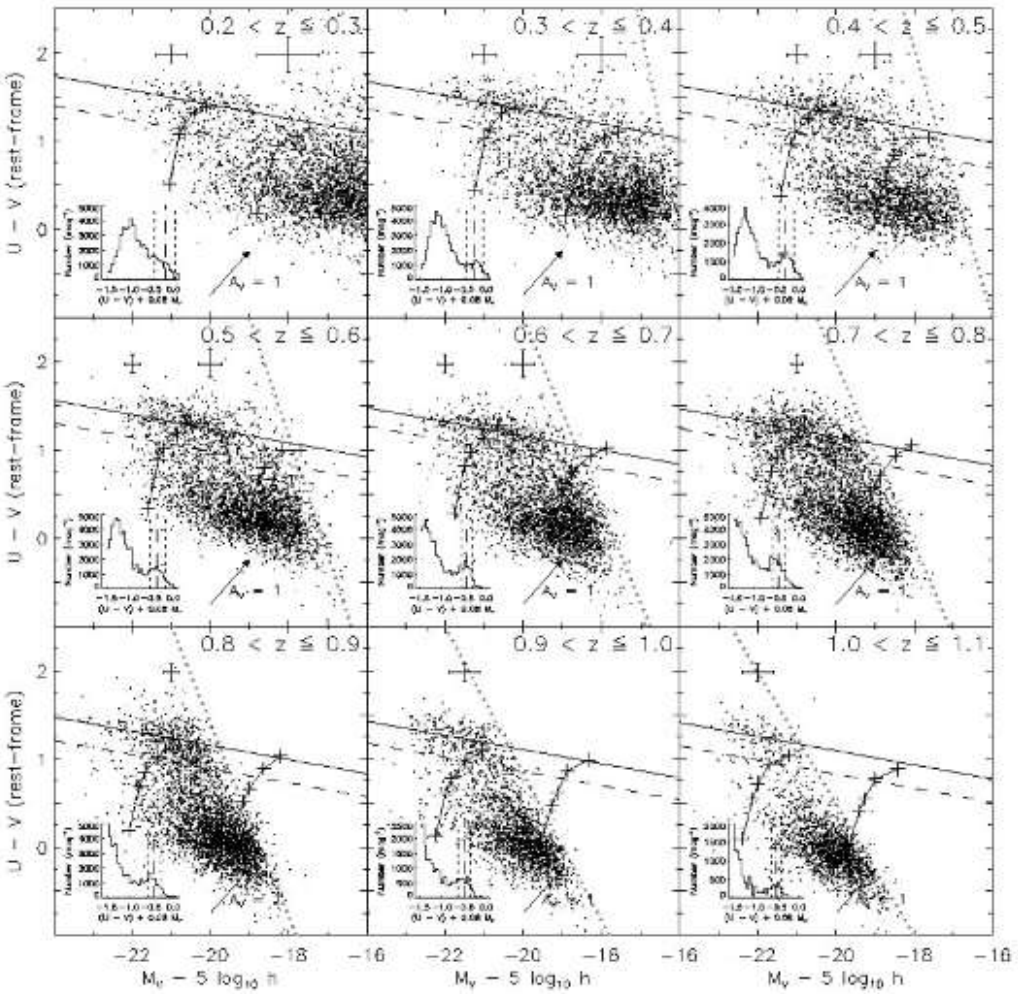
REST-FRAME COLOR BIMODALITY

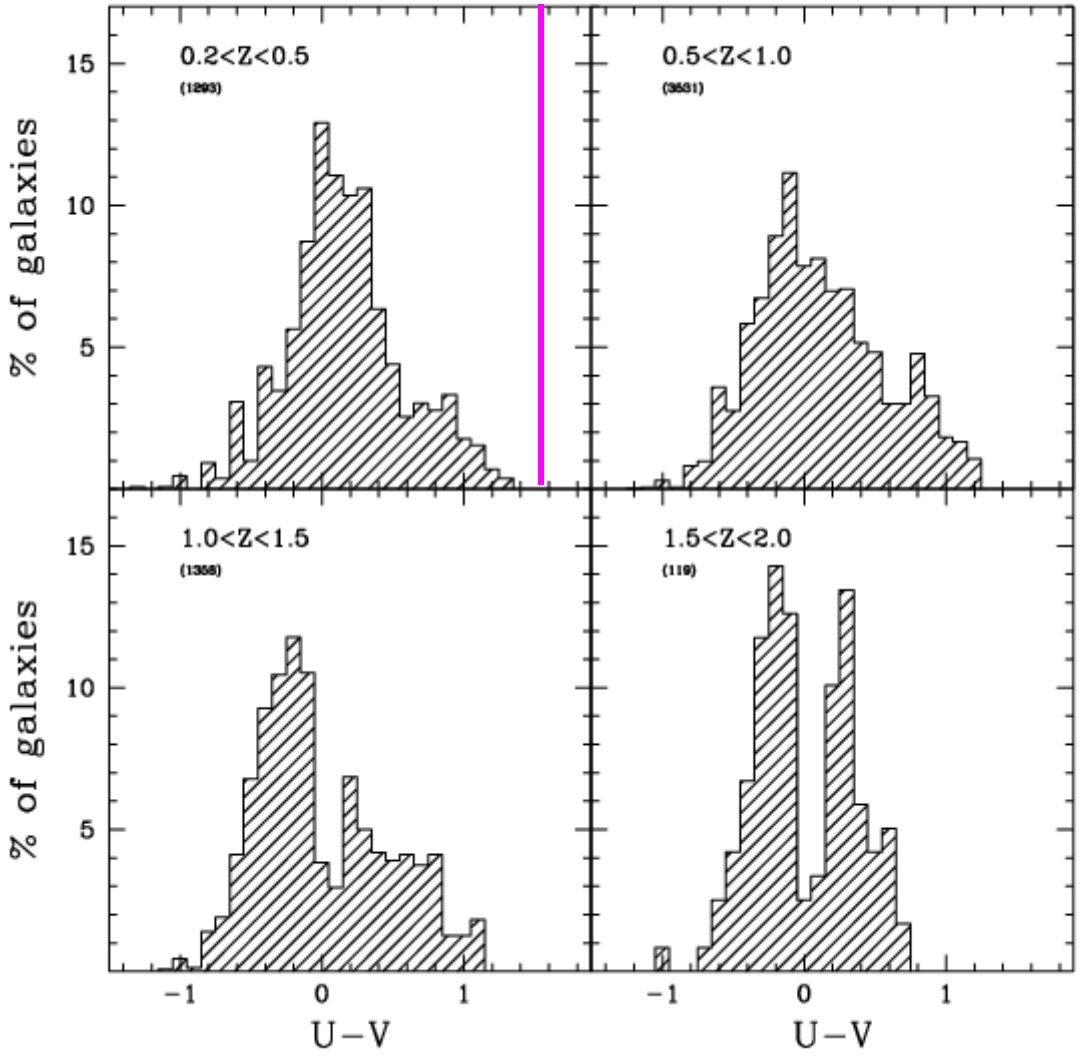
Bologna SM

- Lack of quantification of the results
- Need for comparison with other works

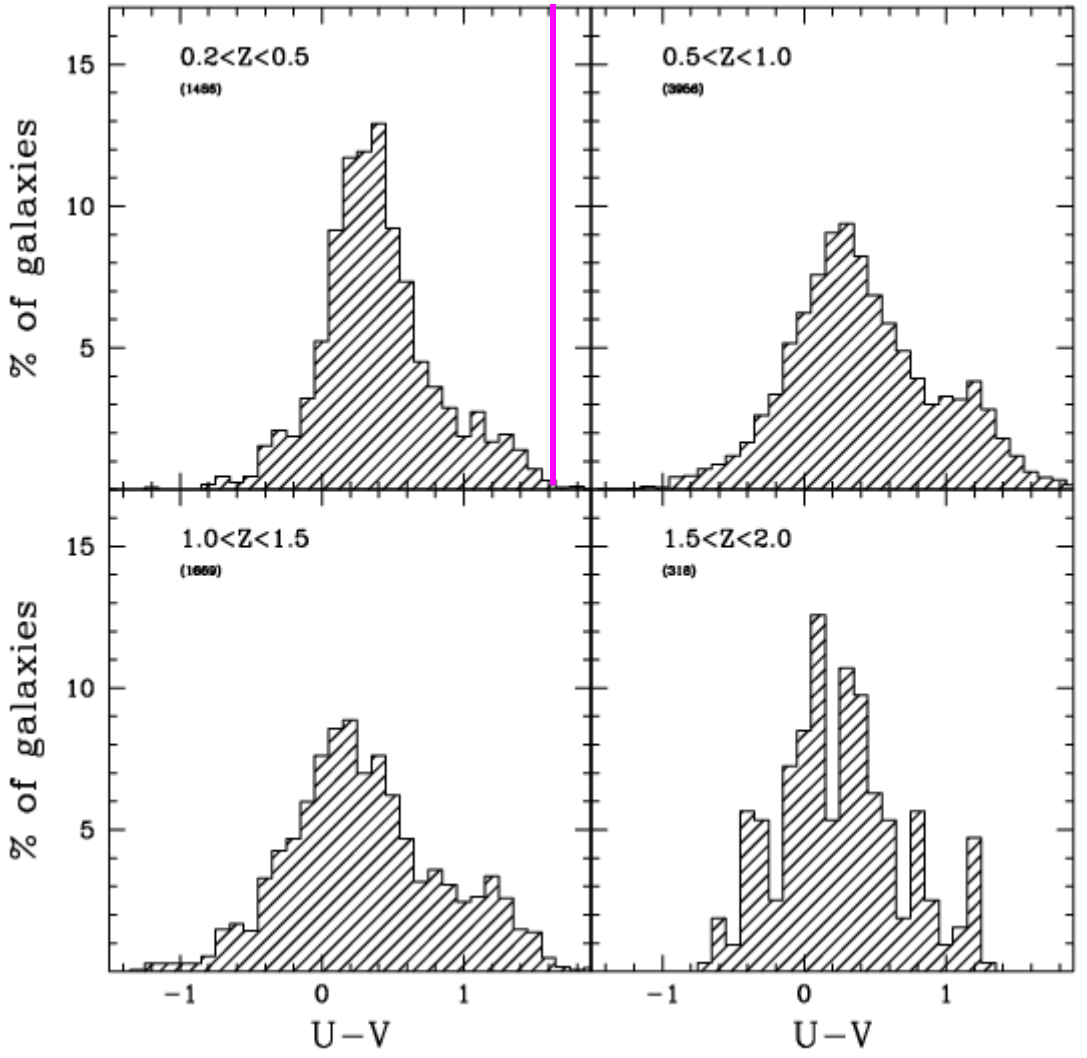
Bell et al. 2004 (COMBO-17 data)



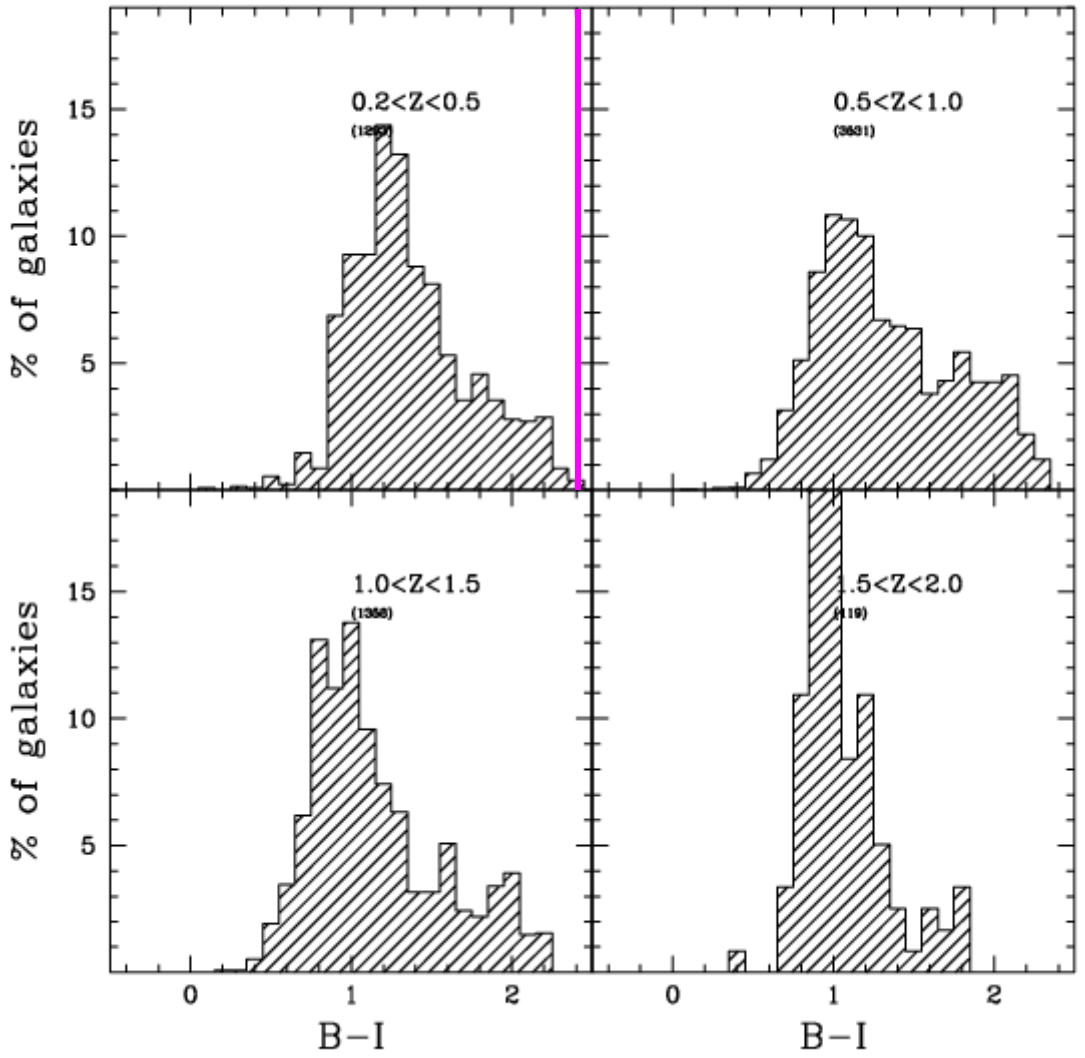
PF COLORS


0.2<Z<0.5
(1293)
0.5<Z<1.0
(3531)
1.0<Z<1.5
(1358)
1.5<Z<2.0
(119)
% of galaxies
% of galaxies
15
10
5
15
10
5
−1
0
1
−1
0
1
U−V
U−V

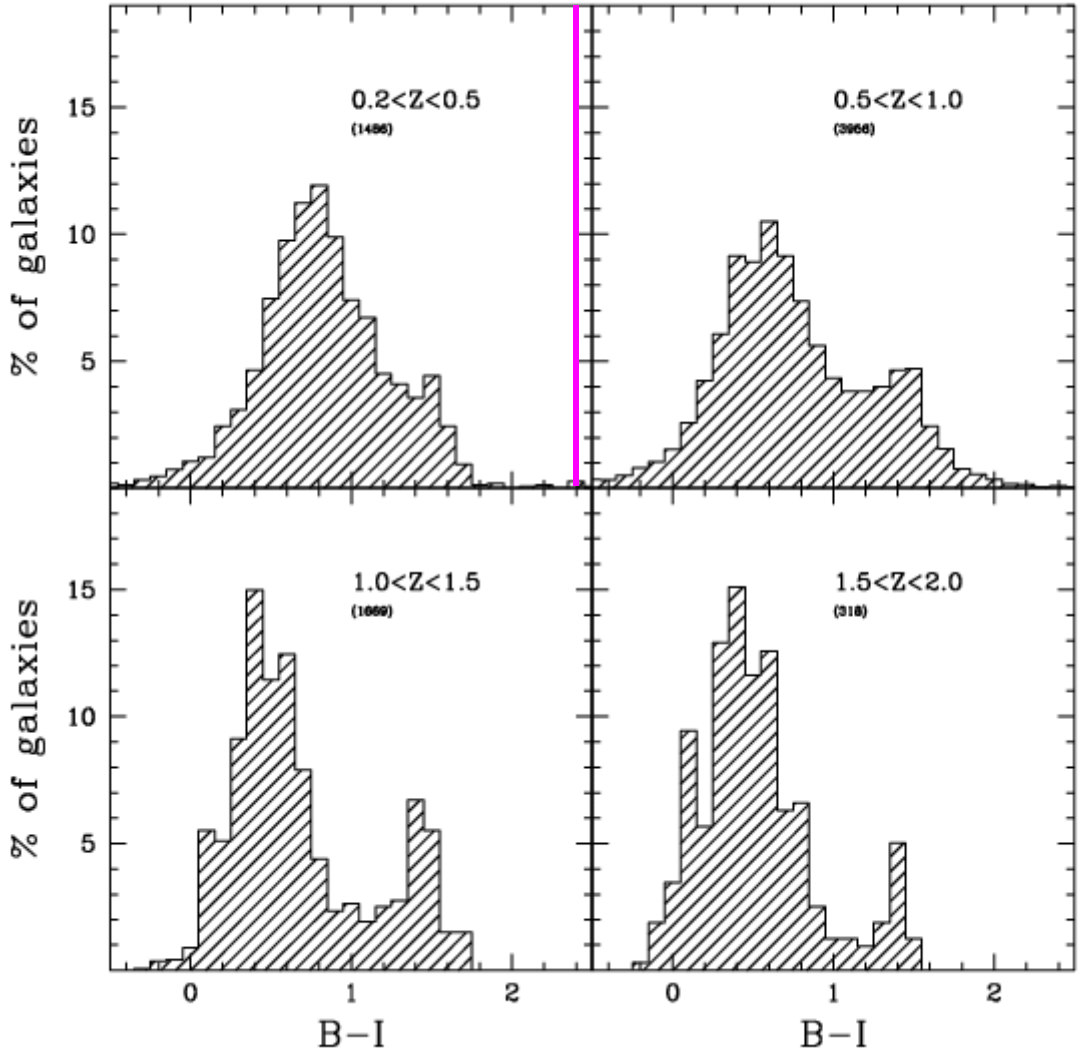
OI COLORS


0.2<Z<0.5
(1488)
0.5<Z<1.0
(3956)
1.0<Z<1.5
(1669)
1.5<Z<2.0
(318)
% of galaxies
% of galaxies
15
10
5
15
10
5
−1
0
1
−1
0
1
U−V
U−V

PF COLORS


0.2<Z<0.5
0.5<Z<1.0
1.0<Z<1.5
% of galaxies
% of galaxies
15
10
5
15
10
5
0
1
2
0
1
2
B−I
B−I

OI COLORS

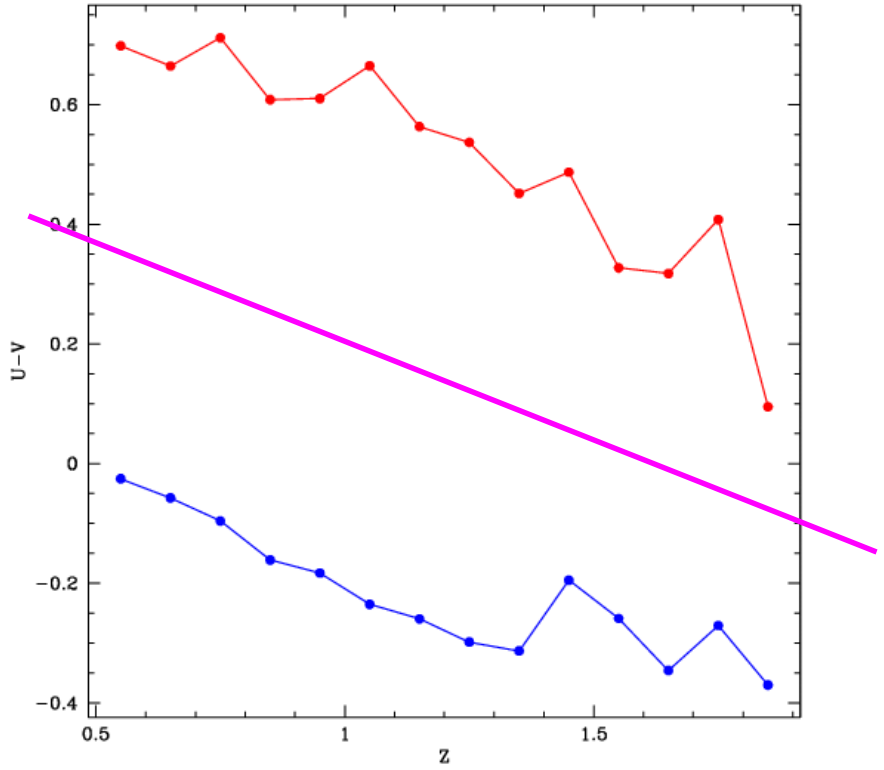

0.2<Z<0.5
(1486)
0.5<Z<1.0
(3966)
1.0<Z<1.5
(1669)
1.5<Z<2.0
(318)
% of galaxies
% of galaxies
15
10
5
15
10
5
0
1
2
0
1
2
B−I
B−I

- Bimodality quantification

KMM code

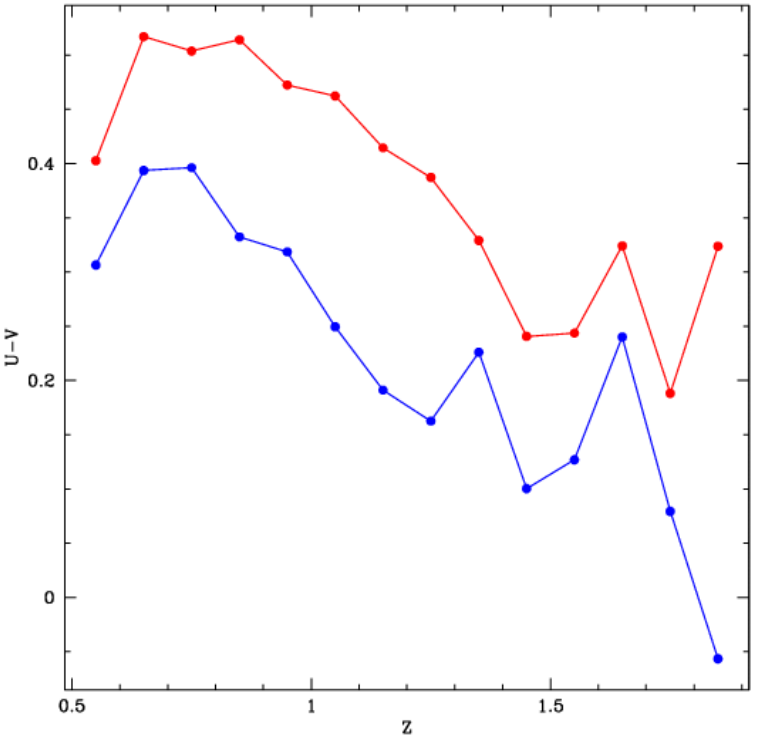
Detecting bimodality in astronomical datasets
Ashman, K. M.; Bird, Christina M., Zepf, S. E.
(1994AJ....108.2348A

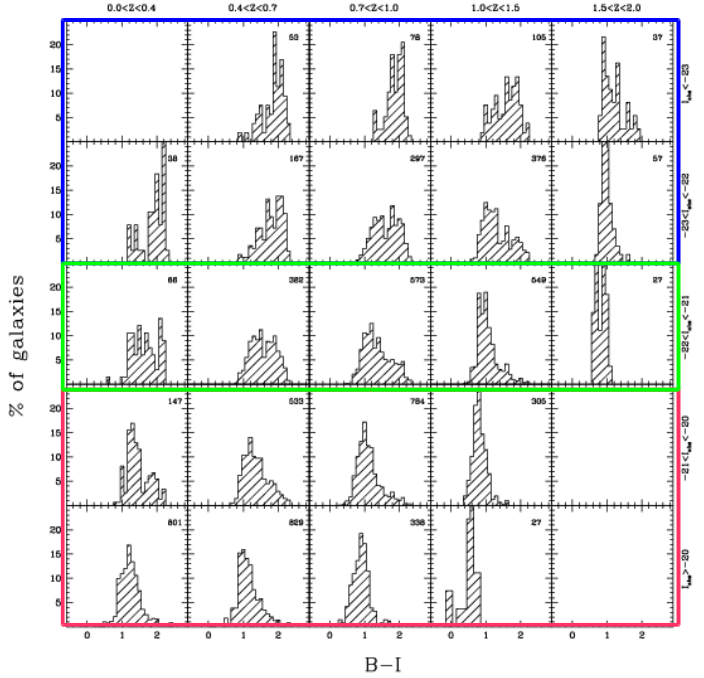
PF

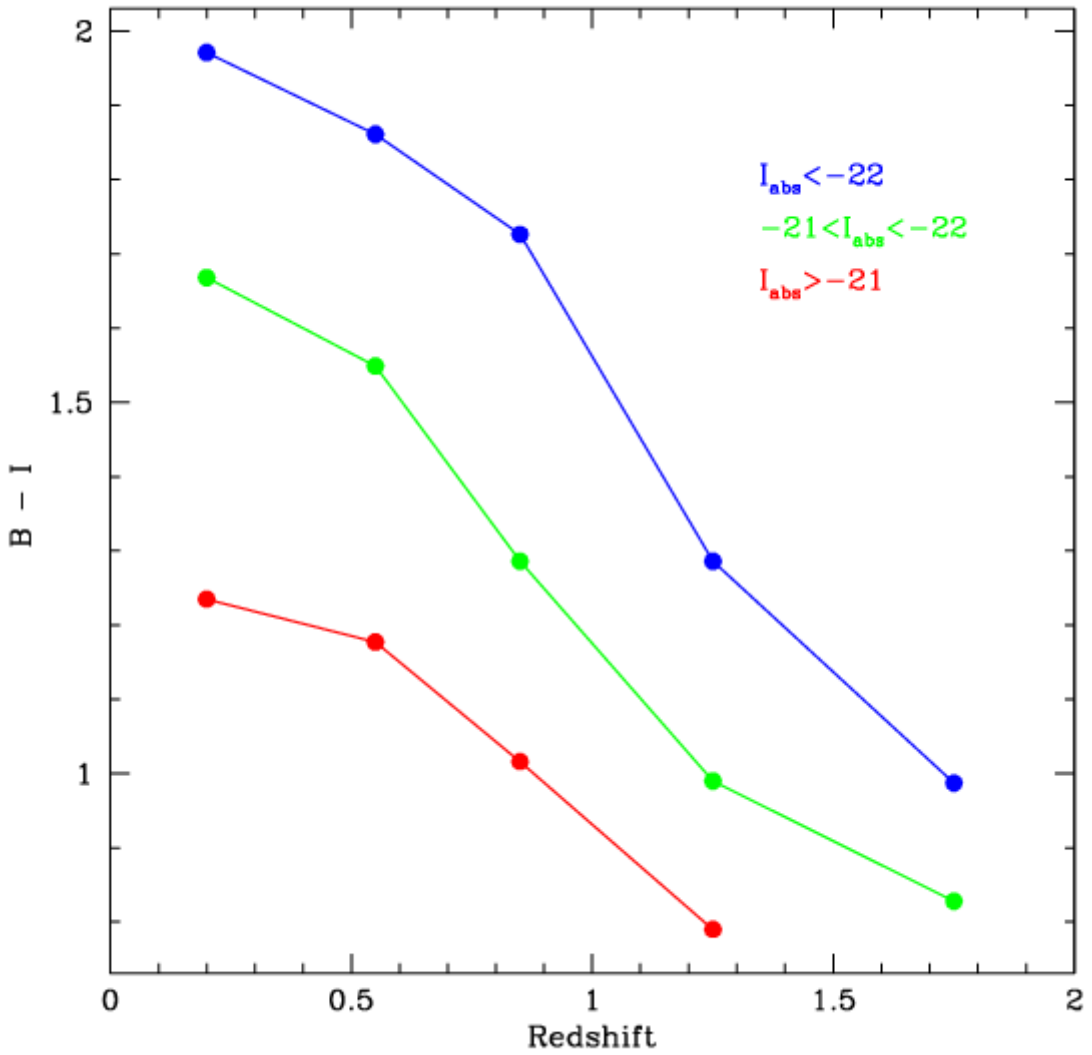


U-V

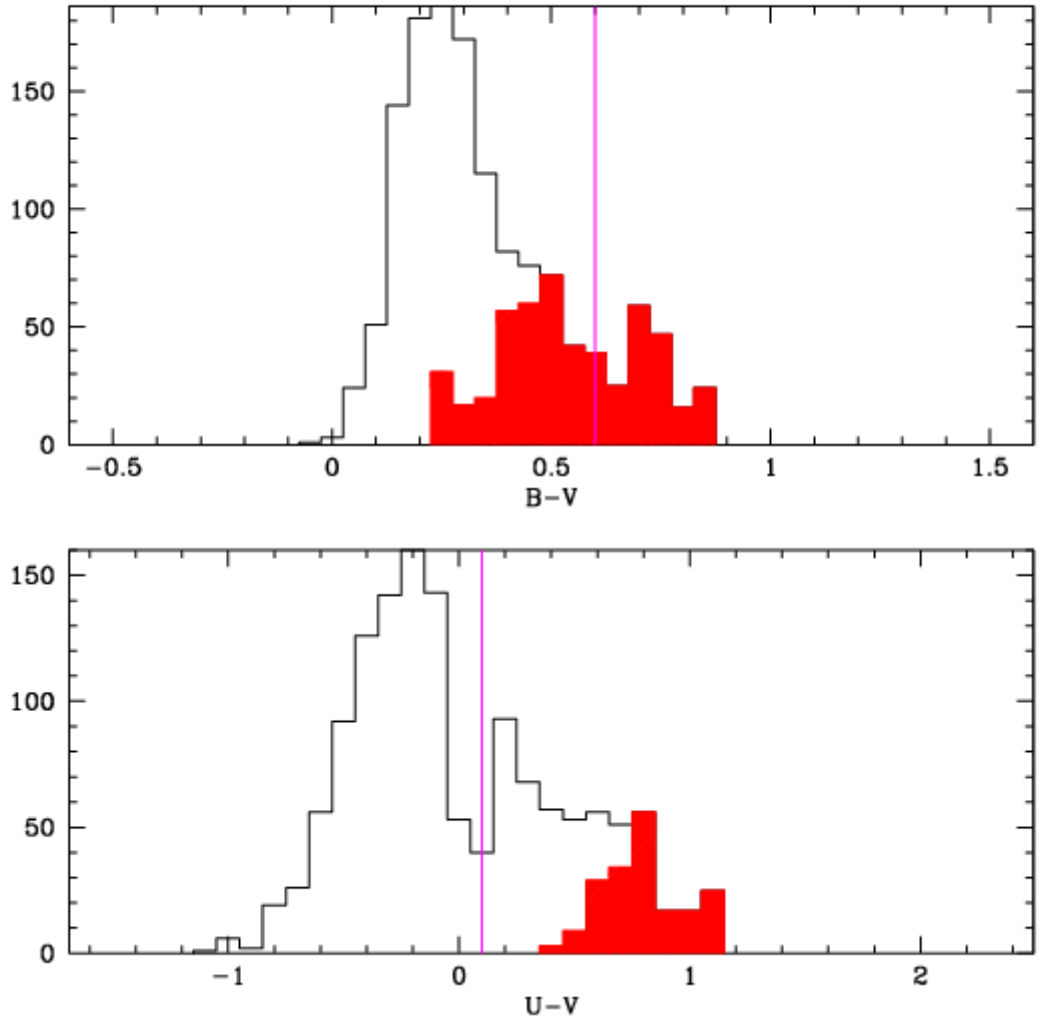
OI



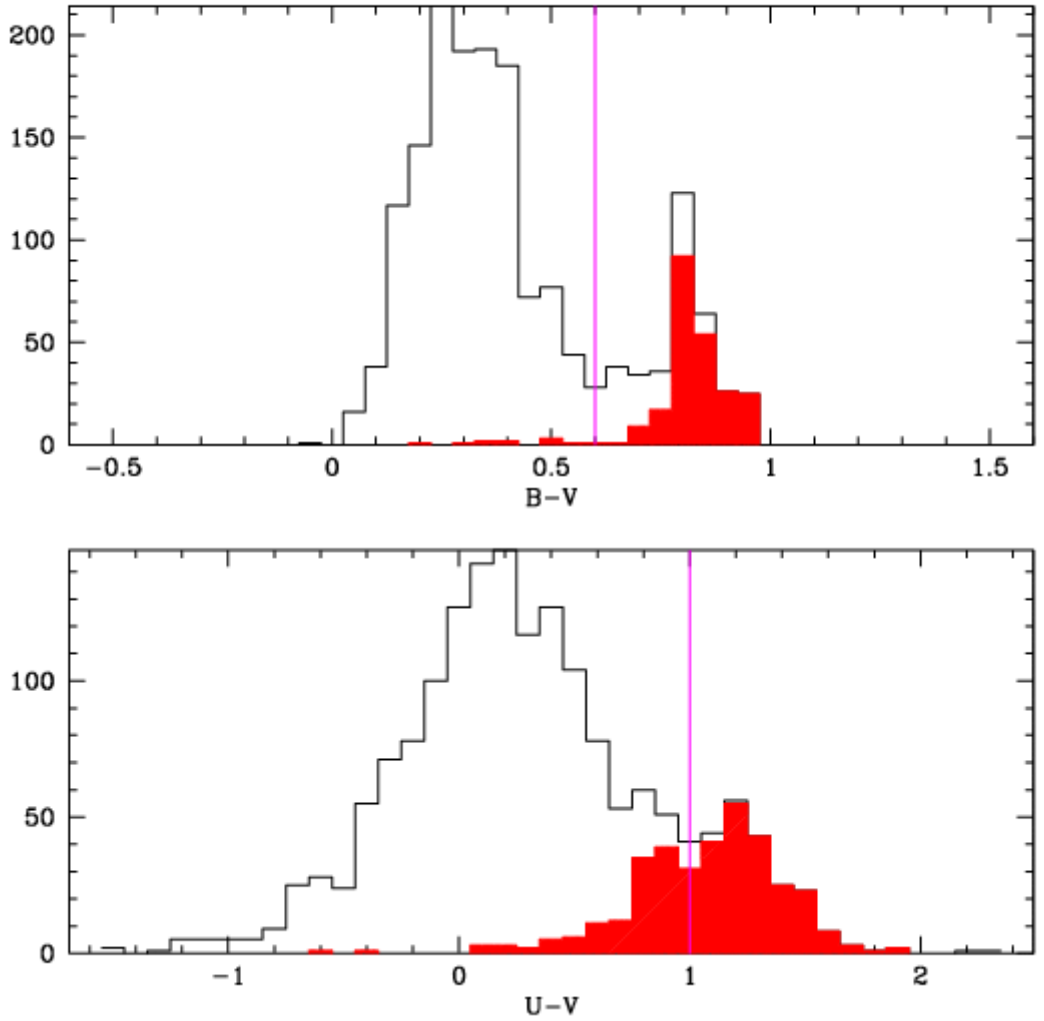

0.0<z<0.4
0.4<z<0.7
0.7<z<1.0
1.0<z<1.5
1.5<z<2.0
% of galaxies
B−I


$I_{abs}<-22$
$-21<I_{abs}<-22$
$I_{abs}>-21$
B − I
Redshift

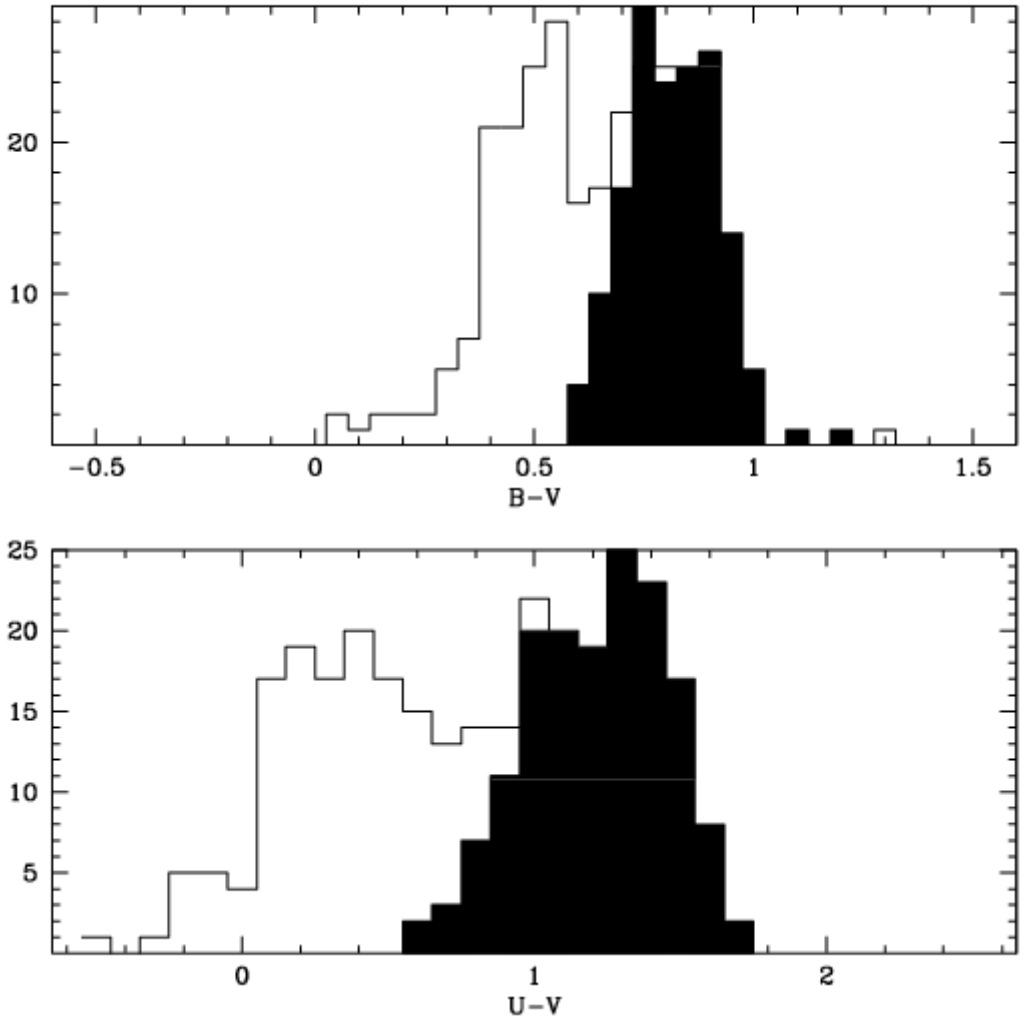
PF



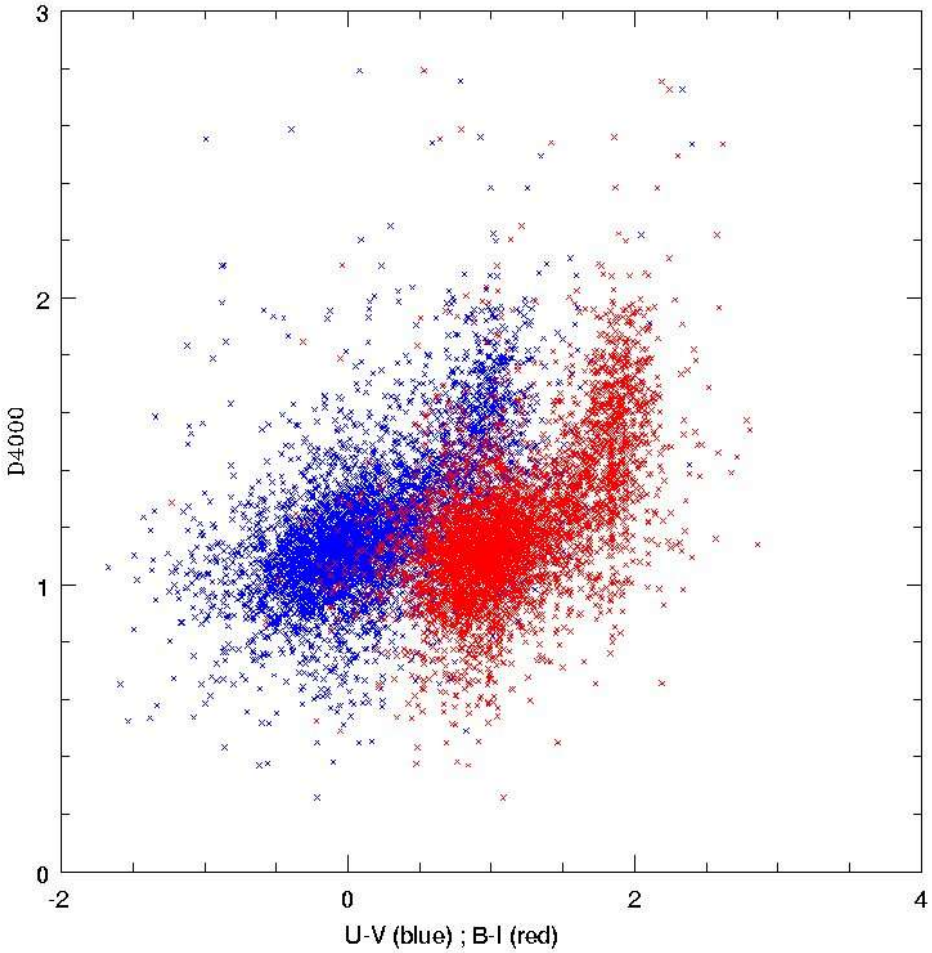
OI



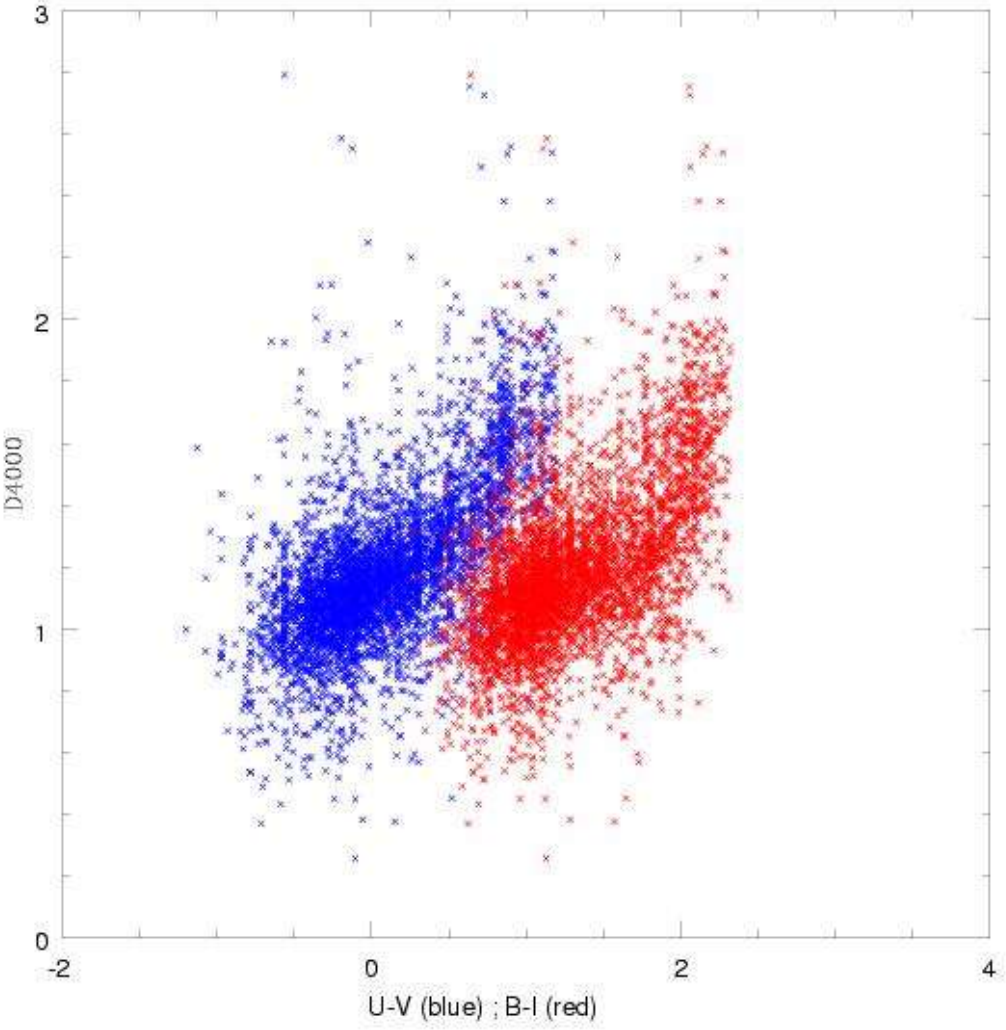
LOCAL UNIVERSE (VIRGO CLUSTER)



OI



PF

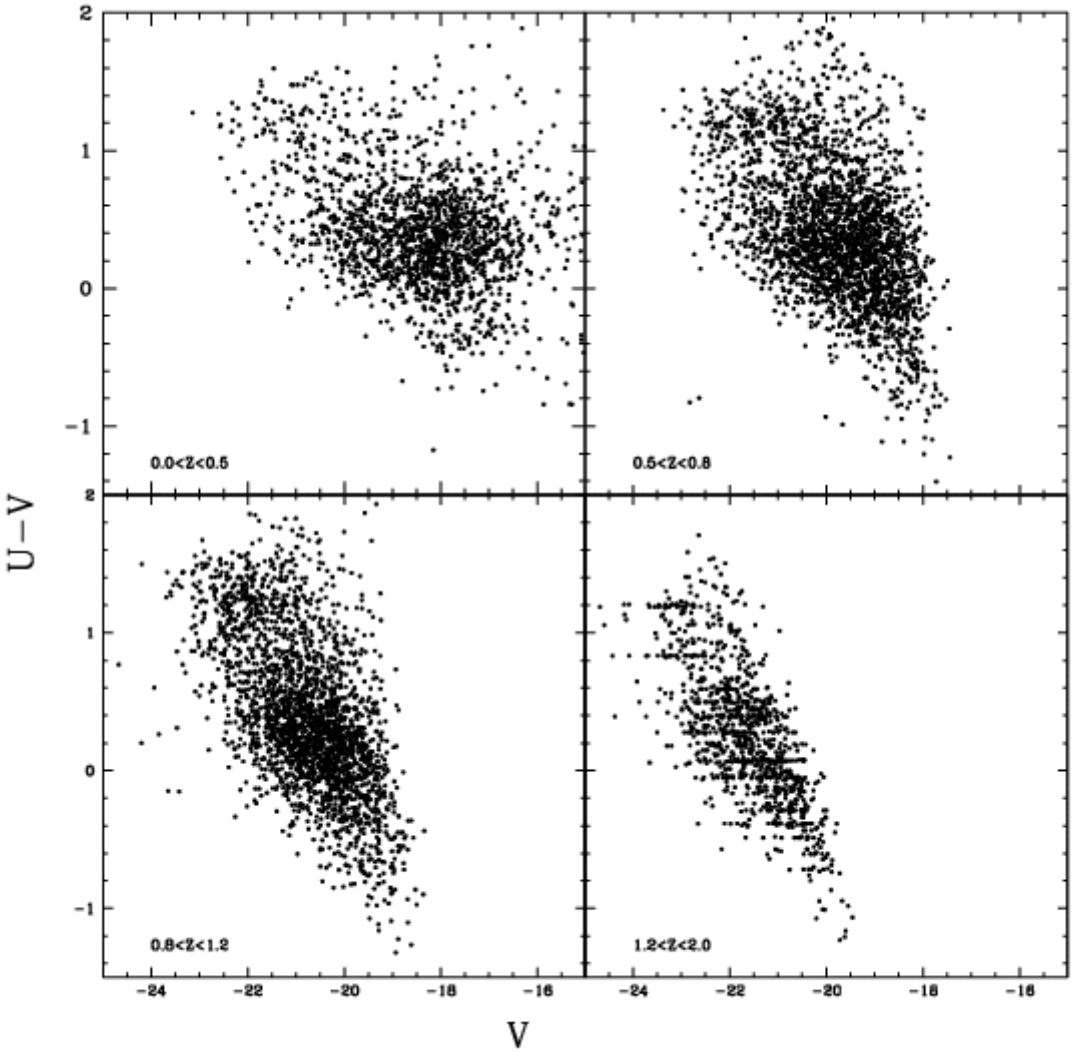


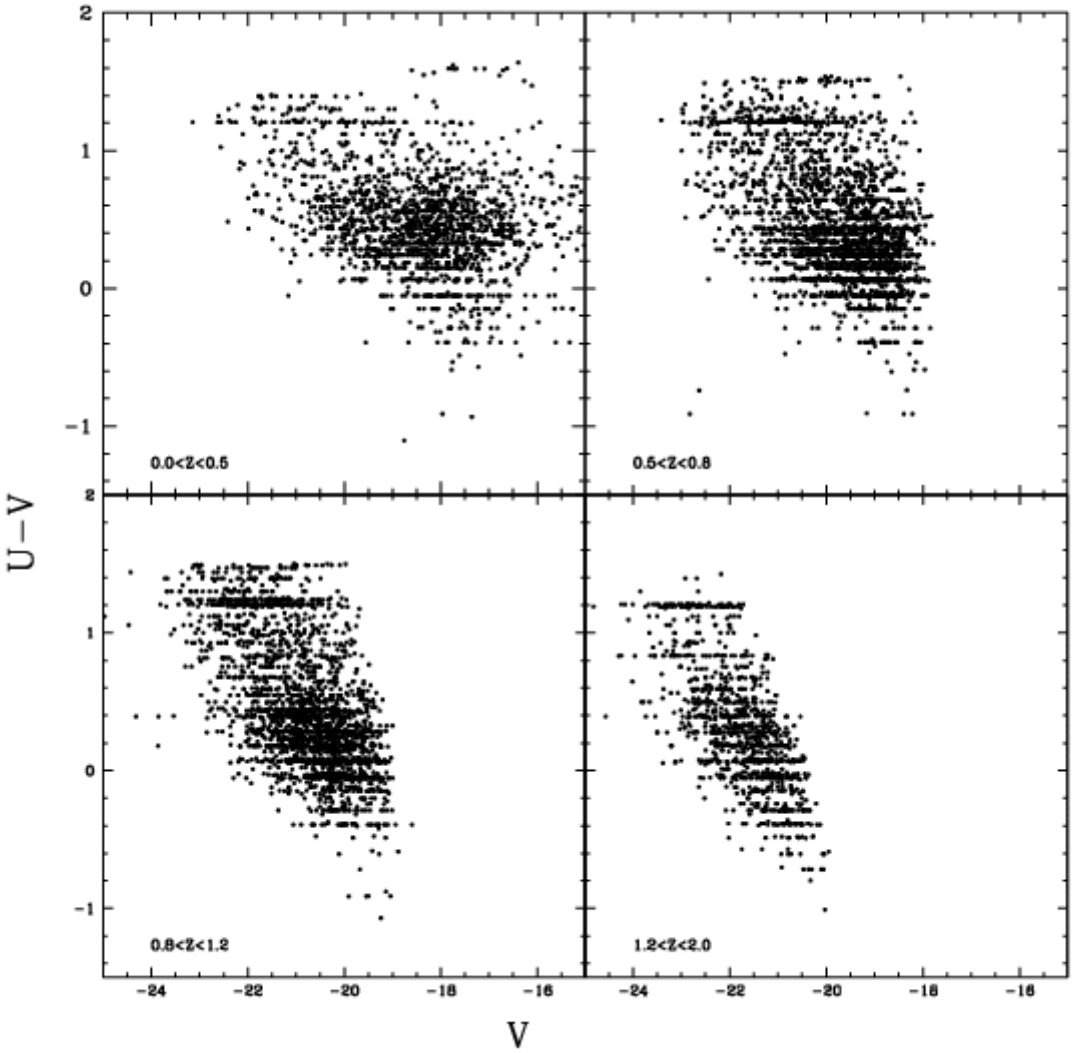
- Colors differences

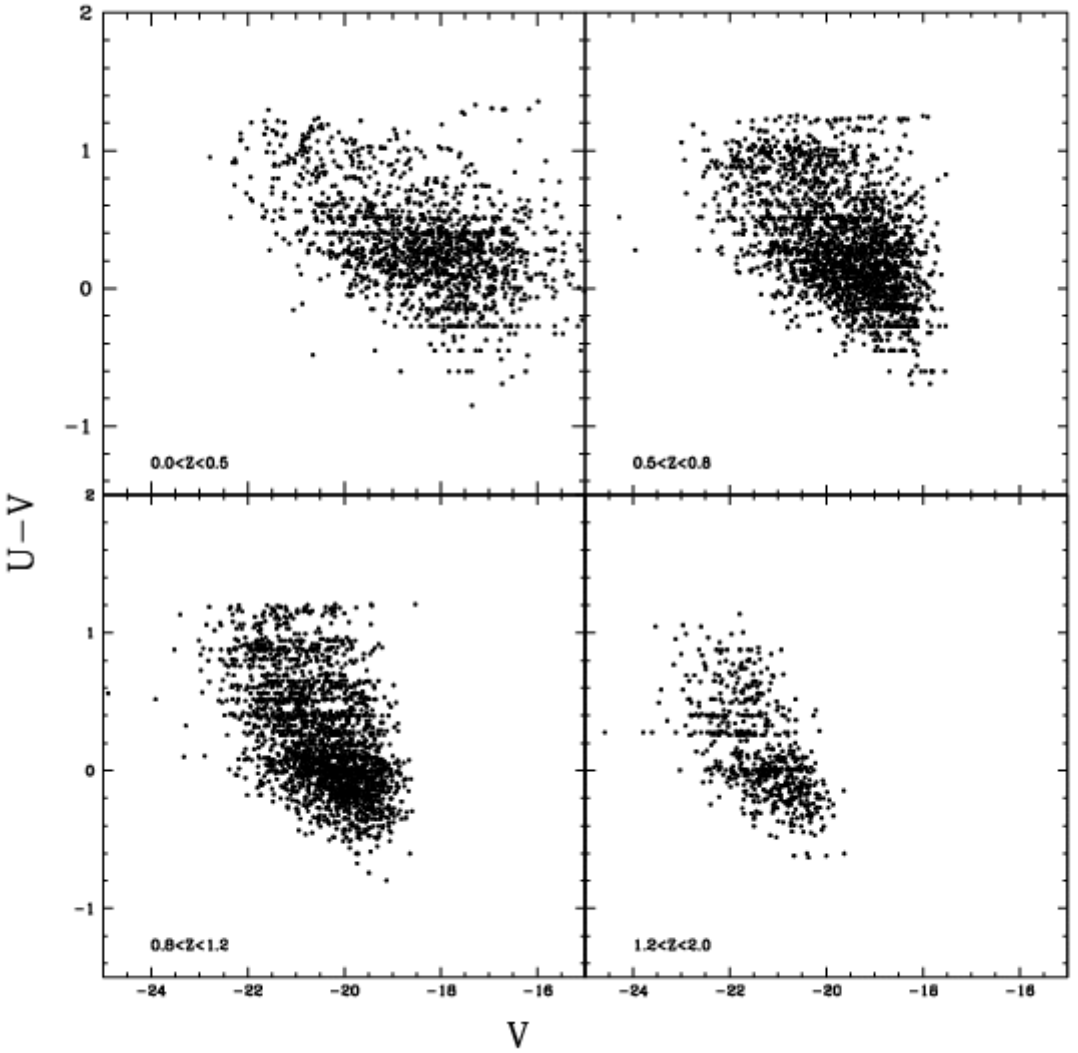
  -Between the two methods
  -Between different colors in the same method
  “Bad color” Good bimodality

- Bimodality quantification and identification of the two population

  -Color dependence?
  -How we can define our blue and red populations?
  -Simple methods (Bell) are reliable?


0.0<z<0.5
0.5<z<0.8
0.8<z<1.2
1.2<z<2.0
U−V
V
2
1
0
−1
−24
−22
−20
−18
−16


0.0<z<0.5
0.5<z<0.8
0.8<z<1.2
1.2<z<2.0
U−V
V
2
1
0
−1
−24
−22
−20
−18
−16


0.0<z<0.5
0.5<z<0.8
0.8<z<1.2
1.2<z<2.0
U−V
V
2
1
0
−1
−24
−22
−20
−18
−16