The intriguing life of massive galaxies
Proceedings IAU Symposium No. 295, 2012
D. Thomas, A. Pasquali & I. Ferreras, eds.

doi:10.1017/S1743921313004857

Photometric analysis of Abell 1689

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Abstract. We carried out a photometric analysis of a sample of early-type galaxies in Abell 1689 at $z = 0.183$, using *HST*/ACS archive images in the rest-frame V band. We performed a two-dimensional photometric decomposition of each galaxy surface-brightness distribution using the GASP2D fitting algorithm (Méndez-Abreu *et al.* 2008). We adopted both a Sérsic and de Vaucouleurs law. S0 galaxies were analysed also taking into account a disc component described by an exponential law. The derived photometric parameters, together with the ones previously obtained with the curve of growth method (Houghton *et al.* 2012), will be used to analyse the Fundamental Plane of Abell 1689 and quantify how it is affected by the use of different decomposition techniques (Dalla Bontà *et al.* 2013, in preparation). The stellar velocity dispersions of the sample galaxies were derived by using GEMINI-N/GMOS and VLT/FLAMES (D'Eugenio *et al.* 2013) spectroscopic data.

Keywords. galaxies: clusters: individual: Abell 1689, galaxies: elliptical and lenticular, cD

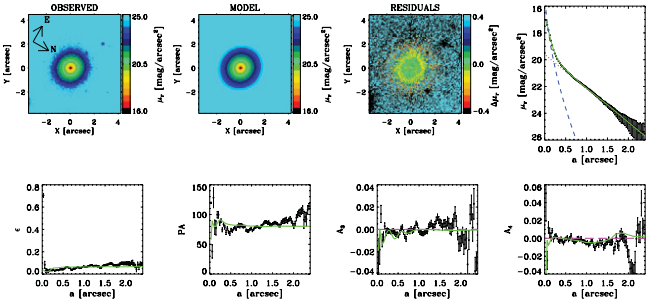

Figure 1. Two-dimensional photometric decomposition of a lenticular galaxy of Abell 1689 at RA $= +13^{\rm h}11^{\rm m}31^{\rm s}.26$, DEC $= -1°20'52''.44$. From left to right and top to bottom: map of the observed, modelled, and residual (observed—modelled) surface-brightness distribution of the galaxy; ellipse-averaged radial profile of surface-brightness, ellipticity, position angle, and cosine-harmonic amplitudes A_3 and A_4, measured in the observed (black dots with error-bars) and modelled image (green solid line). The dashed blue and dotted red lines represent the intrinsic surface-brightness radial profiles of the bulge and disc, respectively.

References

D'Eugenio, F., Houghton, R. C. W., Davies, R. L., & Dalla Bontà, E. 2013, *MNRAS*, 429, 1258
Houghton, R. C. W., Davies, R. L., Dalla Bontà, E., & Masters, R. 2012, *MNRAS*, 423, 256
Méndez-Abreu, J., Aguerri, J. A. L., Corsini, E. M., & Simonneau, E. 2008, *A&A*, 478, 353