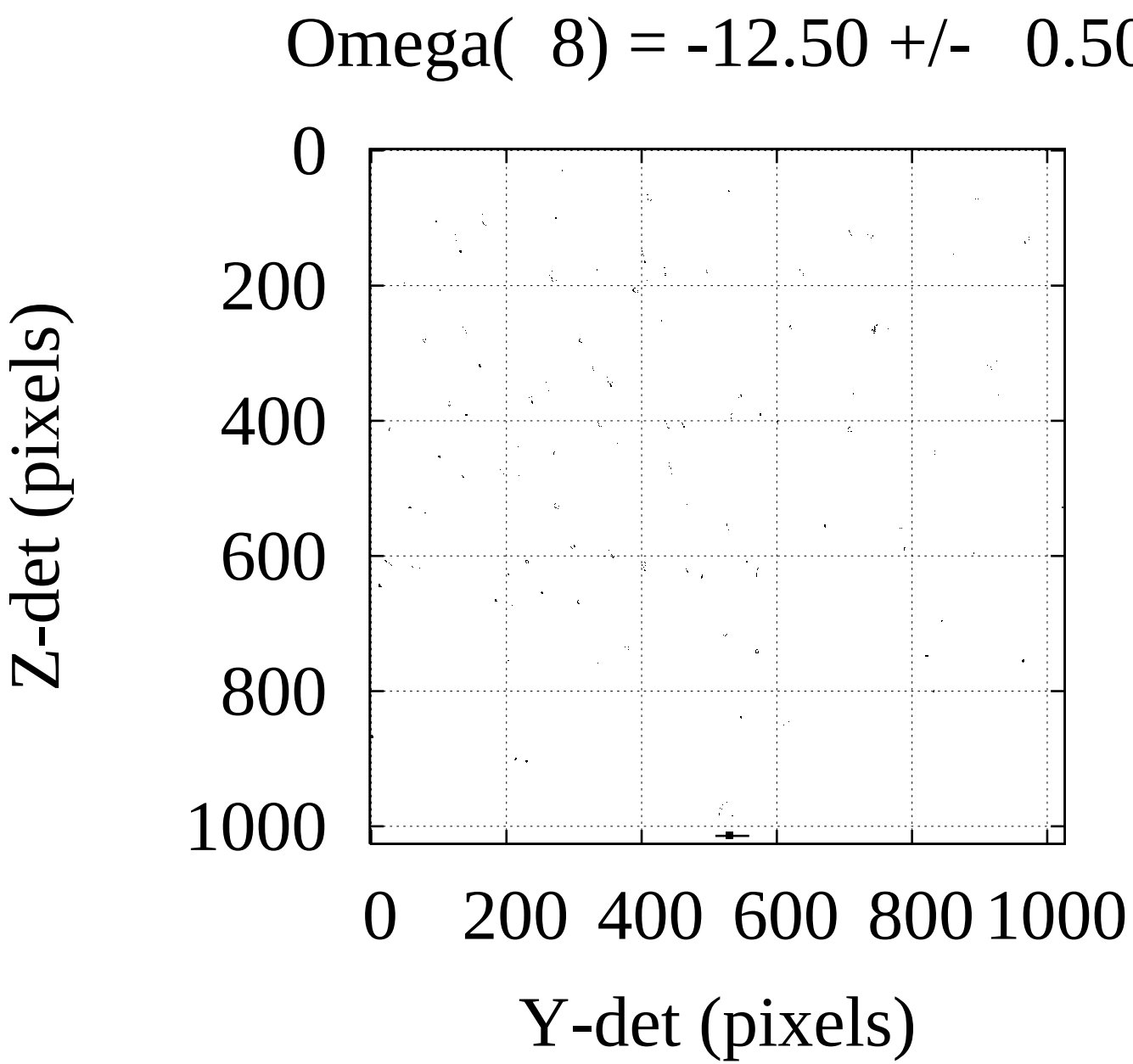
200
400
600
800
1000
0
200
400
600
800
1000
Y-det (pixels)


Omega(7) = -13.50 +/- 0.50
Z-det (pixels)
0
200
400
600
800
1000
0 200 400 600 800 1000
Y-det (pixels)


Omega(8) = -12.50 +/- 0.50
Z-det (pixels)
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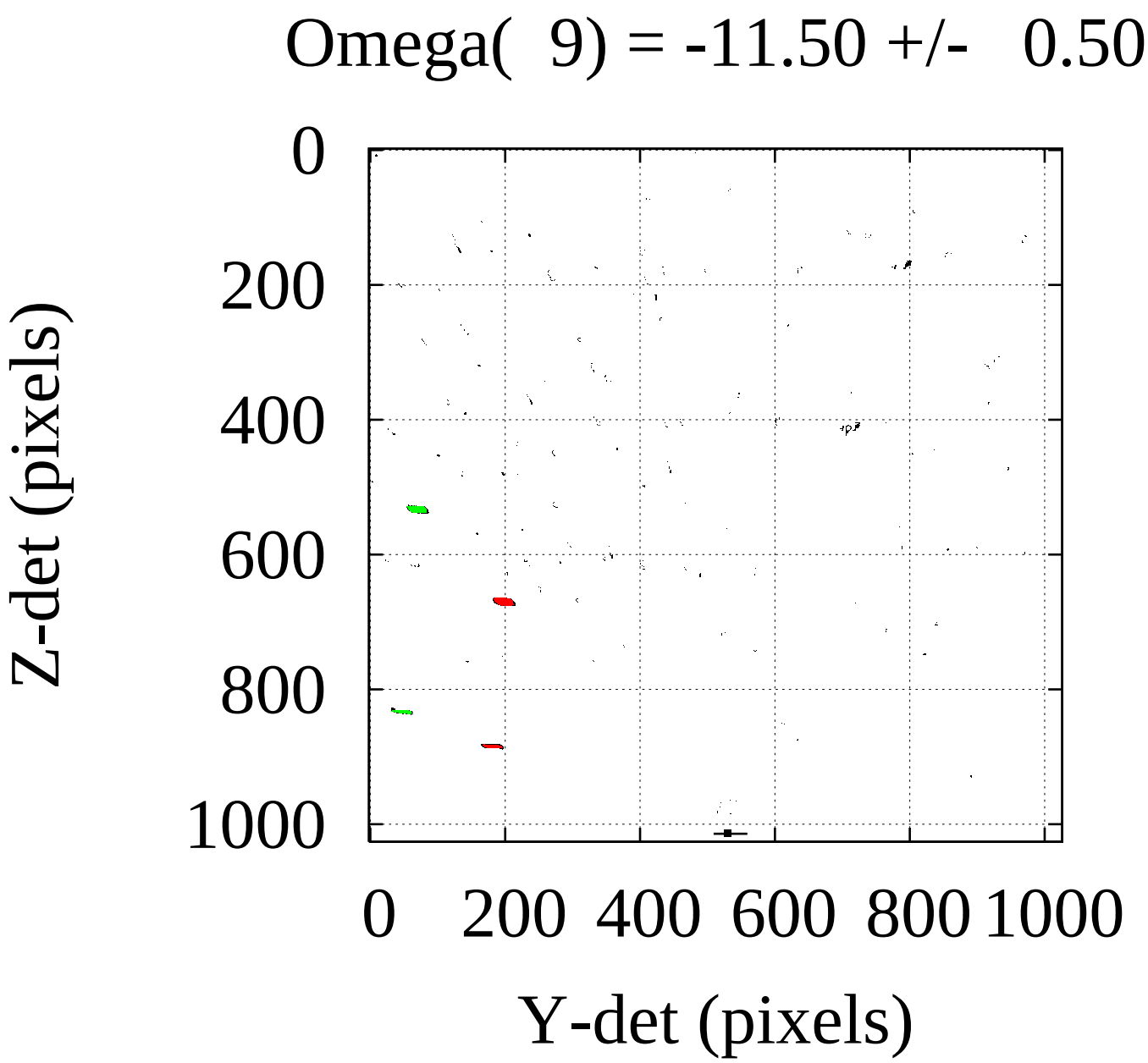
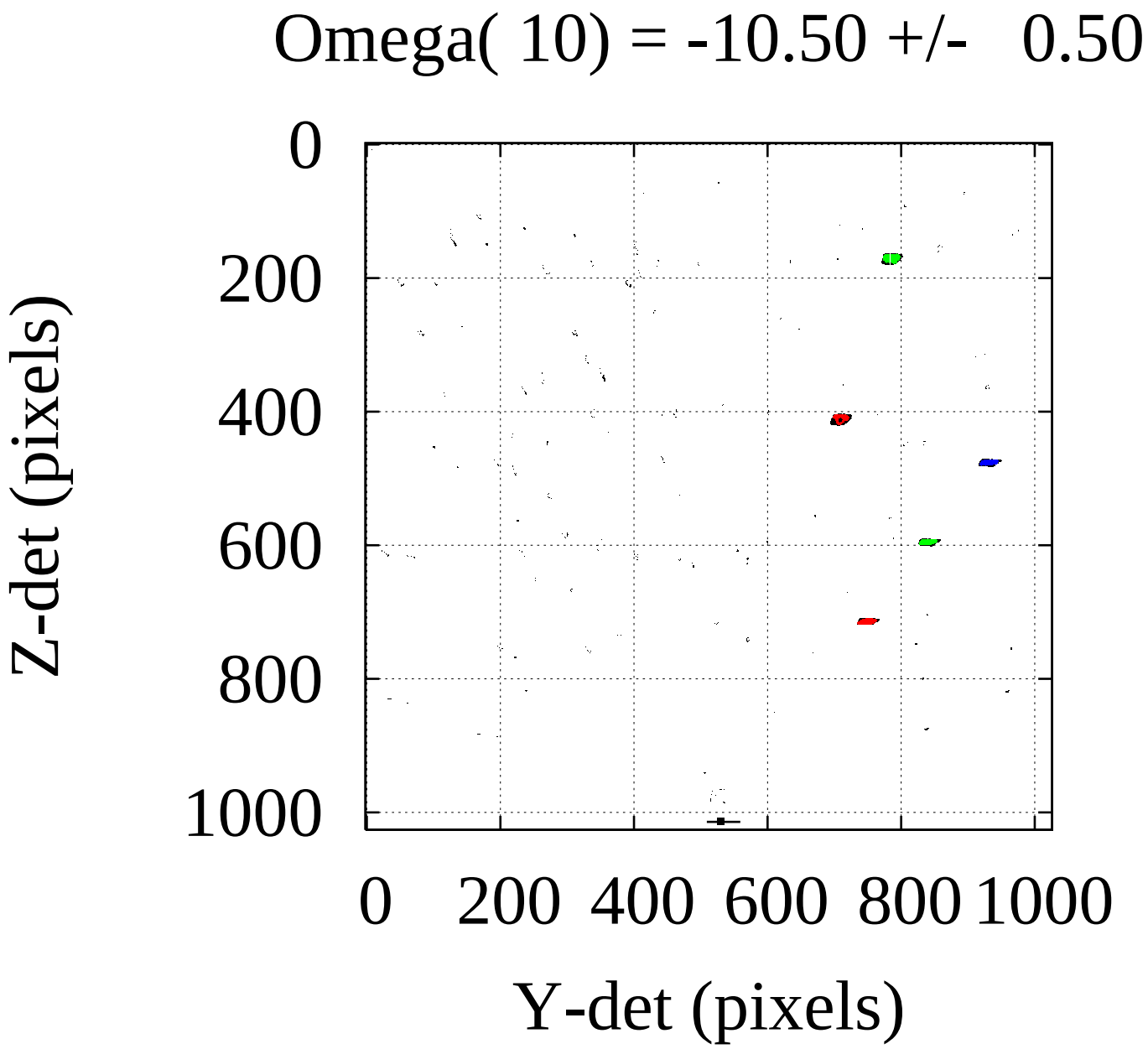
200
400
600
800
1000
0 200 400 600 800 1000
Y-det (pixels)


Omega(9) = -11.50 +/- 0.50
Z-det (pixels)
0
200
400
600
800
1000
0
200
400
600
800
1000
Y-det (pixels)


Omega(10) = -10.50 +/- 0.50
Z-det (pixels)
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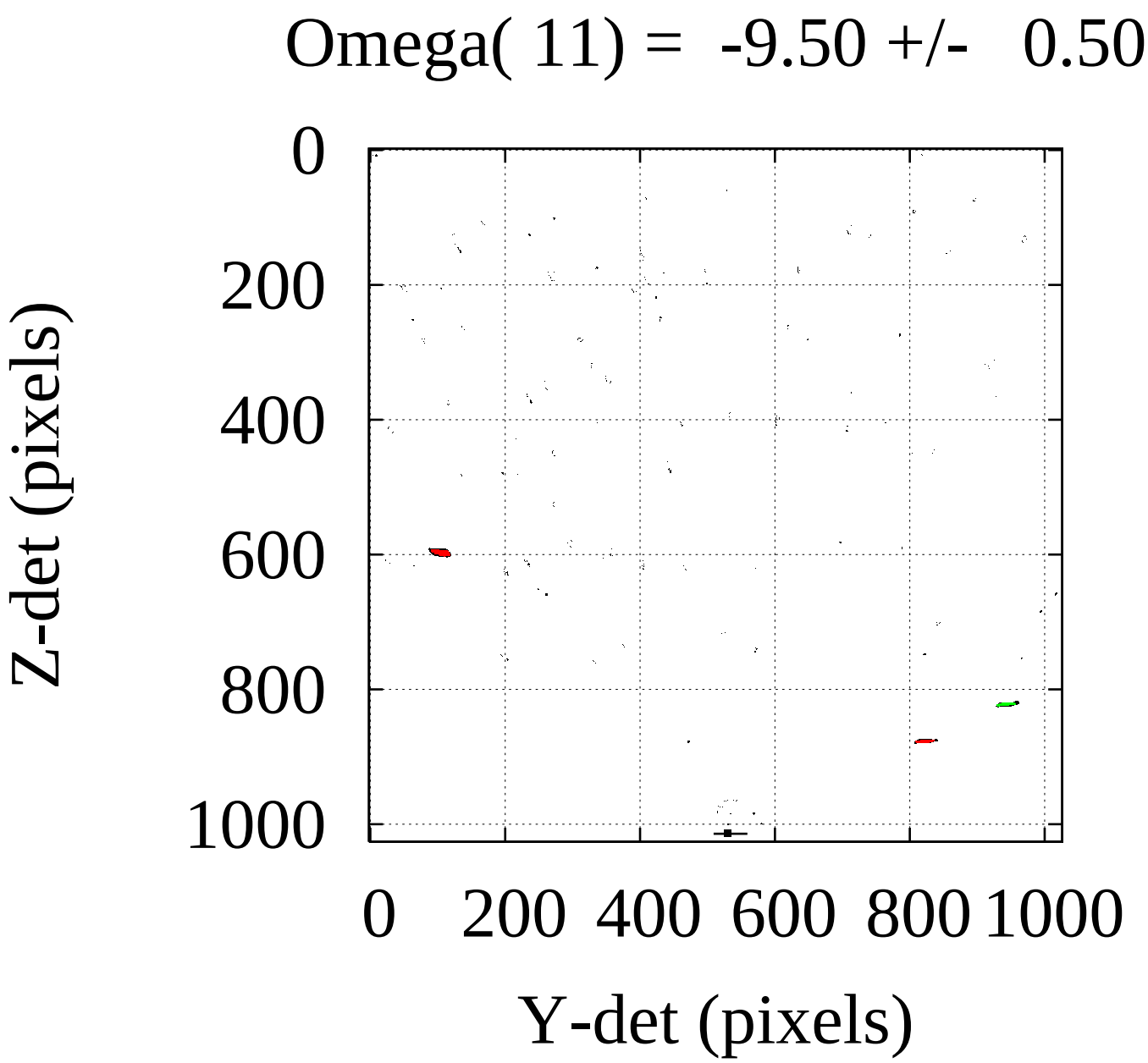
200
400
600
800
1000
0
200
400
600
800
1000
Y-det (pixels)


Omega(11) = -9.50 +/- 0.50
Z-det (pixels)
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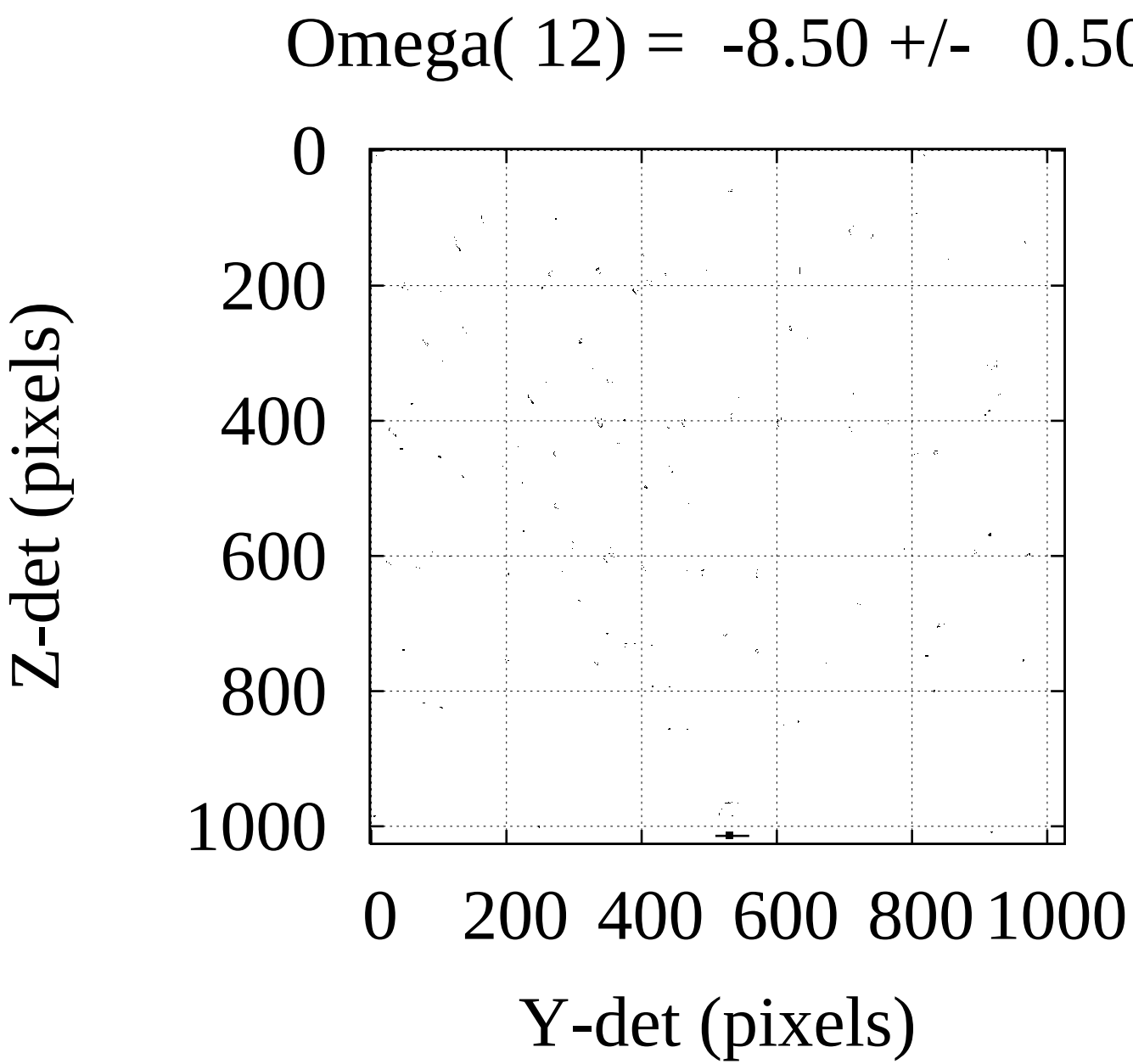
200
400
600
800
1000
0 200 400 600 800 1000
Y-det (pixels)


Omega(12) = -8.50 +/- 0.50
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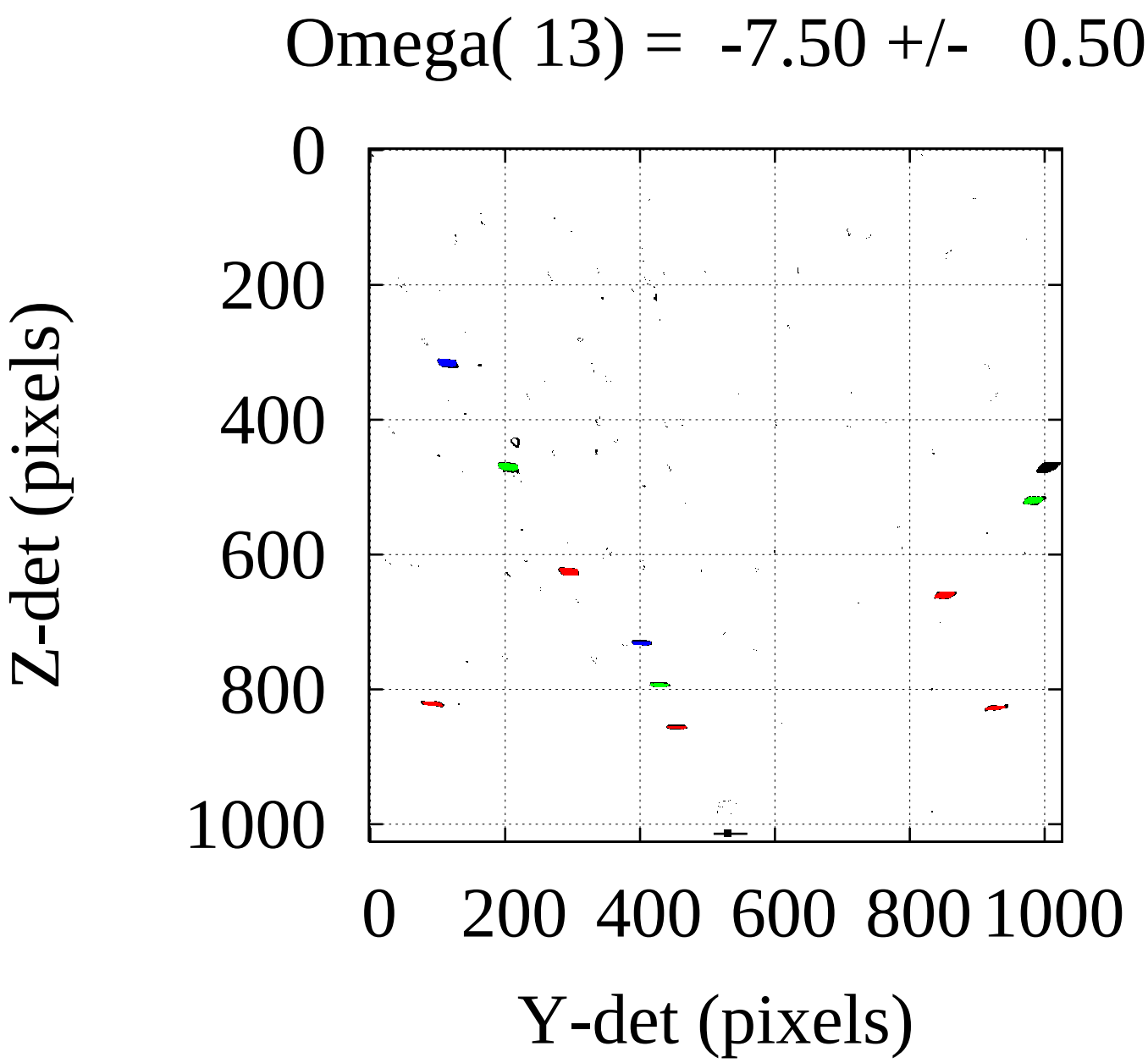
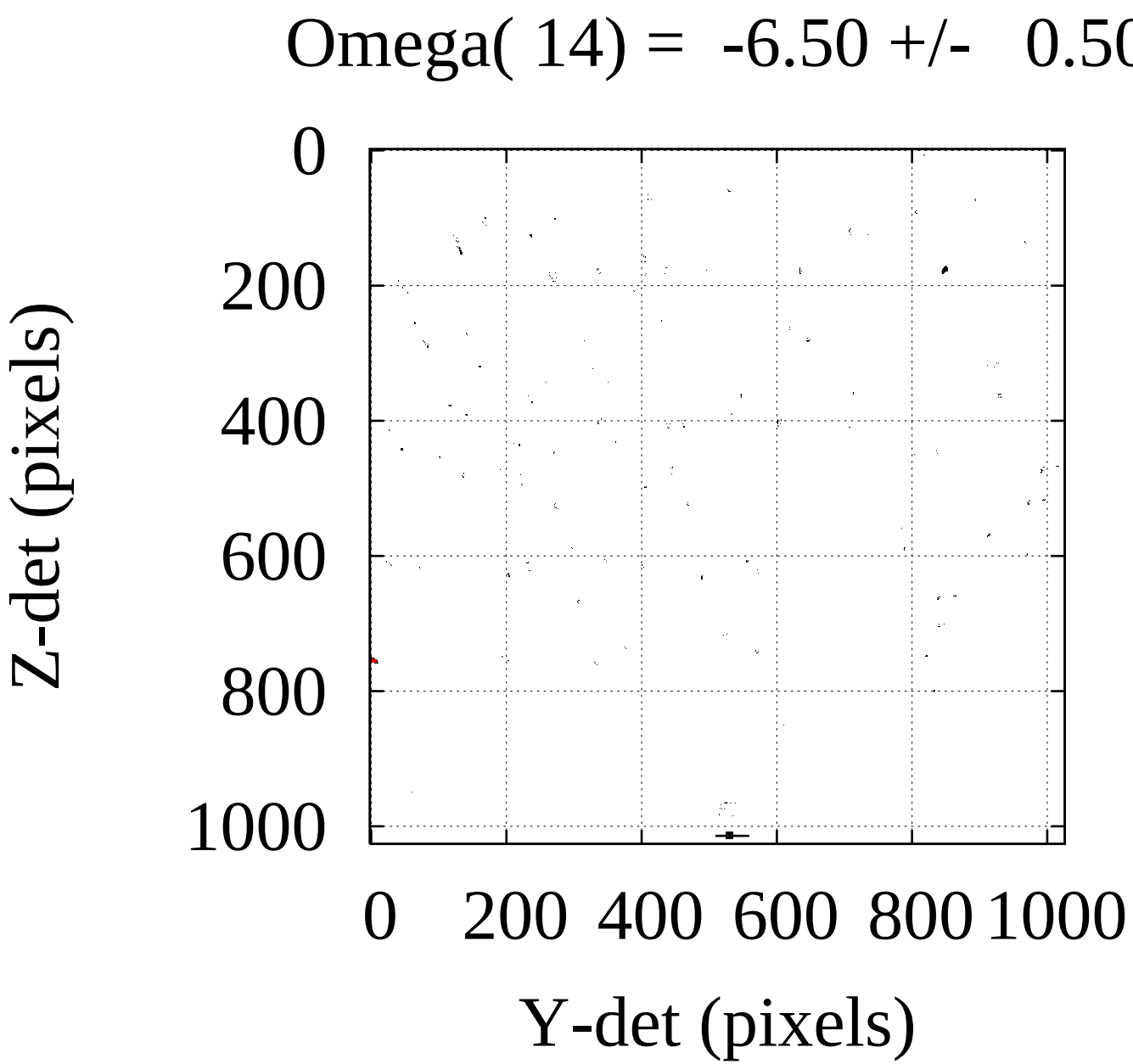
200
400
600
800
1000
Z-det (pixels)
0
200
400
600
800
1000
Y-det (pixels)


Omega(13) = -7.50 +/-   0.50
Z-det (pixels)
0
200
400
600
800
1000
0
200
400
600
800
1000
Y-det (pixels)


Omega(14) = -6.50 +/- 0.50
Z-det (pixels)
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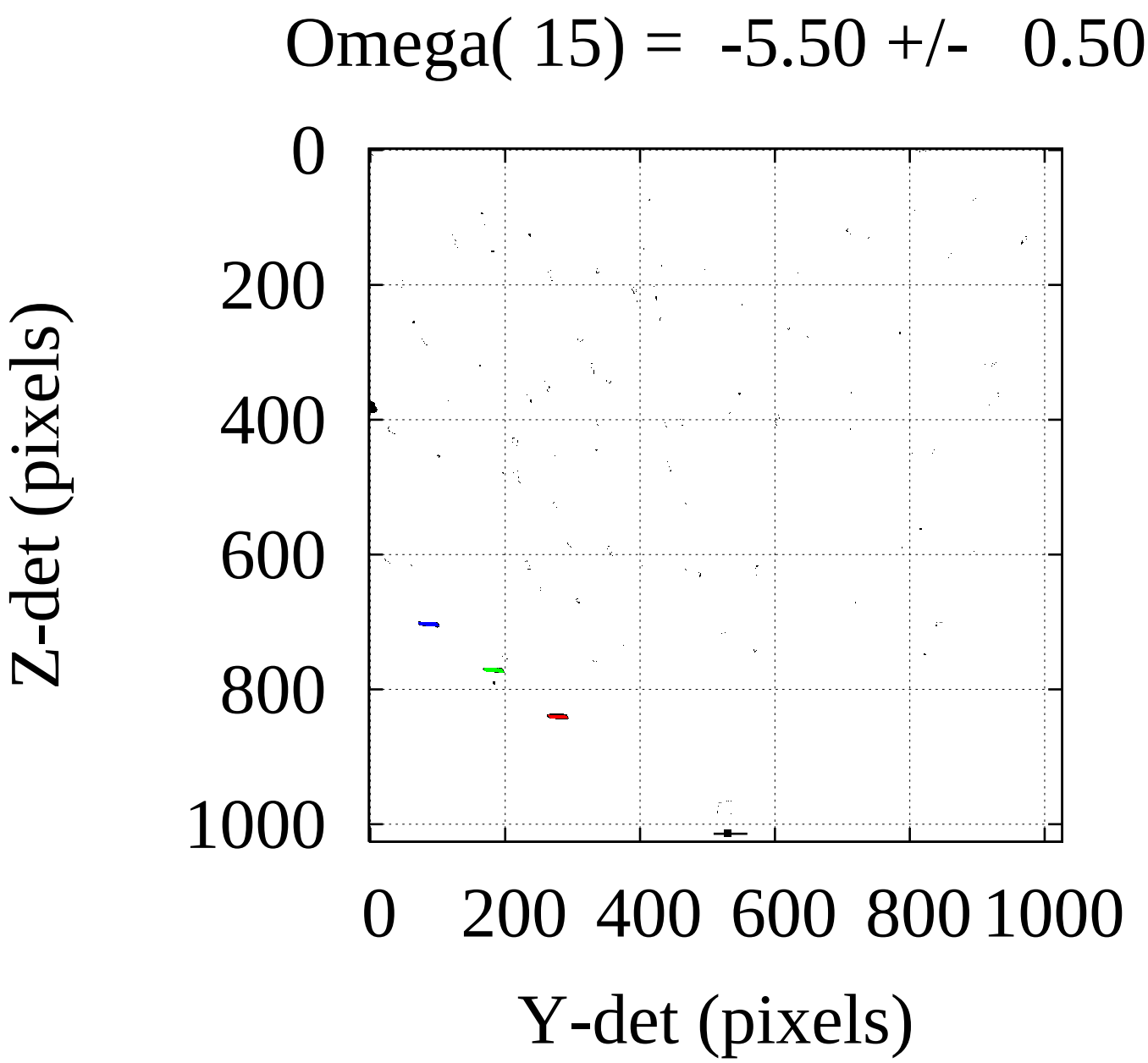
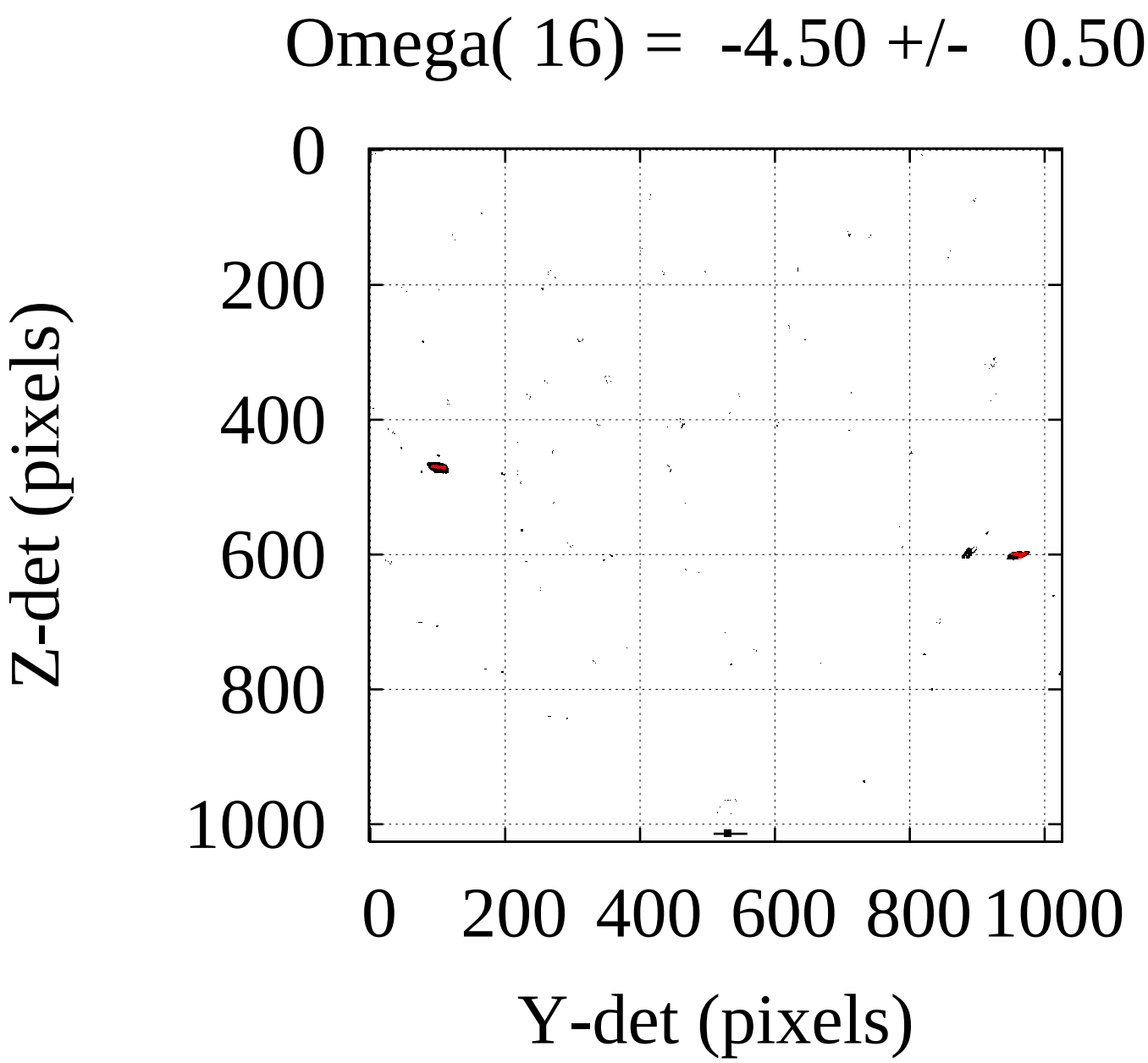
200
400
600
800
1000
0 200 400 600 800 1000
Y-det (pixels)


Omega(15) = -5.50 +/- 0.50
Z-det (pixels)
0
200
400
600
800
1000
0
200
400
600
800
1000
Y-det (pixels)


Omega(16) = -4.50 +/- 0.50
Z-det (pixels)
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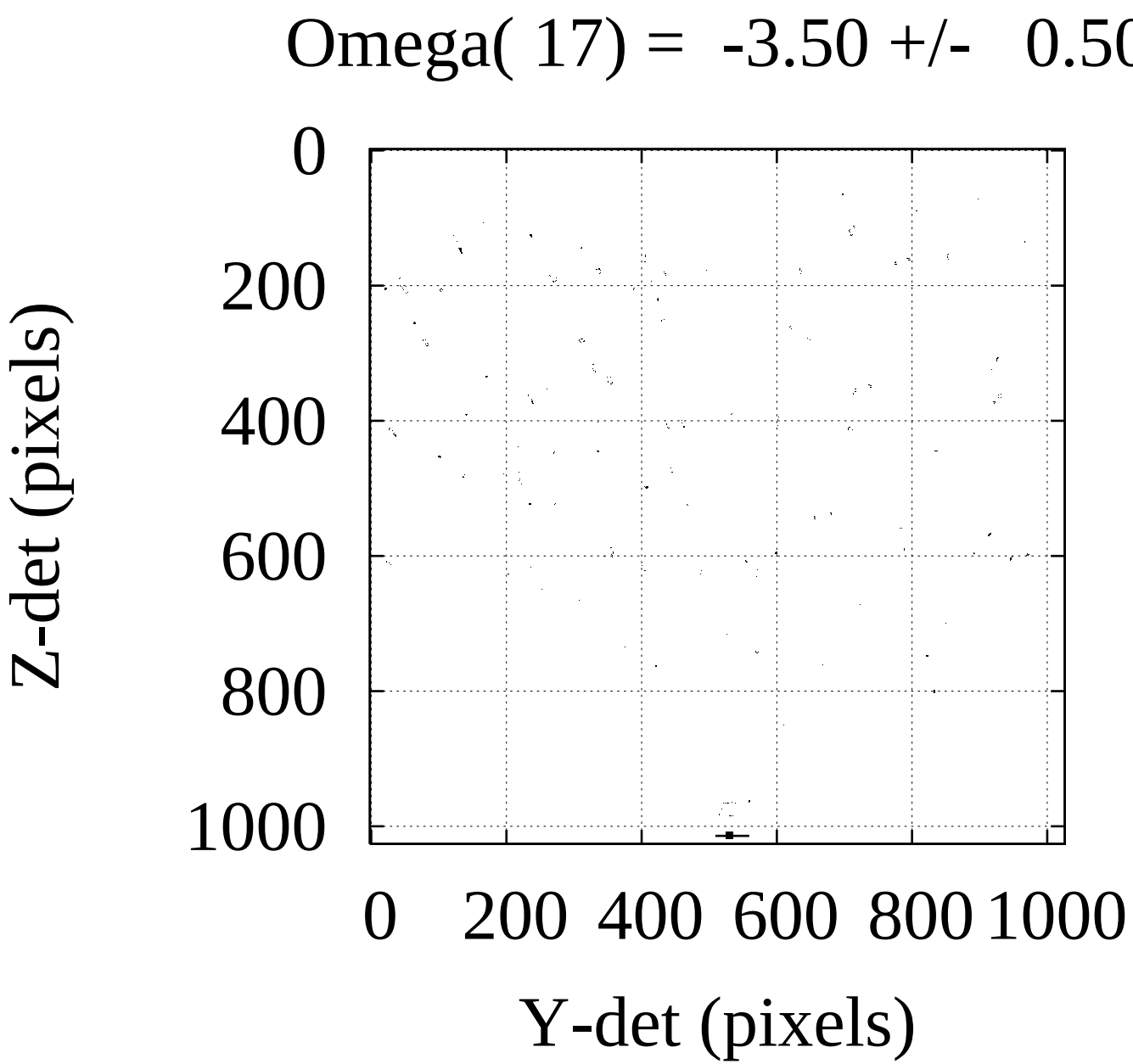
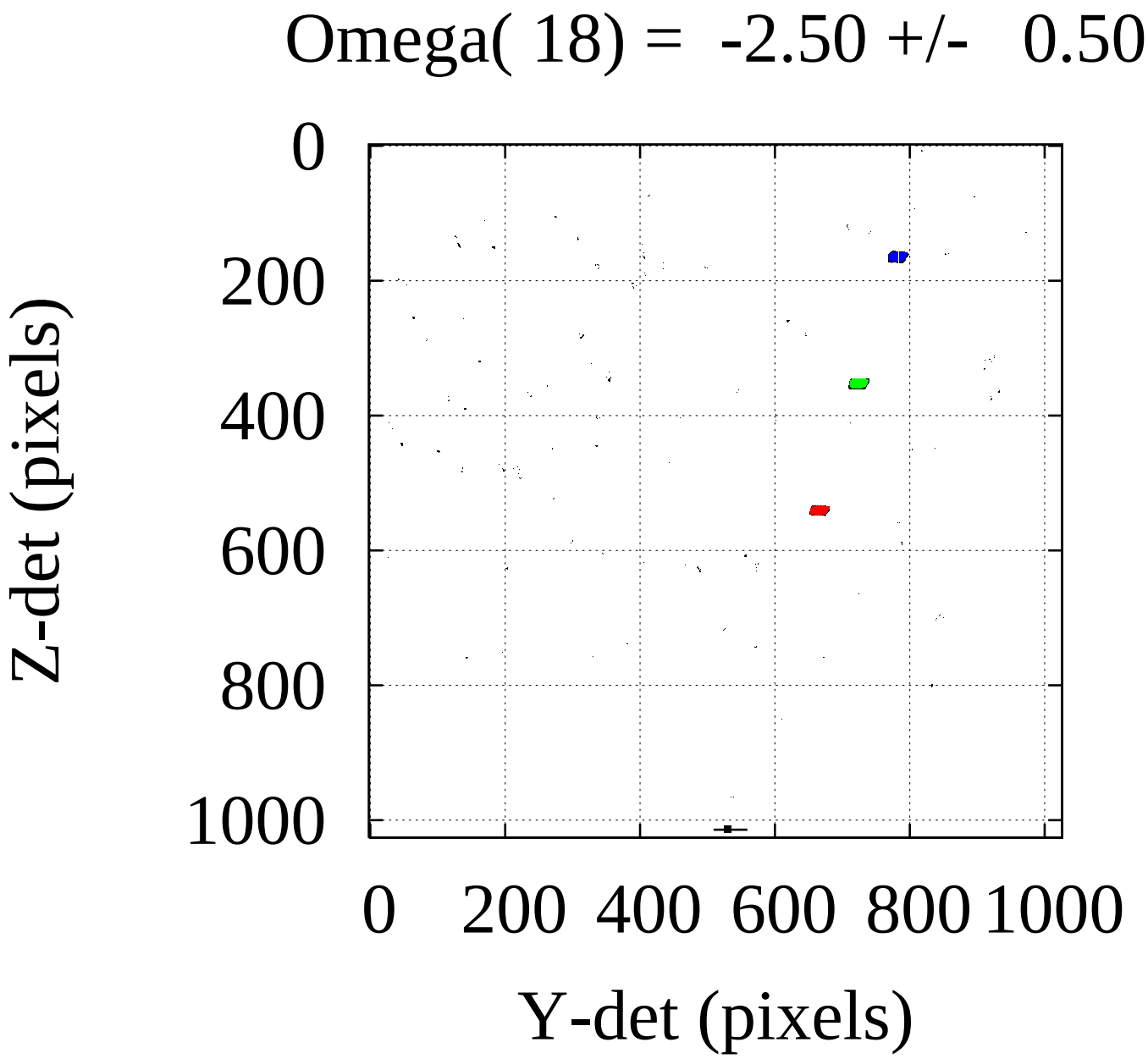
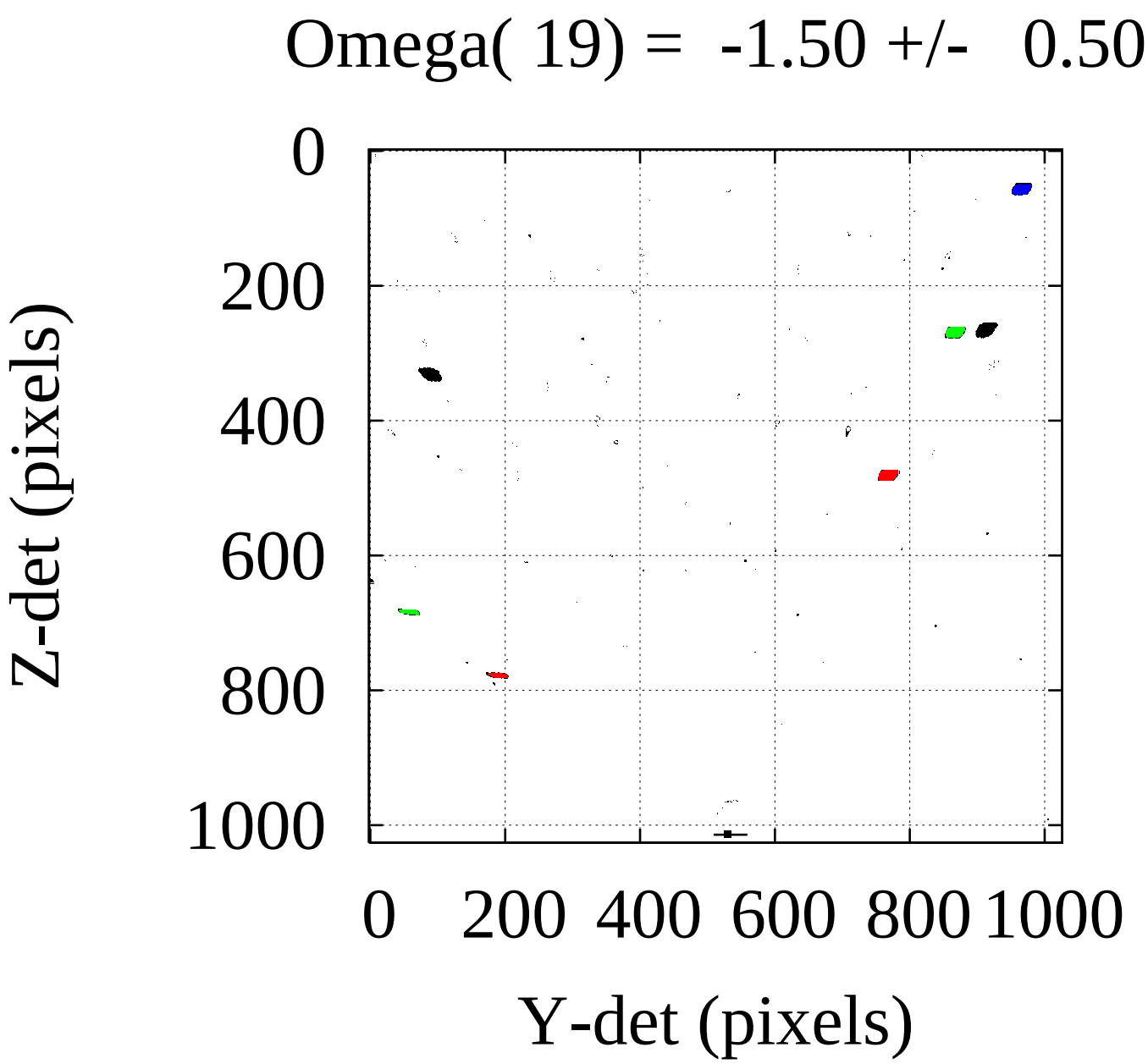
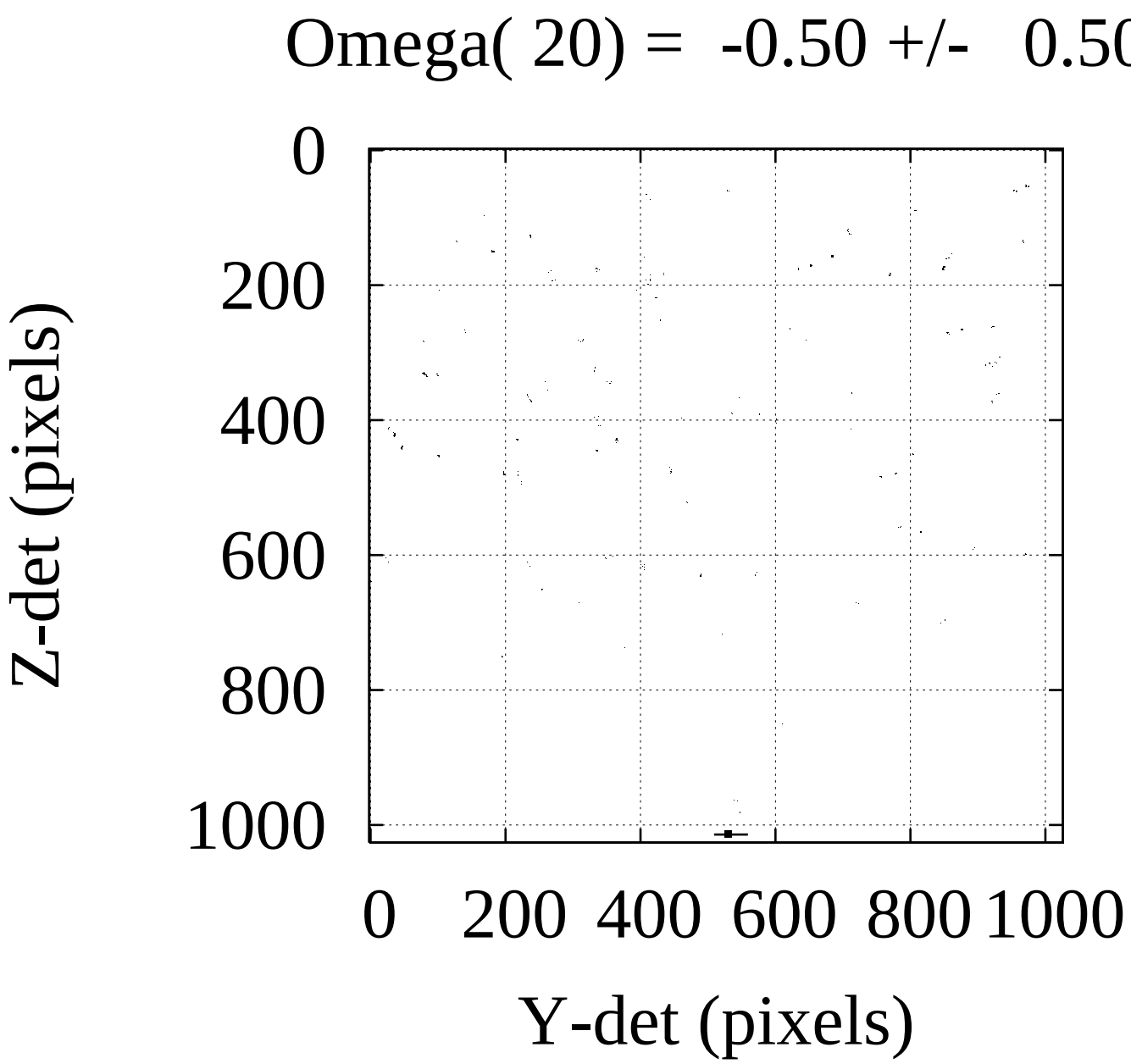
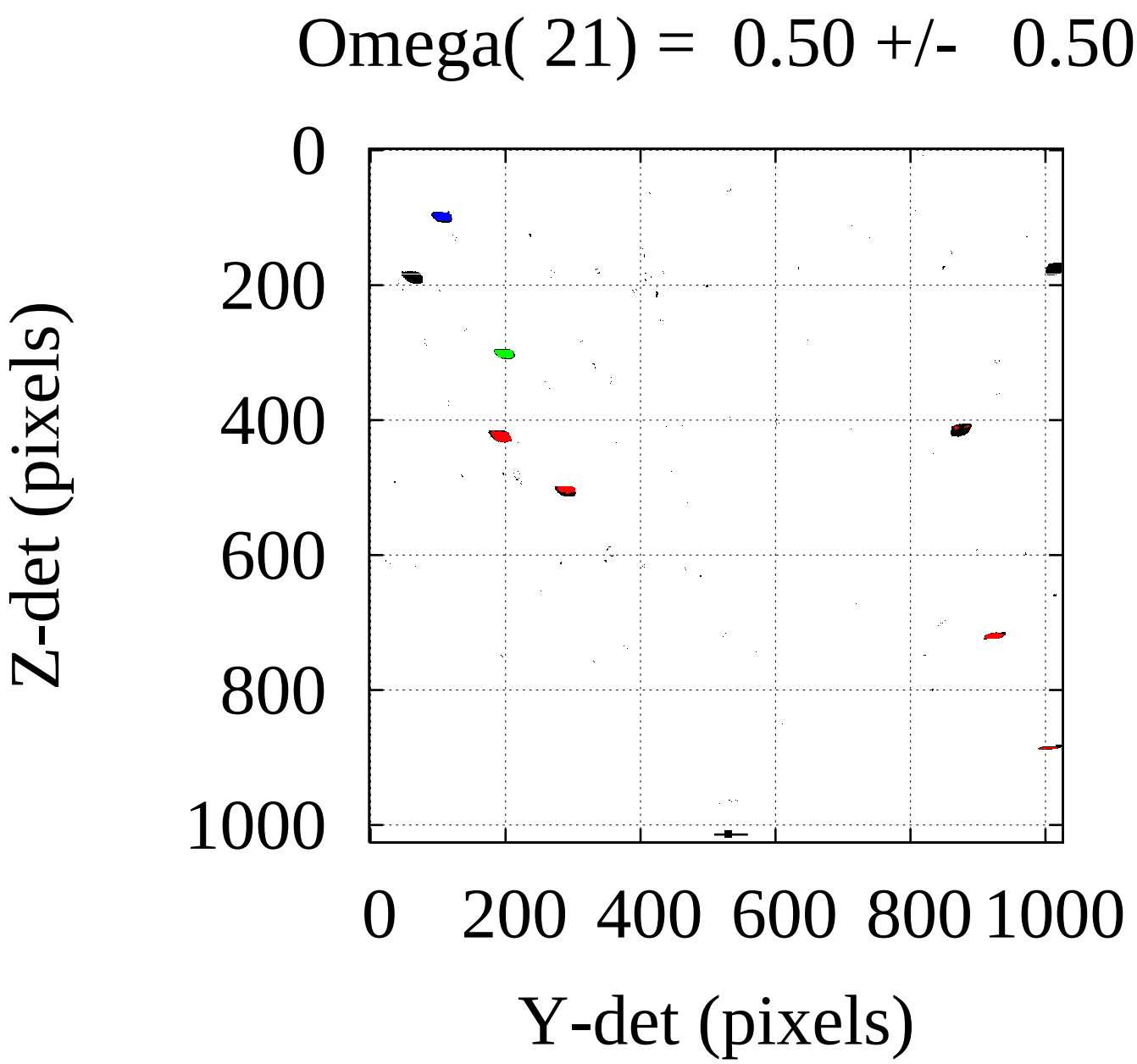
200
400
600
800
1000
0 200 400 600 800 1000
Y-det (pixels)

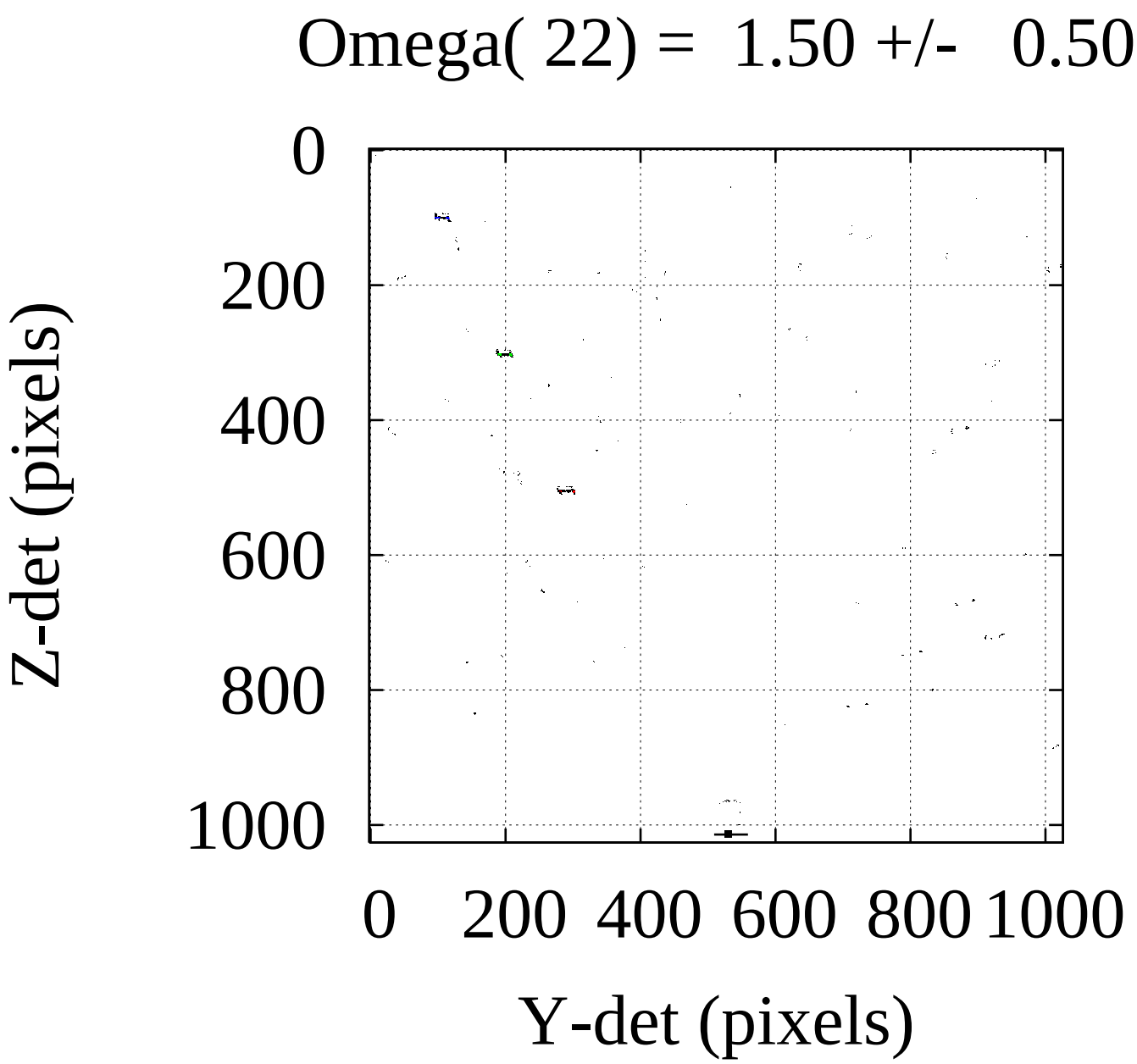

Omega(17) = -3.50 +/- 0.50
0
200
400
600
800
1000
Z-det (pixels)
0
200
400
600
800
1000
Y-det (pixels)

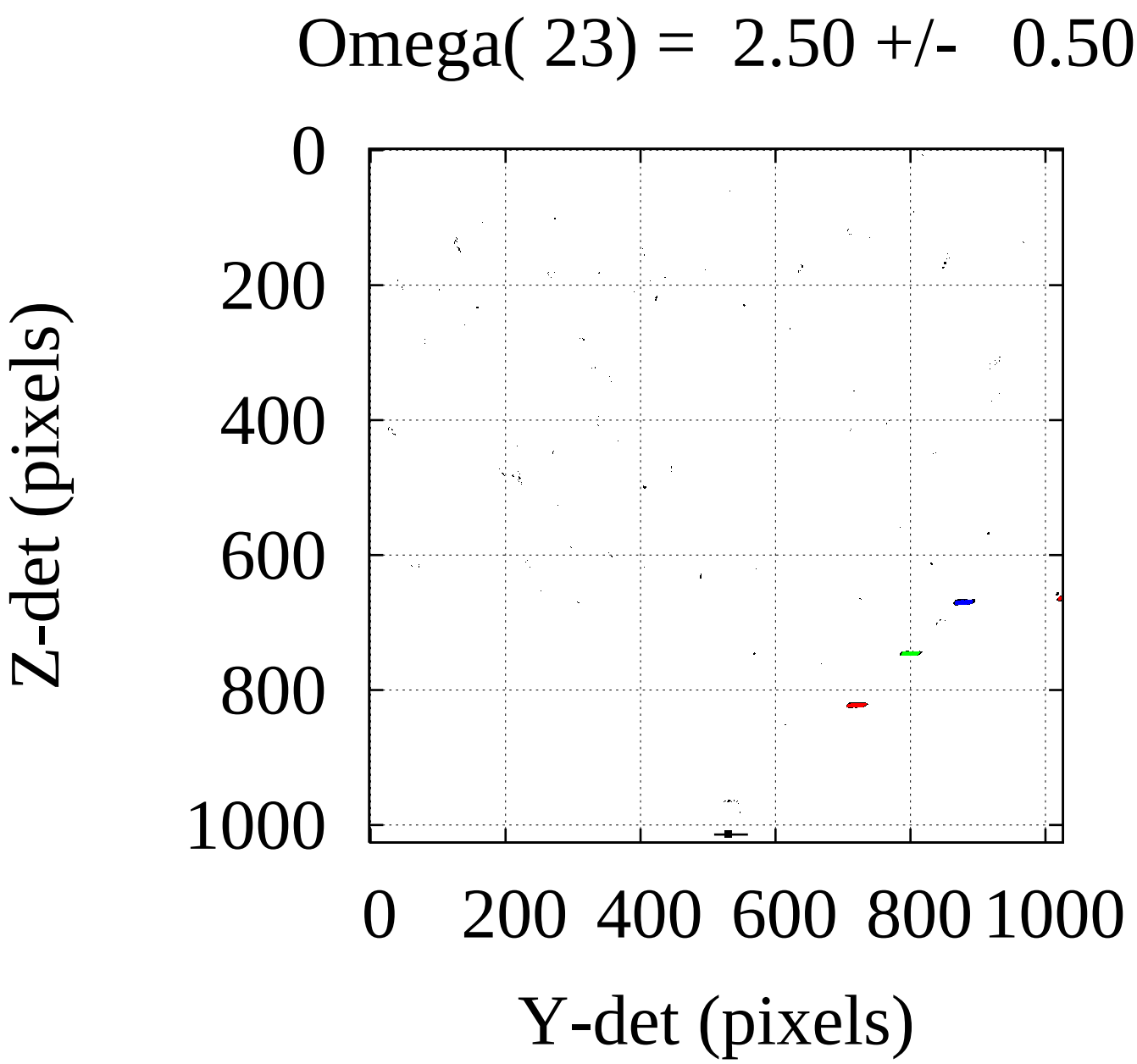

Omega(18) = -2.50 +/- 0.50
Z-det (pixels)
0
200
400
600
800
1000
0
200
400
600
800
1000
Y-det (pixels)

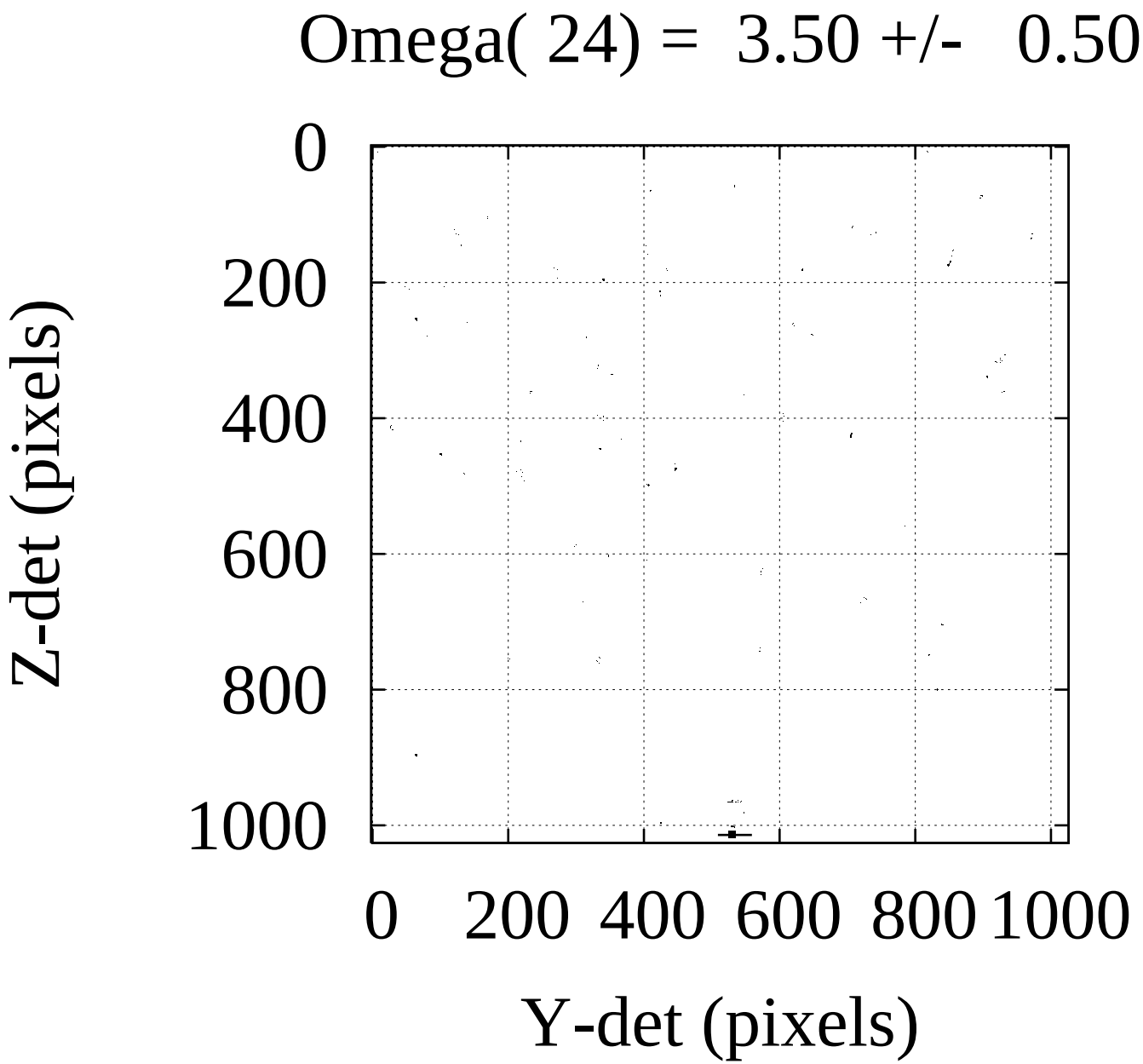

Omega(19) = -1.50 +/-   0.50
Z-det (pixels)
0
200
400
600
800
1000
0
200
400
600
800
1000
Y-det (pixels)

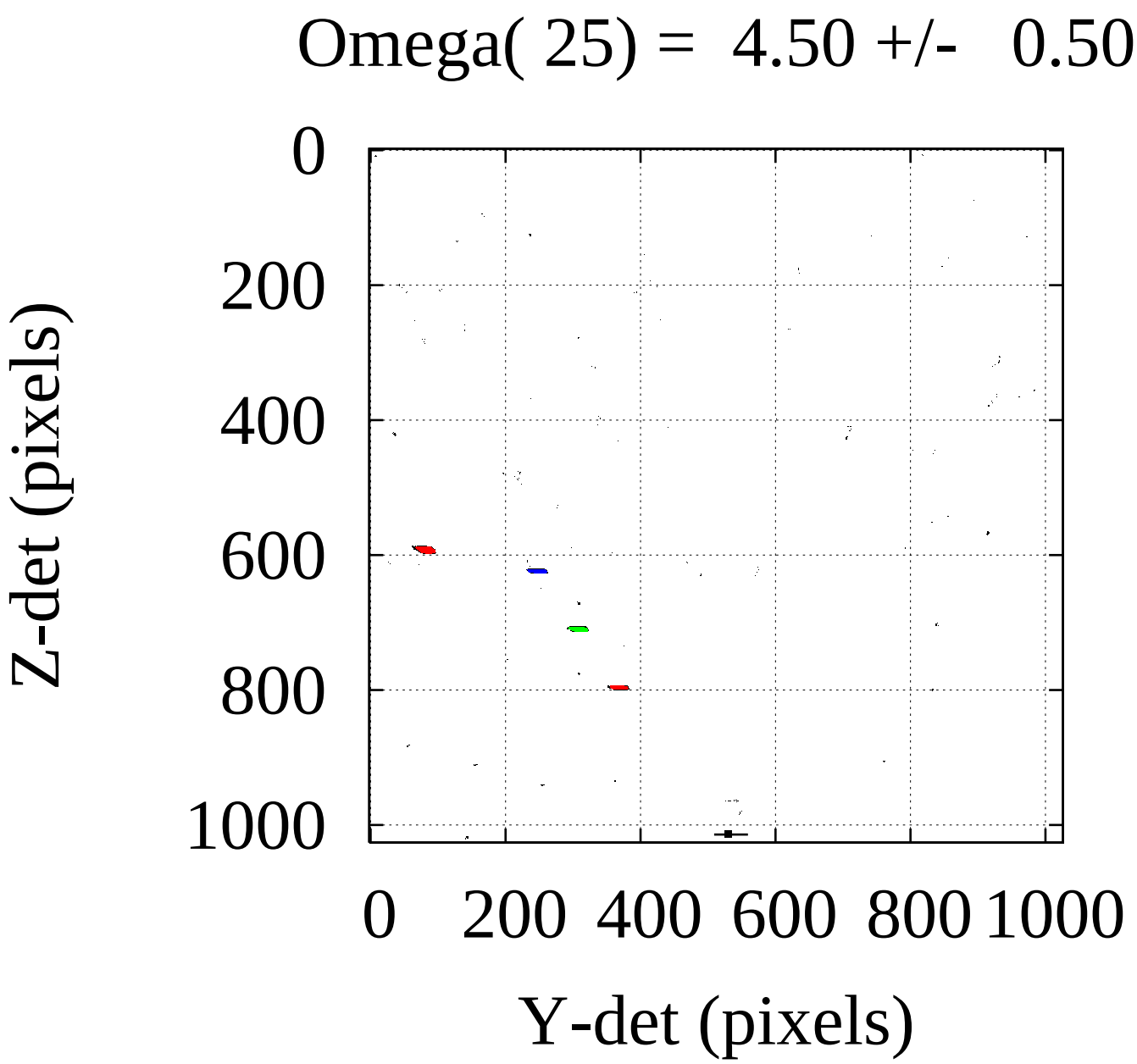

Omega(20) = -0.50 +/- 0.50
0
200
400
600
800
1000
Z-det (pixels)
0
200
400
600
800
1000
Y-det (pixels)

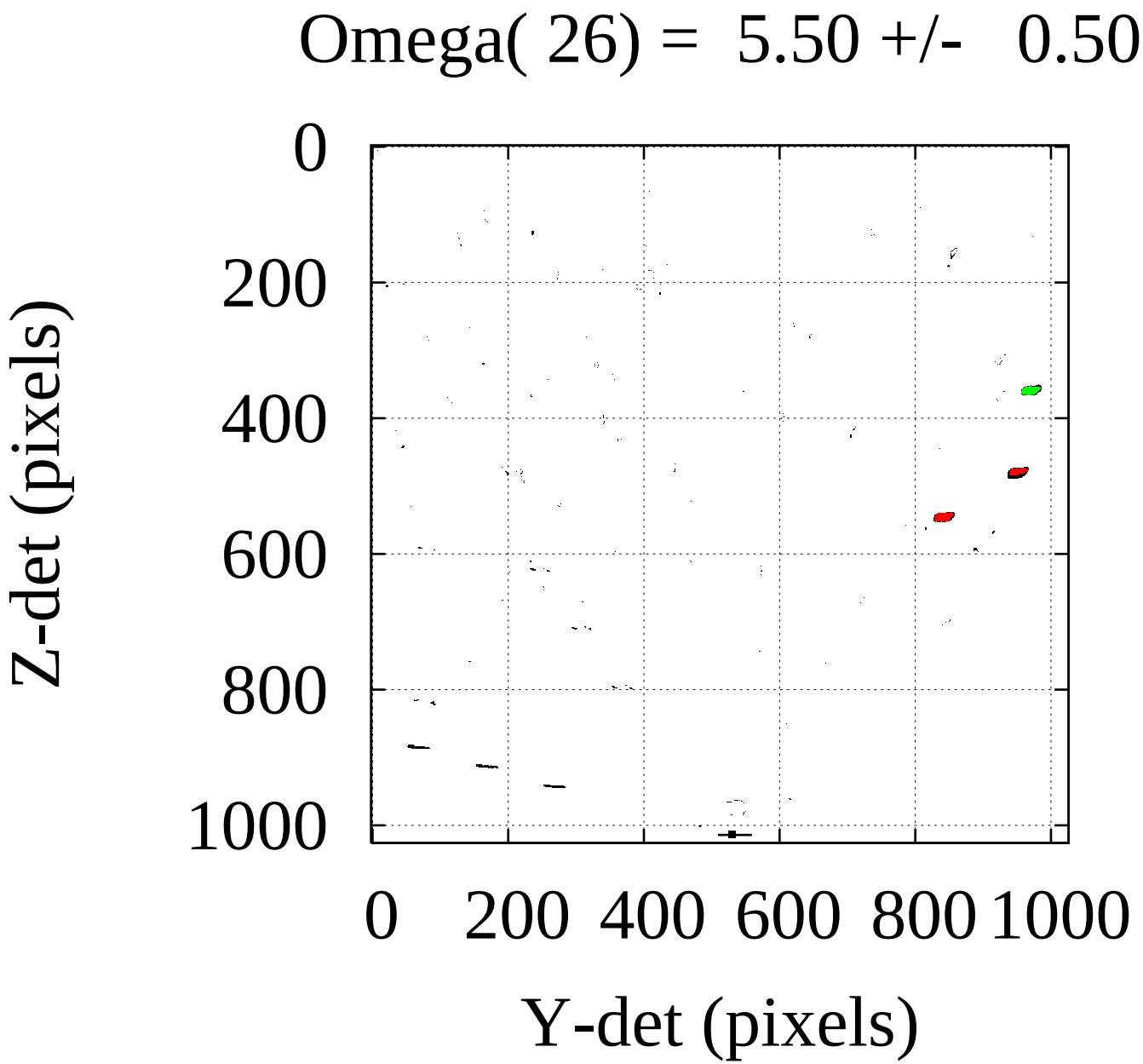

Omega(21) = 0.50 +/- 0.50
Z-det (pixels)
0
200
400
600
800
1000
0
200
400
600
800
1000
Y-det (pixels)

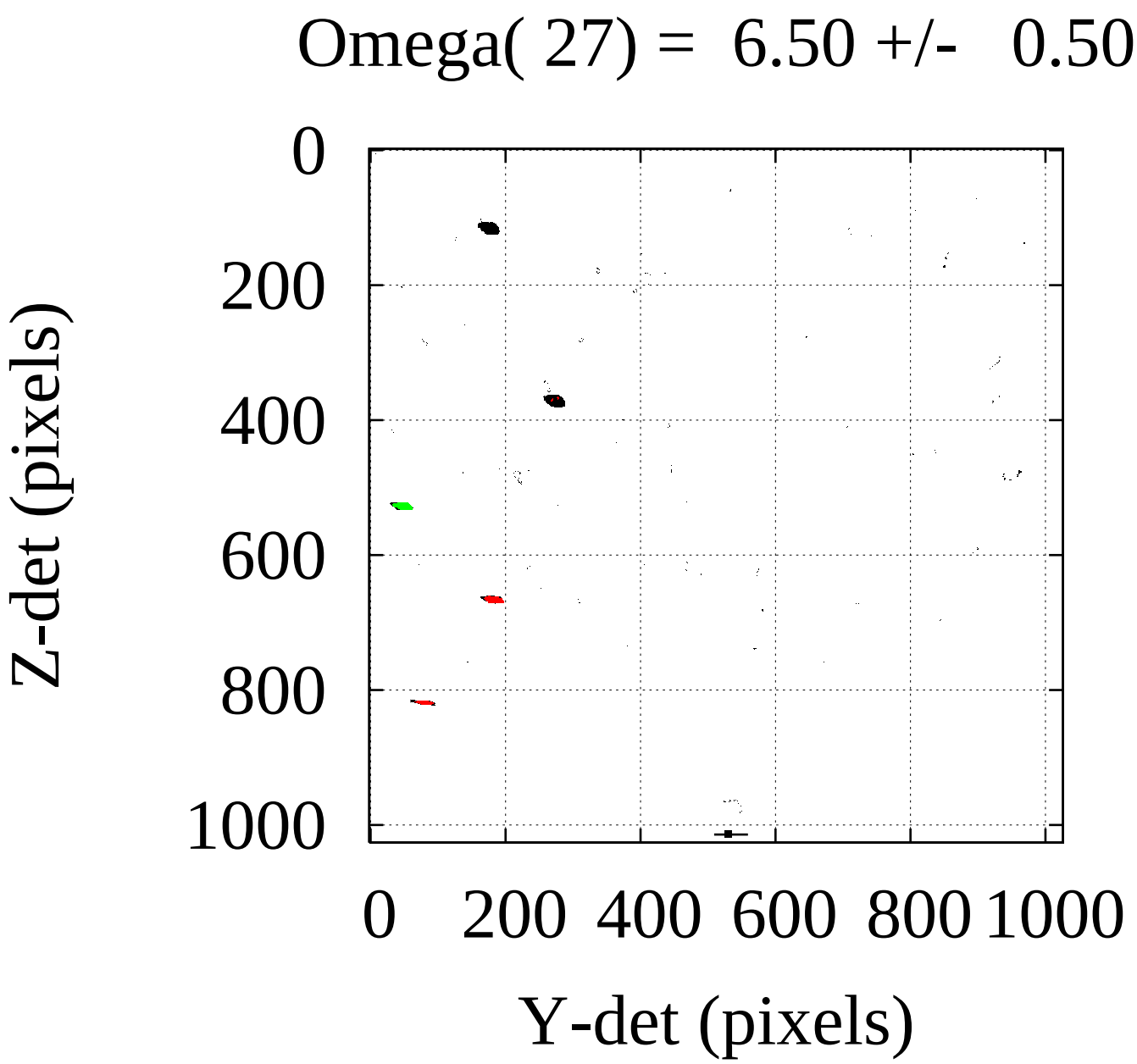

Omega(22) = 1.50 +/- 0.50
Z-det (pixels)
0
200
400
600
800
1000
0 200 400 600 800 1000
Y-det (pixels)

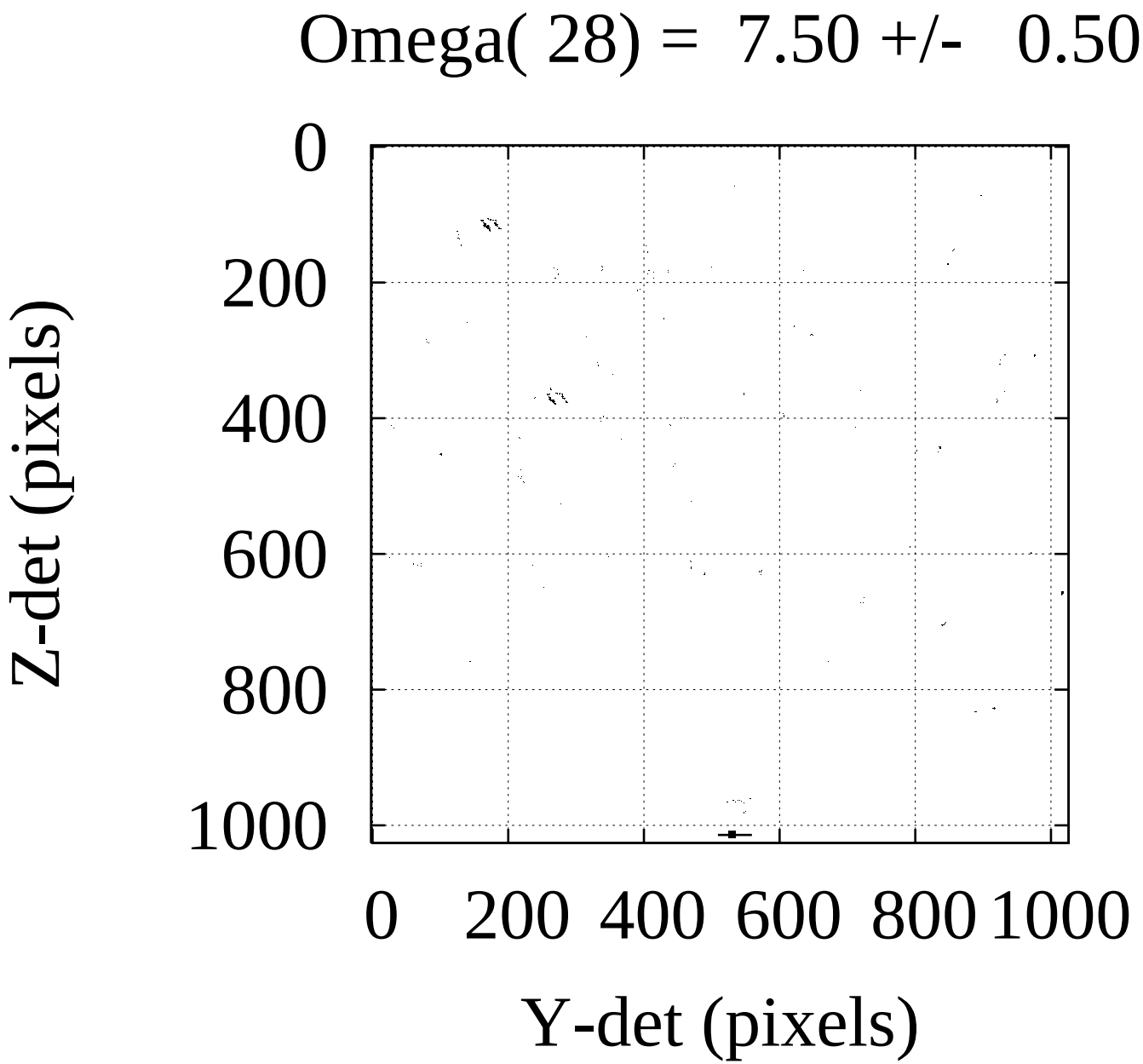

Omega(23) = 2.50 +/- 0.50
Z-det (pixels)
0
200
400
600
800
1000
0
200
400
600
800
1000
Y-det (pixels)

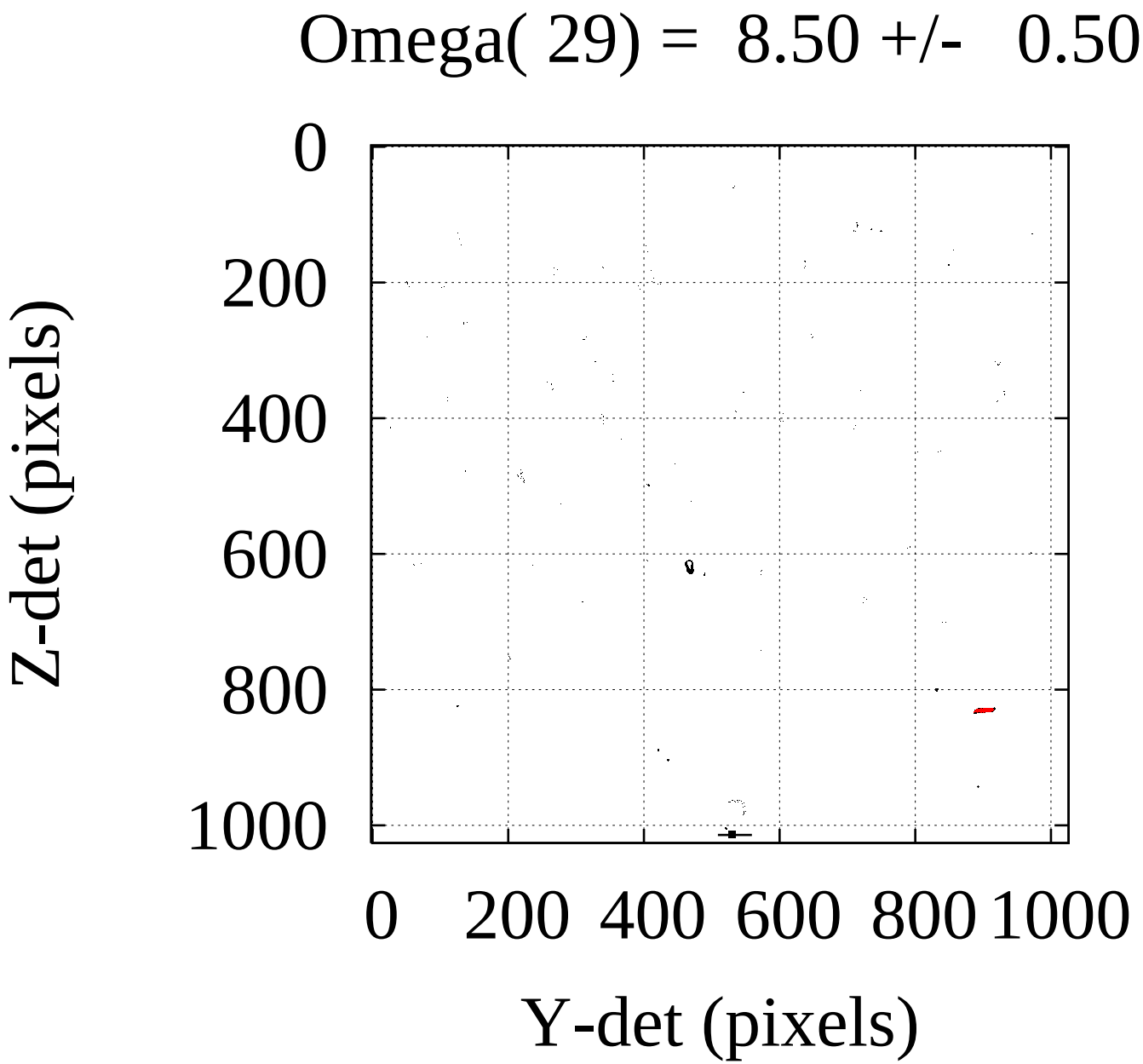

Omega(24) = 3.50 +/- 0.50
Z-det (pixels)
0
200
400
600
800
1000
0 200 400 600 800 1000
Y-det (pixels)

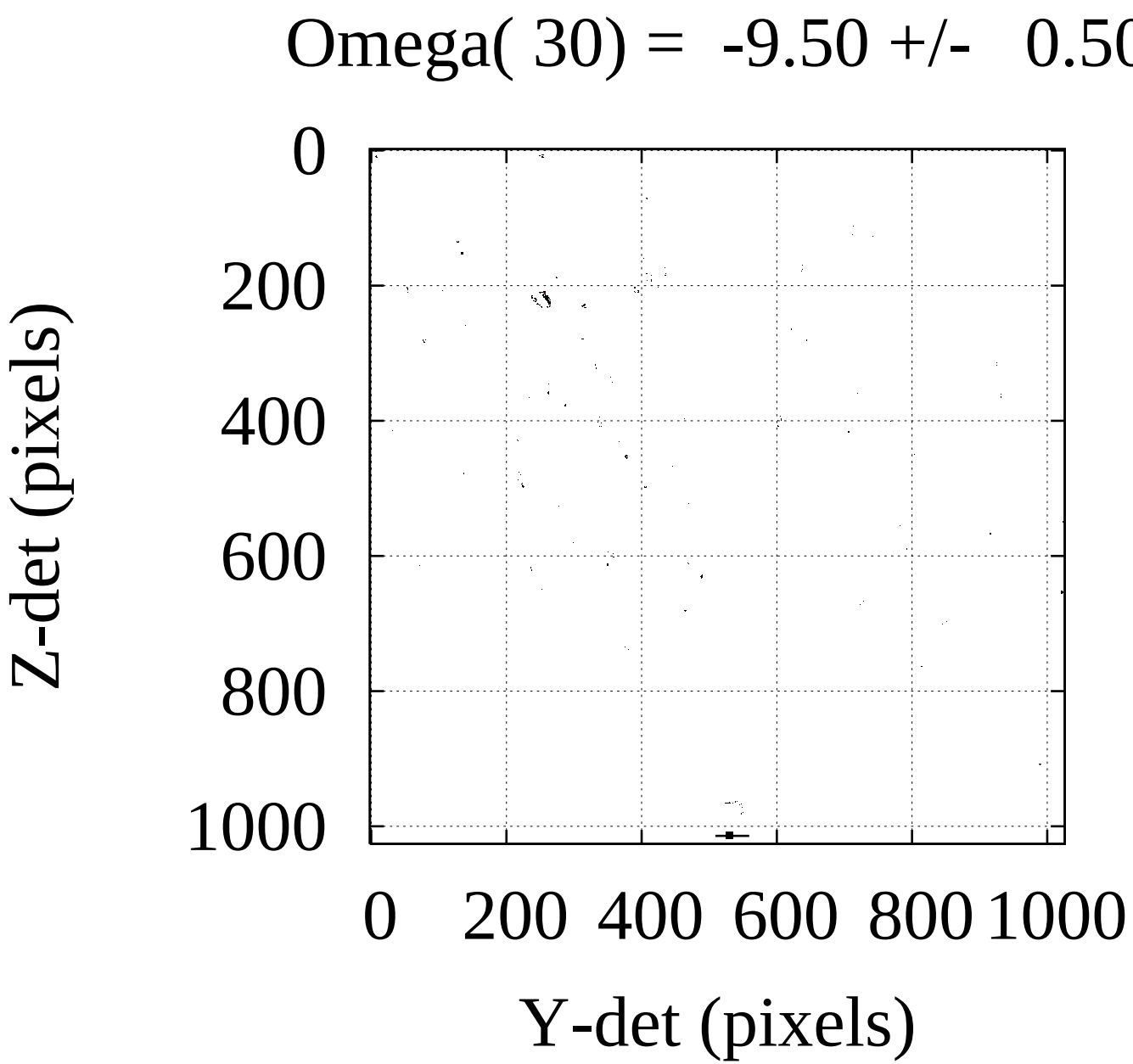

Omega(25) = 4.50 +/- 0.50
Z-det (pixels)
0
200
400
600
800
1000
0 200 400 600 800 1000
Y-det (pixels)

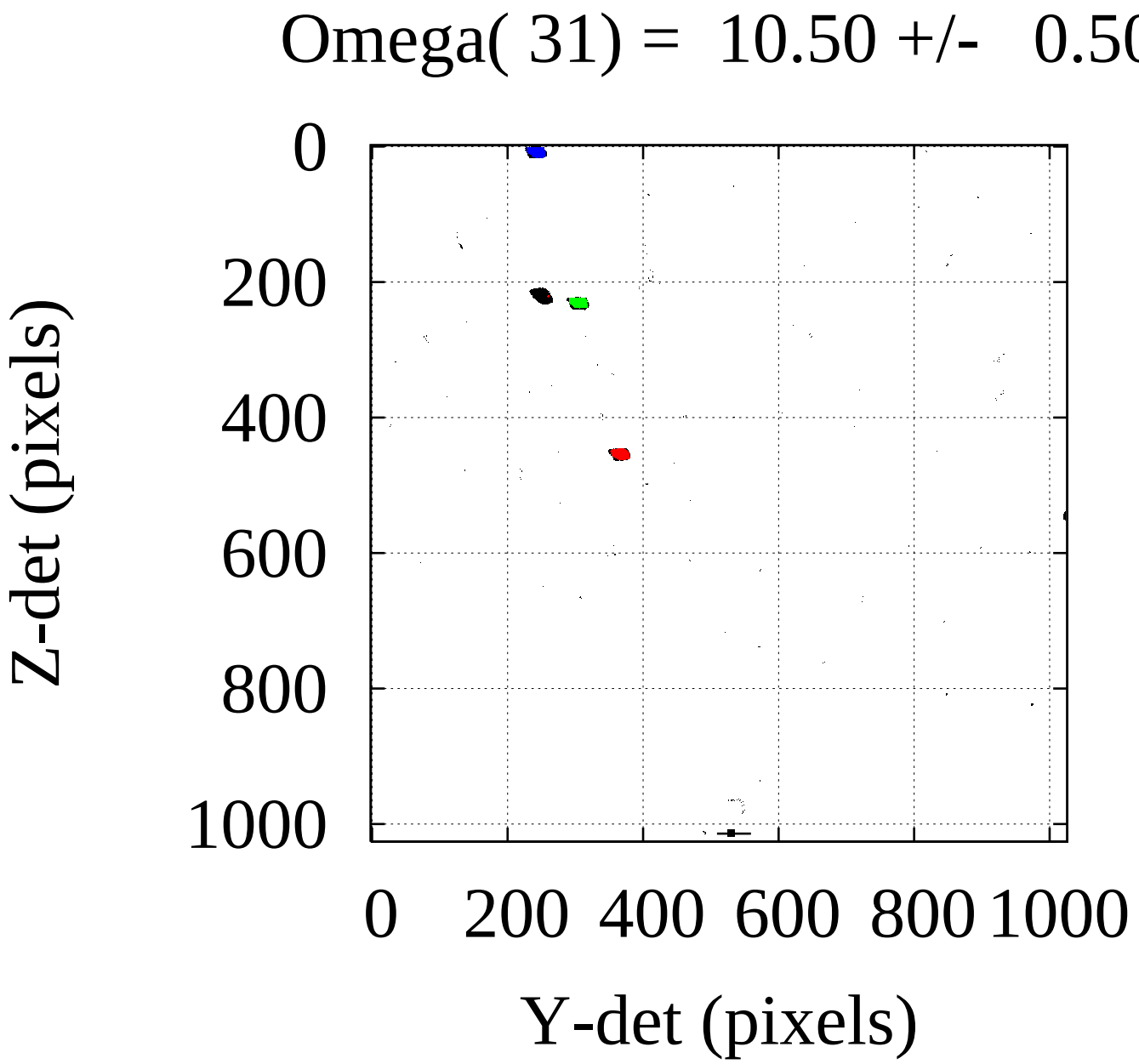

Omega(26) = 5.50 +/- 0.50
Z-det (pixels)
0
200
400
600
800
1000
0
200
400
600
800
1000
Y-det (pixels)

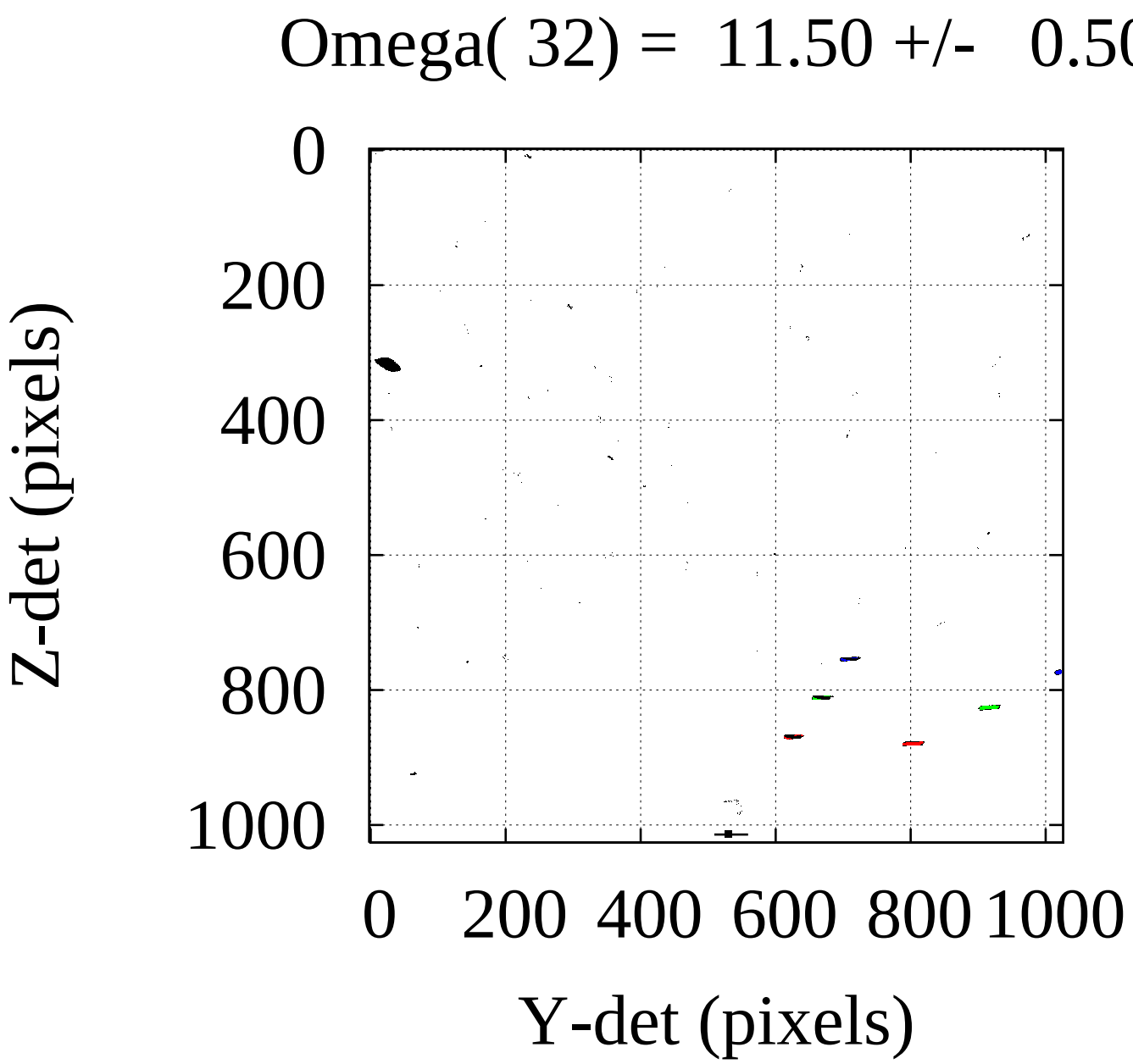

Omega(27) = 6.50 +/- 0.50
Z-det (pixels)
0
200
400
600
800
1000
0
200
400
600
800
1000
Y-det (pixels)

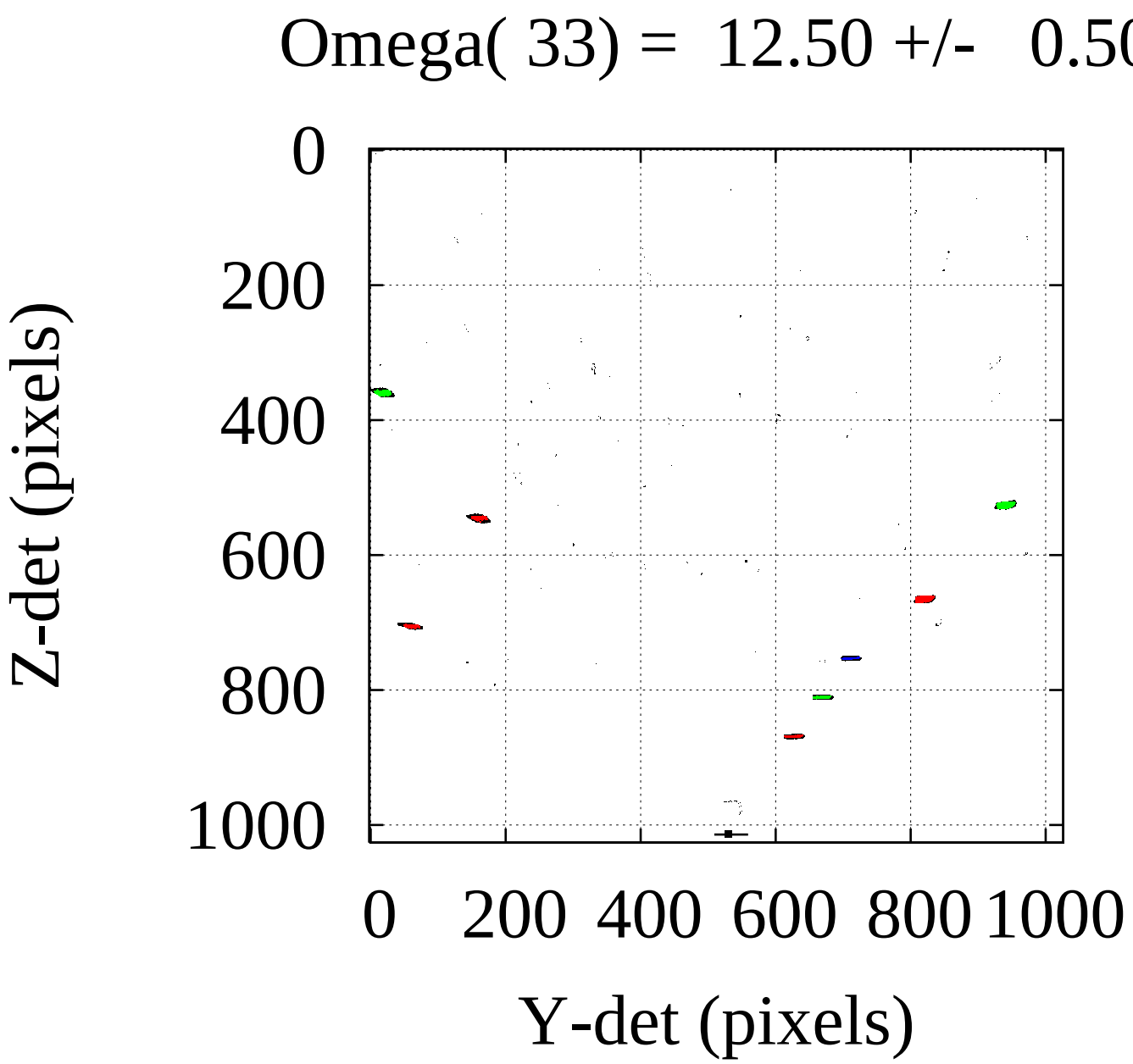

Omega(28) = 7.50 +/- 0.50
Z-det (pixels)
0
200
400
600
800
1000
0
200
400
600
800
1000
Y-det (pixels)

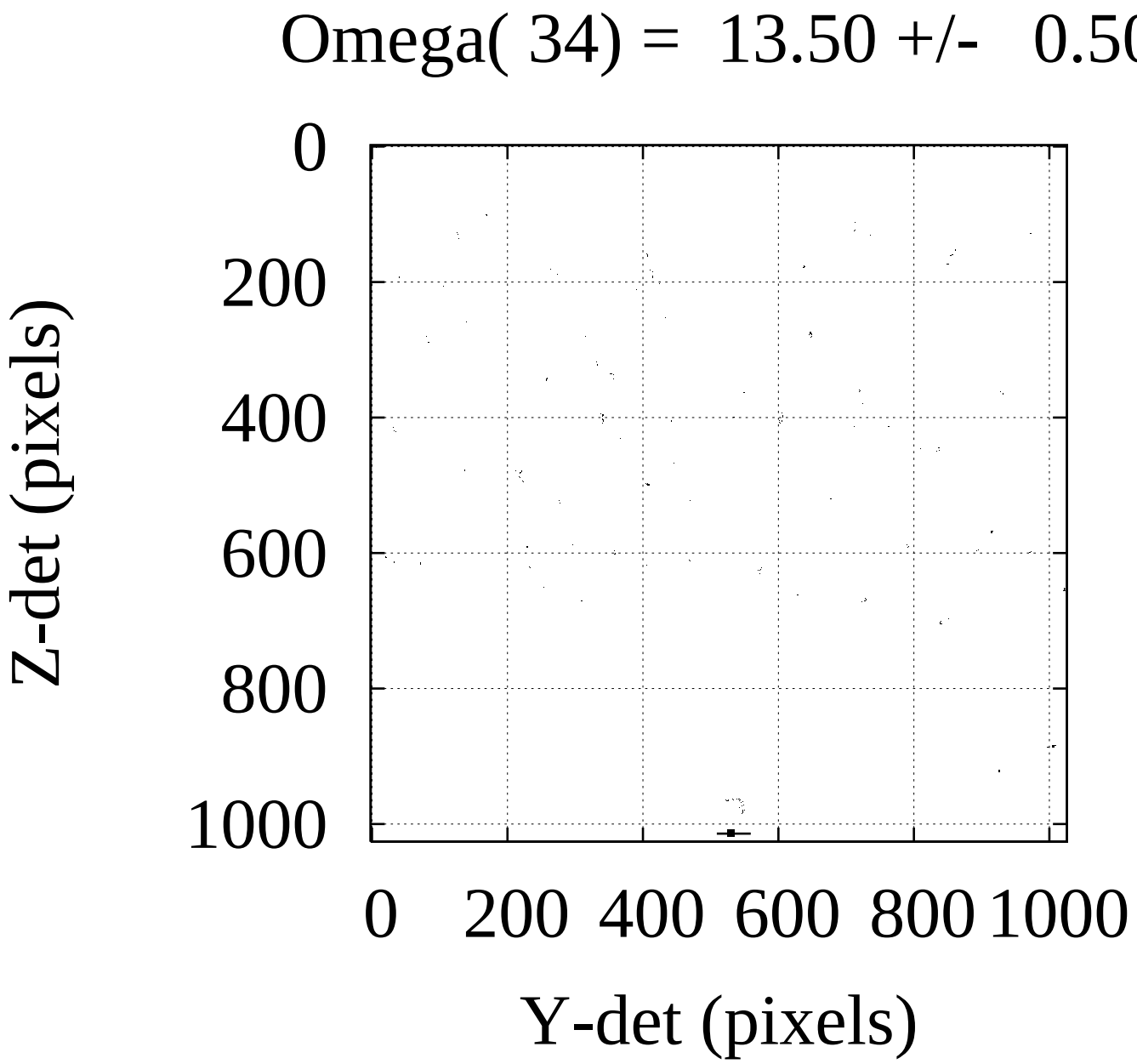

Omega(29) = 8.50 +/- 0.50
Z-det (pixels)
0
200
400
600
800
1000
0
200
400
600
800
1000
Y-det (pixels)

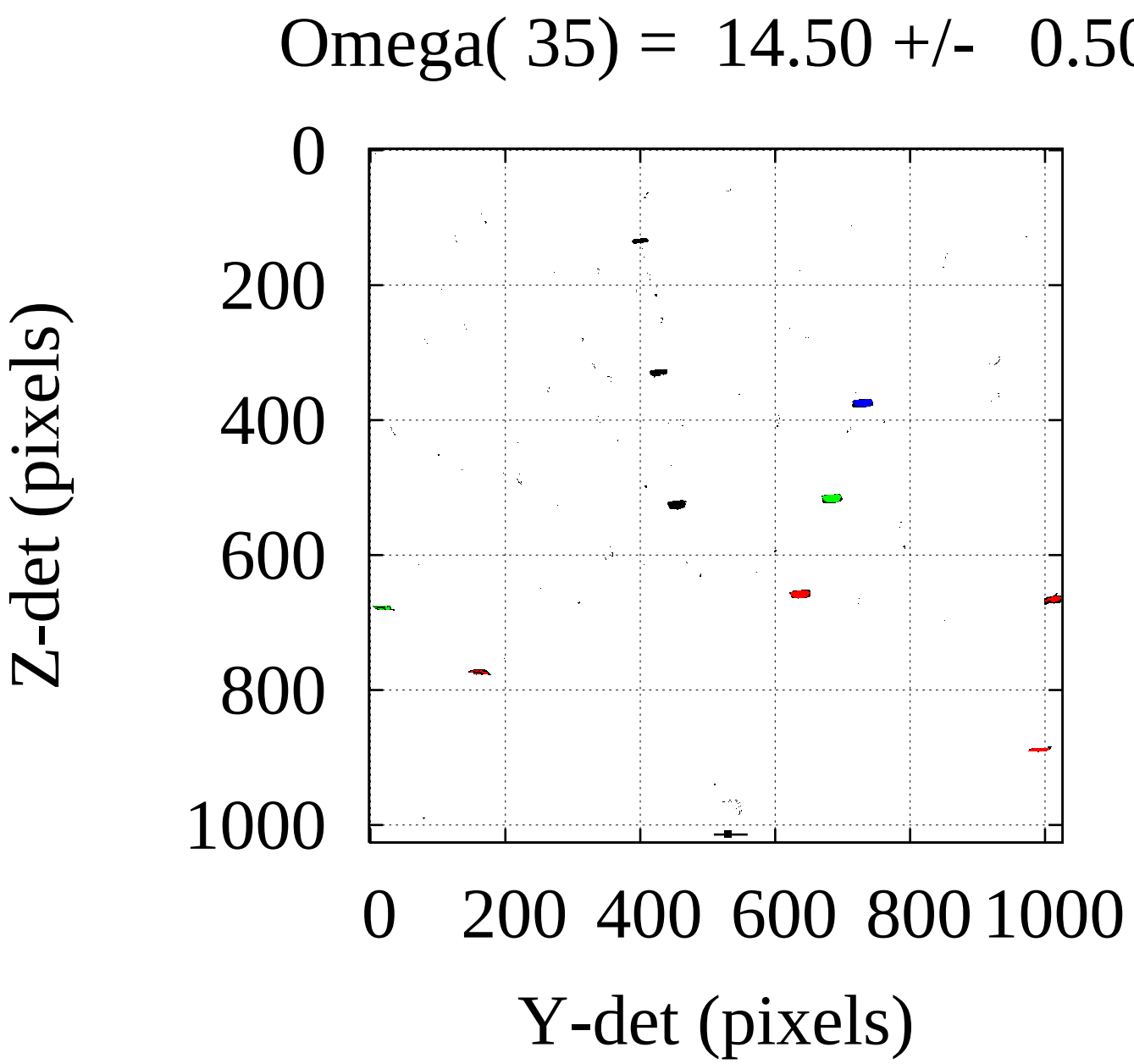

Omega(30) = -9.50 +/- 0.50
Z-det (pixels)
0
200
400
600
800
1000
0 200 400 600 800 1000
Y-det (pixels)

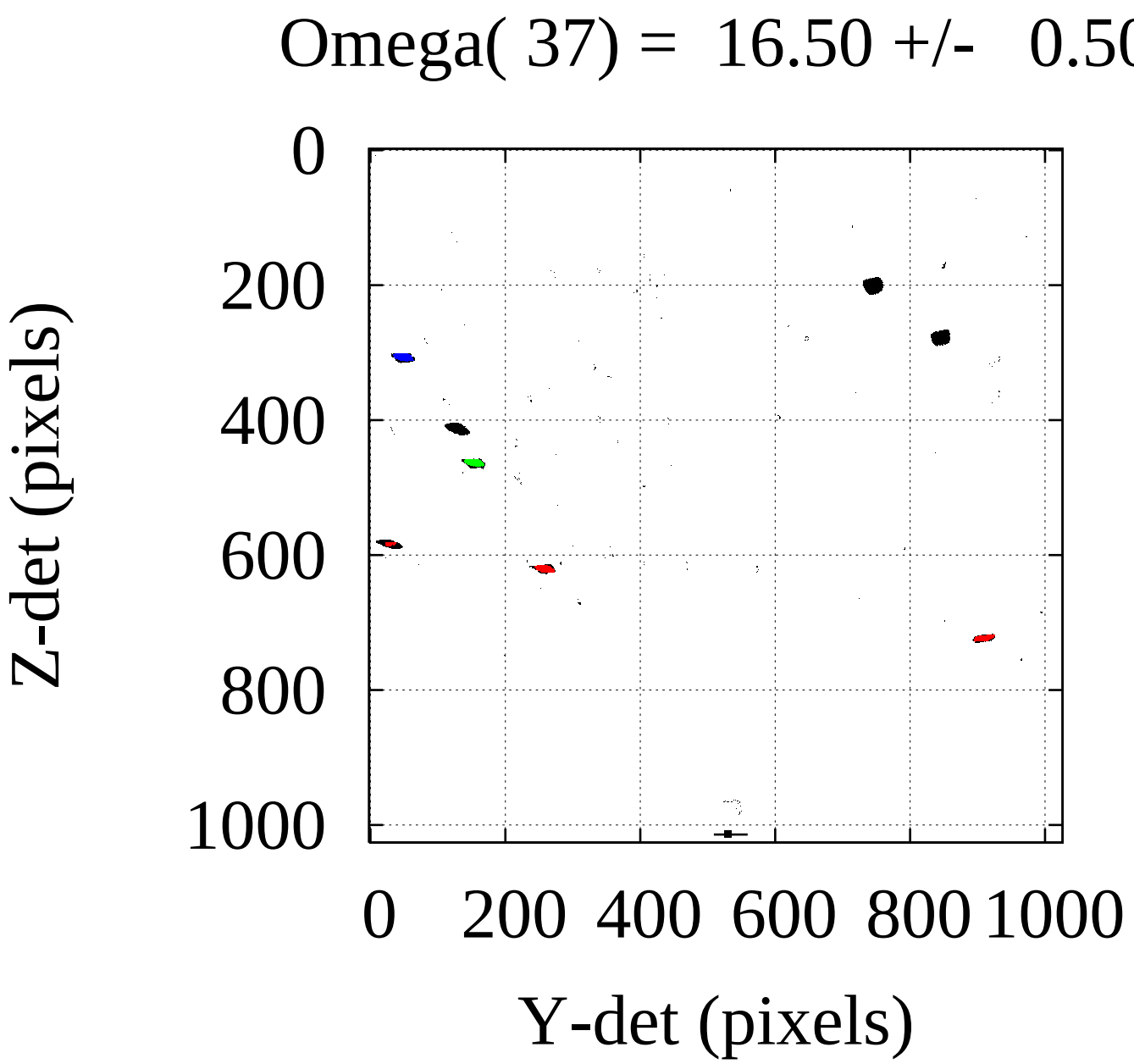

Omega(31) = 10.50 +/- 0.50
Z-det (pixels)
0
200
400
600
800
1000
0
200
400
600
800
1000
Y-det (pixels)

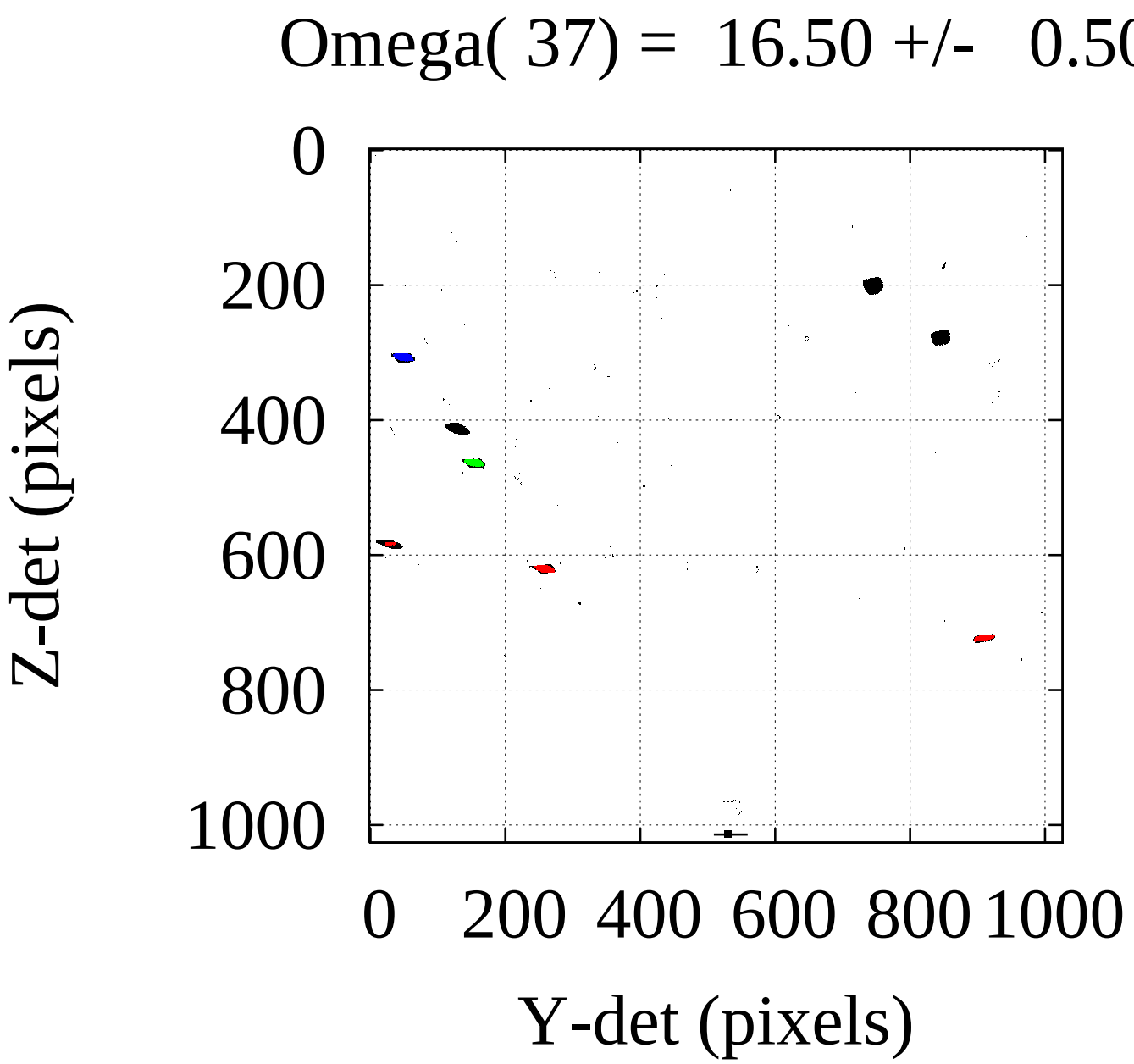

Omega(32) = 11.50 +/- 0.50
Z-det (pixels)
0
200
400
600
800
1000
0 200 400 600 800 1000
Y-det (pixels)

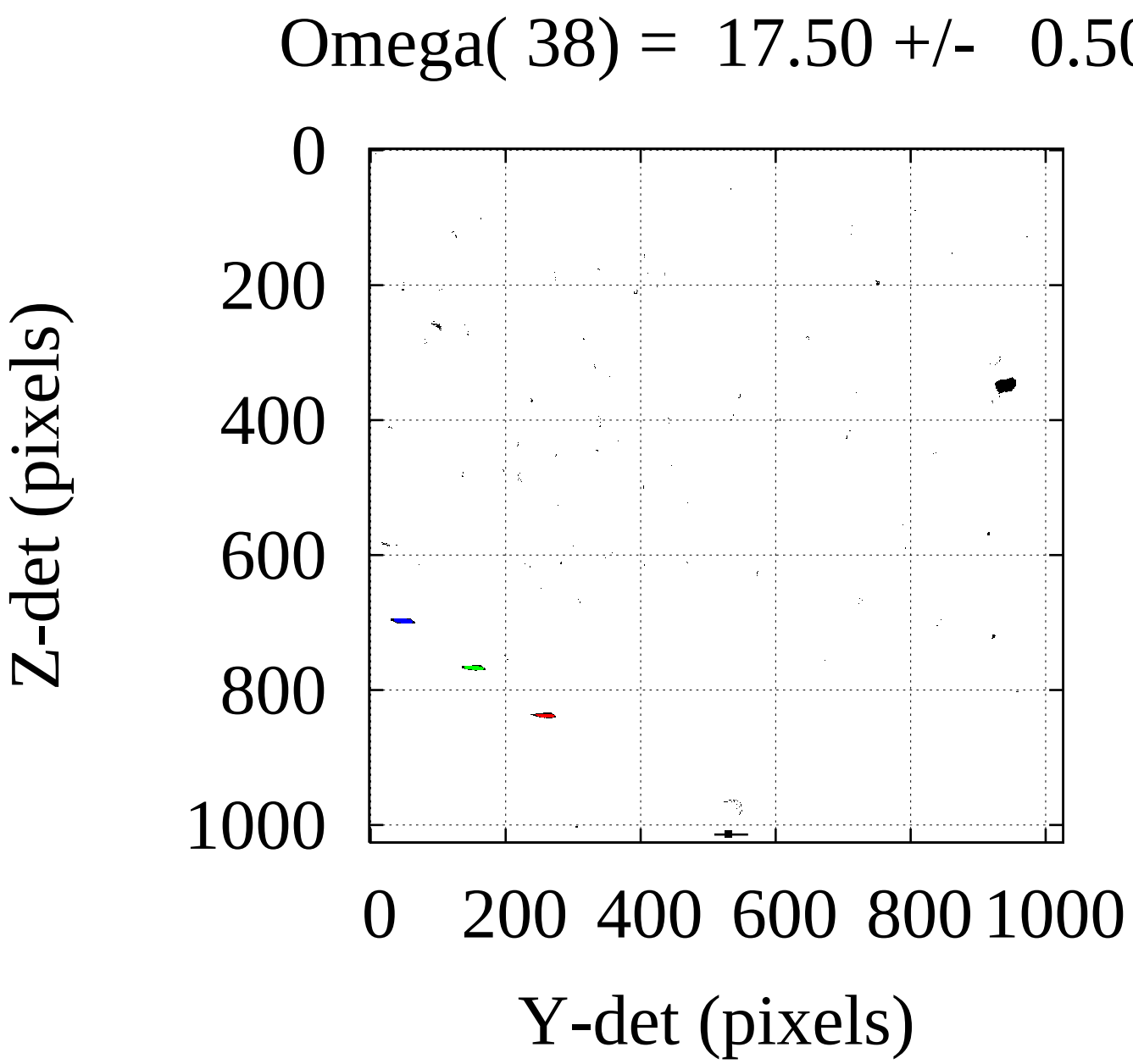

Omega(33) = 12.50 +/- 0.50
Z-det (pixels)
0
200
400
600
800
1000
0
200
400
600
800
1000
Y-det (pixels)

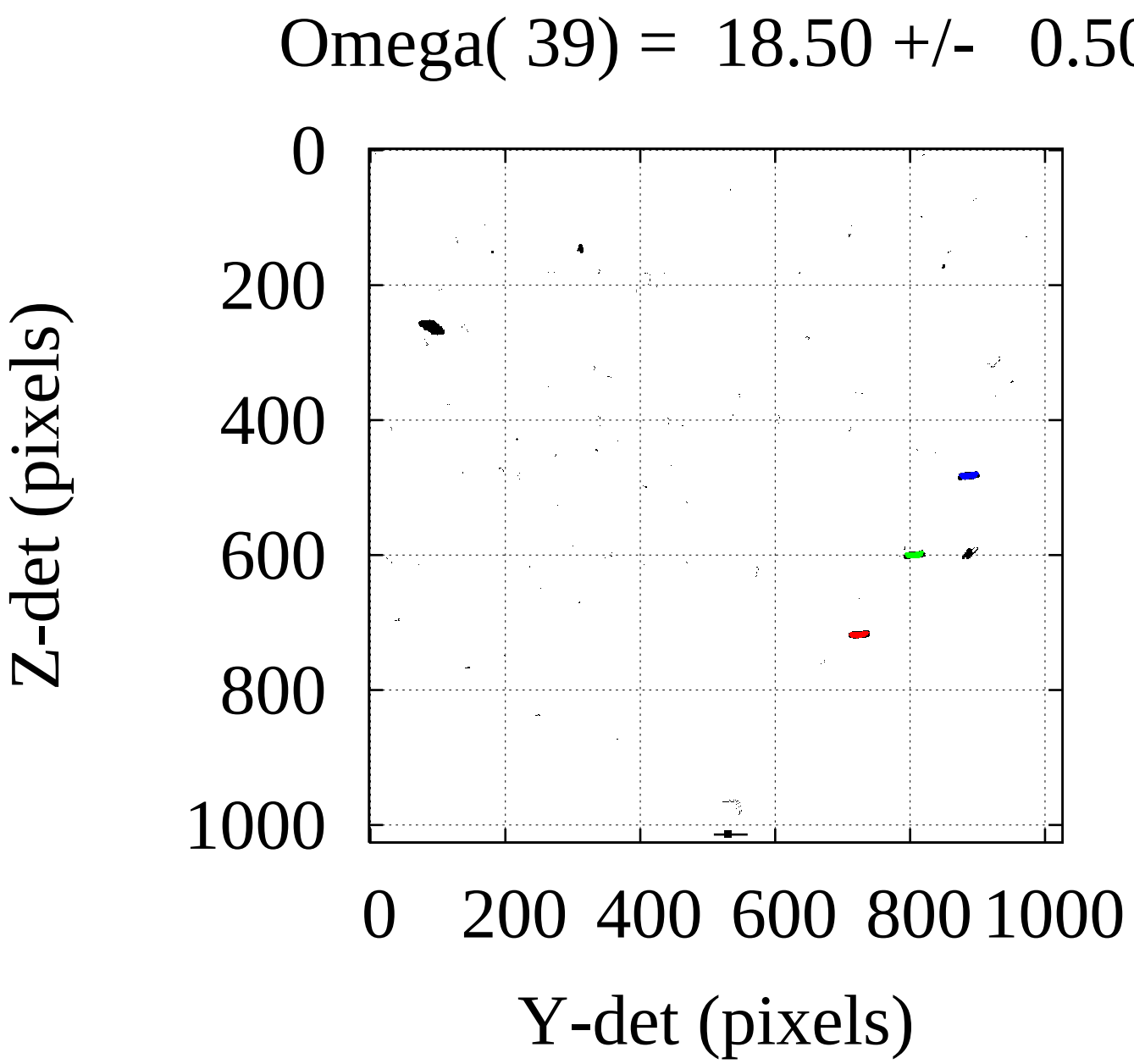

Omega(34) = 13.50 +/- 0.50
Z-det (pixels)
0
200
400
600
800
1000
0 200 400 600 800 1000
Y-det (pixels)

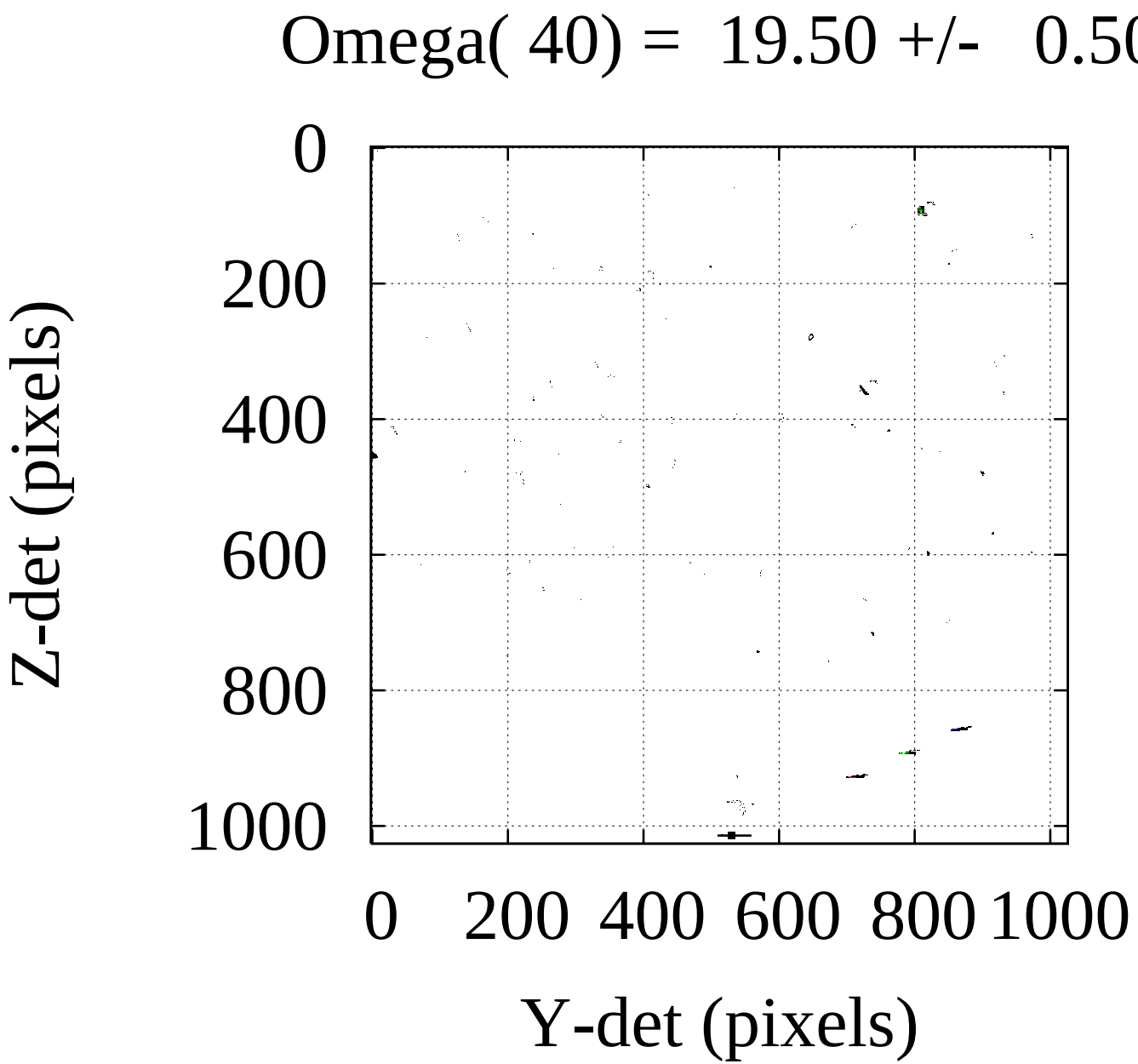

Omega(35) = 14.50 +/- 0.50
Z-det (pixels)
0
200
400
600
800
1000
0 200 400 600 800 1000
Y-det (pixels)


Omega(37) = 16.50 +/- 0.50
Z-det (pixels)
0
200
400
600
800
1000
0
200
400
600
800
1000
Y-det (pixels)


Omega(37) = 16.50 +/- 0.50
Z-det (pixels)
0
200
400
600
800
1000
0
200
400
600
800
1000
Y-det (pixels)


Omega(38) = 17.50 +/- 0.50
Z-det (pixels)
0
200
400
600
800
1000
0 200 400 600 800 1000
Y-det (pixels)


Omega(39) = 18.50 +/- 0.50
Z-det (pixels)
0
200
400
600
800
1000
0 200 400 600 800 1000
Y-det (pixels)


Omega(40) = 19.50 +/- 0.50
Z-det (pixels)
0
200
400
600
800
1000
0 200 400 600 800 1000
Y-det (pixels)