We present our lens models for Abell 2744, MACS J0416.1−2403, MACS J0717.5+3745, MACS J1149.6+2223, Abell S1063, and Abell 370 from the Frontier Fields. The released data include the following maps produced from our best-fit models.

- Magnification map at \(z = 1, 2, 4, 9\) (*z[01-09].magnif.fits)
- Lens potential map scaled to \(D_{\text{LS}}/D_{\text{OS}} = 1\) (*psi.fits)
- Kappa map scaled to \(D_{\text{LS}}/D_{\text{OS}} = 1\) (*kappa.fits)
- Shear maps scaled to \(D_{\text{LS}}/D_{\text{OS}} = 1\) (*gamma1.fits and *gamma2.fits)
- Deflection maps scaled to \(D_{\text{LS}}/D_{\text{OS}} = 1\) (*{x,y}-{arcsec,pixels}-deflect.fits)

In addition to the maps for the best-fit models, we also provide a range of lens models from Markov-Chain Monte-Carlo (MCMC) chains, which can be used to estimate uncertainties in mass model, in the same format as the best-fit models (*glafic-map[000-099].*). The map sizes are 2′7 × 3′1, 2′7 × 2′8, 4′3 × 4′0, 2′8 × 2′5, 2′8 × 2′3, and 2′7 × 3′0 for Abell 2744, MACS J0416.1−2403, MACS J0717.5+3745, MACS J1149.6+2223, Abell S1063, and Abell 370, respectively. For all clusters, the pixel scales are 0″03/pix for the maps from the best-fit models and 0″3/pix for the 100 maps for uncertainty estimates.

*We note that version 2 mass model for Abell 2744, versions 1 and 2 mass models for MACS J0416, MACS J0717, and MACS J1149, and versions 1–3 mass models for Abell S1063 and Abell 370 from the GLAFIC team have not been posted to the HFF Lens Models webpage and therefore are not publicly available.

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For all the analysis we use the public software *glafic* (Oguri 2010), which adopts the a parametric-modeling method. We use a downhill simplex method for the search for the best-fit models and MCMC for estimating uncertainties. A brief summary of modelings is given in Table 1. The detailed modeling method and results are described in Kawamata et al. (2016) and Kawamata et al. (2017). The above three papers should be cited whenever these mass models are used.

**REFERENCES**


Oguri, M. 2010, PASJ, 62, 1017

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**Table 1. Summary of mass modeling**

<table>
<thead>
<tr>
<th>Cluster</th>
<th># of multiple image systems (with spec-z)</th>
<th># of multiple images</th>
<th>(\chi^2)/dof</th>
<th>Image plane RMS (&quot;')</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abell 2744 v4</td>
<td>45 (24)</td>
<td>132</td>
<td>130.2/134</td>
<td>0.42</td>
<td>Kawamata et al. (2017)</td>
</tr>
<tr>
<td>MACS J0416.1–2403 v4</td>
<td>75 (34)</td>
<td>202</td>
<td>240.0/196</td>
<td>0.50</td>
<td>Kawamata et al. (2017)</td>
</tr>
<tr>
<td>MACS J0717.5+3745 v3</td>
<td>60 (8)</td>
<td>173</td>
<td>144.5/144</td>
<td>0.52</td>
<td>Kawamata et al. (2016)</td>
</tr>
<tr>
<td>MACS J1149.6+2223 v3</td>
<td>36 (16)</td>
<td>108</td>
<td>100.1/103</td>
<td>0.31</td>
<td>Kawamata et al. (2016)</td>
</tr>
<tr>
<td>Abell S1063 v4</td>
<td>53 (19)</td>
<td>141</td>
<td>136.2/138</td>
<td>0.38</td>
<td>Kawamata et al. (2017)</td>
</tr>
<tr>
<td>Abell 370 v4</td>
<td>49 (19)</td>
<td>135</td>
<td>99.5/140</td>
<td>0.50</td>
<td>Kawamata et al. (2017)</td>
</tr>
</tbody>
</table>