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Solar-like oscillations in red giants observed with *Kepler*: comparison of global oscillation parameters from different methods

S. Hekker[1], Y. Elsworth[1], J. De Ridder[2], B. Mosser[3], R.A. García[4], T. Kallinger[5,6], S. Mathur[7], D. Huber[8], D.L. Buzasi[9], H.L. Preston[9,10], S.J. Hale[1], J. Ballot[11], W.J. Chaplin[1], C. Régulo[12,13], T.R. Bedding[8], D. Stello[8], W.J. Borucki[14], D.G. Koch[14], J. Jenkins[15], C. Allen[16], R.L. Gilliland[17], H. Kjeldsen[18], and J. Christensen-Dalsgaard[18]

[1] University of Birmingham, School of Physics and Astronomy, Edgbaston, Birmingham B15 2TT, United Kingdom
[2] Instituut voor Sterrenkunde, K.U. Leuven, Celestijnenlaan 200D, 3001 Leuven, Belgium
[3] LESIA, UMR8109, Université Pierre et Marie Curie, Université Denis Diderot, Observatoire de Paris, 92195 Meudon Cedex, France
[4] Laboratoire AIM, CEA/DSM-CNRS, Université Paris 7 Diderot, IRFU/SAp, Centre de Saclay, 91191, GIf-sur-Yvette, France
[5] Department of Physics and Astronomy, University of British Colombia, 6224 Agricultural Road, Vancouver, BC V6T 1Z1, Canada
[6] Institute for Astronomy, University of Vienna, Türkenschanzstrasse 17, A-1180 Vienna
[7] High Altitude Observatory, NCAR, P.O. Box 3000, Boulder, CO 80307, USA
[8] Sydney Institute for Astronomy (SIfA), School of Physics, University of Sydney, NSW 2006, Australia
[9] Eureka Scientific, 2452 Delmer Street Suite 100, Oakland, CA 94602-3017, USA
[10] Department of Mathematical Sciences, University of South Africa, Box 392, UNISA 0003, South Afrika
[11] Laboratoire d'Astrophysique de Toulouse-Tarbes, Université de Toulouse, CNRS, F-31400, Toulouse, France
[12] Universidad de La Laguna, Dpto de Astrofísica, 38206, Tenerife, Spain
[13] Instituto de Astrofísica de Canarias, 38205, La Laguna, Tenerife, Spain
[14] NASA Ames Research Center, MS 244-30, Moffet Field, CA 94035, USA
[15] SETI Institute, NASA Ames Research Center, MS 244-30, Moffet Field, CA 94035, USA
[16] Orbital Sciences Corp., NASA Ames Research Center, Moffet Field, CA 94035, USA
[17] Space Telescope Science Institute, 3700 San Martin Drive, Baltimore, MD 21218, USA
[18] Department of Physics and Astronomy, Building 1520, Aarhus University, 8000 Aarhus C, Denmark

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ABSTRACT

Context. The large number of stars for which uninterrupted high-precision photometric timeseries data are being collected with *Kepler* and CoRoT initiated the development of automated methods to analyse the stochastically excited oscillations in main-sequence, subgiant and red-giant stars.
Aims. We investigate the differences in results for global oscillation parameters of G and K red-giant stars due to different methods and definitions. We also investigate uncertainties originating from the stochastic nature of the oscillations.
Methods. For this investigation we use *Kepler* data obtained during the first four months of operation. These data have been analysed by different groups using already published methods and the results are compared. We also performed simulations to investigate the uncertainty on the resulting parameters due to different realizations of the stochastic signal.
Results. We obtain results for the frequency of maximum oscillation power ($\nu_{\rm max}$) and the mean large separation ($\langle\Delta\nu\rangle$) from different methods for over one thousand red-giant stars. The results for these parameters agree within a few percent and seem therefore robust to the different analysis methods and definitions used here. The uncertainties for $\nu_{\rm max}$ and $\langle\Delta\nu\rangle$ due to differences in realization noise are not negligible and should be taken into account when using these results for stellar modelling.

Key words. asteroseismology – stars: late-type – methods: observational – techniques: photometric

1. Introduction

Oscillations in stars provide information on their internal structures. In the Sun, oscillations are stochastically excited in the outer turbulent layer and these so-called solar-like oscillations have provided a detailed picture of its internal structure including the size of the core, the location of the tachocline and differential rotation (see for a recent overview Chaplin & Basu 2008). With asteroseismology we observe stellar oscillations to reveal similar information on the internal structures of stars other than the Sun.

Stars with turbulent outer layers are expected to exhibit solar-like oscillations and these are indeed observed in solar-type stars, subgiants and G-K red-giant stars. For recent overviews of these observations and interpretations see e.g., Bedding & Kjeldsen (2008); Hekker (2010).

Currently, long time series of uninterrupted high-precision photometric data of oscillating stars are being measured by the space missions CoRoT (Convection Rotation and planetary Transits, Baglin et al. 2006) and *Kepler* (Borucki et al. 2009, see

Send offprint requests to: S. Hekker,
email: saskia@bison.ph.bham.ac.uk

also the MAST website http://stdatu.stsci.edu/kepler/ for Kepler data products available for general public). These missions have increased spectacularly the number of G and K red-giant stars in which solar-like oscillations, both radial and non-radial, are clearly detected. First results on red-giant seismology from both missions were presented by e.g. De Ridder et al. (2009); Hekker et al. (2009); Miglio et al. (2009); Carrier et al. (2010); Kallinger et al. (2010b); Mosser et al. (2010); Bedding et al. (2010); Hekker et al. (2010b); Stello et al. (2010).

In general, the time series are processed to give information on their frequency content using Fourier methods that take account of the non-uniform sampling in the time domain. When analysing these Fourier spectra, one can distinguish between an approach of detailed modelling of individual oscillation modes using Lorentz fitting (e.g., Appourchaux et al. 2008; Benomar et al. 2009; Deheuvels et al. 2010), and a more global analysis of the power spectrum which yields average seismic quantities such as the frequency of maximum power ($\nu_{\rm max}$), the mean large frequency spacing ($\langle\Delta\nu\rangle$), and a parametric fit of the granulation background. From these global seismic observables astrophysically interesting information can be extracted, such as constraints on our galaxy's starburst history (Miglio et al. 2009) and a precise determination of red giant radii and masses (e.g., Kallinger et al. 2010b).

However, as will be shown in Section 2, different authors use different definitions and different approximations to derive $\nu_{\rm max}$ and $\langle\Delta\nu\rangle$. None of these approaches can be claimed as 'the' only correct one, yet there is a need to convey results to theoreticians for modelling. In this paper we quantitatively investigate to what extent the results from different approaches differ. We also study how robust are the different definitions against variations in the power spectrum due to the stochastic realization of the oscillation modes. Understanding both these sources of uncertainty in the observations is of importance for the physical interpretation of the results and seismic modelling. Finally, we discuss what can be gained by combining different methods.

The results for the global oscillation parameters of stars observed with *Kepler* as presented here are used for a more detailed study by Huber et al. (2010) and to investigate the asteroseismic masses and radii of the stars by Kallinger et al. (2010a).

2. Oscillation parameters

The particular oscillation parameters discussed in this study are the frequency of maximum oscillation power ($\nu_{\rm max}$) and the large frequency separation ($\Delta\nu$). In general, $\Delta\nu$ is the separation between oscillation modes with the same degree ℓ and consecutive radial orders n and is sensitive to the sound travel time across the star. For high-order low-degree modes we expect the eigenfrequencies ($\nu_{n,\ell}$) to follow approximately the asymptotic relation by Tassoul (1980), which can be expressed as:

$$\nu_{n,\ell} \simeq \Delta\nu\left(n + \frac{\ell}{2} + \varepsilon\right) - \ell(\ell+1)D_0, \quad (1)$$

in which ε is sensitive to the surface layers and D_0 to layers deeper inside the star. Based on previous results, we take D_0 to be small compared to $\Delta\nu$. The large separation is approximately constant. However, it is well known from observations of the Sun and other stars that $\Delta\nu$ does depend on both frequency and angular degree.

We first describe the general methods by which we obtain $\nu_{\rm max}$ and $\langle\Delta\nu\rangle$. This will then be followed by a more detailed description of each method used in the present study, with the aim of investigating the similarities and differences in the resulting values obtained from different determinations.

The presence of modes due to resolved, stochastically-excited solar-like oscillations leads to a power excess which has a shape that can often be approximated by a Gaussian distribution. This characteristic feature is used to estimate $\nu_{\rm max}$ as the centroid of a Gaussian fitted to the (smoothed) power excess. A complexity is that the oscillations in red giants occur in a frequency regime also containing signal due to stellar activity, granulation and possibly instrumental effects. This 'background' power has a slope that can influence the determination of $\nu_{\rm max}$, and must be taken into account. The background can be modeled by a sum of power laws and white noise (e.g. Harvey 1985; Hekker et al. 2009; Kallinger et al. 2010b). In some cases a simplification is valid and a linear approximation to the background over the frequency range of the oscillations is used.

The regularity in the large frequency spacing between the modes of solar-like oscillations provides a clear signature in the power spectrum of the power spectrum (PS⊗PS), which is equivalent to the autocorrelation of the timeseries. The highest features in the PS⊗PS occur at submultiples of $\Delta\nu$, i.e., $\Delta\nu/2$, $\Delta\nu/4$. Similar features from submultiples of $\Delta\nu$ are present in an autocorrelation of the power spectrum. Many algorithms use a rough version of the relation between $\nu_{\rm max}$ and $\Delta\nu$ as described by Hekker et al. (2009); Stello et al. (2009); Mosser et al. (2010) to identify which feature is due to which submultiple:

$$\Delta\nu \sim \nu_{\rm max}^{0.73\rightarrow0.8}, \quad (2)$$

in which $0.73 \rightarrow 0.8$ indicates the range of values used for the exponent. When the individual modes in the power spectrum are fitted directly, in a procedure known as peak bagging, the large separation as a function of frequency can be obtained directly. Peakbagging is only used in one approach, which is described in more detail by Kallinger et al. (2010a).

Having described the general concepts for determining $\nu_{\rm max}$ and $\langle\Delta\nu\rangle$, we now describe the methods used by the different teams that analysed the data. The methods are also summarised in Table 1. We refer to the references for more detailed descriptions of the methods developed by the individual teams.

- In the autocorrelation method described by Mosser & Appourchaux (2009, hereafter COR) $\nu_{\rm max}$ is obtained as the centroid of a Gaussian fit to the smoothed power spectrum. For the smoothing, a Gaussian with full width half maximum (FWHM) of $3\langle\Delta\nu\rangle$ is used. $\langle\Delta\nu\rangle$ is determined from the first peak in the autocorrelation of the timeseries apodised with a Hanning filter, where the FWHM of the excess envelope is used to compute the mean value.
- In the automated Bayesian Markov-Chain Monte Carlo algorithm (Kallinger et al. 2010b; Gruberbauer et al. 2009, hereafter CAN), $\nu_{\rm max}$ is defined as the centroid of a Gaussian fitted to the unsmoothed power spectrum. $\langle\Delta\nu\rangle$ is obtained from peakbagging, i.e. from fitting a sequence of Lorentzian profiles spanning three radial orders to the background-corrected power spectrum, parameterised by the large and small frequency separations.
- In the method described by Mathur et al. (2010, hereafter A2Z) and adapted for the analysis of red giants, $\nu_{\rm max}$ is defined from a Gaussian fit to the smoothed power spectrum. For the smoothing a boxcar of width $4\langle\Delta\nu\rangle$ is used. $\langle\Delta\nu\rangle$ is determined from the highest feature in the PS⊗PS, which is computed over a range $\nu_{\rm max} \pm \nu_{\rm max}/3$. The results for $\langle\Delta\nu\rangle$ are cross-checked with results from the autocorrelation method (Mosser & Appourchaux 2009).

Table 1. Summary of the different methods used to determine $\nu_{\rm max}$ and $\langle\Delta\nu\rangle$. We also mention the way the smoothing is applied to the power spectrum in the determination of $\nu_{\rm max}$, the frequency interval over which $\langle\Delta\nu\rangle$ is computed, how the background is determined and whether Eq. 2 is used. For the background we indicate the general formulae with w indicating white noise, ν frequency, and a, B, C, α and β free parameters.

ID	COR	CAN	A2Z	SYD	DLB	OCT
$\nu_{\rm max}$	centroid Gaussian	centroid Gaussian	centroid Gaussian	peak smoothed PS	centroid Gaussian	centroid Gaussian (I) first moment (II)
smoothing	$3\Delta\nu$ Gauss	none	$4\Delta\nu$ box	$2\Delta\nu$ Gauss	10 μHz Gauss	$2\Delta\nu$ box
$\Delta\nu$	autocor timeseries	fit to PS	PS⊗PS	autocor PS	autocor PS	PS⊗PS
freq interval	FWHM osc excess	3 radial orders	$\nu_{\rm max} \pm \nu_{\rm max}/3$	$\nu_{\rm max}\pm$ 5-7$\Delta\nu$	$\nu_{\rm max} \pm \nu_{\rm max}/4$	osc excess
background	$w + a\nu^{-\beta}$	$w + \sum_{i=1}^{3} \frac{B_i}{1+C_i\nu^4}$	$w + \frac{B}{1+C\nu^{\alpha}} + a\nu^{-\beta}$	$w + \sum_i \frac{B_i}{1+(C_i\nu)^2+(C_i\nu)^4}$	$w + \frac{B}{1+C\nu^2}$	linear approx
Eq. 2	yes	no	yes	yes	yes	yes

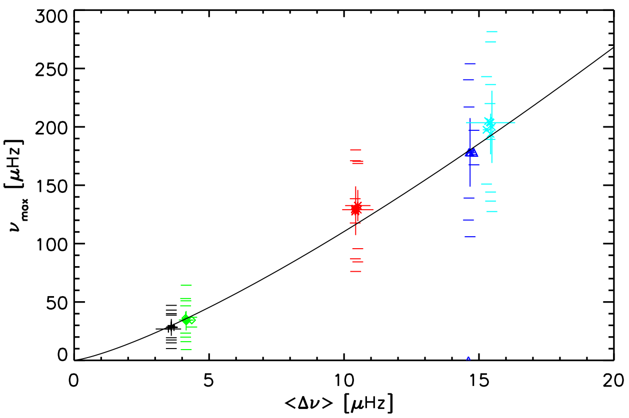

Fig. 1. $\nu_{\rm max}$ versus $\langle\Delta\nu\rangle$ for five stars observed with *Kepler*. For each star all results are plotted with the uncertainties derived by the different methods. The ranges in frequency over which $\langle\Delta\nu\rangle$ values are computed are indicated with the horizontal lines above and below the results. A different colour and symbol are used for results of each star. The black solid line indicates the approximate relation between $\langle\Delta\nu\rangle$ and $\nu_{\rm max}$.

– Huber et al. (2009, hereafter SYD) compute $\nu_{\rm max}$ as the peak of the smoothed power spectrum. The smoothed power spectrum is computed using a Gaussian with a FWHM of $2\langle\Delta\nu\rangle$. $\langle\Delta\nu\rangle$ is computed from the autocorrelation of the power spectrum in the frequency interval $\nu_{\rm max} \pm$ 5-7$\langle\Delta\nu\rangle_{\rm exp}$, where $\langle\Delta\nu\rangle_{\rm exp}$ is calculated using Eq. 2.
– In the next method (Buzasi, Preston; hereafter DLB), $\nu_{\rm max}$ is determined from a Gaussian fit to the smoothed power spectrum. The power spectrum is smoothed using a Gaussian filter with a width equal to 10 μHz. $\langle\Delta\nu\rangle$ is computed from the autocorrelation of the power spectrum in the range $\nu_{\rm max} \pm \nu_{\rm max}/4$.
– In the method described by Hekker et al. (2010a) and adapted for red giants, $\nu_{\rm max}$ is determined in two ways. In the first method (OCT I), $\nu_{\rm max}$ is defined as the centroid of a Gaussian fit to the smoothed power spectrum. In the second method (OCT II), $\nu_{\rm max}$ is computed as the first moment of the area under the smoothed power envelope. The smoothing is obtained using a boxcar with a width of $2\langle\Delta\nu\rangle$. $\Delta\nu$ is computed from the PS⊗PS of the full frequency range in which oscillation excess has been detected.

From this overview it is clear that similar approaches are used by the different teams to determine $\nu_{\rm max}$ and $\langle\Delta\nu\rangle$, although there are differences in the smoothing for $\nu_{\rm max}$ and in the range over which the mean $\Delta\nu$ is computed. On average, neither of these effects are significant in comparison with other sources of uncertainty. We illustrate this for $\langle\Delta\nu\rangle$ with the data shown in Fig. 1, which shows the results from several methods for $\nu_{\rm max}$ and $\langle\Delta\nu\rangle$ for five typical stars. The observed values are shown by the symbols with the ranges over which $\langle\Delta\nu\rangle$ has been computed indicated by the small horizontal lines. Formal errors, where available, are also shown. It is obvious from this figure that the impact of the frequency range is small and within the uncertainties. This is plausible for the following reasons. Firstly, the trend in $\Delta\nu$ over a typical frequency range is approximately linear with frequency. Note that, when analysed in detail, it can be shown that $\Delta\nu$ may vary rapidly with frequency (Mosser et al. 2010). Secondly, most of the time, the region selected is symmetrical with respect to $\nu_{\rm max}$. The consequence of these two factors is that the value returned for $\langle\Delta\nu\rangle$ is roughly independent of the precise range chosen. Furthermore, $\Delta\nu$ changes relatively slowly with frequency and so the impact of a small change in the central position is small, i.e., within the general uncertainties in the determination of $\langle\Delta\nu\rangle$.

Differences in results for $\nu_{\rm max}$ and $\langle\Delta\nu\rangle$ may also arise from the following issues:

– the preparation of the power spectrum,
– identification of the frequency range of oscillations,
– computation of the background signal,
– definition of a positive detection / artefact,
– computation of uncertainties.

These issues are addressed in Sections 4 and 5.

3. Comparison using simulations

To obtain a measure of the variation in the observed parameters due to the stochastic nature of the oscillations, which we will refer to as realization noise, we first present results of a comparison using different realizations of simulated timeseries. Because we observe stochastically excited oscillations, the observed oscillation characteristics will change with time. Timeseries with an infinite timespan would provide the 'real' or 'limit' oscillation parameters. In reality we are dealing with data with a limited timespan and to investigate the scatter in the results due to this, we simulated 100 realizations for five '*Kepler*' stars using the simulator described by De Ridder et al. (2006). The input parameters are listed in Table 2 and were derived from the observations of the *Kepler* targets with *Kepler* ID 1720425, 2013502, 2696732, 3526061, and 6033938 (see Table 7 for their characteristics). These stars are selected based on a visual inspection of their power spectra. By taking parameters obtained from observed stars instead of from for instance scaling relations, we aim to resemble the Kepler observations as well as possible. This also means that scaling relations are not readily applicable anymore, because stars with for instance different metallicity and/or mass are likely to be represented. These parameters are known to induce deviations from the scaling relations. As indicated in Table 2, two sets of mode life times have been considered for each of the simulated *Kepler* stars. This was done to investigate the influence of the width of the frequency peaks, which increases for modes with decreasing life times, on the resulting values of $\nu_{\rm max}$ and $\langle\Delta\nu\rangle$.

These synthetic timeseries were analysed using the methods described in the previous section. The results for simulations 1-5 are shown in Fig. 2 and compared in Figs. 3, 4 and 5, in which the comparison is shown as a function of the results obtained with method COR. Apart from results for some individual realizations around $\nu_{\rm max}$ of 50 μHz, for which the oscillations have the smallest height compared to the background, the results are consistent with the input values, but with a non-negligible scatter. This scatter is inherent to the observations of the star, although not fully independent of the analysis method, and should be taken into account when detailed modelling is performed for a particular star. The mean values of the results of all realizations with the same input parameters and the standard deviations of the results are listed in Tables 3 and 4. The results for simulations 6-10 with longer mode life times are very similar to the results obtained for simulations 1-5. Therefore, we conclude that the mode life time does not significantly influence the obtained $\nu_{\rm max}$ and $\langle\Delta\nu\rangle$ at least for the values investigated here.

Figs. 2, 3 and 4 show some interesting differences in the strengths and weaknesses of the different methods. Firstly, from Fig. 2 and Table 3 and 4 it is clear that all methods provide in general results consistent with the input parameters. Only the Lorentzian fitting from CAN did not return values for $\langle\Delta\nu\rangle$ for the simulations with $\nu_{\rm max}$ at 20 μHz, because the frequency peaks were spaced too closely relative to the timebase of the dataset. In general, for the realizations at $\nu_{\rm max}$ of 50 μHz and 170 μHz the spread in the results is larger due to the relative weakness of the oscillations, and the results of some methods show more spread in $\nu_{\rm max}$ (OCT I), while for others the spread in $\langle\Delta\nu\rangle$ is somewhat larger (A2Z and DLB). Secondly, when comparing the results of the different methods with respect to COR (see Figs. 3 and 4) this shows that, apart from the 'outliers', the results for $\Delta\nu$ of the different methods agree to sub-μHz level. The agreement in $\nu_{\rm max}$ is typically a few μHz. Larger differences are only present for oscillations at the highest frequency when using the OCT I method (centroid of Gaussian fit to smoothed power excess). From the trends in the centre top panel in Fig. 3 it is clear that for $\nu_{\rm max}$ the spread in the results at low frequencies is largest for results obtained with COR, i.e., the spread of the results on the x-axis (COR) is equivalent to the spread on the y-axis (OCT II-COR). At higher frequencies the differences in $\nu_{\rm max}$ seem to be mainly due to OCT II. In this case the spread in results on the x-axis (COR) is less than the spread on the y-axis (OCT II-COR). Similar reasoning reveals that for $\Delta\nu$ at $\nu_{\rm max} > 80$ μHz the spread in the results obtained with method COR dominate the total spread in the difference between the results CAN - COR (left bottom panel in Fig. 3) and SYD - COR (left bottom panel in Fig. 4).

The differences in the results can be due to differences in the methods and due to the realization noise. To investigate this we show the differences in the results added to the input value (see Fig. 5). The scatter in the values in this figure can be interpreted as the differential response of the methods, and are listed in Tables 5 and 6. From this table it is notable that for $\langle\Delta\nu\rangle$ of oscillations with $\nu_{\rm max}$ at 80 μHz or above, the scatter between OCT and COR is less than the scatter in Fig. 2. This indicates that in these cases the scatter due to realization noise is at least as important as the scatter in the results due to the different methods. We also see that the scatter in the difference of the results from SYD - COR and A2Z - COR for $\nu_{\rm max}$ is less for $\nu_{\rm max} \geq 80$ μHz. For the other simulations we cannot distinguish between realization noise and uncertainties, possibly due to the effect of beating between signal and background noise, i.e. changes in the amplitude and hence power when the signal and noise are of similar magnitudes due to the fact that in the amplitude spectrum the signal and noise are added as complex numbers and their relative phases can change significantly. These results indicate that the spread in results due to realization noise can be larger than the difference in the results between different methods, but this depends on the frequency range and the methods used.

Finally, the error bars in Fig. 2 show that uncertainties on the results are in general not a reliable indication of the spread in the results. We discuss the issue of the uncertainties further in Sect 5.

4. Observations

For the present investigation we used data obtained by the NASA *Kepler* satellite taken during the 10 day commissioning run (Q0), the one-month first roll (Q1) and the three-month second roll (Q2), all taken in long-cadence mode (29.4-minute sampling, not entirely regular due to changes in the correction to barycentric times caused by the satelite orbit, see for more details Jenkins et al. 2010). These data are of unprecedented quality, although there are still some outliers and artefacts present in the timeseries of some stars. Before the power spectra are computed, outliers present in the timeseries need to be treated. Their positions can either be filled with zeroes or with a mean flux computed from surrounding observations, or left blank. In Q2 there was a safe-mode event in the first month during which the satellite warmed up and the subsequent thermal relaxation produced photometric responses. In addition there were three separate adjustments of the pointing at the ~0.05 pixel level, leading to step functions in the photometry in some cases. We investigated several ways to remove these signals, such as removing the affected part of the timeseries, or splitting the light curve into several parts, and correcting them individually. These different methods seem to work equally well and therefore we do not expect significant differences in the results of the oscillation parameters described here due to these corrections.

Investigation of the data taken during the first roll (Q1) revealed that many science targets exhibit non-sinusoidal oscillations with a 3.2hr period (87 μHz). This phenomenon is associated with cycling of a heater on one of the Kepler reaction wheels. For an example of this signature see Fig. 6. Due to the non-sinusoidal nature of the signal the resulting signature in the power spectrum mimics solar-like oscillations in terms of its width and near equidistant features. We investigated whether it is related to CCD module or position on the CCD module. We found that it seems to be worse for CCD modules located on the edge of the complete 42-CCD mozaic and mostly on one side, i.e. CCDs 2, 3, 4, 6, 10, 11. So far this was only investigated for stars observed during the Q0 and Q1 runs.

5. Comparison

Comparing results from seven different methods that produced seven measures for $\nu_{\rm max}$ and six measures for $\Delta\nu$ for hundreds of stars is a lengthy process. The results of all teams are collected in a data exchange facility called the *Catbasket*. The *Catbasket* is used to store results for individual stars with uncertainties

Table 2. Input parameters for synthetic timeseries: frequency of maximum oscillation power (ν_{max}), large separation between modes of consecutive order ($\Delta\nu$), small separation between modes with degree 0 and 2 ($\delta\nu_{02}$), half width at half maximum of a Gaussian fit to the oscillation power excess (width$_{env}$) in μHz, the height of this Gaussian fit (height$_{env}$) to the power excess envelope in ppm$^2\mu$Hz^{-1} and mode life times (τ) for modes of different degree ℓ = (0,1,2,3) in days.

Simulation	ν_{max} μHz	$\Delta\nu$ μHz	$\delta\nu_{02}$ μHz	width$_{env}$ μHz	height$_{env}$ 10^3 ppm^2 μHz^{-1}	$\tau_{\ell=0}$ days	$\tau_{\ell=1}$ days	$\tau_{\ell=2}$ days	$\tau_{\ell=3}$ days
1	20.0	2.7	0.38	5.0	40.0	50.0	15.0	30.0	30.0
2	50.0	6.5	0.80	6.5	10.0	50.0	15.0	30.0	30.0
3	80.0	9.1	1.2	6.5	14.4	50.0	15.0	30.0	30.0
4	120.0	11.2	1.4	5.0	19.6	50.0	15.0	30.0	30.0
5	170.0	13.9	1.7	7.0	6.4	50.0	15.0	30.0	30.0
6	20.0	2.7	0.38	5.0	40.0	100.0	30.0	60.0	60.0
7	50.0	6.5	0.80	6.5	10.0	100.0	30.0	60.0	60.0
8	80.0	9.1	1.2	6.5	14.4	100.0	30.0	60.0	60.0
9	120.0	11.2	1.4	5.0	19.6	100.0	30.0	60.0	60.0
10	170.0	13.9	1.7	7.0	6.4	100.0	30.0	60.0	60.0

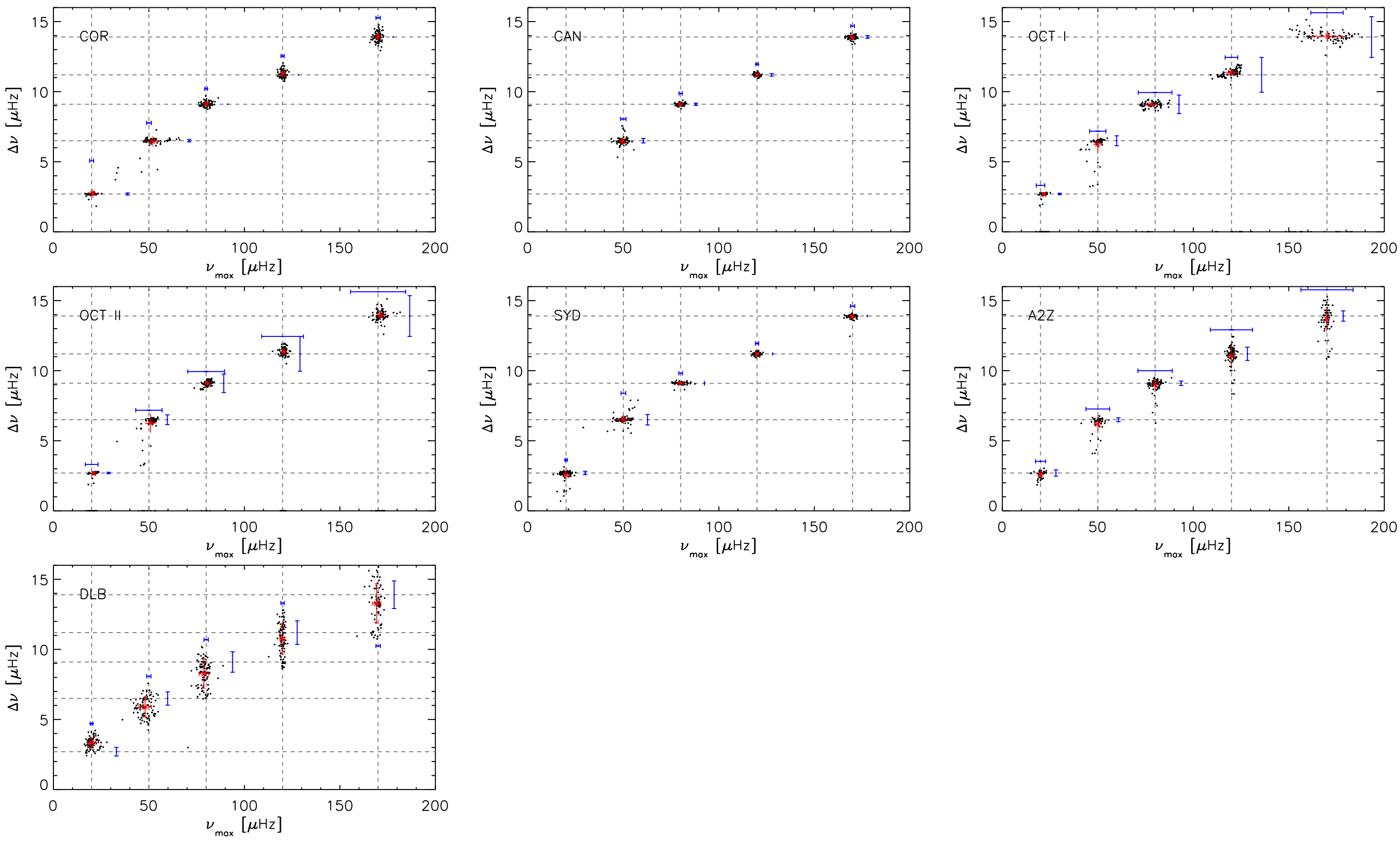

Fig. 2. Results for ν_{max} and $\Delta\nu$ of the analysis of synthetic time series using different methods: COR, CAN, OCT I, OCT II, SYD, A2Z and DLB. The black dots indicate the values obtained by the methods for each individual realization, the red asterisks indicate the mean value and scatter of these results. The typical uncertainties on the computed values for each model are indicated with the blue error bars. The gray dashed lines indicate the input values.

and explanations on how the results were obtained, written in a specific format. The *Catbasket* is located and maintained in Birmingham and is accessible through a web interface. The concept of the *Catbasket* allows for a comparison of results, as is done in this study.

Most methods have an automated procedure to detect the oscillations. These are based on either the hump of excess power (OCT, DLB) or on the regular frequency pattern of the oscillations (SYD, COR, A2Z). For the CAN method, the stars are selected manually and tend to be those where the signal is strong. The exact implementation of the oscillation detection influences the sensitivity of the methods in any given frequency range. Therefore, the number of methods that return a result varies from star to star.

Because of the differences between different methods, we resist giving 'mean' values for ν_{max} or $\langle\Delta\nu\rangle$ for any of the *Kepler* stars. However, we do wish to take advantage of the multiple determinations of the parameters to detect and remove values that are discrepant. For this purpose, we compare for each star the results from the individual methods with a median value taken over all results for that star. For the detections of outliers we use different definitions for ν_{max} and $\langle\Delta\nu\rangle$. For the outlier rejection

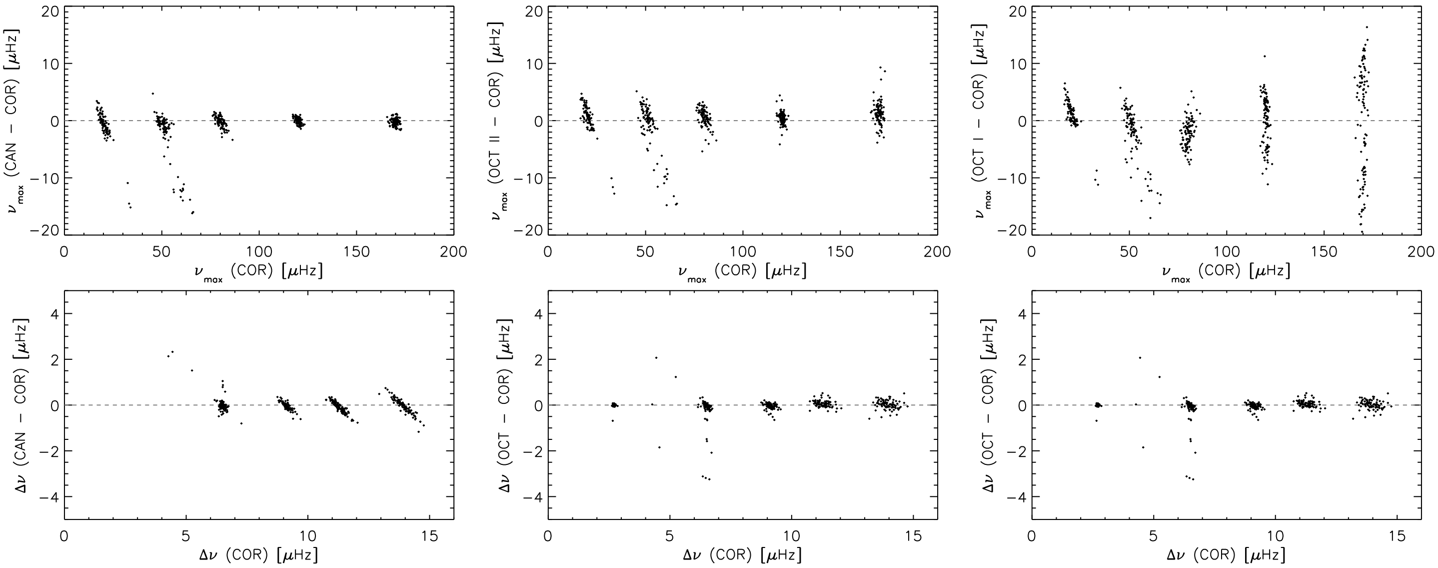

Fig. 3. The differences in the simulation results between different methods, from left to right CAN-COR, OCT II - COR, OCT I - COR are shown as a function of the value returned by COR. The top row is for $\nu_{\rm max}$ and the bottom row for $\Delta\nu$. The gray dashed line indicates agreement between the methods.

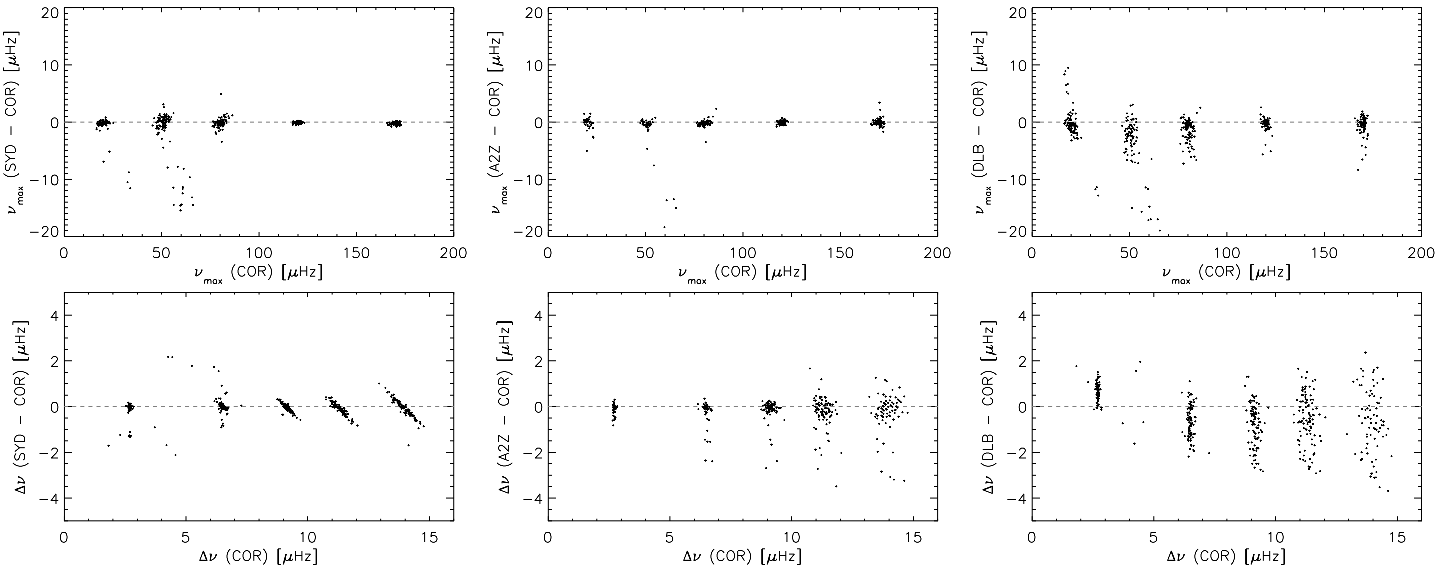

Fig. 4. Same as Fig. 3 but now from left to right for SYD - COR, A2Z - COR and, DLB - COR

for $\nu_{\rm max}$ an absolute threshold of 15 μHz and a relative threshold of 25% are used. This reflects the roughly constant scatter above 30 μHz, but below that level it is more dependent on the median value of $\nu_{\rm max}$ (see top panel of Fig. 7). This is also justified by the results of the simulations (Section 3) where the spread observed in the returned values for $\nu_{\rm max}$ is roughly constant and is less than 5 μHz. If outlier rejection was applied for $\nu_{\rm max}$ we also excluded the matching value for $\langle\Delta\nu\rangle$. For the remaining outliers in $\langle\Delta\nu\rangle$ we applied a rejection based on the median absolute deviation (MAD). We use 10·MAD unless this is less than 0.5 μHz, in which case 0.5 μHz is used as the cut-off. This reflects the fact that, for some stars, $\langle\Delta\nu\rangle$ is poorly determined. Note that a minimum of three results is required before outliers can be identified.

6. Results and discussion

The results for $\nu_{\rm max}$ and $\langle\Delta\nu\rangle$ from each method are listed in Table 7 and shown in Fig. 7. Results have been obtained for 1301 stars. In Fig. 8 the number of results obtained per star is shown as a function of $\nu_{\rm max}$ (left), and the fractional distribution of the number of results (right). This histogram shows that for 69% of the stars we have five or more results, with a clear maximum at six results. For $\nu_{\rm max}$ between roughly 50 and 170 μHz there are only very few stars with less than five results, which indicates that the majority of the methods are most sensitive in this frequency interval and less sensitive for oscillations at lower (< 50 μHz) and higher (> 170 μHz) frequencies for which fewer methods obtain results.

We use the median to compare individual results and explore evidence for bias and possible trends of a method compared to the median value of all results. This information can be useful to see how different a method is from the others, but

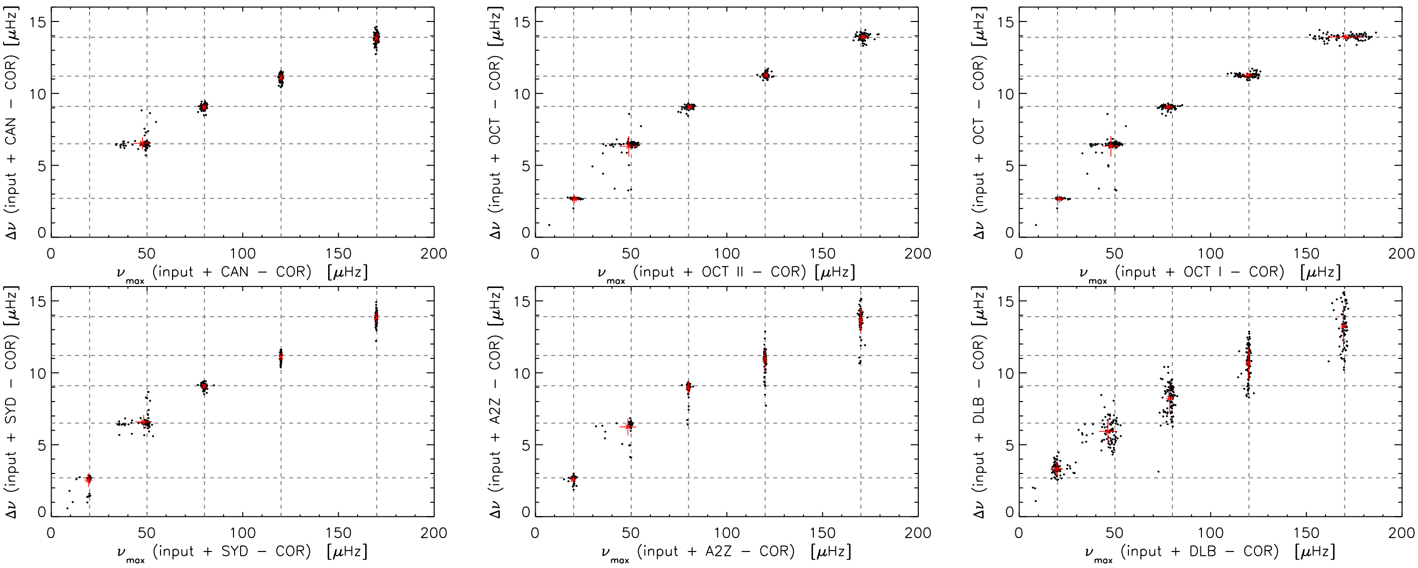

Fig. 5. Same as Fig. 2, but here we show the difference in the results from different methods, i.e., from left to right and top to bottom CAN - COR, OCT II - COR, OCT I - COR, SYD - COR, A2Z - COR and, DLB - COR, at the position of the input parameters of the simulation. The mean values and the scatter are indicated with the red asterisks.

Table 3. Mean and standard deviations of the computed $\nu_{\rm max}$ for synthetic timeseries.

sim	$\nu_{\rm max}$ input μHz	$\nu_{\rm max}$ CAN μHz	$\nu_{\rm max}$ COR μHz	$\nu_{\rm max}$ OCT I μHz	$\nu_{\rm max}$ OCT II μHz	$\nu_{\rm max}$ SYD μHz	$\nu_{\rm max}$ A2Z μHz	$\nu_{\rm max}$ DLB μHz
1	20.0	19.6 ± 1.0	20.4 ± 2.3	21.8 ± 1.2	21.2 ± 1.2	19.9 ± 2.0	20.1 ± 1.8	20.1 ± 2.1
6	20.0	19.4 ± 1.1	20.3 ± 2.3	21.9 ± 1.2	21.1 ± 1.7	19.5 ± 2.4	20.6 ± 1.9	20.3 ± 2.3
2	50.0	49.6 ± 2.0	52.1 ± 4.0	50.0 ± 2.3	50.8 ± 2.9	50.1 ± 3.6	50.0 ± 2.3	48.0 ± 3.3
7	50.0	49.6 ± 2.3	52.9 ± 4.4	50.0 ± 2.7	51.1 ± 2.6	50.1 ± 3.6	49.5 ± 3.3	47.6 ± 4.8
3	80.0	79.9 ± 1.4	80.2 ± 1.9	78.0 ± 3.6	80.8 ± 1.7	80.1 ± 2.3	80.1 ± 2.1	78.8 ± 2.5
8	80.0	79.8 ± 1.4	79.9 ± 1.8	77.9 ± 3.5	80.7 ± 1.5	79.8 ± 2.3	79.8 ± 1.8	78.7 ± 2.2
4	120.0	120.1 ± 1.0	120.1 ± 1.1	119.8 ± 3.8	120.6 ± 1.4	120.0 ± 1.1	120.0 ± 1.2	119.8 ± 1.3
9	120.0	119.8 ± 1.0	119.8 ± 1.2	118.9 ± 4.1	120.4 ± 1.4	119.7 ± 1.3	119.7 ± 1.3	119.4 ± 1.6
5	170.0	169.8 ± 1.5	170.0 ± 1.4	170.4 ± 9.2	171.2 ± 2.6	169.7 ± 1.4	169.8 ± 0.9	169.2 ± 2.2
10	170.0	169.7 ± 1.5	169.9 ± 1.8	169.2 ± 9.9	170.8 ± 3.4	169.7 ± 1.9	169.8 ± 0.9	168.5 ± 2.9

Table 4. Mean and standard deviations of the computed $\langle\Delta\nu\rangle$ for synthetic timeseries.

sim	$\Delta\nu$ input μHz	$\Delta\nu$ CAN μHz	$\Delta\nu$ COR μHz	$\Delta\nu$ OCT μHz	$\Delta\nu$ SYD μHz	$\Delta\nu$ A2Z μHz	$\Delta\nu$ DLB μHz
1	2.7		2.7 ± 0.2	2.7 ± 0.2	2.6 ± 0.5	2.6 ± 0.2	3.3 ± 0.4
6	2.7		2.70 ± 0.04	2.7 ± 0.2	2.7 ± 0.2	2.7 ± 0.2	3.4 ± 1.3
2	6.5	6.5 ± 0.3	6.4 ± 0.3	6.3 ± 0.7	6.5 ± 0.3	6.2 ± 0.6	5.9 ± 0.7
7	6.5	6.5 ± 0.2	6.5 ± 0.1	6.2 ± 0.7	6.5 ± 0.3	6.0 ± 0.8	6.1 ± 0.9
3	9.1	9.1 ± 0.1	9.1 ± 0.2	9.1 ± 0.2	9.1 ± 0.1	9.0 ± 0.5	8.3 ± 1.0
8	9.1	9.1 ± 0.1	9.1 ± 0.2	9.1 ± 0.2	9.1 ± 0.1	9.0 ± 0.6	8.4 ± 0.9
4	11.2	11.2 ± 0.1	11.3 ± 0.3	11.4 ± 0.3	11.2 ± 0.1	11.0 ± 0.7	10.7 ± 1.1
9	11.2	11.2 ± 0.1	11.3 ± 0.3	11.4 ± 0.3	11.2 ± 0.1	11.0 ± 0.8	10.9 ± 1.1
5	13.9	13.9 ± 0.1	13.9 ± 0.3	14.0 ± 0.4	13.9 ± 0.2	13.7 ± 0.9	13.3 ± 1.4
10	13.9	13.9 ± 0.1	14.0 ± 0.3	14.1 ± 0.3	13.9 ± 0.1	13.8 ± 0.9	13.7 ± 1.5

does not by definition tell whether individual methods provide wrong or right values. It is for instance clear that the $\nu_{\rm max}$ values from the first moment of the smoothed power excess (OCT II) are generally higher than results from other methods. Also the spread in these results is relatively large compared to other results. Interestingly, the results of the simulations from the first moment (OCT II) give results that are closer to the input values, i.e. are less spread, than the results from a Gaussian fit to the smoothed power excess (OCT I). It is, however, clear that for the results of the observations compared to the median, the OCT I results are more consistent with the majority of the results, among which the COR, SYD and A2Z results, which also gave results relatively close to the input values of the simulations. Therefore, with the current results of the comparison we can not discard or favour either of the methods OCT I or OCT II, although their results show slightly different behaviour compared to other methods in the simulations and observational results, respectively.

Table 5. The standard deviations of the differences in results for $\nu_{\max}$ from different methods.

sim	$\nu_{\max}$ input μHz	$\sigma_{\nu_{\max}}$ CAN-COR μHz	$\sigma_{\nu_{\max}}$ OCT I-COR μHz	$\sigma_{\nu_{\max}}$ OCT II-COR μHz	$\sigma_{\nu_{\max}}$ SYD- COR μHz	$\sigma_{\nu_{\max}}$ A2Z-COR μHz	$\sigma_{\nu_{\max}}$ DLB-COR μHz
1	20.0	2.9	2.4	2.5	2.1	1.1	3.3
6	20.0	2.3	2.5	2.7	2.5	2.1	2.7
2	50.0	4.4	4.5	4.9	4.4	4.2	4.7
7	50.0	5.4	5.0	5.3	6.2	5.5	6.7
3	80.0	0.9	2.4	1.6	0.9	0.5	1.9
8	80.0	0.9	2.6	1.2	0.8	0.4	1.6
4	120.0	0.6	3.9	1.1	0.2	0.3	1.0
9	120.0	0.7	4.2	1.3	0.8	0.3	1.2
5	170.0	0.6	9.0	2.1	0.2	0.6	1.7
10	170.0	0.7	9.3	2.9	0.3	0.4	1.5

Table 6. The standard deviations of the differences in results for $\langle\Delta\nu\rangle$ from different methods.

sim	$\Delta\nu$ input μHz	$\sigma_{\Delta\nu}$ CAN-COR μHz	$\sigma_{\Delta\nu}$ OCT-COR μHz	$\sigma_{\Delta\nu}$ SYD-COR μHz	$\sigma_{\Delta\nu}$ A2Z-COR μHz	DLB-COR μHz
1	2.7		0.3	0.5	0.2	0.5
6	2.7		0.2	0.2	0.2	1.3
2	6.5	0.4	0.7	0.5	0.6	0.8
7	6.5	0.2	0.7	0.3	0.8	1.0
3	9.1	0.2	0.1	0.2	0.4	1.1
8	9.1	0.2	0.1	0.2	0.6	0.9
4	11.2	0.3	0.1	0.3	0.7	1.1
9	11.2	0.3	0.2	0.3	0.8	1.1
5	13.9	0.3	0.2	0.4	0.8	1.4
10	13.9	0.3	0.3	0.3	0.8	1.5

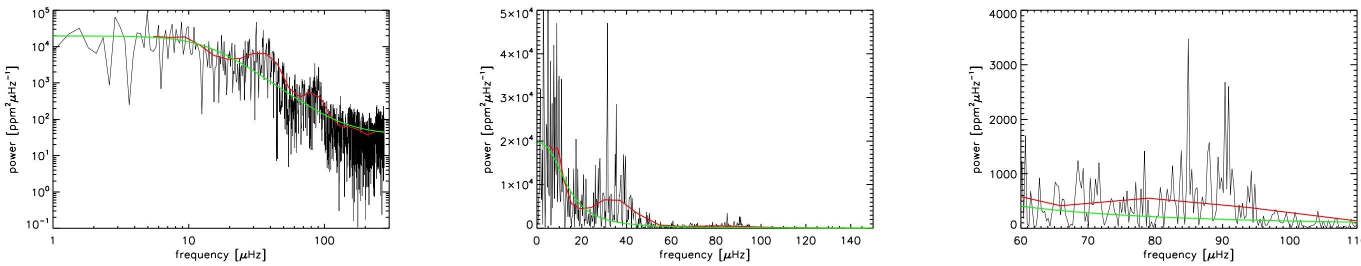

Fig. 6. Power spectra of a target (KIC4813971) on CCD 2 showing power excess due to solar-like oscillations at frequencies around 35 μHz and the artefact due to desaturation around 87 μHz. The red line indicates a binned power spectrum and the green line a fit to the background.

For $\langle\Delta\nu\rangle$ no significant trends and biases are present in the results from different methods, but the scatter in the results seems to be larger for $\langle\Delta\nu\rangle$ between roughly 3 and 5 μHz compared to other values. From population studies (e.g. Miglio et al. 2009) it is known that stars with $\nu_{\max}$ between 30 and 40 μHz and $\langle\Delta\nu\rangle$ between 3 and 5 μHz are mainly red-clump stars. Due to the fact that stars remain for a relatively long time in the He-burning phase in the red-clump, these stars are most commonly observed (Hekker et al. 2009; Mosser et al. 2010). If we bin the $\langle\Delta\nu\rangle$ values in 1 μHz bins we can see that most values are indeed returned between 3 and 5 μHz, but that the standard deviation of these values is similar to that in bins at other values of $\langle\Delta\nu\rangle$. So the larger spread in the results in the $\langle\Delta\nu\rangle$ interval 3-5 μHz could be an apparent effect caused by the increased number of results. The scatter in the $\Delta\nu$ - $\nu_{\max}$ relation (Eq. 2) using results from the different methods is investigated by Huber et al. (2010).

Notwithstanding the differences between the methods and the trends and biases of individual results with respect to the median, the results of the different methods agree within a few percent, as shown in Fig. 9. These figures show the distribution of the ratio of the deviation over the median value of $\nu_{\max}$ and $\Delta\nu$ respectively. The deviation and median are correlated values and a bias in a method most likely causes the skewness in the $\nu_{\max}$ distribution.

We also investigate the relation between the absolute deviation from the median and the formal errors, i.e., uncertainties derived within each method, for both $\nu_{\max}$ and $\langle\Delta\nu\rangle$. These relations show immediately that for most methods the formal error does not provide a realistic indication of the absolute deviation from the median. Again, this does not tell whether the formal errors are unrealistic, but indicates that for some methods the scatter around the median is considerably different from the computed formal error. Additionally, the formal errors do also not provide an indication of the spread due to realization noise.

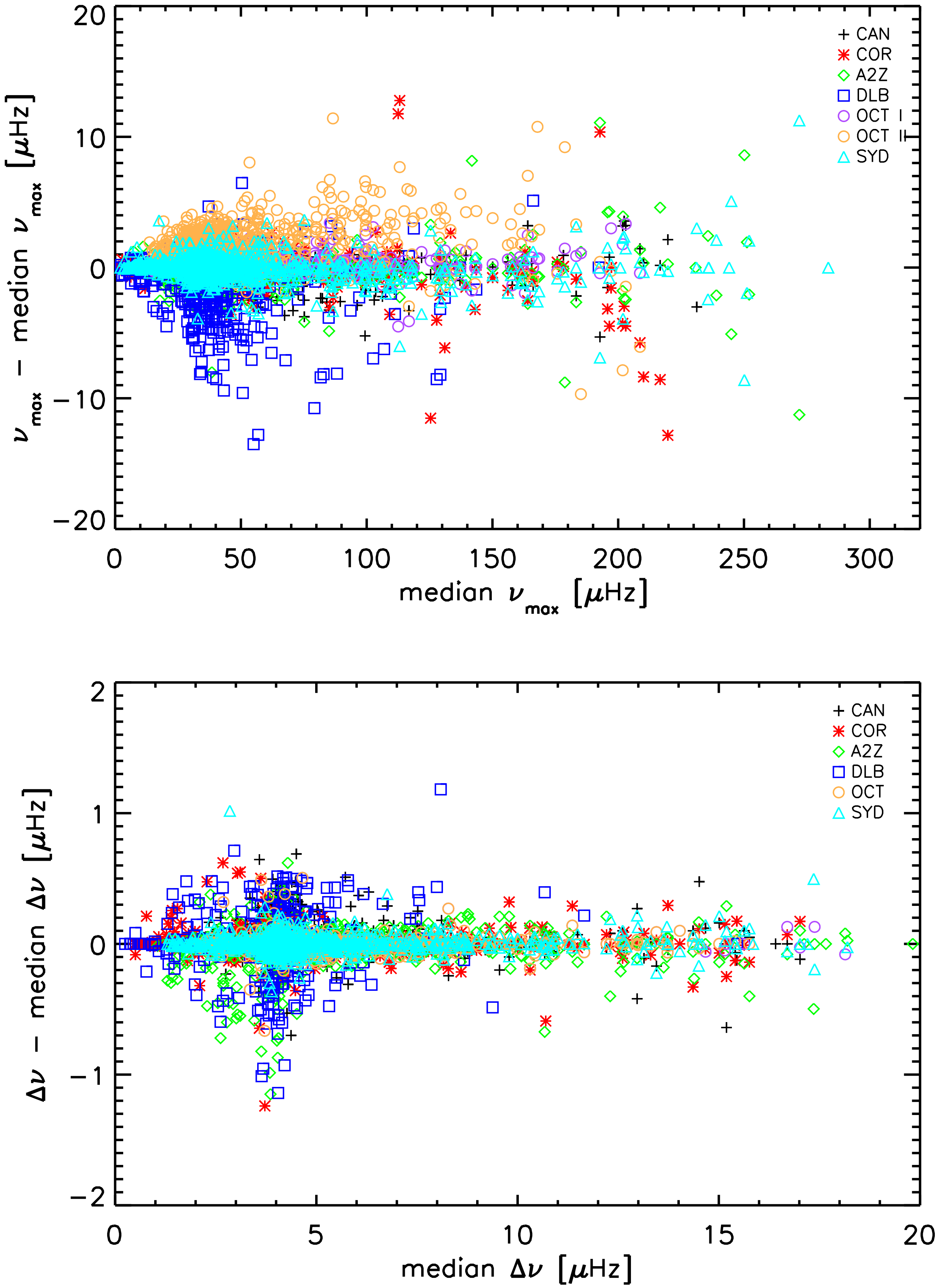

Fig. 7. Results of all methods represented as the value - median value versus the median value for ν_{max} (top) and $\Delta\nu$ (bottom). The different colours and symbols represent results from the different methods, as indicated in the legend.

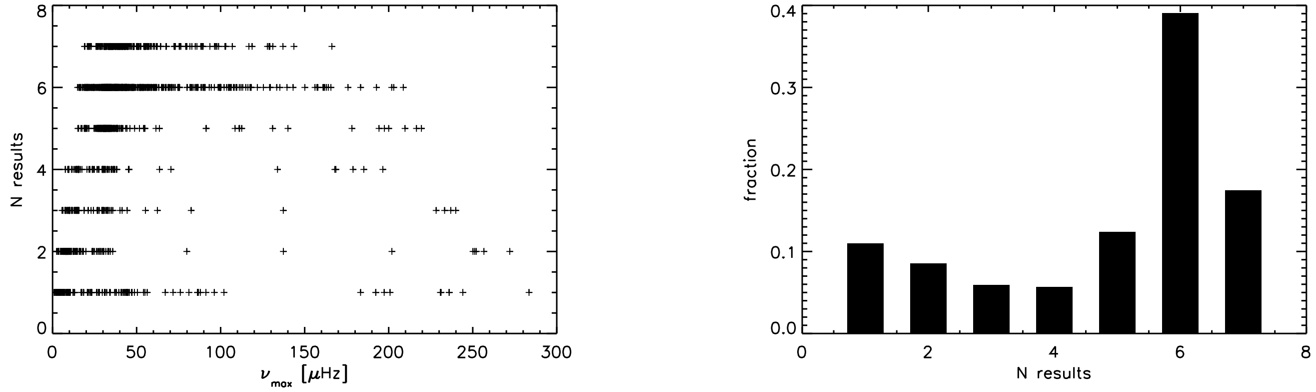

Fig. 8. Number of results obtained per star as a function of $\nu_{\rm max}$ (left) and the fractional distribution of the number of results obtained per star (right).

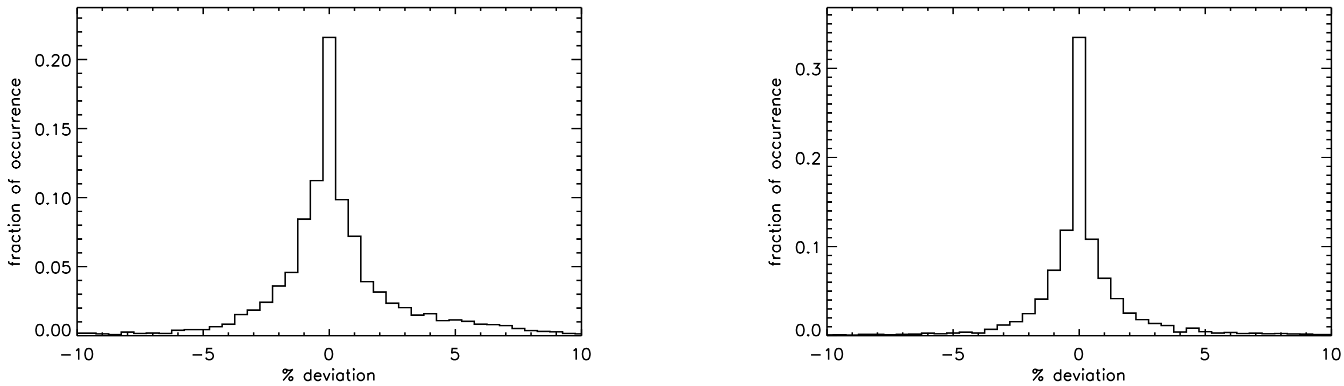

Fig. 9. Distributions of the ratio deviation/median value for $\nu_{\rm max}$ (left) and $\Delta\nu$ (right).

7. Conclusions

We have performed a comparison of results from different methods for the frequency of maximum oscillation and the mean large frequency separation for over one thousand red-giant stars observed during the first four months of *Kepler* observations. We investigated the differences and consistency between these results and their uncertainties. The effect of realization noise, originating from the stochastic nature of the oscillations, is also investigated using simulated datasets.

The comparison of different realizations of simulated data with the same input values revealed that the scatter due to realization noise is non-negligible and can be at least as important as the internal uncertainty of the result due to the method used, but this depends on the frequency of maximum oscillation power and on the methods, i.e., some methods are more sensitive to realization noise than others. When detailed modelling is performed for red-giant stars, the fact that the observational results are obtained from only one realization has to be taken into account.

For 69% of the 1301 stars with results, we could obtain $\nu_{\rm max}$ and $\langle\Delta\nu\rangle$ with five or more methods. For stars in a frequency range between 50 and 170 μHz this percentage is increased to 92% indicating that the majority of the methods are sensitive to oscillations in this frequency interval. At lower ($<$ 50 μHz) frequencies less results are obtained. This is firstly due to the limited frequency resolution of the data and secondly due to difficulties in disentangling oscillations from other effects, such as granulation or instrumental effects, which are also present at low frequencies. At higher ($>$ 170 μHz) frequencies the lower height, i.e. lower signal-to-noise ratio, of the oscillations causes more problems for some methods to detect the oscillations. Furthermore, the Nyquist frequency of these data is $\sim$ 280 μHz, which possibly causes difficulties due to reflection effects, while for some stars only part of the oscillation power excess is covered. In these cases the determination of the background signal is also more complicated.

Although some biases and trends with respect to the median value of the results are present in each method, the results from the different methods agree for most stars within a few percent. Despite the consistency between the results from different methods, the stated formal errors are not indicative of the deviation of these results from the median value.

For $\langle\Delta\nu\rangle$, we found that the results do not show significant dependence on the range over which they were calculated. This is plausible because the trend in $\Delta\nu$ is approximately linear with frequency and/or shows rapid variations with relatively low amplitude (Mosser et al. 2010), which average out. This is the case for the red giants investigated here with oscillations over a range of roughly 10 to 280 μHz.

Apart from the results described here, the comparison also helped to improve all the methods and will continue to do so. Although we are dealing with automated methods, it appeared that inspection of the results is important. In order to remove false positives, it remains necessary to inspect the results in specific frequency ranges by eye: at low frequencies, close to the

Nyquist frequency or in regions of known artefacts as described in Section 4. An additional inspection has been performed for stars for which the results of different methods were significantly different. The latter inspection revealed in most cases that different features were selected as being the oscillations. In some cases this could be traced back to artefacts, as discussed in Sect. 4, or contamination of background stars.

To summarise, the comparison between results of global oscillation parameters from different methods has been very useful, because it allowed for the first time to provide a qualitative measure of the differences between different methods. The comparison has been used to investigate the contribution of the realization noise and internal uncertainties in the methods and allowed for the detection of artefacts. These issues will remain important and the comparison will continue to be applied. In the future, we will investigate the improvements in the accuracy of the results when we have data with longer timespan and investigate the actual uncertainties in the results.

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Table 7. Results for $\nu_{\max}$ and $\Delta\nu$ from different methods. Up-to-date results can be requested from the authors.

star	COR $\nu_{\max}$ μHz	COR $\Delta\nu$ μHz	CAN $\nu_{\max}$ μHz	CAN $\Delta\nu$ μHz	A2Z $\nu_{\max}$ μHz	A2Z $\Delta\nu$ μHz	SYD $\nu_{\max}$ μHz	SYD $\Delta\nu$ μHz	DLB $\nu_{\max}$ μHz	DLB $\Delta\nu$ μHz	OCT I $\nu_{\max}$ μHz	OCT II $\nu_{\max}$ μHz	OCT $\Delta\nu$ μHz
1161618	33.50	4.22	33.58	4.15	33.79		34.02	4.12	32.84	3.55	34.05	34.86	4.18
1162746	27.20	3.80	26.39	4.10			27.68				27.90	28.80	
1432587	4.30	0.91											
1433593	69.00	6.31	68.98	6.17	69.19	6.35	68.81	6.22			70.06	71.23	6.34
1433730	41.40	4.12	41.58	4.16	38.17	4.03	41.45	4.16	37.57	4.38	42.02	44.73	4.11
1435573	26.80	3.76	26.72	3.83			27.27	3.64			27.12	28.00	3.67
1719297	7.60	1.19					7.59						
1720425	28.00	3.60			28.26	3.60	28.31	3.70	26.87	3.49	28.65	29.84	3.60
1725552	7.90	1.29					7.92		6.89				
1726211	30.30	3.72	30.20	3.78			30.54	3.77	25.60		30.62	31.90	3.71
1864183	54.50	5.59	56.03	5.54	54.46	5.59	54.38	5.56	52.81		56.14	58.70	5.56
1864855	129.90	10.42	129.32	10.40	128.16	10.43	127.46	10.41			129.07	132.56	10.51
1868101	31.20	3.84	32.02	3.78			31.54				32.06	33.63	3.80
2013502	61.10	5.68	60.47	5.75	60.11	5.71	60.43	5.70			61.22	64.50	5.65
2018392	33.40	3.78	34.07	3.74	33.10	3.79	33.72	3.78			34.61	34.39	3.75
2142095	27.20	3.82	27.82	3.67	27.07	3.80	26.94	3.70					
2156178	29.30	2.85			26.38	2.61	29.59	3.87					
2300503	14.50	2.04			14.54	2.02	14.55		14.83	1.63			
2303367	34.60	4.04	33.67	3.93	32.07	3.98	34.82		32.70	4.04	34.23	34.84	4.00
2304765	81.10	6.31											
2305930	29.50	3.32					29.70				30.57	32.39	3.34
2307683	40.60	4.09	40.55	4.22	40.84	4.15	40.35	4.35			40.86	42.70	4.24
2309469	29.00	3.60	29.04	3.57			28.95	3.59			29.37	30.08	3.62
2424822	94.30	8.18	92.92	8.04	93.49	8.18	92.91	8.08			93.82	92.22	8.16
2424934	34.20	3.93	34.39	3.90	34.12	3.92	34.44	3.94	32.39	4.32	34.56	36.24	3.95
2424955	50.80	5.37	50.64	5.42	50.26	5.50	51.27	5.34	45.65		51.00	52.37	5.34
2425631	21.20	2.57	21.32	2.58	21.28	2.50	21.41	2.62	17.61	2.92	21.68	22.52	2.57
2444348	28.60	3.21	29.44	3.31	28.94	3.25	28.78	3.27	26.79		29.58	31.58	3.22
2448225	36.10	4.09	35.85	4.08	36.31	3.97	36.17	4.08	34.94	4.37	35.98	37.39	4.08
2449703	29.00	3.95	30.39	3.95			28.53	3.89			30.54	32.15	3.96
2554924	36.00	4.04	36.22	4.04			36.00				36.39	37.39	4.14
2573092	36.50	4.22	37.20	4.41	36.66	4.23	35.06	4.10			37.69	38.00	4.16
2695975	10.20	1.53					10.52		9.23				
2696628	10.60	1.51					10.57						
2696732	90.70	8.28	90.20	8.04	90.56	8.46	90.96	8.28			90.40	91.02	8.30
2696955	107.90	8.38	109.16	8.63			107.26	8.65			108.59	110.39	8.56
2714397	31.80	4.14	32.39	4.26	34.37	3.97	33.26	4.22	33.99	4.51	32.62	33.58	4.11
2831788	54.90	5.54	55.11	5.48	54.96	5.67	55.13	5.48	54.32	5.25	55.21	56.62	5.54
2847978	9.50	1.60					9.63						
2988638	82.30	7.39	85.63	7.47	85.10	7.42	84.01	7.46			88.78	92.08	7.42
2988988	38.70	4.77			38.81	4.54	38.52		36.38	4.50	38.94	39.97	5.16
2995197	9.60	1.56					9.77						
3098045	33.20	3.66	34.57	3.66	34.26	3.23	33.70				34.60	36.28	3.65
3098716	30.60	4.41	31.26	3.74			30.73				31.27	32.05	4.27
3100193	28.10	3.56	29.01	3.45	28.67	3.45	27.44	3.50	24.56	3.40	29.32	31.39	3.36
3101090	30.80	3.88	31.11	4.06	30.36	3.83	30.53	3.91	29.27		31.17	33.22	3.93
3110460	7.80	1.46					8.32						
3114408	30.50	3.42	29.83	3.43	29.54	3.42	31.03	3.42			30.44	31.51	3.38
3118806	19.00	2.63	19.36	2.82	17.89	1.90	19.25	2.72	19.23	2.02	19.74	22.78	2.61
3120486					137.53	10.75	137.06	10.60					
3120585	100.40	8.49	97.97	8.44	98.98	8.46	99.00	8.49			100.88	102.90	8.39
3121940	27.90	3.74	27.33	3.81	27.57	3.64	28.68				28.21	30.05	3.72
3217051	34.10	4.27	33.90	4.41			33.92				34.83	37.37	4.25
3231503	42.90	4.30	43.04	4.23	42.41	4.37	42.93	4.30	40.71	4.62	42.94	43.39	4.28
3323943	32.60	4.17	32.67	4.21	31.29	4.11	32.98	4.11			33.19	34.52	4.16
3326790	24.30	3.62			24.60	3.62	24.99	3.53	25.57	3.28	26.44	26.37	3.61
3339894	31.10	3.34	29.77	3.17	28.27	3.17	31.40	3.22			31.61	34.28	3.20
3346501	19.80	2.49	20.71	2.49			19.94				20.61	22.17	
3355015	26.50	3.45	26.82	3.45			26.65				27.42	28.75	3.45
3425476	37.10	4.49	37.77	4.96	38.85	4.44	36.77				38.53	42.10	4.48
3426898	62.90	6.61	63.61	6.54	62.73	6.62	62.88	6.54			63.68	65.79	6.52
3443483					134.77	10.87	132.06	10.70			134.44	133.26	10.75
3444374	56.20	5.73	56.92	5.71	55.96	5.68	56.17	5.72			56.51	58.95	5.74
3455760	47.80	4.88	48.18	4.87	48.10	4.87	47.75	4.88	44.45		48.13	51.18	4.82
3457618	37.30	3.64			34.31	3.59	37.17	3.61			36.61	36.19	3.61
3526061	127.10	10.74	129.21	10.59	129.28	10.00	128.96	10.67	126.04	11.07	129.24	130.04	10.68
3528656	19.60	2.66	20.68	2.66	19.50	2.67	20.16	2.69			21.17	22.26	2.69
3529276	57.50	5.83	56.79	5.63	57.44	5.74	58.15	5.66	54.38	6.27	57.14	57.96	5.84
3530520	37.60	3.97	36.52	3.90	34.65	3.97	37.78	3.97			36.84	36.86	3.93
3530823	43.90	4.64	44.41	4.72	43.24	4.61	43.85				44.06	46.62	4.67
3531478					236.91	17.38	241.15	17.19					17.51
3560181	34.10	3.95	33.78	3.89	32.85	3.95	34.35	3.88	32.81	3.64	34.09	34.73	3.93

Table 7. Continued.

star	COR ν_{max} μHz	COR $\Delta\nu$ μHz	CAN ν_{max} μHz	CAN $\Delta\nu$ μHz	A2Z ν_{max} μHz	A2Z $\Delta\nu$ μHz	SYD ν_{max} μHz	SYD $\Delta\nu$ μHz	DLB ν_{max} μHz	DLB $\Delta\nu$ μHz	OCT I ν_{max} μHz	OCT II ν_{max} μHz	OCT $\Delta\nu$ μHz
3631092	195.60	14.03					197.43	13.97			200.17	196.91	14.13
3631402	48.30	5.02	46.38	5.28	47.16	4.90	48.45	4.93			47.43	49.04	5.09
3642038	41.60	4.41	41.99	4.33	38.63	4.33	42.51	4.27	40.09		42.22	42.62	4.34
3645232	7.80	1.45					8.12	1.42					
3656231	37.20	4.27	37.46	4.23	37.06	4.25	37.27	4.26			37.74	39.53	4.29
3658136	7.40	1.32					7.32						
3658812			16.94	2.38			18.70						
3660820					33.27	4.04	32.49	4.01					
3660976	39.40	3.88			30.46	3.89	39.52	3.86			37.80	38.47	3.86
3729799	38.10	4.12	38.04	4.19	38.38	4.10	38.31	4.16			38.79	39.20	4.14
3730953	48.30	4.95	47.89	5.03	48.09	4.89	48.75	5.01	46.37	5.05	48.32	49.25	4.92
3744043	111.80	9.96	110.93	9.82	111.24	9.78	111.57	9.85	107.68				
3747777	44.10	4.43	43.15	4.42	42.75	4.50	43.75	4.43	33.81		43.22	46.18	4.43
3747860	36.50	4.14	36.51	4.18	35.44	4.03	36.92	4.10			37.06	37.55	4.00
3748585	44.60	4.64	44.02	4.60	44.41	4.74	44.83	4.63	42.35		44.98	48.10	4.65
3748691	38.80	4.17	39.72	4.34	39.92	4.21	38.94				39.67	41.34	4.22
3758458	74.10	5.93	72.54	6.04	72.19	5.90	73.00	5.83	71.96		73.54	76.16	5.94
3760337	38.20	4.22	38.63	4.25	38.29	4.15	38.33	4.26	36.24	4.30	39.00	40.81	4.18
3835996	45.10	4.98	43.34	5.09	44.09	4.86	45.20	5.01			44.95	45.66	4.96
3839310	12.80	1.52					13.14						
3842486	11.20	1.72			11.36	1.62	11.38						
3842704	7.20	1.00											
3847071	58.70	6.08	61.13	6.14	59.54	5.96	58.84	6.13			60.94	63.28	6.12
3847697	48.10	4.84	46.78	4.87	46.48	4.86	48.64	4.92			46.95	47.89	4.88
3849996	26.90	2.48	26.38	3.72			27.88	4.00			27.53	29.18	
3854605	37.20	4.17	37.78	4.29	37.33	4.22	37.58	4.16	37.09	4.45	37.95	39.96	4.18
3858714	46.40	5.05	47.49	5.05	46.20	5.00	46.22	4.99			47.80	49.65	4.85
3860139	20.40	2.58	21.17	2.60	19.29	2.52	20.64	2.56	15.90	2.08			
3860176	76.70	6.67	71.44	6.85	71.04	6.67	78.86	6.64			76.11	74.30	6.61
3867193	49.50	4.91	49.09	4.95	48.63	5.00	49.68	4.93			48.79	47.56	4.88
3869326	47.60	4.68	47.79	4.63	47.12	4.62	48.52	4.62			47.62	48.20	4.63
3935987	20.10	2.54	20.53	2.57	19.93	2.70	20.24	2.58			20.58	21.68	2.59
3936921	27.10	3.35	27.50	3.70			26.99		26.36	3.25	27.69	29.14	
3937217					27.59	3.55	29.14						
3941538	24.30	3.58			24.27	2.50	26.32						
3946389	23.10	2.83	22.91	2.95	22.96	2.38	23.26	2.94			23.54	24.82	2.78
3955590	18.40	2.74			18.13	2.99	18.80	2.76			19.13	20.93	2.77
4036007	38.10	4.41	38.16	4.50			38.03				38.65	40.40	4.39
4039306	34.00	4.04	32.83	4.04			35.48				33.73	34.31	4.14
4039831							6.18						
4042951	31.60	4.32	31.98	4.23			31.57	4.22			32.31	34.36	4.29
4044238	33.00	4.17	33.03	4.19	32.96	3.90	32.46	4.24			33.92	34.97	4.14
4056266	86.30	7.39	86.61	7.47	86.25	7.35	85.46	7.42			87.30	90.17	7.40
4057076	41.30	4.55	40.96	4.99	40.36	4.58	41.64	4.53			41.66	43.36	4.53
4057744	26.40	2.96	26.11	2.83	25.23	2.85	26.52	2.97	23.74	3.67	26.48	26.28	
4069447							7.87	1.30					
4140726	50.30	4.77	50.54	4.96	50.28	5.00	51.12	4.98			50.77	51.16	4.83
4155395							4.97						
4157282	15.00	1.95			15.21	1.92	15.26	1.92	15.69				
4164910	36.30	3.91	37.01	4.47	37.13	4.20	36.32	4.17	32.34	4.35	37.59	39.89	3.98
4169130	37.00	4.35	37.70	4.69	37.23		37.33	4.31			38.00	39.03	4.36
4243796	37.50	4.35			37.57	4.27	37.56	4.28	36.68	4.57	38.01	39.81	4.30
4243803							16.83		14.86	2.27			
4244973	50.60	4.74	50.53		51.01	4.91	51.77	4.74	44.91	4.99	51.32	52.30	4.74
4249128	42.00	4.12	40.88	4.56	41.56	4.45	42.09	4.48			41.38	43.17	4.49
4249357	47.60	5.09	47.00	5.17	47.29	5.17	47.63	5.17			47.97	47.47	5.04
4262505	88.20	7.99	89.15	7.94	88.82	8.03	87.94	7.97	88.71		89.36	90.21	8.01
4269391	39.60	4.19	35.80	4.11	37.20	4.09	40.23	4.22	33.10		37.54	36.81	4.08
4271039	46.40	5.37	47.05	5.16	46.14	5.11	46.54	5.21			46.90	48.07	5.08
4275625	31.30	3.84			31.23	3.83	31.13	3.82	31.69	3.41	31.94	34.03	3.77
4276070					42.33	4.52	44.98	4.52			45.73	47.87	4.59
4279700	31.10	3.56	32.07	3.56	31.10	3.64	31.00	3.53			32.07	34.26	3.52
4281702	30.10	3.95	29.86	4.06	31.26	3.87	29.97	3.97					
4283484	34.30	4.27					28.95		32.84	4.35			
4345370	32.40	4.07	31.40	4.07	32.08		32.99	4.04			32.27	32.69	
4350501					150.00	10.95	138.94	11.05			140.06	143.59	11.00
4365609	34.30	3.97	34.41	4.21			35.11	4.18			35.10	36.57	
4365827									1.32	0.40			
4374106	14.70	2.10			14.26	2.12	15.04	2.09	13.46	1.92	15.21	16.18	2.10
4378473	22.60	2.69	23.04	2.82	22.31	2.74	22.71	2.84	23.00	2.83	22.99	23.93	
4383388	42.30	4.88	42.47	4.87	42.49	4.81	41.69	4.83	39.49		44.33	45.10	4.82
4445711	35.70	4.24	34.75	4.29	34.63	4.18	35.63		32.79		35.70	36.29	4.21
4446181	30.20	4.17			28.74	4.12	30.70	4.20	30.22	3.84			

Table 7. Continued.

star	COR ν_{max} μHz	COR $\Delta\nu$ μHz	CAN ν_{max} μHz	CAN $\Delta\nu$ μHz	A2Z ν_{max} μHz	A2Z $\Delta\nu$ μHz	SYD ν_{max} μHz	SYD $\Delta\nu$ μHz	DLB ν_{max} μHz	DLB $\Delta\nu$ μHz	OCT I ν_{max} μHz	OCT II ν_{max} μHz	OCT $\Delta\nu$ μHz
4448636	31.50	4.09	32.20	4.36			31.89				32.86	33.62	4.04
4448777	206.90	17.19	221.87	16.90	220.00	17.12	219.47	17.02					16.99
4456739	36.80	4.22	36.26	4.30	36.82	4.21	38.16	4.22			37.14	39.41	4.19
4457200	44.90	4.52	43.31	4.38	43.78	4.62	45.09	4.39	45.00	4.51	43.81	45.26	4.53
4457395	34.00	4.14	33.92	4.05	33.16	3.85	34.37	4.06			34.44	34.59	4.21
4469602	33.60	3.53	33.47	3.62	31.75	3.50	33.88	3.56	30.49	3.92	33.65	34.75	3.48
4469886	58.30	5.50	55.64	5.24	55.63	5.54	58.84	5.45			57.52	56.23	5.52
4475934	39.90	4.43	39.85	4.56	39.88	4.51	40.43	4.41			40.20	41.63	4.43
4479314	18.80	2.28					19.28	2.24	17.54	2.52			
4480358	8.10	1.53					8.21						
4480938	34.20	4.04	35.19	4.32	34.57	3.92	34.15	4.03			35.36	37.53	3.97
4489185	94.20	8.59	94.65	8.55	94.15	8.45	93.28	8.59			94.69	98.39	8.61
4545474	37.40	3.88	37.33	3.74	38.02	3.92	37.69	3.90	37.79		38.48	39.67	3.88
4546625	32.50	4.17	33.42	4.32			33.03	4.25			34.29	36.04	4.16
4548564	58.40	6.03	58.49	5.99	57.97	6.00	58.66	6.00			58.64	58.96	6.03
4548615							3.52						
4553892	44.00	4.64	44.26	4.63	43.18	4.71	44.21	4.62			44.34	44.35	4.64
4555456	7.90	1.36					7.97						
4567221	13.00	1.81					12.91	1.80	13.24	2.14			
4570120	88.50	7.31	88.33	7.54	87.31	7.33	88.78	7.34			88.93	91.66	7.38
4571402	37.40	4.27	37.20	4.43	36.94	4.26	37.33		34.52	4.41	37.45	39.44	4.20
4571962	7.40	1.07			8.63	1.04	7.40						
4575645	38.30	4.43	39.86	4.29	39.57	4.49	37.93	4.31	38.08	4.28	40.24	42.38	4.43
4578488	47.90	5.33	48.83	5.29	47.66	5.26	47.71	5.32			48.55	51.07	5.28
4633907	30.50	3.93	30.76	3.88			30.80	3.94	29.95		30.99	32.02	3.98
4636731	23.40	2.96	22.88	3.03	23.03	3.19	23.82	2.91			23.81	24.83	2.96
4638317	28.60	3.40	28.87	3.58	28.23	2.87	29.03	3.48	29.46	3.68	29.04	30.49	3.43
4640537	34.80	3.95	34.61	3.97	34.01	3.98	35.08	4.03			34.97	35.86	3.97
4644949	62.60	6.25	59.02	6.20	59.49	6.25	63.79	6.29			60.21	60.54	6.21
4645692	34.00	4.12	34.06	3.92			35.16						
4646245	40.00	4.58	41.30	4.64			39.73	4.71	38.45	4.26	41.99	45.32	4.57
4651366	54.30	4.64	54.32	4.51	53.93	4.70	54.04				55.20	56.38	4.68
4659706	33.50	3.70	34.36	3.78	35.59	3.75	34.51	3.81	30.18		35.08	37.59	3.73
4662188	16.00	2.18	16.53	2.20	15.73	2.12	16.43	2.14			16.63	17.14	
4662939	65.00	5.46	61.80	5.46	62.29	5.48	65.03	5.52	61.04	5.15	64.32	68.72	5.53
4672904	57.90	5.93	58.63	6.09	57.87	5.95	58.05	6.12			58.55	60.61	5.92
4726049					253.12	16.86	249.24	17.85					
4736611	90.60	7.99	91.39	7.97			90.63	7.99			91.95	95.57	7.95
4738255	15.00	2.24	15.24	2.31	15.55	2.07	15.34	2.27					
4738610							8.69						
4739728	27.70	3.62	28.53	3.83	27.88	3.44	27.41	3.53	25.07	3.04	28.52	29.58	3.58
4743924	102.20	8.09	102.58		103.21	8.00	101.13	8.20	95.63	9.27	105.67	108.50	8.05
4750456	56.60	5.88	56.65	5.89	56.60	5.82	56.83	5.91			56.74	58.35	5.78
4755467	38.00	4.43	36.85	4.32			38.55				37.88	37.83	4.43
4756934							10.37						
4760954	43.60	4.81	43.55	4.89	43.97	4.91	42.73	4.79			45.01	46.88	4.85
4764420	37.30	4.27	37.96	4.48			37.09				38.37	41.16	4.22
4770846	54.00	5.37	54.65	5.51	55.37	5.30	53.99	5.47	52.86	5.79	55.39	57.48	
4771707	6.30	1.03											
4773539	42.10	4.52	42.64	4.56	41.95	4.50	42.41	4.52			42.90	44.67	4.54
4813971	34.70	4.02	33.85	4.08	33.34	3.87	35.11	4.01			34.84	36.18	3.93
4818830	41.30	4.64	41.88	4.73			41.40	4.69			41.83	44.83	4.60
4821839	19.30	2.40			19.66	2.39	19.64	2.32	18.21	2.88	19.37	19.91	2.40
4828670	43.20	4.43	44.14	5.19	42.18	4.42	43.52	4.50	45.84	5.00			
4843143	33.40	4.00	33.63	3.89	33.48	3.94	33.78	3.93	29.04		34.05	35.74	3.93
4845272	31.00	3.56	31.48	3.57	30.51	3.62	31.22	3.61	26.51		31.31	32.27	3.54
4857853	30.50	3.91					31.23	3.88			31.10	32.50	3.96
4902641	97.40	7.90	97.30	7.85	97.82	8.00	98.14	7.89	97.37		97.75	102.80	7.90
4902701	35.20	4.14	35.15	4.10			35.38	4.10			35.12	35.91	
4908025	7.40	1.21			7.67	1.20	7.67						
4920044	9.60	1.73			9.41	1.64	9.87		9.57	1.72			
4930906	31.70	3.84	31.77	4.15			31.45	3.92			32.73	33.98	3.78
4933594	33.80	4.07	34.62	4.27	34.48	4.08	33.73	4.14			34.89	37.13	4.10
4937204	39.40	4.46	40.01	4.46	39.31	4.44	39.51	4.39	39.15	4.81	40.12	42.25	4.47
4937576			32.21	3.59									
4946220	23.40	2.77											
4949422	52.60	4.68	50.74	4.63	49.40	4.67	52.40	4.61	41.15		50.98	50.29	4.72
4950323	57.10	6.03	58.39	5.98	56.46	6.08	56.74	5.88			58.33	60.83	5.89
4952717	197.30	15.24											
4991033	49.10	5.37	49.78	5.24	49.16	5.43	49.58	5.28			50.14	51.20	5.30
4991732	104.70	8.49	104.85	8.54	104.68	8.44	104.41	8.54			105.28	104.84	8.50
4995218	13.80	1.84					14.03	1.79					
5000307	43.50	4.64	43.08	4.73	42.38	4.73	43.38	4.93	40.14	4.30	43.14	44.52	4.79

Table 7. Continued.

star	COR ν_{max} μHz	COR $\Delta\nu$ μHz	CAN ν_{max} μHz	CAN $\Delta\nu$ μHz	A2Z ν_{max} μHz	A2Z $\Delta\nu$ μHz	SYD ν_{max} μHz	SYD $\Delta\nu$ μHz	DLB ν_{max} μHz	DLB $\Delta\nu$ μHz	OCT I ν_{max} μHz	OCT II ν_{max} μHz	OCT $\Delta\nu$ μHz
5005217	37.50	4.27	39.58	4.34	39.29	4.30	37.96		36.72		40.32	42.22	4.31
5006817	143.40	11.65	143.58	11.66	144.34	11.65	143.26	11.66	141.90	11.87	143.68	147.90	11.59
5008996	30.40	3.74	30.65	3.73	30.25	3.75	30.58	3.70			30.86	32.15	3.73
5009393	33.60	3.88	32.28	3.86			34.03				33.09	34.44	4.02
5016549	99.30	8.70	100.14	8.58	99.44	8.64	99.42	8.74			99.84	103.35	8.69
5017711	36.30	4.17	33.77	4.17	33.96	4.58	37.16	4.11			35.58	36.76	4.20
5023732			26.39	3.08									
5023889			54.15	5.34									
5023931			50.47	4.89									
5023953			46.99	4.77									
5024043			56.31	5.69									
5024967			47.30	4.69									
5026008	62.30	6.19	62.01	6.13	62.01	6.29	62.23	6.11	57.18	6.55	62.59	63.79	6.14
5032140	47.80	4.68	47.69	4.64	47.63	4.78	47.91	4.66			47.53	47.77	4.69
5034571	61.50	5.83	60.62	5.76	60.21	5.88	61.76	5.76			60.80	63.32	5.75
5035849									30.86	3.27			
5039392							6.61						
5084662	43.00	4.49	40.45	4.49	40.55	4.40	43.47	4.33			40.99	41.73	4.48
5087542	35.60	3.80	35.80	3.77	34.54	3.71	35.16	3.76			35.86	35.45	3.83
5088148	28.90	3.84	29.54	3.84			28.51	3.76			30.09	31.68	3.77
5088362	39.40	4.12	39.37	4.16	38.87	4.12	39.44	4.07	37.27	4.41	39.71	40.77	4.12
5090928									192.26	15.45			
5091962	21.80	2.93	21.49	2.95	22.17	2.86	22.02	2.92			21.79	22.45	
5095946	35.60	4.09	35.20	4.42	35.55	4.15	36.15	4.25	34.95	4.28	36.33	38.39	4.20
5104573	35.10	3.93	36.23	4.41			35.49	3.80			36.65	38.90	3.90
5104949	20.10	3.03	20.46	3.20	20.07	2.69	20.24	2.98			20.79	22.39	3.02
5112288			45.67	4.90									
5112361			67.03	6.17									
5112373			44.25	4.60									
5112387			44.68	4.80									
5112730			44.47	5.62									
5112744			41.93	4.38									
5113041			37.75	3.97									
5113061									12.28	1.70			
5113910	2.40	0.59											
5121116	21.60	2.61			19.74	2.60	21.53		22.52	2.91	21.73	24.00	2.64
5121605	33.20	4.09	32.92	4.14	32.58	4.20	32.81	4.07	35.24	4.17	33.29	34.48	4.10
5128171	54.70	5.33	55.42	5.30	53.65	5.24	57.35	5.29	50.83	5.61	55.33	56.71	5.27
5129011	40.90	4.68	40.21	4.53	41.38	4.74	41.37				41.18	42.80	4.66
5167473	30.70	4.00	30.86	4.35	30.86	3.96	30.93				31.38	32.68	3.99
5172229	39.90	4.38	39.59	4.43	39.75	4.43	39.94	4.44	37.83	4.36	39.98	40.94	4.36
5174642					10.41	1.57	10.12						
5184285									1.16	0.38			
5196152	80.10	7.39	79.09	7.32	79.64	7.34	80.54	7.32			79.72	83.00	7.36
5199906	68.10	5.83	69.33	6.14	68.98	5.81	67.30	5.85			69.92	72.94	5.86
5266416	31.60	3.74			31.44	2.81	32.52	3.53	28.65	3.63	32.71	33.18	3.74
5269165	29.90	3.74	29.18	3.74			31.37				30.25	31.44	3.71
5270737									1.07	0.37			
5270933	36.70	4.14	36.78	4.27	36.61	4.15	36.92	4.22			36.99	37.85	4.17
5272829	6.30	1.10											
5283798	53.70	5.33	54.29	5.09	54.04	5.26	53.99				55.09	56.38	5.27
5284127	32.40	3.91	32.85	4.00	29.47	3.83	32.54	3.95			33.44	34.92	3.92
5285357	32.80	4.04									33.03	33.75	3.95
5287610	59.90	6.19	59.91	6.16	59.73	6.22	59.81	6.18	57.04	6.03	60.64	61.65	6.16
5288607	55.50	5.73	57.00	6.23	58.11	5.71	53.49		55.00		58.75	60.39	5.70
5288716	35.40	4.27			36.37	4.29	35.56	4.25			35.77	37.04	4.22
5289959	6.50	1.12							5.74				
5297605	6.00	0.90											
5307203	48.30	5.37	47.06	5.34	47.82	5.22	48.94	5.29	45.06	4.84	47.73	48.34	5.34
5307747	85.40	6.87	84.27	7.06	85.82	6.92	85.36	6.99	81.06		84.20	84.90	6.84
5307930	50.10	4.46	48.87	4.87	51.86	4.52	50.03	4.55			53.51	53.61	4.59
5339823	40.50	4.14	40.84	4.33	40.67	4.15	40.87	4.32	41.17		41.14	44.27	4.22
5353178			29.48	3.82			29.10		30.82	4.07	29.69	31.36	
5356201	202.90	15.62	210.10	15.81	210.00	15.36	209.08	15.88			208.23	202.59	15.76
5360757	37.40	4.12	37.10	4.12	37.37	4.10	37.63	4.19			37.85	40.57	4.15
5364240	71.50	6.81	72.26	6.76	71.46	6.75	71.28	6.78	73.10		72.37	75.08	6.77
5371626	21.40	2.59			21.48	2.67	21.60	2.53			21.63	22.31	2.56
5380775	65.60	5.98	66.49	5.92	65.56	6.00	65.59	5.91			66.12	65.63	5.97
5384584	15.10	2.10			16.30	2.17	15.42		12.24	2.21			
5385518	57.10	5.25	56.25	5.26	55.62	5.32	57.38	5.25	58.59	5.69	56.61	54.98	5.26
5392657	45.20	4.55	44.79	4.60	44.97	4.49	45.58	4.55	40.06		44.93	47.88	4.53
5426041	50.40	5.05	51.23	5.09	50.04	5.10	50.33	5.07			51.03	53.42	5.02
5430086							27.76	3.41					

Table 7. Continued.

star	COR ν_{max} μHz	COR $\Delta\nu$ μHz	CAN ν_{max} μHz	CAN $\Delta\nu$ μHz	A2Z ν_{max} μHz	A2Z $\Delta\nu$ μHz	SYD ν_{max} μHz	SYD $\Delta\nu$ μHz	DLB ν_{max} μHz	DLB $\Delta\nu$ μHz	OCT I ν_{max} μHz	OCT II ν_{max} μHz	OCT $\Delta\nu$ μHz
5430779	128.60	10.42	129.82	10.44	129.29	10.55	126.91	10.48			130.42	134.12	10.35
5436082	39.40	4.38	38.78	4.38	38.84	4.38	39.71				39.67	41.34	4.35
5436814	9.70	1.68			9.67	1.17	10.04		9.43				
5437909	199.40	14.94	205.93	14.55	200.00	15.48	204.74	15.29					15.19
5449290									17.47	2.38			
5457811	30.90	3.64	29.48	3.70	30.36	3.56	30.64	3.63	25.20		31.44	33.54	
5462797	12.10	1.54					12.13	1.59					
5514079	86.80	7.90	88.39	7.82	88.60	7.88	87.10	7.85			88.19	91.53	7.92
5514974	31.90	3.93	32.12	4.03	31.67	3.88	32.01	4.04	33.70	4.08	31.96	33.49	3.90
5515314	137.00	10.91	136.10	10.83	137.58	10.76	137.10	10.86	137.09		135.84	138.45	10.88
5517118	32.10	3.93	31.72	3.89	31.57	3.90	32.36	3.86			31.89	33.22	3.95
5517310	20.10	2.78	20.12	2.52	20.04	2.75	20.74				20.33	21.04	
5517442	34.60	3.97	34.90	3.97	35.20	3.95	35.41	3.97			35.49	36.60	3.94
5524720	21.60	2.53	20.98	2.60	21.87		21.70	2.62					
5525572	27.70	3.37	28.37	3.39			27.41	3.87			28.72	30.40	4.12
5526083	41.00	4.58	41.46	4.78	41.08	4.55	41.35	4.51			41.49	43.46	4.60
5530598	103.00	8.70	100.52	8.61	102.90	8.71	104.39	8.68	103.00	8.55	103.78	107.35	8.66
5546141	79.50	7.47	80.58	7.55	79.41	7.67	79.94	7.51	80.27	7.93	79.64	82.87	7.47
5546749	36.60	3.97			35.43	4.00	36.52	4.04	41.83	4.43	37.71	38.53	4.01
5553032	2.30	0.51											
5597397	45.30	5.09	45.08	5.19	44.74	5.20	45.33	5.11			45.49	47.29	5.07
5598645	87.90	6.55											
5598789	56.20	5.46	56.86	5.41	56.24	5.48	55.47	5.43	53.91	5.45	57.12	58.35	5.39
5599763	31.20	3.80	31.69	3.87	31.24	3.85	31.52	3.81			31.77	33.35	3.80
5611192	99.10	7.99	99.97	7.95	99.48	7.76	97.91	8.07			101.14	105.88	7.91
5612549	27.70	3.64			27.43	3.38			25.53	3.15	28.05	29.63	3.59
5615439	14.70	2.41					14.67						
5617601									20.67	2.57			
5631061	18.20	2.18					18.51						
5640750	24.30	2.83	24.02	2.95	24.10	2.86	24.65	2.98			24.39	24.57	2.81
5648894	75.70	6.14	74.76	6.30	75.37	6.09	75.69	6.15	78.46		75.23	78.30	6.14
5685244	28.30	3.74					28.56	3.79					
5685279	7.60	1.59			7.52	1.09	7.59		8.21	1.39			
5694720	31.00	3.35			30.82	3.41	30.63	3.35	29.34	3.77	31.53	33.64	3.39
5698156	8.40	1.65					10.24		8.67				
5700368	36.70	4.12	36.72	4.16			37.29	4.15	35.27	4.37	37.10	38.38	4.17
5709564	26.40	3.84	26.32	3.75			26.68		27.26	3.14	26.50	27.35	
5709667	90.50	8.18	91.03	8.18	90.20	8.18	89.80	8.06			91.05	96.19	8.09
5732847									27.24	3.35			
5737655	31.30	4.32											
5768953	10.10	1.66					10.82						
5770923	79.60	7.01	78.66		79.21	6.92	78.75	6.99	68.45		80.29	84.22	6.98
5779724	5.90	1.13											
5780782							11.11		9.46				
5782127	26.80	3.58	26.48	3.59	26.23	3.25	26.85	3.45	24.14	3.13	27.27	28.78	3.54
5782671	21.80	2.61	21.69	2.63	21.99	2.62	22.04	2.64	23.56	2.52	21.82	22.35	2.61
5787509	31.40	3.86	31.82	3.84	31.50	3.92	31.28	3.82	30.65	3.83	32.22	33.46	3.85
5790837	48.80	4.74	48.39	4.64	48.67	4.73	48.40	4.67	46.00	4.42	48.10	49.97	4.74
5791135	42.30	4.43	43.47	4.43	42.85	4.59	42.31				43.94	46.82	4.51
5791844	51.20	5.17	51.84	5.32	52.26	5.14	53.18	5.21	46.69	5.34	53.28	55.59	5.14
5793628	38.30	4.74					37.69		35.09	4.32			
5794100	34.30	4.17	34.22	4.28	34.13	4.13	34.39	4.12			34.60	35.72	4.23
5795250	51.80	5.21	51.83	5.17	51.37	5.13	51.83	5.17			51.73	51.14	5.25
5795626	39.90	4.55			39.52	4.52	40.08				39.74	41.47	4.55
5806522	60.50	5.98	58.49	5.85	59.47	5.88	60.89	5.92	56.01		58.76	58.30	5.94
5854149	41.70	4.35	41.19	4.31	40.77	4.30	41.50	4.36			41.61	42.51	4.36
5855568	37.10	4.27	36.86	4.14	36.61	4.33	37.86				37.48	38.89	4.22
5856931	5.50	1.39							6.99				
5857618	71.40	6.31	70.06	6.33	70.76	6.29	71.33	6.31			70.99	72.35	6.25
5857724	15.90	2.31	16.31	2.40	16.05	2.75	16.08	2.37			16.37	17.81	2.30
5858034	42.10	4.38	40.87	4.45	40.72	4.27	42.54				41.41	42.23	4.27
5858947	165.30	14.63	165.94	14.99	165.21	14.49	164.22	14.51			166.40	168.00	14.48
5859492	35.80	3.91	35.93	4.15	35.17	3.88	35.31		34.44	4.22	36.24	37.83	3.95
5866737	65.90	6.42			65.64	6.35	65.82	6.47	66.28		66.35	66.53	6.44
5866965	3.10	0.66											
5872509	39.60	4.30	39.48	4.36	38.93	4.33	39.76	4.37	35.46	4.66	39.06	39.47	
5887977	27.40	3.14	28.16	3.20	27.29	3.22	27.64	3.16	25.46		28.32	29.73	3.13
5891971	30.30	4.52					29.79				31.72	33.48	
5900096	31.00	3.88	31.52	3.97	31.03	3.86	30.93	3.89	29.22	3.83	31.76	32.94	3.88
5903484	30.90	3.44	30.84	3.52	28.76	3.41	30.76	3.35			31.42	32.42	3.39
5905655	13.80	2.76			14.89	1.81	14.42						
5940228	26.20	3.04	26.56	3.10	25.01	3.05	26.47	3.06			26.32	26.24	3.05
5943345	47.90	4.68	49.97		50.42	4.81	47.49	4.69	56.89		51.52	55.13	4.70

Table 7. Continued.

star	COR ν_{max} μHz	COR $\Delta\nu$ μHz	CAN ν_{max} μHz	CAN $\Delta\nu$ μHz	A2Z ν_{max} μHz	A2Z $\Delta\nu$ μHz	SYD ν_{max} μHz	SYD $\Delta\nu$ μHz	DLB ν_{max} μHz	DLB $\Delta\nu$ μHz	OCT I ν_{max} μHz	OCT II ν_{max} μHz	OCT $\Delta\nu$ μHz
5950394	38.30	4.14	38.72	4.27	38.37	4.12	38.21	4.25	37.29		39.23	40.66	4.16
5950668	11.20	1.72					11.31		11.93	1.78			
5954370	15.50	2.40					16.33						
5955168									12.27	1.85			
5959615	29.30	3.45	29.10	3.45	28.96	3.59	29.54	3.51			29.42	30.52	
5963732	9.80	1.53					10.15						
5983299	64.80	5.83	59.93	5.76	61.19	5.88	63.88	5.80	55.65	5.96	62.18	63.22	5.90
5990753			94.13		99.36	7.60	97.64	7.56			100.12	105.96	7.69
6029189	67.20	6.67	68.87	6.64	67.42	6.62	66.98	6.66	65.82	6.96	68.95	69.18	6.64
6029474	75.30	7.09	75.62	7.17	75.02	7.27	75.35	7.17			75.74	76.90	7.14
6032639					43.84	4.77	45.92				45.13	46.89	4.87
6033938	161.40	13.48	162.39	13.28	160.94	13.45	160.81	13.23			162.38	164.51	13.54
6037660	30.80	4.09	30.71	4.09	29.86	4.17	30.93	4.10			30.77	31.82	4.01
6037858	42.90	4.52	42.90	4.54			43.12	4.60	38.85		43.17	45.76	4.54
6043187	61.20	6.31	61.61	6.28	61.17	6.17	61.37	6.28			61.62	62.23	6.30
6067958	16.30	2.32	17.02	2.50	16.80	2.31	16.38				17.04	17.89	2.35
6099979	40.00	4.49	40.61	4.59	40.03	4.52	40.23	4.63			40.61	40.83	4.50
6101376	42.70	3.70											
6103934	98.70	8.38	99.46	8.41	97.58	8.39	97.93	8.41	98.78		98.92	102.82	8.39
6104786					167.89	13.61	166.77	13.84			169.29	171.48	13.71
6115575	50.60	4.91	50.69	4.85	49.97	4.87	50.55	4.86			50.70	50.17	4.85
6117517	118.70	10.11	118.88	10.09	118.36	10.00	118.10	10.09	121.73		118.74	122.51	10.12
6118479	63.90	5.98	64.91	6.09	64.22	5.95	64.18	5.98	65.70		64.96	63.70	5.93
6123202	54.50	5.50	54.52	5.39	54.57	5.48	55.08	5.50	54.93		54.96	54.83	5.42
6125893	7.30	1.21					7.69						
6131884	26.30	3.66	26.14	3.70	26.23		26.53	3.58			27.13	28.66	
6140161	14.20	2.00	14.44	2.09			14.42	2.06	14.88	2.39			
6144766	96.20	7.72											
6144777	123.80	10.91	128.71	10.96	127.83	10.86	127.08	10.95	119.29		128.53	132.25	10.83
6150124	40.70	4.45											
6185790	44.20	4.58	42.45	4.75	42.53	4.71	44.47	4.68			43.47	45.77	4.63
6188269	64.60	5.63	62.93	5.73	61.31	5.67	64.38	5.70					
6191288	25.70	3.10	25.83	3.17	25.54	3.08	26.01	3.20	24.07	3.14	25.83	26.87	3.13
6192431	35.20	4.38	36.33	4.16	34.87	4.08	36.10	4.26	31.34	3.28	36.01	36.78	4.34
6196149					26.92	3.36	28.41						
6197019							9.90						
6198581	40.80	4.68	40.74	4.94	40.30	4.41	40.65		39.43	4.64	41.15	44.46	4.48
6200565	38.40	4.38	38.05	4.14			38.73				38.02	37.56	4.18
6231193	31.50	3.93	31.22	3.91	31.40	3.92	31.84	3.93	29.09	3.74	31.72	32.84	3.89
6264398	29.30	3.26	30.47	3.26			30.93				31.27	31.96	
6276948	89.60	7.47	89.40	7.67	89.54	7.59	90.07	7.52	89.76	7.89	89.40	92.22	7.46
6277741	24.40	2.93	24.74	3.06	24.42	3.01	24.60	3.03			24.75	25.78	
6279491	28.50	3.88	28.03	3.72			29.08	3.71			28.62	29.97	3.05
6279696									13.02	1.81			
6286142	12.10	1.80	12.36	1.79	11.79		12.27						
6304081	69.10	5.78	68.57	5.48	67.03	5.79	69.36	5.90	60.65	6.23	67.75	65.95	5.79
6308068	6.30	1.14					6.18		6.02	1.03			
6345474	32.30	4.19	33.10	3.93			32.12		34.81	4.65	33.19	35.07	4.18
6357879	40.50	4.58	40.66	4.70	41.00	4.53	40.53	4.57			41.49	44.71	4.59
6363090	44.20	4.61	42.59	4.64	42.25	4.64	45.47	4.53	35.59		43.05	45.92	4.58
6365867	27.90	3.72	28.01	3.85	27.86	3.56	27.83				28.34	29.80	3.42
6370549	10.00	1.82			9.73	1.28	10.32						
6371008	30.00	2.79	29.19	2.79			30.01				29.81	32.71	
6382830	21.80	2.46			20.87	2.50	22.72		22.80	2.72			
6418912	32.10	3.74					32.86	3.71			32.58	33.72	3.71
6421579	8.20	1.49					8.12						
6424157	98.90	8.81	98.26	8.77	99.44	9.00	99.08	8.76			98.31	100.22	8.74
6431941	20.90	2.89	20.74	2.91	21.31	2.88	21.06	2.86			21.07	22.08	2.89
6444595	19.90	2.52	19.90	2.63			20.56				20.01	20.16	2.52
6448010	35.20	4.27	35.38	4.11	34.86	4.32	35.51	4.13			35.92	37.09	4.27
6448764									2.11	0.57			
6451238	29.90	3.86					30.19						
6462755	32.60	2.94	30.79	4.23			32.31		30.16		30.82	32.39	
6465610	42.00	4.41	40.57	4.49	39.52	4.42	43.32	4.42	34.94	4.72	41.20	41.38	4.50
6500038	52.40	5.37	52.77	5.42	51.57	5.37	52.53	5.40			52.24	50.44	5.32
6500623	15.10	1.78			14.91	2.42	15.02						
6505025	32.00	4.19	32.66	4.42			31.74	4.22			33.20	35.16	4.20
6508328	38.30	4.24	37.99	4.25	37.30	4.23	37.96	4.28			38.54	40.21	4.22
6508943	32.30	4.12	32.83	4.12			31.38						
6522182	8.10	1.31					8.22						
6526377					33.78	3.67	33.09						
6543514	4.30	0.94											
6547007	38.90	4.58			38.42	4.46	39.35	4.59	35.29		38.70	39.55	4.54

Table 7. Continued.

star	COR ν_{max} μHz	COR $\Delta\nu$ μHz	CAN ν_{max} μHz	CAN $\Delta\nu$ μHz	A2Z ν_{max} μHz	A2Z $\Delta\nu$ μHz	SYD ν_{max} μHz	SYD $\Delta\nu$ μHz	DLB ν_{max} μHz	DLB $\Delta\nu$ μHz	OCT I ν_{max} μHz	OCT II ν_{max} μHz	OCT $\Delta\nu$ μHz
6549467							2.12						
6579495	86.10	8.09	84.79	8.29	85.56	8.10	85.76	8.17			85.94	86.81	8.11
6579998	31.80	4.32	32.22	4.21			32.41				32.31	32.70	4.31
6580479	34.30	4.17	34.22	4.10	33.37	4.17	34.09	4.16			35.63	37.71	4.15
6586554	55.50	5.41	55.41	5.46	55.39	5.29	55.72	5.57			55.85	57.35	5.39
6591336	23.40	2.99	23.96	2.99	23.91	3.03	23.73						
6593623	37.30	4.17	37.94	4.16	37.05	4.22	37.17	4.22			37.88	39.65	4.14
6604237	3.40	0.74											
6606106	31.80	4.07	31.72	4.16	31.61	3.34	32.17	3.98			32.18	33.09	4.06
6610828	32.70	4.04	33.21	4.00	32.80	4.00	32.68				33.48	34.72	4.07
6612293	43.80	4.43			42.06	4.40	43.95	4.45	39.65	4.58	43.46	45.83	4.43
6614588	39.90	4.35			40.91	4.38	40.14		44.16	4.85	40.79	43.33	4.44
6630797	2.90	0.58											
6665058	106.40	10.11	104.04	9.69	106.31	10.00	106.55	9.69			104.93	106.21	9.79
6680734	17.50	2.38	17.59	2.38	18.52	2.40	18.11	2.55			18.10	18.52	2.38
6690139	114.60	9.68	115.26	9.70	114.58	9.80	114.07	9.68			115.45	119.24	9.69
6696436	24.40	3.17	24.45	3.16	24.98	3.19	26.01	3.25			24.71	25.75	3.19
6701238	28.50	4.00			28.92	4.15	29.07	4.05	26.57	3.51	29.14	31.47	4.11
6718509							10.09						
6751876	28.80	4.00					30.14				29.30	30.95	3.82
6752023	86.20	6.37											
6755907	43.70	4.88	43.75	4.82	43.65	4.88	44.00	4.84			43.97	45.41	4.82
6762022	41.50	4.41	41.79	4.39	40.85	4.77	41.54	4.39			41.76	42.54	4.42
6765032							6.70						
6768319	52.70	5.54	53.91	5.60	53.10	5.61	52.55	5.57			54.16	56.64	5.52
6779699	88.20	7.99	88.07	8.00	88.26	7.97	88.41	8.00	80.08		87.41	90.50	8.00
6780490	36.40	4.12			36.58	4.26	36.95		35.46	4.14	37.26	38.37	4.25
6785040	3.40	0.64											
6804138	84.50	7.31	81.49	7.25	83.77	7.31	85.51	7.33			83.49	84.70	7.23
6805631	42.80	4.64	42.49	4.50	42.42	4.57	43.20	4.52			42.68	44.09	4.59
6837256	36.40	4.04	35.78	4.05	35.36	4.00	36.85	4.06	35.91	3.86	36.22	37.27	4.03
6838420	28.70	3.45	29.22	3.62	28.25	3.55	28.23	3.49	26.98		29.66	30.94	3.49
6838707	33.10	4.04					33.10		34.56	4.41			
6843557	48.00	4.88	48.55	4.84	48.08	4.79	48.15	4.86	49.75		49.46	51.11	4.90
6849167	33.70	4.24			33.84	4.30	35.13		25.62				
6851499	52.20	5.68	52.28	5.63	52.44	5.73	52.28	5.64			52.62	53.94	5.70
6853465	85.90	7.55	86.61	7.46	85.46	7.41	84.80	7.51			87.15	90.38	7.56
6853779	11.20	1.81					11.26						
6854095	30.70	4.00	30.33	4.00	30.52		31.00				31.12	31.78	4.08
6860004							235.93	15.85					
6878800	20.90	2.79	20.70	2.78	21.32	2.80	21.15	2.75			20.97	21.44	
6888756	13.20	1.91					13.31	1.93			14.09	15.63	1.91
6922899									3.35	0.71			
6925158	89.40	7.90	90.44	7.99	89.37	7.88	89.28	8.04			90.26	94.18	7.93
6928997	120.50	9.96	122.57	10.02	121.07	10.00	118.28	10.04			123.01	125.98	9.96
6929729	65.40	6.08	66.20	6.04	65.10	6.08	65.15	6.07			66.21	67.92	6.05
6936796	21.90	3.30			22.23	2.68	22.37		20.51	2.24	22.89	24.36	
6939158	30.90	3.35	31.36	3.35	30.54	3.33	31.00	3.46			31.11	29.88	
6949816	79.20	7.99	80.39	8.00	79.58	7.95	78.84	7.92	78.50	8.43	80.48	82.32	8.08
6951925	43.00	4.64	44.44	4.72	43.71	4.58	44.42	4.62	40.93	5.11	44.31	45.66	4.62
6952140	8.60	1.35					8.69		8.76	1.20			
6952430	35.80	4.24	36.26	4.42	36.24	4.17	35.06	4.16			36.55	38.08	4.23
6964342	41.40	4.49	41.52	4.38	40.09	4.49	41.79	4.40	42.48		41.15	43.26	4.49
7006979	35.10	4.07	35.63	3.73	35.40	4.05	35.48	4.20	35.48	4.34	35.62	37.39	4.01
7018252	26.50	3.37					26.37		27.69	3.52	26.98	27.77	3.34
7020371	15.50	2.12	15.43	2.12			15.56				15.49	16.02	2.09
7024018	84.50	6.67	81.80	6.90	80.20	6.86	85.61	6.70			86.90	90.83	6.81
7031016	33.40	4.17	33.75	4.09	33.56	4.17	33.92	4.17			34.10	35.61	4.15
7039075	45.10	4.74	45.10	4.79	45.03	4.82	44.73	4.76	45.24	5.24	46.01	48.33	4.72
7044886	43.50	4.17	42.15	4.22	42.33	4.20	43.90	4.16			43.58	43.27	4.15
7048889	29.60	3.78	29.39	3.75	29.34	3.83	30.48	3.76			30.04	31.66	3.82
7049306	32.60	4.07	33.35	4.32	32.40	3.94	32.89	3.93			33.50	34.64	4.12
7060732	136.00	10.91	133.56	10.84	132.33	10.91	132.25	10.86			133.18	136.24	10.90
7092067	51.30	5.46	51.69	5.46			51.42	5.49			51.74	52.78	5.46
7093179	31.10	3.70	30.66	3.71	29.59	3.62	31.52	3.73			30.77	31.01	3.64
7098252	24.80	3.30	25.28	3.03			25.46				24.57	24.44	
7098412							6.93						
7100768					23.79	2.38	24.47						
7100955							4.83						
7103297	40.50	4.41	39.73	4.41	38.43	4.33	40.46	4.35			39.92	39.84	4.40
7109120	61.90	5.93	61.56	6.01	61.50	5.85	62.65	5.98	62.43		62.09	62.63	5.92
7118721	69.20	6.08	67.62	6.11	68.05	6.03	70.21	6.11			68.22	69.26	6.18
7134640									4.34	1.00			

Table 7. Continued.

star	COR ν_{max} μHz	COR $\Delta\nu$ μHz	CAN ν_{max} μHz	CAN $\Delta\nu$ μHz	A2Z ν_{max} μHz	A2Z $\Delta\nu$ μHz	SYD ν_{max} μHz	SYD $\Delta\nu$ μHz	DLB ν_{max} μHz	DLB $\Delta\nu$ μHz	OCT I ν_{max} μHz	OCT II ν_{max} μHz	OCT $\Delta\nu$ μHz
7177015	82.80	7.47	84.20	7.48	82.87	7.34	82.61	7.46	74.71	7.67	84.43	87.30	7.48
7204369	16.50	2.15	16.38	2.14			16.50		15.53	2.11	16.47	16.96	
7205067	60.00	5.29			61.47	5.26			60.02		62.37	66.96	5.40
7206531	44.90	4.71	46.32	4.71	45.57	4.65	44.93				46.25	47.76	4.64
7213716	15.40	1.93					15.34				15.09	15.52	1.93
7258771	83.10	7.47	83.04	7.77	83.20	7.59	83.21	7.45			84.13	83.48	7.52
7259653	38.30	4.46	39.01	4.39	39.68	4.33	37.68	4.42			40.44	41.31	4.39
7270142	52.20	5.46	53.19	5.44	52.21	5.45	52.34	5.45			52.83	54.69	5.45
7272257	23.90	3.06	23.70	3.04	23.28		24.08	3.03			23.92	24.43	3.01
7273672	20.90	2.78	21.07	2.67	20.87	2.18	21.15		21.88	2.90	21.18	21.88	2.81
7281777	38.10	4.95	36.83	4.95							38.41	39.33	5.05
7289277	29.20	3.78	29.35	3.84	29.07	3.77	29.55				29.22	31.46	3.75
7293531	17.10	2.72			17.81	2.66	21.06		16.80	2.80			
7293609	30.40	3.76	31.01	3.74			31.05				31.27	33.22	3.72
7294715	42.20	4.55	42.01	4.89	42.32	3.98	43.03				42.32	43.86	4.48
7297940	100.30	8.19	99.76	8.14	99.75	8.13	99.90	8.13			100.00	103.82	8.16
7303187	24.40	3.21	24.59	3.41			24.64				25.56	27.54	3.27
7337994	28.60	4.09					29.14	4.27	24.19	2.91	29.17	29.92	4.01
7340724	128.40	10.74	128.80	10.61	129.46	10.66	127.98	10.59			128.79	131.09	10.57
7341343	14.10	1.98	13.88	1.91			14.37		14.40	2.32			
7346365	53.00	5.33	53.20	5.39	52.71	5.40	53.08	5.32			53.68	54.41	5.35
7346442	48.80	5.17	48.41	5.21			49.38	5.22			48.55	50.31	5.17
7365701	31.60	4.14	31.54	4.19			31.42				31.95	33.41	3.96
7366121	43.70	4.43	43.39	4.65	43.56	4.31	43.47				43.91	45.93	4.37
7366820					35.91	4.20	38.18				37.10	36.04	4.09
7374855	36.30	3.68	39.50	3.68	37.47	3.57	37.66	3.68			39.49	40.52	3.65
7378357	7.30	1.29					7.32		7.76				
7382407	43.50	4.77	43.29	4.67	43.49	4.79	43.89	4.74	42.47		43.54	44.65	4.65
7384523	33.70	4.12	33.27	4.12			33.50	4.15			34.50	36.23	4.13
7387188	32.60	4.14	33.39	4.14			32.96				33.51	35.18	4.12
7420223	34.60	4.22	35.52	4.30	34.31	4.01	34.96	4.28	34.61	3.99	35.70	38.06	4.20
7429055	58.00	6.08			59.56	6.15	58.84	6.11	62.01	5.85	60.70	62.91	6.09
7435143	59.50	6.19	60.34	6.19	60.80	6.22	59.97	6.20			62.08	61.17	6.21
7439931					258.76	17.12	241.55						
7445698	41.40	4.17	41.13	4.13	39.64	4.04	41.57	4.18			41.14	40.58	4.14
7446560	12.30	1.98					12.45						
7448051	34.10	3.78	33.90	3.83	33.95	3.85	34.27	3.89	34.50	3.41	33.79	33.97	3.79
7448746	4.90	0.91											
7457184	67.30	5.88	67.53	5.99	64.96	5.93	65.45	5.93			68.06	70.74	5.86
7466616	76.40	6.19	72.69		75.08	6.17	75.29	6.32			74.80	77.28	6.21
7500388	39.50	4.91	39.42	4.67	39.15	4.65	39.54	4.71			39.89	40.98	
7513379	105.60	9.05	108.85	9.01	109.67	9.04	107.71	9.10			109.52	112.61	9.02
7522297	32.80	4.19	31.95	4.15	32.27	4.09	33.08	4.14			33.28	35.01	4.16
7523875	85.30	7.72	85.91	7.68	84.73	7.65	84.05	7.69	89.07		85.97	91.24	7.68
7529215	90.40	8.49	90.33	8.30	90.37	8.33	90.69	8.30			90.24	92.14	8.47
7540130	12.80	1.67					12.87		12.38	1.93			
7543672	19.10	2.15			18.57	2.14	19.28	2.21			19.26	19.91	2.15
7549472							4.21		3.18	0.74			
7552779							7.59		5.16				
7581399	86.20	6.55											
7581822	161.50	13.22	167.24	13.03	161.27	13.14	161.57	13.08			166.51	171.06	13.15
7584122					239.87	18.22	250.05						18.06
7585523	37.70	3.93	35.96	3.98	35.31	3.93	37.96	3.94			36.99	38.01	3.91
7587099	36.90	3.76			35.75	3.95	37.95				36.43	37.10	3.81
7591642	25.10	3.58					24.52						
7594865	30.10	3.91	30.24	4.22	29.70	3.81	30.36	3.93			30.41	31.51	3.92
7595155	26.50	3.60	27.07	3.60			25.98						
7595285	29.40	3.95			27.42	4.33	29.49		29.86	3.41			
7596701	45.50	5.09	45.64	5.08	43.83	5.00	45.46	5.13			45.65	47.14	5.03
7611069	154.40	12.50	156.58	12.56	155.72	12.35	154.22	12.63			156.77	157.87	12.57
7618122	71.20	6.94	70.68	6.97	70.60	6.86	71.53	7.05			70.93	70.80	6.91
7619034	44.30	4.77	44.25	4.85	44.27	4.76	45.05		43.92	4.85	44.90	47.43	4.65
7619745					167.25	12.99	165.31	13.12			168.56	178.67	12.98
7626457	176.20	13.22	176.24	13.32	176.07		174.96	13.33			175.52	175.33	13.29
7661609	21.40	2.70	21.20	2.69	18.89	2.39	21.52	2.73			21.66	22.36	2.68
7662025	28.70	4.09	29.54	3.79	28.36	3.80	29.39				29.98	31.70	4.18
7663241	25.00	2.86	24.77	3.02	23.76	3.00	25.19						
7667657	44.80	4.44	43.33	4.64	43.05	4.45	44.86				44.47	44.99	4.44
7668782	14.50	2.06			14.86	2.05	14.60	2.04					
7670419	29.50	3.72					30.59		26.08	3.62			
7671562	30.80	3.76			29.61	3.75	30.81	3.77			31.43	32.35	3.78
7672405	12.30	1.76					13.22						
7674224					131.40	10.71	130.94	10.70			130.84	134.94	10.72

Table 7. Continued.

star	COR ν_{max} μHz	COR $\Delta\nu$ μHz	CAN ν_{max} μHz	CAN $\Delta\nu$ μHz	A2Z ν_{max} μHz	A2Z $\Delta\nu$ μHz	SYD ν_{max} μHz	SYD $\Delta\nu$ μHz	DLB ν_{max} μHz	DLB $\Delta\nu$ μHz	OCT I ν_{max} μHz	OCT II ν_{max} μHz	OCT $\Delta\nu$ μHz
7677317	22.10	3.08	23.54	3.14	21.34	3.07	21.89	3.05	22.66	2.66	24.00	25.36	3.08
7685724	36.30	4.12	34.84	4.12	35.16	4.19	36.33				35.63	37.07	4.16
7693833	31.30	4.19	31.76	4.01	31.36	3.86	31.48	4.05			32.17	33.84	4.13
7697146	61.30	5.88	61.23	5.79	61.31	5.89	61.71	5.80	62.65	5.60	61.90	62.98	5.85
7701048	42.10	4.14	42.22	4.20	42.11	4.13	42.34	4.18	44.59		42.10	40.82	4.10
7729396	8.30	1.41					8.76	1.39	9.35	1.65			
7732065	12.50	1.91					12.64	1.88					
7732335	81.80	7.64	79.38	7.69	81.14	7.59	81.72	7.65	73.32	7.70	82.02	83.69	7.67
7734065	26.30	3.60	26.57	3.20			26.53				26.92	28.33	3.57
7749249	71.70	6.67	70.48	6.62	69.28	6.76	71.11	6.67			70.68	71.89	6.64
7764335							9.77						
7771603	34.20	3.74	35.17	3.88			35.02	3.75					
7798339			29.57	3.86									
7799762	17.70	2.25	16.97	2.25	15.30	2.19	18.78	2.23			17.93	18.34	2.27
7802551	13.60	1.82			13.18	1.85	13.61	1.75					
7808227	31.60	4.30	32.67	4.24			31.85				32.77	34.08	
7820638	48.70	4.85											
7821234	33.70	4.14	34.51	4.11			34.79	4.16			34.65	36.88	4.10
7831348	37.50	4.04	36.68	4.10	37.55	3.98	38.15	4.11			37.06	37.87	4.13
7841410	7.10	1.32					7.25						
7867854	31.20	4.24	30.18	4.24			29.76				31.93	32.85	
7868532	72.40	7.09	73.37	7.10	72.48	7.22	72.32	7.09			74.13	76.67	7.06
7872519	32.70	4.32	33.07	4.13			32.46	4.01			33.33	34.33	
7888403	47.80	5.25	48.26	5.28	47.59	5.21	46.92	5.26			48.27	50.08	5.27
7905696	45.20	4.64	45.74	4.57	44.51	4.69	45.23	4.56			45.81	47.34	4.60
7909976	76.00	6.12											
7919558	39.20	4.04	37.85	4.04	38.68	4.05	39.29	4.03			38.79	39.74	4.01
7935931							30.88						
7936033	14.70	2.06			14.79	2.11	14.90	2.07					
7938029	20.40	2.77	21.22	2.73	20.27	2.72	20.51	2.74					
7940959	6.40	1.20											
7944142	75.60	7.09	75.03	7.04	75.34	7.10	75.54	7.03			75.71	76.59	7.03
7948086	41.20	4.55	41.72	4.50	41.91	4.59	41.28	4.53	40.17	4.67	42.15	45.02	4.53
7949599	32.80	3.93	32.84	4.17	32.55	3.92	33.28	4.13	35.37	4.55	33.16	33.96	3.93
7950229	42.60	3.86											
7955392	42.30	4.09	43.57	4.14	42.94	4.18	41.97	4.20			44.03	46.31	4.14
7957166					205.83	14.67	197.99	14.34					
7966761									18.53	2.76			
7967534	29.40	4.09	30.16	4.10			30.26	4.07					
7973937	2.90	0.62											
7974439							8.95						
7989213	8.40	1.42					8.44						
8005116	37.70	4.19	36.82	4.31	36.76	4.24	37.76	4.28			37.59	39.06	4.09
8005874	9.70	1.57					9.90	1.57	9.63				
8008492									39.41	3.52			
8017159	3.20	0.60											
8037095									2.27	0.62			
8039416	31.80	4.00	31.57	4.12	31.28	3.98	32.04	4.02			32.26	33.96	3.98
8041612	3.80	0.67					3.78						
8045883	30.90	4.00	29.82	4.03	29.87	3.86	31.16	4.04	26.11	3.53	30.93	31.56	3.83
8056874	52.50	5.29	51.82	5.31	52.65	5.38	51.29	5.24			52.97	57.94	5.20
8078554	34.20	4.22	35.23	4.24	34.53	4.22	34.52	4.16	36.80		35.34	36.92	4.15
8081145	2.80	0.69											
8081278	33.20	3.86	33.10	3.90			33.92	3.84			33.28	34.26	3.87
8081535	42.60	4.58	42.62	4.58	42.29	4.66	43.13		40.33		42.63	44.02	4.55
8081853							6.76						
8085998	34.70	4.12	35.72	4.25	35.10	4.12	34.69		34.21	4.56	35.66	37.83	4.04
8086192	74.40	7.09	75.69	7.01	74.43	7.00	74.23	7.10			75.19	77.79	7.10
8087067	100.40	8.93	99.96	8.98	100.08	9.07	100.43	9.01			100.03	101.49	8.98
8088244	29.90	4.14	29.72	4.11			31.77	4.16					
8094602	55.30	5.41	55.74	5.58	54.57	5.57	54.44	5.49			55.98	58.07	5.42
8099073	42.50	4.49	42.89	4.50	42.34	4.48	43.32	4.43			43.06	46.01	4.45
8120076	33.40	3.91	33.76	4.18			33.56				34.18	35.06	3.94
8123843	34.60	3.62	34.92	3.72	34.54	3.59	34.52	3.65			34.88	35.36	3.63
8144529	38.90	4.41	38.70	4.36	38.73	4.43	39.02	4.40			39.28	40.54	4.36
8154383	64.90	6.37			64.95	6.45	64.66	6.41	65.58	6.06	65.95	68.47	6.34
8160590	34.00	4.04	33.77	4.04	33.29	4.09	34.09	3.95	30.98	3.35	33.86	35.89	4.15
8164977	35.00	4.38	34.06	4.08	33.24	3.68	35.34				34.99	36.74	
8173148	34.40	4.19	33.97	4.18	34.01	4.29	34.49	4.17			34.48	35.46	4.25
8173725	47.60	5.02			47.60	5.00	47.56		48.87		48.56	51.29	4.91
8176543							13.12						
8192986									16.93	2.51			
8195595	69.00	6.42	65.59	6.52	65.85	6.35	69.04	6.49			66.05	68.03	6.39

Table 7. Continued.

star	COR ν_{max} μHz	COR $\Delta\nu$ μHz	CAN ν_{max} μHz	CAN $\Delta\nu$ μHz	A2Z ν_{max} μHz	A2Z $\Delta\nu$ μHz	SYD ν_{max} μHz	SYD $\Delta\nu$ μHz	DLB ν_{max} μHz	DLB $\Delta\nu$ μHz	OCT I ν_{max} μHz	OCT II ν_{max} μHz	OCT $\Delta\nu$ μHz
8196436	37.50	4.17	40.12	4.16	38.50	4.17	37.84	4.20	36.17		40.82	43.02	4.19
8210100	40.90	4.46	40.93	4.44	41.59	4.35	41.25	4.47	35.43	4.44	41.62	43.57	4.38
8210270	86.80	6.31											
8212786	19.70	2.55	19.72	2.62	18.61	2.46	19.72	2.55			19.87	21.32	2.53
8218419									1.76	0.46			
8232851	45.80	4.74	46.19	4.69	45.72	4.70	45.58	4.80	44.51		46.34	48.84	4.81
8233917	30.00	3.76	30.04	3.55			29.99	3.87			30.09	31.13	3.79
8235013	27.80	3.64	28.02	3.64			27.49				28.34	30.49	3.66
8241402					29.32	2.88	30.09				30.07	31.17	
8246635	40.40	4.49	39.64	4.71	40.47	4.46	41.08	4.47	37.29	4.29	40.75	43.09	4.35
8248948	30.80	3.37	28.74	3.37	28.95	3.37	31.42	3.38			29.27	29.69	3.34
8258311					35.15	3.64	37.39				36.37	36.47	
8260453	46.00	4.68	44.06	4.71							44.80	45.54	
8278906	31.20	4.12	30.02	4.29			32.14				31.17	31.77	4.12
8284032	39.50	4.27	39.09	4.29	39.29	4.27	39.74	4.33			39.61	40.39	4.23
8285025	14.70	2.02			15.50	2.07	15.05				14.85	15.85	
8293158	33.10	4.19	33.73	4.17	32.99	4.10	35.11	4.25			34.40	36.01	4.26
8293686	10.80	1.52					10.98						
8300747	15.50	2.44	15.99	2.39	15.73	2.23	15.98				16.32	17.38	2.45
8307630	32.20	3.91	32.79	3.84	31.32	3.94	32.83	3.86	31.14	4.22	32.69	32.01	3.93
8310792	125.90	8.09	114.39	8.27	110.86	8.28	107.12	8.30			111.86	120.81	8.55
8343654	30.00	3.27	28.97	3.42	29.14	3.31	30.06	3.27			29.93	30.91	3.27
8346238	31.50	3.76					30.78	3.62			31.36	34.08	3.79
8350443	31.00	4.12					31.18		26.36	3.12			
8350645	54.30	5.21	53.43	5.29	53.92	5.15	54.54	5.30	47.18	5.29	54.24	56.43	5.18
8359169	52.10	5.33	53.22	5.48	53.23	5.33	52.51	5.30			53.33	55.27	5.25
8366239	182.40	13.75	181.11	13.70	180.63	13.78	186.43	13.73			184.17	186.59	13.66
8377116	27.60	3.82	28.48	3.82			26.97	3.92			29.18	32.32	3.81
8378462	89.00	7.31	89.06		88.42	7.32	88.29	7.38	91.63		89.65	91.60	7.27
8378653	88.90	7.39	86.89	7.39	89.34	7.31	89.65				89.81	92.91	7.40
8381505							7.20						
8386921	27.10	3.56	27.04	3.58			27.46				27.55	28.28	3.59
8387412	6.60	1.06					6.56						
8396782	82.30	7.16	80.03	7.23	82.49	7.11	82.27	7.09			83.29	88.55	7.13
8397081	72.20	5.88	67.43	5.88	68.95	5.71	70.79	5.83			70.67	73.56	5.88
8410006	32.10	4.07	31.90	3.91			31.69	3.95			32.42	33.84	
8410637							43.42	4.61					
8411503							283.50						
8415501	32.00	3.68	31.80	3.59	31.51	3.62	32.27	3.60			31.97	32.57	3.63
8431695	59.80	5.98	57.76	6.09	58.52	6.00	60.25	6.14			58.26	58.80	5.98
8432239	51.50	4.95	51.68	4.95	51.09	5.00	51.41	4.93	47.57	5.17	51.77	54.96	4.94
8454209	15.80	1.90	15.75	1.93			15.79	1.93	15.97				
8458519	31.00	3.86	31.71	3.86	31.04	3.82	30.71	3.97			32.02	33.75	3.85
8461449	54.70	5.29	53.10	5.46	55.74	5.16	55.20	5.28			56.36	56.28	5.30
8462934	72.90	6.25	70.73	6.70	72.24	6.31	73.32	6.30			72.72	74.55	6.24
8475025	111.20	9.55	110.71	9.35	111.10	9.76	110.48	9.52			111.12	114.42	9.60
8475511	13.50	2.08			13.31	1.97	13.46	1.98					
8476245	10.70	1.80			12.82	1.48	11.71		9.40				
8480097	192.00	15.62	197.28	15.32	200.78	15.48	195.69	15.41					
8482522	34.00	3.44	33.30	3.44			33.20				33.92	35.52	
8495082	8.70	1.44					8.98						
8496527					33.99	3.93							
8500704							26.28	4.04			26.81	28.22	
8506788	31.00	4.32					31.13				31.20	32.01	4.17
8507397	35.30	4.35	33.83	4.38	34.42	4.36	36.27		27.20				
8508931	55.00	4.98											
8515390	56.00	5.25	54.64	5.42	54.75	5.28	56.34	5.41	53.36	5.55	55.02	56.67	5.23
8518198	135.30	11.46	135.06	11.56	136.38	11.35	135.72	11.56			135.13	134.96	11.49
8522040	47.50	4.74	48.03	4.80	47.05	4.77	48.15	4.74	47.44	5.18	48.15	49.58	4.72
8525359	57.50	5.78	57.66	5.57	57.17	5.74	57.78	5.58			57.42	59.33	5.77
8526108	42.80	4.55	42.26	4.33	41.89	4.66	42.86	4.43	42.15		42.70	44.40	4.64
8539201	34.80	3.84	34.16	3.99	34.43	3.73	35.78		33.70	3.53	34.70	35.82	3.81
8540615	43.70	4.71	44.97	4.65	42.95	4.79	47.56	4.67			45.44	48.35	4.68
8540767	28.40	3.12	28.43	3.12	27.27		28.75				28.86	28.90	
8543727	4.40	0.81											
8545504	106.20	9.42	107.95	9.30	107.60	9.32	105.70	9.28			108.13	107.73	9.27
8546146	6.50	0.94					6.48						
8547390	44.70	4.71	43.10	4.85	42.84	4.57	44.91	4.69	39.76		44.35	46.56	4.65
8547469	29.20	3.97	29.26	3.89	28.90	3.65	29.52				29.62	32.24	3.81
8561238	51.80	5.41	54.20	5.41			51.14	5.37			55.75	58.30	5.34
8583586	49.60	4.43	46.80	4.44	44.92	4.65	49.99	4.41	45.88		47.99	46.05	4.45
8611833	37.60	4.14	38.68	4.14	38.23	4.18	37.21	4.19			38.96	40.30	4.14
8612520	41.90	4.24	41.05	4.28	40.63	4.17	41.96	4.25			41.80	44.24	4.22

Table 7. Continued.

star	COR ν_{max} μHz	COR $\Delta\nu$ μHz	CAN ν_{max} μHz	CAN $\Delta\nu$ μHz	A2Z ν_{max} μHz	A2Z $\Delta\nu$ μHz	SYD ν_{max} μHz	SYD $\Delta\nu$ μHz	DLB ν_{max} μHz	DLB $\Delta\nu$ μHz	OCT I ν_{max} μHz	OCT II ν_{max} μHz	OCT $\Delta\nu$ μHz
8612811	31.00	4.24	31.89	4.13	31.33	4.20	31.00				32.04	33.64	4.26
8617695							236.00						
8624155	80.20	7.02	80.08		79.92	7.03	77.23				82.09	84.00	7.08
8628585	35.20	4.14	36.12	4.22	35.13	4.11	35.23	4.15			36.50	39.29	4.19
8649099					41.02	4.41	42.59	4.44	41.38				
8669282	37.40	4.41	37.00	4.38	38.26	4.38	37.09	4.41	34.80	4.84	38.24	38.90	4.32
8683589	15.40	2.32	15.62	2.35	15.34	2.18	15.51				15.80	17.04	
8686058	44.60	4.71	44.53	4.73	44.44	4.71	44.73		46.09		44.86	45.77	4.74
8686389					23.22	2.37	23.91				23.48	24.30	3.01
8690009	28.00	3.72	28.82	3.60			28.14				28.90	31.30	
8702088									23.10	3.04			
8707667	35.70	3.95	36.16	3.95	34.53	3.92	36.08	3.92			36.69	38.29	3.98
8708654	51.90	5.33			54.99	5.26	51.71	5.36			55.19	58.11	5.33
8718745	129.30	11.65	130.27	11.36	131.19	11.30	130.67	11.33	121.10		129.29	127.78	11.50
8736415	7.60	1.43					7.80						
8740371									7.09	1.39			
8746834			56.10	5.83							55.24	54.31	
8747415			137.08	11.32							137.26	142.89	11.30
8748278	35.40	3.88	34.84	4.26	33.90	3.96	36.08				35.05	35.18	3.89
8753234	55.00	5.41	57.21	5.32	56.63	5.45	56.09	5.43	51.29	5.45	57.85	60.42	5.40
8757215	35.20	4.22	36.17	4.29			35.51	4.28			36.33	37.64	4.22
8758700	31.50	4.02	31.55	4.03	29.35		32.37				32.43	33.41	3.97
8771414	38.90	4.24	40.00	4.39	39.02	4.17	38.65	4.22			40.41	42.04	4.25
8803432	32.20	3.93	31.87	4.11			32.74	3.89			32.54	33.16	4.02
8812397	70.70	6.67					69.55	6.70			70.14	72.56	6.80
8813946	71.70	6.44											
8818252							18.75	2.75			18.74	20.41	2.56
8827646	33.70	4.02	32.48	4.42	32.19	3.99	34.07						
8827934	52.70	5.33	52.09	5.46	55.50	5.37	55.50	5.34			53.68	56.37	5.37
8839028	27.80	3.26			26.89	3.67	28.36	3.38			27.72	28.70	
8840004	11.60	1.60			10.91	1.50	11.46	1.58	11.13	1.87			
8843610	41.80	4.35	40.78	4.39	41.77	4.40	41.92	4.30			41.47	43.00	4.42
8845313	34.90	4.41					35.28				37.14	39.26	4.38
8845321							30.51				31.81	34.24	
8846187	47.40	4.95	48.28	4.95	48.13	5.00	47.86	4.93			48.43	49.78	5.02
8867740	22.70	2.91	22.09	3.02	22.28		22.96	2.95			22.71	23.21	2.89
8873797	29.30	3.76	28.88	3.77	28.44	3.75	28.40	3.75			29.56	31.86	3.74
8880420	18.70	2.69	19.59	2.68	18.30	2.41	18.78				19.66	20.57	
8907943	31.70	4.02	32.33	4.21	31.72	3.28	31.28				32.86	34.83	
8909673	43.90	4.68	44.28	4.56			43.69	4.66			44.69	46.26	4.60
8911558	40.30	4.43	40.05	4.58	40.17	4.36	40.16	4.45	38.07	4.65	40.74	42.80	4.43
8914504	33.80	4.17	33.32	4.16	34.26	3.70	34.44	4.16			34.33	35.88	4.19
8934264							8.84						
8936084	30.00	4.52	30.67	4.31			30.26				31.10	32.53	4.30
8936339							44.19				44.38	44.60	4.60
8936409	6.80	0.91					7.00						
8941202	33.90	4.00	34.10	4.22	33.75	3.17	34.39	4.14			35.29	36.13	4.04
8949653	18.50	2.60	18.94	2.55	18.78	2.10	19.69	2.55			19.26	19.61	
8955683	45.80	4.71	47.45	4.61	46.43	4.68	45.75	4.82	43.98	4.96	47.90	50.35	4.72
8962844	38.80	4.49	40.70	4.52	40.18	4.58	39.04	4.55			41.30	41.49	4.43
9002344	43.50	4.38	42.44	4.40	42.15	4.27	44.54	4.43			42.87	44.92	4.32
9002884	4.80	0.92					4.85						
9009805	50.00	5.21	51.30	5.21	49.44	5.23	50.13	5.25			50.70	51.98	5.22
9020419	32.60	3.86	32.97	4.03	32.33	2.71	32.93				33.27	34.35	
9021464	38.90	4.41	38.69	4.41	38.82	4.58	39.57	4.48			39.16	39.55	4.45
9026209	9.20	1.34			9.25	1.35	9.38						
9027245	49.10	5.41	48.70	5.36	49.22	5.42	49.88	5.37			48.98	49.91	5.35
9028293							62.36				61.88	62.55	5.67
9028697	59.00	5.88	58.46	5.94	58.78	5.79	59.58	5.95			58.81	60.03	5.86
9072262	38.00	4.46	38.26	4.51	37.81		38.13	4.53			38.46	40.31	4.52
9075872	157.80	12.97	156.54	13.24	158.16	12.86	157.98	13.19			156.54	159.77	12.97
9086505	30.50	3.95	30.40	4.10			30.53	4.09			30.93	32.54	3.97
9088119	34.40	4.04	34.16	3.96			35.03	3.88	26.31	3.62	34.83	33.58	3.95
9100325							5.29						
9110060	10.50	1.53					10.86	1.49					
9112472	46.90	4.77	45.00	4.75	45.12	4.84	46.03	4.59			47.18	47.48	4.75
9115334	68.40	6.03	63.71	6.42	65.89	6.00	66.36	6.09			68.82	70.36	6.05
9138411	5.20	0.91											
9139859	71.90	6.81	71.78	6.85	71.72	6.77	72.08	6.80			72.51	74.89	6.82
9143834	15.70	2.32	15.74	2.27	15.82	2.36	15.69	2.29					
9143924	10.20	1.51					10.25						
9145781							244.10						
9145952	32.70	3.88	32.32	3.80			33.65	3.69			32.54	33.74	

Table 7. Continued.

star	COR ν_{max} μHz	COR $\Delta\nu$ μHz	CAN ν_{max} μHz	CAN $\Delta\nu$ μHz	A2Z ν_{max} μHz	A2Z $\Delta\nu$ μHz	SYD ν_{max} μHz	SYD $\Delta\nu$ μHz	DLB ν_{max} μHz	DLB $\Delta\nu$ μHz	OCT I ν_{max} μHz	OCT II ν_{max} μHz	OCT $\Delta\nu$ μHz
9145955	124.90	10.91	131.86	10.90	131.24	10.97	131.04	10.95	128.72		132.35	129.69	10.91
9150223	36.30	4.38	35.44	4.39	35.30	4.24	36.12	4.37			36.55	37.93	4.29
9151763	13.90	1.94					14.38	1.89					
9157260					238.11	18.22	233.26	18.17					
9159227	28.30	3.78	28.41	3.90	28.32	3.64	28.20	3.81			29.52	31.17	3.78
9166023	19.10	2.38	18.69	2.39	19.47	2.35	19.25	2.40			18.85	19.04	2.35
9173371	96.20	7.99	98.01	7.96	97.03	7.97	96.20	7.98	94.74		98.72	101.42	8.03
9176207	56.20	5.59	58.07	5.51	56.59	5.68	55.80	5.48			58.60	61.42	5.54
9210413					230.74	19.82							
9217456	10.90	1.52					10.56						
9230478	4.30	0.66											
9240941	110.60	8.38			108.89	8.33	108.11	8.35	107.64		110.39	113.68	8.38
9246190	2.80	0.48											
9265513	48.10	5.41	48.04	5.35	47.72	5.44	48.44	5.35			48.35	49.25	5.36
9267654	118.60	10.42	118.03	10.30	118.30	10.17	117.98	10.26			117.98	121.69	10.34
9268146	29.60	3.66	29.42	3.57	29.18	3.75	30.26	3.61			29.71	31.12	3.69
9269772	55.30	5.93	57.17	6.06	56.14	5.94	54.71	5.91			57.68	60.32	5.90
9300159	165.10	12.50	164.78	12.71	168.72	12.55	167.41	12.71	171.29		166.18	165.20	12.61
9307073	41.50	4.71	42.22	4.69	41.38	5.00	41.23	4.81	40.23		42.33	44.45	4.75
9327993											34.55	34.19	3.98
9328135	54.60	5.78	55.52	5.79	55.05	5.73	54.49	5.78	41.54		55.80	56.71	5.84
9329200	76.10	6.81	76.36	6.87	75.79	6.94	76.48	6.81	75.46		76.43	79.63	6.81
9332840	38.40	4.58	39.64	4.49	39.32	4.31	39.37	4.47			39.66	43.03	4.44
9333184	31.70	3.76	31.63	3.77	30.69	3.67	32.59	3.49			32.16	33.77	
9333501	27.60	3.47	27.19	3.56	26.95	3.44	27.49	3.45			27.84	28.16	
9340114	26.70	3.68					27.07						
9344639	7.00	1.14					6.92						
9346288	29.20	3.32	29.03	3.29	28.27	3.27	29.37	3.31			29.17	30.49	3.28
9349632	96.70	7.72	93.34	7.73	98.35	7.67	98.18	7.80			95.76	95.42	7.76
9349690	4.90	0.71					4.88						
9351617	37.40	4.38	39.05	4.43			37.07	4.35			38.74	42.09	4.43
9364778							37.69						
9368427									21.01	2.63			
9390293	30.30	3.80	31.03	3.80	29.90	3.69	30.83	3.73			31.30	33.08	3.79
9392039	36.50	4.09	36.85	4.23	36.78	4.58	36.59	4.12			36.87	37.70	4.15
9395535	21.70	2.96	22.03	2.93	21.57	2.47	21.68	2.93			22.36	23.24	
9396363	42.90	4.55	42.95	4.62	43.90	4.58	43.00	4.61	39.27	4.79	42.97	43.85	4.46
9414068	9.20	1.50					9.33						
9427247	124.30	8.70	112.59				112.54	8.74			108.03	111.24	8.77
9427889	37.40	3.70	38.47		37.61	3.77	37.98	3.62			38.35	39.74	3.67
9430402	70.00	6.08	68.13	6.08	69.98	6.07	68.86	6.19			70.22	72.03	6.05
9430786	40.00	4.02	39.08	4.11	38.48	4.08	40.08	4.15	34.10		39.45	38.20	4.01
9447310	72.80	7.39	73.00	7.28	72.76	7.33	72.87	7.31	71.41	7.52	73.18	75.24	7.33
9451434	27.60	3.66			27.54	3.57	27.56	3.54	26.94	3.55	28.38	30.33	
9456598	40.50	4.32	40.66	4.53	41.36	4.32	40.83	4.51			41.72	42.97	4.35
9470055							8.73		8.72				
9474021	2.20	0.42							2.61	0.59			
9475697	116.80	9.82	113.50	9.83	117.20	9.63	116.94	9.87	117.67		112.69	113.83	9.81
9508346	12.40	1.84					12.59	1.81					
9508595	29.20	4.27	28.02	4.28	27.92	3.96	30.31	4.13			29.19	29.76	4.01
9511938	48.70	4.91			48.01	4.91	48.89	4.90	44.14		48.94	49.35	4.88
9517003	8.30	1.32					8.32						
9517542	20.50	2.69	20.58	2.71	21.21	2.66	20.66	2.78	17.64		20.79	21.17	2.71
9520156	31.30	4.38	31.61	3.85			32.89				31.85	32.33	
9540226	26.20	3.17											
9542075					26.66	3.84	27.15	4.06			28.18	30.03	3.94
9542218	56.00	5.78	57.35	5.77	56.38	5.73	56.02	5.80			57.98	58.22	5.78
9551036	54.00	5.73	54.25	5.70	53.58	5.81	53.89	5.72			54.05	54.71	5.73
9569462	26.50	3.62	26.79	3.62	26.84		26.82	3.52			27.95	29.74	
9570409	29.80	3.66	30.28	3.55	28.64	3.68	29.97						
9574650	105.70	9.55	105.88	9.55	105.63	9.55	105.61	9.61			105.68	106.84	9.54
9575803					260.76	20.54	283.28						
9579860	57.40	5.93	55.65	5.94	55.79	5.77	57.55	5.94			56.33	56.13	5.85
9583430	101.40	7.72	102.73	7.78	101.29	7.94	101.03	7.89			103.11	103.63	7.77
9589500	106.30	8.28	101.74		102.58	8.18	104.14	8.42			103.51	103.69	8.25
9589638	41.30	4.38	41.37	4.40	41.13	4.33	41.50	4.38			41.44	43.08	4.38
9596106	21.80	2.69	21.77	2.66	21.55	2.69	22.37	2.65	22.84	3.11	21.62	22.23	2.64
9611634	27.90	3.47	28.42	3.46	27.80	3.44	28.06	3.44			28.25	30.26	
9631782	64.90	6.49	64.43	6.65	64.51	6.67	64.97	6.58			64.89	67.62	6.47
9635388	36.50	4.32			37.81	4.30	37.63	4.39	32.40	4.20			
9635603	31.80	3.97					32.64				32.05	32.52	3.95
9635649	198.50	14.94	206.20	15.17	200.54	14.87	204.45	15.22			206.32	201.52	15.01
9640886	33.20	4.00	33.18	4.02	33.44	3.85	33.80	4.01	27.33	3.62	33.76	35.89	3.82

Table 7. Continued.

star	COR ν_{max} μHz	COR $\Delta\nu$ μHz	CAN ν_{max} μHz	CAN $\Delta\nu$ μHz	A2Z ν_{max} μHz	A2Z $\Delta\nu$ μHz	SYD ν_{max} μHz	SYD $\Delta\nu$ μHz	DLB ν_{max} μHz	DLB $\Delta\nu$ μHz	OCT I ν_{max} μHz	OCT II ν_{max} μHz	OCT $\Delta\nu$ μHz
9641772	34.50	4.12	35.18	4.25	34.23	4.09	34.29	4.14	33.62	4.28	35.51	37.18	4.04
9650046	66.50	6.03	67.80	6.03	65.98	6.00	67.42	6.02			67.73	68.71	6.03
9650527	54.20	5.29	52.43	5.27	52.85	5.24	54.29	5.33			52.81	53.93	5.29
9652494	42.90	4.55	41.43	4.58	42.55	4.52	43.62	4.62			42.43	43.11	4.53
9655167			101.98	8.23									
9657639							27.88						
9658002	37.90	4.12	35.28	4.05	35.08	4.15	38.18	4.19	30.92	4.02	37.23	38.02	4.11
9666718	7.10	1.25											
9674113	30.30	4.07	30.59	3.62			30.80	3.86	29.77	3.52	30.81	32.04	3.90
9704774	33.70	4.27	33.96	4.17	34.44	4.06	33.38	4.18			34.31	35.91	4.21
9705636	33.30	4.00	32.38	4.04	35.12	3.58	33.52				33.40	34.78	3.92
9705687	71.60	6.61	72.62		74.44	6.57	72.00	6.68	70.17		73.20	75.02	6.62
9706194	25.50	3.35	26.20	3.33	25.56	3.36	25.84	3.31			26.34	27.35	3.29
9711231	47.20	5.02	47.97	5.02	48.02	5.00	47.80	5.12	42.66	5.08	48.01	47.63	4.99
9711349	15.30	2.11	15.03	2.14	15.42	2.16	15.42	2.08					
9711492	49.40	5.02	51.07	5.29	50.77	5.00	49.73	5.07	54.38	5.31	51.98	54.26	5.01
9711510	52.30	5.02	50.74	5.03	51.37	5.11	52.41	5.08			51.94	54.66	5.04
9716866	32.20	3.72	33.33	3.73	32.50		32.39	3.79			33.58	35.04	3.74
9724324	39.70	4.17	39.76	4.23	40.23	4.09	40.13		38.70	4.23	40.28	41.86	4.10
9726045	3.30	0.67											
9728845	27.10	3.21	27.59	3.12			27.17	3.14	26.41	3.39	27.97	30.55	3.14
9761597	58.60	5.83	59.71	5.84	58.65	5.78	58.64	5.83			59.39	61.96	5.71
9761625	9.10	1.25					9.31						
9767051	20.70	2.83	20.99	2.80	20.00		20.52	2.83			21.01	23.61	2.85
9767815	81.70	8.09	83.11	8.07	82.58	7.97	82.15	8.15			83.11	85.13	8.04
9771905							12.15	1.78					
9777536	45.70	4.74	45.21	4.72			46.28				46.01	46.76	4.67
9778288	51.60	5.09	54.25	5.21	50.82	5.23	52.60	5.11			55.66	61.46	5.13
9780183	30.30	3.78					31.32		27.19	3.54	30.41	31.32	3.77
9783807									0.91	0.39			
9791929	43.90	4.58											
9814943	31.20	3.14	31.27	3.09	31.28	3.29	31.87				31.25	32.98	3.12
9818513	32.70	3.88	32.87	3.90	32.94	3.84	33.30	3.90			33.12	35.52	3.87
9818604	30.70	3.56	31.12	3.51	30.81	3.49	30.93	3.52	29.15	3.83	31.09	32.15	3.55
9825822	5.60	0.97					5.59		5.16	1.01			
9835436	24.50	3.12	24.82	2.90	24.12	3.01	24.30						
9835626	56.00	5.46	55.60	5.42	55.13	5.45	56.19	5.41	53.82		55.71	56.10	5.46
9838978	33.00	3.86	33.13	4.09			33.28				33.25	33.11	
9852625	14.40	2.22					14.50						
9882316					186.38	13.45	184.07	13.67			186.26	175.48	13.63
9882550	36.00	4.27	35.60	4.18	35.49		36.65				36.58	38.30	4.20
9884818	34.40	4.32	35.04	4.26	35.05	4.24	34.81				35.24	37.05	4.23
9896174					250.00	17.66	254.12						
9896877	9.30	1.61					9.60						
9902962	74.70	6.74	73.06	7.05	74.71	6.76	74.89	7.14			74.01	74.28	6.72
9903290	4.90	0.93							4.48	0.91			
9933754	33.10	4.04	33.16	4.05			33.05	4.11			33.90	35.19	4.04
9941242	15.60	2.41	15.82	2.47			15.76	2.34					
9942071	34.60	3.91	34.43	3.92	34.02	4.12	36.30				35.36	36.54	3.94
9942816	39.90	4.41	40.38	4.67			41.70				40.78	42.80	4.39
9945290	37.00	4.30	36.76	4.30	36.71	4.35	36.60	4.20			37.75	39.05	4.26
9965582	7.70	1.13					7.60						
9967351	61.20	5.73	60.64	5.69	60.35	5.85	61.41	5.70	60.66		60.54	61.30	5.70
9968040	43.50	4.91	43.32	4.97	43.13	4.93	43.60	5.00			43.33	43.79	4.89
9992544	28.10	3.42	28.44	3.46	28.16	3.41	28.21	3.45	28.93	3.89	28.45	28.54	3.44
9994798	39.90	4.46	40.20	4.41	40.19	4.46	40.66	4.45	31.66	3.98	40.78	42.36	4.48
9995464			29.20	3.85							29.94	30.95	3.98
10004975	3.50	0.64					3.32						
10006158											30.92	32.42	4.07
10010946	42.80	4.52	42.84	4.72	42.94	4.54	42.95	4.72	36.77	4.50	42.69	43.37	4.56
10011329	35.70	3.80	36.13	3.81	35.58	3.88	35.75	3.79	32.51	3.34	36.31	37.72	3.79
10016093	31.40	3.86	31.47	3.81	31.01	3.89	31.84	3.79			31.98	33.20	
10031856	20.90	2.55	21.15	2.55	20.93	2.53	21.05	2.52			21.11	22.77	
10034623	28.90	4.02	28.93	4.15			28.77				29.46	31.62	3.92
10053224	27.00	3.66			25.80	2.56	27.20						
10055061											16.08	16.35	
10055196	109.30	8.81	107.45	8.75	108.04	9.00	107.58	8.77			108.11	111.08	8.83
10055660							9.21						
10055700	34.90	4.17	35.18	4.17	36.91	4.13	34.81						
10062594	42.80	4.71	43.20	4.79	43.07	4.81	43.01	4.79			43.18	44.08	4.72
10068801	11.50	1.60					11.55	1.61	9.67				
10068810	49.80	5.37	50.04	5.37	49.68	5.38	49.96	5.40	44.46		50.01	51.03	5.38
10068892			14.76	2.08							14.91	15.66	

Table 7. Continued.

star	COR ν_{max} μHz	COR $\Delta\nu$ μHz	CAN ν_{max} μHz	CAN $\Delta\nu$ μHz	A2Z ν_{max} μHz	A2Z $\Delta\nu$ μHz	SYD ν_{max} μHz	SYD $\Delta\nu$ μHz	DLB ν_{max} μHz	DLB $\Delta\nu$ μHz	OCT I ν_{max} μHz	OCT II ν_{max} μHz	OCT $\Delta\nu$ μHz
10070717	31.70	4.07	32.47	4.15	35.04	4.05	31.50	4.14			32.77	34.10	4.03
10080974	42.50	4.58	42.27	4.61	42.10	4.58	42.90	4.32			42.89	44.88	4.51
10089758	6.00	1.47											
10090400	32.50	4.00	33.08	4.02	32.31	3.68	32.78				33.13	35.28	3.89
10095409	40.10	4.14	39.51	4.10	38.82	4.21	40.77	4.22			39.86	38.99	4.19
10118422	45.50	4.68	44.63	4.62	44.01	4.74	45.60	4.81			44.91	45.35	4.80
10118929	41.60	4.27	40.96	4.30	41.65	4.31	42.06	4.29	36.85		41.83	43.64	4.27
10122158	203.10	14.03	187.42	14.46	203.82	14.30	185.85	14.42			192.30	193.17	14.36
10123207	161.20	14.03	161.20	13.69	161.82	13.78	161.06	13.74			161.48	163.12	13.72
10123573	34.70	3.91	34.22	4.29			35.93				35.32	36.11	
10124436	48.40	4.95	48.34	4.89	47.53	4.87	48.62	4.92	47.23		48.32	47.13	4.92
10136291	32.60	4.09	32.84	4.06	32.58	3.96	32.79	4.08			33.35	35.14	4.07
10145279	31.00	3.64	28.81	3.62	29.70		31.33	3.61			30.33	30.22	3.45
10161943	62.10	6.31	61.83	6.29	61.78	6.32	62.01	6.27			61.78	62.24	6.33
10162765	84.30	6.67			82.46	6.91	81.77	6.86					
10186053	32.20	3.84			32.16	3.80	32.37		31.75	4.14	32.72	33.88	
10186608	32.70	4.19			32.32	3.95	32.52		31.17	3.71	33.15	34.31	4.13
10188141			34.66	4.32							35.83	37.90	4.21
10188964	37.30	4.04	38.35	3.93			37.69				38.33	39.56	4.16
10189920	25.30	3.54	25.10	3.76			25.59				25.89	28.41	
10190733	29.50	3.78	29.74	3.87	29.85	3.74	29.25	3.77			30.50	32.53	3.77
10192458	118.10	10.42	117.45	10.40	117.95	10.45	118.23	10.48			117.29	119.04	10.35
10196240	34.50	4.09	34.45	4.18	34.33	4.15	34.57	4.14	33.43	4.16	35.06	37.36	4.10
10199187	17.30	2.46	17.54	2.42			17.29				17.69	18.85	2.47
10200377	139.90	12.28	143.14	12.38	143.74	11.90	143.86	12.49			143.09	141.87	12.30
10202184	157.30	12.73	157.12	12.73	158.13	12.70	156.78	12.68			157.42	160.67	12.66
10207321	64.70	6.67	65.63	6.67	65.03	6.71	64.77	6.66			65.14	64.27	6.63
10213931	43.50	4.55	42.57	4.53	42.96	4.56	44.00	4.54	39.73	4.35	43.12	43.59	4.53
10220213			228.21	16.41			234.24						
10221370	43.30	4.52	42.13	4.65	42.67	4.56	43.54	4.52			43.28	44.34	4.52
10228836	54.20	5.21	53.76	5.37			54.48	5.26			55.09	57.46	5.22
10231806	9.70	1.48			9.40	1.51	10.15	1.47	9.81	1.28			
10252281	30.70	4.00	31.36	4.00			30.24	4.10			31.84	33.27	4.00
10252692	30.10	4.07	30.31	4.30			30.14		26.86	3.49	30.08	30.75	
10254023	22.50	3.14	22.79	3.14	22.36	3.20	22.77	3.11			23.03	23.79	3.23
10257278	149.30	12.28	150.12	12.18	150.04	12.42	149.48	12.18			150.34	153.86	12.21
10257419	91.00	8.28	91.31	8.39			91.15	8.41			91.75	93.38	8.30
10257683	31.00	3.86	31.36	3.74	30.76	3.60	31.00	3.79	30.50	3.82	31.46	32.39	4.17
10267242	27.70	2.72	27.27	2.72			27.81				28.31	29.24	
10271721	9.50	1.34			9.77	1.32	9.68	1.39					
10286378	30.40	3.95	31.22	4.15	31.29	3.53	30.38	4.22			31.33	32.93	4.03
10286616	33.60	4.24	33.80	4.25			34.07				34.02	36.00	4.20
10290315	39.80	4.27	39.06	4.19			40.35				39.46	40.39	4.31
10290718							8.27						
10293335	5.00	1.13					5.04						
10295060	8.10	1.17					7.96						
10297313	98.40	7.99	97.89	8.27	100.40	8.18	98.68	8.15			102.04	102.37	8.03
10319045	5.30	0.92					5.61						
10319709	14.20	2.12			14.78	2.10	14.38						
10320170	24.30	2.96	24.44	3.06	24.48		24.54	2.95			25.11	25.65	2.98
10323222	46.60	4.84	47.39	4.84	46.60	4.80	46.44	4.86			47.36	48.50	4.82
10328946	33.60	4.14	33.39	4.12			33.92	4.09			33.84	33.63	
10332186	22.60	3.03	22.92	3.18	22.54	3.03	23.16	3.05			23.15	23.82	3.00
10337695									22.57	3.33			
10339590	3.30	0.61											
10351792	27.00	3.60	27.63	3.52	27.04	3.74	26.20	3.60	26.91		27.81	29.12	3.60
10353044	33.60	4.14	33.87	4.18	33.32	4.22	33.70	4.15	31.33	4.21	34.16	35.08	4.16
10382615	30.50	4.14	29.24	4.04			31.02				30.37	31.33	
10383488	14.10	1.98			13.87	1.97	14.38	1.99					
10383668	55.30	4.95	55.21		55.02	4.83	55.84	5.02	54.89		55.76	57.81	4.96
10384255	43.40	4.52	43.02	3.67	43.67	4.37	43.95				43.34	44.63	
10386904	178.30	14.63	179.15	14.79	178.14	14.67	177.91	14.81					14.61
10388249	52.50	5.50	52.76	5.42	52.58	5.40	52.53	5.41	52.95	5.89	52.19	53.97	5.52
10389037			39.66	4.13							40.12	41.24	4.04
10389393	37.80	4.32	38.71	4.44	37.65	4.26	38.80	4.45			39.22	41.13	4.31
10396693									1.10	0.25			
10403036	10.10	1.42					10.32		8.99	1.49			
10403323	28.80	3.68	29.00	3.68			28.83				29.48	30.85	3.71
10404994	41.10	4.42											
10405285	19.50	2.64	18.95	2.56	18.82	2.72	20.09	2.53			19.37	20.11	
10418503	9.50	1.57					9.73						
10426331	18.80	2.59	18.95	2.60	19.24	2.59	18.80	2.59	15.43		19.01	20.35	2.61
10426854	40.50	4.24			39.41	4.91	40.41	4.40	36.52	4.05	40.12	40.63	4.29

Table 7. Continued.

star	COR ν_{max} μHz	COR $\Delta\nu$ μHz	CAN ν_{max} μHz	CAN $\Delta\nu$ μHz	A2Z ν_{max} μHz	A2Z $\Delta\nu$ μHz	SYD ν_{max} μHz	SYD $\Delta\nu$ μHz	DLB ν_{max} μHz	DLB $\Delta\nu$ μHz	OCT I ν_{max} μHz	OCT II ν_{max} μHz	OCT $\Delta\nu$ μHz
10456555	51.60	4.77	50.17	4.85	51.49	4.79	50.73	4.84	49.83		52.20	56.57	4.80
10463137	30.00	4.00	29.61	4.12			29.91				30.13	31.63	4.04
10467570	28.60	4.07					29.94						
10468528	26.60	3.68	26.63	3.66	26.46	3.66	27.73		25.43	3.68	26.99	28.52	3.71
10474071	84.30	7.47	85.40	7.64	87.80	7.41	83.28	7.51			88.77	98.01	7.52
10483504	105.30	8.70	103.79	8.61	104.42	8.67	104.86	8.67			104.47	107.44	8.77
10489073	33.40	4.07	33.82	4.13	33.81	4.13	33.65	4.03			33.97	36.15	4.02
10514458							10.59						
10527754	59.70	6.08	59.99	6.00	59.64	5.97	59.70	6.00			59.87	61.86	6.01
10533369	42.30	4.24	41.17	4.24	39.78		42.95				42.29	41.94	4.23
10552202	38.30	4.30	37.75	4.48	37.44	4.31	38.52	4.34			38.77	39.34	4.32
10582841	28.50	3.35					28.66		27.55	3.79	29.02	30.21	3.00
10590683	26.30	3.76	26.06	3.77			27.34	3.70			26.53	27.78	3.71
10592249	38.20	4.24	38.29	4.21	38.57	3.89	38.78	4.22			38.73	38.71	4.25
10593078	197.50	15.28	204.96	15.34	200.00	15.48	204.06	15.41			203.56	193.92	15.43
10600926	29.50	4.17	30.03	4.18	28.69	3.85	31.17				31.26	31.10	4.12
10602374	34.80	4.09	35.85	4.10	35.77	4.44	35.21						
10602976							36.96						
10604460	30.20	3.80	30.44	3.90	29.92	3.77	30.59	3.75	27.09	3.80	30.70	30.52	3.75
10614707	34.30	4.17	34.39	4.36	34.20	4.61	35.21	4.21	36.43	4.17	34.79	36.26	4.16
10619191	40.70	4.46	41.60	4.37	40.63	4.51	40.83	4.37			41.70	43.72	4.47
10647243	41.80	4.22	39.17	4.27			42.21				39.42	40.75	4.18
10649021									21.77	3.05			
10649096	25.90	3.39					26.13		25.54	3.38	26.08	27.17	
10651578	31.60	4.00	31.00	3.80			31.62				32.03	33.29	4.02
10656124	10.40	1.57					10.42		10.58	1.38			
10659688	23.20	3.18	23.32	3.19	22.36	3.17	23.03	3.18			23.59	24.42	3.21
10662618	31.50	3.93	31.24	4.07	31.06	3.87	32.42	4.01	25.93	3.47			
10669876	19.50	2.50			19.61	2.39	19.69	2.57			19.35	19.22	
10677958	9.10	1.43			9.25	1.27	9.38		9.95	1.81			
10709799	36.30	4.19	36.89	4.16	36.18	4.15	36.55	4.19	32.81	4.67	36.68	38.21	4.10
10711145	34.10	4.24	33.78	4.15	33.54	4.08	34.69	4.16			34.27	34.39	4.19
10711154	46.50	4.74	46.11	4.71	46.33	4.67	47.24	4.70			46.49	48.56	4.70
10716853	45.00	4.95											
10721900	39.90	4.02	37.13	4.06	37.02	3.97	40.16	3.96			37.55	38.25	
10724027	31.80	4.09	31.62	4.02	31.88	4.05	32.66	4.01	29.01	4.30	31.84	32.28	
10743092	19.50	2.40	19.76	2.52			19.62	2.57			19.61	19.92	2.37
10743515	44.20	4.46	44.83	4.57	44.54	4.55	44.54	4.52			45.02	46.59	4.46
10747240	34.60	3.97	34.04	4.14			33.98				34.70	36.15	3.91
10749112	47.00	5.17	47.51	5.20	47.22	5.00	47.08	5.20			47.61	49.30	5.11
10776256							183.26	13.21					
10777816	201.70	15.62	210.43	15.73	210.41	15.48	209.72	15.73					15.63
10778969	36.60	4.19	37.39	4.30	36.53	4.15	36.62	4.28			37.45	38.48	4.22
10779177							231.15	17.20					
10784013	15.40	2.46	15.55	2.46			15.36						
10788228	37.90	4.22											
10796378	40.50	4.74	40.74	4.70	41.16	4.78	40.83	4.72			41.44	41.77	4.69
10799530	36.90	4.27	37.12	4.32			36.92				37.81	39.01	4.22
10816748	32.60	3.86	31.90	3.79	32.28	3.84	32.78	3.85			32.78	34.02	
10842231	37.90	3.95	37.70	4.25			38.48	4.24	32.65		38.33	40.60	4.22
10847321	69.50	6.49	69.23	6.54	68.74	6.51	69.43	6.59			69.42	71.18	6.45
10849541	20.00	2.83	20.65	2.83	19.64	2.74	20.12	2.87			20.50	21.95	
10858331	28.50	4.02	27.84	3.99			28.40	4.02			28.69	29.70	3.95
10858520	33.40	3.82	34.38	3.82	33.13	3.71	33.56	3.81			34.59	35.89	3.80
10859779	81.80	7.39	82.10	7.38	81.77	7.50	81.36	7.29			82.50	81.18	7.40
10863535	8.20	1.29					8.19						
10864711	44.10	4.95	43.43	4.89			44.17	4.90	41.98	4.84	44.00	45.35	4.91
10866415	96.50	8.81	96.33	8.70	96.39	8.97	96.40	8.72	97.51		95.73	97.27	8.76
10903016	24.30	3.18	24.23	3.25	24.18		24.67	3.28			24.51	25.75	3.12
10903291	33.50	3.97	32.92	3.98	32.79	3.56	33.62	3.99			33.54	35.41	4.01
10907196	44.10	4.74	44.84	4.74	43.60	4.81	43.52	4.63			44.94	44.95	4.72
10910802	22.90	3.12	23.13	3.26			22.66	3.16					
10910889	46.70	4.61	44.66	4.83	44.02	4.66	48.20				46.25	46.70	4.61
10918731	43.80	4.61	43.56	4.91	44.59	4.65	43.84	4.55			44.88	46.50	4.59
10922821	33.00	3.76	33.75	4.04	32.71	3.91	32.86	3.54			33.76	35.09	
10933384	9.30	1.60					9.58	1.56					
10961390	31.70	3.93	32.54	4.08	31.89		31.79	4.01			32.51	34.62	3.95
10964584	30.60	3.95	30.79	3.43			30.63				30.92	32.23	
10965536	25.30	3.27	25.35	3.30	25.24		26.23				26.17	25.65	3.21
10969616	29.80	3.82					31.20	3.76					
10973854	32.60	3.62	32.42	3.61	32.24	3.73	32.93	3.55	31.04	3.91	32.50	32.92	3.62
10977629	24.20	3.26	24.64	3.28	23.89	3.19	24.50	3.23			24.75	25.53	3.22
10979181							9.65						

Table 7. Continued.

star	COR ν_{max} μHz	COR $\Delta\nu$ μHz	CAN ν_{max} μHz	CAN $\Delta\nu$ μHz	A2Z ν_{max} μHz	A2Z $\Delta\nu$ μHz	SYD ν_{max} μHz	SYD $\Delta\nu$ μHz	DLB ν_{max} μHz	DLB $\Delta\nu$ μHz	OCT I ν_{max} μHz	OCT II ν_{max} μHz	OCT $\Delta\nu$ μHz
10992126	7.60	1.34					7.77		7.80	1.25			
11018481							10.44						
11018745	32.80	4.09	33.46	4.42	32.57	4.02	32.88	4.06			34.29	36.08	4.06
11018922	31.70	4.07	31.53	4.07	31.47	4.05	32.52	3.96			32.48	34.27	4.01
11019452							192.35						
11027708									18.37	2.93			
11028372	37.80	4.68	38.79	4.62	37.93	4.54	37.78	4.61			38.53	40.93	
11028575	34.70	4.35	35.68	4.54			34.42	4.32			35.44	38.58	
11037292	16.70	2.45	16.87	2.39			16.73	2.42			16.89	17.98	
11042388	8.50	1.46			8.90	1.47	8.68	1.47					
11043208	51.40	5.41	52.34	5.35	51.49	5.41	51.37	5.40			52.23	52.48	5.44
11043832	58.20	5.68	58.69	5.70	57.85	5.71	57.98	5.69	53.62		58.99	63.03	5.69
11045542	7.50	1.30			7.52	1.02	7.64		8.09	1.45			
11046496	31.30	3.80	31.76	3.74	31.50	3.89	31.40	3.82	27.18	3.75			
11072852	9.70	1.48					9.78		8.44	1.18			
11075908	37.20	4.24	37.29	4.46	37.53	4.20	37.56	4.19			37.99	39.28	4.23
11081838	30.30	3.78	30.51	3.91			31.11				31.32	32.41	
11083701	31.90	3.97	31.75	3.94			32.34	3.90			32.25	33.91	4.05
11084022	43.90	4.61	44.58	4.68	44.02	4.62	43.97	4.70			44.69	47.07	4.61
11126721	29.80	3.54	29.24	3.54	28.59	3.50	30.26				29.77	30.17	3.50
11128910	35.30	4.19	35.09	4.23	35.29	4.15	35.97	4.13	32.43	4.53	35.82	37.42	4.16
11129153	26.90	3.68			25.73	3.64	28.78						
11134608	8.40	1.29					8.54						
11138375	34.20	3.93	34.76	3.94			34.96				35.06	35.88	3.89
11153989	37.80	4.14	37.35	4.04	36.85	4.15	38.03	4.06			38.33	40.07	4.09
11177727	31.50	3.88	31.75	3.89	31.30	3.87	32.19	3.78			32.24	33.24	3.84
11177729					35.71	3.55	35.88						
11177749	33.70	4.09	33.62	4.13	33.51	3.99	33.67	4.12			33.85	36.01	4.07
11178396					26.33	2.38	25.81						
11188067	38.10	4.27	38.08	4.29	38.52	4.14	38.48	4.19	34.73		38.72	39.25	4.29
11190322	55.00	5.50	55.09	5.45	54.86	5.45	55.06	5.48			55.02	54.82	5.50
11199105	30.00	3.91	30.12	4.10			30.06	3.81			30.60	32.39	3.92
11206069	13.50	1.64					13.61	1.65					
11228759	35.80	4.07	36.01	4.07	35.40	4.22	36.08	4.07			36.35	38.40	4.04
11231549	29.70	3.47	29.65	3.55	29.31	3.48	30.16	3.49	26.85	3.62	30.26	31.75	
11236536	43.00	4.44	41.04	4.60	42.50	4.59	43.15	4.60	43.03	4.02	42.69	44.50	4.44
11243761	9.80	1.58			10.65	1.55	10.10						
11245234	32.60	4.32	31.86	4.32	32.58	4.48	33.23				33.27	33.17	
11247049	33.80	3.86			33.22	4.23	33.68	3.89	29.93		34.27	35.92	3.82
11250152	30.90	3.58	30.75	3.77	30.53	3.54	31.28	3.59			30.75	31.08	3.54
11251115	57.50	5.09	53.87	5.24	55.32	5.16	58.55	5.02	44.10	5.20	56.90	61.23	5.10
11252233	32.70	3.93	31.94	3.70	31.56	3.94	33.28				32.62	33.69	3.98
11252706	41.00	4.55	41.27				40.58				41.99	43.60	4.52
11282383	74.50	7.16	75.26	7.23	74.78	7.33	74.52	7.23			74.61	77.74	7.13
11284760	34.10	4.41	33.28	4.22			34.37				34.67	36.67	4.18
11284798	10.10	1.43					10.44		9.73				
11289335	35.80	4.35	36.75	4.14			35.53				36.94	38.20	4.16
11296211	33.50	3.88	33.06	4.08	33.27	3.95	33.48	4.01			33.66	34.19	3.88
11308784	61.90	6.19	61.87	6.11	61.79	6.25	61.95	6.16			62.31	63.04	6.18
11338267	25.30	3.30	25.33	3.31			25.24				25.39	26.47	
11339000	37.30	4.19	38.71	4.39	37.83	4.22	38.73	4.30			39.11	40.98	4.18
11340165	34.90	4.07	33.90	4.56	34.08	4.12	35.24	4.10			34.62	35.11	4.14
11342694	75.10	7.01	75.33	7.12	75.34	7.06	75.52	7.13	75.26		75.45	75.75	6.96
11350954	21.30	2.40					21.50	2.41			21.65	22.37	2.45
11352756	26.70	3.82			26.45	3.64	25.78		26.35	2.63			
11353313	113.90	10.11	124.90	10.79	128.71	10.55	128.26	10.75			125.95	123.63	10.70
11359175	33.90	4.27	34.70	4.65			33.77				34.99	37.20	4.24
11394497							6.06						
11403437	34.20	4.24	33.26	4.24	34.64	4.24	35.58	4.19			34.94	35.85	4.22
11409529	36.50	4.00	34.64	4.00	34.77	3.96	36.22	3.97			35.62	36.65	4.01
11410549	37.00	4.22	37.34	4.28	37.08		37.80		35.21	4.76	37.64	38.90	4.21
11444313	33.20	3.88	32.52	3.93	33.04	3.91	33.47	3.52	30.45	3.53	33.05	33.59	3.89
11455176	37.80	4.17	36.76	4.18			37.42				37.02	38.34	
11456449	113.60	9.29	111.83	9.34	111.10	9.23	110.88	9.37			112.43	113.93	9.25
11465784	35.70	4.24	34.50	4.25	34.35	4.39	36.70				35.90	37.05	4.25
11469401	29.00	3.70	30.47	3.63			29.29				31.16	32.61	3.69
11494511	12.40	1.78					12.79	1.77					
11499428	32.10	3.97	32.22	4.09	31.54	4.01	32.79	3.98			33.15	34.24	3.99
11502218	23.20	2.76											
11509277	44.10	4.71	43.18	4.78	43.76	4.75	43.92	4.73	41.06		44.84	47.32	4.67
11509792	19.10	2.77	19.70	2.82	18.41	2.72	19.33	2.79	18.74	2.39			
11518492	52.40	5.33	52.25	5.36	52.08	5.28	52.87	5.36	50.47	5.21	52.46	53.48	5.28
11521352	106.00	9.17	106.31	9.15	106.15	9.32	105.36	9.20			106.85	108.41	9.25

Table 7. Continued.

star	COR ν_{max} μHz	COR $\Delta\nu$ μHz	CAN ν_{max} μHz	CAN $\Delta\nu$ μHz	A2Z ν_{max} μHz	A2Z $\Delta\nu$ μHz	SYD ν_{max} μHz	SYD $\Delta\nu$ μHz	DLB ν_{max} μHz	DLB $\Delta\nu$ μHz	OCT I ν_{max} μHz	OCT II ν_{max} μHz	OCT $\Delta\nu$ μHz
11546335									91.23	8.15			
11548940	23.80	3.10	23.37	3.01	21.82	2.44	25.07						
11550492	93.60	8.59	93.56	8.63	93.74	8.80	93.61	8.60	90.30		93.16	95.55	8.57
11550567	39.00	4.19	37.17	4.01	37.18	4.17	39.83				37.60	38.10	4.16
11551628	51.50	4.95	51.56	5.13	51.63	4.91	52.13	4.93			51.89	54.16	4.97
11551746	45.80	4.68	44.60	4.79	45.15	4.64	46.52	4.72			45.27	45.90	4.81
11564787	28.00	3.64	28.77	3.63			28.33				29.08	30.89	3.56
11568605	49.50	4.98	49.86	4.91	49.52	5.00	49.91	4.91	51.48		50.04	50.36	4.95
11569659	30.30	4.09	30.60	4.15	30.34	4.06	30.33				31.07	34.52	
11598116	17.40	2.58	17.78	2.59	17.62		17.55	2.53			18.25	18.90	
11599067	24.20	3.06	23.60	3.22	23.72	3.03	24.47	3.02			24.05	24.73	3.03
11603064	15.40	1.77			15.46	1.62	15.64		14.49	2.25			
11606796	32.10	4.09	31.89	3.53			32.61		29.53	3.73	32.32	34.70	
11612171	35.30	4.07	34.38	3.89	33.79	4.04	35.91						
11612320	9.00	1.44					9.35						
11615224	28.50	4.02	29.30	4.03	28.67	3.94	28.63	4.04	28.32	3.76	29.74	32.26	3.96
11617501	43.40	4.71	43.28	4.68	43.10	4.82	43.70	4.67			43.45	43.50	4.69
11617622	31.30	3.88	32.07	4.01	31.70	3.87	31.33	3.84			32.57	34.50	3.84
11617751	12.80	1.90			12.60	1.74	13.44		13.87				
11618103	106.60	9.42	106.37	9.41	107.16	9.31	106.92	9.38	100.68	8.89	107.02	107.37	9.38
11649869	16.80	2.66					16.87						
11653073	39.00	4.27	38.34	4.28	38.49	4.06	39.59	4.08	36.04	3.87	38.75	40.06	4.30
11656670	14.00	1.99			14.39	2.03	14.63	1.97	14.02	1.67			
11657684	33.00	3.91	33.57	4.20			33.06				33.93	35.21	3.99
11658270	25.30	3.10	24.65	3.11	24.63	3.01	25.49	3.10			25.34	26.26	3.07
11658849	29.90	4.07	30.37	3.71			30.43	3.75					
11668246	38.10	4.24	39.02	4.31	38.96	4.26	38.54	4.23			40.06	41.53	4.27
11670252	4.90	0.83											
11673900	43.90	4.64	43.74	4.68	44.28	4.62	43.84	4.59			44.10	46.50	4.71
11674666	32.00	4.07	31.33	4.04	31.11		32.27	4.01			32.21	33.62	3.99
11674677	37.30	3.82	36.88	3.97	35.88	3.68	37.76				37.71	37.58	3.83
11704163	46.80	4.81	46.98	4.77	46.23	4.82	47.46	4.82	42.21	4.55	47.48	48.46	4.78
11706564			21.06	2.67							21.20	22.06	2.78
11707304	35.30	4.07	34.97	4.15	34.89	4.08	35.61	4.11			35.11	36.18	4.07
11707798	38.40	4.19	38.77	4.29	38.12	4.20	38.33	4.38	33.65		38.52	40.05	4.22
11721438	111.10	8.70	109.34	8.58			110.14	8.60			111.02	113.30	8.62
11752358	63.00	6.61	62.98	6.60	63.05	6.72	63.25	6.57			63.19	65.31	6.58
11752707	20.30	2.59	20.55	2.61	19.99	2.60	20.27	2.60			20.66	21.75	2.61
11753010	15.40	2.03			15.55	2.03			15.41	2.18			
11753722	46.90	5.25	47.09	5.31	46.03	5.20	47.56	5.32			47.54	47.98	5.16
11754056	33.90	4.24	34.25	4.30	33.48	4.01	33.01	4.15			34.61	35.94	4.16
11757739	35.70	4.55	35.36	4.39	35.25	4.57	35.70		31.90	4.54	36.00	38.67	4.59
11758710	54.60	5.13	52.86	5.19	52.65	5.12	54.70	5.20			53.51	56.31	5.07
11770790	10.30	1.90					11.90		12.00	2.03			
11773146	3.90	0.67											
11775000	6.90	1.05					7.01						
11805460	36.80	4.30	37.68	4.29			37.11	4.28	37.97	4.04	37.59	39.19	4.45
11805792	33.90	4.14	33.96	4.17	33.94	4.15	34.45	4.36			34.59	36.13	4.13
11807840	16.40	2.18	16.82	2.26			16.61	2.24	13.18	2.09			
11807844	8.90	1.89					9.03						
11817405	33.40	3.82	32.89	3.84	32.98	4.04	33.68	3.79			33.09	33.86	3.79
11819760	31.90	3.58			29.90	3.38	31.84		29.55	3.20	31.20	31.96	3.58
11821439	48.10	4.81	47.88	4.80	47.81	4.84	48.52	4.82	48.50	4.41	48.37	50.09	4.80
11824403	3.10	0.71											
11854450	30.20	4.09	30.19	4.44			31.38	3.94			30.63	30.86	3.90
11854835	8.20	1.23					8.21						
11855110	38.60	4.38	37.69	4.86			39.37				38.55	39.23	4.39
11860626	41.80	4.74	42.31	4.75	41.64	4.82	41.74	4.88			42.35	43.74	4.70
11861823	24.10	2.98	24.39	3.04	24.23	3.00	24.80	3.01			24.75	25.90	
11868246	33.20	3.76	33.87	4.00			33.05				34.17	36.09	3.75
11905840	117.70	10.11	117.09	10.33	117.60	10.45	116.37	10.31			117.47	123.40	10.12
11909754	11.20	1.67					11.24	1.70					
11913545	116.10	10.11	116.73	10.07	115.73	10.00	115.38	10.10			116.28	122.19	10.12
11960922	2.80	0.57											
11961545	48.30	5.37	48.43	5.32	48.04	5.41	48.48	5.33			48.32	49.12	5.25
11968334	138.00	11.27	140.43	11.29	138.56	11.36	138.20	11.28			140.74	143.73	11.28
11973853							200.81	14.58					
12003253	32.10	3.82	31.27	3.88			32.27	3.90	25.56	3.27	31.79	32.41	3.80
12006471	38.00	4.30	38.42	4.54			38.08				38.70	39.44	4.22
12007085	7.60	1.17					7.89						
12007304	208.10	16.77	216.84	16.70	221.27	16.62	216.51	16.64					16.83
12008680	24.30	3.68					24.52	3.79	22.72	2.73			
12008797	31.70	4.35	31.90	4.00	31.54	4.15	32.10	4.04	28.59	4.00			

Table 7. Continued.

star	COR ν_{max} μHz	COR $\Delta\nu$ μHz	CAN ν_{max} μHz	CAN $\Delta\nu$ μHz	A2Z ν_{max} μHz	A2Z $\Delta\nu$ μHz	SYD ν_{max} μHz	SYD $\Delta\nu$ μHz	DLB ν_{max} μHz	DLB $\Delta\nu$ μHz	OCT I ν_{max} μHz	OCT II ν_{max} μHz	OCT $\Delta\nu$ μHz
12008916	160.40	12.97	160.46	12.55	161.35	12.99	159.71	12.85			161.70	165.38	13.00
12012082	27.50	3.29	28.94	3.25	29.01	3.27	27.81	3.31			29.22	31.05	3.27
12012725	25.90	3.32	26.09	3.37	25.63	3.14	25.96	3.33	25.74	3.32	26.35	27.62	3.29
12016555	2.30	0.57											
12020797	4.50	0.83											
12021906	41.90	4.52	41.14	4.58	40.38	4.47	42.06	4.60			41.23	42.12	4.51
12058556	105.50	9.29	104.50	9.35	104.67	9.34	105.03	9.29			106.01	111.04	9.32
12060088	19.80	2.58	20.22	2.58	19.22		19.69	2.49			20.19	21.69	
12061622	33.20	4.19	32.94	4.20	34.53	4.06	33.11	4.20			34.68	37.36	4.13
12066292	4.80	0.86											
12070114	40.50	4.38	39.32	4.61	39.32	4.29	41.70	4.30	37.11		40.03	41.25	4.35
12101990	30.00	3.93	29.73	4.00	29.11	4.00	30.09				30.08	31.16	4.01
12102923	11.00	1.45					11.19	1.54					
12104584	27.40	3.44	27.79	3.50			27.77	3.49					
12109388	40.20	4.27	40.68	4.08	40.12	4.31	40.31	4.35	37.46		40.69	42.20	4.25
12109888	15.40	2.27	15.62	2.27	15.03	2.29	15.47	2.32					
12110266	40.80	4.19	41.28	4.24	40.20	4.19	41.19	4.14	42.06		41.44	41.61	4.21
12116393	61.30	6.25	61.30	6.24	60.84	6.25	61.19	6.32			61.31	62.50	6.25
12121207	26.90	3.72	26.98	3.68			27.29	3.60			27.25	28.79	3.56
12152850	31.30	4.12	31.83	4.14	30.90	4.14	31.47	3.98	31.18	4.17	32.12	34.06	4.04
12159715	62.50	6.49	63.55	6.38			62.53	6.42			63.69	64.20	6.45
12168406	45.20	4.84	45.72	4.69	44.98	4.77	45.52	4.74			45.72	47.05	4.78
12169845	31.30	3.32	30.12	3.30	29.57	3.11	31.65	3.31	25.76		31.19	31.20	3.33
12203243	192.60	15.30	194.24	15.15	200.00	15.07	197.30	15.17					15.10
12208273	21.20	3.18	21.91	3.03			21.21	3.01					
12217239	26.00	3.15	26.22	3.24			26.18	3.24			26.36	28.16	3.15
12255028	37.10	4.24	37.52	4.10	36.47	4.22	37.54				37.62	39.35	4.18
12301444	3.40	0.99							2.19	0.57			
12302104	34.50	4.17	34.78	4.32	34.15		34.82				34.75	36.22	4.07
12302516	32.20	3.97	32.03	3.97	31.36		32.66	4.08			32.55	34.03	3.92
12306695	33.50	3.74	33.64	3.81	33.23	3.75	33.80	3.78			33.96	35.33	3.74
12306763	8.50	1.36					8.49	1.36					
12314927	14.00	1.93			13.97	1.90	14.28	1.98					
12316494	30.20	3.76	31.13	3.86	31.80	3.89	30.24	3.74					
12352536	14.70	2.22					14.79						
12366461	43.40	4.55	43.05	4.58	43.14	4.57	43.70	4.62	45.62		43.38	44.10	4.56
12454201	38.90	4.38	39.70	4.27	38.07	4.35	39.37	4.31	30.50	4.20	39.37	38.31	4.37
12455504	37.70	3.95	38.00	3.90	35.72	3.83	37.31	3.93			38.02	38.85	3.92
12458003	37.10	3.66	36.93	3.84	33.60	3.36	37.24	3.84			36.92	36.51	3.71
12470054	164.10	12.73	161.50	12.56	164.27	12.50	163.53	12.66			160.95	162.28	12.64
12506577	18.40	2.52	18.68	2.53	18.59	2.54	18.78				18.89	19.58	
12507577	81.70	7.55	81.32	7.55	82.05	7.59	81.80	7.54			82.27	84.66	7.56
12519768	23.70	3.10	23.60	3.06	23.30	3.18	24.02	3.16			24.03	24.25	
12520106	41.00	4.30	41.34	4.30	41.64	4.22	41.17	4.27			41.81	43.02	4.29
12555458							34.32						
12555902	39.10	4.07	38.43	4.30			39.10	4.14			39.03	38.81	4.60
12599612	52.00	5.46	52.21	5.43	52.09	5.33	51.54	5.41			52.51	53.66	5.31
12599878	37.30	4.09	36.35	4.46	37.07	4.14	37.36	4.00			37.10	38.67	
12601771					170.00	14.12	177.33	14.39			180.23	187.99	14.44
12603035	29.70	4.02	29.10	3.97			29.89	3.89			29.53	30.60	4.10
12688781	43.70	4.55	44.62	4.60	43.88	4.67	43.52	4.48			44.62	46.14	4.62
12691122	30.60	3.88			29.58	3.92	30.90				30.43	30.91	3.89
12691734	42.50	4.32			47.10	4.42	42.65	4.22			46.10	47.74	4.30
12784683	27.80	3.95			27.96	2.86	28.58	3.85					
12884274	45.50	4.55											