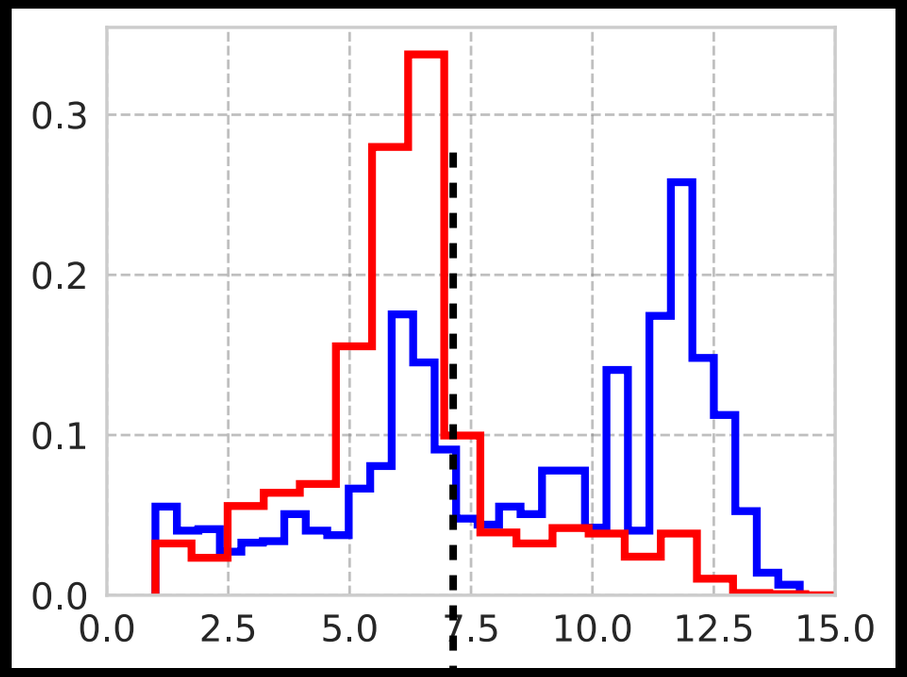
Only the good die young:
identifying star forming Elliptical galaxies using S-PLUS data

A. Cortesi, A. Smith, G. Lucatelli, C. Mendes de Oliveira, K. Saha, S. Dhiwar, M.L. Buzzo, K. Menendez-Delmestre, T. Signorini, C. Bom, F. Ferrari, P. Dimauro, M. Grossi & the S-PLUS morphological group

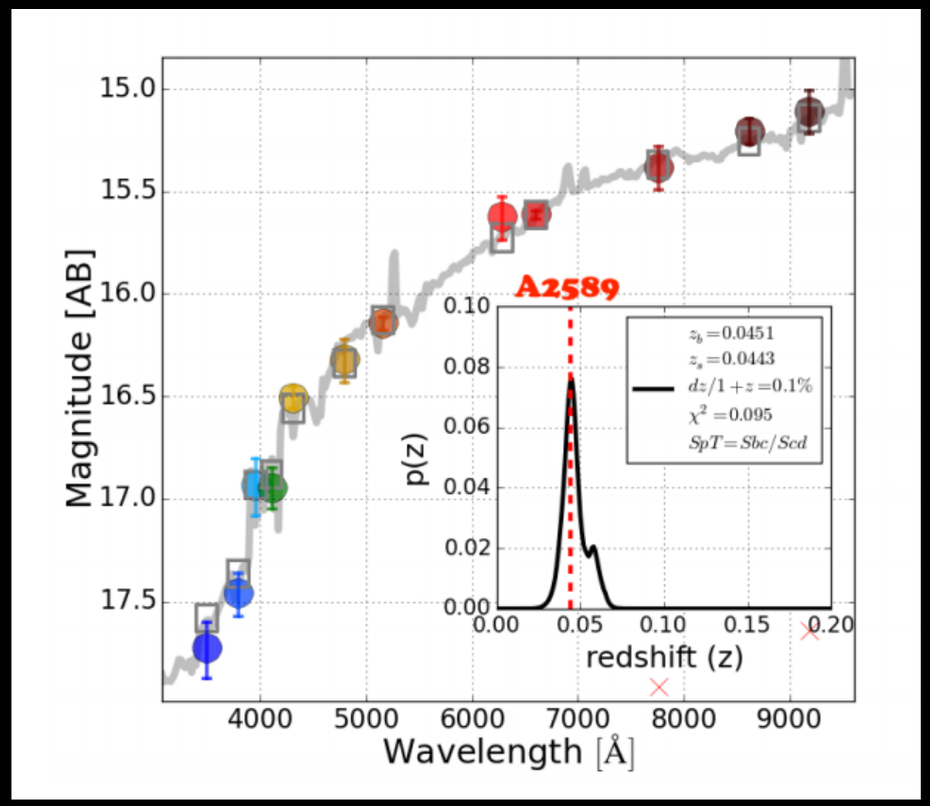
Dedicated to all the victims of police violence
in Rio de Janeiro
Brazil
and the world

The idea



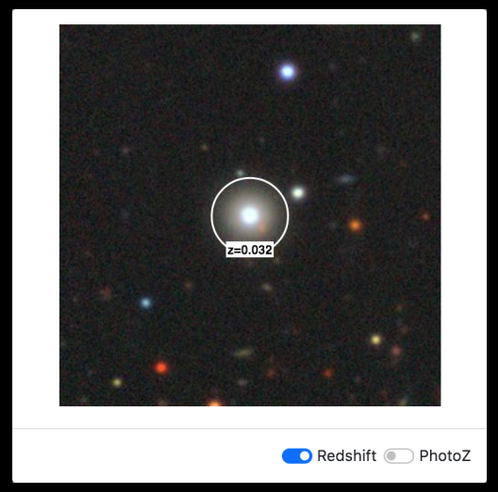
Tb

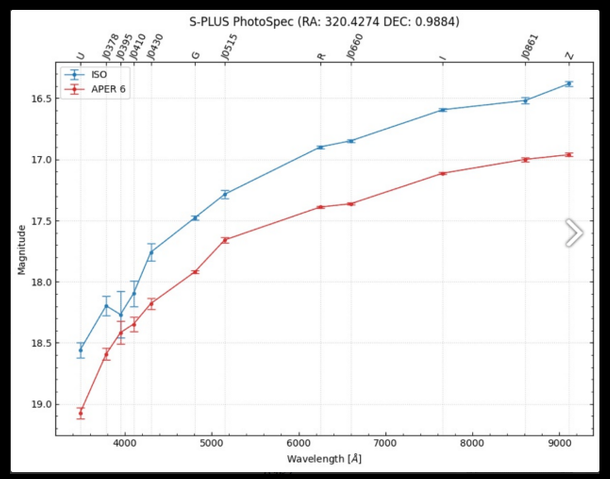
E/S classification
(Bom et al 2021)

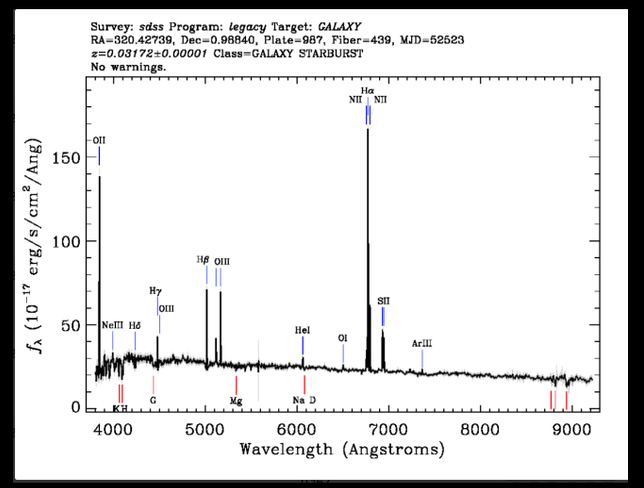


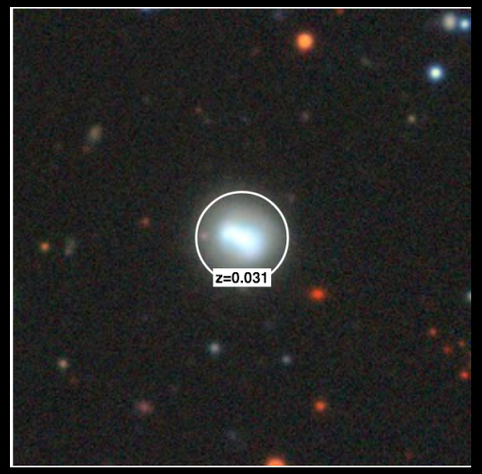
Tb>6.5
(Molino et al. 2020)

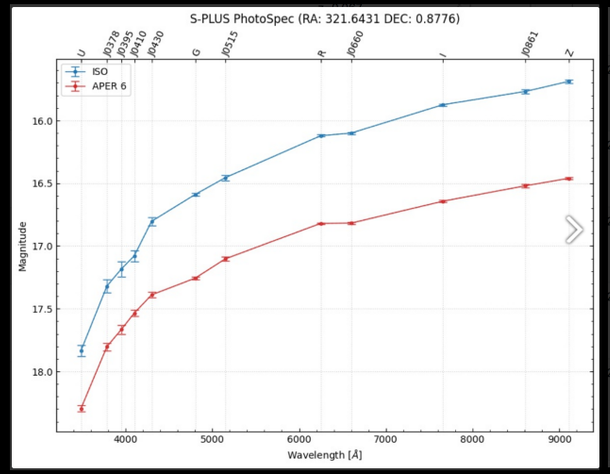
How do they look like

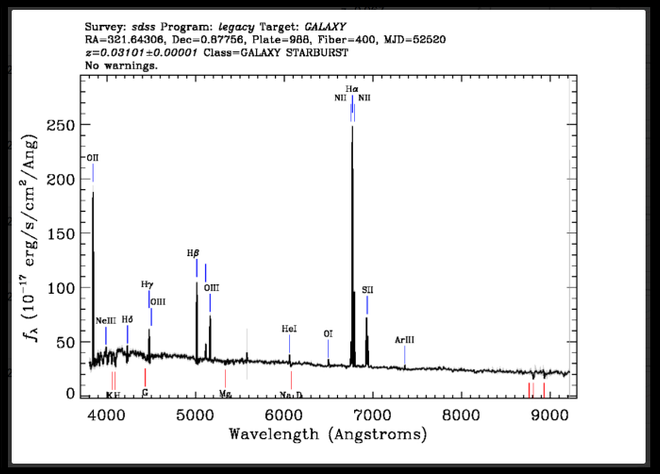


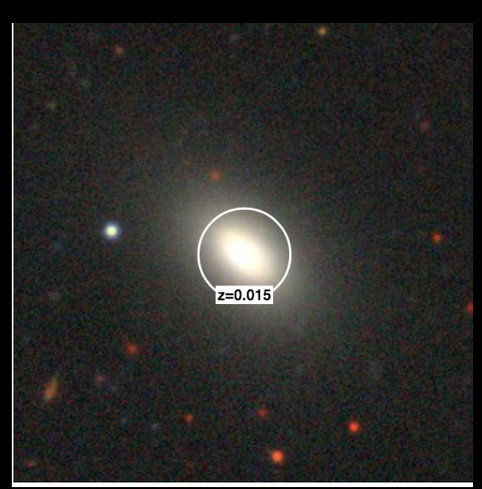


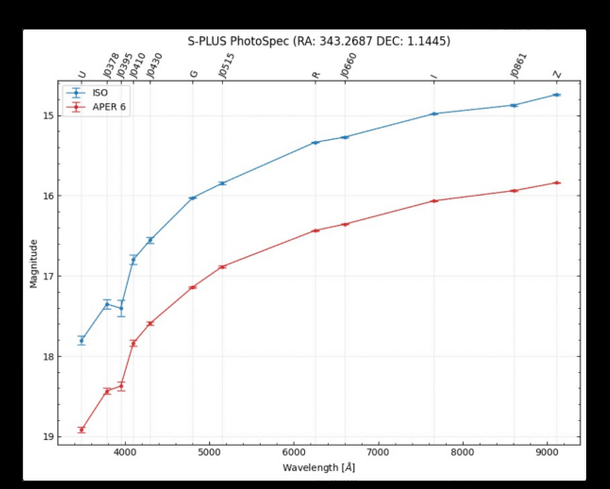


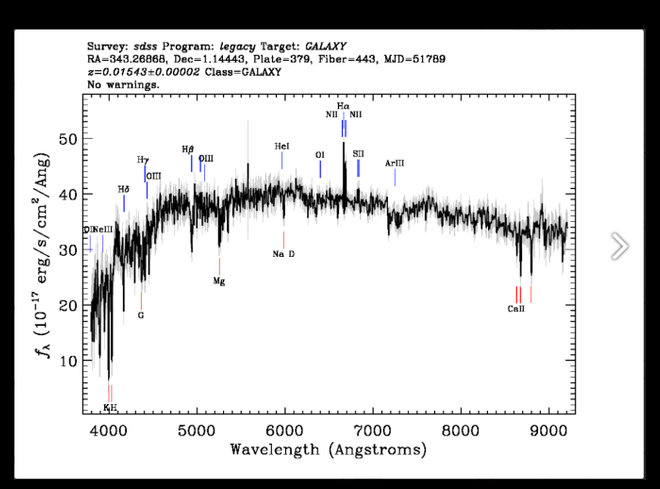




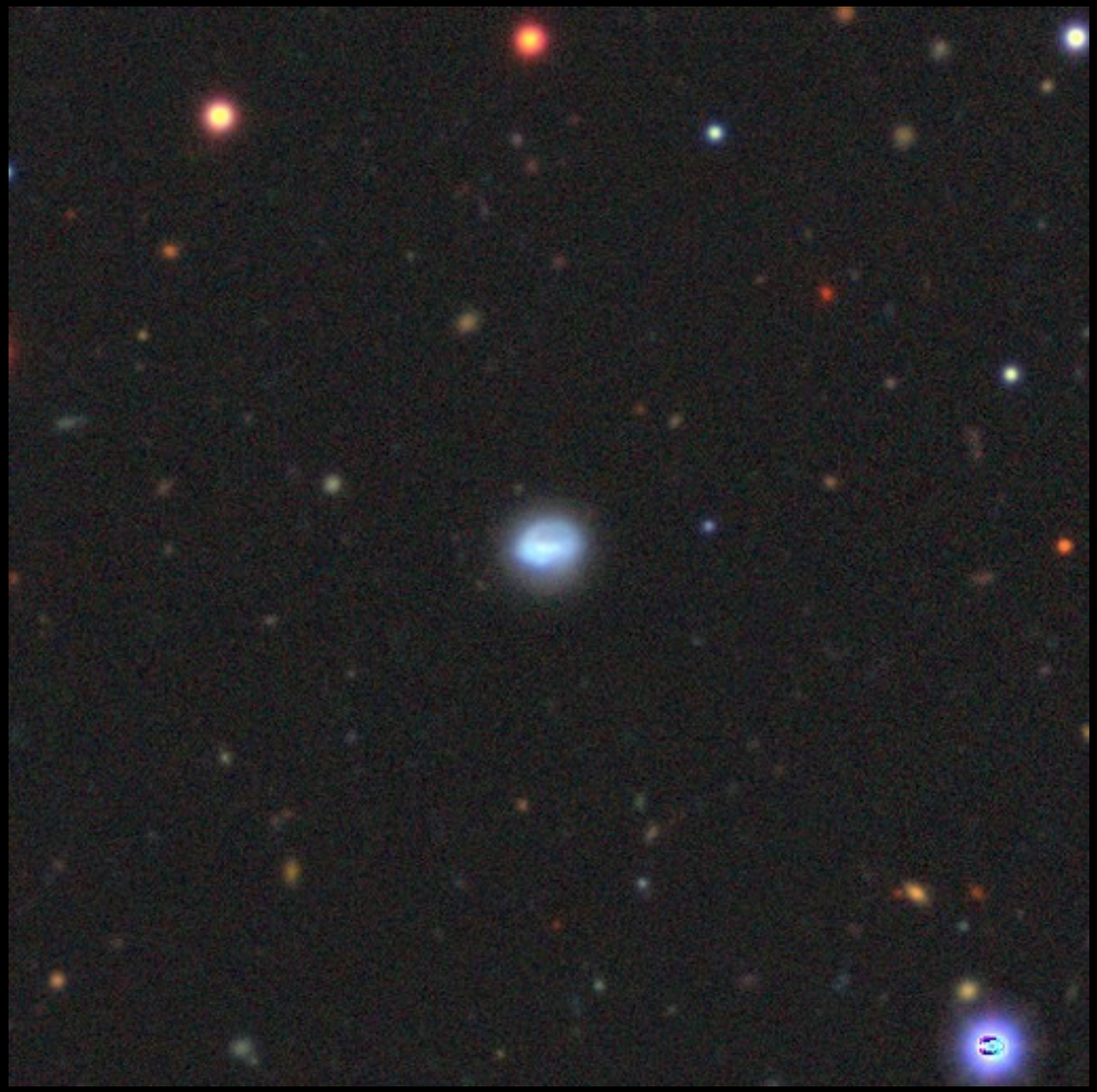




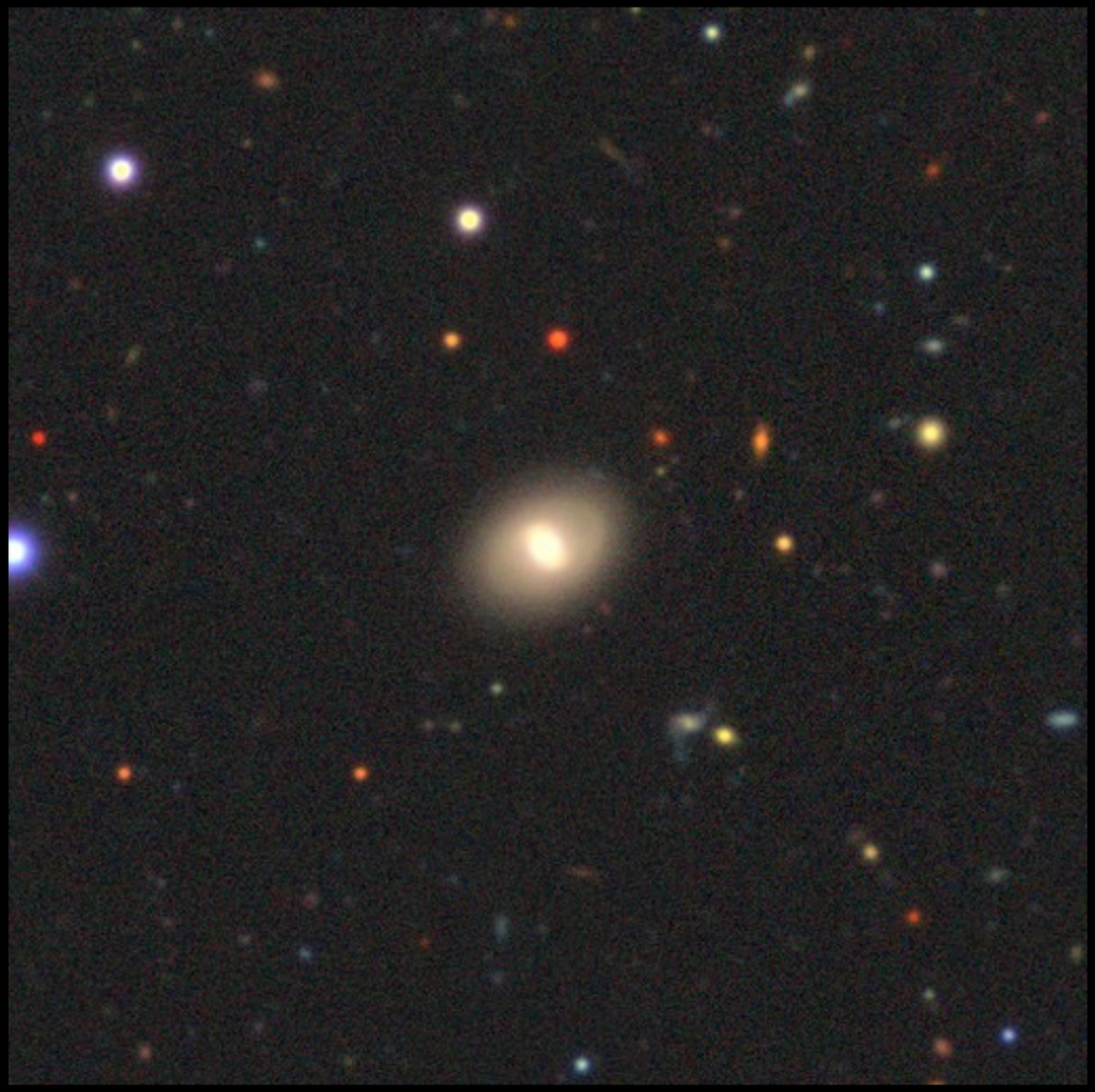




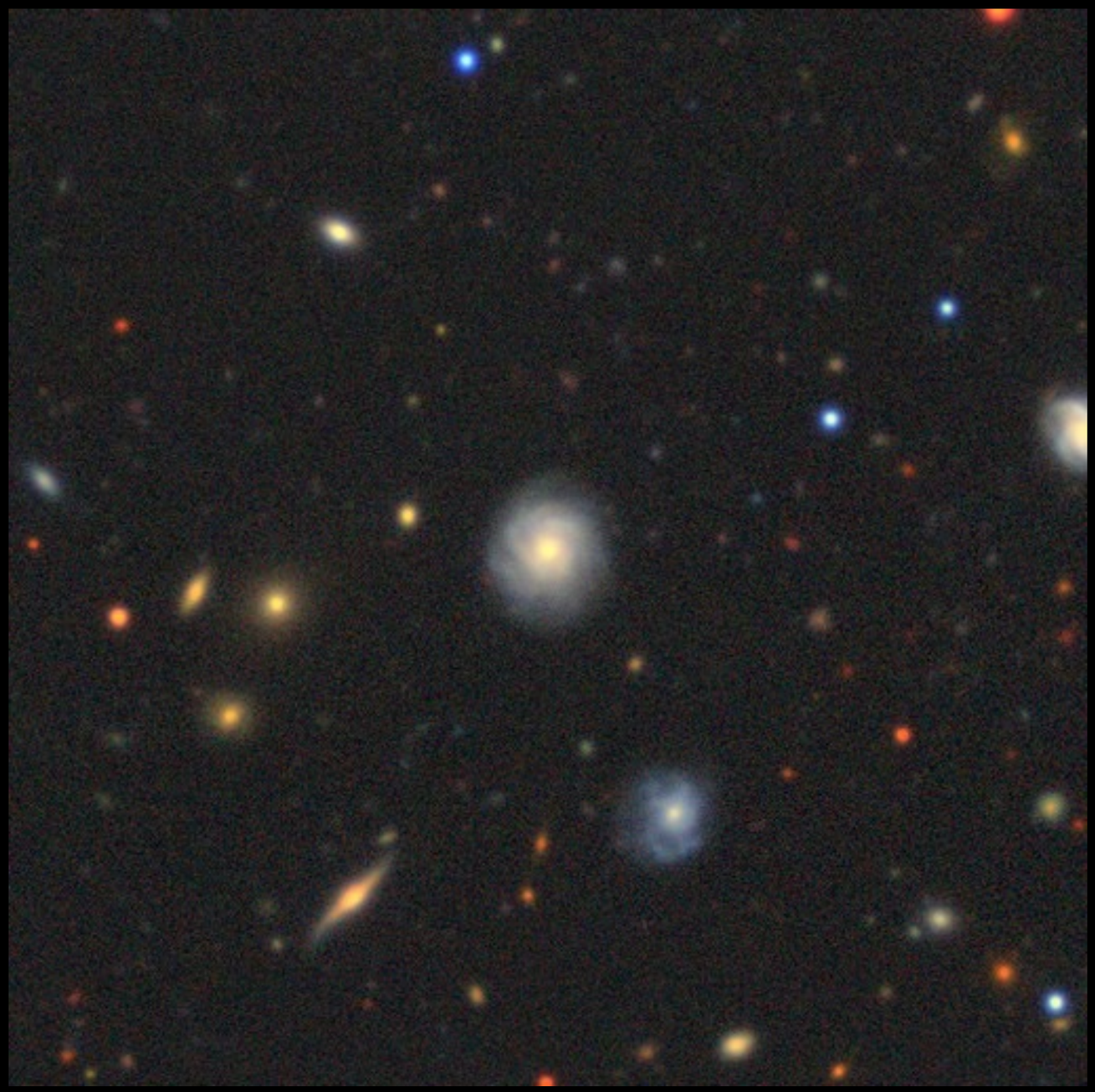
Do they all look like this?



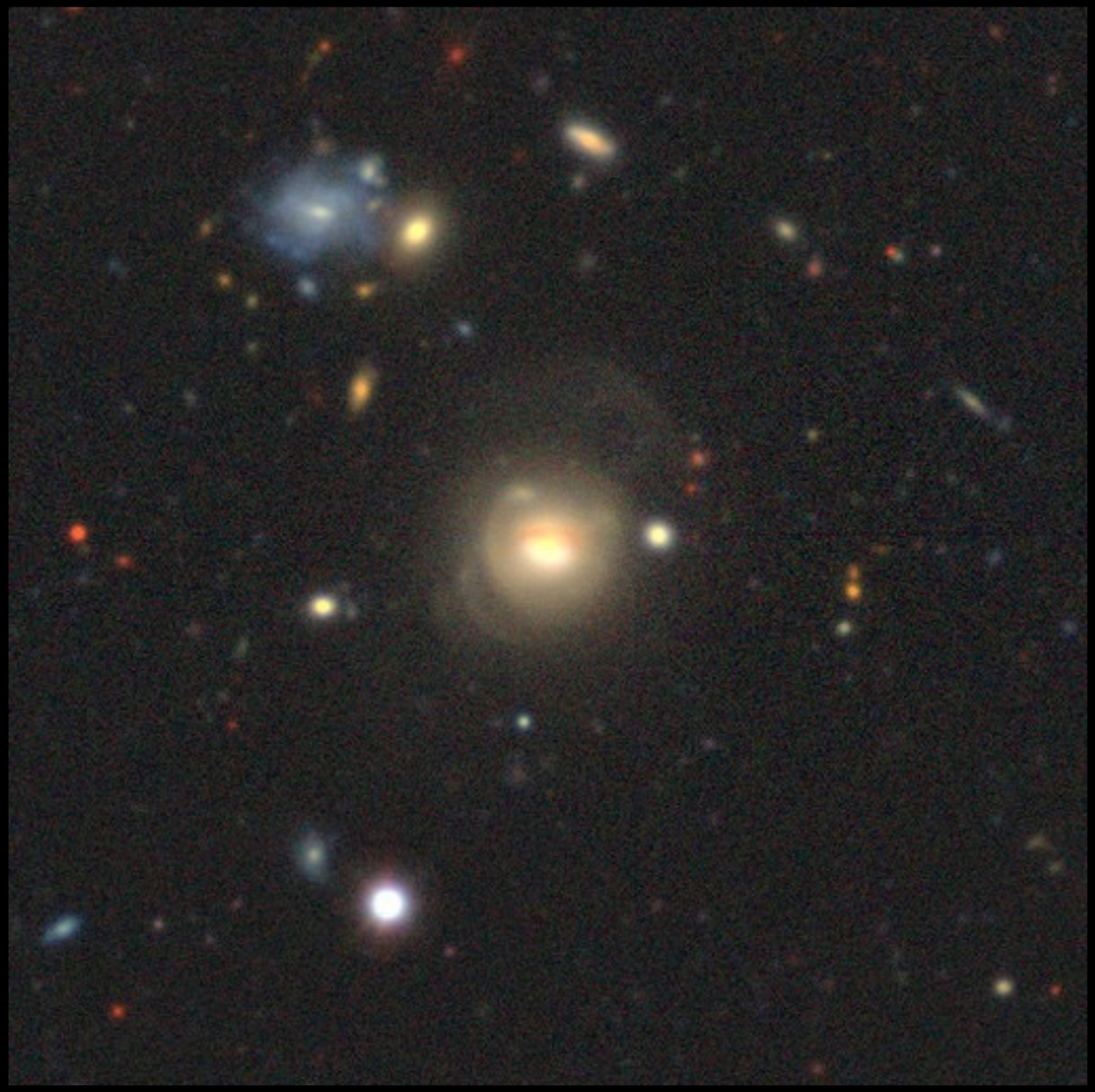
Do they all look like this?

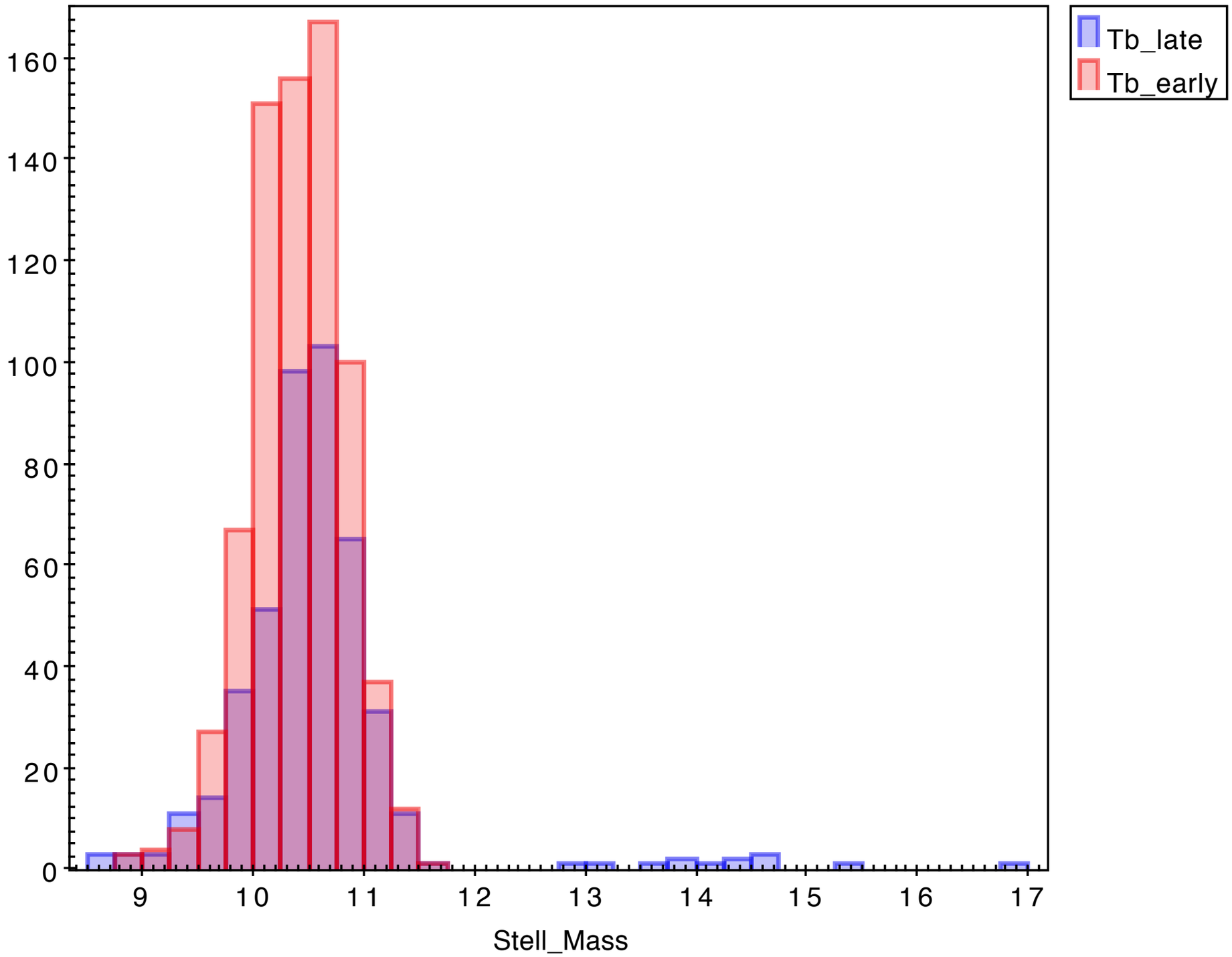


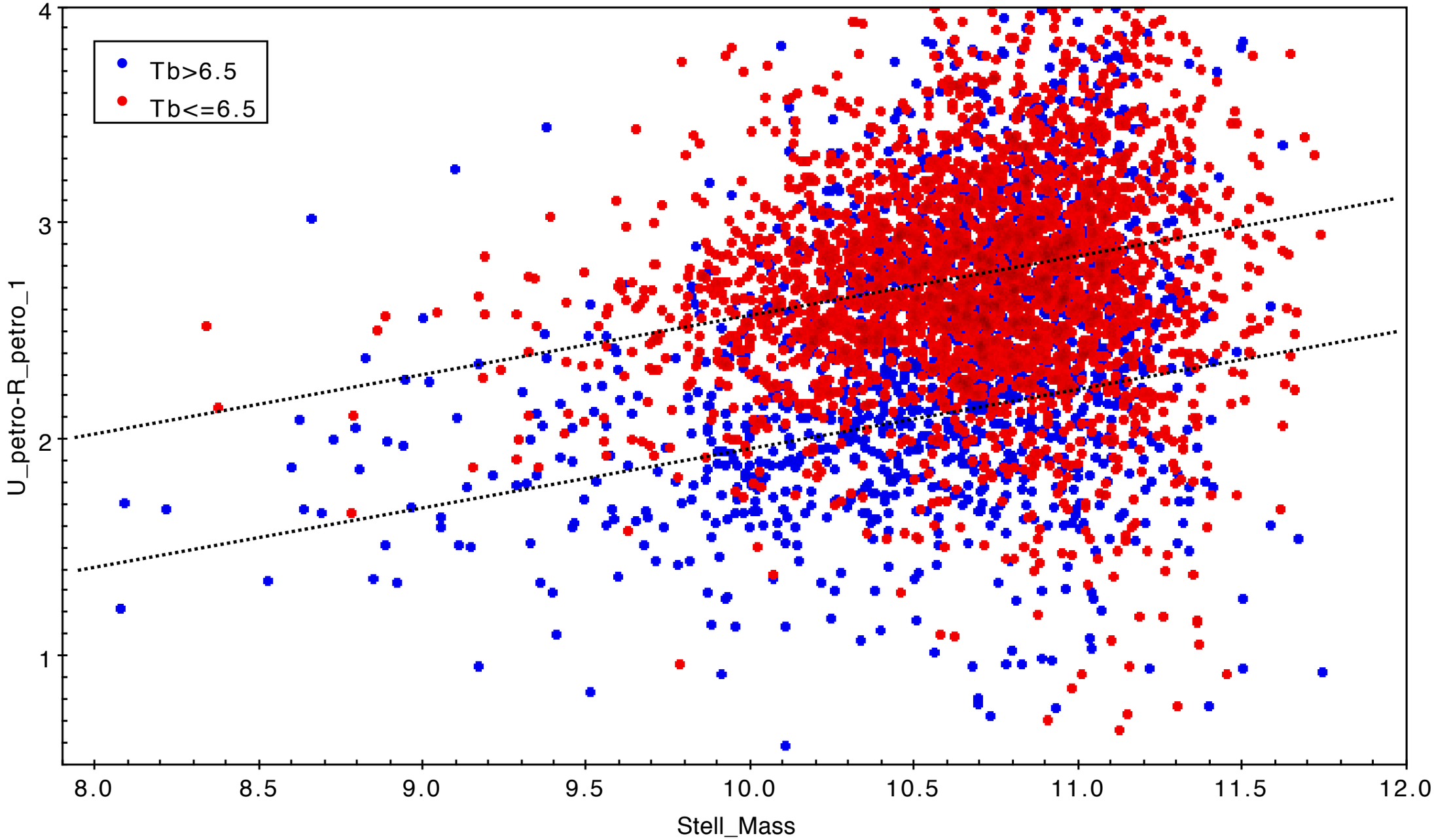
Do they all look like this?

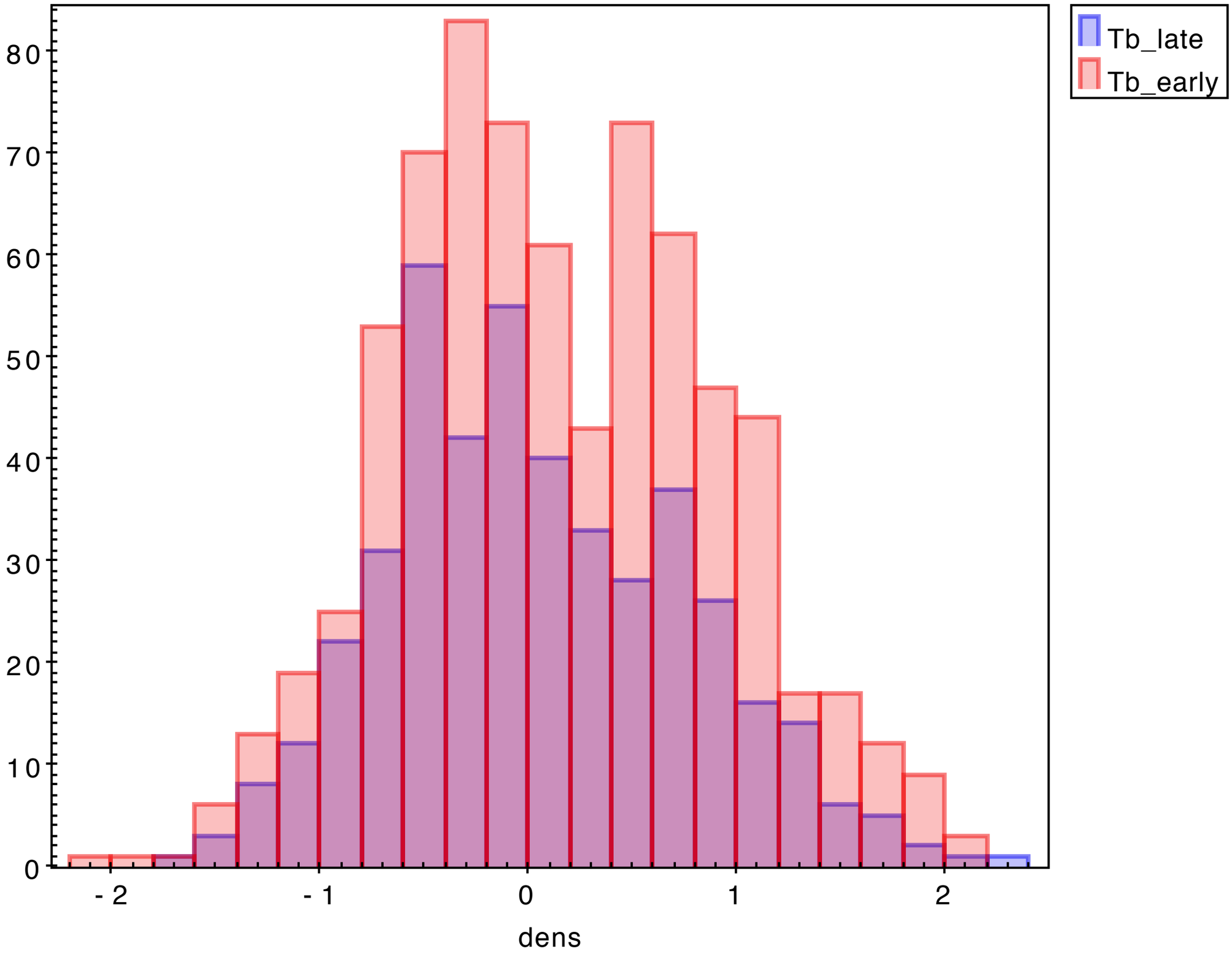


Do they all look like this?



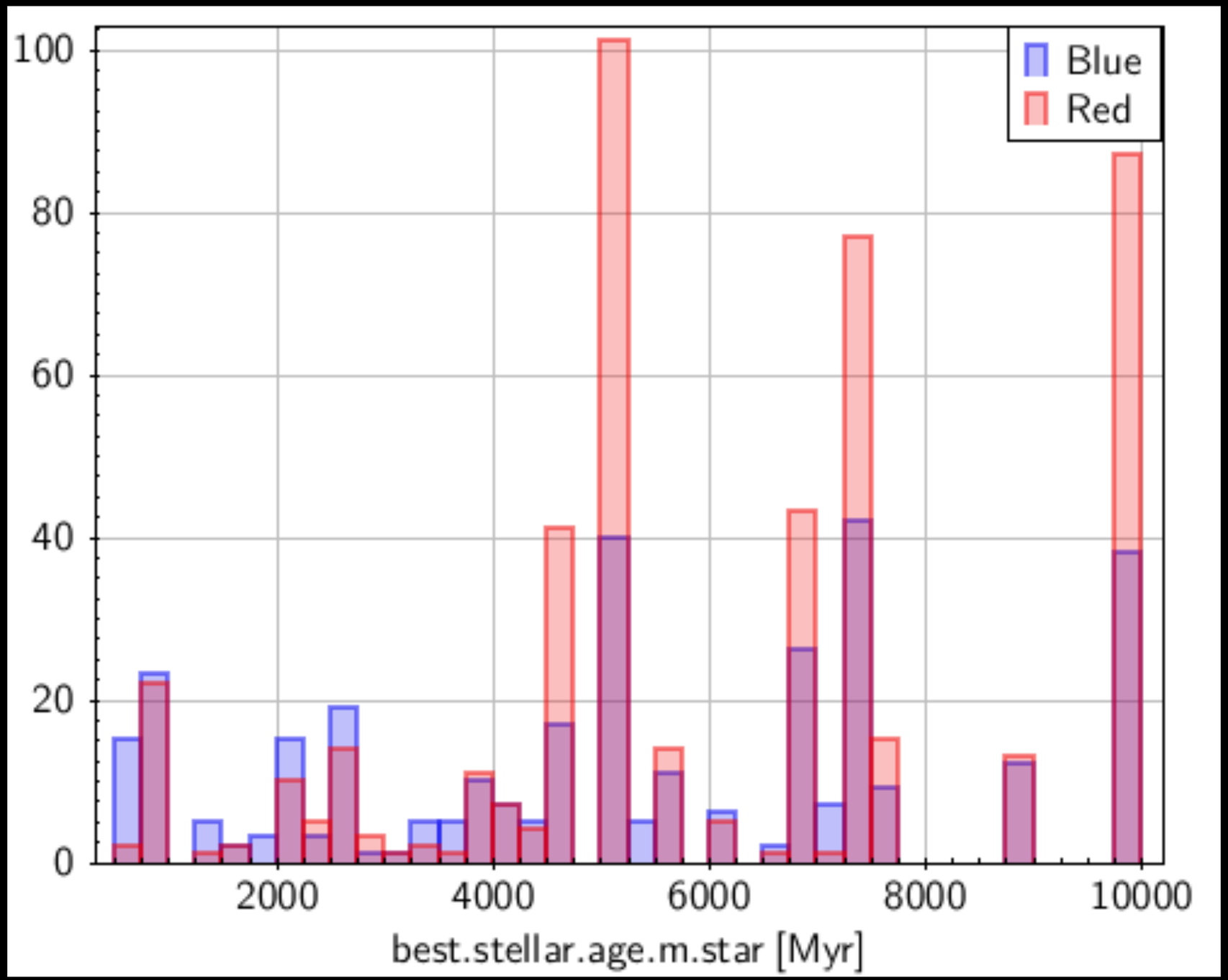

Tb_late
Tb_early
160
140
120
100
80
60
40
20
0
9
10
11
12
13
14
15
16
17
Stell_Mass

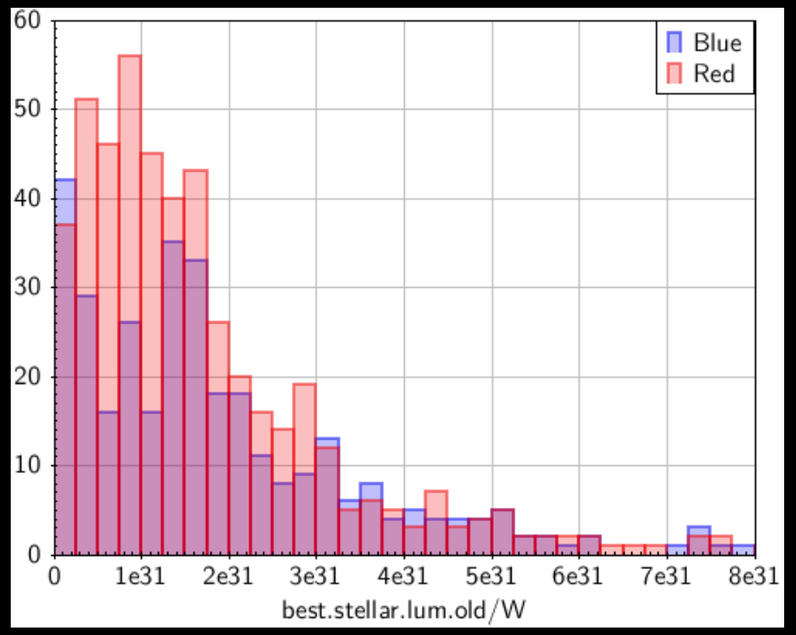

Tb>6.5
Tb<=6.5
U_petro-R_petro_1
Stell_Mass
4
3
2
1
8.0
8.5
9.0
9.5
10.0
10.5
11.0
11.5
12.0

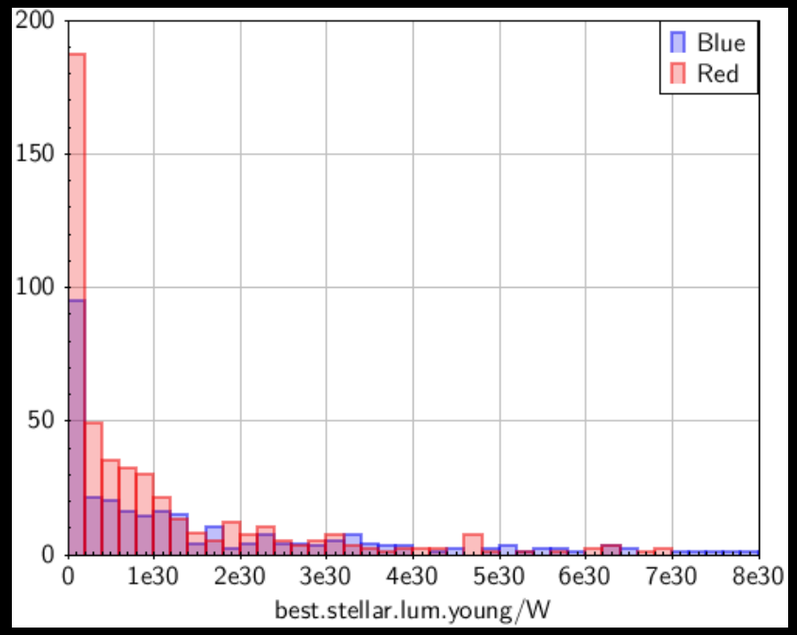


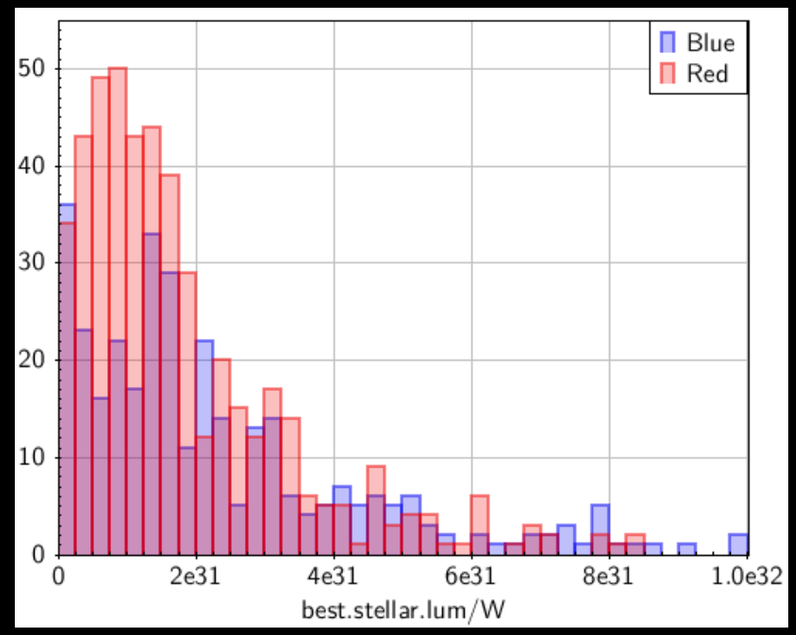
Baldry et al 2006: dens <-0.8 low density - dens > 0.8 high density

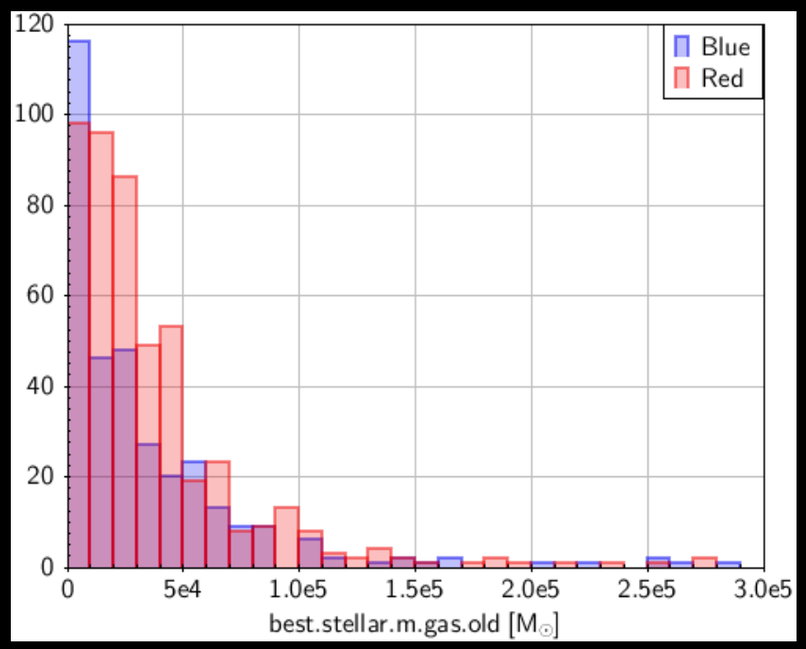
Work in progress in collaboration with A. Smith, using Cigale

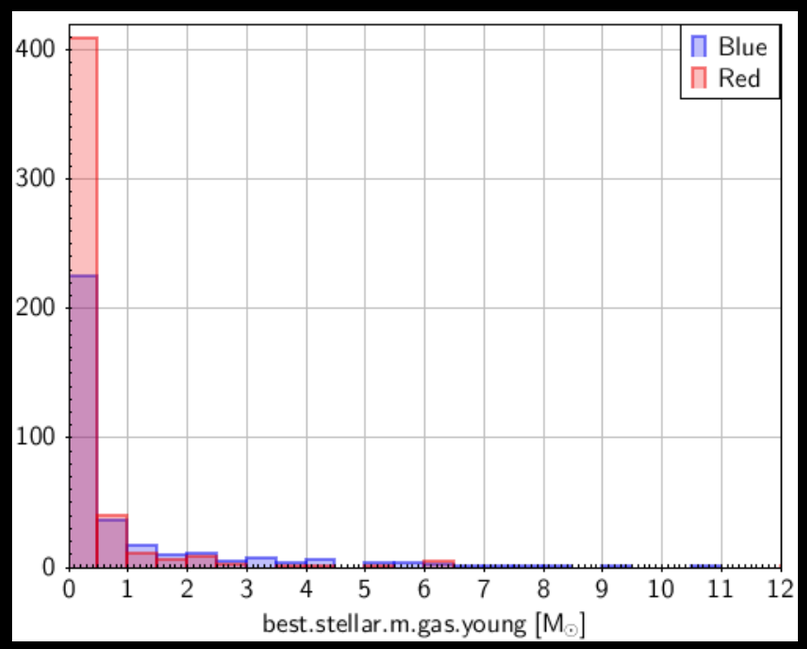


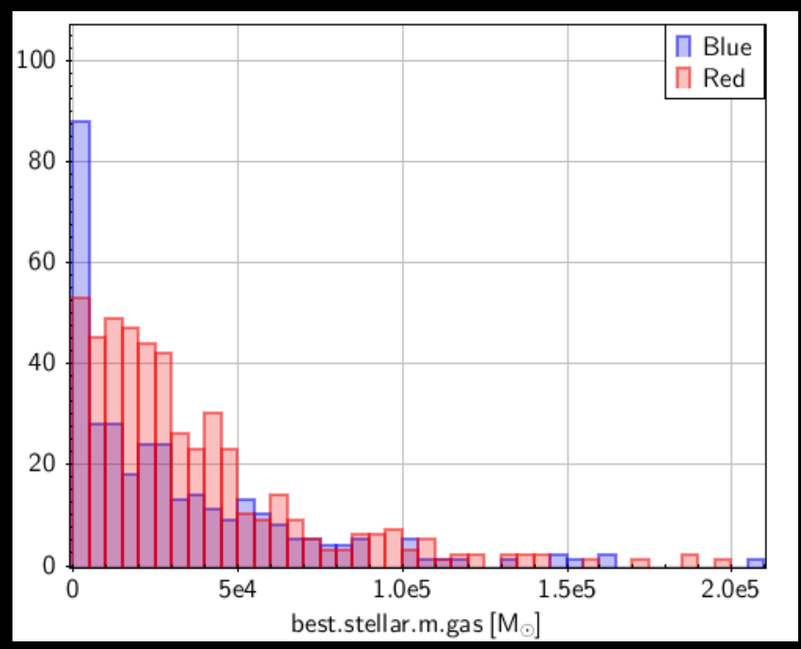

Blue
Red
0
10
20
30
40
50
60
0
1e31
2e31
3e31
4e31
5e31
6e31
7e31
8e31
best.stellar.lum.old/W


Blue
Red
0
50
100
150
200
0
1e30
2e30
3e30
4e30
5e30
6e30
7e30
8e30
best.stellar.lum.young/W


Blue
Red
0
10
20
30
40
50
0
2e31
4e31
6e31
8e31
1.0e32
best.stellar.lum/W


Blue
Red
0
20
40
60
80
100
120
0
5e4
1.0e5
1.5e5
2.0e5
2.5e5
3.0e5
best.stellar.m.gas.old [M⊙]


Blue
Red
0
100
200
300
400
0
1
2
3
4
5
6
7
8
9
10
11
12
best.stellar.m.gas.young [M⊙]


Blue
Red
0
20
40
60
80
100
0
5e4
1.0e5
1.5e5
2.0e5
best.stellar.m.gas [M⊙]