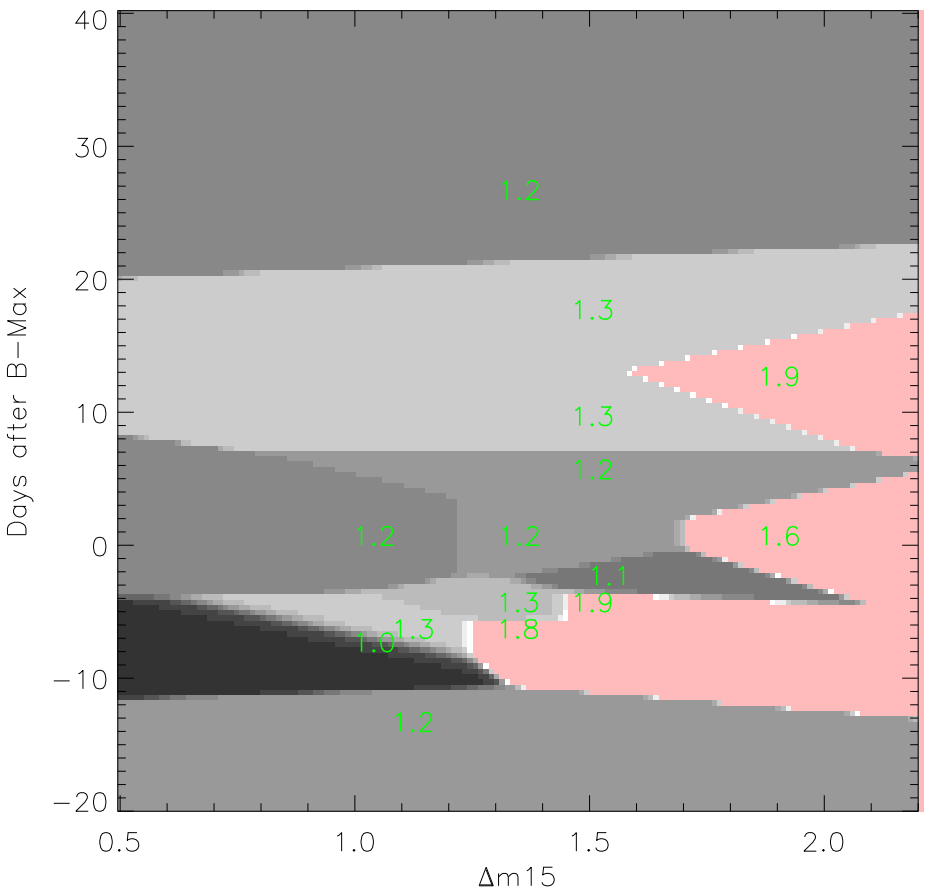
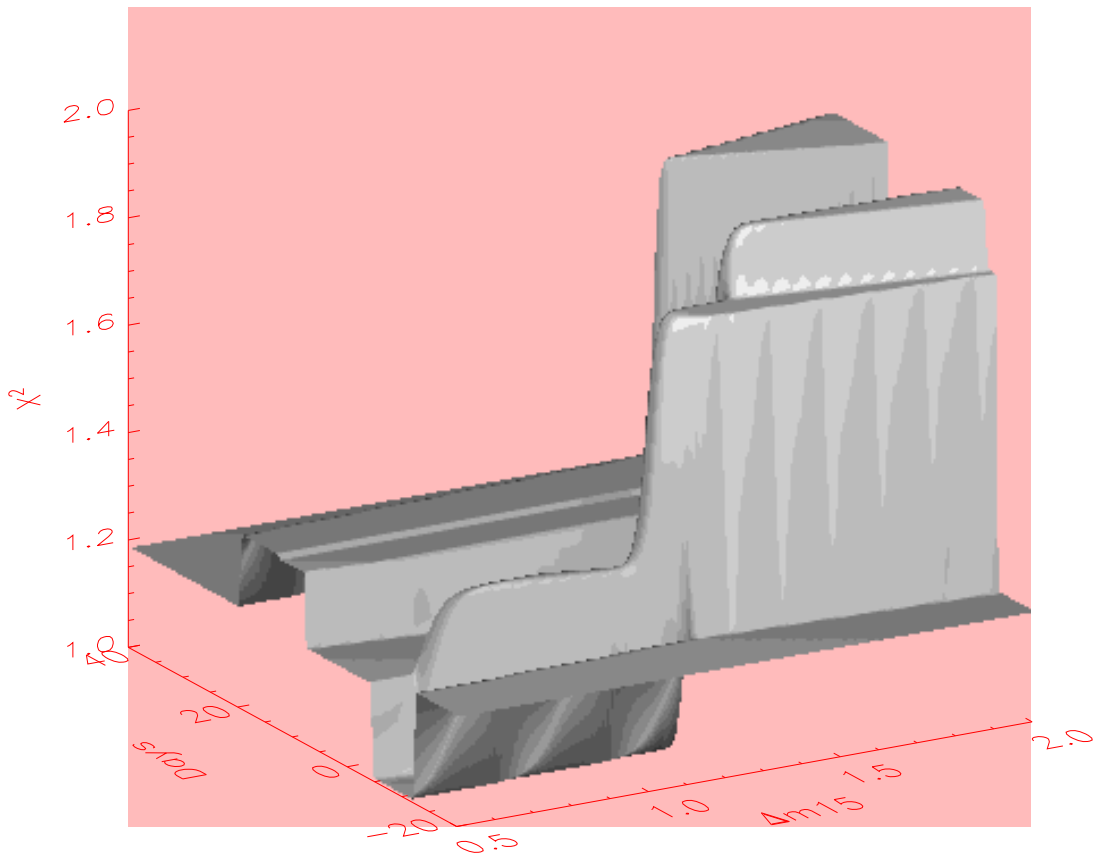
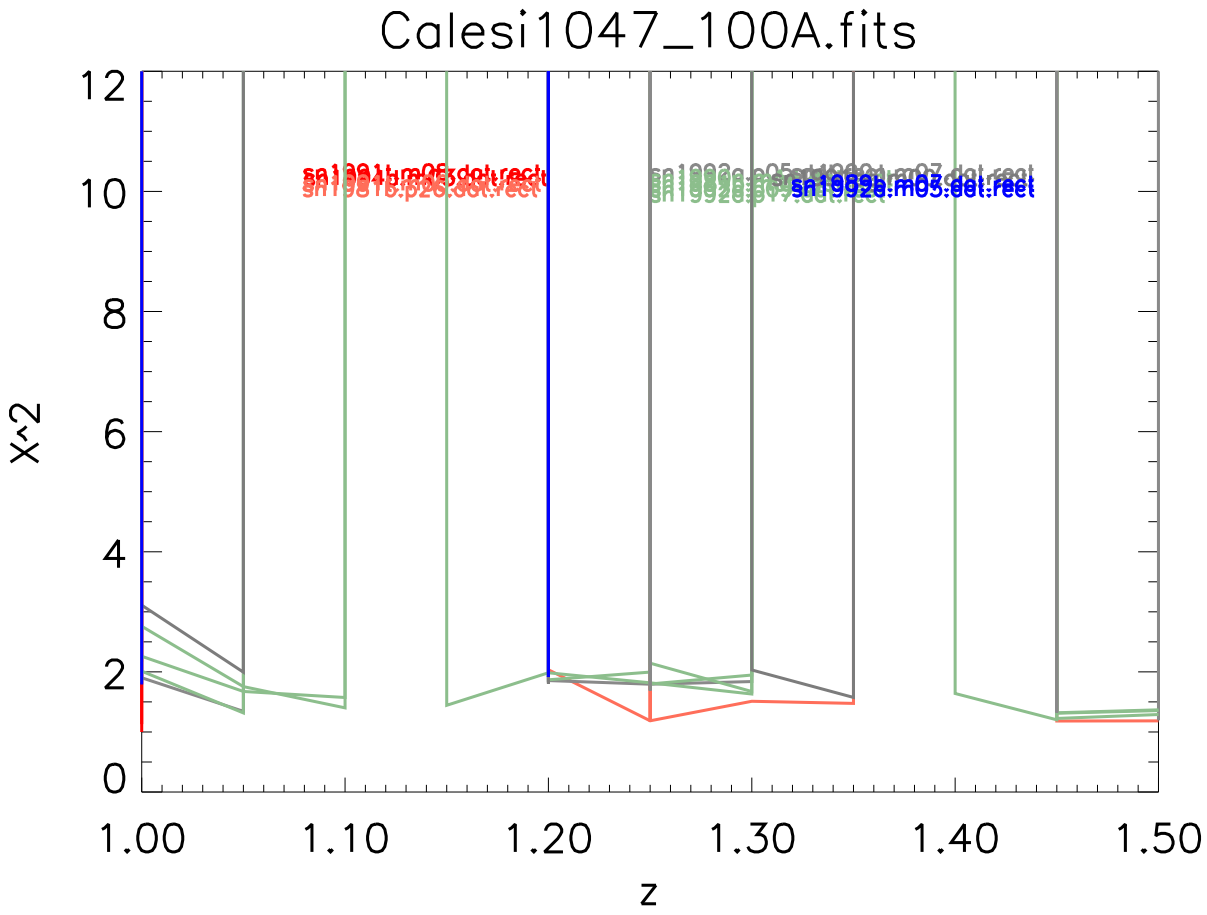
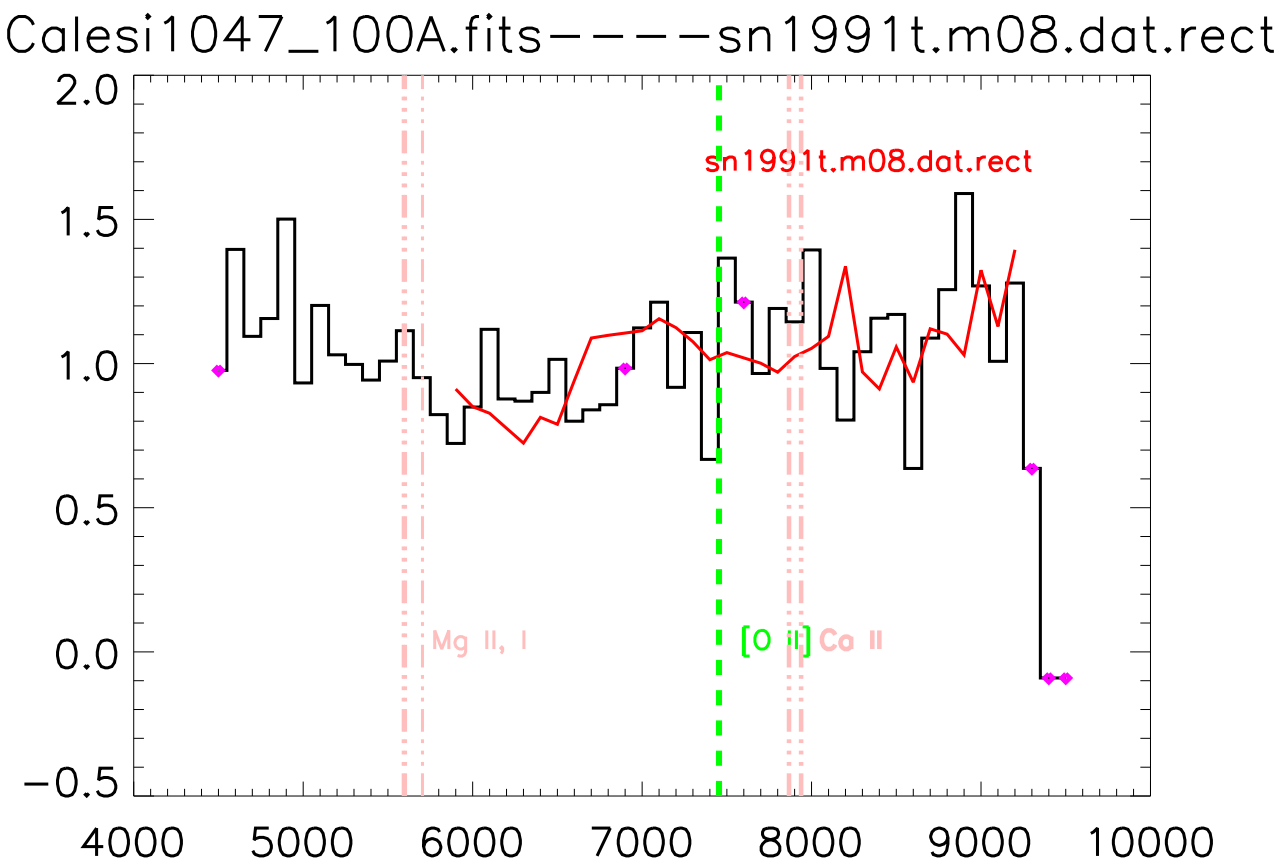
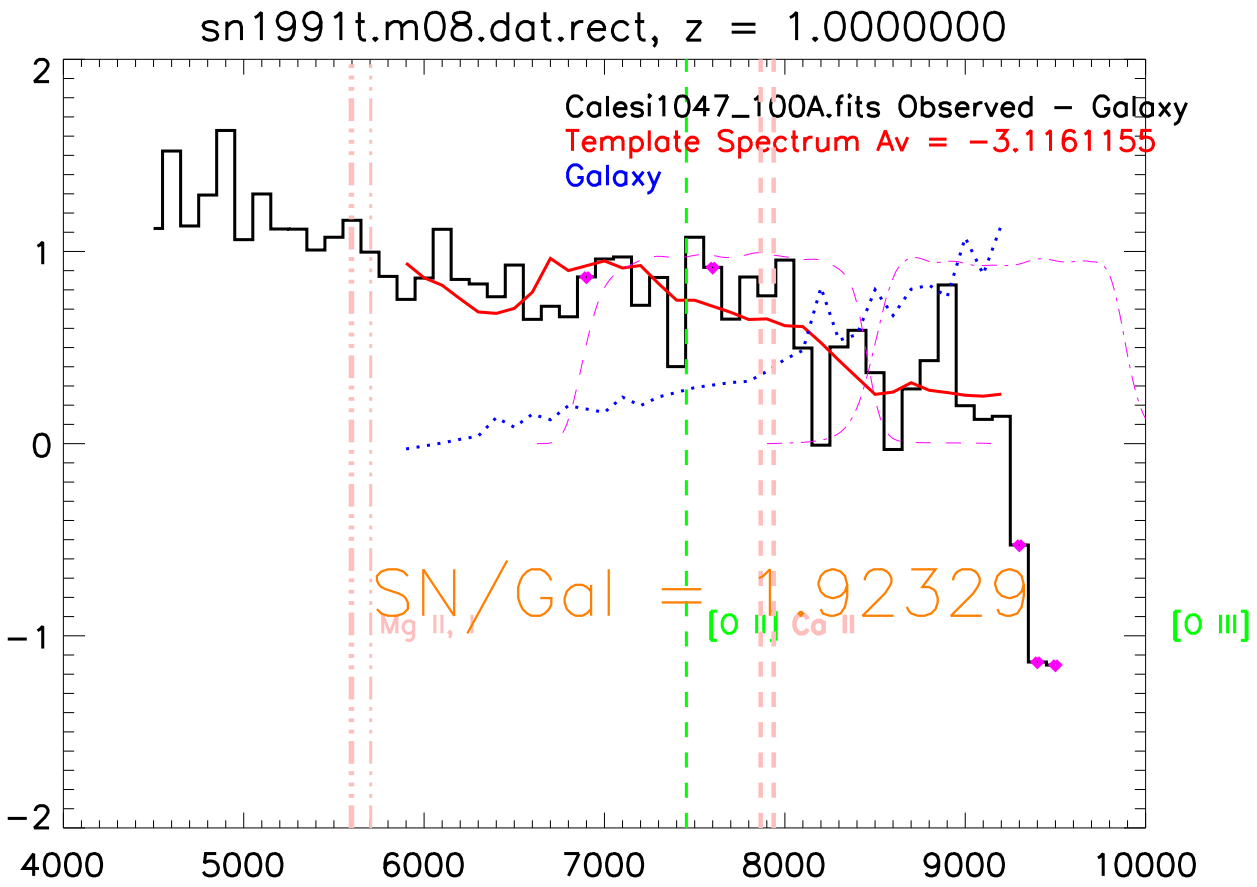

40
30
20
10
0
−10
−20
0.5
1.0
1.5
2.0
Days after B−Max
Δm15
1.2
1.3
1.9
1.3
1.2
1.2
1.2
1.6
1.1
1.3
1.9
1.8
1.0
1.3
1.2

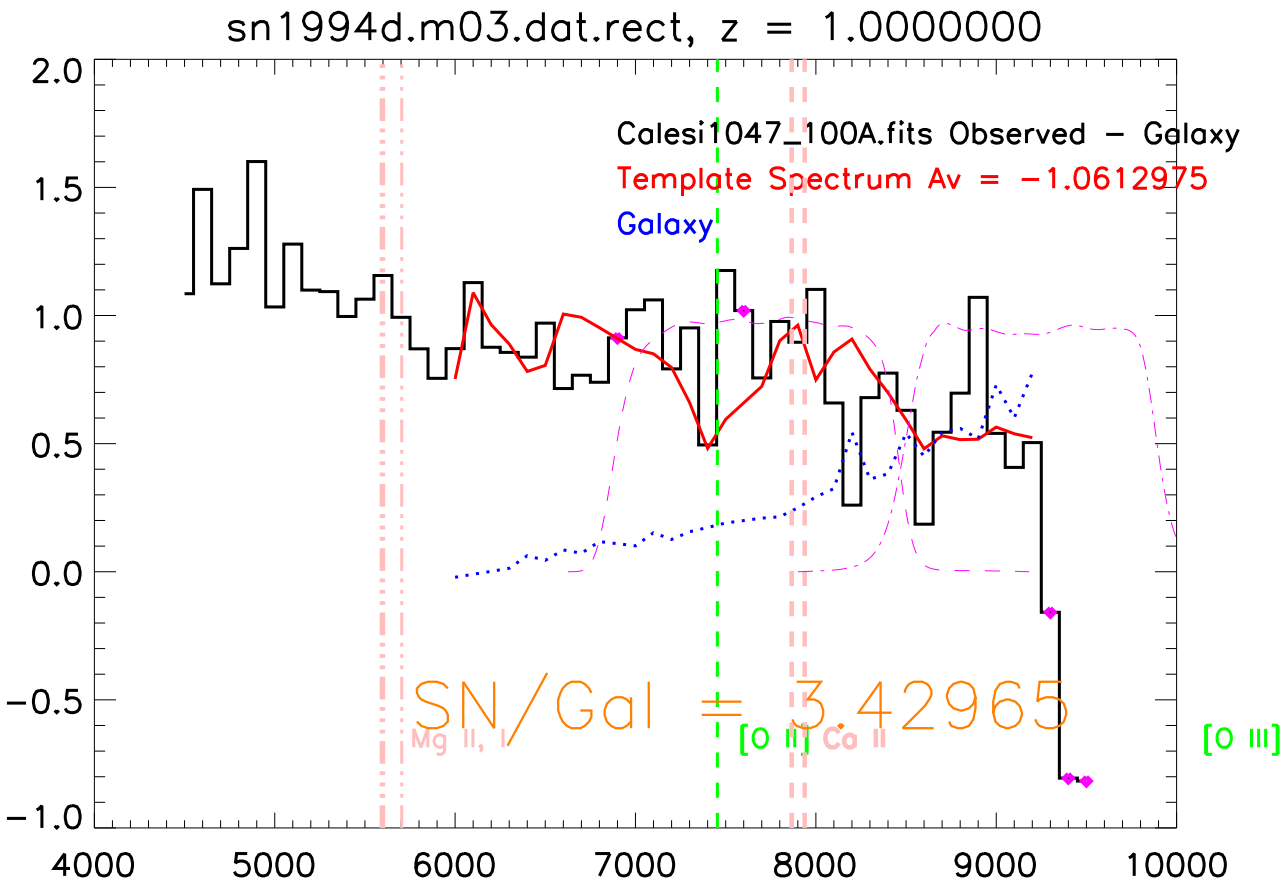


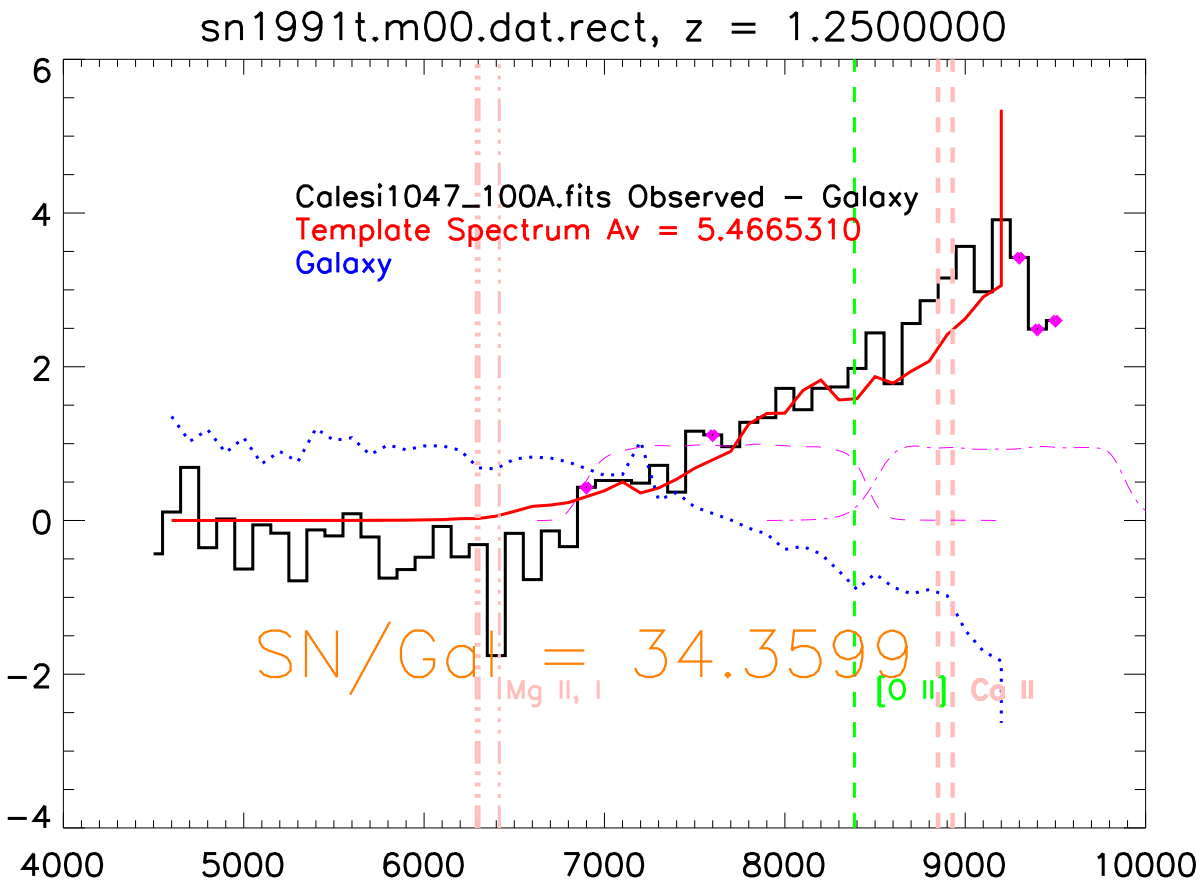
2.0
1.8
1.6
1.4
1.2
1.0
χ^2
40
20
0
−20
Days
0.5
1.0
1.5
2.0
Δm15

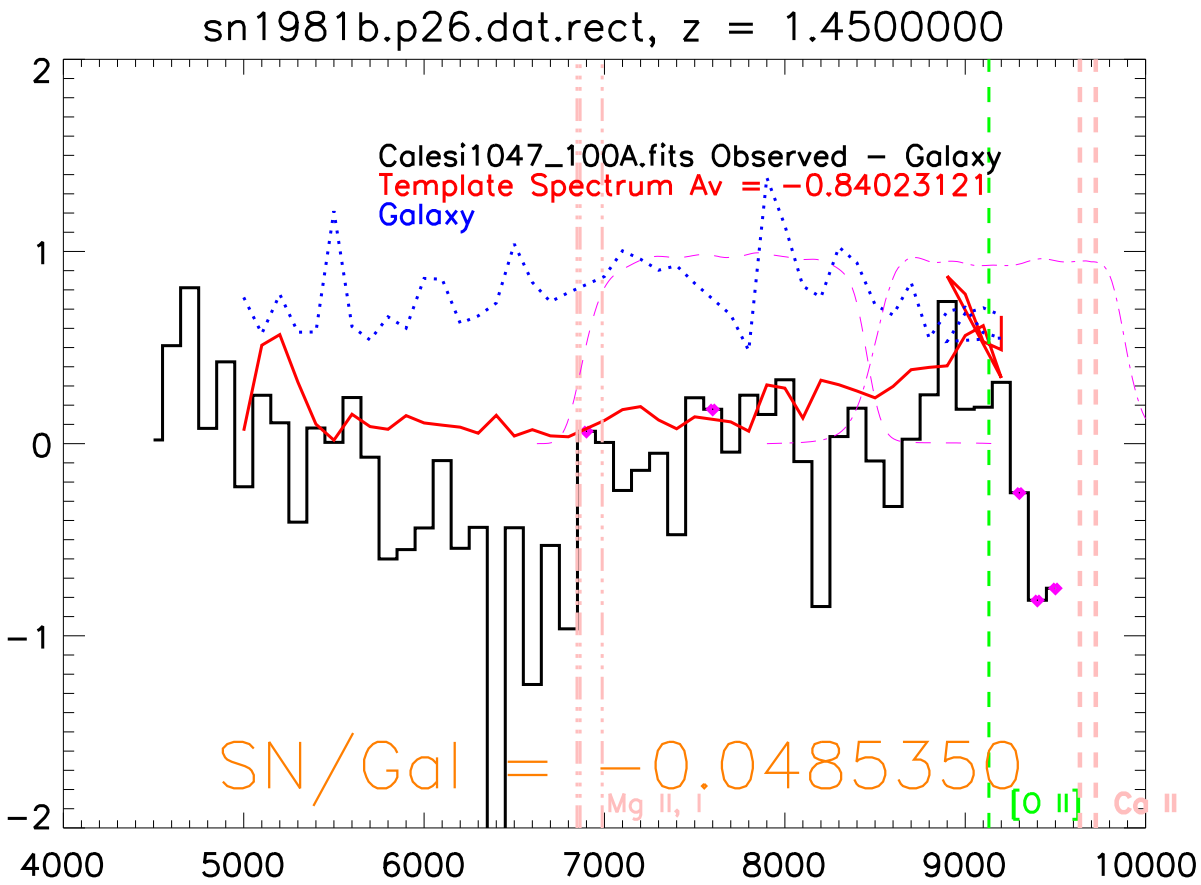

Calesi1047_100A.fits
12
10
8
6
4
2
0
X^2
1.00
1.10
1.20
1.30
1.40
1.50
z
sn1992a.m05.dat.rest

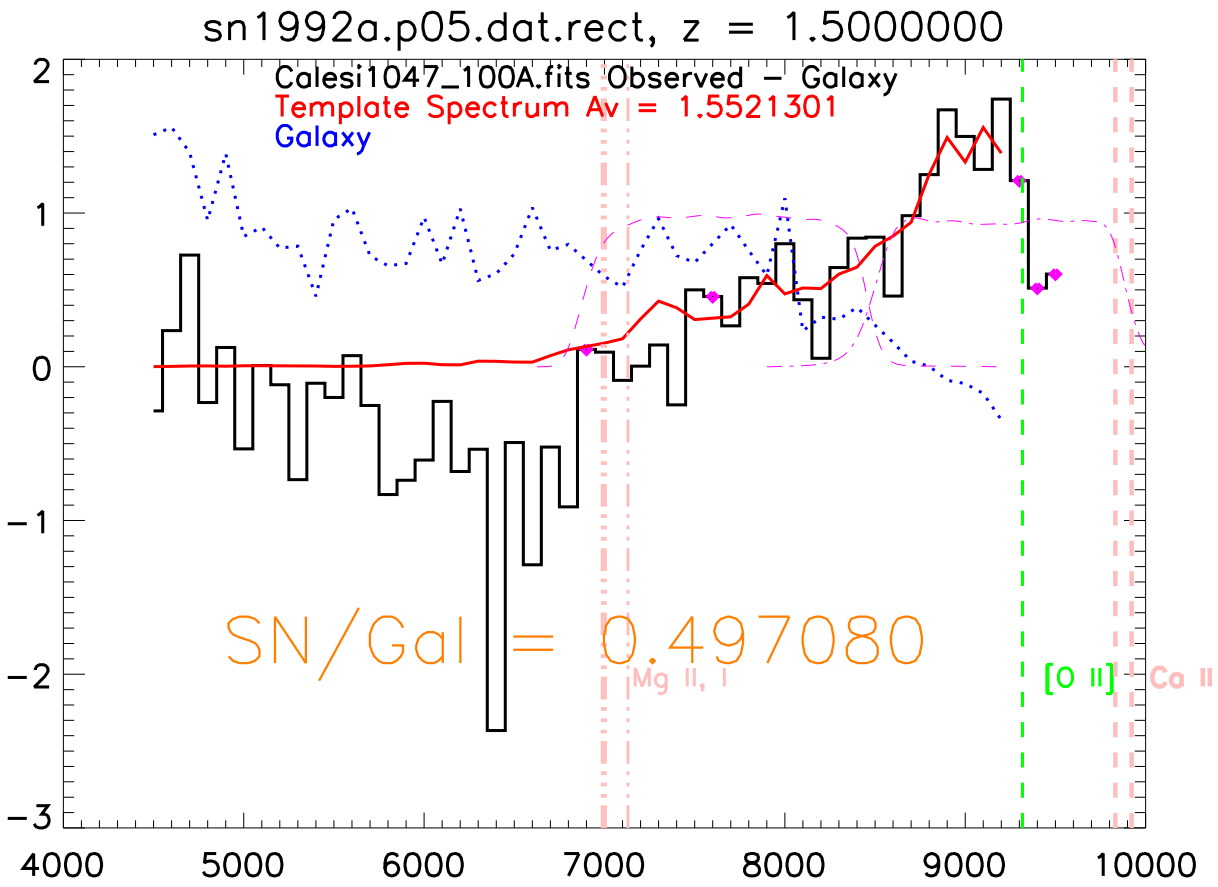

Calesi1047_100A.fits----sn1991t.m08.dat.rect
sn1991t.m08.dat.rect
Mg II, I
[O II] Ca II
2.0
1.5
1.0
0.5
0.0
−0.5
4000
5000
6000
7000
8000
9000
10000

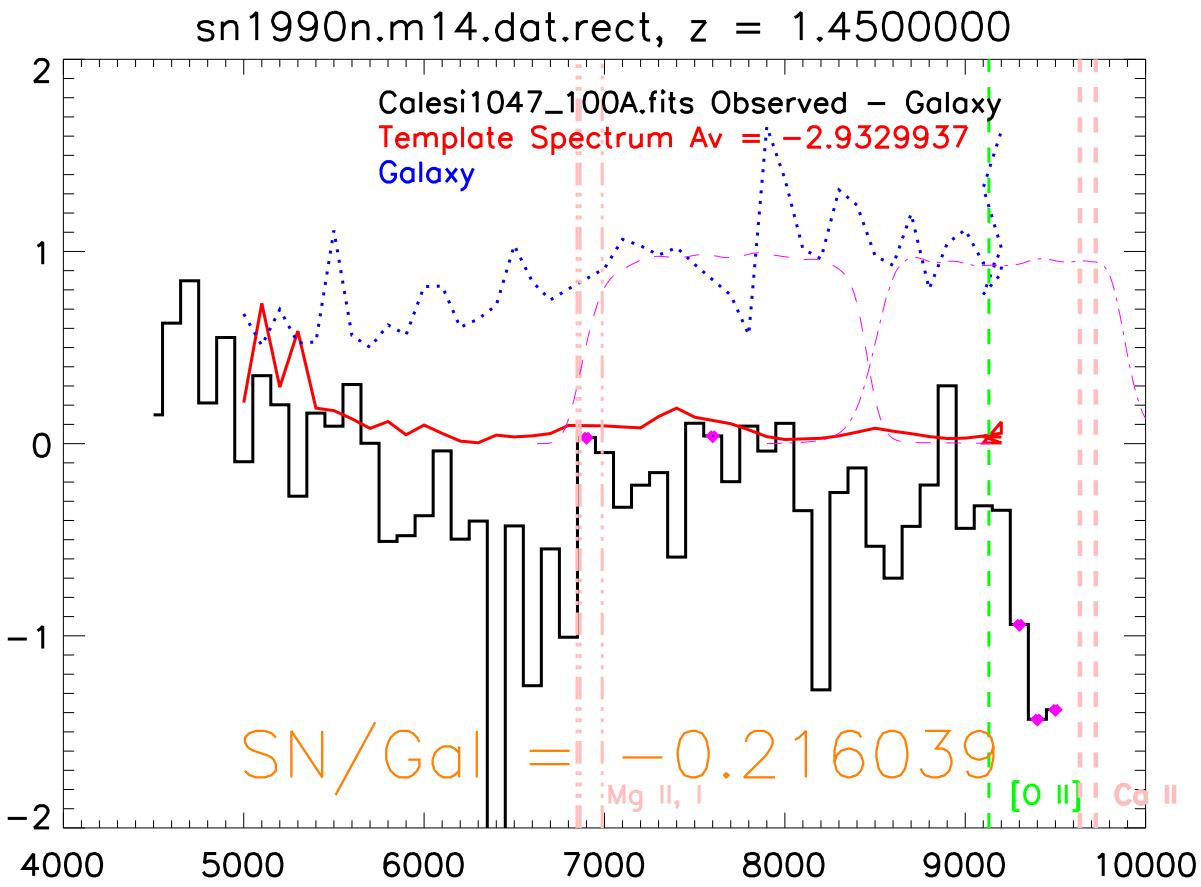

sn1991t.m08.dat.rect, z = 1.0000000
Calesi1047_100A.fits Observed − Galaxy
Template Spectrum Av = −3.1161155
Galaxy
SN/Gal = 1.92329
[O II]
Ca II
[O III]
2
1
0
−1
−2
4000
5000
6000
7000
8000
9000
10000

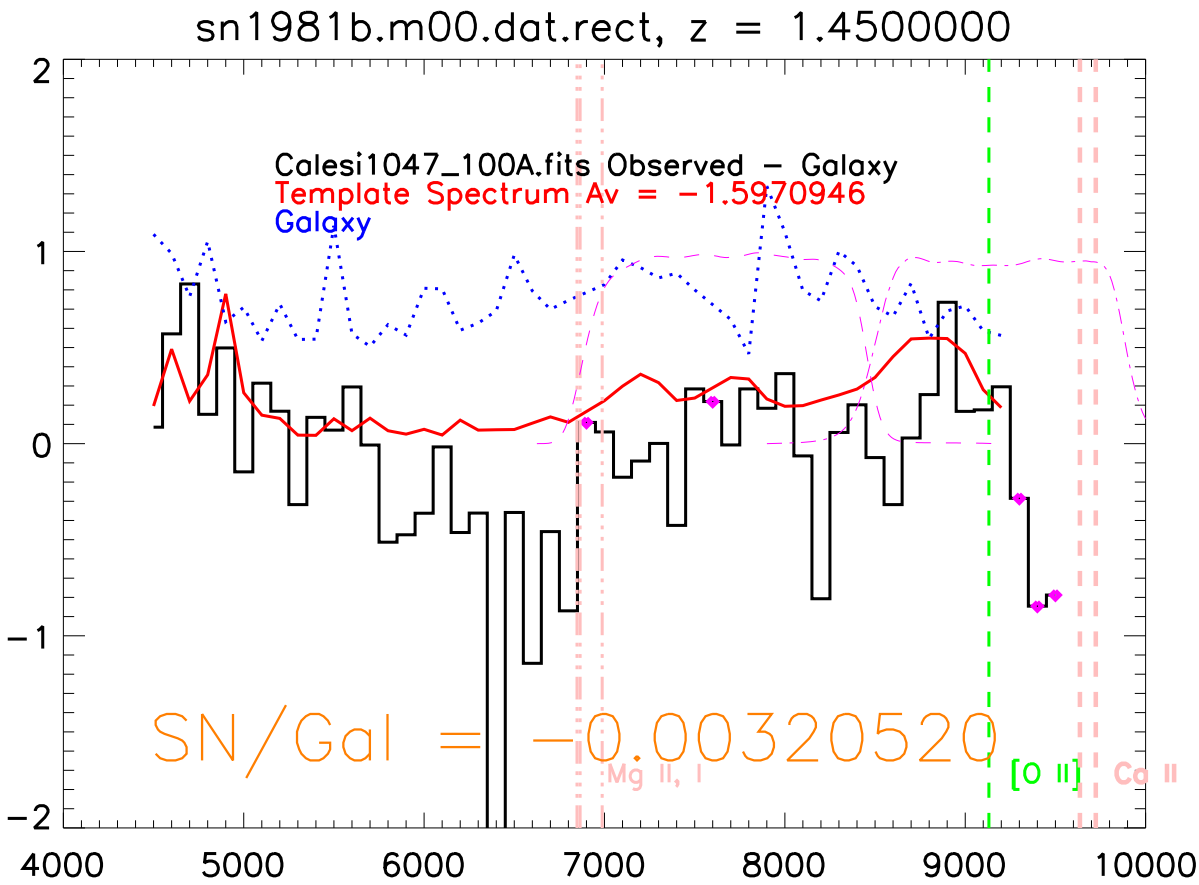

sn1994d.m03.dat.rect, z = 1.0000000
Calesi1047_100A.fits Observed − Galaxy
Template Spectrum Av = −1.0612975
Galaxy
SN/Gal = 3.42965
Mg II, I
[O II]
Ca II
[O III]
2.0
1.5
1.0
0.5
0.0
−0.5
−1.0
4000
5000
6000
7000
8000
9000
10000

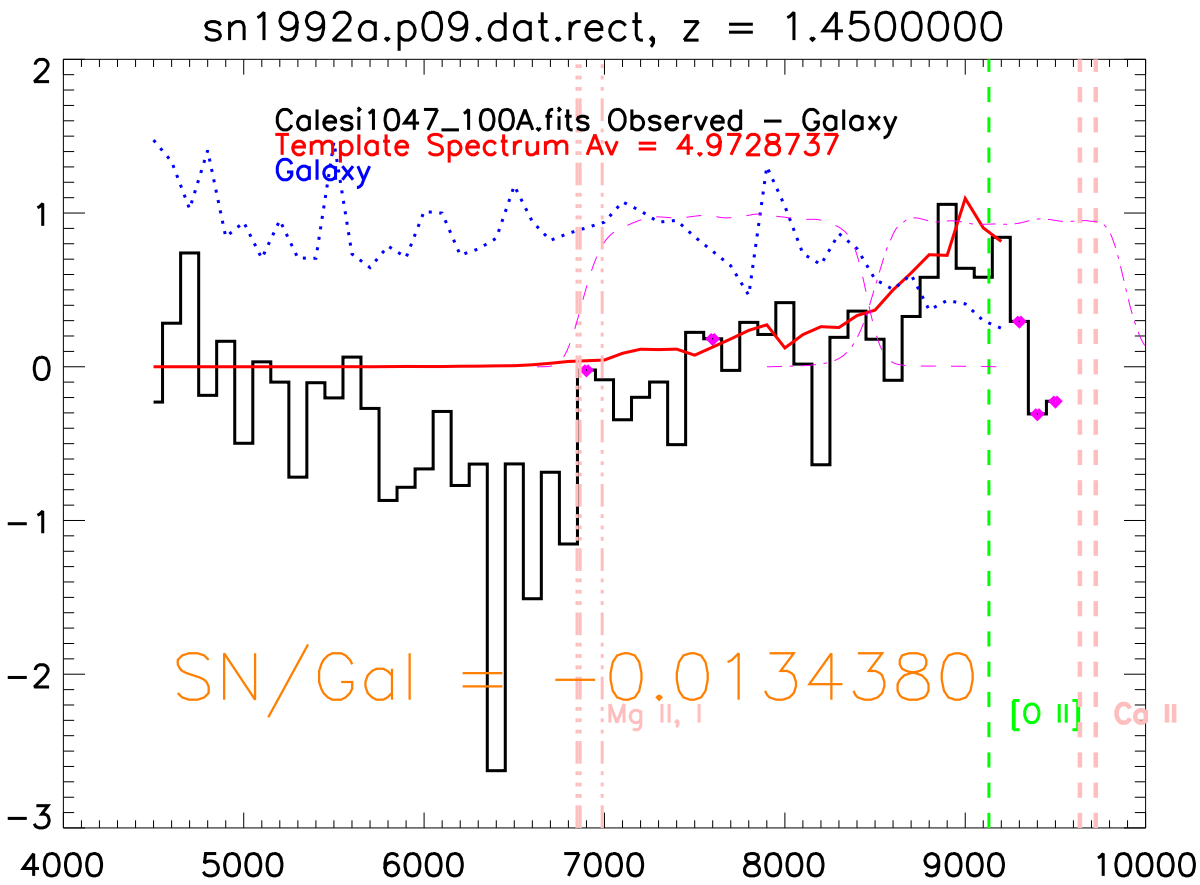

sn1991t.m00.dat.rect, z = 1.2500000
Calesi1047_100A.fits Observed − Galaxy
Template Spectrum Av = 5.4665310
Galaxy
SN/Gal = 34.3599
Mg II, I
[O II]
Ca II
6
4
2
0
−2
−4
4000
5000
6000
7000
8000
9000
10000

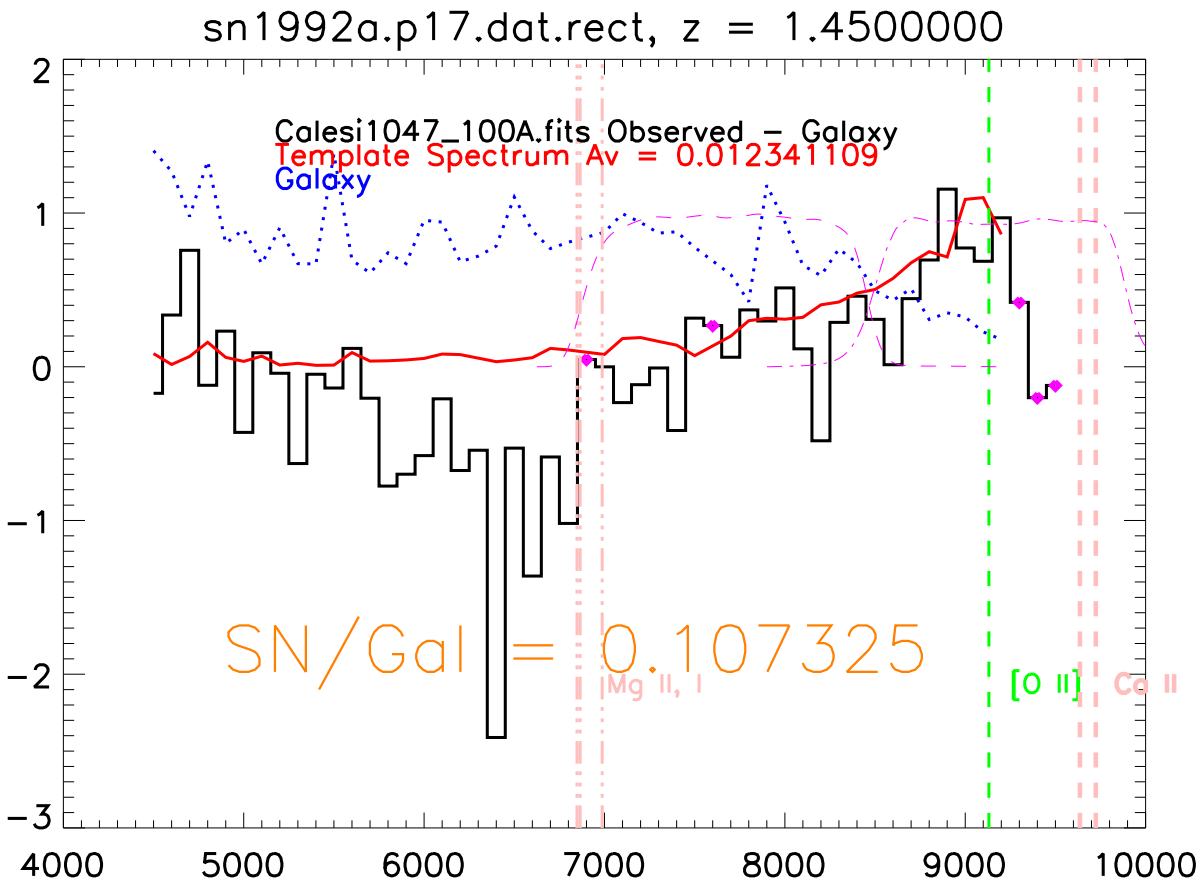

sn1981b.p26.dat.rect, z = 1.4500000
Calesi1047_100A.fits Observed − Galaxy
Template Spectrum Av = −0.84023121
Galaxy
SN/Gal = −0.0485350
Mg II, I
[O II]
Ca II
2
1
0
−1
−2
4000
5000
6000
7000
8000
9000
10000

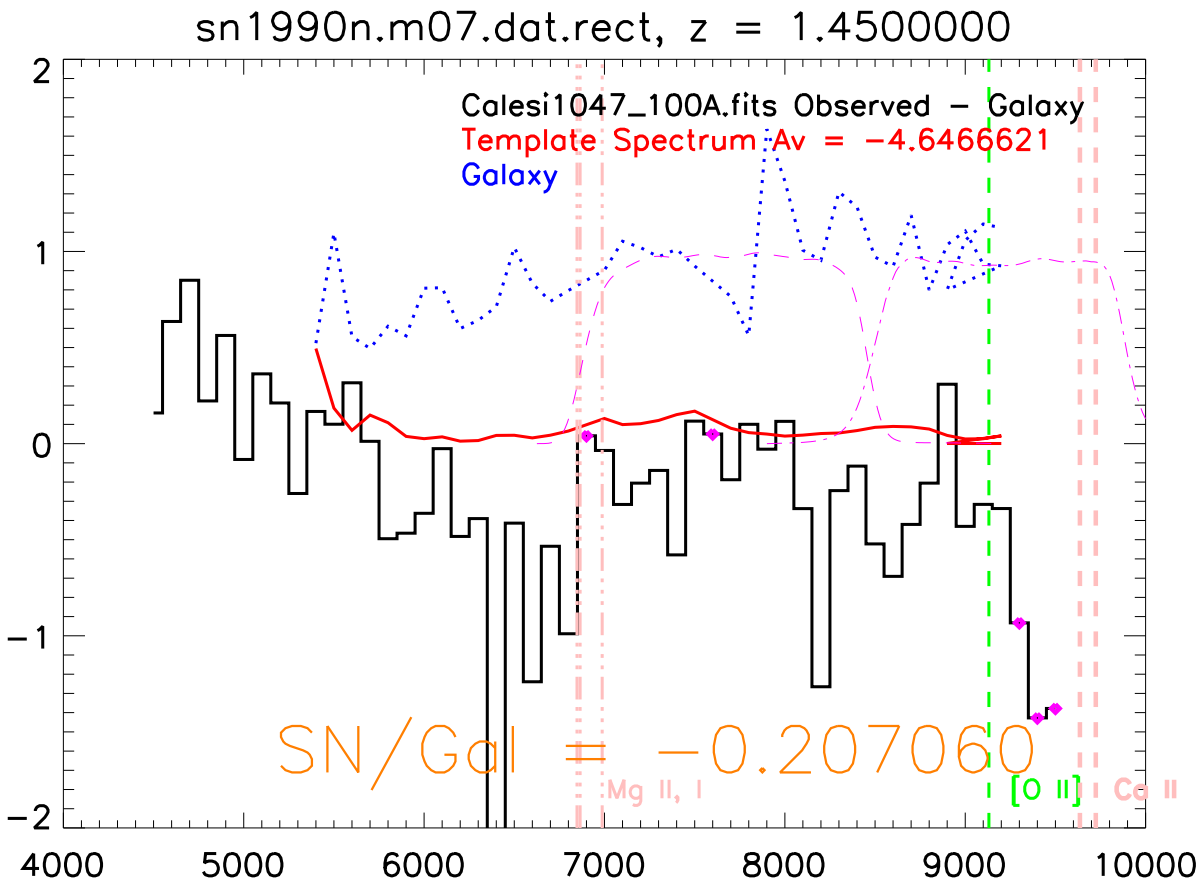

sn1992a.p05.dat.rect, z = 1.5000000
Calesi1047_100A.fits Observed − Galaxy
Template Spectrum Av = 1.5521301
Galaxy
SN/Gal = 0.497080
Mg II, I
[O II]
Ca II
2
1
0
−1
−2
−3
4000
5000
6000
7000
8000
9000
10000

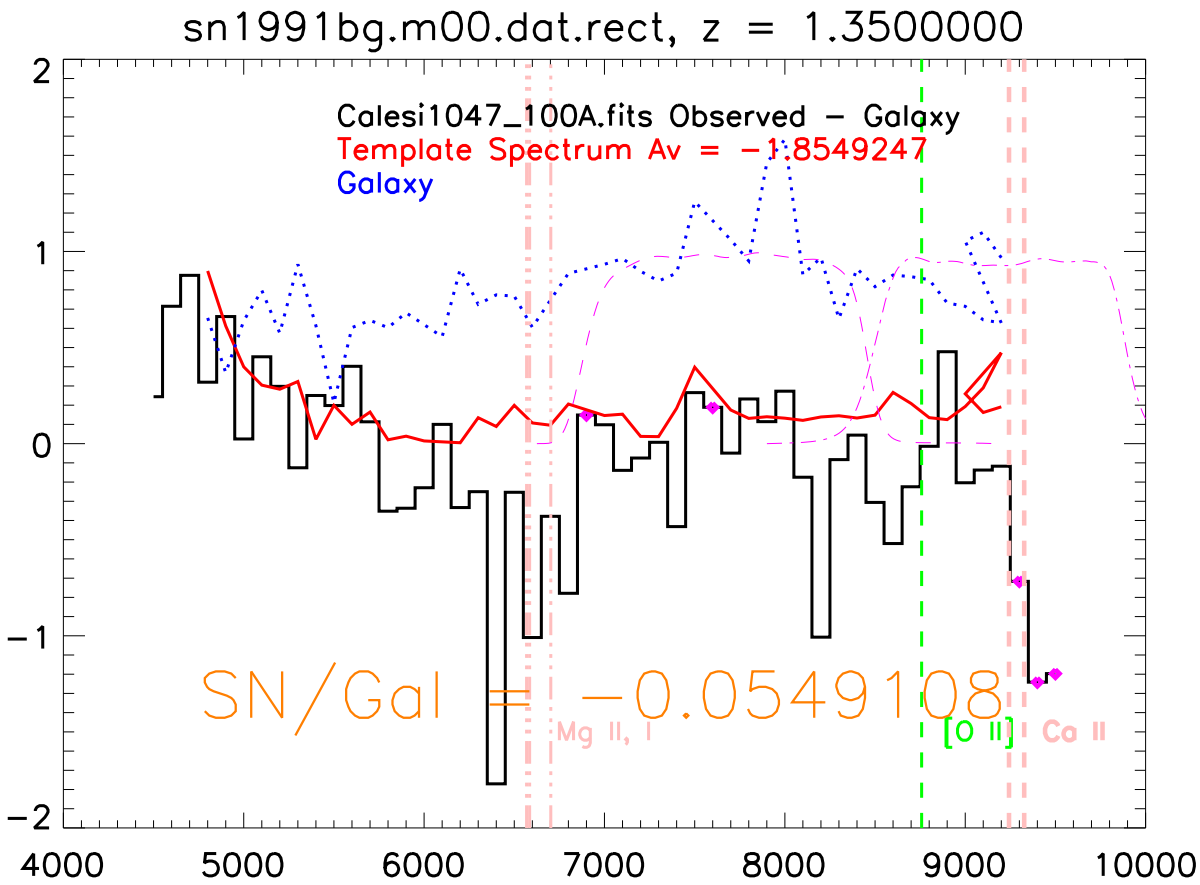

sn1990n.m14.dat.rect, z = 1.4500000
Calesi1047_100A.fits Observed − Galaxy
Template Spectrum Av = −2.9329937
Galaxy
SN/Gal = −0.216039
Mg II, I
[O II]
Ca II
2
1
0
−1
−2
4000
5000
6000
7000
8000
9000
10000

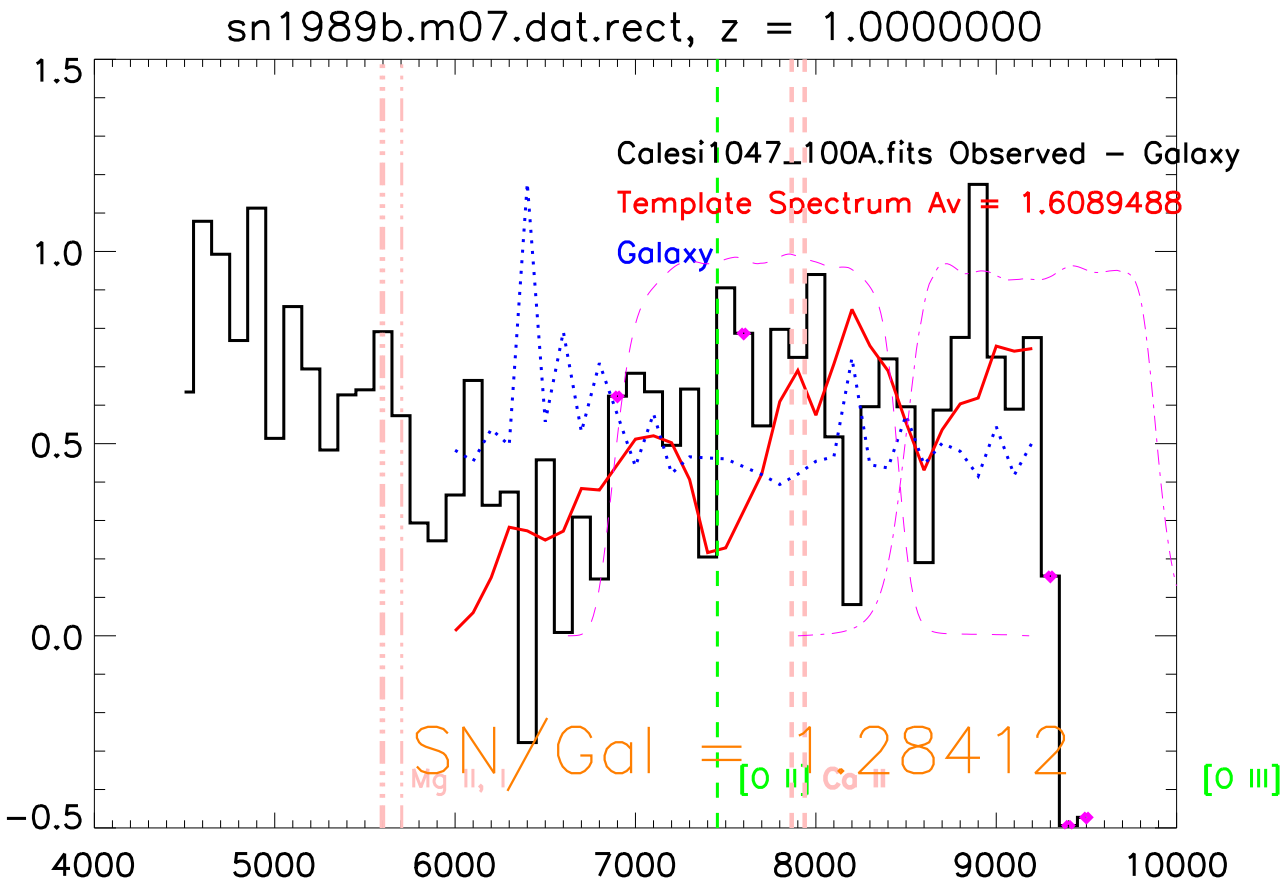

sn1981b.m00.dat.rect, z = 1.4500000
Calesi1047_100A.fits Observed − Galaxy
Template Spectrum Av = −1.5970946
Galaxy
SN/Gal = −0.00320520
Mg II, I
[O II]
Ca II
2
1
0
−1
−2
4000
5000
6000
7000
8000
9000
10000

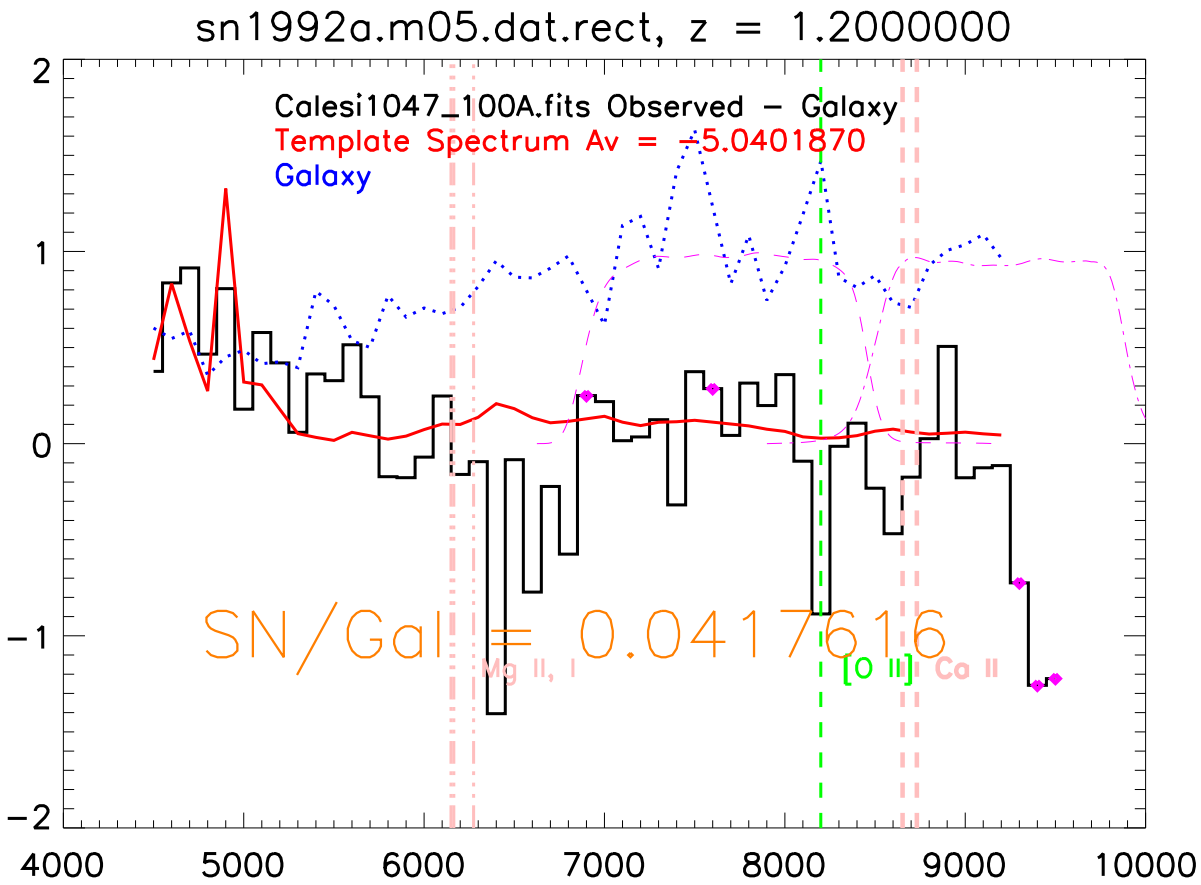

sn1992a.p09.dat.rect, z = 1.4500000
Calesi1047_100A.fits Observed − Galaxy
Template Spectrum Av = 4.9728737
Galaxy
SN/Gal = +0.0134380
Mg II, I
[O II]
Ca II
2
1
0
−1
−2
−3
4000
5000
6000
7000
8000
9000
10000


sn1992a.p17.dat.rect, z = 1.4500000
Calesi1047_100A.fits Observed − Galaxy
Template Spectrum Av = 0.012341109
Galaxy
SN/Gal = 0.107325
Mg II, I
[O II]
Ca II
2
1
0
−1
−2
−3
4000
5000
6000
7000
8000
9000
10000


sn1990n.m07.dat.rect, z = 1.4500000
Calesi1047_100A.fits Observed − Galaxy
Template Spectrum Av = −4.6466621
Galaxy
SN/Gal = −0.207060
Mg II, I
[O II]
Ca II
2
1
0
−1
−2
4000
5000
6000
7000
8000
9000
10000


sn1991bg.m00.dat.rect, z = 1.3500000
Calesi1047_100A.fits Observed − Galaxy
Template Spectrum Av = −1.8549247
Galaxy
SN/Gal = −0.0549108
Mg II, I
[O II]
Ca II
2
1
0
−1
−2
4000
5000
6000
7000
8000
9000
10000


sn1989b.m07.dat.rect, z = 1.0000000
Calesi1047_100A.fits Observed − Galaxy
Template Spectrum Av = 1.6089488
Galaxy
SN/Gal = 1.28412
[O II]
Ca II
[O III]
1.5
1.0
0.5
0.0
−0.5
4000
5000
6000
7000
8000
9000
10000


sn1992a.m05.dat.rect, z = 1.2000000
Calesi1047_100A.fits Observed − Galaxy
Template Spectrum Av = −5.0401870
Galaxy
SN/Gal = 0.0417616
Mg II, I
[O II]
Ca II
2
1
0
−1
−2
4000
5000
6000
7000
8000
9000
10000