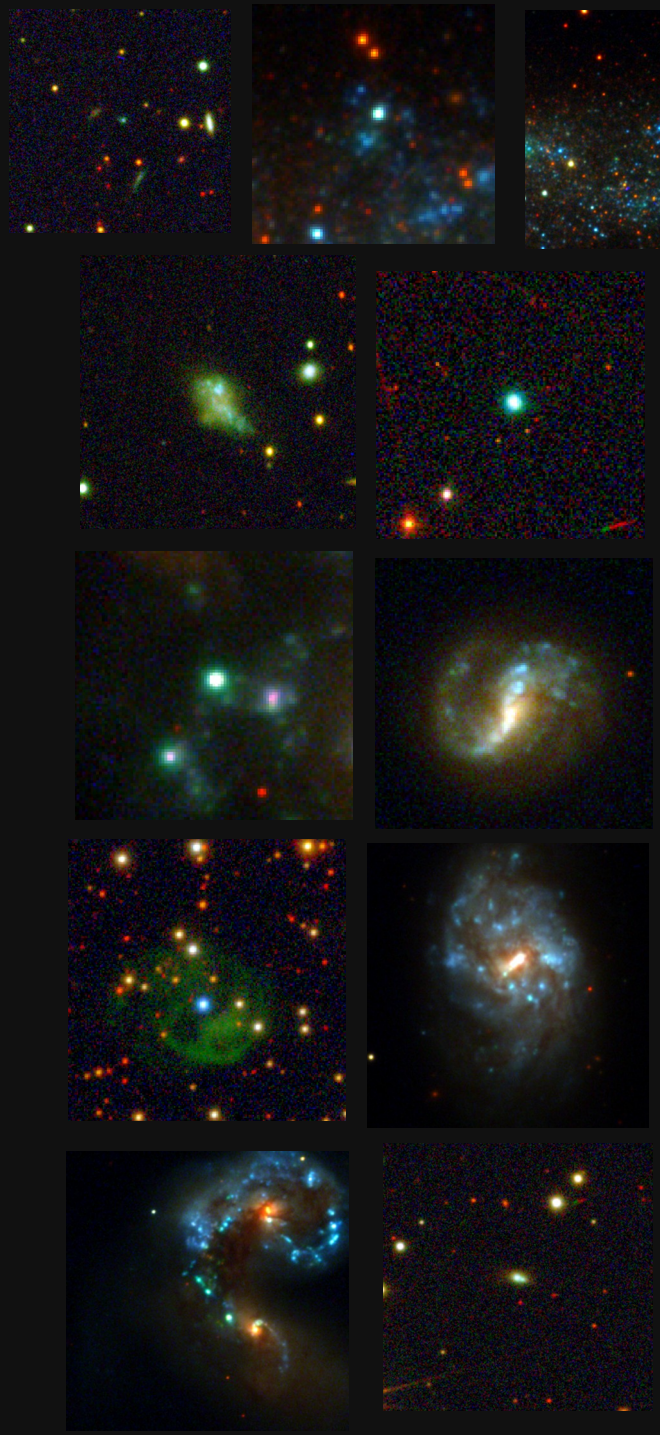
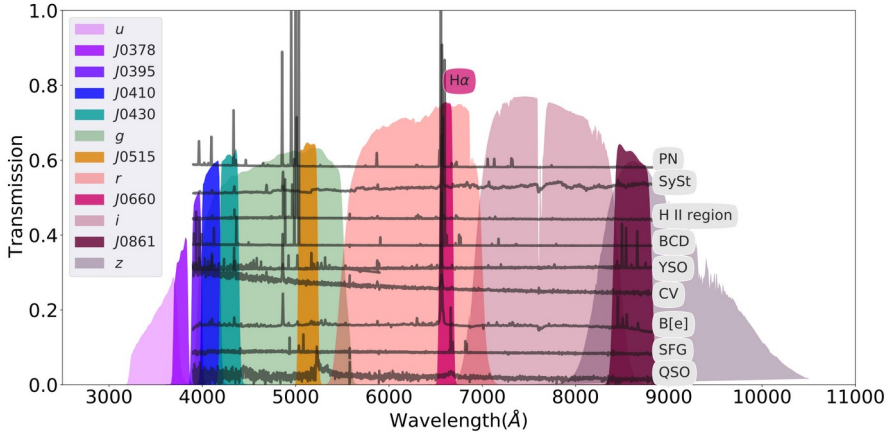
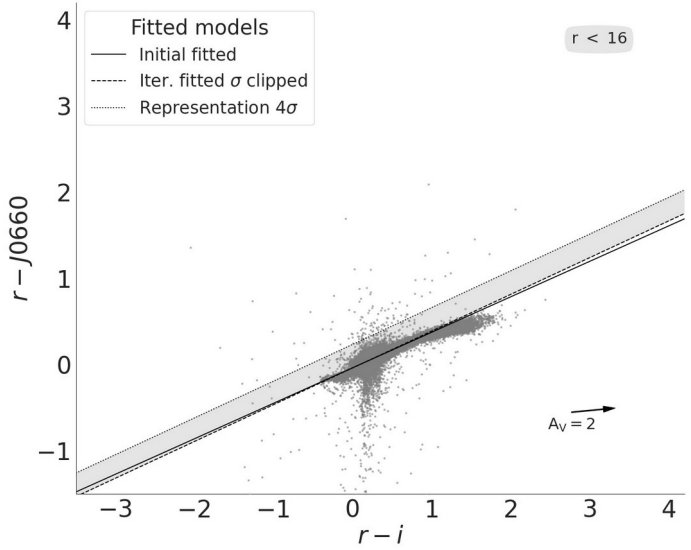


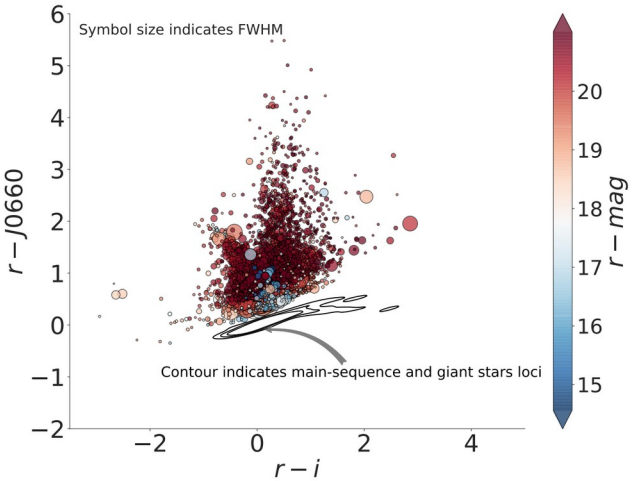
Hα emitters from the Southern Photometric Local Universe Survey (S-PLUS)

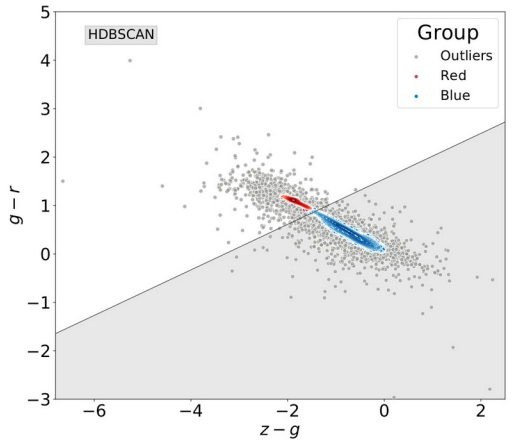
Luis A. Gutiérrez Soto, R. Lopes de Oliveira
Stavros Akras, Denise R. Gonçalves, C. Mendes de Oliveira & S-PLUS collaboration

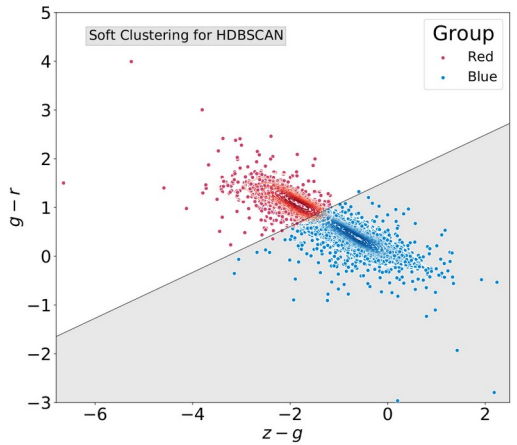
16th S-PLUS Meeting
December, 2021


u
J0378
J0395
J0410
J0430
g
J0515
r
J0660
i
J0861
z
Hα
PN
SySt
H II region
BCD
YSO
CV
B[e]
SFG
QSO
Transmission
Wavelength(Å)


Fitted models
Initial fitted
Iter. fitted σ clipped
Representation 4σ
r < 16
A_V = 2
r − J0660
r − i

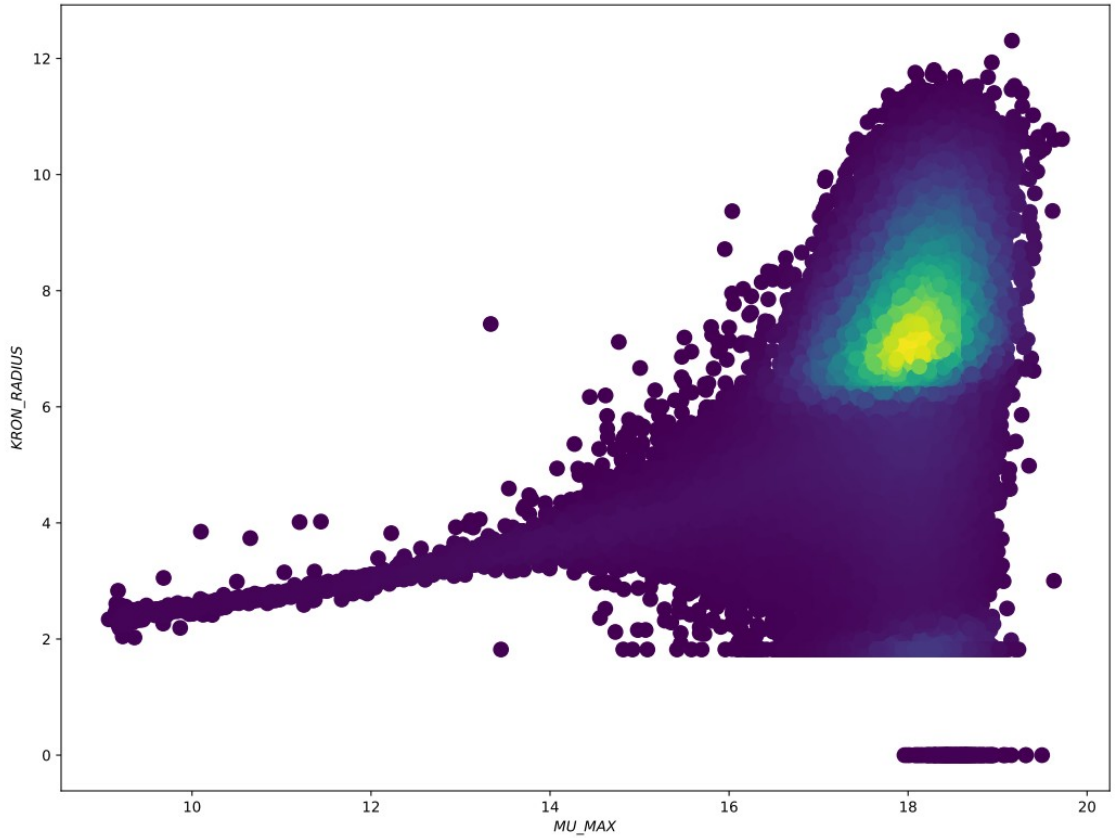

Symbol size indicates FWHM
Contour indicates main-sequence and giant stars loci
r − J0660
r − i
r − mag


HDBSCAN
Group
Outliers
Red
Blue
g − r
z − g


Soft Clustering for HDBSCAN
Group
Red
Blue
g − r
z − g

Kron radius vs Mu max

There is a high density regions in the plots



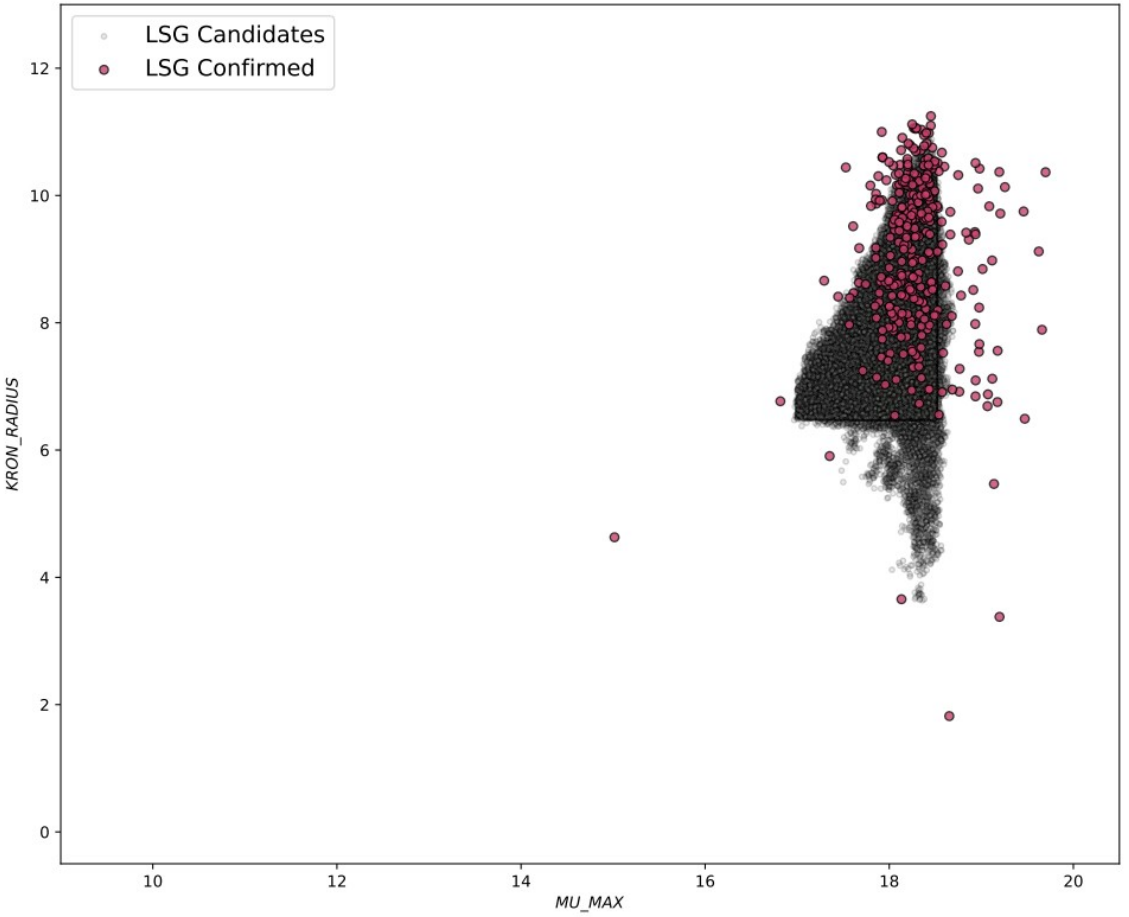
HDBSCAN

Unsupervised/clustering machine learning.

- **Input data: Mu Max, Kron Radius and r_auto mag**

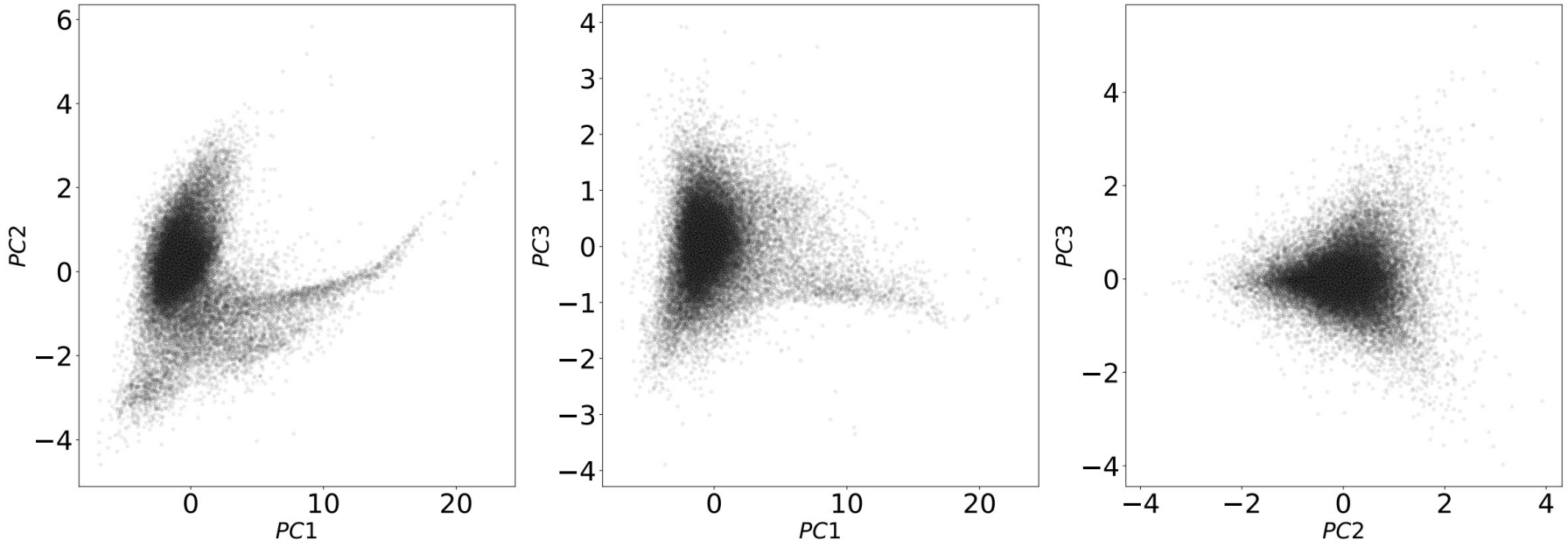
Unsupervised/clustering machine learning

Group 6: $\sim 80 \times 10^3$ objects

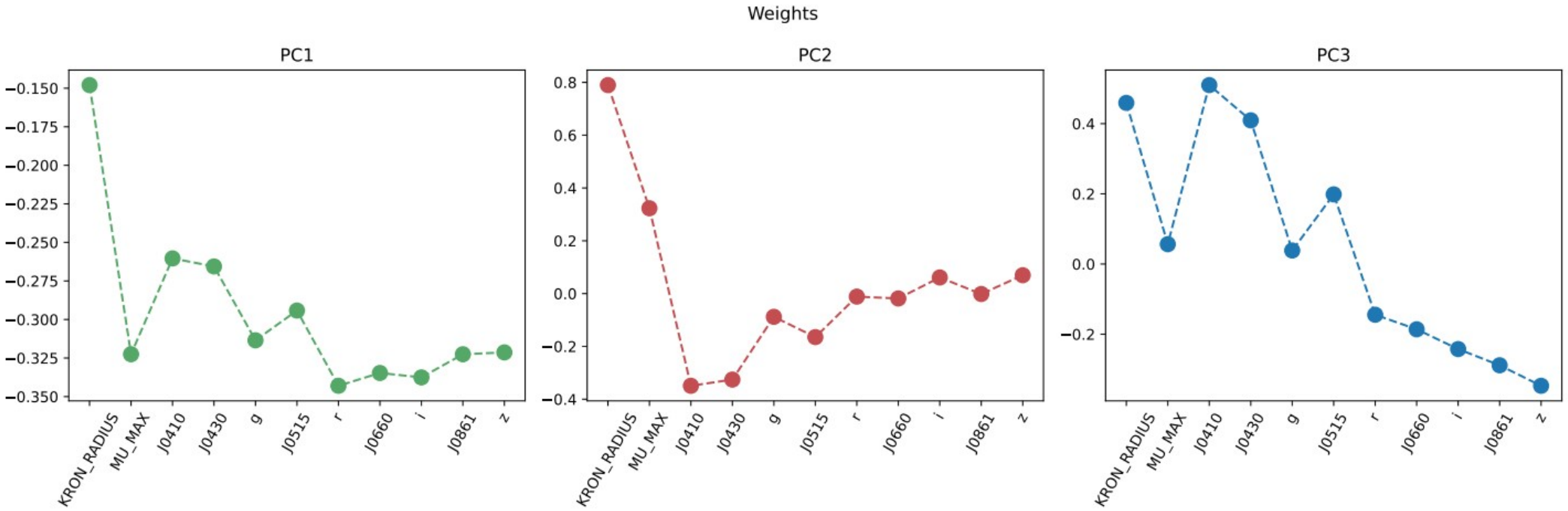


Principal Component Analysis

Variables: “Mu max”, “kron radius”, "J0410", 'J0430', "g", "J0515", "r", "J0660", "i", "J0861" and"z"

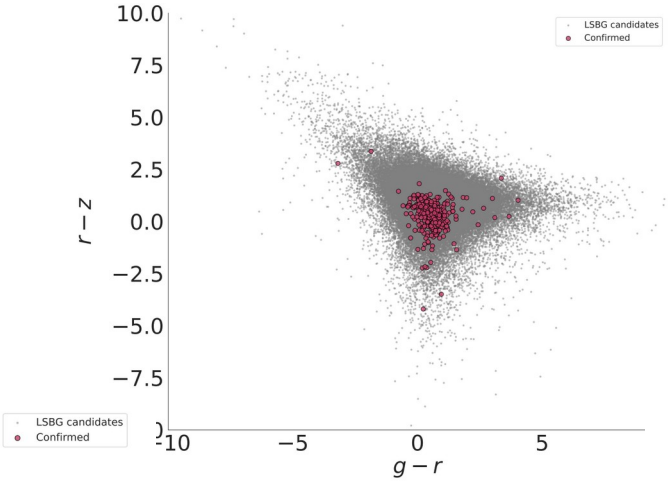


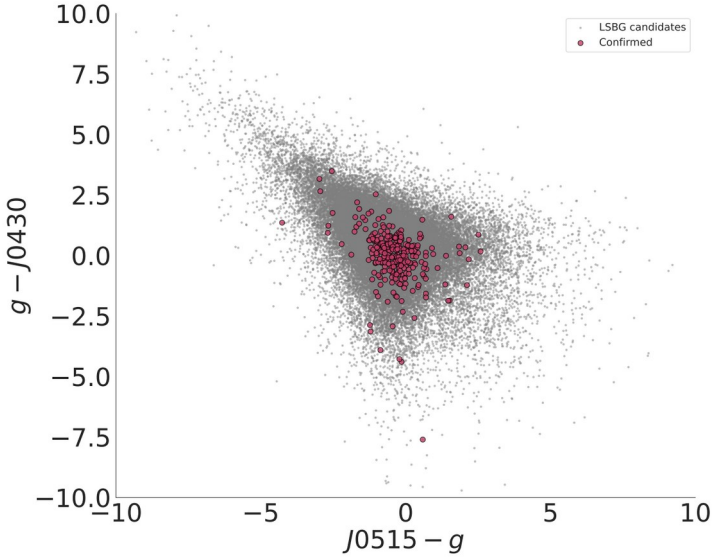
Principal Component Analysis

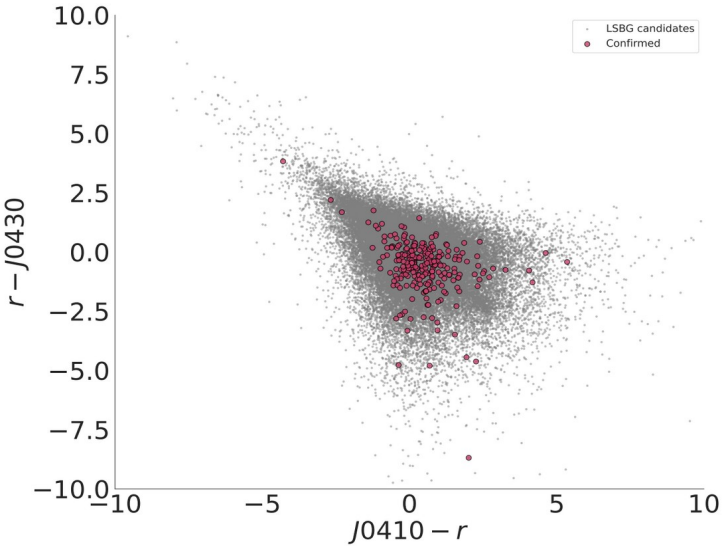


S-PLUS colour-colour diagrams

We first produce several colour-colour diagrams...

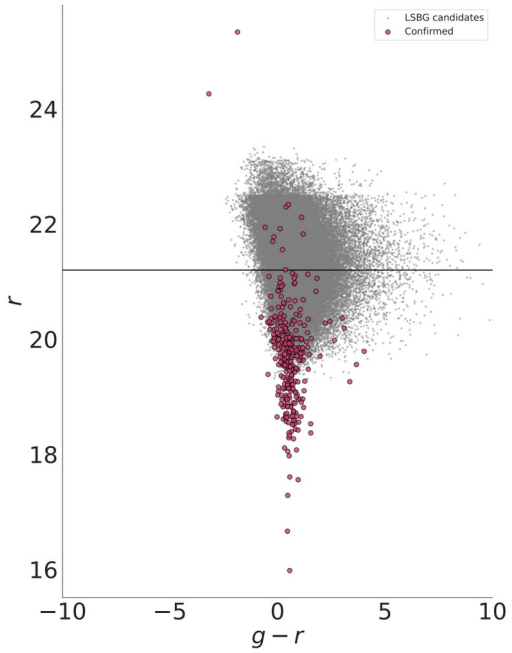


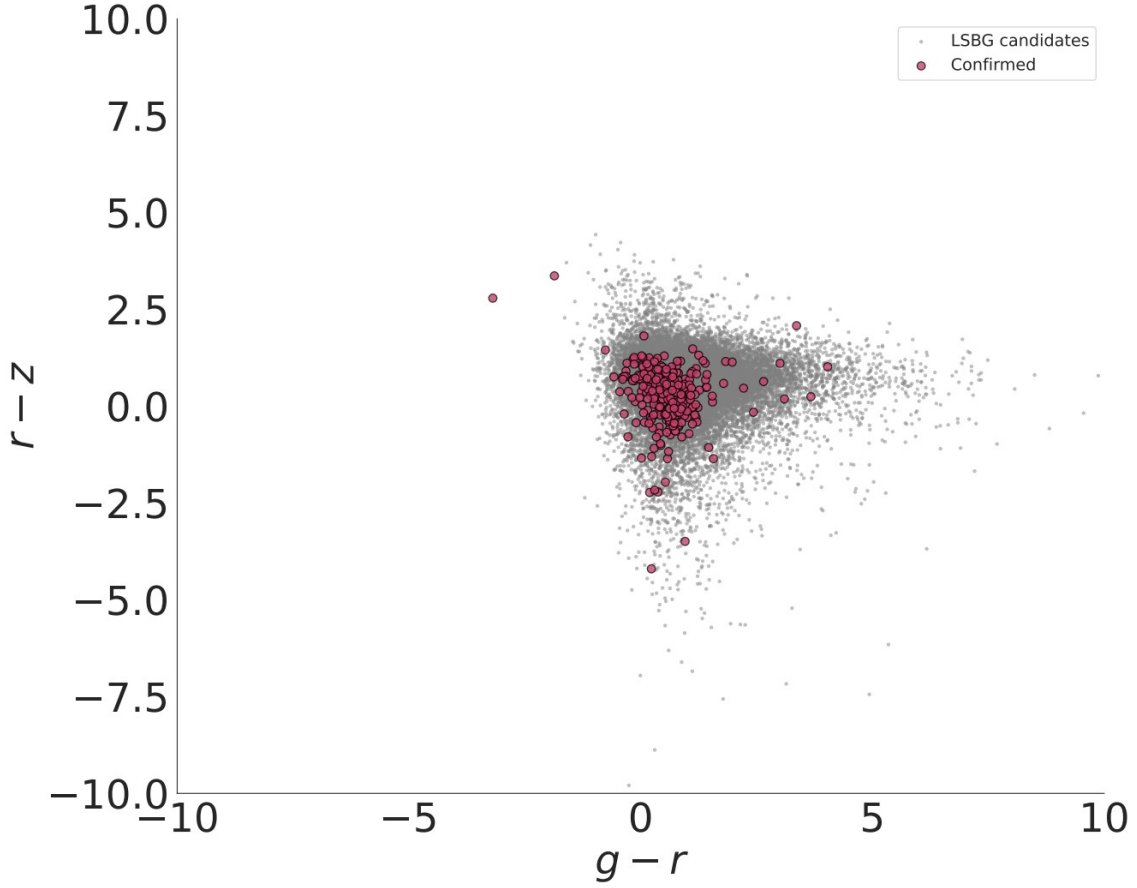




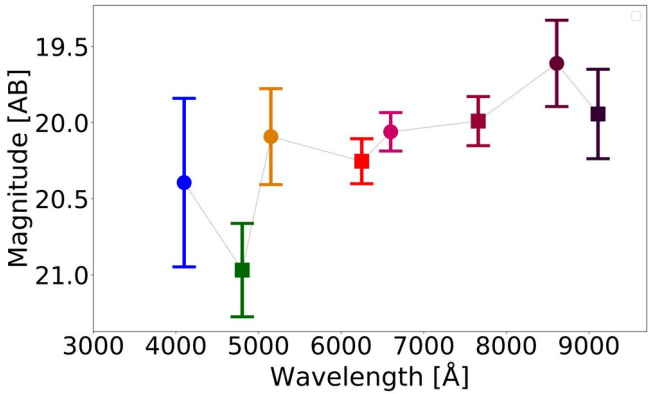
S-PLUS colour-colour diagrams

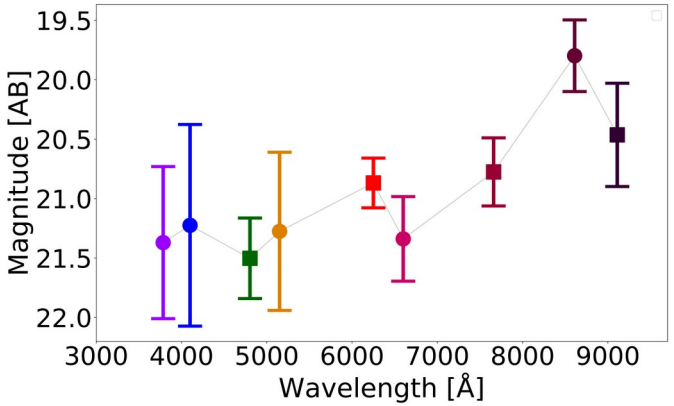
(r – z) vs (g – r) color-color diagram with the HDBSCAN results -- Group 6

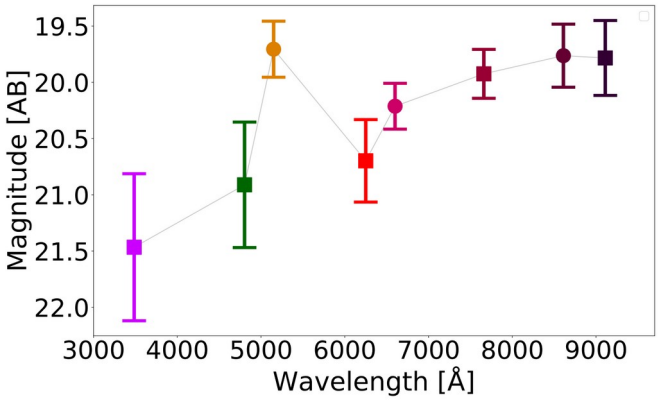




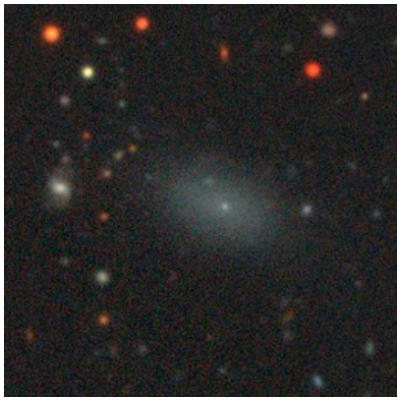
I think that they are good candidates

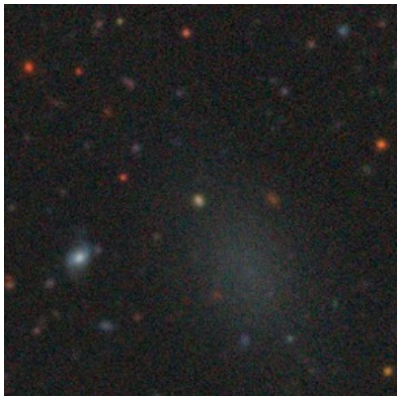




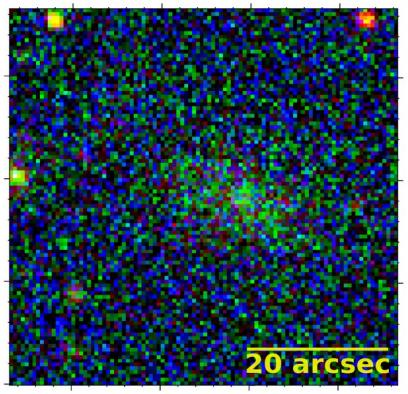


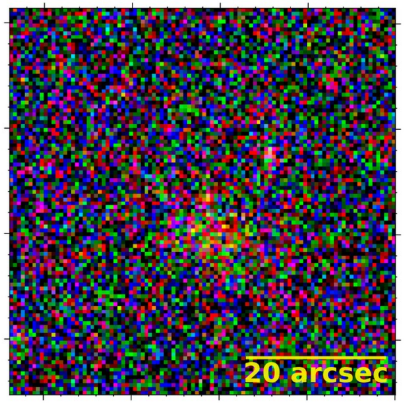
Legacy

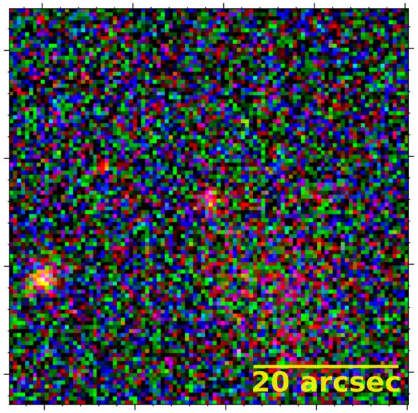
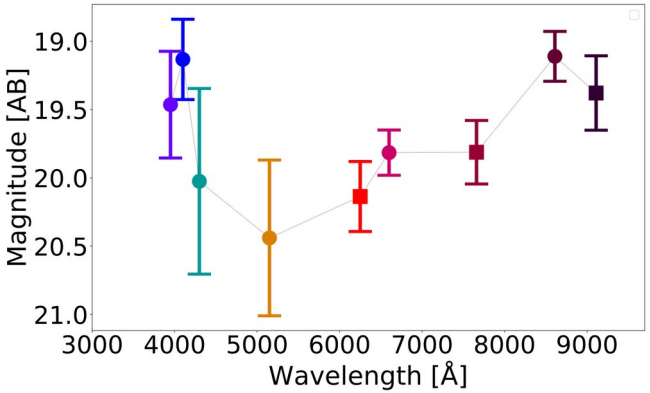
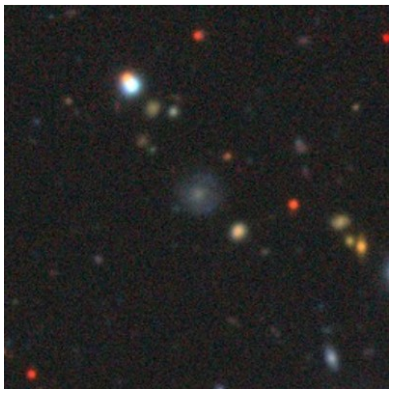
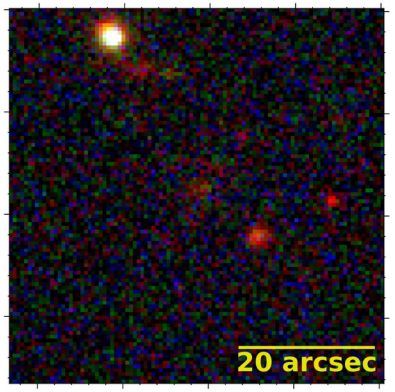
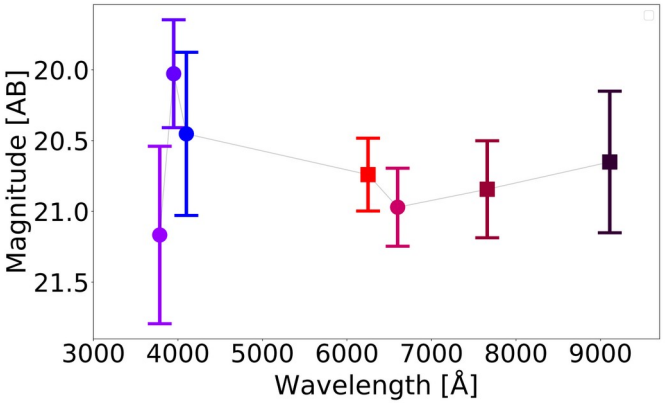
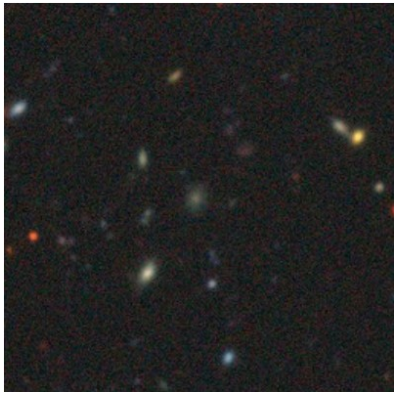
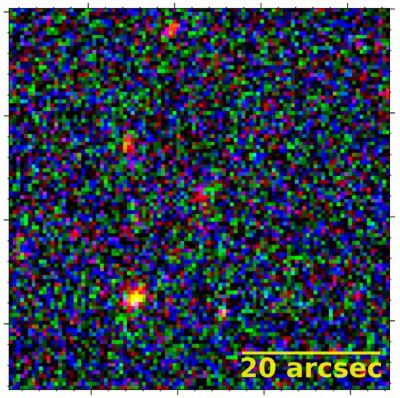
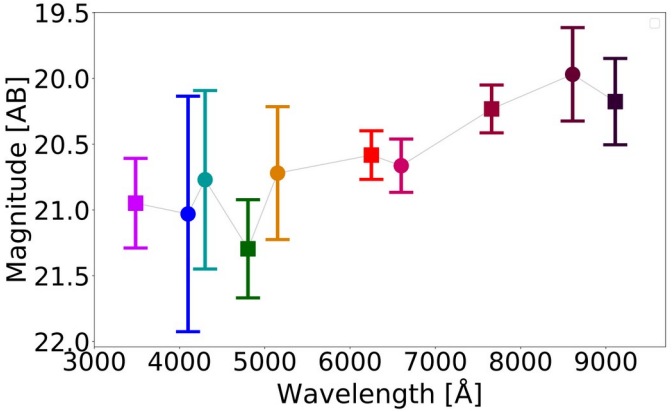
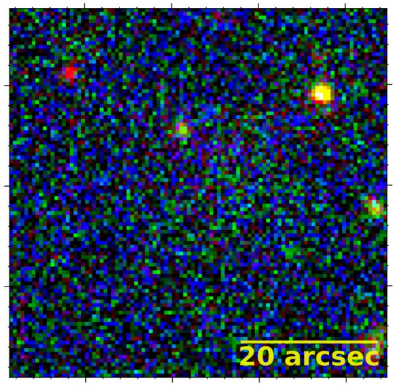




S-PLUS



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