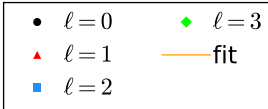
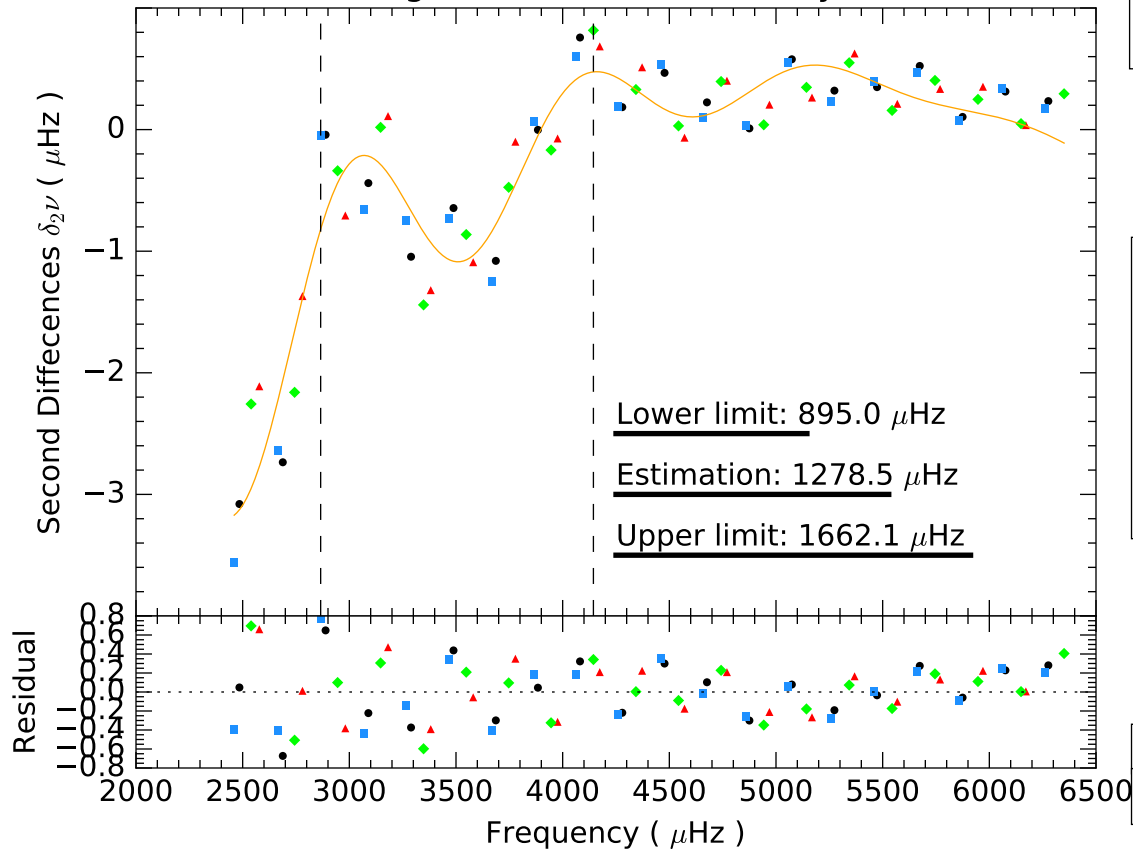


Age after ZAMS: 0.000 Gyr



$$a_0 = -8.8262 \mu\text{Hz}$$

$$a_1 = 0.0036183$$

$$a_2 = -3.5423e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.0010622$$

$$c_2 = 1.4112e-07 \mu\text{Hz}^{-2}$$

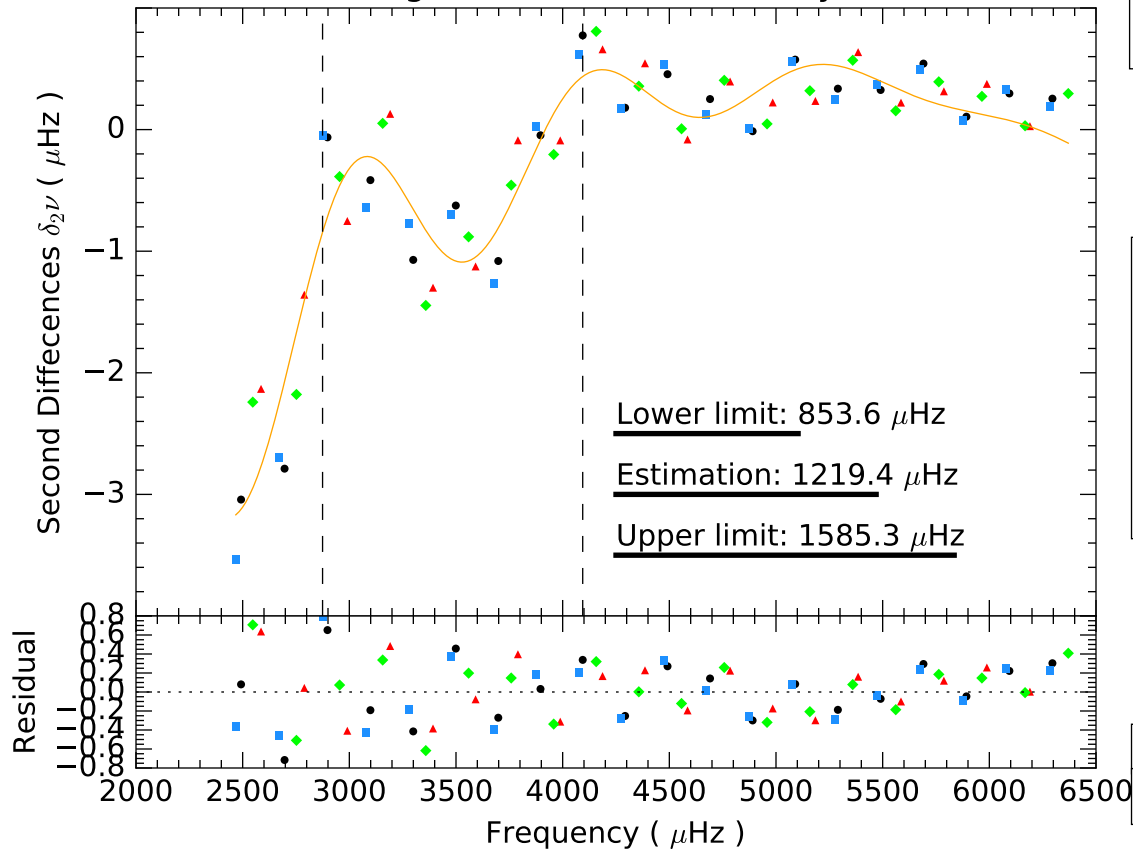
$$\tau_{HeII} = 454.24 \text{ s}$$

$$\phi_{HeII} = 3.1029$$

profile1

$$\chi^2_{\nu}(\text{dof} = 72) = 0.103$$

Age after ZAMS: 0.000 Gyr

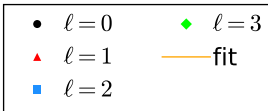
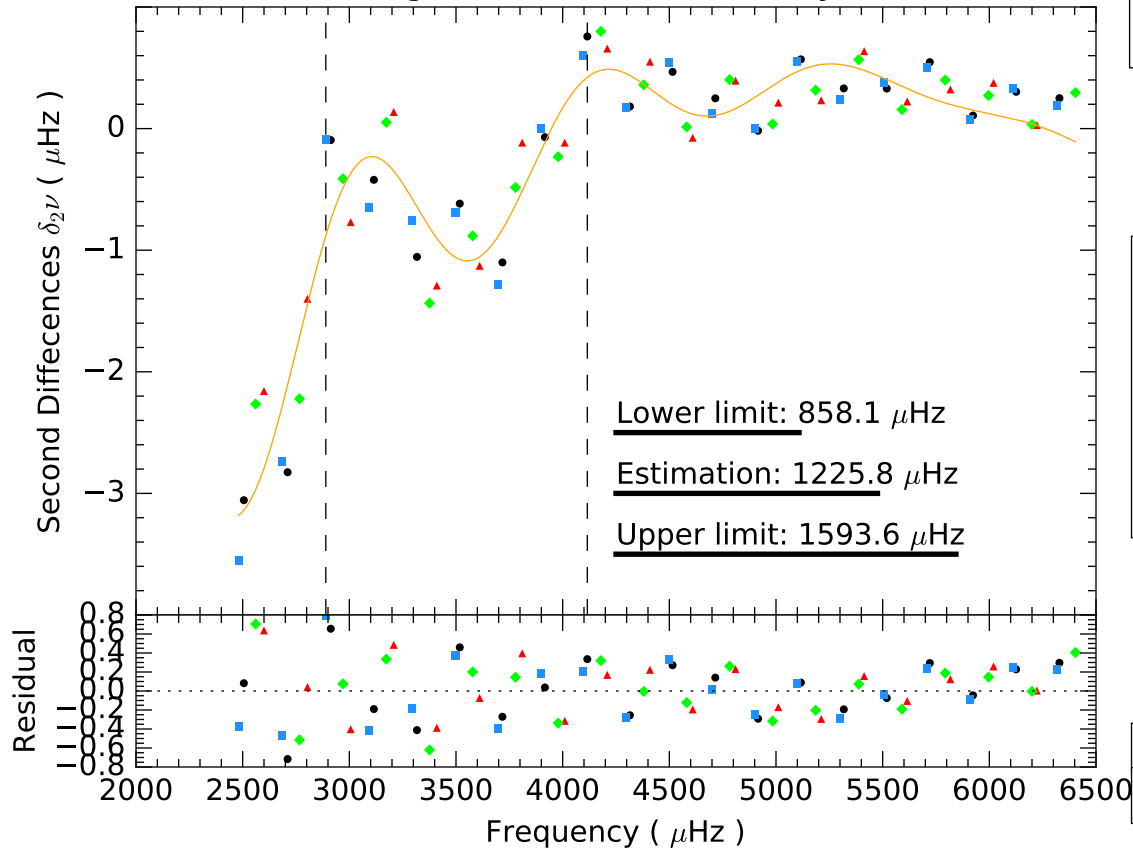


$$\begin{aligned}
 a_0 &= -8.8913 \mu\text{Hz} \\
 a_1 &= 0.0036328 \\
 a_2 &= -3.5458e-07 \mu\text{Hz} \\
 c_0 &= 0.0010066 \\
 c_2 &= 1.3516e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 448.98 \text{ s} \\
 \phi_{HeII} &= 3.2327
 \end{aligned}$$

profile2

$$\chi^2_{\nu}(\text{dof} = 72) = 0.1082$$

Age after ZAMS: 0.001 Gyr

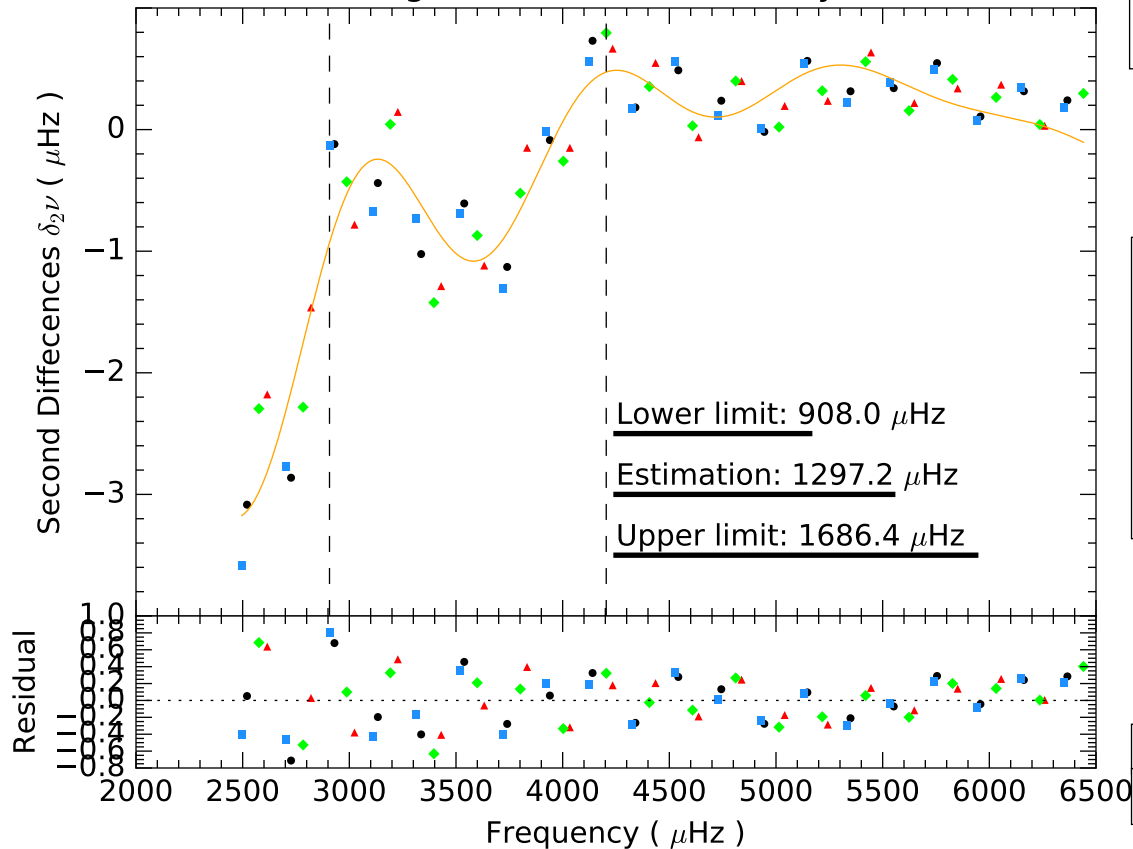


$$\begin{aligned}
 a_0 &= -8.9301 \mu\text{Hz} \\
 a_1 &= 0.003624 \\
 a_2 &= -3.5145e-07 \mu\text{Hz} \\
 c_0 &= 0.00099971 \\
 c_2 &= 1.3377e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 445.4 \text{ s} \\
 \phi_{HeII} &= 3.25
 \end{aligned}$$

profile3

$$\chi^2_{\nu}(\text{dof} = 72) = 0.10832$$

Age after ZAMS: 0.002 Gyr



$$a_0 = -8.9658 \mu\text{Hz}$$

$$a_1 = 0.003611$$

$$a_2 = -3.4768e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.00096625$$

$$c_2 = 1.3031e-07 \mu\text{Hz}^{-2}$$

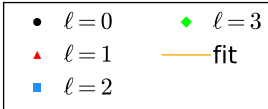
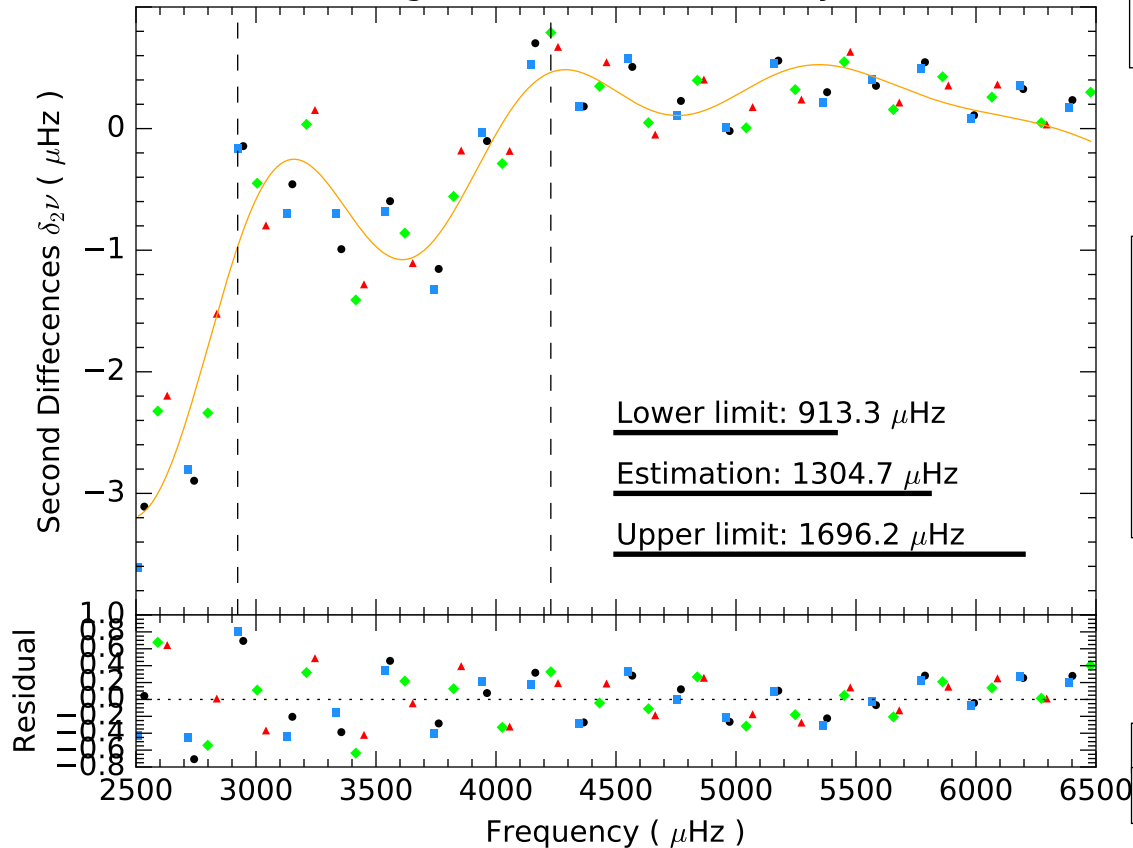
$$\tau_{HeII} = 441.33 \text{ s}$$

$$\phi_{HeII} = 3.2642$$

profile4

$$\chi^2_{\nu}(\text{dof} = 72) = 0.10901$$

Age after ZAMS: 0.004 Gyr



$$a_0 = -9.0112 \mu\text{Hz}$$

$$a_1 = 0.0036039$$

$$a_2 = -3.4468e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.00095801$$

$$c_2 = 1.2886e-07 \mu\text{Hz}^{-2}$$

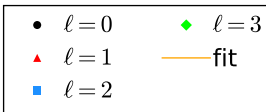
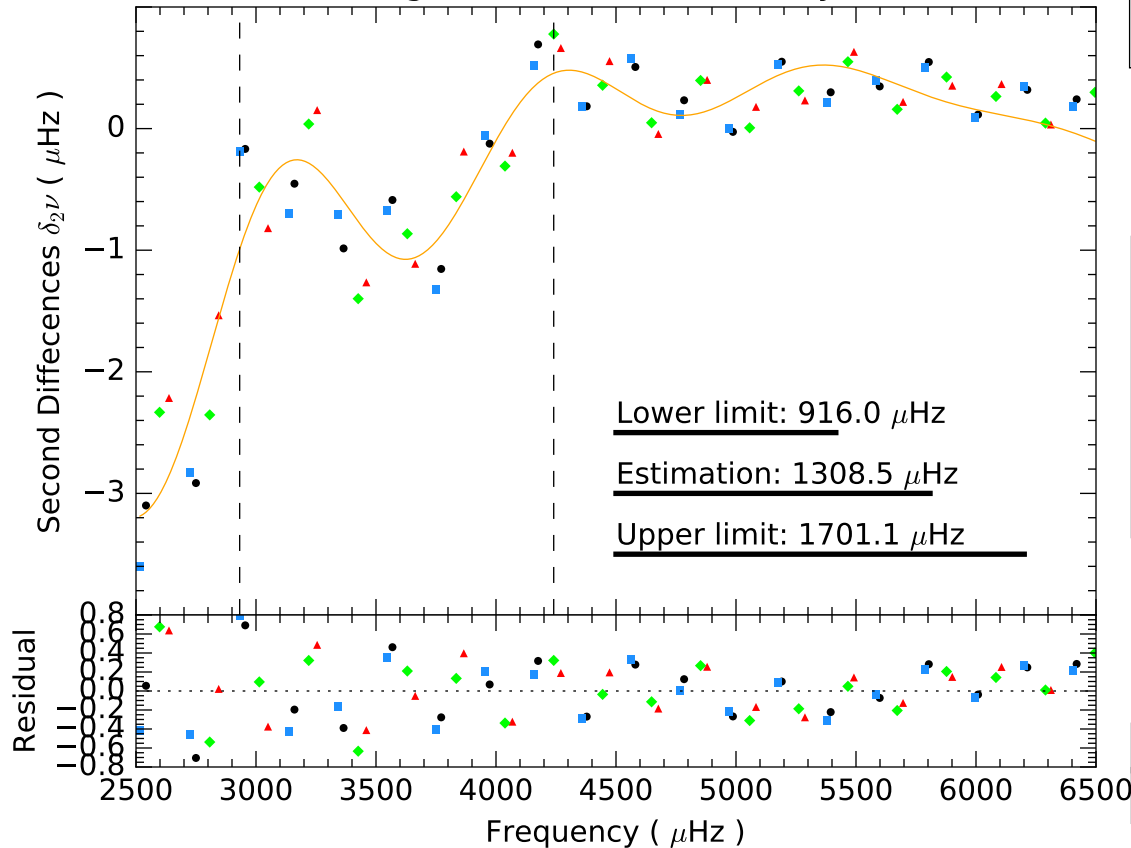
$$\tau_{\text{HeII}} = 437.0 \text{ s}$$

$$\phi_{\text{HeII}} = 3.3021$$

profile5

$$\chi^2_{\nu}(\text{dof} = 72) = 0.10949$$

Age after ZAMS: 0.007 Gyr

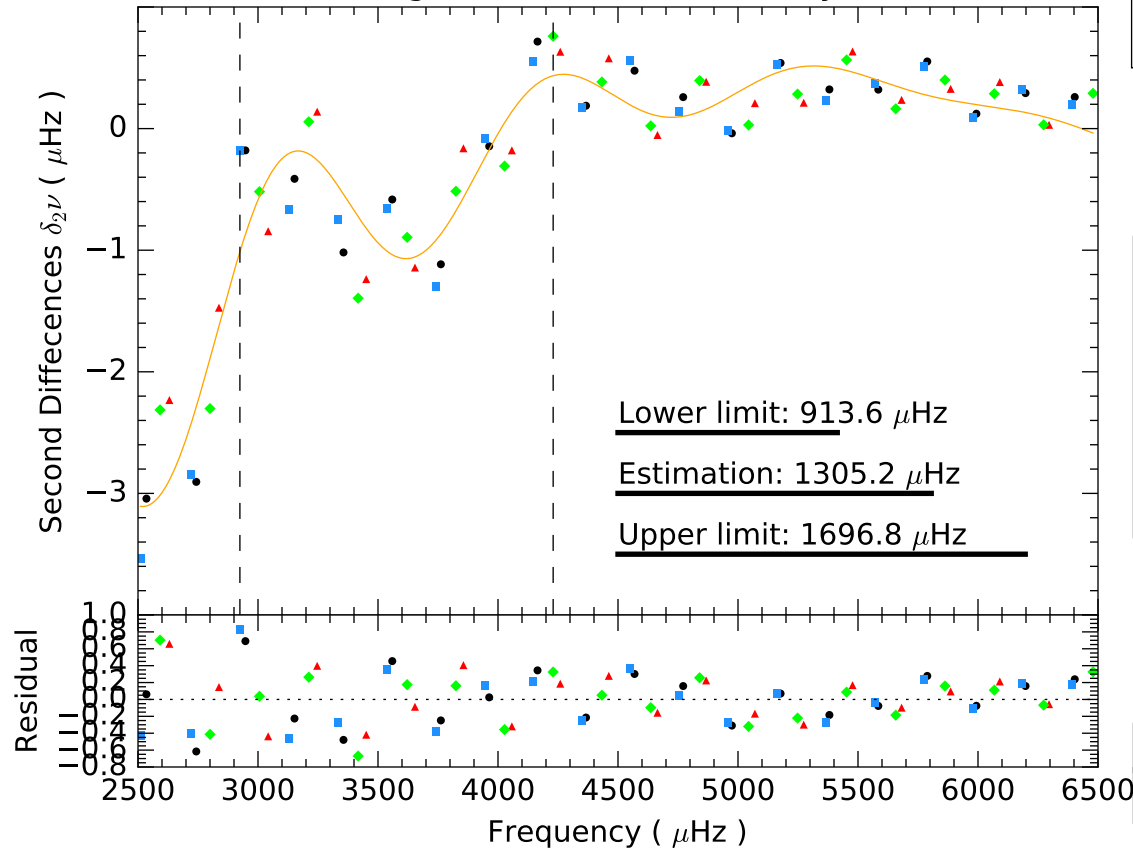


$$\begin{aligned}
 a_0 &= -9.0203 \mu\text{Hz} \\
 a_1 &= 0.0035944 \\
 a_2 &= -3.426e-07 \mu\text{Hz}^{-1} \\
 c_0 &= 0.00095565 \\
 c_2 &= 1.2844e-07 \mu\text{Hz}^{-2} \\
 \tau_{\text{He II}} &= 435.65 \text{ s} \\
 \phi_{\text{He II}} &= 3.2886
 \end{aligned}$$

profile6

$$\chi^2_{\nu}(\text{dof} = 72) = 0.10892$$

Age after ZAMS: 0.013 Gyr



$$a_0 = -8.5266 \mu\text{Hz}$$

$$a_1 = 0.0033825$$

$$a_2 = -3.2034e-07 \mu\text{Hz}^{-1}$$

$$c_0 = 0.0010782$$

$$c_2 = 1.3778e-07 \mu\text{Hz}^{-2}$$

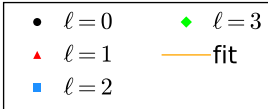
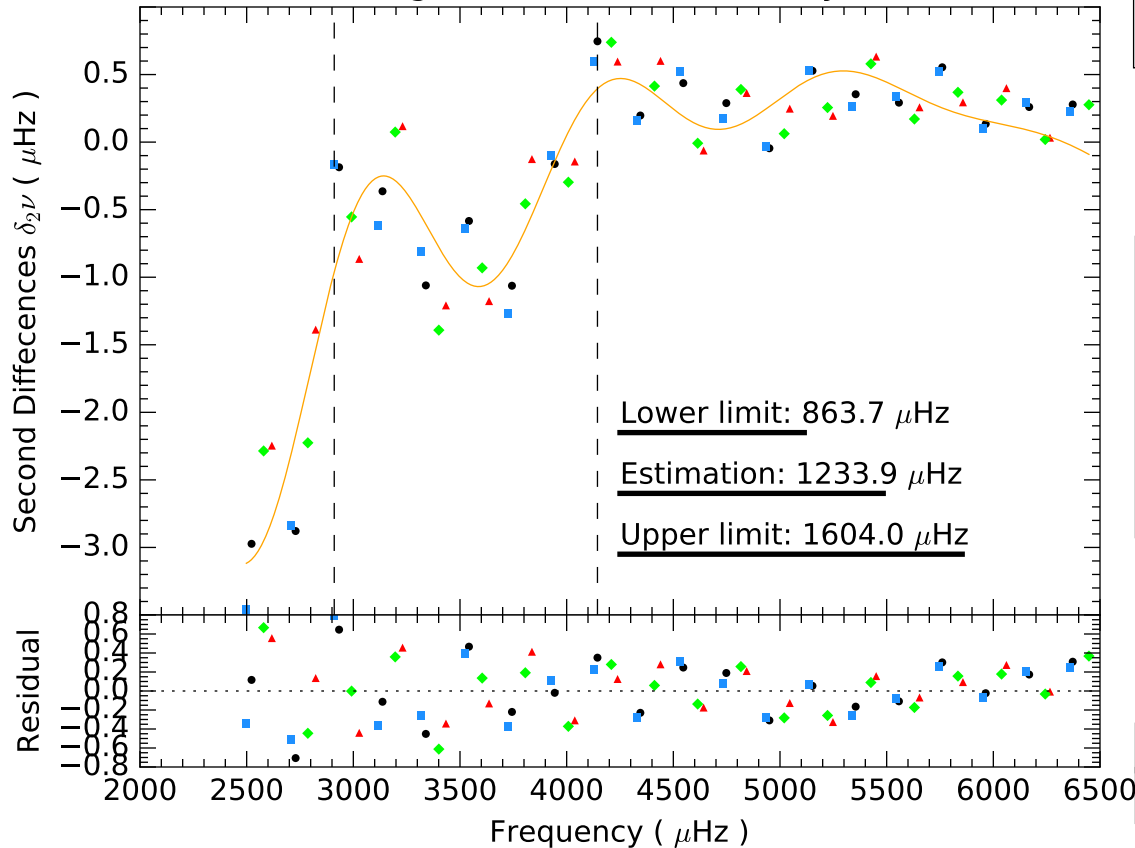
$$\tau_{\text{HeII}} = 449.27 \text{ s}$$

$$\phi_{\text{HeII}} = 2.7201$$

profile7

$$\chi^2_{\nu}(\text{dof} = 72) = 0.1068$$

Age after ZAMS: 0.023 Gyr

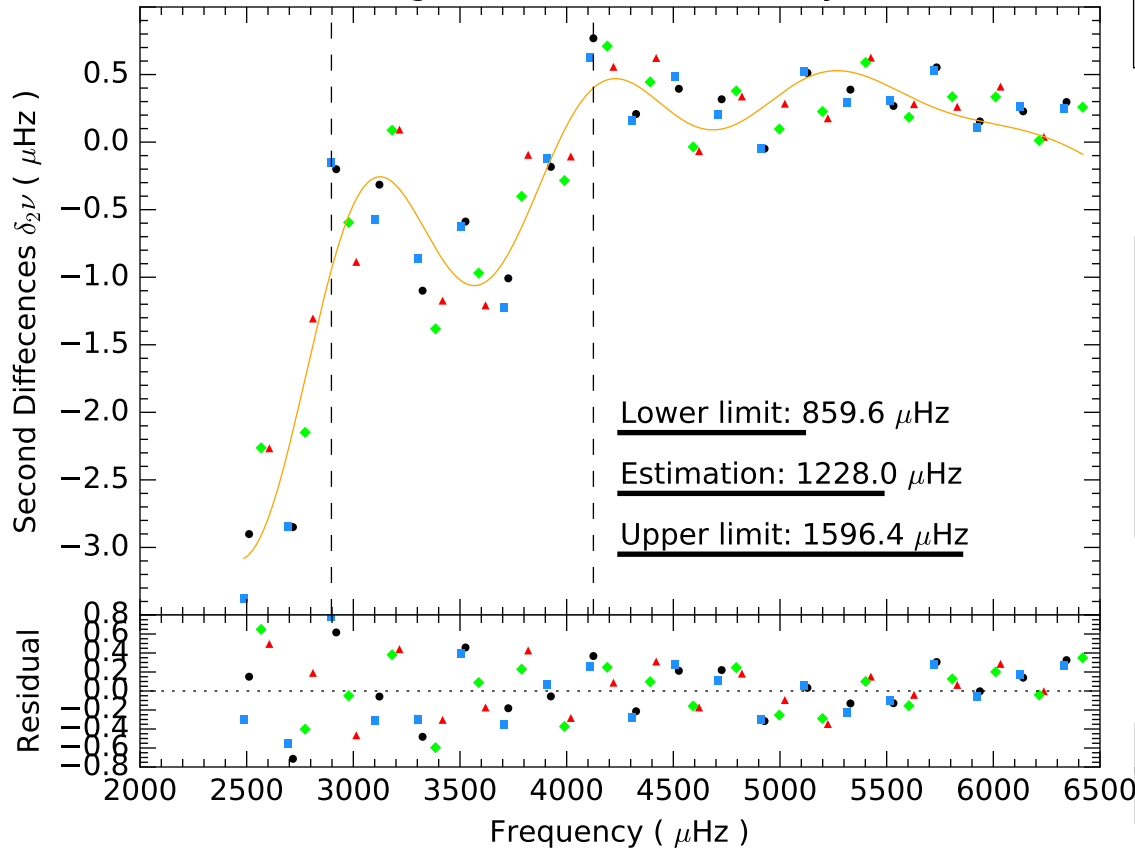


$$\begin{aligned}
 a_0 &= -8.8425 \mu\text{Hz} \\
 a_1 &= 0.0035503 \\
 a_2 &= -3.4076e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.00094333 \\
 c_2 &= 1.2998e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 445.17 \text{ s} \\
 \phi_{HeII} &= 3.065
 \end{aligned}$$

profile8

$$\chi^2_{\nu}(\text{dof} = 72) = 0.10469$$

Age after ZAMS: 0.039 Gyr



$$a_0 = -8.783 \mu\text{Hz}$$

$$a_1 = 0.0035447$$

$$a_2 = -3.4193e-07 \mu\text{Hz}^{-1}$$

$$c_0 = 0.00091804$$

$$c_2 = 1.2961e-07 \mu\text{Hz}^{-2}$$

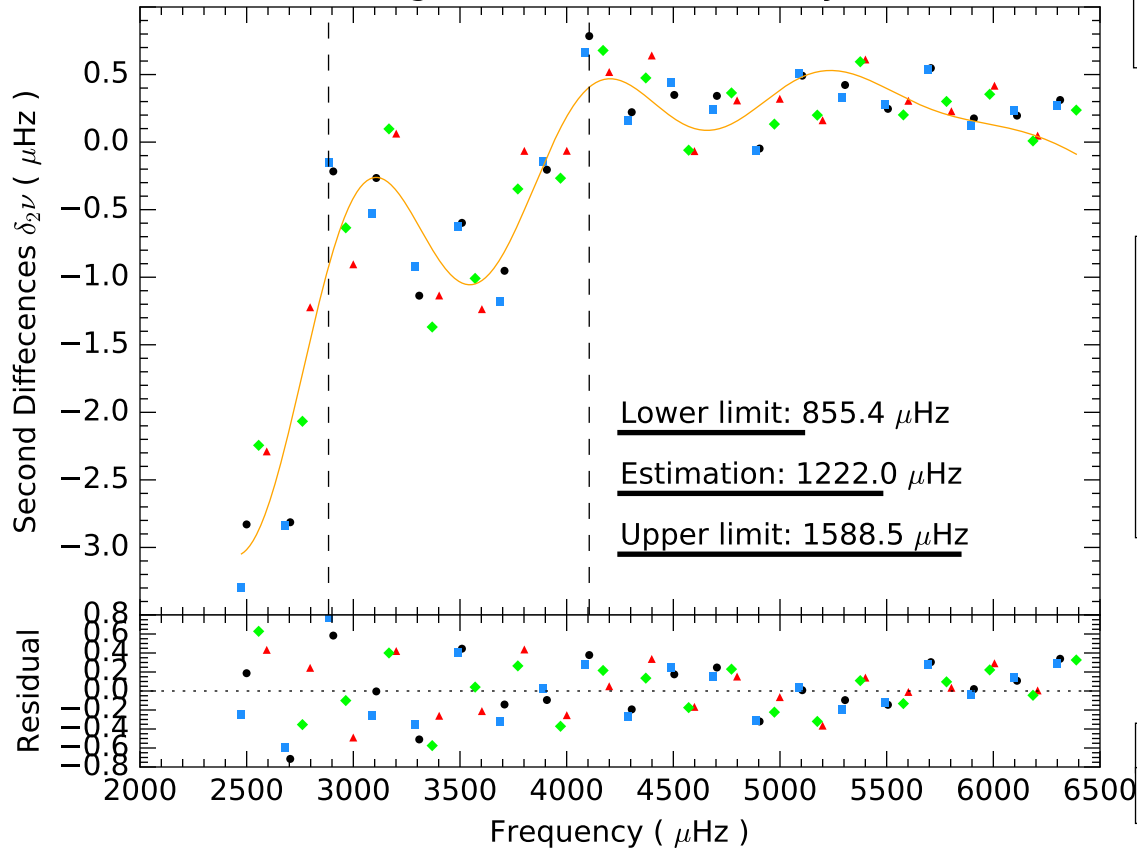
$$\tau_{\text{HeII}} = 447.91 \text{ s}$$

$$\phi_{\text{HeII}} = 3.0564$$

profile9

$$\chi^2_{\nu}(\text{dof} = 72) = 0.10242$$

Age after ZAMS: 0.068 Gyr



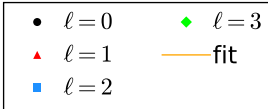
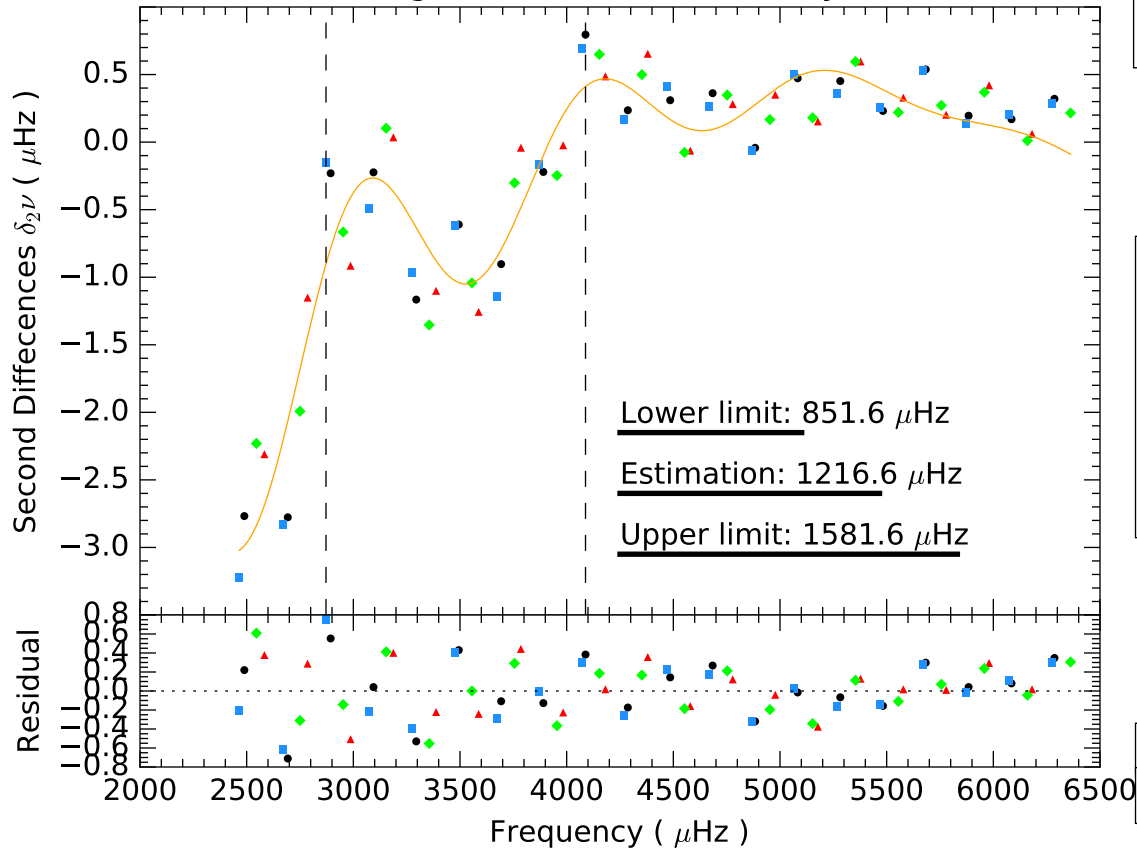
- $\ell=0$
- ▲ $\ell=1$
- $\ell=2$
- ◆ $\ell=3$
- fit

$$\begin{aligned}
 a_0 &= -8.7252 \mu\text{Hz} \\
 a_1 &= 0.0035403 \\
 a_2 &= -3.4328e-07 \mu\text{Hz} \\
 c_0 &= 0.00089743 \\
 c_2 &= 1.2951e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 450.72 \text{ s} \\
 \phi_{HeII} &= 3.0501
 \end{aligned}$$

profile10

$$\chi^2_{\nu}(\text{dof} = 72) = 0.10011$$

Age after ZAMS: 0.118 Gyr



$$a_0 = -8.6773 \mu\text{Hz}$$

$$a_1 = 0.0035383$$

$$a_2 = -3.4473e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.00088186$$

$$c_2 = 1.2957e-07 \mu\text{Hz}^{-2}$$

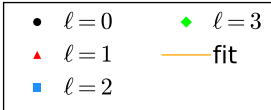
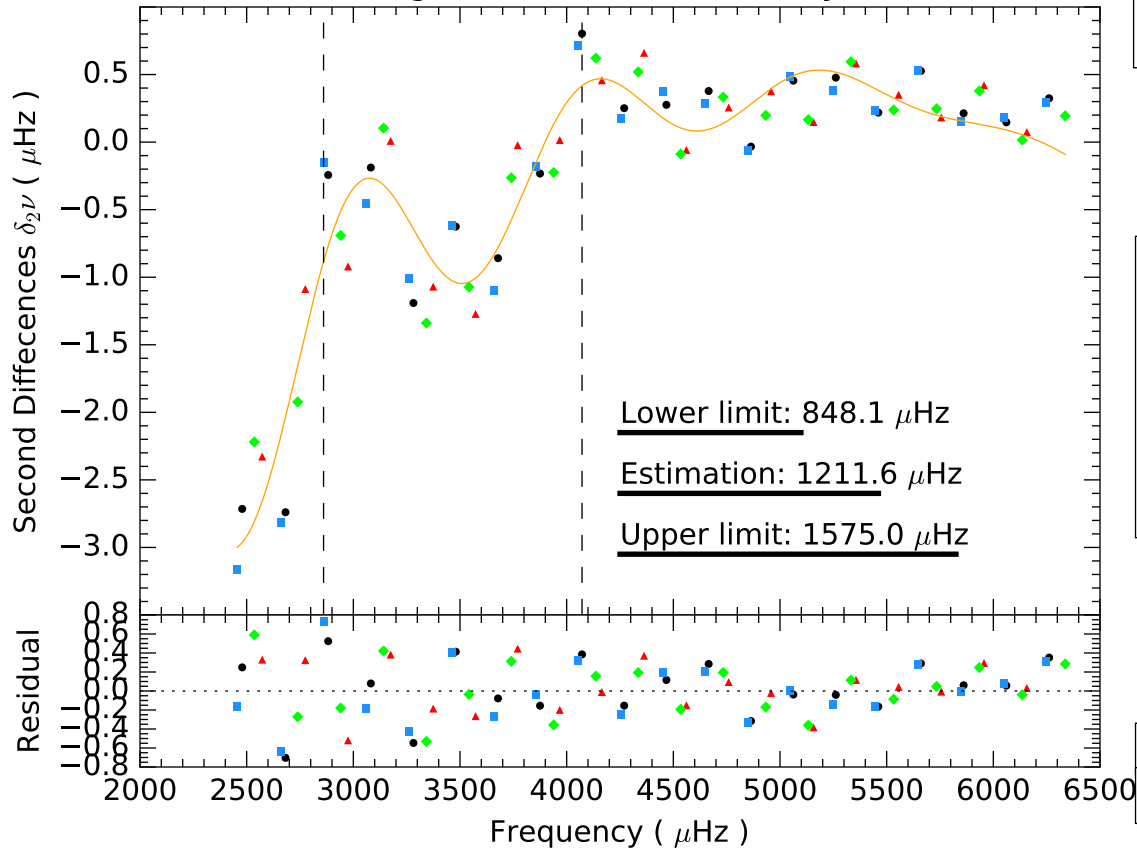
$$\tau_{\text{HeII}} = 453.22 \text{ s}$$

$$\phi_{\text{HeII}} = 3.0472$$

profile11

$$\chi^2_{\nu}(\text{dof} = 72) = 0.09813$$

Age after ZAMS: 0.205 Gyr

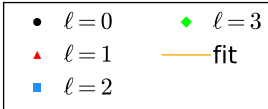
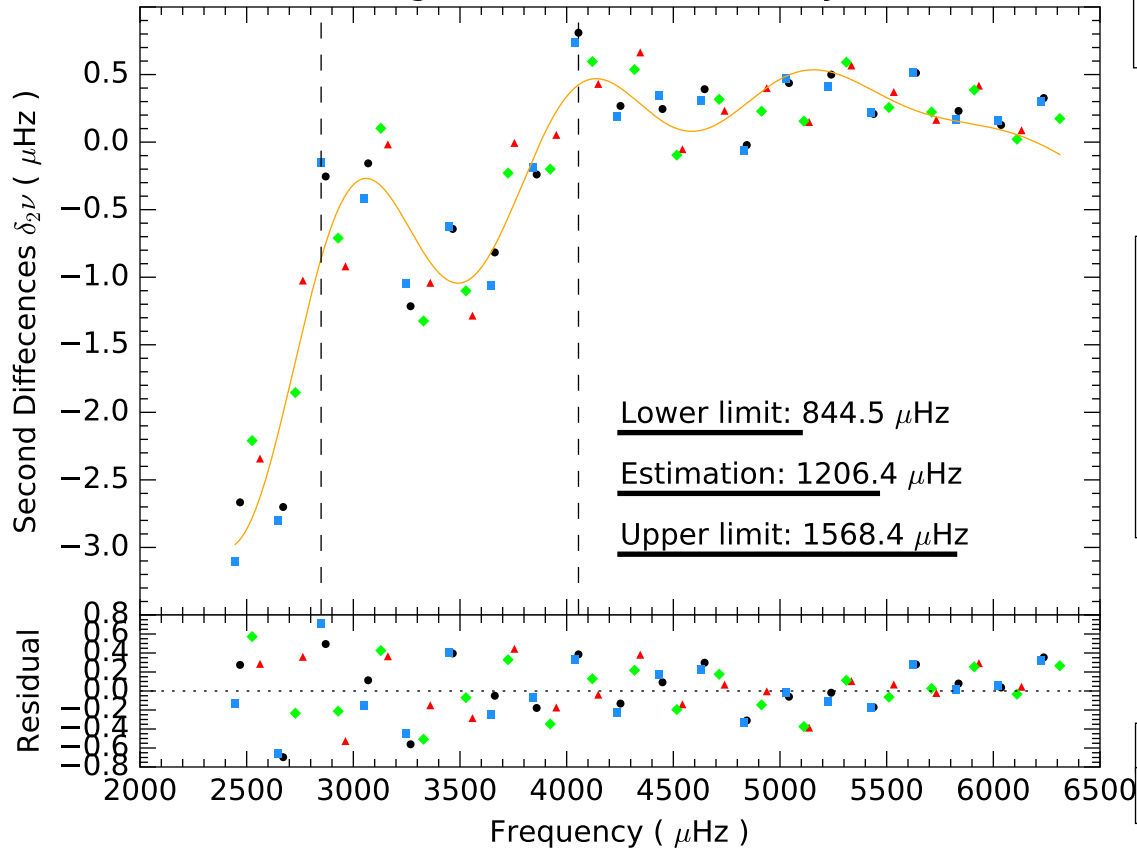


$$\begin{aligned}
 a_0 &= -8.6378 \mu\text{Hz} \\
 a_1 &= 0.0035389 \\
 a_2 &= -3.4635e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.0008693 \\
 c_2 &= 1.2967e-07 \mu\text{Hz}^{-2} \\
 \tau_{\text{HeII}} &= 455.51 \text{ s} \\
 \phi_{\text{HeII}} &= 3.0489
 \end{aligned}$$

profile12

$$\chi^2_{\nu}(\text{dof} = 72) = 0.096418$$

Age after ZAMS: 0.354 Gyr



$$a_0 = -8.6027 \mu\text{Hz}$$

$$a_1 = 0.003542$$

$$a_2 = -3.4833e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.00085844$$

$$c_2 = 1.2981e-07 \mu\text{Hz}^{-2}$$

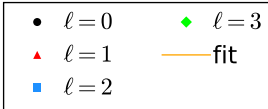
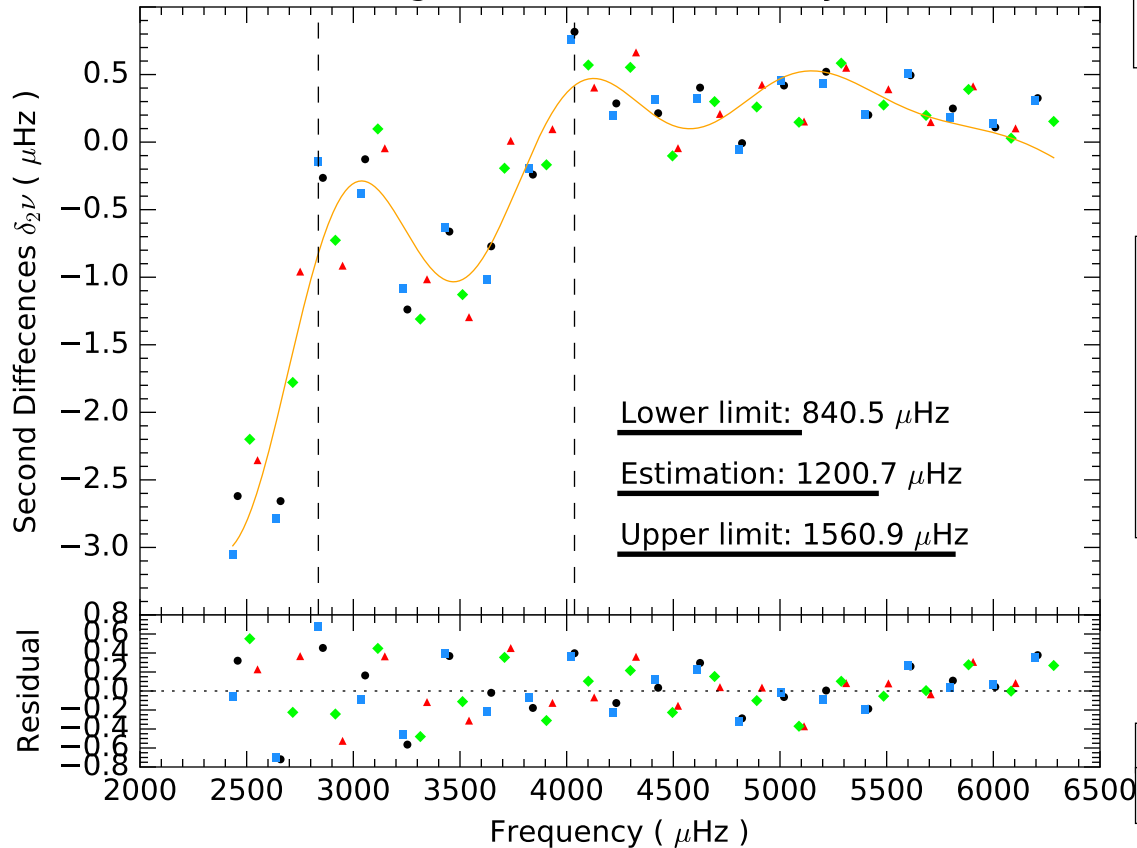
$$\tau_{\text{HeII}} = 457.85 \text{ s}$$

$$\phi_{\text{HeII}} = 3.0528$$

profile13

$$\chi^2_{\nu}(\text{dof} = 72) = 0.094895$$

Age after ZAMS: 0.610 Gyr



$$a_0 = -8.6971 \mu\text{Hz}$$

$$a_1 = 0.0036079$$

$$a_2 = -3.5758e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.00086068$$

$$c_2 = 1.3221e-07 \mu\text{Hz}^{-2}$$

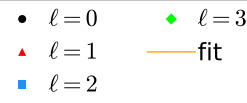
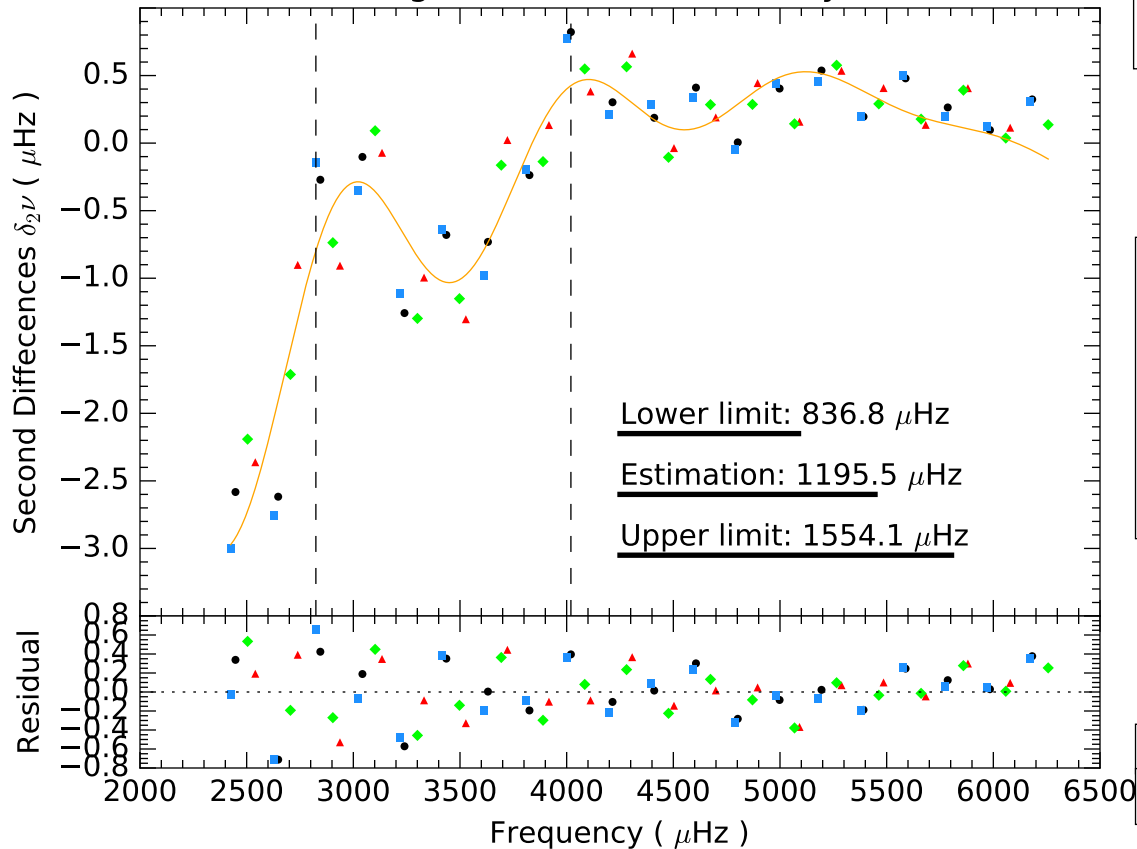
$$\tau_{\text{HeII}} = 453.52 \text{ s}$$

$$\phi_{\text{HeII}} = 3.3491$$

profile14

$$\chi^2_{\nu}(\text{dof} = 72) = 0.094015$$

Age after ZAMS: 0.910 Gyr



$$a_0 = -8.6634 \mu\text{Hz}$$

$$a_1 = 0.0036126$$

$$a_2 = -3.5982e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.0008616$$

$$c_2 = 1.3337e-07 \mu\text{Hz}^{-2}$$

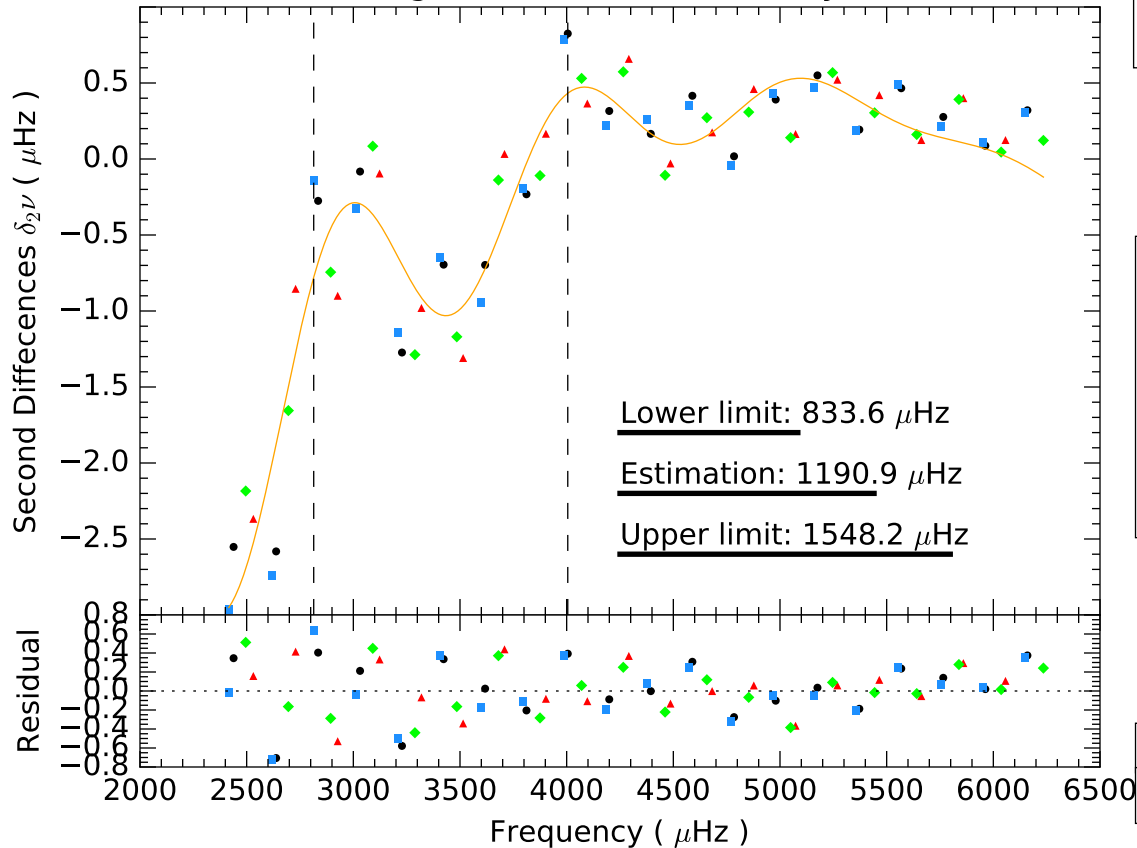
$$\tau_{\text{HeII}} = 455.95 \text{ s}$$

$$\phi_{\text{HeII}} = 3.3558$$

profile15

$$\chi^2_{\nu}(\text{dof} = 72) = 0.092834$$

Age after ZAMS: 1.210 Gyr



$$a_0 = -8.6333 \mu\text{Hz}$$

$$a_1 = 0.0036164$$

$$a_2 = -3.6177e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.00084976$$

$$c_2 = 1.3319e-07 \mu\text{Hz}^{-2}$$

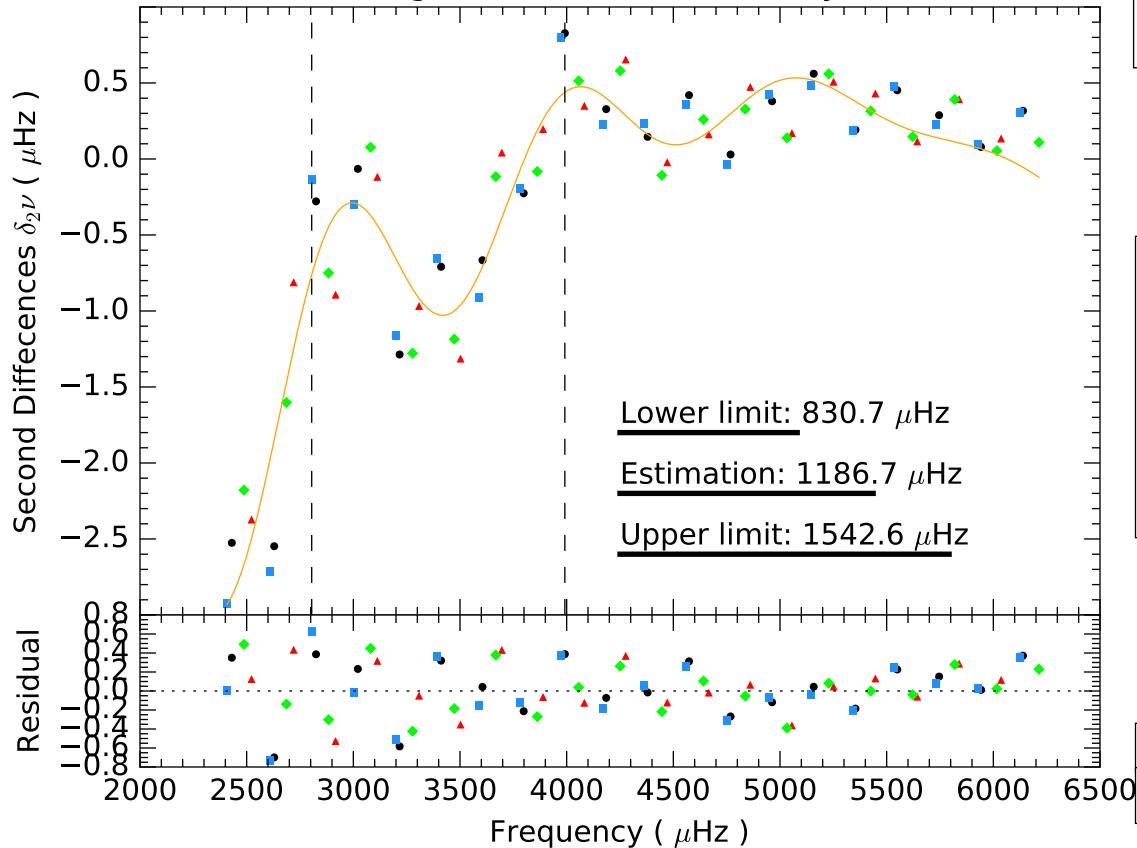
$$\tau_{\text{HeII}} = 457.99 \text{ s}$$

$$\phi_{\text{HeII}} = 3.3631$$

profile16

$$\chi^2_{\nu}(\text{dof} = 72) = 0.091903$$

Age after ZAMS: 1.510 Gyr

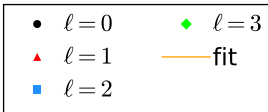
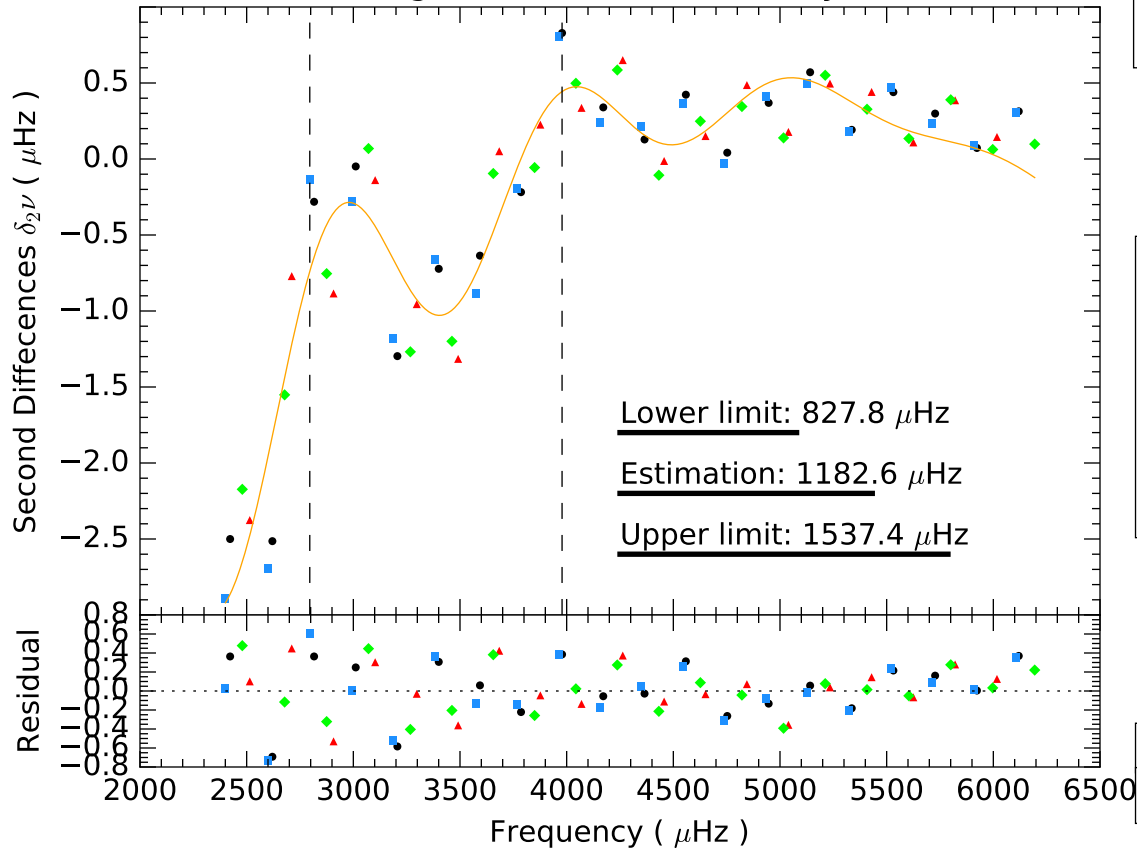


$$\begin{aligned}
 a_0 &= -8.6054 \mu\text{Hz} \\
 a_1 &= 0.0036201 \\
 a_2 &= -3.6362e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.00083865 \\
 c_2 &= 1.3298e-07 \mu\text{Hz}^{-2} \\
 \tau_{\text{HeII}} &= 459.91 \text{ s} \\
 \phi_{\text{HeII}} &= 3.3698
 \end{aligned}$$

profile17

$$\chi^2_{\nu}(\text{dof} = 72) = 0.091075$$

Age after ZAMS: 1.810 Gyr

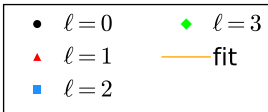
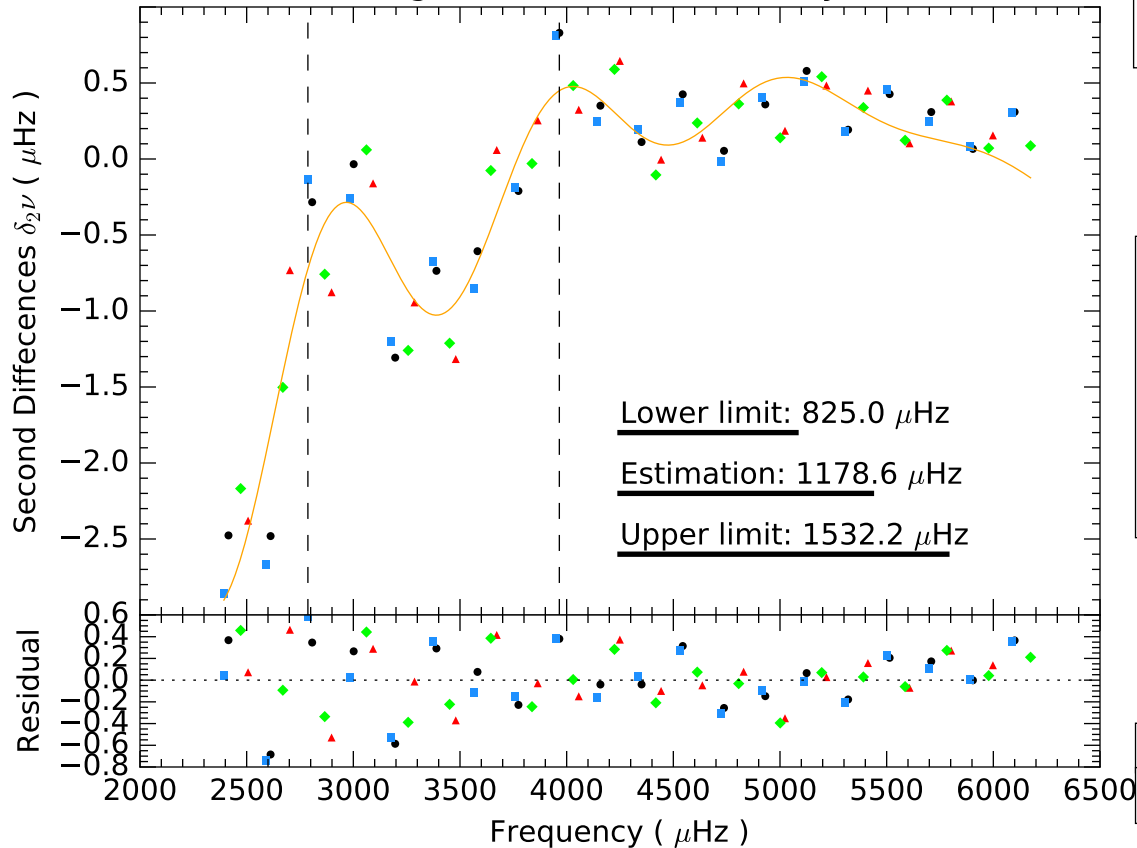


$$\begin{aligned}
 a_0 &= -8.5782 \mu\text{Hz} \\
 a_1 &= 0.0036234 \\
 a_2 &= -3.6537e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.00084484 \\
 c_2 &= 1.3434e-07 \mu\text{Hz}^{-2} \\
 \tau_{\text{HeII}} &= 461.85 \text{ s} \\
 \phi_{\text{HeII}} &= 3.3763
 \end{aligned}$$

profile18

$$\chi^2_{\nu}(\text{dof} = 72) = 0.090256$$

Age after ZAMS: 2.110 Gyr

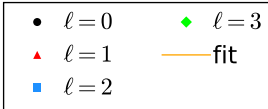
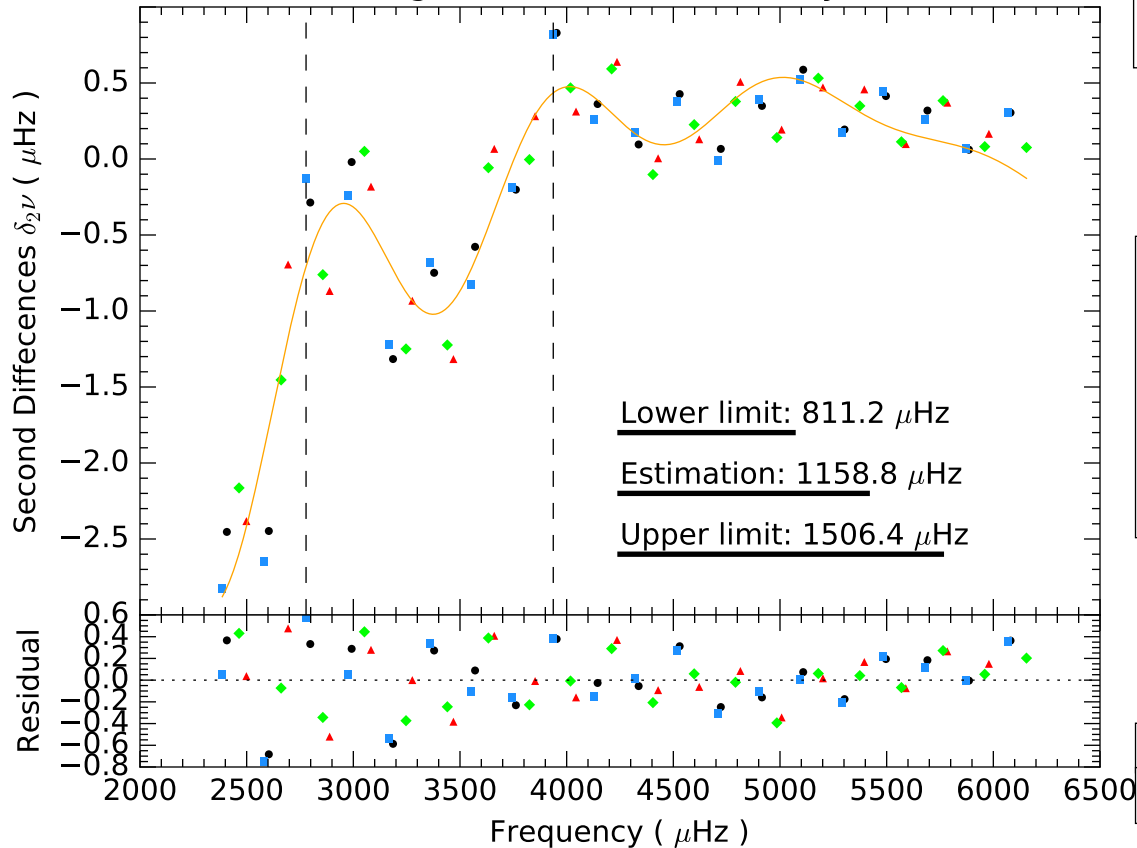


$$\begin{aligned}
 a_0 &= -8.5516 \mu\text{Hz} \\
 a_1 &= 0.0036267 \\
 a_2 &= -3.6711e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.00083822 \\
 c_2 &= 1.3447e-07 \mu\text{Hz}^{-2} \\
 \tau_{\text{HeII}} &= 463.67 \text{ s} \\
 \phi_{\text{HeII}} &= 3.3835
 \end{aligned}$$

profile19

$$\chi^2_{\nu}(\text{dof} = 72) = 0.089526$$

Age after ZAMS: 2.410 Gyr

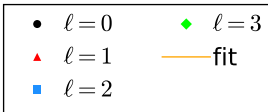
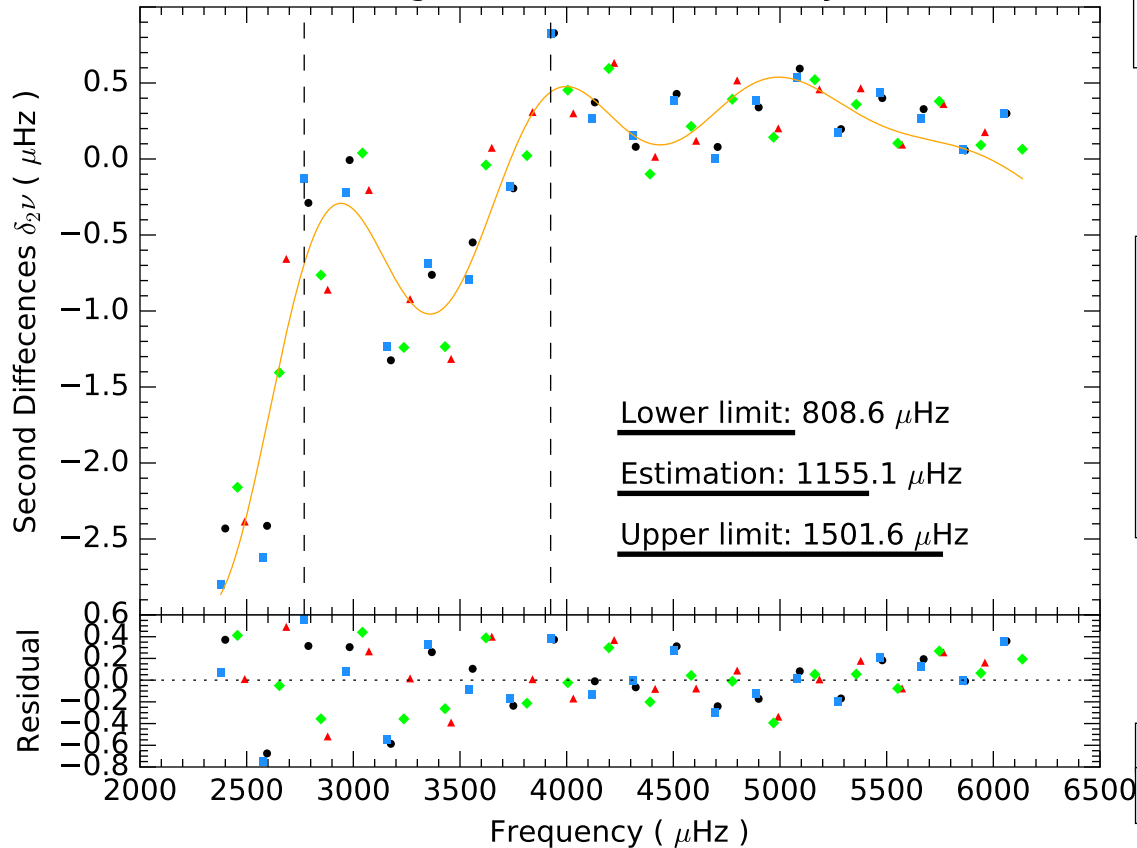


$$\begin{aligned}
 a_0 &= -8.5356 \mu\text{Hz} \\
 a_1 &= 0.003635 \\
 a_2 &= -3.6942e-07 \mu\text{Hz} \\
 c_0 &= 0.00082785 \\
 c_2 &= 1.3491e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 464.71 \text{ s} \\
 \phi_{HeII} &= 3.423
 \end{aligned}$$

profile20

$$\chi^2_{\nu}(\text{dof} = 72) = 0.088872$$

Age after ZAMS: 2.710 Gyr

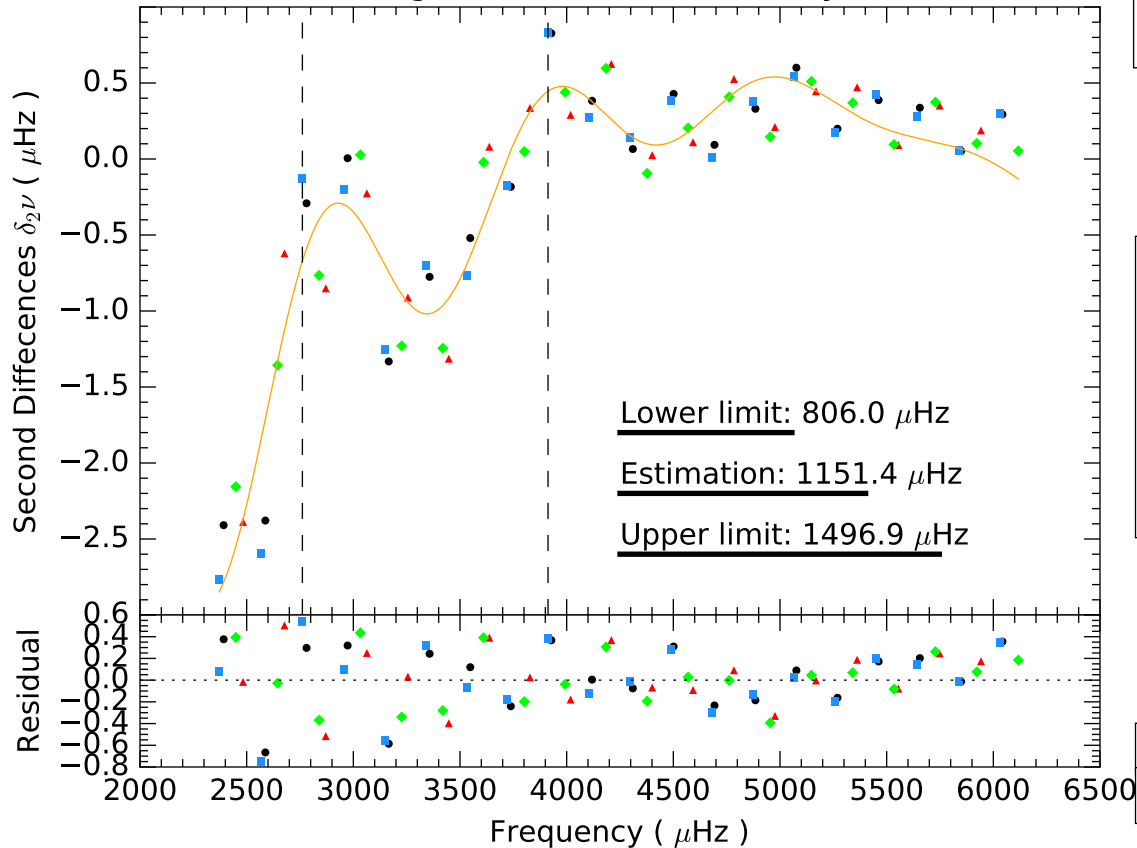


$a_0 = -8.5109 \mu\text{Hz}$
 $a_1 = 0.0036389$
 $a_2 = -3.7123e-07 \mu\text{Hz}^{-2}$
 $c_0 = 0.00082582$
 $c_2 = 1.3552e-07 \mu\text{Hz}^{-2}$
 $\tau_{HeII} = 466.5 \text{ s}$
 $\phi_{HeII} = 3.4321$

profile21

$\chi^2_{\nu}(\text{dof} = 72) = 0.088151$

Age after ZAMS: 3.010 Gyr



$$a_0 = -8.486 \mu\text{Hz}$$

$$a_1 = 0.0036428$$

$$a_2 = -3.7305e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.00082391$$

$$c_2 = 1.3612e-07 \mu\text{Hz}^{-2}$$

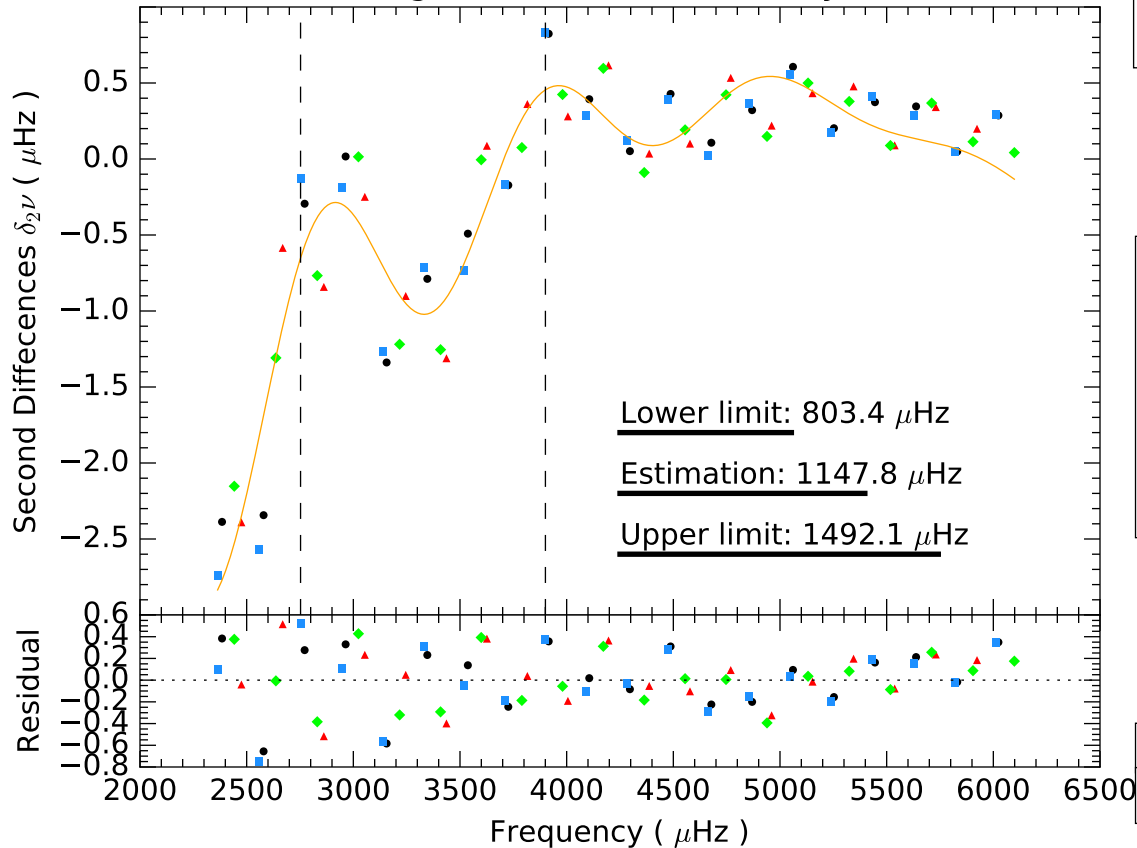
$$\tau_{\text{HeII}} = 468.33 \text{ s}$$

$$\phi_{\text{HeII}} = 3.4399$$

profile22

$$\chi^2_{\nu}(\text{dof} = 72) = 0.08744$$

Age after ZAMS: 3.310 Gyr



$$a_0 = -8.461 \mu\text{Hz}$$

$$a_1 = 0.0036467$$

$$a_2 = -3.7488e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.00082186$$

$$c_2 = 1.3609e-07 \mu\text{Hz}^{-2}$$

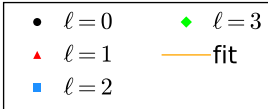
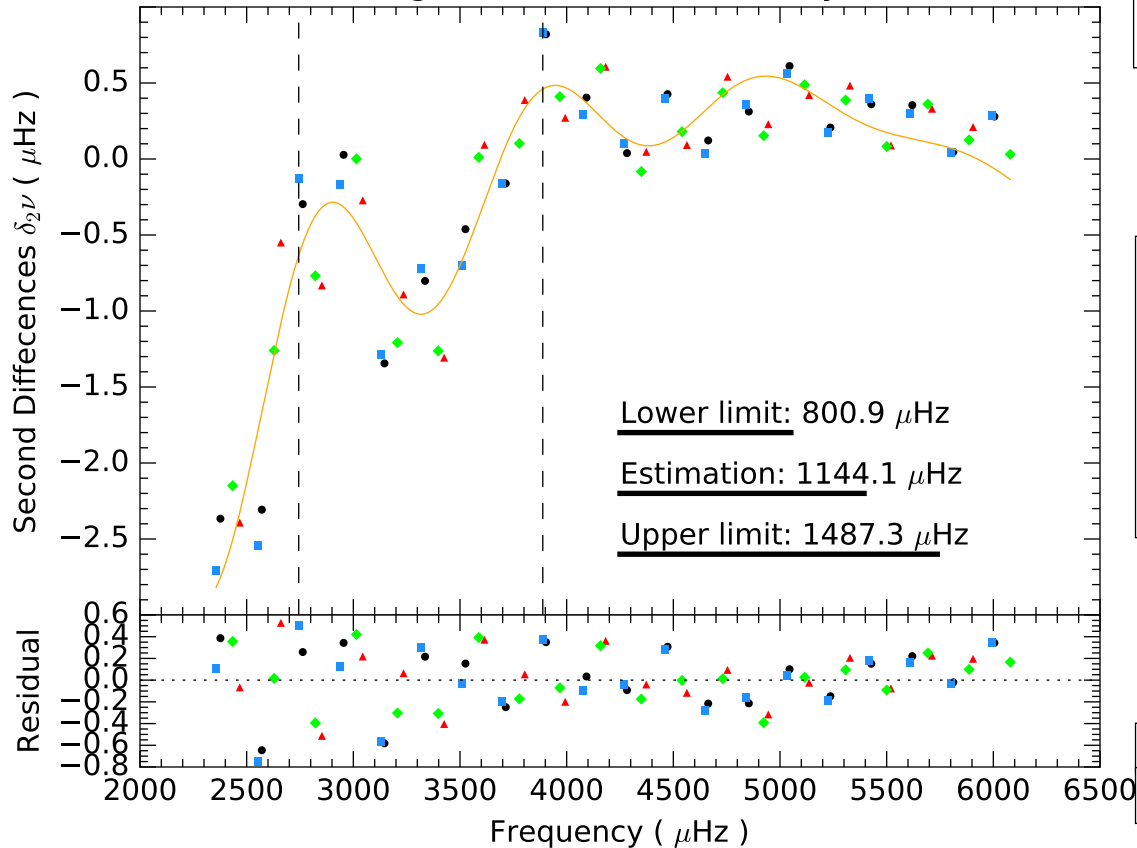
$$\tau_{HeII} = 470.14 \text{ s}$$

$$\phi_{HeII} = 3.4487$$

profile23

$$\chi^2_{\nu}(\text{dof} = 72) = 0.086679$$

Age after ZAMS: 3.610 Gyr

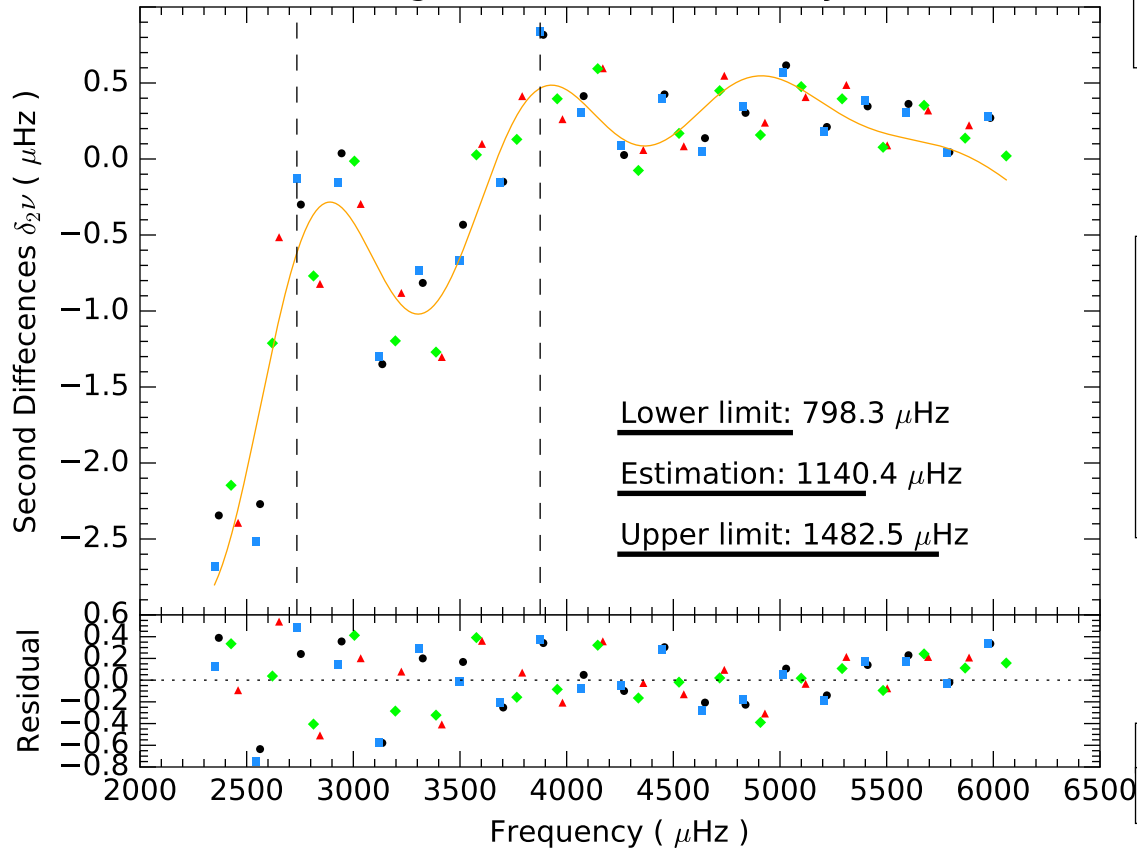


$$\begin{aligned}
 a_0 &= -8.4353 \mu\text{Hz} \\
 a_1 &= 0.0036504 \\
 a_2 &= -3.7671e-07 \mu\text{Hz} \\
 c_0 &= 0.00081965 \\
 c_2 &= 1.3659e-07 \mu\text{Hz}^{-2} \\
 \tau_{\text{HeII}} &= 472.0 \text{ s} \\
 \phi_{\text{HeII}} &= 3.4566
 \end{aligned}$$

profile24

$$\chi^2_{\nu}(\text{dof} = 72) = 0.085943$$

Age after ZAMS: 3.910 Gyr



$$a_0 = -8.4095 \mu\text{Hz}$$

$$a_1 = 0.0036541$$

$$a_2 = -3.7856e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.00081719$$

$$c_2 = 1.3705e-07 \mu\text{Hz}^{-2}$$

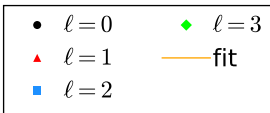
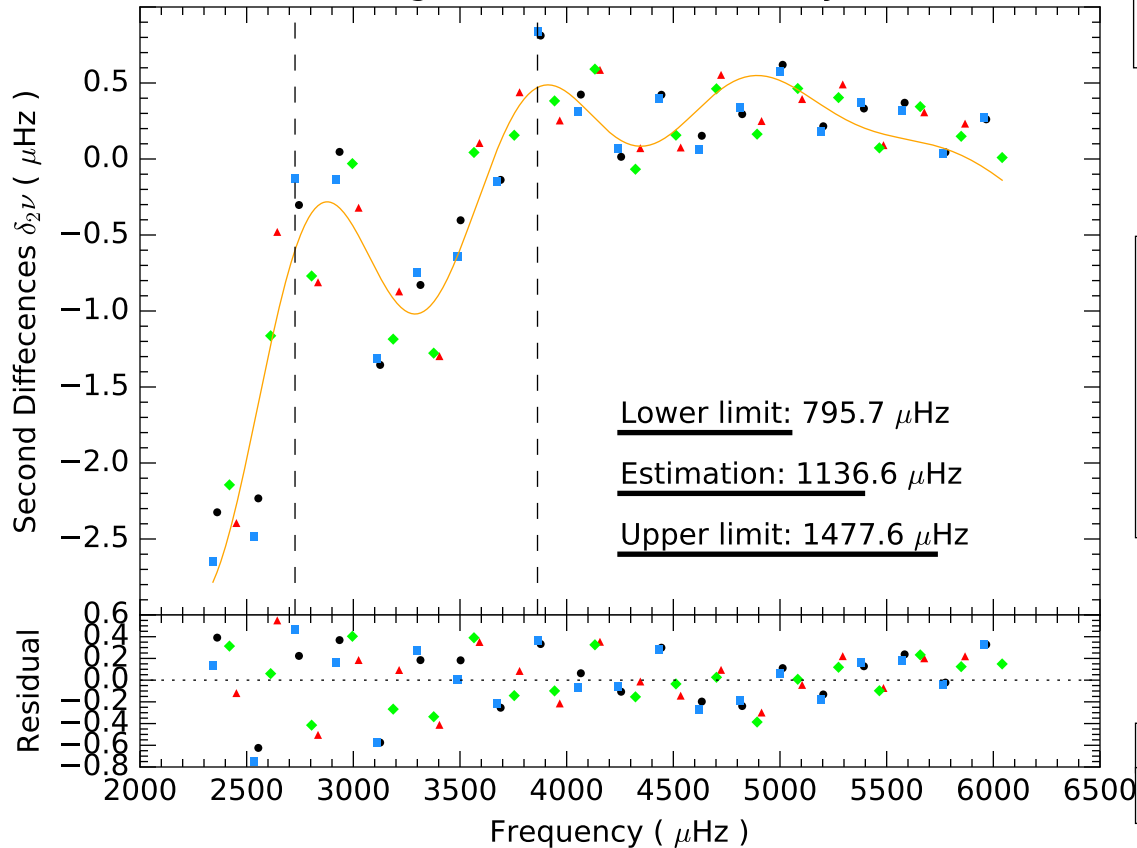
$$\tau_{HeII} = 473.85 \text{ s}$$

$$\phi_{HeII} = 3.4659$$

profile25

$$\chi^2_{\nu}(\text{dof} = 72) = 0.085206$$

Age after ZAMS: 4.210 Gyr

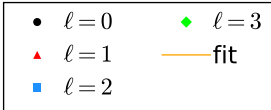
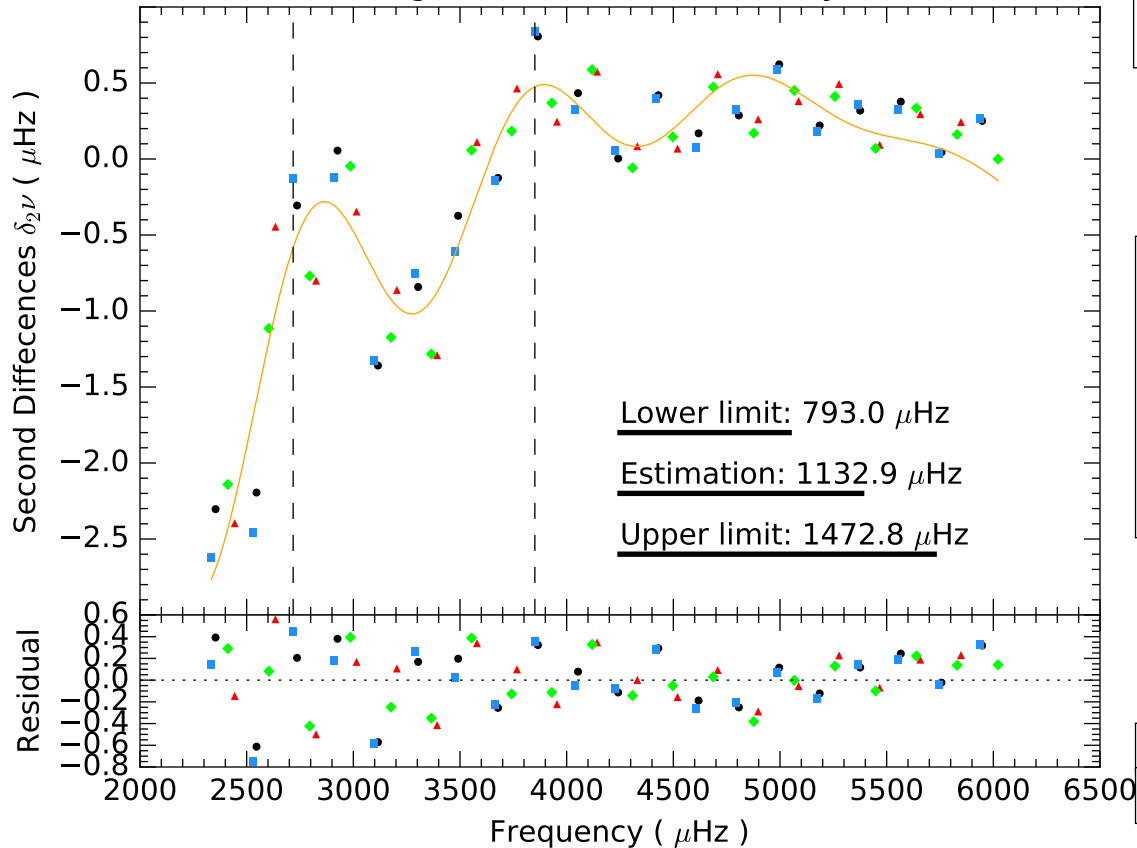


$$\begin{aligned}
 a_0 &= -8.3833 \mu\text{Hz} \\
 a_1 &= 0.0036578 \\
 a_2 &= -3.8043e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.00081457 \\
 c_2 &= 1.3748e-07 \mu\text{Hz}^{-2} \\
 \tau_{\text{HeII}} &= 475.72 \text{ s} \\
 \phi_{\text{HeII}} &= 3.4757
 \end{aligned}$$

profile26

$$\chi^2_{\nu}(\text{dof} = 72) = 0.084458$$

Age after ZAMS: 4.510 Gyr



$$a_0 = -8.3565 \mu\text{Hz}$$

$$a_1 = 0.0036613$$

$$a_2 = -3.8232e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.00081167$$

$$c_2 = 1.3787e-07 \mu\text{Hz}^{-2}$$

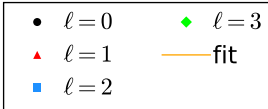
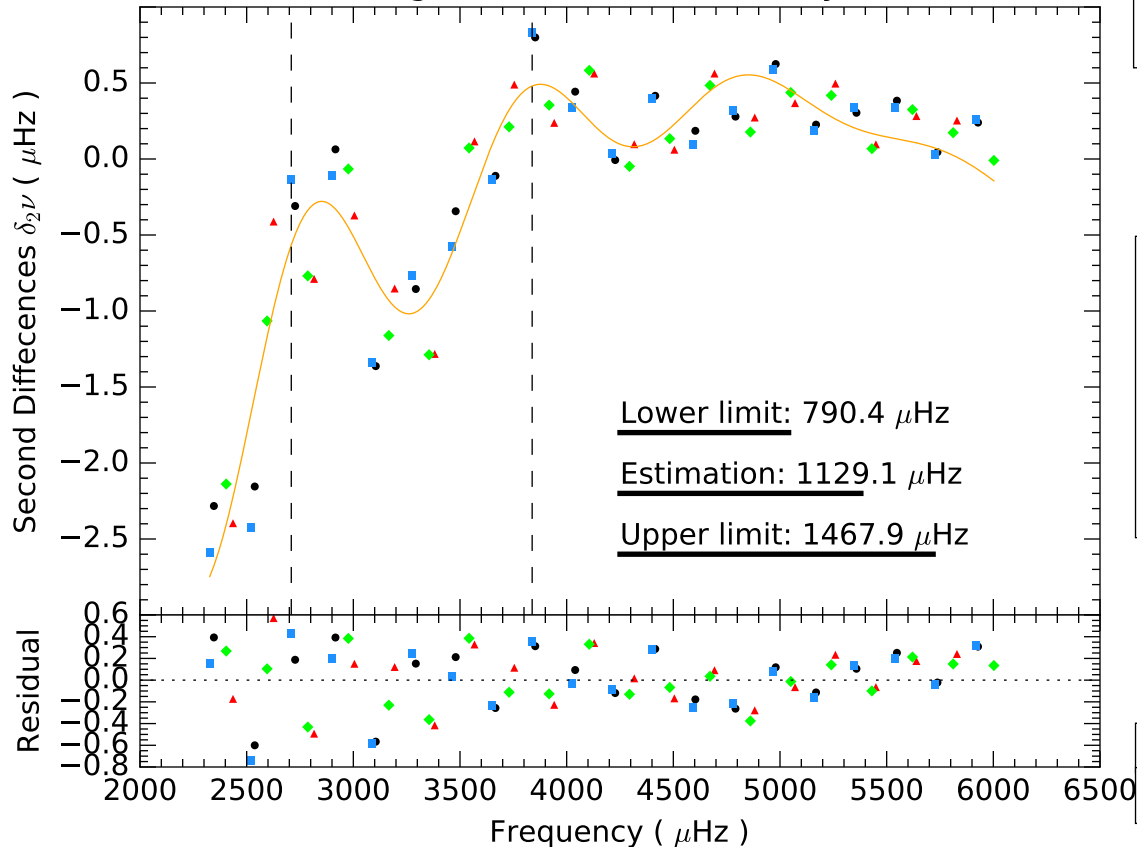
$$\tau_{\text{HeII}} = 477.6 \text{ s}$$

$$\phi_{\text{HeII}} = 3.4858$$

profile27

$$\chi^2_{\nu}(\text{dof} = 72) = 0.083715$$

Age after ZAMS: 4.810 Gyr



$$a_0 = -8.3293 \mu\text{Hz}$$

$$a_1 = 0.0036648$$

$$a_2 = -3.8422e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.00080858$$

$$c_2 = 1.3824e-07 \mu\text{Hz}^{-2}$$

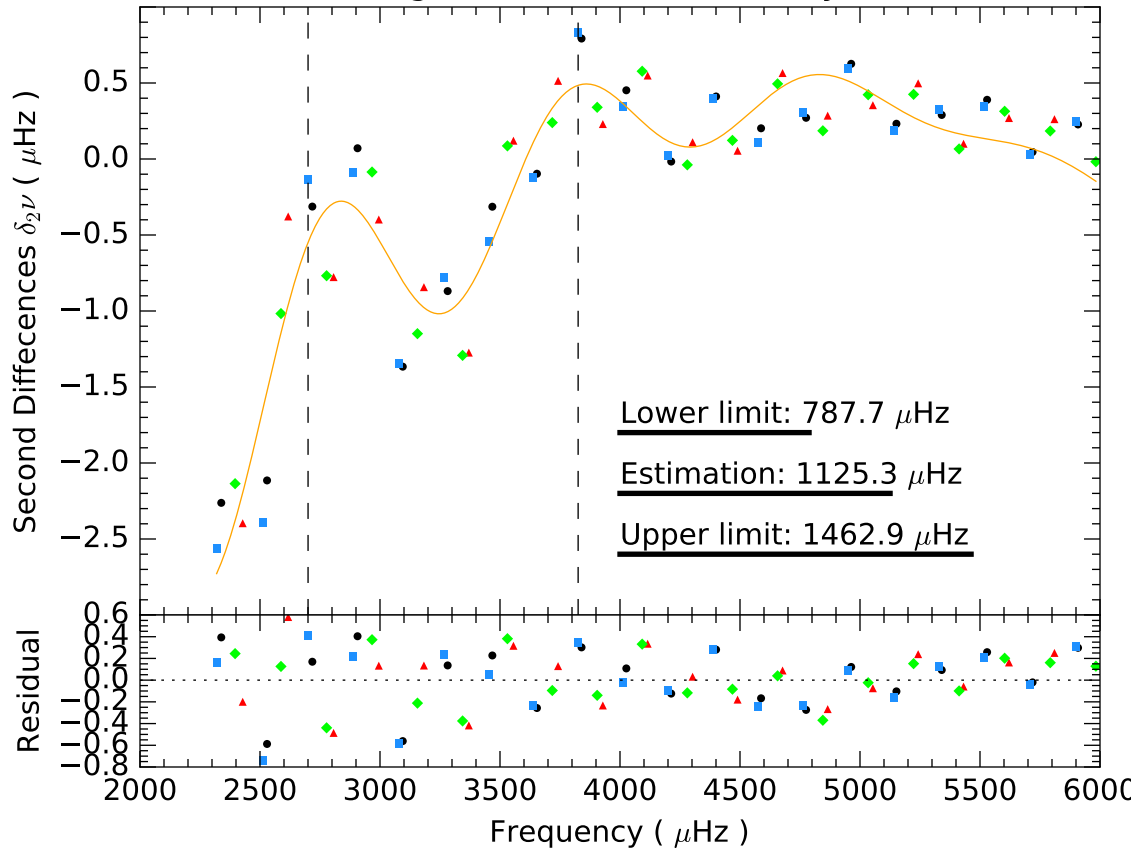
$$\tau_{HeII} = 479.5 \text{ s}$$

$$\phi_{HeII} = 3.4965$$

profile28

$$\chi^2_{\nu}(\text{dof} = 72) = 0.082981$$

Age after ZAMS: 5.110 Gyr



$$a_0 = -8.3021 \mu\text{Hz}$$

$$a_1 = 0.0036683$$

$$a_2 = -3.8615e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.00080559$$

$$c_2 = 1.386e-07 \mu\text{Hz}^{-2}$$

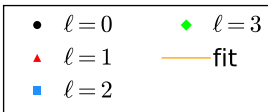
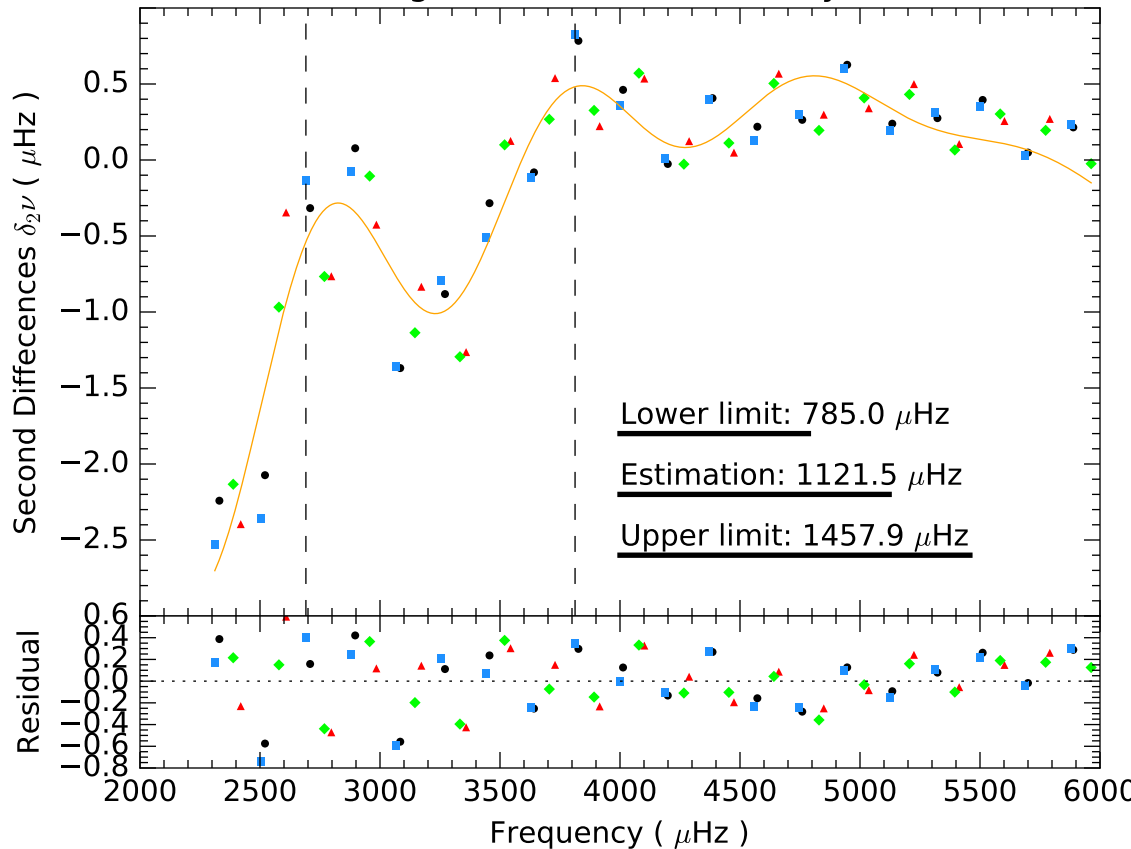
$$\tau_{\text{HeII}} = 481.38 \text{ s}$$

$$\phi_{\text{HeII}} = 3.5096$$

profile29

$$\chi^2_{\nu}(\text{dof} = 72) = 0.082256$$

Age after ZAMS: 5.410 Gyr

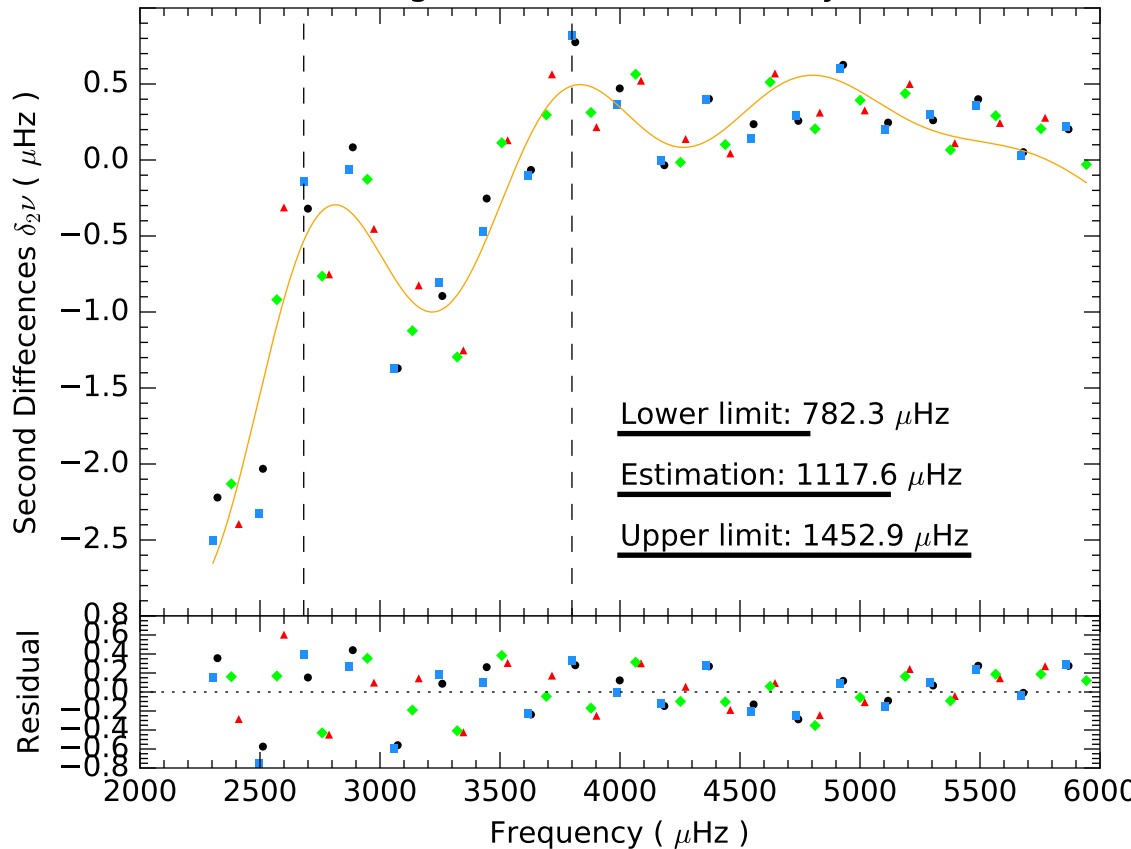


$$\begin{aligned}
 a_0 &= -8.2739 \mu\text{Hz} \\
 a_1 &= 0.0036717 \\
 a_2 &= -3.881e-07 \mu\text{Hz}^{-1} \\
 c_0 &= 0.00080223 \\
 c_2 &= 1.4017e-07 \mu\text{Hz}^{-2} \\
 \tau_{\text{HeII}} &= 483.32 \text{ s} \\
 \phi_{\text{HeII}} &= 3.5216
 \end{aligned}$$

profile30

$$\chi^2_{\nu}(\text{dof} = 72) = 0.081628$$

Age after ZAMS: 5.710 Gyr



$$a_0 = -8.2499 \mu\text{Hz}$$

$$a_1 = 0.0036777$$

$$a_2 = -3.9043e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.00076309$$

$$c_2 = 1.3706e-07 \mu\text{Hz}^{-2}$$

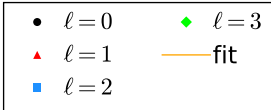
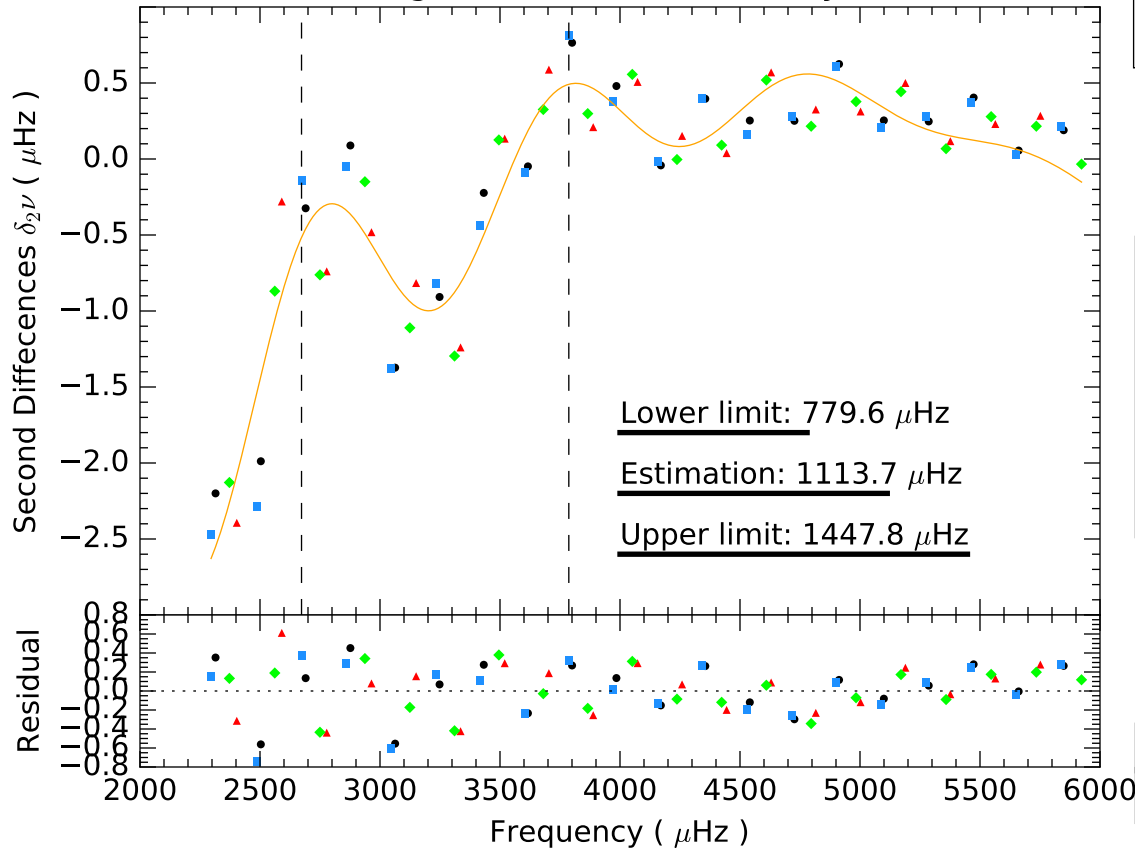
$$\tau_{HeII} = 481.47 \text{ s}$$

$$\phi_{HeII} = 3.6722$$

profile31

$$\chi^2_{\nu}(\text{dof} = 72) = 0.081432$$

Age after ZAMS: 6.010 Gyr

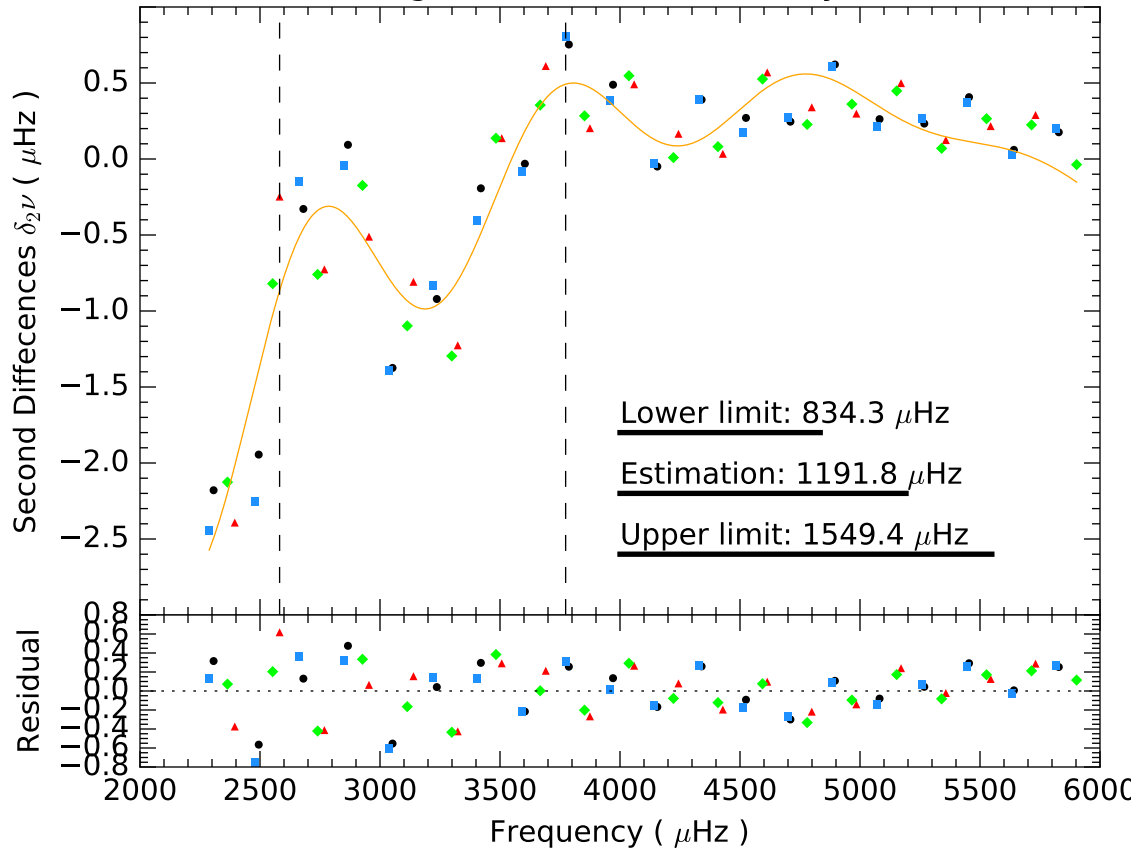


$$\begin{aligned}
 a_0 &= -8.2212 \mu\text{Hz} \\
 a_1 &= 0.0036813 \\
 a_2 &= -3.9247e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.00075936 \\
 c_2 &= 1.3747e-07 \mu\text{Hz}^{-2} \\
 \tau_{\text{HeII}} &= 483.12 \text{ s} \\
 \phi_{\text{HeII}} &= 3.6982
 \end{aligned}$$

profile32

$$\chi^2_{\nu}(\text{dof} = 72) = 0.080877$$

Age after ZAMS: 6.310 Gyr

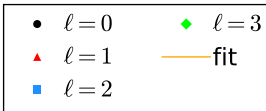
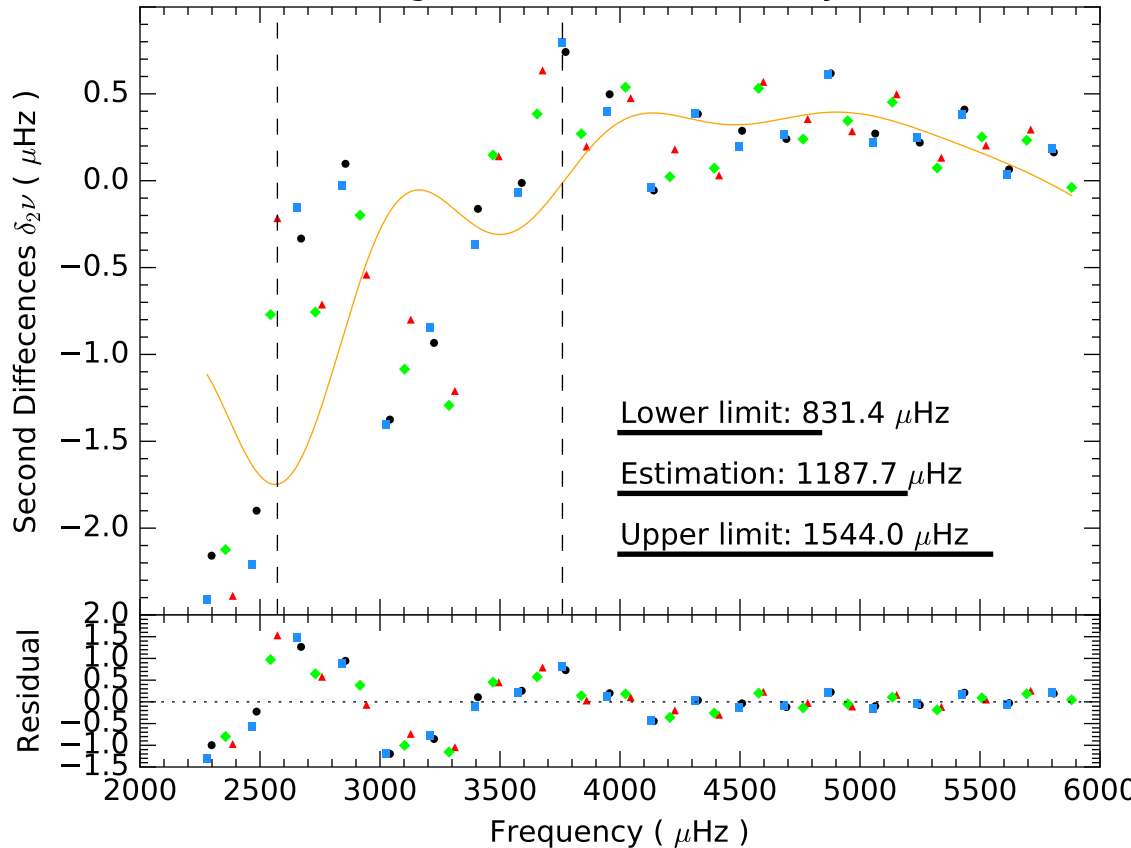


$$\begin{aligned}
 a_0 &= -8.1947 \mu\text{Hz} \\
 a_1 &= 0.0036861 \\
 a_2 &= -3.947e-07 \mu\text{Hz}^{-1} \\
 c_0 &= 0.00072669 \\
 c_2 &= 1.3556e-07 \mu\text{Hz}^{-2} \\
 \tau_{\text{HeII}} &= 480.85 \text{ s} \\
 \phi_{\text{HeII}} &= 3.8726
 \end{aligned}$$

profile33

$$\chi^2_{\nu}(\text{dof} = 72) = 0.08113$$

Age after ZAMS: 6.610 Gyr

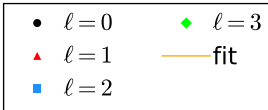
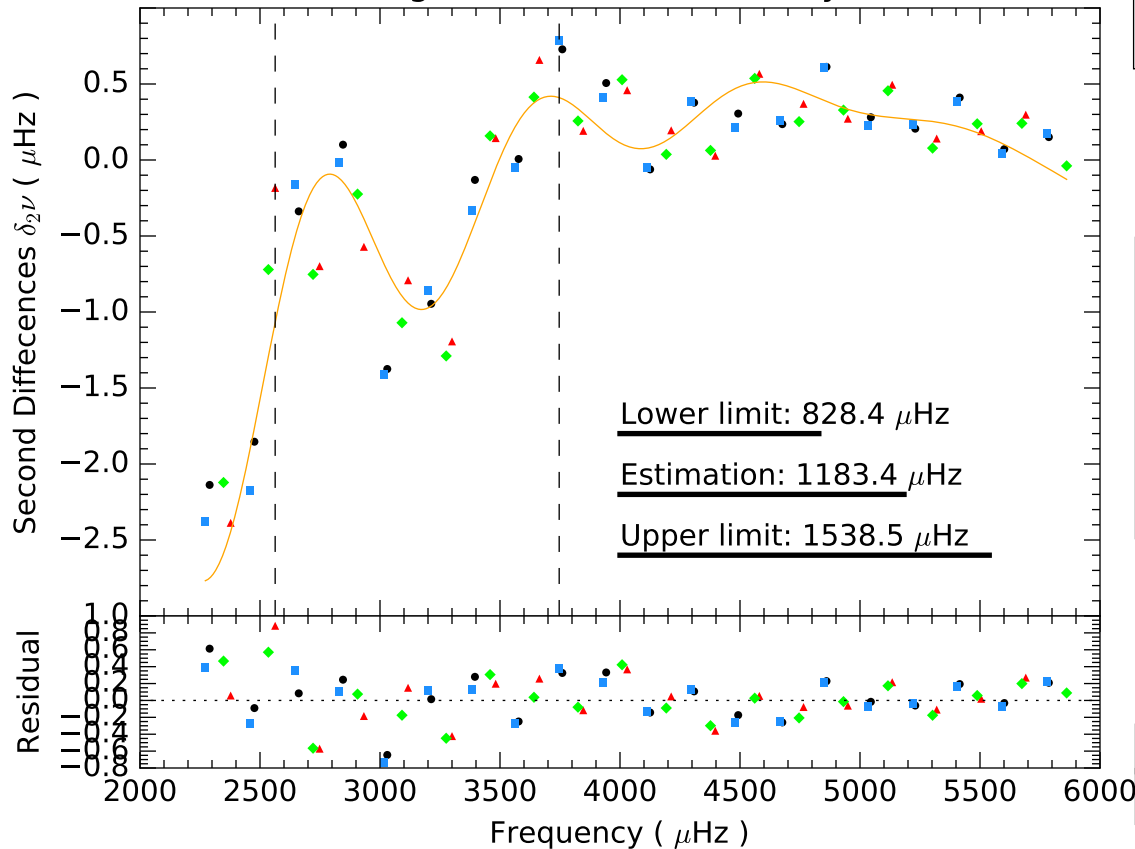


$a_0 = -7.2071 \mu\text{Hz}$
 $a_1 = 0.0032334$
 $a_2 = -3.4395e-07 \mu\text{Hz}^{-2}$
 $c_0 = 0.00098884$
 $c_2 = 2.0992e-07 \mu\text{Hz}^{-2}$
 $\tau_{\text{HeII}} = 516.07 \text{ s}$
 $\phi_{\text{HeII}} = 0.18906$

profile34

$\chi^2_{\nu}(\text{dof} = 72) = 0.37027$

Age after ZAMS: 6.910 Gyr



$$a_0 = -7.6416 \mu\text{Hz}$$

$$a_1 = 0.0034461$$

$$a_2 = -3.6902e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.0012375$$

$$c_2 = 1.8539e-07 \mu\text{Hz}^{-2}$$

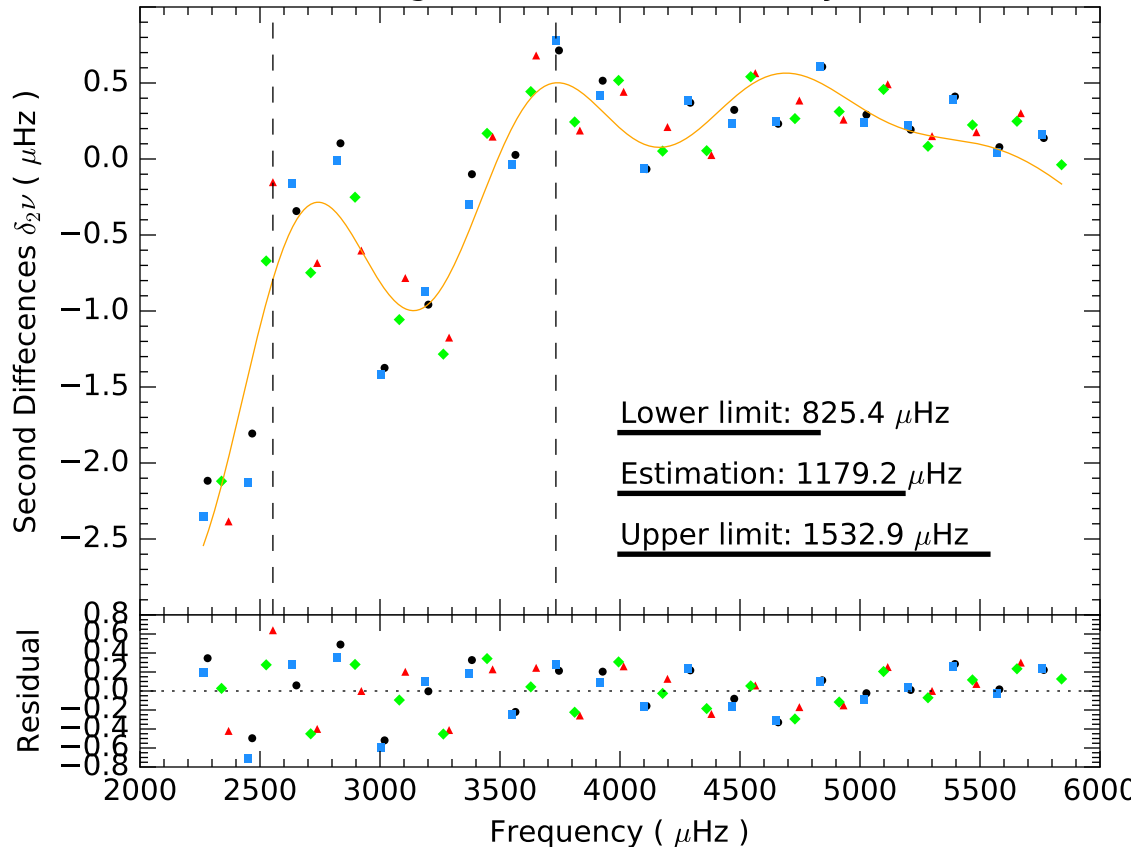
$$\tau_{HeII} = 540.74 \text{ s}$$

$$\phi_{HeII} = 1.6088$$

profile35

$$\chi^2_{\nu}(\text{dof} = 72) = 0.090089$$

Age after ZAMS: 7.210 Gyr

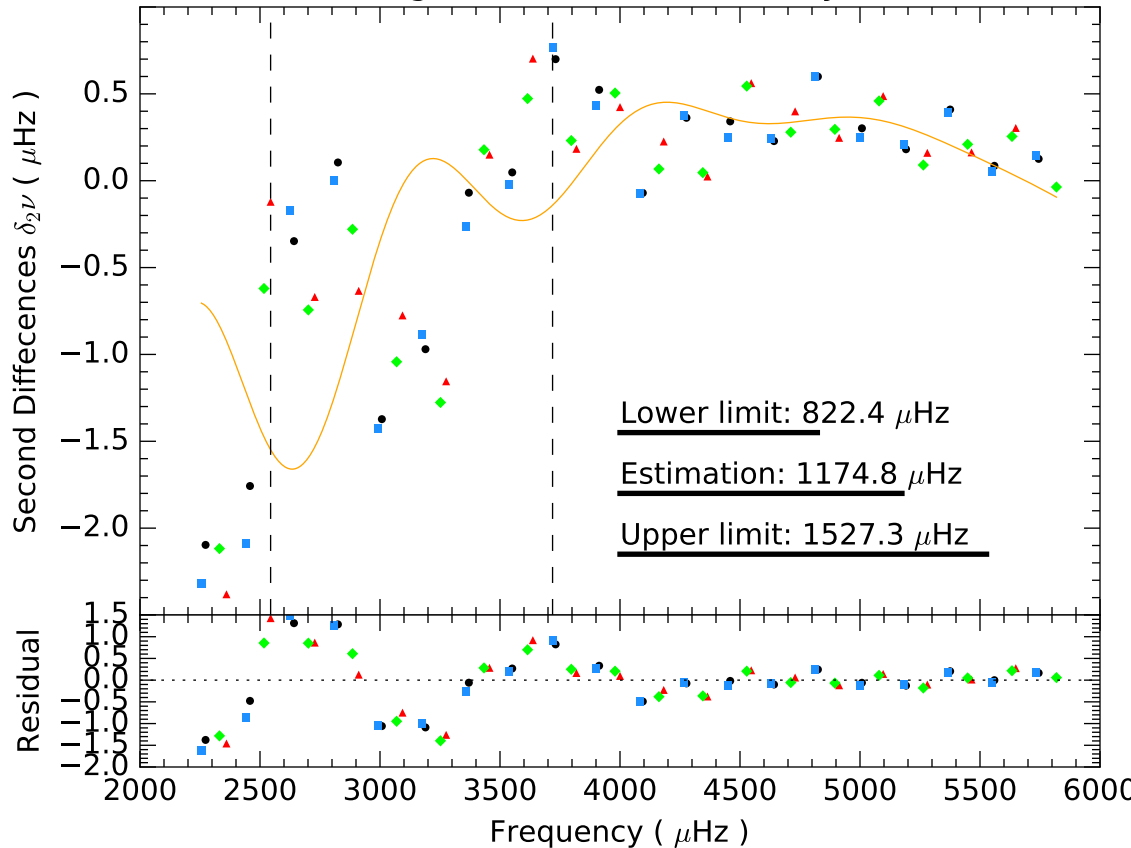


$$\begin{aligned}
 a_0 &= -8.0946 \mu\text{Hz} \\
 a_1 &= 0.003692 \\
 a_2 &= -4.0056e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.00076472 \\
 c_2 &= 1.4131e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 492.07 \text{ s} \\
 \phi_{HeII} &= 3.735
 \end{aligned}$$

profile36

$$\chi^2_{\nu}(\text{dof} = 72) = 0.078833$$

Age after ZAMS: 7.510 Gyr



$$a_0 = -7.0432 \mu\text{Hz}$$

$$a_1 = 0.0032069$$

$$a_2 = -3.4582e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.0011467$$

$$c_2 = 2.0557e-07 \mu\text{Hz}^{-2}$$

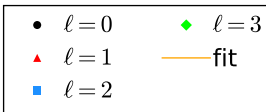
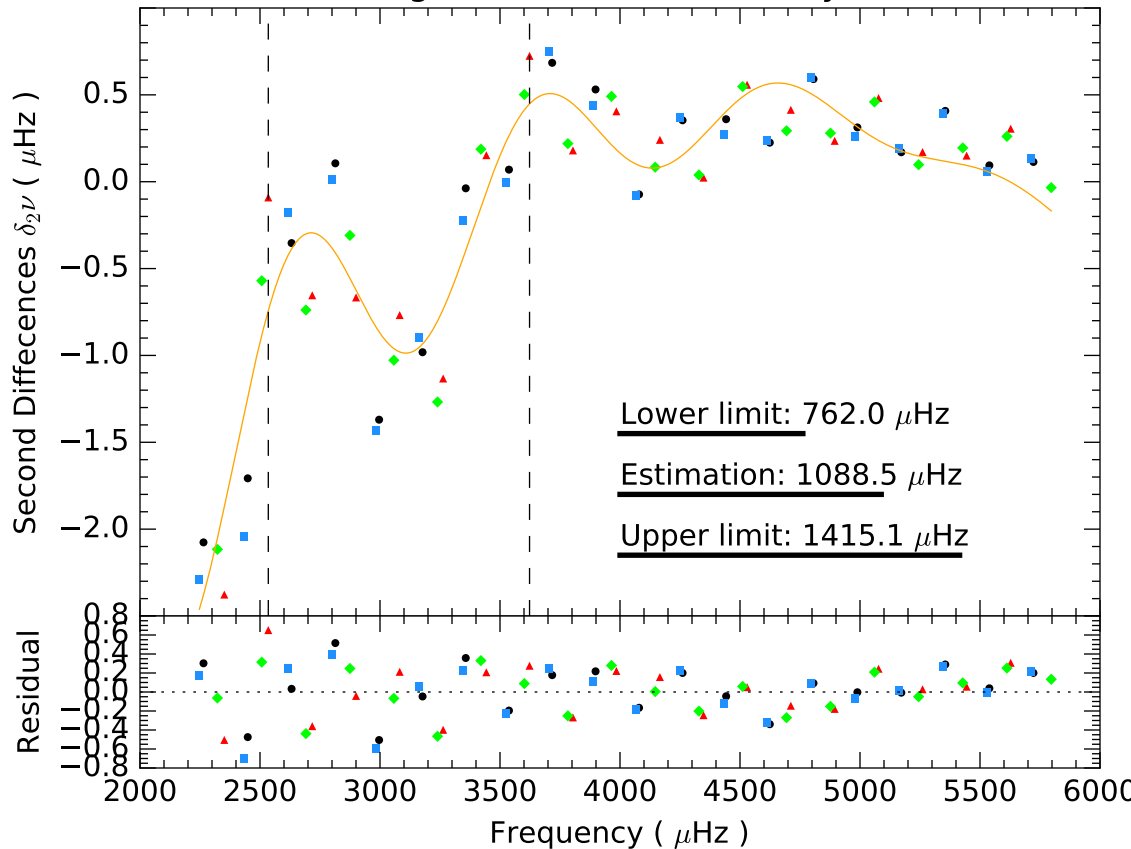
$$\tau_{\text{HeII}} = 508.26 \text{ s}$$

$$\phi_{\text{HeII}} = 0.044033$$

profile37

$$\chi^2_{\nu}(\text{dof} = 72) = 0.49341$$

Age after ZAMS: 7.810 Gyr

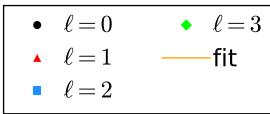
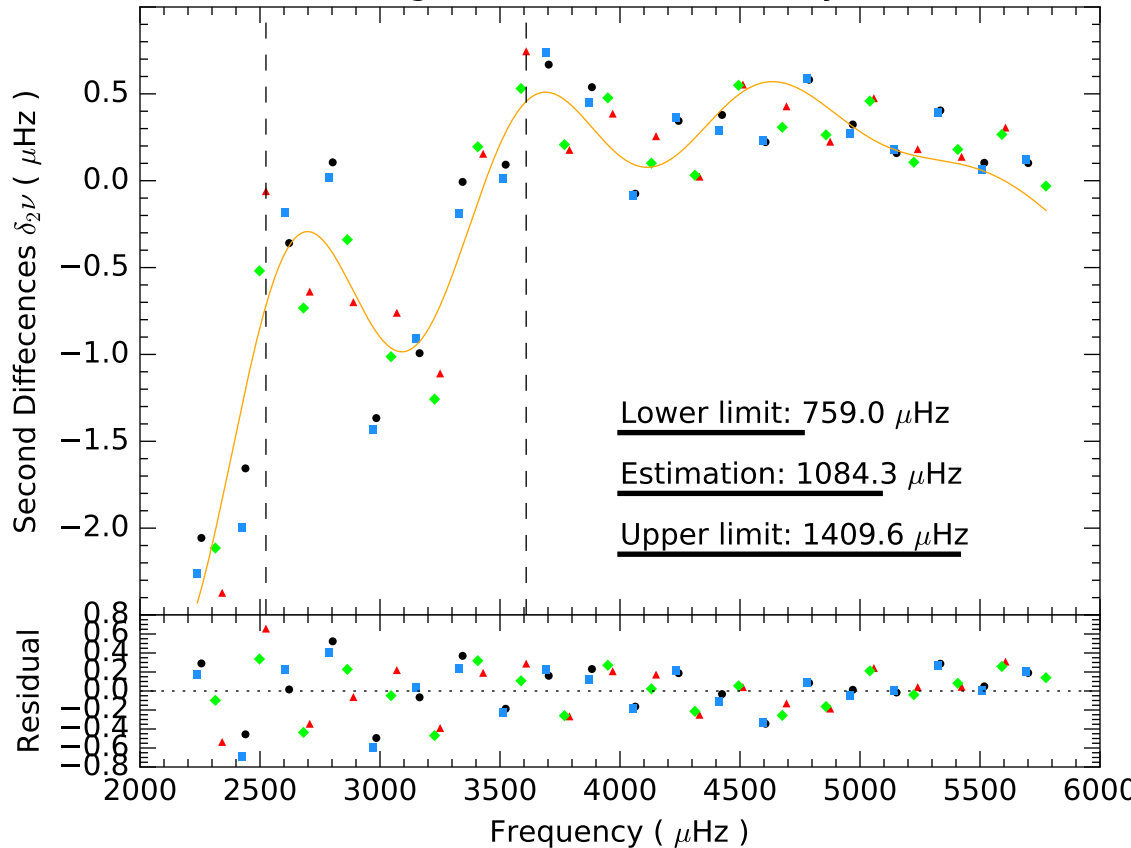


$a_0 = -8.0335 \mu\text{Hz}$
 $a_1 = 0.0037006$
 $a_2 = -4.0531e-07 \mu\text{Hz}^{-2}$
 $c_0 = 0.00073613$
 $c_2 = 1.403e-07 \mu\text{Hz}^{-2}$
 $\tau_{HeII} = 492.42 \text{ s}$
 $\phi_{HeII} = 3.9149$

profile38

$\chi^2_{\nu}(\text{dof} = 72) = 0.078862$

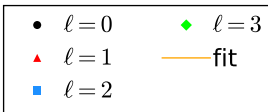
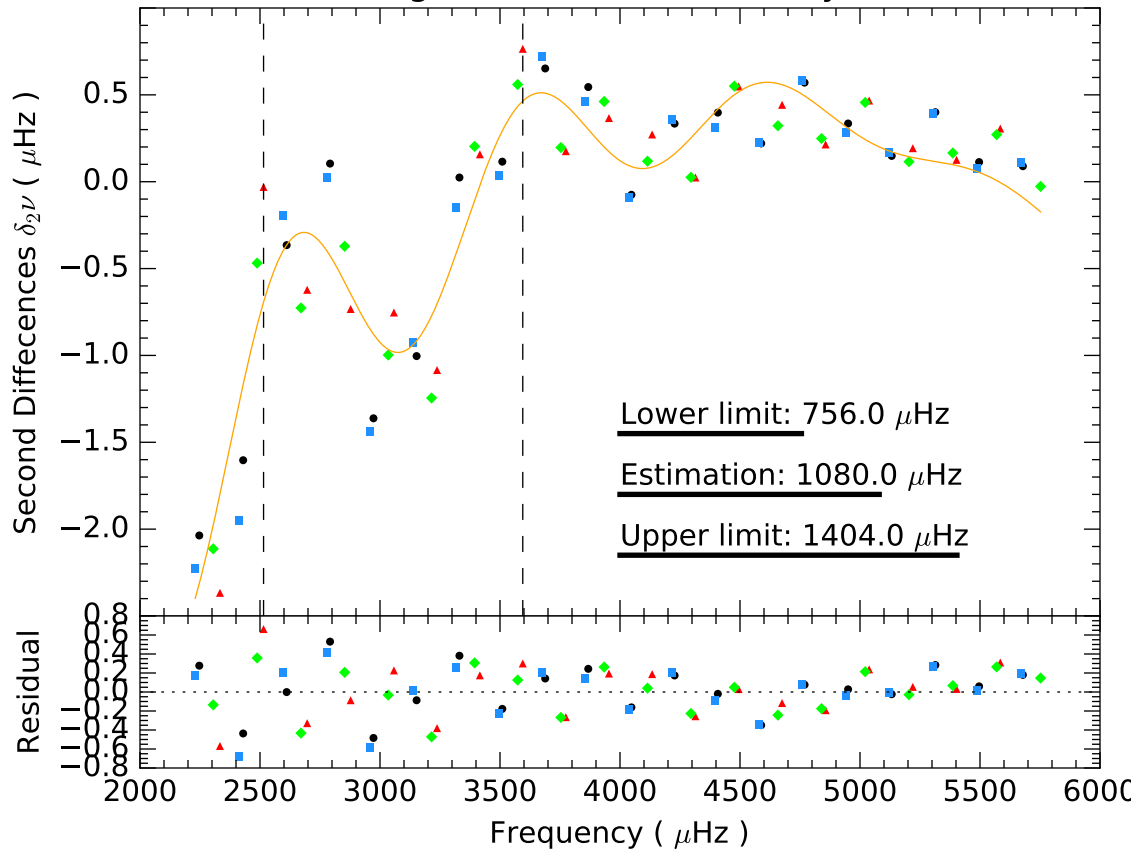
Age after ZAMS: 8.110 Gyr



$a_0 = -7.9977 \mu\text{Hz}$
 $a_1 = 0.0037028$
 $a_2 = -4.0749e-07 \mu\text{Hz}^{-2}$
 $c_0 = 0.00073222$
 $c_2 = 1.407e-07 \mu\text{Hz}^{-2}$
 $\tau_{HeII} = 494.23 \text{ s}$
 $\phi_{HeII} = 3.9472$

profile39
 $\chi^2_{\nu}(\text{dof} = 72) = 0.078682$

Age after ZAMS: 8.410 Gyr

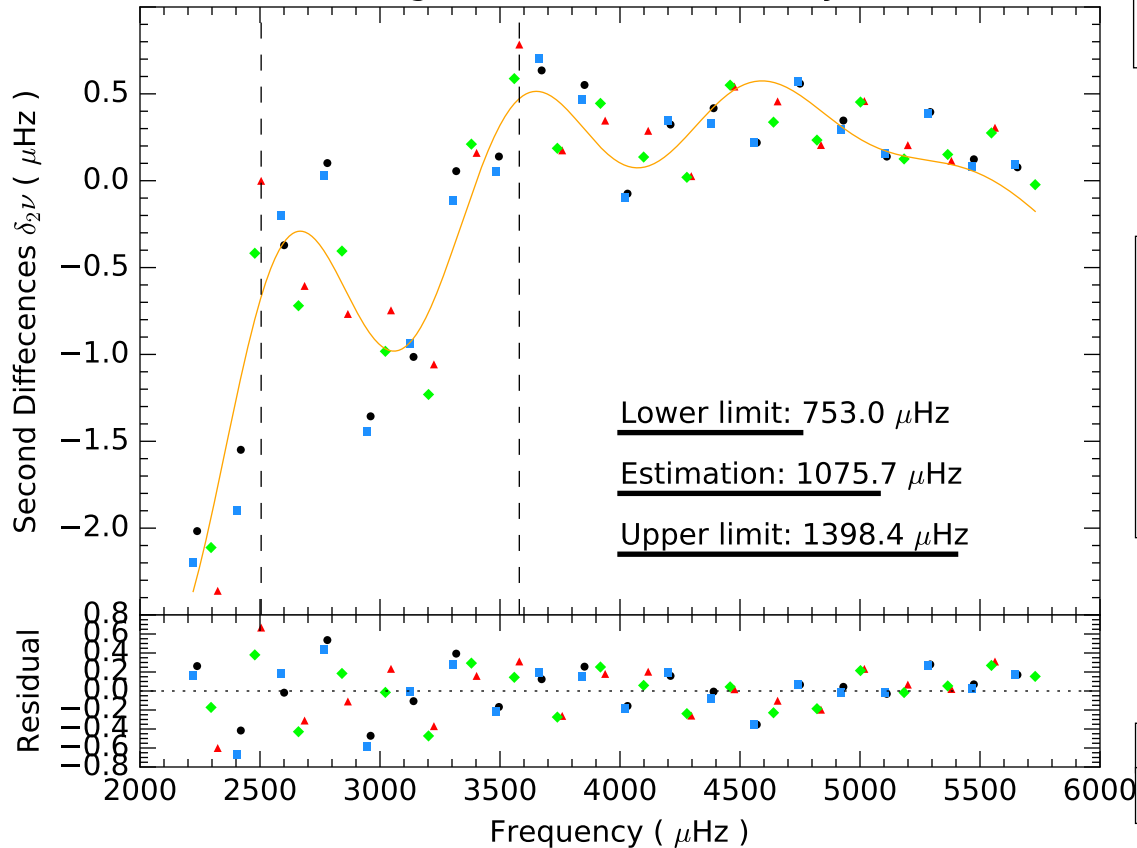


$a_0 = -7.9607 \mu\text{Hz}$
 $a_1 = 0.0037045$
 $a_2 = -4.0967e-07 \mu\text{Hz}^{-2}$
 $c_0 = 0.00072783$
 $c_2 = 1.4106e-07 \mu\text{Hz}^{-2}$
 $\tau_{HeII} = 496.04 \text{ s}$
 $\phi_{HeII} = 3.982$

profile40

$\chi^2_{\nu}(\text{dof} = 72) = 0.078588$

Age after ZAMS: 8.710 Gyr

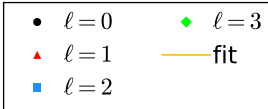
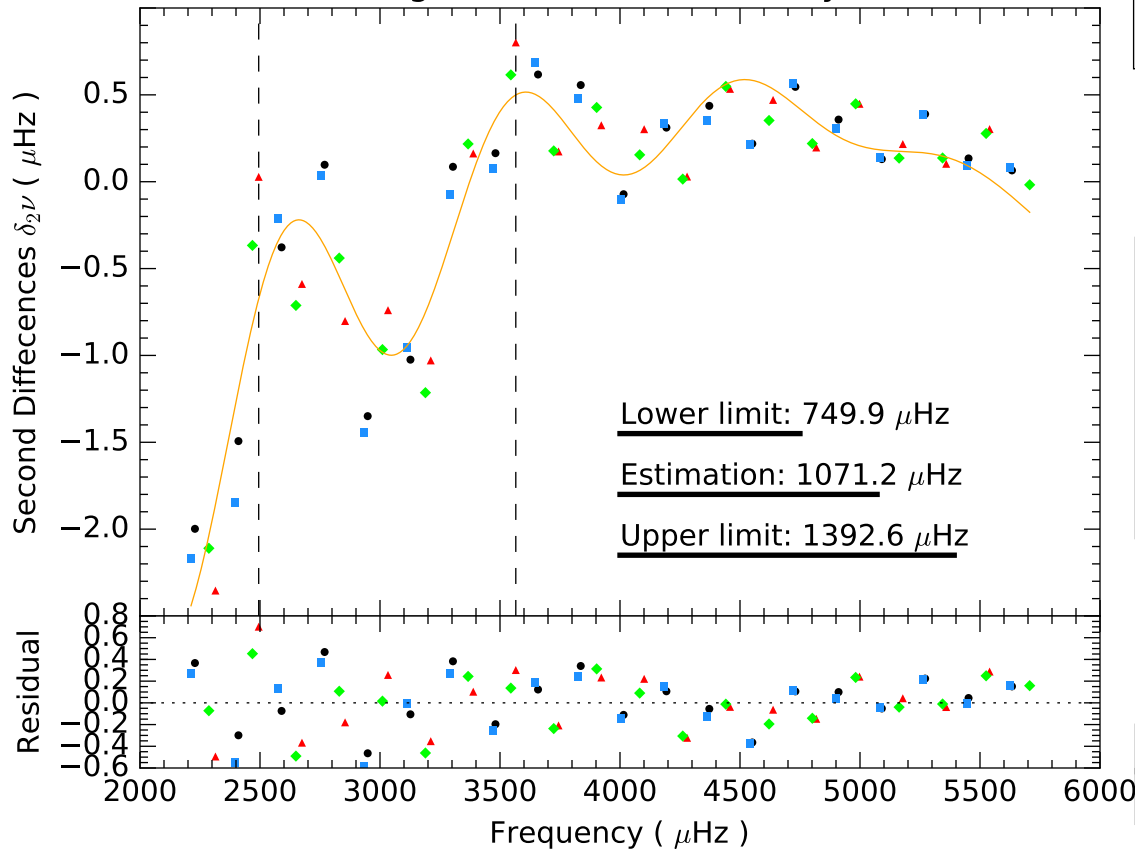


$$\begin{aligned}
 a_0 &= -7.9224 \mu\text{Hz} \\
 a_1 &= 0.003706 \\
 a_2 &= -4.1187e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.00072325 \\
 c_2 &= 1.4138e-07 \mu\text{Hz}^{-2} \\
 \tau_{\text{He II}} &= 497.9 \text{ s} \\
 \phi_{\text{He II}} &= 4.017
 \end{aligned}$$

profile41

$$\chi^2_{\nu}(\text{dof} = 72) = 0.078514$$

Age after ZAMS: 9.010 Gyr

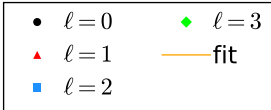
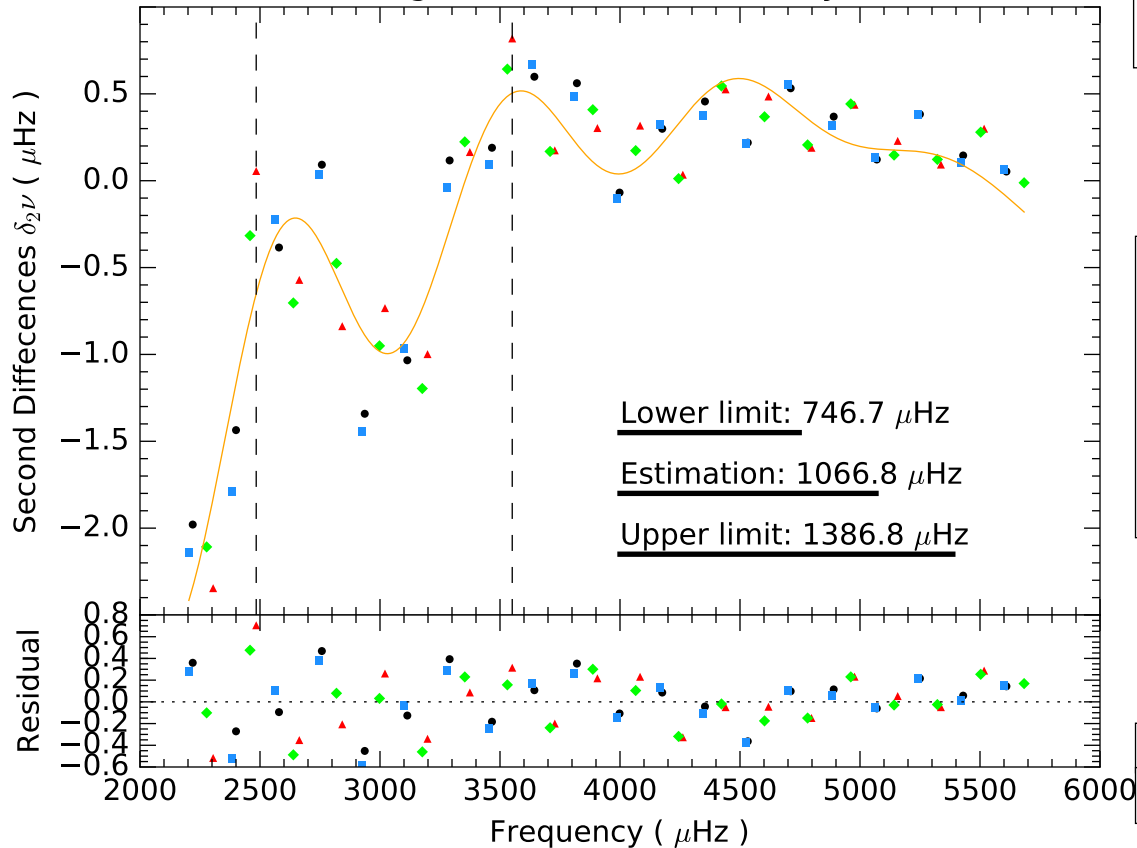


$$\begin{aligned}
 a_0 &= -7.723 \mu\text{Hz} \\
 a_1 &= 0.0036238 \\
 a_2 &= -4.0358e-07 \mu\text{Hz} \\
 c_0 &= 0.00077981 \\
 c_2 &= 1.4566e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 519.77 \text{ s} \\
 \phi_{HeII} &= 3.2805
 \end{aligned}$$

profile42

$$\chi^2_{\nu}(\text{dof} = 72) = 0.07593$$

Age after ZAMS: 9.310 Gyr



$$a_0 = -7.6816 \mu\text{Hz}$$

$$a_1 = 0.0036239$$

$$a_2 = -4.0566e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.00078197$$

$$c_2 = 1.4702e-07 \mu\text{Hz}^{-2}$$

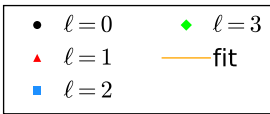
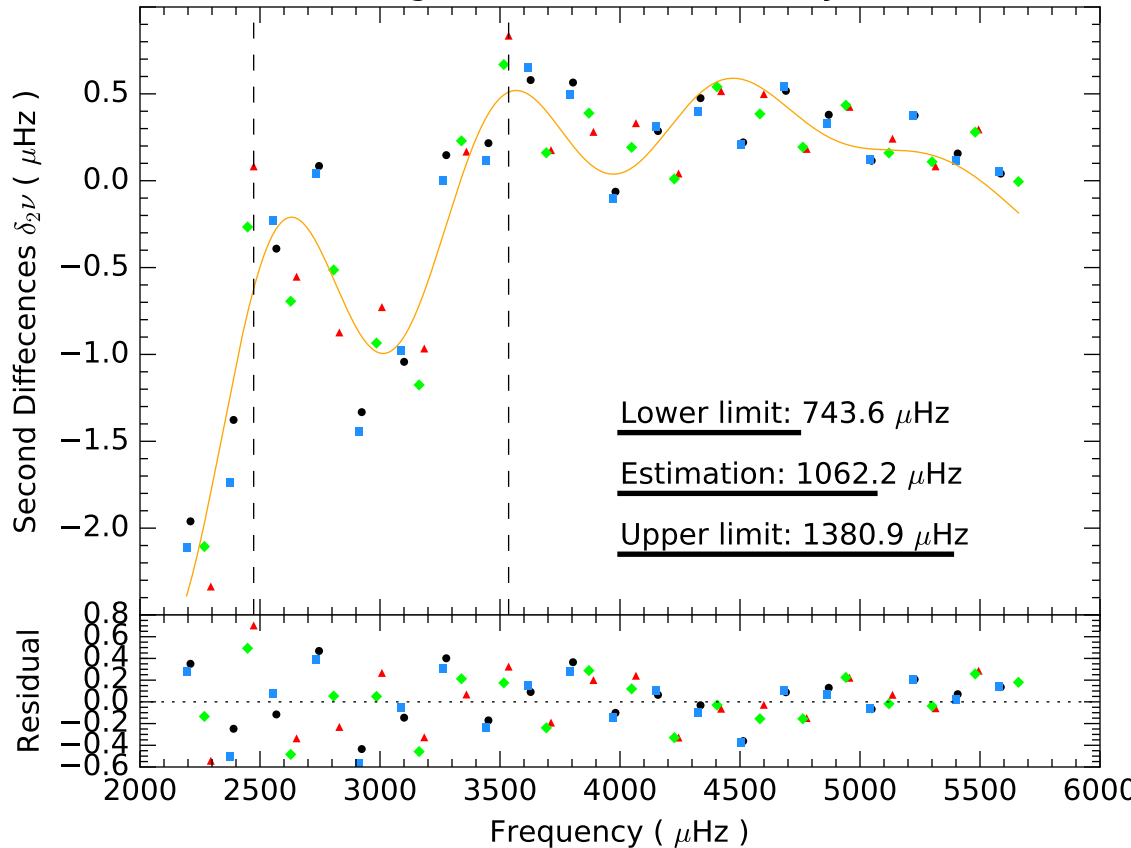
$$\tau_{HeII} = 522.47 \text{ s}$$

$$\phi_{HeII} = 3.2868$$

profile43

$$\chi^2_{\nu}(\text{dof} = 72) = 0.075723$$

Age after ZAMS: 9.610 Gyr



$a_0 = -7.6436 \mu\text{Hz}$

$a_1 = 0.0036261$

$a_2 = -4.0806e-07 \mu\text{Hz}^{-2}$

$c_0 = 0.00078463$

$c_2 = 1.4822e-07 \mu\text{Hz}^{-2}$

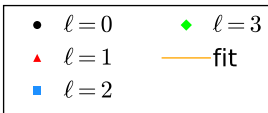
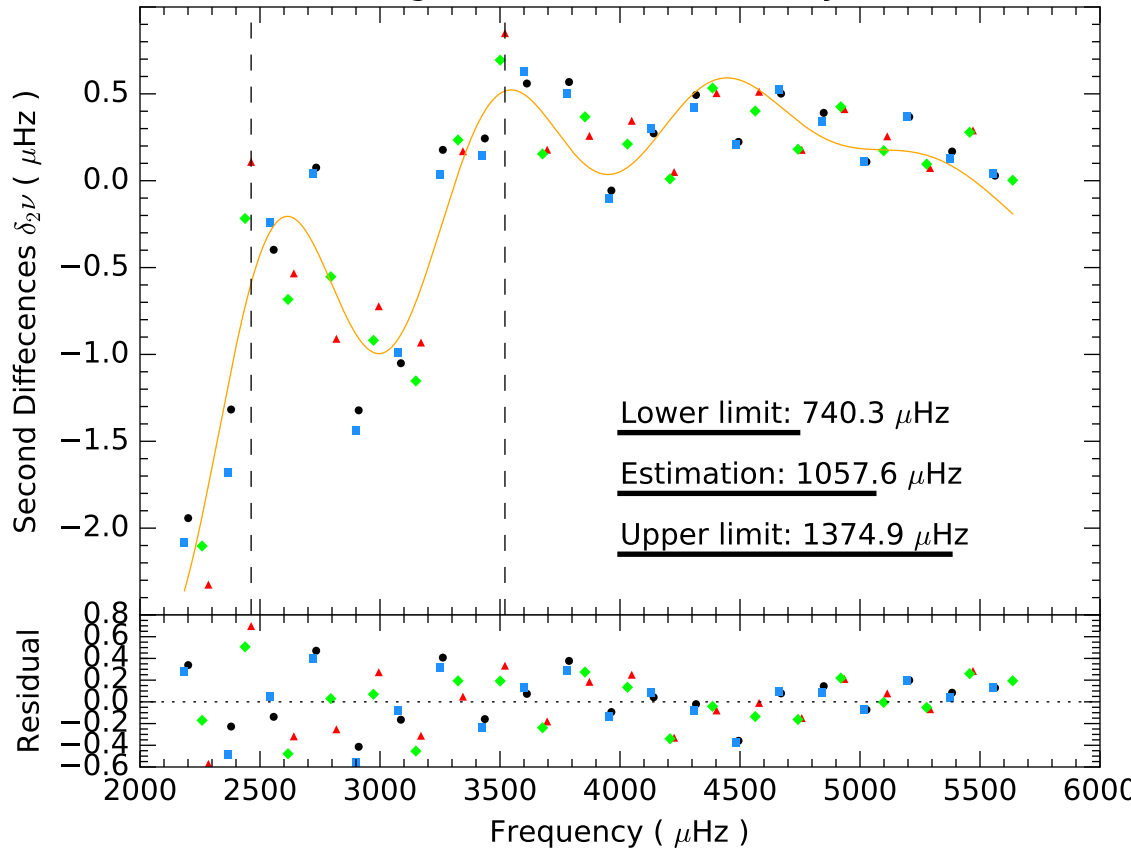
$\tau_{HeII} = 525.0 \text{ s}$

$\phi_{HeII} = 3.3067$

profile44

$\chi^2_{\nu}(\text{dof} = 72) = 0.075505$

Age after ZAMS: 9.910 Gyr



$$a_0 = -7.6093 \mu\text{Hz}$$

$$a_1 = 0.0036307$$

$$a_2 = -4.1081e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.00078789$$

$$c_2 = 1.4935e-07 \mu\text{Hz}^{-2}$$

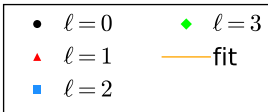
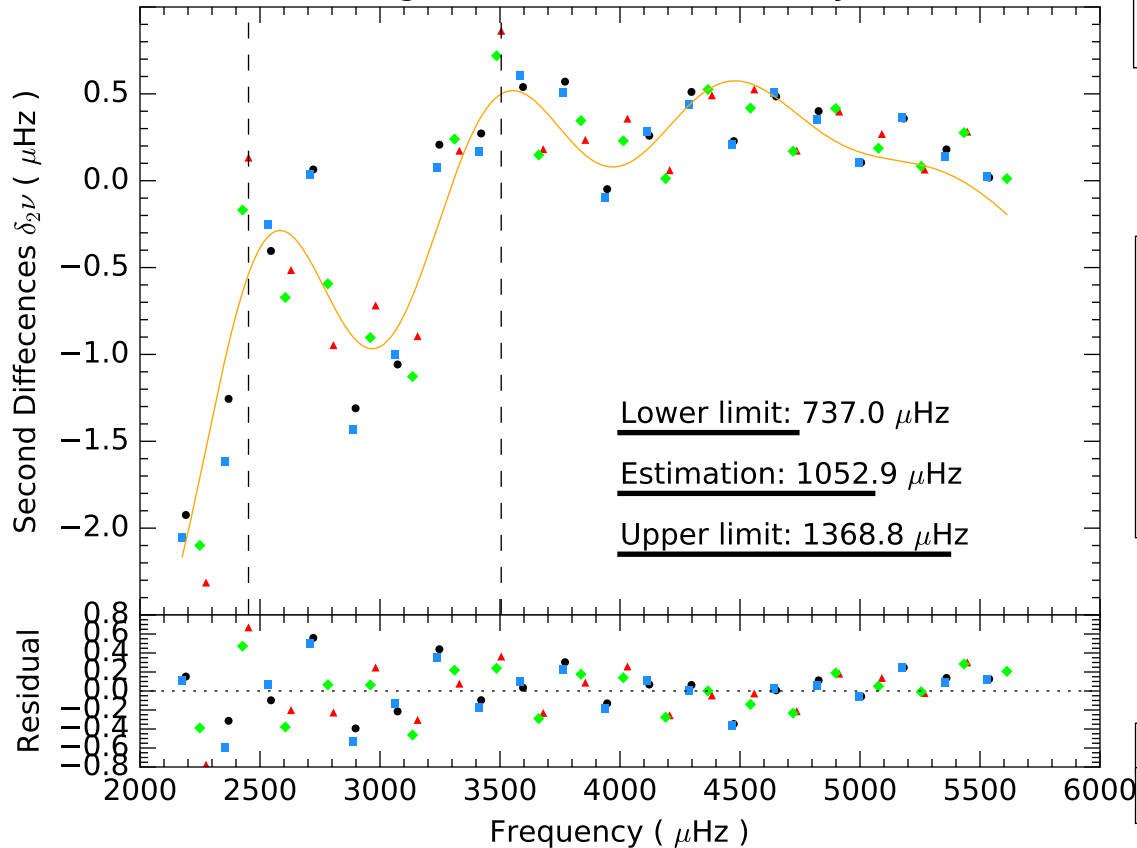
$$\tau_{\text{HeII}} = 527.36 \text{ s}$$

$$\phi_{\text{HeII}} = 3.3393$$

profile45

$$\chi^2_{\nu}(\text{dof} = 72) = 0.075292$$

Age after ZAMS: 10.210 Gyr

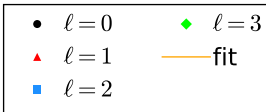
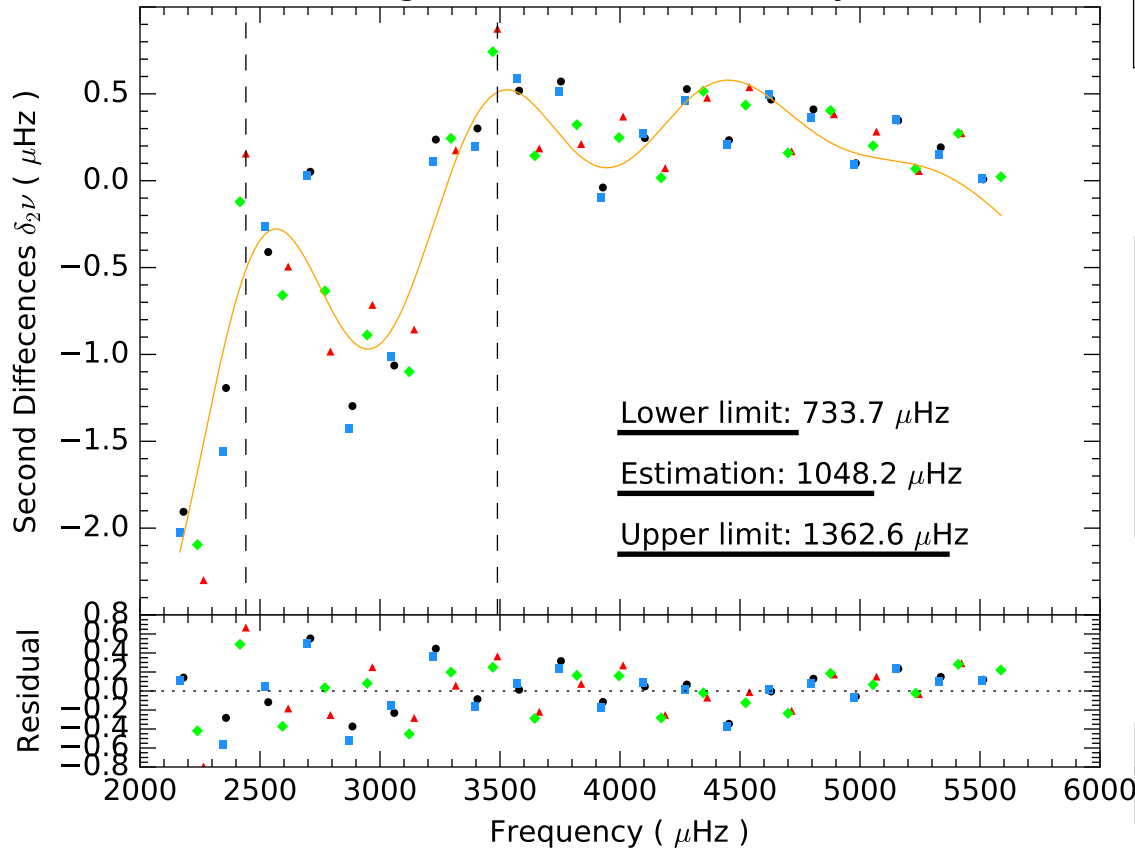


$$\begin{aligned}
 a_0 &= -7.7229 \mu\text{Hz} \\
 a_1 &= 0.0037148 \\
 a_2 &= -4.2389e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.00072253 \\
 c_2 &= 1.4745e-07 \mu\text{Hz}^{-2} \\
 \tau_{\text{He II}} &= 504.93 \text{ s} \\
 \phi_{\text{He II}} &= 4.319
 \end{aligned}$$

profile46

$$\chi^2_{\nu}(\text{dof} = 72) = 0.079445$$

Age after ZAMS: 10.510 Gyr

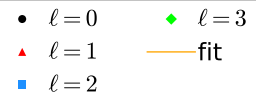
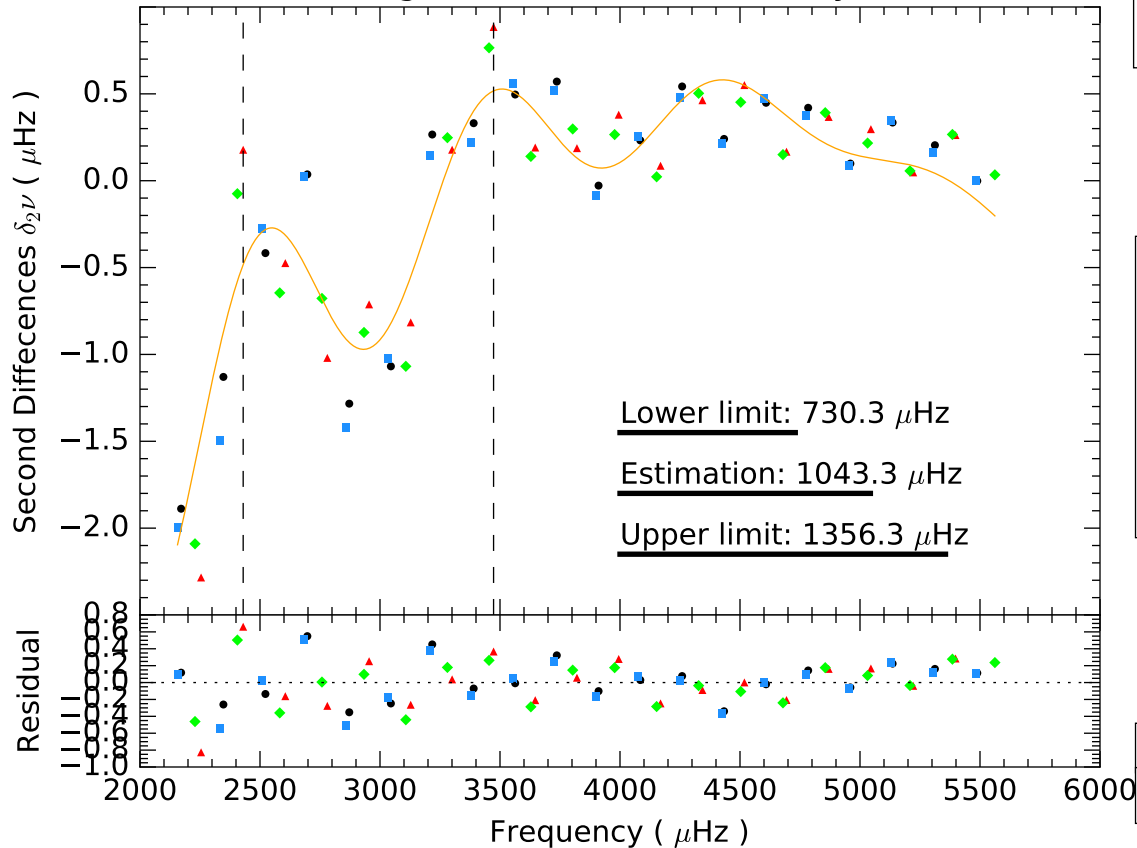


$$\begin{aligned}
 a_0 &= -7.679 \mu\text{Hz} \\
 a_1 &= 0.0037156 \\
 a_2 &= -4.2634e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.00072576 \\
 c_2 &= 1.482e-07 \mu\text{Hz}^{-2} \\
 \tau_{\text{HeII}} &= 508.24 \text{ s} \\
 \phi_{\text{HeII}} &= 4.3141
 \end{aligned}$$

profile47

$$\chi^2_{\nu}(\text{dof} = 72) = 0.079095$$

Age after ZAMS: 10.810 Gyr

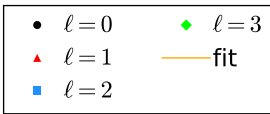
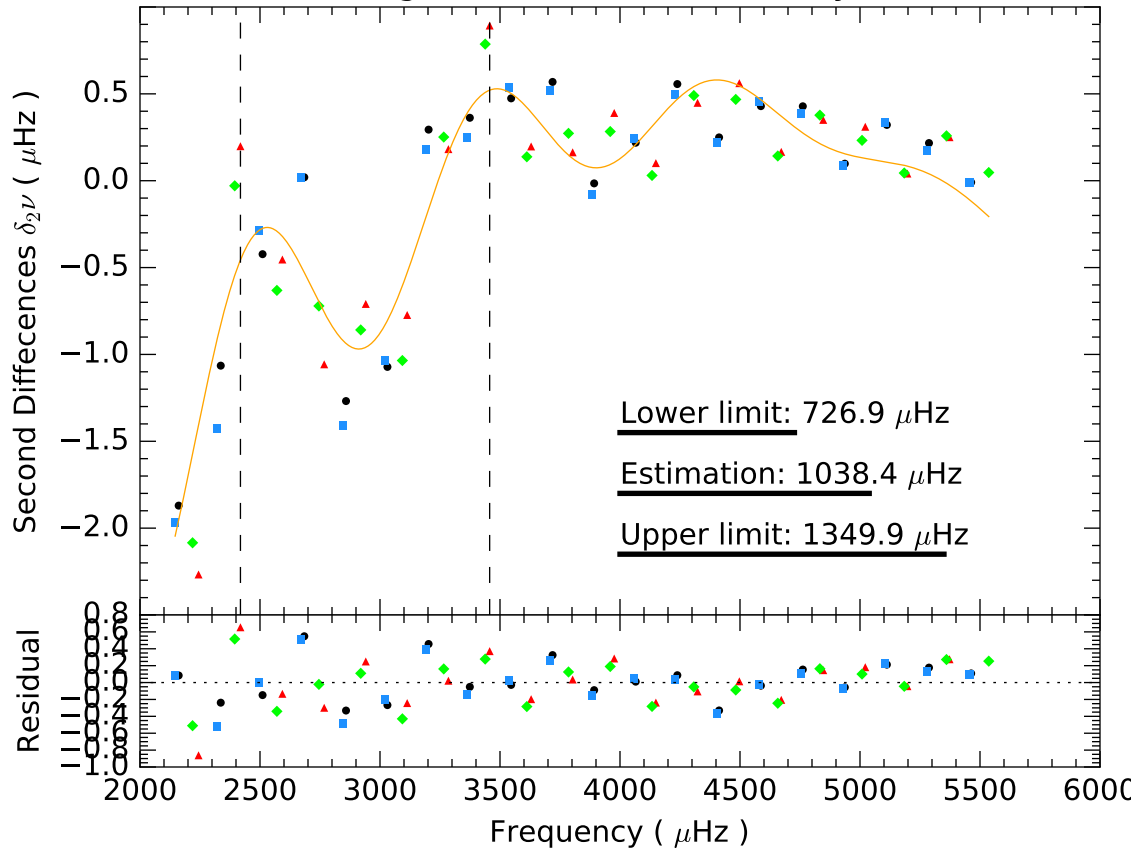


$$\begin{aligned}
 a_0 &= -7.6341 \mu\text{Hz} \\
 a_1 &= 0.0037163 \\
 a_2 &= -4.2888e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.00073026 \\
 c_2 &= 1.4937e-07 \mu\text{Hz}^{-2} \\
 \tau_{\text{HeII}} &= 510.07 \text{ s} \\
 \phi_{\text{HeII}} &= 4.3692
 \end{aligned}$$

profile48

$$\chi^2_{\nu}(\text{dof} = 72) = 0.079252$$

Age after ZAMS: 11.110 Gyr

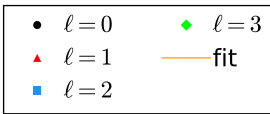
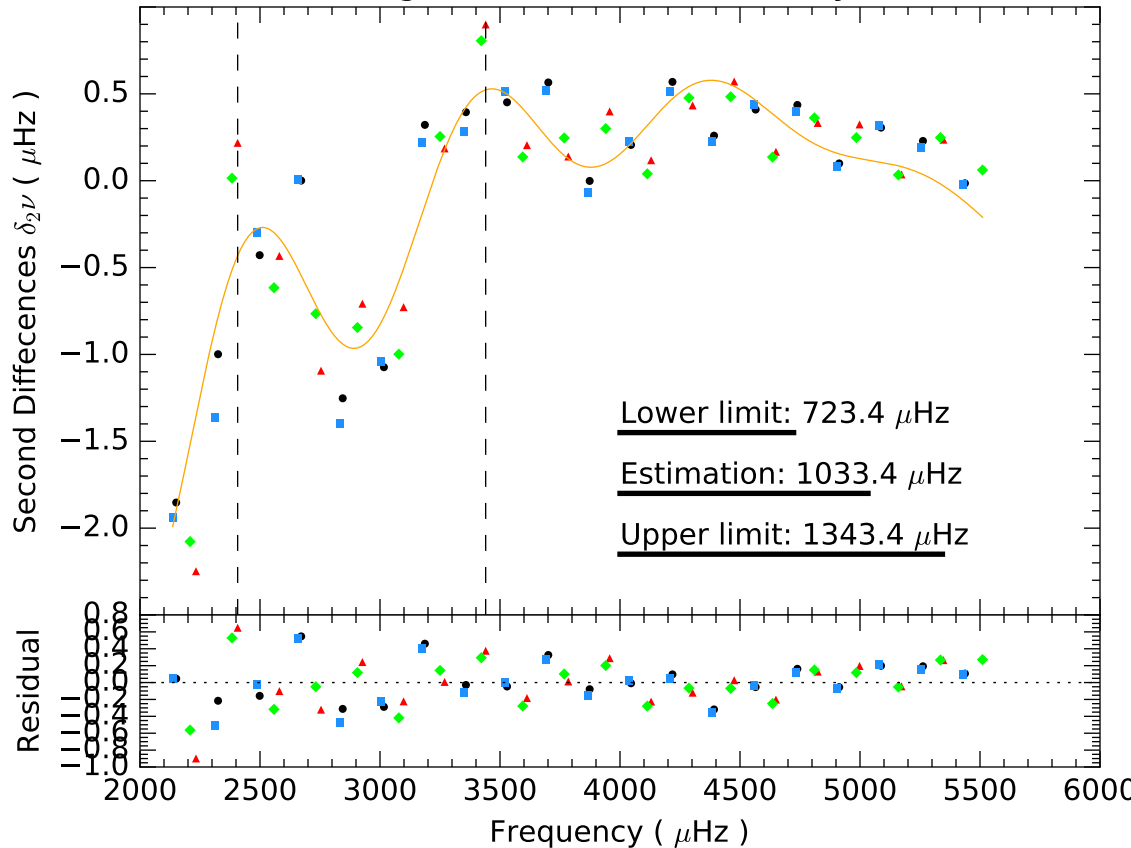


$a_0 = -7.5876 \mu\text{Hz}$
 $a_1 = 0.0037167$
 $a_2 = -4.3145e-07 \mu\text{Hz}^{-2}$
 $c_0 = 0.00073368$
 $c_2 = 1.5111e-07 \mu\text{Hz}^{-2}$
 $\tau_{HeII} = 511.25 \text{ s}$
 $\phi_{HeII} = 4.4522$

profile49

$\chi^2_{\nu}(\text{dof} = 72) = 0.079804$

Age after ZAMS: 11.410 Gyr

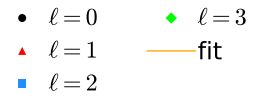
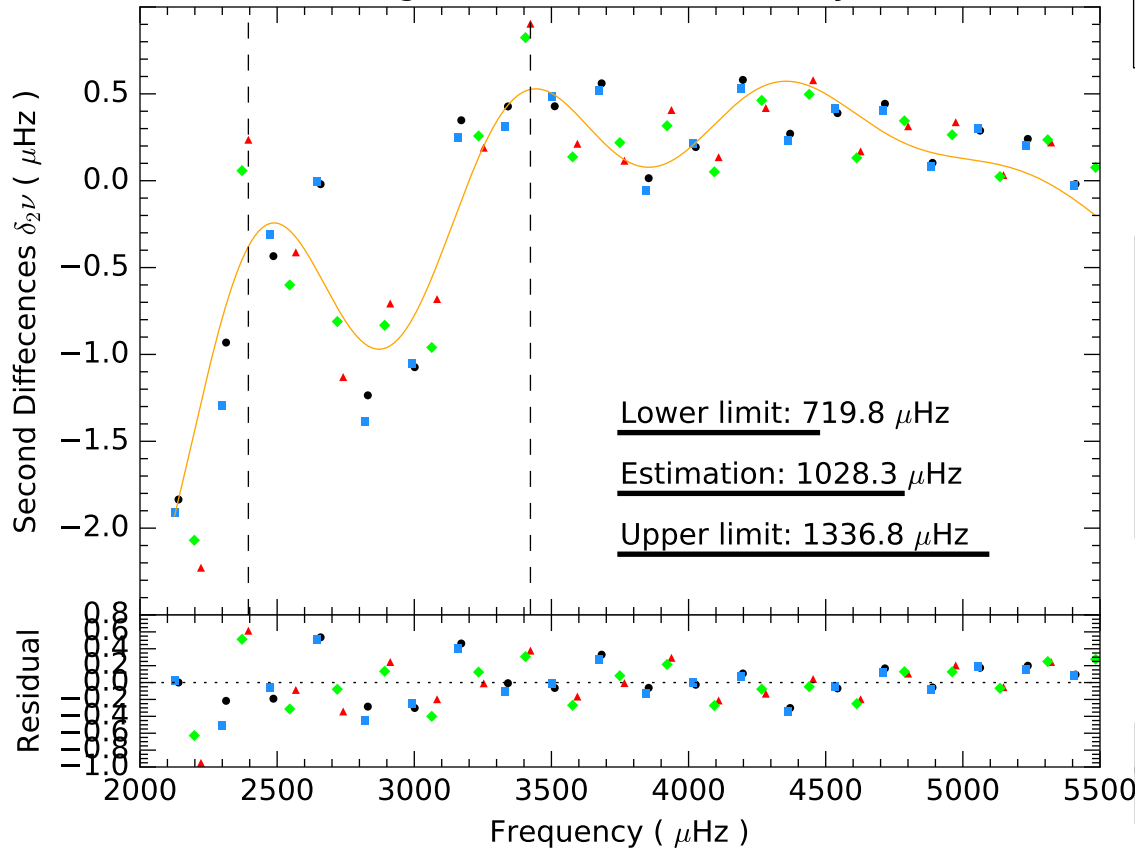


$a_0 = -7.5393 \mu\text{Hz}$
 $a_1 = 0.0037166$
 $a_2 = -4.3404e-07 \mu\text{Hz}^{-2}$
 $c_0 = 0.00073615$
 $c_2 = 1.5319e-07 \mu\text{Hz}^{-2}$
 $\tau_{\text{HeII}} = 512.2 \text{ s}$
 $\phi_{\text{HeII}} = 4.547$

profile50

$\chi^2_{\nu}(\text{dof} = 72) = 0.080635$

Age after ZAMS: 11.710 Gyr

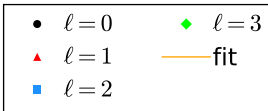
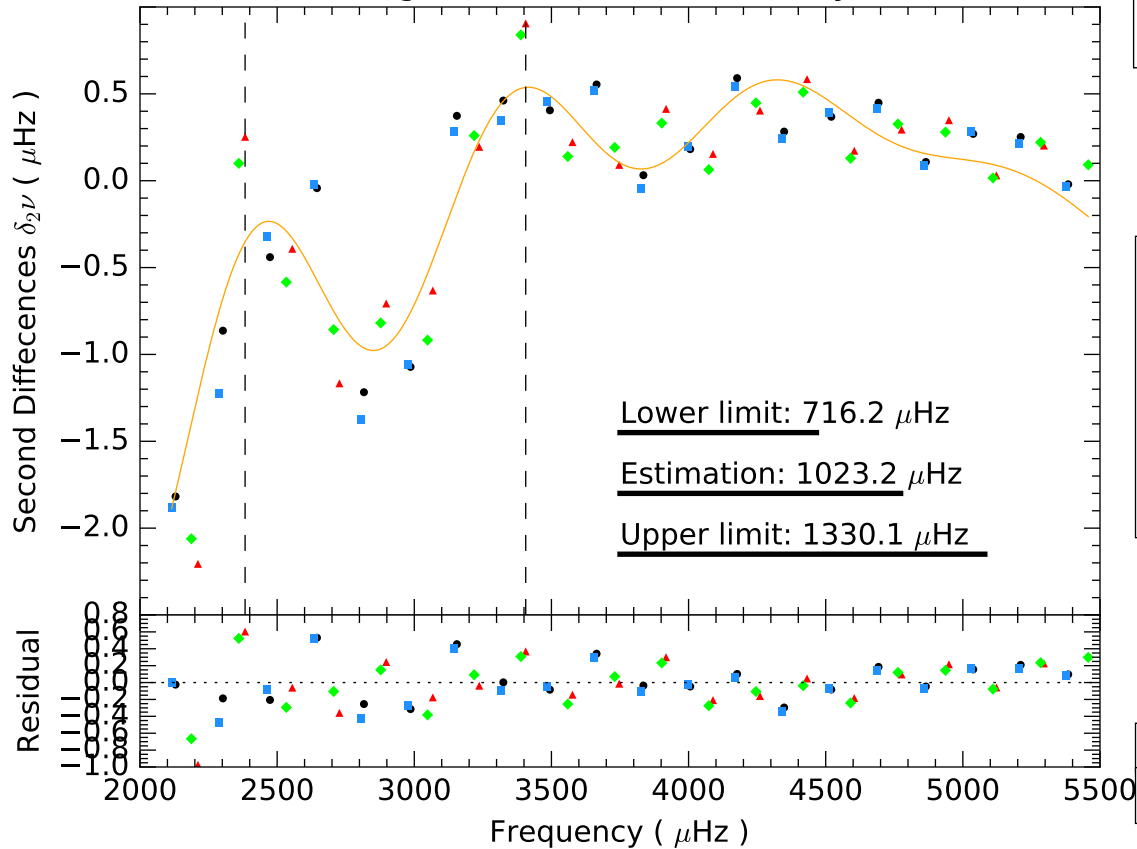


$$\begin{aligned}
 a_0 &= -7.3982 \mu\text{Hz} \\
 a_1 &= 0.0036665 \\
 a_2 &= -4.3012e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.0007736 \\
 c_2 &= 1.5853e-07 \mu\text{Hz}^{-2} \\
 \tau_{\text{HeII}} &= 513.35 \text{ s} \\
 \phi_{\text{HeII}} &= 4.6383
 \end{aligned}$$

profile51

$$\chi^2_{\nu}(\text{dof} = 72) = 0.081107$$

Age after ZAMS: 12.010 Gyr



$$a_0 = -7.3556 \mu\text{Hz}$$

$$a_1 = 0.0036701$$

$$a_2 = -4.3333e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.00077277$$

$$c_2 = 1.5811e-07 \mu\text{Hz}^{-2}$$

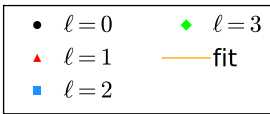
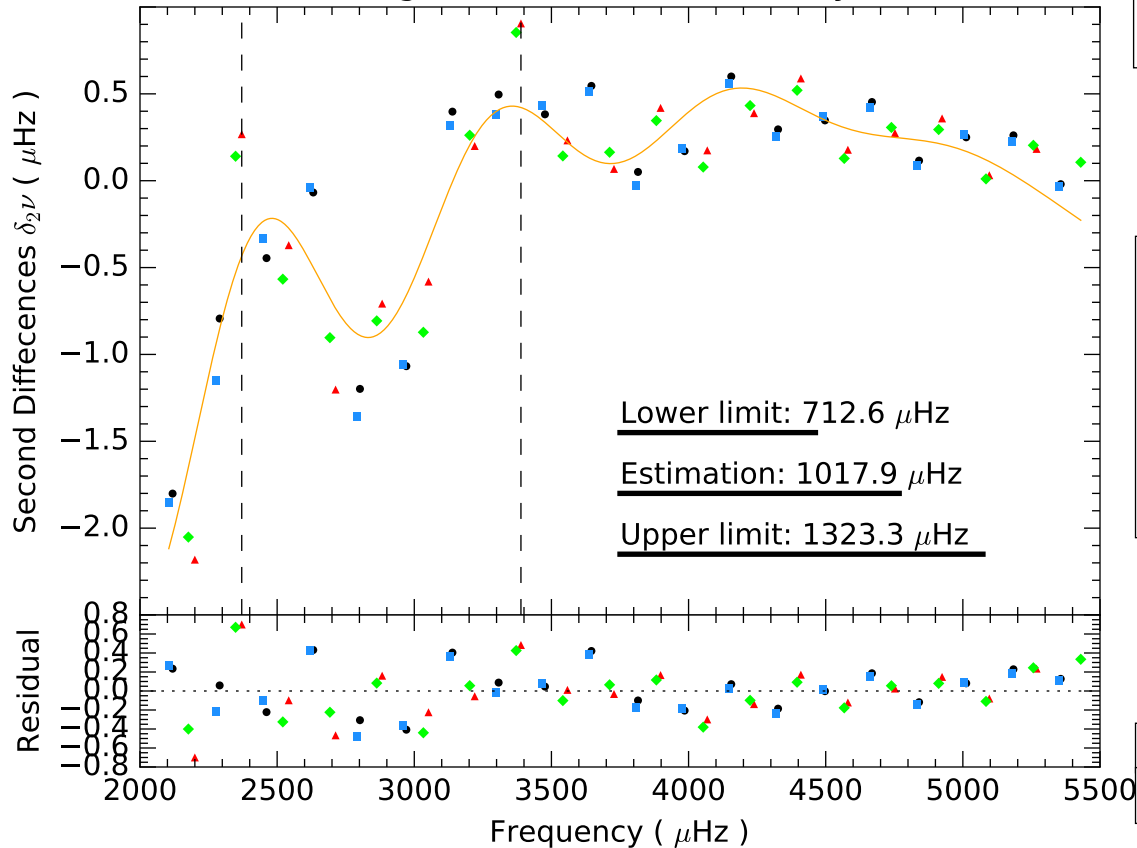
$$\tau_{\text{HeII}} = 517.27 \text{ s}$$

$$\phi_{\text{HeII}} = 4.6387$$

profile52

$$\chi^2_{\nu}(\text{dof} = 72) = 0.081376$$

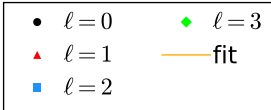
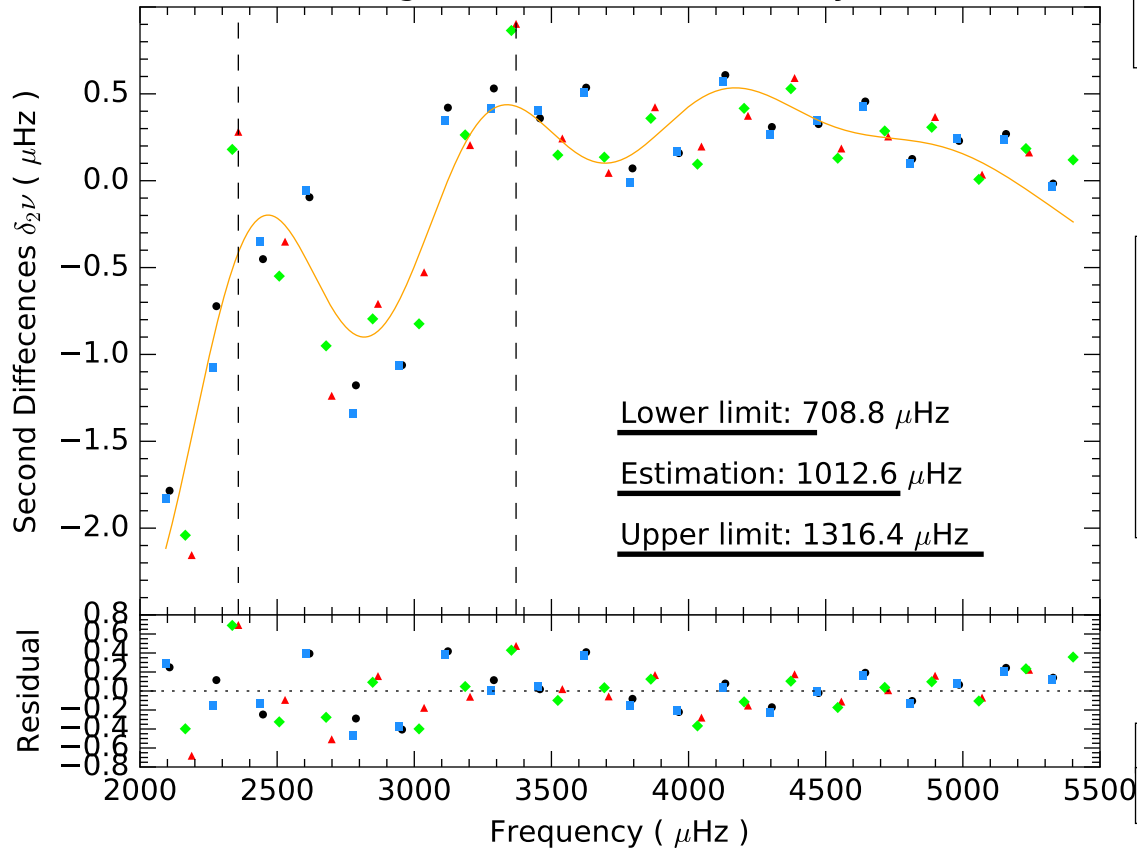
Age after ZAMS: 12.310 Gyr



$a_0 = -7.2154 \mu\text{Hz}$
 $a_1 = 0.0036178$
 $a_2 = -4.2892e-07 \mu\text{Hz}^{-2}$
 $c_0 = 0.000918$
 $c_2 = 1.9605e-07 \mu\text{Hz}^{-2}$
 $\tau_{\text{HeII}} = 564.8 \text{ s}$
 $\phi_{\text{HeII}} = 3.0432$

profile53
 $\chi^2_{\nu}(\text{dof} = 72) = 0.078459$

Age after ZAMS: 12.610 Gyr



$$a_0 = -7.2013 \mu\text{Hz}$$

$$a_1 = 0.0036374$$

$$a_2 = -4.3435e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.00094255$$

$$c_2 = 1.994e-07 \mu\text{Hz}^{-2}$$

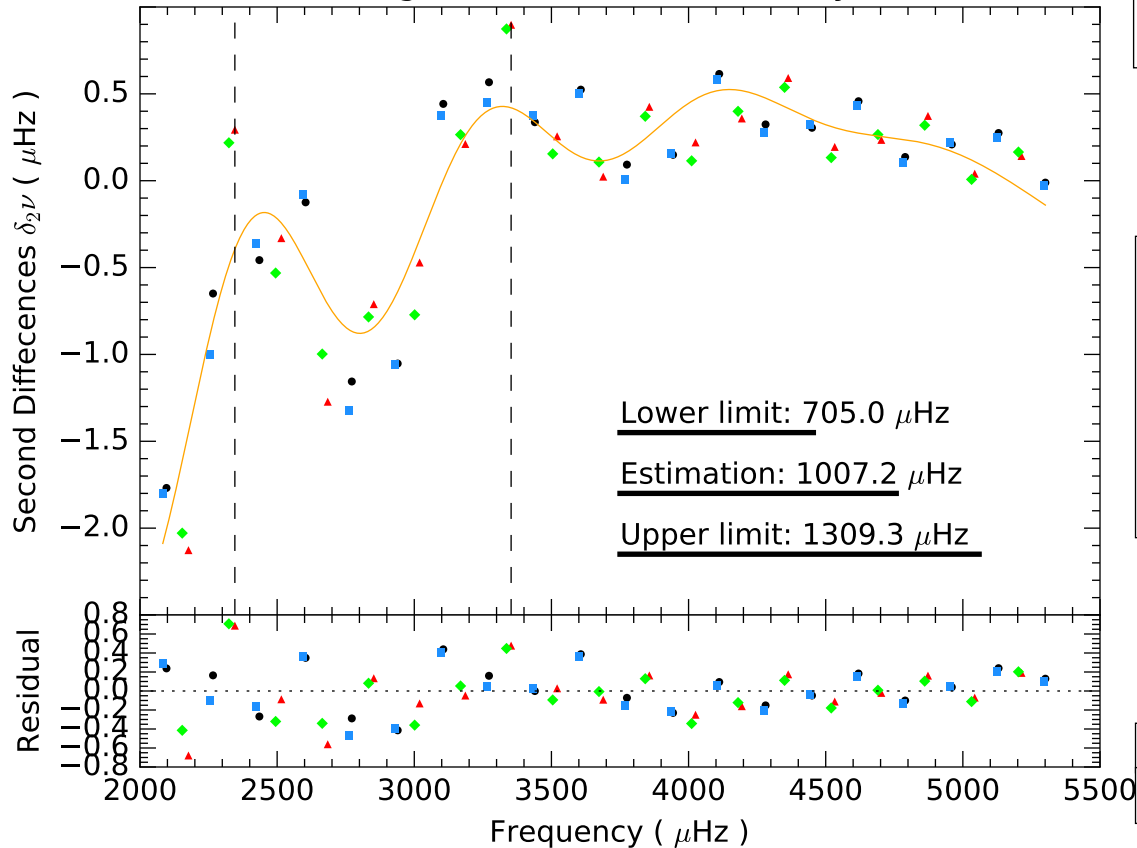
$$\tau_{\text{HeII}} = 568.23 \text{ s}$$

$$\phi_{\text{HeII}} = 3.0298$$

profile54

$$\chi^2_{\nu}(\text{dof} = 72) = 0.078006$$

Age after ZAMS: 12.910 Gyr



$$a_0 = -7.0674 \mu\text{Hz}$$

$$a_1 = 0.003589$$

$$a_2 = -4.3042e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.00097982$$

$$c_2 = 2.0822e-07 \mu\text{Hz}^{-2}$$

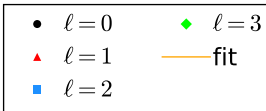
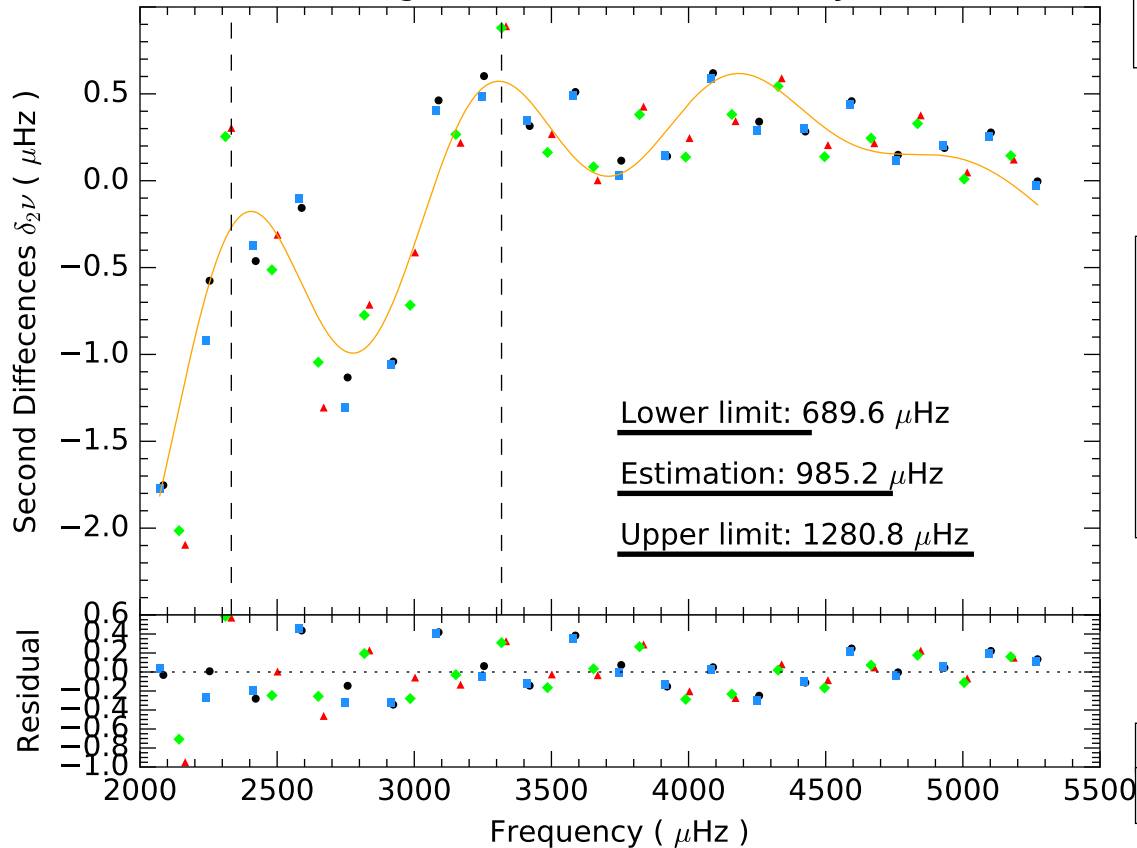
$$\tau_{HeII} = 570.86 \text{ s}$$

$$\phi_{HeII} = 3.0408$$

profile55

$$\chi^2_{\nu}(\text{dof} = 71) = 0.077424$$

Age after ZAMS: 13.210 Gyr



$$a_0 = -7.1715 \mu\text{Hz}$$

$$a_1 = 0.003679$$

$$a_2 = -4.4584e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.00077819$$

$$c_2 = 1.581e-07 \mu\text{Hz}^{-2}$$

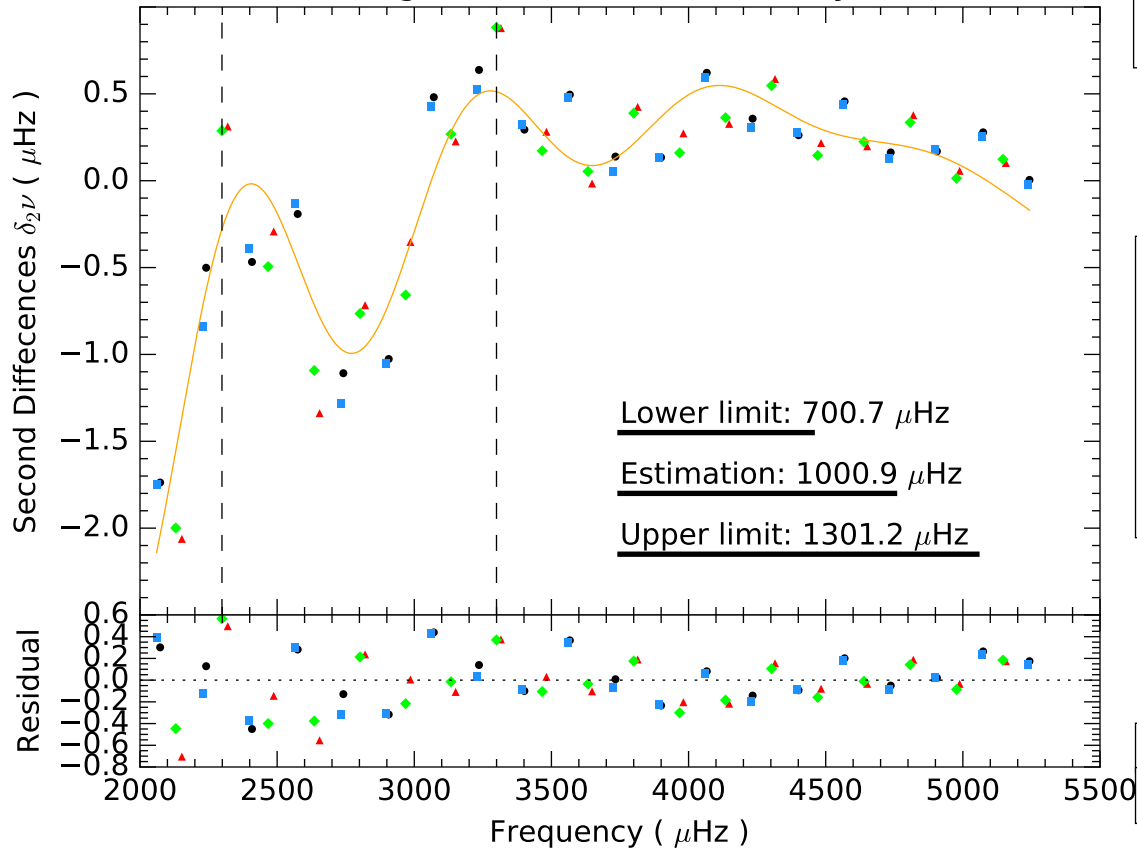
$$\tau_{HeII} = 542.27 \text{ s}$$

$$\phi_{HeII} = 4.2869$$

profile56

$$\chi^2_{\nu}(\text{dof} = 71) = 0.077295$$

Age after ZAMS: 13.510 Gyr

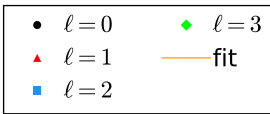
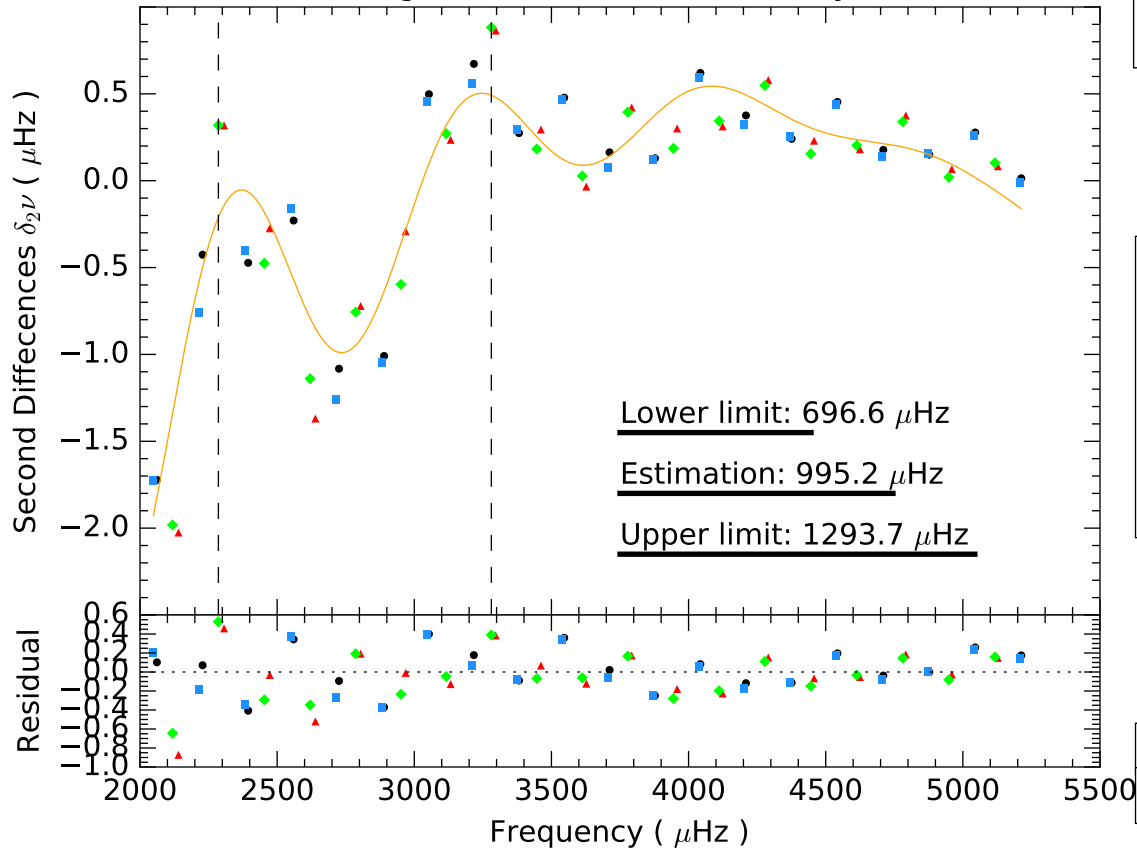


$$\begin{aligned}
 a_0 &= -7.1394 \mu\text{Hz} \\
 a_1 &= 0.0036868 \\
 a_2 &= -4.4965e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.001255 \\
 c_2 &= 2.1569e-07 \mu\text{Hz}^{-2} \\
 \tau_{\text{He II}} &= 567.65 \text{ s} \\
 \phi_{\text{He II}} &= 3.4232
 \end{aligned}$$

profile57

$$\chi^2_{\nu}(\text{dof} = 71) = 0.071109$$

Age after ZAMS: 13.810 Gyr

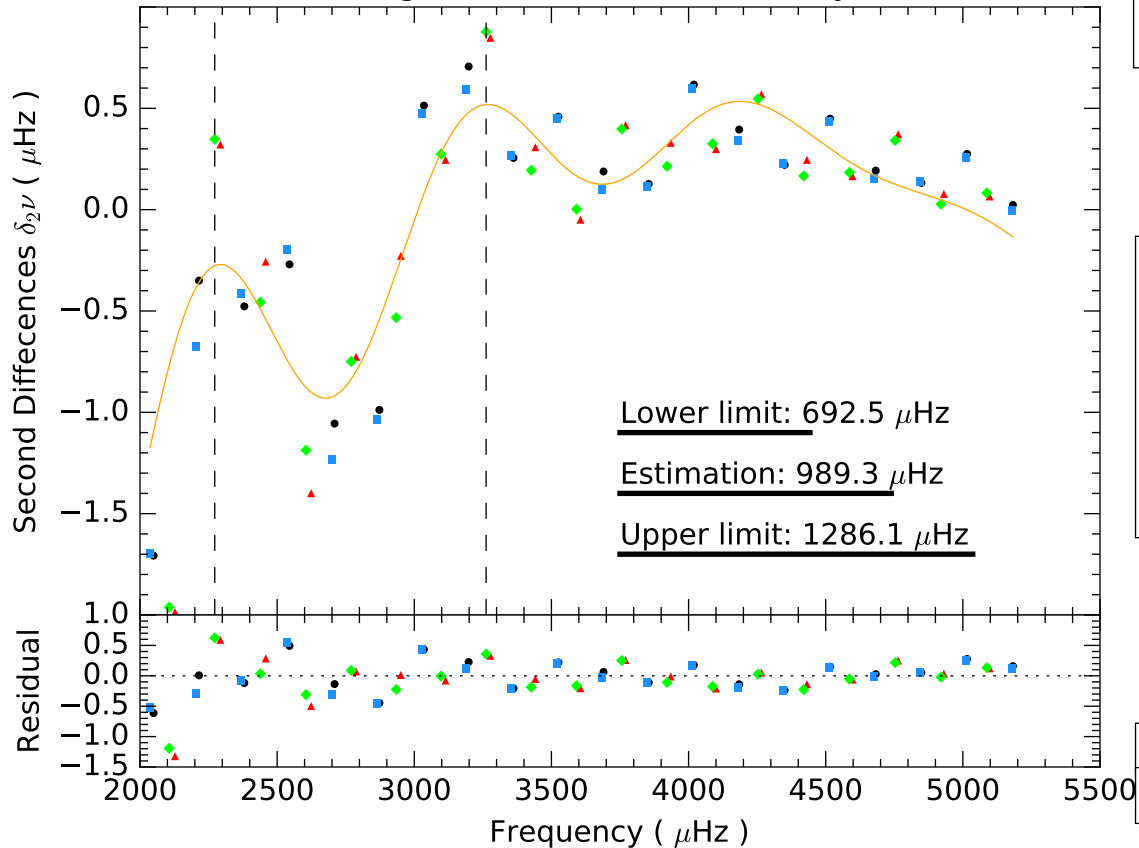


$a_0 = -7.0093 \mu\text{Hz}$
 $a_1 = 0.0036445$
 $a_2 = -4.4716e-07 \mu\text{Hz}^{-2}$
 $c_0 = 0.001204$
 $c_2 = 2.1713e-07 \mu\text{Hz}^{-2}$
 $\tau_{\text{HeII}} = 565.12 \text{ s}$
 $\phi_{\text{HeII}} = 3.7607$

profile58

$\chi^2_{\nu}(\text{dof} = 71) = 0.072002$

Age after ZAMS: 14.110 Gyr

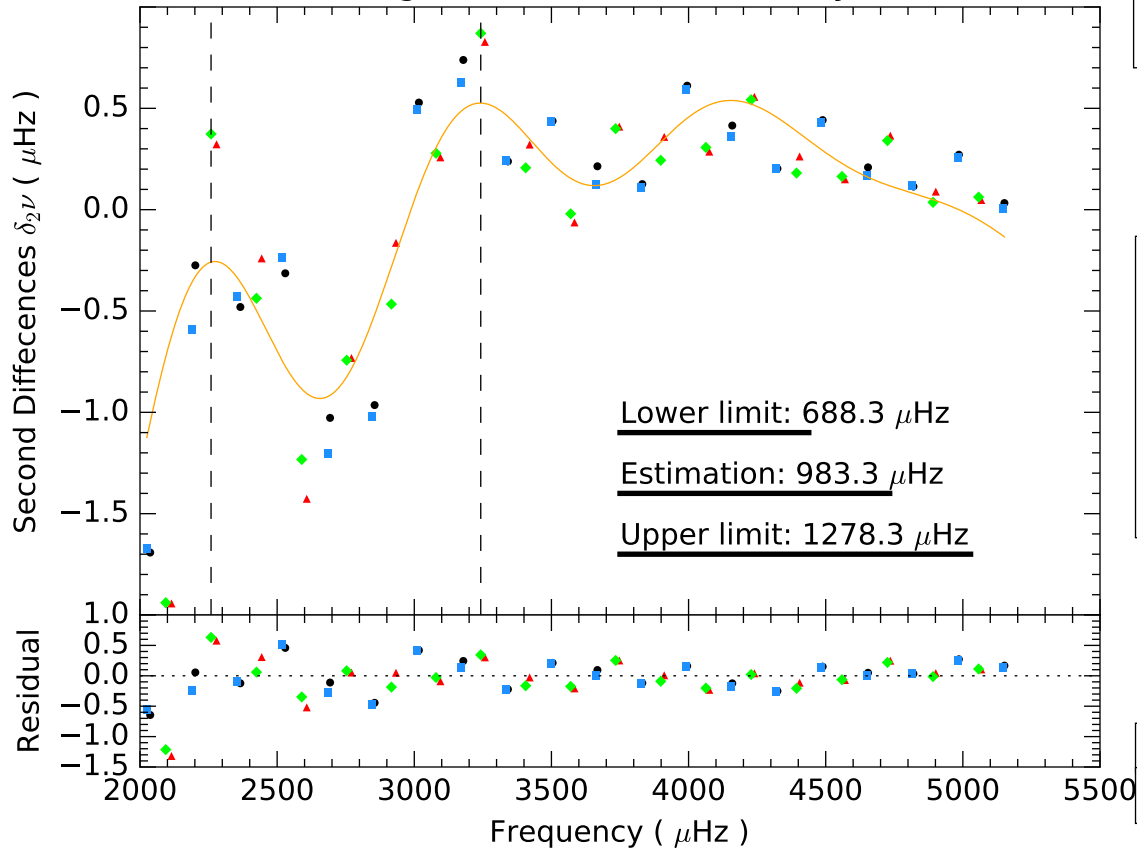


$$\begin{aligned}
 a_0 &= -6.8039 \mu\text{Hz} \\
 a_1 &= 0.0035733 \\
 a_2 &= -4.4227e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.00078131 \\
 c_2 &= 1.8014e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 500.82 \text{ s} \\
 \phi_{HeII} &= 6.2832
 \end{aligned}$$

profile59

$$\chi^2_{\nu}(\text{dof} = 71) = 0.11419$$

Age after ZAMS: 14.410 Gyr

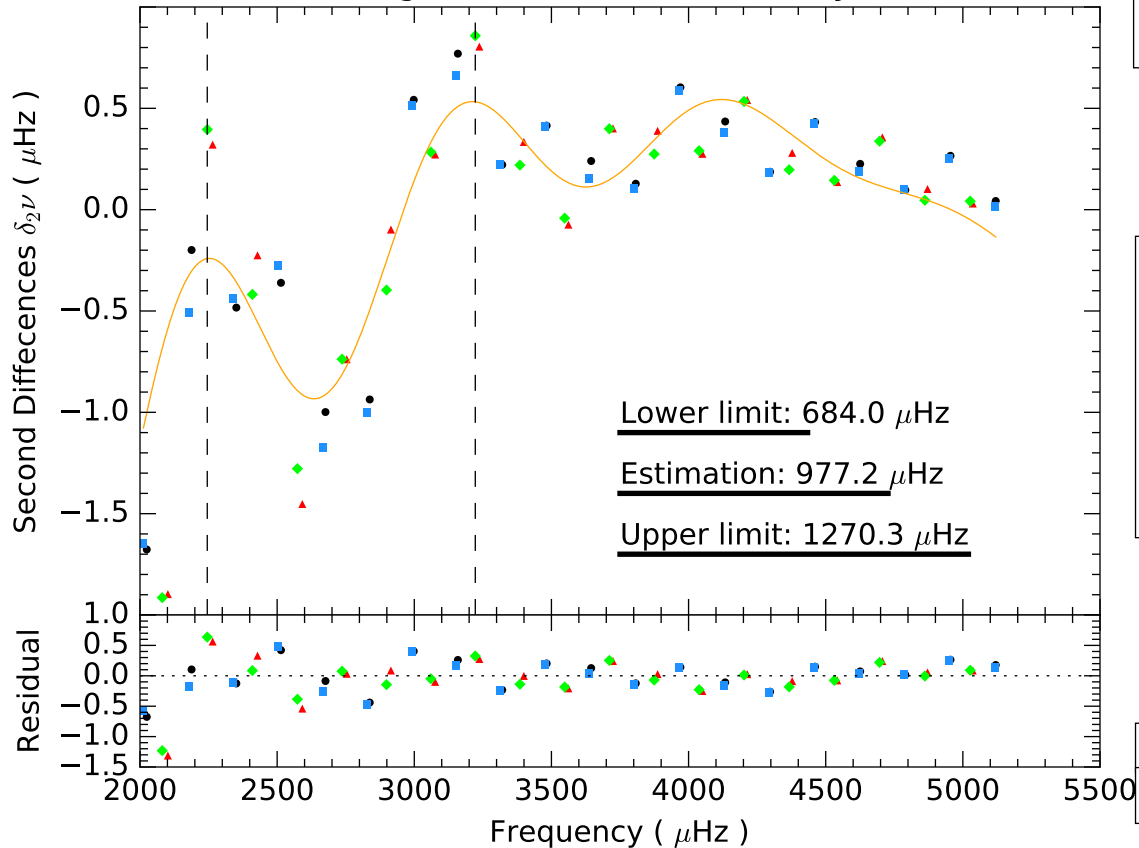


$$\begin{aligned}
 a_0 &= -6.7303 \mu\text{Hz} \\
 a_1 &= 0.0035629 \\
 a_2 &= -4.4427e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.00078602 \\
 c_2 &= 1.8117e-07 \mu\text{Hz}^{-2} \\
 \tau_{\text{HeII}} &= 505.08 \text{ s} \\
 \phi_{\text{HeII}} &= 6.2832
 \end{aligned}$$

profile60

$$\chi^2_{\nu}(\text{dof} = 71) = 0.11437$$

Age after ZAMS: 14.710 Gyr

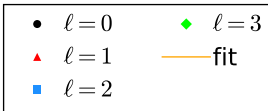
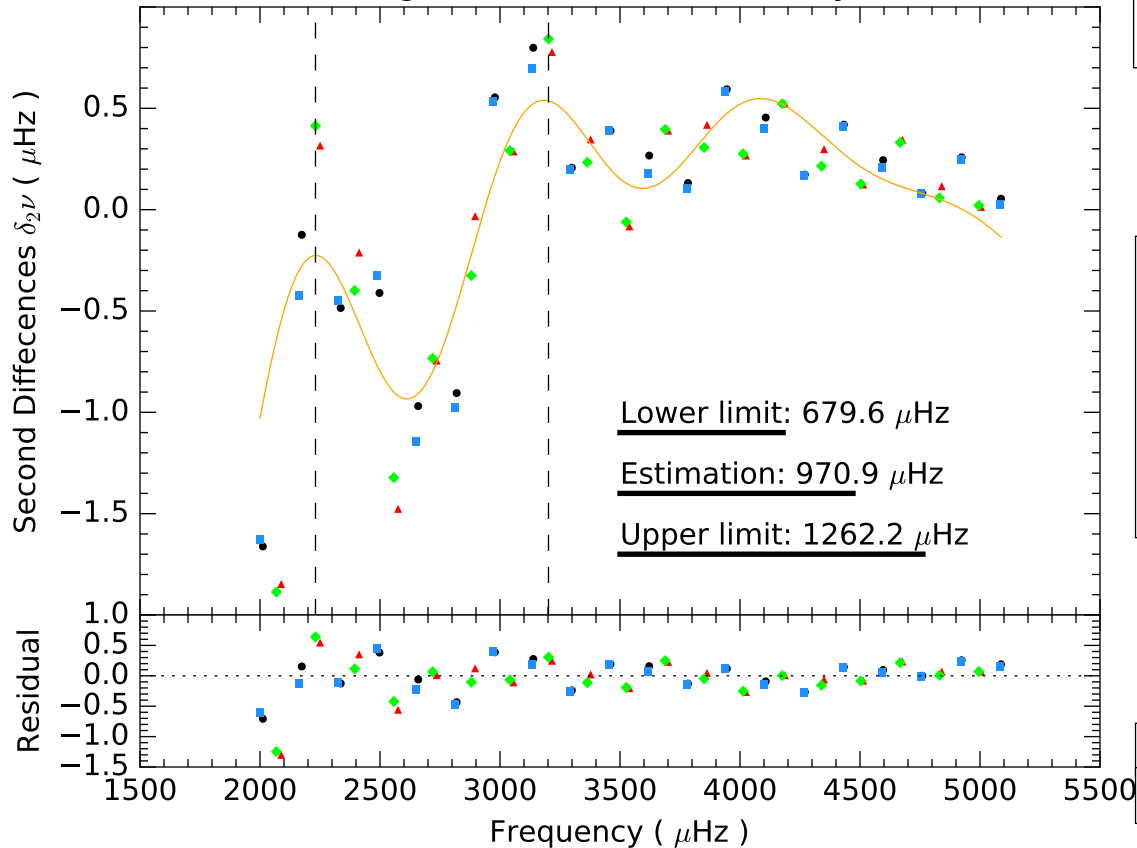


$a_0 = -6.6568 \mu\text{Hz}$
 $a_1 = 0.003553$
 $a_2 = -4.4641e-07 \mu\text{Hz}^{-1}$
 $c_0 = 0.00079087$
 $c_2 = 1.8231e-07 \mu\text{Hz}^{-2}$
 $\tau_{\text{HeII}} = 509.46 \text{ s}$
 $\phi_{\text{HeII}} = 6.2832$

profile61

$\chi^2_{\nu}(\text{dof} = 71) = 0.11452$

Age after ZAMS: 15.010 Gyr



$$a_0 = -6.5843 \mu\text{Hz}$$

$$a_1 = 0.003544$$

$$a_2 = -4.4878e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.00079589$$

$$c_2 = 1.8363e-07 \mu\text{Hz}^{-2}$$

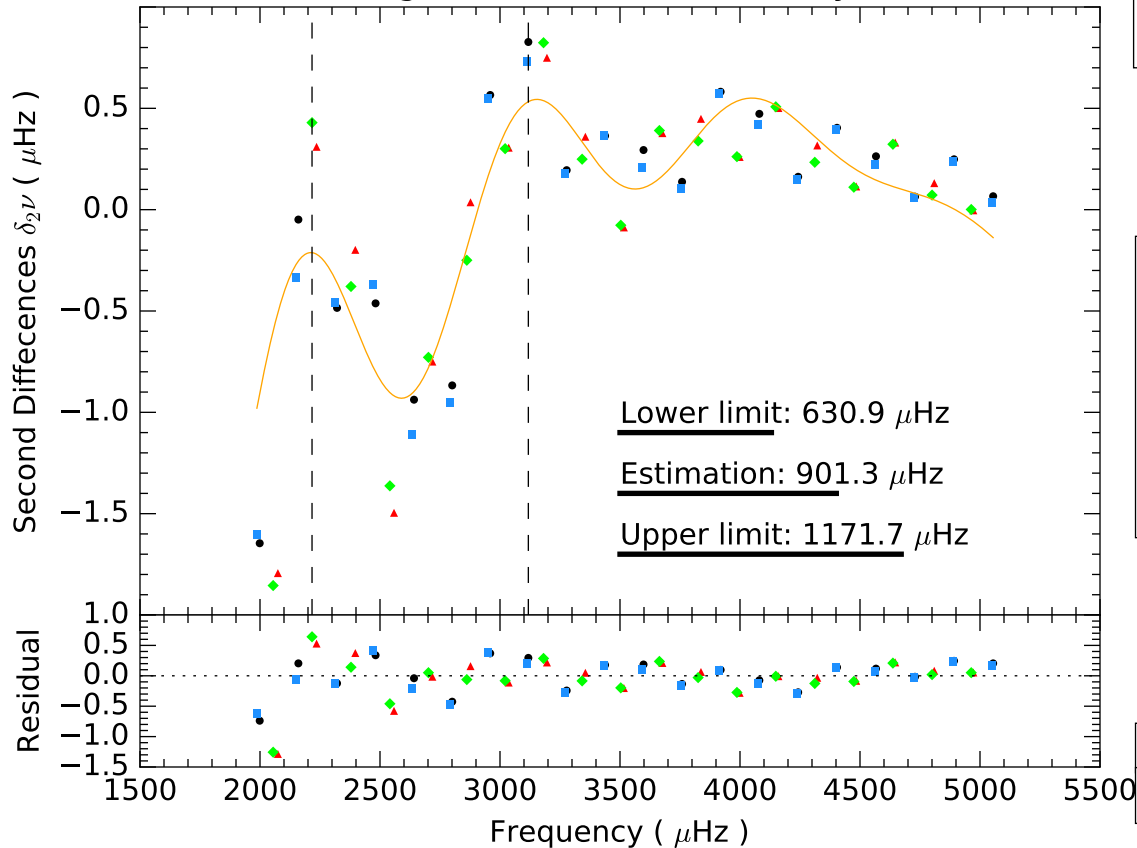
$$\tau_{\text{HeII}} = 514.0 \text{ s}$$

$$\phi_{\text{HeII}} = 6.2832$$

profile62

$$\chi^2_{\nu}(\text{dof} = 71) = 0.1147$$

Age after ZAMS: 15.310 Gyr

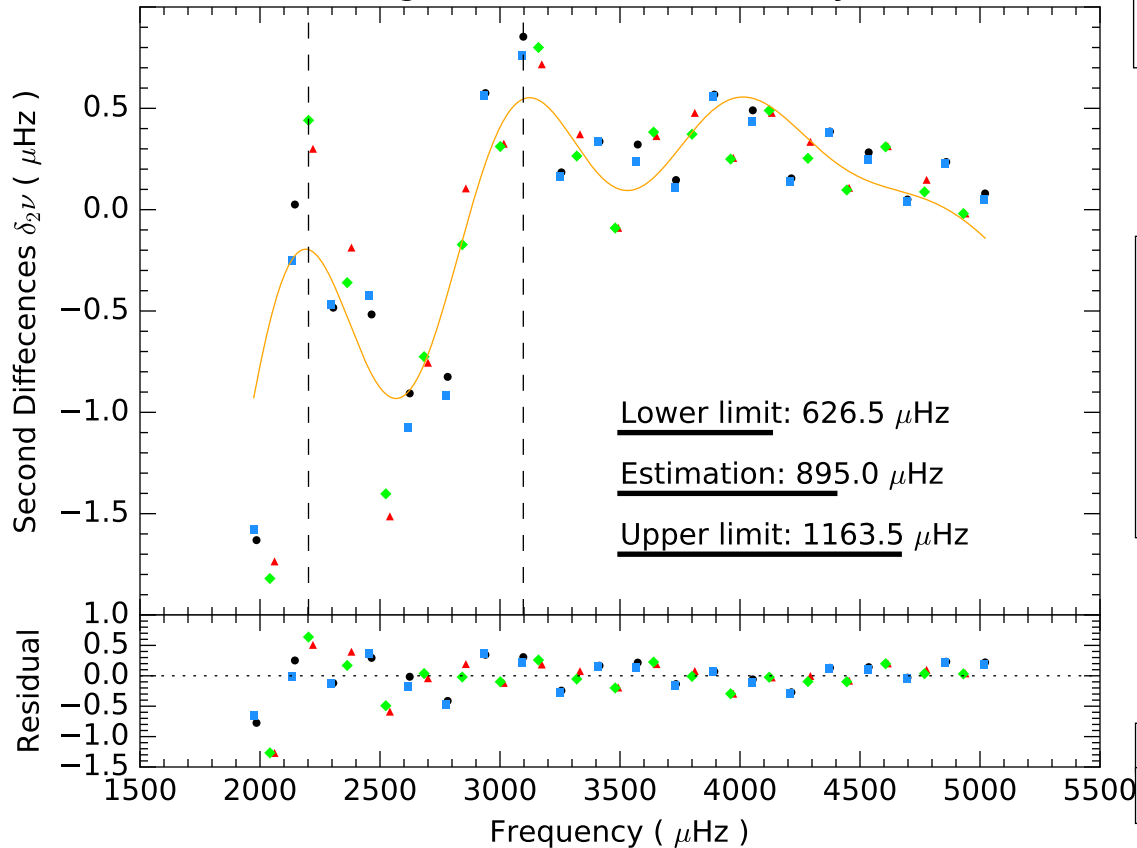


$$\begin{aligned}
 a_0 &= -6.5056 \mu\text{Hz} \\
 a_1 &= 0.0035331 \\
 a_2 &= -4.5113e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.00080112 \\
 c_2 &= 1.859e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 518.66 \text{ s} \\
 \phi_{HeII} &= 6.2831
 \end{aligned}$$

profile63

$$\chi^2_{\nu}(\text{dof} = 71) = 0.11496$$

Age after ZAMS: 15.610 Gyr



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

$$a_0 = -6.4288 \mu\text{Hz}$$

$$a_1 = 0.0035236$$

$$a_2 = -4.5374e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.00080674$$

$$c_2 = 1.8717e-07 \mu\text{Hz}^{-2}$$

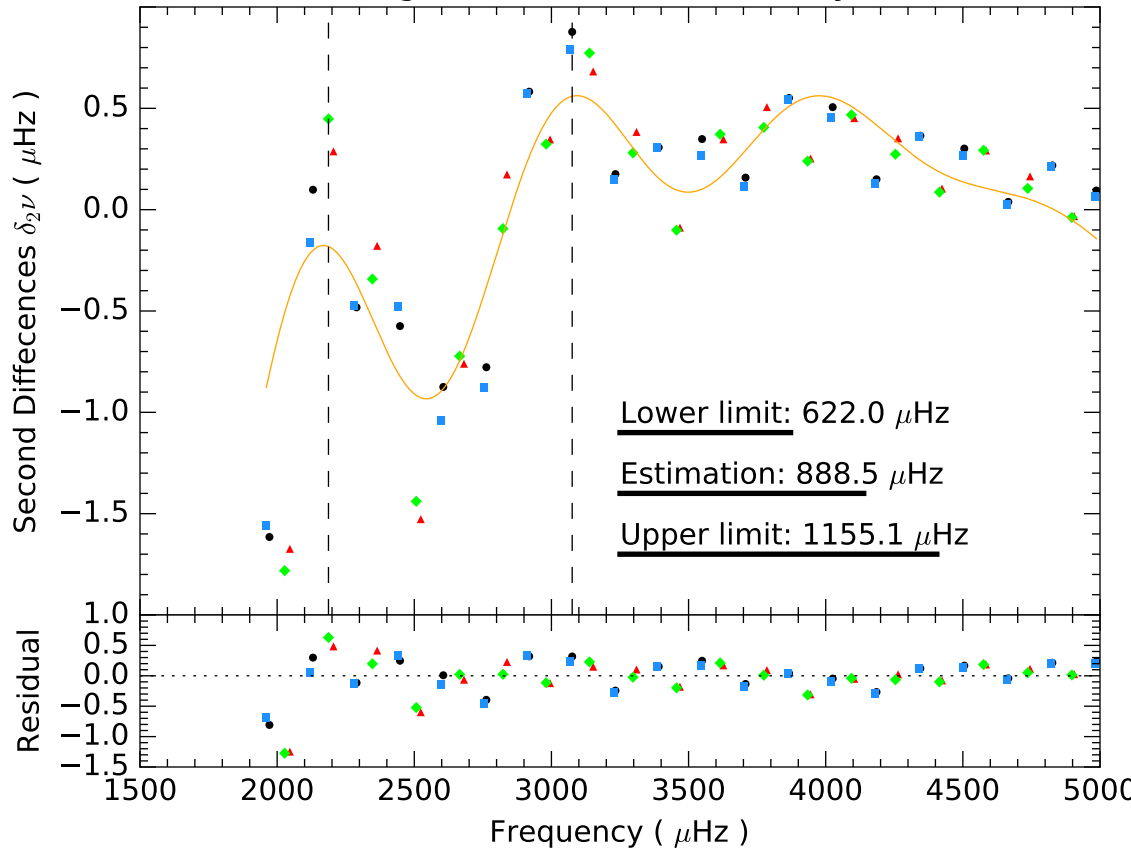
$$\tau_{\text{HeII}} = 523.6 \text{ s}$$

$$\phi_{\text{HeII}} = 6.2827$$

profile64

$$\chi^2_{\nu}(\text{dof} = 71) = 0.11537$$

Age after ZAMS: 15.910 Gyr

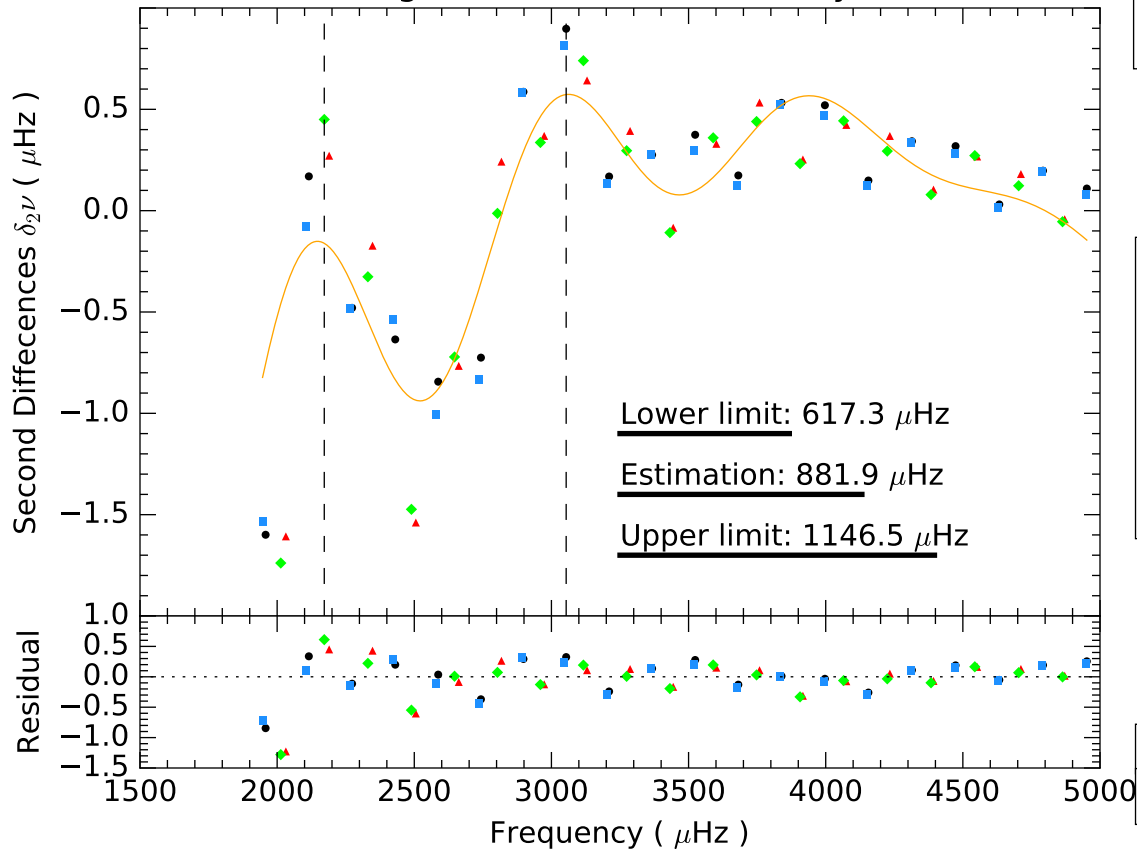


$$\begin{aligned}
 a_0 &= -6.3532 \mu\text{Hz} \\
 a_1 &= 0.0035152 \\
 a_2 &= -4.5666e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.00081197 \\
 c_2 &= 1.8814e-07 \mu\text{Hz}^{-2} \\
 \tau_{\text{HeII}} &= 528.59 \text{ s} \\
 \phi_{\text{HeII}} &= 6.2832
 \end{aligned}$$

profile65

$$\chi^2_{\nu}(\text{dof} = 71) = 0.11557$$

Age after ZAMS: 16.210 Gyr



$$a_0 = -6.272 \mu\text{Hz}$$

$$a_1 = 0.0035034$$

$$a_2 = -4.5917e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.00082942$$

$$c_2 = 1.9039e-07 \mu\text{Hz}^{-2}$$

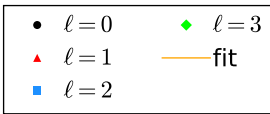
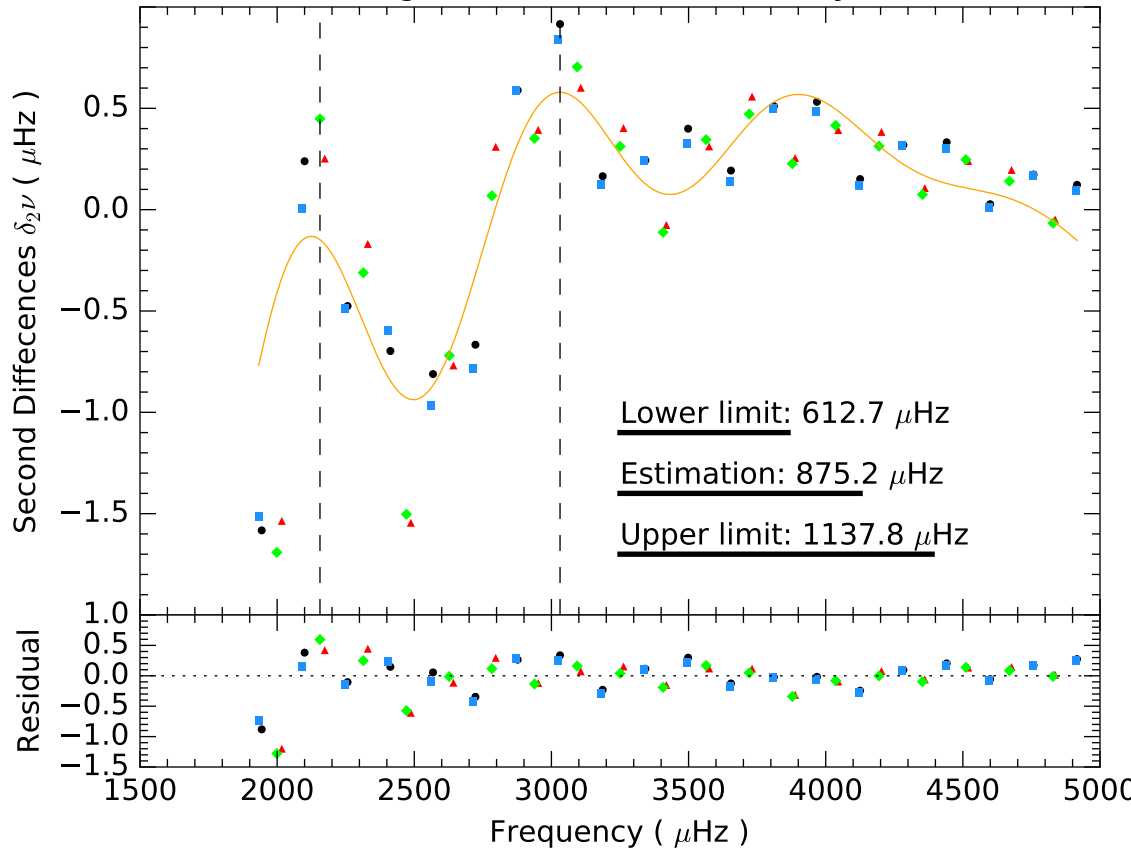
$$\tau_{\text{HeII}} = 533.65 \text{ s}$$

$$\phi_{\text{HeII}} = 6.2832$$

profile66

$$\chi^2_{\nu}(\text{dof} = 71) = 0.11563$$

Age after ZAMS: 16.510 Gyr

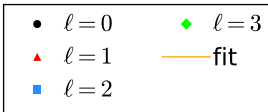
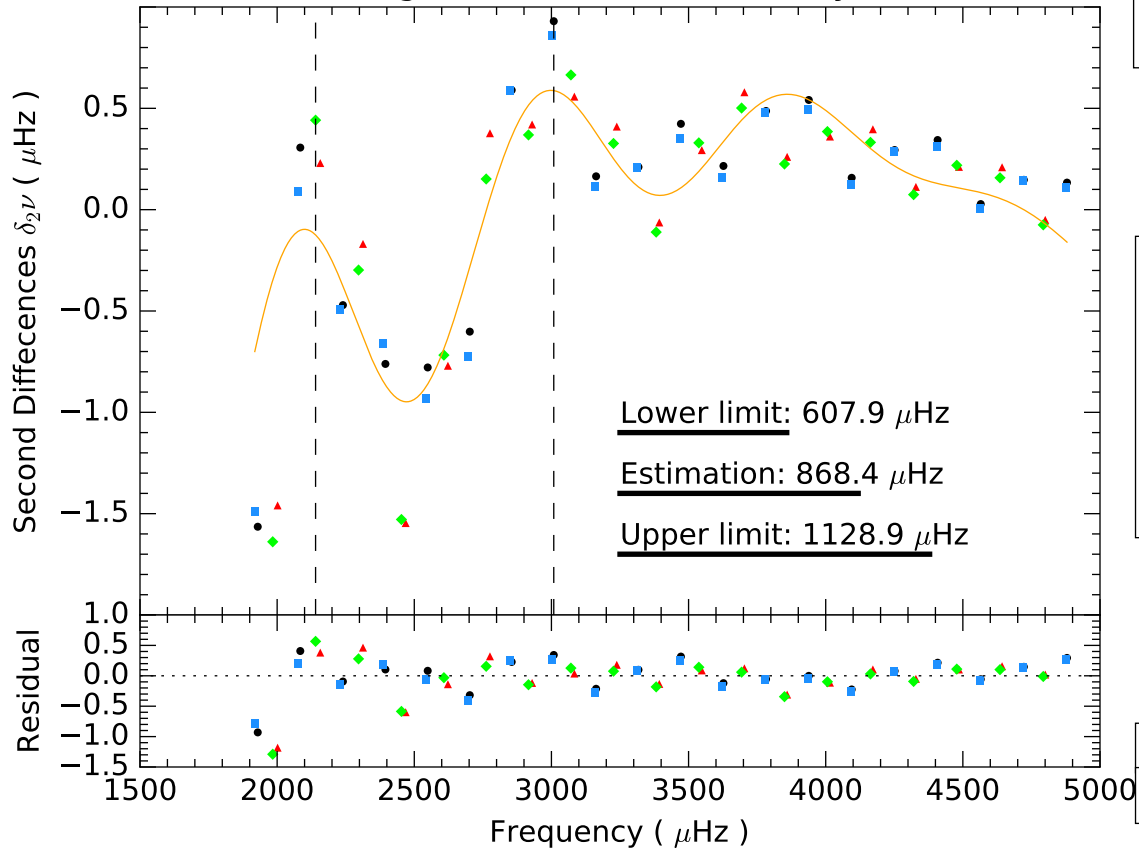


$a_0 = -6.1961 \mu\text{Hz}$
 $a_1 = 0.0034964$
 $a_2 = -4.626e-07 \mu\text{Hz}^{-1}$
 $c_0 = 0.00084709$
 $c_2 = 1.9443e-07 \mu\text{Hz}^{-2}$
 $\tau_{\text{HeII}} = 539.05 \text{ s}$
 $\phi_{\text{HeII}} = 6.2831$

profile67

$\chi^2_{\nu}(\text{dof} = 71) = 0.11588$

Age after ZAMS: 16.810 Gyr

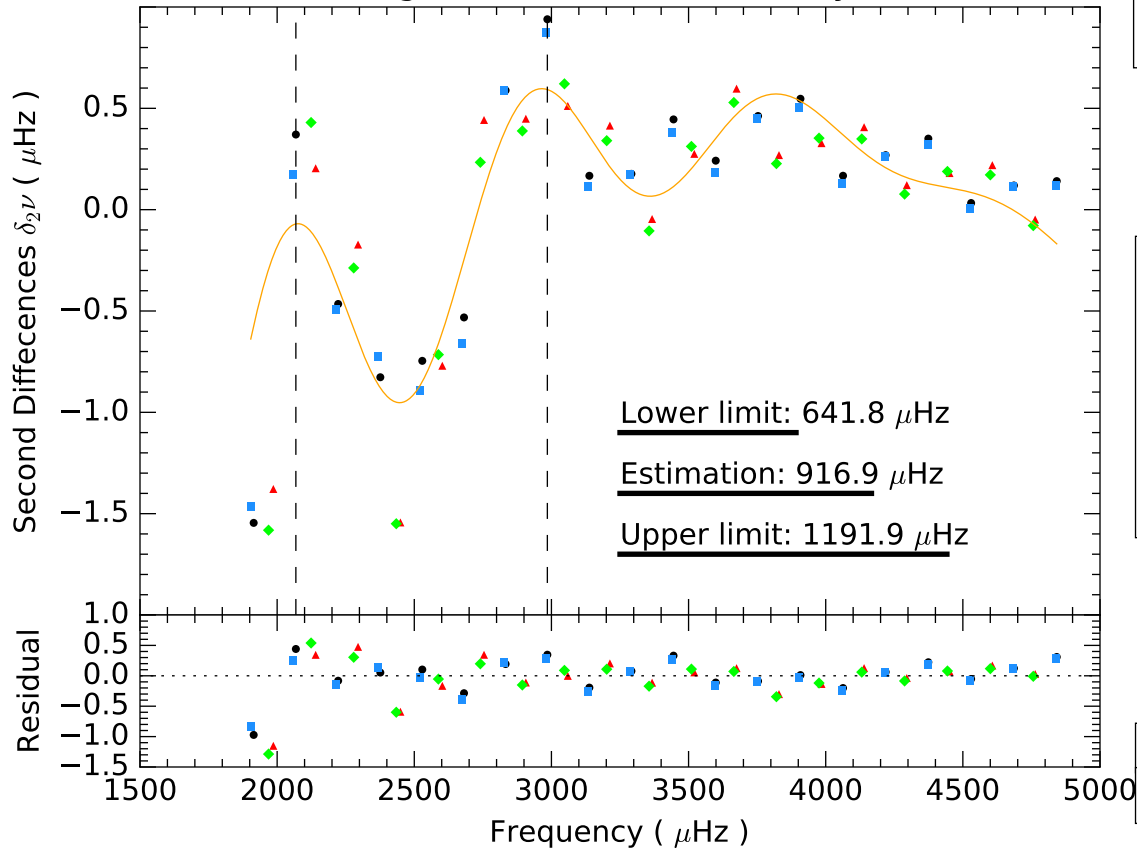


$$\begin{aligned}
 a_0 &= -6.1195 \mu\text{Hz} \\
 a_1 &= 0.0034897 \\
 a_2 &= -4.6627e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.00089318 \\
 c_2 &= 2.0112e-07 \mu\text{Hz}^{-2} \\
 \tau_{\text{HeII}} &= 544.85 \text{ s} \\
 \phi_{\text{HeII}} &= 6.2832
 \end{aligned}$$

profile68

$$\chi^2_{\nu}(\text{dof} = 71) = 0.11693$$

Age after ZAMS: 17.110 Gyr



$$a_0 = -6.043 \mu\text{Hz}$$

$$a_1 = 0.0034838$$

$$a_2 = -4.7023e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.00092475$$

$$c_2 = 2.0643e-07 \mu\text{Hz}^{-2}$$

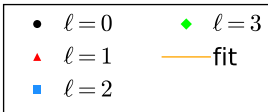
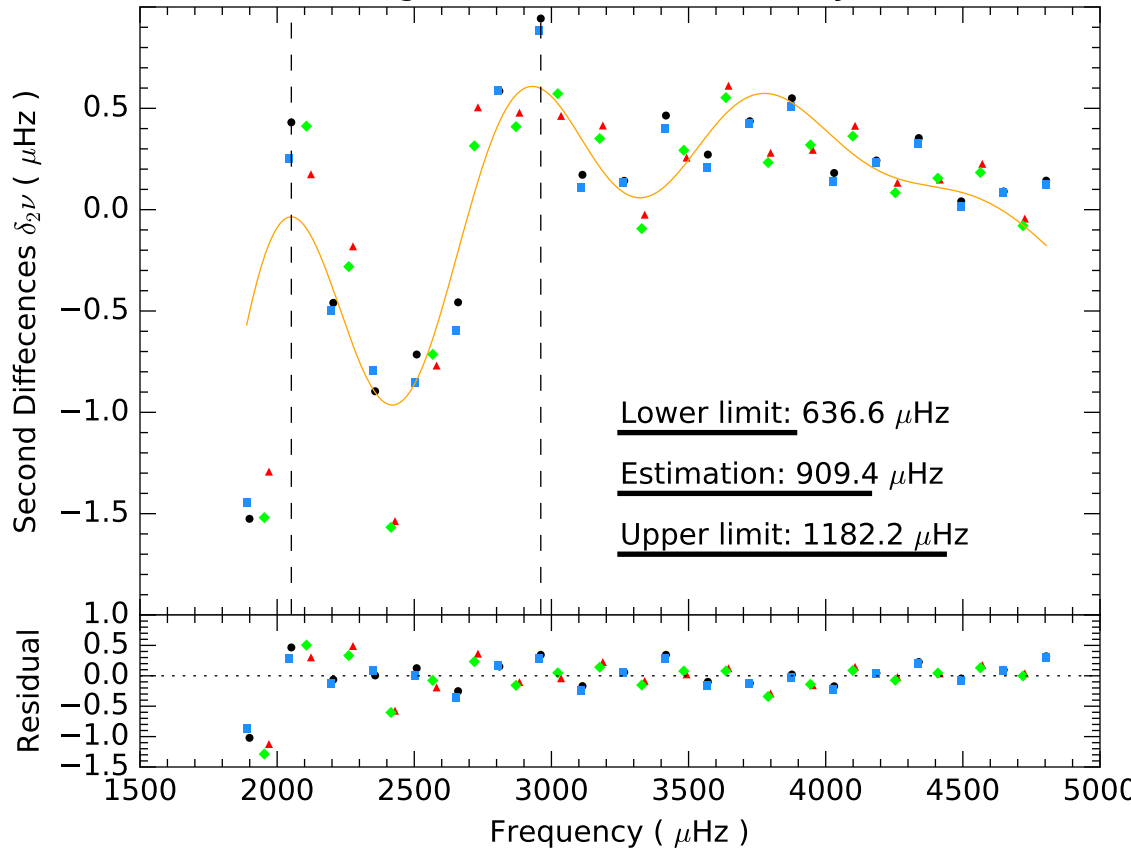
$$\tau_{\text{HeII}} = 550.7 \text{ s}$$

$$\phi_{\text{HeII}} = 6.2832$$

profile69

$$\chi^2_{\nu}(\text{dof} = 71) = 0.11734$$

Age after ZAMS: 17.410 Gyr

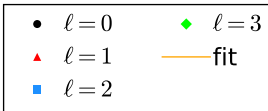
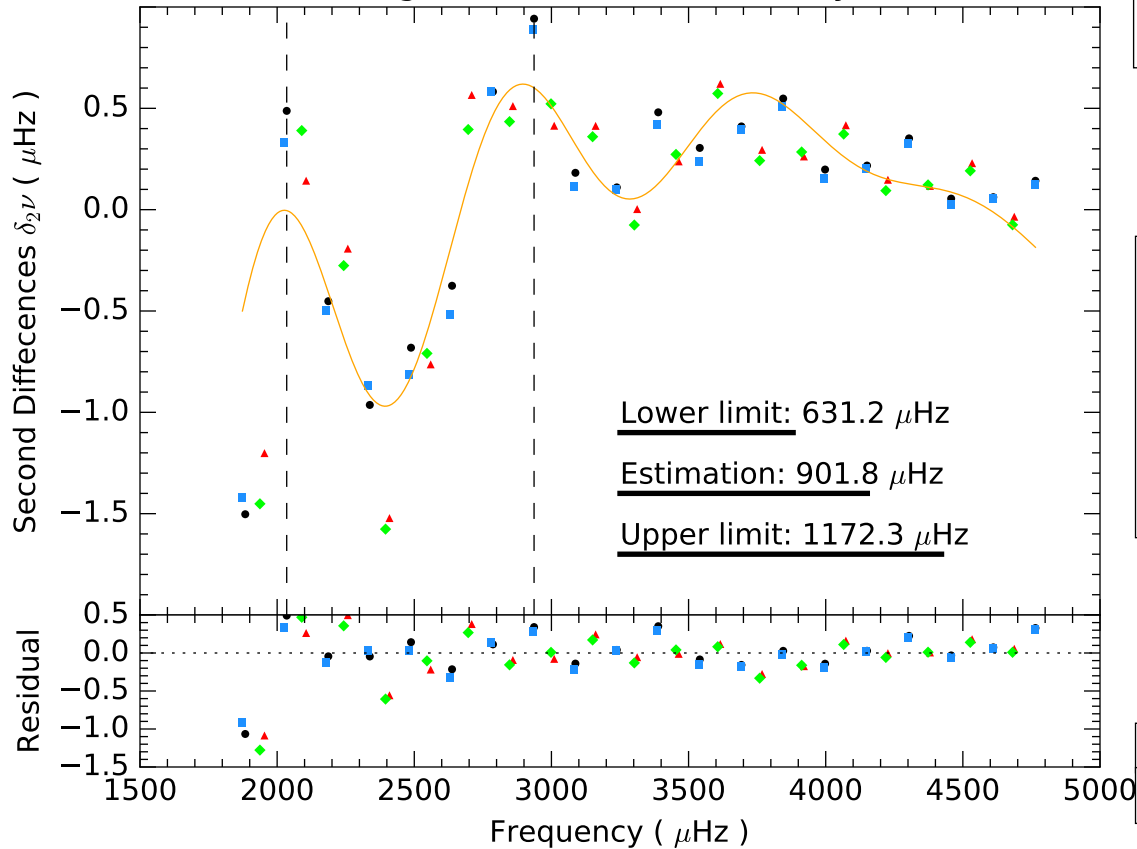


$$\begin{aligned}
 a_0 &= -5.9665 \mu\text{Hz} \\
 a_1 &= 0.0034779 \\
 a_2 &= -4.7432e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.00096655 \\
 c_2 &= 2.1209e-07 \mu\text{Hz}^{-2} \\
 \tau_{\text{HeII}} &= 556.94 \text{ s} \\
 \phi_{\text{HeII}} &= 6.2832
 \end{aligned}$$

profile70

$$\chi^2_{\nu}(\text{dof} = 71) = 0.11808$$

Age after ZAMS: 17.710 Gyr

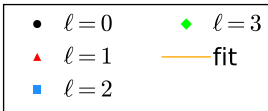
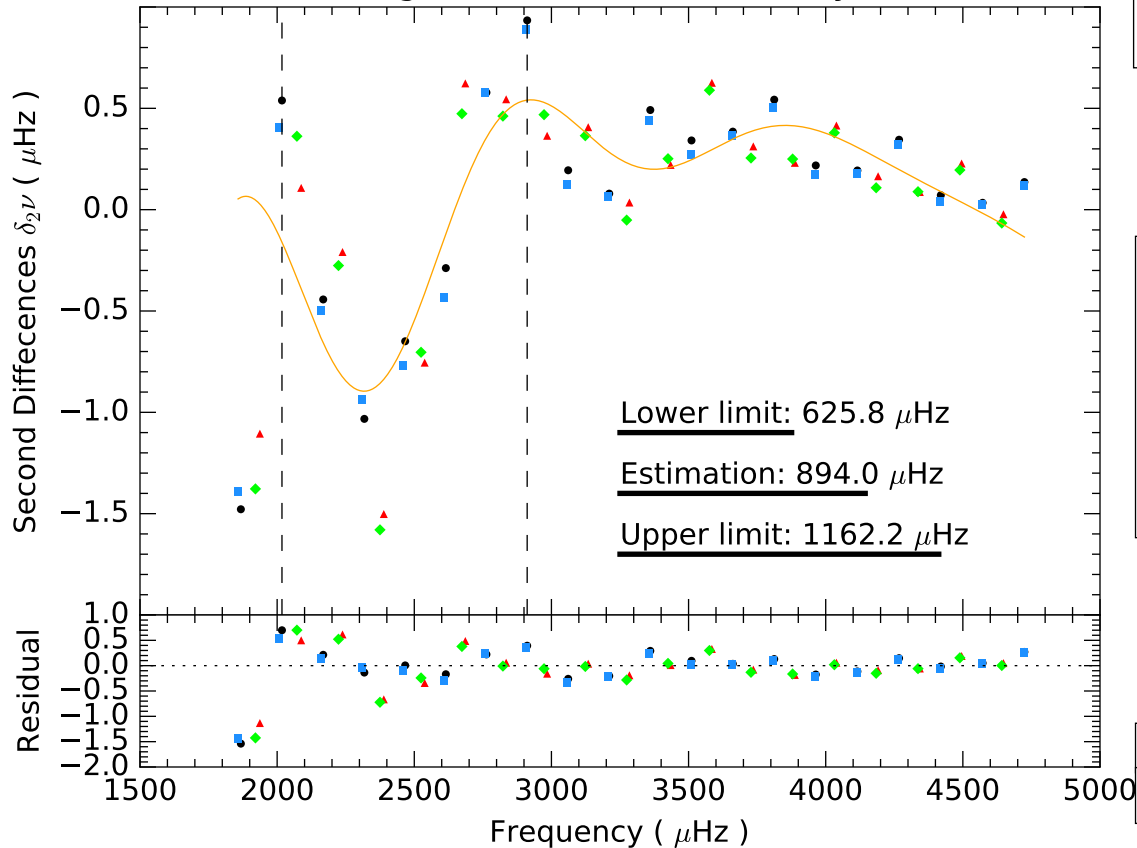


$$\begin{aligned}
 a_0 &= -5.8781 \mu\text{Hz} \\
 a_1 &= 0.0034668 \\
 a_2 &= -4.7798e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.0010011 \\
 c_2 &= 2.1744e-07 \mu\text{Hz}^{-2} \\
 \tau_{\text{HeII}} &= 563.36 \text{ s} \\
 \phi_{\text{HeII}} &= 6.2832
 \end{aligned}$$

profile71

$$\chi^2_{\nu}(\text{dof} = 71) = 0.1186$$

Age after ZAMS: 18.010 Gyr



$$a_0 = -4.9027 \mu\text{Hz}$$

$$a_1 = 0.0029367$$

$$a_2 = -4.0785e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.0012789$$

$$c_2 = 2.7879e-07 \mu\text{Hz}^{-2}$$

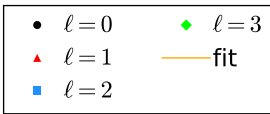
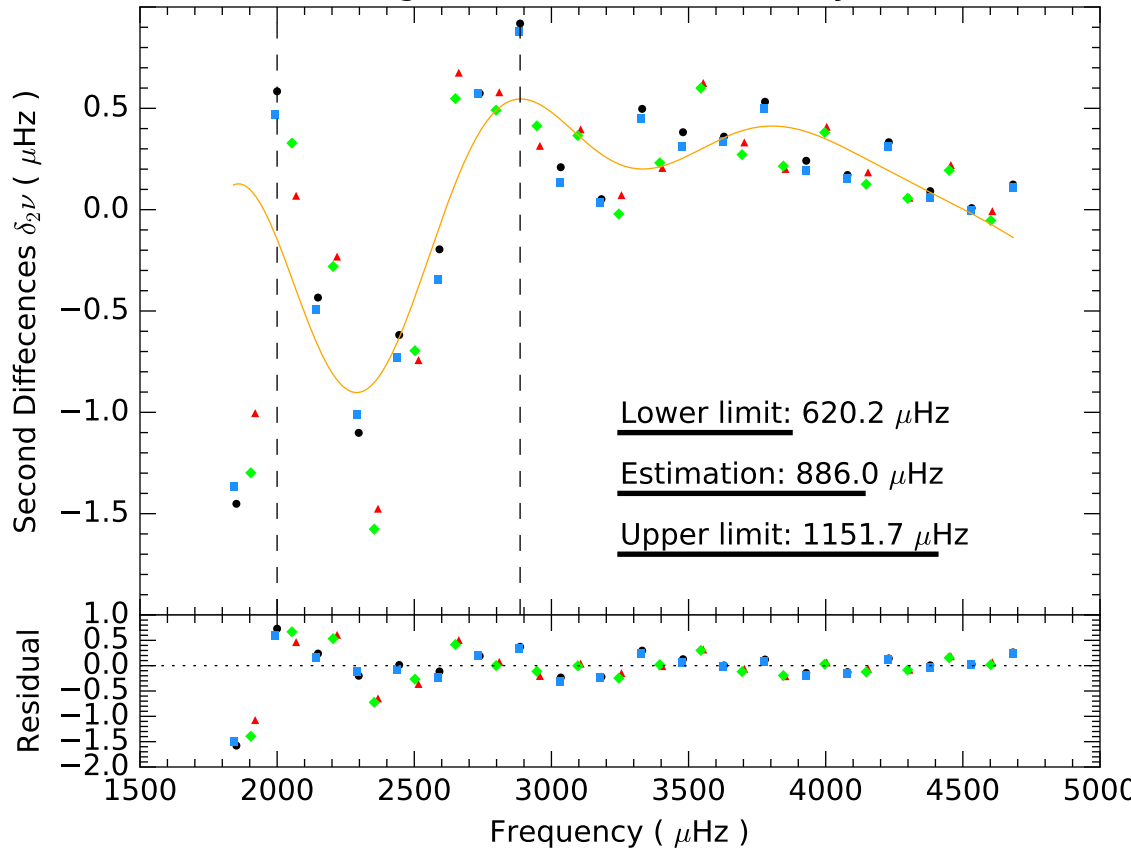
$$\tau_{\text{HeII}} = 471.26 \text{ s}$$

$$\phi_{\text{HeII}} = 3.1461$$

profile72

$$\chi^2_{\nu}(\text{dof} = 71) = 0.18779$$

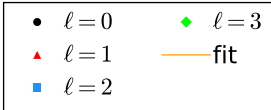
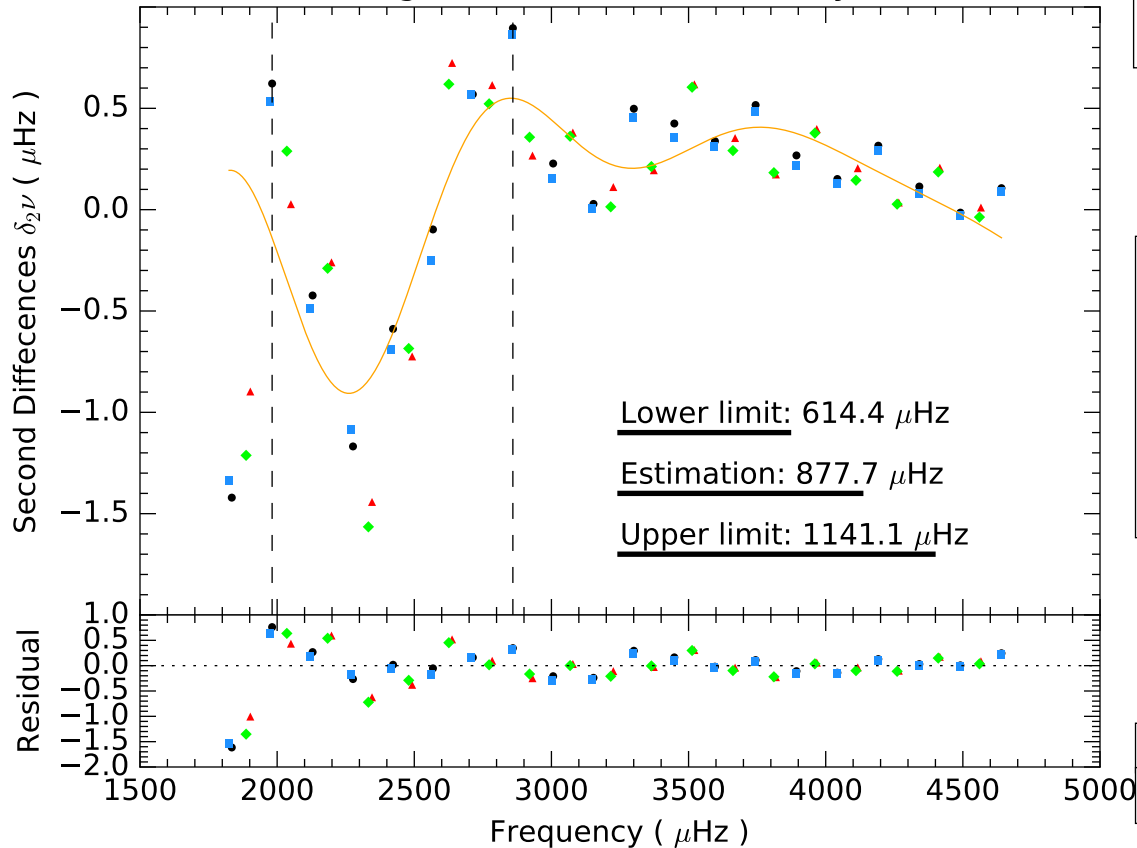
Age after ZAMS: 18.310 Gyr



$a_0 = -4.7917 \mu\text{Hz}$
 $a_1 = 0.0029087$
 $a_2 = -4.0879e-07 \mu\text{Hz}^{-2}$
 $c_0 = 0.0013863$
 $c_2 = 2.9308e-07 \mu\text{Hz}^{-2}$
 $\tau_{HeII} = 476.74 \text{ s}$
 $\phi_{HeII} = 3.1564$

profile73
 $\chi^2_{\nu}(\text{dof} = 71) = 0.188$

Age after ZAMS: 18.610 Gyr



$$a_0 = -4.6546 \mu\text{Hz}$$

$$a_1 = 0.0028654$$

$$a_2 = -4.0769e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.001506$$

$$c_2 = 3.0876e-07 \mu\text{Hz}^{-2}$$

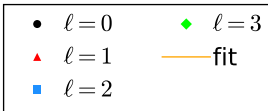
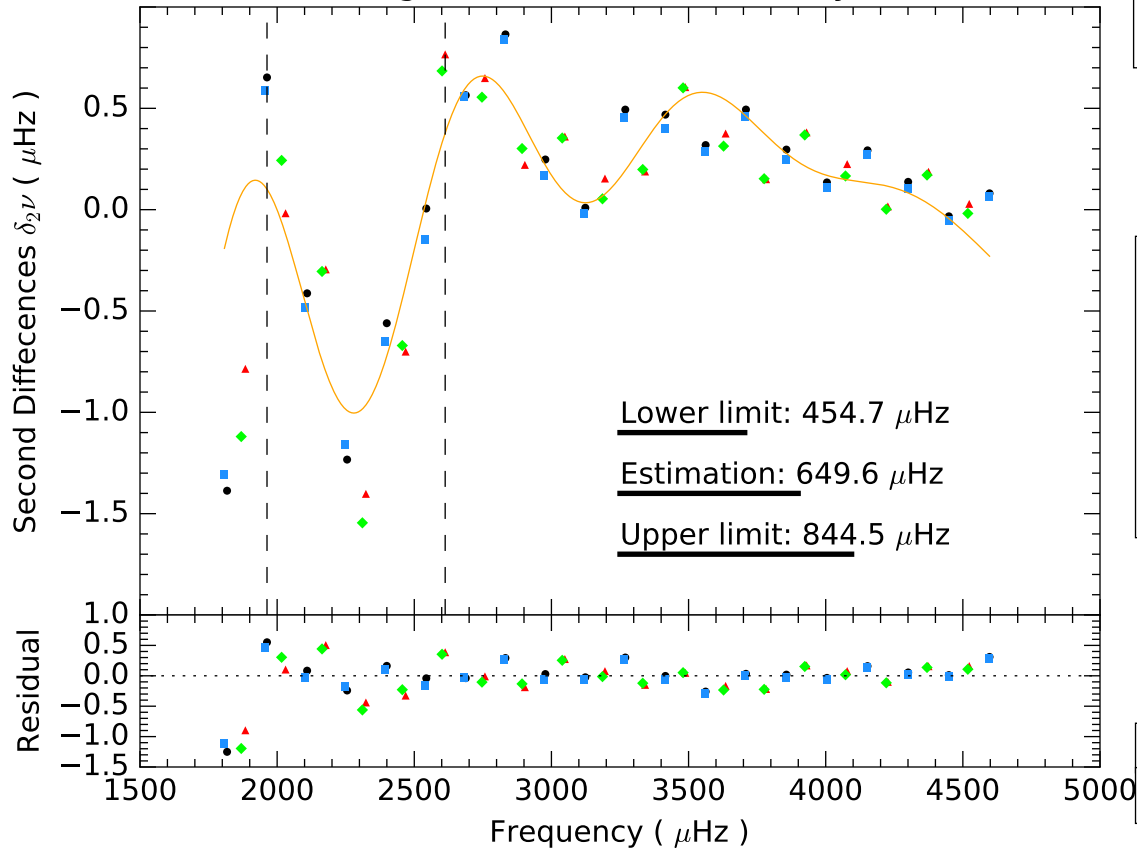
$$\tau_{\text{HeII}} = 480.26 \text{ s}$$

$$\phi_{\text{HeII}} = 3.2318$$

profile74

$$\chi^2_{\nu}(\text{dof} = 71) = 0.18845$$

Age after ZAMS: 18.910 Gyr



$$a_0 = -5.5296 \mu\text{Hz}$$

$$a_1 = 0.0034324$$

$$a_2 = -4.9628e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.0012113$$

$$c_2 = 2.4978e-07 \mu\text{Hz}^{-2}$$

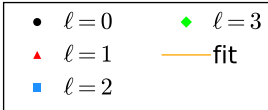
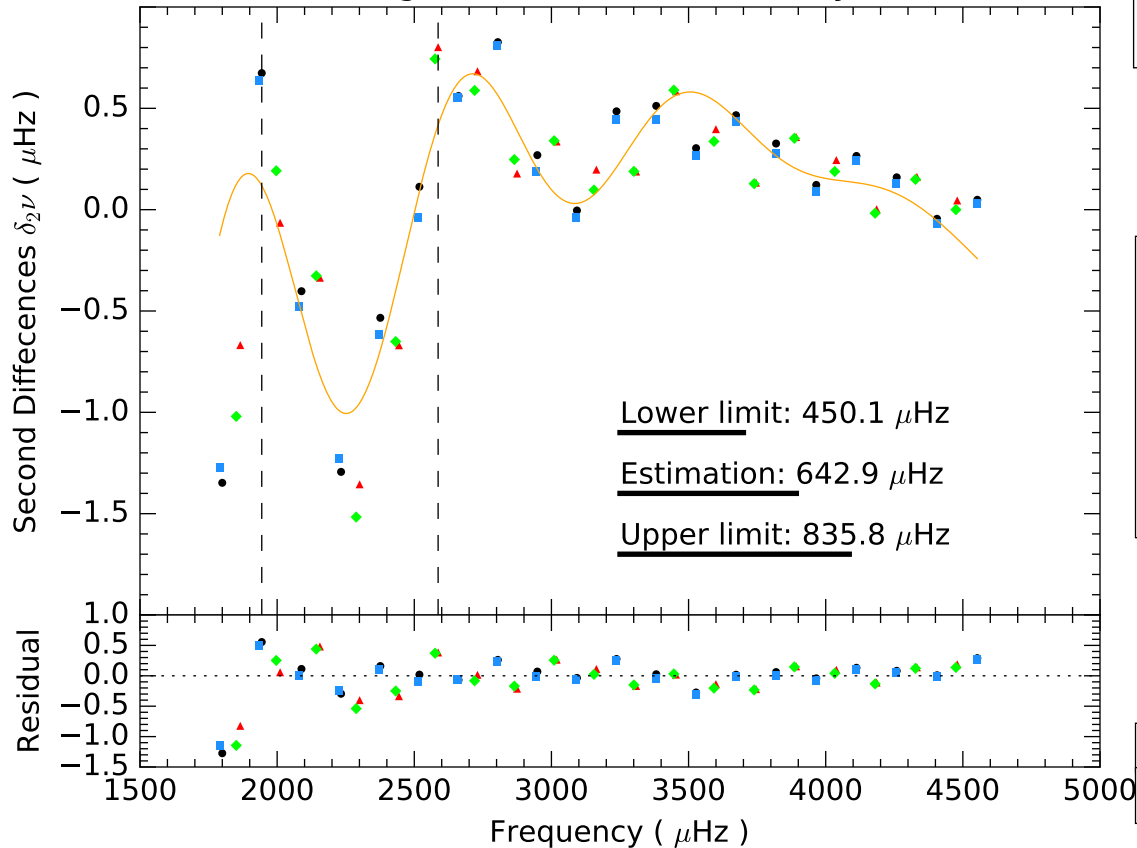
$$\tau_{\text{HeII}} = 592.6 \text{ s}$$

$$\phi_{\text{HeII}} = 6.2832$$

profile75

$$\chi^2_{\nu}(\text{dof} = 71) = 0.12019$$

Age after ZAMS: 19.210 Gyr



$$a_0 = -5.4488 \mu\text{Hz}$$

$$a_1 = 0.00343$$

$$a_2 = -5.0247e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.0012523$$

$$c_2 = 2.5694e-07 \mu\text{Hz}^{-2}$$

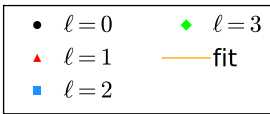
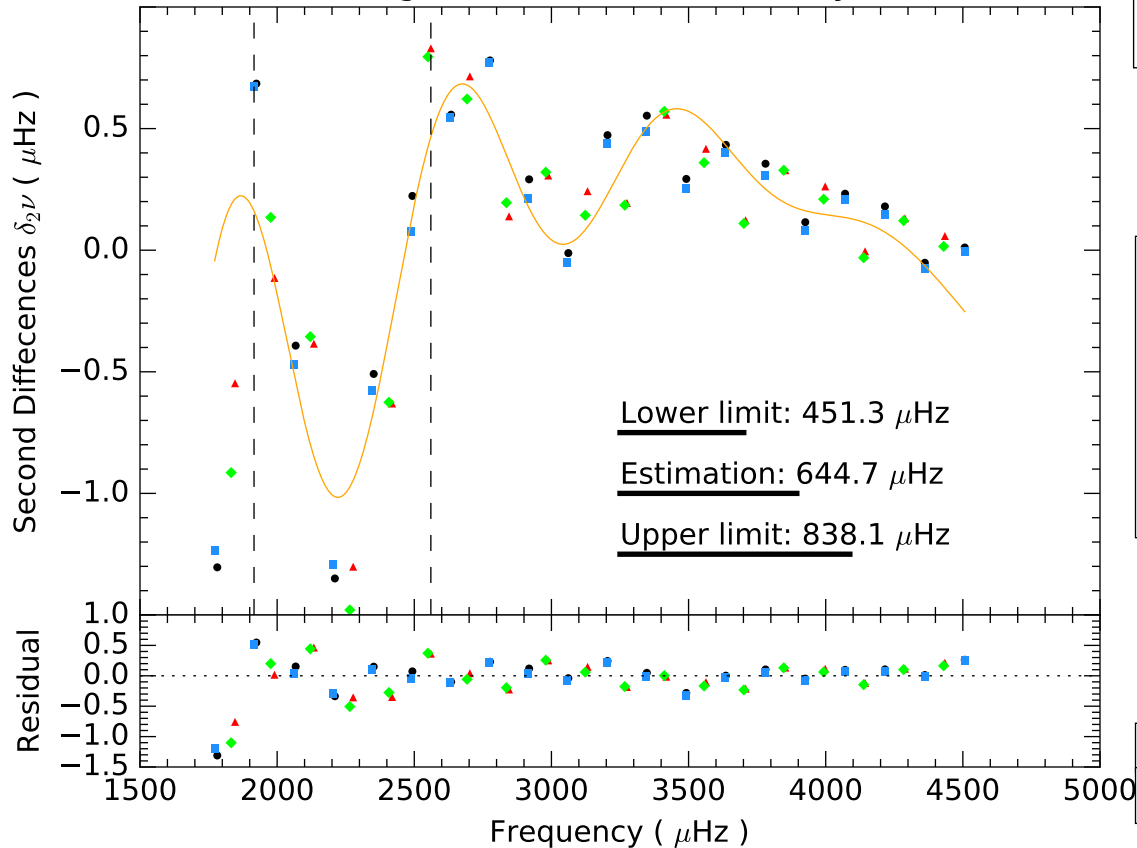
$$\tau_{\text{HeII}} = 600.18 \text{ s}$$

$$\phi_{\text{HeII}} = 6.2832$$

profile76

$$\chi^2_{\nu}(\text{dof} = 71) = 0.1179$$

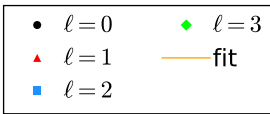
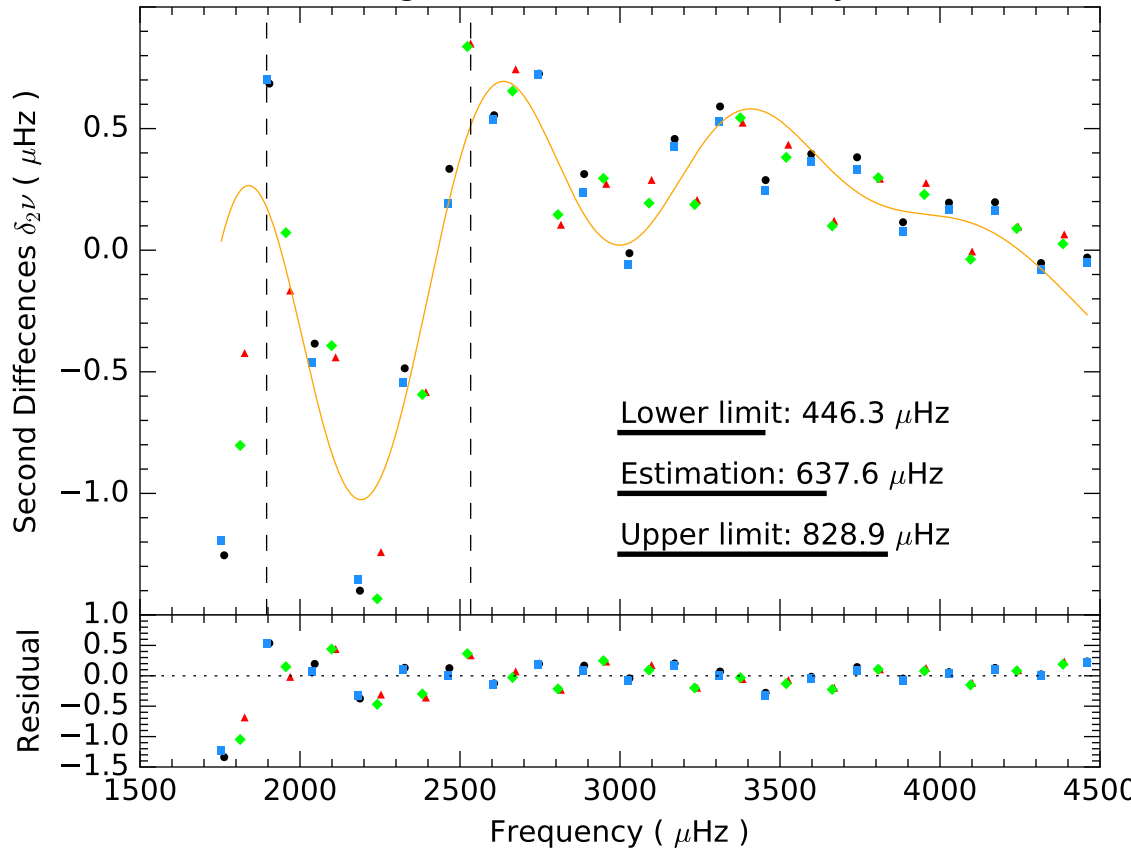
Age after ZAMS: 19.510 Gyr



$a_0 = -5.3509 \mu\text{Hz}$
 $a_1 = 0.0034176$
 $a_2 = -5.0743e-07 \mu\text{Hz}^{-2}$
 $c_0 = 0.0013183$
 $c_2 = 2.6647e-07 \mu\text{Hz}^{-2}$
 $\tau_{\text{HeII}} = 608.6 \text{ s}$
 $\phi_{\text{HeII}} = 6.2832$

profile77
 $\chi^2_{\nu}(\text{dof} = 71) = 0.11695$

Age after ZAMS: 19.810 Gyr

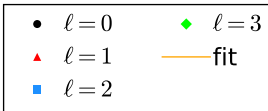
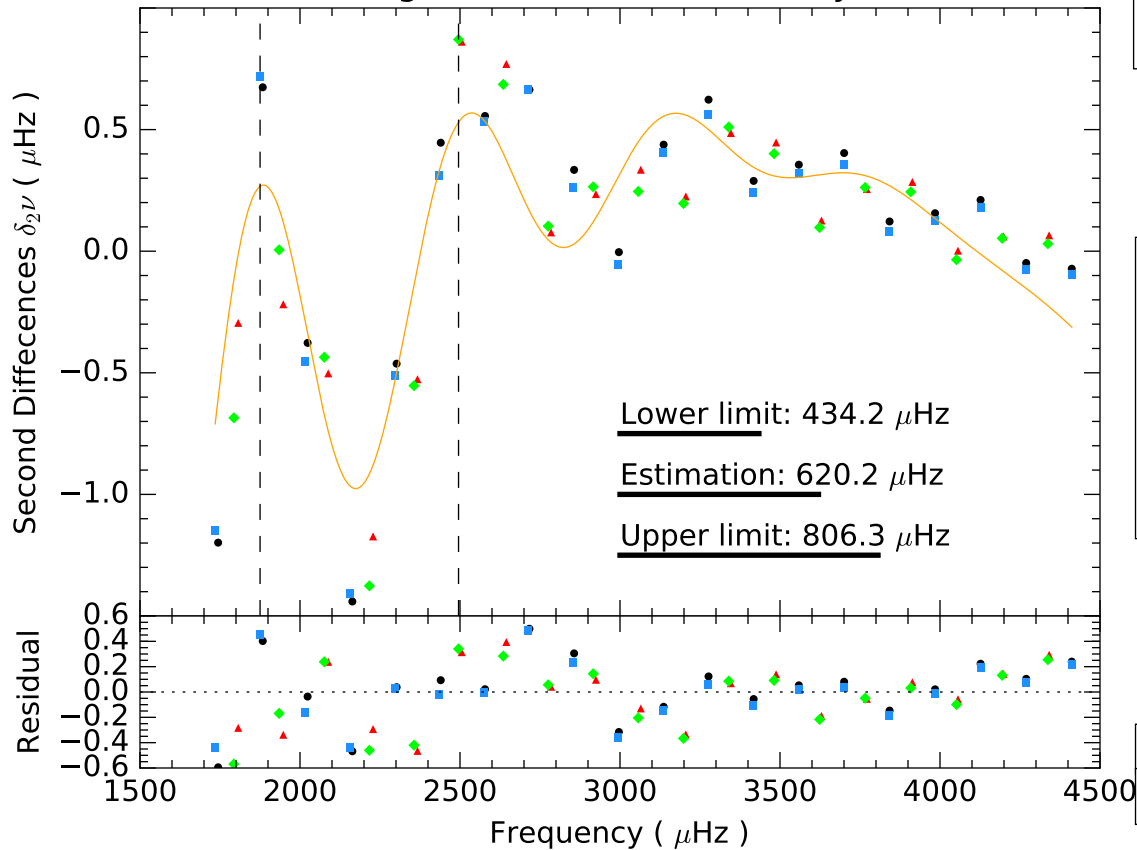


$a_0 = -5.2651 \mu\text{Hz}$
 $a_1 = 0.0034137$
 $a_2 = -5.1401e-07 \mu\text{Hz}^{-2}$
 $c_0 = 0.0013902$
 $c_2 = 2.7752e-07 \mu\text{Hz}^{-2}$
 $\tau_{HeII} = 617.44 \text{ s}$
 $\phi_{HeII} = 6.2832$

profile78

$\chi^2_{\nu}(\text{dof} = 71) = 0.11529$

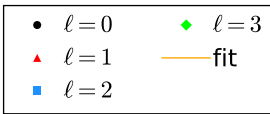
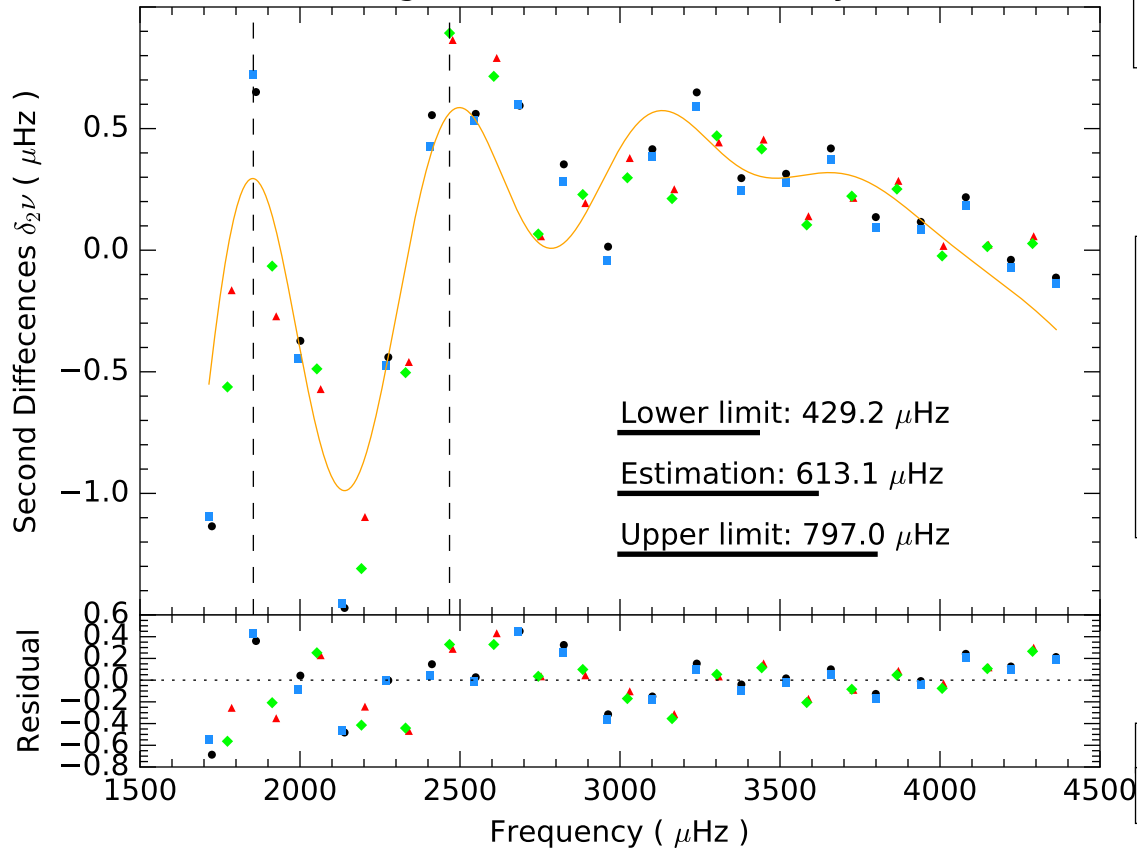
Age after ZAMS: 20.110 Gyr



$a_0 = -5.6806 \mu\text{Hz}$
 $a_1 = 0.0037201$
 $a_2 = -5.6768e-07 \mu\text{Hz}^{-2}$
 $c_0 = 0.0017933$
 $c_2 = 3.5424e-07 \mu\text{Hz}^{-2}$
 $\tau_{HeII} = 762.83 \text{ s}$
 $\phi_{HeII} = 2.4308$

profile79
 $\chi^2_{\nu}(\text{dof} = 71) = 0.071133$

Age after ZAMS: 20.410 Gyr

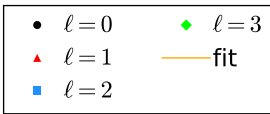
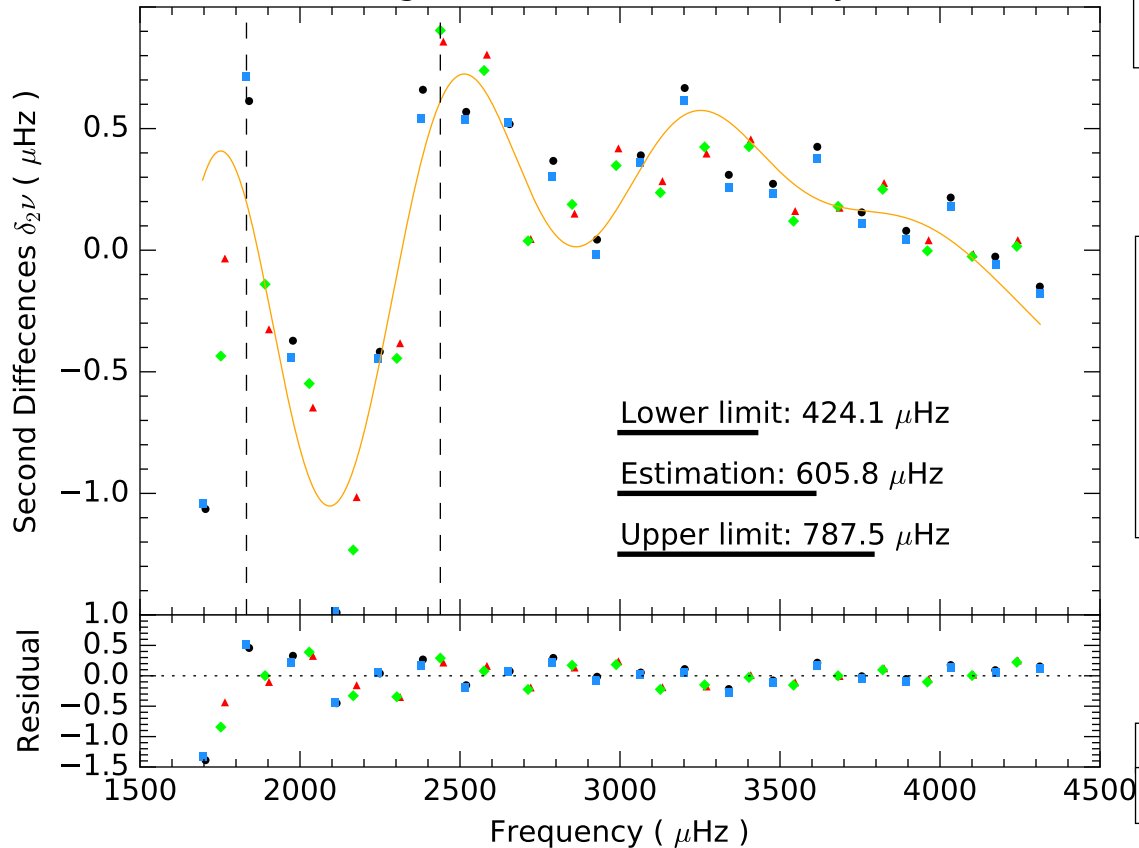


$a_0 = -5.6089 \mu\text{Hz}$
 $a_1 = 0.0037324$
 $a_2 = -5.7825e-07 \mu\text{Hz}^{-2}$
 $c_0 = 0.001812$
 $c_2 = 3.5942e-07 \mu\text{Hz}^{-2}$
 $\tau_{\text{HeII}} = 767.95 \text{ s}$
 $\phi_{\text{HeII}} = 2.6318$

profile80

$\chi^2_{\nu}(\text{dof} = 71) = 0.07233$

Age after ZAMS: 20.710 Gyr

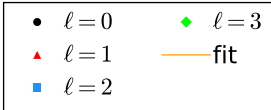
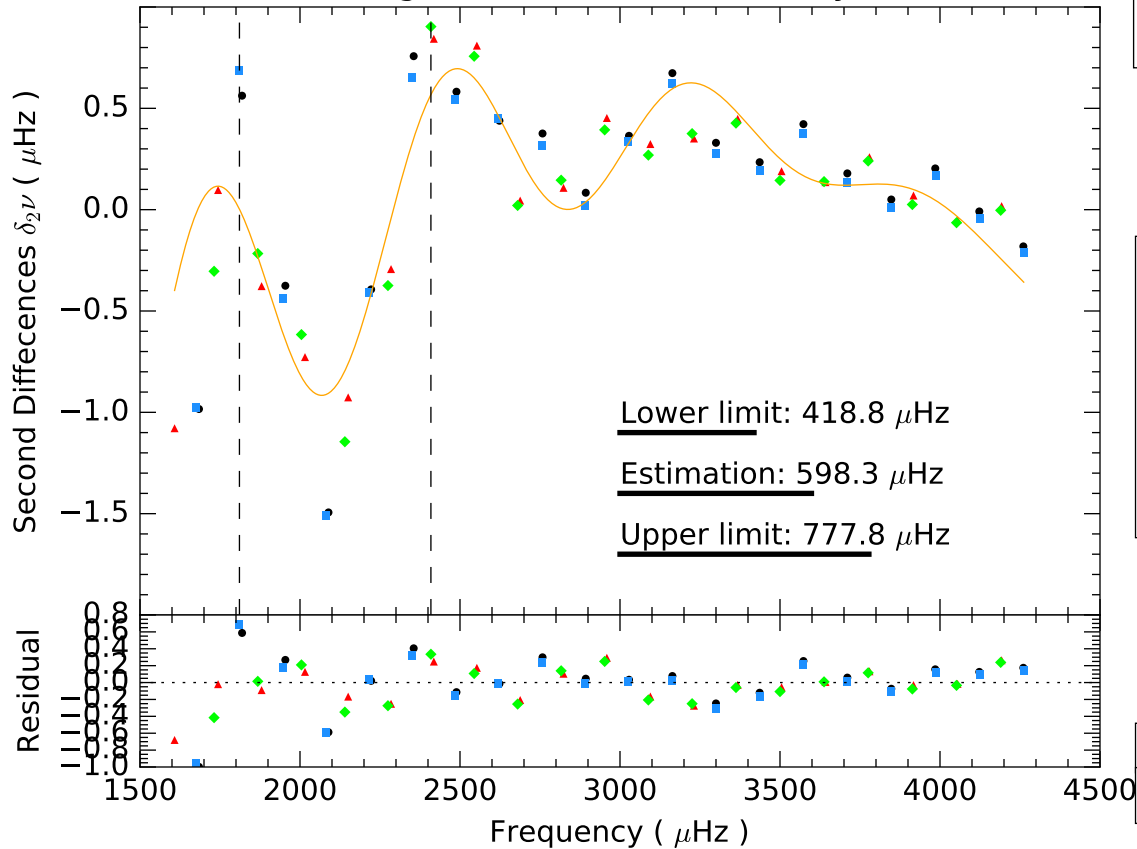


$a_0 = -4.9763 \mu\text{Hz}$
 $a_1 = 0.0033887$
 $a_2 = -5.3408e-07 \mu\text{Hz}^{-2}$
 $c_0 = 0.0016558$
 $c_2 = 3.1823e-07 \mu\text{Hz}^{-2}$
 $\tau_{\text{HeII}} = 646.74 \text{ s}$
 $\phi_{\text{HeII}} = 6.2832$

profile81

$\chi^2_{\nu}(\text{dof} = 71) = 0.10777$

Age after ZAMS: 21.010 Gyr

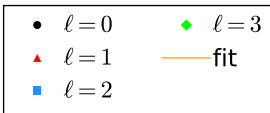
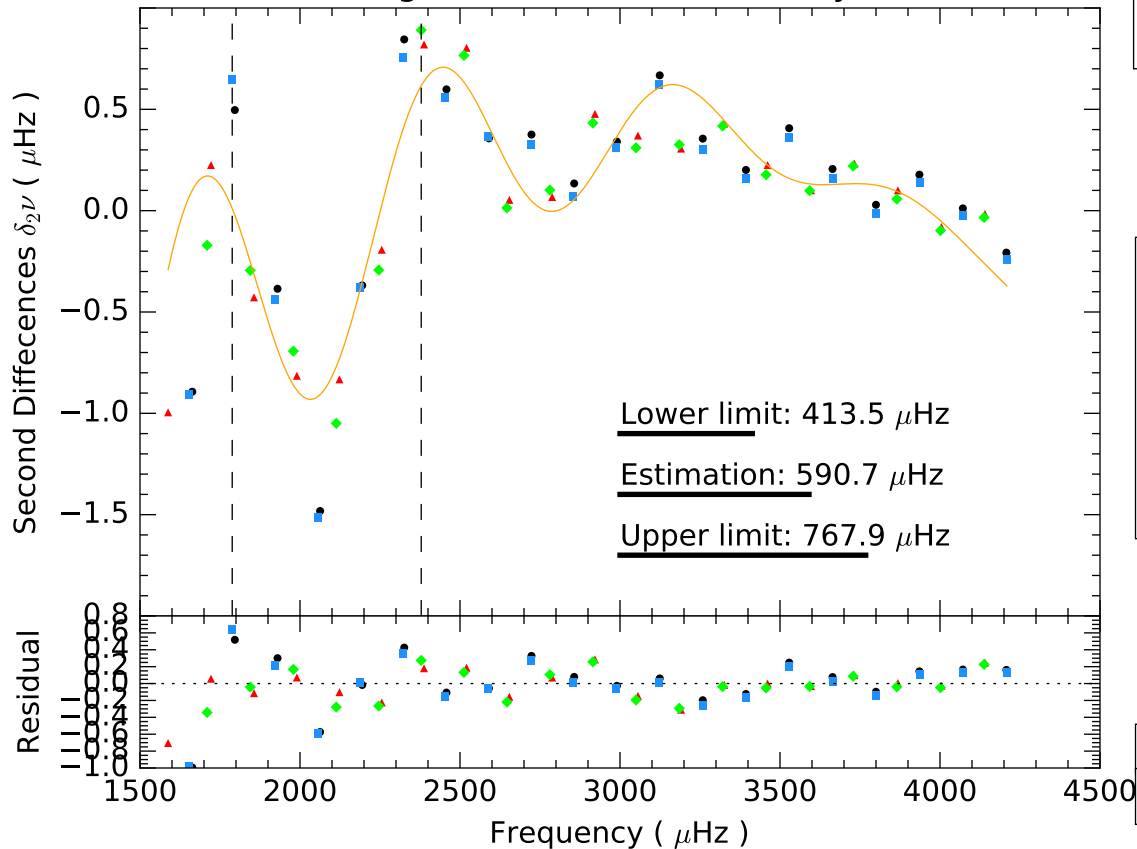


$$\begin{aligned}
 a_0 &= -5.2102 \mu\text{Hz} \\
 a_1 &= 0.0035964 \\
 a_2 &= -5.7566e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.0010289 \\
 c_2 &= 2.5695e-07 \mu\text{Hz}^{-2} \\
 \tau_{\text{HeII}} &= 654.16 \text{ s} \\
 \phi_{\text{HeII}} &= 6.2832
 \end{aligned}$$

profile82

$$\chi^2_{\nu}(\text{dof} = 72) = 0.087845$$

Age after ZAMS: 21.310 Gyr

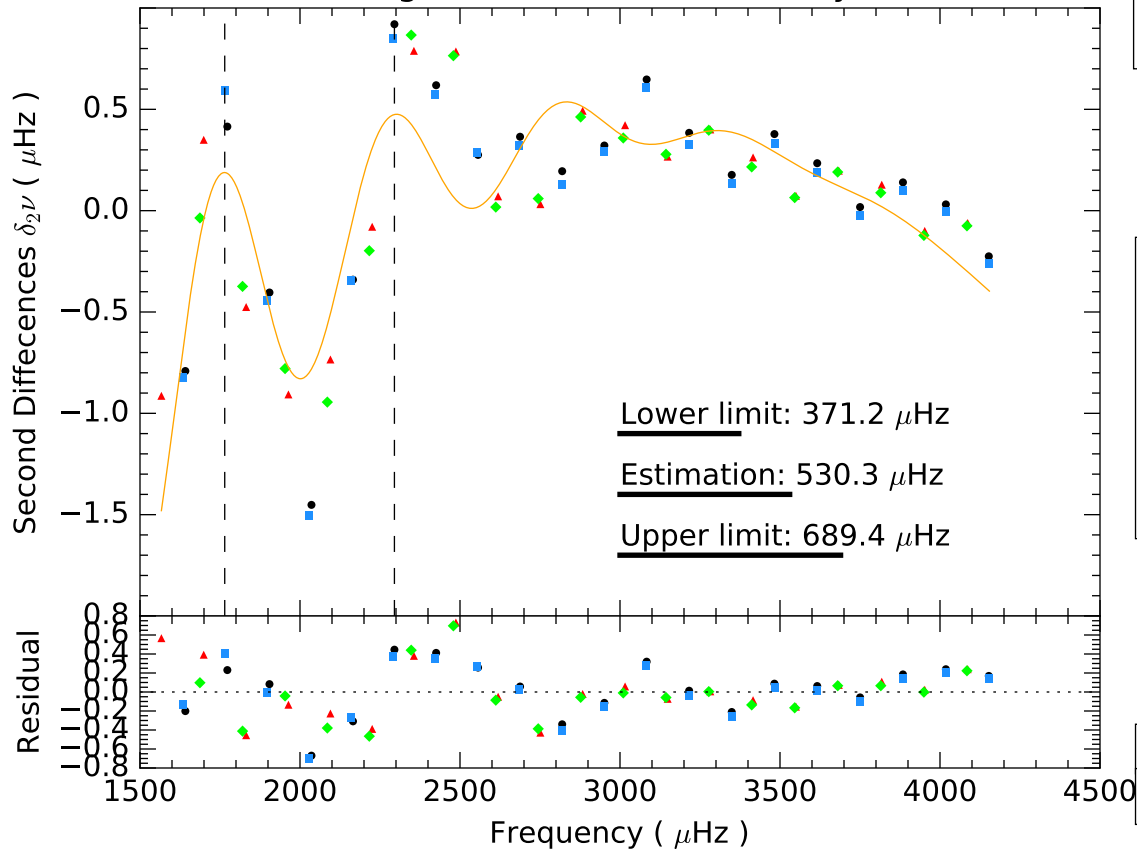


$a_0 = -5.0891 \mu\text{Hz}$
 $a_1 = 0.0035768$
 $a_2 = -5.8219e-07 \mu\text{Hz}^{-2}$
 $c_0 = 0.0011182$
 $c_2 = 2.7364e-07 \mu\text{Hz}^{-2}$
 $\tau_{HeII} = 665.84 \text{ s}$
 $\phi_{HeII} = 6.2832$

profile83

$\chi^2_{\nu}(\text{dof} = 72) = 0.083975$

Age after ZAMS: 21.610 Gyr



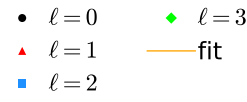
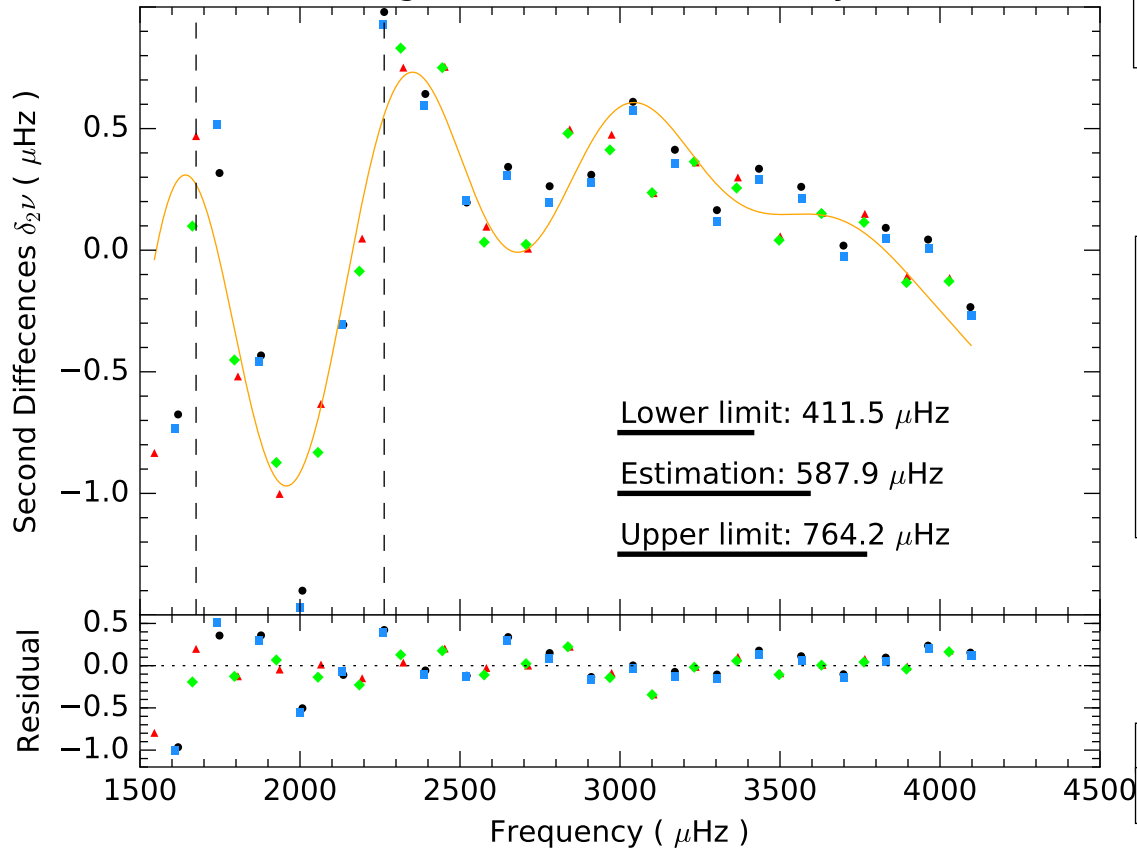
\bullet $\ell=0$ \blacklozenge $\ell=3$
 \blacktriangle $\ell=1$ — fit
 \blacksquare $\ell=2$

$a_0 = -5.3726 \mu\text{Hz}$
 $a_1 = 0.0038238$
 $a_2 = -6.3192e-07 \mu\text{Hz}^{-2}$
 $c_0 = 0.0017247$
 $c_2 = 4.3526e-07 \mu\text{Hz}^{-2}$
 $\tau_{\text{HeII}} = 925.39 \text{ s}$
 $\phi_{\text{HeII}} = 6.2812$

profile84

$\chi^2_{\nu}(\text{dof} = 72) = 0.088639$

Age after ZAMS: 21.910 Gyr

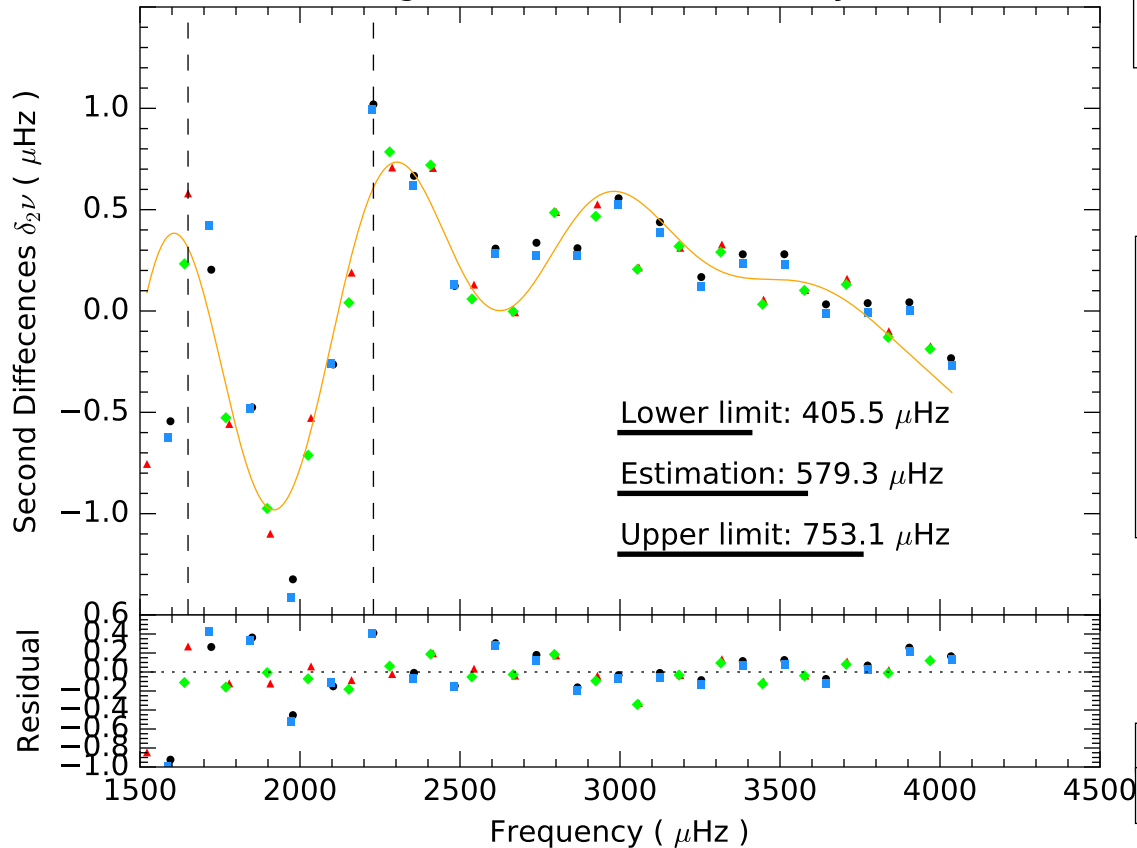


$$\begin{aligned}
 a_0 &= -4.8257 \mu\text{Hz} \\
 a_1 &= 0.003528 \\
 a_2 &= -5.9554e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.0013785 \\
 c_2 &= 3.1922e-07 \mu\text{Hz}^{-2} \\
 \tau_{\text{HeII}} &= 691.98 \text{ s} \\
 \phi_{\text{HeII}} &= 6.2831
 \end{aligned}$$

profile85

$$\chi^2_{\nu}(\text{dof} = 72) = 0.076303$$

Age after ZAMS: 22.210 Gyr



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

$$a_0 = -4.7019 \mu\text{Hz}$$

$$a_1 = 0.0035138$$

$$a_2 = -6.0537e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.0015608$$

$$c_2 = 3.5221e-07 \mu\text{Hz}^{-2}$$

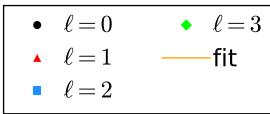
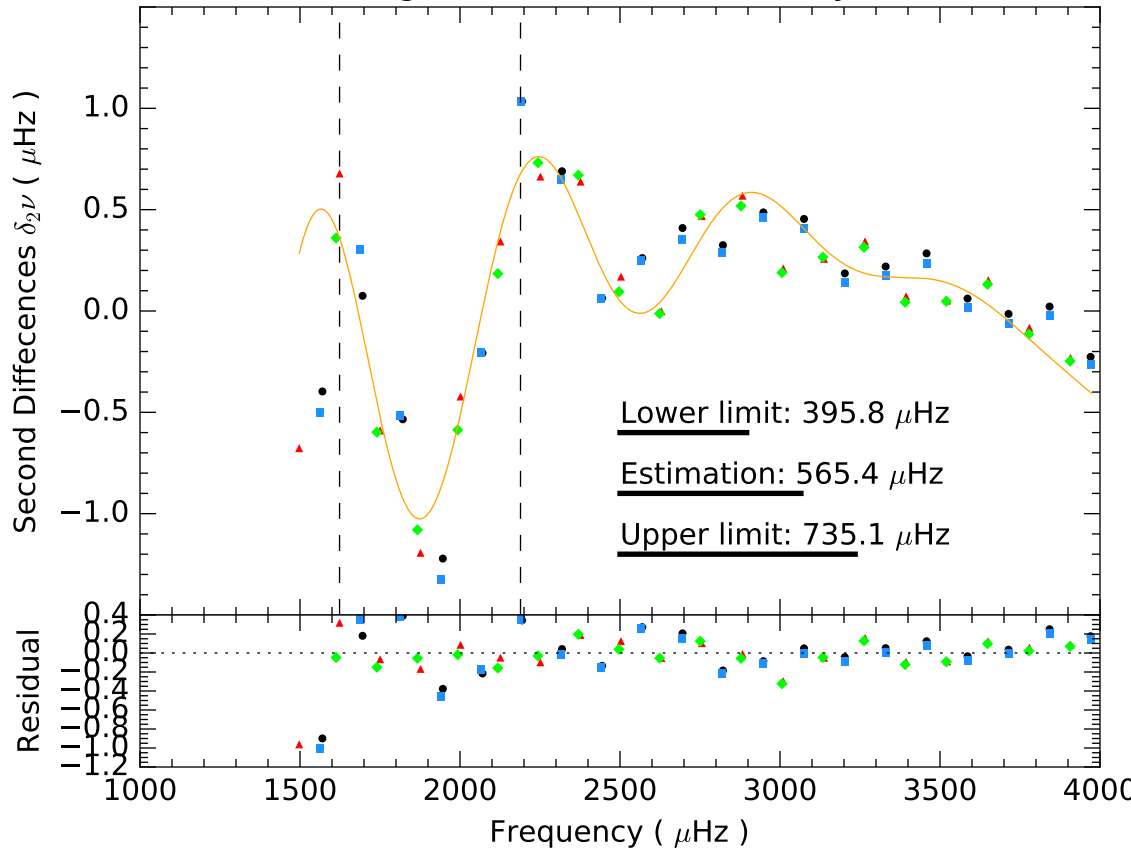
$$\tau_{\text{HeII}} = 706.18 \text{ s}$$

$$\phi_{\text{HeII}} = 6.2831$$

profile86

$$\chi^2_{\nu}(\text{dof} = 72) = 0.071465$$

Age after ZAMS: 22.510 Gyr

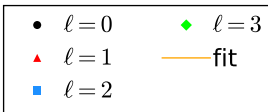
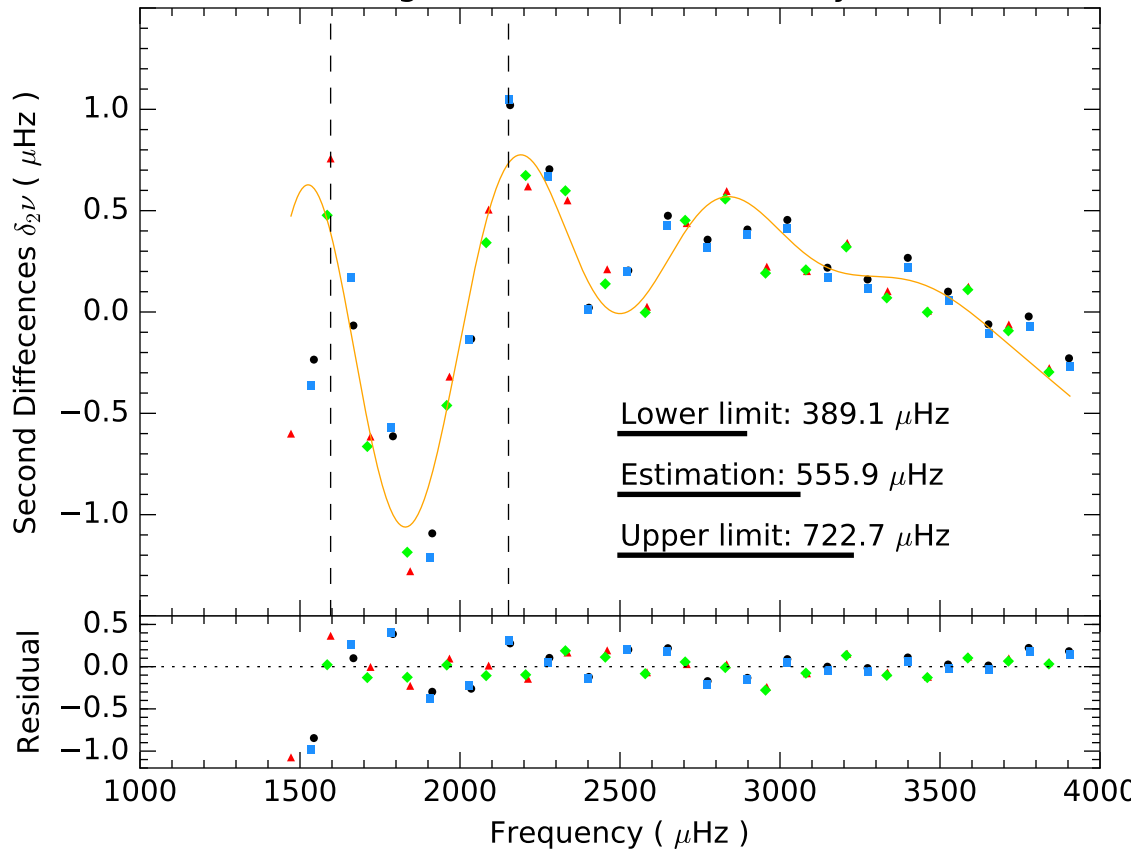


$a_0 = -4.5129 \mu\text{Hz}$
 $a_1 = 0.0034549$
 $a_2 = -6.0836e-07 \mu\text{Hz}^{-2}$
 $c_0 = 0.0018077$
 $c_2 = 3.8451e-07 \mu\text{Hz}^{-2}$
 $\tau_{HeII} = 723.24 \text{ s}$
 $\phi_{HeII} = 6.2832$

profile87

$\chi^2_{\nu}(\text{dof} = 72) = 0.070356$

Age after ZAMS: 22.810 Gyr



$$a_0 = -4.3471 \mu\text{Hz}$$

$$a_1 = 0.003416$$

$$a_2 = -6.1607e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.0021375$$

$$c_2 = 4.2955e-07 \mu\text{Hz}^{-2}$$

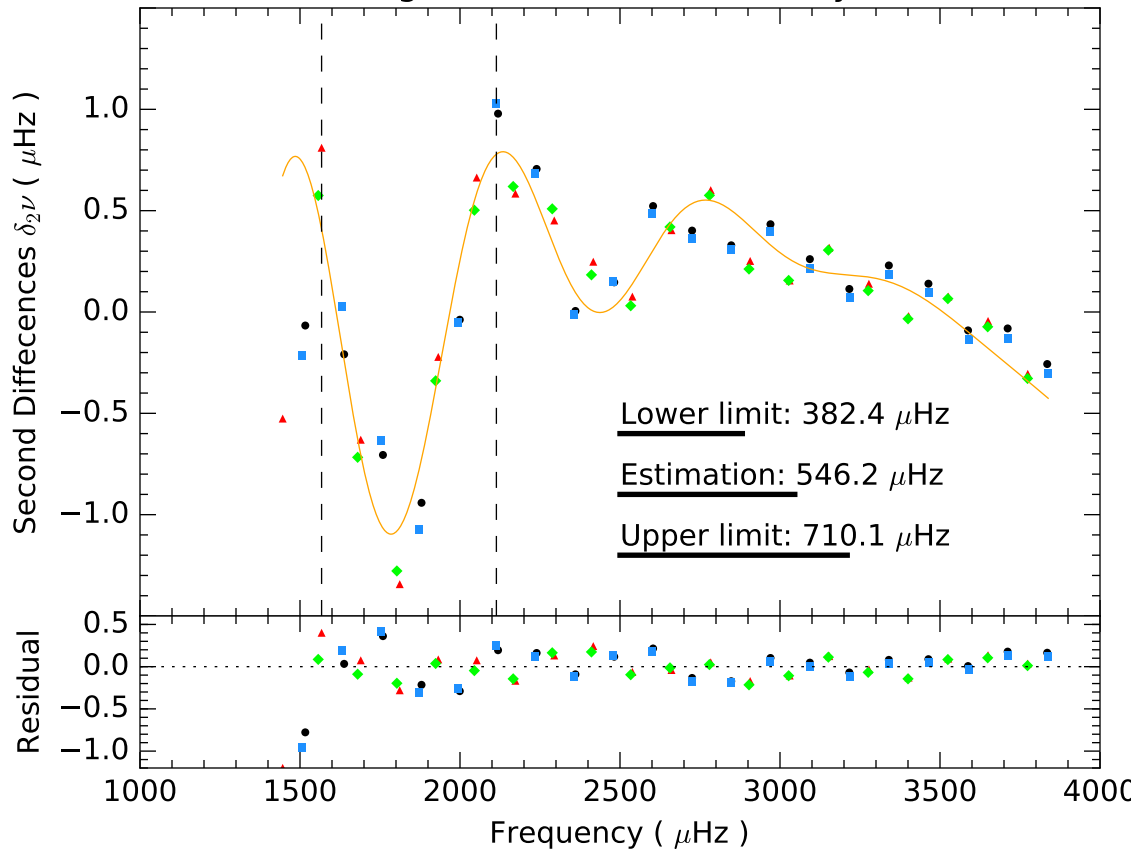
$$\tau_{\text{HeII}} = 741.08 \text{ s}$$

$$\phi_{\text{HeII}} = 6.2832$$

profile88

$$\chi^2_{\nu}(\text{dof} = 72) = 0.068408$$

Age after ZAMS: 23.098 Gyr

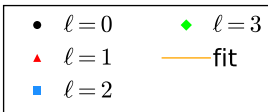
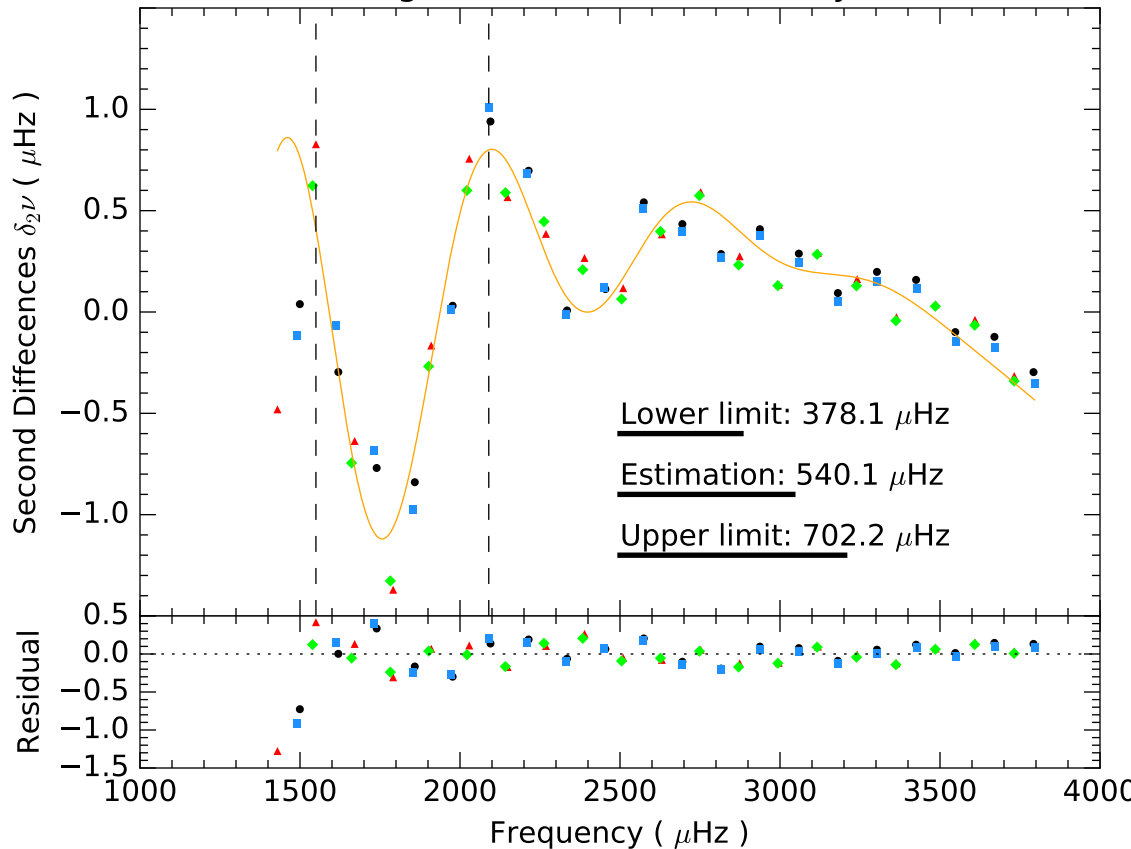


$$\begin{aligned}
 a_0 &= -4.1666 \mu\text{Hz} \\
 a_1 &= 0.0033669 \\
 a_2 &= -6.228e-07 \mu\text{Hz}^{-1} \\
 c_0 &= 0.0025403 \\
 c_2 &= 4.7993e-07 \mu\text{Hz}^{-2} \\
 \tau_{\text{HeII}} &= 759.74 \text{ s} \\
 \phi_{\text{HeII}} &= 6.2832
 \end{aligned}$$

profile89

$$\chi^2_{\nu}(\text{dof} = 72) = 0.067176$$

Age after ZAMS: 23.271 Gyr

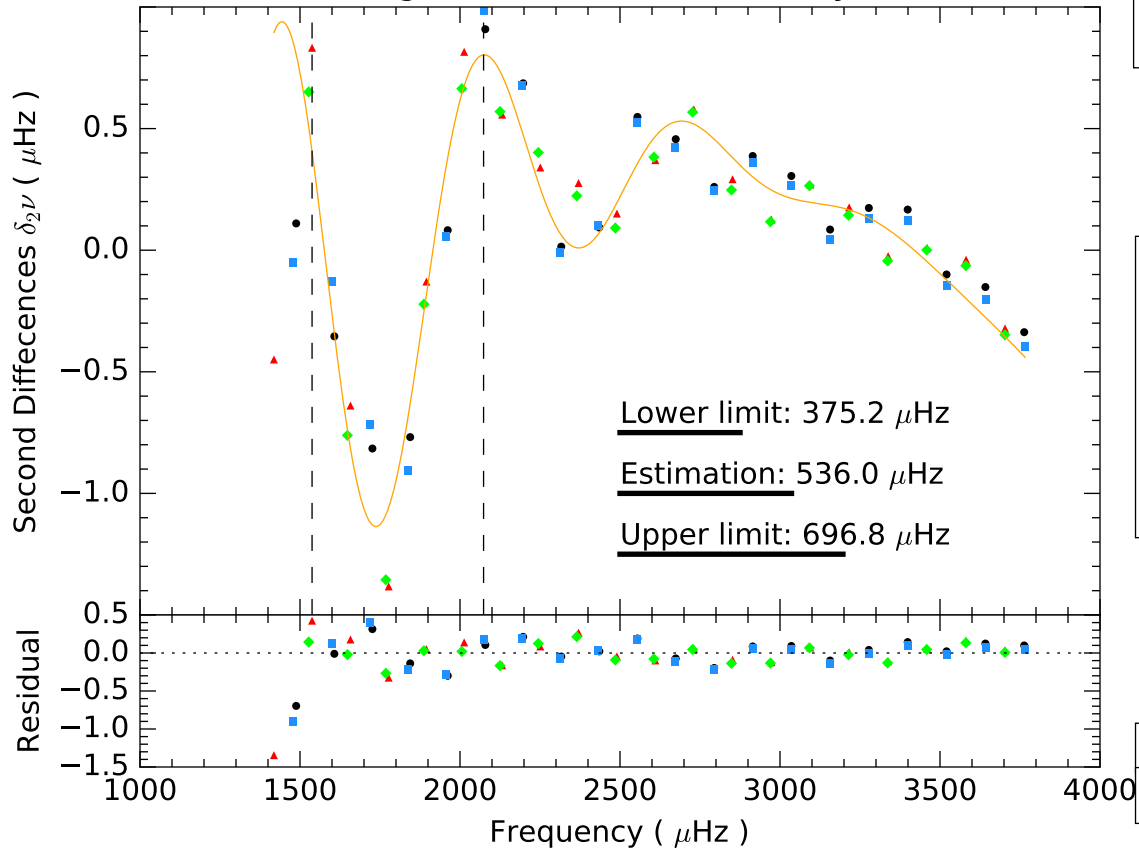


$a_0 = -4.0543 \mu\text{Hz}$
 $a_1 = 0.0033361$
 $a_2 = -6.273e-07 \mu\text{Hz}^{-1}$
 $c_0 = 0.0028208$
 $c_2 = 5.123e-07 \mu\text{Hz}^{-2}$
 $\tau_{HeII} = 771.81 \text{ s}$
 $\phi_{HeII} = 6.2832$

profile90

$\chi^2_{\nu}(\text{dof} = 72) = 0.066638$

Age after ZAMS: 23.385 Gyr



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

$$a_0 = -3.9783 \mu\text{Hz}$$

$$a_1 = 0.0033157$$

$$a_2 = -6.3069e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.0031192$$

$$c_2 = 5.4514e-07 \mu\text{Hz}^{-2}$$

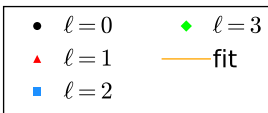
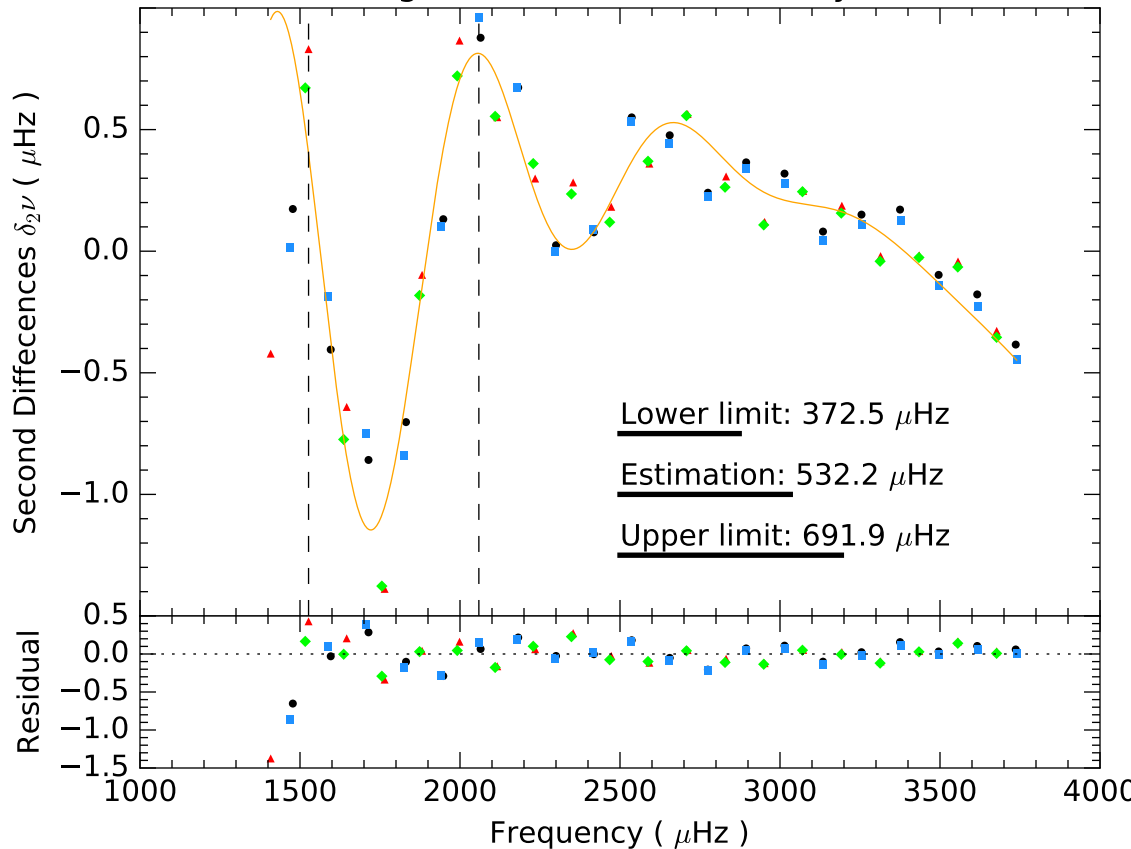
$$\tau_{\text{HeII}} = 780.32 \text{ s}$$

$$\phi_{\text{HeII}} = 6.2832$$

profile91

$$\chi^2_{\nu}(\text{dof} = 72) = 0.067245$$

Age after ZAMS: 23.487 Gyr



$$a_0 = -3.915 \mu\text{Hz}$$

$$a_1 = 0.0033009$$

$$a_2 = -6.3452e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.0032506$$

$$c_2 = 5.6021e-07 \mu\text{Hz}^{-2}$$

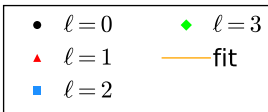
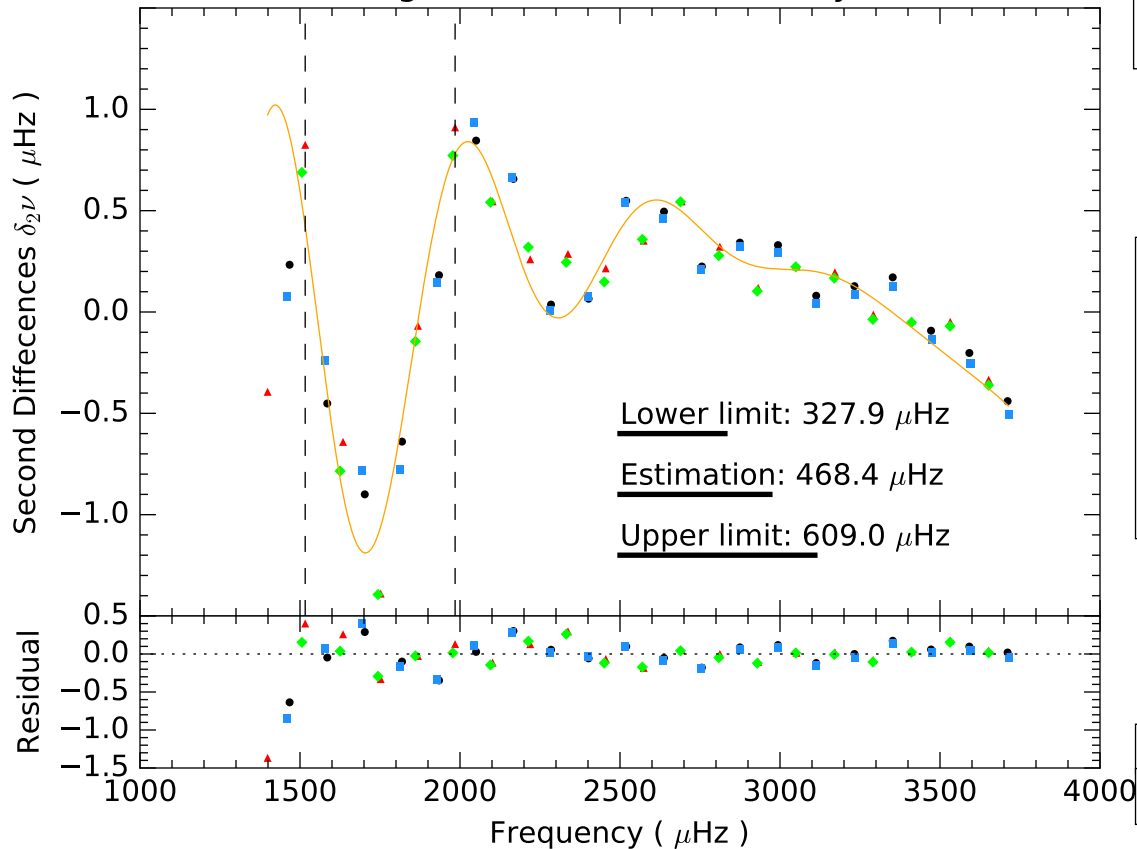
$$\tau_{\text{HeII}} = 787.65 \text{ s}$$

$$\phi_{\text{HeII}} = 6.2832$$

profile92

$$\chi^2_{\nu}(\text{dof} = 72) = 0.065869$$

Age after ZAMS: 23.583 Gyr

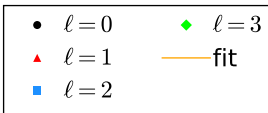
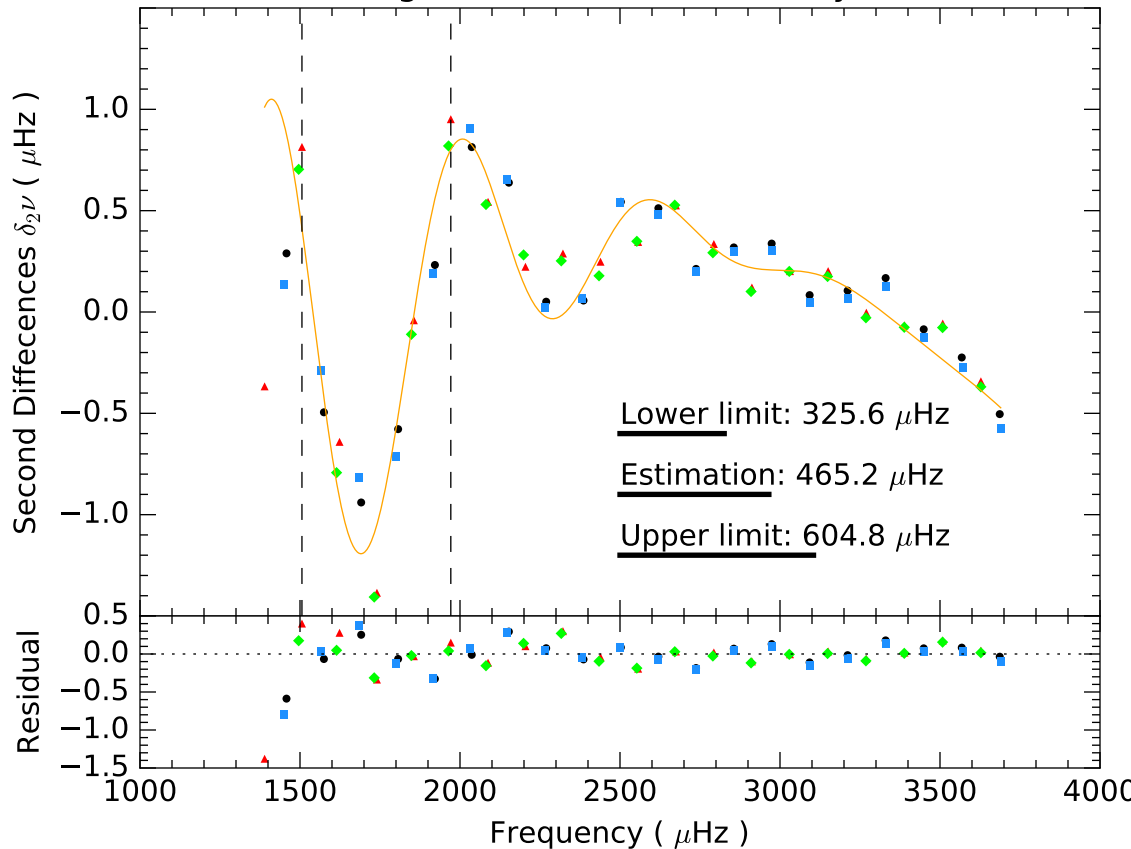


$$\begin{aligned}
 a_0 &= -3.9579 \mu\text{Hz} \\
 a_1 &= 0.003365 \\
 a_2 &= -6.5271e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.0033574 \\
 c_2 &= 5.6789e-07 \mu\text{Hz}^{-2} \\
 \tau_{\text{HeII}} &= 821.05 \text{ s} \\
 \phi_{\text{HeII}} &= 5.7464
 \end{aligned}$$

profile93

$$\chi^2_{\nu}(\text{dof} = 72) = 0.067267$$

Age after ZAMS: 23.674 Gyr

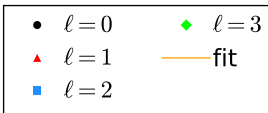
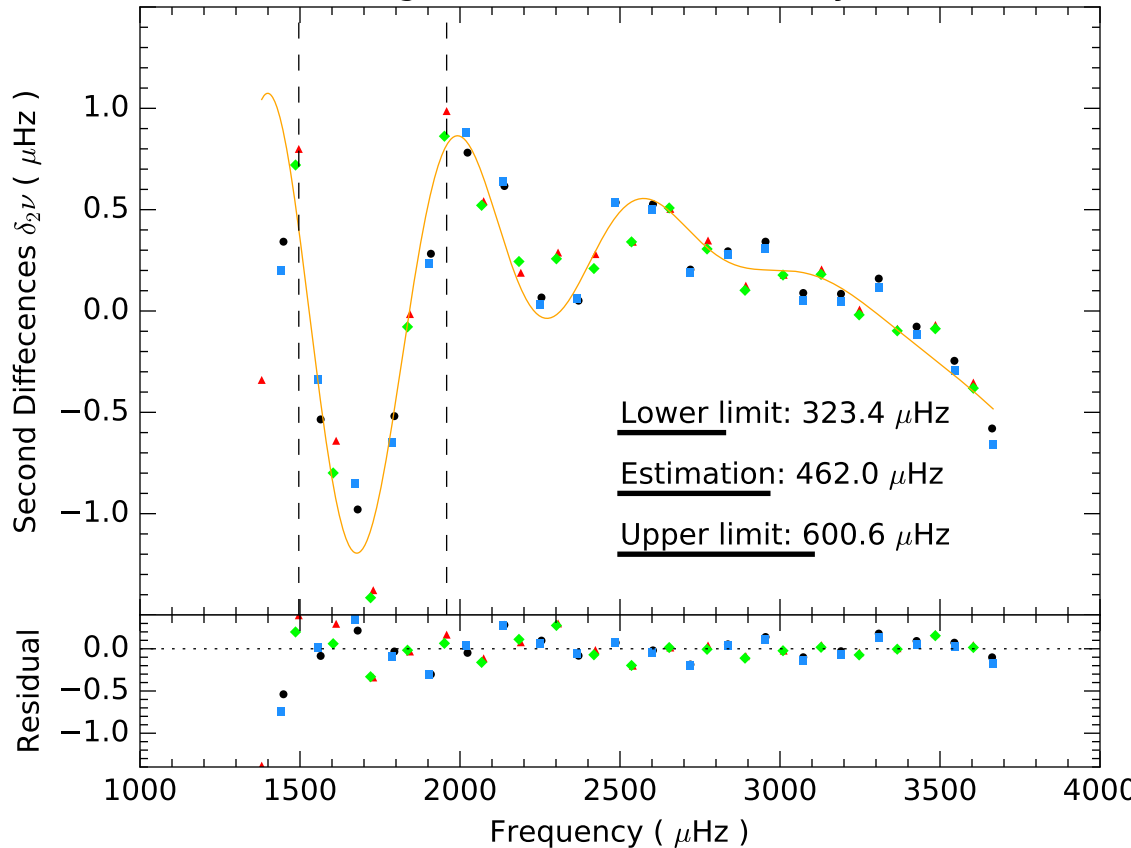


$a_0 = -3.9045 \mu\text{Hz}$
 $a_1 = 0.0033562$
 $a_2 = -6.5755e-07 \mu\text{Hz}^{-2}$
 $c_0 = 0.003406$
 $c_2 = 5.7548e-07 \mu\text{Hz}^{-2}$
 $\tau_{HeII} = 826.79 \text{ s}$
 $\phi_{HeII} = 5.7692$

profile94

$\chi^2_{\nu}(\text{dof} = 72) = 0.064951$

Age after ZAMS: 23.761 Gyr

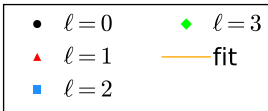
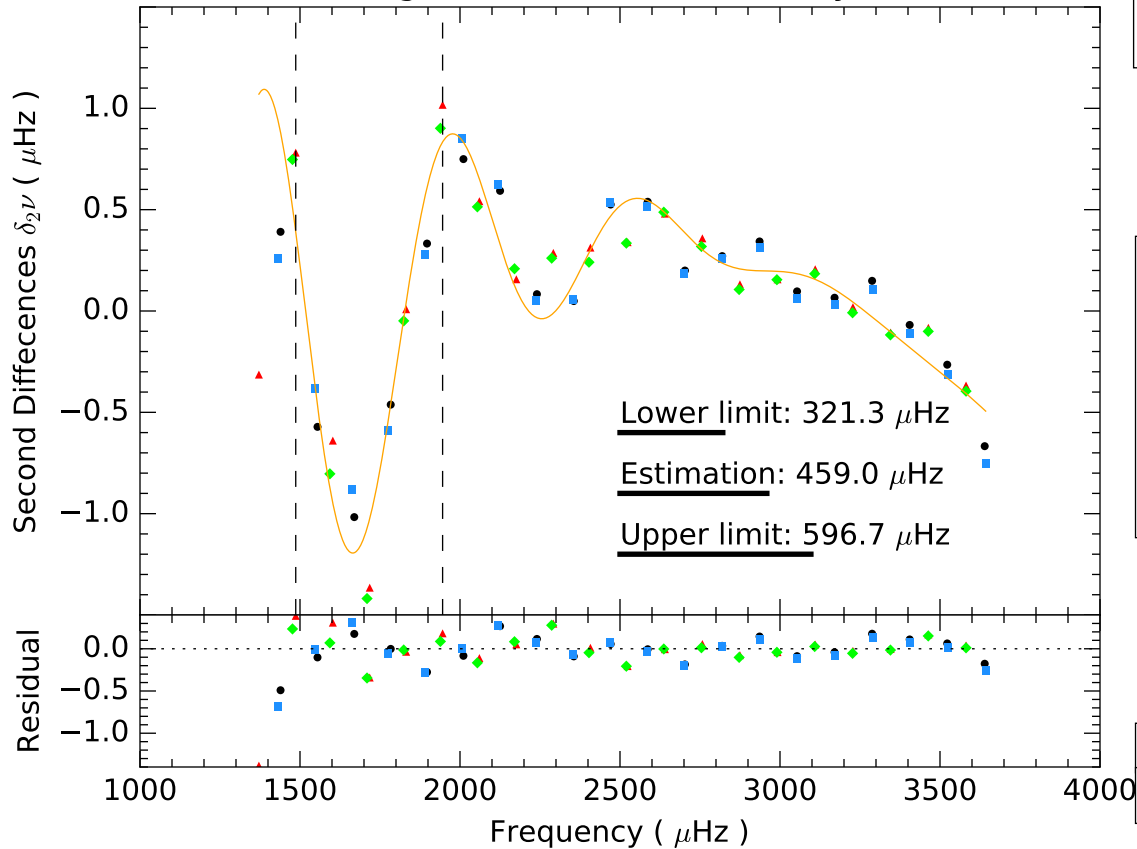


$$\begin{aligned}
 a_0 &= -3.8591 \mu\text{Hz} \\
 a_1 &= 0.0033528 \\
 a_2 &= -6.6342e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.0034483 \\
 c_2 &= 5.83e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 832.44 \text{ s} \\
 \phi_{HeII} &= 5.7898
 \end{aligned}$$

profile95

$$\chi^2_{\nu}(\text{dof} = 72) = 0.062852$$

Age after ZAMS: 23.844 Gyr



$$a_0 = -3.8188 \mu\text{Hz}$$

$$a_1 = 0.0033529$$

$$a_2 = -6.6994e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.0034821$$

$$c_2 = 5.9044e-07 \mu\text{Hz}^{-2}$$

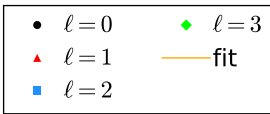
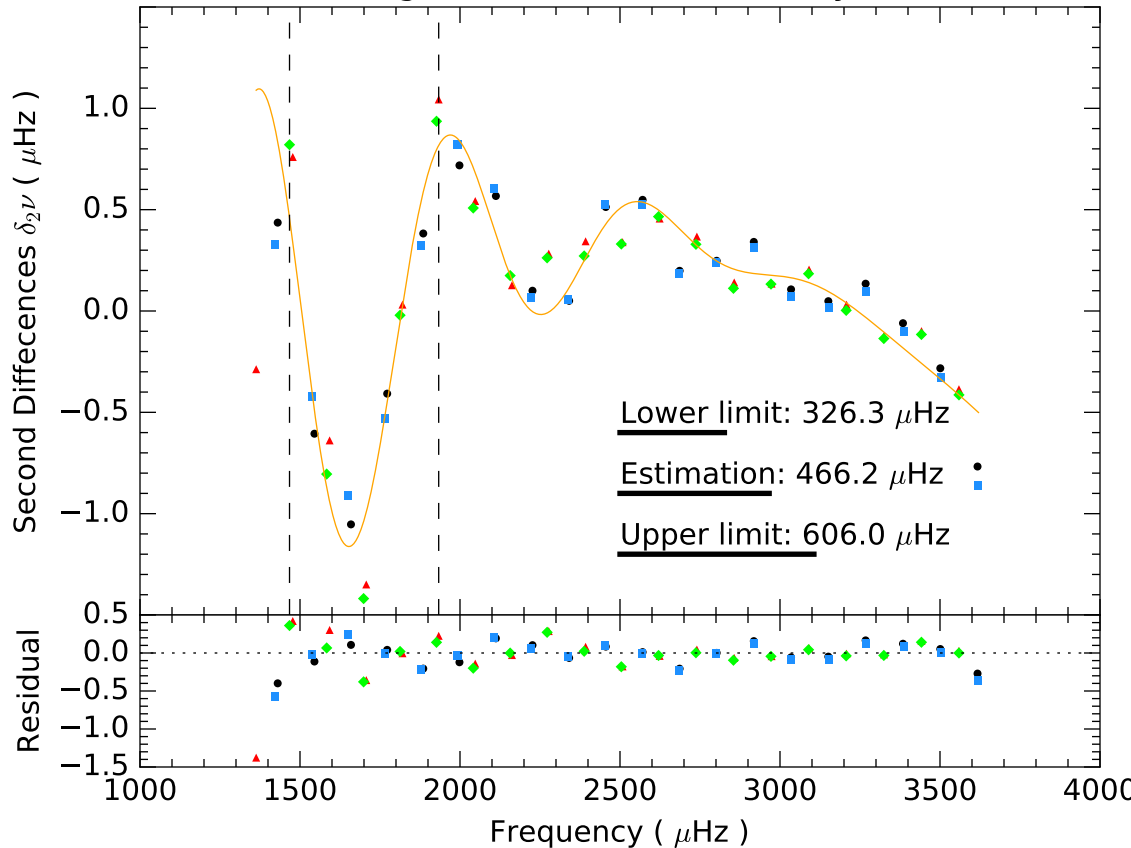
$$\tau_{\text{HeII}} = 837.99 \text{ s}$$

$$\phi_{\text{HeII}} = 5.8082$$

profile96

$$\chi^2_{\nu}(\text{dof} = 72) = 0.061162$$

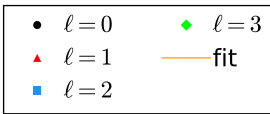
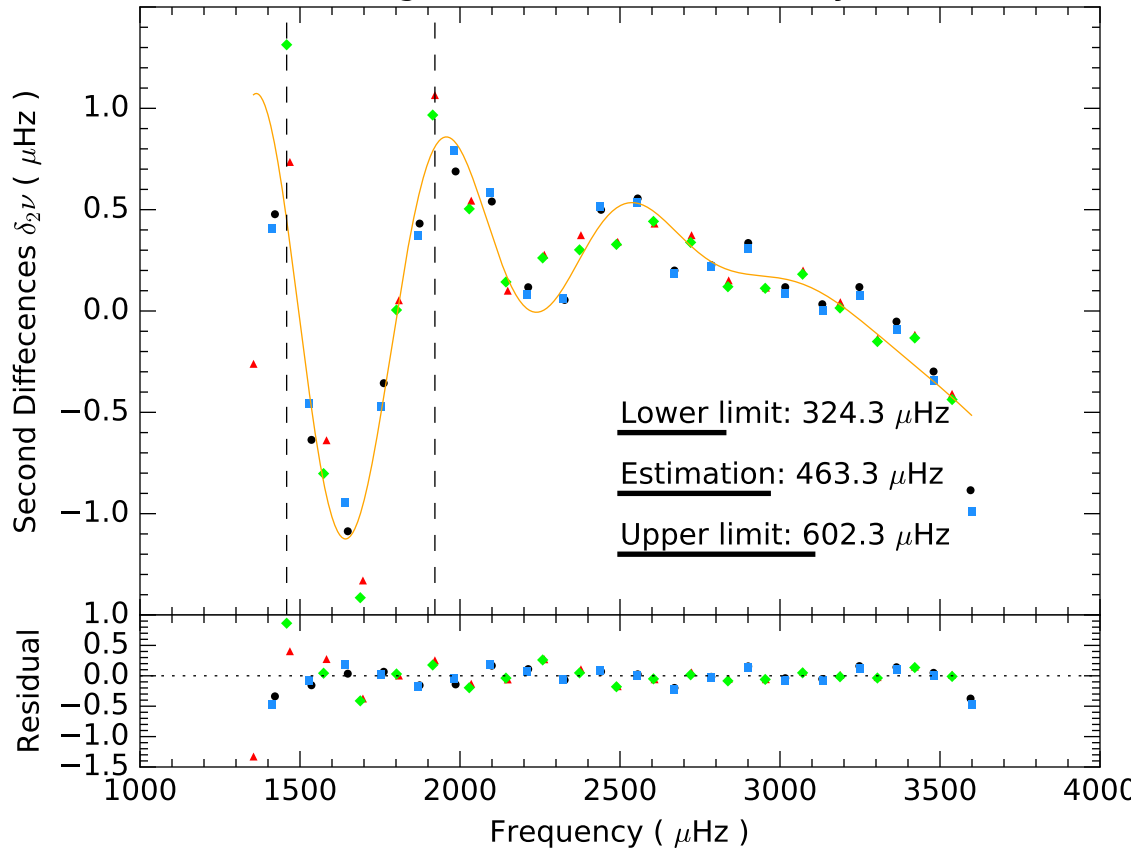
Age after ZAMS: 23.923 Gyr



$a_0 = -3.714 \mu\text{Hz}$
 $a_1 = 0.0033024$
 $a_2 = -6.6693e-07 \mu\text{Hz}^{-2}$
 $c_0 = 0.0034465$
 $c_2 = 5.9779e-07 \mu\text{Hz}^{-2}$
 $\tau_{\text{HeII}} = 825.05 \text{ s}$
 $\phi_{\text{HeII}} = 6.2001$

profile97
 $\chi^2_{\nu}(\text{dof} = 72) = 0.058825$

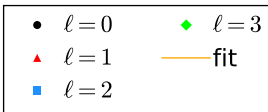
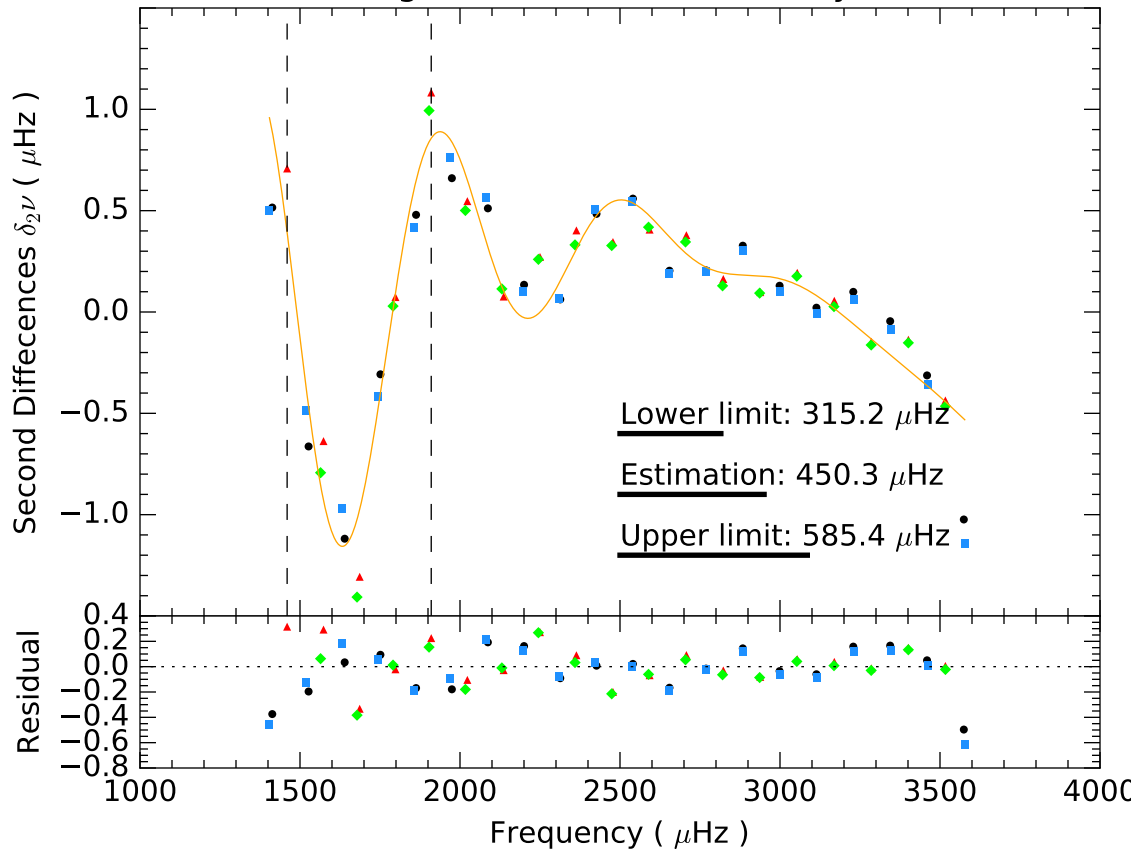
Age after ZAMS: 23.998 Gyr



$a_0 = -3.6741 \mu\text{Hz}$
 $a_1 = 0.003303$
 $a_2 = -6.738e-07 \mu\text{Hz}^{-1}$
 $c_0 = 0.0033801$
 $c_2 = 6.0505e-07 \mu\text{Hz}^{-2}$
 $\tau_{HeII} = 830.21 \text{ s}$
 $\phi_{HeII} = 6.2027$

profile98
 $\chi^2_{\nu}(\text{dof} = 72) = 0.065115$

Age after ZAMS: 24.070 Gyr

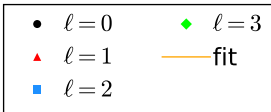
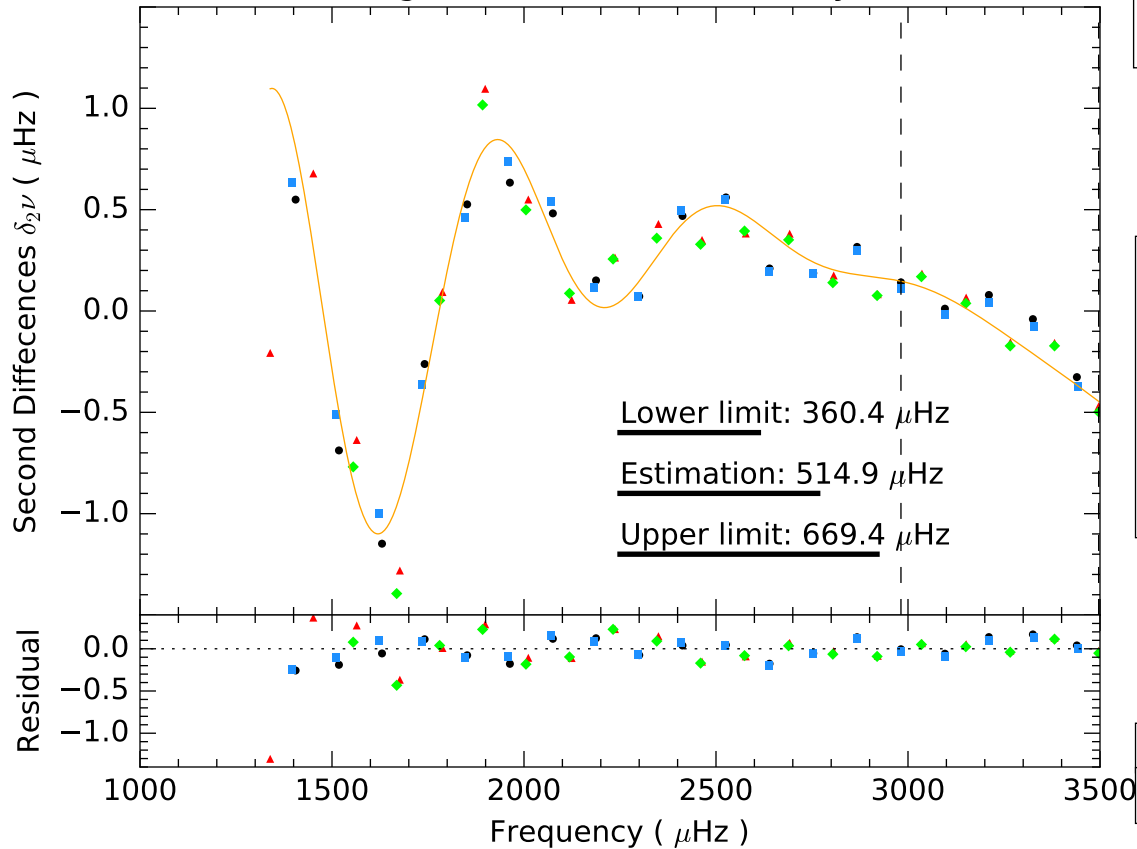


$$\begin{aligned}
 a_0 &= -3.6875 \mu\text{Hz} \\
 a_1 &= 0.0033448 \\
 a_2 &= -6.8848e-07 \mu\text{Hz}^{-2} \\
 c_0 &= 0.0034986 \\
 c_2 &= 6.1112e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 854.09 \text{ s} \\
 \phi_{HeII} &= 5.8246
 \end{aligned}$$

profile99

$$\chi^2_{\nu}(\text{dof} = 70) = 0.034487$$

Age after ZAMS: 24.138 Gyr

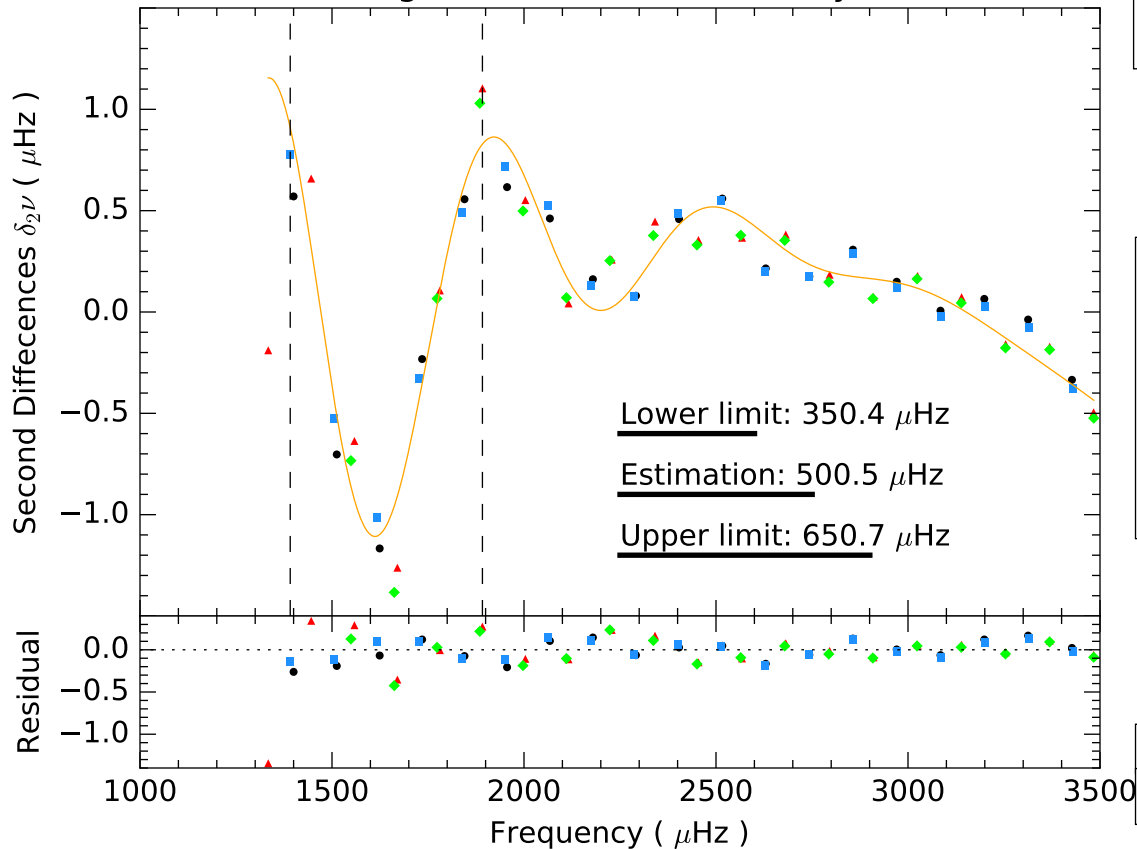


$$\begin{aligned}
 a_0 &= -3.6204 \mu\text{Hz} \\
 a_1 &= 0.0033177 \\
 a_2 &= -6.889e-07 \mu\text{Hz}^{-1} \\
 c_0 &= 0.003557 \\
 c_2 &= 6.4014e-07 \mu\text{Hz}^{-2} \\
 \tau_{HeII} &= 839.16 \text{ s} \\
 \phi_{HeII} &= 6.2502
 \end{aligned}$$

profile100

$$\chi^2_{\nu}(\text{dof} = 69) = 0.04725$$

Age after ZAMS: 24.182 Gyr



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

$$a_0 = -3.48 \mu\text{Hz}$$

$$a_1 = 0.0032189$$

$$a_2 = -6.7281e-07 \mu\text{Hz}^{-2}$$

$$c_0 = 0.0036348$$

$$c_2 = 6.4503e-07 \mu\text{Hz}^{-2}$$

$$\tau_{\text{HeII}} = 841.8 \text{ s}$$

$$\phi_{\text{HeII}} = 6.2832$$

profile101

$$\chi^2_{\nu}(\text{dof} = 69) = 0.048173$$