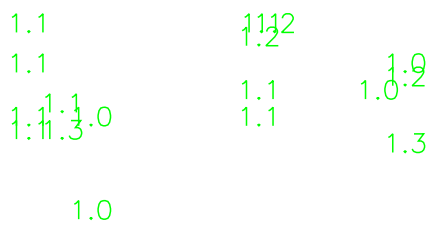
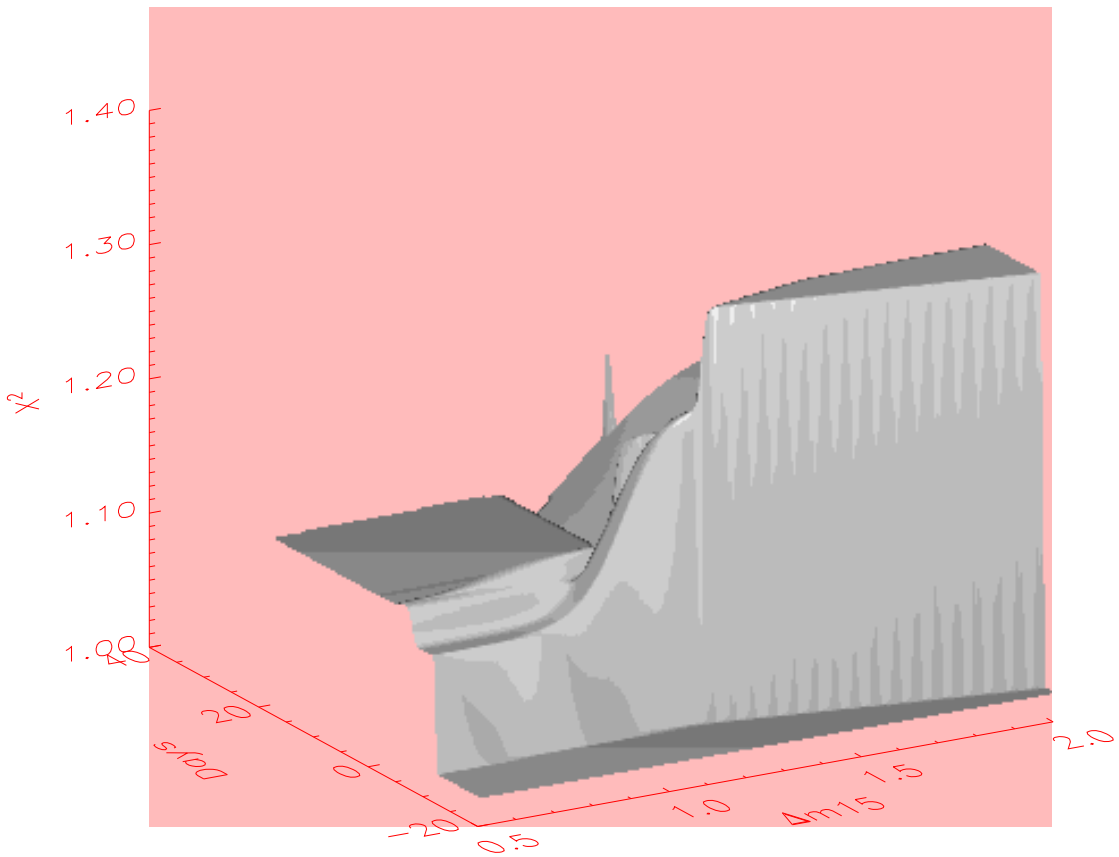
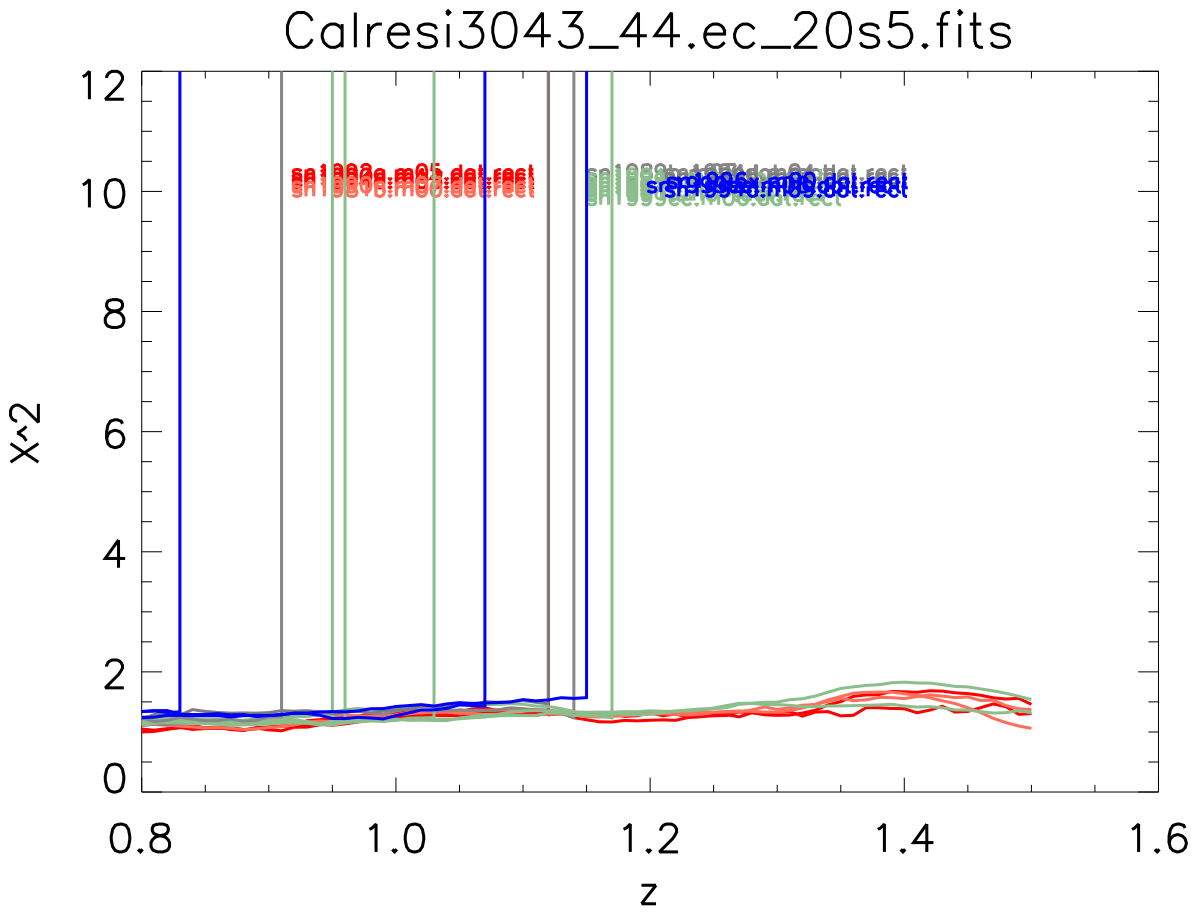
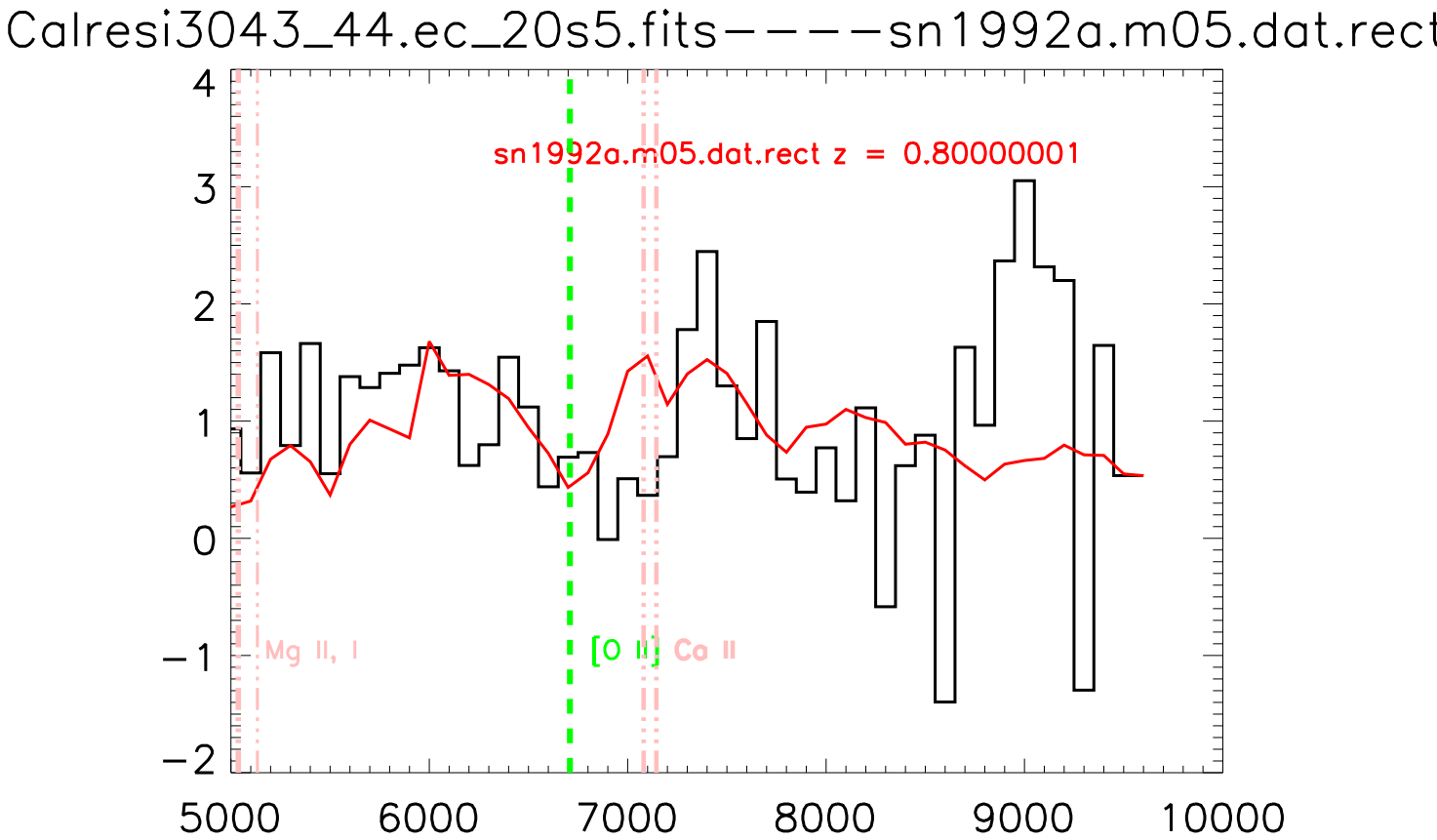
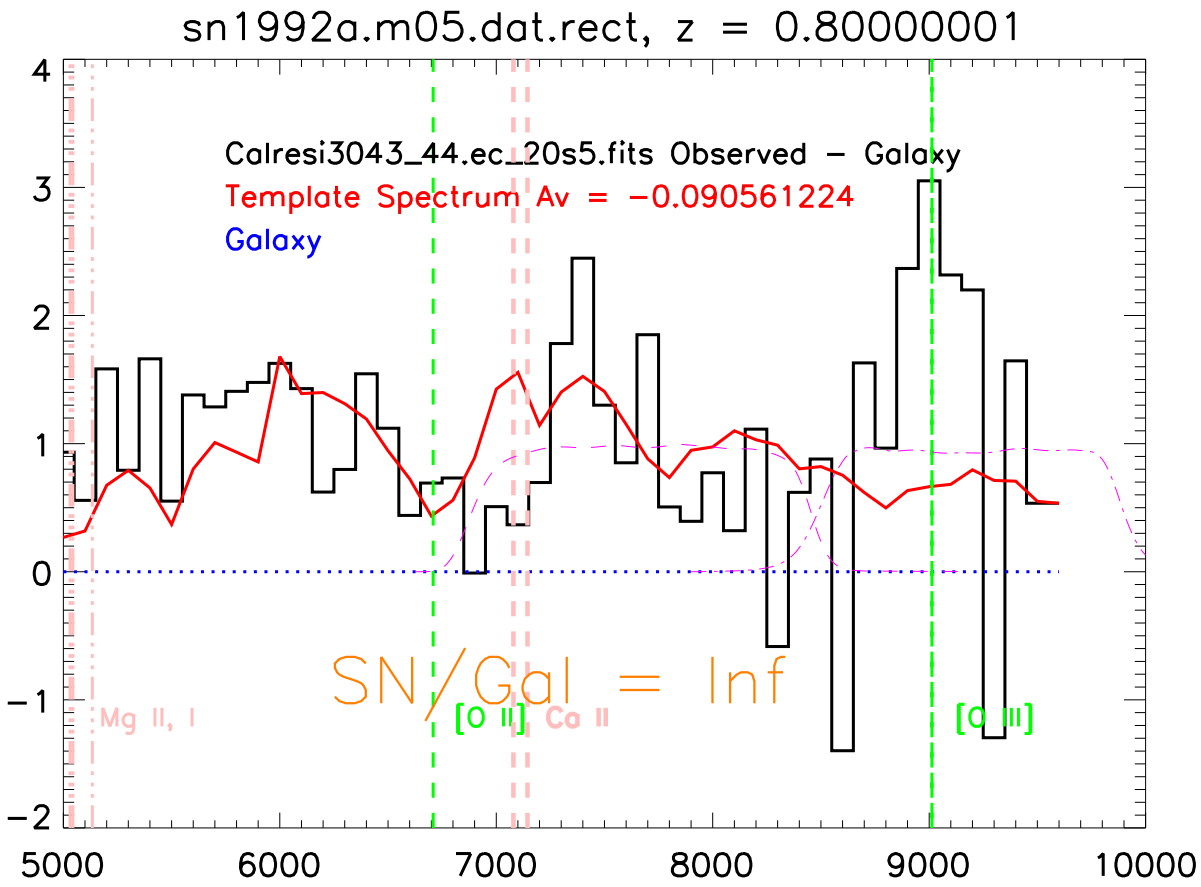
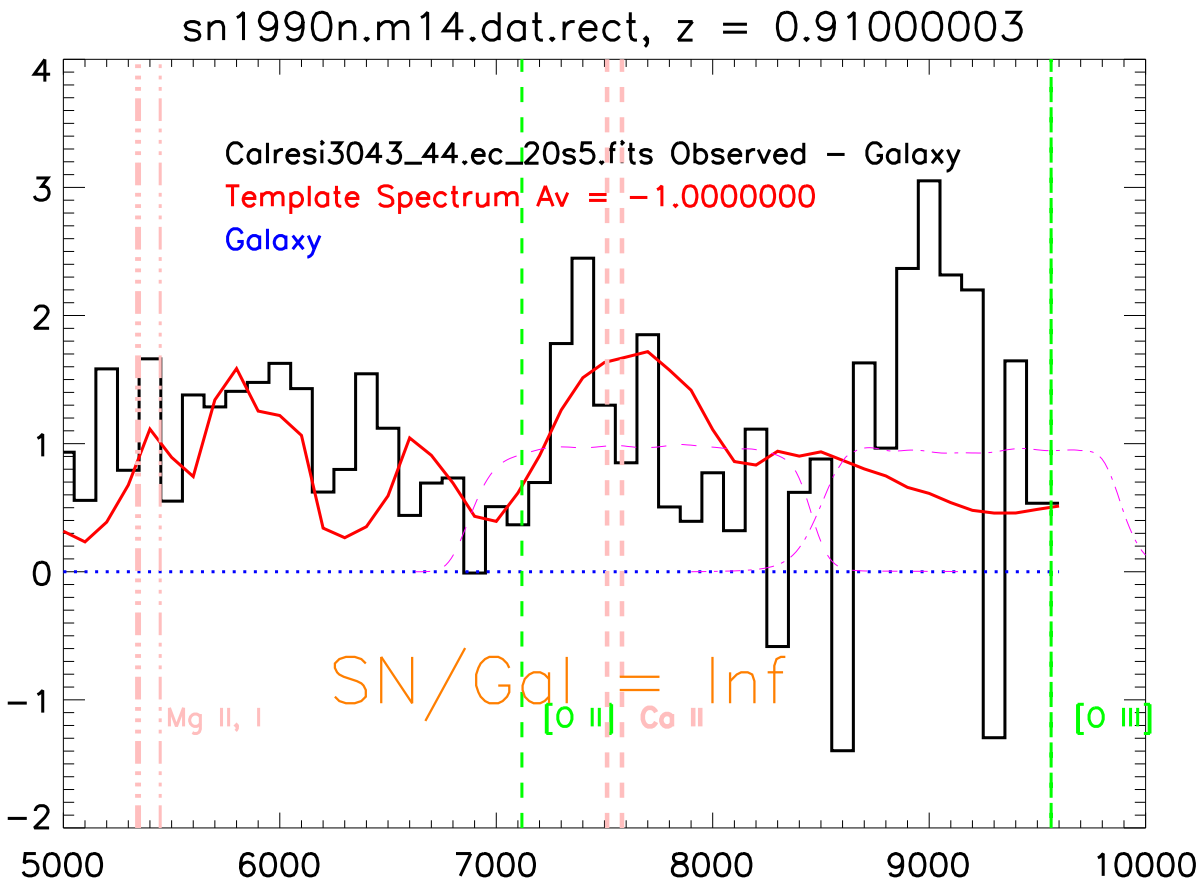

1.1
1.1
1.1
1.1
1.1
1.3
1.0
1.1
1.2
1.1
1.1
1.0
1.2
1.3

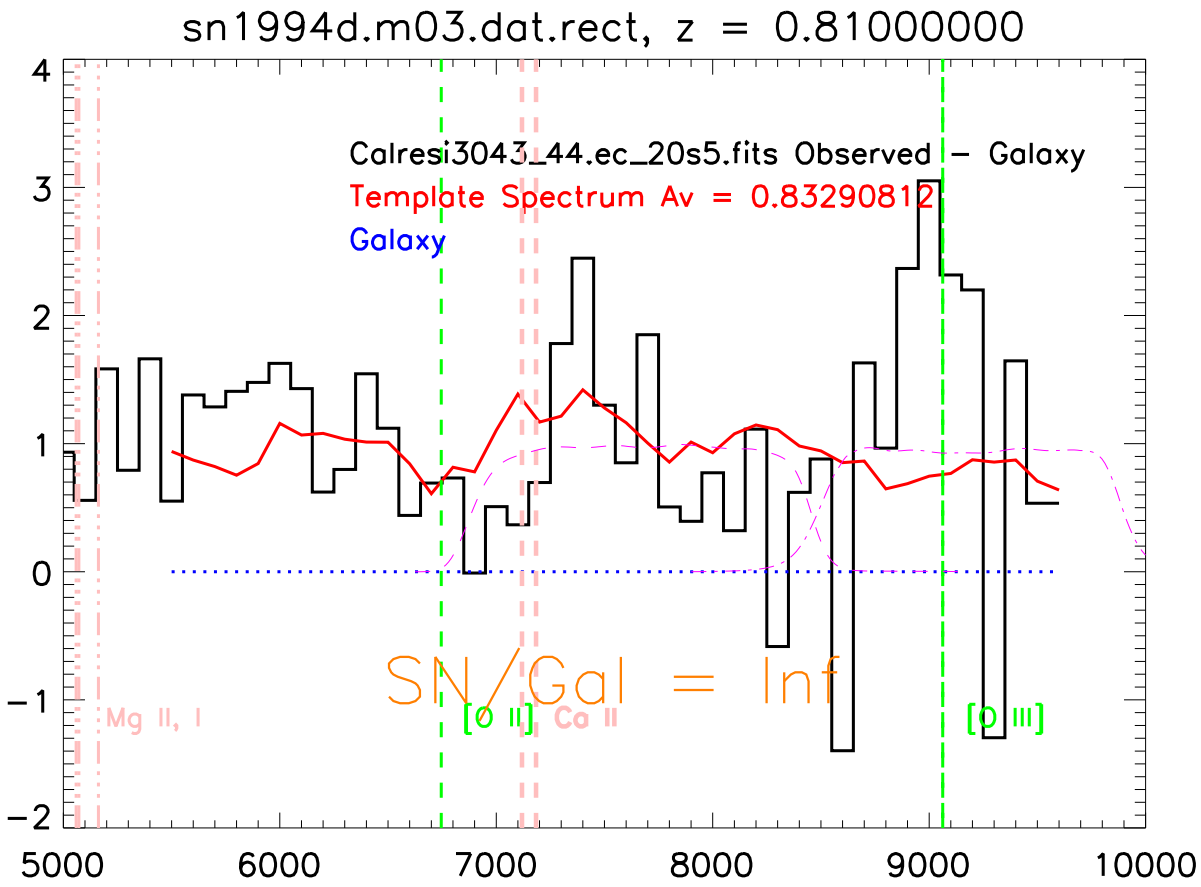

1.40
1.30
1.20
1.10
1.00
χ²
40
20
0
−20
Δm15
0.5
1.0
1.5
2.0

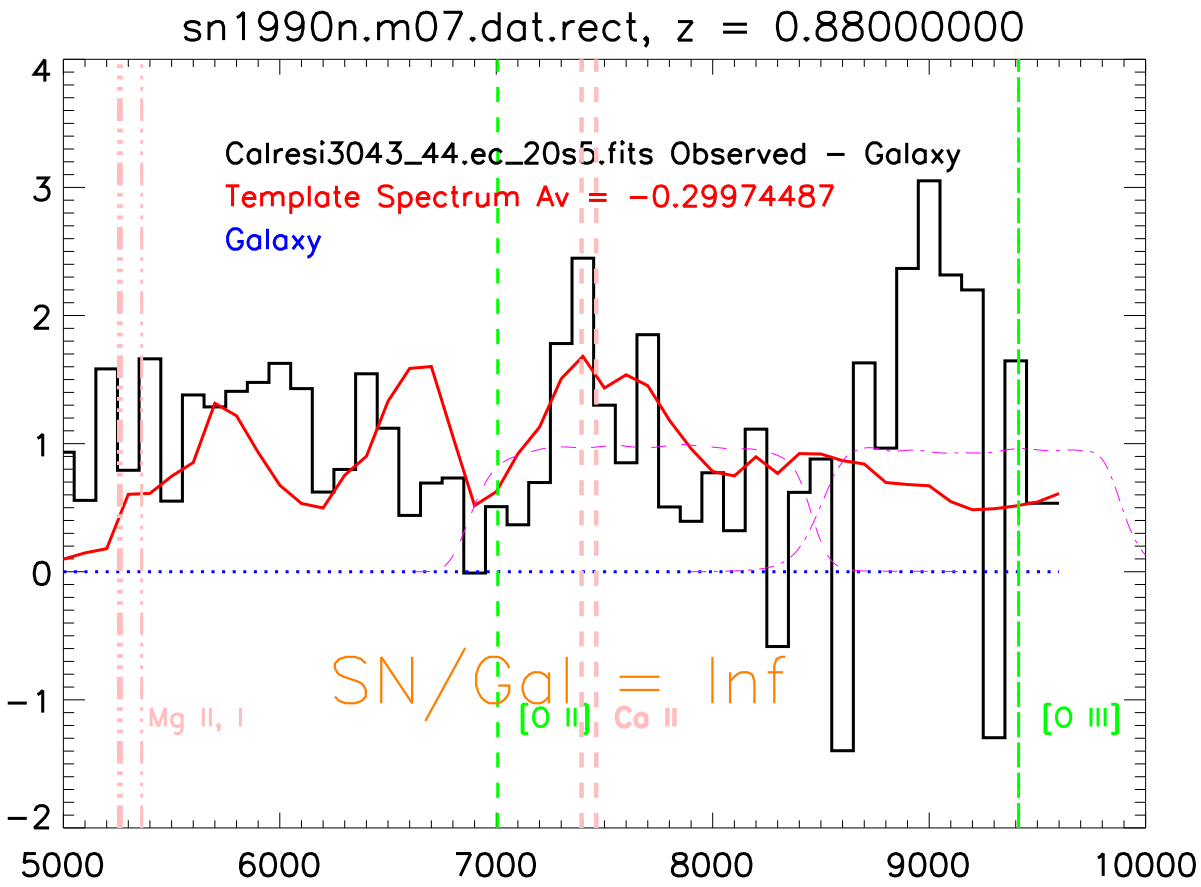

Calresi3043_44.ec_20s5.fits
X^2
z
0
2
4
6
8
10
12
0.8
1.0
1.2
1.4
1.6

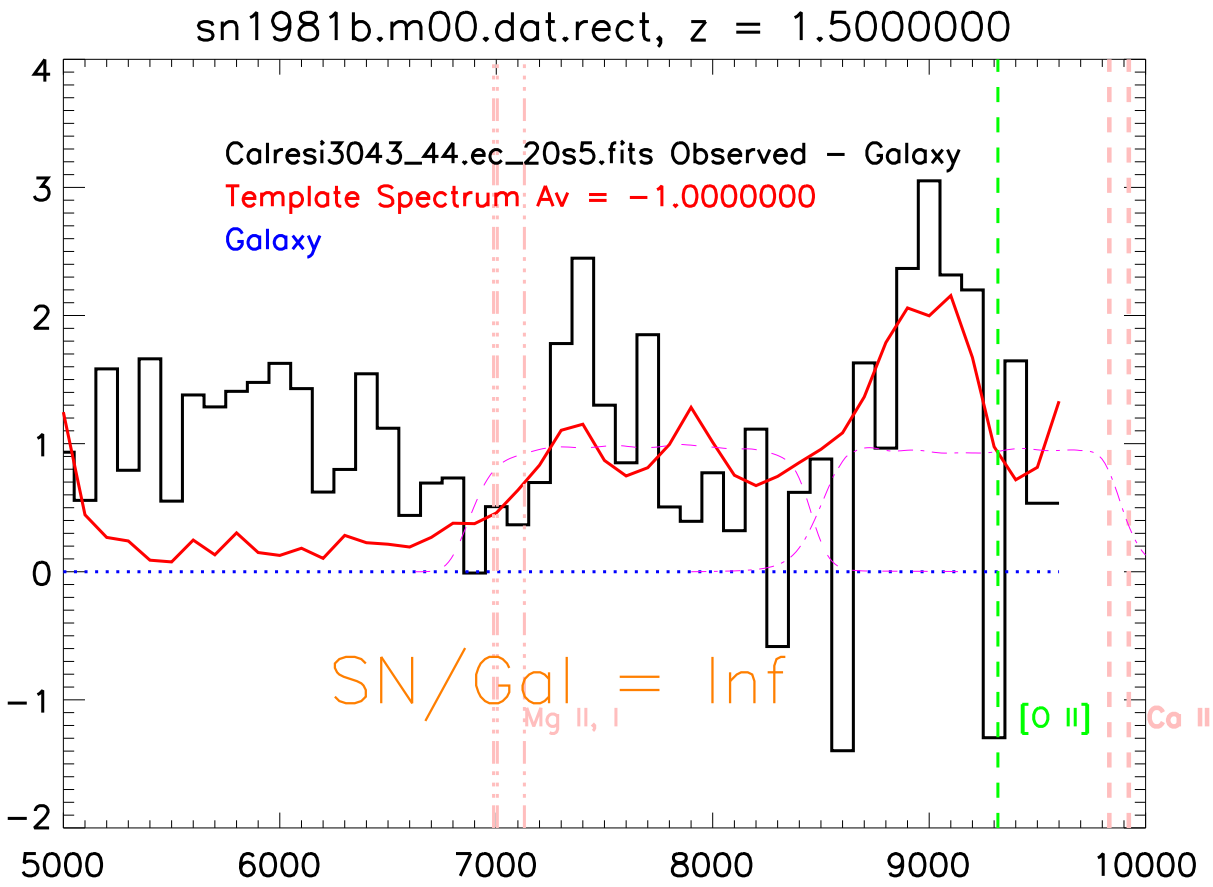

Calresi3043_44.ec_20s5.fits----sn1992a.m05.dat.rect
sn1992a.m05.dat.rect z = 0.80000001
Mg II, I
[O II]
Ca II
4
3
2
1
0
−1
−2
5000
6000
7000
8000
9000
10000

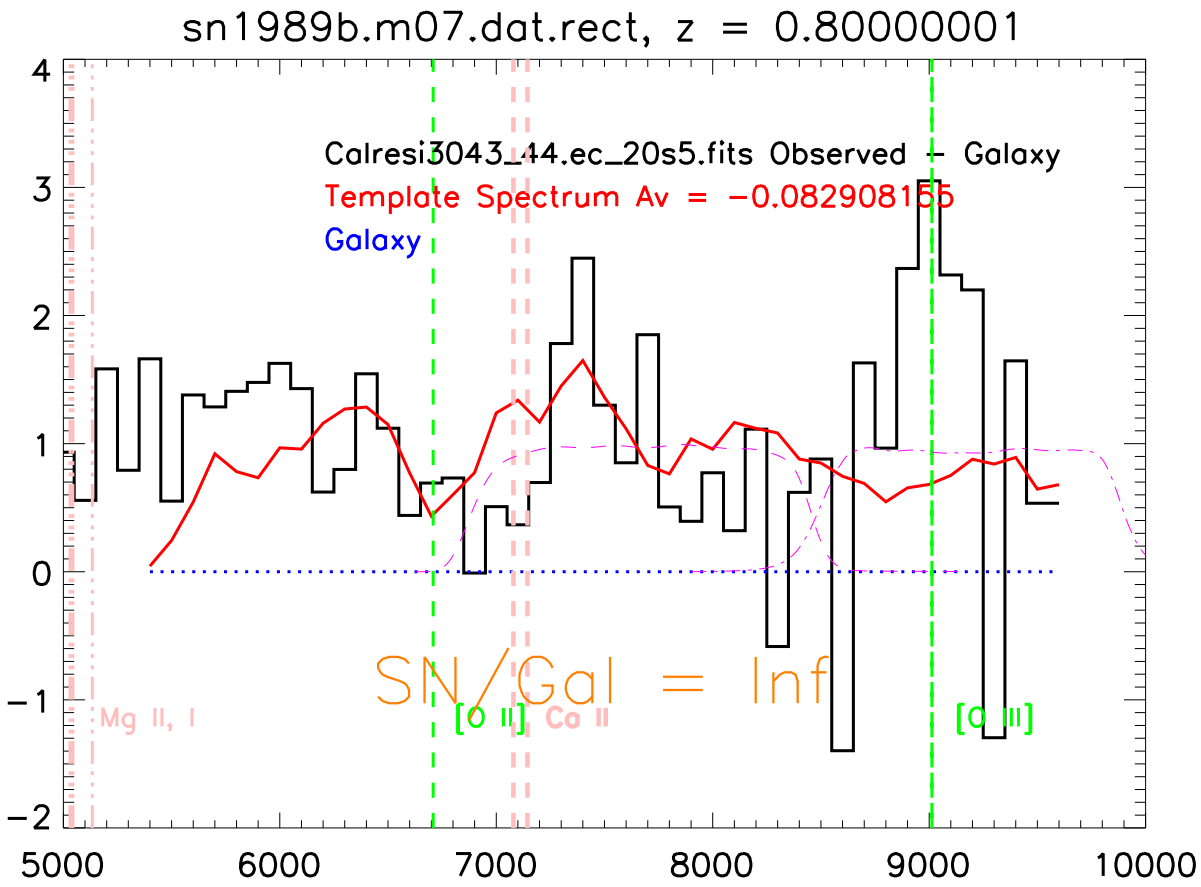

sn1992a.m05.dat.rect, z = 0.80000001
Calresi3043_44.ec_20s5.fits Observed − Galaxy
Template Spectrum Av = −0.090561224
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
4
3
2
1
0
−1
−2
5000
6000
7000
8000
9000
10000

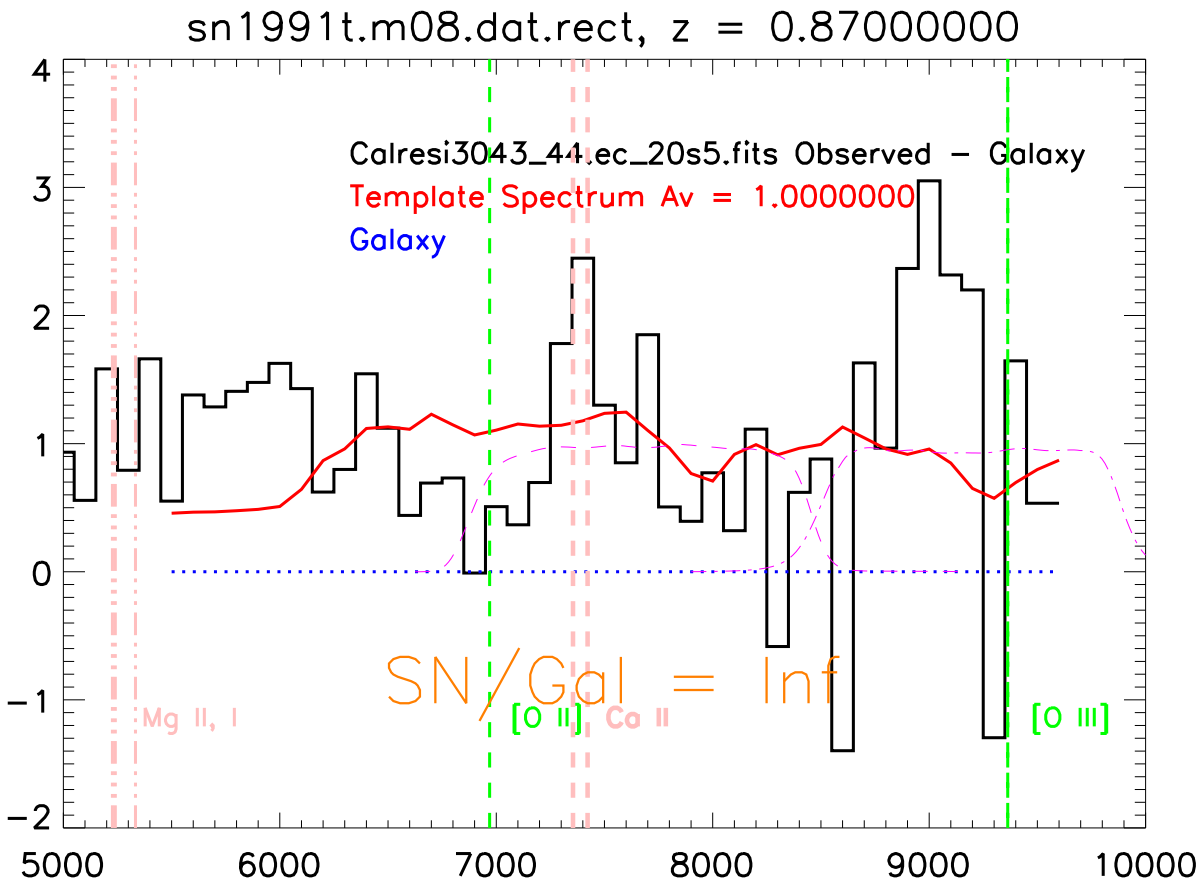

sn1990n.m14.dat.rect, z = 0.91000003
Calresi3043_44.ec_20s5.fits Observed − Galaxy
Template Spectrum Av = −1.0000000
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
4
3
2
1
0
−1
−2
5000
6000
7000
8000
9000
10000

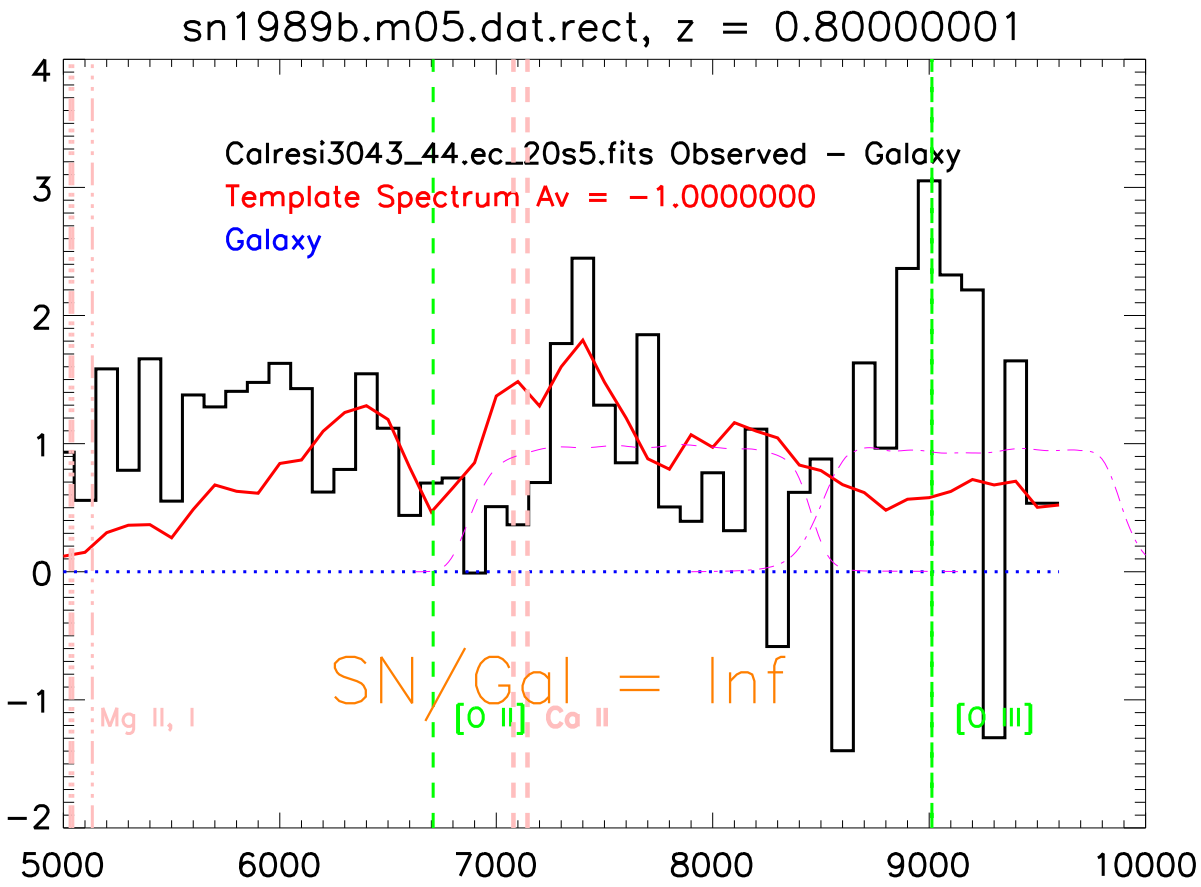

sn1994d.m03.dat.rect, z = 0.81000000
Calresi3043_44.ec_20s5.fits Observed − Galaxy
Template Spectrum Av = 0.83290812
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
4
3
2
1
0
−1
−2
5000
6000
7000
8000
9000
10000

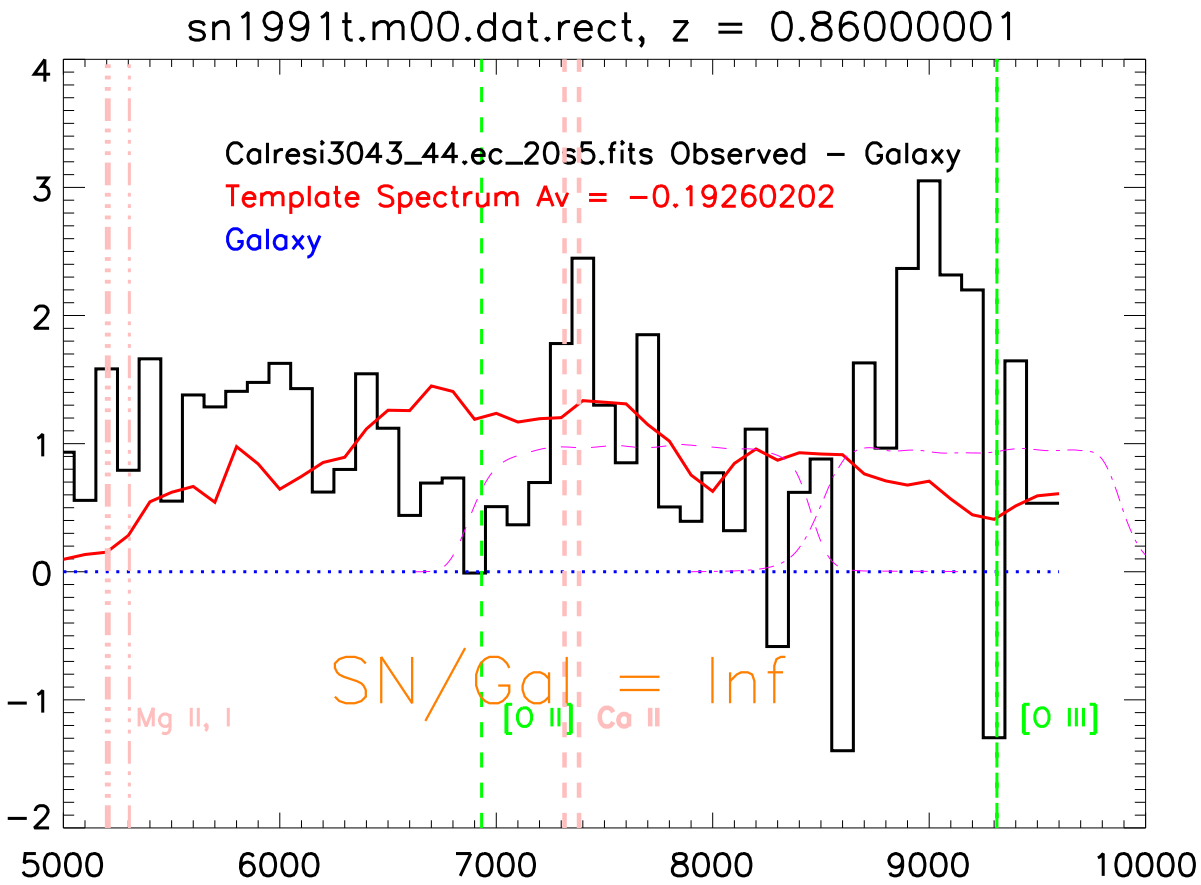

sn1990n.m07.dat.rect, z = 0.88000000
Calresi3043_44.ec_20s5.fits Observed − Galaxy
Template Spectrum Av = −0.29974487
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
4
3
2
1
0
−1
−2
5000
6000
7000
8000
9000
10000

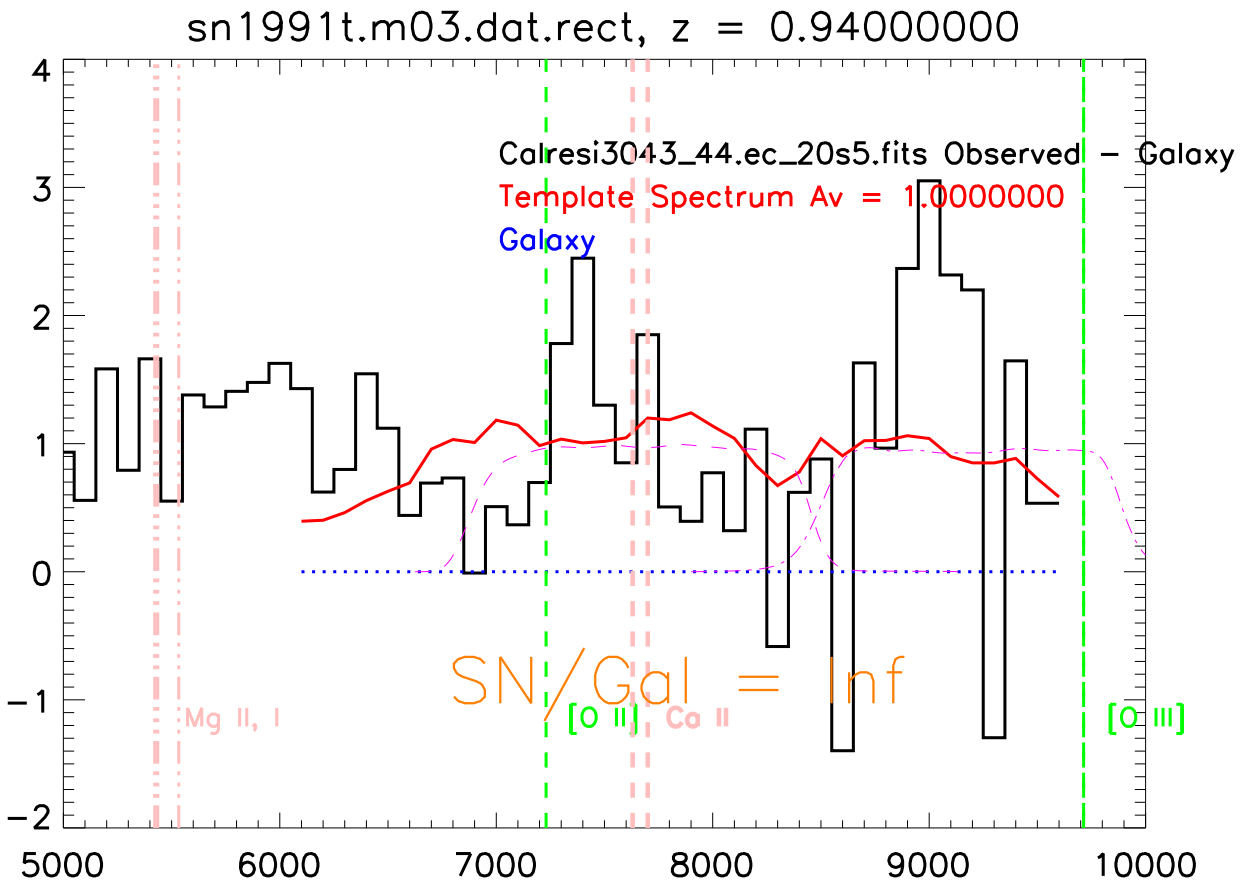

sn1981b.m00.dat.rect, z = 1.5000000
Calresi3043_44.ec_20s5.fits Observed − Galaxy
Template Spectrum Av = −1.0000000
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
4
3
2
1
0
−1
−2
5000
6000
7000
8000
9000
10000

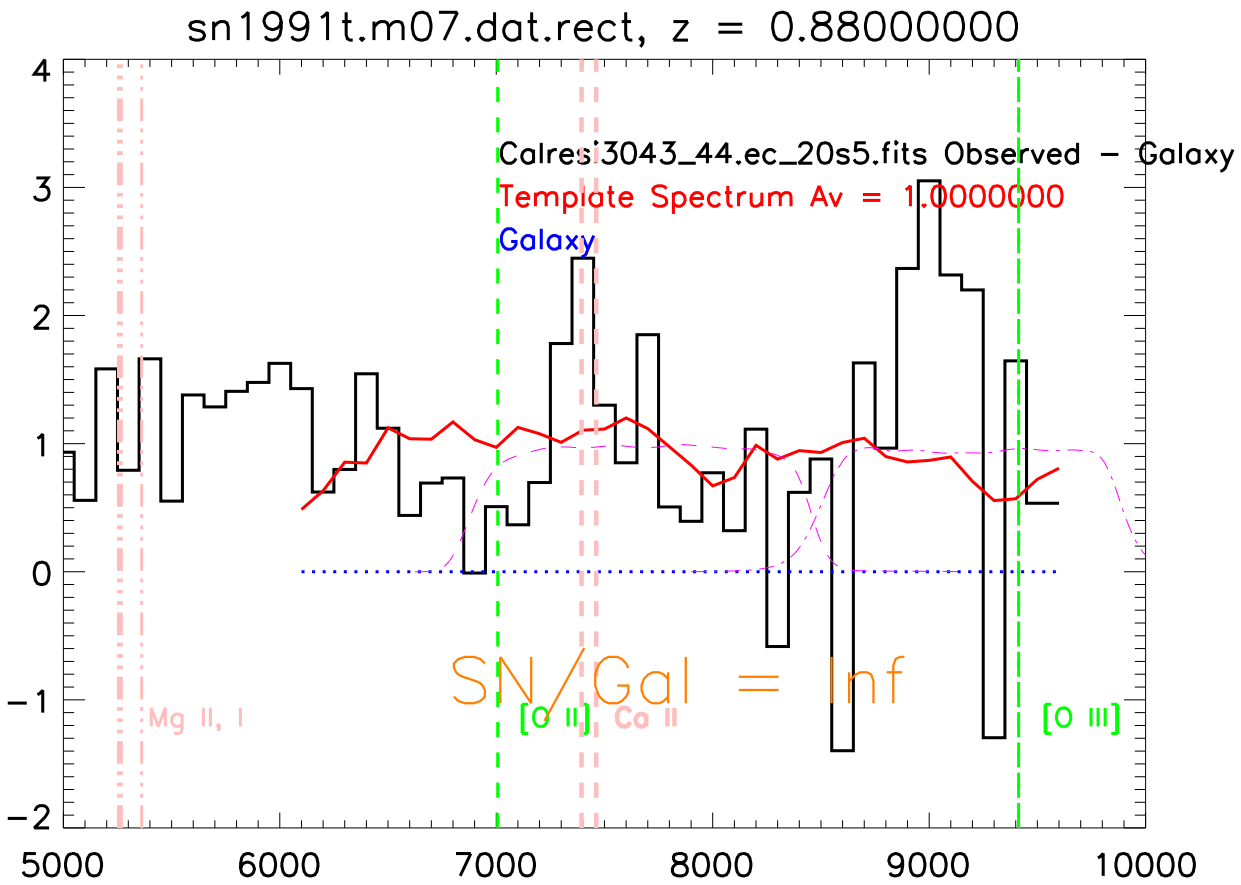

sn1989b.m07.dat.rect, z = 0.80000001
Calresi3043_44.ec_20s5.fits Observed + Galaxy
Template Spectrum Av = −0.082908155
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
4
3
2
1
0
−1
−2
5000
6000
7000
8000
9000
10000

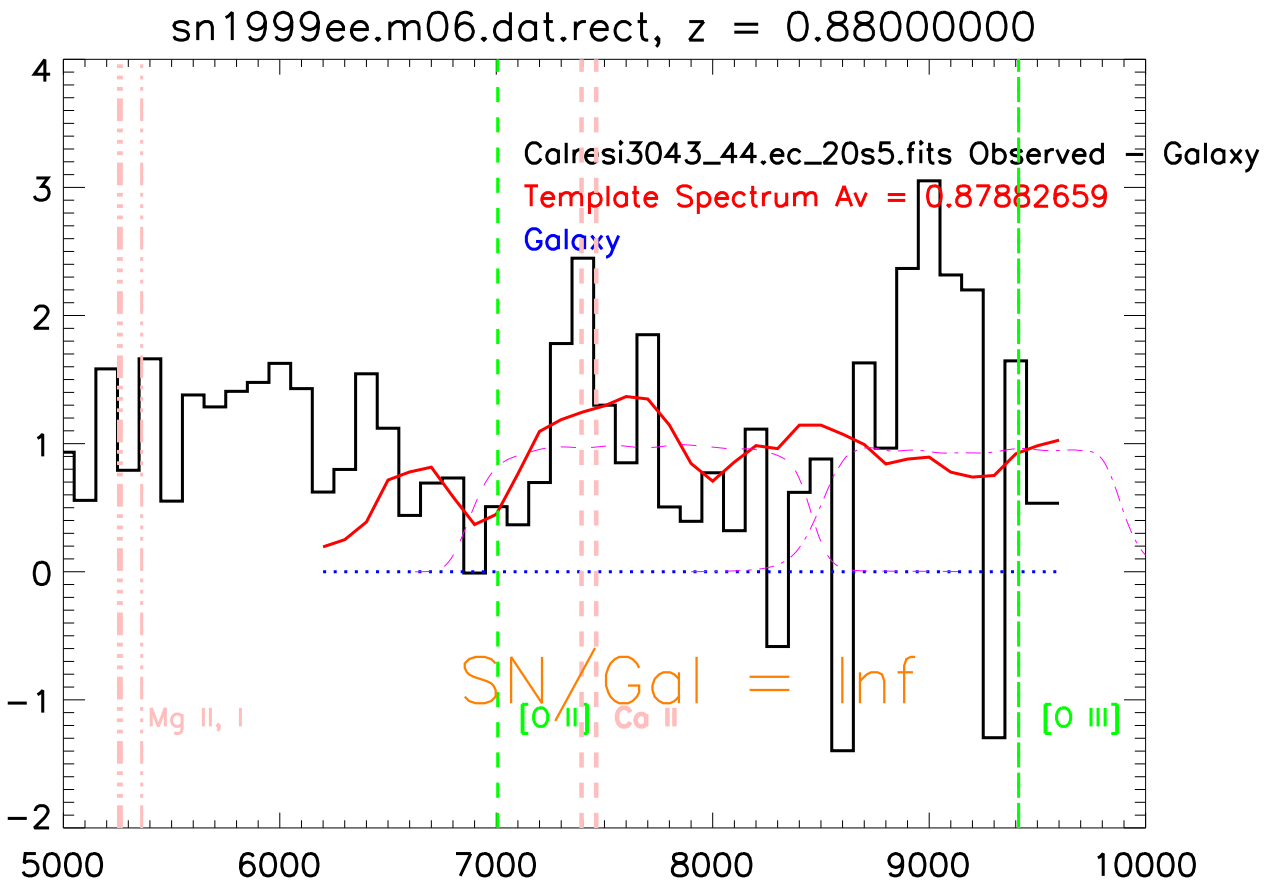

sn1991t.m08.dat.rect, z = 0.87000000
Calresi3043_44.ec_20s5.fits Observed − Galaxy
Template Spectrum Av = 1.0000000
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
4
3
2
1
0
−1
−2
5000
6000
7000
8000
9000
10000

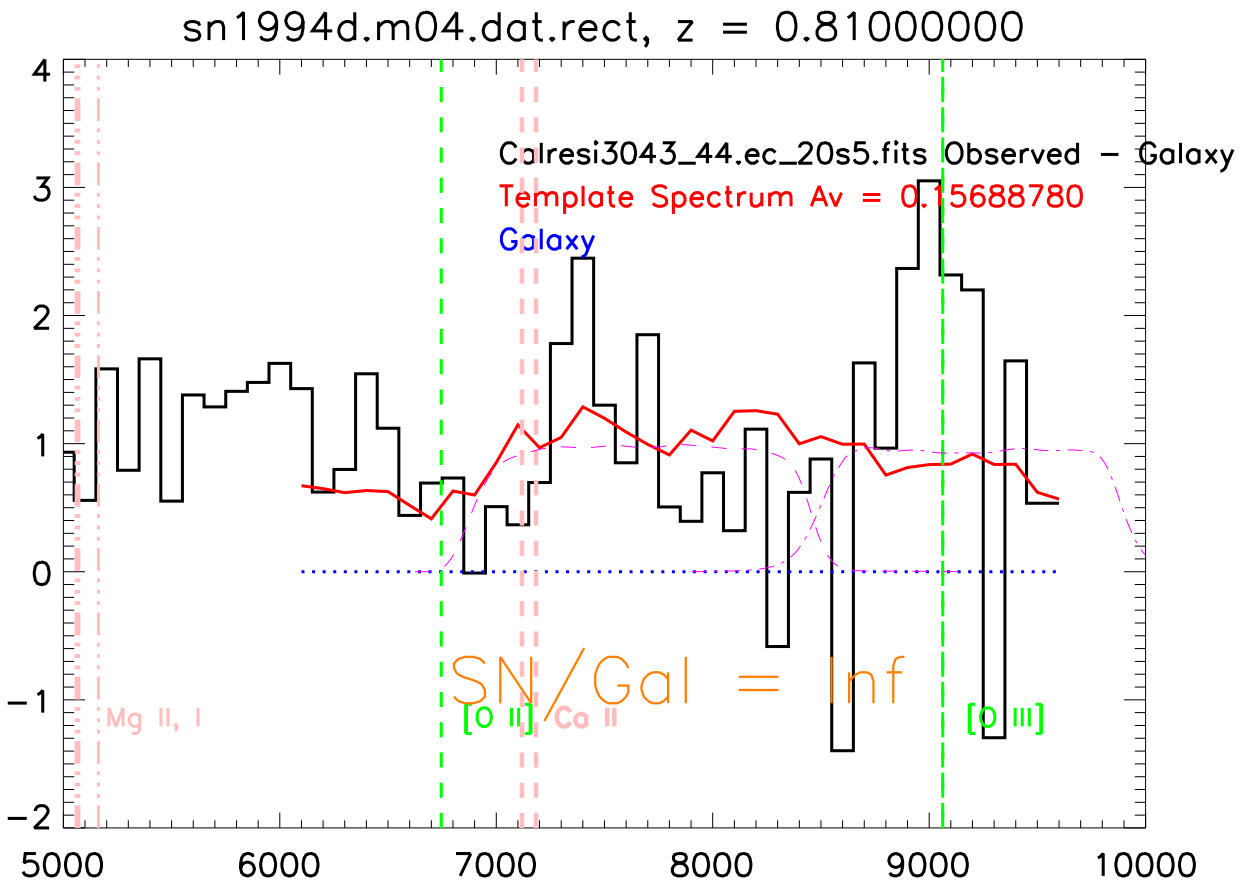

sn1989b.m05.dat.rect, z = 0.80000001
Calresi3043_44.ec_20s5.fits Observed − Galaxy
Template Spectrum Av = −1.0000000
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
4
3
2
1
0
−1
−2
5000
6000
7000
8000
9000
10000

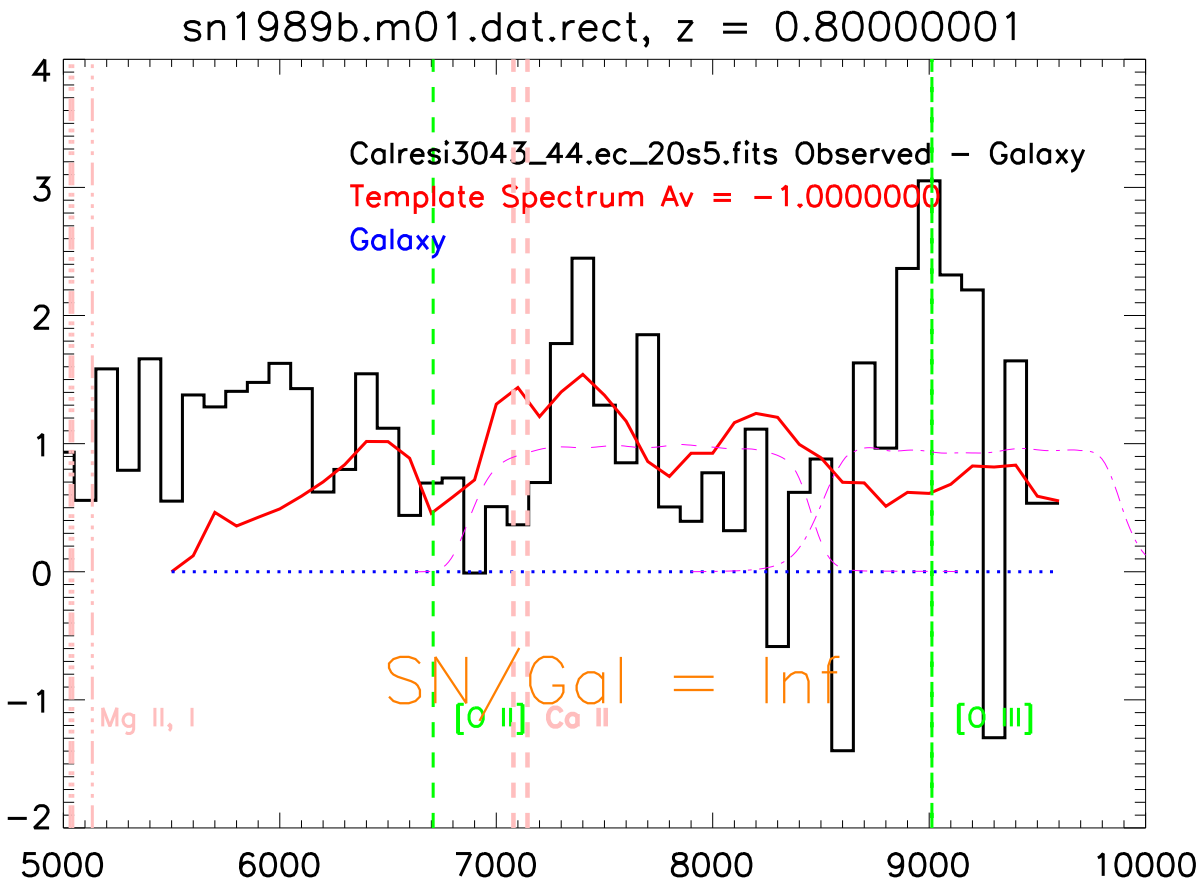

sn1991t.m00.dat.rect, z = 0.86000001
Calresi3043_44.ec_20s5.fits Observed − Galaxy
Template Spectrum Av = −0.19260202
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
4
3
2
1
0
−1
−2
5000
6000
7000
8000
9000
10000

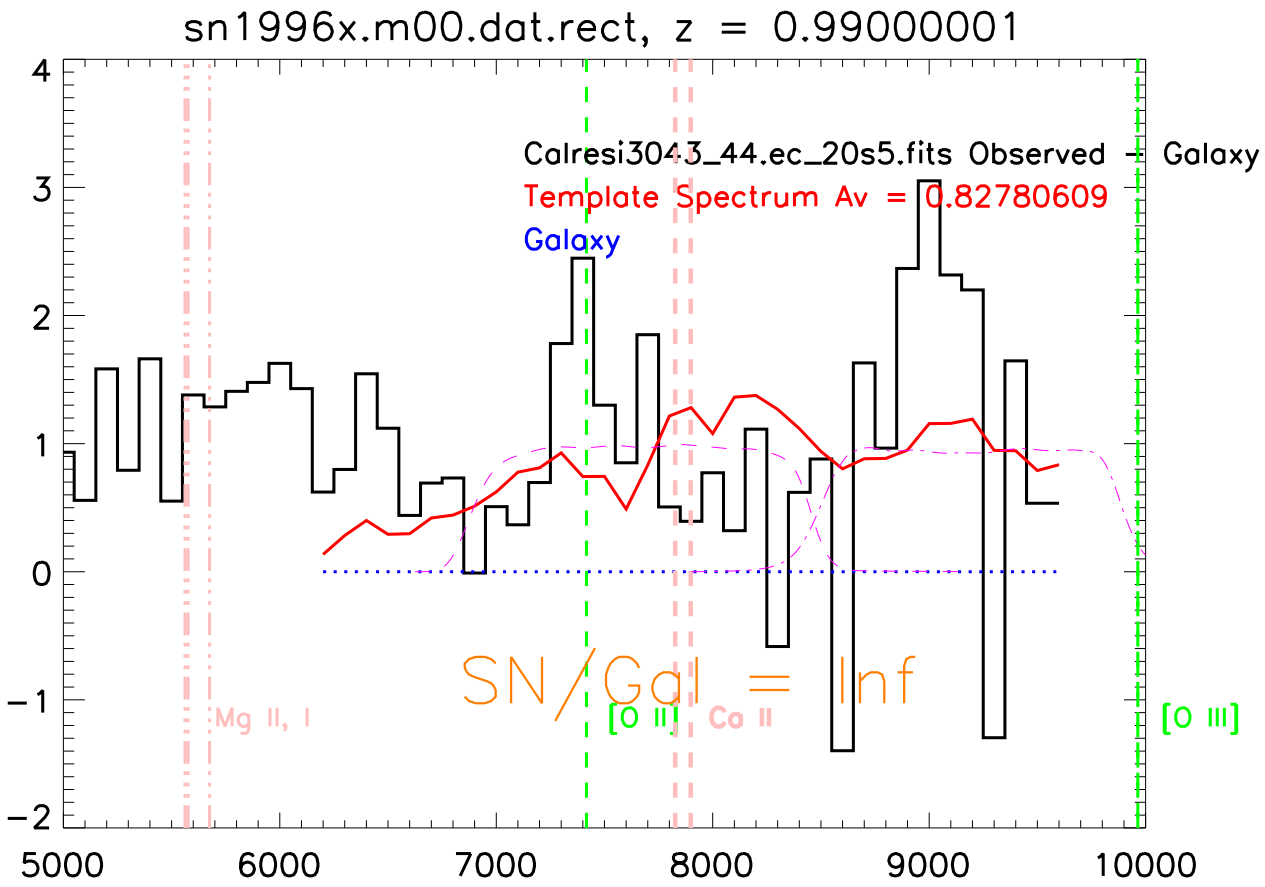

sn1991t.m03.dat.rect, z = 0.94000000
Calresi3043_44.ec_20s5.fits Observed − Galaxy
Template Spectrum Av = 1.0000000
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
4
3
2
1
0
−1
−2
5000
6000
7000
8000
9000
10000

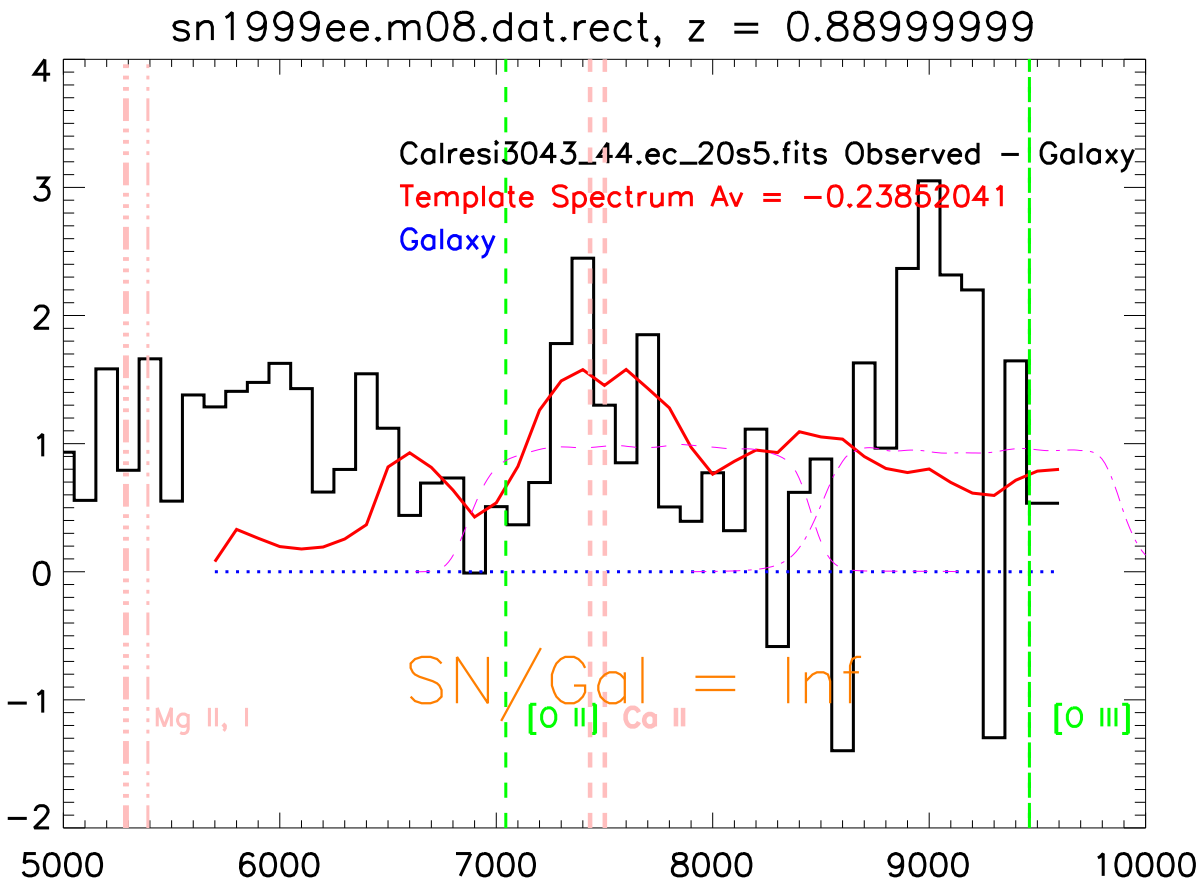

sn1991t.m07.dat.rect, z = 0.88000000
Calres'3043_44.ec_20s5.fits Observed − Galaxy
Template Spectrum Av = 1.0000000
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
4
3
2
1
0
−1
−2
5000
6000
7000
8000
9000
10000

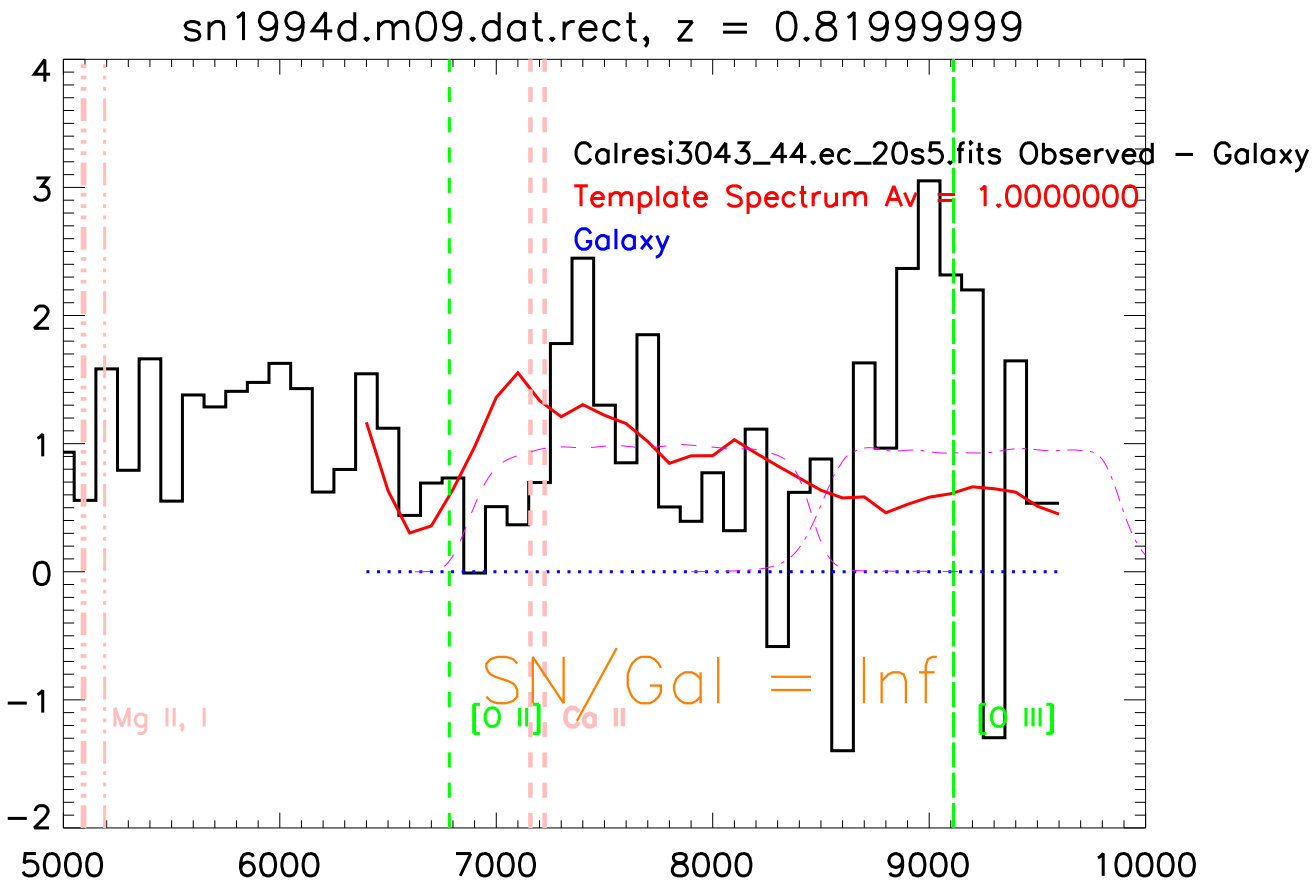

sn1999ee.m06.dat.rect, z = 0.88000000
Calresi3043_44.ec_20s5.fits Observed – Galaxy
Template Spectrum Av = 0.87882659
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
4
3
2
1
0
−1
−2
5000
6000
7000
8000
9000
10000


sn1994d.m04.dat.rect, z = 0.81000000
Calresi3043_44.ec_20s5.fits Observed − Galaxy
Template Spectrum Av = 0.15688780
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
4
3
2
1
0
−1
−2
5000
6000
7000
8000
9000
10000


sn1989b.m01.dat.rect, z = 0.80000001
Calresi3043_44.ec_20s5.fits Observed − Galaxy
Template Spectrum Av = −1.0000000
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
4
3
2
1
0
−1
−2
5000
6000
7000
8000
9000
10000


sn1996x.m00.dat.rect, z = 0.99000001
Calresi3043_44.ec_20s5.fits Observed - Galaxy
Template Spectrum Av = 0.82780609
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
4
3
2
1
0
−1
−2
5000
6000
7000
8000
9000
10000


sn1999ee.m08.dat.rect, z = 0.88999999
Calresi3043_44.ec_20s5.fits Observed − Galaxy
Template Spectrum Av = −0.23852041
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
4
3
2
1
0
−1
−2
5000
6000
7000
8000
9000
10000


sn1994d.m09.dat.rect, z = 0.81999999
Calresi3043_44.ec_20s5.fits Observed − Galaxy
Template Spectrum Av = 1.0000000
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
4
3
2
1
0
−1
−2
5000
6000
7000
8000
9000
10000