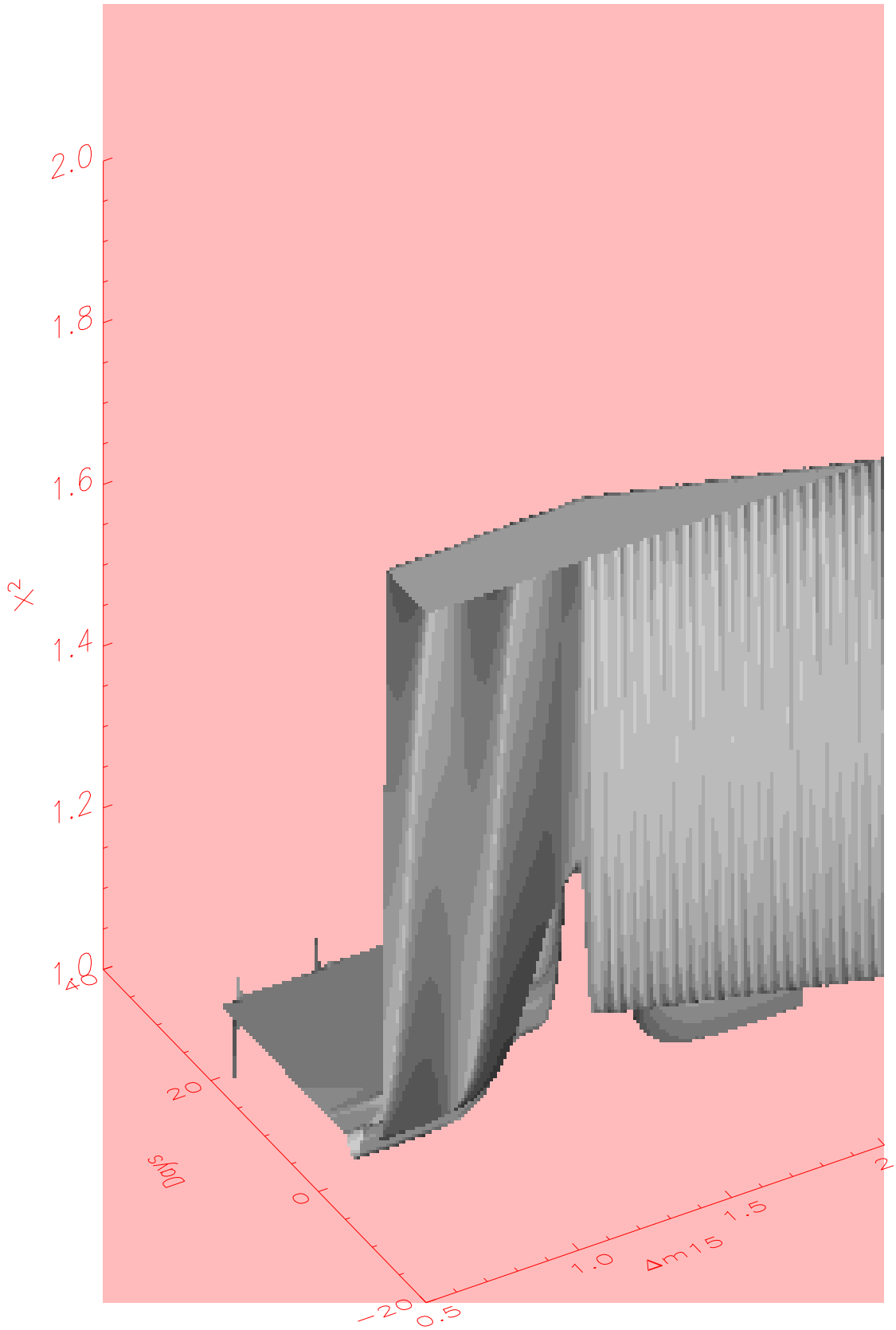
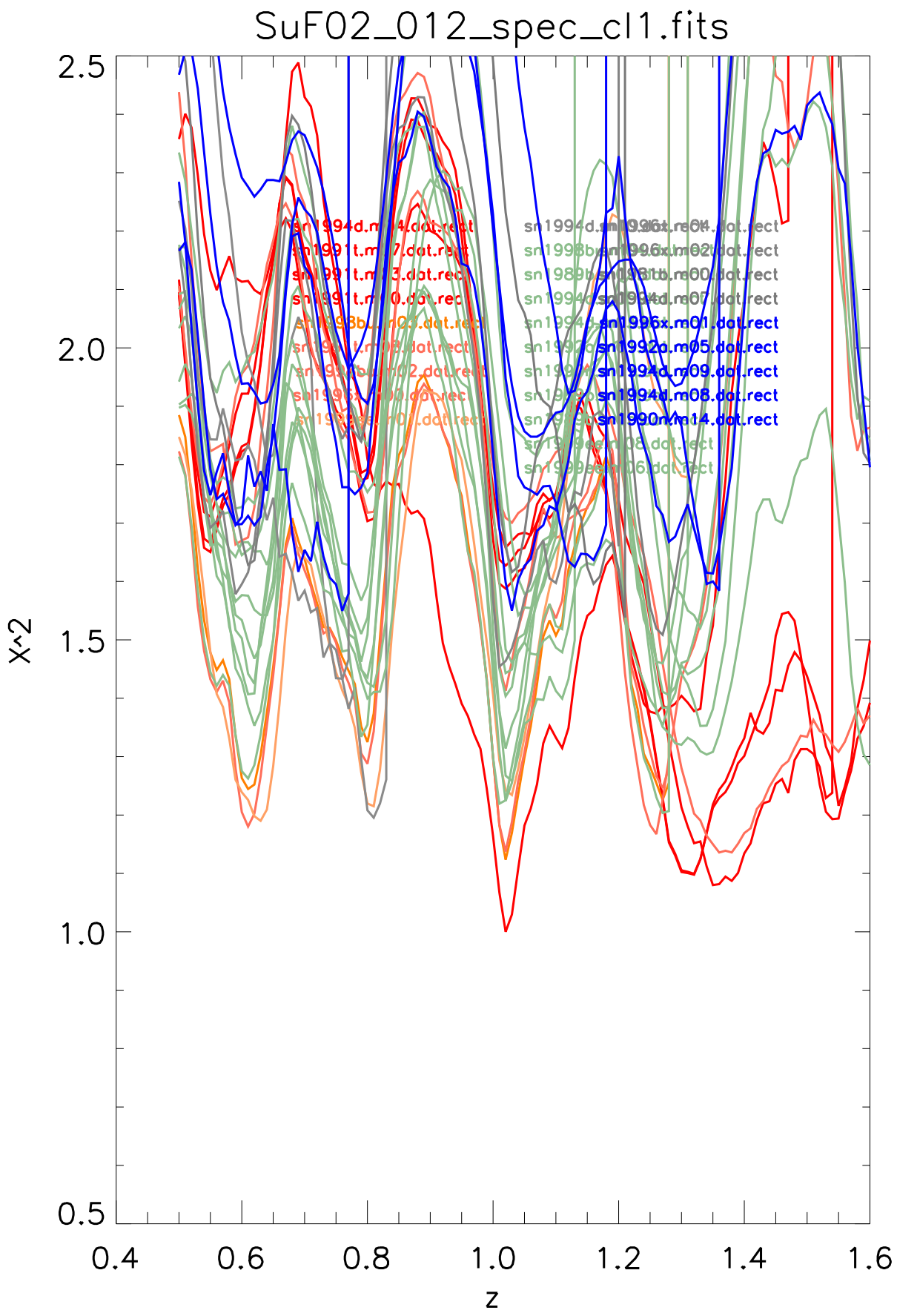
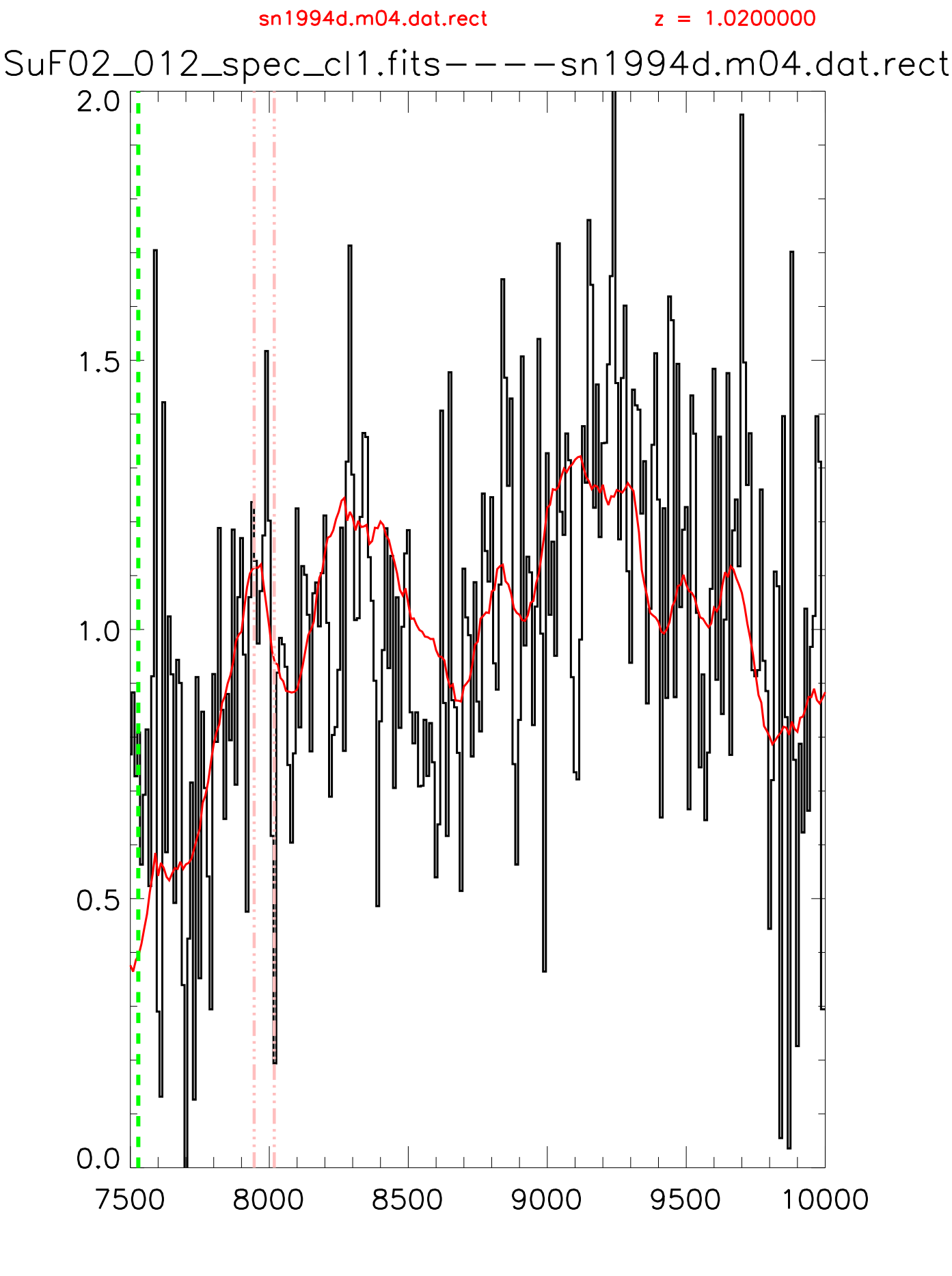
1.1 1152
1.2 1125 1.3
1.1 1.5
1.1 1.1 1.3
1.2 1.4 1.0
1.4 1.6 1.3
1.4
1.1 1.4 1.4 1.5
1.1 1.4 1.6
1.6
1.2

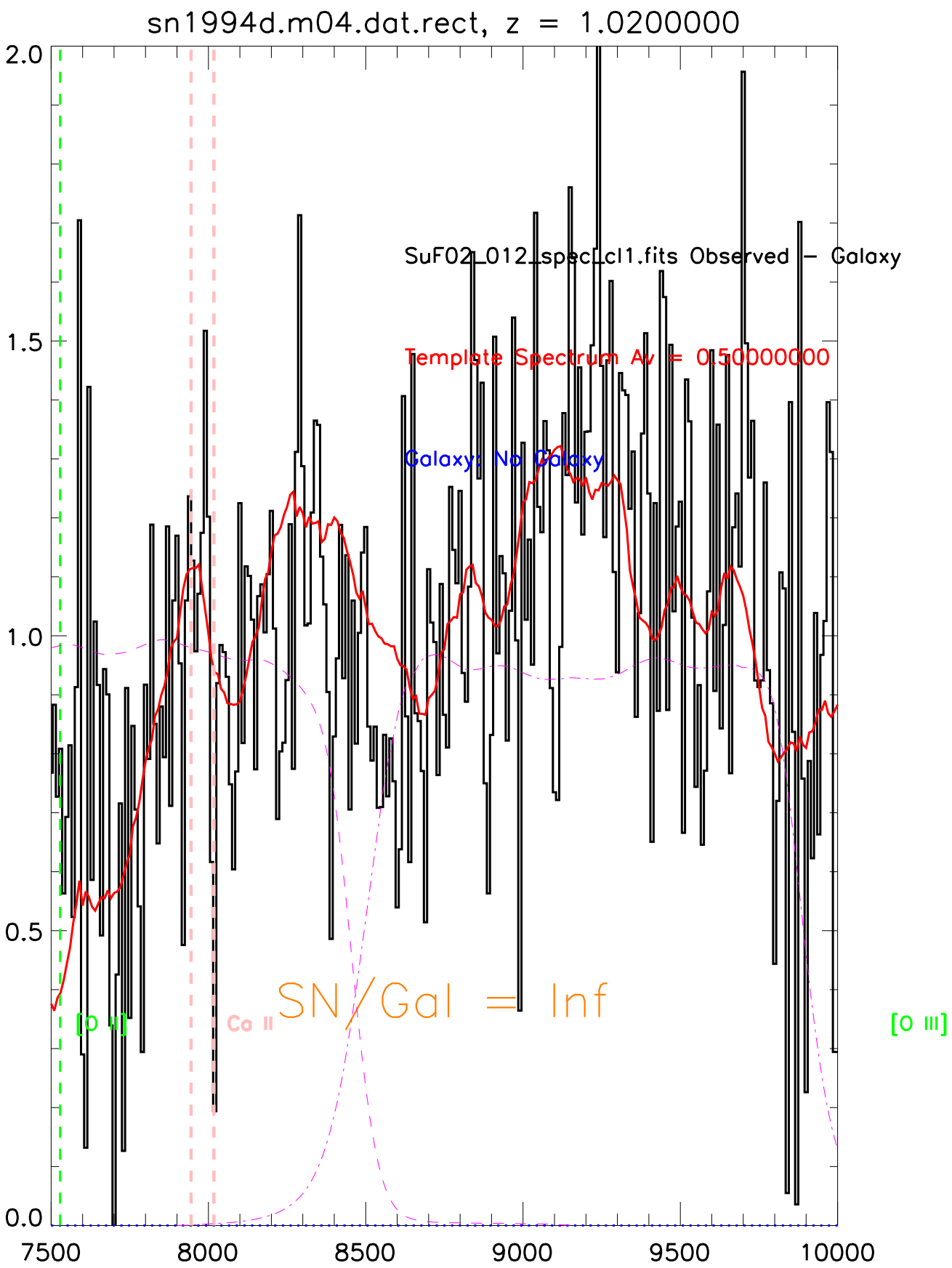
1.8

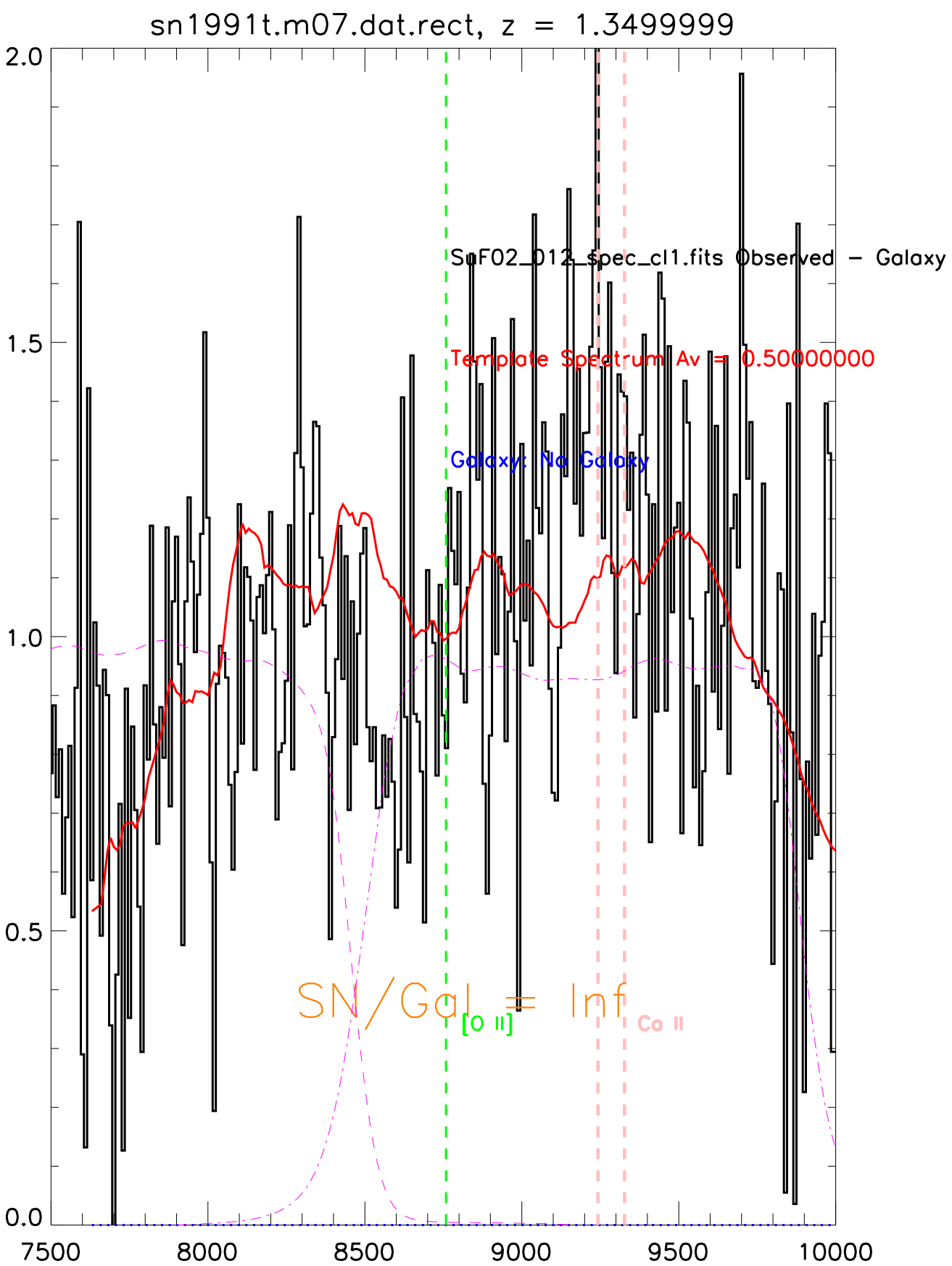


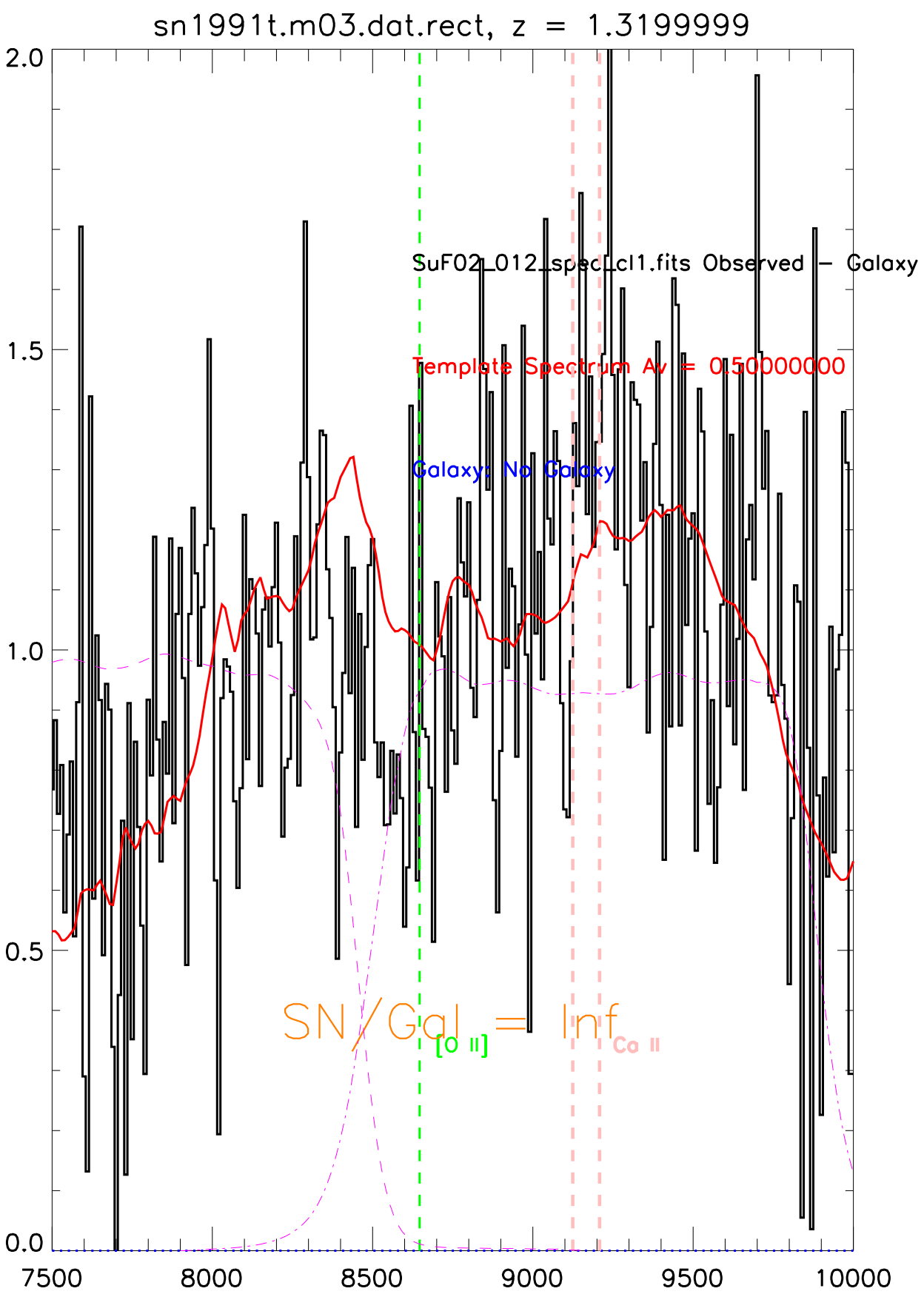
2.0
1.8
1.6
1.4
1.2
1.0
χ^2
40
20
0
−20
Days
0.5
1.0
1.5
2.0
Δm15

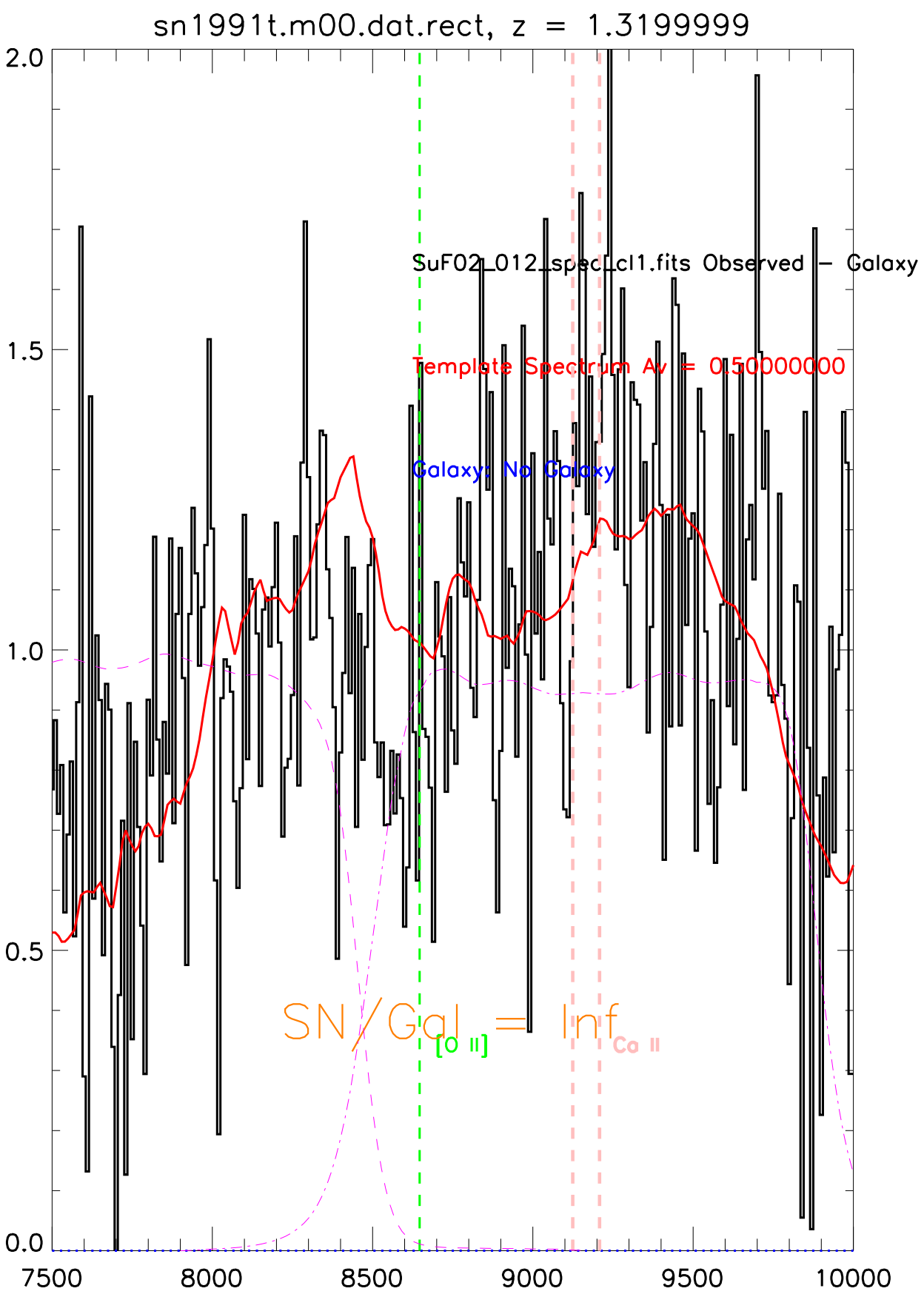

SuF02_012_spec_cl1.fits
2.5
2.0
1.5
1.0
0.5
X^2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
z
sn1994d.m14.dat.rect
sn1991t.m07.dat.rect
sn1991t.m13.dat.rect
sn1991t.m10.dat.rect
sn1994d.m04.dat.rect
sn1998bu.m02.dat.rect
sn1998bu.m00.dat.rect
sn1994d.m07.dat.rect
sn1996x.m01.dat.rect
sn1992a.m05.dat.rect
sn1994d.m09.dat.rect
sn1994d.m08.dat.rect
sn1990nm.m14.dat.rect

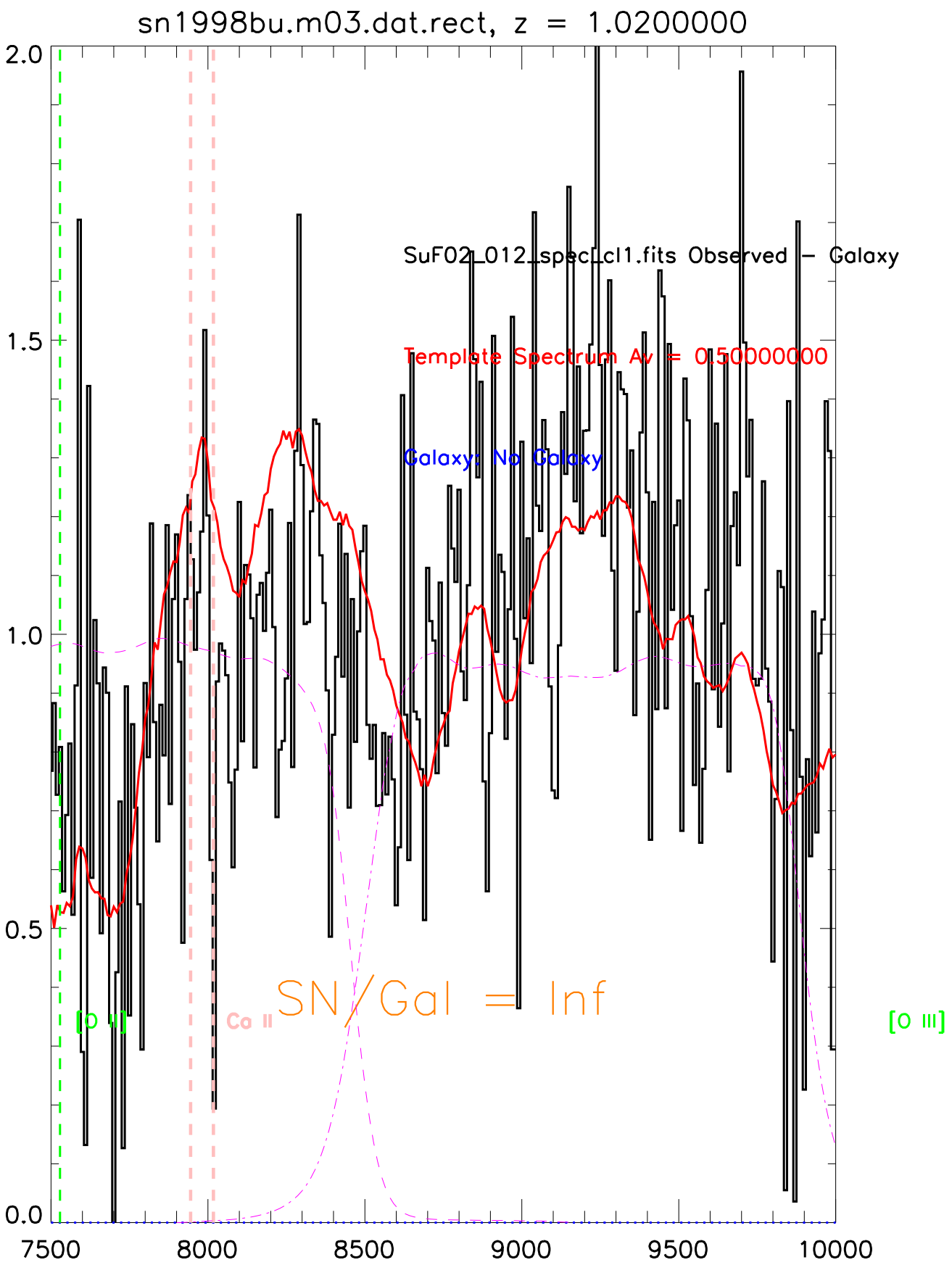

sn1994d.m04.dat.rect
z = 1.0200000
SuF02_012_spec_cl1.fits----sn1994d.m04.dat.rect
2.0
1.5
1.0
0.5
0.0
7500
8000
8500
9000
9500
10000
[O II]
Ca II

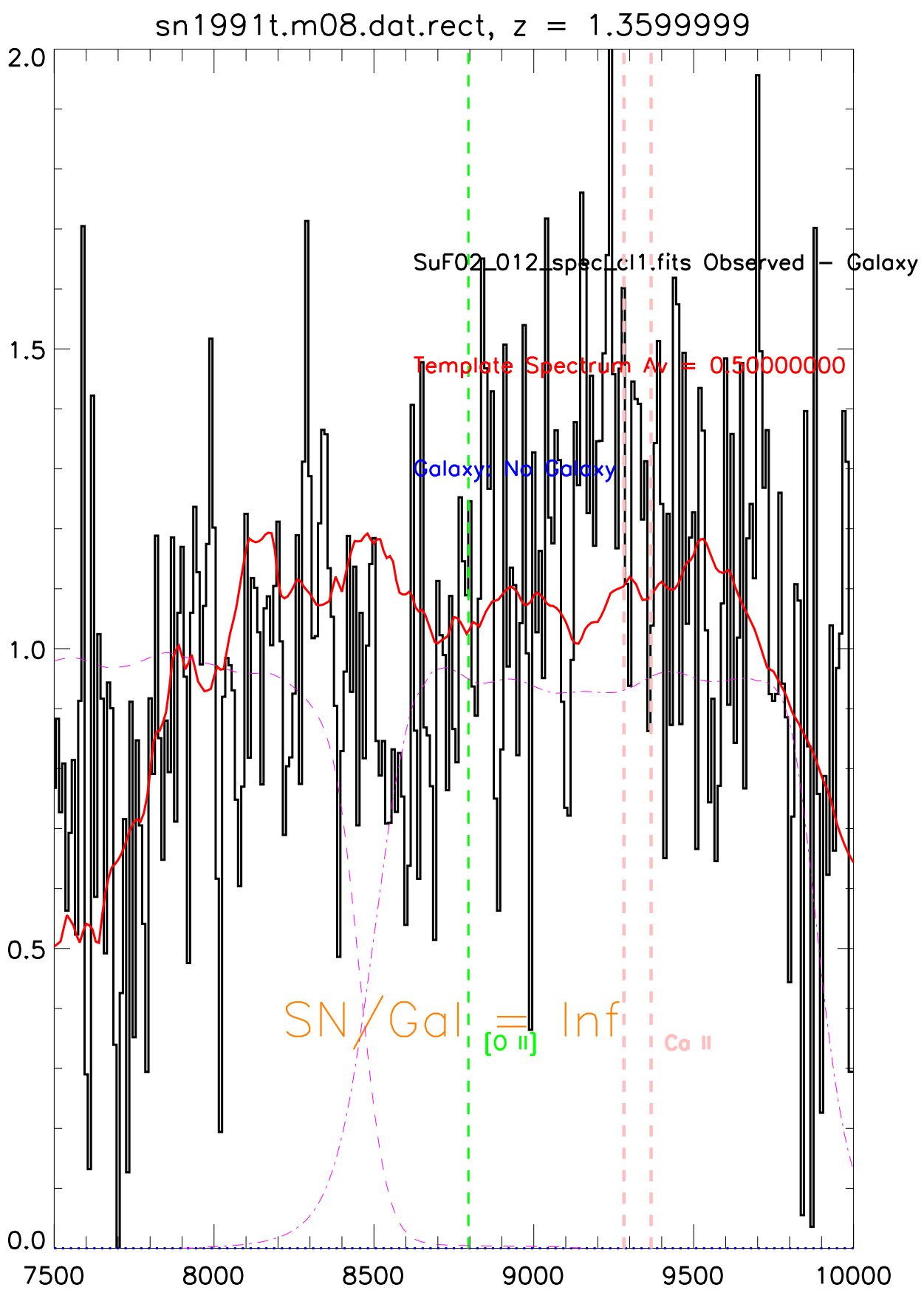

sn1994d.m04.dat.rect, z = 1.0200000
SuF02_012_spec_cl1.fits Observed – Galaxy
Template Spectrum Av = 0.150000000
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
[O III]
2.0
1.5
1.0
0.5
0.0
7500
8000
8500
9000
9500
10000

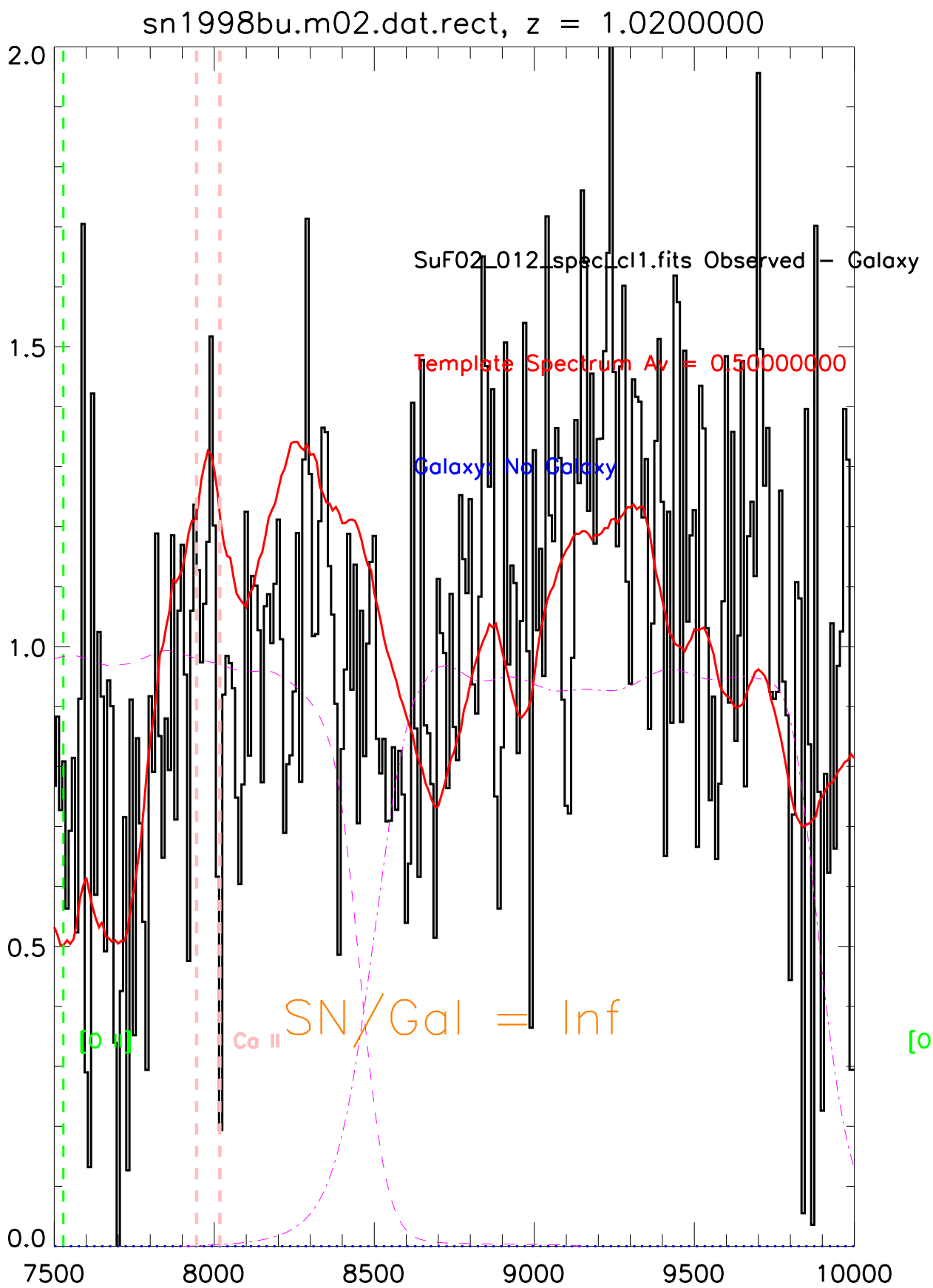

sn1991t.m07.dat.rect, z = 1.3499999
SuF02_012_spec_cl1.fits Observed – Galaxy
Template Spectrum Av = 0.50000000
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
2.0
1.5
1.0
0.5
0.0
7500
8000
8500
9000
9500
10000

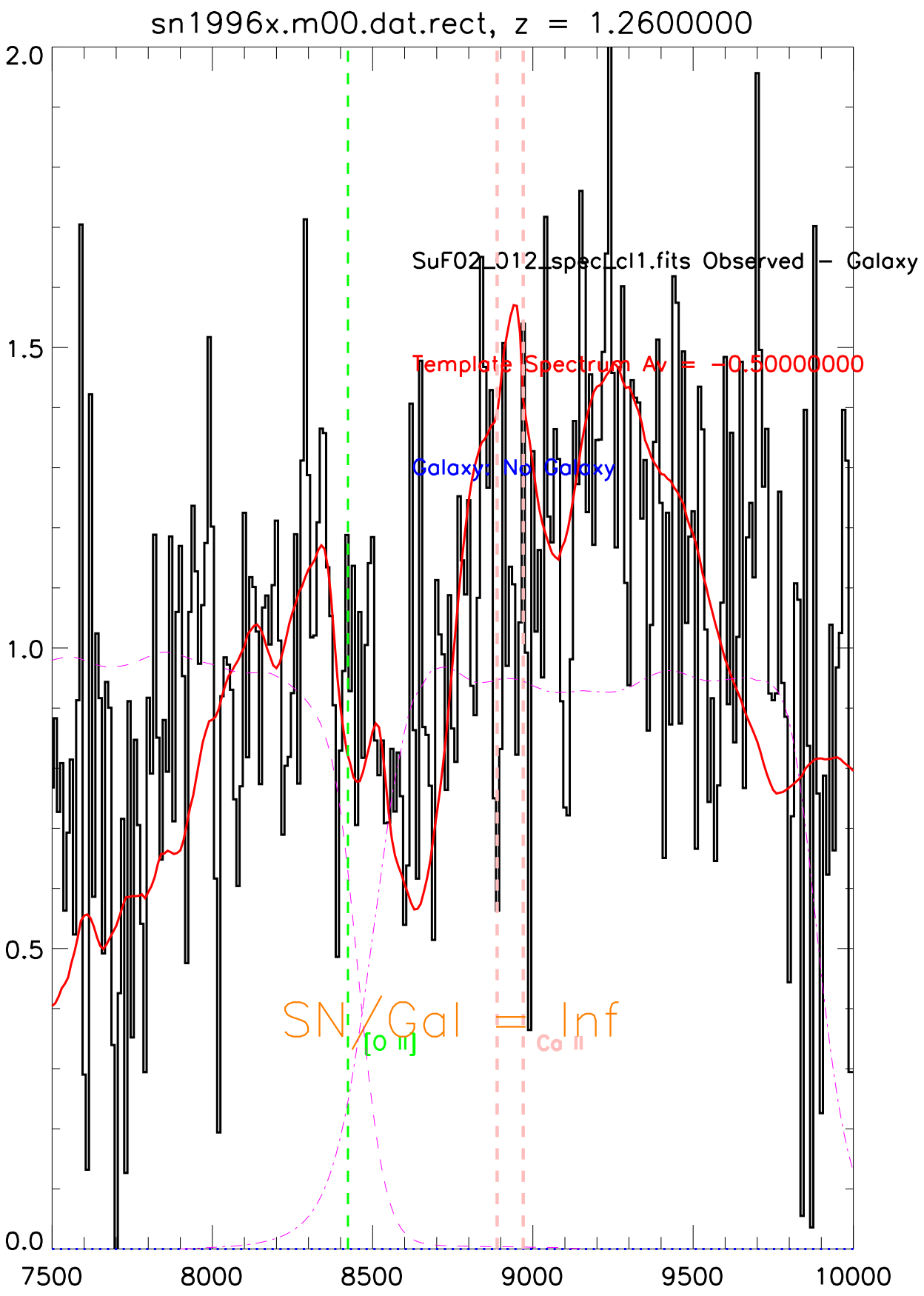

sn1991t.m03.dat.rect, z = 1.3199999
SuF02_012_spec_cl1.fits Observed – Galaxy
Template Spectrum Av = 0.150000000
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
2.0
1.5
1.0
0.5
0.0
7500
8000
8500
9000
9500
10000

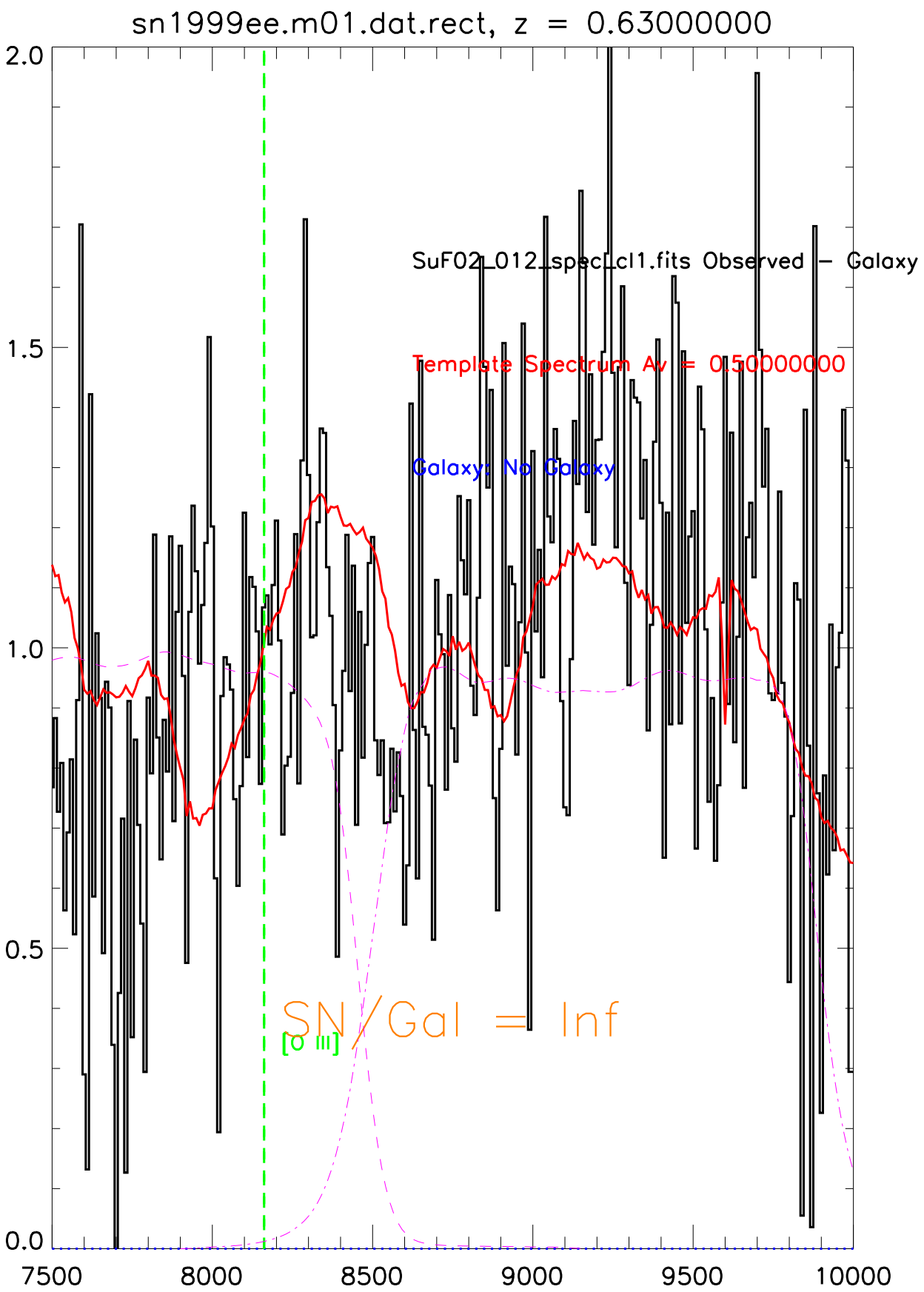

sn1991t.m00.dat.rect, z = 1.3199999
SuF02_012_spec_cl1.fits Observed – Galaxy
Template Spectrum Av = 0.150000000
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
2.0
1.5
1.0
0.5
0.0
7500
8000
8500
9000
9500
10000

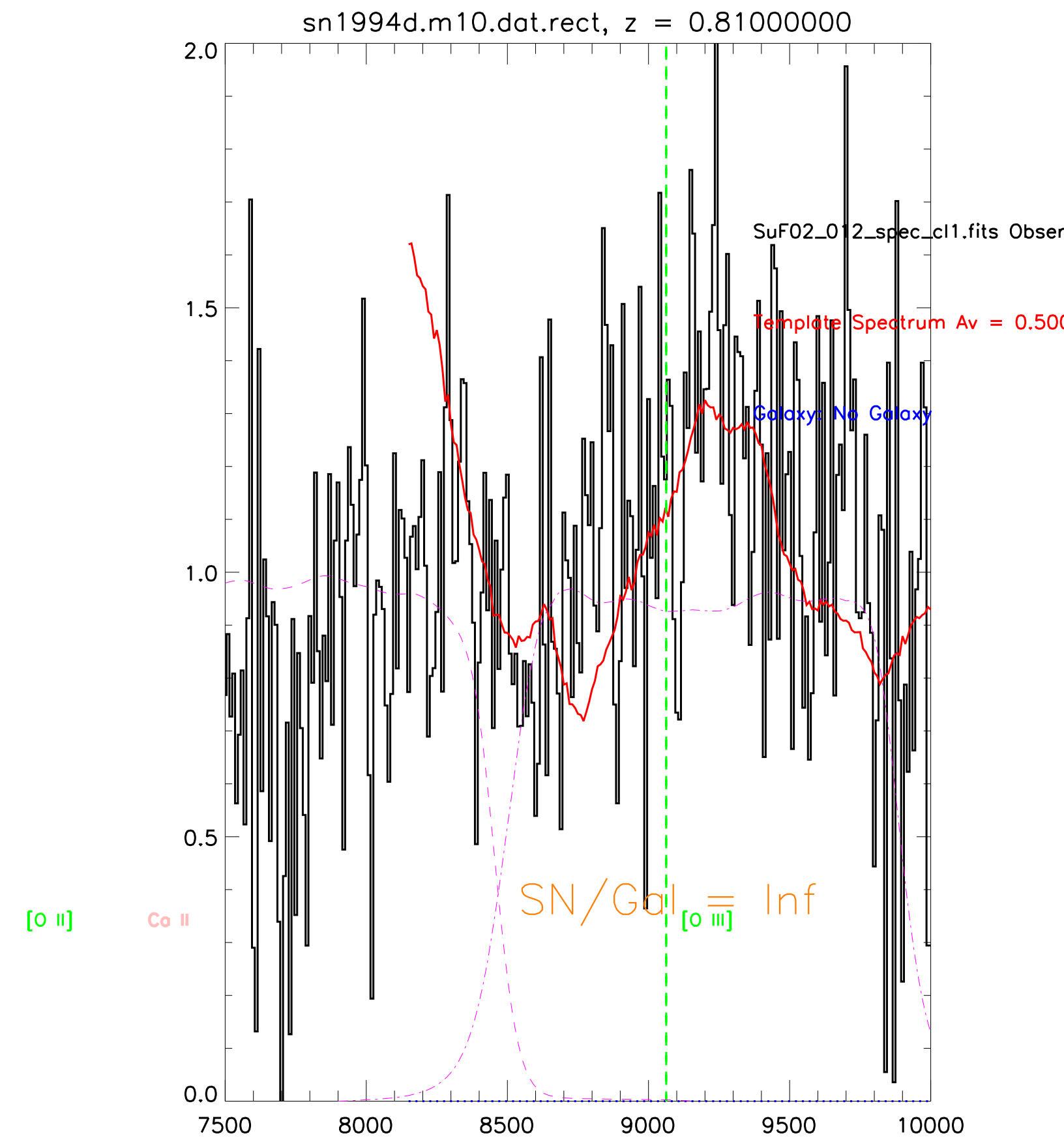

sn1998bu.m03.dat.rect, z = 1.0200000
SuF02_012_spec_cl1.fits Observed – Galaxy
Template Spectrum Av = 0.150000000
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
[O III]
2.0
1.5
1.0
0.5
0.0
7500
8000
8500
9000
9500
10000

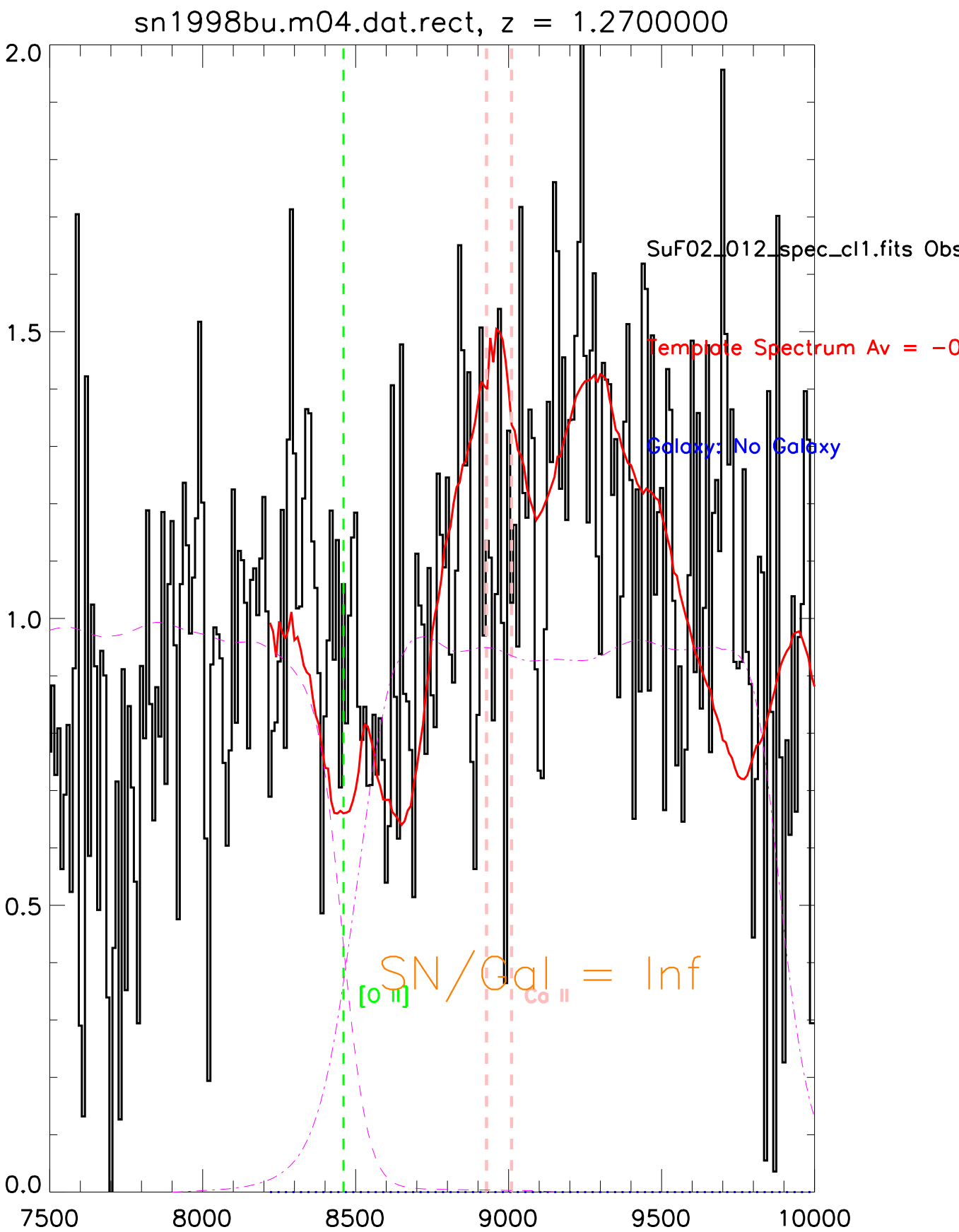

sn1991t.m08.dat.rect, z = 1.3599999
SuF02_012_spec_cl1.fits Observed – Galaxy
Template Spectrum Av = 0.150000000
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
2.0
1.5
1.0
0.5
0.0
7500
8000
8500
9000
9500
10000

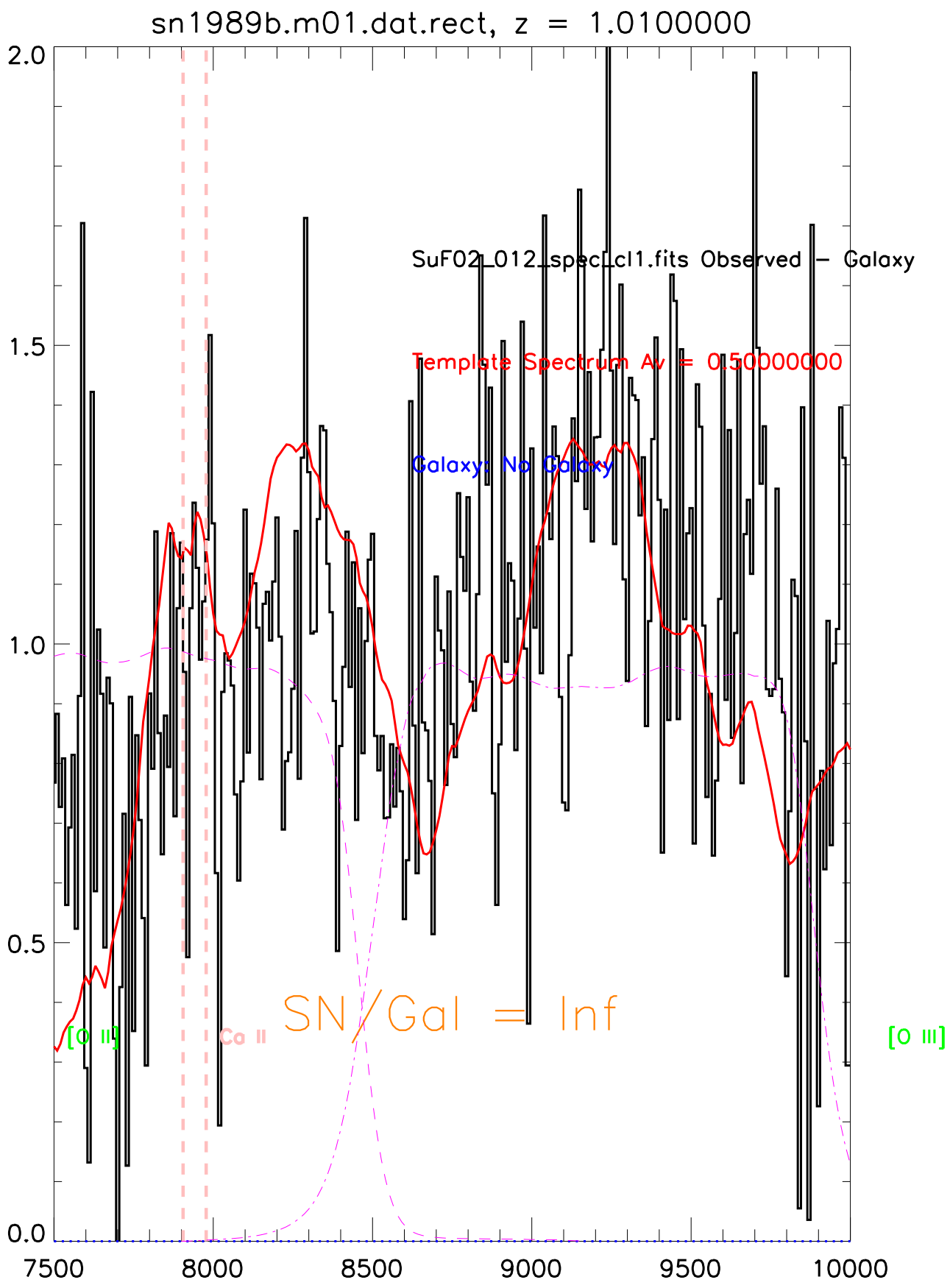

sn1998bu.m02.dat.rect, z = 1.0200000
SuF02_012_spec_cl1.fits Observed – Galaxy
Template Spectrum Av = 0.150000000
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
[O III]
2.0
1.5
1.0
0.5
0.0
7500
8000
8500
9000
9500
10000

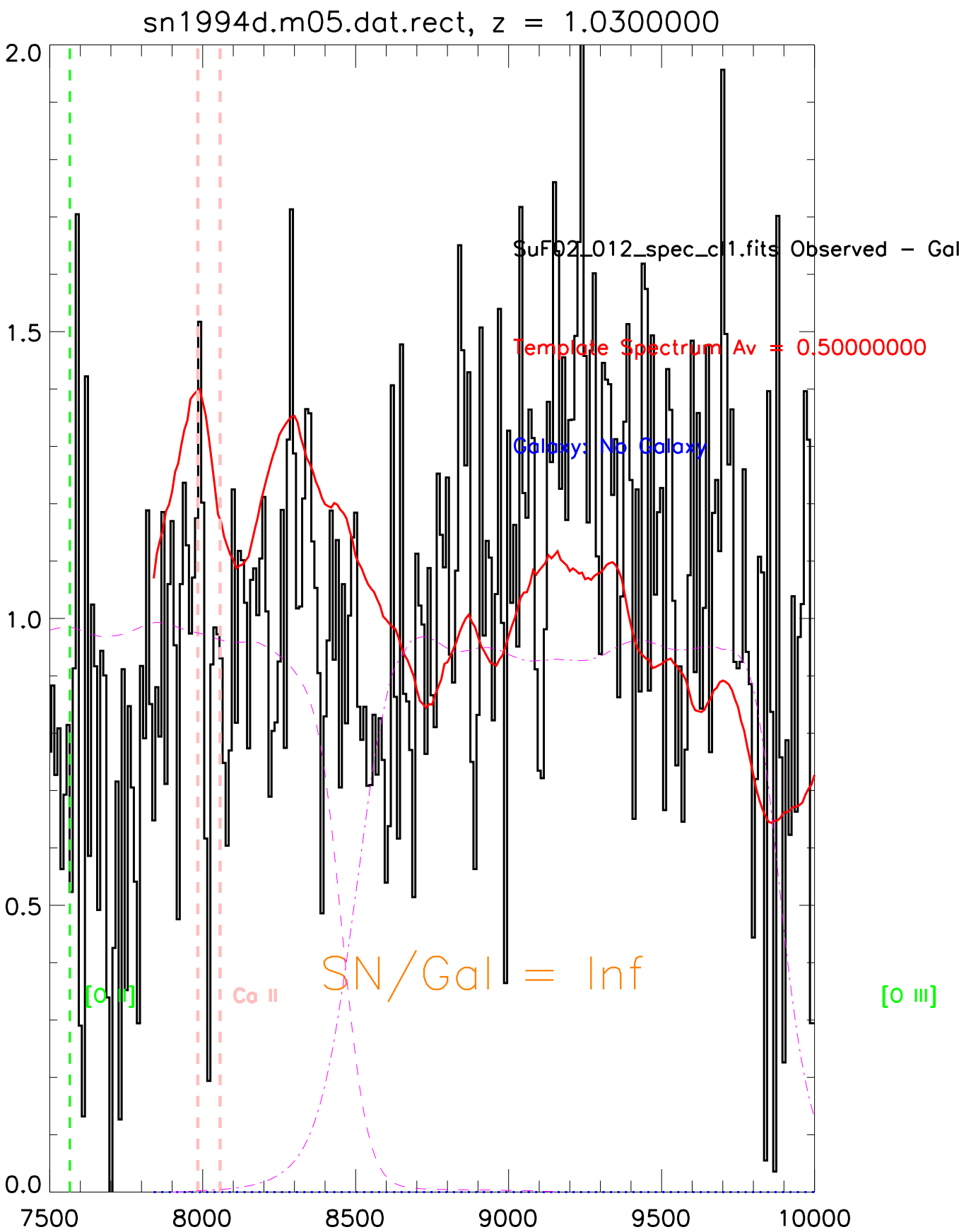

sn1996x.m00.dat.rect, z = 1.2600000
SuF02_012_spec_cl1.fits Observed – Galaxy
Template Spectrum Av = -0.50000000
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
2.0
1.5
1.0
0.5
0.0
7500
8000
8500
9000
9500
10000

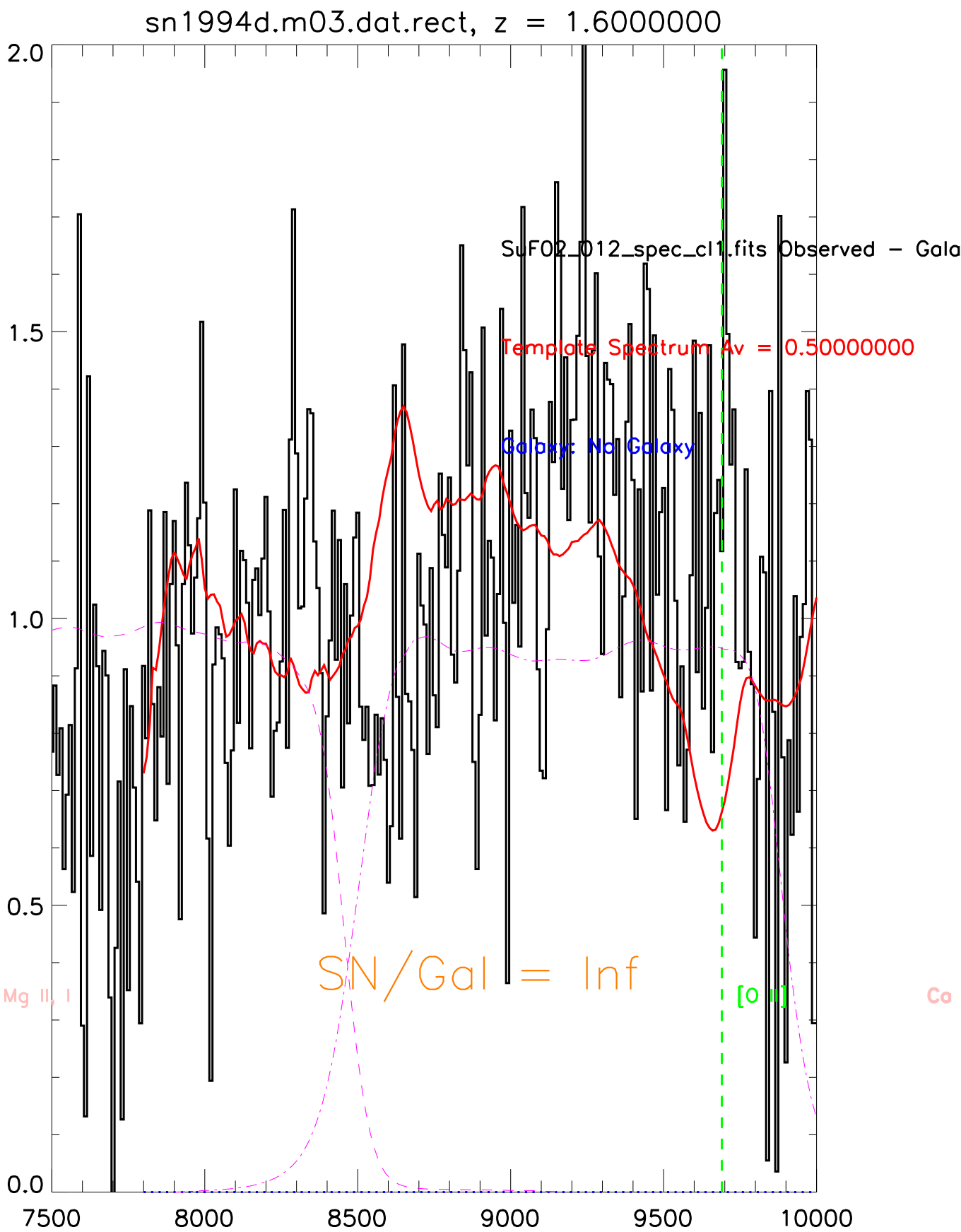

sn1999ee.m01.dat.rect, z = 0.63000000
SuF02_012_spec_cl1.fits Observed – Galaxy
Template Spectrum Av = 0.150000000
Galaxy: No Galaxy
SN/Gal = Inf
[O III]
2.0
1.5
1.0
0.5
0.0
7500
8000
8500
9000
9500
10000

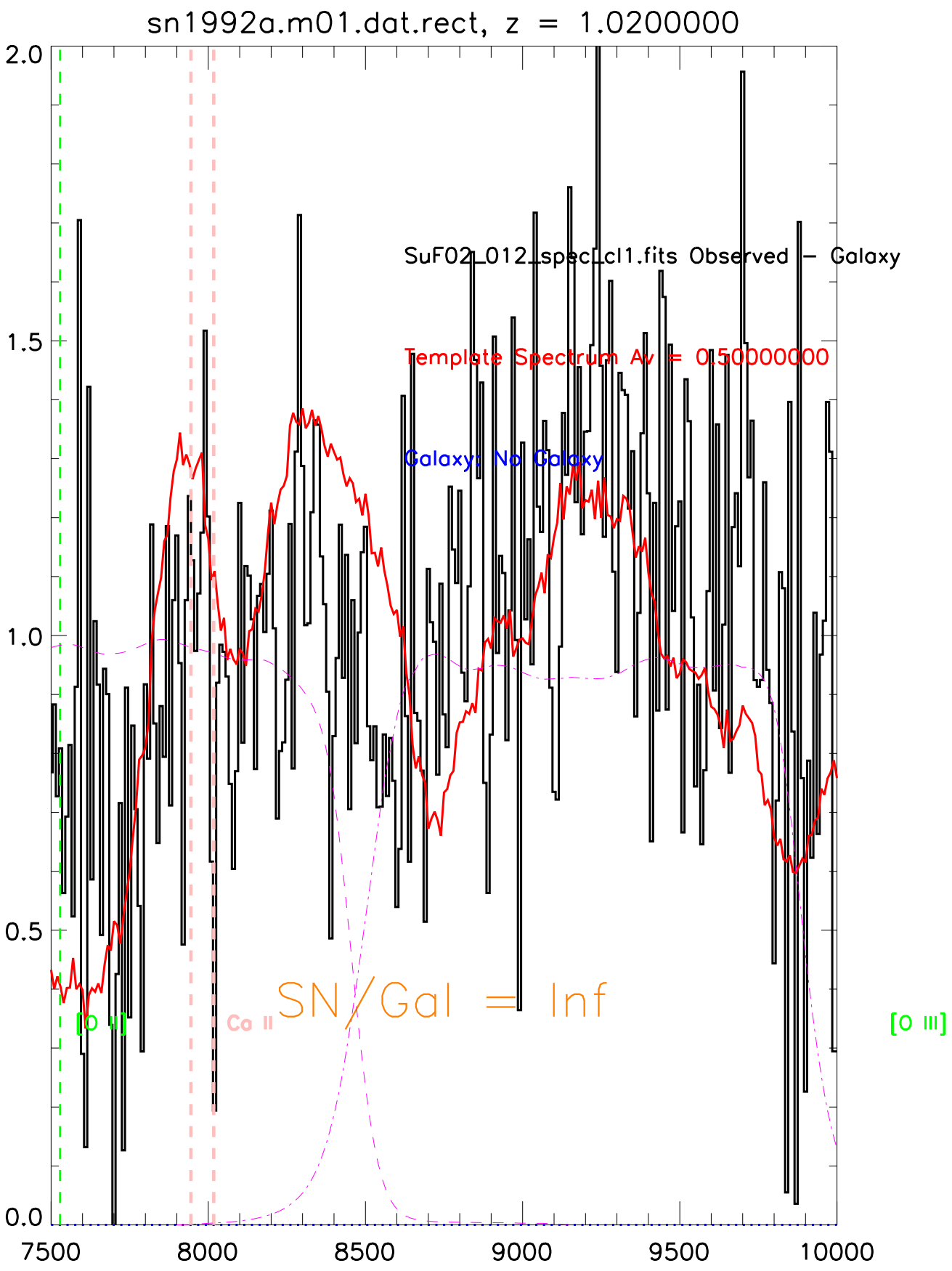

sn1994d.m10.dat.rect, z = 0.81000000
2.0
1.5
1.0
0.5
0.0
7500
8000
8500
9000
9500
10000
SuF02_012_spec_cl1.fits Obser
Template Spectrum Av = 0.500
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
[O III]

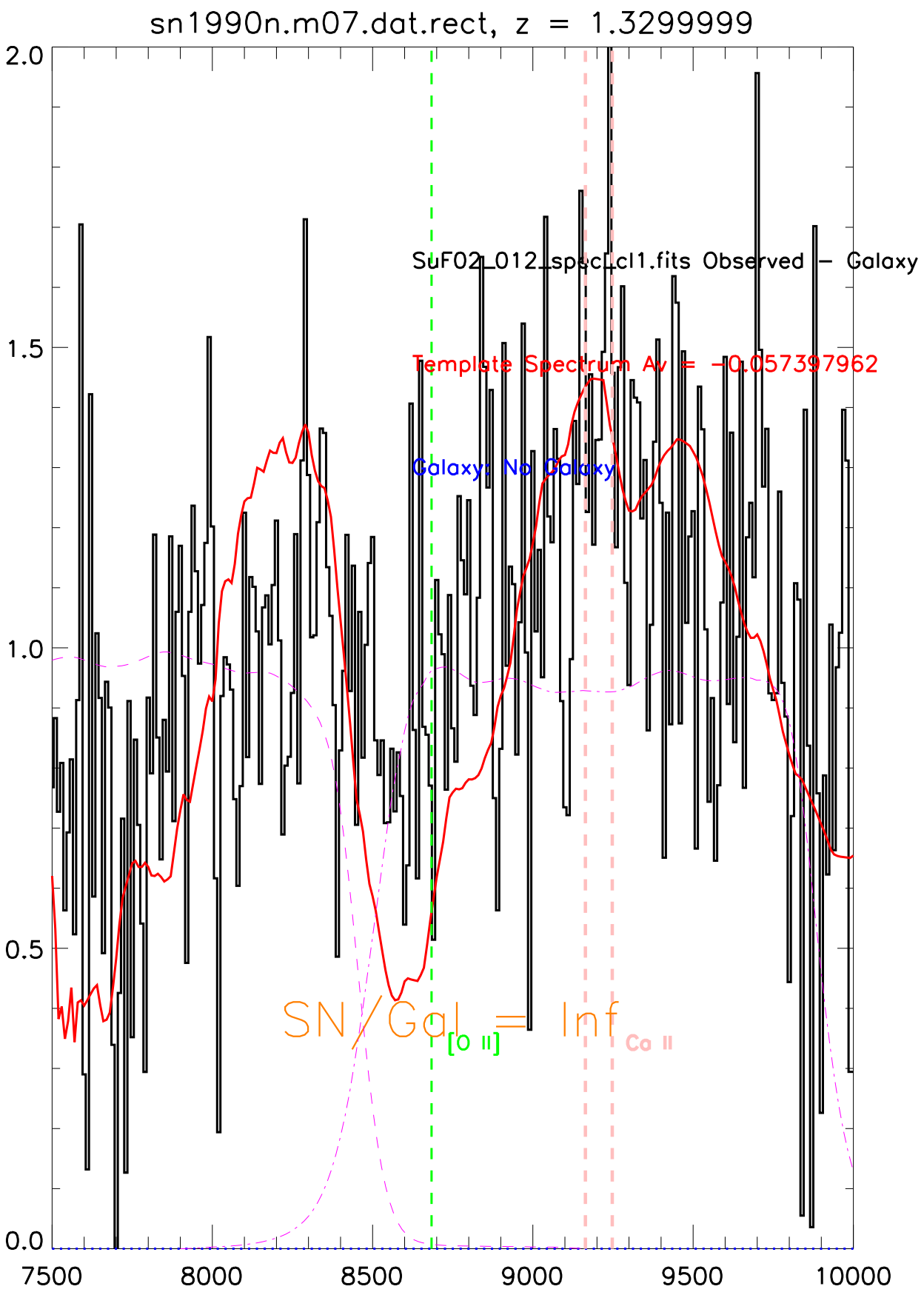

sn1998bu.m04.dat.rect, z = 1.2700000
SuF02_012_spec_cl1.fits Obs
Template Spectrum Av = -0
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
2.0
1.5
1.0
0.5
0.0
7500
8000
8500
9000
9500
10000

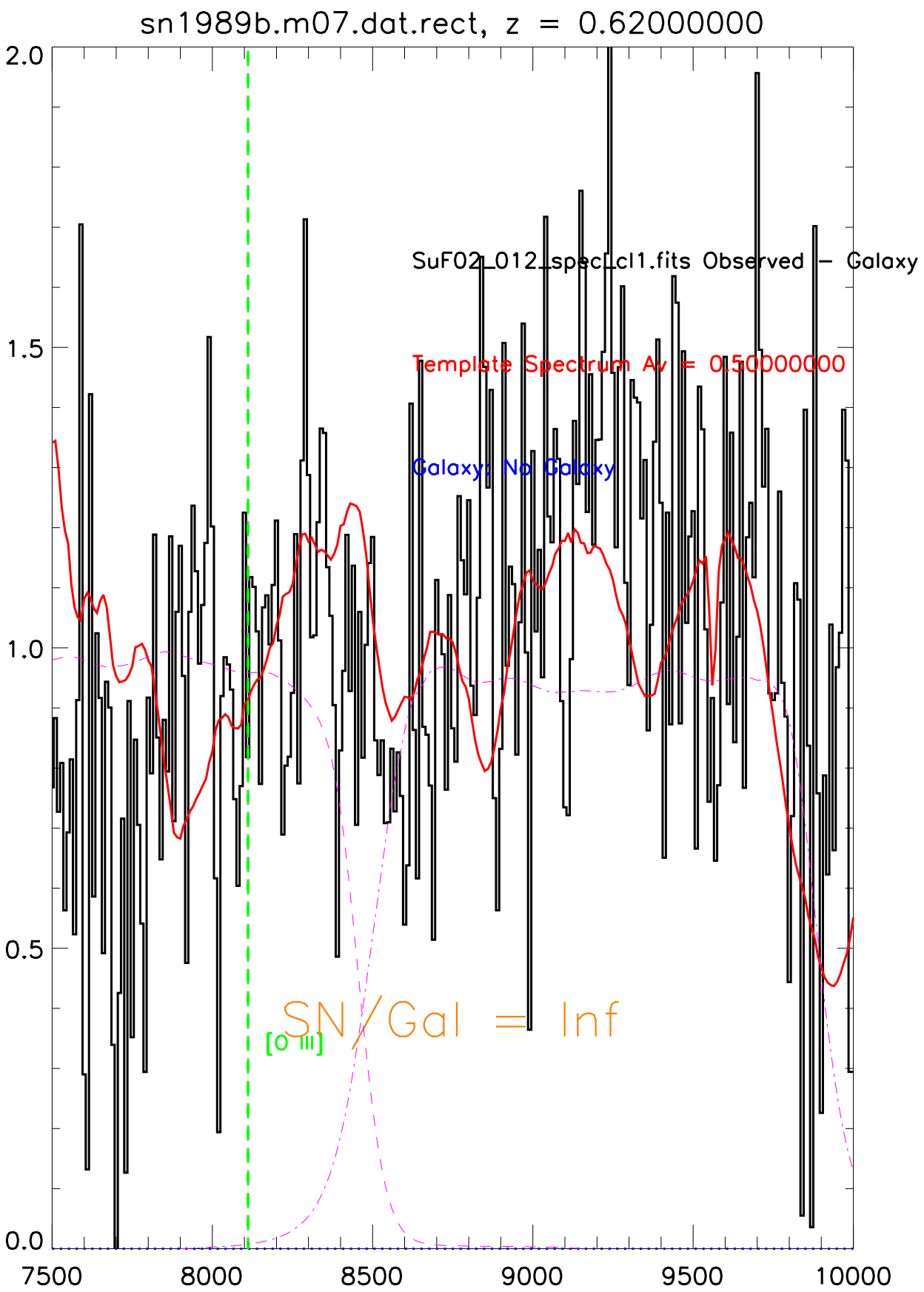

sn1989b.m01.dat.rect, z = 1.0100000
SuF02_012_spec_cl1.fits Observed – Galaxy
Template Spectrum Av = 0.150000000
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
[O III]
2.0
1.5
1.0
0.5
0.0
7500
8000
8500
9000
9500
10000

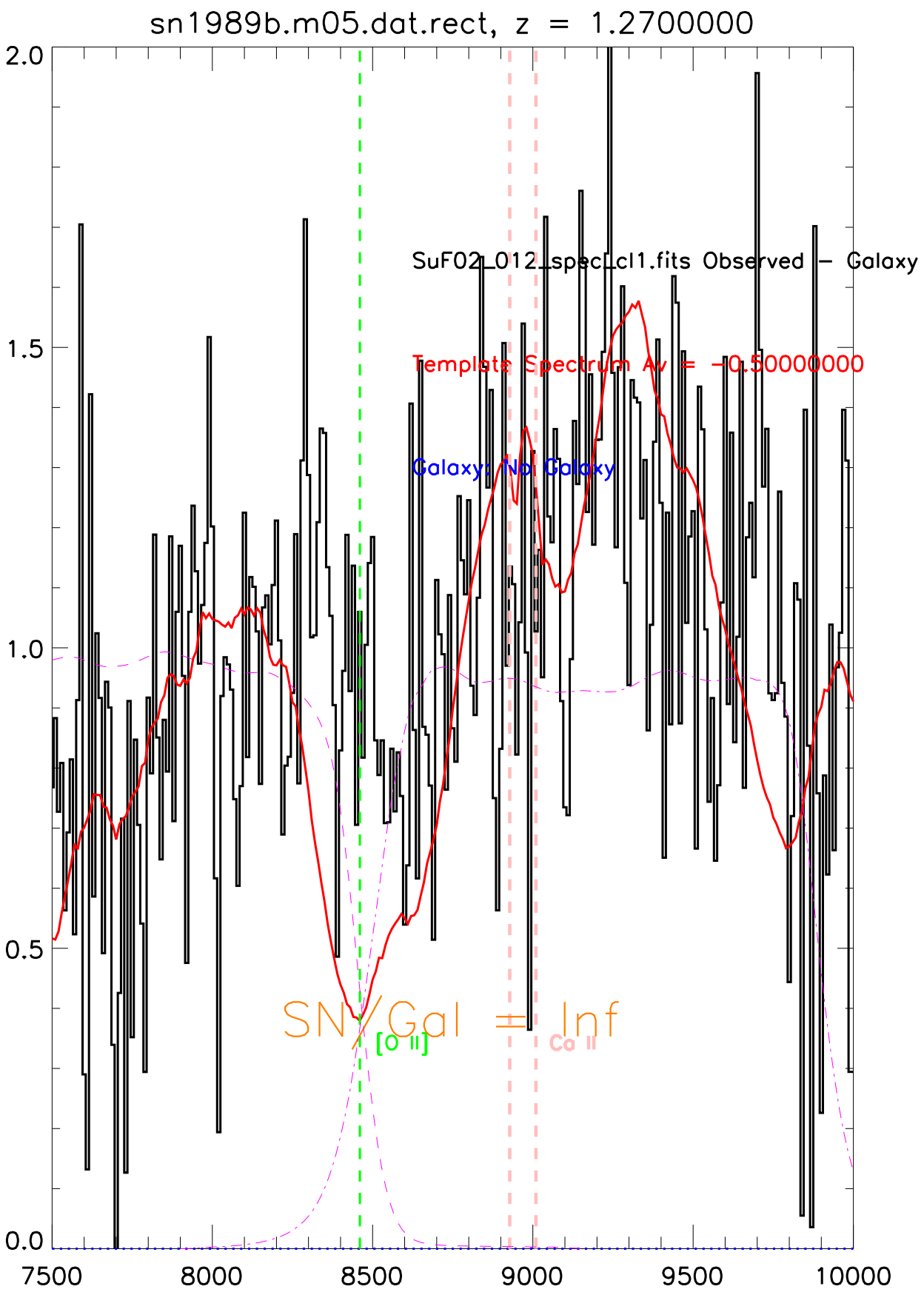

sn1994d.m05.dat.rect, z = 1.0300000
SuF02_012_spec_c11.fits Observed – Gal
Template Spectrum Av = 0.50000000
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
[O III]
2.0
1.5
1.0
0.5
0.0
7500
8000
8500
9000
9500
10000

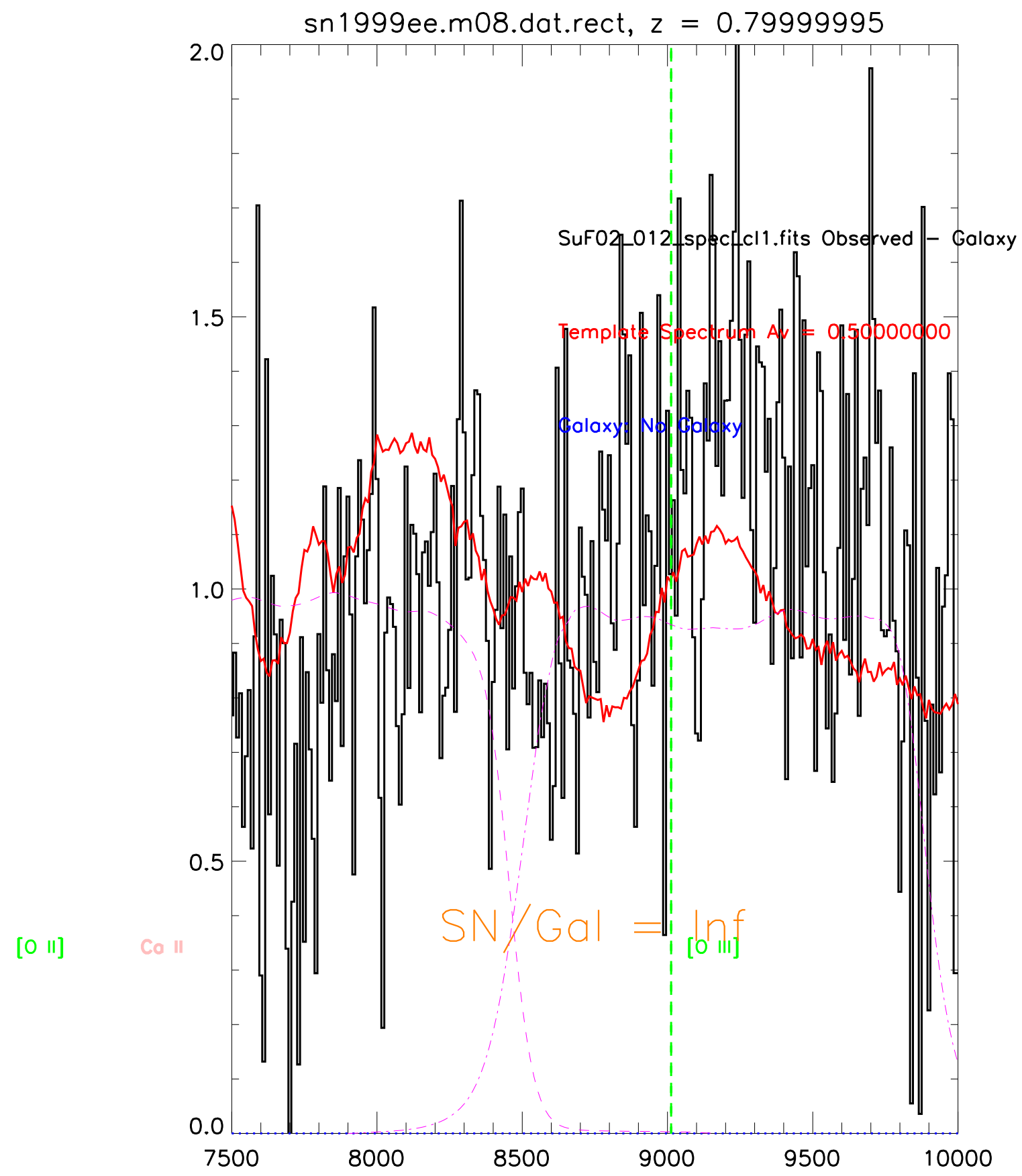

sn1994d.m03.dat.rect, z = 1.6000000
SuF02_012_spec_cl1.fits Observed – Gala
Template Spectrum Av = 0.50000000
Galaxy: No Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca
2.0
1.5
1.0
0.5
0.0
7500
8000
8500
9000
9500
10000

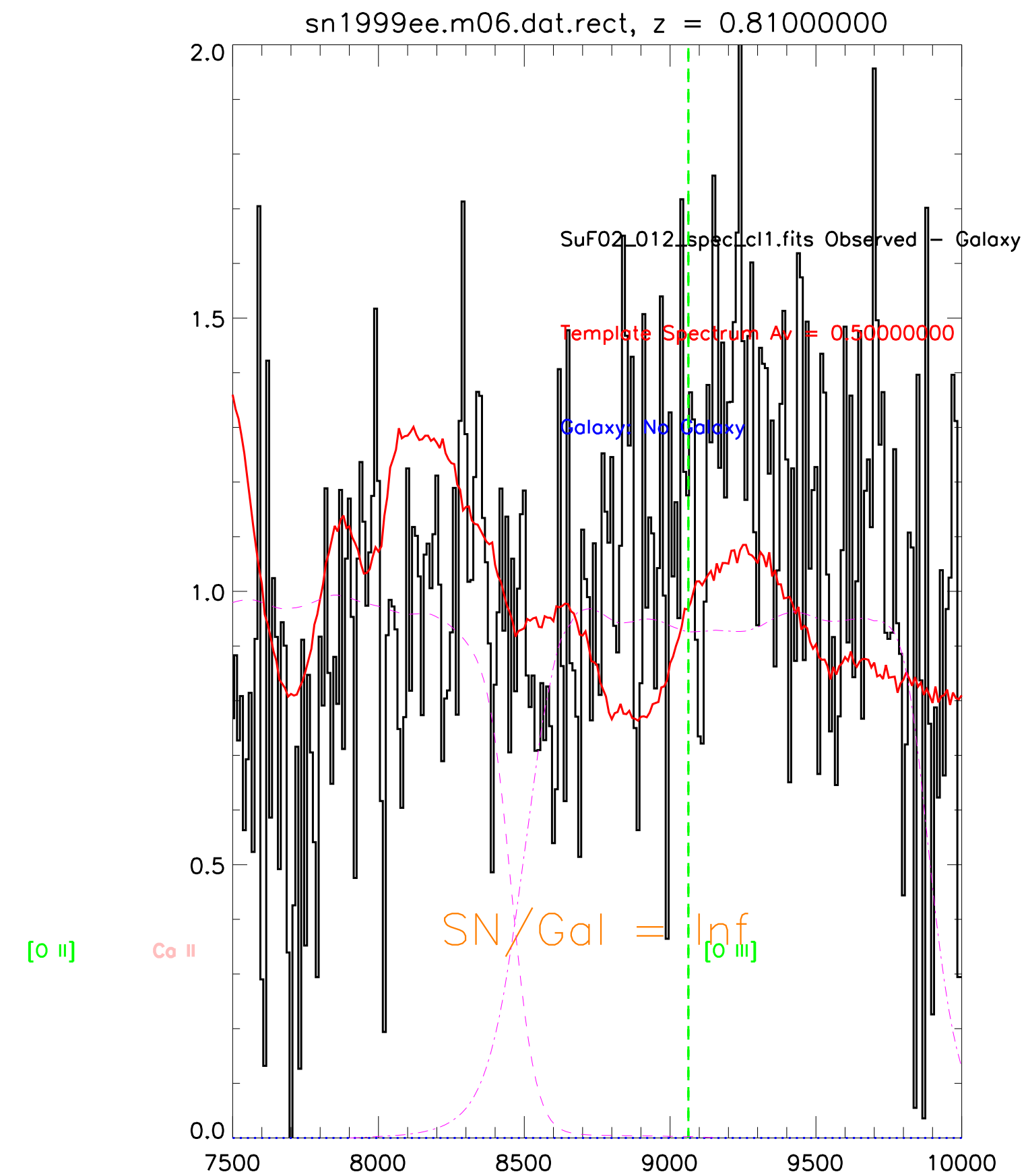

sn1992a.m01.dat.rect, z = 1.0200000
SuF02_012_spec_cl1.fits Observed – Galaxy
Template Spectrum Av = 0.150000000
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
[O III]
2.0
1.5
1.0
0.5
0.0
7500
8000
8500
9000
9500
10000

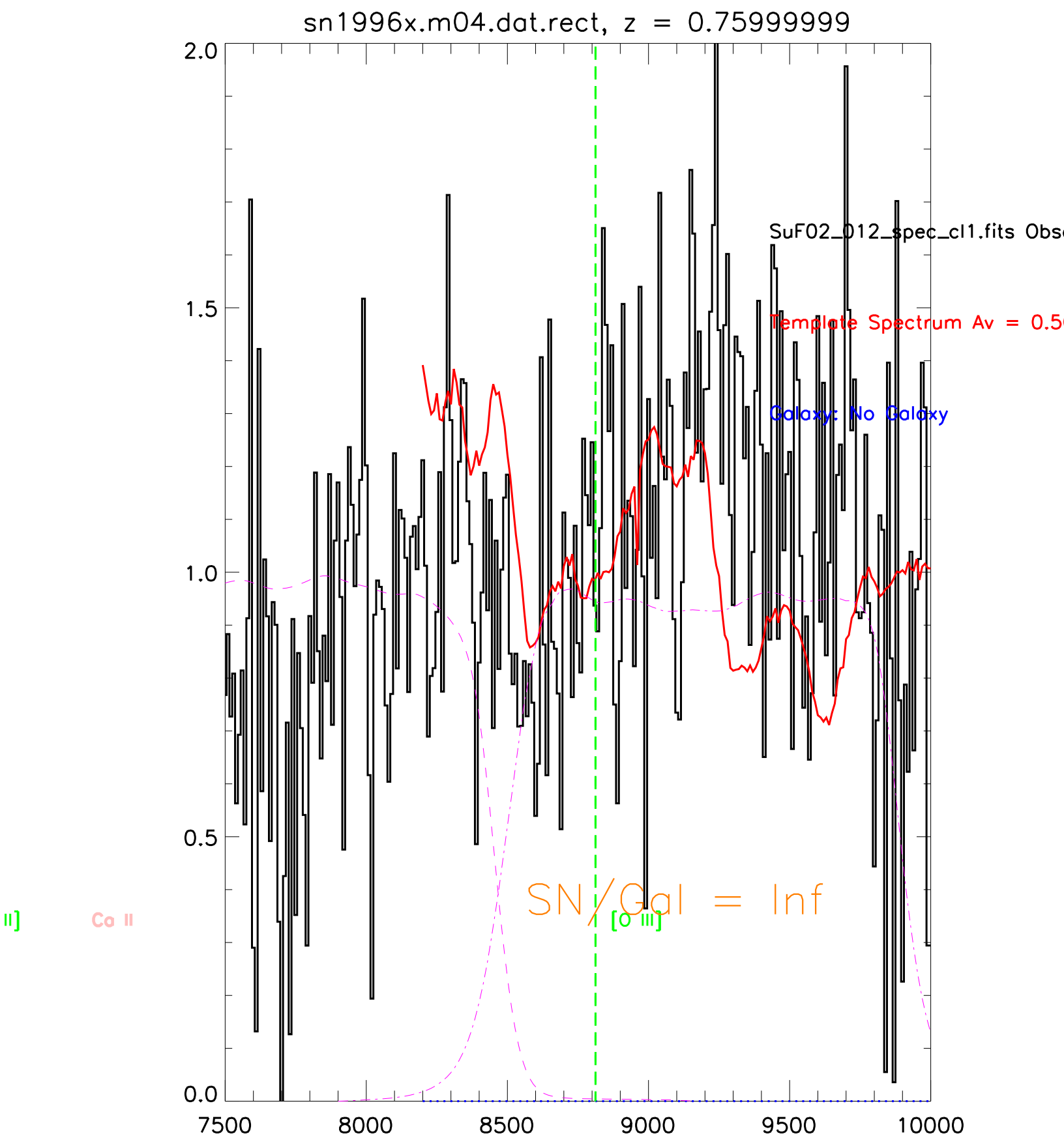

sn1990n.m07.dat.rect, z = 1.3299999
SuF02_012_spec_cl1.fits Observed – Galaxy
Template Spectrum Av = −0.057397962
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
2.0
1.5
1.0
0.5
0.0
7500
8000
8500
9000
9500
10000

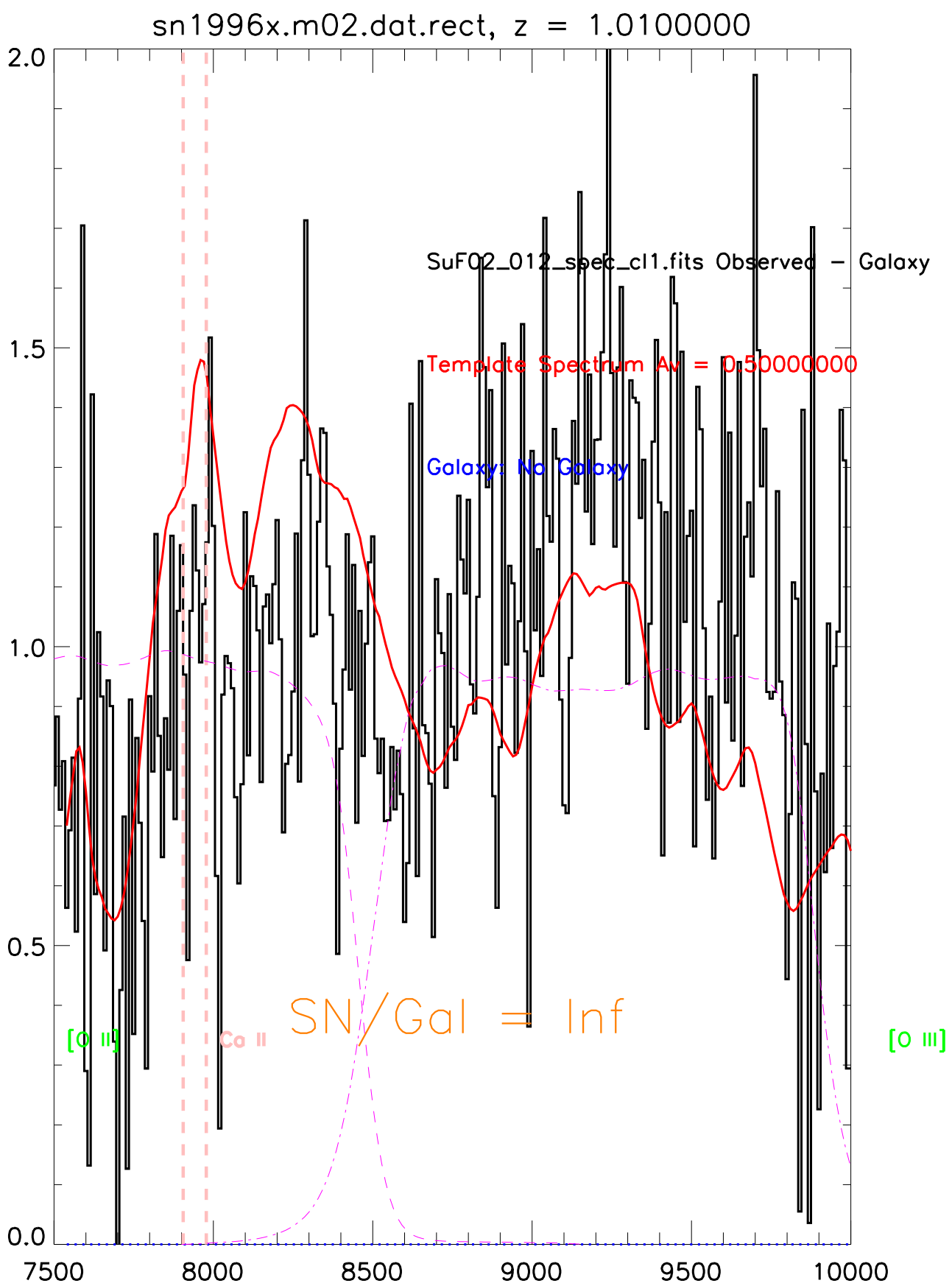

sn1989b.m07.dat.rect, z = 0.62000000
SuF02_012_spec_cl1.fits Observed – Galaxy
Template Spectrum Av = 0.150000000
Galaxy: No Galaxy
SN/Gal = Inf
[O III]
2.0
1.5
1.0
0.5
0.0
7500
8000
8500
9000
9500
10000

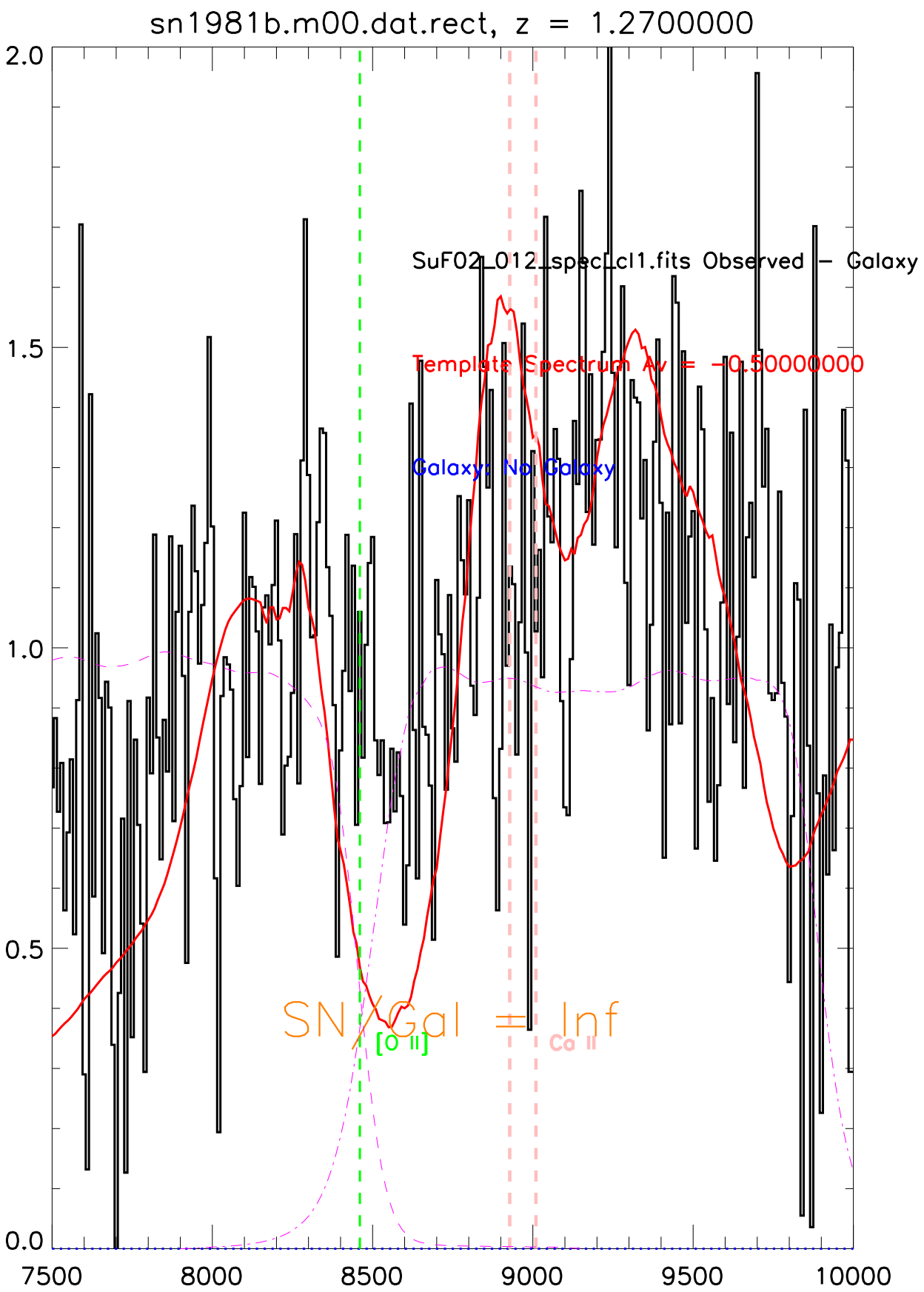

sn1989b.m05.dat.rect, z = 1.2700000
SuF02_012_spec_cl1.fits Observed – Galaxy
Template Spectrum Av = -0.50000000
Galaxy: Not Galaxy
SN/Gal = Inf
[O II]
Co II
2.0
1.5
1.0
0.5
0.0
7500
8000
8500
9000
9500
10000

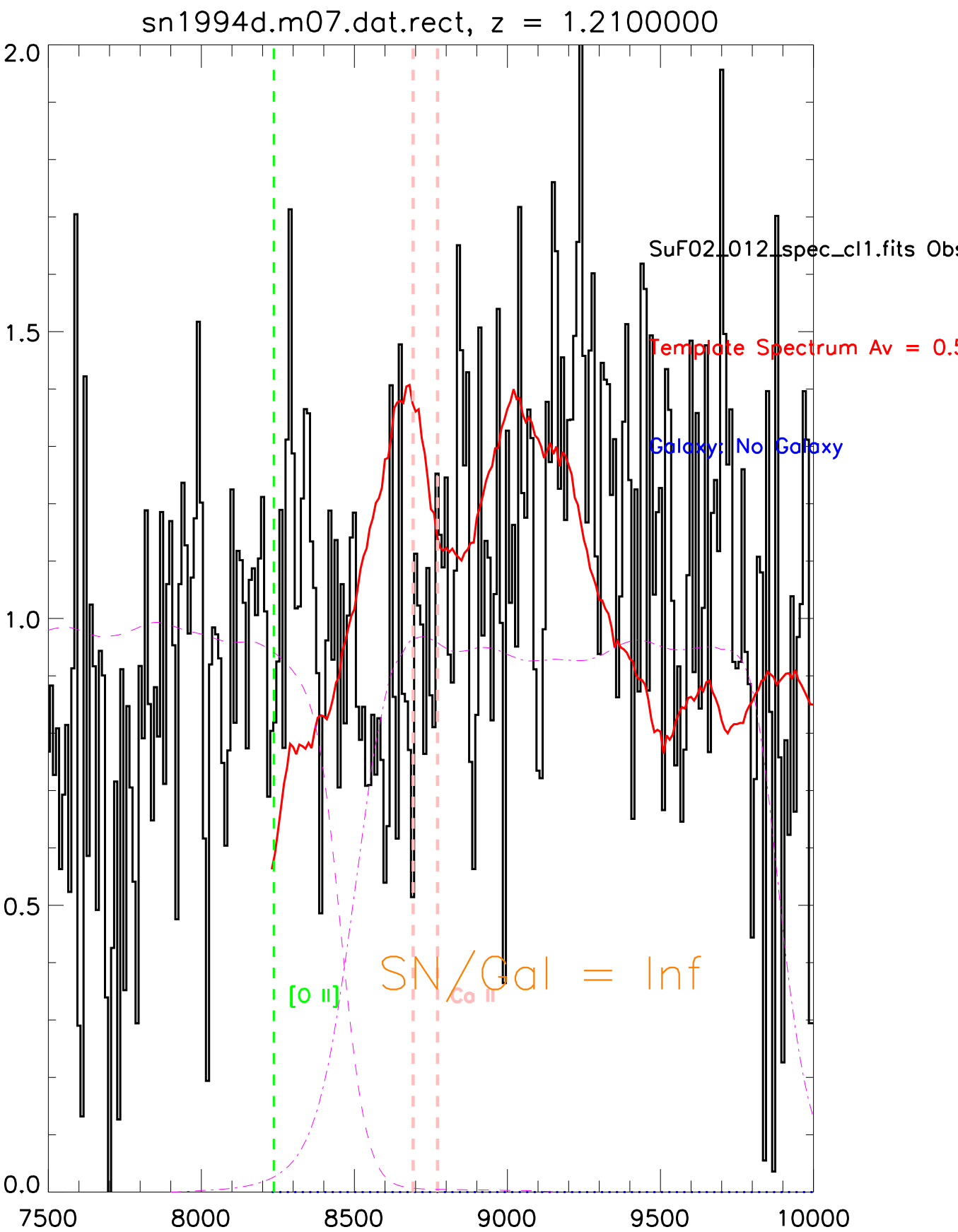

sn1999ee.m08.dat.rect, z = 0.79999995
SuF02_012_spec_cl1.fits Observed – Galaxy
Template Spectrum Av = 0.150000000
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
[O III]
2.0
1.5
1.0
0.5
0.0
7500
8000
8500
9000
9500
10000

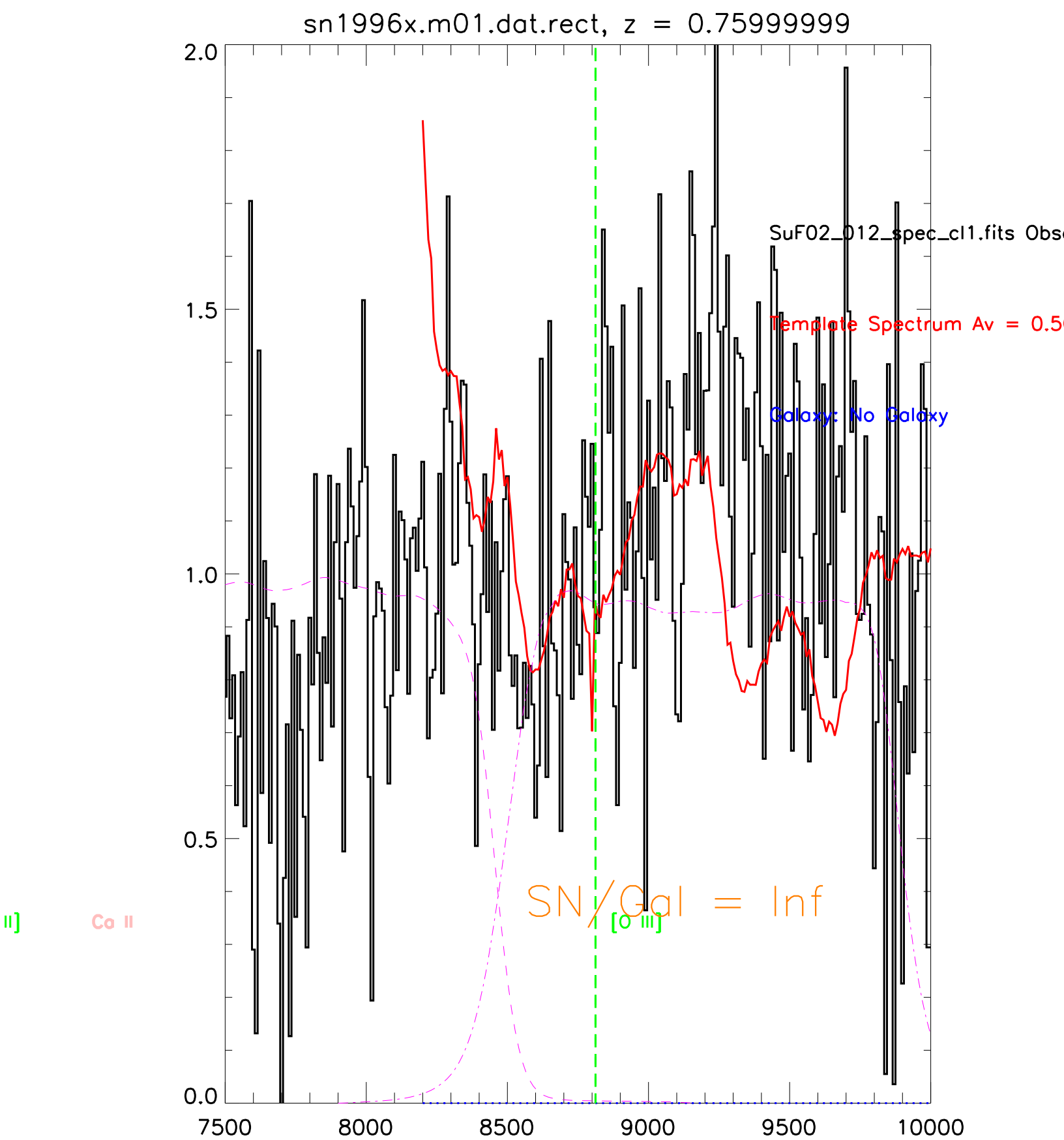

sn1999ee.m06.dat.rect, z = 0.81000000
SuF02_012_spec_cl1.fits Observed – Galaxy
Template Spectrum Av = 0.150000000
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
[O III]
2.0
1.5
1.0
0.5
0.0
7500
8000
8500
9000
9500
10000

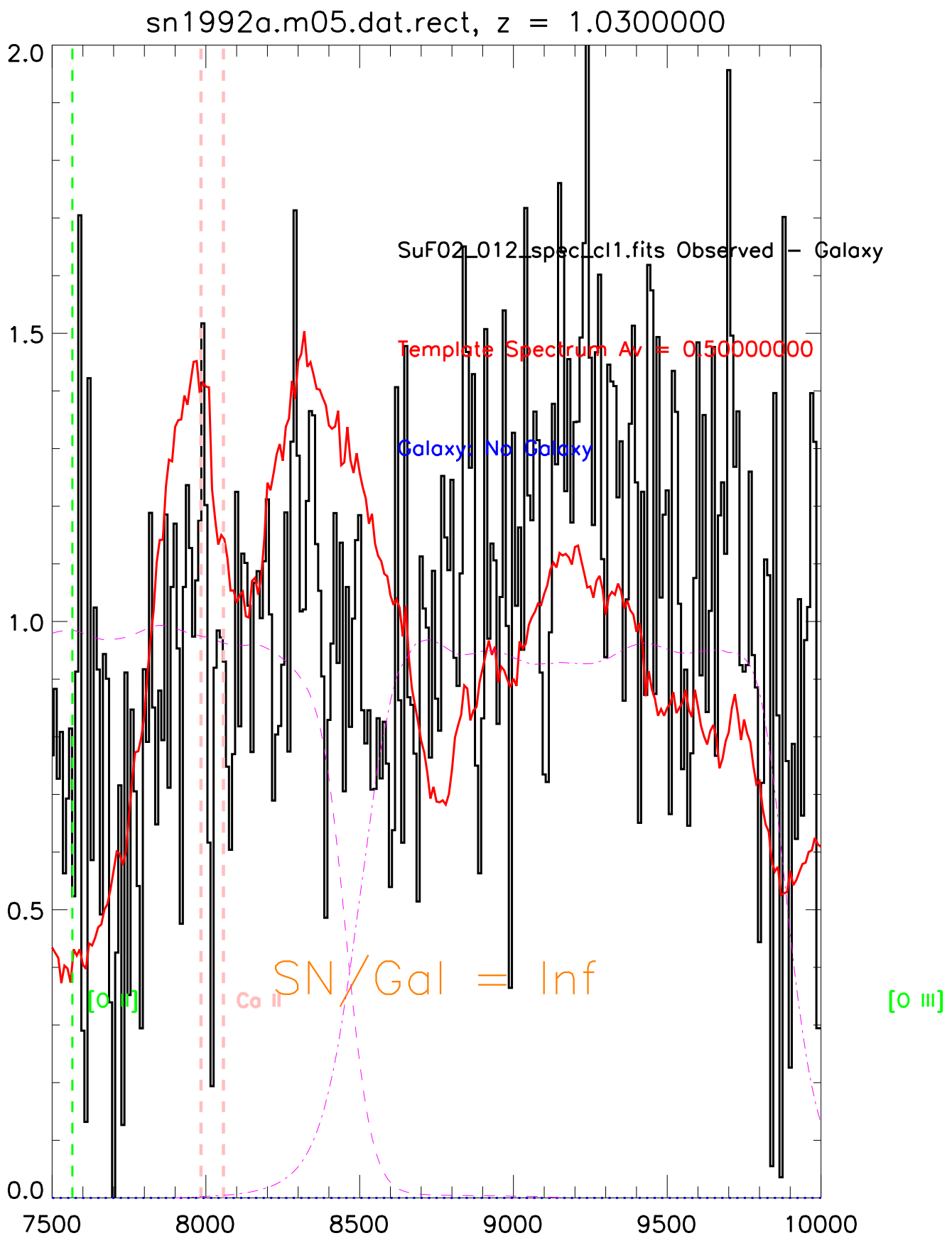

sn1996x.m04.dat.rect, z = 0.75999999
2.0
1.5
1.0
0.5
0.0
7500
8000
8500
9000
9500
10000
SuF02_012_spec_cl1.fits Obs
Template Spectrum Av = 0.5
Galaxy: No Galaxy
SN/Gal = Inf
[O III]
II]
Ca II

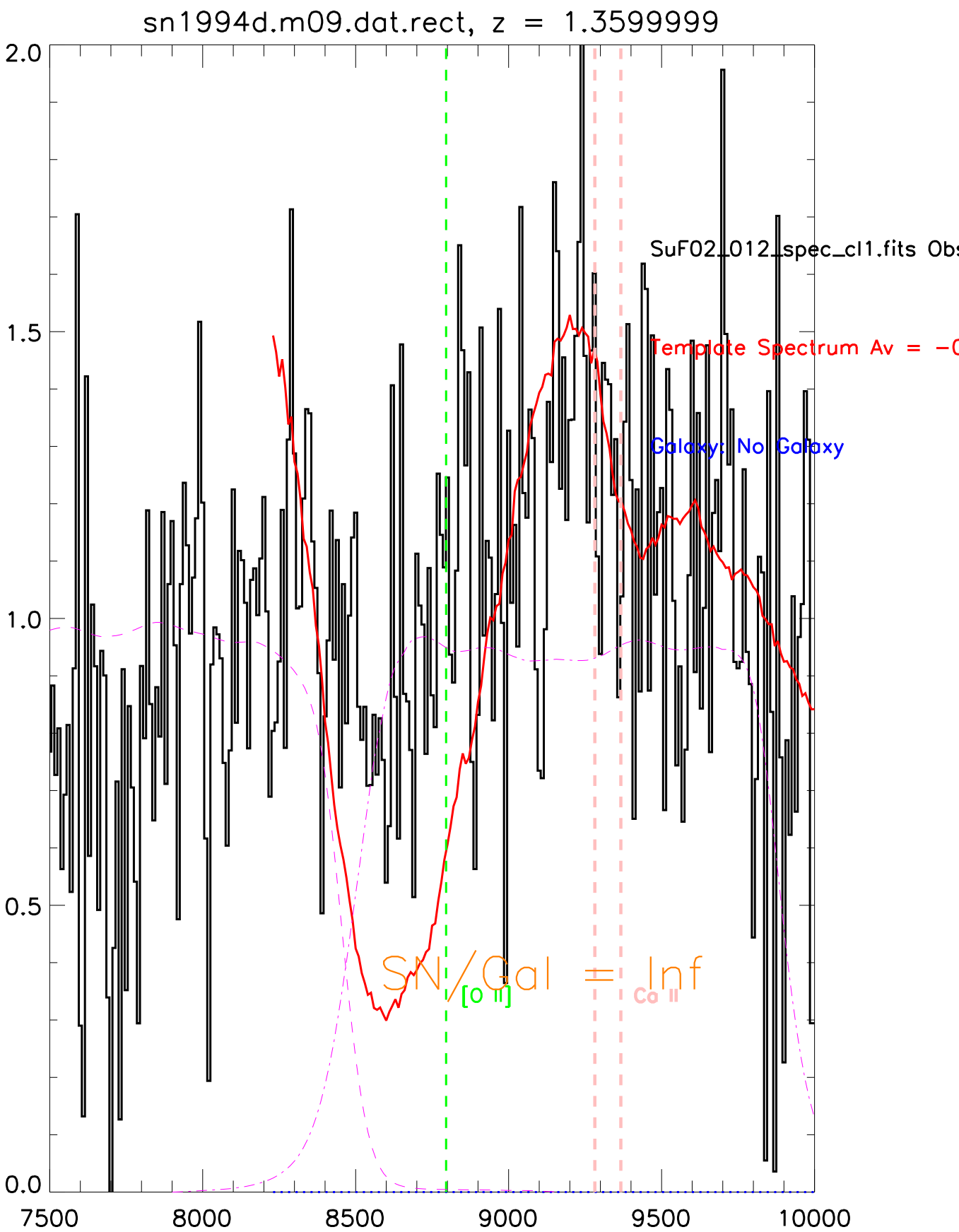

sn1996x.m02.dat.rect, z = 1.0100000
SuF02_012_spec_cl1.fits Observed − Galaxy
Template Spectrum Av = 0.50000000
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
[O III]
2.0
1.5
1.0
0.5
0.0
7500
8000
8500
9000
9500
10000

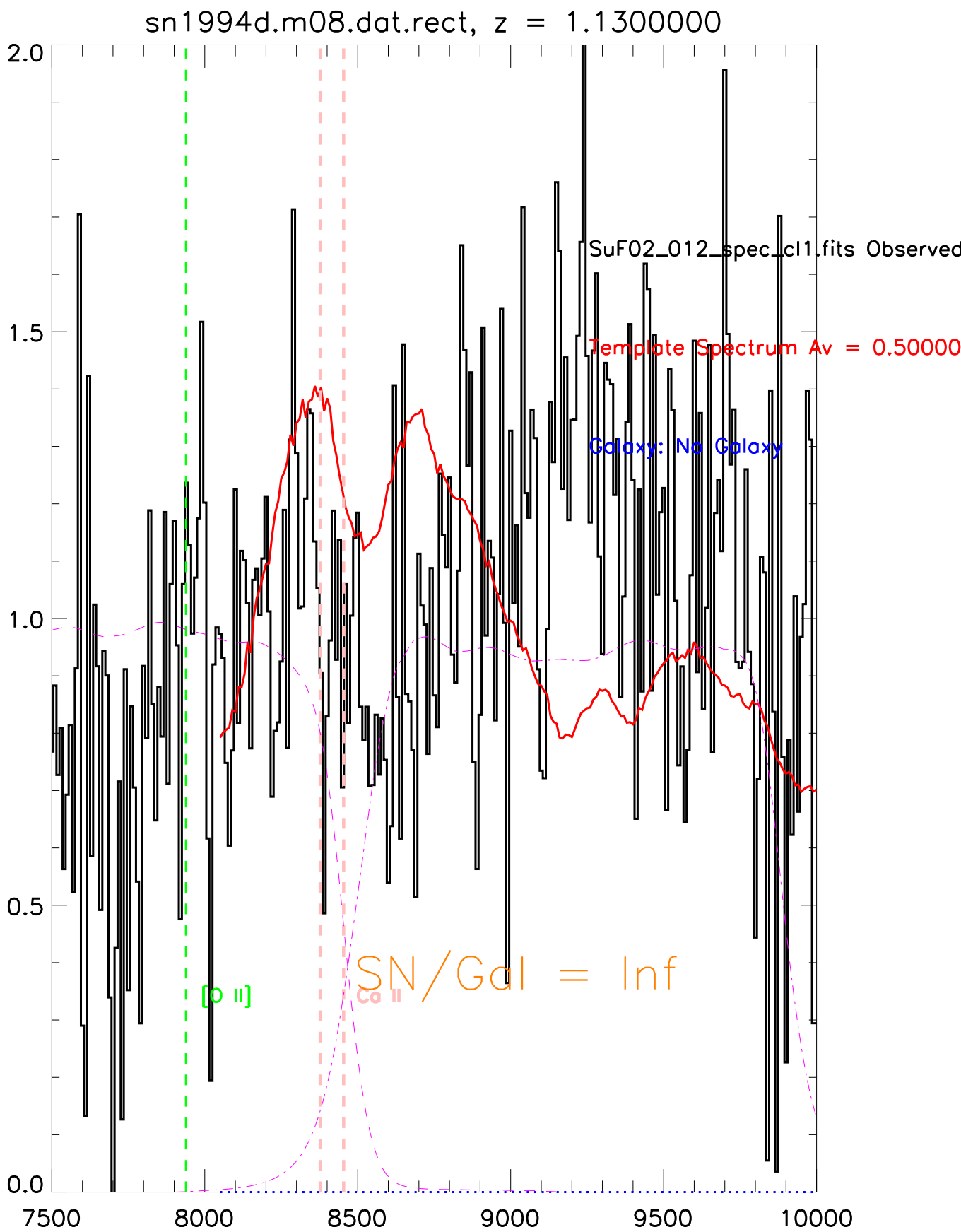

sn1981b.m00.dat.rect, z = 1.2700000
SuF02_012_spec_cl1.fits Observed – Galaxy
Template Spectrum Av = -0.50000000
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Co II
2.0
1.5
1.0
0.5
0.0
7500
8000
8500
9000
9500
10000

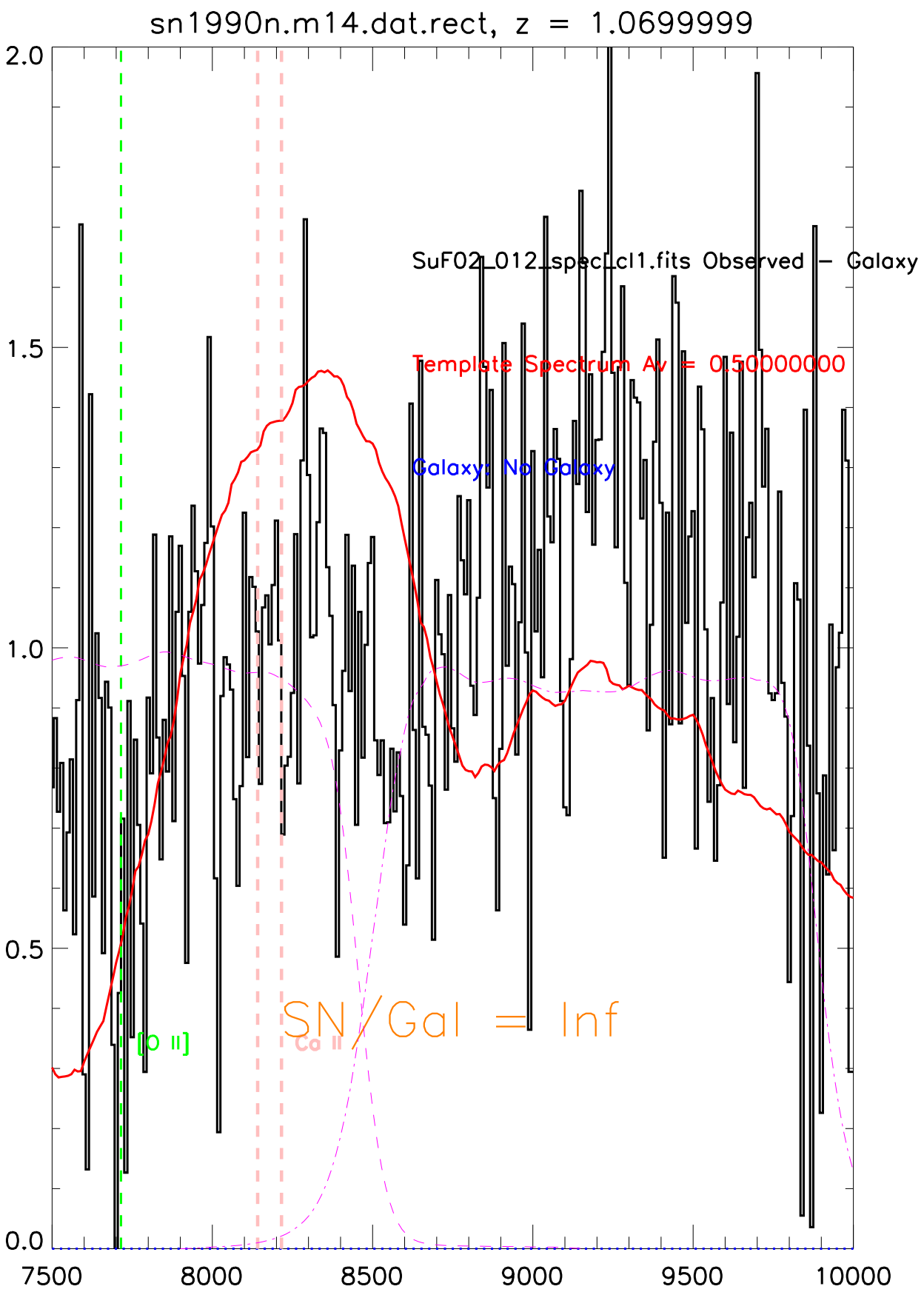

sn1994d.m07.dat.rect, z = 1.2100000
SuF02_012_spec_cl1.fits Obs
Template Spectrum Av = 0.5
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
2.0
1.5
1.0
0.5
0.0
7500
8000
8500
9000
9500
10000


sn1996x.m01.dat.rect, z = 0.75999999
2.0
1.5
1.0
0.5
0.0
7500
8000
8500
9000
9500
10000
SuF02_012_spec_cl1.fits Obs
Template Spectrum Av = 0.5
Galaxy: No Galaxy
SN/Gal = Inf
[O III]
II]
Ca II


sn1992a.m05.dat.rect, z = 1.0300000
SuF02_012_spec_cl1.fits Observed – Galaxy
Template Spectrum Av = 0.150000000
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
[O III]
2.0
1.5
1.0
0.5
0.0
7500
8000
8500
9000
9500
10000


sn1994d.m09.dat.rect, z = 1.3599999
SuF02_012_spec_cl1.fits Obs
Template Spectrum Av = -0
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
2.0
1.5
1.0
0.5
0.0
7500
8000
8500
9000
9500
10000


sn1994d.m08.dat.rect, z = 1.1300000
SuF02_012_spec_cl1.fits Observed
Template Spectrum Av = 0.50000
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
2.0
1.5
1.0
0.5
0.0
7500
8000
8500
9000
9500
10000


sn1990n.m14.dat.rect, z = 1.0699999
SuF02_012_spec_cl1.fits Observed – Galaxy
Template Spectrum Av = 0.150000000
Galaxy: No Galaxy
SN/Gal = Inf
[O II]
Ca II
2.0
1.5
1.0
0.5
0.0
7500
8000
8500
9000
9500
10000