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STELLINGEN

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THE EXTRAORDINARY STRUCTURAL EVOLUTION OF MASSIVE GALAXIES

van Daniel Szomoru

1. On average, high-redshift quiescent galaxies are exceedingly small compared to low-redshift galaxies. Their small measured sizes are not the result of systematic underestimation due to surface brightness effects (Chapters 2, 4).

2. The size growth of individual high-redshift quiescent galaxies may be significantly weaker than what is inferred from mass-selected galaxy samples (Chapter 4).

3. Galaxy morphology and structure correlate with specific star formation rate up to at least $z = 2.5$ (Chapter 3).

4. Galaxies at all redshifts up to $z = 2.5$ have negative radial color and mass-to-light ratio gradients, such that their cores are relatively red and have high mass-to-light ratios, while their outskirts are blue and have low mass-to-light ratios (Chapters 3, 5).

5. The half-mass sizes of massive galaxies are on average 25% smaller than their half-light sizes, independent of redshift or galaxy type (Chapter 5).

6. A rapid increase in the average size of quiescent galaxies is a generic feature of semi-analytic models (Chapter 6).

7. The distinction between morphologically-selected and star formation activity-selected galaxy samples is important for lookback studies, since the resulting differences in galaxy properties can be large and are dependent on redshift.

8. Discrepancies between low- and high-redshift measurements due to differences in measurement techniques form a significant barrier to the accurate determination of redshift trends.

9. Reliably following galaxies across cosmic epochs is one of the biggest challenges currently facing the field of galaxy evolution.

10. Data visualization is one of the most important aspects of astronomical research. A stronger focus on the production of clear, attractive figures would greatly benefit the entire community.