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Awesome analysis of MACS1752

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ABSTRACT

Key words: Galaxies: clusters: individual: MACS J1752.0+4440; Large-scale structure of Universe;

1 INTRODUCTION

2 DATA

2.1 Keck DEIMOS Observations and Spectra Reduction

- Date and observation conditions
- Refer to Will's 2014 paper for details of spectra reduction

2.2 Suburu / SuprimeCam Observation

Date and observation conditions

2.3 Hubble Space Telescope Observation

Date and observation conditions

2.4 Data Reduction for Subaru and HST data

refer to James' CIZA paper

2.4.1 Extinction Correction

Very low extinction variation across the field Dust correction (Schlafly & Finkbeiner reference from CIZA paper 3.3) Interpolation between the extinction piece points using Cubic interpolation?

2.4.2 Source selection and shape measurement

- S/N cuts - ellipticity error < 0.3 and detection significance $> 5\sigma$
- K-correction?
- Selection based on $(g - i)$ vs i band?
- Star galaxy separation based on half-light radius
- Source density counts

2.4.3 Source redshift estimation

Cosmic Evolution Survey photometric catalog (COSMOS) Ilbert et al. 2009 comparison of depth between our Subaru image and the COSMOS image?

3 METHOD

3.1 Optical analysis

3.1.1 Determining the number of galaxy subclusters and membership

3.1.2 Brightest Cluster Galaxies identification (BCG)

3.1.3 Number density and luminosity map

3.1.4 Dynamics of the subclusters

- LOS velocities
- mass estimation from velocity dispersion

3.2 Weak lensing analysis (WL) with LENSTOOL

3.3 Offset between the DM and galaxy centroids

3.4 Setup of Dawson's dynamical simulation

3.4.1 Weights due to radio relic info

4 RESULTS

5 DISCUSSION

5.1 Offset between the DM centroids and galaxy centroids

6 ACKNOWLEDGEMENTS

REFERENCES

APPENDIX A: MCMC DIAGNOSTICS FROM THE WL ANALYSIS

Fig 1. Chains indicating burn-in and the posterior density acceptance rate!

APPENDIX B: OUTPUTS FROM DYNAMICAL SIMULATION

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