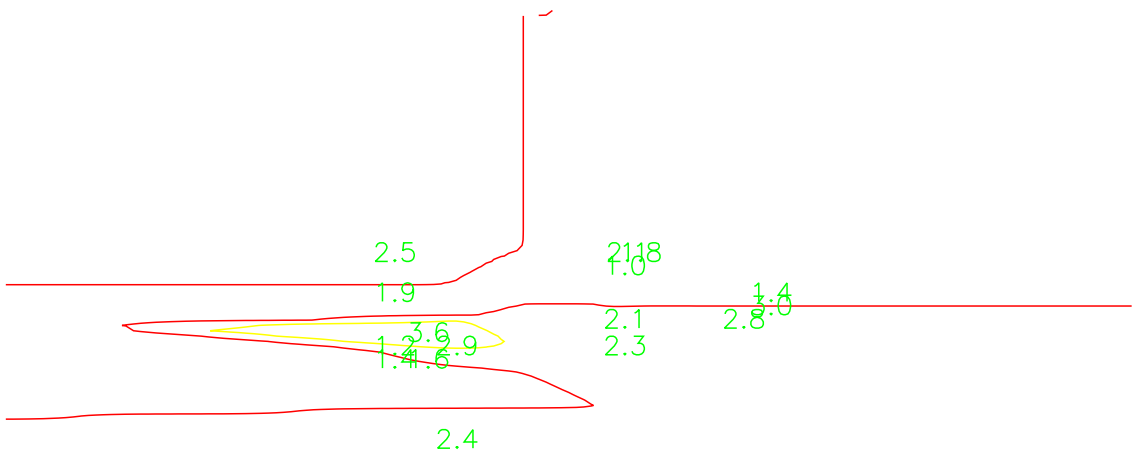
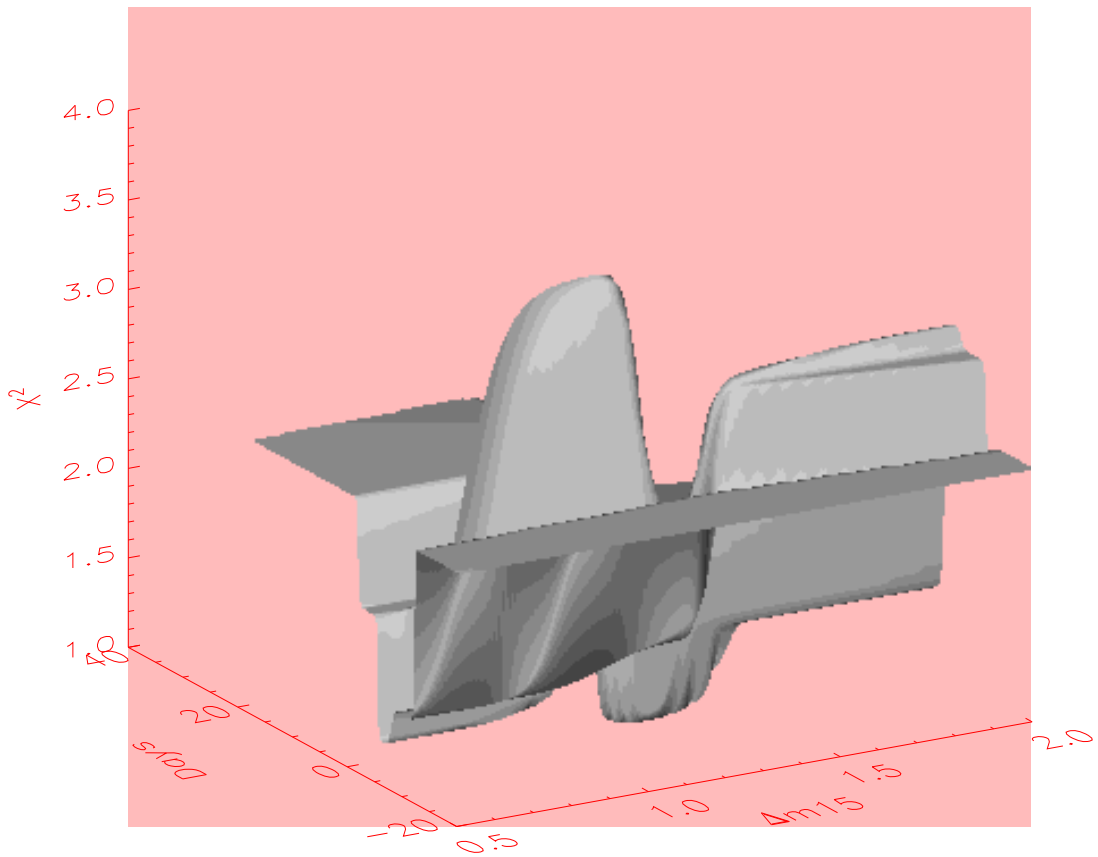
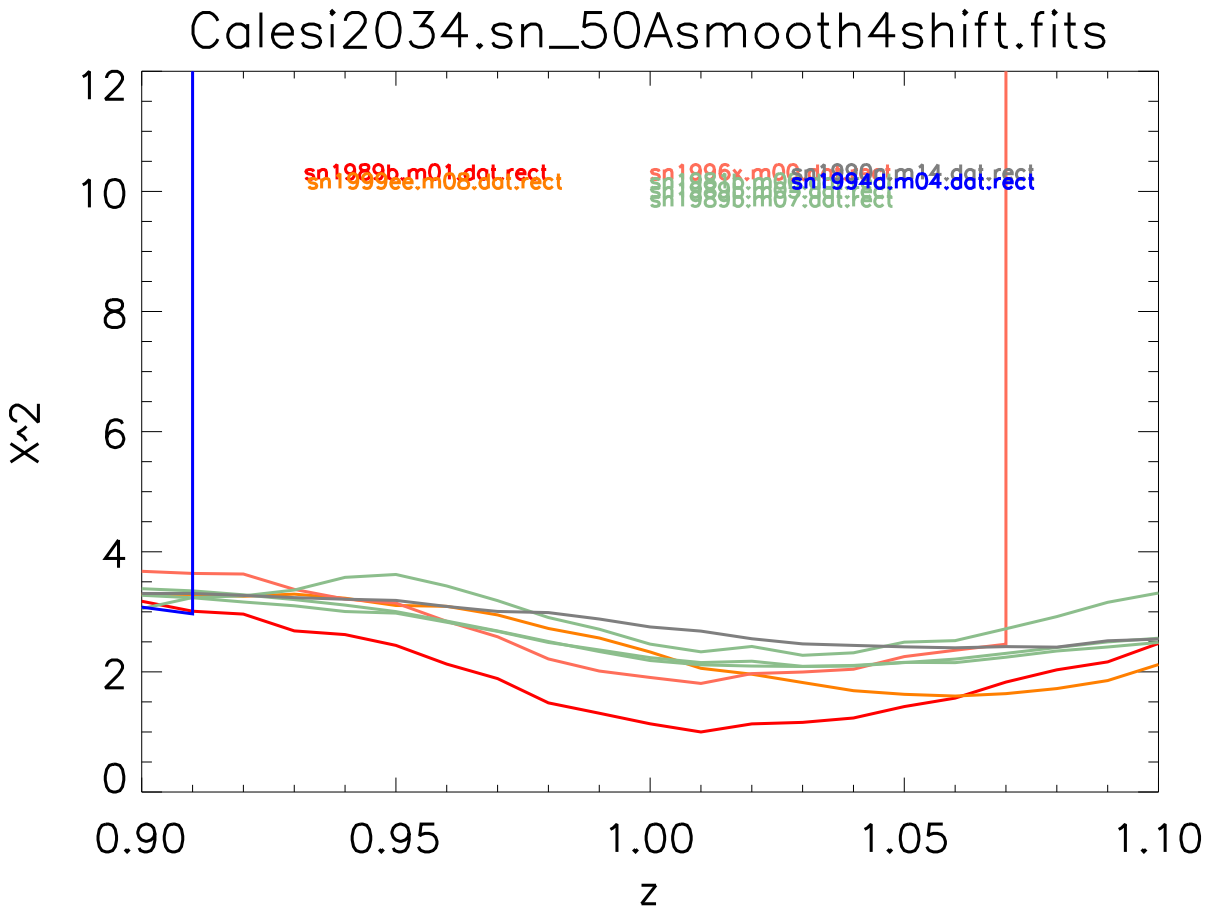
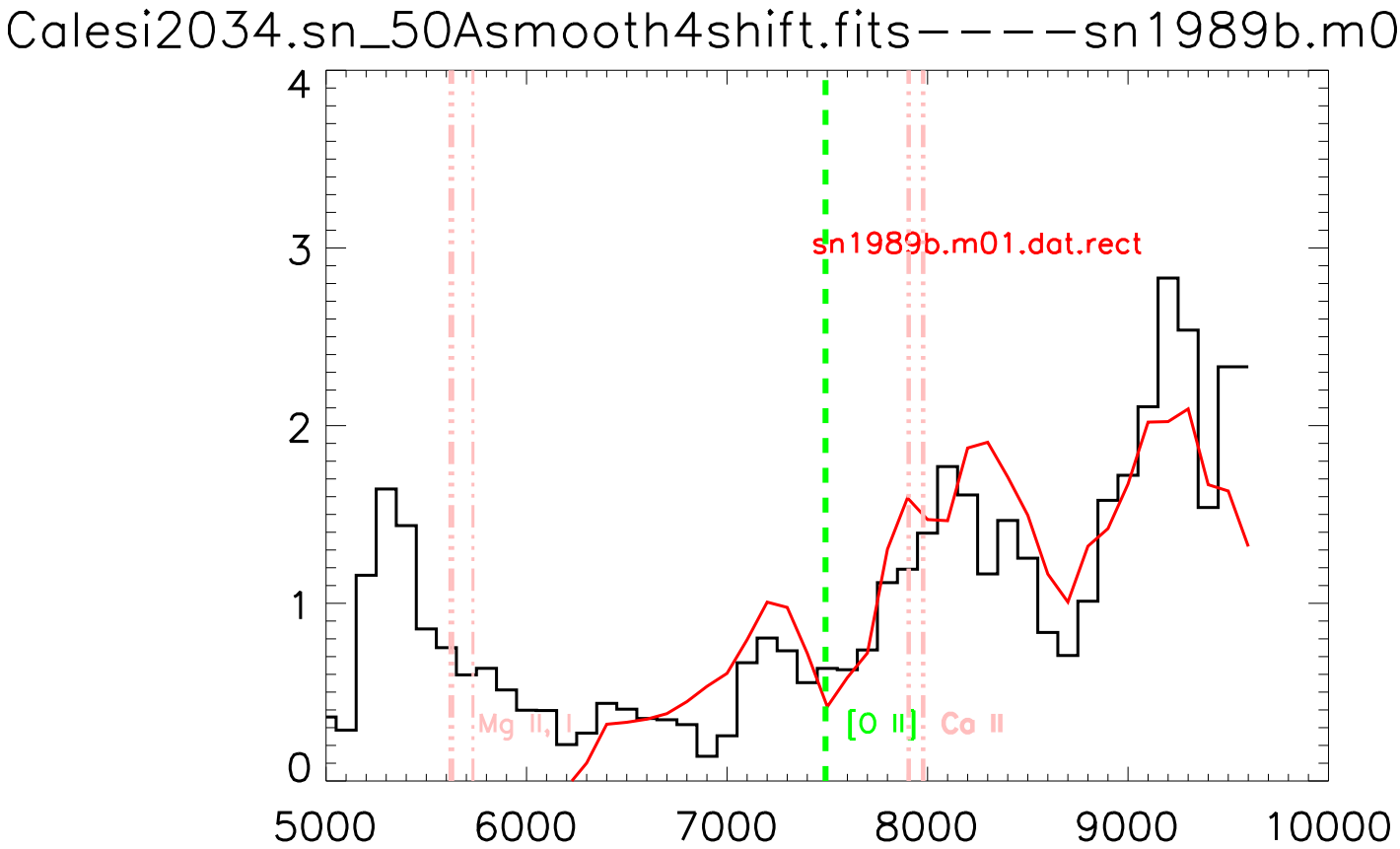
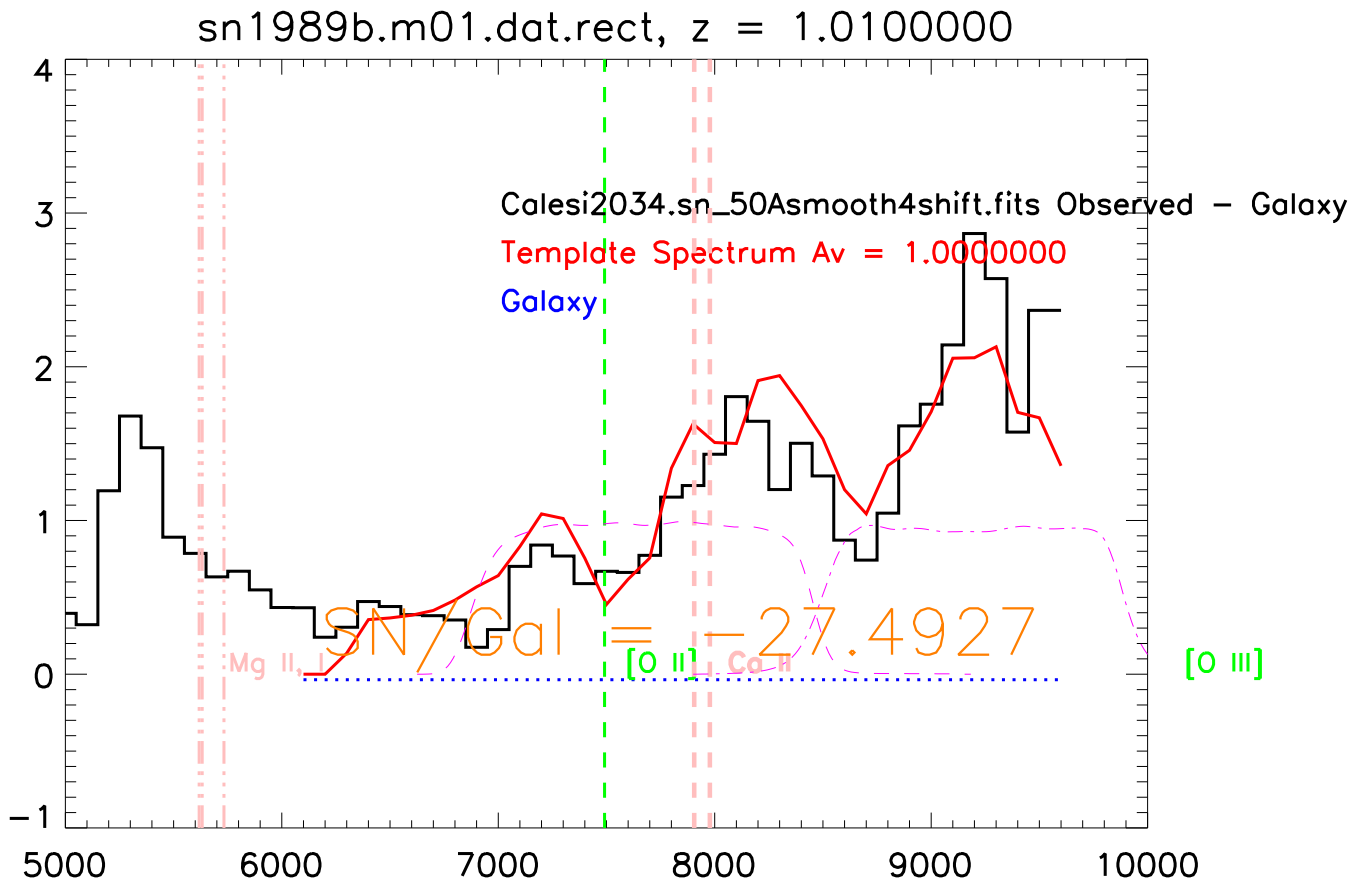

2.5
1.9
2118
1.0
1.4
3.0
2.8
2.1
2.3
3.6
2.9
1.2
1.4
1.6
2.4

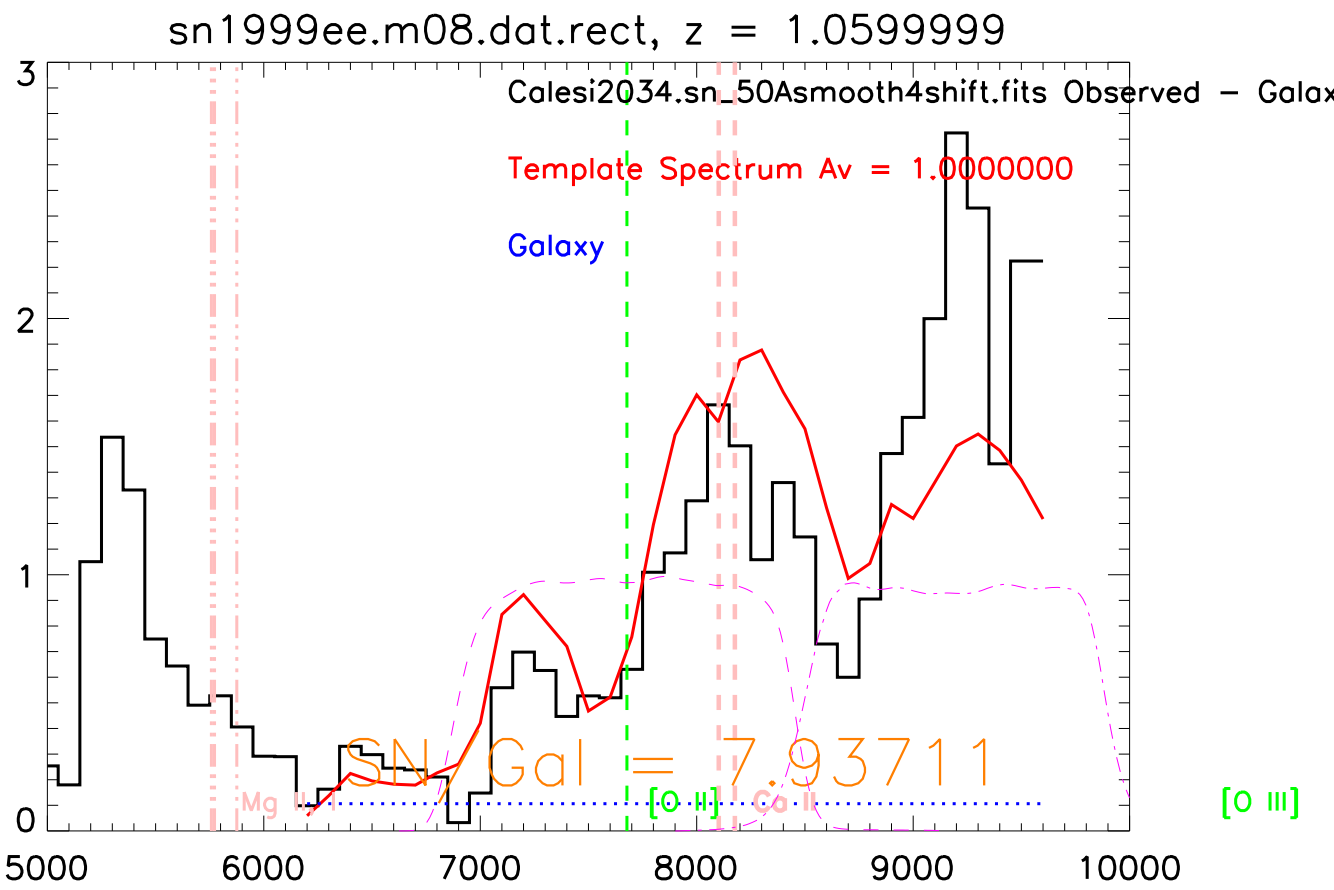


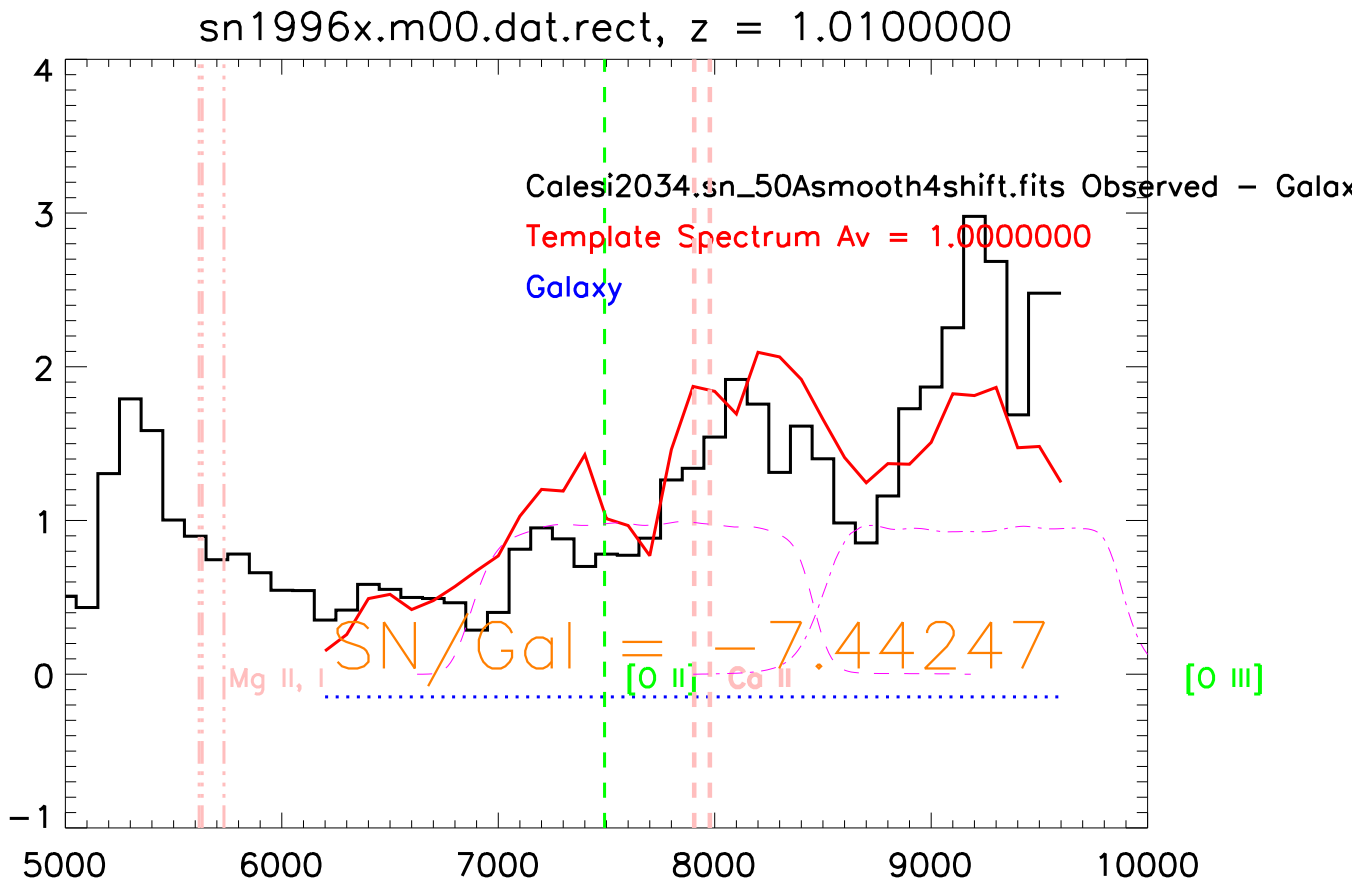
4.0
3.5
3.0
2.5
2.0
1.5
1.0
χ^2
40
20
0
−20
Days
0.5
1.0
1.5
2.0
Δm15

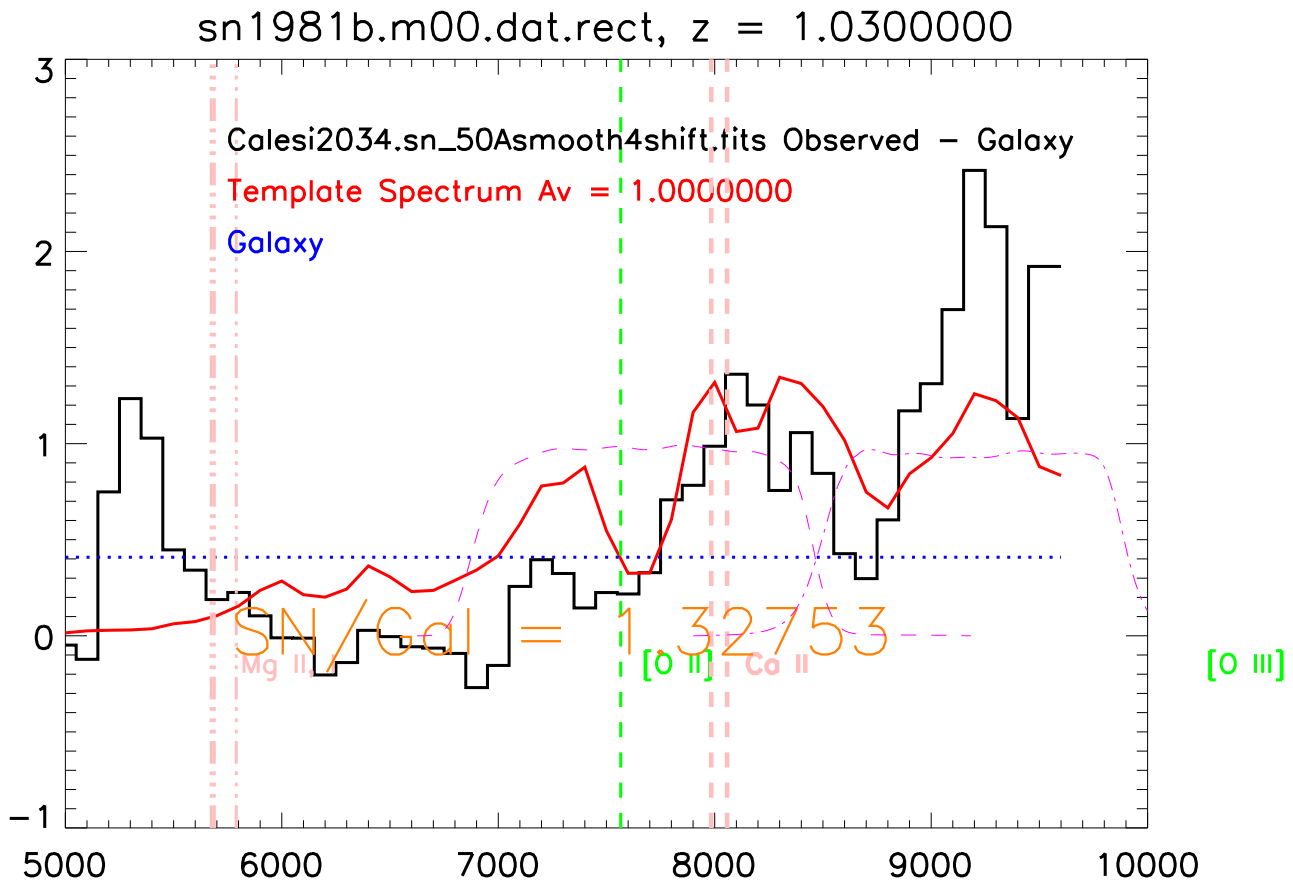

Calesi2034.sn_50Asmooth4shift.fits
sn1989b.m01.dat.rect
sn1994d.m04.dat.rect
X^2
z
0
2
4
6
8
10
12
0.90
0.95
1.00
1.05
1.10

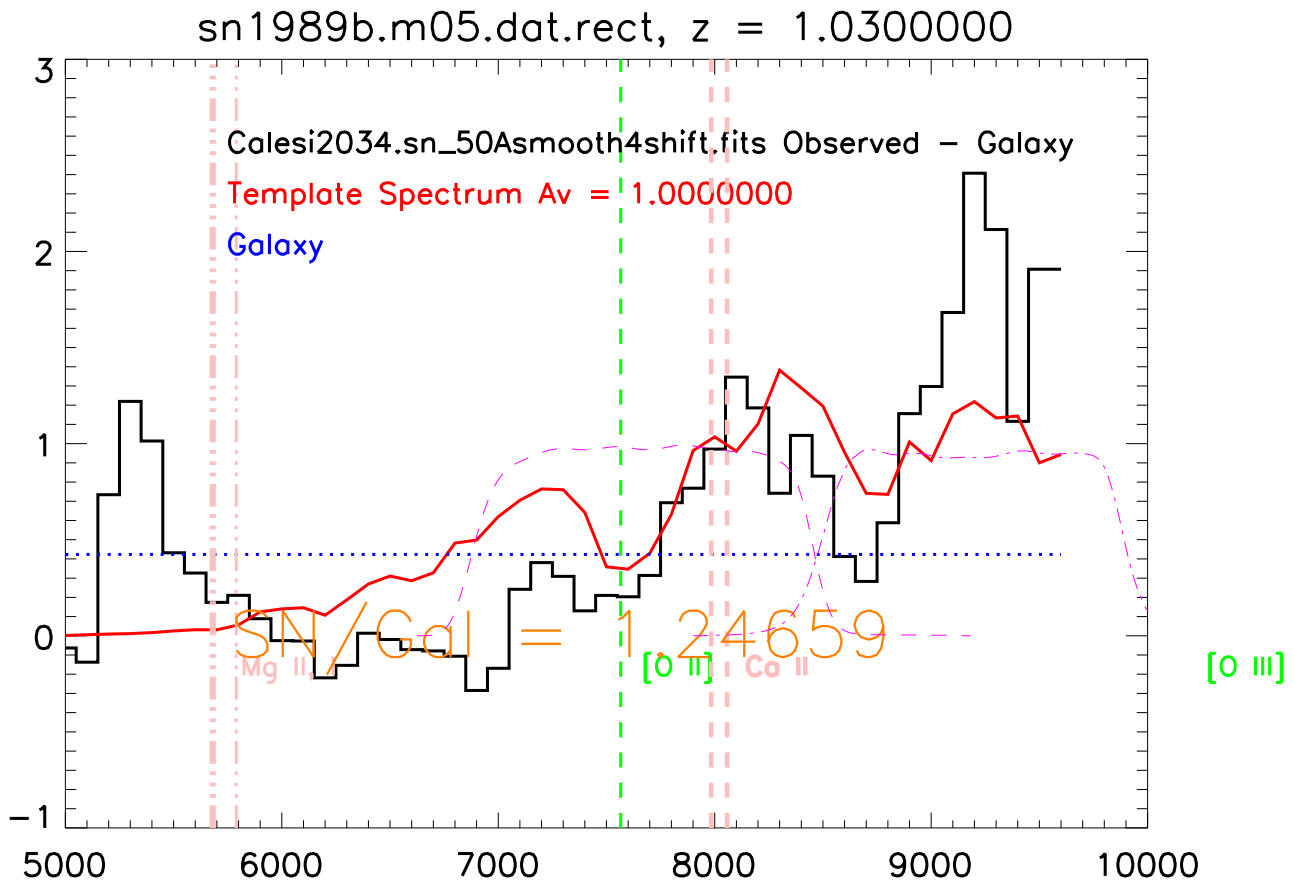

Calesi2034.sn_50Asmooth4shift.fits----sn1989b.m01.dat.
sn1989b.m01.dat.rect
Mg II, I
[O II]
Ca II
0
1
2
3
4
5000
6000
7000
8000
9000
10000

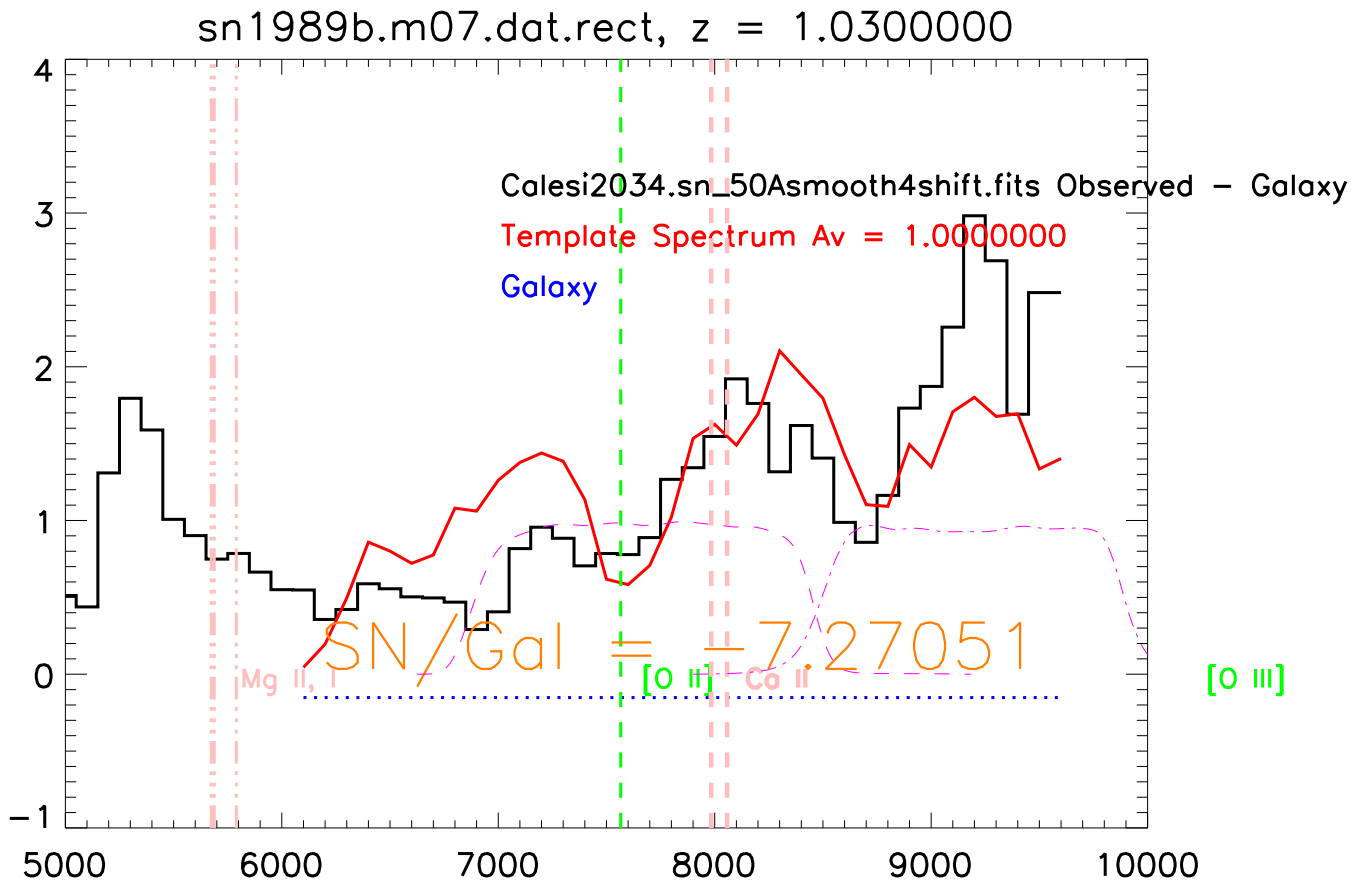

sn1989b.m01.dat.rect, z = 1.0100000
Calesi2034.sn_50Asmooth4shift.fits Observed − Galaxy
Template Spectrum Av = 1.0000000
Galaxy
SN/Gal = −27.4927
Mg II
[O II]
Ca II
[O III]
4
3
2
1
0
−1
5000
6000
7000
8000
9000
10000

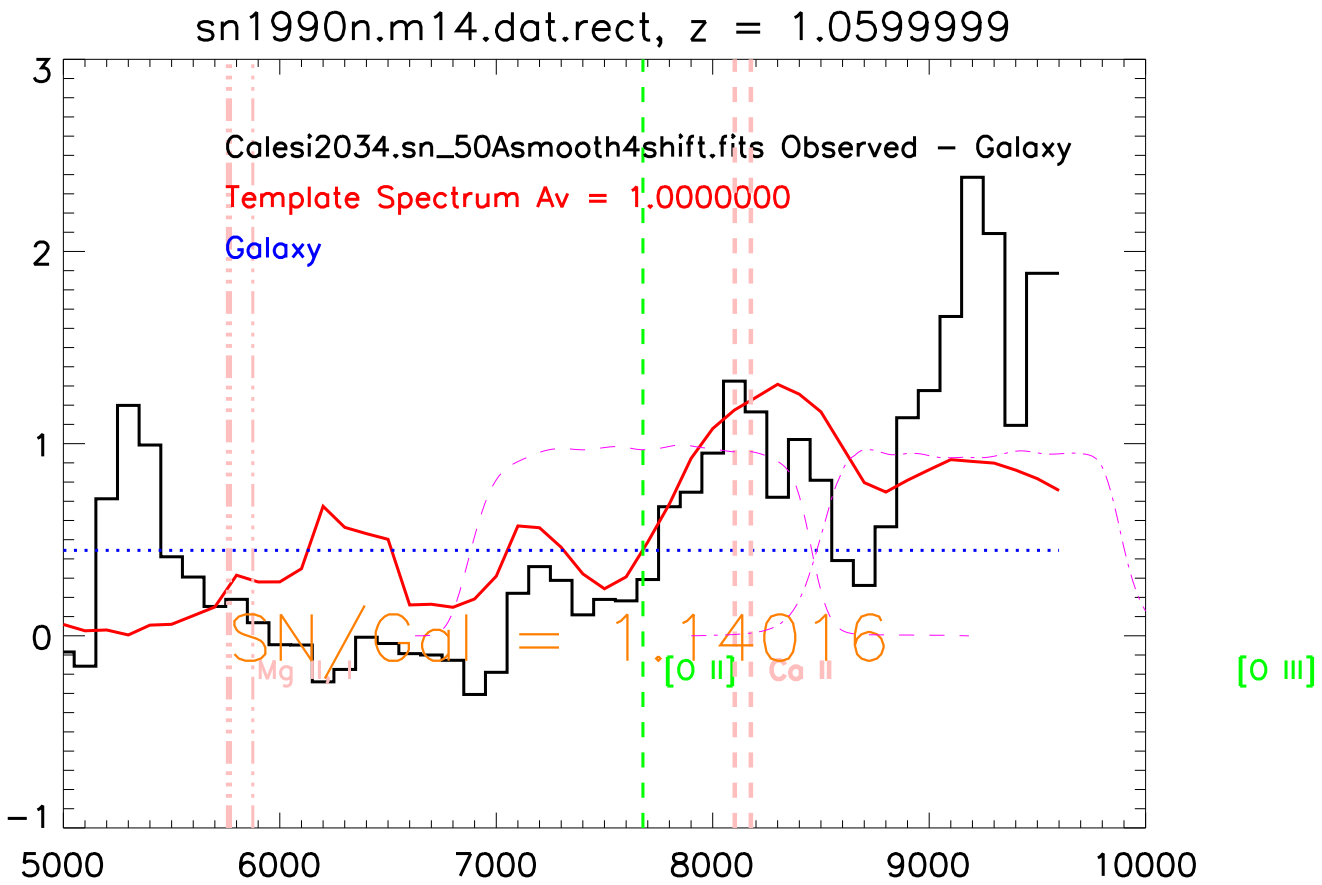

sn1999ee.m08.dat.rect, z = 1.0599999
Calesi2034.sn_50Asmooth4shift.fits Observed – Galax
Template Spectrum Av = 1.0000000
Galaxy
SN / Gal = 7.93711
Mg II
[O II]
Ca
[O III]
0
1
2
3
5000
6000
7000
8000
9000
10000

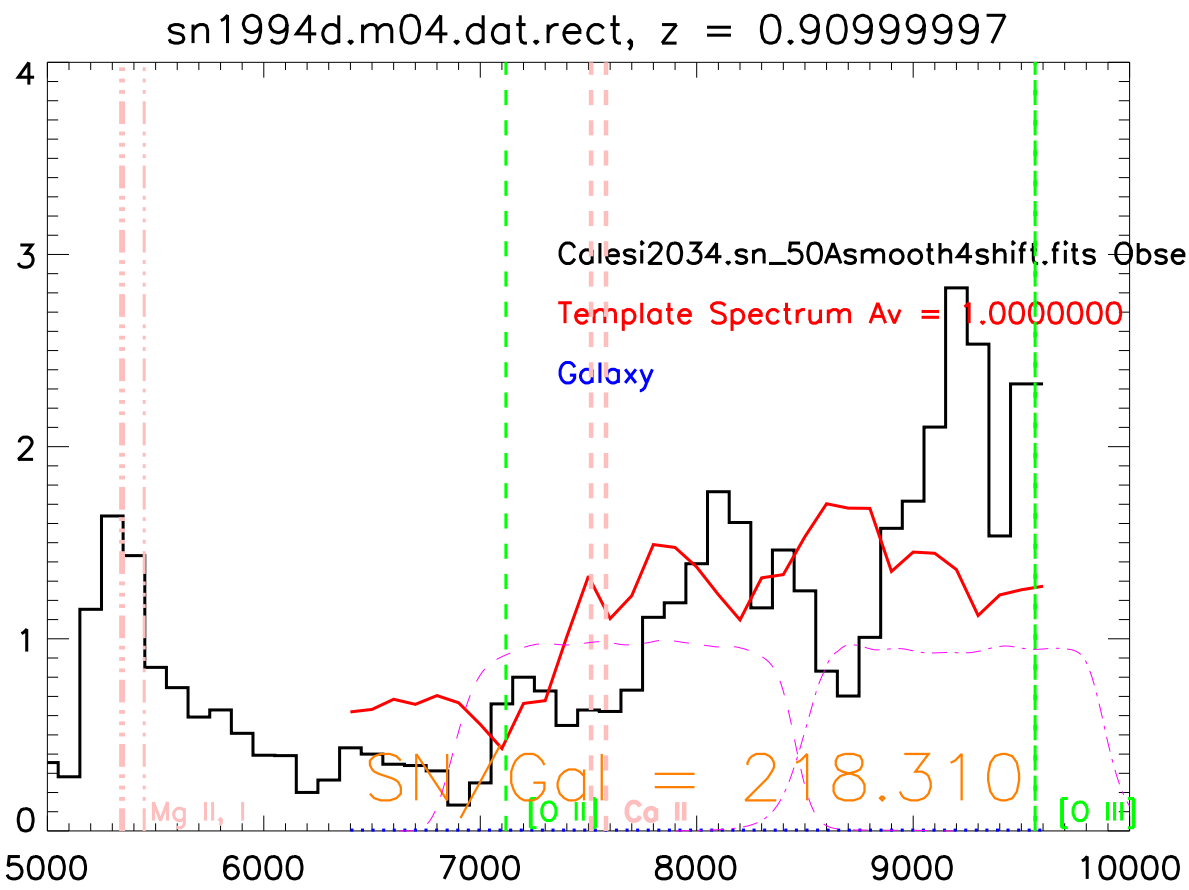

sn1996x.m00.dat.rect, z = 1.0100000
Calesi2034.sn_50Asmooth4shift.fits Observed – Galax
Template Spectrum Av = 1.0000000
Galaxy
SN/Gal = −7.44247
Mg II, I
[O II]
Ca II
[O III]
4
3
2
1
0
−1
5000
6000
7000
8000
9000
10000


sn1981b.m00.dat.rect, z = 1.0300000
Calesi2034.sn_50Asmooth4shift.fits Observed − Galaxy
Template Spectrum Av = 1.0000000
Galaxy
SN/Gal = 1.32753
Mg II
[O II]
Ca II
[O III]
3
2
1
0
−1
5000
6000
7000
8000
9000
10000


sn1989b.m05.dat.rect, z = 1.0300000
Calesi2034.sn_50Asmooth4shift.fits Observed – Galaxy
Template Spectrum Av = 1.0000000
Galaxy
SN/Gal = 1.24659
Mg II
[O II]
Ca II
[O III]
3
2
1
0
−1
5000
6000
7000
8000
9000
10000


sn1989b.m07.dat.rect, z = 1.0300000
Calesi2034.sn_50Asmooth4shift.fits Observed – Galaxy
Template Spectrum Av = 1.0000000
Galaxy
SN/Gal = 7.27051
Mg II, f
[O II]
Ca II
[O III]
4
3
2
1
0
−1
5000
6000
7000
8000
9000
10000


sn1990n.m14.dat.rect, z = 1.0599999
Calesi2034.sn_50Asmooth4shift.fits Observed − Galaxy
Template Spectrum Av = 1.0000000
Galaxy
SN/Gal = 1.14016
Mg II
[O II]
Ca II
[O III]
3
2
1
0
−1
5000
6000
7000
8000
9000
10000


sn1994d.m04.dat.rect, z = 0.90999997
Colesi2034.sn_50Asmooth4shift.fits Observed – Ga
Template Spectrum Av = 1.0000000
Galaxy
SN / Gal = 218.310
Mg II, I
[O II]
Ca II
[O III]
0
1
2
3
4
5000
6000
7000
8000
9000
10000