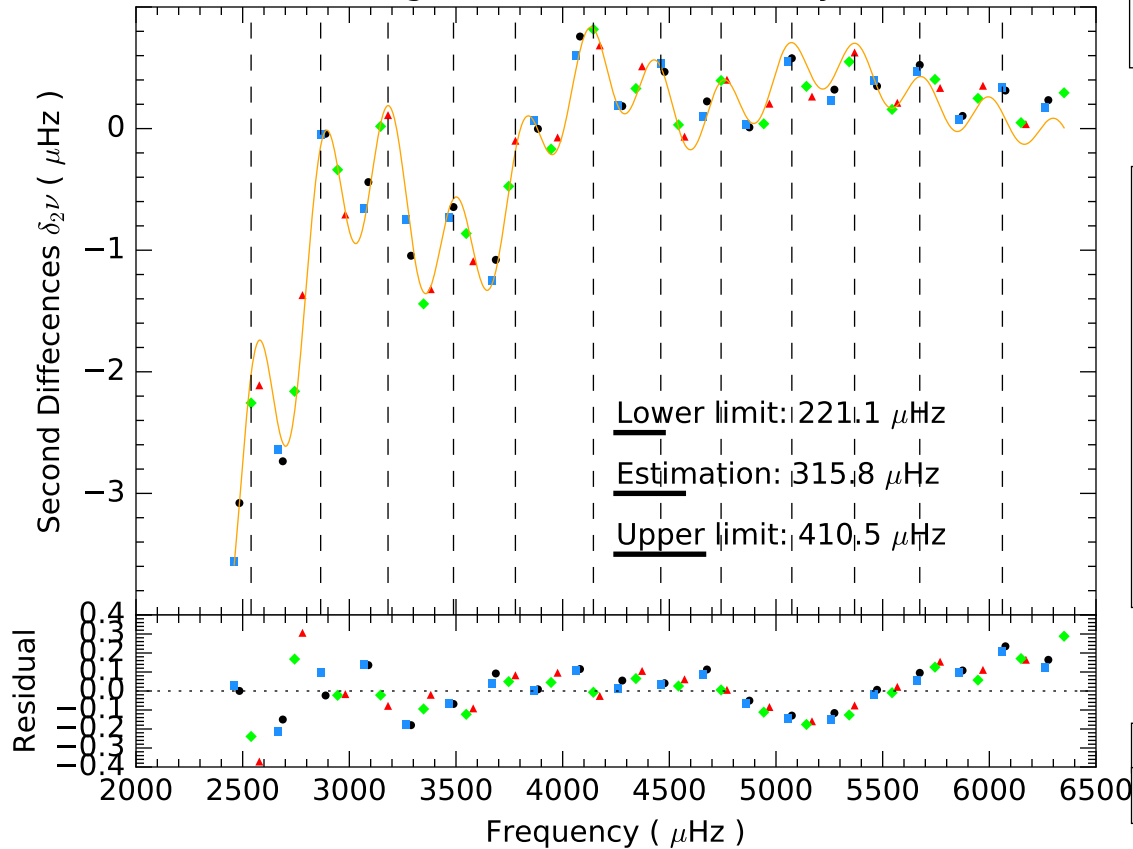


Age after ZAMS: 0.000 Gyr



$$a_0 = -8.7967 \mu\text{Hz}$$

$$a_1 = 0.0036074$$

$$a_2 = -3.5325e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.00084518$$

$$c_2 = 1.2532e-07 \mu\text{Hz}^{-2}$$

$$\tau_{HeII} = 444.19 \text{ s}$$

$$\phi_{HeII} = 3.4979$$

$$b_2 = 5.9827e+06 \text{ mHz}^3$$

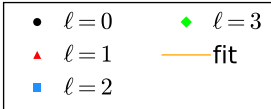
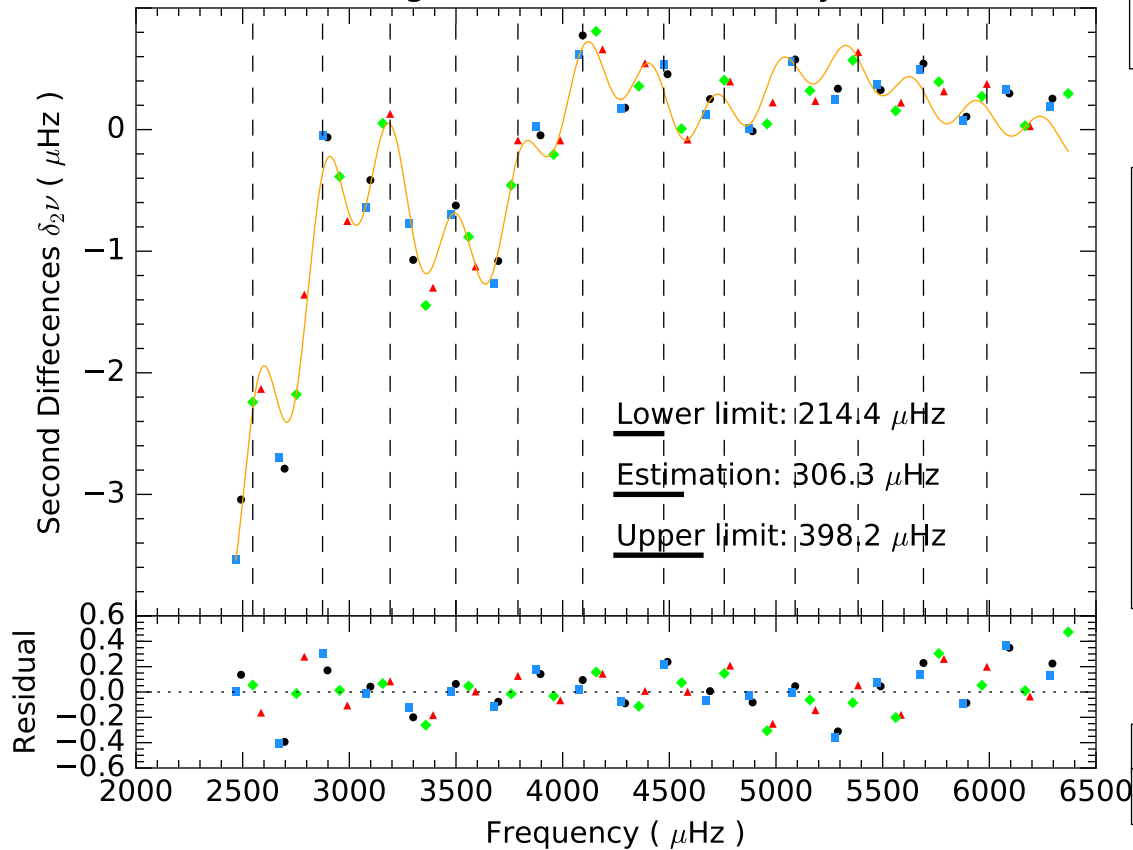
$$\tau_{CZ} = 1602.2 \text{ s}$$

$$\phi_{CZ} = 0.13444$$

profile1

$$\chi^2_\nu(\text{dof} = 69) = 0.017339$$

Age after ZAMS: 0.000 Gyr

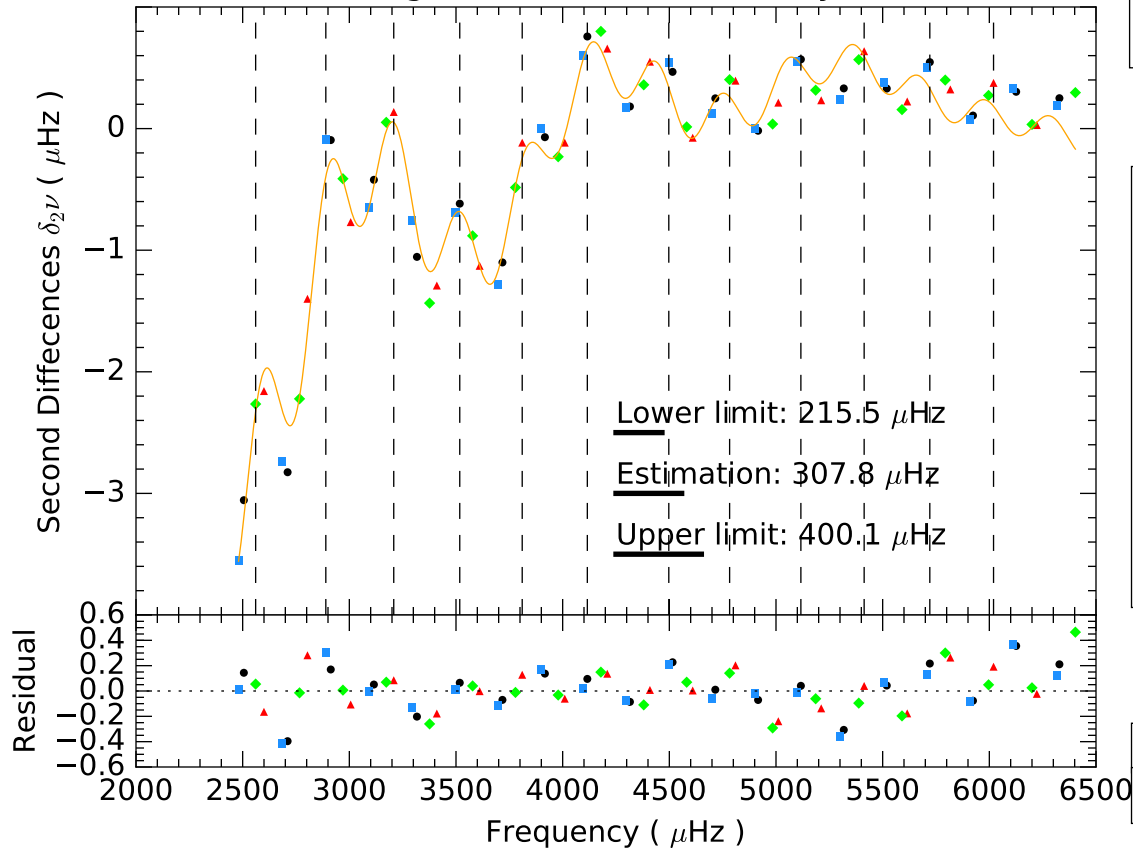


$$\begin{aligned}
 a_0 &= -8.8066 \mu\text{Hz} \\
 a_1 &= 0.0035964 \\
 a_2 &= -3.5076e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.00080312 \\
 c_2 &= 1.1994e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 442.57 \text{ s} \\
 \phi_{HeII} &= 3.4881 \\
 b_2 &= 4.3876e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1636.2 \text{ s} \\
 \phi_{CZ} &= 5.0014
 \end{aligned}$$

profile2

$$\chi^2_\nu(\text{dof} = 69) = 0.035641$$

Age after ZAMS: 0.001 Gyr

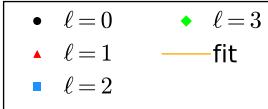
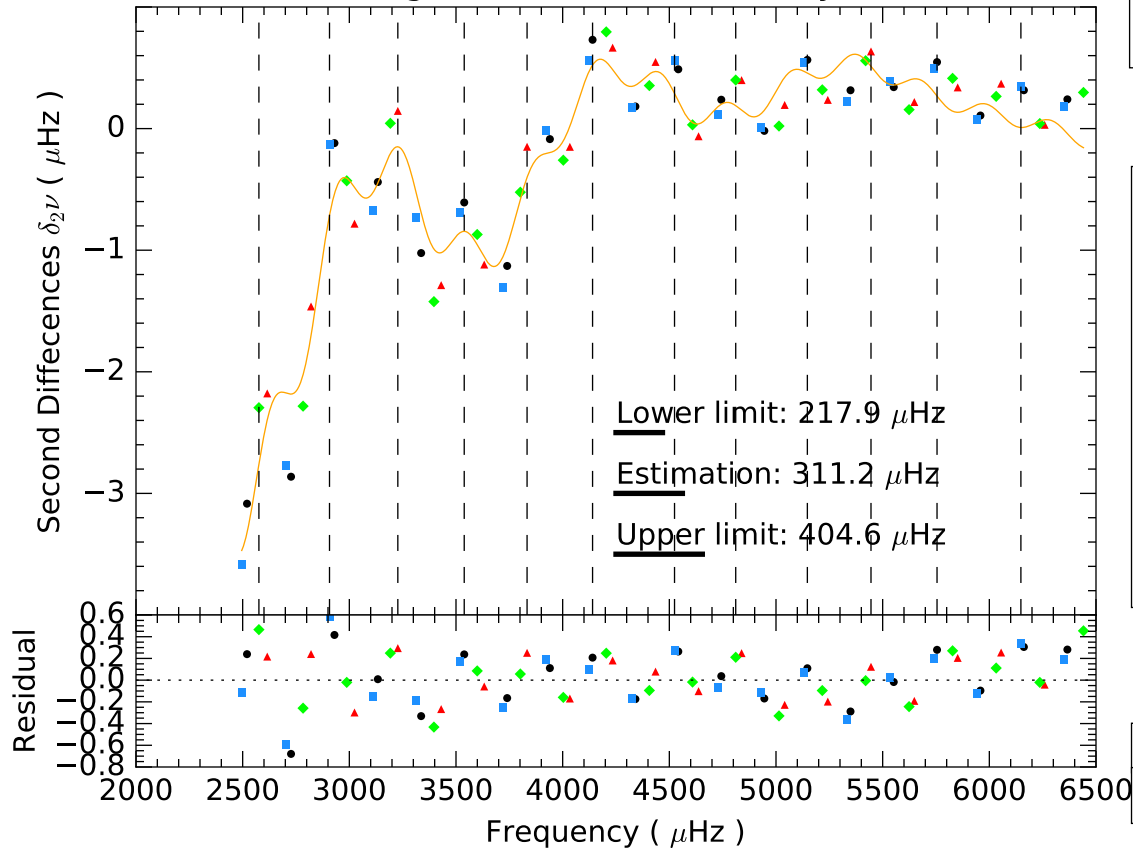


$$\begin{aligned}
 a_0 &= -8.8467 \mu\text{Hz} \\
 a_1 &= 0.0035884 \\
 a_2 &= -3.4774e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.00079657 \\
 c_2 &= 1.1853e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 439.2 \text{ s} \\
 \phi_{HeII} &= 3.4976 \\
 b_2 &= 4.4522e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1625.8 \text{ s} \\
 \phi_{CZ} &= 5.053
 \end{aligned}$$

profile3

$$\chi^2_\nu(\text{dof} = 69) = 0.034619$$

Age after ZAMS: 0.002 Gyr

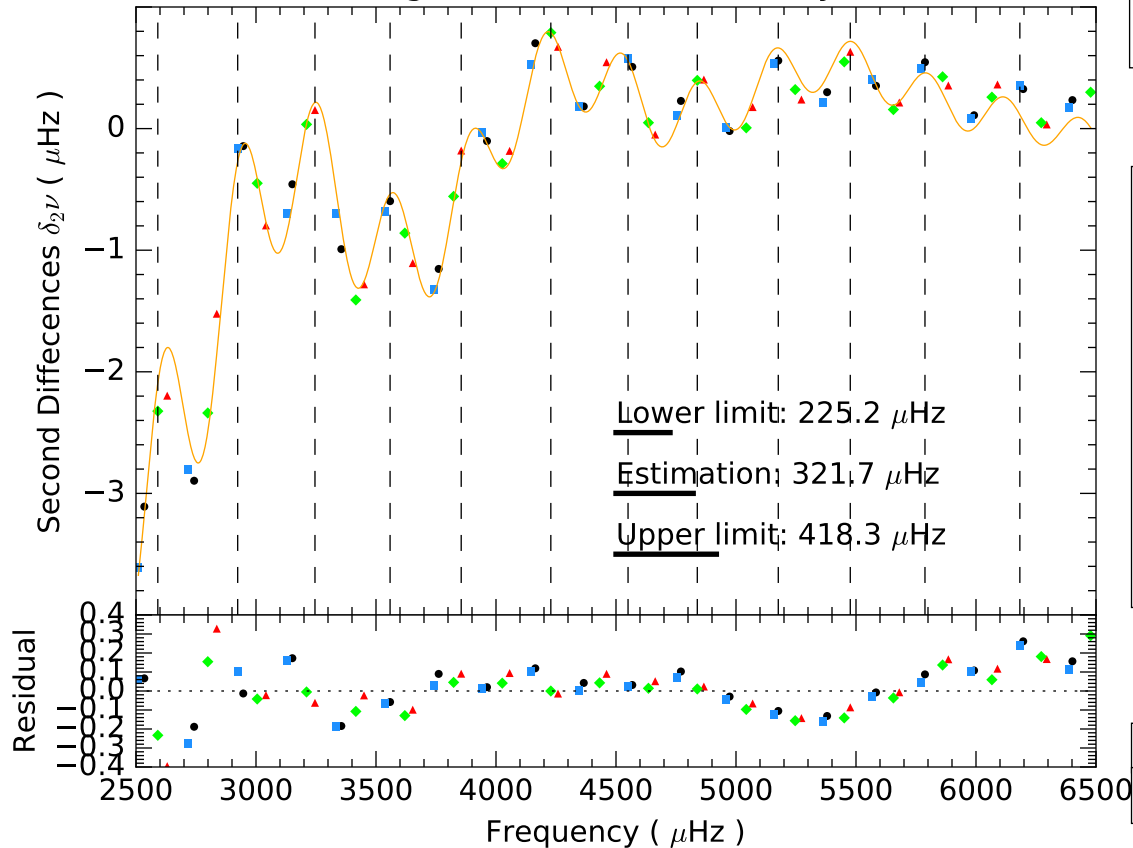


$$\begin{aligned}
 a_0 &= -8.9153 \mu\text{Hz} \\
 a_1 &= 0.0035895 \\
 a_2 &= -3.4544e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.00085711 \\
 c_2 &= 1.2385e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 436.39 \text{ s} \\
 \phi_{HeII} &= 3.4664 \\
 b_2 &= 2.4397e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1642.0 \text{ s} \\
 \phi_{CZ} &= 3.7342
 \end{aligned}$$

profile4

$$\chi^2_\nu(\text{dof} = 69) = 0.0689$$

Age after ZAMS: 0.004 Gyr



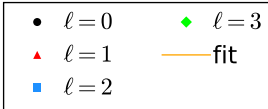
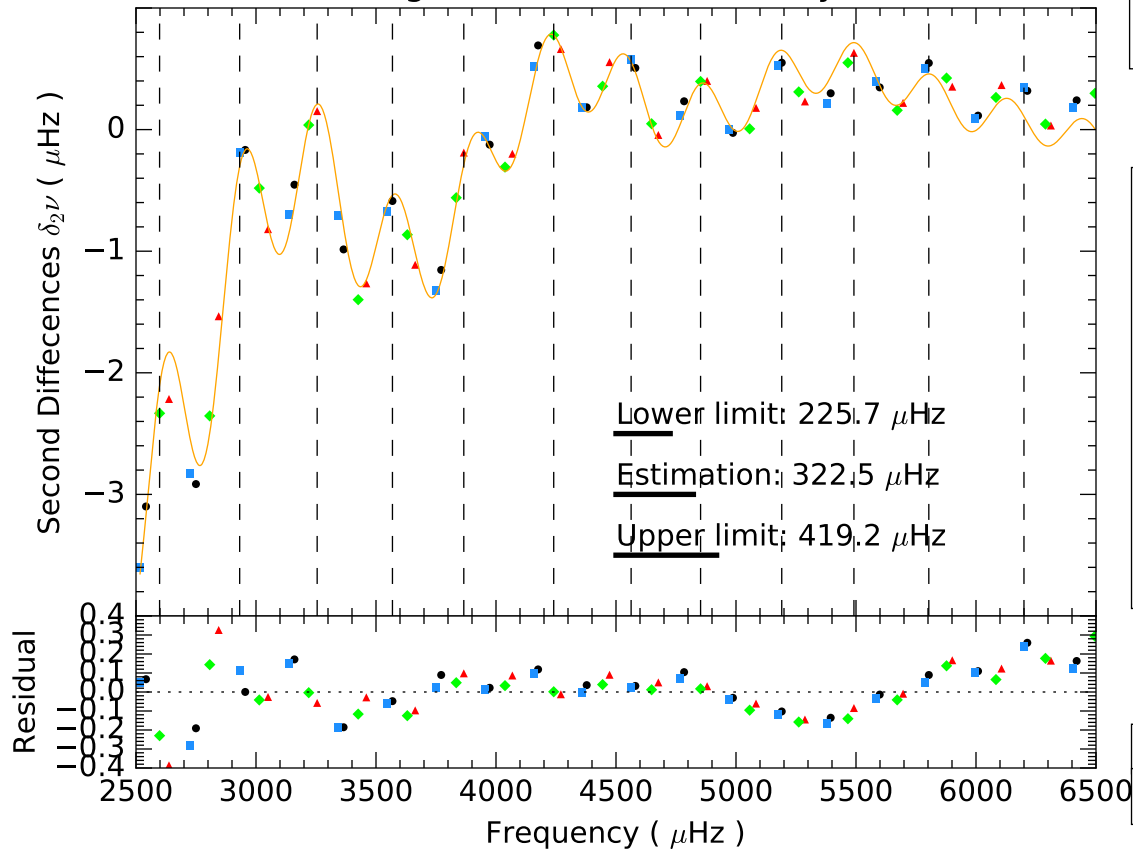
$\bullet$   $\ell=0$      $\blacklozenge$   $\ell=3$   
 $\blacktriangle$   $\ell=1$     — fit  
 $\blacksquare$   $\ell=2$

$a_0 = -8.9367 \mu\text{Hz}$   
 $a_1 = 0.0035728$   
 $a_2 = -3.4151e-07 \mu\text{Hz}^{-1}$   
 $c_0 = 0.00080602$   
 $c_2 = 1.1938e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 430.43 \text{ s}$   
 $\phi_{HeII} = 3.5711$   
 $b_2 = 6.3633e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 1573.0 \text{ s}$   
 $\phi_{CZ} = 0.011378$

profile5

$\chi^2_{\nu}(\text{dof} = 69) = 0.018855$

Age after ZAMS: 0.007 Gyr



$$a_0 = -8.9496 \mu\text{Hz}$$

$$a_1 = 0.003565$$

$$a_2 = -3.3963e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.0007952$$

$$c_2 = 1.1798e-07 \mu\text{Hz}^{-2}$$

$$\tau_{HeII} = 428.9 \text{ s}$$

$$\phi_{HeII} = 3.5625$$

$$b_2 = 6.2902e+06 \text{ mHz}^3$$

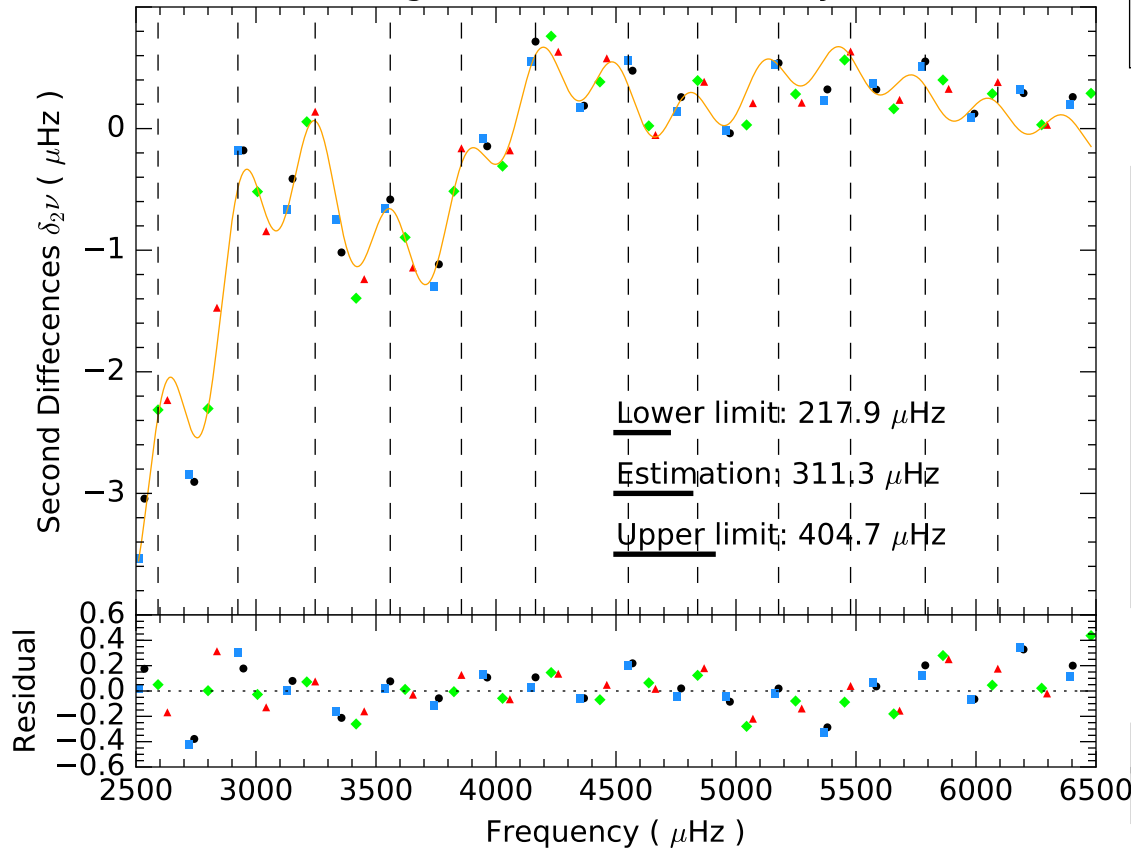
$$\tau_{CZ} = 1568.8 \text{ s}$$

$$\phi_{CZ} = 0.015121$$

profile6

$$\chi^2_\nu(\text{dof} = 69) = 0.018756$$

Age after ZAMS: 0.013 Gyr

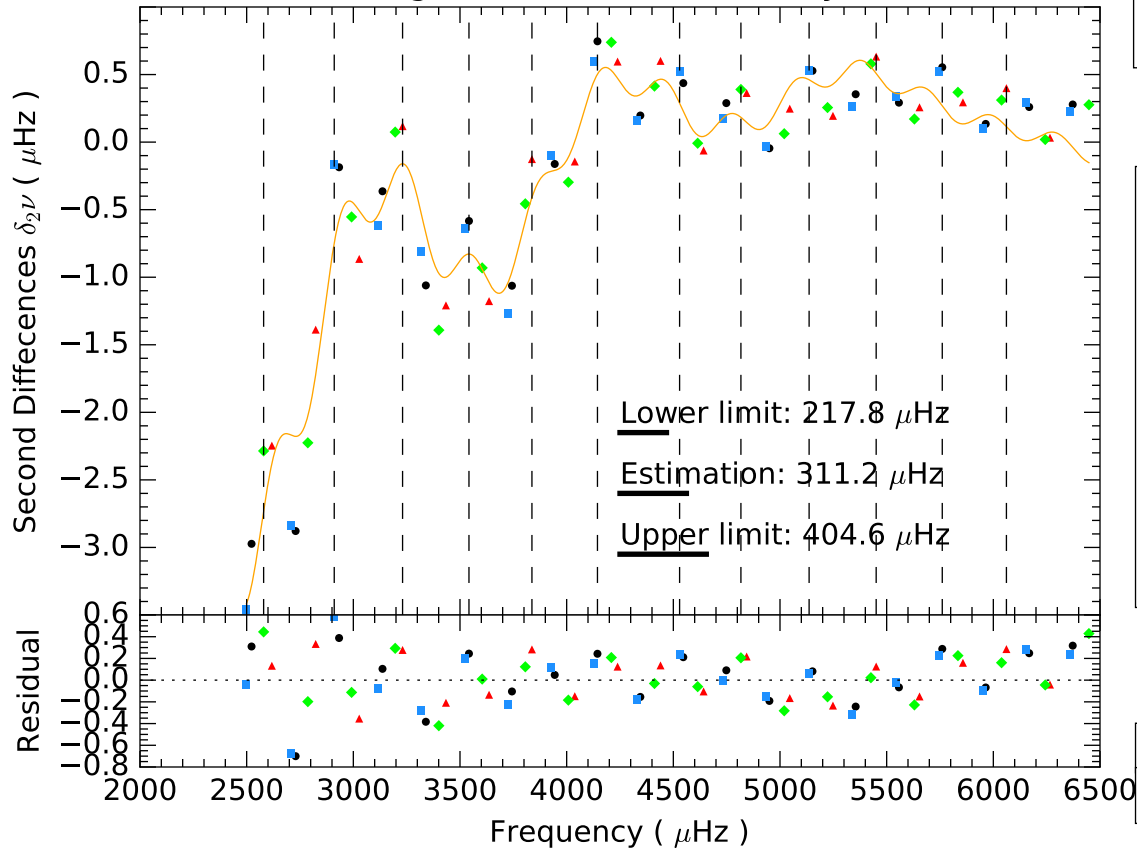


$$\begin{aligned}
 a_0 &= -8.8311 \mu\text{Hz} \\
 a_1 &= 0.0035236 \\
 a_2 &= -3.3608e-07 \mu\text{Hz} \\
 c_0 &= 0.00080769 \\
 c_2 &= 1.1974e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 435.84 \text{ s} \\
 \phi_{HeII} &= 3.3333 \\
 b_2 &= 4.5262e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1604.5 \text{ s} \\
 \phi_{CZ} &= 5.1253
 \end{aligned}$$

profile7

$$\chi^2_\nu(\text{dof} = 69) = 0.032235$$

Age after ZAMS: 0.023 Gyr



- $\ell=0$
- ▲  $\ell=1$
- $\ell=2$
- ◆  $\ell=3$
- fit

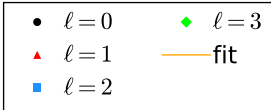
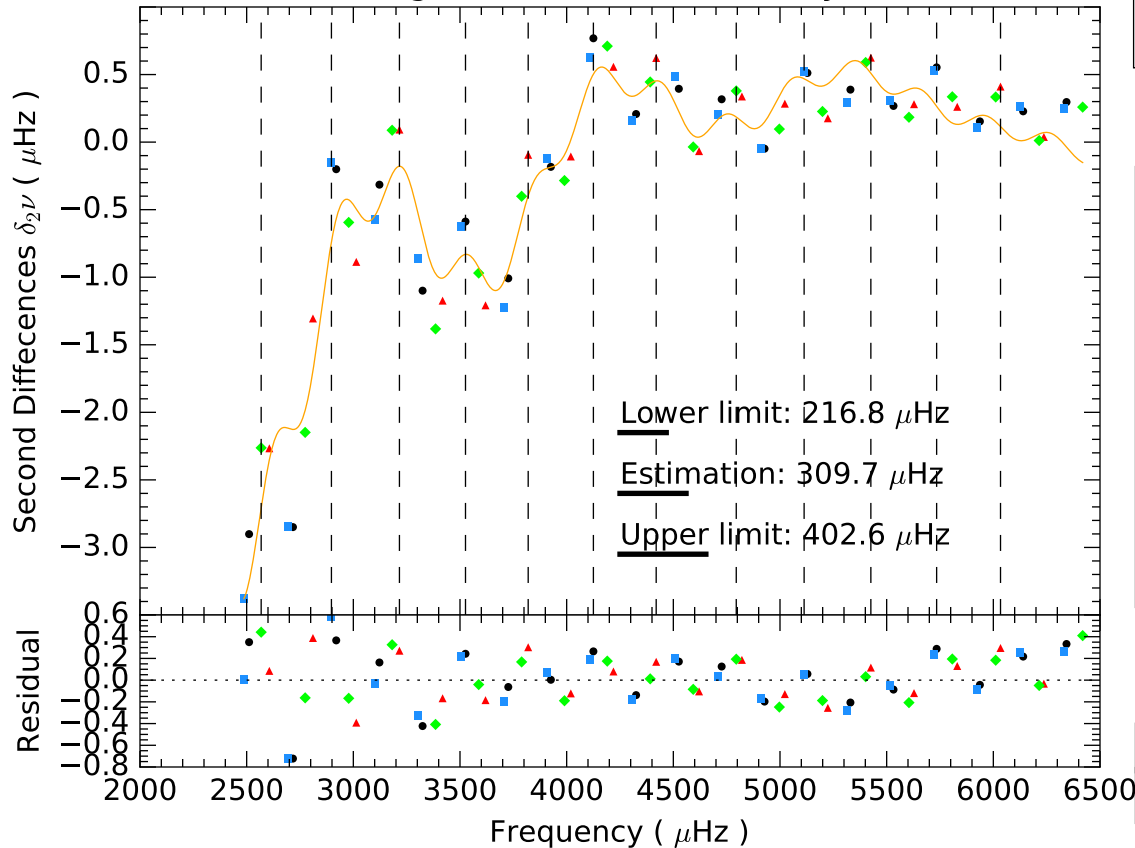
$$\begin{aligned}
 a_0 &= -8.8628 \mu\text{Hz} \\
 a_1 &= 0.0035608 \\
 a_2 &= -3.4204e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.00081751 \\
 c_2 &= 1.2211e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 436.15 \text{ s} \\
 \phi_{HeII} &= 3.4343 \\
 b_2 &= 2.399e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1641.2 \text{ s} \\
 \phi_{CZ} &= 3.6855
 \end{aligned}$$

profile8

$$\chi^2_\nu(\text{dof} = 69) = 0.069059$$



Age after ZAMS: 0.039 Gyr

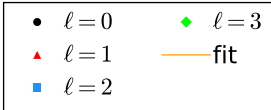
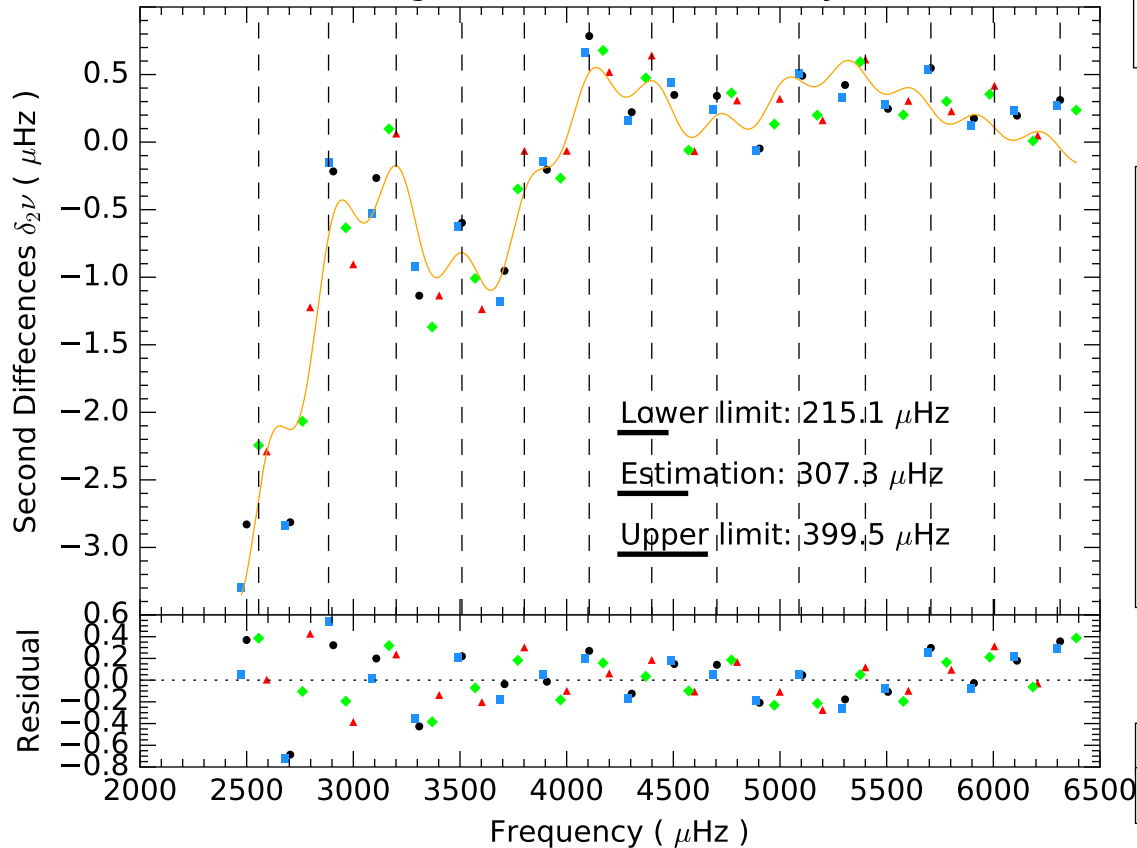


$$\begin{aligned}
 a_0 &= -8.8119 \mu\text{Hz} \\
 a_1 &= 0.0035592 \\
 a_2 &= -3.4366e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.00079821 \\
 c_2 &= 1.22e-07 \mu\text{Hz}^{-2} \\
 \tau_{\text{HeII}} &= 438.45 \text{ s} \\
 \phi_{\text{HeII}} &= 3.4445 \\
 b_2 &= 2.3252e+06 \text{ mHz}^3 \\
 \tau_{\text{CZ}} &= 1648.5 \text{ s} \\
 \phi_{\text{CZ}} &= 3.6529
 \end{aligned}$$

profile9

$$\chi^2_\nu(\text{dof} = 69) = 0.070957$$

Age after ZAMS: 0.068 Gyr

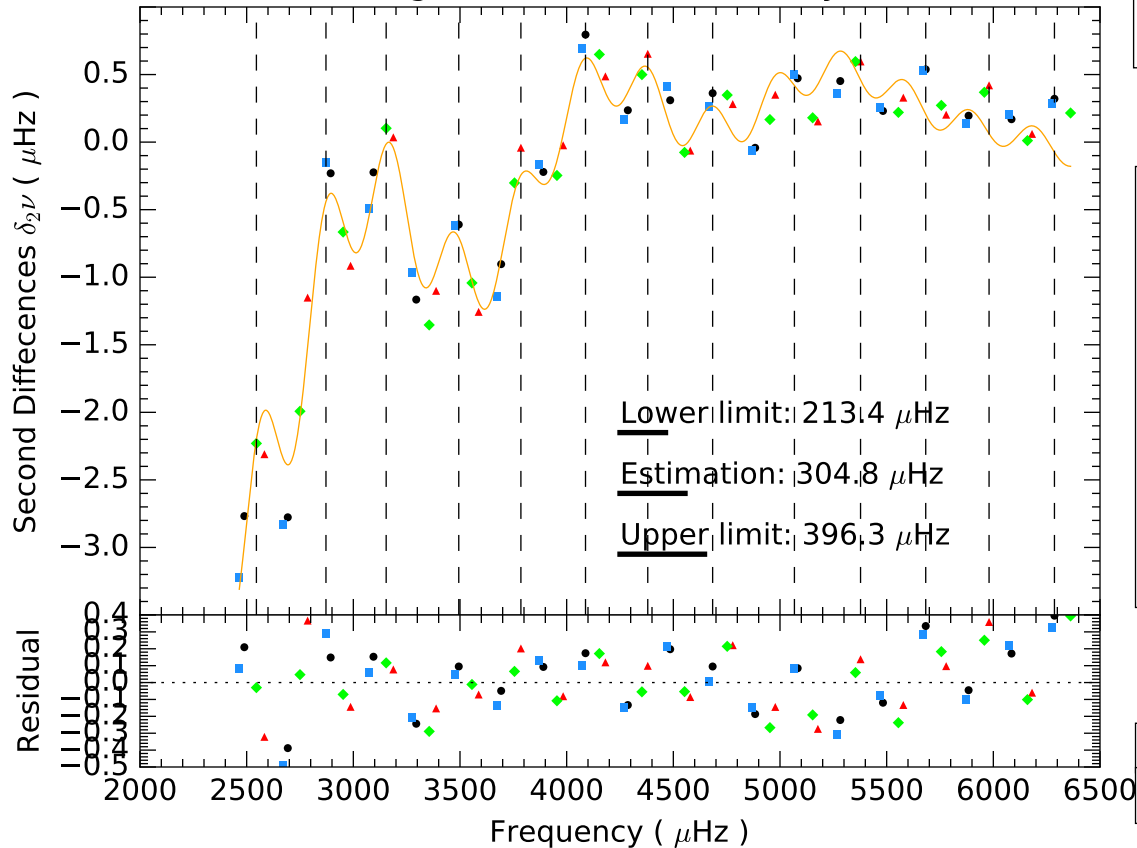


$a_0 = -8.7533 \mu\text{Hz}$   
 $a_1 = 0.0035542$   
 $a_2 = -3.4492e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00078904$   
 $c_2 = 1.2302e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 441.04 \text{ s}$   
 $\phi_{HeII} = 3.4449$   
 $b_2 = 2.3516e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 1657.7 \text{ s}$   
 $\phi_{CZ} = 3.7138$

profile10

$\chi^2_\nu(\text{dof} = 69) = 0.067922$

Age after ZAMS: 0.118 Gyr



$$a_0 = -8.7071 \mu\text{Hz}$$

$$a_1 = 0.003554$$

$$a_2 = -3.4666e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.00072306$$

$$c_2 = 1.1742e-07 \mu\text{Hz}^{-2}$$

$$\tau_{HeII} = 441.25 \text{ s}$$

$$\phi_{HeII} = 3.5385$$

$$b_2 = 3.8592e+06 \text{ mHz}^3$$

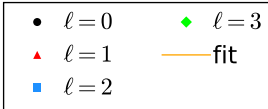
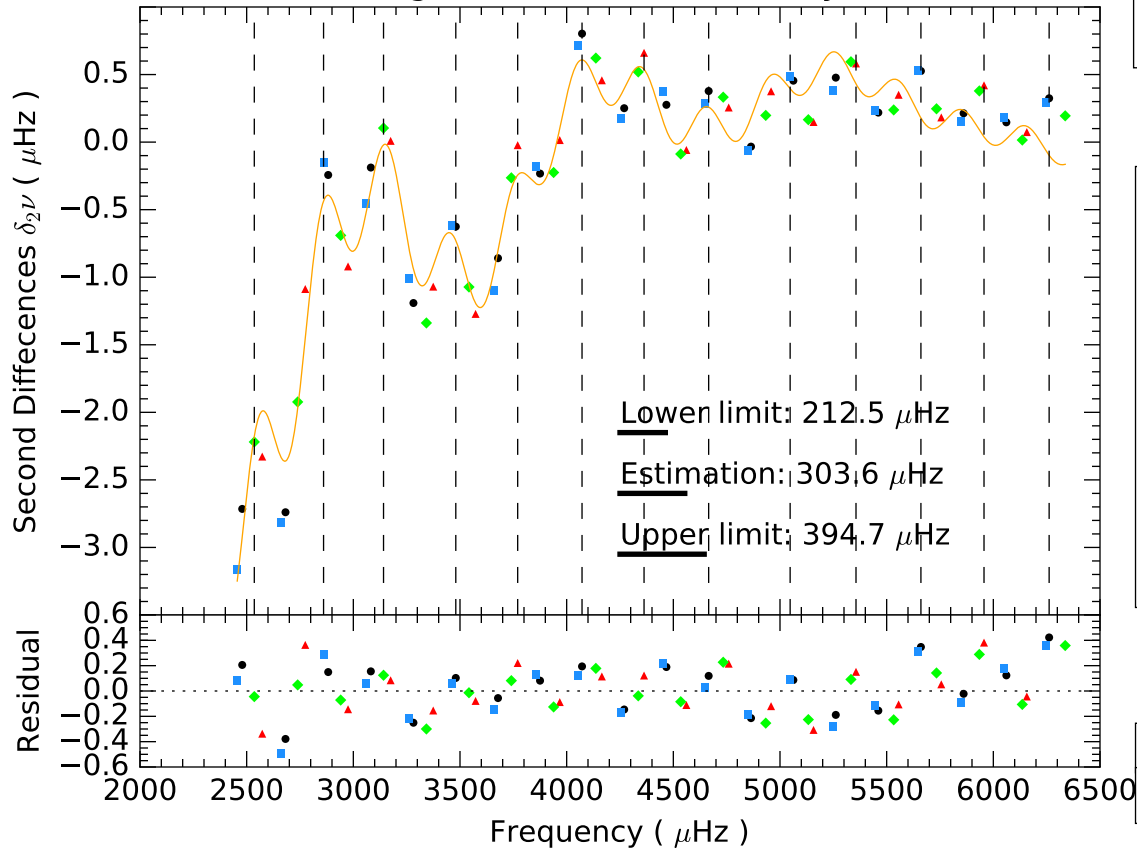
$$\tau_{CZ} = 1657.9 \text{ s}$$

$$\phi_{CZ} = 4.5313$$

profile11

$$\chi^2_\nu(\text{dof} = 69) = 0.043803$$

Age after ZAMS: 0.205 Gyr

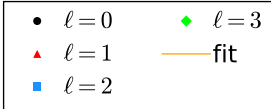
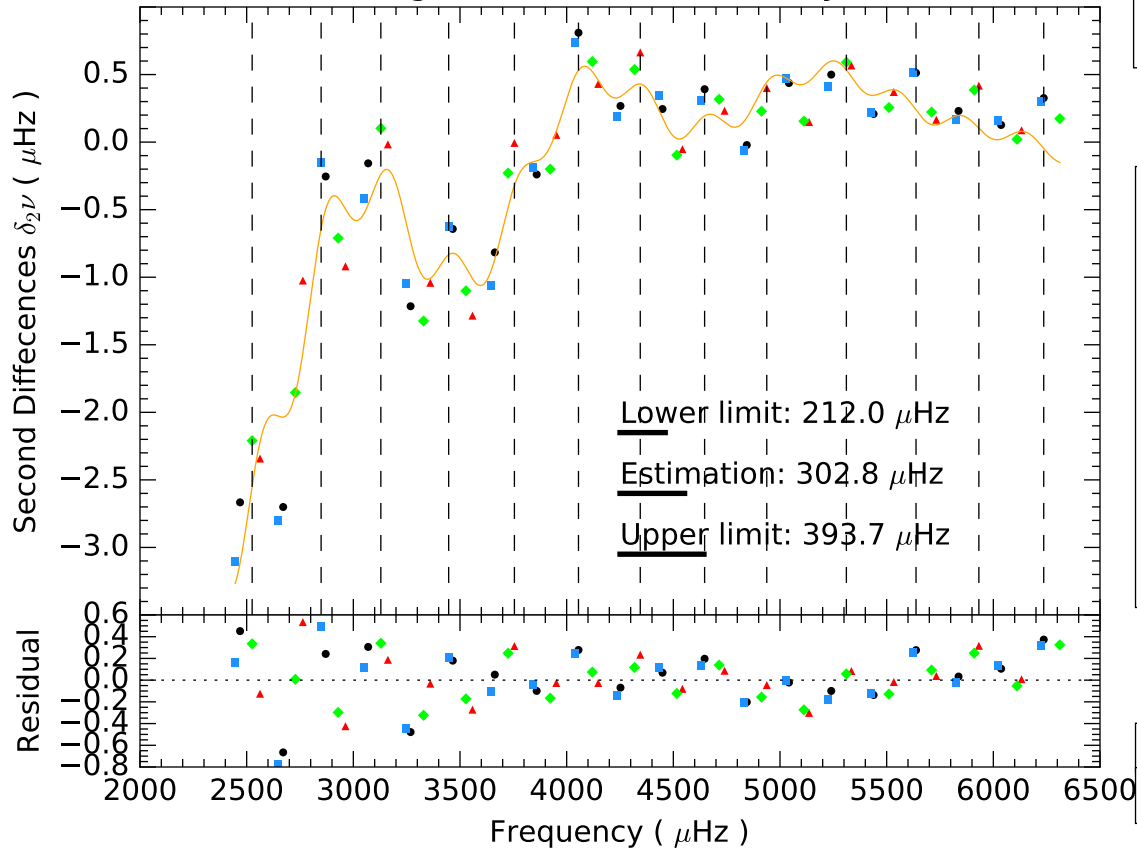


$a_0 = -8.6753 \mu\text{Hz}$   
 $a_1 = 0.0035581$   
 $a_2 = -3.4869e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00072105$   
 $c_2 = 1.186e-07 \mu\text{Hz}^{-2}$   
 $\tau_{\text{HeII}} = 443.0 \text{ s}$   
 $\phi_{\text{HeII}} = 3.5622$   
 $b_2 = 3.6834e+06 \text{ mHz}^3$   
 $\tau_{\text{CZ}} = 1669.2 \text{ s}$   
 $\phi_{\text{CZ}} = 4.4401$

profile12

$\chi^2_{\nu}(\text{dof} = 69) = 0.045717$

Age after ZAMS: 0.354 Gyr

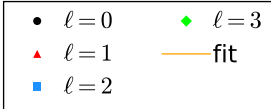
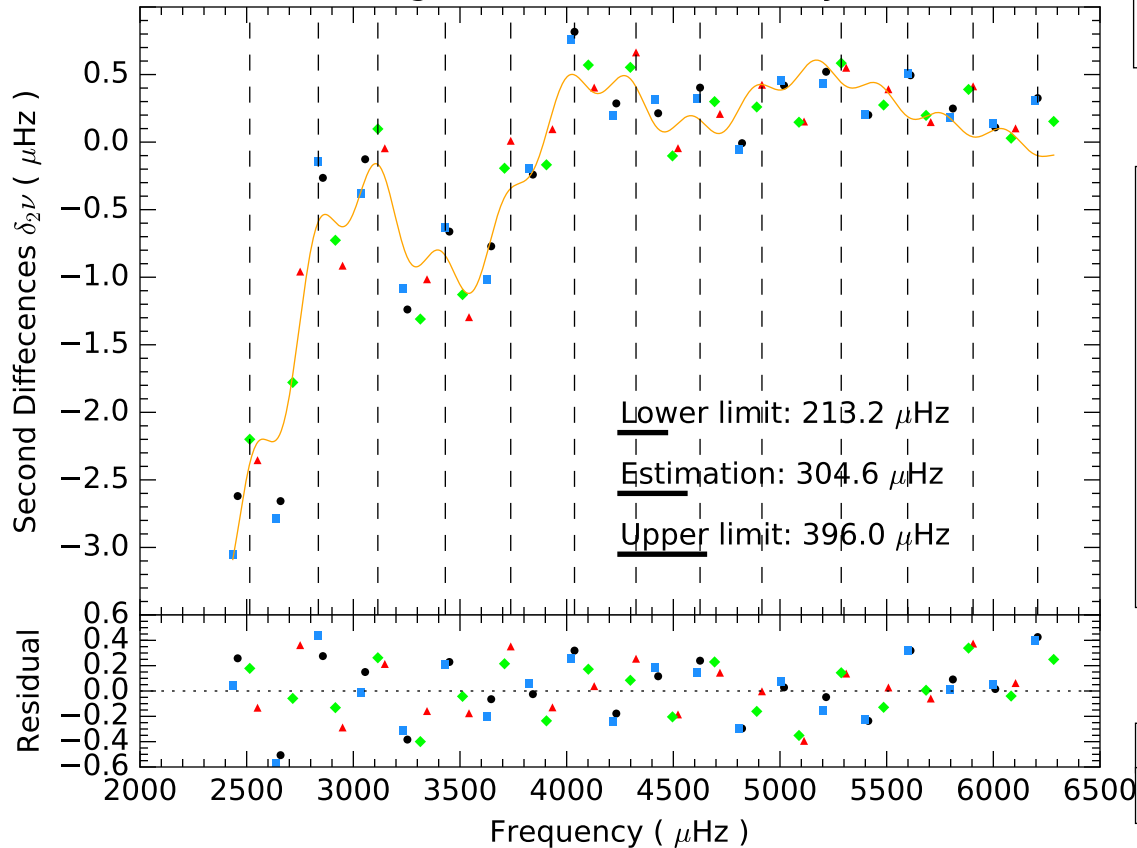


$a_0 = -8.6345 \mu\text{Hz}$   
 $a_1 = 0.0035578$   
 $a_2 = -3.5019e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00076549$   
 $c_2 = 1.2422e-07 \mu\text{Hz}^{-2}$   
 $\tau_{\text{HeII}} = 448.13 \text{ s}$   
 $\phi_{\text{HeII}} = 3.4489$   
 $b_2 = 2.2084e+06 \text{ mHz}^3$   
 $\tau_{\text{CZ}} = 1678.9 \text{ s}$   
 $\phi_{\text{CZ}} = 3.6986$

profile13

$\chi^2_{\nu}(\text{dof} = 69) = 0.070668$

Age after ZAMS: 0.610 Gyr



$a_0 = -8.6657 \mu\text{Hz}$   
 $a_1 = 0.0035943$   
 $a_2 = -3.5613e-07 \mu\text{Hz}^{-2}$

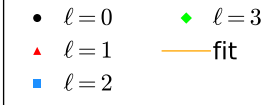
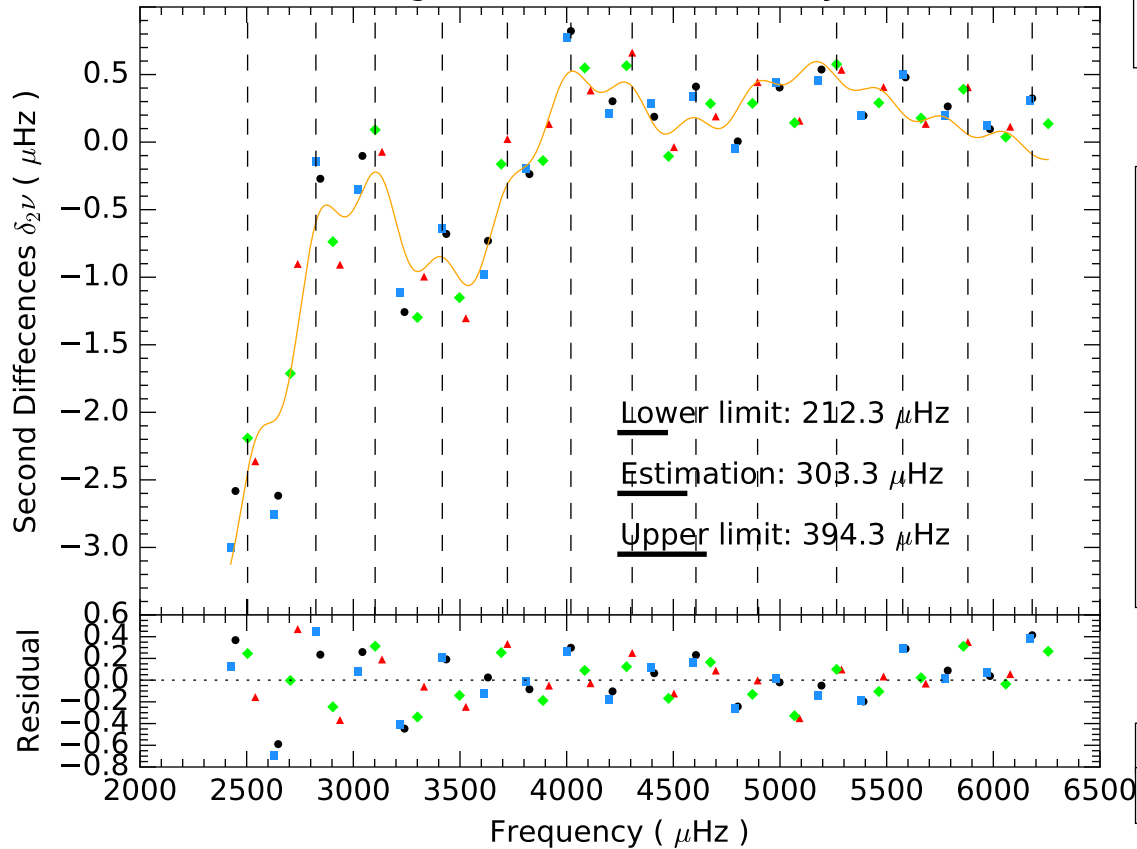
$c_0 = 0.00077143$   
 $c_2 = 1.2533e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 448.7 \text{ s}$   
 $\phi_{HeII} = 3.5396$

$b_2 = 2.0264e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 1705.1 \text{ s}$   
 $\phi_{CZ} = 3.8499$

profile14

$\chi^2_\nu(\text{dof} = 69) = 0.06363$

Age after ZAMS: 0.910 Gyr

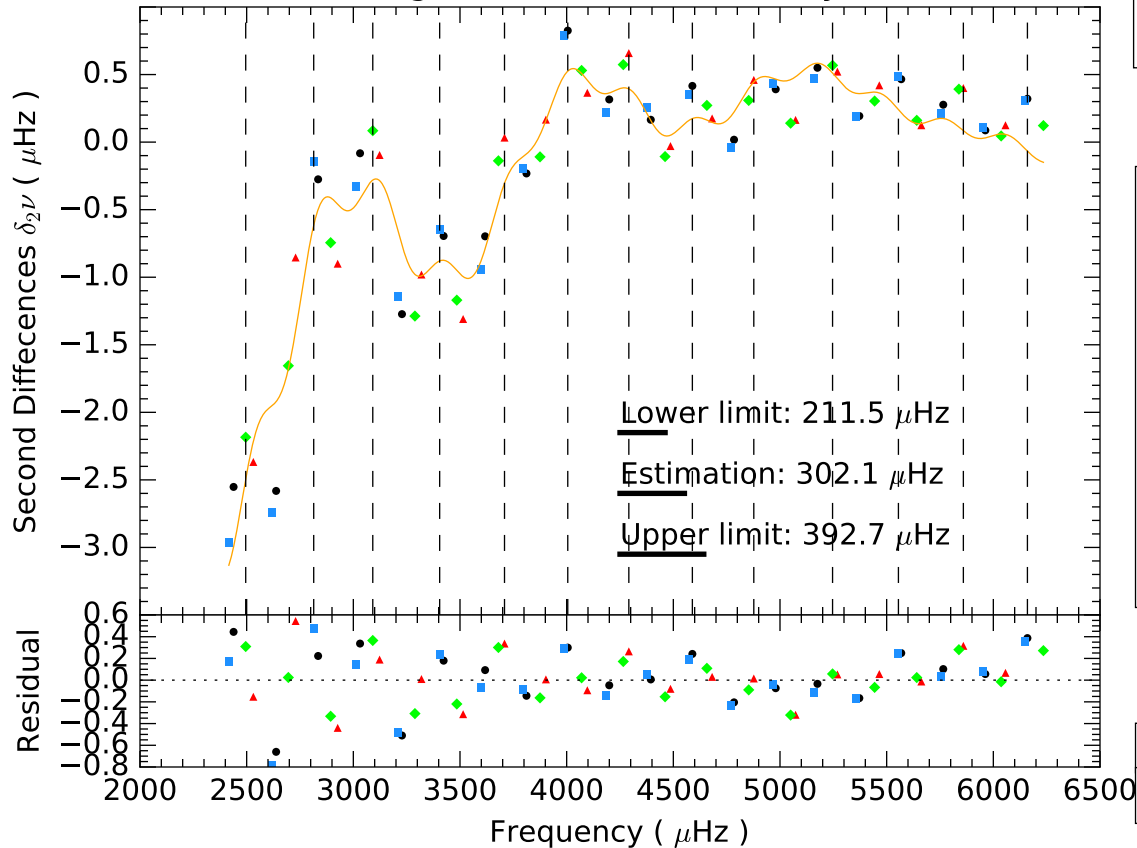


$a_0 = -8.6308 \mu\text{Hz}$   
 $a_1 = 0.0035987$   
 $a_2 = -3.5837e-07 \mu\text{Hz}^{-1}$   
 $c_0 = 0.00076362$   
 $c_2 = 1.2558e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 450.99 \text{ s}$   
 $\phi_{HeII} = 3.5532$   
 $b_2 = 1.7487e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 1705.0 \text{ s}$   
 $\phi_{CZ} = 3.7239$

profile15

$\chi^2_\nu(\text{dof} = 69) = 0.066494$

Age after ZAMS: 1.210 Gyr



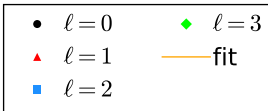
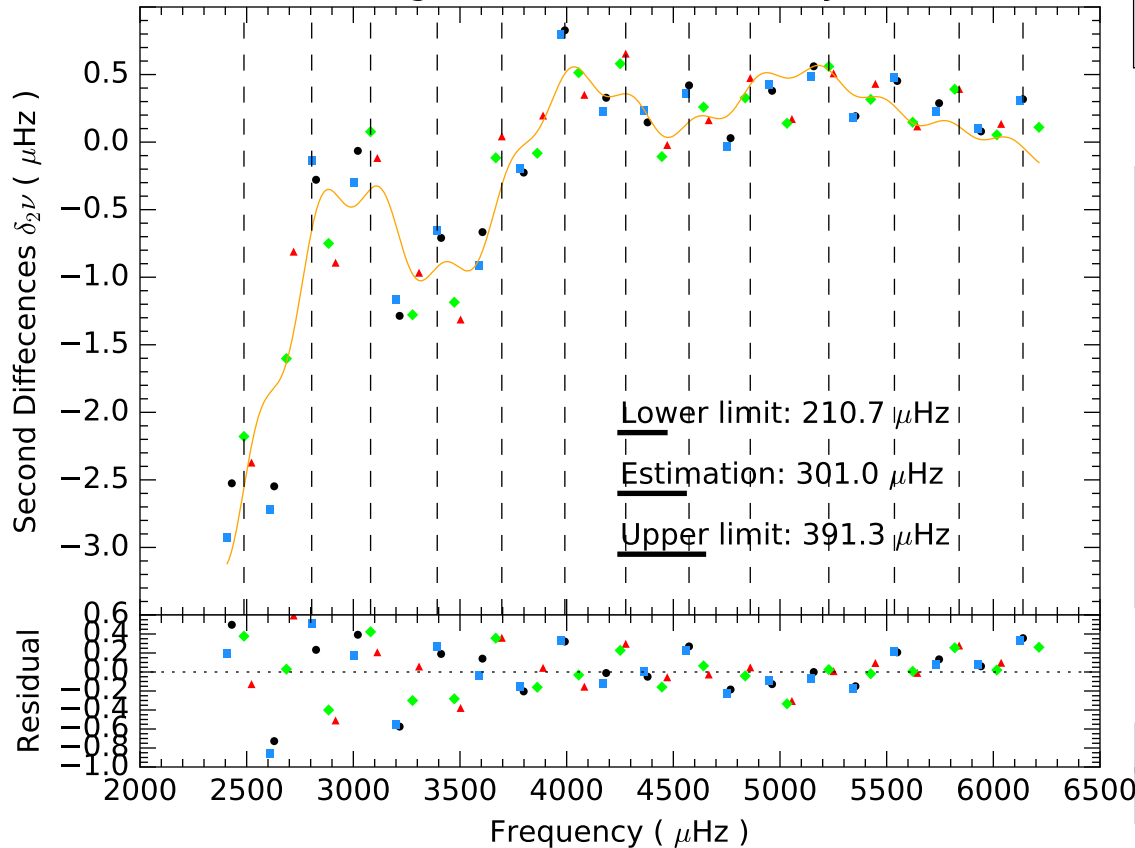
$$\begin{aligned}
 a_0 &= -8.6047 \mu\text{Hz} \\
 a_1 &= 0.0036042 \\
 a_2 &= -3.605e-07 \mu\text{Hz}^{-1} \\
 c_0 &= 0.00076158 \\
 c_2 &= 1.2617e-07 \mu\text{Hz}^{-2} \\
 \tau_{\text{HeII}} &= 453.06 \text{ s} \\
 \phi_{\text{HeII}} &= 3.5612 \\
 b_2 &= 1.5876e+06 \text{ mHz}^3 \\
 \tau_{\text{CZ}} &= 1703.1 \text{ s} \\
 \phi_{\text{CZ}} &= 3.6556
 \end{aligned}$$

profile16

$$\chi^2_{\nu}(\text{dof} = 69) = 0.075305$$



Age after ZAMS: 1.510 Gyr

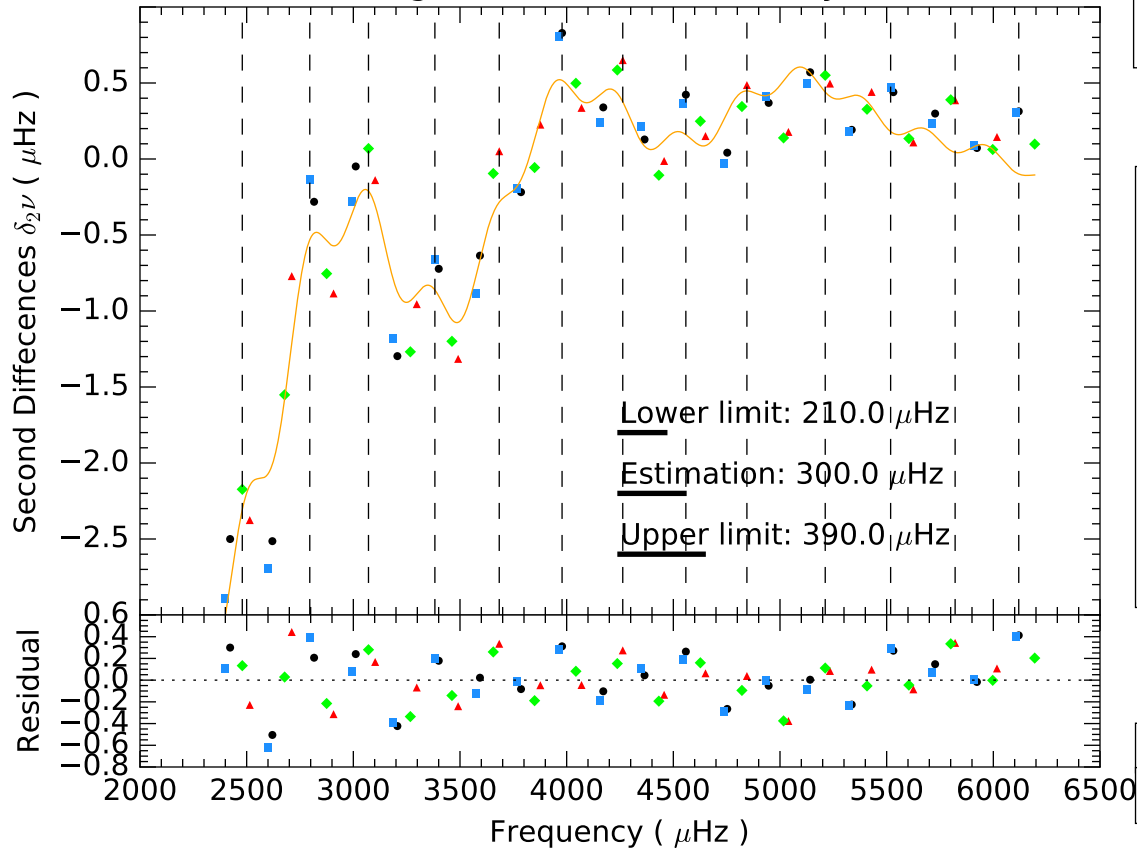


$a_0 = -8.5825 \mu\text{Hz}$   
 $a_1 = 0.0036105$   
 $a_2 = -3.6263e-07 \mu\text{Hz}^{-1}$   
 $c_0 = 0.00076273$   
 $c_2 = 1.2697e-07 \mu\text{Hz}^{-2}$   
 $\tau_{\text{HeII}} = 455.13 \text{ s}$   
 $\phi_{\text{HeII}} = 3.5627$   
 $b_2 = 1.4638e+06 \text{ mHz}^3$   
 $\tau_{\text{CZ}} = 1699.8 \text{ s}$   
 $\phi_{\text{CZ}} = 3.6095$

profile17

$\chi^2_{\nu}(\text{dof} = 69) = 0.089244$

# Age after ZAMS: 1.810 Gyr



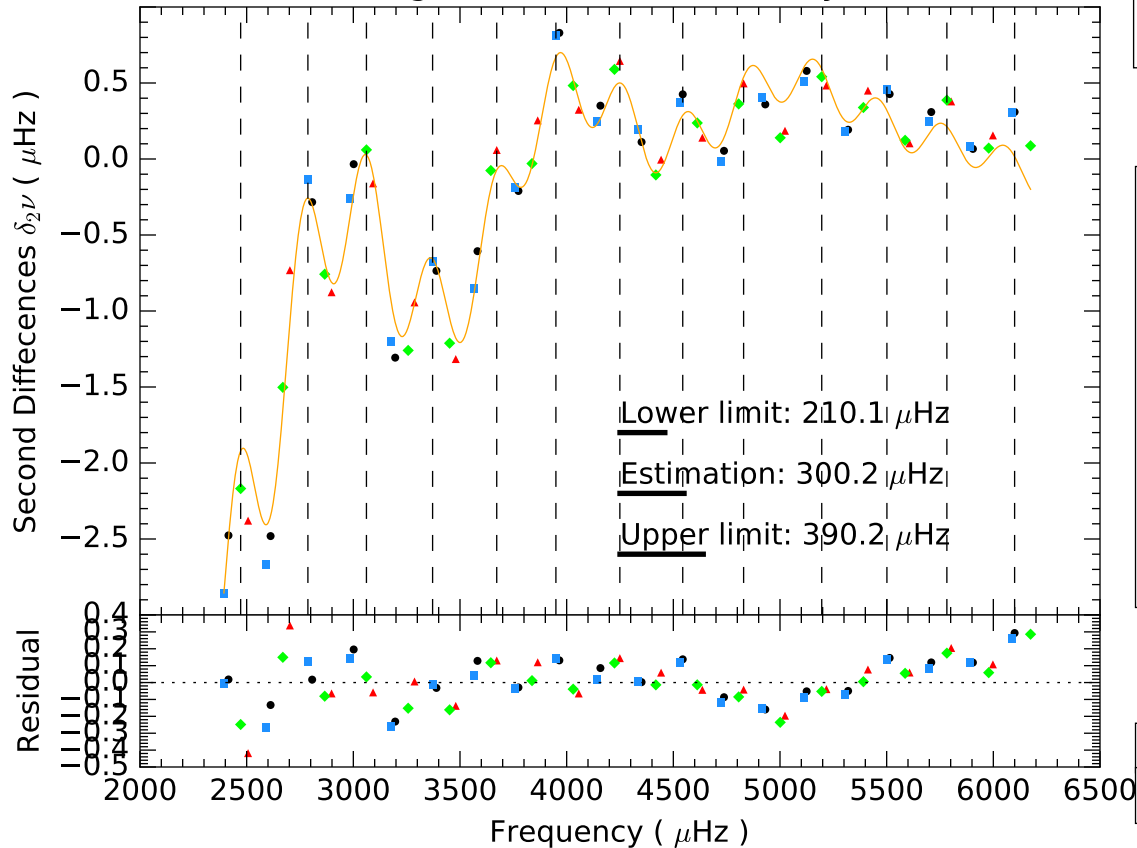
- $\bullet$   $\ell=0$
- $\blacktriangle$   $\ell=1$
- $\blacksquare$   $\ell=2$
- $\blacklozenge$   $\ell=3$
- $\text{—}$  fit

$a_0 = -8.5534 \mu\text{Hz}$   
 $a_1 = 0.0036127$   
 $a_2 = -3.6425e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00075813$   
 $c_2 = 1.2738e-07 \mu\text{Hz}^{-2}$   
 $\tau_{\text{HeII}} = 456.61 \text{ s}$   
 $\phi_{\text{HeII}} = 3.5832$   
 $b_2 = 1.7687e+06 \text{ mHz}^3$   
 $\tau_{\text{CZ}} = 1729.0 \text{ s}$   
 $\phi_{\text{CZ}} = 3.8855$

profile18

$\chi^2_{\nu}(\text{dof} = 69) = 0.06217$

# Age after ZAMS: 2.110 Gyr



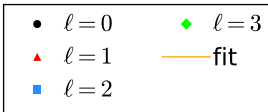
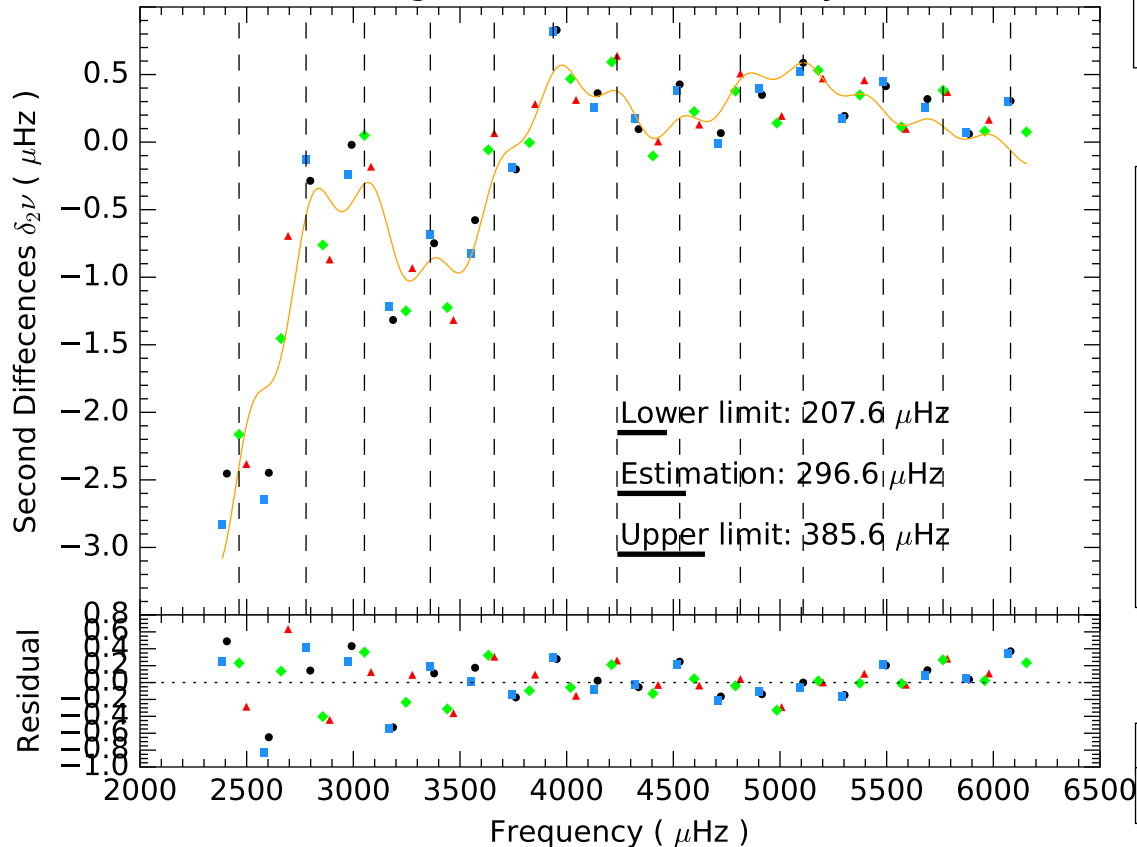
- $\bullet$   $\ell=0$
- $\blacktriangle$   $\ell=1$
- $\blacksquare$   $\ell=2$
- $\blacklozenge$   $\ell=3$
- fit

$a_0 = -8.5365 \mu\text{Hz}$   
 $a_1 = 0.0036203$   
 $a_2 = -3.6644e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00078272$   
 $c_2 = 1.3055e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 459.9 \text{ s}$   
 $\phi_{HeII} = 3.5323$   
 $b_2 = 4.0114e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 1670.9 \text{ s}$   
 $\phi_{CZ} = 0.014578$

profile19

$\chi^2_{\nu}(\text{dof} = 69) = 0.022499$

# Age after ZAMS: 2.410 Gyr

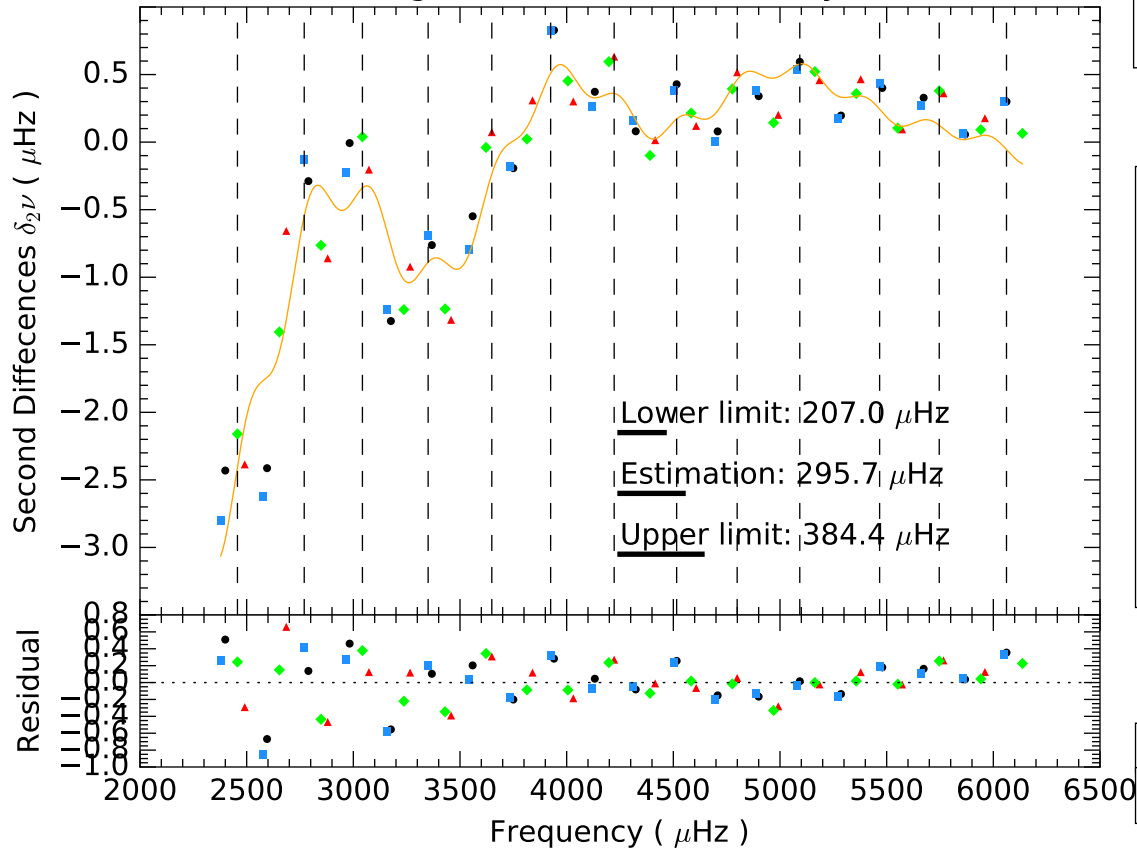


$$\begin{aligned}
 a_0 &= -8.4955 \mu\text{Hz} \\
 a_1 &= 0.0036171 \\
 a_2 &= -3.6747e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.00073792 \\
 c_2 &= 1.2719e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 459.22 \text{ s} \\
 \phi_{HeII} &= 3.6384 \\
 b_2 &= 1.657e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1724.2 \text{ s} \\
 \phi_{CZ} &= 3.6168
 \end{aligned}$$

profile20

$$\chi^2_\nu(\text{dof} = 69) = 0.080011$$

Age after ZAMS: 2.710 Gyr



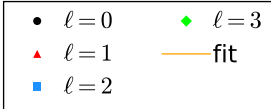
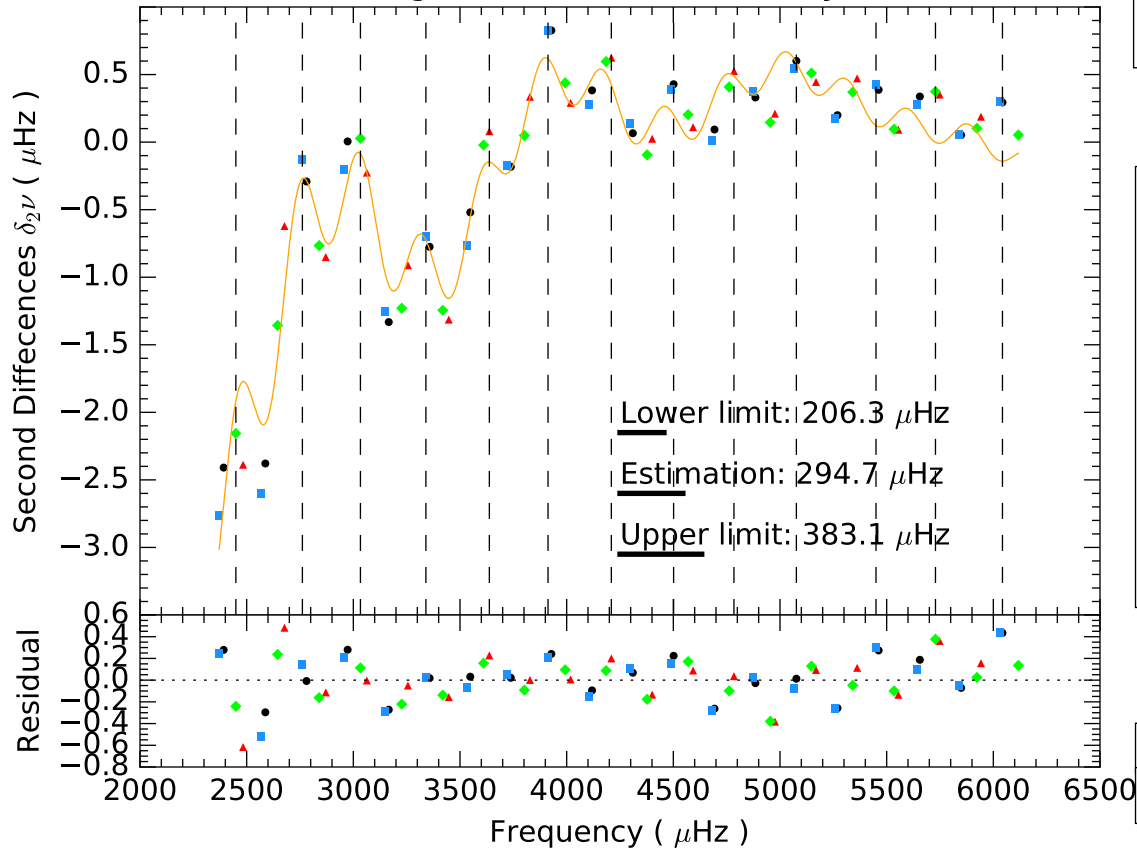
$\ell=0$  (black circle)  
 $\ell=1$  (red triangle)  
 $\ell=2$  (blue square)  
 $\ell=3$  (green diamond)  
 fit (orange line)

$a_0 = -8.4726 \mu\text{Hz}$   
 $a_1 = 0.0036218$   
 $a_2 = -3.6936e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00073629$   
 $c_2 = 1.2768e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 460.95 \text{ s}$   
 $\phi_{HeII} = 3.6494$   
 $b_2 = 1.5915e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 1726.5 \text{ s}$   
 $\phi_{CZ} = 3.5959$

profile21

$\chi^2_{\nu}(\text{dof} = 69) = 0.086202$

Age after ZAMS: 3.010 Gyr

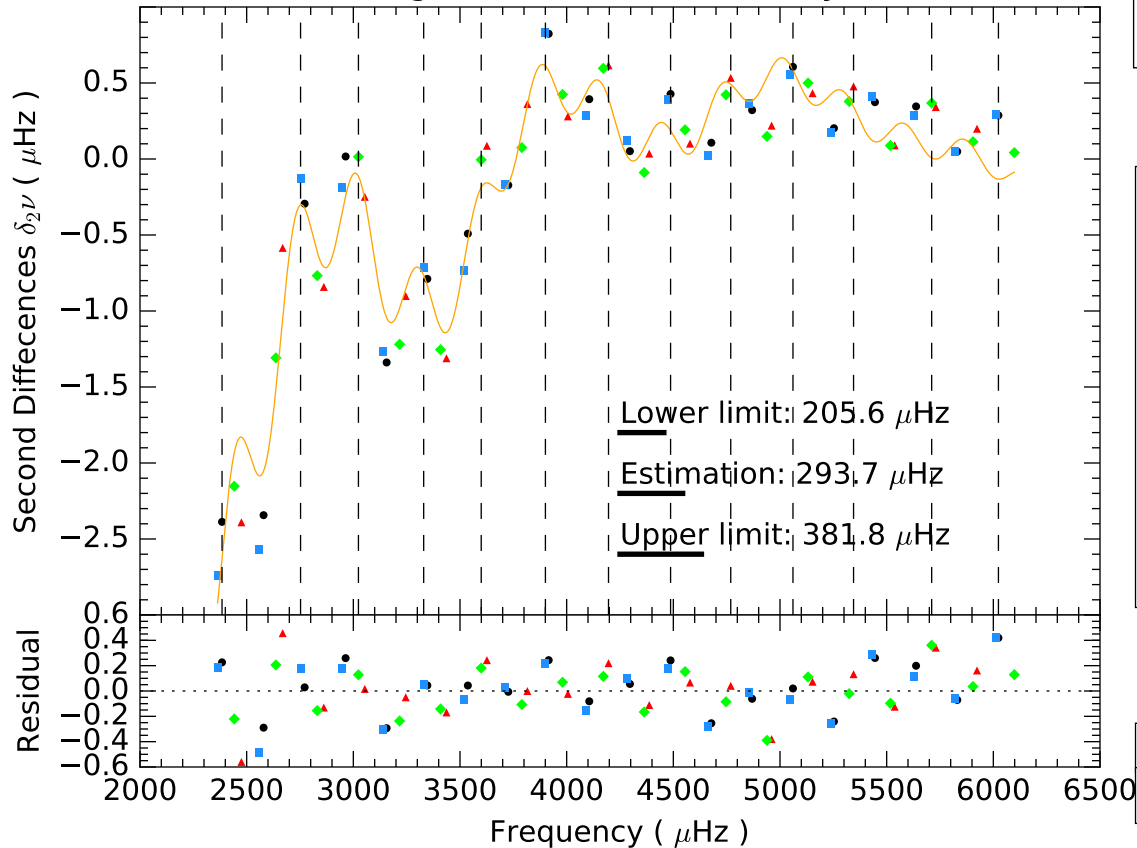


$$\begin{aligned}
 a_0 &= -8.4382 \mu\text{Hz} \\
 a_1 &= 0.0036218 \\
 a_2 &= -3.7079e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.00071311 \\
 c_2 &= 1.2747e-07 \mu\text{Hz}^{-2} \\
 \tau_{\text{HeII}} &= 458.86 \text{ s} \\
 \phi_{\text{HeII}} &= 3.8189 \\
 b_2 &= 3.2811e+06 \text{ mHz}^3 \\
 \tau_{\text{CZ}} &= 1755.3 \text{ s} \\
 \phi_{\text{CZ}} &= 3.7602
 \end{aligned}$$

profile22

$$\chi^2_\nu(\text{dof} = 69) = 0.053694$$

# Age after ZAMS: 3.310 Gyr

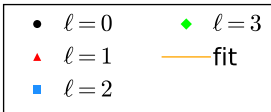
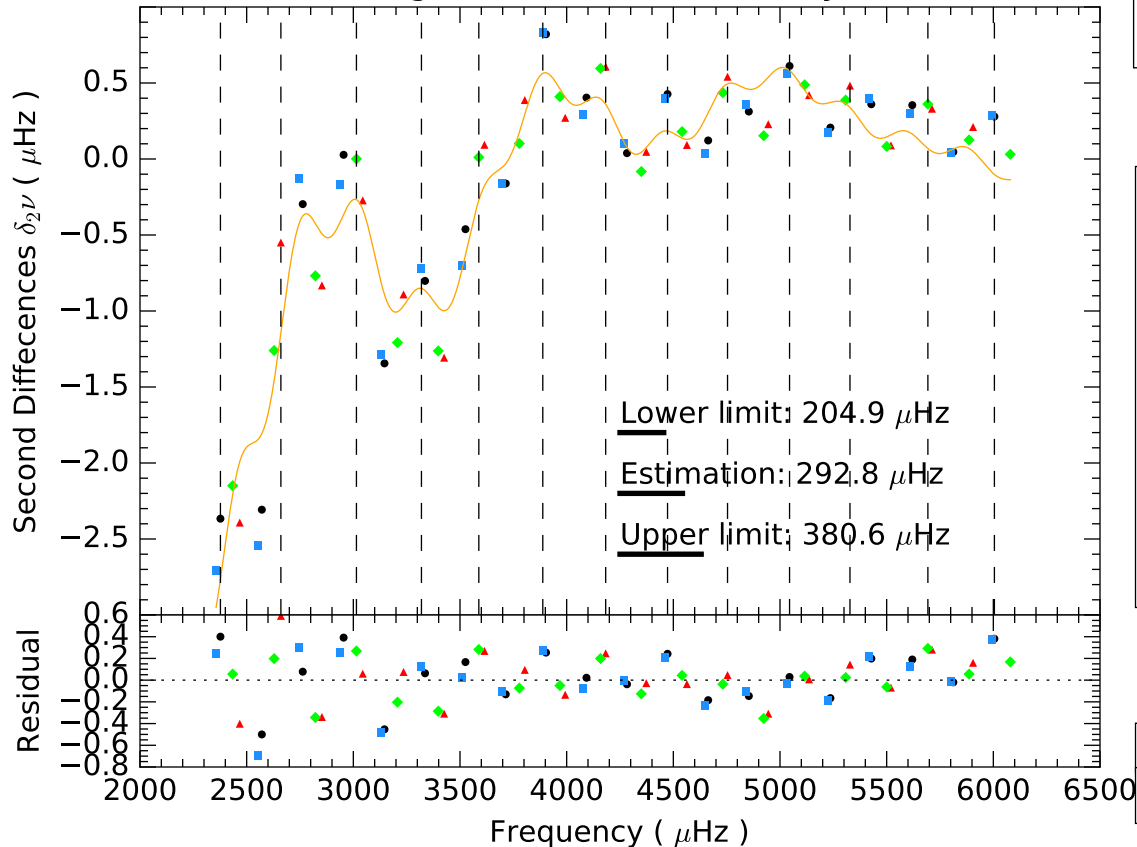


- $\bullet$   $\ell=0$
- $\blacktriangle$   $\ell=1$
- $\blacksquare$   $\ell=2$
- $\blacklozenge$   $\ell=3$
- $\text{—}$  fit

$a_0 = -8.4117 \mu\text{Hz}$   
 $a_1 = 0.0036248$   
 $a_2 = -3.725e-07 \mu\text{Hz}^{-1}$   
 $c_0 = 0.00070948$   
 $c_2 = 1.2637e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 462.56 \text{ s}$   
 $\phi_{HeII} = 3.7491$   
 $b_2 = 2.9942e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 1757.3 \text{ s}$   
 $\phi_{CZ} = 3.9923$

profile23  
 $\chi^2_\nu(\text{dof} = 69) = 0.050428$

# Age after ZAMS: 3.610 Gyr



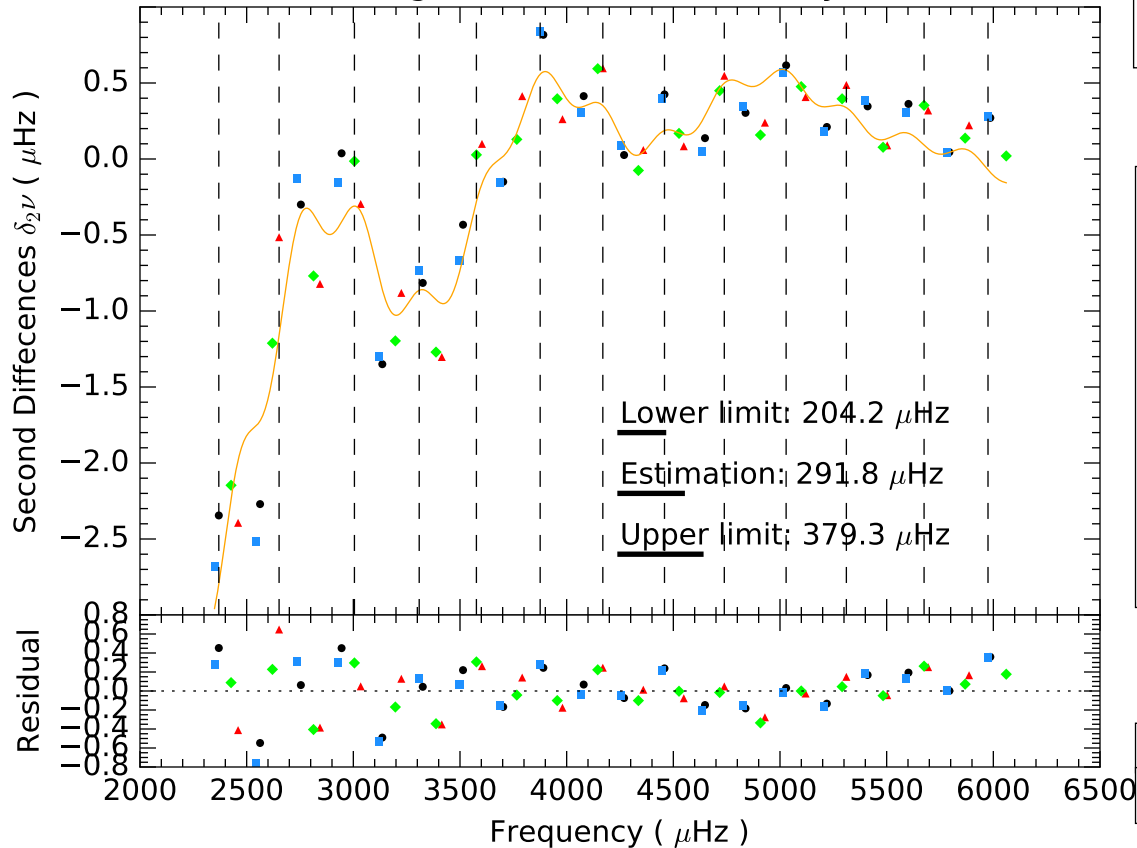
$a_0 = -8.4078 \mu\text{Hz}$   
 $a_1 = 0.0036381$   
 $a_2 = -3.7536e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00074105$   
 $c_2 = 1.2998e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 466.28 \text{ s}$   
 $\phi_{HeII} = 3.6775$   
 $b_2 = 1.6434e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 1756.9 \text{ s}$   
 $\phi_{CZ} = 3.7704$

profile24

$\chi^2_\nu(\text{dof} = 69) = 0.065426$



# Age after ZAMS: 3.910 Gyr



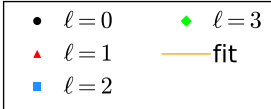
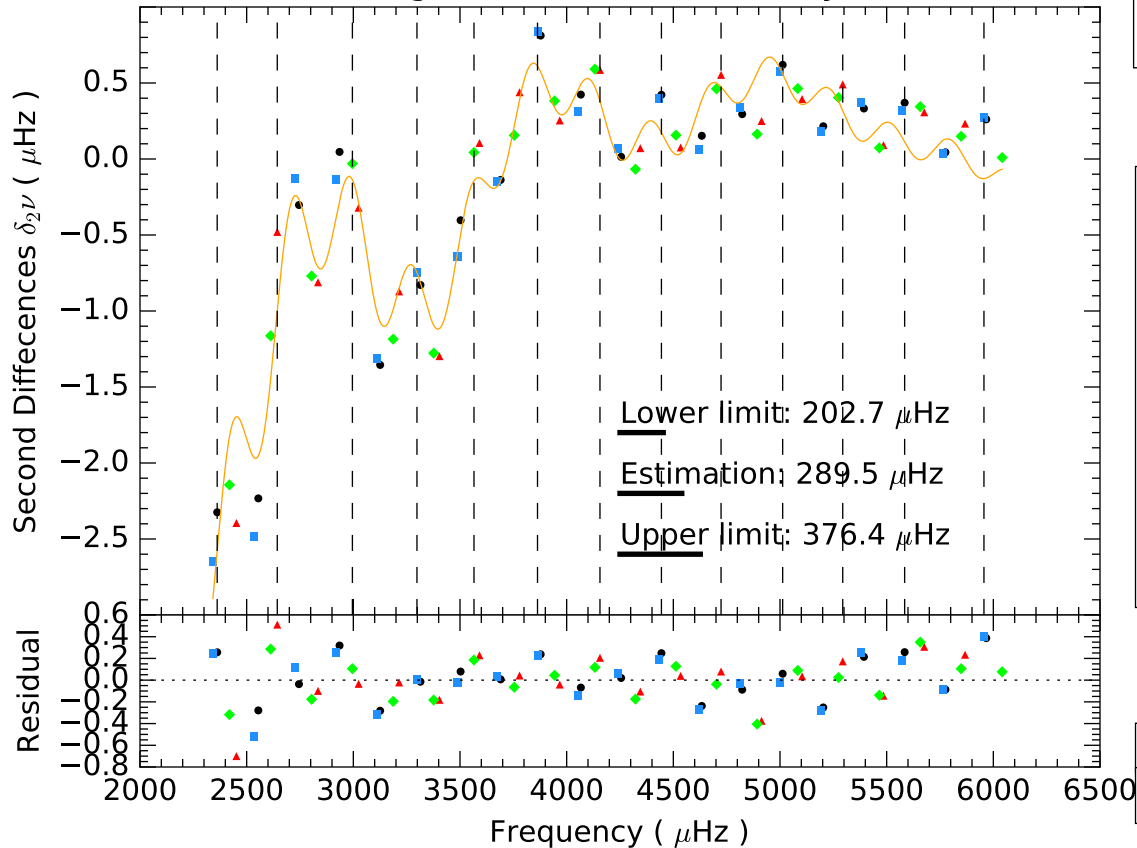
- $\bullet$   $\ell=0$
- $\blacktriangle$   $\ell=1$
- $\blacksquare$   $\ell=2$
- $\blacklozenge$   $\ell=3$
- $\text{—}$  fit

$$\begin{aligned}
 a_0 &= -8.3811 \mu\text{Hz} \\
 a_1 &= 0.0036414 \\
 a_2 &= -3.7717e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.0007377 \\
 c_2 &= 1.3033e-07 \mu\text{Hz}^{-2} \\
 \tau_{\text{HeII}} &= 467.93 \text{ s} \\
 \phi_{\text{HeII}} &= 3.6954 \\
 b_2 &= 1.5177e+06 \text{ mHz}^3 \\
 \tau_{\text{CZ}} &= 1756.2 \text{ s} \\
 \phi_{\text{CZ}} &= 3.7253
 \end{aligned}$$

profile25

$$\chi^2_\nu(\text{dof} = 69) = 0.073928$$

Age after ZAMS: 4.210 Gyr

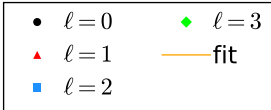
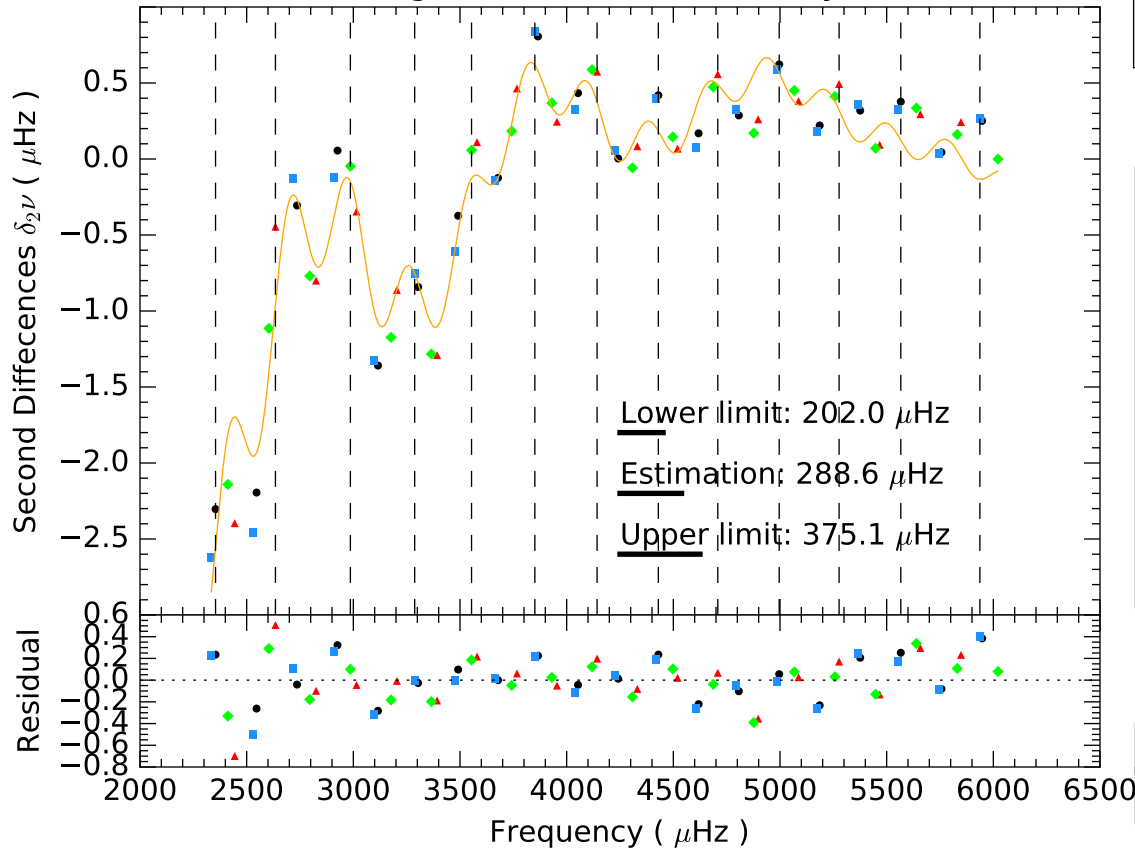


$a_0 = -8.3397 \mu\text{Hz}$   
 $a_1 = 0.0036386$   
 $a_2 = -3.7838e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00068843$   
 $c_2 = 1.2741e-07 \mu\text{Hz}^{-2}$   
 $\tau_{\text{HeII}} = 463.75 \text{ s}$   
 $\phi_{\text{HeII}} = 3.9455$   
 $b_2 = 3.0111e+06 \text{ mHz}^3$   
 $\tau_{\text{CZ}} = 1784.3 \text{ s}$   
 $\phi_{\text{CZ}} = 3.5964$

profile26

$\chi^2_\nu(\text{dof} = 69) = 0.056182$

Age after ZAMS: 4.510 Gyr

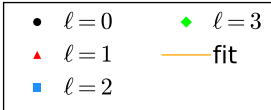
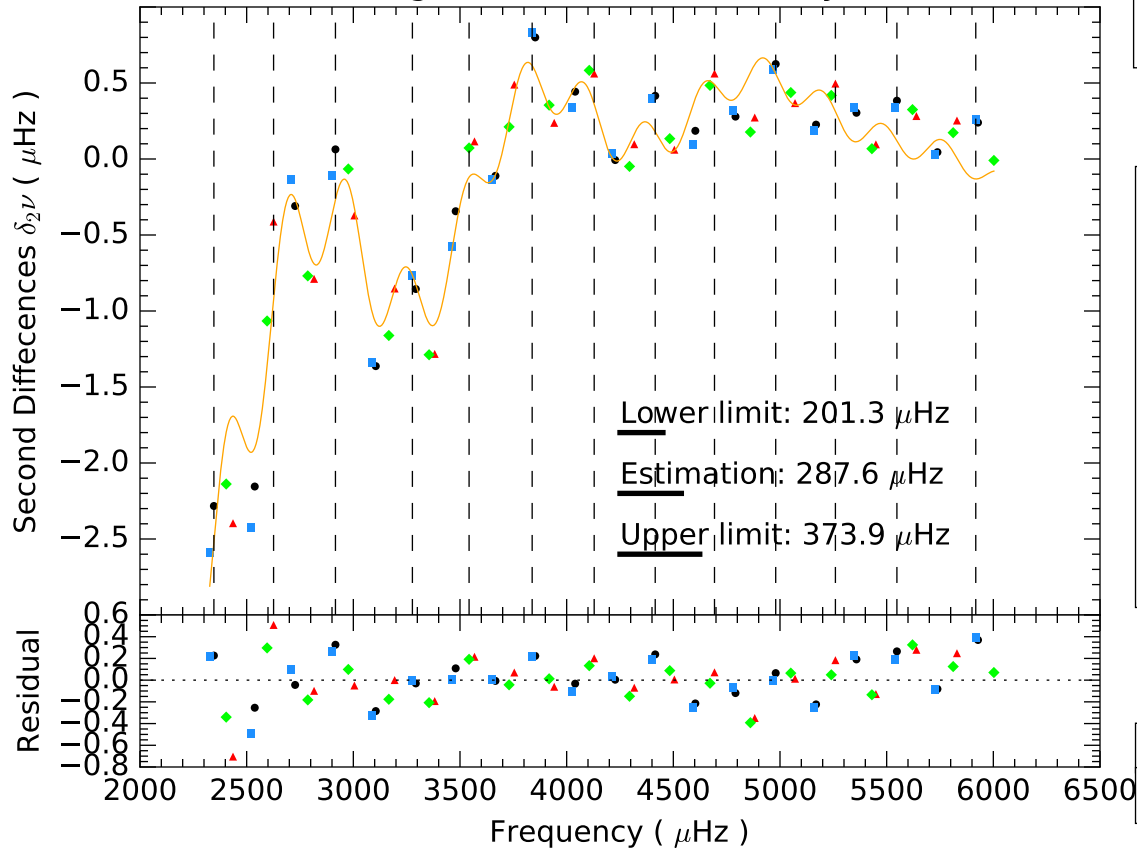


$a_0 = -8.317 \mu\text{Hz}$   
 $a_1 = 0.003644$   
 $a_2 = -3.8046e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00069581$   
 $c_2 = 1.2892e-07 \mu\text{Hz}^{-2}$   
 $\tau_{\text{HeII}} = 466.16 \text{ s}$   
 $\phi_{\text{HeII}} = 3.9341$   
 $b_2 = 2.9409e+06 \text{ mHz}^3$   
 $\tau_{\text{CZ}} = 1785.6 \text{ s}$   
 $\phi_{\text{CZ}} = 3.7849$

profile27

$\chi^2_\nu(\text{dof} = 69) = 0.053565$

Age after ZAMS: 4.810 Gyr

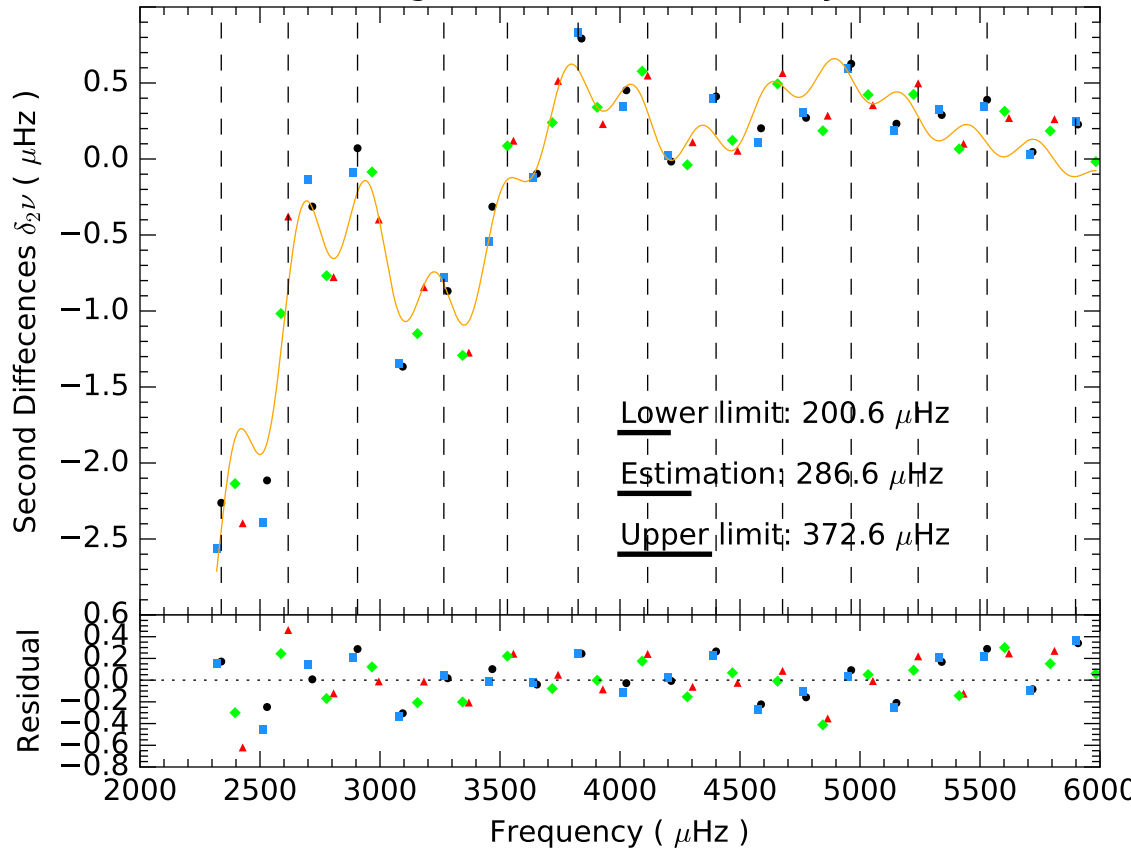


$a_0 = -8.2924 \mu\text{Hz}$   
 $a_1 = 0.0036487$   
 $a_2 = -3.8249e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00069775$   
 $c_2 = 1.297e-07 \mu\text{Hz}^{-2}$   
 $\tau_{\text{HeII}} = 468.18 \text{ s}$   
 $\phi_{\text{HeII}} = 3.9391$   
 $b_2 = 2.8455e+06 \text{ mHz}^3$   
 $\tau_{\text{CZ}} = 1792.3 \text{ s}$   
 $\phi_{\text{CZ}} = 3.7885$

profile28

$\chi^2_\nu(\text{dof} = 69) = 0.053373$

# Age after ZAMS: 5.110 Gyr

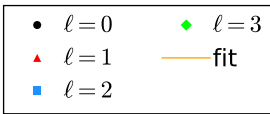
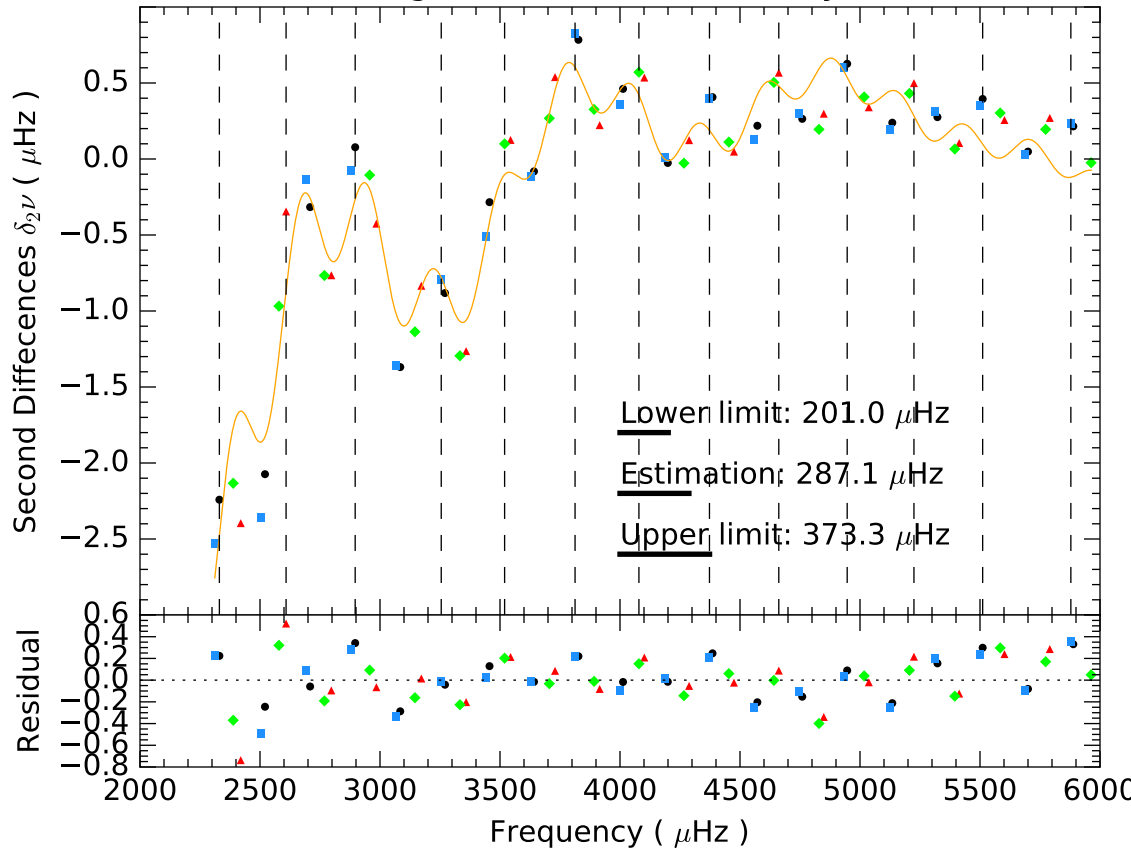


$\bullet$   $\ell=0$        $\blacklozenge$   $\ell=3$   
 $\blacktriangle$   $\ell=1$       — fit  
 $\blacksquare$   $\ell=2$

$a_0 = -8.2722 \mu\text{Hz}$   
 $a_1 = 0.0036553$   
 $a_2 = -3.8476e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00070918$   
 $c_2 = 1.303e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 472.82 \text{ s}$   
 $\phi_{HeII} = 3.8433$   
 $b_2 = 2.5575e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 1798.9 \text{ s}$   
 $\phi_{CZ} = 3.9514$

profile29  
 $\chi^2_\nu(\text{dof} = 69) = 0.050794$

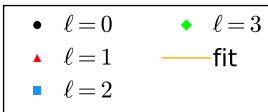
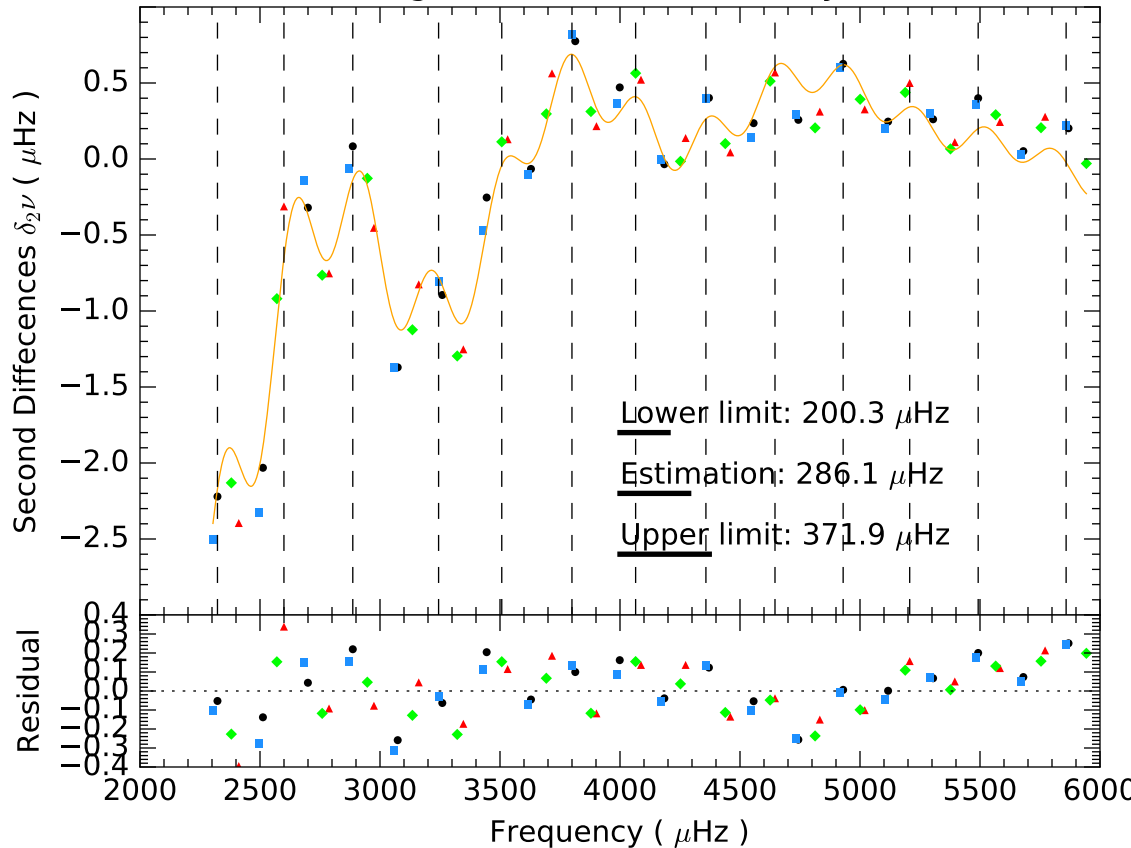
Age after ZAMS: 5.410 Gyr



$a_0 = -8.239 \mu\text{Hz}$   
 $a_1 = 0.0036564$   
 $a_2 = -3.8646e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00069472$   
 $c_2 = 1.3066e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 471.52 \text{ s}$   
 $\phi_{HeII} = 3.9815$   
 $b_2 = 2.6797e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 1809.8 \text{ s}$   
 $\phi_{CZ} = 3.6334$

profile30  
 $\chi^2_\nu(\text{dof} = 69) = 0.05529$

Age after ZAMS: 5.710 Gyr

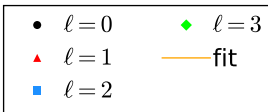
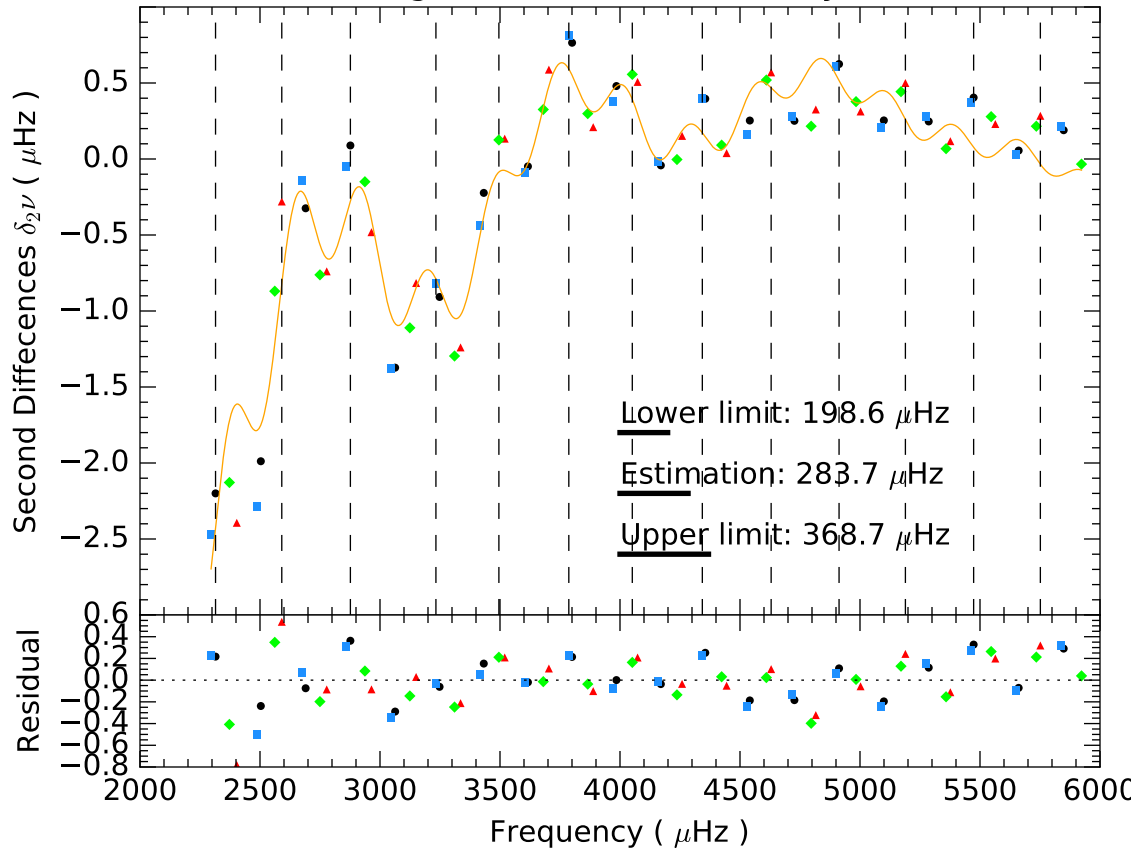


$$\begin{aligned}
 a_0 &= -8.2599 \mu\text{Hz} \\
 a_1 &= 0.0036822 \\
 a_2 &= -3.9092e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.00077211 \\
 c_2 &= 1.3691e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 482.74 \text{ s} \\
 \phi_{HeII} &= 3.6179 \\
 b_2 &= 2.8504e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1734.7 \text{ s} \\
 \phi_{CZ} &= 0.57127
 \end{aligned}$$

profile31

$$\chi^2_\nu(\text{dof} = 69) = 0.026782$$

Age after ZAMS: 6.010 Gyr



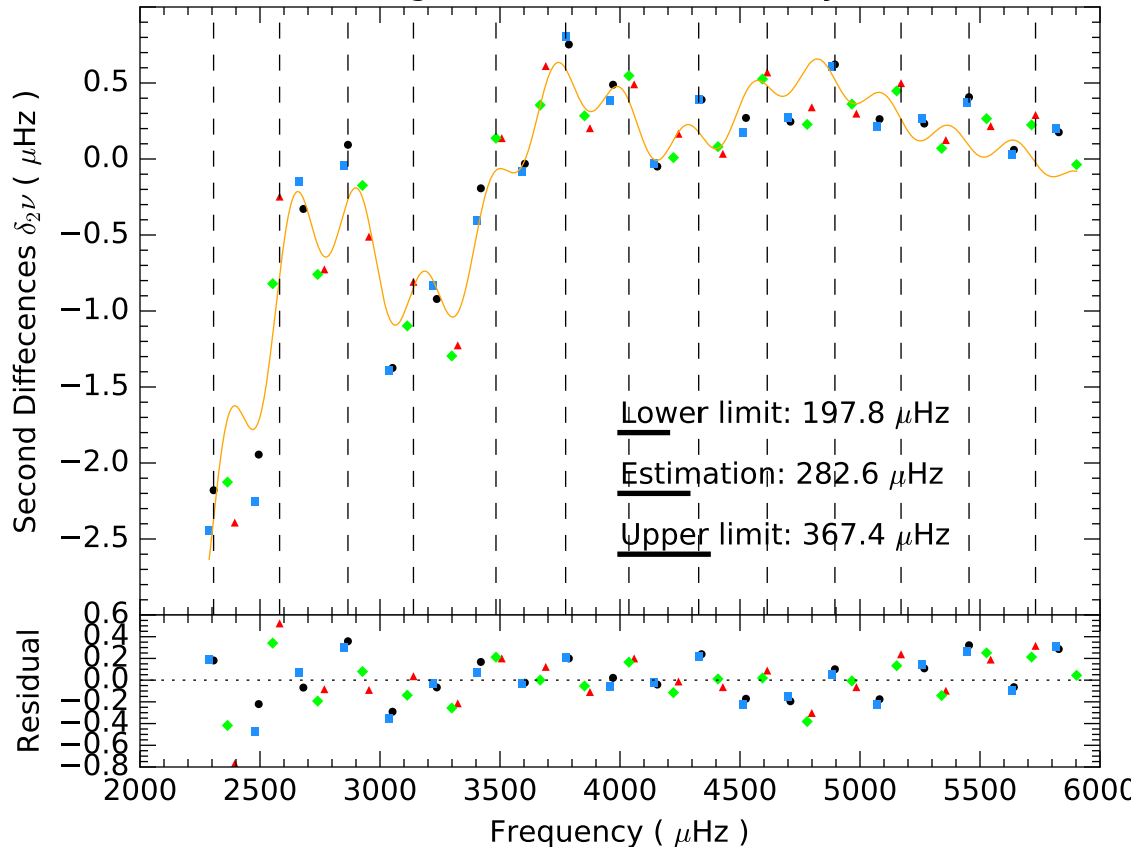
$a_0 = -8.1812 \mu \text{ Hz}$   
 $a_1 = 0.0036632$   
 $a_2 = -3.9047e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00068732$   
 $c_2 = 1.3154e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 474.17 \text{ s}$   
 $\phi_{HeII} = 4.0553$   
 $b_2 = 2.5219e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 1828.0 \text{ s}$   
 $\phi_{CZ} = 3.4586$

profile32

$\chi^2_\nu(\text{dof} = 69) = 0.057902$



Age after ZAMS: 6.310 Gyr

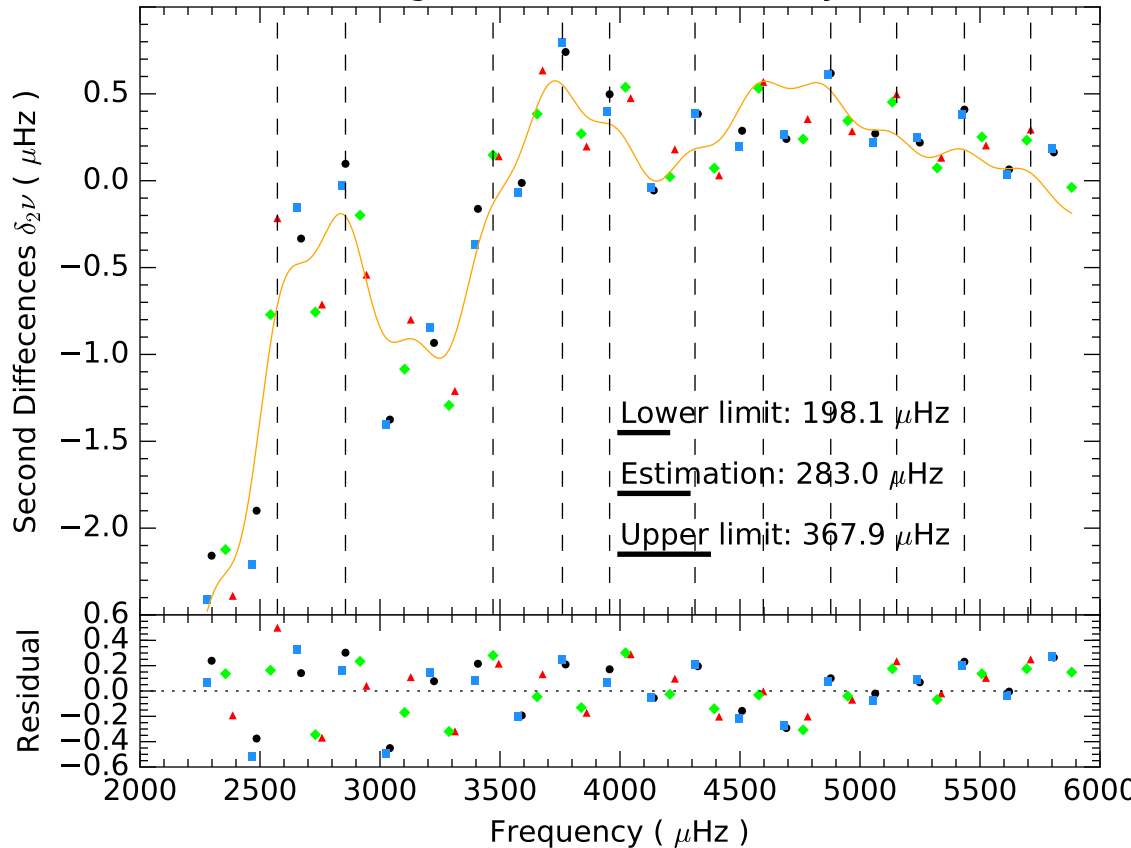


$a_0 = -8.1582 \mu\text{Hz}$   
 $a_1 = 0.0036693$   
 $a_2 = -3.9281e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00069228$   
 $c_2 = 1.3261e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 476.62 \text{ s}$   
 $\phi_{HeII} = 4.0501$   
 $b_2 = 2.432e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 1829.5 \text{ s}$   
 $\phi_{CZ} = 3.6966$

profile33

$\chi^2_\nu(\text{dof} = 69) = 0.05506$

Age after ZAMS: 6.610 Gyr

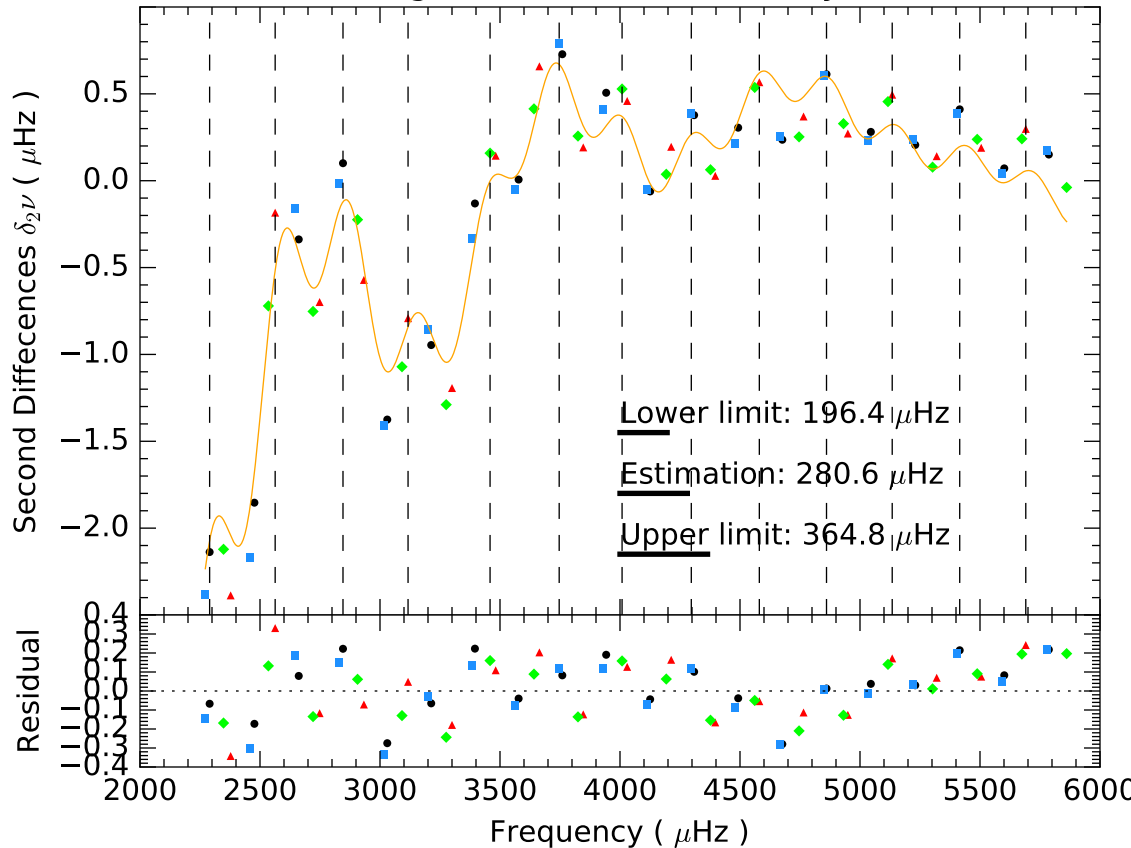


$a_0 = -8.1574 \mu\text{Hz}$   
 $a_1 = 0.0036852$   
 $a_2 = -3.9621e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00080674$   
 $c_2 = 1.4018e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 499.33 \text{ s}$   
 $\phi_{HeII} = 3.257$   
 $b_2 = 1.0432e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 1760.5 \text{ s}$   
 $\phi_{CZ} = 1.0417$

profile34

$\chi^2_{\nu}(\text{dof} = 69) = 0.054353$

Age after ZAMS: 6.910 Gyr

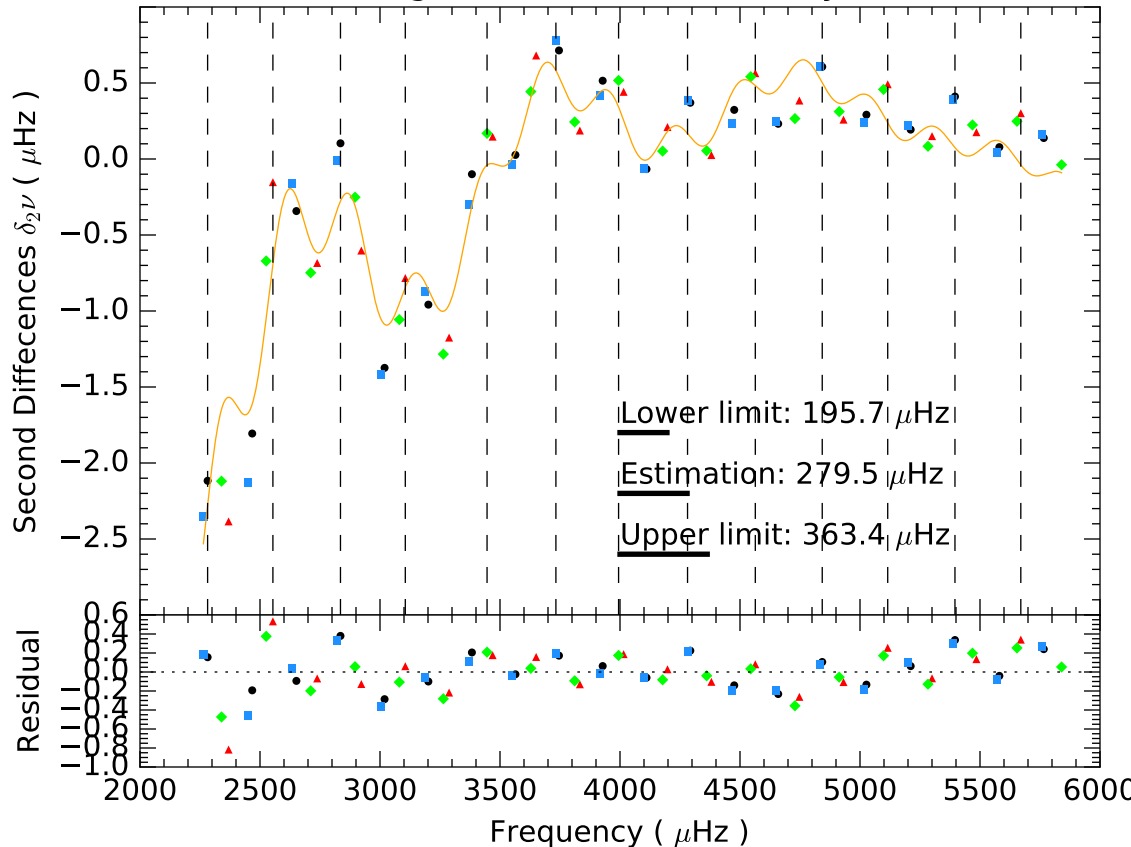


$\bullet$   $\ell=0$      $\blacklozenge$   $\ell=3$   
 $\blacktriangle$   $\ell=1$     — fit  
 $\blacksquare$   $\ell=2$

$a_0 = -8.1594 \mu\text{Hz}$   
 $a_1 = 0.0037046$   
 $a_2 = -4.0024e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00077722$   
 $c_2 = 1.405e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 491.22 \text{ s}$   
 $\phi_{HeII} = 3.656$   
 $b_2 = 2.4603e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 1753.6 \text{ s}$   
 $\phi_{CZ} = 1.0537$

profile35  
 $\chi^2_\nu(\text{dof} = 69) = 0.028286$

Age after ZAMS: 7.210 Gyr

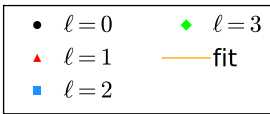
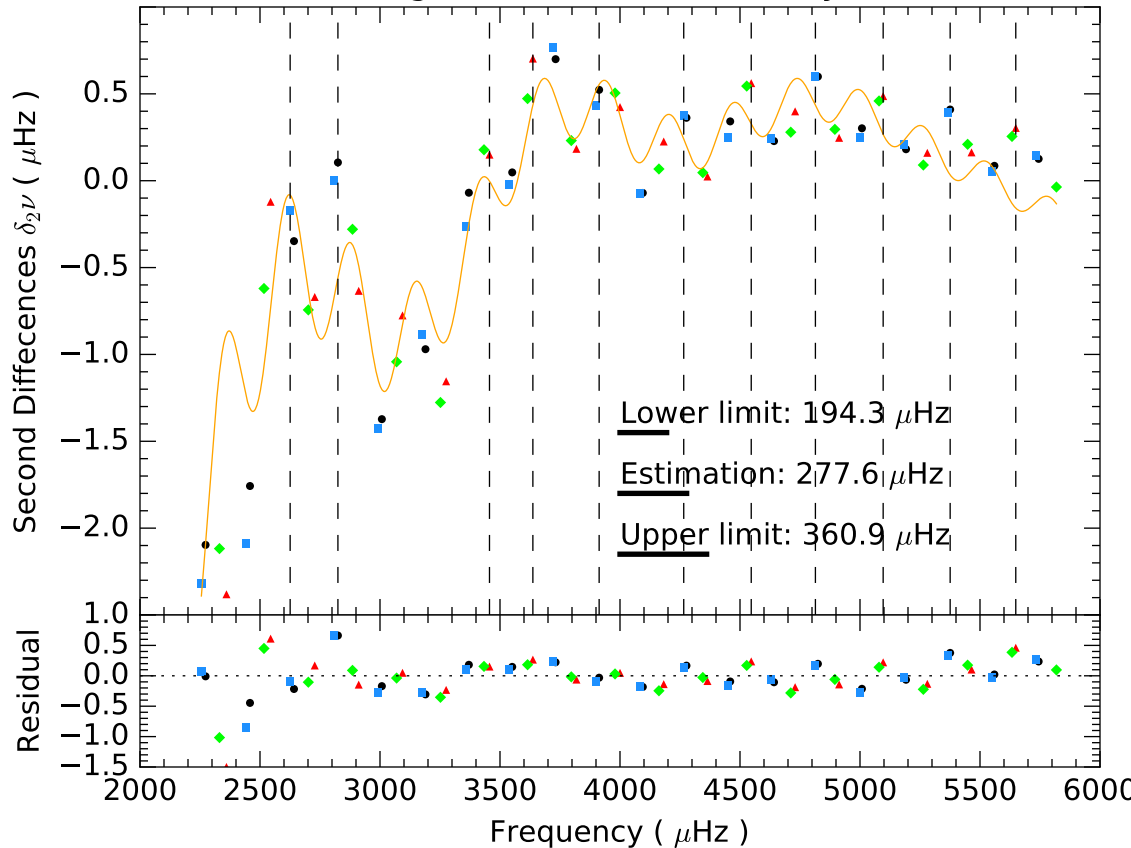


$a_0 = -8.0686 \mu\text{Hz}$   
 $a_1 = 0.0036805$   
 $a_2 = -3.9932e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00069547$   
 $c_2 = 1.3541e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 482.14 \text{ s}$   
 $\phi_{HeII} = 4.1197$   
 $b_2 = 2.2187e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 1852.5 \text{ s}$   
 $\phi_{CZ} = 3.6551$

profile36

$\chi^2_{\nu}(\text{dof} = 69) = 0.05663$

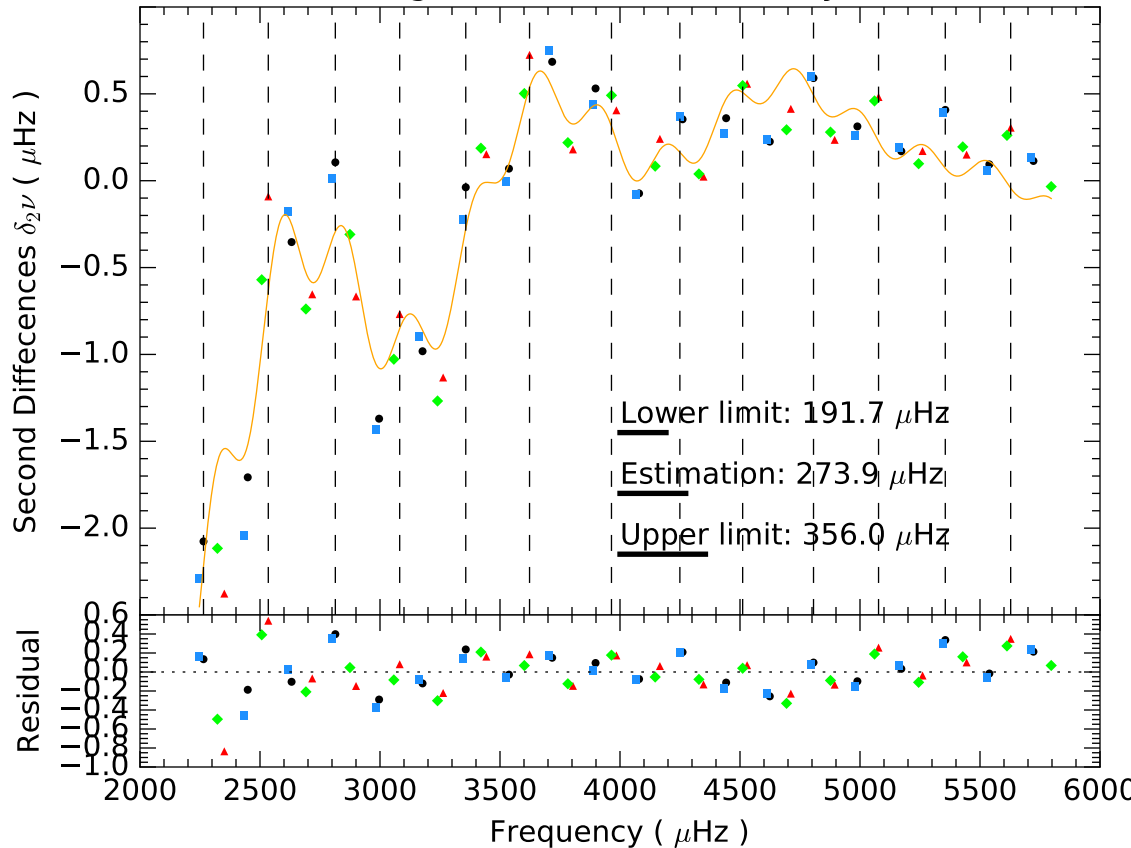
Age after ZAMS: 7.510 Gyr



$a_0 = -8.0524 \mu\text{Hz}$   
 $a_1 = 0.0036982$   
 $a_2 = -4.0393e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00069686$   
 $c_2 = 1.5513e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 432.04 \text{ s}$   
 $\phi_{HeII} = 8.5691e-06$   
 $b_2 = 2.939e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 1889.4 \text{ s}$   
 $\phi_{CZ} = 2.2226$

profile37  
 $\chi^2_{\nu}(\text{dof} = 69) = 0.11873$

Age after ZAMS: 7.810 Gyr

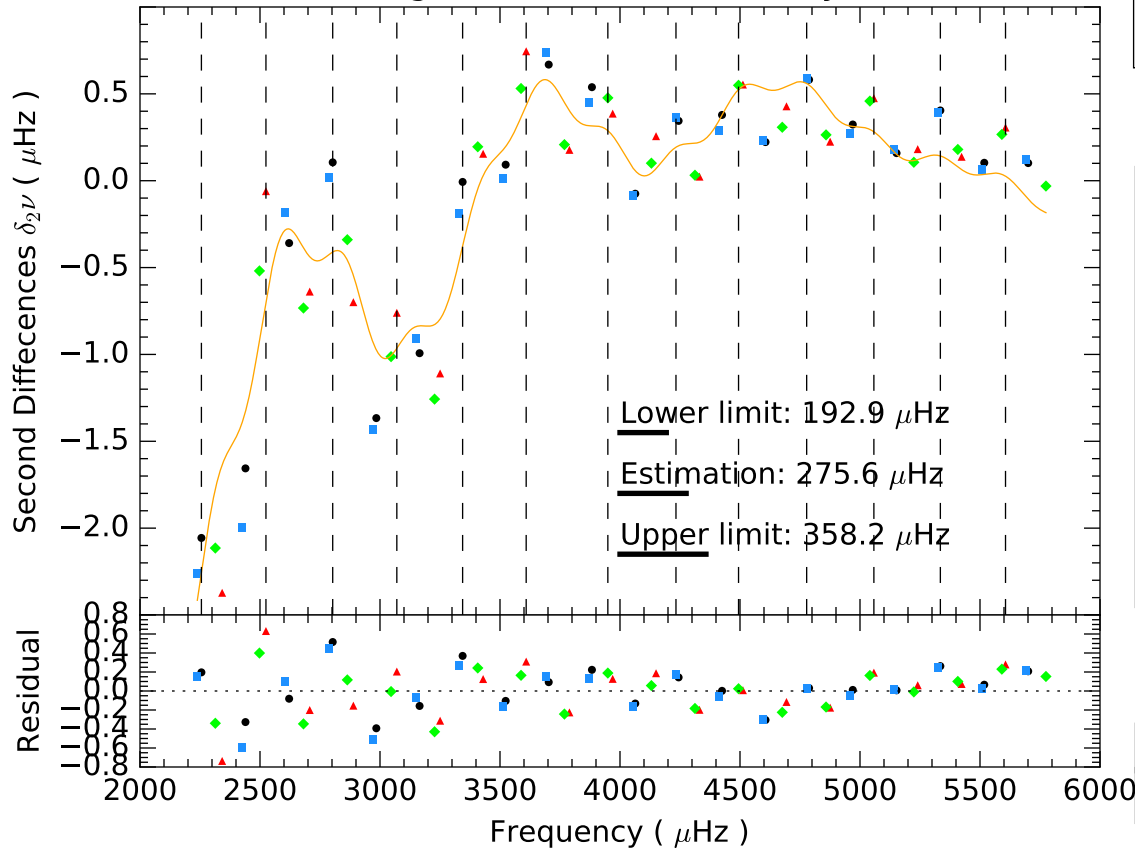


$\bullet$   $\ell=0$      $\blacklozenge$   $\ell=3$   
 $\blacktriangle$   $\ell=1$     — fit  
 $\blacksquare$   $\ell=2$

$a_0 = -8.0082 \mu\text{Hz}$   
 $a_1 = 0.0036891$   
 $a_2 = -4.0402e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00069961$   
 $c_2 = 1.3744e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 485.72 \text{ s}$   
 $\phi_{HeII} = 4.1787$   
 $b_2 = 1.9858e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 1867.4 \text{ s}$   
 $\phi_{CZ} = 3.6734$

profile38  
 $\chi^2_\nu(\text{dof} = 69) = 0.057926$

# Age after ZAMS: 8.110 Gyr

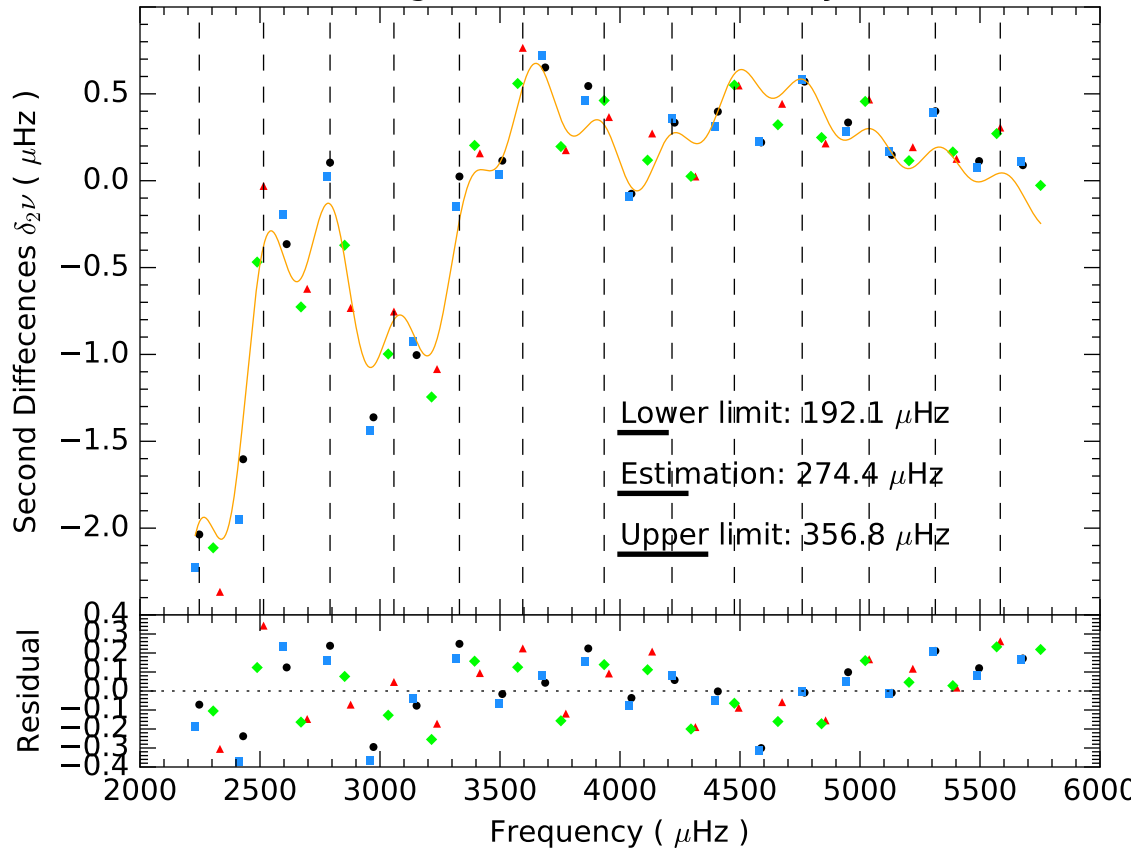


$\bullet$   $\ell=0$        $\blacklozenge$   $\ell=3$   
 $\blacktriangle$   $\ell=1$       — fit  
 $\blacksquare$   $\ell=2$

$a_0 = -7.9759 \mu\text{Hz}$   
 $a_1 = 0.0036925$   
 $a_2 = -4.063e-07 \mu\text{Hz}^{-1}$   
  
 $c_0 = 0.00070258$   
 $c_2 = 1.3832e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 488.55 \text{ s}$   
 $\phi_{HeII} = 4.1682$   
  
 $b_2 = 1.0045e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 1826.2 \text{ s}$   
 $\phi_{CZ} = 4.9861$

profile39  
 $\chi^2_\nu(\text{dof} = 69) = 0.070471$

Age after ZAMS: 8.410 Gyr



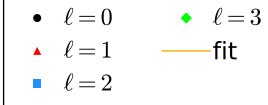
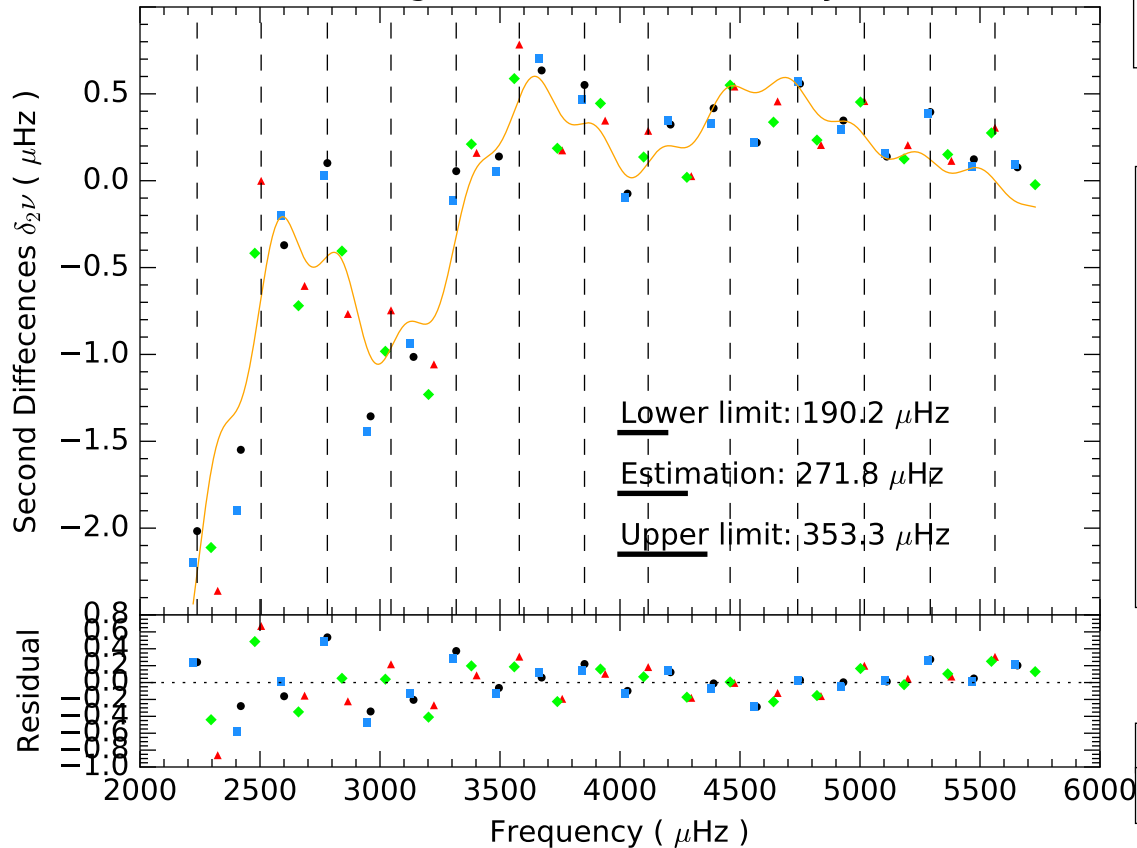
$\bullet$   $\ell=0$      $\blacklozenge$   $\ell=3$   
 $\blacktriangle$   $\ell=1$     — fit  
 $\blacksquare$   $\ell=2$

$a_0 = -8.0045 \mu\text{Hz}$   
 $a_1 = 0.0037255$   
 $a_2 = -4.1211e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00076128$   
 $c_2 = 1.4297e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 501.04 \text{ s}$   
 $\phi_{HeII} = 3.7743$   
 $b_2 = 2.1288e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 1775.3 \text{ s}$   
 $\phi_{CZ} = 1.8929$

profile40  
 $\chi^2_\nu(\text{dof} = 69) = 0.032191$



Age after ZAMS: 8.710 Gyr

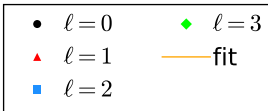
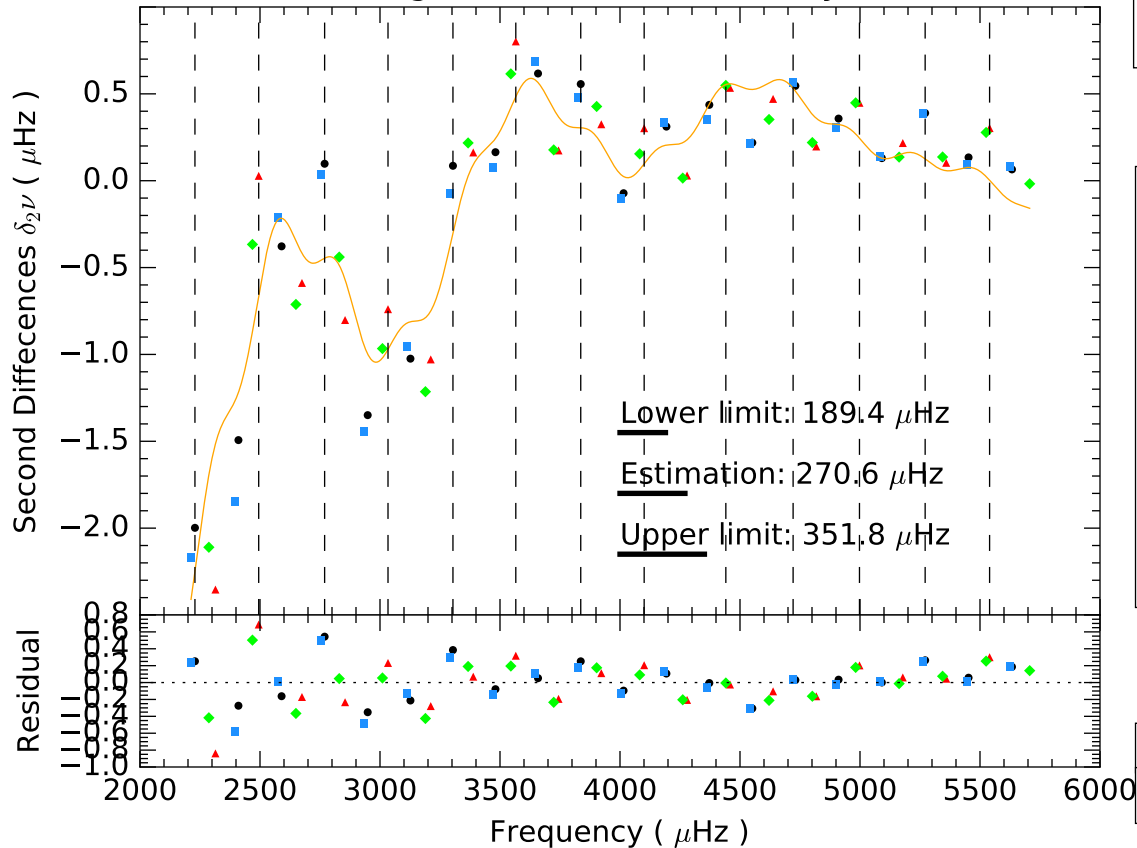


$a_0 = -7.9007 \mu\text{Hz}$   
 $a_1 = 0.0036959$   
 $a_2 = -4.1069e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00071127$   
 $c_2 = 1.4088e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 492.16 \text{ s}$   
 $\phi_{HeII} = 4.2436$   
 $b_2 = 1.1936e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 1877.0 \text{ s}$   
 $\phi_{CZ} = 3.6432$

profile41

$\chi^2_{\nu}(\text{dof} = 69) = 0.07463$

Age after ZAMS: 9.010 Gyr

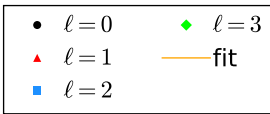
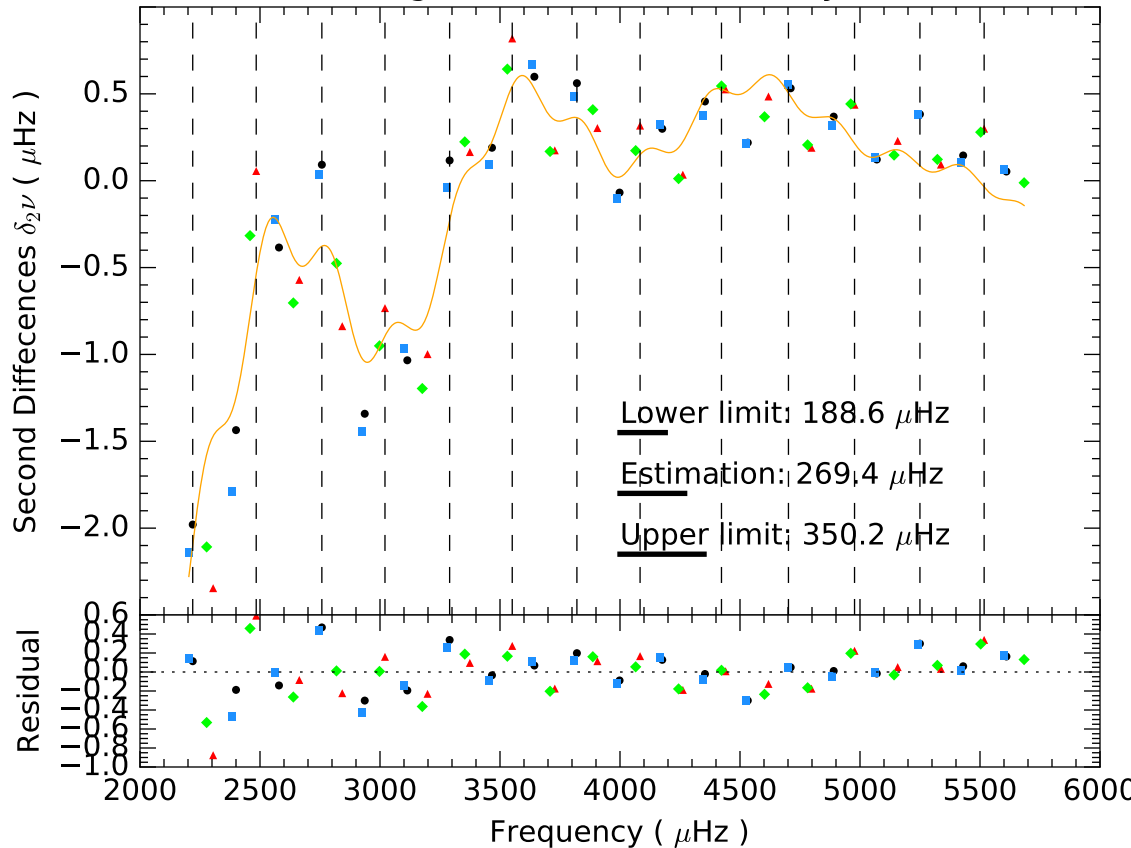


$$\begin{aligned}
 a_0 &= -7.8517 \mu\text{Hz} \\
 a_1 &= 0.003692 \\
 a_2 &= -4.1227e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.00071125 \\
 c_2 &= 1.4145e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 497.82 \text{ s} \\
 \phi_{HeII} &= 4.1393 \\
 b_2 &= 9.909e+05 \text{ mHz}^3 \\
 \tau_{CZ} &= 1885.6 \text{ s} \\
 \phi_{CZ} &= 3.556
 \end{aligned}$$

profile42

$$\chi^2_\nu(\text{dof} = 69) = 0.076901$$

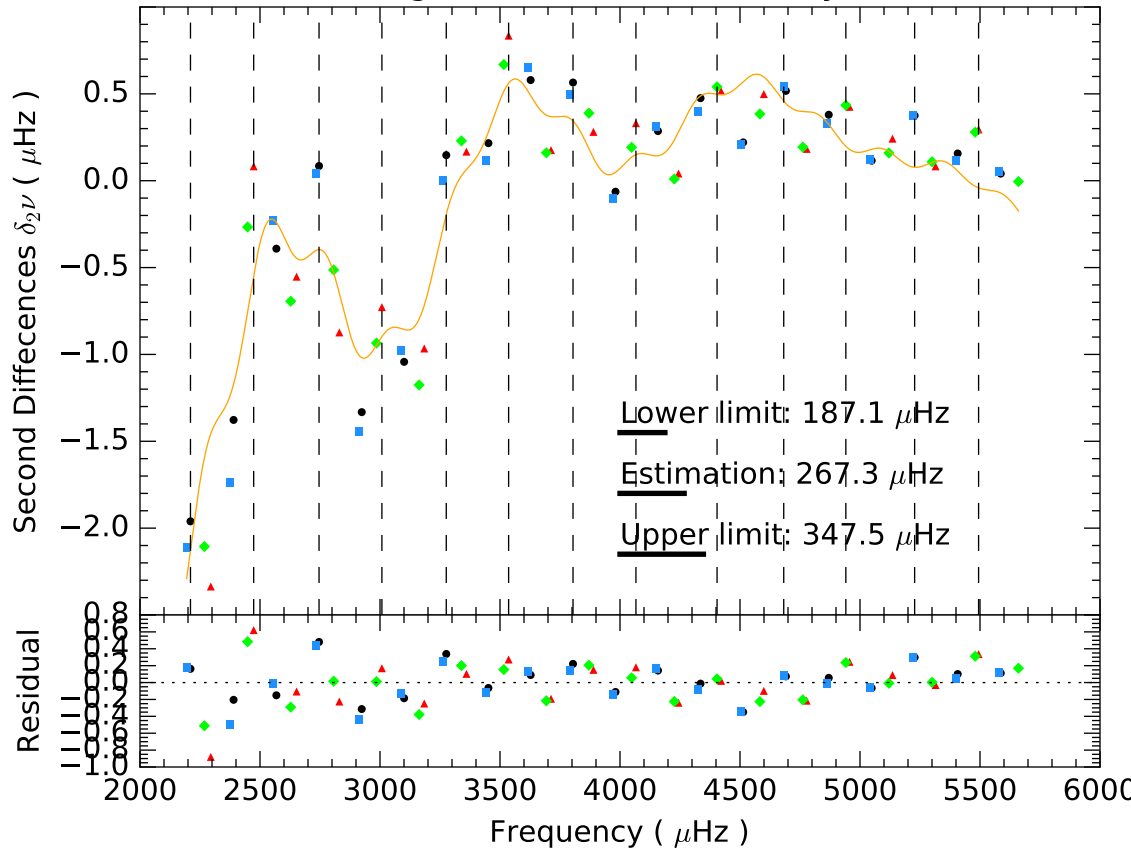
Age after ZAMS: 9.310 Gyr



$a_0 = -7.84 \mu\text{Hz}$   
 $a_1 = 0.0037079$   
 $a_2 = -4.1637e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00071336$   
 $c_2 = 1.4325e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 496.35 \text{ s}$   
 $\phi_{HeII} = 4.2999$   
 $b_2 = 1.2439e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 1903.3 \text{ s}$   
 $\phi_{CZ} = 3.7581$

profile43  
 $\chi^2_{\nu}(\text{dof} = 69) = 0.065829$

Age after ZAMS: 9.610 Gyr

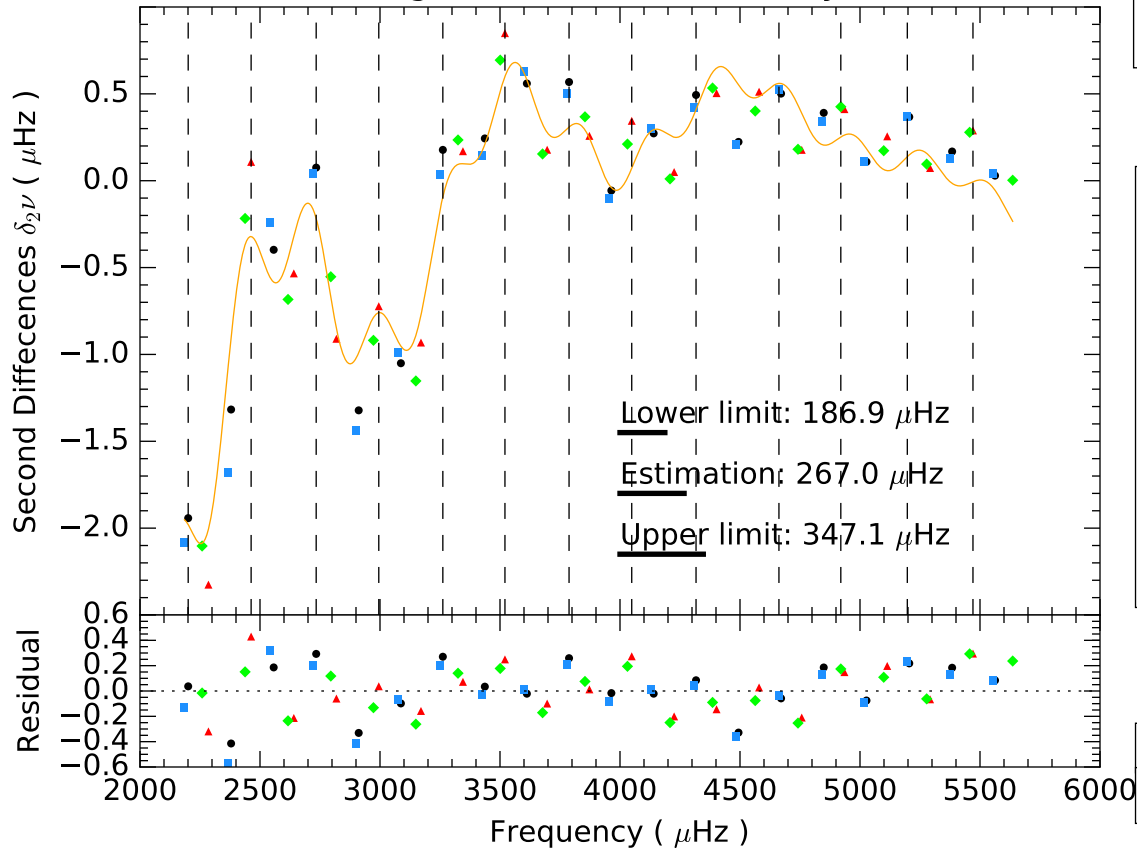


$\bullet$   $\ell=0$      $\blacklozenge$   $\ell=3$   
 $\blacktriangle$   $\ell=1$     — fit  
 $\blacksquare$   $\ell=2$

$a_0 = -7.7739 \mu\text{Hz}$   
 $a_1 = 0.003696$   
 $a_2 = -4.1707e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00071726$   
 $c_2 = 1.4424e-07 \mu\text{Hz}^{-2}$   
 $\tau_{\text{HeII}} = 501.32 \text{ s}$   
 $\phi_{\text{HeII}} = 4.2315$   
 $b_2 = 9.8779e+05 \text{ mHz}^3$   
 $\tau_{\text{CZ}} = 1947.8 \text{ s}$   
 $\phi_{\text{CZ}} = 2.5417$

profile44  
 $\chi^2_{\nu}(\text{dof} = 69) = 0.072413$

# Age after ZAMS: 9.910 Gyr



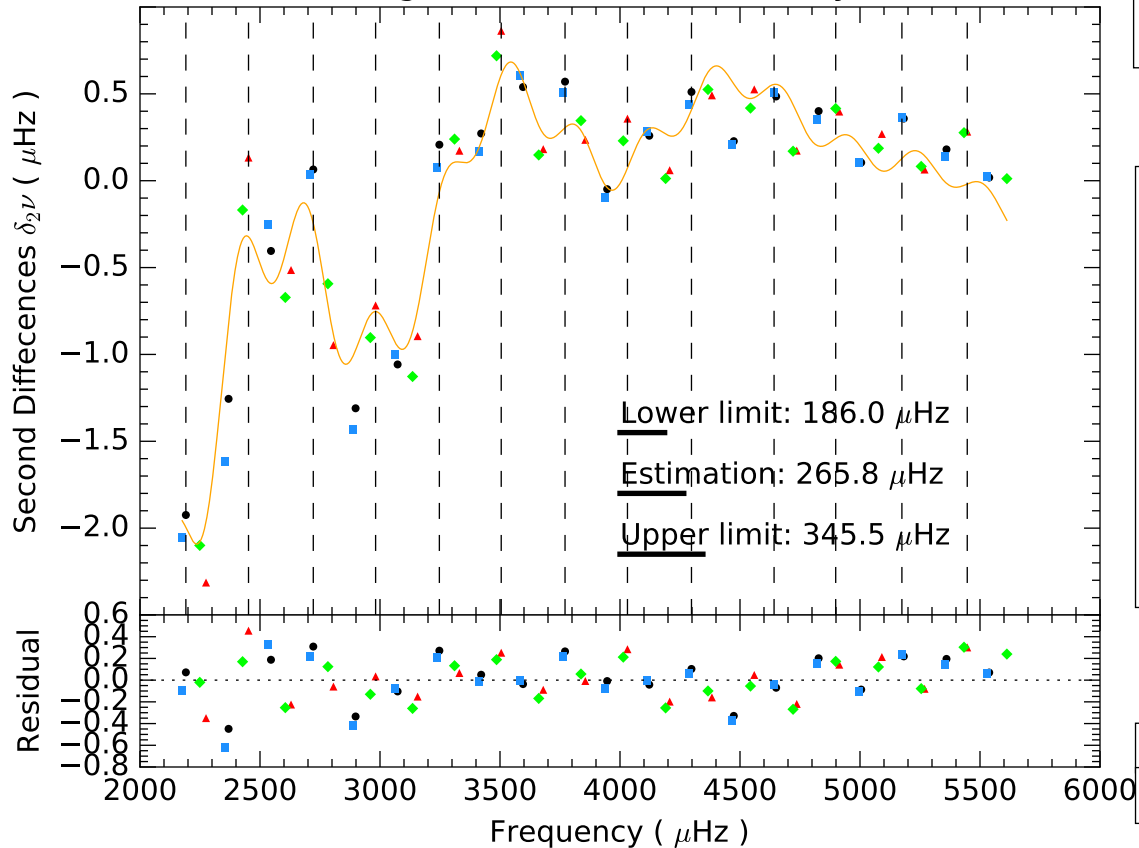
- $\bullet$   $\ell=0$
- $\blacktriangle$   $\ell=1$
- $\blacksquare$   $\ell=2$
- $\blacklozenge$   $\ell=3$
- fit

$a_0 = -7.8012 \mu\text{Hz}$   
 $a_1 = 0.0037311$   
 $a_2 = -4.2351e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00072435$   
 $c_2 = 1.4441e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 507.72 \text{ s}$   
 $\phi_{HeII} = 4.0737$   
 $b_2 = 1.9562e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 1773.6 \text{ s}$   
 $\phi_{CZ} = 3.8606$

profile45

$\chi^2_{\nu}(\text{dof} = 69) = 0.046295$

Age after ZAMS: 10.210 Gyr

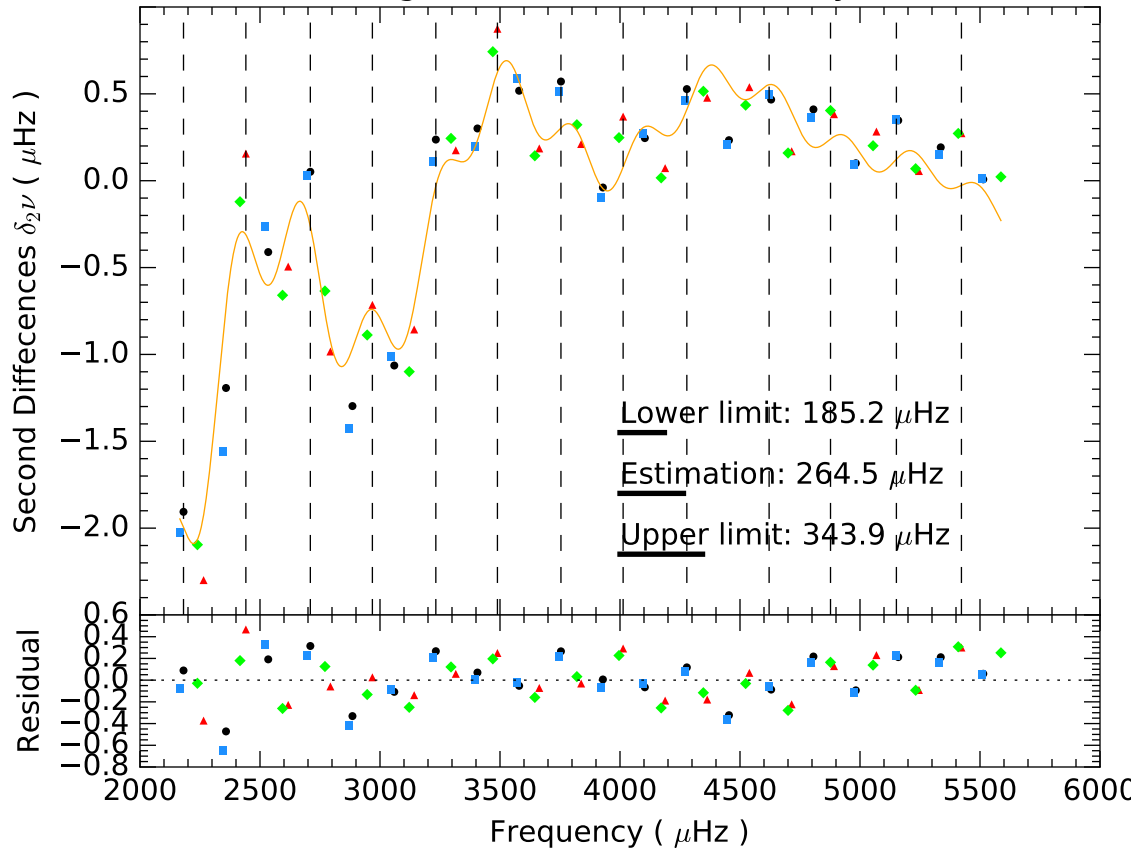


$\bullet$   $\ell=0$        $\blacklozenge$   $\ell=3$   
 $\blacktriangle$   $\ell=1$       — fit  
 $\blacksquare$   $\ell=2$

$a_0 = -7.7544 \mu\text{Hz}$   
 $a_1 = 0.0037303$   
 $a_2 = -4.2574e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00072249$   
 $c_2 = 1.4555e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 508.75 \text{ s}$   
 $\phi_{HeII} = 4.156$   
 $b_2 = 1.9567e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 1773.0 \text{ s}$   
 $\phi_{CZ} = 4.2725$

profile46  
 $\chi^2_\nu(\text{dof} = 69) = 0.050182$

# Age after ZAMS: 10.510 Gyr



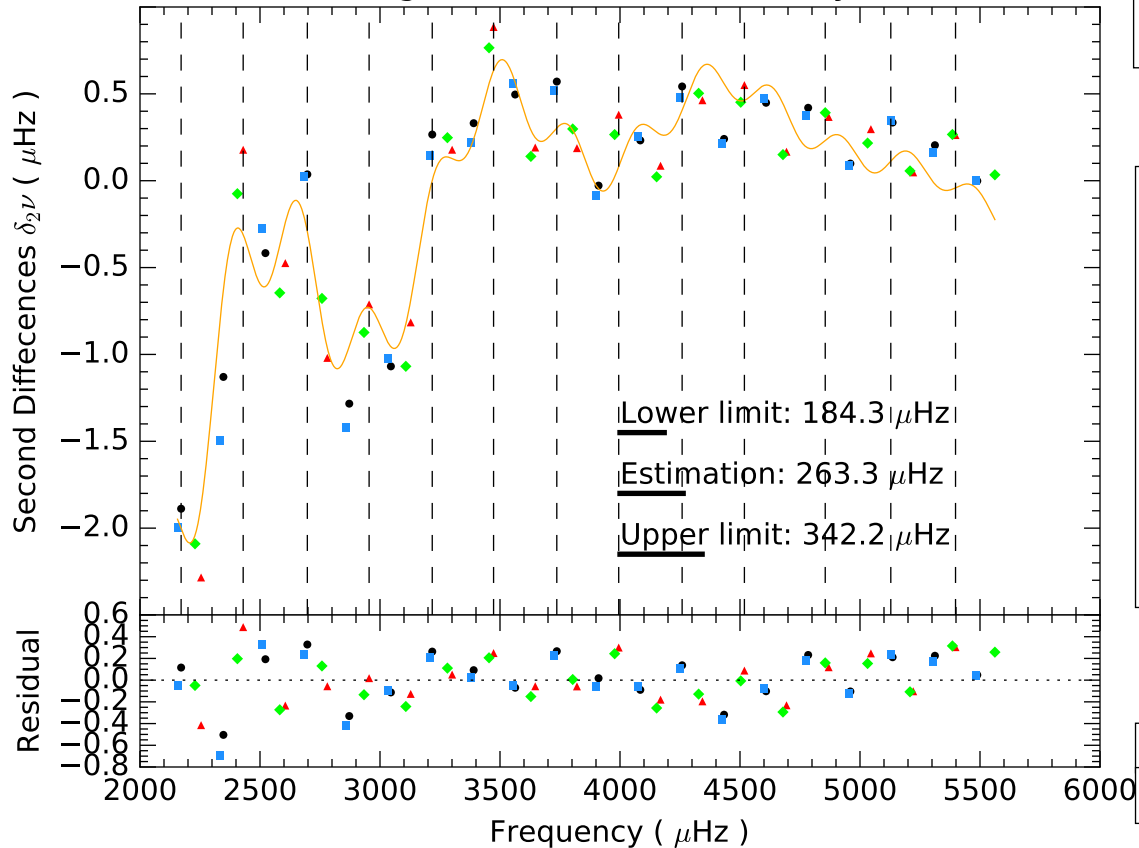
- $\bullet$   $\ell=0$
- $\blacktriangle$   $\ell=1$
- $\blacksquare$   $\ell=2$
- $\blacklozenge$   $\ell=3$
- fit

$a_0 = -7.7102 \mu\text{Hz}$   
 $a_1 = 0.0037311$   
 $a_2 = -4.2823e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00072569$   
 $c_2 = 1.4725e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 509.93 \text{ s}$   
 $\phi_{HeII} = 4.235$   
 $b_2 = 2.0234e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 1776.2 \text{ s}$   
 $\phi_{CZ} = 4.5279$

profile47

$\chi^2_{\nu}(\text{dof} = 69) = 0.052466$

Age after ZAMS: 10.810 Gyr



- $\ell=0$
- ▲  $\ell=1$
- $\ell=2$
- ◆  $\ell=3$
- fit

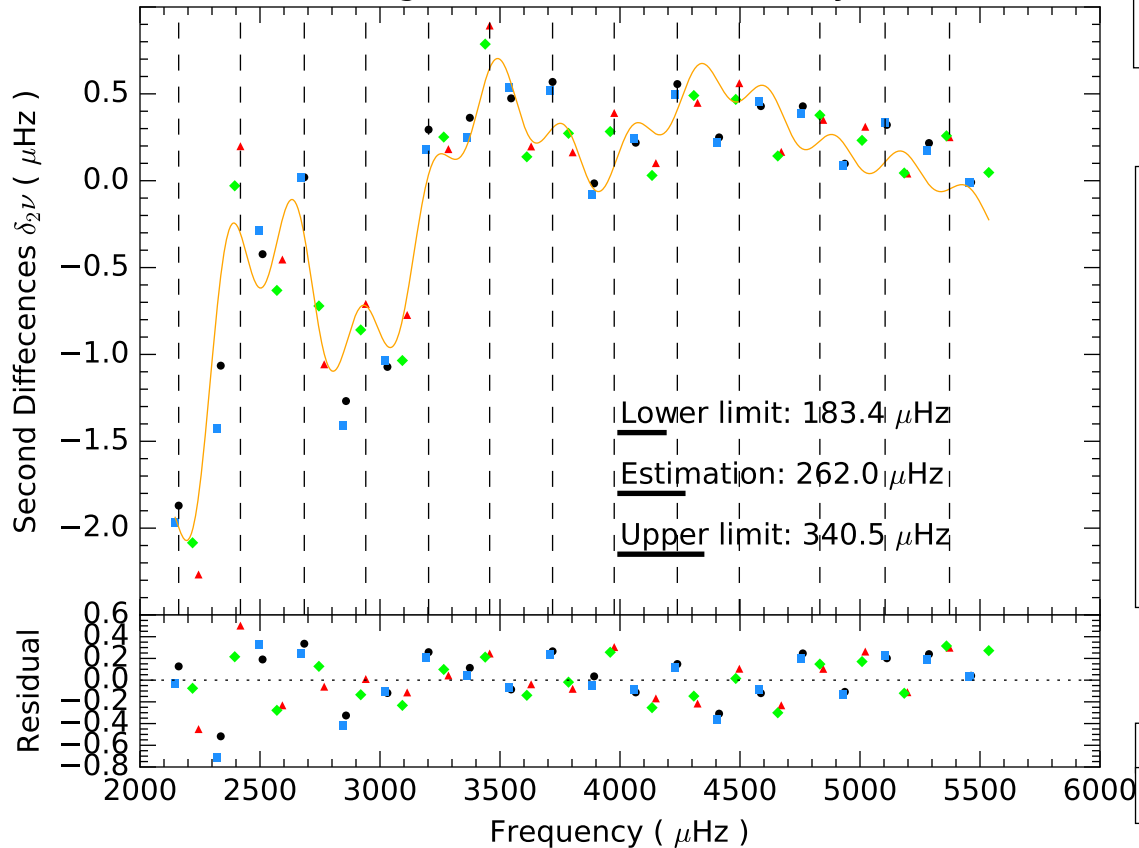
$a_0 = -7.6615 \mu\text{Hz}$   
 $a_1 = 0.0037302$   
 $a_2 = -4.3058e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00072897$   
 $c_2 = 1.4922e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 510.41 \text{ s}$   
 $\phi_{HeII} = 4.3446$   
 $b_2 = 2.0724e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 1776.9 \text{ s}$   
 $\phi_{CZ} = 4.8868$

profile48

$\chi^2_{\nu}(\text{dof} = 69) = 0.056558$



# Age after ZAMS: 11.110 Gyr

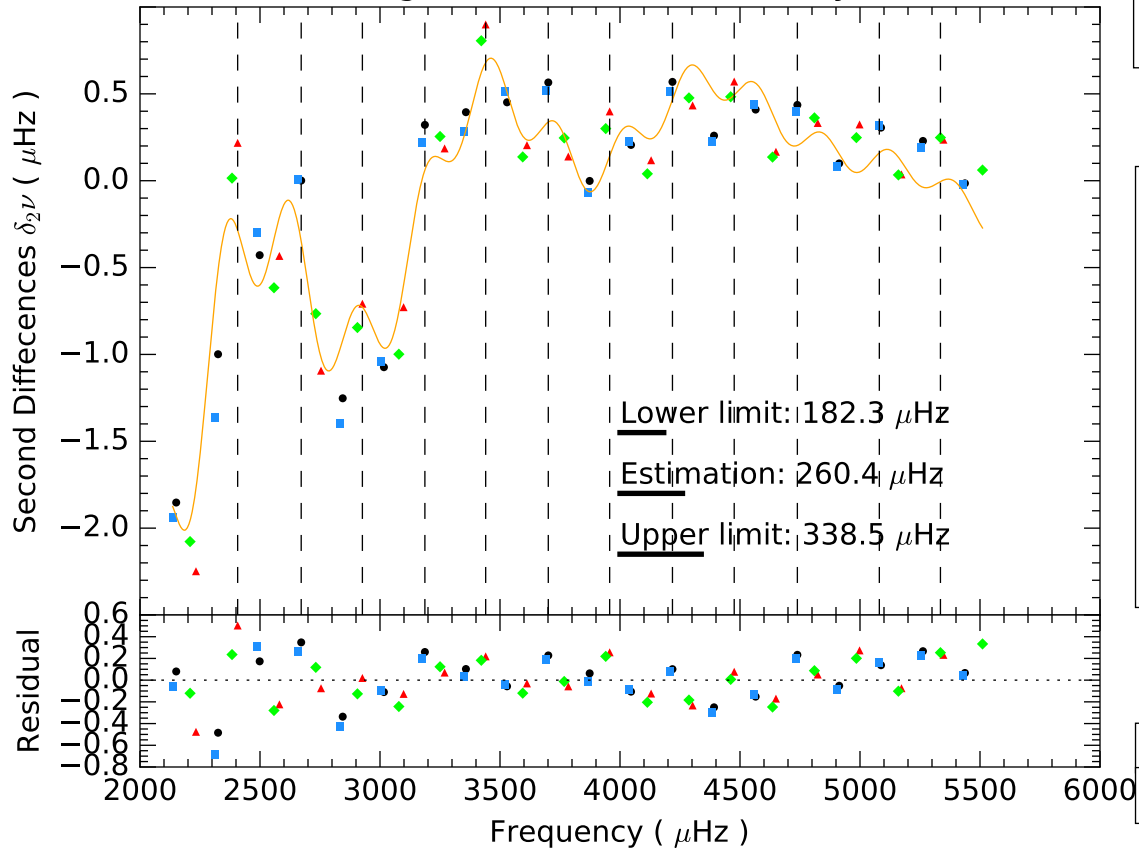


- $\bullet$   $\ell=0$
- $\blacktriangle$   $\ell=1$
- $\blacksquare$   $\ell=2$
- $\blacklozenge$   $\ell=3$
- fit

$a_0 = -7.6113 \mu\text{Hz}$   
 $a_1 = 0.0037288$   
 $a_2 = -4.3294e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00073234$   
 $c_2 = 1.5104e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 511.66 \text{ s}$   
 $\phi_{HeII} = 4.4273$   
 $b_2 = 2.1224e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 1781.4 \text{ s}$   
 $\phi_{CZ} = 5.0918$

profile49  
 $\chi^2_\nu(\text{dof} = 69) = 0.059084$

# Age after ZAMS: 11.410 Gyr



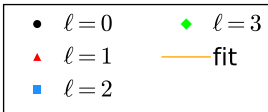
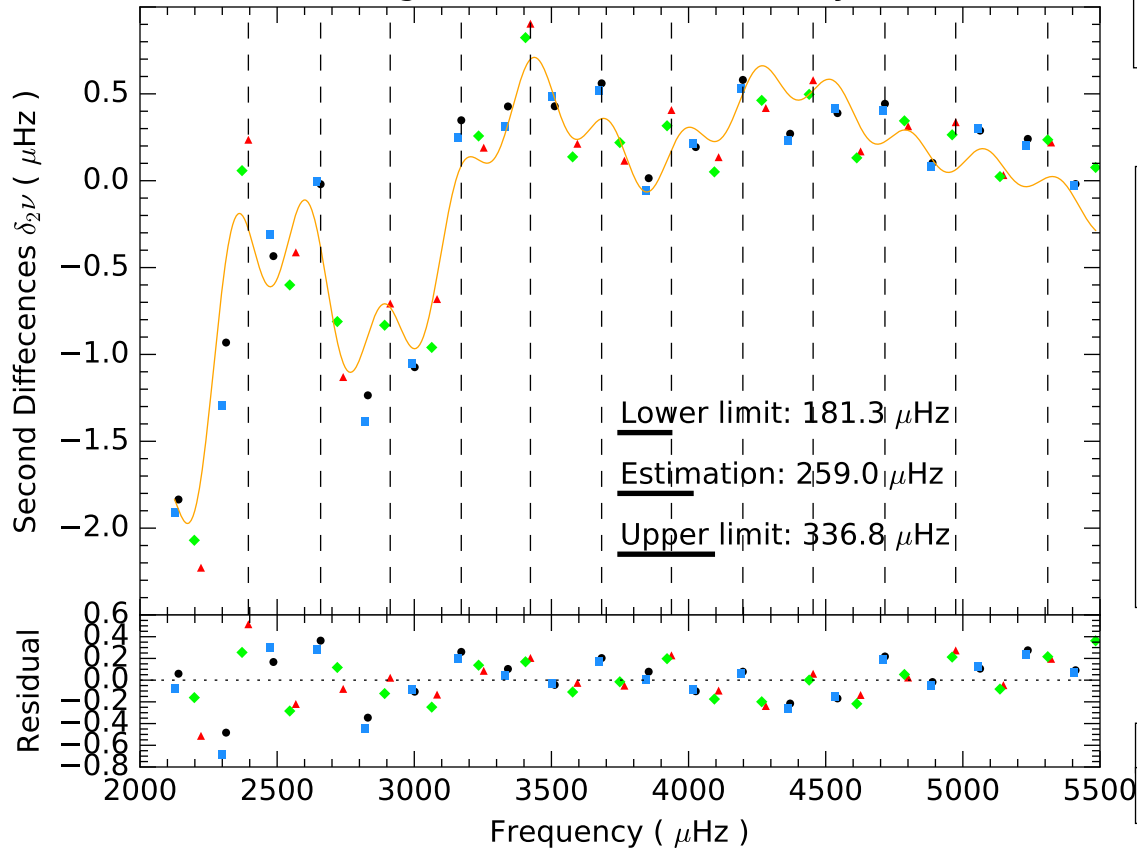
- $\bullet$   $\ell=0$
- $\blacktriangle$   $\ell=1$
- $\blacksquare$   $\ell=2$
- $\blacklozenge$   $\ell=3$
- $\text{—}$  fit

$a_0 = -7.5647 \mu\text{Hz}$   
 $a_1 = 0.0037293$   
 $a_2 = -4.3557e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00073579$   
 $c_2 = 1.5255e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 514.0 \text{ s}$   
 $\phi_{HeII} = 4.4681$   
 $b_2 = 2.0838e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 1810.0 \text{ s}$   
 $\phi_{CZ} = 4.5018$

profile50

$\chi^2_\nu(\text{dof} = 69) = 0.053618$

# Age after ZAMS: 11.710 Gyr

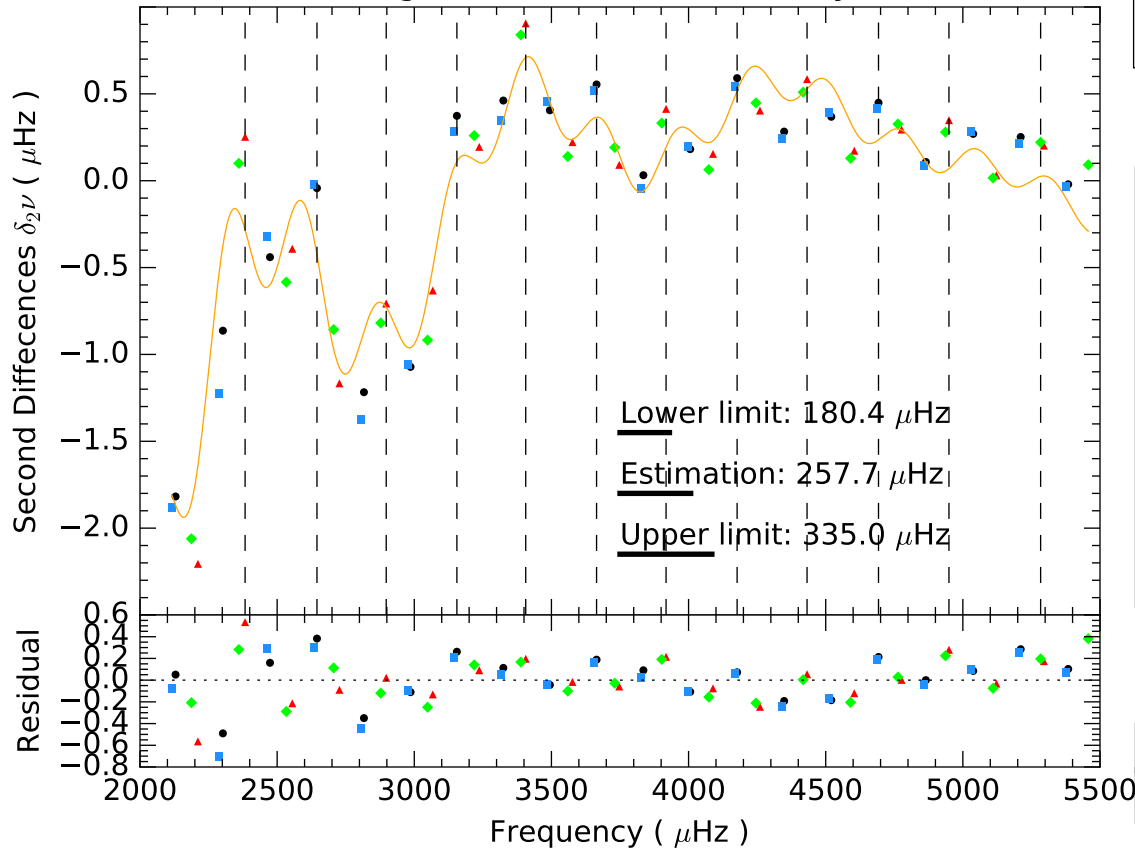


$$\begin{aligned}
 a_0 &= -7.5128 \mu\text{Hz} \\
 a_1 &= 0.0037278 \\
 a_2 &= -4.3806e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.00073934 \\
 c_2 &= 1.5453e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 514.96 \text{ s} \\
 \phi_{HeII} &= 4.5662 \\
 b_2 &= 2.1054e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1827.7 \text{ s} \\
 \phi_{CZ} &= 4.3057
 \end{aligned}$$

profile51

$$\chi^2_\nu(\text{dof} = 69) = 0.052967$$

Age after ZAMS: 12.010 Gyr

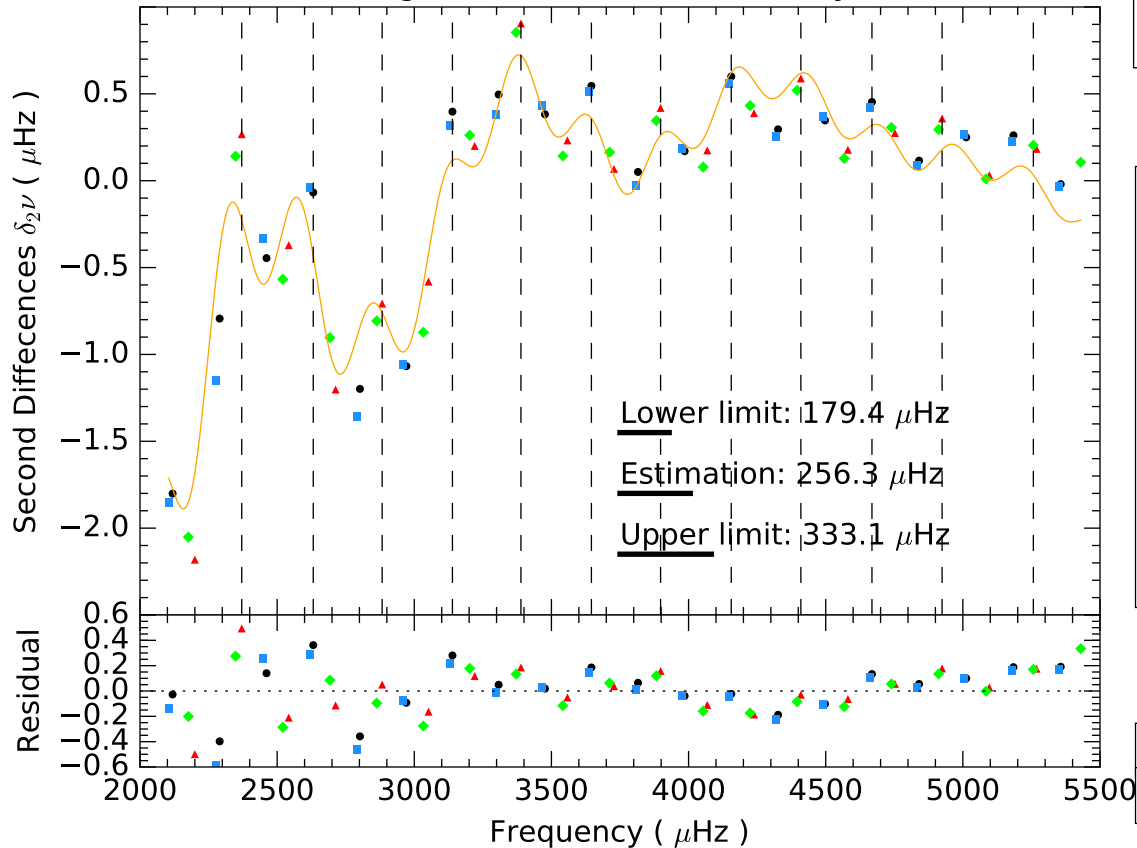


$\bullet$   $\ell=0$      $\blacklozenge$   $\ell=3$   
 $\blacktriangle$   $\ell=1$     — fit  
 $\blacksquare$   $\ell=2$

$a_0 = -7.4546 \mu\text{Hz}$   
 $a_1 = 0.0037235$   
 $a_2 = -4.4029e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00074298$   
 $c_2 = 1.5675e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 515.36 \text{ s}$   
 $\phi_{HeII} = 4.69$   
 $b_2 = 2.1228e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 1838.2 \text{ s}$   
 $\phi_{CZ} = 4.3565$

profile52  
 $\chi^2_{\nu}(\text{dof} = 69) = 0.054999$

Age after ZAMS: 12.310 Gyr



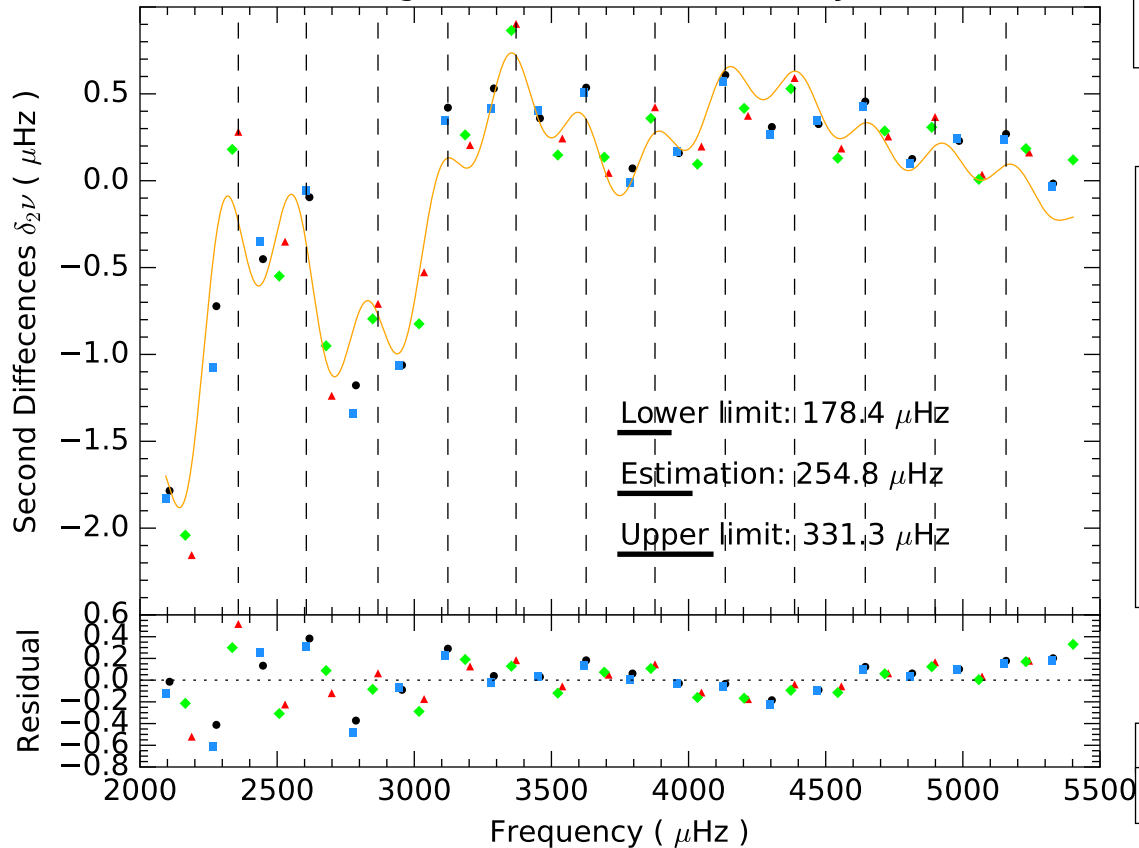
- $\ell=0$
- ▲  $\ell=1$
- $\ell=2$
- ◆  $\ell=3$
- fit

$$\begin{aligned}
 a_0 &= -7.4258 \mu\text{Hz} \\
 a_1 &= 0.0037343 \\
 a_2 &= -4.4444e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.00075635 \\
 c_2 &= 1.5796e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 524.66 \text{ s} \\
 \phi_{HeII} &= 4.4789 \\
 b_2 &= 2.1275e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1891.1 \text{ s} \\
 \phi_{CZ} &= 2.9633
 \end{aligned}$$

profile53

$$\chi^2_\nu(\text{dof} = 69) = 0.044268$$

Age after ZAMS: 12.610 Gyr



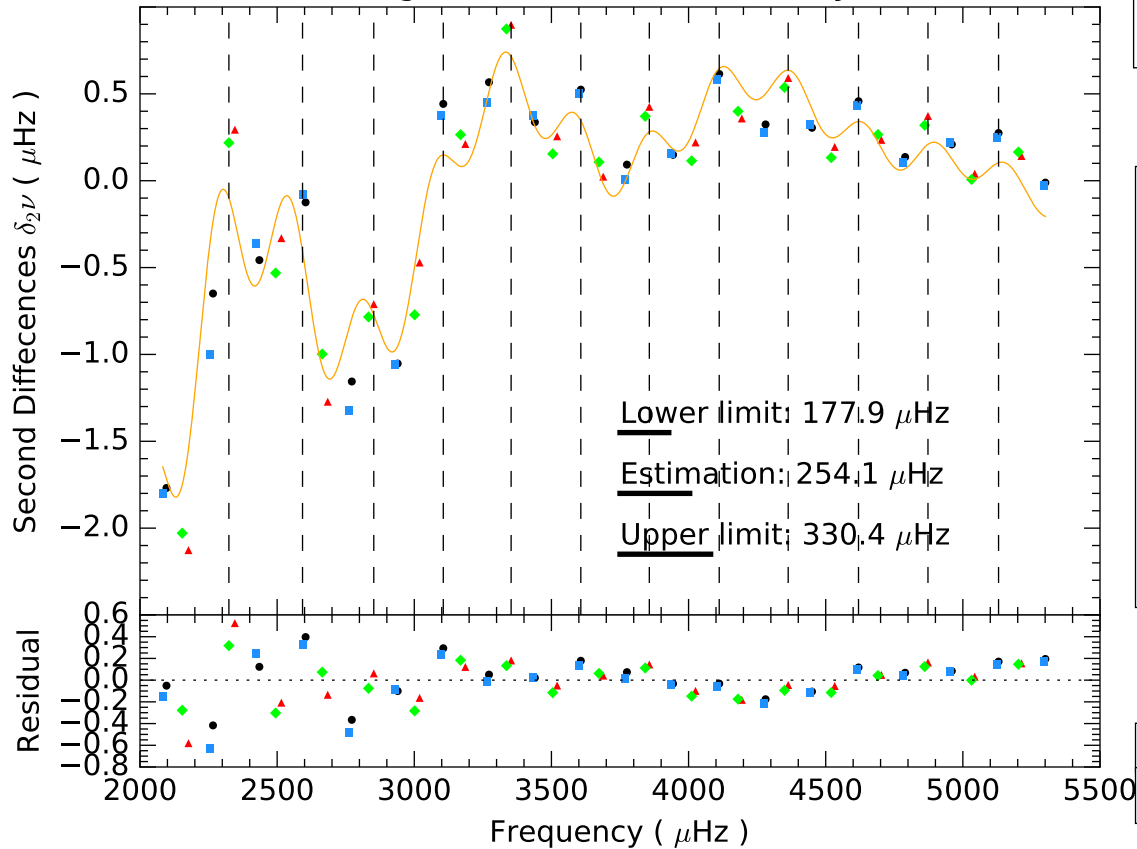
$\bullet$   $\ell=0$      $\blacklozenge$   $\ell=3$   
 $\blacktriangle$   $\ell=1$     — fit  
 $\blacksquare$   $\ell=2$

$a_0 = -7.373 \mu\text{Hz}$   
 $a_1 = 0.0037336$   
 $a_2 = -4.4728e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00076548$   
 $c_2 = 1.6033e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 527.04 \text{ s}$   
 $\phi_{HeII} = 4.5354$   
 $b_2 = 2.2022e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 1906.0 \text{ s}$   
 $\phi_{CZ} = 2.933$

profile54

$\chi^2_\nu(\text{dof} = 69) = 0.046669$

Age after ZAMS: 12.910 Gyr



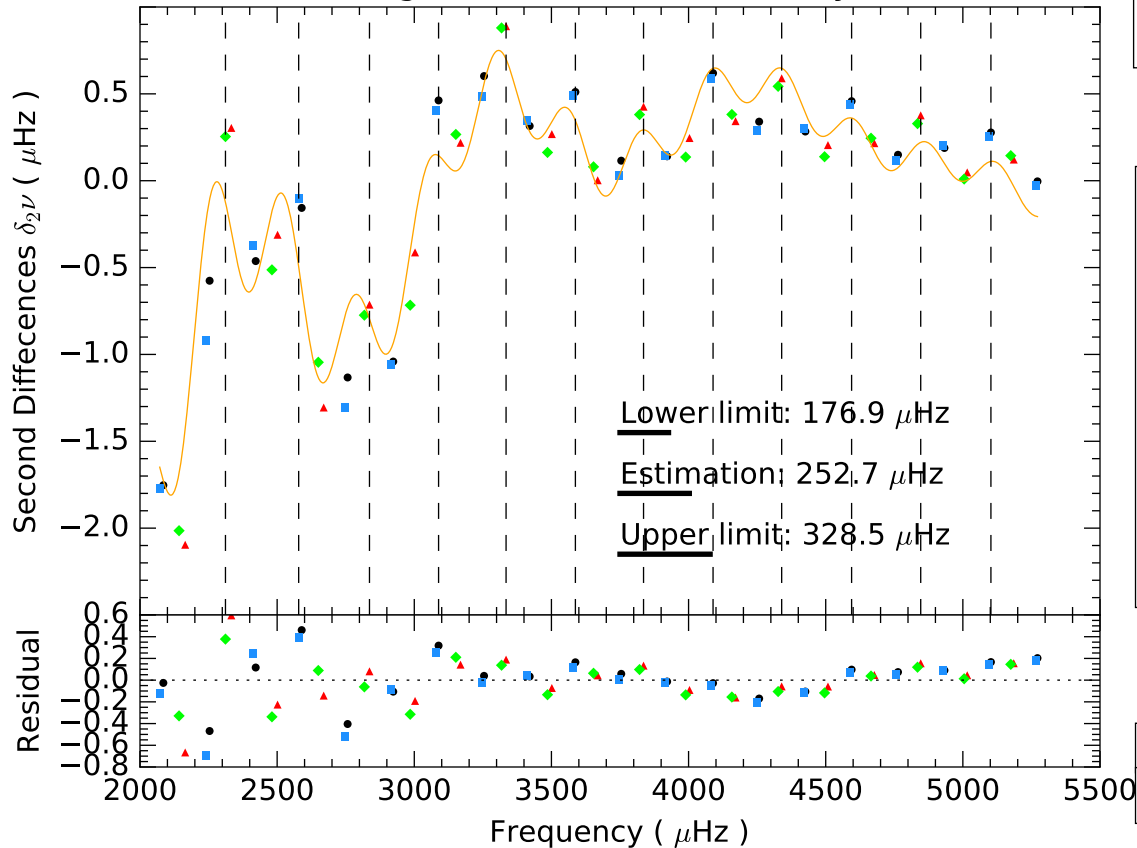
- $\bullet$   $\ell=0$
- $\blacktriangle$   $\ell=1$
- $\blacksquare$   $\ell=2$
- $\blacklozenge$   $\ell=3$
- fit

$$\begin{aligned}
 a_0 &= -7.2517 \mu\text{Hz} \\
 a_1 &= 0.0036941 \\
 a_2 &= -4.4478e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.0007639 \\
 c_2 &= 1.6153e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 527.14 \text{ s} \\
 \phi_{HeII} &= 4.6834 \\
 b_2 &= 2.205e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1916.3 \text{ s} \\
 \phi_{CZ} &= 2.9998
 \end{aligned}$$

profile55

$$\chi^2_\nu(\text{dof} = 68) = 0.047204$$

Age after ZAMS: 13.210 Gyr



- $\bullet$   $\ell=0$
- $\blacktriangle$   $\ell=1$
- $\blacksquare$   $\ell=2$
- $\blacklozenge$   $\ell=3$
- fit

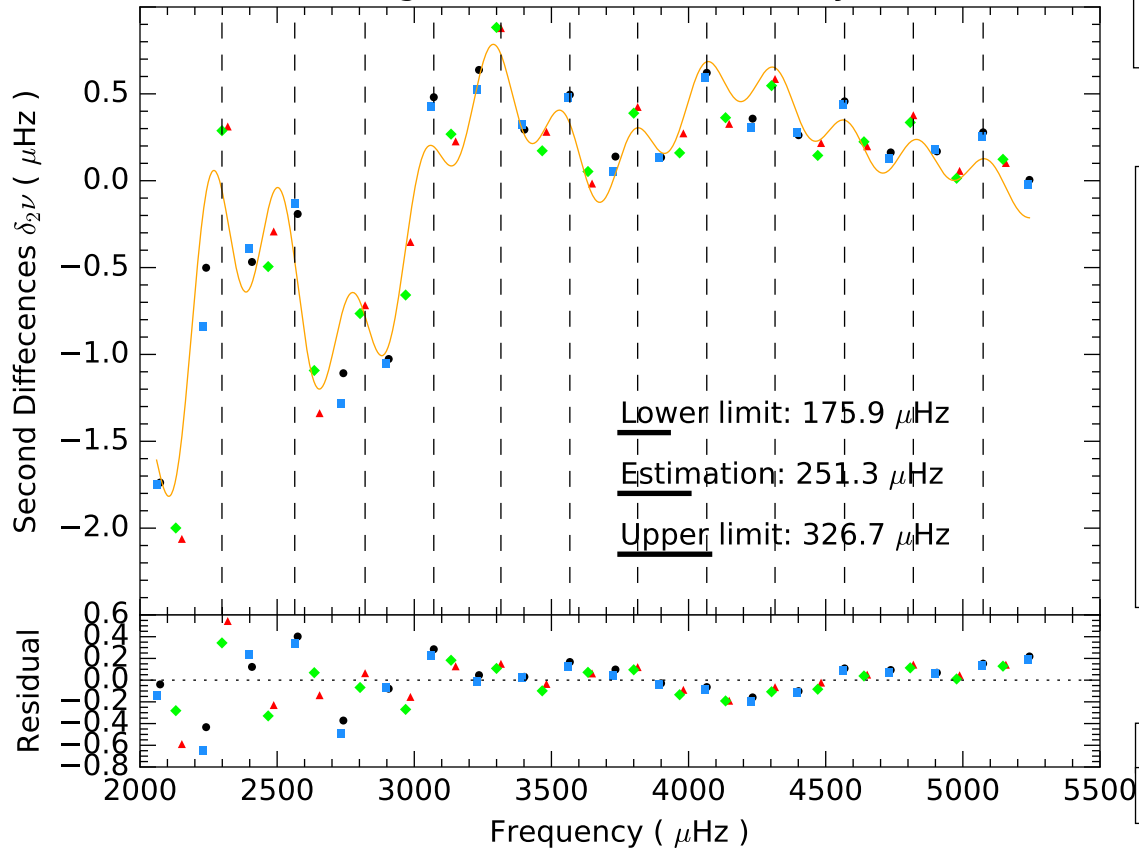
$$\begin{aligned}
 a_0 &= -7.1756 \mu\text{Hz} \\
 a_1 &= 0.0036822 \\
 a_2 &= -4.4637e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.00076869 \\
 c_2 &= 1.6518e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 524.7 \text{ s} \\
 \phi_{HeII} &= 4.927 \\
 b_2 &= 2.3335e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1926.6 \text{ s} \\
 \phi_{CZ} &= 3.2147
 \end{aligned}$$

profile56

$$\chi^2_\nu(\text{dof} = 68) = 0.056677$$



# Age after ZAMS: 13.510 Gyr



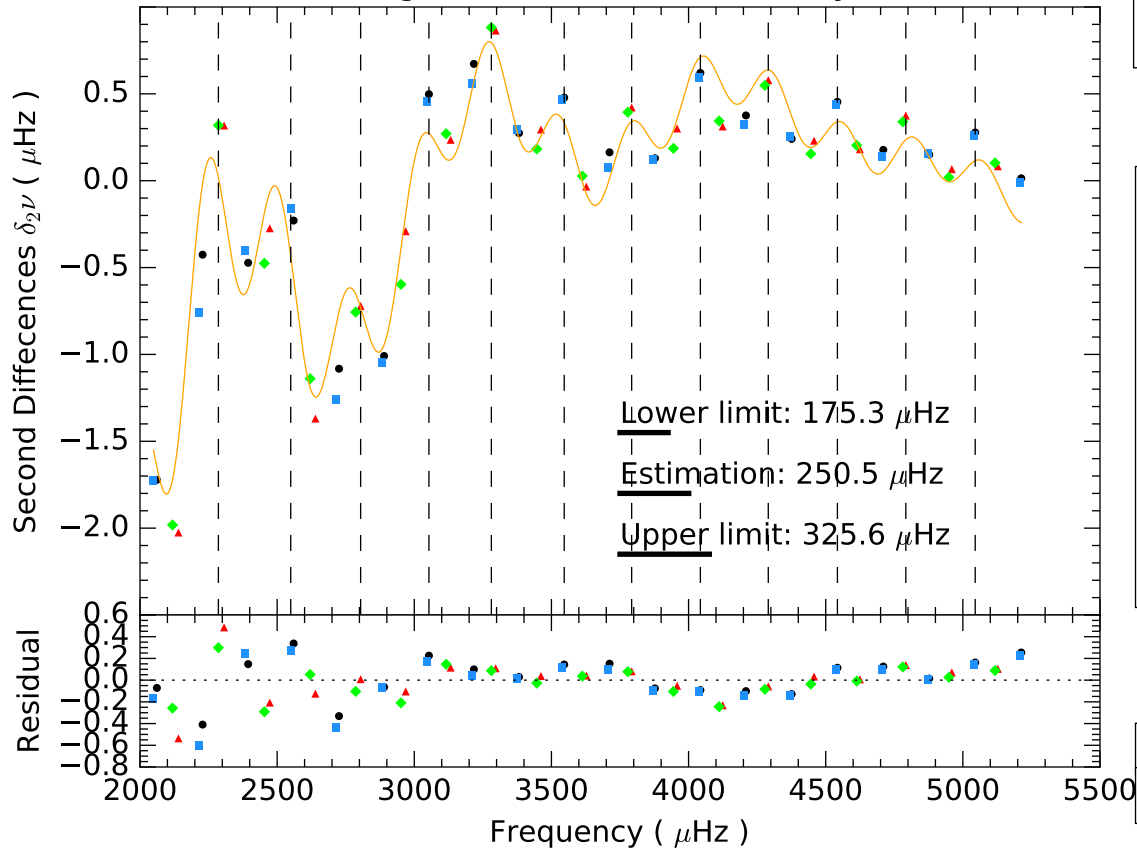
- $\bullet$   $\ell=0$
- $\blacktriangle$   $\ell=1$
- $\blacksquare$   $\ell=2$
- $\blacklozenge$   $\ell=3$
- fit

$a_0 = -7.13 \mu\text{Hz}$   
 $a_1 = 0.0036859$   
 $a_2 = -4.4997e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00077608$   
 $c_2 = 1.6386e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 533.69 \text{ s}$   
 $\phi_{HeII} = 4.7461$   
 $b_2 = 2.4695e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 1941.4 \text{ s}$   
 $\phi_{CZ} = 3.0342$

profile57

$\chi^2_\nu(\text{dof} = 68) = 0.048069$

Age after ZAMS: 13.810 Gyr



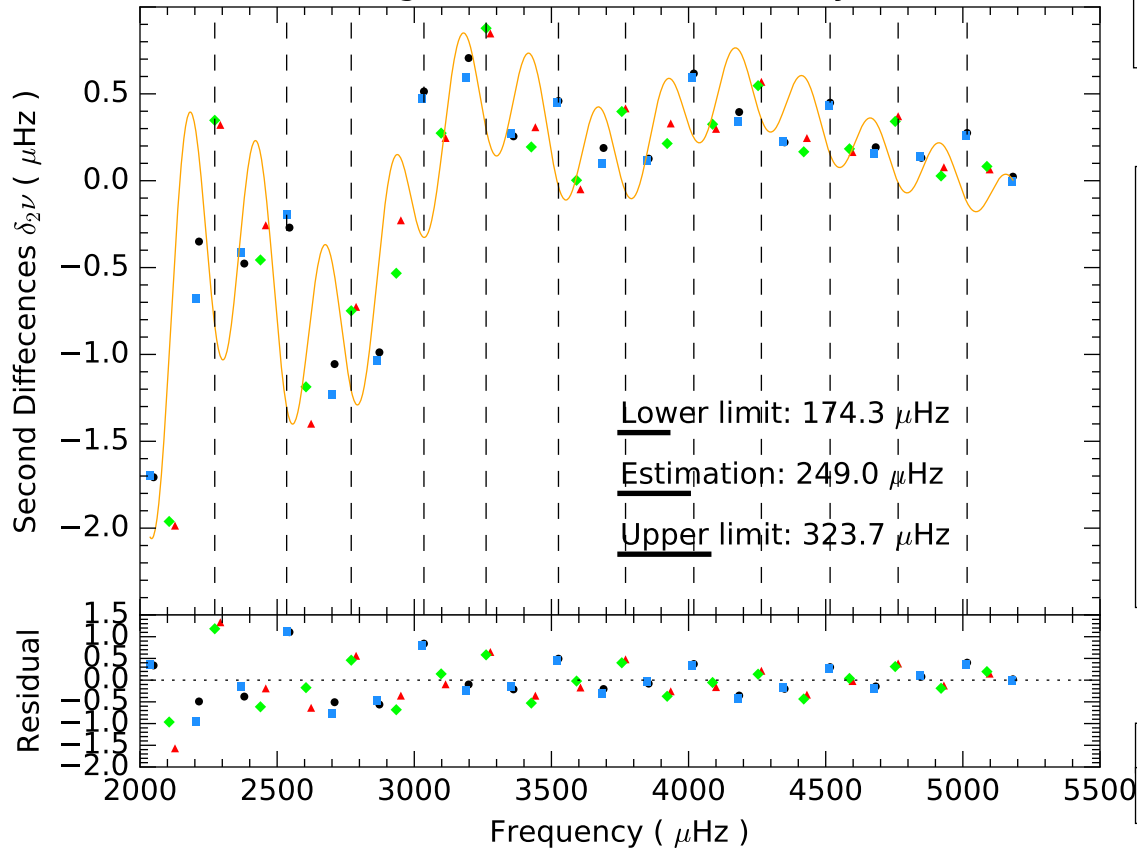
- $\ell=0$
- ♦  $\ell=3$
- ▲  $\ell=1$
- fit
- $\ell=2$

$$\begin{aligned}
 a_0 &= -7.0812 \mu\text{Hz} \\
 a_1 &= 0.0036889 \\
 a_2 &= -4.536e-07 \mu\text{Hz}^{-1} \\
 c_0 &= 0.00080445 \\
 c_2 &= 1.688e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 540.58 \text{ s} \\
 \phi_{HeII} &= 4.6601 \\
 b_2 &= 2.6151e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 1946.5 \text{ s} \\
 \phi_{CZ} &= 3.1378
 \end{aligned}$$

profile58

$$\chi^2_\nu(\text{dof} = 68) = 0.040944$$

# Age after ZAMS: 14.110 Gyr



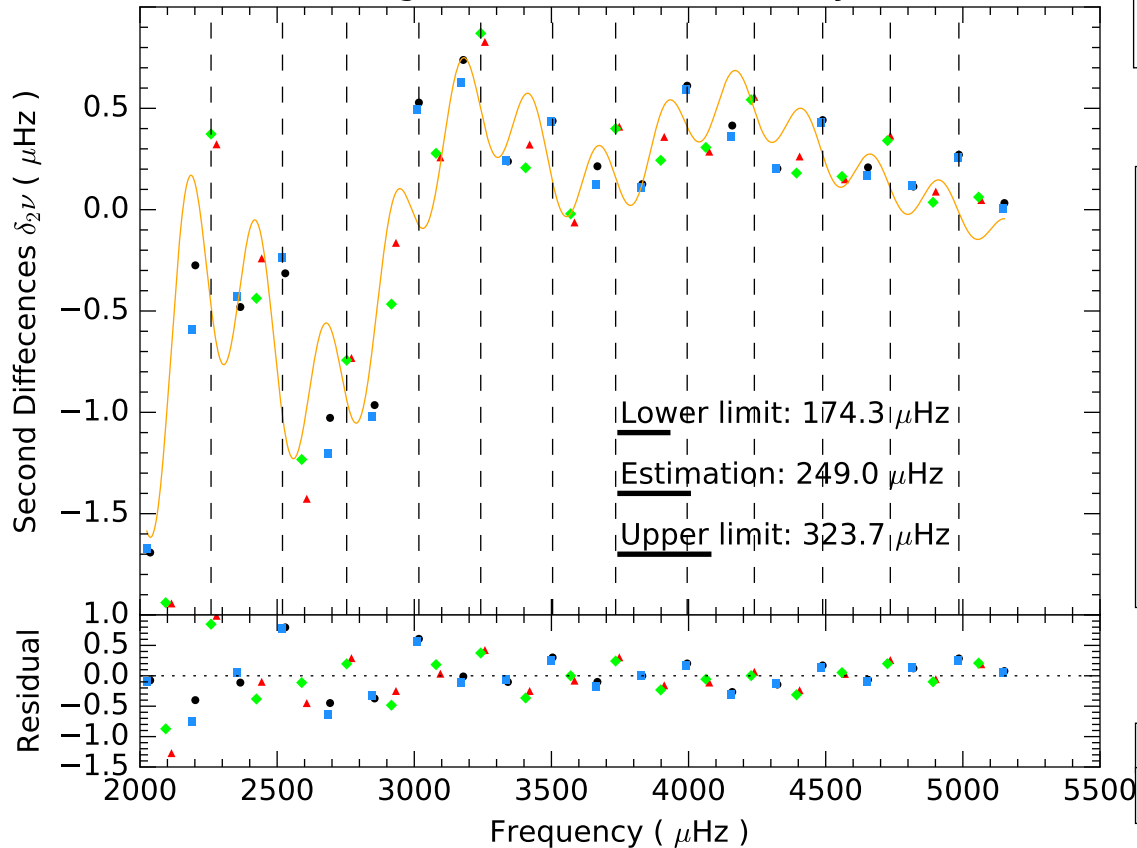
- $\bullet$   $\ell=0$
- $\blacktriangle$   $\ell=1$
- $\blacksquare$   $\ell=2$
- $\blacklozenge$   $\ell=3$
- fit

$a_0 = -6.8039 \mu\text{Hz}$   
 $a_1 = 0.0035733$   
 $a_2 = -4.4227e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00078131$   
 $c_2 = 1.8014e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 500.82 \text{ s}$   
 $\phi_{HeII} = 6.2832$   
 $b_2 = 4.0287e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 2008.1 \text{ s}$   
 $\phi_{CZ} = 3.1416$

profile59

$\chi^2_\nu(\text{dof} = 68) = 0.28978$

Age after ZAMS: 14.410 Gyr

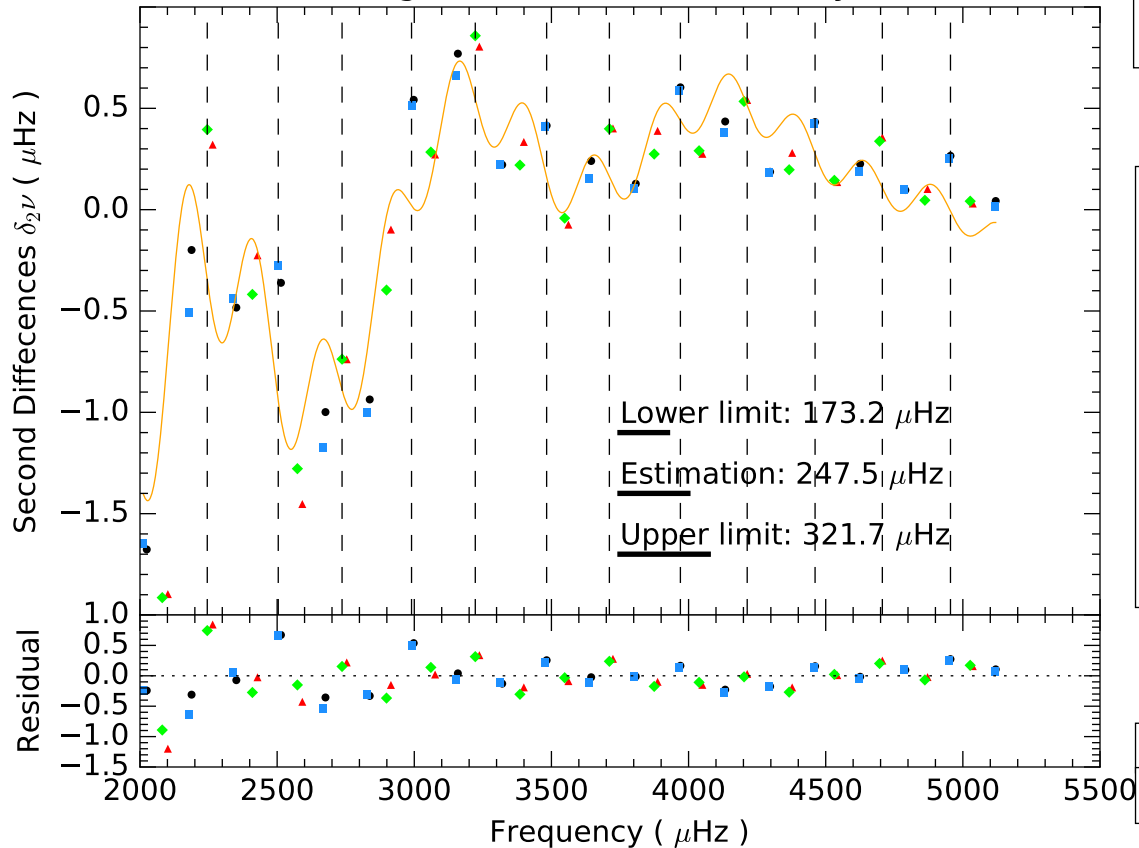


$$\begin{aligned}
 a_0 &= -6.7402 \mu\text{Hz} \\
 a_1 &= 0.0035681 \\
 a_2 &= -4.4492e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.00078602 \\
 c_2 &= 1.8197e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 505.04 \text{ s} \\
 \phi_{HeII} &= 6.2832 \\
 b_2 &= 2.6177e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 2008.4 \text{ s} \\
 \phi_{CZ} &= 3.1033
 \end{aligned}$$

profile60

$$\chi^2_\nu(\text{dof} = 68) = 0.15186$$

# Age after ZAMS: 14.710 Gyr



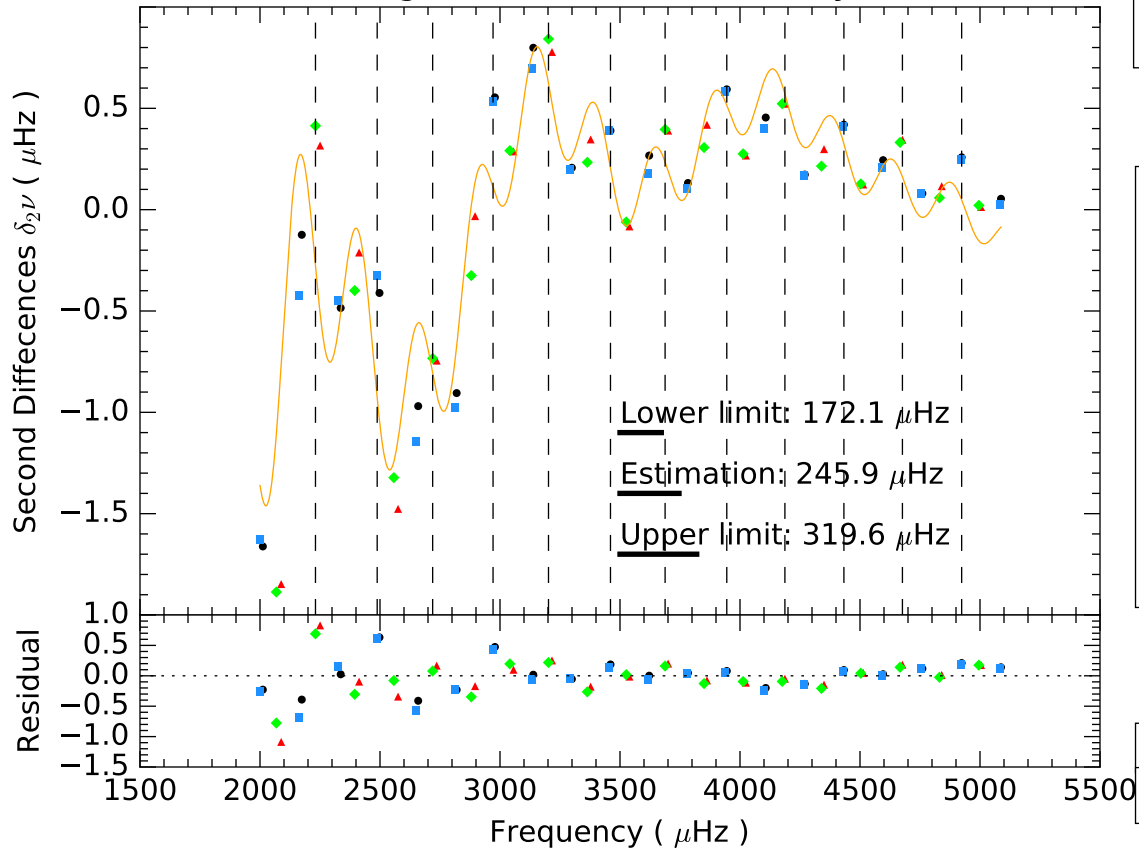
- $\bullet$   $\ell=0$
- $\blacktriangle$   $\ell=1$
- $\blacksquare$   $\ell=2$
- $\blacklozenge$   $\ell=3$
- $\text{—}$  fit

$a_0 = -6.7084 \mu\text{Hz}$   
 $a_1 = 0.0035801$   
 $a_2 = -4.4985e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00080579$   
 $c_2 = 1.8163e-07 \mu\text{Hz}^{-2}$   
 $\tau_{\text{HeII}} = 509.02 \text{ s}$   
 $\phi_{\text{HeII}} = 6.2832$   
 $b_2 = 2.1186e+06 \text{ mHz}^3$   
 $\tau_{\text{CZ}} = 2024.0 \text{ s}$   
 $\phi_{\text{CZ}} = 2.8633$

profile61

$\chi^2_{\nu}(\text{dof} = 68) = 0.11978$

# Age after ZAMS: 15.010 Gyr



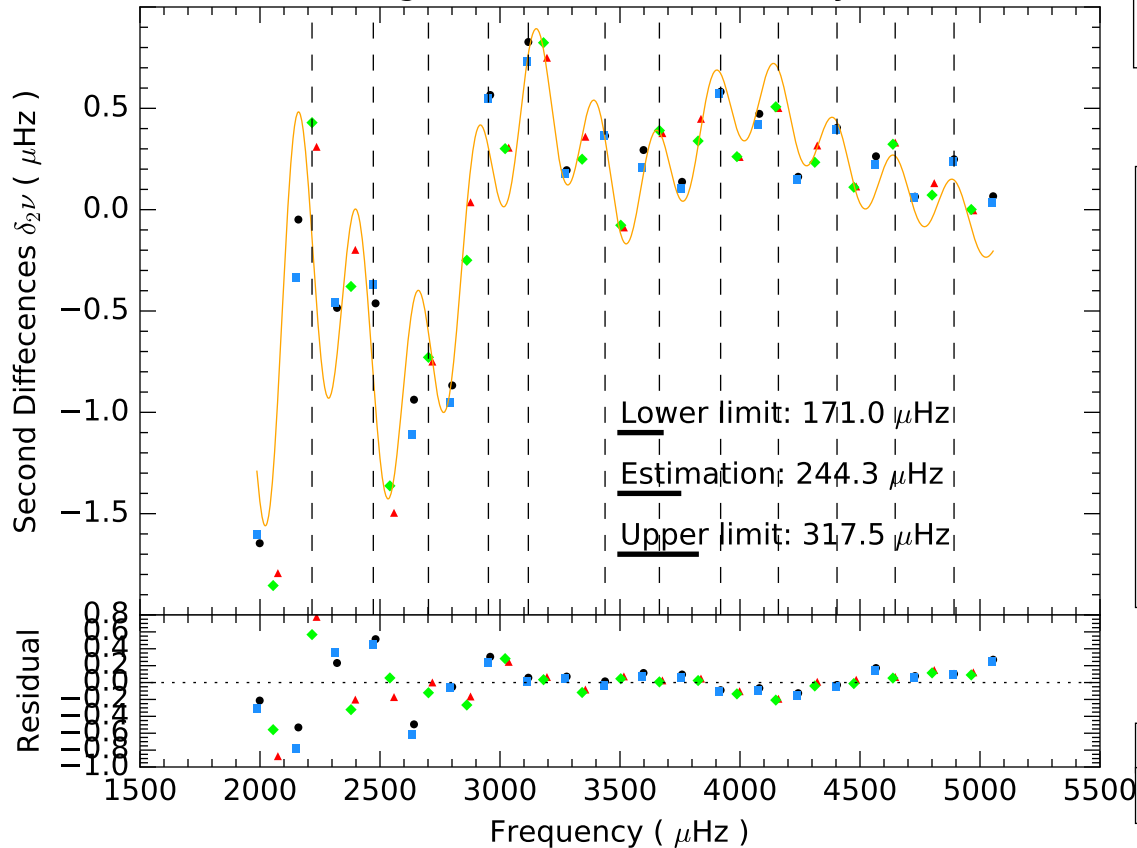
- $\bullet$   $\ell=0$
- $\blacktriangle$   $\ell=1$
- $\blacksquare$   $\ell=2$
- $\blacklozenge$   $\ell=3$
- $\text{—}$  fit

$a_0 = -6.6331 \mu\text{Hz}$   
 $a_1 = 0.0035705$   
 $a_2 = -4.5228e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00081733$   
 $c_2 = 1.8365e-07 \mu\text{Hz}^{-2}$   
 $\tau_{\text{HeII}} = 513.67 \text{ s}$   
 $\phi_{\text{HeII}} = 6.2832$   
 $b_2 = 2.5988e+06 \text{ mHz}^3$   
 $\tau_{\text{CZ}} = 2025.1 \text{ s}$   
 $\phi_{\text{CZ}} = 3.0357$

profile62

$\chi^2_{\nu}(\text{dof} = 68) = 0.10055$

# Age after ZAMS: 15.310 Gyr

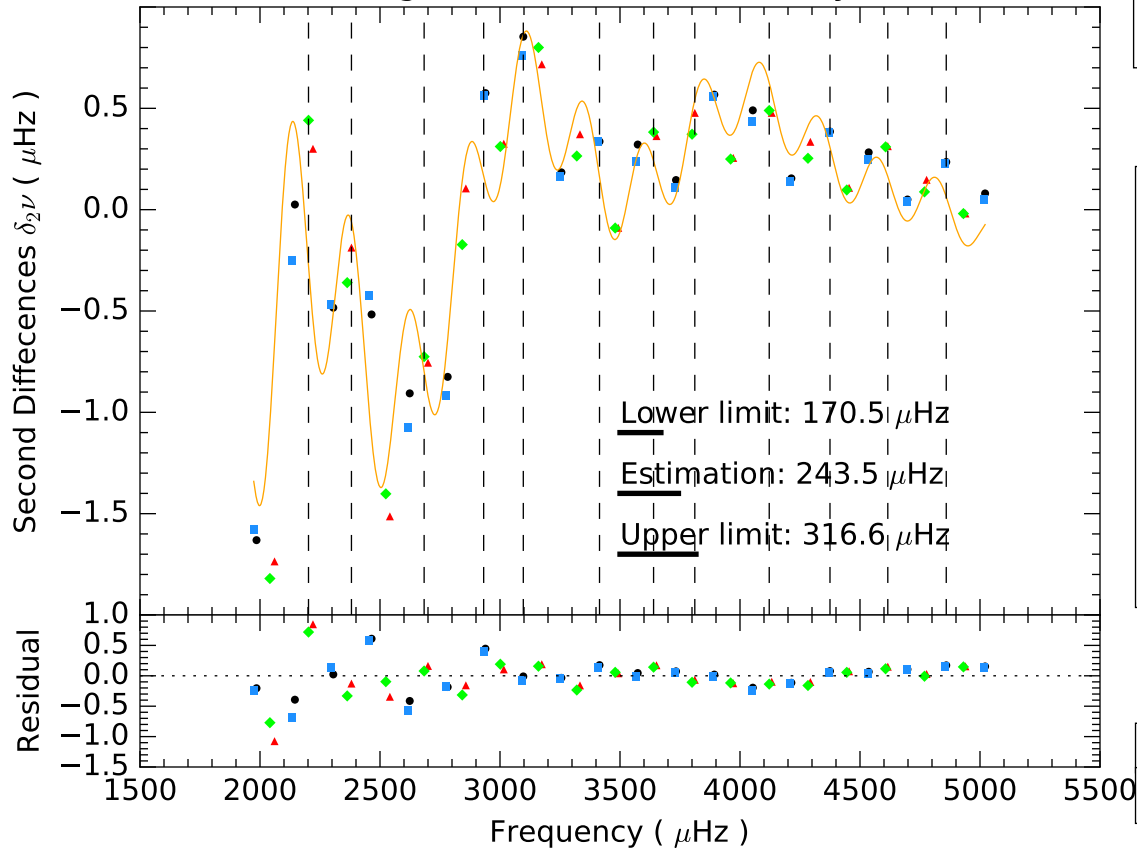


- $\bullet$   $\ell=0$
- $\blacktriangle$   $\ell=1$
- $\blacksquare$   $\ell=2$
- $\blacklozenge$   $\ell=3$
- $\text{—}$  fit

$a_0 = -6.5011 \mu\text{Hz}$   
 $a_1 = 0.0035306$   
 $a_2 = -4.5078e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00080105$   
 $c_2 = 1.8442e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 518.65 \text{ s}$   
 $\phi_{HeII} = 6.2832$   
 $b_2 = 3.4091e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 2013.8 \text{ s}$   
 $\phi_{CZ} = 3.4929$

profile63  
 $\chi^2_{\nu}(\text{dof} = 68) = 0.080126$

# Age after ZAMS: 15.610 Gyr



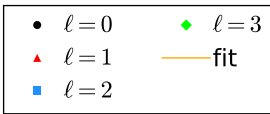
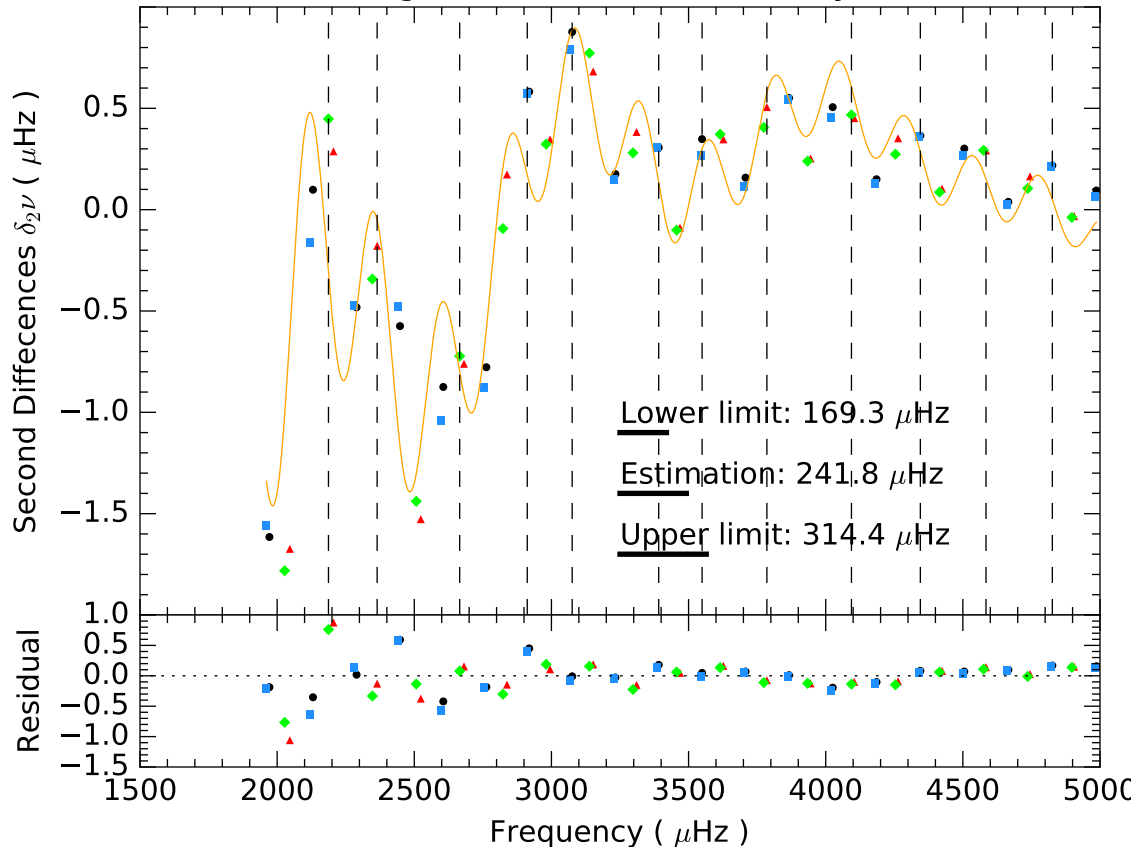
$\bullet$   $\ell=0$      $\blacklozenge$   $\ell=3$   
 $\blacktriangle$   $\ell=1$     — fit  
 $\blacksquare$   $\ell=2$

$a_0 = -6.4298 \mu\text{Hz}$   
 $a_1 = 0.0035239$   
 $a_2 = -4.5376e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00082819$   
 $c_2 = 1.8367e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 523.4 \text{ s}$   
 $\phi_{HeII} = 6.2829$   
 $b_2 = 2.9538e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 2050.1 \text{ s}$   
 $\phi_{CZ} = 3.1442$

profile64  
 $\chi^2_{\nu}(\text{dof} = 68) = 0.096154$



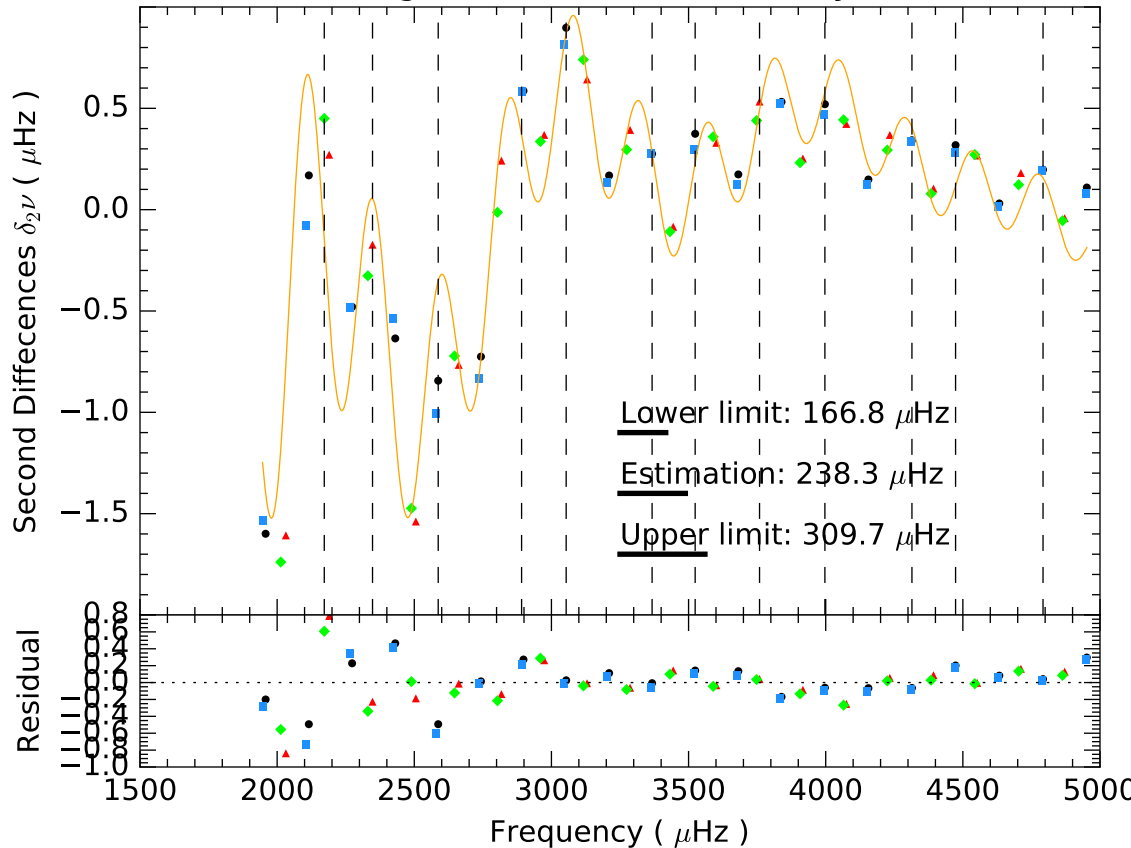
# Age after ZAMS: 15.910 Gyr



$a_0 = -6.3548 \mu\text{Hz}$   
 $a_1 = 0.0035159$   
 $a_2 = -4.5674e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00082445$   
 $c_2 = 1.8634e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 528.48 \text{ s}$   
 $\phi_{HeII} = 6.2832$   
 $b_2 = 3.0545e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 2066.7 \text{ s}$   
 $\phi_{CZ} = 3.1225$

profile65  
 $\chi^2_{\nu}(\text{dof} = 68) = 0.095405$

# Age after ZAMS: 16.210 Gyr

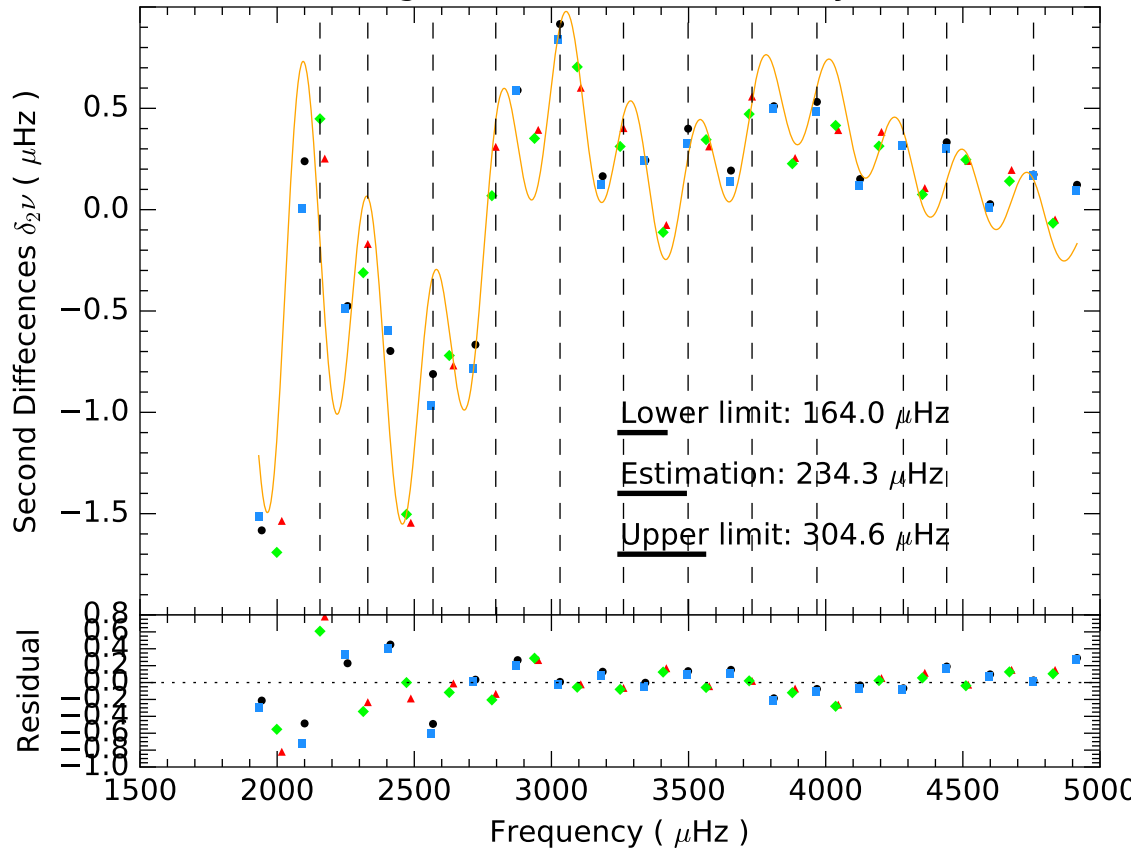


- $\bullet$   $\ell=0$
- $\blacktriangle$   $\ell=1$
- $\blacksquare$   $\ell=2$
- $\blacklozenge$   $\ell=3$
- $\text{—}$  fit

$a_0 = -6.2673 \mu\text{Hz}$   
 $a_1 = 0.0035012$   
 $a_2 = -4.5891e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00085816$   
 $c_2 = 1.9383e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 533.87 \text{ s}$   
 $\phi_{HeII} = 6.2832$   
 $b_2 = 3.6777e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 2060.3 \text{ s}$   
 $\phi_{CZ} = 3.4705$

profile66  
 $\chi^2_{\nu}(\text{dof} = 68) = 0.078679$

# Age after ZAMS: 16.510 Gyr



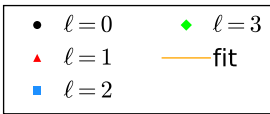
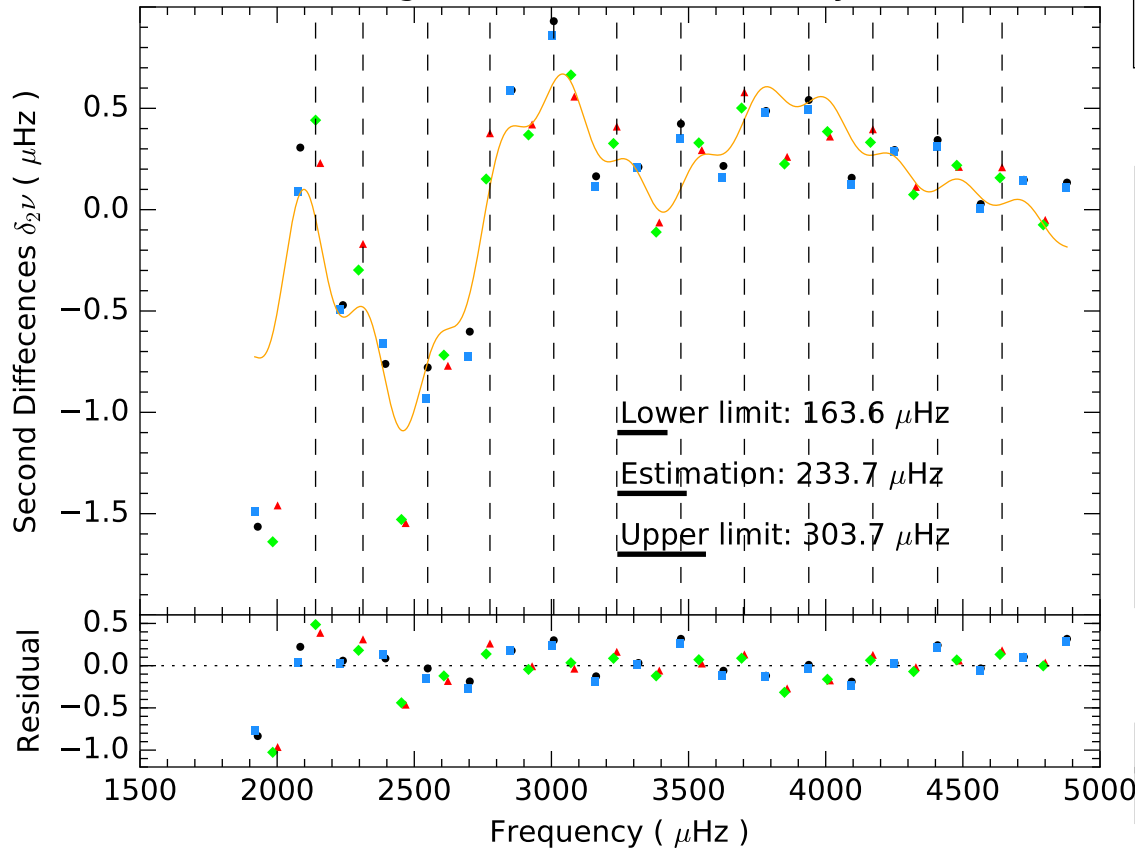
- $\bullet$   $\ell=0$
- $\blacktriangle$   $\ell=1$
- $\blacksquare$   $\ell=2$
- $\blacklozenge$   $\ell=3$
- fit

$a_0 = -6.1896 \mu\text{Hz}$   
 $a_1 = 0.0034933$   
 $a_2 = -4.6225e-07 \mu\text{Hz}^{-1}$   
 $c_0 = 0.00089139$   
 $c_2 = 1.9874e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 539.39 \text{ s}$   
 $\phi_{HeII} = 6.2832$   
 $b_2 = 3.7434e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 2079.6 \text{ s}$   
 $\phi_{CZ} = 3.3803$

profile67

$\chi^2_{\nu}(\text{dof} = 68) = 0.077765$

Age after ZAMS: 16.810 Gyr

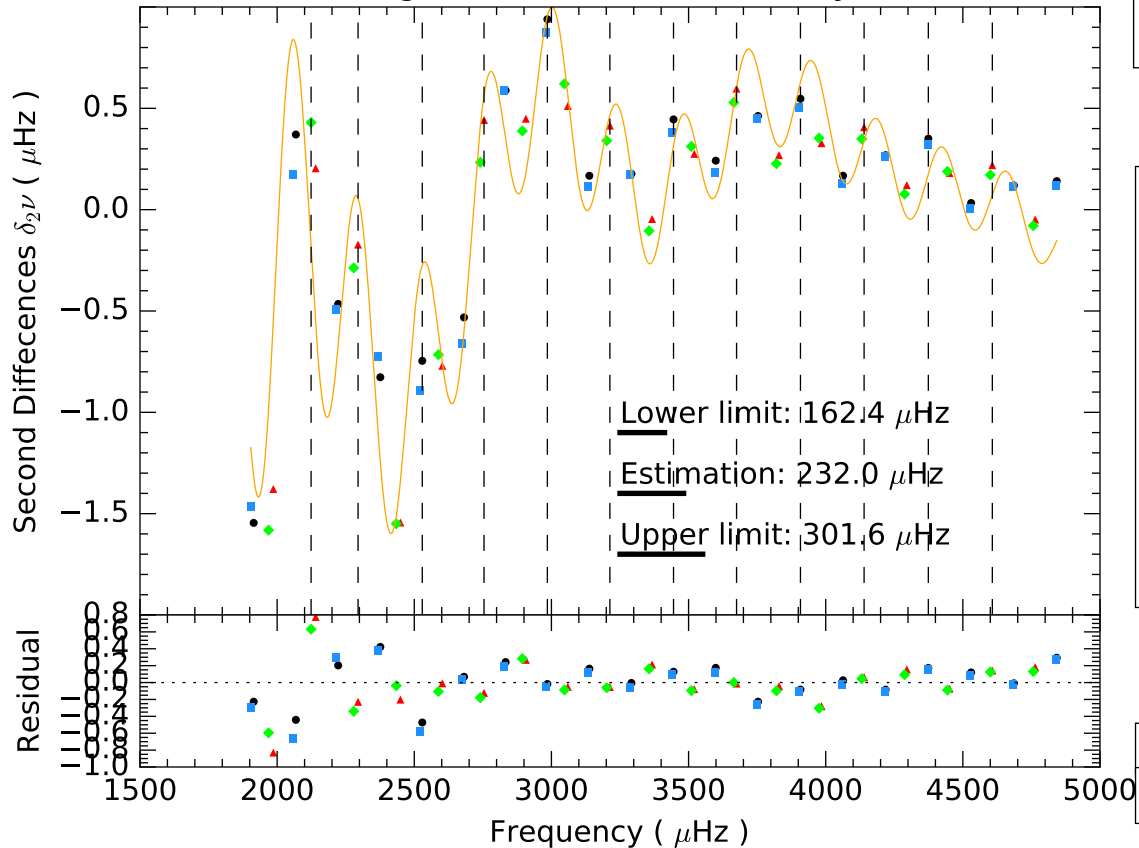


$a_0 = -6.1449 \mu\text{Hz}$   
 $a_1 = 0.0035045$   
 $a_2 = -4.6836e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00085588$   
 $c_2 = 1.9626e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 545.49 \text{ s}$   
 $\phi_{HeII} = 6.2498$   
 $b_2 = 9.4103e+05 \text{ mHz}^3$   
 $\tau_{CZ} = 2093.9 \text{ s}$   
 $\phi_{CZ} = 2.9201$

profile68

$\chi^2_\nu(\text{dof} = 68) = 0.085702$

# Age after ZAMS: 17.110 Gyr

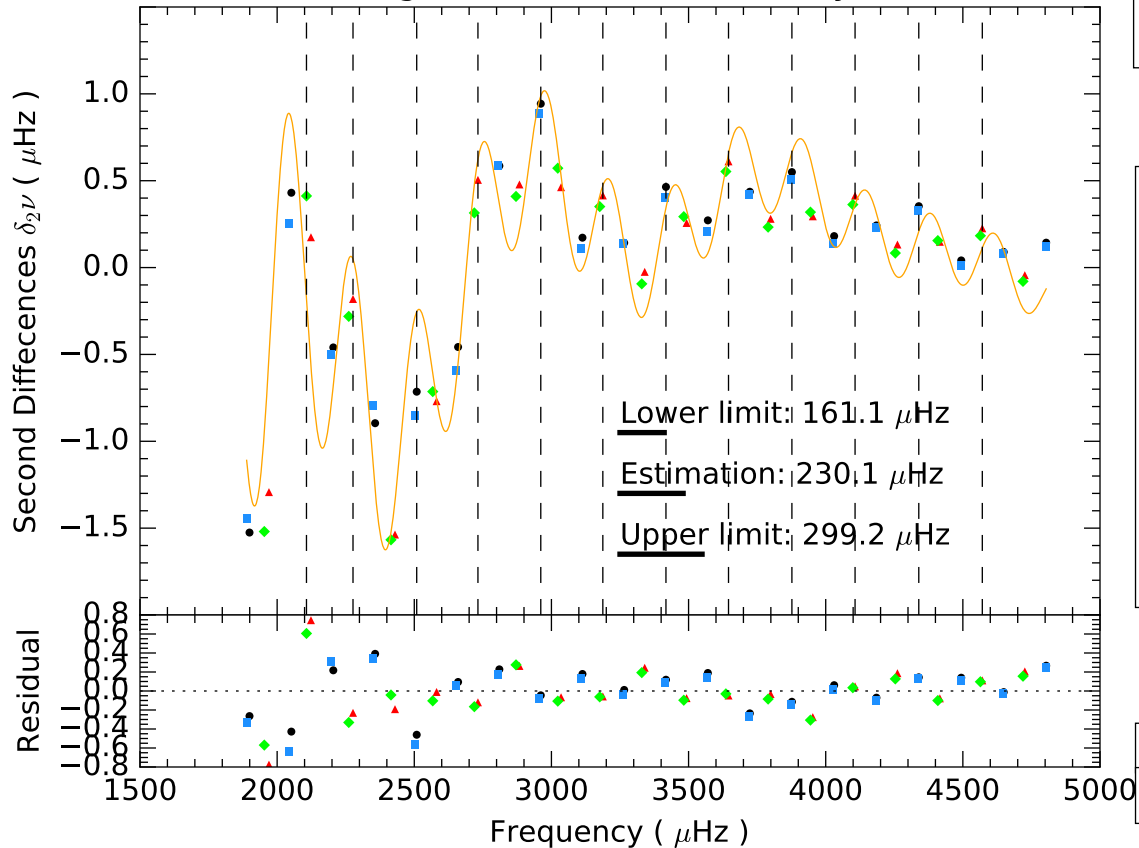


- $\bullet$   $\ell=0$
- $\blacktriangle$   $\ell=1$
- $\blacksquare$   $\ell=2$
- $\blacklozenge$   $\ell=3$
- fit

$a_0 = -6.0271 \mu\text{Hz}$   
 $a_1 = 0.0034754$   
 $a_2 = -4.6916e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00097573$   
 $c_2 = 2.1148e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 551.1 \text{ s}$   
 $\phi_{HeII} = 6.2832$   
 $b_2 = 3.7603e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 2114.4 \text{ s}$   
 $\phi_{CZ} = 3.3948$

profile69  
 $\chi^2_\nu(\text{dof} = 68) = 0.077835$

# Age after ZAMS: 17.410 Gyr



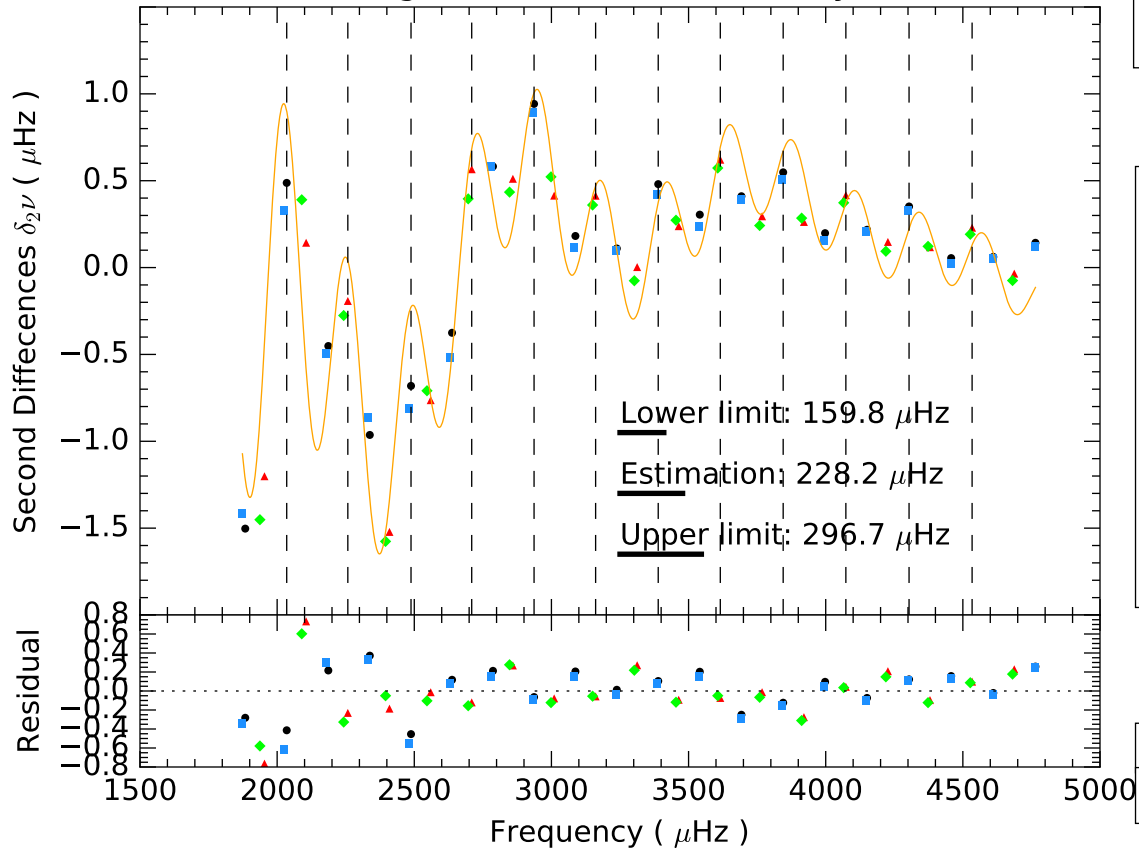
- $\bullet$   $\ell=0$
- $\blacktriangle$   $\ell=1$
- $\blacksquare$   $\ell=2$
- $\blacklozenge$   $\ell=3$
- $\text{—}$  fit

$a_0 = -5.9529 \mu\text{Hz}$   
 $a_1 = 0.0034709$   
 $a_2 = -4.7347e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.00099601$   
 $c_2 = 2.1321e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 557.2 \text{ s}$   
 $\phi_{HeII} = 6.2826$   
 $b_2 = 3.7658e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 2138.1 \text{ s}$   
 $\phi_{CZ} = 3.219$

profile70

$\chi^2_{\nu}(\text{dof} = 68) = 0.074201$

# Age after ZAMS: 17.710 Gyr



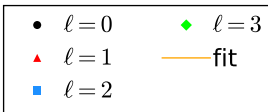
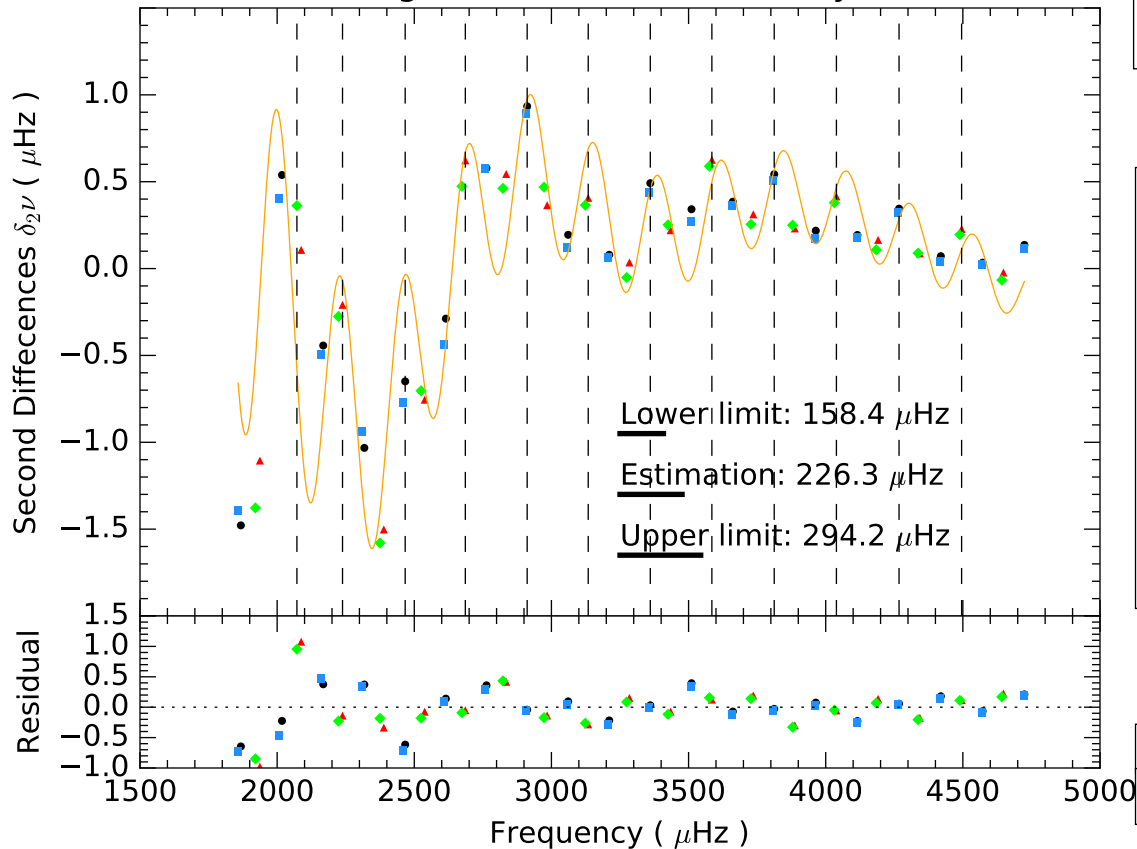
- $\bullet$   $\ell=0$
- $\blacktriangle$   $\ell=1$
- $\blacksquare$   $\ell=2$
- $\blacklozenge$   $\ell=3$
- fit

$a_0 = -5.8631 \mu\text{Hz}$   
 $a_1 = 0.0034593$   
 $a_2 = -4.7708e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.0010463$   
 $c_2 = 2.2047e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 563.68 \text{ s}$   
 $\phi_{HeII} = 6.2829$   
 $b_2 = 3.764e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 2157.9 \text{ s}$   
 $\phi_{CZ} = 3.2003$

profile71

$\chi^2_\nu(\text{dof} = 68) = 0.074374$

# Age after ZAMS: 18.010 Gyr



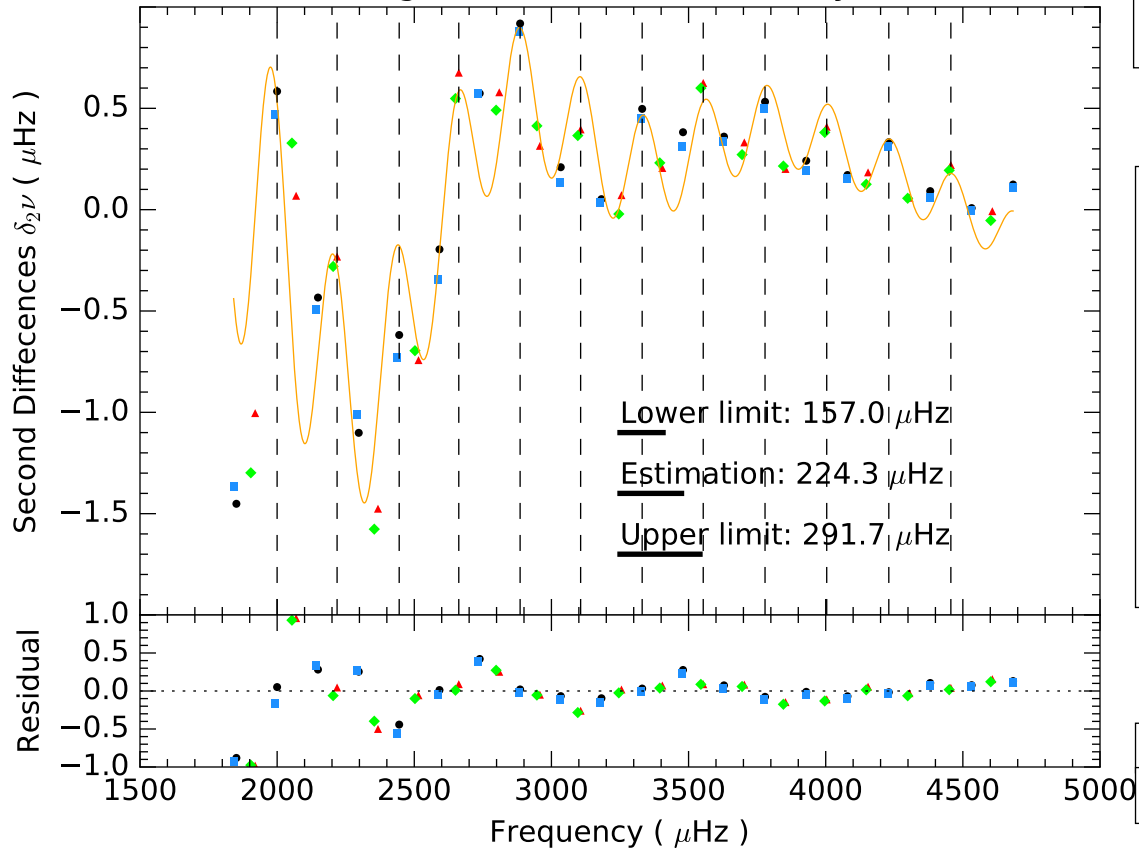
$$\begin{aligned}
 a_0 &= -4.8753 \mu\text{Hz} \\
 a_1 &= 0.0029225 \\
 a_2 &= -4.0605e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.0014053 \\
 c_2 &= 2.8817e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 475.73 \text{ s} \\
 \phi_{HeII} &= 3.0103 \\
 b_2 &= 3.8817e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 2168.5 \text{ s} \\
 \phi_{CZ} &= 3.5502
 \end{aligned}$$

profile72

$$\chi^2_\nu(\text{dof} = 68) = 0.12984$$



# Age after ZAMS: 18.310 Gyr



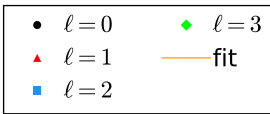
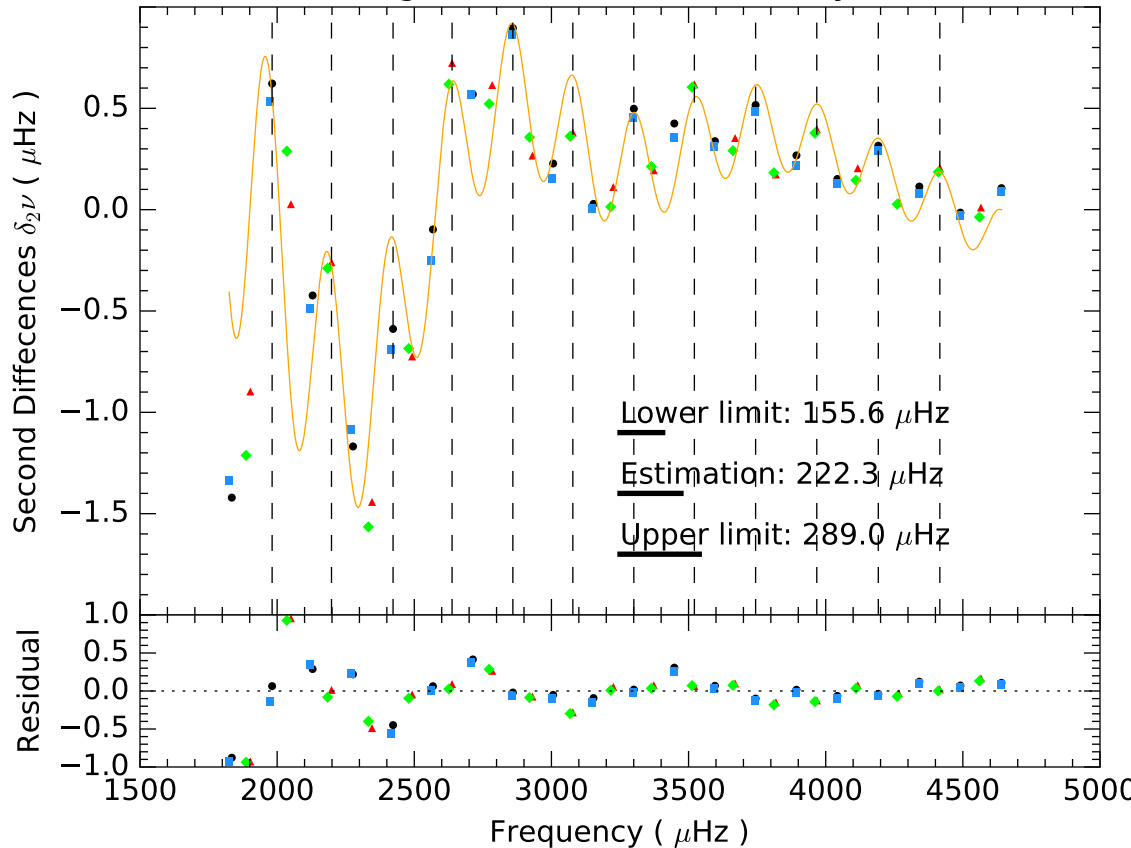
- $\bullet$   $\ell=0$
- $\blacktriangle$   $\ell=1$
- $\blacksquare$   $\ell=2$
- $\blacklozenge$   $\ell=3$
- $\text{—}$  fit

$a_0 = -4.7703 \mu\text{Hz}$   
 $a_1 = 0.0028984$   
 $a_2 = -4.0765e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.0014916$   
 $c_2 = 3.0203e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 478.08 \text{ s}$   
 $\phi_{HeII} = 3.1111$   
 $b_2 = 2.9244e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 2217.2 \text{ s}$   
 $\phi_{CZ} = 2.8843$

profile73

$\chi^2_{\nu}(\text{dof} = 68) = 0.1132$

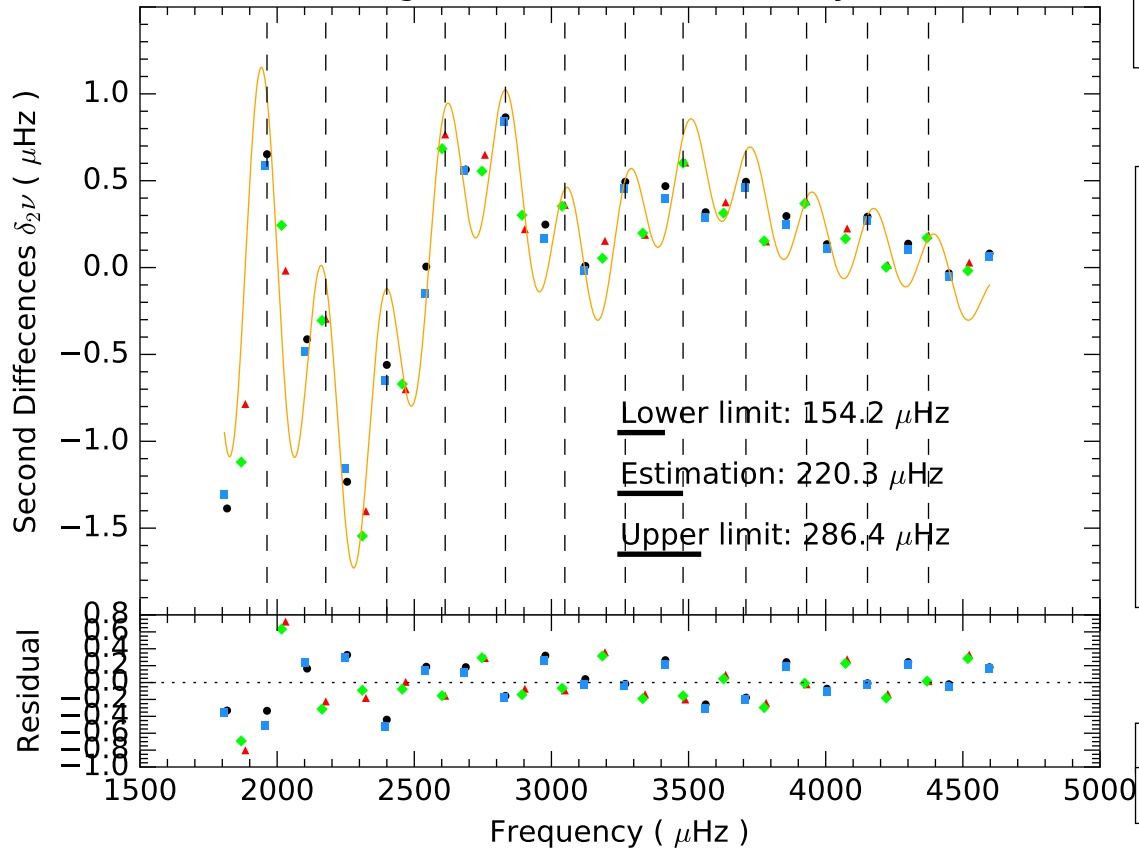
# Age after ZAMS: 18.610 Gyr



$a_0 = -4.6347 \mu\text{Hz}$   
 $a_1 = 0.002856$   
 $a_2 = -4.0666e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.0016099$   
 $c_2 = 3.1653e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 482.11\text{ s}$   
 $\phi_{HeII} = 3.1679$   
 $b_2 = 2.9863e+06\text{ mHz}^3$   
 $\tau_{CZ} = 2239.8\text{ s}$   
 $\phi_{CZ} = 2.8581$

profile74  
 $\chi^2_{\nu}(\text{dof} = 68) = 0.11107$

# Age after ZAMS: 18.910 Gyr

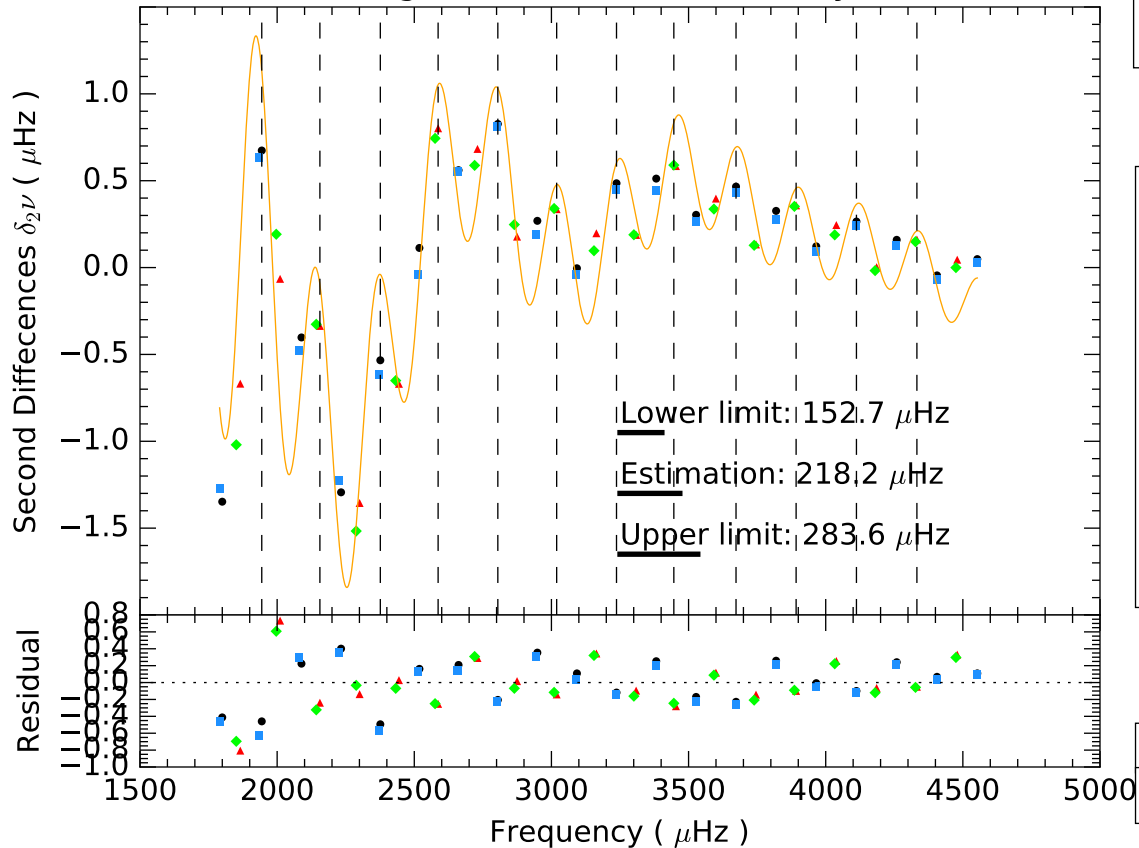


$\bullet$   $\ell=0$        $\blacklozenge$   $\ell=3$   
 $\blacktriangle$   $\ell=1$       — fit  
 $\blacksquare$   $\ell=2$

$a_0 = -5.4861 \mu\text{Hz}$   
 $a_1 = 0.0034079$   
 $a_2 = -4.9289e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.0013435$   
 $c_2 = 2.6182e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 592.78 \text{ s}$   
 $\phi_{HeII} = 6.2832$   
 $b_2 = 3.6386e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 2240.9 \text{ s}$   
 $\phi_{CZ} = 3.3316$

profile75  
 $\chi^2_{\nu}(\text{dof} = 68) = 0.0836$

# Age after ZAMS: 19.210 Gyr

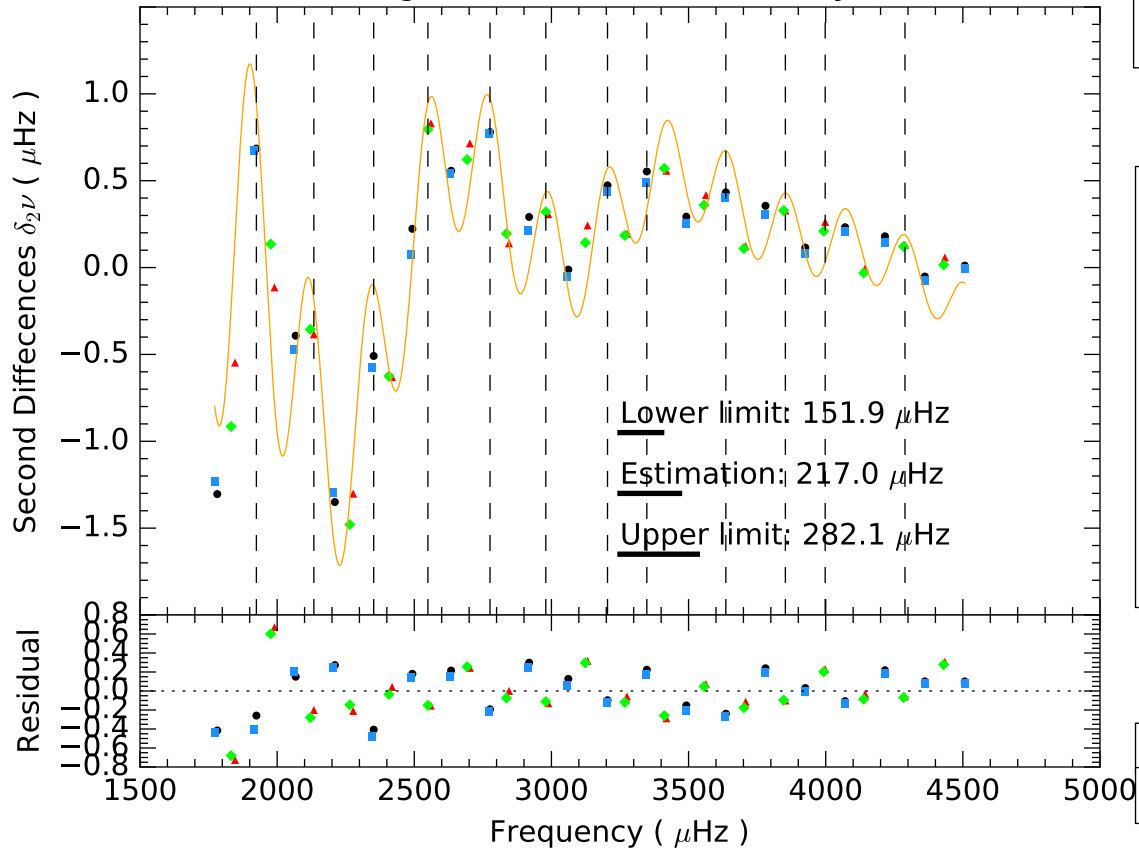


$\bullet$   $\ell=0$      $\blacklozenge$   $\ell=3$   
 $\blacktriangle$   $\ell=1$     — fit  
 $\blacksquare$   $\ell=2$

$a_0 = -5.33 \mu\text{Hz}$   
 $a_1 = 0.0033614$   
 $a_2 = -4.9283e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.0016303$   
 $c_2 = 2.899e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 603.42 \text{ s}$   
 $\phi_{HeII} = 6.2561$   
 $b_2 = 3.8742e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 2277.0 \text{ s}$   
 $\phi_{CZ} = 2.9893$

profile76  
 $\chi^2_\nu(\text{dof} = 68) = 0.094661$

# Age after ZAMS: 19.510 Gyr

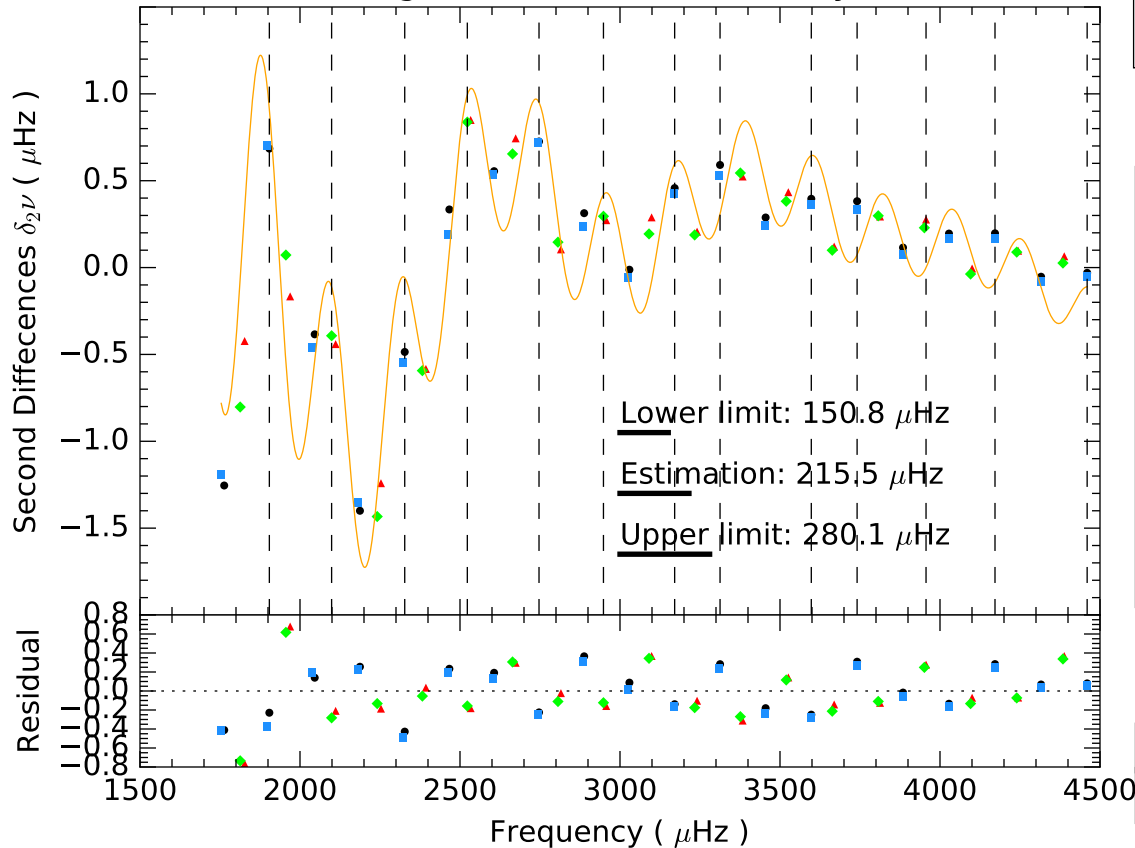


$\bullet$   $\ell=0$        $\blacklozenge$   $\ell=3$   
 $\blacktriangle$   $\ell=1$       — fit  
 $\blacksquare$   $\ell=2$

$a_0 = -5.3228 \mu\text{Hz}$   
 $a_1 = 0.0034032$   
 $a_2 = -5.0566e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.0014914$   
 $c_2 = 2.8439e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 609.1 \text{ s}$   
 $\phi_{HeII} = 6.2826$   
 $b_2 = 3.3561e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 2304.8 \text{ s}$   
 $\phi_{CZ} = 2.9636$

profile77  
 $\chi^2_\nu(\text{dof} = 68) = 0.073707$

# Age after ZAMS: 19.810 Gyr

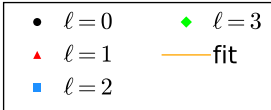
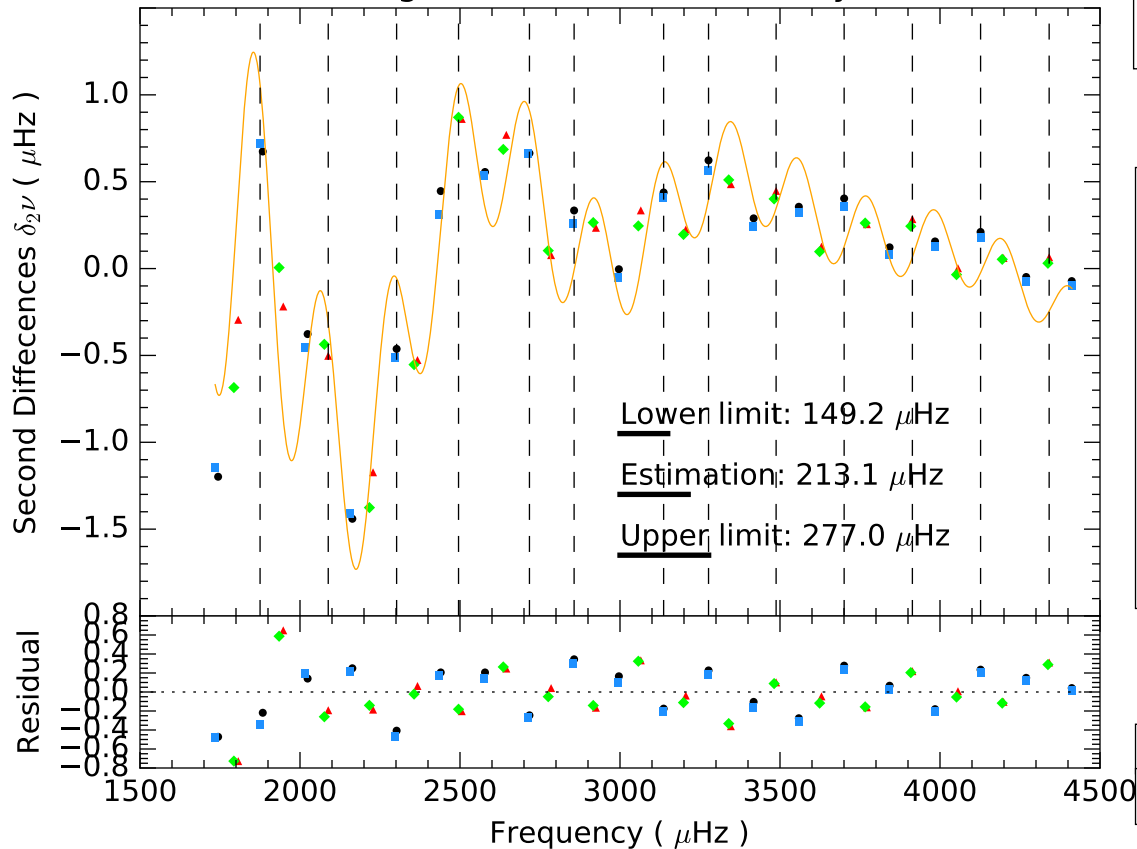


$\bullet$   $\ell=0$      $\blacklozenge$   $\ell=3$   
 $\blacktriangle$   $\ell=1$     — fit  
 $\blacksquare$   $\ell=2$

$a_0 = -5.2338 \mu\text{Hz}$   
 $a_1 = 0.0033979$   
 $a_2 = -5.1215e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.0016271$   
 $c_2 = 3.0287e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 617.98 \text{ s}$   
 $\phi_{HeII} = 6.2832$   
 $b_2 = 3.3053e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 2316.6 \text{ s}$   
 $\phi_{CZ} = 3.3597$

profile78  
 $\chi^2_\nu(\text{dof} = 68) = 0.086075$

# Age after ZAMS: 20.110 Gyr

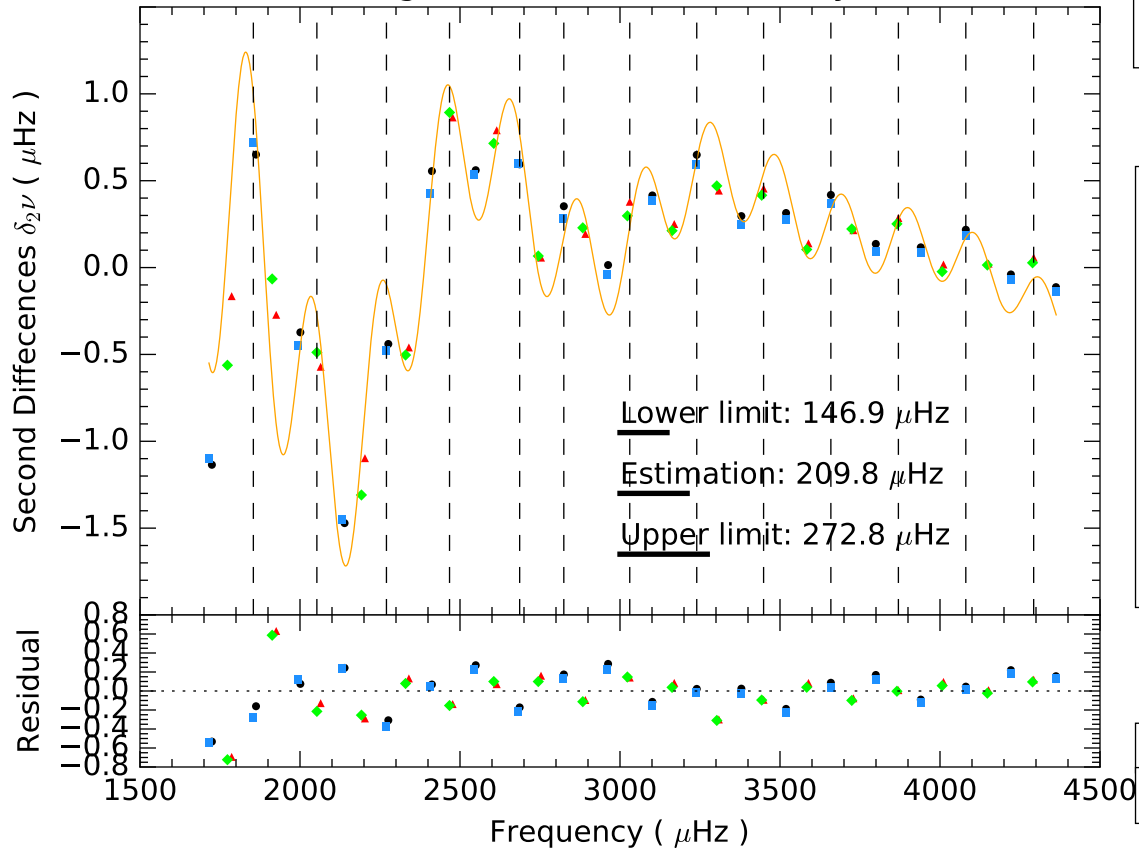


$$\begin{aligned}
 a_0 &= -5.1017 \mu\text{Hz} \\
 a_1 &= 0.003365 \\
 a_2 &= -5.145e-07 \mu\text{Hz}^{-1} \\
 c_0 &= 0.0017185 \\
 c_2 &= 3.1181e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 627.59 \text{ s} \\
 \phi_{HeII} &= 6.2786 \\
 b_2 &= 3.1666e+06 \text{ mHz}^3 \\
 \tau_{CZ} &= 2355.1 \text{ s} \\
 \phi_{CZ} &= 3.0904
 \end{aligned}$$

profile79

$$\chi^2_{\nu}(\text{dof} = 68) = 0.080765$$

# Age after ZAMS: 20.410 Gyr



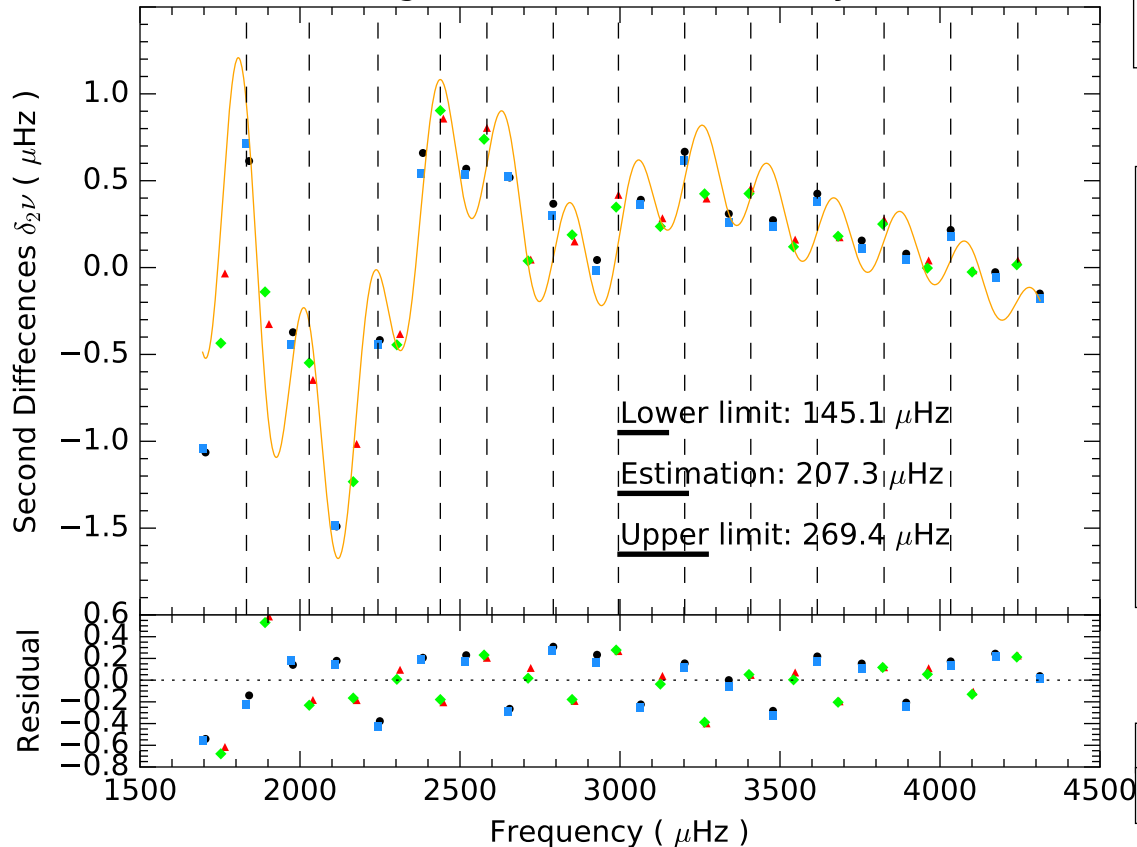
- $\bullet$   $\ell=0$
- $\blacktriangle$   $\ell=1$
- $\blacksquare$   $\ell=2$
- $\blacklozenge$   $\ell=3$
- fit

$a_0 = -4.9802 \mu\text{Hz}$   
 $a_1 = 0.0033383$   
 $a_2 = -5.1801e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.001811$   
 $c_2 = 3.2388e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 637.25 \text{ s}$   
 $\phi_{HeII} = 6.2786$   
 $b_2 = 2.96e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 2421.6 \text{ s}$   
 $\phi_{CZ} = 2.2553$

profile80  
 $\chi^2_{\nu}(\text{dof} = 68) = 0.061518$



# Age after ZAMS: 20.710 Gyr



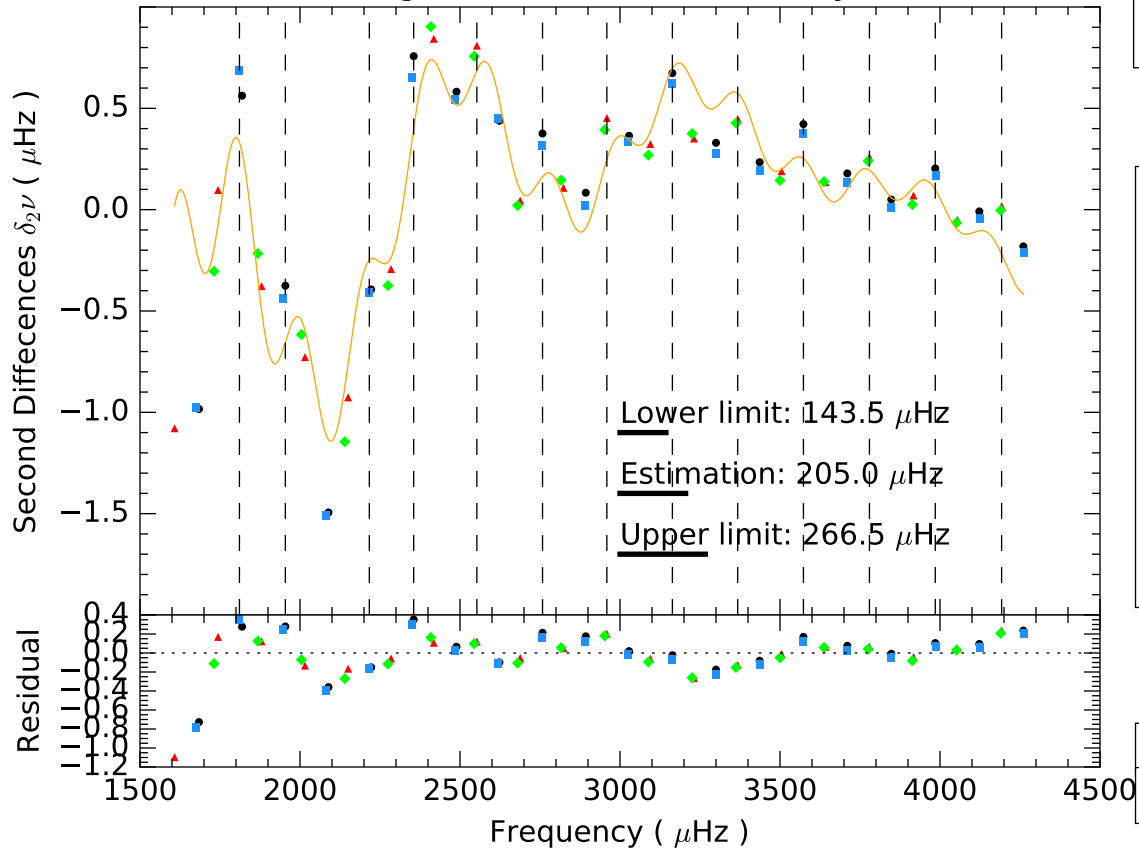
$\bullet$   $\ell=0$        $\blacklozenge$   $\ell=3$   
 $\blacktriangle$   $\ell=1$       — fit  
 $\blacksquare$   $\ell=2$

$a_0 = -4.9362 \mu\text{Hz}$   
 $a_1 = 0.0033664$   
 $a_2 = -5.3105e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.0019045$   
 $c_2 = 3.4071e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 647.08 \text{ s}$   
 $\phi_{HeII} = 6.2827$   
 $b_2 = 2.7803e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 2423.7 \text{ s}$   
 $\phi_{CZ} = 2.884$

profile81

$\chi^2_{\nu}(\text{dof} = 68) = 0.072936$

Age after ZAMS: 21.010 Gyr

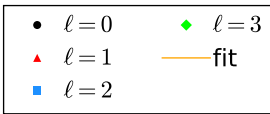
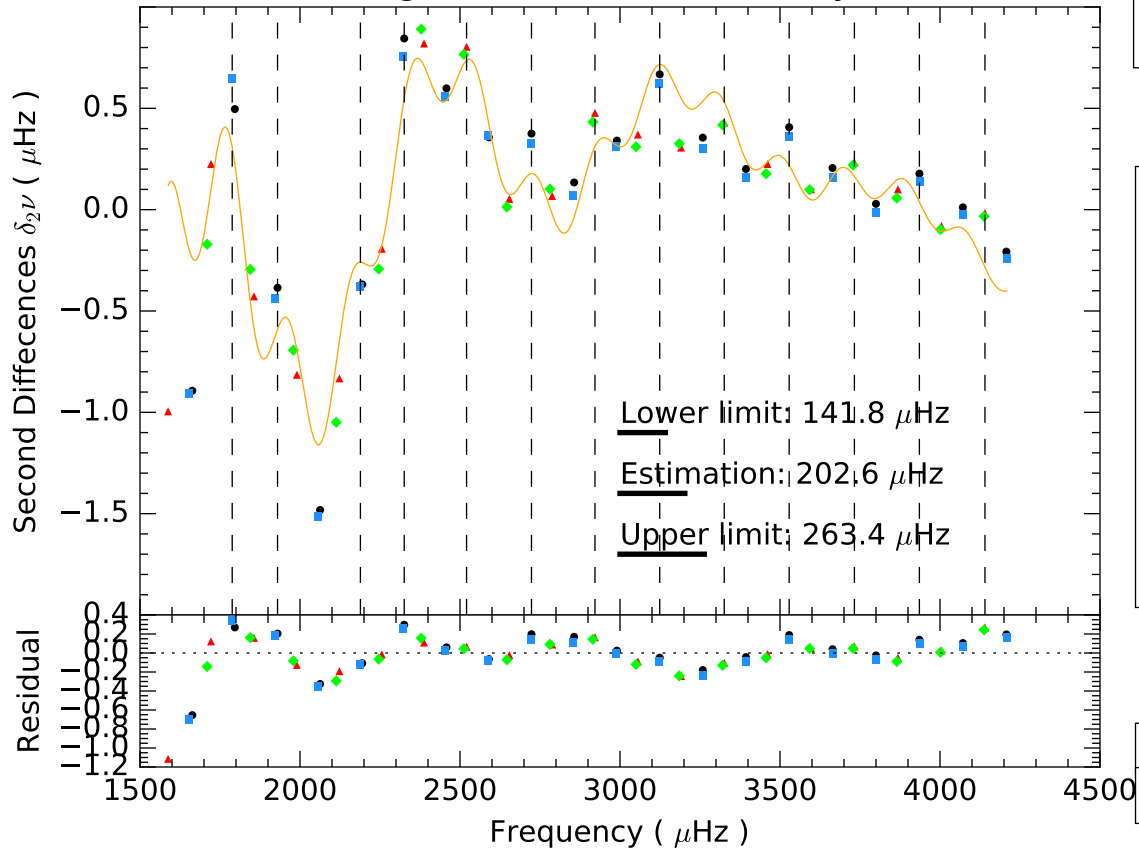


$\bullet$   $\ell=0$      $\blacklozenge$   $\ell=3$   
 $\blacktriangle$   $\ell=1$     — fit  
 $\blacksquare$   $\ell=2$

$a_0 = -5.2214 \mu\text{Hz}$   
 $a_1 = 0.0036031$   
 $a_2 = -5.7663e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.0010093$   
 $c_2 = 2.5424e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 654.17 \text{ s}$   
 $\phi_{HeII} = 6.2832$   
 $b_2 = 1.1138e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 2555.0 \text{ s}$   
 $\phi_{CZ} = 0.050036$

profile82  
 $\chi^2_\nu(\text{dof} = 69) = 0.063063$

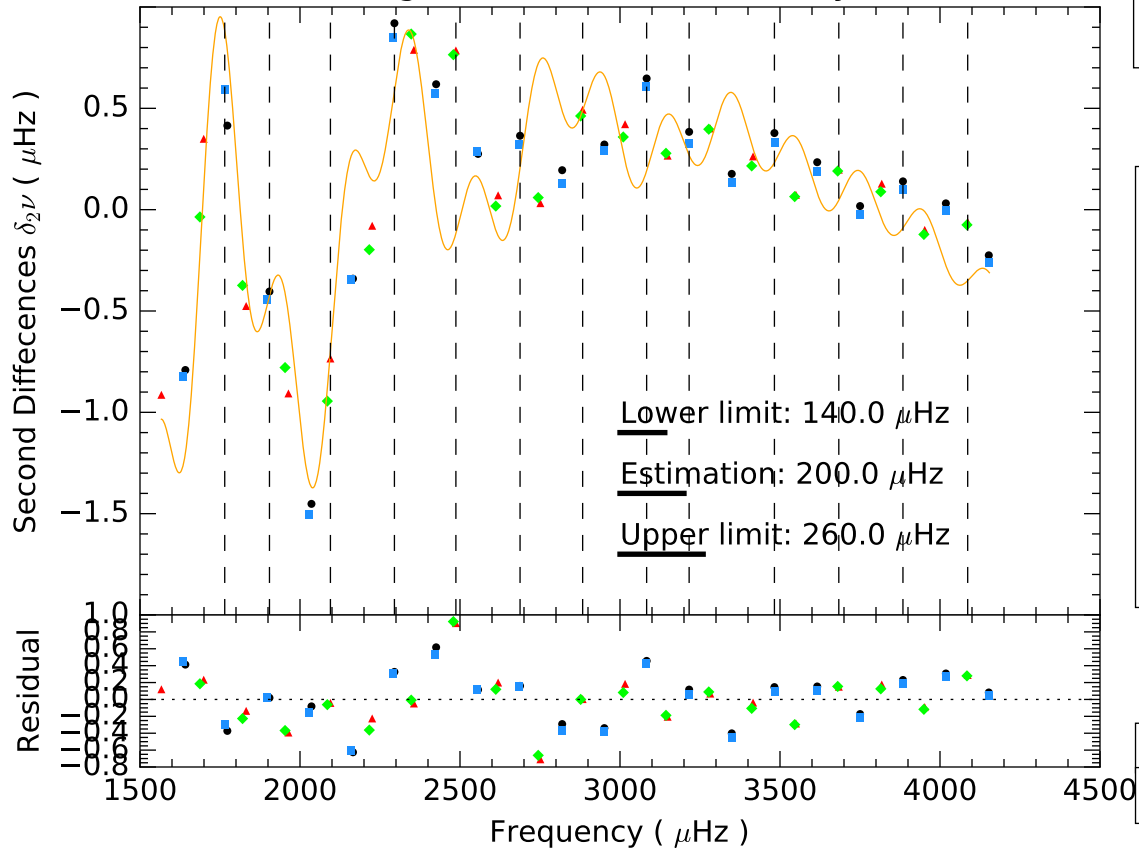
Age after ZAMS: 21.310 Gyr



$a_0 = -5.0952 \mu\text{Hz}$   
 $a_1 = 0.0035804$   
 $a_2 = -5.827e-07 \mu\text{Hz}^{-1}$   
 $c_0 = 0.0011076$   
 $c_2 = 2.7201e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 665.83 \text{ s}$   
 $\phi_{HeII} = 6.2832$   
 $b_2 = 1.0598e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 2601.5 \text{ s}$   
 $\phi_{CZ} = 0.087757$

profile83  
 $\chi^2_{\nu}(\text{dof} = 69) = 0.056697$

# Age after ZAMS: 21.610 Gyr

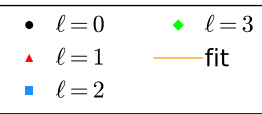
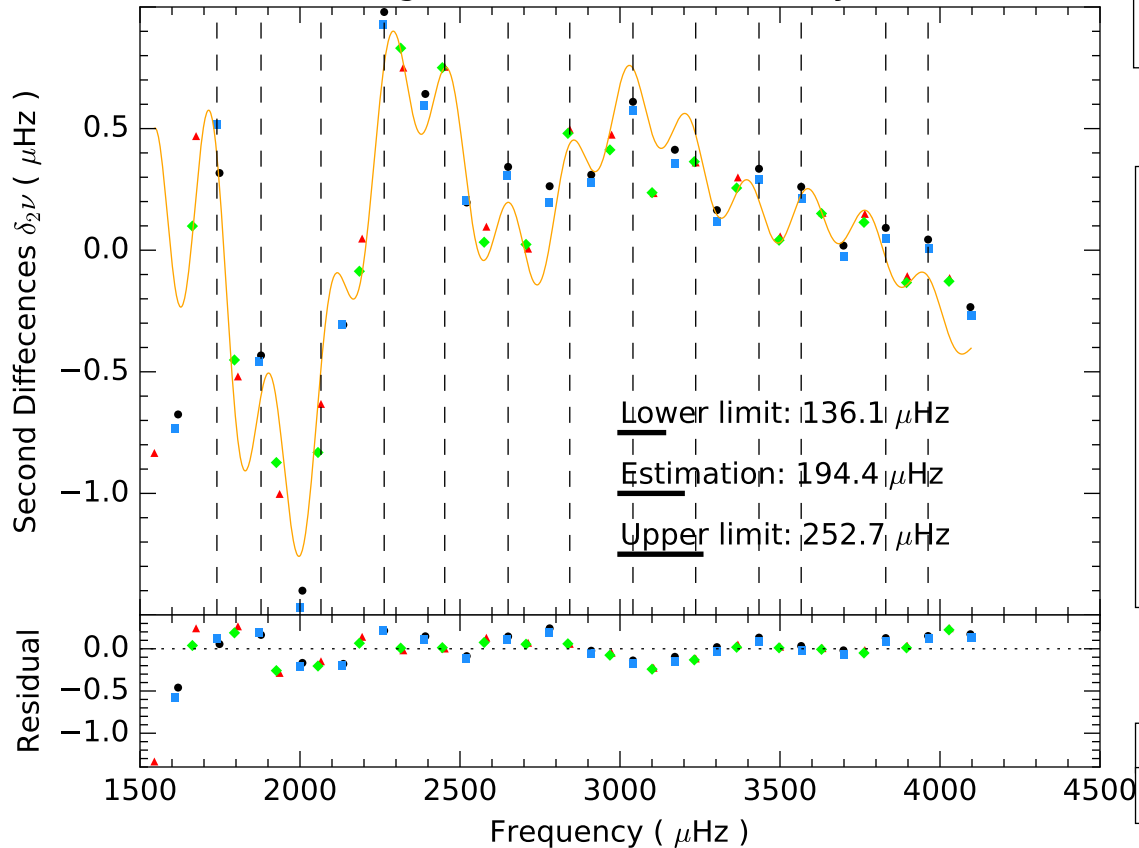


$\bullet$   $\ell=0$        $\blacklozenge$   $\ell=3$   
 $\blacktriangle$   $\ell=1$       — fit  
 $\blacksquare$   $\ell=2$

$a_0 = -5.4541 \mu\text{Hz}$   
 $a_1 = 0.0038799$   
 $a_2 = -6.4127e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.001916$   
 $c_2 = 3.9193e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 924.72 \text{ s}$   
 $\phi_{HeII} = 6.283$   
 $b_2 = 1.7604e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 2500.2 \text{ s}$   
 $\phi_{CZ} = 3.1825$

profile84  
 $\chi^2_\nu(\text{dof} = 69) = 0.1142$

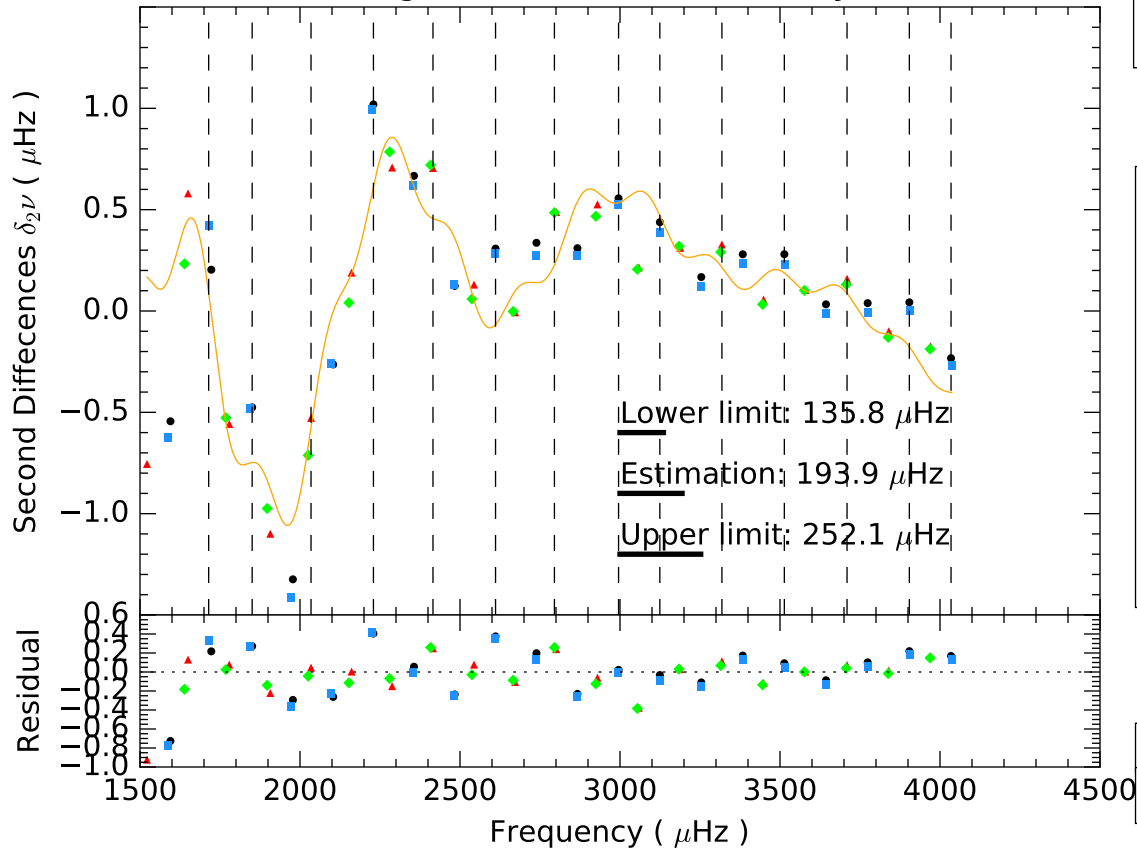
Age after ZAMS: 21.910 Gyr



$a_0 = -4.8506 \mu\text{Hz}$   
 $a_1 = 0.0035457$   
 $a_2 = -5.9858e-07 \mu\text{Hz}^{-1}$   
 $c_0 = 0.0013397$   
 $c_2 = 3.1367e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 691.63 \text{ s}$   
 $\phi_{HeII} = 6.2832$   
 $b_2 = 1.381e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 2683.1 \text{ s}$   
 $\phi_{CZ} = 1.0125e-06$

profile85  
 $\chi^2_{\nu}(\text{dof} = 69) = 0.054427$

Age after ZAMS: 22.210 Gyr



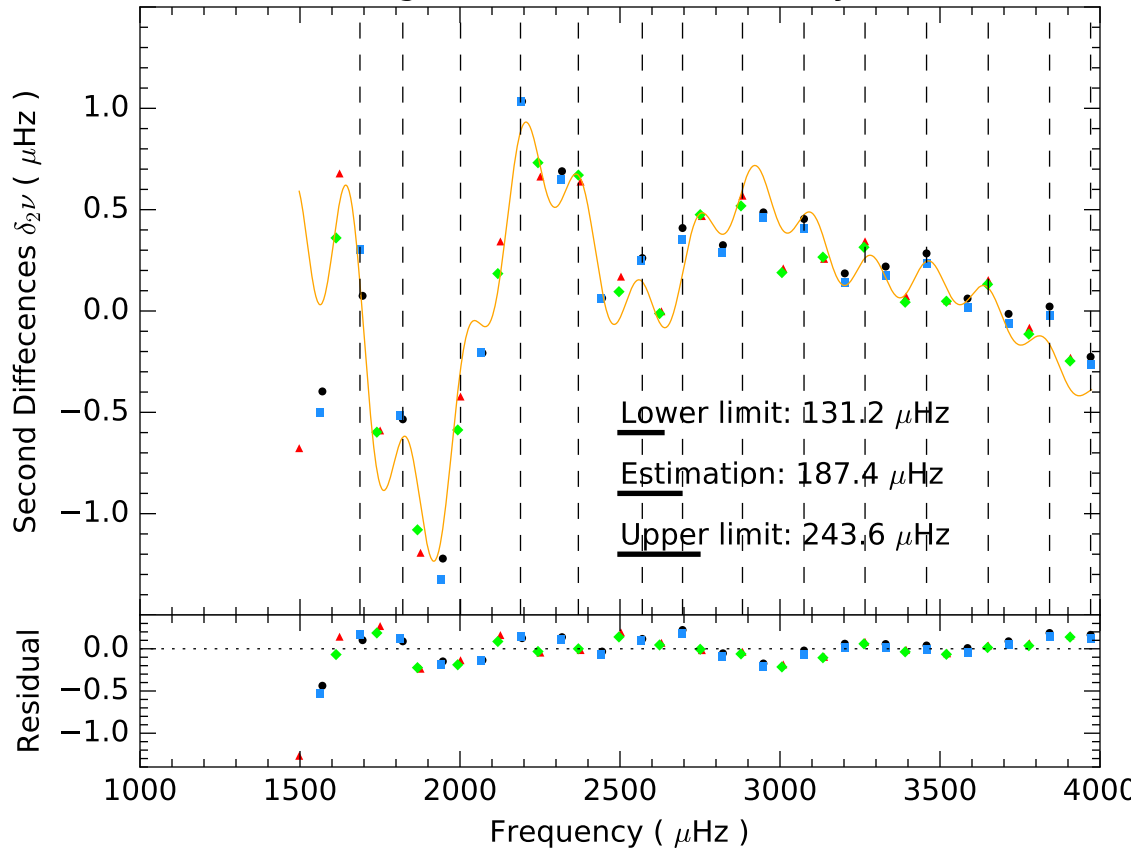
- $\bullet$   $\ell=0$
- $\blacktriangle$   $\ell=1$
- $\blacksquare$   $\ell=2$
- $\blacklozenge$   $\ell=3$
- fit

$a_0 = -4.6732 \mu\text{Hz}$   
 $a_1 = 0.0034931$   
 $a_2 = -6.0176e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.0015489$   
 $c_2 = 3.4632e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 706.62 \text{ s}$   
 $\phi_{HeII} = 6.2832$   
 $b_2 = 6.0149e+05 \text{ mHz}^3$   
 $\tau_{CZ} = 2490.3 \text{ s}$   
 $\phi_{CZ} = 5.5465$

profile86

$\chi^2_\nu(\text{dof} = 69) = 0.067327$

# Age after ZAMS: 22.510 Gyr



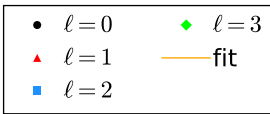
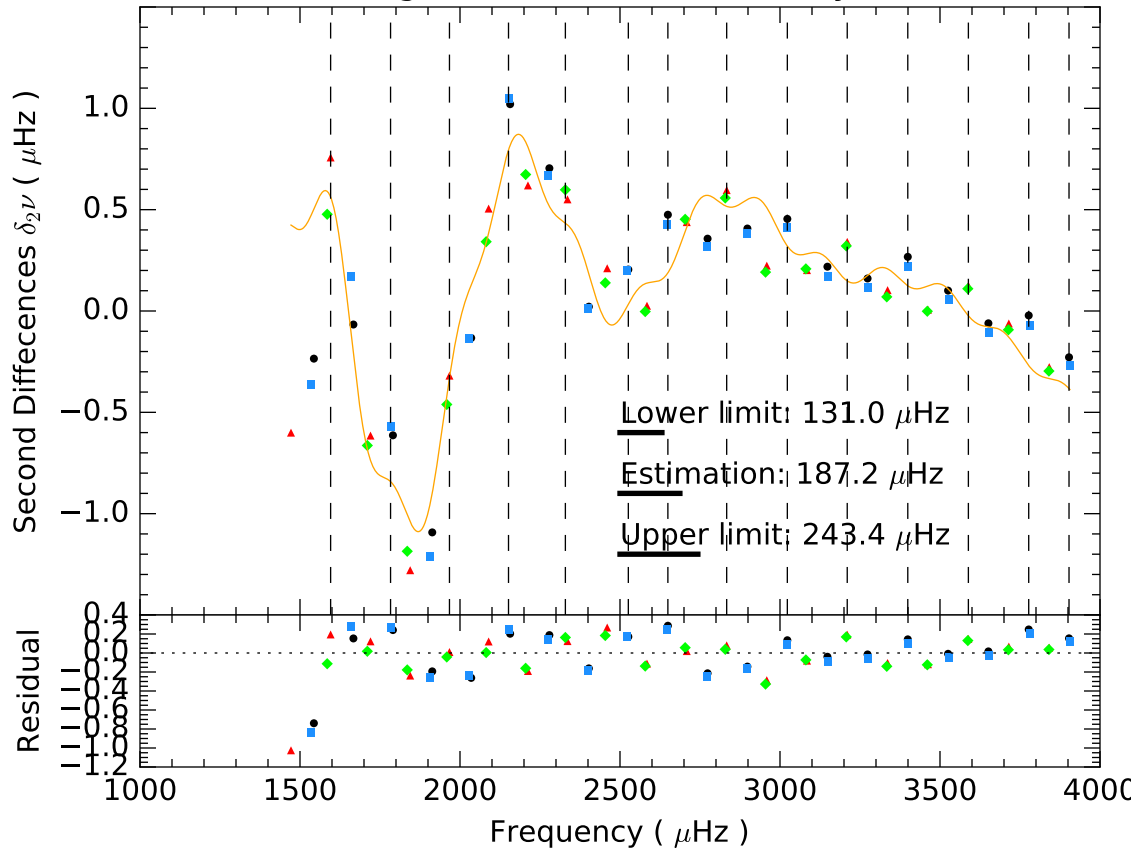
- $\bullet$   $\ell=0$
- $\blacktriangle$   $\ell=1$
- $\blacksquare$   $\ell=2$
- $\blacklozenge$   $\ell=3$
- $\text{—}$  fit

$a_0 = -4.5323 \mu\text{Hz}$   
 $a_1 = 0.0034694$   
 $a_2 = -6.1095e-07 \mu\text{Hz}^{-1}$   
 $c_0 = 0.0017327$   
 $c_2 = 3.7584e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 722.39 \text{ s}$   
 $\phi_{HeII} = 6.2832$   
 $b_2 = 1.0944e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 2761.8 \text{ s}$   
 $\phi_{CZ} = 0.66008$

profile87

$\chi^2_{\nu}(\text{dof} = 69) = 0.046356$

Age after ZAMS: 22.810 Gyr

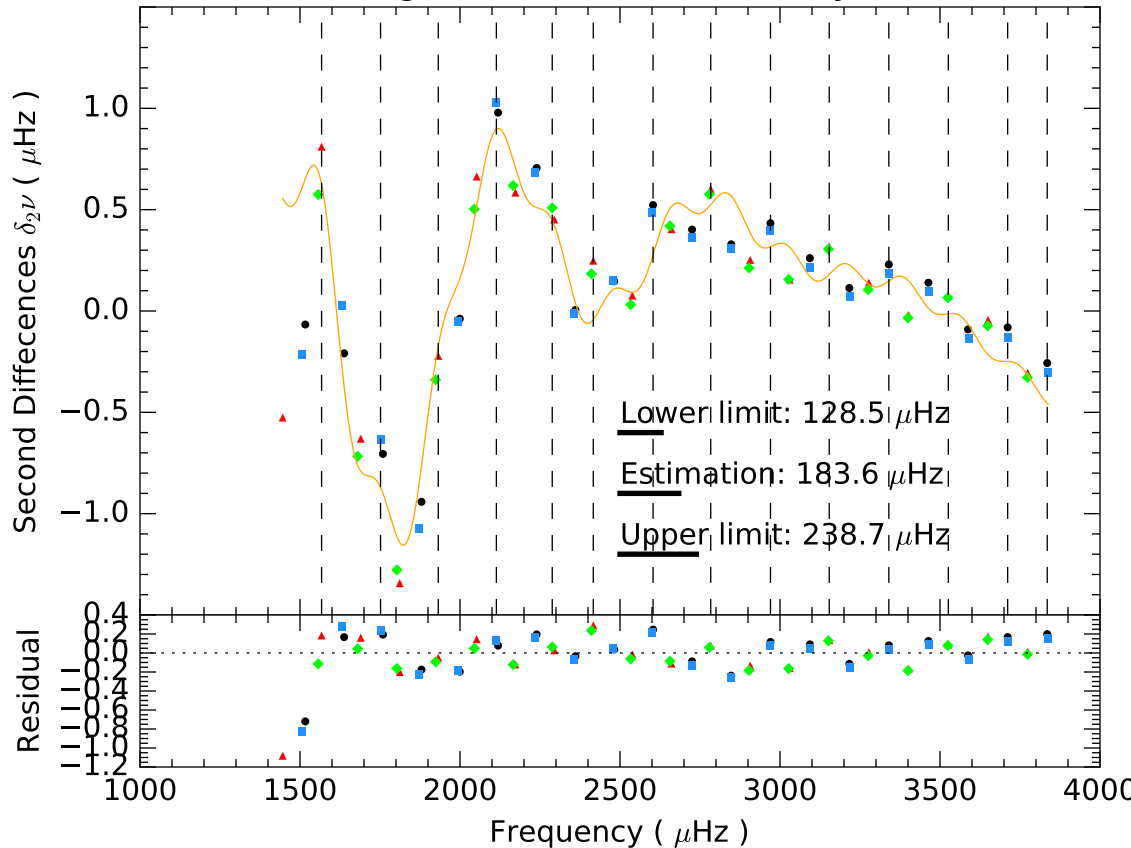


$a_0 = -4.3426 \mu\text{Hz}$   
 $a_1 = 0.003413$   
 $a_2 = -6.1559e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.0021233$   
 $c_2 = 4.2788e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 740.8 \text{ s}$   
 $\phi_{HeII} = 6.2832$   
 $b_2 = 4.6593e+05 \text{ mHz}^3$   
 $\tau_{CZ} = 2626.7 \text{ s}$   
 $\phi_{CZ} = 5.0333$

profile88  
 $\chi^2_{\nu}(\text{dof} = 69) = 0.063062$



# Age after ZAMS: 23.098 Gyr



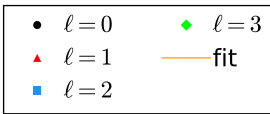
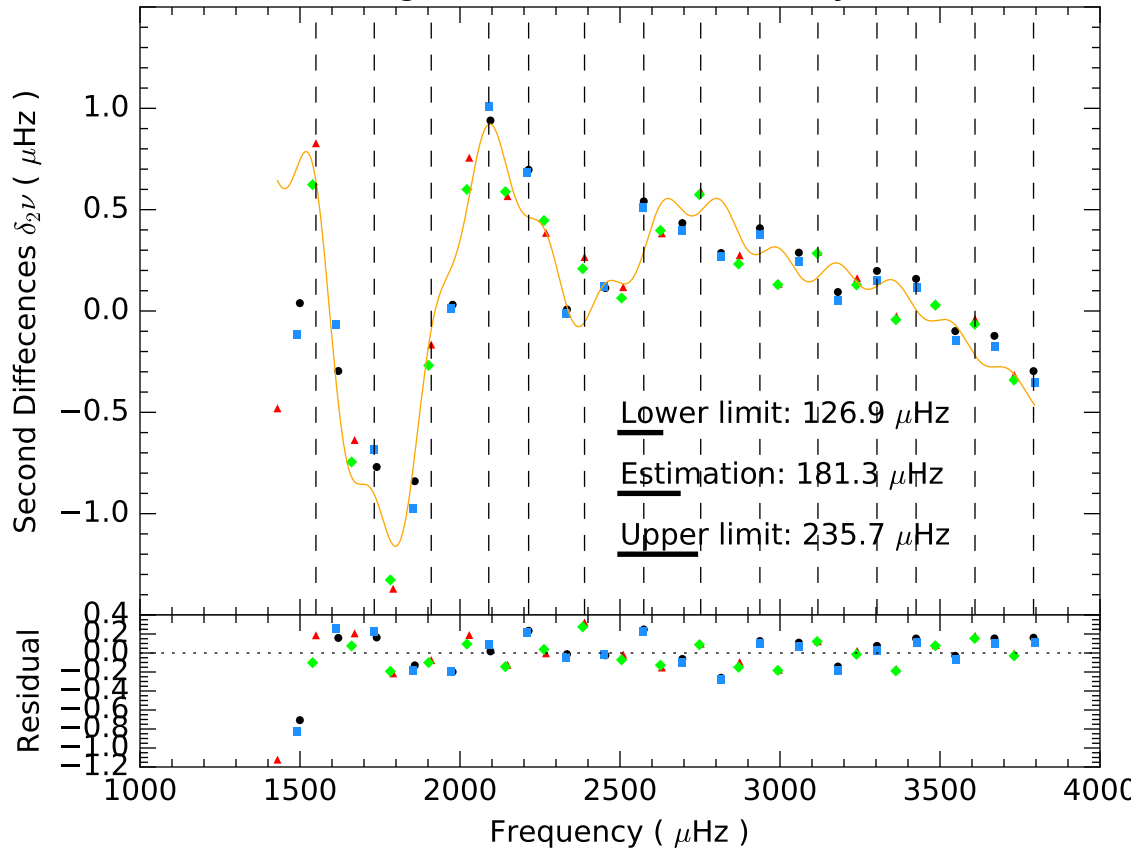
- $\bullet$   $\ell=0$
- $\blacktriangle$   $\ell=1$
- $\blacksquare$   $\ell=2$
- $\blacklozenge$   $\ell=3$
- fit

$a_0 = -4.1565 \mu\text{Hz}$   
 $a_1 = 0.0033593$   
 $a_2 = -6.2139e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.0025071$   
 $c_2 = 4.7624e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 759.45 \text{ s}$   
 $\phi_{HeII} = 6.2832$   
 $b_2 = 5.2469e+05 \text{ mHz}^3$   
 $\tau_{CZ} = 2751.9 \text{ s}$   
 $\phi_{CZ} = 3.8573$

profile89

$\chi^2_{\nu}(\text{dof} = 69) = 0.057183$

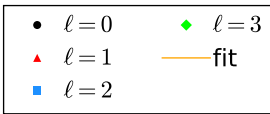
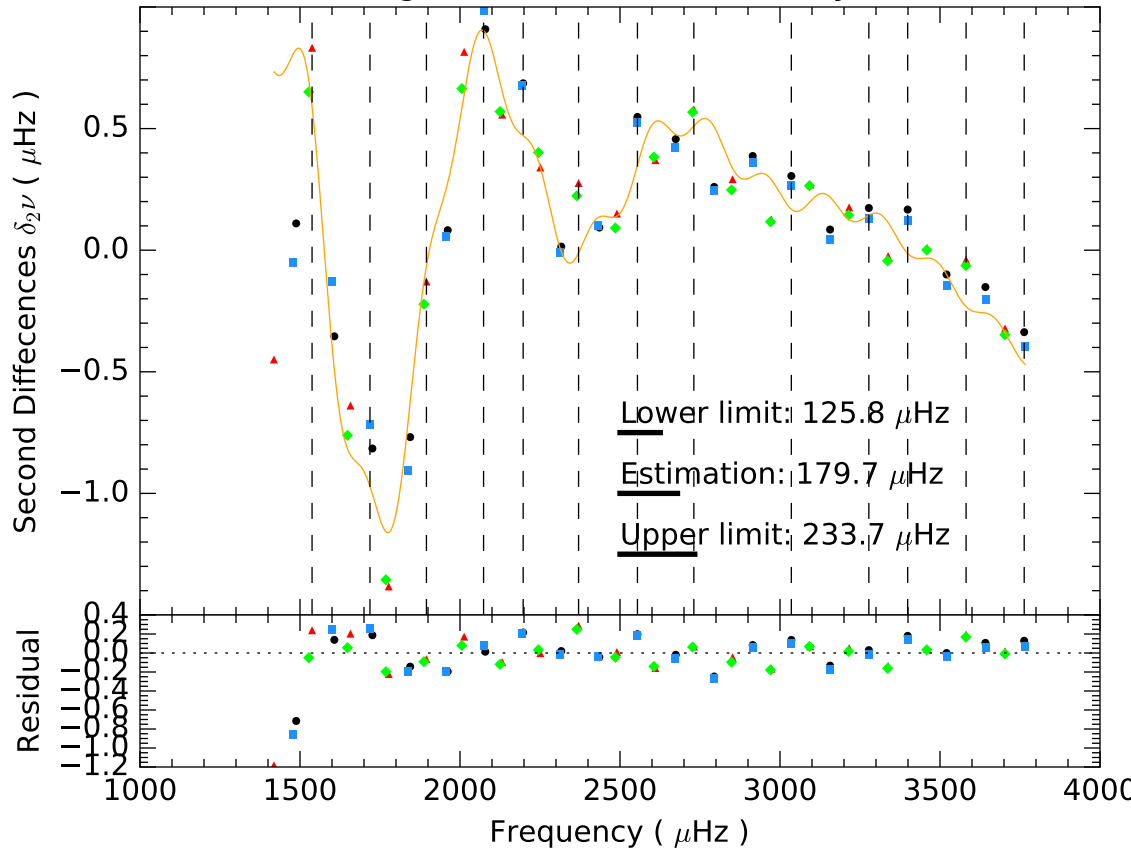
Age after ZAMS: 23.271 Gyr



$a_0 = -4.0431 \mu\text{Hz}$   
 $a_1 = 0.0033278$   
 $a_2 = -6.2579e-07 \mu\text{Hz}^{-1}$   
  
 $c_0 = 0.0028223$   
 $c_2 = 5.1297e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 771.5 \text{ s}$   
 $\phi_{HeII} = 6.2832$   
  
 $b_2 = 5.4197e+05 \text{ mHz}^3$   
 $\tau_{CZ} = 2760.3 \text{ s}$   
 $\phi_{CZ} = 4.4362$

profile90  
 $\chi^2_\nu(\text{dof} = 69) = 0.059751$

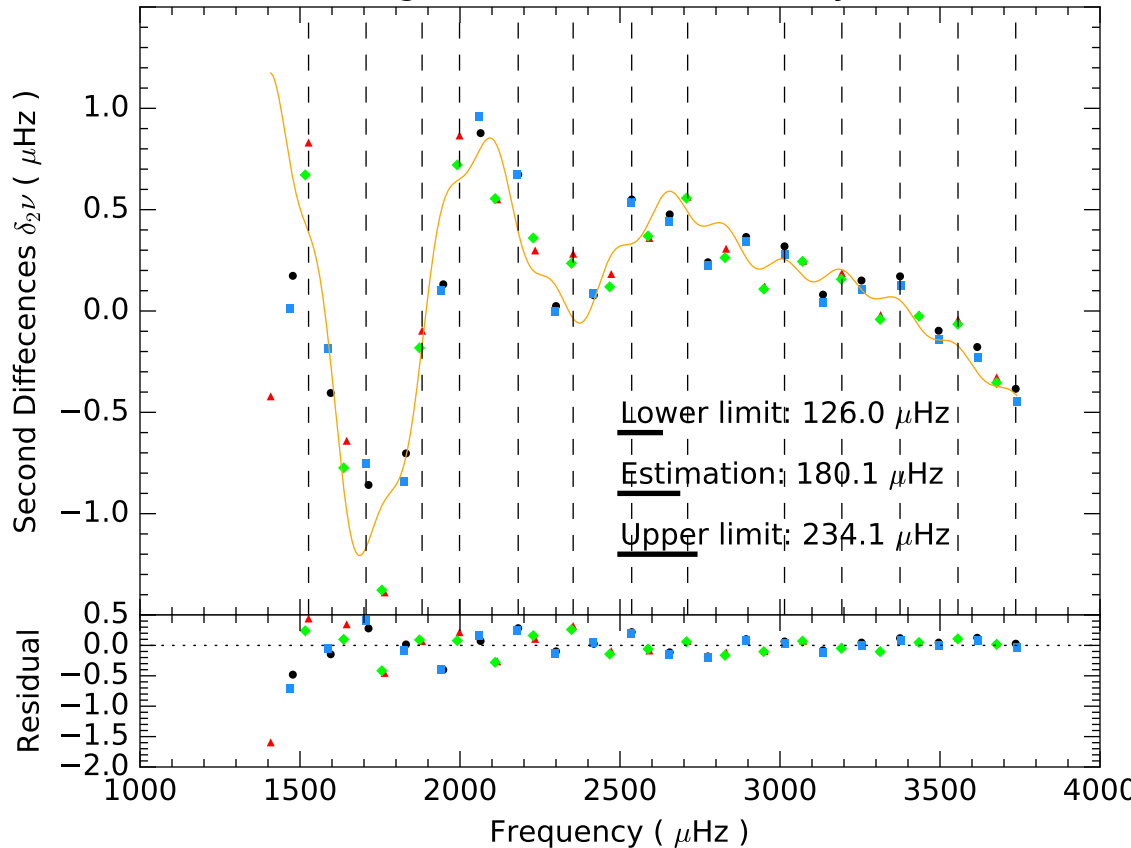
Age after ZAMS: 23.385 Gyr



$a_0 = -3.9645 \mu\text{Hz}$   
 $a_1 = 0.0033052$   
 $a_2 = -6.2875e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.0030922$   
 $c_2 = 5.4307e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 780.07 \text{ s}$   
 $\phi_{HeII} = 6.2832$   
 $b_2 = 4.4541e+05 \text{ mHz}^3$   
 $\tau_{CZ} = 2800.8 \text{ s}$   
 $\phi_{CZ} = 4.2698$

profile91  
 $\chi^2_\nu(\text{dof} = 69) = 0.059481$

# Age after ZAMS: 23.487 Gyr

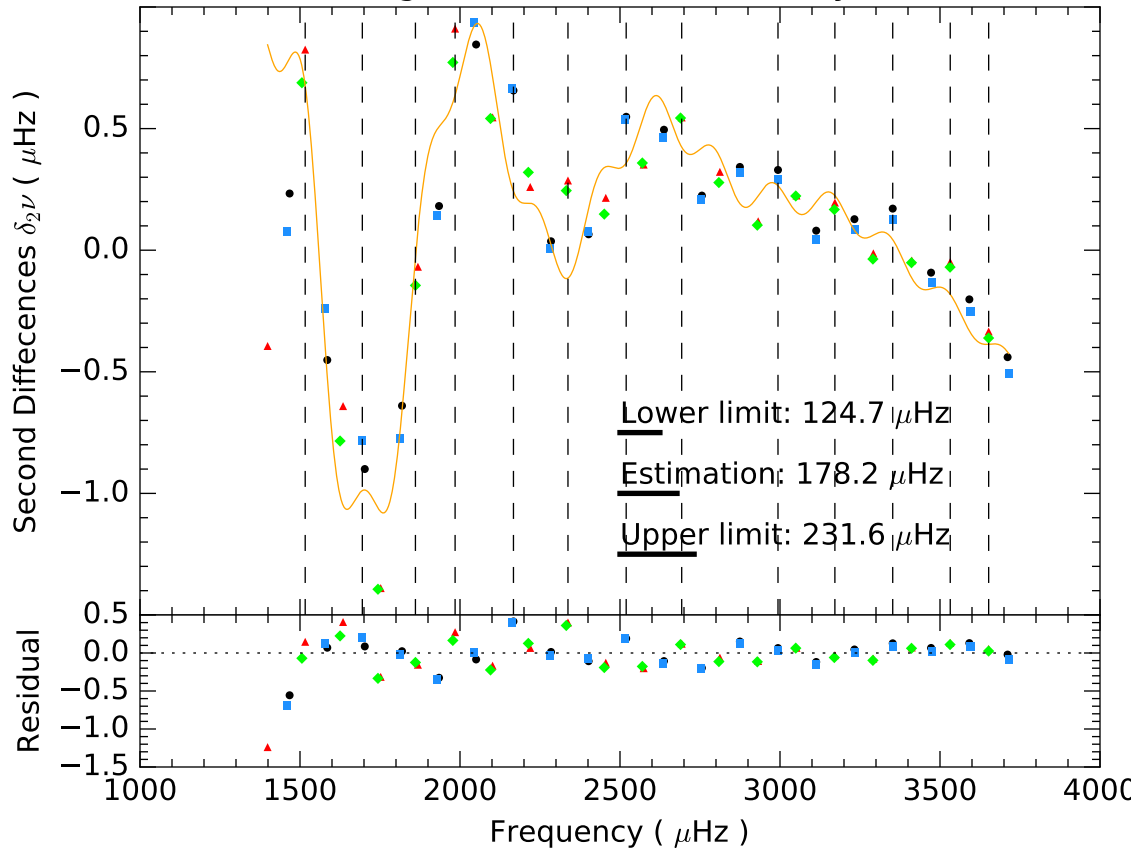


- $\bullet$   $\ell=0$
- $\blacktriangle$   $\ell=1$
- $\blacksquare$   $\ell=2$
- $\blacklozenge$   $\ell=3$
- fit

$a_0 = -3.9016 \mu\text{Hz}$   
 $a_1 = 0.0032907$   
 $a_2 = -6.3265e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.0033024$   
 $c_2 = 5.6018e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 787.97 \text{ s}$   
 $\phi_{HeII} = 6.2832$   
 $b_2 = 4.2796e+05 \text{ mHz}^3$   
 $\tau_{CZ} = 2782.0 \text{ s}$   
 $\phi_{CZ} = 3.0675$

profile92  
 $\chi^2_\nu(\text{dof} = 69) = 0.0832$

Age after ZAMS: 23.583 Gyr

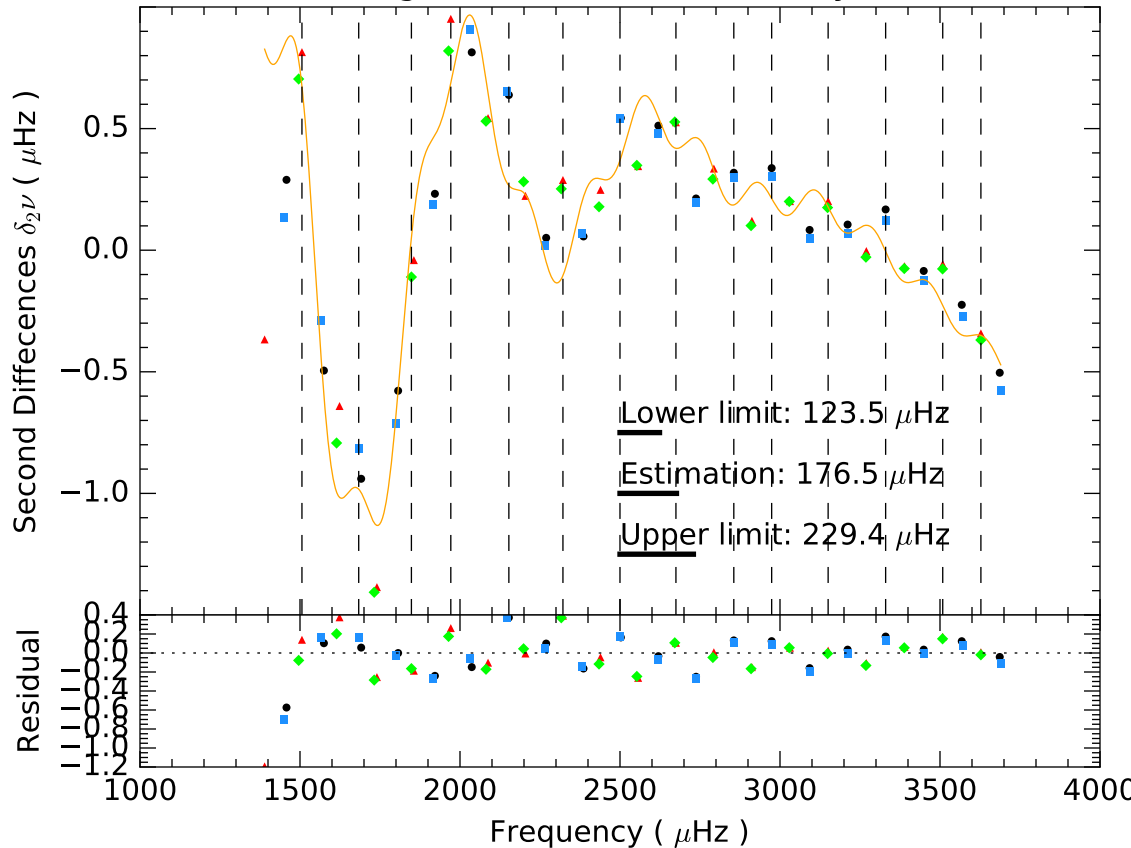


$\bullet$   $\ell=0$      $\blacklozenge$   $\ell=3$   
 $\blacktriangle$   $\ell=1$     — fit  
 $\blacksquare$   $\ell=2$

$a_0 = -3.9506 \mu\text{Hz}$   
 $a_1 = 0.0033599$   
 $a_2 = -6.5185e-07 \mu\text{Hz}^{-2}$   
  
 $c_0 = 0.0033521$   
 $c_2 = 5.6789e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 821.05 \text{ s}$   
 $\phi_{HeII} = 5.7376$   
  
 $b_2 = 5.7342e+05 \text{ mHz}^3$   
 $\tau_{CZ} = 2750.3 \text{ s}$   
 $\phi_{CZ} = 5.5023$

profile93  
 $\chi^2_\nu(\text{dof} = 69) = 0.066148$

Age after ZAMS: 23.674 Gyr

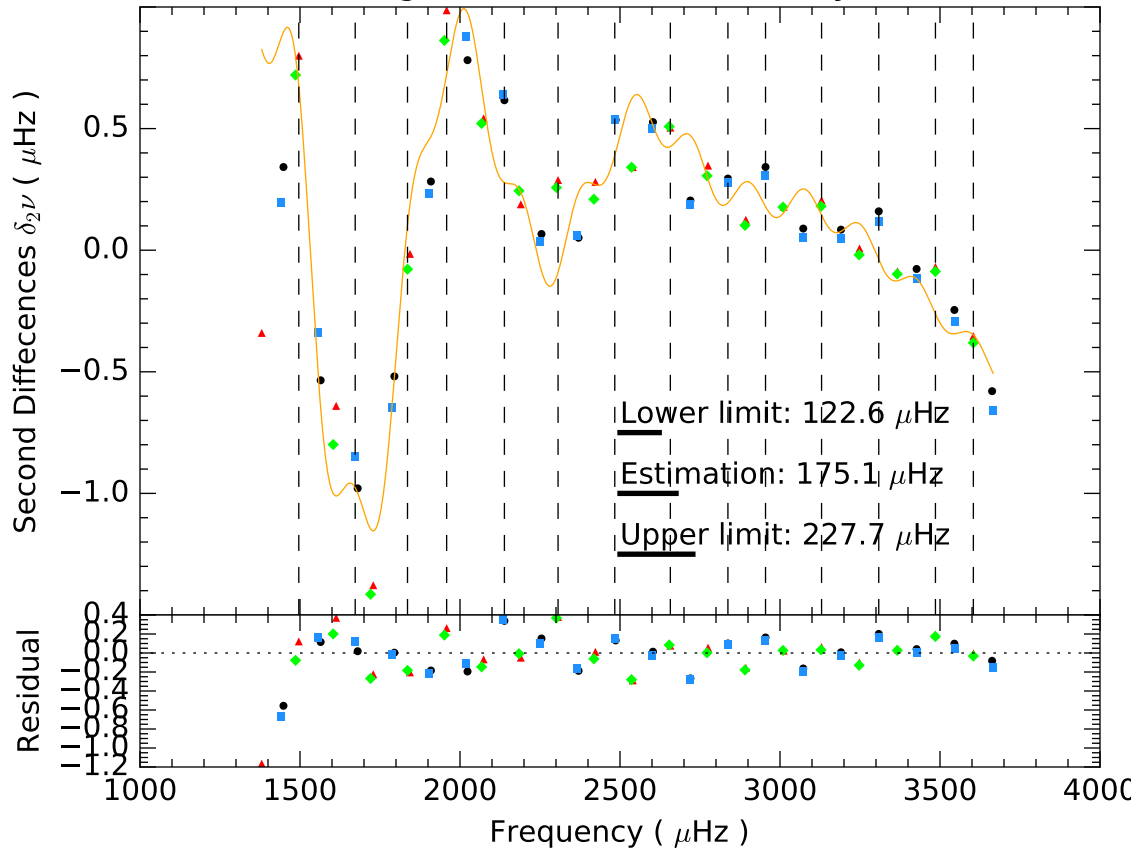


$\bullet$   $\ell=0$      $\blacklozenge$   $\ell=3$   
 $\blacktriangle$   $\ell=1$     — fit  
 $\blacksquare$   $\ell=2$

$a_0 = -3.8946 \mu\text{Hz}$   
 $a_1 = 0.0033489$   
 $a_2 = -6.5624e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.003401$   
 $c_2 = 5.7548e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 826.79 \text{ s}$   
 $\phi_{HeII} = 5.7614$   
 $b_2 = 5.7132e+05 \text{ mHz}^3$   
 $\tau_{CZ} = 2802.2 \text{ s}$   
 $\phi_{CZ} = 5.1431$

profile94  
 $\chi^2_\nu(\text{dof} = 69) = 0.063309$

Age after ZAMS: 23.761 Gyr



$$a_0 = -3.8475 \mu\text{Hz}$$

$$a_1 = 0.0033441$$

$$a_2 = -6.6182e-07 \mu\text{Hz}^{-1}$$

$$c_0 = 0.0034426$$

$$c_2 = 5.83e-07 \mu\text{Hz}^{-2}$$

$$\tau_{\text{HeII}} = 832.44 \text{ s}$$

$$\phi_{\text{HeII}} = 5.7822$$

$$b_2 = 6.0157e+05 \text{ mHz}^3$$

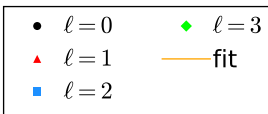
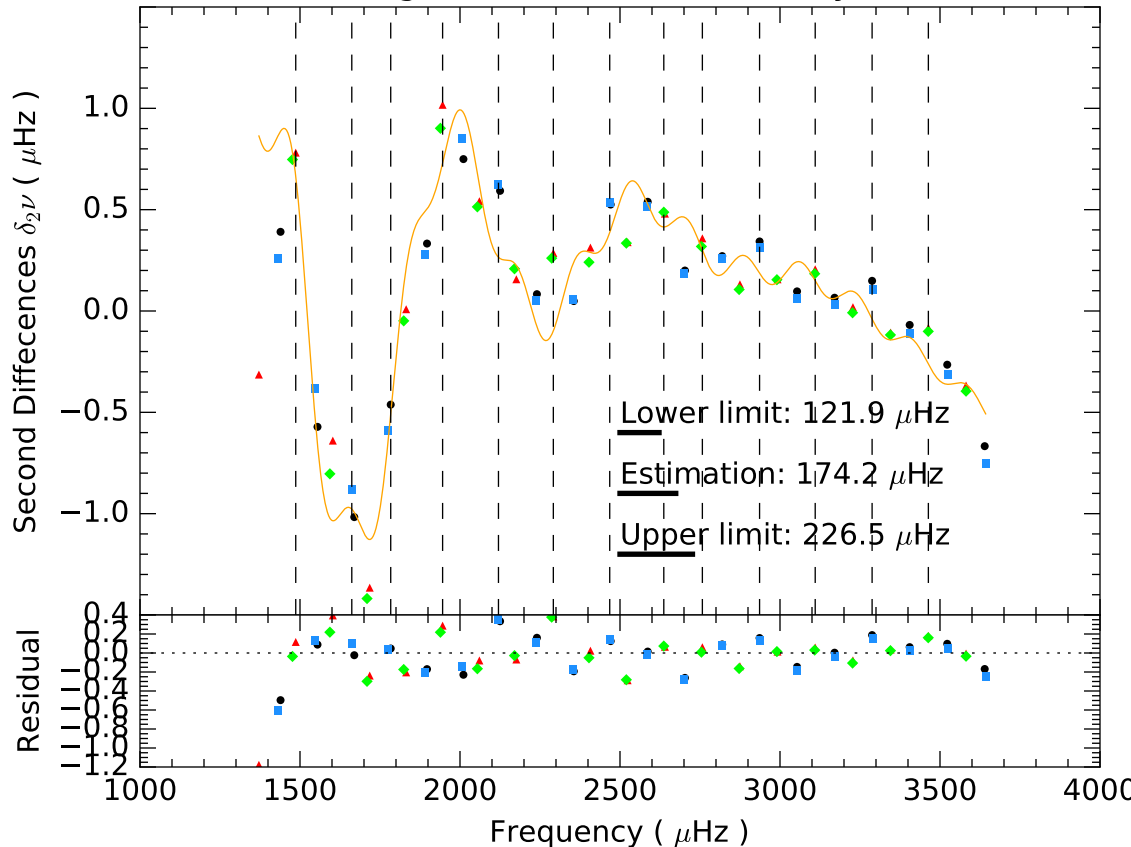
$$\tau_{\text{CZ}} = 2837.6 \text{ s}$$

$$\phi_{\text{CZ}} = 4.9415$$

profile95

$$\chi^2_\nu(\text{dof} = 69) = 0.061209$$

Age after ZAMS: 23.844 Gyr



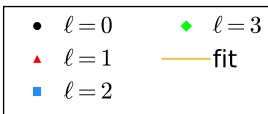
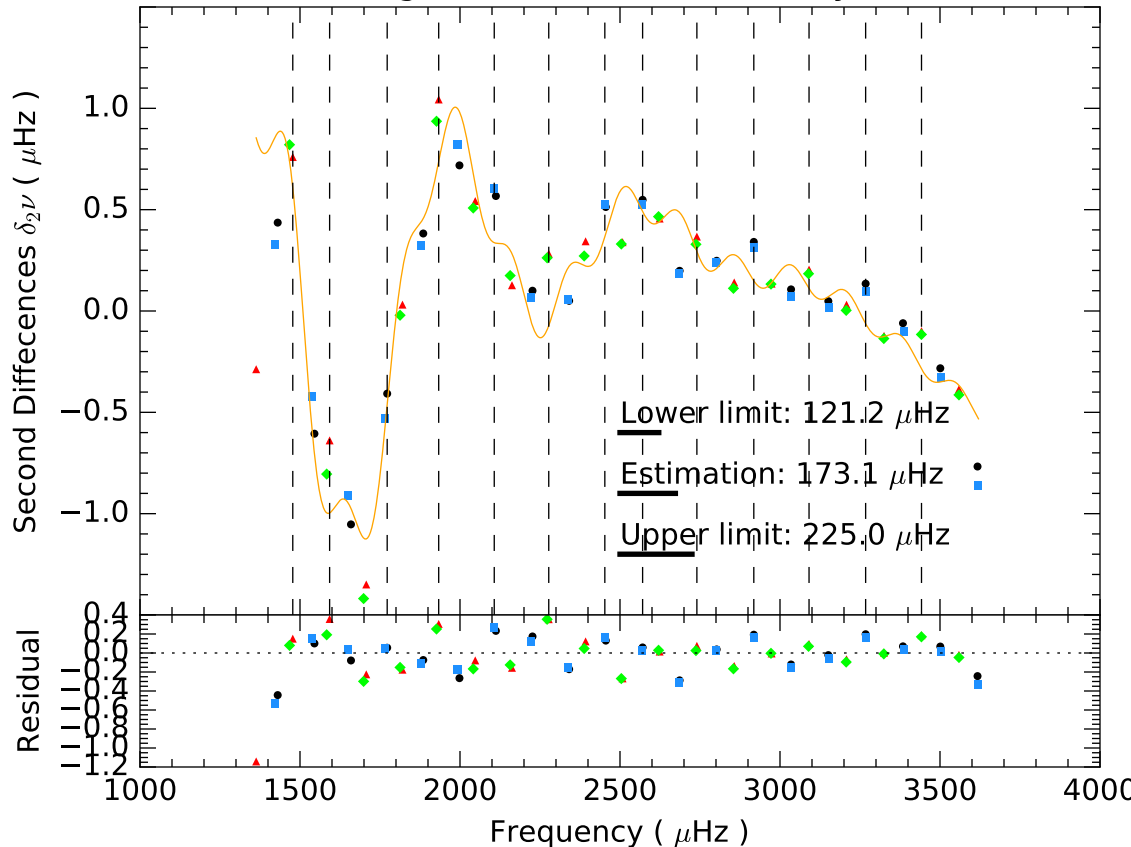
$a_0 = -3.8059 \mu\text{Hz}$   
 $a_1 = 0.0033431$   
 $a_2 = -6.6813e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.0034765$   
 $c_2 = 5.9044e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 837.99 \text{ s}$   
 $\phi_{HeII} = 5.8006$   
 $b_2 = 5.8629e+05 \text{ mHz}^3$   
 $\tau_{CZ} = 2848.8 \text{ s}$   
 $\phi_{CZ} = 5.0234$

profile96

$\chi^2_\nu(\text{dof} = 69) = 0.060556$



# Age after ZAMS: 23.923 Gyr

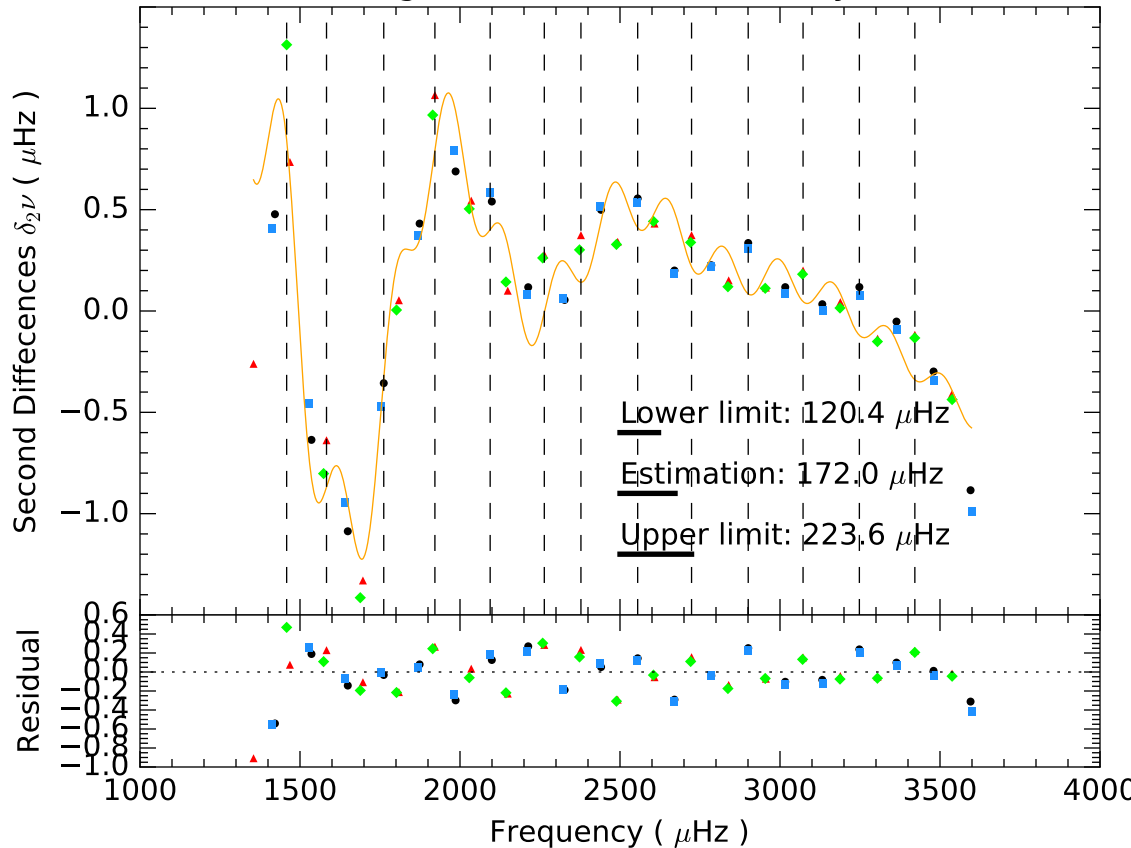


$$\begin{aligned}
 a_0 &= -3.6992 \mu\text{Hz} \\
 a_1 &= 0.003291 \\
 a_2 &= -6.648e-07 \mu\text{Hz}^{-1} \\
 c_0 &= 0.0034416 \\
 c_2 &= 5.9779e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 825.05 \text{ s} \\
 \phi_{HeII} &= 6.1933 \\
 b_2 &= 5.8807e+05 \text{ mHz}^3 \\
 \tau_{CZ} &= 2879.0 \text{ s} \\
 \phi_{CZ} &= 4.9311
 \end{aligned}$$

profile97

$$\chi^2_\nu(\text{dof} = 69) = 0.056841$$

Age after ZAMS: 23.998 Gyr

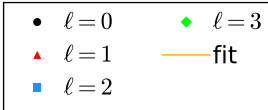
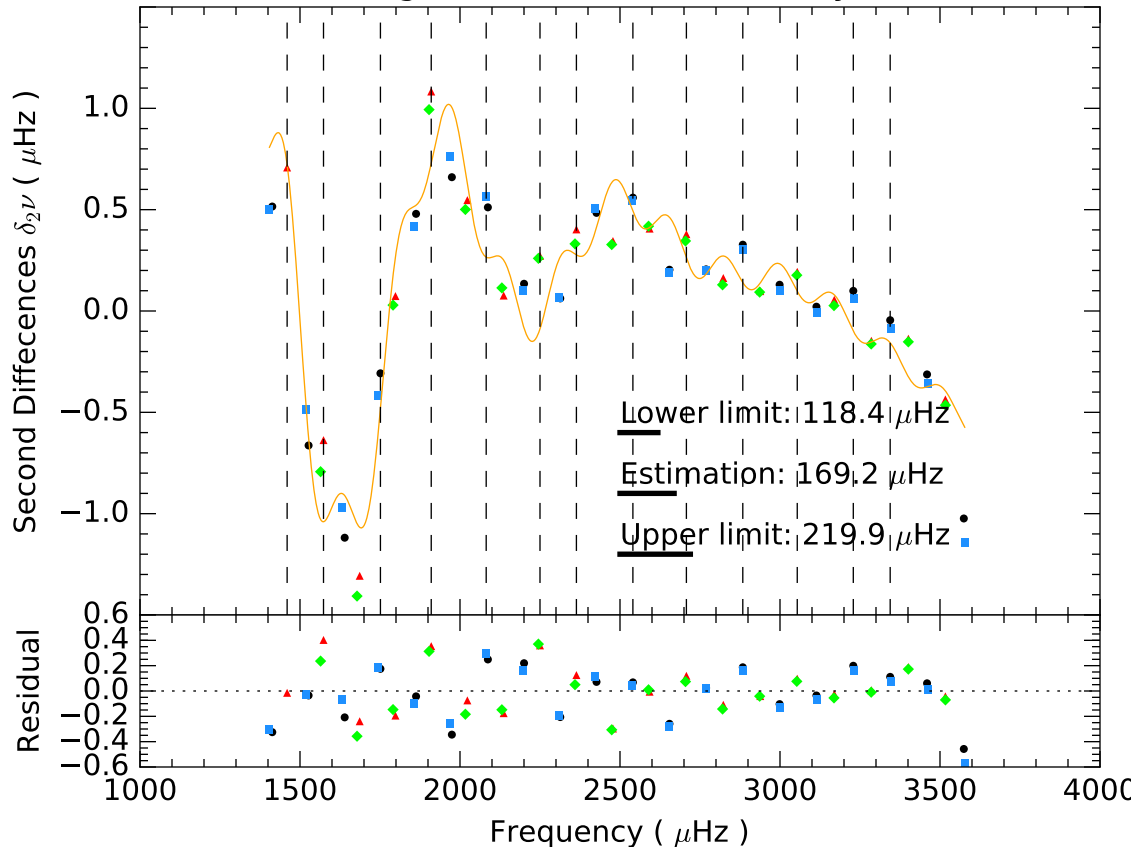


$\bullet$   $\ell=0$      $\blacklozenge$   $\ell=3$   
 $\blacktriangle$   $\ell=1$     — fit  
 $\blacksquare$   $\ell=2$

$a_0 = -3.6541 \mu\text{Hz}$   
 $a_1 = 0.0032876$   
 $a_2 = -6.7089e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.0033798$   
 $c_2 = 6.0505e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 830.21 \text{ s}$   
 $\phi_{HeII} = 6.1957$   
 $b_2 = 8.4258e+05 \text{ mHz}^3$   
 $\tau_{CZ} = 2916.6 \text{ s}$   
 $\phi_{CZ} = 4.9272$

profile98  
 $\chi^2_\nu(\text{dof} = 69) = 0.058976$

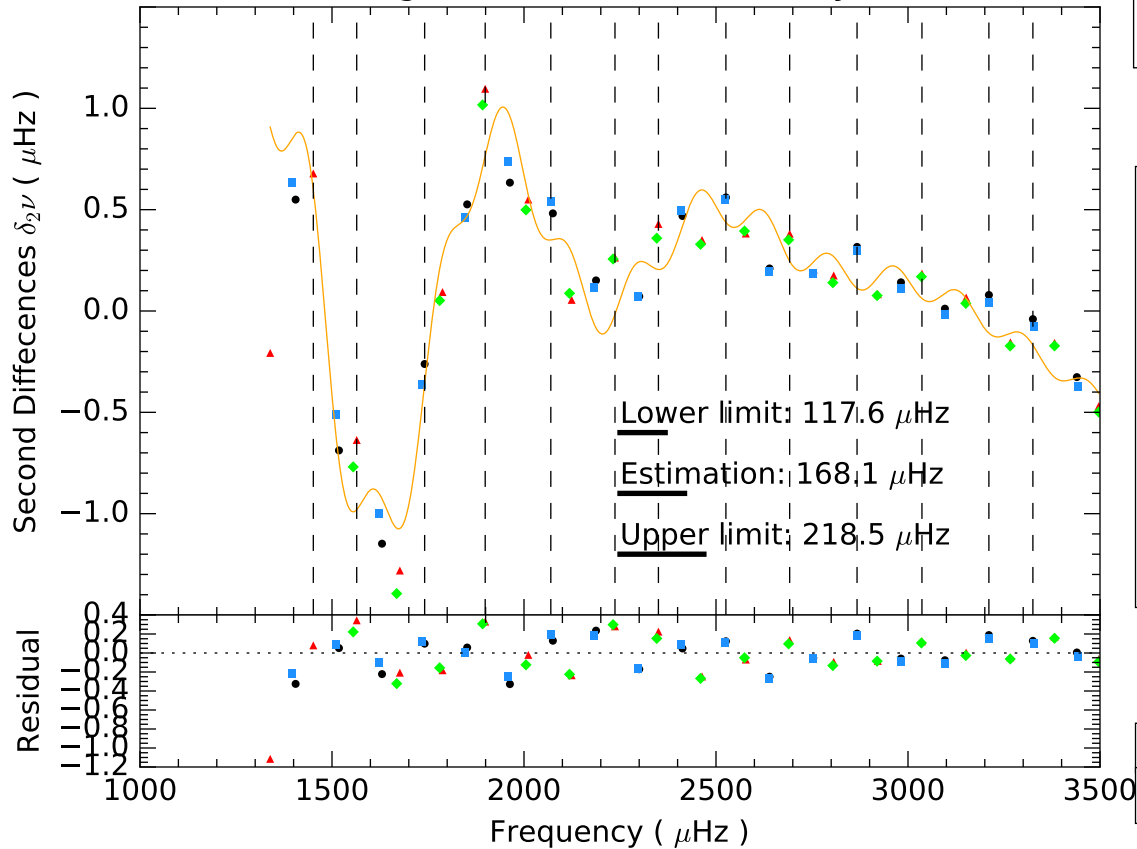
Age after ZAMS: 24.070 Gyr



$a_0 = -3.6677 \mu\text{Hz}$   
 $a_1 = 0.0033312$   
 $a_2 = -6.8621e-07 \mu\text{Hz}^{-2}$   
 $c_0 = 0.0034766$   
 $c_2 = 6.1111e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 854.09 \text{ s}$   
 $\phi_{HeII} = 5.7979$   
 $b_2 = 6.3521e+05 \text{ mHz}^3$   
 $\tau_{CZ} = 2932.9 \text{ s}$   
 $\phi_{CZ} = 4.2444$

profile99  
 $\chi^2_\nu(\text{dof} = 67) = 0.046169$

# Age after ZAMS: 24.138 Gyr

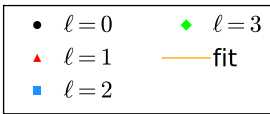
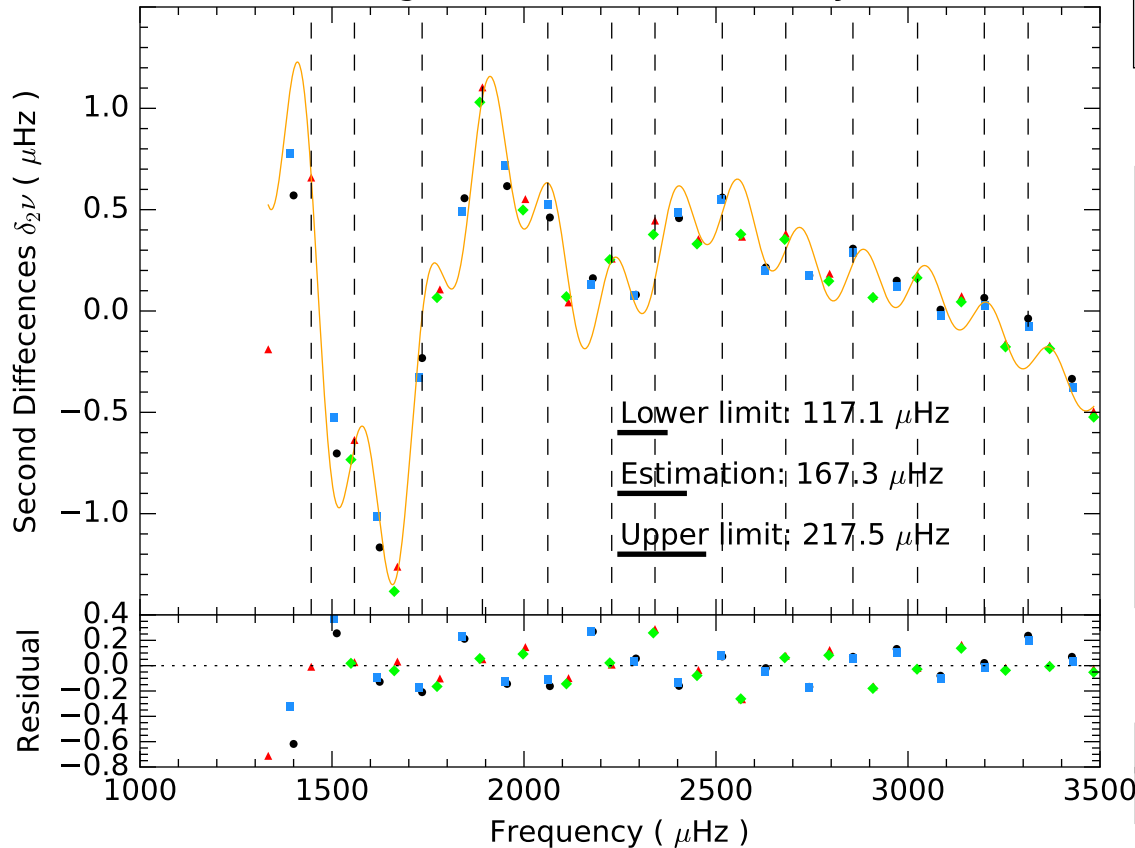


$$\begin{aligned}
 a_0 &= -3.521 \mu\text{Hz} \\
 a_1 &= 0.0032351 \\
 a_2 &= -6.7226e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.0036264 \\
 c_2 &= 6.4019e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 838.69 \text{ s} \\
 \phi_{HeII} &= 6.2665 \\
 b_2 &= 5.9461e+05 \text{ mHz}^3 \\
 \tau_{CZ} &= 2962.0 \text{ s} \\
 \phi_{CZ} &= 4.366
 \end{aligned}$$

profile100

$$\chi^2_\nu(\text{dof} = 66) = 0.052747$$

Age after ZAMS: 24.182 Gyr



$a_0 = -3.4528 \mu\text{Hz}$   
 $a_1 = 0.0031988$   
 $a_2 = -6.6916e-07 \mu\text{Hz}^{-1}$   
  
 $c_0 = 0.003564$   
 $c_2 = 6.4503e-07 \mu\text{Hz}^{-2}$   
 $\tau_{HeII} = 841.25 \text{ s}$   
 $\phi_{HeII} = 6.2832$   
  
 $b_2 = 1.1344e+06 \text{ mHz}^3$   
 $\tau_{CZ} = 3077.8 \text{ s}$   
 $\phi_{CZ} = 3.0806$

profile101

$\chi^2_\nu(\text{dof} = 66) = 0.036764$