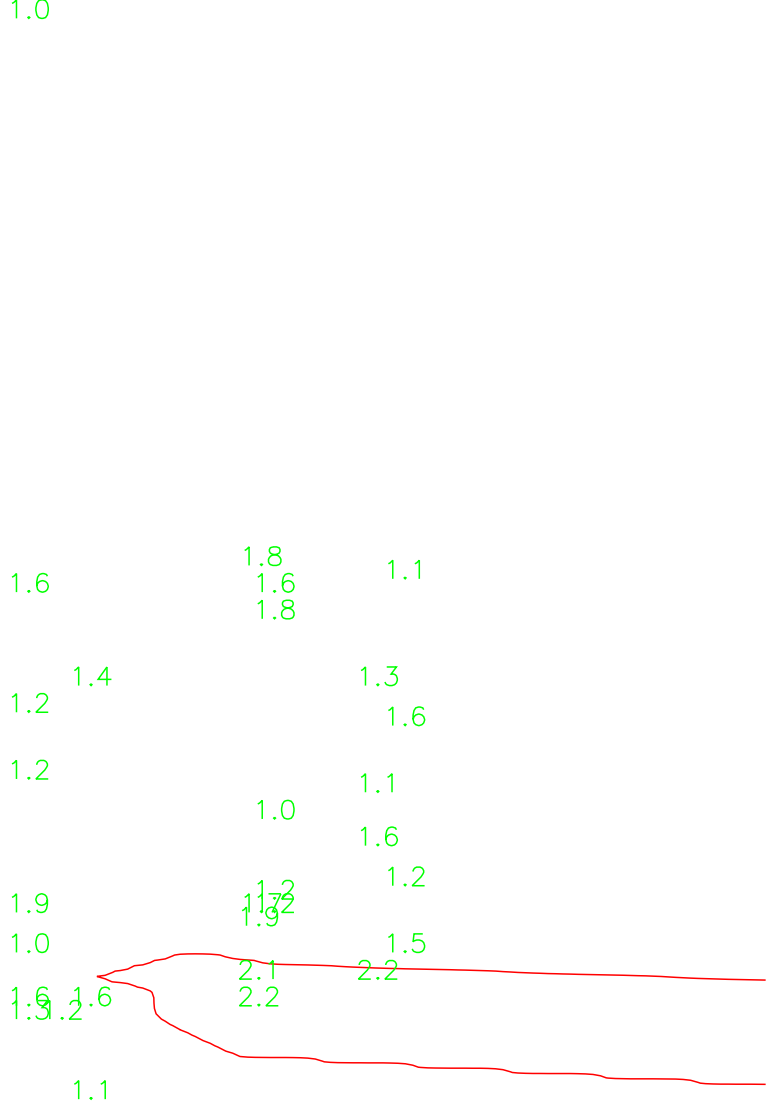
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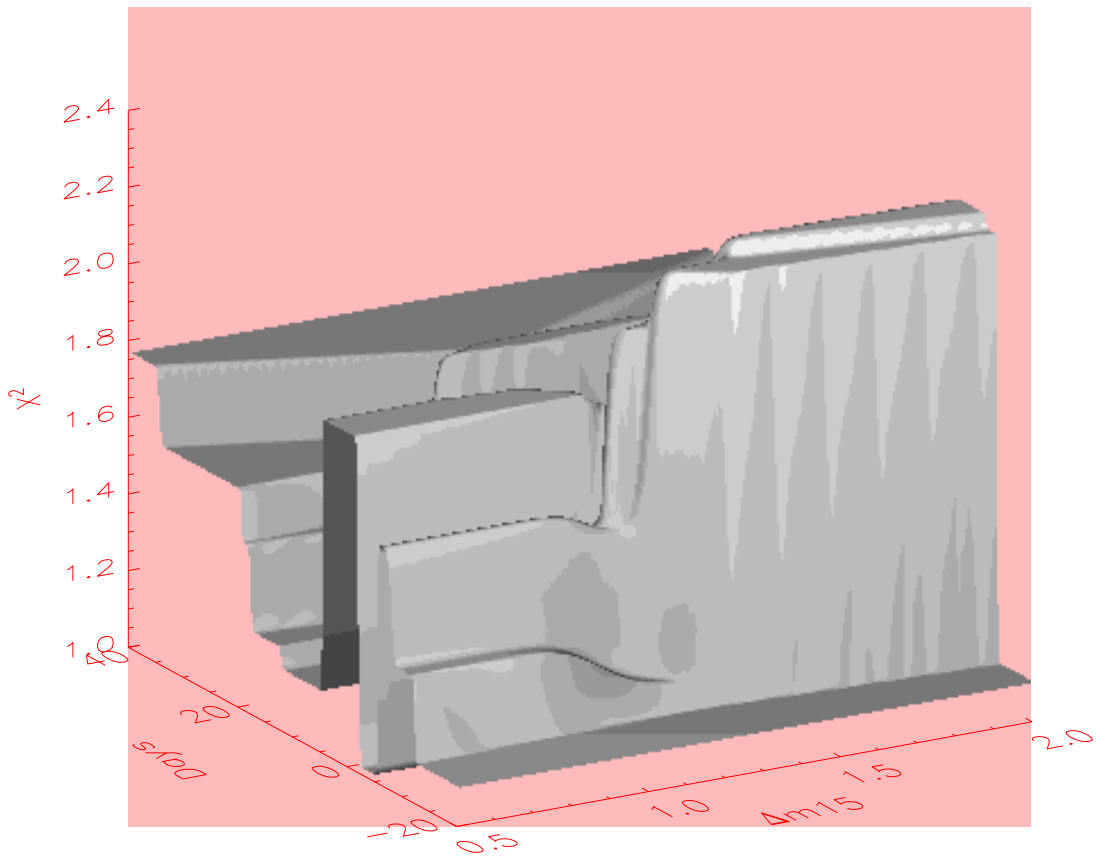
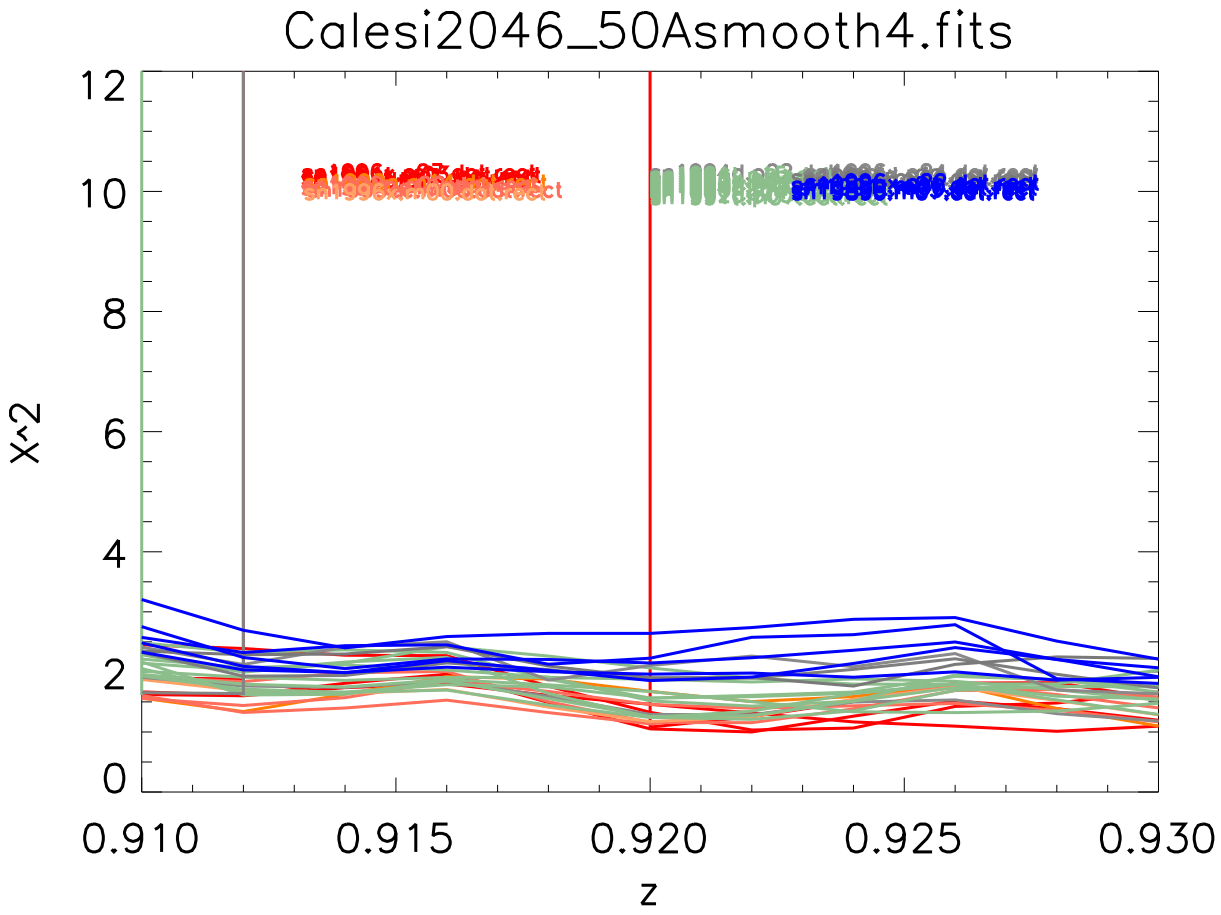
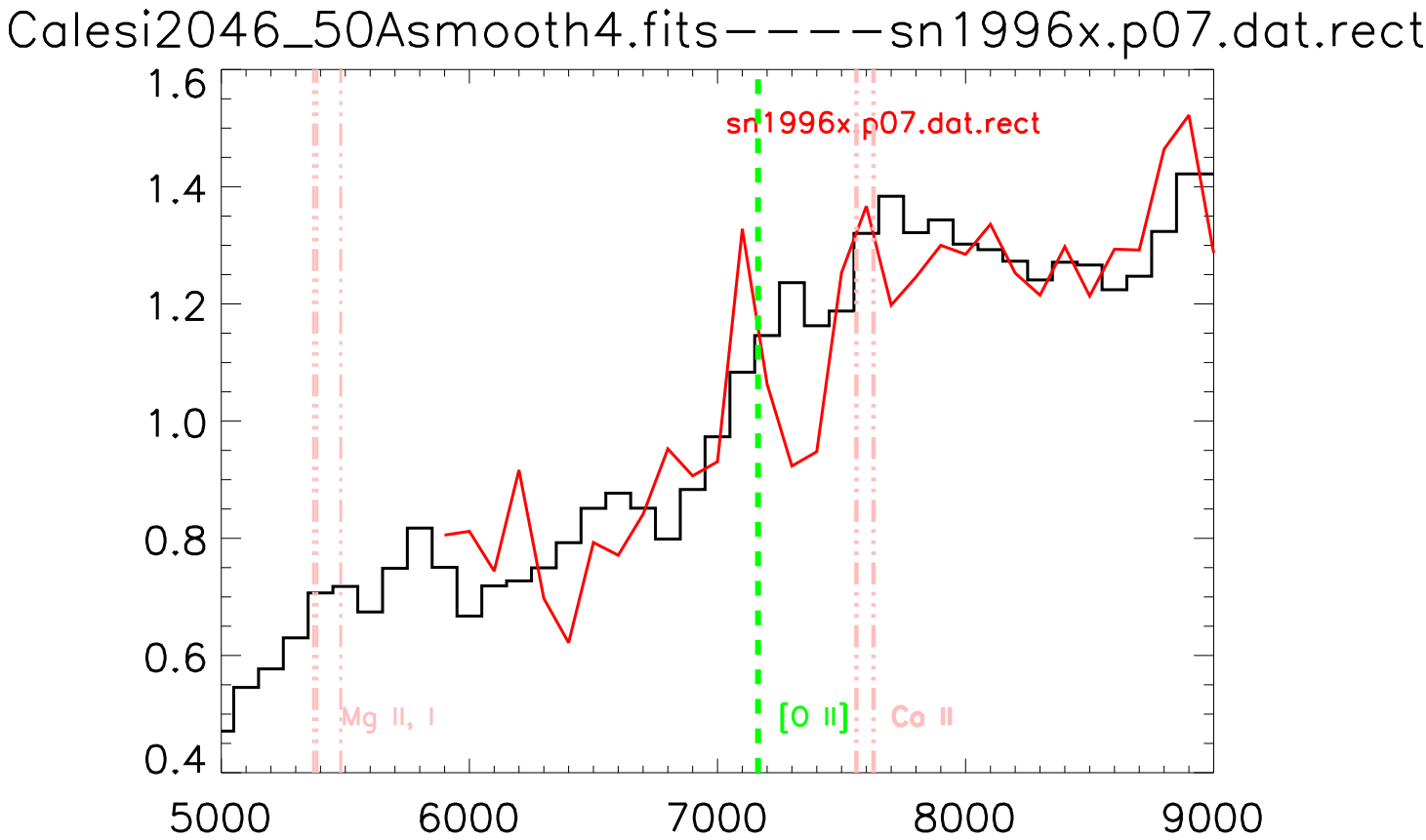
1.8
1.1
1.6
1.6
1.8
1.4
1.3
1.2
1.6
1.2
1.1
1.0
1.6
1.2
1.2
1.9
1.9
1.0
1.5
2.1
2.2
1.6
2.2
1.1



2.4
2.2
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


Calesi2046_50Asmooth4.fits
X^2
z
0
2
4
6
8
10
12
0.910
0.915
0.920
0.925
0.930


Calesi2046_50Asmooth4.fits----sn1996x.p07.dat.rect
sn1996x.p07.dat.rect
Mg II, I
[O II]
Ca II
1.6
1.4
1.2
1.0
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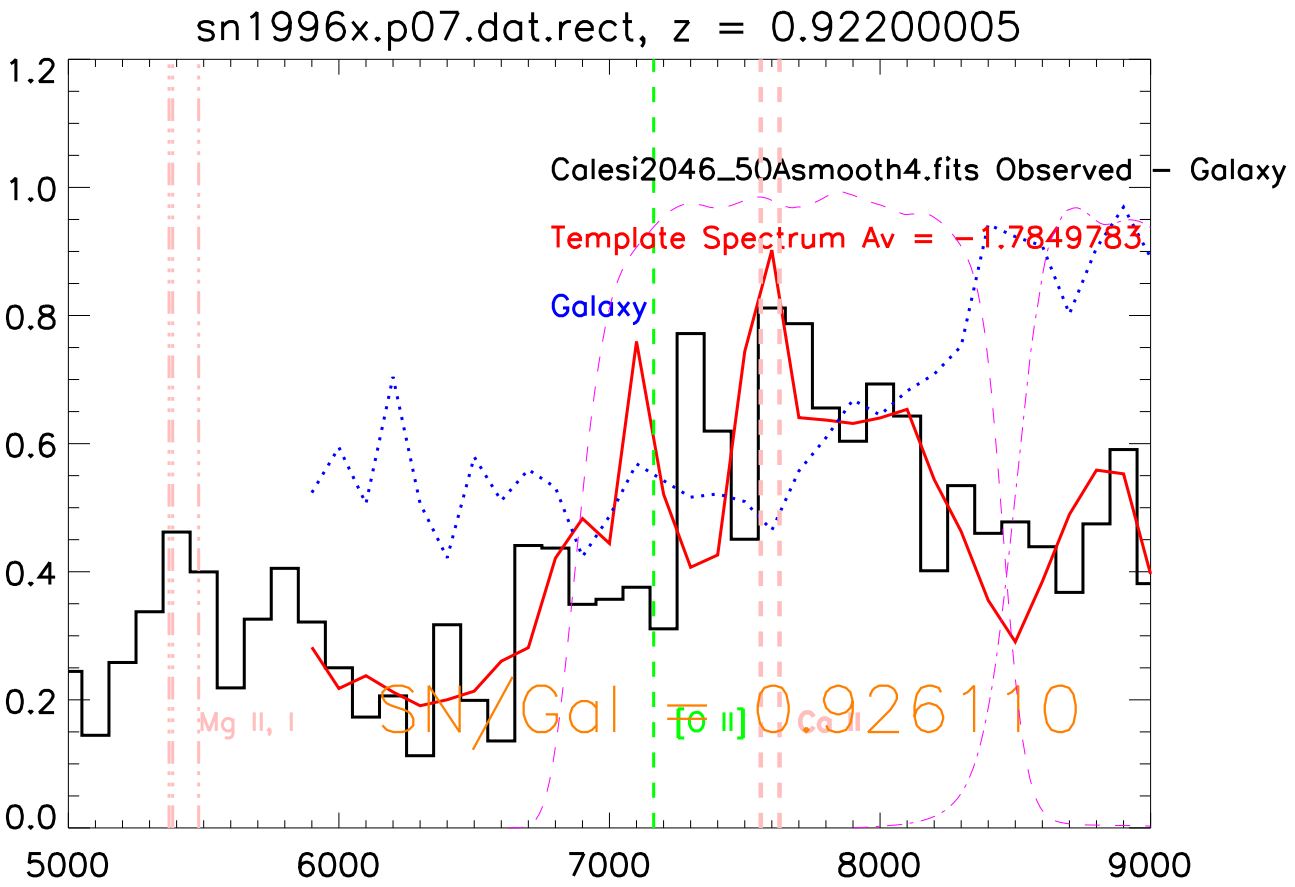
0.6
0.4
5000
6000
7000
8000
9000


sn1996x.p07.dat.rect, z = 0.92200005
Calesi2046_50Asmooth4.fits Observed – Galaxy
Template Spectrum Av = –1.7849783
Galaxy
SN/Gal = 0.926110
Mg II, I
[O II]
Ca II
1.2
1.0
0.8
0.6
0.4
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0.0
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6000
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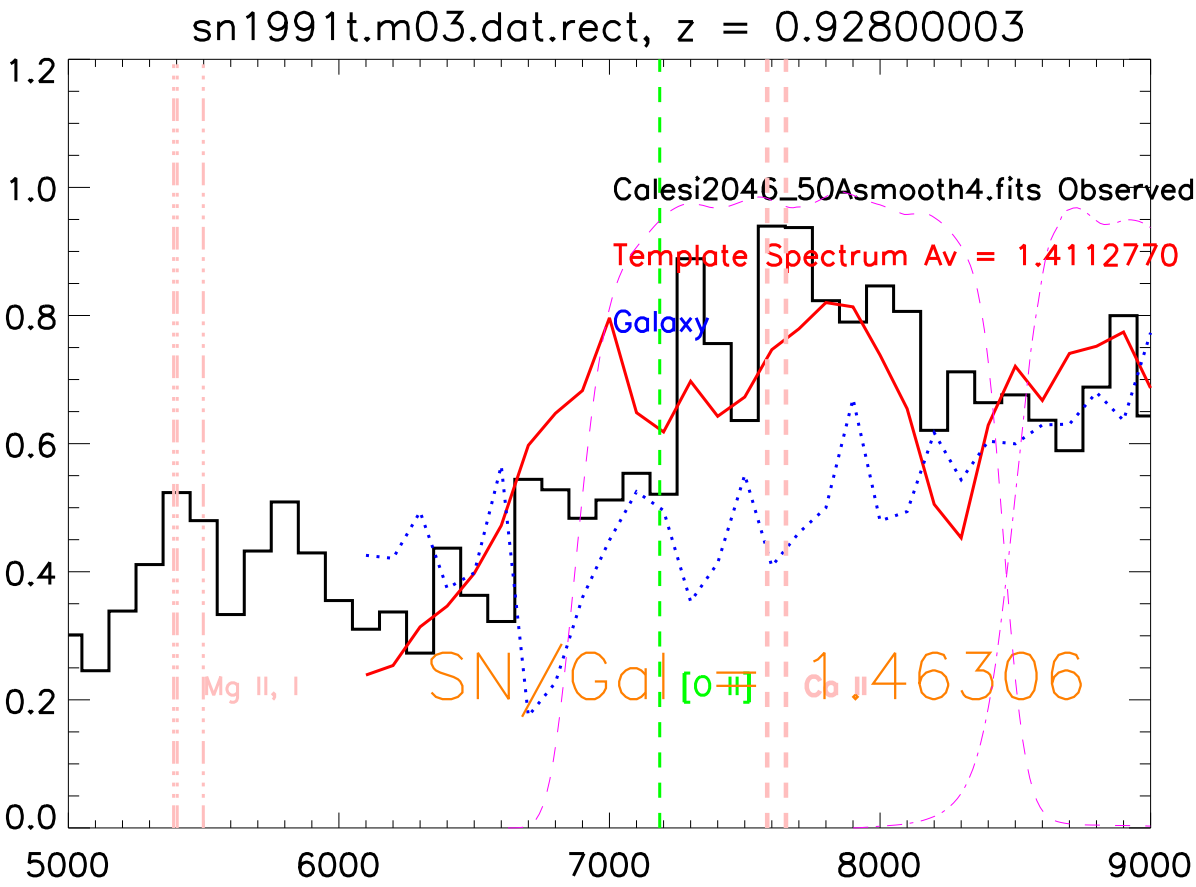
8000
9000


sn1991t.m03.dat.rect, z = 0.92800003
Calesi2046_50Asmooth4.fits Observed – Galaxy
Template Spectrum Av = 1.4112770
Galaxy
SN/Gal = 1.46306
Mg II, I
[O III]
Ca II
1.2
1.0
0.8
0.6
0.4
0.2
0.0
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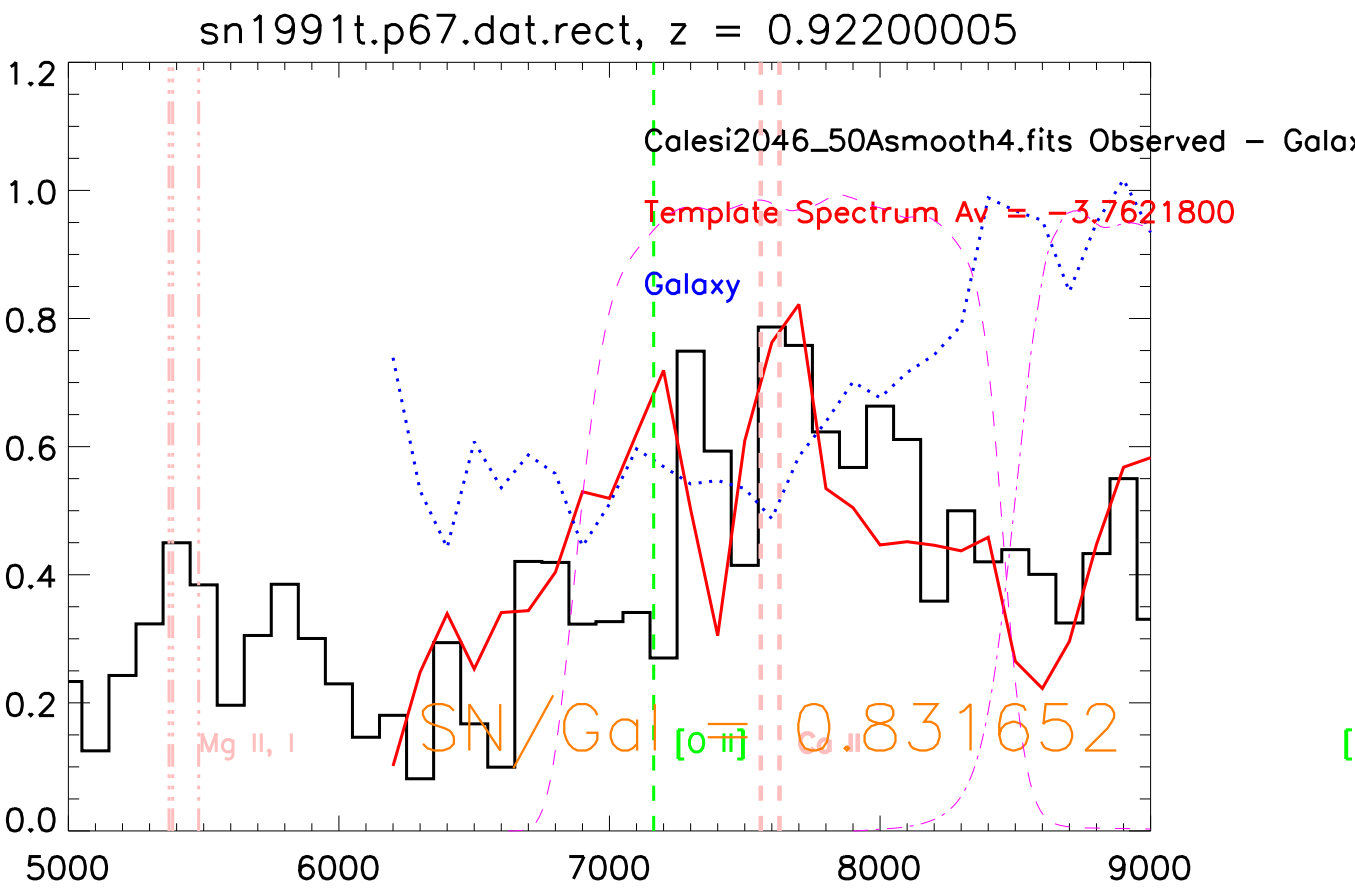
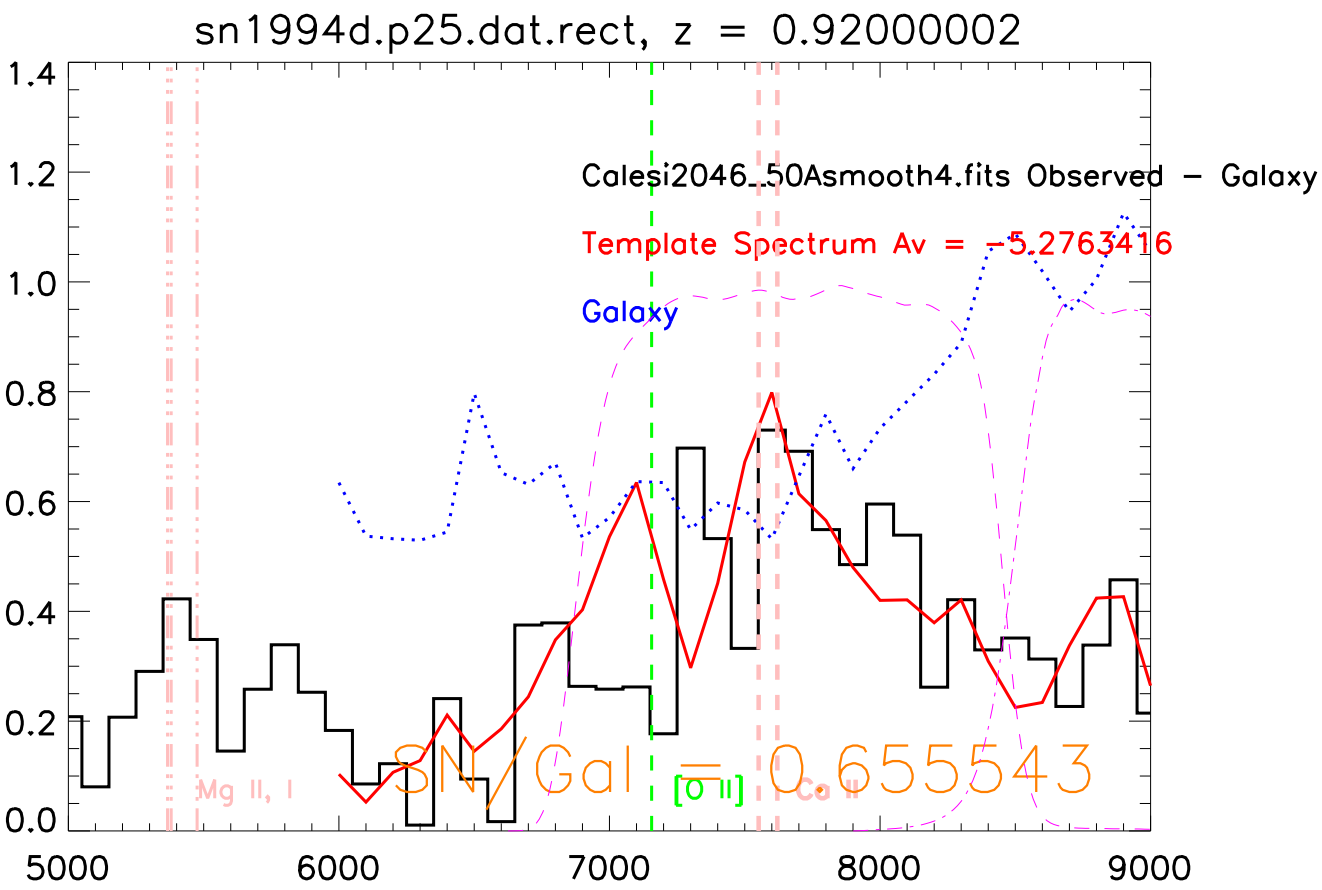
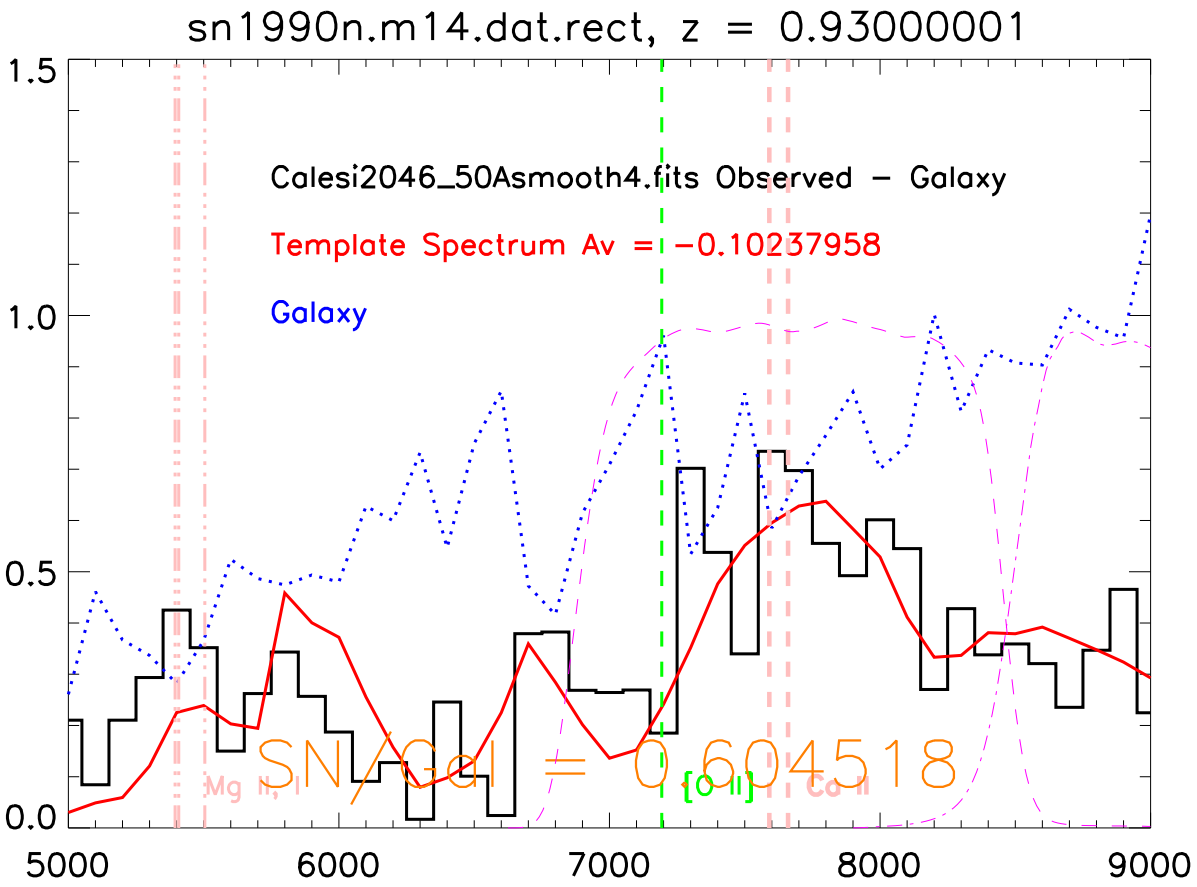
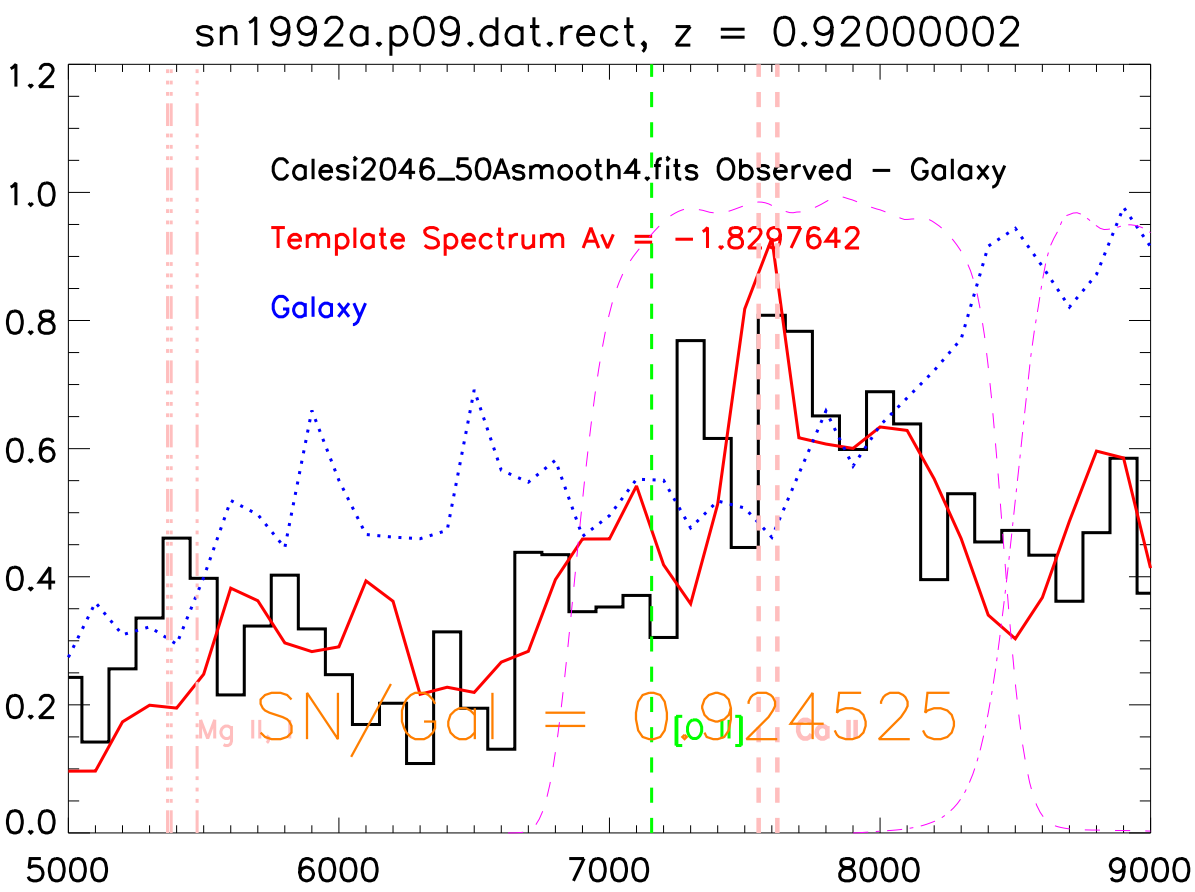
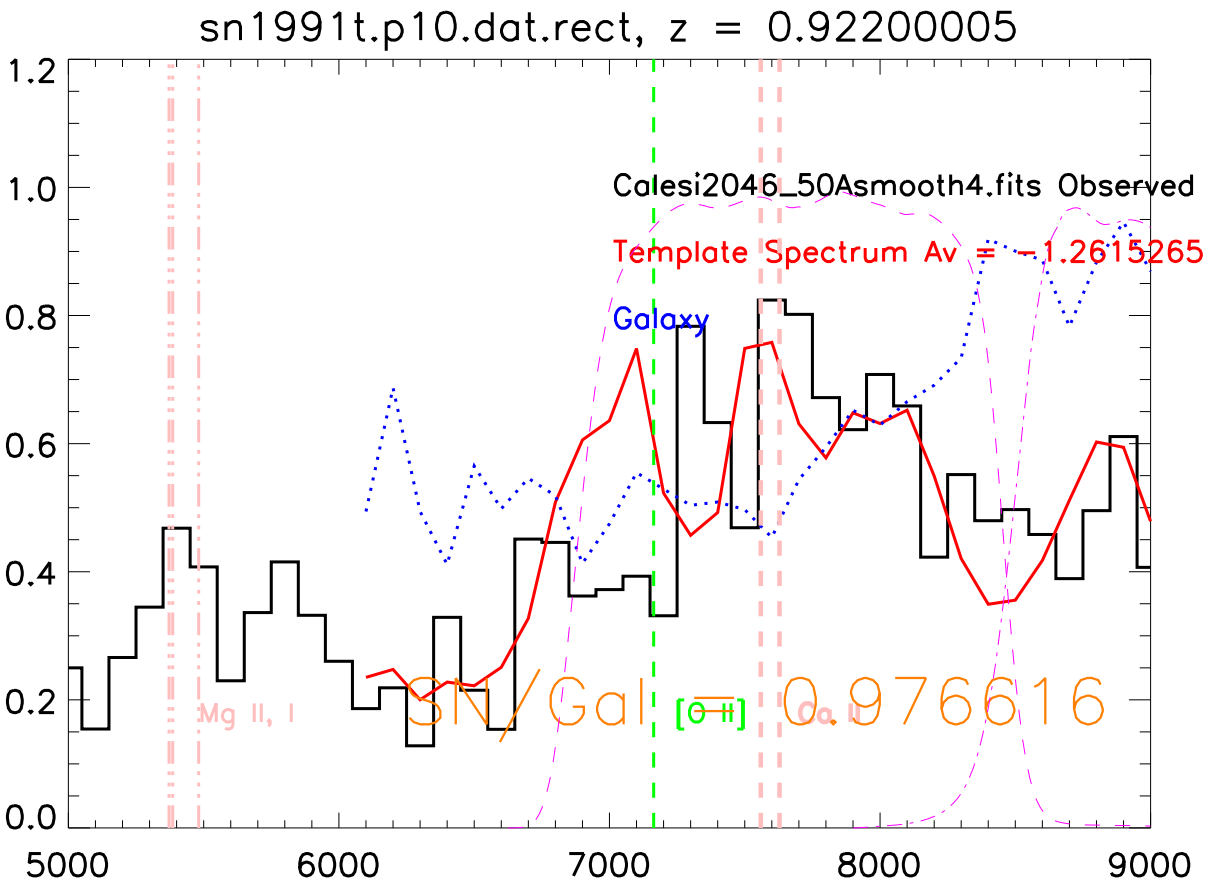
6000
7000
8000
9000

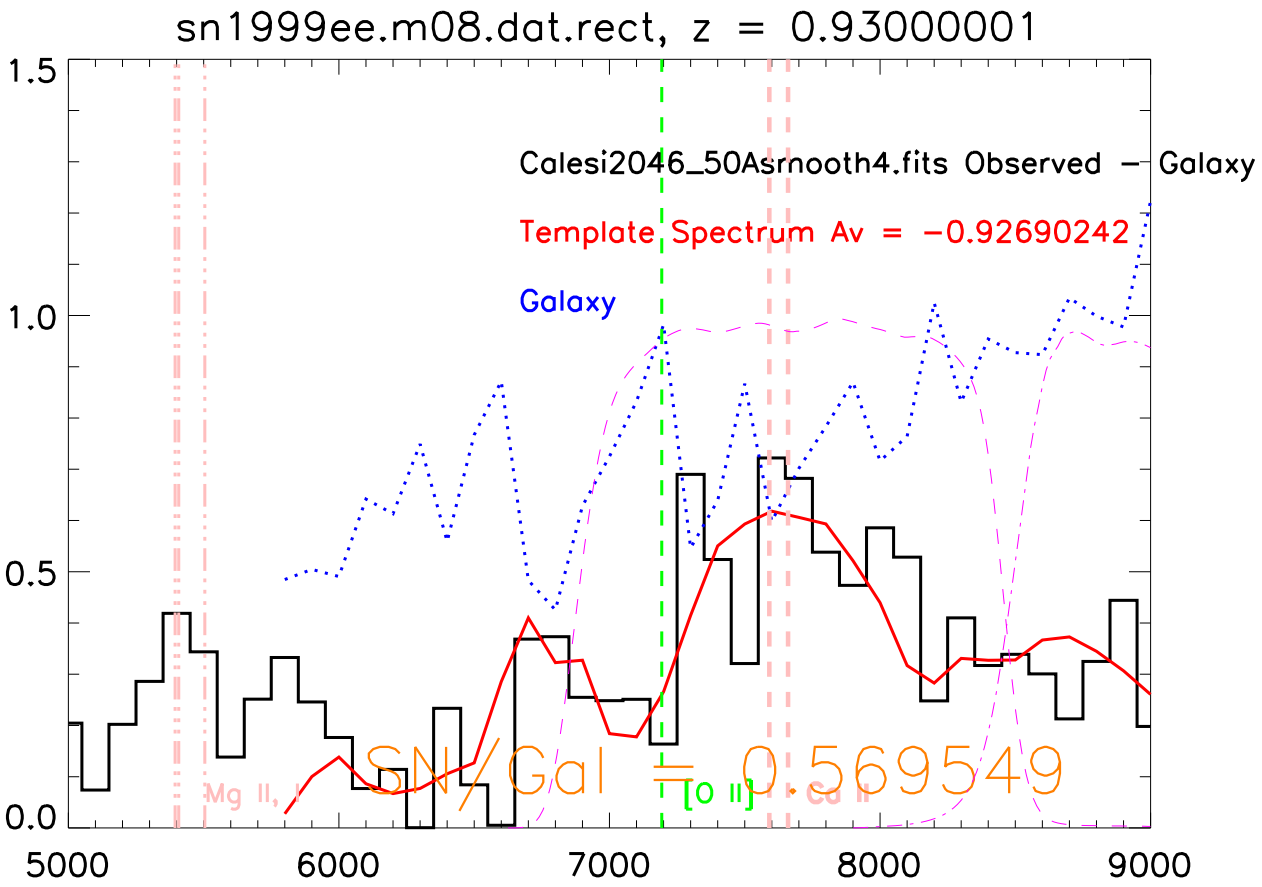

sn1991t.p67.dat.rect, z = 0.92200005
Calesi2046_50Asmooth4.fits Observed – Galax
Template Spectrum Av = –3.7621800
Galaxy
SN/Gal = 0.831652
Mg II, I
[O II]
Ca II
1.2
1.0
0.8
0.6
0.4
0.2
0.0
5000
6000
7000
8000
9000

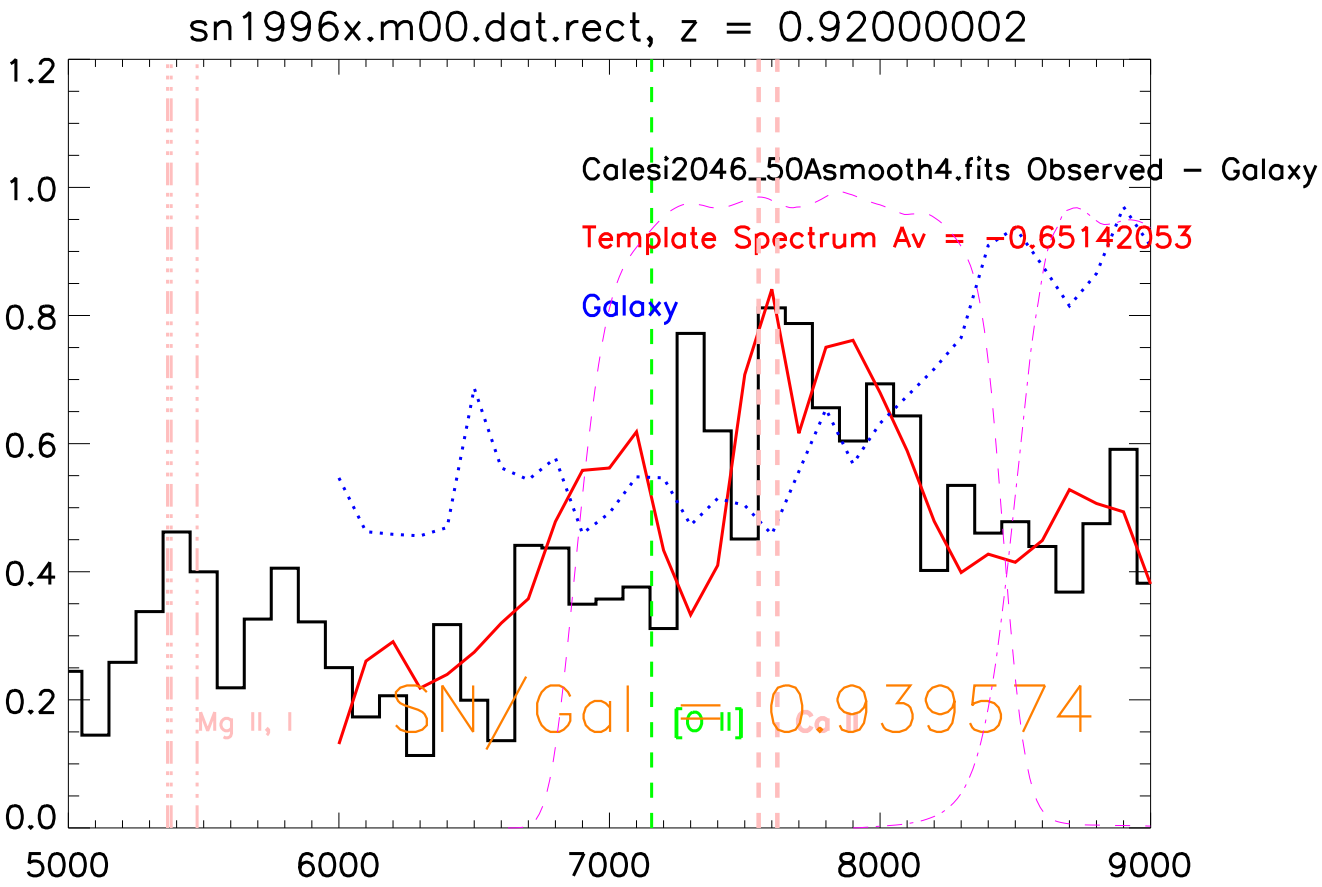

sn1994d.p25.dat.rect, z = 0.92000002
Calesi2046_50Asmooth4.fits Observed − Galaxy
Template Spectrum Av = −5.2763416
Galaxy
SN/Gal = 0.655543
Mg II, I
[O II]
Ca II
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
5000
6000
7000
8000
9000

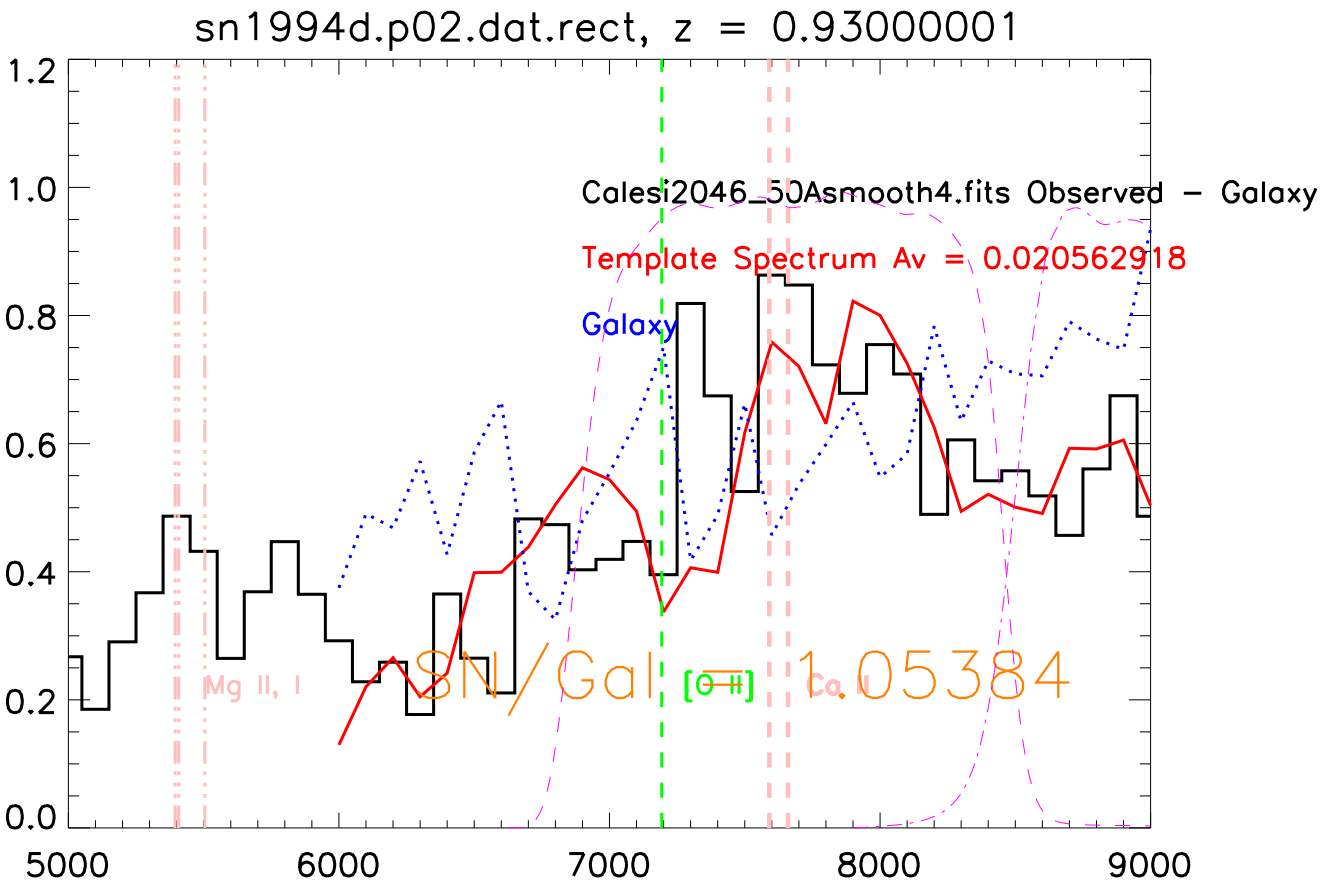

sn1990n.m14.dat.rect, z = 0.93000001
Calesi2046_50Asmooth4.fits Observed − Galaxy
Template Spectrum Av = −0.10237958
Galaxy
SN/Gal = 0.604518
[O II]
1.5
1.0
0.5
0.0
5000
6000
7000
8000
9000

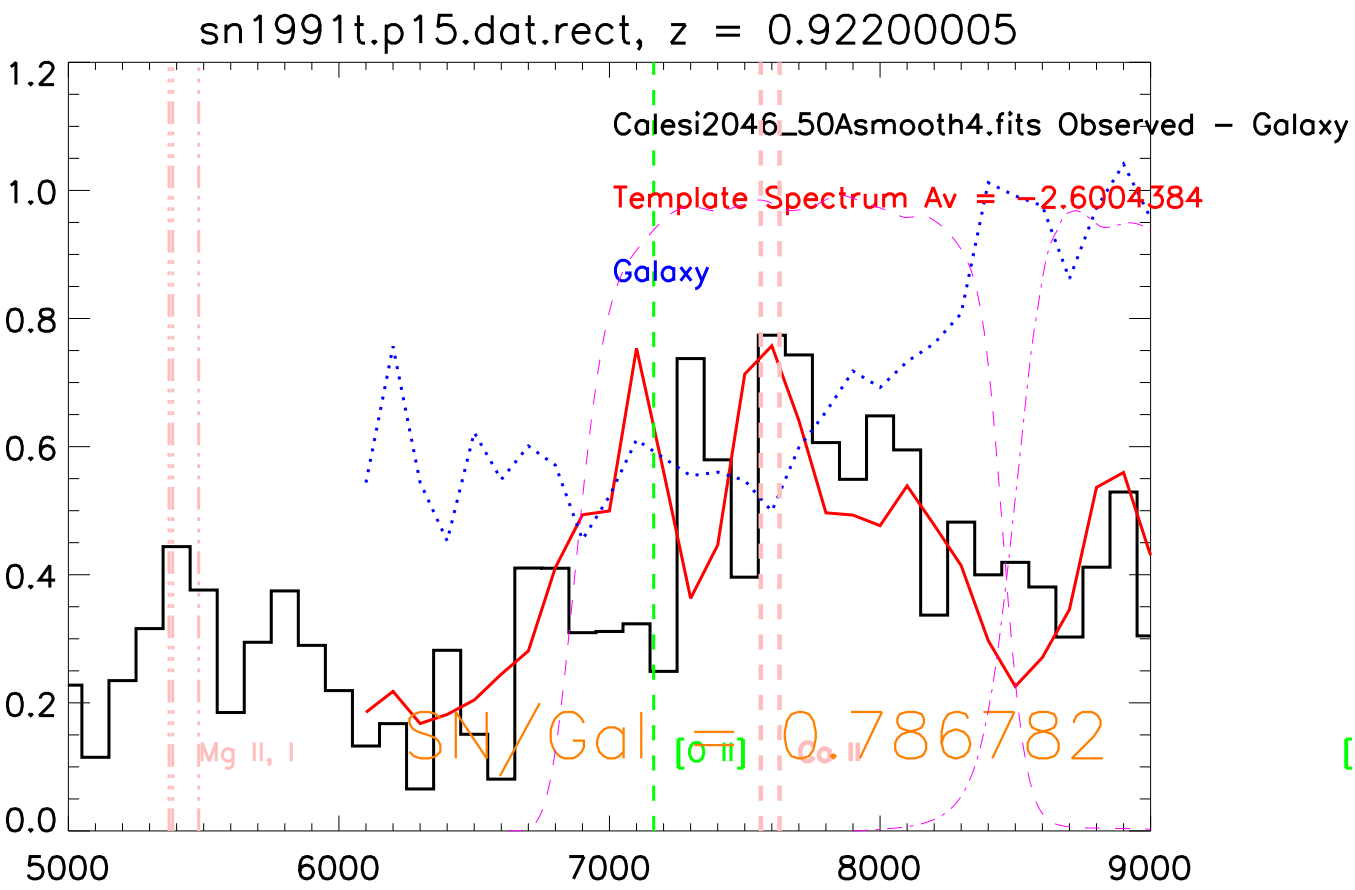

sn1992a.p09.dat.rect, z = 0.92000002
Calesi2046_50Asmooth4.fits Observed − Galaxy
Template Spectrum Av = −1.8297642
Galaxy
SN/Gal = 0.924525
Mg II
[O II]
Ca II
1.2
1.0
0.8
0.6
0.4
0.2
0.0
5000
6000
7000
8000
9000

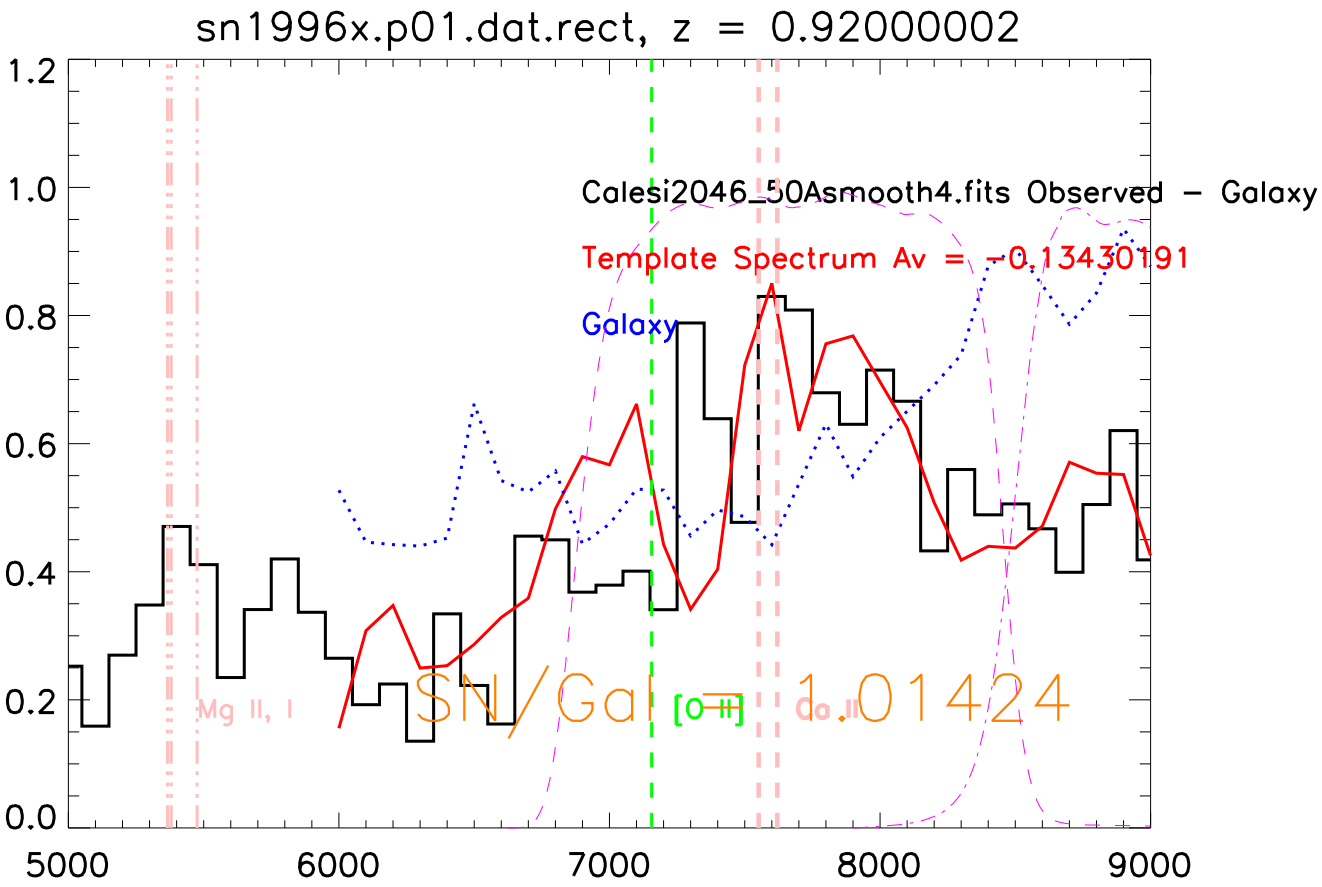

sn1991t.p10.dat.rect, z = 0.92200005
Calesi2046_50Asmooth4.fits Observed − Galaxy
Template Spectrum Av = −1.2615265
Galaxy
SN/Gal = 0.976616
Mg II, I
[O II]
Ca II
1.2
1.0
0.8
0.6
0.4
0.2
0.0
5000
6000
7000
8000
9000

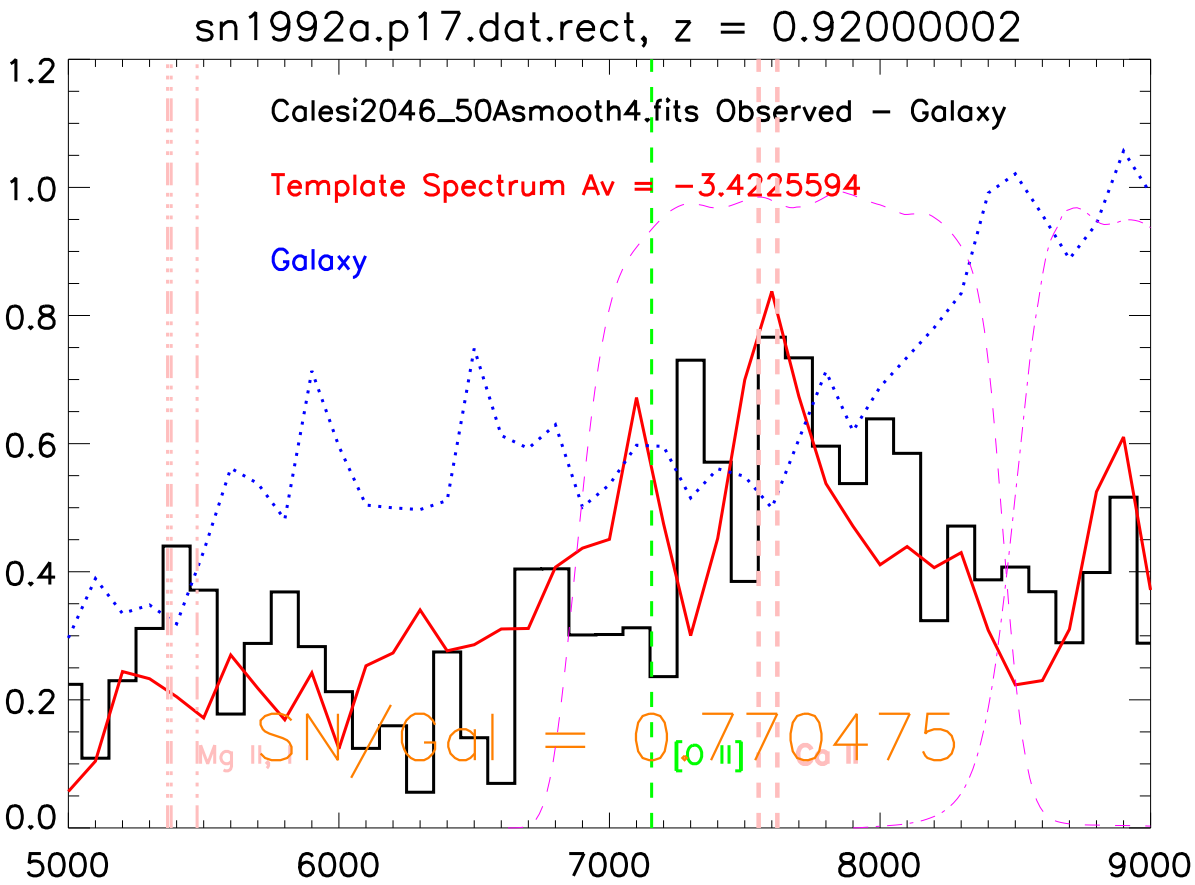

sn1999ee.m08.dat.rect, z = 0.93000001
Calesi2046_50Asmooth4.fits Observed
Galaxy
Template Spectrum Av = -0.92690242
Galaxy
SN/Gal = 0.569549
[O II]
1.5
1.0
0.5
0.0
5000
6000
7000
8000
9000

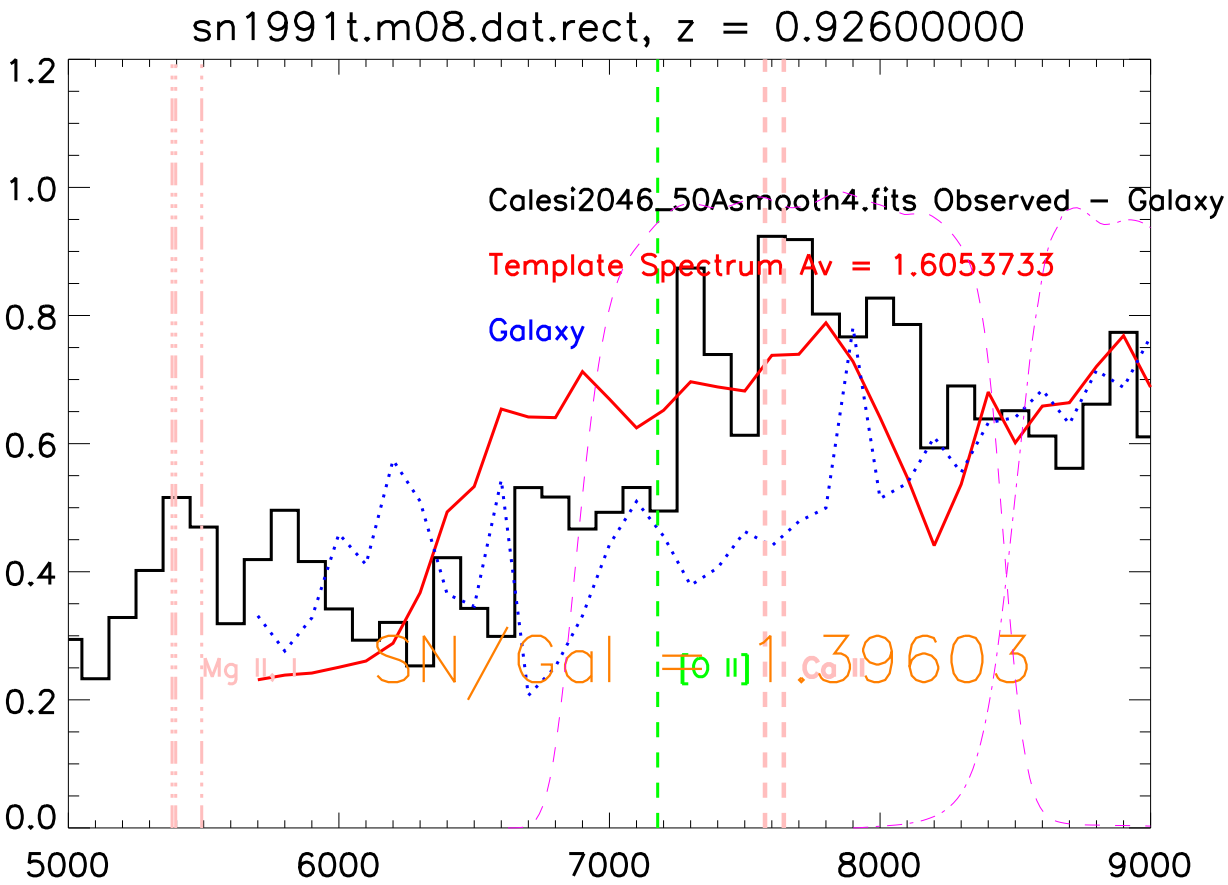

sn1996x.m00.dat.rect, z = 0.92000002
Calesi2046_50Asmooth4.fits Observed − Galaxy
Template Spectrum Av = −0.65142053
Galaxy
SN/Gal = 0.939574
Mg II, I
[O II]
Ca II
1.2
1.0
0.8
0.6
0.4
0.2
0.0
5000
6000
7000
8000
9000

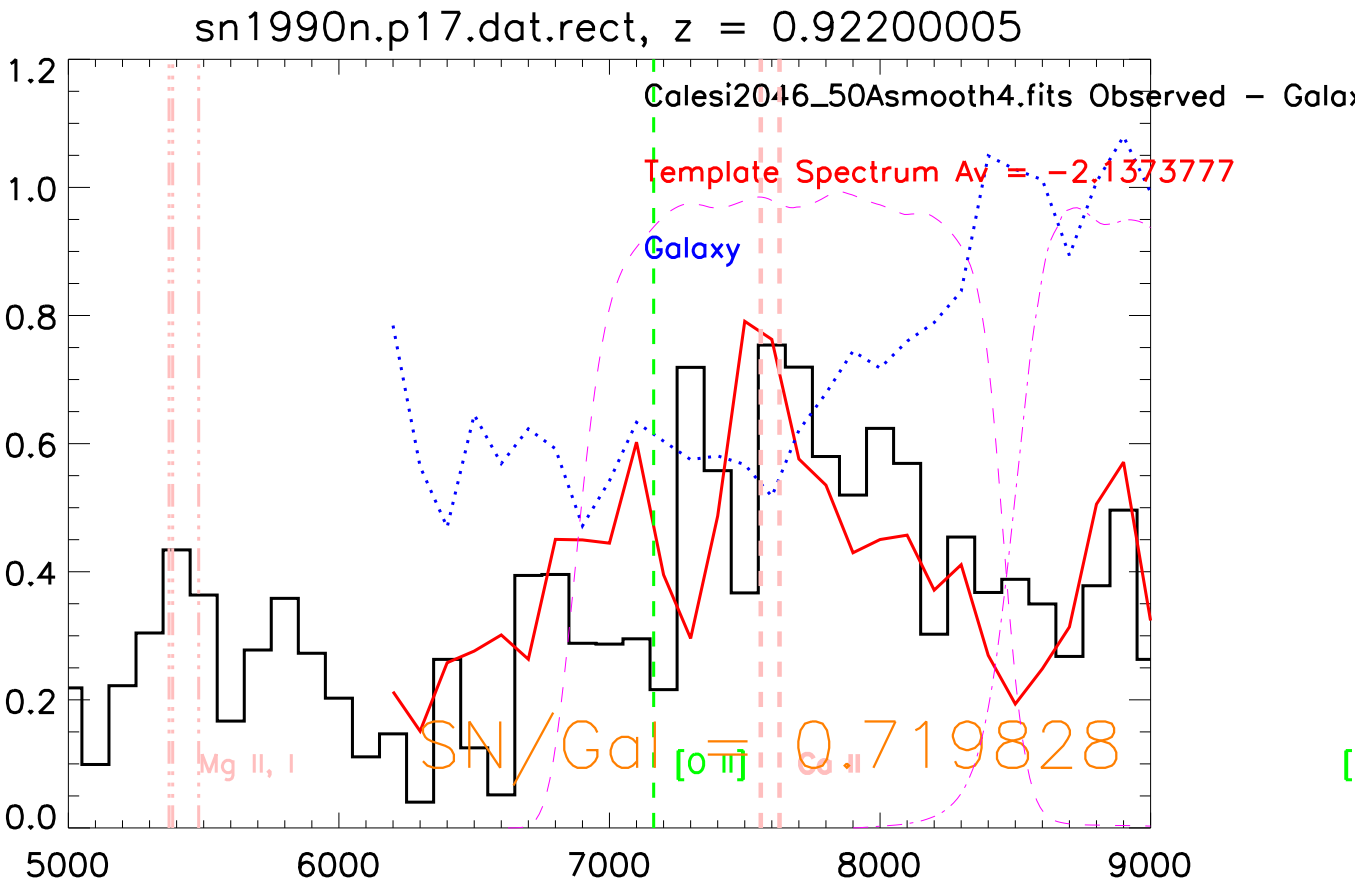

sn1994d.p02.dat.rect, z = 0.93000001
Calesi2046_50Asmooth4.fits Observed – Galaxy
Template Spectrum Av = 0.0205629.18
Galaxy
SN/Gal 1.05384
Mg II, I
[O II]
Ca, I
1.2
1.0
0.8
0.6
0.4
0.2
0.0
5000
6000
7000
8000
9000

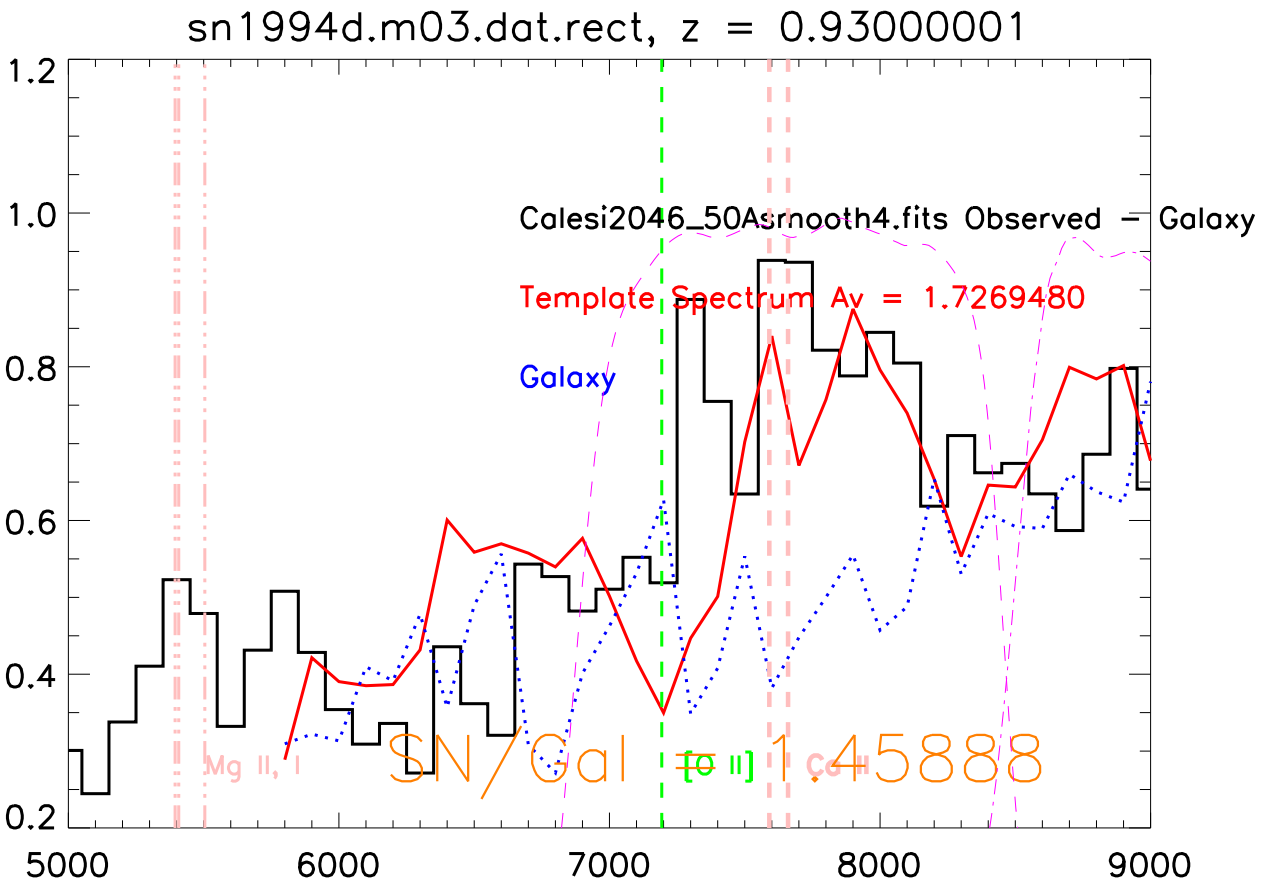

sn1991t.p15.dat.rect, z = 0.92200005
Calesi2046_50Asmooth4.fits Observed – Galaxy
Template Spectrum Av = 2.6004384
Galaxy
SN/Gal = 0.786782
Mg II, I
[O II]
Ca II
1.2
1.0
0.8
0.6
0.4
0.2
0.0
5000
6000
7000
8000
9000


sn1996x.p01.dat.rect, z = 0.92000002
Calesi2046_50Asmooth4.fits Observed − Galaxy
Template Spectrum Av = −0.13430191
Galaxy
SN/Gal = 1.01424
Mg II, I
[O III]
Ca II
1.2
1.0
0.8
0.6
0.4
0.2
0.0
5000
6000
7000
8000
9000


sn1992a.p17.dat.rect, z = 0.92000002
Calesi2046_50Asmooth4.fits Observed − Galaxy
Template Spectrum Av = −3.4225594
Galaxy
SN/Gal = 0.770475
[O II]
1.2
1.0
0.8
0.6
0.4
0.2
0.0
5000
6000
7000
8000
9000


sn1991t.m08.dat.rect, z = 0.92600000
Calesi2046_50Asmooth4.fits Observed – Galaxy
Template Spectrum Av = 1.6053733
Galaxy
SN/Gal = 1.39603
Mg II
[O II]
Ca II
1.2
1.0
0.8
0.6
0.4
0.2
0.0
5000
6000
7000
8000
9000


sn1990n.p17.dat.rect, z = 0.92200005
Calesi2046_50Asmooth4.fits Observed – Galax
Template Spectrum Av = -2.1373777
Galaxy
SN/Gal = 0.719828
Mg II, I
[O II]
Ca II
1.2
1.0
0.8
0.6
0.4
0.2
0.0
5000
6000
7000
8000
9000


sn1994d.m03.dat.rect, z = 0.93000001
Calesi2046_50Asrnooth4.fits Observed
Galaxy
Template Spectrum Av = 1.7269480
Galaxy
SN/Gal 1.45888
1.2
1.0
0.8
0.6
0.4
0.2
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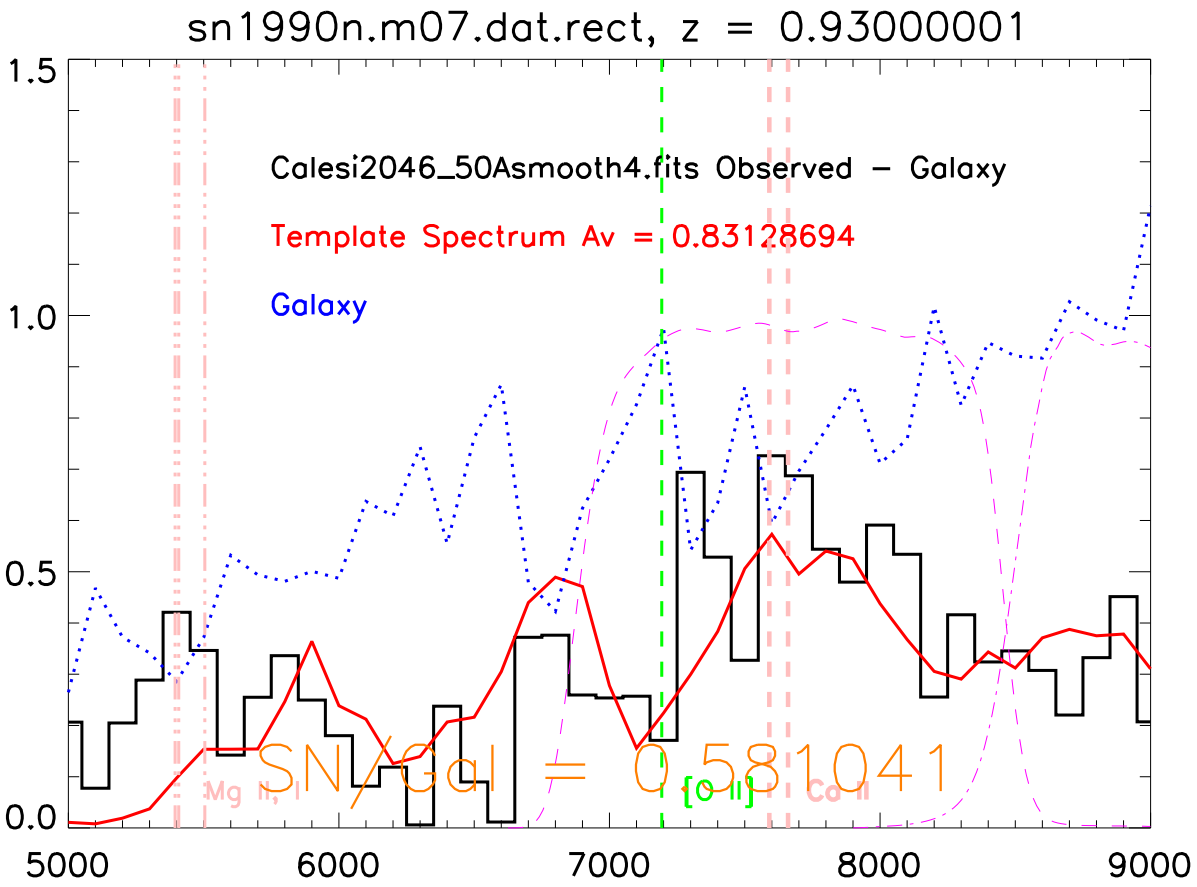
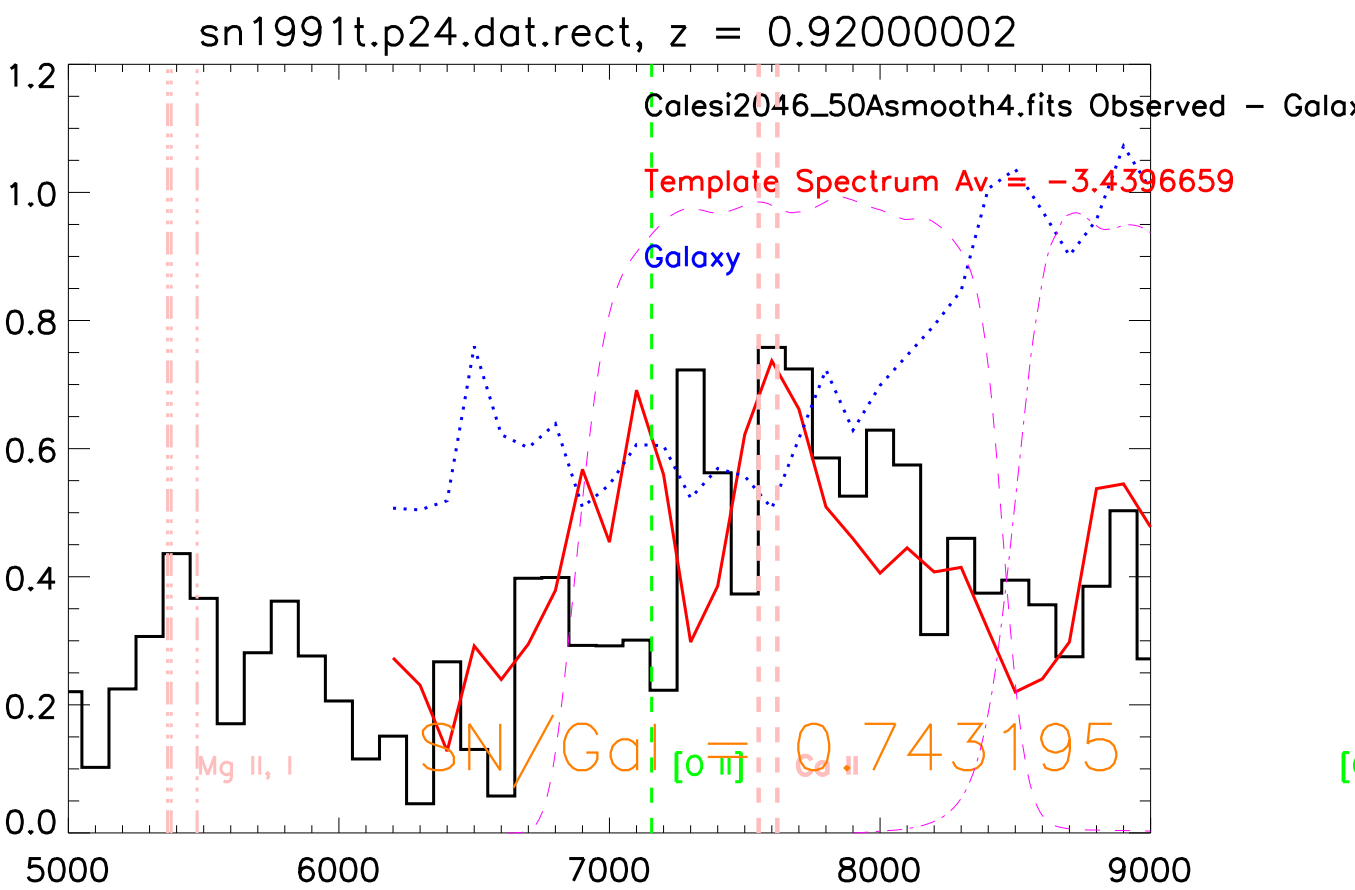
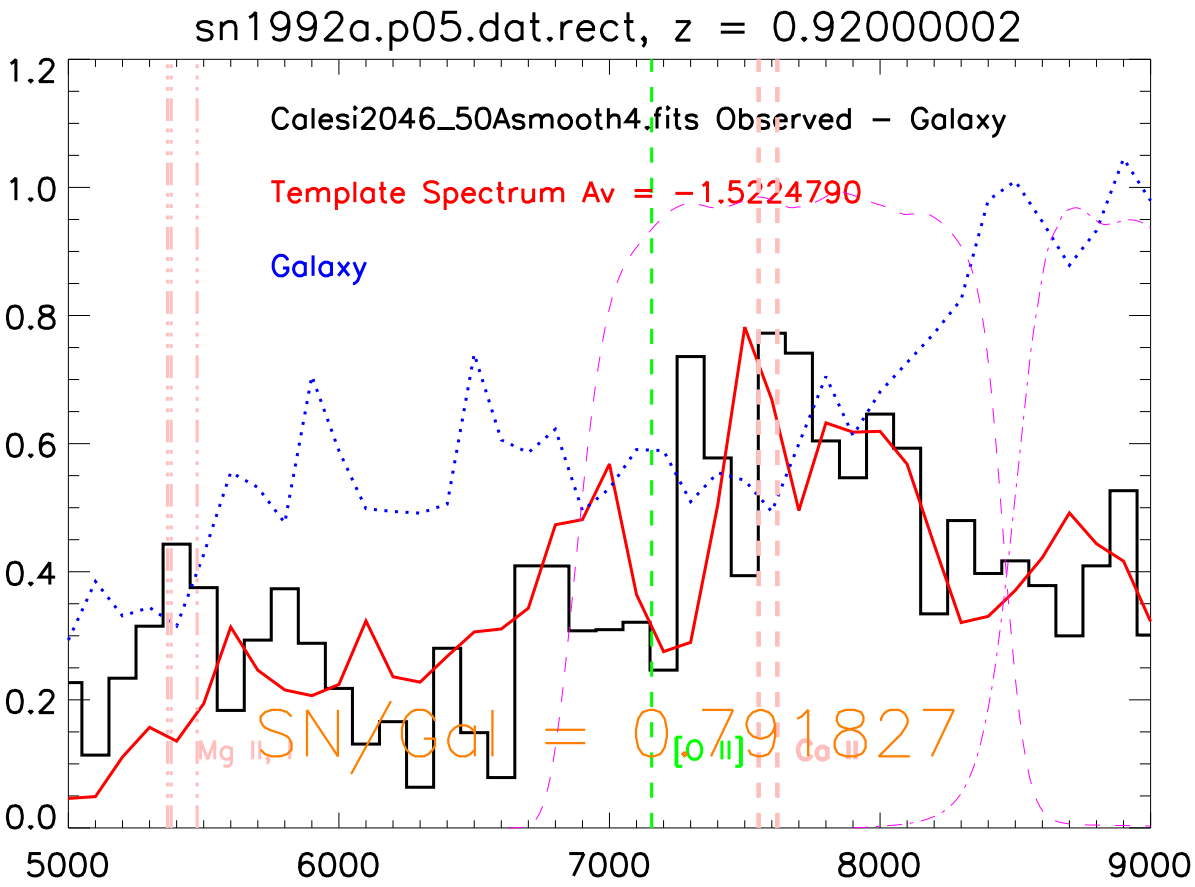
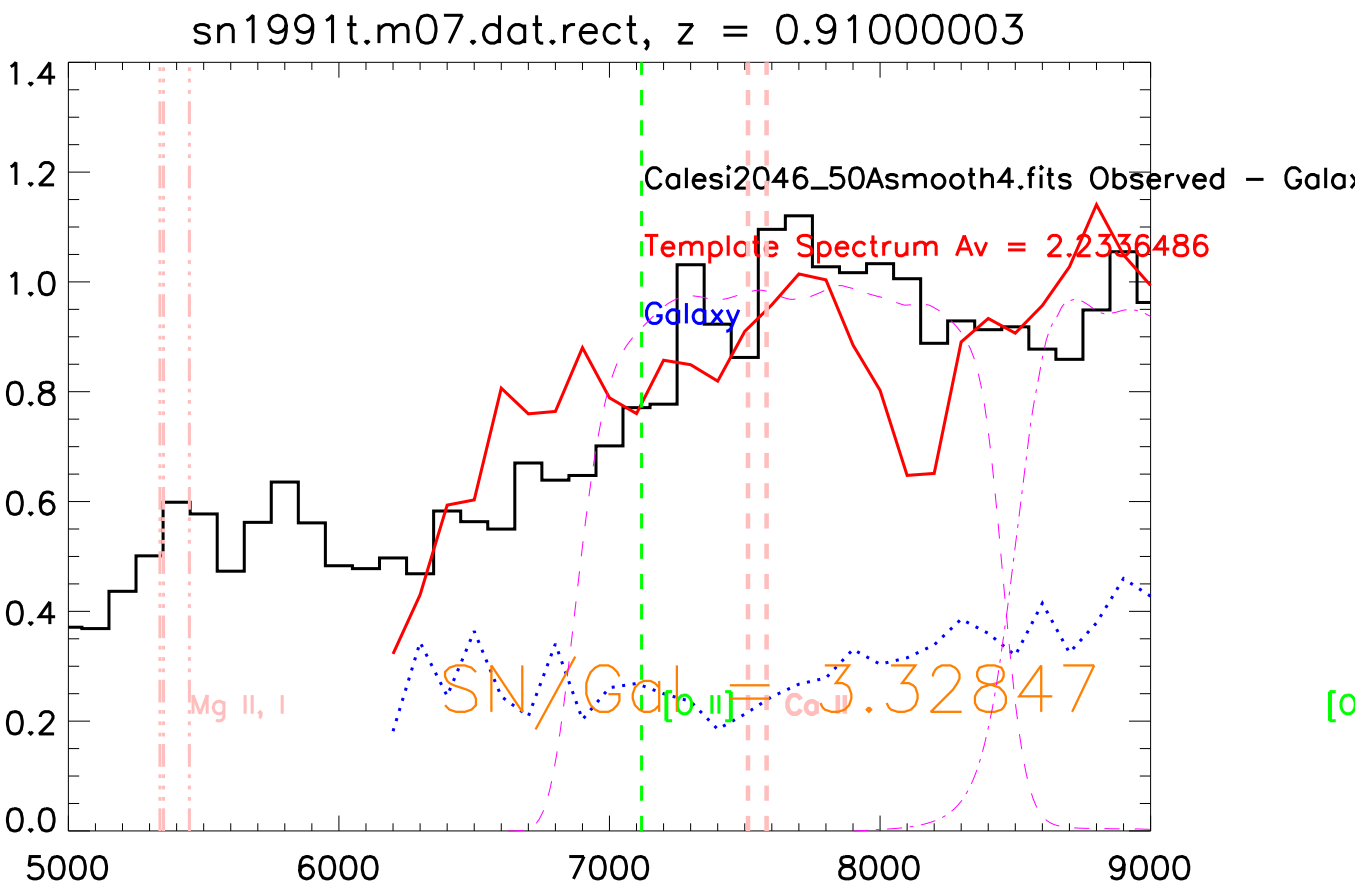
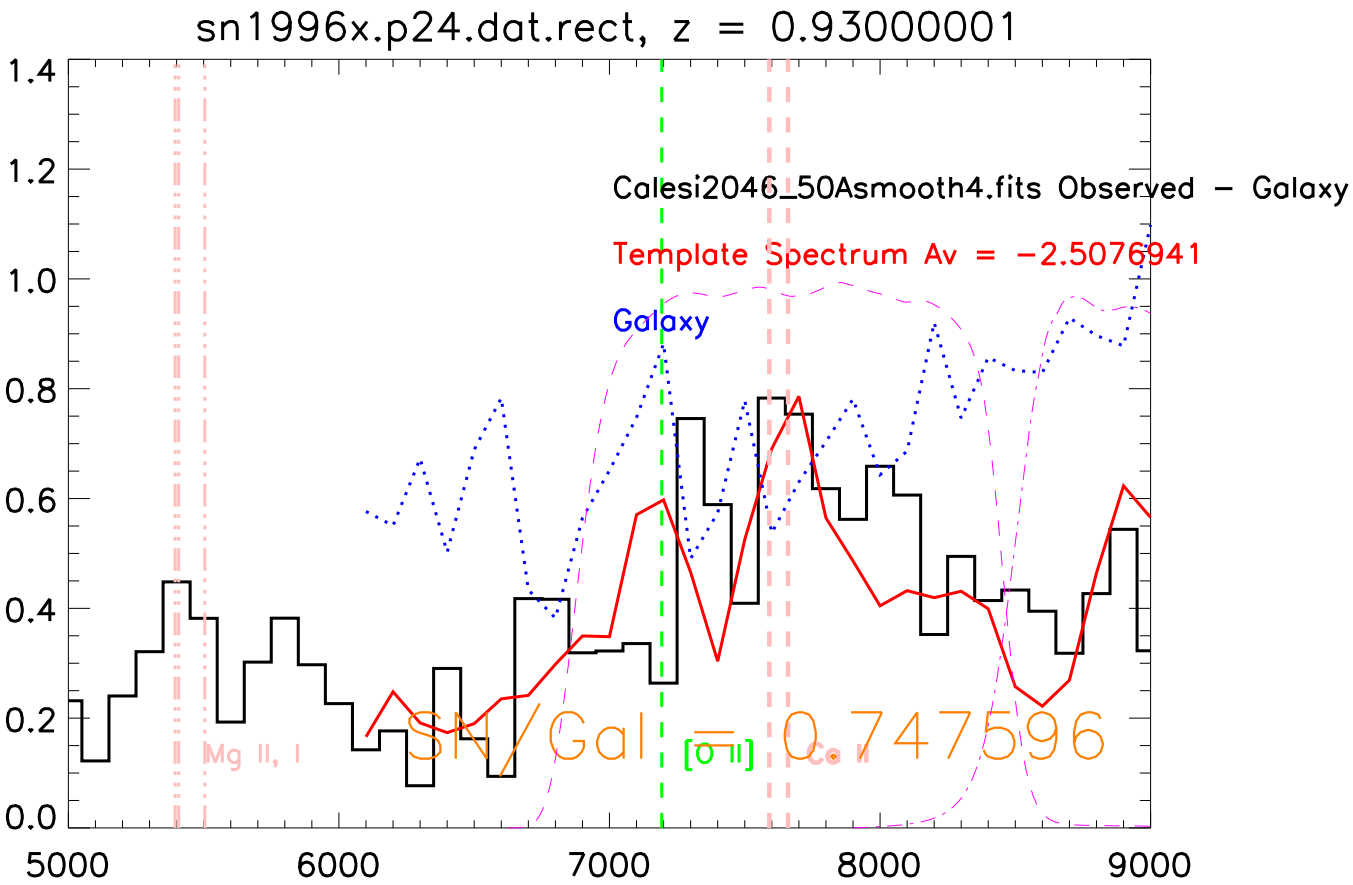
8000
9000

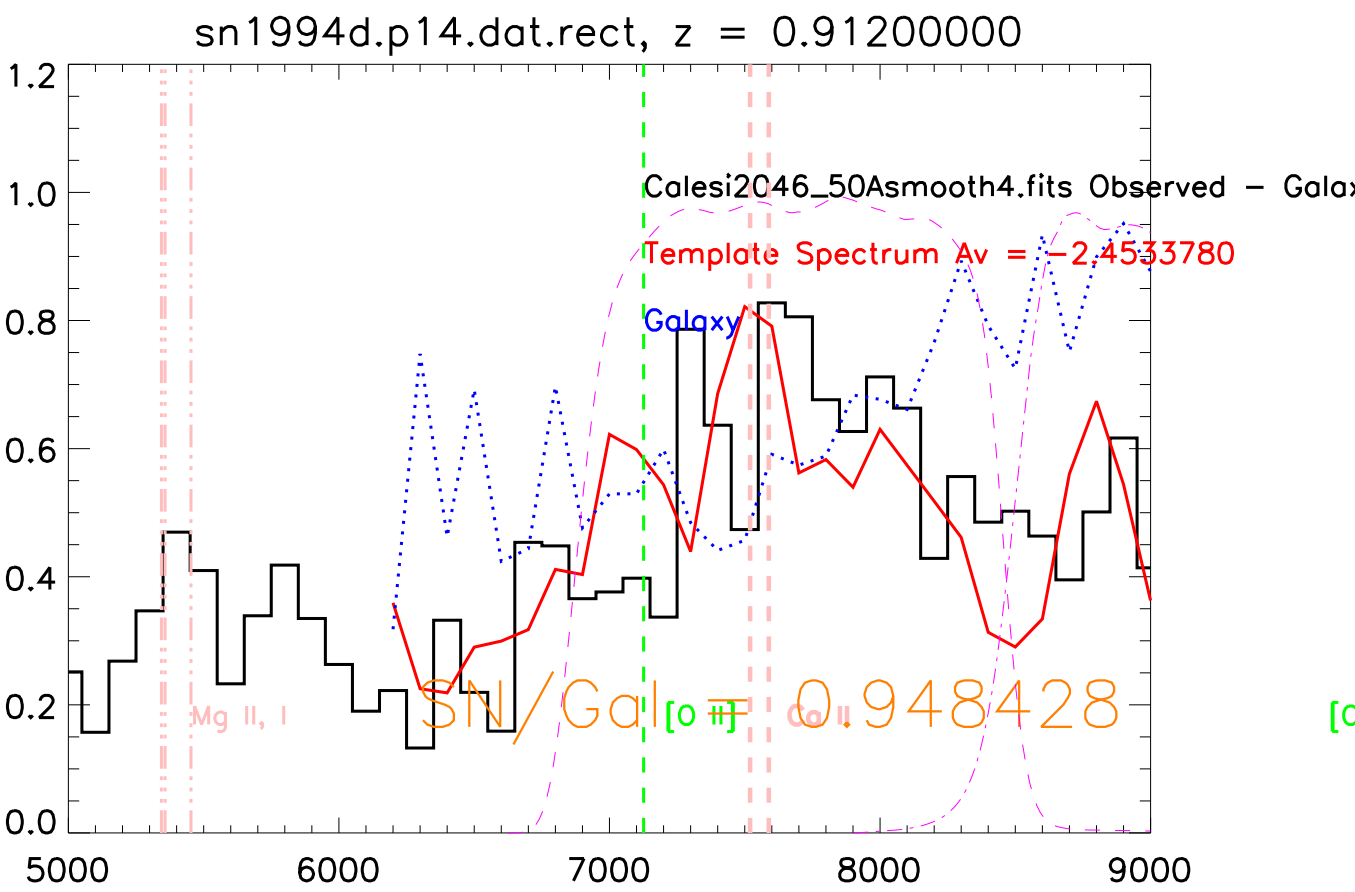

sn1990n.m07.dat.rect, z = 0.93000001
Calesi2046_50Asmooth4.fits Observed − Galaxy
Template Spectrum Av = 0.83128694
Galaxy
SN/Gal = 0.581041
[O II]
1.5
1.0
0.5
0.0
5000
6000
7000
8000
9000

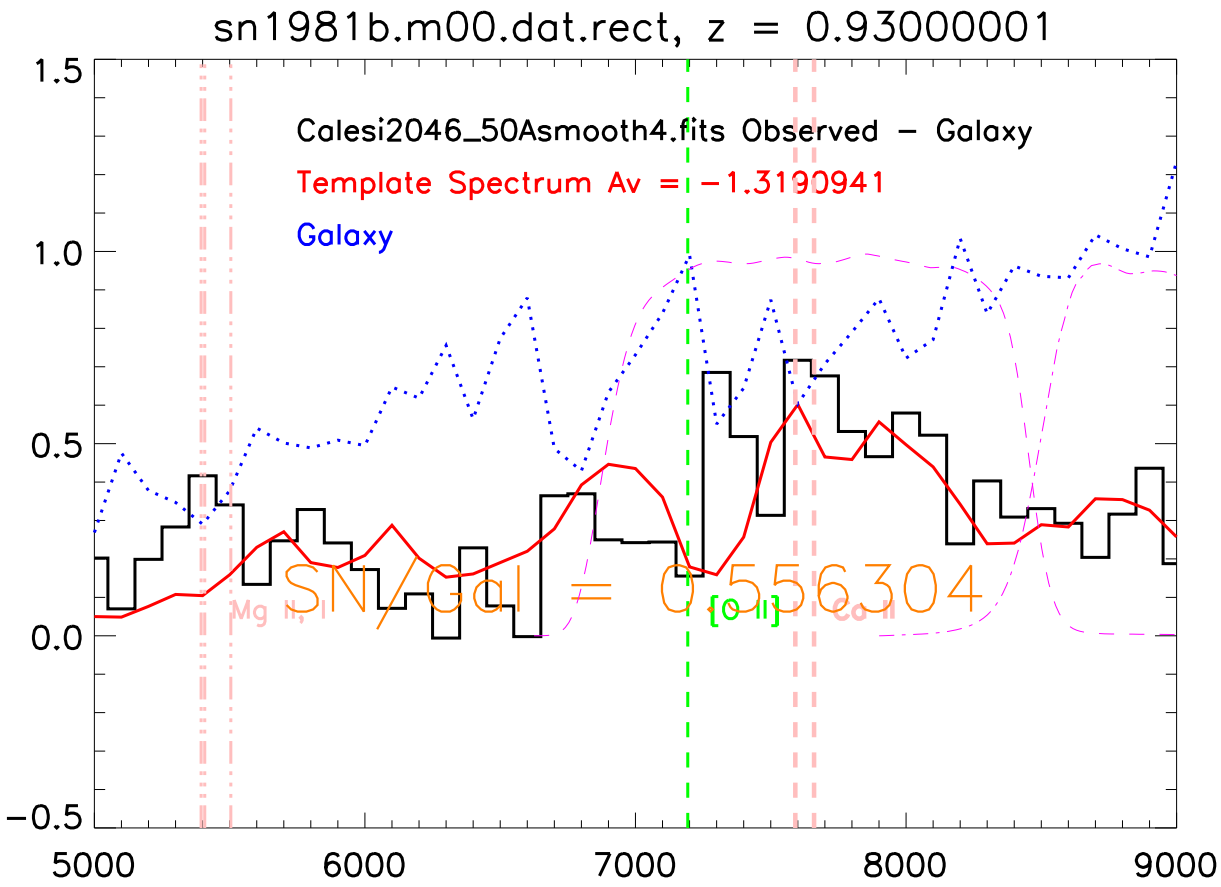

sn1991t.p24.dat.rect, z = 0.92000002
Calesi2046_50Asmooth4.fits Observed – Galax
Template Spectrum Av = -3.4396659
Galaxy
SN/Gal = 0.743195
Mg II, I
[O II]
Ca II
1.2
1.0
0.8
0.6
0.4
0.2
0.0
5000
6000
7000
8000
9000

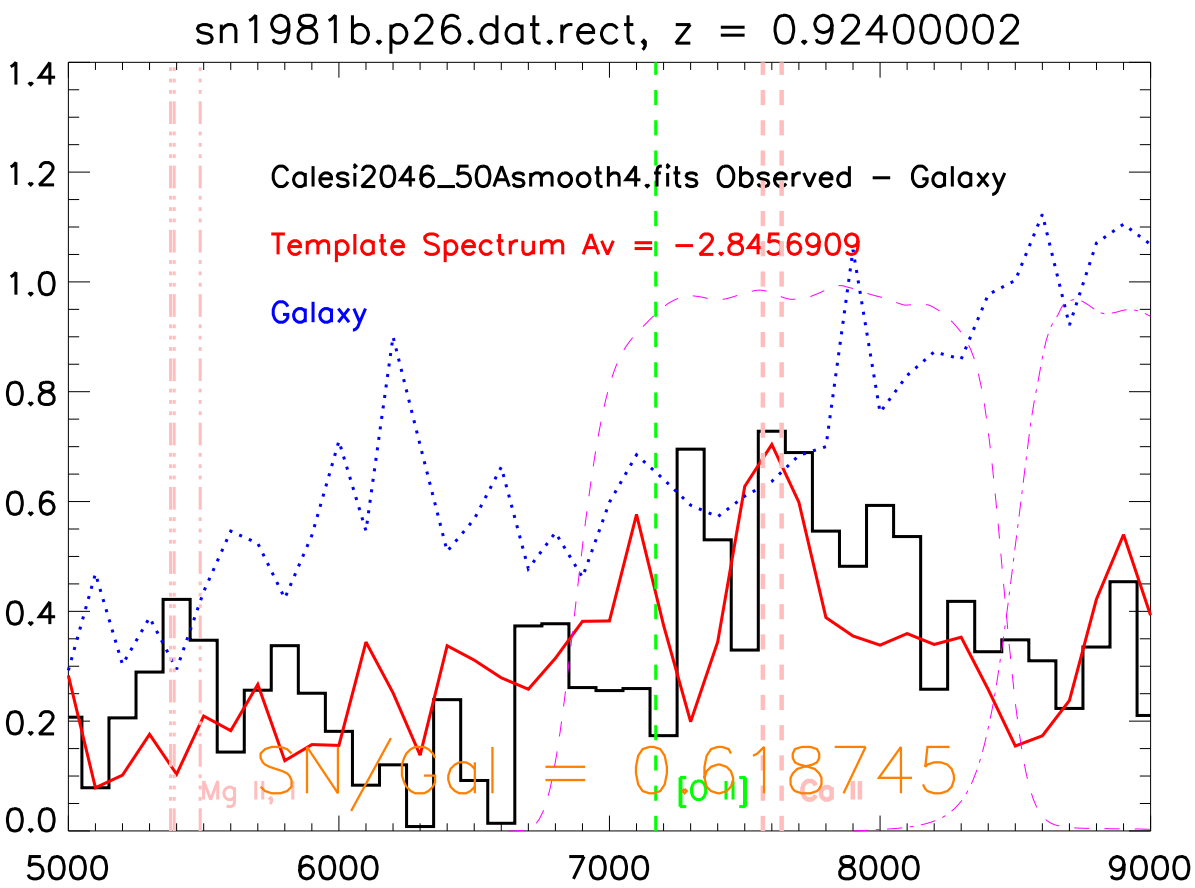

sn1992a.p05.dat.rect, z = 0.92000002
Calesi2046_50Asmooth4.fits Observed − Galaxy
Template Spectrum Av = −1.5224790
Galaxy
SN/Gal = 0.791827
[O II]
1.2
1.0
0.8
0.6
0.4
0.2
0.0
5000
6000
7000
8000
9000

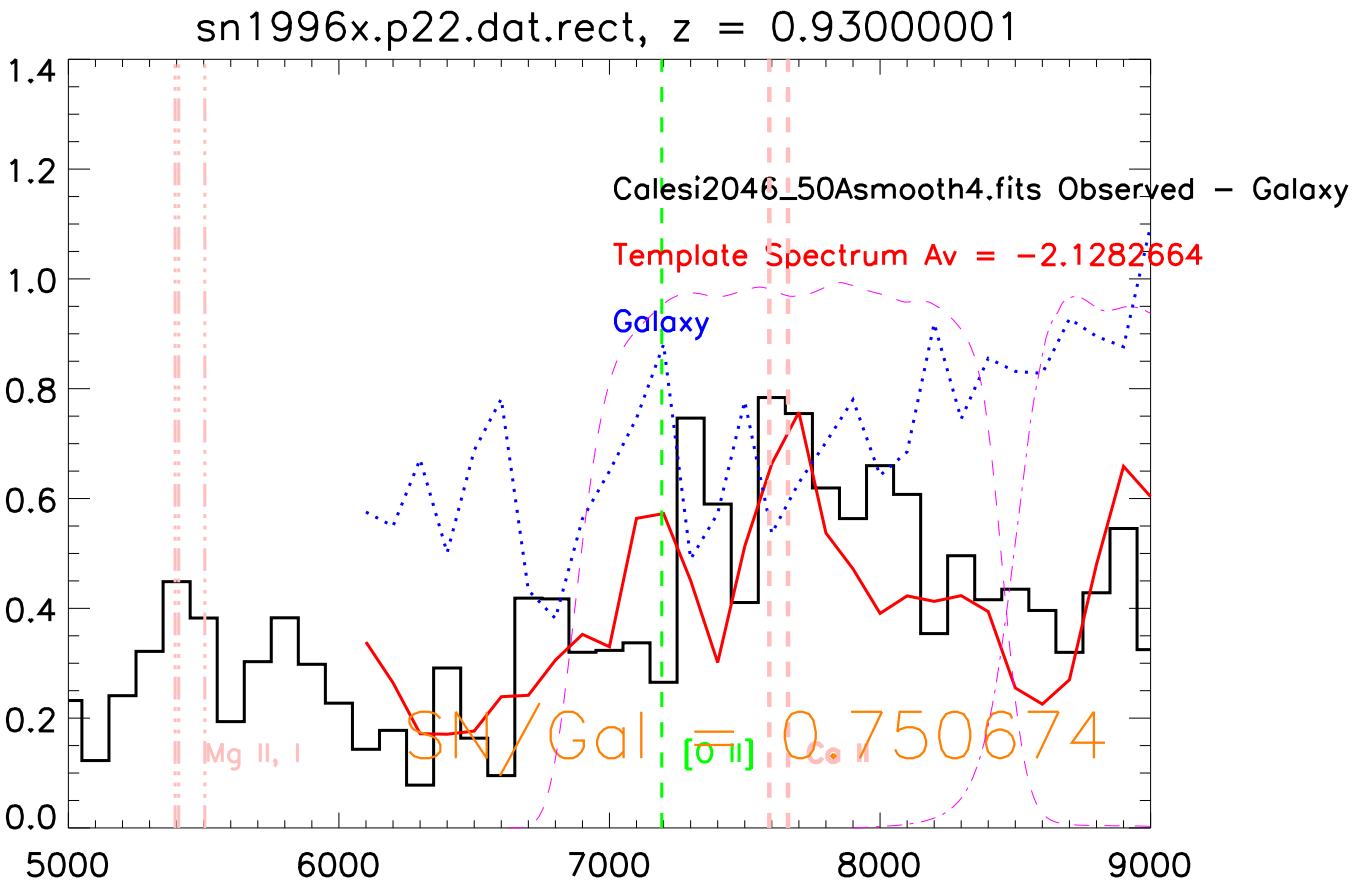

sn1991t.m07.dat.rect, z = 0.91000003
Calesi2046_50Asmooth4.fits Observed – Galax
Template Spectrum Av = 2.2336486
Galdxy
SN/Gal = 3.32847
Mg II, I
[O II]
Ca II
[O
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
5000
6000
7000
8000
9000

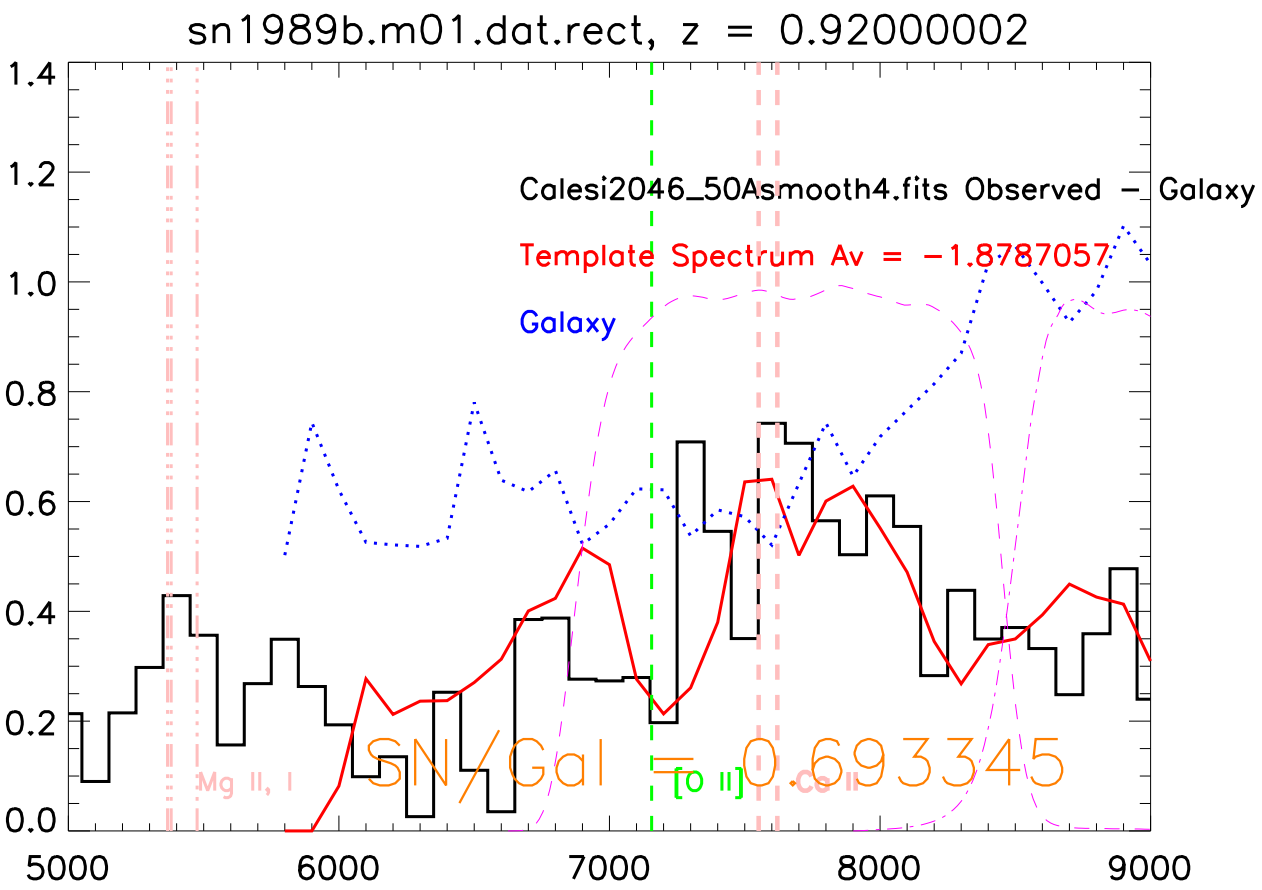

sn1996x.p24.dat.rect, z = 0.93000001
Calesi2046_50Asmooth4.fits Observed – Galaxy
Template Spectrum Av = −2.5076941
Galaxy
SN/Gal = 0.747596
Mg II, I
[O II]
Ca II
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
5000
6000
7000
8000
9000

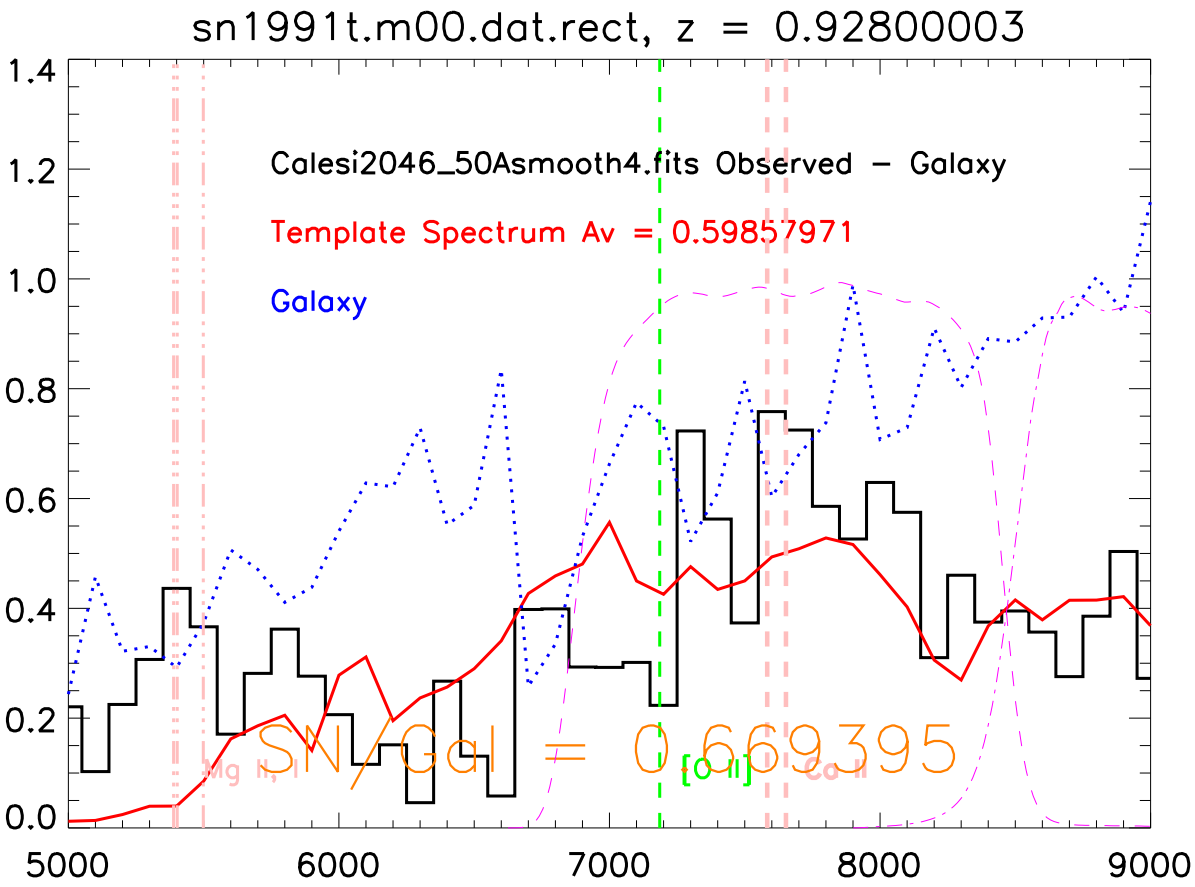

sn1994d.p14.dat.rect, z = 0.91200000
Calesi2046_50Asmooth4.fits Observed – Galax
Template Spectrum Av = 2.4533780
Galaxy
SN/Gal = 0.948428
Mg II, I
[O II]
Ca II
[C
1.2
1.0
0.8
0.6
0.4
0.2
0.0
5000
6000
7000
8000
9000

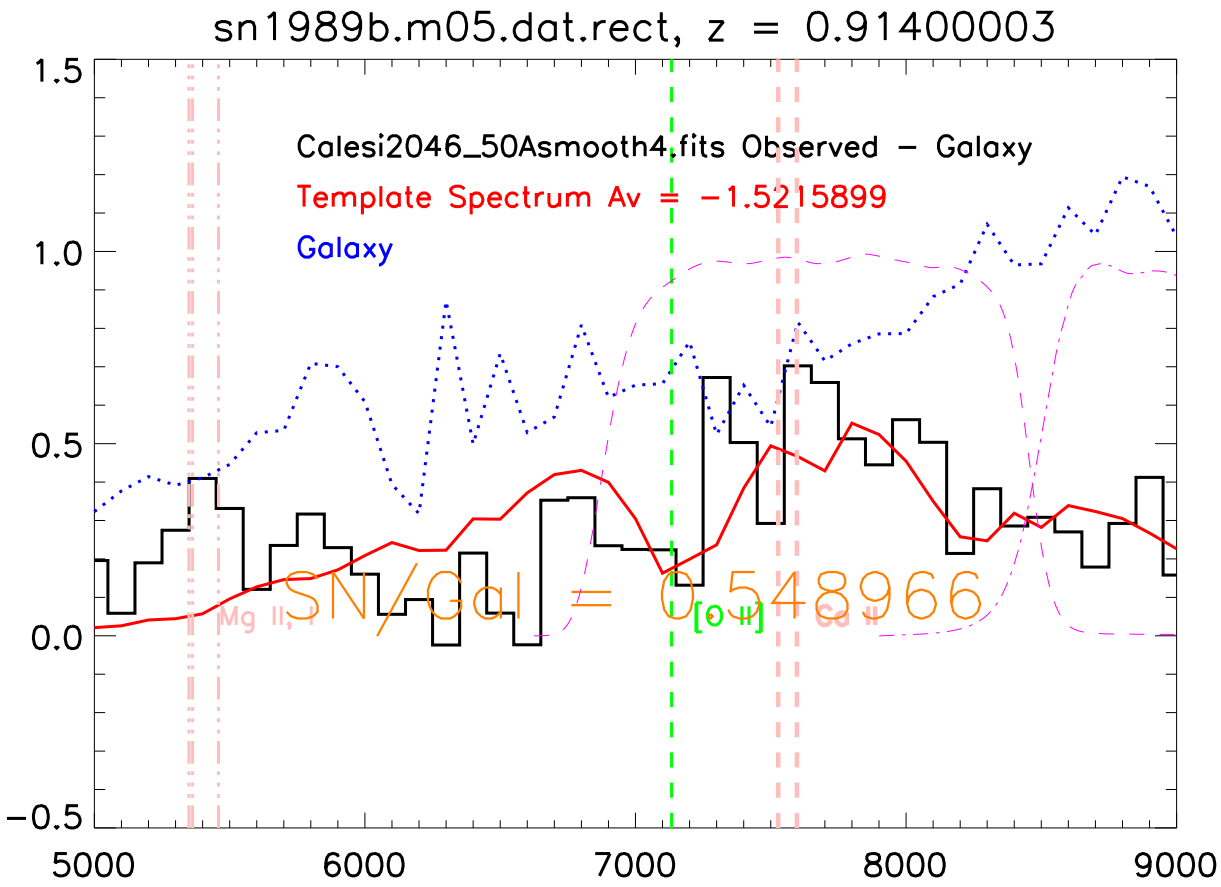

sn1981b.m00.dat.rect, z = 0.93000001
Calesi2046_50Asmooth4.fits Observed − Galaxy
Template Spectrum Av = −1.3190941
Galaxy
SN/Gal = 0.556304
[O II]
1.5
1.0
0.5
0.0
−0.5
5000
6000
7000
8000
9000

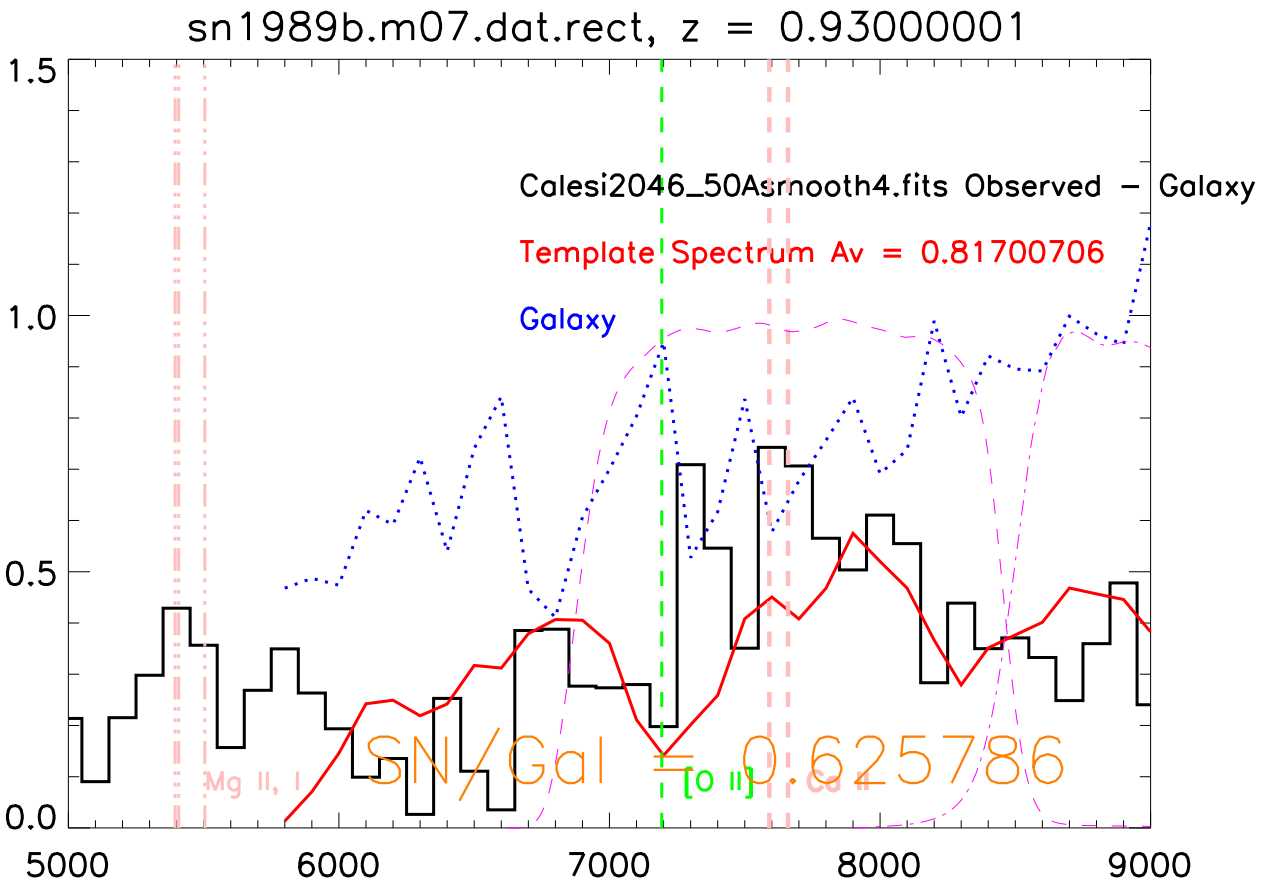

sn1981b.p26.dat.rect, z = 0.92400002
Calesi2046_50Asmooth4.fits Observed − Galaxy
Template Spectrum Av = −2.8456909
Galaxy
SN/Gal = 0.618745
[O II]
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
5000
6000
7000
8000
9000


sn1996x.p22.dat.rect, z = 0.93000001
Calesi2046_50Asmooth4.fits Observed – Galaxy
Template Spectrum Av = −2.1282664
Galaxy
SN/Gal = 0.750674
Mg II, I
[O II]
Ca II
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
5000
6000
7000
8000
9000


sn1989b.m01.dat.rect, z = 0.92000002
Calesi2046_50Asmooth4.fits Observed
Galaxy
Template Spectrum Av = -1.8787057
Galaxy
SN/Gal = 0.693345
Mg II, I
[O II]
Ca II
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
5000
6000
7000
8000
9000


sn1991t.m00.dat.rect, z = 0.92800003
Calesi2046_50Asmooth4.fits Observed − Galaxy
Template Spectrum Av = 0.59857971
Galaxy
SN/Gal = 0.669395
[O II]
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
5000
6000
7000
8000
9000


sn1989b.m05.dat.rect, z = 0.91400003
Calesi2046_50Asmooth4.fits Observed − Galaxy
Template Spectrum Av = −1.5215899
Galaxy
SN/Gal = 0.548966
Mg II,
[O II]
Ca II
1.5
1.0
0.5
0.0
−0.5
5000
6000
7000
8000
9000


sn1989b.m07.dat.rect, z = 0.93000001
Calesi2046_50Asmooth4.fits Observed − Galaxy
Template Spectrum Av = 0.81700706
Galaxy
SN/Gal = 0.625786
[O II]
1.5
1.0
0.5
0.0
5000
6000
7000
8000
9000