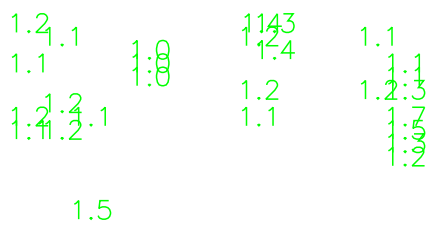
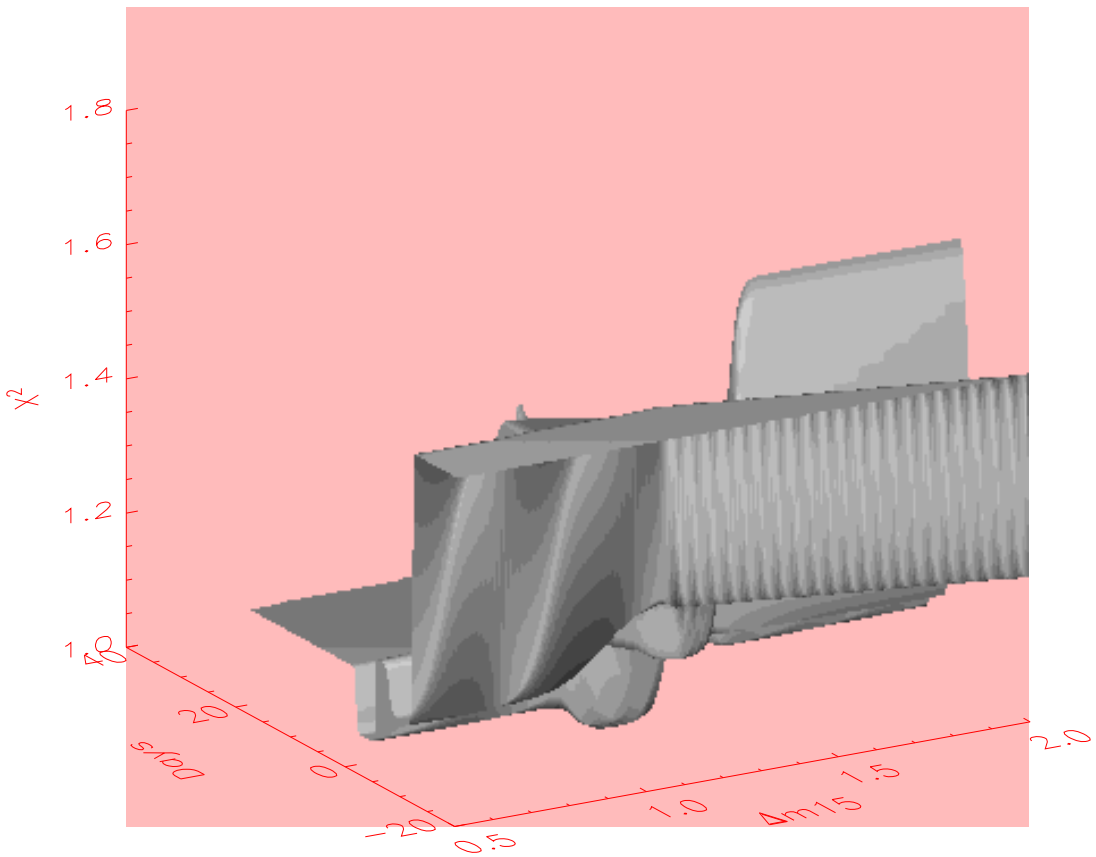
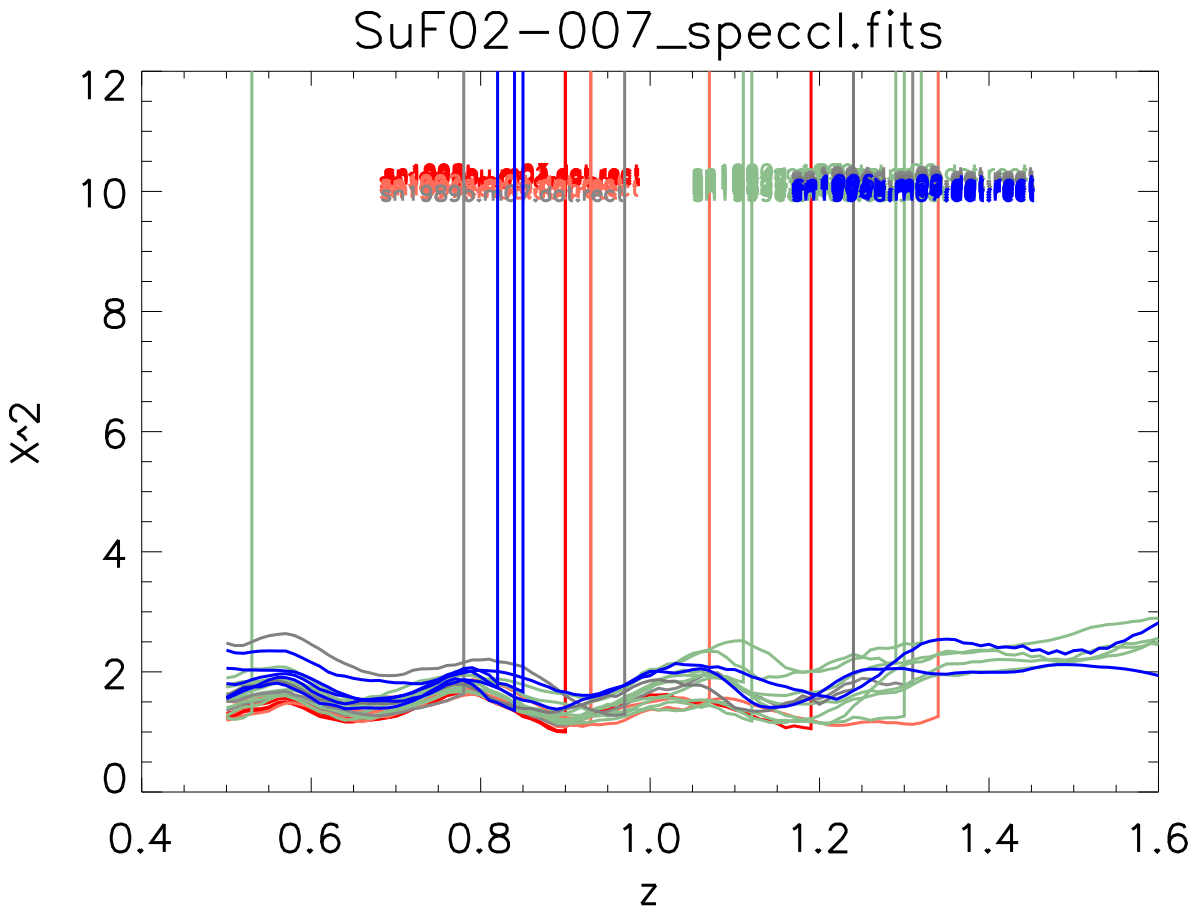
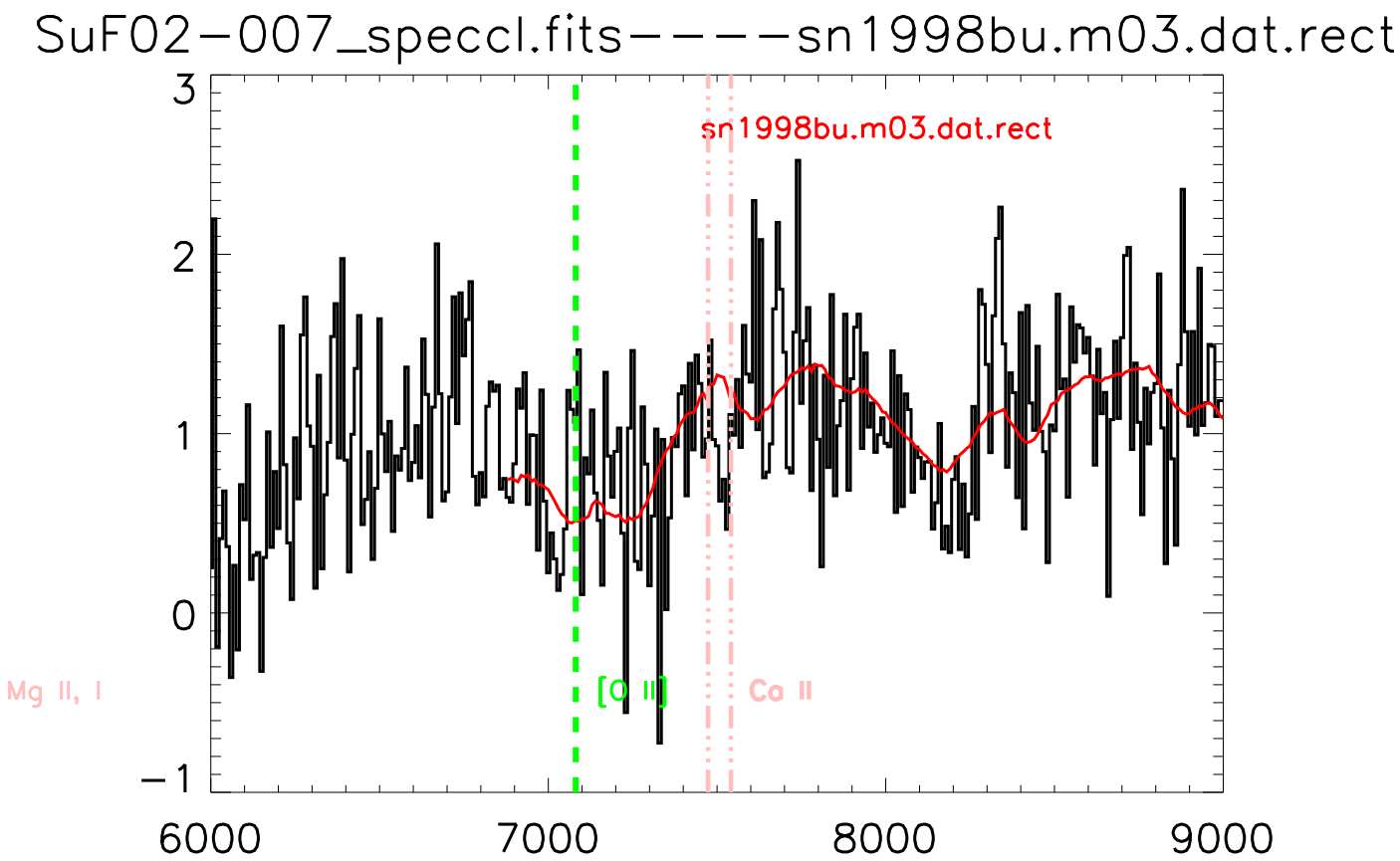
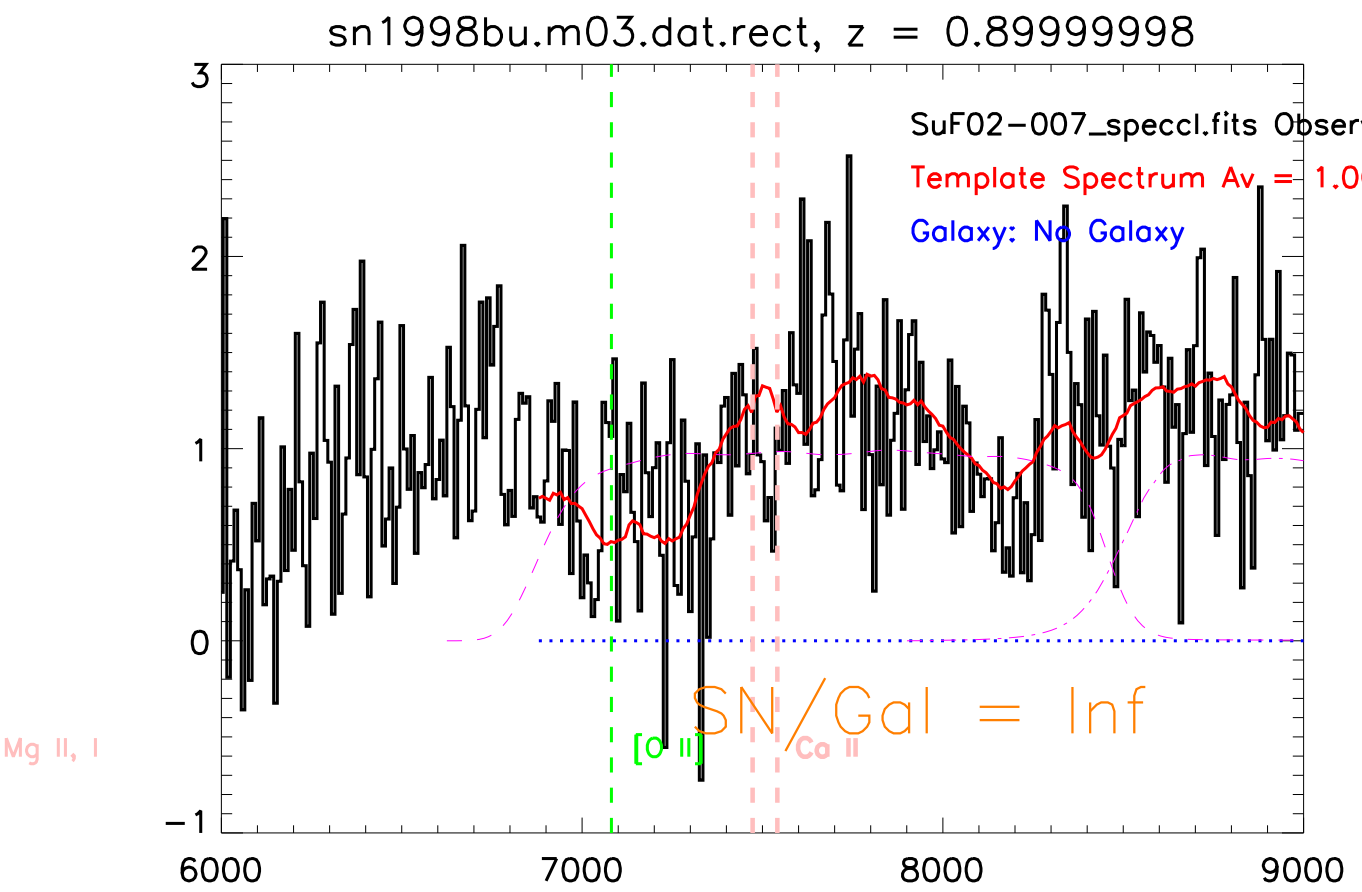
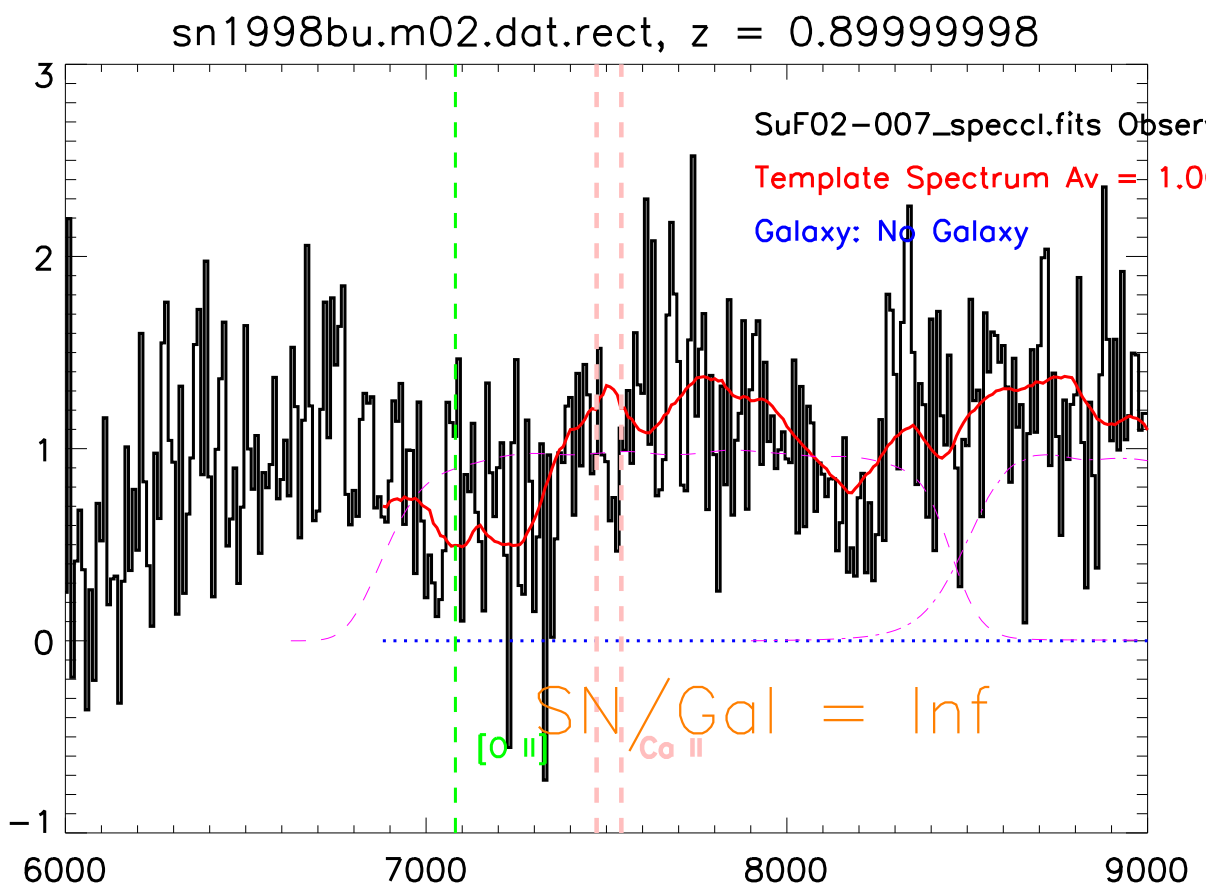

1.2
1.1
1.0
1.1
1.0
1.0
1.2
1.2
1.1
1.1.2
1.5
1.1
1.4
1.2
1.1
1.1
1.2.3
1.2

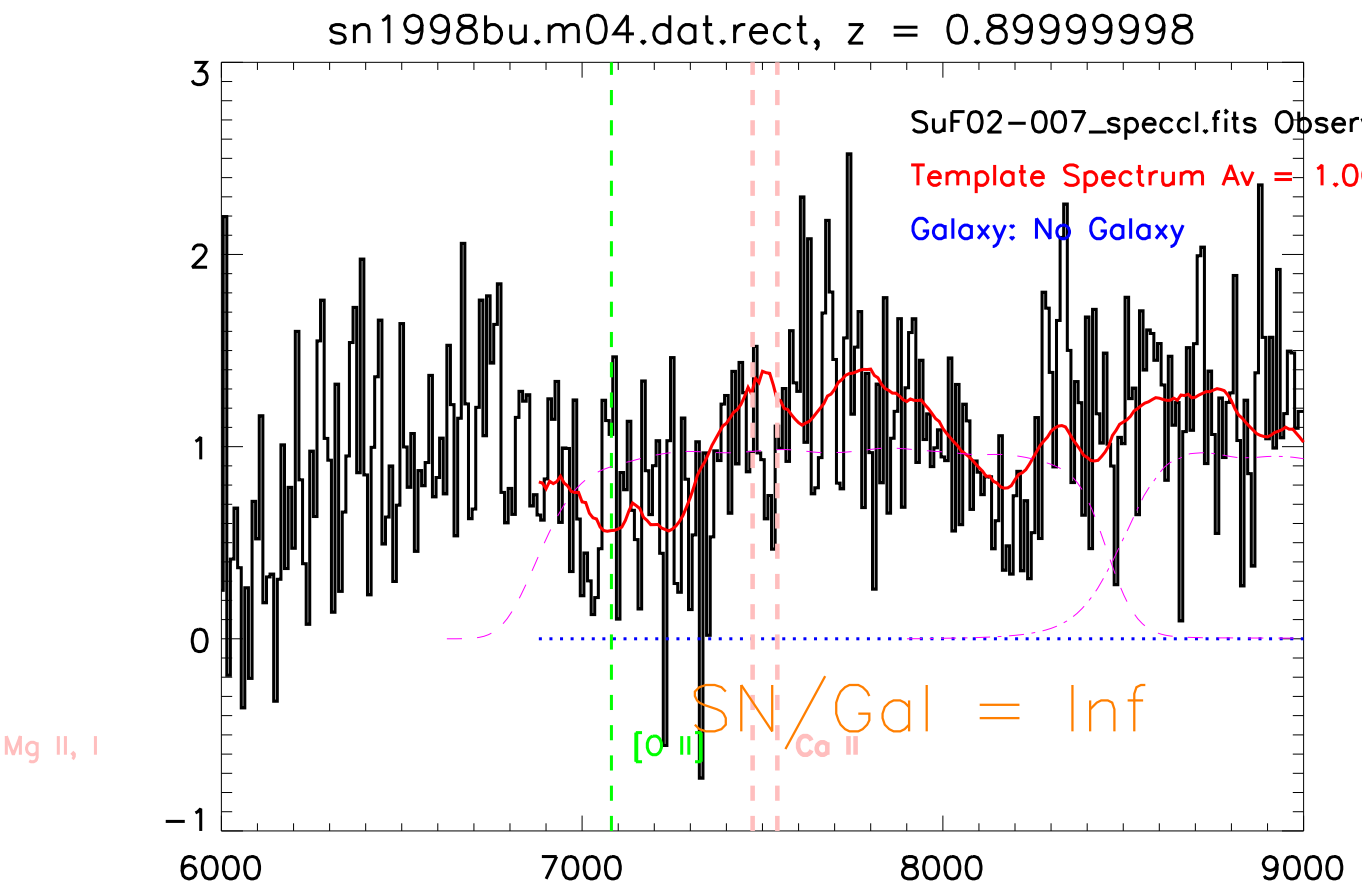

1.8
1.6
1.4
1.2
1.0
χ^2
40
20
0
−20
Dots
0.5
1.0
1.5
2.0
Δm15

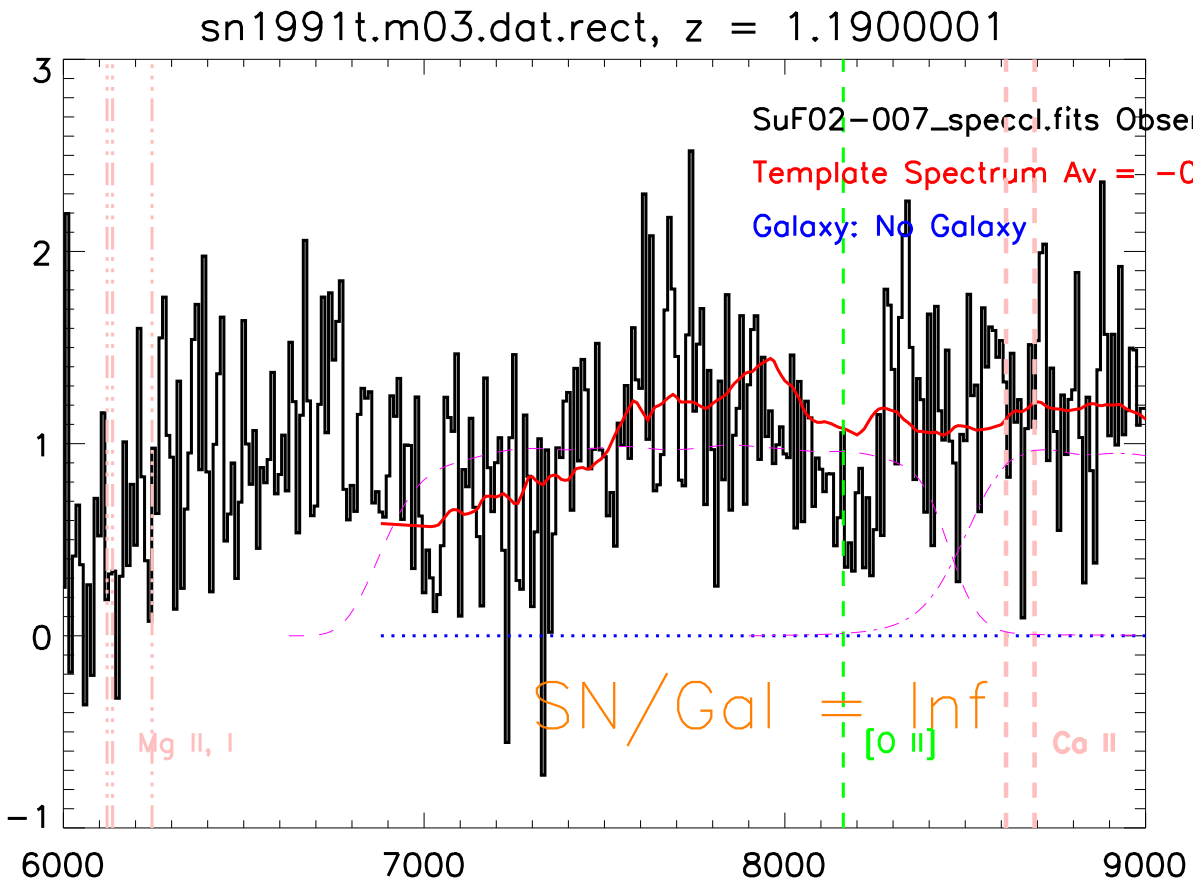

SuF02−007_speccl.fits
X^2
z
0
2
4
6
8
10
12
0.4
0.6
0.8
1.0
1.2
1.4
1.6

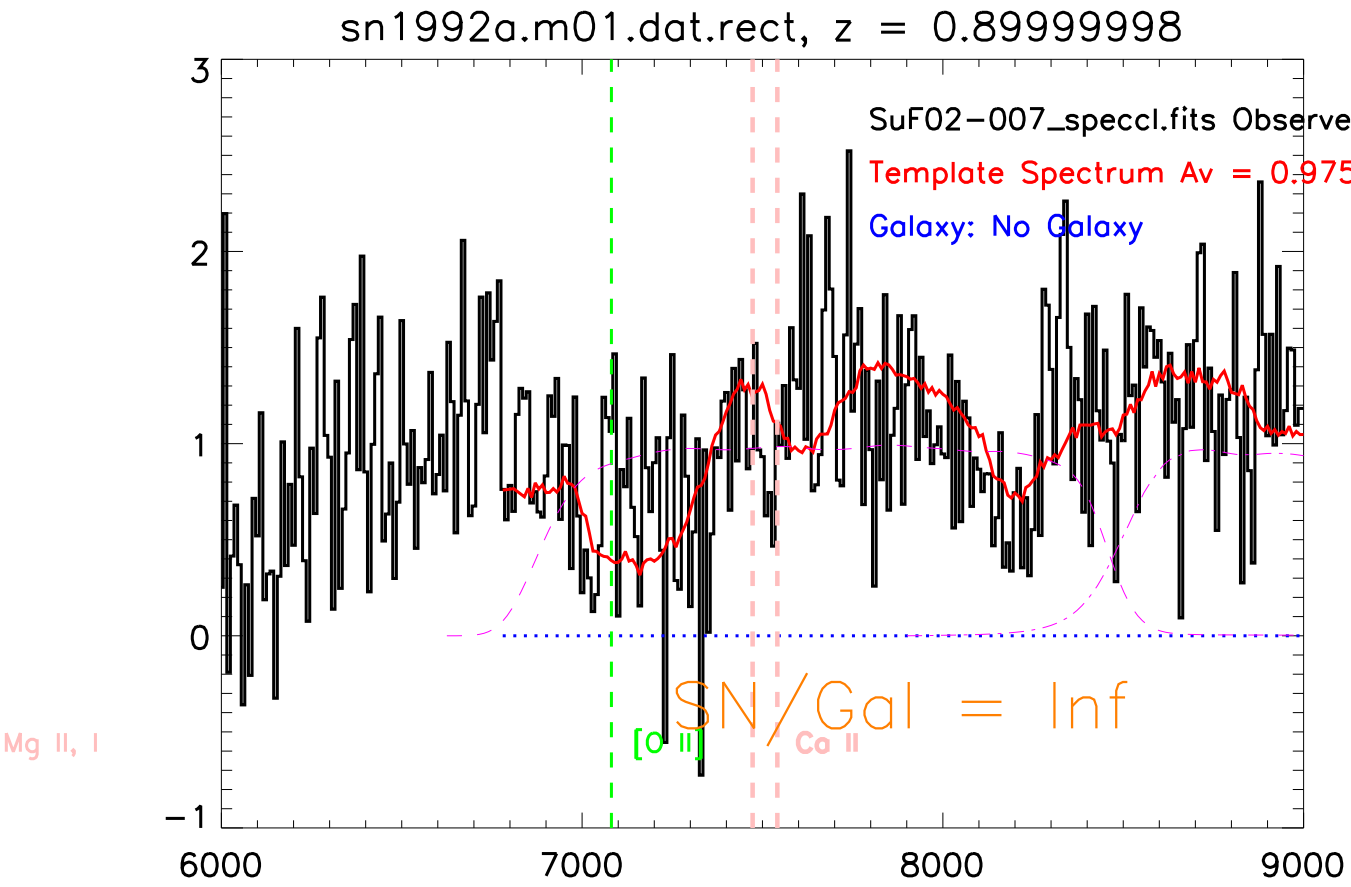

SuF02−007_speccl.fits−−−−sn1998bu.m03.dat.rect
sn1998bu.m03.dat.rect
Mg II, I
[O II]
Ca II
3
2
1
0
−1
6000
7000
8000
9000

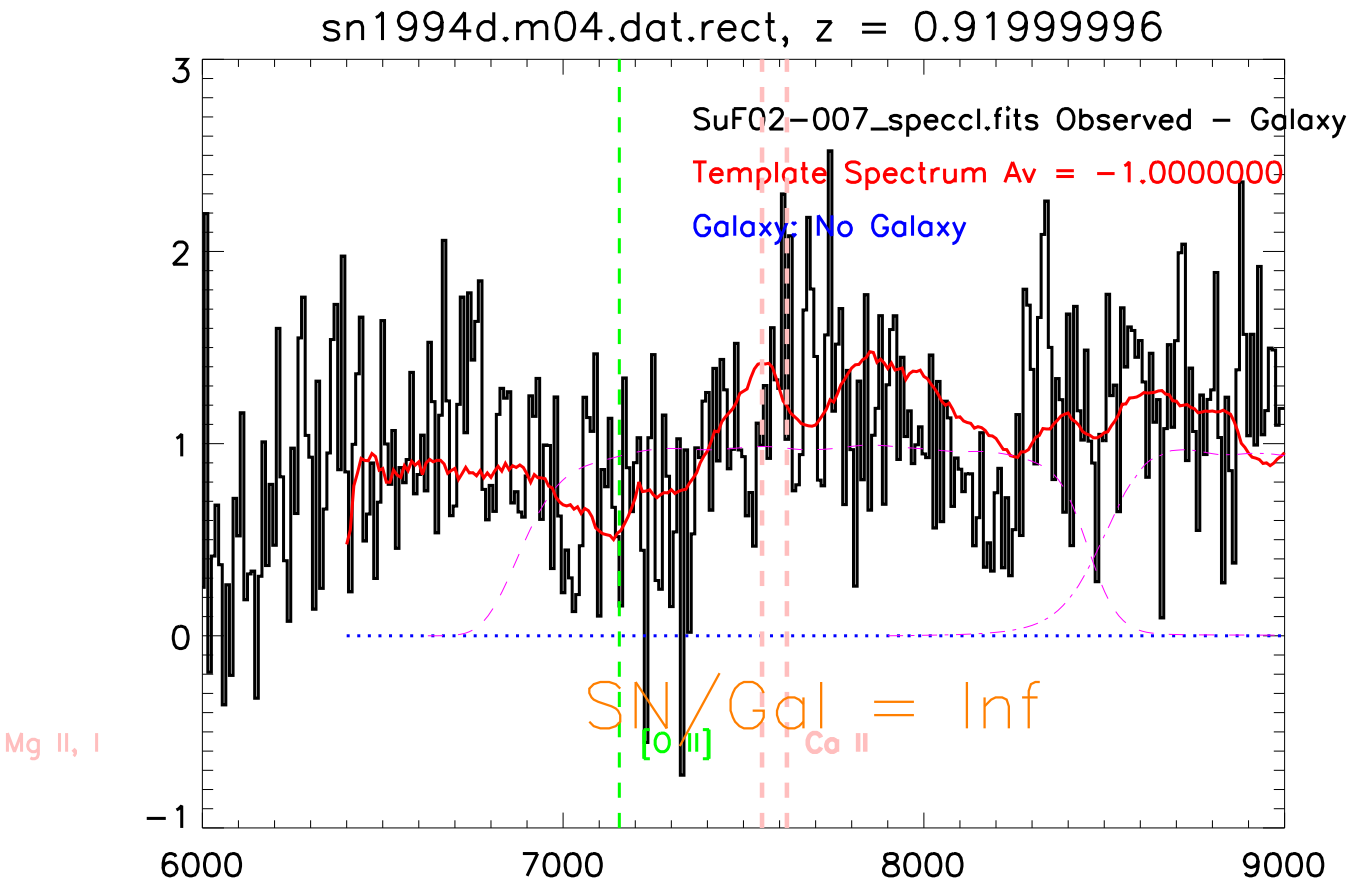

sn1998bu.m03.dat.rect, z = 0.89999998
SuF02-007_specc1.fits Observed - Ga
Template Spectrum Av. = 1.0000000
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
Mg II, I
3
2
1
0
−1
6000
7000
8000
9000

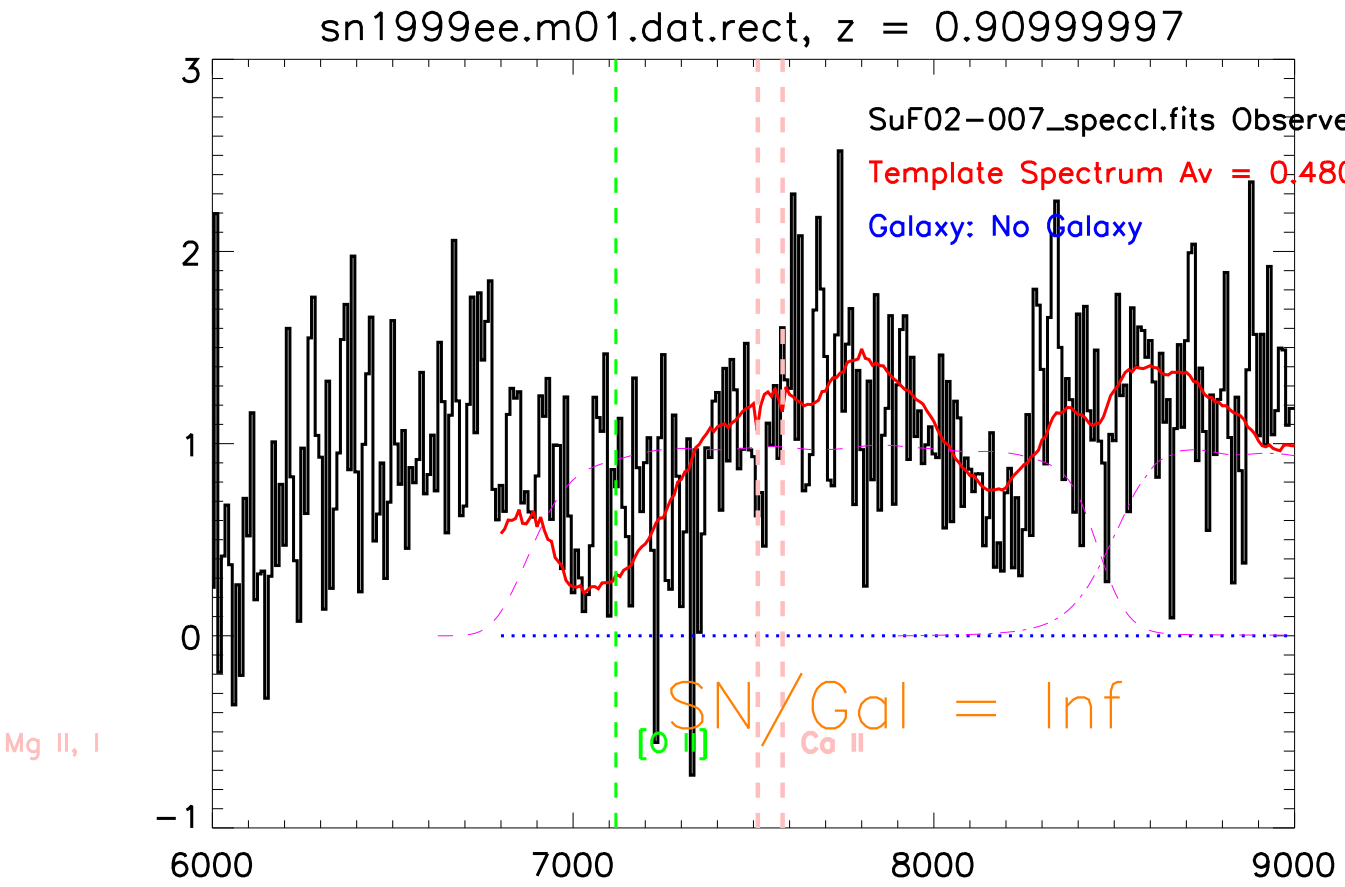

sn1998bu.m02.dat.rect, z = 0.89999998
SuF02-007_specc1.fits Observed - Ga
Template Spectrum Av = 1.0000000
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
Mg II, I
3
2
1
0
−1
6000
7000
8000
9000

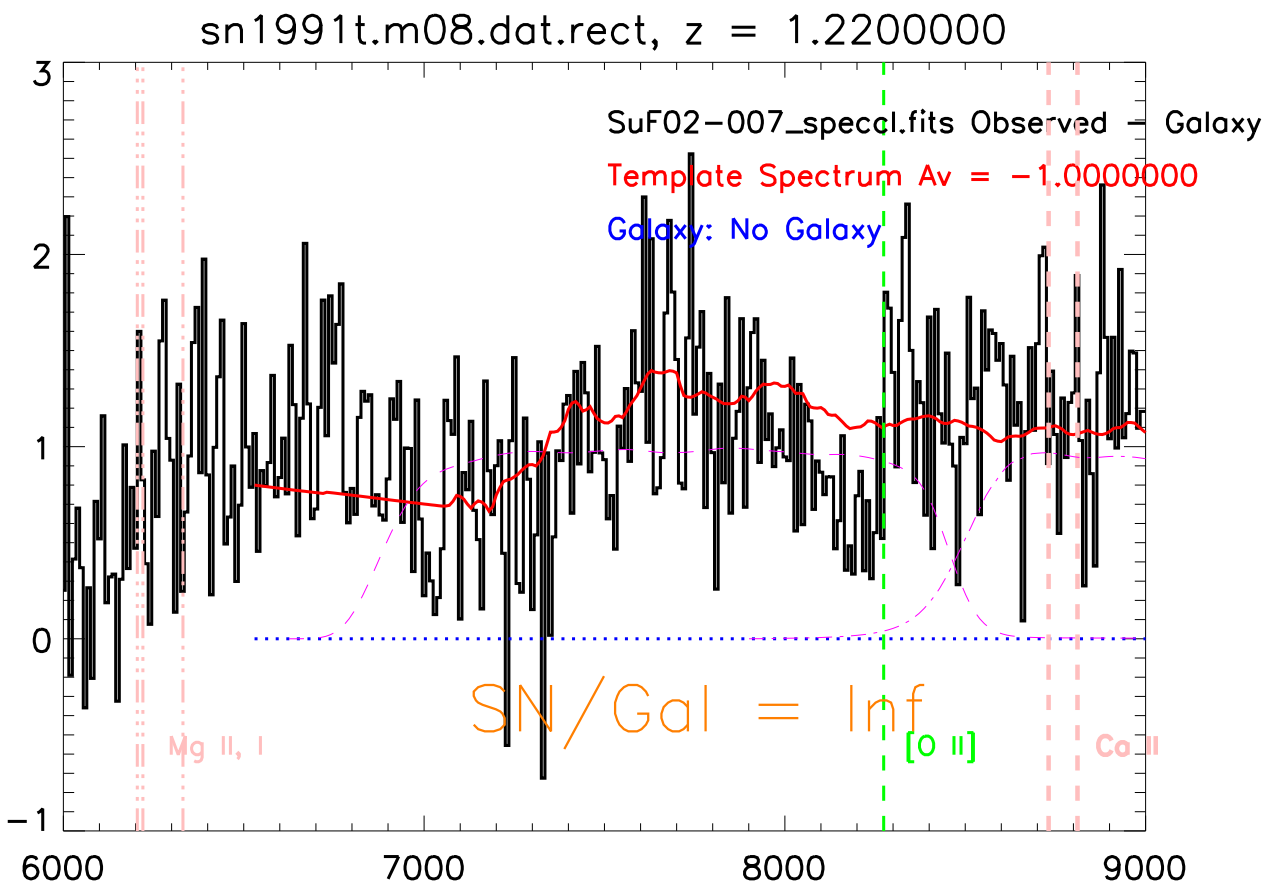

sn1998bu.m04.dat.rect, z = 0.89999998
SuF02-007_speccl.fits Observed - Ga
Template Spectrum Av. = 1.0000000
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
Mg II, I
3
2
1
0
−1
6000
7000
8000
9000

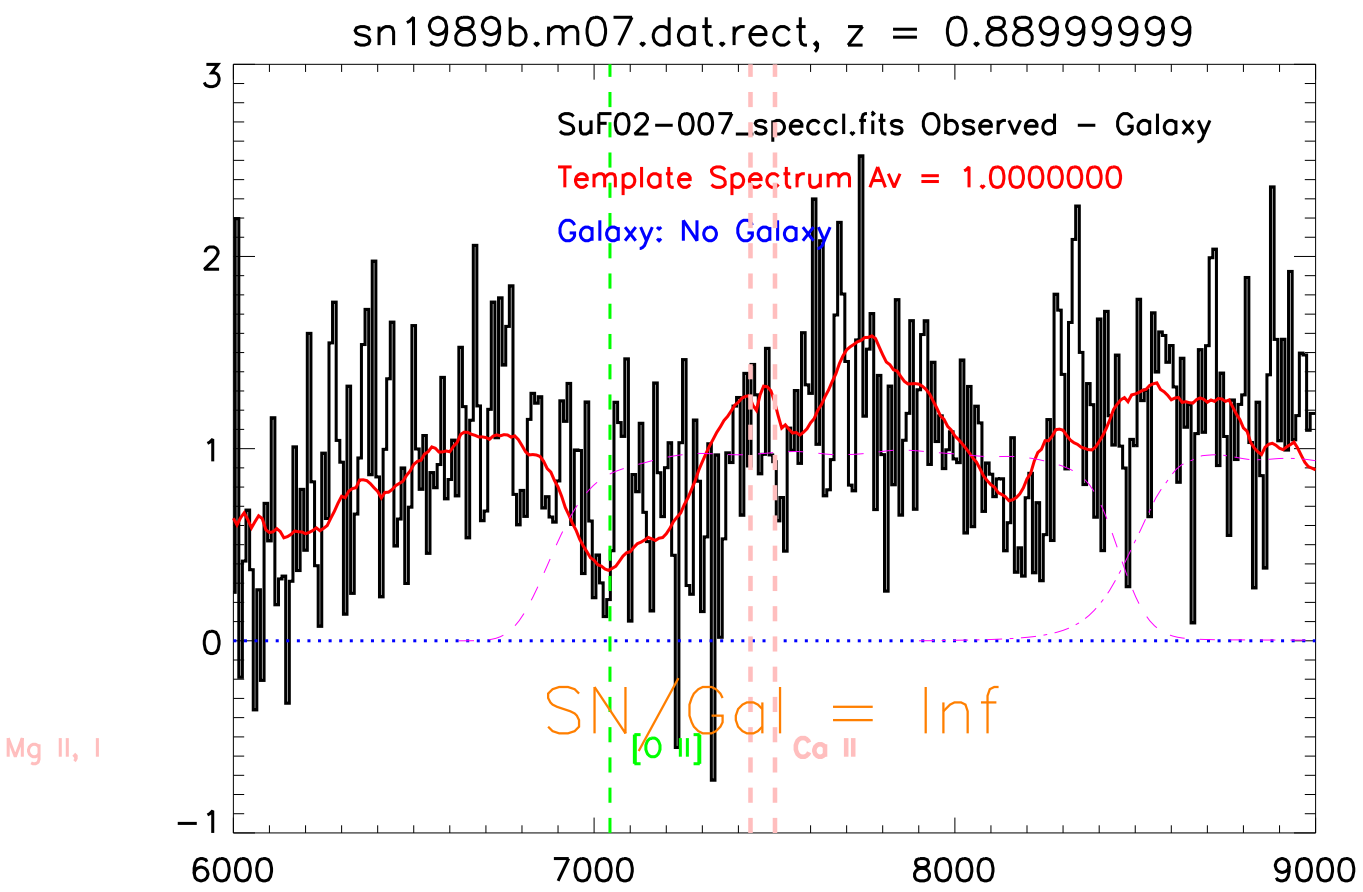

sn1991t.m03.dat.rect, z = 1.1900001
SuF02-007_specCl.fits Observed - Ga
Template Spectrum Av = -0.5573979
Galaxy: No Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
3
2
1
0
-1
6000
7000
8000
9000

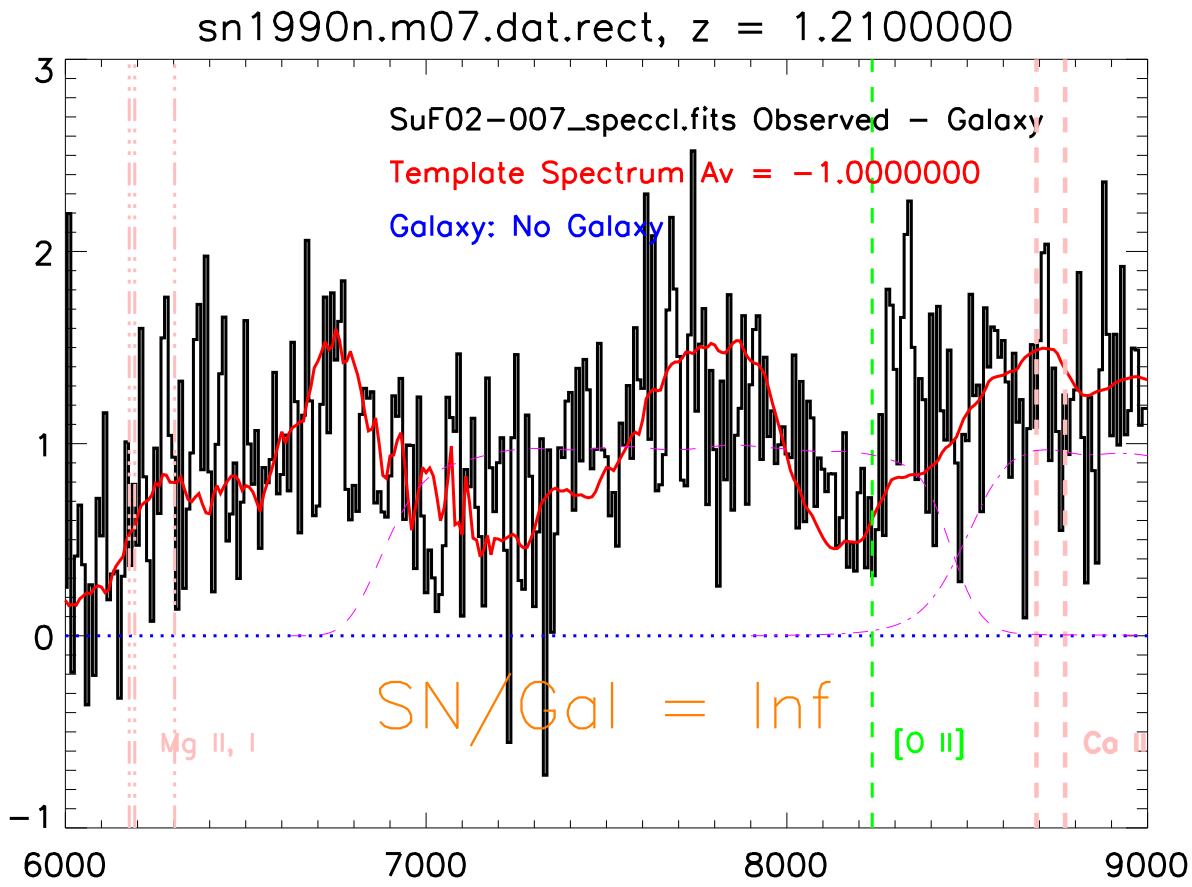

sn1992a.m01.dat.rect, z = 0.89999998
SuF02-007_speccl.fits Observed – Galax
Template Spectrum Av = 0.97576532
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
Mg II, I
3
2
1
0
−1
6000
7000
8000
9000

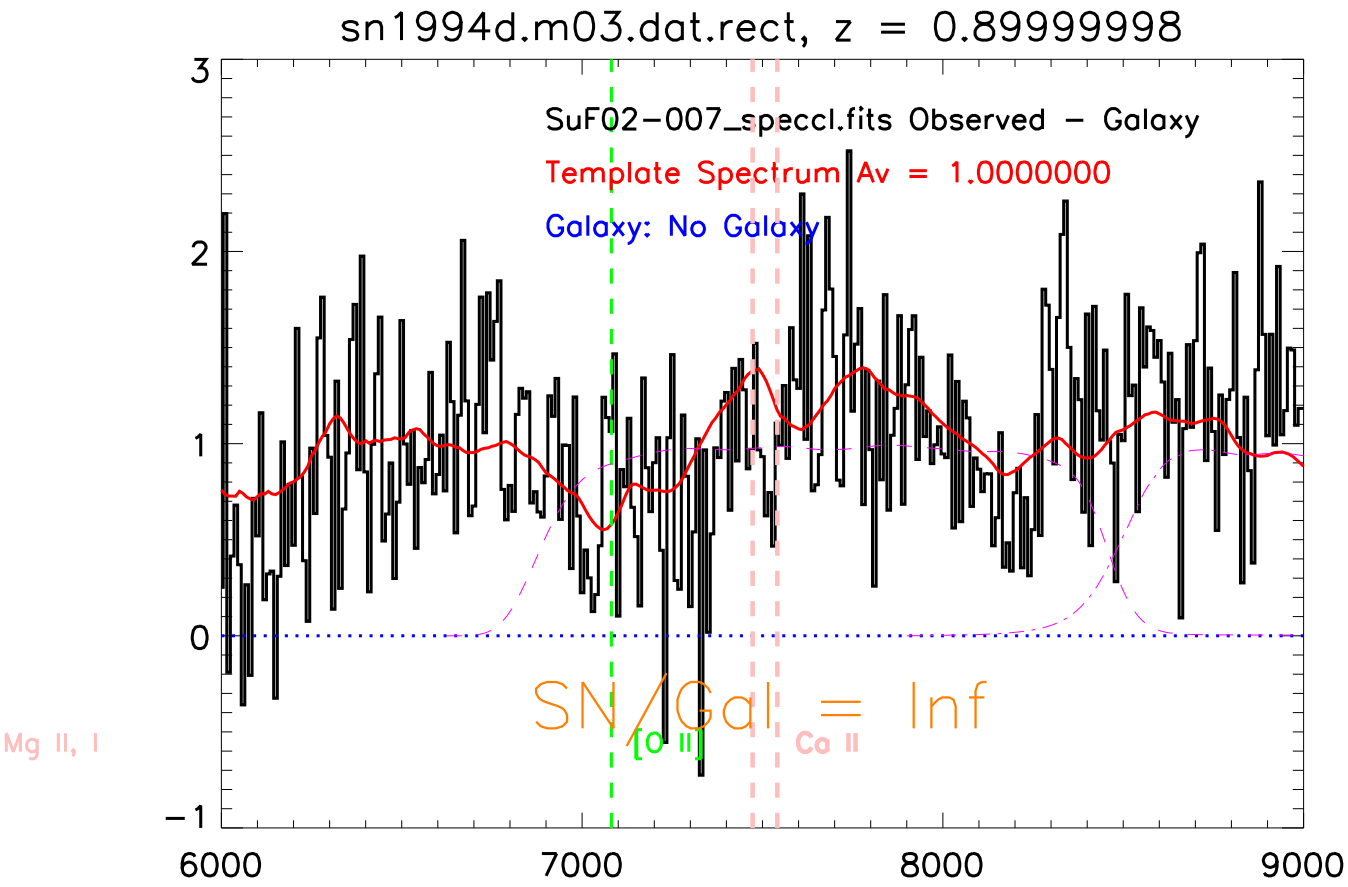

sn1994d.m04.dat.rect, z = 0.91999996
SuF02-007_specc1.fits Observed - Galaxy
Template Spectrum Av = -1.0000000
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
Mg II, I
3
2
1
0
-1
6000
7000
8000
9000

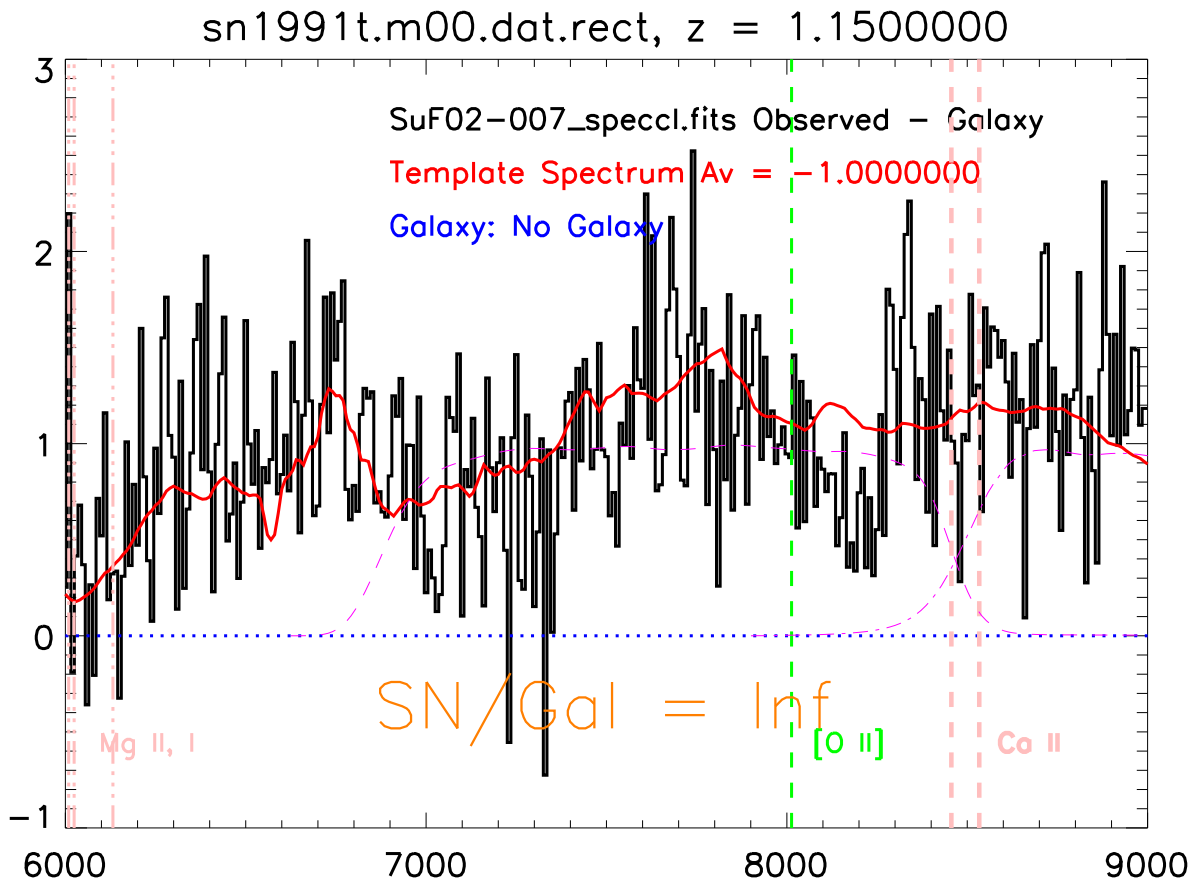

sn1999ee.m01.dat.rect, z = 0.90999997
SuF02−007_speccl.fits Observed − Galax
Template Spectrum Av = 0.48086736
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
Mg II, I
3
2
1
0
−1
6000
7000
8000
9000

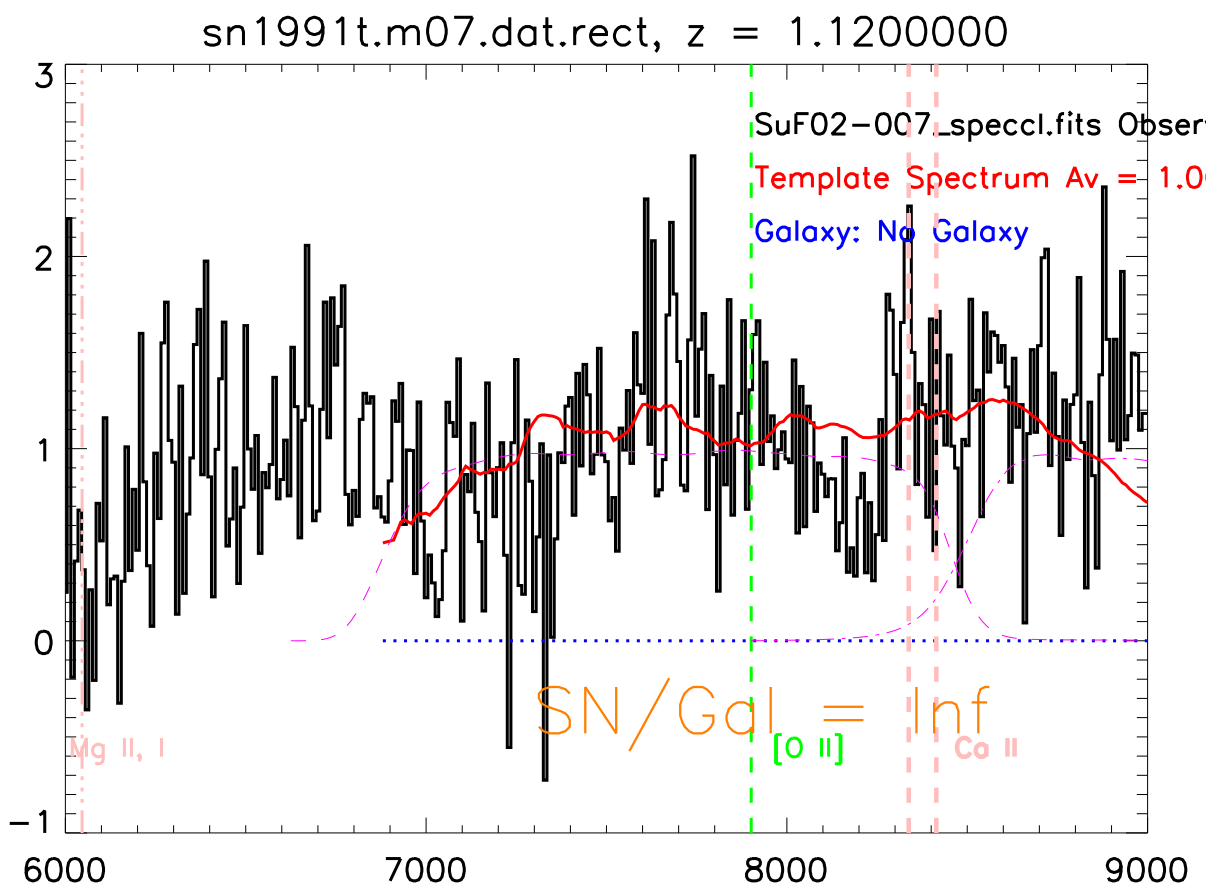

sn1991t.m08.dat.rect, z = 1.2200000
SuF02-007_specal.fits Observed – Galaxy
Template Spectrum Av = -1.0000000
Galaxy: No Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
3
2
1
0
-1
6000
7000
8000
9000

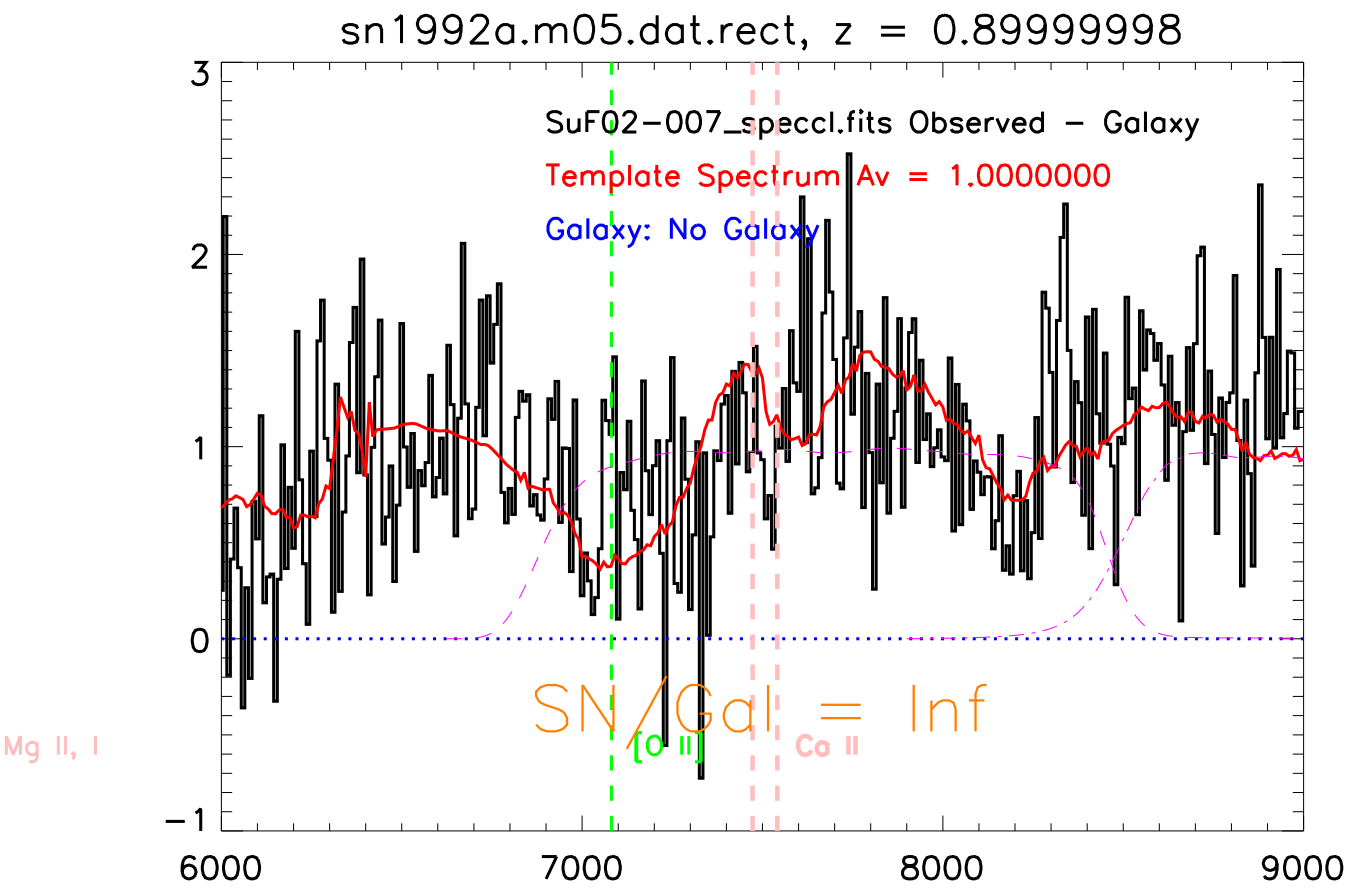

sn1989b.m07.dat.rect, z = 0.88999999
SuF02-007_speccl.fits Observed − Galaxy
Template Spectrum Av = 1.0000000
Galaxy: No Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
3
2
1
0
−1
6000
7000
8000
9000

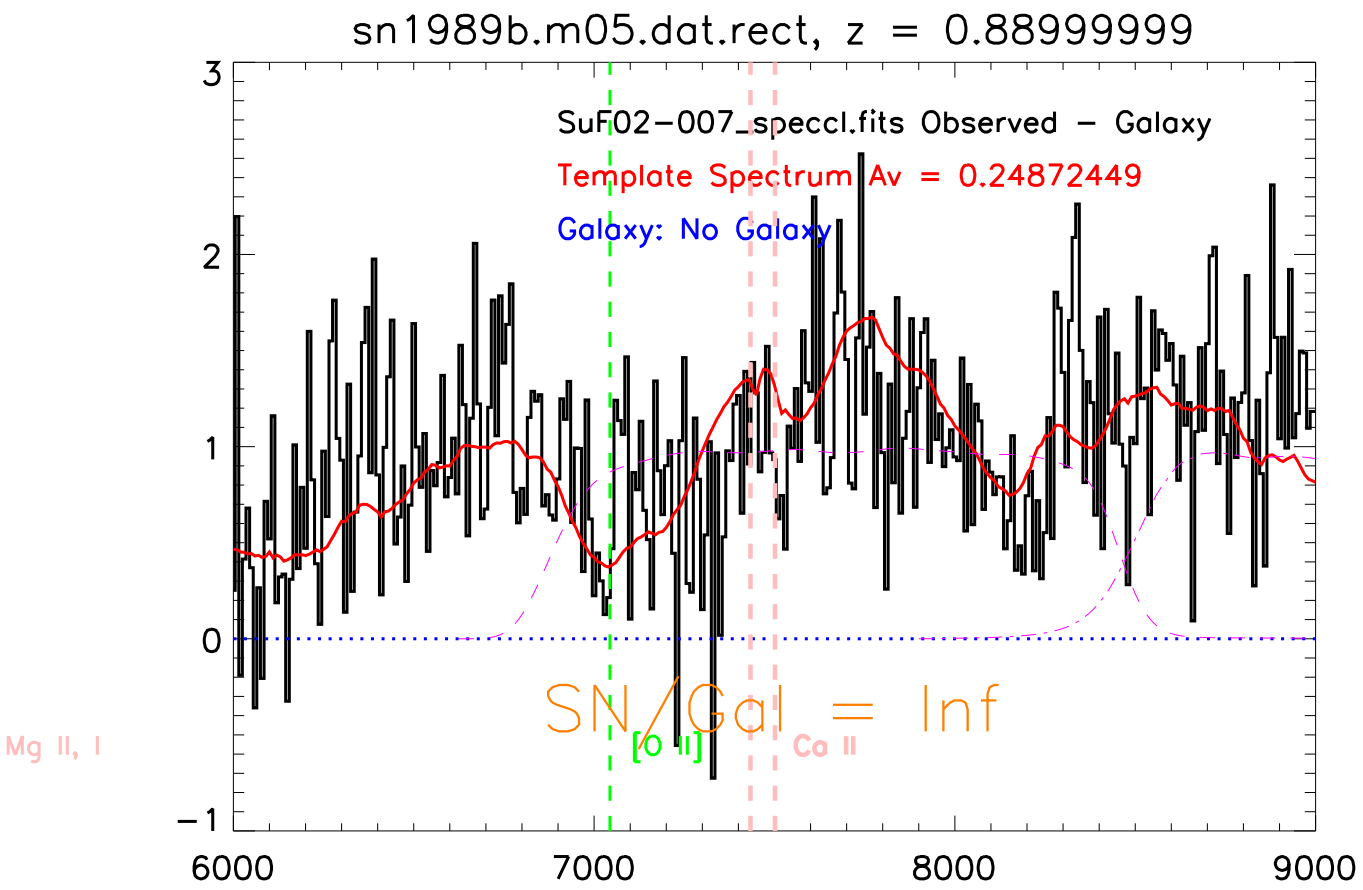

sn1990n.m07.dat.rect, z = 1.2100000
SuF02-007_speccl.fits Observed - Galaxy
Template Spectrum Av = -1.0000000
Galaxy: No Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
3
2
1
0
-1
6000
7000
8000
9000

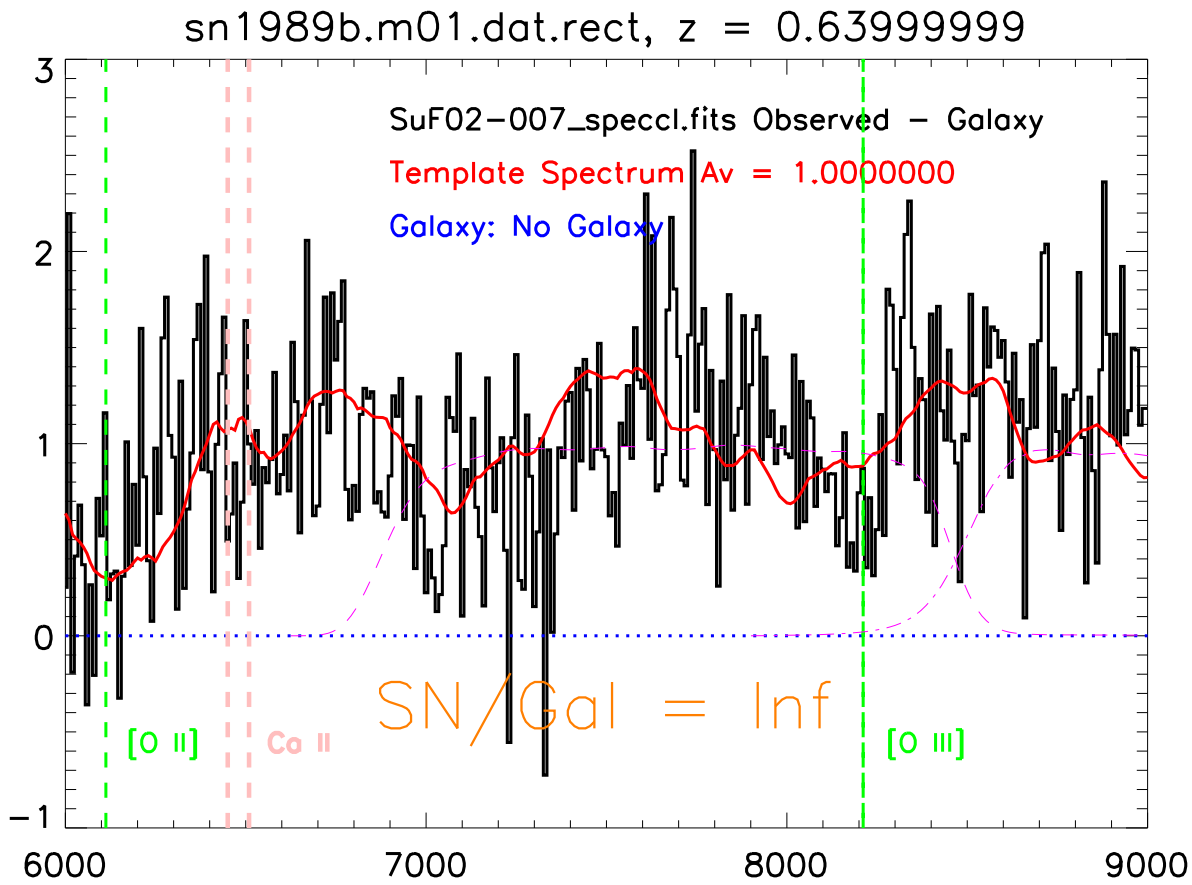

sn1994d.m03.dat.rect, z = 0.89999998
SuF02-007_speccl.fits Observed − Galaxy
Template Spectrum Av = 1.0000000
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
Mg II, I
3
2
1
0
−1
6000
7000
8000
9000

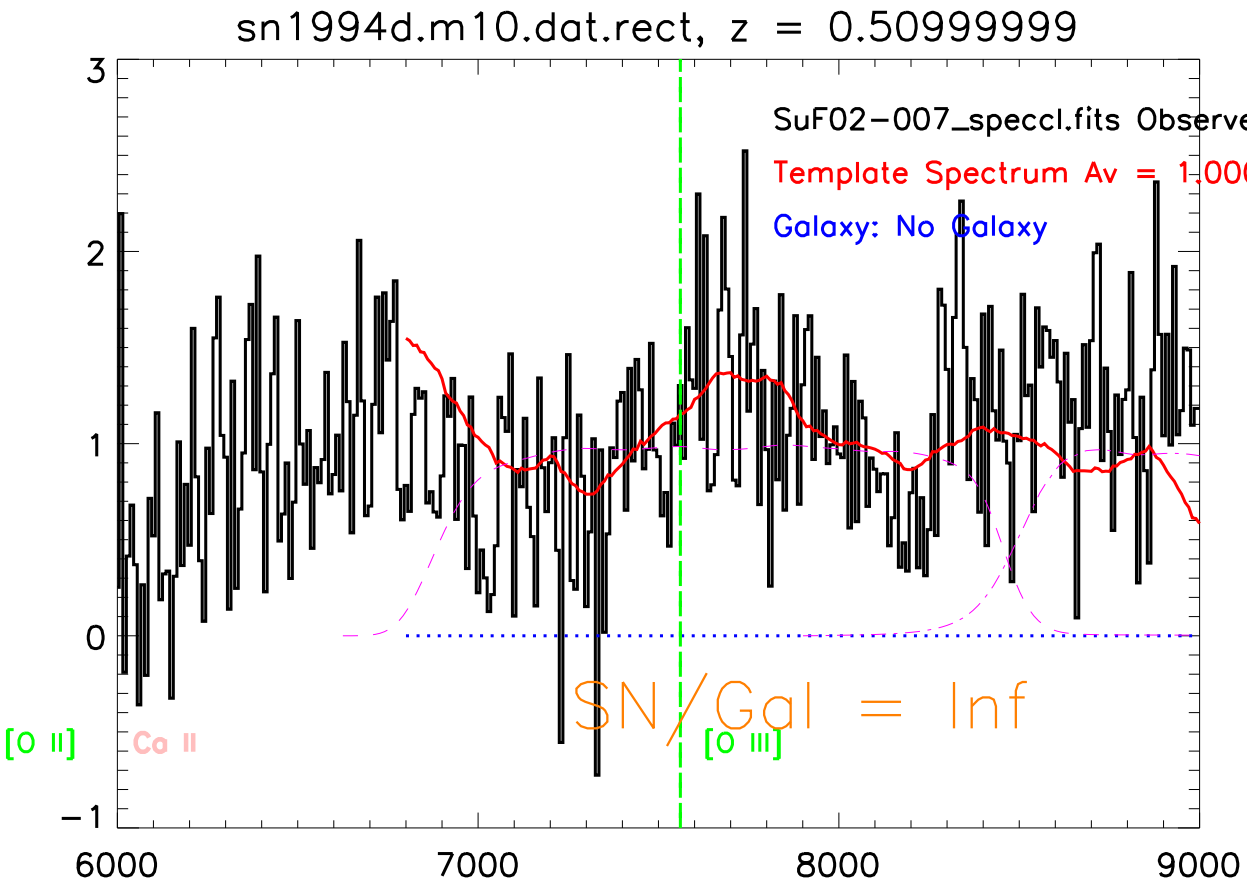

sn1991t.m00.dat.rect, z = 1.1500000
SuF02-007_specc1.fits Observed - Galaxy
Template Spectrum Av = -1.0000000
Galaxy: No Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
3
2
1
0
-1
6000
7000
8000
9000

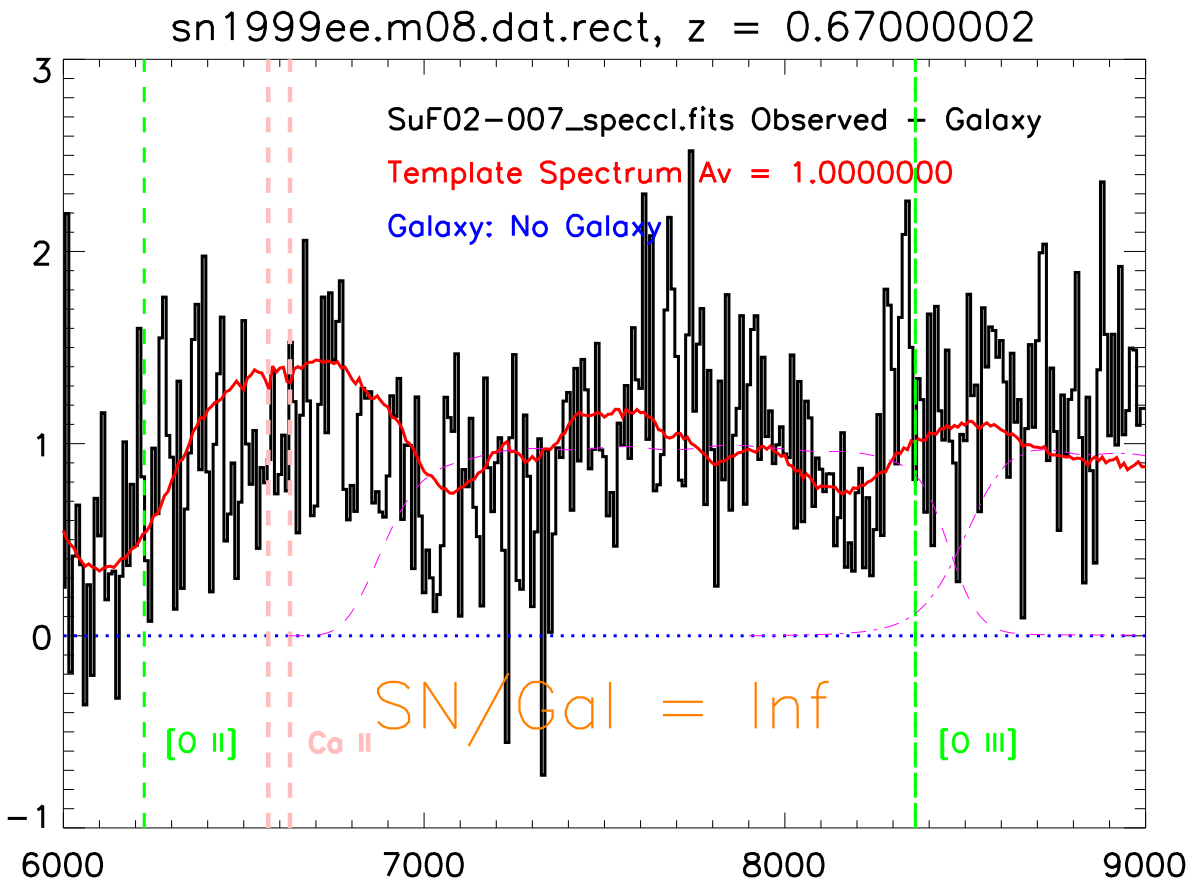

sn1991t.m07.dat.rect, z = 1.1200000
SuF02-007_speccl.fits Observed – Ga
Template Spectrum Av = 1.0000000
Galaxy: No Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
3
2
1
0
−1
6000
7000
8000
9000

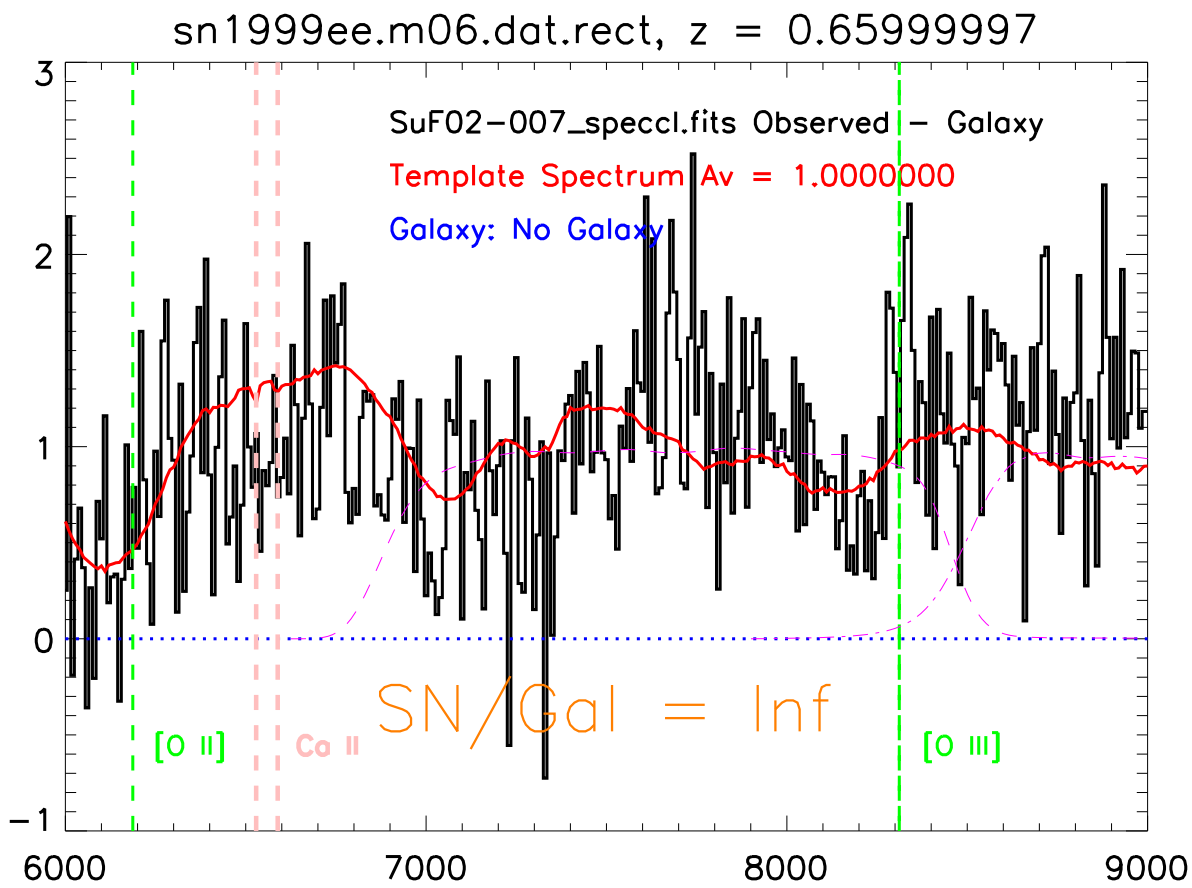

sn1992a.m05.dat.rect, z = 0.89999998
SuF02-007_speccl.fits Observed − Galaxy
Template Spectrum Av = 1.0000000
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
Mg II, I
3
2
1
0
−1
6000
7000
8000
9000

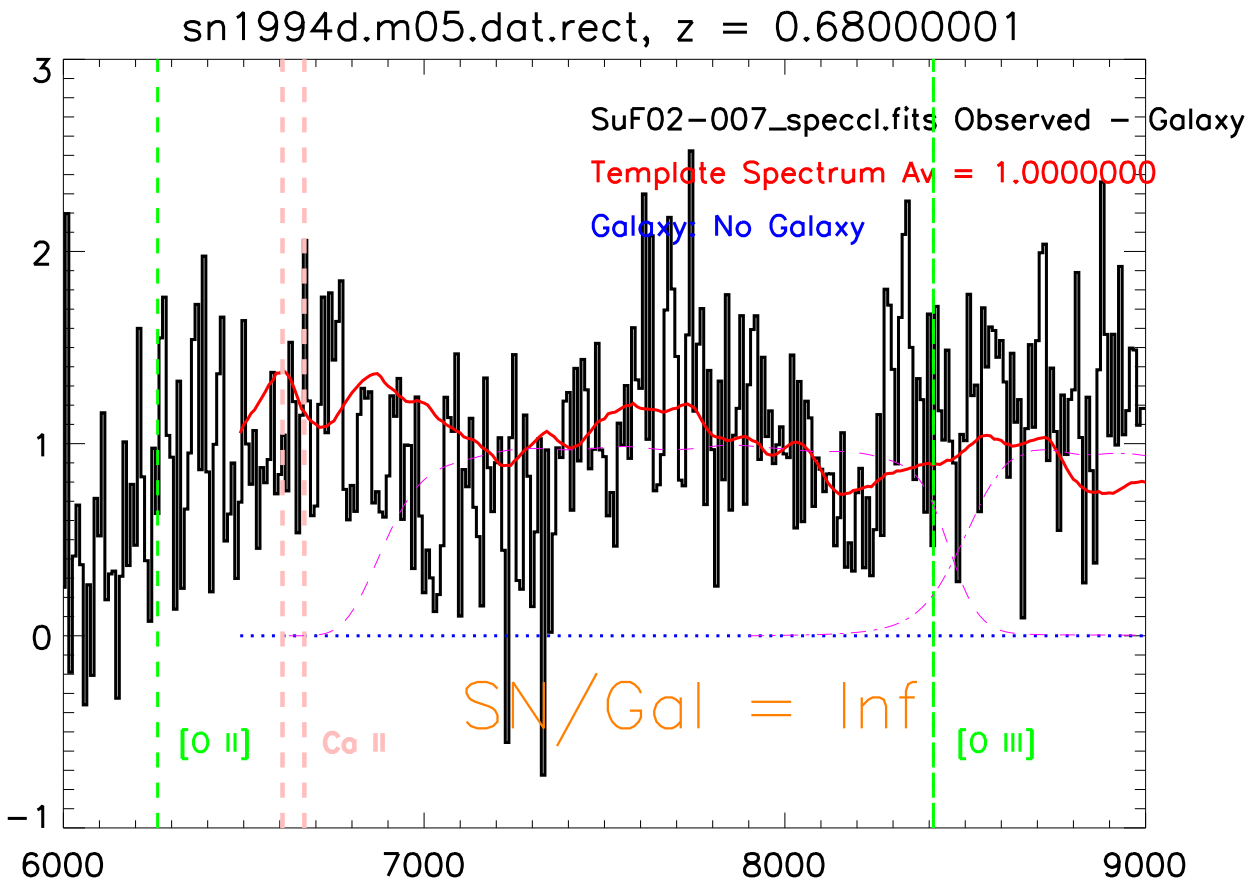

sn1989b.m05.dat.rect, z = 0.88999999
SuF02-007_speccl.fits Observed - Galaxy
Template Spectrum Av = 0.24872449
Galaxy: No Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
3
2
1
0
−1
6000
7000
8000
9000

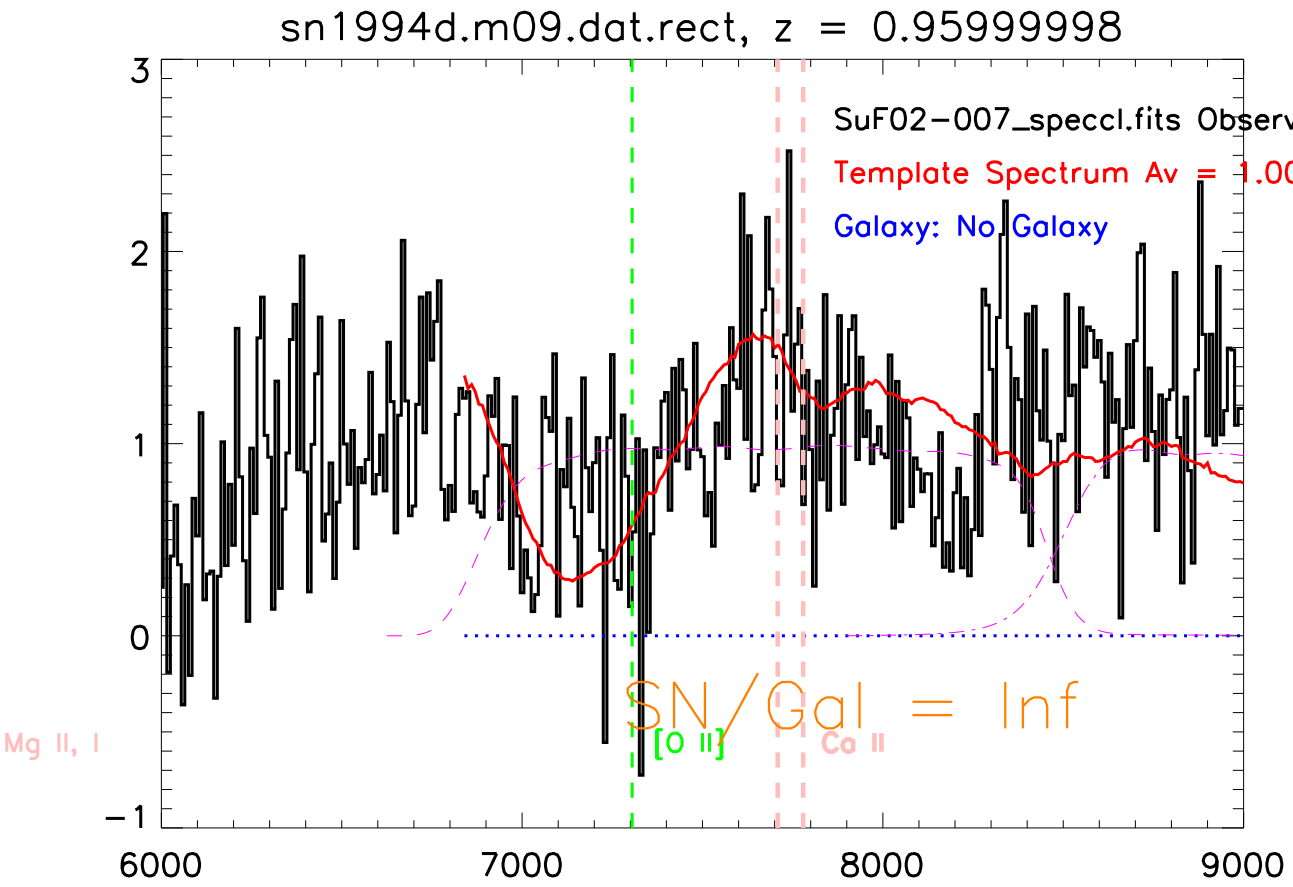

sn1989b.m01.dat.rect, z = 0.63999999
SuF02−007_speccl.fits Observed − Galaxy
Template Spectrum Av = 1.0000000
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
[O III]
3
2
1
0
−1
6000
7000
8000
9000

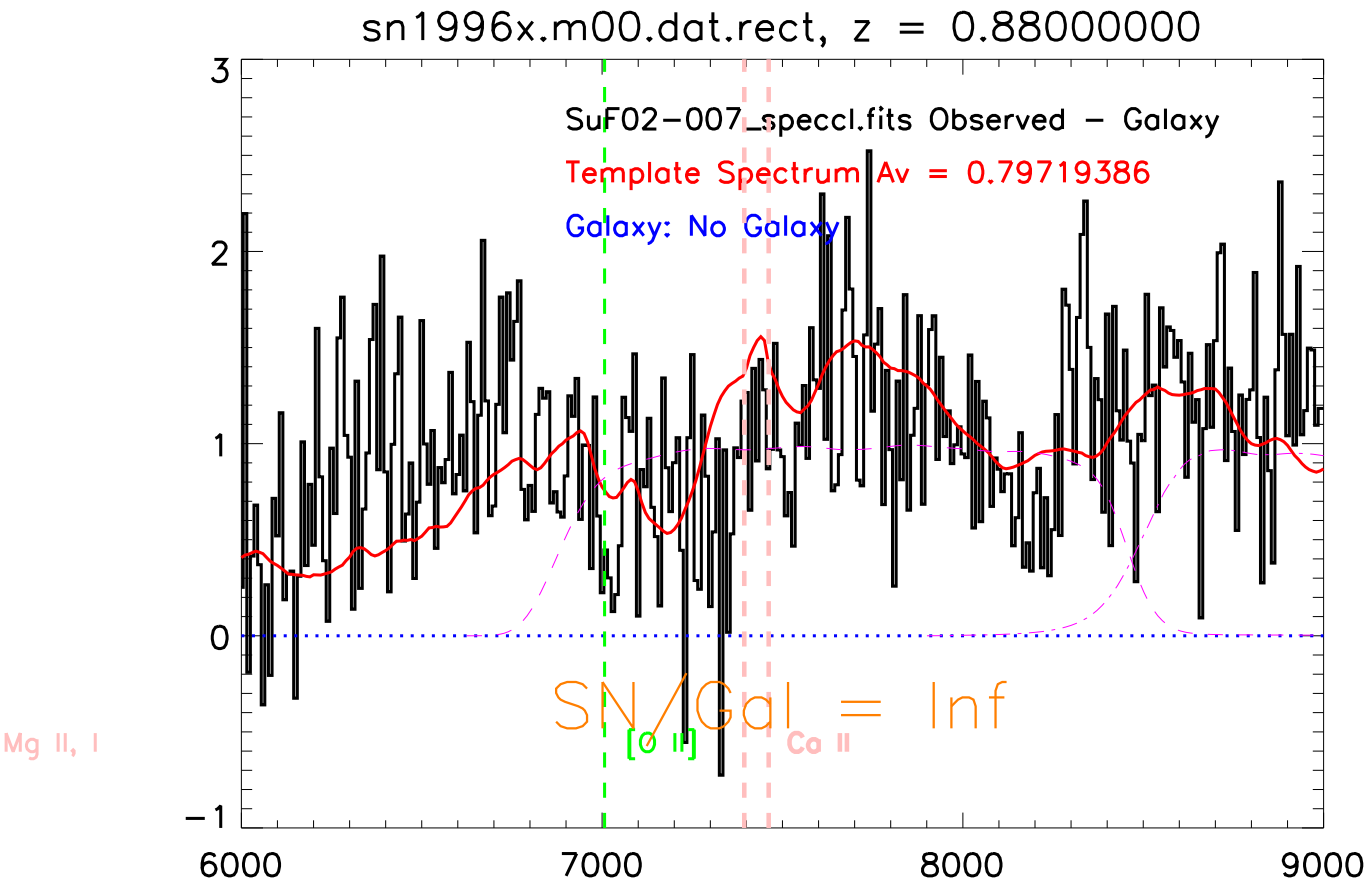

sn1994d.m10.dat.rect, z = 0.50999999
SuF02−007_speccl.fits Observed − Galax
Template Spectrum Av = 1.0000000
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
[O III]
3
2
1
0
−1
6000
7000
8000
9000

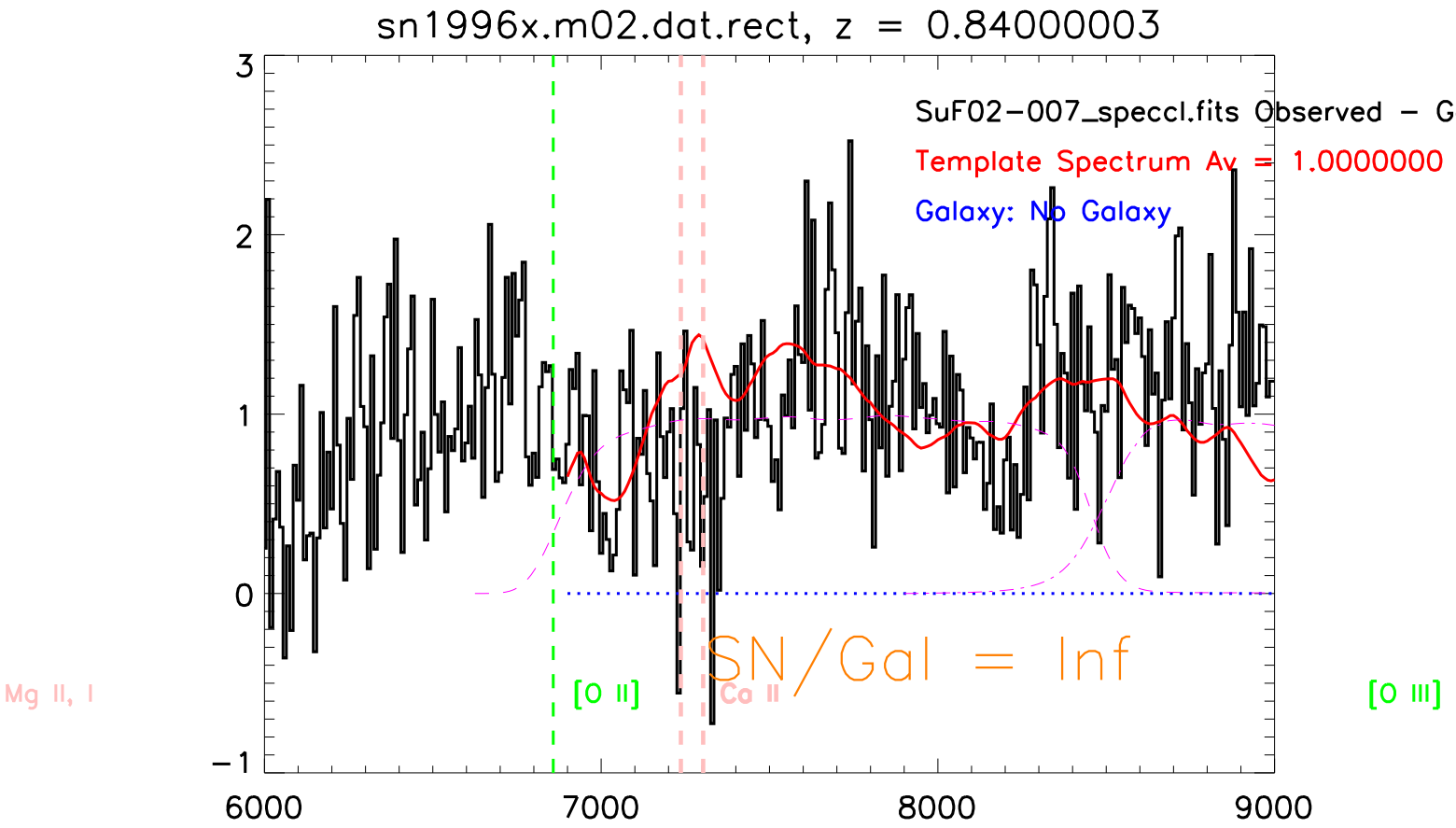

sn1999ee.m08.dat.rect, z = 0.67000002
SuF02−007_speccl.fits Observed + Galaxy
Template Spectrum Av = 1.0000000
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
[O III]
3
2
1
0
−1
6000
7000
8000
9000

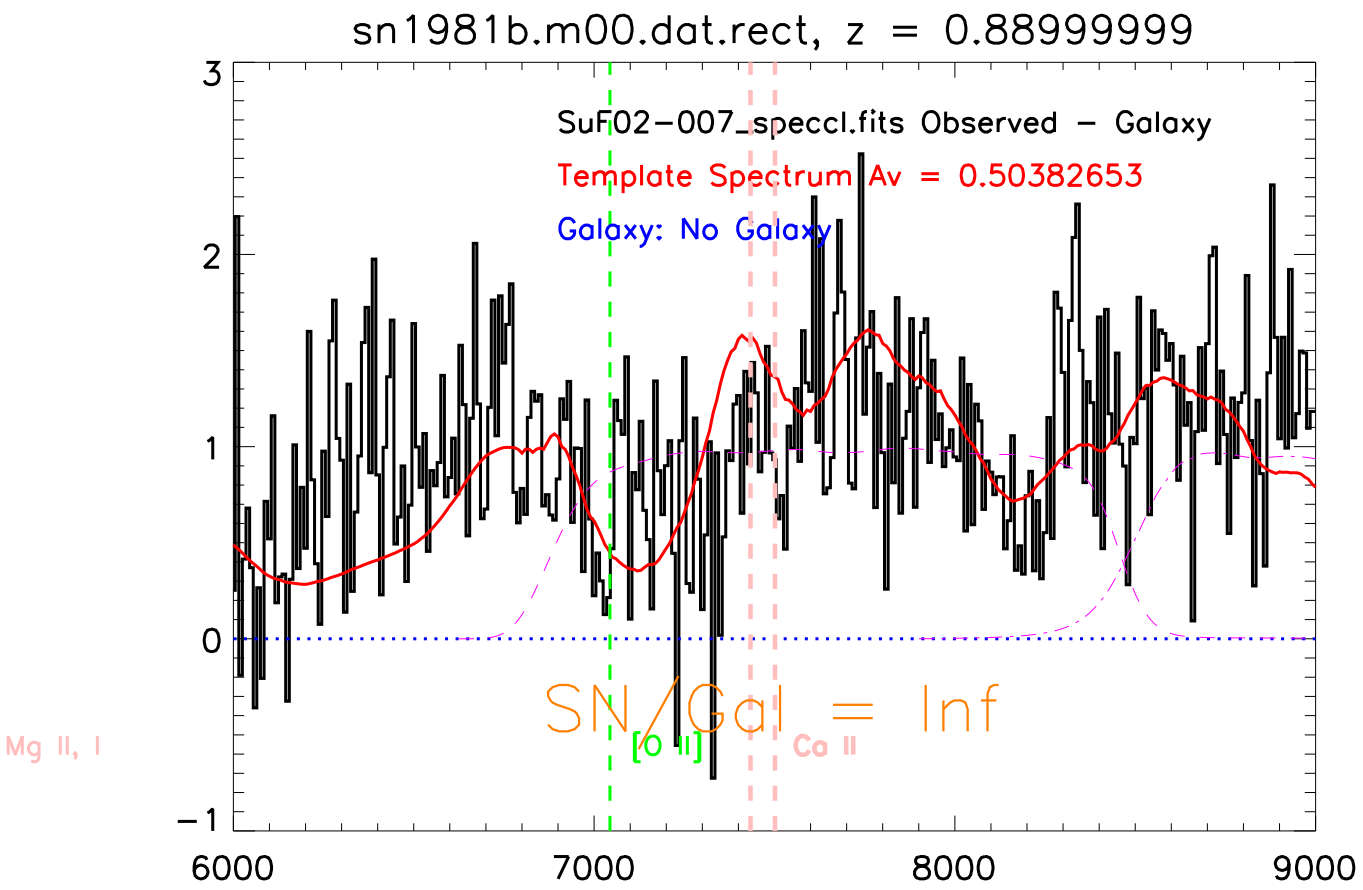

sn1999ee.m06.dat.rect, z = 0.65999997
SuF02−007_speccl.fits Observed − Galaxy
Template Spectrum Av = 1.0000000
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
[O III]
3
2
1
0
−1
6000
7000
8000
9000

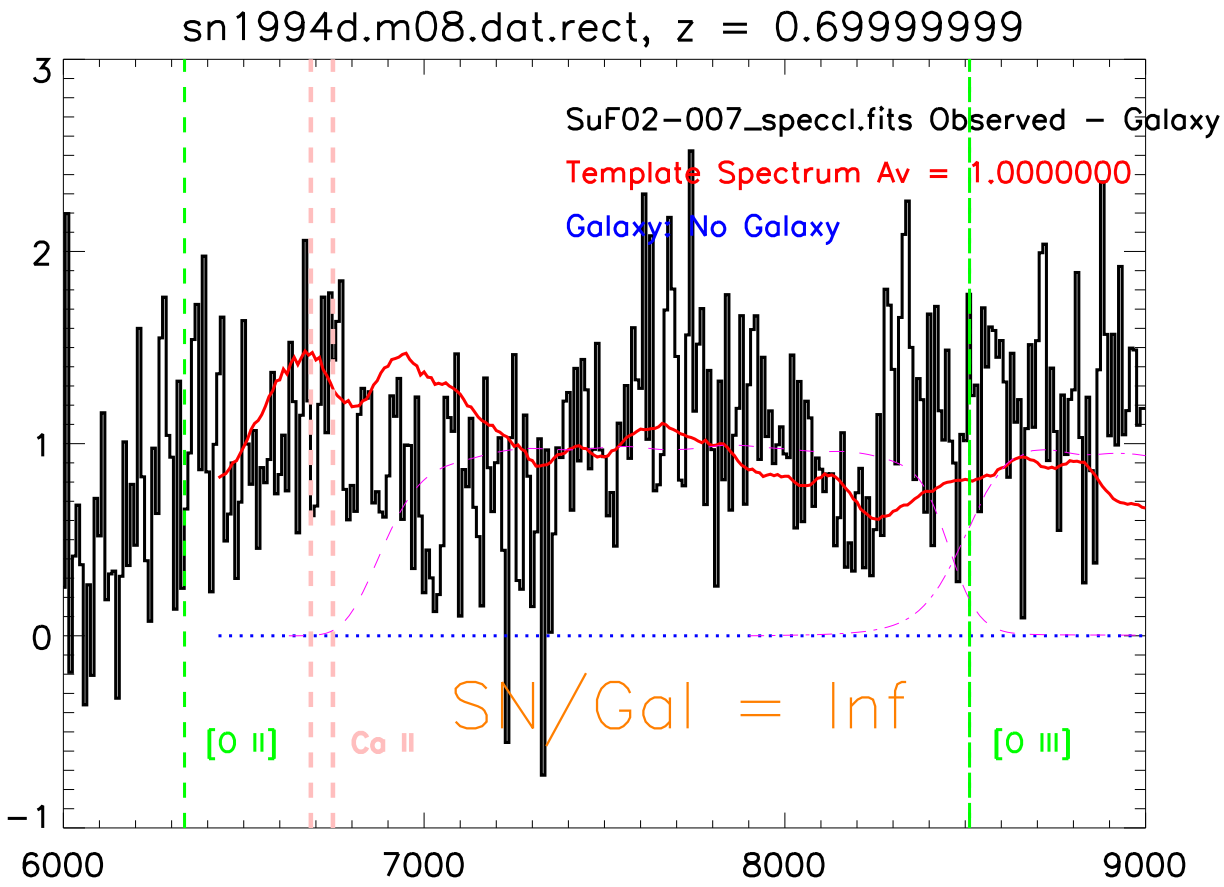

sn1994d.m05.dat.rect, z = 0.68000001
SuF02-007_specc1.fits Observed − Galaxy
Template Spectrum Av = 1.0000000
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
[O III]
3
2
1
0
−1
6000
7000
8000
9000

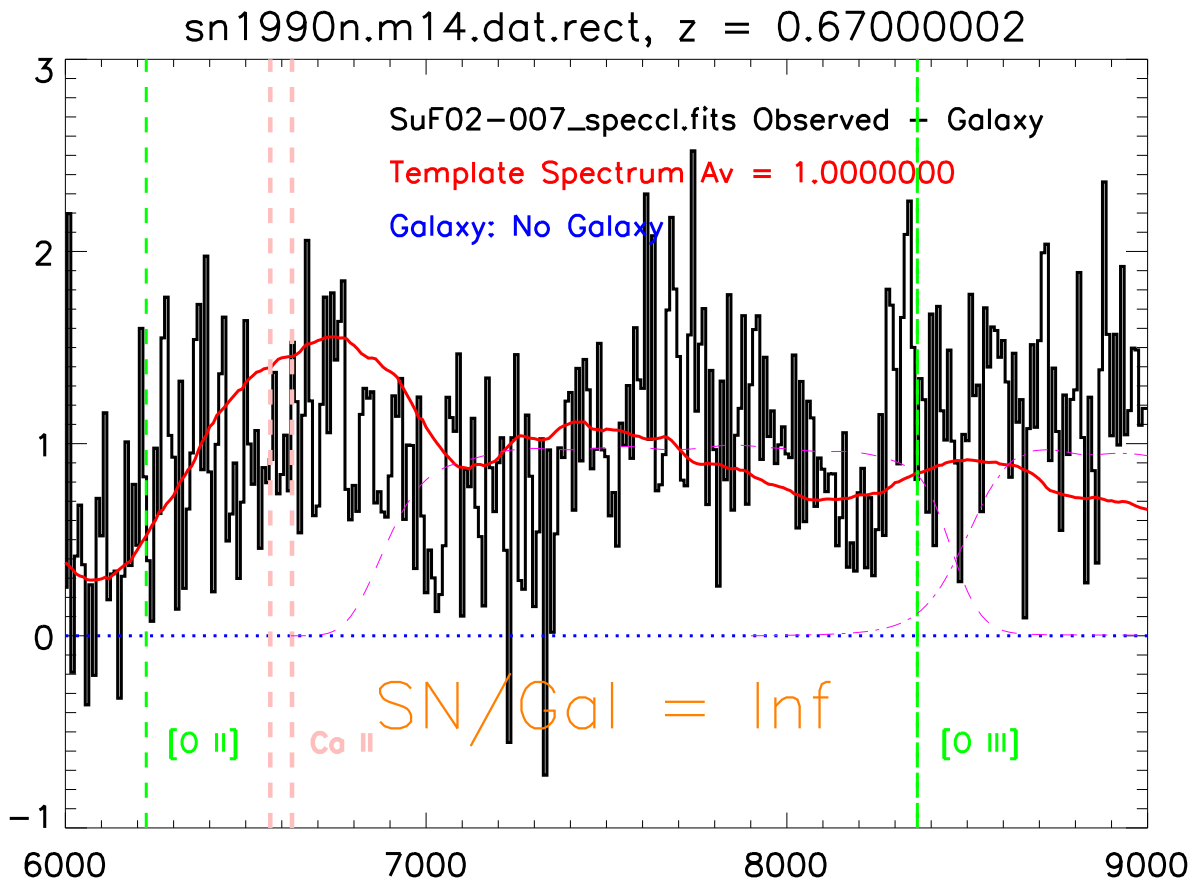

sn1994d.m09.dat.rect, z = 0.95999998
SuF02−007_speccl.fits Observed − Gala
Template Spectrum Av = 1.0000000
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
Mg II, I
3
2
1
0
−1
6000
7000
8000
9000

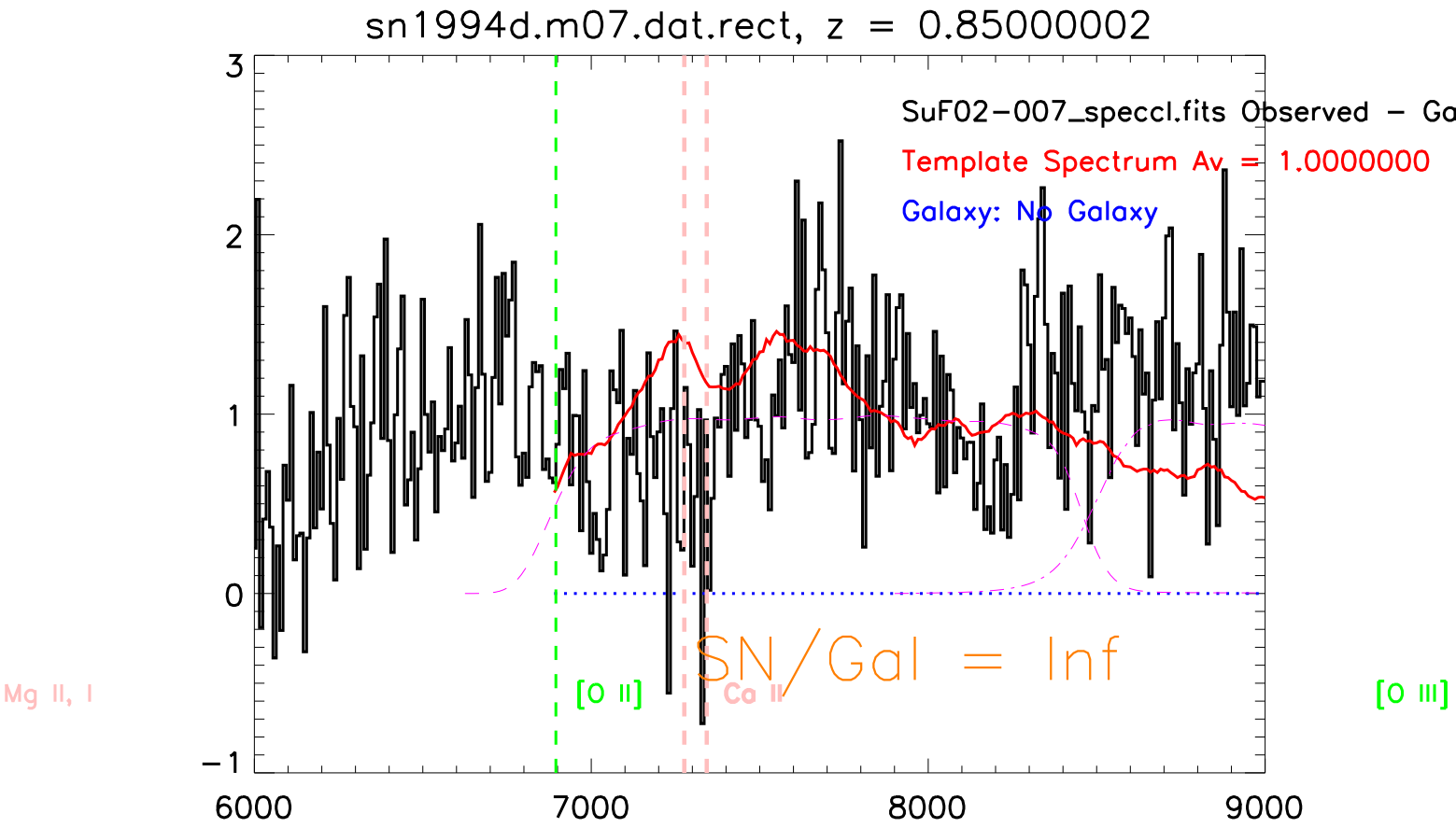

sn1996x.m00.dat.rect, z = 0.88000000
SuF02-007_speccl.fits Observed − Galaxy
Template Spectrum Av = 0.79719386
Galaxy: No Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O
3
2
1
0
−1
6000
7000
8000
9000


sn1996x.m02.dat.rect, z = 0.84000003
SuF02-007_specc1.fits Observed – Ga
Template Spectrum Av = 1.0000000
Galaxy: No Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
3
2
1
0
−1
6000
7000
8000
9000


sn1981b.m00.dat.rect, z = 0.88999999
SuF02-007_speccl.fits Observed − Galaxy
Template Spectrum Av = 0.50382653
Galaxy: No Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
3
2
1
0
−1
6000
7000
8000
9000


sn1994d.m08.dat.rect, z = 0.69999999
SuF02-007_speccl.fits Observed - Galaxy
Template Spectrum Av = 1.0000000
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
[O III]
3
2
1
0
-1
6000
7000
8000
9000


sn1990n.m14.dat.rect, z = 0.67000002
SuF02-007_speccl.fits Observed + Galaxy
Template Spectrum Av = 1.0000000
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
[O III]
3
2
1
0
−1
6000
7000
8000
9000


sn1994d.m07.dat.rect, z = 0.85000002
SuF02-007_specci.fits Observed – Ga
Template Spectrum Av = 1.0000000
Galaxy: No Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
3
2
1
0
−1
6000
7000
8000
9000