




# Erratum: Further support for a trio of mass-to-light deviations in Abell 370: free-form GRALE lens inversion using BUFFALO strong lensing data

by Agniva Ghosh <sup>1</sup>\*, Liliya L. R. Williams <sup>1</sup>\*, Jori Liesenborgs <sup>2</sup>, Ana Acebron,<sup>3</sup>  
Mathilde Jauzac,<sup>4,5,6,7</sup> Anton M. Koekemoer,<sup>8</sup> Guillaume Mahler,<sup>4,5</sup> Anna Niemiec,<sup>4,5</sup>  
Charles Steinhardt,<sup>9,10</sup> Andreas L. Faisst,<sup>11</sup> David Lagattuta<sup>4,5</sup> and Priyamvada Natarajan<sup>12,13</sup>

<sup>1</sup>*School of Physics & Astronomy, University of Minnesota, 116 Church Street SE, Minneapolis, MN 55455, USA*

<sup>2</sup>*UHasselt – iUL, Expertisecentrum voor Digitale Media, Wetenschapspark 2, B-3590 Diepenbeek, Belgium*

<sup>3</sup>*Dipartimento di Fisica, Università degli Studi di Milano, via Celoria 16, I-20133 Milano, Italy*

<sup>4</sup>*Centre for Extragalactic Astronomy, Durham University, South Road, Durham DH1 3LE, UK*

<sup>5</sup>*Institute for Computational Cosmology, Durham University, South Road, Durham DH1 3LE, UK*

<sup>6</sup>*Astrophysics Research Centre, University of KwaZulu-Natal, Westville Campus, Durban 4041, South Africa*

<sup>7</sup>*School of Mathematics, Statistics & Computer Science, University of KwaZulu-Natal, Westville Campus, Durban 4041, South Africa*

<sup>8</sup>*Space Telescope Science Institute, 3700 San Martin Drive, Baltimore, MD 21218, USA*

<sup>9</sup>*Cosmic Dawn Center, Denmark*

<sup>10</sup>*Niels Bohr Institute, University of Copenhagen, Lyngbyvej 2, DK-2100 Copenhagen Ø, Denmark*

<sup>11</sup>*Caltech/IPAC, MS 314–6, 1200 E. California Blvd. Pasadena, CA 91125, USA*

<sup>12</sup>*Department of Astronomy, Yale University, 52 Hillhouse Avenue, New Haven, CT 06511, USA*

<sup>13</sup>*Department of Physics, Yale University, P.O. Box 208121, New Haven, CT 06520, USA*

**Key words:** errata, addenda – gravitational lensing: strong – galaxies: clusters: individual: Abell 370.

The manuscript titled ‘Further support for a trio of mass-to-light deviations in Abell 370: free-form GRALE lens inversion using BUFFALO strong lensing data’, accepted in MNRAS on April 23, 2021 (doi:stab1196) has been submitted by the author as a replacement for the originally published version of the same manuscript. The authors made changes in the text of the manuscript based on the comments received from their BUFFALO collaboration members. Below are the amendments that have been embedded in the new version:

(i) In the abstract, the line ‘Since the number of images is nearly the same in both, we attribute the improvement to the improvement in the data quality.’ to ‘We attribute the improvement to spectroscopic data and use of the full reprocessed HST mosaics’ was paraphrased. The new text summarizes the related information in a clearer way.

(ii) In the introduction, additional references were added.

(iii) Towards the end of the introduction, in the second last paragraph, the text: ‘The main motivation behind this work is to present a comprehensive analysis of the cluster A370 using our free-form lens inversion method GRALE and utilizing the new strong lensing data from the BUFFALO collaboration, for the first time.’ was added to clarify the motivation of the article.

(iv) At the end of section 2.1 the authors added additional information about the reconstruction method: ‘In this work we used single lens plane inversion with GRALE. The current stable version of GRALE is not capable of doing multi-lens plane reconstructions.’ to help the reader understand the study better.

(v) In section 2.2, the wording of the bulleted list was paraphrased in order to make the text clearer. No additional information was added.

(vi) At the start of section 3.1, the authors added the following information about the reconstruction method to help the reader un-

derstand the study better: ‘In this work, we are using a reconstruction area of 0.927 Mpc by 0.927 Mpc and the smallest resolution cell (projected Plummer sphere) is about 12.5 kpc.’

(vii) In table 2, information about the LENSTOOL reconstruction done by Richard et al. (2014) with the HFFv1 data was added. This information does not affect any results or conclusions.

(viii) In section 3.3, text following text ‘Since external shear is not astrophysical. . .’ to ‘To replace the external shear with a more physically motivated component. . .’ was revised,

(ix) In section 3.3, the authors added the reference to the work of an earlier paper, which will help the reader. The added text is: ‘For a discussion on how deflection fields are affected by external mass clumps, see the work of Mahler et al. (2018) on the cluster Abell 2744.’

(x) Toward the end of section 4.4, the following text was added: ‘We note that A370 has a much more complicated structure compared to the simplified analysis of this section, but it should not affect the overall behaviour.’ This should help the reader understand the previous statements better.

(xi) In section 5, in the second paragraph, the authors added the following information: ‘The use of the Schechter LF at high redshifts is further justified by Bouwens et al. (2015).’

(xii) In addition, the authors corrected a number of minor errors, including the erroneous use of articles, typographical errors and capitalizations.

The authors of this article would like to note that none of these changes have had any impact on the main results, conclusions or the plots of the original paper. All the references cited in this erratum article are available in its companion original article (doi:stab1196).

This paper has been typeset from a Microsoft Word file prepared by the author.

\* E-mail: [ghosh116@umn.edu](mailto:ghosh116@umn.edu) (AG); [llrw@umn.edu](mailto:llrw@umn.edu) (LLRW)