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Our Pretty Amazing Project for P&A 346

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ABSTRACT

The abstract should summarize all sections of your paper, especially the results. A good framework for writing it is to include one section each on Motivation, Data, Methodology, Results, and Conclusions. Results and Conclusions might merit a couple of extra sentences, but this should remain concise overall.

1. INTRODUCTION

This is the same as the Motivation for your presentations. Describe the overarching science goal and give context for the investigation that you undertook.

Here and elsewhere, you can cite papers such as those led by former Rutger undergraduate Carlos Vargas (Vargas et al. 2014) parenthetically or directly in text such as when talking about the amazing discovery reported by Hubble (1929).

It's traditional to end the Introduction by offering an overview of the rest of the paper such as the following, but with a bit more detail to make a full paragraph: In this paper, Section 2 introduces the data set. Section 3 describes our methodology. Results for individual galaxies are given in Section 4, and we discuss our conclusions in Section **??**. It's also traditional to list "global" assumptions such as cosmological parameters at this point.

2. THE DATA

How were they originally obtained? Where did you get them from?

2.1. *Broadband Photometry*

You can define as many subsections as you need.

3. METHODOLOGY

Detail the steps that you were instructed to take, plus how you did those and any additional steps you found it necessary to add (and why).

4. RESULTS

Plots and numbers; what do they tell us? You can label and cite tables and figures, such as Table 1 and Figure 1 below.

Photometry Type	Bias [dex]	Scatter [dex]
Observed	-0.076	0.22
Mock	-0.022	0.14
Mock with *JHK*	0.14	0.08

Table 1. Bias and scatter in total stellar mass formed over the SFH reconstructed by the Dense Basis method versus that found by the CMD method, for observed and various mock SEDs.

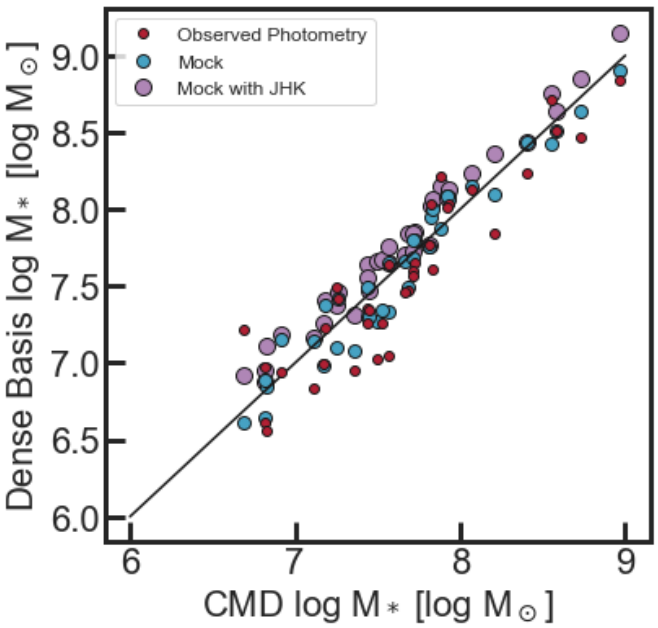

Figure 1. Total stellar mass recovered for each set of photometry for the 36 ANGST galaxies compared with that inferred from the CMD SFHs. The observed photometry (red) shows only a slight bias of 0.076 dex where the Dense Basis SED fitting method underestimates the CMD SFH values with a scatter of 0.22 dex. Mock photometry generated directly from the CMD SFH (blue) is considerably less biased with a bias and scatter of 0.022 dex and 0.14 dex respectively. Mock photometry that includes the J, H and K bands (purple) shows a significant reduction in scatter, but twice the bias of the observed photometry, meaning that the addition of the NIR bands caused a slight overestimation of the total mass. While the addition of NIR bands did not ultimately help, the good agreement between the total stellar mass formed in the mock photometry (blue) and the CMD SFHs tells us the Dense Basis SED method and CMD methods agree well. Likewise, the agreement between the observed broadband photometry (red) SFH and the CMD SFH show the degree of agreement between the methods as well as the agreement between the two sets of observations.

5. DISCUSSION

Where would you take this in future work, including multiwavelength observations?

6. CONCLUSIONS

Summarize your group's key findings. You can forward- or backward-reference a section such a saying, "see our results from § 4. You can choose between

1. Regular text, or
2. A numbered list, or
3. A bulleted list by replacing "enumerate" with "itemize" above and below this in the .tex file.

- You can even just custom-create bullets if you prefer them to text.

7. ACKNOWLEDGEMENTS

Use this section to describe each author's contributions to this report by name.

REFERENCES

Hubble, E. 1929, Proceedings of the National Academy of Sciences, 15, 168

Vargas, C. J., Bish, H., Acquaviva, V., et al. 2014, ApJ, 783, 26