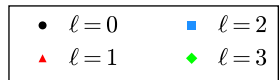


Age after ZAMS: 0.000 Gyr



$a_0 = -8.4803 \mu \text{ Hz}$
 $a_1 = 0.0034206$
 $a_2 = -3.2805e-07 \mu \text{ Hz}^{-1}$

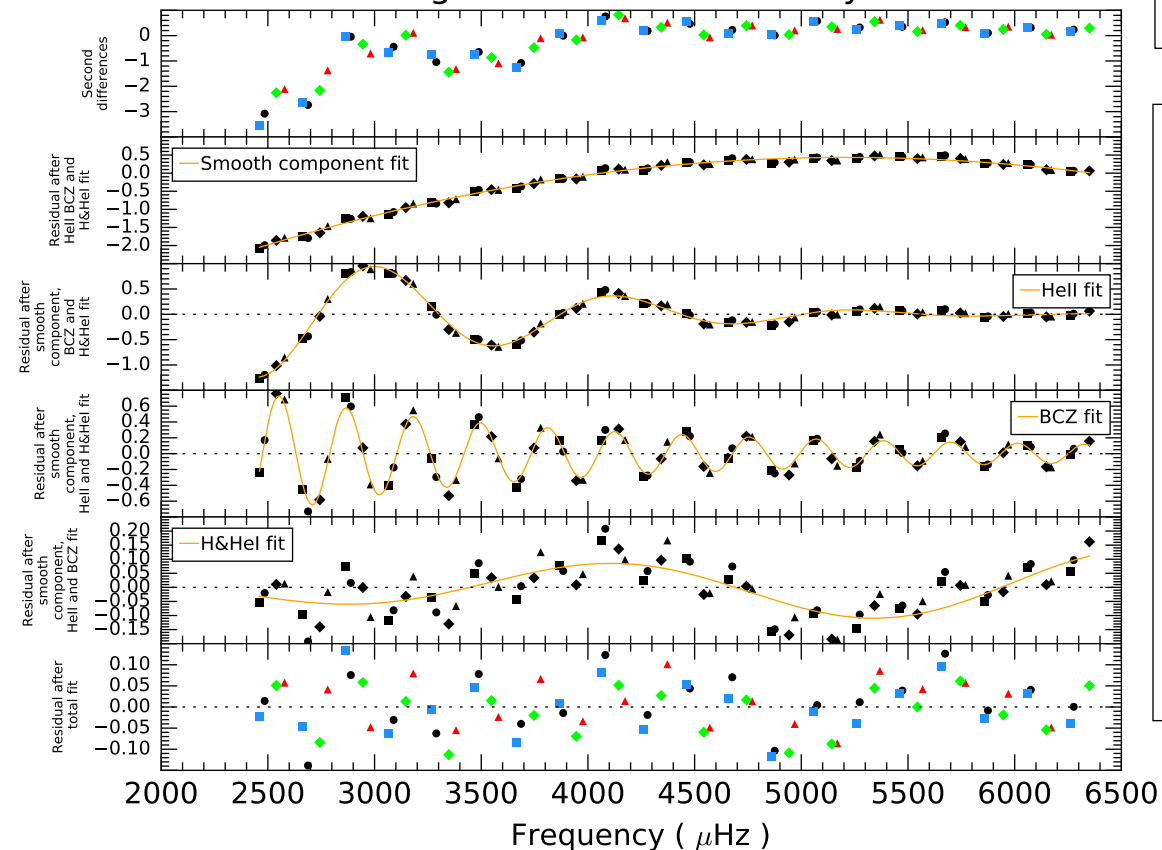
 $c_0 = 0.0013101$
 $c_2 = 1.58e-07 \mu \text{ Hz}^{-2}$
 $\tau_{HeII} = 441.88 \text{ s}$
 $\phi_{HeII} = 3.656$

 $b_2 = 4.7409e+06 \text{ mHz}^3$
 $\tau_{CZ} = 1589.0 \text{ s}$
 $\phi_{CZ} = 0.85283$

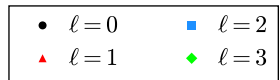
 $d_0 = 2.1221e-05$
 $d_2 = 1.118e-09 \mu \text{ Hz}^{-2}$
 $\tau_{HI} = 200.67 \text{ s}$
 $\phi_{HI} = 3.878$

profile1

$\chi^2_{\nu}(\text{dof} = 65) = 0.0045471$



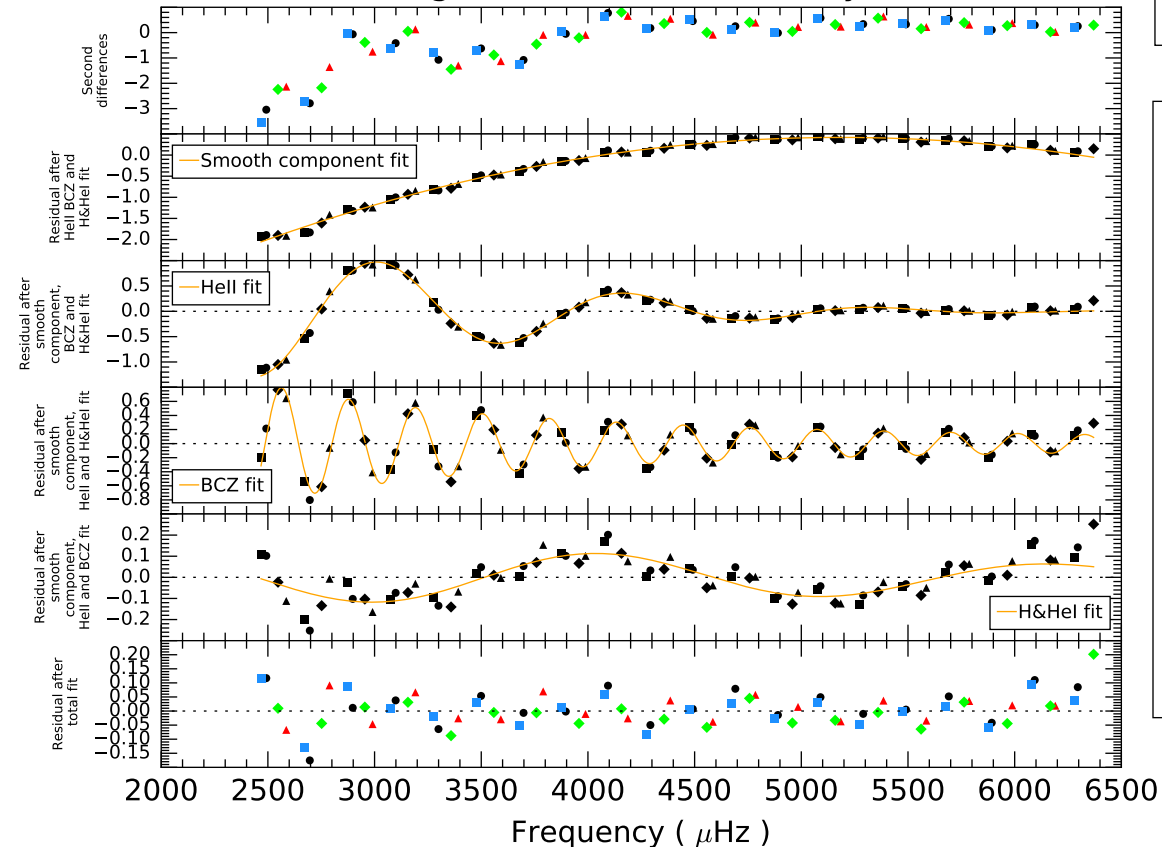
Age after ZAMS: 0.000 Gyr



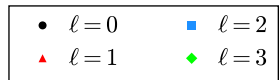
$$\begin{aligned}
 a_0 &= -8.5931 \mu \text{ Hz} \\
 a_1 &= 0.0034765 \\
 a_2 &= -3.3528e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0013616 \\
 c_2 &= 1.5804e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 427.79 \text{ s} \\
 \phi_{HeII} &= 4.1348 \\
 b_2 &= 5.2219e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1594.0 \text{ s} \\
 \phi_{CZ} &= 0.45497 \\
 d_0 &= 5.9543e-05 \\
 d_2 &= 4.622e-08 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 233.87 \text{ s} \\
 \phi_{HI} &= 2.2345
 \end{aligned}$$

profile2

$$\chi^2_\nu(\text{dof} = 65) = 0.0042631$$



Age after ZAMS: 0.001 Gyr



$a_0 = -8.4936 \mu \text{ Hz}$
 $a_1 = 0.0034229$
 $a_2 = -3.2904e-07 \mu \text{ Hz}^{-1}$

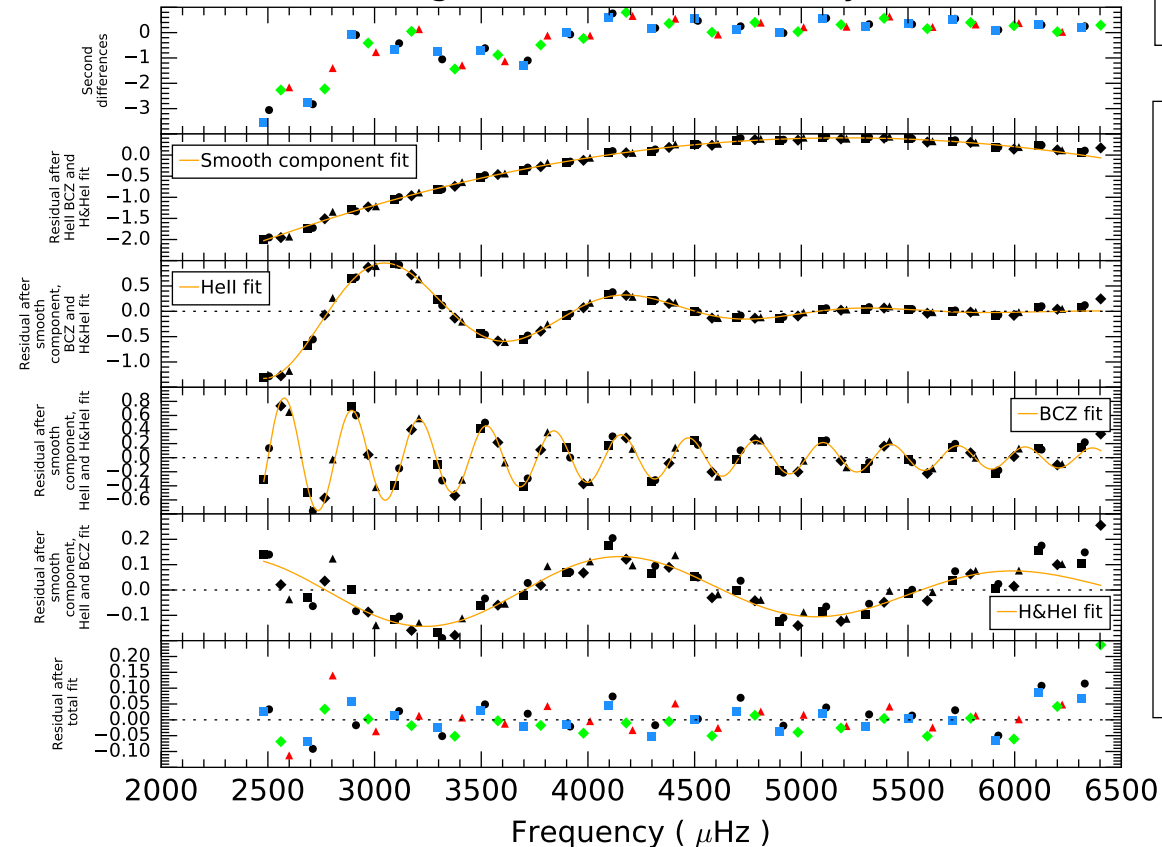
 $c_0 = 0.0015205$
 $c_2 = 1.6943e-07 \mu \text{ Hz}^{-2}$
 $\tau_{\text{HeII}} = 436.64 \text{ s}$
 $\phi_{\text{HeII}} = 3.5759$

 $b_2 = 5.6309e+06 \text{ mHz}^3$
 $\tau_{\text{CZ}} = 1584.6 \text{ s}$
 $\phi_{\text{CZ}} = 0.48565$

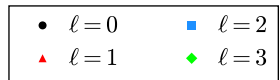
 $d_0 = 7.4592e-05$
 $d_2 = 4.9383e-08 \mu \text{ Hz}^{-2}$
 $\tau_{\text{HI}} = 268.72 \text{ s}$
 $\phi_{\text{HI}} = 0.071907$

profile3

$\chi^2_{\nu}(\text{dof} = 65) = 0.0033828$



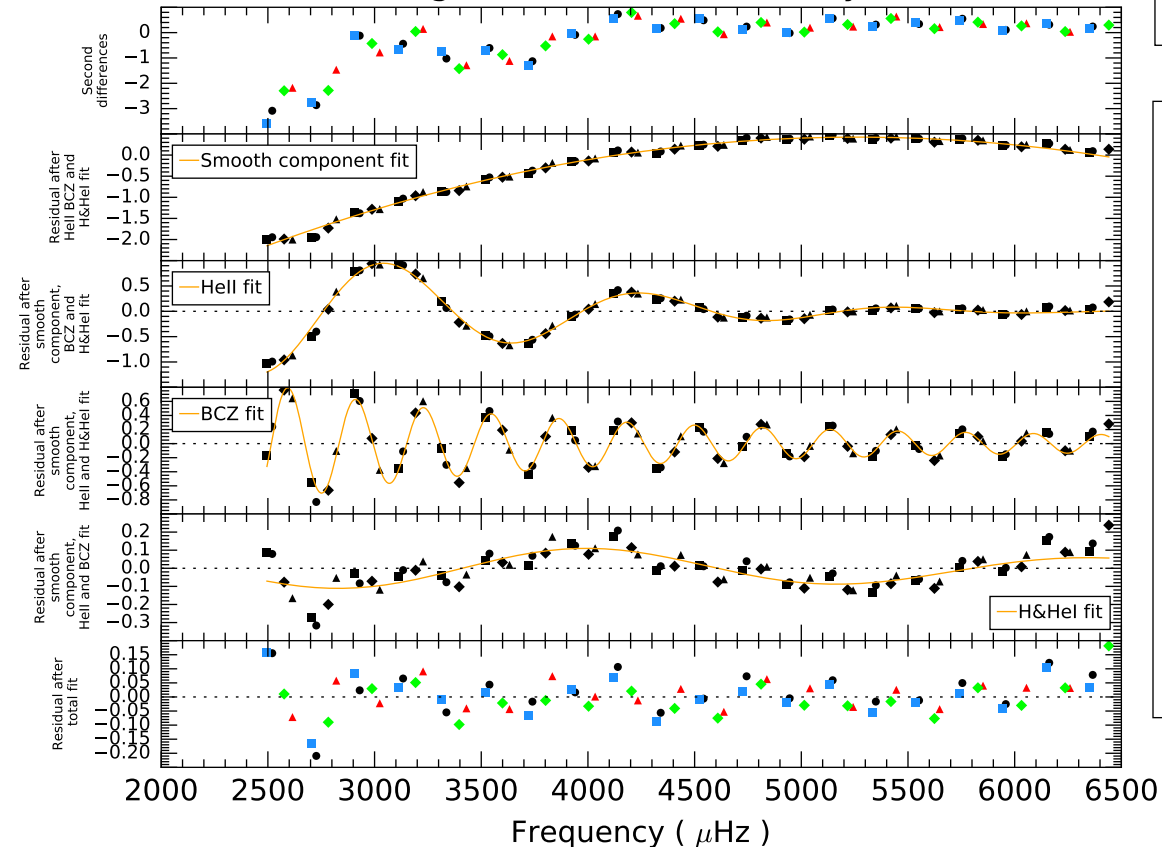
Age after ZAMS: 0.002 Gyr



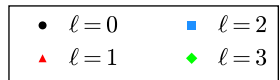
$$\begin{aligned}
 a_0 &= -8.8878 \mu\text{ Hz} \\
 a_1 &= 0.0035408 \\
 a_2 &= -3.3654e-07 \mu\text{Hz}^{-1} \\
 c_0 &= 0.0012264 \\
 c_2 &= 1.4728e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 412.57 \text{ s} \\
 \phi_{HeII} &= 4.5402 \\
 b_2 &= 5.3331e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1574.2 \text{ s} \\
 \phi_{CZ} &= 0.5085 \\
 d_0 &= 5.6127e-05 \\
 d_2 &= 4.4547e-08 \mu\text{Hz}^{-2} \\
 \tau_{HI} &= 209.31 \text{ s} \\
 \phi_{HI} &= 3.5934
 \end{aligned}$$

profile4

$$\chi^2_\nu(\text{dof} = 65) = 0.0053006$$



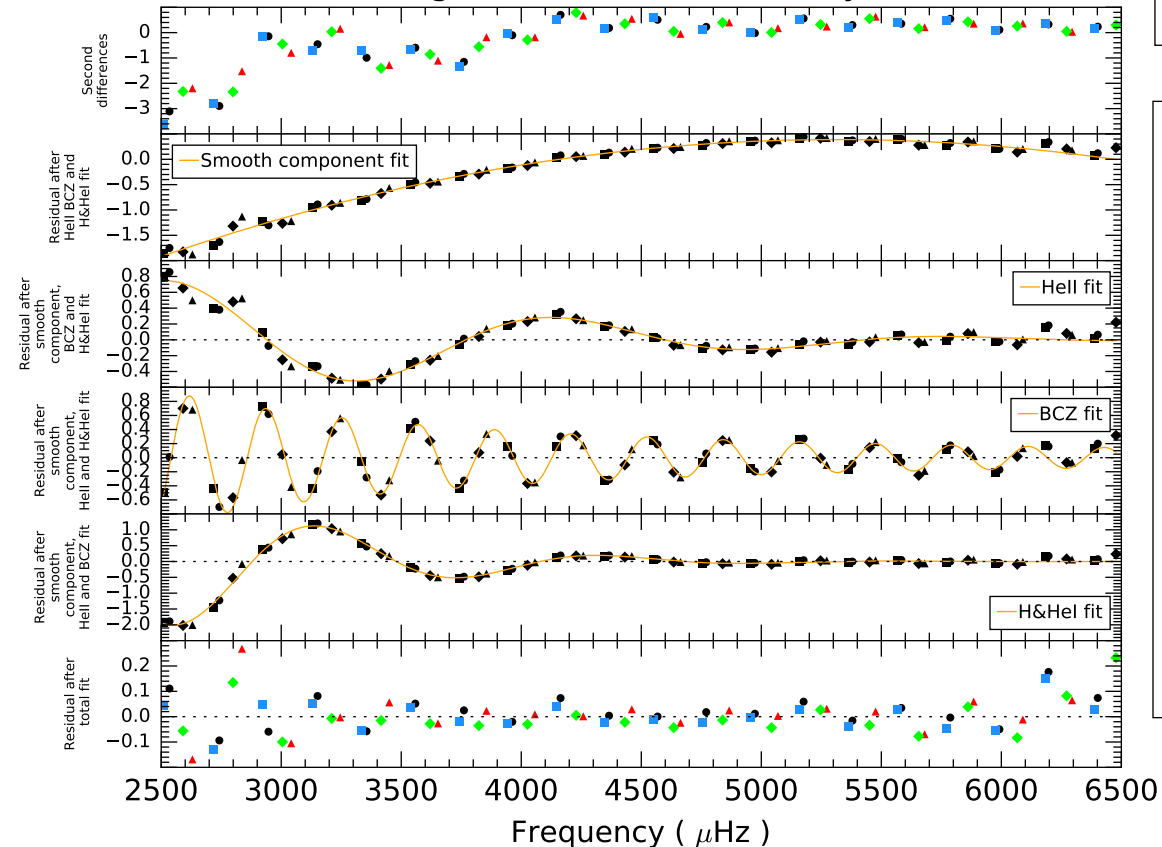
Age after ZAMS: 0.004 Gyr



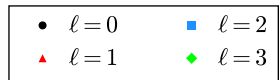
$$\begin{aligned}
 a_0 &= -7.8382 \mu \text{ Hz} \\
 a_1 &= 0.0030968 \\
 a_2 &= -2.9138e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0007008 \\
 c_2 &= 1.3517e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 301.71 \text{ s} \\
 \phi_{HeII} &= 4.562 \\
 b_2 &= 6.0189e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1574.8 \text{ s} \\
 \phi_{CZ} &= 6.2824 \\
 d_0 &= 0.003618 \\
 d_2 &= 2.3253e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 417.12 \text{ s} \\
 \phi_{HI} &= 3.7605
 \end{aligned}$$

profile5

$$\chi^2_{\nu}(\text{dof} = 65) = 0.0061574$$



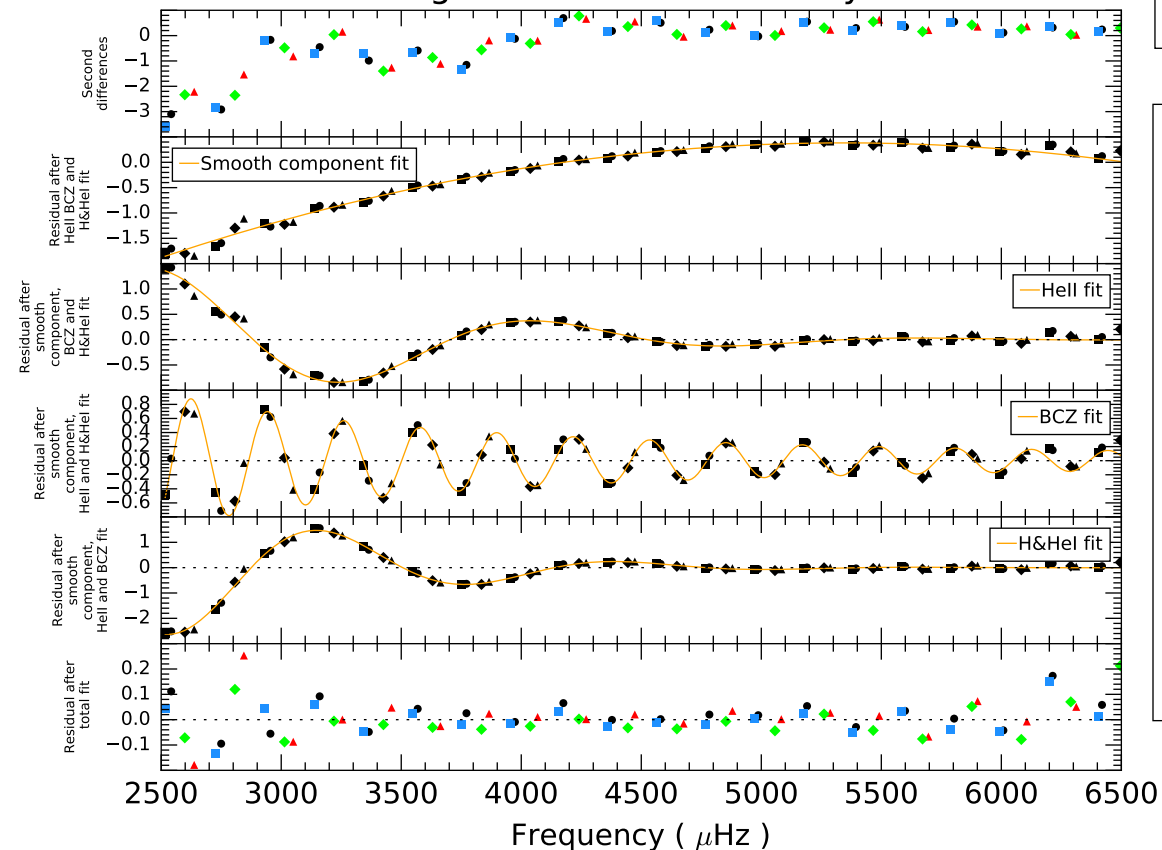
Age after ZAMS: 0.007 Gyr



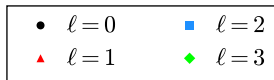
$$\begin{aligned}
 a_0 &= -7.5995 \mu \text{ Hz} \\
 a_1 &= 0.0029856 \\
 a_2 &= -2.7915e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0016499 \\
 c_2 &= 1.7419e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 304.63 \text{ s} \\
 \phi_{HeII} &= 4.6756 \\
 b_2 &= 6.0557e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1570.9 \text{ s} \\
 \phi_{CZ} &= 0.0044586 \\
 d_0 &= 0.0044244 \\
 d_2 &= 2.2459e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 395.87 \text{ s} \\
 \phi_{HI} &= 4.5515
 \end{aligned}$$

profile6

$$\chi^2_{\nu}(\text{dof} = 65) = 0.0056838$$



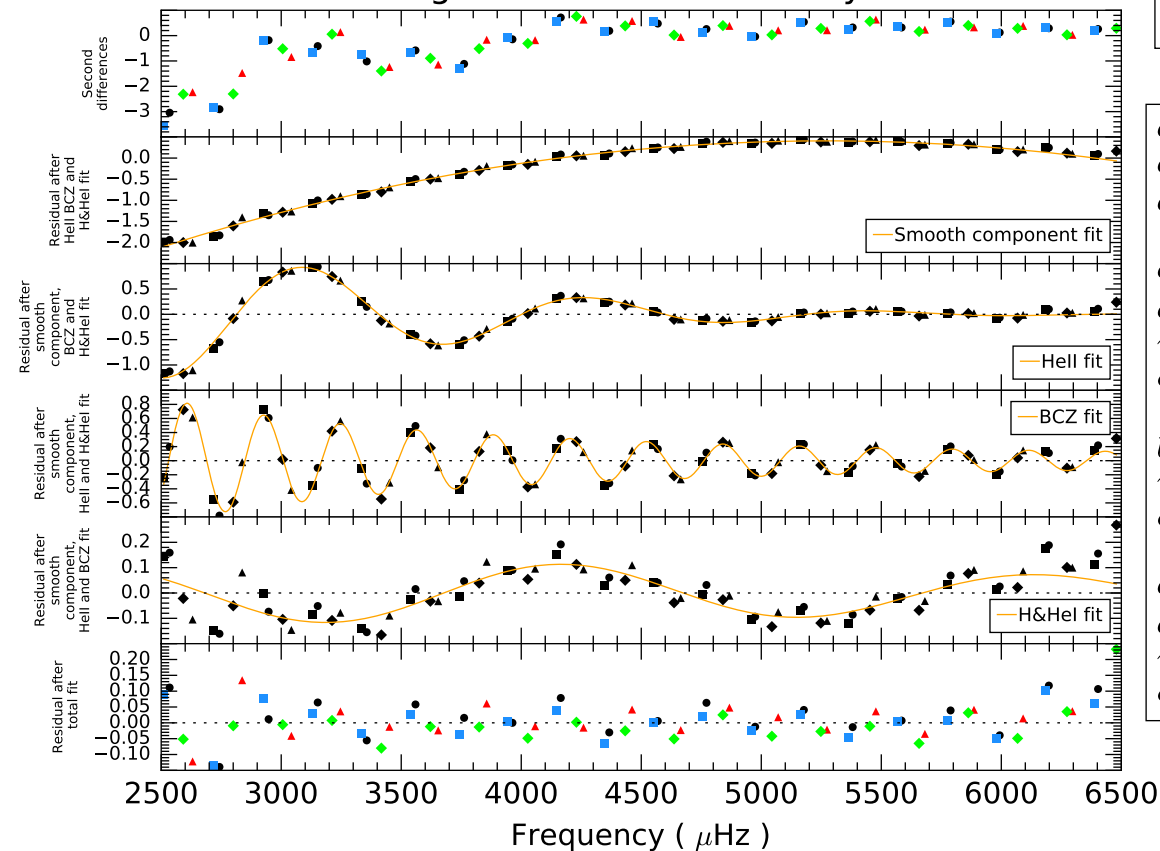
Age after ZAMS: 0.013 Gyr



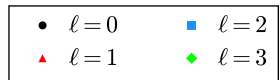
$$\begin{aligned}
 a_0 &= -8.7064 \mu \text{ Hz} \\
 a_1 &= 0.0034565 \\
 a_2 &= -3.277e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0013334 \\
 c_2 &= 1.5563e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 421.36 \text{ s} \\
 \phi_{HeII} &= 3.9548 \\
 b_2 &= 5.5573e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1569.0 \text{ s} \\
 \phi_{CZ} &= 0.3806 \\
 d_0 &= 5.5348e-05 \\
 d_2 &= 4.0912e-08 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 250.88 \text{ s} \\
 \phi_{HI} &= 0.97378
 \end{aligned}$$

profile7

$$\chi^2_\nu(\text{dof} = 65) = 0.0043121$$



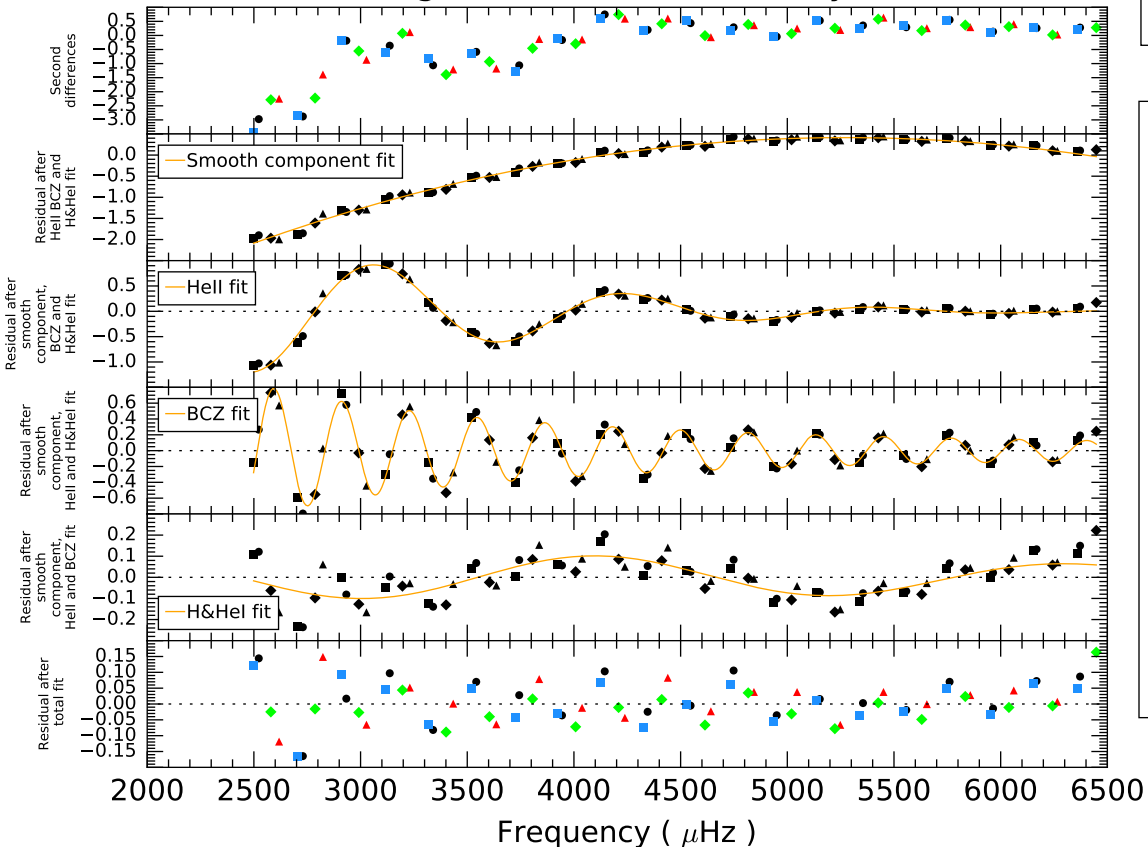
Age after ZAMS: 0.023 Gyr



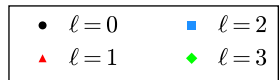
$$\begin{aligned}
 a_0 &= -8.628 \mu \text{ Hz} \\
 a_1 &= 0.0034309 \\
 a_2 &= -3.2545e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0012182 \\
 c_2 &= 1.4914e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 423.28 \text{ s} \\
 \phi_{HeII} &= 4.0304 \\
 b_2 &= 5.279e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1575.1 \text{ s} \\
 \phi_{CZ} &= 0.47567 \\
 d_0 &= 4.7364e-05 \\
 d_2 &= 3.8464e-08 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 224.31 \text{ s} \\
 \phi_{HI} &= 2.5628
 \end{aligned}$$

profile8

$$\chi^2_\nu(\text{dof} = 65) = 0.0052381$$



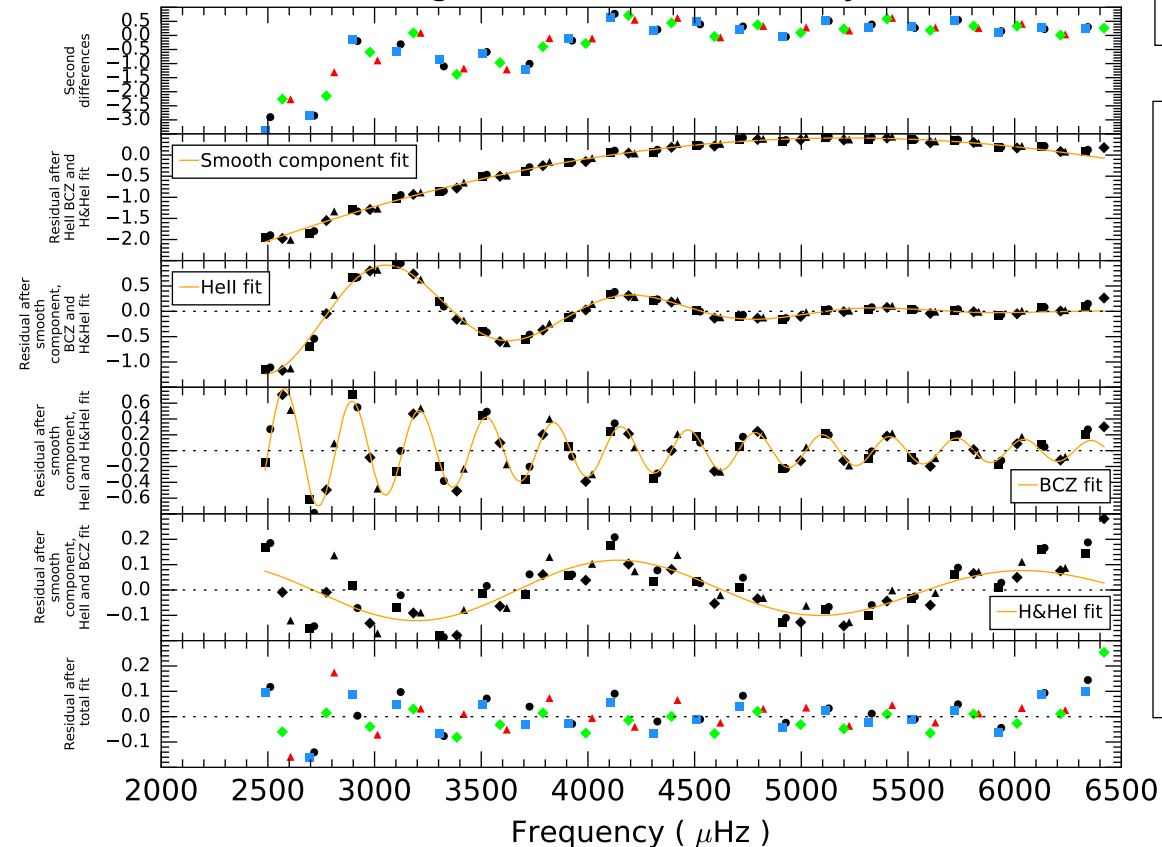
Age after ZAMS: 0.039 Gyr



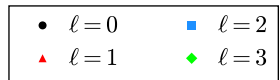
$$\begin{aligned}
 a_0 &= -8.6108 \mu\text{Hz} \\
 a_1 &= 0.0034599 \\
 a_2 &= -3.3191e-07 \mu\text{Hz}^{-1} \\
 c_0 &= 0.0013572 \\
 c_2 &= 1.6155e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 429.64 \text{ s} \\
 \phi_{HeII} &= 3.8143 \\
 b_2 &= 5.2258e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1587.9 \text{ s} \\
 \phi_{CZ} &= 0.33814 \\
 d_0 &= 5.7796e-05 \\
 d_2 &= 4.1357e-08 \mu\text{Hz}^{-2} \\
 \tau_{HI} &= 260.6 \text{ s} \\
 \phi_{HI} &= 0.54822
 \end{aligned}$$

profile9

$$\chi^2_\nu(\text{dof} = 65) = 0.0057765$$



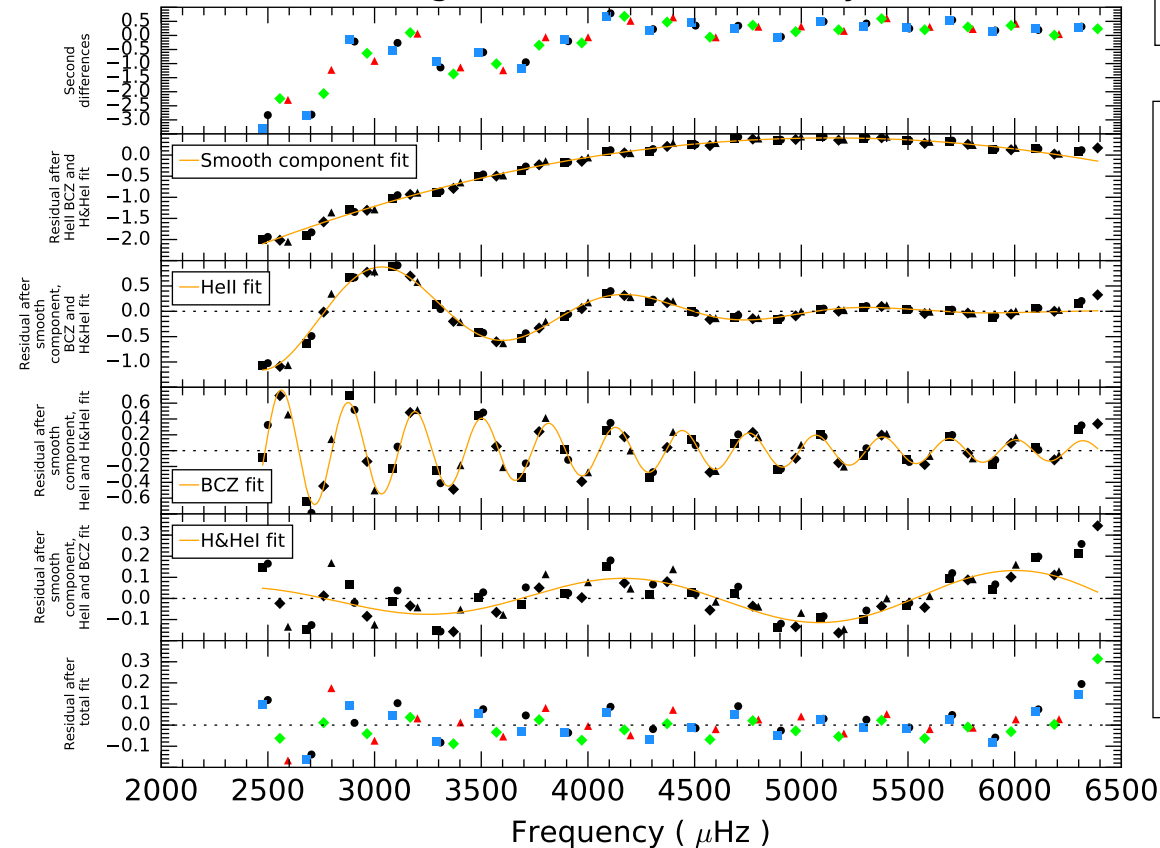
Age after ZAMS: 0.068 Gyr



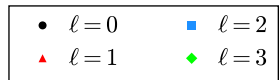
$$\begin{aligned}
 a_0 &= -8.9314 \mu \text{ Hz} \\
 a_1 &= 0.0036332 \\
 a_2 &= -3.5338e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0012164 \\
 c_2 &= 1.5565e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 434.99 \text{ s} \\
 \phi_{HeII} &= 3.7293 \\
 b_2 &= 5.0312e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1597.4 \text{ s} \\
 \phi_{CZ} &= 0.34626 \\
 d_0 &= 2.3765e-05 \\
 d_2 &= 2.0251e-09 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 271.2 \text{ s} \\
 \phi_{HI} &= 0.001759
 \end{aligned}$$

profile10

$$\chi^2_\nu(\text{dof} = 65) = 0.0070879$$



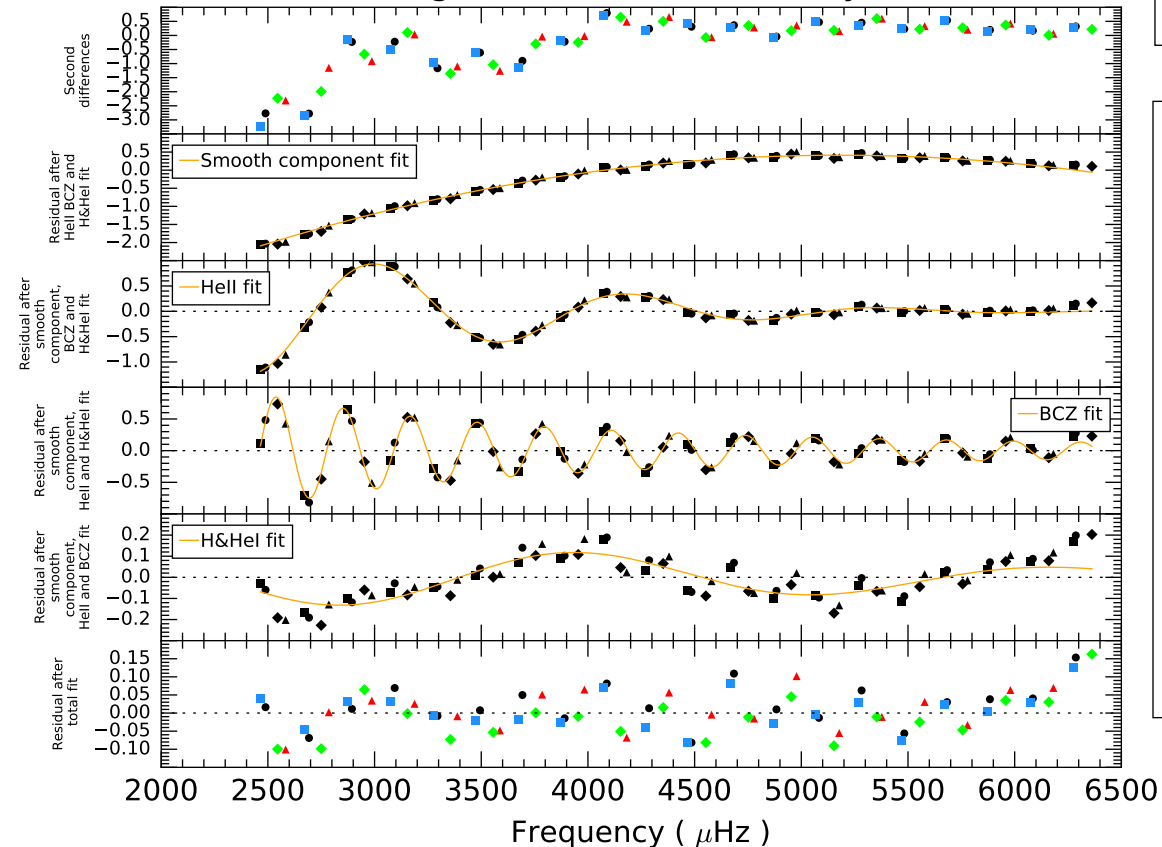
Age after ZAMS: 0.118 Gyr



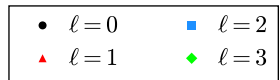
$$\begin{aligned}
 a_0 &= -8.702 \mu \text{ Hz} \\
 a_1 &= 0.0035184 \\
 a_2 &= -3.3948e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0012753 \\
 c_2 &= 1.5608e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 417.89 \text{ s} \\
 \phi_{HeII} &= 4.576 \\
 b_2 &= 5.454e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1591.7 \text{ s} \\
 \phi_{CZ} &= 1.0387 \\
 d_0 &= 7.4885e-05 \\
 d_2 &= 5.9111e-08 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 220.65 \text{ s} \\
 \phi_{HI} &= 3.1505
 \end{aligned}$$

profile11

$$\chi^2_\nu(\text{dof} = 65) = 0.0040336$$



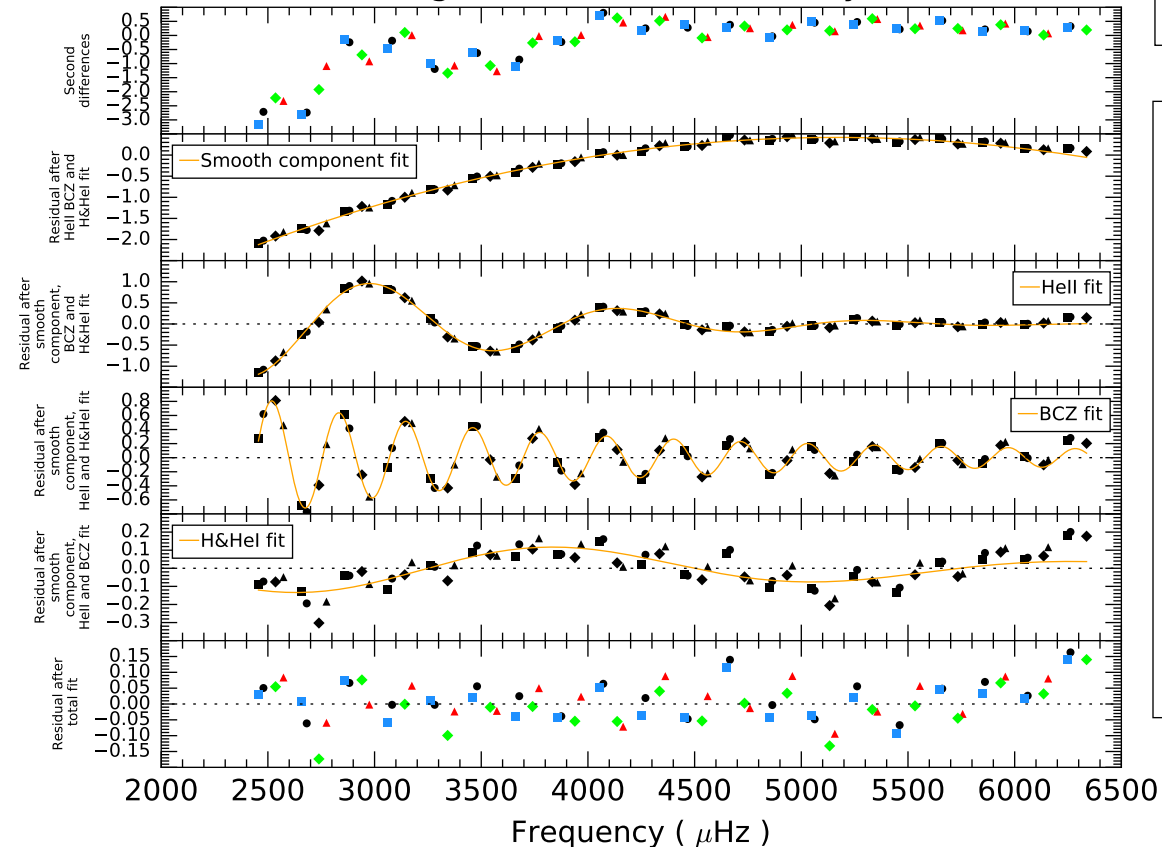
Age after ZAMS: 0.205 Gyr



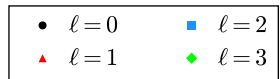
$$\begin{aligned}
 a_0 &= -8.8076 \mu \text{ Hz} \\
 a_1 &= 0.0035721 \\
 a_2 &= -3.4575e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0012678 \\
 c_2 &= 1.54e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 425.13 \text{ s} \\
 \phi_{HeII} &= 4.4117 \\
 b_2 &= 5.123e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1593.8 \text{ s} \\
 \phi_{CZ} &= 1.3649 \\
 d_0 &= 7.9943e-05 \\
 d_2 &= 6.5092e-08 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 200.78 \text{ s} \\
 \phi_{HI} &= 4.3684
 \end{aligned}$$

profile12

$$\chi^2_\nu(\text{dof} = 65) = 0.0050356$$



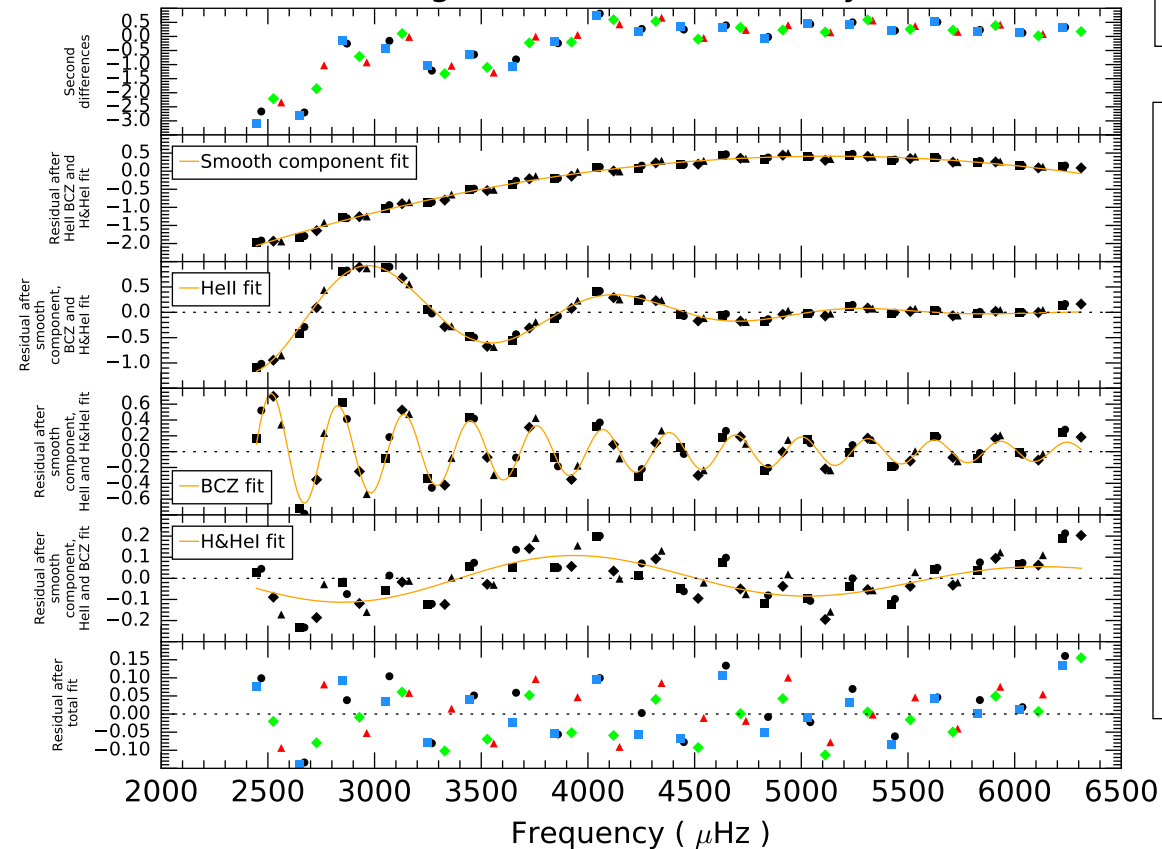
Age after ZAMS: 0.354 Gyr



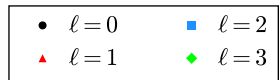
$$\begin{aligned}
 a_0 &= -8.6188 \mu \text{ Hz} \\
 a_1 &= 0.0035216 \\
 a_2 &= -3.4325e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0012534 \\
 c_2 &= 1.5757e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 427.64 \text{ s} \\
 \phi_{HeII} &= 4.3516 \\
 b_2 &= 4.6453e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1609.3 \text{ s} \\
 \phi_{CZ} &= 0.91769 \\
 d_0 &= 5.9673e-05 \\
 d_2 &= 4.9956e-08 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 225.0 \text{ s} \\
 \phi_{HI} &= 2.9638
 \end{aligned}$$

profile13

$$\chi^2_\nu (\text{dof} = 65) = 0.0062561$$



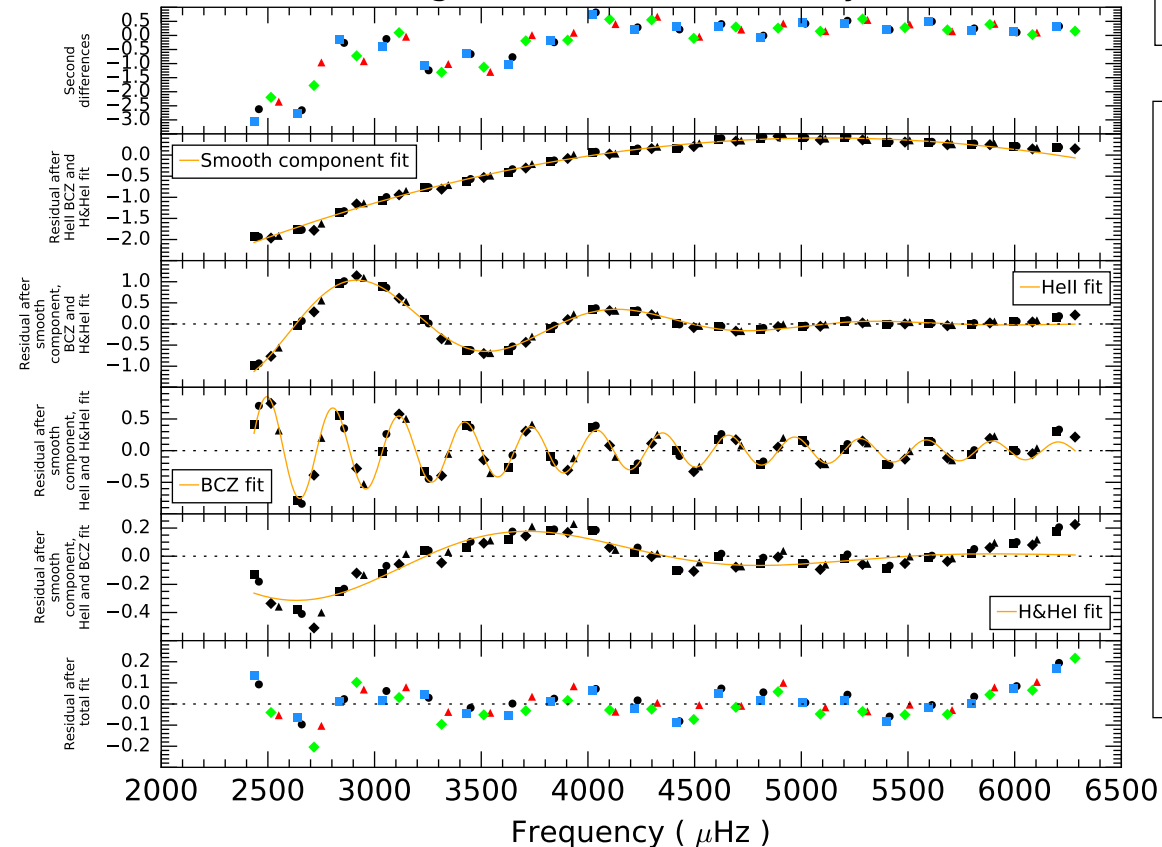
Age after ZAMS: 0.610 Gyr



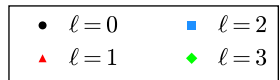
$$\begin{aligned}
 a_0 &= -8.6206 \mu \text{ Hz} \\
 a_1 &= 0.003531 \\
 a_2 &= -3.4532e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.001472 \\
 c_2 &= 1.6589e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 404.4 \text{ s} \\
 \phi_{HeII} &= 5.4773 \\
 b_2 &= 5.3084e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1618.1 \text{ s} \\
 \phi_{CZ} &= 1.0645 \\
 d_0 &= 0.00029612 \\
 d_2 &= 1.303e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 221.49 \text{ s} \\
 \phi_{HI} &= 3.5546
 \end{aligned}$$

profile14

$$\chi^2_\nu(\text{dof} = 65) = 0.0059875$$



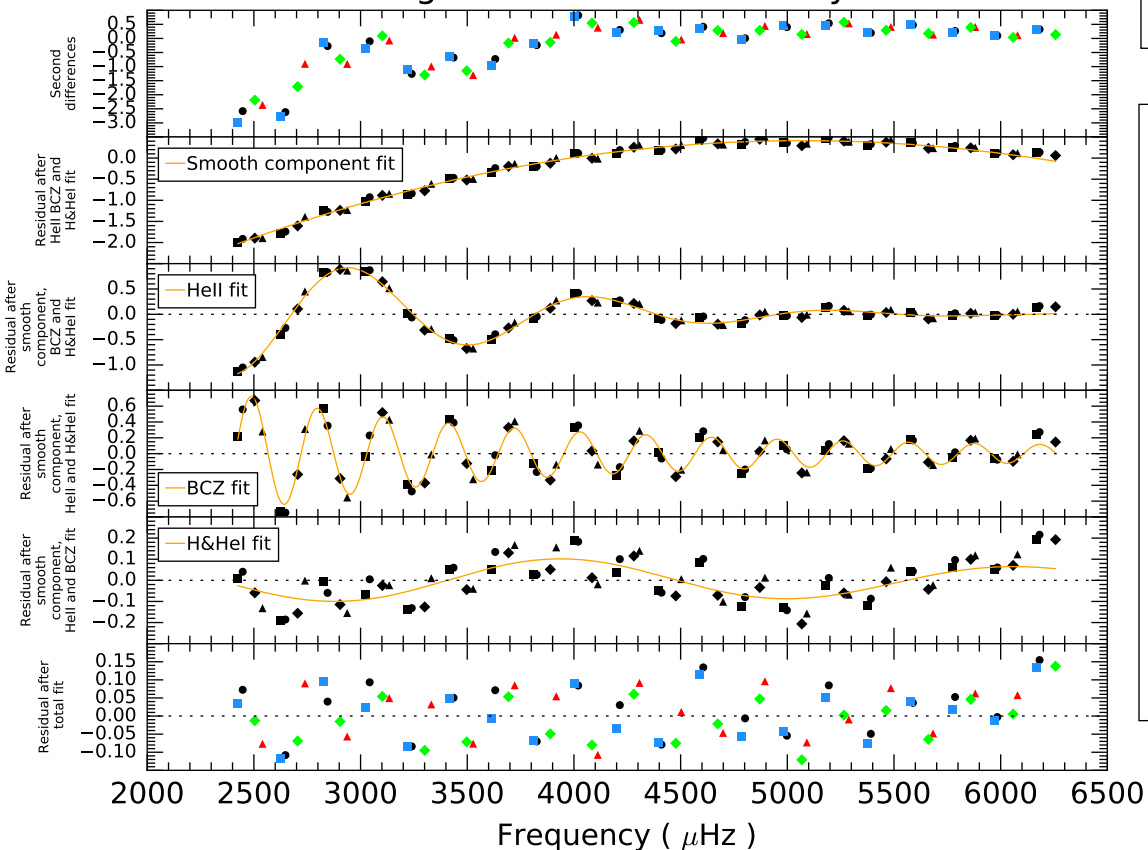
Age after ZAMS: 0.910 Gyr



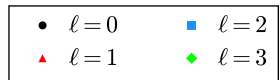
$$\begin{aligned}
 a_0 &= -8.5534 \mu \text{ Hz} \\
 a_1 &= 0.0035368 \\
 a_2 &= -3.4874e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0012741 \\
 c_2 &= 1.619e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 438.31 \text{ s} \\
 \phi_{HeII} &= 4.1175 \\
 b_2 &= 4.4808e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1624.1 \text{ s} \\
 \phi_{CZ} &= 1.0195 \\
 d_0 &= 4.8759e-05 \\
 d_2 &= 4.0941e-08 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 231.99 \text{ s} \\
 \phi_{HI} &= 2.6387
 \end{aligned}$$

profile15

$$\chi^2_\nu(\text{dof} = 65) = 0.0060763$$



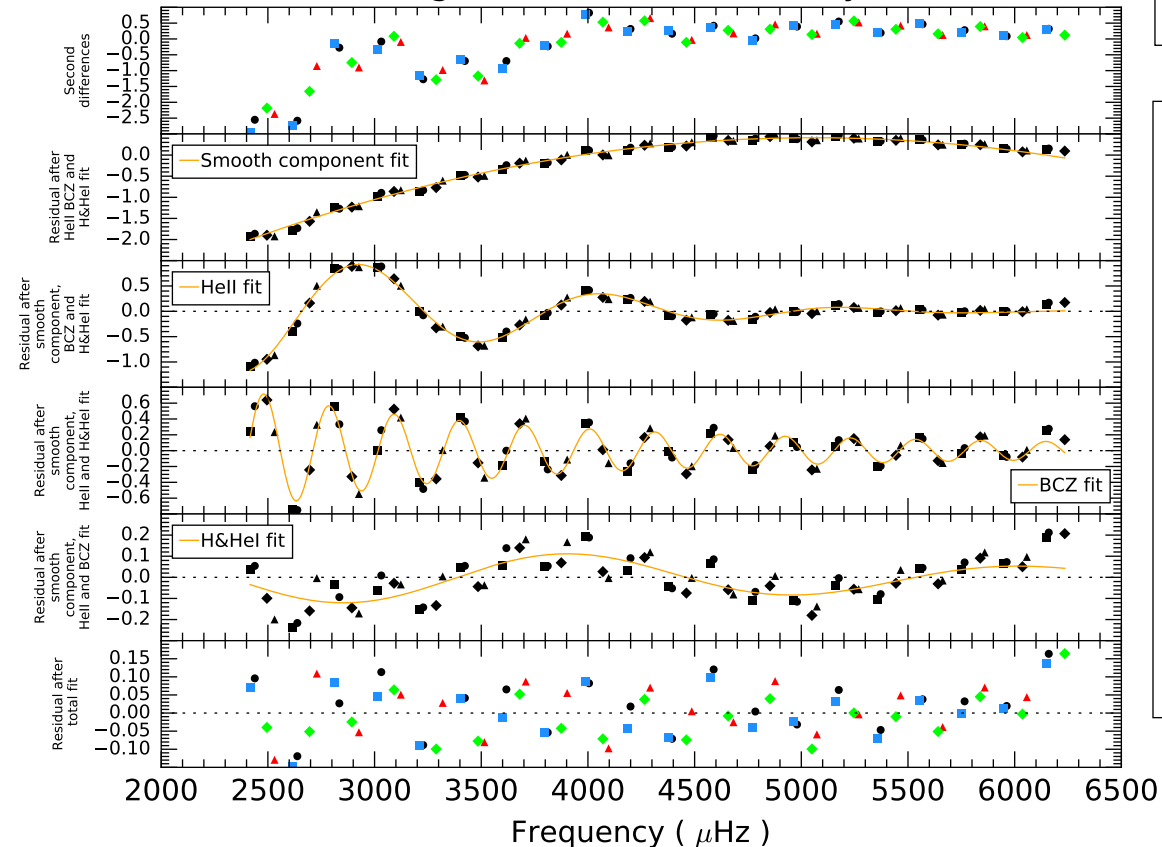
Age after ZAMS: 1.210 Gyr



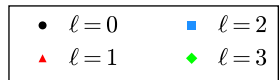
$$\begin{aligned}
 a_0 &= -8.4332 \mu \text{ Hz} \\
 a_1 &= 0.0034979 \\
 a_2 &= -3.4585e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0012934 \\
 c_2 &= 1.6406e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 437.08 \text{ s} \\
 \phi_{HeII} &= 4.2477 \\
 b_2 &= 4.4022e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1637.0 \text{ s} \\
 \phi_{CZ} &= 0.77738 \\
 d_0 &= 6.6431e-05 \\
 d_2 &= 5.533e-08 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 232.97 \text{ s} \\
 \phi_{HI} &= 2.6514
 \end{aligned}$$

profile16

$$\chi^2_{\nu}(\text{dof} = 65) = 0.0060263$$



Age after ZAMS: 1.510 Gyr



$a_0 = -8.5465 \mu \text{ Hz}$
 $a_1 = 0.0035562$
 $a_2 = -3.5276e-07 \mu \text{ Hz}^{-1}$

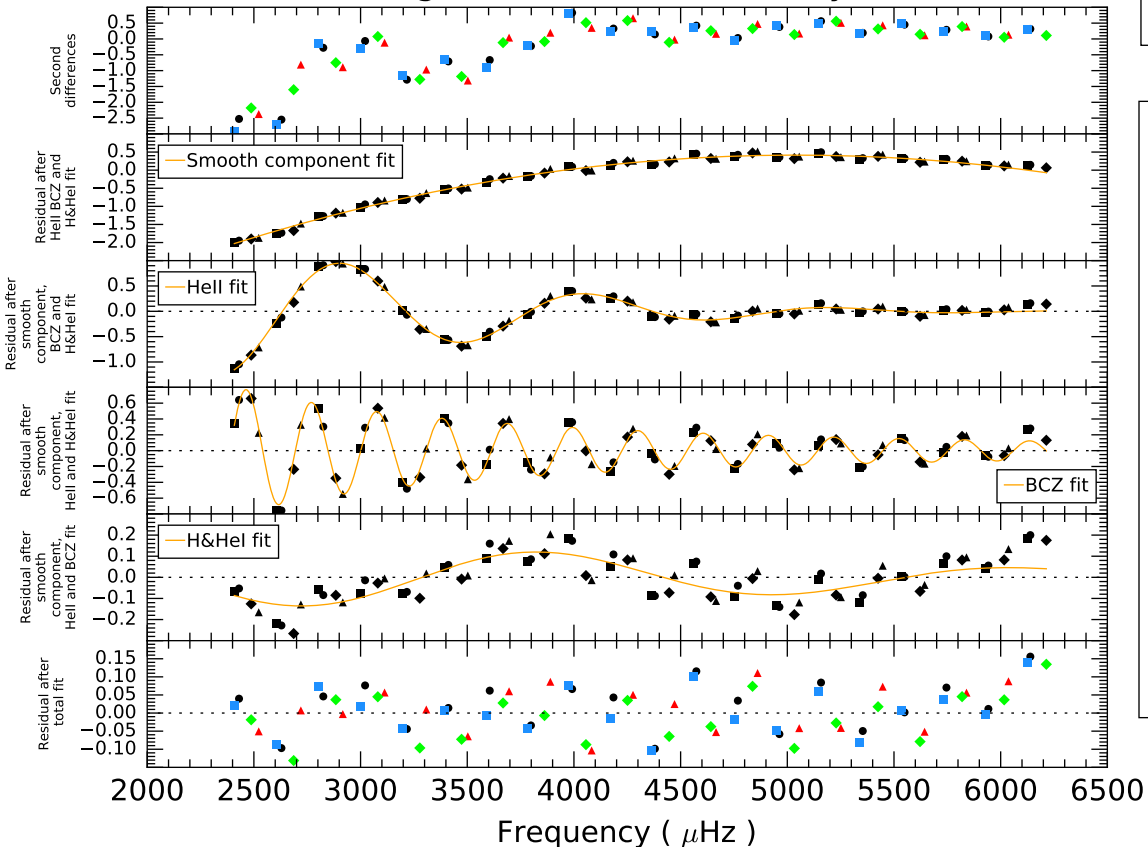
 $c_0 = 0.0013405$
 $c_2 = 1.6684e-07 \mu \text{ Hz}^{-2}$
 $\tau_{HeII} = 432.49 \text{ s}$
 $\phi_{HeII} = 4.5376$

 $b_2 = 4.6759e+06 \text{ mHz}^3$
 $\tau_{CZ} = 1634.4 \text{ s}$
 $\phi_{CZ} = 1.2097$

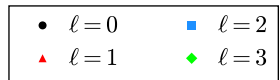
 $d_0 = 8.0067e-05$
 $d_2 = 6.3925e-08 \mu \text{ Hz}^{-2}$
 $\tau_{HI} = 221.06 \text{ s}$
 $\phi_{HI} = 3.4406$

profile17

$\chi^2_{\nu}(\text{dof} = 65) = 0.0052969$



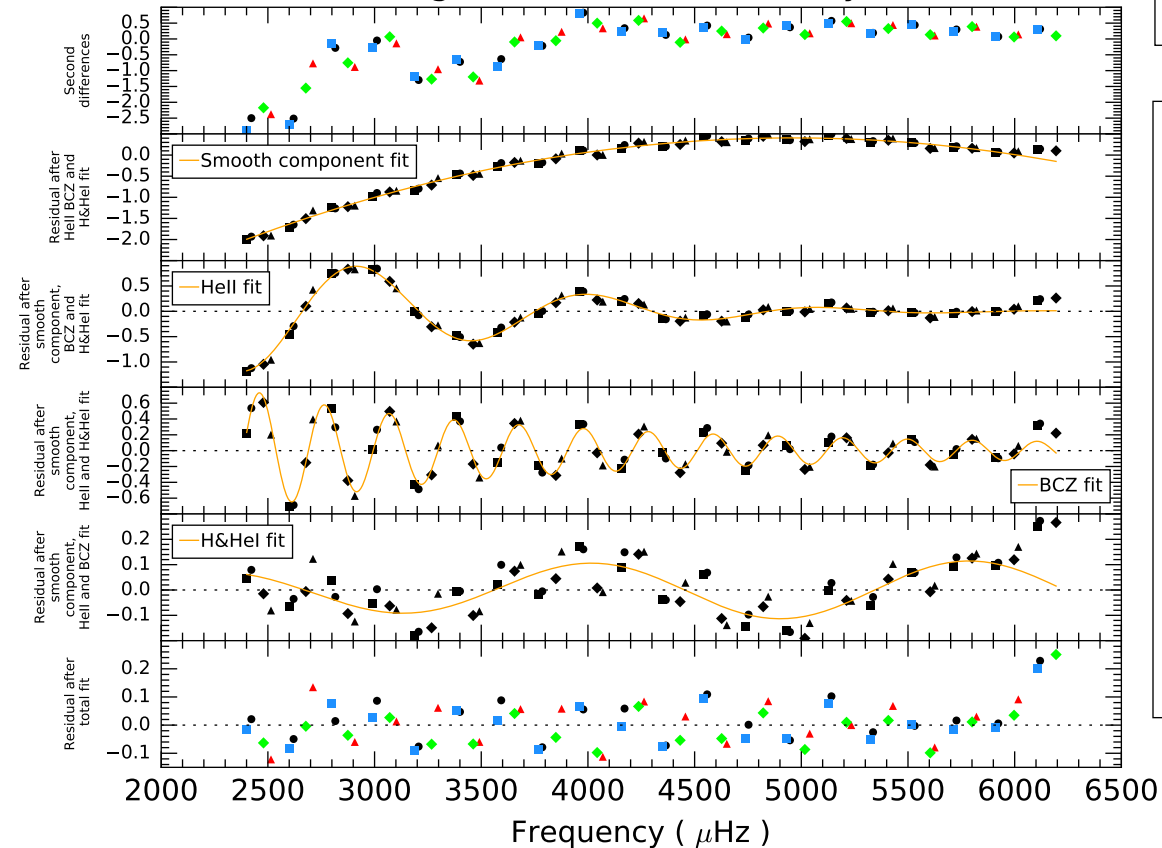
Age after ZAMS: 1.810 Gyr



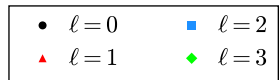
$$\begin{aligned}
 a_0 &= -8.6066 \mu \text{ Hz} \\
 a_1 &= 0.0036341 \\
 a_2 &= -3.6629e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0013167 \\
 c_2 &= 1.7141e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 458.16 \text{ s} \\
 \phi_{HeII} &= 3.5318 \\
 b_2 &= 4.4225e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1646.8 \text{ s} \\
 \phi_{CZ} &= 0.88925 \\
 d_0 &= 3.4495e-05 \\
 d_2 &= 1.6574e-08 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 280.73 \text{ s} \\
 \phi_{HI} &= 0.0021335
 \end{aligned}$$

profile18

$$\chi^2_\nu(\text{dof} = 65) = 0.006987$$



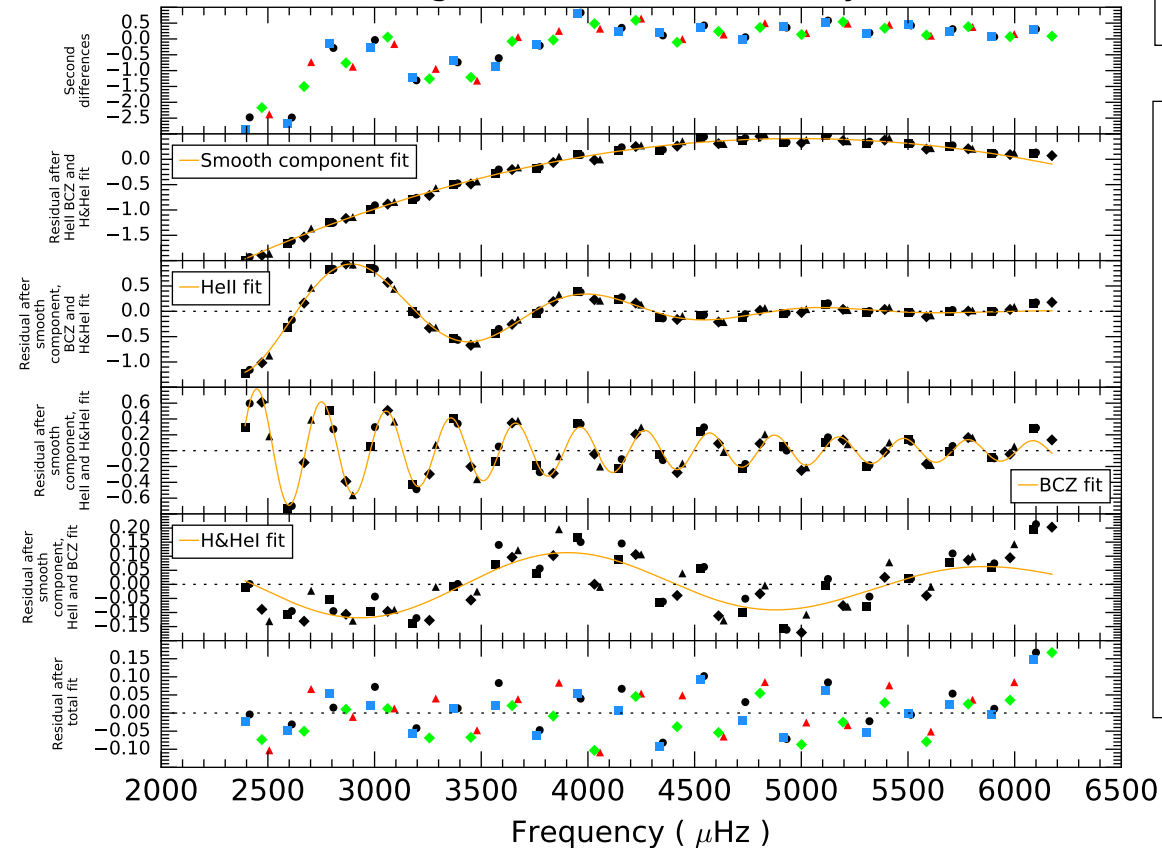
Age after ZAMS: 2.110 Gyr



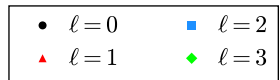
$$\begin{aligned}
 a_0 &= -8.3878 \mu\text{Hz} \\
 a_1 &= 0.0035323 \\
 a_2 &= -3.5456e-07 \mu\text{Hz}^{-1} \\
 c_0 &= 0.0013893 \\
 c_2 &= 1.7368e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 448.97 \text{ s} \\
 \phi_{HeII} &= 3.9874 \\
 b_2 &= 4.674e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1650.0 \text{ s} \\
 \phi_{CZ} &= 1.0432 \\
 d_0 &= 6.2913e-05 \\
 d_2 &= 5.1014e-08 \mu\text{Hz}^{-2} \\
 \tau_{HI} &= 252.03 \text{ s} \\
 \phi_{HI} &= 1.7323
 \end{aligned}$$

profile19

$$\chi^2_{\nu}(\text{dof} = 65) = 0.0047914$$



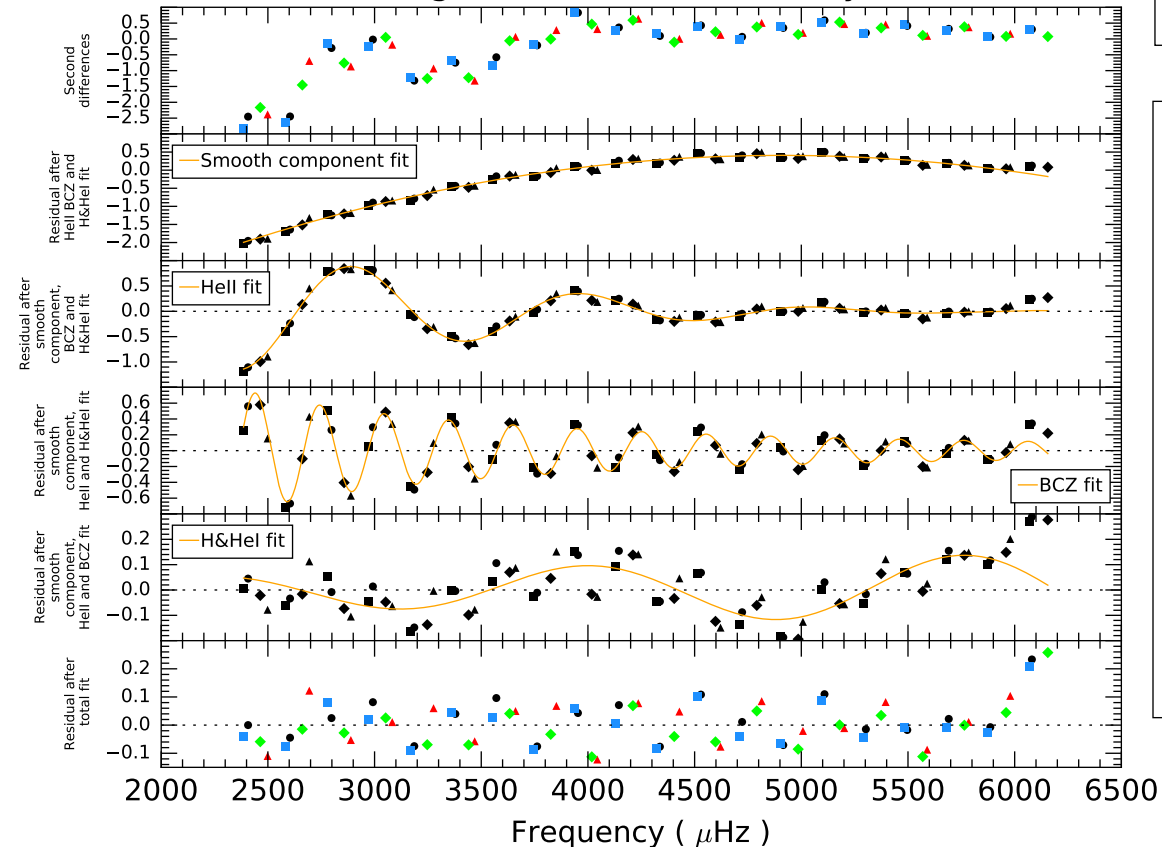
Age after ZAMS: 2.410 Gyr



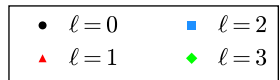
$$\begin{aligned}
 a_0 &= -8.6888 \mu \text{ Hz} \\
 a_1 &= 0.0037065 \\
 a_2 &= -3.7749e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0012528 \\
 c_2 &= 1.6825e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 462.35 \text{ s} \\
 \phi_{HeII} &= 3.5343 \\
 b_2 &= 4.3383e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1656.6 \text{ s} \\
 \phi_{CZ} &= 1.0001 \\
 d_0 &= 2.4355e-05 \\
 d_2 &= 6.782e-10 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 282.61 \text{ s} \\
 \phi_{HI} &= 0.00062977
 \end{aligned}$$

profile20

$$\chi^2_\nu(\text{dof} = 65) = 0.0074021$$



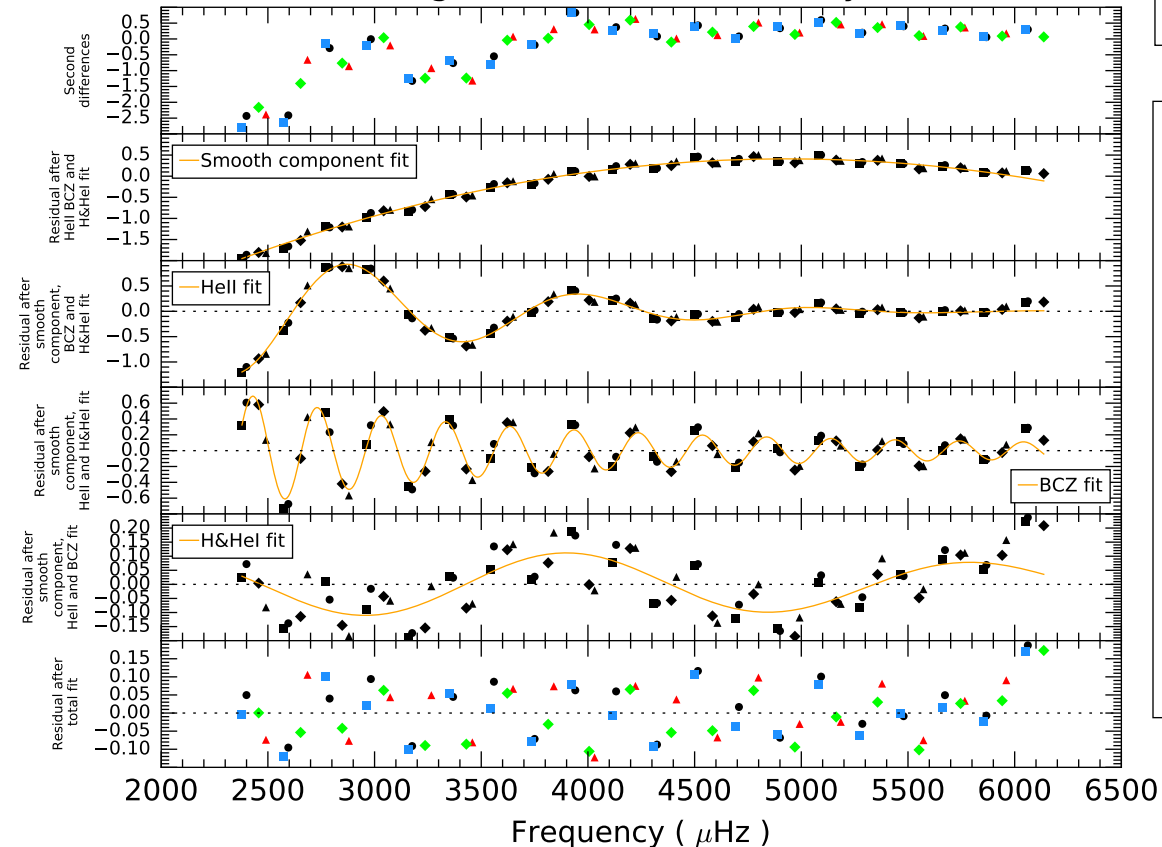
Age after ZAMS: 2.710 Gyr



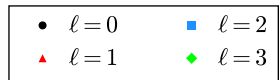
$$\begin{aligned}
 a_0 &= -8.3908 \mu \text{ Hz} \\
 a_1 &= 0.0035679 \\
 a_2 &= -3.6159e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0014014 \\
 c_2 &= 1.7704e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 455.72 \text{ s} \\
 \phi_{HeII} &= 3.8658 \\
 b_2 &= 4.0653e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1661.8 \text{ s} \\
 \phi_{CZ} &= 1.0647 \\
 d_0 &= 5.3261e-05 \\
 d_2 &= 4.0719e-08 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 261.09 \text{ s} \\
 \phi_{HI} &= 1.3286
 \end{aligned}$$

profile21

$$\chi^2_\nu(\text{dof} = 65) = 0.006911$$



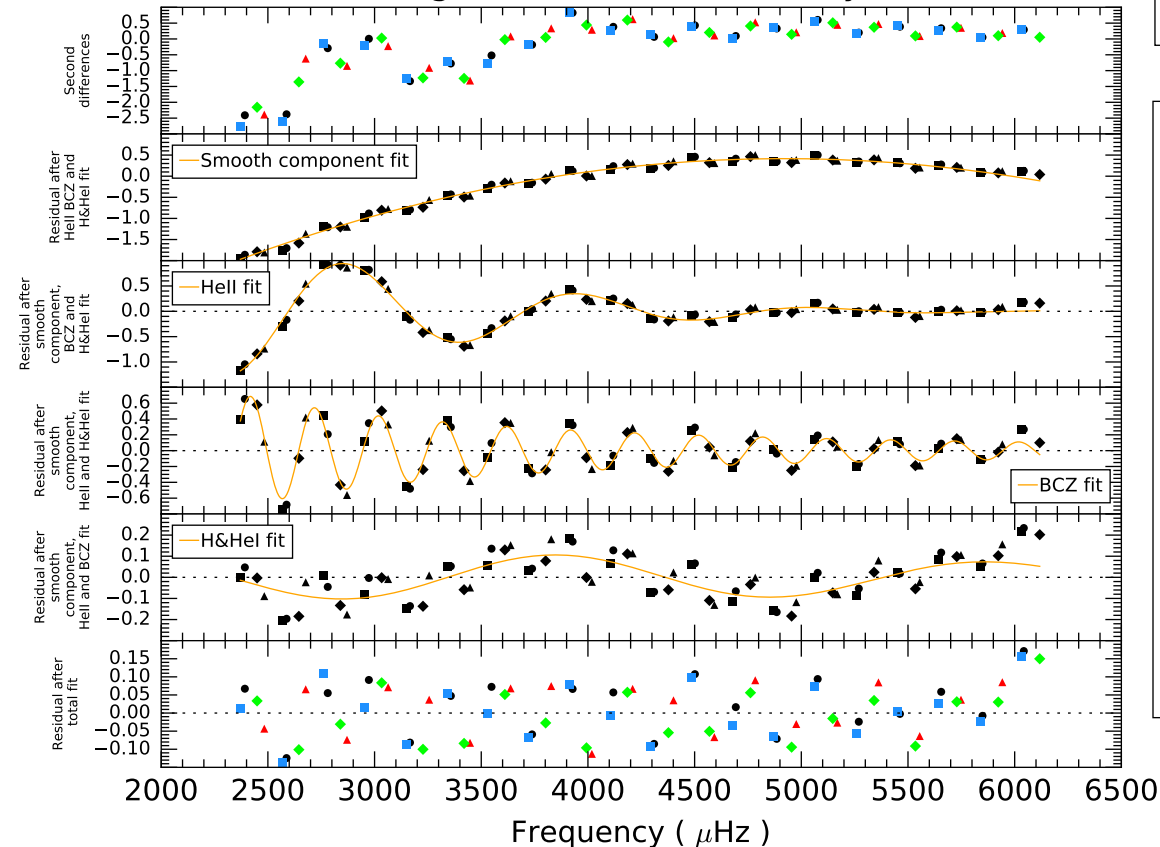
Age after ZAMS: 3.010 Gyr



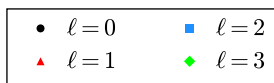
$$\begin{aligned}
 a_0 &= -8.465 \mu \text{ Hz} \\
 a_1 &= 0.00361 \\
 a_2 &= -3.6684e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0014018 \\
 c_2 &= 1.7692e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 452.99 \text{ s} \\
 \phi_{HeII} &= 4.0807 \\
 b_2 &= 4.009e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1666.9 \text{ s} \\
 \phi_{CZ} &= 1.148 \\
 d_0 &= 4.9937e-05 \\
 d_2 &= 4.0143e-08 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 245.21 \text{ s} \\
 \phi_{HI} &= 2.2674
 \end{aligned}$$

profile22

$$\chi^2_\nu(\text{dof} = 65) = 0.0065234$$



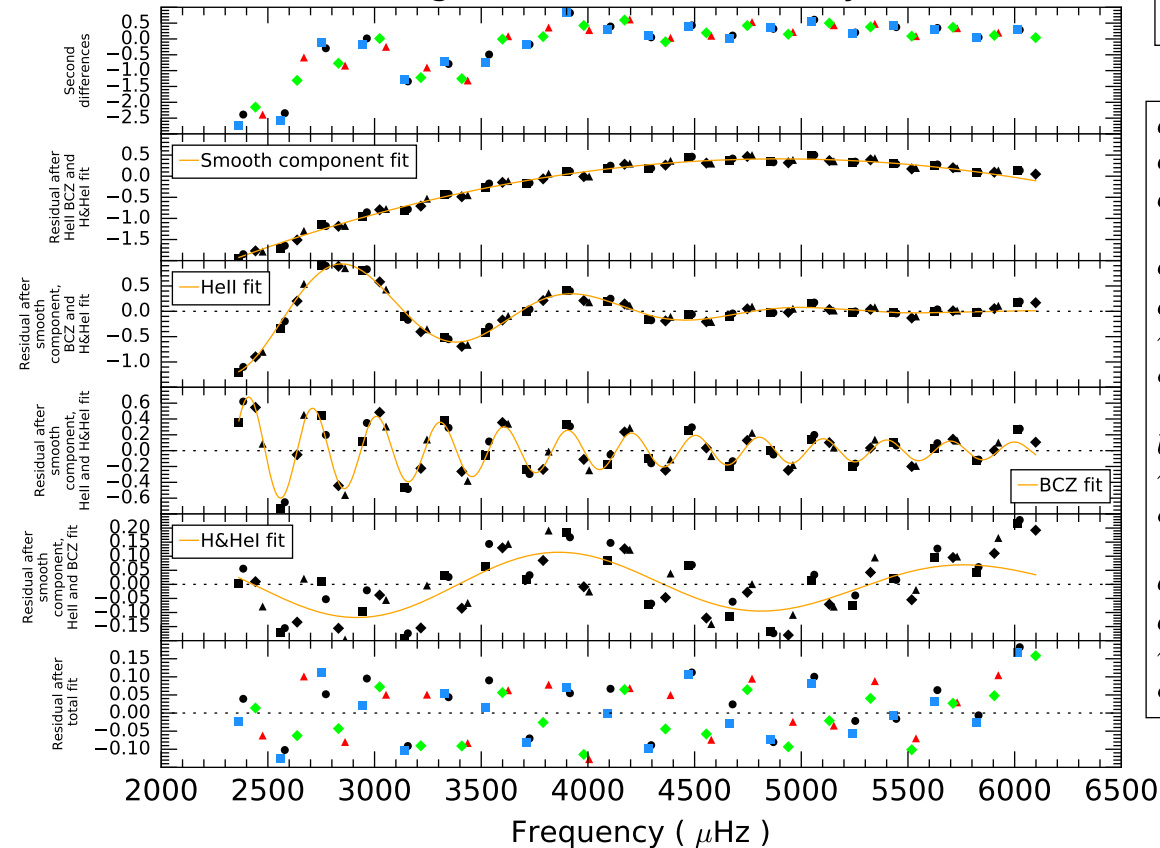
Age after ZAMS: 3.310 Gyr



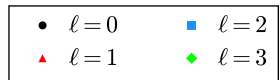
$$\begin{aligned}
 a_0 &= -8.3032 \mu \text{ Hz} \\
 a_1 &= 0.0035561 \\
 a_2 &= -3.628e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0014105 \\
 c_2 &= 1.7896e-07 \mu \text{ Hz}^{-2} \\
 \tau_{\text{He II}} &= 459.45 \text{ s} \\
 \phi_{\text{He II}} &= 3.8726 \\
 b_2 &= 3.9318e+06 \text{ mHz}^3 \\
 \tau_{\text{CZ}} &= 1672.4 \text{ s} \\
 \phi_{\text{CZ}} &= 1.1475 \\
 d_0 &= 6.113e-05 \\
 d_2 &= 4.8663e-08 \mu \text{ Hz}^{-2} \\
 \tau_{\text{HI}} &= 259.77 \text{ s} \\
 \phi_{\text{HI}} &= 1.4913
 \end{aligned}$$

profile23

$$\chi^2_\nu(\text{dof} = 65) = 0.0071637$$



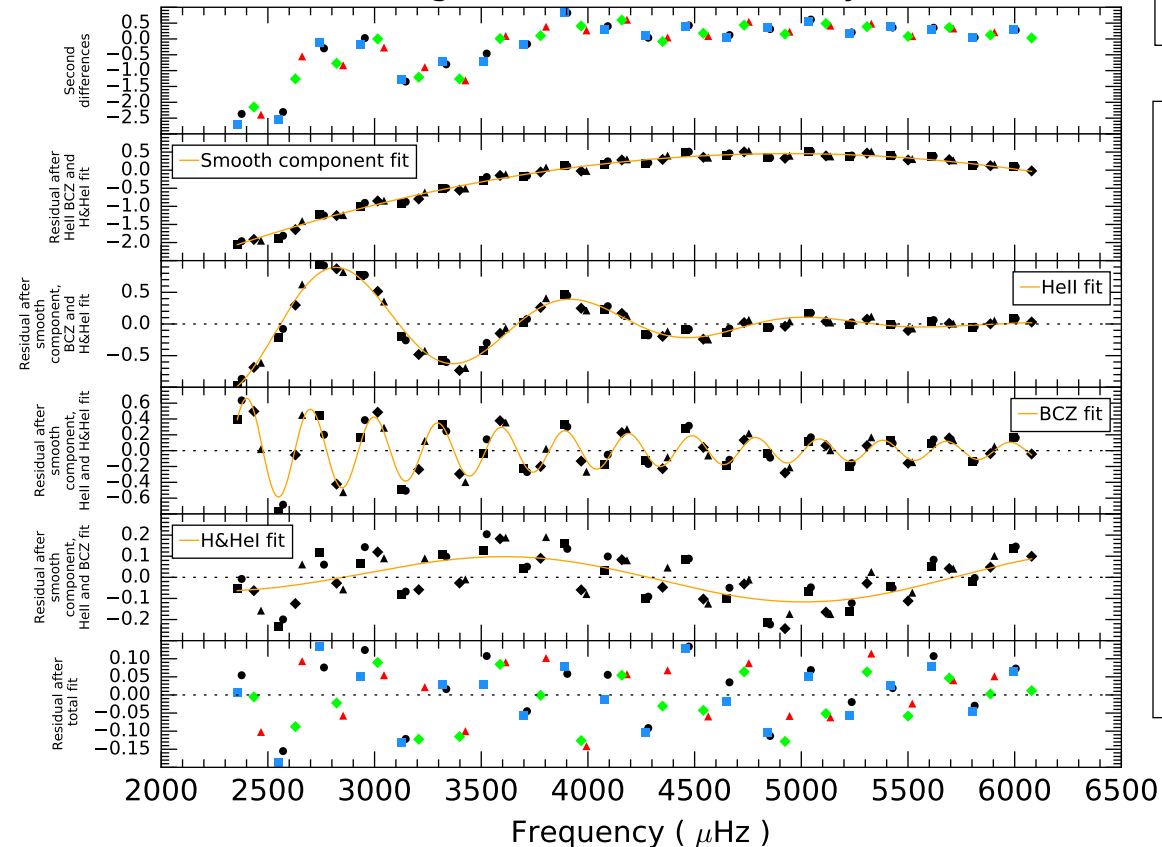
Age after ZAMS: 3.610 Gyr



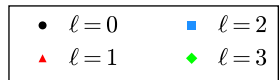
$$\begin{aligned}
 a_0 &= -8.7426 \mu \text{ Hz} \\
 a_1 &= 0.0037254 \\
 a_2 &= -3.7714e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0010901 \\
 c_2 &= 1.5494e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 450.04 \text{ s} \\
 \phi_{HeII} &= 4.3855 \\
 b_2 &= 3.8106e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1677.6 \text{ s} \\
 \phi_{CZ} &= 1.1889 \\
 d_0 &= 3.2376e-05 \\
 d_2 &= 1.3103e-08 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 174.91 \text{ s} \\
 \phi_{HI} &= 0.012789
 \end{aligned}$$

profile24

$$\chi^2_\nu(\text{dof} = 65) = 0.0078922$$



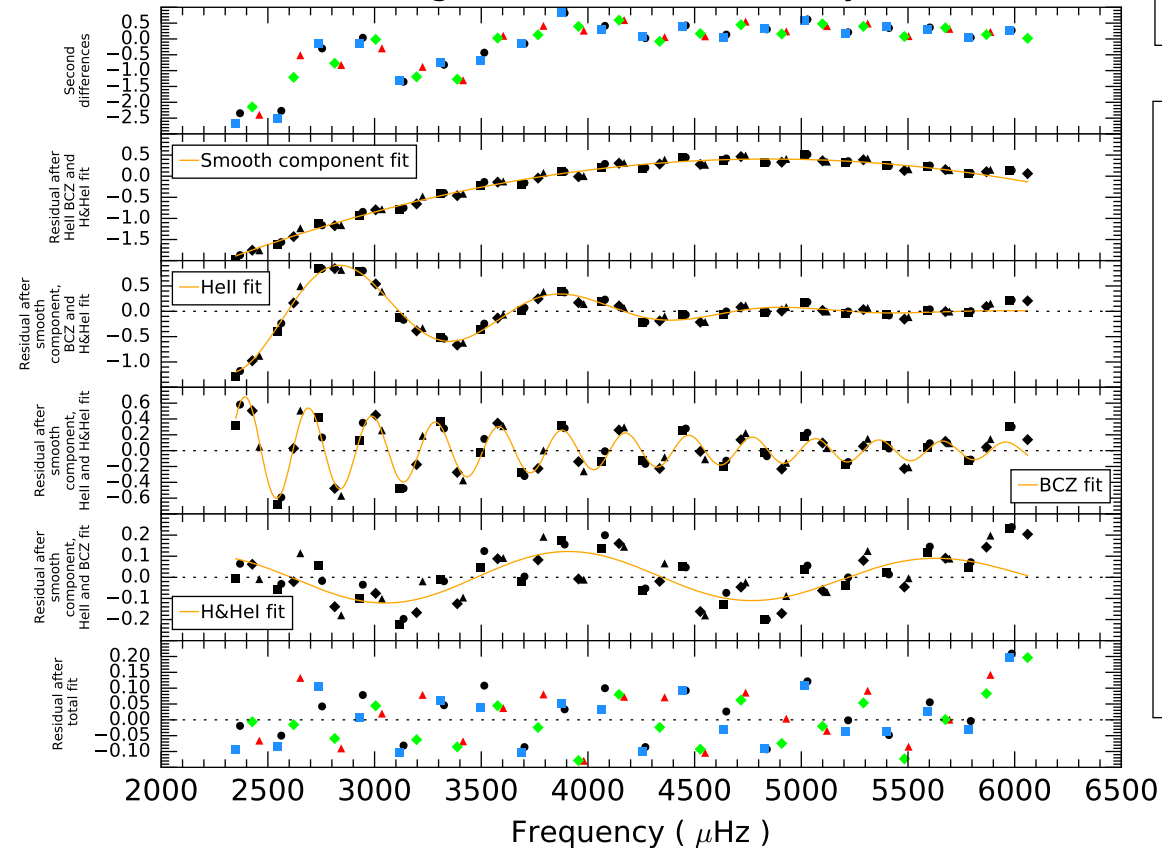
Age after ZAMS: 3.910 Gyr



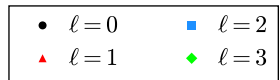
$$\begin{aligned}
 a_0 &= -8.2393 \mu \text{ Hz} \\
 a_1 &= 0.0035684 \\
 a_2 &= -3.6816e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0014118 \\
 c_2 &= 1.8365e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 477.1 \text{ s} \\
 \phi_{HeII} &= 3.3104 \\
 b_2 &= 3.8975e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1683.1 \text{ s} \\
 \phi_{CZ} &= 1.197 \\
 d_0 &= 5.8243e-05 \\
 d_2 &= 4.0543e-08 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 287.52 \text{ s} \\
 \phi_{HI} &= 0.00084882
 \end{aligned}$$

profile25

$$\chi^2_\nu(\text{dof} = 65) = 0.0082348$$



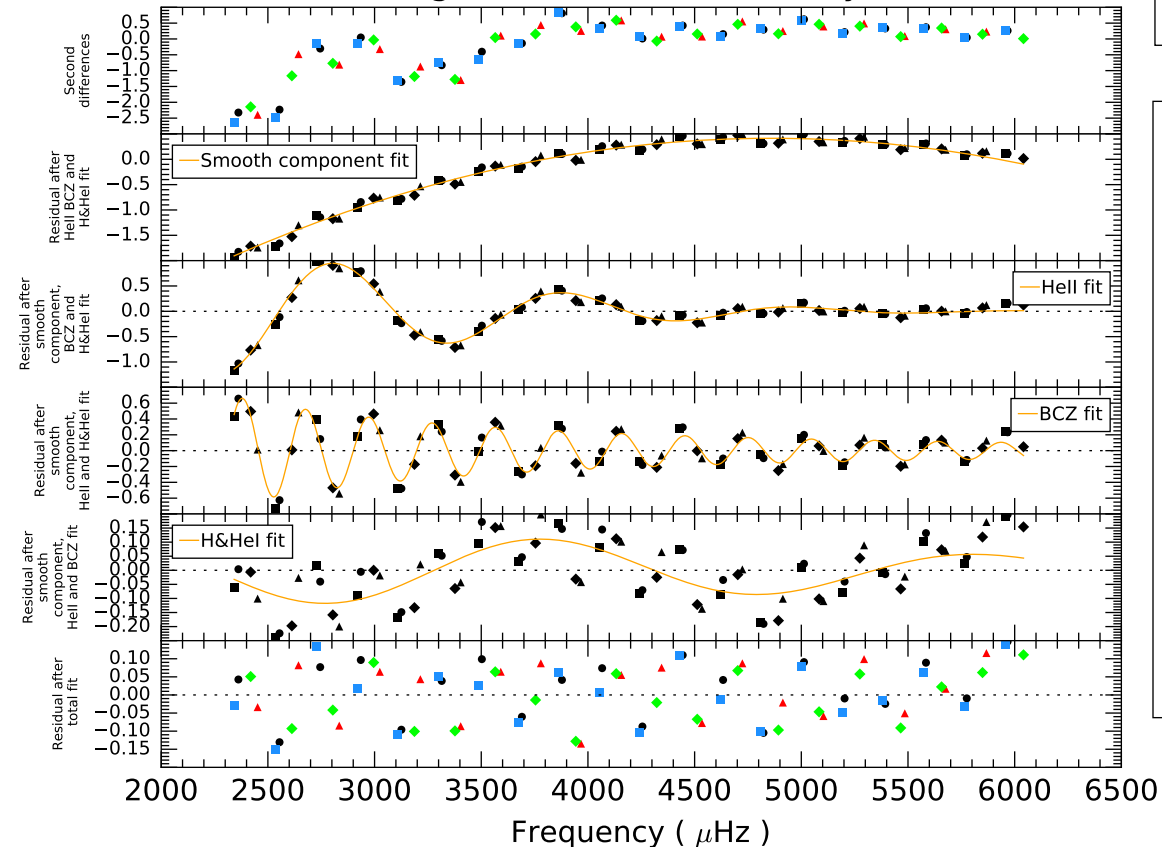
Age after ZAMS: 4.210 Gyr



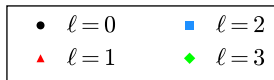
$$\begin{aligned}
 a_0 &= -8.2308 \mu \text{ Hz} \\
 a_1 &= 0.0035581 \\
 a_2 &= -3.6607e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0013618 \\
 c_2 &= 1.7641e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 461.22 \text{ s} \\
 \phi_{HeII} &= 4.0578 \\
 b_2 &= 3.7446e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1687.6 \text{ s} \\
 \phi_{CZ} &= 1.333 \\
 d_0 &= 6.5176e-05 \\
 d_2 &= 5.5928e-08 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 242.33 \text{ s} \\
 \phi_{HI} &= 2.585
 \end{aligned}$$

profile26

$$\chi^2_\nu(\text{dof} = 65) = 0.0075966$$



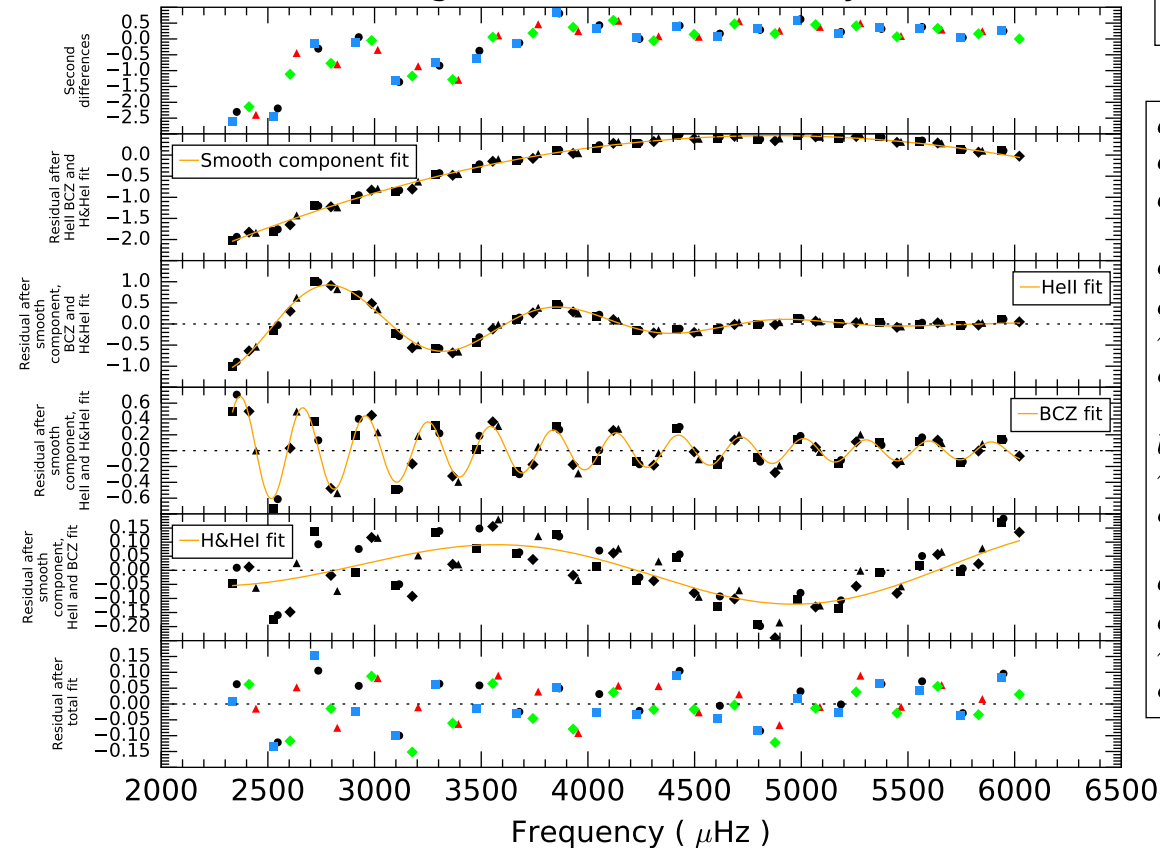
Age after ZAMS: 4.510 Gyr



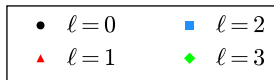
$$\begin{aligned}
 a_0 &= -8.76 \mu \text{ Hz} \\
 a_1 &= 0.0037873 \\
 a_2 &= -3.889e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0011649 \\
 c_2 &= 1.6129e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 461.38 \text{ s} \\
 \phi_{HeII} &= 4.1772 \\
 b_2 &= 3.8466e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1704.6 \text{ s} \\
 \phi_{CZ} &= 1.0285 \\
 d_0 &= 2.7157e-05 \\
 d_2 &= 4.482e-09 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 177.23 \text{ s} \\
 \phi_{HI} &= 0.010169
 \end{aligned}$$

profile27

$$\chi^2_{\nu}(\text{dof} = 65) = 0.0052035$$



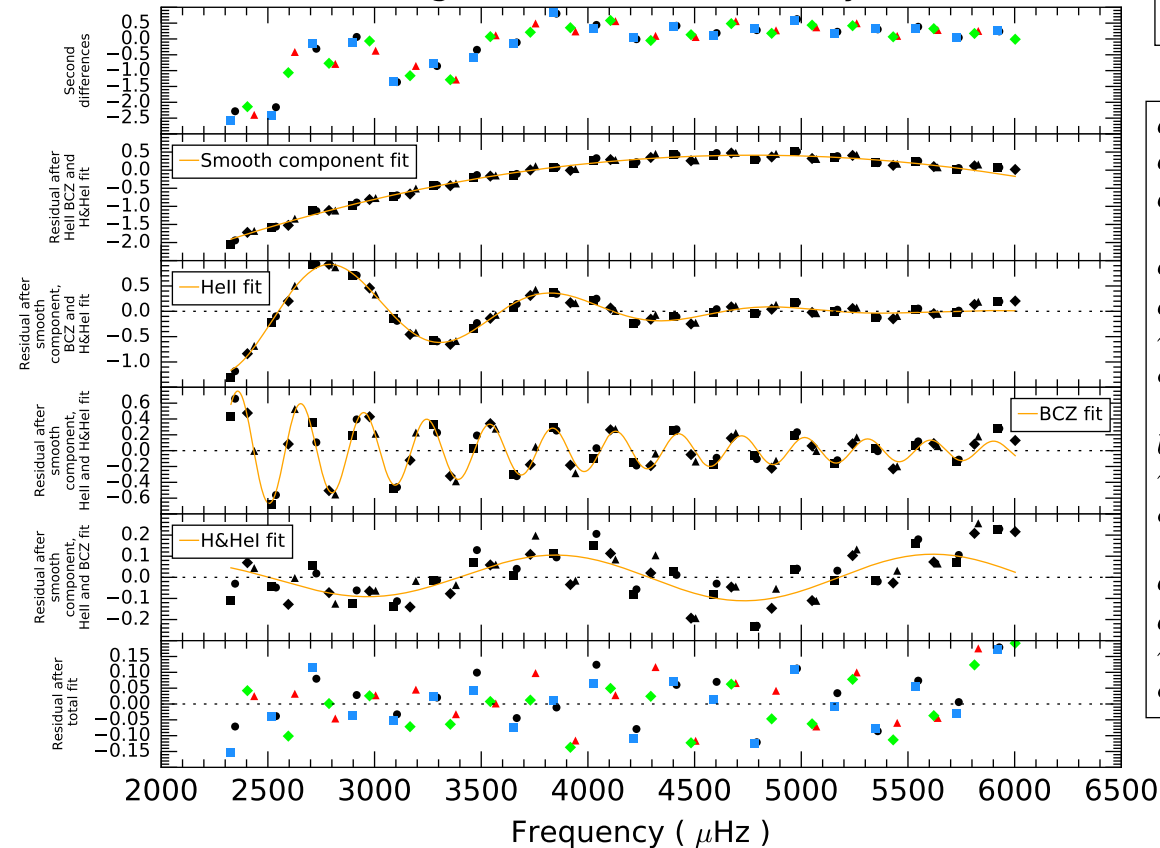
Age after ZAMS: 4.810 Gyr



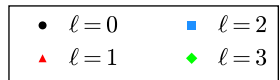
$$\begin{aligned}
 a_0 &= -8.423 \mu \text{ Hz} \\
 a_1 &= 0.0037034 \\
 a_2 &= -3.88e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0013828 \\
 c_2 &= 1.8245e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 478.36 \text{ s} \\
 \phi_{HeII} &= 3.5374 \\
 b_2 &= 4.1875e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1694.2 \text{ s} \\
 \phi_{CZ} &= 1.5843 \\
 d_0 &= 3.7056e-05 \\
 d_2 &= 2.0343e-08 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 280.65 \text{ s} \\
 \phi_{HI} &= 0.59512
 \end{aligned}$$

profile28

$$\chi^2_\nu(\text{dof} = 65) = 0.0080889$$



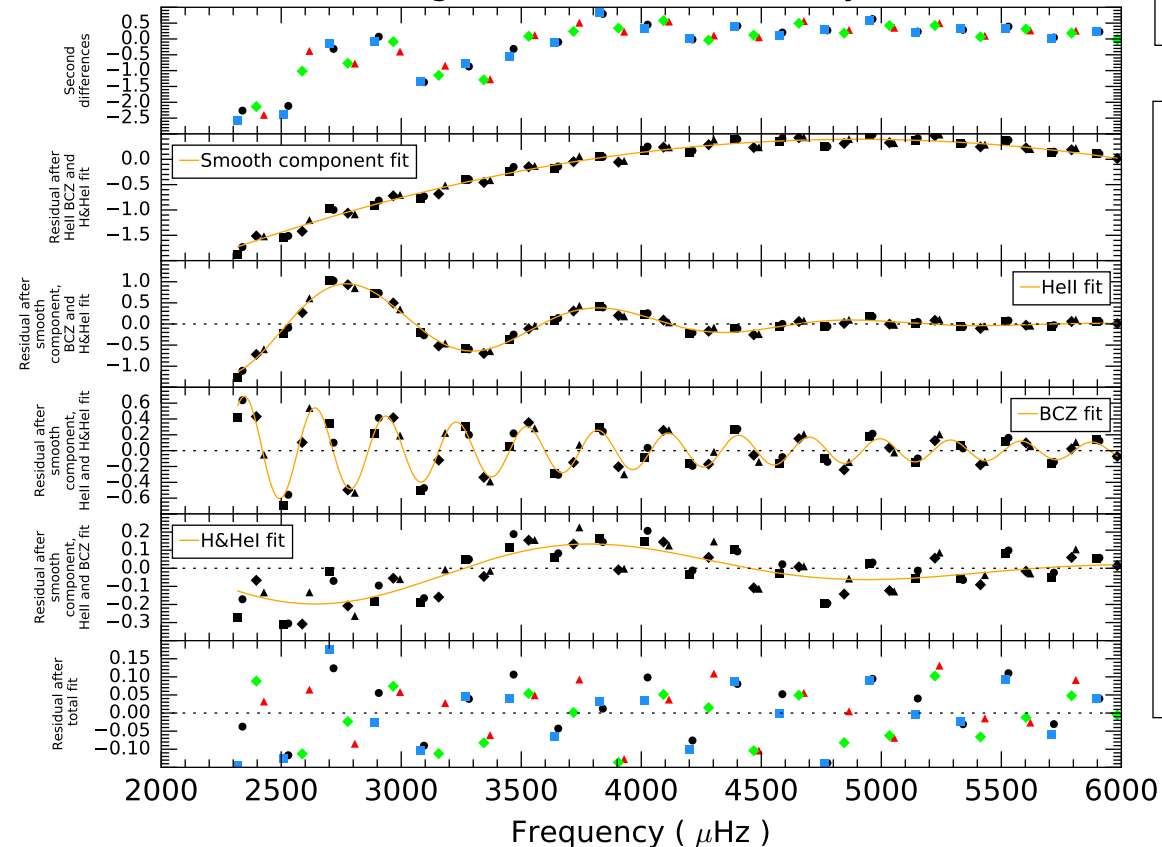
Age after ZAMS: 5.110 Gyr



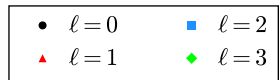
$$\begin{aligned}
 a_0 &= -7.2571 \mu \text{ Hz} \\
 a_1 &= 0.0031243 \\
 a_2 &= -3.1889e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0013495 \\
 c_2 &= 1.7717e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 471.51 \text{ s} \\
 \phi_{HeII} &= 3.8864 \\
 b_2 &= 3.7719e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1700.4 \text{ s} \\
 \phi_{CZ} &= 1.6573 \\
 d_0 &= 0.00014991 \\
 d_2 &= 9.9348e-08 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 209.75 \text{ s} \\
 \phi_{HI} &= 3.9766
 \end{aligned}$$

profile29

$$\chi^2_\nu(\text{dof} = 65) = 0.0075622$$



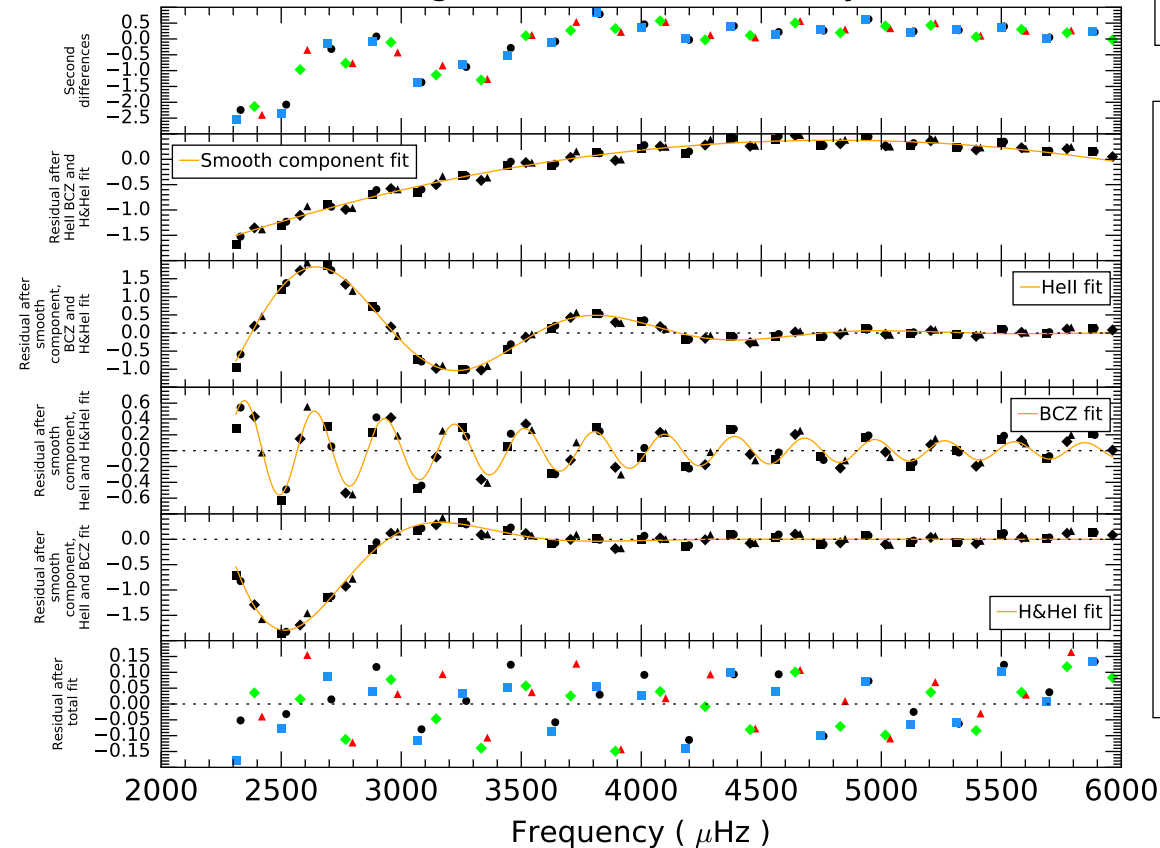
Age after ZAMS: 5.410 Gyr



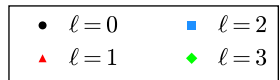
$$\begin{aligned}
 a_0 &= -6.6133 \mu\text{Hz} \\
 a_1 &= 0.0029115 \\
 a_2 &= -3.0317e-07 \mu\text{Hz}^{-1} \\
 c_0 &= 0.0032553 \\
 c_2 &= 2.2003e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 421.02 \text{ s} \\
 \phi_{HeII} &= 6.2823 \\
 b_2 &= 3.4801e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1714.3 \text{ s} \\
 \phi_{CZ} &= 1.2532 \\
 d_0 &= 0.01898 \\
 d_2 &= 5.0321e-07 \mu\text{Hz}^{-2} \\
 \tau_{HI} &= 372.34 \text{ s} \\
 \phi_{HI} &= 5.0753
 \end{aligned}$$

profile30

$$\chi^2_\nu(\text{dof} = 65) = 0.0091689$$



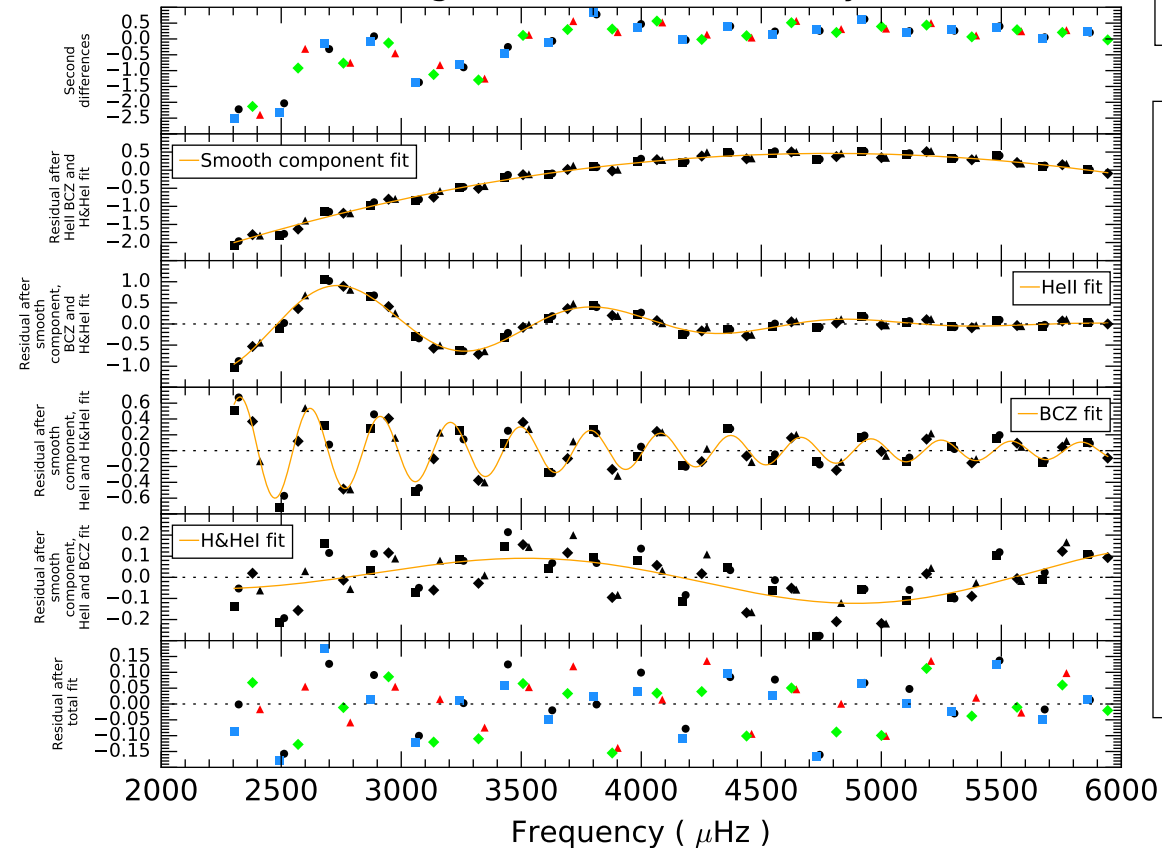
Age after ZAMS: 5.710 Gyr



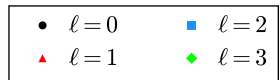
$$\begin{aligned}
 a_0 &= -8.692 \mu\text{ Hz} \\
 a_1 &= 0.0038252 \\
 a_2 &= -3.9955e-07 \mu\text{Hz}^{-1} \\
 c_0 &= 0.0011374 \\
 c_2 &= 1.6354e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 466.45 \text{ s} \\
 \phi_{HeII} &= 4.3015 \\
 b_2 &= 3.6752e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1712.3 \text{ s} \\
 \phi_{CZ} &= 1.7034 \\
 d_0 &= 2.6474e-05 \\
 d_2 &= 1.9027e-09 \mu\text{Hz}^{-2} \\
 \tau_{HI} &= 179.8 \text{ s} \\
 \phi_{HI} &= 0.02311
 \end{aligned}$$

profile31

$$\chi^2_\nu(\text{dof} = 65) = 0.0088698$$



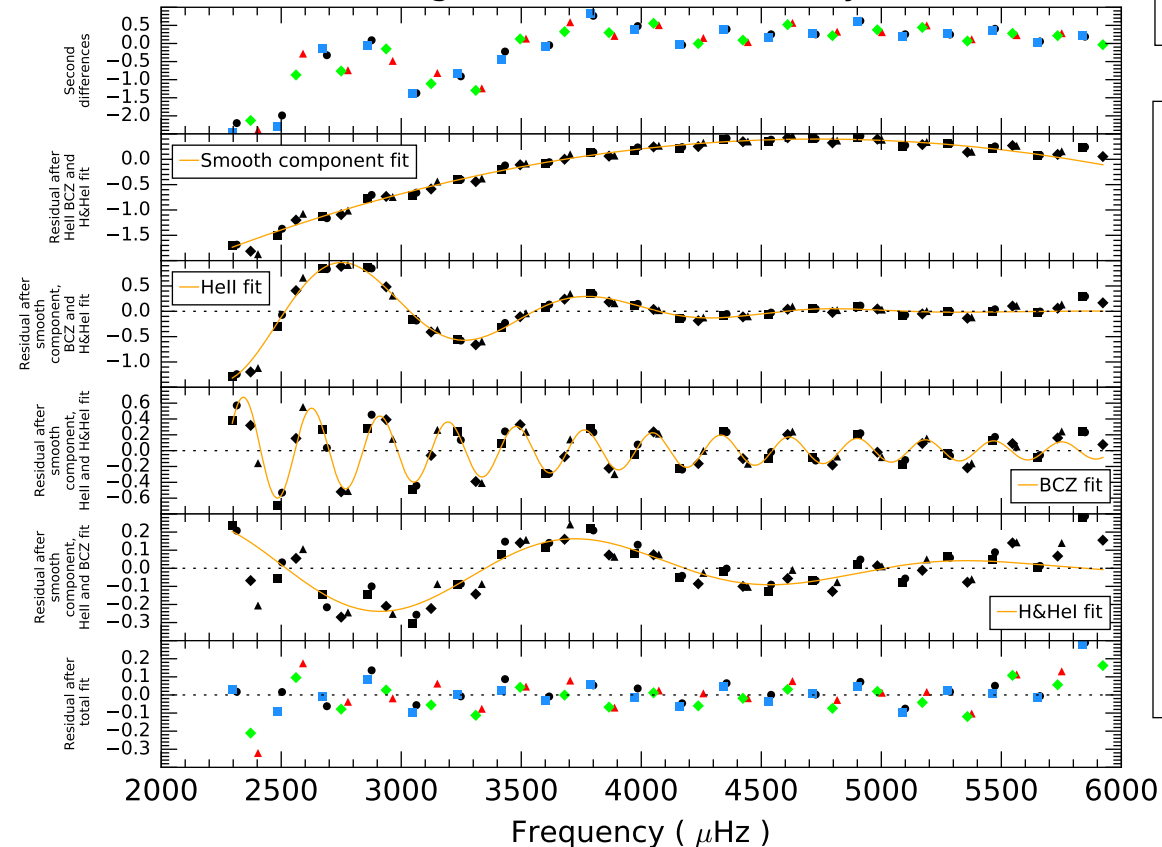
Age after ZAMS: 6.010 Gyr



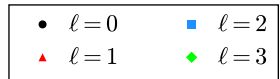
$$\begin{aligned}
 a_0 &= -7.652 \mu \text{ Hz} \\
 a_1 &= 0.0034018 \\
 a_2 &= -3.5931e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0019124 \\
 c_2 &= 2.2277e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 482.04 \text{ s} \\
 \phi_{HeII} &= 3.6114 \\
 b_2 &= 3.7047e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1760.2 \text{ s} \\
 \phi_{CZ} &= 6.274 \\
 d_0 &= 0.00021658 \\
 d_2 &= 1.1435e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 301.34 \text{ s} \\
 \phi_{HI} &= 6.1658
 \end{aligned}$$

profile32

$$\chi^2_{\nu}(\text{dof} = 65) = 0.0096789$$



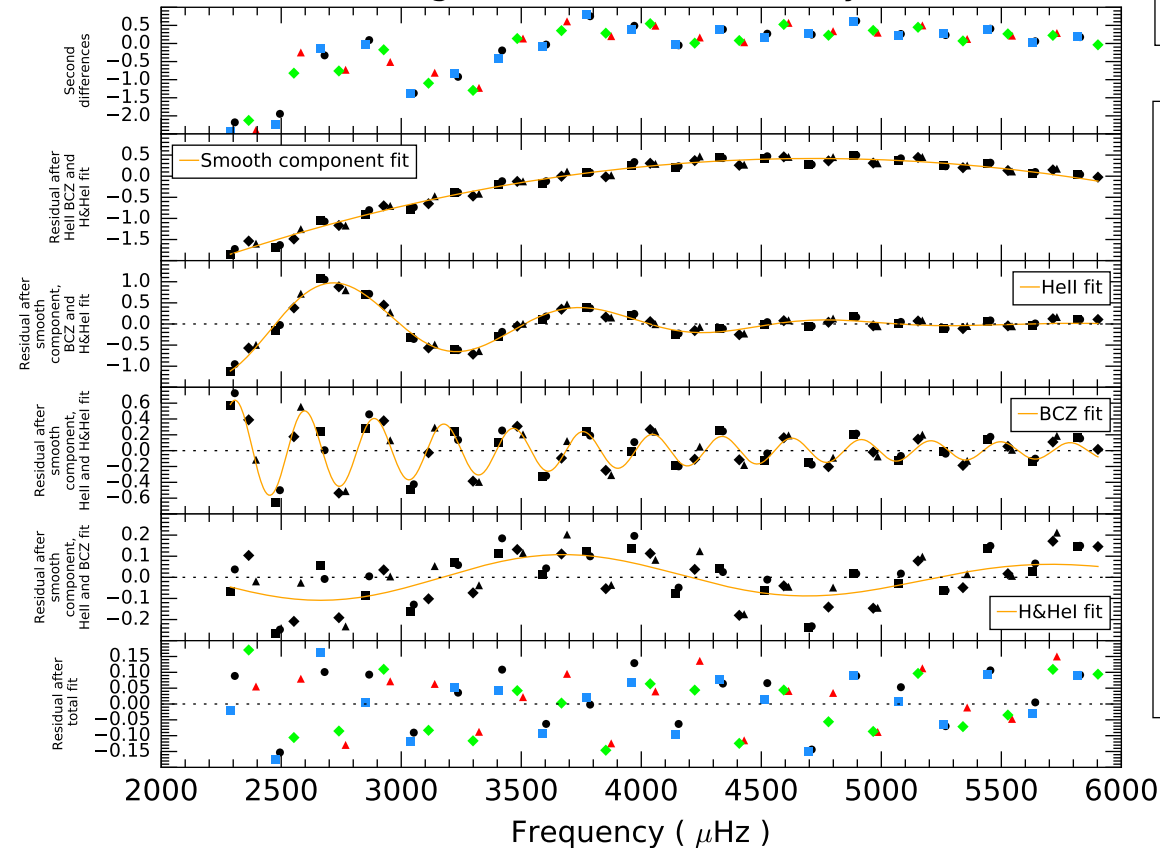
Age after ZAMS: 6.310 Gyr



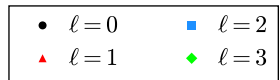
$$\begin{aligned}
 a_0 &= -8.1223 \mu\text{ Hz} \\
 a_1 &= 0.0036198 \\
 a_2 &= -3.8349e-07 \mu\text{Hz}^{-1} \\
 c_0 &= 0.0014154 \\
 c_2 &= 1.8519e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 481.92 \text{ s} \\
 \phi_{HeII} &= 3.857 \\
 b_2 &= 3.3941e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1725.0 \text{ s} \\
 \phi_{CZ} &= 1.7822 \\
 d_0 &= 5.9059e-05 \\
 d_2 &= 5.1823e-08 \mu\text{Hz}^{-2} \\
 \tau_{HI} &= 242.04 \text{ s} \\
 \phi_{HI} &= 2.9268
 \end{aligned}$$

profile33

$$\chi^2_{\nu}(\text{dof} = 65) = 0.0098693$$



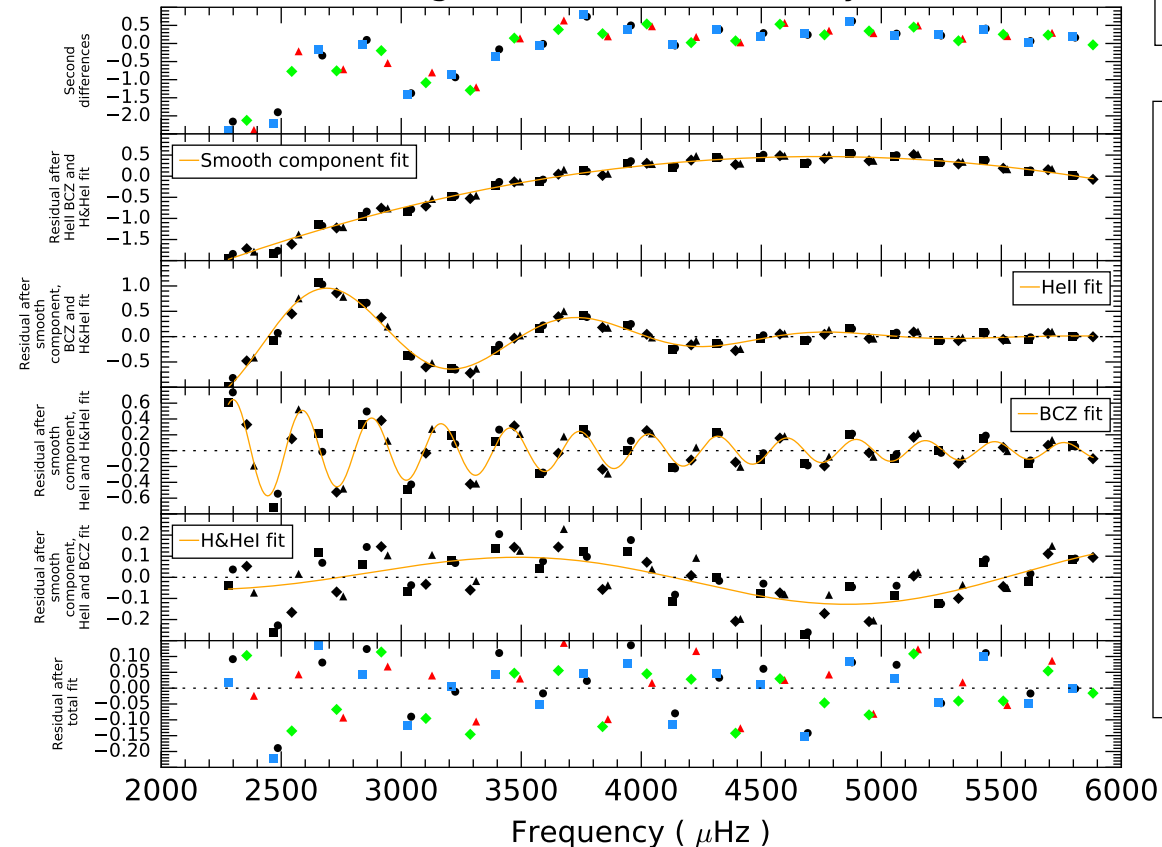
Age after ZAMS: 6.610 Gyr



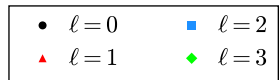
$$\begin{aligned}
 a_0 &= -8.5765 \mu \text{ Hz} \\
 a_1 &= 0.0038157 \\
 a_2 &= -4.0253e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0013785 \\
 c_2 &= 1.8647e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 475.21 \text{ s} \\
 \phi_{HeII} &= 4.25 \\
 b_2 &= 3.4138e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1734.3 \text{ s} \\
 \phi_{CZ} &= 1.6773 \\
 d_0 &= 2.8634e-05 \\
 d_2 &= 3.4553e-09 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 180.29 \text{ s} \\
 \phi_{HI} &= 0.06771
 \end{aligned}$$

profile34

$$\chi^2_{\nu}(\text{dof} = 65) = 0.0091359$$



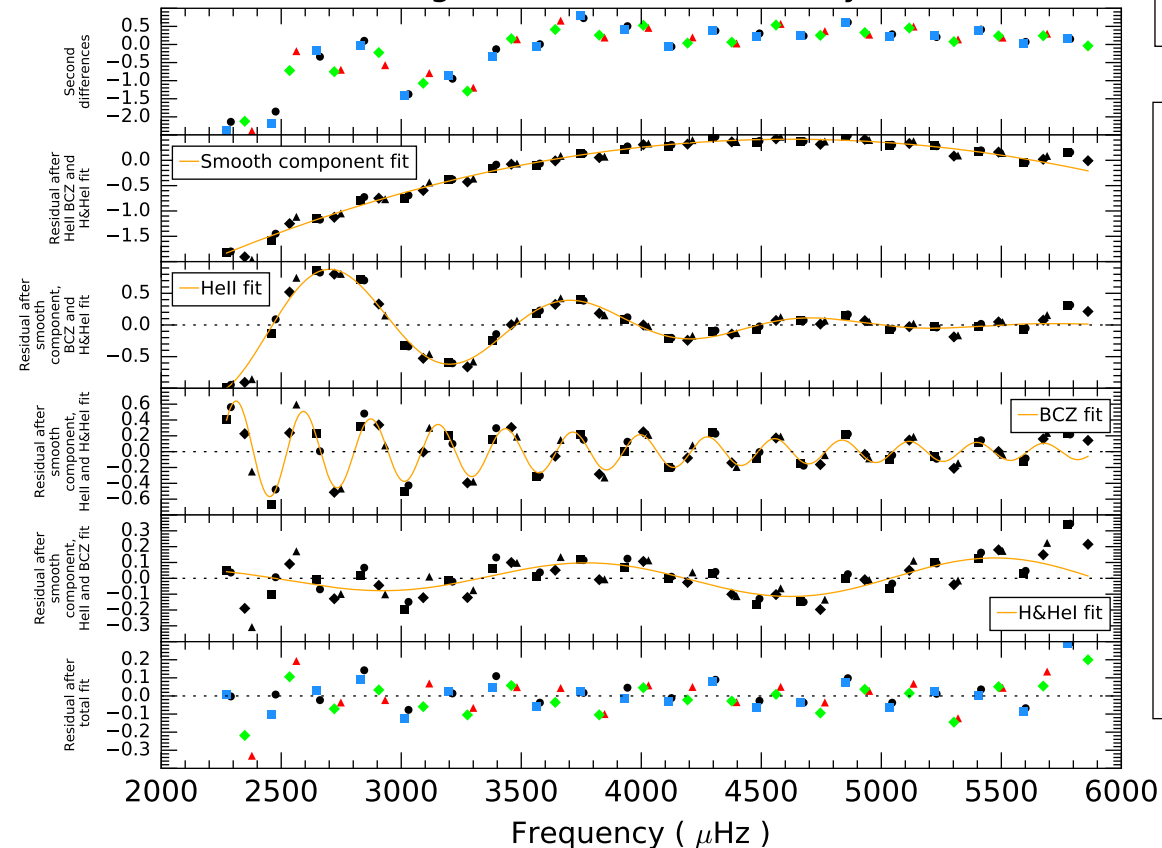
Age after ZAMS: 6.910 Gyr



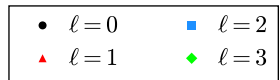
$$\begin{aligned}
 a_0 &= -8.2759 \mu \text{ Hz} \\
 a_1 &= 0.0037612 \\
 a_2 &= -4.0689e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0011681 \\
 c_2 &= 1.7449e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 493.81 \text{ s} \\
 \phi_{HeII} &= 3.5627 \\
 b_2 &= 3.4209e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1783.0 \text{ s} \\
 \phi_{CZ} &= 6.2816 \\
 d_0 &= 2.8274e-05 \\
 d_2 &= 6.0475e-09 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 292.57 \text{ s} \\
 \phi_{HI} &= 0.3311
 \end{aligned}$$

profile35

$$\chi^2_\nu(\text{dof} = 65) = 0.010929$$



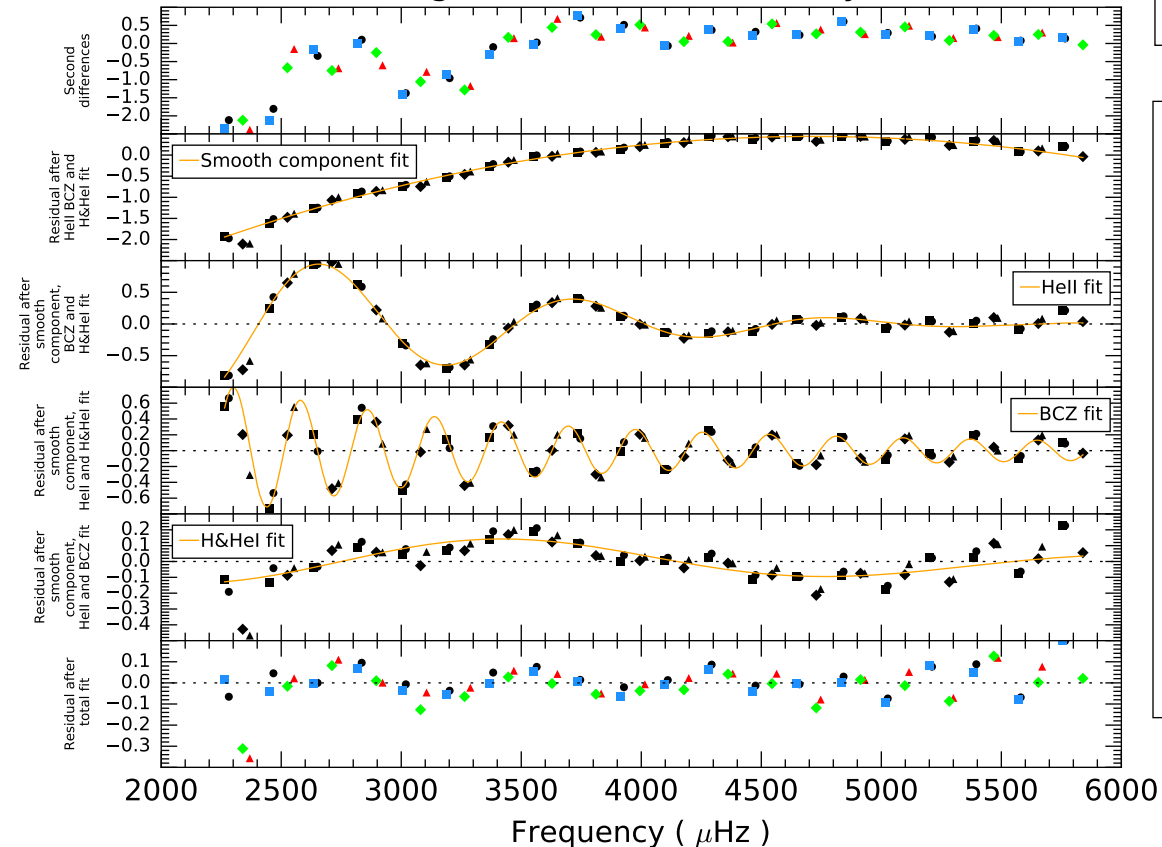
Age after ZAMS: 7.210 Gyr



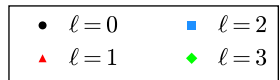
$$\begin{aligned}
 a_0 &= -8.3706 \mu\text{ Hz} \\
 a_1 &= 0.0037372 \\
 a_2 &= -3.9618e-07 \mu\text{Hz}^{-1} \\
 c_0 &= 0.001256 \\
 c_2 &= 1.7805e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 466.39 \text{ s} \\
 \phi_{HeII} &= 4.757 \\
 b_2 &= 4.2363e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1792.3 \text{ s} \\
 \phi_{CZ} &= 6.2671 \\
 d_0 &= 8.9376e-05 \\
 d_2 &= 6.5221e-08 \mu\text{Hz}^{-2} \\
 \tau_{HI} &= 178.69 \text{ s} \\
 \phi_{HI} &= 0.10977
 \end{aligned}$$

profile36

$$\chi^2_\nu(\text{dof} = 65) = 0.0083667$$



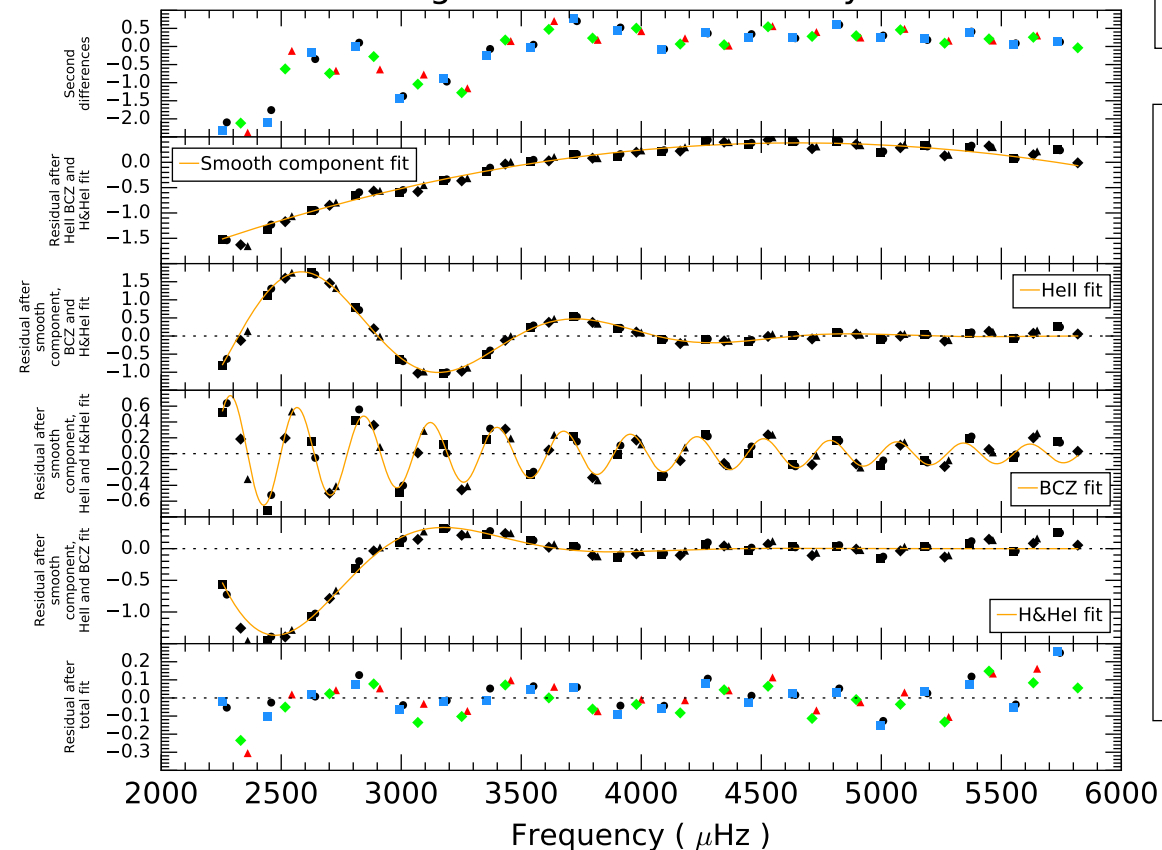
Age after ZAMS: 7.510 Gyr



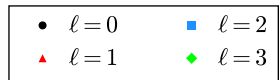
$$\begin{aligned}
 a_0 &= -6.7585 \mu \text{ Hz} \\
 a_1 &= 0.0030707 \\
 a_2 &= -3.3007e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0032488 \\
 c_2 &= 2.3105e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 430.75 \text{ s} \\
 \phi_{HeII} &= 0.00014415 \\
 b_2 &= 3.8402e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1801.4 \text{ s} \\
 \phi_{CZ} &= 6.2831 \\
 d_0 &= 0.006991 \\
 d_2 &= 4.0364e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 342.08 \text{ s} \\
 \phi_{HI} &= 0.00015599
 \end{aligned}$$

profile37

$$\chi^2_\nu (\text{dof} = 65) = 0.010287$$



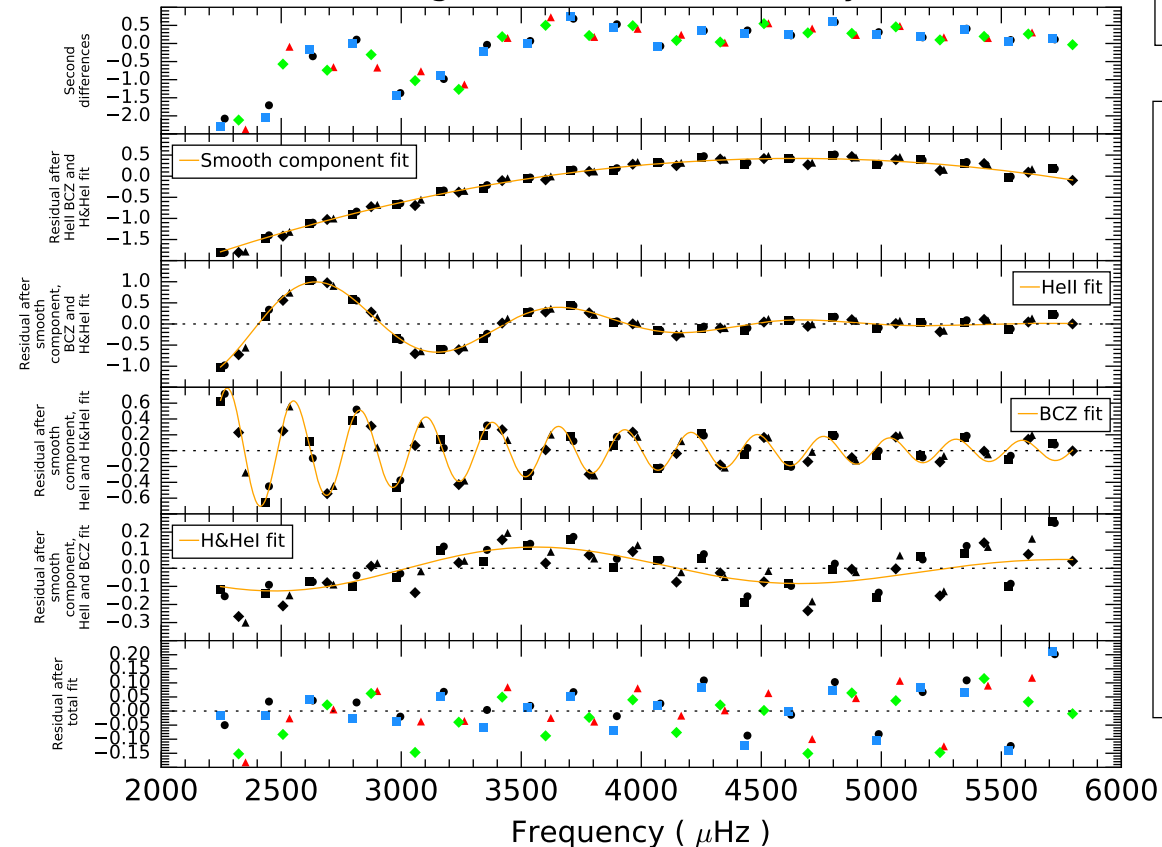
Age after ZAMS: 7.810 Gyr



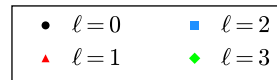
$$\begin{aligned}
 a_0 &= -7.8848 \mu \text{ Hz} \\
 a_1 &= 0.0035769 \\
 a_2 &= -3.8509e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0014706 \\
 c_2 &= 1.9401e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 487.73 \text{ s} \\
 \phi_{HeII} &= 4.113 \\
 b_2 &= 4.0938e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1812.1 \text{ s} \\
 \phi_{CZ} &= 6.2763 \\
 d_0 &= 7.5659e-05 \\
 d_2 &= 6.536e-08 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 222.44 \text{ s} \\
 \phi_{HI} &= 4.1154
 \end{aligned}$$

profile38

$$\chi^2_\nu(\text{dof} = 65) = 0.0080319$$



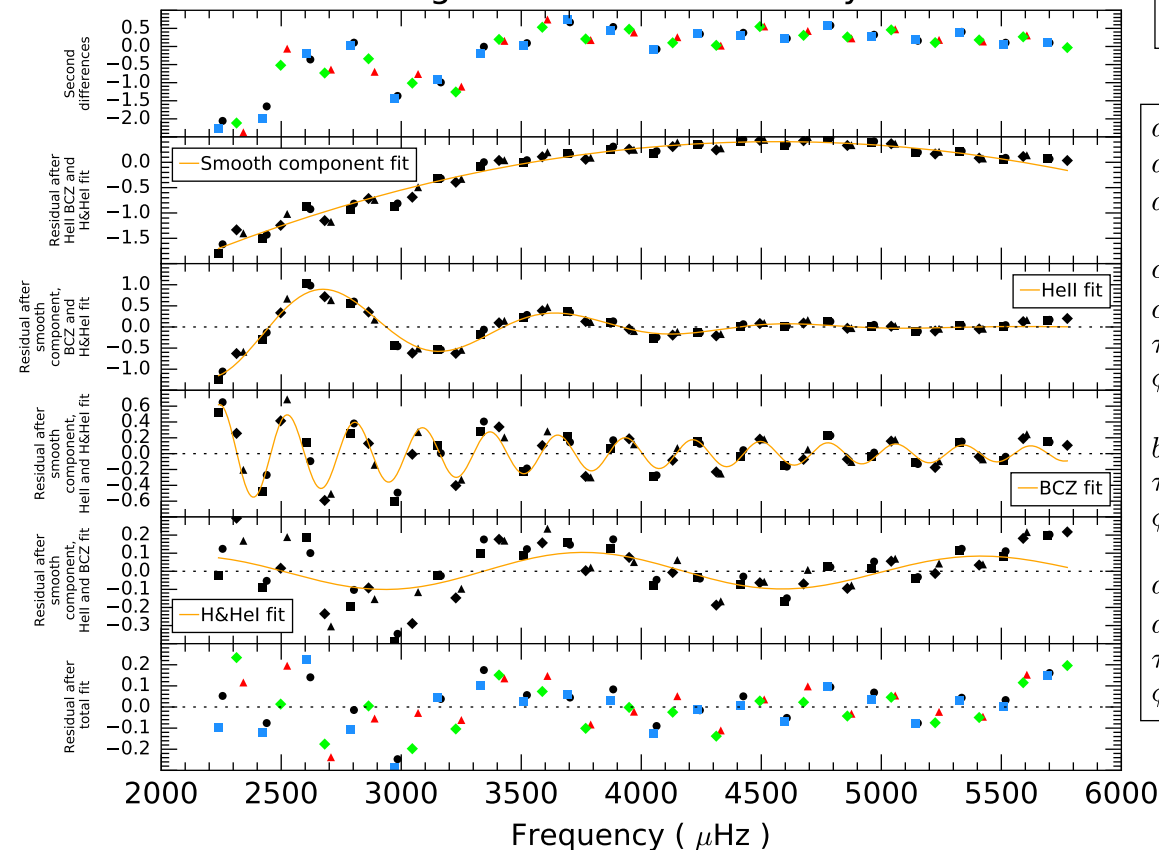
Age after ZAMS: 8.110 Gyr



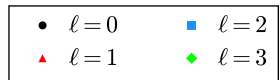
$$\begin{aligned}
 a_0 &= -7.7117 \mu \text{ Hz} \\
 a_1 &= 0.0035567 \\
 a_2 &= -3.895e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0015263 \\
 c_2 &= 2.1147e-07 \mu \text{ Hz}^{-2} \\
 \tau_{\text{HeII}} &= 511.21 \text{ s} \\
 \phi_{\text{HeII}} &= 3.1246 \\
 b_2 &= 3.1284e+06 \text{ mHz}^3 \\
 \tau_{\text{CZ}} &= 1776.1 \text{ s} \\
 \phi_{\text{CZ}} &= 1.7267 \\
 d_0 &= 4.7613e-05 \\
 d_2 &= 3.816e-08 \mu \text{ Hz}^{-2} \\
 \tau_{\text{HI}} &= 299.2 \text{ s} \\
 \phi_{\text{HI}} &= 3.0999e-12
 \end{aligned}$$

profile39

$$\chi^2_{\nu}(\text{dof} = 65) = 0.014167$$



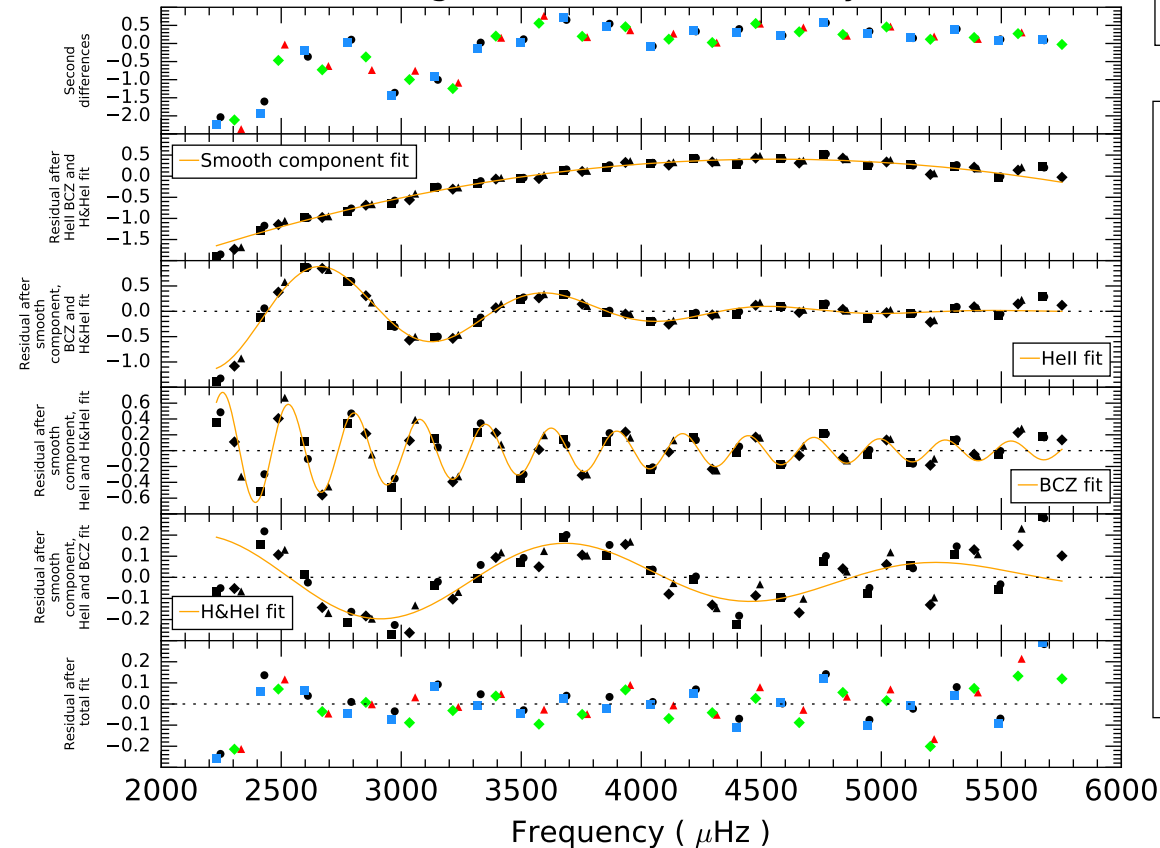
Age after ZAMS: 8.410 Gyr



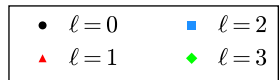
$$\begin{aligned}
 a_0 &= -7.4769 \mu\text{Hz} \\
 a_1 &= 0.0034624 \\
 a_2 &= -3.8032e-07 \mu\text{Hz}^{-1} \\
 c_0 &= 0.0013971 \\
 c_2 &= 2.0196e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 530.4 \text{ s} \\
 \phi_{HeII} &= 2.5787 \\
 b_2 &= 3.7473e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1827.3 \text{ s} \\
 \phi_{CZ} &= 6.2832 \\
 d_0 &= 0.00013868 \\
 d_2 &= 8.466e-08 \mu\text{Hz}^{-2} \\
 \tau_{HI} &= 319.76 \text{ s} \\
 \phi_{HI} &= 5.5337
 \end{aligned}$$

profile40

$$\chi^2_\nu(\text{dof} = 65) = 0.012144$$



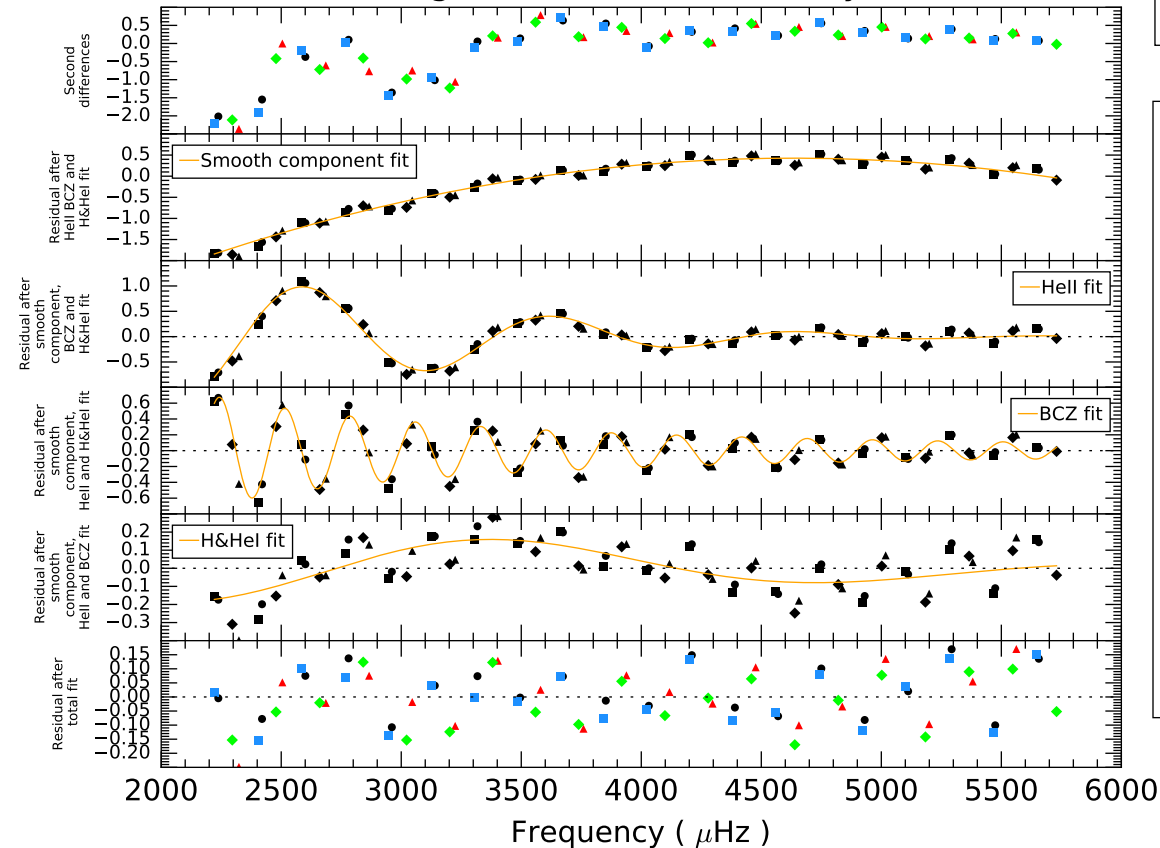
Age after ZAMS: 8.710 Gyr



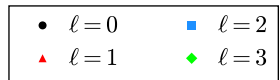
$$\begin{aligned}
 a_0 &= -7.9482 \mu \text{ Hz} \\
 a_1 &= 0.0036152 \\
 a_2 &= -3.9013e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0013654 \\
 c_2 &= 1.903e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 480.38 \text{ s} \\
 \phi_{HeII} &= 4.6998 \\
 b_2 &= 3.392e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1838.3 \text{ s} \\
 \phi_{CZ} &= 6.2832 \\
 d_0 &= 0.00013489 \\
 d_2 &= 9.1241e-08 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 176.24 \text{ s} \\
 \phi_{HI} &= 0.24096
 \end{aligned}$$

profile41

$$\chi^2_\nu (\text{dof} = 65) = 0.011306$$



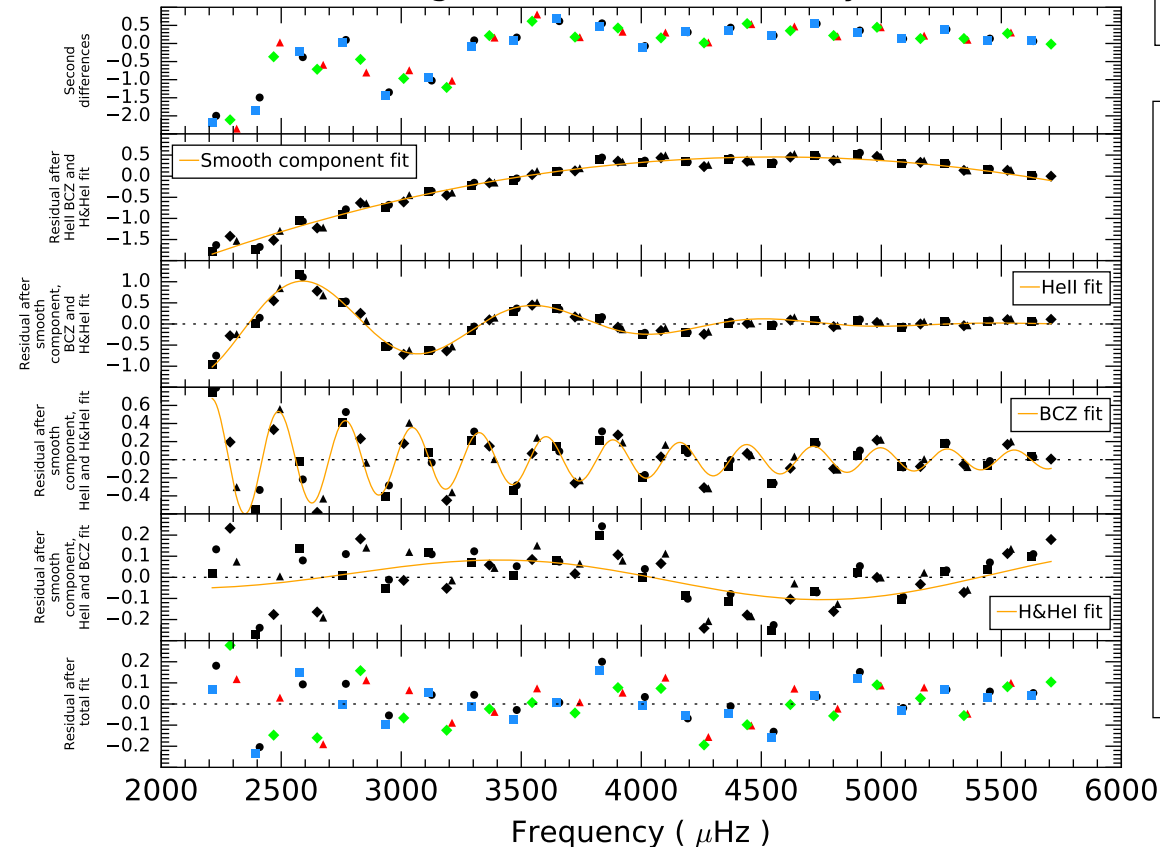
Age after ZAMS: 9.010 Gyr



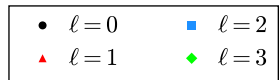
$$\begin{aligned}
 a_0 &= -8.2561 \mu\text{Hz} \\
 a_1 &= 0.0038276 \\
 a_2 &= -4.2041e-07 \mu\text{Hz}^{-1} \\
 c_0 &= 0.0014501 \\
 c_2 &= 1.9425e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 515.04 \text{ s} \\
 \phi_{HeII} &= 3.5644 \\
 b_2 &= 3.3083e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1794.9 \text{ s} \\
 \phi_{CZ} &= 1.9549 \\
 d_0 &= 2.641e-05 \\
 d_2 &= 7.463e-09 \mu\text{Hz}^{-2} \\
 \tau_{HI} &= 183.03 \text{ s} \\
 \phi_{HI} &= 0.12597
 \end{aligned}$$

profile42

$$\chi^2_\nu(\text{dof} = 65) = 0.012435$$



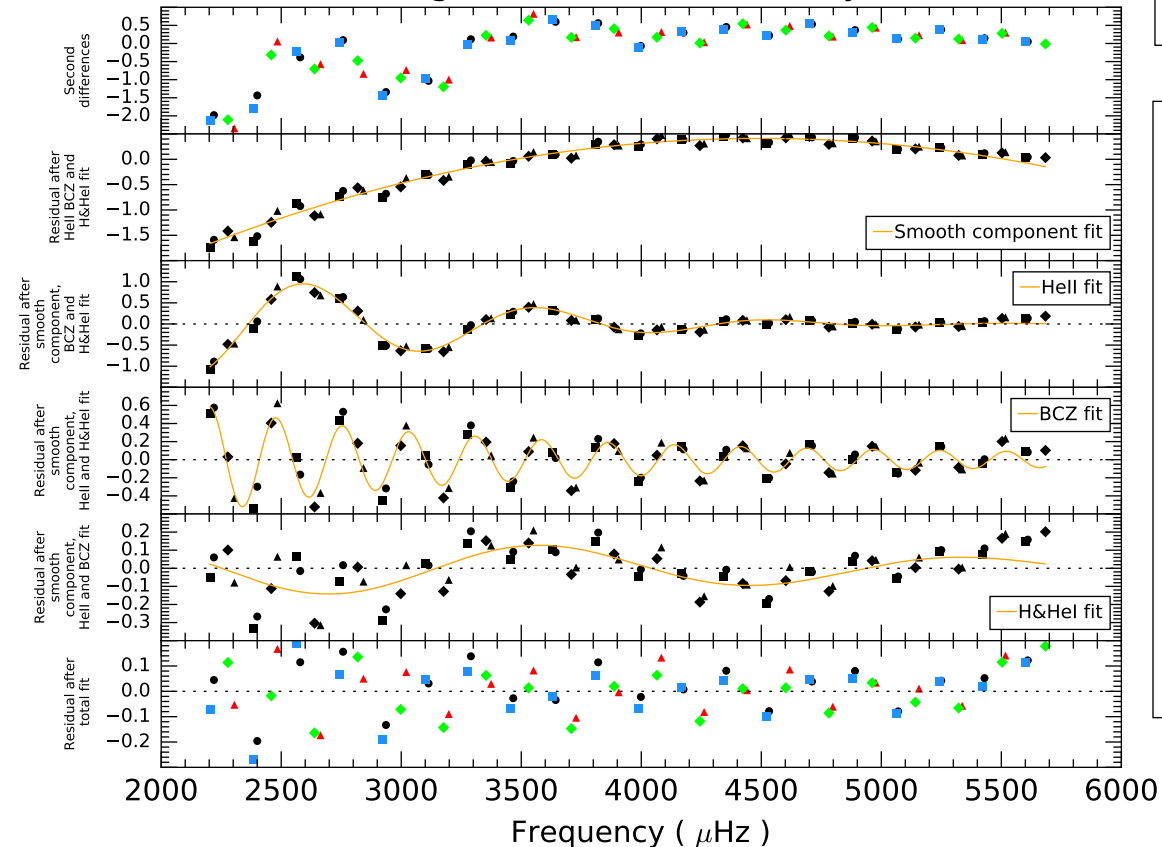
Age after ZAMS: 9.310 Gyr



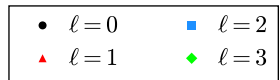
$$\begin{aligned}
 a_0 &= -7.5748 \mu \text{ Hz} \\
 a_1 &= 0.0035541 \\
 a_2 &= -3.9534e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0014398 \\
 c_2 &= 2.0268e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 511.54 \text{ s} \\
 \phi_{HeII} &= 3.6611 \\
 b_2 &= 2.8436e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1807.5 \text{ s} \\
 \phi_{CZ} &= 1.8215 \\
 d_0 &= 8.8831e-05 \\
 d_2 &= 7.1557e-08 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 279.82 \text{ s} \\
 \phi_{HI} &= 1.5088
 \end{aligned}$$

profile43

$$\chi^2_{\nu}(\text{dof} = 65) = 0.011341$$



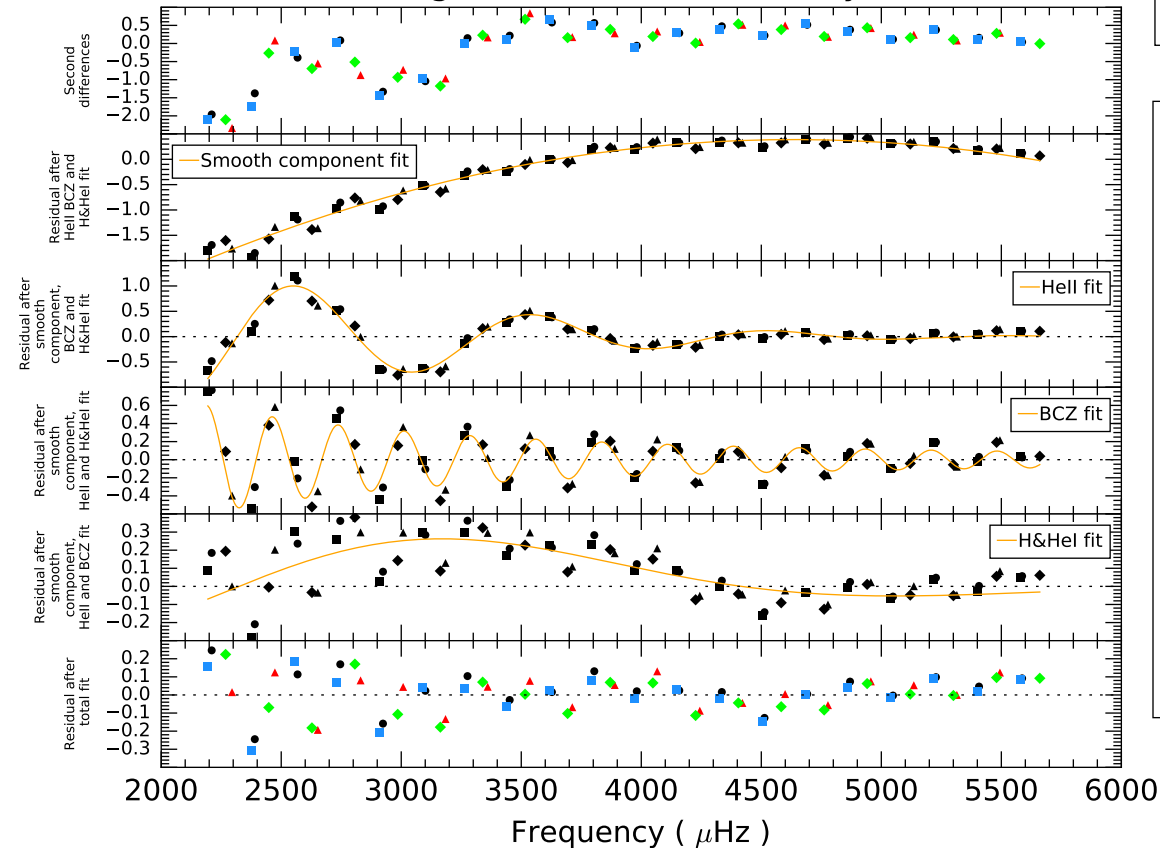
Age after ZAMS: 9.610 Gyr



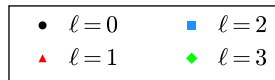
$$\begin{aligned}
 a_0 &= -8.1105 \mu\text{ Hz} \\
 a_1 &= 0.0036669 \\
 a_2 &= -3.9548e-07 \mu\text{Hz}^{-1} \\
 c_0 &= 0.0013747 \\
 c_2 &= 1.9206e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 500.91 \text{ s} \\
 \phi_{HeII} &= 4.2753 \\
 b_2 &= 2.8805e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1821.8 \text{ s} \\
 \phi_{CZ} &= 1.7187 \\
 d_0 &= 0.00029963 \\
 d_2 &= 1.2329e-07 \mu\text{Hz}^{-2} \\
 \tau_{HI} &= 119.48 \text{ s} \\
 \phi_{HI} &= 2.7945
 \end{aligned}$$

profile44

$$\chi^2_{\nu}(\text{dof} = 65) = 0.013846$$



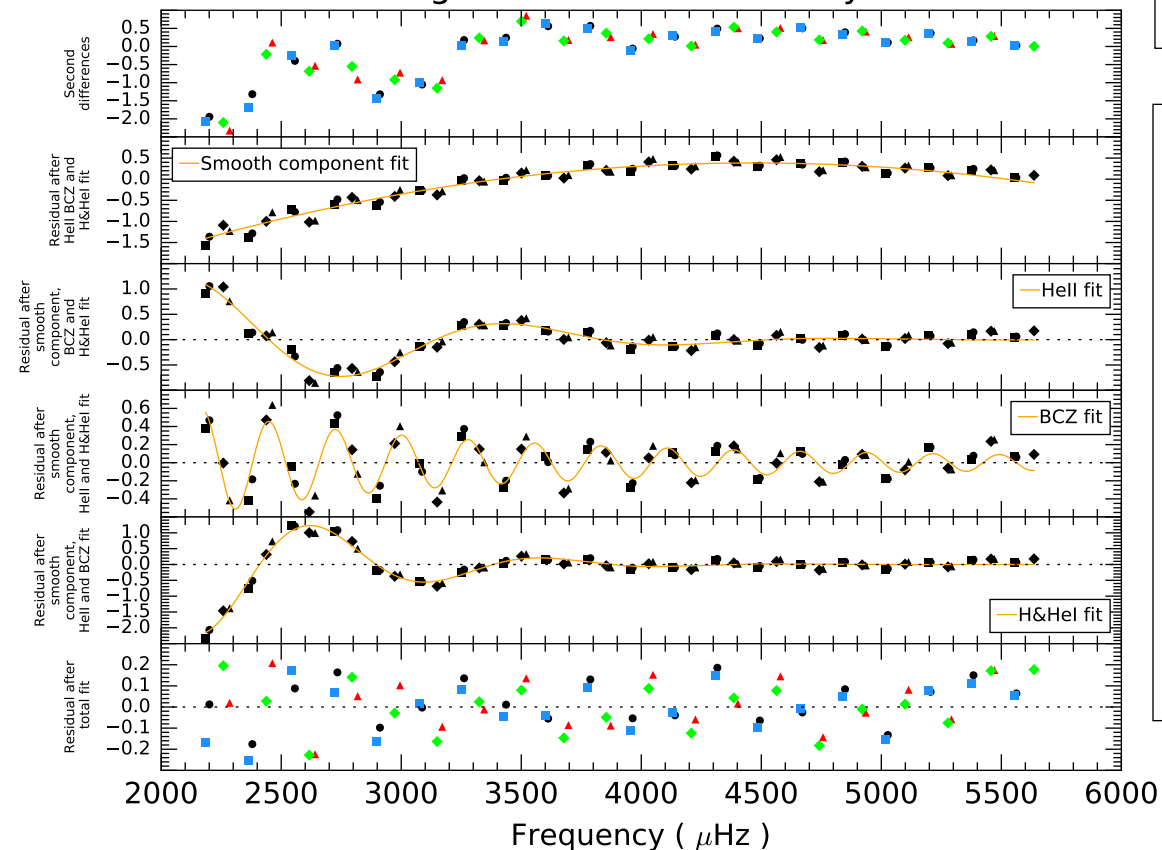
Age after ZAMS: 9.910 Gyr



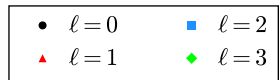
$$\begin{aligned}
 a_0 &= -6.4605 \mu \text{ Hz} \\
 a_1 &= 0.0030664 \\
 a_2 &= -3.4336e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0017379 \\
 c_2 &= 2.4629e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 360.03 \text{ s} \\
 \phi_{HeII} &= 4.6308 \\
 b_2 &= 2.7409e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1807.6 \text{ s} \\
 \phi_{CZ} &= 2.4787 \\
 d_0 &= 0.0051901 \\
 d_2 &= 3.4673e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 514.65 \text{ s} \\
 \phi_{HI} &= 3.2634
 \end{aligned}$$

profile45

$$\chi^2_\nu(\text{dof} = 65) = 0.016022$$



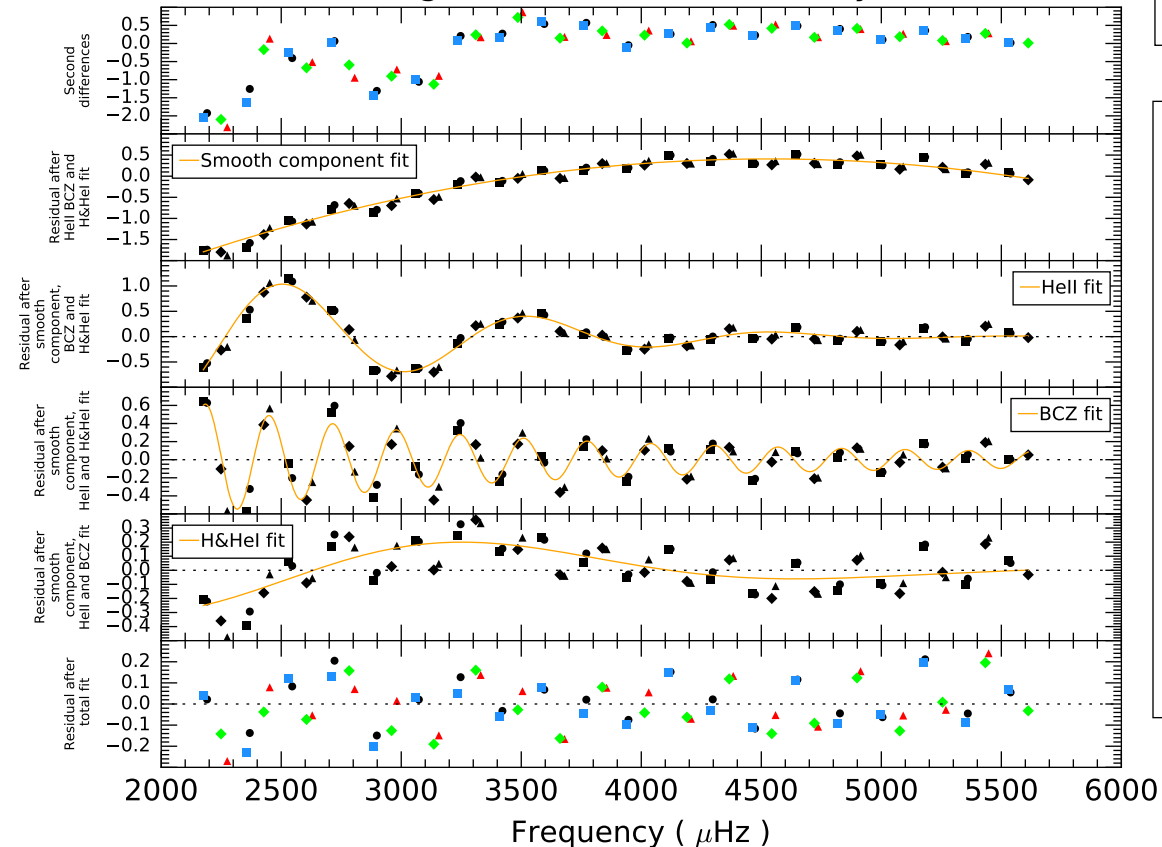
Age after ZAMS: 10.210 Gyr



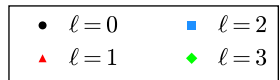
$$\begin{aligned}
 a_0 &= -7.7353 \mu \text{ Hz} \\
 a_1 &= 0.0035951 \\
 a_2 &= -3.9671e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0015359 \\
 c_2 &= 2.0809e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 486.66 \text{ s} \\
 \phi_{HeII} &= 4.9931 \\
 b_2 &= 2.9343e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1887.3 \text{ s} \\
 \phi_{CZ} &= 6.2832 \\
 d_0 &= 0.00026162 \\
 d_2 &= 1.3362e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 168.61 \text{ s} \\
 \phi_{HI} &= 0.70195
 \end{aligned}$$

profile46

$$\chi^2_\nu(\text{dof} = 65) = 0.016259$$



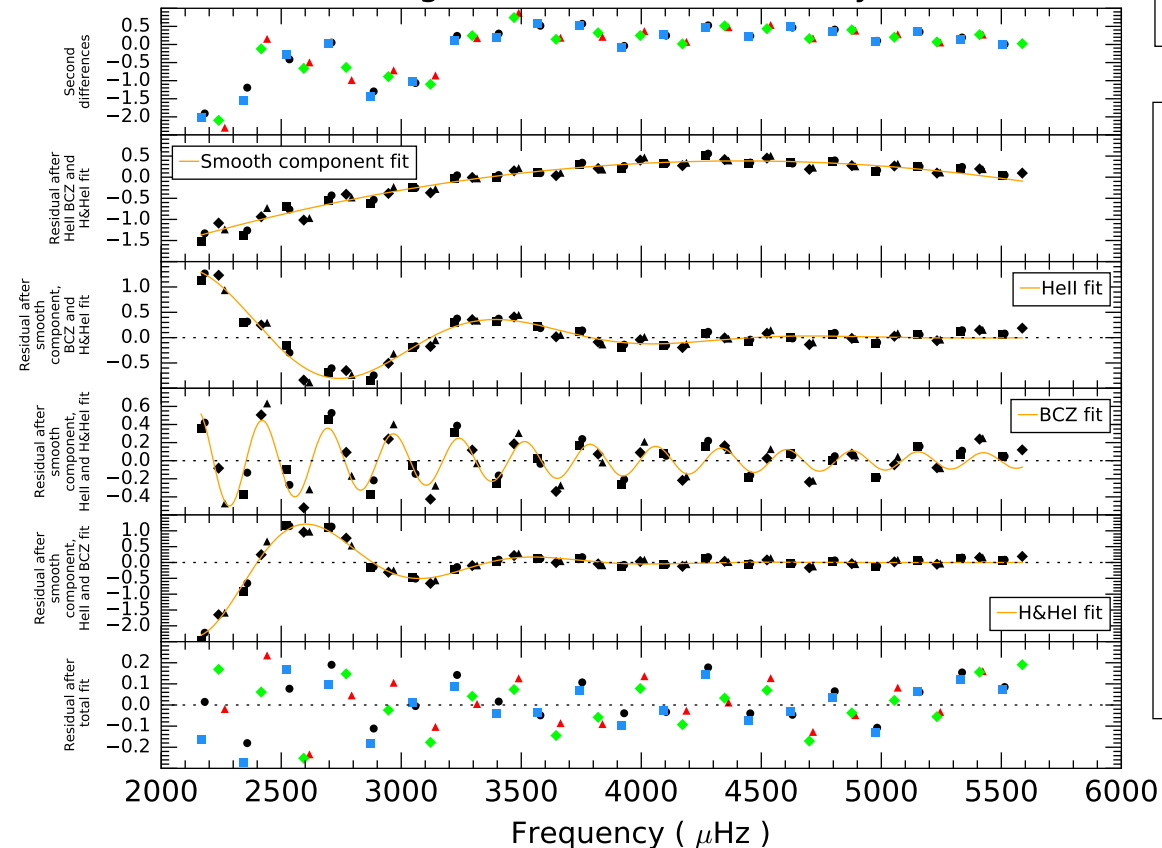
Age after ZAMS: 10.510 Gyr



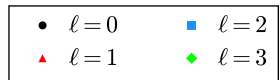
$$\begin{aligned}
 a_0 &= -6.384 \mu\text{Hz} \\
 a_1 &= 0.0030685 \\
 a_2 &= -3.4772e-07 \mu\text{Hz}^{-1} \\
 c_0 &= 0.0019765 \\
 c_2 &= 2.5064e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 374.24 \text{ s} \\
 \phi_{HeII} &= 4.1733 \\
 b_2 &= 2.6163e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1830.7 \text{ s} \\
 \phi_{CZ} &= 2.3948 \\
 d_0 &= 0.0063443 \\
 d_2 &= 3.8105e-07 \mu\text{Hz}^{-2} \\
 \tau_{HI} &= 519.3 \text{ s} \\
 \phi_{HI} &= 3.1914
 \end{aligned}$$

profile47

$$\chi^2_\nu(\text{dof} = 65) = 0.015798$$



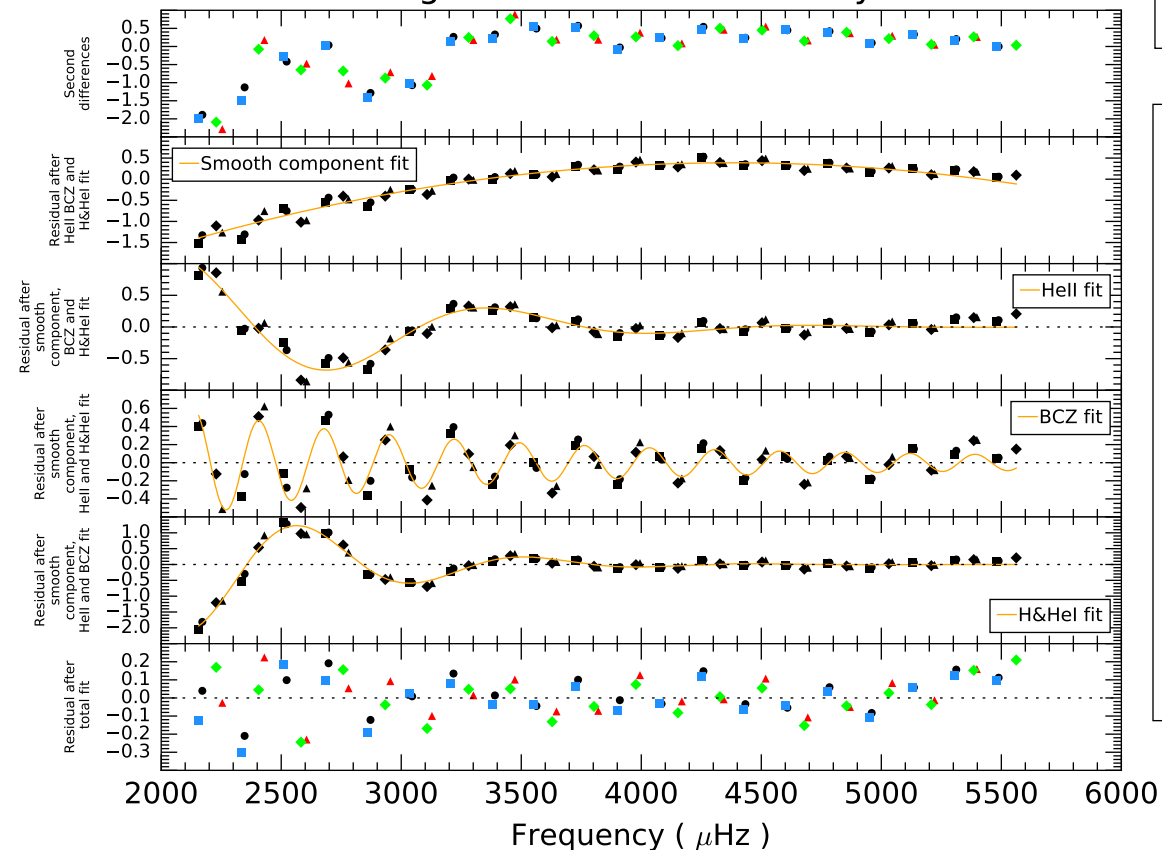
Age after ZAMS: 10.810 Gyr



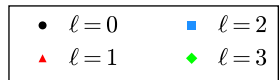
$$\begin{aligned}
 a_0 &= -6.5158 \mu \text{ Hz} \\
 a_1 &= 0.003153 \\
 a_2 &= -3.5994e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0016066 \\
 c_2 &= 2.5259e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 364.98 \text{ s} \\
 \phi_{HeII} &= 4.7463 \\
 b_2 &= 2.6936e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1843.6 \text{ s} \\
 \phi_{CZ} &= 2.3351 \\
 d_0 &= 0.004437 \\
 d_2 &= 3.3554e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 521.71 \text{ s} \\
 \phi_{HI} &= 3.4059
 \end{aligned}$$

profile48

$$\chi^2_{\nu}(\text{dof} = 65) = 0.015111$$



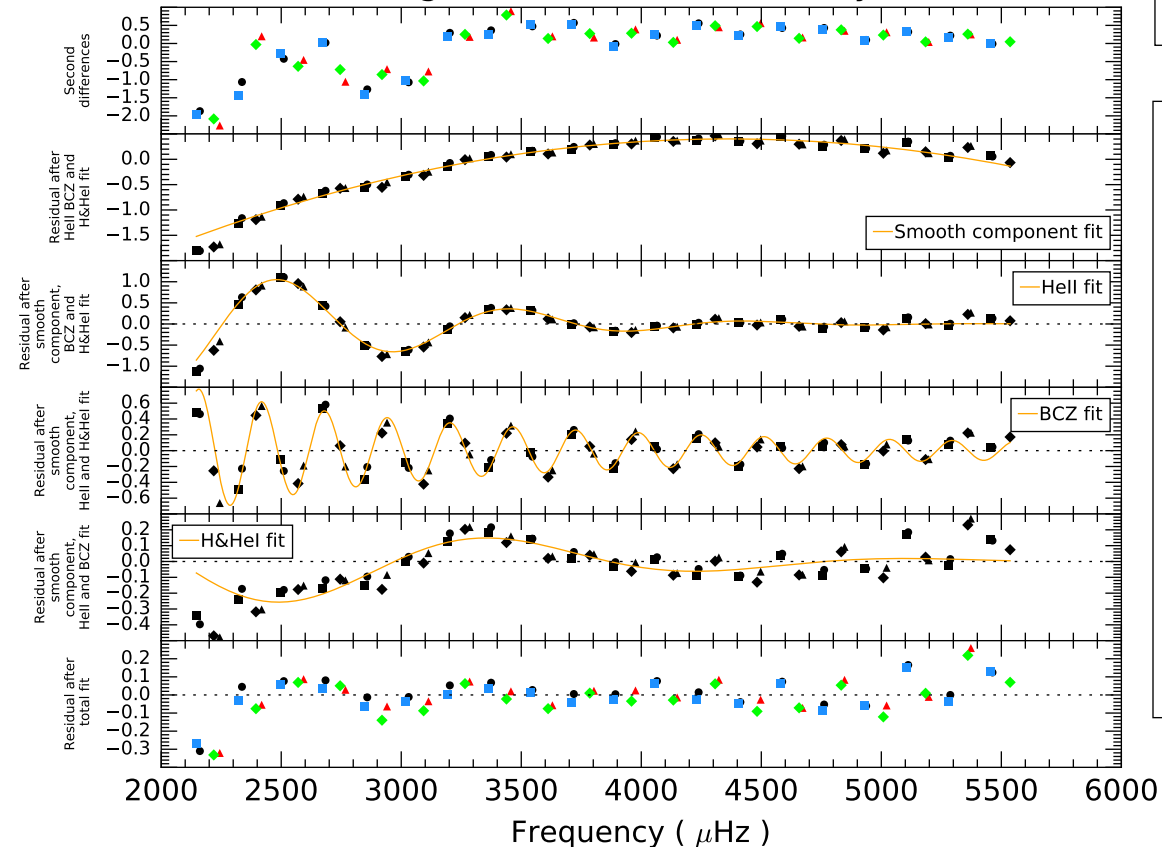
Age after ZAMS: 11.110 Gyr



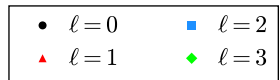
$$\begin{aligned}
 a_0 &= -7.0498 \mu \text{ Hz} \\
 a_1 &= 0.0034148 \\
 a_2 &= -3.9119e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0018957 \\
 c_2 &= 2.4211e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 509.48 \text{ s} \\
 \phi_{HeII} &= 4.4111 \\
 b_2 &= 3.616e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1911.7 \text{ s} \\
 \phi_{CZ} &= 6.2775 \\
 d_0 &= 0.0002861 \\
 d_2 &= 1.635e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 278.91 \text{ s} \\
 \phi_{HI} &= 2.1554
 \end{aligned}$$

profile49

$$\chi^2_\nu(\text{dof} = 65) = 0.012348$$



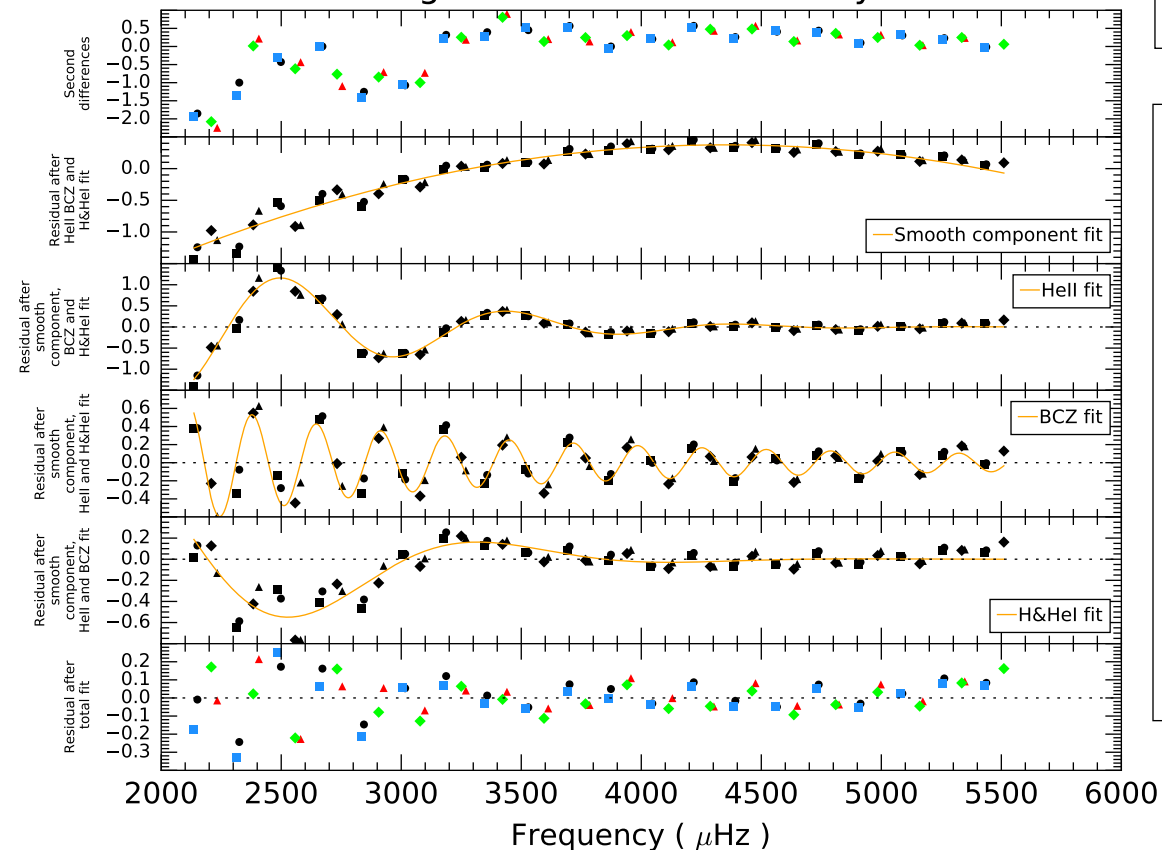
Age after ZAMS: 11.410 Gyr



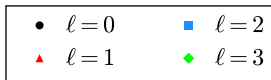
$$\begin{aligned}
 a_0 &= -5.9133 \mu\text{Hz} \\
 a_1 &= 0.0028907 \\
 a_2 &= -3.3215e-07 \mu\text{Hz}^{-1} \\
 c_0 &= 0.0023384 \\
 c_2 &= 2.5766e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 525.55 \text{ s} \\
 \phi_{HeII} &= 3.8013 \\
 b_2 &= 2.9991e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1867.3 \text{ s} \\
 \phi_{CZ} &= 2.2888 \\
 d_0 &= 0.0016626 \\
 d_2 &= 3.1128e-07 \mu\text{Hz}^{-2} \\
 \tau_{HI} &= 302.79 \text{ s} \\
 \phi_{HI} &= 1.0763
 \end{aligned}$$

profile50

$$\chi^2_\nu(\text{dof} = 65) = 0.013142$$



Age after ZAMS: 11.710 Gyr



$a_0 = -6.8593 \mu \text{ Hz}$
 $a_1 = 0.0033799$
 $a_2 = -3.933e-07 \mu \text{ Hz}^{-1}$

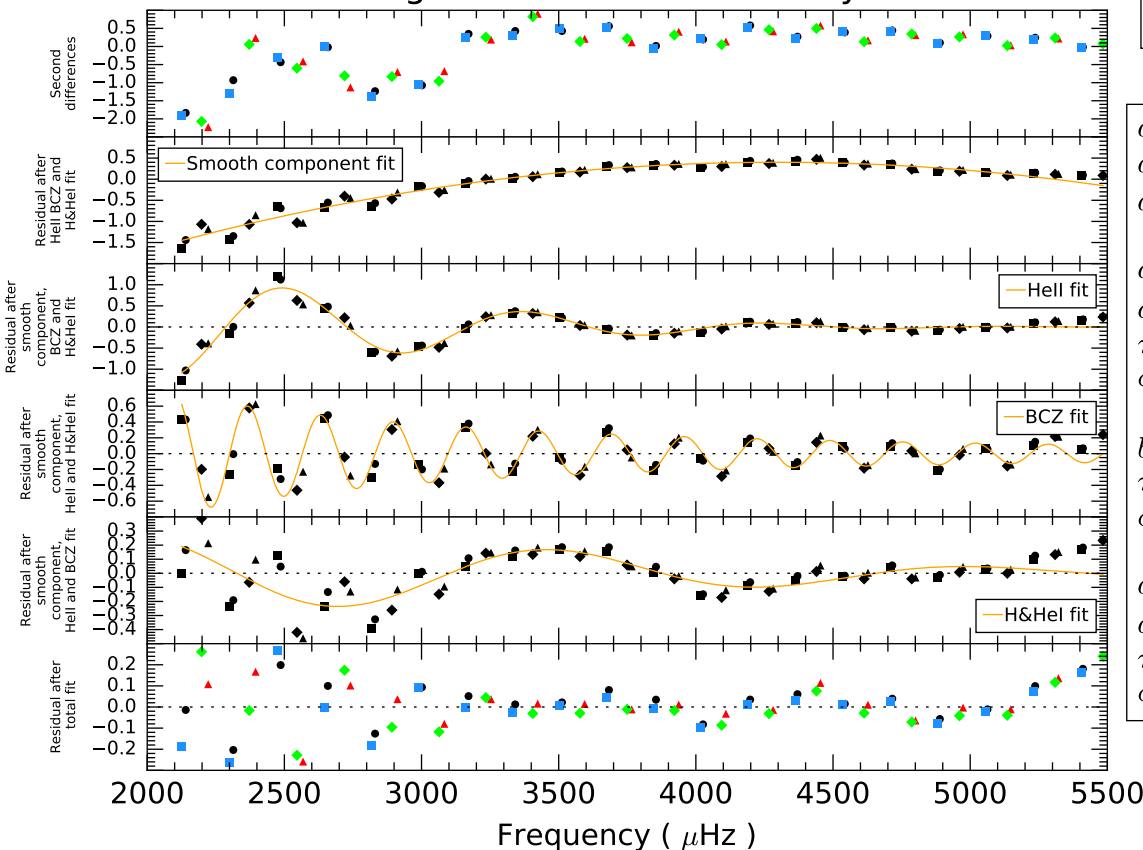
 $c_0 = 0.0016417$
 $c_2 = 2.3842e-07 \mu \text{ Hz}^{-2}$
 $\tau_{HeII} = 566.78 \text{ s}$
 $\phi_{HeII} = 2.5656$

 $b_2 = 3.3686e+06 \text{ mHz}^3$
 $\tau_{CZ} = 1884.6 \text{ s}$
 $\phi_{CZ} = 2.0708$

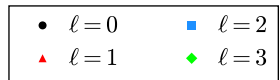
 $d_0 = 0.00021541$
 $d_2 = 1.2379e-07 \mu \text{ Hz}^{-2}$
 $\tau_{HI} = 322.48 \text{ s}$
 $\phi_{HI} = 1.392e-06$

profile51

$\chi^2_{\nu}(\text{dof} = 65) = 0.013786$



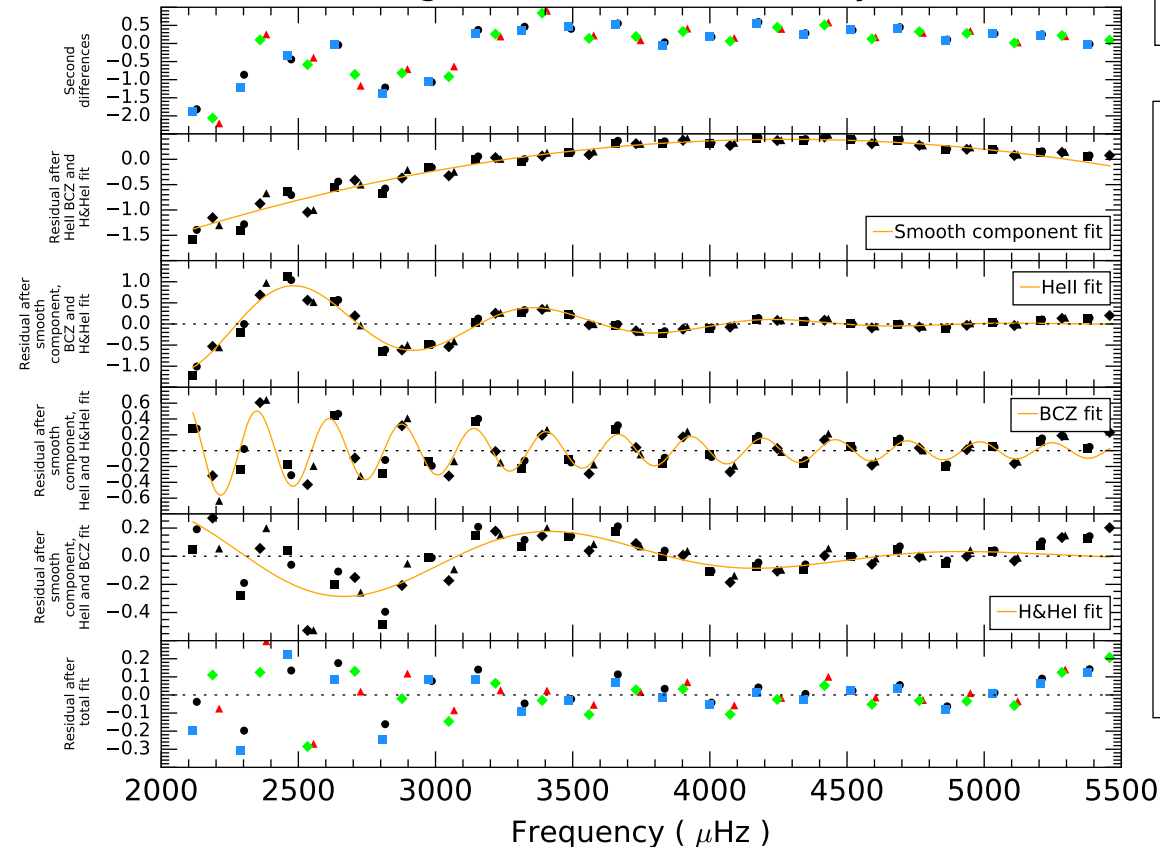
Age after ZAMS: 12.010 Gyr



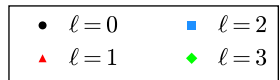
$a_0 = -6.5372 \mu \text{ Hz}$
 $a_1 = 0.0032393$
 $a_2 = -3.7842e-07 \mu \text{ Hz}^{-1}$
 $c_0 = 0.0014685$
 $c_2 = 2.2497e-07 \mu \text{ Hz}^{-2}$
 $\tau_{HeII} = 565.99 \text{ s}$
 $\phi_{HeII} = 2.6655$
 $b_2 = 2.7712e+06 \text{ mHz}^3$
 $\tau_{CZ} = 1897.7 \text{ s}$
 $\phi_{CZ} = 2.0747$
 $d_0 = 0.00033171$
 $d_2 = 1.5798e-07 \mu \text{ Hz}^{-2}$
 $\tau_{HI} = 324.98 \text{ s}$
 $\phi_{HI} = 0.00063568$

profile52

$\chi^2_{\nu}(\text{dof} = 65) = 0.015215$



Age after ZAMS: 12.310 Gyr



$a_0 = -7.6824 \mu \text{ Hz}$
 $a_1 = 0.0036838$
 $a_2 = -4.2155e-07 \mu \text{ Hz}^{-1}$

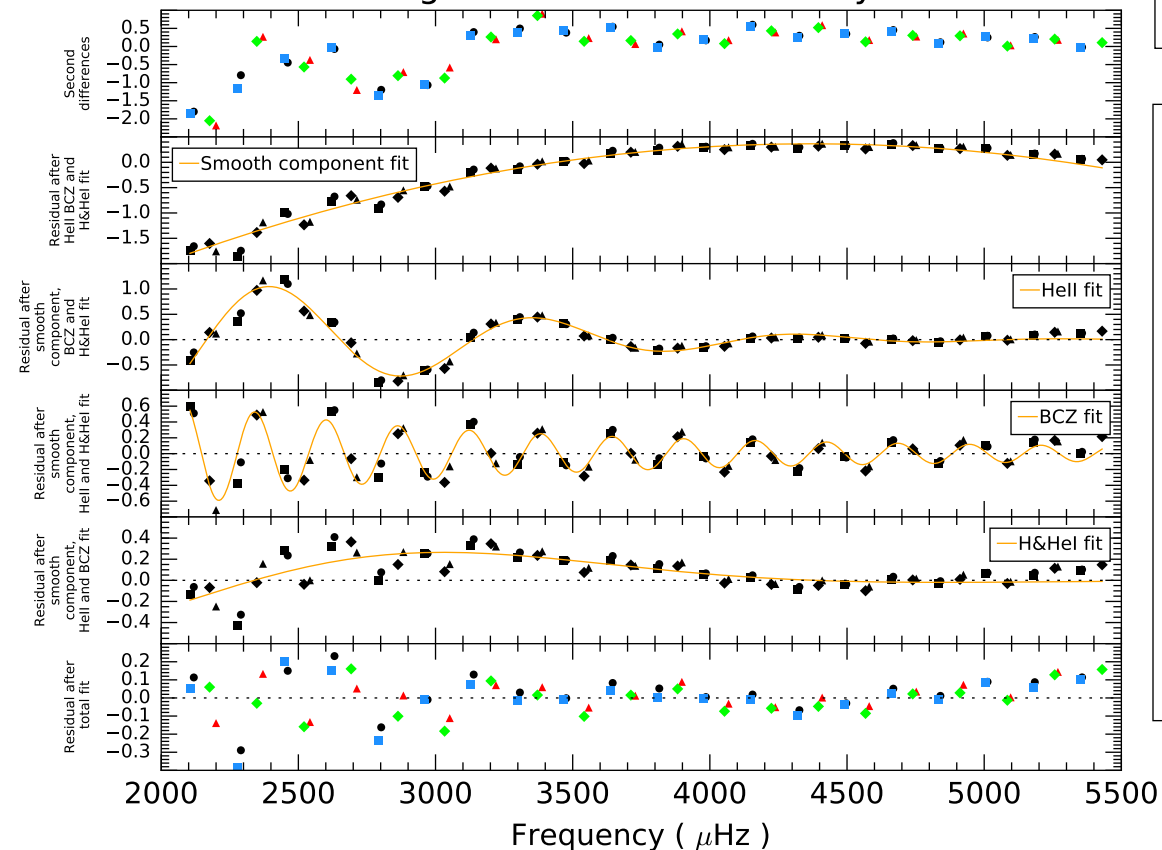
 $c_0 = 0.0015479$
 $c_2 = 2.196e-07 \mu \text{ Hz}^{-2}$
 $\tau_{HeII} = 514.93 \text{ s}$
 $\phi_{HeII} = 4.8356$

 $b_2 = 2.8876e+06 \text{ mHz}^3$
 $\tau_{CZ} = 1918.9 \text{ s}$
 $\phi_{CZ} = 1.6501$

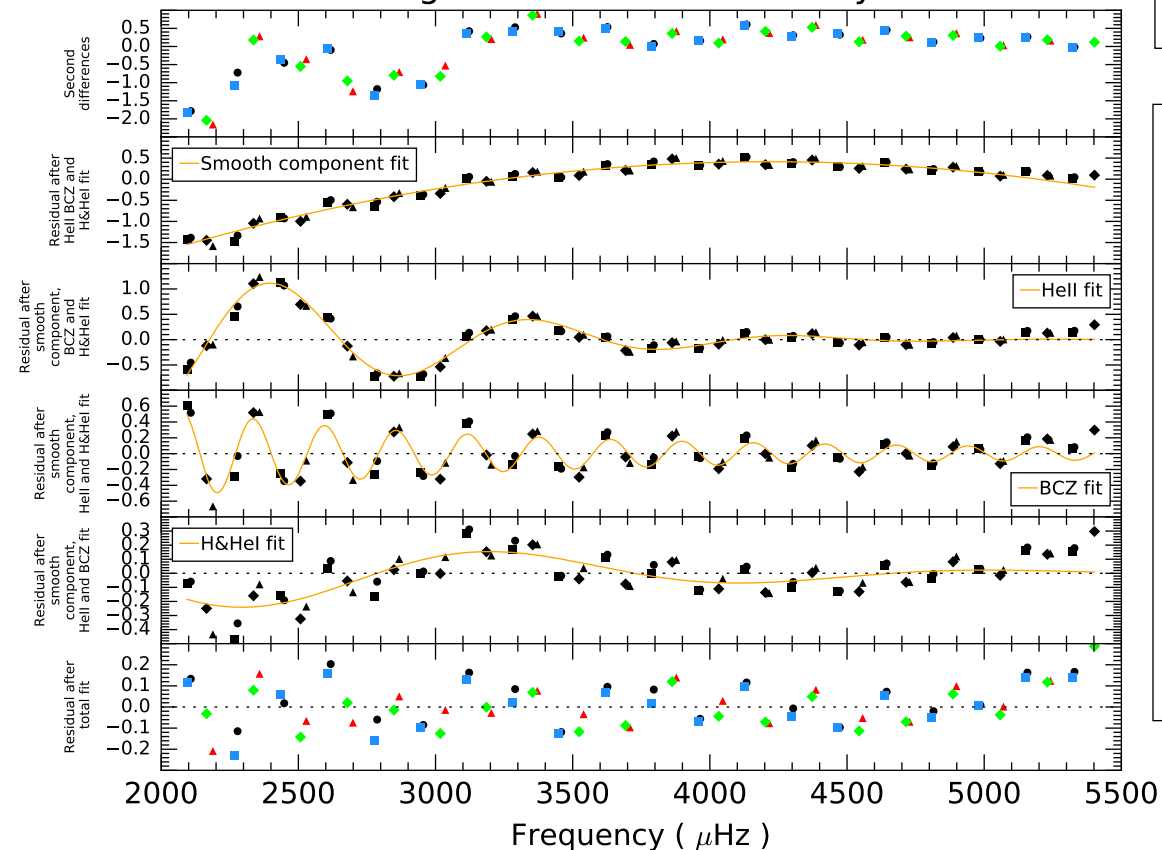
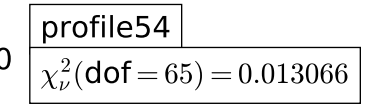
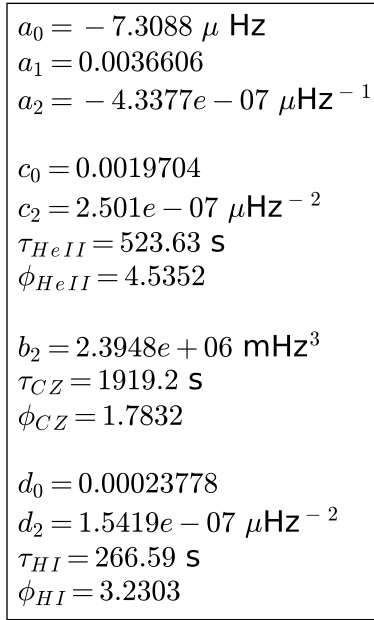
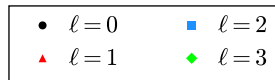
 $d_0 = 0.00060164$
 $d_2 = 1.9545e-07 \mu \text{ Hz}^{-2}$
 $\tau_{HI} = 122.59 \text{ s}$
 $\phi_{HI} = 2.6808$

profile53

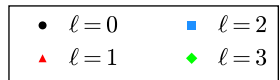
$\chi^2_\nu(\text{dof} = 65) = 0.013497$



Age after ZAMS: 12.610 Gyr



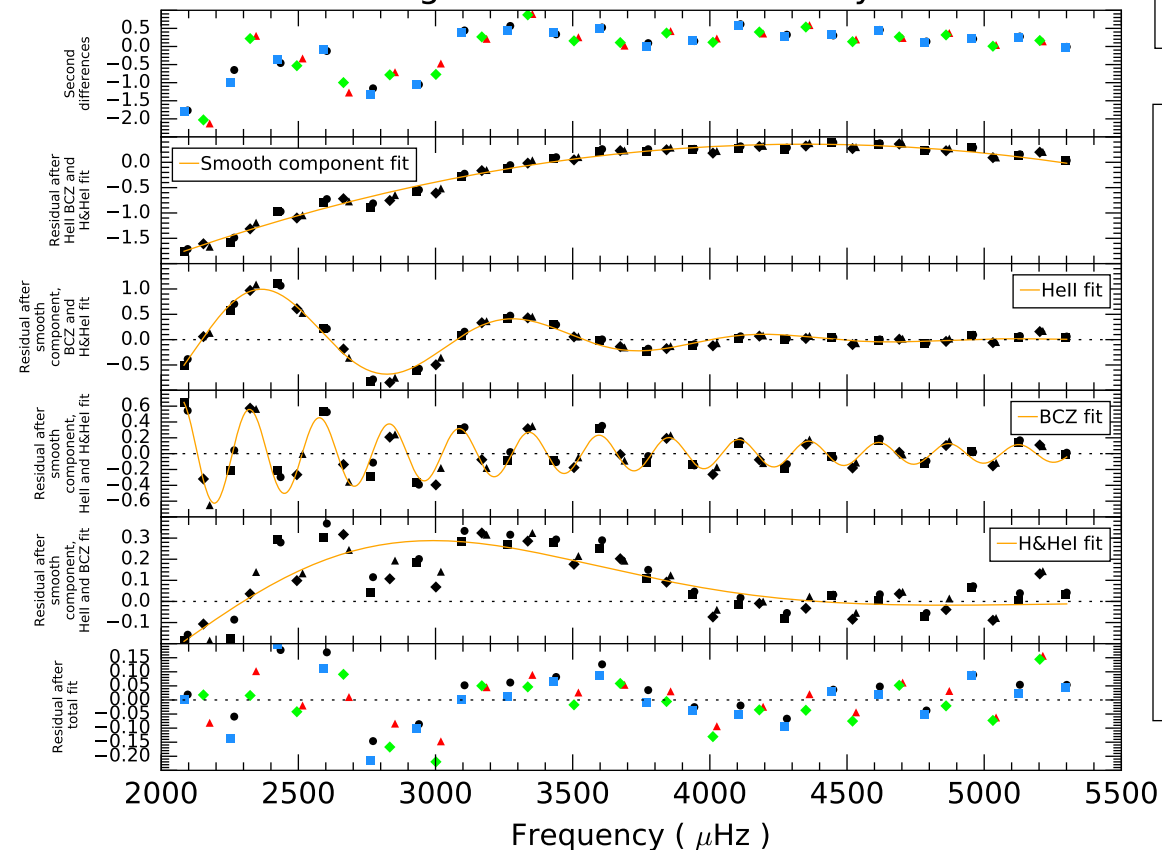
Age after ZAMS: 12.910 Gyr



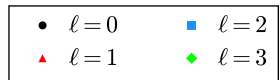
$$\begin{aligned}
 a_0 &= -7.438 \mu \text{ Hz} \\
 a_1 &= 0.0035871 \\
 a_2 &= -4.1265e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.001547 \\
 c_2 &= 2.3185e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 539.41 \text{ s} \\
 \phi_{HeII} &= 4.2864 \\
 b_2 &= 3.016e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1962.2 \text{ s} \\
 \phi_{CZ} &= 0.84294 \\
 d_0 &= 0.00068824 \\
 d_2 &= 2.0317e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 119.47 \text{ s} \\
 \phi_{HI} &= 2.8315
 \end{aligned}$$

profile55

$$\chi^2_\nu(\text{dof} = 64) = 0.0088831$$



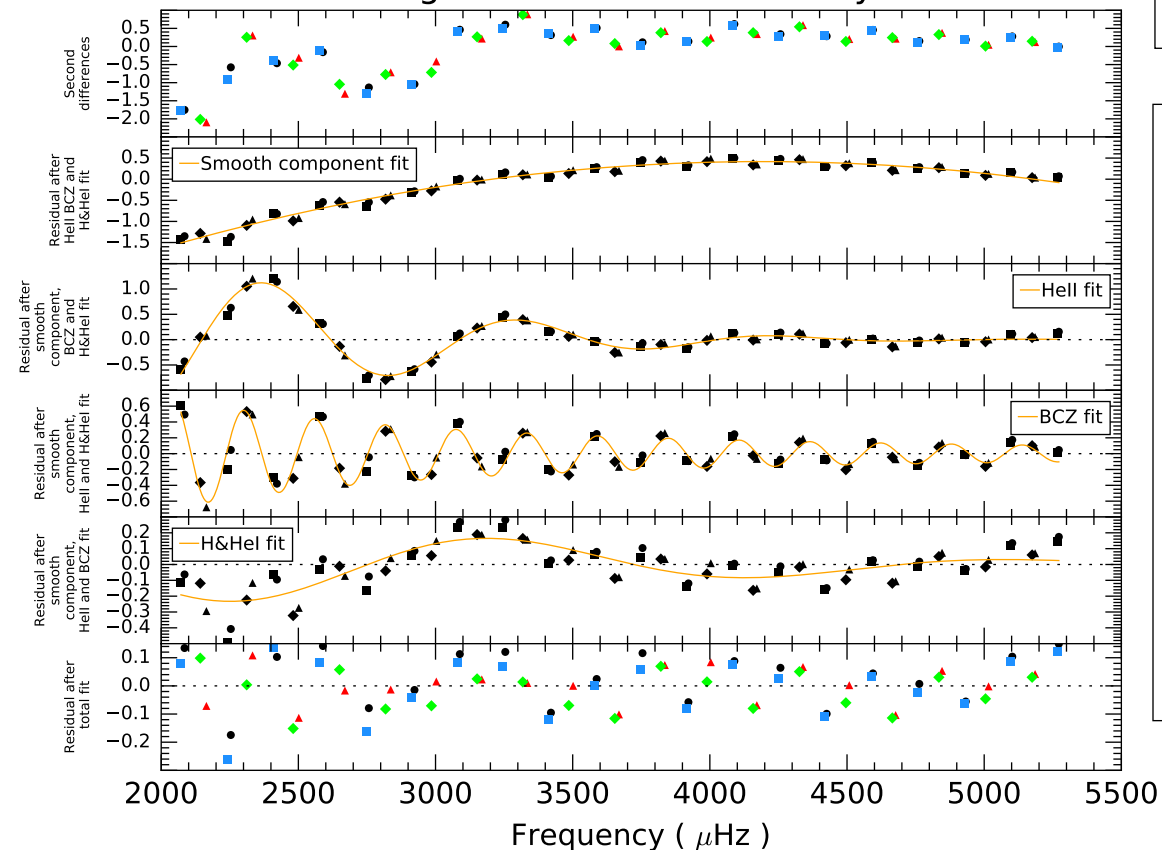
Age after ZAMS: 13.210 Gyr



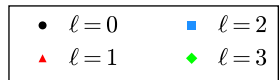
$$\begin{aligned}
 a_0 &= -7.1107 \mu \text{ Hz} \\
 a_1 &= 0.0035911 \\
 a_2 &= -4.2824e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0020853 \\
 c_2 &= 2.6345e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 532.96 \text{ s} \\
 \phi_{HeII} &= 4.4642 \\
 b_2 &= 2.8972e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1938.6 \text{ s} \\
 \phi_{CZ} &= 2.0415 \\
 d_0 &= 0.00020376 \\
 d_2 &= 1.3354e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 257.88 \text{ s} \\
 \phi_{HI} &= 3.6469
 \end{aligned}$$

profile56

$$\chi^2_\nu(\text{dof} = 64) = 0.0092121$$



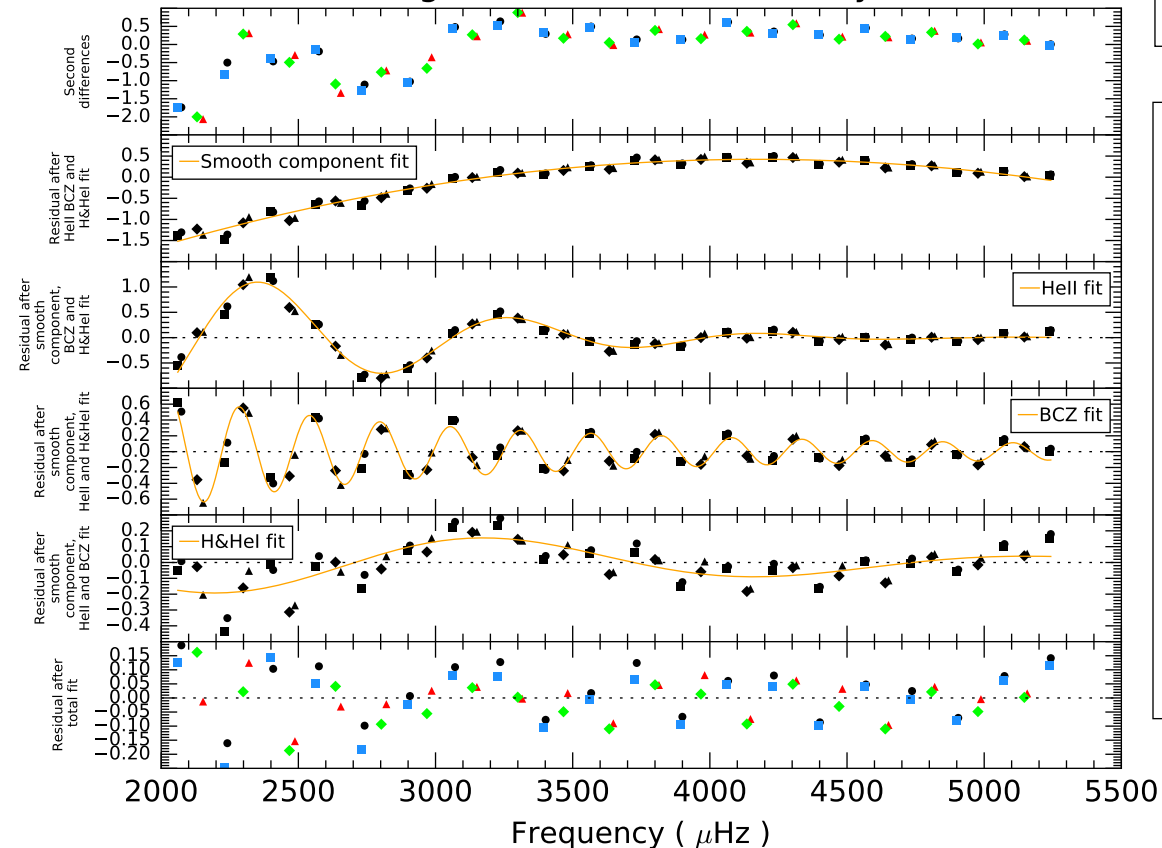
Age after ZAMS: 13.510 Gyr



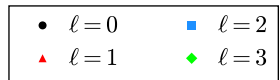
$$\begin{aligned}
 a_0 &= -7.1574 \mu\text{ Hz} \\
 a_1 &= 0.0036349 \\
 a_2 &= -4.3569e-07 \mu\text{Hz}^{-1} \\
 c_0 &= 0.0019838 \\
 c_2 &= 2.6071e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 542.31 \text{ s} \\
 \phi_{HeII} &= 4.2796 \\
 b_2 &= 2.9542e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1950.1 \text{ s} \\
 \phi_{CZ} &= 2.1122 \\
 d_0 &= 0.00014916 \\
 d_2 &= 1.0992e-07 \mu\text{Hz}^{-2} \\
 \tau_{HI} &= 245.98 \text{ s} \\
 \phi_{HI} &= 4.205
 \end{aligned}$$

profile57

$$\chi^2_{\nu}(\text{dof} = 64) = 0.009522$$



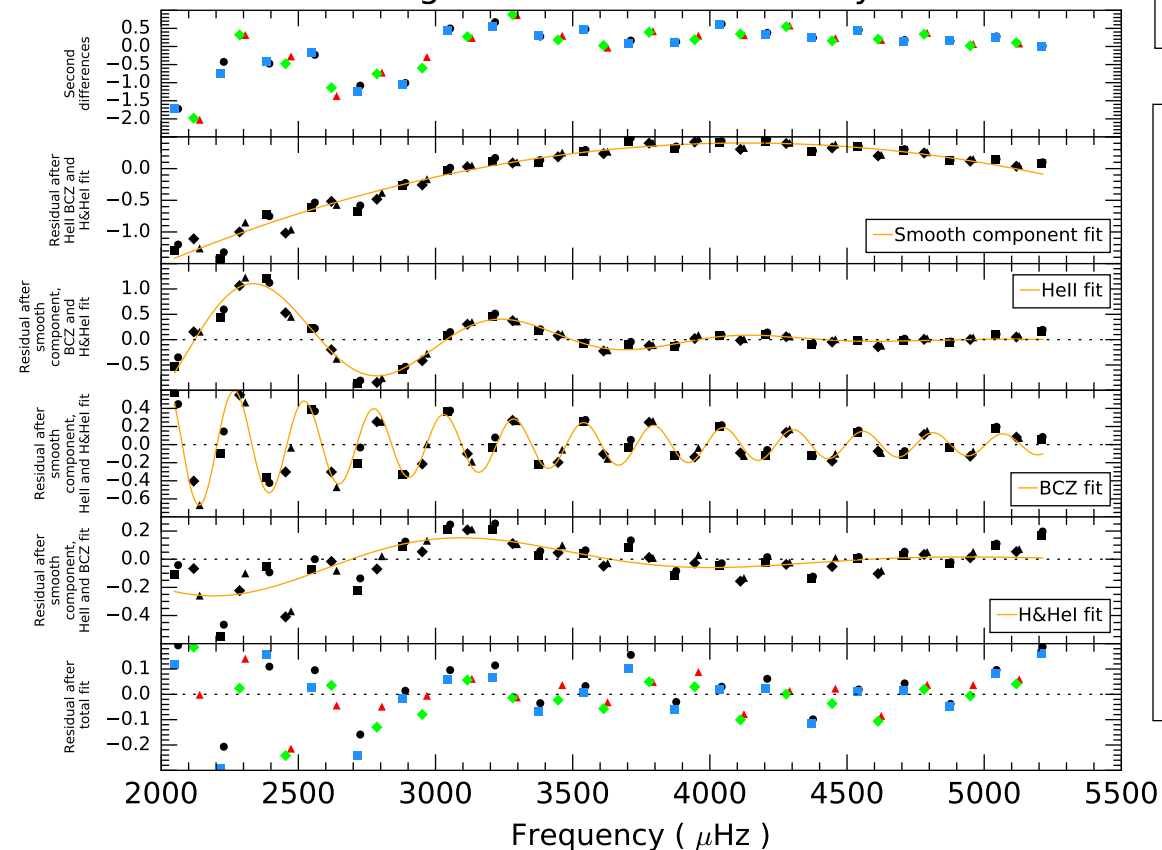
Age after ZAMS: 13.810 Gyr



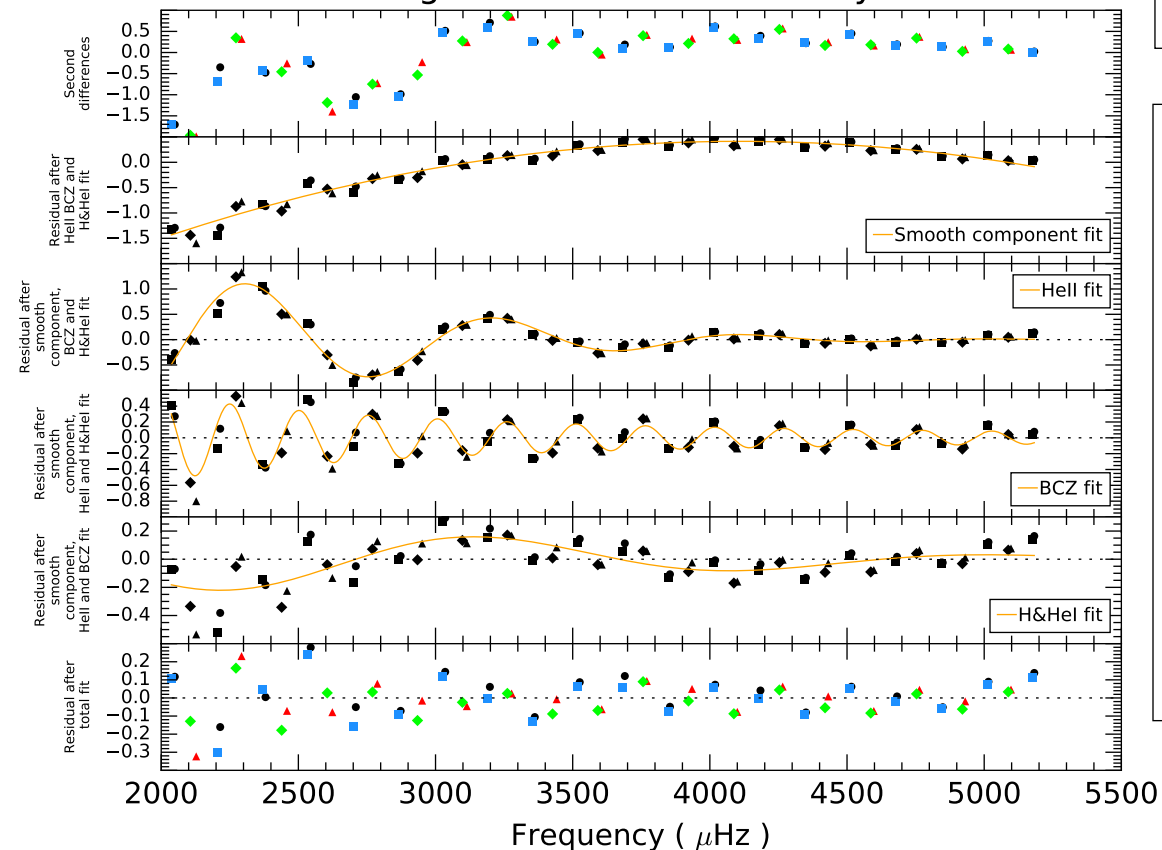
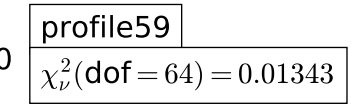
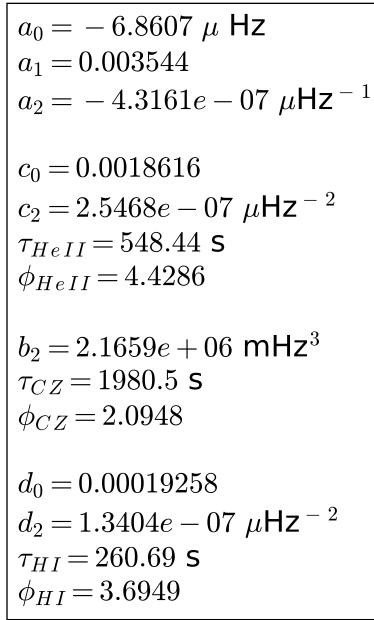
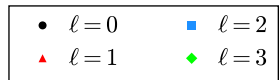
$$\begin{aligned}
 a_0 &= -6.7562 \mu\text{Hz} \\
 a_1 &= 0.0034674 \\
 a_2 &= -4.1972e-07 \mu\text{Hz}^{-1} \\
 c_0 &= 0.0019859 \\
 c_2 &= 2.6182e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 545.6 \text{ s} \\
 \phi_{HeII} &= 4.2995 \\
 b_2 &= 3.057e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1963.5 \text{ s} \\
 \phi_{CZ} &= 2.1789 \\
 d_0 &= 0.00028379 \\
 d_2 &= 1.8006e-07 \mu\text{Hz}^{-2} \\
 \tau_{HI} &= 264.85 \text{ s} \\
 \phi_{HI} &= 3.6055
 \end{aligned}$$

profile58

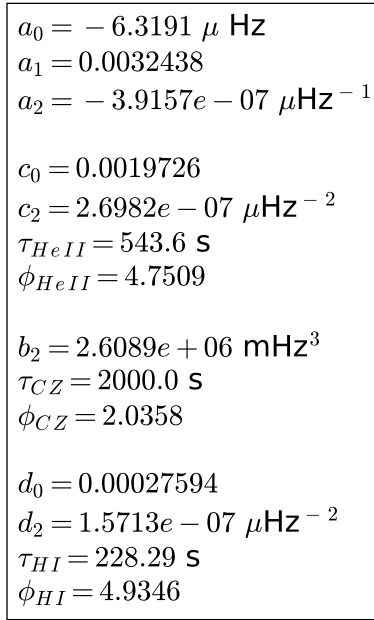
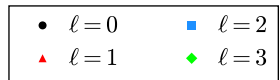
$$\chi^2_\nu(\text{dof} = 64) = 0.011838$$



Age after ZAMS: 14.110 Gyr

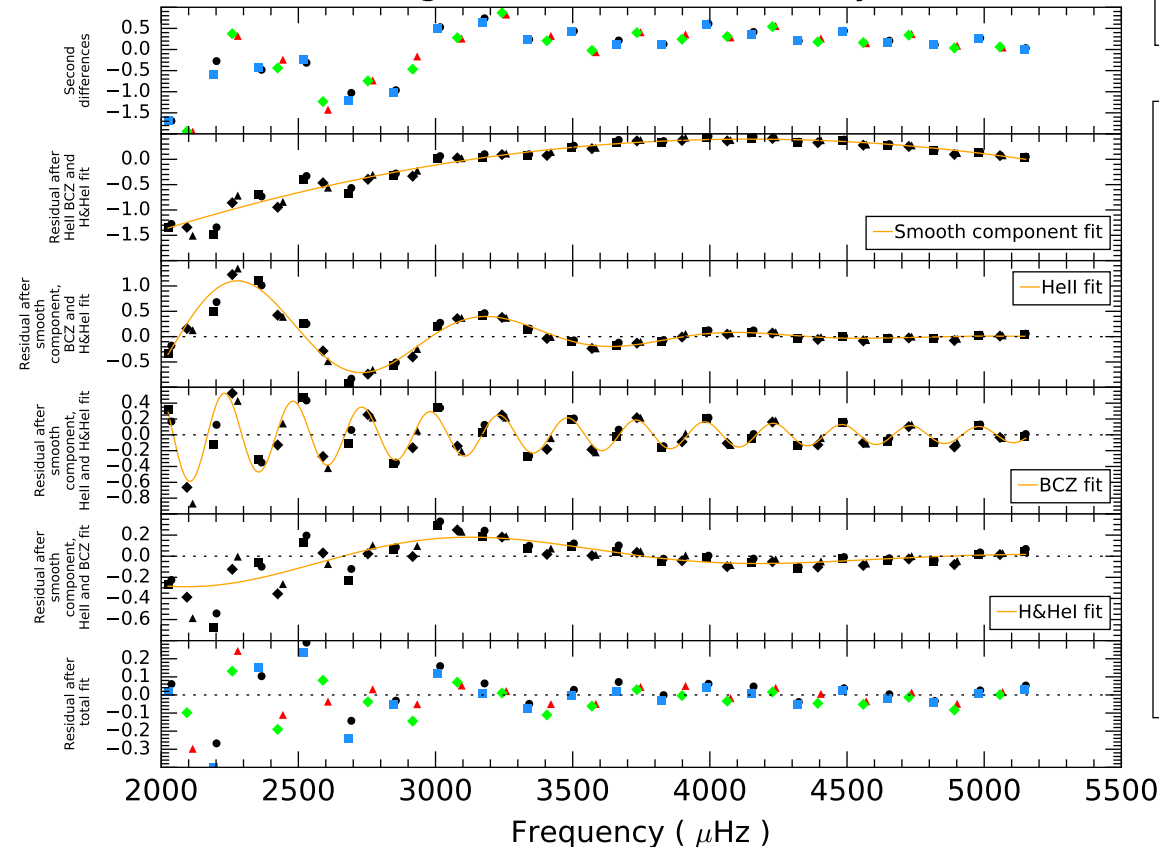


Age after ZAMS: 14.410 Gyr

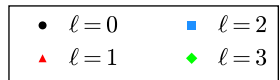


profile60

$\chi^2_{\nu}(\text{dof} = 64) = 0.013772$



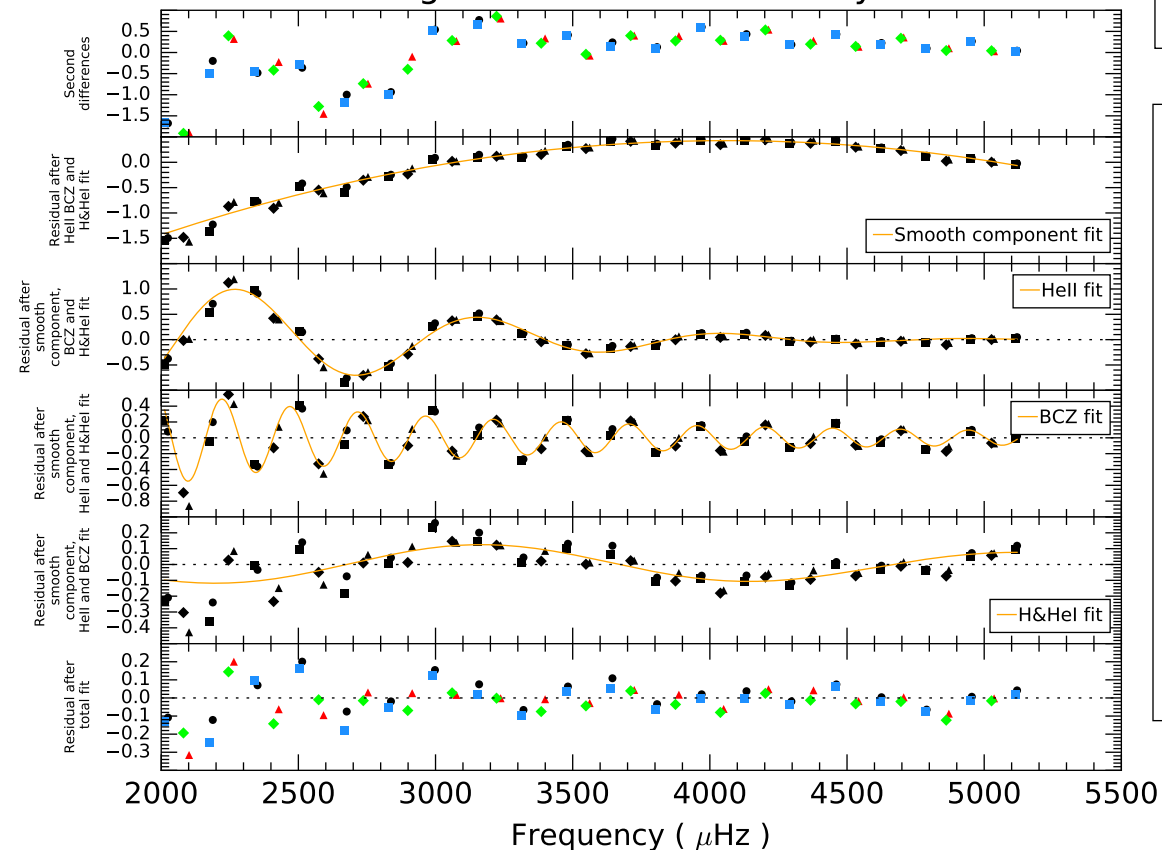
Age after ZAMS: 14.710 Gyr



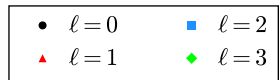
$a_0 = -6.7942 \mu \text{ Hz}$
 $a_1 = 0.003558$
 $a_2 = -4.3818e-07 \mu \text{ Hz}^{-1}$
 $c_0 = 0.0014785$
 $c_2 = 2.3556e-07 \mu \text{ Hz}^{-2}$
 $\tau_{HeII} = 559.32 \text{ s}$
 $\phi_{HeII} = 4.3822$
 $b_2 = 2.4145e+06 \text{ mHz}^3$
 $\tau_{CZ} = 2022.2 \text{ s}$
 $\phi_{CZ} = 1.6345$
 $d_0 = 7.1896e-05$
 $d_2 = 5.946e-08 \mu \text{ Hz}^{-2}$
 $\tau_{HI} = 251.25 \text{ s}$
 $\phi_{HI} = 4.1196$

profile61

$\chi^2_{\nu}(\text{dof} = 64) = 0.0097922$



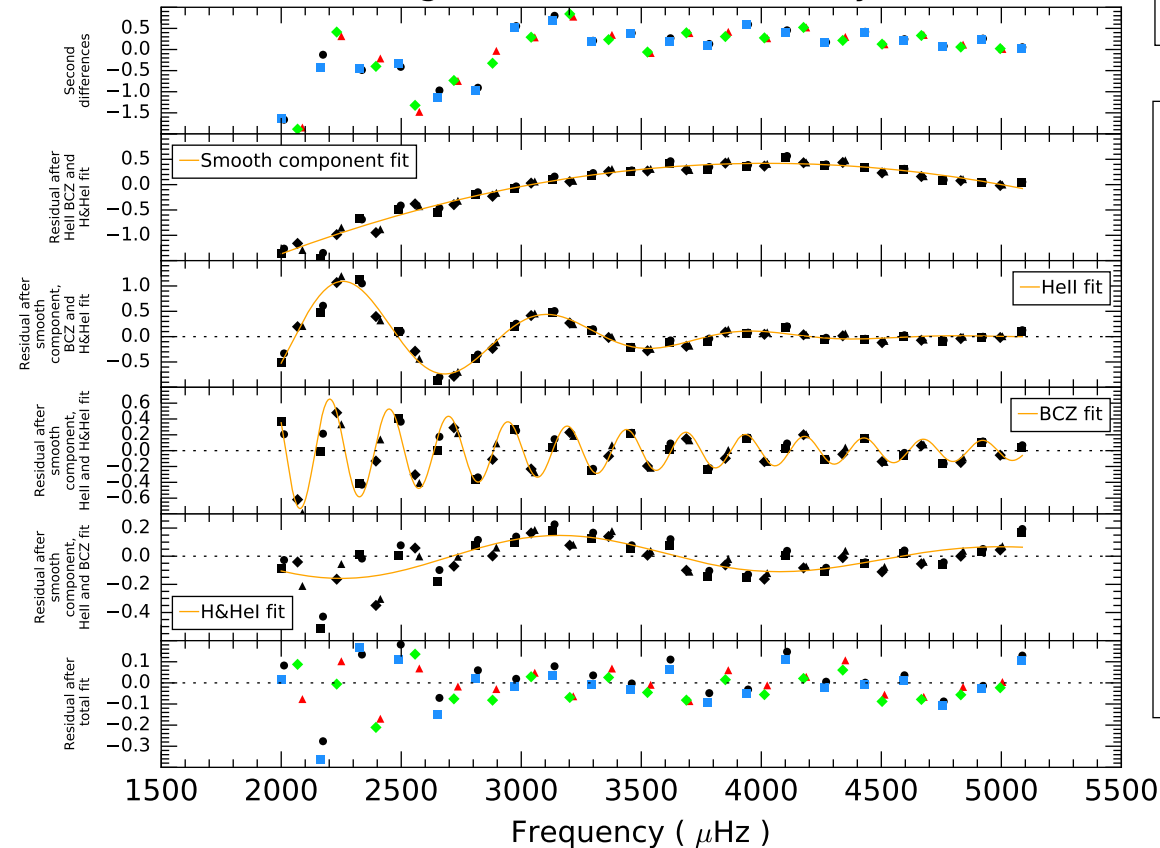
Age after ZAMS: 15.010 Gyr



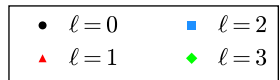
$$\begin{aligned}
 a_0 &= -6.6539 \mu \text{ Hz} \\
 a_1 &= 0.003519 \\
 a_2 &= -4.3759e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0019052 \\
 c_2 &= 2.6787e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 581.94 \text{ s} \\
 \phi_{HeII} &= 3.8125 \\
 b_2 &= 3.1616e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 2022.6 \text{ s} \\
 \phi_{CZ} &= 2.1117 \\
 d_0 &= 0.00010633 \\
 d_2 &= 8.2089e-08 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 267.4 \text{ s} \\
 \phi_{HI} &= 3.4588
 \end{aligned}$$

profile62

$$\chi^2_\nu(\text{dof} = 64) = 0.010598$$



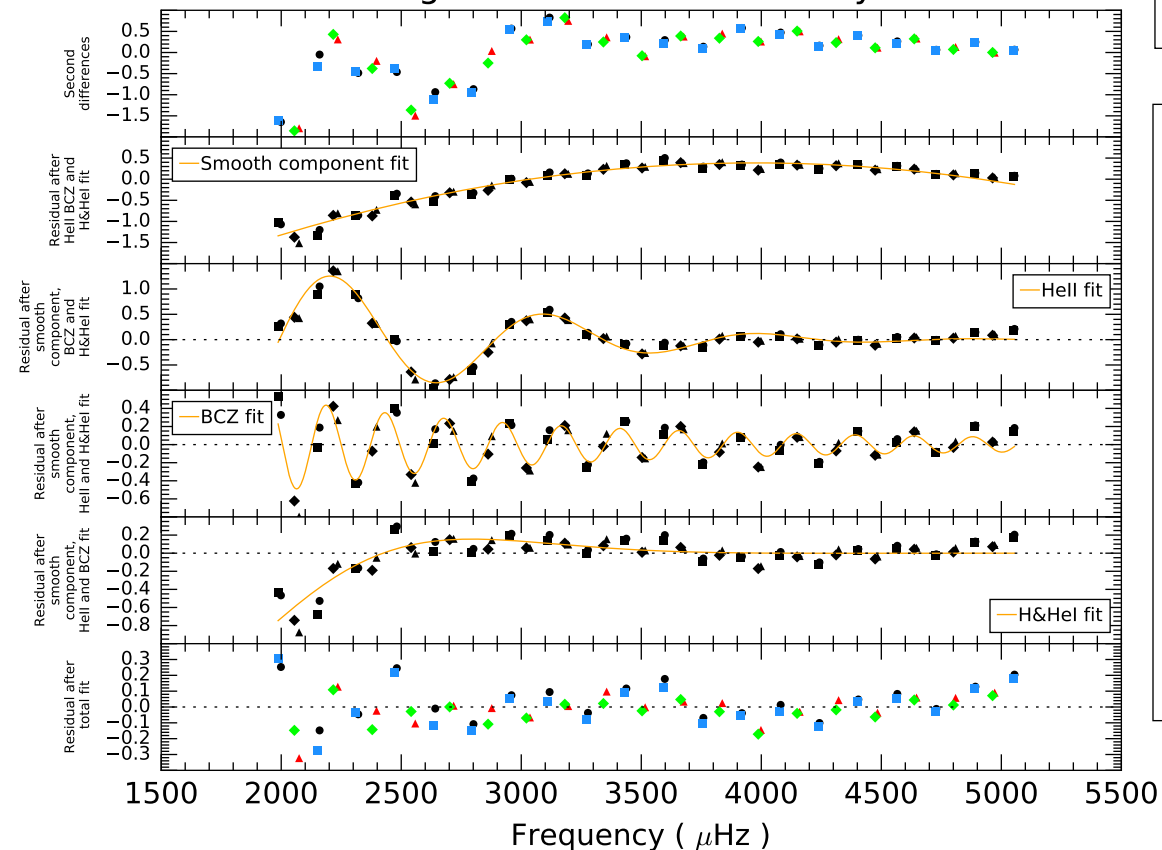
Age after ZAMS: 15.310 Gyr



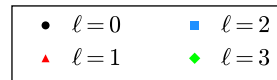
$$\begin{aligned}
 a_0 &= -6.5233 \mu\text{Hz} \\
 a_1 &= 0.0034768 \\
 a_2 &= -4.3737e-07 \mu\text{Hz}^{-1} \\
 c_0 &= 0.0020541 \\
 c_2 &= 2.6324e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 555.9 \text{ s} \\
 \phi_{HeII} &= 4.9331 \\
 b_2 &= 2.0883e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 2042.2 \text{ s} \\
 \phi_{CZ} &= 1.9674 \\
 d_0 &= 0.0031159 \\
 d_2 &= 4.6035e-07 \mu\text{Hz}^{-2} \\
 \tau_{HI} &= 152.2 \text{ s} \\
 \phi_{HI} &= 1.6473
 \end{aligned}$$

profile63

$$\chi^2_\nu(\text{dof} = 64) = 0.015318$$



Age after ZAMS: 15.610 Gyr



$a_0 = -6.4119 \mu \text{ Hz}$
 $a_1 = 0.0034946$
 $a_2 = -4.483e-07 \mu \text{ Hz}^{-1}$

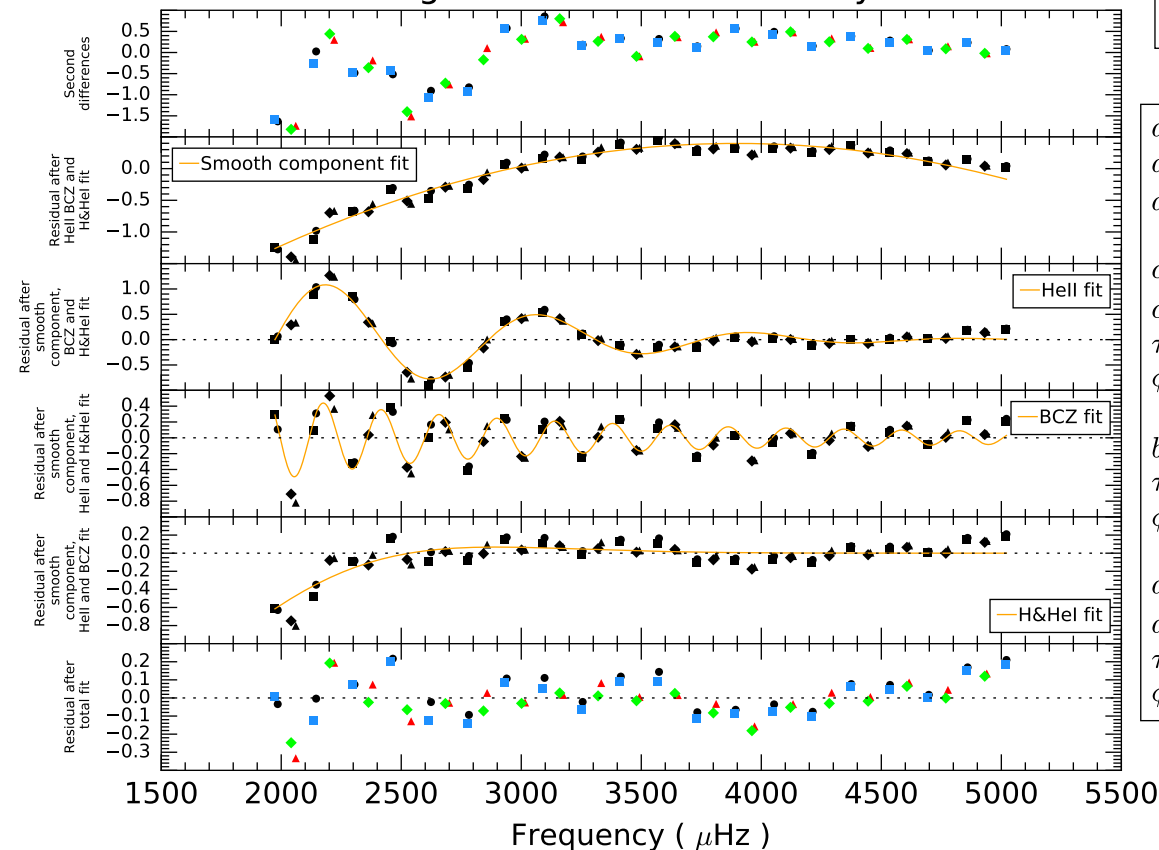
 $c_0 = 0.0015744$
 $c_2 = 2.4161e-07 \mu \text{ Hz}^{-2}$
 $\tau_{\text{He II}} = 562.19 \text{ s}$
 $\phi_{\text{He II}} = 4.9044$

 $b_2 = 2.081e+06 \text{ mHz}^3$
 $\tau_{\text{CZ}} = 2075.6 \text{ s}$
 $\phi_{\text{CZ}} = 1.3522$

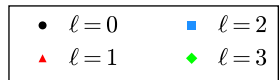
 $d_0 = 0.003042$
 $d_2 = 4.934e-07 \mu \text{ Hz}^{-2}$
 $\tau_{\text{HI}} = 110.27 \text{ s}$
 $\phi_{\text{HI}} = 2.7728$

profile64

$\chi^2_{\nu}(\text{dof} = 64) = 0.013432$



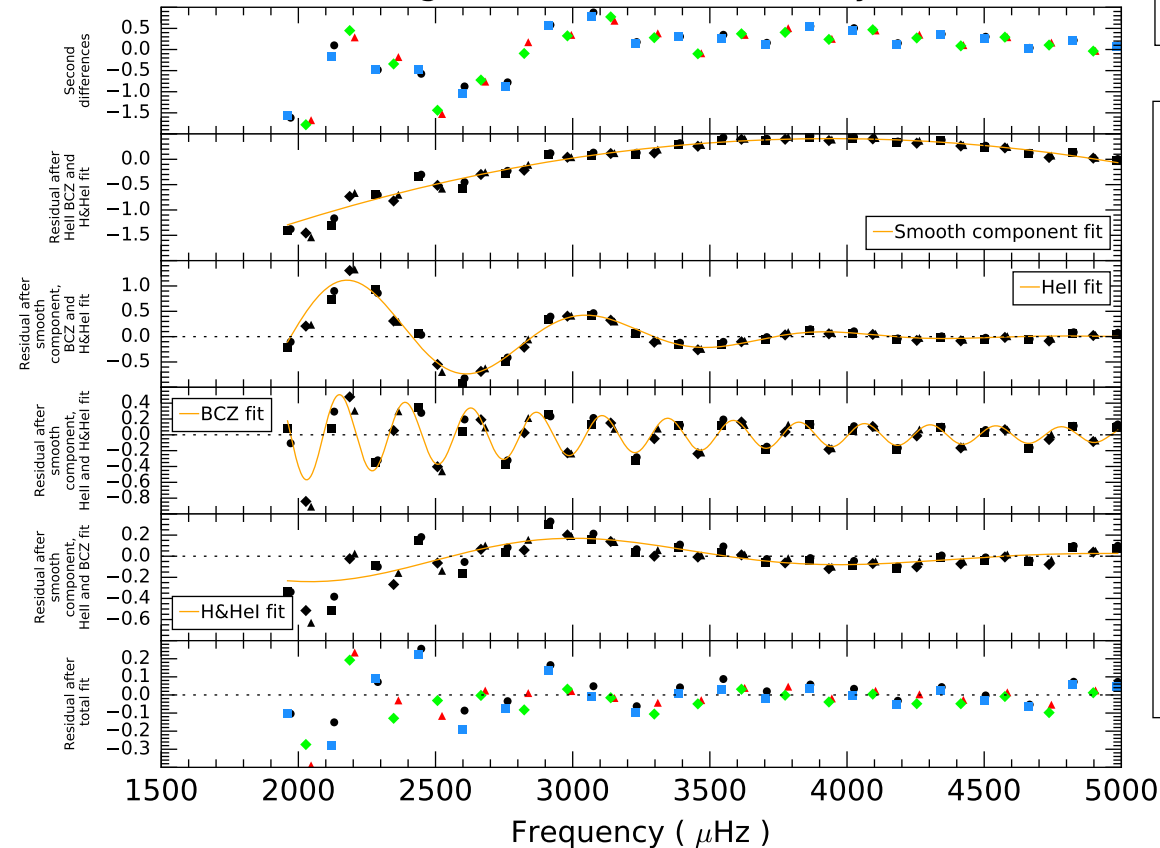
Age after ZAMS: 15.910 Gyr



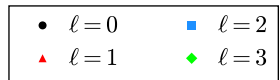
$$\begin{aligned}
 a_0 &= -6.3332 \mu\text{ Hz} \\
 a_1 &= 0.0034216 \\
 a_2 &= -4.3415e-07 \mu\text{Hz}^{-1} \\
 c_0 &= 0.001976 \\
 c_2 &= 2.8371e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 566.86 \text{ s} \\
 \phi_{HeII} &= 4.8038 \\
 b_2 &= 2.3465e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 2090.4 \text{ s} \\
 \phi_{CZ} &= 1.6129 \\
 d_0 &= 0.0002197 \\
 d_2 &= 1.4859e-07 \mu\text{Hz}^{-2} \\
 \tau_{HI} &= 249.11 \text{ s} \\
 \phi_{HI} &= 4.5614
 \end{aligned}$$

profile65

$$\chi^2_\nu(\text{dof} = 64) = 0.012733$$



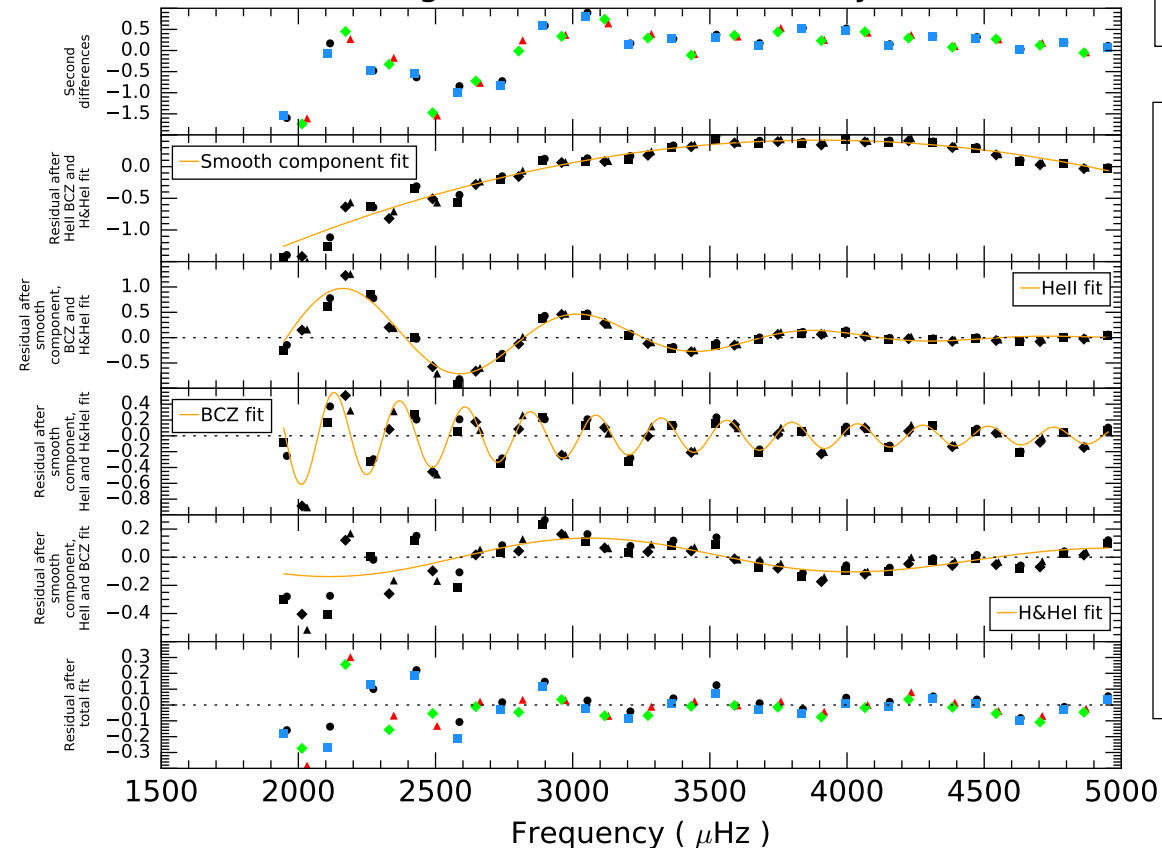
Age after ZAMS: 16.210 Gyr



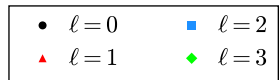
$$\begin{aligned}
 a_0 &= -6.2528 \mu\text{Hz} \\
 a_1 &= 0.0034193 \\
 a_2 &= -4.3814e-07 \mu\text{Hz}^{-1} \\
 c_0 &= 0.0013798 \\
 c_2 &= 2.3925e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 577.9 \text{ s} \\
 \phi_{HeII} &= 4.6422 \\
 b_2 &= 2.4822e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 2096.9 \text{ s} \\
 \phi_{CZ} &= 1.9606 \\
 d_0 &= 9.2547e-05 \\
 d_2 &= 7.8237e-08 \mu\text{Hz}^{-2} \\
 \tau_{HI} &= 255.93 \text{ s} \\
 \phi_{HI} &= 4.2461
 \end{aligned}$$

profile66

$$\chi^2_{\nu}(\text{dof} = 64) = 0.014188$$



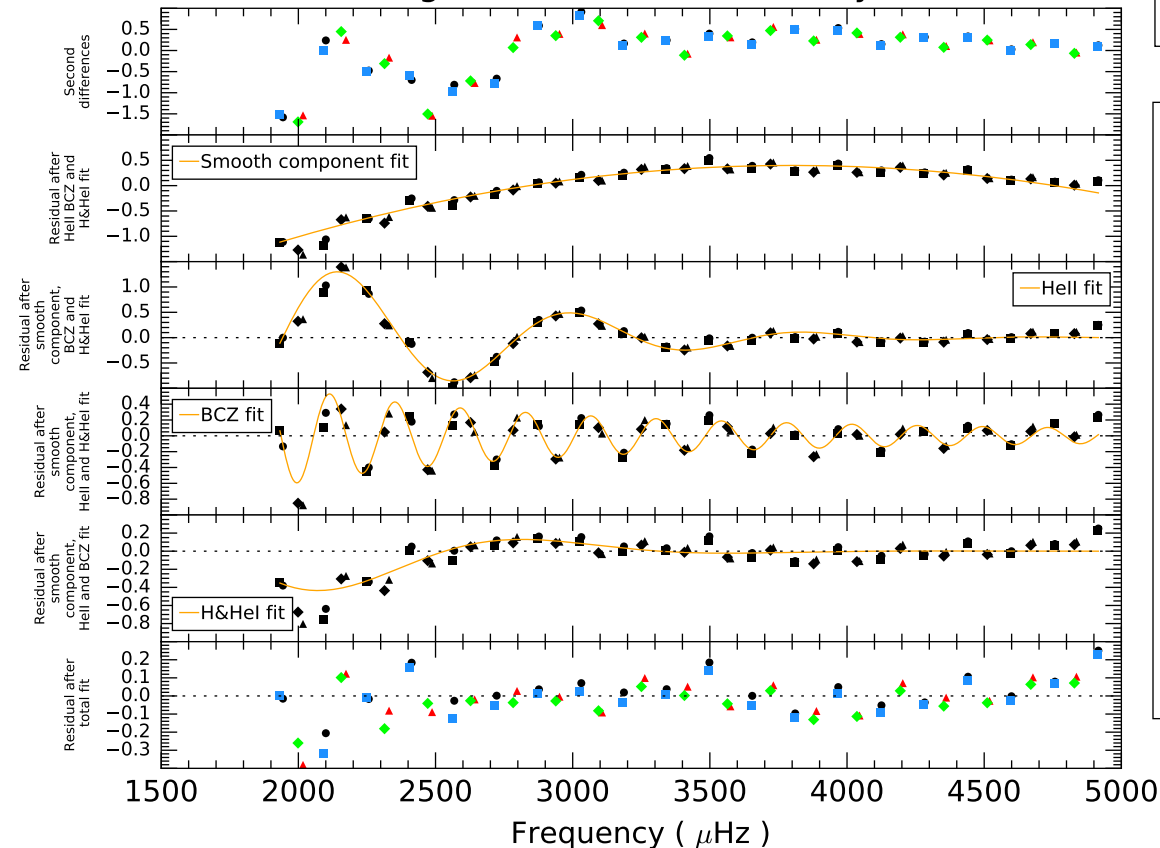
Age after ZAMS: 16.510 Gyr



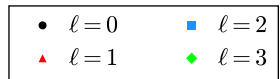
$$\begin{aligned}
 a_0 &= -5.8745 \mu \text{ Hz} \\
 a_1 &= 0.0033026 \\
 a_2 &= -4.3467e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0024033 \\
 c_2 &= 2.9878e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 583.41 \text{ s} \\
 \phi_{HeII} &= 4.6081 \\
 b_2 &= 2.3677e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 2101.5 \text{ s} \\
 \phi_{CZ} &= 2.2661 \\
 d_0 &= 0.0012186 \\
 d_2 &= 4.0022e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 319.54 \text{ s} \\
 \phi_{HI} &= 2.3941
 \end{aligned}$$

profile67

$$\chi^2_\nu(\text{dof} = 64) = 0.01397$$



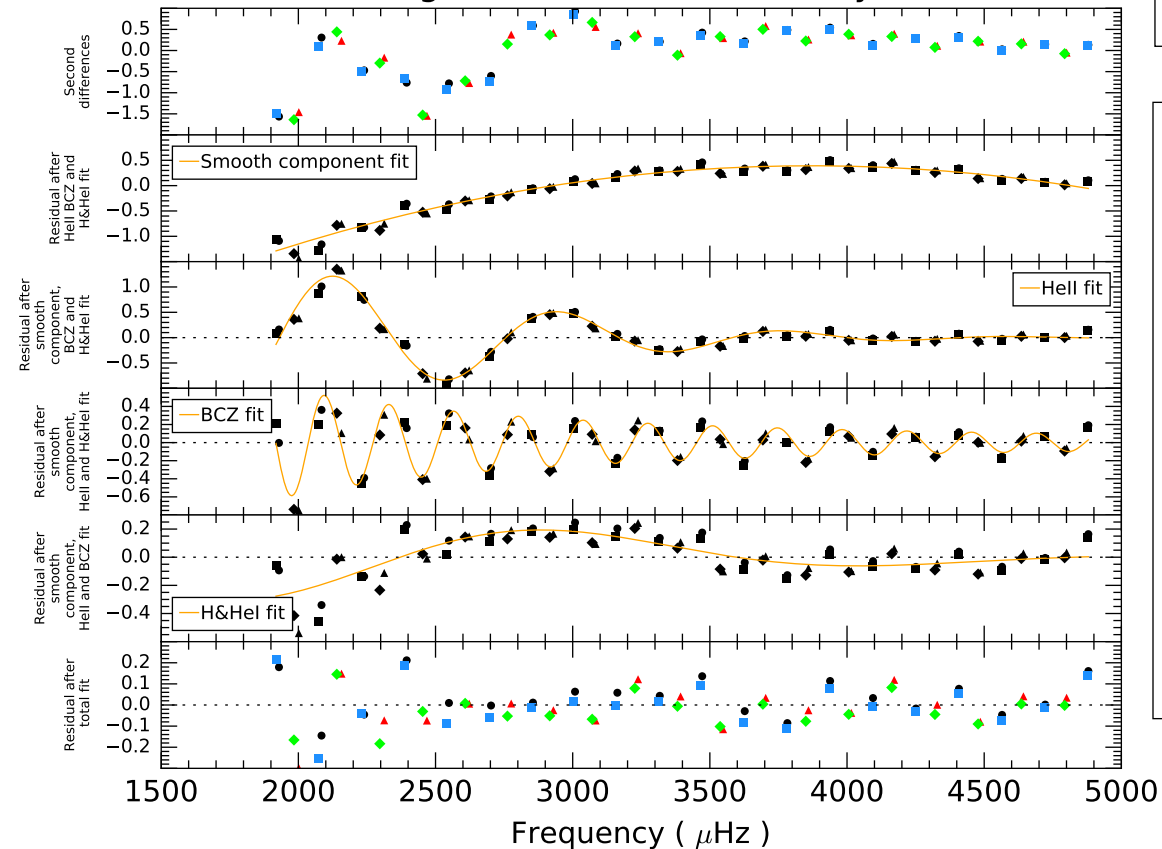
Age after ZAMS: 16.810 Gyr



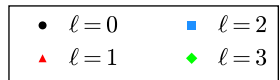
$$\begin{aligned}
 a_0 &= -6.2121 \mu \text{ Hz} \\
 a_1 &= 0.0034119 \\
 a_2 &= -4.4066e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0020755 \\
 c_2 &= 2.8487e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 606.17 \text{ s} \\
 \phi_{HeII} &= 4.14 \\
 b_2 &= 2.2908e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 2119.0 \text{ s} \\
 \phi_{CZ} &= 2.3348 \\
 d_0 &= 0.00030237 \\
 d_2 &= 1.7704e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 203.88 \text{ s} \\
 \phi_{HI} &= 0.21239
 \end{aligned}$$

profile68

$$\chi^2_{\nu}(\text{dof} = 64) = 0.011337$$



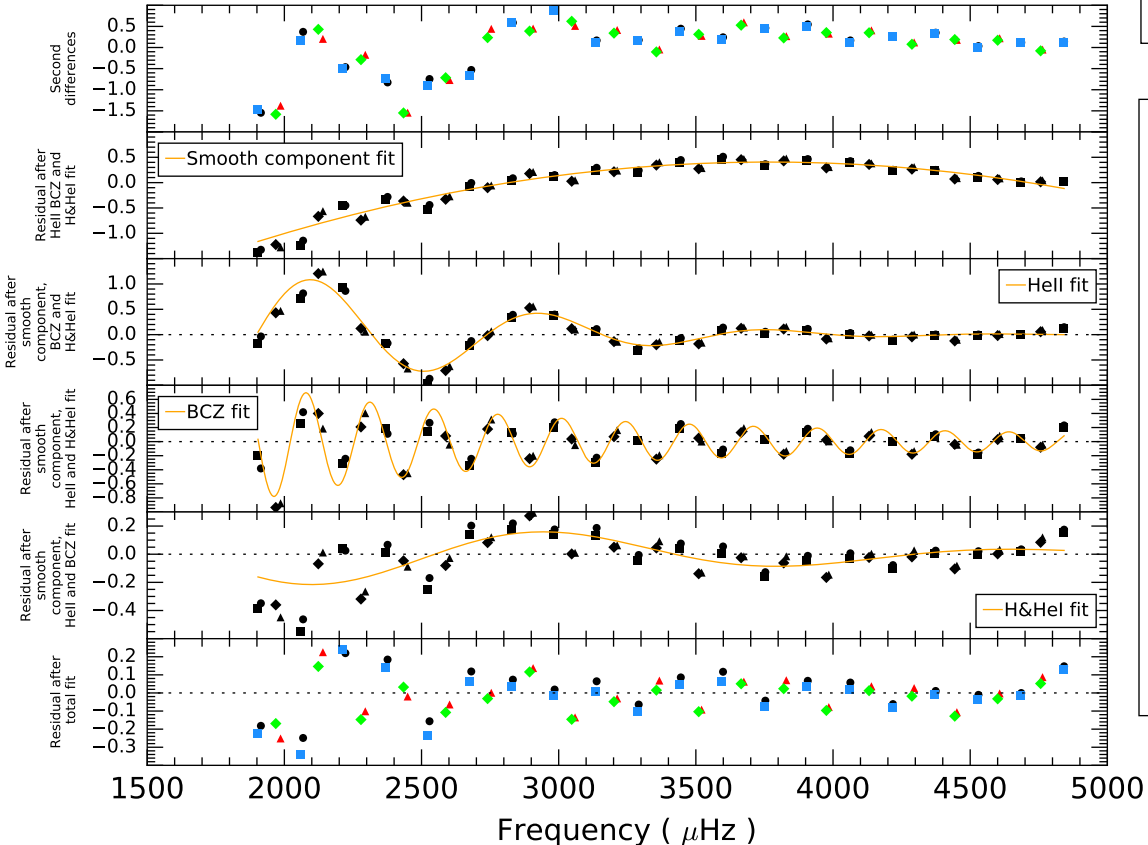
Age after ZAMS: 17.110 Gyr



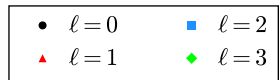
$$\begin{aligned}
 a_0 &= -6.0026 \mu\text{Hz} \\
 a_1 &= 0.003403 \\
 a_2 &= -4.5172e-07 \mu\text{Hz}^{-1} \\
 c_0 &= 0.0019761 \\
 c_2 &= 3.0408e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 595.61 \text{ s} \\
 \phi_{HeII} &= 4.6384 \\
 b_2 &= 3.0029e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 2147.1 \text{ s} \\
 \phi_{CZ} &= 1.9997 \\
 d_0 &= 0.00019793 \\
 d_2 &= 1.4866e-07 \mu\text{Hz}^{-2} \\
 \tau_{HI} &= 286.26 \text{ s} \\
 \phi_{HI} &= 3.4016
 \end{aligned}$$

profile69

$$\chi^2_\nu(\text{dof} = 64) = 0.01593$$



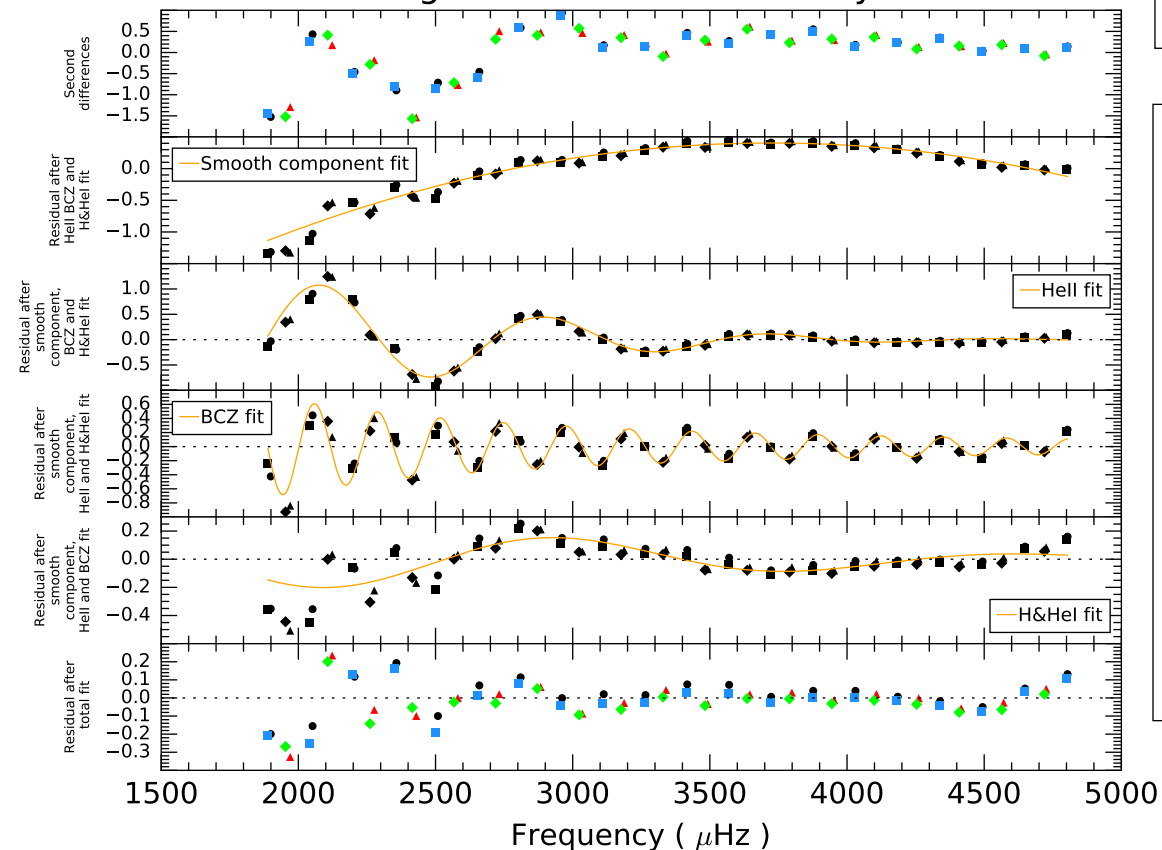
Age after ZAMS: 17.410 Gyr



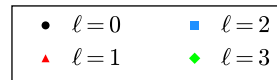
$$\begin{aligned}
 a_0 &= -5.923 \mu \text{ Hz} \\
 a_1 &= 0.0033963 \\
 a_2 &= -4.5571e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0018612 \\
 c_2 &= 2.9562e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 604.76 \text{ s} \\
 \phi_{HeII} &= 4.5536 \\
 b_2 &= 2.5836e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 2179.8 \text{ s} \\
 \phi_{CZ} &= 1.6996 \\
 d_0 &= 0.00018078 \\
 d_2 &= 1.4358e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 289.51 \text{ s} \\
 \phi_{HI} &= 3.3552
 \end{aligned}$$

profile70

$$\chi^2_\nu(\text{dof} = 64) = 0.011993$$



Age after ZAMS: 17.710 Gyr



$a_0 = -5.8908 \mu \text{ Hz}$
 $a_1 = 0.003433$
 $a_2 = -4.685e-07 \mu \text{ Hz}^{-1}$

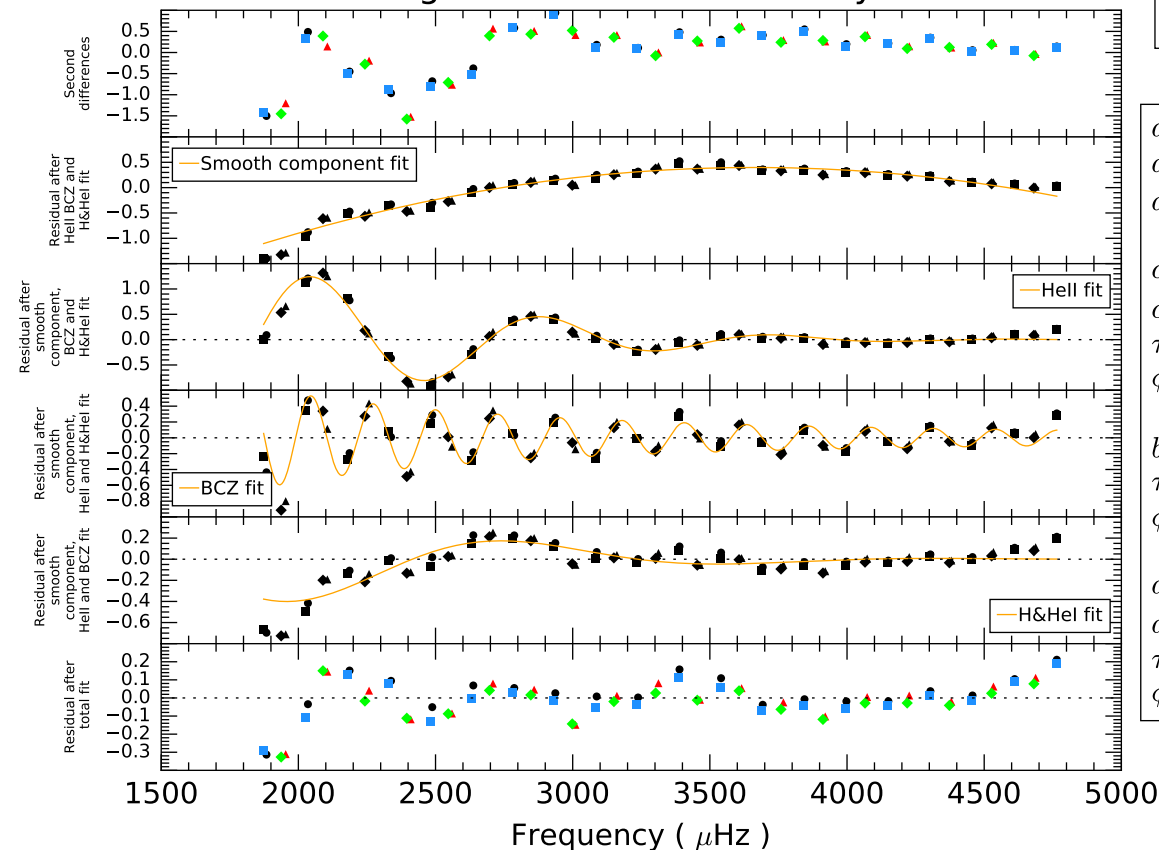
 $c_0 = 0.0023765$
 $c_2 = 3.2522e-07 \mu \text{ Hz}^{-2}$
 $\tau_{HeII} = 590.05 \text{ s}$
 $\phi_{HeII} = 5.1715$

 $b_2 = 2.2182e+06 \text{ mHz}^3$
 $\tau_{CZ} = 2204.4 \text{ s}$
 $\phi_{CZ} = 1.4241$

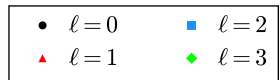
 $d_0 = 0.00067654$
 $d_2 = 3.0779e-07 \mu \text{ Hz}^{-2}$
 $\tau_{HI} = 304.27 \text{ s}$
 $\phi_{HI} = 3.3342$

profile71

$\chi^2_{\nu}(\text{dof} = 64) = 0.013514$



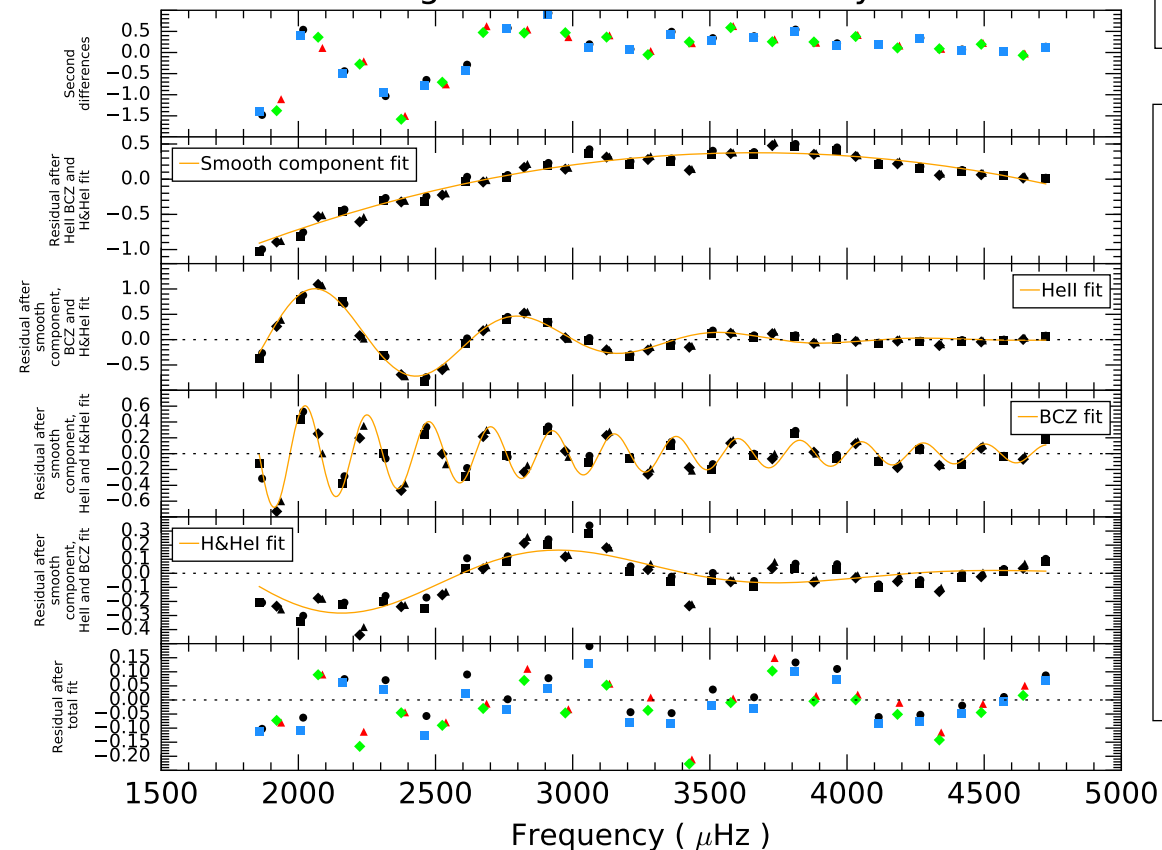
Age after ZAMS: 18.010 Gyr



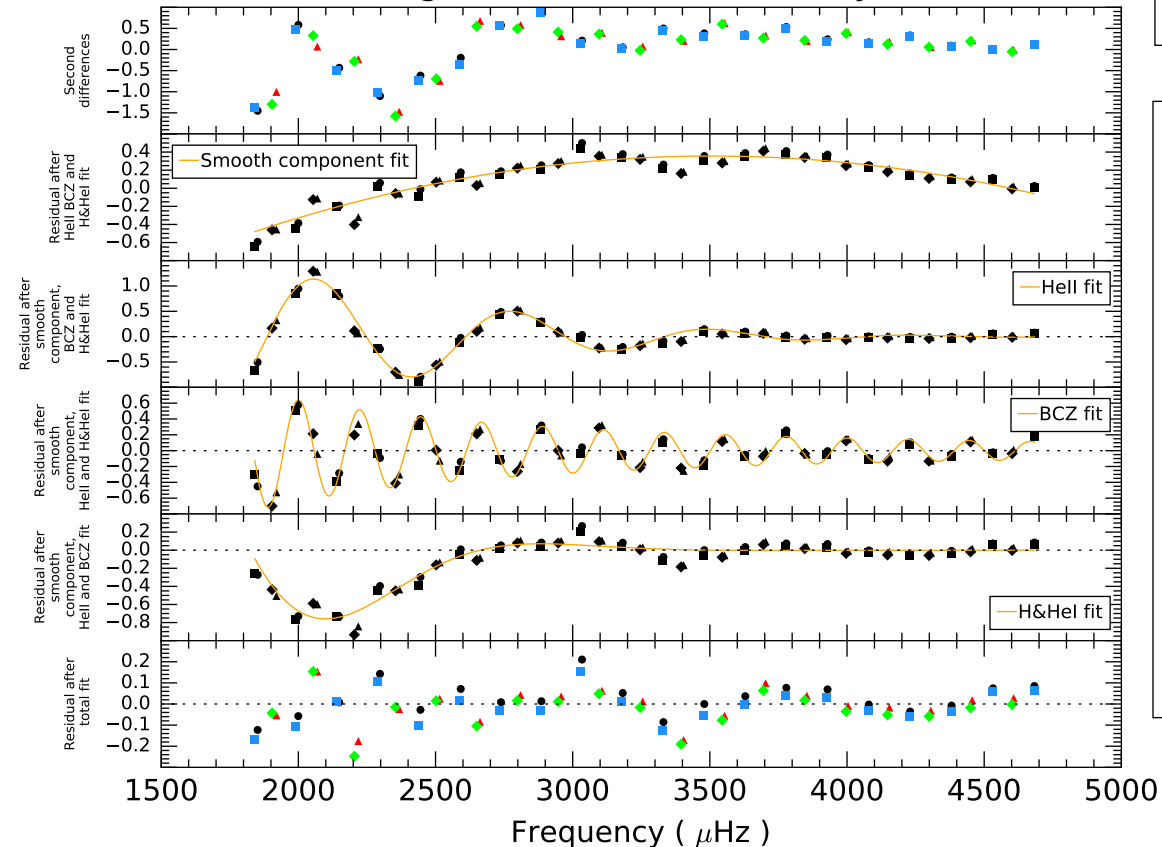
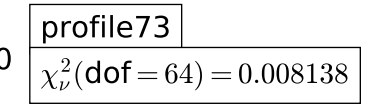
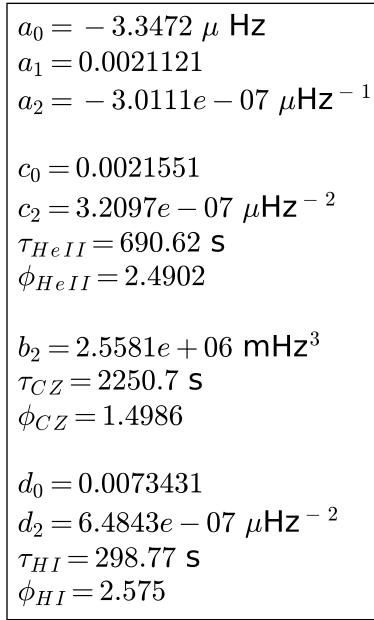
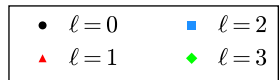
$$\begin{aligned}
 a_0 &= -4.9109 \mu\text{ Hz} \\
 a_1 &= 0.0028861 \\
 a_2 &= -3.9388e-07 \mu\text{Hz}^{-1} \\
 c_0 &= 0.0017417 \\
 c_2 &= 2.9889e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 672.34 \text{ s} \\
 \phi_{HeII} &= 2.9259 \\
 b_2 &= 2.4824e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 2219.4 \text{ s} \\
 \phi_{CZ} &= 1.6177 \\
 d_0 &= 0.00034627 \\
 d_2 &= 2.0707e-07 \mu\text{Hz}^{-2} \\
 \tau_{HI} &= 305.75 \text{ s} \\
 \phi_{HI} &= 2.5923
 \end{aligned}$$

profile72

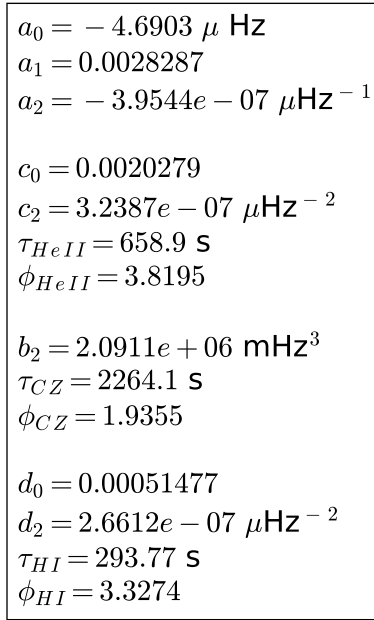
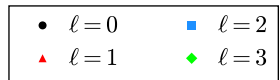
$$\chi^2_\nu(\text{dof} = 64) = 0.0083038$$



Age after ZAMS: 18.310 Gyr

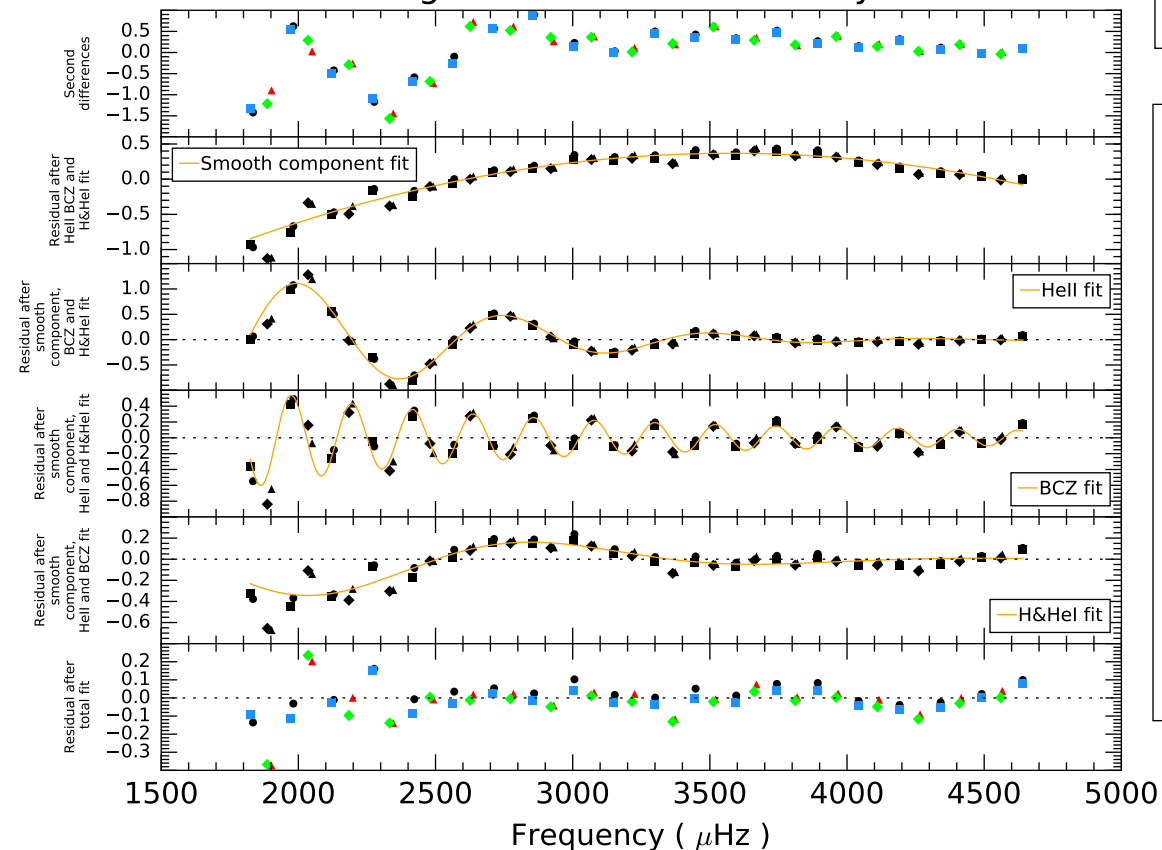


Age after ZAMS: 18.610 Gyr

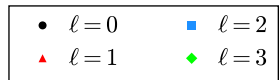


profile74

$\chi^2_{\nu}(\text{dof} = 64) = 0.010273$



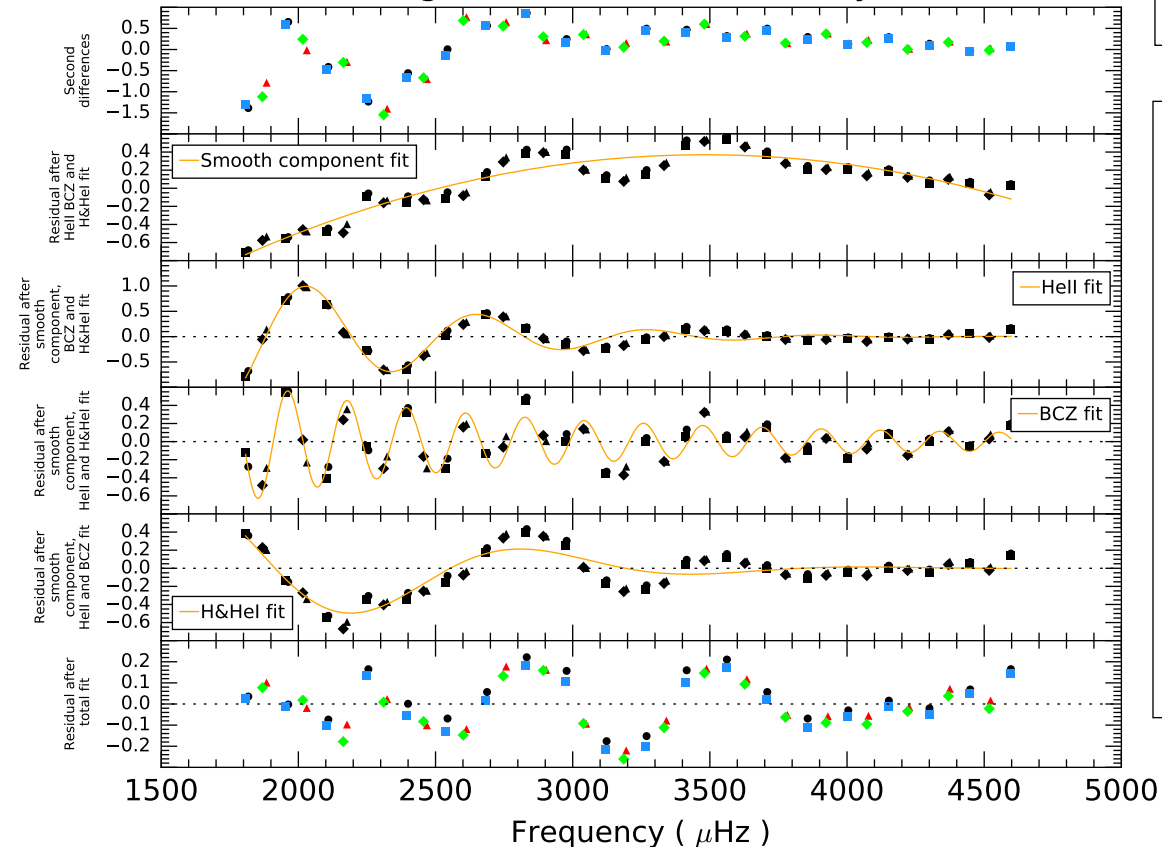
Age after ZAMS: 18.910 Gyr



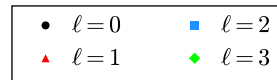
$$\begin{aligned}
 a_0 &= -4.4037 \mu\text{Hz} \\
 a_1 &= 0.0027423 \\
 a_2 &= -3.9378e-07 \mu\text{Hz}^{-1} \\
 c_0 &= 0.0022551 \\
 c_2 &= 3.6995e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 797.58 \text{ s} \\
 \phi_{HeII} &= 6.2832 \\
 b_2 &= 2.156e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 2314.5 \text{ s} \\
 \phi_{CZ} &= 1.0449 \\
 d_0 &= 0.0012186 \\
 d_2 &= 3.4583e-07 \mu\text{Hz}^{-2} \\
 \tau_{HI} &= 391.7 \text{ s} \\
 \phi_{HI} &= 7.168e-05
 \end{aligned}$$

profile75

$$\chi^2_\nu(\text{dof} = 64) = 0.015905$$



Age after ZAMS: 19.210 Gyr



$a_0 = -3.7927 \mu\text{Hz}$
 $a_1 = 0.0024201$
 $a_2 = -3.528e-07 \mu\text{Hz}^{-1}$

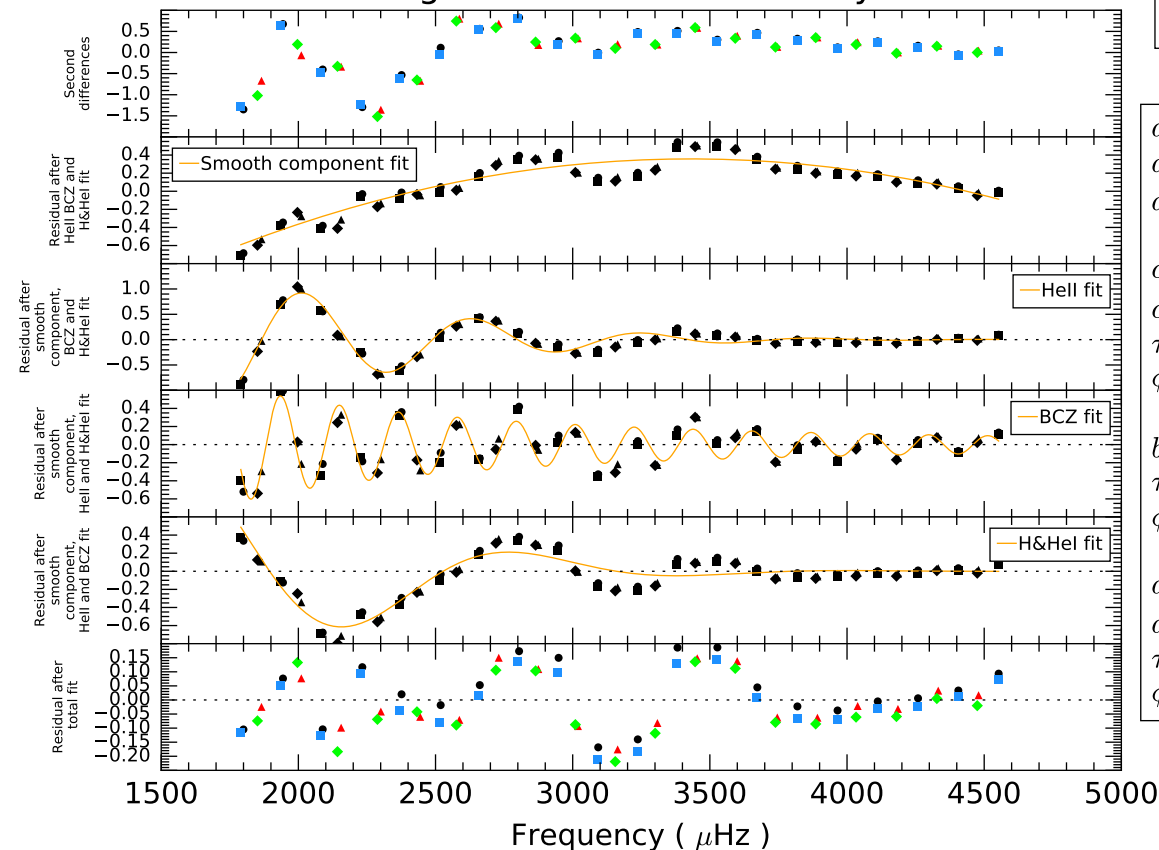
 $c_0 = 0.0020593$
 $c_2 = 3.7053e-07 \mu\text{Hz}^{-2}$
 $\tau_{\text{HeII}} = 804.11 \text{ s}$
 $\phi_{\text{HeII}} = 6.281$

 $b_2 = 2.014e+06 \text{ mHz}^3$
 $\tau_{\text{CZ}} = 2327.8 \text{ s}$
 $\phi_{\text{CZ}} = 1.4916$

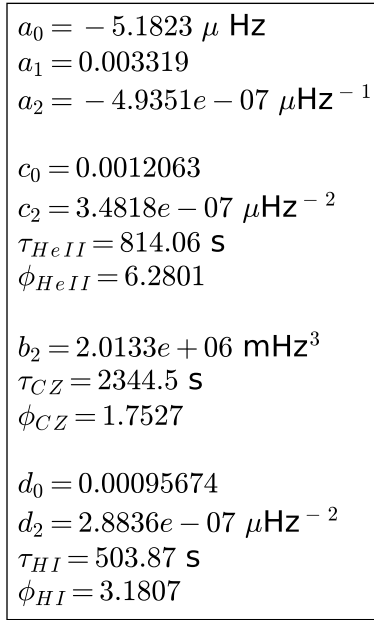
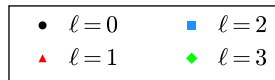
 $d_0 = 0.0021393$
 $d_2 = 4.2533e-07 \mu\text{Hz}^{-2}$
 $\tau_{\text{HI}} = 395.38 \text{ s}$
 $\phi_{\text{HI}} = 0.0097451$

profile76

$\chi^2_{\nu}(\text{dof} = 64) = 0.012684$

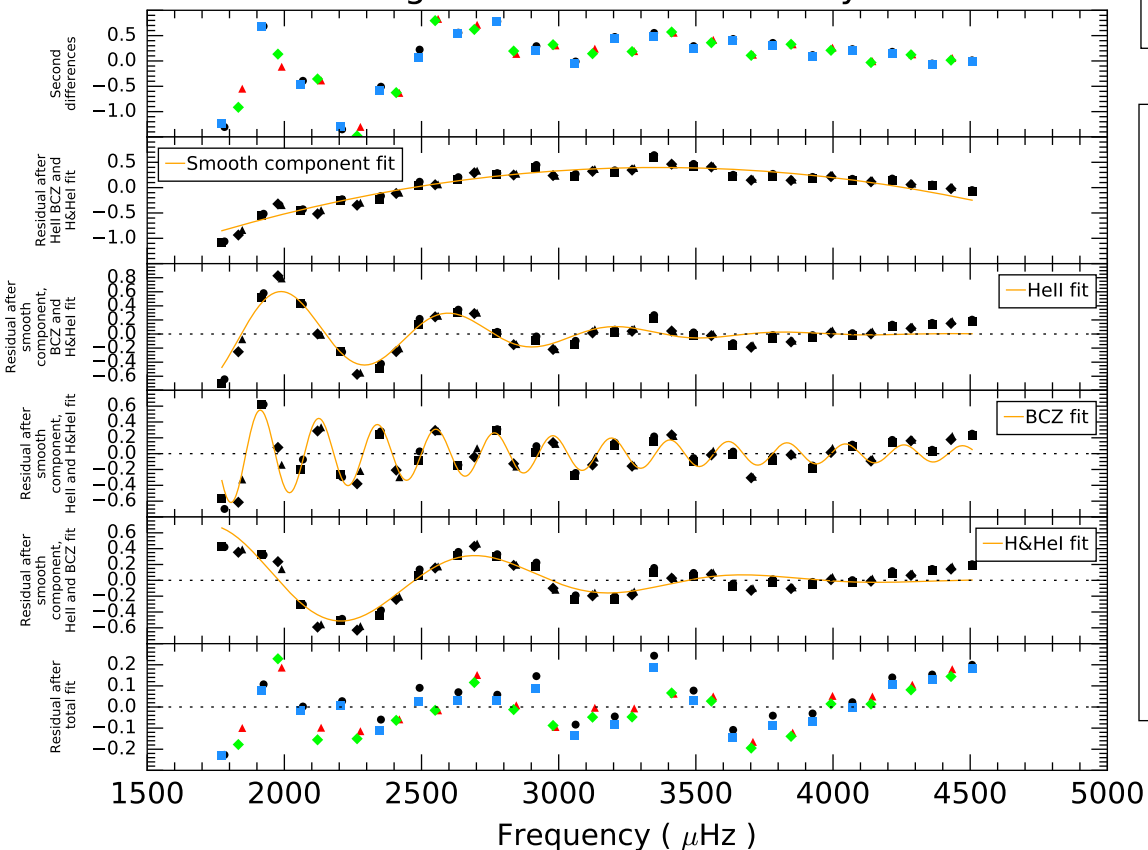


Age after ZAMS: 19.510 Gyr

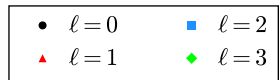


profile77

$\chi^2_{\nu}(\text{dof} = 64) = 0.015093$



Age after ZAMS: 19.810 Gyr



$a_0 = -5.0834 \mu \text{ Hz}$
 $a_1 = 0.0033057$
 $a_2 = -4.9853e-07 \mu \text{ Hz}^{-1}$

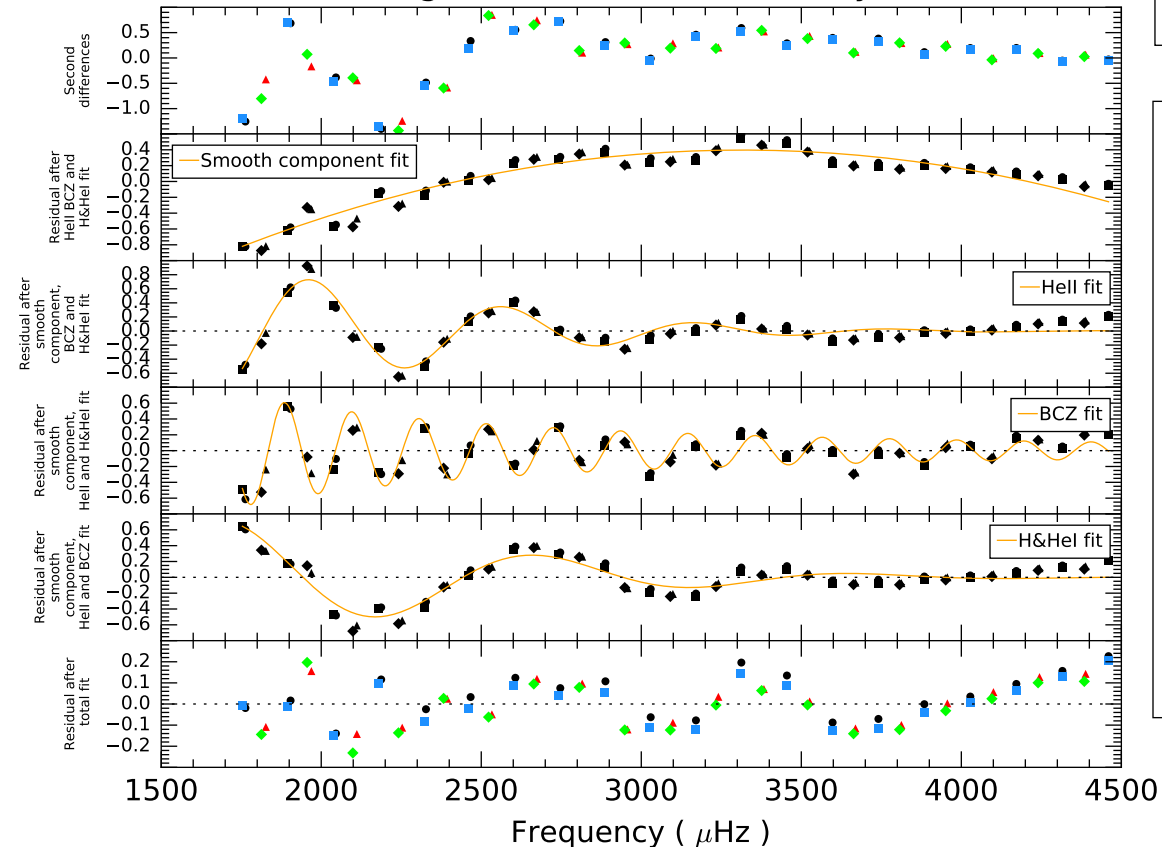
 $c_0 = 0.0015466$
 $c_2 = 3.6986e-07 \mu \text{ Hz}^{-2}$
 $\tau_{HeII} = 825.36 \text{ s}$
 $\phi_{HeII} = 6.283$

 $b_2 = 2.1571e+06 \text{ mHz}^3$
 $\tau_{CZ} = 2381.3 \text{ s}$
 $\phi_{CZ} = 1.6765$

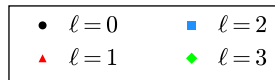
 $d_0 = 0.0010811$
 $d_2 = 3.2615e-07 \mu \text{ Hz}^{-2}$
 $\tau_{HI} = 500.1 \text{ s}$
 $\phi_{HI} = 3.4998$

profile78

$\chi^2_{\nu}(\text{dof} = 64) = 0.013531$



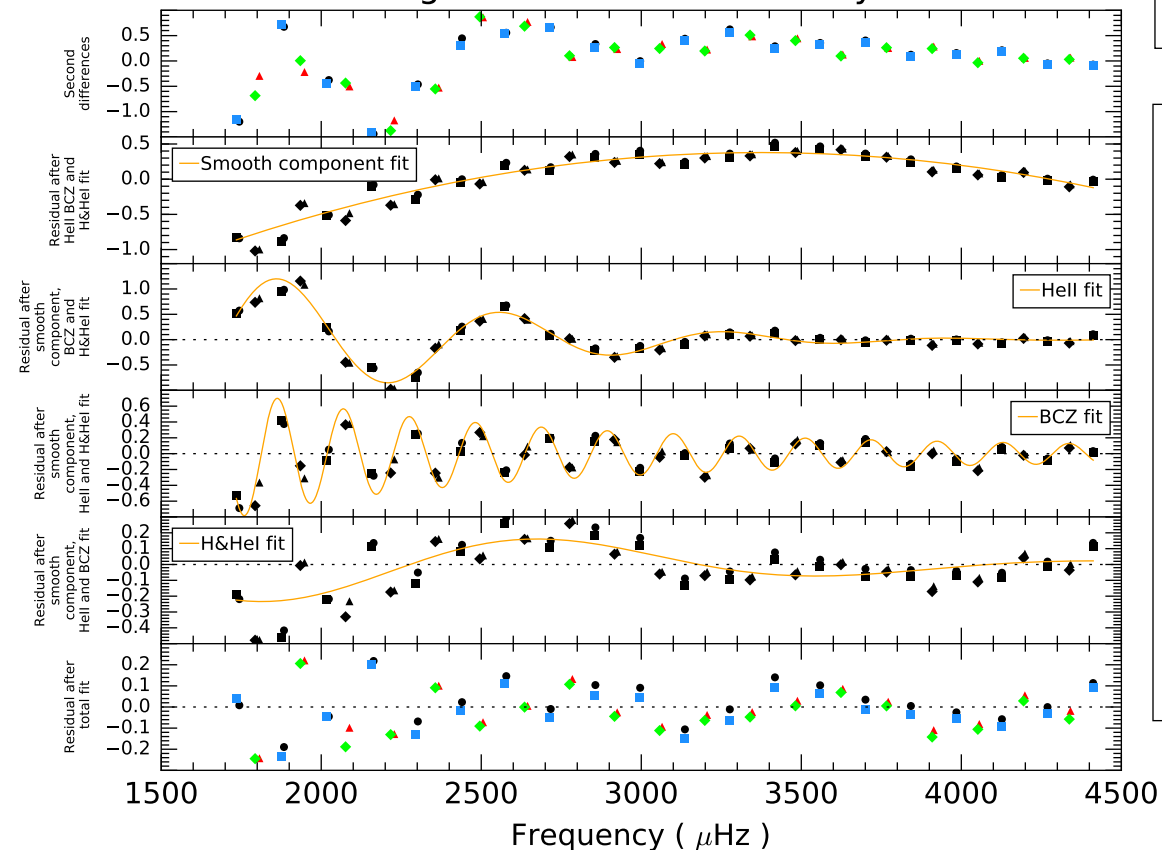
Age after ZAMS: 20.110 Gyr



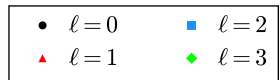
$$\begin{aligned}
 a_0 &= -4.8825 \mu \text{ Hz} \\
 a_1 &= 0.0031195 \\
 a_2 &= -4.6241e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0022555 \\
 c_2 &= 3.6054e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 710.36 \text{ s} \\
 \phi_{HeII} &= 3.7246 \\
 b_2 &= 2.4258e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 2426.2 \text{ s} \\
 \phi_{CZ} &= 1.2911 \\
 d_0 &= 0.0002437 \\
 d_2 &= 1.9294e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 276.79 \text{ s} \\
 \phi_{HI} &= 4.6461
 \end{aligned}$$

profile79

$$\chi^2_\nu(\text{dof} = 64) = 0.013128$$



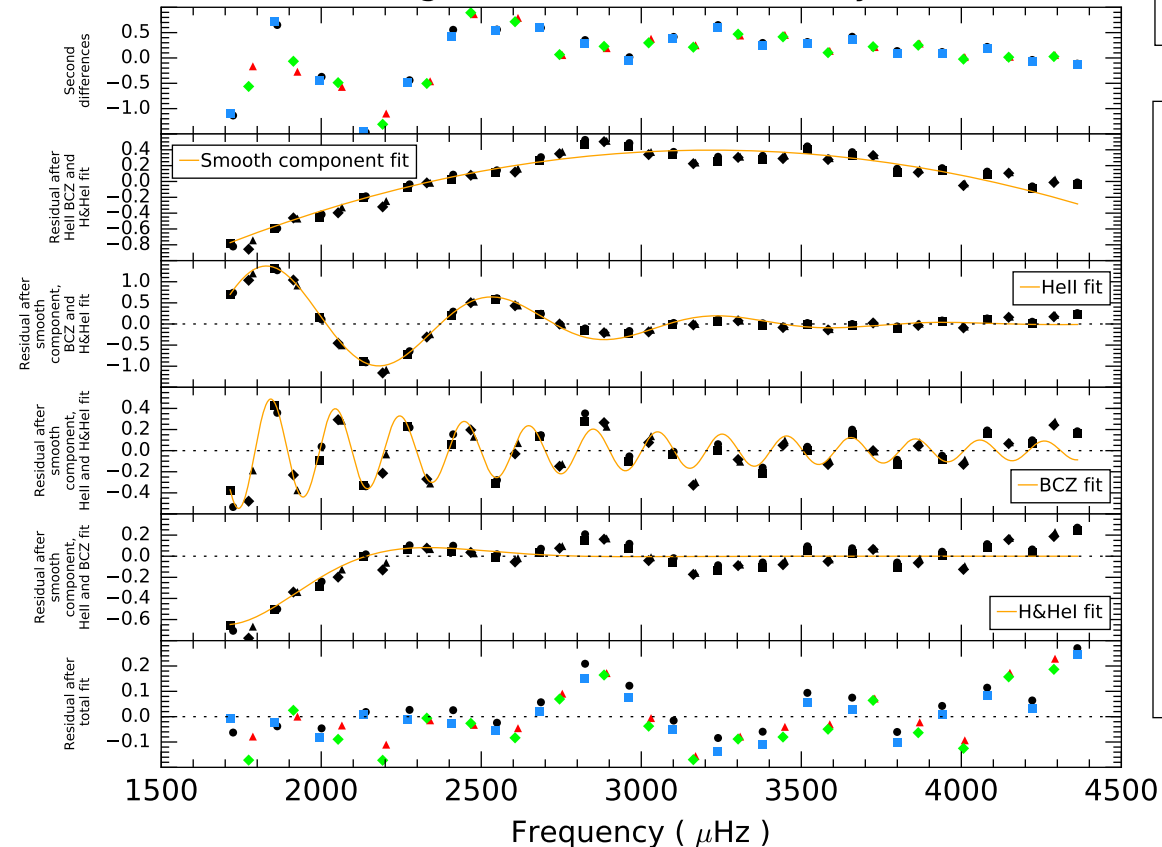
Age after ZAMS: 20.410 Gyr



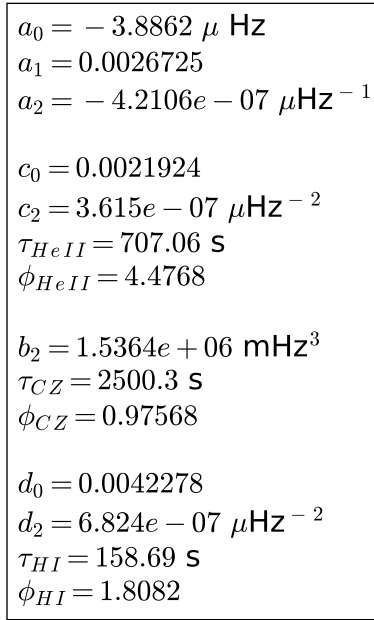
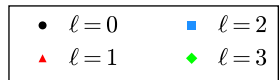
$$\begin{aligned}
 a_0 &= -4.9676 \mu\text{Hz} \\
 a_1 &= 0.0033341 \\
 a_2 &= -5.1812e-07 \mu\text{Hz}^{-1} \\
 c_0 &= 0.0024409 \\
 c_2 &= 3.5162e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 702.44 \text{ s} \\
 \phi_{HeII} &= 4.1978 \\
 b_2 &= 1.661e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 2483.1 \text{ s} \\
 \phi_{CZ} &= 0.5964 \\
 d_0 &= 0.0056281 \\
 d_2 &= 8.881e-07 \mu\text{Hz}^{-2} \\
 \tau_{HI} &= 372.51 \text{ s} \\
 \phi_{HI} &= 2.5484
 \end{aligned}$$

profile80

$$\chi^2_\nu(\text{dof} = 64) = 0.012121$$

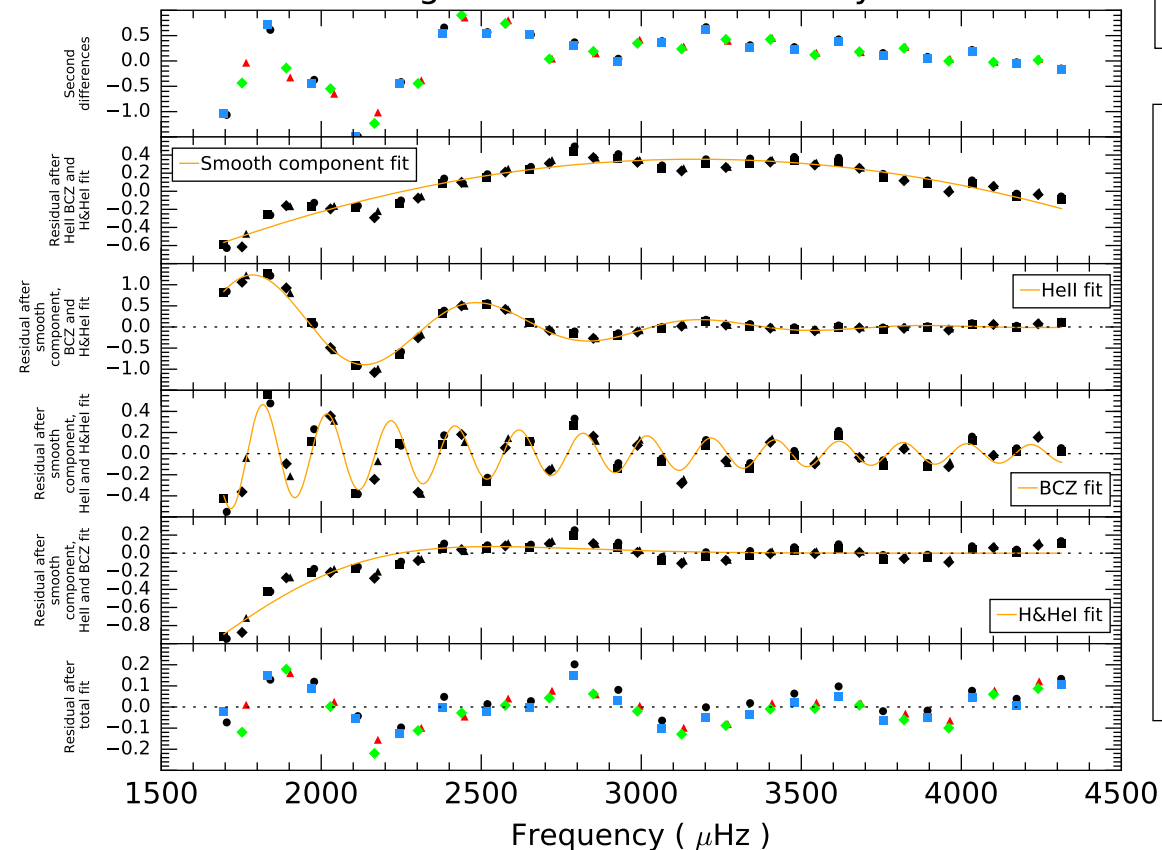


Age after ZAMS: 20.710 Gyr

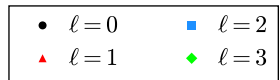


profile81

$\chi^2_{\nu}(\text{dof} = 64) = 0.0083131$



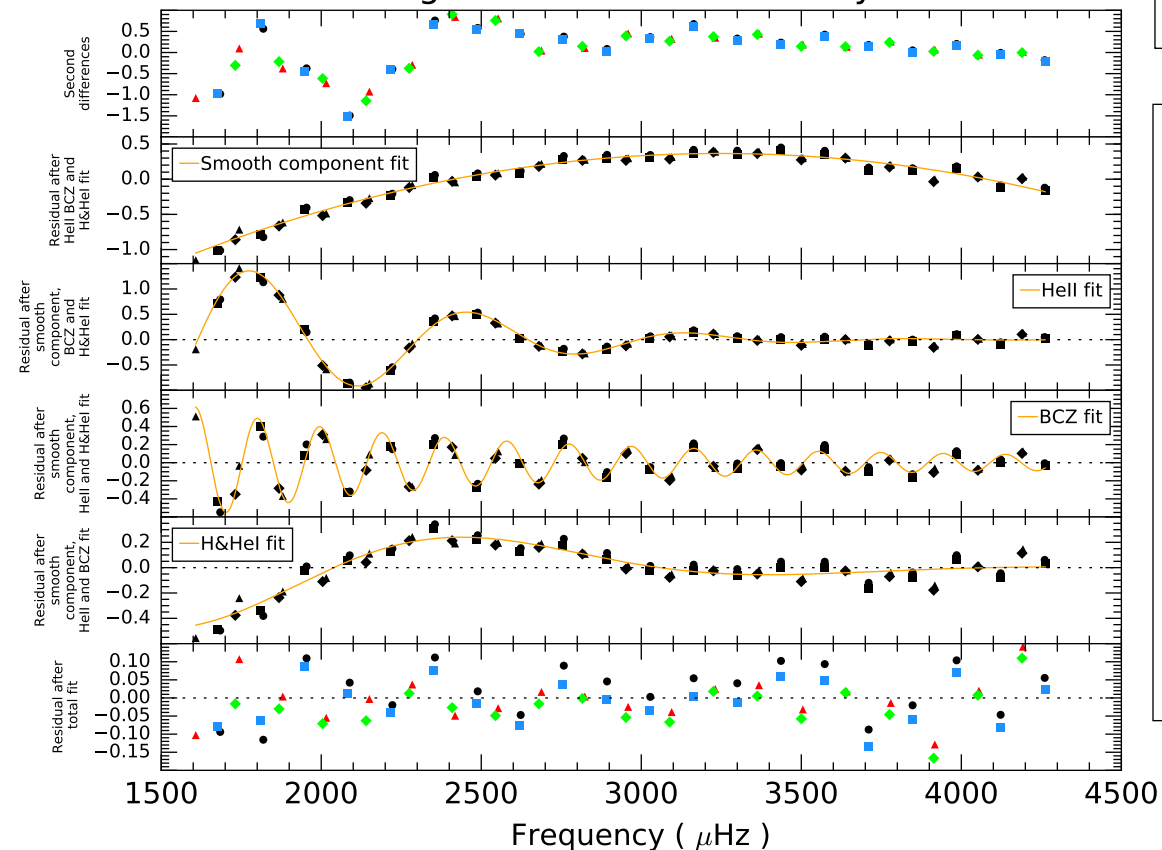
Age after ZAMS: 21.010 Gyr



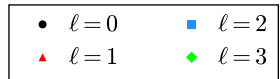
$$\begin{aligned}
 a_0 &= -5.1896 \mu \text{ Hz} \\
 a_1 &= 0.003423 \\
 a_2 &= -5.2724e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0029615 \\
 c_2 &= 4.2805e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 727.56 \text{ s} \\
 \phi_{HeII} &= 4.0916 \\
 b_2 &= 1.5901e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 2567.0 \text{ s} \\
 \phi_{CZ} &= 0.017752 \\
 d_0 &= 0.00063868 \\
 d_2 &= 3.0437e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 245.32 \text{ s} \\
 \phi_{HI} &= 6.2826
 \end{aligned}$$

profile82

$$\chi^2_\nu(\text{dof} = 65) = 0.0049575$$



Age after ZAMS: 21.310 Gyr



$a_0 = -2.4854 \mu\text{Hz}$
 $a_1 = 0.0018707$
 $a_2 = -3.1058e-07 \mu\text{Hz}^{-1}$

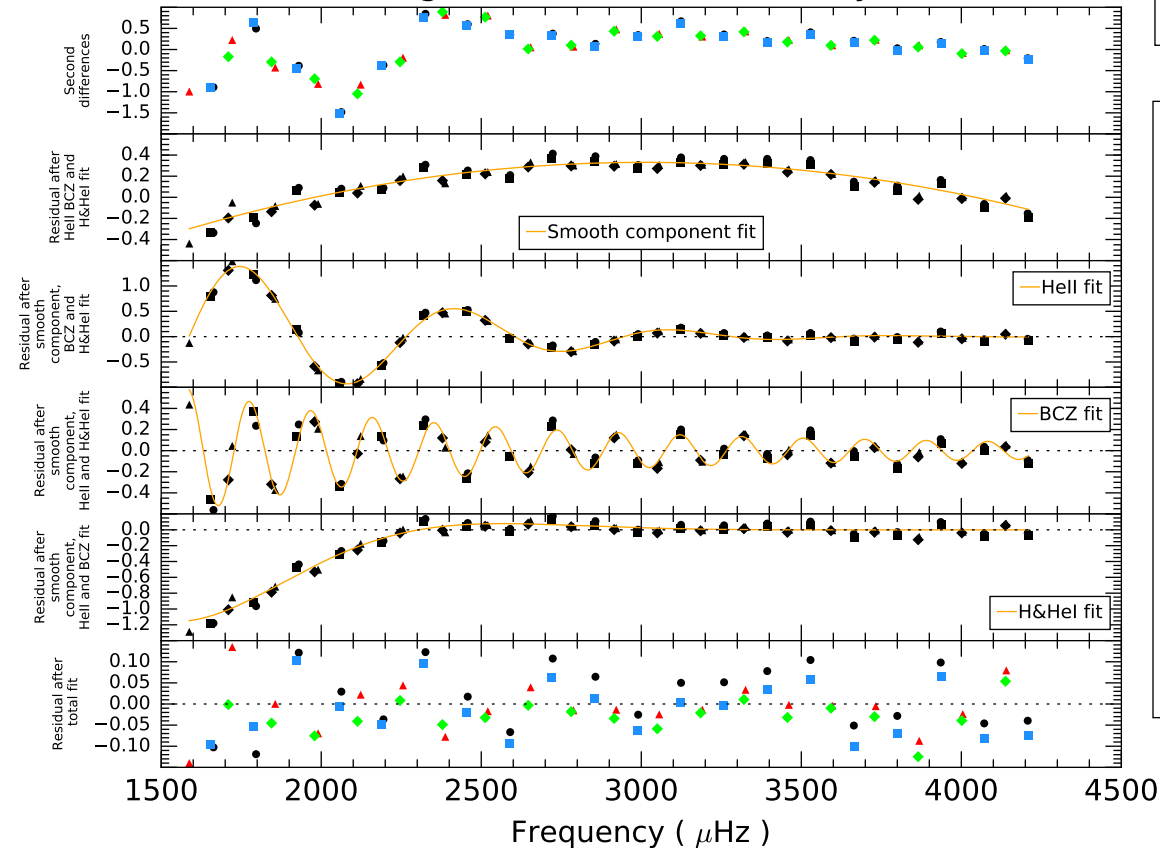
 $c_0 = 0.0030699$
 $c_2 = 4.4223e-07 \mu\text{Hz}^{-2}$
 $\tau_{HeII} = 737.46 \text{ s}$
 $\phi_{HeII} = 4.1443$

 $b_2 = 1.4684e+06 \text{ mHz}^3$
 $\tau_{CZ} = 2599.9 \text{ s}$
 $\phi_{CZ} = 0.10781$

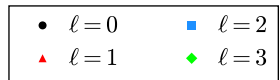
 $d_0 = 0.0044571$
 $d_2 = 6.9144e-07 \mu\text{Hz}^{-2}$
 $\tau_{HI} = 216.95 \text{ s}$
 $\phi_{HI} = 6.283$

profile83

$\chi^2_\nu(\text{dof} = 65) = 0.004832$



Age after ZAMS: 21.610 Gyr



$a_0 = -3.2639 \mu\text{Hz}$
 $a_1 = 0.0024048$
 $a_2 = -4.0043e-07 \mu\text{Hz}^{-1}$

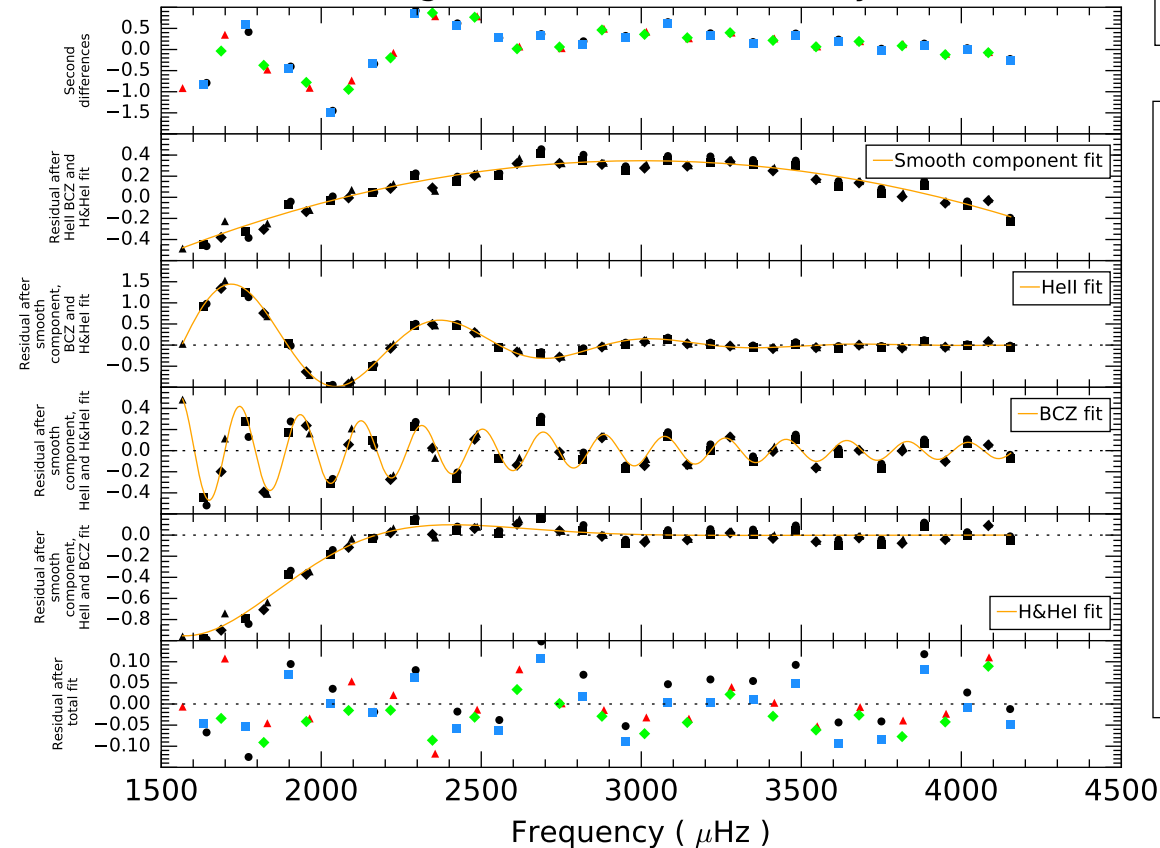
 $c_0 = 0.0032094$
 $c_2 = 4.5179e-07 \mu\text{Hz}^{-2}$
 $\tau_{\text{HeII}} = 757.32 \text{ s}$
 $\phi_{\text{HeII}} = 3.9596$

 $b_2 = 1.2796e+06 \text{ mHz}^3$
 $\tau_{\text{CZ}} = 2636.3 \text{ s}$
 $\phi_{\text{CZ}} = 0.27695$

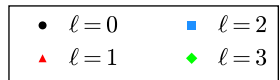
 $d_0 = 0.0043545$
 $d_2 = 7.4945e-07 \mu\text{Hz}^{-2}$
 $\tau_{\text{HI}} = 271.82 \text{ s}$
 $\phi_{\text{HI}} = 5.1488$

profile84

$\chi^2_\nu(\text{dof} = 65) = 0.0043568$



Age after ZAMS: 21.910 Gyr



$a_0 = -2.4643 \mu \text{ Hz}$
 $a_1 = 0.0019271$
 $a_2 = -3.3229e-07 \mu \text{ Hz}^{-1}$

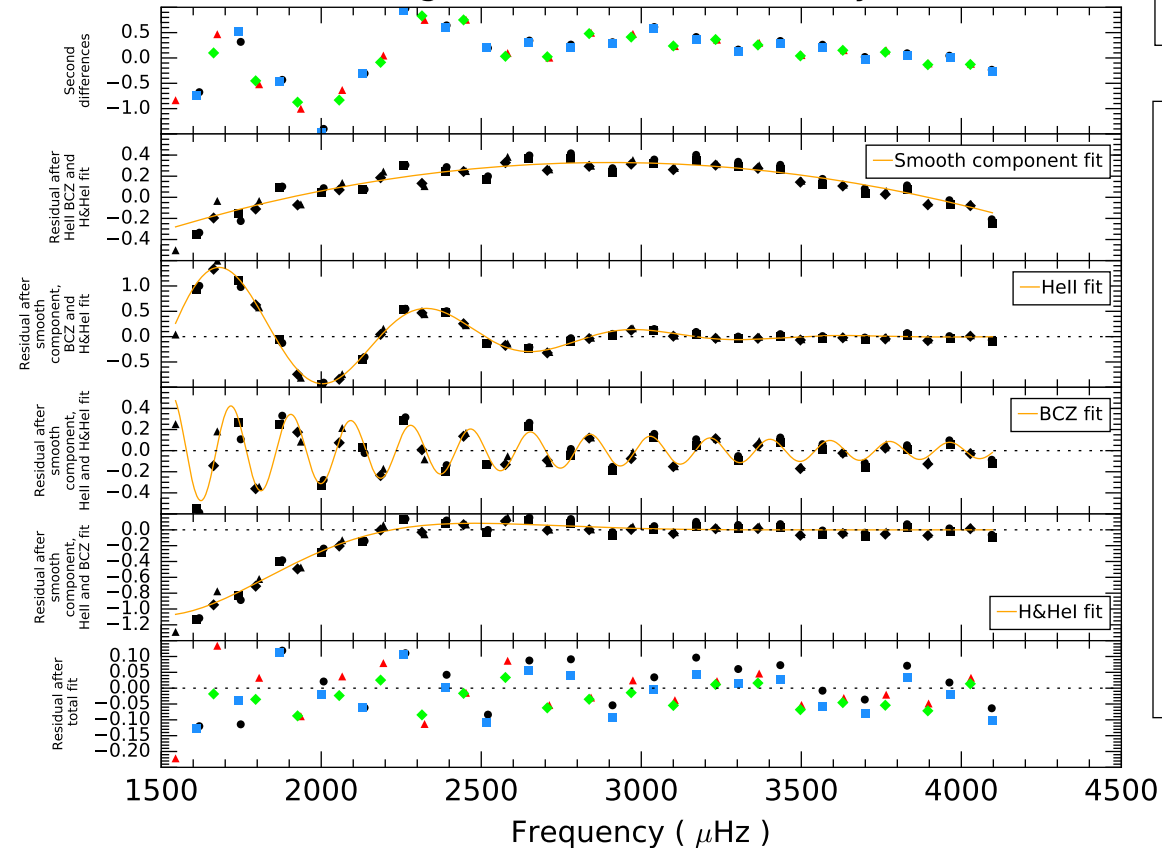
 $c_0 = 0.0030551$
 $c_2 = 4.6671e-07 \mu \text{ Hz}^{-2}$
 $\tau_{HeII} = 762.47 \text{ s}$
 $\phi_{HeII} = 4.2174$

 $b_2 = 1.2504e+06 \text{ mHz}^3$
 $\tau_{CZ} = 2672.3 \text{ s}$
 $\phi_{CZ} = 0.40008$

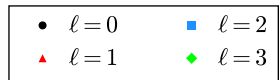
 $d_0 = 0.0040303$
 $d_2 = 7.139e-07 \mu \text{ Hz}^{-2}$
 $\tau_{HI} = 225.17 \text{ s}$
 $\phi_{HI} = 6.2832$

profile85

$\chi^2_{\nu}(\text{dof} = 65) = 0.0057566$



Age after ZAMS: 22.210 Gyr



$a_0 = -2.3643 \mu\text{ Hz}$
 $a_1 = 0.0019078$
 $a_2 = -3.3758e-07 \mu\text{Hz}^{-1}$

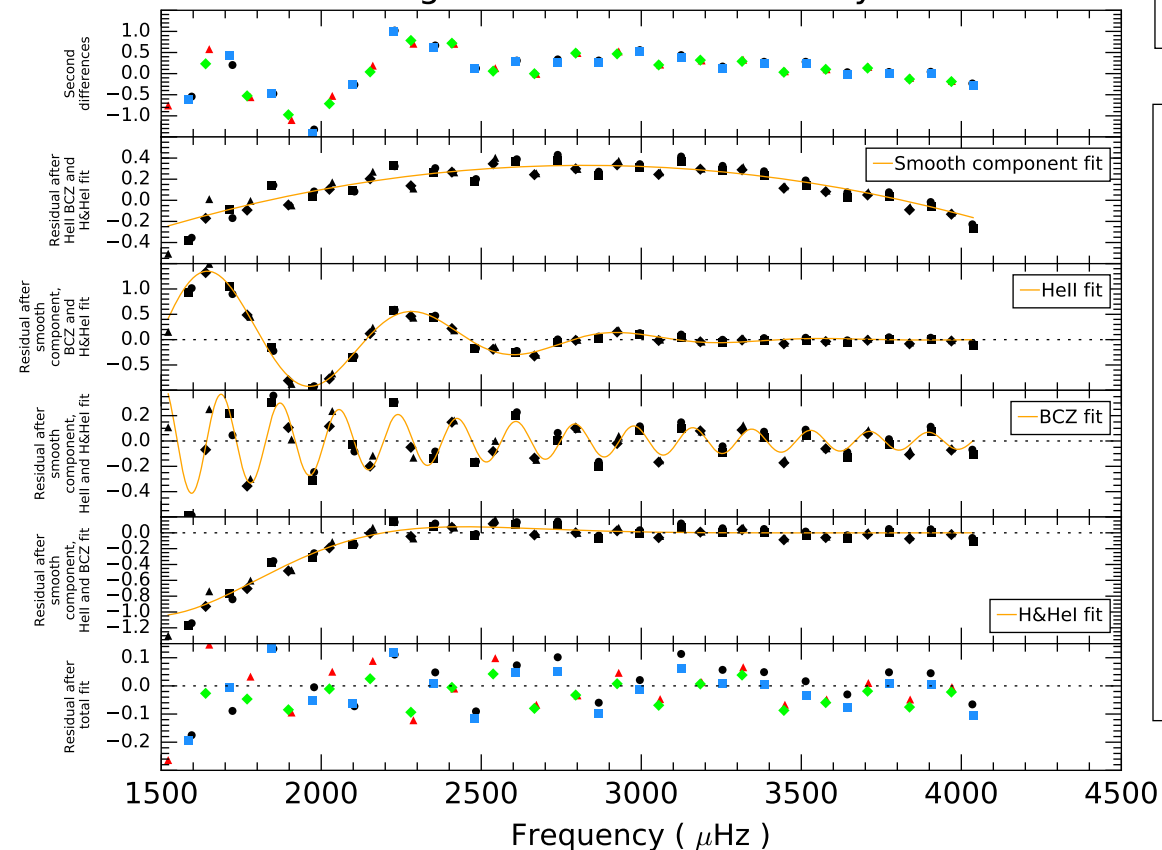
 $c_0 = 0.0030302$
 $c_2 = 4.8075e-07 \mu\text{Hz}^{-2}$
 $\tau_{HeII} = 774.1 \text{ s}$
 $\phi_{HeII} = 4.3244$

 $b_2 = 1.0508e+06 \text{ mHz}^3$
 $\tau_{CZ} = 2715.3 \text{ s}$
 $\phi_{CZ} = 0.51948$

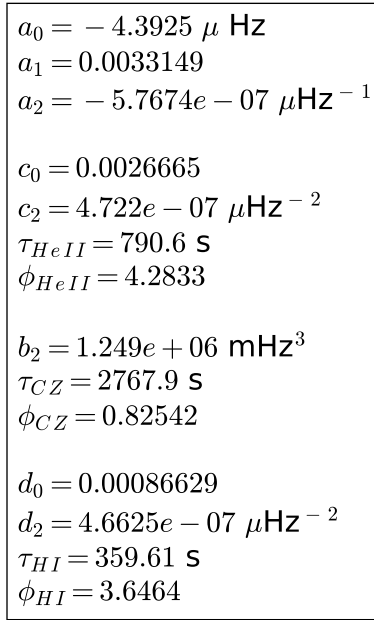
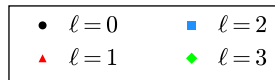
 $d_0 = 0.004077$
 $d_2 = 7.4504e-07 \mu\text{Hz}^{-2}$
 $\tau_{HI} = 228.01 \text{ s}$
 $\phi_{HI} = 6.2832$

profile86

$\chi^2_\nu(\text{dof} = 65) = 0.0072377$

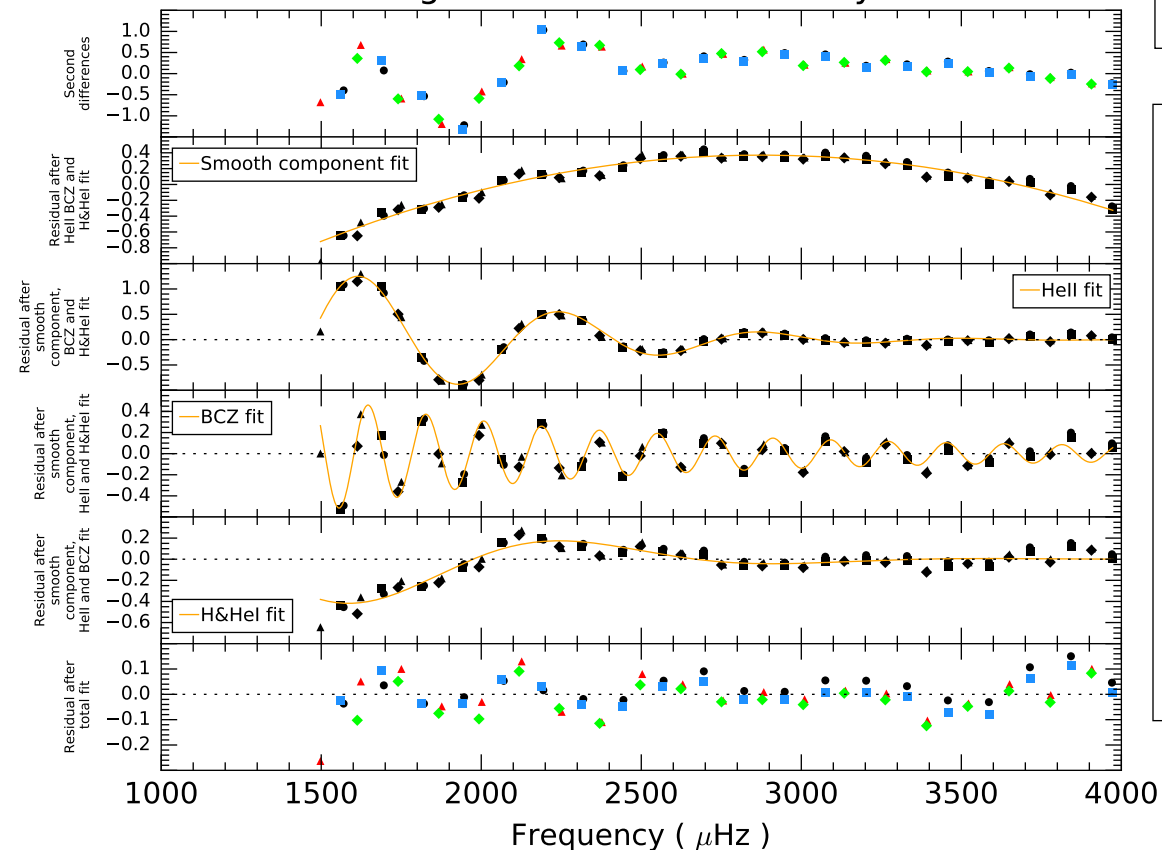


Age after ZAMS: 22.510 Gyr

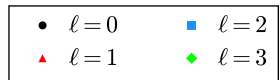


profile87

$\chi^2_{\nu}(\text{dof} = 65) = 0.0054193$



Age after ZAMS: 22.810 Gyr



$a_0 = -3.8958 \mu\text{Hz}$
 $a_1 = 0.0030273$
 $a_2 = -5.3919e-07 \mu\text{Hz}^{-1}$

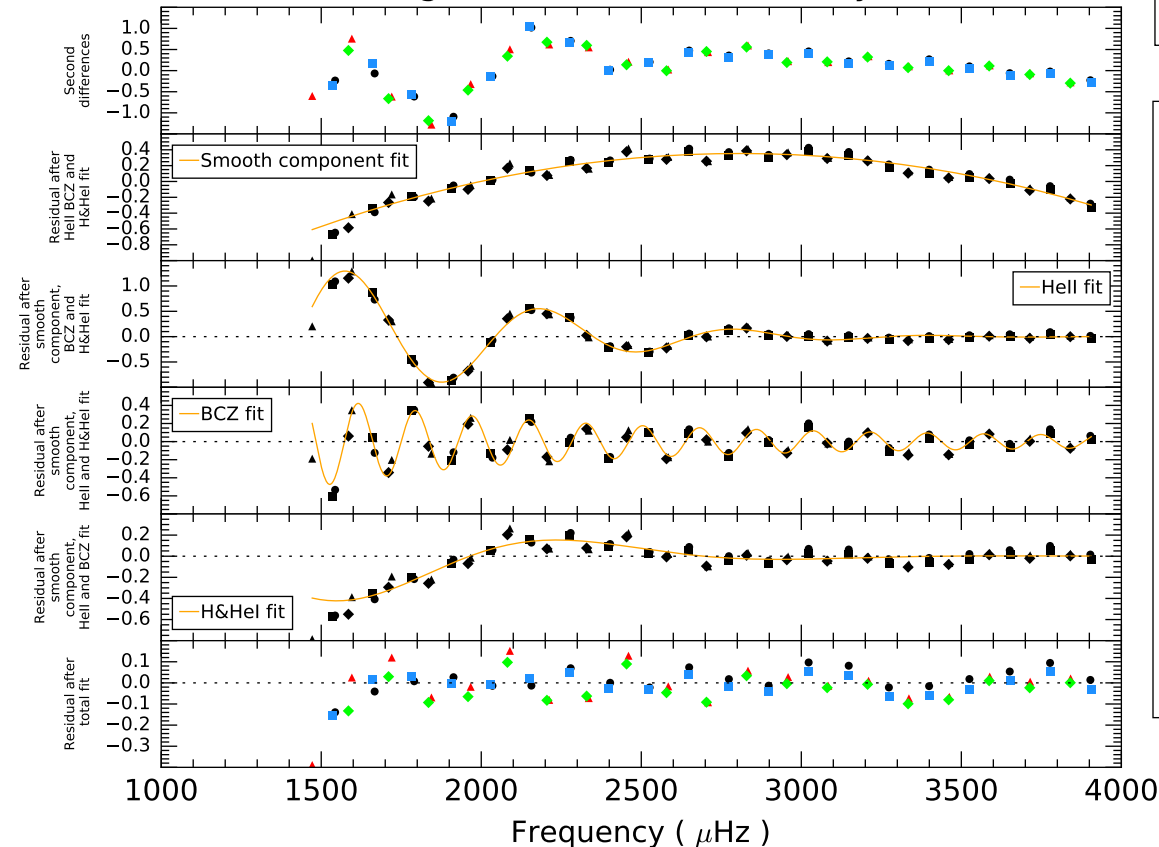
 $c_0 = 0.0029467$
 $c_2 = 5.1328e-07 \mu\text{Hz}^{-2}$
 $\tau_{HeII} = 815.66 \text{ s}$
 $\phi_{HeII} = 4.1919$

 $b_2 = 1.1044e+06 \text{ mHz}^3$
 $\tau_{CZ} = 2814.0 \text{ s}$
 $\phi_{CZ} = 0.95466$

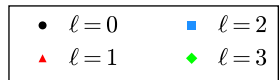
 $d_0 = 0.0009421$
 $d_2 = 5.0705e-07 \mu\text{Hz}^{-2}$
 $\tau_{HI} = 341.9 \text{ s}$
 $\phi_{HI} = 4.1317$

profile88

$\chi^2_\nu(\text{dof} = 65) = 0.0068811$



Age after ZAMS: 23.098 Gyr



$a_0 = -3.9488 \mu \text{ Hz}$
 $a_1 = 0.0031372$
 $a_2 = -5.7165e-07 \mu \text{ Hz}^{-1}$

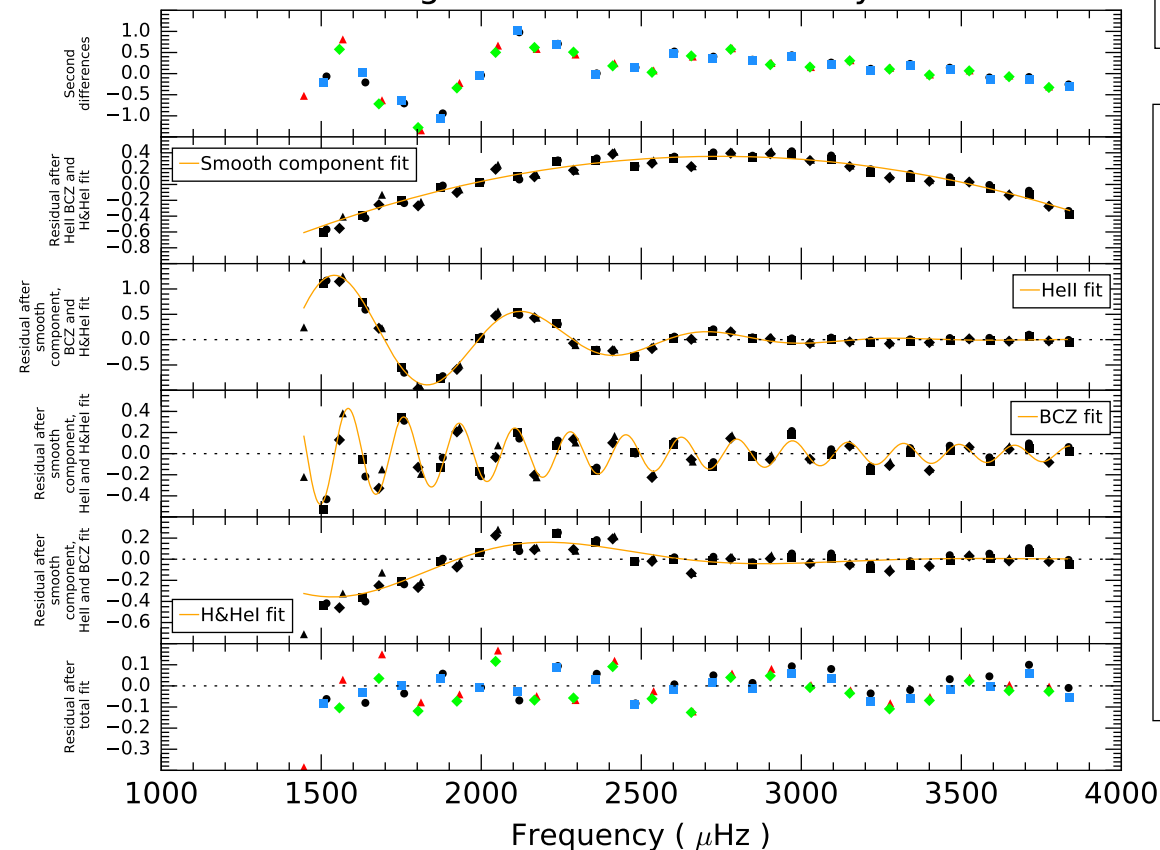
 $c_0 = 0.0029249$
 $c_2 = 5.3169e-07 \mu \text{ Hz}^{-2}$
 $\tau_{HeII} = 849.22 \text{ s}$
 $\phi_{HeII} = 3.8875$

 $b_2 = 1.0765e+06 \text{ mHz}^3$
 $\tau_{CZ} = 2882.0 \text{ s}$
 $\phi_{CZ} = 0.71666$

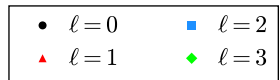
 $d_0 = 0.00067653$
 $d_2 = 4.467e-07 \mu \text{ Hz}^{-2}$
 $\tau_{HI} = 353.94 \text{ s}$
 $\phi_{HI} = 4.0015$

profile89

$\chi^2_\nu (\text{dof} = 65) = 0.0075148$



Age after ZAMS: 23.271 Gyr



$a_0 = -3.95 \mu \text{ Hz}$
 $a_1 = 0.0031997$
 $a_2 = -5.9438e-07 \mu \text{ Hz}^{-1}$

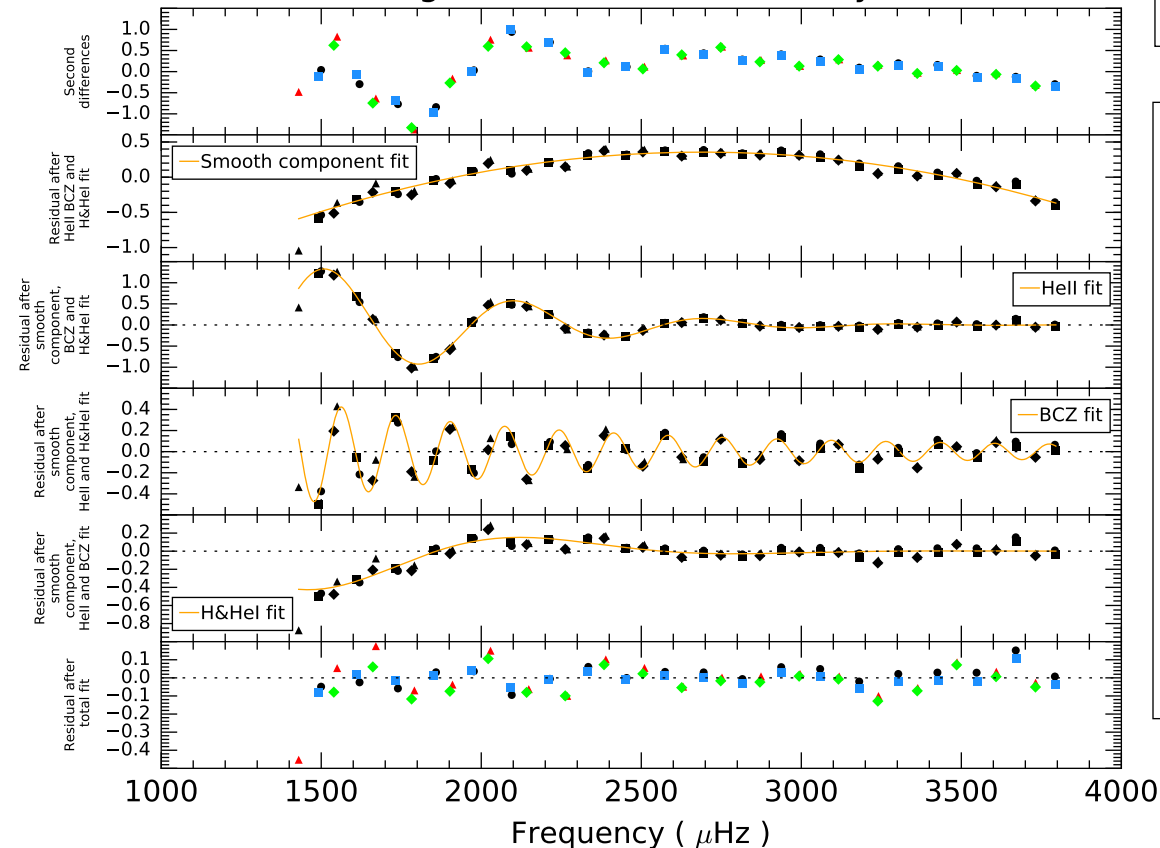
 $c_0 = 0.003039$
 $c_2 = 5.4278e-07 \mu \text{ Hz}^{-2}$
 $\tau_{HeII} = 833.85 \text{ s}$
 $\phi_{HeII} = 4.5198$

 $b_2 = 1.0337e+06 \text{ mHz}^3$
 $\tau_{CZ} = 2939.2 \text{ s}$
 $\phi_{CZ} = 0.37104$

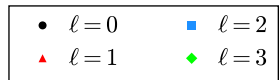
 $d_0 = 0.00099324$
 $d_2 = 5.6427e-07 \mu \text{ Hz}^{-2}$
 $\tau_{HI} = 354.53 \text{ s}$
 $\phi_{HI} = 4.2814$

profile90

$\chi^2_\nu(\text{dof} = 65) = 0.0077348$



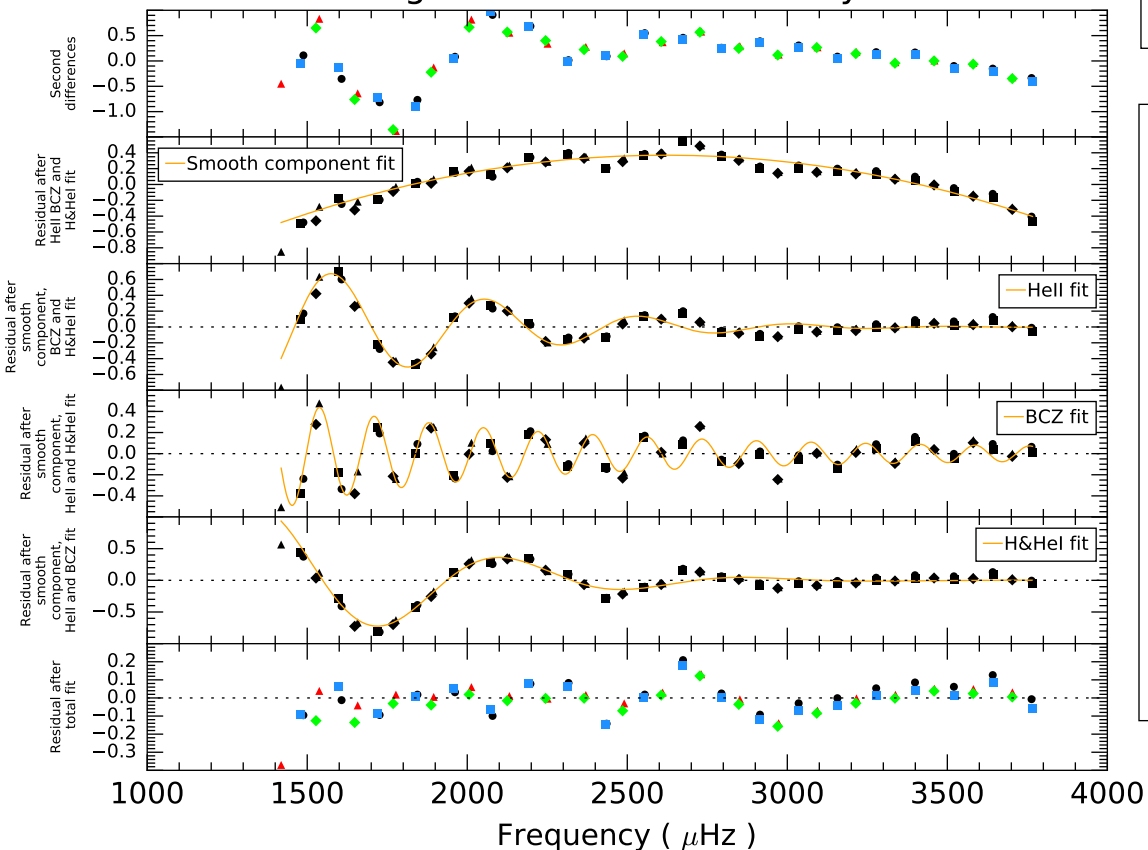
Age after ZAMS: 23.385 Gyr



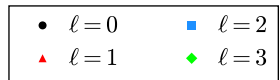
$$\begin{aligned}
 a_0 &= -3.6736 \mu\text{ Hz} \\
 a_1 &= 0.0030864 \\
 a_2 &= -5.8896e-07 \mu\text{Hz}^{-1} \\
 c_0 &= 0.0015713 \\
 c_2 &= 5.2372e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 1036.0 \text{ s} \\
 \phi_{HeII} &= 6.1307 \\
 b_2 &= 1.0358e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 2930.5 \text{ s} \\
 \phi_{CZ} &= 1.4397 \\
 d_0 &= 0.0025759 \\
 d_2 &= 6.0701e-07 \mu\text{Hz}^{-2} \\
 \tau_{HI} &= 644.53 \text{ s} \\
 \phi_{HI} &= 3.1676
 \end{aligned}$$

profile91

$$\chi^2_\nu(\text{dof} = 65) = 0.0085969$$



Age after ZAMS: 23.487 Gyr



$a_0 = -3.6764 \mu \text{ Hz}$
 $a_1 = 0.003081$
 $a_2 = -5.8833e-07 \mu \text{ Hz}^{-1}$

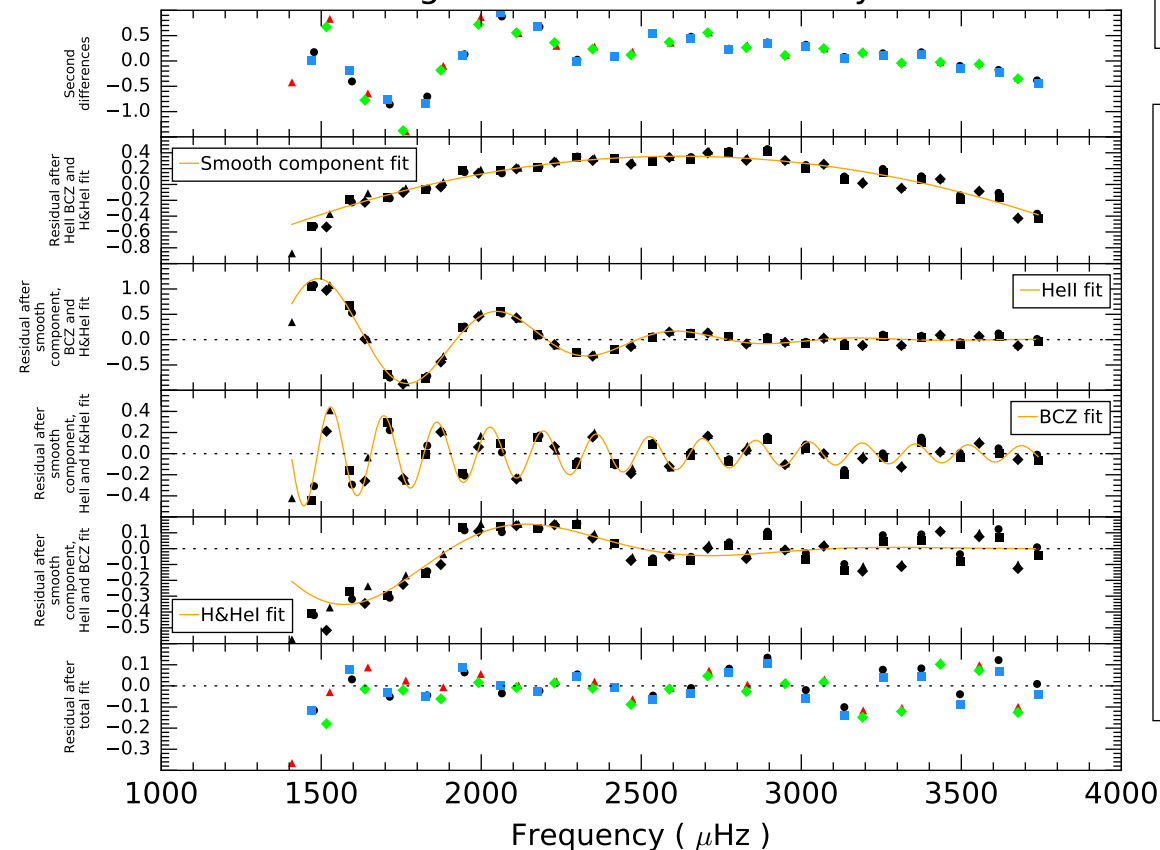
 $c_0 = 0.0027334$
 $c_2 = 5.4674e-07 \mu \text{ Hz}^{-2}$
 $\tau_{HeII} = 885.21 \text{ s}$
 $\phi_{HeII} = 3.7612$

 $b_2 = 1.0349e+06 \text{ mHz}^3$
 $\tau_{CZ} = 3011.7 \text{ s}$
 $\phi_{CZ} = 0.21113$

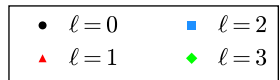
 $d_0 = 0.00082337$
 $d_2 = 5.192e-07 \mu \text{ Hz}^{-2}$
 $\tau_{HI} = 420.89 \text{ s}$
 $\phi_{HI} = 2.4988$

profile92

$\chi^2_\nu(\text{dof} = 65) = 0.0080156$



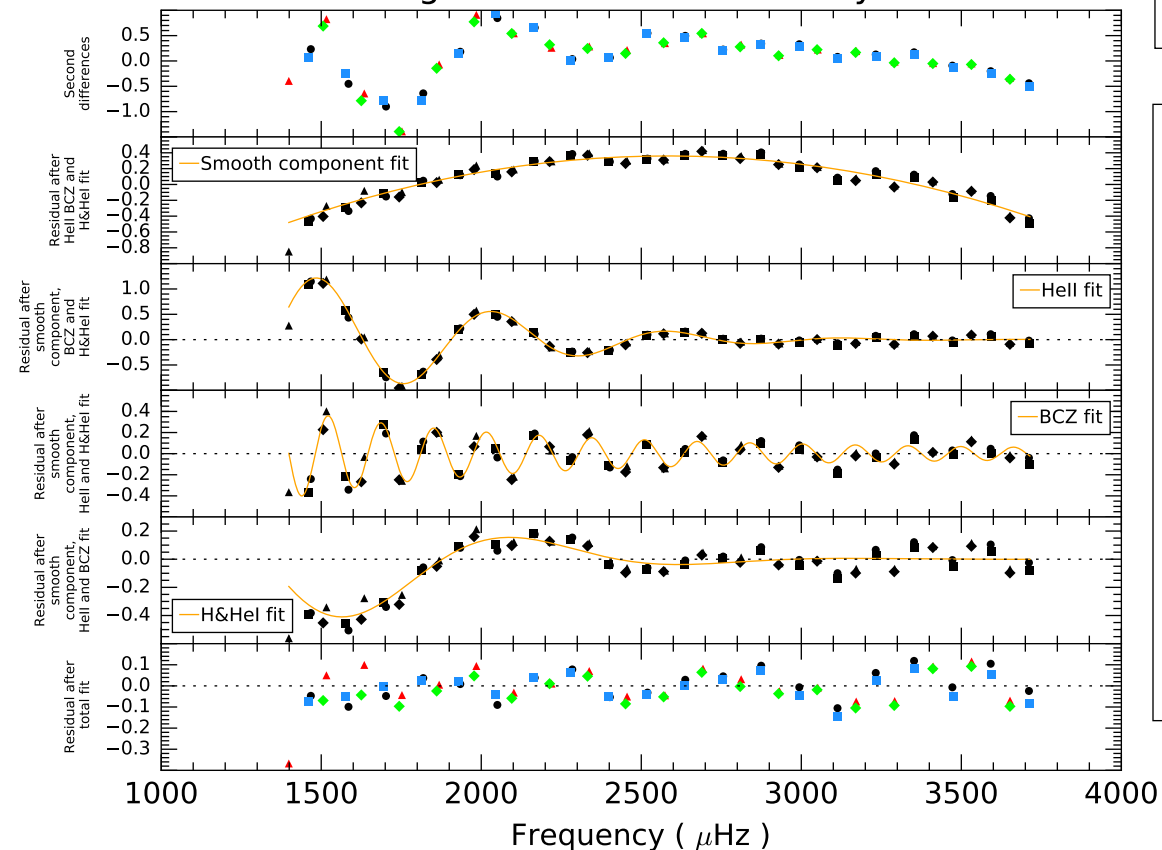
Age after ZAMS: 23.583 Gyr



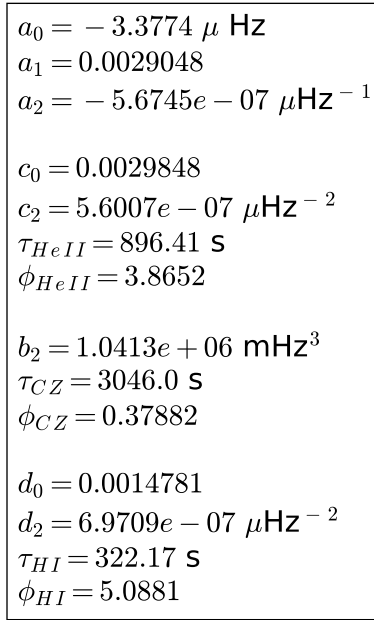
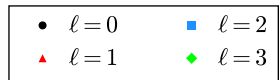
$$\begin{aligned}
 a_0 &= -3.6387 \mu \text{ Hz} \\
 a_1 &= 0.0030966 \\
 a_2 &= -5.9948e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0028697 \\
 c_2 &= 5.6692e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HeII} &= 906.5 \text{ s} \\
 \phi_{HeII} &= 3.4243 \\
 b_2 &= 8.3032e+05 \text{ mHz}^3 \\
 \tau_{CZ} &= 3036.5 \text{ s} \\
 \phi_{CZ} &= 0.026083 \\
 d_0 &= 0.0012813 \\
 d_2 &= 6.3728e-07 \mu \text{ Hz}^{-2} \\
 \tau_{HI} &= 457.3 \text{ s} \\
 \phi_{HI} &= 1.7723
 \end{aligned}$$

profile93

$$\chi^2_\nu(\text{dof} = 65) = 0.0070012$$

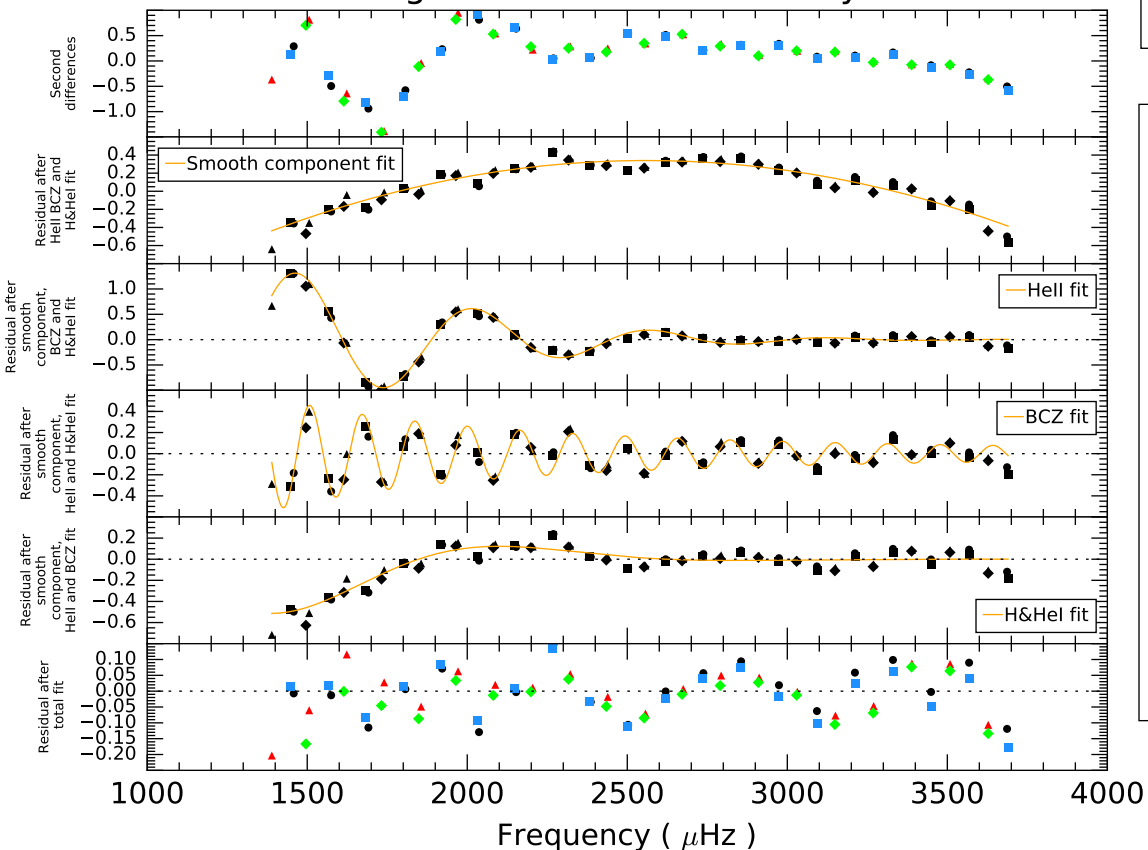


Age after ZAMS: 23.674 Gyr

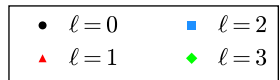


profile94

$\chi^2_\nu(\text{dof} = 65) = 0.0067905$



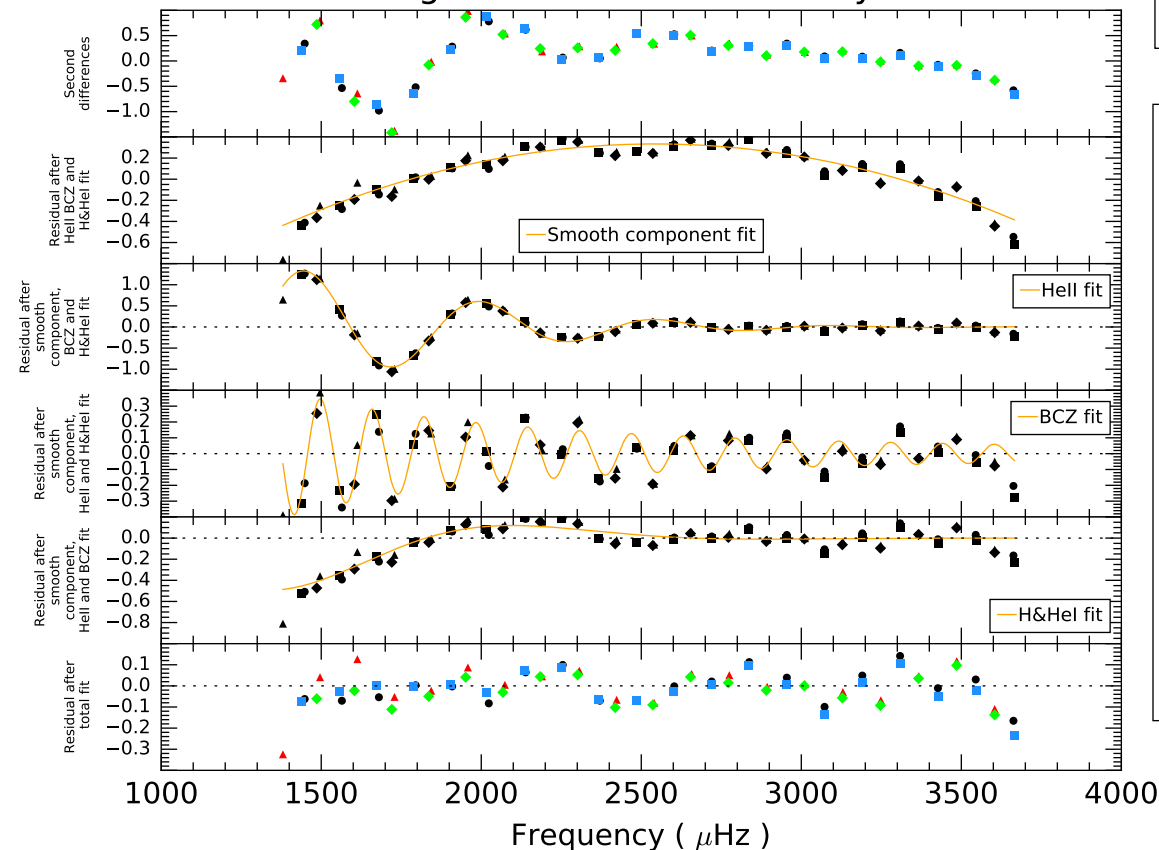
Age after ZAMS: 23.761 Gyr



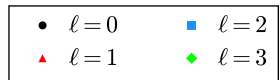
$$\begin{aligned}
 a_0 &= -3.3568 \mu\text{ Hz} \\
 a_1 &= 0.0029023 \\
 a_2 &= -5.7052e-07 \mu\text{Hz}^{-1} \\
 c_0 &= 0.0031103 \\
 c_2 &= 5.8283e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 902.37 \text{ s} \\
 \phi_{HeII} &= 3.955 \\
 b_2 &= 7.739e+05 \text{ mHz}^3 \\
 \tau_{CZ} &= 3086.9 \text{ s} \\
 \phi_{CZ} &= 0.020546 \\
 d_0 &= 0.0012665 \\
 d_2 &= 6.6844e-07 \mu\text{Hz}^{-2} \\
 \tau_{HI} &= 299.63 \text{ s} \\
 \phi_{HI} &= 5.6888
 \end{aligned}$$

profile95

$$\chi^2_\nu(\text{dof} = 65) = 0.0080622$$



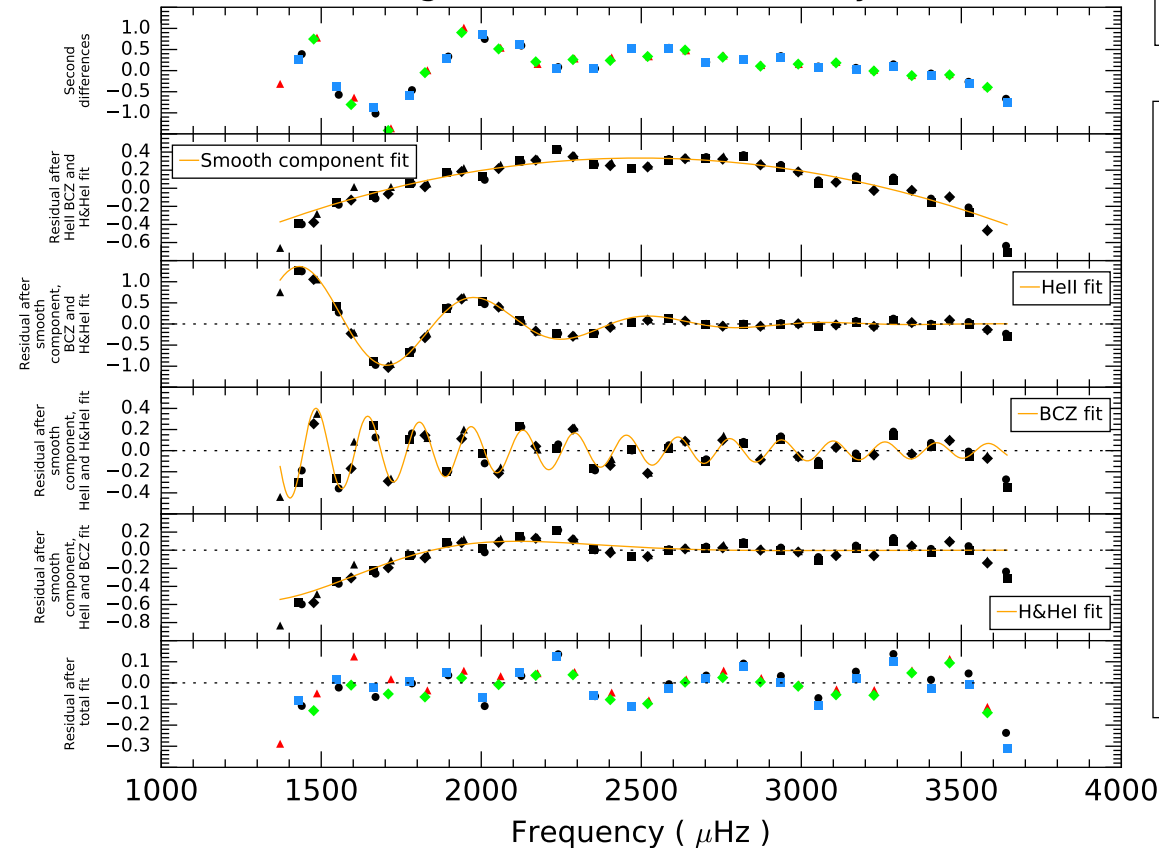
Age after ZAMS: 23.844 Gyr



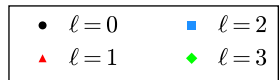
$a_0 = -3.1478 \mu\text{Hz}$
 $a_1 = 0.0027917$
 $a_2 = -5.5957e-07 \mu\text{Hz}^{-1}$
 $c_0 = 0.0031715$
 $c_2 = 5.8586e-07 \mu\text{Hz}^{-2}$
 $\tau_{HeII} = 907.38 \text{ s}$
 $\phi_{HeII} = 4.0144$
 $b_2 = 8.8326e+05 \text{ mHz}^3$
 $\tau_{CZ} = 3094.4 \text{ s}$
 $\phi_{CZ} = 0.39872$
 $d_0 = 0.0015913$
 $d_2 = 7.3745e-07 \mu\text{Hz}^{-2}$
 $\tau_{HI} = 271.65 \text{ s}$
 $\phi_{HI} = 6.2637$

profile96

$\chi^2_\nu(\text{dof} = 65) = 0.0088655$



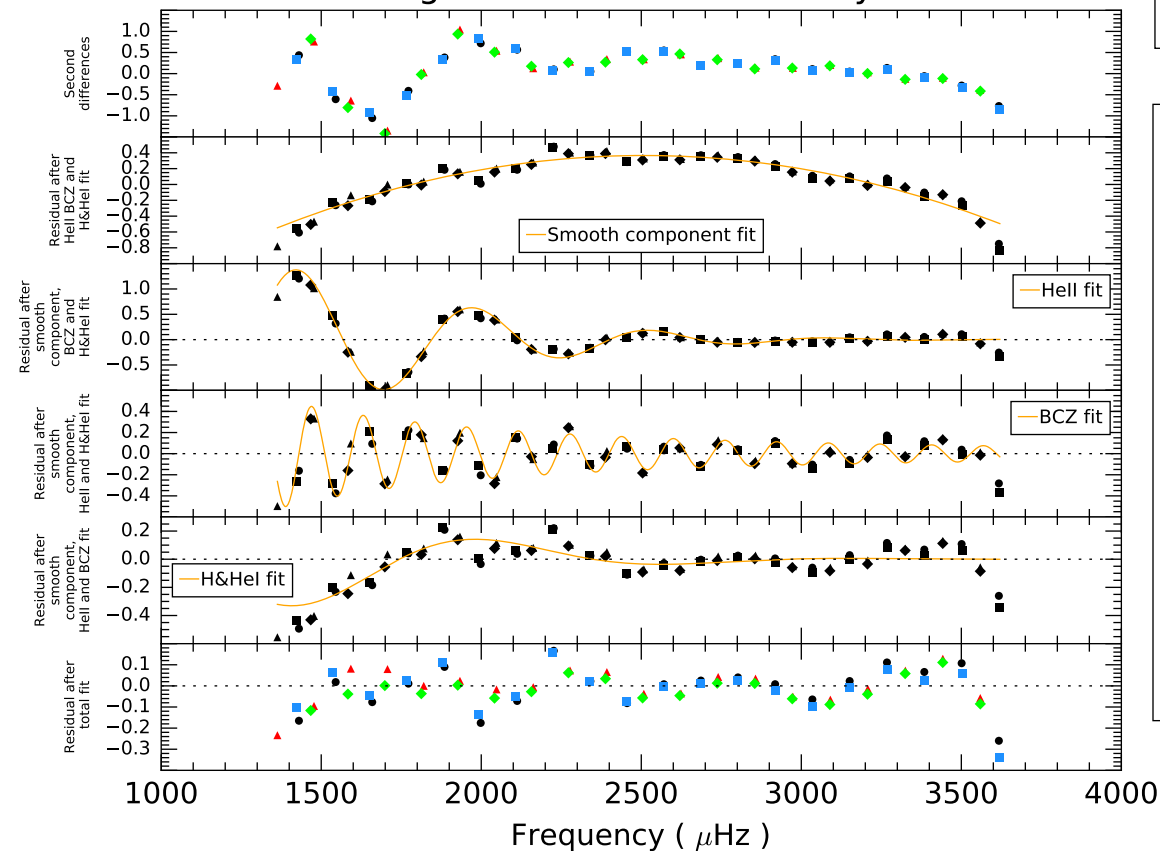
Age after ZAMS: 23.923 Gyr



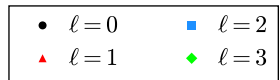
$$\begin{aligned}
 a_0 &= -4.0162 \mu \text{ Hz} \\
 a_1 &= 0.003494 \\
 a_2 &= -6.9643e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.0032107 \\
 c_2 &= 5.9119e-07 \mu \text{ Hz}^{-2} \\
 \tau_{\text{He II}} &= 900.21 \text{ s} \\
 \phi_{\text{He II}} &= 4.2612 \\
 b_2 &= 9.6754e+05 \text{ mHz}^3 \\
 \tau_{\text{CZ}} &= 3097.2 \text{ s} \\
 \phi_{\text{CZ}} &= 0.88581 \\
 d_0 &= 0.00076984 \\
 d_2 &= 5.905e-07 \mu \text{ Hz}^{-2} \\
 \tau_{\text{HI}} &= 414.15 \text{ s} \\
 \phi_{\text{HI}} &= 3.4887
 \end{aligned}$$

profile97

$$\chi^2_\nu (\text{dof} = 65) = 0.0096178$$



Age after ZAMS: 23.998 Gyr



$a_0 = -3.6328 \mu\text{Hz}$
 $a_1 = 0.0032312$
 $a_2 = -6.5441e-07 \mu\text{Hz}^{-1}$

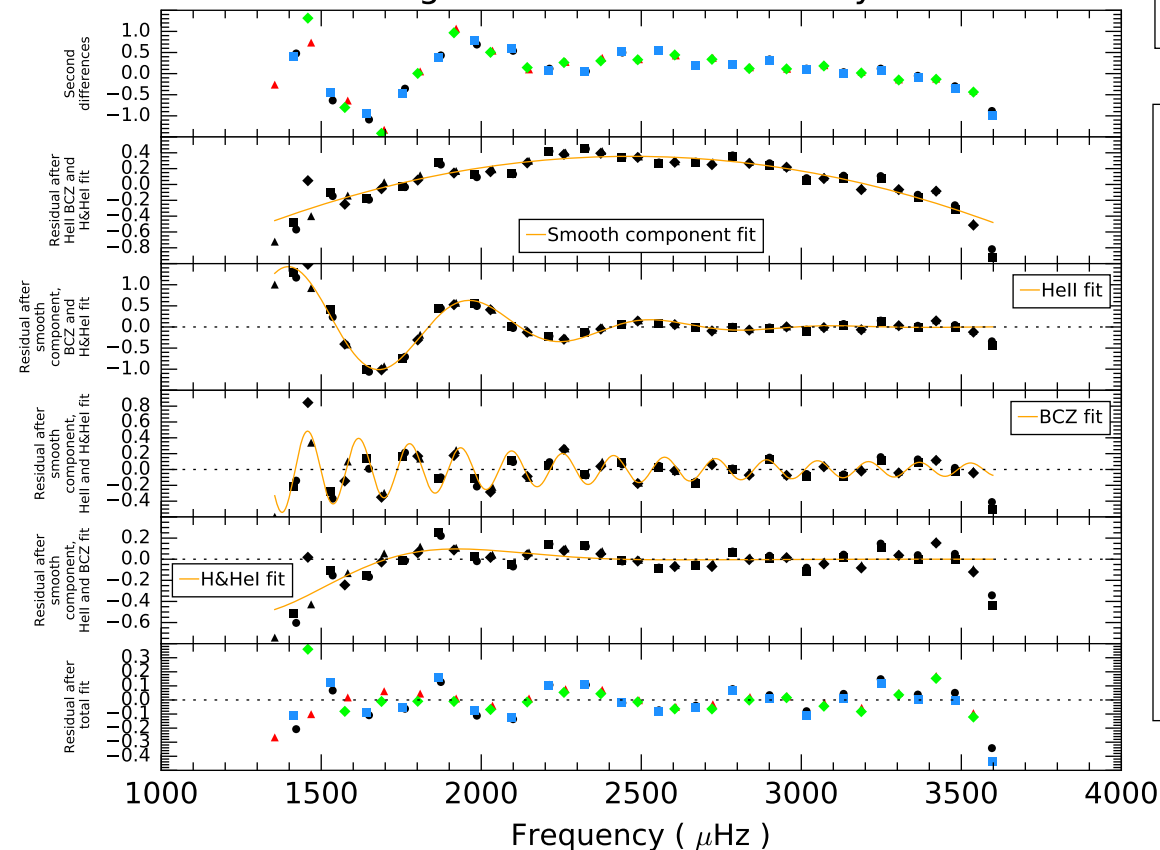
 $c_0 = 0.0033429$
 $c_2 = 6.049e-07 \mu\text{Hz}^{-2}$
 $\tau_{HeII} = 873.6 \text{ s}$
 $\phi_{HeII} = 4.9947$

 $b_2 = 1.0299e+06 \text{ mHz}^3$
 $\tau_{CZ} = 3138.9 \text{ s}$
 $\phi_{CZ} = 0.59942$

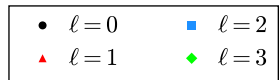
 $d_0 = 0.0019363$
 $d_2 = 9.2786e-07 \mu\text{Hz}^{-2}$
 $\tau_{HI} = 343.32 \text{ s}$
 $\phi_{HI} = 5.2156$

profile98

$\chi^2_\nu(\text{dof} = 65) = 0.015211$



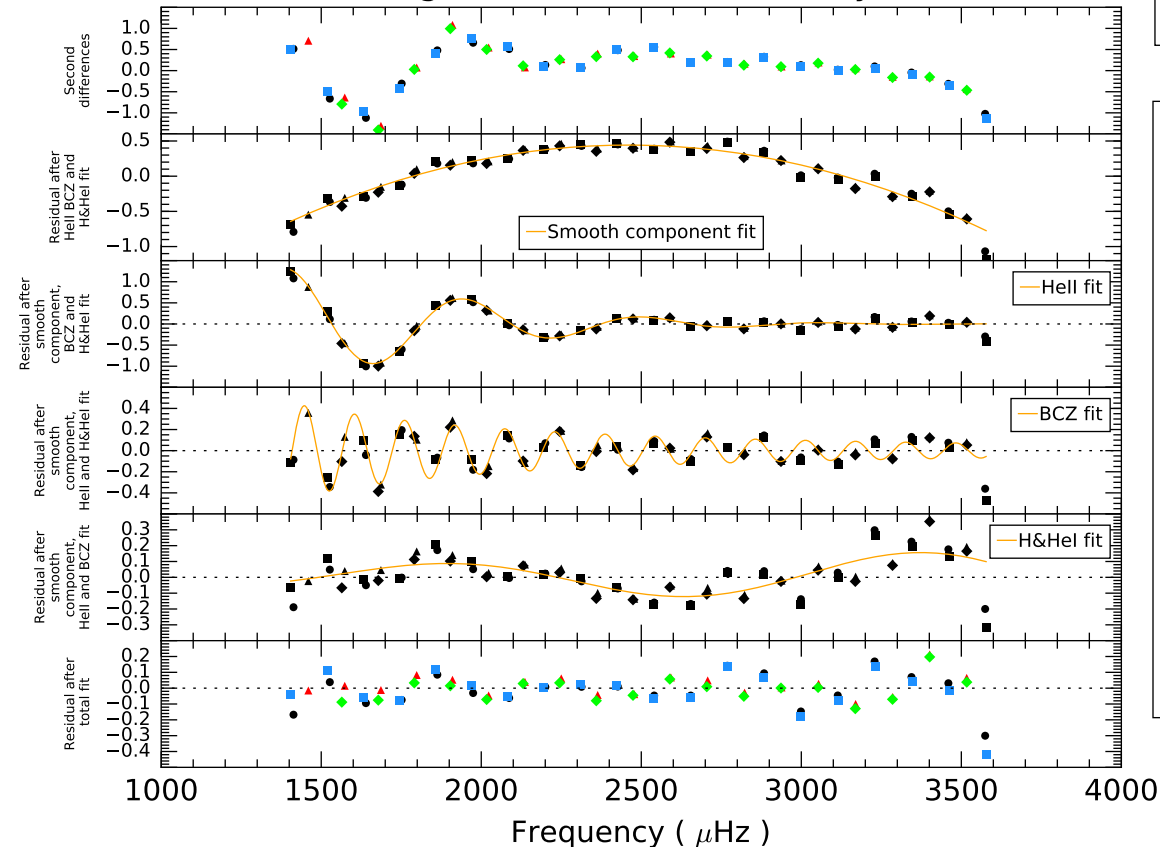
Age after ZAMS: 24.070 Gyr



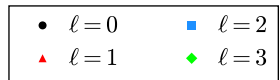
$$\begin{aligned}
 a_0 &= -5.4498 \mu\text{Hz} \\
 a_1 &= 0.0047907 \\
 a_2 &= -9.7378e-07 \mu\text{Hz}^{-1} \\
 c_0 &= 0.0030623 \\
 c_2 &= 6.0921e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 892.0 \text{ s} \\
 \phi_{HeII} &= 4.8095 \\
 b_2 &= 8.9169e+05 \text{ mHz}^3 \\
 \tau_{CZ} &= 3194.1 \text{ s} \\
 \phi_{CZ} &= 6.2832 \\
 d_0 &= 4.656e-05 \\
 d_2 &= 2.1674e-10 \mu\text{Hz}^{-2} \\
 \tau_{HI} &= 335.21 \text{ s} \\
 \phi_{HI} &= 6.2828
 \end{aligned}$$

profile99

$$\chi^2_\nu(\text{dof} = 63) = 0.011586$$



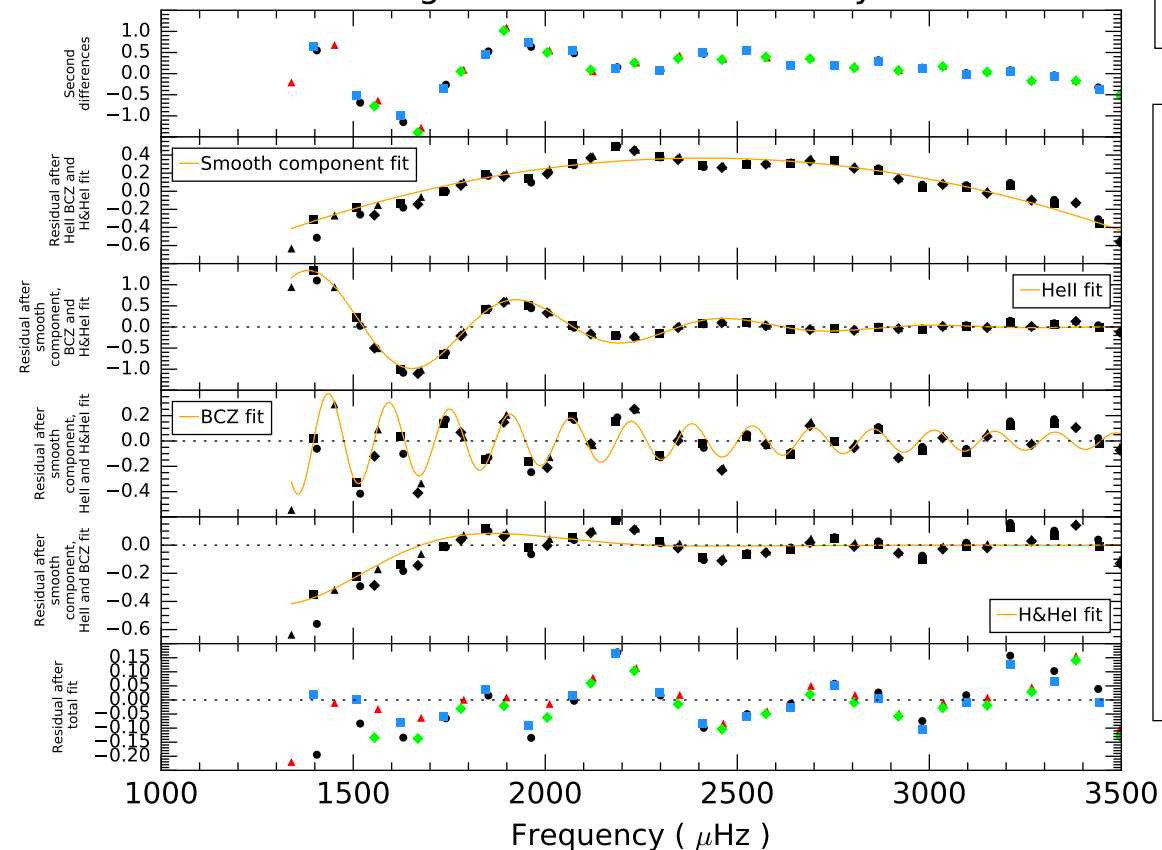
Age after ZAMS: 24.138 Gyr



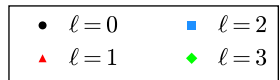
$$\begin{aligned}
 a_0 &= -3.5697 \mu \text{ Hz} \\
 a_1 &= 0.0032641 \\
 a_2 &= -6.7667e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.00299 \\
 c_2 &= 5.88e-07 \mu \text{ Hz}^{-2} \\
 \tau_{\text{HeII}} &= 914.9 \text{ s} \\
 \phi_{\text{HeII}} &= 4.4435 \\
 b_2 &= 7.7223e+05 \text{ mHz}^3 \\
 \tau_{\text{CZ}} &= 3170.9 \text{ s} \\
 \phi_{\text{CZ}} &= 0.90174 \\
 d_0 &= 0.0021329 \\
 d_2 &= 1.0616e-06 \mu \text{ Hz}^{-2} \\
 \tau_{\text{HI}} &= 421.32 \text{ s} \\
 \phi_{\text{HI}} &= 3.6926
 \end{aligned}$$

profile100

$$\chi^2_{\nu}(\text{dof} = 62) = 0.0081118$$



Age after ZAMS: 24.182 Gyr



$$\begin{aligned}
 a_0 &= -3.4122 \mu \text{ Hz} \\
 a_1 &= 0.0031262 \\
 a_2 &= -6.4837e-07 \mu \text{ Hz}^{-1} \\
 c_0 &= 0.002845 \\
 c_2 &= 6.0844e-07 \mu \text{ Hz}^{-2} \\
 \tau_{\text{He II}} &= 953.63 \text{ s} \\
 \phi_{\text{He II}} &= 3.6403 \\
 b_2 &= 9.0953e+05 \text{ mHz}^3 \\
 \tau_{\text{CZ}} &= 3188.4 \text{ s} \\
 \phi_{\text{CZ}} &= 0.81475 \\
 d_0 &= 0.00062134 \\
 d_2 &= 5.5212e-07 \mu \text{ Hz}^{-2} \\
 \tau_{\text{HI}} &= 462.08 \text{ s} \\
 \phi_{\text{HI}} &= 2.1895
 \end{aligned}$$

profile101

$$\chi^2_\nu (\text{dof} = 62) = 0.0085226$$

