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Comprehensive analysis of Isobutyraldehyde: millimetre-wave spectroscopy as an approach to ISM detection

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COMPRENHENSIVE ANALYSIS OF ISO-BUTYRALDEHYDE: MILLIMETRE-WAVE SPECTROSCOPY AS AN APPROACH TO ISM DETECTION

GRUPO DE ESPECTROSCOPÍA MOLECULAR

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INDEX

TERMINOLOGY

AABS: Assignment and Analysis of Broadband Spectra

ALMA: Atacama Large Millimeter/sub-Millimeter Array

AMC: Amplifier Multiplier Chains

CARMA: Combined Array for Research in Millimetre-wave Astronomy

COM: Complex Organic Molecule

DRM: Double Resonance Modulation

GEM: Grupo de Espectroscopía Molecular (University of Valladolid)

GPIB: General-Purpose Instrumentation Bus

HIFI: Heterodyne Instrument for HERSCHEL – formerly known as FIRST

IRAM: Institut de Radioastronomie Millimétrique

ISM: Interstellar Medium

MW: Microwave

MMW: Millimetre Microwave Region

Orion-KL: Kleinmann-Low Nebula

QOD: Quasi-Optical Detector

SEM: Stark Effect Modulation

Sgr-B2: Saggitarius B2

SPCAT/SPFIT (PROSPE): Programs for Rotational Spectroscopy

ABSTRACT

Iso-butyraldehyde is a strong candidate for ISM search, for which GEM is willing to provide spectroscopical information. Out of four possible rotational conformations, only the gauche and trans rotamers are stable. In a 75 to 325 GHz frequency range analysis, more than 3800 transitions corresponding to the most stable (gauche) specie in the vibrational ground state were assigned. Only 394 transitions of the trans conformer could be assigned as a result of a mismatching between the observed and predicted frequencies.

The high number of observed transitions led to precise determination of rotational, quartic and first complete set of sextic centrifugal distortion constants using Watson's-A Hamiltonian reduction. These accurate parameters could allow the detection of iso-butyraldehyde in the ISM.

INTRODUCTION

+ SPECTROSCOPY AND MOLECULAR DETECTION IN SPACE: BRIEF HISTORICAL REVIEW

Nowadays, there is a huge interest in unveiling the secrets of space. Its chemical composition remains mostly unknown, though many efforts are put into elucidating which substances are present in it. The combination of radio astronomy and spectroscopy has proven to be very effective in the search and detection of molecular species in outer space since the first half of the XXth century, and today it is probably the most effective way to gather data from the ISM.

Spectroscopy begins its journey back in the second half of the XVIIth century, when Sir Isaac Newton[1] diffracted a beam of sunlight using a prism, observing how it decomposed in all the colours that conform the visible spectrum. Besides the characteristic colours of the rainbow, he stated that many dark lines were present.

These discrete black lines were catalogued and measured in 1814 by J. von Frauhofer[2]. In another experiment using the light emitted by the nearby red-star Betelgeuse, he observed a change in the pattern of black lines, concluding that it depended on the object being studied.

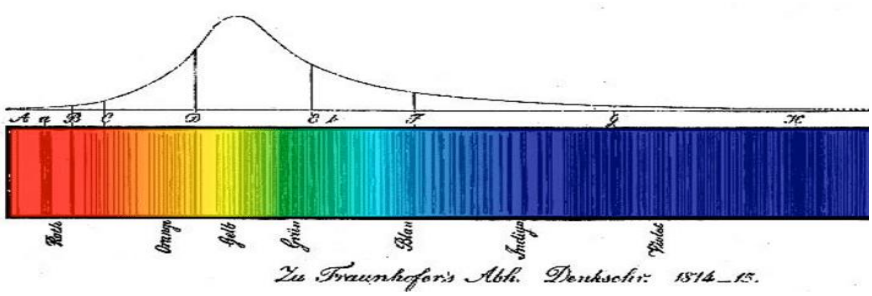

***Image 1. Fraunhoffer's Betelgeuse spectrum**. Note the black lines in the upper part signalling absorption zones[3].*

The German scientists Kirchhoff and Bunsen further studied these lines using the combustion of different metals[4]. The nature of the absorption phenomena was not understood until the XXth century, when the first hypothesis of the quantum-mechanic behaviour of matter were proposed.

In 1864, Maxwell proposed that light could be described as an electromagnetic wave moving at the speed of light[5, 6]. But it was at the beginning of the XXth century, when the electromagnetic spectrum was completely observed. Spectroscopy took a huge leap forward: observations could be done beyond human-eye barriers.

Herschel very rightly affirmed that space could be composed of molecules already present on Earth[7], which was far later verified by Huggins, who observed the spectrum of several astronomical bodies[8] in a quite rudimentary experiment.

In 1931, Jansky showed that radiation at a frequency of 20.5 MHz received with a direction-sensitive antenna was not emitted by the sun[9]. This enabled the detection of molecules in the ISM as we know today: in 1937 methylidyne (CH) [10], its monopositive cation (CH^+) [10] and the cyano radical (CN*) [11, 12, 13] were discovered. Ammonia, which was the first molecule observed by rotational spectroscopy in 1934[14], was detected in 1968 in space[15].

As years went by and technology evolved, many more species were observed: until September 2018, 204 individual molecular species compromising 16 different elements have been detected in the ISM[16].

+ THE ROLE OF MILLIMETER-WAVE SPECTROSCOPY IN SPACIAL SEARCH

"Millimetre band" is a common designation for the part of the radio-wave electromagnetic spectrum between 30 and 300 GHz. In this particular region, rotational transitions involving fundamental and excited vibrational states take place, which can be used as a molecule "fingerprint". Astronomical interferometers are capable of providing data in these frequencies, so that through comparison, lines corresponding to a particular molecules can be detected.

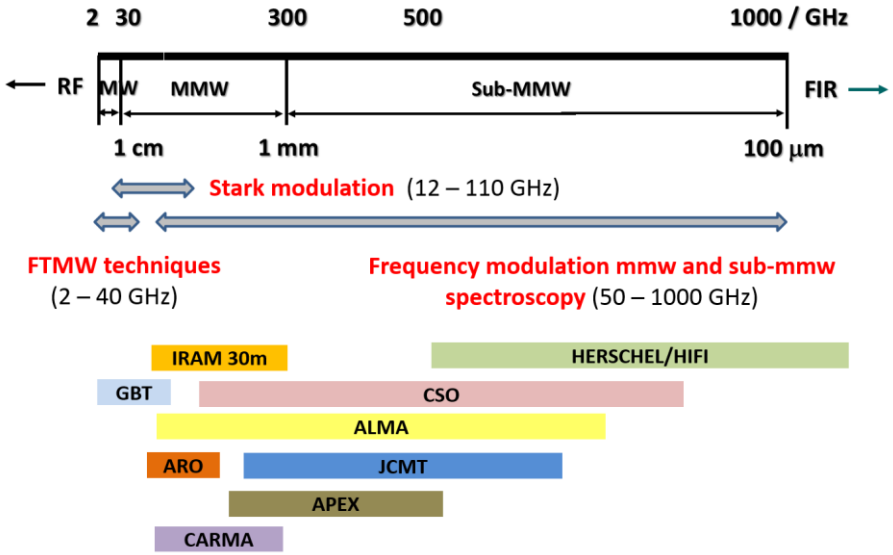

Image 2: laboratory and various astronomical interferometers coverage.

Conventional microwave spectroscopy yields precise data in the low frequency region. However, the presence of transitions involving vibrational excited states or affected by centrifugal distortion, suggest that it is not appropriate to extrapolate the results: precise data valid for ISM searching purposes can only be obtained through millimetre spectroscopy.

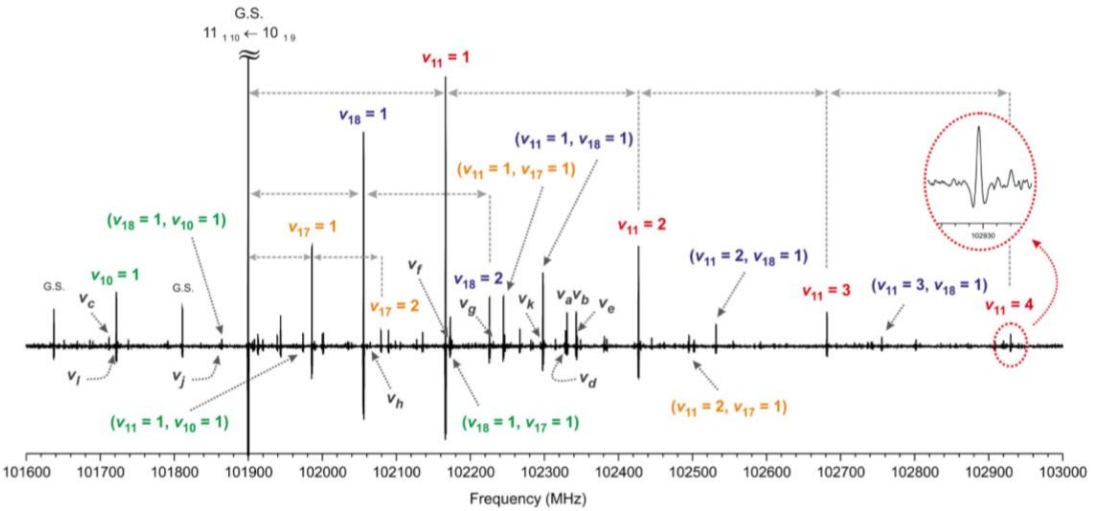

***Image 3: excited vibrational states of aminoacetonitrile**. Up to 29 excited states and many 13-C satellites were detected in the millimetre region[17].*

The use of millimetre waves is not only beneficial from a spectroscopical perspective, but also the configuration of these spectrometers has a lot to say. Resolution depends on the diameter of the antenna and the frequency of the radiation: high resolution is achieved in vast apparatus (or an array of multiple interferometers) operating between 80 and 900 GHz[9, 18].

Atmospheric absorption is also another important issue since the electromagnetic waves do not trespass the atmosphere in the same way. At low frequencies, free electrons in the ionosphere block the transmission, whereas resonant absorption of the lowest rotation bands of molecules present in the atmosphere (water, CO…) do so at higher frequencies.

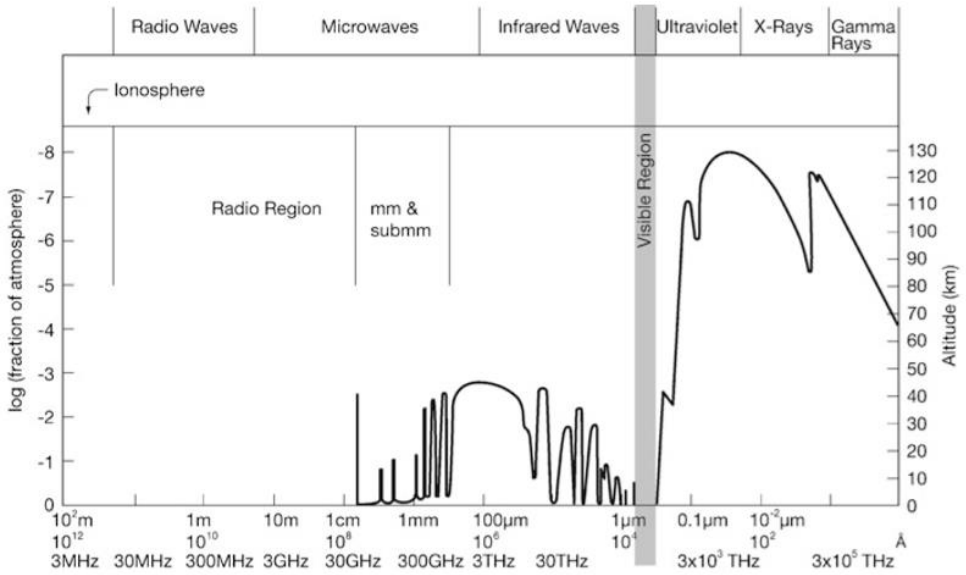

***Image 4: atmospheric absorption graphic**. The operation of astronomical interferometers is submitted to the radiation absorption.*

The spectra obtained by these antennas, contain a huge amount of transitions involving many species. A good agreement between this data and transitions observed on Earth, indicate the detection of a molecule. To simplify future research, lines corresponding to already identified particles are subtracted.

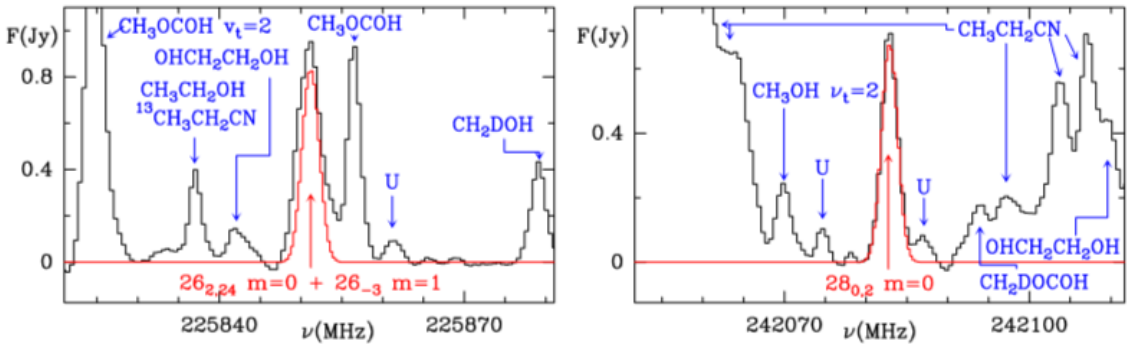

***Image 5: Orion KL selected spectra.** Note the presence of three unidentified lines, six different molecules, deuterium and 13-C isotopologues and two excited vibrational states.*

Two observatories are remarkably important due to the quality of their data: IRAM (Institute de Radiastronomie Millimétrique) and ALMA (Atacama Large Millimeter/sub-Millimeter Array).

- IRAM[20]: result of Spanish, French and German collaboration operates two interferometers in Pico Veleta (Granada, Spain) and the French Alps.

- ALMA[21]: operates 64 interferometers in the Atacama Desert in a joint international effort for astronomical research.

+ MOTIVATION

Spectroscopy is probably the most useful tool for astronomers to study the universe: it can detect chemical compositions, physical properties… Even though there's still a long way to go, this technique has unveiled many secrets of the ISM, especially about its composition.

Some regions in space known as "hot cores" are very active star-forming regions with very complex chemical compositions. Formed of dust clouds, when they begin to collapse, gas-phase particles condense on ice grains. Reactants move along their surface until they meet and give birth to a new molecule. Cosmic-rays spot heating or collisions release them back to space[22]. Saggitarius B2 (Sgr B2) and the Kleinmann-Low Nebula (Orion-KL) usually serve as searching fields.

Sgr B2 (about 100 pc from the centre of the Milky Way) is the most massive star-forming area in our Galaxy. In a routine survey using the HIFI instrument on the Herschel Space Observatory compromising the 480-1910 GHz spectral range, more than 8000 spectral features corresponding to 72 isotopologues from 4 different molecules were identified[23].

As we see from this example, some regions are efficient enough to form moderately complex organic molecules (COM's). Recently, new research has reported that some COM's (iso-butyraldehyde included) can be produced using ultra-high vacuum surface-science chambers at extremely low temperatures (recreating ISM conditions), thus making our molecule a potential candidate for ISM search[24].

GEM has performed an exhaustive work in this field, conducting numerous researches and even achieving detection including acrylic acid[25], aminoacetonitrile[17], ethyl cyanide[26], propenal[27], and propinal[28] or vinyl cyanide[29].

Since 2012 our group is a Unit Associated to CSIC, involved in an international endeavour to advance in our molecular understanding of the universe. In an intern communication with CSIC Professor Cernicharo, we could get to know that if an alkyl cyanide is detected in space, its corresponding aldehyde is usually found a few years later. As iso-propyl cyanide had already been detected[30] and later deeply studied by GEM[31], we were very deeply encouraged to proceed with this study.

Though iso-butyraldehyde was previously studied by Stiefvater et al. (1986)[32], as we mentioned earlier, it is not appropriate to extrapolate the results in the low frequency region to the millimetre-region as rotational energy levels are distortioned by excited vibrational levels, their combinations and centrifugal effects. Millimetre-wave spectroscopy is the only technique that can provide precise results at high frequencies.

OBJECTIVES AND WORKING PLAN

+ OBJECTIVES:

Our main goal is to provide data for future detection of iso-butyraldehyde in the ISM. Therefore, we will proceed with a spectroscopic analysis in the millimetre region from 75-325 GHz, yielding very precise rotational parameters. Future work with this data will be focused on interferometer survey comparison.

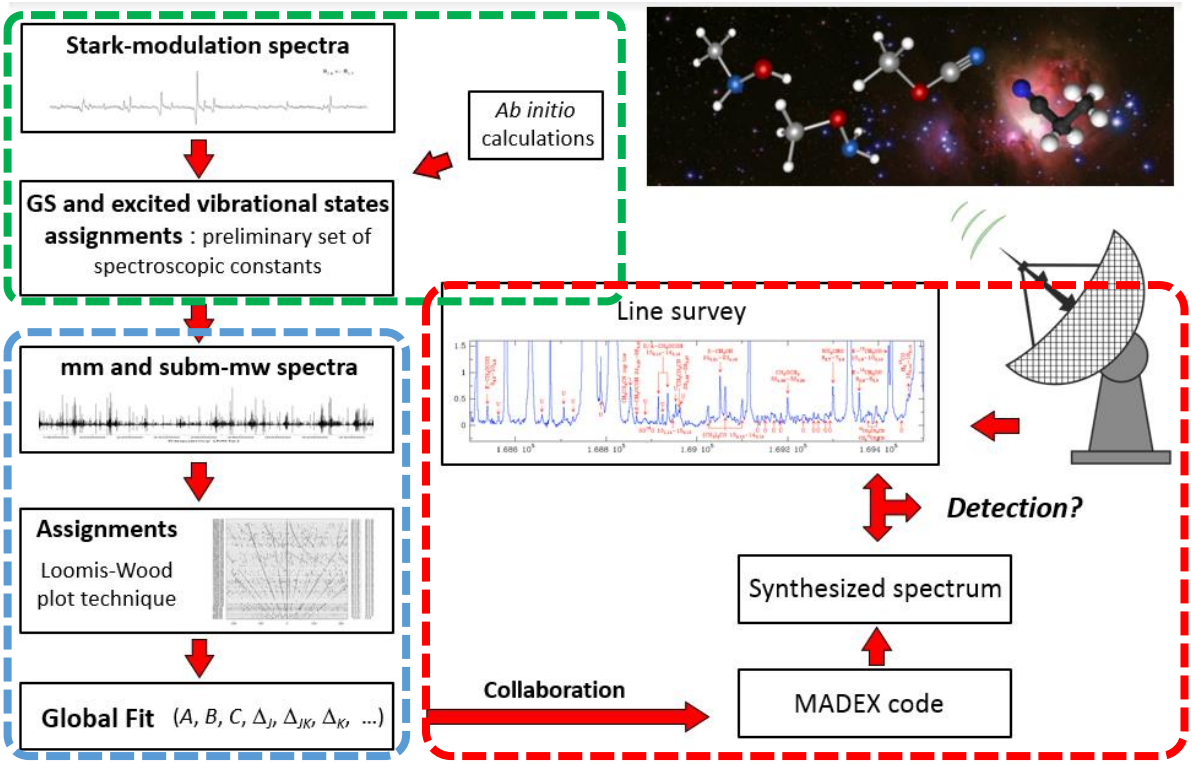

Image 6: ISM detection complete work scheme. *Previous work by Stiefvater et al. is marked in green, the current work objectives in blue and future collaboration in red.*

+ WORKING PLAN:

Bibliographic research was first carried out to ensure there was not high frequency data yet, familiarize with the technique and result interpretation. As previous research on the low frequency region was found (Stiefvater et al.[32]), we used this preliminary set of spectroscopical constants to facilitate the experimental work and line assignment.

After a commercial sample of the substance was acquired, we proceeded with the experimental part. The spectrum was assigned and analysed. Once a global fit is made, a future collaboration will allow to study the presence of this particular substance in the Interstellar Medium using this current work spectroscopic material.

THEORETICAL BASIS

+ ENERGIES OF THE SEMI-RIGID ASYMMETRIC TOP

As both gauche and trans rotamers belong to the C1 symmetry group, they are described as asymmetric rotors[33]. In this case, there is no internal component angular momentum: H does not commute with any component of angular momentum in a direction fixed in the rotator, and thus, only J and M are considered as accurate quantum numbers.

The molecular rotation is treated on account of a Cartesian axis system, which has its origin located at the centre of mass of the system. They are also oriented so that they coincide with the principal axes of inertia. The quantum mechanical Hamiltonian that describes an asymmetric rotor is defined as[34]:

$$\hat{H} = A \cdot P_A^2 + B \cdot P_B^2 + C \cdot P_C^2$$

Equation 1: general form of the rotation Hamiltonian.

The components of the angular momentum of rotation (P_a,P_b and P_c) are now operators. The calculation of the energy levels is facilitated by rearrangement:

$$\hat{H} = \frac{1}{2}(A + C) \cdot P^2 + \frac{1}{2}(A - C) \cdot \hat{H}(\kappa)$$
$$\hat{H}(\kappa) = A \cdot P_A^2 + B \cdot P_B^2 + C \cdot P_C^2$$

Equation 2: rearranged Hamiltonian. *Using Ray's asymmetry parameter.*

A good measure of the asymmetry of a molecule is Ray's asymmetry parameter (κ), which is a relation of the rotational constants A, B and C of a molecule.

$$K = \frac{2B - A - C}{A - C}$$

Equation 3: Ray's asymmetry parameter. *It is a relation between the rotational constants in the main three axis.*

The highest asymmetry is achieved when K=0, whereas the prolate and oblate tops limit the value of K at -1 and +1 respectively. Most molecules possess moment of inertia relationships that lie somewhere between both limits.

The symmetry of the Hamiltonian operator does not allow direct solution of Schrödinger's equation. The common procedure is to expand the unknown eigenfunction in terms of a known orthogonal set of functions:

$$\psi_{J_\tau} = \sum_{J,K,M} a_{JKM}\psi_{JKM} \quad where \quad \psi_{JKM} = \Theta_{JKM} e^{iK\varphi} e^{iM\chi}$$

Equation 4: expanded rotational Hamiltonian. *Expressed as a weighted sum of orthogonal functions.*

Substituting equation (anterior) in the conventional $\hat{H}\psi=E\psi$ Schrödinger's equation and multiplying by the conjugate of a member of the orthogonal set, we obtain the general formula:

$$\sum_n c_n \int \psi_m^* \hat{H} \psi_n \, d\tau = E \sum_n c_n \int \psi_m^* \psi_n \, d\tau$$

Equation 5: Schrödinger's equation general formula. *Note the position of the Hamiltonian inside the integral, in contrast to the eigenvalue E, at the very beginning outside the integral.*

The assumed set is orthogonal except when m=n. Since they are normalized, this quantity will be one whenever m=n. The previous formula will therefore be converted to the secular equation, as it represents a set of "l" linear equations containing "l" unknown coefficients with a nontrivial solution only if the determinant of the coefficient vanishes.

$$\left|(m|\hat{\mathrm{H}}|n) - E\delta_{m,n}\right| = 0$$

Equation 6: secular equation. *It represents a set of "l" linear equations with "l" unknown coefficients.*

The final solution is given by the secular determinant, in which the λ values that make the determinant vanish, are the allowed energy levels for an asymmetric rotor[35,36].

$$\sum_{K=-J}^{+J} (\hat{\mathrm{H}}_{K'K} - \delta_{K'K}\lambda)a_{JKM} = 0 \quad where \quad K' = -J \ldots J$$

Equation 7: setup of the secular determinant. *A very similar representation from equation 6.*

As there are no off-diagonal matrix elements in J, they can be treated separately: we will have a secular determinant for each J, each one composed of 2J+1 rows and columns where K will take all integer values from J to –J.

This particular matrix has diagonal and off-diagonal elements and it is symmetrical about both diagonals. It is related to the fact that the basis vectors are degenerate in ±K and thus can be separated in two blocks; one consisting of even K values, and the other of odd K values.

The diagonalization is carried out using Wang's matrix U_J, yielding the final eigenvalues:

$$U_J H U_J = \hat{\mathrm{H}} \quad \text{where} \quad U_J = 1/\sqrt{2}\begin{bmatrix} -1 & 0 & 0 & 0 & 1 \\ 0 & -1 & 0 & 1 & 0 \\ 0 & 0 & \sqrt{2} & 0 & 0 \\ 0 & 1 & 0 & 1 & 0 \\ 1 & 0 & 0 & 0 & 1 \end{bmatrix}$$

Equation 8: Wang's diagonalizing matrix. *It can be further expanded as J values go higher.*

The non-commuting properties of P_z and $\hat{\mathrm{H}}$ do not allow us to use K as a quantum number. However, each energy level is linked to a K value in the prolate limit (K_{-1}) and another in the oblate limit (K_1). This lets us represent the relation between the energy levels of a symmetric top with an asymmetric one.

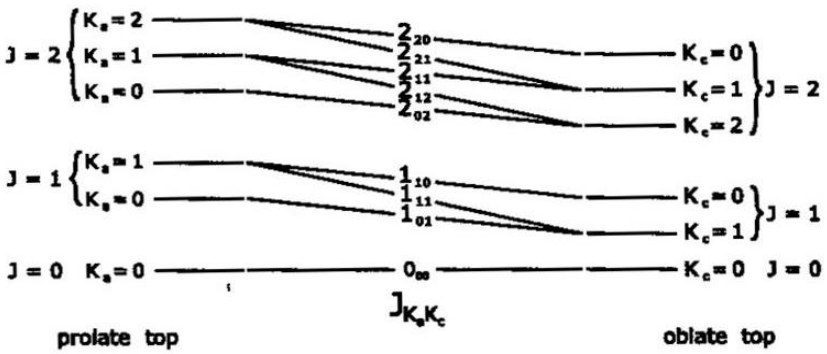

Image 7: symmetric and asymmetric top energies correlation diagram[33]. *The straight-line representation is only approximate. The asymmetry splitting of the K levels decrease as K increases, and for a given K, it increases as J increases.*

Energy levels are usually marked as $J_{K-1,K1}$ (K_{-1}=K_A and K_1=K_C) using King-Hainer-Cross notation[34]. In the older notation, a single τ subscript can be used, making clear that $\tau = K_{-1} - K_1$.

The conventional rigid rotor model is not completely appropriate for describing rotational transitions: molecules are not stiff since during rotation, centrifugal forces are interfering, modifying bond lengths and angles. At higher frequencies, distortions are more important and produce huge shifts in transitions' energies.

Its effects on spectra will depend on the angular momentum operators and the τ constants of distortion defined by Kivelson and Willson and later corrected by Watson and Howard. A first order approximation is not enough for fully describing the distortion. Instead, using Watson's A reduction, we will describe up to the sextics distortion terms[34]:

$$\hat{H} = AJ_A^2 + BJ_B^2 + CJ_C^2 - \Delta_J J^4 - \Delta_{JK} J^2 J_A^2 - \Delta_K J_A^4 - \frac{1}{2}\left(\delta_J + \delta_K J_{A'}^2 J_+^2 + J_-^2\right)_+ + \Phi_J J^6 + \Phi_{JK} J^4 J_A^2 + \Phi_{KJ} J^2 J_A^4 + \Phi_K J_A^6 + \frac{1}{2}(\varphi_J J^4 + \varphi_{JK} J^2 J_A^2 + \varphi_K J^4 J_+^2 + J_-^2)_+$$

Equation 9: semi-rigid rotor Hamiltonian up to sextics distortion terms. *As in equation 7, the first three terms come from the rigid rotor Hamiltonian, whereas the rest account for centrifugal distortion.*

The distortion terms included are:

- Quartics: Δ_J, Δ_{JK}, Δ_K, δ_J, δ_K.
- Sextics: Φ_J, Φ_{JK}, Φ_{KJ}, Φ_K, ϕ_J, ϕ_{JK}, ϕ_K

+ SELECTION RULES AND LINE INTENSITY

The selection rules arise from the non-vanishing property of the dipole matrix elements[33]:

$$R_r = \int \psi_r'^* \, \mu \, \psi_r''^* \, d\tau$$

Equation 10: transition dipole moment. *The gross selection rule for rotational spectroscopy is that molecules must have dipolar moment.*

The first selection rule involves the J quantum number, as only ΔJ=0, ±1 changes are allowed. We refer to these transitions as branches: P-Branch (ΔJ=-1), Q-Branch (ΔJ=0) or R-Branch (ΔJ=1).

Another set of restrictions involving the "K" pseudoquantum numbers arise from the symmetry properties of the ellipsoid of inertia. The component of the electric moment along a space-fixed axis F, can be written as:

$$\mu_F = \sum_g \cos(Fg)\, \mu_g$$

Equation 11: electric moment along axis F. *The cosine function defines the angles between the fixed F-axes and the rotating g-axes.*

The substitution of equation 8 into 7 gives the true transition integral:

$$(J, K_{-1}, K_1|\mu_F|J', K'_{-1}, K'_1) = \mu_g(J, K_{-1}, K_1|Cos\ (Fg)|J', K'_{-1}, K'_1)$$

Equation 12: transition integral. *The considered g-axis in each case will define different selection rules.*

For this integral not to vanish, it must be unchanged for any operation which carries the system into a configuration indistinguishable from the original. The symmetry of the ellipsoid of inertia will be characterized by the Four-group operations[34]:

Symmetry	E	C_2^a	C_2^b	C_2^c
A	1	1	1	1
B_a	1	1	-1	-1
B_b	1	-1	1	-1
B_c	1	-1	-1	1

Table 1: Four-Group character table V (a,b,c). *Cos (Fa) transforms according to B_a, Cos (Fb) to B_b and Cos (Fc) to B_c*

Taking into account the transition integral in equation 14, it comes clear that for μ_a only transitions A ↔ B_a and B_b ↔ B_c are possible. For μ_b, A ↔ B_b and B_a ↔ B_c; or for μ_c, A ↔ B_c and B_a ↔ B_b.

The selections rules are stated in terms of the evenness or oddness of K_{-1} and K_1. The connection between the numbers K_{-1} and K_1, and the symmetry of the Four-Group is given by Mulliken, who used the expanded rotational eigenfunction in equation 4 and Wang symmetrizing transformation matrix[34,36,37].

Dipole Moment	ΔK_{-1}	ΔK_1
μ_a (a-type transitions)	Even	Odd
μ_b (b-type transitions)	Odd	Odd
μ_c (c-type transitions)	Odd	Even

Table 2: selection rules for the pseudoquantum numbers "K" in terms of evenness and oddness

In order to evaluate intensities, we must obtain the matrix elements. The z component of the matrix element for a given transition will be expressed by:

$$\mu_z = \mu_a \int \cos(az)\, \psi_i \psi_j^* d\tau + \mu_b \int \cos(bz)\, \psi_i \psi_j^* d\tau + \mu_c \int \cos(cz)\, \psi_i \psi_j^* d\tau$$

Equation 13: Z component of the matrix element for a given transition

As seen in equation 9, the wave functions of an asymmetric rotor can be expanded in terms of those of a symmetric one, and thus, the matrix elements can be derived. The dipole elements for a symmetric top can be divided in various factors:

$$\mu_g = \mu\varphi_{JJ'}\varphi_{JKJ'K'}\varphi_{JMJ'M'}$$

Equation 14: dipole matrix elements as function of direction-cosine matrix factors. *They are dependant of the quantum numbers marked in the subscript.*

These dipole moments will be used in the next equation, which represents the proportionality between them and the transition strength:

$$(\mu_x)^2 S(x)_{J_{kl}J'_{mn}}(K) = (2J+1)\left|(\mu_x)_{J_{kl}J'_{mn}}\right|^2$$

Equation 15: relation between dipole moment and the intensity of a transition. *S is a tabulated quantity obtained as a function of initial and final state and of the asymmetry parameter K.*

Taking into account the Maxwell-Boltzmann's distribution applied to rotation:

$$f_{rot} = \frac{(2J+1)e^{-\frac{W(J_{K,K'})}{kT}}}{\sum_J (2J+1)e^{-\frac{W(J_{K,K'})}{kT}}}$$

Equation 16: Maxwell-Boltzmann's factor applied to rotation. *It is defined as the population ratio of an energy level in comparison to another (or various levels)*

Assuming there are no other effects (nuclear spins), the highest intensity will be defined by the maximum absorption coefficient[35]. Mixing equations 11 and 12':

$$\gamma_{máx} = \frac{8\pi h N f_v}{3c(kT)^2}\sqrt{\frac{\pi hABC}{kT}}e^{-\frac{W(J_{K,K'})}{kT}}(2J+1)\left|\mu_{ij}\right|^2\frac{\nu^2}{\Delta\nu}$$

Equation 17: maximum absorption coefficient. *Note the dependence with T.*

In order to match the shape of astronomical interferometers' surveys and rotational spectra shapes, intensities are modified using the partition function. Neglecting the electronic and nuclear spin states, as at room temperature molecules are in their ground states, we are left with vibrational and rotational terms only.

If anharmonicites are neglected, the vibrational partition function can be expressed as:

$$Q_V = \prod_j (1 - e^{-h\nu_j/kT})$$

Equation 18: vibrational partition function*. Were v represents the frequencies of the fundamental modes of vibration.*

In case of the rotational partition function, an approximate formula is usually employed:

$$Q_R = \left(\frac{5.34 * 10^6}{\sigma}\right) * \left(\frac{T^3}{ABC}\right)$$

Equation 19: rotational partition function. *Where σ is a measure of the degree of symmetry.*

+ COMPUTATIONAL METHODS

Although the present study has been completely experimental, computational methods have played an important role in it. The spectra was fully analysed using Pickett's SPFIT/SPCAT program suite[38].

To prove that O.L Stiefvater[32] constants were accurate, an initial set of calculus was made using three different methods. First, a simple DFT (B3LYP/6-311G(d,p)) is used to optimize the structure in minimum time. Rotational constants and dipole moment were then improved with MP2/6-311++G(d,p) and B2PLYPD3/aug-cc-pVTZ methods.

EXPERIMENTAL METHODOLOGY

+ FREQUENCY MODULATION MILLIMETER-WAVE SPECTROSCOPIES

The experiment was carried out using two different millimetre-wave spectrometer configurations in the GEM at the University of Valladolid[26,39]. A double pass configuration was used to cover a range from 75 to 112 GHz and 170-325 GHz, whereas in the single pass array the range from 120-170 GHz was swept.

The microwave source is a frequency modulated signal generator (Agilent E8257D) operating from 12 to 20 GHz, phased locked to a Rubidium standard. A series of amplifier multipliers (Virginia Diodes) multiply the frequency of the source by factors of 3,4,6,9, 12(as combination of 3*4) and 18 (as combination of 3*6).

Frequency	Configuration	Multiplier	Multiplier	Detector	Output	Input
75-110	Double Pass	6	WR 10.0	WR 10.0	5-20	16
120-170	Single Pass	9	WR 6.5	QOD	2-8	18
170-240	Double Pass	12	WR 9.0 + WR 4.3	WR 4.3	2.5-4	16
240-325	Double Pass	18	WR 9.0 + WR 2.8	WR 3.4	1	16

Table 3: spectrometer configuration chart. *Operation parameters are conditioned by manufacturer specifications. All experiments were conducted under 1.8 V attenuation.*

For both configurations, the detected signal is amplified and sent back to a brand new lock-in amplifier (SR810-DSP), where 2f detection is applied, where f is the modulation frequency, to increase the sensitivity of the measurements. A 10.2 kHz modulation frequency is used for both detectors, whereas phase is automatically imposed by the new lock-in amplifier. Standard GPIB connects the generator and amplifier to the computer, being controlled by LabVIEW software. A set of metallic parabolic mirrors (Edmund Optics) are used to focus the input and output radiation.

A home-made rooftop mirror and a polarization grid (Millitech Inc.) allow us to double the optical path length of the Pyrex glass cell from 3.6 to 7.2 metres, resulting in the creation of the double pass configuration.

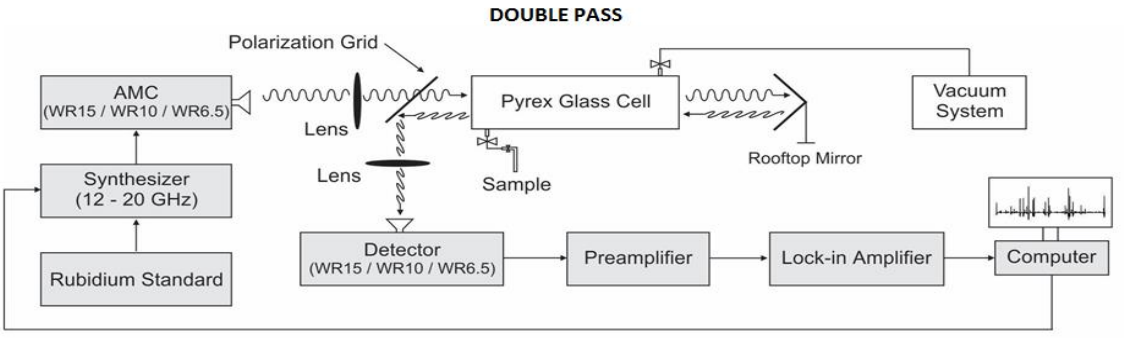

Image 8: double pass spectrometer scheme. *Note that the input and output radiation enter the Pyrex chamber through the same end, and how the polarization grid reflects the output radiation towards the detection array.*

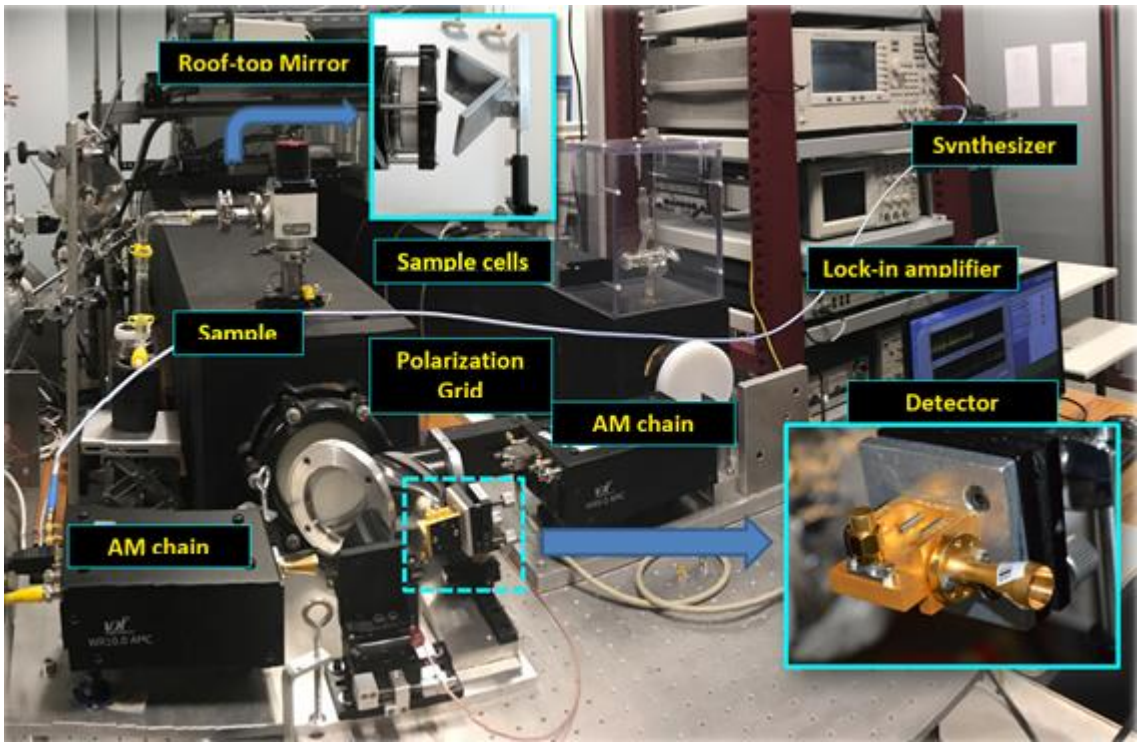

Image 9: GEM's millimetre-wave spectrometer double pass configuration. *Note on the right side of the picture the single pass apparatus without the polarization grid nor the rooftop mirror.*

In case we operate between 120-170 GHz, a single configuration apparatus involving a Quasi-Optical Detector (QOD) by VDI is used. The main difference is the absence of the mirror and the grid, resulting in an optical path of 300 cm.

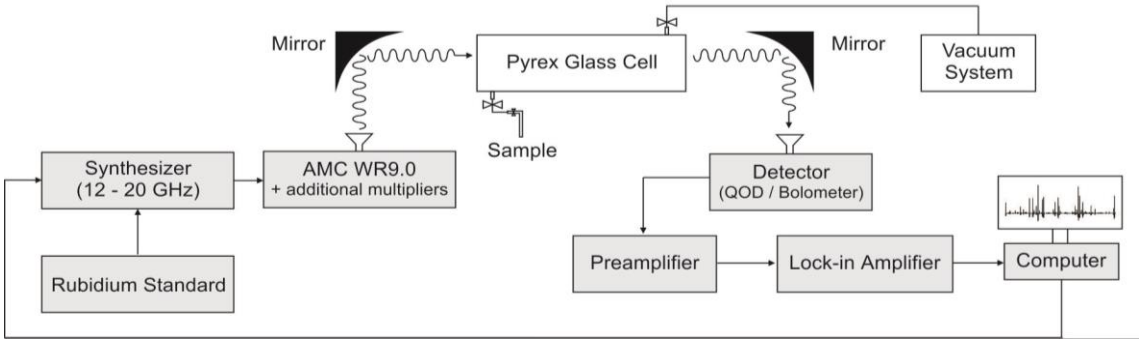

Image 10: singe pass configuration scheme. *In this case, a QOD detector at the back end of the Pyrex glass sample cell is used.*

+ EXPERIMENTAL:

Iso-butyraldehyde is a colourless liquid at room temperature with a fairly low boiling point (b.p. 63ºC). Spectroscopic work was carried out on a commercial sample, which was used without further purification. The liquid was introduced into a flask, which was later connected to the vacuum pressurized Pyrex glass. The sample was previously cooled with liquid nitrogen to avoid the introduction of the oxidation by-products (iso-butyric acid; b.p. 155ºC). Using the vacuum system, pressure inside the chamber is regulated at around 20 µbar.

The spectrometer is set up depending on the region being studied and connected. Five line measurements (involving the most intense transitions) are performed to ensure the quality of the spectrum. The spectrum is finally recorded in 1 GHz sections in both directions, yielding a precision better than 30 kHz. The spectra are combined in one single spectrum, which is finally analysed using H.M.Pickett's package[38].

Once the experimental procedure is finished, the Pyrex glass cell is emptied using high vacuum and the flask is disconnected.

SPECTRA ANALYSIS AND RESULTS

+ PREVIOUS WORKS ON ISO-BUTYRALDEHYDE

Iso-butyraldehyde was first studied by Stiefvater et al. (1986)[32] using a K-Band DRM spectrometer and a Stark-Effect Modulated spectrometer (SEM) at dry ice temperature (200 K). Out of four possible rotameric structures, only two were found to be stable: gauche and trans.

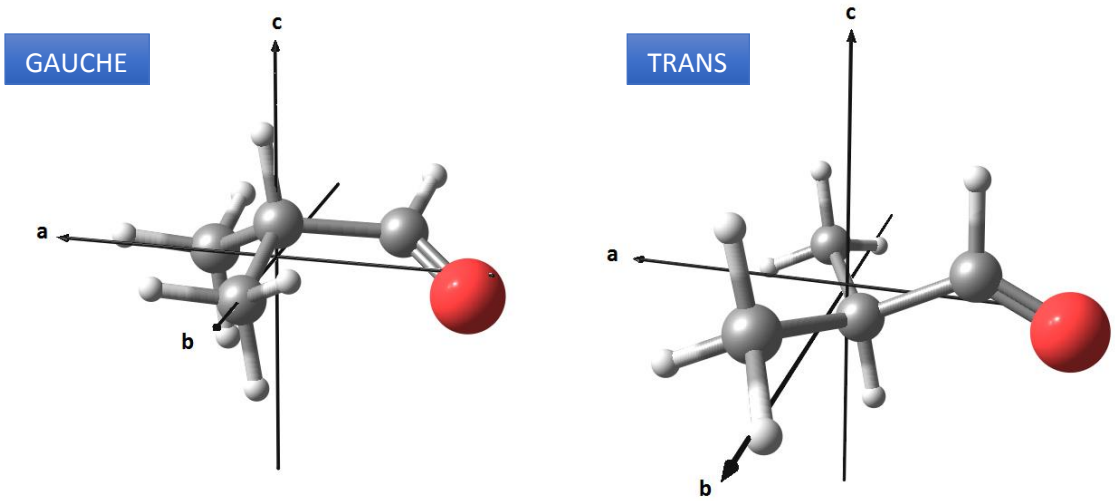

Image 11: gauche and trans conformers. *Note the ac symmetry plane in the trans rotameric form.*

The energy difference between both is 1030 cal/mol (360.25 cm^{-1}), so according to Maxwell-Boltzmann's distribution, ISM detection can be performed attending mainly to the gauche rotameric form.

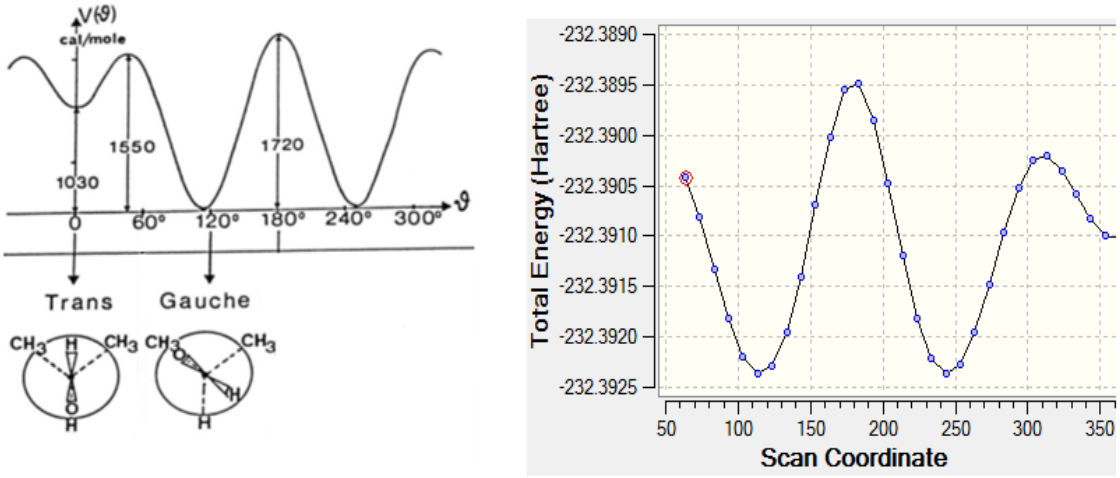

Image 12: O.L. Stiefvater and B3LYP/6-311G(d,p) predicted energy barriers. *Both methods predict a similar energetic difference between the conformers.*

Measures with a precision better than 76 kHz in the gauche conformer and 97 kHz for trans allowed to obtain up to quartic distortion terms.

Parameter	Gauche	Trans
A (MHz)	7494.62 ± 0.02	7707.84 ± 0.03
B (MHz)	4107.51 ± 0.02	3736.63 ± 0.02
C (MHz)	2980.70 ± 0.02	2815.08 ± 0.02
ΔJ (kHz)	1.9 ± 0.5	0.7 ± 0.4
ΔJK (kHz)	-0.3 ± 0.3	48.4 ± 0.7
ΔK (kHz)	11.2 ± 0.7	-19.0 ± 5.0
δJ (kHz)	0.28 ± 0.02	0.18 ± 0.02
δK (kHz)	3.6 ± 0.2	25.0 ± 0.5
μ_A	2.43 ± 0.02	2.82 ± 0.02
μ_B	0.80 ± 0.03	Zero by symmetry
μ_C	0.83 ± 0.02	0.46 ± 0.03
μ_{TOTAL}	2.69 ± 0.03	2.86 ± 0.03
κ	-0.501	-0.623

Table 4: Stiefvater et al. (1986) iso-butyraldehyde rotational parameters. *A new fit was made on the trans conformer due to data contradictions.*

+ SPECTRAL RANGE SELECTION

Best resolution is achieved in frequencies where transitions are most intense. Using data from the previous article, a simulation of the spectrum is generated. Line intensities are modified by imposing a temperature of 100 K. In both species, the line with maximum intensity at ISM temperatures belongs to the 170-240 GHz range.

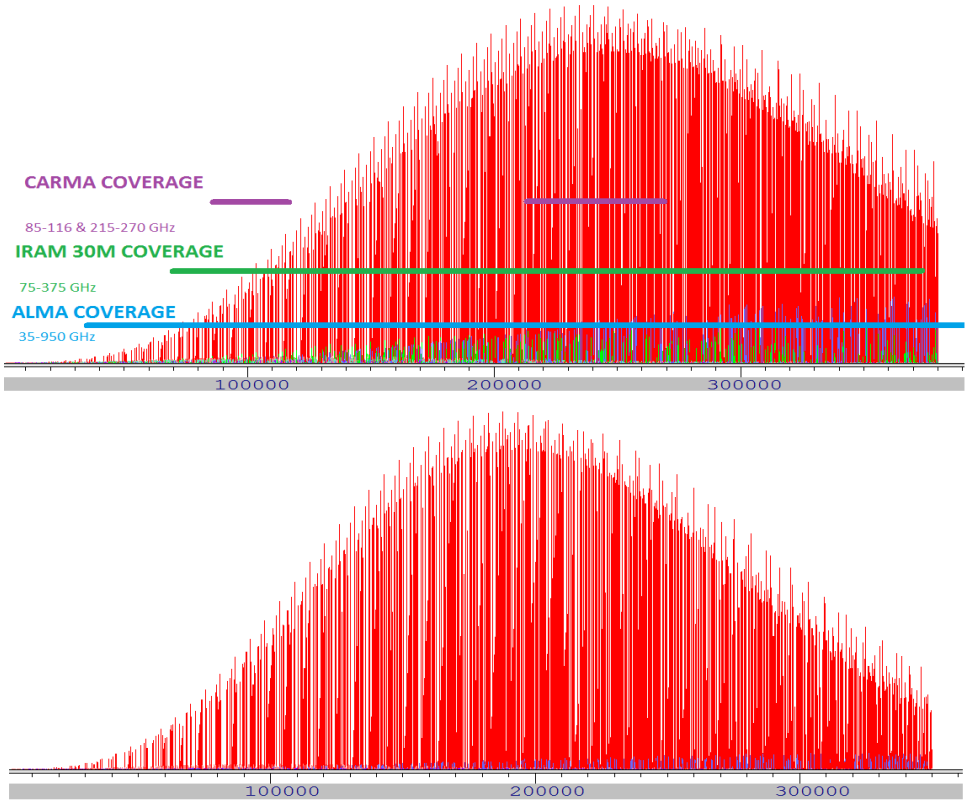

Image 13: intensity profile at 100K compared to some astronomical interferometers coverage. *The gauche conformer in the upper part, has maximum expected intensity between 230-260 GHz, whereas the trans specie maximum in the lower part, lies between 170-200 GHz*[18,19].

The most intense line in the gauche form would be formed by the combination of transitions $39_{0,39}\leftarrow38_{0,38}$; $39_{0,39}\leftarrow38_{1,38}$; $39_{1,39}\leftarrow38_{0,38}$ and $39_{1,39}\leftarrow38_{1,38}$ at 234422.9325 Hz. In the trans conformation it is the $33_{0,33}\leftarrow32_{0,33}$ and $33_{1,33}\leftarrow32_{1,32}$ set at 187869.5016 Hz.

Note that low frequency parameters are not precise at higher frequencies since centrifugal and vibrational distortions take place. However, to make a first approach, instead of using computational methods, we can rely on this information.

It seems that the best range for study would lie somewhere between 170 and 240 GHz. To ensure that there is sufficient data, we extend our study up to 75-325 GHz, where most interferometers operate: CARMA, IRAM 30M, ALMA…

+ GAUCHE ROTAMER: RESULTS

Previous measurements by Stiefvater et al (1986) significantly facilitated the assignments at lower frequencies. It was proved that a, b and c-type transitions will be relevant in the gauche isomers; however, due to the bc symmetry plane only a and c-type transitions will be present in the trans isomer.

Some calculations were made using the Gaussian 16 package at B3LYP/6-311G(d,p), MP2-/6-311++(d,p) and B2PLYPD3/aug-cc-pVTZ levels to predict the rotational constants.

Level	A (MHz)	B (MHz)	C (MHz)	μ_A	μ_B	μ_C	μ_{TOTAL}
MP2	7439.24	4125.23	3007.61	2.408	0.757	0.978	2.707
B2PLYPD3	7497.13	4123.61	2997.15	2.544	0.774	0.971	2.831
B3LYP	7461.32	4092.43	2968.66	2.627	0.781	0.974	2.909
Stiefvater	7494.62	4107.51	2980.70	2.43	0.80	0.83	2.69

Table 5: rotational constant and dipole moment comparison for gauche rotamer. *Note that the B2PLYP/aug-cc-pVTZ level seems to be most accurate.*

It is quite clear that the B2PLYPD3/aug-cc-pVTZ is the most accurate. However, since we have previous experimental data, line assignation will not rely on computational calculus. A prediction using this information at high frequency is made to prove the need of further centrifugal distortion terms.

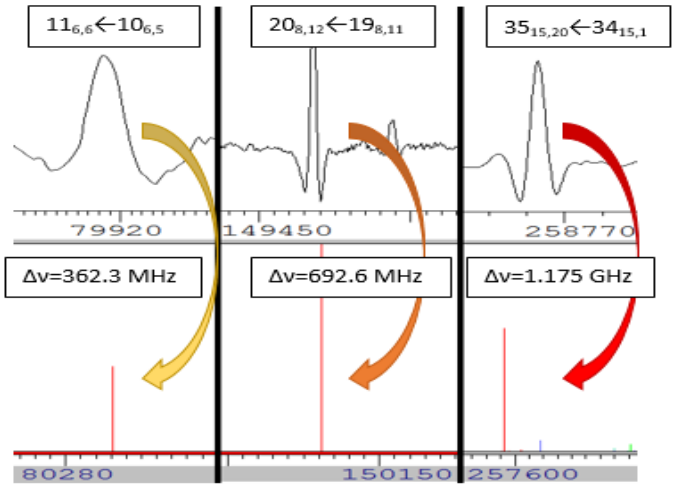

Image 14: prediction using up to quartic distortion terms by Stiefvater et al.[32] versus real spectra. *At higher frequencies when centrifugal distortion is more important, line shift is greater.*

R-branch a-type transitions were first assigned due to their high intensity. They form a very particular harmonic pattern, set up in groups centred at approximately (B+C)(J"+1) and spanning (B-C)(J"+1). As they do not depend on A; B and C parameters get more precise as transitions are input.

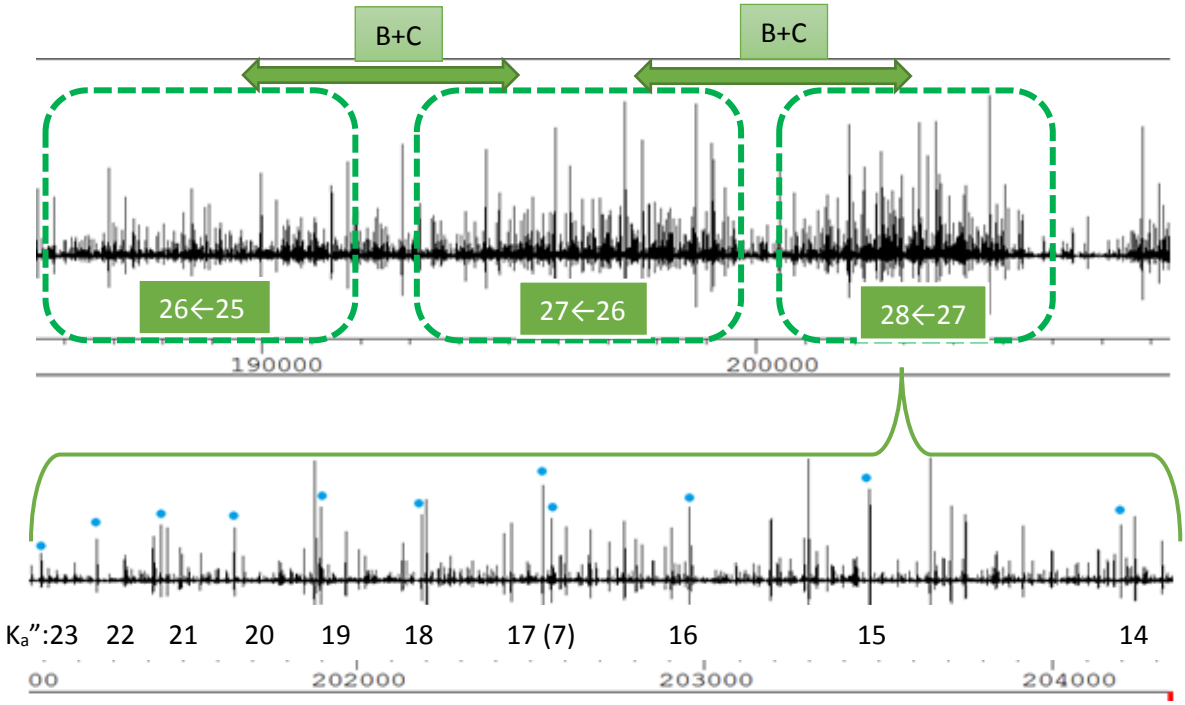

Image 15: a 22 GHz section of the room-temperature rotational spectrum of i-butyraldehyde. *Groups of transitions involving J"=25, 26 and 27 are displayed, showing a clear B+C distancing between them.*

Image 16: J (28←27) section zoom. *Higher K_a'' are found at lower frequencies until they lose degeneracy, when the branch splits towards higher and lower frequencies (note the presence of K_a"=7 between K_a"=16 and K_a"=17)*

Transitions involving low K_a numbers are not degenerate. As K_a values begin to rise, transitions tend to merge until one line finally contains two features with the same K_a but different K_c: (K_a, K_c) and (K_a, K_c+1). Some lines cannot be taken into account on the global fit since they are not degenerate but closer than the 30 kHz spectral resolution.

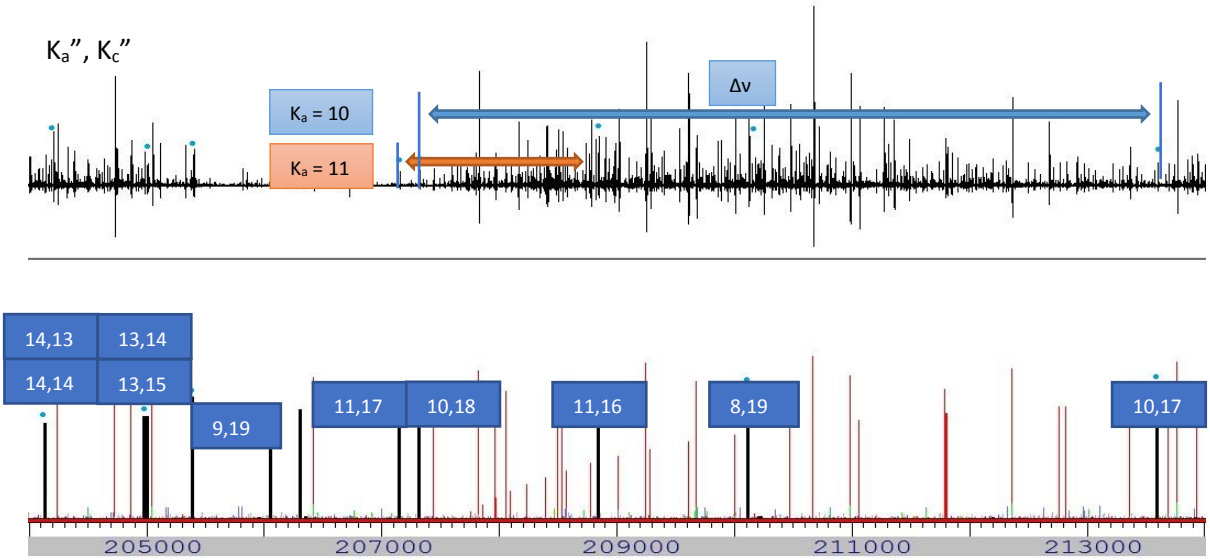

Image 17: J (28←27) lines selection degeneracy split*. Note the higher shift in frequencies for K=10.*

R-branch a-type transitions are also degenerate with R.b-type. $J''_{Ka,\,Kc}$ levels produce b.R ($\Delta K_a=1$; $\Delta K_c=1$) transitions, whereas $J''_{Ka+1,\,Kc}$ levels do so with $\Delta K_a=-1$; $\Delta K_c=1$. Most of these lines were measured with a.R transitions, as when not degenerate line intensity is very poor.

Lines are found not degenerate at low frequencies and tend to merge into one line at higher ranges. As higher K_a'' numbers are involved, blending takes place at higher energies.

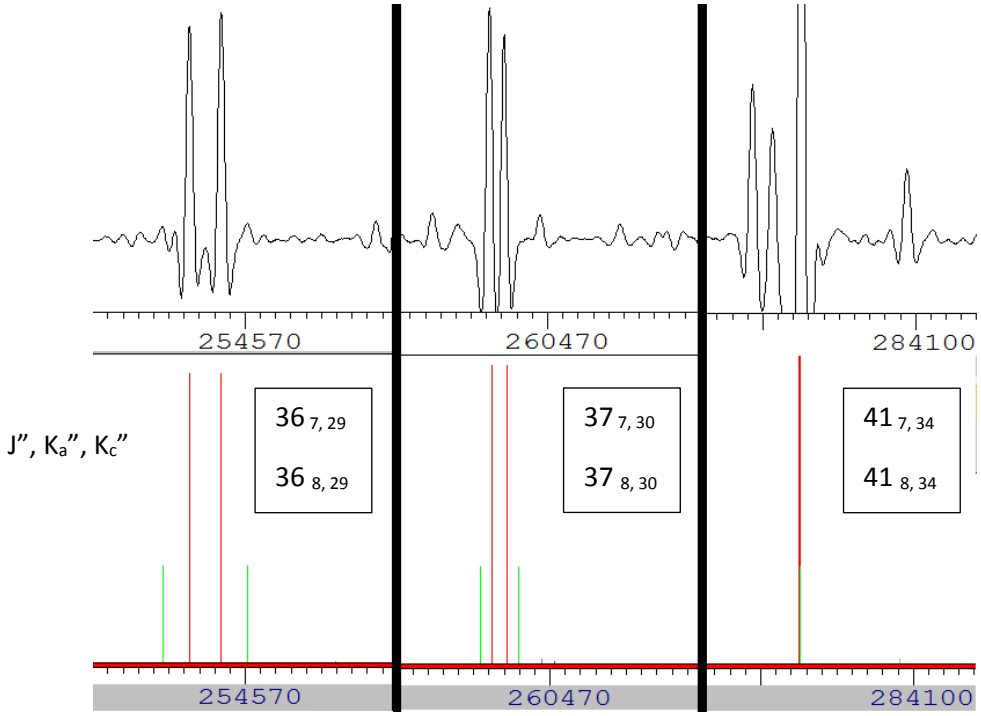

Image 18: b.R transitions blending with a.R type. *Lines begin to merge as frequency rises.*

R-branch c-type transitions can be measured also as long as they are accompanied by more intense b-type lines.

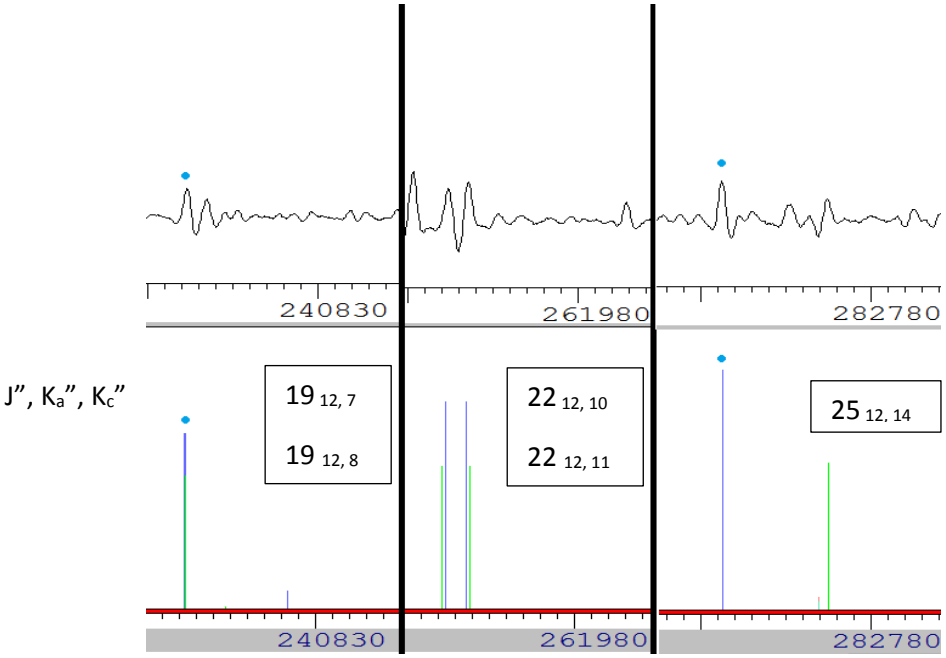

Image 19: b.R and c.R-type transitions split. *Note that b.R not degenerate lines are indistinguishable from the noise.*

In this case, the involved lower energy levels are $J''_{Ka,\,Kc}$ and $J''_{Ka,\,Kc+1}$. The first one produces b.R ($\Delta K_a=1$; $\Delta K_c=1$) transitions, the second $\Delta K_a=1$; $\Delta K_c=-1$ and both of them c-type $\Delta K_a=1$; $\Delta K_c=0$. Lines diverge as frequency rises: at higher K_a'', transitions remain degenerate for longer ranges.

Q-branch a, b and c-type transitions are also included. However, due to their low intensity, they are studied when degenerate with other lines. Given the initial $J''_{Ka,\,Kc}$ level, it is possible to study a-type $\Delta K_a=2$; $\Delta K_c=-1$ and b-type $\Delta K_a=1$; $\Delta K_c=-1$ transitions, and in the $J''_{Ka+1,\,Kc}$ level, a-type $\Delta K_a=0$; $\Delta K_c=-1$ and b-type $\Delta K_a=1$; $\Delta K_c=-1$. As frequency drops, degeneracy is lost. Higher K_a'' values imply that this split will take place at higher frequencies.

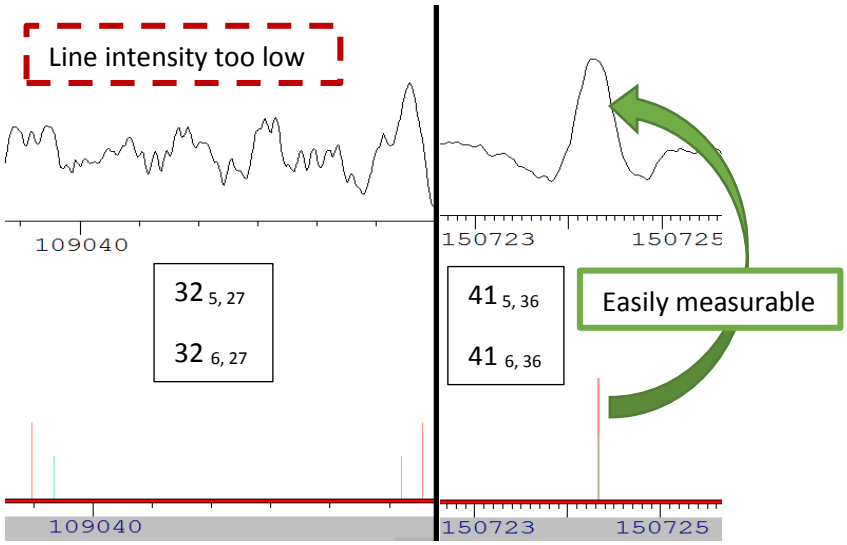

Image 20: a.Q and b.Q-type transitions degeneracy split. *Note that in most cases, when these lines are not degenerate, their intensity is not high enough to be measured.*

Only a few c-type transitions could be seen, and they were always accompanied by b.Q transitions. No pattern could be described in this case.

About 1900 lines corresponding to 3888 transitions were measured, and the ranges of the quantum numbers J'' and K_a'' were extended up to 79 and 44. The fits and prediction were made in terms of Watson's A-reduced Hamiltonian with the Pickett's SPFIT/SPCAT program suite[38].

Constant	Unit	Value[a]
A	MHz	7494.613589 (162)
B	MHz	4107.511610 (68)
C	MHz	2980.699704 (71)
Δ_J	kHz	1.960525 (51)
Δ_{JK}	kHz	-0.298455 (160)
Δ_K	kHz	11.39002 (44)
δ_J	kHz	0.2790495 (163)
δ_K	kHz	3.704685 (145)
Φ_J	Hz	0.0054768 (125)
Φ_{JK}	Hz	0.062851 (70)
Φ_K	Hz	0.34070 (45)
Φ_{KJ}	Hz	-0.399255 (243)
ϕ_J	Hz	0.0001810 (38)
ϕ_{JK}	Hz	0.048063 (50)
ϕ_K	Hz	-0.093600 (199)

σ_{fit}[b]	kHz	23
κ		-0.501
J''_{max}		79
K''_{max}		44

a) The number in parenthesis are 1σ uncertainties in units of the last decimal digit.
b) Root mean square deviation of the fit.

Table 6: ground state spectroscopic constants of gauche iso-butyraldehyde (Watson's A-Reduction)

The line intensity of the present spectrum will be modified for ISM search using the partition function. The rotational contribution is calculated with the present work constants, and the vibrational part is estimated at B2PLYPD3/aug-cc-pVTZ computational level and using J.R.Durig (1990)[40] data:

T /K	Q_{rot}	Q_{vib} (IR gas)	Q_{tot} (Exp)
9.38	507.7790	1.0000	507.7841
18.75	1432.7594	1.0032	147.3068
37.50	4048.2085	1.0601	4291.5771
75.00	11447.6189	1.3607	15577.3579
150.00	32395.4141	2.9026	55190.5621
225.00	59557.2200	7.0407	419326.4039
300.00	91764.5868	17.4012	1596818.0587

Mode	IR gas (cm^{-1})
ν_1	75
ν_2	212
ν_3	227
ν_4	272
ν_5	351
ν_6	395
ν_7	632
ν_8	800
ν_9	922
ν_{10}	933
ν_{11}	942
ν_{12}	965

Table 7: partition function of the gauche conformer at various temperatures. *The vibrational partition function was calculated using J.R. Durig's gas phase infrared analysis data.*

Table 8: normal vibrational modes for the gauche conformer.

+ TRANS ROTAMER: RESULTS

In this case due to the bc symmetry plane, only a and c type transitions are possible. On account of the energetic difference between the cis and trans rotameric conformations, line intensity in the latter one is expected to be very low. Thus, only a.R-type transitions could be assigned.

Level	A (MHz)	B (MHz)	C (MHz)	μ_A	μ_B	μ_C	μ_{TOTAL}
MP2	7730.12	3713.45	2813.13	2.783	0	0.658	2.860
B2PLYPD3	7747.19	3734.07	2823.61	2.904	0	0.679	2.982
B3LYP	7680.41	3719.41	2807.57	2.986	0	0.689	3.065
Stiefvater	7707.84	3736.63	2815.8	2.82	0	0.46	2.86

Table 9: rotational constant and dipole moment comparison for trans rotamer. *Both MP2 and B2PLYPD3 methods are quite accurate.*

No clear pattern could be observed in this conformation. However, as in the previous conformer, transitions involving low values of the K_a number are degenerate. When K_a takes higher values, these lines begin to merge, finally blending into one single line, containing transitions between the fundamental states (J,K_a, K_c) and (J,K_a, K_c+1).

Only 394 transitions up to $K_a=5$ could be assigned. As this number got higher, huge shifts between the observed and predicted frequencies appeared. Including further centrifugal distortion correction terms was not appropriate since uncertainties became as high as the calculated parameter itself.

Loomis-Wood plots represent the deviation of the observed transitions from the original prediction, and they are a very reliable method to see if lines follow a clear pattern.

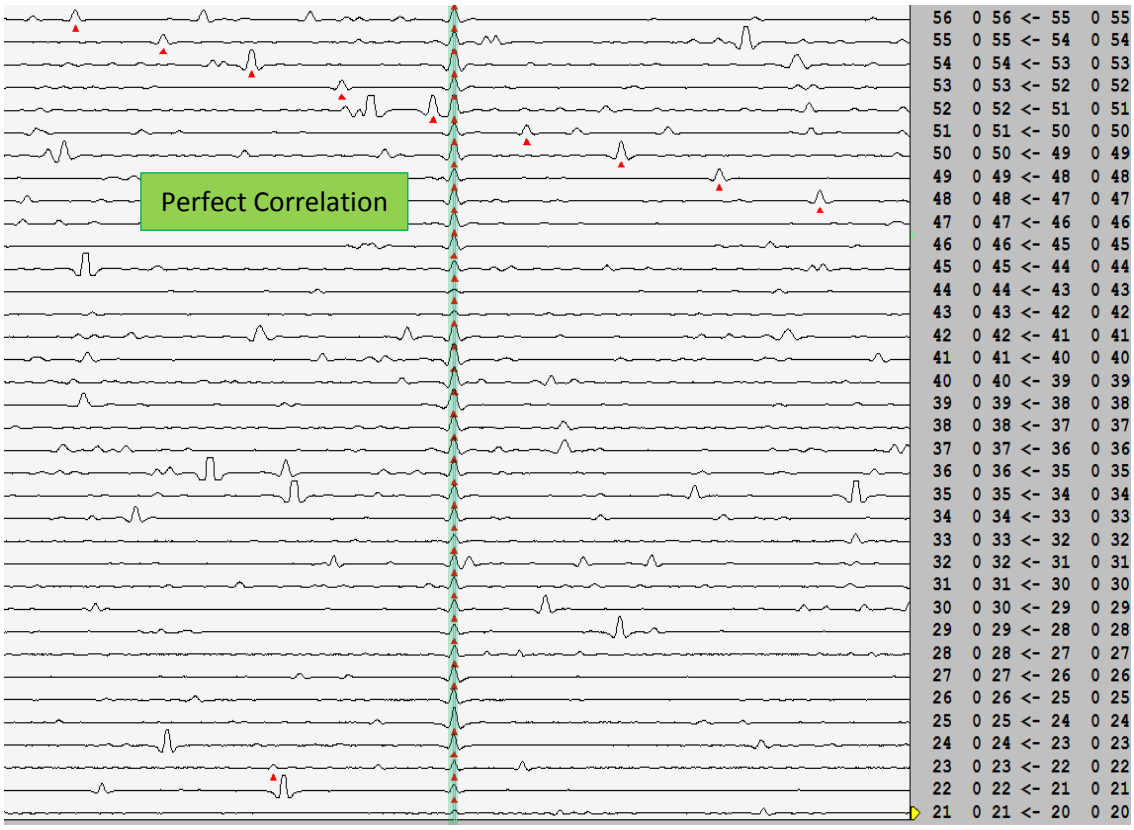

Image 21: Loomis-Wood plot for Ka=0 in the trans rotamer. *Assigned lines match perfectly the prediction.*

The green line represents the prediction using the final fit data and the red triangles are the assigned frequencies for a given line. At the lowest K_a value possible (K_a=0), there is a perfect matching. In the upper part, there is a crossing pattern that belongs to the series involving K_a=4.

Further plots were made involving K_a numbers up to 15. Only a few plots are displayed as they were found most representative.

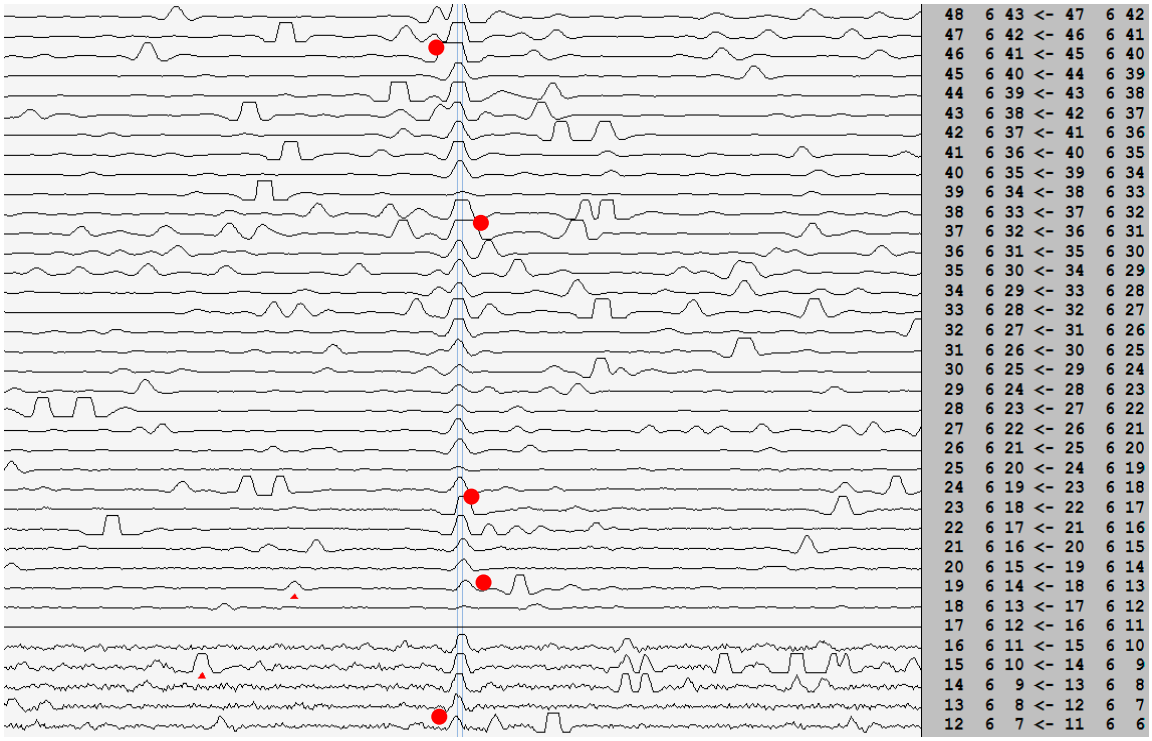

Image 22: LW plot for Ka=6 in the trans rotamer. *Red dots indicate lines too deviated.*

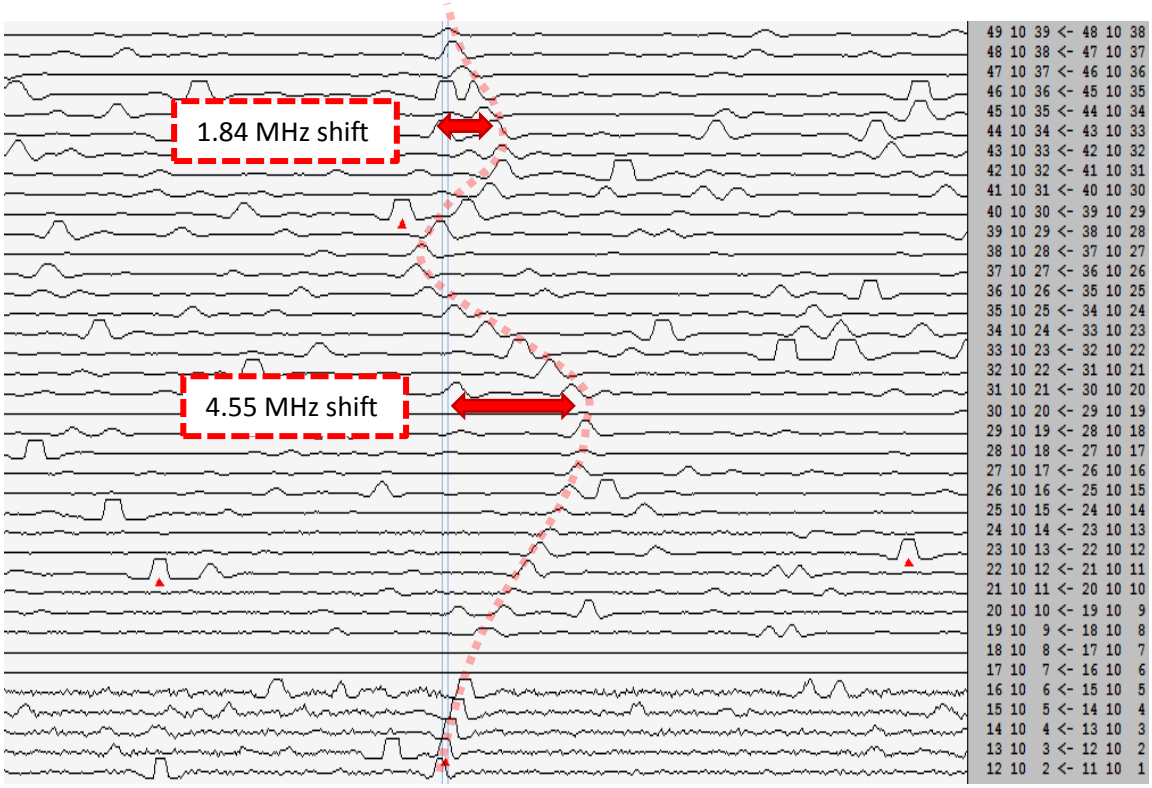

Image 23: LW plot for Ka=10 in the trans rotamer. *The blue line indicates the prediction and the red one, the real pattern.*

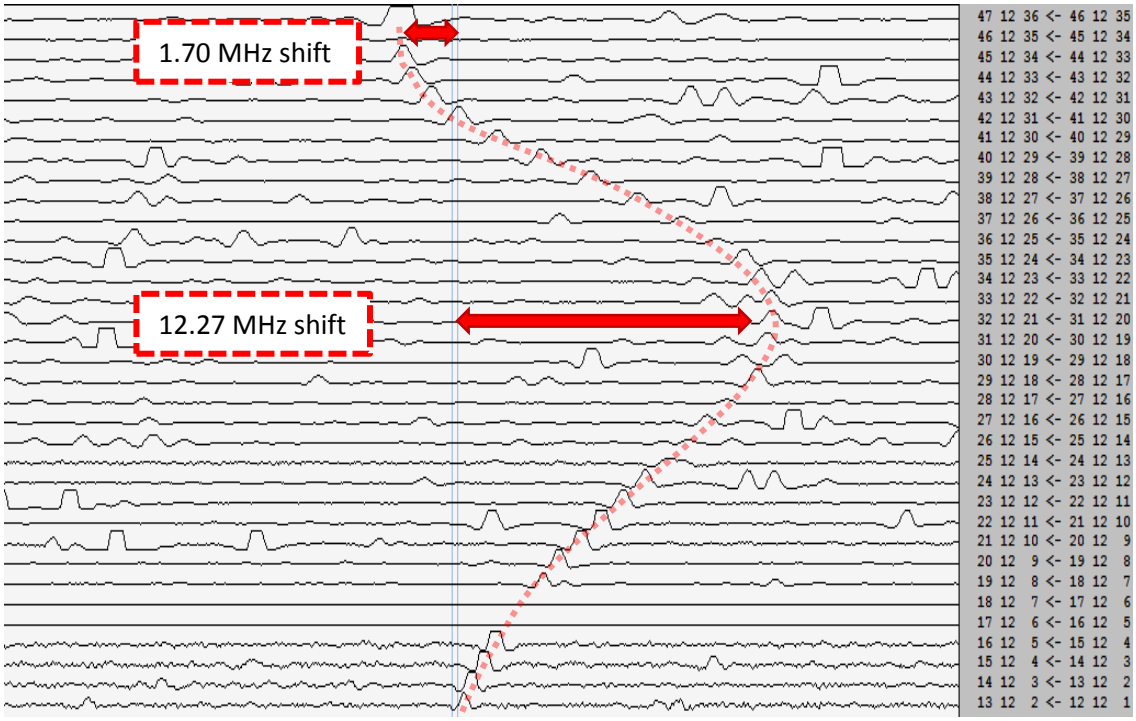

Image 24: LW plot for Ka=12 in the trans rotamer. *The blue line indicates the prediction and the red one, the real pattern.*

At lower K_a numbers, only a few transitions are displaced or disappear, whereas at high K_a values, shifts are huge and no line can be assigned. It is possible that the excited first normal mode of vibration and the second mode in the fundamental state are interacting, thus producing this shift. At this point, various options arise:

- Continue with the analysis including as many distortion terms as we need.

- Make a complete study of the vibrational states and how they affect rotation.

- Stop at K_a=5 the assignment.

The first option is clearly discarded since as we mentioned earlier, including further distortion terms make uncertainties rise enormously. Moreover, the reason of the energetic displacement is clearly not centrifugal distortion and the Hamiltonian operator would lack of physical meaning, though it could probably reproduce the spectrum.

The intensity of the lines produced by the trans conformer is quite low in comparison to those of the gauche rotamer. As we know from Maxwell-Boltzmann's population equation, the number of particles in a higher energy state (trans specie) compared to a more stable state (gauche) becomes lower as temperature decreases.

Taking into account that this experiment was performed at room temperature and that the intensity of some lines could not be distinguished from the noise in the spectrum. It seems quite clear that at much lower temperatures in the ISM, only a few lines will be visible.

There are little benefits in continuing with the analysis, and as Prof. Lucie Kolesniková suggested, the assignment ends at K_a=5 and the terms included in the Hamiltonian will be only those who provide accurate results while maintaining their physical meaning.

Further investigation on the vibrationally excited states is being made with a computational calculus of the anharmonic vibration frequencies using the B2PLYPD3/aug-cc-pVTZ level.

The yielded global fit parameters are:

Constant	Unit	Value[a]
A	MHz	7707.8917 (42)
B	MHz	3736.6548 (11)
C	MHz	2815.08435 (13)
Δ_J	kHz	0.8134 (14)
Δ_{JK}	kHz	54.5344 (74)
Δ_K	kHz	-46.44 (12)
δ_J	kHz	0.24233 (72)
δ_K	kHz	26.9932 (84)
Φ_{JK}	Hz	0.01118 (100)
Φ_K	Hz	43.450 (483)
Φ_{KJ}	Hz	-4.102 (36)
σ_{fit}[b]	kHz	19
κ		-0.623
J''_{max}		57
K''_{max}		10 (two c.R type); 5 (a.R type)

a) The number in parenthesis are 1σ uncertainties in units of the last decimal digit.
b) Root mean square deviation of the fit.

Table 10: ground state spectroscopic constants of trans iso-butyraldehyde (Watson's A-Reduction)

The vibrational partition function in this case is calculated using the B2PLYPD3/aug-cc-pVTZ level with the harmonic approximation.

T /K	Q_{rot}	Q_{vib}	Q_{tot}
9.38	540.1055	1.0000	540.1216
18.75	1524.3672	1.0055	1532.7415
37.50	4308.2241	1.0803	4654.1502
75.00	12186.6007	1.4193	17296.3681
150.00	34487.1656	3.0340	104634.2330
225.00	63361.6091	7.3443	465345.1723
300.00	97507.9158	18.0473	1759757.9252

Table 11 : partition function of the trans conformer at various temperatures

Mode	Calculated (cm^{-1})	Mode	Calculated (cm^{-1})
ν_1	67.88	ν_7	549.25
ν_2	207.68	ν_8	861.95
ν_3	242.41	ν_9	939.11
ν_4	333.00	ν_{10}	950.31
ν_5	333.10	ν_{11}	961.73
ν_6	353.90		

Table 12: normal vibrational modes for the trans conformer.

+ GAUCHE-TRANS ENERGETIC DIFFERENCE

Through the analysis of line intensity, the link between the relative population of a given rotamer with the square dipolar moment seems quite evident. Let us use equation 17 employing five different transitions observable for both conformers that accomplish the following conditions:

- Transitions in the same frequency range: the intensity of the signal depends of the detector used, and thus only transitions measured with the same equipment can be compared.

- Non degenerate transitions: lines must correspond to only one transition; otherwise, the intensity profile could be heavily modified.

Using Stiefvater et al. (1986)[32] experimental dipolar moments, we calculate the energy difference between both species:

J	K_a	K_c	J"	$K"_a$	$K"_c$	Gauche Int.	Trans Int.	Int. Trans/ Int. Gauche
25	5	21	24	5	20	43834382.2	11494136.8	0.26221738
13	3	11	12	3	10	73240016	22655306.7	0.309329626
12	3	10	11	3	9	65056811	17993505.4	0.276581423
16	3	14	15	3	13	113610000	31599251.3	0.278137939
15	3	13	14	3	12	100000001	30381174.2	0.303811738

Table 13: relative intensities of representative transitions. *The stability of both species can be clearly seen by the relative intensity.*

The new energy difference between both gauche and trans conformers is 321.49 cm^{-1} in comparison to the previous theoretical 360.25 cm^{-1}. Our proposals to explain these differences are:

- The article does not explain whether the Zero Point Vibrational Energy has been taken into account or not. Moreover, only harmonic models are able to do so, which are not the best approach to the real molecular behaviour.

- Collisional cooling in low torsional barriers can produce shifts in the relative population.

Using Maxwell-Boltzmann's population equation, we can predict the number of particles in both states at different temperatures:

T (K)	Rel. Trans Pop. (%)
5	0.0000%
10	0.0000%
25	0.0000%
50	0.0096%
100	0.9801%
150	4.5798%
200	9.9000%
298.15	21.1967%

Table 14: expected trans population at different temperatures. *Most molecules are expected to be in the gauche conformation in the ISM.*

The low number of particles in the trans rotameric form ensures that only the gauche conformer will be relevant in ISM detection.

CONCLUSIONS

The rotational spectrum of iso-butyraldehyde has been recorded from 75 to 325 GHz (excepting 110-120 GHz). 1921 lines corresponding to 3888 transitions were measured for the most stable conformation, as for the second rotamer, only 243 lines corresponding to 394 transitions could be observed.

As there is an experimental 321.49 cm^{-1} energy barrier between both conformers, efforts were focused on the gauche rotamer since it will be most important for ISM detection. Very precise measurements allowed us to yield up to the sextics distortion terms of the Hamiltonian in this rotamer, and up to the quartics and Φ_{JK}, Φ_{K} and Φ_{KJ} sextic terms in the trans conformation.

A wide variety of transitions (a,b and c-type in both Q and R branches) corresponding to the gauche conformation have been measured. The rotational parameters provided by Stiefvater et al.[32] have been further improved, allowing the recreation of the experimental spectrum for ISM search.

Since distortion terms were not precisely determined in the trans rotamer, using Loomis-Wood plots, a clear pattern of deviation was observed. Vibrational distortions are proposed as the possible cause of this shift. Further investigation through the anharmonic frequencies vibration calculus is being made.

The high precision data obtained in the current work will allow detection in the future. Additional work for characterization of the rotational spectrum involving excited vibrational states can be carried out in case of detection for line subtraction.

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IMAGES, TABLES AND EQUATIONS

+ LIST OF IMAGES:

+ LIST OF EQUATIONS:

+ LIST OF TABLES:

SUPPORTING INFORMATION

+ GAUCHE CONFORMER: LIST OF TRANSITIONS

Frequencies are expressed in MHz as well as the differences O-C (observed and calculated).

J	K_a	K_c	J''	K''_a	K''_c	EXP. FREQ.	DIFF. (O-C)	WEIGHT
10	4	6	9	4	5	75598.185	0.00907	
8	3	5	7	2	5	75657.442	0.04706	
25	7	19	25	6	20	75751.631	0.0426	
28	9	20	28	7	21	75818.275	-0.04735	
25	7	19	25	5	20	75853.464	0.00789	
10	3	7	9	3	6	76205.308	0.00636	
11	3	9	10	3	8	76516.262	0.02342	
22	4	18	22	4	19	76518.973	0.04461	
22	4	18	22	3	19	76523.120	0.01424	
30	10	21	30	9	22	76546.866	-0.03127	
22	5	18	22	3	19	76597.326	0.03633	
27	8	20	27	6	21	77629.127	0.01021	
11	2	9	10	2	8	77730.583	-0.01486	
29	10	20	29	8	21	78043.672	-0.04403	
12	2	11	11	2	10	78308.025	0.03211	
12	1	11	11	1	10	78356.886	-0.01556	
24	5	19	24	5	20	78478.042	-0.01811	
28	10	19	28	8	20	78658.617	-0.02864	
24	6	19	24	5	20	78691.627	-0.02163	
24	6	19	24	4	20	78706.837	0.00708	
11	10	1	10	10	0	78945.826	0.00326	0.5
11	10	2	10	10	1	78945.826	0.0033	0.5
11	9	3	10	9	2	79075.799	0.0075	
11	8	4	10	8	3	79259.754	0.11433	0.5
11	8	3	10	8	2	79259.754	-0.09842	0.5
30	10	21	30	8	22	79314.307	-0.03623	
11	4	8	10	4	7	79344.782	0.00812	
32	9	23	32	9	24	79406.592	0.01486	
11	7	5	10	7	4	79531.447	0.01061	
11	7	4	10	7	3	79538.250	0.00612	
13	0	13	12	1	12	79744.049	0.46758	0.0462
13	1	13	12	1	12	79744.049	0.18971	0.4538
13	0	13	12	0	12	79744.049	-0.26884	0.4538
13	1	13	12	0	12	79744.049	-0.5467	0.0462
11	6	6	10	6	5	79919.855	-0.01026	
26	6	20	26	6	21	79968.042	0.02755	
11	6	5	10	6	4	80047.497	0.02547	
11	5	7	10	5	6	80189.975	-0.0073	
31	10	22	31	9	23	80507.916	-0.02128	
26	7	20	26	5	21	80565.036	0.01473	
30	8	22	30	8	23	80764.387	-0.00588	
28	7	21	28	7	22	80821.033	-0.02028	
28	7	21	28	6	22	80954.113	-0.02684	
23	4	19	23	4	20	81215.473	-0.00285	
23	5	19	23	3	20	81251.107	0.00014	
11	5	6	10	5	5	81445.340	0.01023	
27	10	18	27	8	19	81459.817	-0.01798	
12	11	2	12	10	3	81838.854	-0.03702	
31	10	22	31	8	23	82015.822	-0.02848	
28	8	21	28	6	22	82240.107	0.00372	
33	11	23	33	10	24	82399.930	-0.02209	
12	3	10	11	3	9	82684.918	0.00968	
11	3	8	10	3	7	83032.336	-0.00827	
25	5	20	25	5	21	83315.239	-0.00323	
12	2	10	11	2	9	83382.573	0.01155	
25	6	20	25	5	21	83417.128	0.01916	
25	6	20	25	4	21	83423.822	0.01347	
30	9	22	30	7	23	83870.589	-0.01138	
11	4	7	10	4	6	83948.077	-0.00847	
11	4	7	10	4	6	83948.078	-0.0071	
12	3	10	11	2	9	84087.416	0.02666	
13	2	12	12	2	11	84272.501	0.00653	
13	1	12	12	1	11	84293.800	0.0217	
27	7	21	27	5	22	85330.549	0.01446	
33	11	23	33	9	24	85553.152	-0.01599	
14	0	14	13	1	13	85702.038	0.1754	0.0442
14	1	14	13	1	13	85702.038	0.07152	0.4325
32	10	23	32	8	24	85702.038	0.02409	0.0467
14	0	14	13	0	13	85702.038	-0.10247	0.4325
14	1	14	13	0	13	85702.038	-0.20634	0.0442
24	4	20	24	4	21	85876.907	-0.02714	
6	6	1	5	5	0	86015.025	0.19502	0.2374
6	6	0	5	5	0	86015.025	0.16075	0.2626
6	6	1	5	5	1	86015.025	-0.16702	0.2626
6	6	0	5	5	1	86015.025	-0.20129	0.2374
12	4	9	11	4	8	86085.137	-0.00261	
12	11	1	11	11	0	86109.430	0.01214	0.5
12	11	2	11	11	1	86109.430	0.01215	0.5
12	10	2	11	10	1	86233.751	0.00338	0.5
12	10	3	11	10	2	86233.751	0.00378	0.5
29	7	22	29	6	23	86332.906	0.00094	
34	11	24	34	10	25	86388.368	0.03592	
12	9	4	11	9	3	86403.261	0.01663	
33	9	24	33	9	25	86449.732	0.01308	
12	8	4	11	8	3	86644.739	-0.05098	
20	1	19	20	1	20	86675.472	0.02216	0.3442
20	1	19	20	0	20	86675.472	0.02191	0.1558
20	2	19	20	1	20	86675.472	-0.00071	0.1558
20	2	19	20	0	20	86675.472	-0.00096	0.3442
31	8	23	31	8	24	86837.311	-0.00416	
29	8	22	29	7	23	86938.473	-0.01547	
12	7	6	11	7	5	86996.671	0.03331	
29	8	22	29	6	23	87001.922	-0.0107	
31	8	23	31	7	24	87004.958	0.00964	
12	7	5	11	7	4	87020.146	0.00867	
12	6	7	11	6	6	87450.630	0.01423	
12	5	8	11	5	7	87533.611	0.00716	
37	13	25	37	12	26	87766.972	-0.00431	
12	6	6	11	6	5	87784.387	0.01253	
30	13	18	30	12	19	87911.372	-0.01719	
26	5	21	26	5	22	88081.538	-0.04802	
26	5	21	26	4	22	88084.503	0.00195	
34	11	24	34	9	25	88126.841	-0.02003	
26	6	21	26	4	22	88132.067	-0.03444	
31	9	23	31	7	24	88512.851	-0.00995	
13	3	11	12	3	10	88756.867	0.00411	
9	4	5	8	3	5	88780.232	-0.00861	
17	12	6	17	11	7	88814.166	-0.02093	
16	12	5	16	11	6	89087.761	-0.00483	
13	2	11	12	2	10	89124.167	0.01013	
12	3	9	11	3	8	89259.796	-0.00241	
15	12	4	15	11	5	89314.121	0.00043	
13	3	11	12	2	10	89461.702	0.01072	
14	12	3	14	11	4	89499.549	-0.014	
33	10	24	33	9	25	89602.935	-0.00048	
13	12	2	13	11	3	89649.693	-0.02186	
22	2	20	22	2	21	89717.443	0.08007	0.3395
22	2	20	22	1	21	89717.443	0.07678	0.1605
22	3	20	22	2	21	89717.443	-0.07242	0.1605
22	3	20	22	1	21	89717.443	-0.0757	0.3395
12	5	7	11	5	6	89881.211	-0.01437	
28	13	15	28	12	16	89898.546	-0.01879	
28	6	22	28	6	23	89963.798	0.00211	
28	6	22	28	5	23	89973.695	0.02944	
33	10	24	33	8	25	90011.736	0.00641	
28	7	22	28	5	23	90106.789	0.03682	
14	1	13	13	2	12	90224.982	0.02674	
14	2	13	13	2	12	90231.249	0.01997	
14	1	13	13	1	12	90240.259	0.01003	
14	2	13	13	1	12	90246.512	-0.01002	
25	5	21	25	3	22	90521.261	0.0413	
35	12	24	35	10	25	90891.245	-0.03402	
21	1	20	21	1	21	91194.635	0.02807	0.3445
21	1	20	21	0	21	91194.635	0.02798	0.1555
21	2	20	21	0	21	91194.635	0.01928	0.3445
21	2	20	21	1	21	91194.635	0.01937	0.1555
31	17	14	30	18	13	91418.969	-0.01586	
30	7	23	30	7	24	91457.426	-0.03001	
15	0	15	14	1	14	91659.635	0.05838	0.0465
15	1	15	14	1	14	91659.635	0.01986	0.4535
15	0	15	14	0	14	91659.635	-0.04549	0.4535
15	1	15	14	0	14	91659.635	-0.08402	0.0465
35	11	25	35	9	26	91757.559	-0.00238	
30	8	23	30	6	24	91825.879	-0.04921	
12	4	8	11	4	7	91934.401	0.0051	
36	10	26	36	10	27	92030.093	0.03028	
34	12	23	34	10	24	92179.455	-0.02228	
26	13	14	26	12	15	92344.164	0.02593	
32	8	24	32	7	25	92528.768	0.01471	
13	4	10	12	4	9	92615.726	0.01746	
34	9	25	34	9	26	92739.852	-0.0132	
27	5	22	27	5	23	92801.385	-0.00745	
27	5	22	27	4	23	92802.682	0.03672	
27	6	22	27	5	23	92823.283	0.04307	
27	6	22	27	4	23	92824.512	0.01967	
34	9	25	34	8	26	92945.217	0.00483	
32	9	24	32	8	25	93243.081	0.01464	
13	12	1	12	12	0	93272.695	0.00992	0.5
13	12	2	12	12	1	93272.695	0.00992	0.5
32	9	24	32	7	25	93324.403	0.02275	
40	14	27	40	13	28	93376.311	0.0015	

13	11	2	12	11	1	93392.593	0.01097	0.5
13	11	3	12	11	2	93392.593	0.01101	0.5
13	10	3	12	10	2	93551.213	0.00172	0.5
13	10	4	12	10	3	93551.213	0.00464	0.5
13	9	5	12	9	4	93768.222	0.07508	0.5
13	9	4	12	9	3	93768.222	-0.05627	0.5
39	13	27	39	12	28	93854.547	-0.03377	
13	8	6	12	8	5	94076.875	0.03144	
13	8	5	12	8	4	94080.641	-0.01342	
37	12	26	37	10	27	94159.954	-0.03036	
10	3	7	9	2	7	94515.793	0.04745	
13	7	7	12	7	6	94519.340	0.0082	
13	7	6	12	7	5	94589.748	0.01864	
14	2	12	13	3	11	94612.581	0.01666	
34	10	25	34	8	26	94683.723	-0.01799	
13	5	9	12	5	8	94731.775	-0.00892	
14	3	12	13	3	11	94768.365	0.02877	
29	6	23	29	6	24	94804.500	-0.02292	
29	7	23	29	5	24	94872.360	-0.00336	
14	2	12	13	2	11	94950.096	-0.00224	
13	6	8	12	6	7	94990.888	-0.0021	
13	3	10	12	3	9	95008.772	0.01047	
14	3	12	13	2	11	95105.849	-0.02212	
32	14	19	32	13	20	95316.024	0.00021	
10	4	6	9	3	6	95569.694	0.00502	
36	11	26	36	10	27	95579.006	0.04574	
22	1	21	22	1	22	95713.017	0.02654	0.3449
22	1	21	22	0	22	95713.017	0.02651	0.1551
22	2	21	22	0	22	95713.017	0.02322	0.3449
22	2	21	22	1	22	95713.017	0.02326	0.1551
13	6	7	12	6	6	95758.301	0.01136	
20	13	8	20	12	8	96028.224	0.06801	0.2081
20	13	7	20	12	8	96028.224	0.06388	0.2919
20	13	8	20	12	9	96028.224	-0.05328	0.2919
20	13	7	20	12	9	96028.224	-0.05741	0.2081
41	14	28	41	13	29	96042.119	-0.03168	
36	11	26	36	9	27	96062.428	0.01928	
15	1	14	14	2	13	96185.031	0.03406	
15	2	14	14	2	13	96187.562	0.03254	
15	1	14	14	1	13	96191.283	0.01226	
15	2	14	14	1	13	96193.818	0.01536	
19	13	7	19	12	8	96379.006	-0.00465	
31	7	24	31	7	25	96481.337	-0.03353	
31	7	24	31	6	25	96495.112	0.04464	
31	8	24	31	7	25	96648.997	-0.00719	
31	8	24	31	6	25	96662.751	0.05057	
18	13	6	18	12	7	96676.811	0.00891	
17	13	5	17	12	6	96928.064	0.02856	
16	13	4	16	12	5	97138.394	-0.00211	
15	13	3	15	12	4	97312.952	-0.02304	
14	13	2	14	12	3	97456.310	-0.04672	
28	5	23	28	5	24	97488.793	0.01531	
28	6	23	28	4	24	97499.207	0.02803	
16	0	16	15	1	15	97616.797	0.01149	0.0467
16	1	16	15	1	15	97616.797	-0.0027	0.4533
16	0	16	15	0	15	97616.797	-0.02703	0.4533
16	1	16	15	0	15	97616.797	-0.04122	0.0467
38	12	27	38	10	28	97732.988	-0.01008	
33	8	25	33	8	26	97759.317	-0.00685	
40	13	28	40	12	29	97897.729	0.01019	
33	9	25	33	7	26	98206.859	-0.01354	
13	5	8	12	5	7	98502.918	0.02162	
35	9	26	35	9	27	98513.960	0.00915	
37	10	27	37	10	28	98538.812	0.05854	
37	15	23	37	14	24	98573.766	-0.01676	
37	10	27	37	9	28	98784.866	0.00333	
24	2	22	24	2	23	98785.981	0.02589	0.3403
24	2	22	24	1	23	98785.981	0.02543	0.1597
24	3	22	24	1	23	98785.981	0.00156	0.3403
24	3	22	24	2	23	98785.981	0.00202	0.1597
14	4	11	13	4	10	98957.809	0.00289	
13	4	9	12	4	8	99378.058	0.01452	
35	10	26	35	9	27	99442.768	0.00428	
32	17	15	31	18	14	99454.049	-0.00536	
42	14	29	42	13	30	99470.060	-0.01111	
35	10	26	35	8	27	99543.906	-0.00148	
30	6	24	30	6	25	99586.849	0.01625	
30	6	24	30	5	25	99588.808	0.04245	
30	7	24	30	6	25	99616.553	0.00873	
30	7	24	30	5	25	99618.440	-0.03746	
9	5	5	8	4	5	99875.455	-0.02616	
23	1	22	23	1	23	100230.753	0.01048	0.3444
23	2	22	23	0	23	100230.753	0.00924	0.3444
23	2	22	23	1	23	100230.753	0.00925	0.1556
23	1	22	23	0	23	100230.753	0.01047	0.1556
14	13	1	13	13	0	100435.499	0.01686	0.5
14	13	2	13	13	1	100435.499	0.01686	0.5
37	11	27	37	10	28	100516.250	0.02148	
14	3	11	13	3	10	100539.106	0.00552	
14	12	2	13	12	1	100551.831	0.01376	0.5
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27	14	13	27	13	14	100658.379	0.01437	
14	11	3	13	11	2	100701.968	-0.00171	0.5
14	11	4	13	11	3	100701.968	-0.00139	0.5
15	3	13	14	3	12	100745.891	-0.01035	
37	11	27	37	9	28	100762.373	0.03493	
15	2	13	14	2	12	100831.844	-0.02179	
14	10	4	13	10	3	100901.163	0.01747	0.5
14	10	5	13	10	4	100901.163	0.0339	0.5
32	7	25	32	7	26	101399.825	-0.01852	
32	7	25	32	6	26	101406.049	-0.01897	
35	15	21	35	14	22	101414.977	-0.0052	
32	8	25	32	7	26	101481.147	-0.01051	
32	8	25	32	6	26	101487.363	-0.01898	
14	8	7	13	8	6	101563.403	-0.00101	
14	8	6	13	8	5	101576.174	-0.01253	
26	3	23	26	3	24	101661.691	0.06227	0.3368
26	3	23	26	2	24	101661.691	0.05864	0.1632
26	4	23	26	3	24	101661.691	-0.06314	0.1632
26	4	23	26	2	24	101661.691	-0.06677	0.3368
14	5	10	13	5	9	101737.200	0.00446	
39	12	28	39	10	29	102030.668	0.02526	
14	7	8	13	7	7	102093.718	-0.02065	
16	1	15	15	1	14	102144.393	0.0367	
14	7	7	13	7	6	102280.696	-0.00156	
14	4	11	13	3	10	102484.607	-0.04255	
14	6	9	13	6	8	102493.466	0.0087	
34	8	26	34	8	27	102881.248	0.01728	
34	8	26	34	7	27	102899.402	-0.01128	
34	9	26	34	8	27	103086.605	0.02729	
34	9	26	34	7	27	103104.720	-0.04036	
11	4	7	10	3	7	103312.449	-0.02325	
25	2	23	25	2	24	103316.663	0.0158	0.3414
25	2	23	25	1	24	103316.663	0.01563	0.1586
25	3	23	25	1	24	103316.663	0.00629	0.3414
25	3	23	25	2	24	103316.663	0.00646	0.1586
17	0	17	16	1	16	103573.500	0.01604	0.047
17	1	17	16	1	16	103573.500	0.01085	0.453
17	0	17	16	0	16	103573.500	0.00185	0.453
17	1	17	16	0	16	103573.500	-0.00334	0.047
21	14	7	21	13	8	103930.550	0.00984	0.2905
21	14	8	21	13	8	103930.550	0.01037	0.2095
21	14	8	21	13	9	103930.550	-0.00674	0.2905
21	14	7	21	13	9	103930.550	-0.00726	0.2095
36	9	27	36	9	28	103952.009	0.00202	
36	9	27	36	8	28	104000.954	-0.01228	
14	6	8	13	6	7	104049.795	0.01771	
20	14	6	20	13	7	104250.260	0.00628	0.2882
20	14	7	20	13	8	104250.260	0.00226	0.2882
20	14	6	20	13	8	104250.260	0.00215	0.2118
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31	6	25	31	6	26	104328.097	-0.03508	
31	7	25	31	5	26	104342.671	0.00243	
36	10	27	36	9	28	104435.486	0.02995	
38	10	28	38	10	29	104478.624	0.04411	
36	10	27	36	8	28	104484.395	-0.01941	
24	1	23	24	1	24	104747.969	-0.00868	0.3448
24	2	23	24	0	24	104747.969	-0.00915	0.3448
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18	14	4	18	13	5	104757.699	-0.00292	0.2845
18	14	5	18	13	5	104757.699	-0.00292	0.2155
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17	14	3	17	13	4	104955.211	-0.0097	0.2827
17	14	4	17	13	4	104955.211	-0.0097	0.2173
17	14	3	17	13	5	104955.211	-0.00973	0.2173
17	14	4	17	13	5	104955.211	-0.00973	0.2827
15	4	12	14	4	11	105148.629	0.00507	
11	3	8	10	2	8	105463.372	0.01067	
38	11	28	38	10	29	105546.921	0.01296	
38	11	28	38	9	29	105669.819	0.02631	
15	3	12	14	3	11	106084.159	0.00544	
14	4	10	13	4	9	106181.146	0.01311	
27	3	24	27	3	25	106214.777	0.03845	0.3373
27	3	24	27	2	25	106214.777	0.03705	0.1627
27	4	24	27	3	25	106214.777	-0.01246	0.1627
27	4	24	27	2	25	106214.777	-0.01386	0.3373
33	7	26	33	7	27	106247.685	-0.0306	
33	7	26	33	6	27	106250.486	-0.02091	
33	8	26	33	7	27	106286.501	0.03139	
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16	2	14	15	3	13	106675.840	0.00547	
16	3	14	15	3	13	106706.383	0.0088	
16	2	14	15	2	13	106745.659	0.01711	
40	12	29	40	10	30	106756.477	0.03924	
16	3	14	15	2	13	106776.156	-0.02606	
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15	14	1	14	14	0	107597.708	0.01613	0.5
15	14	2	14	14	1	107597.708	0.01613	0.5
15	13	2	14	13	1	107711.127	0.01415	0.5
15	13	3	14	13	2	107711.127	0.01415	0.5
26	2	24	26	2	25	107845.433	0.00933	0.3413
26	2	24	26	1	25	107845.433	0.00927	0.1587
26	3	24	26	1	25	107845.433	0.00564	0.3413
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15	12	3	14	12	2	107854.491	-0.0043	0.5

15	12	4	14	12	3	107854.491	-0.00426	0.5
35	8	27	35	8	28	107879.981	0.01885	
15	11	4	14	11	3	108039.963	0.02374	0.5
15	11	5	14	11	4	108039.963	0.02569	0.5
17	1	16	16	1	15	108098.256	-0.03296	
8	7	2	7	6	1	108160.735	0.23756	0.232
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15	10	5	14	10	4	108286.712	-0.04443	0.5
15	10	6	14	10	5	108286.712	0.03256	0.5
15	5	11	14	5	10	108523.339	-0.00867	
29	4	25	29	4	26	108920.357	0.12917	0.3335
29	4	25	29	3	26	108920.357	0.12098	0.1665
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29	5	25	29	3	26	108920.357	-0.10276	0.3335
32	7	26	32	5	27	109045.565	0.0045	
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37	9	28	37	9	29	109174.023	-0.00293	
25	1	24	25	1	25	109264.800	0.00999	0.3453
25	2	24	25	0	25	109264.800	0.00982	0.3453
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37	10	28	37	9	29	109420.169	0.03423	
37	10	28	37	8	29	109443.518	0.05066	
18	0	18	17	1	17	109529.652	0.00744	0.0473
18	1	18	17	1	17	109529.652	0.00555	0.4527
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15	7	9	14	7	8	109702.580	0.00157	
15	6	10	14	6	9	109899.969	-0.00253	
39	10	29	39	9	30	110104.941	0.00793	
15	7	8	14	7	7	110148.168	-0.01775	
41	11	30	41	11	31	110349.137	0.05953	
39	11	29	39	10	30	110607.239	0.05421	
25	15	11	25	14	11	110635.210	0.03905	0.2037
25	15	10	25	14	11	110635.210	0.03416	0.2963
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25	15	10	25	14	12	110635.210	-0.08181	0.2037
39	11	29	39	9	30	110667.546	0.04747	
28	3	25	28	3	26	110763.624	0.02582	0.3376
28	3	25	28	2	26	110763.624	0.02528	0.1624
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34	7	27	34	6	28	111046.961	-0.02843	
34	8	27	34	6	28	111065.172	0.00017	
24	15	9	24	14	10	111080.573	0.01854	0.2936
24	15	10	24	14	10	111080.573	0.01979	0.2064
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16	4	13	15	4	12	111230.969	0.01399	
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23	15	8	23	14	9	111470.128	0.01784	0.2913
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41	12	30	41	11	31	111563.120	0.02214	
41	12	30	41	10	31	111709.636	0.0327	
16	3	13	15	3	12	111740.463	0.00831	
22	15	7	22	14	8	111809.698	-0.01334	0.2891
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19	1	18	18	2	17	120006.446	0.07054	0.0432
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19	16	3	19	15	4	120569.286	-0.0483	0.2814
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33	5	28	33	5	29	120650.849	0.08367	0.3312
33	5	28	33	4	29	120650.849	0.07726	0.1688
33	6	28	33	5	29	120650.849	-0.07018	0.1688
33	6	28	33	4	29	120650.849	-0.07659	0.3312
20	1	20	19	1	19	121440.230	0.01983	0.4525
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17	16	1	16	16	0	121919.993	0.03886	0.5
17	16	2	16	16	1	121919.993	0.03886	0.5
17	15	2	16	15	1	122028.949	0.01482	0.5
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17	14	3	16	14	2	122162.258	0.02996	0.5
17	14	4	16	14	3	122162.258	0.02996	0.5
17	13	4	16	13	3	122328.002	-0.01175	0.5
17	13	5	16	13	4	122328.002	-0.01173	0.5
17	12	5	16	12	4	122538.380	0.00539	0.5
17	12	6	16	12	5	122538.380	0.00661	0.5
16	5	11	15	5	10	122582.302	0.01039	
32	4	28	32	4	29	122635.600	-0.01496	0.3351
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17	11	7	16	11	6	122811.992	0.03911	0.5
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28	1	27	28	1	28	122813.474	0.04982	0.3455
28	2	27	28	0	28	122813.474	0.04981	0.3455
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9	8	1	8	7	2	123143.438	-0.01636	0.233
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17	10	7	16	10	6	123180.048	0.03108	
13	5	8	12	4	8	123235.923	0.03251	
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17	4	13	16	4	12	123392.428	-0.01162	
17	9	9	16	9	8	123685.960	0.01149	
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17	6	12	16	6	11	124201.218	0.03827	
17	8	10	16	8	9	124354.281	0.01941	
31	3	28	31	3	29	124390.163	-0.00072	0.3392
31	4	28	31	3	29	124390.163	-0.002	0.1608
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19	2	17	18	3	16	124555.679	-0.01954	
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30	17	13	30	16	14	125092.457	0.07313	0.2989
30	17	14	30	16	14	125092.457	0.0778	0.2011
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37	7	30	37	7	31	125246.739	-0.0166	0.6484
37	7	30	37	6	31	125246.739	-0.11811	0.3516
34	5	29	34	5	30	125248.427	0.07673	0.2679
34	5	29	34	4	30	125248.427	0.07414	0.1358
34	6	29	34	5	30	125248.427	0.01179	0.1358
37	8	30	37	7	31	125248.427	-0.06203	0.1619
37	8	30	37	6	31	125248.427	-0.16354	0.2985
42	10	32	42	10	33	125589.179	-0.02705	
42	10	32	42	9	33	125595.791	0.0471	
29	17	12	29	16	13	125622.616	0.02121	0.2966
29	17	13	29	16	13	125622.616	0.02255	0.2034
29	17	13	29	16	14	125622.616	-0.00781	0.2966
29	17	12	29	16	14	125622.616	-0.00915	0.2034
20	1	19	19	2	18	125960.299	0.03869	0.0435
20	2	19	19	2	18	125960.299	0.01582	0.4565
20	1	19	19	1	18	125960.299	-0.02103	0.4565
20	2	19	19	1	18	125960.299	-0.0439	0.0435
28	17	11	28	16	12	126095.639	-0.00233	0.2947
28	17	12	28	16	13	126095.639	-0.01107	0.2947
28	17	11	28	16	13	126095.639	-0.01143	0.2053
28	17	12	28	16	12	126095.639	-0.00197	0.2053
27	17	10	27	16	11	126516.910	-0.00077	0.2925
27	17	11	27	16	12	126516.910	-0.00324	0.2925
27	17	10	27	16	12	126516.910	-0.00333	0.2075
27	17	11	27	16	11	126516.910	-0.00068	0.2075
44	11	33	44	11	34	126720.963	0.03735	
17	7	10	16	7	9	126725.476	-0.00149	
26	17	9	26	16	10	126891.224	0.01194	0.2912
26	17	9	26	16	11	126891.224	0.01127	0.2088
26	17	10	26	16	11	126891.224	0.01129	0.2912
26	17	10	26	16	10	126891.224	0.01196	0.2088
33	4	29	33	4	30	127196.499	0.01424	0.3358
33	4	29	33	3	30	127196.499	0.01404	0.1642
33	5	29	33	4	30	127196.499	0.00783	0.1642
33	5	29	33	3	30	127196.499	0.00763	0.3358
25	17	8	25	16	9	127222.863	-0.00407	0.2892
25	17	9	25	16	9	127222.863	-0.00406	0.2108
25	17	8	25	16	10	127222.863	-0.00423	0.2108
25	17	9	25	16	10	127222.863	-0.00423	0.2892
29	1	28	29	1	29	127329.197	-0.02905	0.3458
29	2	28	29	0	29	127329.197	-0.02906	0.3458
29	2	28	29	1	29	127329.197	-0.02906	0.1542
29	1	28	29	0	29	127329.197	-0.02905	0.1542
12	6	6	11	5	6	127369.015	-0.01635	
21	1	21	20	1	20	127394.542	0.00152	0.4528
21	0	21	20	0	20	127394.542	0.00136	0.4528
21	1	21	20	0	20	127394.542	0.00127	0.0472
21	0	21	20	1	20	127394.542	0.00161	0.0472
24	17	7	24	16	8	127515.802	0.00504	0.2876
24	17	8	24	16	8	127515.802	0.00504	0.2124
24	17	7	24	16	9	127515.802	0.00501	0.2124
24	17	8	24	16	9	127515.802	0.00501	0.2876
18	5	14	17	5	13	127657.817	-0.00058	
36	6	30	36	6	31	127683.890	0.10333	0.3284
36	6	30	36	5	31	127683.890	0.09204	0.1716
36	7	30	36	6	31	127683.890	-0.13253	0.1716
36	7	30	36	5	31	127683.890	-0.14383	0.3284
23	17	6	23	16	7	127773.567	-0.00157	0.2858
23	17	6	23	16	8	127773.567	-0.00158	0.2142

23	17	7	23	16	7	127773.567	-0.00157	0.2142
23	17	7	23	16	8	127773.567	-0.00158	0.2858
38	18	21	38	17	21	127799.701	0.01238	
38	18	20	38	17	21	127801.231	0.05767	
38	18	21	38	17	22	127817.754	0.02585	
38	18	20	38	17	22	127819.274	0.06127	
22	17	5	22	16	6	127999.451	-0.00246	0.2841
22	17	5	22	16	7	127999.451	-0.00246	0.2159
22	17	6	22	16	6	127999.451	-0.00246	0.2159
22	17	6	22	16	7	127999.451	-0.00246	0.2841
21	17	4	21	16	5	128196.447	-0.00993	0.2829
21	17	4	21	16	6	128196.447	-0.00993	0.2171
21	17	5	21	16	5	128196.447	-0.00993	0.2171
21	17	5	21	16	6	128196.447	-0.00993	0.2829
20	17	3	20	16	4	128367.339	-0.01451	0.2814
20	17	3	20	16	5	128367.339	-0.01451	0.2186
20	17	4	20	16	4	128367.339	-0.01451	0.2186
20	17	4	20	16	5	128367.339	-0.01451	0.2814
18	17	1	18	16	2	128640.904	-0.01889	0.2783
18	17	1	18	16	3	128640.904	-0.01889	0.2217
18	17	2	18	16	2	128640.904	-0.01889	0.2217
18	17	2	18	16	3	128640.904	-0.01889	0.2783
18	4	14	17	4	13	128830.316	-0.01745	
32	3	29	32	3	30	128927.050	-0.00617	0.3396
32	4	29	32	2	30	128927.050	-0.00669	0.3396
32	4	29	32	3	30	128927.050	-0.00667	0.1604
32	3	29	32	2	30	128927.050	-0.00618	0.1604
12	6	7	11	5	7	129003.064	-0.02927	
41	9	32	41	9	33	129024.095	0.03383	
41	9	32	41	8	33	129025.110	-0.00877	
18	17	2	17	17	1	129079.854	0.0234	0.5
18	17	1	17	17	0	129079.854	0.0234	0.5
19	3	16	18	4	15	129118.567	0.05366	
19	4	16	18	4	15	129168.809	-0.00379	
18	16	2	17	16	1	129187.132	0.03045	0.5
18	16	3	17	16	2	129187.132	0.03045	0.5
19	3	16	18	3	15	129229.567	0.02685	
18	15	3	17	15	2	129316.595	0.03465	0.5
18	15	4	17	15	3	129316.595	0.03465	0.5
17	5	12	16	5	11	129359.860	0.02088	
18	14	4	17	14	3	129475.122	0.02088	0.5
18	14	5	17	14	4	129475.122	0.02088	0.5
18	13	5	17	13	4	129672.609	-0.01145	0.5
18	13	6	17	13	5	129672.609	-0.0113	0.5
35	5	30	35	5	31	129838.046	0.01884	0.3324
35	5	30	35	4	31	129838.046	0.0178	0.1676
35	6	30	35	5	31	129838.046	-0.00834	0.1676
35	6	30	35	4	31	129838.046	-0.00938	0.3324
18	12	6	17	12	5	129923.870	0.01049	0.5
18	12	7	17	12	6	129923.870	0.01624	0.5
38	7	31	38	6	32	129935.384	0.03908	
17	6	11	16	6	10	130110.142	0.01527	
18	11	8	17	11	7	130251.913	0.13123	0.5
18	11	7	17	11	6	130251.913	-0.03764	0.5
10	8	3	9	7	2	130297.008	0.23569	0.2276
10	8	2	9	7	2	130297.008	0.19495	0.2724
10	8	3	9	7	3	130297.008	-0.12748	0.2724
10	8	2	9	7	3	130297.008	-0.16822	0.2276
31	2	29	31	2	30	130468.799	-0.04139	0.3429
31	3	29	31	1	30	130468.799	-0.04142	0.3429
31	3	29	31	2	30	130468.799	-0.04142	0.1571
31	2	29	31	1	30	130468.799	-0.04139	0.1571
20	2	18	19	3	17	130505.990	-0.00269	
20	3	18	19	3	17	130506.947	0.0158	
20	2	18	19	2	17	130508.250	-0.03274	
43	10	33	43	10	34	130568.234	0.00785	
43	11	33	43	9	34	130606.919	0.01322	
18	10	9	17	10	8	130693.543	0.03225	
18	10	8	17	10	7	130697.131	0.01324	
14	5	9	13	4	9	130867.487	-0.02413	
9	9	0	8	8	0	130959.382	0.00541	0.2613
9	9	1	8	8	0	130959.382	0.00544	0.2387
9	9	0	8	8	1	130959.382	0.00514	0.2387
9	9	1	8	8	1	130959.382	0.00516	0.2613
25	9	16	24	10	14	130967.079	-0.03445	
18	6	13	17	6	12	131021.987	0.00133	
18	9	9	17	9	8	131354.157	-0.00177	
13	4	10	12	3	10	131440.792	0.01431	
34	4	30	34	4	31	131752.987	-0.02405	0.3363
34	4	30	34	3	31	131752.987	-0.02412	0.1637
34	5	30	34	4	31	131752.987	-0.02664	0.1637
34	5	30	34	3	31	131752.987	-0.02671	0.3363
49	20	29	49	19	30	131829.837	0.01484	
30	1	29	30	1	30	131844.856	-0.04585	0.3456
30	2	29	30	0	30	131844.856	-0.04586	0.3456
30	2	29	30	1	30	131844.856	-0.04586	0.1544
30	1	29	30	0	30	131844.856	-0.04585	0.1544
21	2	20	20	2	19	131913.672	-0.0115	0.4563
21	1	20	20	1	19	131913.672	-0.02567	0.4563
21	2	20	20	1	19	131913.672	-0.03437	0.0437
21	1	20	20	2	19	131913.672	-0.0028	0.0437
45	12	34	45	10	35	131943.744	-0.02852	
33	18	16	33	17	16	131965.551	0.07476	0.1989
33	18	15	33	17	16	131965.551	0.06699	0.3011
33	18	16	33	17	17	131965.551	-0.06925	0.3011
33	18	15	33	17	17	131965.551	-0.07702	0.1989
18	8	11	17	8	10	132031.515	0.00952	
37	6	31	37	6	32	132310.187	0.0521	0.3293
37	6	31	37	5	32	132310.187	0.04745	0.1707
37	7	31	37	6	32	132310.187	-0.04941	0.1707
37	7	31	37	5	32	132310.187	-0.05407	0.3293
18	7	12	17	7	11	132337.066	-0.00364	
32	18	14	32	17	15	132565.630	0.05831	0.2992
32	18	15	32	17	15	132565.630	0.06068	0.2008
32	18	15	32	17	16	132565.630	0.01243	0.2992
32	18	14	32	17	16	132565.630	0.01006	0.2008
18	8	10	17	8	9	132590.757	-0.00725	
42	19	23	42	18	24	132961.589	-0.01453	
19	4	15	18	5	14	133064.717	0.0269	
31	18	13	31	17	14	133105.385	0.02354	0.2973
31	18	14	31	17	14	133105.385	0.02423	0.2027
31	18	14	31	17	15	133105.385	0.00883	0.2973
31	18	13	31	17	15	133105.385	0.00815	0.2027
13	6	7	12	5	7	133246.101	0.00394	
22	0	22	21	0	21	133348.196	0.00688	0.4527
22	1	22	21	0	21	133348.196	0.00685	0.0473
22	1	22	21	1	21	133348.196	0.00693	0.4527
22	0	22	21	1	21	133348.196	0.00697	0.0473
33	3	30	33	3	31	133461.811	-0.01651	0.3395
33	4	30	33	3	31	133461.811	-0.01671	0.1605
33	4	30	33	2	31	133461.811	-0.01671	0.3395
33	3	30	33	2	31	133461.811	-0.01651	0.1605
14	4	10	13	3	10	133505.177	0.03676	
30	18	12	30	17	13	133590.362	0.02232	0.2952
30	18	13	30	17	13	133590.362	0.02251	0.2048
30	18	13	30	17	14	133590.362	0.01785	0.2952
30	18	12	30	17	14	133590.362	0.01766	0.2048
19	5	15	18	5	14	133743.718	-0.01422	
29	18	11	29	17	12	134025.414	0.02178	0.2932
29	18	11	29	17	13	134025.414	0.02045	0.2068
29	18	12	29	17	13	134025.414	0.0205	0.2932
29	18	12	29	17	12	134025.414	0.02183	0.2068
19	4	15	18	4	14	134398.985	-0.0113	
28	18	10	28	17	11	134414.915	0.01393	0.2916
28	18	11	28	17	11	134414.915	0.01394	0.2084
28	18	10	28	17	12	134414.915	0.01357	0.2084
28	18	11	28	17	12	134414.915	0.01358	0.2916
36	5	31	36	5	32	134420.789	0.00923	0.6664
36	5	31	36	4	32	134420.789	0.00881	0.3336
39	7	32	39	7	33	134607.255	0.21252	0.3258
39	7	32	39	6	33	134607.255	0.19418	0.1742
39	8	32	39	7	33	134607.255	-0.12948	0.1742
39	8	32	39	6	33	134607.255	-0.14782	0.3258
27	18	9	27	17	10	134762.818	-0.01286	0.2899
27	18	10	27	17	10	134762.818	-0.01286	0.2101
27	18	9	27	17	11	134762.818	-0.01295	0.2101
27	18	10	27	17	11	134762.818	-0.01295	0.2899
32	2	30	32	2	31	134990.609	0.00834	0.3428
32	3	30	32	1	31	134990.609	0.00833	0.3428
32	3	30	32	2	31	134990.609	0.00833	0.1572
32	2	30	32	1	31	134990.609	0.00834	0.1572
26	18	8	26	17	9	135072.779	-0.00679	0.2884
26	18	8	26	17	10	135072.779	-0.00681	0.2116
26	18	9	26	17	9	135072.779	-0.00679	0.2116
26	18	9	26	17	10	135072.779	-0.00681	0.2884
19	5	15	18	4	14	135078.040	0.00273	
20	4	17	19	4	16	135112.127	0.01582	
20	3	17	19	3	16	135140.099	0.0127	
20	4	17	19	3	16	135162.427	0.01694	
25	18	7	25	17	8	135348.074	0.01335	0.2867
25	18	7	25	17	9	135348.074	0.01335	0.2133
25	18	8	25	17	8	135348.074	0.01335	0.2133
25	18	8	25	17	9	135348.074	0.01335	0.2867
18	5	13	17	5	12	135437.218	0.04461	
18	7	11	17	7	10	135513.584	-0.00866	
24	18	6	24	17	7	135591.648	-0.03649	0.2851
24	18	6	24	17	8	135591.648	-0.0365	0.2149
24	18	7	24	17	7	135591.648	-0.03649	0.2149
24	18	7	24	17	8	135591.648	-0.0365	0.2851
23	18	5	23	17	6	135806.474	0.02442	0.2837
23	18	5	23	17	7	135806.474	0.02442	0.2163
23	18	6	23	17	6	135806.474	0.02442	0.2163
23	18	6	23	17	7	135806.474	0.02442	0.2837
22	18	4	22	17	5	135994.919	-0.02303	0.2825
22	18	4	22	17	6	135994.919	-0.02303	0.2175
22	18	5	22	17	5	135994.919	-0.02303	0.2175
22	18	5	22	17	6	135994.919	-0.02303	0.2825
19	18	1	18	18	0	136238.774	0.01226	0.5
19	18	2	18	18	1	136238.774	0.01226	0.5
35	4	31	35	3	32	136305.688	-0.01702	0.1633
35	4	31	35	4	32	136305.688	-0.01699	0.3367
35	5	31	35	3	32	136305.688	-0.01806	0.3367
35	5	31	35	4	32	136305.688	-0.01803	0.1633
19	17	2	18	17	1	136344.573	-0.01047	0.5
19	17	3	18	17	2	136344.573	-0.01047	0.5
12	7	5	11	6	5	136466.309	-0.00576	
19	16	3	18	16	2	136470.790	-0.00186	0.5
19	16	4	18	16	3	136470.790	-0.00186	0.5
19	14	5	18	14	4	136810.255	-0.02751	0.5
19	14	6	18	14	5	136810.255	-0.0275	0.5

38	6	32	38	6	33	136926.208	-0.00918	0.3301
38	6	32	38	5	33	136926.208	-0.01109	0.1699
38	7	32	38	5	33	136926.208	-0.05441	0.3301
38	7	32	38	6	33	136926.208	-0.0525	0.1699
36	14	23	36	12	24	137043.726	0.04633	0.0224
19	13	6	18	13	5	137043.726	-0.00094	0.4888
19	13	7	18	13	6	137043.726	-0.00021	0.4888
19	12	8	18	12	7	137341.576	0.05838	0.5
19	12	7	18	12	6	137341.576	0.03438	0.5
19	6	14	18	6	13	137612.239	-0.02279	
22	1	21	21	2	20	137866.599	0.03468	0.0439
22	2	21	21	2	20	137866.599	0.0314	0.4561
22	1	21	21	1	20	137866.599	0.02598	0.4561
22	2	21	21	1	20	137866.599	0.0227	0.0439
10	9	1	9	8	1	138123.034	0.02967	0.5317
10	9	2	9	8	1	138123.034	0.03011	0.4683
44	7	38	43	8	36	138134.578	-0.02889	0.5
44	6	38	43	7	36	138134.578	-0.04064	0.5
19	10	10	18	10	9	138259.361	0.03587	
19	10	9	18	10	8	138270.015	0.03907	
18	6	12	17	6	11	138293.333	-0.0349	
33	7	26	32	8	24	138524.836	-0.05793	
19	9	11	18	9	10	138967.526	0.00854	
37	5	32	37	5	33	138997.431	0.00391	0.3338
37	5	32	37	4	33	138997.431	0.00375	0.1662
37	6	32	37	5	33	138997.431	-0.00075	0.1662
37	6	32	37	4	33	138997.431	-0.00091	0.3338
19	9	10	18	9	9	139104.229	0.02988	
40	7	33	40	7	34	139264.330	0.08415	0.3269
40	7	33	40	6	34	139264.330	0.07644	0.1731
40	8	33	40	7	34	139264.330	-0.06563	0.1731
40	8	33	40	6	34	139264.330	-0.07334	0.3269
23	1	23	22	1	22	139301.161	0.04226	0.4526
23	0	23	22	0	22	139301.161	0.04223	0.4526
23	1	23	22	0	22	139301.161	0.04222	0.0474
23	0	23	22	1	22	139301.161	0.04227	0.0474
20	4	16	19	5	15	139419.188	0.01183	
35	19	17	35	18	17	139426.413	0.07067	0.1985
35	19	16	35	18	17	139426.413	0.06677	0.3015
35	19	17	35	18	18	139426.413	-0.00144	0.3015
35	19	16	35	18	18	139426.413	-0.00535	0.1985
33	2	31	33	2	32	139511.665	-0.00508	0.343
33	3	31	33	1	32	139511.665	-0.00509	0.343
33	3	31	33	2	32	139511.665	-0.00509	0.157
33	2	31	33	1	32	139511.665	-0.00508	0.157
19	7	13	18	7	12	139633.103	0.01593	
19	8	12	18	8	11	139703.736	-0.01495	
20	5	16	19	5	15	139752.747	0.00844	
15	5	10	14	4	10	139786.549	-0.00287	
46	25	22	45	26	19	139803.423	-0.00848	0.2696
46	25	22	45	26	20	139803.423	-0.00848	0.2304
46	25	21	45	26	19	139803.423	-0.00849	0.2304
46	25	21	45	26	20	139803.423	-0.00849	0.2696
34	19	15	34	18	16	140032.480	0.03772	0.2994
34	19	16	34	18	16	140032.480	0.03892	0.2006
34	19	16	34	18	17	140032.480	0.0147	0.2994
34	19	15	34	18	17	140032.480	0.0135	0.2006
14	3	11	13	2	11	140033.743	0.03692	
20	4	16	19	4	15	140098.250	0.03215	
33	19	14	33	18	15	140580.961	0.02433	0.2974
33	19	15	33	18	16	140580.961	0.01691	0.2974
33	19	14	33	18	16	140580.961	0.01656	0.2026
33	19	15	33	18	15	140580.961	0.02468	0.2026
19	8	11	18	8	10	140848.959	0.0308	
36	4	32	36	4	33	140854.991	-0.01127	0.3371
36	5	32	36	4	33	140854.991	-0.01168	0.1629
36	5	32	36	3	33	140854.991	-0.01169	0.3371
36	4	32	36	3	33	140854.991	-0.01128	0.1629
32	1	31	32	1	32	140875.982	-0.03558	0.3462
32	2	31	32	0	32	140875.982	-0.03558	0.3462
32	2	31	32	1	32	140875.982	-0.03558	0.1538
32	1	31	32	0	32	140875.982	-0.03558	0.1538
20	5	15	19	6	14	140910.890	-0.01664	
19	5	14	18	5	13	140978.434	-0.00136	
21	3	18	20	4	17	141042.532	-0.02288	
21	4	18	20	4	17	141052.249	-0.03929	
21	3	18	20	3	17	141064.863	-0.01537	
31	19	12	31	18	13	141524.471	-0.00707	0.294
31	19	13	31	18	13	141524.471	-0.00705	0.206
31	19	13	31	18	14	141524.471	-0.00773	0.294
31	19	12	31	18	14	141524.471	-0.00776	0.206
39	6	33	39	6	34	141533.249	-0.02726	0.3308
39	6	33	39	5	34	141533.249	-0.02804	0.1692
39	7	33	39	5	34	141533.249	-0.04638	0.3308
39	7	33	39	6	34	141533.249	-0.0456	0.1692
30	19	11	30	18	12	141927.985	-0.00423	0.292
30	19	12	30	18	12	141927.985	-0.00422	0.208
30	19	11	30	18	13	141927.985	-0.00442	0.208
30	19	12	30	18	13	141927.985	-0.00441	0.292
29	19	10	29	18	11	142290.977	0.00106	0.2904
29	19	10	29	18	12	142290.977	0.00101	0.2096
29	19	11	29	18	11	142290.977	0.00106	0.2096
29	19	11	29	18	12	142290.977	0.00102	0.2904
22	2	20	21	3	19	142405.348	0.26931	0.0403
22	3	20	21	3	19	142405.348	0.11683	0.4597
22	2	20	21	2	19	142405.348	-0.11098	0.4597
22	3	20	21	2	19	142405.348	-0.26346	0.0403
17	6	12	16	5	11	142511.540	-0.01234	
35	3	32	35	3	33	142525.942	-0.02111	0.3403
35	4	32	35	2	33	142525.942	-0.02114	0.3403
35	4	32	35	3	33	142525.942	-0.02114	0.1597
35	3	32	35	2	33	142525.942	-0.02111	0.1597
28	19	9	28	18	10	142616.752	-0.01346	0.2888
28	19	9	28	18	11	142616.752	-0.01347	0.2112
28	19	10	28	18	10	142616.752	-0.01346	0.2112
28	19	10	28	18	11	142616.752	-0.01347	0.2888
26	19	7	26	18	8	143168.745	0.02108	0.2144
26	19	7	26	18	9	143168.745	0.02108	0.1604
26	19	8	26	18	8	143168.745	0.02108	0.1604
26	19	8	26	18	9	143168.745	0.02108	0.2144
13	7	7	12	6	6	143168.745	-0.20404	0.2504
13	7	6	12	6	6	143271.658	-0.01266	
14	2	12	13	1	12	143388.841	-0.02442	
20	19	1	19	19	0	143396.708	0.03738	0.5
20	19	2	19	19	1	143396.708	0.03738	0.5
25	19	6	25	18	7	143400.289	-0.01712	0.2843
25	19	6	25	18	8	143400.289	-0.01712	0.2157
25	19	7	25	18	7	143400.289	-0.01712	0.2157
25	19	7	25	18	8	143400.289	-0.01712	0.2843
20	18	2	19	18	1	143501.275	0.01634	0.5
20	18	3	19	18	2	143501.275	0.01634	0.5
38	5	33	38	5	34	143568.659	-0.00277	0.3343
38	5	33	38	4	34	143568.659	-0.00283	0.1657
38	6	33	38	5	34	143568.659	-0.00468	0.1657
38	6	33	38	4	34	143568.659	-0.00474	0.3343
24	19	5	24	18	6	143605.568	-0.00409	0.2832
24	19	5	24	18	7	143605.568	-0.00409	0.2168
24	19	6	24	18	6	143605.568	-0.00409	0.2168
24	19	6	24	18	7	143605.568	-0.00409	0.2832
13	7	7	12	6	7	143687.354	0.04116	
20	16	4	19	16	3	143772.090	0.04096	
23	19	4	23	18	5	143786.813	0.04424	0.2818
23	19	4	23	18	6	143786.813	0.04424	0.2182
23	19	5	23	18	5	143786.813	0.04424	0.2182
23	19	5	23	18	6	143786.813	0.04424	0.2818
23	2	22	22	2	21	143818.880	0.01187	0.4559
23	1	22	22	1	21	143818.880	0.00982	0.4559
23	2	22	22	1	21	143818.880	0.00858	0.0441
23	1	22	22	2	21	143818.880	0.0131	0.0441
41	7	34	41	7	35	143908.739	-0.00183	0.3276
41	7	34	41	6	35	143908.739	-0.00504	0.1724
41	8	34	41	6	35	143908.739	-0.07007	0.3276
41	8	34	41	7	35	143908.739	-0.06685	0.1724
20	15	5	19	15	4	143950.310	-0.00306	0.5
20	15	6	19	15	5	143950.310	-0.00306	0.5
20	6	15	19	6	14	143993.506	-0.03728	
34	2	32	34	2	33	144032.127	-0.0109	0.3432
34	3	32	34	1	33	144032.127	-0.0109	0.3432
34	3	32	34	2	33	144032.127	-0.0109	0.1568
34	2	32	34	1	33	144032.127	-0.0109	0.1568
20	14	6	19	14	5	144169.329	0.03041	0.5
20	14	7	19	14	6	144169.329	0.0305	0.5
14	6	9	13	5	9	144222.069	0.01562	
20	13	7	19	13	6	144443.284	-0.01836	0.5
20	13	8	19	13	7	144443.284	-0.01512	0.5
19	7	12	18	7	11	144462.084	-0.01989	
20	12	9	19	12	8	144794.064	0.03179	0.5
20	12	8	19	12	7	144794.064	-0.05827	0.5
46	10	36	46	10	37	145204.185	0.09209	0.6339
46	10	36	46	9	37	145204.185	-0.19541	0.3661
46	11	36	46	9	37	145208.234	-0.00984	
24	0	24	23	0	23	145253.298	0.00348	0.4525
24	0	24	23	1	23	145253.298	0.0035	0.0475
24	1	24	23	0	23	145253.298	0.00348	0.0475
24	1	24	23	1	23	145253.298	0.00349	0.4525
20	11	10	19	11	9	145255.965	0.04941	
20	11	9	19	11	8	145257.809	0.0104	
11	9	3	10	8	2	145279.349	0.01997	0.2292
11	9	2	10	8	2	145279.349	0.01563	0.2708
11	9	3	10	8	3	145279.349	-0.02076	0.2708
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15	4	11	14	3	11	145298.747	0.00546	
41	20	22	40	21	19	145316.158	0.04277	0.5321
41	20	22	40	21	20	145316.158	0.03977	0.4679
33	1	32	33	1	33	145391.506	-0.01543	0.3457
33	2	32	33	0	33	145391.506	-0.01544	0.3457
33	2	32	33	1	33	145391.506	-0.01544	0.1543
33	1	32	33	0	33	145391.506	-0.01543	0.1543
37	4	33	37	4	34	145401.295	0.0224	0.3374
37	5	33	37	3	34	145401.295	0.02223	0.3374
37	5	33	37	4	34	145401.295	0.02223	0.1626
37	4	33	37	3	34	145401.295	0.02239	0.1626
39	20	20	39	19	20	145472.001	0.14328	0.1943
39	20	19	39	19	20	145472.001	0.12538	0.3057
39	20	20	39	19	21	145472.001	-0.13857	0.3057
39	20	19	39	19	21	145472.001	-0.15647	0.1943
21	4	17	20	5	16	145557.648	0.01185	
21	5	17	20	5	16	145716.833	-0.01268	
19	6	13	18	6	12	145808.489	-0.03052	
20	10	11	19	10	10	145879.909	0.02067	

21	4	17	20	4	16	145891.213	0.01504	
20	10	10	19	10	9	145908.867	-0.03269	
10	10	0	9	9	0	145935.743	0.01887	0.2612
10	10	1	9	9	0	145935.743	0.01887	0.2388
10	10	0	9	9	1	145935.743	0.01884	0.2388
10	10	1	9	9	1	145935.743	0.01884	0.2612
43	8	35	43	8	36	146118.442	0.09052	0.3246
43	8	35	43	7	36	146118.442	0.07854	0.1754
43	9	35	43	7	36	146118.442	-0.13272	0.3246
43	9	35	43	8	36	146118.442	-0.12075	0.1754
65	21	45	65	20	46	146132.347	0.30726	0.0845
40	6	34	40	6	35	146132.347	-0.00532	0.3033
40	6	34	40	5	35	146132.347	-0.00564	0.1544
40	7	34	40	6	35	146132.347	-0.01303	0.1544
40	7	34	40	5	35	146132.347	-0.01335	0.3033
38	20	18	38	19	19	146209.616	0.08063	0.3035
38	20	19	38	19	19	146209.616	0.08667	0.1965
38	20	19	38	19	20	146209.616	-0.016	0.3035
38	20	18	38	19	20	146209.616	-0.02203	0.1965
20	5	15	19	5	14	146281.270	0.01174	
20	9	12	19	9	11	146681.171	-0.00277	
20	7	14	19	7	13	146718.445	-0.00106	
37	20	18	37	19	18	146881.334	0.04007	0.1987
37	20	17	37	19	18	146881.334	0.03811	0.3013
37	20	18	37	19	19	146881.334	0.00408	0.3013
37	20	17	37	19	19	146881.334	0.00213	0.1987
22	3	19	21	4	18	146987.860	-0.02894	
22	4	19	21	4	18	146992.081	0.01338	
20	9	11	19	9	10	146996.462	0.00603	
22	3	19	21	3	18	146997.617	-0.00517	
22	4	19	21	3	18	147001.786	-0.01376	
36	3	33	36	3	34	147055.742	0.01912	0.3404
36	4	33	36	2	34	147055.742	0.0191	0.3404
36	4	33	36	3	34	147055.742	0.0191	0.1596
36	3	33	36	2	34	147055.742	0.01912	0.1596
20	8	13	19	8	12	147321.936	0.03717	
36	20	16	36	19	17	147492.898	0.03177	0.2996
36	20	17	36	19	17	147492.898	0.03238	0.2004
36	20	17	36	19	18	147492.898	0.02027	0.2996
36	20	16	36	19	18	147492.898	0.01966	0.2004
35	20	15	35	19	16	148049.333	0.02685	0.2977
35	20	16	35	19	17	148049.333	0.02312	0.2977
35	20	15	35	19	17	148049.333	0.02294	0.2023
35	20	16	35	19	16	148049.333	0.02703	0.2023
23	2	21	22	3	20	148354.446	0.08842	0.0408
23	3	21	22	3	20	148354.446	0.02784	0.4592
23	2	21	22	2	20	148354.446	-0.06406	0.4592
23	3	21	22	2	20	148354.446	-0.12464	0.0408
42	7	35	42	7	36	148542.045	0.01132	0.3283
42	7	35	42	6	36	148542.045	0.00998	0.1717
42	8	35	42	7	36	148542.045	-0.01669	0.1717
42	8	35	42	6	36	148542.045	-0.01802	0.3283
35	2	33	35	1	34	148552.092	0.01019	0.1568
35	2	33	35	2	34	148552.092	0.01019	0.3432
35	3	33	35	1	34	148552.092	0.01019	0.3432
35	3	33	35	2	34	148552.092	0.01019	0.1568
34	20	15	34	19	15	148555.172	0.03605	0.204
34	20	14	34	19	15	148555.172	0.036	0.296
34	20	15	34	19	16	148555.172	0.03485	0.296
34	20	14	34	19	16	148555.172	0.0348	0.204
33	20	13	33	19	14	149014.399	-0.02709	0.2943
33	20	14	33	19	14	149014.399	-0.02708	0.2057
33	20	13	33	19	15	149014.399	-0.02744	0.2057
33	20	14	33	19	15	149014.399	-0.02743	0.2943
52	13	39	52	13	40	149291.728	0.03675	
32	20	12	32	19	13	149430.904	0.03777	0.2926
32	20	13	32	19	13	149430.904	0.03777	0.2074
32	20	12	32	19	14	149430.904	0.03767	0.2074
32	20	13	32	19	14	149430.904	0.03767	0.2926
20	8	12	19	8	11	149453.562	-0.01409	
24	1	23	23	2	22	149770.558	0.02954	0.0445
24	2	23	23	2	22	149770.558	0.02908	0.4555
24	1	23	23	1	22	149770.558	0.02831	0.4555
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31	20	11	31	19	12	149807.784	-0.03626	0.2911
31	20	11	31	19	13	149807.784	-0.03629	0.2089
31	20	12	31	19	12	149807.784	-0.03626	0.2089
31	20	12	31	19	13	149807.784	-0.03629	0.2911
38	4	34	38	3	35	149944.801	-0.03842	0.1621
38	4	34	38	4	35	149944.801	-0.03842	0.3379
38	5	34	38	3	35	149944.801	-0.03849	0.3379
38	5	34	38	4	35	149944.801	-0.03848	0.1621
16	5	11	15	4	11	150036.140	-0.00215	
30	20	10	30	19	11	150148.338	-0.02885	0.2895
30	20	10	30	19	12	150148.338	-0.02886	0.2105
30	20	11	30	19	11	150148.338	-0.02885	0.2105
30	20	11	30	19	12	150148.338	-0.02886	0.2895
54	31	23	53	32	21	150325.981	0.00424	0.2295
54	31	23	53	32	22	150325.981	0.00424	0.2705
54	31	24	53	32	21	150325.981	0.00424	0.2705
54	31	24	53	32	22	150325.981	0.00424	0.2295
29	20	9	29	19	10	150455.356	0.0138	0.2881
29	20	9	29	19	11	150455.356	0.0138	0.2119
29	20	10	29	19	10	150455.356	0.0138	0.2119
29	20	10	29	19	11	150455.356	0.0138	0.2881
21	20	1	20	20	0	150553.502	0.02177	0.5
21	20	2	20	20	1	150553.502	0.02177	0.5
21	19	2	20	19	1	150657.058	0.03962	0.5
21	19	3	20	19	2	150657.058	0.03962	0.5
15	5	11	14	4	11	150686.599	0.00993	
21	18	3	20	18	2	150778.049	-0.01047	0.5
21	18	4	20	18	3	150778.049	-0.01047	0.5
14	7	8	13	6	8	150790.183	0.02189	
44	8	36	44	8	37	150792.929	0.0814	0.3255
44	8	36	44	7	37	150792.929	0.07631	0.1745
44	9	36	44	8	37	150792.929	-0.01177	0.1745
44	9	36	44	7	37	150792.929	-0.01686	0.3255
16	6	10	15	5	10	150816.589	-0.04275	
21	17	4	20	17	3	150921.093	0.04994	0.5
21	17	5	20	17	4	150921.093	0.04994	0.5
21	16	5	20	16	4	151091.913	-0.02746	0.5
21	16	6	20	16	5	151091.913	-0.02746	0.5
26	20	6	26	19	7	151200.131	0.03547	0.2838
26	20	6	26	19	8	151200.131	0.03547	0.2162
26	20	7	26	19	7	151200.131	0.03547	0.2162
26	20	7	26	19	8	151200.131	0.03547	0.2838
21	15	6	20	15	5	151299.020	0.04905	0.5
21	15	7	20	15	6	151299.020	0.04906	0.5
25	20	5	25	19	6	151397.172	0.00156	0.2828
25	20	5	25	19	7	151397.172	0.00156	0.2172
25	20	6	25	19	6	151397.172	0.00156	0.2172
25	20	6	25	19	7	151397.172	0.00156	0.2828
51	22	29	51	21	30	151478.930	-0.01988	
66	19	47	65	22	43	151553.779	-0.25541	0.0002
21	14	8	20	14	7	151553.779	-0.00096	0.4999
21	14	7	20	14	6	151553.779	-0.00138	0.4999
24	20	4	24	19	5	151572.050	-0.01114	0.2818
24	20	4	24	19	6	151572.050	-0.01114	0.2182
24	20	5	24	19	5	151572.050	-0.01114	0.2182
24	20	5	24	19	6	151572.050	-0.01114	0.2818
37	3	34	37	2	35	151584.154	-0.01231	0.1594
37	3	34	37	3	35	151584.154	-0.01231	0.3406
37	4	34	37	2	35	151584.154	-0.01232	0.3406
37	4	34	37	3	35	151584.154	-0.01232	0.1594
21	5	16	20	5	15	151612.555	-0.01587	
13	8	6	12	7	6	151626.762	0.02202	
22	5	18	21	5	17	151657.804	-0.00567	
22	4	18	21	4	17	151742.836	0.00042	
22	5	18	21	4	17	151816.991	-0.02845	
22	20	2	22	19	3	151862.542	-0.02171	0.2791
22	20	2	22	19	4	151862.542	-0.02171	0.2209
22	20	3	22	19	3	151862.542	-0.02171	0.2209
22	20	3	22	19	4	151862.542	-0.02171	0.2791
21	13	9	20	13	8	151873.451	-0.02895	0.5
21	13	8	20	13	7	151873.451	-0.04192	0.5
42	21	22	42	20	22	152114.532	0.21818	0.1925
42	21	21	42	20	22	152114.532	0.19285	0.3075
42	21	22	42	20	23	152114.532	-0.15511	0.3075
42	21	21	42	20	23	152114.532	-0.18044	0.1925
57	23	34	57	22	36	152255.050	0.04815	
21	12	10	20	12	9	152284.512	0.14473	0.4962
46	8	39	45	9	37	152284.512	0.08099	0.0038
46	7	39	45	8	37	152284.512	0.04113	0.0038
21	12	9	20	12	8	152284.512	-0.16367	0.4962
15	6	10	14	5	10	152384.830	0.0015	
12	9	4	11	8	3	152422.869	0.14738	0.2243
12	9	3	11	8	3	152422.869	0.11746	0.2757
12	9	4	11	8	4	152422.869	-0.10611	0.2757
12	9	3	11	8	4	152422.869	-0.13602	0.2243
40	13	27	40	12	29	152559.308	0.03188	
20	6	14	19	6	13	152560.045	0.0032	
40	5	35	40	4	36	152697.151	-0.02109	0.165
40	5	35	40	5	36	152697.151	-0.02108	0.335
40	6	35	40	4	36	152697.151	-0.0214	0.335
40	6	35	40	5	36	152697.151	-0.02139	0.165
21	11	11	20	11	10	152827.946	0.02831	
21	11	10	20	11	9	152833.442	-0.01851	
41	21	20	41	20	21	152919.533	0.1105	0.5
41	21	21	41	20	22	152919.533	-0.02113	0.5
23	4	20	22	4	19	152932.486	0.00346	
23	3	20	22	3	19	152934.868	-0.0238	
23	4	20	22	3	19	152936.671	0.01018	
36	2	34	36	1	35	153071.565	-0.00822	0.1566
36	2	34	36	2	35	153071.565	-0.00822	0.3434
36	3	34	36	1	35	153071.565	-0.00822	0.3434
36	3	34	36	2	35	153071.565	-0.00822	0.1566
11	10	1	10	9	1	153099.487	0.02316	0.2655
11	10	2	10	9	1	153099.487	0.0232	0.2345
11	10	1	10	9	2	153099.487	0.02272	0.2345
11	10	2	10	9	2	153099.487	0.02276	0.2655
43	7	36	43	7	37	153165.375	-0.01049	0.3291
43	7	36	43	6	37	153165.375	-0.01104	0.1709
43	8	36	43	7	37	153165.375	-0.02246	0.1709
43	8	36	43	6	37	153165.375	-0.02301	0.3291
20	7	13	19	7	12	153237.613	0.02778	
21	10	12	20	10	11	153556.752	0.02665	
21	7	15	20	7	14	153566.548	0.02225	
21	10	11	20	10	10	153630.092	-0.03375	
40	21	20	40	20	20	153656.126	0.06106	0.1964
40	21	19	40	20	20	153656.126	0.05806	0.3036

40	21	20	40	20	21	153656.126	0.00999	0.3036
40	21	19	40	20	21	153656.126	0.00699	0.1964
24	2	22	23	3	21	154303.485	0.06543	0.0413
24	3	22	23	3	21	154303.485	0.04156	0.4587
24	2	22	23	2	21	154303.485	0.00485	0.4587
24	3	22	23	2	21	154303.485	-0.01902	0.0413
39	21	19	39	20	19	154330.111	0.00878	0.1983
39	21	18	39	20	19	154330.111	0.00781	0.3017
39	21	19	39	20	20	154330.111	-0.00911	0.3017
39	21	18	39	20	20	154330.111	-0.01009	0.1983
21	9	13	20	9	12	154419.276	-0.03858	
39	4	35	39	3	36	154485.987	0.00614	0.1619
39	4	35	39	4	36	154485.987	0.00614	0.3381
39	5	35	39	3	36	154485.987	0.00612	0.3381
39	5	35	39	4	36	154485.987	0.00612	0.1619
21	8	14	20	8	13	154827.208	0.01248	
38	21	18	38	20	18	154946.703	0.02014	0.2001
38	21	17	38	20	18	154946.703	0.01984	0.2999
38	21	18	38	20	19	154946.703	0.01411	0.2999
38	21	17	38	20	19	154946.703	0.0138	0.2001
21	9	12	20	9	11	155093.235	0.01823	
15	7	9	14	6	8	155157.180	-0.01805	
42	6	36	42	5	37	155309.913	-0.03466	0.1675
42	6	36	42	6	37	155309.913	-0.03461	0.3325
42	7	36	42	6	37	155309.913	-0.03594	0.1675
42	7	36	42	5	37	155309.913	-0.036	0.3325
45	8	37	45	8	38	155453.936	0.02781	0.2645
45	8	37	45	7	38	155453.936	0.02567	0.1409
45	9	37	45	8	38	155453.936	-0.01294	0.1409
45	9	37	45	7	38	155453.936	-0.01509	0.2645
55	15	41	55	13	42	155453.936	-0.03222	0.1892
37	21	17	37	20	17	155510.438	0.03553	0.2019
37	21	16	37	20	17	155510.438	0.03544	0.2981
37	21	17	37	20	18	155510.438	0.03358	0.2981
37	21	16	37	20	18	155510.438	0.03349	0.2019
25	1	24	24	2	23	155721.534	0.03809	0.0445
25	2	24	24	2	23	155721.534	0.03792	0.4555
25	1	24	24	1	23	155721.534	0.03763	0.4555
25	2	24	24	1	23	155721.534	0.03746	0.0445
55	23	33	55	22	33	155752.925	-0.01503	
15	7	8	14	6	8	155892.491	0.00506	
36	21	15	36	20	16	156025.432	0.03837	0.2965
36	21	16	36	20	16	156025.432	0.0384	0.2035
36	21	15	36	20	17	156025.432	0.03776	0.2035
36	21	16	36	20	17	156025.432	0.03779	0.2965
22	6	17	21	6	16	156288.785	-0.04126	
35	21	14	35	20	15	156495.342	-0.05292	0.2947
35	21	15	35	20	15	156495.342	-0.05291	0.2053
35	21	14	35	20	16	156495.342	-0.0531	0.2053
35	21	15	35	20	16	156495.342	-0.05309	0.2947
34	21	13	34	20	14	156923.787	-0.02422	0.293
34	21	14	34	20	14	156923.787	-0.02422	0.207
34	21	13	34	20	15	156923.787	-0.02427	0.207
34	21	14	34	20	15	156923.787	-0.02427	0.293
22	5	17	21	5	16	157092.403	0.00048	
41	5	36	41	4	37	157255.384	-0.00922	0.1645
41	5	36	41	5	37	157255.384	-0.00921	0.3355
41	6	36	41	4	37	157255.384	-0.00934	0.3355
41	6	36	41	5	37	157255.384	-0.00934	0.1645
33	21	12	33	20	13	157313.744	-0.00831	0.2916
33	21	12	33	20	14	157313.744	-0.00832	0.2084
33	21	13	33	20	13	157313.744	-0.00831	0.2084
33	21	13	33	20	14	157313.744	-0.00832	0.2916
23	4	19	22	5	18	157554.860	0.01289	
47	9	38	47	9	39	157584.843	0.12636	0.3233
47	9	38	47	8	39	157584.843	0.11873	0.1767
47	10	38	47	9	39	157584.843	-0.00225	0.1767
47	10	38	47	8	39	157584.843	-0.00988	0.3233
23	5	19	22	5	18	157588.732	0.023	
37	2	35	37	1	36	157590.686	0.01412	0.1566
37	2	35	37	2	36	157590.686	0.01412	0.3434
37	3	35	37	1	36	157590.686	0.01412	0.3434
37	3	35	37	2	36	157590.686	0.01412	0.1566
23	4	19	22	4	18	157629.046	0.01484	
32	21	11	32	20	12	157668.038	-0.04124	0.2902
32	21	11	32	20	13	157668.038	-0.04125	0.2098
32	21	12	32	20	12	157668.038	-0.04124	0.2098
32	21	12	32	20	13	157668.038	-0.04125	0.2902
22	21	1	21	21	0	157709.119	0.00133	0.5
22	21	2	21	21	1	157709.119	0.00133	0.5
44	7	37	44	7	38	157779.853	-0.01473	0.3296
44	7	37	44	6	38	157779.853	-0.01496	0.1704
44	8	37	44	7	38	157779.853	-0.01981	0.1704
44	8	37	44	6	38	157779.853	-0.02004	0.3296
22	20	2	21	20	1	157811.748	-0.01601	0.5
22	20	3	21	20	2	157811.748	-0.01601	0.5
22	19	3	21	19	2	157930.769	0.02784	0.5
22	19	4	21	19	3	157930.769	0.02784	0.5
31	21	10	31	20	11	157989.403	-0.02762	0.2887
31	21	10	31	20	12	157989.403	-0.02762	0.2113
31	21	11	31	20	11	157989.403	-0.02762	0.2113
31	21	11	31	20	12	157989.403	-0.02762	0.2887
15	7	9	14	6	9	157999.251	-0.03026	
22	18	4	21	18	3	158069.948	-0.00803	0.5
22	18	5	21	18	4	158069.948	-0.00803	0.5
30	21	9	30	20	10	158280.238	-0.01397	0.2874
30	21	9	30	20	11	158280.238	-0.01397	0.2126
30	21	10	30	20	10	158280.238	-0.01397	0.2126
30	21	10	30	20	11	158280.238	-0.01397	0.2874
17	6	11	16	5	11	158344.451	-0.01558	
21	8	13	20	8	12	158395.908	-0.03108	
22	16	6	21	16	5	158431.607	0.02588	0.5
22	16	7	21	16	6	158431.607	0.02588	0.5
21	6	15	20	6	14	158565.187	0.01301	
22	15	8	21	15	7	158670.655	0.03312	0.5
22	15	7	21	15	6	158670.655	0.03307	0.5
24	4	21	23	4	20	158873.805	0.0357	
24	3	21	23	3	20	158874.796	-0.00213	
22	14	9	21	14	8	158965.477	-0.00734	0.5
22	14	8	21	14	7	158965.477	-0.00912	0.5
27	21	6	27	20	7	158991.466	-0.03352	0.2838
27	21	6	27	20	8	158991.466	-0.03352	0.2162
27	21	7	27	20	7	158991.466	-0.03352	0.2162
27	21	7	27	20	8	158991.466	-0.03352	0.2838
26	21	5	26	20	6	159181.419	-0.04108	0.2827
26	21	5	26	20	7	159181.419	-0.04108	0.2173
26	21	6	26	20	6	159181.419	-0.04108	0.2173
26	21	6	26	20	7	159181.419	-0.04108	0.2827
22	13	10	21	13	9	159336.642	0.00478	0.5
22	13	9	21	13	8	159336.642	-0.04263	0.5
44	22	22	44	21	23	159560.054	0.09204	0.5
44	22	23	44	21	24	159560.054	-0.08155	0.5
22	12	10	21	12	9	159816.783	-0.03492	
43	6	37	43	5	38	159889.860	-0.00602	0.1671
43	6	37	43	6	38	159889.860	-0.006	0.3329
43	7	37	43	6	38	159889.860	-0.00655	0.1671
43	7	37	43	5	38	159889.860	-0.00657	0.3329
46	8	38	46	8	39	160103.047	0.02742	0.6541
46	8	38	46	7	39	160103.047	0.02652	0.3459
22	7	16	21	7	15	160175.526	-0.01845	
25	2	23	24	3	22	160252.158	-0.00626	0.0414
25	3	23	24	3	22	160252.158	-0.0156	0.4586
25	2	23	24	2	22	160252.158	-0.03013	0.4586
25	3	23	24	2	22	160252.158	-0.03947	0.0414
12	10	3	11	9	2	160257.394	-0.0222	0.2301
12	10	2	11	9	2	160257.394	-0.02265	0.2699
12	10	3	11	9	3	160257.394	-0.02654	0.2699
12	10	2	11	9	3	160257.394	-0.02699	0.2301
43	22	22	43	21	22	160360.650	0.03747	0.1945
43	22	21	43	21	22	160360.650	0.03308	0.3055
43	22	22	43	21	23	160360.650	-0.03234	0.3055
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22	11	12	21	11	11	160451.801	-0.00341	
22	11	11	21	11	10	160466.972	-0.0079	
39	3	36	39	2	37	160637.638	-0.00968	0.159
39	3	36	39	3	37	160637.638	-0.00968	0.341
39	4	36	39	2	37	160637.638	-0.00968	0.341
39	4	36	39	3	37	160637.638	-0.00968	0.159
11	11	0	10	10	0	160909.003	-0.04029	0.261
11	11	1	10	10	0	160909.003	-0.04029	0.239
11	11	0	10	10	1	160909.003	-0.04029	0.239
11	11	1	10	10	1	160909.003	-0.04029	0.261
16	6	11	15	5	11	161013.146	0.02662	
22	10	13	21	10	12	161286.976	0.02734	
17	5	12	16	4	12	161419.245	0.00076	
22	10	12	21	10	11	161460.253	0.02894	
21	7	14	20	7	13	161505.424	0.01412	
26	1	25	25	2	24	161671.754	0.03427	0.0448
26	2	25	25	2	24	161671.754	0.03421	0.4552
26	1	25	25	1	24	161671.754	0.0341	0.4552
26	2	25	25	1	24	161671.754	0.03404	0.0448
41	22	19	41	21	20	161772.546	0.02358	0.302
41	22	20	41	21	21	161772.546	0.01519	0.302
41	22	19	41	21	21	161772.546	0.01471	0.198
41	22	20	41	21	20	161772.546	0.02407	0.198
22	9	14	21	9	13	162146.342	0.02524	
22	8	15	21	8	14	162161.100	0.04293	
23	6	18	22	6	17	162290.503	0.01783	
23	5	18	22	5	17	162723.725	0.04216	
22	9	13	21	9	12	163477.092	-0.02386	
24	4	20	23	5	19	163501.323	-0.04343	
24	5	20	23	5	19	163516.524	-0.02347	
24	4	20	23	4	19	163535.216	-0.01128	
42	19	24	41	20	21	163849.184	0.03737	0.5242
42	19	24	41	20	22	163849.184	-0.10313	0.4758
37	22	15	37	21	16	163967.459	-0.00687	0.2952
37	22	16	37	21	16	163967.459	-0.00687	0.2048
37	22	15	37	21	17	163967.459	-0.00696	0.2048
37	22	16	37	21	17	163967.459	-0.00696	0.2952
22	6	16	21	6	15	164006.176	0.00871	
50	10	40	50	9	41	164289.786	0.12613	0.5
50	11	40	50	10	41	164289.786	-0.0351	0.5
56	19	37	56	18	39	164729.139	-0.00608	
47	8	39	47	8	40	164741.479	0.03758	0.3276
47	8	39	47	7	40	164741.479	0.03721	0.1724
47	9	39	47	8	40	164741.479	0.02995	0.1724
47	9	39	47	7	40	164741.479	0.02958	0.3276
69	43	26	68	44	24	164809.009	-0.65957	0.0027
69	43	26	68	44	25	164809.009	-0.65957	0.0031
69	43	27	68	44	24	164809.009	-0.65957	0.0031

69	43	27	68	44	25	164809.009	-0.65957	0.0027
35	22	13	35	21	14	164809.009	-0.04187	0.2887
35	22	13	35	21	15	164809.009	-0.04187	0.2055
35	22	14	35	21	14	164809.009	-0.04187	0.2055
35	22	14	35	21	15	164809.009	-0.04187	0.2887
23	22	1	22	22	0	164863.513	0.00648	0.5
23	22	2	22	22	1	164863.513	0.00648	0.5
23	21	2	22	21	1	164965.422	0.02133	0.5
23	21	3	22	21	2	164965.422	0.02133	0.5
23	20	3	22	20	2	165082.586	-0.00379	0.5
23	20	4	22	20	3	165082.586	-0.00379	0.5
80	4	76	79	5	74	165162.904	-0.59083	0.0033
80	5	76	79	6	74	165162.904	-0.59083	0.0033
40	3	37	40	2	38	165162.904	-0.01539	0.1578
40	3	37	40	3	38	165162.904	-0.01539	0.339
40	4	37	40	2	38	165162.904	-0.01539	0.339
40	4	37	40	3	38	165162.904	-0.01539	0.1578
34	22	12	34	21	13	165176.244	-0.02735	0.2907
34	22	12	34	21	14	165176.244	-0.02735	0.2093
34	22	13	34	21	13	165176.244	-0.02735	0.2093
34	22	13	34	21	14	165176.244	-0.02735	0.2907
23	19	4	22	19	3	165218.545	0.00544	0.5
23	19	5	22	19	4	165218.545	0.00544	0.5
23	18	5	22	18	4	165377.775	0.00951	0.5
23	18	6	22	18	5	165377.775	0.00951	0.5
33	22	11	33	21	12	165511.092	-0.03385	0.2893
33	22	11	33	21	13	165511.092	-0.03385	0.2107
33	22	12	33	21	12	165511.092	-0.03385	0.2107
33	22	12	33	21	13	165511.092	-0.03385	0.2893
23	17	6	22	17	5	165566.260	0.00227	0.5
23	17	7	22	17	6	165566.260	0.00227	0.5
23	16	7	22	16	6	165792.120	-0.02297	0.5
23	16	8	22	16	7	165792.120	-0.02296	0.5
23	15	9	22	15	8	166066.734	0.00042	0.5
23	15	8	22	15	7	166066.734	0.00018	0.5
26	2	24	25	3	23	166200.467	-0.02057	0.0418
26	3	24	25	3	23	166200.467	-0.02419	0.4582
26	2	24	25	2	23	166200.467	-0.0299	0.4582
26	3	24	25	2	23	166200.467	-0.03353	0.0418
23	14	10	22	14	9	166406.306	-0.02264	0.5
23	14	9	22	14	8	166406.306	-0.02954	0.5
23	13	11	22	13	10	166835.479	0.07568	0.5
23	13	10	22	13	9	166835.479	-0.08402	0.5
23	12	12	22	12	11	167392.149	0.02646	
23	12	11	22	12	10	167394.951	-0.0322	
13	10	4	12	9	3	167405.351	-0.00285	0.2267
13	10	3	12	9	3	167405.351	-0.00621	0.2733
13	10	4	12	9	4	167405.351	-0.03276	0.2733
13	10	3	12	9	4	167405.351	-0.03612	0.2267
22	8	14	21	8	13	167488.935	0.00502	
27	2	26	26	2	25	167621.183	0.02696	0.4551
27	1	26	26	1	25	167621.183	0.02692	0.4551
27	2	26	26	1	25	167621.183	0.0269	0.0449
27	1	26	26	2	25	167621.183	0.02699	0.0449
12	11	1	11	10	1	168072.619	-0.01974	0.2648
12	11	1	11	10	2	168072.619	-0.01978	0.2352
12	11	2	11	10	1	168072.619	-0.01973	0.2352
12	11	2	11	10	2	168072.619	-0.01977	0.2648
23	11	13	22	11	12	168130.721	0.01303	
23	11	12	22	11	11	168169.569	0.00289	
24	6	19	23	6	18	168243.022	0.00732	
24	5	19	23	5	18	168466.766	0.0144	
45	6	39	45	6	40	169034.793	0.02304	0.3339
45	7	39	45	5	40	169034.793	0.02294	0.3339
45	7	39	45	6	40	169034.793	0.02294	0.1661
45	6	39	45	5	40	169034.793	0.02303	0.1661
22	7	15	21	7	14	169049.902	-0.03219	
28	0	28	27	0	27	169053.779	-0.00913	0.4523
28	0	28	27	1	27	169053.779	-0.00913	0.0477
28	1	28	27	0	27	169053.779	-0.00913	0.0477
28	1	28	27	1	27	169053.779	-0.00913	0.4523
23	6	17	22	6	16	169198.212	0.03414	
23	8	16	22	8	15	169276.318	-0.03647	
48	8	40	48	8	41	169370.237	-0.02103	0.3284
48	8	40	48	7	41	169370.237	-0.02118	0.1716
48	9	40	48	8	41	169370.237	-0.02429	0.1716
48	9	40	48	7	41	169370.237	-0.02445	0.3284
23	10	13	22	10	12	169442.324	0.0208	
25	5	21	24	5	20	169444.630	0.01018	
25	4	21	24	4	20	169453.076	-0.02582	
26	3	23	25	4	22	170758.520	0.22353	0.0386
26	4	23	25	4	22	170758.520	0.09812	0.4614
26	3	23	25	3	22	170758.520	-0.08262	0.4614
26	4	23	25	3	22	170758.520	-0.20803	0.0386
44	5	39	44	5	40	170910.391	0.00352	0.3365
44	6	39	44	4	40	170910.391	0.00351	0.3365
44	6	39	44	5	40	170910.391	0.00351	0.1635
44	5	39	44	4	40	170910.391	0.00352	0.1635
47	7	40	47	7	41	171578.663	0.00582	0.3316
47	8	40	47	6	41	171578.663	0.00543	0.3316
47	8	40	47	7	41	171578.663	0.00545	0.1684
47	7	40	47	6	41	171578.663	0.00581	0.1684
38	23	15	38	22	16	171880.534	-0.01534	0.2937
38	23	15	38	22	17	171880.534	-0.01535	0.2062
38	23	16	38	22	16	171880.534	-0.01534	0.2062
38	23	16	38	22	17	171880.534	-0.01535	0.2937
24	23	2	23	23	1	172016.561	-0.01127	0.5
24	23	1	23	23	0	172016.561	-0.01127	0.5
24	22	3	23	22	2	172117.829	-0.00933	0.5
24	22	2	23	22	1	172117.829	-0.00933	0.5
27	2	25	26	2	24	172148.263	-0.03252	0.4579
27	3	25	26	2	24	172148.263	-0.03392	0.0421
27	2	25	26	3	24	172148.263	-0.0289	0.0421
27	3	25	26	3	24	172148.263	-0.0303	0.4579
18	7	11	17	6	11	172158.585	0.04373	
23	9	14	22	9	13	172220.805	-0.01548	
24	21	3	23	21	2	172233.499	0.02242	0.5
24	21	4	23	21	3	172233.499	0.02242	0.5
24	20	4	23	20	3	172366.593	0.00961	0.5
24	20	5	23	20	4	172366.593	0.00961	0.5
24	19	6	23	19	5	172521.092	-0.04479	0.5
24	19	5	23	19	4	172521.092	-0.04479	0.5
24	18	7	23	18	6	172702.350	0.01613	0.5
24	18	6	23	18	5	172702.350	0.01613	0.5
24	7	18	23	7	17	172780.160	0.00081	
24	17	8	23	17	7	172917.096	-0.0025	0.5
24	17	7	23	17	6	172917.096	-0.0025	0.5
24	16	8	23	16	7	173174.884	0.01295	0.5
24	16	9	23	16	8	173174.884	0.01298	0.5
18	5	13	17	4	13	173463.987	0.00733	
24	15	10	23	15	9	173488.898	0.00679	0.5
24	15	9	23	15	8	173488.898	0.00583	0.5
28	1	27	27	1	26	173569.783	0.02259	0.4549
28	1	27	27	2	26	173569.783	0.02261	0.0451
28	2	27	27	1	26	173569.783	0.02258	0.0451
28	2	27	27	2	26	173569.783	0.0226	0.4549
49	24	26	49	23	26	173573.129	0.05229	0.1905
49	24	25	49	23	26	173573.129	0.04387	0.3095
49	24	26	49	23	27	173573.129	-0.06705	0.3095
49	24	25	49	23	27	173573.129	-0.07547	0.1905
46	6	40	46	6	41	173600.621	-0.05381	0.3342
46	7	40	46	5	41	173600.621	-0.05385	0.3342
46	7	40	46	6	41	173600.621	-0.05385	0.1658
46	6	40	46	5	41	173600.621	-0.05381	0.1658
15	9	6	14	8	7	173711.099	-0.0013	
24	14	10	23	14	9	173878.455	0.007	0.5
24	14	11	23	14	10	173878.455	0.0317	0.5
25	6	20	24	6	19	174170.054	-0.02619	
25	5	20	24	5	19	174281.786	-0.01598	
24	13	12	23	13	11	174372.960	0.22277	0.5
24	13	11	23	13	10	174372.960	-0.27739	0.5
24	6	18	23	6	17	174423.892	0.01149	
14	10	5	13	9	4	174538.333	0.12708	0.2217
14	10	4	13	9	4	174538.333	0.1073	0.2783
14	10	5	13	9	5	174538.333	-0.03419	0.2783
14	10	4	13	9	5	174538.333	-0.05397	0.2217
29	0	29	28	0	28	175001.670	-0.02086	0.4523
29	0	29	28	1	28	175001.670	-0.02086	0.0477
29	1	29	28	0	28	175001.670	-0.02086	0.0477
29	1	29	28	1	28	175001.670	-0.02086	0.4523
24	12	13	23	12	12	175017.079	-0.01281	
24	12	12	23	12	11	175024.956	-0.00135	
13	11	3	12	10	2	175231.466	-0.00774	0.2312
13	11	2	12	10	2	175231.466	-0.00778	0.2688
13	11	2	12	10	3	175231.466	-0.00823	0.2312
13	11	3	12	10	3	175231.466	-0.00818	0.2688
26	5	22	25	5	21	175374.193	0.00135	
26	4	22	25	4	21	175377.960	-0.01572	
45	5	40	45	5	41	175456.466	-0.01505	0.3368
45	6	40	45	4	41	175456.466	-0.01505	0.3368
45	6	40	45	5	41	175456.466	-0.01505	0.1632
45	5	40	45	4	41	175456.466	-0.01505	0.1632
23	7	16	22	7	15	175775.548	-0.0047	
24	11	14	23	11	13	175865.457	-0.02847	
12	12	1	11	11	0	175879.031	0.0013	0.2388
12	12	1	11	11	1	175879.031	0.0013	0.2612
12	12	0	11	11	0	175879.031	0.0013	0.2612
12	12	0	11	11	1	175879.031	0.0013	0.2388
24	11	13	23	11	12	175958.886	-0.03498	
24	8	17	23	8	16	176146.485	-0.00038	
48	7	41	48	7	42	176165.639	-0.03823	0.3314
48	8	41	48	7	42	176165.639	-0.03838	0.1686
48	8	41	48	6	42	176165.639	-0.03839	0.3314
48	7	41	48	6	42	176165.639	-0.03823	0.1686
23	8	15	22	8	14	176383.701	0.04858	
27	3	24	26	4	23	176701.380	0.10171	0.039
27	4	24	26	4	23	176701.380	0.0508	0.461
27	3	24	26	3	23	176701.380	-0.0237	0.461
27	4	24	26	3	23	176701.380	-0.07461	0.039
24	10	15	23	10	14	176852.875	0.0124	
44	4	40	44	4	41	177162.839	-0.02491	0.3393
44	5	40	44	3	41	177162.839	-0.02491	0.3393
44	5	40	44	4	41	177162.839	-0.02491	0.1607
44	4	40	44	3	41	177162.839	-0.02491	0.1607
24	9	16	23	9	15	177357.867	-0.00585	
24	10	14	23	10	13	177641.832	-0.00807	
19	6	13	18	5	13	177649.331	-0.00951	
28	2	26	27	2	25	178095.463	-0.03095	0.4576
28	3	26	27	2	25	178095.463	-0.03149	0.0424
28	2	26	27	3	25	178095.463	-0.02955	0.0424

28	3	26	27	3	25	178095.463	-0.03009	0.4576
47	6	41	47	6	42	178162.730	-0.00604	0.3346
47	7	41	47	5	42	178162.730	-0.00606	0.3346
47	7	41	47	6	42	178162.730	-0.00606	0.1654
47	6	41	47	5	42	178162.730	-0.00604	0.1654
19	7	12	18	6	12	178327.309	0.03068	
42	24	18	42	23	19	178387.253	0.01159	0.2972
42	24	19	42	23	19	178387.253	0.01159	0.2028
42	24	18	42	23	20	178387.253	0.01151	0.2028
42	24	19	42	23	20	178387.253	0.01151	0.2972
50	8	42	50	8	43	178602.710	0.01433	0.3295
50	8	42	50	7	43	178602.710	0.0143	0.1705
50	9	42	50	8	43	178602.710	0.01374	0.1705
50	9	42	50	7	43	178602.710	0.01371	0.3295
43	3	40	43	3	41	178734.014	0.01227	0.3419
43	4	40	43	2	41	178734.014	0.01227	0.3419
43	4	40	43	3	41	178734.014	0.01227	0.1581
43	3	40	43	2	41	178734.014	0.01227	0.1581
25	7	19	24	7	18	178860.467	0.01089	
41	24	17	41	23	18	178884.911	-0.01114	0.296
41	24	18	41	23	18	178884.911	-0.01114	0.204
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41	24	17	41	23	19	178884.911	-0.01117	0.204
25	24	1	24	24	0	179168.212	-0.02755	0.5
25	24	2	24	24	1	179168.212	-0.02755	0.5
25	23	3	24	23	2	179268.971	-0.01741	0.5
25	23	2	24	23	1	179268.971	-0.01741	0.5
25	22	4	24	22	3	179383.290	0.00609	0.5
25	22	3	24	22	2	179383.290	0.00609	0.5
25	21	4	24	21	3	179513.896	-0.01081	0.5
25	21	5	24	21	4	179513.896	-0.01081	0.5
29	1	28	28	1	27	179517.502	0.00857	0.4547
29	1	28	28	2	27	179517.502	0.00857	0.0453
29	2	28	28	1	27	179517.502	0.00856	0.0453
29	2	28	28	2	27	179517.502	0.00857	0.4547
25	20	5	24	20	4	179664.369	-0.01885	0.5
25	20	6	24	20	5	179664.369	-0.01885	0.5
18	6	13	17	5	13	179693.714	0.03103	
39	24	15	39	23	16	179768.401	-0.03372	0.2927
39	24	15	39	23	17	179768.401	-0.03373	0.2073
39	24	16	39	23	16	179768.401	-0.03372	0.2073
39	24	16	39	23	17	179768.401	-0.03373	0.2927
25	6	19	24	6	18	179814.321	-0.02812	
25	19	7	24	19	6	179839.302	0.02377	0.5
25	19	6	24	19	5	179839.302	0.02377	0.5
25	18	8	24	18	7	180044.542	-0.00207	0.5
25	18	7	24	18	6	180044.542	-0.00207	0.5
26	6	21	25	6	20	180086.275	0.0067	
26	5	21	25	5	20	180140.516	-0.01992	
18	4	14	17	3	14	180168.672	0.04114	
42	2	40	42	2	41	180182.004	-0.0158	0.3442
42	3	40	42	1	41	180182.004	-0.0158	0.3442
42	3	40	42	2	41	180182.004	-0.0158	0.1558
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26	6	21	25	5	20	180188.119	-0.01629	
25	17	9	24	17	8	180288.170	0.00298	0.5
25	17	8	24	17	7	180288.170	0.00298	0.5
25	16	9	24	16	8	180581.107	0.01072	0.5
25	16	10	24	16	9	180581.107	0.01085	0.5
16	9	7	15	8	7	180684.539	0.01913	
16	9	8	15	8	8	180730.772	0.00079	
49	7	42	49	7	43	180747.332	-0.01983	0.3325
49	8	42	49	6	43	180747.332	-0.01989	0.3325
49	8	42	49	7	43	180747.332	-0.01989	0.1675
49	7	42	49	6	43	180747.332	-0.01983	0.1675
25	15	11	24	15	10	180938.831	0.01269	0.5
25	15	10	24	15	9	180938.831	0.00906	0.5
30	0	30	29	0	29	180948.634	-0.00559	0.4523
30	0	30	29	1	29	180948.634	-0.00559	0.0477
30	1	30	29	0	29	180948.634	-0.00559	0.0477
30	1	30	29	1	29	180948.634	-0.00559	0.4523
27	5	23	26	5	22	181305.551	0.02482	
24	9	15	23	9	14	181307.080	0.12515	0.4634
27	4	23	26	4	22	181307.080	-0.10857	0.5366
25	14	11	24	14	10	181384.159	-0.04169	0.5
25	14	12	24	14	11	181384.159	0.04038	0.5
25	13	13	24	13	12	181951.992	0.0464	
28	4	25	27	4	24	182644.357	0.03458	0.4606
28	3	25	27	4	24	182644.357	0.05508	0.0394
28	3	25	27	3	24	182644.357	0.00416	0.4606
28	4	25	27	3	24	182644.357	-0.01634	0.0394
25	12	14	24	12	13	182694.483	-0.01095	
25	12	13	24	12	12	182714.816	-0.0144	
48	6	42	48	6	43	182721.295	0.00635	0.335
48	7	42	48	5	43	182721.295	0.00635	0.335
48	7	42	48	6	43	182721.295	0.00635	0.165
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25	8	18	24	8	17	182769.717	0.00086	
13	12	2	12	11	1	183042.296	-0.00136	0.2363
13	12	2	12	11	2	183042.296	-0.00137	0.2637
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51	8	43	51	8	44	183207.843	-0.00039	0.3299
51	9	43	51	7	44	183207.843	-0.00065	0.3299
51	9	43	51	8	44	183207.843	-0.00063	0.1701
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48	25	23	48	24	24	183377.216	0.02854	0.3041
48	25	24	48	24	25	183377.216	0.02568	0.3041
48	25	23	48	24	25	183377.216	0.0255	0.1959
48	25	24	48	24	24	183377.216	0.02872	0.1959
18	3	15	17	2	15	183503.753	0.00177	
25	11	15	24	11	14	183652.252	-0.01697	
25	11	14	24	11	13	183863.744	-0.02826	
29	2	27	28	3	26	184041.989	-0.02294	0.0426
29	3	27	28	3	26	184041.989	-0.02314	0.4574
29	2	27	28	2	26	184041.989	-0.02347	0.4574
29	3	27	28	2	26	184041.989	-0.02368	0.0426
47	5	42	47	5	43	184541.691	-0.04952	0.3374
47	6	42	47	4	43	184541.691	-0.04952	0.3374
47	6	42	47	5	43	184541.691	-0.04952	0.1626
47	5	42	47	4	43	184541.691	-0.04952	0.1626
25	10	16	24	10	15	184629.159	-0.03772	
43	2	41	43	2	42	184699.724	-0.01845	0.3442
43	3	41	43	1	42	184699.724	-0.01845	0.3442
43	3	41	43	2	42	184699.724	-0.01845	0.1558
43	2	41	43	1	42	184699.724	-0.01845	0.1558
25	9	17	24	9	16	184724.690	-0.0041	
24	8	16	23	8	15	184729.970	-0.00391	
26	7	20	25	7	19	184852.089	-0.01243	
50	7	43	50	7	44	185324.158	0.01083	0.3327
50	8	43	50	6	44	185324.158	0.0108	0.3327
50	8	43	50	7	44	185324.158	0.0108	0.1673
50	7	43	50	6	44	185324.158	0.01083	0.1673
26	6	20	25	6	19	185375.908	-0.01402	
30	1	29	29	1	28	185464.298	-0.01645	0.4546
30	1	29	29	2	28	185464.298	-0.01645	0.0454
30	2	29	29	1	28	185464.298	-0.01645	0.0454
30	2	29	29	2	28	185464.298	-0.01645	0.4546
27	6	22	26	6	21	185999.567	-0.01311	
27	5	22	26	5	21	186025.305	-0.02764	
25	10	15	24	10	14	186143.284	-0.02672	
26	25	1	25	25	0	186318.399	-0.03398	0.5
26	25	2	25	25	1	186318.399	-0.03398	0.5
26	24	2	25	24	1	186418.756	-0.01126	0.5
26	24	3	25	24	2	186418.756	-0.01126	0.5
26	23	4	25	23	3	186531.898	-0.00336	0.5
26	23	3	25	23	2	186531.898	-0.00336	0.5
26	22	5	25	22	4	186660.354	0.00488	0.5
26	22	4	25	22	3	186660.354	0.00488	0.5
26	21	5	25	21	4	186807.261	-0.0035	0.5
26	21	6	25	21	5	186807.261	-0.0035	0.5
31	0	31	30	0	30	186894.625	0.0233	0.4522
31	0	31	30	1	30	186894.625	0.0233	0.0478
31	1	31	30	0	30	186894.625	0.0233	0.0478
31	1	31	30	1	30	186894.625	0.0233	0.4522
26	20	6	25	20	5	186976.680	0.0147	0.5
26	20	7	25	20	6	186976.680	0.0147	0.5
25	7	18	24	7	17	187053.928	-0.0102	
26	19	8	25	19	7	187173.755	0.01349	0.5
26	19	7	25	19	6	187173.755	0.01349	0.5
26	18	9	25	18	8	187405.371	0.0479	0.5
26	18	8	25	18	7	187405.371	0.0479	0.5
26	17	10	25	17	9	187680.590	-0.00801	0.5
26	17	9	25	17	8	187680.590	-0.00803	0.5
17	9	9	16	8	9	187710.521	0.03131	
26	16	10	25	16	9	188012.270	0.01546	0.5
26	16	11	25	16	10	188012.270	0.01597	0.5
26	15	12	25	15	11	188418.419	0.008	0.5
26	15	11	25	15	10	188418.419	-0.00475	0.5
29	4	26	28	4	25	188587.216	0.00522	0.4602
29	3	26	28	3	25	188587.216	-0.00708	0.4602
29	3	26	28	4	25	188587.216	0.01342	0.0398
29	4	26	28	3	25	188587.216	-0.01528	0.0398
26	14	12	25	14	11	188926.165	-0.14087	0.5
26	14	13	25	14	12	188926.165	0.11431	0.5
48	5	43	48	5	44	189081.285	-0.01021	0.3379
48	6	43	48	4	44	189081.285	-0.01021	0.3379
48	6	43	48	5	44	189081.285	-0.01021	0.1621
48	5	43	48	4	44	189081.285	-0.01021	0.1621
26	8	19	25	8	18	189167.925	0.00056	
15	11	4	14	10	4	189521.062	0.03777	0.2769
15	11	5	14	10	5	189521.062	0.0203	0.2769
15	11	4	14	10	5	189521.062	0.01799	0.2231
15	11	5	14	10	4	189521.062	0.04008	0.2231
26	13	14	25	13	13	189576.707	0.036	
26	13	13	25	13	12	189580.699	-0.01644	
19	6	14	18	5	14	189648.165	0.03702	
30	2	28	29	2	27	189987.778	-0.00445	0.4572
30	3	28	29	2	27	189987.778	-0.00453	0.0428
30	2	28	29	3	27	189987.778	-0.00425	0.0428
30	3	28	29	3	27	189987.778	-0.00433	0.4572
51	26	25	51	25	26	190056.581	0.011	0.3058
51	26	26	51	25	27	190056.581	0.00712	0.3058
51	26	25	51	25	27	190056.581	0.00686	0.1942
51	26	26	51	25	26	190056.581	0.01126	0.1942
14	12	3	13	11	2	190201.559	0.02673	0.2327
14	12	3	13	11	3	190201.559	0.02668	0.2673
14	12	2	13	11	2	190201.559	0.02672	0.2673
14	12	2	13	11	3	190201.559	0.02668	0.2327
26	12	15	25	12	14	190427.114	0.01812	

26	12	14	25	12	13	190476.730	-0.00858	
25	9	16	24	9	15	190535.229	-0.00686	
27	7	21	26	7	20	190790.854	0.00782	
13	13	1	12	12	0	190845.379	0.00205	0.2396
13	13	1	12	12	1	190845.379	0.00205	0.2604
13	13	0	12	12	0	190845.379	0.00205	0.2604
13	13	0	12	12	1	190845.379	0.00205	0.2396
27	6	21	26	6	20	191066.659	-0.01004	
19	4	15	18	3	15	191222.975	-0.00691	
31	1	30	30	1	29	191410.209	0.02152	0.4545
31	1	30	30	2	29	191410.209	0.02152	0.0455
31	2	30	30	1	29	191410.209	0.02151	0.0455
31	2	30	30	2	29	191410.209	0.02152	0.4545
26	11	16	25	11	15	191479.056	-0.02313	
50	6	44	50	6	45	191829.040	0.01438	0.3356
50	7	44	50	5	45	191829.040	0.01438	0.3356
50	7	44	50	6	45	191829.040	0.01438	0.1644
50	6	44	50	5	45	191829.040	0.01438	0.1644
26	9	18	25	9	17	191865.573	0.01533	
28	6	23	27	6	22	191913.860	-0.00079	
28	5	23	27	5	22	191925.855	0.01644	
26	11	15	25	11	14	191930.040	-0.00878	
26	7	19	25	7	18	192137.266	-0.0127	
25	8	17	24	8	16	192301.337	0.00652	
26	10	17	25	10	16	192338.001	0.00792	
32	1	32	31	1	31	192839.531	-0.0146	
27	26	1	26	26	0	193467.025	-0.04966	0.5
27	26	2	26	26	1	193467.025	-0.04966	0.5
27	25	2	26	25	1	193567.062	-0.02608	0.5
27	25	3	26	25	2	193567.062	-0.02608	0.5
49	5	44	49	5	45	193619.068	0.04153	0.338
49	6	44	49	4	45	193619.068	0.04153	0.338
49	6	44	49	5	45	193619.068	0.04153	0.162
49	5	44	49	4	45	193619.068	0.04153	0.162
27	24	3	26	24	2	193679.201	-0.02335	0.5
27	24	4	26	24	3	193679.201	-0.02335	0.5
27	23	5	26	23	4	193805.806	0.04023	0.5
27	23	4	26	23	3	193805.806	0.04023	0.5
27	22	6	26	22	5	193949.557	0.00713	0.5
27	22	5	26	22	4	193949.557	0.00713	0.5
27	21	6	26	21	5	194114.181	0.03755	0.5
27	21	7	26	21	6	194114.181	0.03755	0.5
27	20	7	26	20	6	194304.100	-0.00365	0.5
27	20	8	26	20	7	194304.100	-0.00365	0.5
18	9	9	17	8	9	194332.311	-0.03339	
52	7	45	52	7	46	194464.671	-0.03401	0.3338
52	8	45	52	6	46	194464.671	-0.03401	0.3338
52	8	45	52	7	46	194464.671	-0.03401	0.1662
52	7	45	52	6	46	194464.671	-0.03401	0.1662
27	19	9	26	19	8	194525.340	0.00357	0.5
27	19	8	26	19	7	194525.340	0.00357	0.5
30	4	27	29	4	26	194529.837	0.00593	0.4599
30	3	27	29	3	26	194529.837	0.00098	0.4599
30	4	27	29	3	26	194529.837	-0.00227	0.0401
30	3	27	29	4	26	194529.837	0.00918	0.0401
20	8	12	19	7	12	194635.865	0.03831	
21	7	14	20	6	14	194701.719	0.00628	
55	9	46	55	9	47	194782.252	0.03623	0.3286
55	10	46	55	8	47	194782.252	0.03606	0.3286
55	10	46	55	9	47	194782.252	0.03607	0.1714
55	9	46	55	8	47	194782.252	0.03622	0.1714
27	18	10	26	18	9	194785.652	0.0021	0.5
27	18	9	26	18	8	194785.652	0.0021	0.5
26	10	16	25	10	15	195017.282	-0.01244	
27	17	11	26	17	10	195095.601	-0.00274	0.5
27	17	10	26	17	9	195095.601	-0.00281	0.5
27	8	20	26	8	19	195380.253	0.01938	
27	16	11	26	16	10	195469.885	-0.01979	0.5
27	16	12	26	16	11	195469.885	-0.0179	0.5
17	10	7	16	9	7	195776.760	-0.00343	
17	10	8	16	9	8	195784.881	0.00182	
17	10	7	16	9	8	195786.415	0.01116	
27	15	13	26	15	12	195929.804	0.03188	0.5
27	15	12	26	15	11	195929.804	-0.01001	0.5
31	2	29	30	2	28	195932.765	0.02183	0.457
31	3	29	30	2	28	195932.765	0.02181	0.043
31	2	29	30	3	28	195932.765	0.02191	0.043
31	3	29	30	3	28	195932.765	0.02188	0.457
19	8	11	18	7	12	196361.430	0.02217	
51	6	45	51	6	46	196378.687	-0.0258	0.336
51	7	45	51	5	46	196378.687	-0.0258	0.336
51	7	45	51	6	46	196378.687	-0.0258	0.164
51	6	45	51	5	46	196378.687	-0.0258	0.164
28	6	22	27	7	21	196568.919	-0.0508	
16	11	6	15	10	5	196643.317	0.03575	0.2195
16	11	5	15	10	5	196643.317	0.02351	0.2805
16	11	6	15	10	6	196643.317	-0.06101	0.2805
16	11	5	15	10	6	196643.317	-0.07325	0.2195
54	27	27	54	26	28	196677.729	-0.02244	0.3069
54	27	28	54	26	28	196677.729	-0.02208	0.1931
54	27	28	54	26	29	196677.729	-0.02756	0.3069
54	27	27	54	26	29	196677.729	-0.02792	0.1931
28	7	22	27	7	21	196702.043	-0.01344	
47	3	44	47	3	45	196820.476	0.01293	0.3424
47	4	44	47	2	45	196820.476	0.01293	0.3424
47	4	44	47	3	45	196820.476	0.01293	0.1576
47	3	44	47	2	45	196820.476	0.01293	0.1576
28	6	22	27	6	21	196842.552	-0.00175	
28	7	22	27	6	21	196975.679	0.0383	
54	8	46	54	8	47	196986.338	-0.01829	0.3311
54	9	46	54	7	47	196986.338	-0.01831	0.3311
54	9	46	54	8	47	196986.338	-0.01831	0.1689
54	8	46	54	7	47	196986.338	-0.01829	0.1689
28	8	20	27	9	19	197204.172	-0.02215	
27	13	15	26	13	14	197250.712	-0.0158	
27	7	20	26	7	19	197258.507	-0.00779	
27	13	14	26	13	13	197261.276	0.00443	
32	1	31	31	1	30	197355.073	-0.0023	0.4544
32	1	31	31	2	30	197355.073	-0.0023	0.0456
32	2	31	31	1	30	197355.073	-0.0023	0.0456
32	2	31	31	2	30	197355.073	-0.0023	0.4544
20	5	15	19	4	15	197494.376	0.03155	
29	5	24	28	6	23	197826.163	-0.04873	
29	6	24	28	6	23	197830.604	-0.00322	
29	5	24	28	5	23	197836.070	-0.0108	
29	6	24	28	5	23	197840.482	0.00493	
14	13	2	13	12	1	198008.185	0.01154	0.2363
14	13	2	13	12	2	198008.185	0.01154	0.2637
14	13	1	13	12	1	198008.185	0.01154	0.2637
14	13	1	13	12	2	198008.185	0.01154	0.2363
50	5	45	50	5	46	198155.044	-0.03746	0.3383
50	6	45	50	4	46	198155.044	-0.03746	0.3383
50	6	45	50	5	46	198155.044	-0.03746	0.1617
50	5	45	50	4	46	198155.044	-0.03746	0.1617
52	27	25	52	26	26	198194.543	0.03509	0.304
52	27	26	52	26	26	198194.543	0.03514	0.196
52	27	26	52	26	27	198194.543	0.03441	0.304
52	27	25	52	26	27	198194.543	0.03436	0.196
27	12	16	26	12	15	198215.138	-0.00741	
27	12	15	26	12	14	198329.818	-0.00691	
27	9	19	26	9	18	198753.869	0.00066	
33	0	33	32	0	32	198783.429	-0.00867	0.4521
33	0	33	32	1	32	198783.429	-0.00867	0.0479
33	1	33	32	0	32	198783.429	-0.00867	0.0479
33	1	33	32	1	32	198783.429	-0.00867	0.4521
26	8	18	25	8	17	199001.539	-0.00225	
53	7	46	53	7	47	199029.133	-0.02978	0.3338
53	8	46	53	6	47	199029.133	-0.02978	0.3338
53	8	46	53	7	47	199029.133	-0.02978	0.1662
53	7	46	53	6	47	199029.133	-0.02978	0.1662
30	5	26	29	4	25	199107.836	-0.15657	0.0371
30	4	26	29	4	25	199107.836	-0.06339	0.4629
30	5	26	29	5	25	199107.836	0.06717	0.4629
30	4	26	29	5	25	199107.836	0.16035	0.0371
27	11	17	26	11	16	199322.126	-0.0049	
50	27	23	50	26	24	199518.438	0.02042	0.3013
50	27	24	50	26	24	199518.438	0.02043	0.1987
50	27	23	50	26	25	199518.438	0.02033	0.1987
50	27	24	50	26	25	199518.438	0.02034	0.3013
26	9	17	25	9	16	199541.956	0.00713	
21	8	13	20	7	13	199794.161	-0.01962	
49	4	45	49	4	46	199805.710	-0.01934	0.3406
49	5	45	49	3	46	199805.710	-0.01934	0.3406
49	5	45	49	4	46	199805.710	-0.01934	0.1594
49	4	45	49	3	46	199805.710	-0.01934	0.1594
27	10	18	26	10	17	199919.757	0.00085	
27	11	16	26	11	15	200226.182	-0.0081	
31	4	28	30	4	27	200472.058	0.01509	0.4596
31	3	28	30	3	27	200472.058	0.01313	0.4596
31	4	28	30	3	27	200472.058	0.01184	0.0404
31	3	28	30	4	27	200472.058	0.01638	0.0404
28	27	2	27	27	1	200614.046	-0.0419	0.5
28	27	1	27	27	0	200614.046	-0.0419	0.5
28	26	2	27	26	1	200713.829	-0.03999	0.5
28	26	3	27	26	2	200713.829	-0.03999	0.5
28	25	3	27	25	2	200825.165	0.01013	0.5
28	25	4	27	25	3	200825.165	0.01013	0.5
19	9	10	18	8	10	200845.770	-0.00938	
52	6	46	52	6	47	200925.901	-0.00517	0.3361
52	7	46	52	5	47	200925.901	-0.00517	0.3361
52	7	46	52	6	47	200925.901	-0.00517	0.1639
52	6	46	52	5	47	200925.901	-0.00517	0.1639
28	24	4	27	24	3	200950.035	0.00853	0.5
28	24	5	27	24	4	200950.035	0.00853	0.5
28	23	6	27	23	5	201091.085	0.03485	0.5
28	23	5	27	23	4	201091.085	0.03485	0.5
28	22	7	27	22	6	201251.440	0.02319	0.5
28	22	6	27	22	5	201251.440	0.02319	0.5
48	3	45	48	3	46	201340.941	-0.04076	0.3423
48	4	45	48	2	46	201340.941	-0.04076	0.3423
48	4	45	48	3	46	201340.941	-0.04076	0.1577
48	3	45	48	2	46	201340.941	-0.04076	0.1577
28	21	7	27	21	6	201435.178	0.02306	0.5
28	21	8	27	21	7	201435.178	0.02306	0.5
28	8	21	27	8	20	201453.537	-0.00387	
21	6	15	20	5	15	201514.848	-0.01477	
55	8	47	55	8	48	201568.567	0.035	0.3313
55	9	47	55	7	48	201568.567	0.035	0.3313
55	9	47	55	8	48	201568.567	0.035	0.1687
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28	20	8	27	20	7	201647.436	0.01728	0.5
28	20	9	27	20	8	201647.436	0.01728	0.5
46	27	19	46	26	20	201678.279	0.03462	0.2951
46	27	19	46	26	21	201678.279	0.03462	0.2049
46	27	20	46	26	20	201678.279	0.03462	0.2049
46	27	20	46	26	21	201678.279	0.03462	0.2951
32	2	30	31	2	29	201876.826	-0.00995	0.4568
32	2	30	31	3	29	201876.826	-0.00992	0.0432
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32	3	30	31	3	29	201876.826	-0.00993	0.4568
28	19	10	27	19	9	201894.904	-0.01174	0.5
28	19	9	27	19	8	201894.904	-0.01174	0.5
20	4	16	19	3	16	202091.633	-0.0271	
28	18	11	27	18	10	202186.565	0.00368	0.5
28	18	10	27	18	9	202186.565	0.00367	0.5
28	17	12	27	17	11	202534.483	-0.00761	0.5
28	17	11	27	17	10	202534.483	-0.00787	0.5
29	6	23	28	7	22	202538.280	0.03165	
28	7	21	27	7	20	202559.450	-0.01498	
29	7	23	28	7	22	202601.686	-0.007	
29	6	23	28	6	22	202671.329	-0.00557	
29	7	23	28	6	22	202734.782	0.00318	
18	10	8	17	9	9	202797.519	-0.05364	
28	16	12	27	16	11	202955.736	-0.02515	0.5
28	16	13	27	16	12	202955.736	-0.01861	0.5
33	1	32	32	1	31	203298.935	-0.0067	0.4543
33	1	32	32	2	31	203298.935	-0.0067	0.0457
33	2	32	32	1	31	203298.935	-0.0067	0.0457
33	2	32	32	2	31	203298.935	-0.0067	0.4543
28	15	14	27	15	13	203475.325	0.06502	0.5
28	15	13	27	15	12	203475.325	-0.06444	0.5
54	7	47	54	7	48	203590.145	0.00092	0.3338
54	8	47	54	6	48	203590.145	0.00092	0.3338
54	8	47	54	7	48	203590.145	0.00092	0.1662
54	7	47	54	6	48	203590.145	0.00092	0.1662
17	11	7	16	10	6	203743.836	0.24412	0.2143
17	11	6	16	10	6	203743.836	0.18834	0.2857
17	11	7	16	10	7	203743.836	-0.16411	0.2857
17	11	6	16	10	7	203743.836	-0.21988	0.2143
30	5	25	29	6	24	203748.188	-0.00042	
30	6	25	29	6	24	203750.115	-0.00575	
30	5	25	29	5	24	203752.563	-0.0202	
30	6	25	29	5	24	203754.483	-0.03351	
56	28	28	56	27	29	204077.463	-0.02183	0.3069
56	28	29	56	27	30	204077.463	-0.02434	0.3069
56	28	28	56	27	30	204077.463	-0.02451	0.1931
56	28	29	56	27	29	204077.463	-0.02165	0.1931
28	14	15	27	14	14	204130.850	0.00873	
28	14	14	27	14	13	204132.864	-0.04297	
27	10	17	26	10	16	204238.552	-0.0109	
50	4	46	50	4	47	204331.443	0.01465	0.3406
50	5	46	50	3	47	204331.443	0.01465	0.3406
50	5	46	50	4	47	204331.443	0.01465	0.1594
50	4	46	50	3	47	204331.443	0.01465	0.1594
16	12	4	15	11	4	204496.799	0.02095	0.5491
16	12	5	15	11	4	204496.799	0.02121	0.4509
34	0	34	33	0	33	204726.265	0.01879	0.4521
34	0	34	33	1	33	204726.265	0.01879	0.0479
34	1	34	33	0	33	204726.265	0.01879	0.0479
34	1	34	33	1	33	204726.265	0.01879	0.4521
27	8	19	26	8	18	204868.751	-0.01641	
28	13	15	27	13	14	205003.724	-0.02641	
31	5	27	30	4	26	205043.494	-0.08595	0.0375
31	4	27	30	4	26	205043.494	-0.04748	0.4625
31	5	27	30	5	26	205043.494	0.00723	0.4625
31	4	27	30	5	26	205043.494	0.04571	0.0375
15	13	2	14	12	2	205167.464	-0.00488	0.2667
15	13	2	14	12	3	205167.464	-0.00489	0.2333
15	13	3	14	12	2	205167.464	-0.00488	0.2333
15	13	3	14	12	3	205167.464	-0.00489	0.2667
28	9	20	27	9	19	205387.969	0.01735	
22	8	14	21	7	14	205777.657	-0.04347	
14	14	1	13	13	0	205807.778	0.00492	0.2398
14	14	1	13	13	1	205807.778	0.00492	0.2602
14	14	0	13	13	0	205807.778	0.00492	0.2602
14	14	0	13	13	1	205807.778	0.00492	0.2398
28	12	17	27	12	16	206053.907	0.016	
28	12	16	27	12	15	206304.905	0.01011	
32	4	29	31	4	28	206413.744	0.01655	0.4593
32	3	29	31	3	28	206413.744	0.01577	0.4593
32	4	29	31	3	28	206413.744	0.01527	0.0407
32	3	29	31	4	28	206413.744	0.01706	0.0407
28	11	18	27	11	17	207143.382	0.02401	
52	5	47	52	5	48	207222.709	0.02505	0.3386
52	6	47	52	4	48	207222.709	0.02505	0.3386
52	6	47	52	5	48	207222.709	0.02505	0.1614
52	5	47	52	4	48	207222.709	0.02505	0.1614
48	2	46	48	2	47	207287.375	0.04908	0.3443
48	3	46	48	1	47	207287.375	0.04908	0.3443
48	3	46	48	2	47	207287.375	0.04908	0.1557
48	2	46	48	1	47	207287.375	0.04908	0.1557
28	10	19	27	10	18	207315.765	0.0336	
29	8	22	28	8	21	207433.178	0.01427	
33	2	31	32	2	30	207820.004	-0.00706	0.4566
33	2	31	32	3	30	207820.004	-0.00705	0.0434
33	3	31	32	2	30	207820.004	-0.00707	0.0434
33	3	31	32	3	30	207820.004	-0.00706	0.4566
29	27	3	28	27	2	207858.969	-0.0554	0.5
29	27	2	28	27	1	207858.969	-0.0554	0.5
27	9	18	26	9	17	207962.066	-0.00153	
29	26	3	28	26	2	207969.557	-0.03655	0.5
29	26	4	28	26	3	207969.557	-0.03655	0.5
29	7	22	28	7	21	208050.105	0.00548	
29	25	4	28	25	3	208093.023	0.01514	0.5
29	25	5	28	25	4	208093.023	0.01514	0.5
29	24	5	28	24	4	208231.598	0.00107	0.5
29	24	6	28	24	5	208231.598	0.00107	0.5
29	23	7	28	23	6	208388.252	0.02028	0.5
29	23	6	28	23	5	208388.252	0.02028	0.5
30	6	24	29	7	23	208468.977	-0.00825	
30	7	24	29	7	23	208498.693	-0.00494	
30	6	24	29	6	23	208532.445	0.01458	
20	9	12	19	8	12	208569.010	0.02261	
58	9	49	58	9	50	208591.762	0.02409	0.3301
58	10	49	58	8	50	208591.762	0.02408	0.3301
58	10	49	58	9	50	208591.762	0.02408	0.1699
58	9	49	58	8	50	208591.762	0.02409	0.1699
29	21	8	28	21	7	208770.938	0.00441	0.5
29	21	9	28	21	8	208770.938	0.00441	0.5
28	11	17	27	11	16	208838.347	-0.00896	
51	4	47	51	4	48	208856.364	0.0078	0.3405
51	5	47	51	3	48	208856.364	0.0078	0.3405
51	5	47	51	4	48	208856.364	0.0078	0.1595
51	4	47	51	3	48	208856.364	0.0078	0.1595
29	20	9	28	20	8	209007.347	-0.0089	0.5
29	20	10	28	20	9	209007.347	-0.0089	0.5
21	5	16	20	4	16	209008.722	0.02479	
20	9	11	19	8	12	209105.681	-0.00137	
34	1	33	33	1	32	209241.747	-0.00529	0.4542
34	1	33	33	2	32	209241.747	-0.00529	0.0458
34	2	33	33	1	32	209241.747	-0.00529	0.0458
34	2	33	33	2	32	209241.747	-0.00529	0.4542
29	19	11	28	19	10	209283.363	-0.01492	0.5
29	19	10	28	19	9	209283.363	-0.01493	0.5
29	18	12	28	18	11	209609.159	-0.00912	0.5
29	18	11	28	18	10	209609.159	-0.00916	0.5
31	6	26	30	6	25	209672.170	0.00078	
31	5	26	30	5	25	209673.243	-0.01951	
19	10	9	18	9	9	209683.515	0.02309	
19	10	10	18	9	10	209752.427	-0.01574	
29	17	13	28	17	12	209998.668	-0.00813	0.5
29	17	12	28	17	11	209998.668	-0.0091	0.5
54	6	48	54	6	49	210013.556	-0.00307	0.3367
54	7	48	54	5	49	210013.556	-0.00307	0.3367
54	7	48	54	6	49	210013.556	-0.00307	0.1633
54	6	48	54	5	49	210013.556	-0.00307	0.1633
21	8	14	20	7	14	210046.579	-0.01441	
28	8	20	27	8	19	210116.922	0.00118	
21	6	16	20	5	16	210349.229	-0.00553	
50	3	47	50	3	48	210381.050	0.02429	0.3428
50	4	47	50	2	48	210381.050	0.02429	0.3428
50	4	47	50	3	48	210381.050	0.02429	0.1572
50	3	47	50	2	48	210381.050	0.02429	0.1572
29	16	13	28	16	12	210471.713	-0.01104	0.5
29	16	14	28	16	13	210471.713	0.01022	0.5
35	0	35	34	0	34	210667.922	-0.01802	0.4521
35	0	35	34	1	34	210667.922	-0.01802	0.0479
35	1	35	34	0	34	210667.922	-0.01802	0.0479
35	1	35	34	1	34	210667.922	-0.01802	0.4521
57	8	49	57	8	50	210719.345	0.01634	0.3324
57	9	49	57	7	50	210719.345	0.01634	0.3324
57	9	49	57	8	50	210719.345	0.01634	0.1676
57	8	49	57	7	50	210719.345	0.01634	0.1676
32	4	28	31	4	27	210979.524	-0.02283	0.924
32	5	28	31	4	27	210979.524	-0.03859	0.076
17	12	5	16	11	5	211626.157	0.02752	0.2788
17	12	6	16	11	6	211626.157	0.01676	0.2788
17	12	5	16	11	6	211626.157	0.01528	0.2212
17	12	6	16	11	5	211626.157	0.02899	0.2212
53	5	48	53	5	49	211754.483	0.01994	0.3389
53	6	48	53	4	49	211754.483	0.01994	0.3389
53	6	48	53	5	49	211754.483	0.01994	0.1611
53	5	48	53	4	49	211754.483	0.01994	0.1611
29	9	21	28	9	20	211789.866	-0.00754	
29	14	16	28	14	15	211800.669	0.01675	
29	14	15	28	14	14	211806.061	-0.01482	
16	13	4	15	12	3	212321.088	0.0324	0.2297
16	13	3	15	12	4	212321.088	0.03236	0.2297
16	13	4	15	12	4	212321.088	0.03237	0.2703
16	13	3	15	12	3	212321.088	0.0324	0.2703
33	4	30	32	4	29	212354.819	0.03677	0.459
33	3	30	32	3	29	212354.819	0.03647	0.459
33	4	30	32	3	29	212354.819	0.03627	0.041
33	3	30	32	4	29	212354.819	0.03697	0.041
21	9	12	20	8	12	212632.963	0.01642	
56	7	49	56	7	50	212702.743	0.03463	0.3349
56	8	49	56	6	50	212702.743	0.03463	0.3349
56	8	49	56	7	50	212702.743	0.03463	0.1651
56	7	49	56	6	50	212702.743	0.03463	0.1651
29	13	17	28	13	16	212760.014	0.03281	

29	13	16	28	13	15	212821.242	0.02892	
15	14	2	14	13	1	212970.016	0.03297	0.2371
15	14	2	14	13	2	212970.016	0.03297	0.2629
15	14	1	14	13	1	212970.016	0.03297	0.2629
15	14	1	14	13	2	212970.016	0.03297	0.2371
21	5	17	20	4	17	212979.625	-0.03214	
23	8	15	22	7	15	213111.414	-0.0053	
28	10	18	27	10	17	213594.564	0.02375	
30	7	23	29	7	22	213686.721	0.02837	
34	2	32	33	2	31	213762.245	0.02522	0.4564
34	2	32	33	3	31	213762.245	0.02522	0.0436
34	3	32	33	2	31	213762.245	0.02521	0.0436
34	3	32	33	3	31	213762.245	0.02522	0.4564
22	6	16	21	5	16	213908.486	0.02694	
29	12	18	28	12	17	213930.256	0.02591	
31	6	25	30	7	24	214383.759	0.00158	
31	7	25	30	7	24	214397.431	-0.02214	
31	6	25	30	6	24	214413.490	0.02128	
31	7	25	30	6	24	214427.188	0.02258	
29	12	17	28	12	16	214450.558	0.01491	
29	10	20	28	10	19	214478.781	0.00199	
55	6	49	55	6	50	214554.373	0.0233	0.3368
55	7	49	55	5	50	214554.373	0.0233	0.3368
55	7	49	55	6	50	214554.373	0.0233	0.1632
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29	11	19	28	11	18	214891.084	-0.04209	
53	29	24	53	28	25	214917.139	-0.0219	0.2996
53	29	24	53	28	26	214917.139	-0.0219	0.2004
53	29	25	53	28	25	214917.139	-0.0219	0.2004
53	29	25	53	28	26	214917.139	-0.0219	0.2996
29	8	21	28	8	20	215093.699	-0.00813	
30	27	4	29	27	3	215112.408	-0.04016	0.5
30	27	3	29	27	2	215112.408	-0.04016	0.5
22	9	14	21	8	13	215172.743	0.01657	
35	1	34	34	1	33	215183.501	0.02955	0.4541
35	1	34	34	2	33	215183.501	0.02955	0.0459
35	2	34	34	1	33	215183.501	0.02955	0.0459
35	2	34	34	2	33	215183.501	0.02955	0.4541
30	26	4	29	26	3	215234.576	-0.01807	0.5
30	26	5	29	26	4	215234.576	-0.01807	0.5
58	8	50	58	8	51	215288.610	-0.00791	0.3329
58	9	50	58	7	51	215288.610	-0.00791	0.3329
58	9	50	58	8	51	215288.610	-0.00791	0.1671
58	8	50	58	7	51	215288.610	-0.00791	0.1671
30	25	5	29	25	4	215371.009	-0.02485	0.5
30	25	6	29	25	5	215371.009	-0.02485	0.5
30	24	6	29	24	5	215524.380	0.01257	0.5
30	24	7	29	24	6	215524.380	0.01257	0.5
28	9	19	27	9	18	215558.469	-0.02337	
30	23	8	29	23	7	215697.826	0.02162	0.5
30	23	7	29	23	6	215697.826	0.02162	0.5
30	22	9	29	22	8	215895.380	0.01694	0.5
30	22	8	29	22	7	215895.380	0.01694	0.5
30	21	9	29	21	8	216122.126	-0.01464	0.5
30	21	10	29	21	9	216122.126	-0.01464	0.5
54	5	49	54	5	50	216285.010	-0.02191	0.3389
54	6	49	54	4	50	216285.010	-0.02191	0.3389
54	6	49	54	5	50	216285.010	-0.02191	0.1611
54	5	49	54	4	50	216285.010	-0.02191	0.1611
50	2	48	50	2	49	216322.327	0.0124	0.3446
50	3	48	50	1	49	216322.327	0.0124	0.3446
50	3	48	50	2	49	216322.327	0.0124	0.1554
50	2	48	50	1	49	216322.327	0.0124	0.1554
30	20	10	29	20	9	216384.721	0.01836	0.5
30	20	11	29	20	10	216384.721	0.01836	0.5
20	10	10	19	9	10	216488.159	-0.03349	
36	0	36	35	0	35	216608.469	-0.01817	0.452
36	0	36	35	1	35	216608.469	-0.01817	0.048
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20	10	11	19	9	11	216664.799	-0.01436	
30	19	12	29	19	11	216691.636	-0.0416	0.5
30	19	11	29	19	10	216691.636	-0.04161	0.5
20	10	10	19	9	11	216709.576	-0.02961	
21	9	12	20	8	13	216876.962	-0.03849	
33	4	29	32	4	28	216915.643	-0.0087	0.4616
33	5	29	32	4	28	216915.643	-0.01511	0.0384
33	4	29	32	5	28	216915.643	0.00706	0.0384
33	5	29	32	5	28	216915.643	0.00065	0.4616
23	7	16	22	6	16	216955.860	0.00228	
30	18	13	29	18	12	217054.685	0.02057	0.5
30	18	12	29	18	11	217054.685	0.02043	0.5
57	7	50	57	7	51	217254.725	-0.02074	0.3349
57	8	50	57	6	51	217254.725	-0.02074	0.3349
57	8	50	57	7	51	217254.725	-0.02074	0.1651
57	7	50	57	6	51	217254.725	-0.02074	0.1651
30	17	14	29	17	13	217489.722	0.00868	0.5
30	17	13	29	17	12	217489.722	0.00535	0.5
22	9	13	21	8	13	217714.102	-0.02145	
60	9	51	60	9	52	217769.612	0.03262	0.331
60	10	51	60	8	52	217769.612	0.03262	0.331
60	10	51	60	9	52	217769.612	0.03262	0.169
60	9	51	60	8	52	217769.612	0.03262	0.169
29	11	18	28	11	17	217835.216	0.01484	
21	8	13	20	7	14	217859.439	0.04765	
53	4	49	53	4	50	217904.152	-0.00651	0.3409
53	5	49	53	3	50	217904.152	-0.00651	0.3409
53	5	49	53	4	50	217904.152	-0.00651	0.1591
53	4	49	53	3	50	217904.152	-0.00651	0.1591
30	9	22	29	9	21	217999.189	-0.00747	
30	16	14	29	16	13	218019.873	-0.05458	0.5
30	16	15	29	16	14	218019.873	0.01078	0.5
34	4	31	33	4	30	218295.136	0.01832	0.4587
34	3	31	33	3	30	218295.136	0.0182	0.4587
34	4	31	33	3	30	218295.136	0.01813	0.0413
34	3	31	33	4	30	218295.136	0.0184	0.0413
22	8	15	21	7	15	218641.155	0.03009	
30	15	15	29	15	14	218680.595	-0.01909	
56	6	50	56	6	51	219093.302	-0.0114	0.3373
56	7	50	56	5	51	219093.302	-0.0114	0.3373
56	7	50	56	6	51	219093.302	-0.0114	0.1627
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31	7	24	30	7	23	219421.371	0.00244	
17	13	5	16	12	4	219466.423	0.01338	0.2264
17	13	4	16	12	5	219466.423	0.01309	0.2264
17	13	5	16	12	5	219466.423	0.01312	0.2736
17	13	4	16	12	4	219466.423	0.01335	0.2736
30	14	17	29	14	16	219520.324	-0.05042	
30	14	16	29	14	15	219533.875	-0.0496	
31	8	24	30	7	23	219588.986	-0.01572	
59	30	29	59	29	30	219627.777	-0.02507	0.305
59	30	29	59	29	31	219627.777	-0.02531	0.195
59	30	30	59	29	31	219627.777	-0.02529	0.305
59	30	30	59	29	30	219627.777	-0.02506	0.195
35	2	33	34	2	32	219703.416	0.00069	0.4562
35	2	33	34	3	32	219703.416	0.00069	0.0438
35	3	33	34	2	32	219703.416	0.00069	0.0438
35	3	33	34	3	32	219703.416	0.00069	0.4562
30	8	22	29	8	21	220111.644	-0.02896	
16	14	3	15	13	2	220129.062	-0.02527	0.2342
16	14	3	15	13	3	220129.062	-0.02527	0.2658
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62	10	52	62	10	53	220143.683	0.00855	0.3288
62	11	52	62	9	53	220143.683	0.00854	0.3288
62	11	52	62	10	53	220143.683	0.00854	0.1712
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22	5	17	21	4	17	220209.884	-0.01777	
32	6	26	31	7	25	220293.515	0.04394	
32	7	26	31	7	25	220299.659	-0.03668	
32	6	26	31	6	25	220307.138	-0.02892	
32	7	26	31	6	25	220313.382	-0.00962	
58	30	28	58	29	29	220359.116	0.01338	0.3036
58	30	29	58	29	29	220359.116	0.01338	0.1964
58	30	28	58	29	30	220359.116	0.01329	0.1964
58	30	29	58	29	30	220359.116	0.0133	0.3036
30	13	18	29	13	17	220597.294	-0.00177	
30	13	17	29	13	16	220734.170	-0.0442	
15	15	1	14	14	0	220765.906	-0.00247	0.2395
15	15	1	14	14	1	220765.906	-0.00247	0.2605
15	15	0	14	14	0	220765.906	-0.00247	0.2605
15	15	0	14	14	1	220765.906	-0.00247	0.2395
51	2	49	51	2	50	220839.884	0.00545	0.3447
51	3	49	51	1	50	220839.884	0.00545	0.3447
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22	6	17	21	5	17	220921.197	-0.01797	
57	30	27	57	29	28	221047.354	0.02247	0.3025
57	30	28	57	29	28	221047.354	0.02247	0.1975
57	30	27	57	29	29	221047.354	0.02244	0.1975
57	30	28	57	29	29	221047.354	0.02244	0.3025
36	1	35	35	1	34	221124.071	0.00529	0.454
36	1	35	35	2	34	221124.071	0.00529	0.046
36	2	35	35	1	34	221124.071	0.00529	0.046
36	2	35	35	2	34	221124.071	0.00529	0.454
30	10	21	29	10	20	221382.268	-0.0321	
58	7	51	58	7	52	221804.235	0.01205	0.3353
58	8	51	58	6	52	221804.235	0.01205	0.3353
58	8	51	58	7	52	221804.235	0.01205	0.1647
58	7	51	58	6	52	221804.235	0.01205	0.1647
30	12	19	29	12	18	221819.124	-0.05024	
24	8	16	23	7	16	222065.816	-0.0251	
50	1	49	50	1	50	222170.338	-0.00181	0.3466
50	2	49	50	0	50	222170.338	-0.00181	0.3466
50	2	49	50	1	50	222170.338	-0.00181	0.1534
50	1	49	50	0	50	222170.338	-0.00181	0.1534
29	9	20	28	9	19	222234.094	0.03422	
61	9	52	61	9	53	222351.211	0.02082	0.3312
61	10	52	61	8	53	222351.211	0.02082	0.3312
61	10	52	61	9	53	222351.211	0.02082	0.1688
61	9	52	61	8	53	222351.211	0.02082	0.1688
31	27	5	30	27	4	222374.634	-0.03924	0.5
31	27	4	30	27	3	222374.634	-0.03924	0.5
30	11	20	29	11	19	222505.500	-0.01028	
31	26	5	30	26	4	222509.231	0.01084	0.5
31	26	6	30	26	5	222509.231	0.01084	0.5
37	0	37	36	0	36	222547.874	0.0181	0.452
37	0	37	36	1	36	222547.874	0.0181	0.048
37	1	37	36	0	36	222547.874	0.0181	0.048
37	1	37	36	1	36	222547.874	0.0181	0.452

31	25	6	30	25	5	222659.659	0.03336	0.5
31	25	7	30	25	6	222659.659	0.03336	0.5
29	10	19	28	10	18	222707.336	0.00391	
31	24	7	30	24	6	222828.804	0.02151	0.5
31	24	8	30	24	7	222828.804	0.02151	0.5
30	12	18	29	12	17	222837.959	-0.01361	
34	4	30	33	5	29	222851.665	0.02761	0.0387
34	5	30	33	5	29	222851.665	0.02503	0.4613
34	4	30	33	4	29	222851.665	0.0212	0.4613
34	5	30	33	4	29	222851.665	0.01862	0.0387
30	9	22	29	8	21	222879.129	0.00936	
22	9	14	21	8	14	222985.551	0.0272	
31	23	9	30	23	8	223020.298	0.02299	0.5
31	23	8	30	23	7	223020.298	0.02299	0.5
21	10	11	20	9	11	223121.846	-0.01626	
31	22	10	30	22	9	223238.593	-0.0031	0.5
31	22	9	30	22	8	223238.593	-0.0031	0.5
31	21	10	30	21	9	223489.480	0.01344	0.5
31	21	11	30	21	10	223489.480	0.01344	0.5
22	4	18	21	3	18	223520.763	0.03538	
21	10	12	20	9	12	223540.369	0.00432	
22	5	18	21	4	18	223585.211	0.032	
57	6	51	57	6	52	223630.586	0.00574	0.3373
57	7	51	57	5	52	223630.586	0.00574	0.3373
57	7	51	57	6	52	223630.586	0.00574	0.1627
57	6	51	57	5	52	223630.586	0.00574	0.1627
21	10	11	20	9	12	223658.600	0.04192	
31	20	11	30	20	10	223780.292	0.00404	0.5
31	20	12	30	20	11	223780.292	0.00404	0.5
31	9	23	30	9	22	224063.639	0.01028	
31	19	13	30	19	12	224120.846	0.01105	0.5
31	19	12	30	19	11	224120.846	0.01103	0.5
35	3	32	34	3	31	224234.664	0.01184	0.4586
35	4	32	34	3	31	224234.664	0.01181	0.0414
35	4	32	34	4	31	224234.664	0.01188	0.4586
35	3	32	34	4	31	224234.664	0.01191	0.0414
60	8	52	60	8	53	224416.429	0.01381	0.3335
60	9	52	60	7	53	224416.429	0.01381	0.3335
60	9	52	60	8	53	224416.429	0.01381	0.1665
60	8	52	60	7	53	224416.429	0.01381	0.1665
31	18	14	30	18	13	224524.319	-0.02674	0.5
31	18	13	30	18	12	224524.319	-0.02724	0.5
20	11	10	19	10	9	224836.058	0.01388	
20	11	9	19	10	9	224838.753	0.01176	
20	11	10	19	10	10	224851.885	0.05988	
31	17	15	30	17	14	225009.307	-0.00685	0.5
31	17	14	30	17	13	225009.307	-0.01758	0.5
32	7	25	31	8	24	225050.509	-0.026	
32	8	25	31	8	24	225131.852	0.00357	
32	7	25	31	7	24	225218.167	-0.00108	
31	8	23	30	8	22	225323.189	0.02594	
52	2	50	52	2	51	225357.536	0.02389	0.3446
52	3	50	52	1	51	225357.536	0.02389	0.3446
52	3	50	52	2	51	225357.536	0.02389	0.1554
52	2	50	52	1	51	225357.536	0.02389	0.1554
22	9	13	21	8	14	225526.946	0.02538	
31	16	15	30	16	14	225602.682	-0.11877	0.5
31	16	16	30	16	15	225602.682	0.07196	0.5
36	2	34	35	2	33	225643.557	0.00036	0.4561
36	2	34	35	3	33	225643.557	0.00036	0.0439
36	3	34	35	2	33	225643.557	0.00036	0.0439
36	3	34	35	3	33	225643.557	0.00036	0.4561
19	12	8	18	11	7	225827.673	0.11974	0.2132
19	12	7	18	11	7	225827.673	0.08851	0.2868
19	12	8	18	11	8	225827.673	-0.10491	0.2868
19	12	7	18	11	8	225827.673	-0.13614	0.2132
19	12	8	18	11	7	225827.673	0.1206	0.2131
19	12	7	18	11	7	225827.673	0.08937	0.2869
19	12	8	18	11	8	225827.673	-0.10405	0.2869
19	12	7	18	11	8	225827.673	-0.13528	0.2131
23	6	17	22	5	17	226014.244	0.00997	
33	6	27	32	7	26	226202.979	-0.00552	
33	7	27	32	7	26	226205.792	0.01583	
33	6	27	32	6	26	226209.207	-0.00092	
31	15	17	30	15	16	226344.727	0.01088	
31	15	16	30	15	15	226347.455	-0.03272	
59	7	52	59	7	53	226351.263	-0.05286	0.3355
59	8	52	59	6	53	226351.263	-0.05286	0.3355
59	8	52	59	7	53	226351.263	-0.05286	0.1645
59	7	52	59	6	53	226351.263	-0.05286	0.1645
18	13	5	17	12	5	226600.637	-0.01758	0.2771
18	13	6	17	12	6	226600.637	-0.01889	0.2771
18	13	5	17	12	6	226600.637	-0.01906	0.2229
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62	9	53	62	9	54	226928.363	-0.02226	0.3315
62	10	53	62	8	54	226928.363	-0.02226	0.3315
62	10	53	62	9	54	226928.363	-0.02226	0.1685
62	9	53	62	8	54	226928.363	-0.02226	0.1685
55	4	51	55	4	52	226949.606	0.00399	0.3413
55	5	51	55	3	52	226949.606	0.00399	0.3413
55	5	51	55	4	52	226949.606	0.00399	0.1587
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37	2	36	36	2	35	227063.521	0.01858	0.4539
37	1	36	36	1	35	227063.521	0.01858	0.4539
37	1	36	36	2	35	227063.521	0.01858	0.0461
37	2	36	36	1	35	227063.521	0.01858	0.0461
30	11	19	29	11	18	227184.288	0.01108	
17	14	4	16	13	3	227283.267	0.03288	0.2305
17	14	4	16	13	4	227283.267	0.03288	0.2695
17	14	3	16	13	3	227283.267	0.03288	0.2695
17	14	3	16	13	4	227283.267	0.03287	0.2305
31	14	18	30	14	17	227293.404	-0.01383	
31	14	17	30	14	16	227325.697	-0.01281	
24	9	15	23	8	15	227369.317	0.00044	
34	6	29	33	5	28	227449.165	-0.1246	0.036
34	5	29	33	5	28	227449.165	-0.05967	0.464
34	6	29	33	6	28	227449.165	0.02925	0.464
34	5	29	33	6	28	227449.165	0.09419	0.036
23	8	16	22	7	16	227741.929	-0.00618	
16	15	2	15	14	1	227927.440	0.01083	0.2368
16	15	2	15	14	2	227927.440	0.01083	0.2632
16	15	1	15	14	1	227927.440	0.01083	0.2632
16	15	1	15	14	2	227927.440	0.01083	0.2368
31	10	22	30	10	21	228024.662	-0.00728	
30	9	21	29	9	20	228035.623	0.0009	
58	6	52	58	6	53	228166.301	0.03144	0.3376
58	7	52	58	5	53	228166.301	0.03144	0.3376
58	7	52	58	6	53	228166.301	0.03144	0.1624
58	6	52	58	5	53	228166.301	0.03144	0.1624
31	13	19	30	13	18	228484.094	0.0297	
38	0	38	37	0	37	228486.056	0.04118	0.452
38	0	38	37	1	37	228486.056	0.04118	0.048
38	1	38	37	0	37	228486.056	0.04118	0.048
38	1	38	37	1	37	228486.056	0.04118	0.452
31	13	18	30	13	17	228775.556	0.00459	
35	4	31	34	5	30	228787.347	0.00289	0.039
35	5	31	34	5	30	228787.347	0.00185	0.461
35	4	31	34	4	30	228787.347	0.0003	0.461
35	5	31	34	4	30	228787.347	-0.00074	0.039
23	7	17	22	6	17	228814.533	-0.02087	
32	28	4	31	28	3	229513.106	-0.03354	0.5
32	28	5	31	28	4	229513.106	-0.03354	0.5
32	27	6	31	27	5	229645.982	-0.04028	0.5
32	27	5	31	27	4	229645.982	-0.04028	0.5
31	12	20	30	12	19	229681.593	0.01412	
32	26	6	31	26	5	229793.865	0.03443	0.5
32	26	7	31	26	6	229793.865	0.03443	0.5
53	2	51	53	2	52	229875.276	0.04601	0.3447
53	3	51	53	1	52	229875.276	0.04601	0.3447
53	3	51	53	2	52	229875.276	0.04601	0.1553
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31	11	21	30	11	20	229927.570	-0.01023	
32	25	7	31	25	6	229959.186	0.00065	0.5
32	25	8	31	25	7	229959.186	0.00065	0.5
32	9	24	31	9	23	230029.686	-0.00155	
32	24	8	31	24	7	230145.333	0.03213	0.5
32	24	9	31	24	8	230145.333	0.03213	0.5
36	3	33	35	3	32	230173.321	0.00423	0.4581
36	4	33	35	3	32	230173.321	0.00422	0.0419
36	4	33	35	4	32	230173.321	0.00425	0.4581
36	3	33	35	4	32	230173.321	0.00426	0.0419
32	23	10	31	23	9	230356.151	-0.01914	0.5
32	23	9	31	23	8	230356.151	-0.01914	0.5
22	10	13	21	9	13	230408.012	0.01395	
32	22	11	31	22	10	230596.823	0.01052	0.5
32	22	10	31	22	9	230596.823	0.01052	0.5
23	9	15	22	8	15	230636.676	0.00701	
22	10	12	21	9	13	230699.448	-0.0195	
32	8	24	31	8	23	230741.963	-0.01059	
32	21	11	31	21	10	230873.647	0.00629	0.5
32	21	12	31	21	11	230873.647	0.00629	0.5
60	7	53	60	7	54	230896.214	0.02459	0.3359
60	8	53	60	6	54	230896.214	0.02459	0.3359
60	8	53	60	7	54	230896.214	0.02459	0.1641
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33	7	26	32	8	25	230972.353	0.01963	
33	8	26	32	8	25	231011.088	-0.00023	
33	7	26	32	7	25	231053.632	-0.01562	
33	8	26	32	7	25	231092.376	-0.0268	
23	5	18	22	4	18	231190.754	0.00515	
32	20	12	31	20	11	231194.980	-0.01251	0.5
32	20	13	31	20	12	231194.980	-0.01251	0.5
30	10	20	29	10	19	231197.553	-0.0014	
56	4	52	56	4	53	231471.531	-0.03334	0.3415
56	5	52	56	3	53	231471.531	-0.03334	0.3415
56	5	52	56	4	53	231471.531	-0.03334	0.1585
56	4	52	56	3	53	231471.531	-0.03334	0.1585
32	9	24	31	8	23	231537.588	-0.01215	
31	12	19	30	12	18	231554.853	-0.03585	
32	19	14	31	19	13	231571.901	-0.04502	0.5
32	19	13	31	19	12	231571.901	-0.04509	0.5
37	2	35	36	2	34	231582.602	0.00093	0.456
37	2	35	36	3	34	231582.602	0.00093	0.044
37	3	35	36	2	34	231582.602	0.00093	0.044
37	3	35	36	3	34	231582.602	0.00093	0.456
21	11	11	20	10	10	231755.046	-0.01546	
21	11	10	20	10	10	231763.293	-0.0097	
21	11	11	20	10	11	231799.860	0.00495	
32	18	14	31	18	13	232019.591	-0.03464	0.5
32	18	15	31	18	14	232019.591	-0.03295	0.5

34	7	28	33	7	27	232115.409	-0.00014	
32	17	16	31	17	15	232559.367	-0.01509	0.5
32	17	15	31	17	14	232559.367	-0.04794	0.5
25	8	17	24	7	17	232656.489	-0.04434	
59	6	53	59	6	54	232700.507	0.01726	0.3378
59	7	53	59	5	54	232700.507	0.01726	0.3378
59	7	53	59	6	54	232700.507	0.01726	0.1622
59	6	53	59	5	54	232700.507	0.01726	0.1622
55	3	52	55	3	53	232977.030	0.01677	0.3432
55	4	52	55	2	53	232977.030	0.01677	0.3432
55	4	52	55	3	53	232977.030	0.01677	0.1568
55	3	52	55	2	53	232977.030	0.01677	0.1568
38	1	37	37	1	36	233001.748	0.00095	0.4539
38	1	37	37	2	36	233001.748	0.00095	0.0461
38	2	37	37	1	36	233001.748	0.00095	0.0461
38	2	37	37	2	36	233001.748	0.00095	0.4539
25	9	16	24	8	16	233174.612	0.0345	
31	9	22	30	9	21	233191.094	-0.02118	
32	16	16	31	16	15	233222.837	-0.32162	0.5
32	16	17	31	16	16	233222.837	0.20848	0.5
35	6	30	34	5	29	233376.978	-0.07145	0.0364
35	5	30	34	5	29	233376.978	-0.04427	0.4636
35	6	30	34	6	29	233376.978	-0.00651	0.4636
35	5	30	34	6	29	233376.978	0.02067	0.0364
62	8	54	62	8	55	233531.420	-0.03172	0.3341
62	9	54	62	7	55	233531.420	-0.03172	0.3341
62	9	54	62	8	55	233531.420	-0.03172	0.1659
62	8	54	62	7	55	233531.420	-0.03172	0.1659
19	13	7	18	12	7	233720.512	-0.01675	
32	15	18	31	15	17	234056.574	-0.03738	
32	15	17	31	15	16	234063.569	-0.02966	
23	4	19	22	3	19	234152.083	-0.05404	
39	0	39	38	0	38	234422.927	-0.00482	0.452
39	0	39	38	1	38	234422.927	-0.00482	0.048
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39	1	39	38	1	38	234422.927	-0.00482	0.452
32	10	23	31	10	22	234428.175	0.03703	
18	14	5	17	13	4	234430.337	0.01517	0.2278
18	14	5	17	13	5	234430.337	0.01514	0.2722
18	14	4	17	13	4	234430.337	0.01516	0.2722
18	14	4	17	13	5	234430.337	0.01513	0.2278
36	4	32	35	4	31	234722.593	-0.02043	0.4606
36	5	32	35	4	31	234722.593	-0.02084	0.0394
36	4	32	35	5	31	234722.593	-0.01939	0.0394
36	5	32	35	5	31	234722.593	-0.0198	0.4606
17	15	3	16	14	2	235086.157	0.01073	0.234
17	15	3	16	14	3	235086.157	0.01073	0.266
17	15	2	16	14	2	235086.157	0.01073	0.266
17	15	2	16	14	3	235086.157	0.01073	0.234
32	14	19	31	14	18	235121.887	-0.01494	
32	14	18	31	14	17	235195.372	-0.03999	
61	7	54	61	7	55	235438.961	-0.02921	0.3361
61	8	54	61	6	55	235438.961	-0.02921	0.3361
61	8	54	61	7	55	235438.961	-0.02921	0.1639
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23	10	13	22	9	13	235454.083	0.02532	
33	8	25	32	9	24	235527.354	0.00846	
16	16	0	15	15	1	235719.463	-0.00805	0.2399
16	16	1	15	15	0	235719.463	-0.00805	0.2399
16	16	1	15	15	1	235719.463	-0.00805	0.2601
16	16	0	15	15	0	235719.463	-0.00805	0.2601
33	9	25	32	9	24	235936.137	-0.00293	
37	3	34	36	3	33	236111.025	-0.0185	0.4578
37	3	34	36	4	33	236111.025	-0.01849	0.0422
37	4	34	36	3	33	236111.025	-0.01851	0.0422
37	4	34	36	4	33	236111.025	-0.0185	0.4578
33	8	25	32	8	24	236322.969	-0.00341	
32	13	20	31	13	19	236406.154	-0.0058	
31	11	20	30	11	19	236661.511	-0.01412	
33	28	5	32	28	4	236781.272	-0.04175	0.5
33	28	6	32	28	5	236781.272	-0.04175	0.5
34	8	27	33	8	26	236892.869	-0.00437	
34	7	27	33	7	26	236913.448	0.00285	
33	27	7	32	27	6	236926.764	-0.05601	0.5
33	27	6	32	27	5	236926.764	-0.05601	0.5
32	13	19	31	13	18	236996.355	0.01163	
33	26	7	32	26	6	237088.806	0.01472	0.5
33	26	8	32	26	7	237088.806	0.01472	0.5
32	11	22	31	11	21	237110.121	-0.00538	
33	25	8	32	25	7	237270.150	0.02182	0.5
33	25	9	32	25	8	237270.150	0.02182	0.5
24	8	17	23	7	17	237321.349	0.12777	0.4801
23	10	14	22	9	14	237321.349	-0.14605	0.5199
32	12	21	31	12	20	237465.042	0.01294	
33	24	9	32	24	8	237474.414	0.01759	0.5
33	24	10	32	24	9	237474.414	0.01759	0.5
38	2	36	37	2	35	237520.506	-0.00279	0.4558
38	2	36	37	3	35	237520.506	-0.00279	0.0442
38	3	36	37	2	35	237520.506	-0.00279	0.0442
38	3	36	37	3	35	237520.506	-0.00279	0.4558
33	23	11	32	23	10	237706.036	-0.00165	0.5
33	23	10	32	23	9	237706.036	-0.00165	0.5
33	22	12	32	22	11	237970.655	0.0006	0.5
33	22	11	32	22	10	237970.655	0.0006	0.5
23	10	13	22	9	14	237995.418	-0.03635	
35	7	29	34	7	28	238028.082	0.01744	
32	9	23	31	9	22	238063.391	-0.0067	
63	8	55	63	8	56	238084.735	0.0237	0.3344
63	9	55	63	7	56	238084.735	0.0237	0.3344
63	9	55	63	8	56	238084.735	0.0237	0.1656
63	8	55	63	7	56	238084.735	0.0237	0.1656
33	21	12	32	21	11	238275.414	-0.0159	0.5
33	21	13	32	21	12	238275.414	-0.0159	0.5
22	11	11	21	10	11	238600.178	0.02169	
33	20	13	32	20	12	238629.763	0.00554	0.5
33	20	14	32	20	13	238629.763	0.00555	0.5
22	11	12	21	10	12	238694.899	-0.0345	
24	9	16	23	8	16	238718.226	0.03905	
31	10	21	30	10	20	238817.860	-0.00638	
59	5	54	59	5	55	238922.660	-0.00464	0.3397
59	6	54	59	4	55	238922.660	-0.00464	0.3397
59	6	54	59	5	55	238922.660	-0.00464	0.1603
59	5	54	59	4	55	238922.660	-0.00464	0.1603
39	1	38	38	1	37	238938.752	-0.01686	0.4538
39	1	38	38	2	37	238938.752	-0.01686	0.0462
39	2	38	38	1	37	238938.752	-0.01686	0.0462
39	2	38	38	2	37	238938.752	-0.01686	0.4538
33	19	14	32	19	13	239046.183	-0.01497	0.5
33	19	15	32	19	14	239046.183	-0.01472	0.5
36	5	31	35	6	30	239305.384	0.04612	0.0368
36	6	31	35	6	30	239305.384	0.03483	0.4632
36	5	31	35	5	30	239305.384	0.01894	0.4632
36	6	31	35	5	30	239305.384	0.00764	0.0368
33	18	15	32	18	14	239542.017	-0.04315	0.5
33	18	16	32	18	15	239542.017	-0.03776	0.5
62	7	55	62	7	56	239979.795	-0.0611	0.3363
62	8	55	62	6	56	239979.795	-0.0611	0.3363
62	8	55	62	7	56	239979.795	-0.0611	0.1637
62	7	55	62	6	56	239979.795	-0.0611	0.1637
33	17	17	32	17	16	240142.083	0.03065	0.5
33	17	16	32	17	15	240142.083	-0.06511	0.5
40	0	40	39	0	39	240358.560	-0.01841	0.452
40	0	40	39	1	39	240358.560	-0.01841	0.048
40	1	40	39	0	39	240358.560	-0.01841	0.048
40	1	40	39	1	39	240358.560	-0.01841	0.452
37	5	33	36	5	32	240657.334	0.01942	0.4604
37	4	33	36	4	32	240657.334	0.01917	0.4604
37	5	33	36	4	32	240657.334	0.019	0.0396
37	4	33	36	5	32	240657.334	0.01958	0.0396
20	13	7	19	12	7	240822.289	0.0066	0.2845
20	13	8	19	12	8	240822.289	-0.02049	0.2845
20	13	7	19	12	8	240822.289	-0.02463	0.2155
20	13	8	19	12	7	240822.289	0.01073	0.2155
38	3	35	37	3	34	242047.814	0.03767	0.458
38	3	35	37	4	34	242047.814	0.03767	0.042
38	4	35	37	3	34	242047.814	0.03767	0.042
38	4	35	37	4	34	242047.814	0.03767	0.458
18	15	4	17	14	3	242240.510	0.03073	0.2313
18	15	4	17	14	4	242240.510	0.03073	0.2687
18	15	3	17	14	3	242240.510	0.03073	0.2687
18	15	3	17	14	4	242240.510	0.03073	0.2313
18	15	3	17	14	3	242240.510	0.03106	0.2684
18	15	3	17	14	4	242240.510	0.03106	0.2316
18	15	4	17	14	3	242240.510	0.03106	0.2316
18	15	4	17	14	4	242240.510	0.03106	0.2684
35	7	28	34	7	27	242788.941	-0.01869	
17	16	1	16	15	2	242880.203	-0.00903	0.2372
17	16	2	16	15	1	242880.203	-0.00903	0.2372
17	16	2	16	15	2	242880.203	-0.00903	0.2628
17	16	1	16	15	1	242880.203	-0.00903	0.2628
33	9	24	32	9	23	242979.304	0.02198	
34	29	5	33	29	4	243914.925	-0.05042	0.5
34	29	6	33	29	5	243914.925	-0.05042	0.5
36	7	30	35	7	29	243943.310	0.14403	0.5
36	6	30	35	6	29	243943.310	-0.16316	0.5
33	11	23	32	11	22	244026.514	-0.00749	
34	28	6	33	28	5	244058.434	-0.01032	0.5
34	28	7	33	28	6	244058.434	-0.01032	0.5
33	13	21	32	13	20	244337.481	-0.00558	
34	26	8	33	26	7	244394.505	0.02531	0.5
34	26	9	33	26	8	244394.505	0.02531	0.5
34	25	9	33	25	8	244592.918	0.03697	0.5
34	25	10	33	25	9	244592.918	0.03697	0.5
34	24	10	33	24	9	244816.590	0.03034	0.5
34	24	11	33	24	10	244816.590	0.03034	0.5
40	1	39	39	1	38	244874.543	0.00877	0.4537
40	1	39	39	2	38	244874.543	0.00877	0.0463
40	2	39	39	1	38	244874.543	0.00877	0.0463
40	2	39	39	2	38	244874.543	0.00877	0.4537
34	23	12	33	23	11	245070.469	0.02046	0.5
34	23	11	33	23	10	245070.469	0.02046	0.5
33	12	22	32	12	21	245109.168	0.01372	
37	5	32	36	6	31	245233.949	-0.00156	0.0373
37	6	32	36	6	31	245233.949	-0.00621	0.4627
37	5	32	36	5	31	245233.949	-0.01285	0.4627
37	6	32	36	5	31	245233.949	-0.01751	0.0373
34	22	13	33	22	12	245360.802	0.00591	0.5
34	22	12	33	22	11	245360.802	0.00591	0.5
32	10	22	31	10	21	245469.768	0.00079	
33	13	20	32	13	19	245470.426	0.04944	

34	21	13	33	21	12	245695.682	0.03162	0.5
34	21	14	33	21	13	245695.682	0.03162	0.5
32	11	21	31	11	20	245875.469	-0.01127	
34	20	14	33	20	13	246085.563	-0.0291	0.5
34	20	15	33	20	14	246085.563	-0.02907	0.5
41	0	41	40	0	40	246292.892	-0.02815	0.452
41	0	41	40	1	40	246292.892	-0.02815	0.048
41	1	41	40	0	40	246292.892	-0.02815	0.048
41	1	41	40	1	40	246292.892	-0.02815	0.452
34	19	16	33	19	15	246544.871	-0.00987	0.5
34	19	15	33	19	14	246544.871	-0.01072	0.5
38	4	34	37	4	33	246591.347	0.00464	0.46
38	5	34	37	4	33	246591.347	0.00458	0.04
38	4	34	37	5	33	246591.347	0.00481	0.04
38	5	34	37	5	33	246591.347	0.00474	0.46
34	10	25	33	10	24	246686.774	-0.01775	
34	18	17	33	18	16	247093.368	0.00807	0.5
34	18	16	33	18	15	247093.368	-0.00838	0.5
35	9	27	34	9	26	247673.712	-0.00284	
34	17	18	33	17	17	247759.830	0.0996	0.5
34	17	17	33	17	16	247759.830	-0.16704	0.5
35	8	27	34	8	26	247777.901	-0.0171	
21	13	9	20	12	8	247901.712	0.07539	0.2116
21	13	8	20	12	8	247901.712	0.05829	0.2884
21	13	9	20	12	9	247901.712	-0.0459	0.2884
21	13	8	20	12	9	247901.712	-0.06301	0.2116
39	3	36	38	3	35	247983.472	0.01559	0.4576
39	3	36	38	4	35	247983.472	0.01559	0.0424
39	4	36	38	3	35	247983.472	0.01559	0.0424
39	4	36	38	4	35	247983.472	0.01559	0.4576
34	9	25	33	9	24	248101.487	0.00776	
34	16	19	33	16	18	248586.906	-0.01687	
34	16	18	33	16	17	248590.468	-0.03239	
36	8	29	35	8	28	248670.450	0.00274	
36	7	29	35	7	28	248674.995	-0.02166	
20	14	7	19	13	6	248693.596	0.04042	0.2208
20	14	6	19	13	6	248693.596	0.04031	0.2792
20	14	7	19	13	7	248693.596	0.03952	0.2792
20	14	6	19	13	7	248693.596	0.03941	0.2208
27	9	18	26	8	18	249375.730	0.00875	
19	15	5	18	14	4	249388.620	-0.03303	0.2286
19	15	5	18	14	5	249388.620	-0.03304	0.2714
19	15	4	18	14	4	249388.620	-0.03303	0.2714
19	15	4	18	14	5	249388.620	-0.03304	0.2286
40	2	38	39	2	37	249392.764	0.00018	0.4556
40	2	38	39	3	37	249392.764	0.00018	0.0444
40	3	38	39	2	37	249392.764	0.00018	0.0444
40	3	38	39	3	37	249392.764	0.00018	0.4556
34	15	20	33	15	19	249634.953	-0.04861	
34	15	19	33	15	18	249673.914	-0.0493	
37	6	31	36	7	30	249860.226	0.15834	0.0346
37	7	31	36	7	30	249860.226	0.05683	0.4654
37	6	31	36	6	30	249860.226	-0.07753	0.4654
37	7	31	36	6	30	249860.226	-0.17904	0.0346
18	16	2	17	15	3	250038.395	0.0162	0.2347
18	16	3	17	15	2	250038.395	0.0162	0.2347
18	16	3	17	15	3	250038.395	0.0162	0.2653
18	16	2	17	15	2	250038.395	0.0162	0.2653
33	12	21	32	12	20	250138.724	0.04139	
17	17	1	16	16	0	250668.163	0.01461	0.2395
17	17	1	16	16	1	250668.163	0.01461	0.2605
17	17	0	16	16	0	250668.163	0.01461	0.2605
17	17	0	16	16	1	250668.163	0.01461	0.2395
34	11	24	33	11	23	250675.170	-0.00235	
41	1	40	40	1	39	250808.996	-0.01565	0.4536
41	1	40	40	2	39	250808.996	-0.01565	0.0464
41	2	40	40	1	39	250808.996	-0.01565	0.0464
41	2	40	40	2	39	250808.996	-0.01565	0.4536
34	14	21	33	14	20	250936.323	-0.03373	
35	30	6	34	30	5	251046.848	-0.04398	0.5
35	30	5	34	30	4	251046.848	-0.04398	0.5
38	6	33	37	5	32	251162.559	-0.02051	0.0377
38	5	33	37	6	32	251162.559	-0.01394	0.0377
38	6	33	37	6	32	251162.559	-0.01585	0.4623
38	5	33	37	5	32	251162.559	-0.0186	0.4623
35	29	6	34	29	5	251188.530	-0.0332	0.5
35	29	7	34	29	6	251188.530	-0.0332	0.5
33	10	23	32	10	22	251207.891	0.01873	
34	14	20	33	14	19	251269.051	-0.00618	
35	27	9	34	27	8	251518.125	0.01158	0.5
35	27	8	34	27	7	251518.125	0.01158	0.5
35	26	9	34	26	8	251711.287	0.00427	0.5
35	26	10	34	26	9	251711.287	0.00427	0.5
35	25	10	34	25	9	251927.917	0.0304	0.5
35	25	11	34	25	10	251927.917	0.0304	0.5
35	24	11	34	24	10	252172.347	0.04796	0.5
35	24	12	34	24	11	252172.347	0.04796	0.5
42	0	42	41	0	41	252225.946	0.01678	0.4519
42	0	42	41	1	41	252225.946	0.01678	0.0481
42	1	42	41	0	41	252225.946	0.01678	0.0481
42	1	42	41	1	41	252225.946	0.01678	0.4519
34	13	22	33	13	21	252237.867	-0.02969	
35	23	13	34	23	12	252450.006	0.00652	0.5
35	23	12	34	23	11	252450.006	0.00652	0.5
62	5	57	62	5	58	252495.577	0.02761	0.34
62	6	57	62	4	58	252495.577	0.02761	0.34
62	6	57	62	5	58	252495.577	0.02761	0.16
62	5	57	62	4	58	252495.577	0.02761	0.16
39	4	35	38	4	34	252524.603	0.00534	0.4597
39	4	35	38	5	34	252524.603	0.0054	0.0403
39	5	35	38	4	34	252524.603	0.00531	0.0403
39	5	35	38	5	34	252524.603	0.00538	0.4597
34	12	23	33	12	22	252554.817	0.00735	
35	10	26	34	10	25	252638.100	0.01519	
35	22	14	34	22	13	252767.941	-0.01124	0.5
35	22	13	34	22	12	252767.941	-0.01124	0.5
35	21	14	34	21	13	253135.148	-0.02388	0.5
35	21	15	34	21	14	253135.148	-0.02387	0.5
35	9	26	34	9	25	253447.777	-0.02259	
36	9	28	35	9	27	253533.993	0.00872	
35	20	15	34	20	14	253563.561	-0.026	0.5
35	20	16	34	20	15	253563.561	-0.02587	0.5
36	8	28	35	8	27	253586.171	0.00265	
23	12	12	22	11	12	253846.603	-0.03714	
40	3	37	39	3	36	253918.035	-0.00078	0.4575
40	3	37	39	4	36	253918.035	-0.00078	0.0425
40	4	37	39	3	36	253918.035	-0.00078	0.0425
40	4	37	39	4	36	253918.035	-0.00078	0.4575
35	19	16	34	19	15	254069.387	-0.02927	0.5
35	19	17	34	19	16	254069.387	-0.02657	0.5
34	13	21	33	13	20	254286.794	0.00943	
33	11	22	32	11	21	254432.913	0.03324	
37	8	30	36	8	29	254566.340	0.01918	
37	7	30	36	7	29	254568.423	-0.00488	
71	11	60	71	11	61	254629.946	-0.00175	0.3295
71	12	60	71	10	61	254629.946	-0.00175	0.3295
71	12	60	71	11	61	254629.946	-0.00175	0.1705
71	11	60	71	10	61	254629.946	-0.00175	0.1705
35	18	18	34	18	17	254675.440	-0.0243	0.5
35	18	17	34	18	16	254675.440	-0.0722	0.5
22	13	10	21	12	9	254953.817	0.21914	0.2076
22	13	9	21	12	9	254953.817	0.15463	0.2924
22	13	10	21	12	10	254953.817	-0.21055	0.2924
22	13	9	21	12	10	254953.817	-0.27506	0.2076
41	2	39	40	2	38	255327.024	-0.01355	0.4555
41	2	39	40	3	38	255327.024	-0.01355	0.0445
41	3	39	40	2	38	255327.024	-0.01355	0.0445
41	3	39	40	3	38	255327.024	-0.01355	0.4555
35	17	19	34	17	18	255415.186	0.05006	
38	7	32	37	6	31	255778.616	-0.08411	0.0351
38	6	32	37	6	31	255778.616	-0.04079	0.4649
38	7	32	37	7	31	255778.616	0.0174	0.4649
38	6	32	37	7	31	255778.616	0.06072	0.0351
21	14	8	20	13	7	255804.036	0.00266	0.2175
21	14	7	20	13	7	255804.036	0.00214	0.2825
21	14	8	20	13	8	255804.036	-0.00147	0.2825
21	14	7	20	13	8	255804.036	-0.002	0.2175
34	10	24	33	10	23	256273.136	0.0083	
35	16	20	34	16	19	256338.184	-0.0169	
35	16	19	34	16	18	256346.880	-0.04292	
26	9	18	25	8	18	256392.246	0.00814	
20	15	6	19	14	5	256528.699	0.0154	0.2256
20	15	6	19	14	6	256528.699	0.01538	0.2744
20	15	5	19	14	5	256528.699	0.0154	0.2744
20	15	5	19	14	6	256528.699	0.01538	0.2256
42	1	41	41	1	40	256742.179	0.0096	0.4535
42	1	41	41	2	40	256742.179	0.0096	0.0465
42	2	41	41	1	40	256742.179	0.0096	0.0465
42	2	41	41	2	40	256742.179	0.0096	0.4535
35	11	25	34	11	24	257078.516	0.01538	
39	5	34	38	5	33	257091.014	0.0032	0.462
39	6	34	38	5	33	257091.014	0.00243	0.038
39	5	34	38	6	33	257091.014	0.00511	0.038
39	6	34	38	6	33	257091.014	0.00434	0.462
19	16	3	18	15	4	257192.602	-0.00783	0.2321
19	16	4	18	15	3	257192.602	-0.00783	0.2321
19	16	4	18	15	4	257192.602	-0.00783	0.2679
19	16	3	18	15	3	257192.602	-0.00783	0.2679
27	8	19	26	7	19	257335.611	-0.01291	
35	15	21	34	15	20	257506.575	-0.00242	
35	15	20	34	15	19	257592.914	-0.03561	
26	8	19	25	7	19	257618.258	0.01098	
18	17	2	17	16	1	257828.025	0.0007	0.2375
18	17	2	17	16	2	257828.025	0.0007	0.2625
18	17	1	17	16	1	257828.025	0.0007	0.2625
18	17	1	17	16	2	257828.025	0.0007	0.2375
43	0	43	42	0	42	258157.581	0.00749	0.4519
43	0	43	42	1	42	258157.581	0.00749	0.0481
43	1	43	42	0	42	258157.581	0.00749	0.0481
43	1	43	42	1	42	258157.581	0.00749	0.4519
40	4	36	39	4	35	258457.004	0.00925	0.4596
40	4	36	39	5	35	258457.004	0.00928	0.0404
40	5	36	39	4	35	258457.004	0.00924	0.0404
40	5	36	39	5	35	258457.004	0.00927	0.4596
36	29	7	35	29	6	258470.918	-0.01511	0.5
36	29	8	35	29	7	258470.918	-0.01511	0.5
36	10	27	35	10	26	258526.678	0.00262	
36	28	8	35	28	7	258640.807	-0.00346	0.5
36	28	9	35	28	8	258640.807	-0.00346	0.5
36	27	10	35	27	9	258829.324	0.02036	0.5

36	27	9	35	27	8	258829.324	0.02036	0.5
35	14	22	34	14	21	258900.918	-0.01221	
36	9	27	35	9	26	258972.059	0.01837	
36	26	10	35	26	9	259039.637	0.03753	0.5
36	26	11	35	26	10	259039.637	0.03753	0.5
36	25	11	35	25	10	259275.621	0.01851	0.5
36	25	12	35	25	11	259275.621	0.01851	0.5
37	8	29	36	9	28	259374.299	0.04911	
37	9	29	36	9	28	259397.589	0.00702	
37	8	29	36	8	28	259423.214	0.00502	
36	24	12	35	24	11	259542.165	0.01495	0.5
36	24	13	35	24	12	259542.165	0.01495	0.5
35	14	21	34	14	20	259561.204	-0.01339	
34	12	22	33	12	21	259731.684	0.02733	
35	12	24	34	12	23	259754.693	0.016	
36	23	14	35	23	13	259845.271	-0.04961	0.5
36	23	13	35	23	12	259845.271	-0.04961	0.5
41	3	38	40	3	37	259851.478	0.01412	0.4776
41	4	38	40	3	37	259851.478	0.01412	0.0448
41	4	38	40	4	37	259851.478	0.01412	0.4776
35	13	23	34	13	22	260054.242	0.00905	
28	9	19	27	8	19	260065.453	0.00654	
36	22	15	35	22	14	260192.872	-0.00669	0.5
36	22	14	35	22	13	260192.872	-0.00669	0.5
38	8	31	37	8	30	260466.189	0.00412	
38	7	31	37	7	30	260467.141	-0.00374	
25	1	24	24	0	24	260469.515	0.04106	0.5
25	2	24	24	1	24	260469.515	0.04089	0.5
28	10	18	27	9	18	260522.532	-0.04678	
36	21	15	35	21	14	260594.903	-0.02319	0.5
36	21	16	35	21	15	260594.903	-0.02317	0.5
24	12	13	23	11	13	260733.039	0.01523	
35	10	25	34	10	24	261042.889	0.01318	
36	20	16	35	20	15	261064.901	-0.02727	0.5
36	20	17	35	20	16	261064.901	-0.02684	0.5
42	2	40	41	2	39	261260.039	0.01239	0.4553
42	2	40	41	3	39	261260.039	0.01239	0.0447
42	3	40	41	2	39	261260.039	0.01239	0.0447
42	3	40	41	3	39	261260.039	0.01239	0.4553
36	19	17	35	19	16	261621.344	-0.02411	0.5
36	19	18	35	19	17	261621.344	-0.01591	0.5
39	7	33	38	6	32	261698.082	-0.00457	0.0355
39	6	33	38	6	32	261698.082	0.01377	0.4645
39	7	33	38	7	32	261698.082	0.03875	0.4645
39	6	33	38	7	32	261698.082	0.05709	0.0355
23	13	10	22	12	10	261972.412	0.00418	
23	13	11	22	12	11	261973.583	-0.00473	
25	9	16	24	8	17	262006.043	0.00872	
34	11	23	33	11	22	262076.391	0.0338	
36	18	19	35	18	18	262290.547	0.02066	0.5
36	18	18	35	18	17	262290.547	-0.11293	0.5
43	1	42	42	1	41	262673.988	0.01266	0.4535
43	1	42	42	2	41	262673.988	0.01266	0.0465
43	2	42	42	1	41	262673.988	0.01266	0.0465
43	2	42	42	2	41	262673.988	0.01266	0.4535
50	18	32	49	19	31	262717.973	-0.04912	
22	14	8	21	13	8	262896.006	-0.02096	0.2855
22	14	9	21	13	9	262896.006	-0.03576	0.2855
22	14	8	21	13	9	262896.006	-0.03806	0.2145
22	14	9	21	13	8	262896.006	-0.01866	0.2145
40	5	35	39	6	34	263019.098	0.00643	0.0383
40	6	35	39	6	34	263019.098	0.00611	0.4617
40	5	35	39	5	34	263019.098	0.00565	0.4617
40	6	35	39	5	34	263019.098	0.00533	0.0383
36	17	20	35	17	19	263111.323	-0.00924	
36	11	26	35	11	25	263276.914	0.02553	
21	15	7	20	14	6	263658.356	-0.00011	0.2229
21	15	6	20	14	6	263658.356	-0.00012	0.2771
21	15	6	20	14	7	263658.356	-0.00023	0.2229
21	15	7	20	14	7	263658.356	-0.00022	0.2771
26	11	15	25	10	15	263834.777	-0.01001	
44	0	44	43	0	43	264087.815	-0.00857	0.4519
44	0	44	43	1	43	264087.815	-0.00857	0.0481
44	1	44	43	0	43	264087.815	-0.00857	0.0481
44	1	44	43	1	43	264087.815	-0.00857	0.4519
36	16	21	35	16	20	264140.416	-0.01145	
36	16	20	35	16	19	264160.816	-0.04232	
20	16	4	19	15	5	264341.407	0.02413	0.2297
20	16	5	19	15	4	264341.407	0.02413	0.2297
20	16	5	19	15	5	264341.407	0.02413	0.2703
20	16	4	19	15	4	264341.407	0.02413	0.2703
37	10	28	36	10	27	264382.276	0.01518	
41	4	37	40	4	36	264388.459	0.00536	0.4593
41	4	37	40	5	36	264388.459	0.00537	0.0407
41	5	37	40	4	36	264388.459	0.00536	0.0407
41	5	37	40	5	36	264388.459	0.00537	0.4593
37	9	28	36	9	27	264619.604	0.00239	
19	17	3	18	16	2	264985.484	-0.02149	0.2354
19	17	3	18	16	3	264985.484	-0.02149	0.2646
19	17	2	18	16	2	264985.484	-0.02149	0.2646
19	17	2	18	16	3	264985.484	-0.02149	0.2354
38	9	30	37	9	29	265266.772	0.01985	
38	8	30	37	8	29	265279.130	0.0095	
36	15	22	35	15	21	265432.363	0.01042	
37	30	8	36	30	7	265595.489	-0.04099	0.5
37	30	7	36	30	6	265595.489	-0.04099	0.5
18	18	1	17	17	0	265611.589	-0.03979	0.2396
18	18	1	17	17	1	265611.589	-0.03979	0.2604
18	18	0	17	17	0	265611.589	-0.03979	0.2604
18	18	0	17	17	1	265611.589	-0.03979	0.2396
36	15	21	35	15	20	265615.985	-0.03721	
37	29	8	36	29	7	265762.384	0.01198	0.5
37	29	9	36	29	8	265762.384	0.01198	0.5
42	3	39	41	3	38	265783.688	-0.00738	0.457
42	3	39	41	4	38	265783.688	-0.00738	0.043
42	4	39	41	3	38	265783.688	-0.00738	0.043
42	4	39	41	4	38	265783.688	-0.00738	0.457
36	10	26	35	10	25	265857.820	-0.00588	
37	28	9	36	28	8	265946.683	0.00434	0.5
37	28	10	36	28	9	265946.683	0.00434	0.5
27	9	19	26	8	19	265978.160	-0.02212	
37	27	11	36	27	10	266151.377	0.04204	0.5
37	27	10	36	27	9	266151.377	0.04204	0.5
27	7	20	26	6	20	266303.901	0.00339	
39	7	32	38	8	31	266369.575	0.56509	0.0331
39	8	32	38	8	31	266369.575	0.22308	0.4669
39	7	32	38	7	31	266369.575	-0.20869	0.4669
39	8	32	38	7	31	266369.575	-0.55069	0.0331
37	26	11	36	26	10	266379.878	0.03378	0.5
37	26	12	36	26	11	266379.878	0.03378	0.5
37	25	12	36	25	11	266636.523	0.01695	0.5
37	25	13	36	25	12	266636.523	0.01695	0.5
36	12	25	35	12	24	266682.109	0.03711	
36	14	23	35	14	22	266871.607	0.01625	
37	24	13	36	24	12	266926.663	-0.0053	0.5
37	24	14	36	24	13	266926.663	-0.0053	0.5
43	2	41	42	2	40	267191.714	0.01489	0.4552
43	2	41	42	3	40	267191.714	0.01489	0.0448
43	3	41	42	2	40	267191.714	0.01489	0.0448
43	3	41	42	3	40	267191.714	0.01489	0.4552
37	23	15	36	23	14	267257.063	-0.01344	0.5
37	23	14	36	23	13	267257.063	-0.01344	0.5
27	10	18	26	9	18	267300.938	-0.03916	
27	11	17	26	10	16	267321.473	0.03408	
25	12	14	24	11	14	267562.007	-0.02553	
40	7	34	39	6	33	267618.172	-0.00275	0.036
40	6	34	39	6	33	267618.172	0.00496	0.464
40	7	34	39	7	33	267618.172	0.01559	0.464
40	6	34	39	7	33	267618.172	0.0233	0.036
64	4	60	64	4	61	267634.267	-0.00071	0.3421
64	5	60	64	3	61	267634.267	-0.00071	0.3421
64	5	60	64	4	61	267634.267	-0.00071	0.1579
64	4	60	64	3	61	267634.267	-0.00071	0.1579
37	22	16	36	22	15	267636.366	-0.0169	0.5
37	22	15	36	22	14	267636.366	-0.0169	0.5
29	10	19	28	9	19	267671.425	0.00643	
36	13	24	35	13	23	267725.683	0.01568	
26	3	23	25	2	23	267862.182	0.05256	0.5
26	4	23	25	3	23	267862.182	-0.06352	0.5
71	9	62	71	9	63	267966.743	-0.05081	0.334
71	10	62	71	8	63	267966.743	-0.05081	0.334
71	10	62	71	9	63	267966.743	-0.05081	0.166
71	9	62	71	8	63	267966.743	-0.05081	0.166
37	21	16	36	21	15	268075.882	-0.03779	0.5
37	21	17	36	21	16	268075.882	-0.03773	0.5
36	14	22	35	14	21	268117.654	0.00759	
27	8	20	26	7	20	268146.365	-0.01386	
74	11	63	74	11	64	268363.529	0.00415	0.3307
74	12	63	74	10	64	268363.529	0.00415	0.3307
74	12	63	74	11	64	268363.529	0.00415	0.1693
74	11	63	74	10	64	268363.529	0.00415	0.1693
37	20	17	36	20	16	268590.867	-0.04432	0.5
37	20	18	36	20	17	268590.867	-0.04297	0.5
44	1	43	43	1	42	268604.401	0.00181	0.4534
44	1	43	43	2	42	268604.401	0.00181	0.0466
44	2	43	43	1	42	268604.401	0.00181	0.0466
44	2	43	43	2	42	268604.401	0.00181	0.4534
35	11	24	34	11	23	268705.779	0.0229	
41	5	36	40	6	35	268946.680	0.00526	0.0386
41	6	36	40	6	35	268946.680	0.00513	0.4614
41	5	36	40	5	35	268946.680	0.00495	0.4614
41	6	36	40	5	35	268946.680	0.00482	0.0386
24	13	11	23	12	11	268950.701	0.03982	
35	12	23	34	12	22	269042.690	0.05492	
37	19	19	36	19	18	269202.431	-0.02688	0.5
37	19	18	36	19	17	269202.431	-0.05075	0.5
37	11	27	36	11	26	269319.533	0.00336	
26	2	24	25	1	24	269517.122	-0.02194	0.5
26	3	24	25	2	24	269517.122	-0.02539	0.5
37	18	20	36	18	19	269941.112	0.12311	0.5
37	18	19	36	18	18	269941.112	-0.23459	0.5
23	14	10	22	13	9	269965.728	0.05939	0.2105
23	14	9	22	13	9	269965.728	0.05018	0.2895
23	14	10	22	13	10	269965.728	-0.00513	0.2895
23	14	9	22	13	10	269965.728	-0.01433	0.2105
45	0	45	44	0	44	270016.644	-0.00326	0.4519
45	0	45	44	1	44	270016.644	-0.00326	0.0481
45	1	45	44	0	44	270016.644	-0.00326	0.0481
45	1	45	44	1	44	270016.644	-0.00326	0.4519
31	11	21	30	10	20	270051.031	0.00899	

38	9	29	37	10	28	270101.518	-0.02724	
28	8	20	27	7	20	270194.036	0.00554	
38	10	29	37	10	28	270224.423	-0.00635	
42	4	38	41	4	37	270318.917	0.01198	0.4591
42	4	38	41	5	37	270318.917	0.01198	0.0409
42	5	38	41	4	37	270318.917	0.01198	0.0409
42	5	38	41	5	37	270318.917	0.01198	0.4591
38	9	29	37	9	28	270347.645	-0.00943	
22	15	8	21	14	7	270775.228	0.03135	0.2196
22	15	7	21	14	8	270775.228	0.03076	0.2196
22	15	8	21	14	8	270775.228	0.03082	0.2804
22	15	7	21	14	7	270775.228	0.03128	0.2804
37	17	21	36	17	20	270851.699	-0.01715	
37	17	20	36	17	19	270856.161	-0.03616	
37	10	27	36	10	26	270890.959	0.00607	
27	6	21	26	5	21	271082.285	0.00169	
39	8	31	38	9	30	271136.895	-0.00429	
39	9	31	38	9	30	271141.991	0.0054	
39	8	31	38	8	30	271147.867	0.00423	
21	16	5	20	15	6	271483.001	-0.00898	0.227
21	16	6	20	15	5	271483.001	-0.00898	0.227
21	16	6	20	15	6	271483.001	-0.00898	0.273
21	16	5	20	15	5	271483.001	-0.00898	0.273
43	3	40	42	3	39	271714.695	0.0084	0.4572
43	3	40	42	4	39	271714.695	0.0084	0.0428
43	4	40	42	3	39	271714.695	0.0084	0.0428
43	4	40	42	4	39	271714.695	0.0084	0.4572
37	16	22	36	16	21	271996.704	-0.01583	
37	16	21	36	16	20	272042.715	-0.02468	
20	17	4	19	16	3	272139.395	-0.0073	0.2327
20	17	4	19	16	4	272139.395	-0.0073	0.2673
20	17	3	19	16	3	272139.395	-0.0073	0.2673
20	17	3	19	16	4	272139.395	-0.0073	0.2327
29	9	20	28	8	20	272182.592	0.00634	
40	8	33	39	7	32	272275.269	-0.24103	0.0335
40	7	33	39	7	32	272275.269	-0.09126	0.4665
40	8	33	39	8	32	272275.269	0.10097	0.4665
40	7	33	39	8	32	272275.269	0.25075	0.0335
38	31	7	37	31	6	272718.428	-0.05402	0.5
38	31	8	37	31	7	272718.428	-0.05402	0.5
19	18	2	18	17	1	272770.555	-0.00528	0.2376
19	18	2	18	17	2	272770.555	-0.00528	0.2624
19	18	1	18	17	1	272770.555	-0.00528	0.2624
19	18	1	18	17	2	272770.555	-0.00528	0.2376
38	30	9	37	30	8	272882.618	0.00313	0.5
38	30	8	37	30	7	272882.618	0.00313	0.5
27	11	17	26	10	17	272977.800	0.00889	
38	29	9	37	29	8	273063.200	0.0276	0.5
38	29	10	37	29	9	273063.200	0.0276	0.5
44	2	42	43	2	41	273122.019	0.00081	0.4552
44	2	42	43	3	41	273122.019	0.00081	0.0448
44	3	42	43	2	41	273122.019	0.00081	0.0448
44	3	42	43	3	41	273122.019	0.00081	0.4552
38	28	10	37	28	9	273262.809	0.03361	0.5
38	28	11	37	28	10	273262.809	0.03361	0.5
37	12	26	36	12	25	273335.423	0.01086	
37	15	23	36	15	22	273405.291	-0.00582	
38	27	12	37	27	11	273484.618	0.03387	0.5
38	27	11	37	27	10	273484.618	0.03387	0.5
41	7	35	40	7	34	273538.648	0.00431	0.4637
41	6	35	40	6	34	273538.648	-0.00019	0.4637
41	7	35	40	6	34	273538.648	-0.0034	0.0363
41	6	35	40	7	34	273538.648	0.00752	0.0363
28	11	17	27	10	17	273643.452	-0.02293	
38	26	12	37	26	11	273732.482	0.03636	0.5
38	26	13	37	26	12	273732.482	0.03636	0.5
37	15	22	36	15	21	273779.721	-0.00185	
38	25	13	37	25	12	274011.101	0.00553	0.5
38	25	14	37	25	13	274011.101	0.00553	0.5
26	12	14	25	11	14	274051.751	-0.0036	
38	24	14	37	24	13	274326.450	0.0073	0.5
38	24	15	37	24	14	274326.450	0.0073	0.5
26	12	15	25	11	15	274336.863	0.00463	
36	11	25	35	11	24	274382.669	0.03843	
45	2	44	44	2	43	274533.403	-0.00624	0.4534
45	1	44	44	1	43	274533.403	-0.00624	0.4534
45	1	44	44	2	43	274533.403	-0.00624	0.0466
45	2	44	44	1	43	274533.403	-0.00624	0.0466
38	23	16	37	23	15	274685.955	-0.01416	0.5
38	23	15	37	23	14	274685.955	-0.01416	0.5
27	11	16	26	10	17	274700.082	0.04838	
37	14	24	36	14	23	274807.255	-0.00256	
42	5	37	41	6	36	274873.662	0.02985	0.0389
42	6	37	41	6	36	274873.662	0.0298	0.4611
42	5	37	41	5	36	274873.662	0.02972	0.4611
42	6	37	41	5	36	274873.662	0.02967	0.0389
38	22	17	37	22	16	275099.285	-0.0426	0.5
38	22	16	37	22	15	275099.285	-0.04261	0.5
38	11	28	37	11	27	275255.128	0.0192	
38	21	17	37	21	16	275579.203	-0.0404	0.5
38	21	18	37	21	17	275579.203	-0.04018	0.5
28	10	19	27	9	19	275862.805	-0.03465	
25	13	12	24	12	12	275879.117	0.00006	
46	0	46	45	0	45	275944.039	0.02209	0.4518
46	0	46	45	1	45	275944.039	0.02209	0.0482
46	1	46	45	0	45	275944.039	0.02209	0.0482
46	1	46	45	1	45	275944.039	0.02209	0.4518
39	10	30	38	10	29	276064.729	0.00738	
39	9	30	38	9	29	276127.297	0.00483	
38	20	18	37	20	17	276142.921	-0.04157	0.5
38	20	19	37	20	18	276142.921	-0.03749	0.5
38	10	28	37	10	27	276164.258	0.00181	
43	4	39	42	4	38	276248.296	0.01343	0.4589
43	4	39	42	5	38	276248.296	0.01343	0.0411
43	5	39	42	4	38	276248.296	0.01343	0.0411
43	5	39	42	5	38	276248.296	0.01343	0.4589
27	5	23	26	4	23	276441.632	-0.57728	0.5
27	4	23	26	3	23	276441.632	0.54995	0.5
30	10	20	29	9	20	276634.894	-0.02055	
38	19	20	37	19	19	276814.636	-0.02047	0.5
38	19	19	37	19	18	276814.636	-0.08715	0.5
40	9	32	39	9	31	277022.933	0.01159	
40	8	32	39	8	31	277025.695	0.01903	
37	14	23	36	14	22	277028.857	0.05295	
38	18	21	37	18	20	277629.587	-0.02194	
44	3	41	43	3	40	277644.393	-0.00321	0.4569
44	3	41	43	4	40	277644.393	-0.00321	0.0431
44	4	41	43	3	40	277644.393	-0.00321	0.0431
44	4	41	43	4	40	277644.393	-0.00321	0.4569
36	12	24	35	12	23	277664.938	0.04492	
28	7	21	27	6	21	277796.653	-0.04059	
23	15	9	22	14	8	277876.439	-0.00614	0.2162
23	15	8	22	14	8	277876.439	-0.00644	0.2838
23	15	9	22	14	9	277876.439	-0.00845	0.2838
23	15	8	22	14	9	277876.439	-0.00874	0.2162
29	11	18	28	10	18	277884.143	0.00743	
41	8	34	40	7	33	278183.089	-0.11466	0.0339
41	7	34	40	7	33	278183.089	-0.04963	0.4661
41	8	34	40	8	33	278183.089	0.03511	0.4661
41	7	34	40	8	33	278183.089	0.10014	0.0339
27	3	24	26	2	24	278363.062	0.02596	0.5
27	4	24	26	3	24	278363.062	-0.02133	0.5
22	16	6	21	15	7	278615.629	0.00849	0.2239
22	16	7	21	15	6	278615.629	0.00851	0.2239
22	16	7	21	15	7	278615.629	0.0085	0.2761
22	16	6	21	15	6	278615.629	0.00851	0.2761
38	17	22	37	17	21	278639.878	-0.04751	
38	17	21	37	17	20	278650.511	-0.03178	
45	2	43	44	2	42	279050.949	-0.00353	0.455
45	2	43	44	3	42	279050.949	-0.00353	0.045
45	3	43	44	2	42	279050.949	-0.00353	0.045
45	3	43	44	3	42	279050.949	-0.00353	0.455
21	17	5	20	16	4	279288.403	0.00586	0.2303
21	17	5	20	16	5	279288.403	0.00586	0.2697
21	17	4	20	16	4	279288.403	0.00586	0.2697
21	17	4	20	16	5	279288.403	0.00586	0.2303
37	11	26	36	11	25	279360.026	0.00558	
42	7	36	41	7	35	279459.252	0.0002	0.4633
42	6	36	41	6	35	279459.252	-0.00169	0.4633
42	7	36	41	6	35	279459.252	-0.00302	0.0367
42	6	36	41	7	35	279459.252	0.00153	0.0367
64	2	62	64	2	63	279579.394	-0.01959	0.3447
64	3	62	64	1	63	279579.394	-0.01959	0.3447
64	3	62	64	2	63	279579.394	-0.01959	0.1553
64	2	62	64	1	63	279579.394	-0.01959	0.1553
38	12	27	37	12	26	279737.276	0.00581	
38	16	23	37	16	22	279908.594	-0.02065	
20	18	3	19	17	2	279927.225	-0.0106	0.2354
20	18	3	19	17	3	279927.225	-0.0106	0.2646
20	18	2	19	17	2	279927.225	-0.0106	0.2646
20	18	2	19	17	3	279927.225	-0.0106	0.2354
39	31	8	38	31	7	280001.333	-0.03831	0.5
39	31	9	38	31	8	280001.333	-0.03831	0.5
38	16	22	37	16	21	280008.339	0.00124	
39	30	10	38	30	9	280178.565	-0.00432	0.5
39	30	9	38	30	8	280178.565	-0.00432	0.5
28	11	18	27	10	18	280201.357	-0.03554	
39	29	10	38	29	9	280373.670	0.03292	0.5
39	29	11	38	29	10	280373.670	0.03292	0.5
27	12	15	26	11	15	280451.528	-0.0028	
46	1	45	45	1	44	280460.995	0.01991	0.4533
46	1	45	45	2	44	280460.995	0.01991	0.0467
46	2	45	45	1	44	280460.995	0.01991	0.0467
46	2	45	45	2	44	280460.995	0.01991	0.4533
19	19	0	18	18	1	280549.566	-0.03386	0.2397
19	19	1	18	18	0	280549.566	-0.03386	0.2397
19	19	1	18	18	1	280549.566	-0.03386	0.2603
19	19	0	18	18	0	280549.566	-0.03386	0.2603
39	28	11	38	28	10	280589.473	0.03253	0.5
39	28	12	38	28	11	280589.473	0.03253	0.5
43	5	38	42	6	37	280799.859	0.00948	0.0392
43	6	38	42	6	37	280799.859	0.00946	0.4608
43	5	38	42	5	37	280799.859	0.00943	0.4608
43	6	38	42	5	37	280799.859	0.00941	0.0392
39	27	13	38	27	12	280829.465	0.02648	0.5
39	27	12	38	27	11	280829.465	0.02648	0.5
27	12	16	26	11	16	281072.923	-0.00273	
39	26	13	38	26	12	281097.875	0.02371	0.5
39	26	14	38	26	13	281097.875	0.02371	0.5
39	11	29	38	11	28	281125.012	0.0133	

27	12	15	26	11	16	281269.737	0.02192	
39	25	14	38	25	13	281399.898	0.00516	0.5
39	25	15	38	25	14	281399.898	0.00516	0.5
38	15	24	37	15	23	281409.454	-0.00227	
39	10	29	38	10	28	281630.782	0.02008	
39	24	15	38	24	14	281742.087	-0.00409	0.5
39	24	16	38	24	15	281742.087	-0.00409	0.5
47	0	47	46	0	46	281869.892	-0.00868	0.4518
47	0	47	46	1	46	281869.892	-0.00868	0.0482
47	1	47	46	0	46	281869.892	-0.00868	0.0482
47	1	47	46	1	46	281869.892	-0.00868	0.4518
40	9	31	39	10	30	281879.967	0.01627	
28	6	22	27	5	22	281899.565	0.06078	
40	10	31	39	10	30	281909.116	0.01651	
40	9	31	39	9	30	281940.268	0.00499	
28	7	22	27	6	22	282010.722	-0.02159	
39	23	17	38	23	16	282132.718	-0.03202	0.5
39	23	16	38	23	15	282132.718	-0.03202	0.5
38	15	23	37	15	22	282139.845	0.02174	
44	4	40	43	4	39	282176.544	0.01728	0.4587
44	4	40	43	5	39	282176.544	0.01728	0.0413
44	5	40	43	4	39	282176.544	0.01728	0.0413
44	5	40	43	5	39	282176.544	0.01728	0.4587
30	11	19	29	10	19	282361.087	0.00649	
38	13	26	37	13	25	282408.243	0.03786	
39	22	18	38	22	17	282582.593	-0.05124	0.5
39	22	17	38	22	16	282582.593	-0.05127	0.5
38	14	25	37	14	24	282654.073	0.01019	
29	8	21	28	7	21	282728.318	0.04557	
26	13	14	25	12	13	282738.731	-0.0357	
26	13	13	25	12	13	282745.036	0.03422	
26	13	14	25	12	14	282771.227	-0.00648	
41	9	33	40	9	32	282908.850	-0.00041	
41	8	33	40	8	32	282910.113	-0.01197	
39	21	18	38	21	17	283106.029	-0.05688	0.5
39	21	19	38	21	18	283106.029	-0.05621	0.5
45	3	42	44	3	41	283572.785	0.00059	0.4568
45	3	42	44	4	41	283572.785	0.00059	0.0432
45	4	42	44	3	41	283572.785	0.00059	0.0432
45	4	42	44	4	41	283572.785	0.00059	0.4568
39	20	19	38	20	18	283722.606	-0.05877	0.5
39	20	20	38	20	19	283722.606	-0.04691	0.5
38	11	27	37	11	26	284029.148	0.02159	
42	8	35	41	7	34	284092.512	-0.06022	0.0344
42	7	35	41	7	34	284092.512	-0.03221	0.4656
42	8	35	41	8	34	284092.512	0.00481	0.4656
42	7	35	41	8	34	284092.512	0.03281	0.0344
69	5	64	69	5	65	284146.194	-0.0406	0.3409
69	6	64	69	4	65	284146.194	-0.0406	0.3409
69	6	64	69	5	65	284146.194	-0.0406	0.1591
69	5	64	69	4	65	284146.194	-0.0406	0.1591
39	19	21	38	19	20	284460.188	0.04238	0.5
39	19	20	38	19	19	284460.188	-0.13681	0.5
28	6	23	27	5	23	284737.056	-0.0452	
29	10	20	28	9	20	284953.643	-0.02356	
24	15	10	23	14	9	284959.011	0.0095	0.213
24	15	9	23	14	9	284959.011	0.00825	0.287
24	15	10	23	14	10	284959.011	0.0003	0.287
24	15	9	23	14	10	284959.011	-0.00096	0.213
46	2	44	45	2	43	284978.464	-0.00368	0.455
46	2	44	45	3	43	284978.464	-0.00368	0.045
46	3	44	45	2	43	284978.464	-0.00368	0.045
46	3	44	45	3	43	284978.464	-0.00368	0.455
30	9	21	29	8	21	285124.502	0.00179	
39	18	22	38	18	21	285359.475	-0.01609	
43	6	37	42	6	36	285379.790	0.02171	0.463
43	7	37	42	6	36	285379.790	0.02116	0.037
43	6	37	42	7	36	285379.790	0.02304	0.037
43	7	37	42	7	36	285379.790	0.02249	0.463
23	16	7	22	15	8	285737.136	-0.0055	0.221
23	16	8	22	15	8	285737.136	-0.00549	0.279
23	16	7	22	15	7	285737.136	-0.00543	0.279
23	16	8	22	15	7	285737.136	-0.00543	0.221
39	12	28	38	12	27	285928.428	0.02254	
29	9	21	28	8	21	286322.204	-0.02866	
47	1	46	46	1	45	286387.104	0.03831	0.4533
47	1	46	46	2	45	286387.104	0.03831	0.0467
47	2	46	46	1	45	286387.104	0.03831	0.0467
47	2	46	46	2	45	286387.104	0.03831	0.4533
22	17	6	21	16	5	286431.030	-0.00372	0.2279
22	17	6	21	16	6	286431.030	-0.00372	0.2721
22	17	5	21	16	5	286431.030	-0.00372	0.2721
22	17	5	21	16	6	286431.030	-0.00372	0.2279
39	17	23	38	17	22	286479.543	-0.01668	
39	17	22	38	17	21	286503.769	-0.03951	
28	12	16	27	11	16	286530.242	0.00498	
44	5	39	43	5	38	286725.239	0.01234	0.4606
44	5	39	43	6	38	286725.239	0.01236	0.0394
44	6	39	43	5	38	286725.239	0.01234	0.0394
44	6	39	43	6	38	286725.239	0.01236	0.4606
40	11	30	39	11	29	286960.184	0.01516	
21	18	4	20	17	3	287080.609	0.00249	0.2333
21	18	4	20	17	4	287080.609	0.00249	0.2667
21	18	3	20	17	3	287080.609	0.00249	0.2667
21	18	3	20	17	4	287080.609	0.00249	0.2333
40	10	30	39	10	29	287232.927	0.0303	
40	31	9	39	31	8	287292.677	0.00603	0.5
40	31	10	39	31	9	287292.677	0.00603	0.5
40	29	11	39	29	10	287694.122	0.04507	0.5
40	29	12	39	29	11	287694.122	0.04507	0.5
20	19	1	19	18	2	287707.493	-0.01577	0.2376
20	19	2	19	18	1	287707.493	-0.01577	0.2376
20	19	2	19	18	2	287707.493	-0.01577	0.2624
20	19	1	19	18	1	287707.493	-0.01577	0.2624
41	9	32	40	10	31	287746.231	0.04648	
41	10	32	40	10	31	287760.092	0.01478	
41	9	32	40	9	31	287775.340	0.00529	
41	10	32	40	9	31	287789.253	0.02623	
48	0	48	47	0	47	287794.257	-0.01231	0.4518
48	0	48	47	1	47	287794.257	-0.01231	0.0482
48	1	48	47	0	47	287794.257	-0.01231	0.0482
48	1	48	47	1	47	287794.257	-0.01231	0.4518
28	12	17	27	11	17	287804.674	-0.0116	
31	11	20	30	10	20	287825.049	-0.00227	
39	16	24	38	16	23	287874.326	0.0091	
40	28	12	39	28	11	287927.071	0.04465	0.5
40	28	13	39	28	12	287927.071	0.04465	0.5
39	16	23	38	16	22	288082.185	-0.01105	
45	4	41	44	4	40	288103.580	-0.00128	0.4585
45	4	41	44	5	40	288103.580	-0.00128	0.0415
45	5	41	44	4	40	288103.580	-0.00128	0.0415
45	5	41	44	5	40	288103.580	-0.00128	0.4585
40	27	14	39	27	13	288186.333	0.03261	0.5
40	27	13	39	27	12	288186.333	0.03261	0.5
40	26	14	39	26	13	288476.556	0.02808	0.5
40	26	15	39	26	14	288476.556	0.02808	0.5
39	11	28	38	11	27	288744.233	-0.00091	
40	25	15	39	25	14	288803.437	-0.0106	0.5
40	25	16	39	25	15	288803.437	-0.0106	0.5
28	3	25	27	2	25	288859.121	0.02774	0.5
28	4	25	27	3	25	288859.121	0.00864	0.5
29	7	22	28	6	22	289004.229	-0.01144	
40	24	16	39	24	15	289174.218	-0.05265	0.5
40	24	17	39	24	16	289174.218	-0.05265	0.5
39	13	27	38	13	26	289345.104	0.0286	
39	15	25	38	15	24	289416.780	0.01301	
29	8	22	28	7	22	289540.193	0.01184	
40	23	18	39	23	17	289598.210	-0.01118	
43	8	36	42	7	35	290003.117	-0.01439	0.0348
43	7	36	42	7	35	290003.117	-0.00241	0.4652
43	8	36	42	8	35	290003.117	0.01362	0.4652
43	7	36	42	8	35	290003.117	0.02559	0.0348
40	22	19	39	22	18	290087.325	-0.01273	0.5
40	22	18	39	22	17	290087.325	-0.01283	0.5
39	14	26	38	14	25	290350.763	0.03973	
28	2	26	27	1	26	290468.071	0.01244	0.5
28	3	26	27	2	26	290468.071	0.01192	0.5
40	21	19	39	21	18	290657.698	-0.05288	0.5
40	21	20	39	21	19	290657.698	-0.05086	0.5
39	15	24	38	15	23	290774.841	0.03565	
47	2	45	46	2	44	290904.544	0.01221	0.4549
47	2	45	46	3	44	290904.544	0.01221	0.0451
47	3	45	46	2	44	290904.544	0.01221	0.0451
47	3	45	46	3	44	290904.544	0.01221	0.4549
26	14	12	25	13	12	290992.444	0.02362	
26	14	13	25	13	13	290994.222	-0.01799	
44	6	38	43	6	37	291300.018	0.0131	0.4626
44	7	38	43	6	37	291300.018	0.01288	0.0374
44	6	38	43	7	37	291300.018	0.01365	0.0374
44	7	38	43	7	37	291300.018	0.01343	0.4626
28	1	27	27	0	27	291867.179	-0.03239	0.5
28	2	27	27	1	27	291867.179	-0.0324	0.5
38	12	26	37	12	25	291939.480	0.03803	
40	12	29	39	12	28	291958.723	0.03171	
25	15	11	24	14	10	292019.391	0.01911	0.2096
25	15	10	24	14	10	292019.391	0.01422	0.2904
25	15	11	24	14	11	292019.391	-0.01479	0.2904
25	15	10	24	14	11	292019.391	-0.01968	0.2096
42	13	29	41	14	28	292116.423	-0.03679	
40	19	22	39	19	21	292141.587	0.18172	0.5
40	19	21	39	19	20	292141.587	-0.2824	0.5
48	1	47	47	1	46	292311.644	-0.00784	0.4533
48	1	47	47	2	46	292311.644	-0.00784	0.0467
48	2	47	47	1	46	292311.644	-0.00784	0.0467
48	2	47	47	2	46	292311.644	-0.00784	0.4533
41	10	31	40	11	30	292634.770	-0.03222	
29	6	23	28	5	23	292644.984	-0.01571	
45	5	40	44	5	39	292649.690	0.01541	0.4603
45	5	40	44	6	39	292649.690	0.01541	0.0397
45	6	40	44	5	39	292649.690	0.0154	0.0397
45	6	40	44	6	39	292649.690	0.01541	0.4603
29	7	23	28	6	23	292698.570	-0.00508	0.6247
39	12	28	38	11	27	292698.570	-0.07492	0.3753
41	11	31	40	11	30	292781.302	-0.00501	
24	16	8	23	15	9	292845.289	0.01075	0.2183
24	16	9	23	15	9	292845.289	0.01079	0.2817
24	16	8	23	15	8	292845.289	0.01105	0.2817
24	16	9	23	15	8	292845.289	0.01108	0.2183
41	10	31	40	10	30	292924.641	0.00253	
40	18	23	39	18	22	293134.024	-0.0369	

40	18	22	39	18	21	293139.503	-0.0327	
23	17	7	22	16	6	293565.707	-0.00417	0.2251
23	17	7	22	16	7	293565.707	-0.00417	0.2749
23	17	6	22	16	6	293565.707	-0.00417	0.2749
23	17	6	22	16	7	293565.707	-0.00418	0.2251
42	10	33	41	10	32	293618.246	0.00972	
42	9	33	41	9	32	293625.589	-0.00198	
40	11	29	39	11	28	293688.522	0.00063	
49	0	49	48	0	48	293717.085	-0.00859	0.4518
49	0	49	48	1	48	293717.085	-0.00859	0.0482
49	1	49	48	0	48	293717.085	-0.00859	0.0482
49	1	49	48	1	48	293717.085	-0.00859	0.4518
46	4	42	45	4	41	294029.391	-0.00267	0.4584
46	4	42	45	5	41	294029.391	-0.00267	0.0416
46	5	42	45	4	41	294029.391	-0.00267	0.0416
46	5	42	45	5	41	294029.391	-0.00267	0.4584
29	11	18	28	10	19	294138.076	-0.02711	
22	18	5	21	17	4	294229.495	-0.02403	0.2311
22	18	5	21	17	5	294229.495	-0.02403	0.2689
22	18	4	21	17	4	294229.495	-0.02403	0.2689
22	18	4	21	17	5	294229.495	-0.02403	0.2311
40	17	24	39	17	23	294373.585	-0.01103	
41	32	9	40	32	8	294405.282	-0.01302	0.5
41	32	10	40	32	9	294405.282	-0.01302	0.5
40	17	23	39	17	22	294426.986	-0.02177	
30	10	21	29	9	21	294546.053	-0.04055	
41	31	10	40	31	9	294592.646	0.01238	0.5
41	31	11	40	31	10	294592.646	0.01238	0.5
43	8	35	42	9	34	294692.690	0.36059	0.0323
43	9	35	42	9	34	294692.690	0.14932	0.4677
43	8	35	42	8	34	294692.690	-0.11432	0.4677
43	9	35	42	8	34	294692.690	-0.32559	0.0323
30	8	22	29	7	22	294789.846	0.00007	
21	19	2	20	18	3	294863.252	-0.01656	0.2357
21	19	3	20	18	2	294863.252	-0.01656	0.2357
21	19	3	20	18	3	294863.252	-0.01656	0.2643
21	19	2	20	18	2	294863.252	-0.01656	0.2643
32	11	21	31	10	21	294882.669	0.003	
41	29	12	40	29	11	295024.863	0.0521	0.5
41	29	13	40	29	12	295024.863	0.0521	0.5
41	28	13	40	28	12	295275.930	0.03273	0.5
41	28	14	40	28	13	295275.930	0.03273	0.5
29	6	24	28	5	24	295329.259	0.00468	
47	3	44	46	3	43	295425.438	-0.00061	0.4565
47	3	44	46	4	43	295425.438	-0.00061	0.0435
47	4	44	46	3	43	295425.438	-0.00061	0.0435
47	4	44	46	4	43	295425.438	-0.00061	0.4565
20	20	0	19	19	0	295481.727	-0.02192	0.2603
20	20	0	19	19	1	295481.727	-0.02192	0.2397
20	20	1	19	19	0	295481.727	-0.02192	0.2397
20	20	1	19	19	1	295481.727	-0.02192	0.2603
41	27	15	40	27	14	295555.630	0.04125	0.5
41	27	14	40	27	13	295555.630	0.04125	0.5
30	11	20	29	10	20	295803.494	-0.02426	
41	26	15	40	26	14	295868.973	0.00865	0.5
41	26	16	40	26	15	295868.973	0.00865	0.5
44	8	37	43	8	36	295914.494	0.01418	0.4648
44	7	37	43	7	36	295914.494	0.00729	0.4648
44	8	37	43	7	36	295914.494	0.00221	0.0352
44	7	37	43	8	36	295914.494	0.01926	0.0352
40	13	28	39	13	27	296001.877	0.04676	
73	6	67	73	6	68	296069.878	0.01739	0.3394
73	7	67	73	5	68	296069.878	0.01739	0.3394
73	7	67	73	6	68	296069.878	0.01739	0.1606
73	6	67	73	5	68	296069.878	0.01739	0.1606
41	25	16	40	25	15	296222.312	-0.02597	0.5
41	25	17	40	25	16	296222.312	-0.02597	0.5
40	16	24	39	16	23	296302.619	0.01296	
28	13	16	27	12	16	296357.392	-0.0158	
41	24	17	40	24	16	296623.636	-0.04418	0.5
41	24	18	40	24	17	296623.636	-0.04418	0.5
48	2	46	47	2	45	296829.096	-0.01747	0.4548
48	2	46	47	3	45	296829.096	-0.01747	0.0452
48	3	46	47	2	45	296829.096	-0.01747	0.0452
48	3	46	47	3	45	296829.096	-0.01747	0.4548
30	9	22	29	8	22	296888.281	0.01595	
30	12	18	29	11	18	297145.167	-0.02919	
45	6	39	44	6	38	297219.799	-0.002	0.4623
45	7	39	44	6	38	297219.799	-0.0021	0.0377
45	6	39	44	7	38	297219.799	-0.00178	0.0377
45	7	39	44	7	38	297219.799	-0.00187	0.4623
40	15	26	39	15	25	297385.298	0.02169	
29	5	25	28	4	25	297507.548	-0.11456	0.5
29	4	25	28	3	25	297507.548	0.08868	0.5
39	12	27	38	12	26	297557.400	0.05283	
40	14	27	39	14	26	297837.617	0.03542	
41	12	30	40	12	29	297877.804	-0.00046	
27	14	14	26	13	13	297918.497	-0.02116	
27	14	14	26	13	14	297924.721	-0.0317	
31	9	22	30	8	22	298203.957	0.01404	
49	1	48	48	1	47	298234.685	-0.01818	0.4532
49	1	48	48	2	47	298234.685	-0.01818	0.0468
49	2	48	48	1	47	298234.685	-0.01818	0.0468
49	2	48	48	2	47	298234.685	-0.01818	0.4532
41	21	20	40	21	19	298235.641	-0.03682	0.5
41	21	21	40	21	20	298235.641	-0.03094	0.5
46	5	41	45	5	40	298573.117	0.00683	0.4601
46	5	41	45	6	40	298573.117	0.00683	0.0399
46	6	41	45	5	40	298573.117	0.00683	0.0399
46	6	41	45	6	40	298573.117	0.00683	0.4601
42	11	32	41	11	31	298600.791	0.02181	
42	10	32	41	10	31	298674.473	0.00969	
42	11	32	41	10	31	298747.282	0.0067	
41	11	30	40	11	29	298888.386	0.01987	
26	15	12	25	14	11	299053.662	0.08096	0.206
26	15	11	25	14	11	299053.662	0.06332	0.294
26	15	12	25	14	12	299053.662	-0.035	0.294
26	15	11	25	14	12	299053.662	-0.05265	0.206
43	10	34	42	10	33	299483.204	0.00826	
43	9	34	42	9	33	299486.689	-0.00361	
50	0	50	49	0	49	299638.314	-0.029	0.4518
50	0	50	49	1	49	299638.314	-0.029	0.0482
50	1	50	49	0	49	299638.314	-0.029	0.0482
50	1	50	49	1	49	299638.314	-0.029	0.4518
32	10	22	31	9	22	299695.800	-0.00873	
41	19	23	40	19	22	299861.210	-0.02325	
25	16	9	24	15	10	299937.423	-0.06063	0.215
25	16	10	24	15	9	299937.423	-0.0592	0.215
25	16	9	24	15	9	299937.423	-0.05937	0.285
25	16	10	24	15	10	299937.423	-0.06046	0.285
47	4	43	46	4	42	299953.924	0.00905	0.4581
47	4	43	46	5	42	299953.924	0.00905	0.0419
47	5	43	46	4	42	299953.924	0.00905	0.0419
47	5	43	46	5	42	299953.924	0.00905	0.4581
30	8	23	29	7	23	300294.910	-0.00382	
44	9	36	43	8	35	300588.937	-0.13211	0.0329
44	8	36	43	8	35	300588.937	-0.03894	0.4671
44	9	36	43	9	35	300588.937	0.07915	0.4671
44	8	36	43	9	35	300588.937	0.17232	0.0329
42	39	3	41	39	2	300669.025	-0.01673	0.5
42	39	4	41	39	3	300669.025	-0.01673	0.5
24	17	8	23	16	7	300690.682	0.01432	0.2225
24	17	8	23	16	8	300690.682	0.01432	0.2775
24	17	7	23	16	7	300690.682	0.01432	0.2775
24	17	7	23	16	8	300690.682	0.01431	0.2225
41	18	24	40	18	23	300956.925	-0.03314	
41	18	23	40	18	22	300969.585	-0.03079	
48	3	45	47	3	44	301349.632	0.00059	0.4565
48	3	45	47	4	44	301349.632	0.00059	0.0435
48	4	45	47	3	44	301349.632	0.00059	0.0435
48	4	45	47	4	44	301349.632	0.00059	0.4565
23	18	6	22	17	5	301372.688	-0.0198	0.2284
23	18	6	22	17	6	301372.688	-0.0198	0.2716
23	18	5	22	17	5	301372.688	-0.0198	0.2716
23	18	5	22	17	6	301372.688	-0.0198	0.2284
42	33	9	41	33	8	301516.214	-0.05515	0.5
42	33	10	41	33	9	301516.214	-0.05515	0.5
30	12	19	29	11	19	301519.586	-0.01992	
42	32	10	41	32	9	301700.344	0.01758	0.5
42	32	11	41	32	10	301700.344	0.01758	0.5
45	7	38	44	7	37	301826.338	0.00793	0.4644
45	8	38	44	7	37	301826.338	0.00579	0.0356
45	7	38	44	8	37	301826.338	0.01302	0.0356
45	8	38	44	8	37	301826.338	0.01087	0.4644
22	19	3	21	18	4	302015.948	-0.00279	0.2335
22	19	4	21	18	3	302015.948	-0.00279	0.2335
22	19	4	21	18	4	302015.948	-0.00279	0.2665
22	19	3	21	18	3	302015.948	-0.00279	0.2665
41	17	25	40	17	24	302323.315	0.01536	
42	29	13	41	29	12	302366.211	0.03988	0.5
42	29	14	41	29	13	302366.211	0.03988	0.5
41	13	29	40	13	28	302401.198	0.03312	
40	12	28	39	12	27	302449.245	0.03621	
42	28	14	41	28	13	302636.473	0.0417	0.5
42	28	15	41	28	14	302636.473	0.0417	0.5
21	20	1	20	19	1	302638.535	-0.02475	0.2625
21	20	1	20	19	2	302638.535	-0.02475	0.2375
21	20	2	20	19	1	302638.535	-0.02475	0.2375
21	20	2	20	19	2	302638.535	-0.02475	0.2625
29	13	16	28	12	16	302719.762	-0.01652	
49	2	47	48	2	46	302752.177	-0.00257	0.4547
49	2	47	48	3	46	302752.177	-0.00257	0.0453
49	3	47	48	2	46	302752.177	-0.00257	0.0453
49	3	47	48	3	46	302752.177	-0.00257	0.4547
42	27	16	41	27	15	302937.687	-0.05605	0.5
42	27	15	41	27	14	302937.687	-0.05605	0.5
29	13	17	28	12	17	303063.512	0.01396	
46	6	40	45	6	39	303139.020	0.00532	0.4621
46	7	40	45	7	39	303139.020	0.00537	0.4621
46	7	40	45	6	39	303139.020	0.00528	0.0379
46	6	40	45	7	39	303139.020	0.00541	0.0379
42	26	16	41	26	15	303275.689	0.01295	0.5
42	26	17	41	26	16	303275.689	0.01295	0.5
30	7	24	29	6	24	303366.649	-0.01636	
42	12	31	41	12	30	303728.340	0.02552	
33	11	22	32	10	22	303845.796	0.01801	
41	16	26	40	16	25	303927.353	0.04744	
50	1	49	49	1	48	304156.173	-0.01588	0.4532
50	1	49	49	2	48	304156.173	-0.01588	0.0468
50	2	49	49	1	48	304156.173	-0.01588	0.0468

50	2	49	49	2	48	304156.173	-0.01588	0.4532
42	11	31	41	11	30	304296.309	0.01987	
31	11	21	30	10	21	304348.793	-0.00433	
43	11	33	42	11	32	304425.040	-0.00279	
43	10	33	42	10	32	304462.227	0.01215	
47	5	42	46	5	41	304495.453	-0.00575	0.4599
47	5	42	46	6	41	304495.453	-0.00575	0.0401
47	6	42	46	5	41	304495.453	-0.00575	0.0401
47	6	42	46	6	41	304495.453	-0.00575	0.4599
43	11	33	42	10	32	304497.845	-0.00929	
31	10	22	30	9	22	304571.546	-0.02009	
41	16	25	40	16	24	304727.528	0.04058	
28	14	15	27	13	14	304788.051	-0.03706	
28	14	14	27	13	14	304791.289	0.0179	
28	14	14	27	13	15	304808.074	0.02437	
28	10	18	27	8	19	305029.533	-0.00124	
41	15	27	40	15	26	305260.491	0.05145	
44	9	35	43	10	34	305352.759	-0.01266	
44	10	35	43	10	34	305354.192	0.02209	
44	9	35	43	9	34	305355.821	0.00935	
32	12	20	31	11	20	305522.448	0.00477	
51	0	51	50	0	50	305557.959	-0.03115	0.4518
51	0	51	50	1	50	305557.959	-0.03115	0.0482
51	1	51	50	0	50	305557.959	-0.03115	0.0482
51	1	51	50	1	50	305557.959	-0.03115	0.4518
48	4	44	47	4	43	305877.092	-0.0055	0.458
48	4	44	47	5	43	305877.092	-0.0055	0.042
48	5	44	47	4	43	305877.092	-0.0055	0.042
48	5	44	47	5	43	305877.092	-0.0055	0.458
30	5	25	29	4	25	305905.034	0.01898	
30	6	25	29	5	25	305906.698	-0.02639	
27	15	13	26	14	12	306057.262	0.21438	0.2019
27	15	12	26	14	12	306057.262	0.15485	0.2981
27	15	13	26	14	13	306057.262	-0.15676	0.2981
27	15	12	26	14	13	306057.262	-0.21629	0.2019
45	9	37	44	8	36	306487.372	-0.05659	0.0333
45	8	37	44	8	36	306487.372	-0.01584	0.4667
45	9	37	44	9	36	306487.372	0.03658	0.4667
45	8	37	44	9	36	306487.372	0.07733	0.0333
42	20	22	41	20	21	306646.432	-0.12013	0.5
42	20	23	41	20	22	306646.432	0.11266	0.5
26	16	10	25	15	10	307010.918	0.00365	0.2881
26	16	11	25	15	11	307010.918	-0.00056	0.2881
26	16	10	25	15	11	307010.918	-0.00124	0.2119
26	16	11	25	15	10	307010.918	0.00432	0.2119
41	12	29	40	12	28	307019.505	0.0087	
49	3	46	48	3	45	307272.359	0.005	0.4564
49	3	46	48	4	45	307272.359	0.005	0.0436
49	4	46	48	3	45	307272.359	0.005	0.0436
49	4	46	48	4	45	307272.359	0.005	0.4564
42	19	24	41	19	23	307622.759	-0.01599	
46	7	39	45	7	38	307738.398	0.0158	0.4641
46	8	39	45	7	38	307738.398	0.01491	0.0359
46	7	39	45	8	38	307738.398	0.01795	0.0359
46	8	39	45	8	38	307738.398	0.01705	0.4641
25	17	9	24	16	8	307803.951	-0.01338	0.2199
25	17	8	24	16	8	307803.951	-0.01338	0.2801
25	17	8	24	16	9	307803.951	-0.01342	0.2199
25	17	9	24	16	9	307803.951	-0.01341	0.2801
30	5	26	29	4	26	308028.155	-0.06534	0.5
30	4	26	29	3	26	308028.155	0.01966	0.5
24	18	7	23	17	6	308508.793	0.00997	0.2262
24	18	7	23	17	7	308508.793	0.00997	0.2738
24	18	6	23	17	6	308508.793	0.00997	0.2738
24	18	6	23	17	7	308508.793	0.00997	0.2262
42	13	30	41	13	29	308584.242	0.05483	
50	2	48	49	2	47	308673.692	-0.00899	0.4546
50	2	48	49	3	47	308673.692	-0.00899	0.0454
50	3	48	49	2	47	308673.692	-0.00899	0.0454
50	3	48	49	3	47	308673.692	-0.00899	0.4546
31	12	20	30	11	20	308695.674	-0.00103	
43	33	10	42	33	9	308806.559	0.0095	0.5
43	33	11	42	33	10	308806.559	0.0095	0.5
42	18	25	41	18	24	308831.715	-0.02005	
42	18	24	41	18	23	308859.992	-0.02465	
47	6	41	46	6	40	309057.547	0.02667	0.4618
47	7	41	46	6	40	309057.547	0.02665	0.0382
47	6	41	46	7	40	309057.547	0.0267	0.0382
47	7	41	46	7	40	309057.547	0.02669	0.4618
23	19	4	22	18	5	309164.520	-0.01457	0.2315
23	19	5	22	18	4	309164.520	-0.01457	0.2315
23	19	5	22	18	5	309164.520	-0.01457	0.2685
23	19	4	22	18	4	309164.520	-0.01457	0.2685
43	12	32	42	12	31	309542.464	0.0572	
43	29	14	42	29	13	309718.514	0.0146	0.5
43	29	15	42	29	14	309718.514	0.0146	0.5
22	20	3	21	19	2	309793.300	-0.00487	0.2359
22	20	3	21	19	3	309793.300	-0.00487	0.2641
22	20	2	21	19	2	309793.300	-0.00487	0.2641
22	20	2	21	19	3	309793.300	-0.00487	0.2359
43	11	32	42	11	31	309851.984	0.01547	
43	28	15	42	28	14	310009.045	0.0215	0.5
43	28	16	42	28	15	310009.045	0.0215	0.5
51	1	50	50	1	49	310076.082	0.00178	0.4532
51	1	50	50	2	49	310076.082	0.00178	0.0468
51	2	50	50	1	49	310076.082	0.00178	0.0468
51	2	50	50	2	49	310076.082	0.00178	0.4532
44	10	34	43	11	33	310239.727	0.01482	
44	10	34	43	10	33	310275.384	0.03276	
42	17	26	41	17	25	310326.476	0.04051	
43	27	17	42	27	16	310333.211	-0.01168	0.5
43	27	16	42	27	15	310333.211	-0.01168	0.5
21	21	0	20	20	0	310407.740	-0.02519	0.2601
21	21	0	20	20	1	310407.740	-0.02519	0.2399
21	21	1	20	20	0	310407.740	-0.02519	0.2399
21	21	1	20	20	1	310407.740	-0.02519	0.2601
48	5	43	47	5	42	310416.649	-0.00326	0.4597
48	5	43	47	6	42	310416.649	-0.00326	0.0403
48	6	43	47	5	42	310416.649	-0.00326	0.0403
48	6	43	47	6	42	310416.649	-0.00326	0.4597
42	17	25	41	17	24	310558.930	0.0321	
43	26	17	42	26	16	310697.167	-0.03616	0.5
43	26	18	42	26	17	310697.167	-0.03616	0.5
45	10	36	44	10	35	311230.277	0.01331	
45	9	36	44	9	35	311231.059	0.03286	
52	0	52	51	0	51	311475.957	-0.04763	0.4518
52	0	52	51	1	51	311475.957	-0.04763	0.0482
52	1	52	51	0	51	311475.957	-0.04763	0.0482
52	1	52	51	1	51	311475.957	-0.04763	0.4518
29	14	15	28	13	15	311593.592	-0.00477	
29	14	16	28	13	16	311627.889	0.05758	
42	12	30	41	12	29	311635.788	0.00087	
49	4	45	48	4	44	311798.904	0.00728	0.4578
49	4	45	48	5	44	311798.904	0.00728	0.0422
49	5	45	48	4	44	311798.904	0.00728	0.0422
49	5	45	48	5	44	311798.904	0.00728	0.4578
42	16	27	41	16	26	311968.916	0.04106	
42	14	29	41	14	28	312012.165	0.05719	
46	9	38	45	8	37	312387.495	-0.01392	0.0337
46	8	38	45	8	37	312387.495	0.00377	0.4663
46	9	38	45	9	37	312387.495	0.02684	0.4663
46	8	38	45	9	37	312387.495	0.04453	0.0337
33	10	23	32	9	23	312840.327	0.04313	
42	15	28	41	15	27	312980.577	0.05469	
28	15	13	27	14	13	313024.554	-0.01125	
28	15	14	27	14	14	313025.518	0.02386	
50	3	47	49	3	46	313193.549	-0.02134	0.4562
50	3	47	49	4	46	313193.549	-0.02134	0.0438
50	4	47	49	3	46	313193.549	-0.02134	0.0438
50	4	47	49	4	46	313193.549	-0.02134	0.4562
32	11	22	31	10	22	313434.282	0.02671	
47	7	40	46	7	39	313650.394	-0.01936	0.4638
47	8	40	46	7	39	313650.394	-0.01973	0.0362
47	7	40	46	8	39	313650.394	-0.01846	0.0362
47	8	40	46	8	39	313650.394	-0.01883	0.4638
31	6	25	30	5	25	314002.261	0.02648	
31	7	25	30	6	25	314013.977	-0.02083	
27	16	12	26	15	11	314062.419	0.02586	0.2086
27	16	11	26	15	11	314062.419	0.0233	0.2914
27	16	12	26	15	12	314062.419	0.00822	0.2914
27	16	11	26	15	12	314062.419	0.00566	0.2086
51	2	49	50	2	48	314593.627	-0.01776	0.4545
51	2	49	50	3	48	314593.627	-0.01776	0.0455
51	3	49	50	2	48	314593.627	-0.01776	0.0455
51	3	49	50	3	48	314593.627	-0.01776	0.4545
43	13	31	42	13	30	314601.443	0.0303	
34	11	23	33	10	23	314714.293	0.02975	
26	17	9	25	16	9	314903.472	0.0058	0.2831
26	17	10	25	16	9	314903.472	0.00582	0.2169
26	17	9	25	16	10	314903.472	0.00563	0.2169
26	17	10	25	16	10	314903.472	0.00566	0.2831
32	10	23	31	9	23	314936.048	-0.02698	
31	13	18	30	12	18	314941.021	-0.00705	
48	6	42	47	6	41	314975.181	-0.02399	0.4615
48	6	42	47	7	41	314975.181	-0.02398	0.0385
48	7	42	47	6	41	314975.181	-0.024	0.0385
48	7	42	47	7	41	314975.181	-0.02398	0.4615
34	12	22	33	11	22	315084.429	0.00684	
44	12	33	43	12	32	315341.838	0.01056	
43	19	25	42	19	24	315429.424	-0.06142	
44	11	33	43	11	32	315506.311	-0.00891	
25	18	8	24	17	7	315636.211	-0.01675	0.2237
25	18	8	24	17	8	315636.211	-0.01675	0.2763
25	18	7	24	17	7	315636.211	-0.01675	0.2763
25	18	7	24	17	8	315636.211	-0.01675	0.2237
44	12	33	43	11	32	315678.313	0.00267	
44	34	10	43	34	9	315911.072	-0.04653	0.5
44	34	11	43	34	10	315911.072	-0.04653	0.5
52	1	51	51	1	50	315994.299	-0.04869	0.4531
52	1	51	51	2	50	315994.299	-0.04869	0.0469
52	2	51	51	1	50	315994.299	-0.04869	0.0469
52	2	51	51	2	50	315994.299	-0.04869	0.4531
45	11	35	44	11	34	316097.089	0.01018	
44	33	11	43	33	10	316104.850	-0.00258	0.5
44	33	12	43	33	11	316104.850	-0.00258	0.5
45	10	35	44	10	34	316106.097	0.0153	
32	12	21	31	11	21	316233.123	-0.0008	
24	19	5	23	18	6	316307.892	-0.01306	0.2293
24	19	6	23	18	5	316307.892	-0.01306	0.2293
24	19	6	23	18	6	316307.892	-0.01306	0.2707

24	19	5	23	18	5	316307.892	-0.01306	0.2707
49	5	44	48	5	43	316336.615	-0.01184	0.4595
49	5	44	48	6	43	316336.615	-0.01184	0.0405
49	6	44	48	5	43	316336.615	-0.01184	0.0405
49	6	44	48	6	43	316336.615	-0.01184	0.4595
31	13	19	30	12	19	316395.420	-0.03372	
43	12	31	42	12	30	316491.466	0.00947	
43	18	26	42	18	25	316761.227	-0.0048	
43	18	25	42	18	24	316822.304	-0.01532	
31	13	18	30	12	19	316927.911	-0.02257	
23	20	4	22	19	3	316945.140	-0.01417	0.2342
23	20	4	22	19	4	316945.140	-0.01417	0.2658
23	20	3	22	19	3	316945.140	-0.01417	0.2658
23	20	3	22	19	4	316945.140	-0.01417	0.2342
44	29	15	43	29	14	317082.186	0.03257	0.5
44	29	16	43	29	15	317082.186	0.03257	0.5
44	28	16	43	28	15	317394.097	0.01061	0.5
44	28	17	43	28	16	317394.097	0.01061	0.5
22	21	1	21	20	1	317563.376	-0.02531	0.2614
22	21	1	21	20	2	317563.376	-0.02531	0.2386
22	21	2	21	20	1	317563.376	-0.02531	0.2386
22	21	2	21	20	2	317563.376	-0.02531	0.2614
50	4	46	49	4	45	317719.267	-0.00285	0.4577
50	4	46	49	5	45	317719.267	-0.00285	0.0423
50	5	46	49	4	45	317719.267	-0.00285	0.0423
50	5	46	49	5	45	317719.267	-0.00285	0.4577
44	27	18	43	27	17	317742.476	-0.03377	0.5
44	27	17	43	27	16	317742.476	-0.03377	0.5
32	8	24	31	7	24	317746.874	-0.04741	
47	9	39	46	8	38	318288.840	-0.00283	0.0341
47	8	39	46	8	38	318288.840	0.00479	0.4659
47	9	39	46	9	38	318288.840	0.01486	0.4659
47	8	39	46	9	38	318288.840	0.02249	0.0341
30	14	16	29	13	16	318306.275	-0.03186	
30	14	17	29	13	17	318388.251	0.0262	
31	5	27	30	4	27	318541.840	-0.03658	0.5
31	4	27	30	3	27	318541.840	-0.00135	0.5
78	6	72	78	6	73	318669.482	0.00049	0.3397
78	7	72	78	5	73	318669.482	0.00049	0.3397
78	7	72	78	6	73	318669.482	0.00049	0.1603
78	6	72	78	5	73	318669.482	0.00049	0.1603
48	7	41	47	8	40	319562.222	-0.00246	0.0366
48	8	41	47	8	40	319562.222	-0.00261	0.4634
48	7	41	47	7	40	319562.222	-0.00283	0.4634
48	8	41	47	7	40	319562.222	-0.00299	0.0366
29	15	15	28	14	15	319952.162	-0.01699	
43	16	28	42	16	27	319968.079	-0.00077	
32	13	19	31	12	19	320382.490	0.00792	
44	13	32	43	13	31	320503.502	0.04151	
52	2	50	51	2	49	320511.959	-0.02264	0.4544
52	2	50	51	3	49	320511.959	-0.02264	0.0456
52	3	50	51	2	49	320511.959	-0.02264	0.0456
52	3	50	51	3	49	320511.959	-0.02264	0.4544
49	6	43	48	6	42	320892.002	0.03317	0.4613
49	6	43	48	7	42	320892.002	0.03317	0.0387
49	7	43	48	6	42	320892.002	0.03316	0.0387
49	7	43	48	7	42	320892.002	0.03317	0.4613
28	16	12	27	15	13	321088.359	-0.04269	0.205
28	16	13	27	15	13	321088.359	-0.03358	0.295
28	16	12	27	15	12	321088.359	0.01684	0.295
28	16	13	27	15	12	321088.359	0.02594	0.205
45	12	34	44	12	33	321139.760	0.0269	
45	11	34	44	11	33	321225.310	0.04124	
44	12	32	43	12	31	321617.432	-0.01163	
32	7	25	31	6	25	321713.245	0.01024	
53	1	52	52	1	51	321910.936	-0.02587	0.4531
53	1	52	52	2	51	321910.936	-0.02587	0.0469
53	2	52	52	1	51	321910.936	-0.02587	0.0469
53	2	52	52	2	51	321910.936	-0.02587	0.4531
46	10	36	45	11	35	321941.307	0.03149	
46	11	36	45	11	35	321945.185	0.04619	
46	10	36	45	10	35	321949.496	0.02004	
46	11	36	45	10	35	321953.358	0.01721	
27	17	11	26	16	10	321986.832	0.01676	0.2138
27	17	10	26	16	10	321986.832	0.01667	0.2862
27	17	11	26	16	11	321986.832	0.01609	0.2862
27	17	10	26	16	11	321986.832	0.016	0.2138
50	5	45	49	5	44	322255.303	-0.02069	0.4593
50	5	45	49	6	44	322255.303	-0.02069	0.0407
50	6	45	49	5	44	322255.303	-0.02069	0.0407
50	6	45	49	6	44	322255.303	-0.02069	0.4593
26	18	9	25	17	8	322753.401	0.01724	0.2211
26	18	9	25	17	9	322753.401	0.01724	0.2789
26	18	8	25	17	8	322753.401	0.01724	0.2789
26	18	8	25	17	9	322753.401	0.01724	0.2211
33	13	21	32	12	20	322929.110	-0.03569	
33	11	23	32	10	23	323032.582	-0.05724	
45	34	11	44	34	10	323204.421	-0.00324	0.5
45	34	12	44	34	11	323204.421	-0.00324	0.5
31	1	30	30	0	30	323255.105	0.01561	0.5
31	2	30	30	1	30	323255.105	0.01561	0.5
44	19	26	43	19	25	323284.988	-0.01615	
44	19	25	43	19	24	323299.808	-0.02674	
45	32	13	44	32	12	323637.155	0.00398	0.5
45	32	14	44	32	13	323637.155	0.00398	0.5
51	4	47	50	4	46	323638.149	-0.0264	0.4575
51	4	47	50	5	46	323638.149	-0.0264	0.0425
51	5	47	50	4	46	323638.149	-0.0264	0.0425
51	5	47	50	5	46	323638.149	-0.0264	0.4575
24	20	4	23	19	4	324093.168	-0.03005	0.2687
24	20	4	23	19	5	324093.168	-0.03005	0.2313
24	20	5	23	19	4	324093.168	-0.03005	0.2313
24	20	5	23	19	5	324093.168	-0.03005	0.2687
48	8	40	47	8	39	324191.049	0.0074	0.4655
48	9	40	47	8	39	324191.049	0.00414	0.0345
48	8	40	47	9	39	324191.049	0.01503	0.0345
48	9	40	47	9	39	324191.049	0.01176	0.4655
33	12	22	32	11	22	324232.153	0.00158	
32	13	19	31	12	20	324242.685	-0.01374	
45	29	16	44	29	15	324457.507	0.00302	0.5
45	29	17	44	29	16	324457.507	0.00302	0.5
32	7	26	31	6	26	324641.513	-0.01039	
44	18	27	43	18	26	324746.457	0.00578	
45	28	17	44	28	16	324792.029	-0.02157	0.5
45	28	18	44	28	17	324792.029	-0.02157	0.5
44	18	26	43	18	25	324874.014	0.01274	
31	14	17	30	13	17	324897.829	0.02585	

+ TRANS ROTAMER: LIST OF TRANSITIONS

Frequencies are expressed in MHz as well as the differences O-C (observed and calculated).

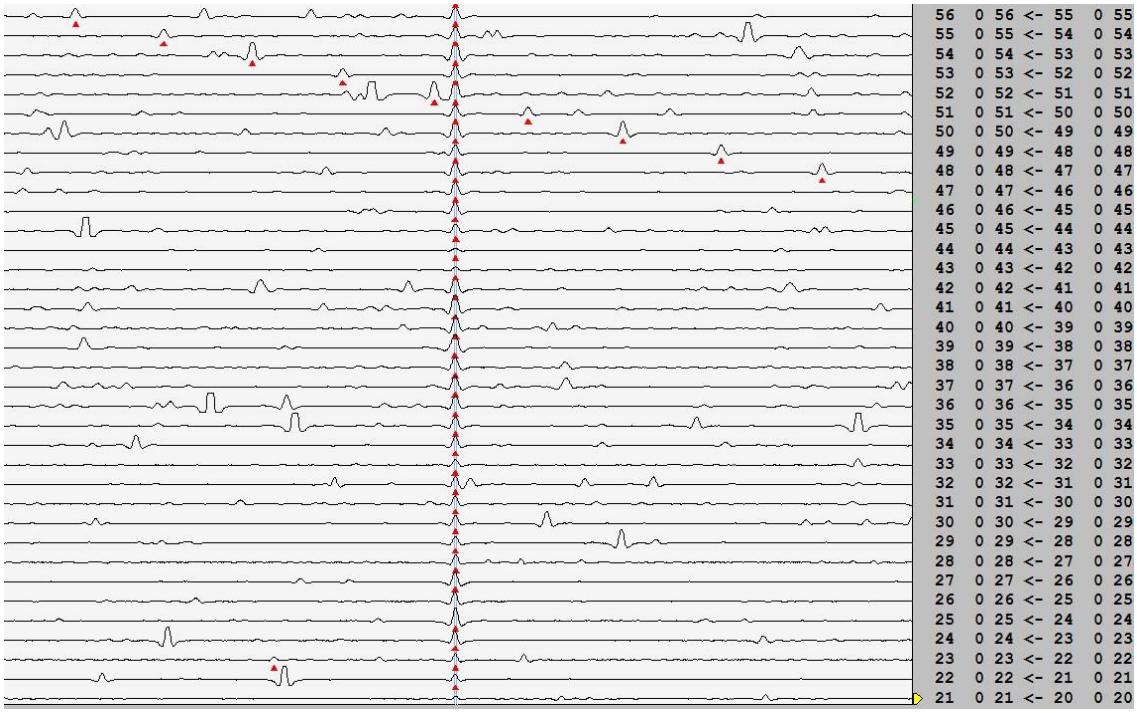
J	K_a	K_c	J"	$K"_a$	$K"_c$	EXP. FREQ.	DIFF. (O-C)	WEIGHT
13	1	13	12	1	12	75315.3376	0.01667	
13	0	13	12	0	12	75318.0866	0.02109	
12	3	10	11	3	9	77648.0867	0.00229	
14	1	14	13	1	13	80944.8301	0.02014	
14	0	14	13	0	13	80946.0538	0.01299	
13	3	11	12	3	10	83530.4189	0.02781	
12	3	9	11	3	8	83570.9682	0.0026	
13	2	11	12	2	10	84619.0084	0.02788	
13	10	4	12	10	3	85859.8353	-0.00821	0.5
13	10	3	12	10	2	85859.8353	-0.00835	0.5
15	1	15	14	1	14	86573.9171	-0.00187	
15	0	15	14	0	14	86574.4377	-0.02704	
14	3	12	13	3	11	89321.3045	-0.01251	
13	3	10	12	3	9	89786.0885	0.00365	
14	2	12	13	2	11	89995.331	-0.00917	
15	2	14	14	2	13	90834.6752	-0.00636	
15	1	14	14	1	13	90858.6222	0.0161	
16	0	16	15	0	15	92202.9579	-0.10231	0.5
16	1	16	15	1	15	92202.9579	0.13732	0.5
14	5	10	13	5	9	93903.8349	-0.0324	
15	3	13	14	3	12	95045.2573	-0.00563	

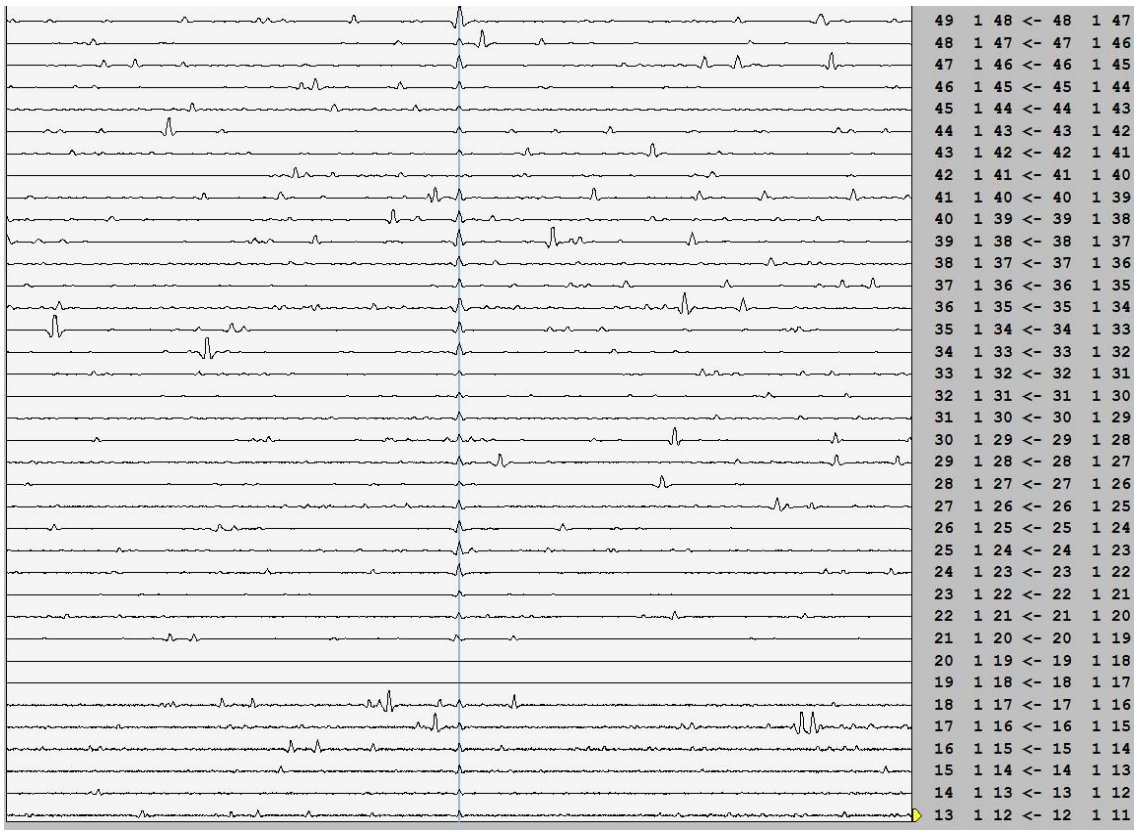
15	2	13	14	2	12	95436.9928	-0.0088	
14	3	11	13	3	10	95582.1109	0.01189	
17	0	17	16	0	16	97831.6282	-0.0581	0.5
17	1	17	16	1	16	97831.6282	0.04622	0.5
16	3	14	15	3	13	100724.127	-0.00207	
16	3	14	15	3	13	100724.129	0.00081	
16	2	14	15	2	13	100941.297	-0.01354	
18	0	18	17	0	17	103460.248	-0.0195	0.5
18	1	18	17	1	17	103460.248	0.02557	0.5
16	3	13	15	3	12	106324.691	-0.04074	
17	3	15	16	3	14	106375.04	-0.00658	
17	2	15	16	2	14	106491.197	0.00433	
16	5	12	15	5	11	107050.32	0.01509	
18	2	17	17	2	16	107717.982	0.00295	
18	1	17	17	1	16	107720.551	-0.00524	
19	0	19	18	0	18	109088.742	-0.01926	0.5
19	1	19	18	1	18	109088.742	0.00008	0.5
17	3	14	16	3	13	111585.862	-0.02251	
21	1	21	20	1	20	120345.418	0.03889	0.5
21	0	21	20	0	20	120345.418	0.03539	0.5
20	3	18	19	3	17	123259.231	0.01811	
20	2	18	19	2	17	123274.524	0.05334	
19	5	15	18	5	14	125665.746	-0.00262	
22	1	22	21	1	21	125973.469	-0.00526	0.5
22	0	22	21	0	21	125973.469	-0.00674	0.5
20	4	17	19	4	16	127578.7	-0.00567	
20	3	17	19	3	16	127806.149	-0.02393	
19	4	15	18	4	14	128158.187	-0.03461	
21	3	19	20	3	18	128880.322	-0.01881	
21	2	19	20	2	18	128887.807	-0.00234	
22	2	21	21	2	20	130222.901	0.04953	0.5
22	1	21	21	1	20	130222.901	-0.06118	0.5
20	5	16	19	5	15	131587.431	0.03479	
23	1	23	22	1	22	131601.399	-0.00673	0.5
23	0	23	22	0	22	131601.399	-0.00735	0.5
21	4	18	20	4	17	133214.994	-0.01143	
20	4	16	19	4	15	133316.457	-0.01468	
21	3	18	20	3	17	133338.306	-0.03144	
22	3	20	21	3	19	134501.101	-0.03492	
22	2	20	21	2	19	134504.766	0.02831	
23	2	22	22	2	21	135849.126	0.05462	0.5
23	1	22	22	1	21	135849.126	0.00537	0.5
24	0	24	23	0	23	137229.136	-0.02518	0.5
24	1	24	23	1	23	137229.136	-0.02492	0.5
21	5	17	20	5	16	137401.016	-0.02582	
16	5	11	15	4	11	138748.791	0.02286	
22	4	19	21	4	18	138837.444	-0.01936	
22	3	19	21	3	18	138902.659	0.02587	
20	5	15	19	5	14	139165.855	0.02933	
23	3	21	22	3	20	140122.082	-0.03799	
24	2	23	23	2	22	141475.261	0.00774	
25	1	25	24	1	24	142856.74	0.00763	0.5
25	0	25	24	0	24	142856.74	0.00752	0.5
22	5	18	21	5	17	143133.251	0.00985	
22	4	18	21	4	17	143811.698	0.0118	
23	3	20	22	3	19	144486.813	-0.02129	
21	5	16	20	5	15	144814.394	-0.02787	
24	3	22	23	3	21	145743.474	0.00336	
24	2	22	23	2	21	145744.317	0.03987	
25	2	24	24	2	23	147101.389	0.0256	0.5
25	1	24	24	1	23	147101.389	0.01606	0.5
23	5	19	22	5	18	148808.829	0.00705	
23	4	19	22	4	18	149203.834	0.00619	
24	4	21	23	4	20	150066.119	0.01699	
24	3	21	23	3	20	150083.194	-0.01132	
22	5	17	21	5	16	150088.768	-0.01332	
25	3	23	24	3	22	151365.349	0.14683	0.5
25	2	23	24	2	22	151365.349	-0.22836	0.5
27	0	27	26	0	26	154111.264	-0.0146	0.5
27	1	27	26	1	26	154111.264	-0.01458	0.5
24	5	20	23	5	19	154448.207	-0.00164	
24	4	20	23	4	19	154670.375	0.02815	
23	5	18	22	5	17	155174.167	0.00429	
25	4	22	24	4	21	155678.558	0.03562	
25	3	22	24	3	21	155687.057	-0.00636	
26	3	24	25	3	23	156987.305	0.0437	0.5
26	2	24	25	2	23	156987.305	-0.12921	0.5
27	2	26	26	2	25	158353.194	-0.05268	0.5
27	1	26	26	1	25	158353.194	-0.05448	0.5
28	0	28	27	0	27	159738.261	0.02609	0.5
28	1	28	27	1	27	159738.261	0.0261	0.5
25	5	21	24	5	20	160066.507	0.01669	
25	4	21	24	4	20	160187.959	0.00018	
24	5	19	23	5	18	160247.729	0.00915	
26	4	23	25	4	22	161291.411	-0.00703	
26	3	23	25	3	22	161295.621	-0.00018	
27	3	25	26	3	24	162609.662	0.09047	0.5
27	2	25	26	2	24	162609.662	0.0115	0.5
28	2	27	27	2	26	163978.988	0.01763	0.5
28	1	27	27	1	26	163978.988	0.01686	0.5
29	0	29	28	0	28	165364.99	0.02081	0.5
29	1	29	28	1	28	165364.99	0.02081	0.5
25	5	20	24	5	19	165411.678	0.04264	
26	5	22	25	5	21	165673.775	-0.03753	
26	4	22	25	4	21	165738.684	-0.01098	
27	4	24	26	4	23	166905.148	-0.03344	
28	3	26	27	3	25	168232.115	0.06037	0.5
28	2	26	27	2	25	168232.115	0.0246	0.5
29	2	28	28	2	27	169604.501	-0.01806	0.5
29	1	28	28	1	27	169604.501	-0.01839	0.5
30	0	30	29	0	29	170991.482	0.01074	0.5
30	1	30	29	1	29	170991.482	0.01074	0.5
27	5	23	26	5	22	171276.401	-0.02561	
27	4	23	26	4	22	171310.389	-0.00542	
29	2	27	28	2	26	173854.641	-0.01188	0.5
29	3	27	28	3	26	173854.641	0.00419	0.5
30	2	29	29	2	28	175229.875	-0.00048	0.5
30	1	29	29	1	28	175229.875	-0.00062	0.5
27	5	22	26	5	21	176072.775	0.0339	
31	0	31	30	0	30	176617.725	-0.00734	0.5
31	1	31	30	1	30	176617.725	-0.00734	0.5
28	5	24	27	5	23	176877.84	-0.02619	
28	4	24	27	4	23	176895.354	0.01513	
30	3	28	29	3	27	179477.246	-0.01133	0.5
30	2	28	29	2	27	179477.246	-0.0185	0.5
31	2	30	30	2	29	180855.021	0.00051	0.5
31	1	30	30	1	29	180855.021	0.00045	0.5
32	0	32	31	0	31	182243.752	0.00638	0.5
32	1	32	31	1	31	182243.752	0.00638	0.5
29	4	25	28	4	24	182488.769	-0.009	
31	2	29	30	2	28	185099.851	-0.01085	0.5
31	3	29	30	3	28	185099.851	-0.00767	0.5
32	2	31	31	2	30	186479.949	0.00795	0.5
32	1	31	31	1	30	186479.949	0.00792	0.5
33	0	33	32	0	32	187869.492	-0.00898	0.5
33	1	33	32	1	32	187869.492	-0.00898	0.5
30	5	26	29	5	25	188083.411	0.01472	
30	4	26	29	4	25	188087.803	-0.01124	
32	2	30	31	2	29	190722.375	-0.02383	0.5
32	3	30	31	3	29	190722.375	-0.02243	0.5
33	2	32	32	2	31	192104.607	-0.01528	0.5
33	1	32	32	1	31	192104.607	-0.01529	0.5
34	0	34	33	0	33	193494.992	0.00069	0.5
34	1	34	33	1	33	193494.992	0.00069	0.5
31	4	27	30	4	26	193690.665	-0.00214	
32	4	29	31	4	28	194986.071	0.02539	0.5
32	3	29	31	3	28	194986.071	-0.02163	0.5
33	2	31	32	2	30	196344.815	-0.01683	0.5
33	3	31	32	3	30	196344.815	-0.01621	0.5
34	2	33	33	2	32	197729.06	0.00821	0.5
34	1	33	33	1	32	197729.06	0.00821	0.5
31	5	26	30	5	25	198131.033	0.0156	
35	0	35	34	0	34	199120.201	-0.00672	0.5
35	1	35	34	1	34	199120.201	-0.00672	0.5
32	5	28	31	5	27	199295.164	0.00823	
32	4	28	31	4	27	199296.205	-0.01214	
33	4	30	32	4	29	200603.759	-0.0007	0.5
33	3	30	32	3	29	200603.759	-0.02223	0.5
34	2	32	33	2	31	201967.113	-0.01261	0.5
34	3	32	33	3	31	201967.113	-0.01235	0.5
35	2	34	34	2	33	203353.236	0.01933	0.5
35	1	34	34	1	33	203353.236	0.01933	0.5
32	5	27	31	5	26	203704.312	0.02765	
36	0	36	35	0	35	204745.153	0.01052	0.5
36	1	36	35	1	35	204745.153	0.01052	0.5
34	4	31	33	4	30	206221.715	-0.00115	0.5
34	3	31	33	3	30	206221.715	-0.01093	0.5
35	2	33	34	2	32	207589.253	0.00151	0.5
35	3	33	34	3	32	207589.253	0.00162	0.5
33	5	28	32	5	27	209286.694	-0.0288	
37	0	37	36	0	36	210369.774	-0.01187	0.5
37	1	37	36	1	36	210369.774	-0.01187	0.5
34	4	30	33	4	29	210512.616	-0.11226	0.5
34	5	30	33	5	29	210512.616	0.13174	0.5
35	4	32	34	4	31	211839.842	0.01671	0.5
35	3	32	34	3	31	211839.842	0.0123	0.5
36	2	34	35	2	33	213211.218	0.03631	0.5
36	3	34	35	3	33	213211.218	0.03636	0.5
37	2	36	36	2	35	214600.716	0.00959	0.5
37	1	36	36	1	35	214600.716	0.00959	0.5
34	5	29	33	5	28	214875.439	-0.01205	
38	0	38	37	0	37	215994.117	-0.01473	0.5
38	1	38	37	1	37	215994.117	-0.01473	0.5
36	4	33	35	4	32	217458.034	0.0198	0.5
36	3	33	35	3	32	217458.034	0.01782	0.5
37	2	35	36	2	34	218832.918	0.02664	0.5
37	3	35	36	3	34	218832.918	0.02666	0.5
38	2	37	37	2	36	220223.981	-0.02964	0.5
38	1	37	37	1	36	220223.981	-0.02964	0.5
35	5	30	34	5	29	220468.635	-0.01198	
39	0	39	38	0	38	221618.137	-0.03371	0.5
39	1	39	38	1	38	221618.137	-0.03371	0.5
36	4	32	35	4	31	221733.782	-0.03799	0.5
36	5	32	35	5	31	221733.782	0.01602	0.5
37	3	34	36	3	33	223076.209	-0.00762	0.5
37	4	34	36	4	33	223076.209	-0.00675	0.5
38	2	36	37	2	35	224454.365	0.00394	0.5
38	3	36	37	3	35	224454.365	0.00395	0.5

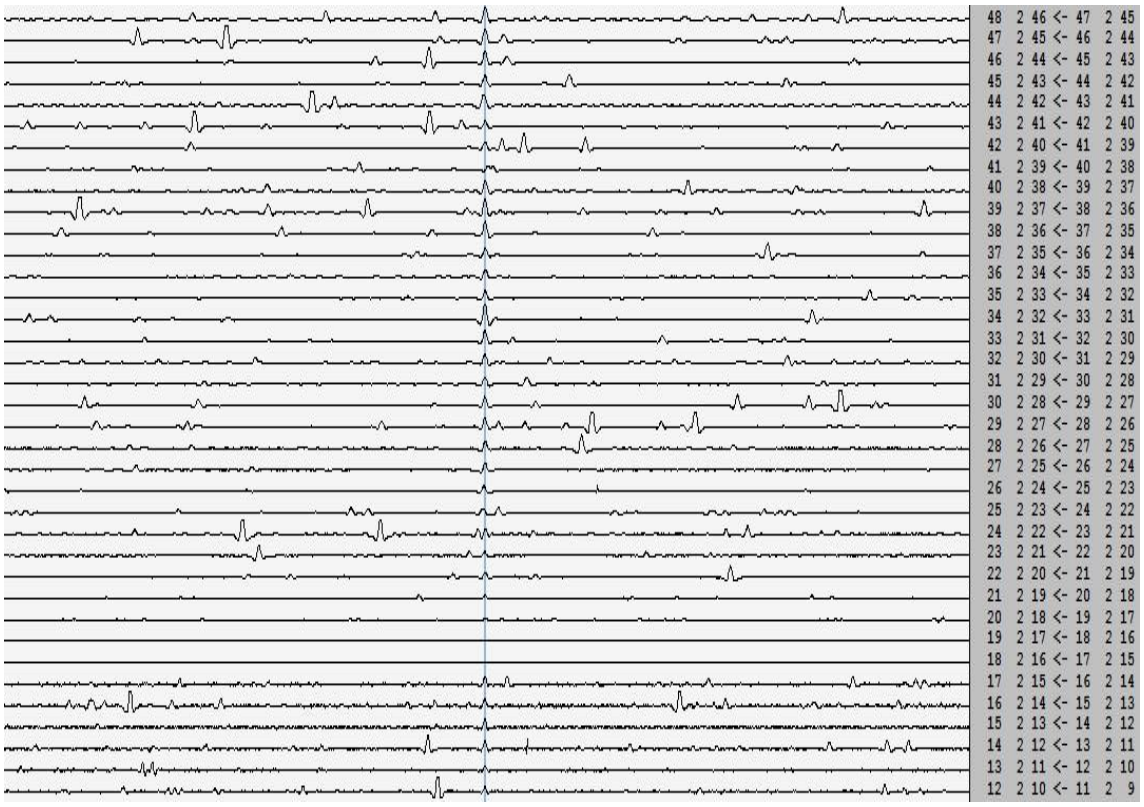
39	1	38	38	1	37	225846.995	-0.01217	0.5
39	2	38	38	2	37	225846.995	-0.01217	0.5
36	5	31	35	5	30	226065.139	0.01207	
40	0	40	39	0	39	227241.936	0.03976	0.5
40	1	40	39	1	39	227241.936	0.03976	0.5
37	4	33	36	4	32	227345.423	-0.03172	0.5
37	5	33	36	5	32	227345.423	-0.00663	0.5
38	3	35	37	3	34	228694.402	0.02385	0.5
38	4	35	37	4	34	228694.402	0.02424	0.5
39	2	37	38	2	36	230075.567	-0.00424	0.5
39	3	37	38	3	36	230075.567	-0.00423	0.5
40	2	39	39	2	38	231469.671	-0.01585	0.5
40	1	39	39	1	38	231469.671	-0.01585	0.5
41	0	41	40	0	40	232865.28	-0.01778	0.5
41	1	41	40	1	40	232865.28	-0.01778	0.5
38	4	34	37	4	33	232957.569	-0.01873	0.5
38	5	34	37	5	33	232957.569	-0.00718	0.5
40	2	38	39	2	37	235696.52	0.01752	0.5
40	3	38	39	3	37	235696.52	0.01752	0.5
41	2	40	40	2	39	237092.031	-0.0067	0.5
41	1	40	40	1	39	237092.031	-0.0067	0.5
42	0	42	41	0	41	238488.377	0.00683	0.5
42	1	42	41	1	41	238488.377	0.00683	0.5
39	4	35	38	4	34	238570.104	0.01711	0.5
39	5	35	38	5	34	238570.104	0.0224	0.5
43	0	43	42	0	42	244111.114	0.01109	0.5
43	1	43	42	1	42	244111.114	0.01109	0.5
40	4	36	39	4	35	244182.83	-0.01377	0.5
40	5	36	39	5	35	244182.83	-0.01137	0.5
41	3	38	40	3	37	245548.179	0.01287	0.5
41	4	38	40	4	37	245548.179	0.0129	0.5
42	2	40	41	2	39	246937.464	-0.00425	0.5
42	3	40	41	3	39	246937.464	-0.00425	0.5
43	2	42	42	2	41	248335.711	-0.01147	0.5
43	1	42	42	1	41	248335.711	-0.01147	0.5
40	6	35	39	6	34	248470.997	0.04979	0.5
40	5	35	39	5	34	248470.997	-0.00676	0.5
44	0	44	43	0	43	249733.484	-0.00569	0.5
44	1	44	43	1	43	249733.484	-0.00569	0.5
41	4	37	40	4	36	249795.755	-0.01147	0.5
41	5	37	40	5	36	249795.755	-0.01039	0.5
43	2	41	42	2	40	252557.488	0.016	0.5
43	3	41	42	3	40	252557.488	0.016	0.5
44	1	43	43	1	42	253957.026	-0.01069	0.5
44	2	43	43	2	42	253957.026	-0.01069	0.5
41	6	36	40	6	35	254075.526	-0.0151	0.5
41	5	36	40	5	35	254075.526	-0.04165	0.5
45	0	45	44	0	44	255355.546	0.02462	0.5
45	1	45	44	1	44	255355.546	0.02462	0.5
42	4	38	41	4	37	255408.757	-0.01861	0.5
42	5	38	41	5	37	255408.757	-0.01813	0.5
43	3	40	42	3	39	256783.094	0.00905	0.5
43	4	40	42	4	39	256783.094	0.00906	0.5
45	1	44	44	1	43	259577.97	-0.01741	0.5
45	2	44	44	2	43	259577.97	-0.01741	0.5
42	5	37	41	5	36	259680.859	-0.02666	0.5
42	6	37	41	6	36	259680.859	-0.0143	0.5
46	0	46	45	0	45	260977.175	-0.01579	0.5
46	1	46	45	1	45	260977.175	-0.01579	0.5
43	4	39	42	4	38	261021.809	0.00489	0.5
43	5	39	42	5	38	261021.809	0.0051	0.5
44	3	41	43	3	40	262400.188	0.01391	0.5
44	4	41	43	4	40	262400.188	0.01392	0.5
45	2	43	44	2	42	263796.45	-0.00638	0.5
45	3	43	44	3	42	263796.45	-0.00638	0.5
46	2	45	45	2	44	265198.559	-0.00575	0.5
46	1	45	45	1	44	265198.559	-0.00575	0.5
47	0	47	46	0	46	266598.492	0.00245	0.5
47	1	47	46	1	46	266598.492	0.00245	0.5
44	4	40	43	4	39	266634.785	-0.00828	0.5
44	5	40	43	5	39	266634.785	-0.00818	0.5
45	3	42	44	3	41	268016.976	-0.00801	0.5
45	4	42	44	4	41	268016.976	-0.00801	0.5
46	2	44	45	2	43	269415.413	0.00222	0.5
46	3	44	45	3	43	269415.413	0.00222	0.5
47	2	46	46	2	45	270818.766	0.00501	0.5
47	1	46	46	1	45	270818.766	0.00501	0.5
44	5	39	43	5	38	270893.142	-0.00621	0.5
44	6	39	43	6	38	270893.142	-0.0036	0.5
48	0	48	47	0	47	272219.408	-0.00208	0.5
48	1	48	47	1	47	272219.408	-0.00208	0.5
45	4	41	44	4	40	272247.694	0.00423	0.5
45	5	41	44	5	40	272247.694	0.00428	0.5
46	3	43	45	3	42	273633.486	-0.00519	0.5
46	4	43	45	4	42	273633.486	-0.00519	0.5
47	2	45	46	2	44	275034.002	0.00965	0.5
47	3	45	46	3	44	275034.002	0.00965	0.5
48	1	47	47	1	46	276438.583	0.01543	0.5
48	2	47	47	2	46	276438.583	0.01543	0.5
45	5	40	44	5	39	276499.842	0.00617	0.5
45	6	40	44	6	39	276499.842	0.00736	0.5
49	0	49	48	0	48	277839.941	-0.00255	0.5
49	1	49	48	1	48	277839.941	-0.00255	0.5
46	4	42	45	4	41	277860.449	0.00074	0.5
46	5	42	45	5	41	277860.449	0.00076	0.5
47	3	44	46	3	43	279249.672	-0.00516	0.5
47	4	44	46	4	43	279249.672	-0.00516	0.5
48	2	46	47	2	45	280652.201	0.01313	0.5
48	3	46	47	3	45	280652.201	0.01313	0.5
49	2	48	48	2	47	282058.011	0.03529	0.5
49	1	48	48	1	47	282058.011	0.03529	0.5
50	0	50	49	0	49	283460.086	0.0022	0.5
50	1	50	49	1	49	283460.086	0.0022	0.5
47	4	43	46	4	42	283473.013	-0.01594	0.5
47	5	43	46	5	42	283473.013	-0.01593	0.5
48	3	45	47	3	44	284865.545	0.02225	0.5
48	4	45	47	4	44	284865.545	0.02225	0.5
49	2	47	48	2	46	286270.004	0.01545	0.5
49	3	47	48	3	46	286270.004	0.01545	0.5
50	1	49	49	1	48	287676.959	-0.01829	0.5
50	2	49	49	2	48	287676.959	-0.01829	0.5
47	5	42	46	5	41	287713.805	-0.01038	0.5
47	6	42	46	6	41	287713.805	-0.01014	0.5
51	0	51	50	0	50	289079.824	0.00353	0.5
51	1	51	50	1	50	289079.824	0.00353	0.5
48	4	44	47	4	43	289085.429	0.0339	0.5
48	5	44	47	5	43	289085.429	0.0339	0.5
49	3	46	48	3	45	290481.019	0.00894	0.5
49	4	46	48	4	45	290481.019	0.00894	0.5
50	2	48	49	2	47	291887.377	-0.00512	0.5
50	3	48	49	3	47	291887.377	-0.00512	0.5
51	1	50	50	1	49	293295.564	0.00126	0.5
51	2	50	50	2	49	293295.564	0.00126	0.5
48	5	43	47	5	42	293320.952	0.00941	0.5
48	6	43	47	6	42	293320.952	0.00951	0.5
49	4	45	48	4	44	294697.517	0.00491	0.5
49	5	45	48	5	44	294697.517	0.00491	0.5
52	0	52	51	0	51	294699.151	0.00253	0.5
52	1	52	51	1	51	294699.151	0.00253	0.5
50	3	47	49	3	46	296096.122	-0.0007	0.5
50	4	47	49	4	46	296096.122	-0.0007	0.5
51	2	49	50	2	48	297504.376	0.0173	0.5
51	3	49	50	3	48	297504.376	0.0173	0.5
52	1	51	51	1	50	298913.73	0.00421	0.5
52	2	51	51	2	50	298913.73	0.00421	0.5
49	5	44	48	5	43	298928.074	0.00603	0.5
49	6	44	48	6	43	298928.074	0.00607	0.5
50	4	46	49	4	45	300309.372	0.02067	0.5
50	5	46	49	5	45	300309.372	0.02068	0.5
53	0	53	52	0	52	300318.057	0.00019	0.5
53	1	53	52	1	52	300318.057	0.00019	0.5
52	2	50	51	2	49	303120.923	0.01452	0.5
52	3	50	51	3	49	303120.923	0.01452	0.5
53	1	52	52	1	51	304531.438	-0.01752	0.5
53	2	52	52	2	51	304531.438	-0.01752	0.5
50	5	45	49	5	44	304535.127	-0.00528	0.5
50	6	45	49	6	44	304535.127	-0.00526	0.5
51	4	47	50	4	46	305920.889	0.00253	0.5
51	5	47	50	5	46	305920.889	0.00253	0.5
54	0	54	53	0	53	305936.536	-0.00388	0.5
54	1	54	53	1	53	305936.536	-0.00388	0.5
52	3	49	51	3	48	307325.156	-0.00995	0.5
52	4	49	51	4	48	307325.156	-0.00995	0.5
53	2	51	52	2	50	308737.04	0.0184	0.5
53	3	51	52	3	50	308737.04	0.0184	0.5
51	5	46	50	5	45	310142.079	-0.00348	0.5
51	6	46	50	6	45	310142.079	-0.00347	0.5
54	1	53	53	1	52	310148.75	0.0049	0.5
54	2	53	53	2	52	310148.75	0.0049	0.5
52	4	48	51	4	47	311532.097	0.00726	0.5
52	5	48	51	5	47	311532.097	0.00726	0.5
55	0	55	54	0	54	311554.586	-0.00302	0.5
55	1	55	54	1	54	311554.586	-0.00302	0.5
53	3	50	52	3	49	312939.043	-0.02334	0.5
53	4	50	52	4	49	312939.043	-0.02334	0.5
54	2	52	53	2	51	314352.671	-0.01749	0.5
54	3	52	53	3	51	314352.671	-0.01749	0.5
52	5	47	51	5	46	315748.856	-0.01585	0.5
52	6	47	51	6	46	315748.856	-0.01585	0.5
55	1	54	54	1	53	315765.561	-0.02554	0.5
55	2	54	54	2	53	315765.561	-0.02554	0.5
53	4	49	52	4	48	317142.918	-0.02148	0.5
53	5	49	52	5	48	317142.918	-0.02148	0.5
56	0	56	55	0	55	317172.204	0.00809	0.5
56	1	56	55	1	55	317172.204	0.00809	0.5
54	3	51	53	3	50	318552.551	0.0148	0.5
54	4	51	53	4	50	318552.551	0.0148	0.5
53	5	48	52	5	47	321355.49	0.03393	0.5
53	6	48	52	6	47	321355.49	0.03394	0.5
54	4	50	53	4	49	322753.401	-0.01361	0.5
54	5	50	53	5	49	322753.401	-0.01361	0.5
57	0	57	56	0	56	322789.352	-0.00109	0.5
57	1	57	56	1	56	322789.352	-0.00109	0.5
55	3	52	54	3	51	324165.529	-0.03197	0.5
55	4	52	54	4	51	324165.529	-0.03197	0.5

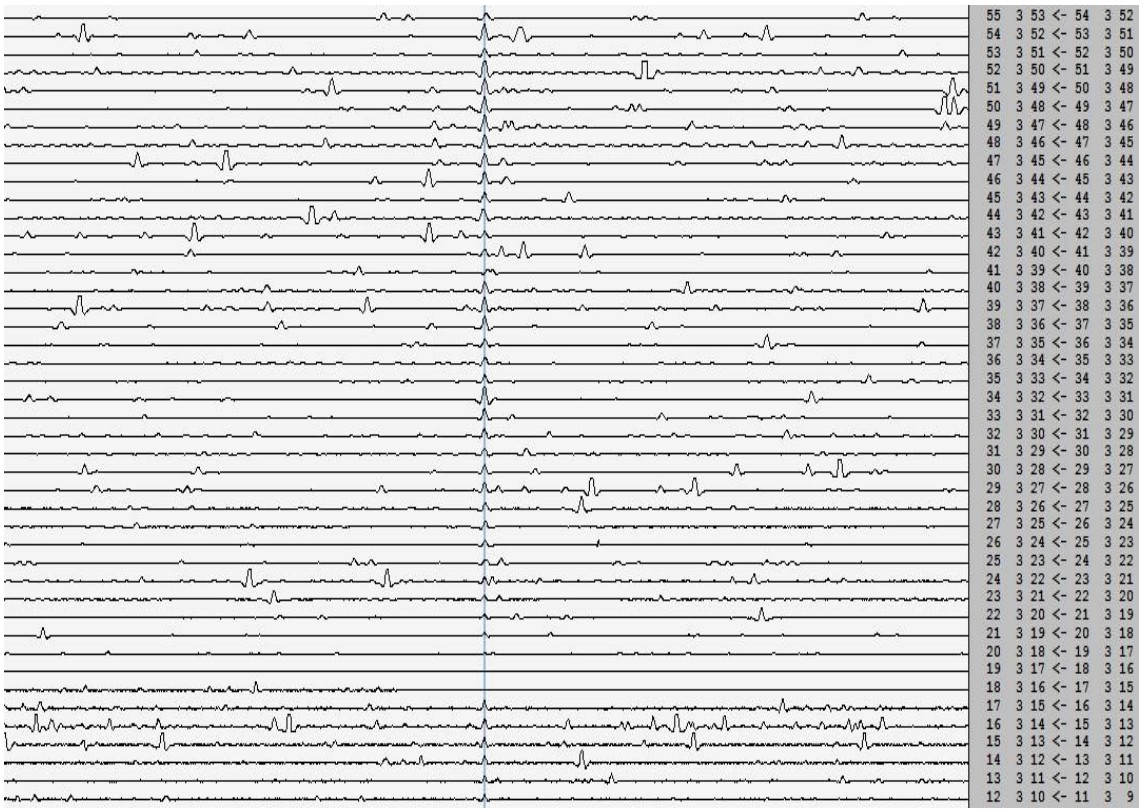
+ TRANS CONFORMER: LOOMIS-WOOD PLOTS

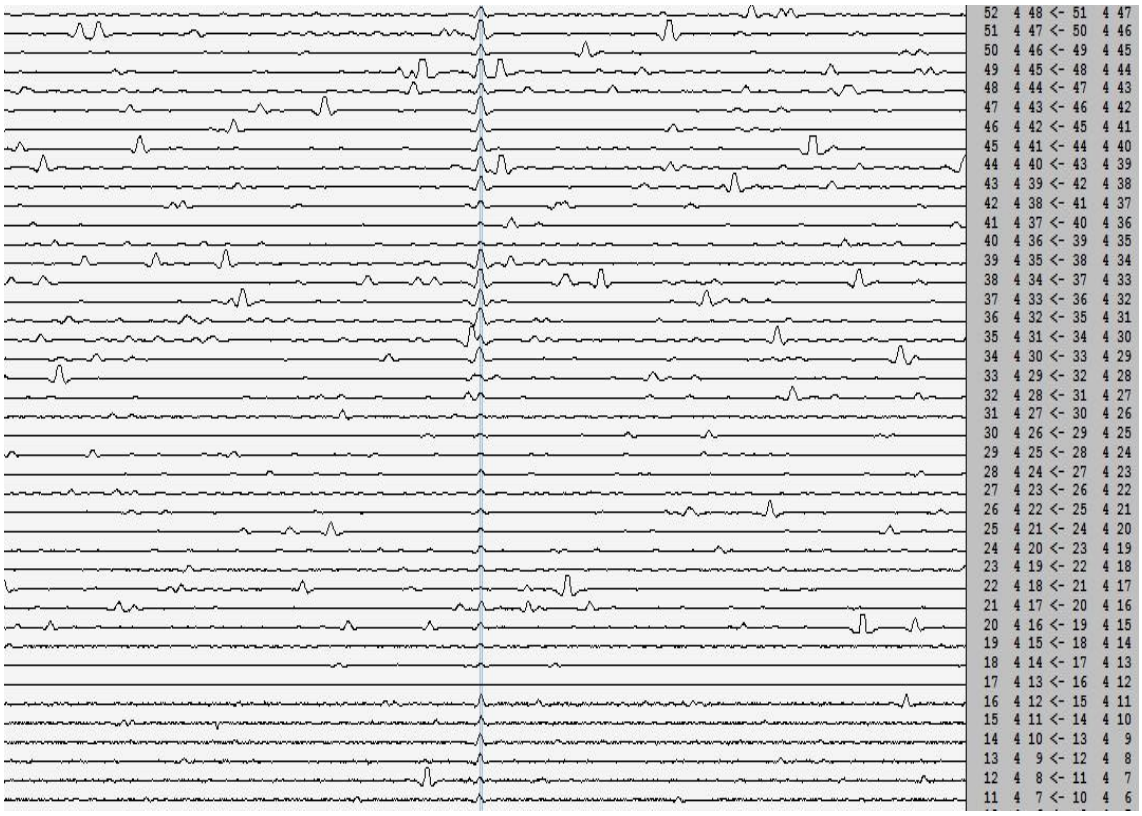
Collection of Loomis-Wood plots for the trans conformer from K_a=0 to K_a=15.

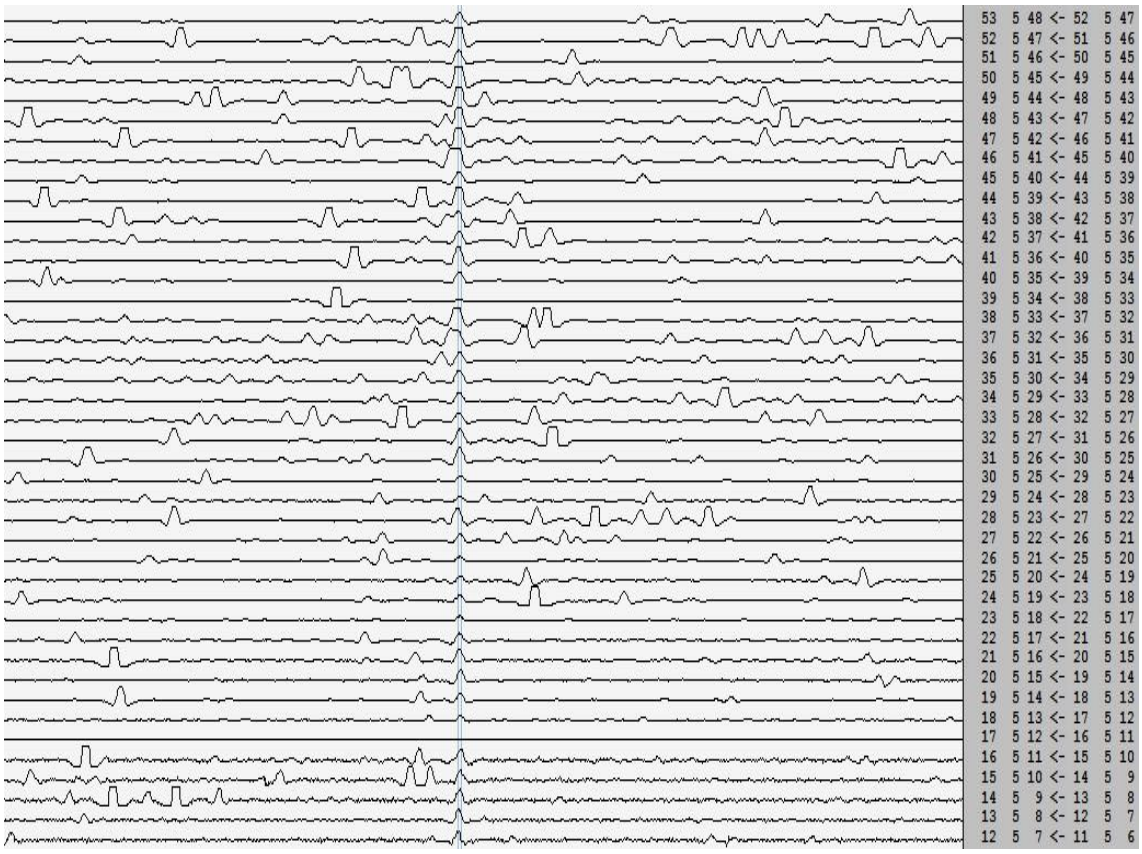


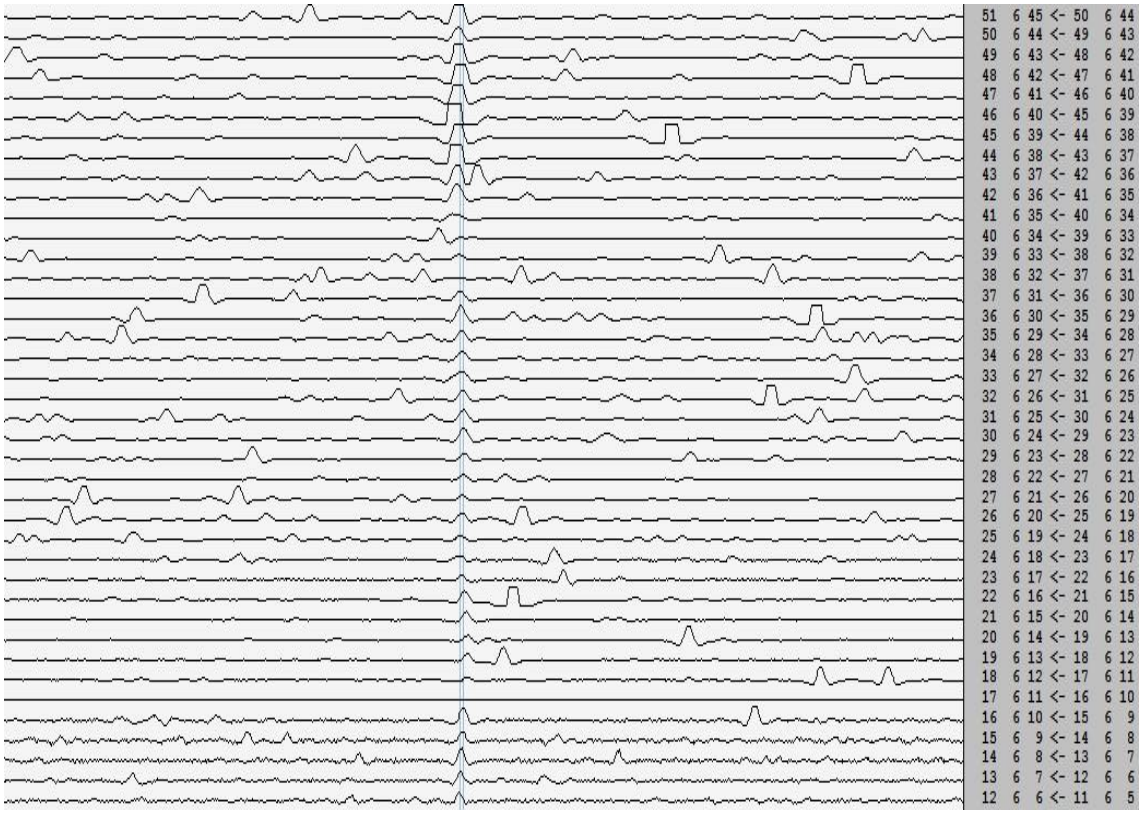


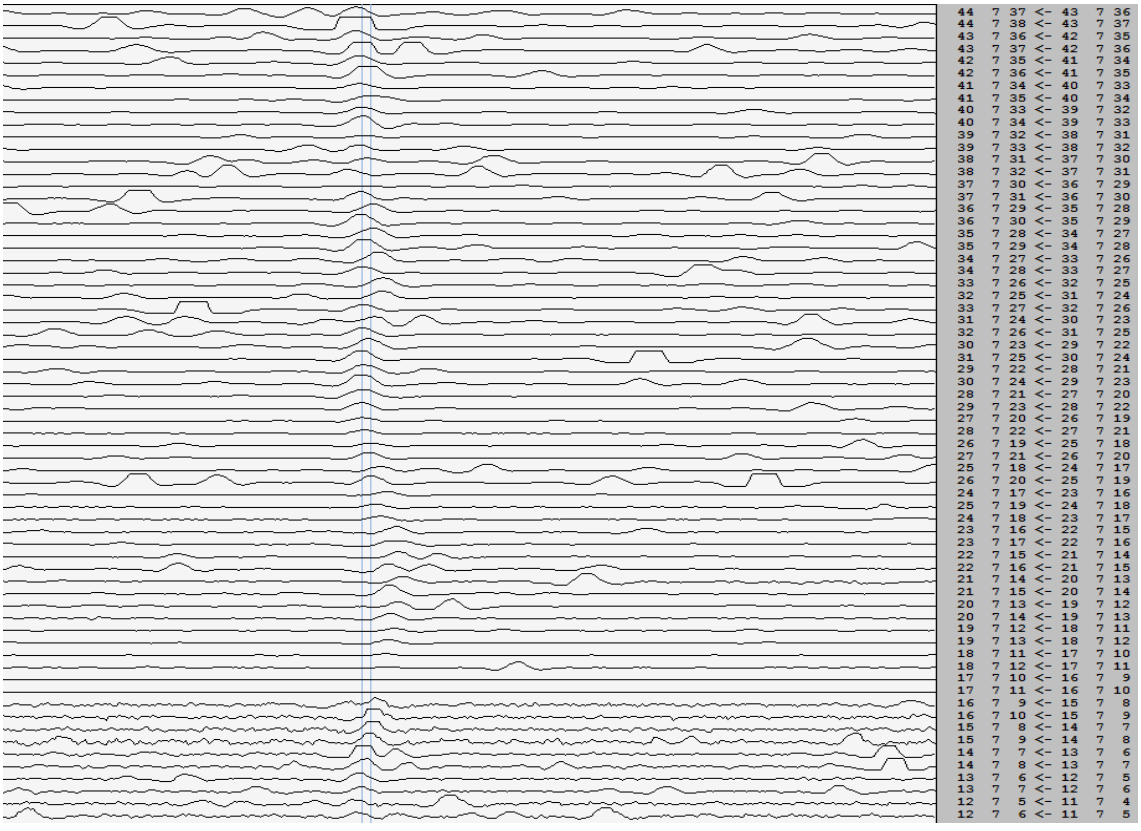

48 2 46 <- 47 2 45
47 2 45 <- 46 2 44
46 2 44 <- 45 2 43
45 2 43 <- 44 2 42
44 2 42 <- 43 2 41
43 2 41 <- 42 2 40
42 2 40 <- 41 2 39
41 2 39 <- 40 2 38
40 2 38 <- 39 2 37
39 2 37 <- 38 2 36
38 2 36 <- 37 2 35
37 2 35 <- 36 2 34
36 2 34 <- 35 2 33
35 2 33 <- 34 2 32
34 2 32 <- 33 2 31
33 2 31 <- 32 2 30
32 2 30 <- 31 2 29
31 2 29 <- 30 2 28
30 2 28 <- 29 2 27
29 2 27 <- 28 2 26
28 2 26 <- 27 2 25
27 2 25 <- 26 2 24
26 2 24 <- 25 2 23
25 2 23 <- 24 2 22
24 2 22 <- 23 2 21
23 2 21 <- 22 2 20
22 2 20 <- 21 2 19
21 2 19 <- 20 2 18
20 2 18 <- 19 2 17
19 2 17 <- 18 2 16
18 2 16 <- 17 2 15
17 2 15 <- 16 2 14
16 2 14 <- 15 2 13
15 2 13 <- 14 2 12
14 2 12 <- 13 2 11
13 2 11 <- 12 2 10
12 2 10 <- 11 2 9

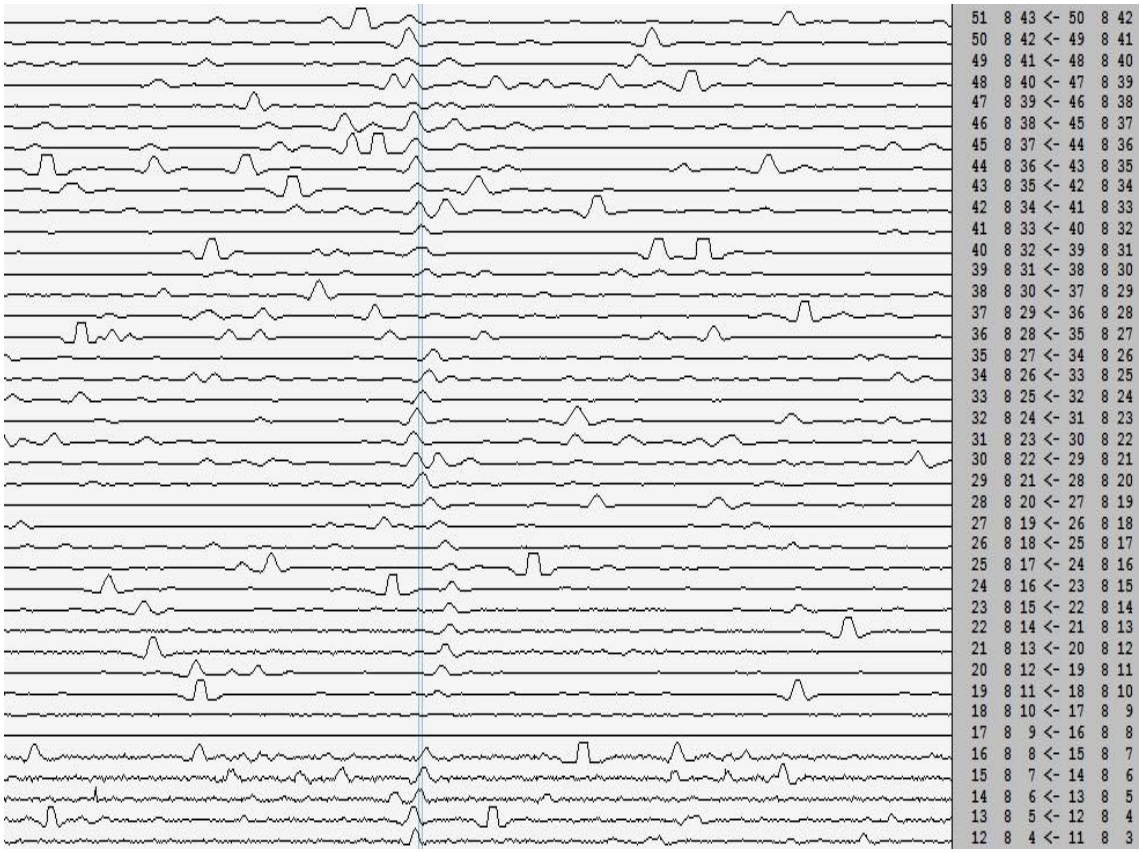

55 3 53 <- 54 3 52
54 3 52 <- 53 3 51
53 3 51 <- 52 3 50
52 3 50 <- 51 3 49
51 3 49 <- 50 3 48
50 3 48 <- 49 3 47
49 3 47 <- 48 3 46
48 3 46 <- 47 3 45
47 3 45 <- 46 3 44
46 3 44 <- 45 3 43
45 3 43 <- 44 3 42
44 3 42 <- 43 3 41
43 3 41 <- 42 3 40
42 3 40 <- 41 3 39
41 3 39 <- 40 3 38
40 3 38 <- 39 3 37
39 3 37 <- 38 3 36
38 3 36 <- 37 3 35
37 3 35 <- 36 3 34
36 3 34 <- 35 3 33
35 3 33 <- 34 3 32
34 3 32 <- 33 3 31
33 3 31 <- 32 3 30
32 3 30 <- 31 3 29
31 3 29 <- 30 3 28
30 3 28 <- 29 3 27
29 3 27 <- 28 3 26
28 3 26 <- 27 3 25
27 3 25 <- 26 3 24
26 3 24 <- 25 3 23
25 3 23 <- 24 3 22
24 3 22 <- 23 3 21
23 3 21 <- 22 3 20
22 3 20 <- 21 3 19
21 3 19 <- 20 3 18
20 3 18 <- 19 3 17
19 3 17 <- 18 3 16
18 3 16 <- 17 3 15
17 3 15 <- 16 3 14
16 3 14 <- 15 3 13
15 3 13 <- 14 3 12
14 3 12 <- 13 3 11
13 3 11 <- 12 3 10
12 3 10 <- 11 3 9

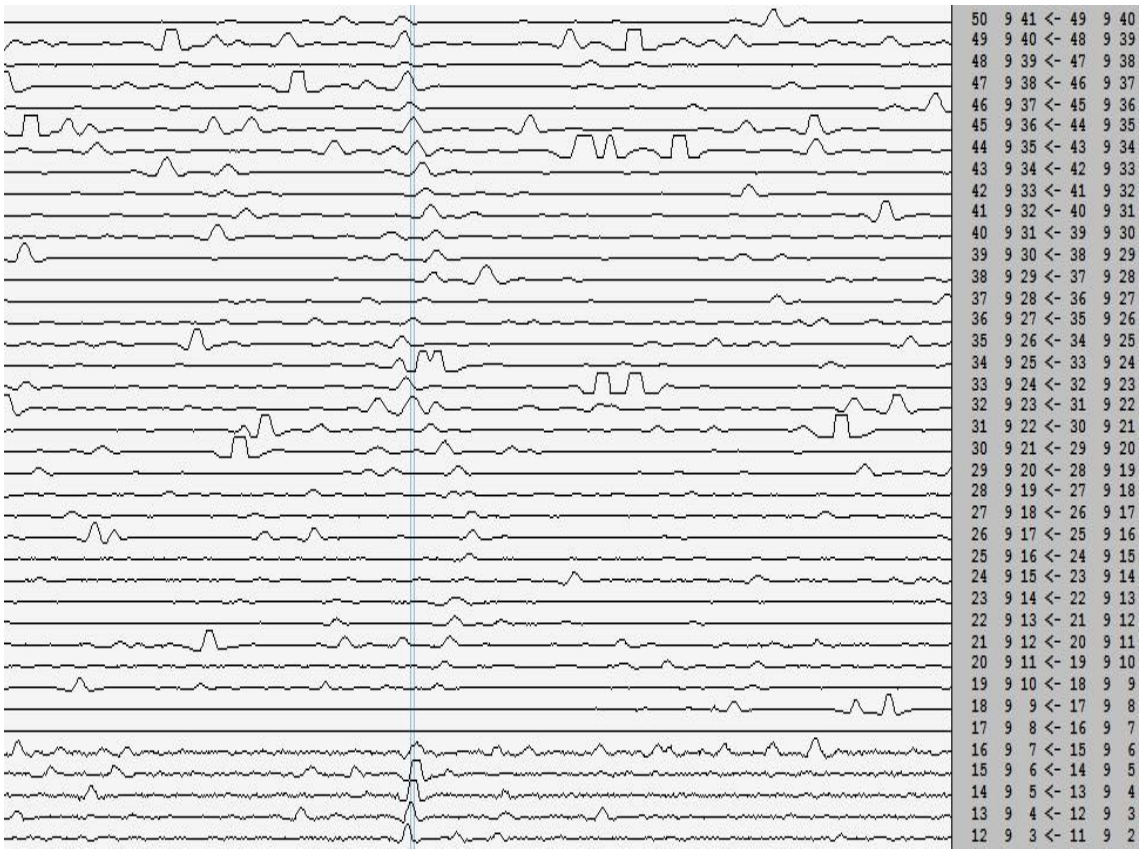

52 4 48 <- 51 4 47
51 4 47 <- 50 4 46
50 4 46 <- 49 4 45
49 4 45 <- 48 4 44
48 4 44 <- 47 4 43
47 4 43 <- 46 4 42
46 4 42 <- 45 4 41
45 4 41 <- 44 4 40
44 4 40 <- 43 4 39
43 4 39 <- 42 4 38
42 4 38 <- 41 4 37
41 4 37 <- 40 4 36
40 4 36 <- 39 4 35
39 4 35 <- 38 4 34
38 4 34 <- 37 4 33
37 4 33 <- 36 4 32
36 4 32 <- 35 4 31
35 4 31 <- 34 4 30
34 4 30 <- 33 4 29
33 4 29 <- 32 4 28
32 4 28 <- 31 4 27
31 4 27 <- 30 4 26
30 4 26 <- 29 4 25
29 4 25 <- 28 4 24
28 4 24 <- 27 4 23
27 4 23 <- 26 4 22
26 4 22 <- 25 4 21
25 4 21 <- 24 4 20
24 4 20 <- 23 4 19
23 4 19 <- 22 4 18
22 4 18 <- 21 4 17
21 4 17 <- 20 4 16
20 4 16 <- 19 4 15
19 4 15 <- 18 4 14
18 4 14 <- 17 4 13
17 4 13 <- 16 4 12
16 4 12 <- 15 4 11
15 4 11 <- 14 4 10
14 4 10 <- 13 4 9
13 4 9 <- 12 4 8
12 4 8 <- 11 4 7
11 4 7 <- 10 4 6

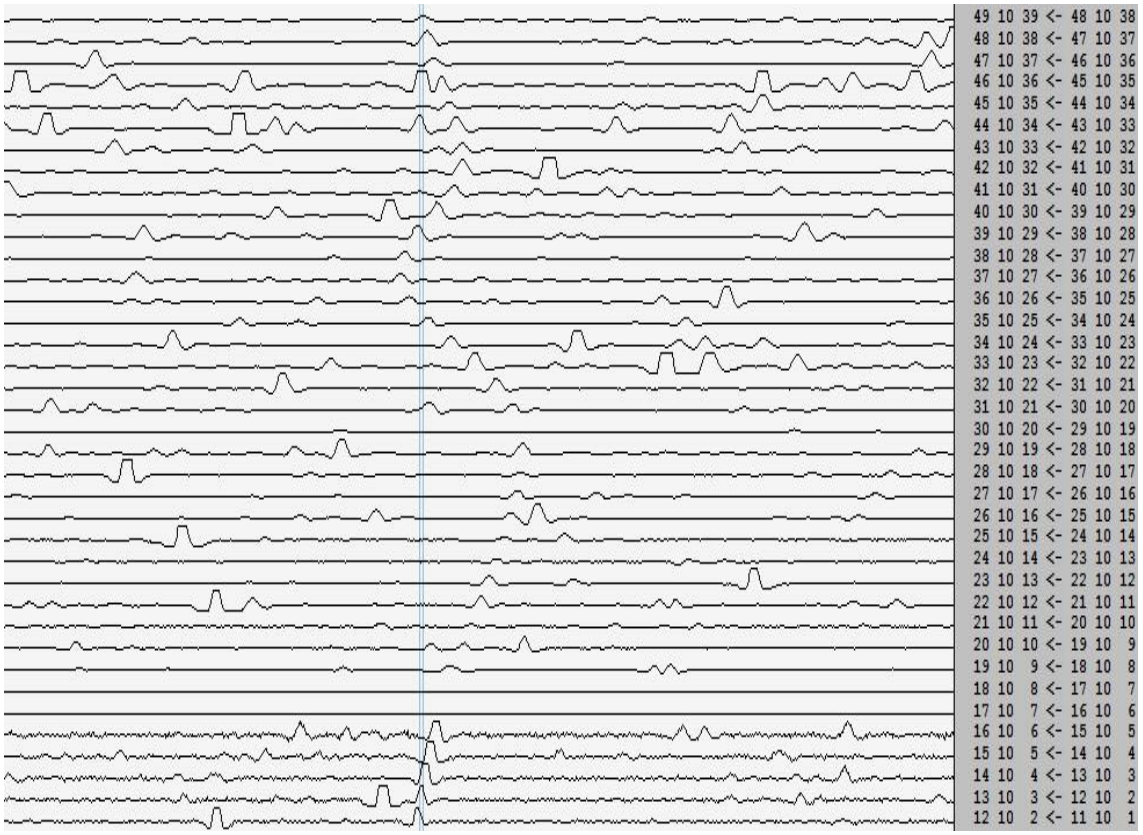

53 5 48 <- 52 5 47
52 5 47 <- 51 5 46
51 5 46 <- 50 5 45
50 5 45 <- 49 5 44
49 5 44 <- 48 5 43
48 5 43 <- 47 5 42
47 5 42 <- 46 5 41
46 5 41 <- 45 5 40
45 5 40 <- 44 5 39
44 5 39 <- 43 5 38
43 5 38 <- 42 5 37
42 5 37 <- 41 5 36
41 5 36 <- 40 5 35
40 5 35 <- 39 5 34
39 5 34 <- 38 5 33
38 5 33 <- 37 5 32
37 5 32 <- 36 5 31
36 5 31 <- 35 5 30
35 5 30 <- 34 5 29
34 5 29 <- 33 5 28
33 5 28 <- 32 5 27
32 5 27 <- 31 5 26
31 5 26 <- 30 5 25
30 5 25 <- 29 5 24
29 5 24 <- 28 5 23
28 5 23 <- 27 5 22
27 5 22 <- 26 5 21
26 5 21 <- 25 5 20
25 5 20 <- 24 5 19
24 5 19 <- 23 5 18
23 5 18 <- 22 5 17
22 5 17 <- 21 5 16
21 5 16 <- 20 5 15
20 5 15 <- 19 5 14
19 5 14 <- 18 5 13
18 5 13 <- 17 5 12
17 5 12 <- 16 5 11
16 5 11 <- 15 5 10
15 5 10 <- 14 5 9
14 5 9 <- 13 5 8
13 5 8 <- 12 5 7
12 5 7 <- 11 5 6

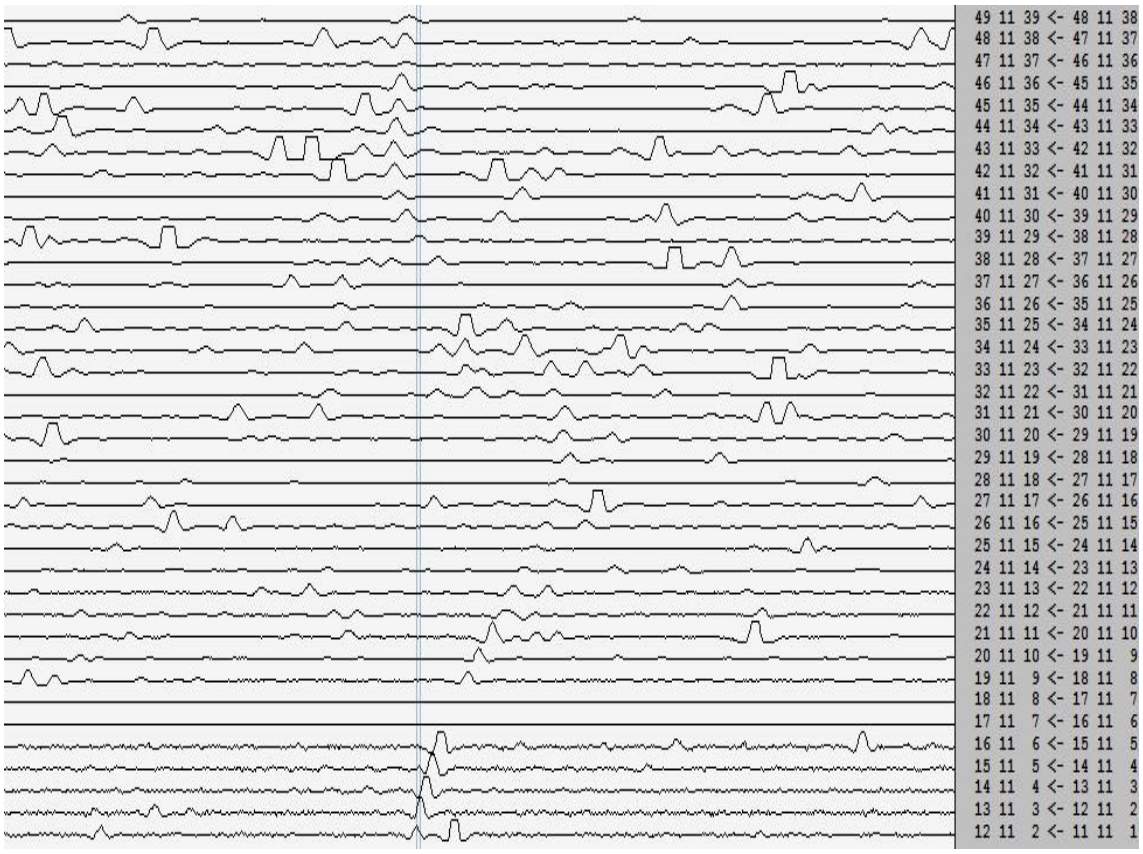

51 6 45 <- 50 6 44
50 6 44 <- 49 6 43
49 6 43 <- 48 6 42
48 6 42 <- 47 6 41
47 6 41 <- 46 6 40
46 6 40 <- 45 6 39
45 6 39 <- 44 6 38
44 6 38 <- 43 6 37
43 6 37 <- 42 6 36
42 6 36 <- 41 6 35
41 6 35 <- 40 6 34
40 6 34 <- 39 6 33
39 6 33 <- 38 6 32
38 6 32 <- 37 6 31
37 6 31 <- 36 6 30
36 6 30 <- 35 6 29
35 6 29 <- 34 6 28
34 6 28 <- 33 6 27
33 6 27 <- 32 6 26
32 6 26 <- 31 6 25
31 6 25 <- 30 6 24
30 6 24 <- 29 6 23
29 6 23 <- 28 6 22
28 6 22 <- 27 6 21
27 6 21 <- 26 6 20
26 6 20 <- 25 6 19
25 6 19 <- 24 6 18
24 6 18 <- 23 6 17
23 6 17 <- 22 6 16
22 6 16 <- 21 6 15
21 6 15 <- 20 6 14
20 6 14 <- 19 6 13
19 6 13 <- 18 6 12
18 6 12 <- 17 6 11
17 6 11 <- 16 6 10
16 6 10 <- 15 6 9
15 6 9 <- 14 6 8
14 6 8 <- 13 6 7
13 6 7 <- 12 6 6
12 6 6 <- 11 6 5

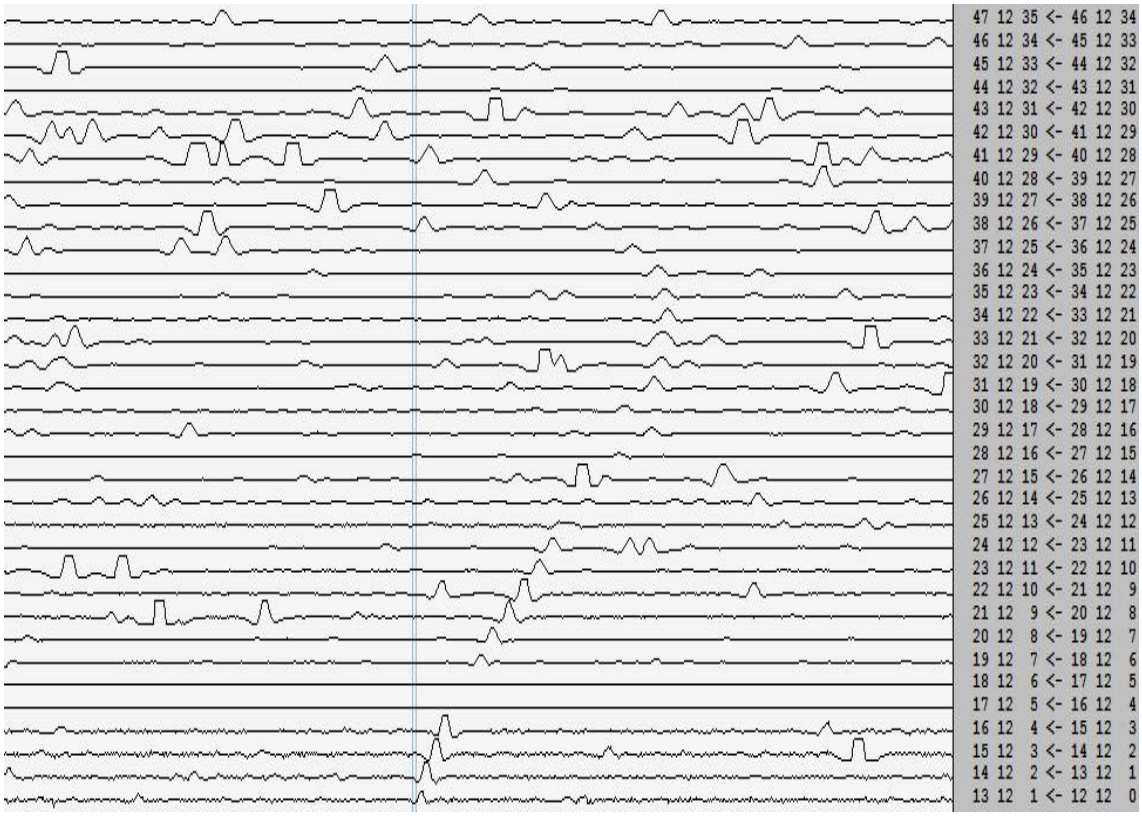

44 7 37 <- 43 7 36
44 7 38 <- 43 7 37
43 7 36 <- 42 7 35
43 7 37 <- 42 7 36
42 7 35 <- 41 7 34
42 7 36 <- 41 7 35
41 7 34 <- 40 7 33
41 7 35 <- 40 7 34
40 7 33 <- 39 7 32
40 7 34 <- 39 7 33
39 7 32 <- 38 7 31
39 7 33 <- 38 7 32
38 7 31 <- 37 7 30
38 7 32 <- 37 7 31
37 7 30 <- 36 7 29
37 7 31 <- 36 7 30
36 7 29 <- 35 7 28
36 7 30 <- 35 7 29
35 7 28 <- 34 7 27
35 7 29 <- 34 7 28
34 7 27 <- 33 7 26
34 7 28 <- 33 7 27
33 7 26 <- 32 7 25
32 7 25 <- 31 7 24
33 7 27 <- 32 7 26
31 7 24 <- 30 7 23
32 7 26 <- 31 7 25
30 7 23 <- 29 7 22
31 7 25 <- 30 7 24
29 7 22 <- 28 7 21
30 7 24 <- 29 7 23
28 7 21 <- 27 7 20
29 7 23 <- 28 7 22
27 7 20 <- 26 7 19
28 7 22 <- 27 7 21
26 7 19 <- 25 7 18
27 7 21 <- 26 7 20
25 7 18 <- 24 7 17
26 7 20 <- 25 7 19
24 7 17 <- 23 7 16
25 7 19 <- 24 7 18
24 7 18 <- 23 7 17
23 7 16 <- 22 7 15
23 7 17 <- 22 7 16
22 7 15 <- 21 7 14
22 7 16 <- 21 7 15
21 7 14 <- 20 7 13
21 7 15 <- 20 7 14
20 7 13 <- 19 7 12
20 7 14 <- 19 7 13
19 7 12 <- 18 7 11
19 7 13 <- 18 7 12
18 7 11 <- 17 7 10
18 7 12 <- 17 7 11
17 7 10 <- 16 7 9
17 7 11 <- 16 7 10
16 7 9 <- 15 7 8
16 7 10 <- 15 7 9
15 7 8 <- 14 7 7
15 7 9 <- 14 7 8
14 7 7 <- 13 7 6
14 7 8 <- 13 7 7
13 7 6 <- 12 7 5
13 7 7 <- 12 7 6
12 7 5 <- 11 7 4
12 7 6 <- 11 7 5

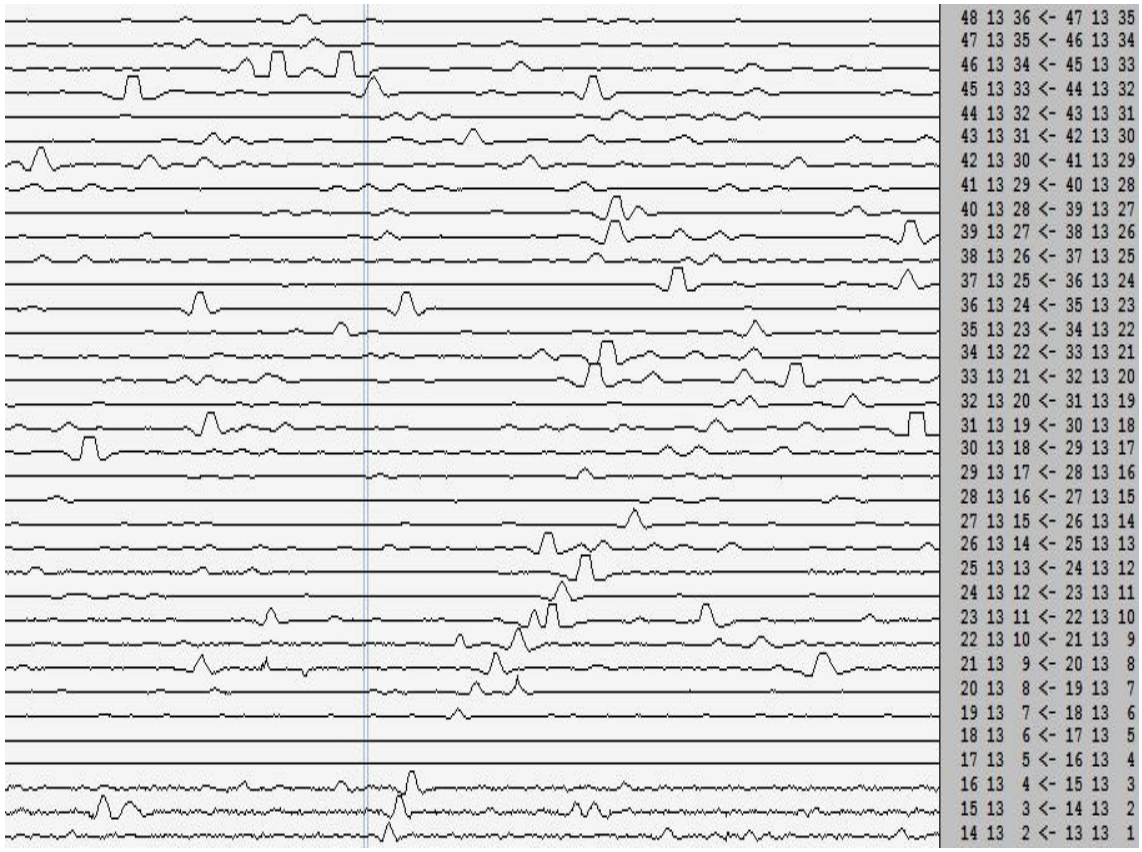

51 8 43 <- 50 8 42
50 8 42 <- 49 8 41
49 8 41 <- 48 8 40
48 8 40 <- 47 8 39
47 8 39 <- 46 8 38
46 8 38 <- 45 8 37
45 8 37 <- 44 8 36
44 8 36 <- 43 8 35
43 8 35 <- 42 8 34
42 8 34 <- 41 8 33
41 8 33 <- 40 8 32
40 8 32 <- 39 8 31
39 8 31 <- 38 8 30
38 8 30 <- 37 8 29
37 8 29 <- 36 8 28
36 8 28 <- 35 8 27
35 8 27 <- 34 8 26
34 8 26 <- 33 8 25
33 8 25 <- 32 8 24
32 8 24 <- 31 8 23
31 8 23 <- 30 8 22
30 8 22 <- 29 8 21
29 8 21 <- 28 8 20
28 8 20 <- 27 8 19
27 8 19 <- 26 8 18
26 8 18 <- 25 8 17
25 8 17 <- 24 8 16
24 8 16 <- 23 8 15
23 8 15 <- 22 8 14
22 8 14 <- 21 8 13
21 8 13 <- 20 8 12
20 8 12 <- 19 8 11
19 8 11 <- 18 8 10
18 8 10 <- 17 8 9
17 8 9 <- 16 8 8
16 8 8 <- 15 8 7
15 8 7 <- 14 8 6
14 8 6 <- 13 8 5
13 8 5 <- 12 8 4
12 8 4 <- 11 8 3

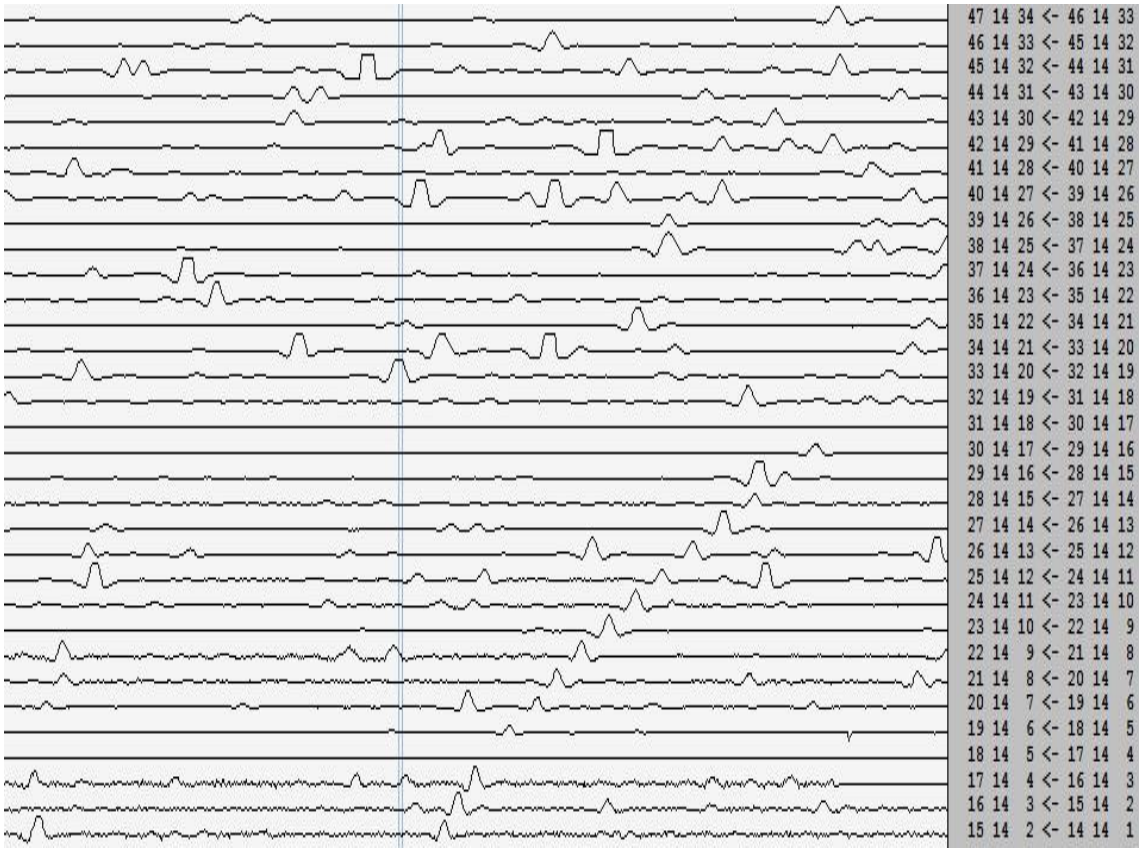

50 9 41 <- 49 9 40
49 9 40 <- 48 9 39
48 9 39 <- 47 9 38
47 9 38 <- 46 9 37
46 9 37 <- 45 9 36
45 9 36 <- 44 9 35
44 9 35 <- 43 9 34
43 9 34 <- 42 9 33
42 9 33 <- 41 9 32
41 9 32 <- 40 9 31
40 9 31 <- 39 9 30
39 9 30 <- 38 9 29
38 9 29 <- 37 9 28
37 9 28 <- 36 9 27
36 9 27 <- 35 9 26
35 9 26 <- 34 9 25
34 9 25 <- 33 9 24
33 9 24 <- 32 9 23
32 9 23 <- 31 9 22
31 9 22 <- 30 9 21
30 9 21 <- 29 9 20
29 9 20 <- 28 9 19
28 9 19 <- 27 9 18
27 9 18 <- 26 9 17
26 9 17 <- 25 9 16
25 9 16 <- 24 9 15
24 9 15 <- 23 9 14
23 9 14 <- 22 9 13
22 9 13 <- 21 9 12
21 9 12 <- 20 9 11
20 9 11 <- 19 9 10
19 9 10 <- 18 9 9
18 9 9 <- 17 9 8
17 9 8 <- 16 9 7
16 9 7 <- 15 9 6
15 9 6 <- 14 9 5
14 9 5 <- 13 9 4
13 9 4 <- 12 9 3
12 9 3 <- 11 9 2

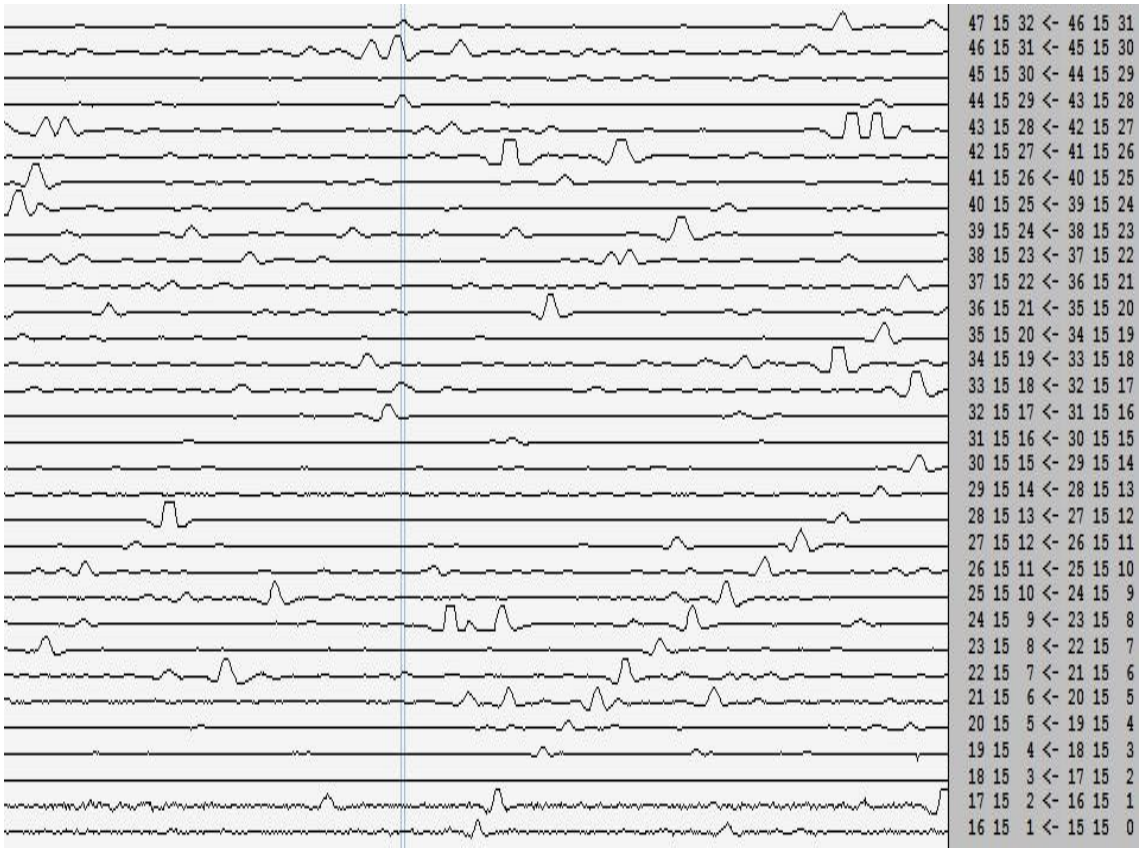

49 10 39 <- 48 10 38
48 10 38 <- 47 10 37
47 10 37 <- 46 10 36
46 10 36 <- 45 10 35
45 10 35 <- 44 10 34
44 10 34 <- 43 10 33
43 10 33 <- 42 10 32
42 10 32 <- 41 10 31
41 10 31 <- 40 10 30
40 10 30 <- 39 10 29
39 10 29 <- 38 10 28
38 10 28 <- 37 10 27
37 10 27 <- 36 10 26
36 10 26 <- 35 10 25
35 10 25 <- 34 10 24
34 10 24 <- 33 10 23
33 10 23 <- 32 10 22
32 10 22 <- 31 10 21
31 10 21 <- 30 10 20
30 10 20 <- 29 10 19
29 10 19 <- 28 10 18
28 10 18 <- 27 10 17
27 10 17 <- 26 10 16
26 10 16 <- 25 10 15
25 10 15 <- 24 10 14
24 10 14 <- 23 10 13
23 10 13 <- 22 10 12
22 10 12 <- 21 10 11
21 10 11 <- 20 10 10
20 10 10 <- 19 10 9
19 10 9 <- 18 10 8
18 10 8 <- 17 10 7
17 10 7 <- 16 10 6
16 10 6 <- 15 10 5
15 10 5 <- 14 10 4
14 10 4 <- 13 10 3
13 10 3 <- 12 10 2
12 10 2 <- 11 10 1


49 11 39 <- 48 11 38
48 11 38 <- 47 11 37
47 11 37 <- 46 11 36
46 11 36 <- 45 11 35
45 11 35 <- 44 11 34
44 11 34 <- 43 11 33
43 11 33 <- 42 11 32
42 11 32 <- 41 11 31
41 11 31 <- 40 11 30
40 11 30 <- 39 11 29
39 11 29 <- 38 11 28
38 11 28 <- 37 11 27
37 11 27 <- 36 11 26
36 11 26 <- 35 11 25
35 11 25 <- 34 11 24
34 11 24 <- 33 11 23
33 11 23 <- 32 11 22
32 11 22 <- 31 11 21
31 11 21 <- 30 11 20
30 11 20 <- 29 11 19
29 11 19 <- 28 11 18
28 11 18 <- 27 11 17
27 11 17 <- 26 11 16
26 11 16 <- 25 11 15
25 11 15 <- 24 11 14
24 11 14 <- 23 11 13
23 11 13 <- 22 11 12
22 11 12 <- 21 11 11
21 11 11 <- 20 11 10
20 11 10 <- 19 11 9
19 11 9 <- 18 11 8
18 11 8 <- 17 11 7
17 11 7 <- 16 11 6
16 11 6 <- 15 11 5
15 11 5 <- 14 11 4
14 11 4 <- 13 11 3
13 11 3 <- 12 11 2
12 11 2 <- 11 11 1


47 12 35 <- 46 12 34
46 12 34 <- 45 12 33
45 12 33 <- 44 12 32
44 12 32 <- 43 12 31
43 12 31 <- 42 12 30
42 12 30 <- 41 12 29
41 12 29 <- 40 12 28
40 12 28 <- 39 12 27
39 12 27 <- 38 12 26
38 12 26 <- 37 12 25
37 12 25 <- 36 12 24
36 12 24 <- 35 12 23
35 12 23 <- 34 12 22
34 12 22 <- 33 12 21
33 12 21 <- 32 12 20
32 12 20 <- 31 12 19
31 12 19 <- 30 12 18
30 12 18 <- 29 12 17
29 12 17 <- 28 12 16
28 12 16 <- 27 12 15
27 12 15 <- 26 12 14
26 12 14 <- 25 12 13
25 12 13 <- 24 12 12
24 12 12 <- 23 12 11
23 12 11 <- 22 12 10
22 12 10 <- 21 12 9
21 12 9 <- 20 12 8
20 12 8 <- 19 12 7
19 12 7 <- 18 12 6
18 12 6 <- 17 12 5
17 12 5 <- 16 12 4
16 12 4 <- 15 12 3
15 12 3 <- 14 12 2
14 12 2 <- 13 12 1
13 12 1 <- 12 12 0


48 13 36 <- 47 13 35
47 13 35 <- 46 13 34
46 13 34 <- 45 13 33
45 13 33 <- 44 13 32
44 13 32 <- 43 13 31
43 13 31 <- 42 13 30
42 13 30 <- 41 13 29
41 13 29 <- 40 13 28
40 13 28 <- 39 13 27
39 13 27 <- 38 13 26
38 13 26 <- 37 13 25
37 13 25 <- 36 13 24
36 13 24 <- 35 13 23
35 13 23 <- 34 13 22
34 13 22 <- 33 13 21
33 13 21 <- 32 13 20
32 13 20 <- 31 13 19
31 13 19 <- 30 13 18
30 13 18 <- 29 13 17
29 13 17 <- 28 13 16
28 13 16 <- 27 13 15
27 13 15 <- 26 13 14
26 13 14 <- 25 13 13
25 13 13 <- 24 13 12
24 13 12 <- 23 13 11
23 13 11 <- 22 13 10
22 13 10 <- 21 13 9
21 13 9 <- 20 13 8
20 13 8 <- 19 13 7
19 13 7 <- 18 13 6
18 13 6 <- 17 13 5
17 13 5 <- 16 13 4
16 13 4 <- 15 13 3
15 13 3 <- 14 13 2
14 13 2 <- 13 13 1


47 14 34 <- 46 14 33
46 14 33 <- 45 14 32
45 14 32 <- 44 14 31
44 14 31 <- 43 14 30
43 14 30 <- 42 14 29
42 14 29 <- 41 14 28
41 14 28 <- 40 14 27
40 14 27 <- 39 14 26
39 14 26 <- 38 14 25
38 14 25 <- 37 14 24
37 14 24 <- 36 14 23
36 14 23 <- 35 14 22
35 14 22 <- 34 14 21
34 14 21 <- 33 14 20
33 14 20 <- 32 14 19
32 14 19 <- 31 14 18
31 14 18 <- 30 14 17
30 14 17 <- 29 14 16
29 14 16 <- 28 14 15
28 14 15 <- 27 14 14
27 14 14 <- 26 14 13
26 14 13 <- 25 14 12
25 14 12 <- 24 14 11
24 14 11 <- 23 14 10
23 14 10 <- 22 14 9
22 14 9 <- 21 14 8
21 14 8 <- 20 14 7
20 14 7 <- 19 14 6
19 14 6 <- 18 14 5
18 14 5 <- 17 14 4
17 14 4 <- 16 14 3
16 14 3 <- 15 14 2
15 14 2 <- 14 14 1


47 15 32 <- 46 15 31
46 15 31 <- 45 15 30
45 15 30 <- 44 15 29
44 15 29 <- 43 15 28
43 15 28 <- 42 15 27
42 15 27 <- 41 15 26
41 15 26 <- 40 15 25
40 15 25 <- 39 15 24
39 15 24 <- 38 15 23
38 15 23 <- 37 15 22
37 15 22 <- 36 15 21
36 15 21 <- 35 15 20
35 15 20 <- 34 15 19
34 15 19 <- 33 15 18
33 15 18 <- 32 15 17
32 15 17 <- 31 15 16
31 15 16 <- 30 15 15
30 15 15 <- 29 15 14
29 15 14 <- 28 15 13
28 15 13 <- 27 15 12
27 15 12 <- 26 15 11
26 15 11 <- 25 15 10
25 15 10 <- 24 15 9
24 15 9 <- 23 15 8
23 15 8 <- 22 15 7
22 15 7 <- 21 15 6
21 15 6 <- 20 15 5
20 15 5 <- 19 15 4
19 15 4 <- 18 15 3
18 15 3 <- 17 15 2
17 15 2 <- 16 15 1
16 15 1 <- 15 15 0