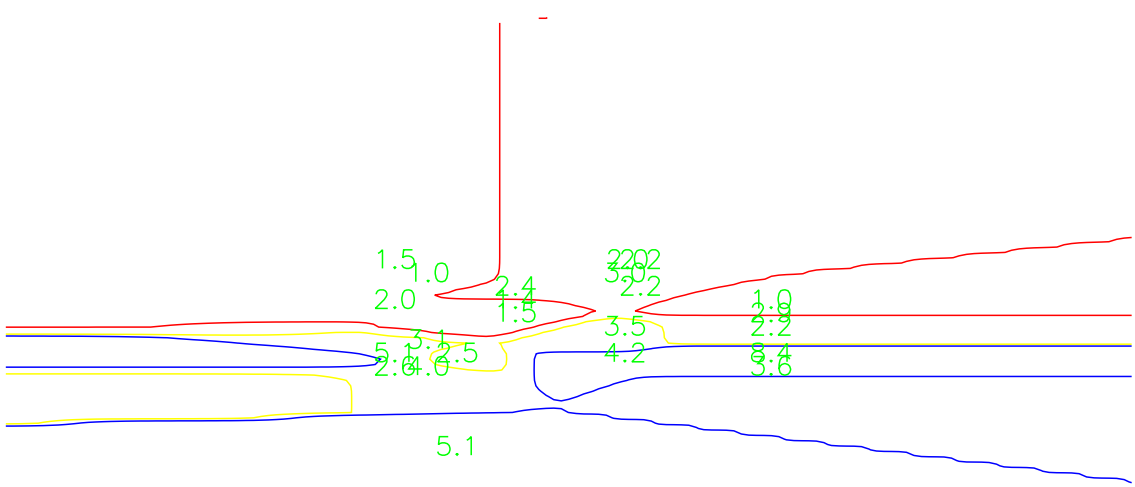
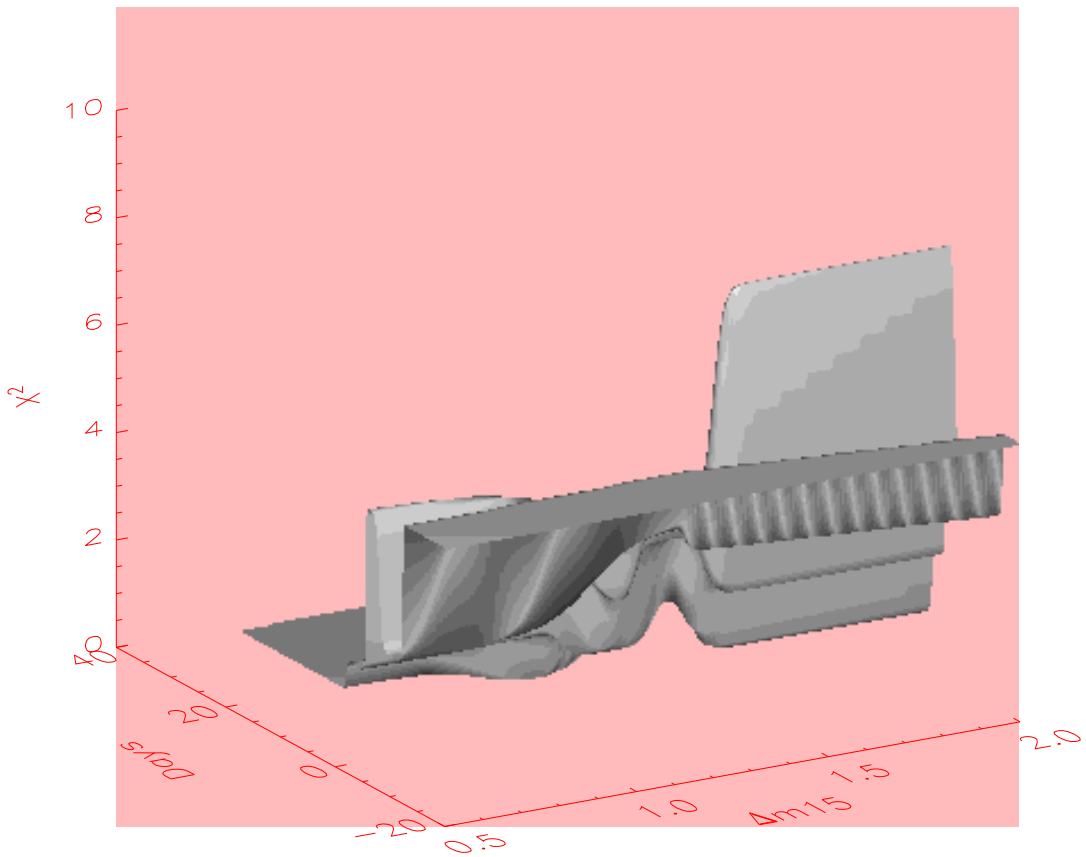
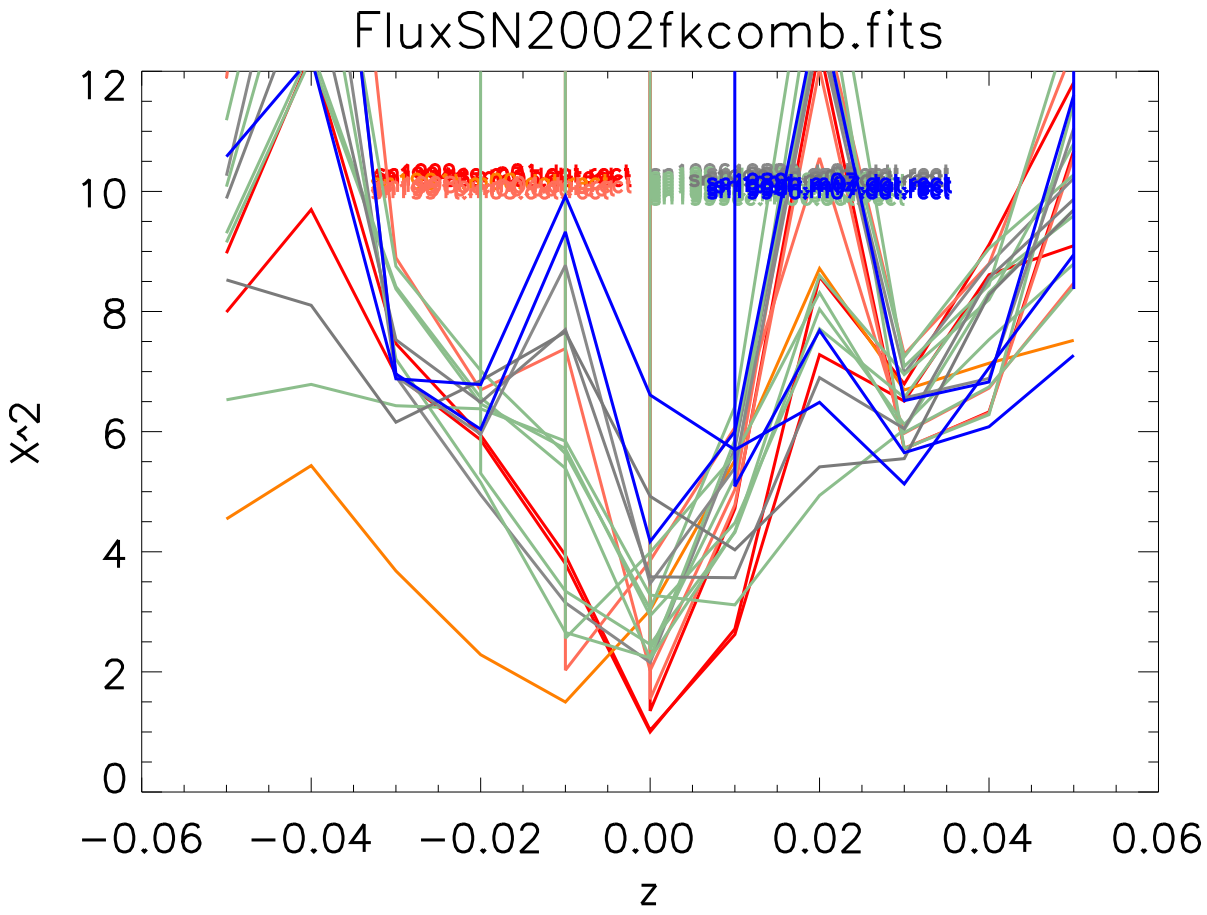
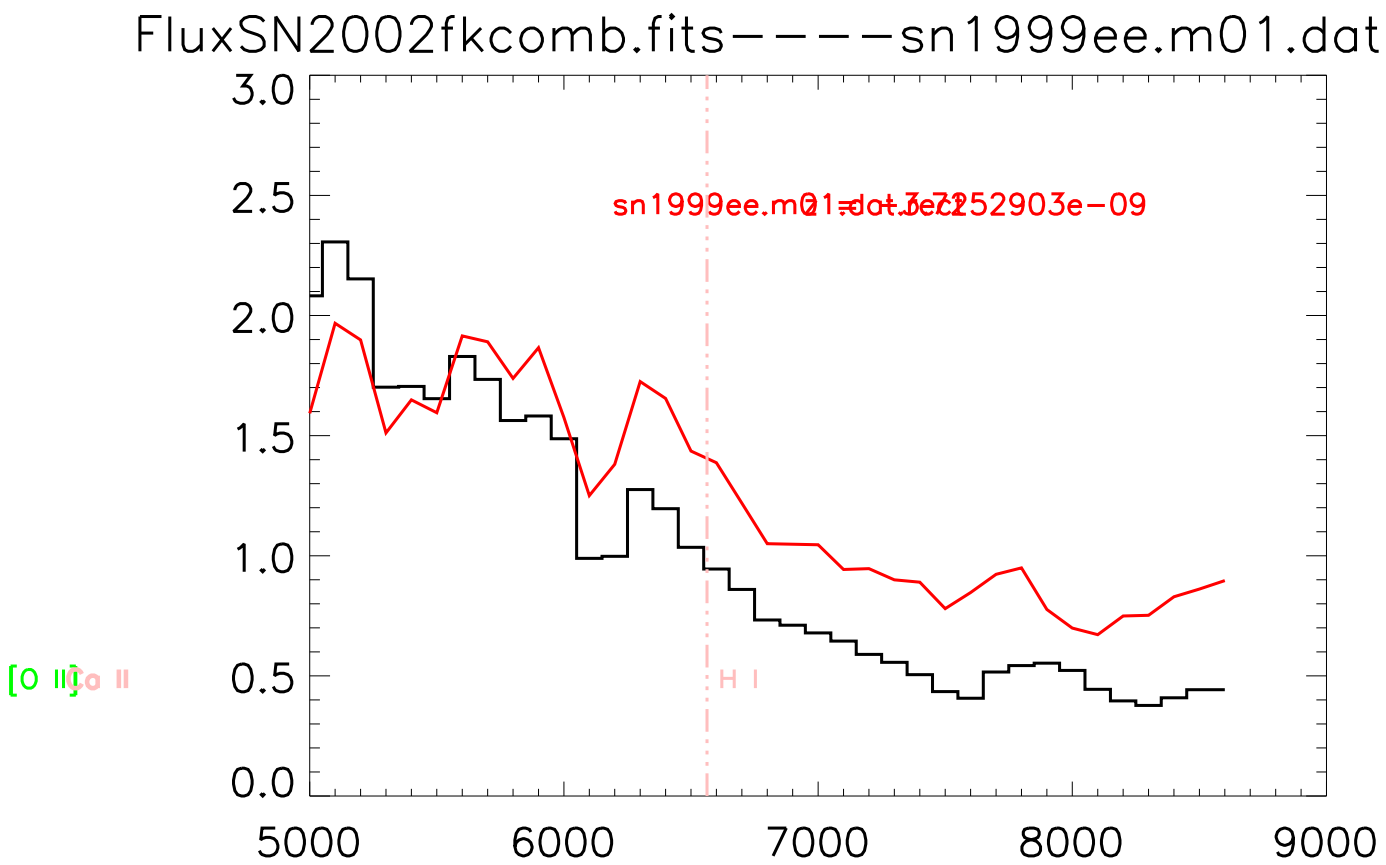
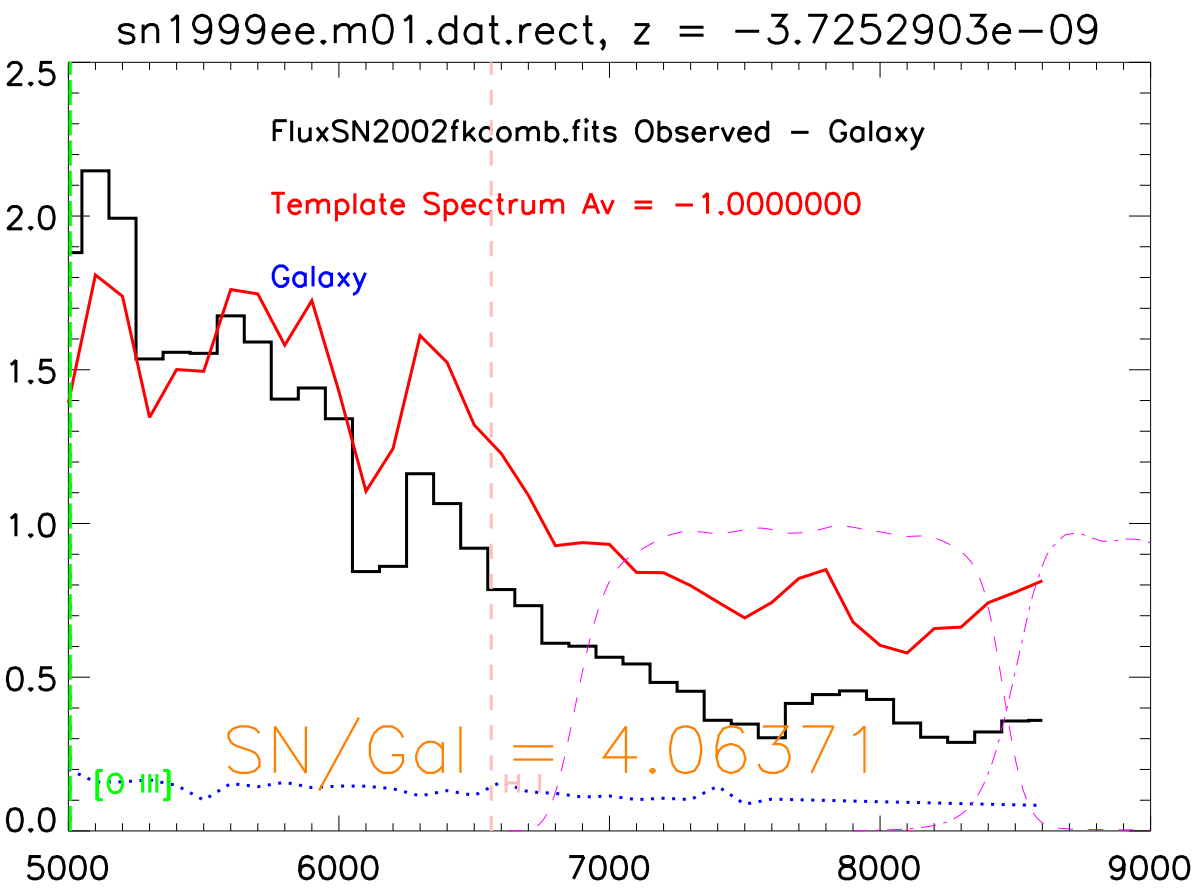

1.5
1.0
2.0
2.4
1.5
3.5
4.2
2.2
3.6
5.1

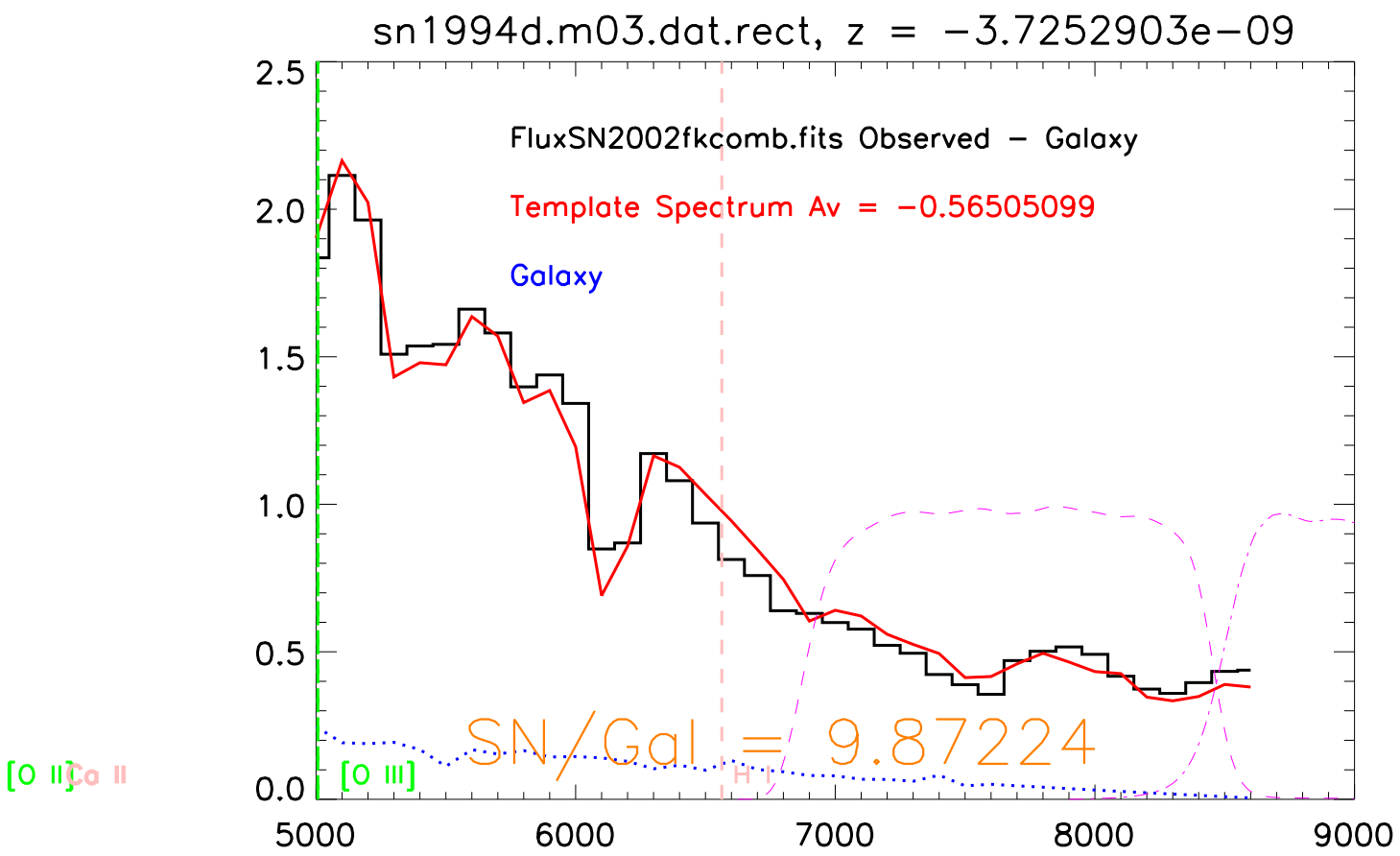


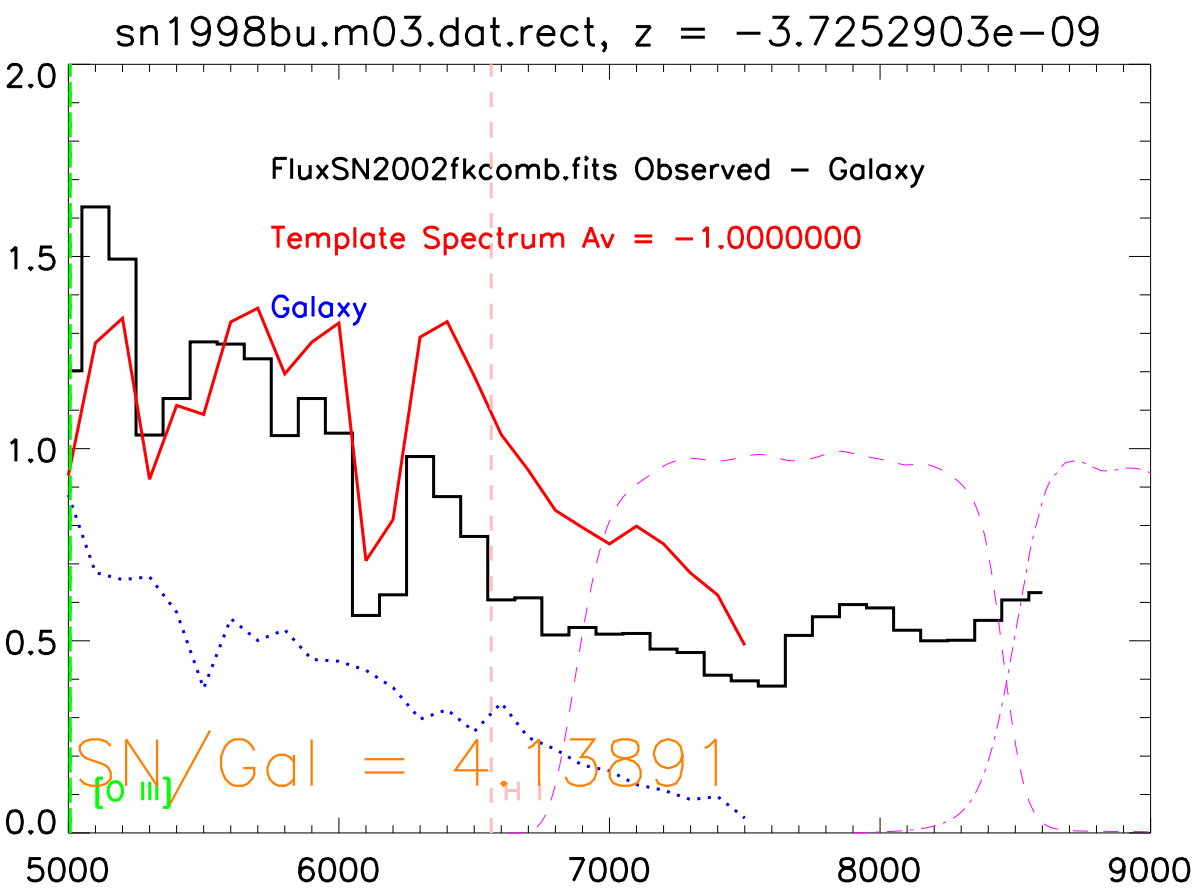
10
8
6
4
2
0
χ^2
40
20
0
−20
Days
0.5
1.0
1.5
2.0
Δm15

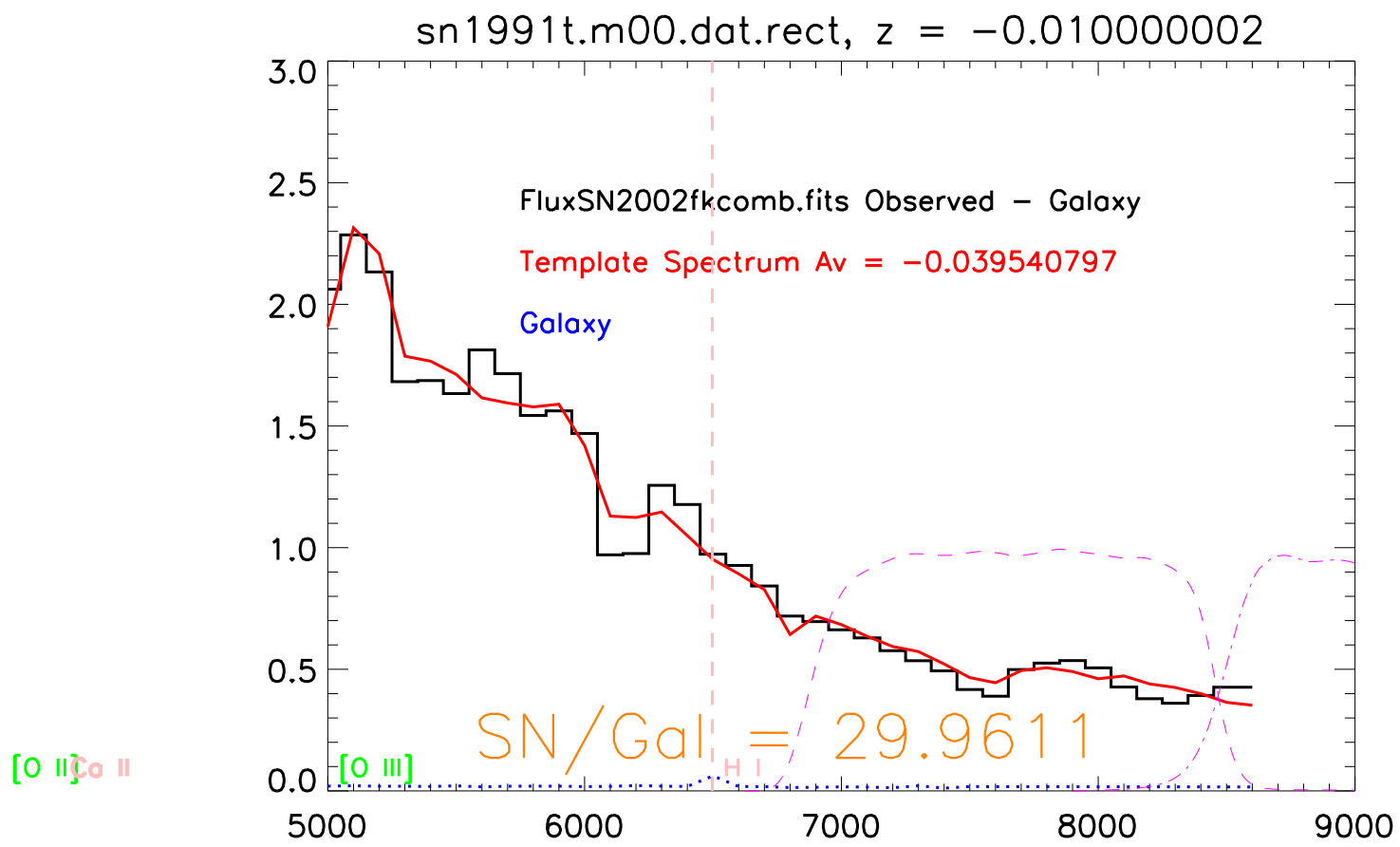

FluxSN2002fkcomb.fits
X^2
z
12
10
8
6
4
2
0
−0.06
−0.04
−0.02
0.00
0.02
0.04
0.06

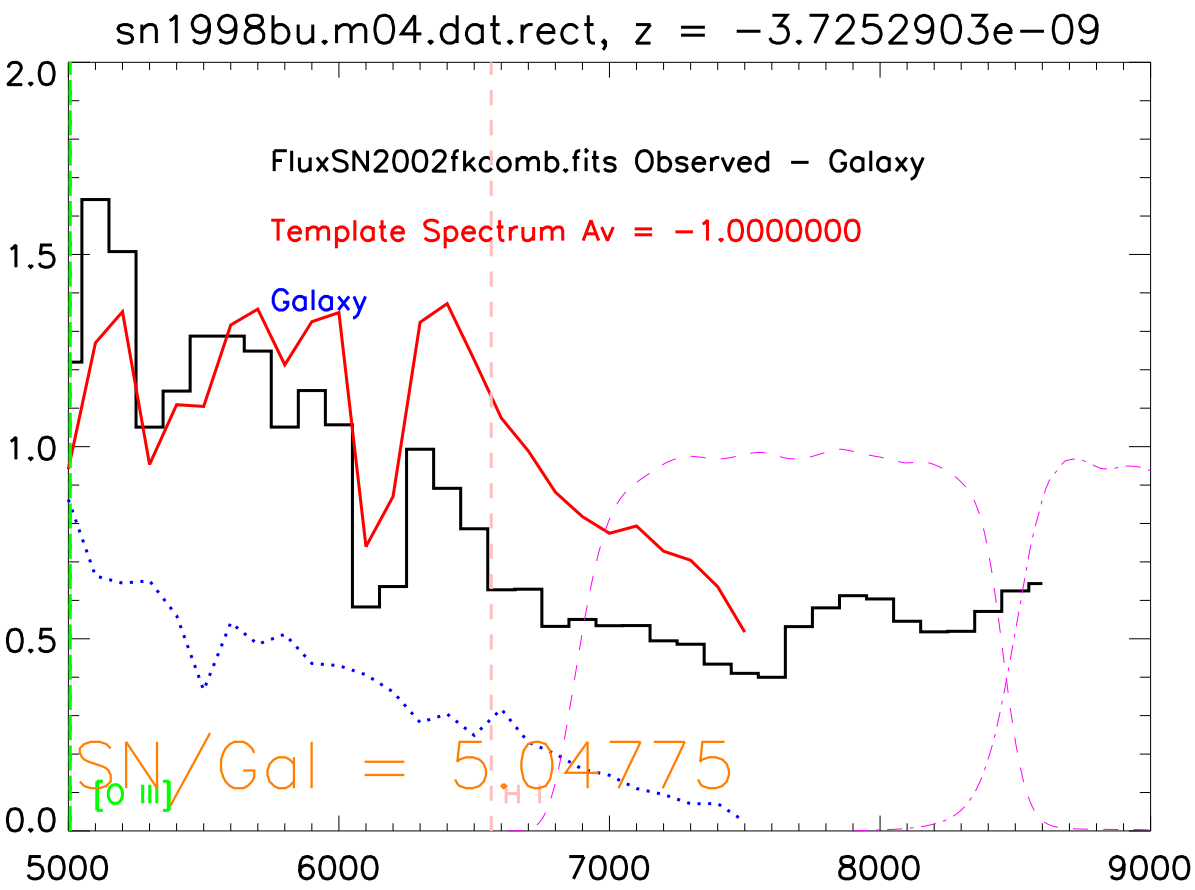

FluxSN2002fkcomb.fits----sn1999ee.m01.dat.rect
sn1999ee.m01.dat.rect 3.72252903e-09
[O II]
Ca II
H I
3.0
2.5
2.0
1.5
1.0
0.5
0.0
5000
6000
7000
8000
9000

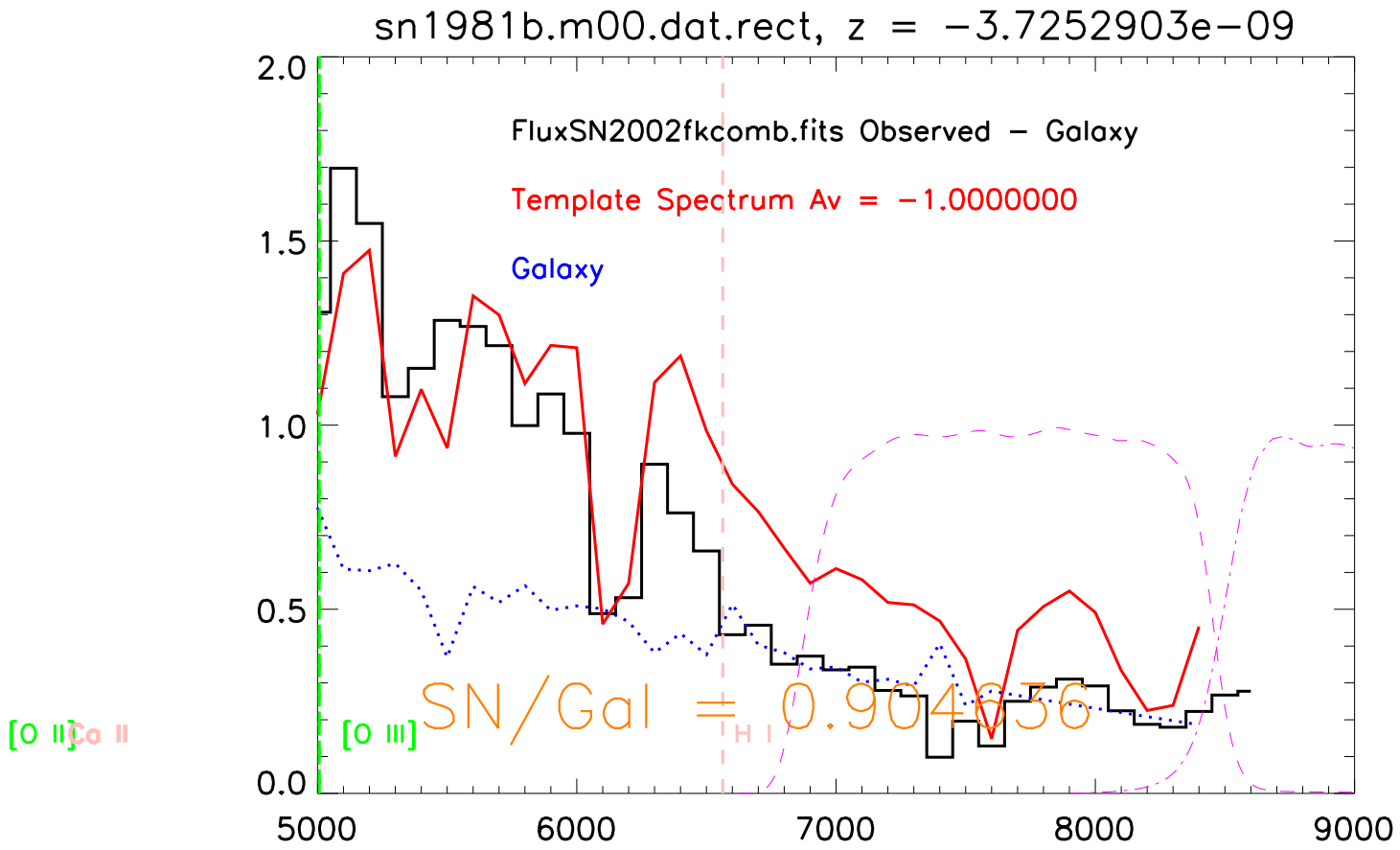

sn1999ee.m01.dat.rect, z = −3.7252903e−09
FluxSN2002fkcomb.fits Observed − Galaxy
Template Spectrum Av = −1.0000000
Galaxy
SN/Gal = 4.06371
[O II]
Ca II
[O III]
H I
2.5
2.0
1.5
1.0
0.5
0.0
5000
6000
7000
8000
9000

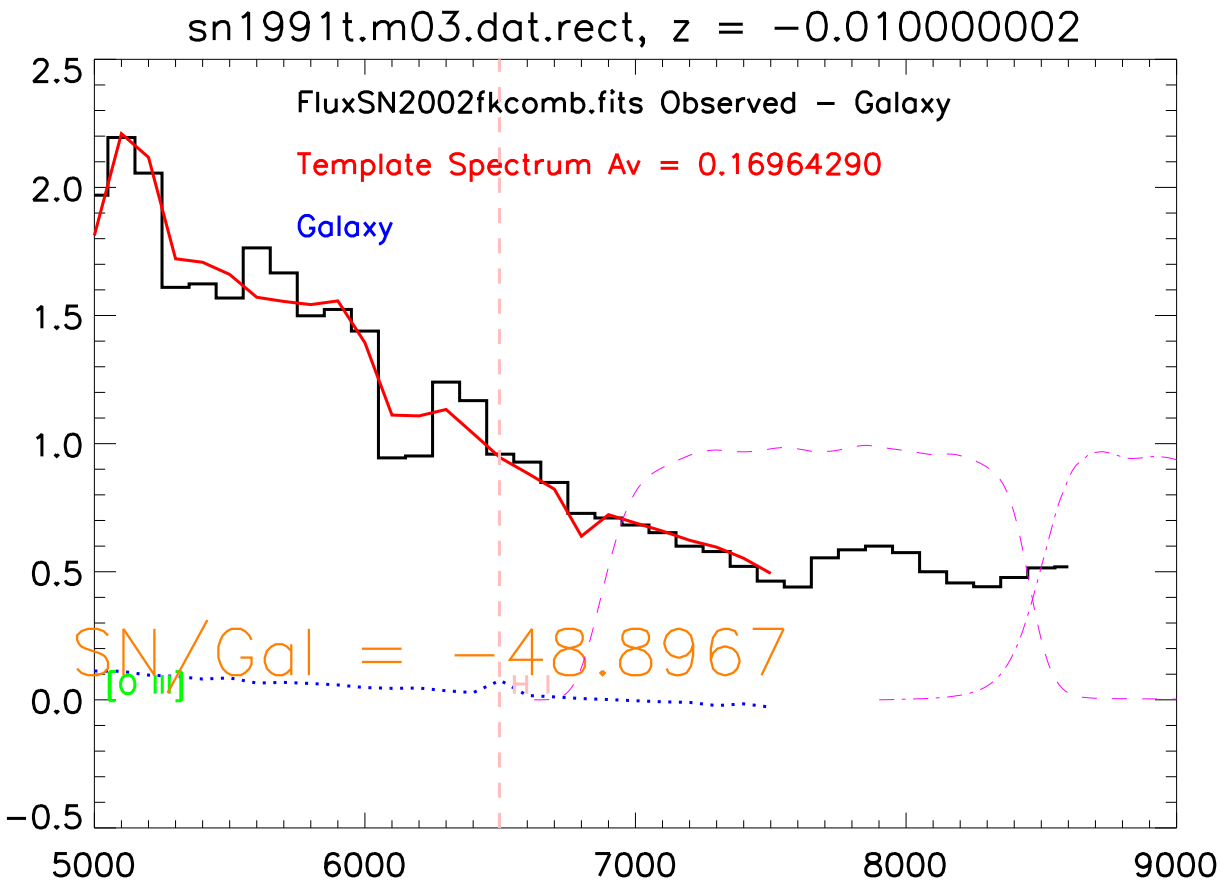

sn1994d.m03.dat.rect, z = −3.7252903e−09
FluxSN2002fkcomb.fits Observed − Galaxy
Template Spectrum Av = −0.56505099
Galaxy
SN/Gal = 9.87224
[O II]
Ca II
[O III]
H I
2.5
2.0
1.5
1.0
0.5
0.0
5000
6000
7000
8000
9000

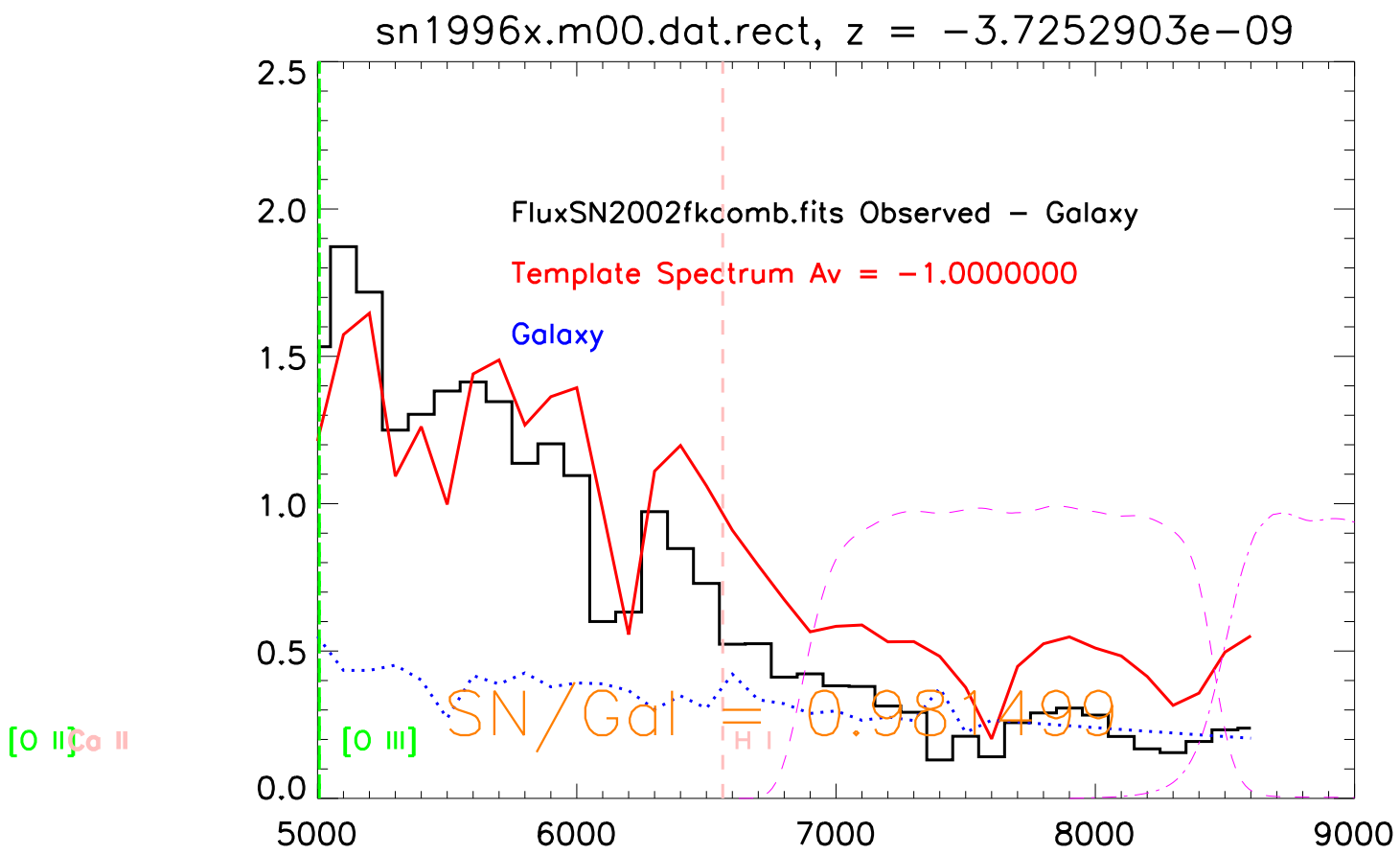

sn1998bu.m03.dat.rect, z = −3.7252903e−09
FluxSN2002fkcomb.fits Observed − Galaxy
Template Spectrum Av = −1.0000000
Galaxy
SN/Gal = 4.13891
[O II]
Ca II
[O III]
H I
2.0
1.5
1.0
0.5
0.0
5000
6000
7000
8000
9000

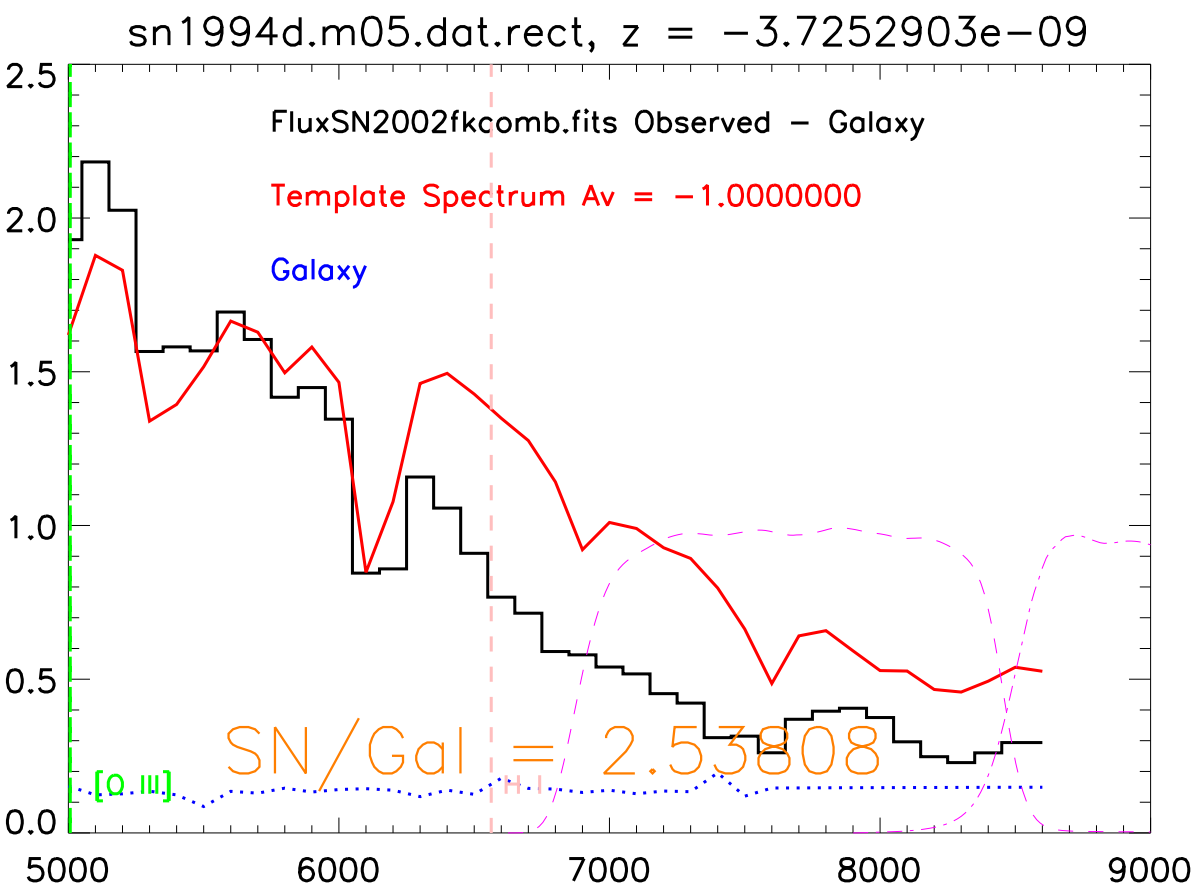

sn1991t.m00.dat.rect, z = −0.010000002
FluxSN2002fkcomb.fits Observed − Galaxy
Template Spectrum Av = −0.039540797
Galaxy
SN/Gal = 29.9611
[O II]
Ca II
[O III]
H I
3.0
2.5
2.0
1.5
1.0
0.5
0.0
5000
6000
7000
8000
9000

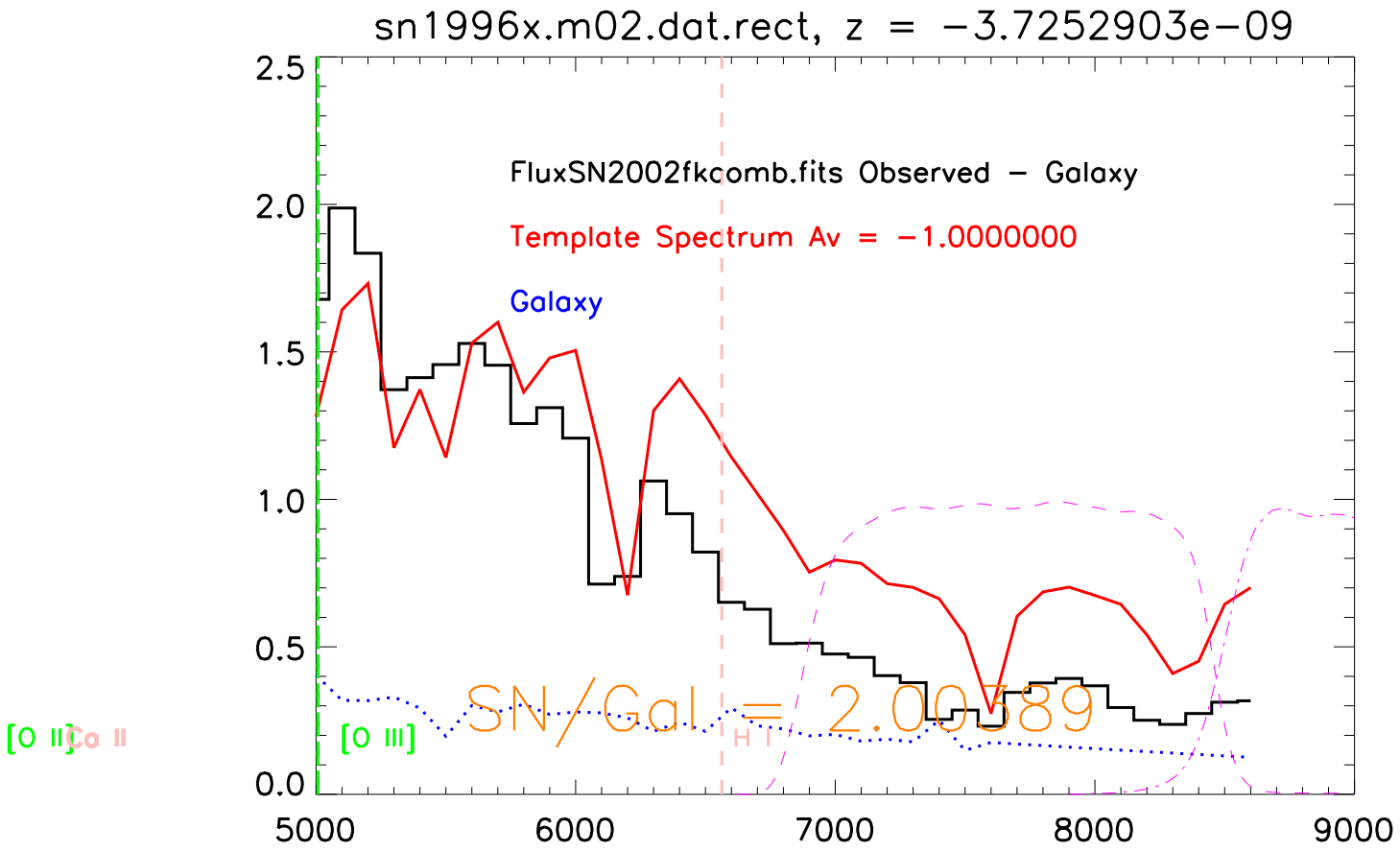

sn1998bu.m04.dat.rect, z = −3.7252903e−09
FluxSN2002fkcomb.fits Observed − Galaxy
Template Spectrum Av = −1.0000000
Galaxy
SN/Gal = 5.04775
[O II]
Ca II
[O III]
H I
2.0
1.5
1.0
0.5
0.0
5000
6000
7000
8000
9000

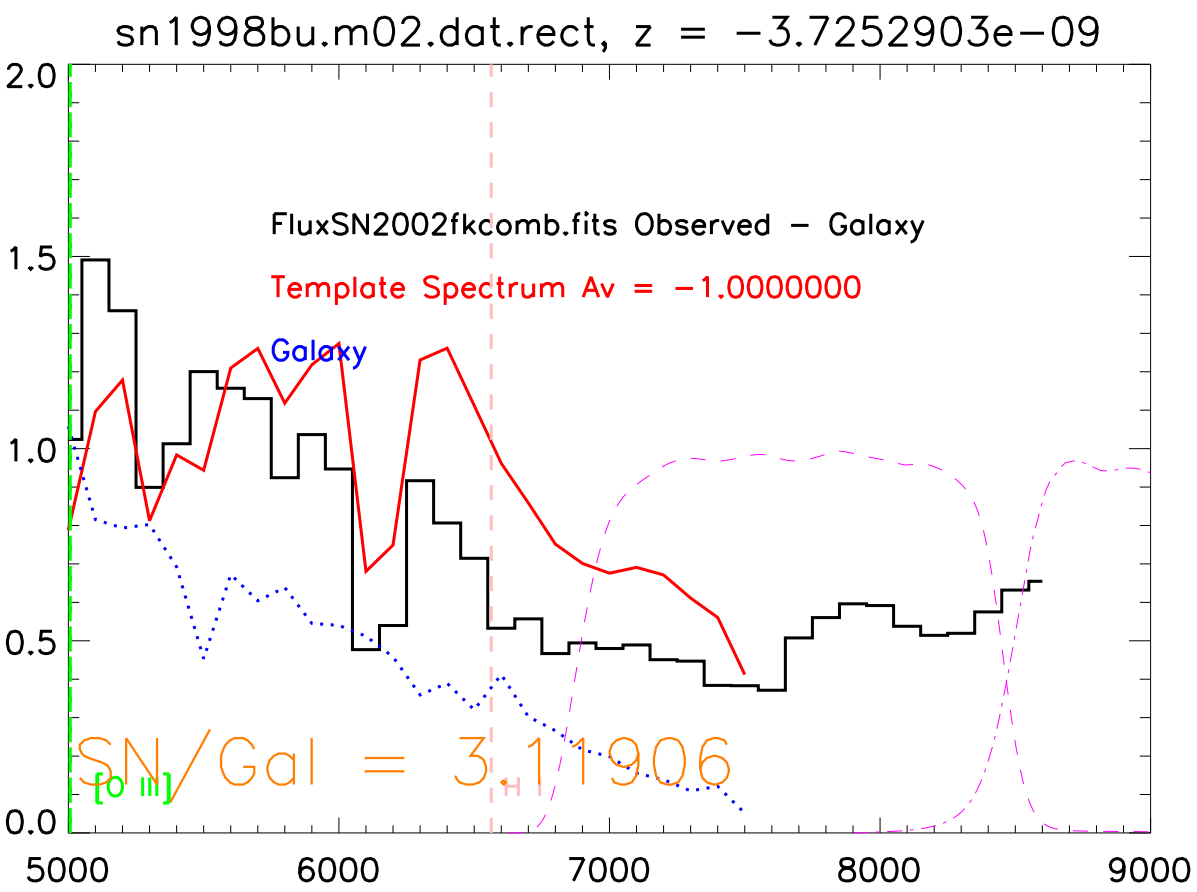

sn1981b.m00.dat.rect, z = −3.7252903e−09
FluxSN2002fkcomb.fits Observed − Galaxy
Template Spectrum Av = −1.0000000
Galaxy
SN/Gal = 0.9046036
[O II]
Ca II
[O III]
H I
2.0
1.5
1.0
0.5
0.0
5000
6000
7000
8000
9000

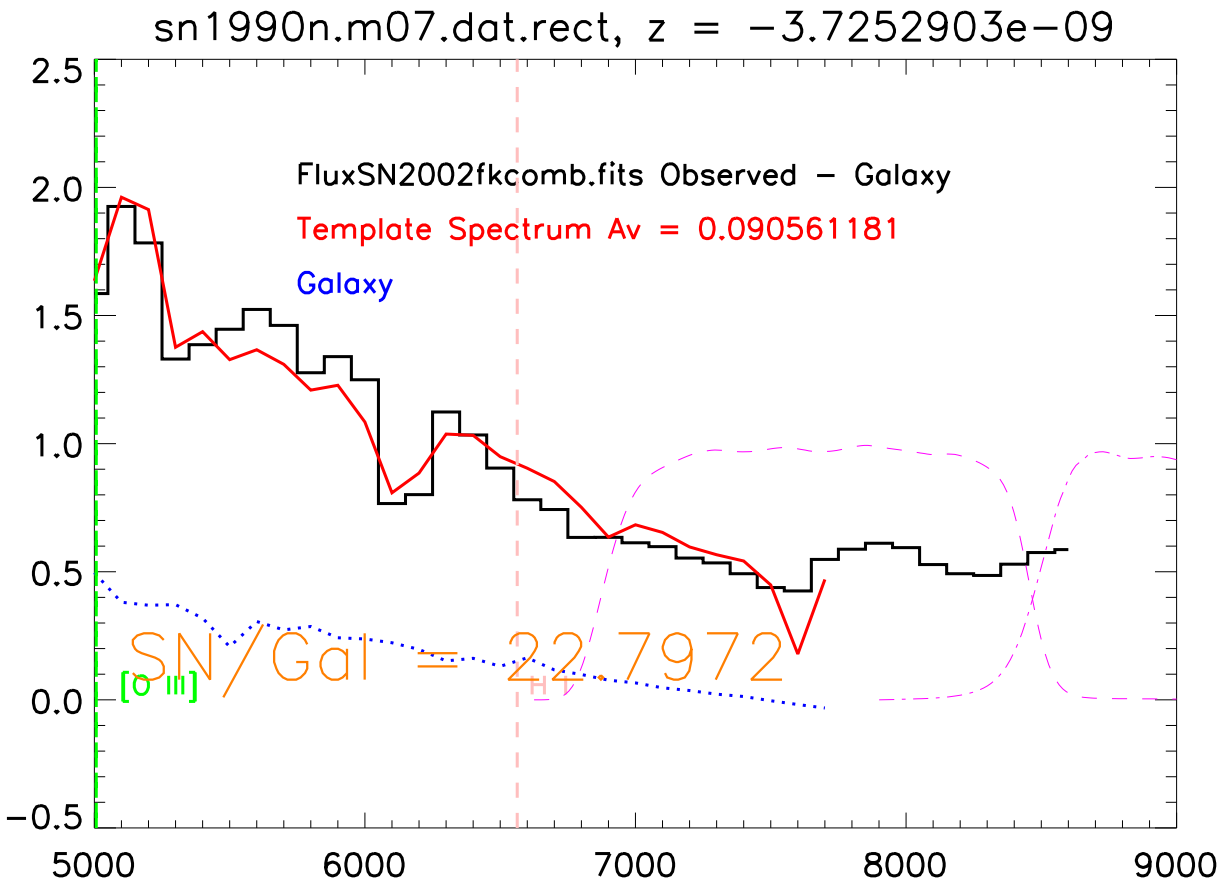

sn1991t.m03.dat.rect, z = −0.010000002
FluxSN2002fkcomb.fits Observed − Galaxy
Template Spectrum Av = 0.16964290
Galaxy
SN/Gal = −48.8967
[O II]
Ca II
[O III]
H I
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
5000
6000
7000
8000
9000

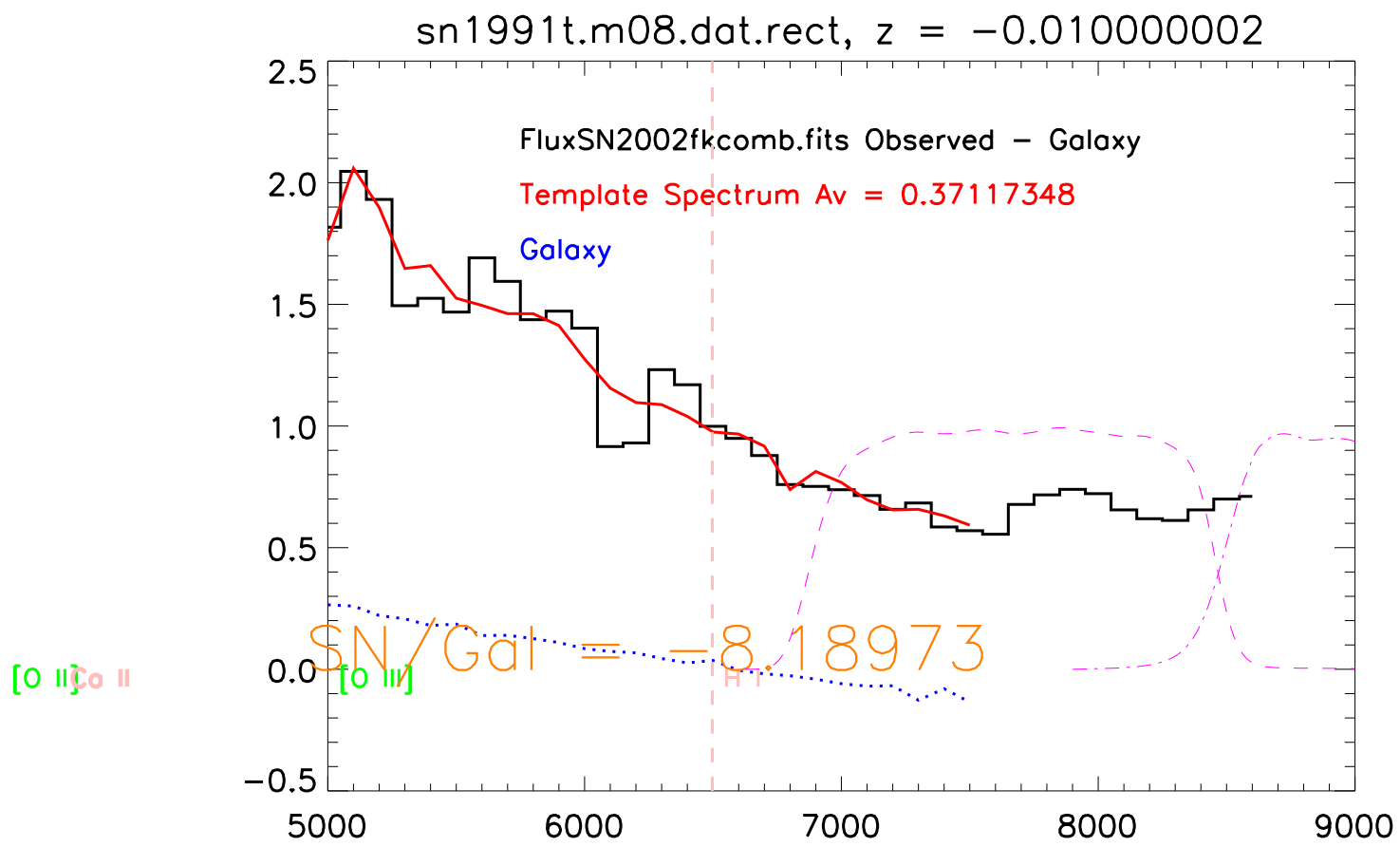

sn1996x.m00.dat.rect, z = −3.7252903e−09
FluxSN2002fkcomb.fits Observed − Galaxy
Template Spectrum Av = −1.0000000
Galaxy
SN/Gal = 0.981499
[O II]
Ca II
[O III]
H I
2.5
2.0
1.5
1.0
0.5
0.0
5000
6000
7000
8000
9000

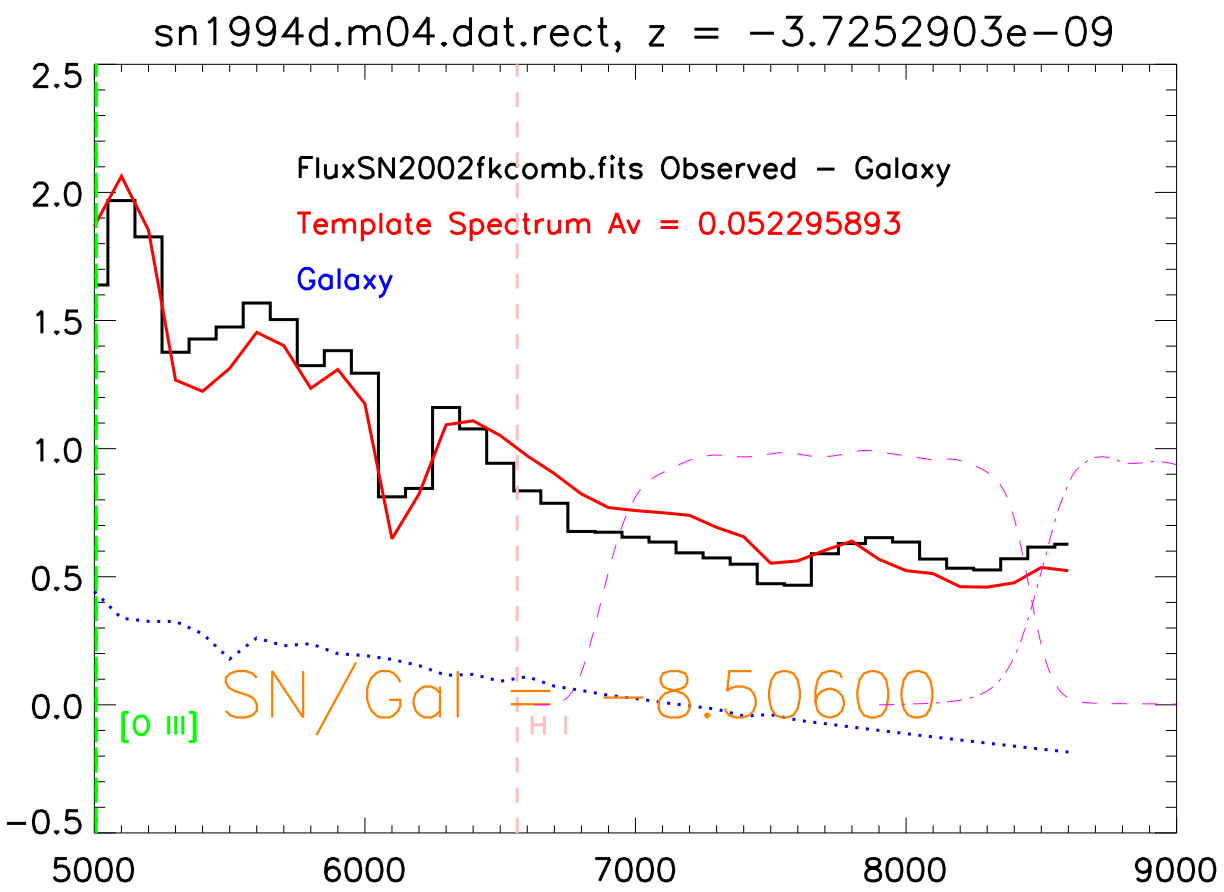

sn1994d.m05.dat.rect, z = −3.7252903e−09
FluxSN2002fkcomb.fits Observed − Galaxy
Template Spectrum Av = −1.0000000
Galaxy
SN/Gal = 2.53808
[O II]
Ca II
[O III]
H I
2.5
2.0
1.5
1.0
0.5
0.0
5000
6000
7000
8000
9000

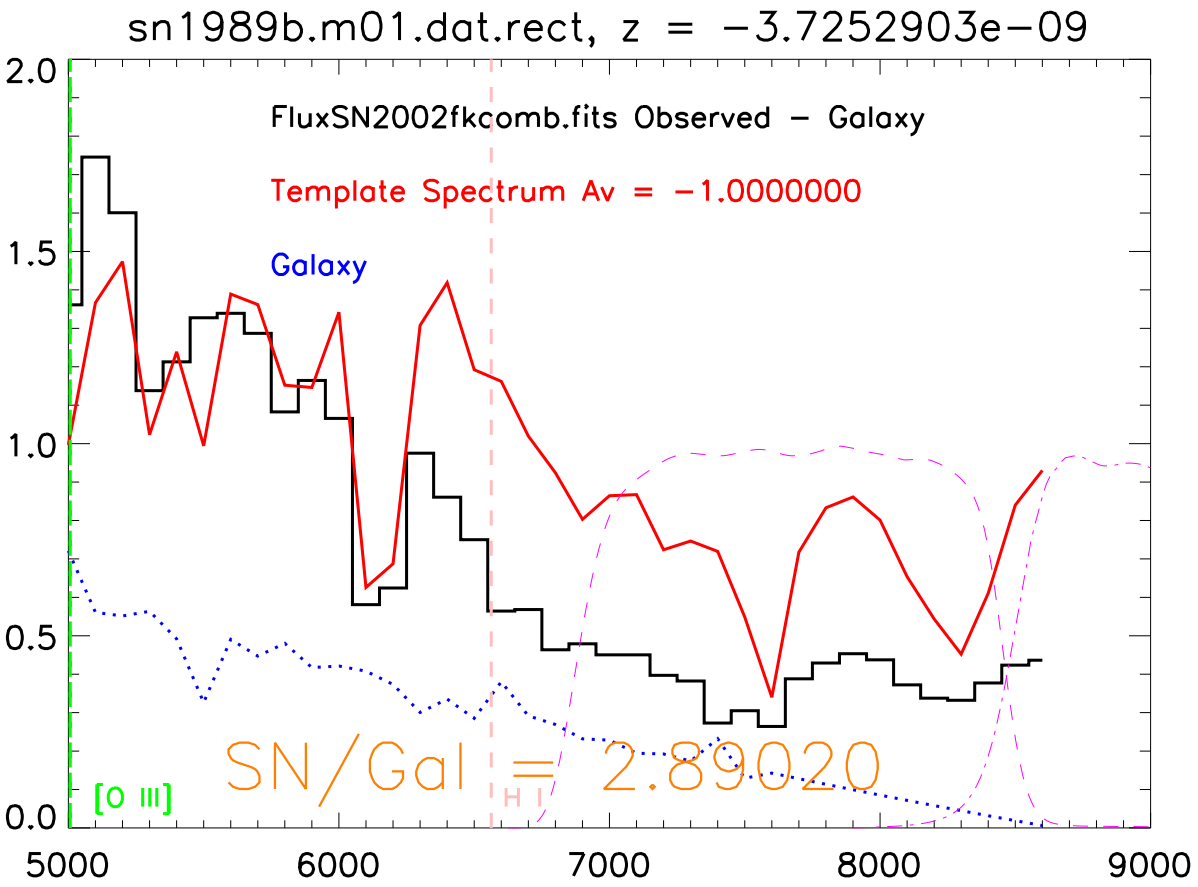

sn1996x.m02.dat.rect, z = −3.7252903e−09
FluxSN2002fkcomb.fits Observed − Galaxy
Template Spectrum Av = −1.0000000
Galaxy
SN/Gal = 2.00589
[O II]
Ca II
[O III]
H I
2.5
2.0
1.5
1.0
0.5
0.0
5000
6000
7000
8000
9000

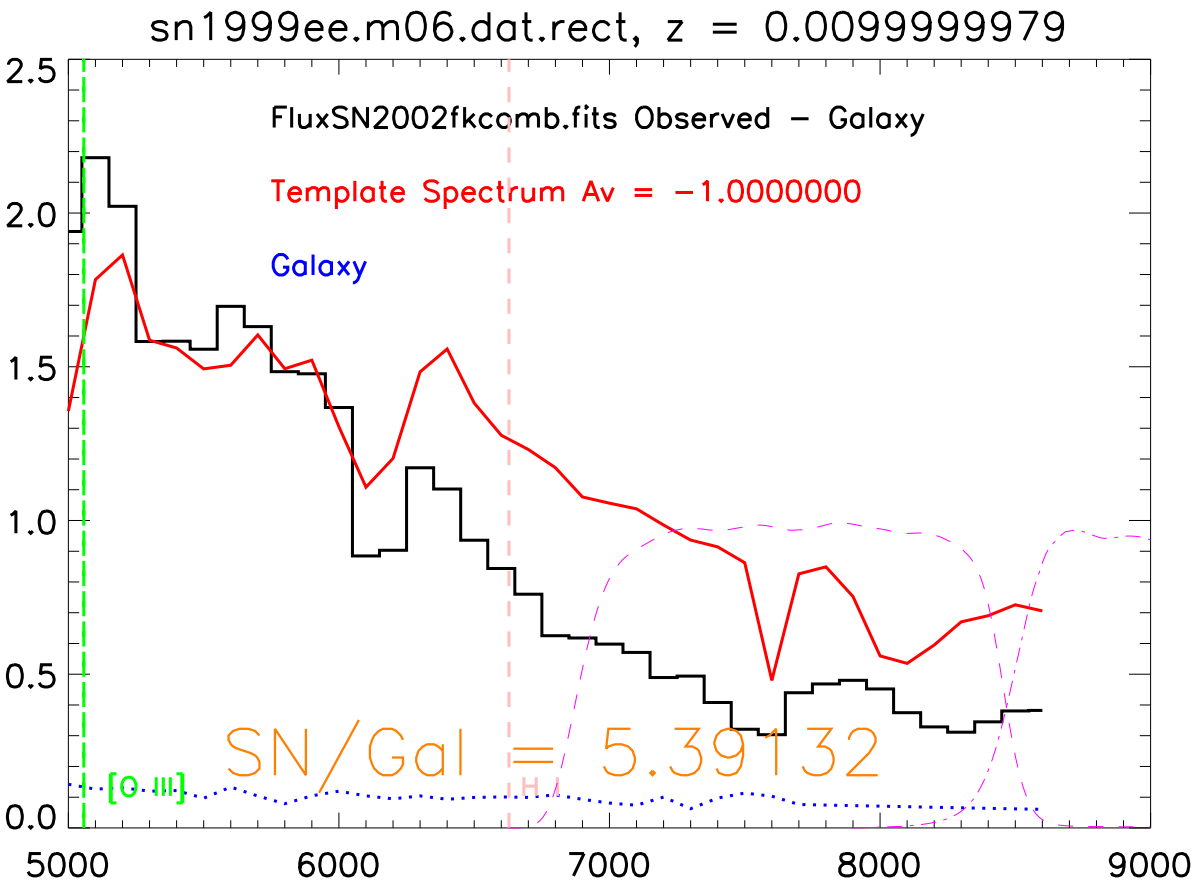

sn1998bu.m02.dat.rect, z = −3.7252903e−09
FluxSN2002fkcomb.fits Observed − Galaxy
Template Spectrum Av = −1.0000000
Galaxy
SN/Gal = 3.11906
[O II]
Ca II
[O III]
H
2.0
1.5
1.0
0.5
0.0
5000
6000
7000
8000
9000

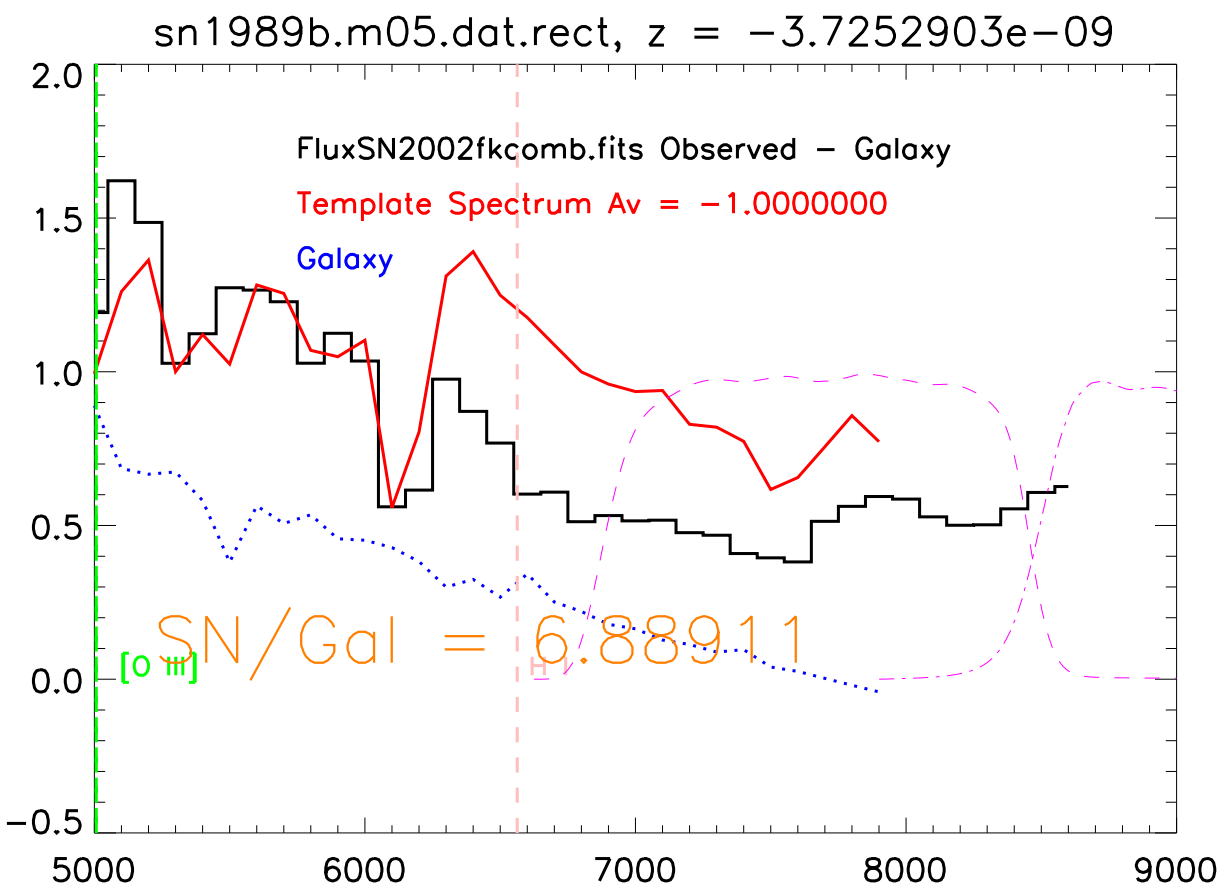

sn1990n.m07.dat.rect, z = −3.7252903e−09
FluxSN2002fkcomb.fits Observed − Galaxy
Template Spectrum Av = 0.090561181
Galaxy
SN/Gal = 22.7972
[O II]
Ca II
[O III]
H γ
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
5000
6000
7000
8000
9000

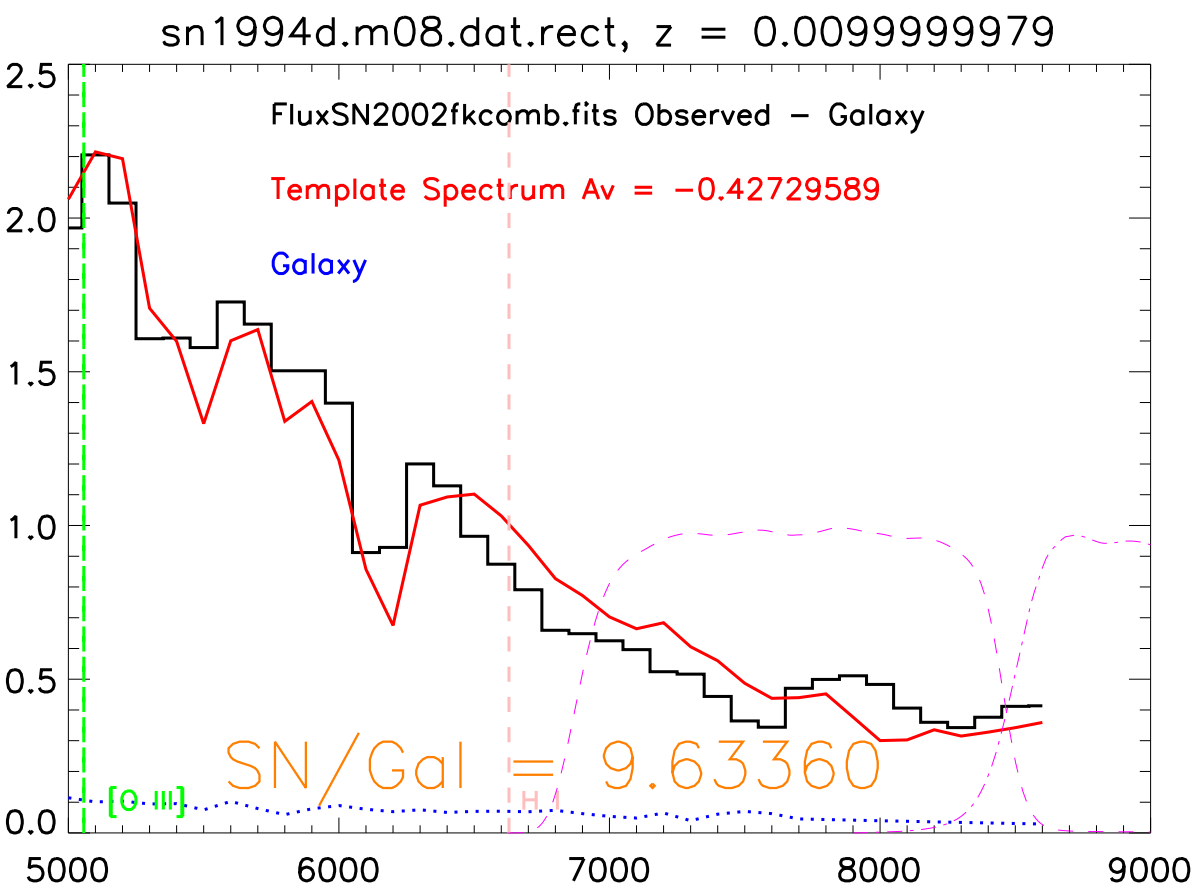

sn1991t.m08.dat.rect, z = −0.010000002
FluxSN2002fkcomb.fits Observed − Galaxy
Template Spectrum Av = 0.37117348
Galaxy
SN/Gal = −8.18973
[O II]
Ca II
[O III]
Hγ
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
5000
6000
7000
8000
9000

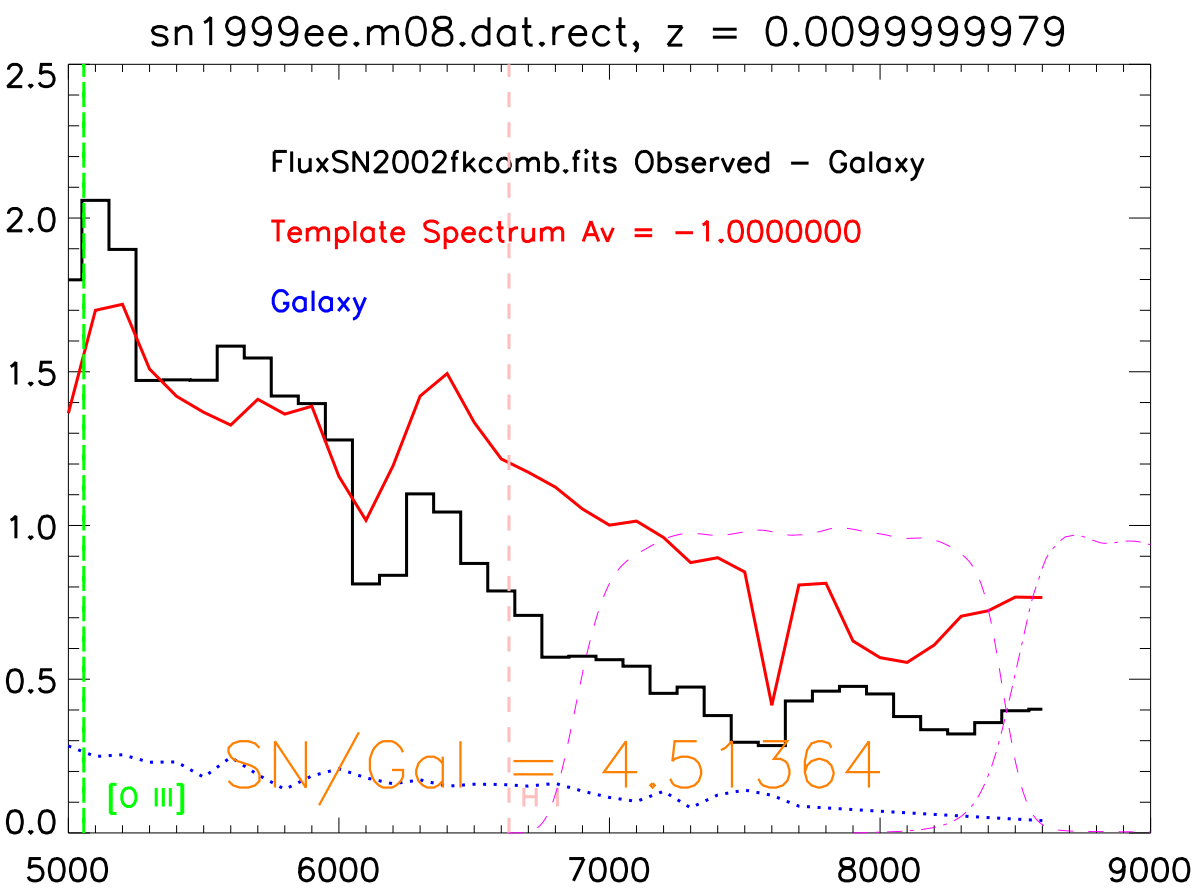

sn1994d.m04.dat.rect, z = −3.7252903e−09
FluxSN2002fkcomb.fits Observed − Galaxy
Template Spectrum Av = 0.052295893
Galaxy
SN/Gal = −8.50600
[O II]
Ca II
[O III]
H I
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
5000
6000
7000
8000
9000

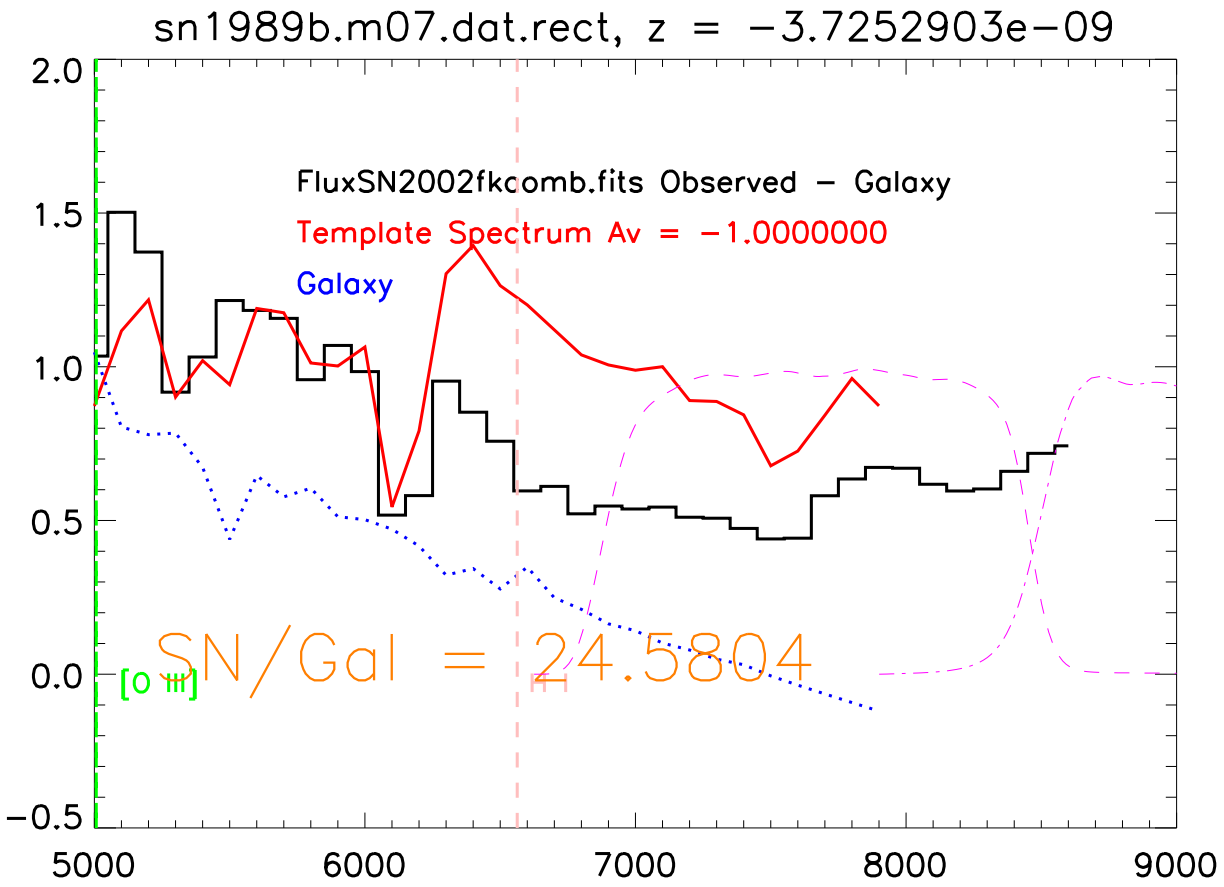

sn1989b.m01.dat.rect, z = −3.7252903e−09
FluxSN2002fkcomb.fits Observed − Galaxy
Template Spectrum Av = −1.0000000
Galaxy
SN/Gal = 2.89020
[O II]
Ca II
[O III]
H I
2.0
1.5
1.0
0.5
0.0
5000
6000
7000
8000
9000

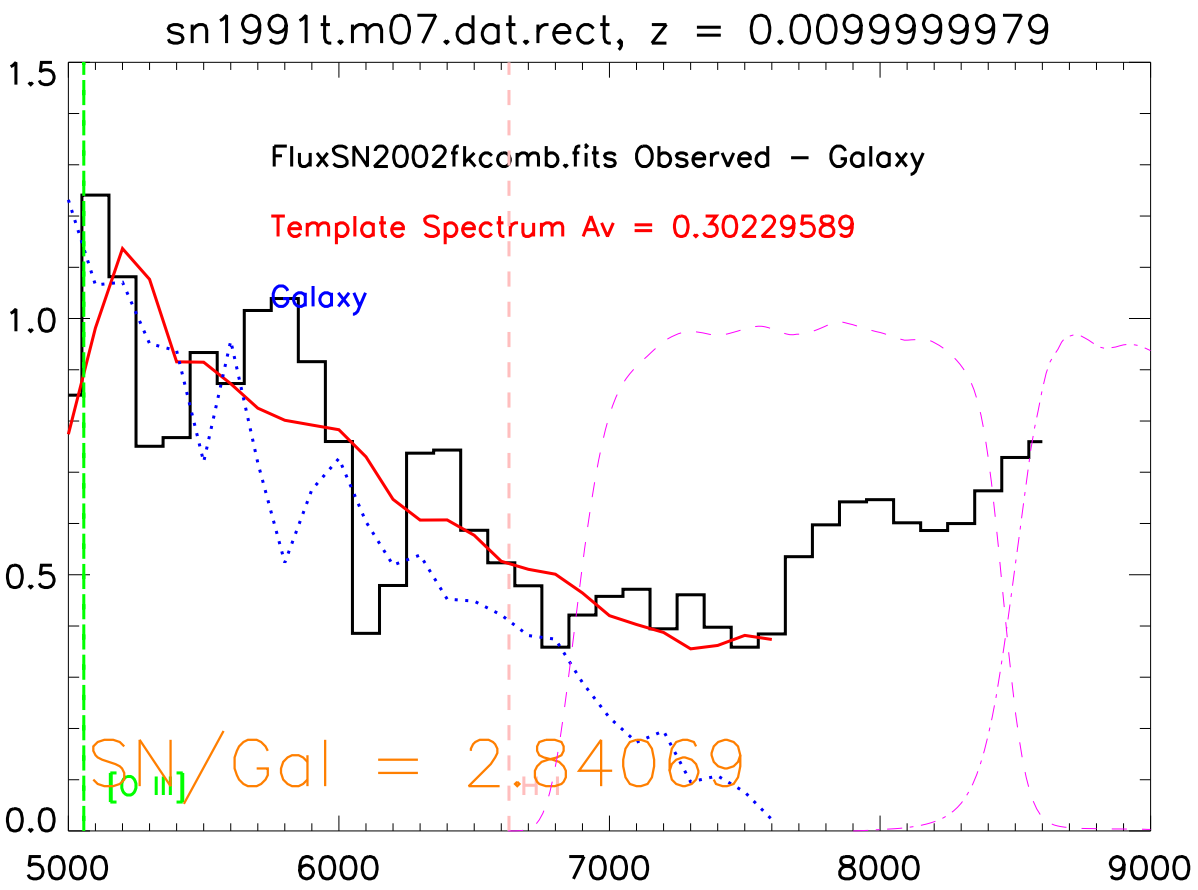

sn1999ee.m06.dat.rect, z = 0.0099999979
FluxSN2002fkcomb.fits Observed − Galaxy
Template Spectrum Av = −1.0000000
Galaxy
SN/Gal = 5.39132
[O II]
Ca II
[O III]
H
2.5
2.0
1.5
1.0
0.5
0.0
5000
6000
7000
8000
9000

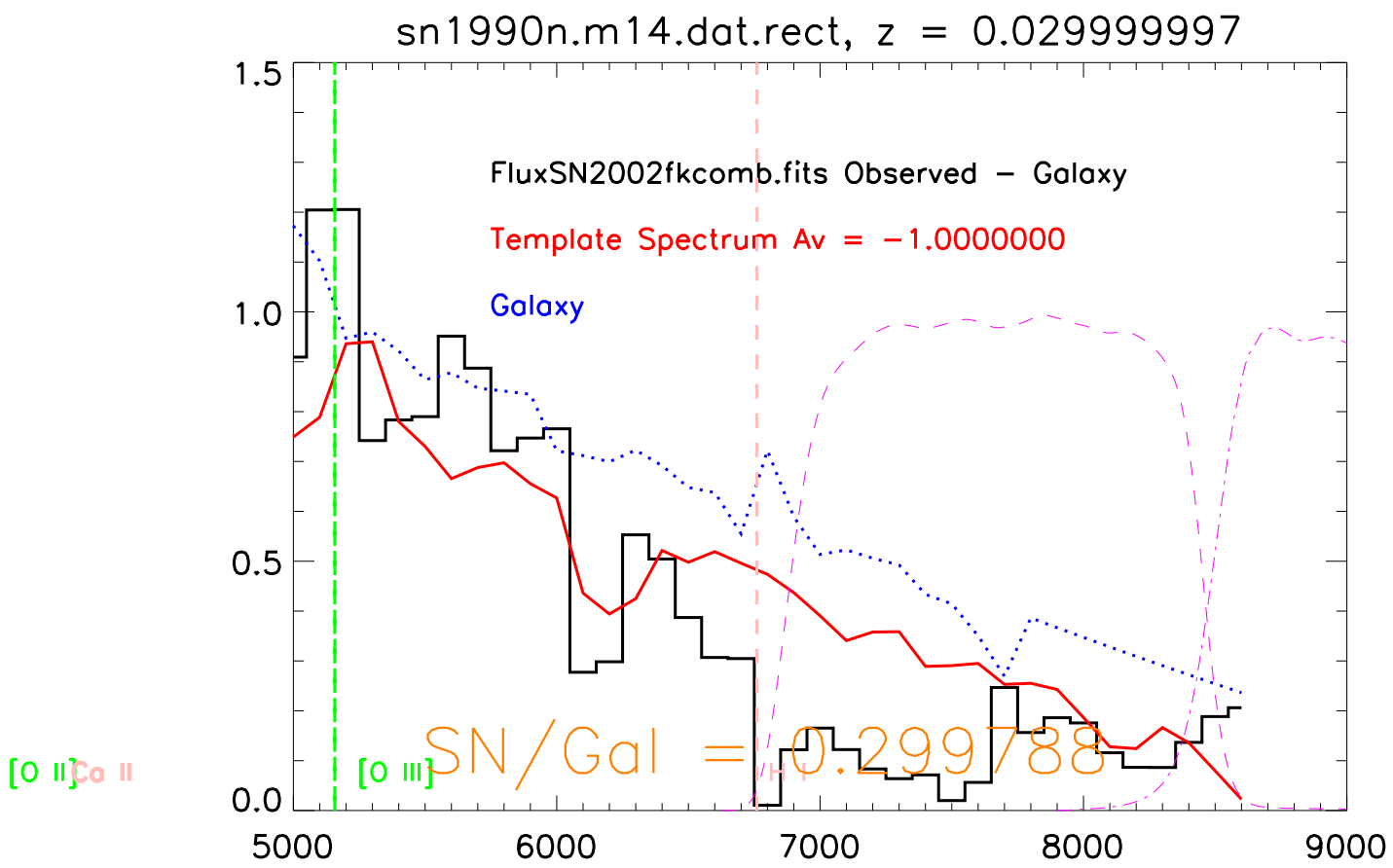

sn1989b.m05.dat.rect, z = −3.7252903e−09
FluxSN2002fkcomb.fits Observed − Galaxy
Template Spectrum Av = −1.0000000
Galaxy
SN/Gal = 6.88911
[O II]
Ca II
[O III]
H γ
2.0
1.5
1.0
0.5
0.0
−0.5
5000
6000
7000
8000
9000

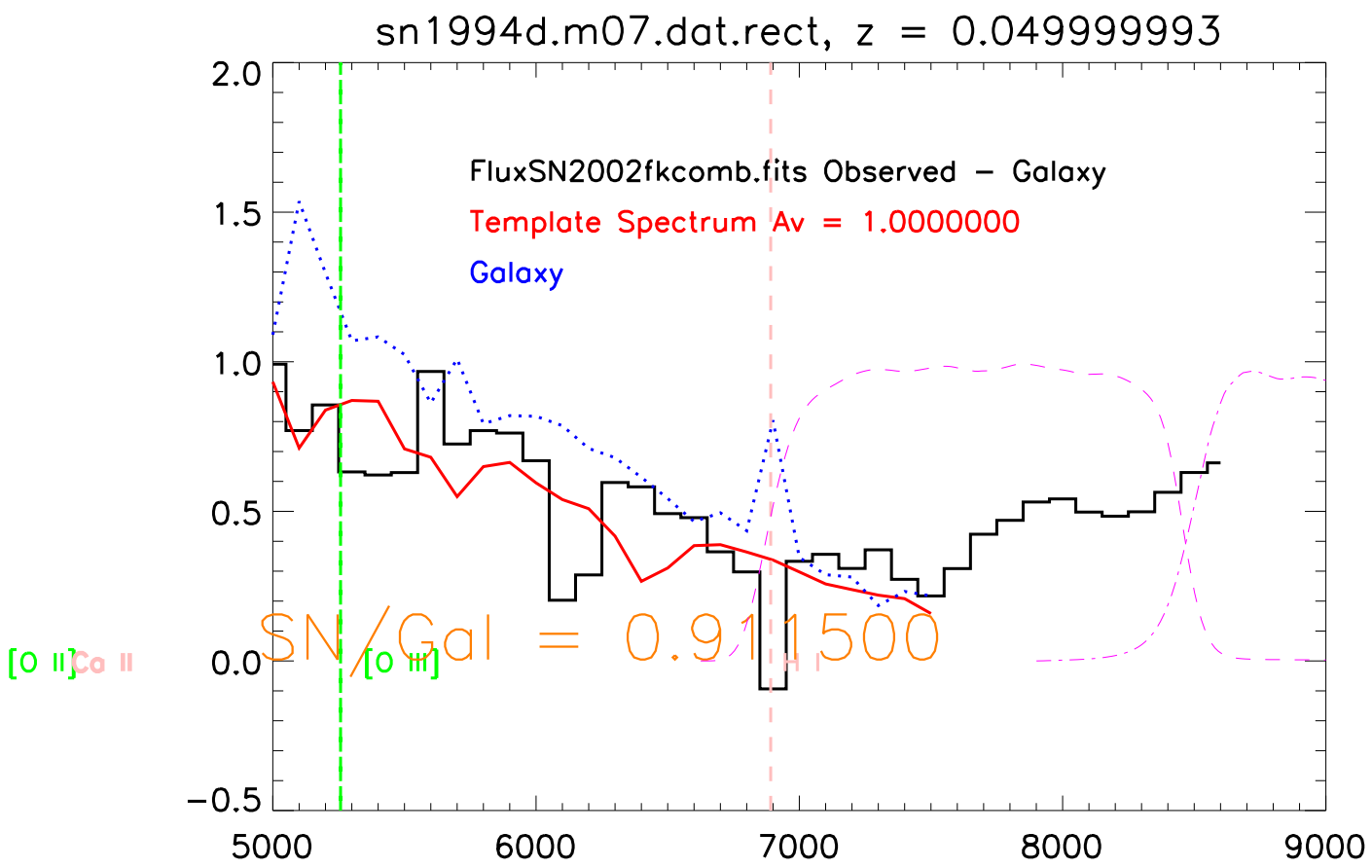

sn1994d.m08.dat.rect, z = 0.0099999979
FluxSN2002fkcomb.fits Observed − Galaxy
Template Spectrum Av = −0.42729589
Galaxy
SN/Gal = 9.63360
[O II]
Ca II
[O III]
H
2.5
2.0
1.5
1.0
0.5
0.0
5000
6000
7000
8000
9000


sn1999ee.m08.dat.rect, z = 0.0099999979
FluxSN2002fkcomb.fits Observed − Galaxy
Template Spectrum Av = −1.0000000
Galaxy
SN/Gal = 4.51364
[O II]
Ca II
[O III]
H
2.5
2.0
1.5
1.0
0.5
0.0
5000
6000
7000
8000
9000


sn1989b.m07.dat.rect, z = −3.7252903e−09
FluxSN2002fkcomb.fits Observed − Galaxy
Template Spectrum Av = −1.0000000
Galaxy
SN/Gal = 24.5804
[O II]
Ca II
[O III]
H
2.0
1.5
1.0
0.5
0.0
−0.5
5000
6000
7000
8000
9000


sn1991t.m07.dat.rect, z = 0.0099999979
FluxSN2002fkcomb.fits Observed − Galaxy
Template Spectrum Av = 0.30229589
Galaxy
SN/Gal = 2.84069
[O II]
Ca II
[O III]
Hβ
1.5
1.0
0.5
0.0
5000
6000
7000
8000
9000


sn1990n.m14.dat.rect, z = 0.029999997
FluxSN2002fkcomb.fits Observed − Galaxy
Template Spectrum Av = −1.0000000
Galaxy
SN/Gal = 0.299788
[O II]
Ca II
[O III]
1.5
1.0
0.5
0.0
5000
6000
7000
8000
9000


sn1994d.m07.dat.rect, z = 0.049999993
FluxSN2002fkcomb.fits Observed − Galaxy
Template Spectrum Av = 1.0000000
Galaxy
SN/Gal = 0.911500
[O II]
Ca II
[O III]
2.0
1.5
1.0
0.5
0.0
−0.5
5000
6000
7000
8000
9000