

## Status of the lenses in the sample:

Original sample: 21 lenses

### Lens we surely drop from the sample

After discussion with Domink, Justin, and Fei decided to drop 3 lenses: 0818 (shorthand for HS0818), 1520, 1600. They are all quite complicated.

- 0818 Complicated environment, never possible to reconstruct it
- 1520 A lot of structure in the line of sight (3 groups including the probable lens and its group in between)
- 1600 SPS really hard (late-type viewed edge-on, a lot of dust) and it gives a really flat stellar mass profile

→ down to 18 lenses

### Lenses which are hard to model

Plots of the lenses can be found on the next page. Generally, adding an external mass only changes the time delays significantly but not reconstructed lens.

- 0414 Satellite galaxy
- 0712 Fold lens
- 0911 Satellite galaxy
- 1422 asdf
- 1608 Merger (after discussing it with Prasenjit, model the merging smaller galaxy as a point mass)
- 2045 Cusp lens and satellite galaxy

→ down to 12 lenses without them

My judgement:

- 0414 Not happy with external mass. One of the plots ok like that? Otherwise no idea what to try next.
- 0712 Looks almost ok. Otherwise no idea what to try next.
- 0911 Not happy with external mass. One of the plots ok like that? Otherwise no idea what to try next.
- 1422 Almost there, but I'm a bit worried about the 'lobe'-structure. Fix pixrad (worse with larger pixrad) but maybe higher resolution in the center (9x9) (or ok like that?)
- 1608 Not happy with external mass. Maybe could try a slightly higher pixrad.
- 2045 Very, very hard. I would rather suggest to drop this lens. No idea what to try next.

### Lenses which work fine

12 lenses:

- 0047
- 0142
- 0952
- 0957
- 1009
- 1030
- 1104
- 1115
- 1152
- 2016
- 2149
- 2237

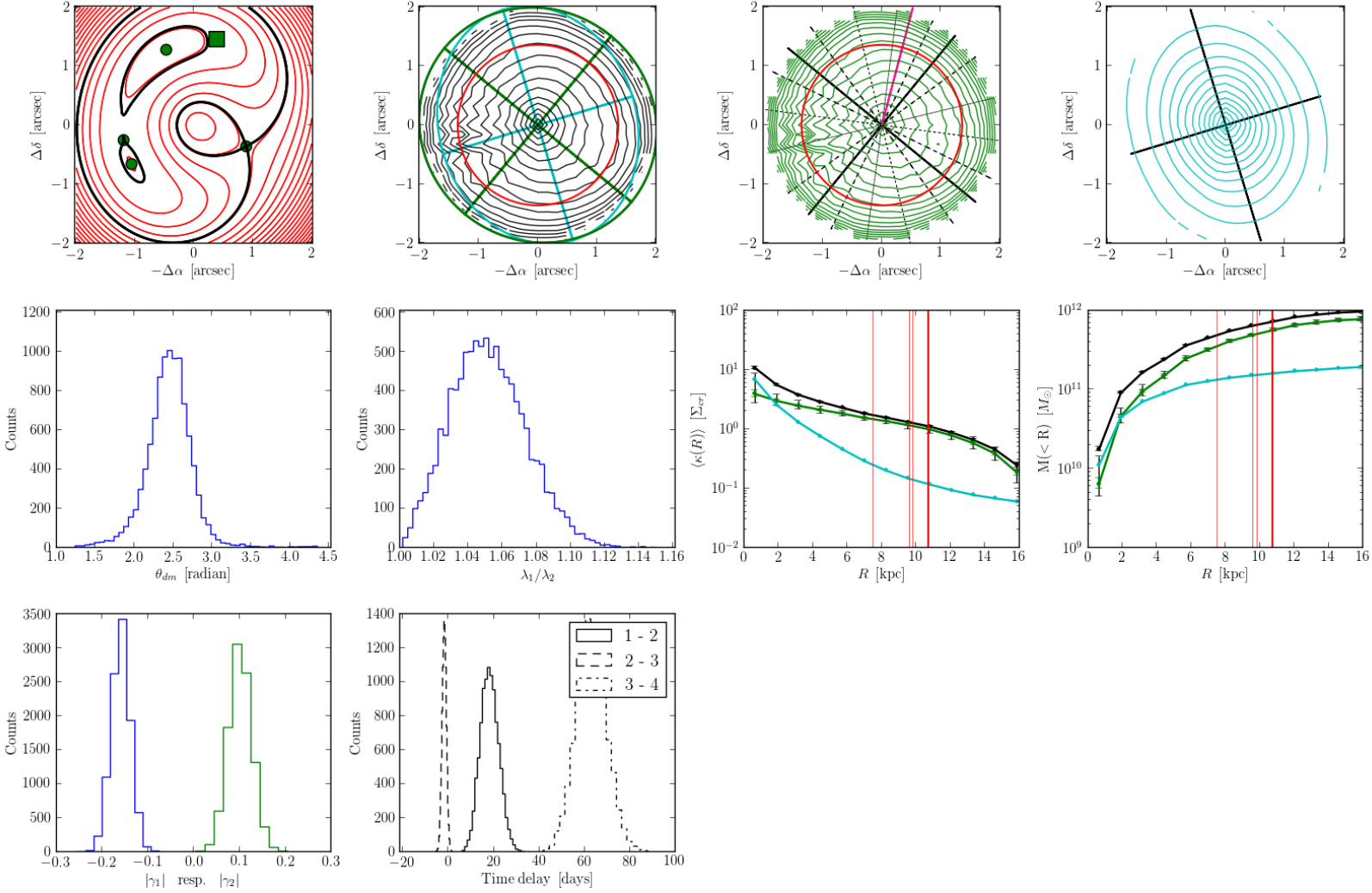


## Plots of the more problematic lenses

### 0414

Pixrad 12, shear 0.5, Point mass with mass range:  $10^9$ - $5 \cdot 10^{10}$

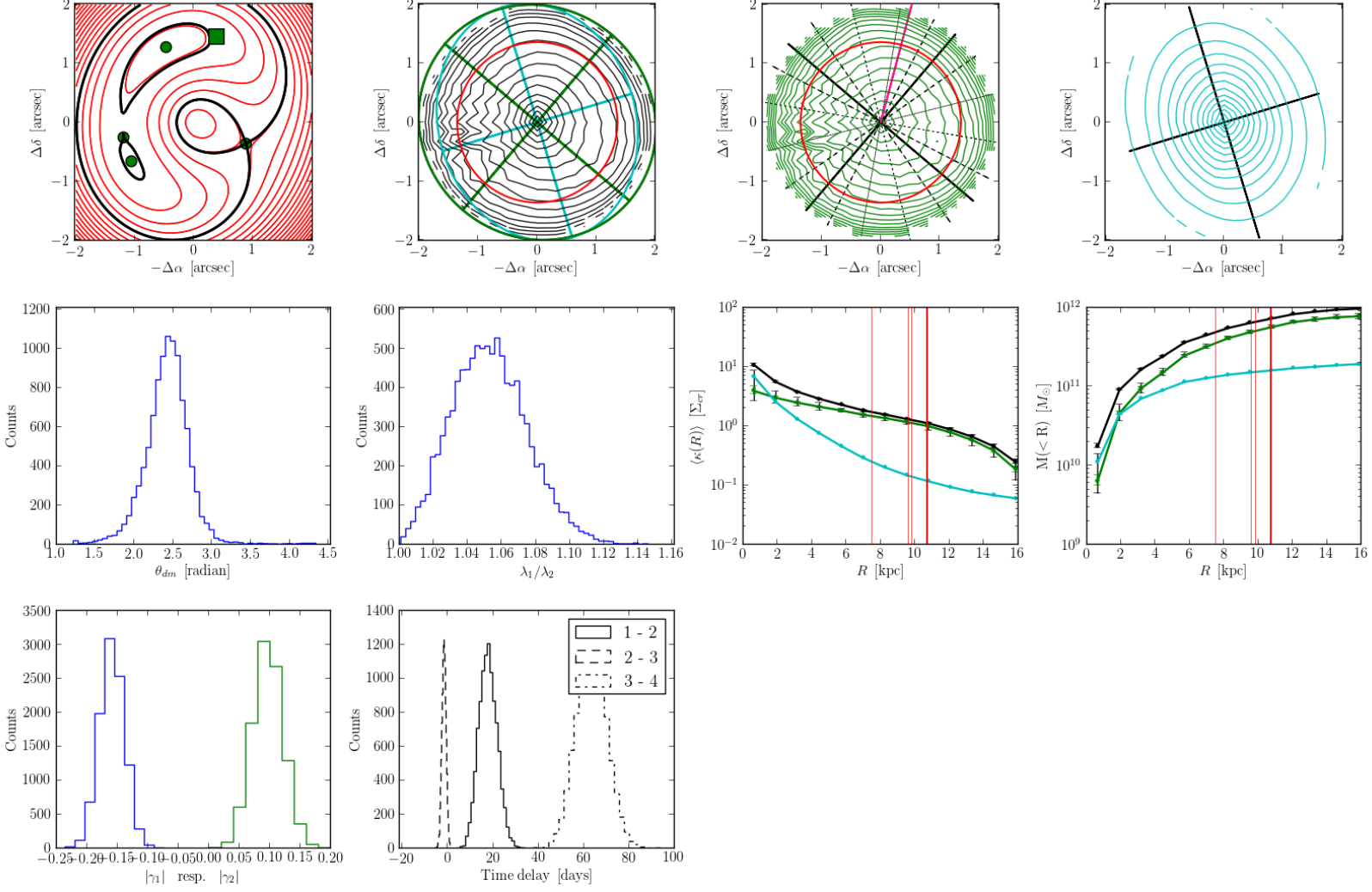
0414\_pix12\_mod10000\_sh0-5\_scale1-0\_symmOn\_lograd50\_PM



**0414**

Pixrad 12, shear 0.5, Point mass with mass range  $5 \cdot 10^8 - 10^{10}$

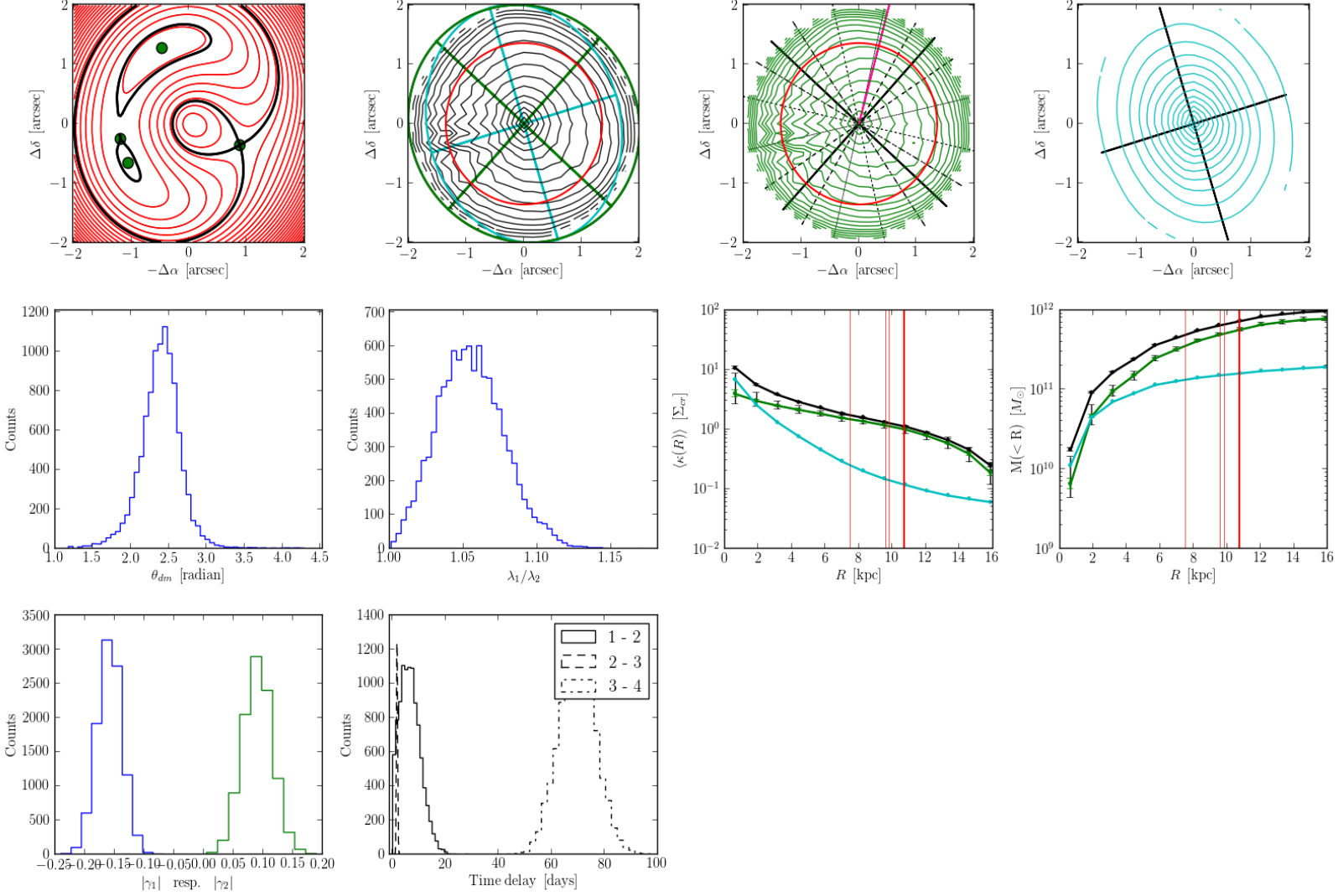
0414\_pix12\_mod10000\_sh0.5\_scale1-0\_symmOn\_locgrad50\_PMIlower



**0414**

Pixrad 12, shear 0.5, without Point mass

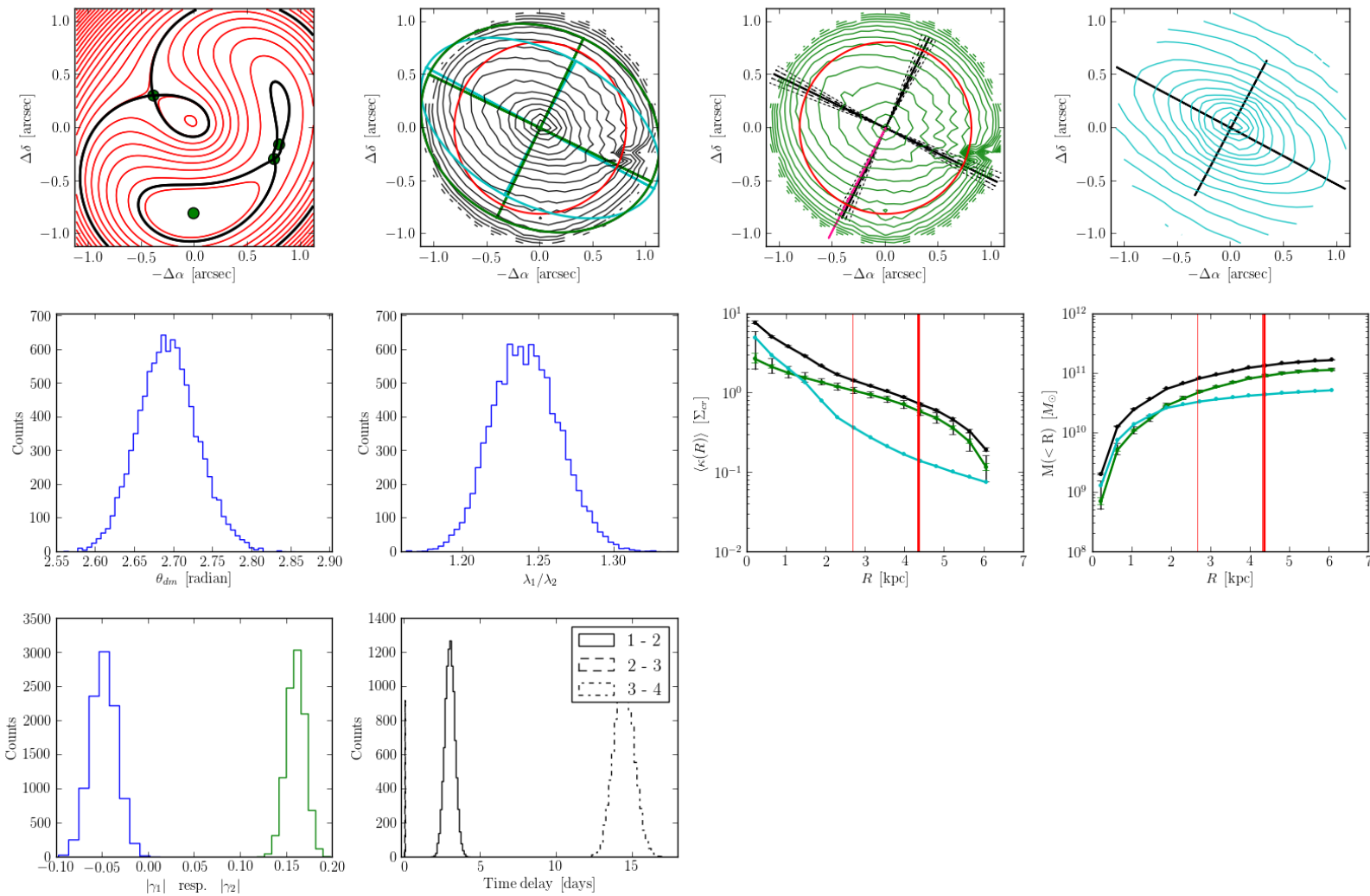
0414\_pix12.mod10000\_sh0-5\_scale1-0\_symmOn\_locgrad50



**0712**

Pixrad 14, shear 0.3

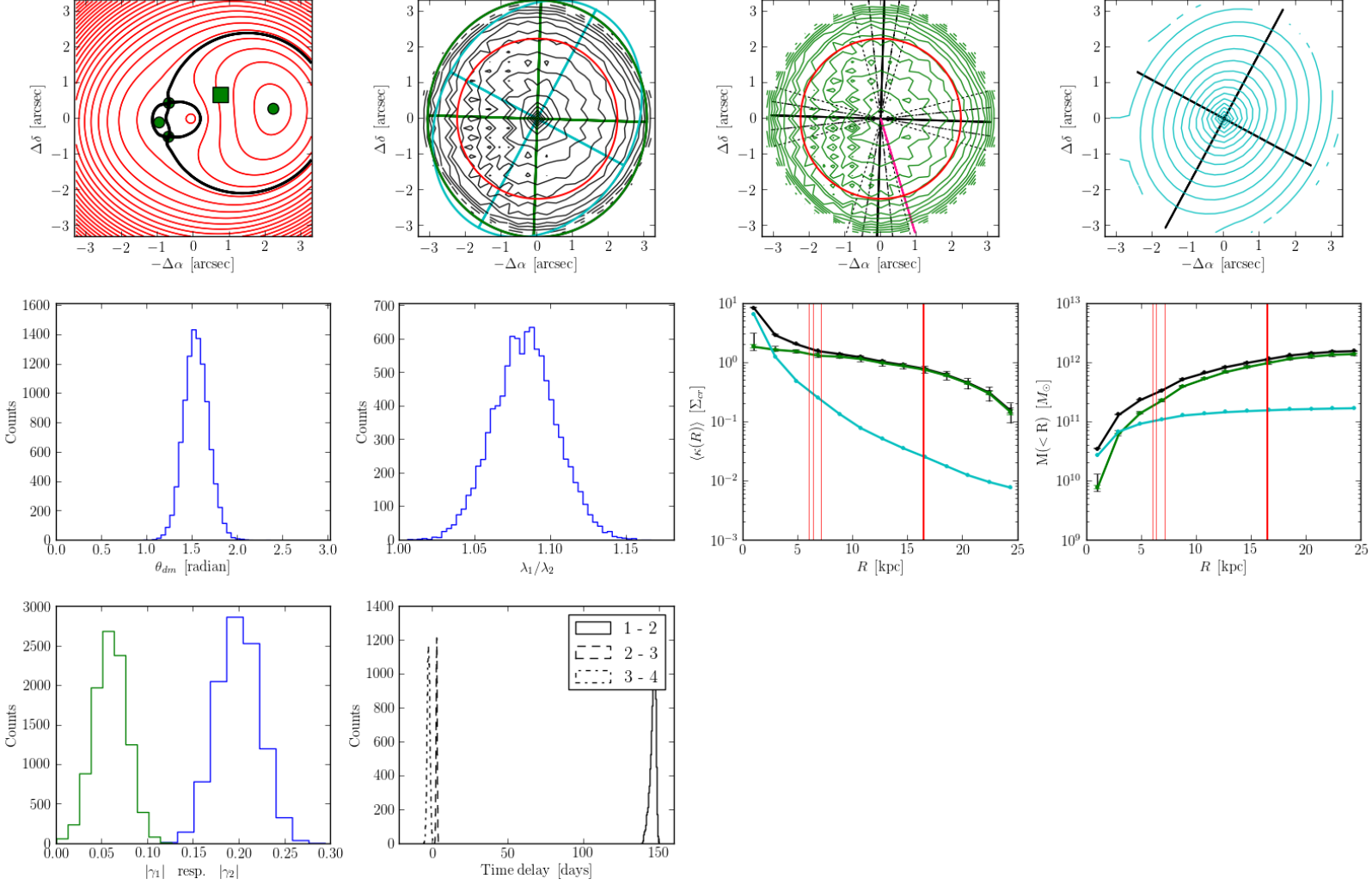
0712\_pix14\_mod10000\_sh0-3\_scale1-0\_symmOff\_loggrad50



**0911**

Pixrad 12, shar 0.4, Point mass with mass range  $10^9$ - $5 \times 10^{10}$

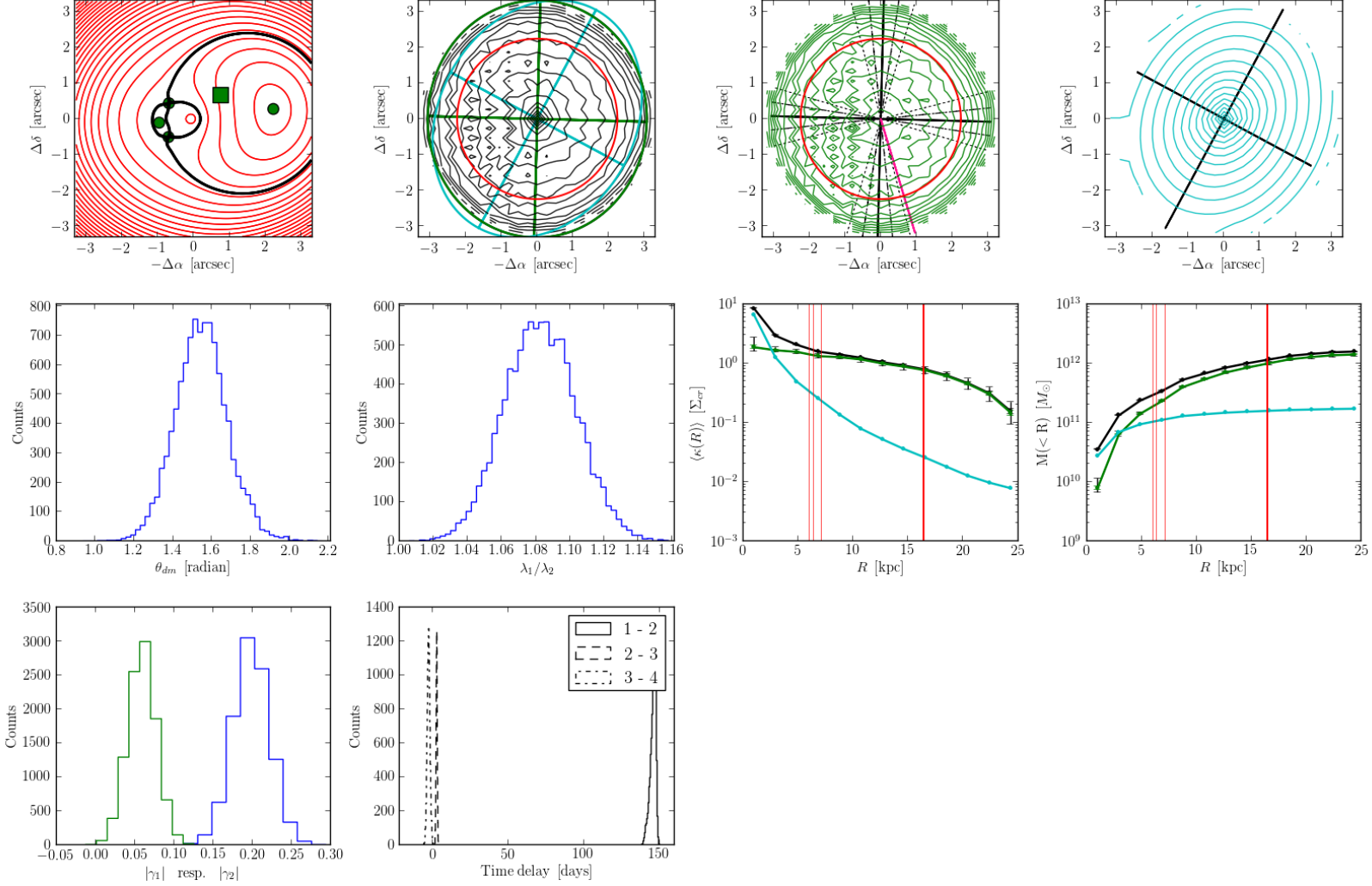
0911\_pix12\_mod10000\_sh0-4\_scale1-0\_symmOffLocgrad50\_PM



**0911**

Pixrad 12, shar 0.4, Point mass with mass range  $5 \cdot 10^8 - 10^{10}$

0911\_pix12\_mod10000\_sh0-4\_scale1-0\_symmOffLocgrad50\_PMlower

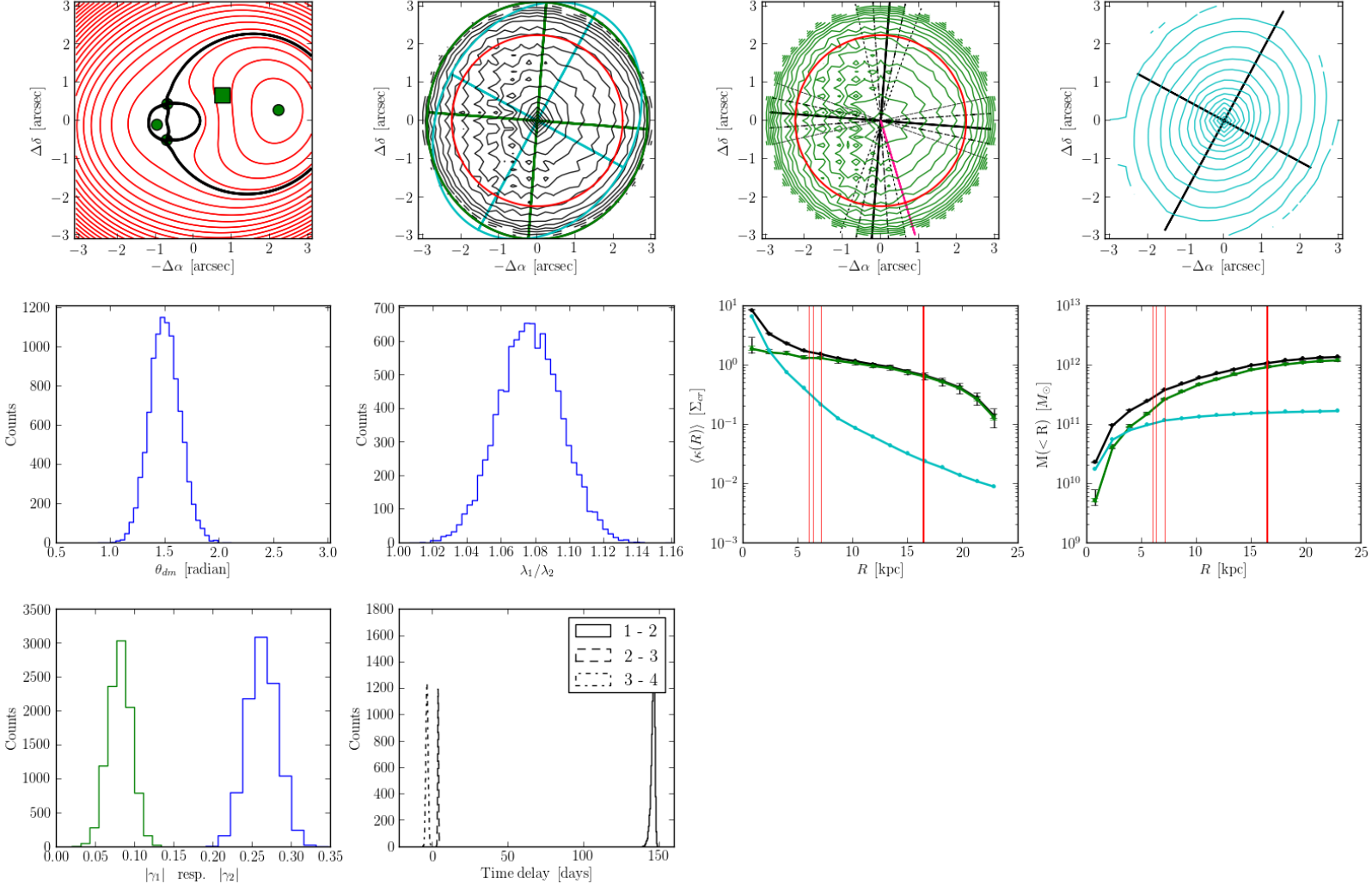




**0911**

Pixrad 14, shear 0.4, Point mass in mass range  $10^9$ - $5 \times 10^{10}$

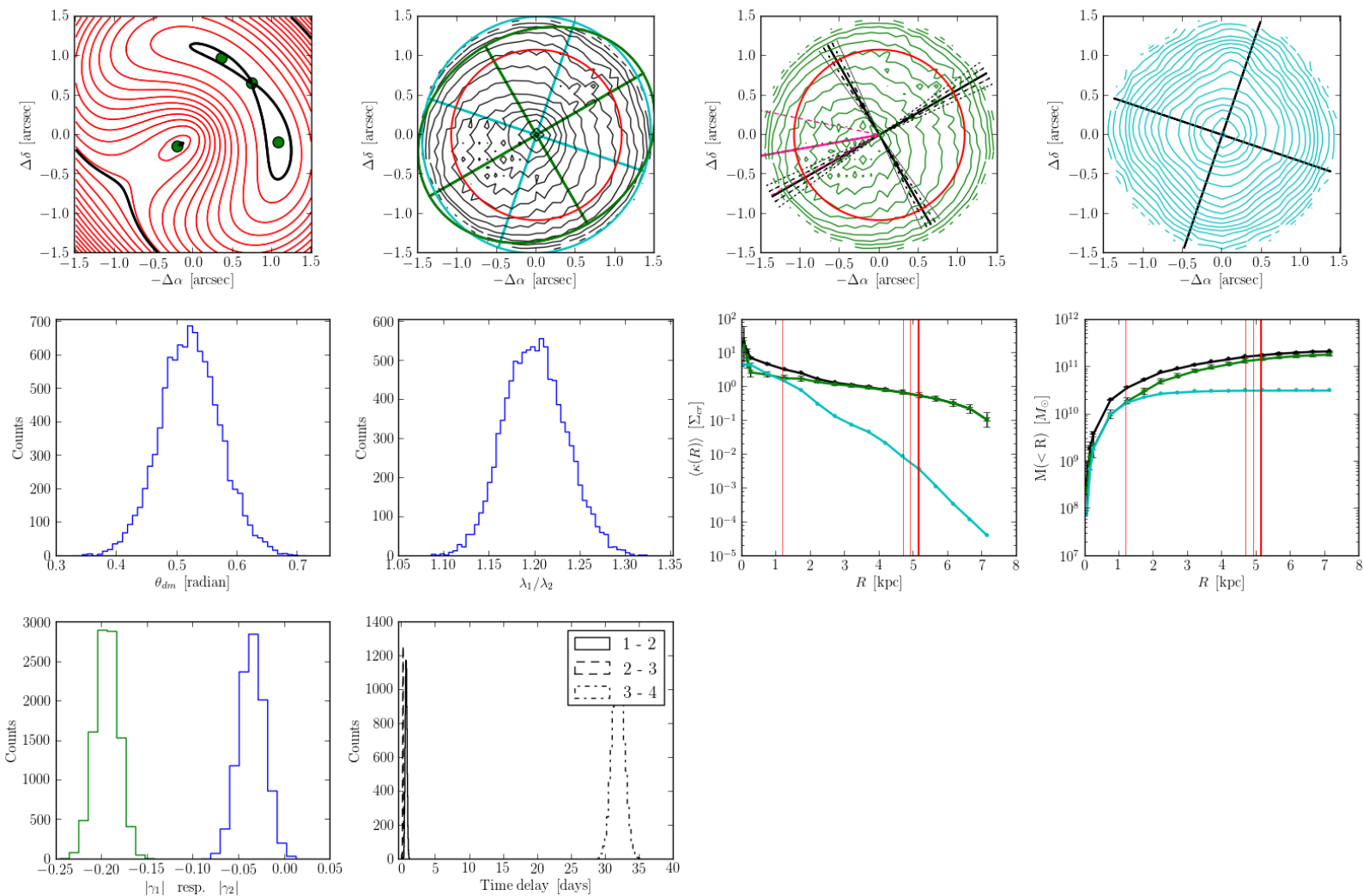
0911\_pix14\_mod10000\_sh0-4\_scale1-0\_symmOffLocgrad50\_PM



**1422**

Pixrad 14, shear 0.3, high resolution in the center (central pixel split into 5x5-grid)

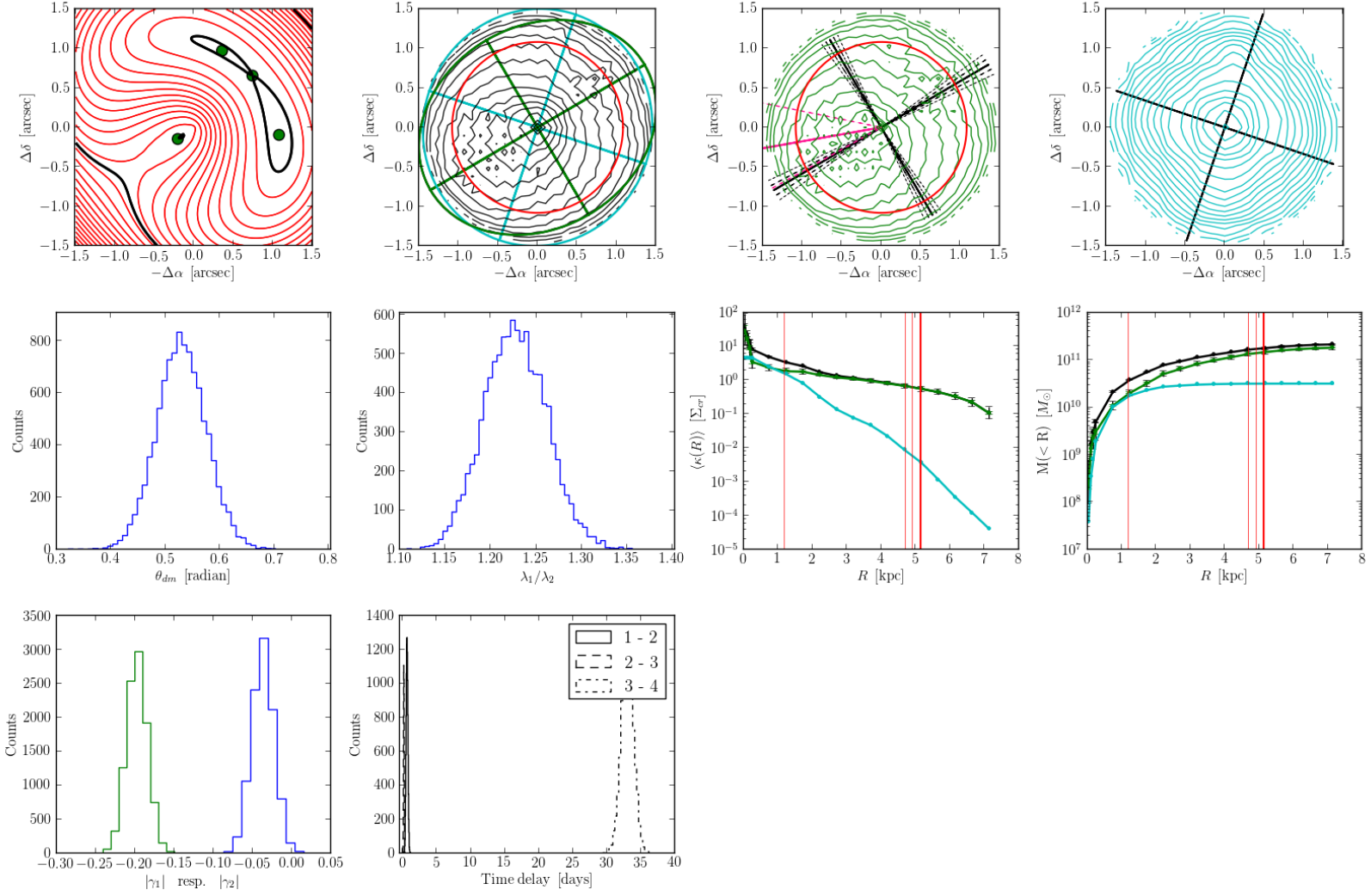
1422\_pix14\_mod10000\_sh0.3\_scale1-0\_symmOffLocgrad50\_highres5



**1422**

Pixrad 14, shear 0.3, high resolution in the center (central pixel split into 7x7-grid)

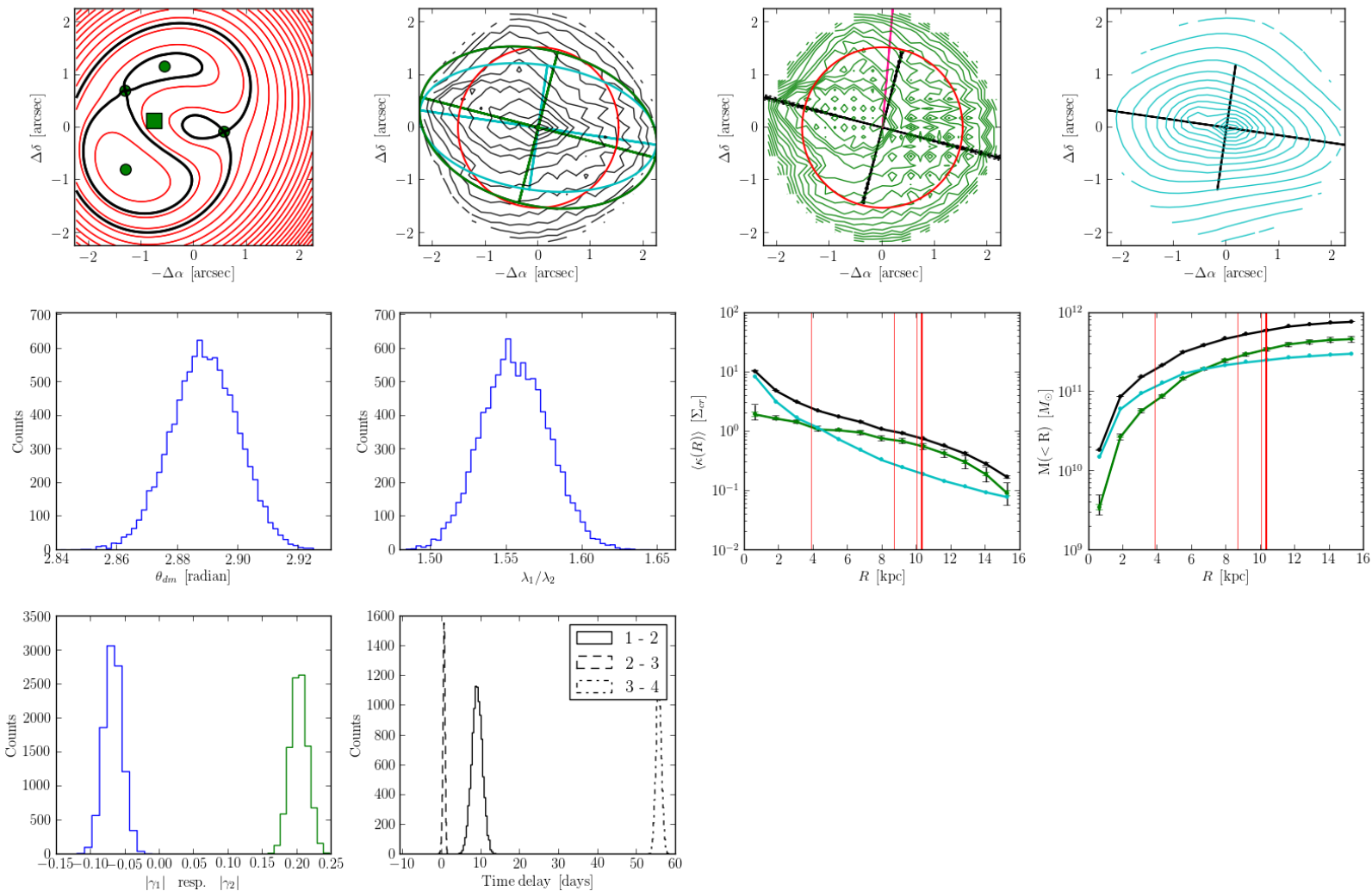
1422\_pix14\_mod10000\_sh0-3\_scale1-0\_symmOff\_lograd50\_highres7



**1608**

Pixrad 12, shear 0.4, Point mass with mass range  $10^9$ - $5 \times 10^{10}$

1608\_pix12\_mod10000\_sh0-4\_scale1-0\_symmOffLocgrad50



## 2045

Pixrad 14, shear 0.5, high resolution in the center (central pixel split into 5x5-grid),  
Point mass in mass range  $10^9$ - $5 \times 10^{10}$

2045\_pix14\_mod10000\_sh0-5\_scale1-0\_symmOffLoggrad50\_PM\_highres5

