S-PLUS: Emission line objects in the southern photometric local Universe survey

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ABSTRACT
The emission line objects are very important objects in astronomy because

Key words: keyword1 – keyword2 – keyword3

1 INTRODUCTION

The existence of an ionizing radiation field can lead to Balmer hydrogen emission lines. From the presence of the H Balmer lines in the optical spectra of some sources it is well known the possible presence of ionized gas. Many important astronomical objects involve the physics of photo-ionized gases and the interpretation of the emission-line spectra. Emission line objects as the H II regions allow us to study the star formation history of the far reaches of our Galaxy and of distant galaxies. Planetary nebulae let us to see the remaining envelope of dying stars. Star-burst galaxies and QSOs are one the most luminous objects and hence the most distant that can be observed. Their spectra can reveal details about of the first generation of star and the formation of heavy elements in the young universe. On the other hand, emission lines can also infer the presence or lack the accretion discs (Schwope et al. 2000; Ratti et al. 2012), the properties of single or double picked line can allow us to infer geometrical characteristics (Horne & Marsh 1986), the nature of donor stars in binary system (Steeghs & Casares 2002; van Spaandonk et al. 2010; Casares 2015) and the compact objects as black holes (Casares 2016).

Hα emission line

the properties of single and/or double-peaked lines can allow us to infer geometrical properties (Horne & Marsh 1986), the presence or absence of an accretion disc (Schwope et al. 2000; Ratti et al. 2012), or the nature of the compact object and/or donor star (Steeghs & Casares 2002; van Spaandonk et al. 2010; Casares 2015, 2016).

Large-scale Hα imaging surveys have traditionally focused on extended emission-line sources,

2 OBSERVATIONS

The S-PLUS survey is a multi-band photometric survey...

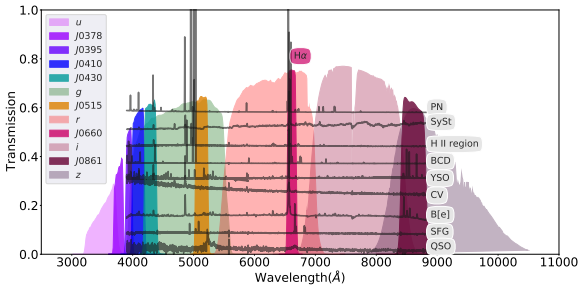

Figure 1. Transmission curves...

3 METHODOLOGY

Witham et al. (2008) presented a catalogue of point-sources Hα emission objects identified in IPHAS.

Appliyng the selection criteria to selecting Hα emitters. We used the same procedure in Wevers et al. (2017). The objects with Hα excess meet the condition:

$$(r-J0660)_{obs} - (r-J0660)_{fit} \geq C \times \sqrt{\sigma_s^2 - \sigma_{phot}^2}$$

where σ_s is the root mean squared value of the residuals around the fit and σ_{phot} is the error on the observed $(r-J0660)$ colour

Firts see an aproximation of the 4σ cut away from the ariginal fit.

3.1 Maths

3.2 Figures and tables

4 RESULTS

5 CONCLUSIONS

We have found a important sample of emission line objects.

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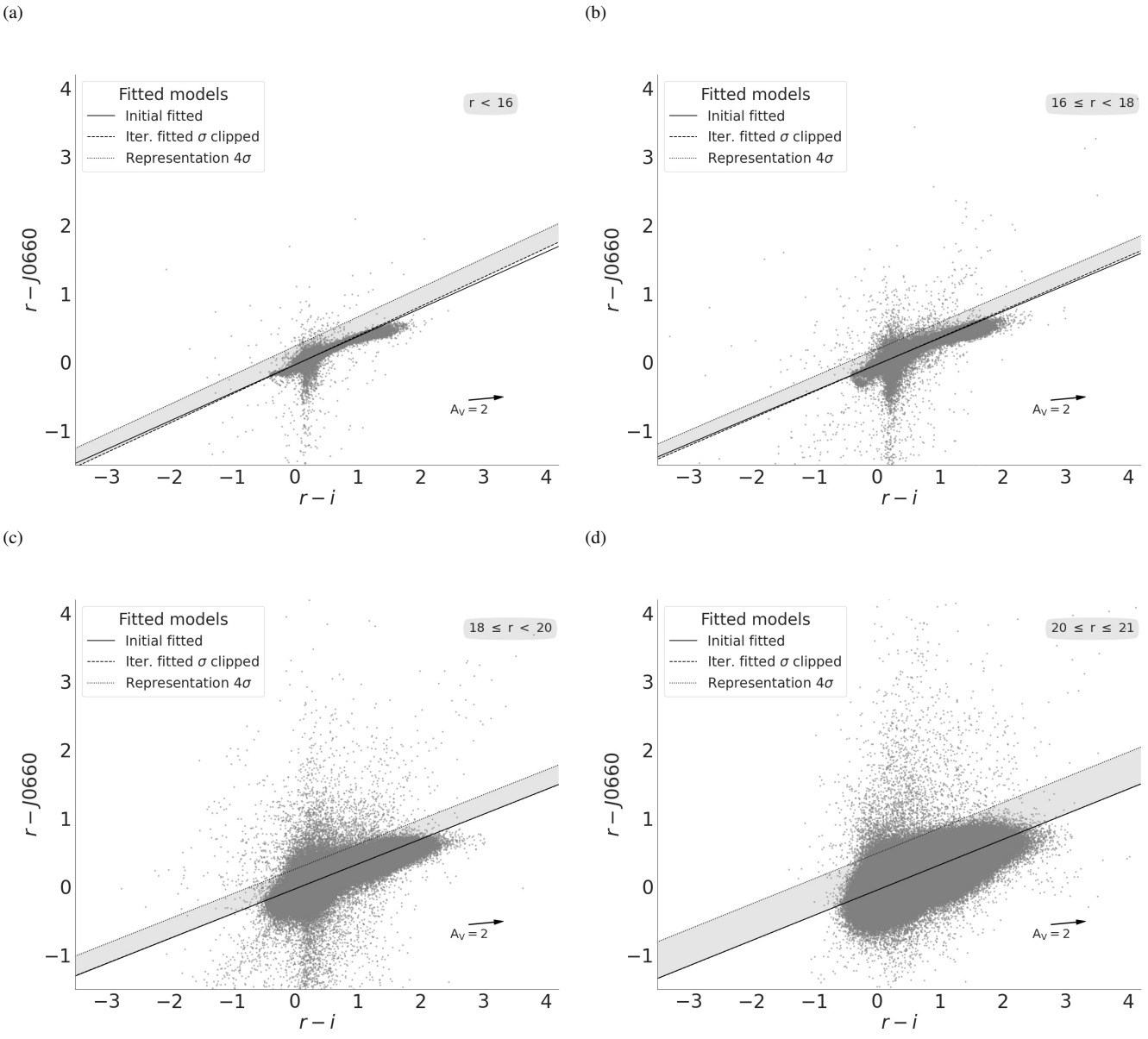

Figure 2. Color-color diagrams with all objects...

ACKNOWLEDGEMENTS

DATA AVAILABILITY

REFERENCES

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Schwope A. D., Catalán M. S., Beuermann K., Metzner A., Smith R. C., Steeghs D., 2000, MNRAS, 313, 533
Steeghs D., Casares J., 2002, ApJ, 568, 273
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van Spaandonk L., Steeghs D., Marsh T. R., Torres M. A. P., 2010, MNRAS, 401, 1857

APPENDIX A: SOME EXTRA MATERIAL

This paper has been typeset from a TEX/LATEX file prepared by the author.

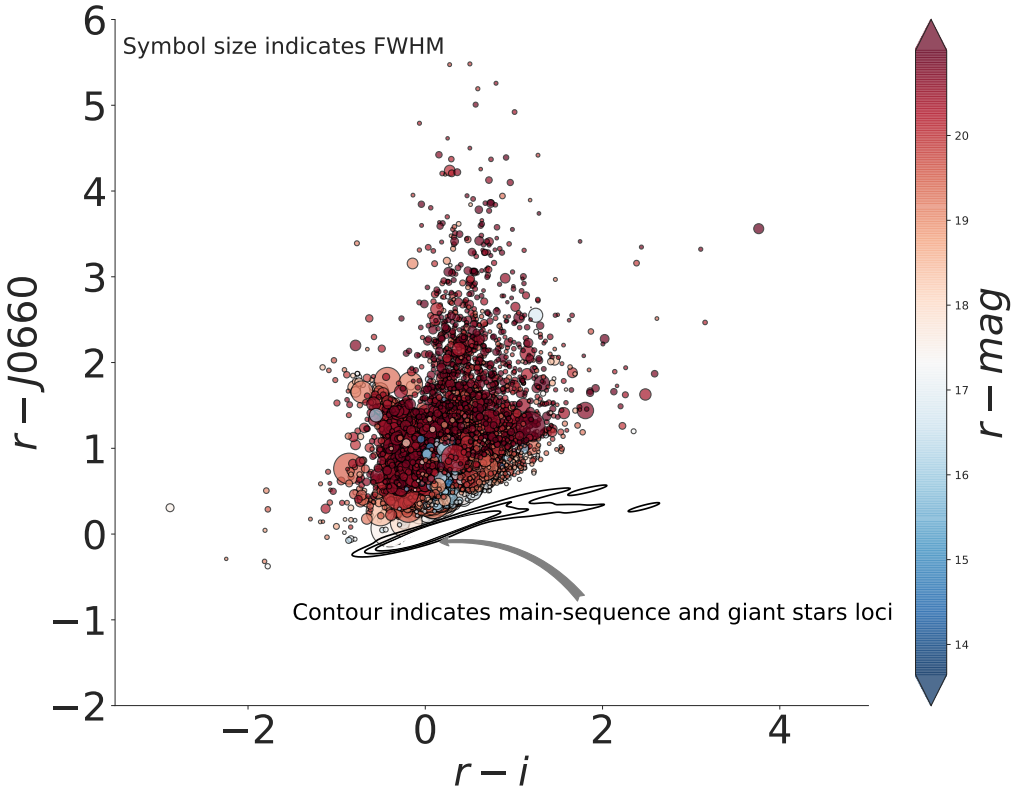

Figure 3. Emission lines selected...

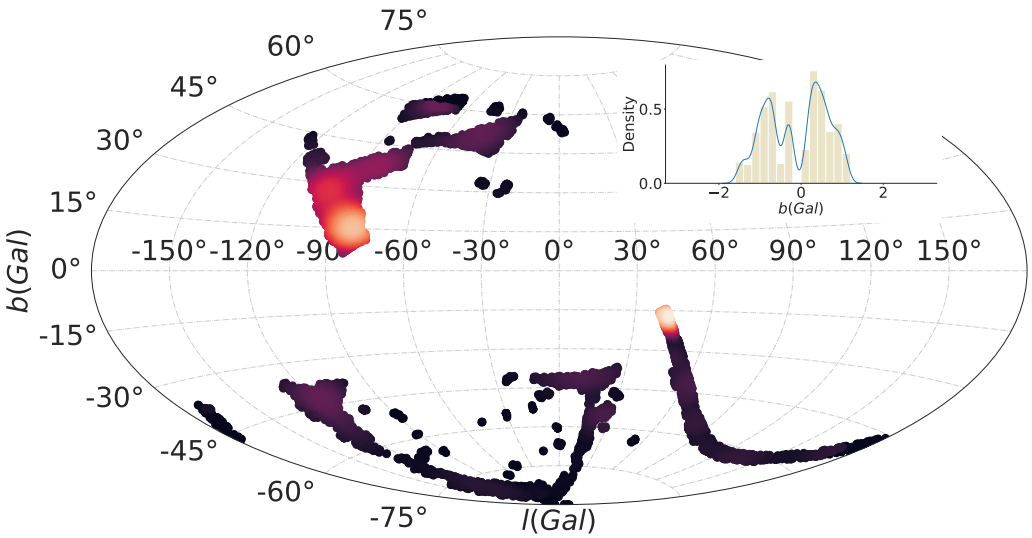

Figure 4. This is my embedded figure

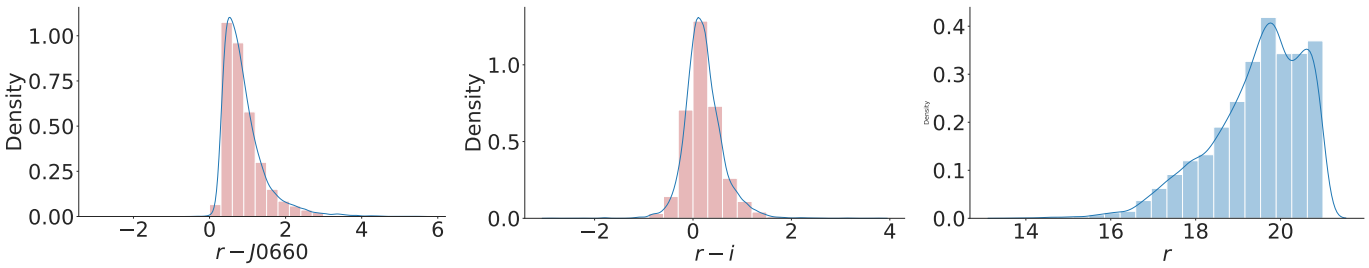

Figure 5. Emission lines selected...

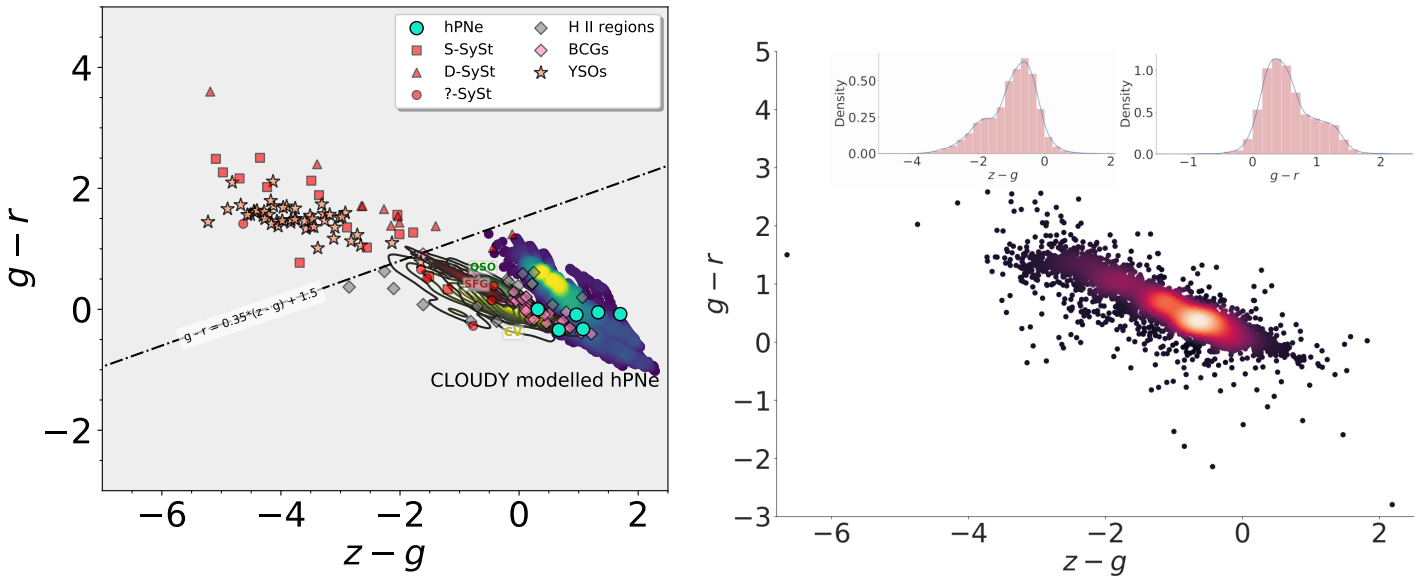

Figure 6. New color-color diagram to separate the blue objects from the red ones.

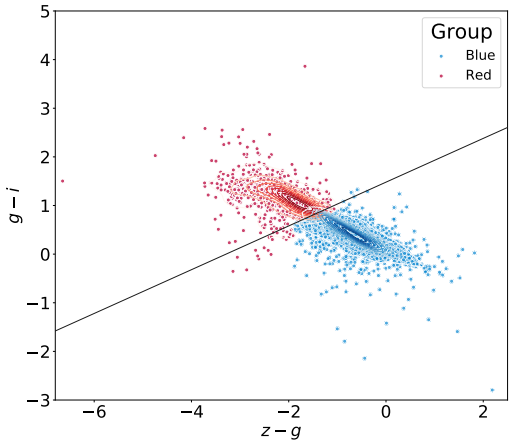

Figure 7. Classifying...

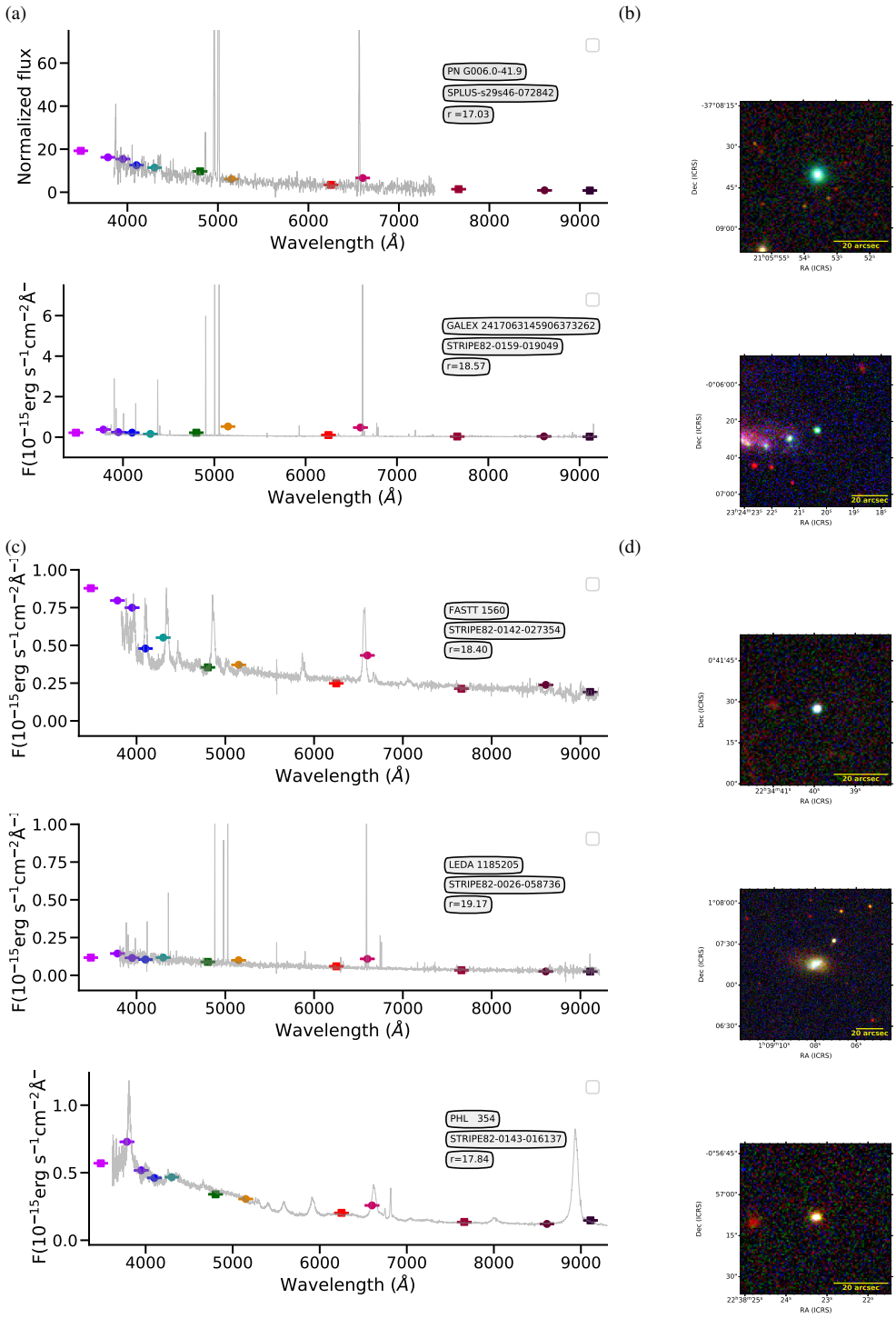

Figure 8. Spectra of the known objects select with our algorithm

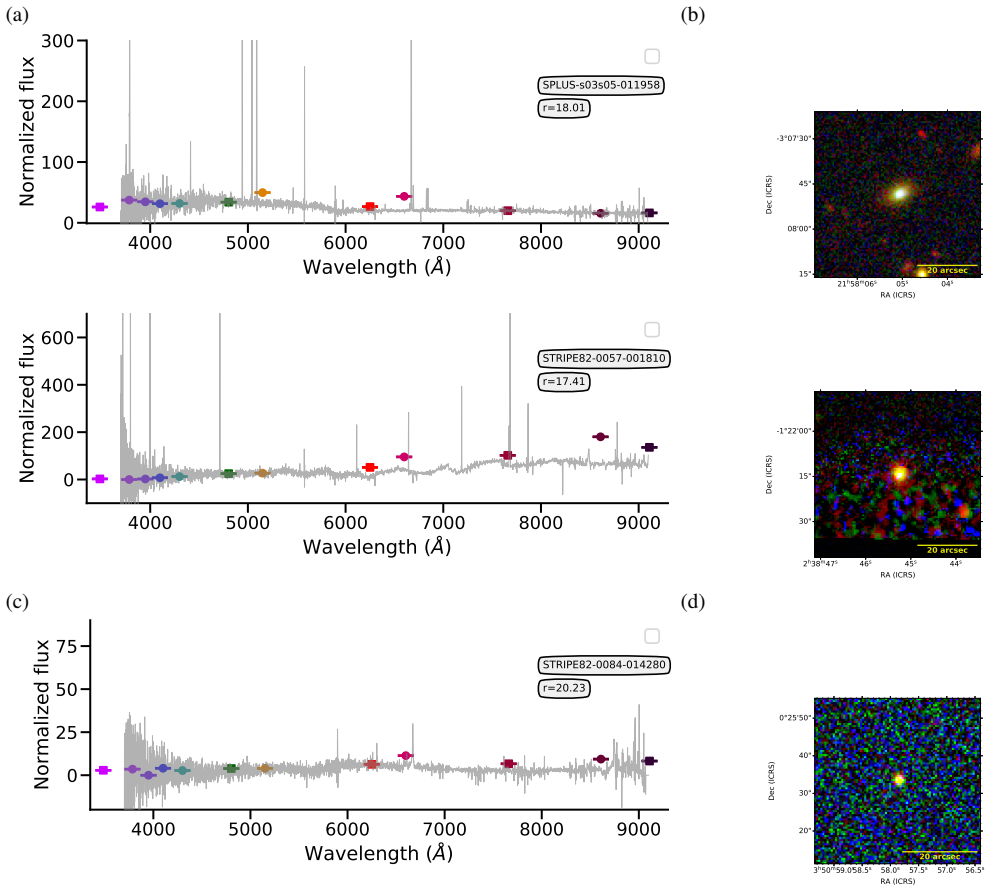

Figure 9. Spectra of the Lamost

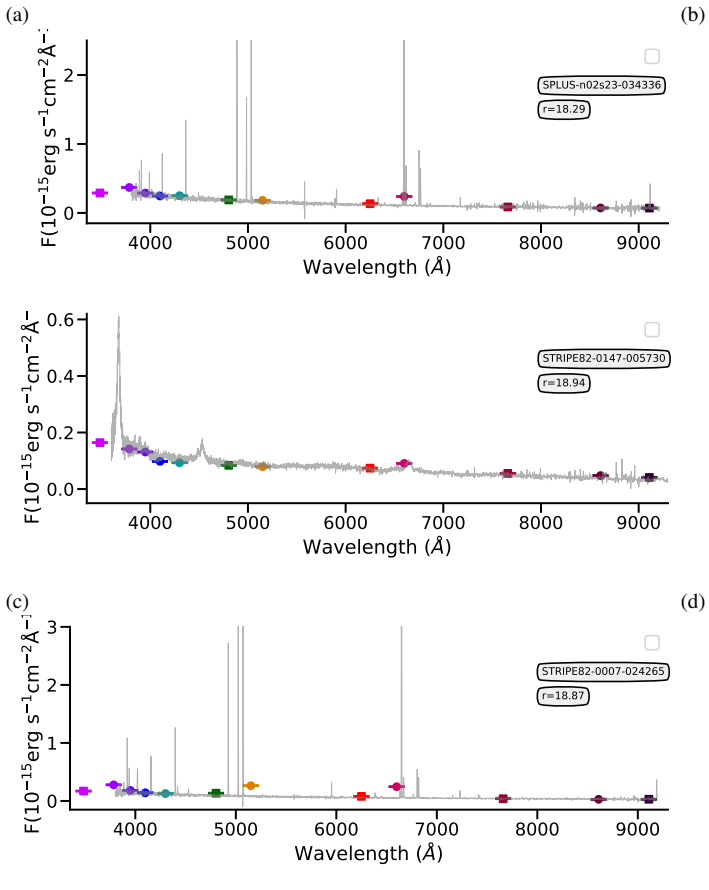

Figure 10. Spectra of the SDSS