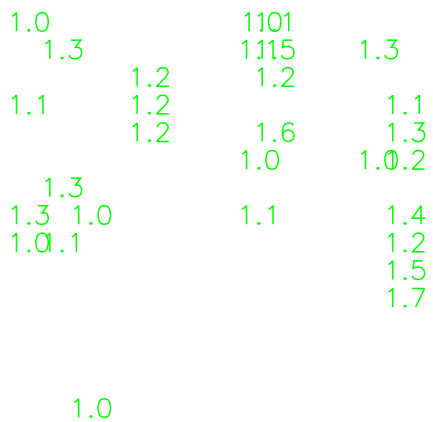
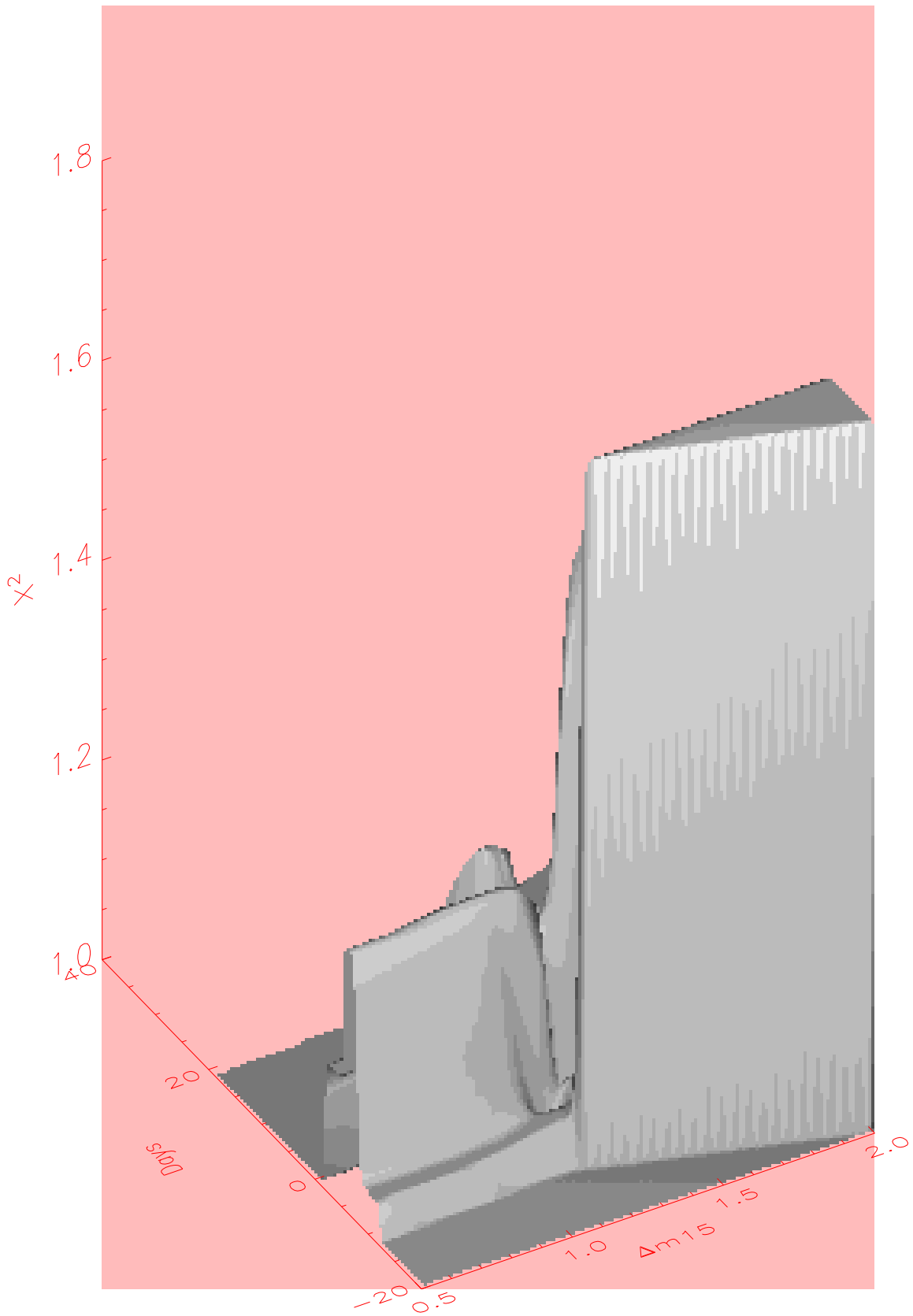
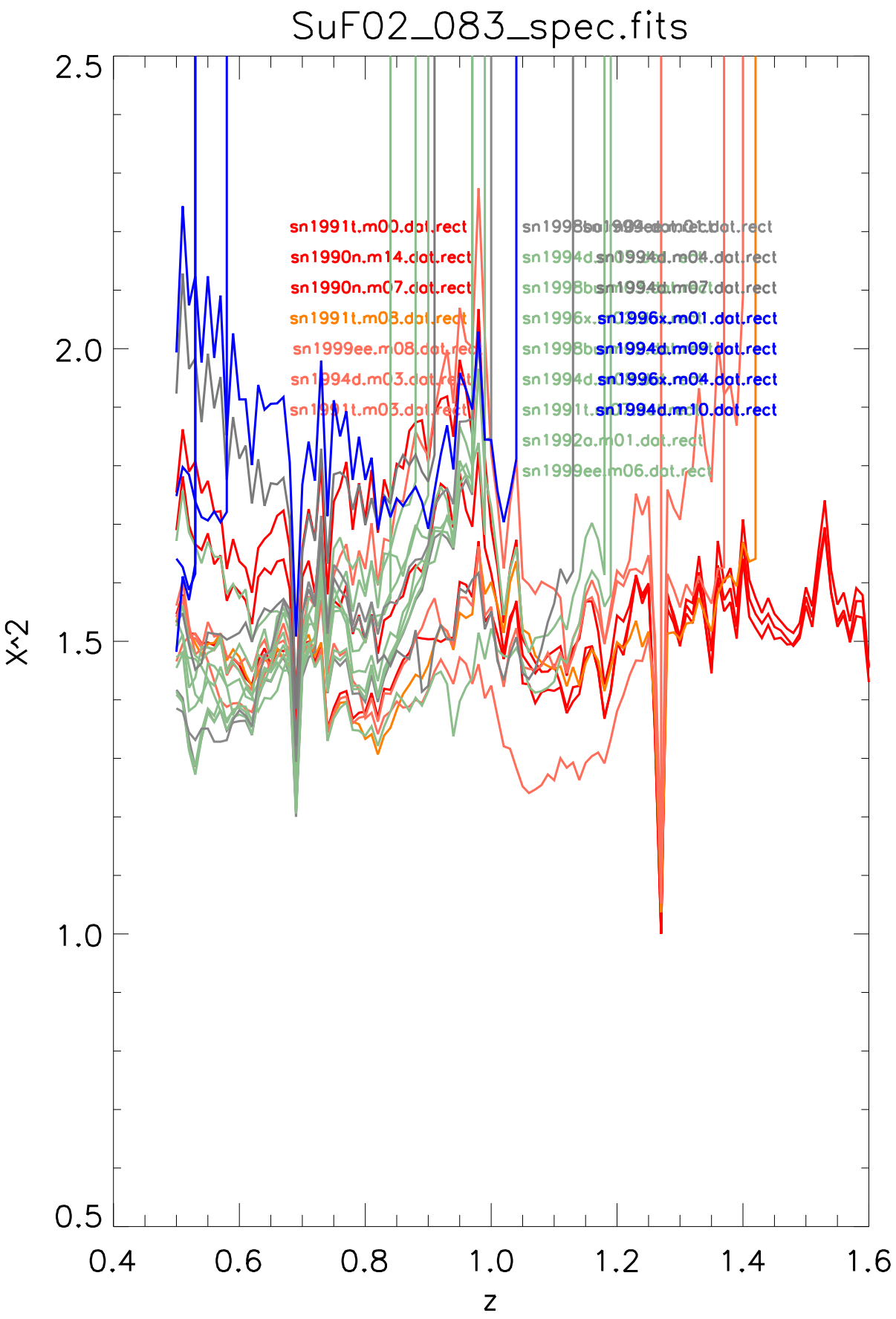
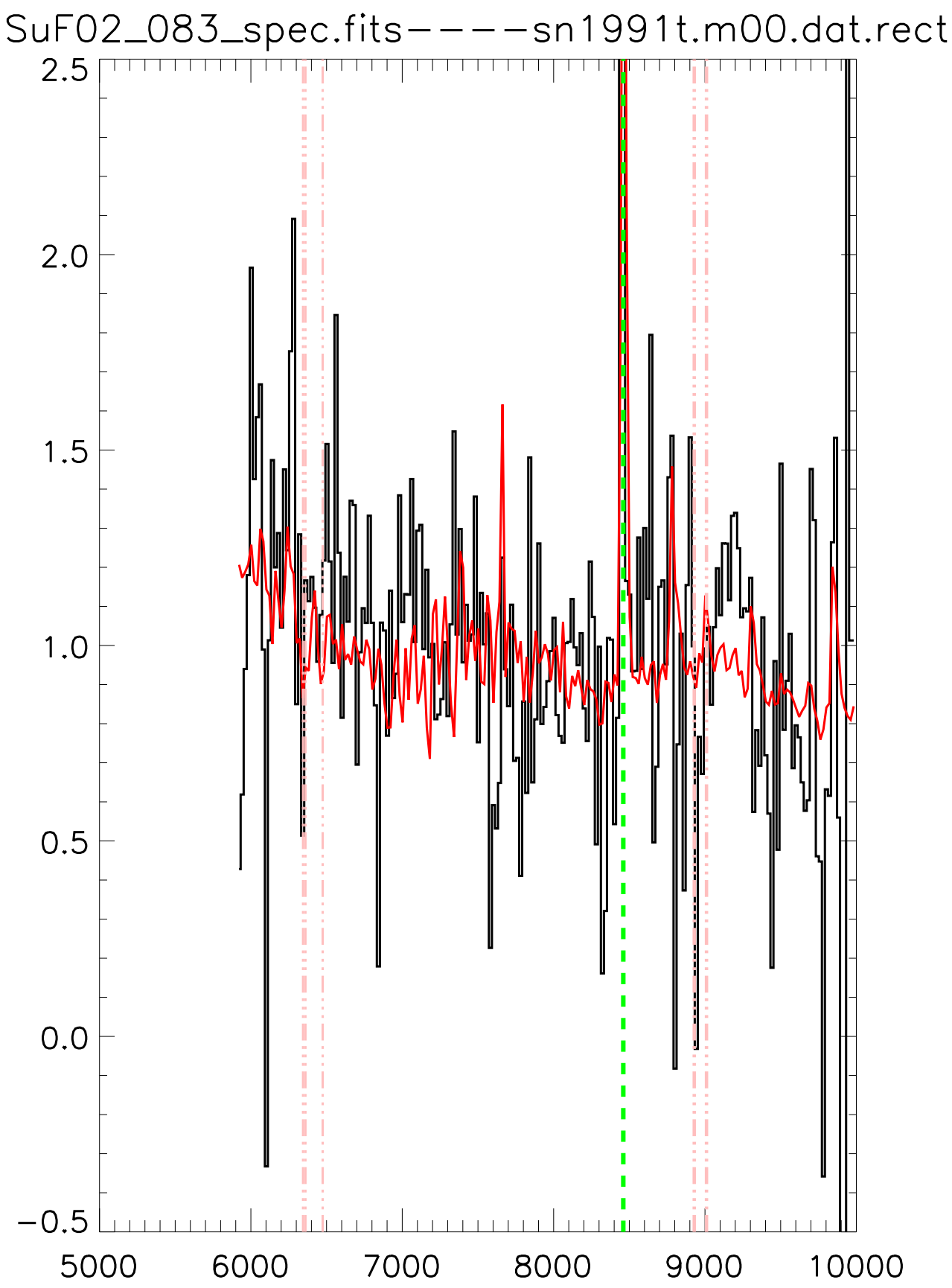
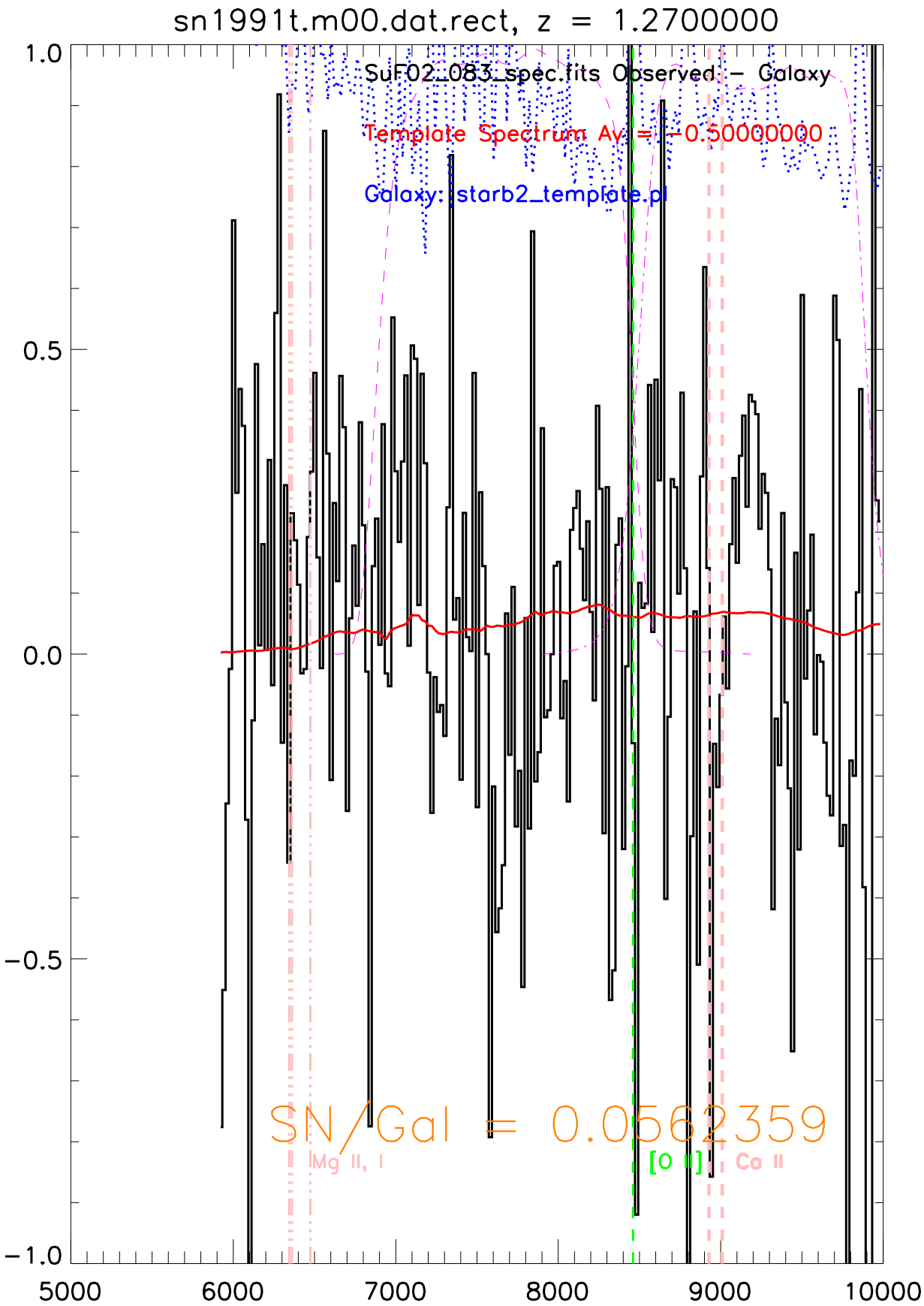

1.0
1.3
1.2
1.1
1.2
1.2
1.3
1.3
1.0
1.0
1.1
1101
1115
1.2
1.2
1.6
1.0
1.3
1.0
1.1
1.3
0.2
1.4
1.2
1.5
1.7
1.0

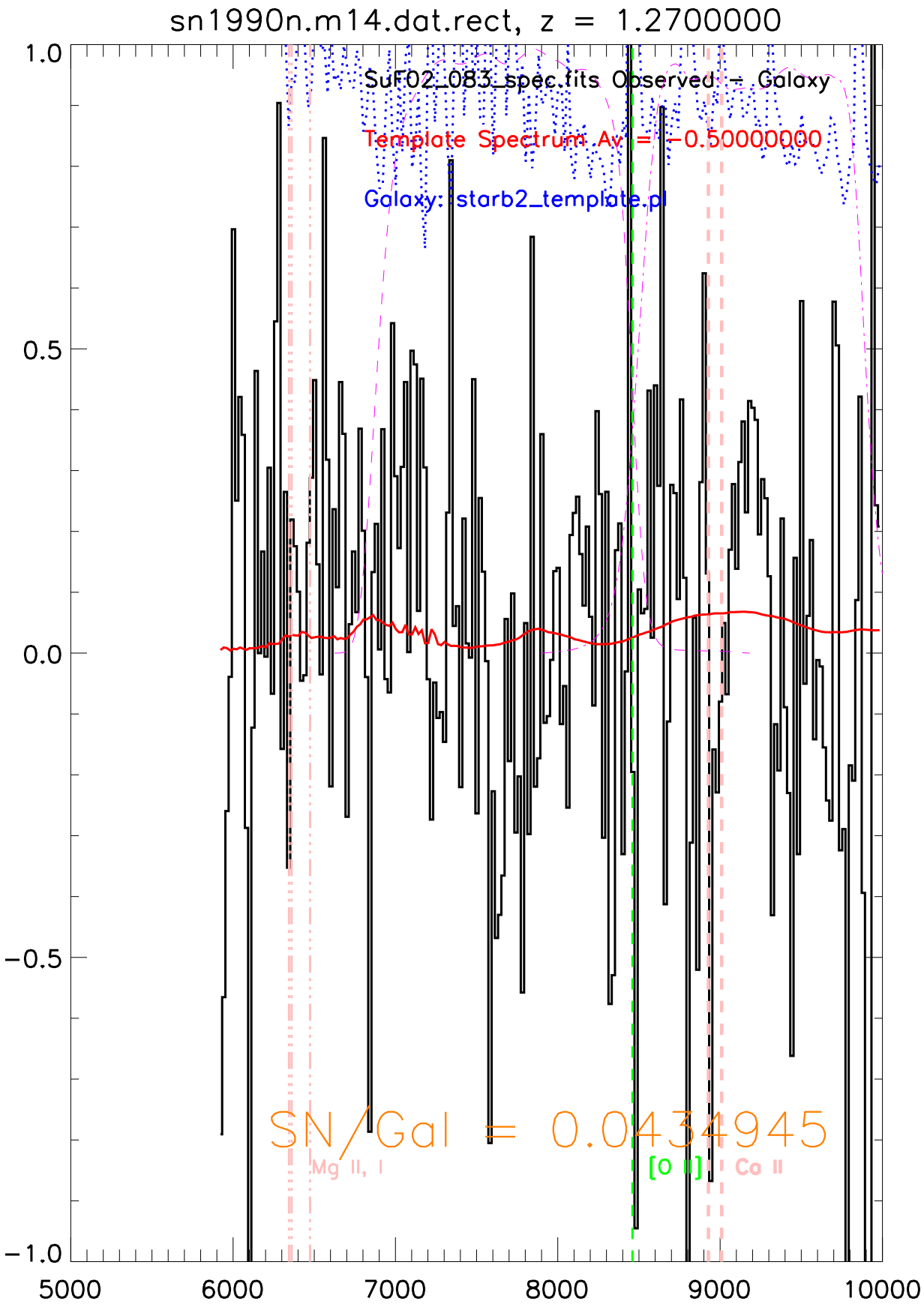


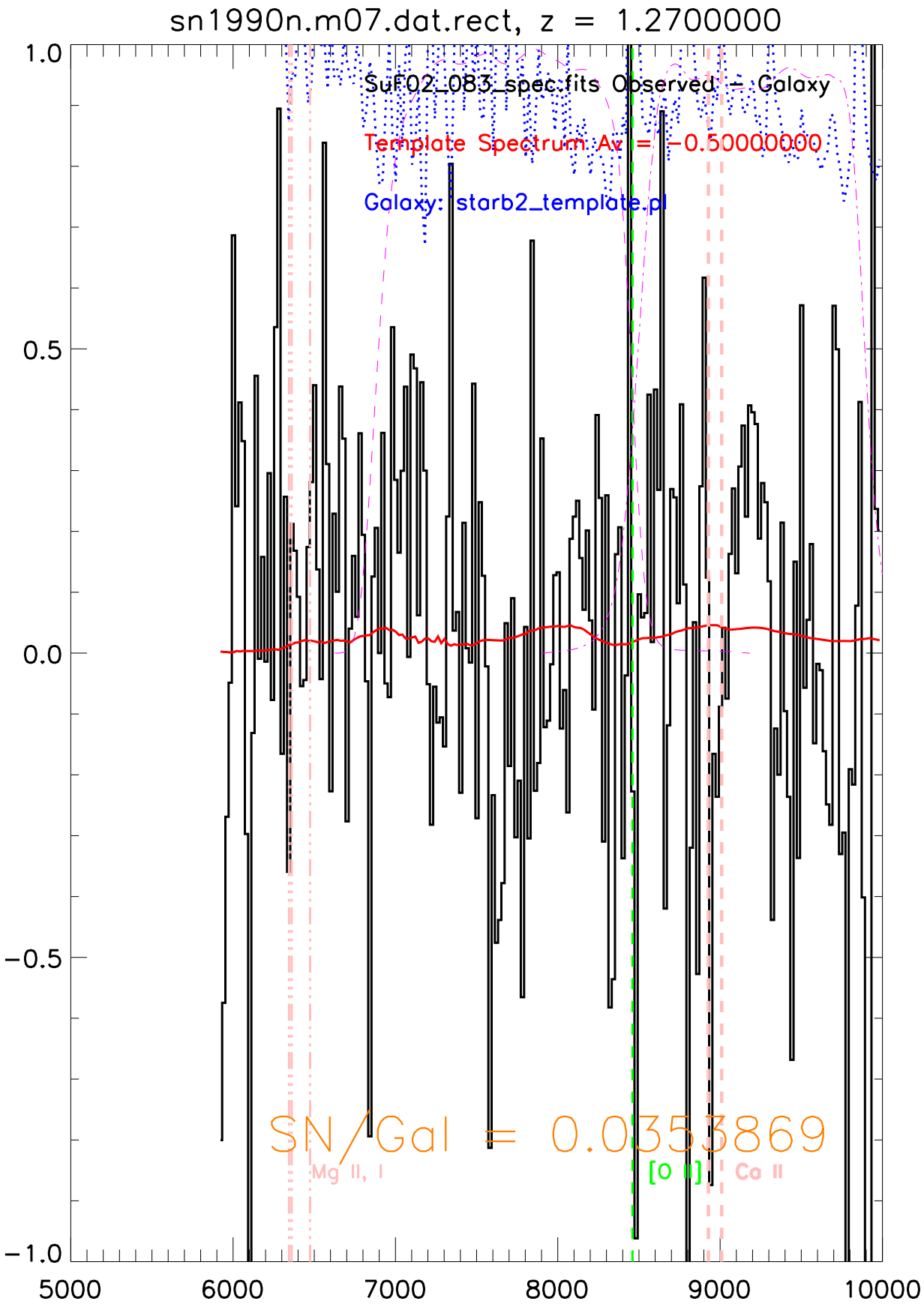
1.8
1.6
1.4
1.2
1.0
χ^2
40
20
0
−20
Days
0.5
1.0
1.5
2.0
Δm15

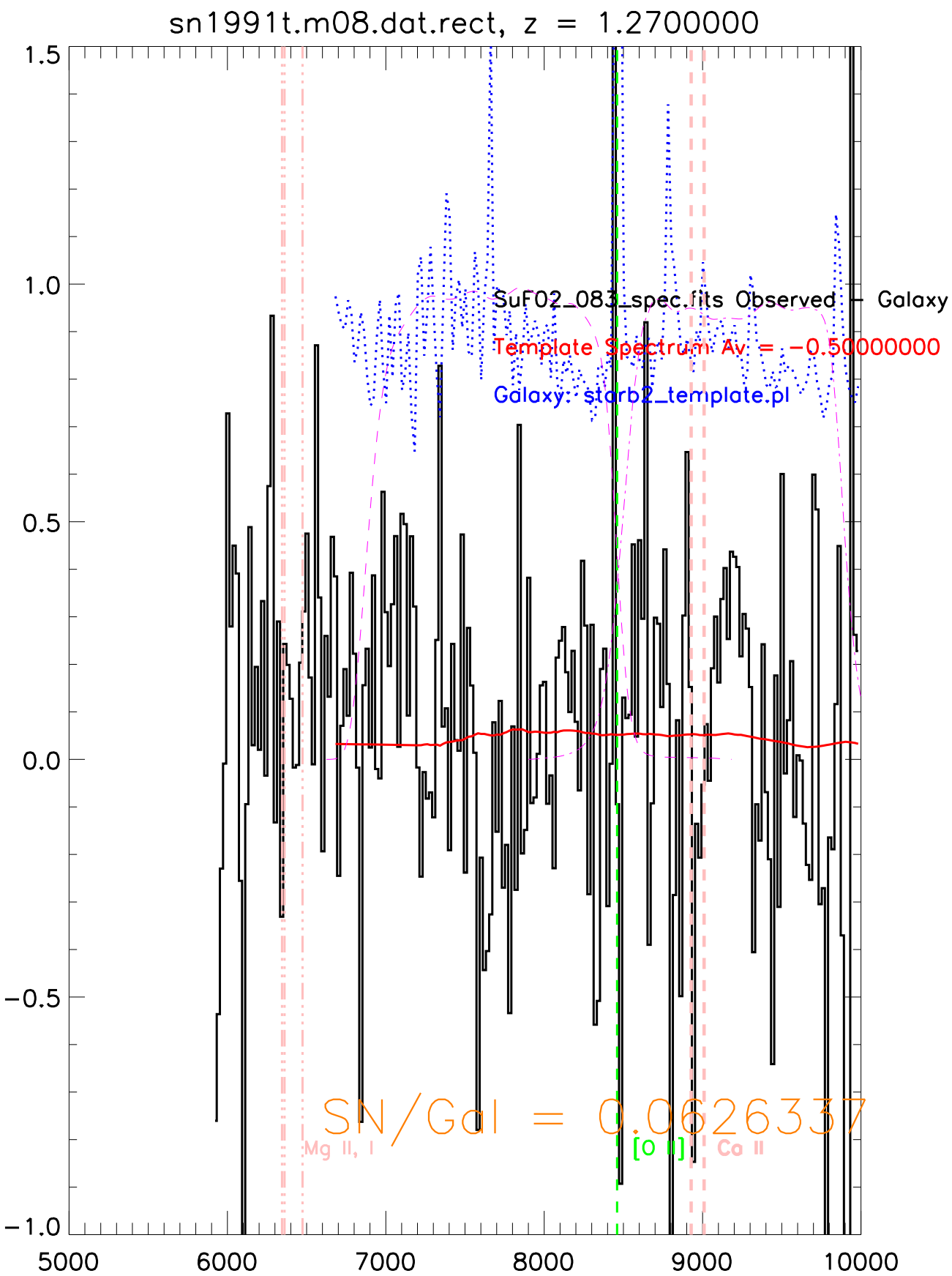

SuF02_083_spec.fits
2.5
2.0
1.5
1.0
0.5
X^2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
z
sn1991t.m00.dat.rect
sn1990n.m14.dat.rect
sn1990n.m07.dat.rect
sn1991t.m08.dat.rect
sn1999ee.m08.dat.rect
sn1994d.m03.dat.rect
sn1991t.m03.dat.rect
sn1994d.m09.dat.rect
sn1996x.m04.dat.rect
sn1994d.m10.dat.rect
sn1992a.m01.dat.rect
sn1999ee.m06.dat.rect

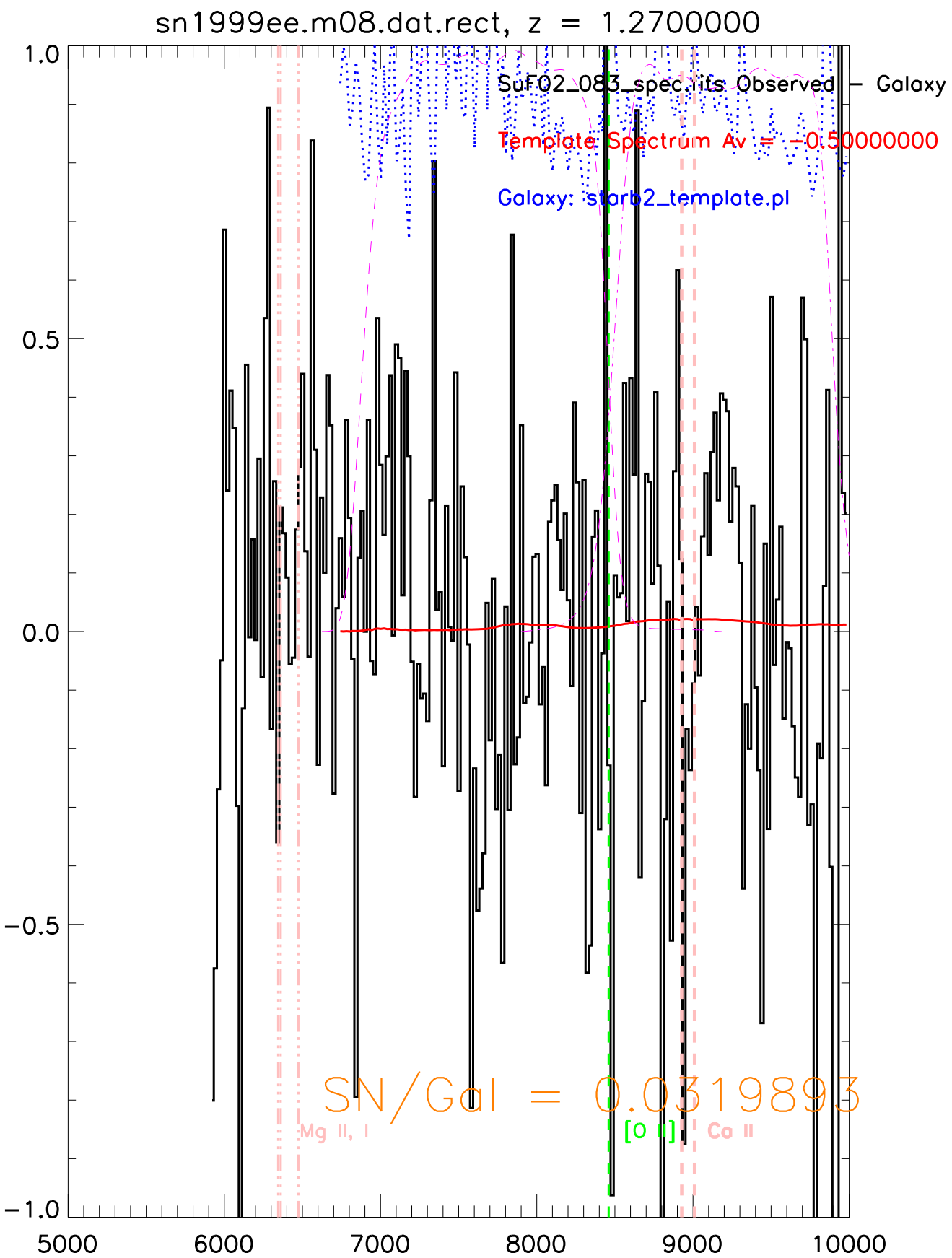

SuF02_083_spec.fits----sn1991t.m00.dat.rect
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
5000
6000
7000
8000
9000
10000

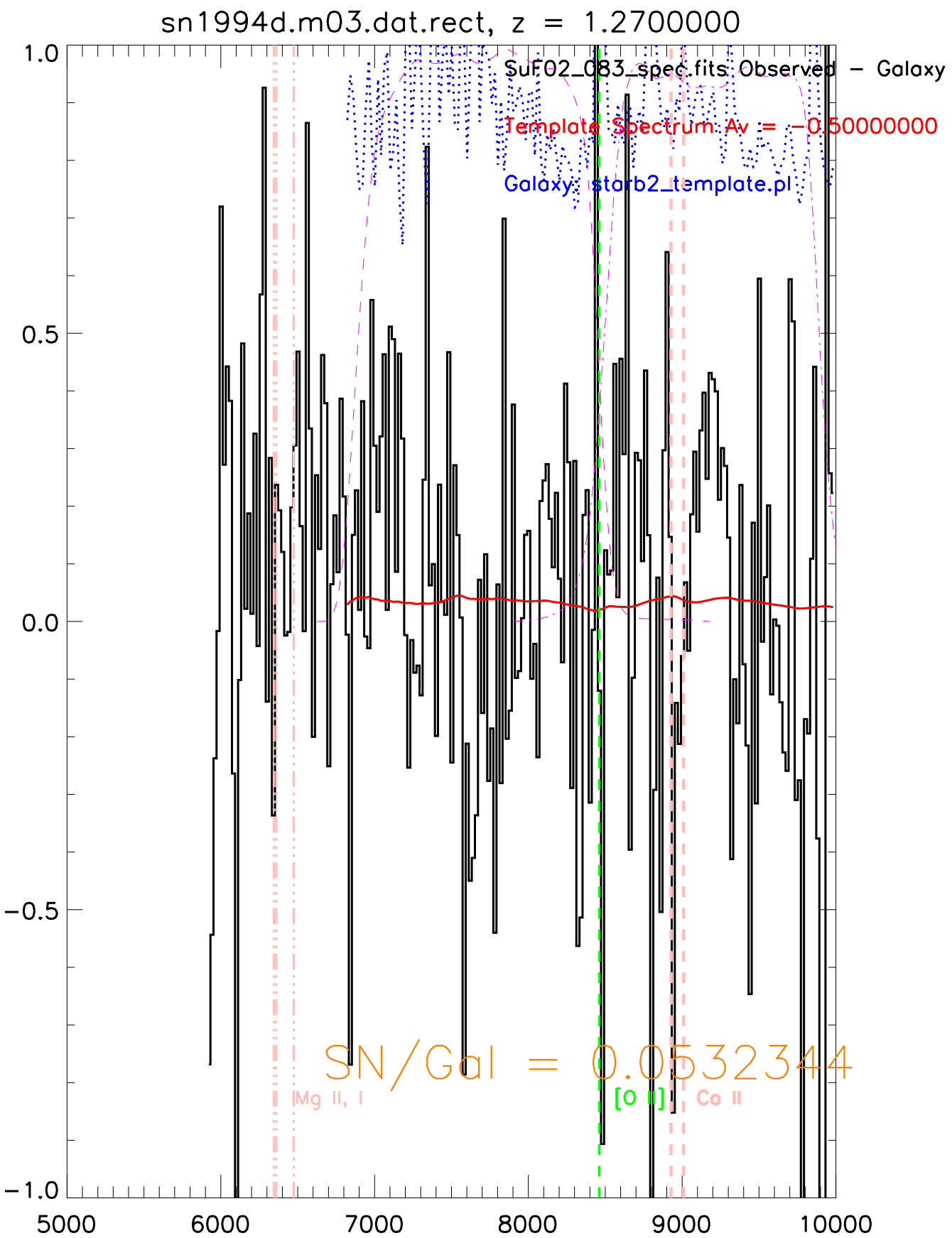

sn1991t.m00.dat.rect, z = 1.2700000
SuF02_083_spec.fits Observed - Galaxy
Template Spectrum Av = -0.50000000
Galaxy: starb2_template.pl
SN/Gal = 0.0562359
Mg II, I
[O II]
Ca II
1.0
0.5
0.0
−0.5
−1.0
5000
6000
7000
8000
9000
10000

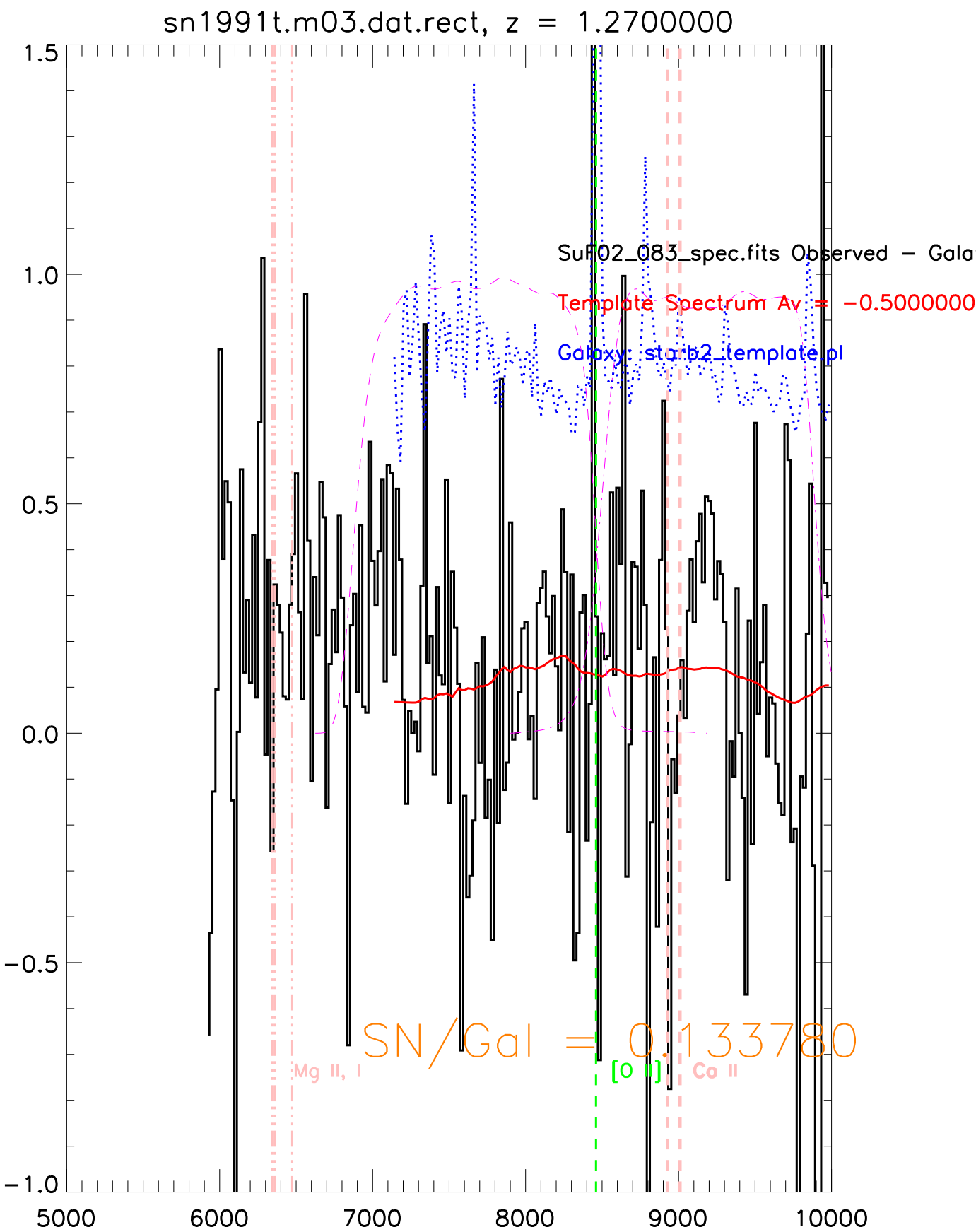

sn1990n.m14.dat.rect, z = 1.2700000
SuF02_083_spec.fits Observed - Galaxy
Template Spectrum Av = -0.50000000
Galaxy: starb2_template.pl
SN/Gal = 0.0434945
Mg II, I
[O II]
Ca II
1.0
0.5
0.0
−0.5
−1.0
5000
6000
7000
8000
9000
10000

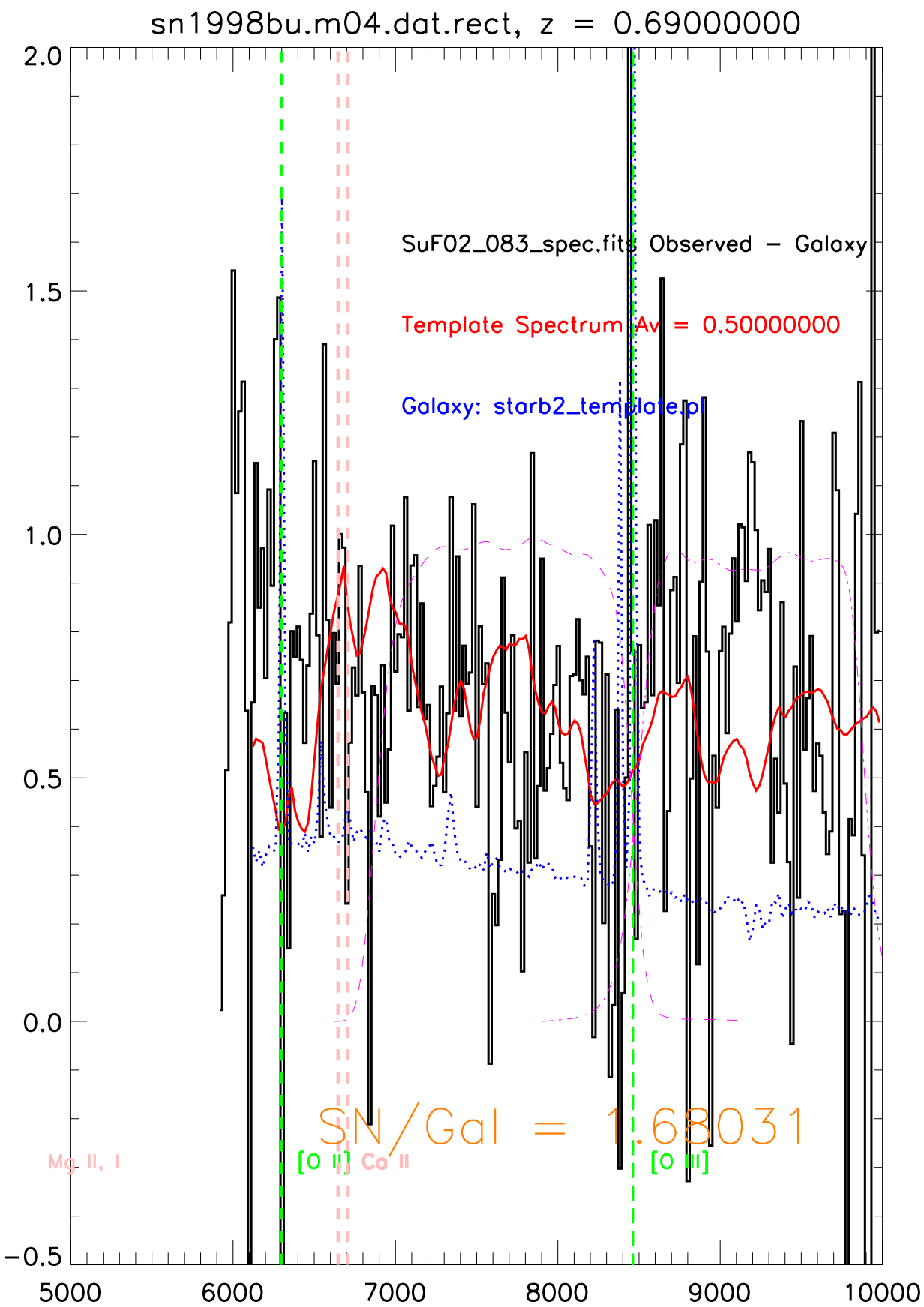

sn1990n.m07.dat.rect, z = 1.2700000
SuF02_083_spec.fits Observed - Galaxy
Template Spectrum Av = -0.50000000
Galaxy: starb2_template.pl
SN/Gal = 0.0353869
Mg II, I
[O II]
Ca II
1.0
0.5
0.0
−0.5
−1.0
5000
6000
7000
8000
9000
10000

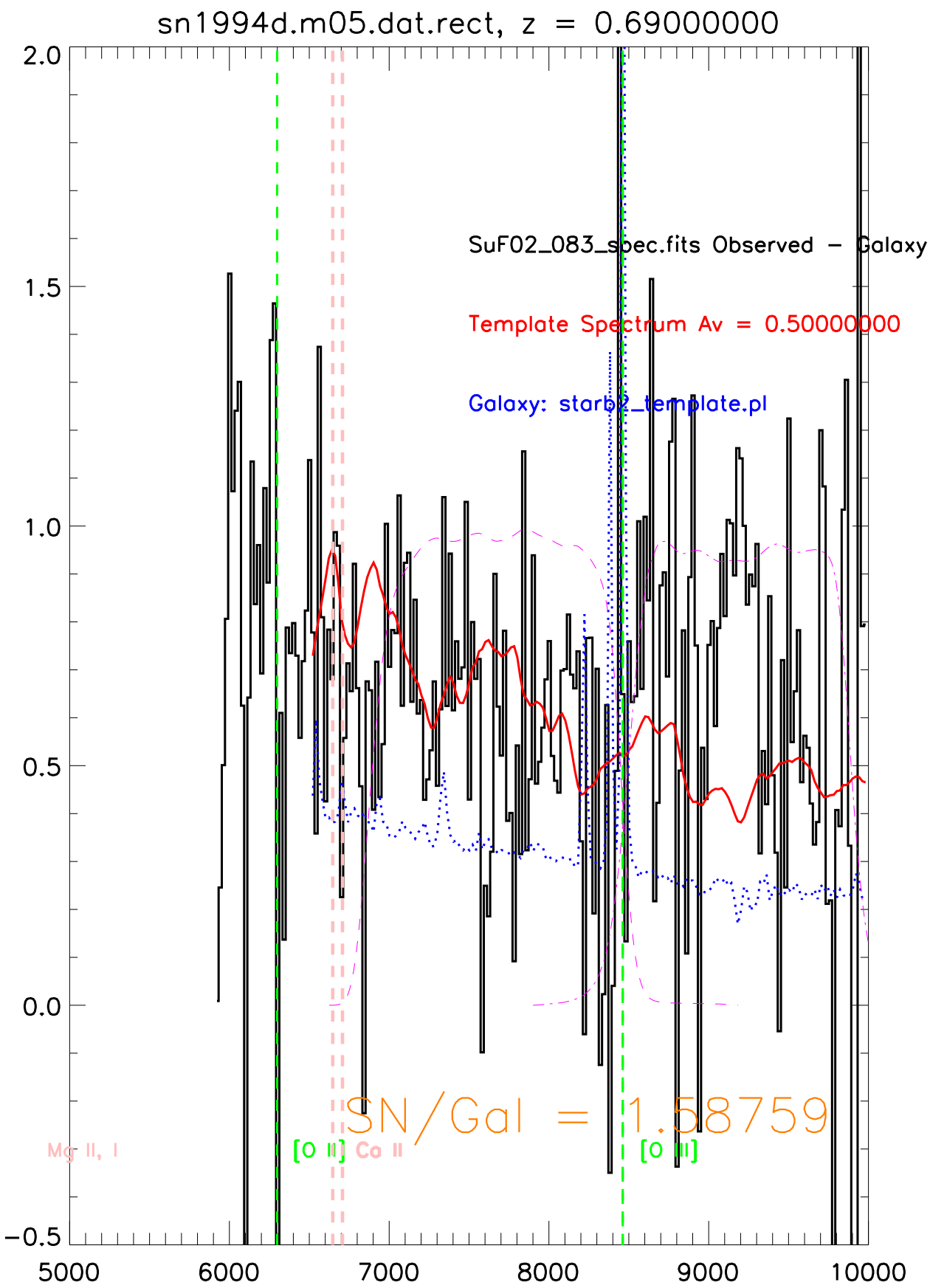

sn1991t.m08.dat.rect, z = 1.2700000
SuF02_083_spec.fits Observed
Galaxy
Template Spectrum: Av = -0.50000000
Galaxy: starb2_template.pl
SN/Gal = 0.0626337
Mg II, I
[O II]
Ca II
1.5
1.0
0.5
0.0
-0.5
-1.0
5000
6000
7000
8000
9000
10000

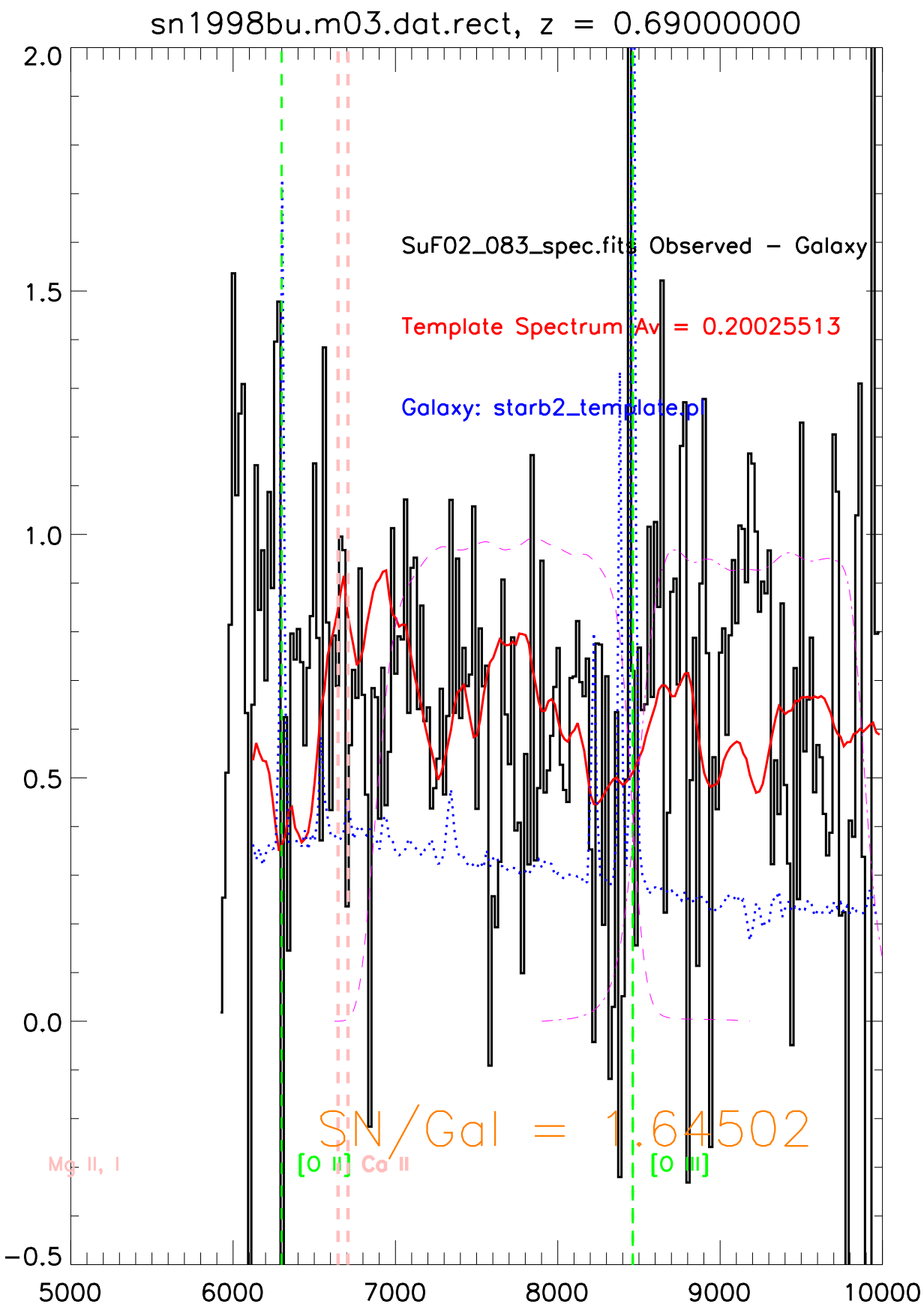

sn1999ee.m08.dat.rect, z = 1.2700000
Suf02_083_spec.fits Observed – Galaxy
Template Spectrum Av = -0.50000000
Galaxy: starb2_template.pl
SN/Gal = 0.0319893
Mg II, I
[O II]
Ca II
1.0
0.5
0.0
−0.5
−1.0
5000
6000
7000
8000
9000
10000

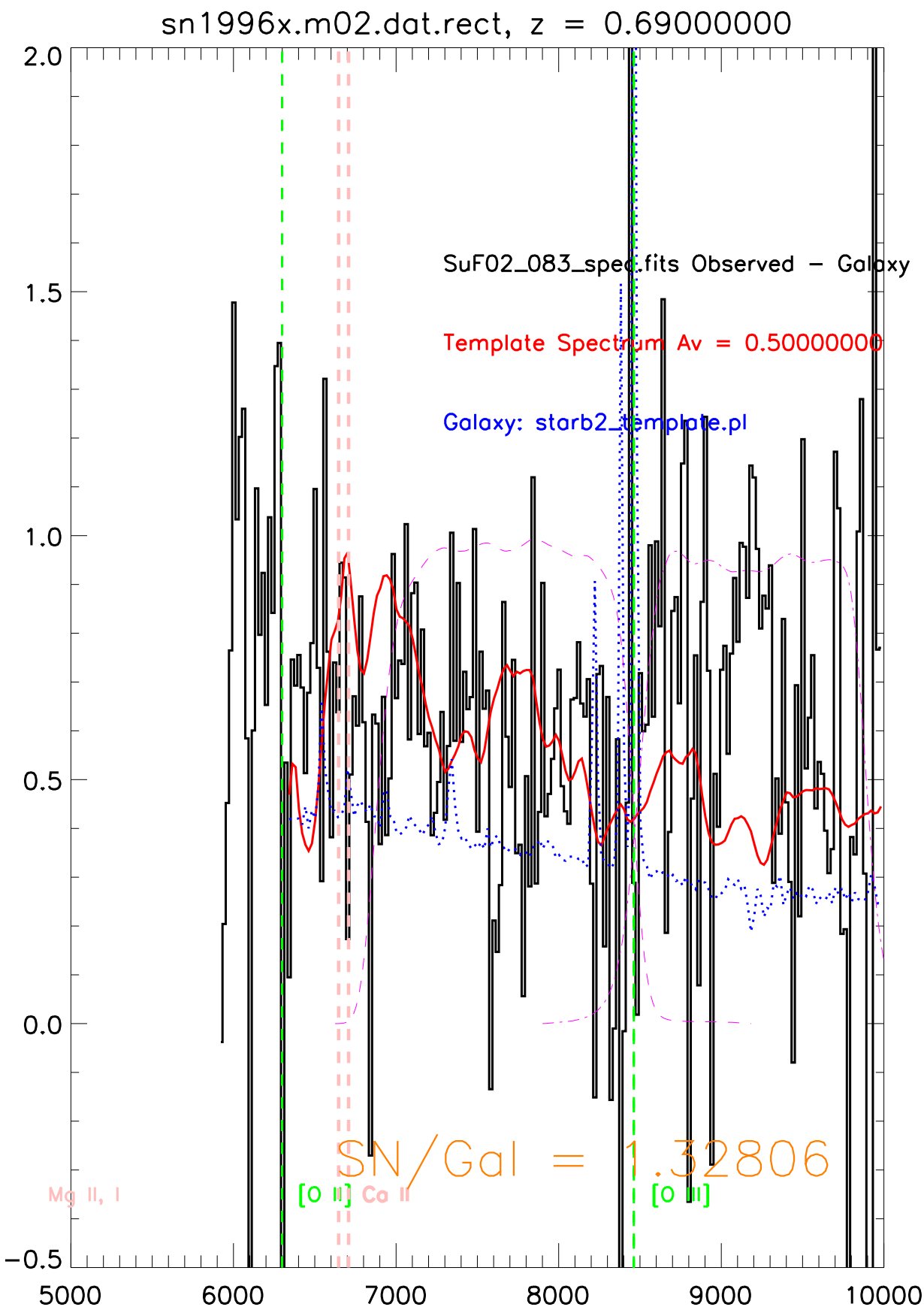

sn1994d.m03.dat.rect, z = 1.2700000
SuF02_083_spec.fits Observed − Galaxy
Template Spectrum Av = −0.50000000
Galaxy: starb2_template.pl
SN/Gal = 0.0532344
Mg II, I
[O II]
Ca II
1.0
0.5
0.0
−0.5
−1.0
5000
6000
7000
8000
9000
10000

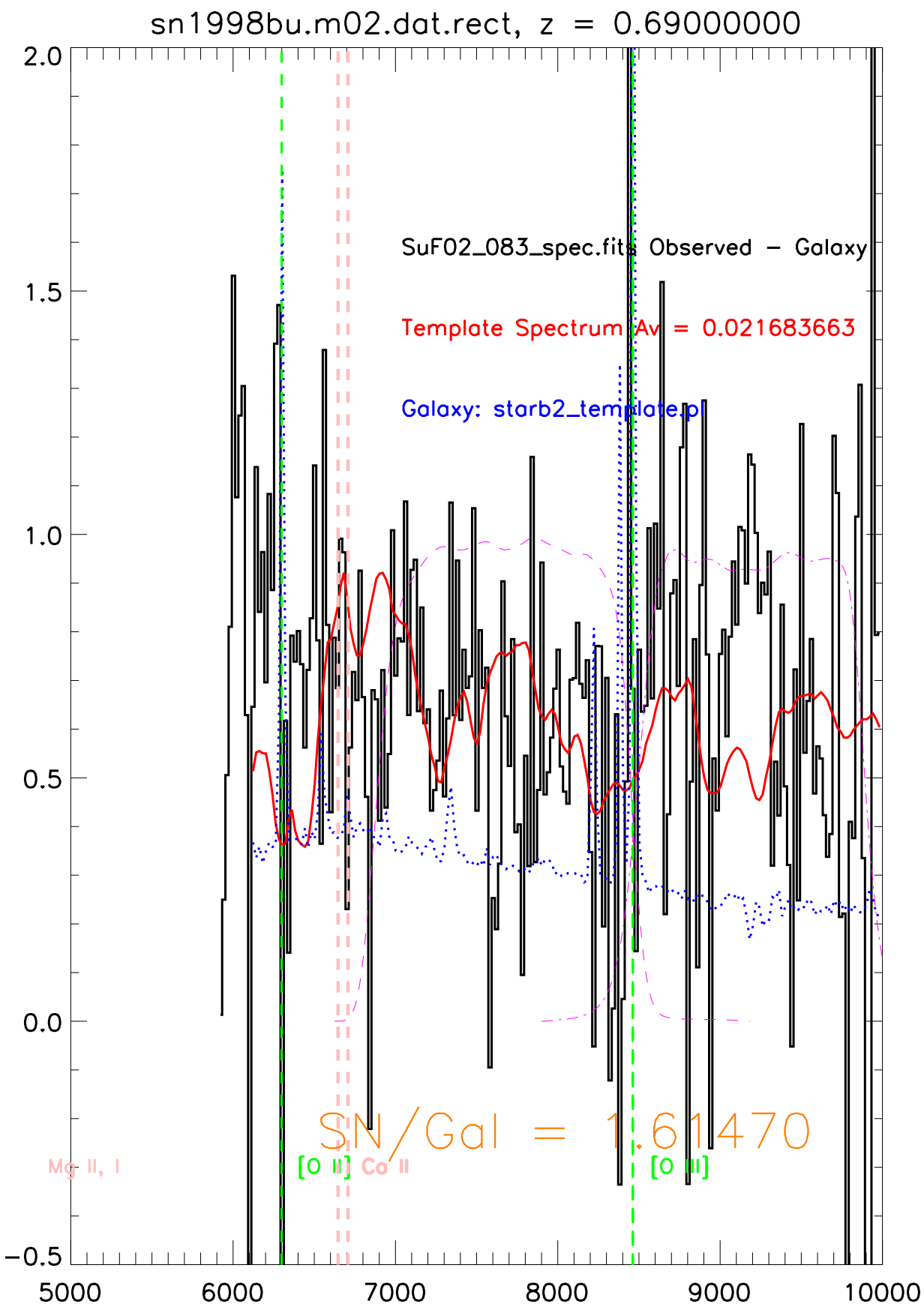

sn1991t.m03.dat.rect, z = 1.2700000
SuF02_083_spec.fits Observed – Gala
Template Spectrum Av = −0.5000000
Galaxy: sta:b2_template.pl
SN/Gal = 0.133780
Mg II, I
[O II]
Ca II
1.5
1.0
0.5
0.0
−0.5
−1.0
5000
6000
7000
8000
9000
10000

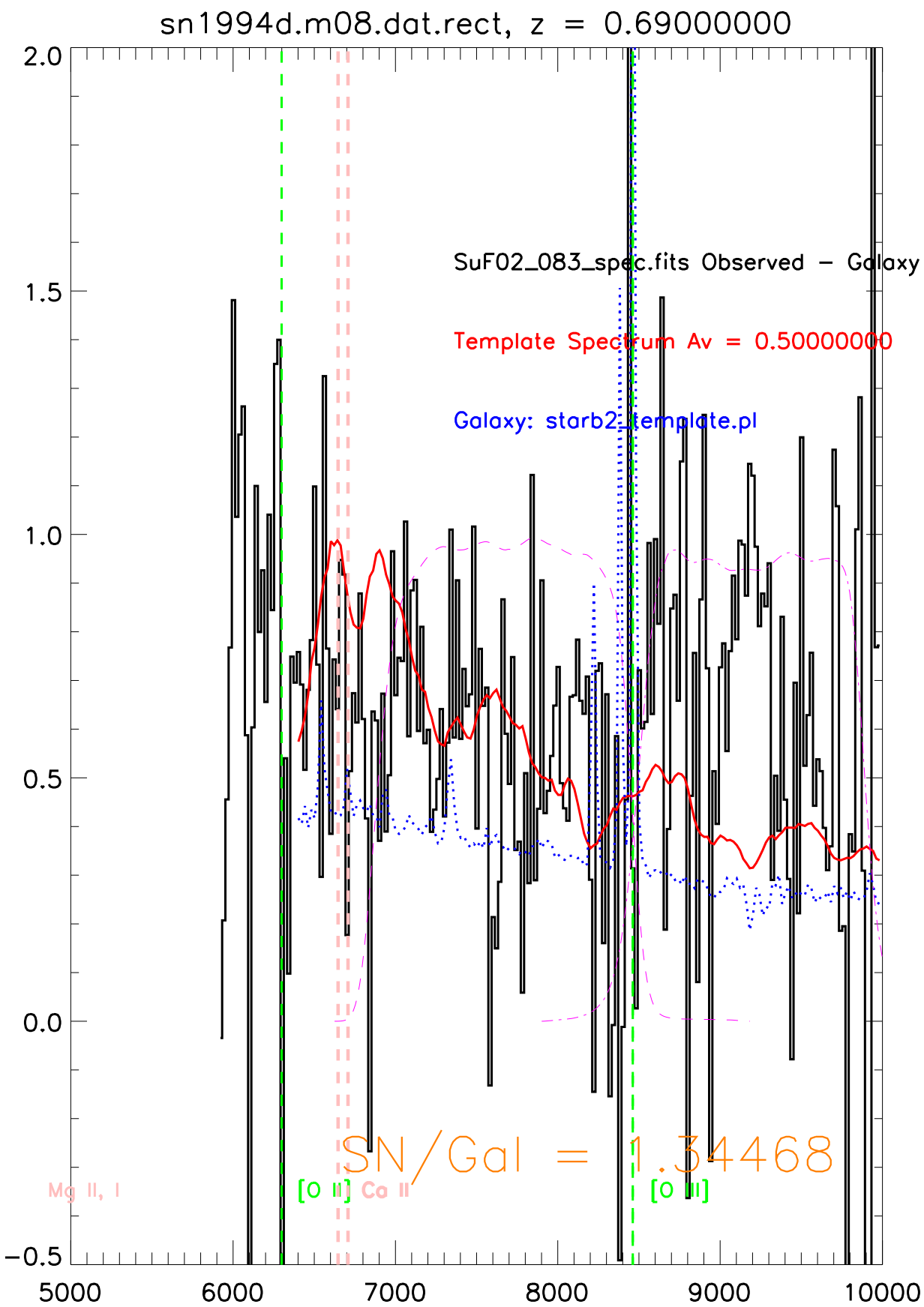

sn1998bu.m04.dat.rect, z = 0.69000000
SuF02_083_spec.fits Observed − Galaxy
Template Spectrum Av = 0.50000000
Galaxy: starb2_template.pl
SN/Gal = 1.68031
Mg II, I
[O II]
Ca II
[O III]
2.0
1.5
1.0
0.5
0.0
−0.5
5000
6000
7000
8000
9000
10000

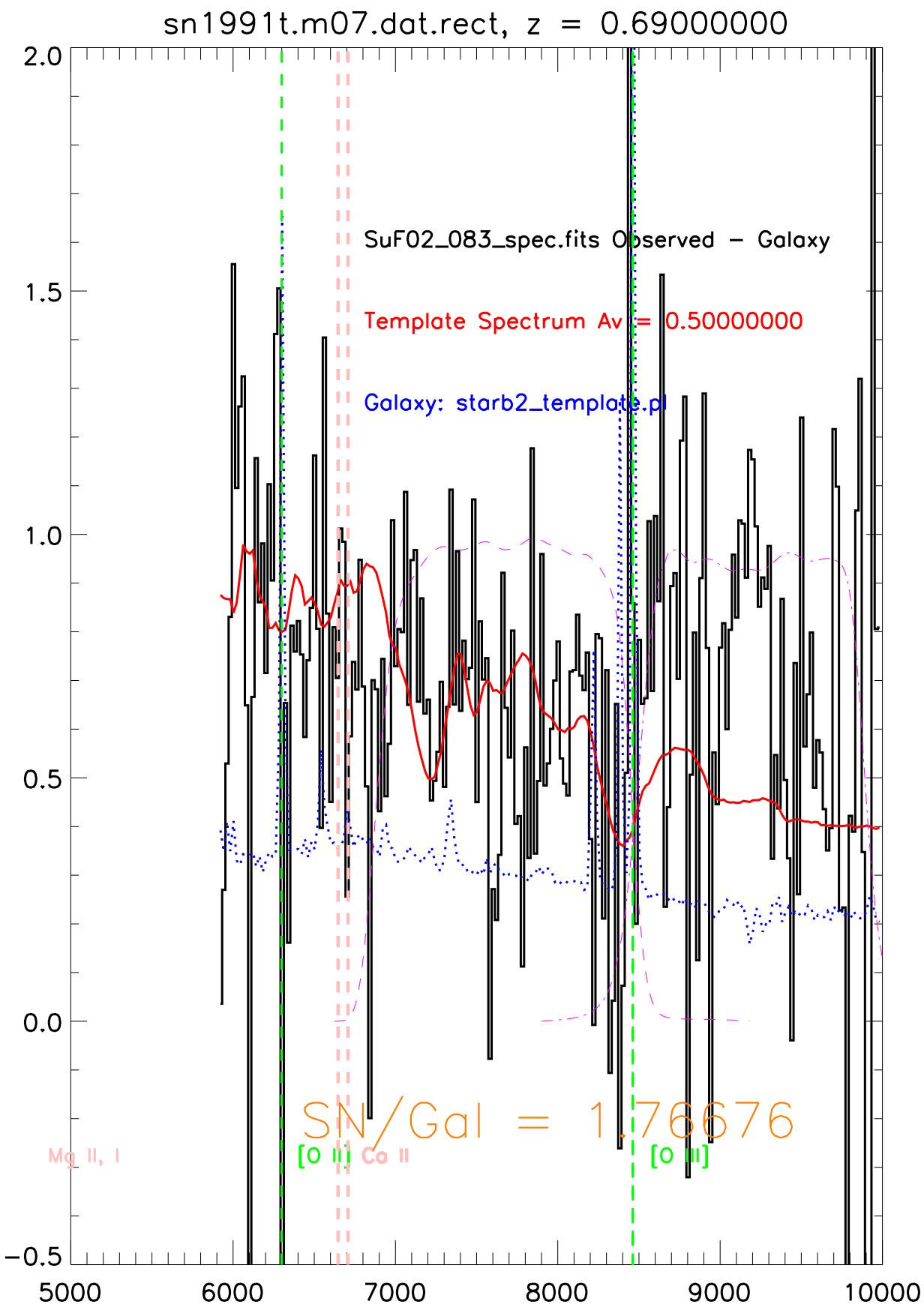

sn1994d.m05.dat.rect, z = 0.69000000
SuF02_083_spec.fits Observed − Galaxy
Template Spectrum Av = 0.50000000
Galaxy: starb2_template.pl
SN/Gal = 1.58759
Mg II, I
[O II] Ca II
[O III]
2.0
1.5
1.0
0.5
0.0
−0.5
5000
6000
7000
8000
9000
10000

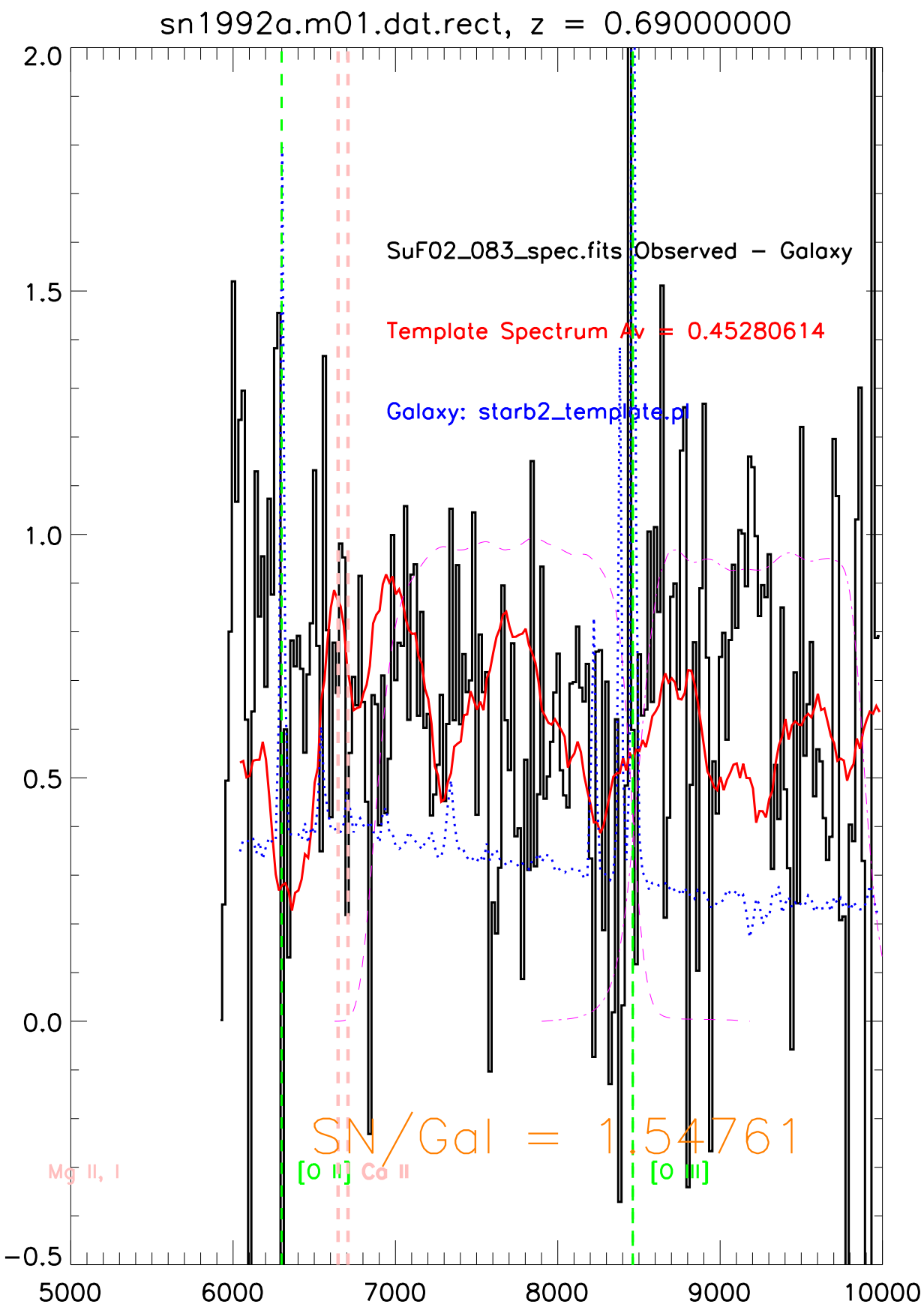

sn1998bu.m03.dat.rect, z = 0.69000000
SuF02_083_spec.fits Observed − Galaxy
Template Spectrum Av = 0.20025513
Galaxy: starb2_template.pl
SN/Gal = 1.64502
Mg II, I
[O II] Ca II
[O III]
2.0
1.5
1.0
0.5
0.0
−0.5
5000
6000
7000
8000
9000
10000

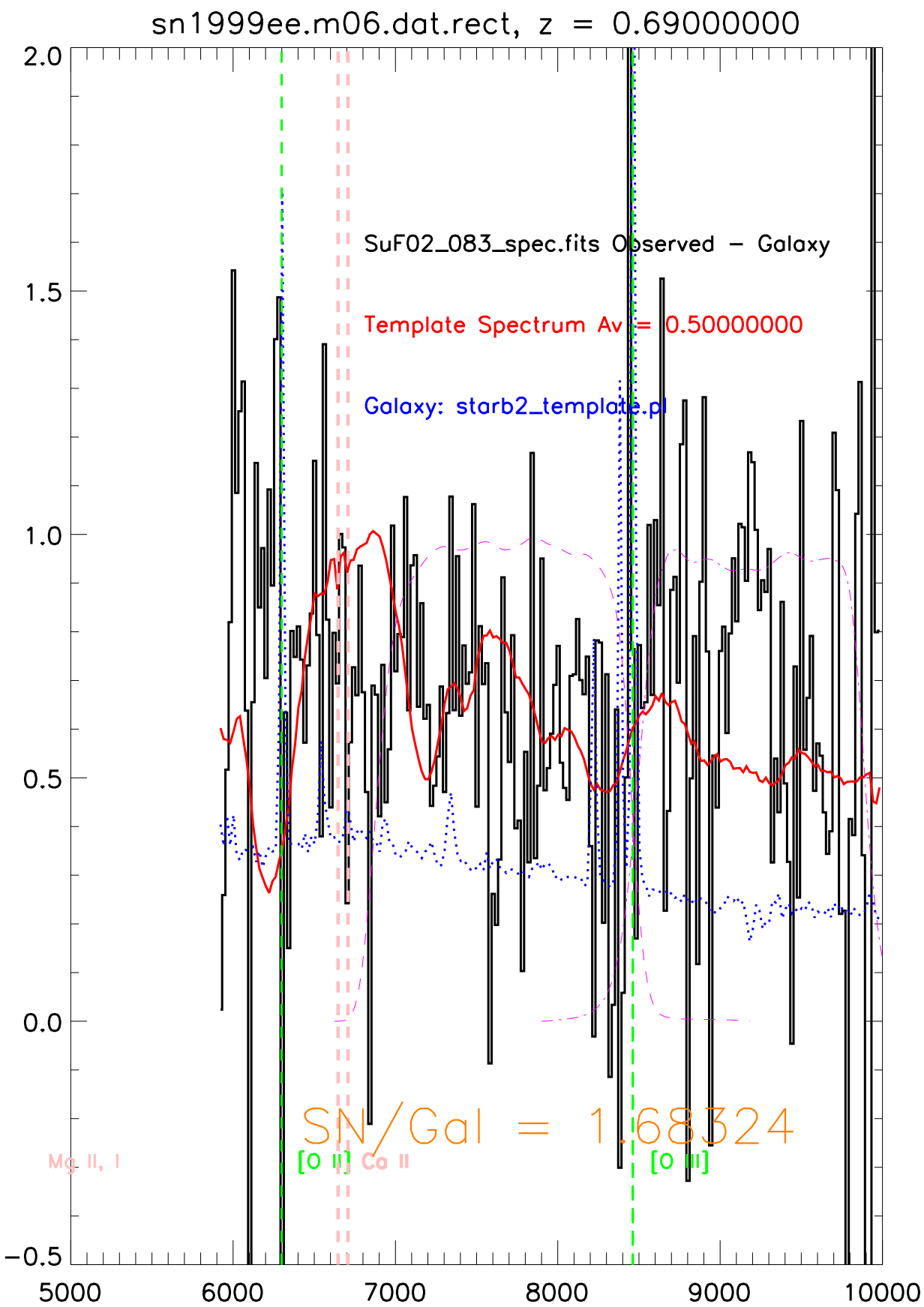

sn1996x.m02.dat.rect, z = 0.69000000
SuF02_083_spec.fits Observed − Galaxy
Template Spectrum Av = 0.50000000
Galaxy: starb2_template.pl
SN/Gal = 1.32806
Mg II, I
[O II] Ca II
[O III]
2.0
1.5
1.0
0.5
0.0
−0.5
5000
6000
7000
8000
9000
10000

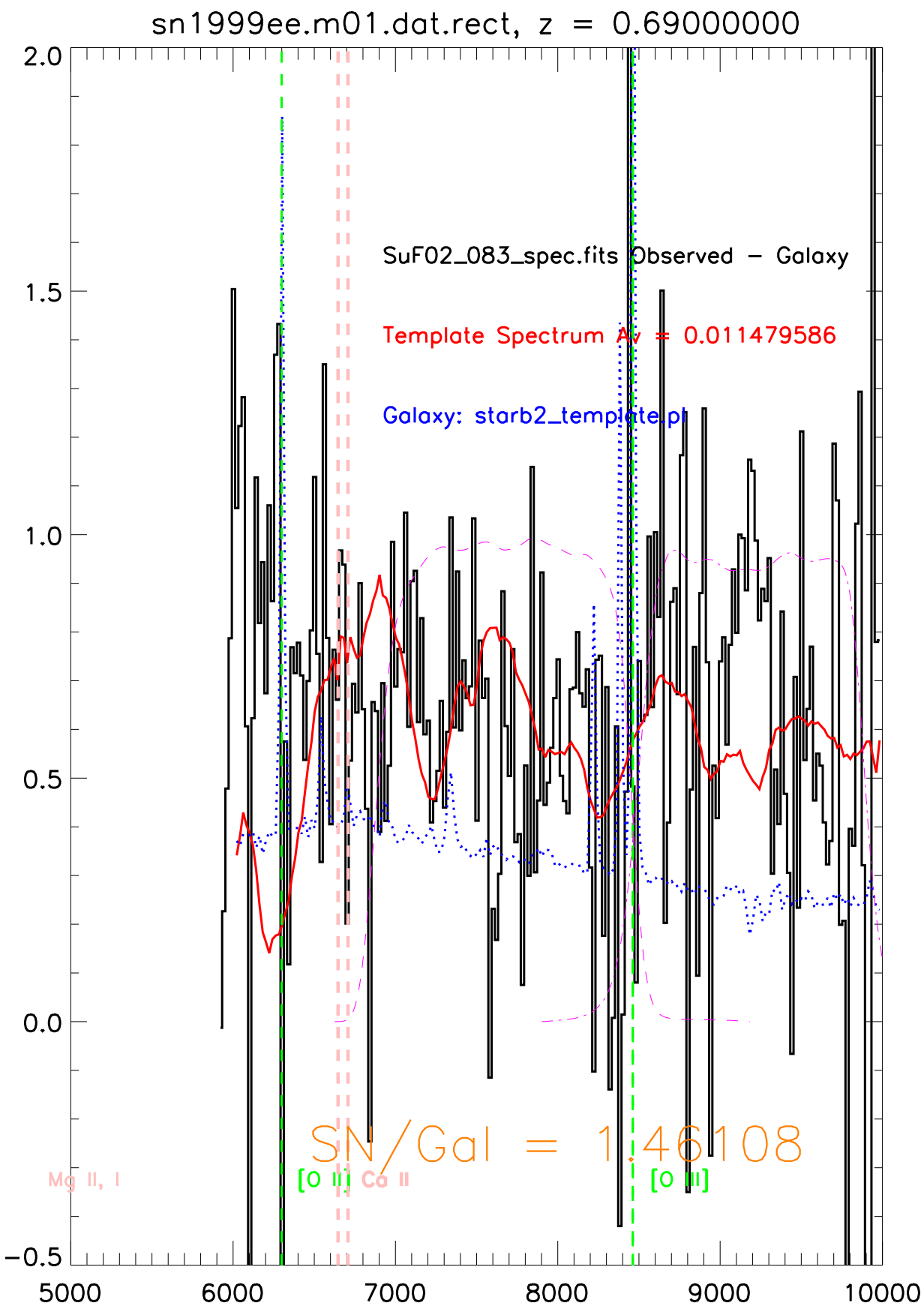

sn1998bu.m02.dat.rect, z = 0.69000000
SuF02_083_spec.fits Observed − Galaxy
Template Spectrum Av = 0.021683663
Galaxy: starb2_template.pl
SN/Gal = 1.61470
Mg II, I
[O II] Ca II
[O III]
2.0
1.5
1.0
0.5
0.0
−0.5
5000
6000
7000
8000
9000
10000

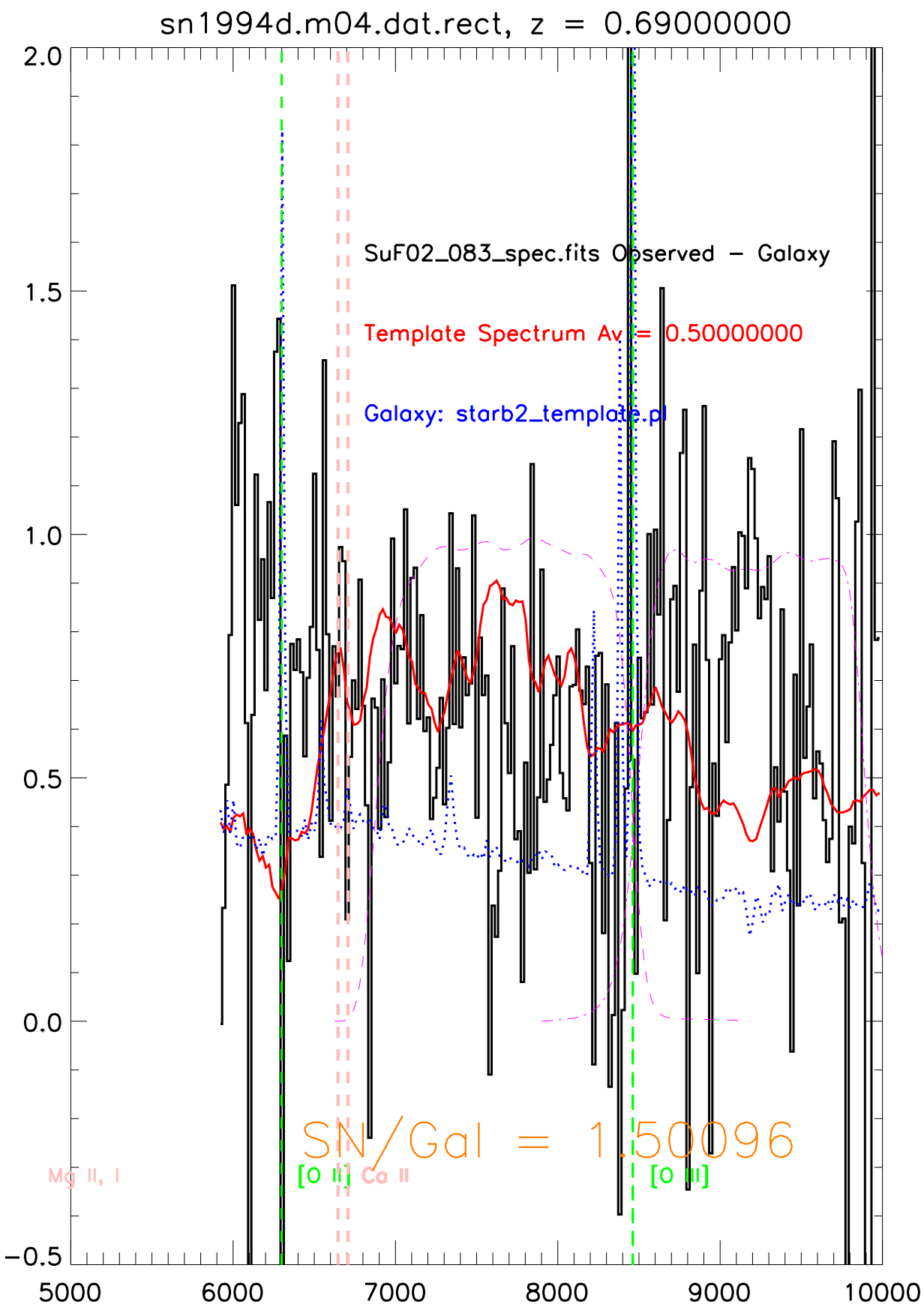

sn1994d.m08.dat.rect, z = 0.69000000
SuF02_083_spec.fits Observed − Galaxy
Template Spectrum Av = 0.50000000
Galaxy: starb2_template.pl
SN/Gal = 1.34468
Mg II, I
[O II] Ca II
[O III]
2.0
1.5
1.0
0.5
0.0
−0.5
5000
6000
7000
8000
9000
10000

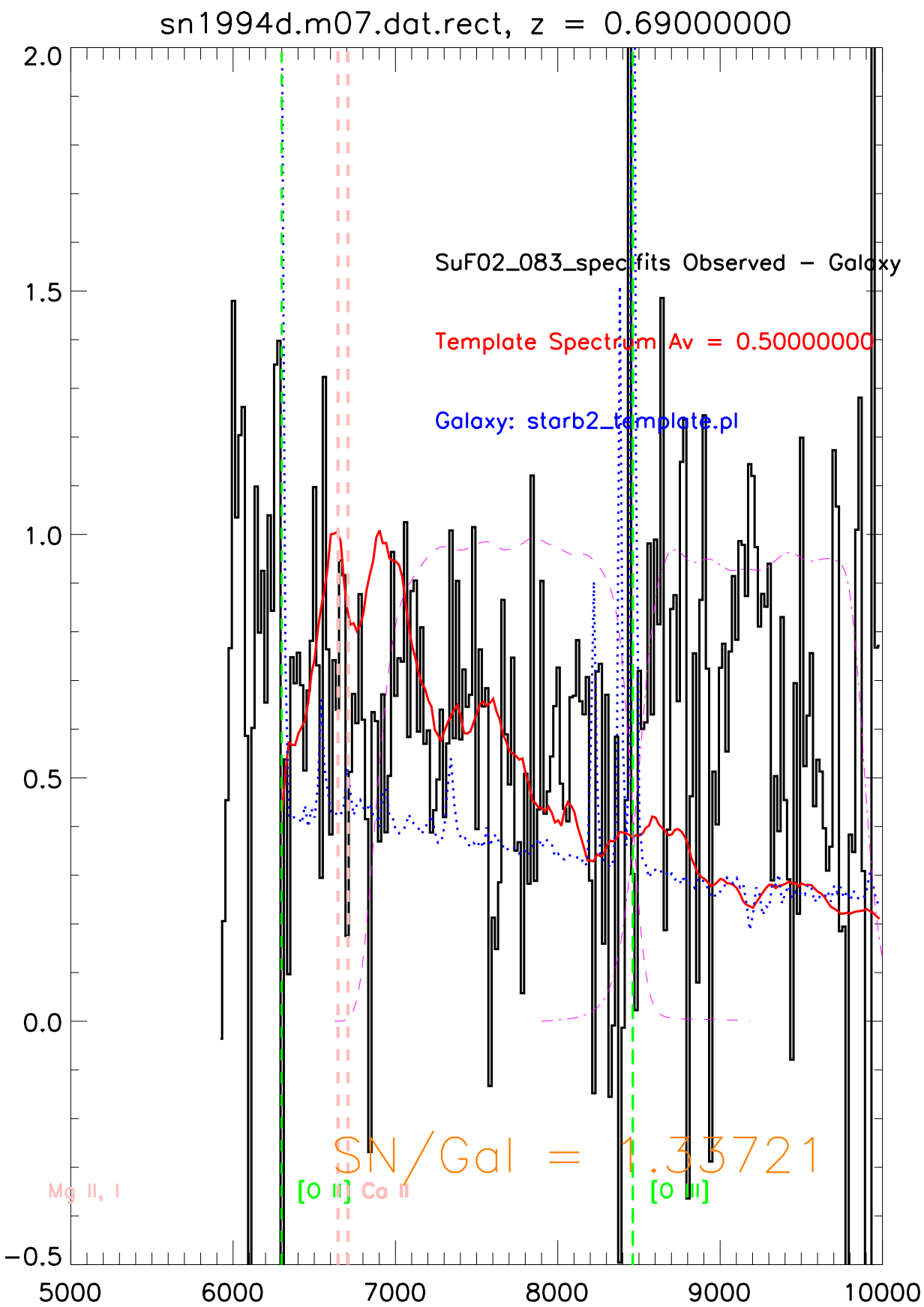

sn1991t.m07.dat.rect, z = 0.69000000
SuF02_083_spec.fits Observed − Galaxy
Template Spectrum Av = 0.50000000
Galaxy: starb2_template.pl
SN/Gal = 1.76676
Mg II, I
[O II], Ca II
[O III]
2.0
1.5
1.0
0.5
0.0
−0.5
5000
6000
7000
8000
9000
10000

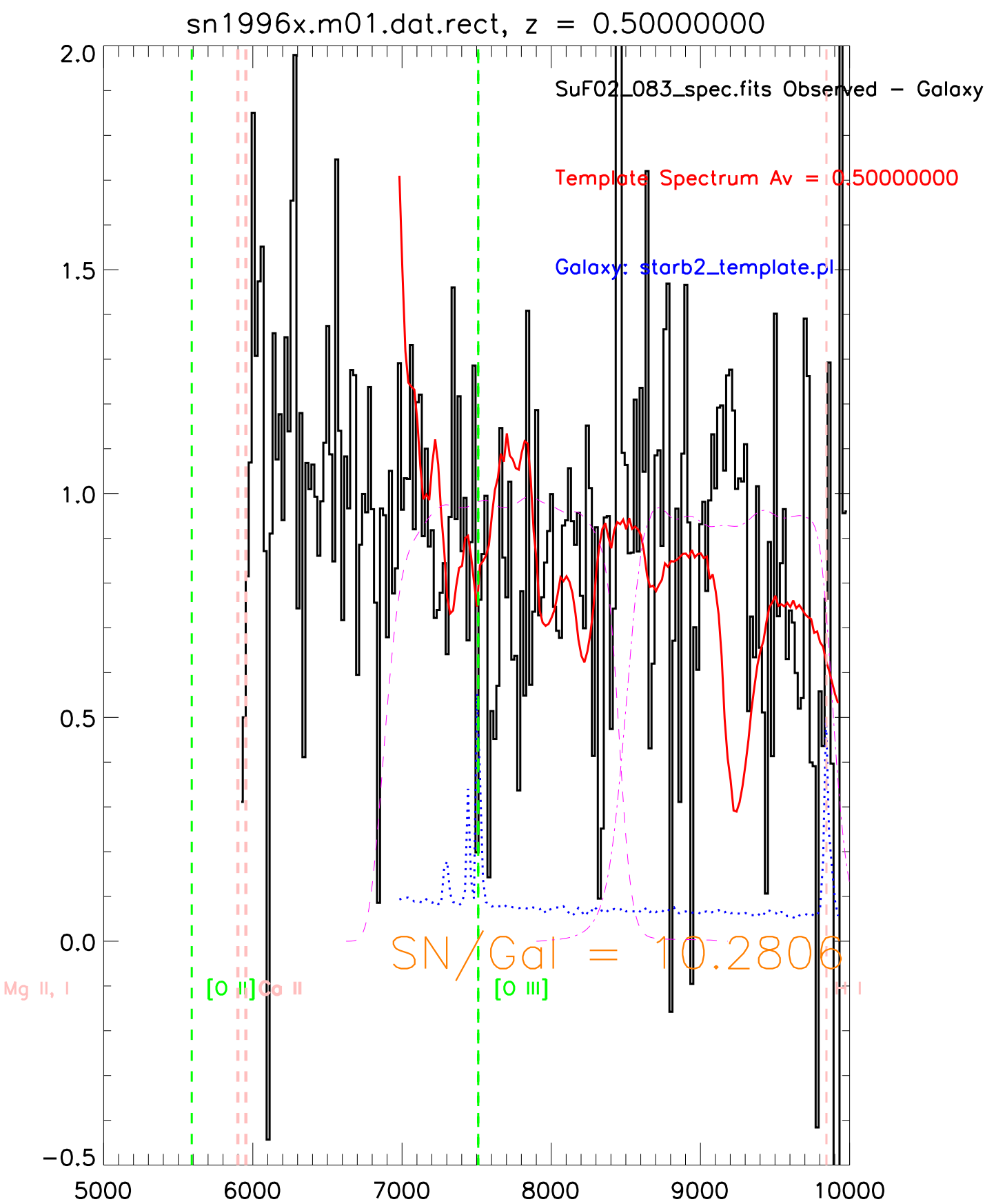

sn1992a.m01.dat.rect, z = 0.69000000
SuF02_083_spec.fits Observed − Galaxy
Template Spectrum Av = 0.45280614
Galaxy: starb2_template.pl
SN/Gal = 1.54761
Mg II, I
[O II] Ca II
[O III]
2.0
1.5
1.0
0.5
0.0
−0.5
5000
6000
7000
8000
9000
10000

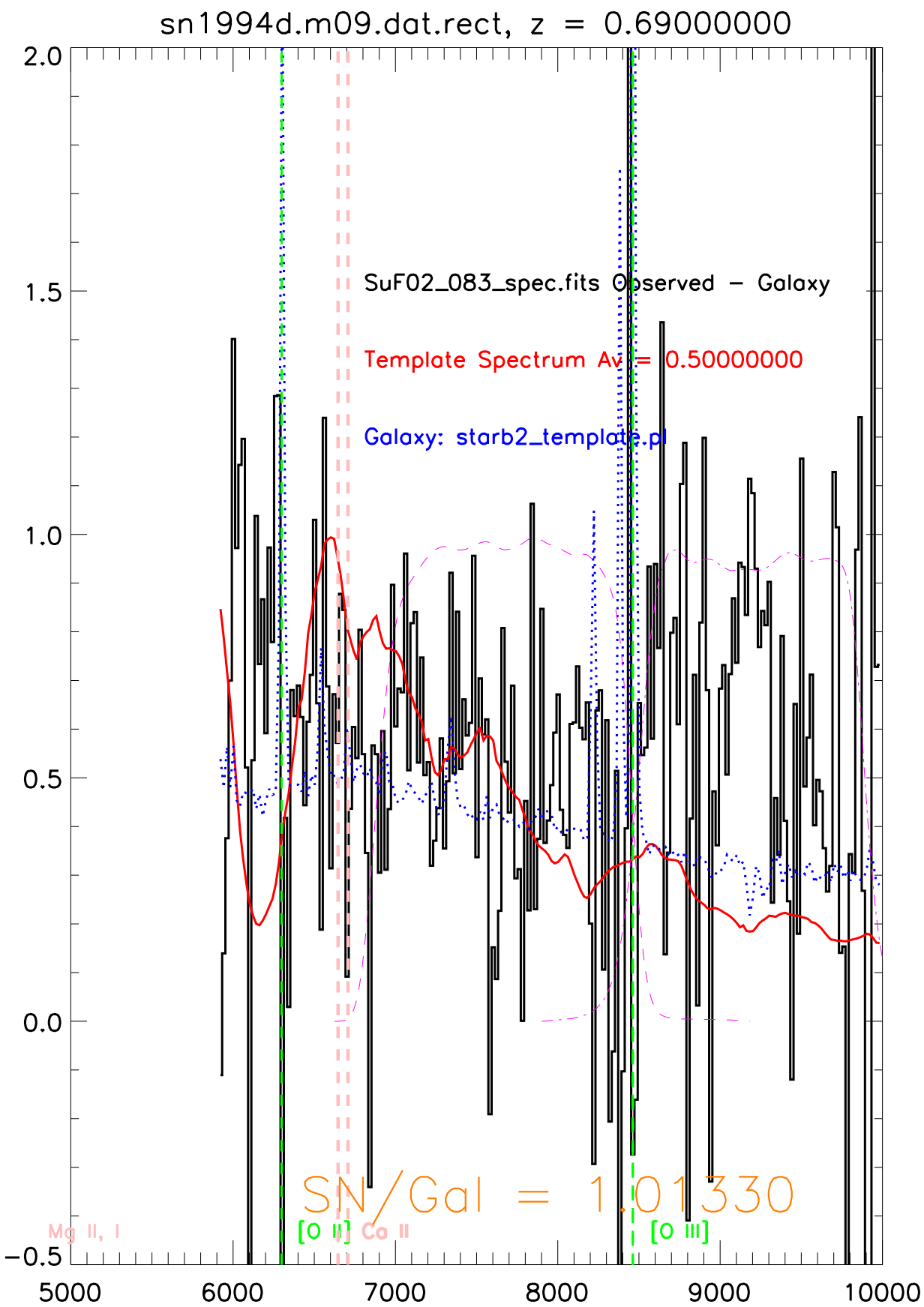

sn1999ee.m06.dat.rect, z = 0.69000000
SuF02_083_spec.fits Observed − Galaxy
Template Spectrum Av = 0.50000000
Galaxy: starb2_template.pl
SN/Gal = 1.68324
Mg II, I
[O II]
Ca II
[O III]
2.0
1.5
1.0
0.5
0.0
−0.5
5000
6000
7000
8000
9000
10000

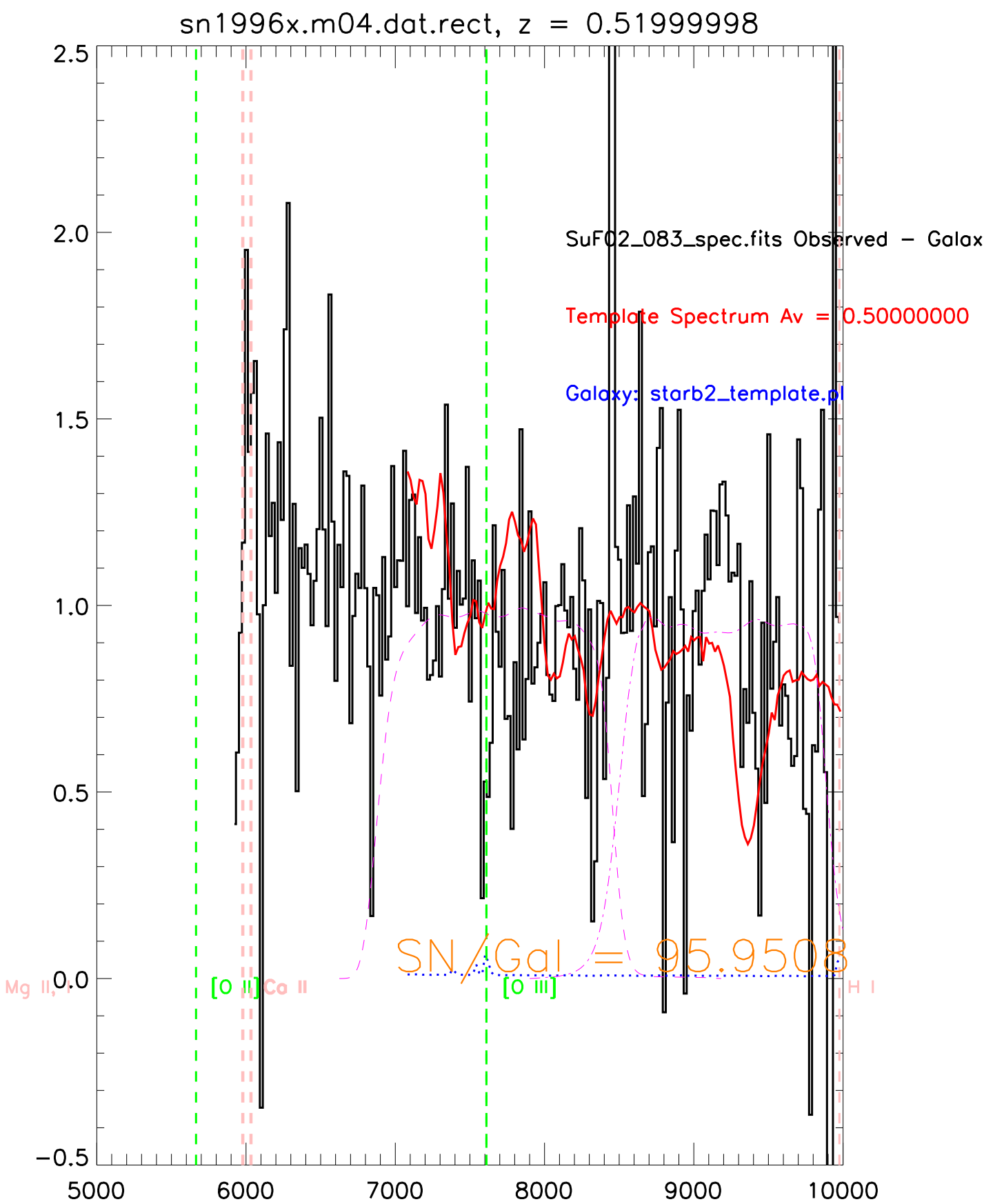

sn1999ee.m01.dat.rect, z = 0.69000000
SuF02_083_spec.fits Observed − Galaxy
Template Spectrum Av = 0.011479586
Galaxy: starb2_template.pl
SN/Gal = 1.46108
Mg II, I
[O II] Ca II
[O III]
2.0
1.5
1.0
0.5
0.0
−0.5
5000
6000
7000
8000
9000
10000

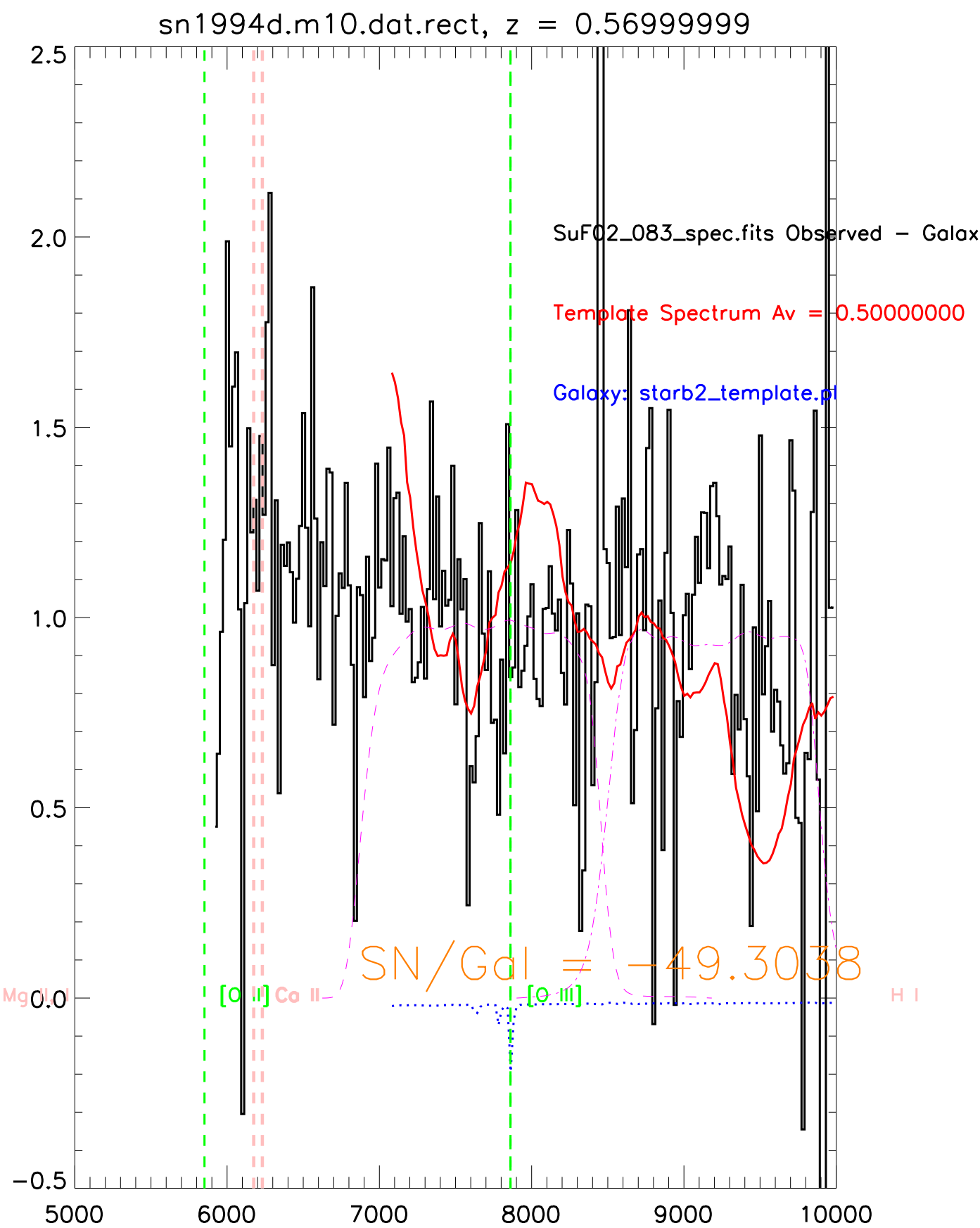

sn1994d.m04.dat.rect, z = 0.69000000
SuF02_083_spec.fits Observed − Galaxy
Template Spectrum Av = 0.50000000
Galaxy: starb2_template.pl
SN/Gal = 1.50096
Mg II, I
[O II]
Ca II
[O III]
2.0
1.5
1.0
0.5
0.0
−0.5
5000
6000
7000
8000
9000
10000


sn1994d.m07.dat.rect, z = 0.69000000
SuF02_083_spec.fits Observed − Galaxy
Template Spectrum Av = 0.50000000
Galaxy: starb2_template.pl
SN/Gal = 1.33721
Mg II, I
[O II] Ca II
[O III]
2.0
1.5
1.0
0.5
0.0
−0.5
5000
6000
7000
8000
9000
10000


sn1996x.m01.dat.rect, z = 0.50000000
SuF02_083_spec.fits Observed − Galaxy
Template Spectrum Av = 0.50000000
Galaxy: starb2_template.pl
SN/Gal = 10.2806
Mg II, I
[O II]
Ca II
[O III]
H I
2.0
1.5
1.0
0.5
0.0
−0.5
5000
6000
7000
8000
9000
10000


sn1994d.m09.dat.rect, z = 0.69000000
SuF02_083_spec.fits Observed − Galaxy
Template Spectrum Av = 0.50000000
Galaxy: starb2_template.pl
SN/Gal = 1.01330
Mg II, I
[O II] Ca II
[O III]
2.0
1.5
1.0
0.5
0.0
−0.5
5000
6000
7000
8000
9000
10000


sn1996x.m04.dat.rect, z = 0.51999998
SuF02_083_spec.fits Observed − Galax
Template Spectrum Av = 0.50000000
Galaxy: starb2_template.pl
SN/Gal = 95.9508
[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
10000


sn1994d.m10.dat.rect, z = 0.56999999
SuF02_083_spec.fits Observed − Galax
Template Spectrum Av = 0.50000000
Galaxy: starb2_template.pl
SN/Gal = −49.3038
[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
10000