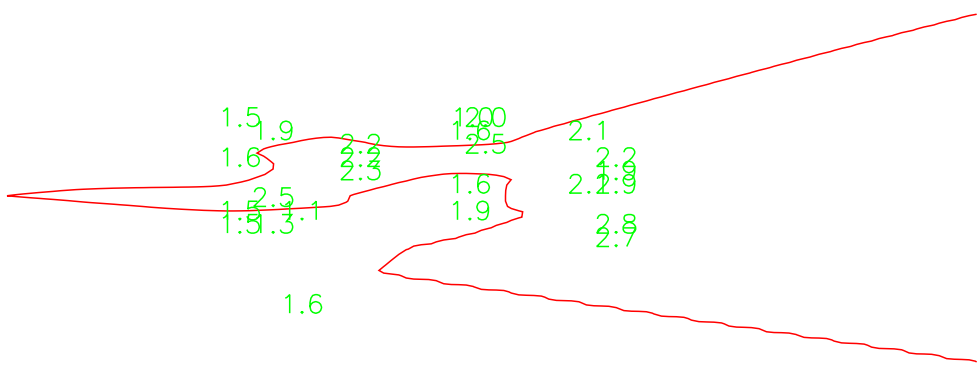
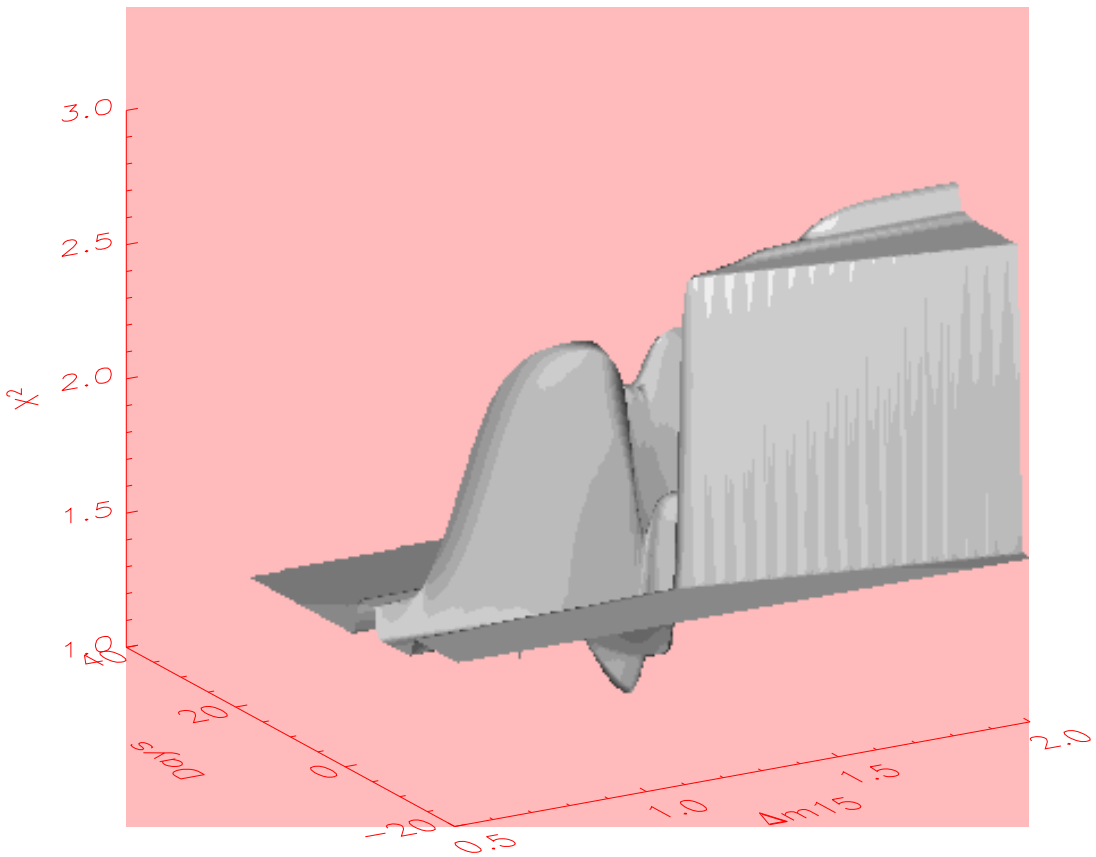
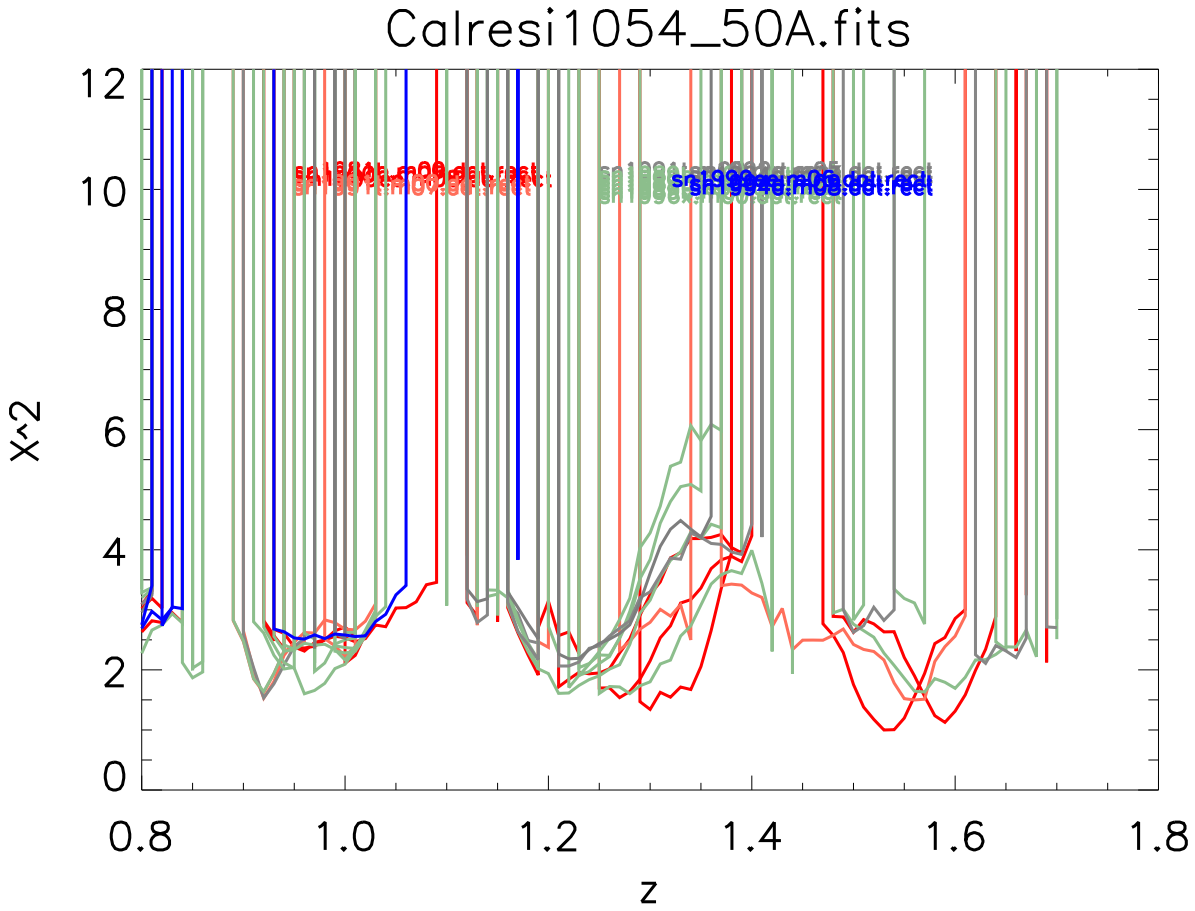
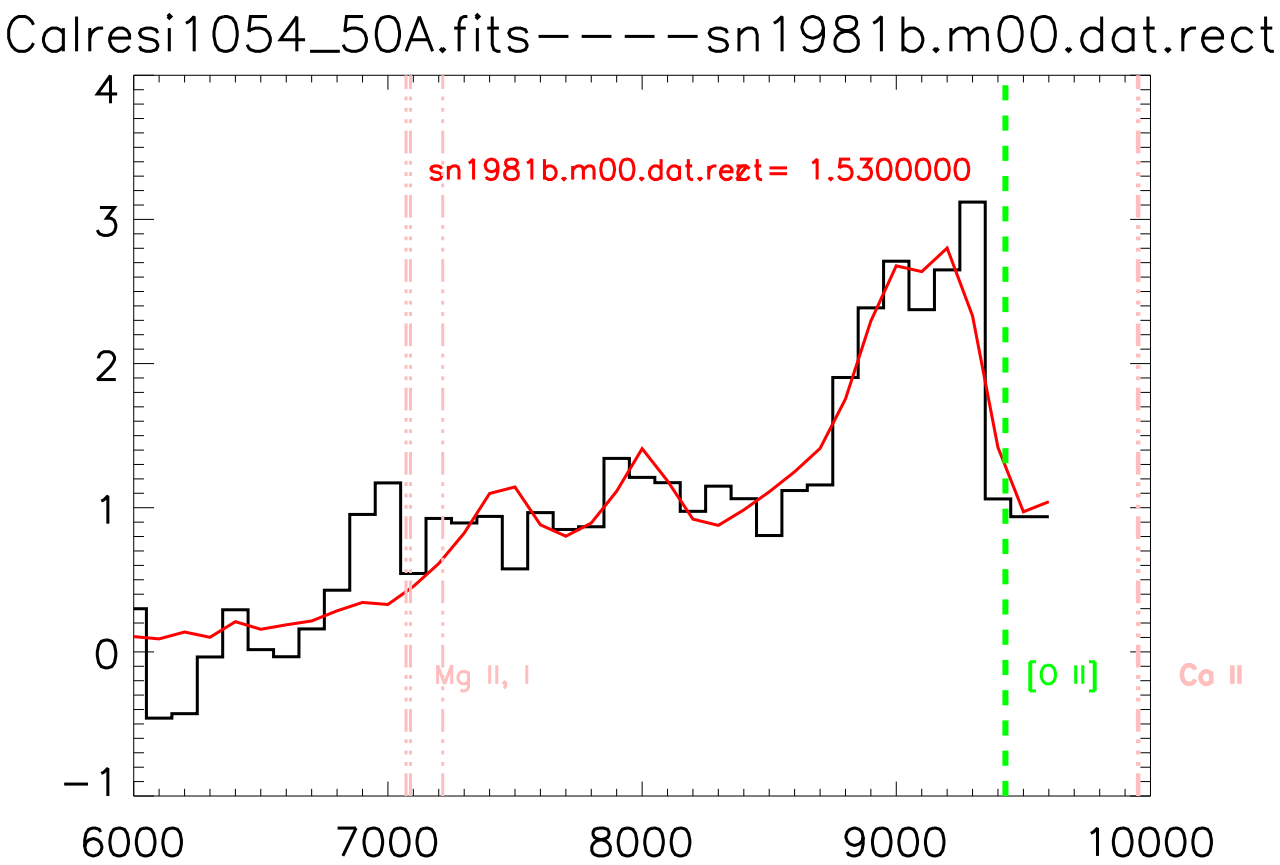
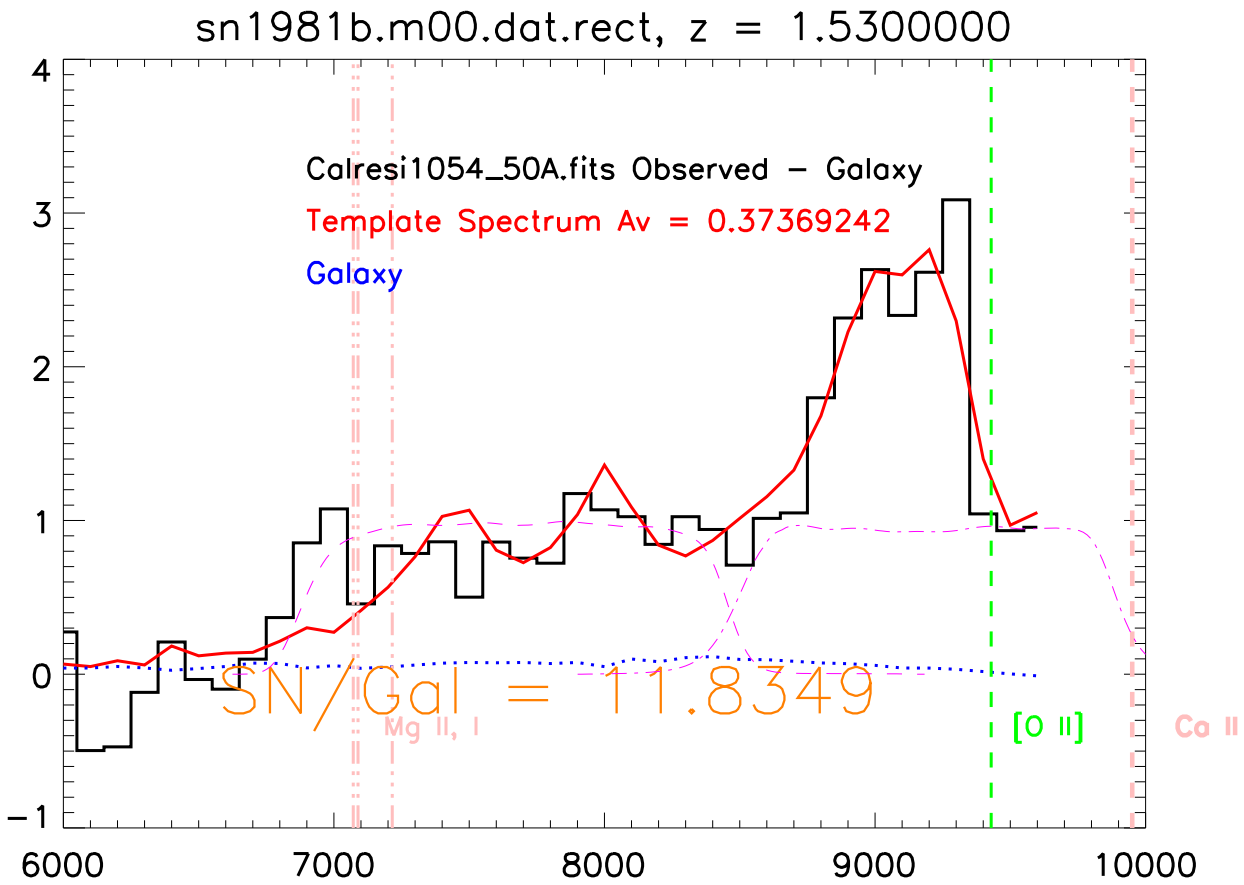

1.5
1.9
1.6
2.2
2.3
2.5
1.1
1.3
1.6
1.6
1.9
2.1
2.2
2.9
2.8
2.7

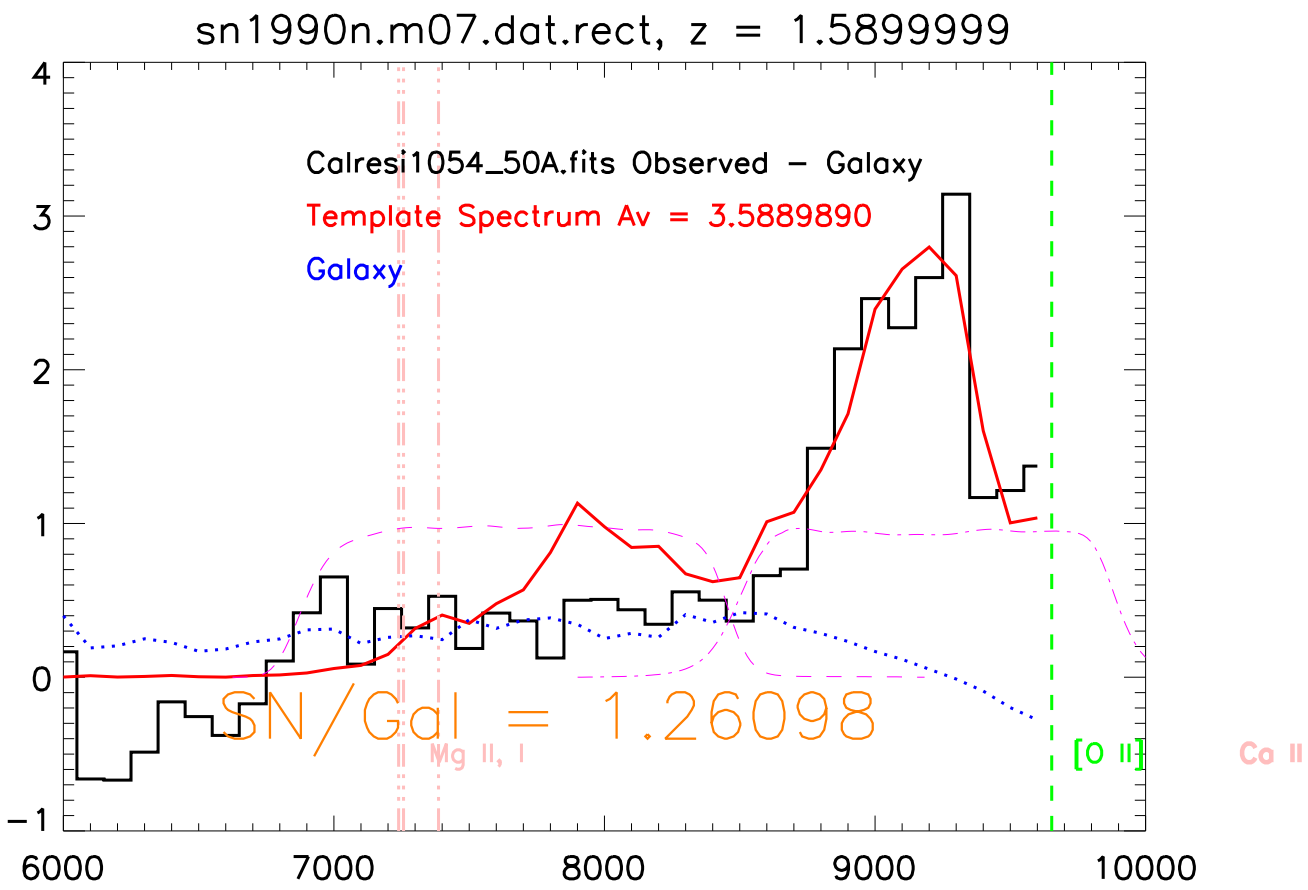


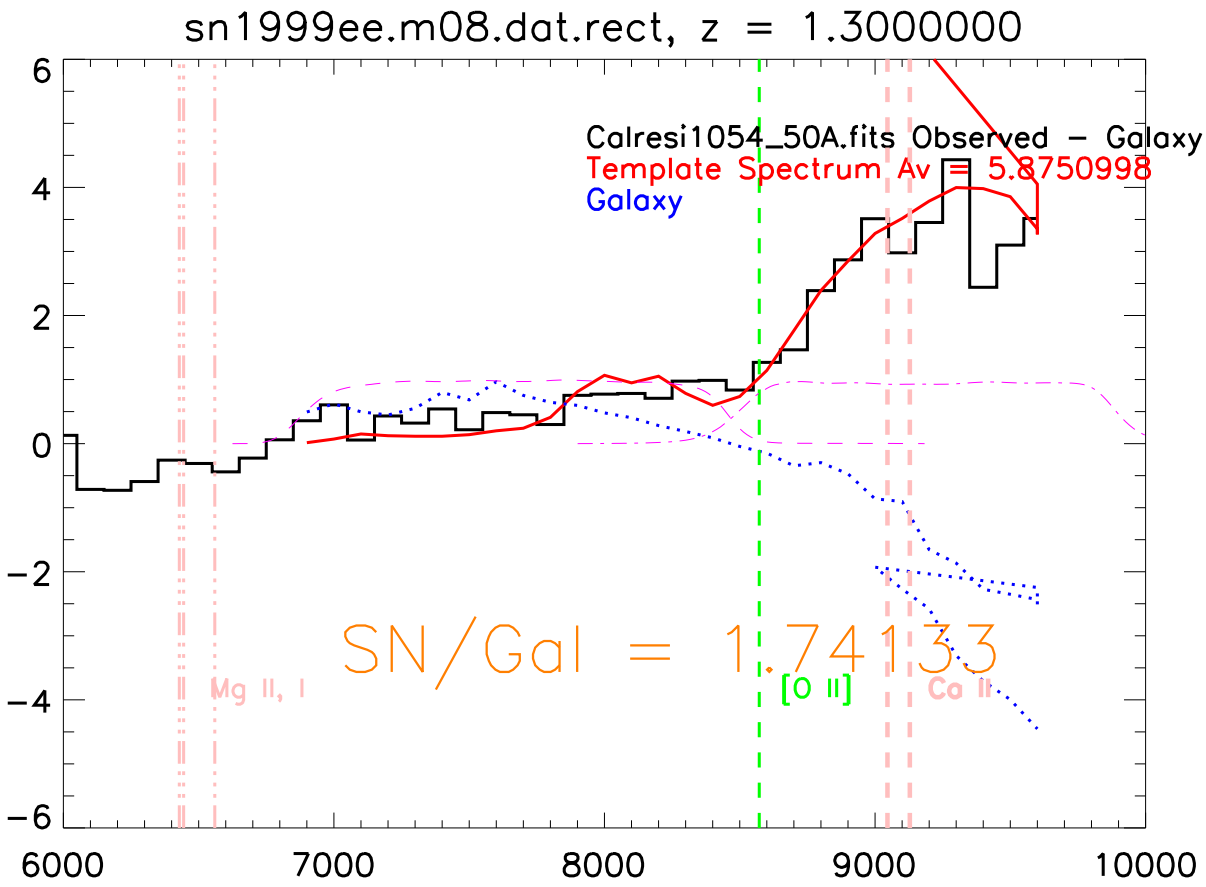
3.0
2.5
2.0
1.5
1.0
χ^2
40
20
0
−20
Days
0.5
1.0
1.5
2.0
Δm15

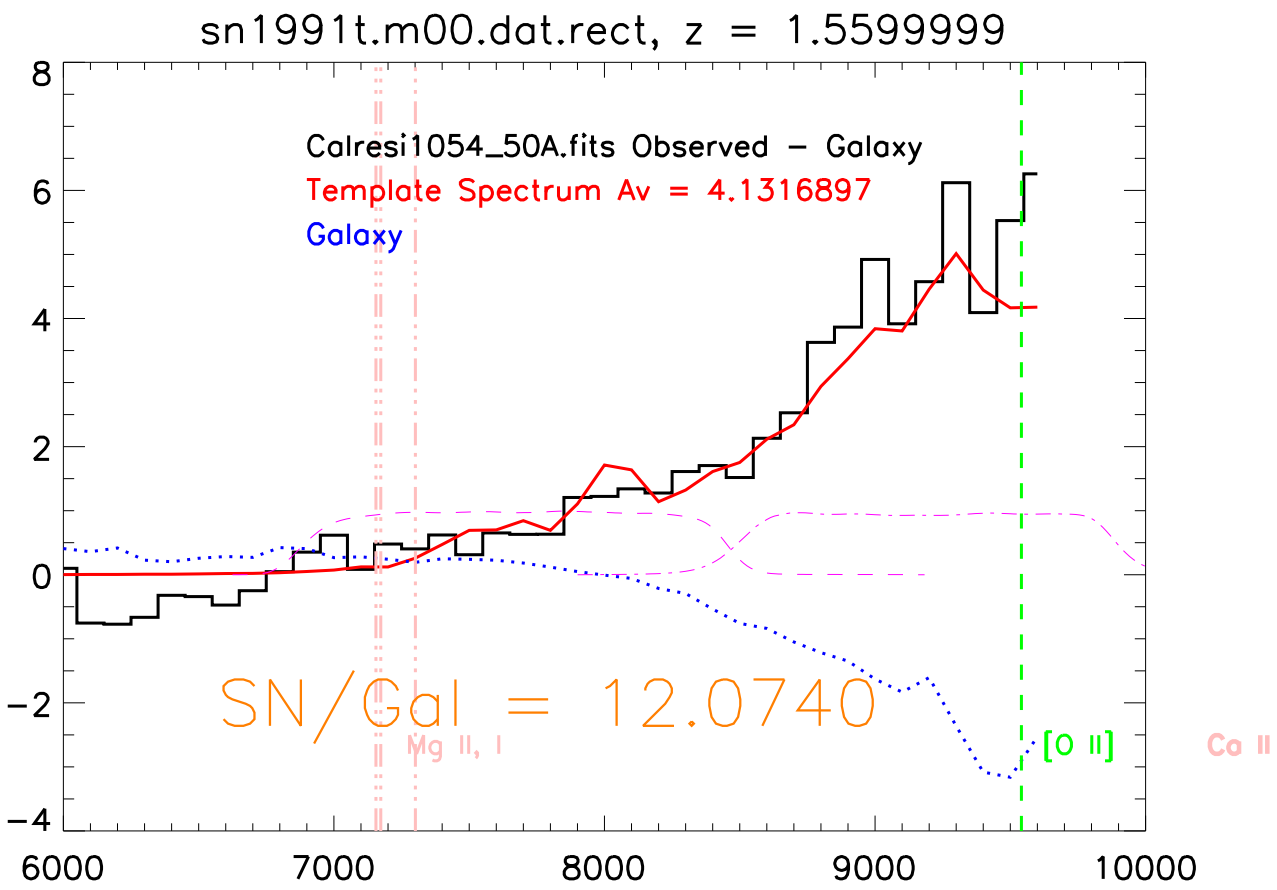

Calresi1054_50A.fits
12
10
8
6
4
2
0
X^2
0.8
1.0
1.2
1.4
1.6
1.8
z

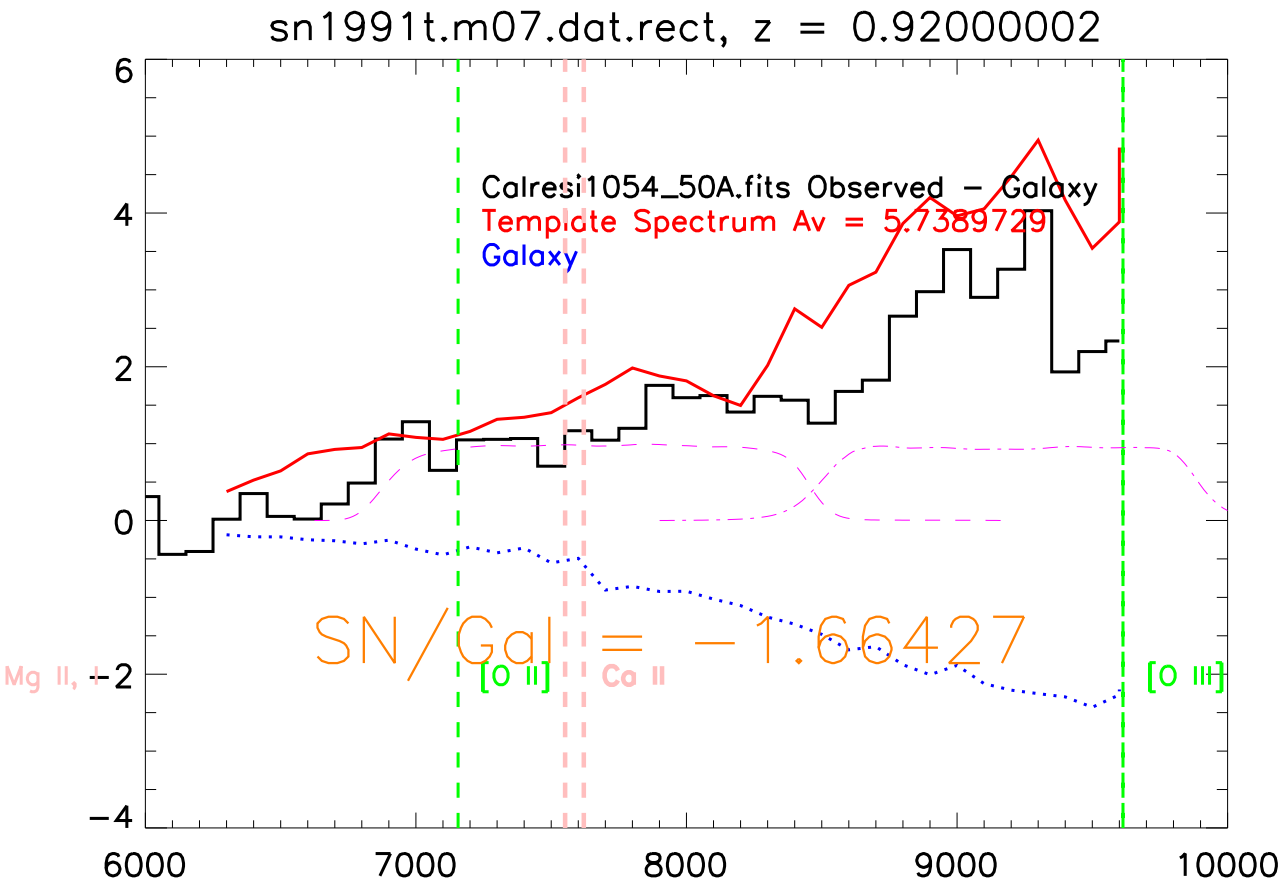

Calresi1054_50A.fits----sn1981b.m00.dat.rect
sn1981b.m00.dat.rect z= 1.5300000
Mg II, I
[O II]
Ca II
4
3
2
1
0
−1
6000
7000
8000
9000
10000

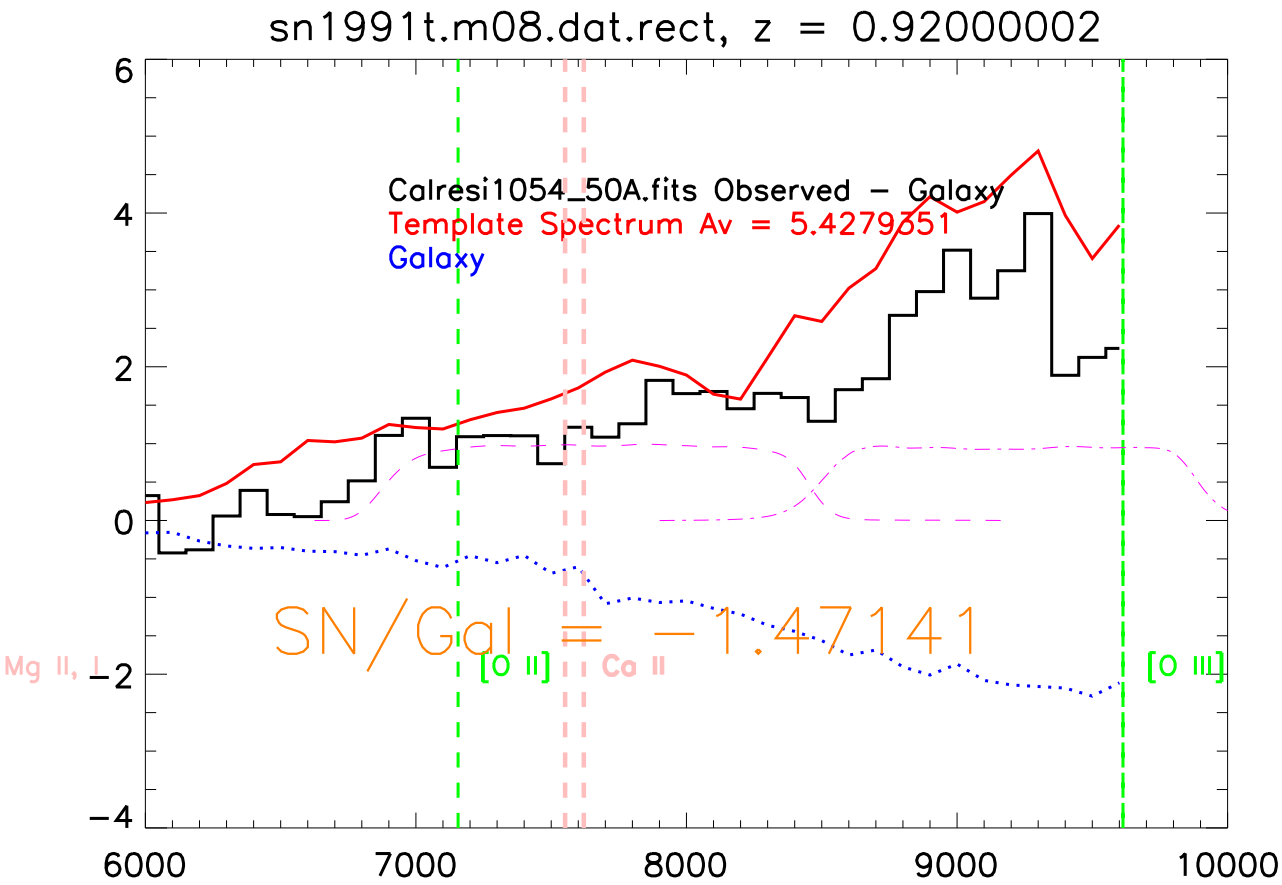

sn1981b.m00.dat.rect, z = 1.5300000
Calresi1054_50A.fits Observed − Galaxy
Template Spectrum Av = 0.37369242
Galaxy
SN/Gal = 11.8349
Mg II, I
[O II]
Ca II
4
3
2
1
0
−1
6000
7000
8000
9000
10000

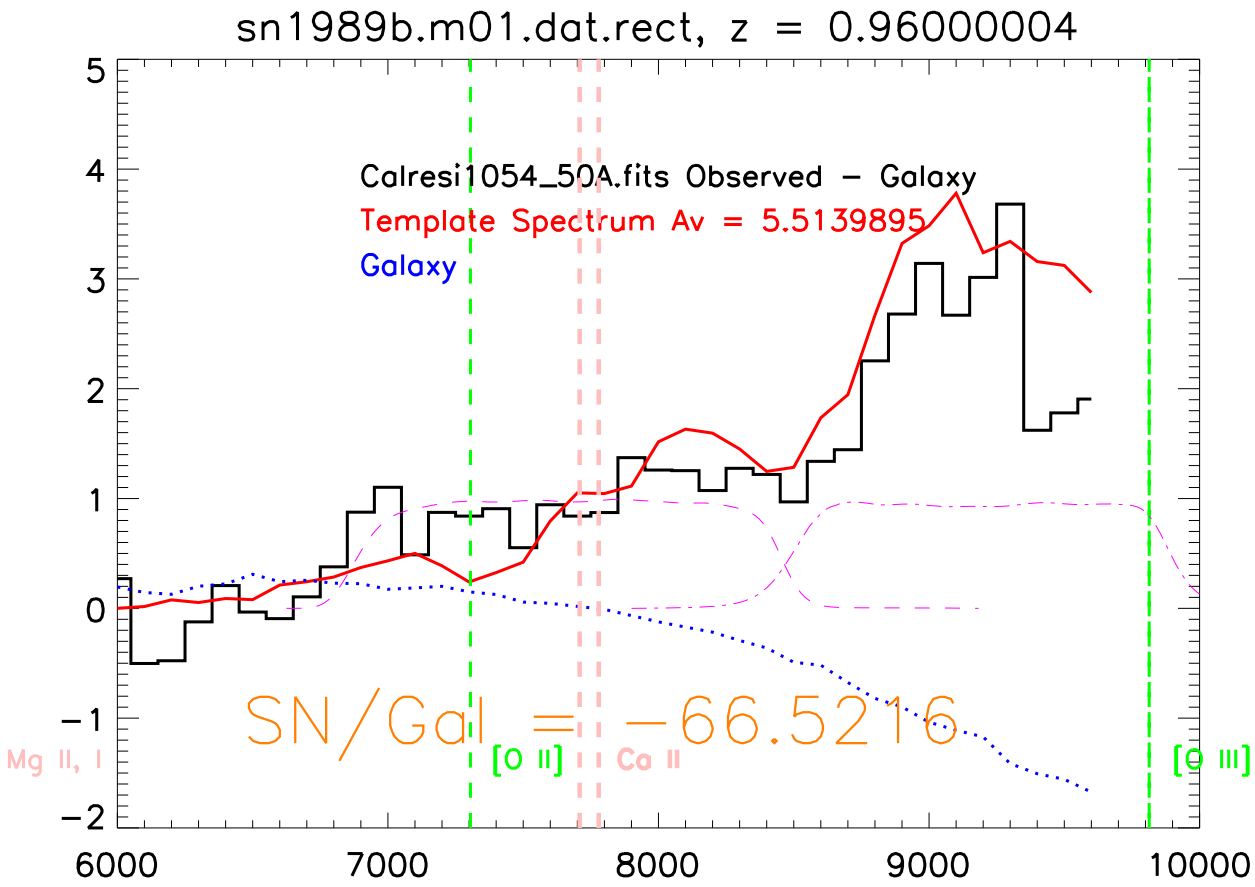

sn1990n.m07.dat.rect, z = 1.5899999
Calresi1054_50A.fits Observed − Galaxy
Template Spectrum Av = 3.5889890
Galaxy
SN/Gal = 1.26098
Mg II, I
[O II]
Ca II
4
3
2
1
0
−1
6000
7000
8000
9000
10000

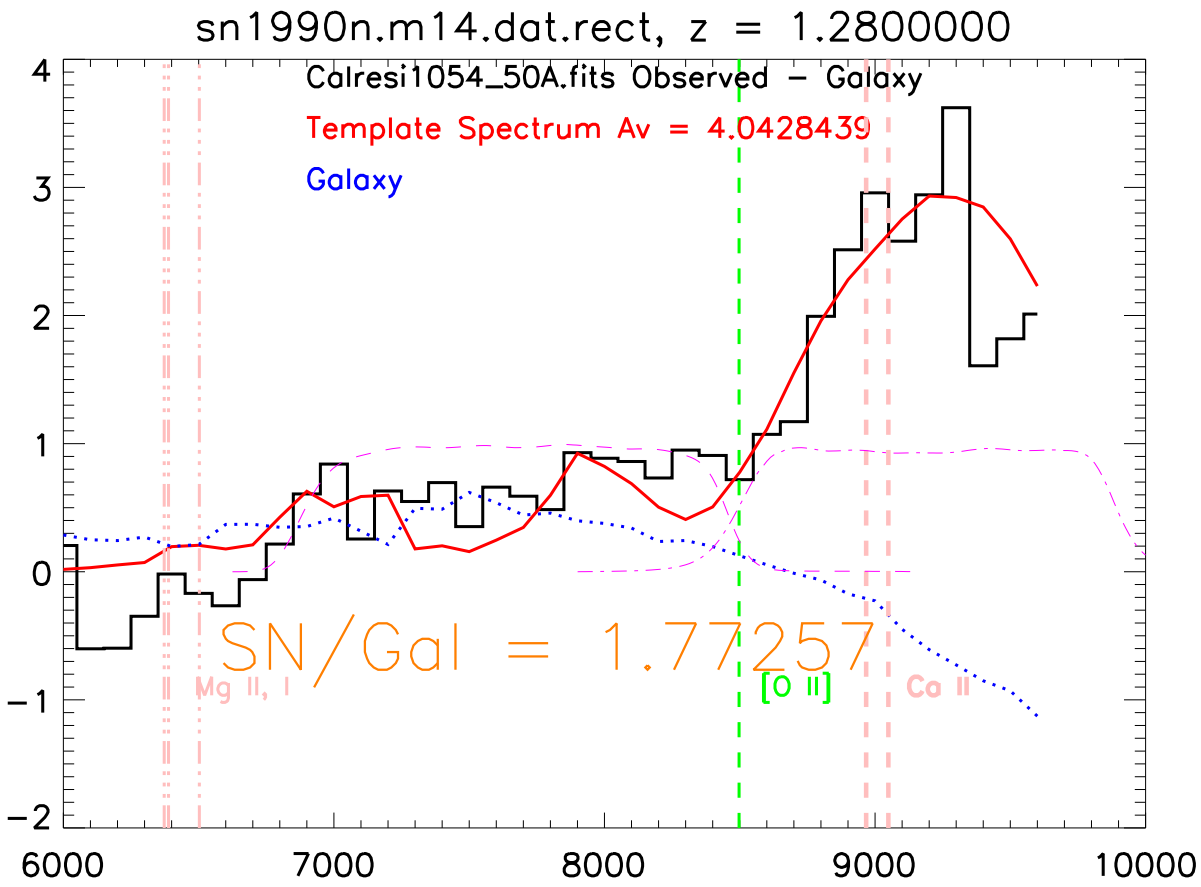

sn1999ee.m08.dat.rect, z = 1.3000000
Calresi1054_50A.fits Observed − Galaxy
Template Spectrum Av = 5.8750998
Galaxy
SN/Gal = 1.74133
Mg II, I
[O II]
Ca II
6
4
2
0
−2
−4
−6
6000
7000
8000
9000
10000

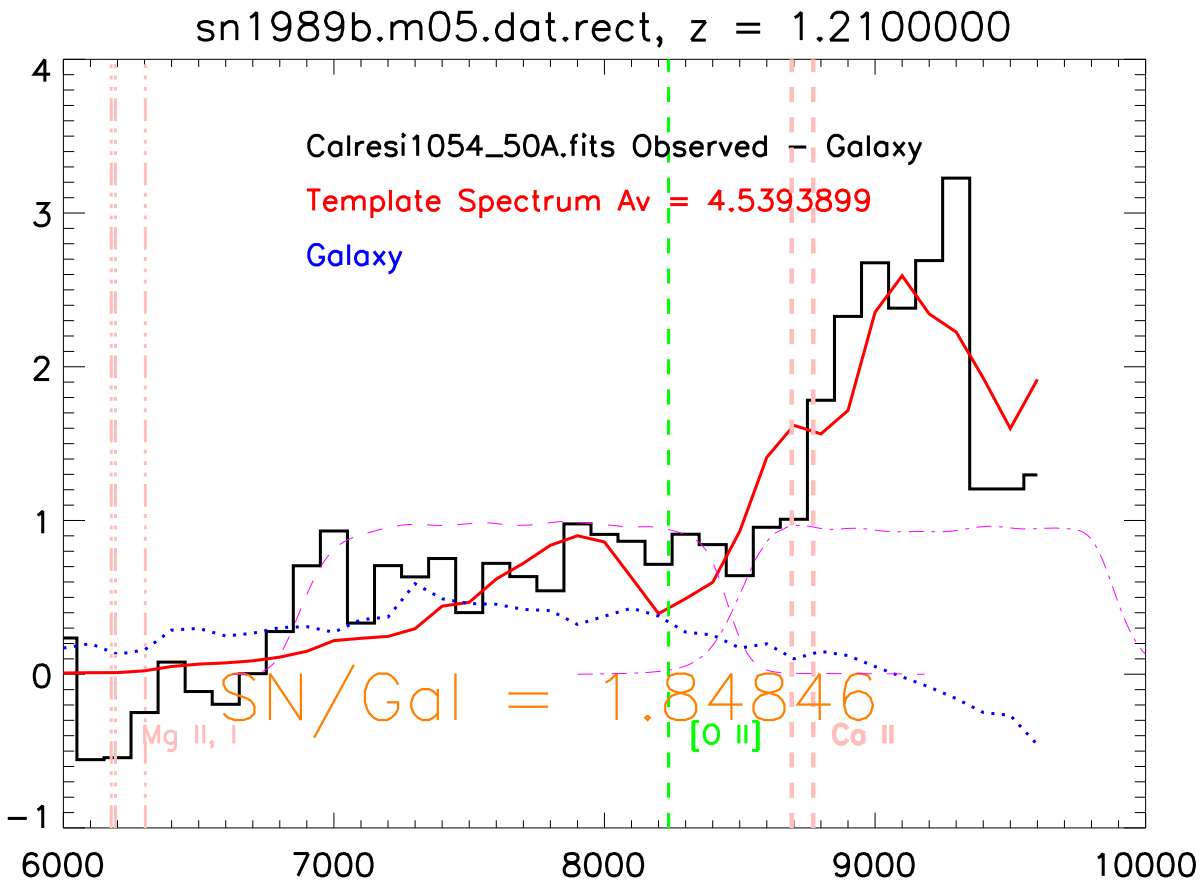

sn1991t.m00.dat.rect, z = 1.5599999
Calresi1054_50A.fits Observed − Galaxy
Template Spectrum Av = 4.1316897
Galaxy
SN/Gal = 12.0740
Mg II, I
[O II]
Ca II
8
6
4
2
0
−2
−4
6000
7000
8000
9000
10000

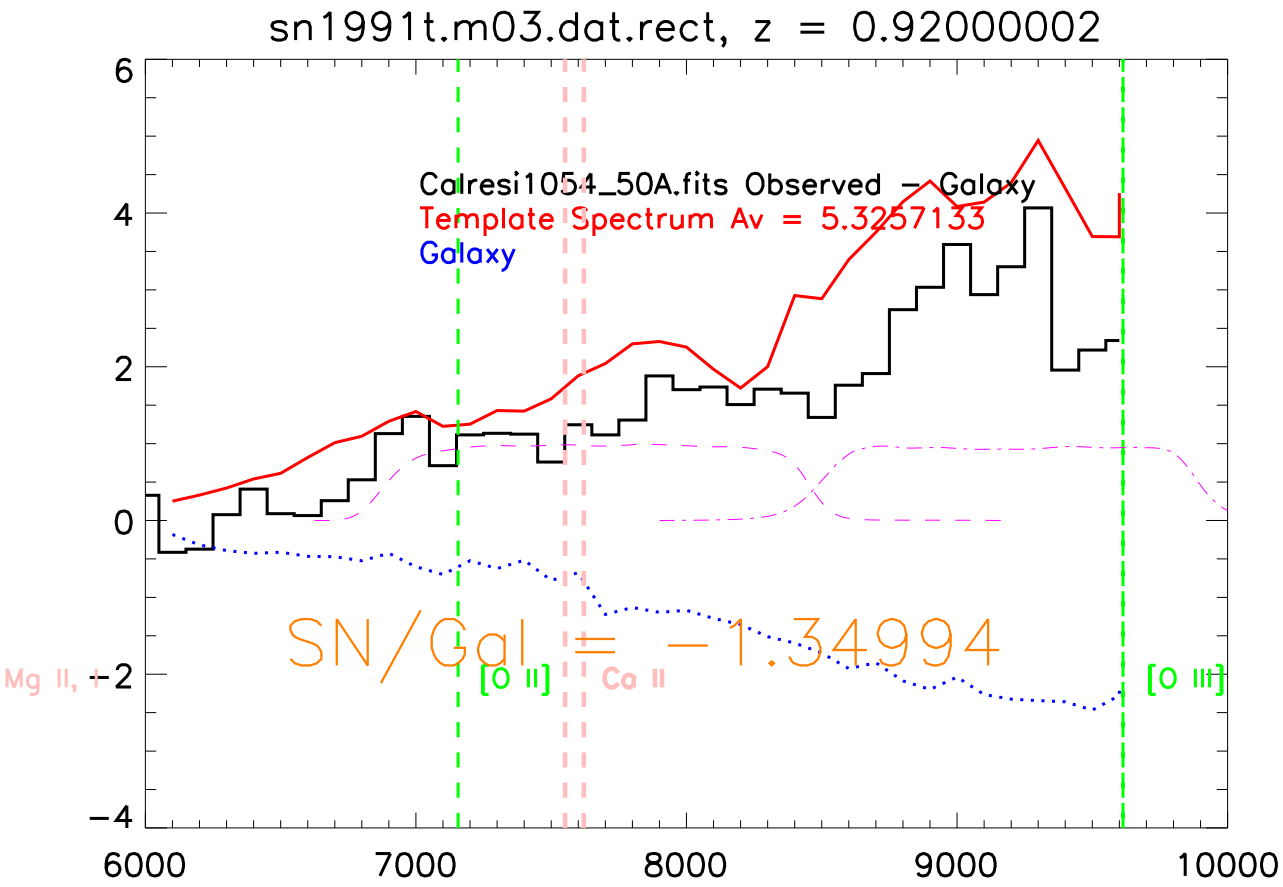

sn1991t.m07.dat.rect, z = 0.92000002
Calresi1054_50A.fits Observed − Galaxy
Template Spectrum Av = 5.7389729
Galaxy
SN/Gal = −1.66427
[O II]
Ca II
[O III]
Mg II,
6
4
2
0
−2
−4
6000
7000
8000
9000
10000

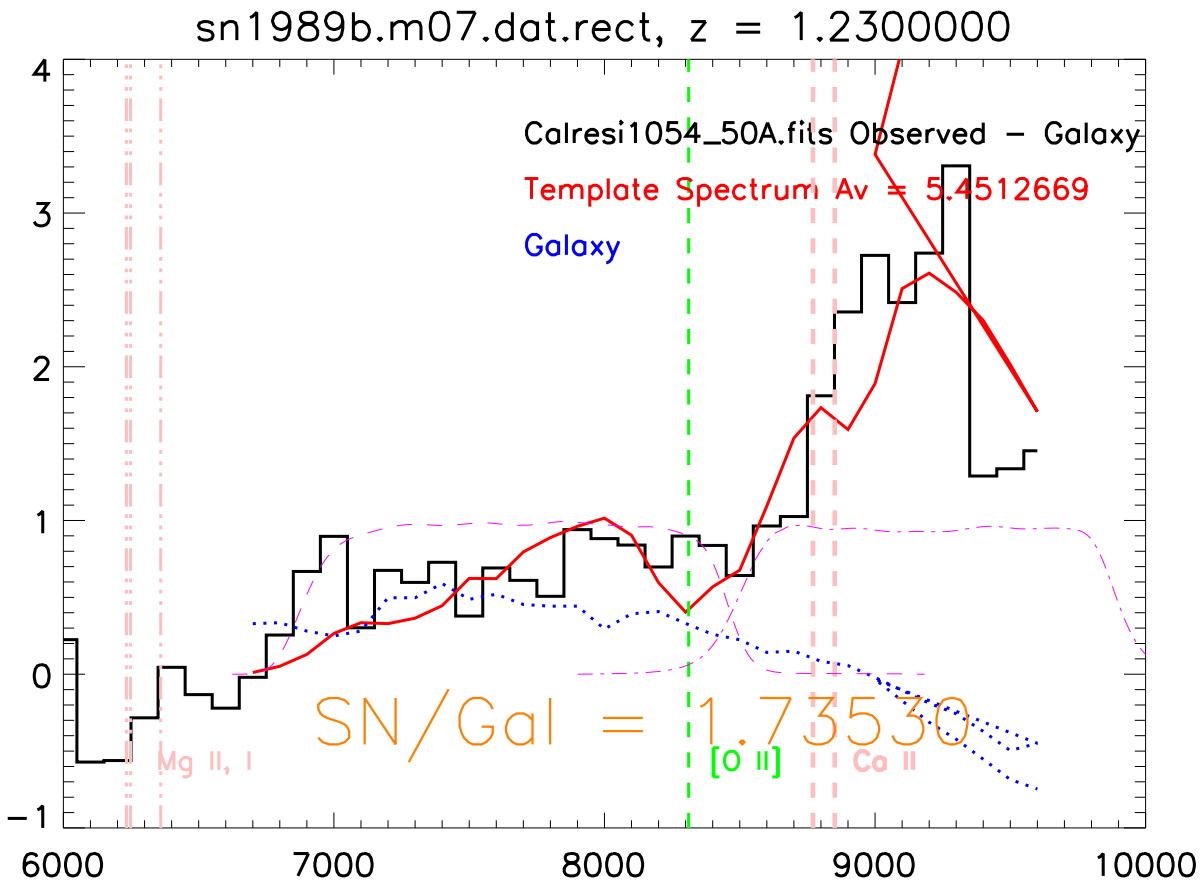

sn1991t.m08.dat.rect, z = 0.92000002
Calresi1054_50A.fits Observed − Galaxy
Template Spectrum Av = 5.4279351
Galaxy
SN/Gal = −1.47141
Mg II, ⊥
[O II]
Ca II
[O III]
6
4
2
0
−2
−4
6000
7000
8000
9000
10000

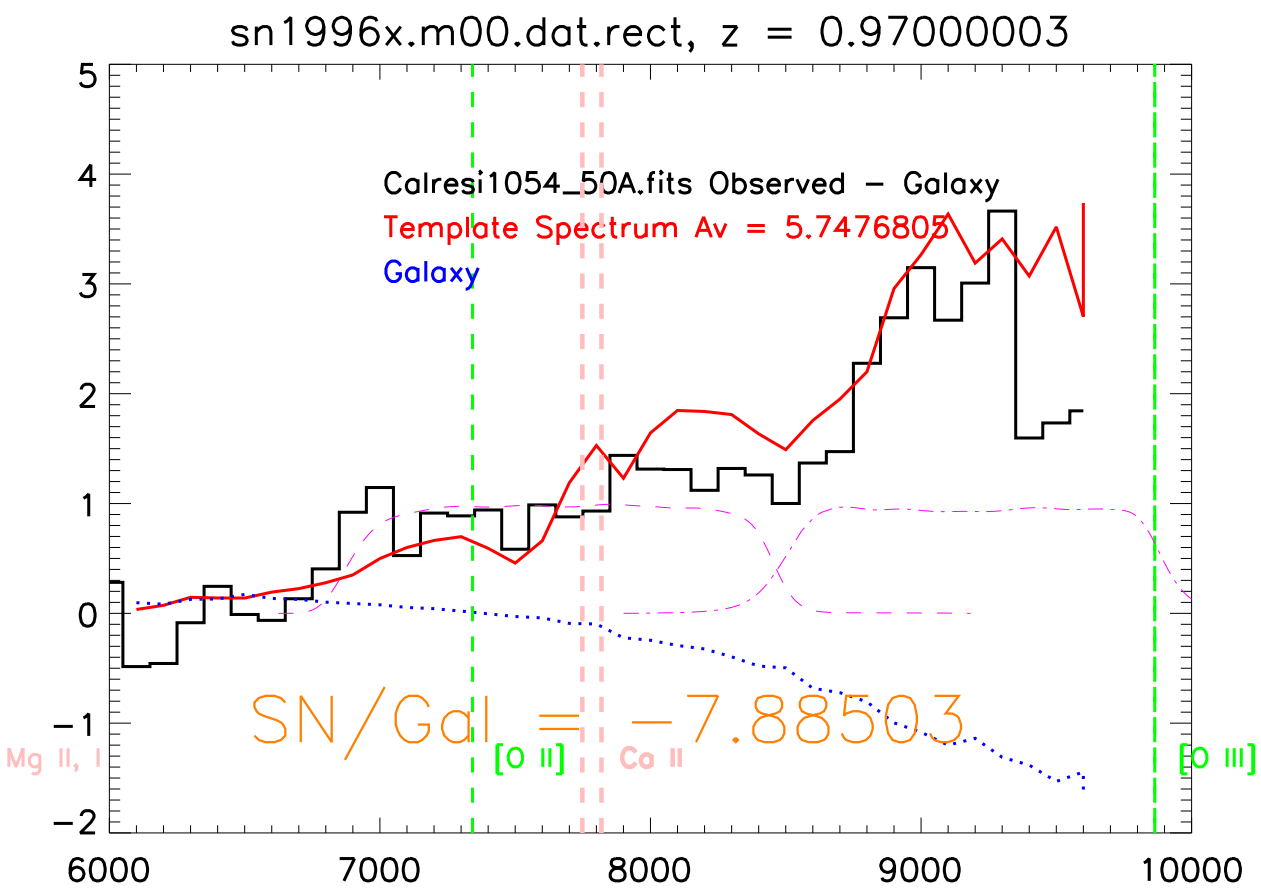

sn1989b.m01.dat.rect, z = 0.96000004
Calresi1054_50A.fits Observed − Galaxy
Template Spectrum Av = 5.5139895
Galaxy
SN/Gal = −66.5216
Mg II, I
[O II]
Ca II
[O III]
5
4
3
2
1
0
−1
−2
6000
7000
8000
9000
10000

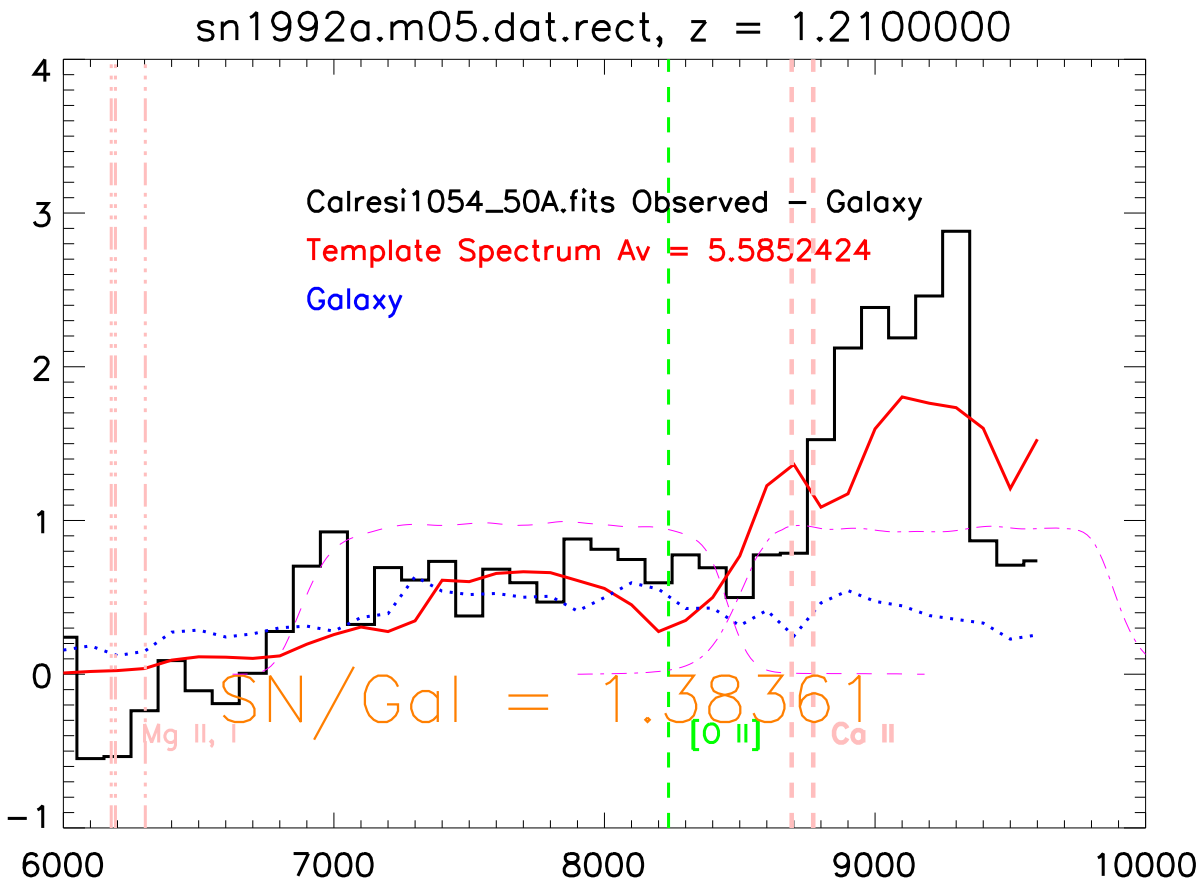

sn1990n.m14.dat.rect, z = 1.2800000
Calresi1054_50A.fits Observed − Galaxy
Template Spectrum Av = 4.0428439
Galaxy
SN/Gal = 1.77257
Mg II, I
[O II]
Ca II
4
3
2
1
0
−1
−2
6000
7000
8000
9000
10000

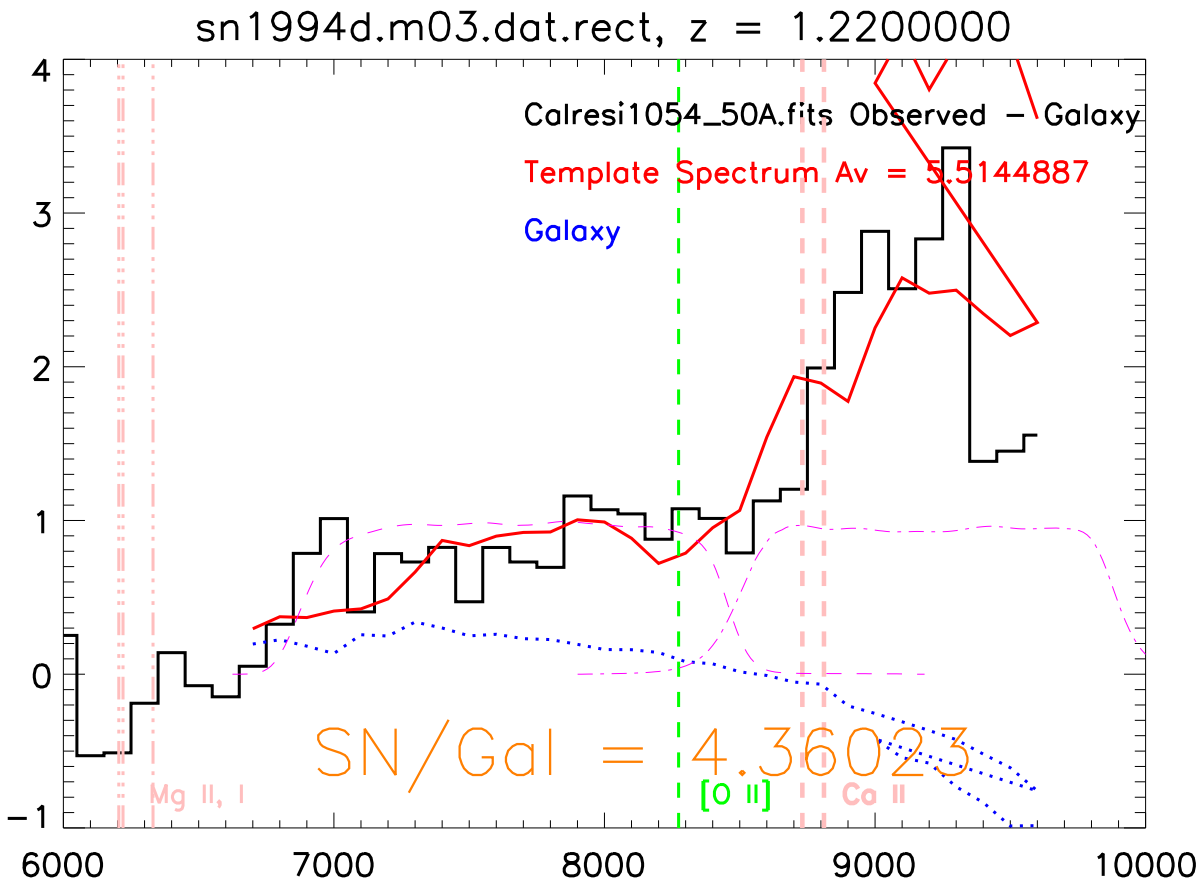

sn1989b.m05.dat.rect, z = 1.2100000
Calresi1054_50A.fits Observed – Galaxy
Template Spectrum Av = 4.5393899
Galaxy
SN/Gal = 1.84846
Mg II, I
[O II]
Ca II
4
3
2
1
0
−1
6000
7000
8000
9000
10000

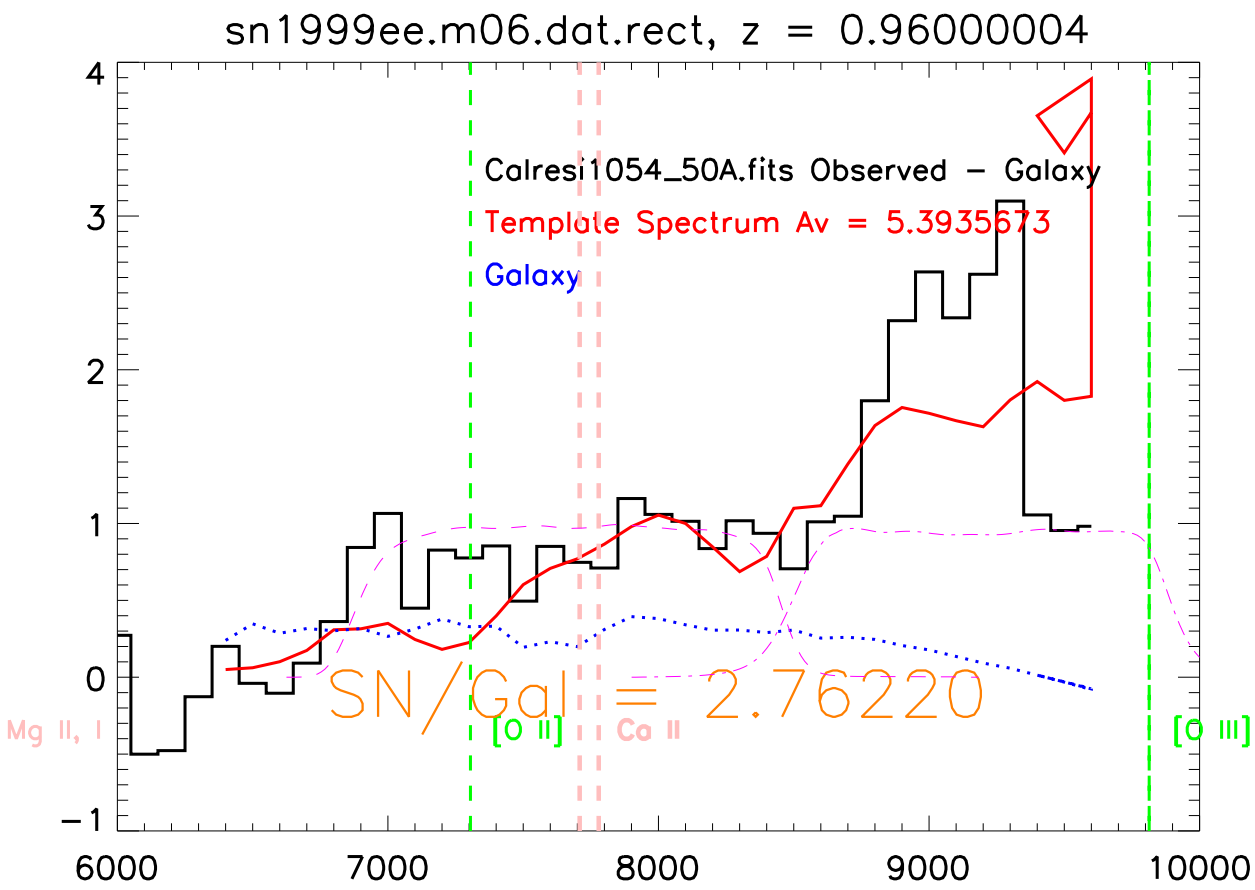

sn1991t.m03.dat.rect, z = 0.92000002
Calresi1054_50A.fits Observed – Galaxy
Template Spectrum Av = 5.3257133
Galaxy
SN/Gal = −1.34994
[O II]
Ca II
[O III]
Mg II,
6
4
2
0
−2
−4
6000
7000
8000
9000
10000

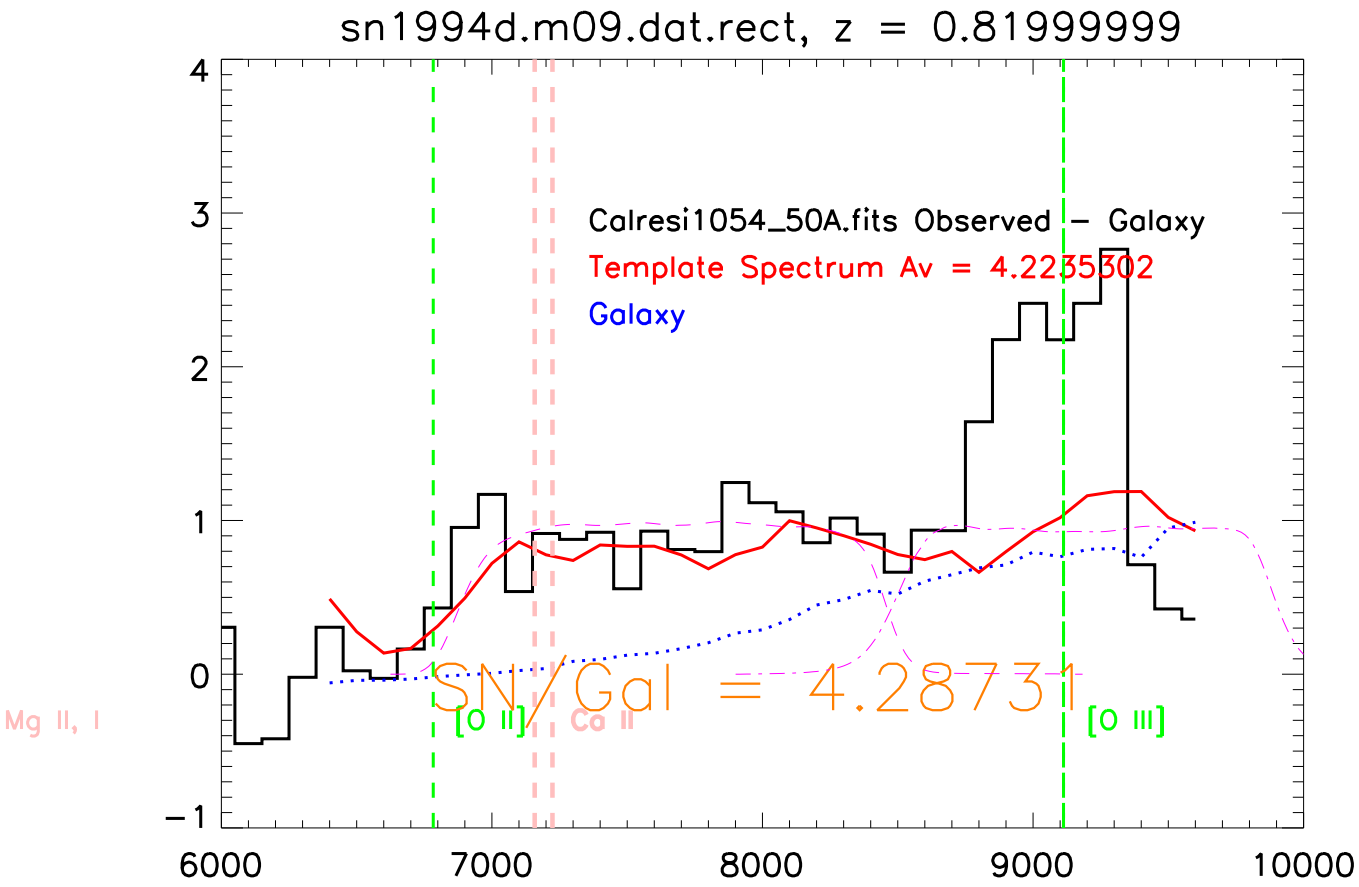

sn1989b.m07.dat.rect, z = 1.2300000
Calresi1054_50A.fits Observed − Galaxy
Template Spectrum Av = 5.4512669
Galaxy
SN/Gal = 1.73530
Mg II, I
[O II]
Ca II
4
3
2
1
0
−1
6000
7000
8000
9000
10000

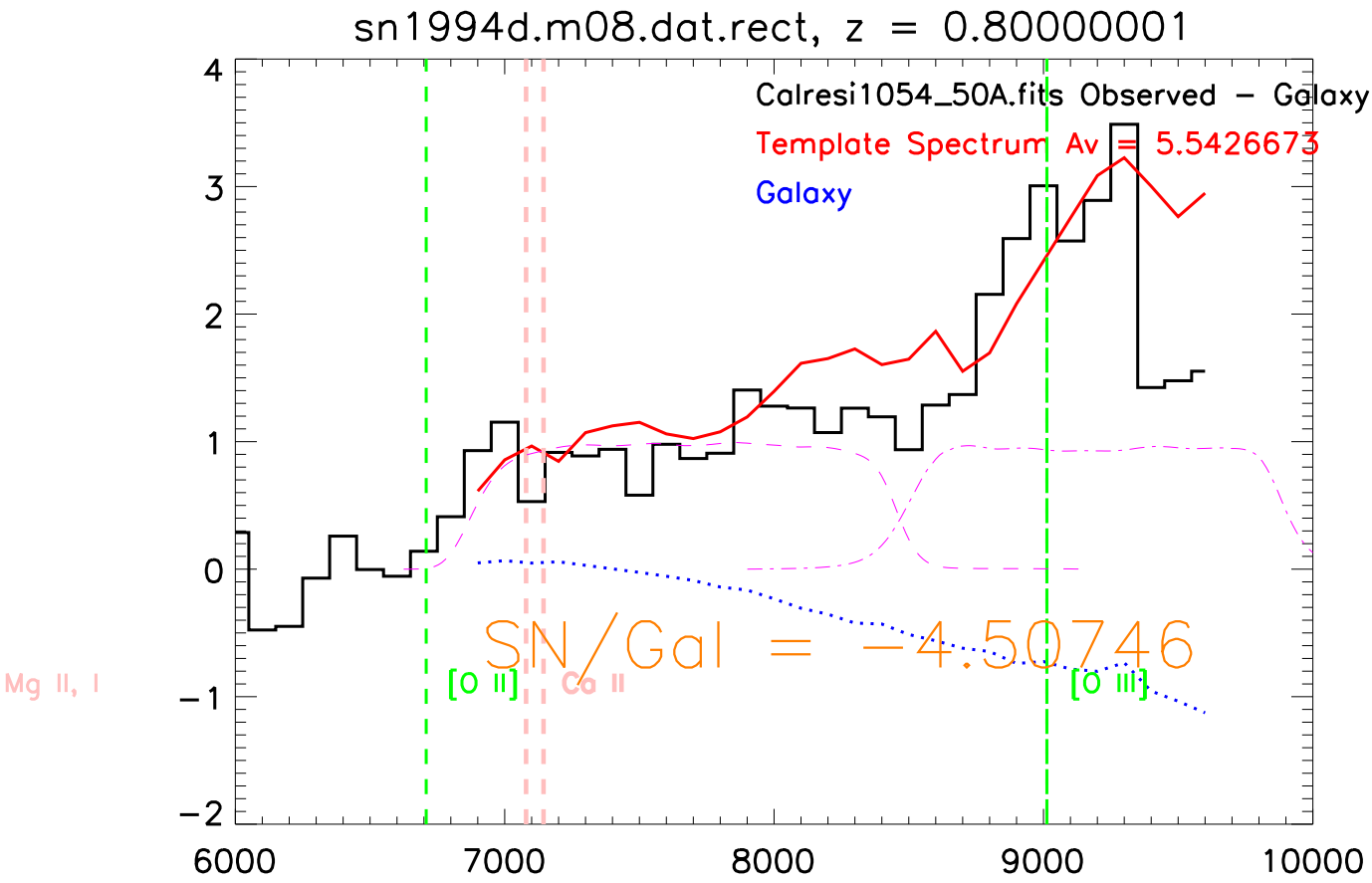

sn1996x.m00.dat.rect, z = 0.97000003
Calresi1054_50A.fits Observed − Galaxy
Template Spectrum Av = 5.7476805
Galaxy
SN/Gal = −7.88503
Mg II, I
[O II]
Ca II
[O III]
5
4
3
2
1
0
−1
−2
6000
7000
8000
9000
10000


sn1992a.m05.dat.rect, z = 1.2100000
Calresi1054_50A.fits Observed − Galaxy
Template Spectrum Av = 5.5852424
Galaxy
SN/Gal = 1.38361
Mg II, I
[O II]
Ca II
4
3
2
1
0
−1
6000
7000
8000
9000
10000


sn1994d.m03.dat.rect, z = 1.2200000
Calresi1054_50A.fits Observed – Galaxy
Template Spectrum Av = 5.5144887
Galaxy
SN/Gal = 4.36023
Mg II, I
[O II]
Ca II
4
3
2
1
0
−1
6000
7000
8000
9000
10000


sn1999ee.m06.dat.rect, z = 0.96000004
Calresi1054_50A.fits Observed − Galaxy
Template Spectrum Av = 5.3935673
Galaxy
SN/Gal = 2.76220
Mg II, I
[O II]
Ca II
[O III]
4
3
2
1
0
−1
6000
7000
8000
9000
10000


sn1994d.m09.dat.rect, z = 0.81999999
Calresi1054_50A.fits Observed − Galaxy
Template Spectrum Av = 4.2235302
Galaxy
SN/Gal = 4.28731
Mg II, I
[O II]
Ca II
[O III]
4
3
2
1
0
−1
6000
7000
8000
9000
10000


sn1994d.m08.dat.rect, z = 0.80000001
Calresi1054_50A.fits Observed − Galaxy
Template Spectrum Av = 5.5426673
Galaxy
SN/Gal = −4.50746
[O II]
Ca II
[O III]
Mg II, I
4
3
2
1
0
−1
−2
6000
7000
8000
9000
10000