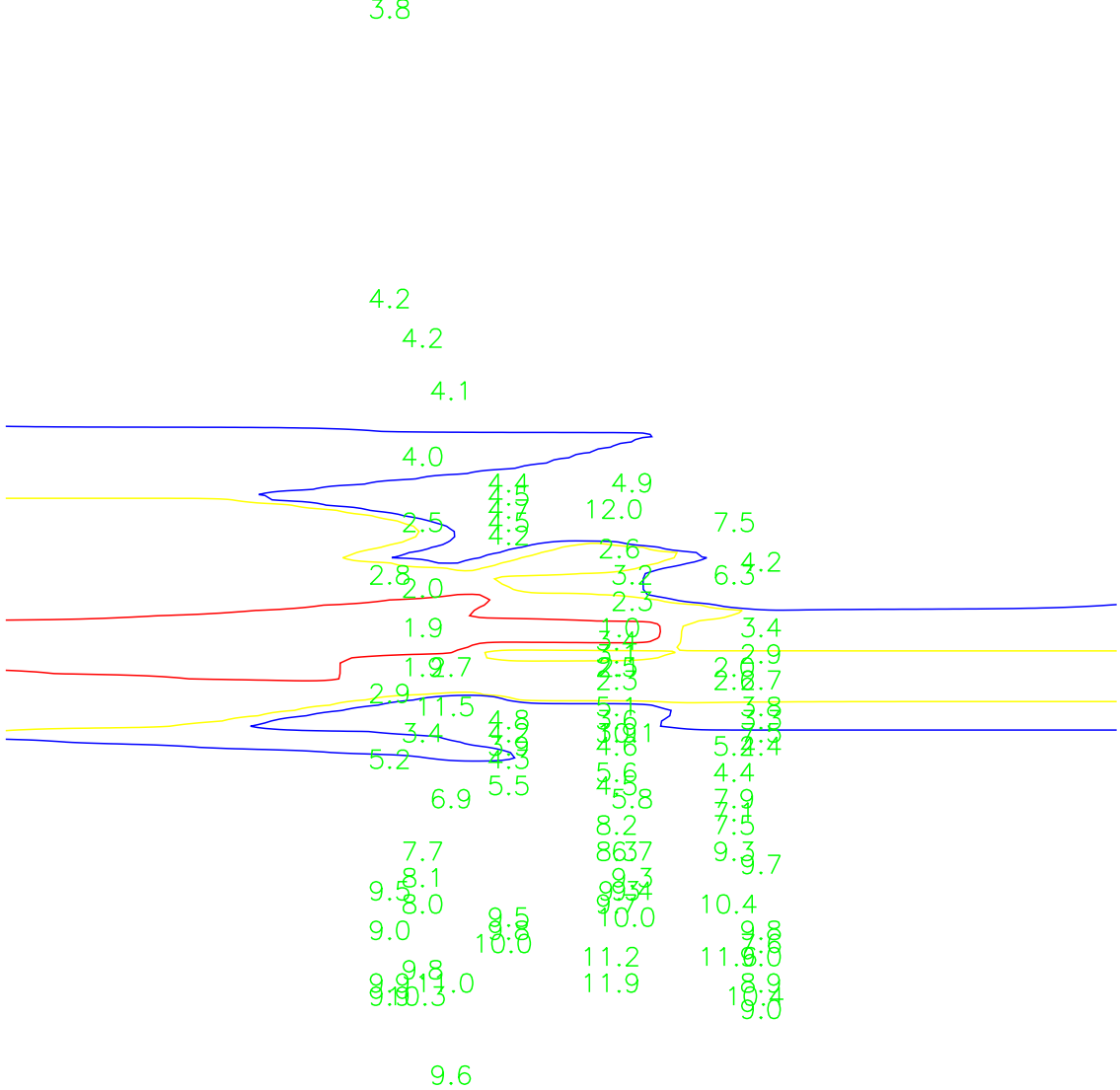

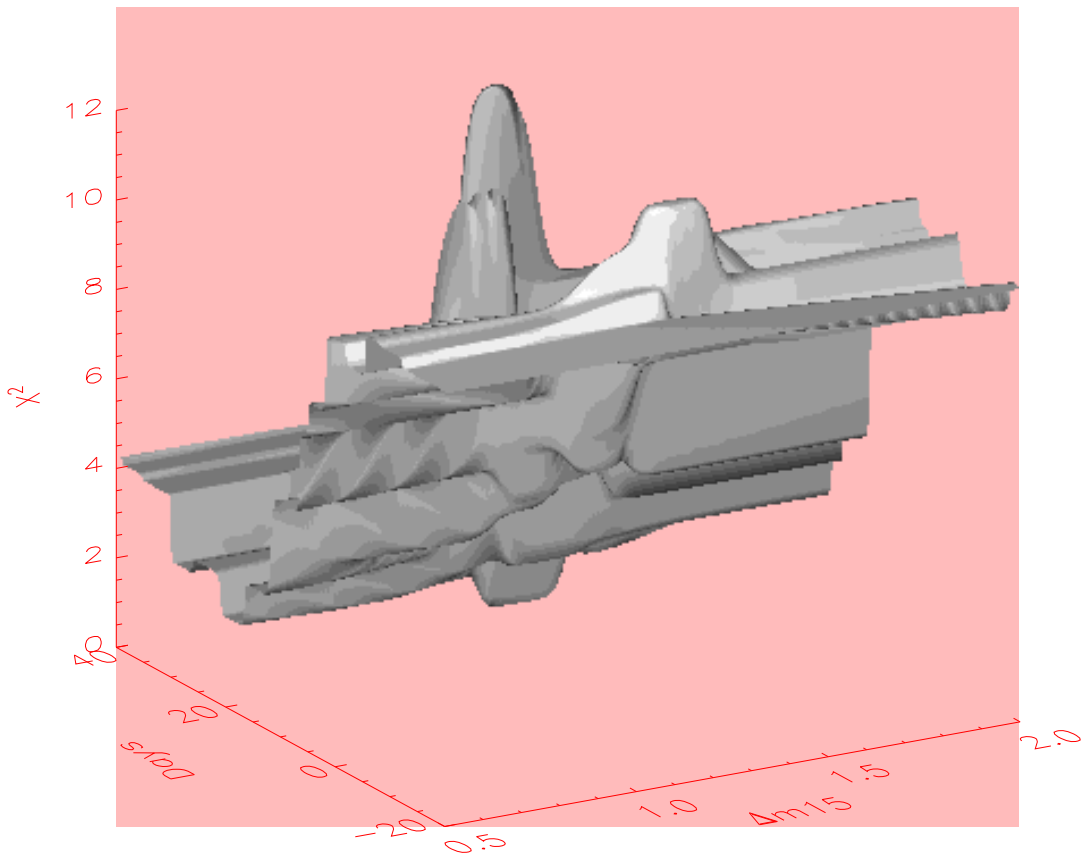

12
10
8
6
4
2
0
χ^2
40
20
0
−20
Days
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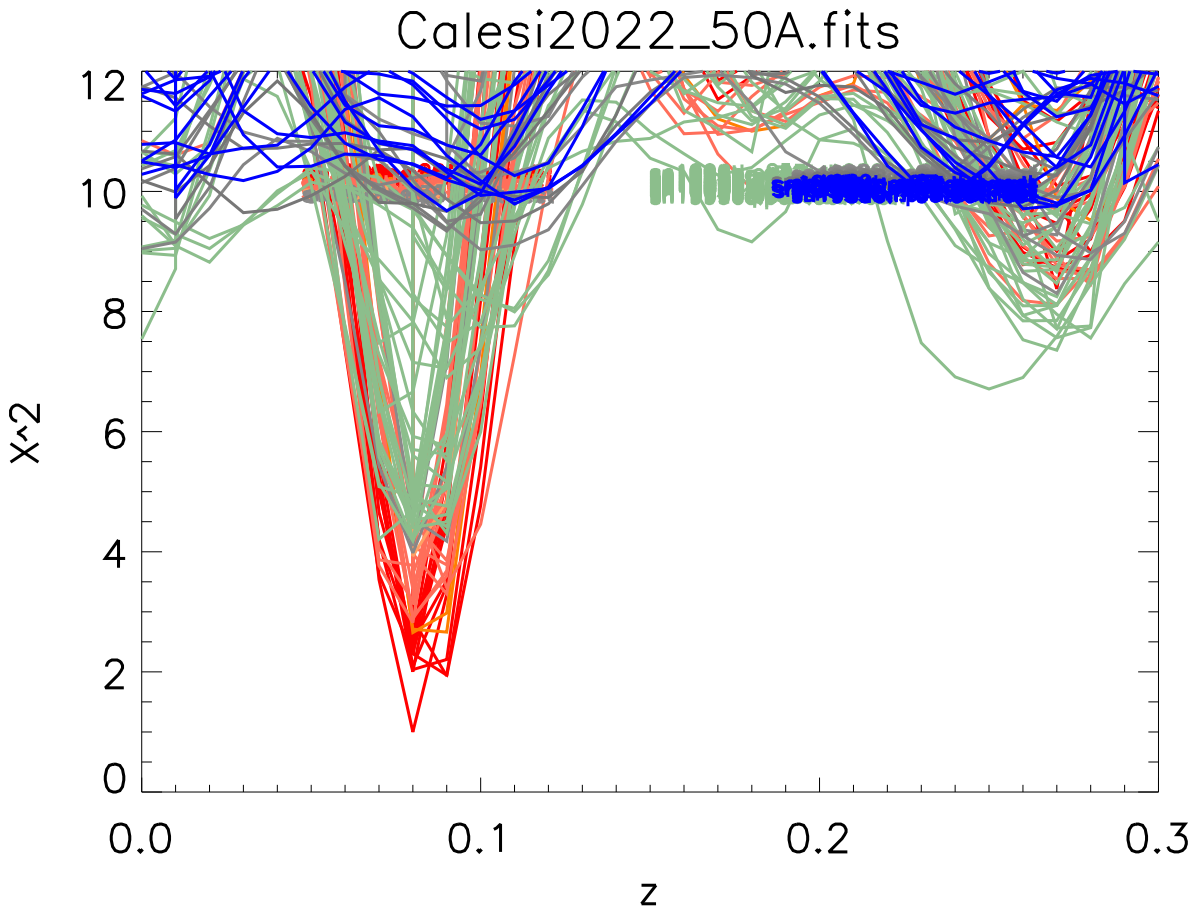
1.5
2.0
Δm15


Calesi2022_50A.fits
12
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8
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4
2
0
X^2
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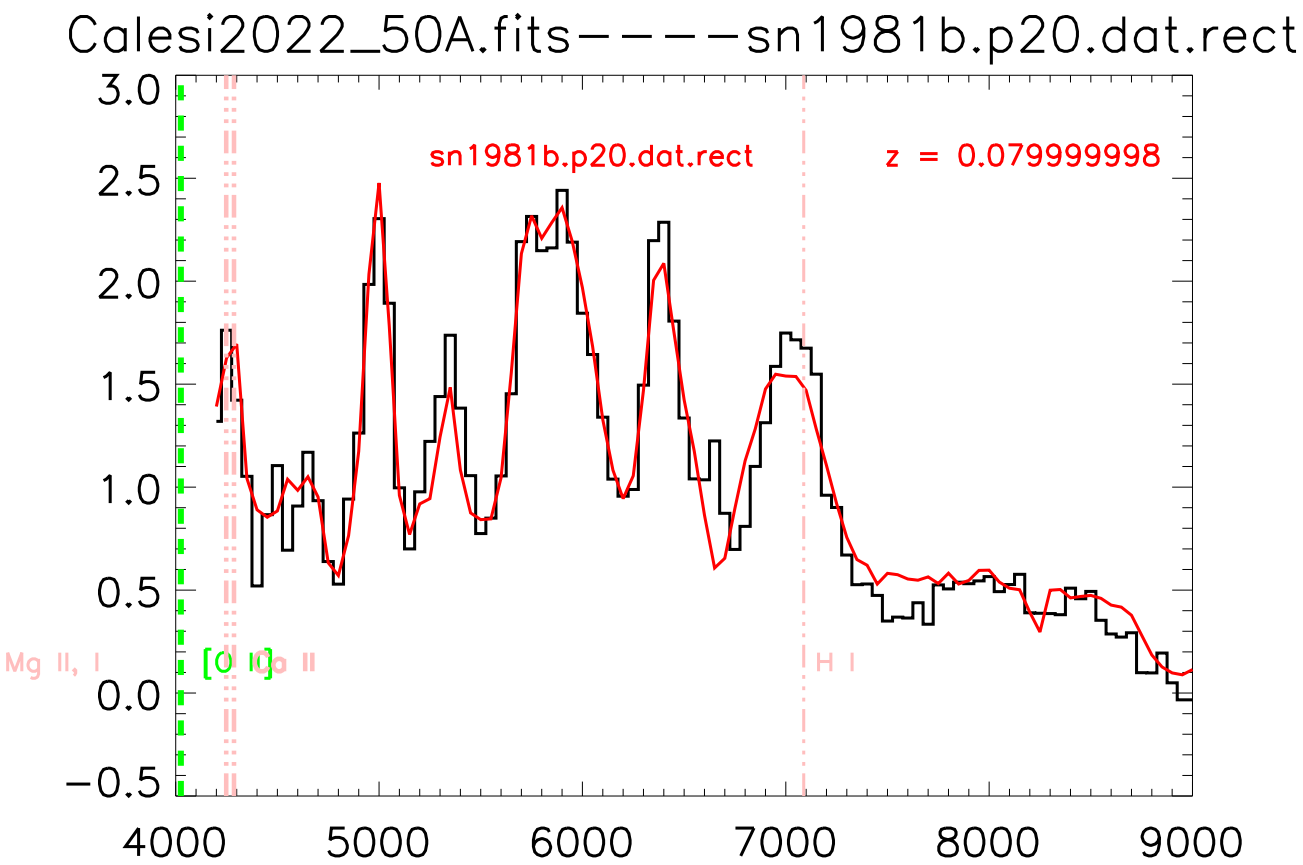
0.1
0.2
0.3
z


Calesi2022_50A.fits----sn1981b.p20.dat.rect
sn1981b.p20.dat.rect
z = 0.079999998
Mg II, I
[O II]
Ca II
H I
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1.5
1.0
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8000
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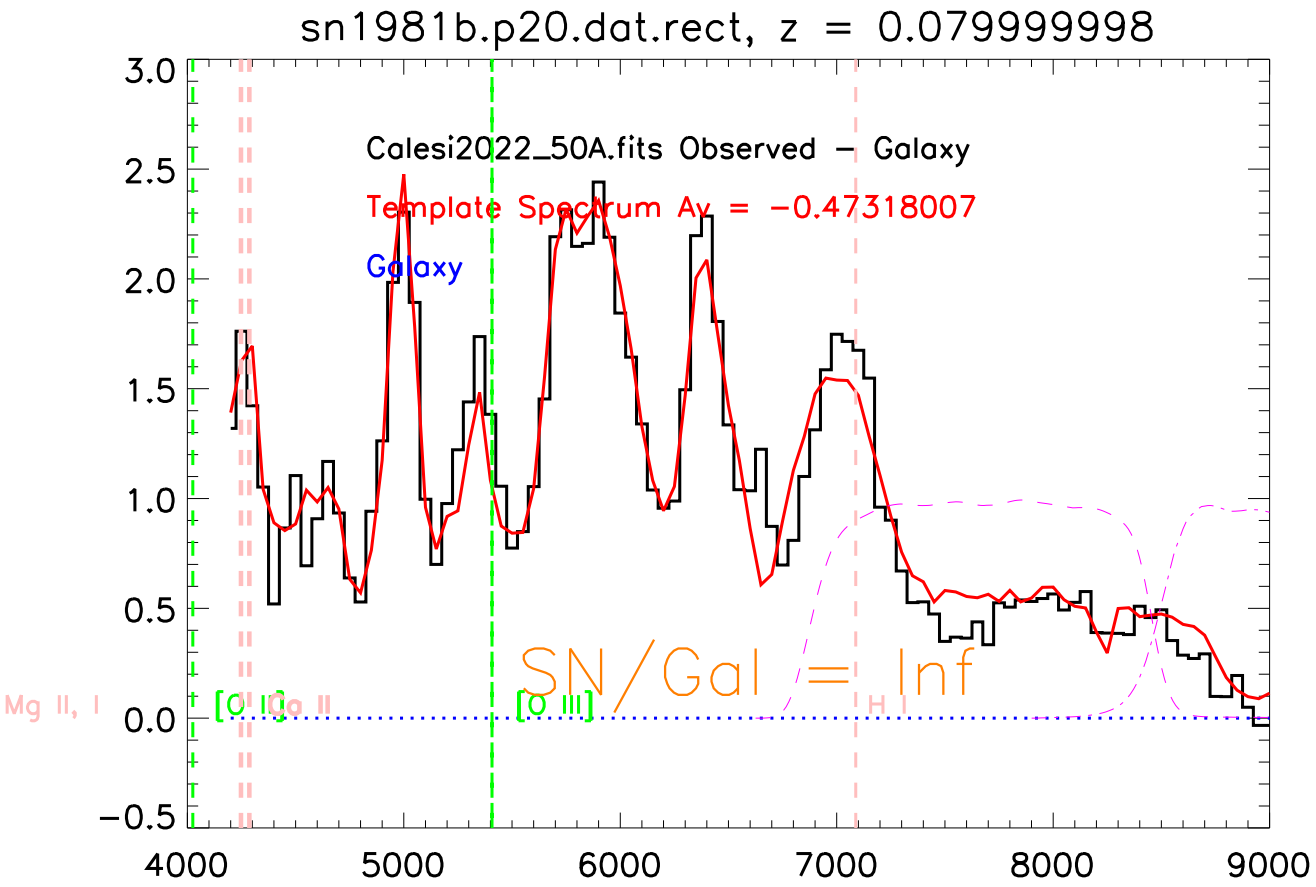
sn1981b.p20.dat.rect, z = 0.079999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −0.47318007
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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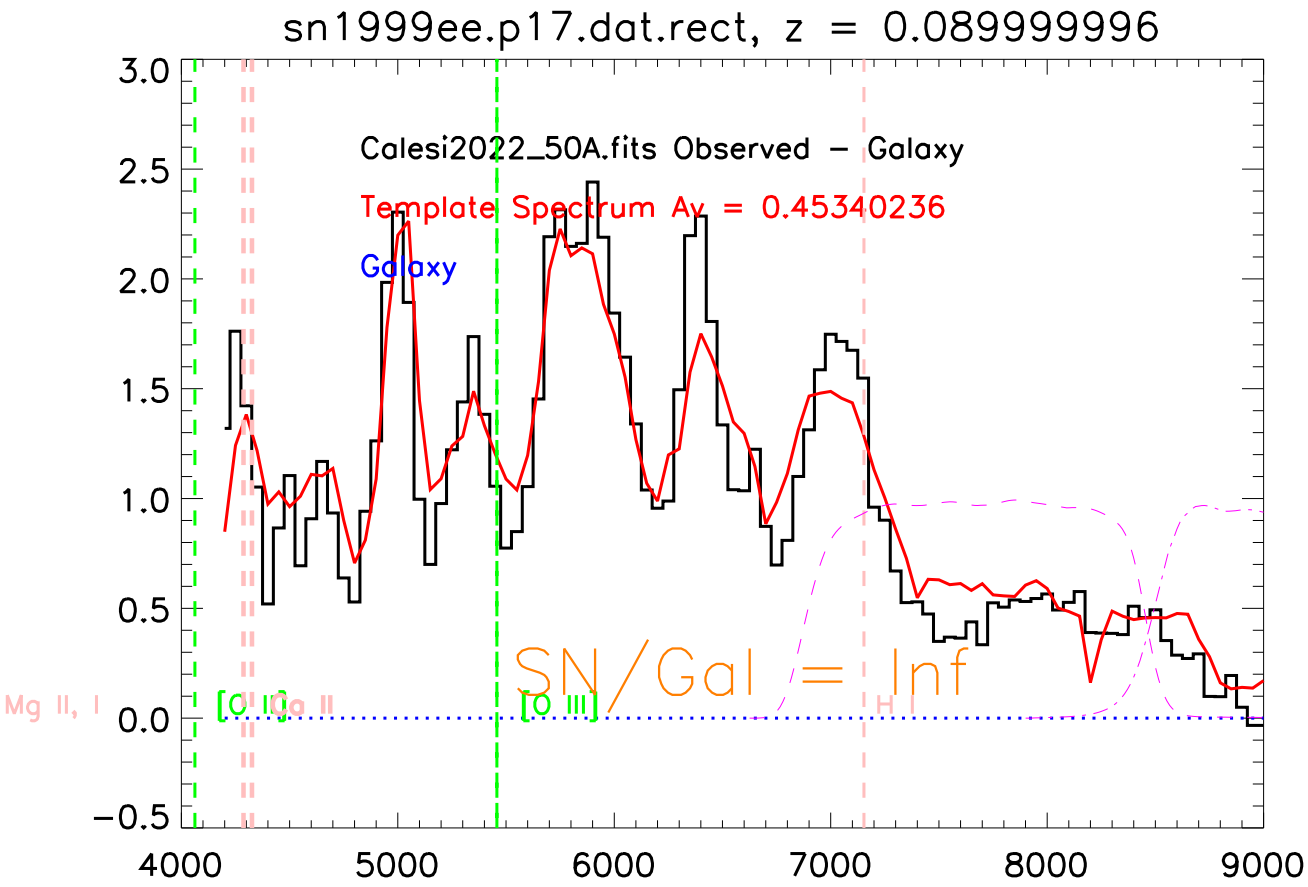
sn1999ee.p17.dat.rect, z = 0.089999996
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 0.45340236
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SN/Gal = Inf
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Ca II
[O III]
H I
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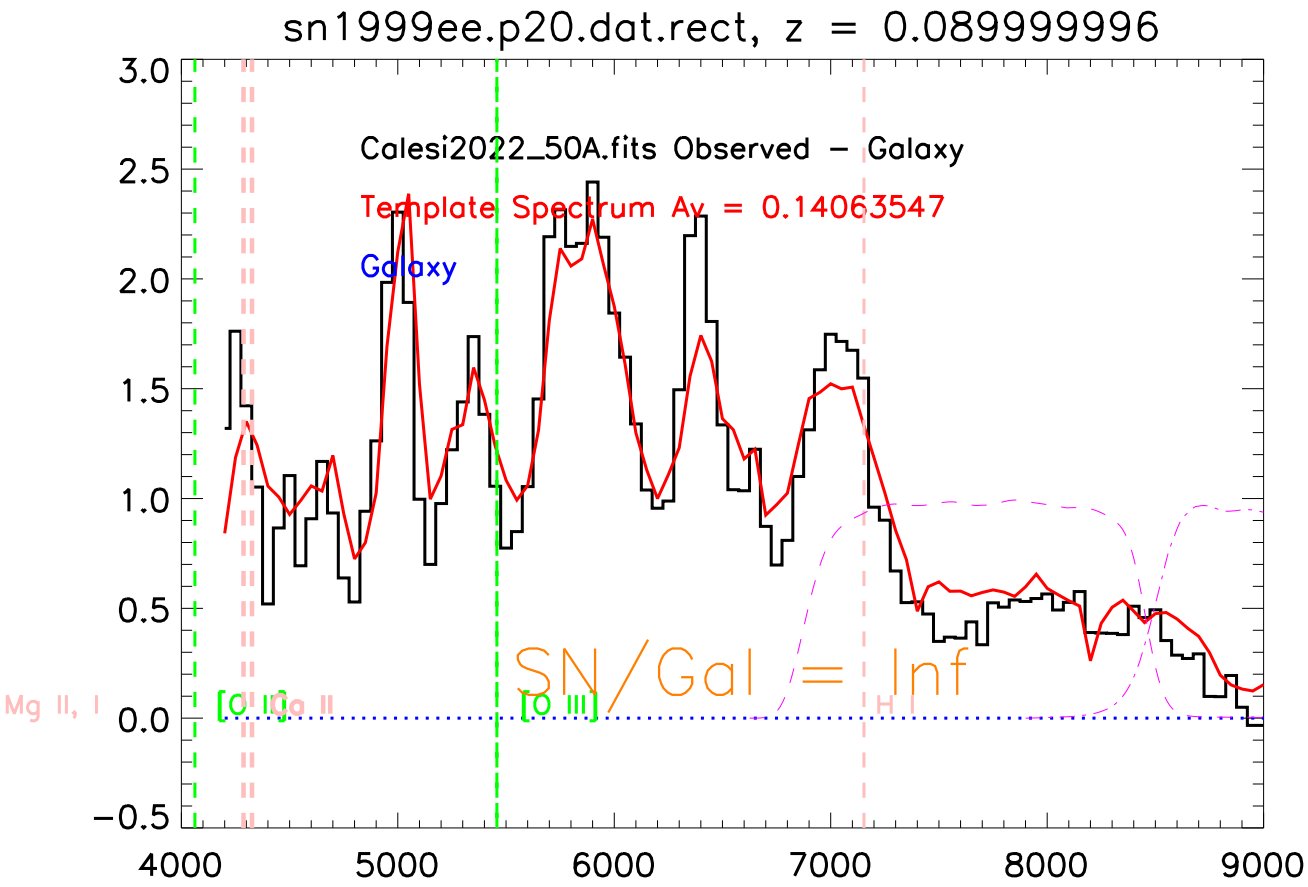
sn1999ee.p20.dat.rect, z = 0.089999996
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Template Spectrum Av = 0.14063547
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SN/Gal = Inf
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[O III]
H I
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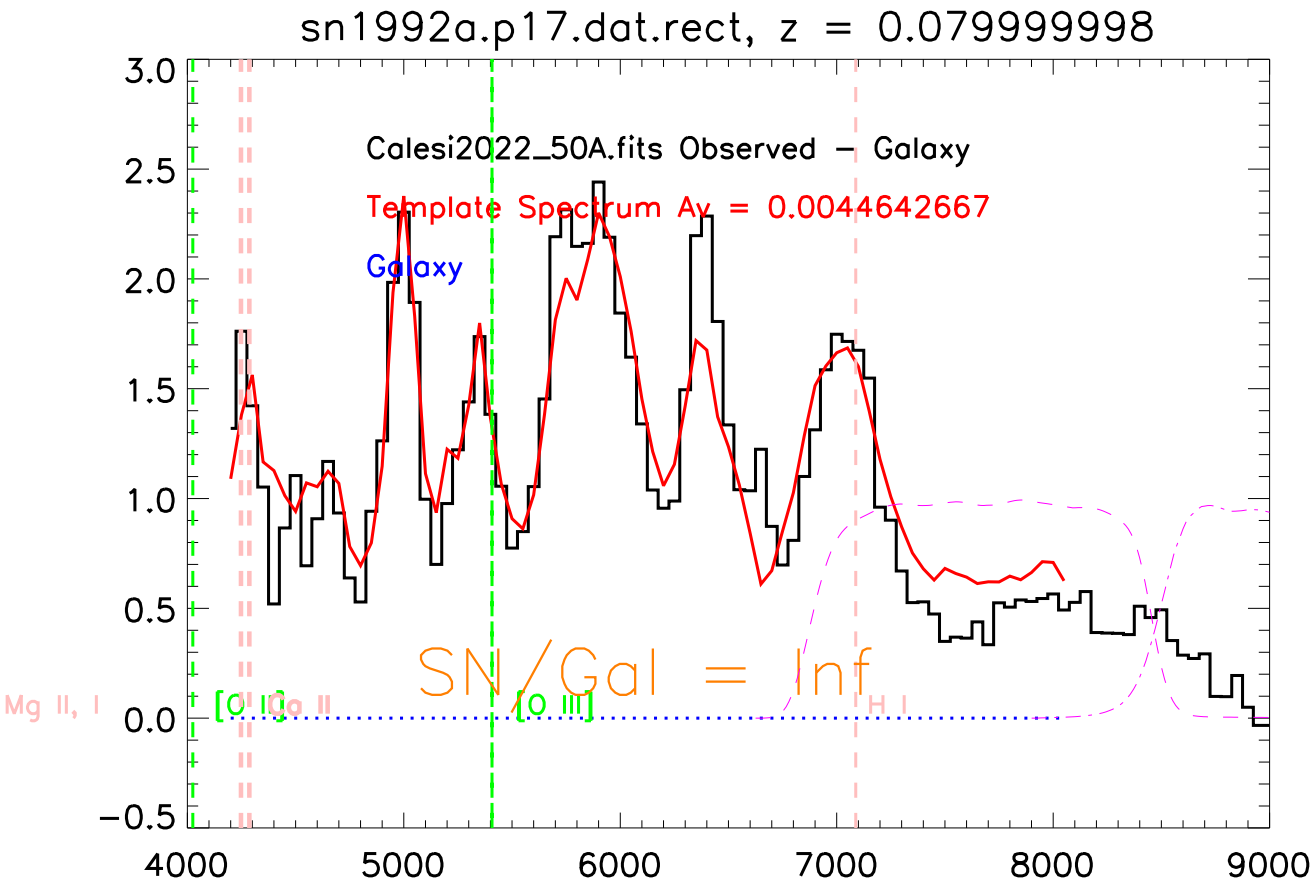
sn1992a.p17.dat.rect, z = 0.079999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 0.0044642667
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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0.5
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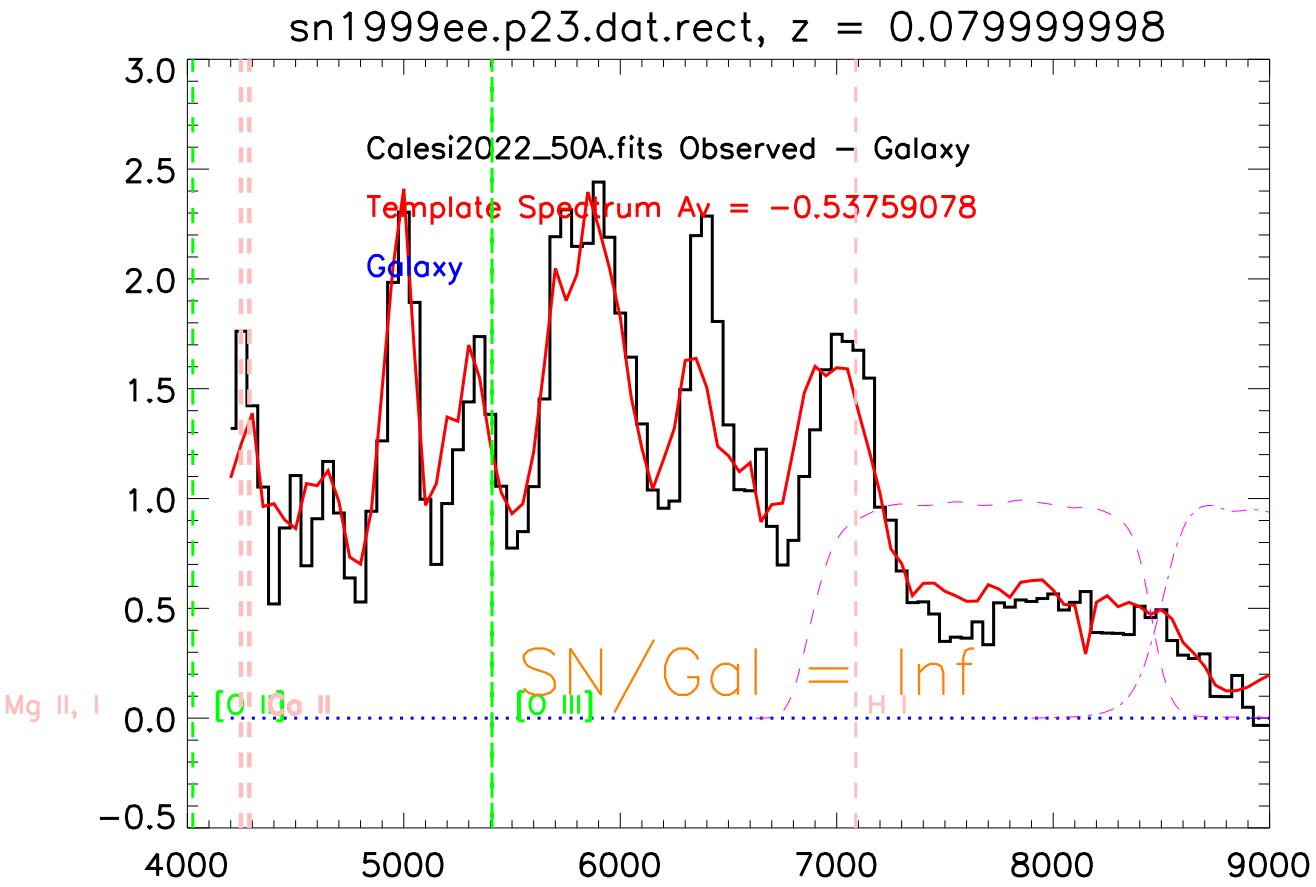
sn1999ee.p23.dat.rect, z = 0.079999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −0.53759078
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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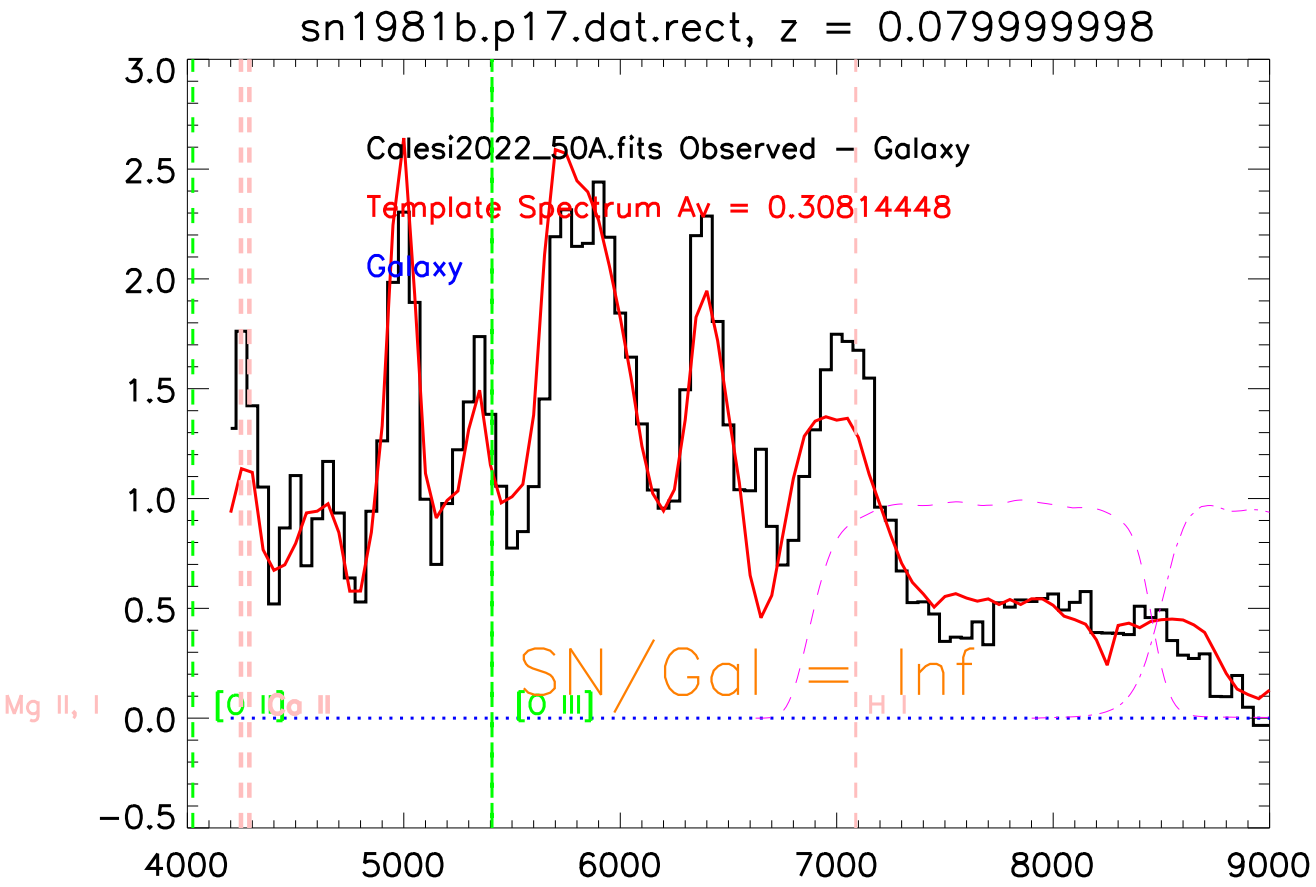
sn1981b.p17.dat.rect, z = 0.079999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 0.30814448
Galaxy
SN/Gal = Inf
Mg II, I
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Ca II
[O III]
H I
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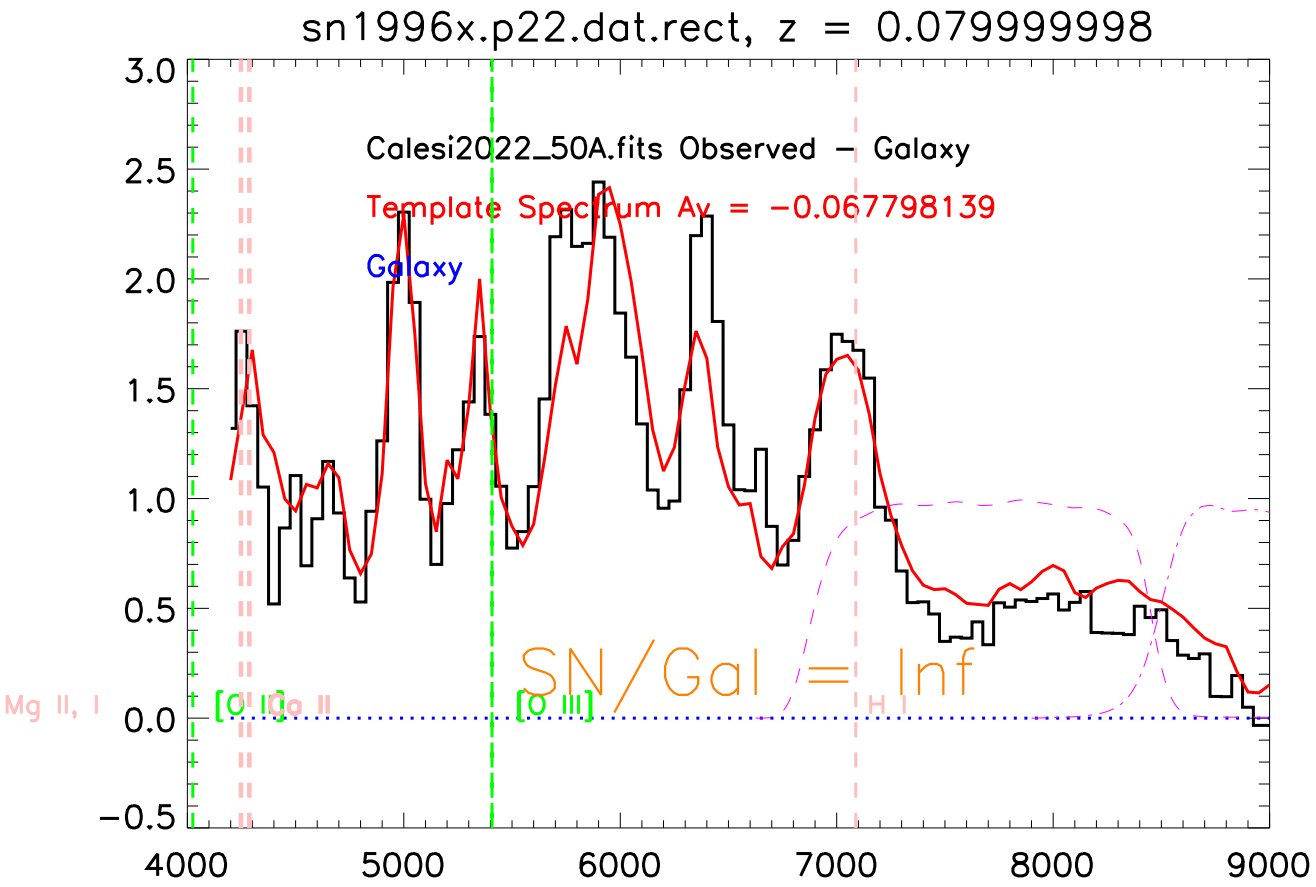
sn1996x.p22.dat.rect, z = 0.079999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −0.067798139
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SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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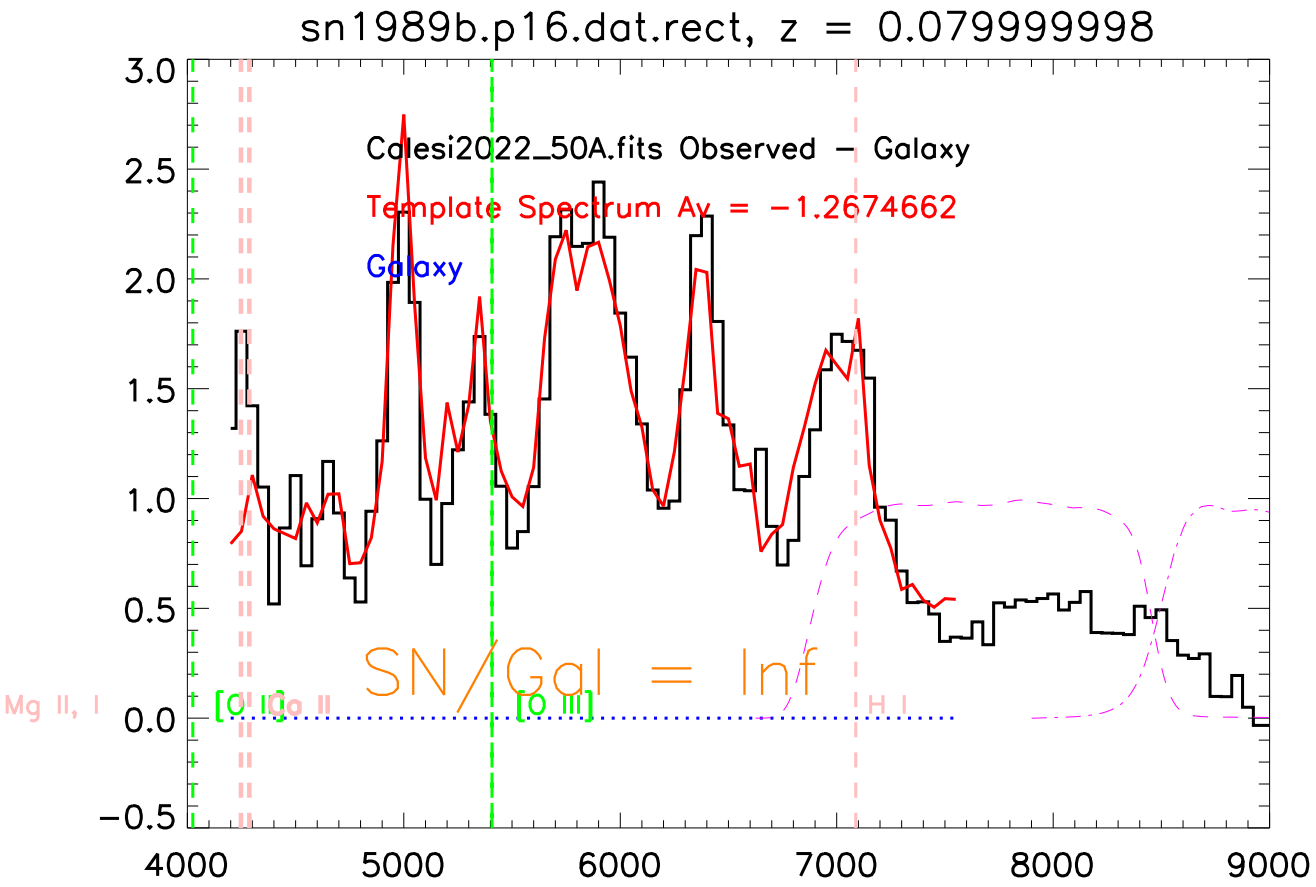
sn1989b.p16.dat.rect, z = 0.079999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −1.2674662
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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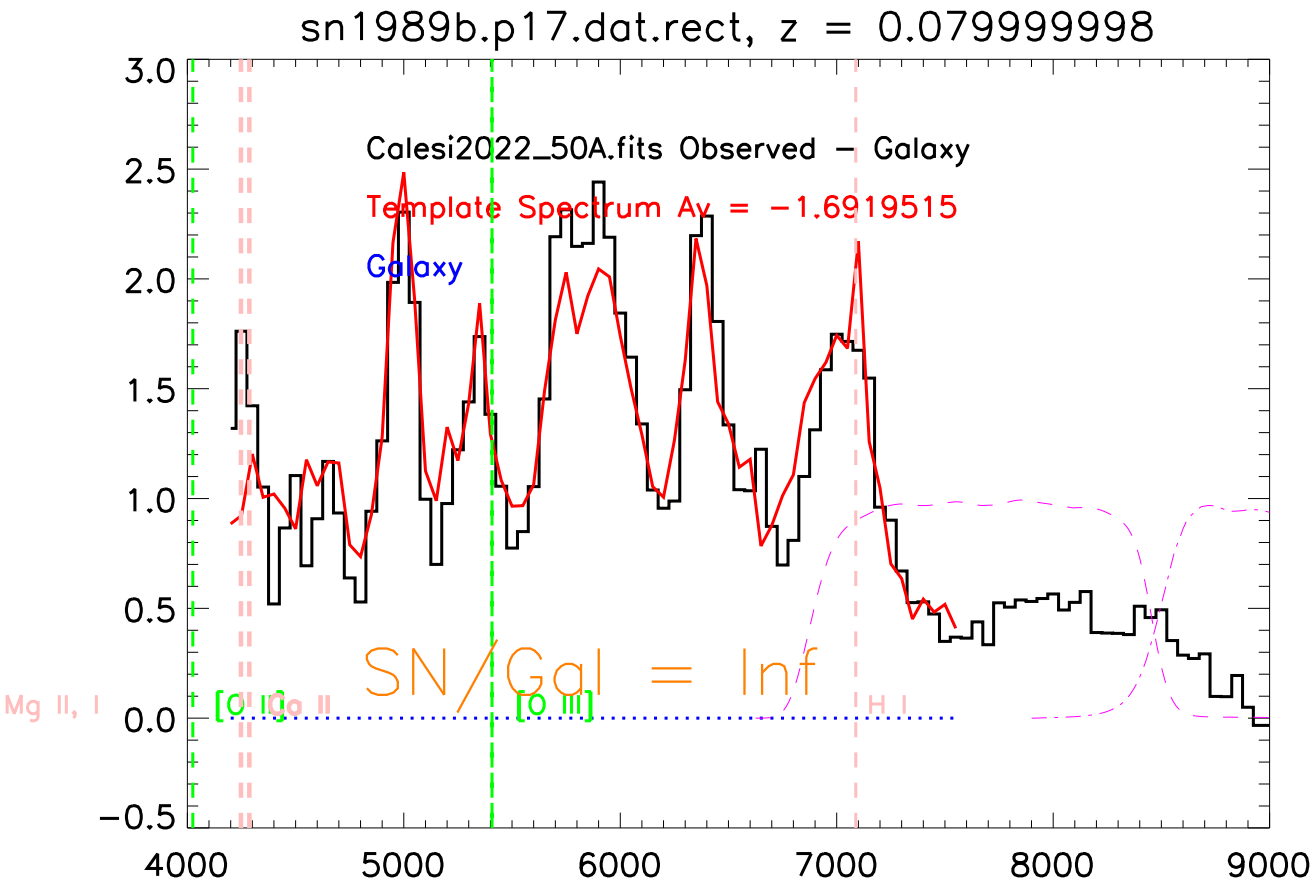
sn1989b.p17.dat.rect, z = 0.079999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −1.6919515
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SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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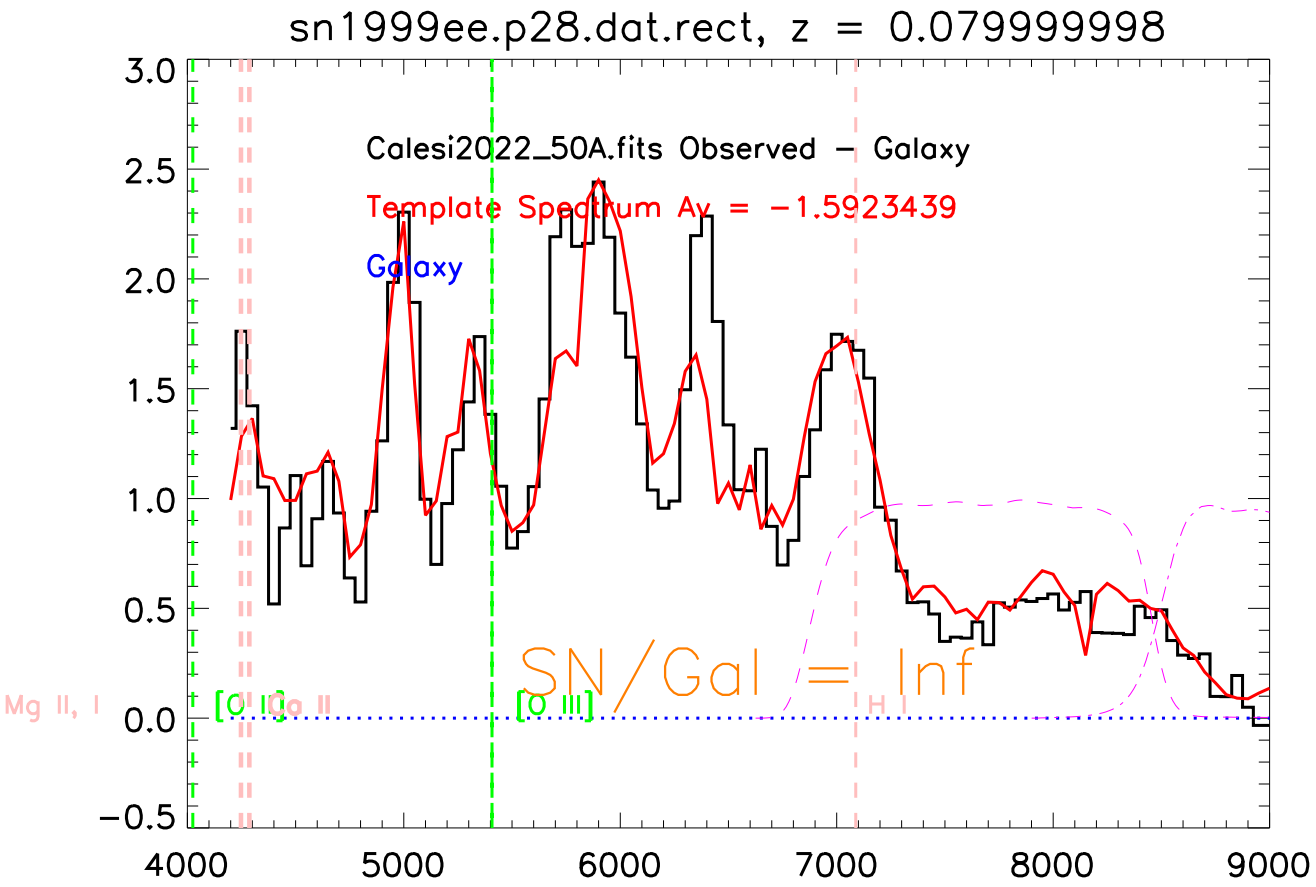
sn1999ee.p28.dat.rect, z = 0.079999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −1.5923439
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SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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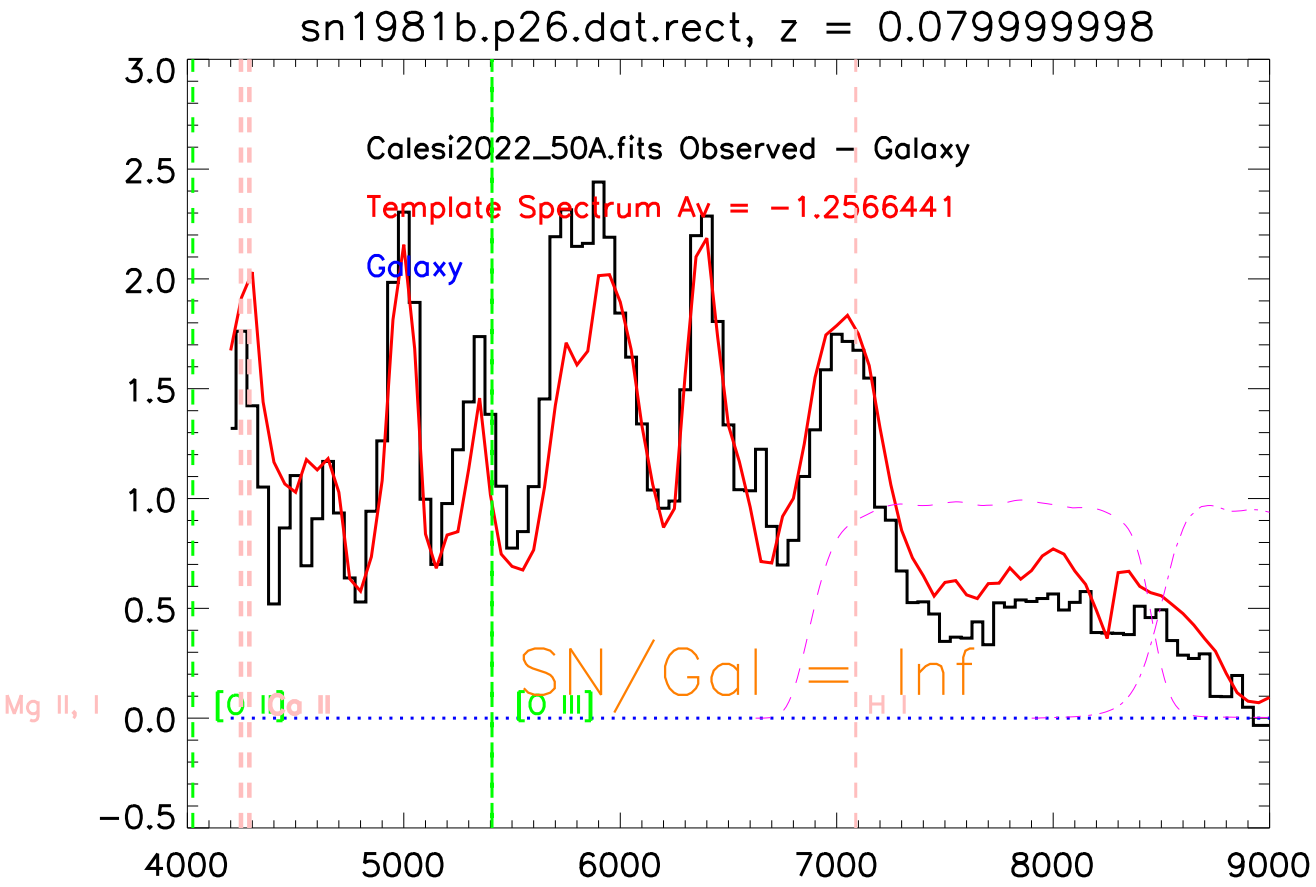
sn1981b.p26.dat.rect, z = 0.079999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −1.2566441
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SN/Gal = Inf
Mg II, I
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Ca II
[O III]
H I
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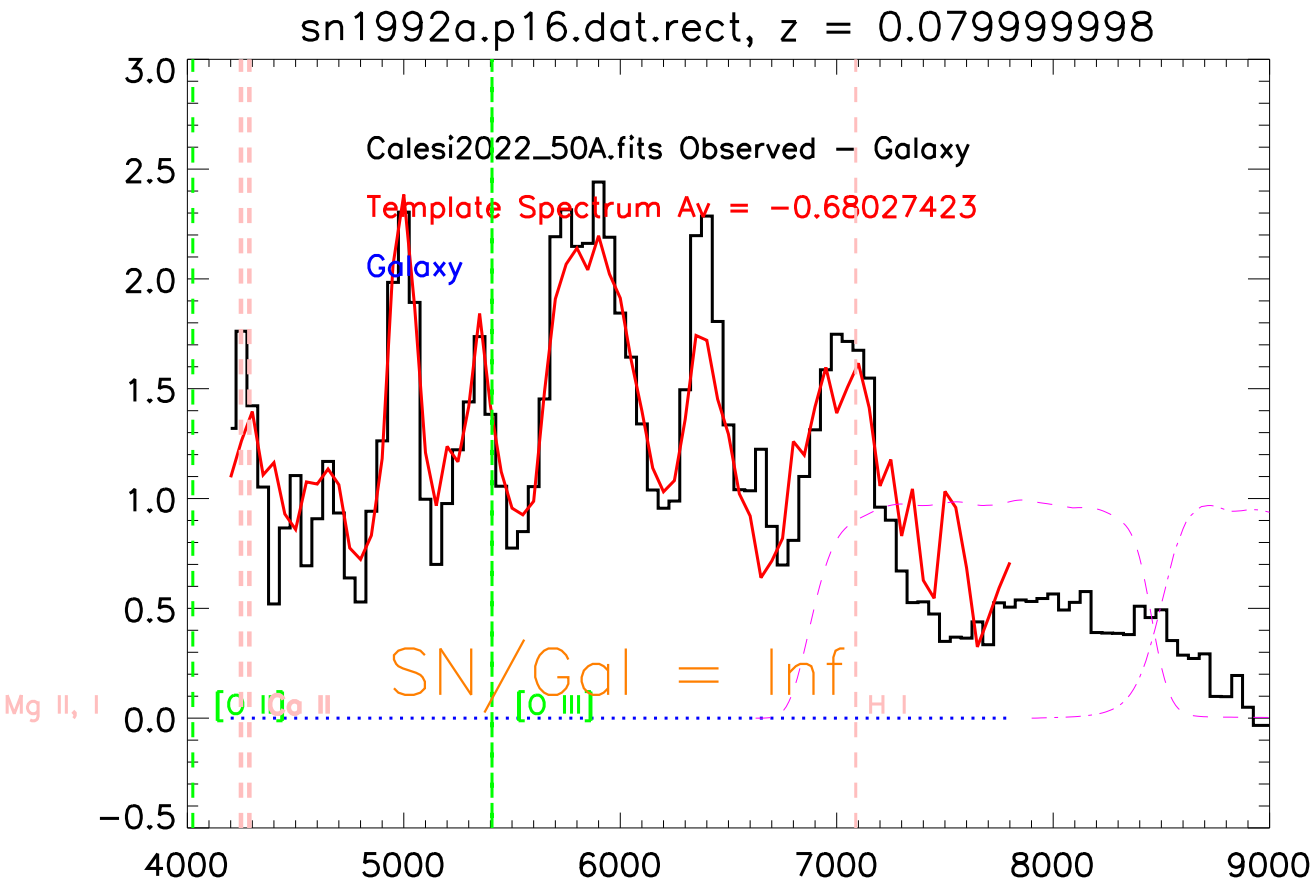
sn1992a.p16.dat.rect, z = 0.079999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −0.68027423
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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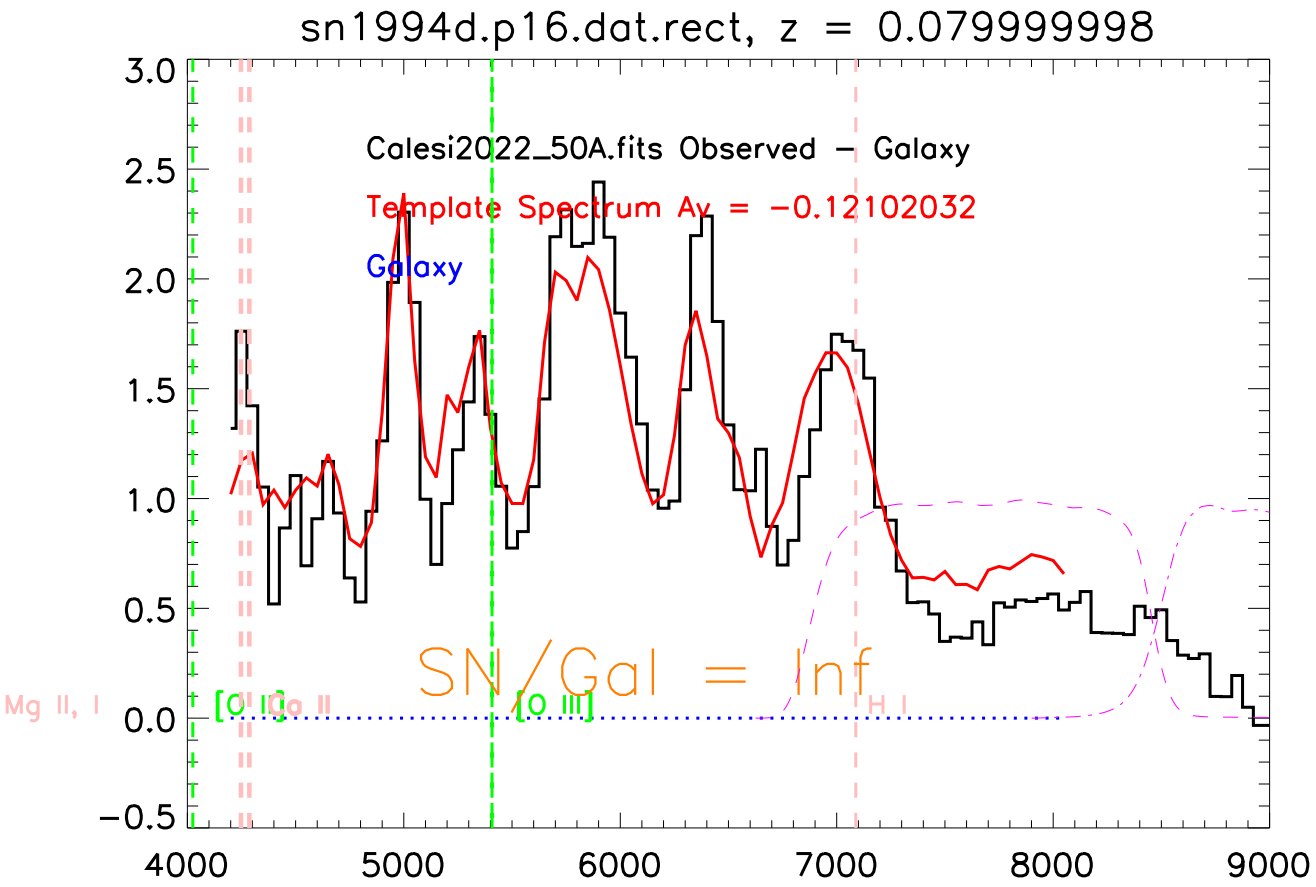
sn1994d.p16.dat.rect, z = 0.079999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −0.12102032
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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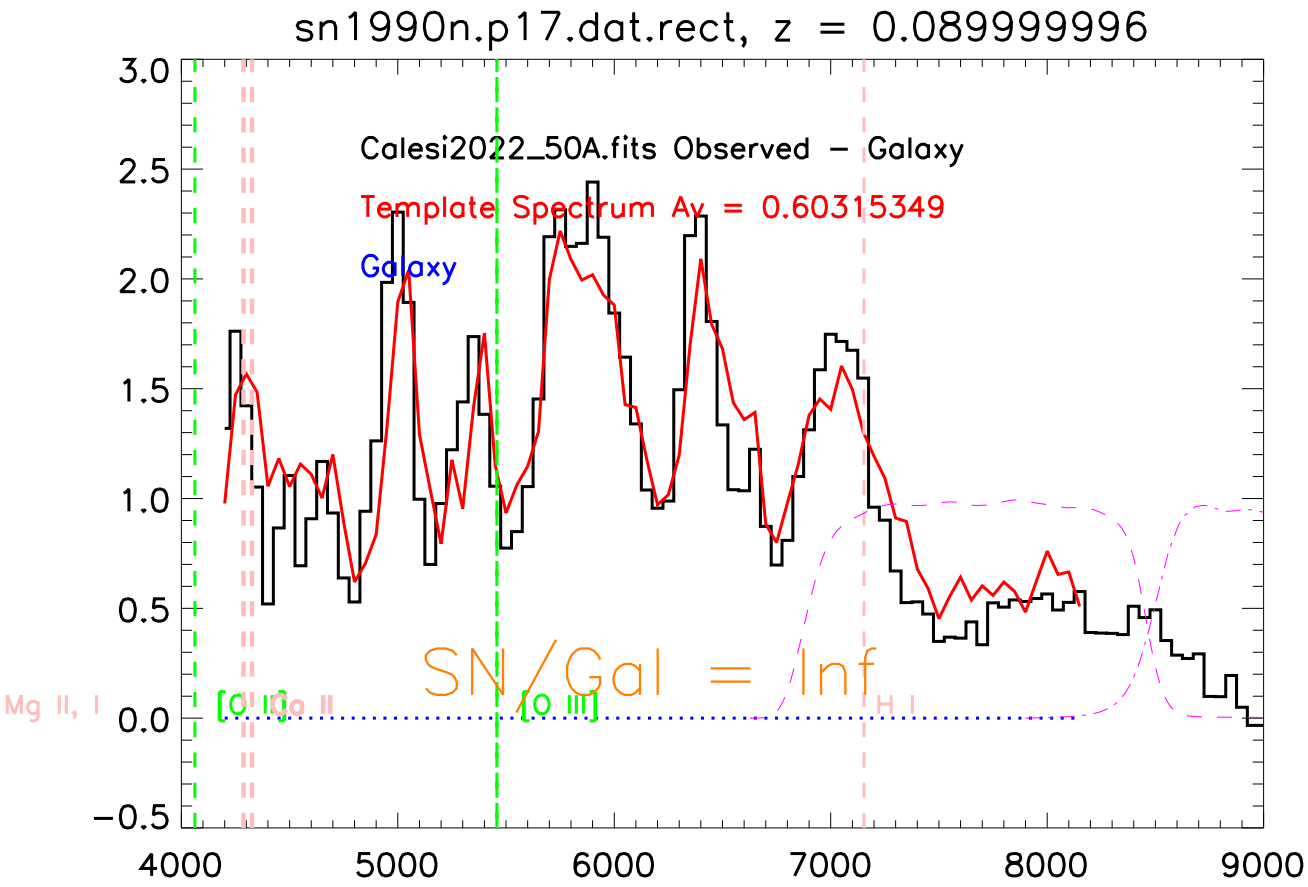
sn1990n.p17.dat.rect, z = 0.089999996
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 0.60315349
Galaxy
SN/Gal = Inf
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Ca II
[O III]
H I
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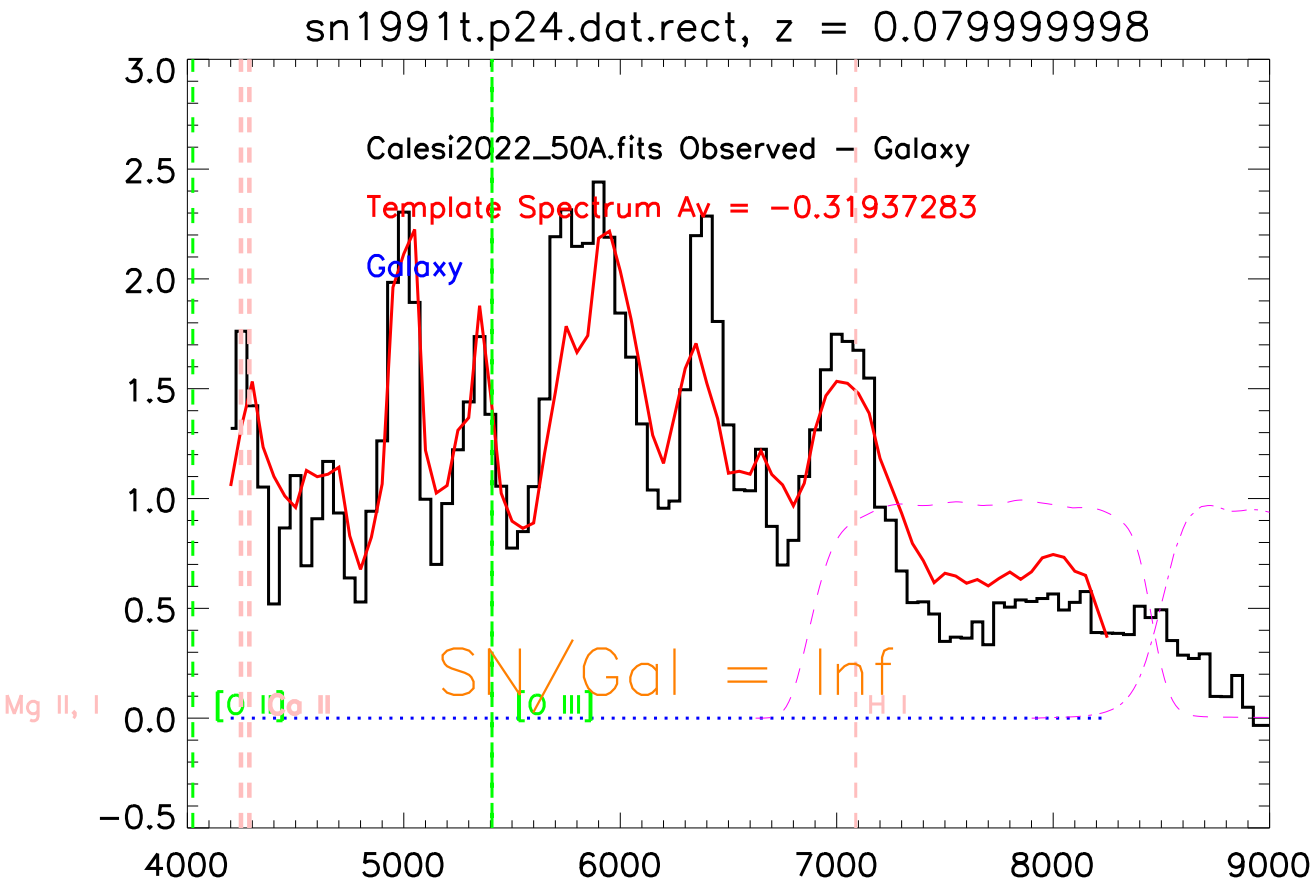
sn1991t.p24.dat.rect, z = 0.079999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −0.31937283
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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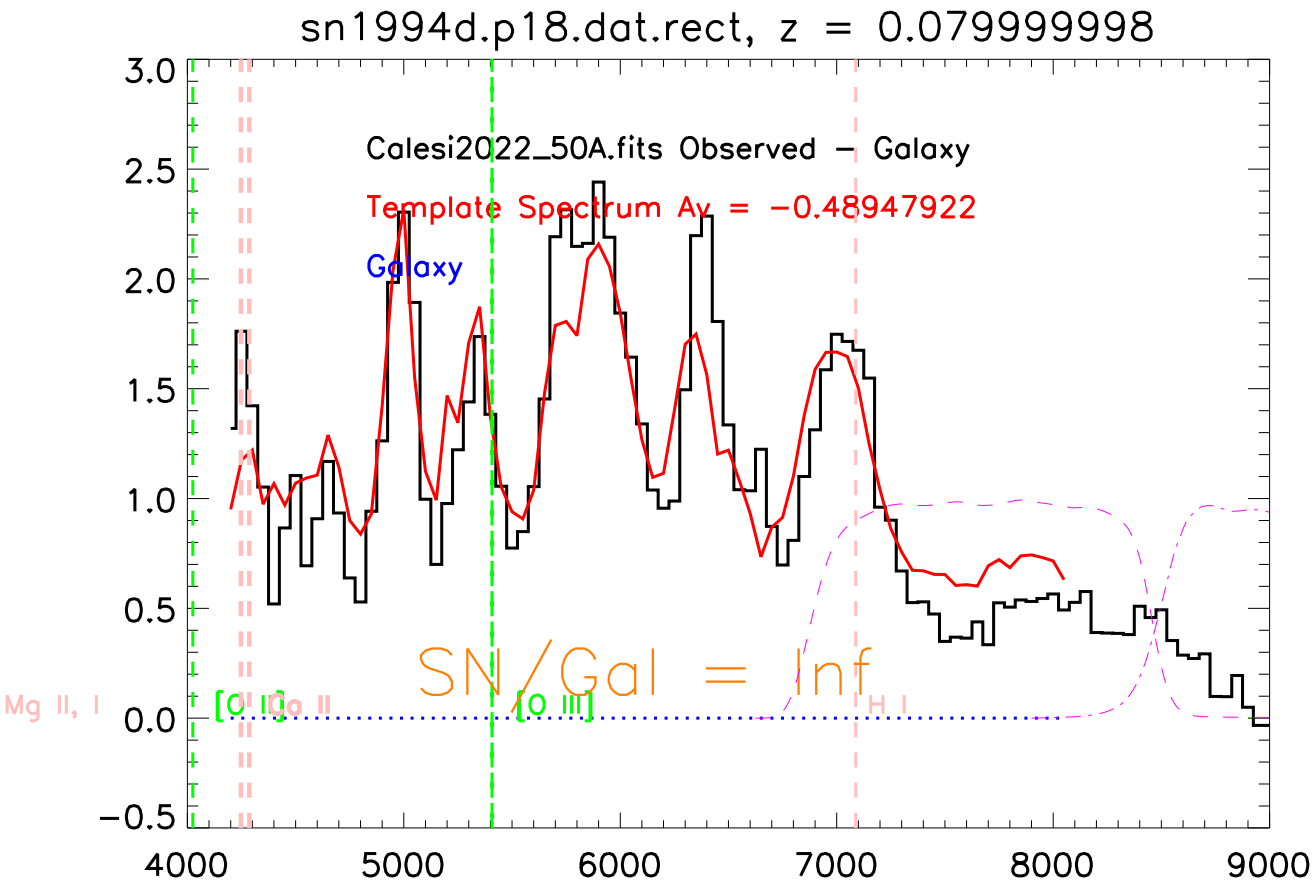
sn1994d.p18.dat.rect, z = 0.079999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −0.48947922
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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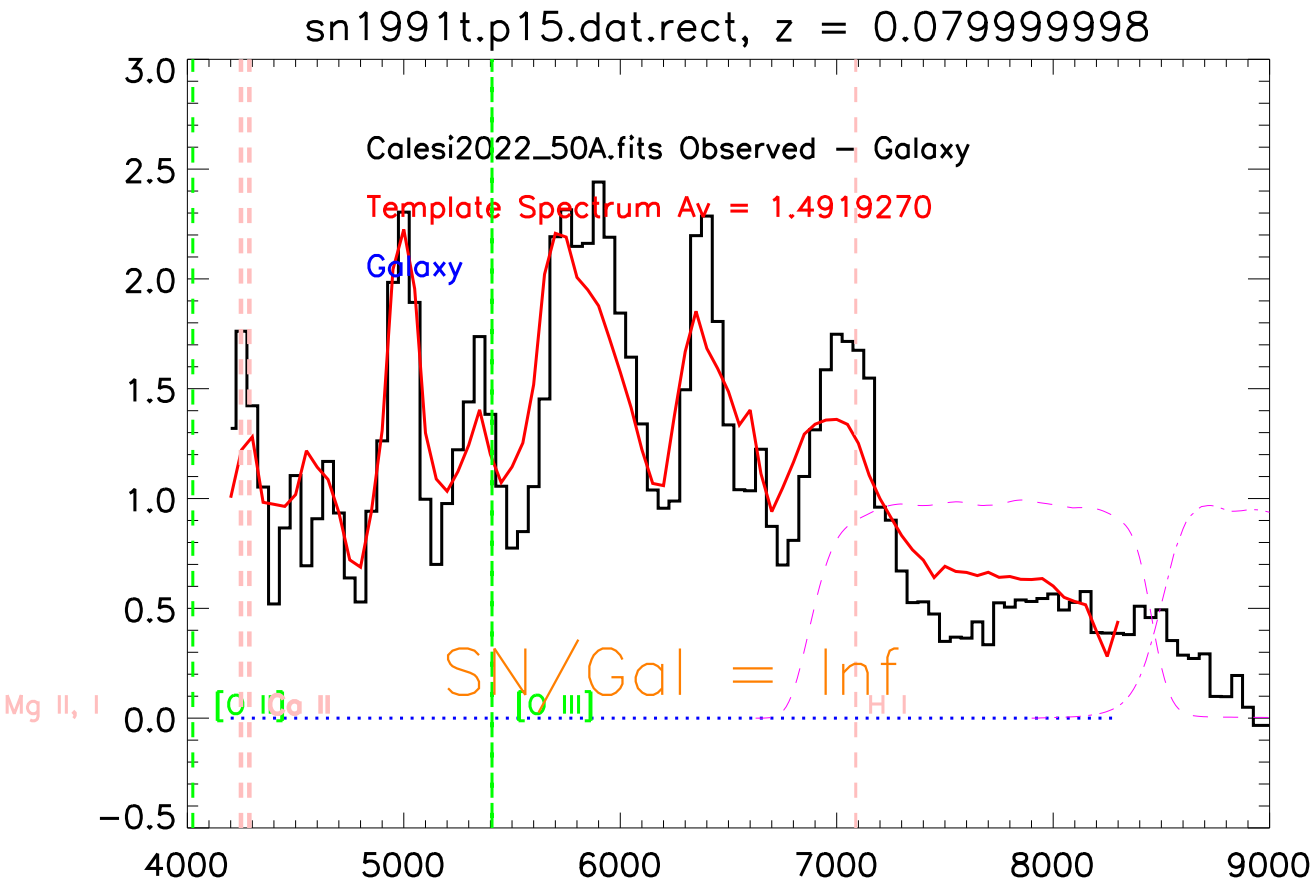
sn1991t.p15.dat.rect, z = 0.079999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 1.4919270
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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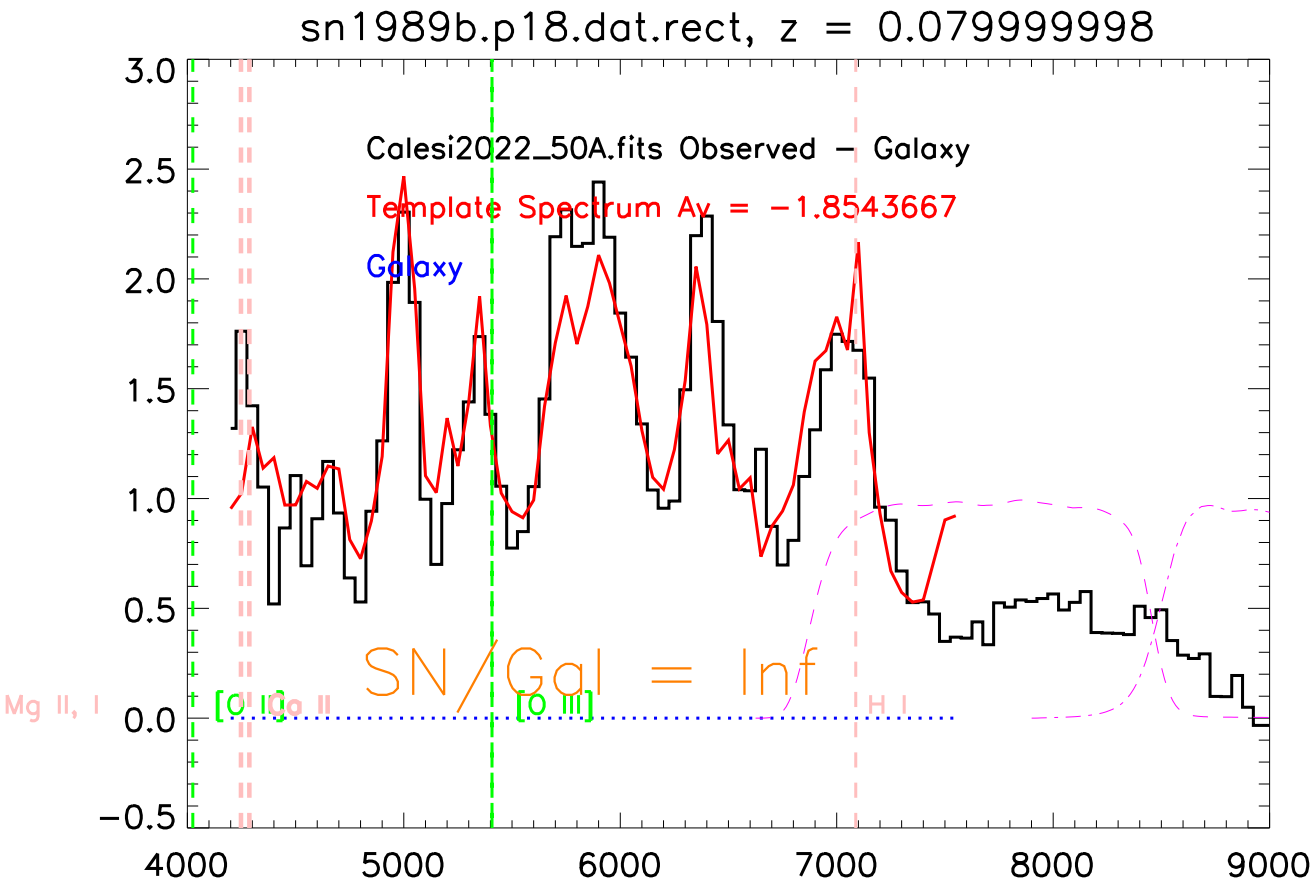
sn1989b.p18.dat.rect, z = 0.079999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −1.8543667
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SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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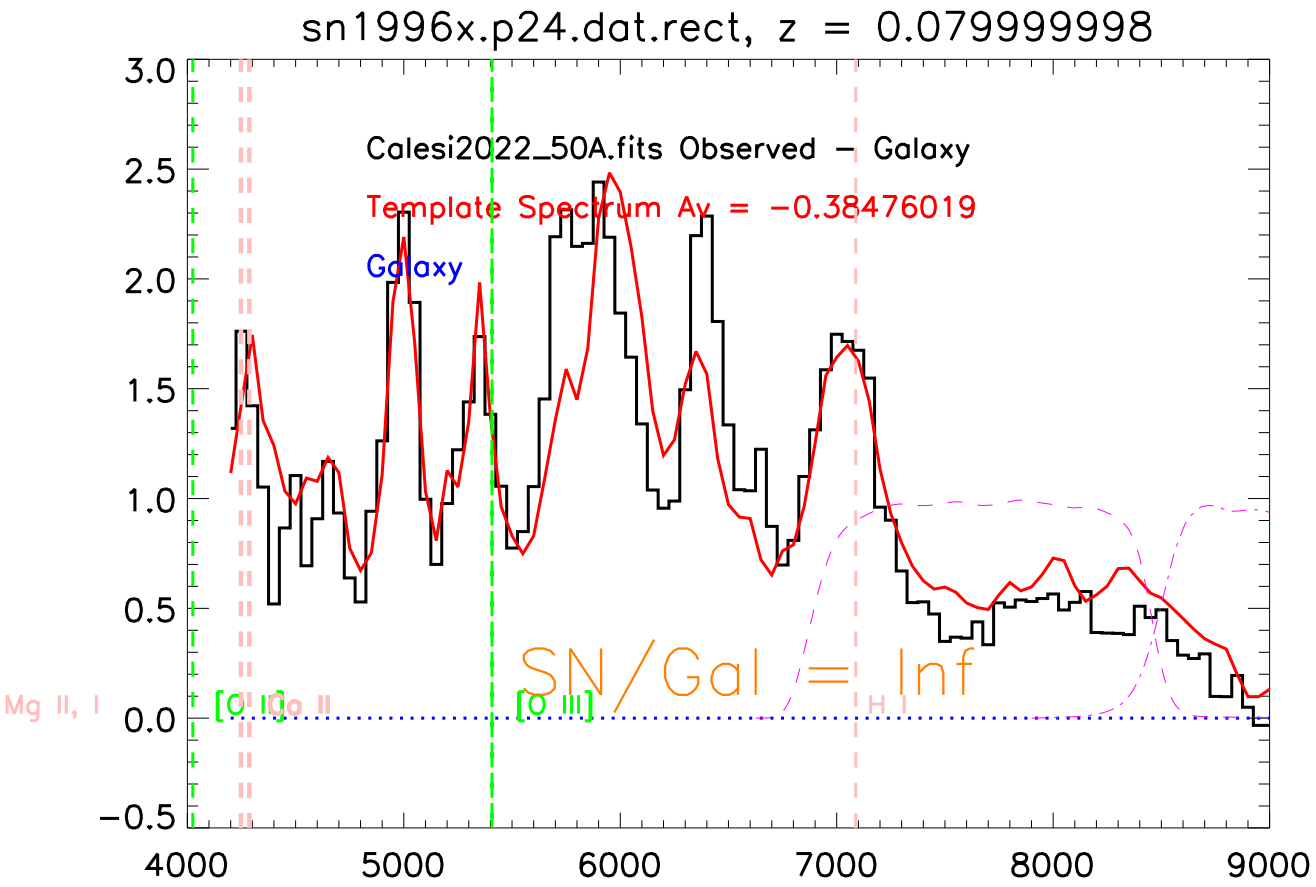
sn1996x.p24.dat.rect, z = 0.079999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −0.38476019
Galaxy
SN/Gal = Inf
Mg II, I
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Ca II
[O III]
H I
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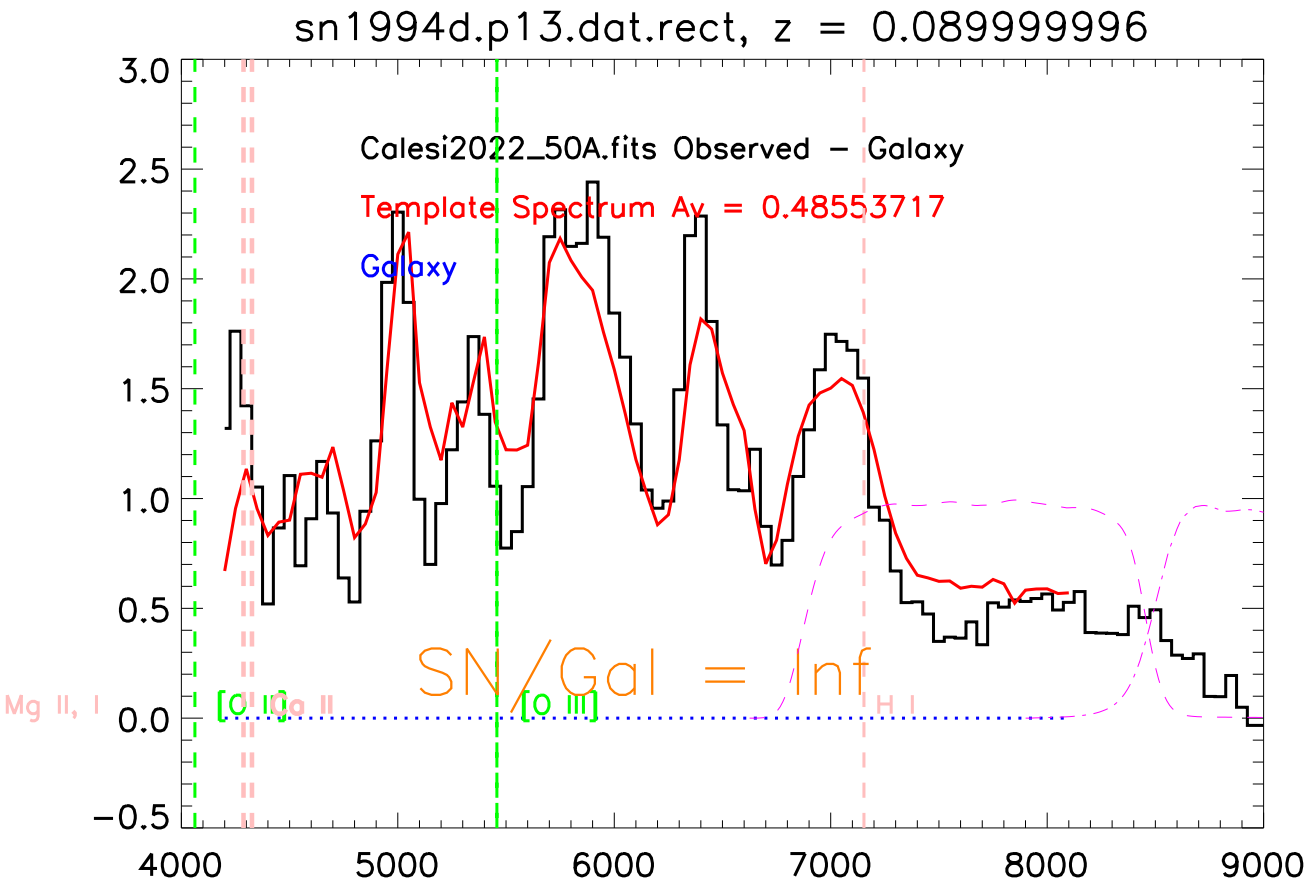
sn1994d.p13.dat.rect, z = 0.089999996
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 0.48553717
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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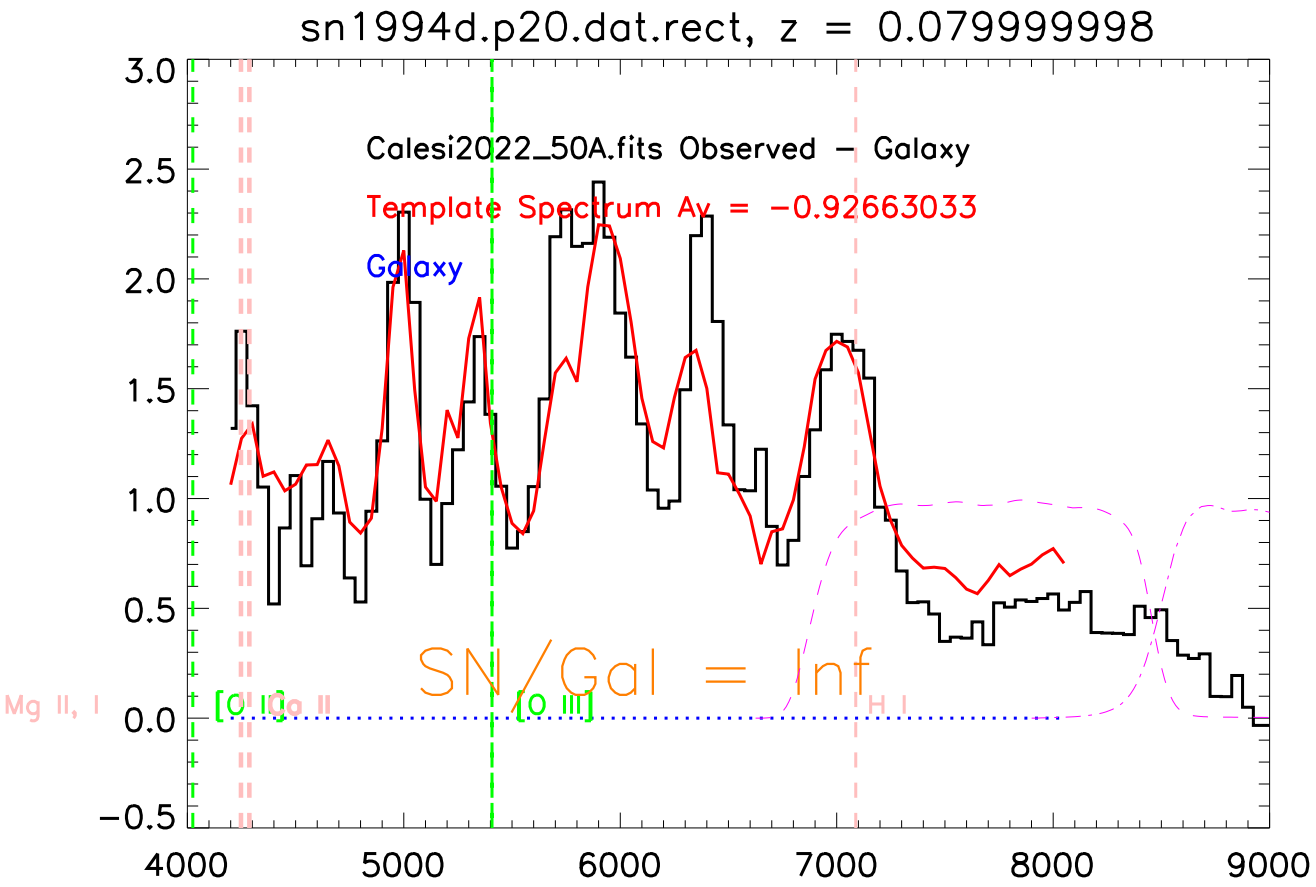
sn1994d.p20.dat.rect, z = 0.079999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −0.92663033
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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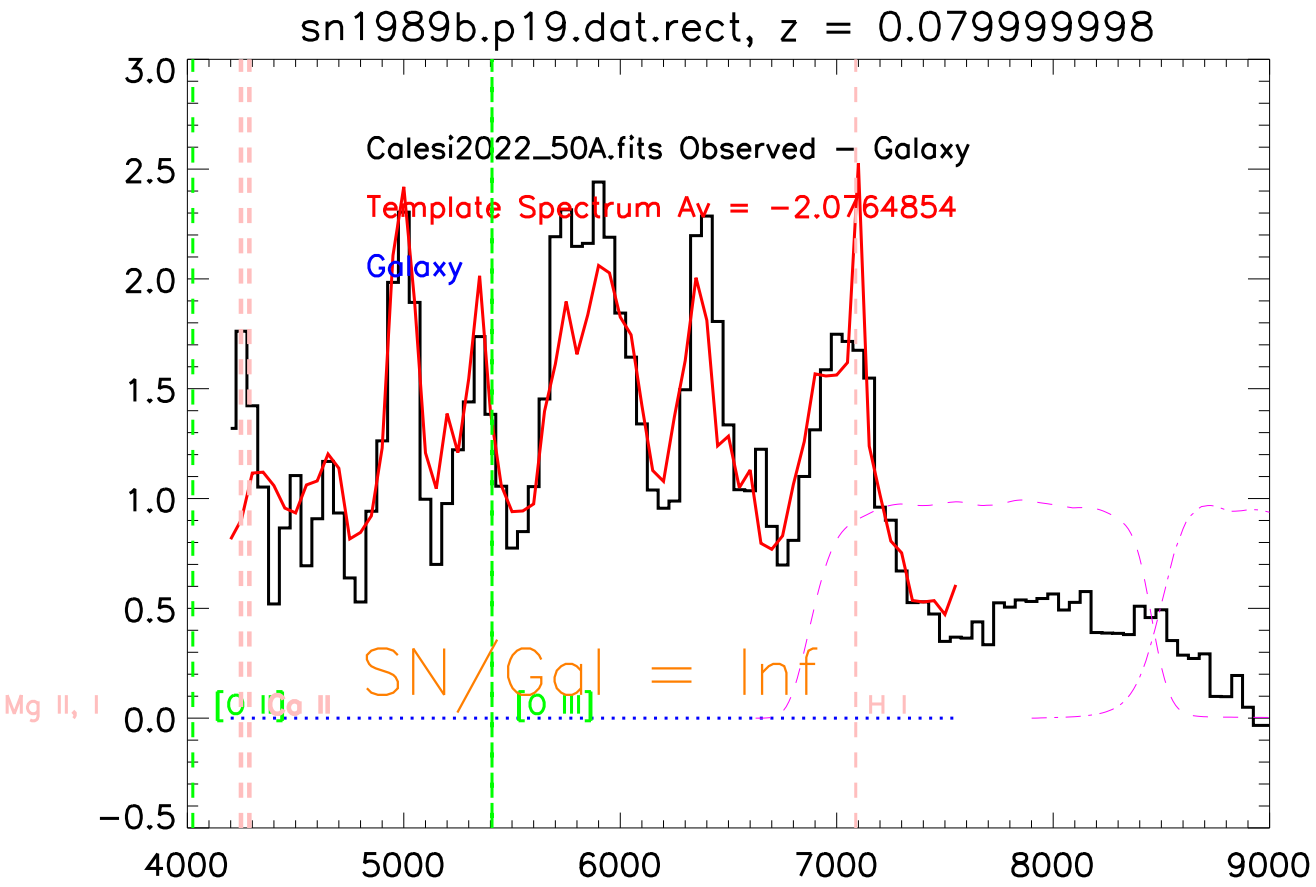
sn1989b.p19.dat.rect, z = 0.079999998
Calesi2022_50A.fits Observed – Galaxy
Template Spectrum Av = −2.0764854
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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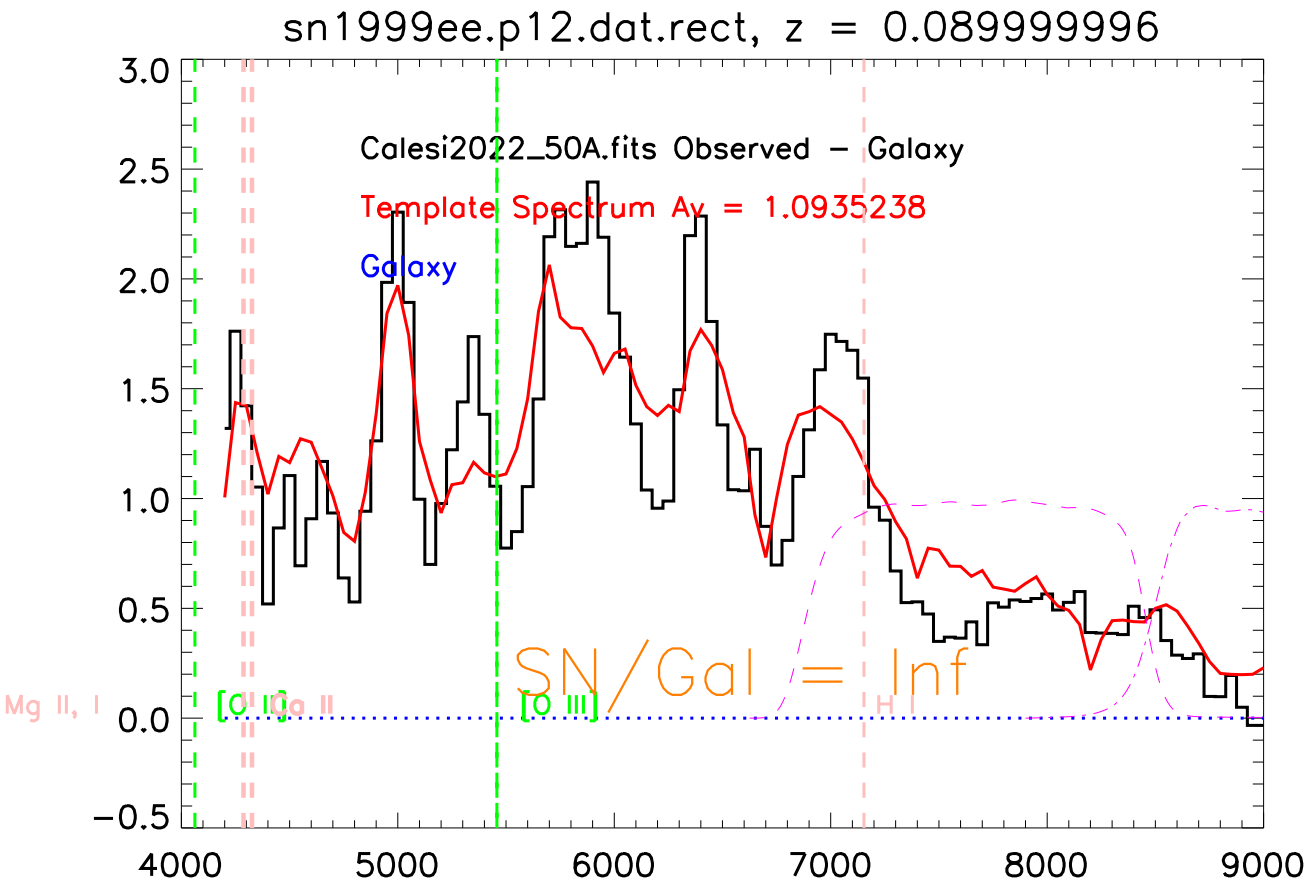
sn1999ee.p12.dat.rect, z = 0.089999996
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 1.0935238
Galaxy
SN/Gal = Inf
Mg II, I
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Ca II
[O III]
H I
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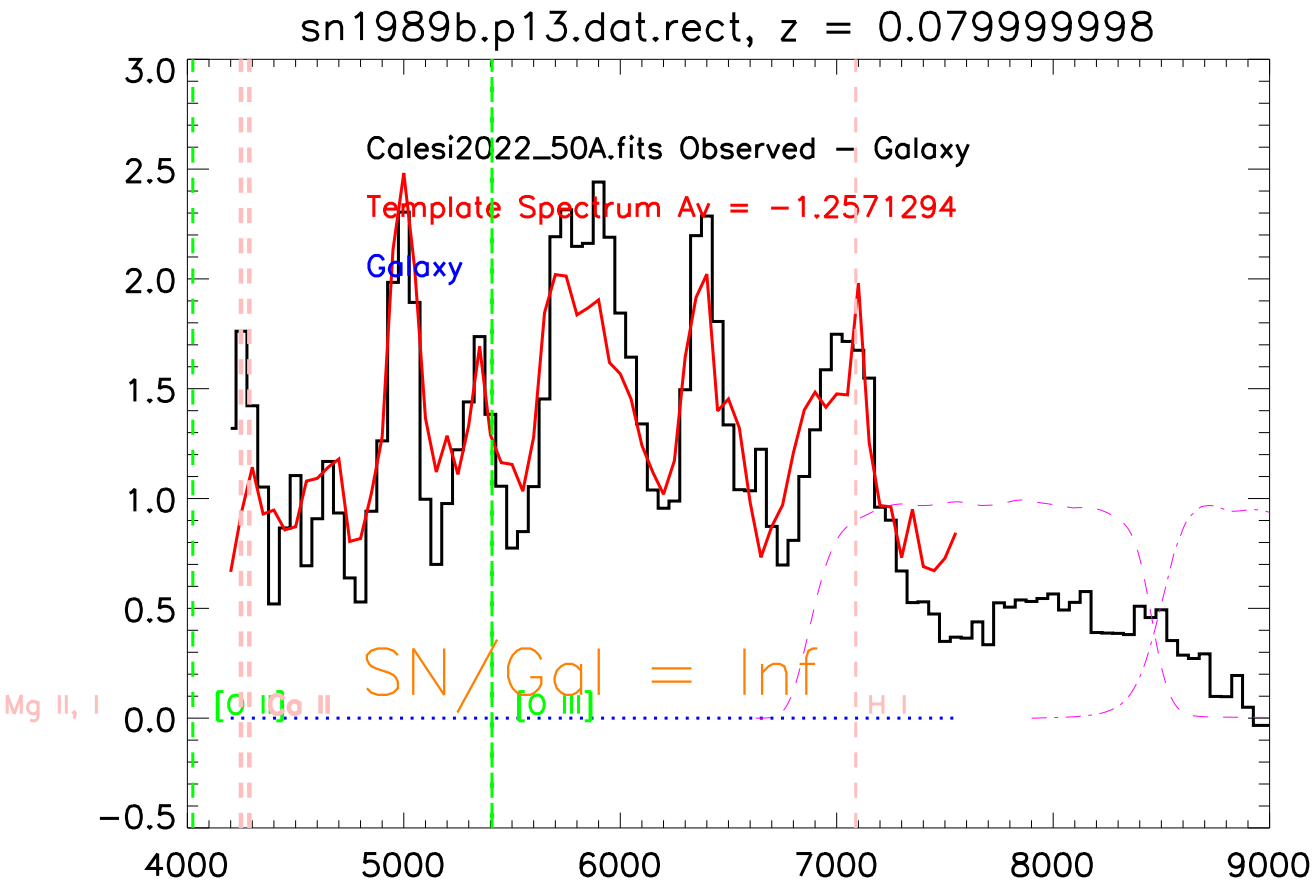
sn1989b.p13.dat.rect, z = 0.079999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −1.2571294
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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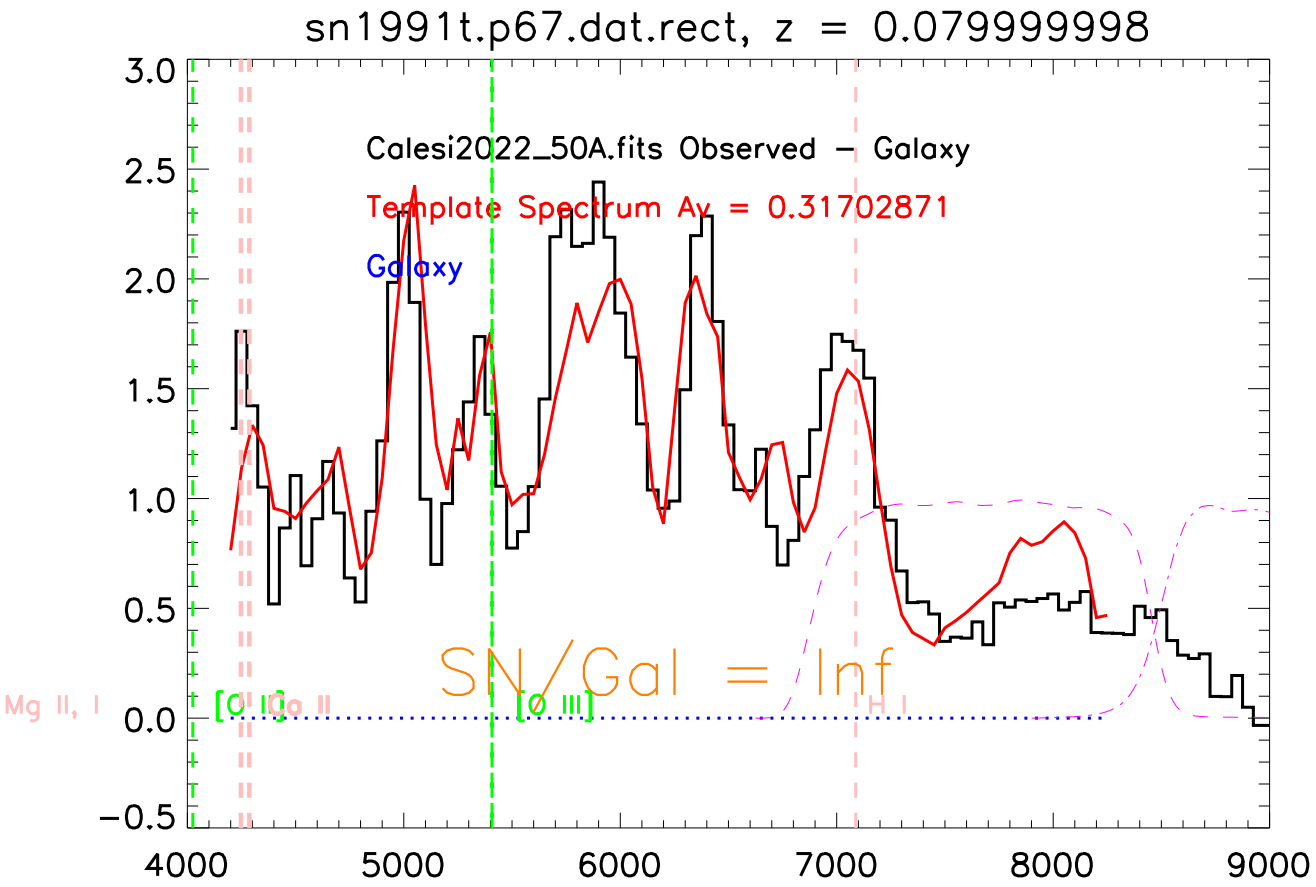
sn1991t.p67.dat.rect, z = 0.079999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 0.31702871
Galaxy
SN/Gal = Inf
Mg II, I
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Ca II
[O III]
H I
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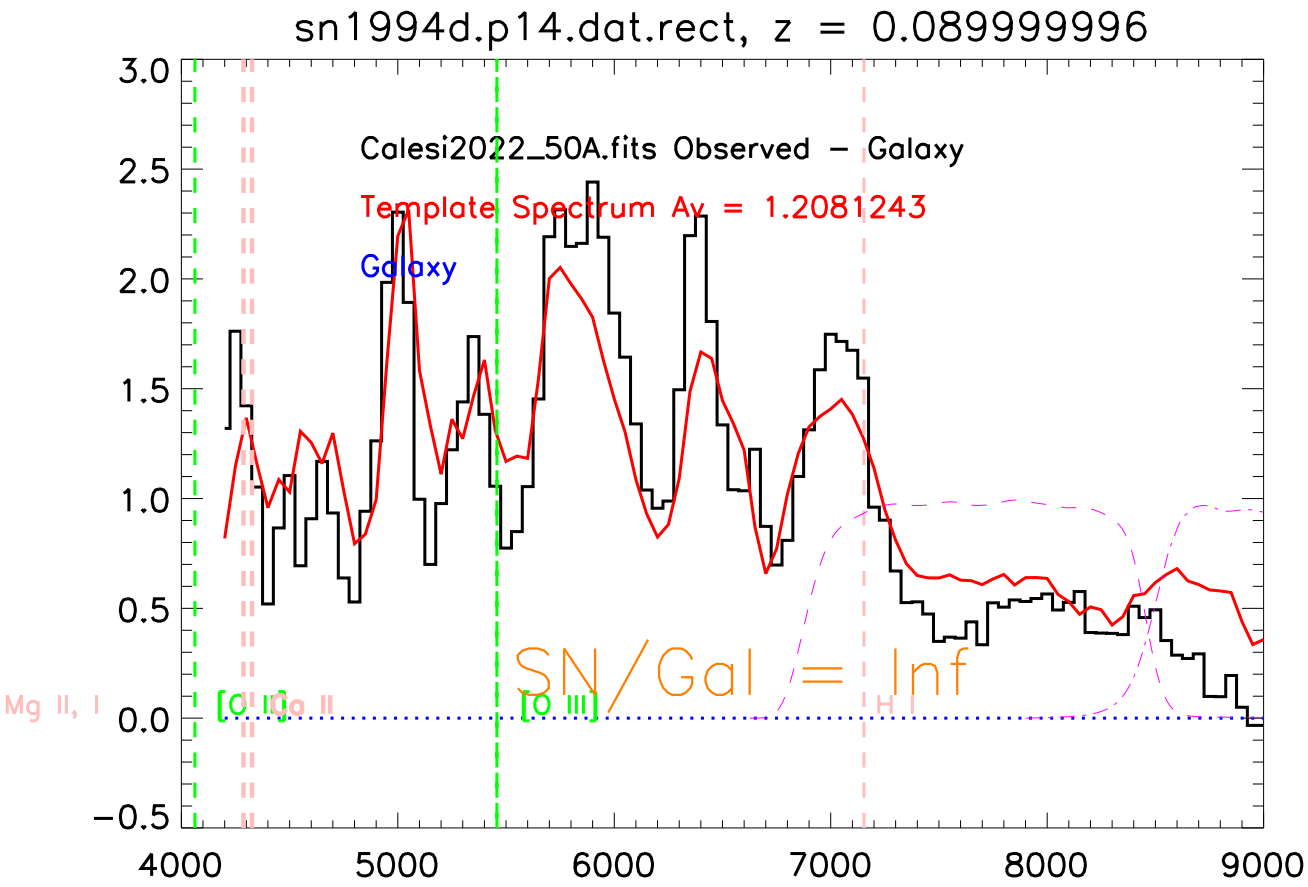
sn1994d.p14.dat.rect, z = 0.089999996
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 1.2081243
Galaxy
SN/Gal = Inf
Mg II, I
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Ca II
[O III]
H I
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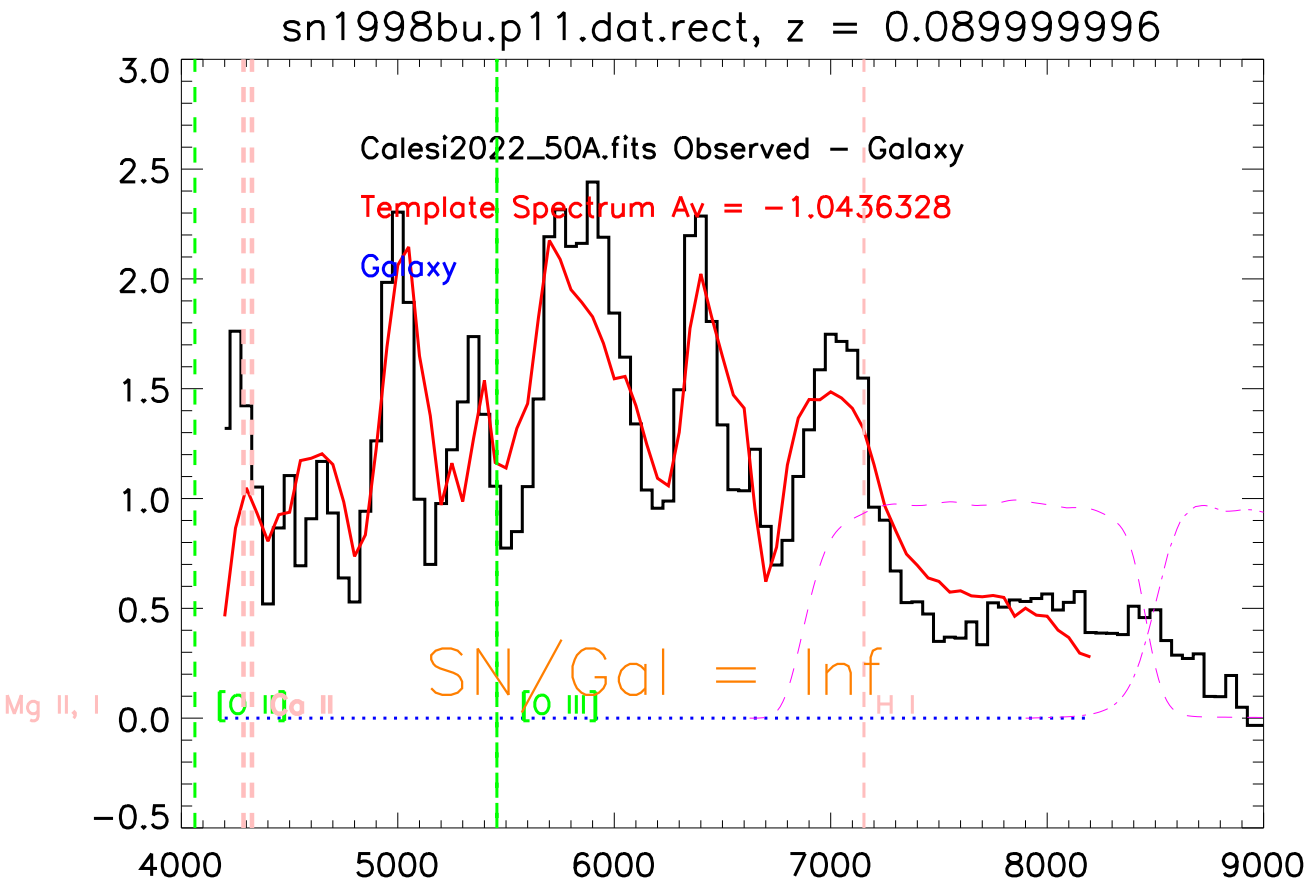
sn1998bu.p11.dat.rect, z = 0.089999996
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −1.0436328
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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2.0
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1.0
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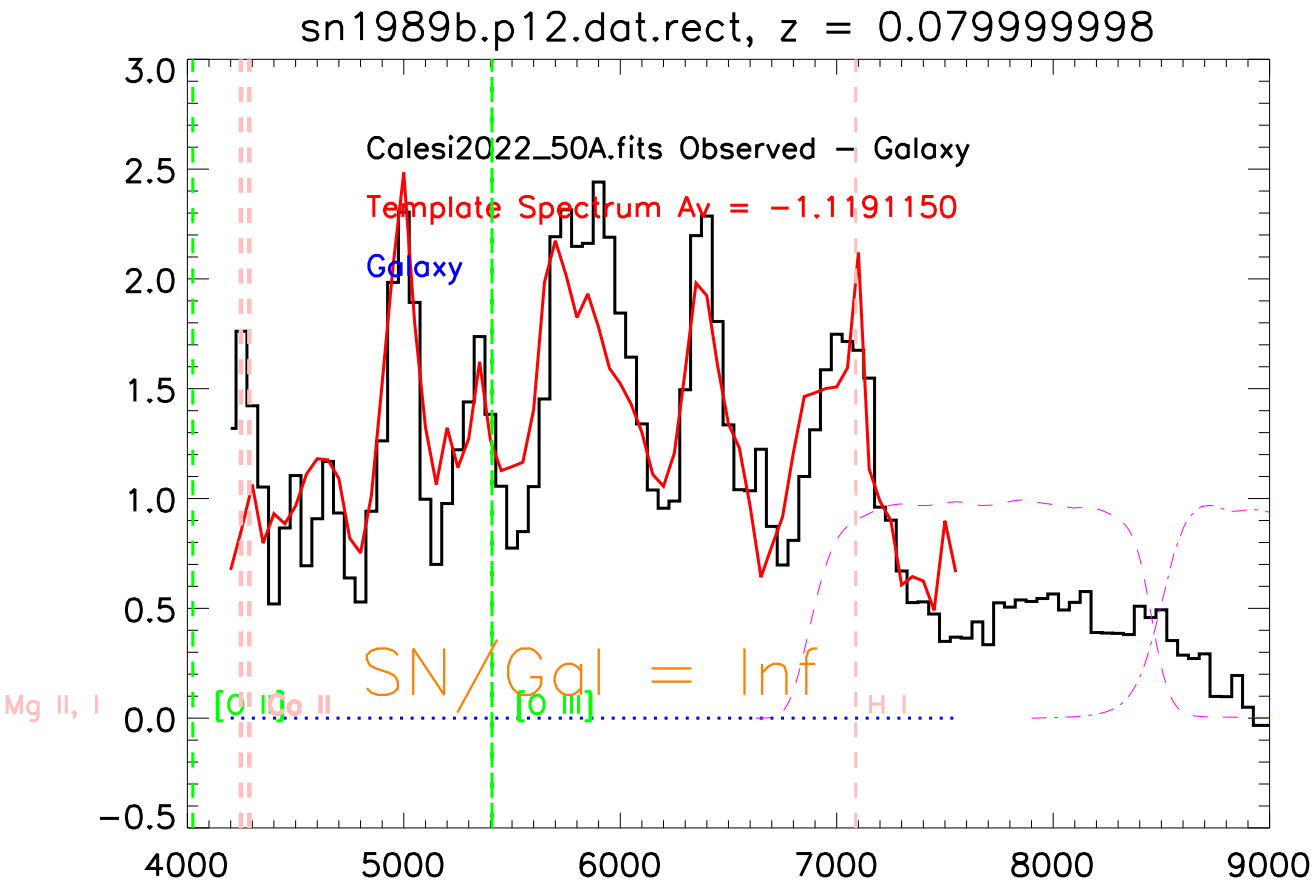
9000


sn1989b.p12.dat.rect, z = 0.079999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −1.1191150
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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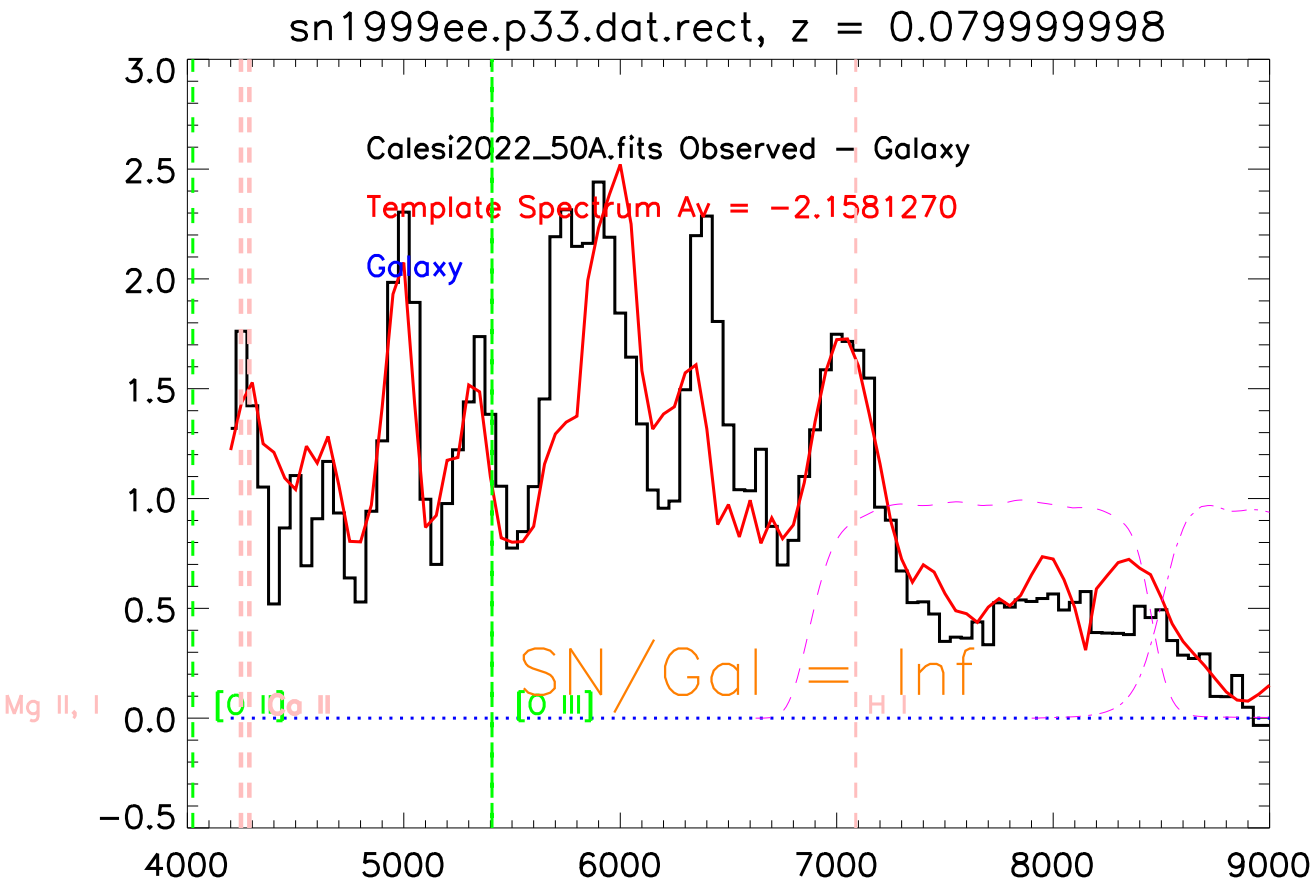
sn1999ee.p33.dat.rect, z = 0.079999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −2.1581270
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
3.0
2.5
2.0
1.5
1.0
0.5
0.0
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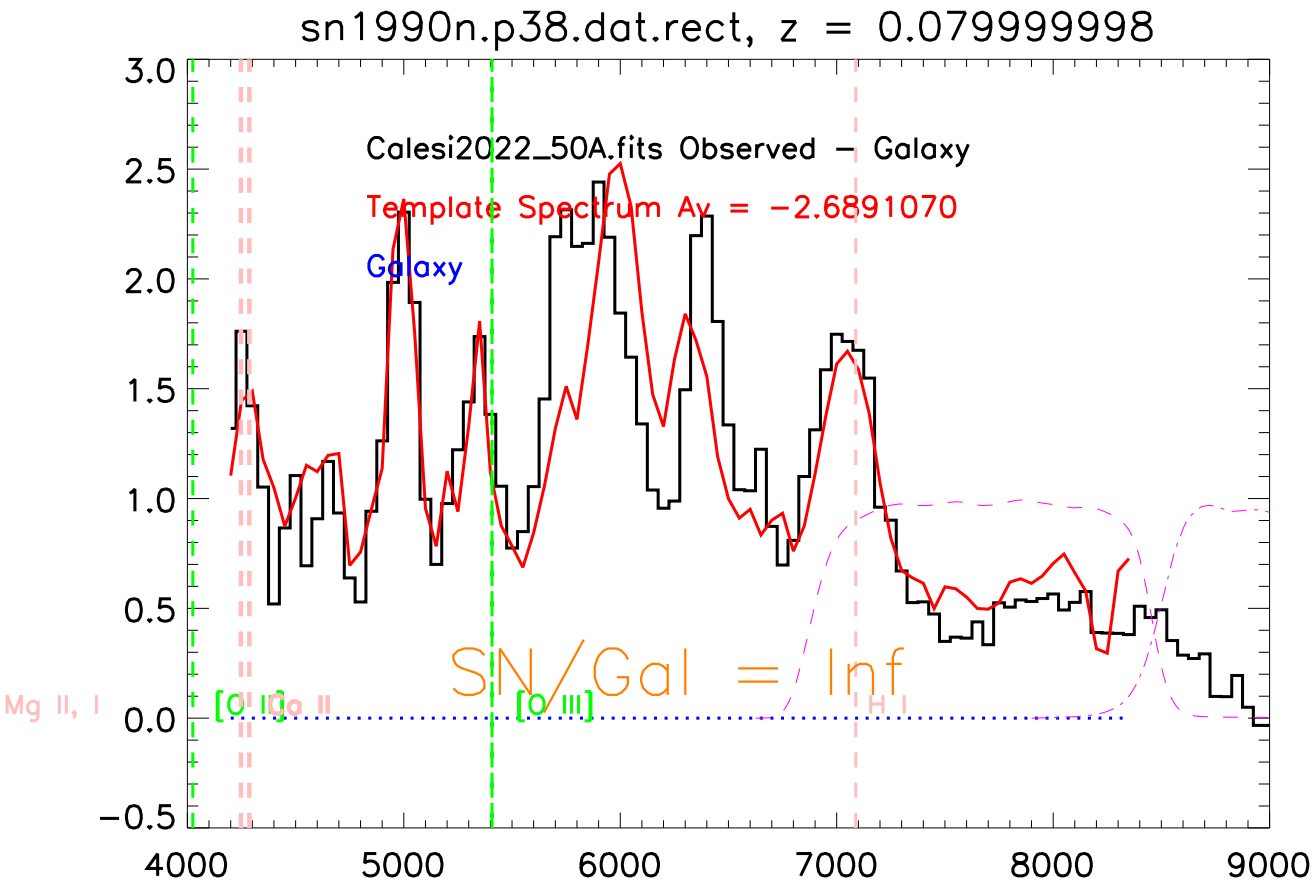
sn1990n.p38.dat.rect, z = 0.079999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −2.6891070
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
3.0
2.5
2.0
1.5
1.0
0.5
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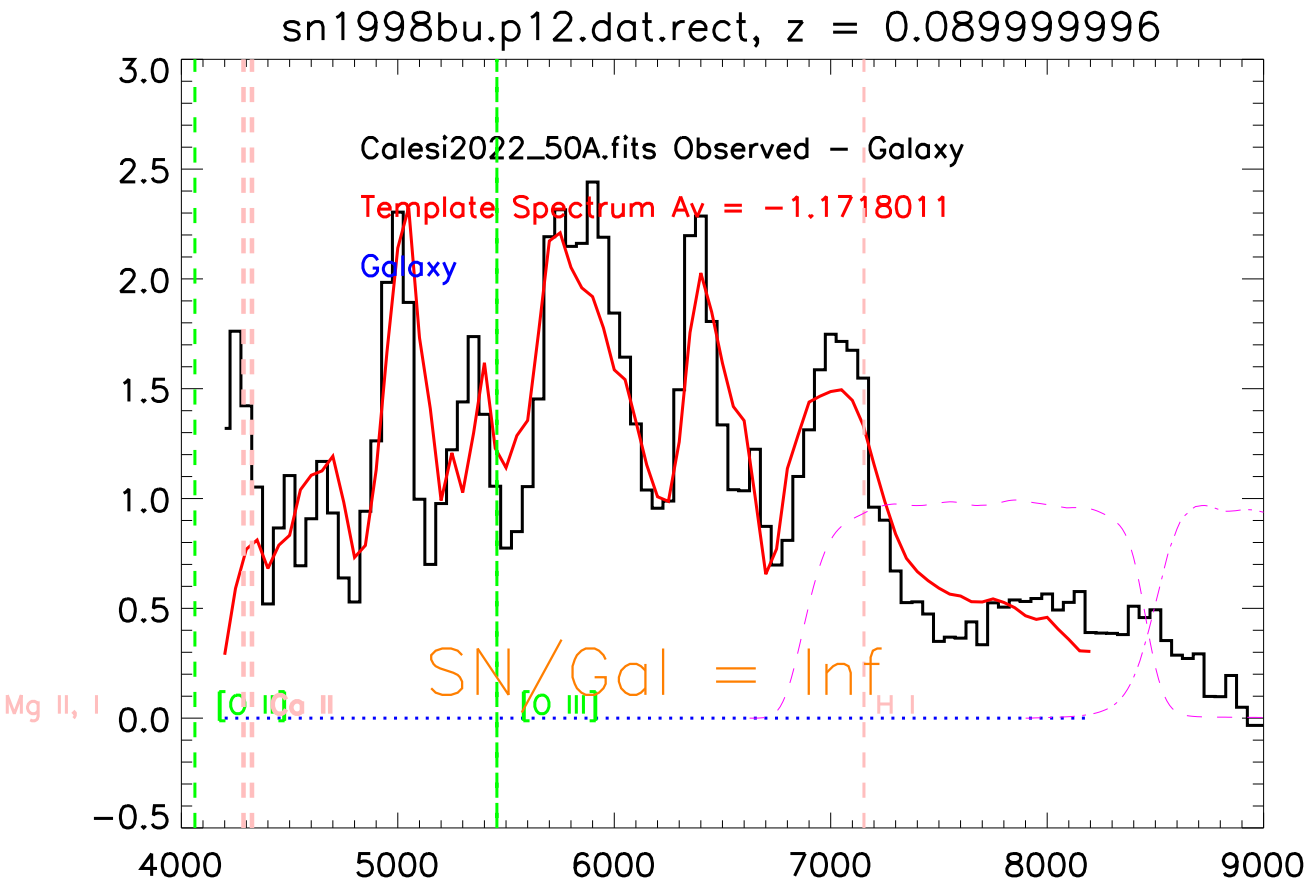
sn1998bu.p12.dat.rect, z = 0.089999996
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −1.1718011
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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1.5
1.0
0.5
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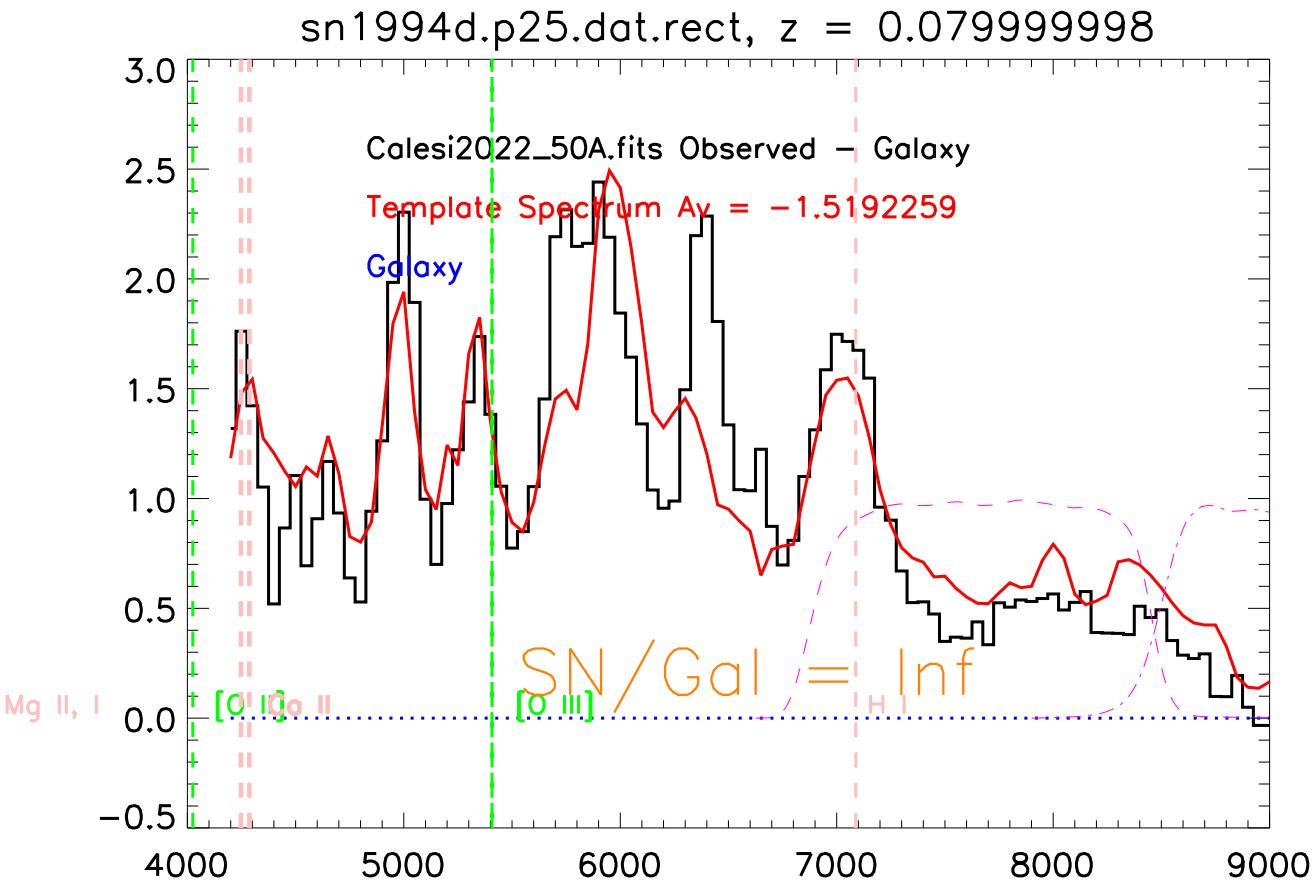
sn1994d.p25.dat.rect, z = 0.079999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −1.5192259
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
3.0
2.5
2.0
1.5
1.0
0.5
0.0
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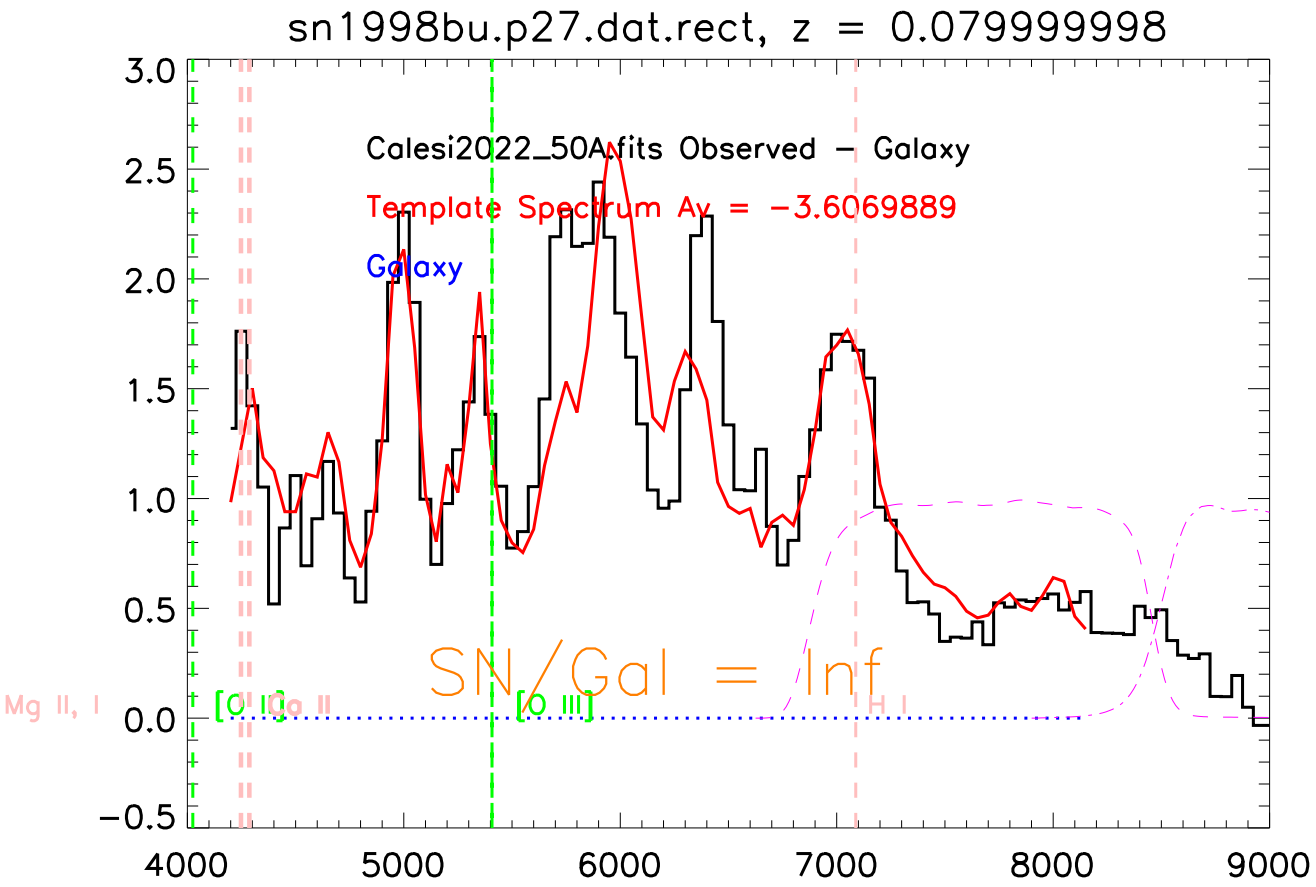
sn1998bu.p27.dat.rect, z = 0.079999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −3.6069889
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
3.0
2.5
2.0
1.5
1.0
0.5
0.0
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7000
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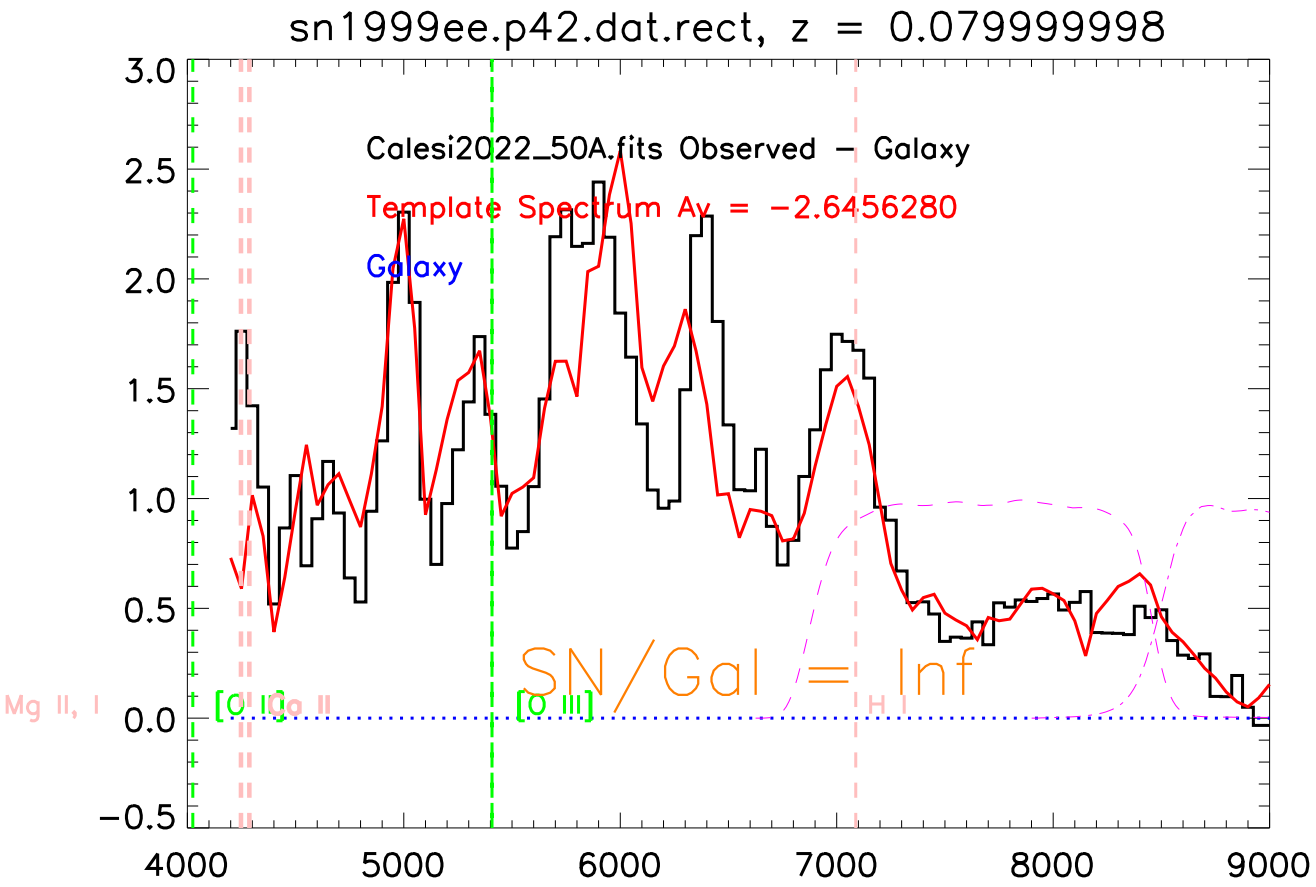
sn1999ee.p42.dat.rect, z = 0.079999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −2.6456280
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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1.5
1.0
0.5
0.0
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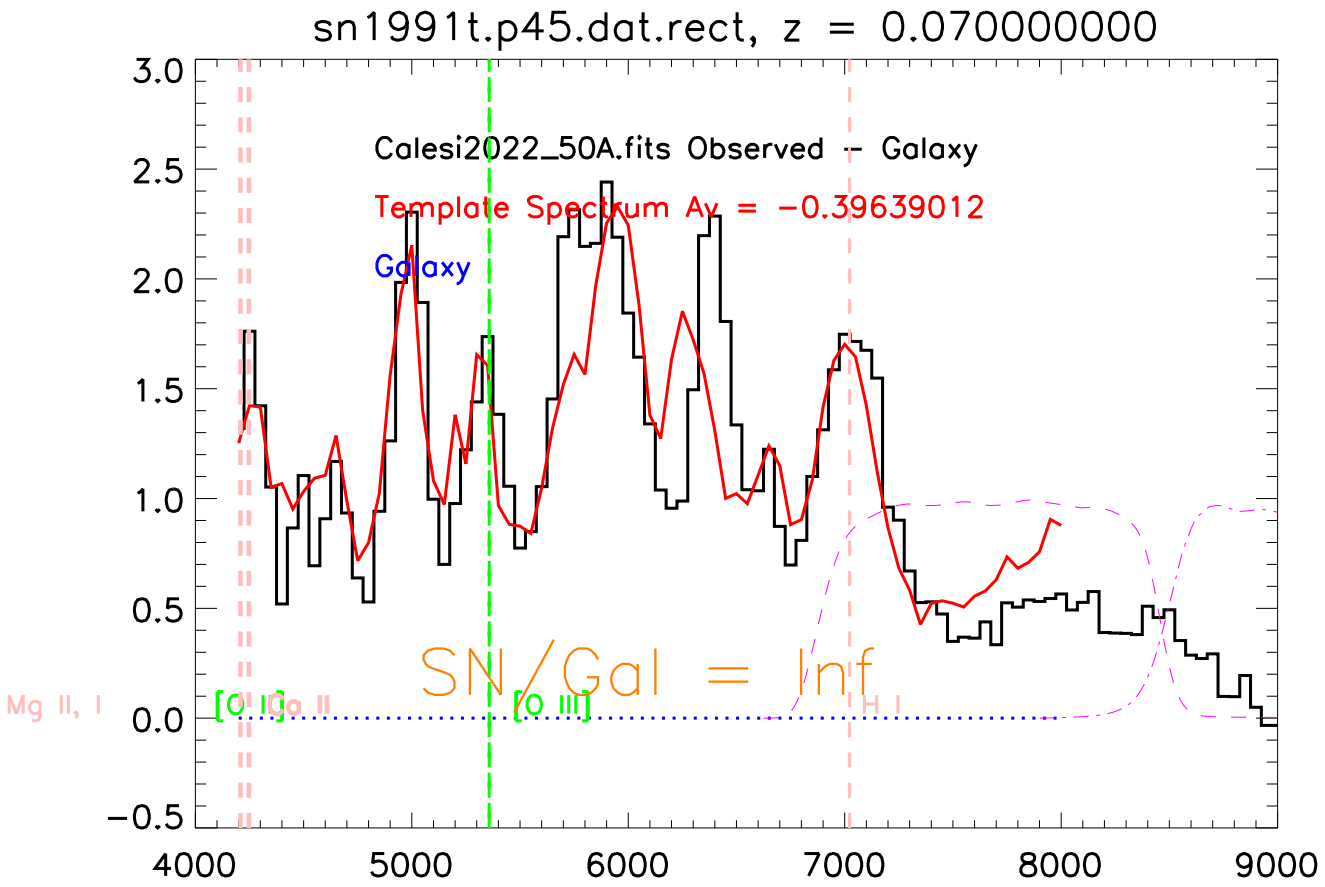
sn1991t.p45.dat.rect, z = 0.070000000
Calesi2022_50A.fits Observed -- Galaxy
Template Spectrum Av = -0.39639012
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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1.5
1.0
0.5
0.0
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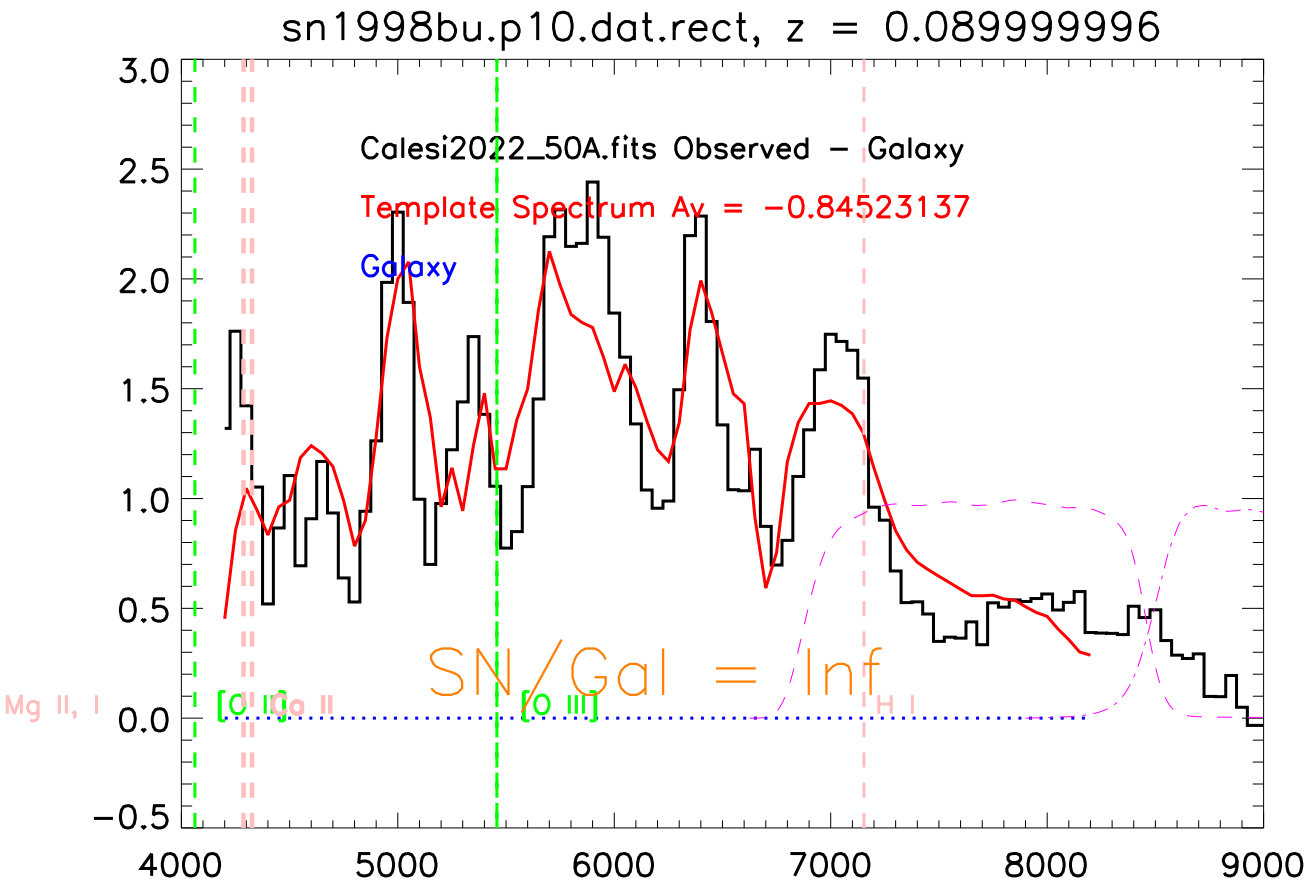
sn1998bu.p10.dat.rect, z = 0.089999996
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −0.84523137
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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1.5
1.0
0.5
0.0
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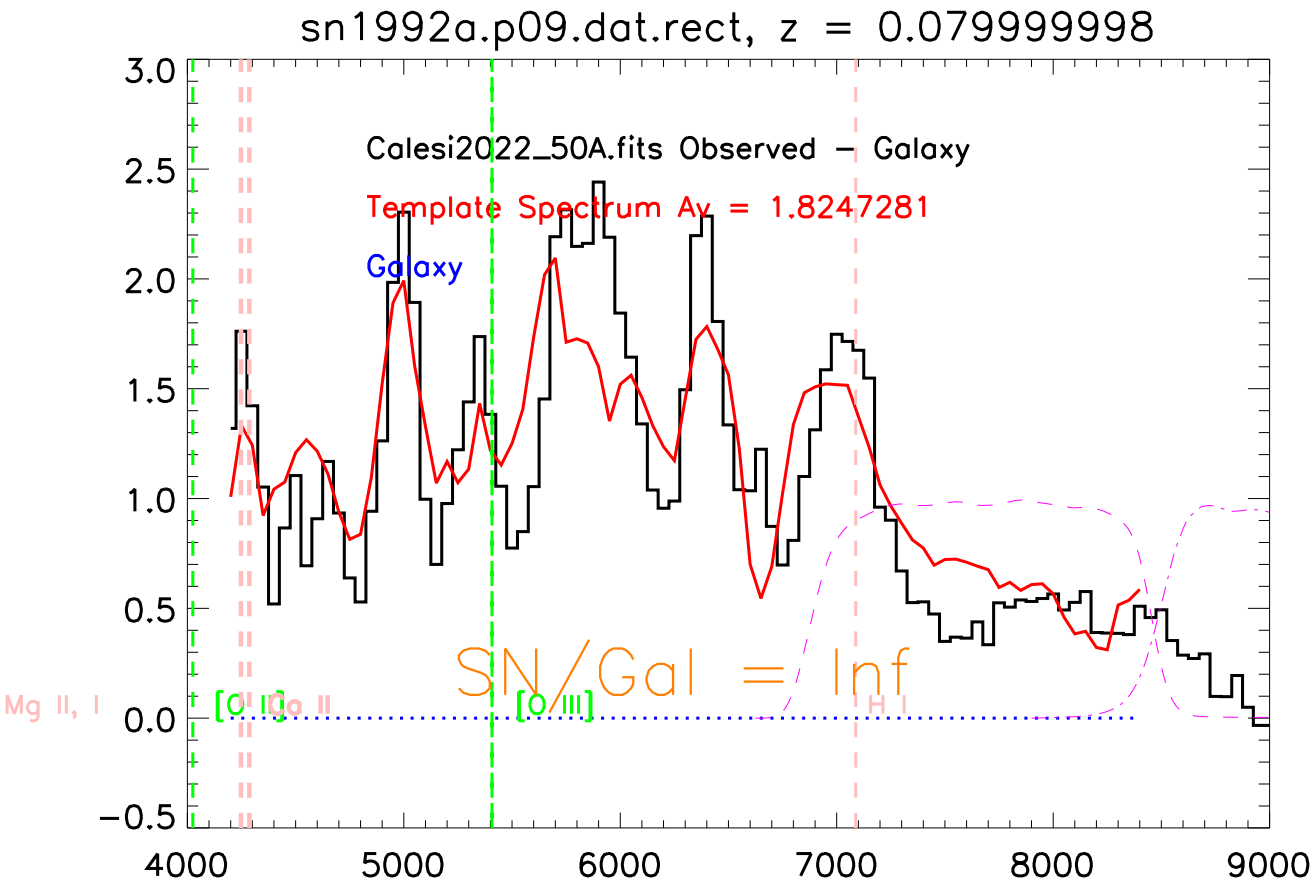
sn1992a.p09.dat.rect, z = 0.079999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 1.8247281
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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2.0
1.5
1.0
0.5
0.0
−0.5
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7000
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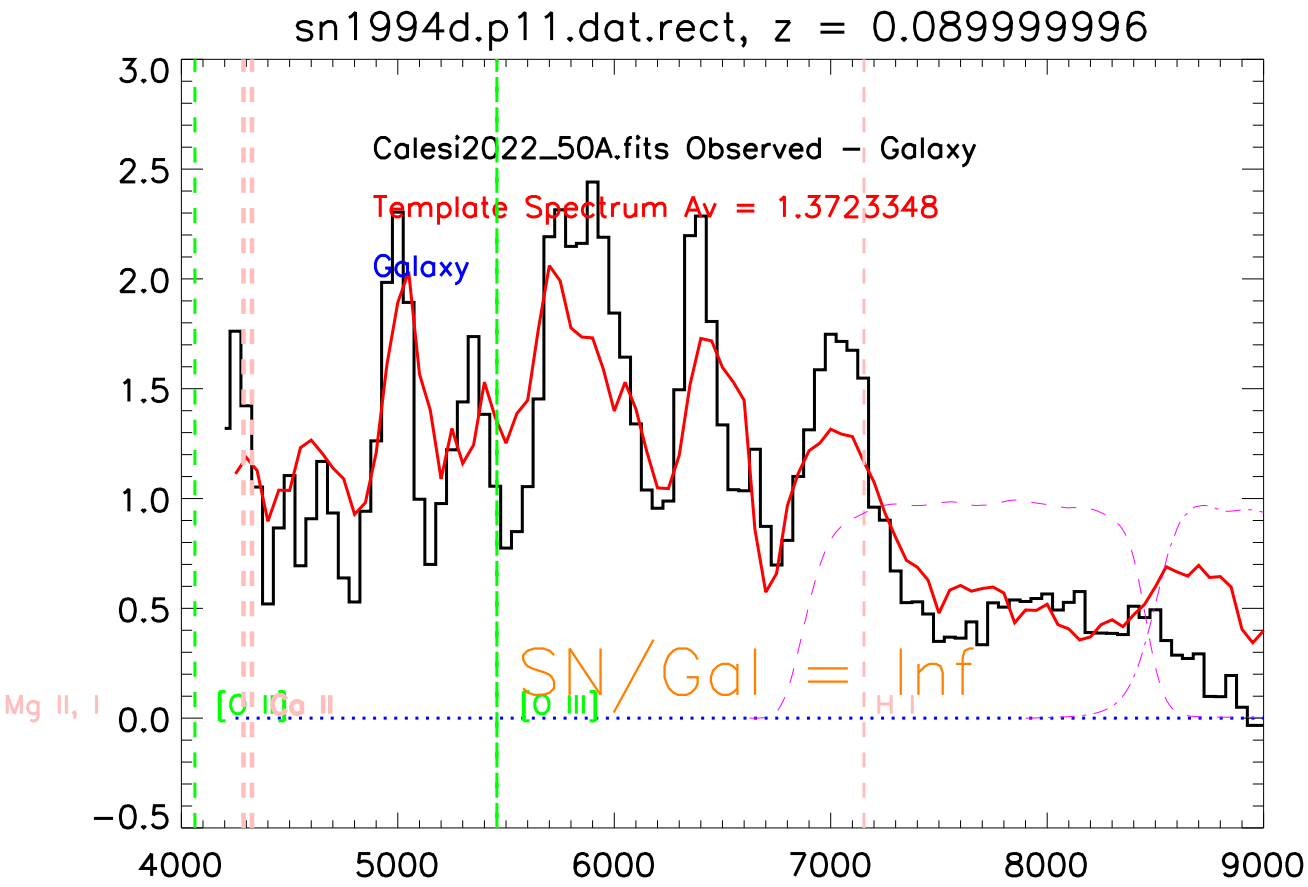
9000


sn1994d.p11.dat.rect, z = 0.089999996
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 1.3723348
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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2.0
1.5
1.0
0.5
0.0
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7000
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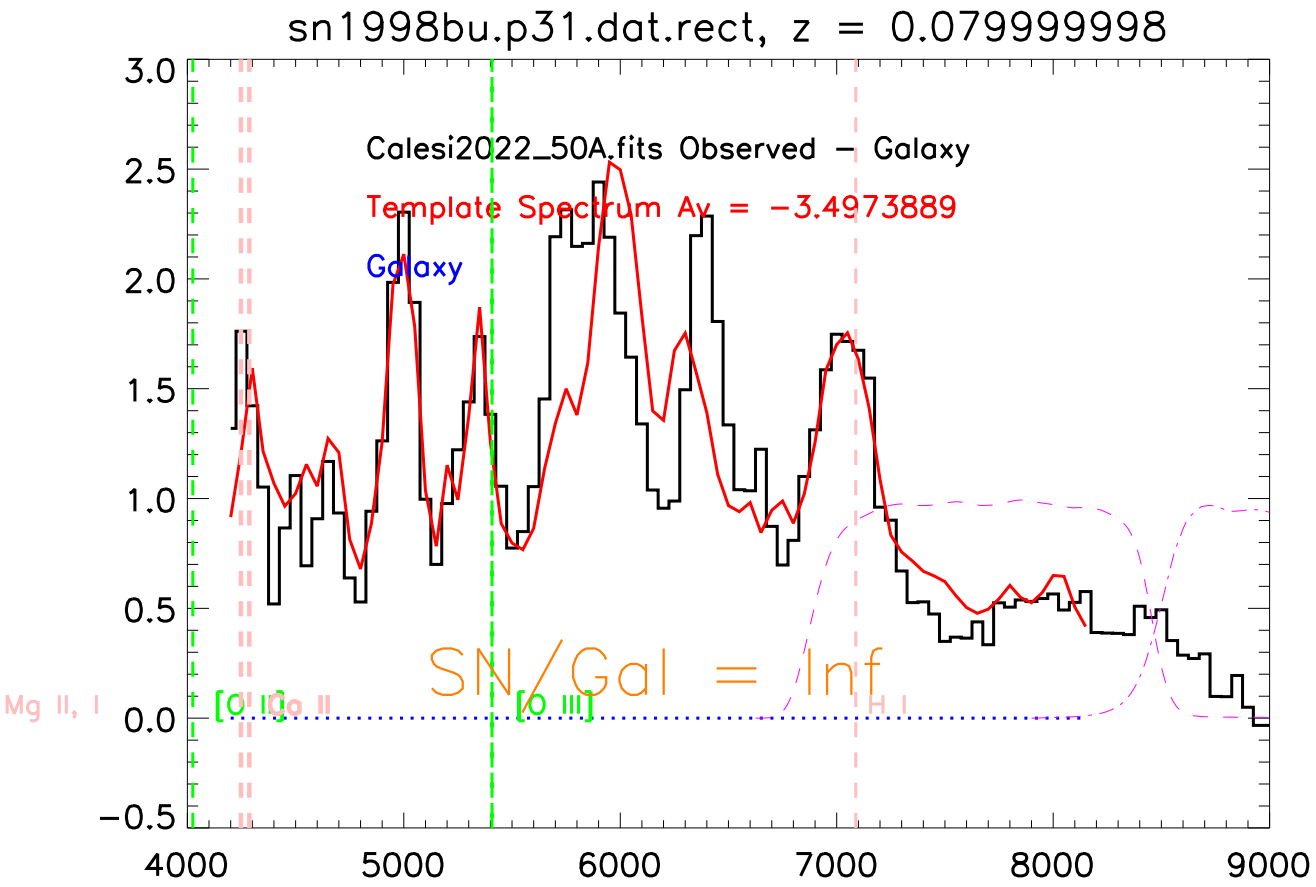
sn1998bu.p31.dat.rect, z = 0.079999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −3.4973889
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
3.0
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
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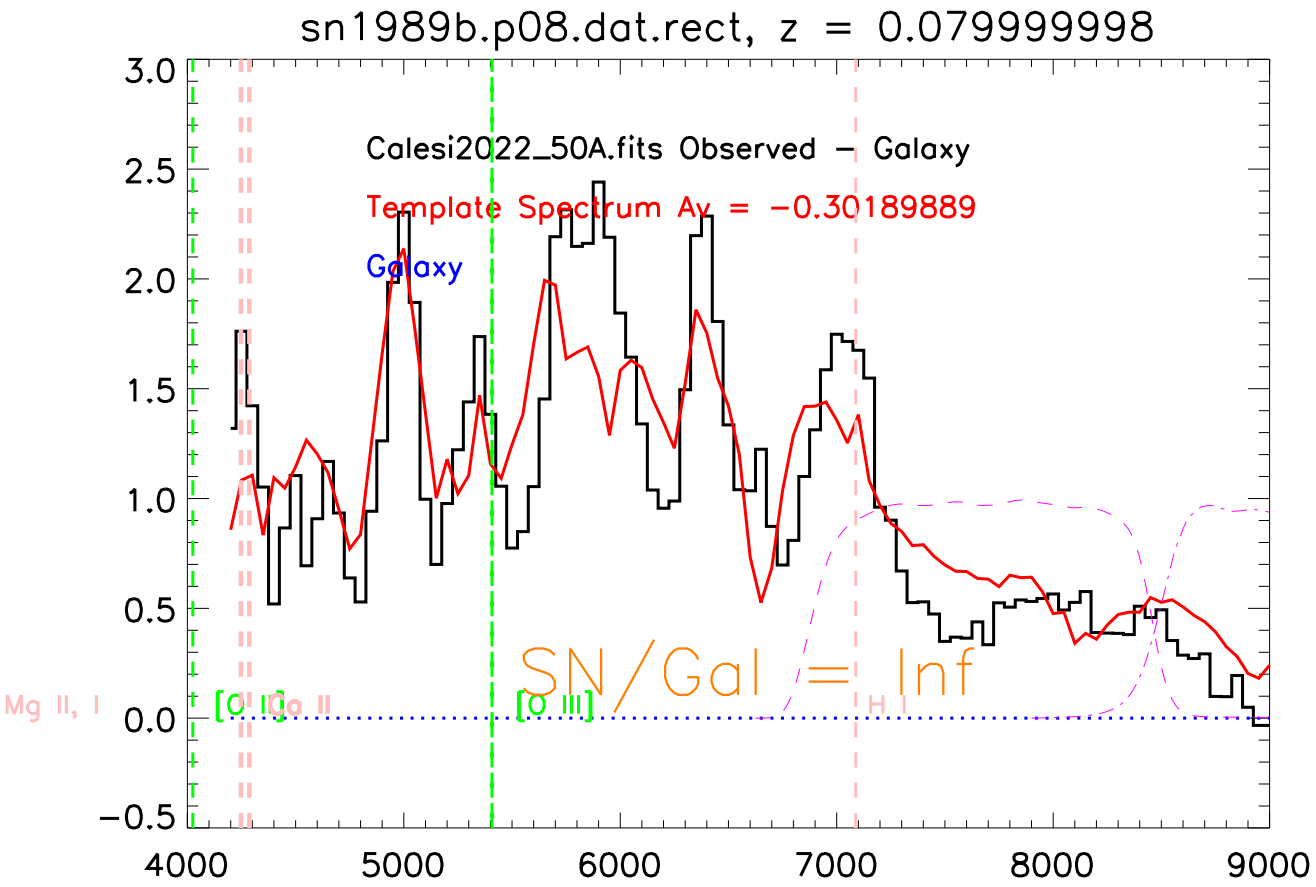
sn1989b.p08.dat.rect, z = 0.079999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −0.30189889
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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2.5
2.0
1.5
1.0
0.5
0.0
−0.5
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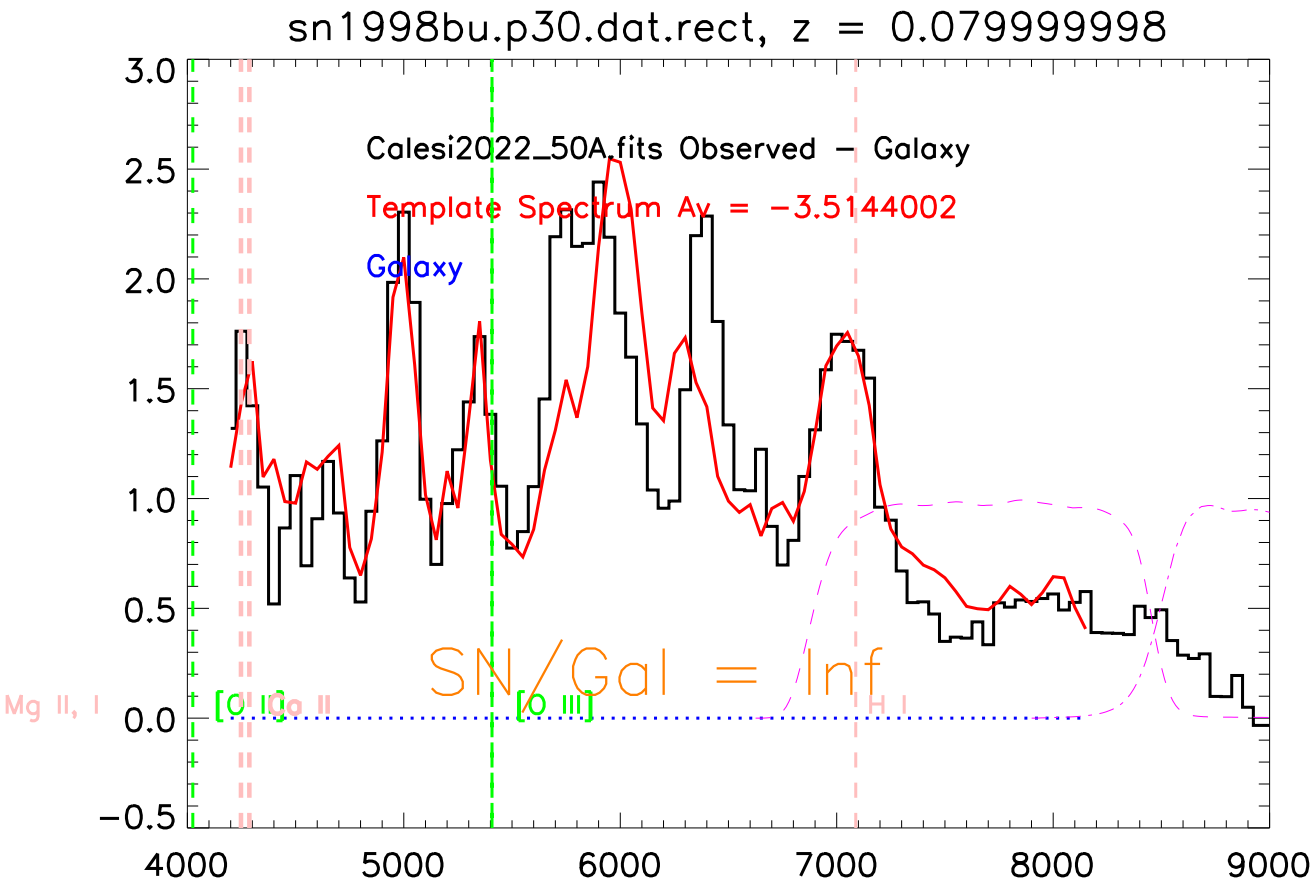
sn1998bu.p30.dat.rect, z = 0.079999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −3.5144002
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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2.0
1.5
1.0
0.5
0.0
−0.5
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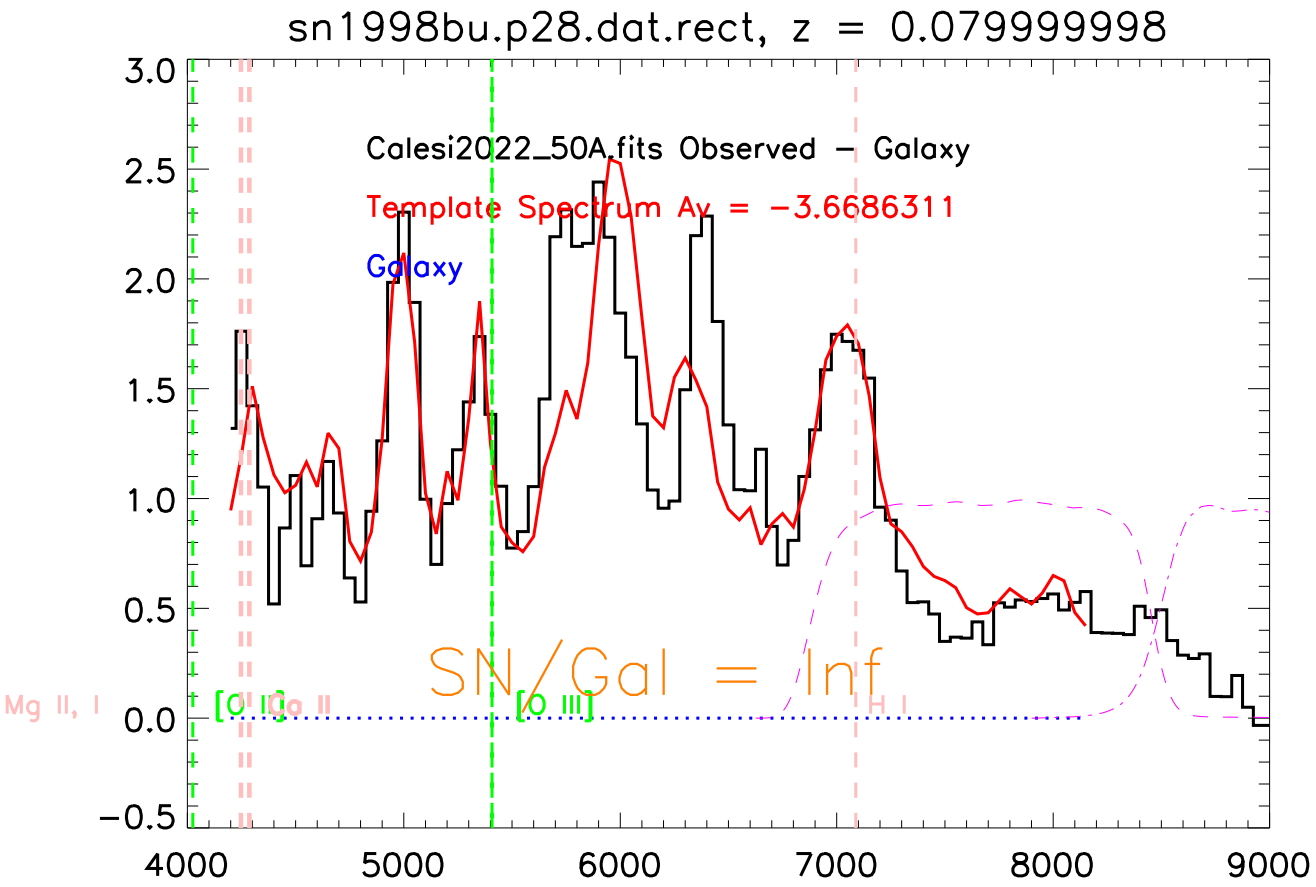
9000


sn1998bu.p28.dat.rect, z = 0.079999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −3.6686311
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
3.0
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2.0
1.5
1.0
0.5
0.0
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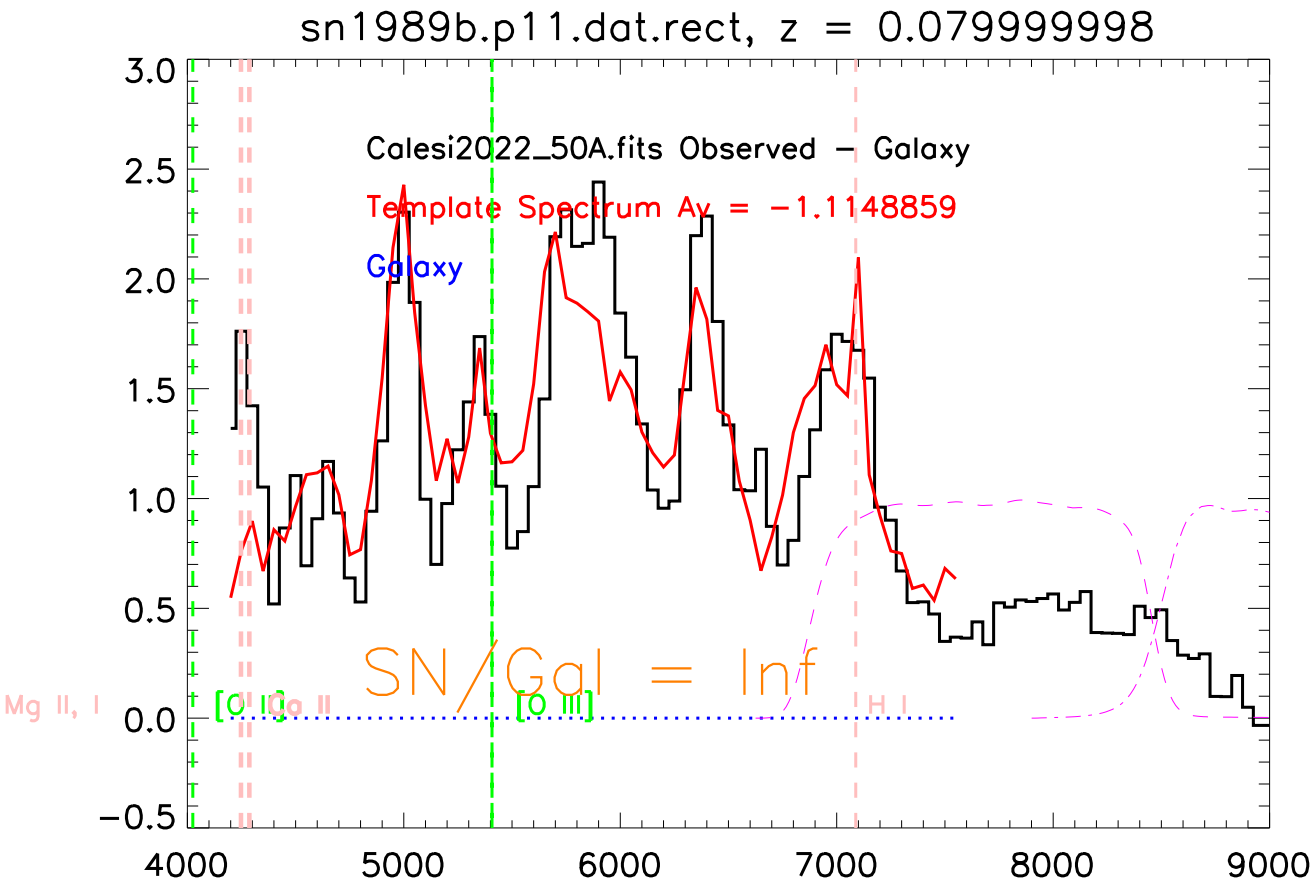
sn1989b.p11.dat.rect, z = 0.079999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −1.1148859
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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1.5
1.0
0.5
0.0
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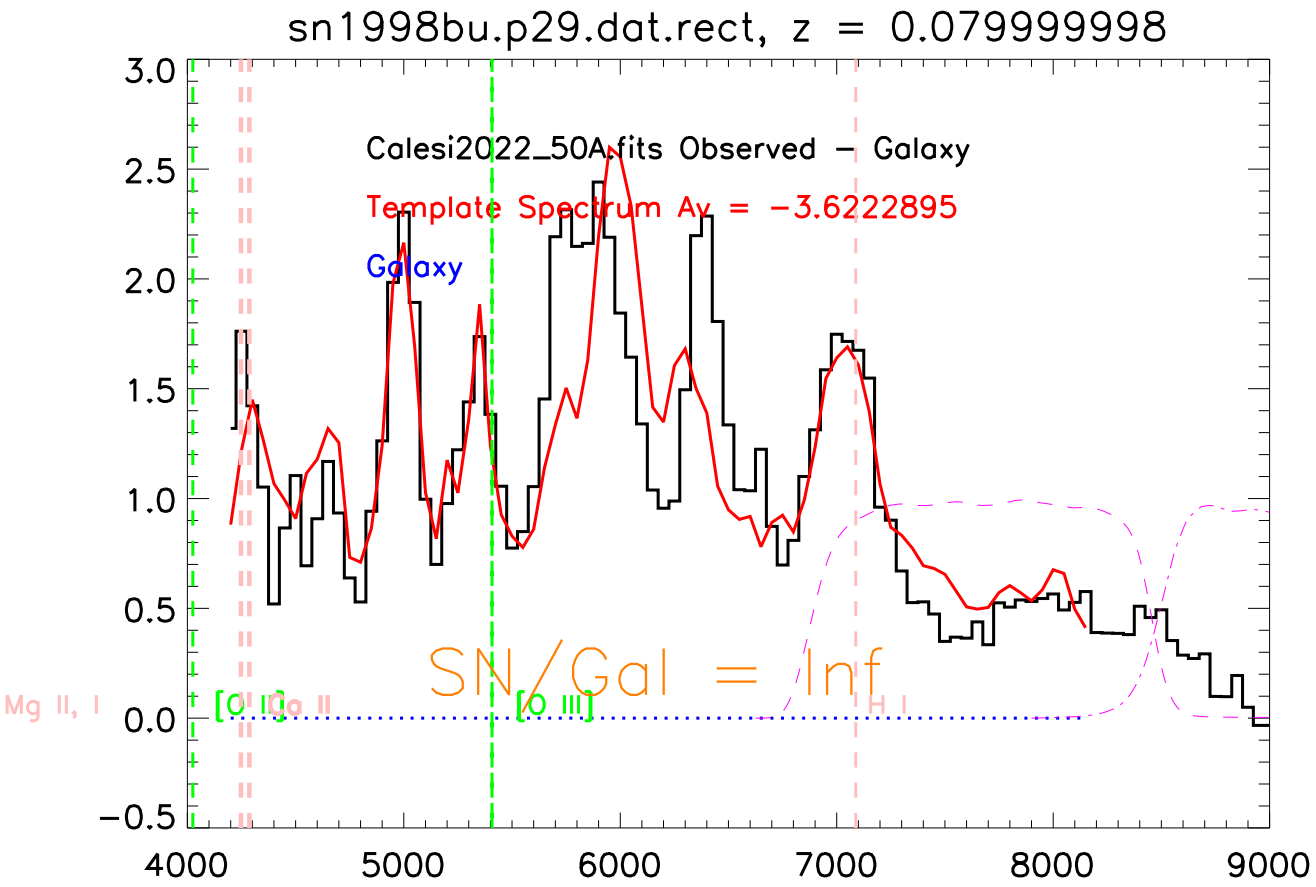
sn1998bu.p29.dat.rect, z = 0.079999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −3.6222895
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
3.0
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1.5
1.0
0.5
0.0
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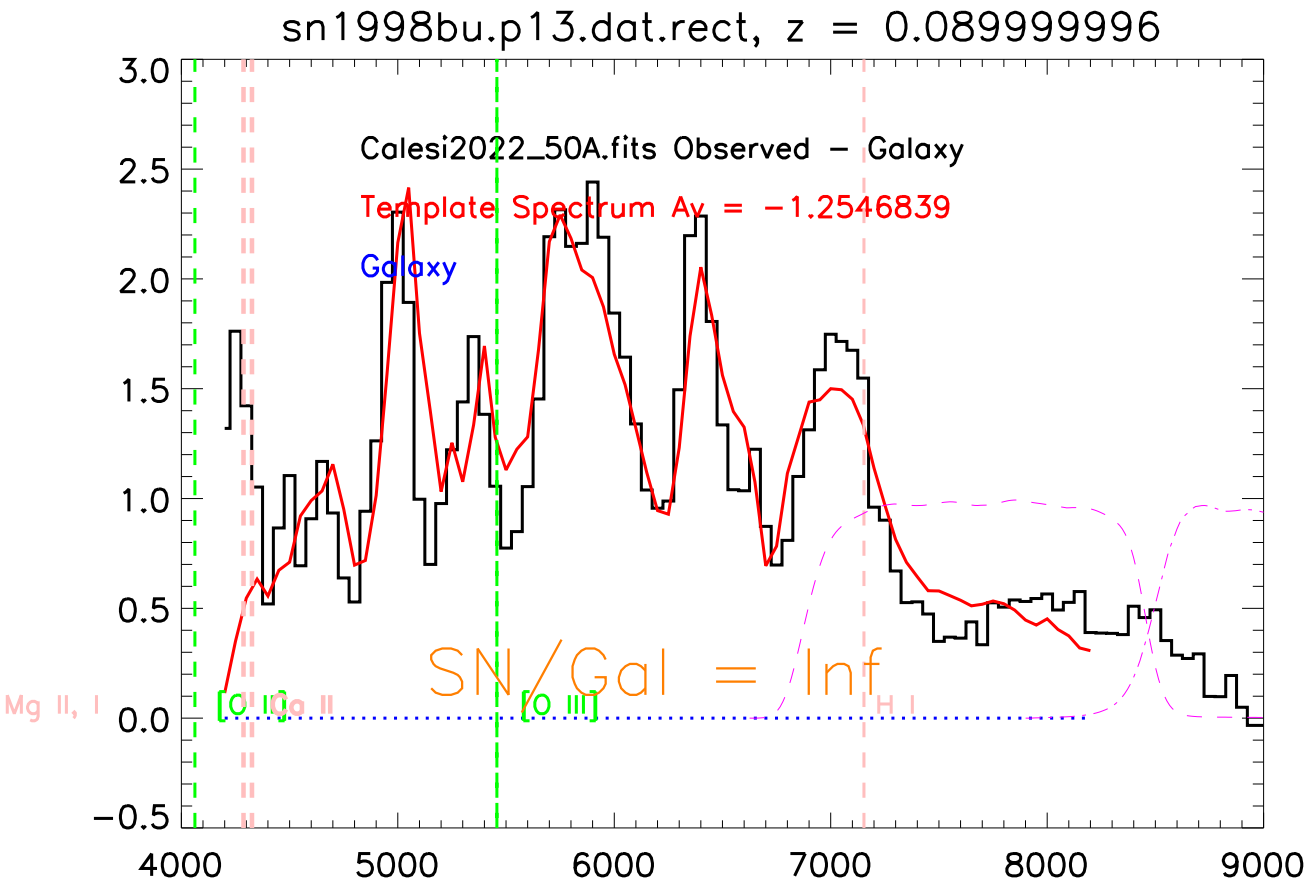
sn1998bu.p13.dat.rect, z = 0.089999996
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −1.2546839
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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1.5
1.0
0.5
0.0
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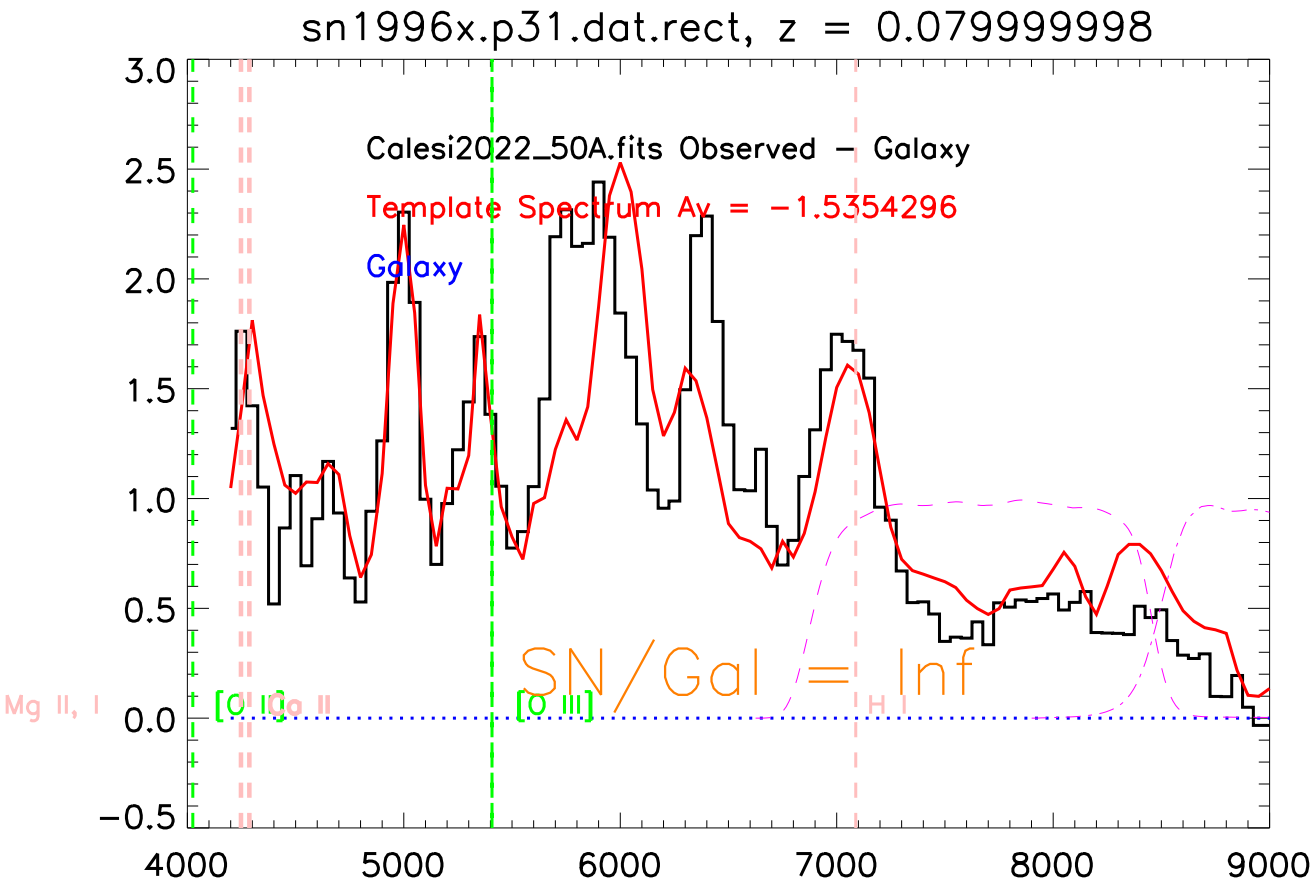
sn1996x.p31.dat.rect, z = 0.079999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −1.5354296
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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1.5
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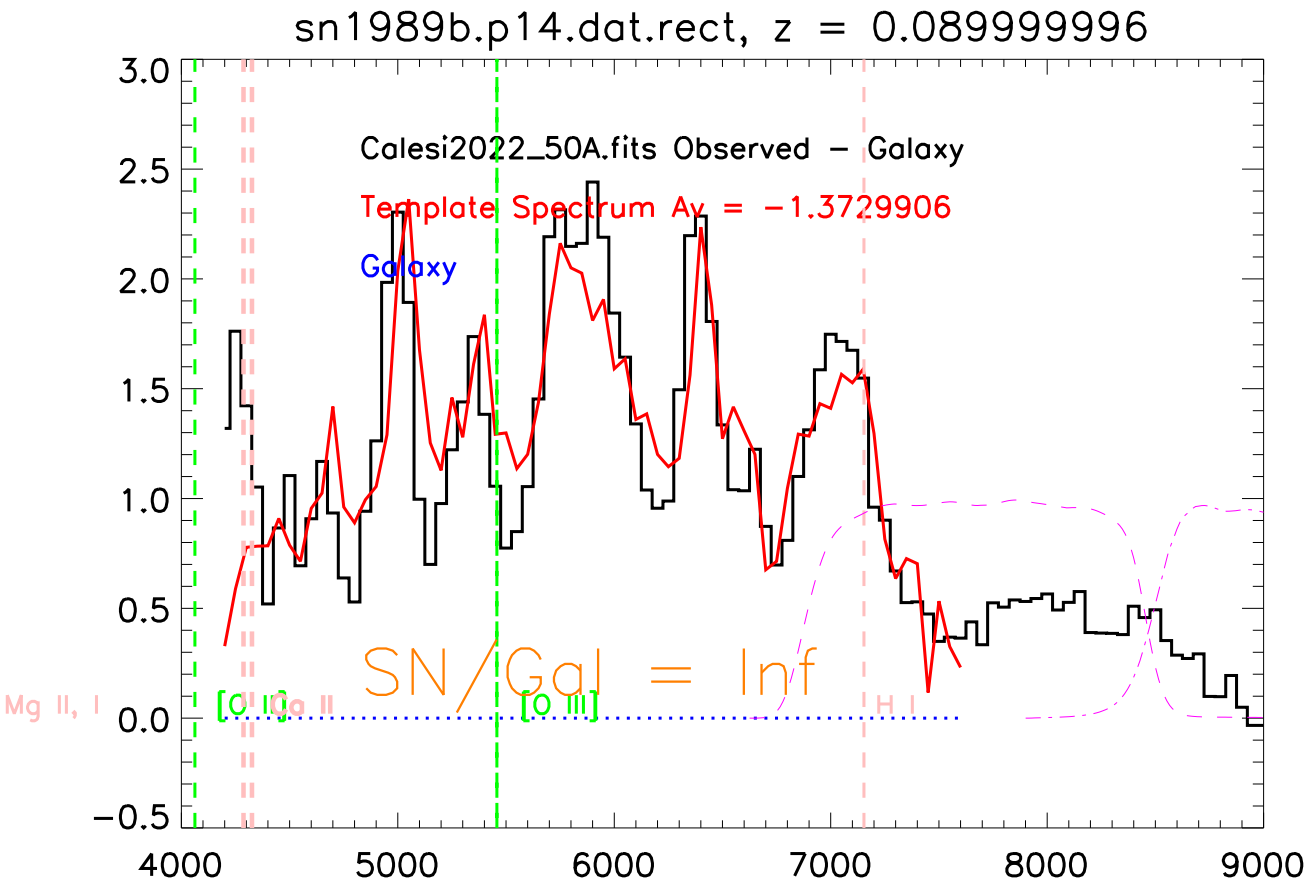
sn1989b.p14.dat.rect, z = 0.089999996
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −1.3729906
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
3.0
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
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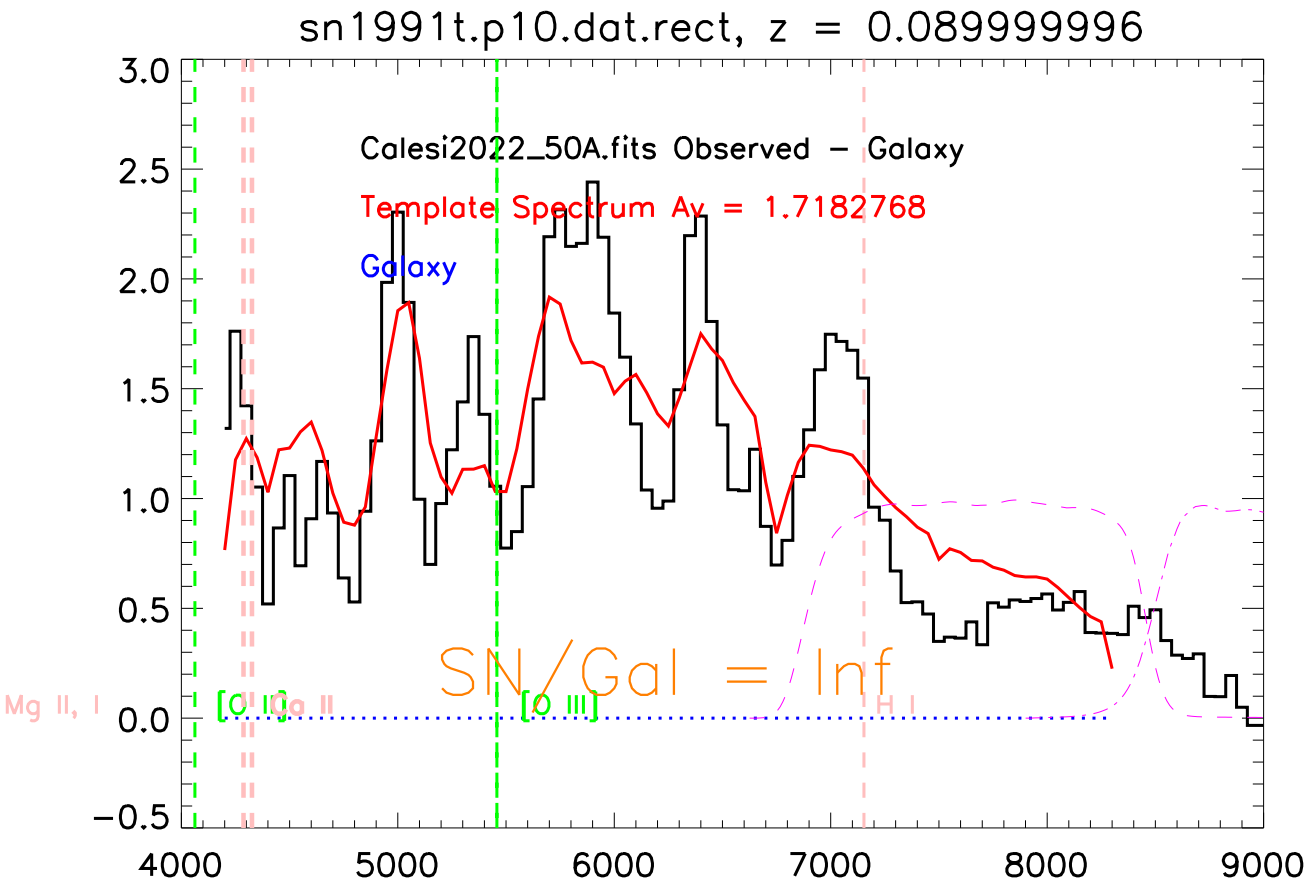
8000
9000


sn1991t.p10.dat.rect, z = 0.089999996
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 1.7182768
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
3.0
2.5
2.0
1.5
1.0
0.5
0.0
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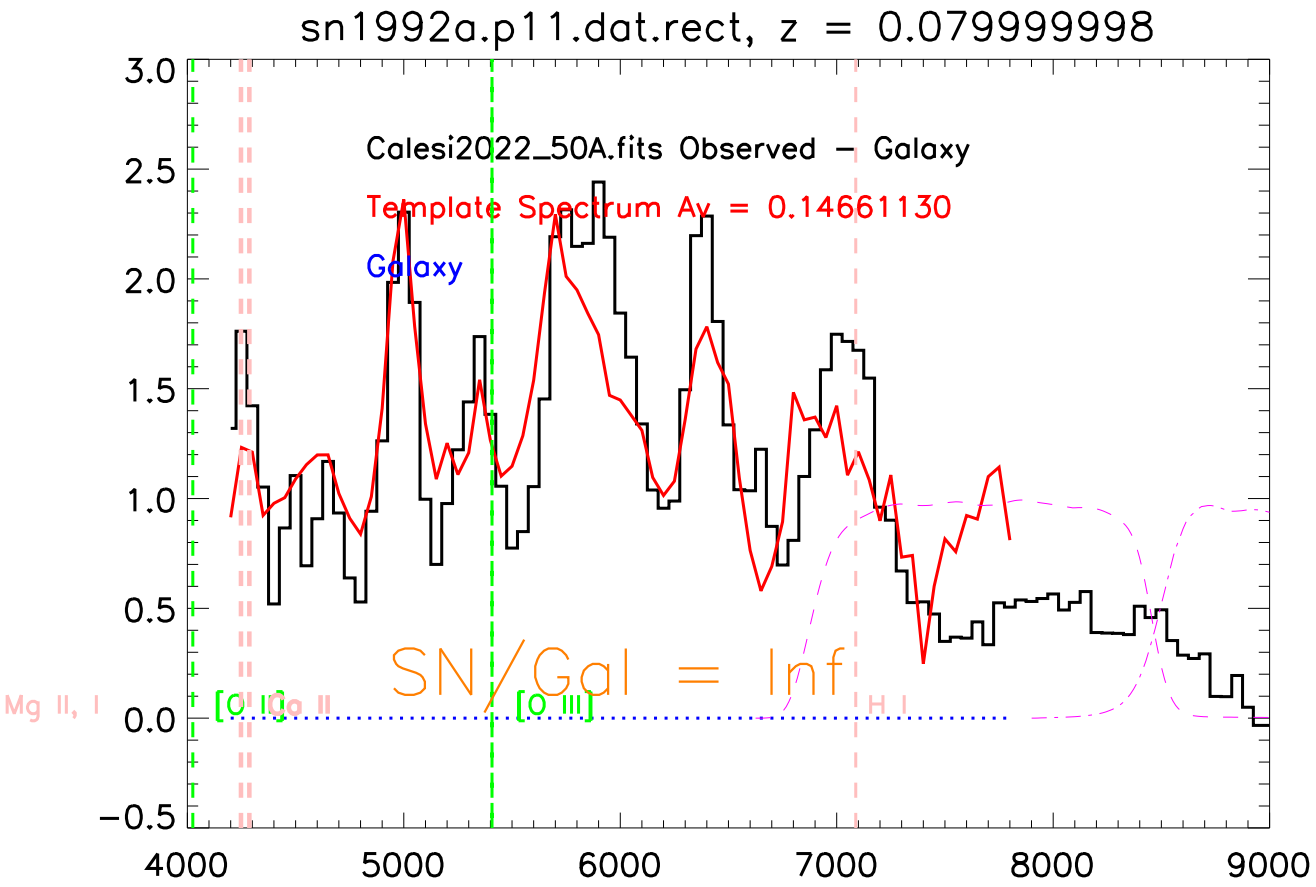
sn1992a.p11.dat.rect, z = 0.079999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 0.14661130
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
3.0
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2.0
1.5
1.0
0.5
0.0
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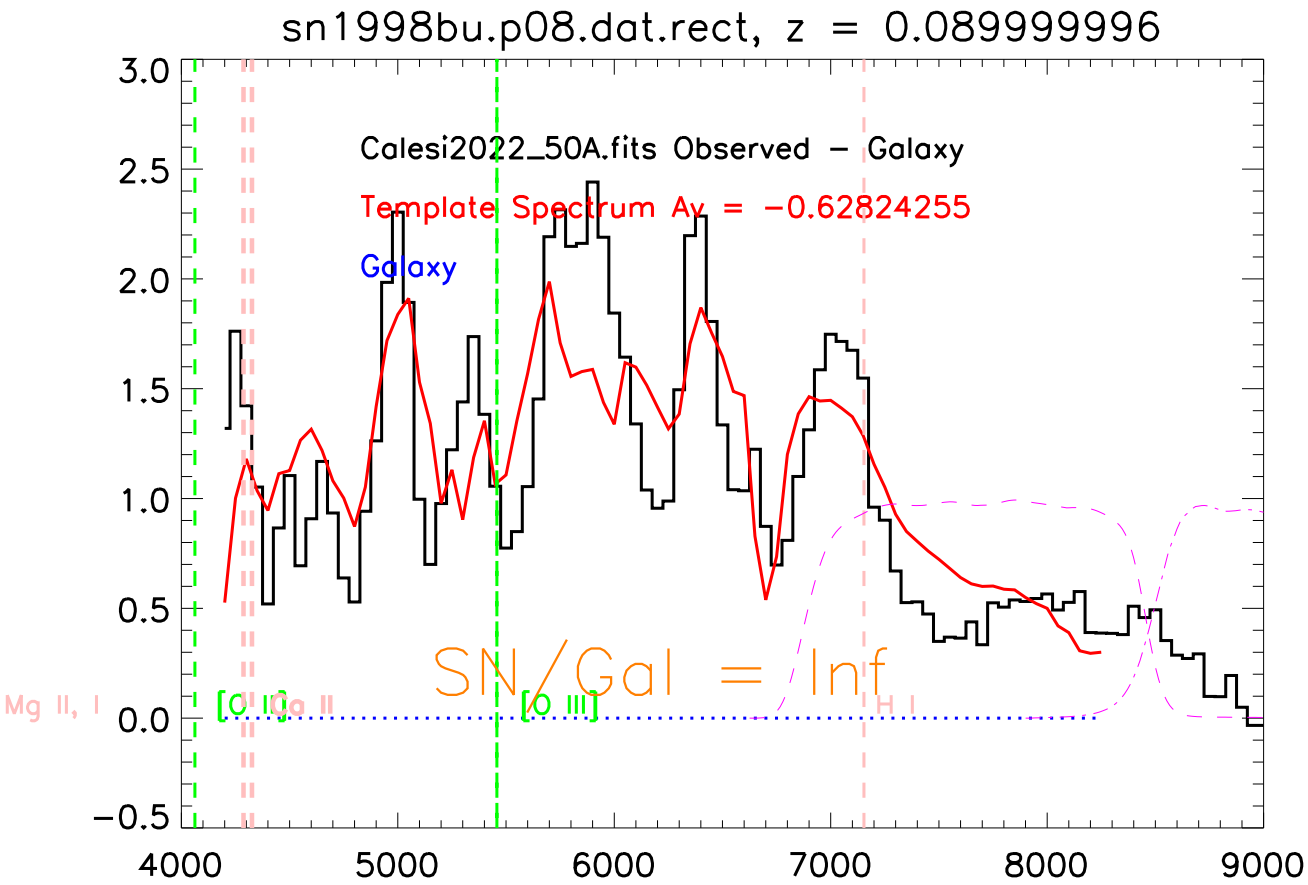
8000
9000


sn1998bu.p08.dat.rect, z = 0.089999996
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −0.62824255
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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1.0
0.5
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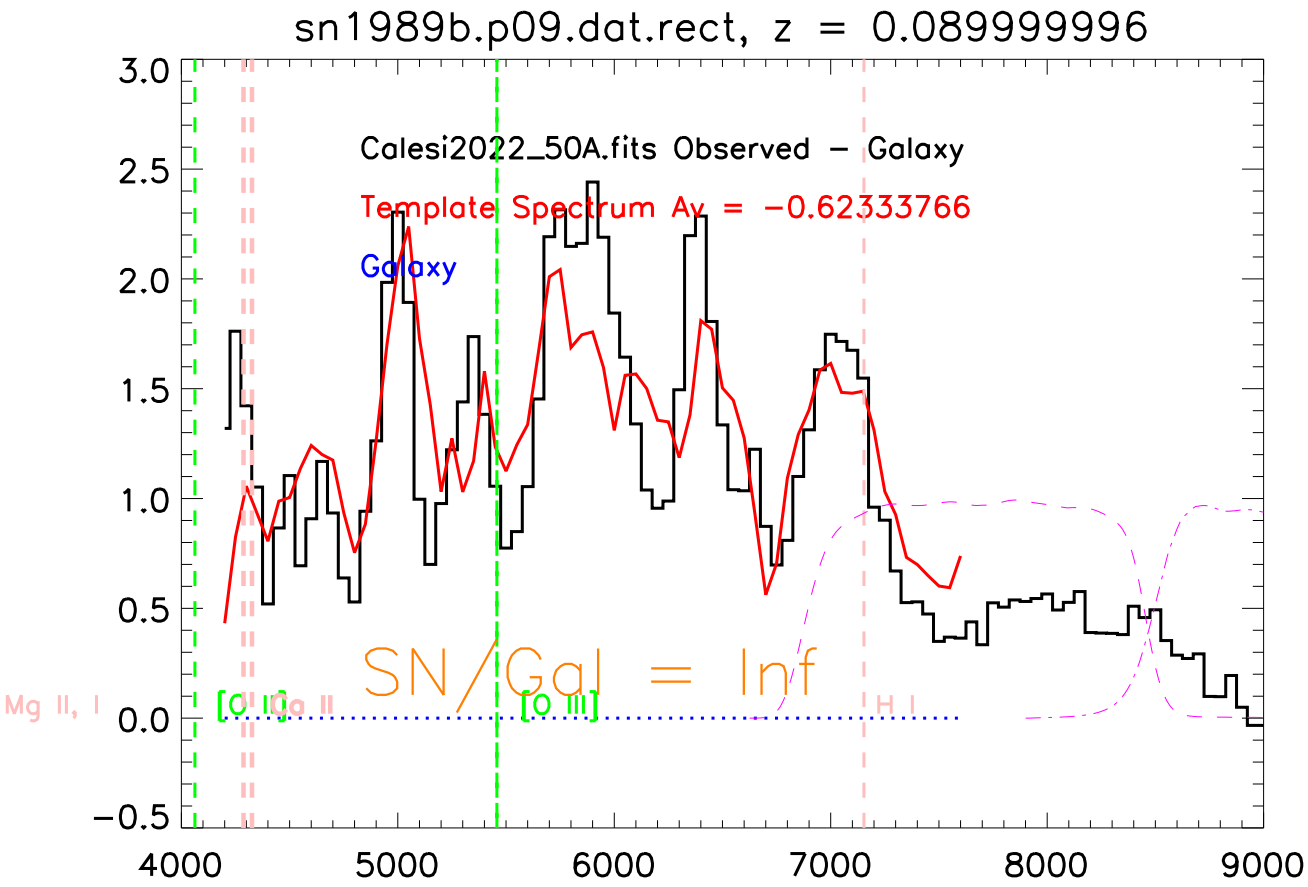
sn1989b.p09.dat.rect, z = 0.089999996
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −0.62333766
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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1.5
1.0
0.5
0.0
−0.5
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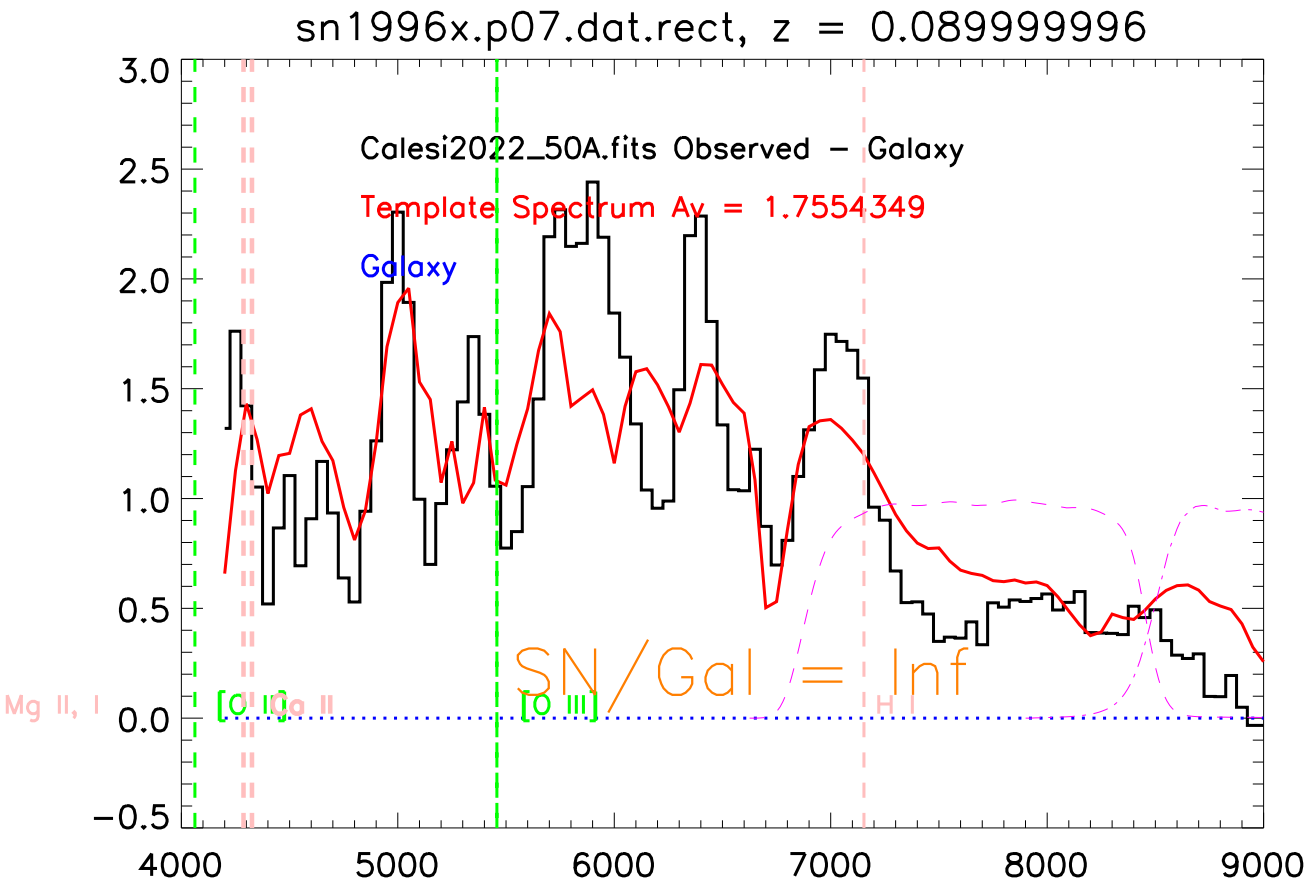
sn1996x.p07.dat.rect, z = 0.089999996
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 1.7554349
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
3.0
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1.5
1.0
0.5
0.0
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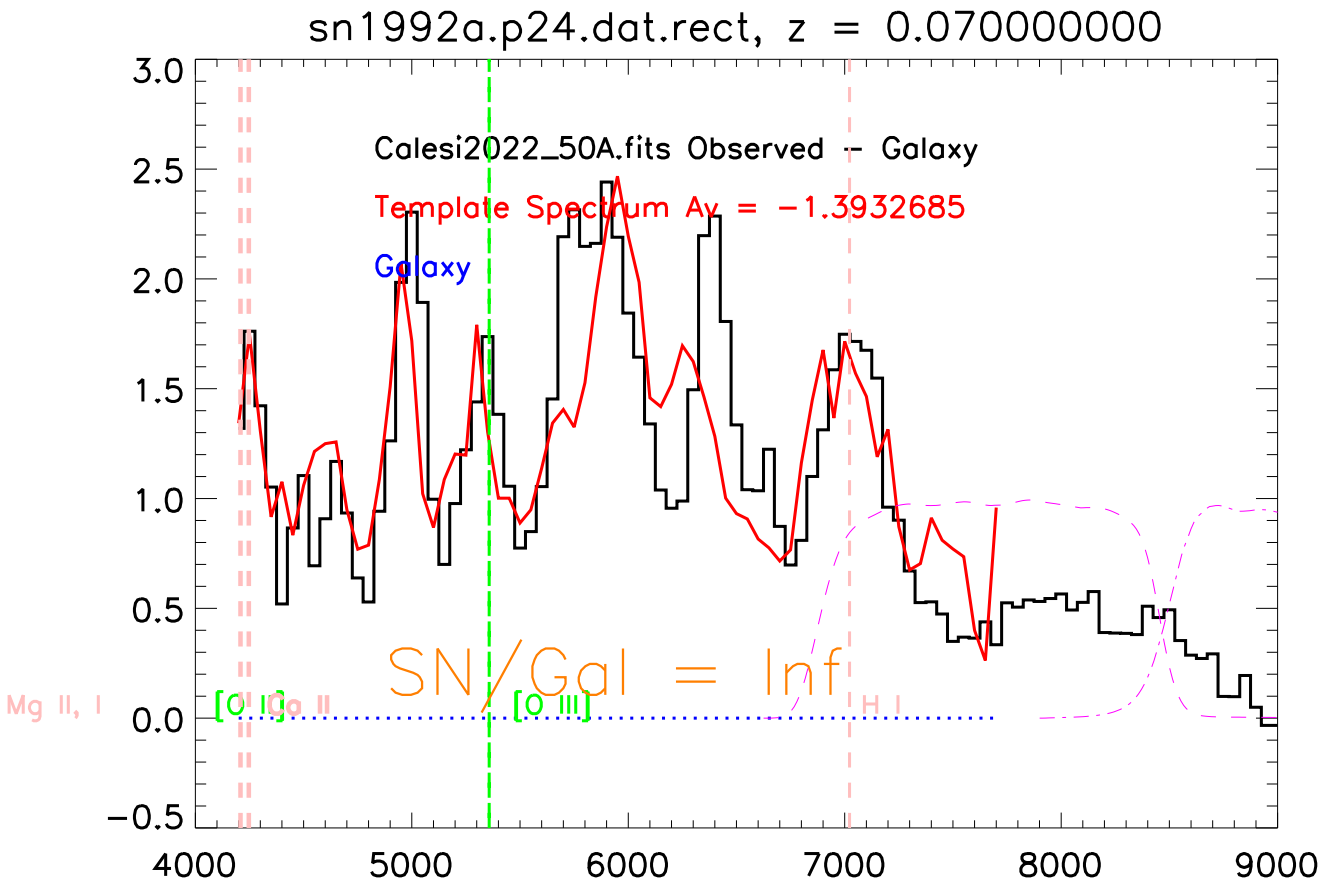
sn1992a.p24.dat.rect, z = 0.070000000
Calesi2022_50A.fits Observed -- Galaxy
Template Spectrum Av = -1.3932685
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
3.0
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2.0
1.5
1.0
0.5
0.0
-0.5
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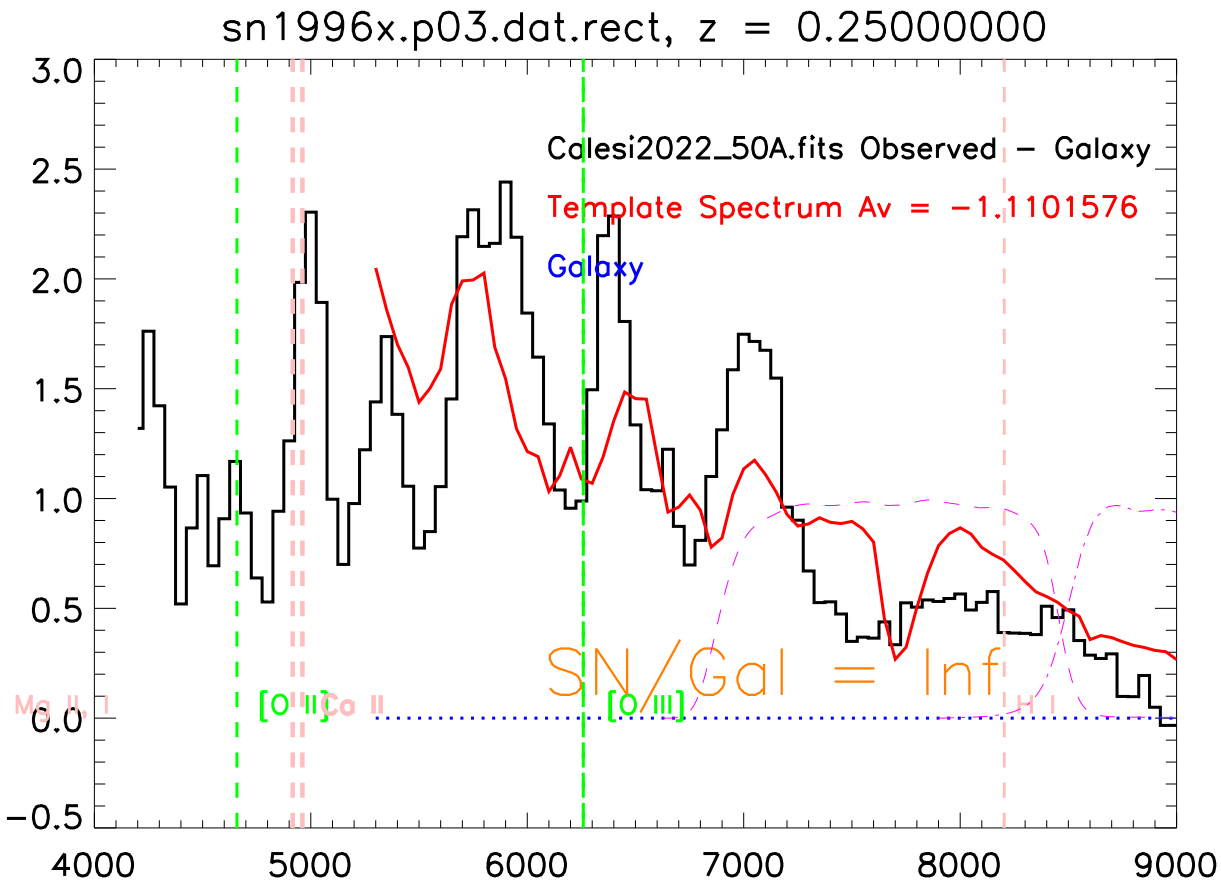
7000
8000
9000


sn1996x.p03.dat.rect, z = 0.25000000
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −1.1101576
Galaxy
SN/Gal = Inf
Mg II
[O II]
Ca II
[O III]
H I
3.0
2.5
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1.5
1.0
0.5
0.0
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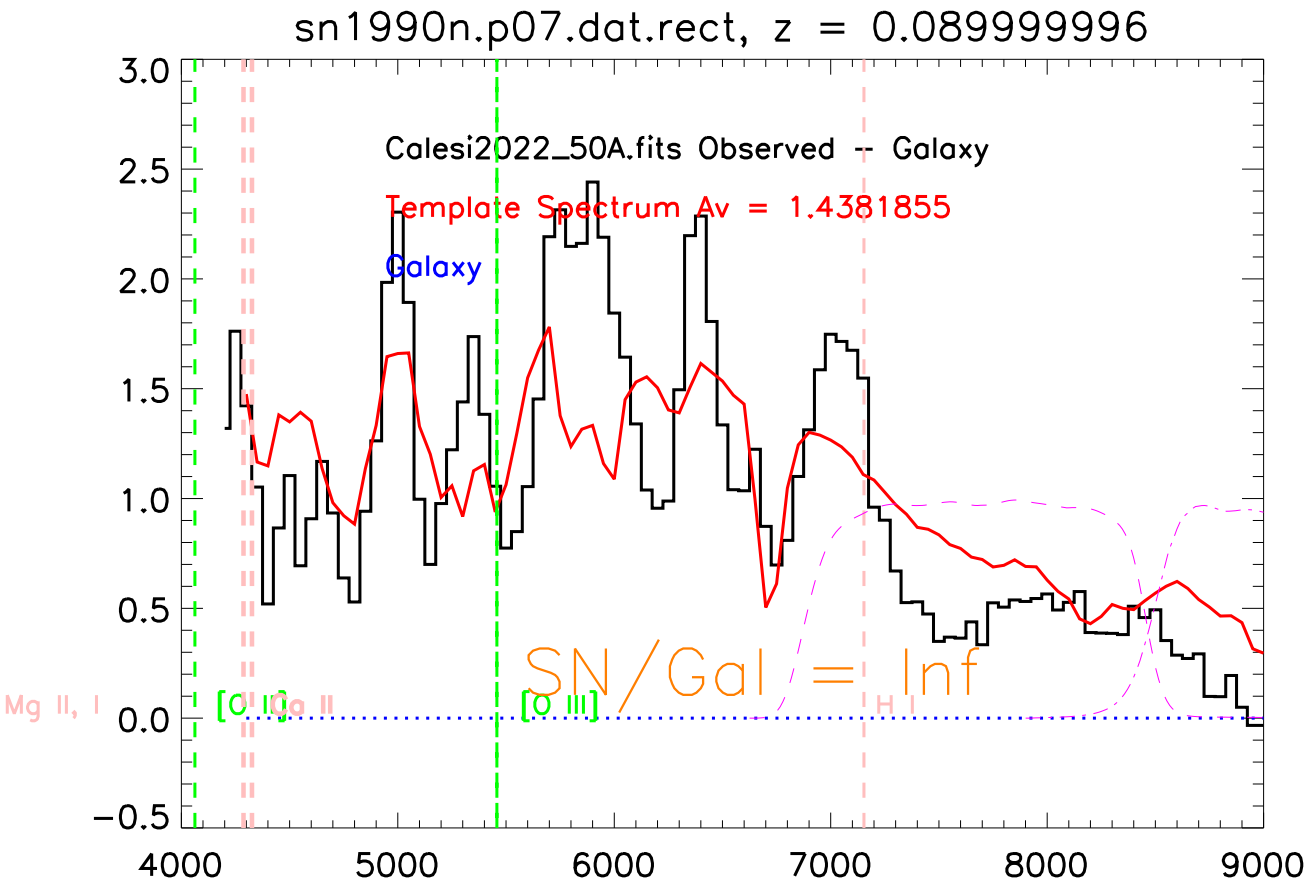
sn1990n.p07.dat.rect, z = 0.089999996
Calesi2022_50A.fits Observed -- Galaxy
Template Spectrum Av = 1.4381855
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
3.0
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2.0
1.5
1.0
0.5
0.0
−0.5
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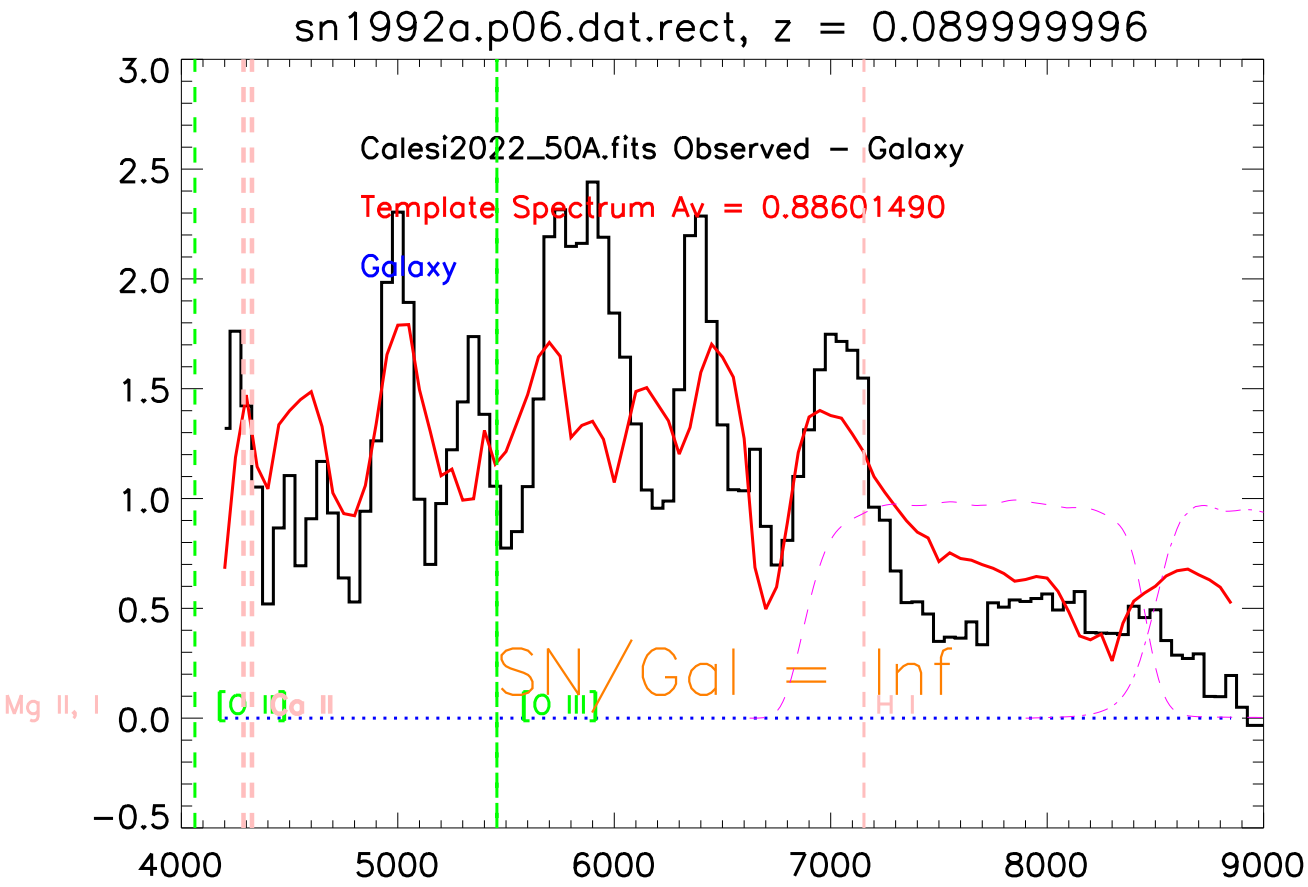
sn1992a.p06.dat.rect, z = 0.089999996
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 0.88601490
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
3.0
2.5
2.0
1.5
1.0
0.5
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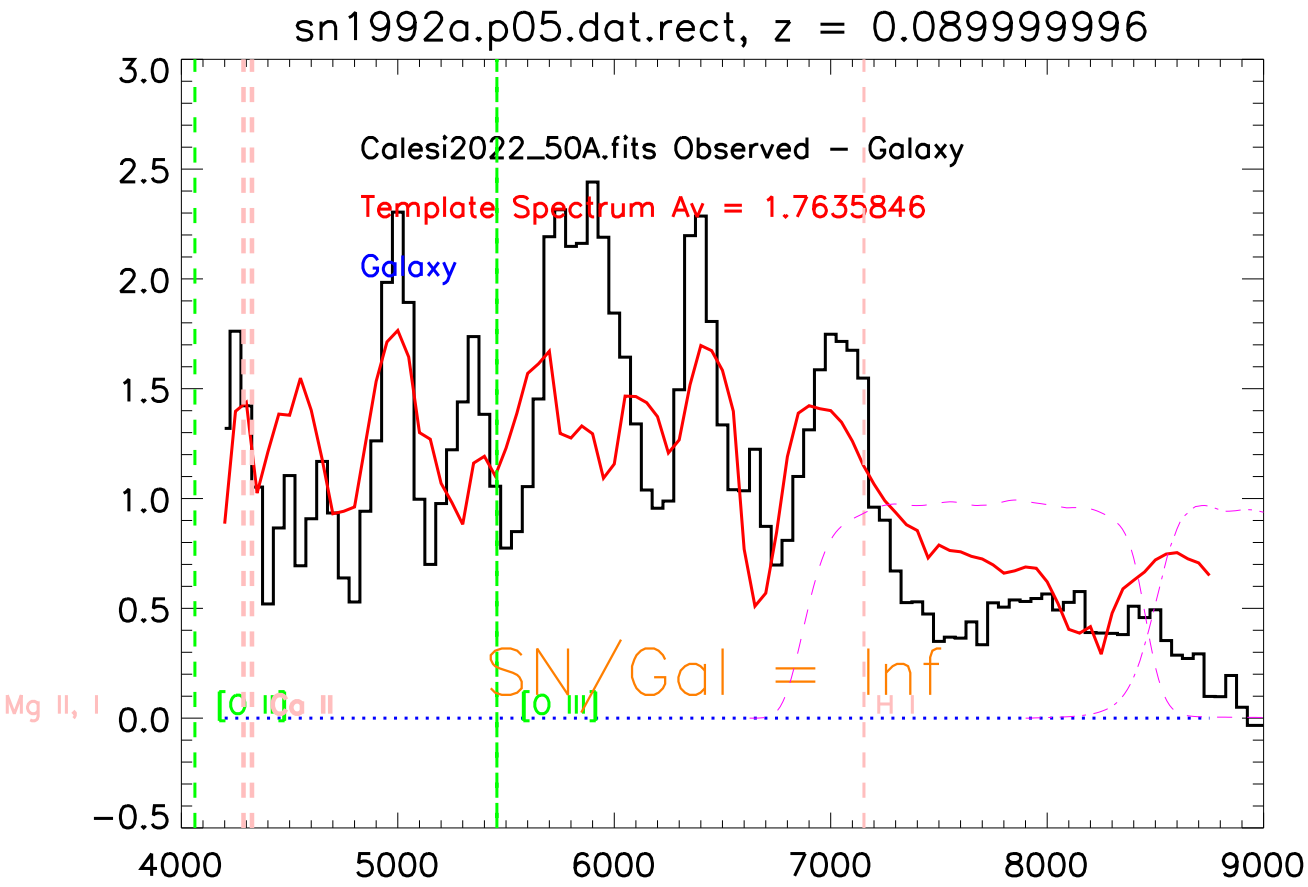
9000


sn1992a.p05.dat.rect, z = 0.089999996
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 1.7635846
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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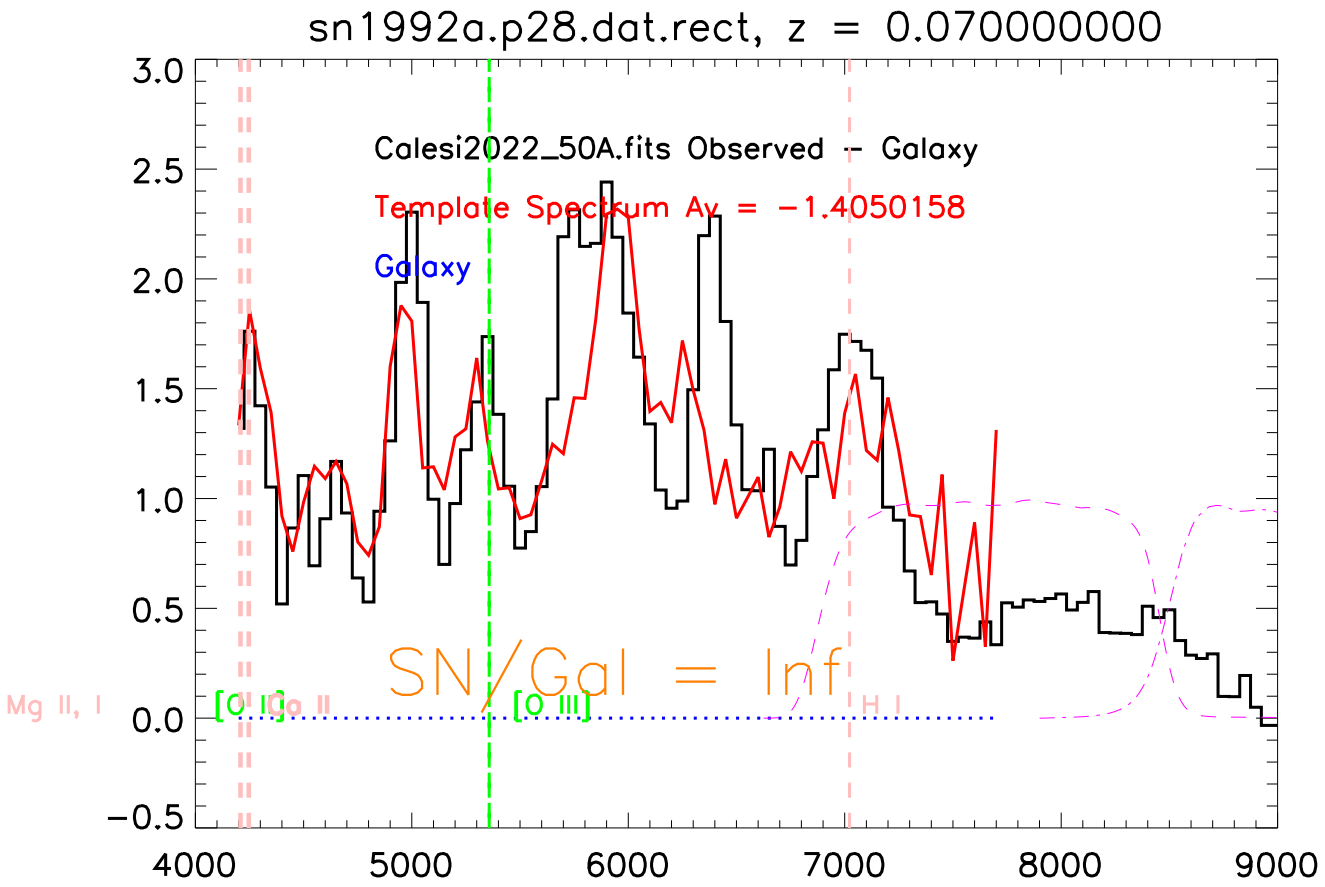
sn1992a.p28.dat.rect, z = 0.070000000
Calesi2022_50A.fits Observed -- Galaxy
Template Spectrum Av = -1.4050158
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
3.0
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1.5
1.0
0.5
0.0
−0.5
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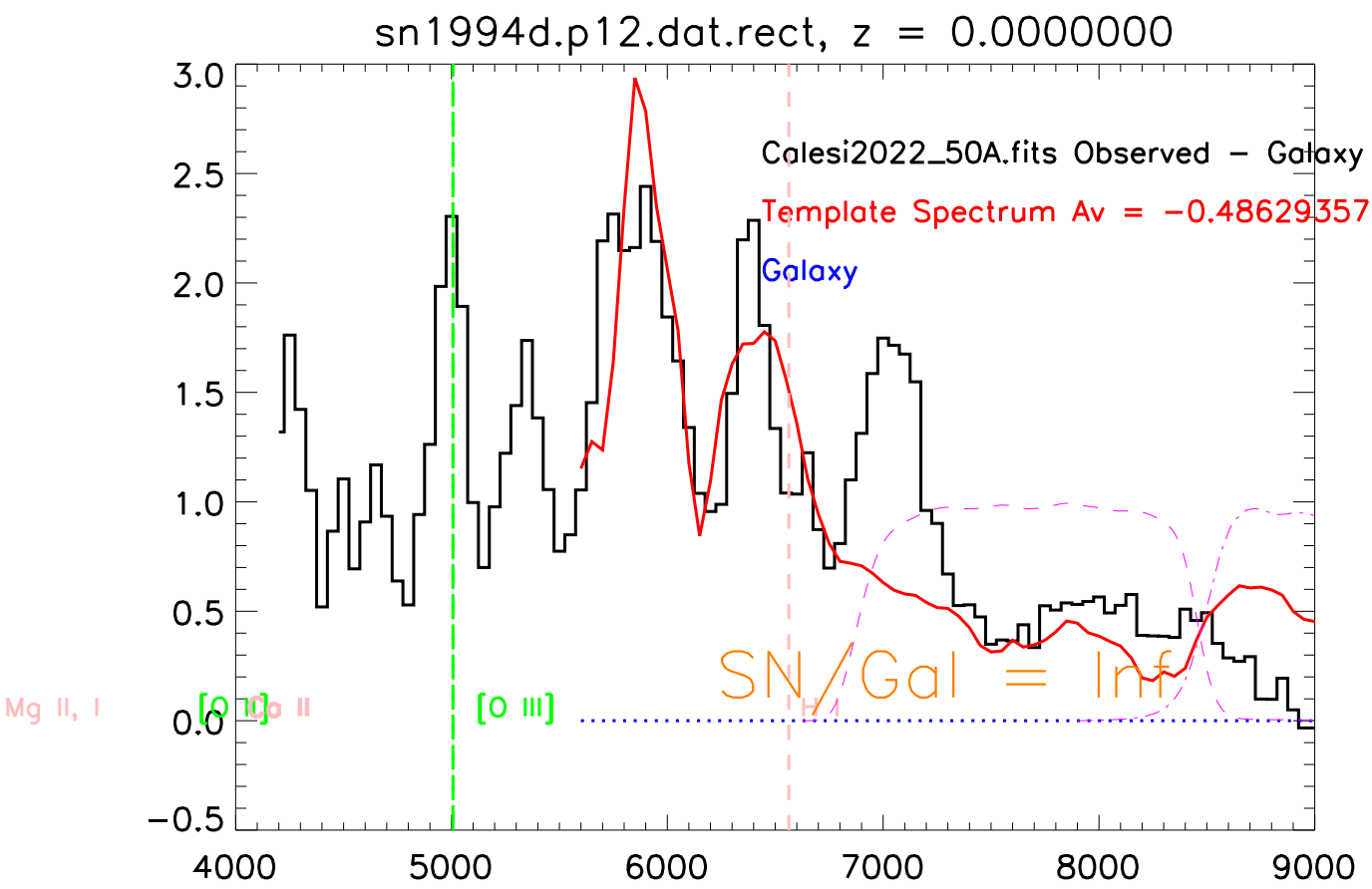
7000
8000
9000


sn1994d.p12.dat.rect, z = 0.0000000
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −0.48629357
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
[O III]
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1.5
1.0
0.5
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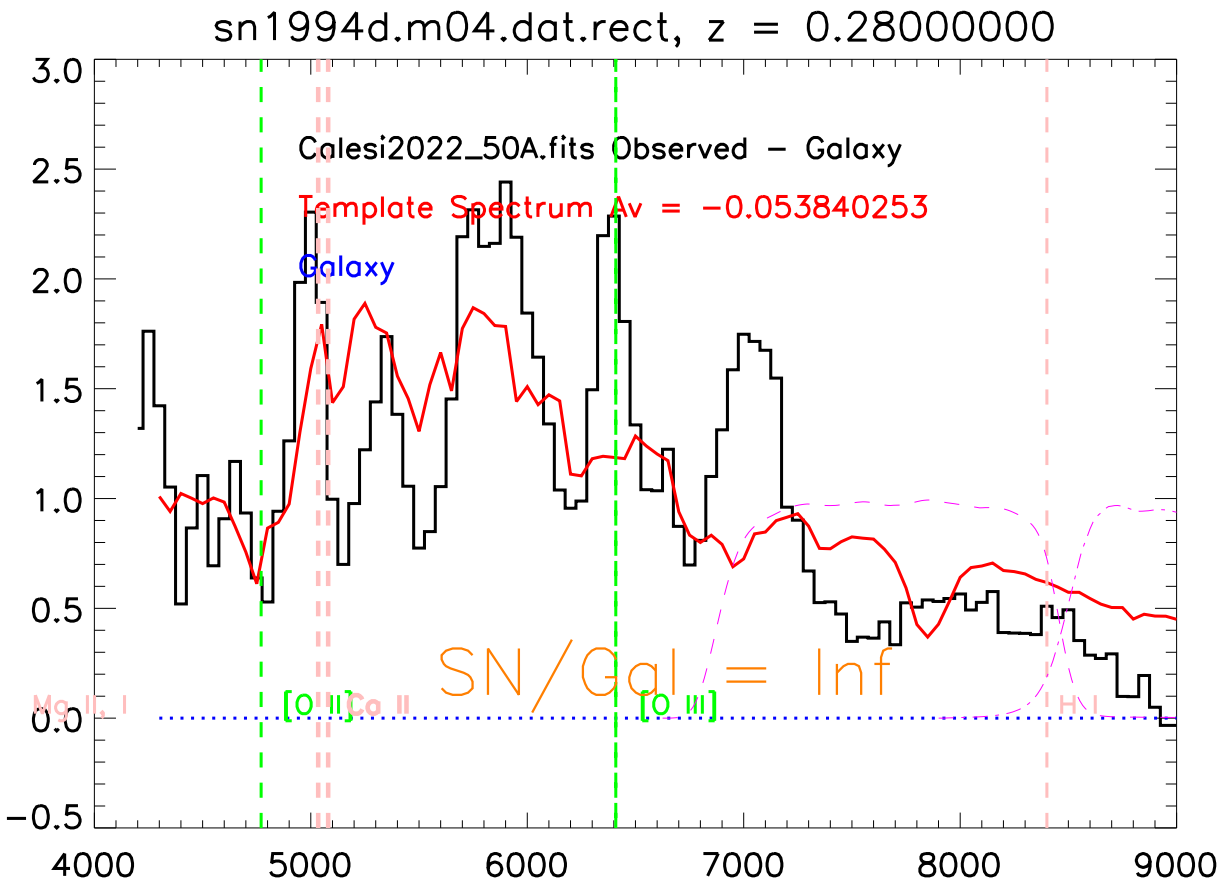
sn1994d.m04.dat.rect, z = 0.28000000
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −0.053840253
Galaxy
SN/Gal = Inf
[O II]
Ca II
[O III]
Mg II, I
H I
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1.5
1.0
0.5
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8000
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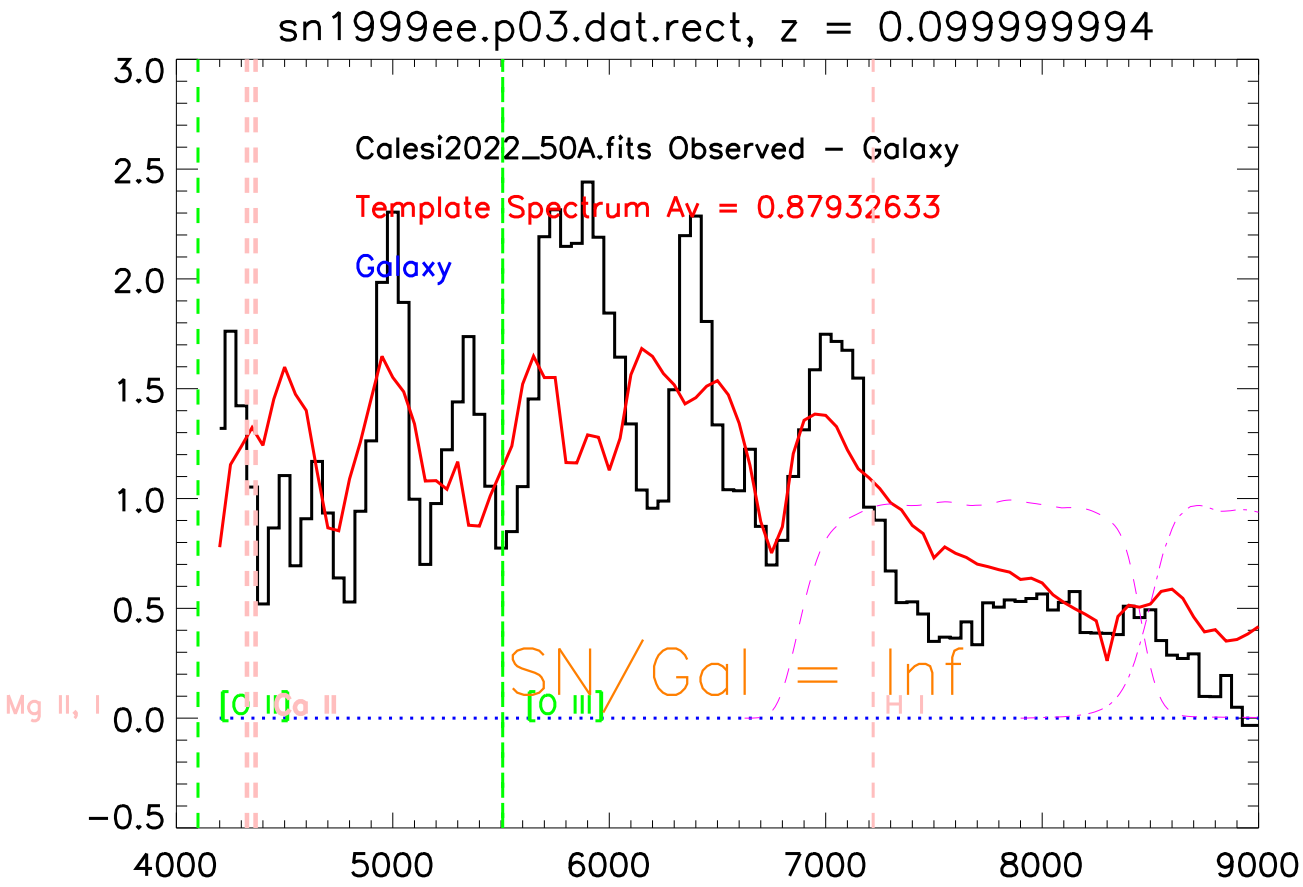
sn1999ee.p03.dat.rect, z = 0.099999994
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 0.87932633
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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1.5
1.0
0.5
0.0
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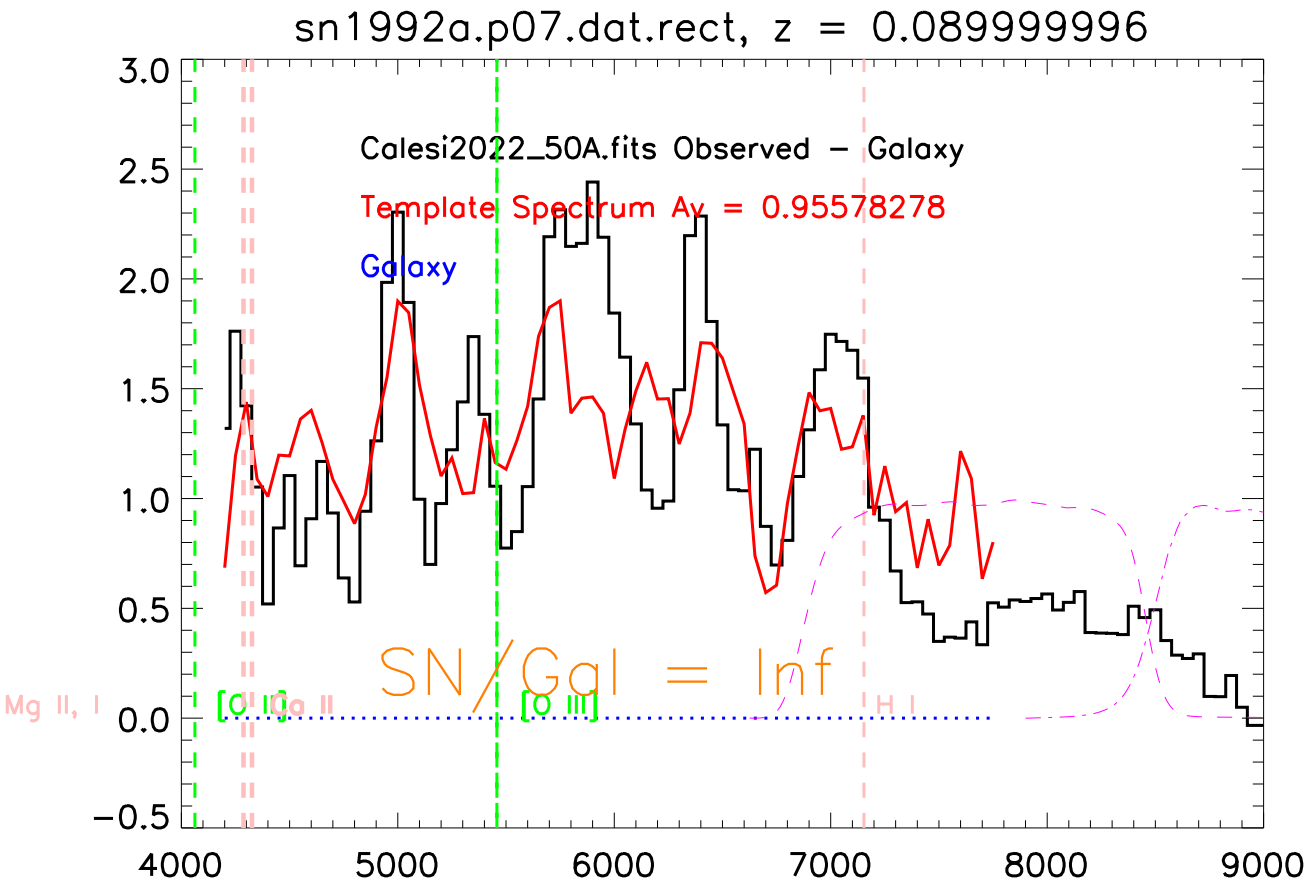
sn1992a.p07.dat.rect, z = 0.089999996
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 0.95578278
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
3.0
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
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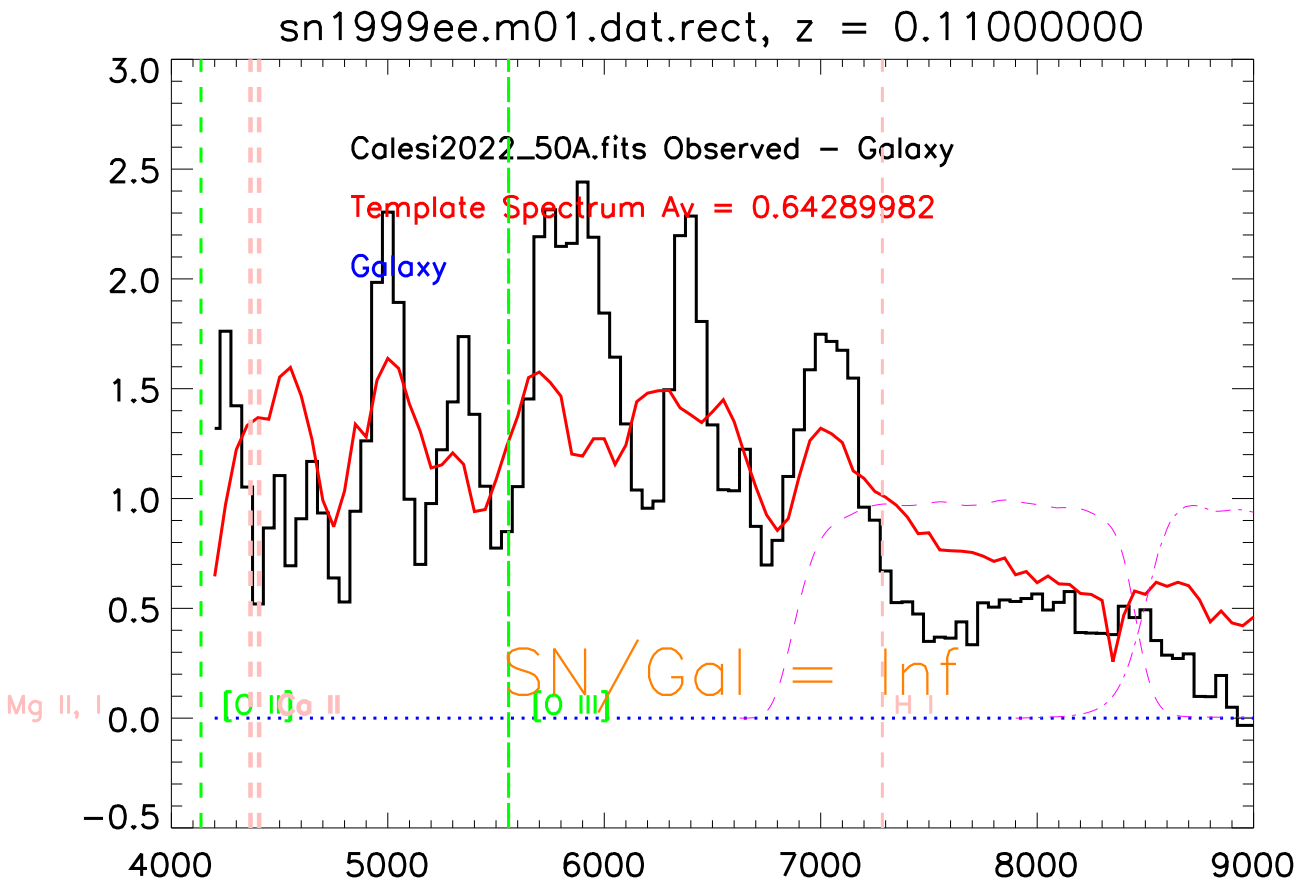
7000
8000
9000


sn1999ee.m01.dat.rect, z = 0.11000000
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 0.64289982
Galaxy
SN/Gal = Inf
[O II]
[O III]
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2.5
2.0
1.5
1.0
0.5
0.0
−0.5
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5000
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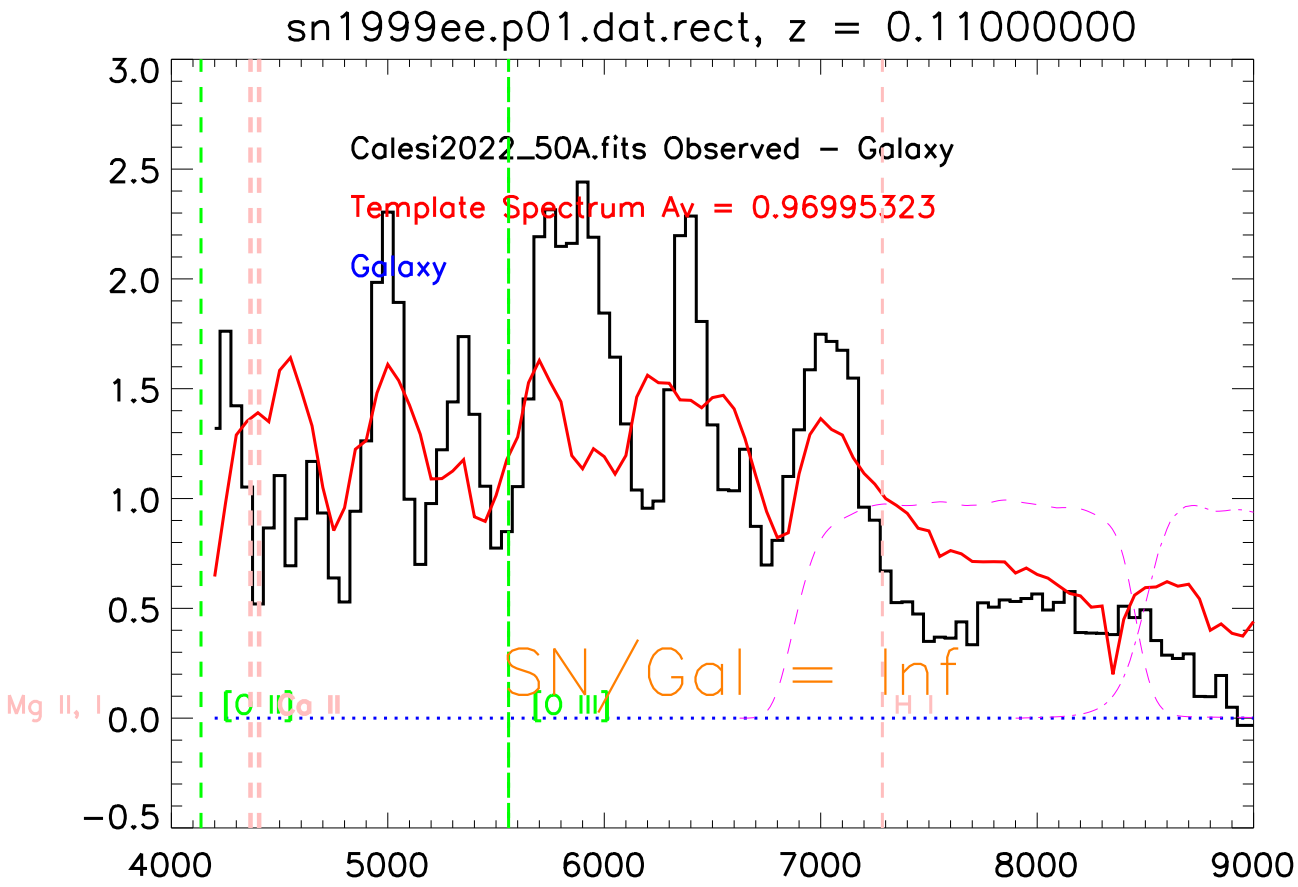
7000
8000
9000


sn1999ee.p01.dat.rect, z = 0.11000000
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 0.96995323
Galaxy
SN/Gal = Inf
[O II]
[O III]
3.0
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
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5000
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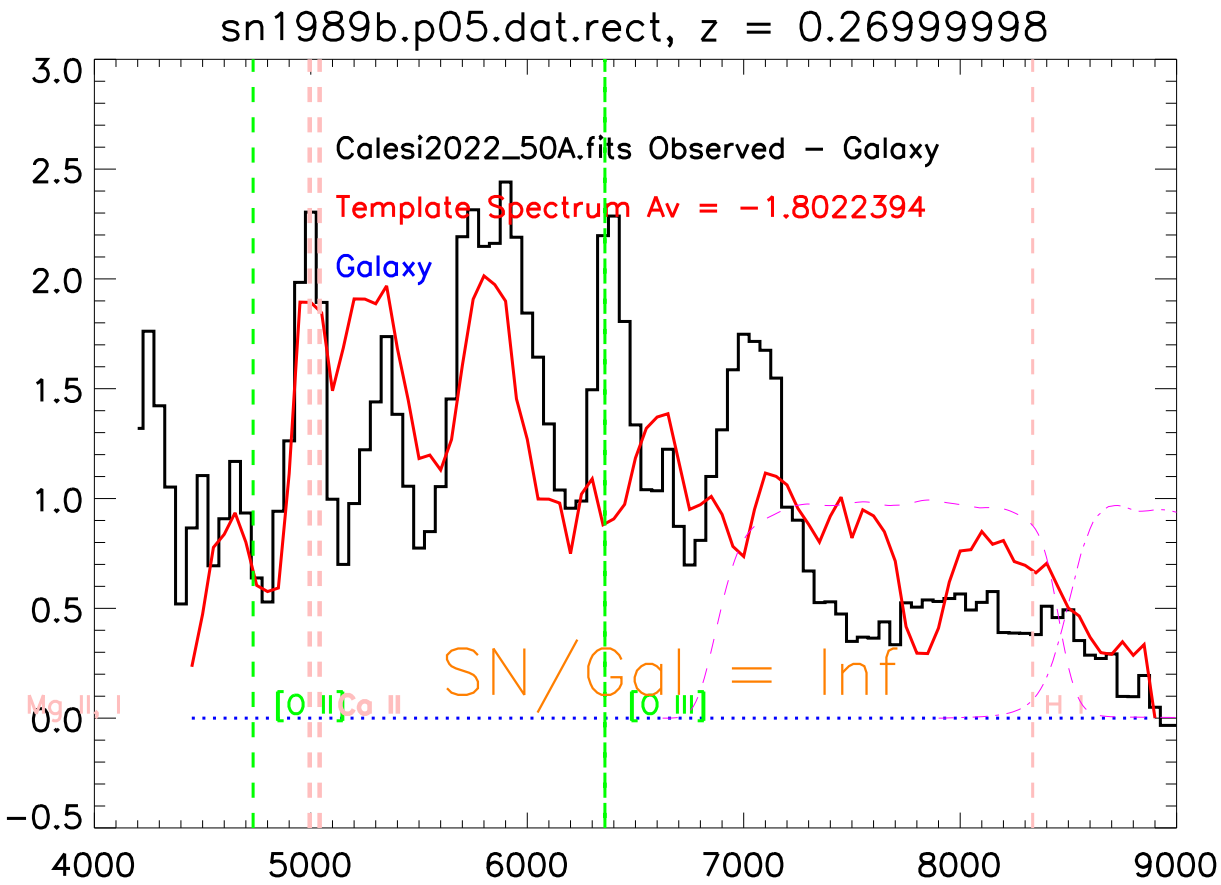
7000
8000
9000


sn1989b.p05.dat.rect, z = 0.26999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −1.8022394
Galaxy
SN/Gal = Inf
Mg II
[O II]
Ca II
[O III]
H
3.0
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
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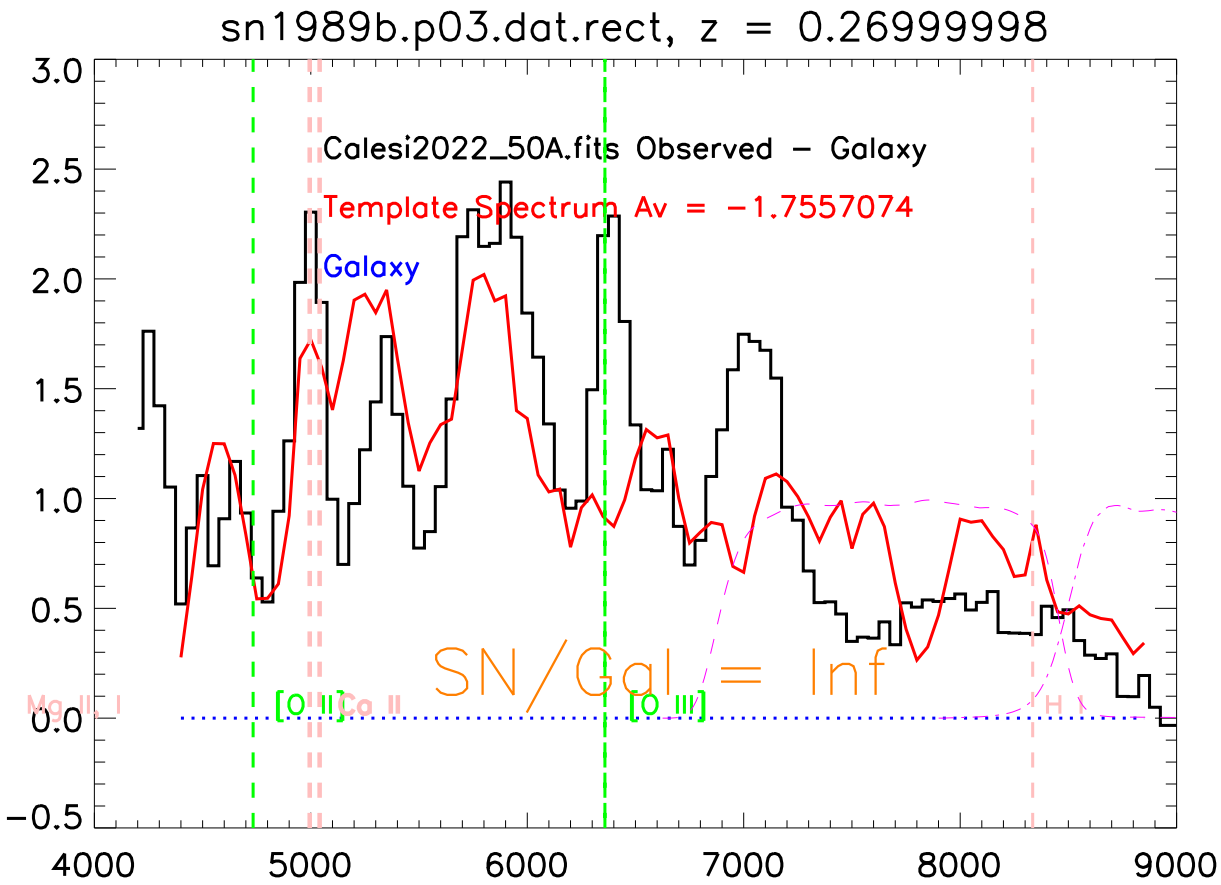
7000
8000
9000


sn1989b.p03.dat.rect, z = 0.26999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum, Av = −1.7557074
Galaxy
SN/Gal = Inf
Mg II
[O II]
Ca II
[O III]
H
3.0
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
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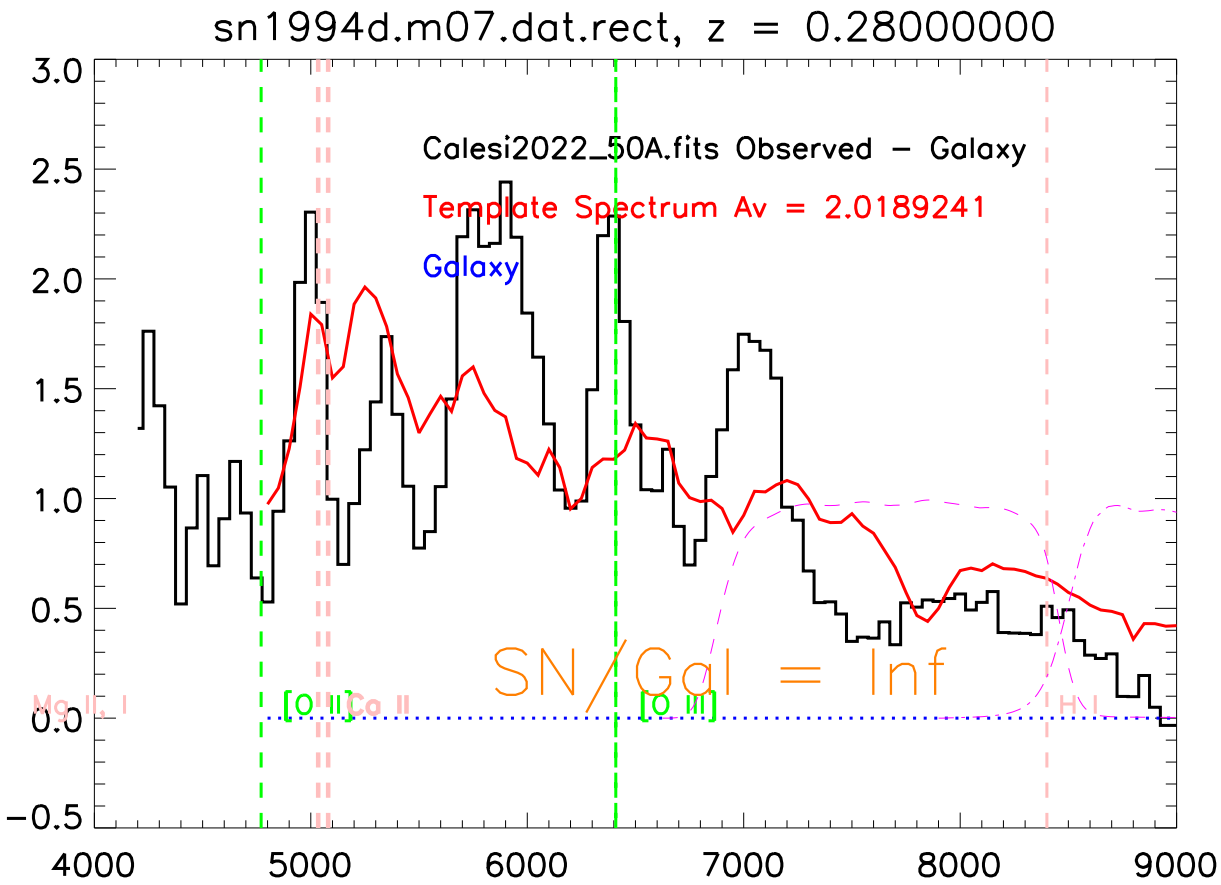
7000
8000
9000


sn1994d.m07.dat.rect, z = 0.28000000
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 2.0189241
Galaxy
SN/Gal = Inf
[O II]
Ca II
[O III]
H I
Mg II, I
3.0
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2.0
1.5
1.0
0.5
0.0
−0.5
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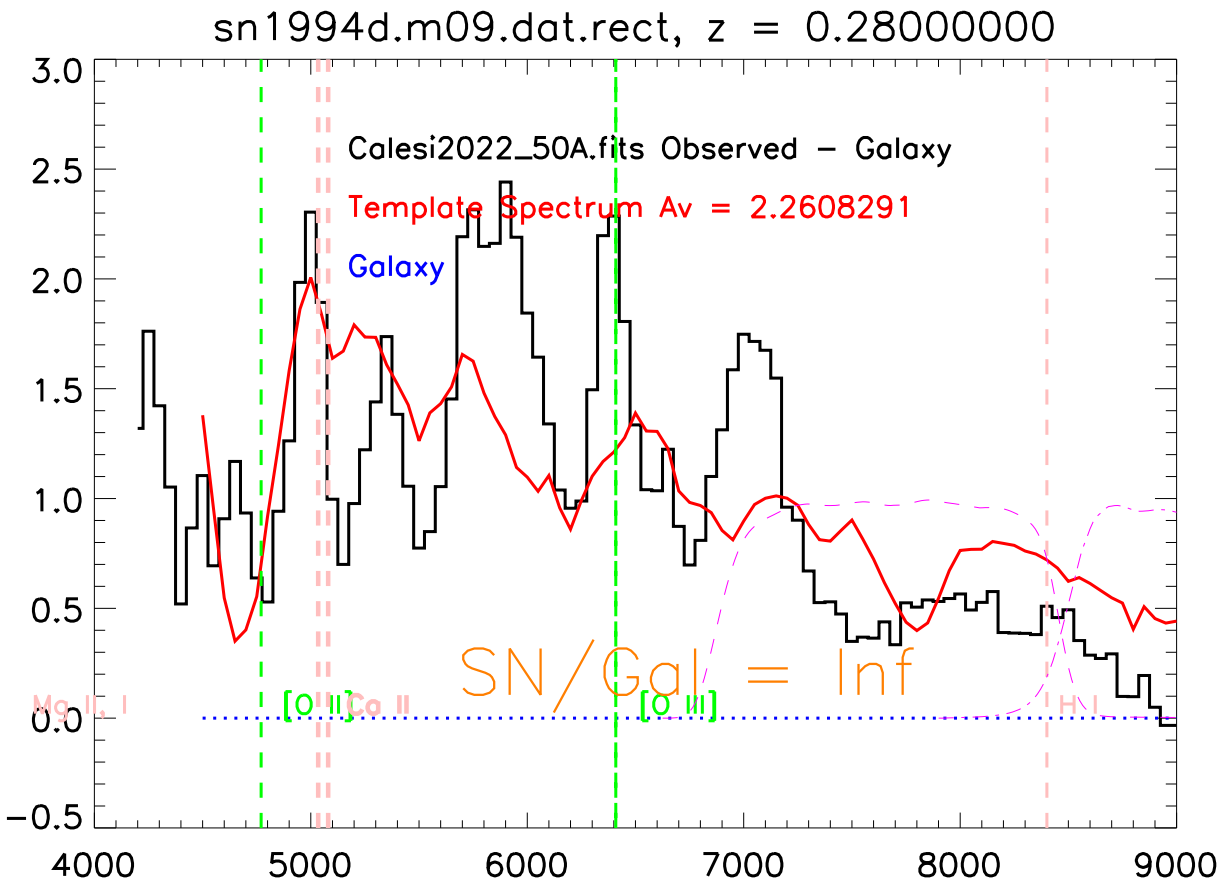
7000
8000
9000


sn1994d.m09.dat.rect, z = 0.28000000
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 2.2608291
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
3.0
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
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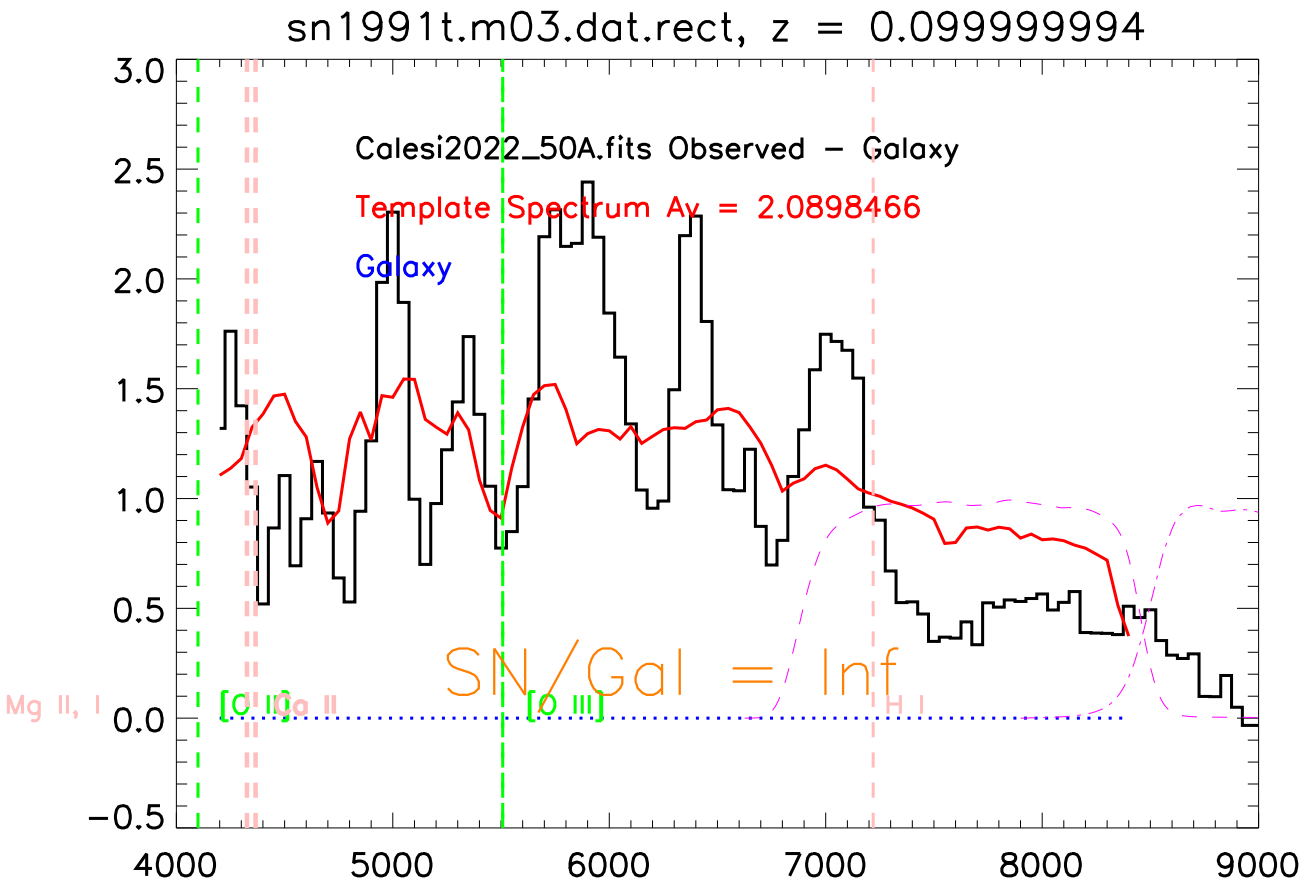
8000
9000


sn1991t.m03.dat.rect, z = 0.099999994
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 2.0898466
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
3.0
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
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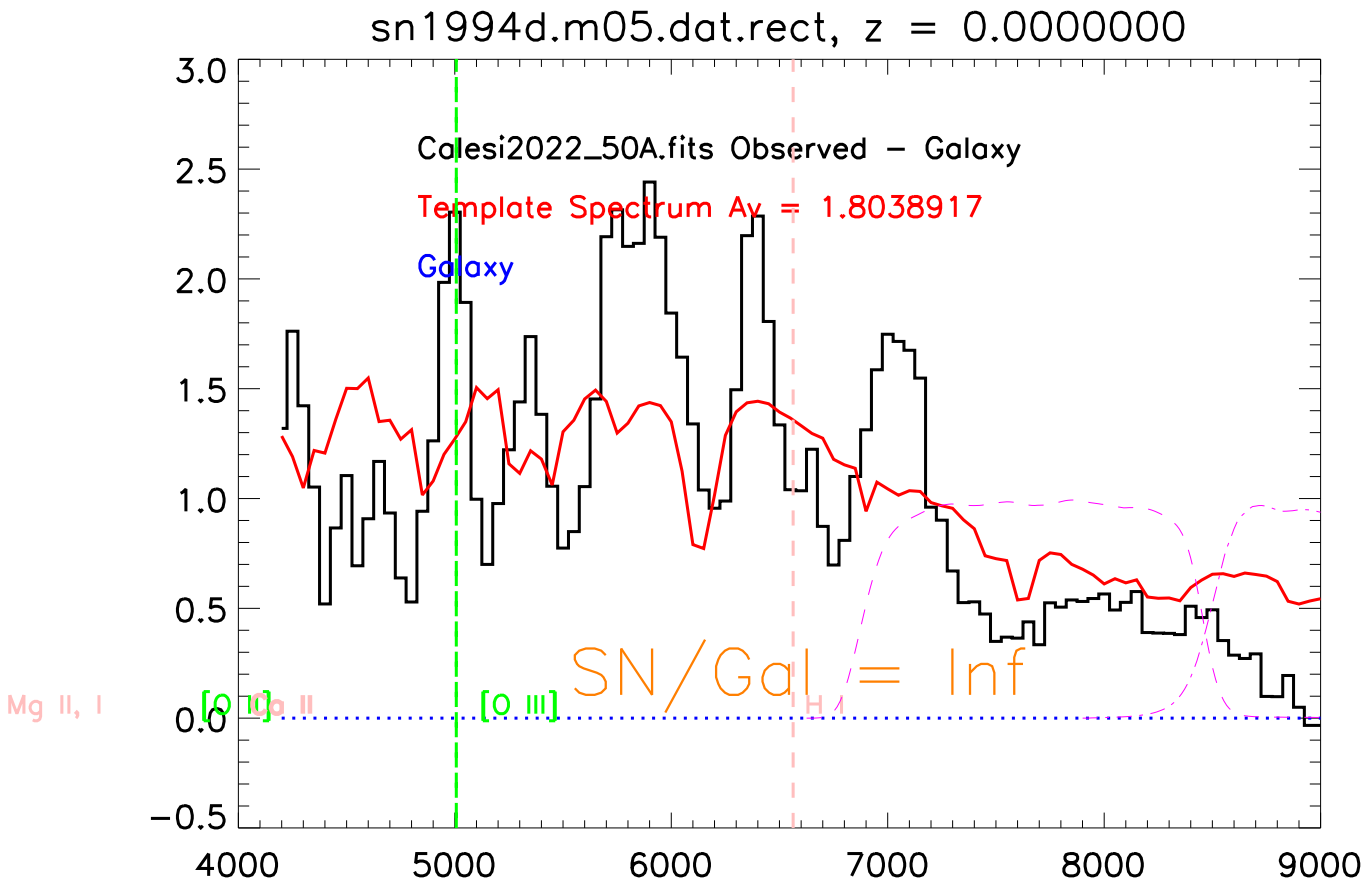
sn1994d.m05.dat.rect, z = 0.0000000
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 1.8038917
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
[O III]
H
3.0
2.5
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1.5
1.0
0.5
0.0
−0.5
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7000
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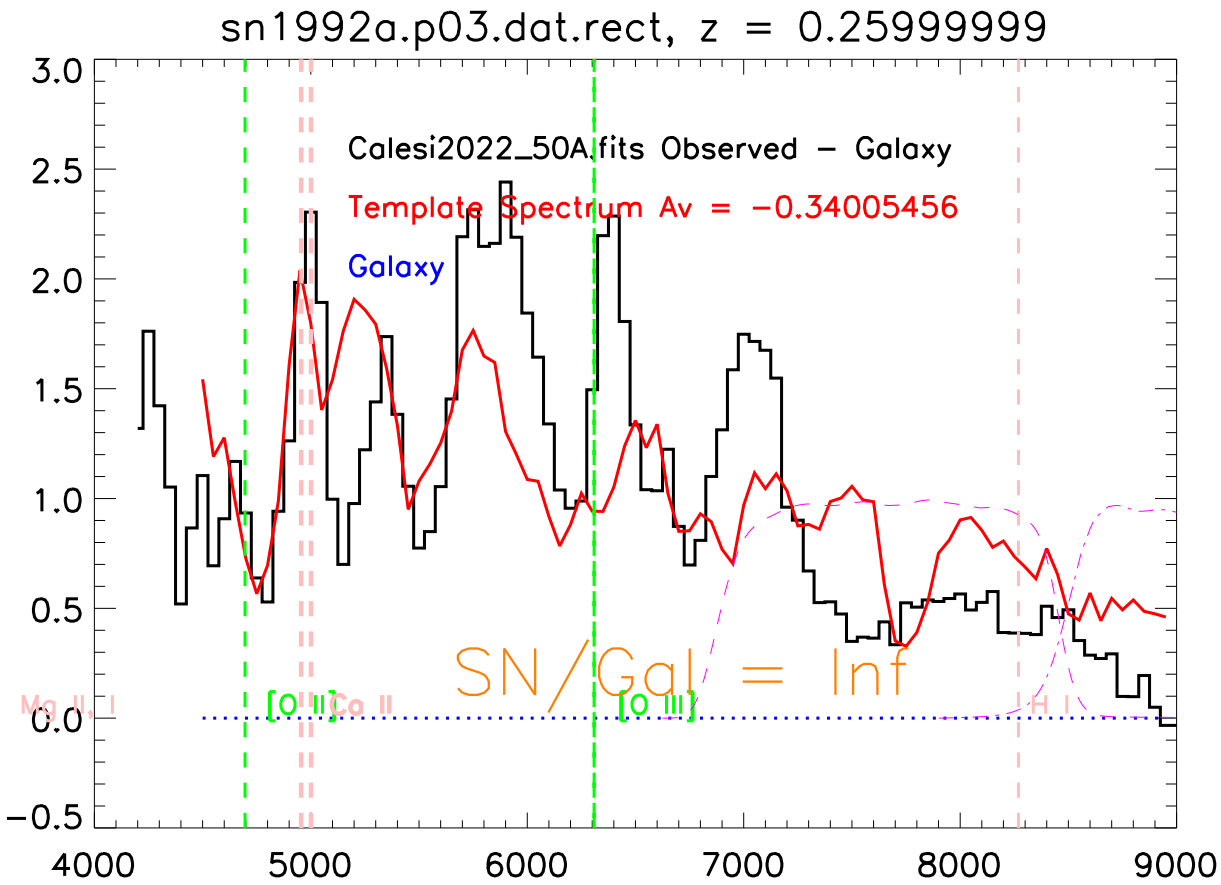
9000


sn1992a.p03.dat.rect, z = 0.25999999
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −0.34005456
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
3.0
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
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7000
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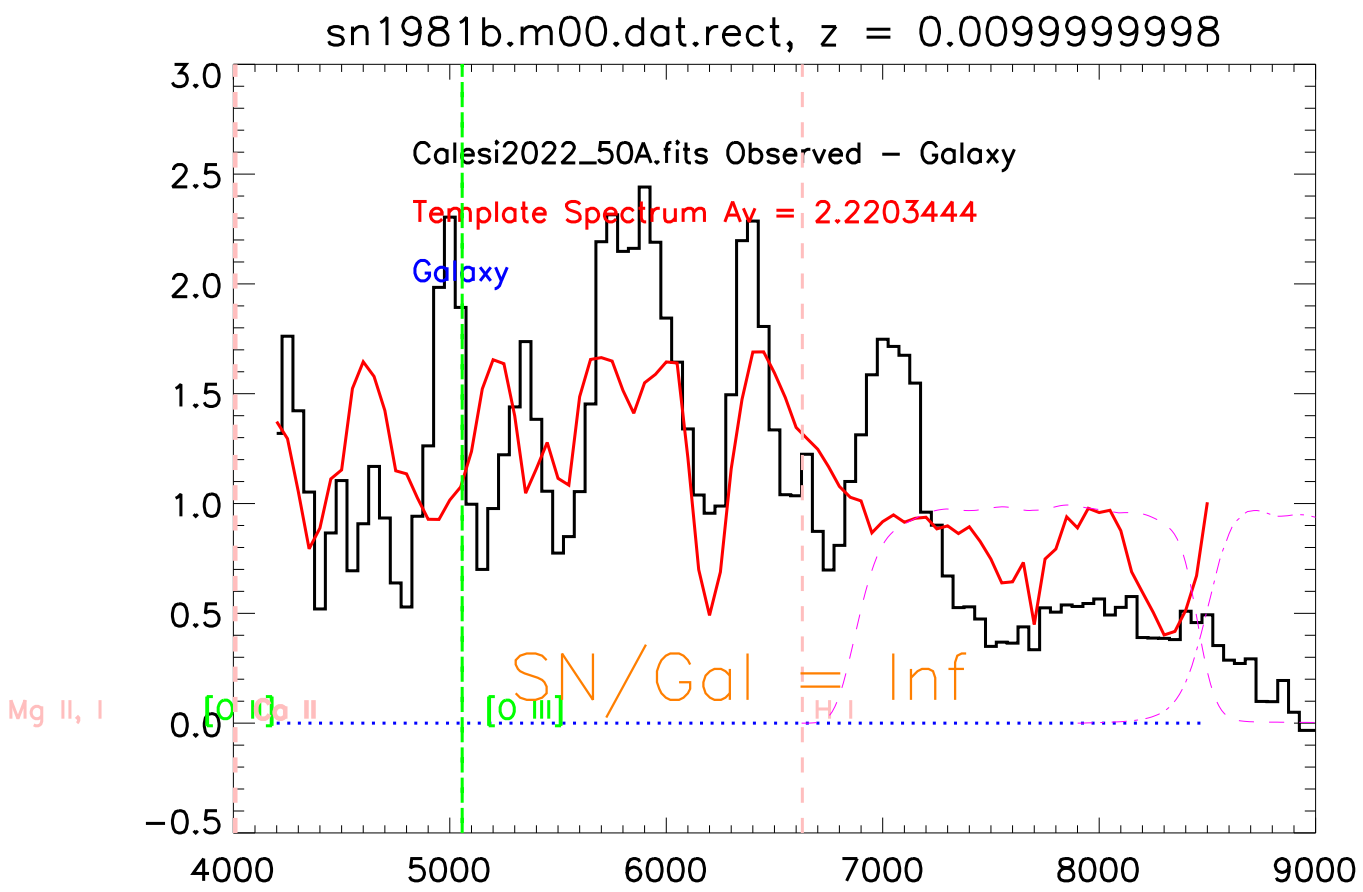
9000


sn1981b.m00.dat.rect, z = 0.0099999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 2.2203444
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
3.0
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2.0
1.5
1.0
0.5
0.0
−0.5
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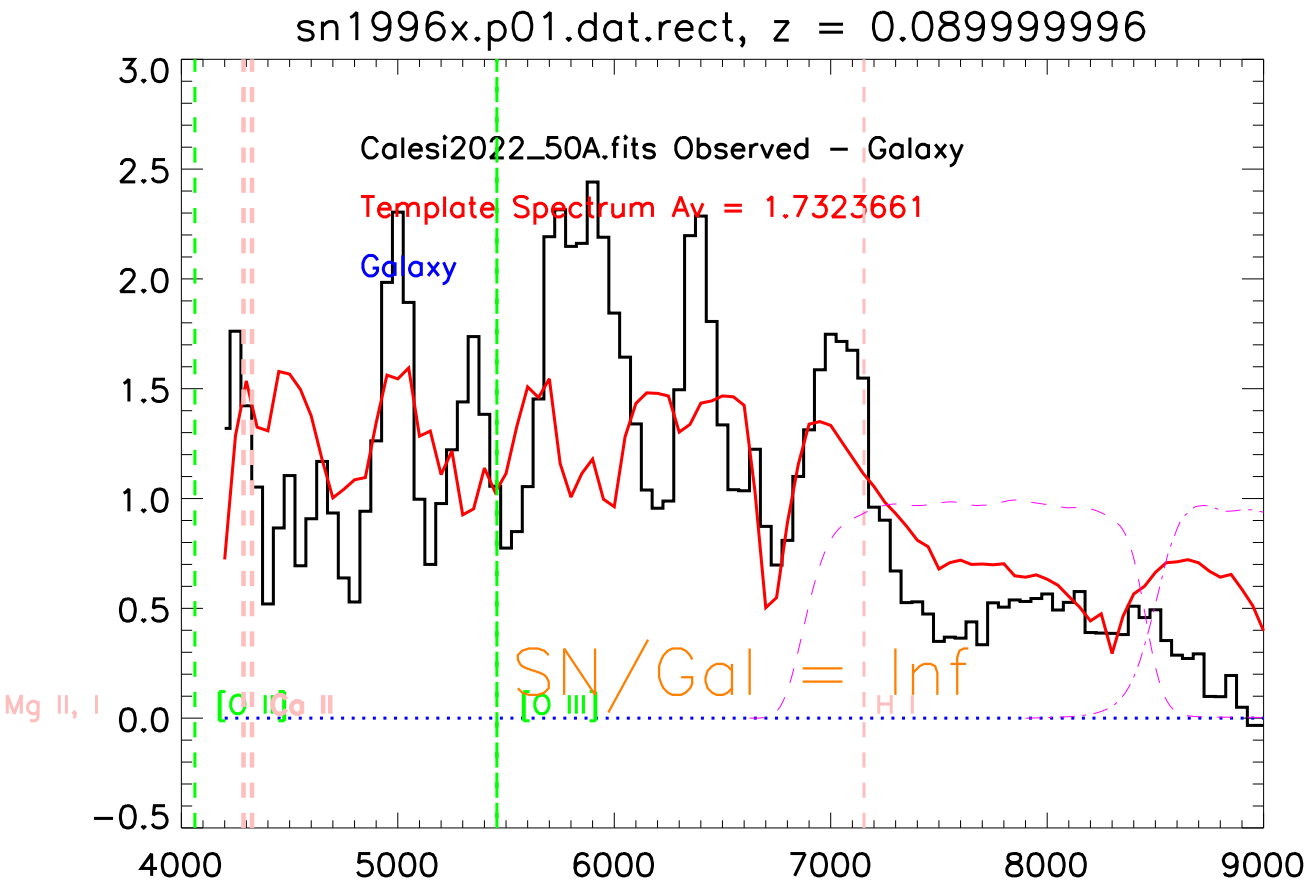
7000
8000
9000


sn1996x.p01.dat.rect, z = 0.089999996
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 1.7323661
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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1.5
1.0
0.5
0.0
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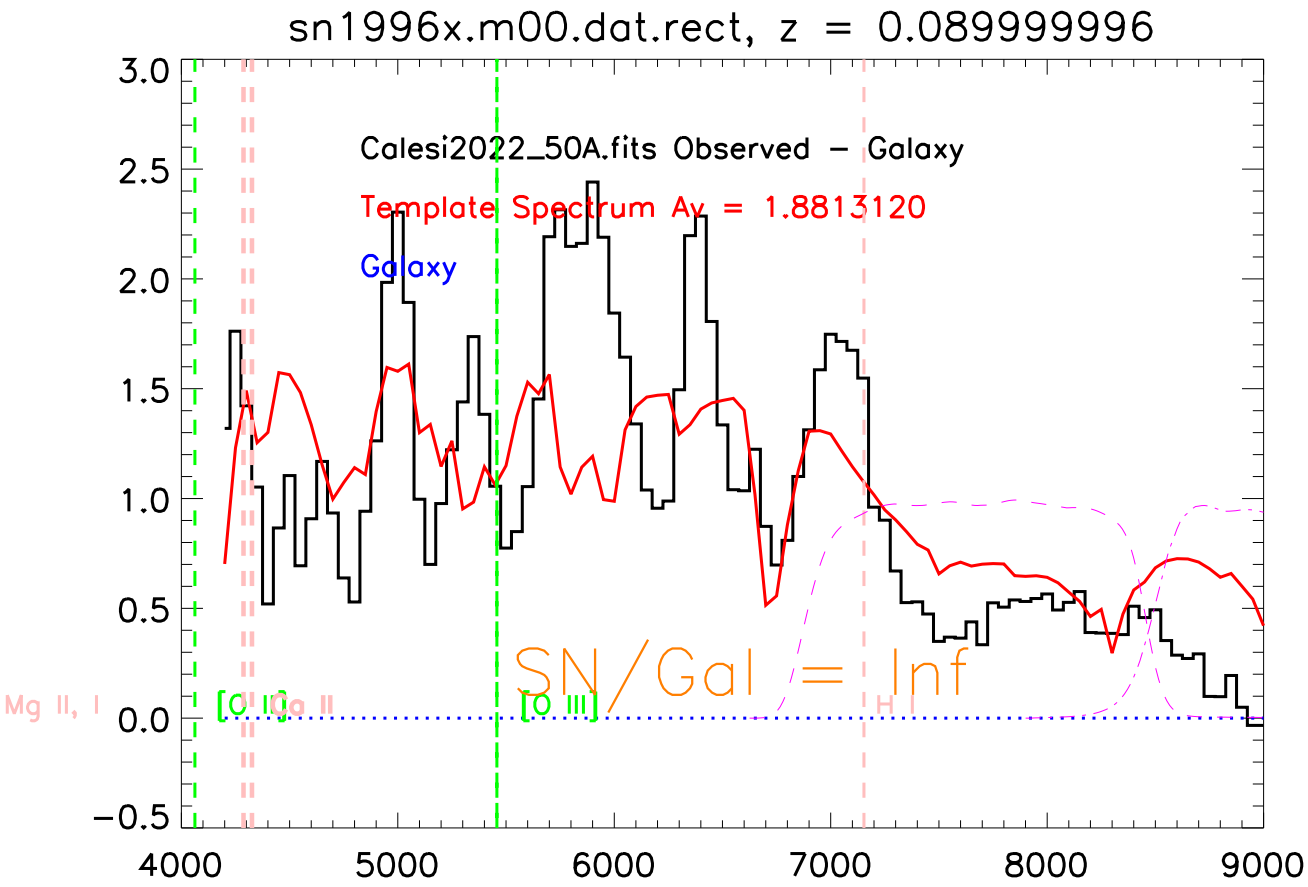
sn1996x.m00.dat.rect, z = 0.089999996
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 1.8813120
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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1.5
1.0
0.5
0.0
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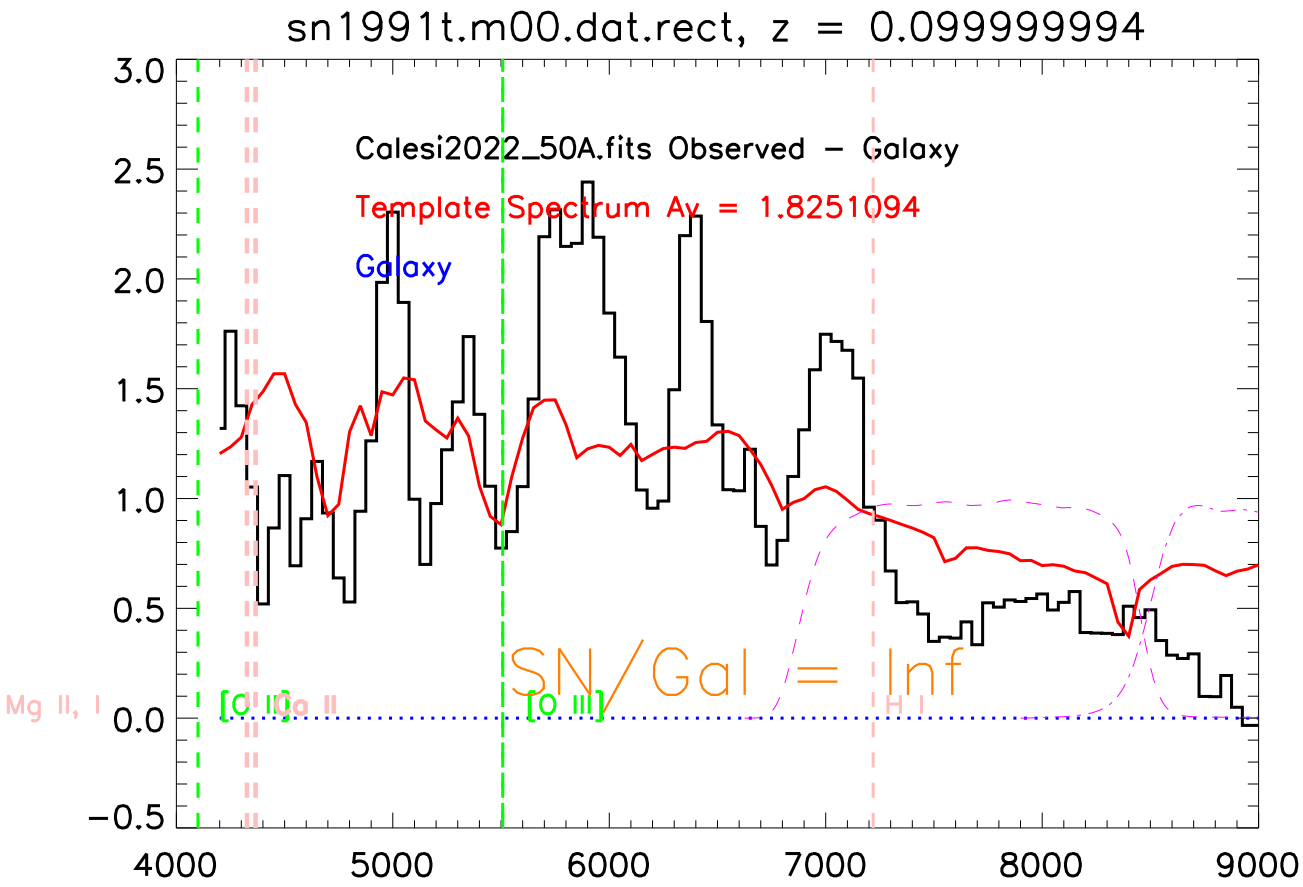
sn1991t.m00.dat.rect, z = 0.099999994
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 1.8251094
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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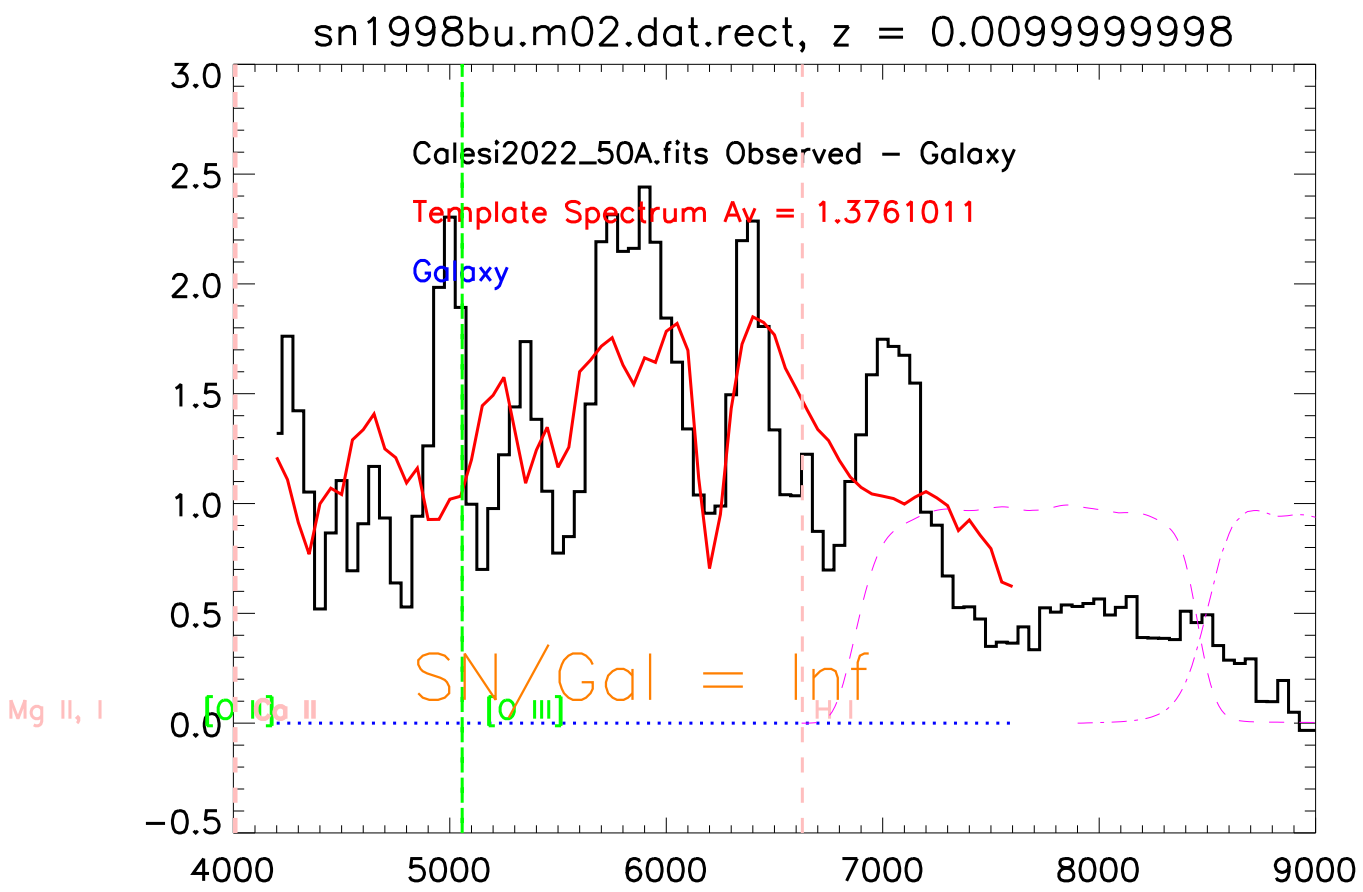
sn1998bu.m02.dat.rect, z = 0.0099999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 1.3761011
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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1.5
1.0
0.5
0.0
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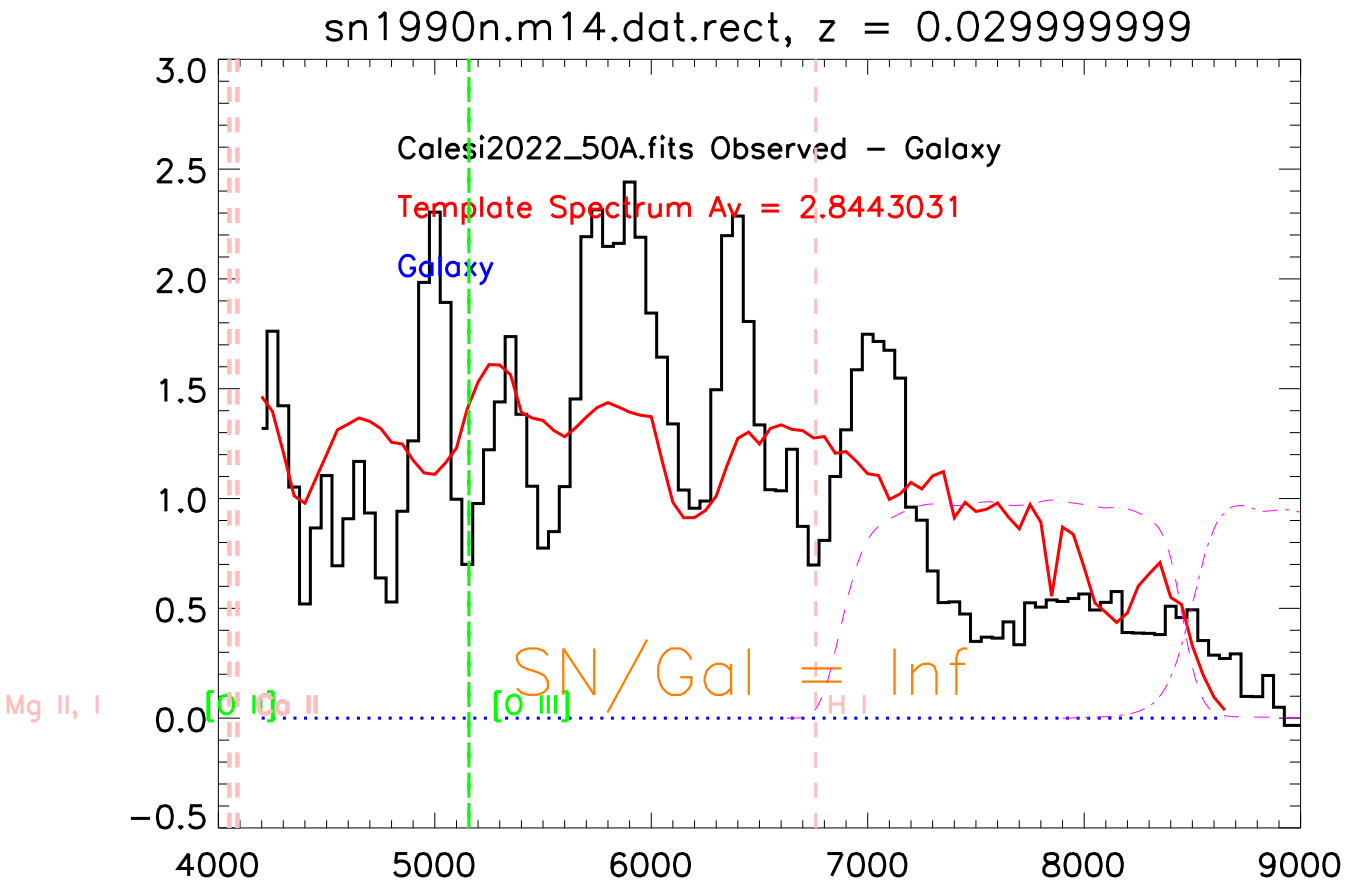
7000
8000
9000


sn1990n.m14.dat.rect, z = 0.029999999
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 2.8443031
Galaxy
SN/Gal = Inf
Mg II, I
[O I]
Ca II
[O III]
H I
3.0
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
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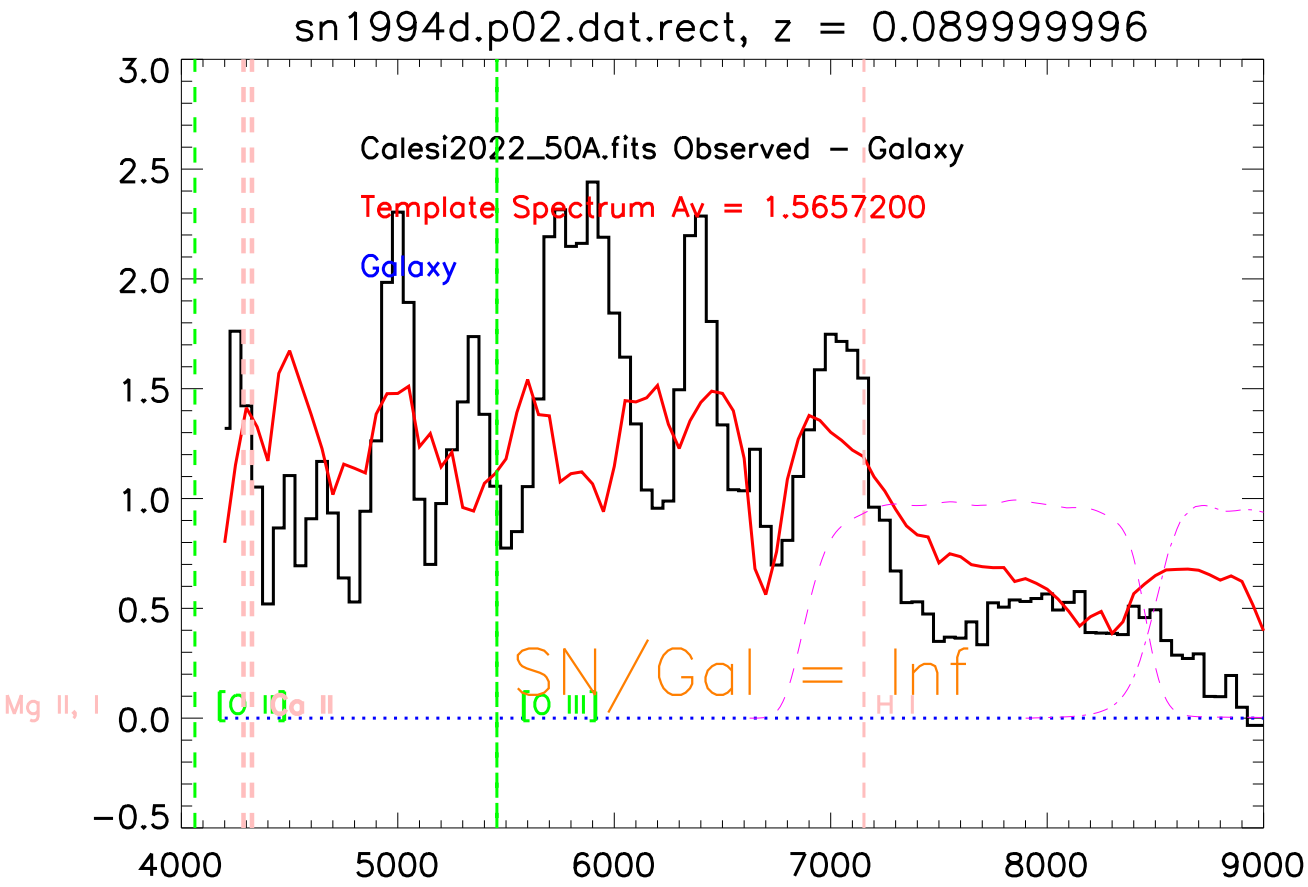
7000
8000
9000


sn1994d.p02.dat.rect, z = 0.089999996
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 1.5657200
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
3.0
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1.5
1.0
0.5
0.0
−0.5
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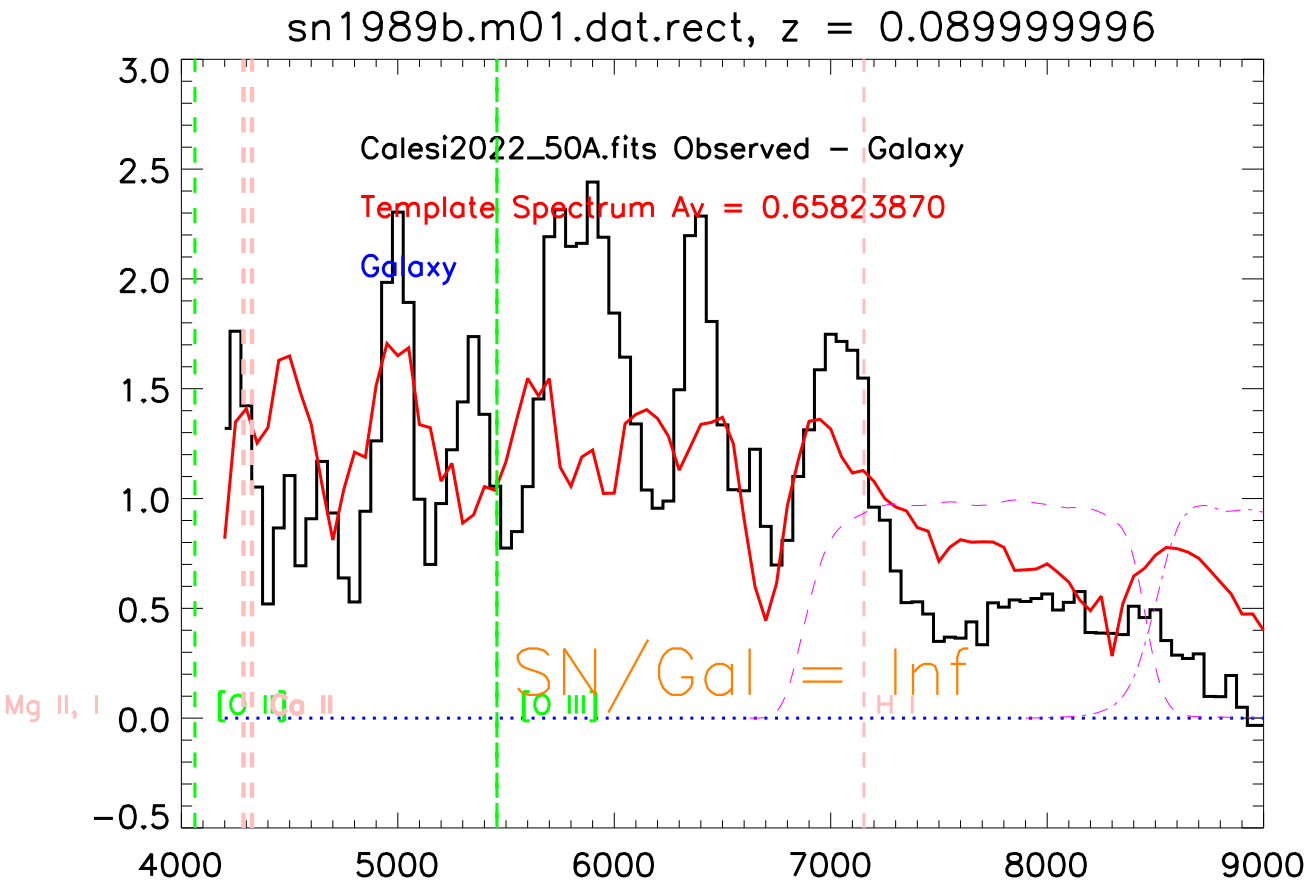
7000
8000
9000


sn1989b.m01.dat.rect, z = 0.089999996
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 0.65823870
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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1.5
1.0
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0.0
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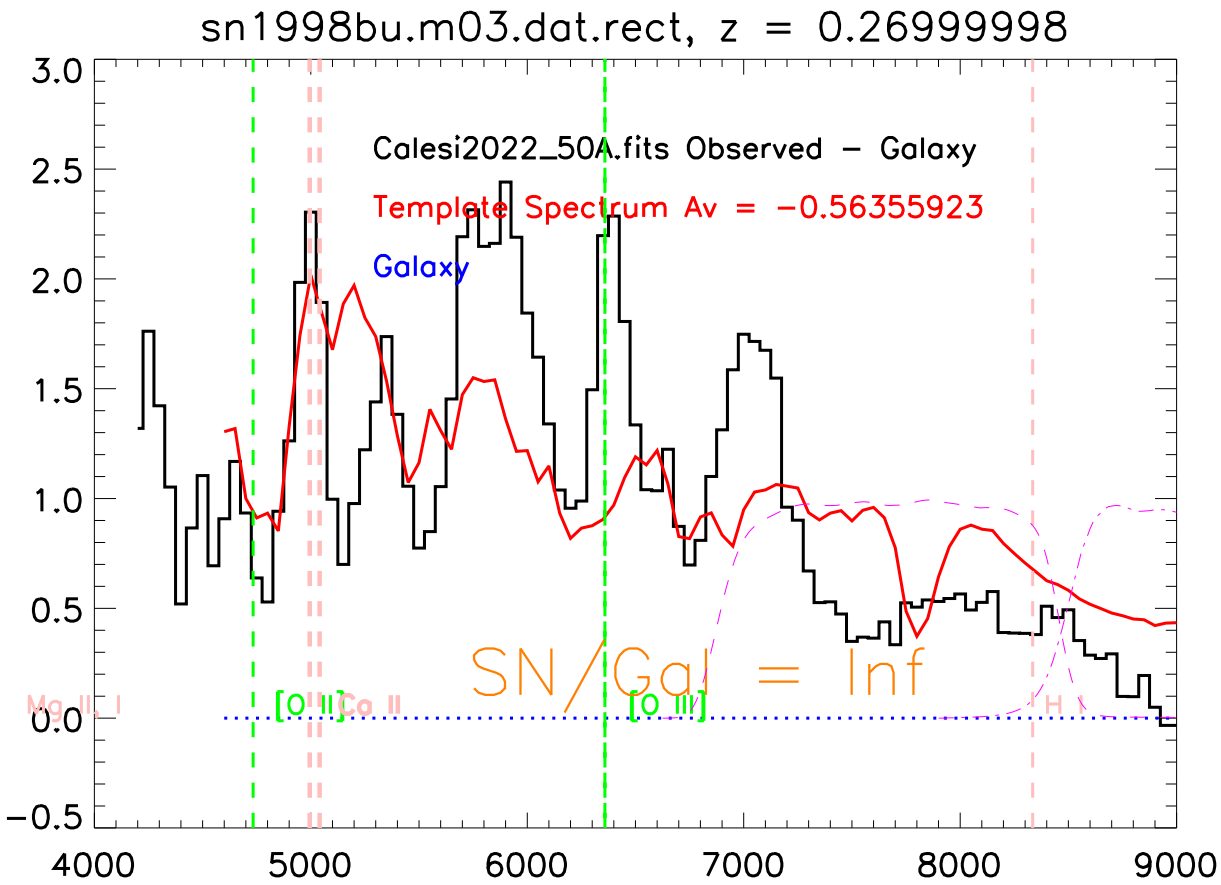
7000
8000
9000


sn1998bu.m03.dat.rect, z = 0.26999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −0.56355923
Galaxy
SN/Gal = Inf
Mg II
[O II]
Ca II
[O III]
H
3.0
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2.0
1.5
1.0
0.5
0.0
−0.5
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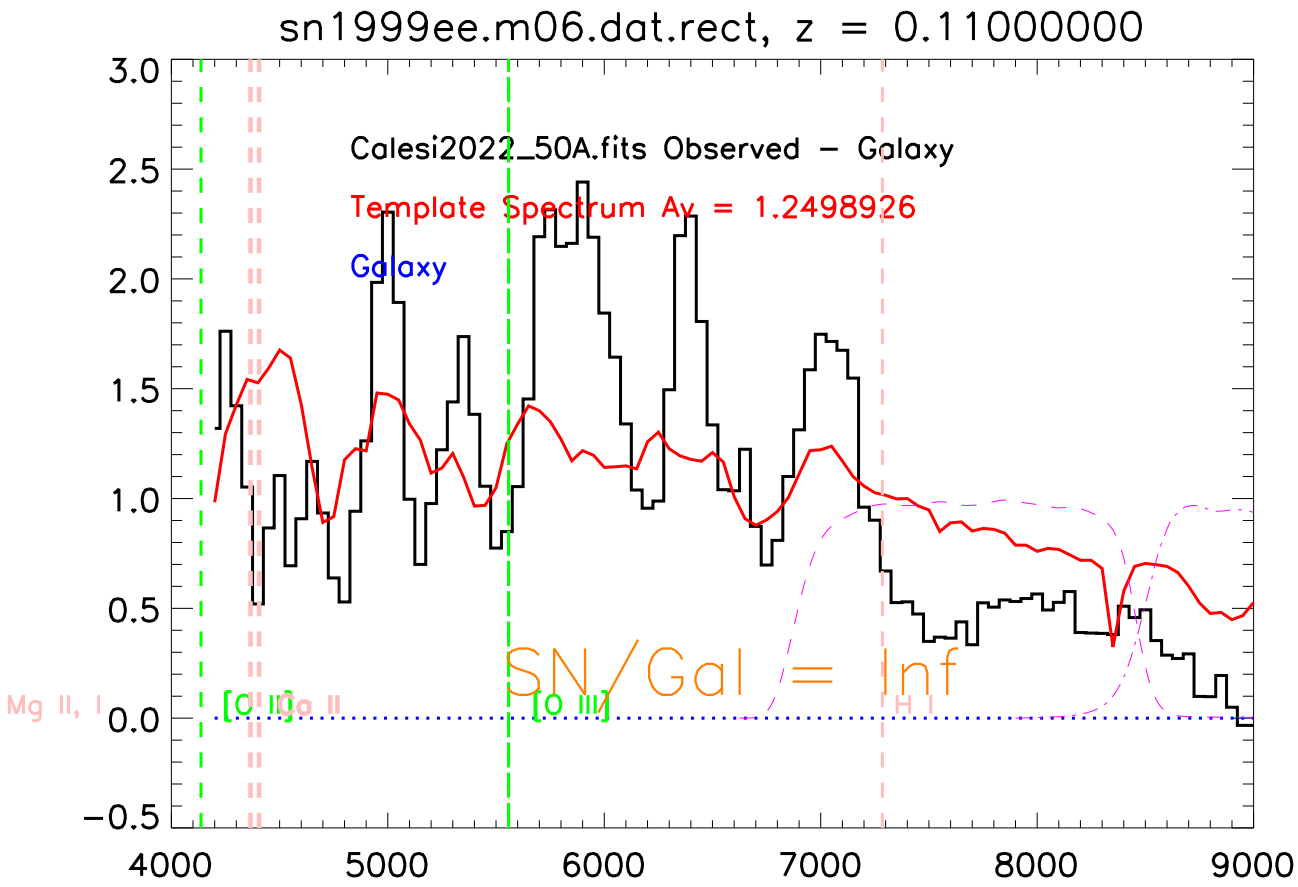
5000
6000
7000
8000
9000


sn1999ee.m06.dat.rect, z = 0.11000000
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 1.2498926
Galaxy
SN/Gal = Inf
[O II]
[O III]
H I
3.0
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2.0
1.5
1.0
0.5
0.0
−0.5
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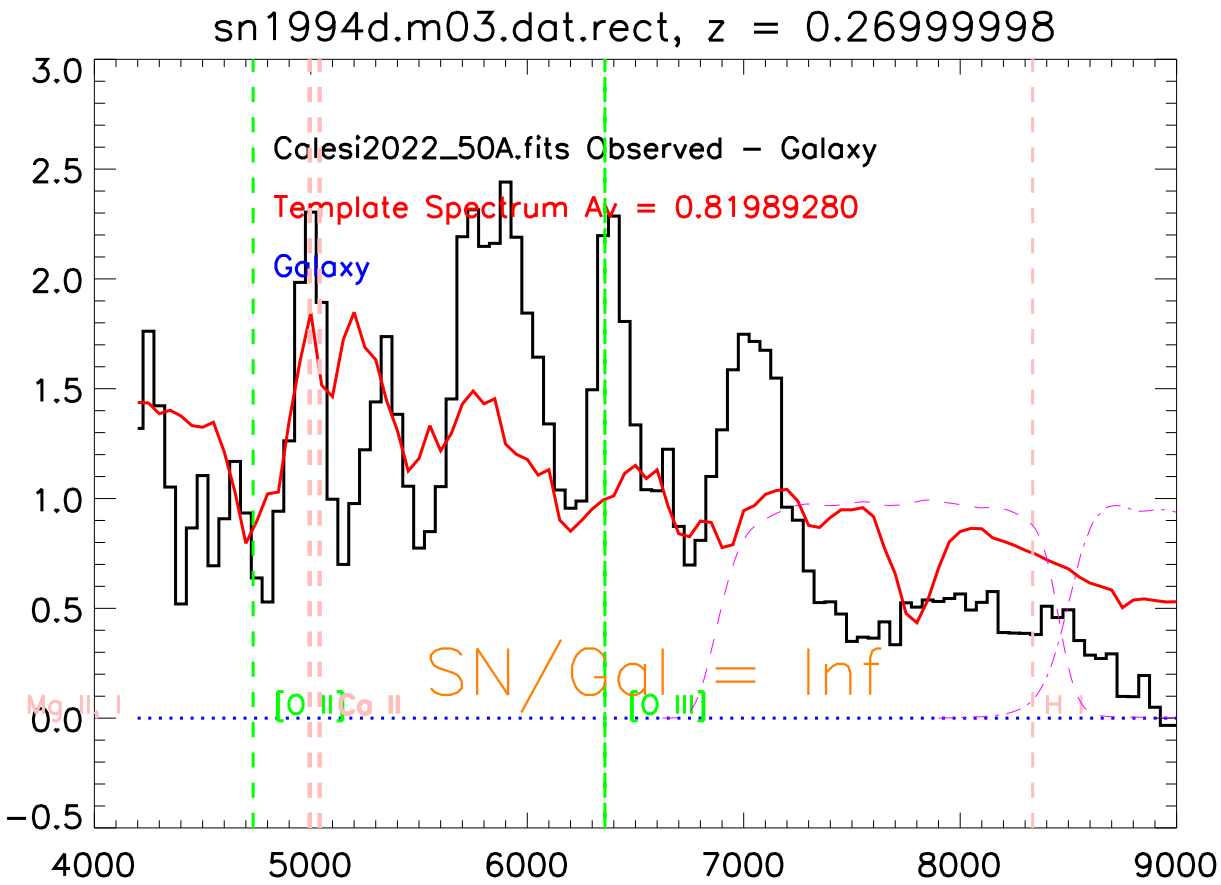
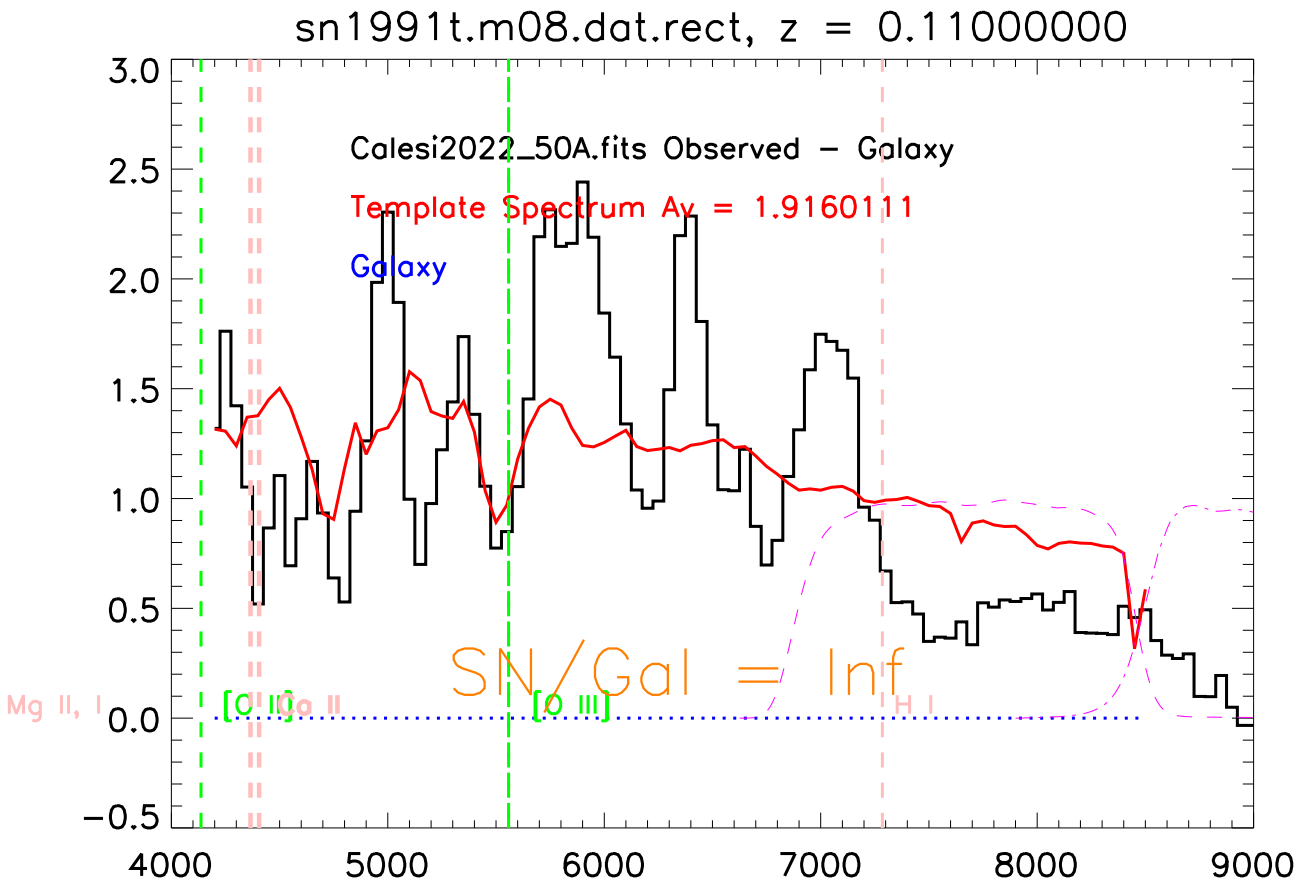
5000
6000
7000
8000
9000


sn1994d.m03.dat.rect, z = 0.26999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 0.81989280
Galaxy
SN/Gal = Inf
Mg II
[O II]
Ca II
[O III]
H
3.0
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
4000
5000
6000
7000
8000
9000


sn1991t.m08.dat.rect, z = 0.11000000
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 1.9160111
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
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1.5
1.0
0.5
0.0
−0.5
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7000
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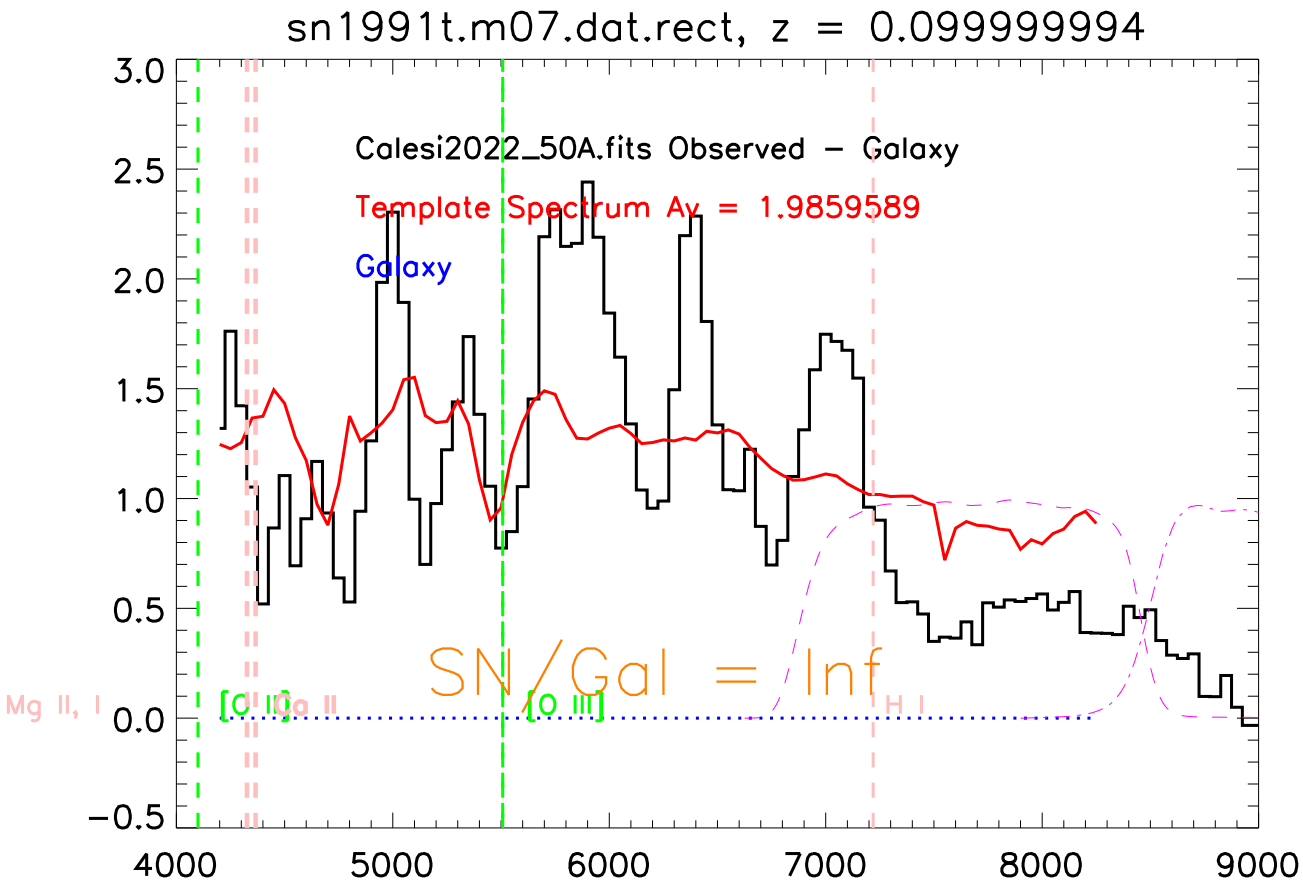
sn1991t.m07.dat.rect, z = 0.099999994
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 1.9859589
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
3.0
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
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7000
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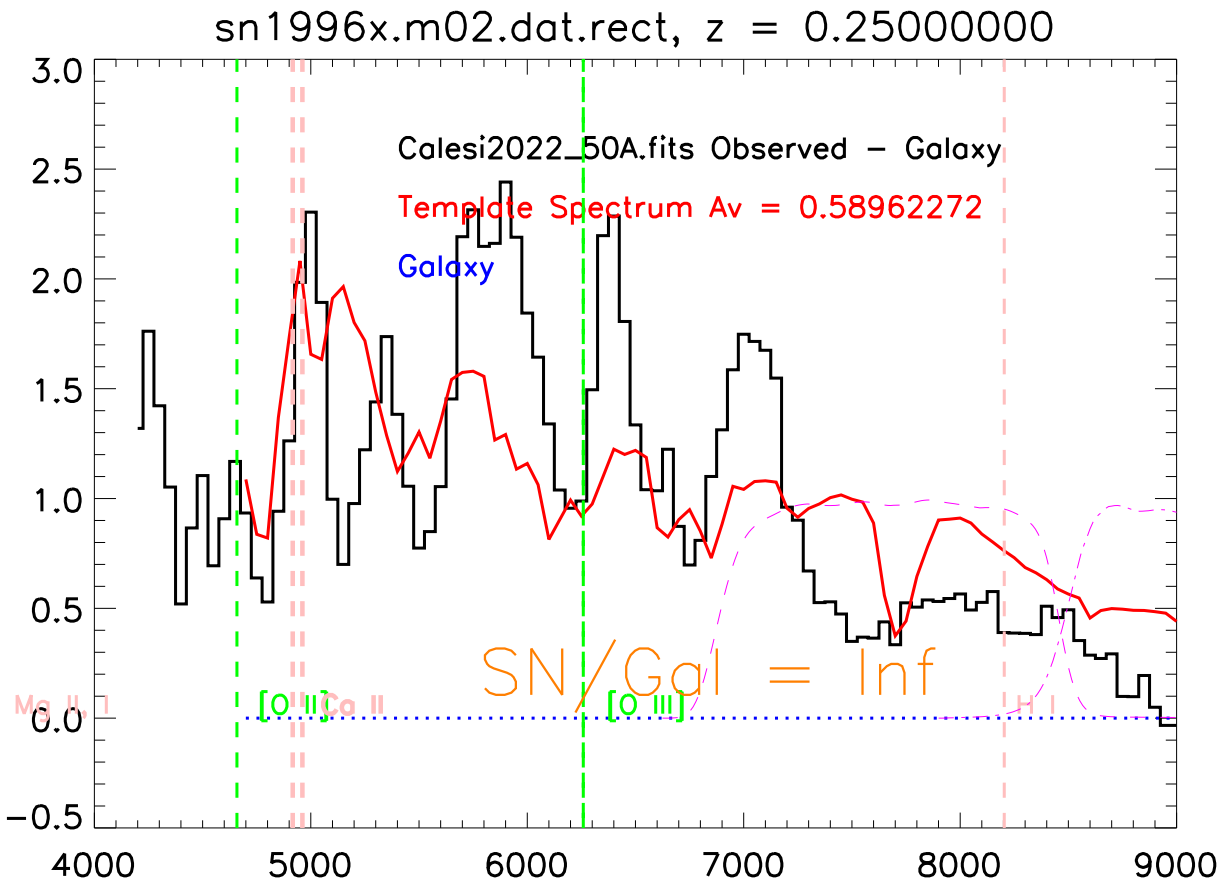
sn1996x.m02.dat.rect, z = 0.25000000
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 0.58962272
Galaxy
SN/Gal = Inf
[O II]
Ca II
[O III]
H I
3.0
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
4000
5000
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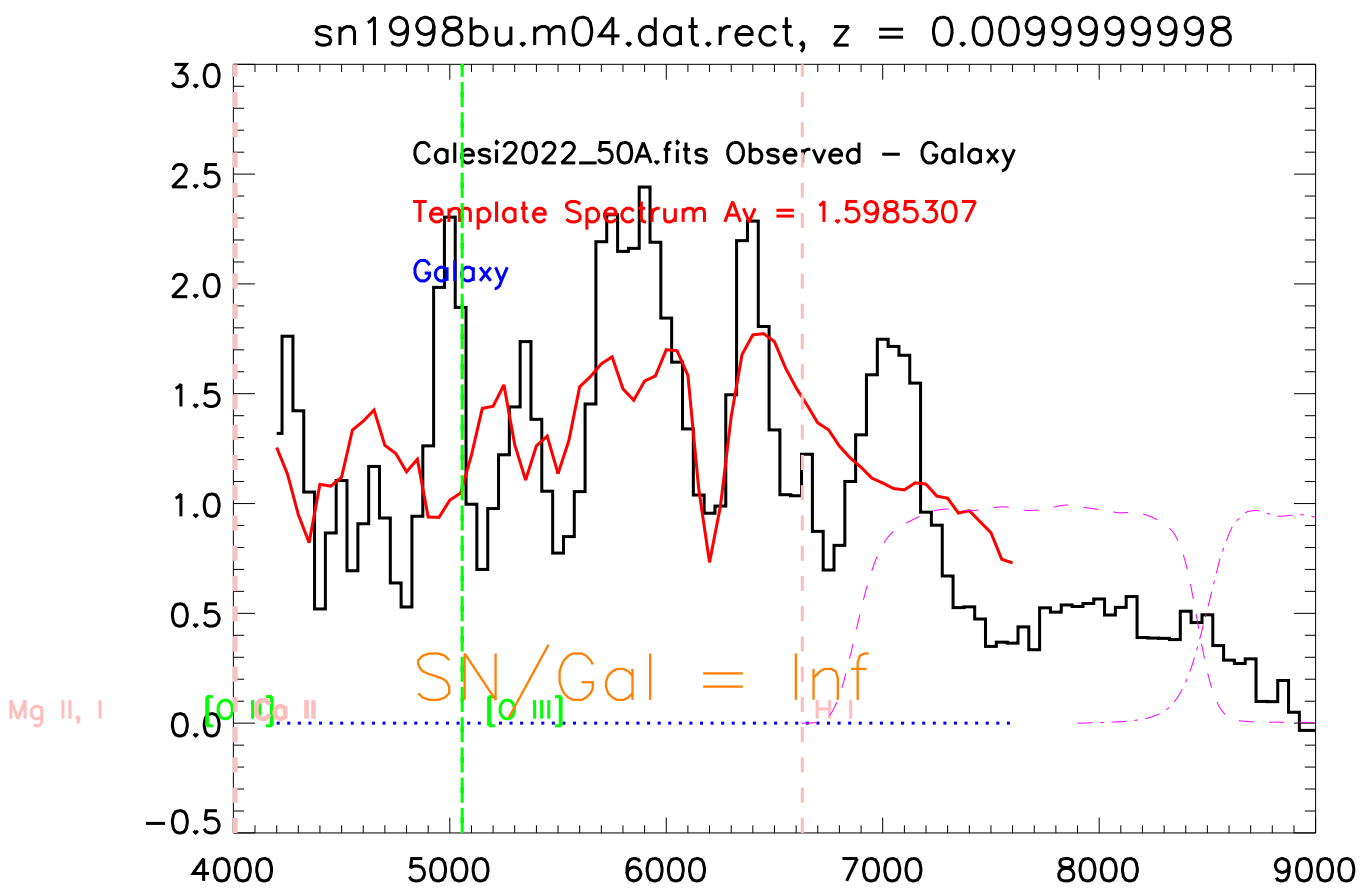
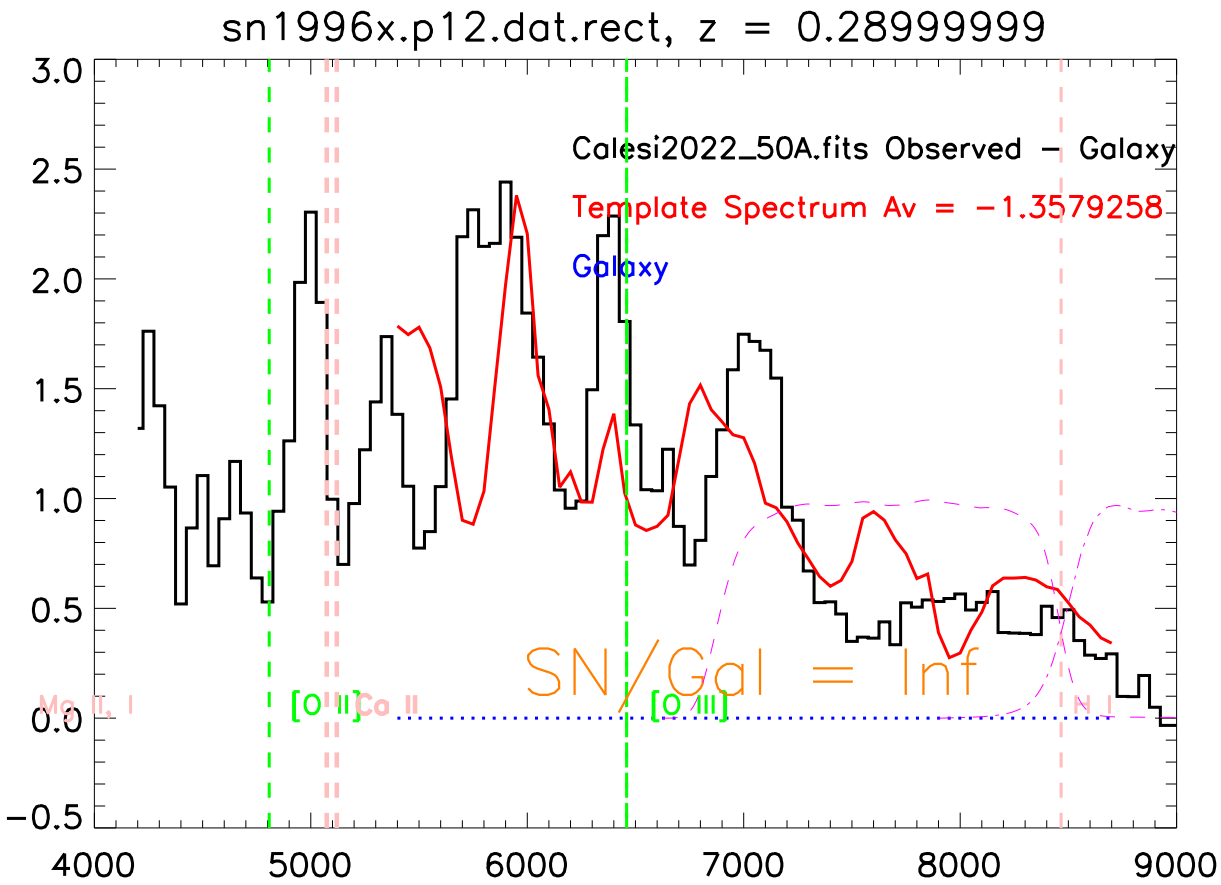
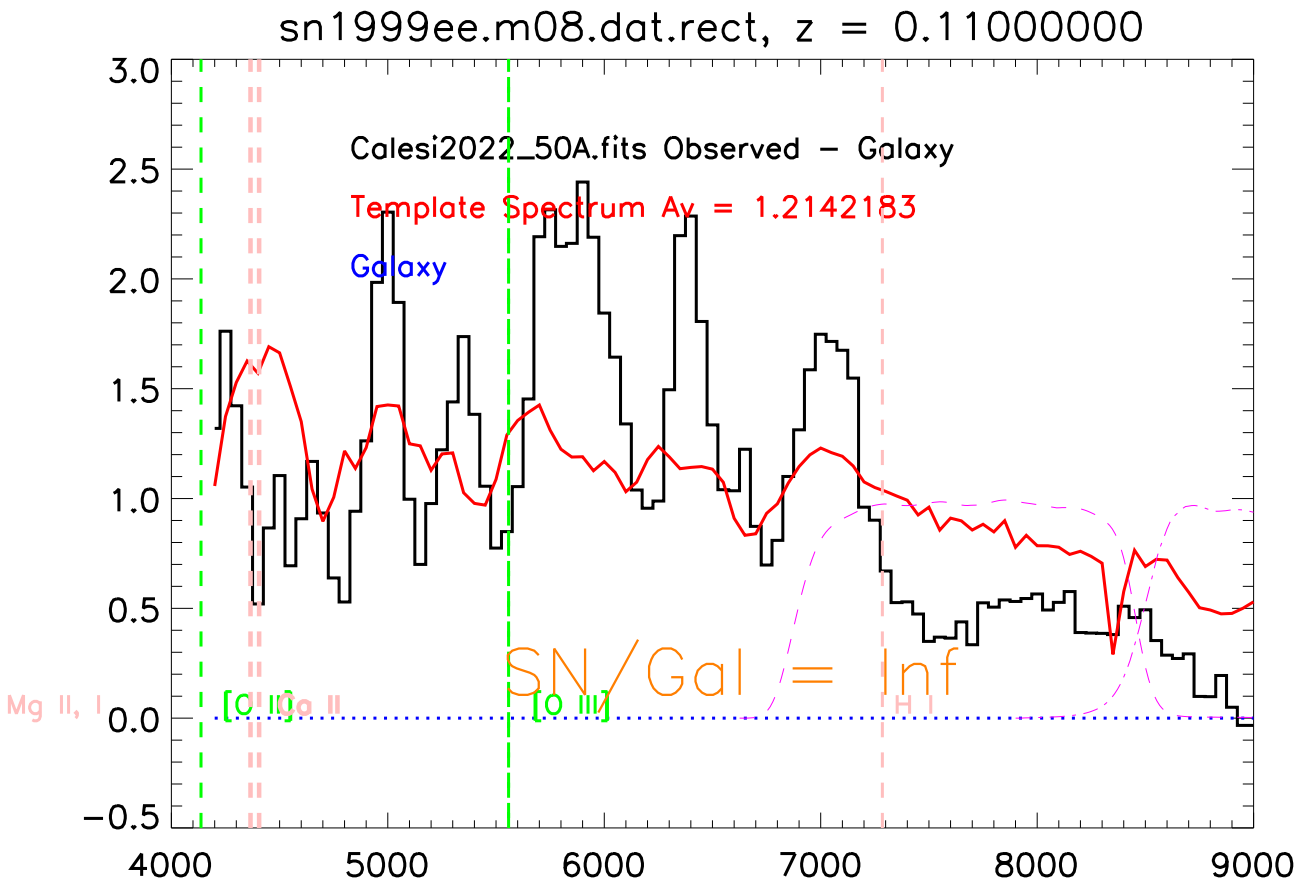
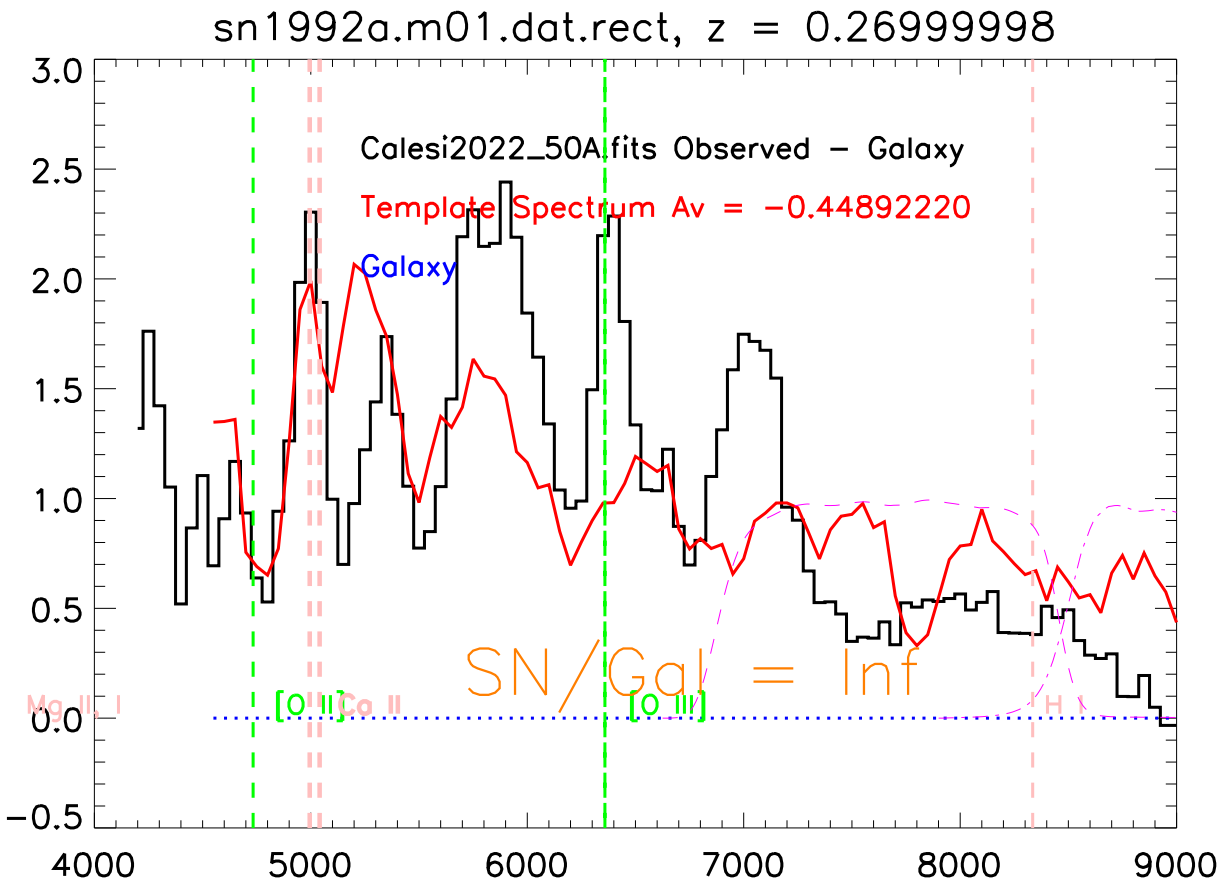
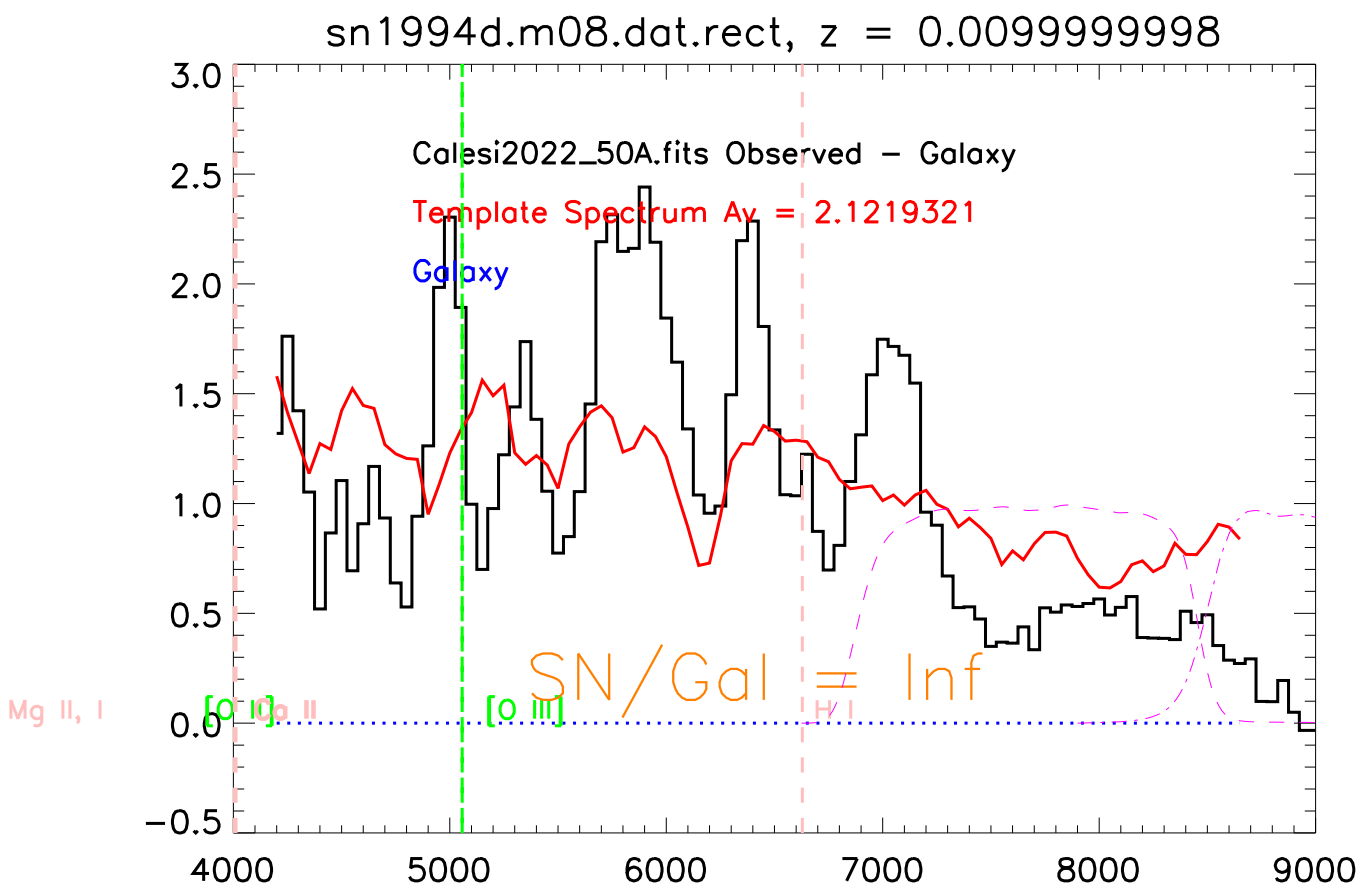
7000
8000
9000

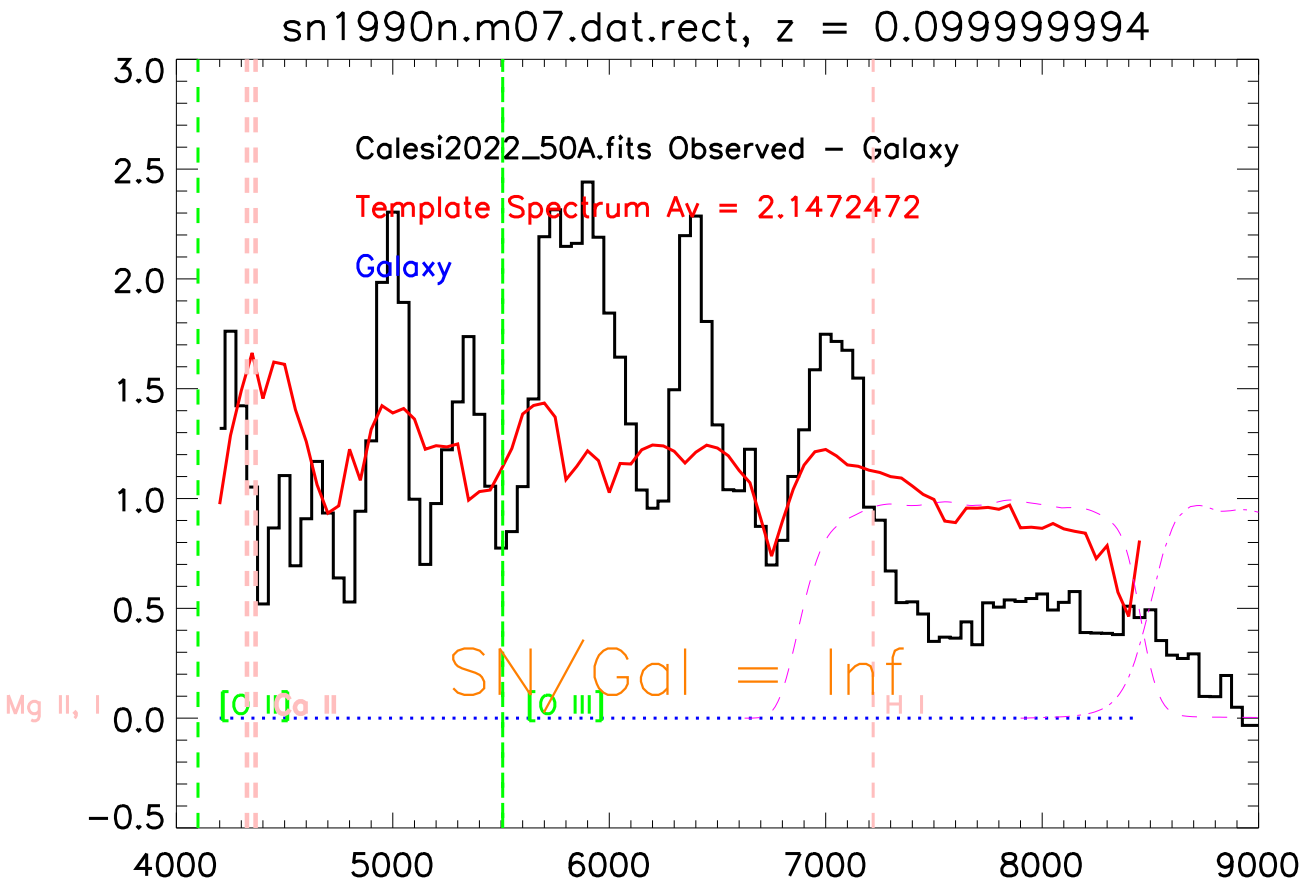

sn1998bu.m04.dat.rect, z = 0.0099999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 1.5985307
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
3.0
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
4000
5000
6000
7000
8000
9000

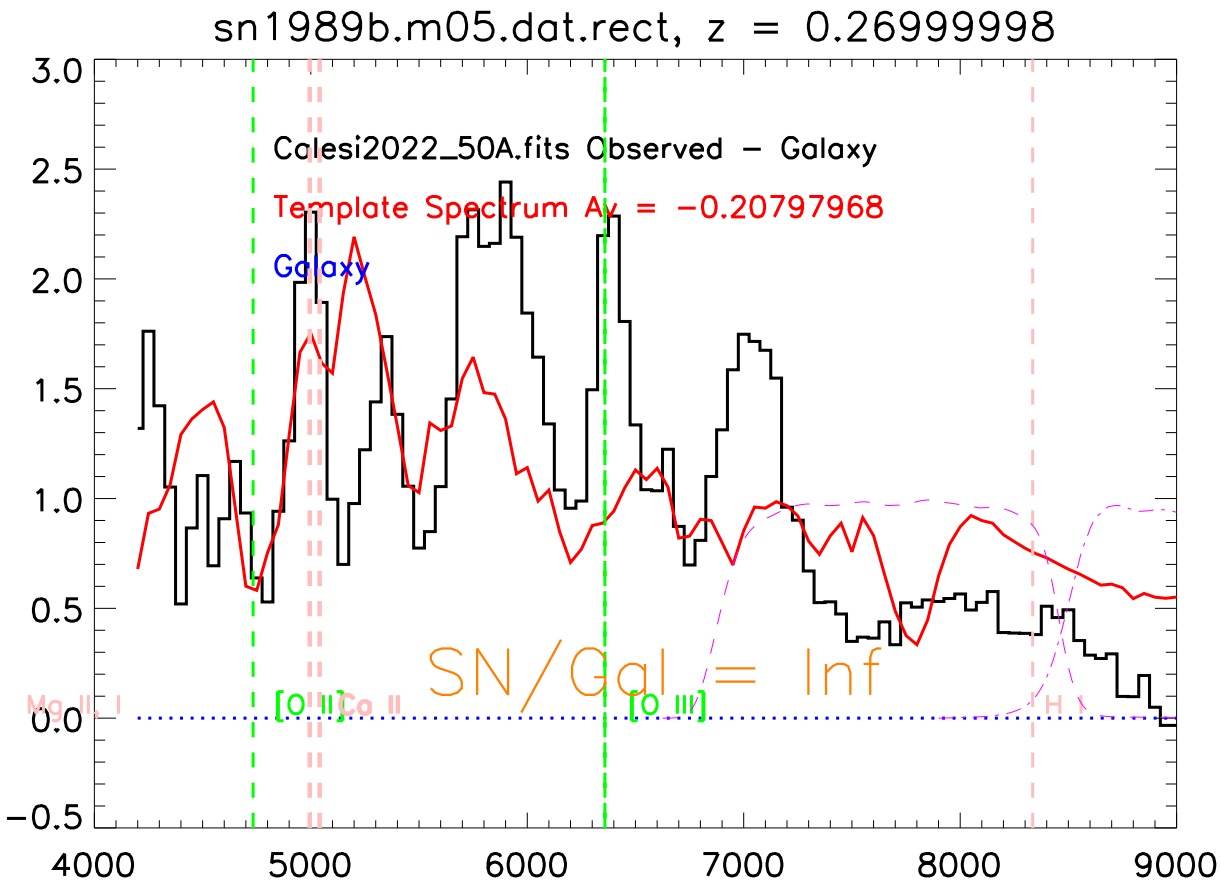

sn1996x.p12.dat.rect, z = 0.28999999
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −1.3579258
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
N I
3.0
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
4000
5000
6000
7000
8000
9000

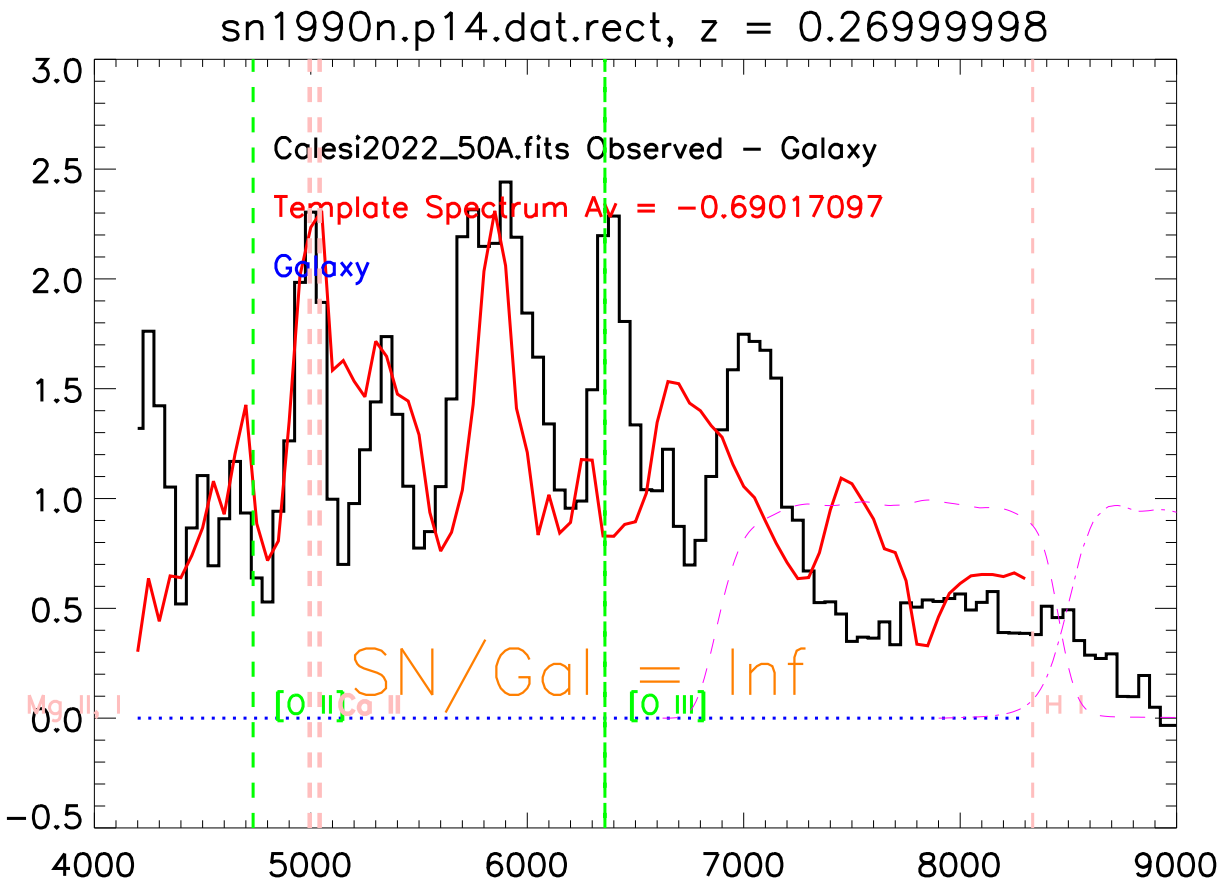

sn1999ee.m08.dat.rect, z = 0.11000000
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 1.2142183
Galaxy
SN/Gal = Inf
[O II]
[O III]
H I
3.0
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
4000
5000
6000
7000
8000
9000

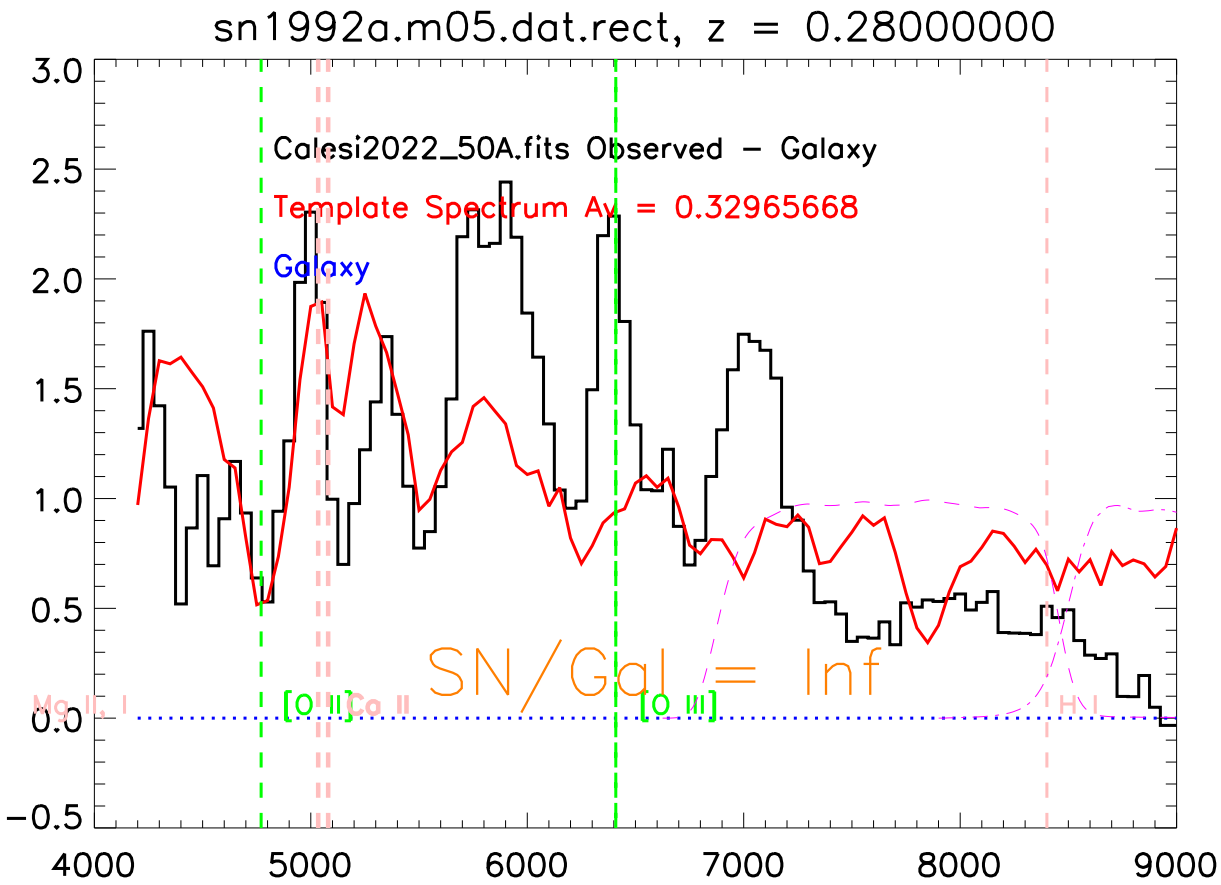

sn1992a.m01.dat.rect, z = 0.26999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −0.44892220
Galaxy
SN/Gal = Inf
Mg II
[O II]
Ca II
[O III]
H
3.0
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
4000
5000
6000
7000
8000
9000

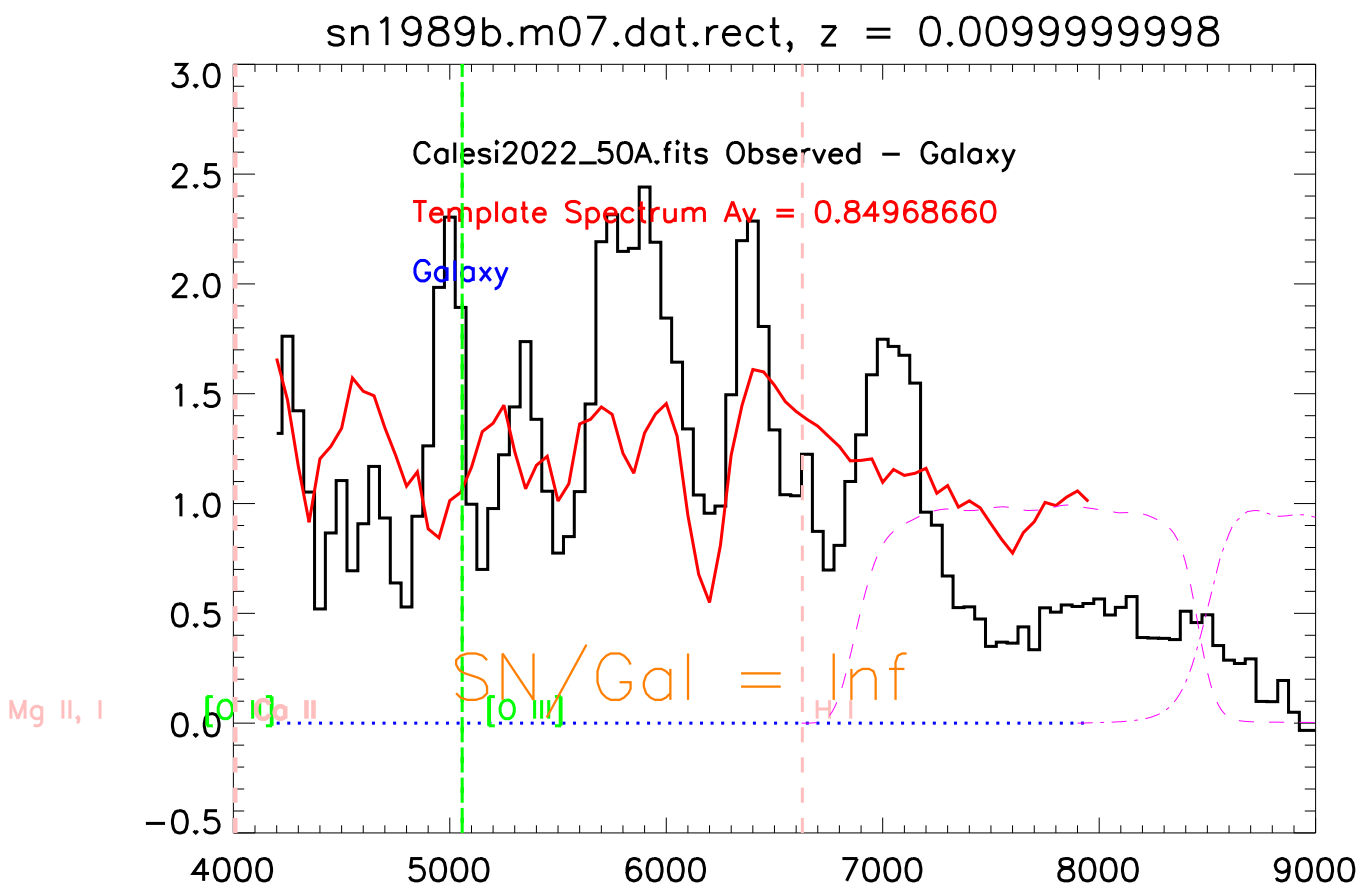

sn1994d.m08.dat.rect, z = 0.0099999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 2.1219321
Galaxy
SN/Gal = Inf
[O II]
[O III]
Mg II, I
H I
3.0
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
4000
5000
6000
7000
8000
9000


sn1990n.m07.dat.rect, z = 0.099999994
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 2.1472472
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
3.0
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
4000
5000
6000
7000
8000
9000


sn1989b.m05.dat.rect, z = 0.26999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −0.20797968
Galaxy
SN/Gal = Inf
Mg II
[O II]
Ca II
[O III]
H
3.0
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
4000
5000
6000
7000
8000
9000


sn1990n.p14.dat.rect, z = 0.26999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = −0.69017097
Galaxy
SN/Gal = Inf
[O II]
Ca II
[O III]
H I
3.0
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
4000
5000
6000
7000
8000
9000


sn1992a.m05.dat.rect, z = 0.28000000
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 0.32965668
Galaxy
SN/Gal = Inf
[O II]
Ca II
[O III]
H I
3.0
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
4000
5000
6000
7000
8000
9000


sn1989b.m07.dat.rect, z = 0.0099999998
Calesi2022_50A.fits Observed − Galaxy
Template Spectrum Av = 0.84968660
Galaxy
SN/Gal = Inf
Mg II, I
[O II]
Ca II
[O III]
H I
3.0
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
4000
5000
6000
7000
8000
9000