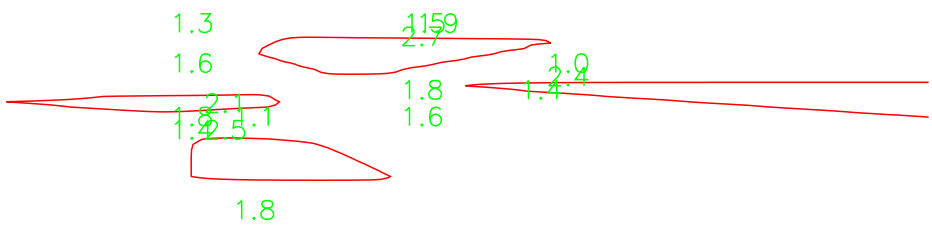
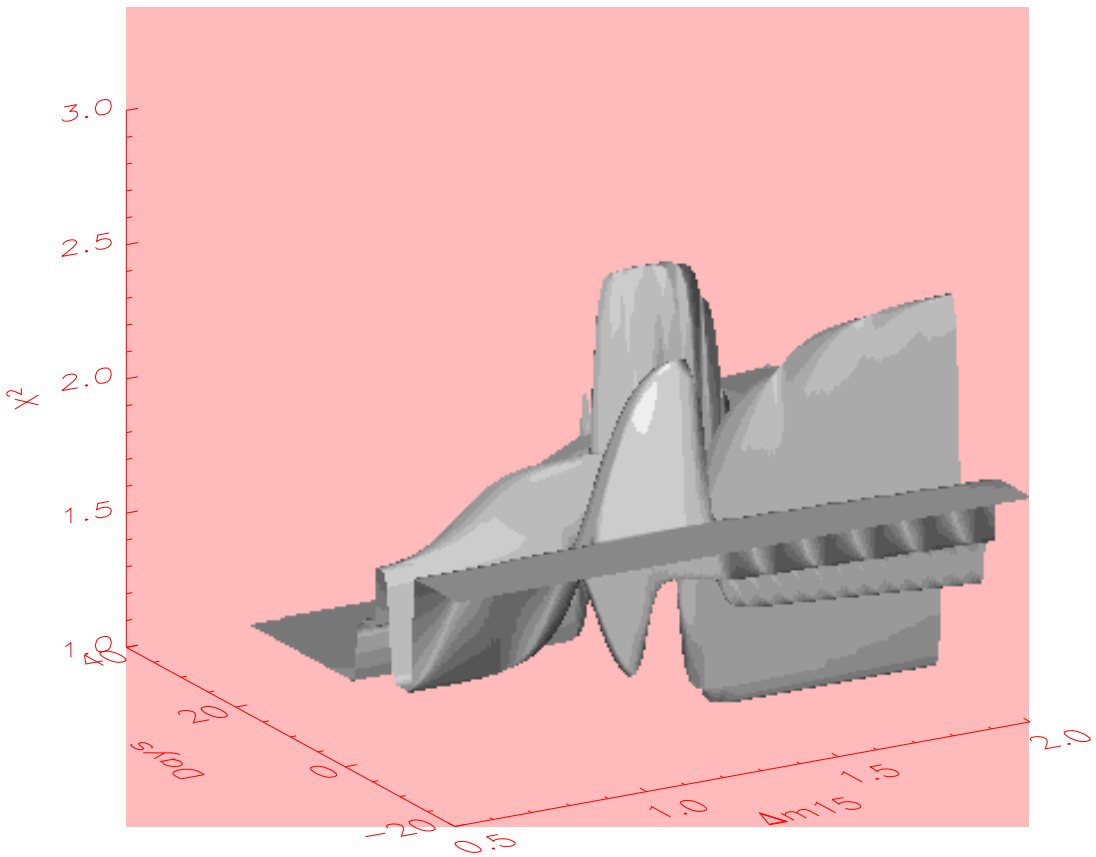
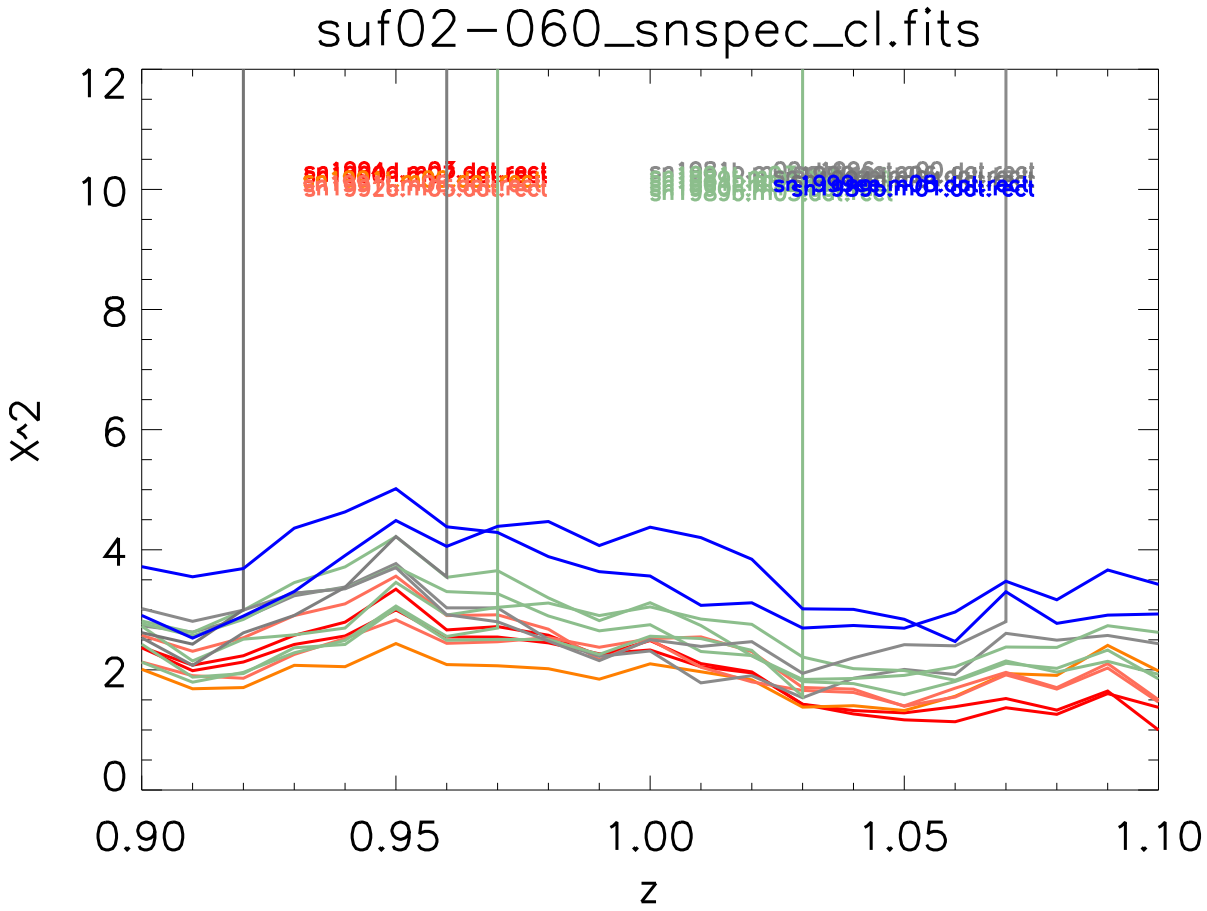
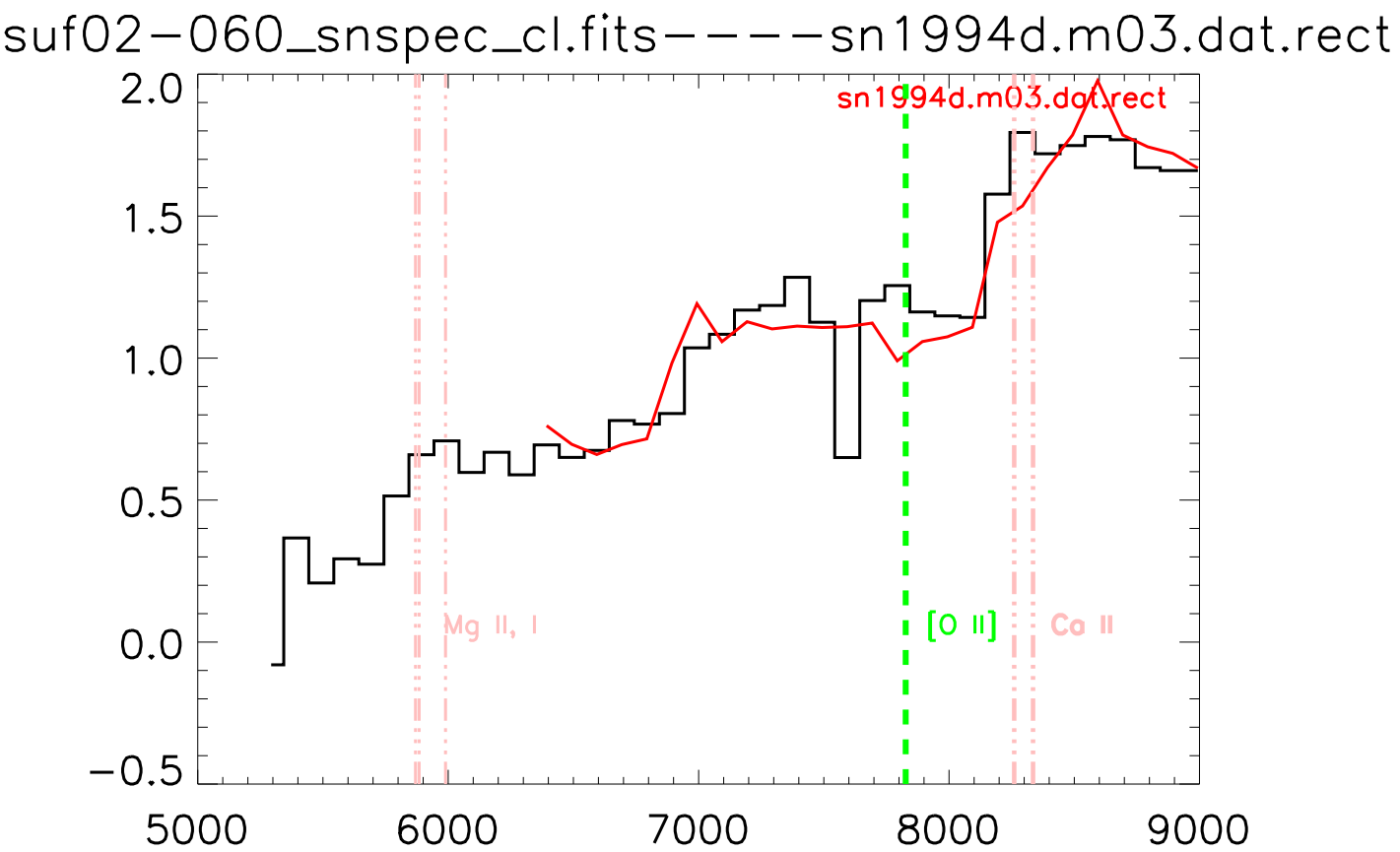
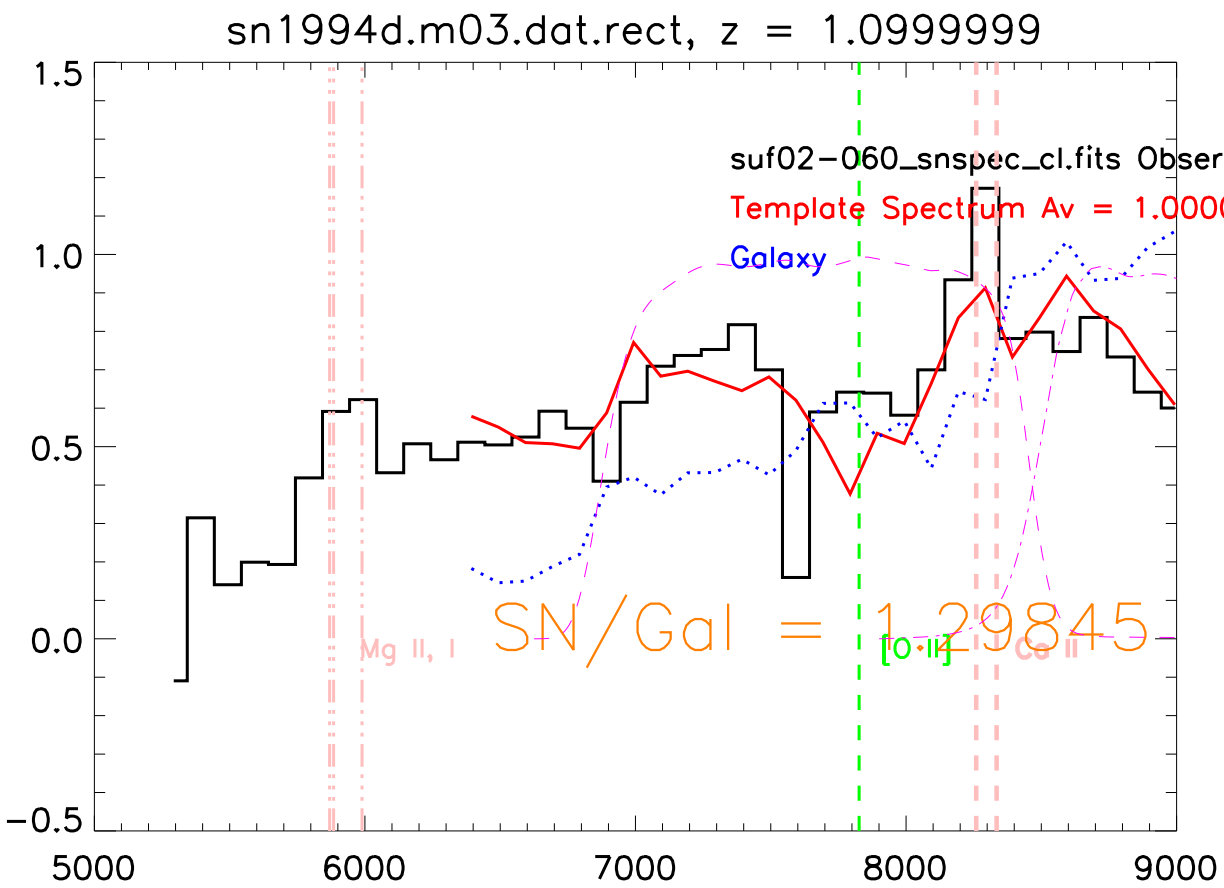

1.3
1.6
1.8
1.6
1.8

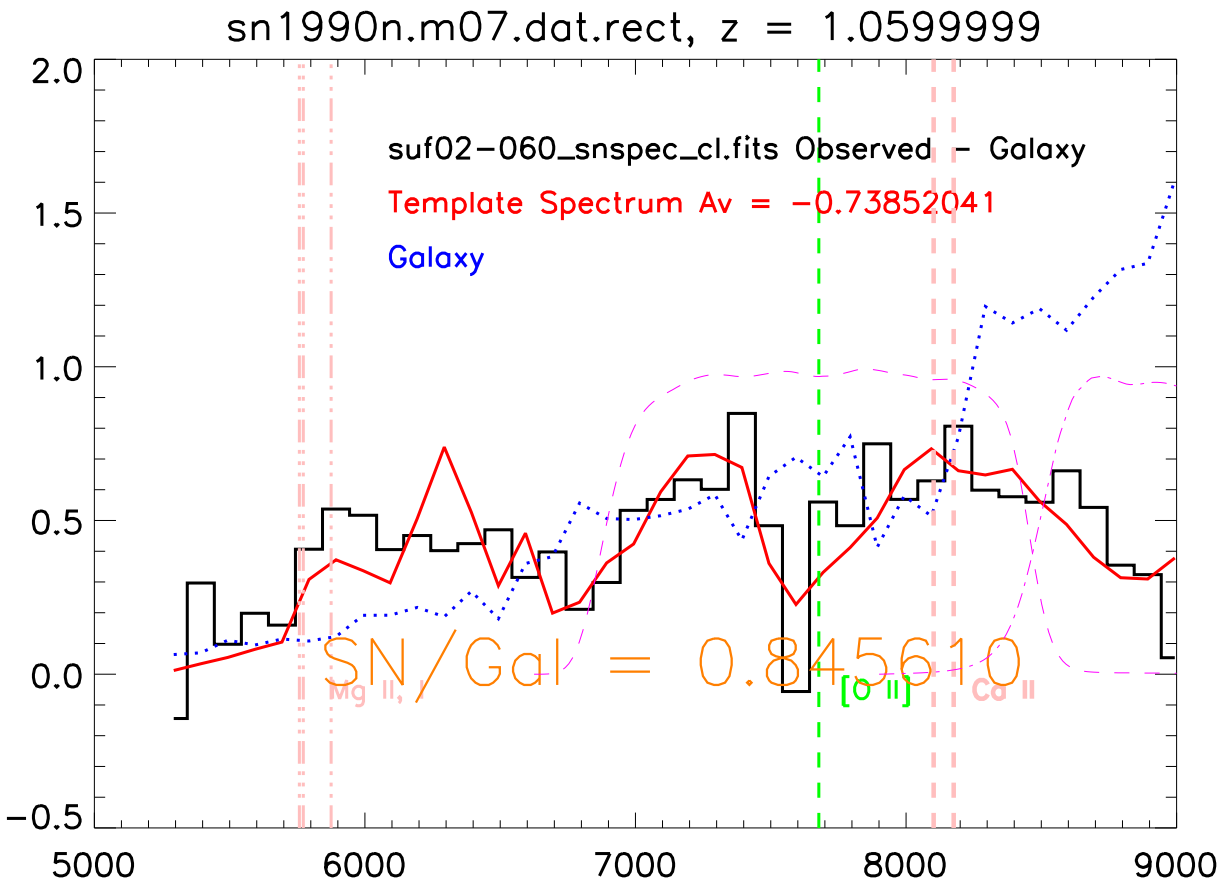


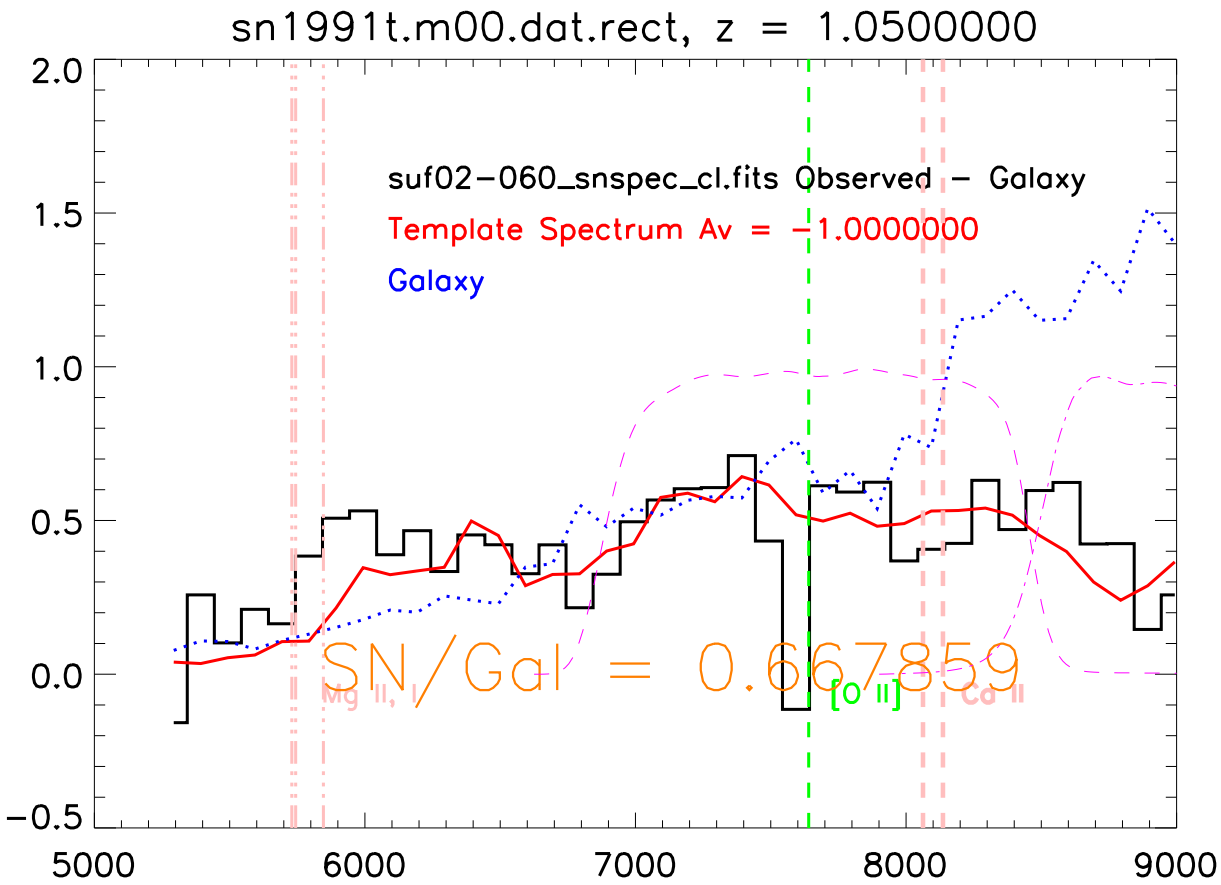
3.0
2.5
2.0
1.5
1.0
χ^2
40
20
0
−20
Days
0.5
1.0
1.5
2.0
Δm15

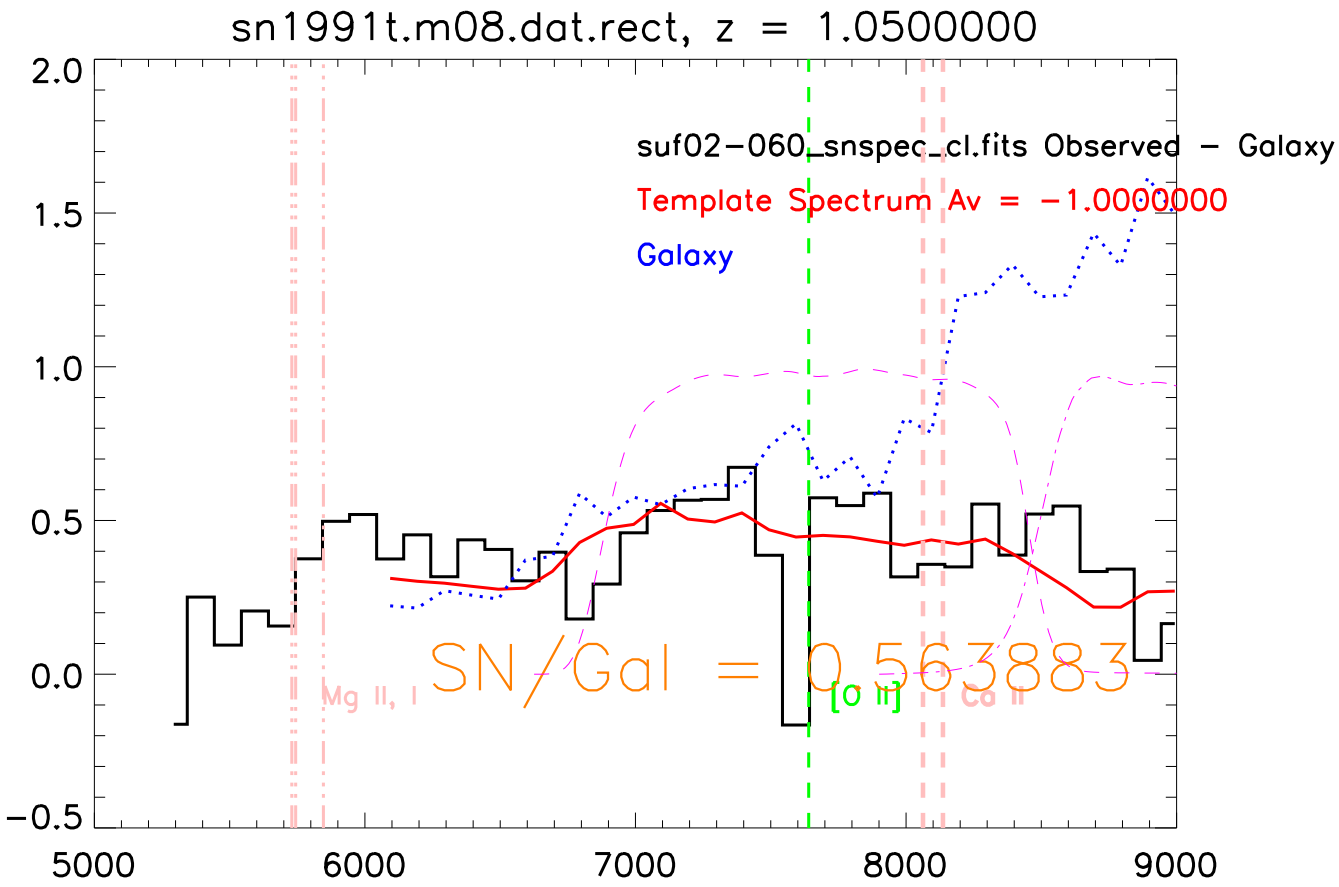

suf02−060_snspec_cl.fits
X^2
z
0
2
4
6
8
10
12
0.90
0.95
1.00
1.05
1.10

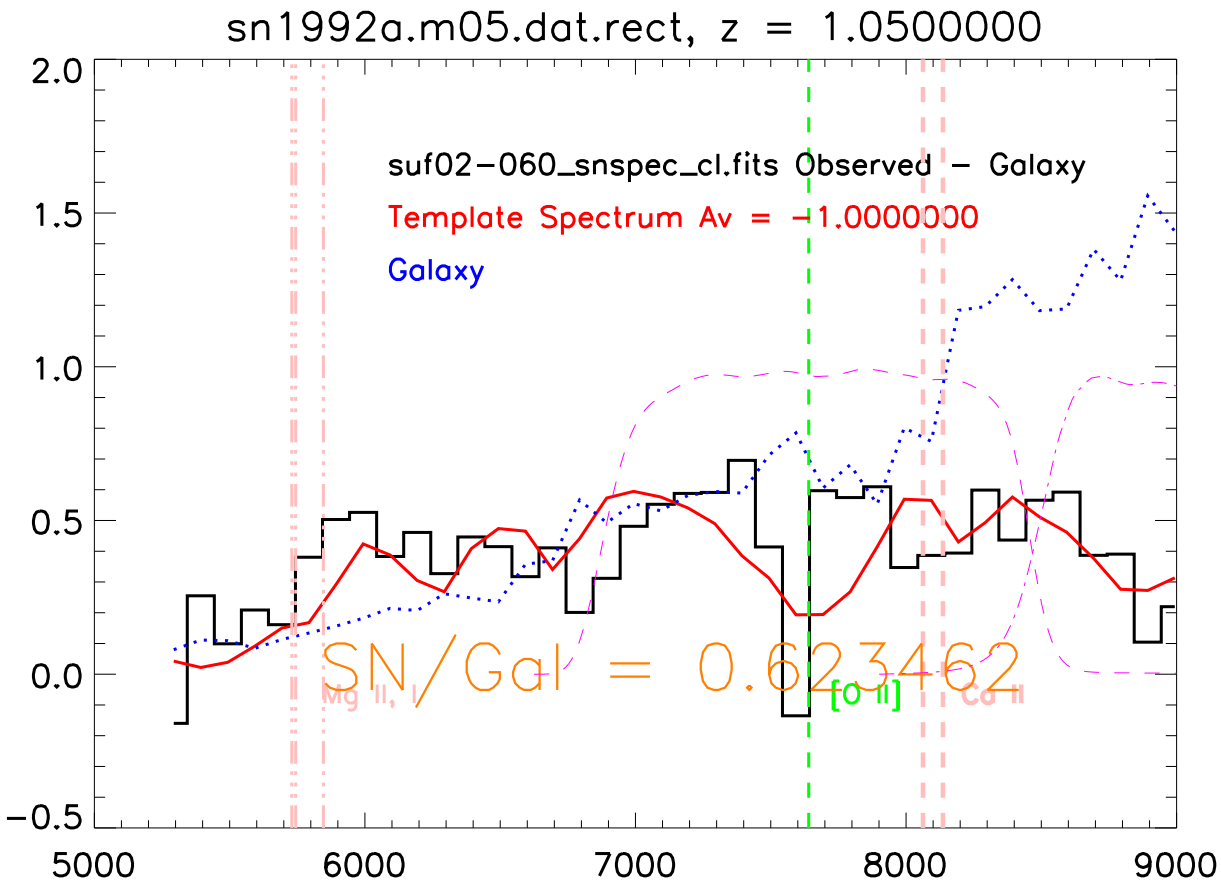

suf02−060_snspec_cl.fits−−−−sn1994d.m03.dat.rect
sn1994d.m03.dat.rect
Mg II, I
[O II]
Ca II
2.0
1.5
1.0
0.5
0.0
−0.5
5000
6000
7000
8000
9000

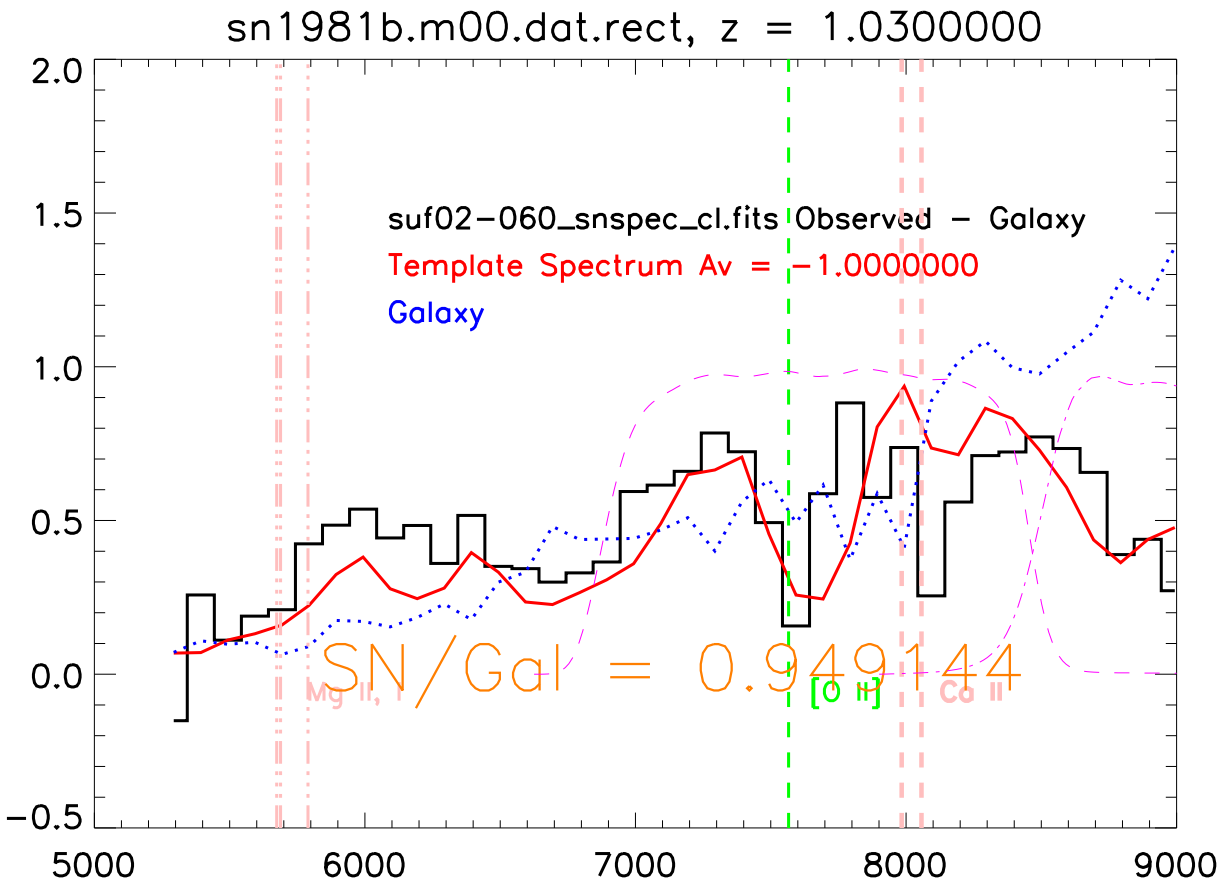

sn1994d.m03.dat.rect, z = 1.0999999
suf02-060_snspec_cl.fits Observed - Gal
Template Spectrum Av = 1.0000000
Galaxy
SN/Gal = 1.29845
Mg II, I
[O II]
Ca II
1.5
1.0
0.5
0.0
-0.5
5000
6000
7000
8000
9000

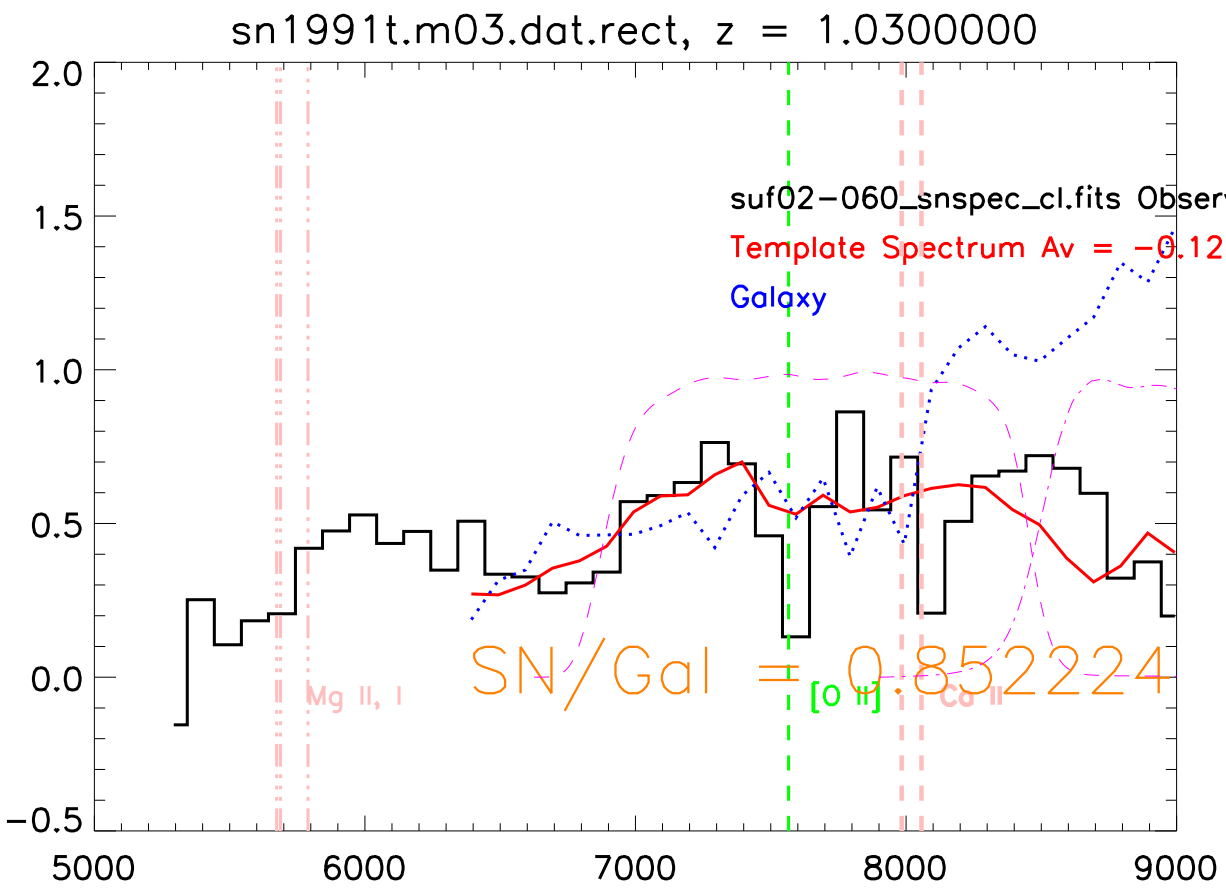

sn1990n.m07.dat.rect, z = 1.0599999
suf02-060_snspec_cl.fits Observed - Galaxy
Template Spectrum Av = -0.73852041
Galaxy
SN/Gal = 0.845610
Mg II, I
[O II]
Ca II
2.0
1.5
1.0
0.5
0.0
-0.5
5000
6000
7000
8000
9000

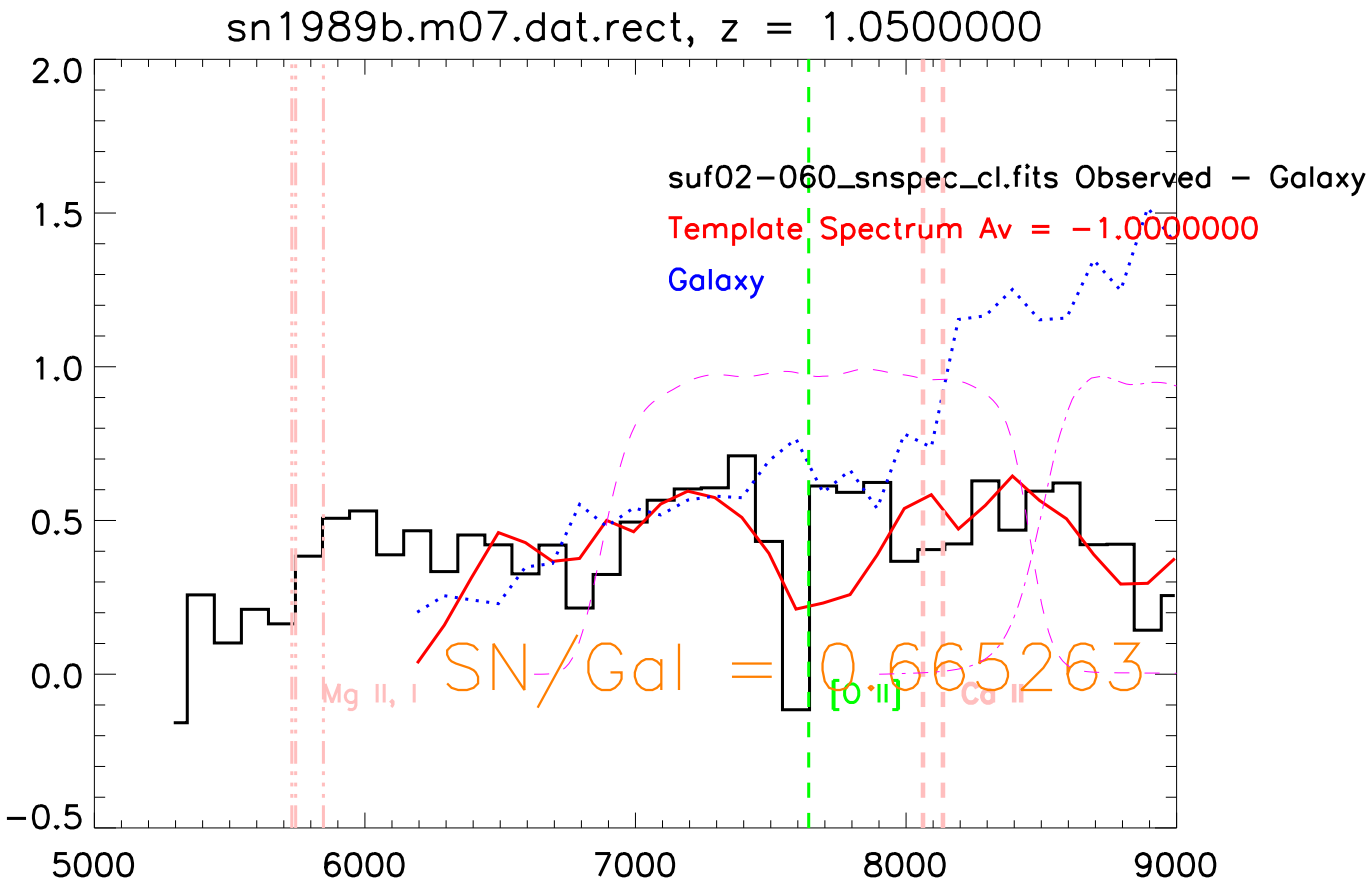

sn1991t.m00.dat.rect, z = 1.0500000
suf02-060_snspec_cl.fits Observed - Galaxy
Template Spectrum Av = 1.0000000
Galaxy
SN/Gal = 0.667859
Mg II, I
[O II]
Ca II
2.0
1.5
1.0
0.5
0.0
-0.5
5000
6000
7000
8000
9000

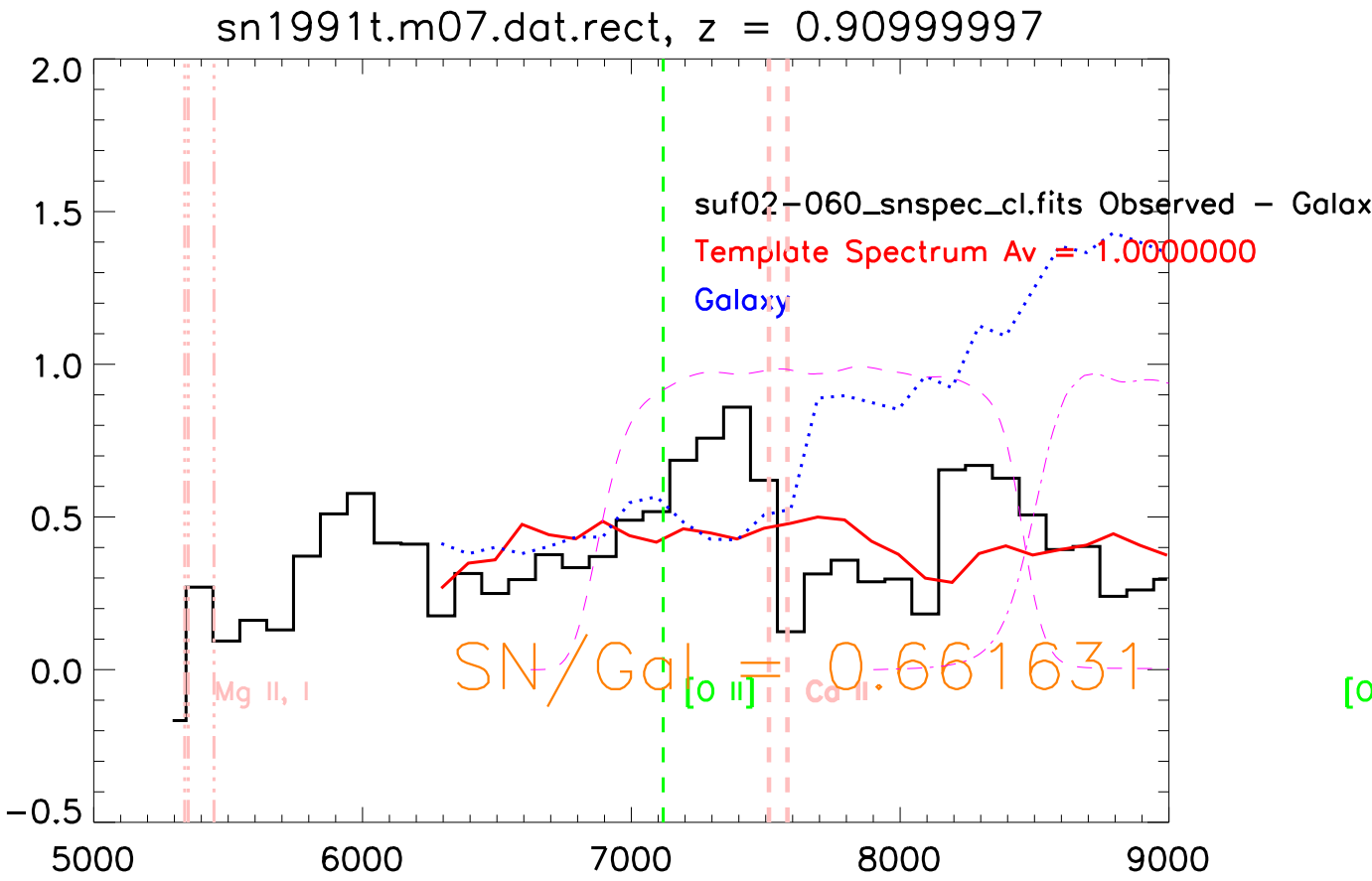

sn1991t.m08.dat.rect, z = 1.0500000
suf02-060_snspec_cl.fits Observed − Galaxy
Template Spectrum Av = −1.0000000
Galaxy
SN/Gal = 0.563883
Mg II, I
[O II]
Ca II
2.0
1.5
1.0
0.5
0.0
−0.5
5000
6000
7000
8000
9000

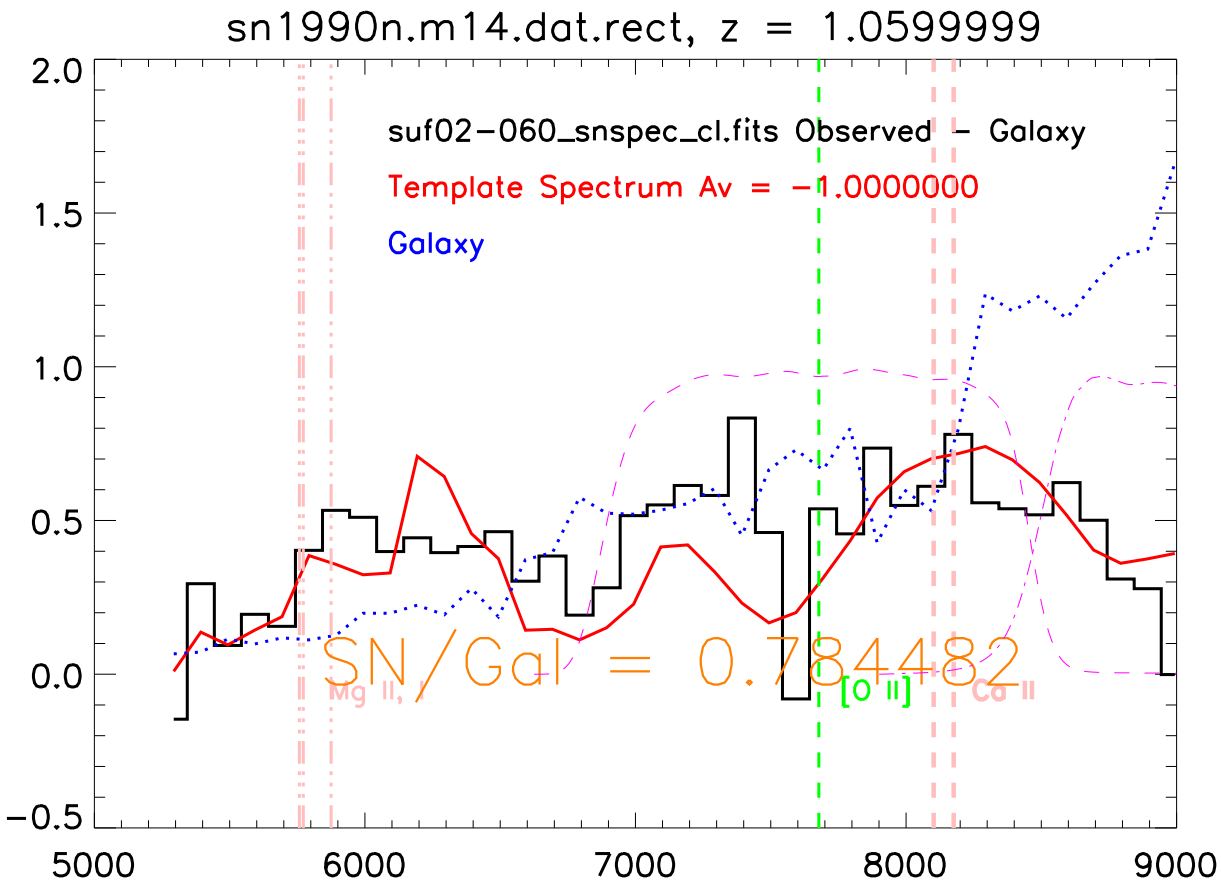

sn1992a.m05.dat.rect, z = 1.0500000
suf02-060_snspec_cl.fits Observed - Galaxy
Template Spectrum Av = 1.0000000
Galaxy
SN/Gal = 0.623462
Mg II, I
[O II]
Ca II
2.0
1.5
1.0
0.5
0.0
-0.5
5000
6000
7000
8000
9000

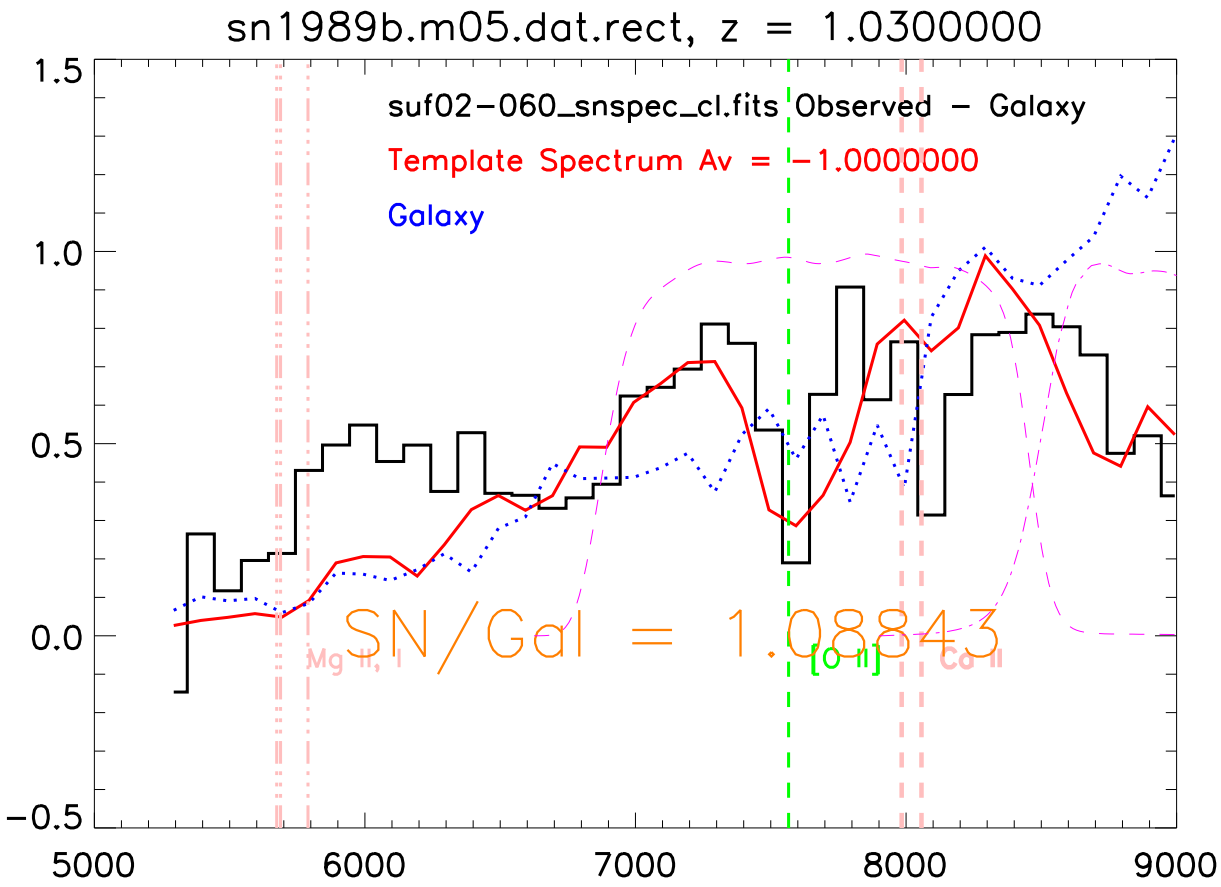

sn1981b.m00.dat.rect, z = 1.0300000
suf02-060_snspec_cl.fits Observed - Galaxy
Template Spectrum Av = -1.0000000
Galaxy
SN/Gal = 0.949144
Mg II, ?
[O II]
Ca II
2.0
1.5
1.0
0.5
0.0
-0.5
5000
6000
7000
8000
9000

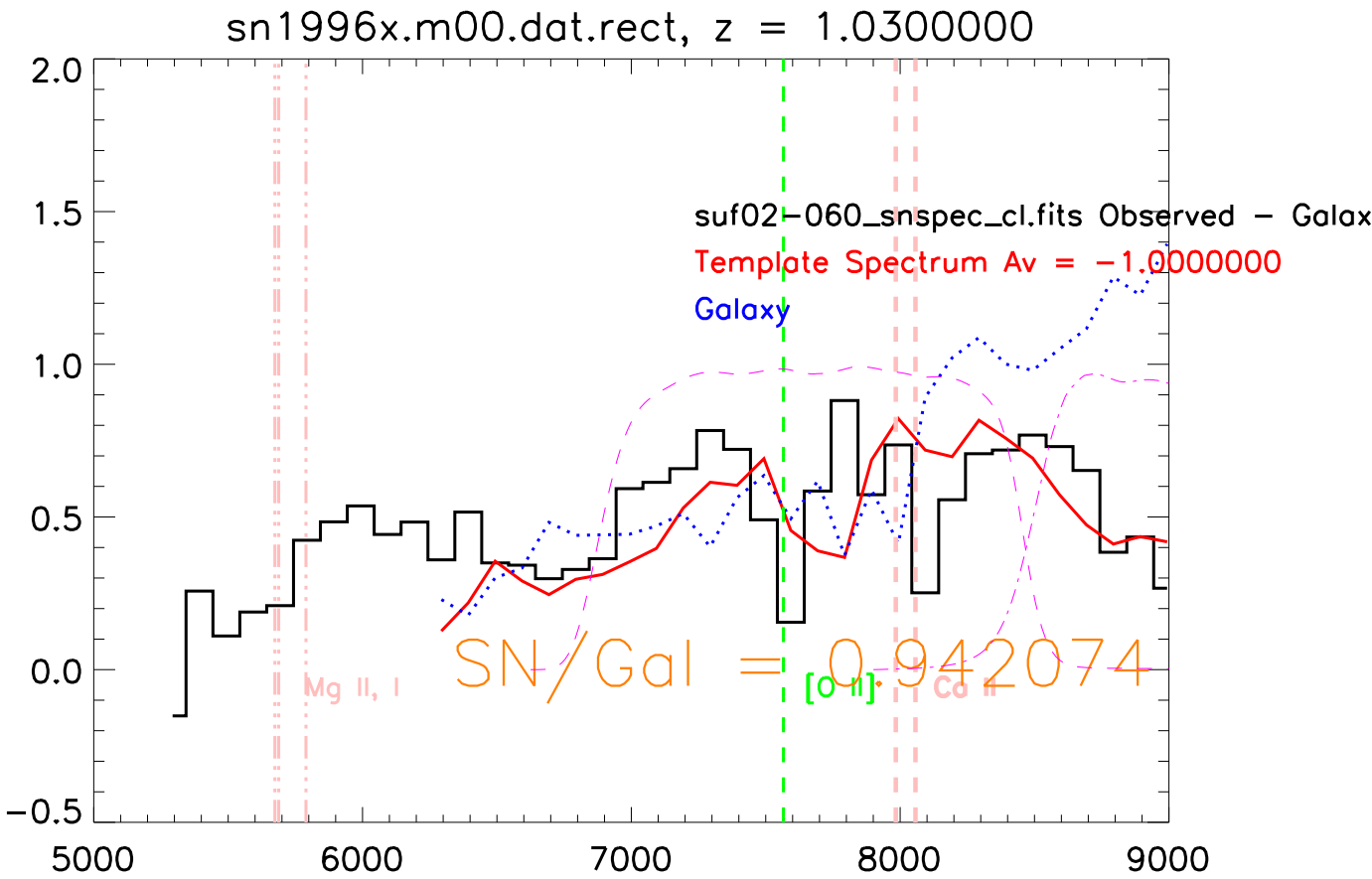

sn1991t.m03.dat.rect, z = 1.0300000
suf02-060_snspec_cl.fits Observed – Gal
Template Spectrum Av = -0.12372449
Galaxy
SN/Gal = 0.852224
Mg II, I
[O II]
Ca II
2.0
1.5
1.0
0.5
0.0
-0.5
5000
6000
7000
8000
9000

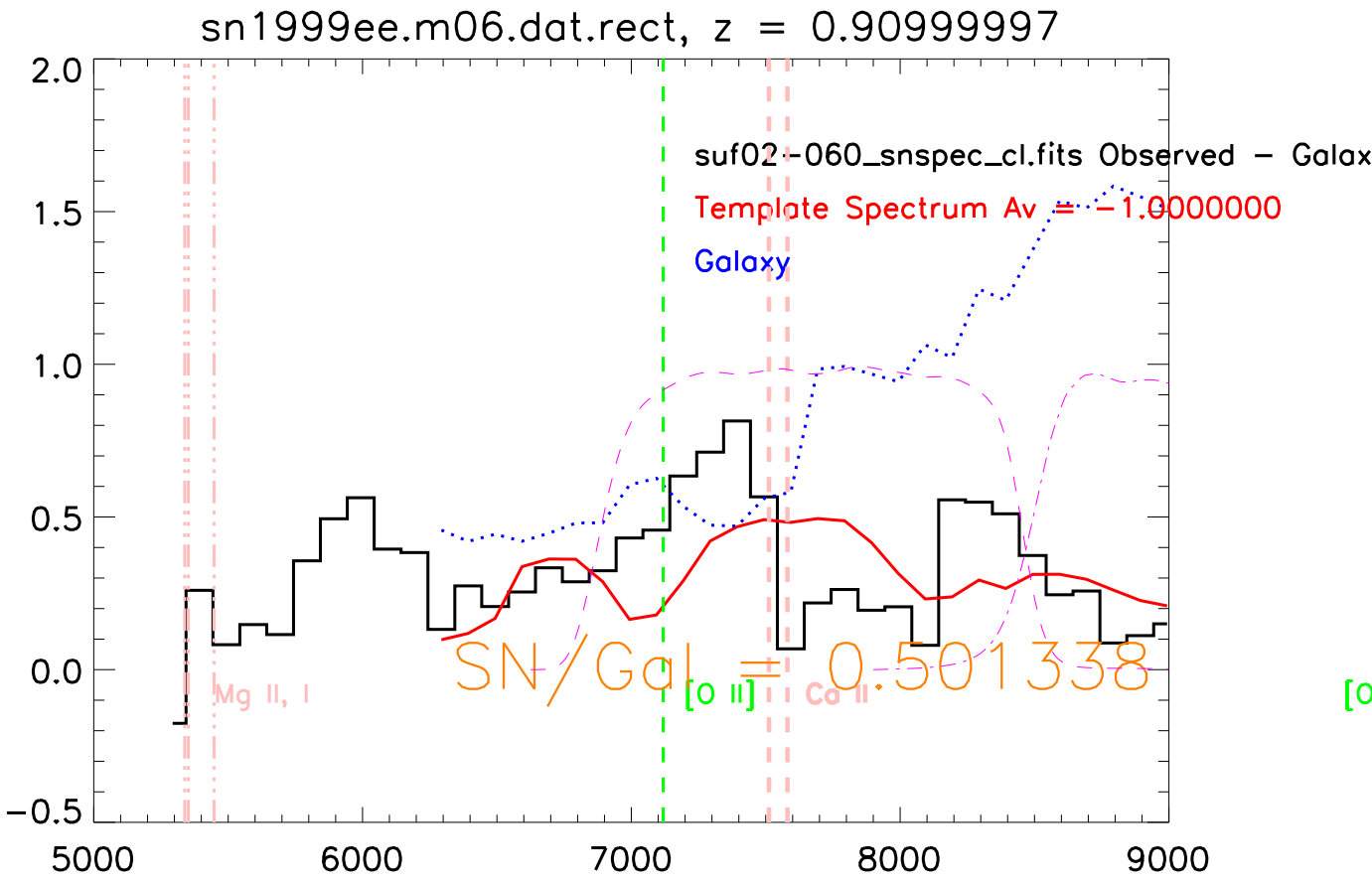

sn1989b.m07.dat.rect, z = 1.0500000
suf02-060_snspec_cl.fits Observed - Galaxy
Template Spectrum Av = -1.0000000
Galaxy
SN/Gal = 0.665263
Mg II, I
[O II]
Ca II
2.0
1.5
1.0
0.5
0.0
-0.5
5000
6000
7000
8000
9000

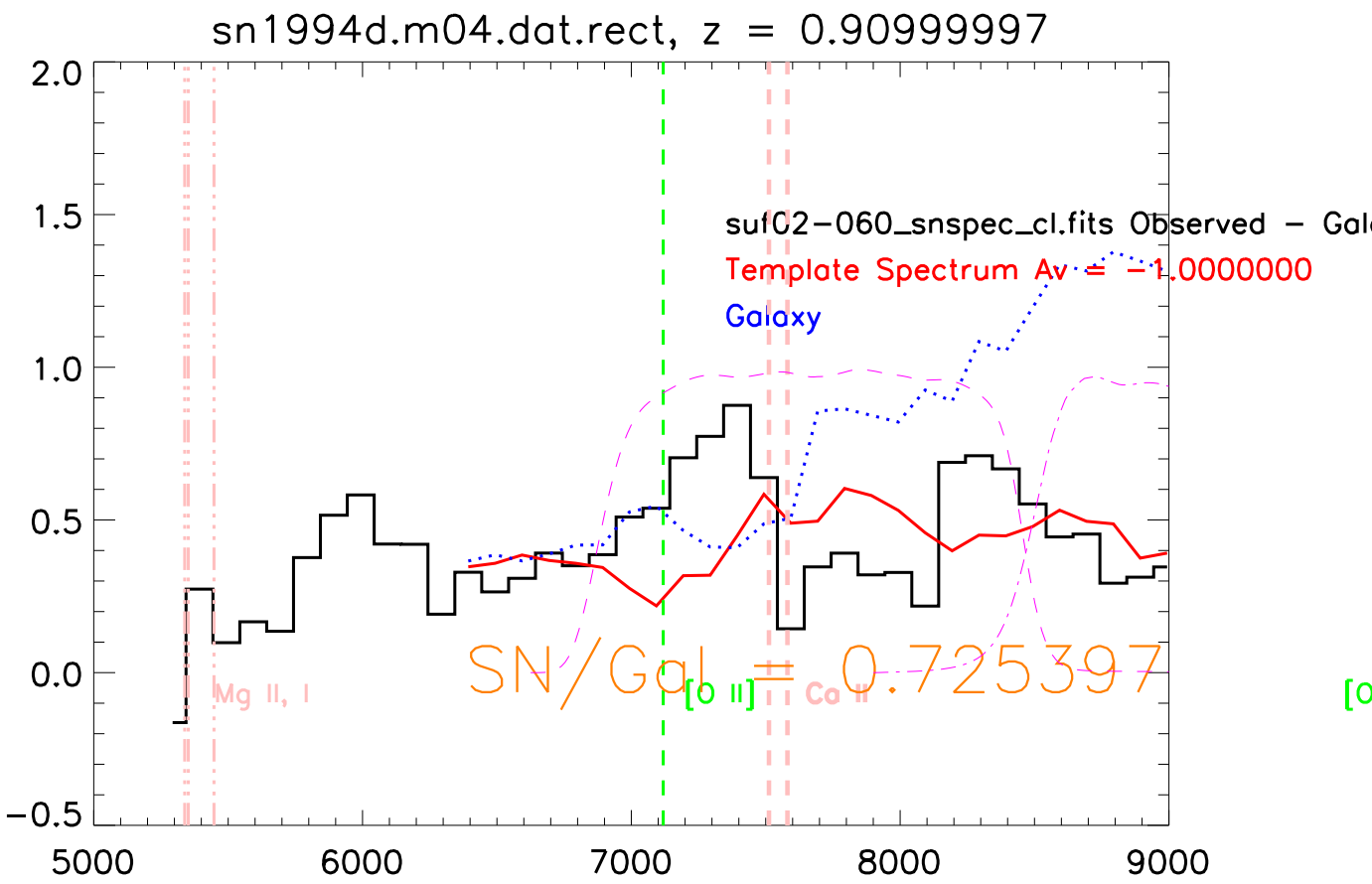

sn1991t.m07.dat.rect, z = 0.90999997
suf02-060_snspec_cl.fits Observed – Galax
Template Spectrum Av = 1.0000000
Galaxy
SN/Gal = 0.661631
Mg II, I
[O II]
Ca II
2.0
1.5
1.0
0.5
0.0
−0.5
5000
6000
7000
8000
9000

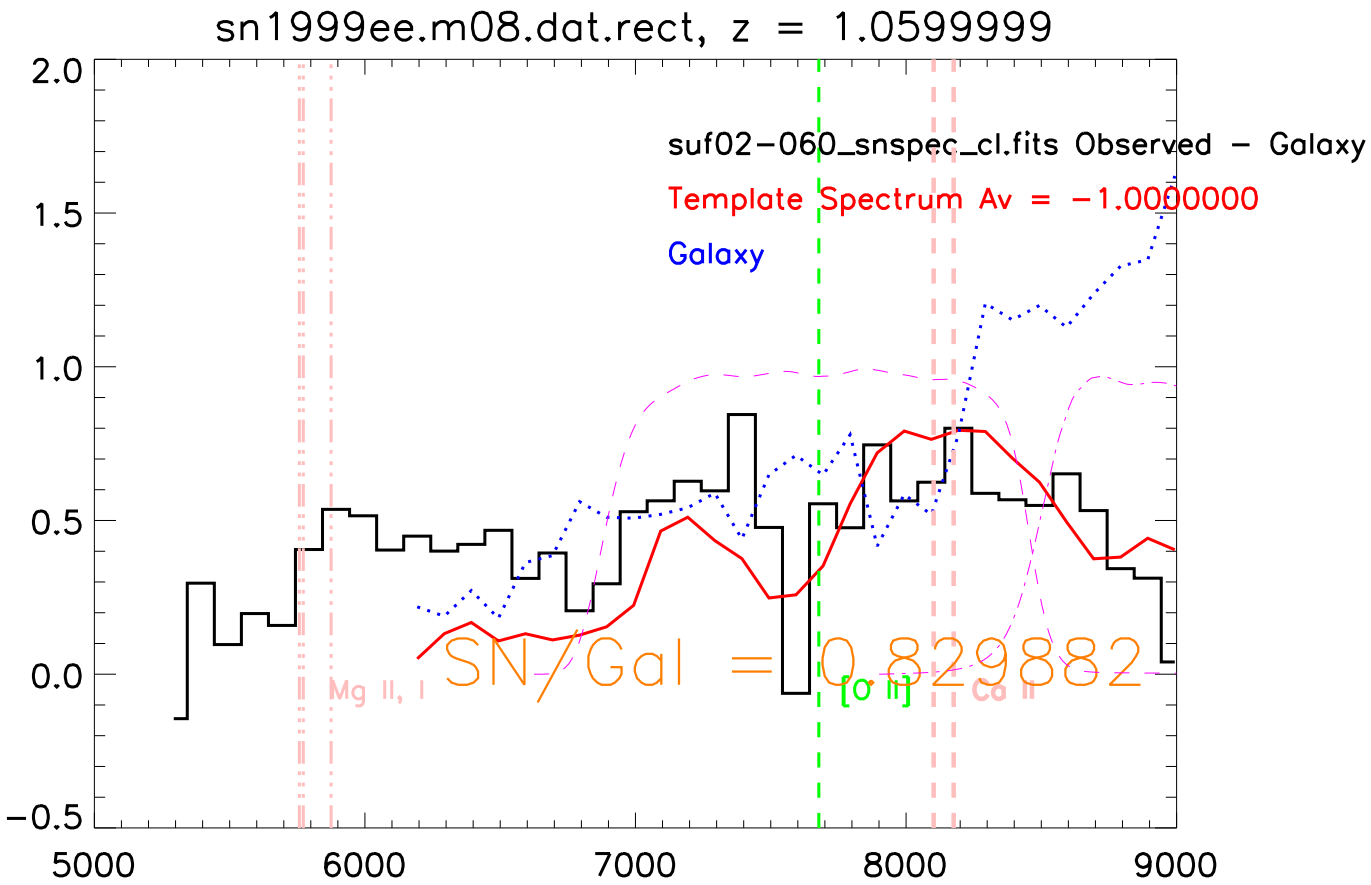

sn1990n.m14.dat.rect, z = 1.0599999
suf02-060_snspec_cl.fits Observed - Galaxy
Template Spectrum Av = -1.0000000
Galaxy
SN/Gal = 0.784482
[O II]
2.0
1.5
1.0
0.5
0.0
-0.5
5000
6000
7000
8000
9000

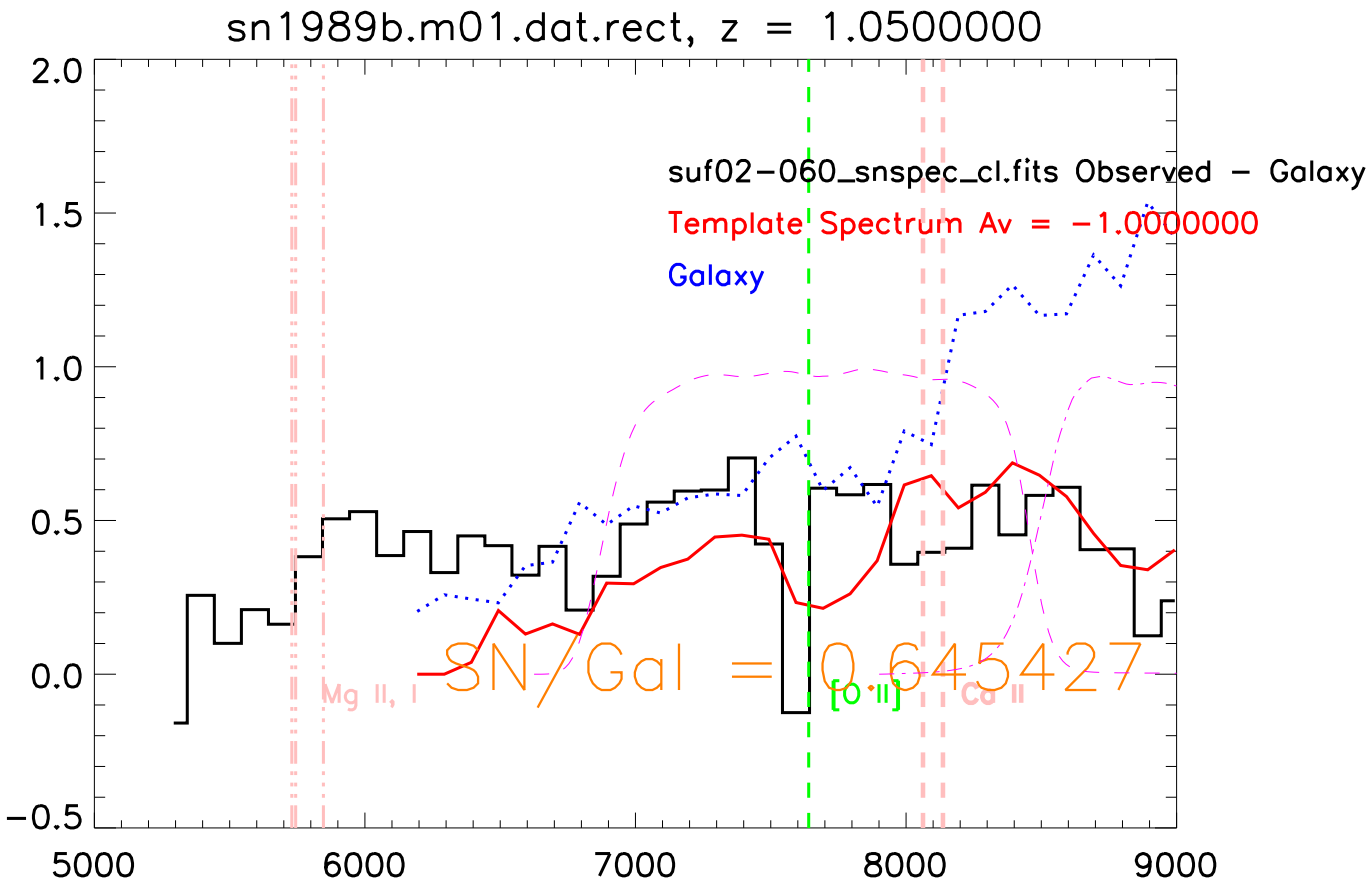

sn1989b.m05.dat.rect, z = 1.0300000
suf02-060_snspec_cl.fits Observed - Galaxy
Template Spectrum Av = -1.0000000
Galaxy
SN/Gal = 1.08843
Mg II, I
[O II]
Ca II
1.5
1.0
0.5
0.0
-0.5
5000
6000
7000
8000
9000


sn1996x.m00.dat.rect, z = 1.0300000
suf02-060_snspec_cl.fits Observed - Galax
Template Spectrum Av = -1.0000000
Galaxy
SN/Gal = 0.942074
Mg II, I
[O II]
Ca II
2.0
1.5
1.0
0.5
0.0
-0.5
5000
6000
7000
8000
9000


sn1999ee.m06.dat.rect, z = 0.90999997
suf02-060_snspec_cl.fits Observed – Galax
Template Spectrum Av = 1.0000000
Galaxy
SN/Gal = 0.501338
Mg II, I
[O II]
Ca II
[O
2.0
1.5
1.0
0.5
0.0
−0.5
5000
6000
7000
8000
9000


sn1994d.m04.dat.rect, z = 0.90999997
2.0
1.5
1.0
0.5
0.0
−0.5
5000
6000
7000
8000
9000
sufC2−060_snspec_cl.fits Observed − Gal
Template Spectrum Av = −1.0000000
Galaxy
SN/Gal = 0.725397
Mg II, I
[O II]
Ca II
[O


sn1999ee.m08.dat.rect, z = 1.0599999
suf02-060_snspec_cl.fits Observed - Galaxy
Template Spectrum Av = -1.0000000
Galaxy
SN/Gal = 0.829882
Mg II, I
[O II]
Ca II
2.0
1.5
1.0
0.5
0.0
-0.5
5000
6000
7000
8000
9000


sn1989b.m01.dat.rect, z = 1.0500000
suf02-060_snspec_cl.fits Observed - Galaxy
Template Spectrum Av = -1.0000000
Galaxy
SN/Gal = 0.645427
Mg II, I
[O II]
Ca II
2.0
1.5
1.0
0.5
0.0
-0.5
5000
6000
7000
8000
9000