

Appendix A

Known models for the motion in the Solar System

In this Appendix we introduce some known models used for the motion of a particle in the real Solar System. They are the Restricted Three–Body Problem (RTBP, see, e.g., [30]), the Bicircular Problem (BCP, see [25]), the Quasi–Bicircular problem (QBCP, see [3]) and the real Solar System written as a time–dependent perturbation of the RTBP (see [12], [10]). For this last model, we give the details about the deduction of its equations.

A.1 The Restricted Three Body Problem (RTBP)

As it is well known, the RTBP describes the motion of a massless particle under the attraction of two bodies of masses m_1 and m_2 , called primaries, which are assumed to move in circular orbits around their center of mass. Taking a coordinate system that rotates with the primaries and suitable units, the primaries can be assumed to have masses $1 - \mu$ and μ with $\mu \in [0, 1/2]$, to be fixed at coordinates $(\mu, 0, 0)$ and $(\mu - 1, 0, 0)$, and to complete one inertial revolution in 2π time units. Under these assumptions, the massless particle is governed by the following second-order differential equations (see [30])

$$\begin{aligned}\ddot{x} - 2\dot{y} &= \Omega_x, \\ \ddot{y} + 2\dot{x} &= \Omega_y, \\ \ddot{z} &= \Omega_z,\end{aligned}\tag{A.1}$$

where

$$\Omega = \frac{1}{2}(x^2 + y^2) + \frac{1 - \mu}{r_1} + \frac{\mu}{r_2} + \frac{1}{2}\mu(1 - \mu),$$

and $r_1 = \sqrt{(x - \mu)^2 + y^2 + z^2}$, $r_2 = \sqrt{(x - \mu + 1)^2 + y^2 + z^2}$ are the distances from the particles to the primaries. The above system of differential equations has a first integral, called the Jacobi integral, which is defined as

$$C(x, y, z, p_x, p_y, p_z) = 2\Omega - \dot{x}^2 - \dot{y}^2 - \dot{z}^2.$$

The RTBP has five libration points, two of them, L_4 and L_5 , form an equilateral triangle with the primaries and are located at $(-1/2 + \mu, \mp\sqrt{3}/2, 0)$, respectively. The

other three are collinear, with $y = z = 0$. If x_{L_j} denotes the value of the x coordinates for $j = 1, 2, 3$, we will assume that the positions of these points and the primaries are such that

$$x_{L_2} < \mu - 1 < x_{L_1} < \mu < x_{L_3}.$$

For small values of μ , both $\mu - 1 - x_{L_2}$ and $\mu - 1 - x_{L_1}$ are $3^{-1/3}\mu^{1/3} + O(\mu^{2/3})$ and $x_{L_3} = 1 + O(\mu)$.

By introducing momenta as $p_x = \dot{x} - y$, $p_y = \dot{y} + x$ and $p_z = \dot{z}$, the RTBP can be written in Hamiltonian form with Hamiltonian function

$$H(x, y, z, p_x, p_y, p_z) = \frac{1}{2}(p_x^2 + p_y^2 + p_z^2) - xp_y + yp_x - \frac{1-\mu}{r_1} - \frac{\mu}{r_2}.$$

The differential equations are then

$$\begin{aligned} \dot{x} &= p_x + y, & \dot{p}_x &= p_y - \frac{1-\mu}{r_1^3}(x-\mu) - \frac{\mu}{r_2^3}(x-\mu+1), \\ \dot{y} &= p_y - x, & \dot{p}_y &= -p_x - \frac{1-\mu}{r_1^3}y - \frac{\mu}{r_2^3}y, \\ \dot{z} &= p_z, & \dot{p}_z &= -\frac{1-\mu}{r_1^3}z - \frac{\mu}{r_2^3}z. \end{aligned} \tag{A.2}$$

All the computations that follow, have been done using this last set of equations. We will refer to the value of the Hamiltonian as the ‘‘energy’’, and it is related to the Jacobi constant, C , by

$$C = -2H - \mu(1 - \mu).$$

The linearized equations around any collinear equilibrium point, are given by the second order terms of the Hamiltonian, which can be written as

$$H_2 = \frac{1}{2}(p_x^2 + p_y^2) - xp_y + yp_x - c_2(x^2 - \frac{y^2}{2}) + \frac{p_z^2}{2} + c_2\frac{z^2}{2},$$

where c_2 is a positive constant (in fact, $c_2 > 1$) that depends on the equilibrium point and the value of the mass parameter μ . Its values are represented in Fig. A.1 ([23]).

From the above expression for H_2 , it is clear that, linearly, the z direction is uncoupled from the planar ones and the motion in the vertical direction is an harmonic oscillator with vertical frequency $\omega_v = \sqrt{c_2}$. The characteristic polynomial associated to the planar motion is

$$p(\lambda) = \lambda^4 + (2 - c_2)\lambda^2 + (1 + c_2 - 2c_2^2).$$

Denoting $\eta = \lambda^2$, we have that the roots of $p(\lambda) = 0$ are given by

$$\eta_{1,2} = \frac{c_2 - 2 \pm \sqrt{9c_2^2 - 8c_2}}{2},$$

so, according to the values of c_2 , we have that $\eta_1 > 0$ and $\eta_2 < 0$. This shows that the three equilibrium points are of the type center \times center \times saddle. The constant $\omega_p = \sqrt{-\eta_2}$ is usually called the planar frequency.

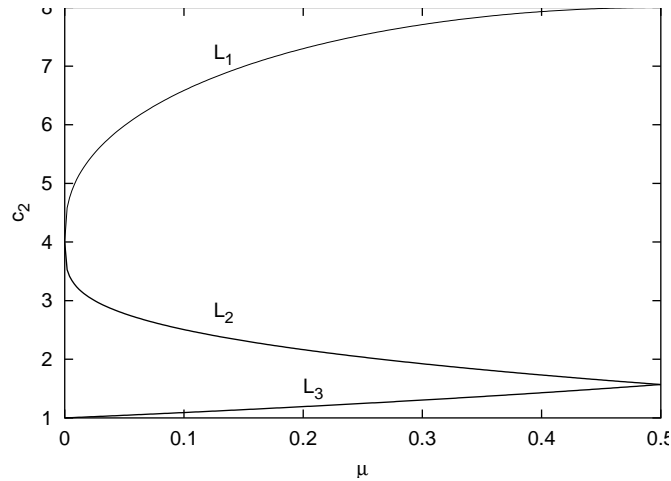


Figure A.1: Values of the $c_2(\mu)$ function, $\mu \in [0, 0.5]$, for $L_{1,2,3}$.

A.2 The Bicircular Problem (BCP)

The bicircular problem is a simplified version of a restricted four body problem. It can be suitable to describe the motion of a massless particle under the gravitational attraction of Earth, Moon and Sun. In this model we suppose that the Earth and the Moon are revolving in circular orbits around the center of masses of the Sun–Earth–Moon system. We remark that, with these assumptions, the motion of these three bodies is not coherent, that is, the assumed motions do not satisfy Newton’s equations. However the model is extremely useful as an intermediate model between the RTBP and the “real” problem.

Let μ the mass of the Moon, $1 - \mu$ the mass of the Earth and m_S the mass of the Sun. Let the distance from the Earth to the Moon be taken as unity. Then the distance from B to the Sun is a_S . We use synodic coordinates with respect to the Earth–Moon system, so that the positions of Earth and Moon are fixed at $(\mu, 0, 0)$ and $(\mu - 1, 0, 0)$, respectively. The mean angular velocity of the Sun in these synodic coordinates is denoted by ω_S .

To keep a Hamiltonian form we use synodic coordinates x, y, z for the position of the massless body, but instead of the velocities we use momenta p_x, p_y, p_z , defined by $p_x = \dot{x} - y$, $p_y = \dot{y} + x$, $p_z = \dot{z}$.

In this way the equations of the bicircular problem are

$$\begin{aligned} \dot{x} &= p_x + y, \\ \dot{y} &= p_y - x, \\ \dot{z} &= p_z, \\ \dot{p}_x &= p_y - \frac{1 - \mu}{r_{PE}^3}(x - \mu) - \frac{\mu}{r_{PM}^3}(x - \mu + 1) - \frac{m_S}{r_{PS}^3}(x - x_S) - \varepsilon_S \cos \theta, \\ \dot{p}_y &= -p_x - \left(\frac{1 - \mu}{r_{PE}^3} + \frac{\mu}{r_{PM}^3} \right) y - \frac{m_S}{r_{PS}^3}(y - y_S) + \varepsilon_S \sin \theta, \\ \dot{p}_z &= - \left(\frac{1 - \mu}{r_{PE}^3} + \frac{\mu}{r_{PM}^3} + \frac{m_S}{r_{PS}^3} \right) z, \end{aligned}$$

where

$$\begin{aligned}
r_{PE}^2 &= (x - \mu)^2 + y^2 + z^2, \\
r_{PM}^2 &= (x - \mu + 1)^2 + y^2 + z^2, \\
r_{PS}^2 &= (x - x_S)^2 + (y - y_S)^2 + z^2, \\
x_S &= a_S \cos \theta, \\
y_S &= -a_S \sin \theta, \\
\theta &= \omega_S t + \theta_0,
\end{aligned}$$

and θ_0 is some initial phase of the Sun. For shortness we have used the perturbation parameter of the Sun $\varepsilon_S = \frac{m_S}{a_S}$.

The related Hamiltonian is

$$H = \frac{1}{2}(p_x^2 + p_y^2 + p_z^2) + y p_x - x p_y - \frac{1 - \mu}{r_{PE}} - \frac{\mu}{r_{PM}} - \frac{m_S}{r_{PS}} - \frac{m_S}{a_S^2}(y \sin \theta - x \cos \theta)$$

The semimajor axis of the Sun is related to its mean angular motion through Kepler's third law:

$$a_S = \left(\frac{1 + m_S}{(1 - \omega_S)^2} \right)^{1/3}.$$

A.3 The Quasi-Bicircular problem (QBCP)

It has been recently developed a bicircular-coherent model, called the Quasi-Bicircular problem (QBCP) [3]. It is based on a planar solution of the general three-body problem for the Earth, the Moon and the Sun which is close to bicircular and satisfies Newton's equations. Its main advantage is that, although it is still a time-periodic perturbation of the RTBP with the same frequency as the BCP, it is dynamically closer to the real problem. In some sense is "the best we can do" assuming planar motion for the Sun-Earth-Moon system.

The QBCP can be formulated in Hamiltonian form, with Hamiltonian

$$\begin{aligned}
H_{QBCP} &= \frac{1}{2}\alpha_1(p_x^2 + p_y^2 + p_z^2) + \alpha_2(p_x x + p_y y + p_z z) \\
&+ \alpha_3(p_x y - p_y x) + \alpha_4 x + \alpha_5 y \\
&- \alpha_6 \left(\frac{1 - \mu}{((x - \mu)^2 + y^2 + z^2)^{1/2}} + \frac{\mu}{((x - \mu + 1)^2 + y^2 + z^2)^{1/2}} \right) \\
&+ \frac{\mu_S}{((x - \alpha_7)^2 + (y - \alpha_8)^2 + z^2)^{1/2}},
\end{aligned}$$

where S stands for the Sun and $\mu_S = \frac{m_S}{m_E + m_M}$, being m_S , m_E and m_M the masses of Sun, Earth and Moon, respectively. The $\alpha_1, \dots, \alpha_8$ are periodic functions with the same basic frequency as the BCP, and thus are evaluated by means of the following Fourier expansions:

$$\alpha_i(t) = \alpha_{i,0} + \sum_{k \geq 1} (\alpha_{i,k,c} \cos(j\omega_S t) + \alpha_{i,k,s} \sin(j\omega_S t)).$$

The actual values of the $\alpha_{i,k,c}$ and $\alpha_{i,k,s}$ coefficients are given in [3].

A.4 The Solar System equations of motion as a perturbation of the RTBP equations

In this Section, we will derive the equations of motion of a spacecraft under the Newtonian attraction of the bodies of the Solar System in the form of a perturbed RTBP ([12], [10]).

As we did in Chapter 5, we will denote the Solar System as $\mathcal{S} = \{P_1, \dots, P_9, P_{10}, P_{11}\}$, where P_1, \dots, P_9 are the planets ordered by increasing distance from the Sun, P_{10} is the Moon and P_{11} is the Sun.

In some cases, for instance when studying the Sun–Earth+Moon problem, it is convenient to consider the Earth and the Moon as a single body, located at the Earth–Moon barycenter and with mass the sum of masses of Earth and Moon. In this case, the Solar System will be denoted as $\mathcal{S} = \{P_1, P_2, P_4, \dots, P_9, P_{11}, P_{12}\}$, being P_{12} the Earth–Moon barycenter.

All the following arguments can be applied to the case in which Earth and Moon are considered different bodies as well as the case in which are considered a single body.

A.4.1 Deduction of the equations

In an inertial reference frame, Newton's equations for the motion of a spacecraft can be written as

$$\mathbf{R}'' = G \sum_{i \in \mathcal{S}} m_i \frac{(\mathbf{R}_i - \mathbf{R})}{\|\mathbf{R} - \mathbf{R}_i\|^3}. \quad (\text{A.3})$$

Here $\mathbf{R} = (X, Y, Z)^T$ is the position of the spacecraft (in km), \mathbf{R}_i is the position of the body $i \in \mathcal{S}$, G is the gravitational constant, m_i is the mass of the body $i \in \mathcal{S}$, $\|\cdot\|$ is the Euclidean norm, and the primes denote derivative with respect to time (in Julian days), which we will denote as t^* . From now on, \mathbf{R} and t^* will be called *inertial coordinates* and *inertial time*, respectively.

The above system can be written in Lagrangian form as

$$L(\mathbf{R}, \mathbf{R}', t^*) = \frac{1}{2} \mathbf{R}' \mathbf{R}' + \sum_{i \in \mathcal{S}} \frac{G m_i}{\|\mathbf{R} - \mathbf{R}_i\|}.$$

Here $\mathbf{R}' \mathbf{R}'$ is the dot product between \mathbf{R}' and \mathbf{R}' .

In order to write the previous system as a perturbed RTBP, we choose two primaries $I, J \in \mathcal{S}$ with $m_I > m_J$ and perform a change of coordinates in order to leave I and J at the constant positions $(\mu, 0, 0)$ and $(\mu - 1, 0, 0)$ respectively, being $\mu = m_J / (m_I + m_J)$. This is done in several steps:

- A translation through

$$\mathbf{B} = \frac{m_I \mathbf{R}_I + m_J \mathbf{R}_J}{m_I + m_J}$$

which leaves the barycenter of the primaries at the origin,

- a rotation through the orthogonal matrix $C = (\mathbf{e}_1, \mathbf{e}_2, \mathbf{e}_3)$, where

$$\mathbf{e}_1 = \frac{\mathbf{R}_{JI}}{\|\mathbf{R}_{JI}\|}, \quad \mathbf{e}_3 = \frac{\mathbf{R}_{JI} \times \mathbf{R}'_{JI}}{\|\mathbf{R}_{JI} \times \mathbf{R}'_{JI}\|}, \quad \mathbf{e}_2 = \mathbf{e}_3 \times \mathbf{e}_1,$$

being $\mathbf{R}_{ij} = \mathbf{R}_j - \mathbf{R}_i$. This turns the instantaneous plane of motion of the primaries into the xy plane and leaves the primaries on the x axis,

- a scaling through $k = \|\mathbf{R}_{JI}\|$, which makes the distance between the primaries to be constant and equal to 1.

The change of coordinates to be performed is written as

$$\mathbf{R} = \mathbf{B} + k\mathbf{C}\mathbf{r}, \quad (\text{A.4})$$

where $\mathbf{r} = (x, y, z)^T$. From now on \mathbf{r} will be called *adimensional coordinates*. It is important to note that the previous change of coordinates is non-autonomous, because \mathbf{B} , k and C depend on time.

It can be verified that the change of coordinates (A.4) preserves Lagrangian form and, therefore, the Lagrangian in the new coordinates is

$$\begin{aligned} L(\mathbf{r}, \mathbf{r}', t^*) &= \frac{1}{2}\mathbf{B}'\mathbf{B}' + k'\mathbf{B}\mathbf{s} + k\mathbf{B}'\mathbf{s}' + \frac{1}{2}k'^2\mathbf{r}\mathbf{r} + kk'\mathbf{s}\mathbf{s}' + \frac{1}{2}k^2\mathbf{s}'\mathbf{s}' + \\ &+ \frac{Gm_I}{k[(x - \mu)^2 + y^2 + z^2]^{1/2}} + \frac{Gm_J}{k[(x - \mu + 1)^2 + y^2 + z^2]^{1/2}} + \\ &+ \sum_{i \in \mathcal{S}^*} \frac{Gm_i}{k\|\mathbf{r} - \mathbf{r}_i\|}, \end{aligned}$$

where $\mathbf{s} = \mathbf{C}\mathbf{r}$, \mathbf{r}_i is the position of the body i in adimensional coordinates and \mathcal{S}^* represents the Solar System bodies considered without the two primaries I, J . Here we have used that C is an orthogonal matrix and, hence, it preserves the scalar product and the Euclidean norm.

Now we want to use the same time units as the RTBP, where 2π time units correspond to one revolution of the primaries. In order to do so, let a and n be the semi-major axis and the mean motion of J with respect to I , which are chosen to satisfy Kepler's third law: $G(m_I + m_J) = n^2 a^3$. Then we perform the change of time

$$t = n(t^* - t_0^*), \quad (\text{A.5})$$

where t_0^* is a fixed epoch, for instance 2451544.5 (1st Jan 2000). From now on, t will be called *adimensional time*. In Table A.1 we give the values of n, a used in the computations of Chapter 5.

It can be verified that the time change (A.5) preserves Lagrangian form too. If we denote by a dot the derivative with respect to t , then the new Lagrangian can be written as

$$\begin{aligned} L(\mathbf{r}, \dot{\mathbf{r}}, t) &= n^2 \left(\frac{1}{2}\dot{\mathbf{B}}\dot{\mathbf{B}} + k\dot{\mathbf{B}}\mathbf{s} + k\dot{\mathbf{B}}\dot{\mathbf{s}} + \frac{1}{2}k^2\mathbf{r}\mathbf{r} + k\dot{k}\mathbf{s}\mathbf{s} + \frac{1}{2}k^2\dot{\mathbf{s}}\dot{\mathbf{s}} \right) + \\ &+ \frac{Gm_I}{k[(x - \mu)^2 + y^2 + z^2]^{1/2}} + \frac{Gm_J}{k[(x - \mu + 1)^2 + y^2 + z^2]^{1/2}} + \\ &+ \sum_{i \in \mathcal{S}^*} \frac{Gm_i}{k\|\mathbf{r} - \mathbf{r}_i\|}. \end{aligned}$$

Earth–Moon	Sun–Earth+Moon
0.22997154619514	0.01720209883844

Table A.1: Values for the mean motion used in the Earth–Moon and Sun–Earth+Moon cases.

Since the equations of motion are

$$\frac{d}{dt} \frac{\partial L}{\partial \dot{\mathbf{r}}} = \frac{\partial L}{\partial \mathbf{r}}, \quad (\text{A.6})$$

neither adding a term that does not depend on $\mathbf{r}, \dot{\mathbf{r}}$ nor scaling the Lagrangian by a constant affect the equations of motion. We can therefore skip the term $\frac{n^2}{2} \dot{\mathbf{B}}\dot{\mathbf{B}}$ and multiply by $\frac{a}{G(m_I+m_J)} = \frac{1}{n^2 a^2}$ to get

$$\begin{aligned} L(\mathbf{r}, \dot{\mathbf{r}}, t) = & \frac{1}{a^2} \left(\dot{k} \dot{\mathbf{B}}\mathbf{s} + k \dot{\mathbf{B}}\dot{\mathbf{s}} + \frac{1}{2} \dot{k}^2 \mathbf{r}\mathbf{r} + k \dot{k} \dot{\mathbf{s}}\dot{\mathbf{s}} + \frac{1}{2} k^2 \dot{\mathbf{s}}\dot{\mathbf{s}} \right) + \\ & + \frac{a}{k} \left(\frac{1-\mu}{[(x-\mu)^2 + y^2 + z^2]^{1/2}} + \frac{\mu}{[(x-\mu+1)^2 + y^2 + z^2]^{1/2}} + \right. \\ & \left. + \sum_{i \in \mathcal{S}^*} \frac{\mu_i}{\|\mathbf{r} - \mathbf{r}_i\|} \right). \end{aligned} \quad (\text{A.7})$$

Here $\mu_i = \frac{m_i}{m_I+m_J}$.

Since $\mathbf{e}_1, \mathbf{e}_2, \mathbf{e}_3$ form an orthogonal basis we have $\mathbf{e}_i \mathbf{e}_j = \delta_{ij}$, $\dot{\mathbf{e}}_i \mathbf{e}_j = -\mathbf{e}_i \dot{\mathbf{e}}_j$ and $\dot{\mathbf{e}}_i \mathbf{e}_i = 0$ for $i, j = 1, 2, 3$. It can be further shown that $\dot{\mathbf{e}}_1 \dot{\mathbf{e}}_2 \equiv 0$, $\dot{\mathbf{e}}_2 \dot{\mathbf{e}}_3 \equiv 0$ and $\dot{\mathbf{e}}_1 \dot{\mathbf{e}}_3 \equiv 0$. Writing $\mathbf{s} = C\mathbf{r} = \mathbf{e}_1 x + \mathbf{e}_2 y + \mathbf{e}_3 z$ and using the previous relations, we get

$$\begin{aligned} L(\mathbf{r}, \dot{\mathbf{r}}, t) = & a_1(\dot{x}^2 + \dot{y}^2 + \dot{z}^2) + a_2(x\dot{x} + y\dot{y} + z\dot{z}) + a_3(x\dot{y} - \dot{x}y) + \\ & + a_4(y\dot{z} - \dot{y}z) + a_5 x^2 + a_6 y^2 + a_7 z^2 + a_8 xz + \\ & + a_9 \dot{x} + a_{10} \dot{y} + a_{11} \dot{z} + a_{12} x + a_{13} y + a_{14} z + \\ & + a_{15} \left(\frac{1-\mu}{[(x-\mu)^2 + y^2 + z^2]^{1/2}} + \frac{\mu}{[(x-\mu+1)^2 + y^2 + z^2]^{1/2}} + \right. \\ & \left. + \sum_{i \in \mathcal{S}^*} \frac{\mu_i}{[(x-x_i)^2 + (y-y_i)^2 + (z-z_i)^2]^{1/2}} \right), \end{aligned}$$

where

$$\begin{aligned} a_1 &= \frac{k^2}{2a^2}, & a_6 &= \frac{1}{2} \left(\frac{\dot{k}^2}{a^2} + \frac{k^2}{a^2} \dot{\mathbf{e}}_2 \dot{\mathbf{e}}_2 \right), & a_{11} &= \frac{k}{a^2} (\dot{\mathbf{B}}\mathbf{e}_3), \\ a_2 &= \frac{k\dot{k}}{a^2}, & a_7 &= \frac{1}{2} \left(\frac{\dot{k}^2}{a^2} + \frac{k^2}{a^2} \dot{\mathbf{e}}_3 \dot{\mathbf{e}}_3 \right), & a_{12} &= \frac{\dot{k}}{a^2} \dot{\mathbf{B}}\mathbf{e}_1 + \frac{k}{a^2} \dot{\mathbf{B}}\dot{\mathbf{e}}_1, \\ a_3 &= \frac{k^2}{a^2} \dot{\mathbf{e}}_1 \mathbf{e}_2, & a_8 &= \frac{k^2}{a^2} \dot{\mathbf{e}}_1 \dot{\mathbf{e}}_3, & a_{13} &= \frac{\dot{k}}{a^2} \dot{\mathbf{B}}\mathbf{e}_2 + \frac{k}{a^2} \dot{\mathbf{B}}\dot{\mathbf{e}}_2, \\ a_4 &= \frac{k^2}{a^2} \dot{\mathbf{e}}_2 \mathbf{e}_3, & a_9 &= \frac{k}{a^2} \dot{\mathbf{B}}\mathbf{e}_1, & a_{14} &= \frac{\dot{k}}{a^2} \dot{\mathbf{B}}\mathbf{e}_3 + \frac{k}{a^2} \dot{\mathbf{B}}\dot{\mathbf{e}}_3, \\ a_5 &= \frac{1}{2} \left(\frac{\dot{k}^2}{a^2} + \frac{k^2}{a^2} \dot{\mathbf{e}}_1 \dot{\mathbf{e}}_1 \right), & a_{10} &= \frac{k}{a^2} \dot{\mathbf{B}}\mathbf{e}_2, & a_{15} &= \frac{a}{k}. \end{aligned}$$

If we we introduce momenta as

$$p_x = \frac{\partial L}{\partial \dot{x}}, \quad p_y = \frac{\partial L}{\partial \dot{y}}, \quad p_z = \frac{\partial L}{\partial \dot{z}}, \quad (\text{A.8})$$

we have

$$\begin{aligned} p_x &= 2a_1\dot{x} + a_2x - a_3y + a_9, \\ p_y &= 2a_1\dot{y} + a_2y + a_3x - a_4z + a_{10}, \\ p_z &= 2a_1\dot{z} + a_2z + a_4y + a_{11}. \end{aligned} \quad (\text{A.9})$$

It is known that, in this case, the Hamiltonian of the model is given in terms of the Lagrangian as $H(\mathbf{r}, \mathbf{p}, t) = \dot{x}p_x + \dot{y}p_y + \dot{z}p_z - L(\mathbf{r}, \dot{\mathbf{r}}, t)$, where $\mathbf{p} = (p_x, p_y, p_z)^T$ and $\dot{x}, \dot{y}, \dot{z}$ can be written in terms of p_x, p_y, p_z from (A.9). After expanding the previous expression of H , skipping terms that do not depend on \mathbf{r}, \mathbf{p} and collecting we obtain

$$\begin{aligned} H(\mathbf{r}, \mathbf{p}, t) &= b_1(p_x^2 + p_y^2 + p_z^2) + b_2(xp_x + yp_y + zp_z) + b_3(yp_x - xp_y) + \\ &+ b_4(zp_y - yp_z) + b_5x^2 + b_6y^2 + b_7z^2 + b_8xz + \\ &+ b_9p_x + b_{10}p_y + b_{11}p_z + b_{12}x + b_{13}y + b_{14}z + \\ &+ b_{15} \left(\frac{1-\mu}{[(x-\mu)^2 + y^2 + z^2]^{1/2}} + \frac{\mu}{[(x-\mu+1)^2 + y^2 + z^2]^{1/2}} + \right. \\ &\left. + \sum_{i \in \mathcal{S}^*} \frac{\mu_i}{[(x-x_i)^2 + (y-y_i)^2 + (z-z_i)^2]^{1/2}} \right), \end{aligned} \quad (\text{A.10})$$

where

$$\begin{aligned} b_1 &= \frac{a^2}{2k^2}, & b_9 &= \frac{-1}{k} \dot{\mathbf{B}}\mathbf{e}_1, \\ b_2 &= \frac{-\dot{k}}{k}, & b_{10} &= \frac{-1}{k} \dot{\mathbf{B}}\mathbf{e}_2, \\ b_3 &= \dot{\mathbf{e}}_1\mathbf{e}_2, & b_{11} &= \frac{-1}{k} \dot{\mathbf{B}}\mathbf{e}_3, \\ b_4 &= \dot{\mathbf{e}}_2\mathbf{e}_3, & b_{12} &= \frac{k}{a^2} \left((\dot{\mathbf{e}}_1\mathbf{e}_2)(\dot{\mathbf{B}}\mathbf{e}_2) - \dot{\mathbf{B}}\dot{\mathbf{e}}_1 \right), \\ b_5 &= \frac{k^2}{2a^2} \left((\dot{\mathbf{e}}_1\mathbf{e}_2)^2 - \dot{\mathbf{e}}_1\dot{\mathbf{e}}_1 \right), & b_{13} &= \frac{k}{a^2} \left((\dot{\mathbf{e}}_2\mathbf{e}_3)(\dot{\mathbf{B}}\mathbf{e}_3) - \right. \\ b_6 &= \frac{k^2}{2a^2} \left((\dot{\mathbf{e}}_1\mathbf{e}_2)^2 + (\dot{\mathbf{e}}_2\mathbf{e}_3)^2 - \dot{\mathbf{e}}_2\dot{\mathbf{e}}_2 \right) & & \left. - (\dot{\mathbf{e}}_1\mathbf{e}_2)(\dot{\mathbf{B}}\mathbf{e}_1) - \dot{\mathbf{B}}\dot{\mathbf{e}}_2 \right), \\ b_7 &= \frac{k^2}{2a^2} \left((\dot{\mathbf{e}}_2\mathbf{e}_3)^2 - \dot{\mathbf{e}}_3\dot{\mathbf{e}}_3 \right), & b_{14} &= \frac{-k}{a^2} \left((\dot{\mathbf{e}}_2\mathbf{e}_3)(\dot{\mathbf{B}}\mathbf{e}_2) + \dot{\mathbf{B}}\dot{\mathbf{e}}_3 \right), \\ b_8 &= \frac{k^2}{a^2} \left(-(\dot{\mathbf{e}}_1\mathbf{e}_2)(\dot{\mathbf{e}}_2\mathbf{e}_3) - \dot{\mathbf{e}}_1\dot{\mathbf{e}}_3 \right), & b_{15} &= \frac{-a}{k} \end{aligned}$$

From (A.6) we get the second-order differential equations given in (5.3), where the c_i

are defined as

$$\begin{aligned}
c_1 &= \frac{-1}{k}(\ddot{\mathbf{B}}\mathbf{e}_1), & c_6 &= 2(\dot{\mathbf{e}}_2\mathbf{e}_3), & c_{11} &= \frac{2\dot{k}}{k}(\dot{\mathbf{e}}_2\mathbf{e}_3) + (\ddot{\mathbf{e}}_2\mathbf{e}_3), \\
c_2 &= \frac{-1}{k}(\ddot{\mathbf{B}}\mathbf{e}_2), & c_7 &= (\dot{\mathbf{e}}_1\dot{\mathbf{e}}_1) - \frac{\ddot{k}}{k}, & c_{12} &= (\dot{\mathbf{e}}_3\dot{\mathbf{e}}_3) - \frac{\ddot{k}}{k}, \\
c_3 &= \frac{-1}{k}(\ddot{\mathbf{B}}\dot{\mathbf{e}}_3) & c_8 &= \frac{2\dot{k}}{k}(\dot{\mathbf{e}}_1\mathbf{e}_2) + (\ddot{\mathbf{e}}_1\mathbf{e}_2), & c_{13} &= \frac{a^3}{k^3}, \\
c_4 &= \frac{-2\dot{k}}{k} & c_9 &= (\dot{\mathbf{e}}_1\dot{\mathbf{e}}_3), \\
c_5 &= 2(\dot{\mathbf{e}}_1\mathbf{e}_2), & c_{10} &= (\dot{\mathbf{e}}_2\dot{\mathbf{e}}_2) - \frac{\ddot{k}}{k}.
\end{aligned}$$

As in the deduction of the Lagrangian, to obtain these expressions for c_i it has been used that $\dot{\mathbf{e}}_1\dot{\mathbf{e}}_2 \equiv 0$ and $\dot{\mathbf{e}}_2\dot{\mathbf{e}}_3 \equiv 0$.

Appendix B

The discontinuities in accelerations and over–accelerations of the JPL ephemeris

In this Appendix we discuss the jump discontinuities introduced in the evaluation of accelerations and over–accelerations of the positions of the Sun, the planets and the Moon due to the use of the JPL numerical ephemeris.

B.1 Structure of JPL’s ephemeris files

The JPL ephemeris files ([26],[27]) contain the coefficients of a large set of Chebyshev polynomials, each of which is used to compute the position or velocity of a Solar System body over a determined time span called *granule*. The length of these granules is chosen in order to obtain a very accurate approximation with the corresponding Chebyshev polynomial.

All the Chebyshev coefficients are adjusted from the output of a numerical integration which takes into account the latest planetary observations. In this adjustment, Chebyshev polynomials corresponding to neighboring granules are asked to be equal when evaluated at the border points. Therefore, there are no discontinuities in positions and velocities.

In order to evaluate the c_i functions in Chapter 5, we need the accelerations and over–accelerations of the Solar System bodies. They are computed by derivating the Chebyshev polynomials corresponding to the velocities. In this way, a jump discontinuity is introduced at each granule change in accelerations and over–accelerations.

B.2 Jump discontinuities corresponding to DE406

For DE406, which is the JPL ephemeris file used for the computations of Chapter 5, we give in Table B.1 the maximum value of these jumps over the 6000–year time–span of this ephemeris.

body	gr. l.	x''	y''	z''	x'''	y'''	z'''
Sun	64	9.98E-03	8.84E-03	4.81E-03	1.25E-02	1.08E-02	5.91E-03
Mercury	16	4.60E-01	4.14E-01	2.25E-01	2.69E+00	2.47E+00	1.34E+00
Venus	64	1.29E-02	1.19E-02	5.60E-03	1.49E-02	1.40E-02	7.47E-03
EMB	32	3.55E-02	3.34E-02	1.67E-02	3.00E-02	2.67E-02	1.28E-02
Mars	64	2.92E-03	2.71E-03	1.21E-03	1.59E-03	1.23E-03	5.72E-04
Jupiter	64	9.93E-05	8.32E-05	3.38E-05	1.67E-04	1.37E-04	5.83E-05
Saturn	64	6.77E-06	6.82E-06	2.58E-06	3.91E-06	4.10E-06	1.49E-06
Uranus	64	3.43E-07	2.96E-07	1.23E-07	6.50E-08	5.54E-08	2.36E-08
Neptune	64	5.96E-08	5.18E-08	2.17E-08	9.15E-09	7.81E-09	3.17E-09
Pluto	64	5.07E-08	5.19E-08	1.94E-08	6.34E-09	7.18E-09	2.96E-09
Moon	8	1.27E-01	1.24E-01	5.84E-02	1.41E+00	1.31E+00	6.66E-01

Table B.1: Jump discontinuities in the JPL DE406 ephemeris file. For each Solar System body, we give the maximum jump in accelerations (in km/JD^2 , JD stands for “Julian days”) and over-accelerations (in km/JD^3) over the whole time span covered by this ephemeris, which is from JD 625360.5 (Feb. 23, 3000 B.C.) to 2816848.5 (March 3, 3000 A.C.). We also give, in the second column, the granule length (in JD) for each body. In the table, EMB stands for “Earth-Moon barycenter”.

Appendix C

Fourier expansions

We give in this appendix all the Fourier expansions referenced in Chapter 5. These include the c_i functions and the positions of the Solar System bodies in adimensional coordinates, both in the Earth–Moon and the Sun–Earth+Moon cases. For the c_i functions of the Earth–Moon case, we also give the coefficients that adjust them as linear combinations of the 5 basic frequencies of Brown’s simplified lunar theory given in [8].

C.1 Notation

Each table in this Appendix corresponds to a Fourier expansion of the form

$$A_0^c + \sum_{l=1}^{N_f} \left(A_l^c \cos(f_l(t - t_0)) + A_l^s \sin(f_l(t - t_0)) \right),$$

where A_0^c is given in the first entry of the table, f_l, A_l^c, A_l^s are given in the remaining entries and $N_f + 1$ is the total number of entries of the table. The time t above is assumed to be in adimensional units, and therefore the units of f_l are cycles per revolution of the primaries (note that this depends on the primaries chosen). The parameter t_0 corresponds to the starting date of the Fourier analysis, which is the Julian Day 2451910.5 (Jan 1st, 2001), as mentioned in Chapter 5. In the above formula, t_0 must be set according to the origin of time needed. For instance, for the computations of Table 5.22, we set

$$t_0 = (2451919.3489 - 2451910.5)n,$$

being n the mean motion in the Earth–Moon case.

C.2 Expansions of the c_i functions, Earth–Moon case

In tables C.1 to C.13 we give the Fourier expansions computed for the c_i functions in the Earth–Moon case. In addition to the frequencies f_l and Fourier coefficients A_l^c, A_l^s , we display in these tables the amplitudes,

$$A_l = \sqrt{(A_l^c)^2 + (A_l^s)^2},$$

the coefficients of the adjustment of the frequencies as linear combinations of the 5 basic frequencies $\omega = (\omega_1, \dots, \omega_5)$ from Brown's simplified lunar theory (see Section 5.3.2),

$$k_l = (k_l^1, \dots, k_l^5) \in \mathbb{Z}^5,$$

the order of these linear combinations,

$$|k_l| = |k_l^1| + \dots + |k_l^5|,$$

and its error, $f_l - k_l\omega$.

Table C.1: Fourier analysis of the c_1 function in the Earth–Moon case.

f_l	A_l^c	A_l^s	A_l	k_l^1	k_l^2	k_l^3	k_l^4	k_l^5	$ k_l $	$f_l - k_l\omega$
0.0000000000	3.49728352384E-04	0.00000000000E+00	0.00E+00	0	0	0	0	0	0	0.00E+00
0.92519578633	6.11424843788E-01	-2.07418797009E+00	2.16E+00	0	1	0	0	0	1	-2.11E-07
1.91674083005	9.86980050137E-02	1.47470649298E-01	1.77E-01	1	1	-1	0	0	3	-3.89E-07
0.85039537676	1.84739724027E-02	-7.30244372310E-02	7.53E-02	-1	2	0	0	1	4	-1.92E-07
0.06634926288	6.79099306828E-02	2.93309343012E-02	7.40E-02	1	-1	-1	0	0	3	3.89E-08
1.78404231456	3.36502864099E-02	5.62537249256E-03	3.41E-02	-1	3	1	0	0	5	-4.56E-07
2.77558735935	-1.81647617922E-02	1.56389320446E-02	2.40E-02	0	3	0	0	0	3	-6.33E-07
2.90828587988	-1.36201204397E-02	-1.42944852785E-03	1.37E-02	2	1	-2	0	0	5	-5.61E-07
1.84194060336	4.29226286451E-03	5.91815966141E-03	7.31E-03	0	2	-1	0	1	4	-1.87E-07
1.08284144947	1.73778166384E-03	-3.50558609743E-03	3.91E-03	2	-1	0	2	0	5	-2.30E-07
0.99999608580	-1.19150925903E-03	3.53655992224E-03	3.73E-03	1	0	0	0	-1	2	-3.40E-07
1.05789429677	-3.07241003106E-03	1.55611903813E-03	3.44E-03	2	-1	-2	0	0	5	-1.49E-07
3.76713240391	-6.08881828453E-05	-3.69529711823E-03	3.70E-03	1	3	-1	0	0	5	-8.10E-07
1.70924216643	2.64745450493E-03	3.42227127121E-04	2.67E-03	-2	4	1	0	1	8	-1.76E-07
0.14114984241	2.21715980197E-03	1.06470732416E-03	2.46E-03	2	-2	-1	0	-1	6	1.90E-07
2.70078684154	-1.77905198818E-03	1.65814811377E-03	2.43E-03	-1	4	0	0	1	6	-7.22E-07
0.77559511766	4.51845611742E-04	-2.12193487364E-03	2.17E-03	-2	3	0	0	2	7	-2.29E-08
1.99154129499	-6.16552315269E-04	-1.00470510178E-03	1.18E-03	2	0	-1	0	-1	4	-3.52E-07
3.89983092217	7.41953246429E-04	-7.22192495846E-04	1.04E-03	3	1	-3	0	0	7	-7.40E-07
1.85039170167	8.04906243666E-04	5.20157776726E-04	9.58E-04	0	2	0	0	0	2	-2.93E-07
0.00845138932	6.65622320815E-04	-2.56010200523E-04	7.13E-04	0	0	1	0	-1	2	1.85E-07
3.63443388582	-5.34183218572E-04	-4.86728021205E-04	7.23E-04	-1	5	1	0	0	7	-8.80E-07
2.83348530843	-6.46647280720E-04	-4.19030497728E-05	6.48E-04	1	2	-2	0	1	6	-7.03E-07
1.94168801634	-5.70156567948E-04	-2.01298040697E-04	6.05E-04	1	1	1	2	0	5	-4.36E-07
2.64288884133	-2.30111081823E-05	5.15506926653E-04	5.16E-04	-2	5	2	0	0	9	-7.03E-07
4.75867745029	3.31598521437E-04	2.66986910545E-04	4.26E-04	2	3	-2	0	0	7	-9.85E-07
3.69233204989	-2.20450941041E-05	-4.01689512934E-04	4.02E-04	0	4	-1	0	1	6	-7.35E-07
2.04943934140	7.89082727159E-05	-3.43946293640E-04	3.53E-04	3	-1	-3	0	0	7	-3.26E-07
4.62597893259	3.17812781243E-04	-4.39748393952E-05	3.21E-04	0	5	0	0	0	5	-1.05E-06
0.79249727839	1.46147169122E-04	2.50176540225E-04	2.90E-04	-2	3	2	0	0	7	-2.71E-07
2.85038749322	2.29034795813E-04	-1.82906642935E-04	2.93E-04	1	2	0	0	-1	4	-9.28E-07
1.85884282406	-2.68393879459E-04	-5.59346373905E-05	2.74E-04	0	2	1	0	-1	4	-3.75E-07
2.07438649155	1.00104220995E-04	2.26431623377E-04	2.48E-04	3	-1	-1	2	0	7	-4.09E-07
1.76713975394	1.46841353083E-04	1.85677393011E-04	2.37E-04	-1	3	-1	0	2	7	-6.08E-07
0.99154552975	-9.98303822273E-05	1.18636745420E-04	1.55E-04	1	0	-1	0	0	2	3.08E-07
2.98308653320	1.58715139628E-04	2.32065297134E-05	1.60E-04	3	0	-2	0	-1	6	-3.36E-07
2.62598647989	-1.09612744138E-04	1.10344395335E-04	1.56E-04	-2	5	0	0	2	9	-6.56E-07
0.76755012989	1.78020427952E-05	-1.56694202456E-04	1.58E-04	-2	3	0	-2	0	7	-1.86E-07
2.84193687948	-1.40489977606E-04	4.37454238194E-05	1.47E-04	1	2	-1	0	0	4	-3.37E-07
1.92518236638	-1.20781449732E-04	-7.71669622302E-05	1.43E-04	1	1	0	0	-4	6	6.65E-07
1.63444105798	1.36659514559E-04	1.16813694410E-05	1.37E-04	-3	5	1	0	2	11	-8.56E-07
0.09129636592	-1.35682361867E-04	3.23729916781E-05	1.39E-04	1	-1	1	2	0	5	-9.20E-08
1.15764188855	6.25218147810E-05	-1.14606606715E-04	1.31E-04	3	-2	0	2	-1	8	-2.19E-07
1.13269454643	-1.14980469674E-04	5.28598414079E-05	1.27E-04	3	-2	-2	0	-1	8	-3.28E-07
0.98309391503	-1.00601880441E-04	5.59572601745E-05	1.15E-04	1	0	-2	0	1	4	-1.02E-07
3.55963358492	-8.08697481496E-05	-6.81910186892E-05	1.06E-04	-2	6	1	0	1	10	-7.52E-07
0.85667921182	-5.57341314954E-05	5.36860930410E-05	7.74E-05	1	0	-16	-2	-1	20	-3.08E-06
4.89137596488	6.00146407056E-06	7.72048105887E-05	7.74E-05	4	1	-4	0	0	9	-9.18E-07
0.21595025012	6.41383670711E-05	3.39355239073E-05	7.26E-05	3	-3	-1	0	-2	9	1.69E-07
0.99368985120	2.47053910368E-05	6.79242266002E-05	7.23E-05	0	1	10	-4	5	20	3.55E-06
5.61752397365	-3.38221623028E-05	5.43299057021E-05	6.40E-05	1	5	-1	0	0	7	-1.24E-06

Table C.1: (continued)

f_l	A_l^c	A_l^s	A_l	k_l^1	k_l^2	k_l^3	k_l^4	k_l^5	$ k_l $	$f_l - k_l\omega$
0.83161613915	6.12150108682E-05	4.03281949393E-07	6.12E-05	-2	3	9	-5	1	20	2.58E-05
3.84193273653	-1.37471572688E-06	6.32779781570E-05	6.33E-05	2	2	-1	0	-1	6	-9.06E-07
2.56808837322	-3.22503237248E-07	6.29799538494E-05	6.30E-05	-3	6	2	0	1	12	-7.43E-07
0.70079476312	9.84685095663E-06	-5.70172128806E-05	5.79E-05	-3	4	0	0	3	10	5.11E-08
3.82503051749	3.79951259667E-05	-3.99656672370E-05	5.51E-05	2	2	-3	0	1	8	-7.16E-07
4.55117827917	5.23327741201E-05	-9.42146772880E-06	5.32E-05	-1	6	0	0	1	8	-1.28E-06
0.85897289547	3.08660636249E-05	-4.33322044081E-05	5.32E-05	-1	2	1	0	16	20	6.89E-05
0.87840517073	-2.73362433751E-05	-3.62382703721E-05	4.54E-05	1	0	-12	-5	-2	20	-3.61E-05
4.68387732034	3.93920826409E-05	2.93893345115E-05	4.91E-05	1	4	-2	0	1	8	-6.87E-07
0.92106437583	-3.25555627393E-05	2.83209740769E-05	4.32E-05	0	1	0	-1	-18	20	-4.84E-05
2.70924074179	-1.96760960640E-05	3.94475946590E-05	4.41E-05	-1	4	1	0	1	7	-1.60E-06
5.75022249274	-4.22685502911E-05	8.50598750911E-06	4.31E-05	3	3	-3	0	0	9	-1.16E-06
1.77558406592	3.33326712151E-05	1.79239466613E-05	3.78E-05	-1	3	0	0	-1	5	-3.52E-07
0.92931687630	-1.03272351611E-05	-3.64307852312E-05	3.79E-05	0	1	0	1	18	20	3.77E-05
3.04098438397	2.12611214652E-05	2.79126334707E-05	3.51E-05	4	-1	-4	0	0	9	-5.04E-07
0.07479106172	-3.44903527052E-05	1.22146523056E-07	3.45E-05	1	-1	0	0	-4	6	1.36E-06
0.78820512789	3.56765000296E-05	-5.37751229718E-07	3.57E-05	-2	3	1	1	13	20	9.71E-05
1.07479604325	1.19713246690E-05	-3.17125369130E-05	3.39E-05	2	-1	0	0	-2	5	-8.11E-07
0.95013822530	-1.17152065460E-05	-2.95053250873E-05	3.17E-05	1	0	-4	-4	9	18	5.26E-07
1.75909561820	-2.25640187122E-05	-2.37000568921E-05	3.27E-05	-1	3	-1	-2	0	7	8.12E-08
1.98308844057	-5.20568672527E-06	-2.71757521633E-05	2.77E-05	2	0	-2	0	-1	5	1.57E-06

Table C.2: Fourier analysis of the c_2 function in the Earth–Moon case.

f_l	A_l^c	A_l^s	A_l	k_l^1	k_l^2	k_l^3	k_l^4	k_l^5	$ k_l $	$f_l - k_l\omega$
0.00000000000	-6.69060194679E-09	0.00000000000E+00	0.00E+00	0	0	0	0	0	0	0.00E+00
0.92519578633	-2.08103238269E+00	-6.13442419291E-01	2.17E+00	0	1	0	0	0	1	-2.11E-07
1.91674083004	1.47778923754E-01	-9.89043356525E-02	1.78E-01	1	1	-1	0	0	3	-3.89E-07
0.85039537678	-7.35157689775E-02	-1.85982826047E-02	7.58E-02	-1	2	0	0	1	4	-1.92E-07
0.06634926261	-1.84248845643E-02	4.26593425274E-02	4.65E-02	1	-1	-1	0	0	3	3.86E-08
1.78404231457	5.63768935330E-03	-3.37239534583E-02	3.42E-02	-1	3	1	0	0	5	-4.56E-07
2.77558735933	1.56548442710E-02	1.81832380635E-02	2.40E-02	0	3	0	0	0	3	-6.33E-07
2.90828587987	-1.43178677458E-03	1.36424019055E-02	1.37E-02	2	1	-2	0	0	5	-5.61E-07
1.84194060336	5.94066139233E-03	-4.30858282343E-03	7.34E-03	0	2	-1	0	1	4	-1.87E-07
1.08284144951	-3.53987678055E-03	-1.75478096993E-03	3.95E-03	2	-1	0	2	0	5	-2.30E-07
0.99999608598	3.36805943382E-03	1.13474357362E-03	3.55E-03	1	0	0	0	-1	2	-3.40E-07
3.76713240393	-3.69822504600E-03	6.09357266032E-05	3.70E-03	1	3	-1	0	0	5	-8.10E-07
1.70924216643	3.43306609402E-04	-2.65580617619E-03	2.68E-03	-2	4	1	0	1	8	-1.76E-07
2.70078684157	1.66037784063E-03	1.78144503430E-03	2.44E-03	-1	4	0	0	1	6	-7.22E-07
0.77559511787	-2.14710976867E-03	-4.57210066527E-04	2.20E-03	-2	3	0	0	2	7	-2.27E-08
1.05789429444	8.19959186171E-04	1.61887055560E-03	1.81E-03	2	-1	-2	0	0	5	-1.51E-07
0.14114984132	-5.16667985576E-04	1.07593090188E-03	1.19E-03	2	-2	-1	0	-1	6	1.89E-07
1.99154129484	-9.98441492896E-04	6.12712412342E-04	1.17E-03	2	0	-1	0	-1	4	-3.53E-07
3.8983092216	-7.23194051763E-04	-7.42981705411E-04	1.04E-03	3	1	-3	0	0	7	-7.40E-07
1.85039170219	5.19759664007E-04	-8.04287495147E-04	9.58E-04	0	2	0	0	0	2	-2.93E-07
3.63443388590	-4.87125677594E-04	5.34619147885E-04	7.23E-04	-1	5	1	0	0	7	-8.80E-07
2.83348530824	-4.20188745840E-05	6.48447333205E-04	6.50E-04	1	2	-2	0	1	6	-7.04E-07
1.94168801639	-2.01690620802E-04	5.71267646297E-04	6.06E-04	1	1	1	2	0	5	-4.36E-07
2.64288884115	5.16411039850E-04	2.30507636537E-05	5.17E-04	-2	5	2	0	0	9	-7.03E-07
4.75867745004	2.67166148391E-04	-3.31821601079E-04	4.26E-04	2	3	-2	0	0	7	-9.85E-07
3.69233205026	-4.02103527563E-04	2.20667737844E-05	4.03E-04	0	4	-1	0	1	6	-7.35E-07
4.62597893287	-4.39982267533E-05	-3.17985028852E-04	3.21E-04	0	5	0	0	0	5	-1.05E-06
2.04943934059	-2.86195080490E-04	-6.56571998810E-05	2.94E-04	3	-1	-3	0	0	7	-3.26E-07
0.09129639705	-7.16445449641E-05	-3.00381875874E-04	3.09E-04	1	-1	1	2	0	5	-6.08E-08
2.85038749272	-1.82692994943E-04	-2.28764028381E-04	2.93E-04	1	2	0	0	-1	4	-9.28E-07
1.85884282415	-5.56540946513E-05	2.67045551329E-04	2.73E-04	0	2	1	0	-1	4	-3.75E-07
2.07438649178	2.26815124643E-04	-1.00273289385E-04	2.48E-04	3	-1	-1	2	0	7	-4.09E-07
1.76713975228	1.86810707270E-04	-1.47740726023E-04	2.38E-04	-1	3	-1	0	2	7	-6.10E-07
0.79249728138	1.94471368911E-04	-1.13605156901E-04	2.25E-04	-2	3	2	0	0	7	-2.68E-07
0.76755012789	-2.07804780484E-04	-2.36073068497E-05	2.09E-04	-2	3	0	-2	0	7	-1.88E-07
2.98308653436	2.31614097072E-05	-1.58387930928E-04	1.60E-04	3	0	-2	0	-1	6	-3.35E-07
2.62598647994	1.10533921097E-04	1.09801089455E-04	1.56E-04	-2	5	0	0	2	9	-6.56E-07
2.84193688002	4.37500930417E-05	1.40506546876E-04	1.47E-04	1	2	-1	0	0	4	-3.36E-07
0.99154557296	1.04874476457E-04	8.83339112201E-05	1.37E-04	1	0	-1	0	0	2	3.51E-07
1.92518236335	-7.73344192492E-05	1.21048507356E-04	1.44E-04	1	1	0	0	-4	6	6.62E-07

Table C.2: (continued)

f_l	A_l^c	A_l^s	A_l	k_l^1	k_l^2	k_l^3	k_l^4	k_l^5	$ k_l $	$f_l - k_l\omega$
1.63444105775	1.17316169732E-05	-1.37250560288E-04	1.38E-04	-3	5	1	0	2	11	-8.56E-07
1.15764188875	-1.16758589093E-04	-6.36957769010E-05	1.33E-04	3	-2	0	2	-1	8	-2.19E-07
3.55963358475	-6.82591428843E-05	8.09507487588E-05	1.06E-04	-2	6	1	0	1	10	-7.53E-07
0.98309392752	4.72468926974E-05	8.49580577255E-05	9.72E-05	1	0	-2	0	1	4	-8.95E-08
1.13269454580	3.57707565531E-05	7.78080580926E-05	8.56E-05	3	-2	-2	0	-1	8	-3.28E-07
0.00845139102	3.07372495670E-05	7.99153552907E-05	8.56E-05	0	0	1	0	-1	2	1.87E-07
0.85667925660	5.42041228168E-05	5.62886970508E-05	7.81E-05	1	0	-16	-2	-1	20	-3.04E-06
4.89137596570	7.72995796986E-05	-6.00835760277E-06	7.75E-05	4	1	-4	0	0	9	-9.18E-07
0.99368987435	6.80820698338E-05	-2.47538844521E-05	7.24E-05	0	1	10	-4	5	20	3.57E-06
5.61752397501	5.43544558703E-05	3.38377582417E-05	6.40E-05	1	5	-1	0	0	7	-1.23E-06
0.83161614019	4.06781758845E-07	-6.16327472408E-05	6.16E-05	-2	3	9	-5	1	20	2.58E-05
3.84193276517	6.32511818071E-05	1.39328742897E-06	6.33E-05	2	2	-1	0	-1	6	-8.77E-07
0.70079455470	-5.81108814028E-05	-9.95295573976E-06	5.90E-05	-3	4	0	0	3	10	-1.57E-07
2.56808837326	6.31213546372E-05	3.23326162216E-07	6.31E-05	-3	6	2	0	1	12	-7.43E-07
0.85895856940	-5.22584798038E-05	-3.10498111850E-05	6.08E-05	-1	2	1	0	16	20	5.46E-05
3.82503051818	-4.00554803608E-05	-3.80807259644E-05	5.53E-05	2	2	-3	0	1	8	-7.15E-07
4.55117827594	-9.42879903626E-06	-5.23663095418E-05	5.32E-05	-1	6	0	0	1	8	-1.28E-06
0.87840517268	-3.64612185758E-05	2.75036574637E-05	4.57E-05	1	0	-12	-5	-2	20	-3.61E-05
4.68387732037	2.94147120321E-05	-3.94259543654E-05	4.92E-05	1	4	-2	0	1	8	-6.86E-07
0.92106449259	2.83731922032E-05	3.27059258332E-05	4.33E-05	0	1	0	-1	-18	20	-4.83E-05
2.70924074401	3.94712853588E-05	1.96884587744E-05	4.41E-05	-1	4	1	0	1	7	-1.60E-06
5.75022249277	8.51114689521E-06	4.22936129318E-05	4.31E-05	3	3	-3	0	0	9	-1.16E-06
1.77558402408	1.78544957566E-05	-3.32228575311E-05	3.77E-05	-1	3	0	0	-1	5	-3.94E-07
0.22399475718	2.19291001908E-05	-3.34446601846E-05	4.00E-05	3	-3	-1	2	0	9	-1.49E-07
1.07479609830	-3.56801737639E-05	-1.35029307970E-05	3.81E-05	2	-1	0	0	-2	5	-7.56E-07
0.07479371116	3.16273337164E-07	-3.62067080278E-05	3.62E-05	1	-1	0	0	-3	5	4.31E-07
0.92931706129	-3.65481037822E-05	1.02866353914E-05	3.80E-05	0	1	0	1	18	20	3.79E-05
0.78820509888	-5.42823874818E-07	-3.58993863796E-05	3.59E-05	-2	3	1	1	13	20	9.70E-05
3.04098438273	2.57496423087E-05	-1.96141294193E-05	3.24E-05	4	-1	-4	0	0	9	-5.06E-07
1.75909563274	-2.30048302843E-05	2.18984956824E-05	3.18E-05	-1	3	-1	-2	0	7	9.57E-08
0.95013782809	-2.71894147140E-05	1.08560888150E-05	2.93E-05	1	0	-4	-4	9	18	1.29E-07

Table C.3: Fourier analysis of the c_3 function in the Earth–Moon case.

f_l	A_l^c	A_l^s	A_l	k_l^1	k_l^2	k_l^3	k_l^4	k_l^5	$ k_l $	$f_l - k_l\omega$
0.00000000000	-1.41391624431E-07	0.00000000000E+00	0.00E+00	0	0	0	0	0	0	0.00E+00
0.07882283209	1.65129188649E-02	-1.89806776179E-01	1.91E-01	1	-1	0	1	0	3	-8.87E-09
0.15362345869	8.33621582882E-04	-6.51608735752E-03	6.57E-03	2	-2	0	1	-1	6	1.89E-07
0.91272221273	-4.27672165735E-03	-2.97357058176E-03	5.21E-03	0	1	-1	-1	0	3	-1.68E-07
1.07036787667	3.70099062228E-03	3.66945459845E-03	5.21E-03	2	-1	-1	1	0	5	-1.86E-07
0.78002369686	-1.07260772392E-03	2.26147319359E-04	1.10E-03	-2	3	1	-1	0	7	-2.36E-07
0.93766935941	1.08547184161E-03	-3.71888565840E-05	1.09E-03	0	1	1	1	0	3	-2.55E-07
1.92921440450	-2.43197278645E-04	3.13293384083E-04	3.97E-04	1	1	0	1	0	3	-4.31E-07
1.77156873957	1.68764438879E-04	-3.19061397781E-04	3.61E-04	-1	3	0	-1	0	5	-4.14E-07
0.00402218336	-1.54002140911E-05	3.31300055196E-04	3.32E-04	0	0	0	1	1	2	-2.29E-07
1.90426726120	2.73607073938E-04	-7.53915633969E-05	2.84E-04	1	1	-2	-1	0	5	-3.41E-07
2.06191292066	-2.83381722882E-04	2.70997465732E-05	2.85E-04	3	-1	-2	1	0	7	-3.63E-07
0.05387572603	1.85346701099E-04	-2.07607303241E-04	2.78E-04	1	-1	-2	-1	0	5	1.19E-07
0.83792177167	-1.79476696083E-04	-1.14611543575E-04	2.13E-04	-1	2	-1	-1	1	6	-1.80E-07
0.22842390460	3.12697229285E-05	-1.85938023676E-04	1.89E-04	3	-3	0	1	-2	9	2.07E-07
1.14516815726	1.05223966858E-04	1.12633389177E-04	1.54E-04	3	-2	-1	1	-1	8	-3.34E-07
0.07480318375	8.89008076597E-05	-2.76548656160E-06	8.89E-05	1	-1	0	0	0	2	-8.19E-07
0.70522330073	-8.40364542539E-05	2.11601703817E-05	8.67E-05	-3	4	1	-1	1	10	-2.03E-07
2.76311379200	2.24174258219E-05	5.45551681753E-05	5.90E-05	0	3	-1	-1	0	5	-5.83E-07
2.92075944712	-1.30892284939E-05	-5.95464884695E-05	6.10E-05	2	1	-1	1	0	5	-6.10E-07
0.86286898456	4.53619420419E-05	-3.30451500664E-06	4.55E-05	-1	2	1	1	1	6	-2.01E-07
0.21152103150	3.29470715251E-05	-2.61161694662E-05	4.20E-05	3	-3	-2	1	0	9	-2.57E-07
1.69676853402	1.66059660683E-05	-3.44732946823E-05	3.83E-05	-2	4	0	-1	1	8	-1.91E-07
0.98752246425	2.75952346653E-05	2.07779909894E-05	3.45E-05	1	0	-1	-1	-1	4	-3.45E-07
1.01246970438	2.99609444339E-05	1.21118028516E-07	3.00E-05	1	0	1	1	-1	4	-3.38E-07
0.84637310372	-2.72072488623E-05	-5.52059724270E-06	2.78E-05	-1	2	0	-1	0	4	-5.28E-08
1.00401874181	2.58124113020E-05	1.01371658955E-05	2.77E-05	1	0	0	1	0	2	-9.66E-08
1.85441423986	-1.63357434395E-05	2.27380033473E-05	2.80E-05	0	2	0	1	1	4	-1.68E-07
0.99556772201	1.78522824142E-05	1.64330442345E-05	2.43E-05	1	0	-1	1	1	4	8.81E-08
1.09531495627	-1.91740914228E-05	-2.68124551197E-06	1.94E-05	2	-1	1	3	0	7	-3.40E-07

Table C.3: (continued)

f_l	A_l^c	A_l^s	A_l	k_l^1	k_l^2	k_l^3	k_l^4	k_l^5	$ k_l $	$f_l - k_l\omega$
2.89581231904	-7.14840108044E-06	1.57717180188E-05	1.73E-05	2	1	-3	-1	0	7	-5.04E-07
3.05345796678	9.83357156690E-06	-1.44042440703E-05	1.74E-05	4	-1	-3	1	0	9	-5.39E-07
1.82946700626	1.27244562339E-05	-4.03272295341E-06	1.33E-05	0	2	-2	-1	1	6	-1.67E-07
0.01247355131	3.76785612705E-06	1.16454453678E-05	1.22E-05	0	0	1	1	0	2	-6.56E-08
2.78806092755	-9.95195809787E-06	-5.95246344045E-06	1.16E-05	0	3	1	1	0	5	-6.82E-07
1.63887022472	-3.68937570758E-06	-1.08131073000E-05	1.14E-05	-3	5	2	-1	0	11	-4.81E-07
1.79651589740	1.72047264987E-06	1.09949641348E-05	1.11E-05	-1	3	2	1	0	7	-4.90E-07
2.63041526638	1.03274181954E-05	3.95218551934E-06	1.11E-05	-2	5	1	-1	0	9	-6.61E-07
1.04542073532	1.56929729941E-06	1.05332084899E-05	1.06E-05	2	-1	-3	-1	0	7	-9.32E-08
2.00401490831	-6.53150996540E-06	7.76351743764E-06	1.01E-05	2	0	0	1	-1	4	-3.56E-07
0.85482363678	8.66655396082E-06	-1.50567256134E-06	8.80E-06	-1	2	1	-1	-1	6	-7.24E-07
0.12867636242	5.27843669813E-06	-5.43363042093E-06	7.58E-06	2	-2	-2	-1	-1	8	3.27E-07
0.01032838748	-4.31750283561E-06	4.91979830811E-06	6.55E-06	1	-1	-10	5	-3	20	-1.13E-05
2.68831322944	2.71561250282E-06	5.92501264482E-06	6.52E-06	-1	4	-1	-1	1	8	-7.18E-07
0.76312187241	-5.92636702789E-06	-3.49438110641E-06	6.88E-06	-2	3	-1	-1	2	9	3.49E-07
2.13671337285	-6.99079745142E-06	3.91421215994E-07	7.00E-06	4	-2	-2	1	-1	10	-3.40E-07
3.75465883357	-5.91388181368E-06	-1.85819901236E-06	6.20E-06	1	3	-2	-1	0	7	-7.63E-07
3.91230449343	5.62061870306E-06	2.91171617063E-06	6.33E-06	3	1	-2	1	0	7	-7.85E-07
0.14732397123	3.31100613301E-06	5.67102602595E-06	6.57E-06	0	0	16	3	-1	20	-5.43E-06
0.14516151179	2.93966084666E-06	-5.24112782175E-06	6.01E-06	2	-2	-1	1	-3	9	1.69E-07
3.77960597917	5.23287820170E-06	-1.83559797441E-06	5.55E-06	1	3	0	1	0	5	-8.52E-07
3.62196032482	-4.70264389647E-06	2.63584079152E-06	5.39E-06	-1	5	0	-1	0	7	-8.24E-07
0.17240241859	-5.02625528012E-06	-1.93088183641E-06	5.38E-06	2	-2	-3	12	-1	20	-6.37E-05
0.30322396832	1.01239980774E-06	-4.93809351615E-06	5.04E-06	4	-4	0	1	-3	12	-1.58E-07
0.63042306441	-4.30829432810E-06	1.26047389061E-06	4.49E-06	-4	5	1	-1	2	13	-1.11E-08
1.84636921092	-2.13829040280E-06	3.68403897944E-06	4.26E-06	0	2	0	-1	-1	4	-3.72E-07
2.84595897287	-1.14977732228E-06	-4.39455978492E-06	4.54E-06	1	2	-1	1	1	6	-6.56E-07
0.07084658749	-1.32257614976E-06	3.66740083483E-06	3.90E-06	1	-1	0	-1	17	20	6.64E-07
0.92121047321	3.32897838341E-06	1.80097731218E-06	3.78E-06	-1	2	6	5	-1	15	-8.11E-07
0.12559267841	2.97799400653E-06	-2.41342894957E-06	3.83E-06	0	0	12	6	2	20	1.52E-05
1.21996826630	2.62250686885E-06	3.02525726671E-06	4.00E-06	4	-3	-1	1	-2	11	-6.53E-07
0.23646805584	-8.91224052428E-07	3.39432751678E-06	3.51E-06	3	-3	0	3	0	9	-4.67E-07
1.97906770169	-3.22548624714E-06	7.54617691232E-07	3.31E-06	2	0	-2	-1	-1	6	-3.29E-07

Table C.4: Fourier analysis of the c_4 function in the Earth–Moon case.

f_l	A_l^c	A_l^s	A_l	k_l^1	k_l^2	k_l^3	k_l^4	k_l^5	$ k_l $	$f_l - k_l\omega$
0.00000000000	5.69258520818E-12	0.00000000000E+00	0.00E+00	0	0	0	0	0	0	0.00E+00
0.99154505158	8.29312818040E-02	6.90594554837E-02	1.08E-01	1	0	-1	0	0	2	-1.70E-07
1.85039157297	-1.59855561906E-02	2.47583666135E-02	2.95E-02	0	2	0	0	0	2	-4.22E-07
0.85884652974	1.67379008687E-02	-2.03538562041E-03	1.69E-02	-1	2	1	0	0	4	-2.44E-07
1.98309009374	-8.67558194562E-03	1.59743794050E-03	8.82E-03	2	0	-2	0	0	4	-3.49E-07
2.84193661725	-1.13437968478E-03	-3.62678210826E-03	3.80E-03	1	2	-1	0	0	4	-5.99E-07
1.77559111021	-9.83411685349E-04	1.66244731351E-03	1.93E-03	-1	3	0	0	1	5	-4.56E-07
2.97463513494	3.32702813179E-04	-5.91697263186E-04	6.79E-04	3	0	-3	0	0	6	-5.29E-07
2.70923810004	-6.42274853037E-04	-3.12072836643E-04	7.14E-04	-1	4	1	0	0	6	-6.68E-07
0.78404586971	6.30043768779E-04	-1.02605170318E-04	6.38E-04	-2	3	1	0	1	7	-4.75E-07
0.91674491443	4.87250400233E-04	3.75982197195E-04	6.15E-04	0	1	-1	0	1	3	1.21E-07
1.06634556273	-4.33955866827E-04	-3.91494270207E-04	5.84E-04	2	-1	-1	0	-1	5	-8.72E-08
0.92519583107	5.03784551164E-04	1.48616536954E-04	5.25E-04	0	1	0	0	0	1	-1.66E-07
1.01649220427	-4.20014027252E-04	-2.21144199403E-05	4.21E-04	1	0	1	2	0	4	-2.51E-07
3.83348166144	3.65674483436E-04	1.50825201000E-04	3.96E-04	2	2	-2	0	0	6	-7.76E-07
3.70078314515	3.51159321364E-04	-1.58573311046E-04	3.85E-04	0	4	0	0	0	4	-8.45E-07
1.92519179753	1.84773719973E-04	-2.63670140967E-04	3.22E-04	1	1	0	0	-1	3	-6.26E-07
2.76713632148	-9.23378252333E-05	-2.60052648396E-04	2.76E-04	0	3	-1	0	1	5	-4.66E-07
1.71769305450	6.70614923558E-05	2.71624147662E-04	2.80E-04	-2	4	2	0	0	8	-4.92E-07
0.93364709822	-1.19541040936E-04	9.68816359057E-06	1.20E-04	0	1	1	0	-1	3	-1.04E-07
1.90828958176	-1.01569901478E-04	2.28876021128E-05	1.04E-04	1	1	-2	0	1	5	-4.33E-07
0.13269851619	-7.10058903144E-05	6.68741105560E-05	9.75E-05	2	-2	-2	0	0	6	6.82E-08
2.05789024161	9.15159940257E-05	-1.33417420819E-05	9.25E-05	3	-1	-2	0	-1	7	-6.30E-07
1.91674095806	-7.69296156723E-05	5.14261794575E-05	9.25E-05	1	1	-1	0	0	3	-2.61E-07
1.12424356617	-5.48139799797E-06	-8.96405072839E-05	8.98E-05	3	-2	-3	0	0	8	-1.03E-07
1.70079079393	-4.21751108077E-05	7.79545524388E-05	8.86E-05	-2	4	0	0	2	8	-3.44E-07
0.99998863023	-8.35547718548E-05	-2.51035175322E-05	8.72E-05	1	0	0	0	-3	4	-6.48E-07
2.63443786699	-7.13693831406E-05	-3.14223239666E-05	7.80E-05	-2	5	1	0	1	9	-4.73E-07

Table C.4: (continued)

f_l	A_l^c	A_l^s	A_l	k_l^1	k_l^2	k_l^3	k_l^4	k_l^5	$ k_l $	$f_l - k_l\omega$
4.69232818958	-1.89983786838E-05	6.85986722270E-05	7.12E-05	1	4	-1	0	0	6	-1.02E-06
2.91673702305	1.56984107763E-05	5.80705902926E-05	6.02E-05	2	1	-1	0	-1	5	-6.22E-07
1.14919073360	-3.48979290285E-05	-4.12035019781E-05	5.40E-05	3	-2	-1	2	0	8	-1.70E-07
3.96618017455	1.82356277479E-05	4.78277747740E-05	5.12E-05	4	0	-4	0	0	8	-7.11E-07
3.62598256632	4.50035705721E-05	-2.25433248131E-05	5.03E-05	-1	5	0	0	1	7	-9.95E-07
4.82502670768	-3.32657461013E-05	1.75408926184E-05	3.76E-05	3	2	-3	0	0	8	-9.52E-07
1.78404602877	-6.51927989981E-06	3.43864713625E-05	3.50E-05	-1	3	1	0	1	6	-3.16E-07
3.75868102278	2.94173830466E-05	1.07709699534E-05	3.13E-05	1	3	-2	0	1	7	-9.87E-07
1.64289264852	6.40150293653E-06	2.22012156996E-05	2.31E-05	-3	5	2	0	1	11	-4.70E-07
0.70924540702	1.85960068168E-05	-3.78209782003E-06	1.90E-05	-3	4	1	0	2	10	-5.09E-07
0.8338953731	-1.78052037539E-05	-1.02333734402E-05	2.05E-05	-1	2	-1	-2	0	6	-2.24E-09
0.07480035535	-7.01789009483E-07	1.81812418915E-05	1.82E-05	1	-1	0	0	-1	3	-7.31E-08
1.99153897762	1.23884290431E-05	-7.70680691288E-06	1.46E-05	2	0	-1	0	-2	5	9.04E-07
3.56808462838	4.64454761812E-06	-1.35035965570E-05	1.43E-05	-2	6	2	0	0	10	-9.13E-07
2.86688391328	1.12459120695E-05	8.14339107788E-06	1.39E-05	1	2	1	2	0	6	-5.37E-07
4.55962967174	7.10217278133E-06	1.17099428726E-05	1.37E-05	-1	6	1	0	0	8	-1.09E-06
2.69233642245	-5.03758394471E-06	-1.27356301464E-05	1.37E-05	-1	4	-1	0	2	8	6.30E-08
2.11578861411	1.04948628922E-05	7.70526119749E-06	1.30E-05	4	-2	-4	0	0	10	-2.77E-07
2.89983478885	5.49303841618E-06	-1.07137701306E-05	1.20E-05	2	1	-3	0	1	7	-4.47E-07
1.00844351252	-1.24287524256E-05	8.58260657781E-07	1.25E-05	1	0	1	0	-3	5	-5.44E-07
2.78403856475	1.08549597986E-05	5.80939190056E-06	1.23E-05	0	3	1	0	-1	5	-6.32E-07
1.87533964054	-7.23315183407E-07	-1.14247198873E-05	1.14E-05	0	2	2	2	0	6	4.12E-07
2.77558724978	8.05881460213E-06	9.36814891652E-06	1.24E-05	0	3	0	0	0	3	-7.43E-07
2.90828617867	1.12754209694E-06	-1.06000818559E-05	1.07E-05	2	1	-2	0	0	5	-2.62E-07
3.04943549784	-5.56886022302E-06	9.06384155744E-06	1.06E-05	4	-1	-3	0	-1	9	-5.44E-07
1.05788851103	-4.69455465425E-06	-8.55344449205E-06	9.76E-06	2	-1	-2	0	-2	7	1.21E-06
5.68387323721	-5.52405713382E-06	-7.96698964867E-06	9.69E-06	2	4	-2	0	0	8	-1.20E-06
2.00803713924	-6.34952837799E-06	6.86566203020E-06	9.35E-06	2	0	0	2	0	4	-5.38E-07
0.84194494406	7.53035053307E-06	5.38874653268E-06	9.26E-06	-1	2	-1	0	2	6	5.80E-07
4.61752778262	-2.26852749876E-06	9.64188312665E-06	9.91E-06	0	5	-1	0	1	7	-1.00E-06
0.15764566683	-1.56621823023E-06	8.93245023735E-06	9.07E-06	2	-2	0	2	0	6	-1.51E-08
3.77558379863	-7.69430333804E-06	3.10747393377E-06	8.30E-06	1	3	0	0	-1	5	-6.20E-07
2.14073570044	8.08187751910E-06	-7.10311454171E-08	8.08E-06	4	-2	-2	2	0	10	-4.24E-07
3.90828224509	-7.48795085991E-06	-3.44752191789E-06	8.24E-06	3	1	-2	0	-1	7	-6.21E-07
0.99573453469	4.65850734281E-06	6.12989858827E-06	7.70E-06	0	1	5	7	7	20	1.08E-04
1.14114597284	-4.96572505631E-06	-4.84311487044E-06	6.94E-06	3	-2	-1	0	-2	8	-1.06E-07
0.20749882044	-5.00117260573E-06	4.36223014901E-06	6.64E-06	3	-3	-2	0	-1	9	-5.61E-08
5.55117471845	-5.50687453407E-06	-8.27552411974E-07	5.57E-06	0	6	0	0	0	6	-1.27E-06
2.55963667065	-4.91417155735E-06	-1.91149007145E-06	5.27E-06	-3	6	1	0	2	12	-1.24E-06
1.08284044368	-4.01849139912E-06	-1.95891304252E-06	4.47E-06	2	-1	0	2	0	5	-1.24E-06
2.57653958792	-4.11676976502E-06	1.56388748277E-06	4.40E-06	-3	6	3	0	0	12	-7.32E-07
1.69274572021	-1.51255835578E-06	3.59431392651E-06	3.90E-06	-2	4	0	-2	0	8	-5.93E-07
1.82544916188	3.85062231348E-06	-1.30708775583E-06	4.07E-06	0	2	-2	-2	1	7	8.27E-07
4.95772522920	-3.61226335289E-06	-1.23786067268E-06	3.82E-06	5	0	-5	0	0	10	-8.78E-07
3.55118217058	3.48286485441E-06	-1.91413417641E-06	3.97E-06	-2	6	0	0	2	10	-9.62E-07
0.79250294631	3.28156966126E-06	-1.78893552705E-06	3.74E-06	-2	3	2	0	2	9	-1.75E-06
1.62598688715	-1.46092271866E-06	3.15163604831E-06	3.47E-06	-3	5	0	0	2	10	-2.48E-07
1.19904412046	-7.34810480685E-08	-3.41794990606E-06	3.42E-06	4	-3	-3	0	-1	11	2.25E-08
1.79249330162	-6.87749096117E-07	-3.32041416969E-06	3.39E-06	-1	3	2	0	-1	7	-6.74E-07
5.81657175340	7.04451225438E-07	-3.31964786630E-06	3.39E-06	4	2	-4	0	0	10	-1.13E-06
4.75022625415	-2.78566837152E-06	1.61074466444E-06	3.22E-06	2	3	-3	0	1	9	-9.77E-07
1.85882993466	4.16180661397E-07	-2.89866123031E-06	2.93E-06	1	1	-5	-6	6	19	-5.84E-07
2.85037248271	1.93795831811E-06	2.09952811403E-06	2.86E-06	2	1	-6	-6	5	20	3.16E-07
0.98750599511	9.73950054944E-07	-2.30023048331E-06	2.50E-06	1	0	-1	-1	-6	9	1.06E-06
4.48482931269	1.33200205902E-06	2.01589960261E-06	2.42E-06	-2	7	1	0	1	11	-1.02E-06
1.70920430077	2.39266045306E-07	2.38004459063E-06	2.39E-06	-1	3	-5	-6	1	16	-3.43E-07

Table C.5: Fourier analysis of the c_5 function in the Earth–Moon case.

f_l	A_l^c	A_l^s	A_l	k_l^1	k_l^2	k_l^3	k_l^4	k_l^5	$ k_l $	$f_l - k_l\omega$
0.00000000000	2.00002531222E+00	0.00000000000E+00	0.00E+00	0	0	0	0	0	0	0.00E+00
0.99154503470	-1.39262526978E-01	1.67268469653E-01	2.18E-01	1	0	-1	0	0	2	-1.87E-07
1.85039156826	-3.60764692902E-02	-2.32919068442E-02	4.29E-02	0	2	0	0	0	2	-4.27E-07
0.85884653189	4.60700119614E-03	3.78883517587E-02	3.82E-02	-1	2	1	0	0	4	-2.42E-07
1.98309007298	-2.68306511802E-03	-1.45621710605E-02	1.48E-02	2	0	-2	0	0	4	-3.70E-07

Table C.5: (continued)

f_l	A_l^c	A_l^s	A_l	k_l^1	k_l^2	k_l^3	k_l^4	k_l^5	$ k_l $	$f_l - k_l\omega$
2.84193660358	5.11831718890E-03	-1.60131441069E-03	5.36E-03	1	2	-1	0	0	4	-6.13E-07
1.77559105182	-2.45250369261E-03	-1.44994031463E-03	2.85E-03	-1	3	0	0	1	5	-5.15E-07
0.78404613976	2.48070111393E-04	1.53843288507E-03	1.56E-03	-2	3	1	0	1	7	-2.05E-07
0.91674466299	-7.96904617992E-04	1.03615142247E-03	1.31E-03	0	1	-1	0	1	3	-1.30E-07
0.92519587725	-3.17428122603E-04	1.07511143482E-03	1.12E-03	0	1	0	0	0	1	-1.20E-07
2.97463510080	9.11159641497E-04	5.12115111071E-04	1.05E-03	3	0	-3	0	0	6	-5.64E-07
1.06634564227	7.56547334654E-04	-8.38553005289E-04	1.13E-03	2	-1	-1	0	-1	5	-7.66E-09
2.70923810214	4.47023359972E-04	-9.19991167575E-04	1.02E-03	-1	4	1	0	0	6	-6.66E-07
1.01649216639	4.36707007591E-05	-8.32487891521E-04	8.34E-04	1	0	1	2	0	4	-2.89E-07
3.83348163818	-2.07293619318E-04	5.02761410358E-04	5.44E-04	2	2	-2	0	0	6	-8.00E-07
3.70078313673	2.10196157149E-04	4.65419755642E-04	5.11E-04	0	4	0	0	0	4	-8.53E-07
1.71769305309	-4.97258344562E-04	1.22769448777E-04	5.12E-04	-2	4	2	0	0	8	-4.94E-07
0.07480022695	-4.80719057617E-04	-1.83089058972E-05	4.81E-04	1	-1	0	0	-1	3	-2.02E-07
1.92519202224	3.79217664229E-04	2.66359541480E-04	4.63E-04	1	1	0	0	-1	3	-4.01E-07
2.76713592402	3.69924980801E-04	-1.32377207938E-04	3.93E-04	0	3	-1	0	1	5	-8.64E-07
0.13269849998	-1.86639333771E-04	-1.98137830013E-04	2.72E-04	2	-2	-2	0	0	6	5.19E-08
0.93364712167	-2.07358784210E-05	-2.55493044788E-04	2.56E-04	0	1	1	0	-1	3	-8.02E-08
0.99997255631	3.62018627833E-05	-1.73565732903E-04	1.77E-04	2	-1	-6	-6	3	18	-4.67E-07
1.90828957561	-3.92893685937E-05	-1.74568822220E-04	1.79E-04	1	1	-2	0	1	5	-4.39E-07
1.91674112230	-8.73915270715E-05	-1.30986309714E-04	1.57E-04	1	1	-1	0	0	3	-9.66E-08
2.05789060404	2.16574958687E-05	1.50727691953E-04	1.52E-04	3	-1	-2	0	-1	7	-2.67E-07
1.12424353662	1.43818624168E-04	-8.81906866549E-06	1.44E-04	3	-2	-3	0	0	8	-1.33E-07
1.70079090059	-1.16866785487E-04	-6.32838032291E-05	1.33E-04	-2	4	0	0	2	8	-2.37E-07
0.15764565046	-1.22741918961E-04	-2.15106467326E-05	1.25E-04	2	-2	0	2	0	6	-3.15E-08
2.63443738603	4.51151605299E-05	-1.03242858325E-04	1.13E-04	-2	5	1	0	1	9	-9.54E-07
1.14919069284	7.76571422819E-05	-6.58014246897E-05	1.02E-04	3	-2	-1	2	0	8	-2.11E-07
4.69232817345	-8.92862215261E-05	-2.47193231990E-05	9.26E-05	1	4	-1	0	0	6	-1.04E-06
2.91673693109	-8.13369600914E-05	2.20463130634E-05	8.43E-05	2	1	-1	0	-1	5	-7.14E-07
3.96618013709	-6.98398107877E-05	2.66434972479E-05	7.47E-05	4	0	-4	0	0	8	-7.49E-07
3.62598283878	2.98836653007E-05	5.99130602130E-05	6.70E-05	-1	5	0	0	1	7	-7.23E-07
1.78404761389	-5.49100697124E-05	-1.06493909055E-05	5.59E-05	-1	3	1	0	1	6	1.27E-06
0.83389964937	2.59627649456E-05	-4.51088304892E-05	5.20E-05	-1	2	-1	-2	0	6	1.10E-07
0.70924618727	9.86496824234E-06	4.95213601315E-05	5.05E-05	-3	4	1	0	2	10	2.71E-07
4.82502667103	-2.36091997739E-05	-4.47526042520E-05	5.06E-05	3	2	-3	0	0	8	-9.88E-07
1.64289243393	-4.17059205157E-05	1.20836093933E-05	4.34E-05	-3	5	2	0	1	11	-6.84E-07
3.75868136860	-1.49826084235E-05	4.06860797808E-05	4.34E-05	1	3	-2	0	1	7	-6.41E-07
1.99153221996	1.38593274784E-05	2.03905584791E-05	2.47E-05	2	0	-1	0	-4	7	1.29E-06
1.00844456204	-1.58874971007E-06	-2.48120469178E-05	2.49E-05	1	0	1	0	-3	5	5.06E-07
0.84194317573	-1.20486585799E-05	1.71286182619E-05	2.09E-05	-1	2	-1	0	2	6	-1.19E-06
2.86688385130	-1.16357686982E-05	1.60821728759E-05	1.99E-05	1	2	1	2	0	6	-5.99E-07
2.11578859826	-1.15507773200E-05	1.57348901050E-05	1.95E-05	4	-2	-4	0	0	10	-2.93E-07
3.56808463779	1.89933721693E-05	6.53378648668E-06	2.01E-05	-2	6	2	0	0	10	-9.04E-07
2.89983443878	1.67772355217E-05	8.56013873620E-06	1.88E-05	2	1	-3	0	1	7	-7.97E-07
1.87533945757	2.00365232698E-05	-1.29131346626E-06	2.01E-05	0	2	2	2	0	6	2.29E-07
2.69233581561	1.82939360549E-05	-7.31246581406E-06	1.97E-05	-1	4	-1	0	2	8	-5.44E-07
1.05788561422	1.57554375108E-05	-8.86725735594E-06	1.81E-05	2	-1	-2	0	-2	7	-1.68E-06
4.55962965915	-1.53441102618E-05	9.30764351708E-06	1.79E-05	-1	6	1	0	0	8	-1.10E-06
2.78403841529	-8.24662321955E-06	1.54350661046E-05	1.75E-05	0	3	1	0	-1	5	-7.82E-07
0.20749868831	-1.13616718790E-05	-1.30189670718E-05	1.73E-05	3	-3	-2	0	-1	9	-1.88E-07
3.04943547176	-1.37822498103E-05	-8.46626551572E-06	1.62E-05	4	-1	-3	0	-1	9	-6.21E-07
2.90828631382	1.64450569322E-05	1.76184438265E-06	1.65E-05	2	1	-2	0	0	5	-1.27E-07
0.99572699638	-1.08962727848E-05	8.59153863250E-06	1.39E-05	0	1	5	7	7	20	1.00E-04
2.14073567493	1.17373541400E-07	1.31985586204E-05	1.32E-05	4	-2	-2	2	0	10	-4.50E-07
4.61752774410	-1.25941041399E-05	-2.96334027463E-06	1.29E-05	0	5	-1	0	1	7	-1.04E-06
1.14114153793	8.75438674701E-06	-9.39712467292E-06	1.28E-05	3	-2	-1	0	-3	9	-9.66E-07
5.68387320622	1.02361774955E-05	-7.09996538934E-06	1.25E-05	2	4	-2	0	0	8	-1.23E-06
0.06634574152	-1.10740336878E-05	-4.55690794850E-06	1.20E-05	1	-1	-1	0	-1	4	9.16E-08
3.77558328540	-4.12957973347E-06	-1.01462055348E-05	1.10E-05	1	3	0	0	-1	5	-1.13E-06
3.90828180523	4.68738057722E-06	-1.02498756656E-05	1.13E-05	3	1	-2	0	-1	7	-1.06E-06
0.14960108151	-1.07041108372E-05	-8.48459047204E-07	1.07E-05	2	-2	0	0	-2	6	2.25E-07
2.77558306766	-7.55143475528E-06	6.78503355623E-06	1.02E-05	0	3	0	0	-1	4	-1.35E-06
0.79250938126	4.33957433490E-06	8.53439178453E-06	9.57E-06	-2	3	2	0	3	10	1.11E-06
1.08284144849	3.73788081691E-06	-7.57474250383E-06	8.45E-06	2	-1	0	2	0	5	-2.31E-07
0.72614808243	6.71645410170E-06	4.94710710237E-06	8.34E-06	-3	4	3	0	0	10	-2.43E-07
2.55963716572	2.81307414135E-06	-7.16708806083E-06	7.70E-06	-3	6	1	0	2	12	-7.46E-07
2.00803761750	5.62254374942E-06	5.22884178639E-06	7.68E-06	2	0	0	2	0	4	-5.93E-08

Table C.5: (continued)

f_l	A_l^c	A_l^s	A_l	k_l^1	k_l^2	k_l^3	k_l^4	k_l^5	$ k_l $	$f_l - k_l\omega$
1.82544761410	2.47668855633E-06	7.04678852264E-06	7.47E-06	0	2	-2	-2	1	7	-7.21E-07
2.57653956312	-2.59609917296E-06	-6.83150602842E-06	7.31E-06	-3	6	3	0	0	12	-7.57E-07
0.23244459161	-7.46048645668E-06	-1.55038850071E-06	7.62E-06	3	-3	0	2	-1	9	-1.52E-06
5.55117470356	1.04822131913E-06	-6.97909614485E-06	7.06E-06	0	6	0	0	0	6	-1.28E-06
1.79249372596	6.06715372452E-06	-1.24064340363E-06	6.19E-06	-1	3	2	0	-1	7	-2.49E-07
1.19904405268	5.56215852980E-06	-1.23207392920E-07	5.56E-06	4	-3	-3	0	-1	11	-4.53E-08
1.62598632562	-4.82524193301E-06	-2.21518833222E-06	5.31E-06	-3	5	0	0	2	10	-8.10E-07
4.95772516437	1.74065590601E-06	-5.08530016770E-06	5.37E-06	5	0	-5	0	0	10	-9.43E-07
1.69274581115	-4.79961263068E-06	-2.02343750944E-06	5.21E-06	-2	4	0	-2	0	8	-5.02E-07
1.85880317192	4.93935966320E-06	3.99010651585E-08	4.94E-06	0	2	1	0	-12	15	-7.13E-07

Table C.6: Fourier analysis of the c_6 function in the Earth–Moon case.

f_l	A_l^c	A_l^s	A_l	k_l^1	k_l^2	k_l^3	k_l^4	k_l^5	$ k_l $	$f_l - k_l\omega$
0.00000000000	4.35184546580E-11	0.00000000000E+00	0.00E+00	0	0	0	0	0	0	0.00E+00
0.84637295298	1.41671041967E-03	2.86993453344E-04	1.45E-03	-1	2	0	-1	0	4	-2.04E-07
1.00401861552	-1.34572932338E-03	-5.27264980036E-04	1.45E-03	1	0	0	1	0	2	-2.23E-07
0.01247357965	-5.97175993899E-05	-1.79680583333E-04	1.89E-04	0	0	1	1	0	2	-3.73E-08
0.14517208262	8.96762308339E-05	-1.66351495182E-04	1.89E-04	2	-2	-1	1	0	6	1.77E-08
0.77157269571	8.67028940271E-05	1.41402700717E-05	8.78E-05	-2	3	0	-1	1	7	-3.23E-08
0.92921810815	-3.35065025771E-05	-1.16303694795E-05	3.55E-05	0	1	0	1	1	3	-3.02E-07
1.07881913165	-3.21811101671E-05	-1.40909922482E-05	3.51E-05	2	-1	0	1	-1	5	-1.35E-07
0.92117316418	-1.67752610064E-05	-4.06864341536E-06	1.73E-05	0	1	0	-1	-1	3	-4.21E-07
0.21997272479	5.57287416324E-06	-9.40958574481E-06	1.09E-05	3	-3	-1	1	-1	9	2.31E-07
2.85441018360	-5.42761603524E-06	-7.53745595885E-06	9.29E-06	1	2	0	1	0	4	-6.50E-07
2.69676451863	6.83522174704E-06	6.66986908255E-06	9.55E-06	-1	4	0	-1	0	6	-6.33E-07
0.07882273770	6.06084362799E-07	-7.00417513713E-06	7.03E-06	1	-1	0	1	0	3	-1.03E-07
0.08727424077	-1.81385049433E-06	-6.29369941854E-06	6.55E-06	1	-1	1	1	-1	5	1.95E-07
1.70521951753	-4.29148280168E-07	5.41649834747E-06	5.43E-06	-2	4	1	-1	0	8	-4.12E-07
1.86286514653	1.30475372865E-06	-5.05880335167E-06	5.22E-06	0	2	1	1	0	4	-4.65E-07
1.92921439924	-2.69639610010E-06	3.47378094963E-06	4.40E-06	1	1	0	1	0	3	-4.37E-07
1.77156874649	2.05713416681E-06	-3.88855402282E-06	4.40E-06	-1	3	0	-1	0	5	-4.07E-07
0.06232679689	-1.44433280255E-06	3.84107296568E-06	4.10E-06	1	-1	-1	-1	-1	5	-1.46E-08
0.69677182156	3.62334128723E-06	4.37694769096E-07	3.65E-06	-3	4	0	-1	2	10	-4.78E-07
1.13671718122	-1.19014503947E-06	-2.96394468688E-06	3.19E-06	3	-2	-2	1	0	8	-1.05E-07
1.16166429024	-2.23107418092E-06	-1.35868592266E-06	2.61E-06	3	-2	0	3	0	8	-2.30E-07
1.99556366734	1.94941135485E-06	-1.07259380867E-06	2.23E-06	2	0	-1	1	0	4	-3.93E-07
1.83791799116	-1.76212479965E-06	1.41514193352E-06	2.26E-06	0	2	-1	-1	0	4	-3.87E-07
0.71367452075	1.26655023253E-06	-8.94653064437E-07	1.55E-06	-3	4	2	-1	0	10	-1.88E-07
2.62196399961	8.92865661026E-07	8.05169376943E-07	1.20E-06	-2	5	0	-1	1	9	-7.23E-07
0.78002483392	1.06244810252E-06	-2.31916627526E-07	1.09E-06	-2	3	1	-1	0	7	9.01E-07

Table C.7: Fourier analysis of the c_7 function in the Earth–Moon case.

f_l	A_l^c	A_l^s	A_l	k_l^1	k_l^2	k_l^3	k_l^4	k_l^5	$ k_l $	$f_l - k_l\omega$
0.00000000000	1.00478056978E+00	0.00000000000E+00	0.00E+00	0	0	0	0	0	0	0.00E+00
0.99154504274	-1.05600650110E-01	1.26826992087E-01	1.65E-01	1	0	-1	0	0	2	-1.79E-07
0.85884652974	3.92058551530E-03	3.22407546273E-02	3.25E-02	-1	2	1	0	0	4	-2.44E-07
1.85039157284	-1.54636618183E-02	-9.98429642886E-03	1.84E-02	0	2	0	0	0	2	-4.22E-07
1.98309009374	-2.44632884858E-03	-1.32858575697E-02	1.35E-02	2	0	-2	0	0	4	-3.49E-07
2.84193661727	3.14452154764E-03	-9.83537953676E-04	3.29E-03	1	2	-1	0	0	4	-5.99E-07
0.13269851611	9.94318811401E-04	1.05575138924E-03	1.45E-03	2	-2	-2	0	0	6	6.81E-08
0.78404586978	2.24821535313E-04	1.38051798711E-03	1.40E-03	-2	3	1	0	1	7	-4.75E-07
1.77559111013	-1.08376329529E-03	-6.41094169882E-04	1.26E-03	-1	3	0	0	1	5	-4.56E-07
2.97463513459	9.43812864541E-04	5.30689337498E-04	1.08E-03	3	0	-3	0	0	6	-5.30E-07
0.91674491440	-6.24266810578E-04	8.09012155764E-04	1.02E-03	0	1	-1	0	1	3	1.21E-07
0.92519583006	-2.52368102371E-04	8.55498941663E-04	8.92E-04	0	1	0	0	0	1	-1.67E-07
1.06634556274	5.60048250594E-04	-6.20791407218E-04	8.36E-04	2	-1	-1	0	-1	5	-8.72E-08
1.01649220452	3.27278898515E-05	-6.21575632570E-04	6.22E-04	1	0	1	2	0	4	-2.51E-07
2.70923810041	2.80592159028E-04	-5.77482493788E-04	6.42E-04	-1	4	1	0	0	6	-6.68E-07
1.71769305471	-5.09936623145E-04	1.25898469358E-04	5.25E-04	-2	4	2	0	0	8	-4.92E-07
0.07480035406	-4.46737125036E-04	-1.72431561415E-05	4.47E-04	1	-1	0	0	-1	3	-7.44E-08
3.83348166121	-1.59647770116E-04	3.87066302230E-04	4.19E-04	2	2	-2	0	0	6	-7.77E-07

Table C.7: (continued)

f_i	A_i^c	A_i^s	A_i	k_i^1	k_i^2	k_i^3	k_i^4	k_i^5	$ k_i $	$f_i - k_i\omega$
3.70078314470	1.16912147500E-04	2.58898640125E-04	2.84E-04	0	4	0	0	0	4	-8.45E-07
2.76713632199	2.32834961805E-04	-8.26728736626E-05	2.47E-04	0	3	-1	0	1	5	-4.66E-07
0.93364709839	-1.70906358851E-05	-2.10876303159E-04	2.12E-04	0	1	1	0	-1	3	-1.04E-07
1.92519179279	1.56051754448E-04	1.09352748960E-04	1.91E-04	1	1	0	0	-1	3	-6.31E-07
1.90828958191	-3.69781664716E-05	-1.64101588399E-04	1.68E-04	1	1	-2	0	1	5	-4.33E-07
1.91674094402	-8.06227857015E-05	-1.20612265635E-04	1.45E-04	1	1	-1	0	0	3	-2.75E-07
2.05789024063	1.95622380176E-05	1.34179365013E-04	1.36E-04	3	-1	-2	0	-1	7	-6.31E-07
0.99998863487	3.81238384159E-05	-1.26885121225E-04	1.32E-04	1	0	0	0	-3	4	-6.43E-07
0.15764565868	-1.34558102659E-04	-2.35876974526E-05	1.37E-04	2	-2	0	2	0	6	-2.32E-08
3.96618016962	-7.98172593525E-05	3.04353766124E-05	8.54E-05	4	0	-4	0	0	8	-7.16E-07
2.00803725224	5.62378665351E-05	5.20725840742E-05	7.66E-05	2	0	0	2	0	4	-4.25E-07
1.14919073107	5.98915529397E-05	-5.07276572169E-05	7.85E-05	3	-2	-1	2	0	8	-1.72E-07
2.63443786601	2.90003095725E-05	-6.58691654322E-05	7.20E-05	-2	5	1	0	1	9	-4.74E-07
1.70079080375	-5.43275440727E-05	-2.93969125488E-05	6.18E-05	-2	4	0	0	2	8	-3.34E-07
4.69232818955	-5.98069468024E-05	-1.65634989241E-05	6.21E-05	1	4	-1	0	0	6	-1.02E-06
0.83389949603	2.81093914971E-05	-4.89334732998E-05	5.64E-05	-1	2	-1	-2	0	6	-4.35E-08
0.20749881825	3.16551944440E-05	3.62913558210E-05	4.82E-05	3	-3	-2	0	-1	9	-5.82E-08
0.70924541539	9.50838122469E-06	4.67640677134E-05	4.77E-05	-3	4	1	0	2	10	-5.01E-07
2.91673702561	-4.90131286651E-05	1.32493580622E-05	5.08E-05	2	1	-1	0	-1	5	-6.19E-07
0.06634897910	4.09690700931E-05	1.75778748849E-05	4.46E-05	1	-1	-1	0	0	3	-2.45E-07
1.64289264250	-4.38668294916E-05	1.26505763702E-05	4.57E-05	-3	5	2	0	1	11	-4.76E-07
4.82502670586	-2.12911304788E-05	-4.03768530073E-05	4.56E-05	3	2	-3	0	0	8	-9.53E-07
1.78404454094	-3.73048438182E-05	-6.73471944607E-06	3.79E-05	-1	3	1	0	0	5	1.77E-06
3.62598256600	1.67398216286E-05	3.34178274884E-05	3.74E-05	-1	5	0	0	1	7	-9.95E-07
0.02494718598	-2.75031621538E-05	2.05459387543E-05	3.43E-05	0	0	2	2	0	4	-4.79E-08
3.75868102259	-1.16819519001E-05	3.19053919515E-05	3.40E-05	1	3	-2	0	1	7	-9.87E-07
2.77558740703	2.17374372405E-05	-1.87198193057E-05	2.87E-05	0	3	0	0	0	3	-5.85E-07
0.72614799035	2.20561143139E-05	1.62268218870E-05	2.74E-05	-3	4	3	0	0	10	-3.35E-07
1.99153780609	1.18796352082E-05	1.89816102368E-05	2.24E-05	2	0	-1	0	-2	5	-2.67E-07
2.89983478751	1.78783848204E-05	9.16620621715E-06	2.01E-05	2	1	-3	0	1	7	-4.48E-07
1.87533906868	1.97567154577E-05	-1.31532362272E-06	1.98E-05	0	2	2	2	0	6	-1.60E-07
1.00844344524	-1.29865312683E-06	-1.86874959543E-05	1.87E-05	1	0	1	0	-3	5	-6.11E-07
0.84194476574	-9.90783890811E-06	1.38815086948E-05	1.71E-05	-1	2	-1	0	2	6	4.01E-07
2.90828602715	1.71433080883E-05	1.81030346034E-06	1.72E-05	2	1	-2	0	0	5	-4.13E-07
3.04943549875	-1.39435526316E-05	-8.56716534202E-06	1.64E-05	4	-1	-3	0	-1	9	-5.94E-07
3.56808462848	1.51663983305E-05	5.21648327947E-06	1.60E-05	-2	6	2	0	0	10	-9.13E-07
2.86688390210	-7.95992888686E-06	1.09939834674E-05	1.36E-05	1	2	1	2	0	6	-5.48E-07
2.69233626629	1.18896095970E-05	-4.71817742483E-06	1.28E-05	-1	4	-1	0	2	8	-9.32E-08
4.55962967194	-1.03587659249E-05	6.28266012816E-06	1.21E-05	-1	6	1	0	0	8	-1.09E-06
2.14073577037	1.01491982934E-07	1.20572498841E-05	1.21E-05	4	-2	-2	2	0	10	-3.54E-07
0.99573421889	-9.34872231326E-06	7.14004460212E-06	1.18E-05	0	1	5	7	7	20	1.07E-04
2.78403855131	-5.09208899377E-06	9.51653037782E-06	1.08E-05	0	3	1	0	-1	5	-6.46E-07
0.14960040892	-9.79067809937E-06	-7.35057827463E-07	9.82E-06	2	-2	0	0	-2	6	-4.48E-07
2.11578859531	-5.74048440534E-06	7.82101779007E-06	9.70E-06	4	-2	-4	0	0	10	-2.96E-07
5.68387323698	8.06630538970E-06	-5.59291867334E-06	9.82E-06	2	4	-2	0	0	8	-1.20E-06
0.79250188242	4.78680542875E-06	8.66556650077E-06	9.90E-06	-2	3	2	0	1	8	7.59E-07
1.05788564137	8.12254192125E-06	-4.63256714072E-06	9.35E-06	2	-1	-2	0	-2	7	-1.66E-06
1.14114595160	6.31513010095E-06	-6.47703061026E-06	9.05E-06	3	-2	-1	0	-2	8	-1.27E-07
2.57653958492	-3.01732707991E-06	-7.94253995489E-06	8.50E-06	-3	6	3	0	0	12	-7.35E-07
4.61752778242	-8.49898064235E-06	-1.99961489619E-06	8.73E-06	0	5	-1	0	1	7	-1.00E-06
3.90828224740	3.58161507307E-06	-7.77905574185E-06	8.56E-06	3	1	-2	0	-1	7	-6.19E-07
1.82544587273	2.84705189682E-06	7.87302832242E-06	8.37E-06	0	2	-2	-2	0	6	1.11E-06
0.23244610300	-7.90625473216E-06	-1.70707784901E-06	8.09E-06	3	-3	0	2	-1	9	-7.37E-09
2.99958232250	-7.50116247535E-06	9.75582145208E-07	7.56E-06	3	0	-1	2	0	6	-5.76E-07
0.00845113073	-6.49225604174E-06	2.40814249377E-06	6.92E-06	0	0	1	0	-1	2	-7.37E-08
4.95772521212	2.15761743915E-06	-6.29848595379E-06	6.66E-06	5	0	-5	0	0	10	-8.95E-07
1.79249332447	6.41739840729E-06	-1.32872031490E-06	6.55E-06	-1	3	2	0	-1	7	-6.51E-07
1.08284063444	2.68307835796E-06	-5.48682790003E-06	6.11E-06	2	-1	0	2	0	5	-1.04E-06
3.77558379710	-2.25045074160E-06	-5.57186316158E-06	6.01E-06	1	3	0	0	-1	5	-6.21E-07
2.55963667121	1.81988599822E-06	-4.67859295536E-06	5.02E-06	-3	6	1	0	2	12	-1.24E-06
5.55117471847	7.02302684922E-07	-4.67336998863E-06	4.73E-06	0	6	0	0	0	6	-1.27E-06
3.76713270158	7.43713912880E-08	4.93363984609E-06	4.93E-06	1	3	-1	0	0	5	-5.12E-07
1.85883679620	4.47165311845E-06	8.42122400091E-07	4.55E-06	0	2	1	0	-3	6	7.45E-07
5.81657175093	4.46431125381E-06	9.47288016402E-07	4.56E-06	4	2	-4	0	0	10	-1.13E-06
4.75022625182	-1.99397919827E-06	-3.44830884877E-06	3.98E-06	2	3	-3	0	1	9	-9.79E-07

Table C.7: (continued)

f_l	A_l^c	A_l^s	A_l	k_l^1	k_l^2	k_l^3	k_l^4	k_l^5	$ k_l $	$f_l - k_l\omega$
0.98750650924	3.47508385557E-06	1.51060872270E-06	3.79E-06	1	0	-1	-1	-6	9	1.57E-06

Table C.8: Fourier analysis of the c_8 function in the Earth–Moon case.

f_l	A_l^c	A_l^s	A_l	k_l^1	k_l^2	k_l^3	k_l^4	k_l^5	$ k_l $	$f_l - k_l\omega$
0.00000000000	-7.00705929731E-10	0.00000000000E+00	0.00E+00	0	0	0	0	0	0	0.00E+00
1.85039159884	-4.47493105278E-03	6.92765214672E-03	8.25E-03	0	2	0	0	0	2	-3.96E-07
2.84193667476	-2.69643391730E-04	-8.63422974426E-04	9.05E-04	1	2	-1	0	0	4	-5.42E-07
0.85884652023	-9.10789980883E-04	1.10814616798E-04	9.18E-04	-1	2	1	0	0	4	-2.53E-07
1.77559103310	-2.57643412420E-04	4.36771127059E-04	5.07E-04	-1	3	0	0	1	5	-5.33E-07
0.99154507796	-1.50568191113E-04	-1.25437901608E-04	1.96E-04	1	0	-1	0	0	2	-1.44E-07
2.70923811505	-1.55972094319E-04	-7.58095953300E-05	1.73E-04	-1	4	1	0	0	6	-6.53E-07
3.70078319630	1.04768101402E-04	-4.72555847568E-05	1.15E-04	0	4	0	0	0	4	-7.94E-07
1.92519194707	5.49538098115E-05	-7.83654950169E-05	9.57E-05	1	1	0	0	-1	3	-4.76E-07
3.83348174853	7.40181830184E-05	3.05885138588E-05	8.01E-05	2	2	-2	0	0	6	-6.89E-07
2.6713621096	-2.05637558776E-05	-5.78121531006E-05	6.14E-05	0	3	-1	0	1	5	-5.77E-07
0.78404581899	-5.14255880457E-05	8.44348666926E-06	5.21E-05	-2	3	1	0	1	7	-5.26E-07
1.98309015831	2.90779368434E-05	-5.33905161017E-06	2.96E-05	2	0	-2	0	0	4	-2.85E-07
2.00803725475	-2.05946747599E-05	2.22394081329E-05	3.03E-05	2	0	0	2	0	4	-4.22E-07
1.70079041093	-1.00749220240E-05	1.87692860977E-05	2.13E-05	-2	4	0	0	2	8	-7.27E-07
2.77558740720	1.33684435175E-05	1.55389206885E-05	2.05E-05	0	3	0	0	0	3	-5.85E-07
4.69232828283	-5.34611548544E-06	1.92493676848E-05	2.00E-05	1	4	-1	0	0	6	-9.28E-07
0.13269851410	-1.32181244126E-05	1.24513029616E-05	1.82E-05	2	-2	-2	0	0	6	6.61E-08
2.63443783949	-1.66662661529E-05	-7.34938531063E-06	1.82E-05	-2	5	1	0	1	9	-5.00E-07
3.62598249513	1.30908156659E-05	-6.57544949819E-06	1.46E-05	-1	5	0	0	1	7	-1.07E-07
2.91673711995	3.89096456937E-06	1.44397716162E-05	1.50E-05	2	1	-1	0	-1	5	-5.25E-07
1.71769304977	-2.78386551236E-06	-1.12748925691E-05	1.16E-05	-2	4	2	0	0	8	-4.97E-07
0.91674470879	-8.62088533371E-06	-6.64001979415E-06	1.09E-05	0	1	-1	0	1	3	-8.42E-08
0.92519579258	-9.53021970051E-06	-2.80992555411E-06	9.94E-06	0	1	0	0	0	1	-2.05E-07
1.06634562519	-4.98627536013E-06	-4.50626085908E-06	6.72E-06	2	-1	-1	0	-1	5	-2.47E-08
4.82502678865	-5.81426918931E-06	3.06593645634E-06	6.57E-06	3	2	-3	0	0	8	-8.71E-07
3.75868136201	5.55497614194E-06	2.04872183310E-06	5.92E-06	1	3	-2	0	1	7	-6.47E-07
1.78403932539	-6.77284678504E-07	4.98004778276E-06	5.03E-06	-1	3	1	0	-1	6	1.29E-07
0.93364676144	4.49437002626E-06	-3.77454163873E-07	4.51E-06	0	1	1	0	-1	3	-4.40E-07
4.55962965282	2.02825079055E-06	3.34233656935E-06	3.91E-06	-1	6	1	0	0	8	-1.11E-06
2.97463519857	-1.63097418314E-06	2.89891228594E-06	3.33E-06	3	0	-3	0	0	6	-4.66E-07
0.83389936110	2.92854211526E-06	1.67836070770E-06	3.38E-06	-1	2	-1	-2	0	6	-1.78E-07
1.01649218329	-3.03157552117E-06	-1.59313564777E-07	3.04E-06	1	0	1	2	0	4	-2.72E-07
2.99958233581	-3.79697464557E-07	-2.92389665436E-06	2.95E-06	3	0	-1	2	0	6	-5.62E-07
2.78403872627	2.73452977885E-06	1.47110913250E-06	3.11E-06	0	3	1	0	-1	5	-4.71E-07
3.56808456483	9.67582421661E-07	-2.81529727153E-06	2.98E-06	-2	6	2	0	0	10	-9.77E-07
2.69233584944	-1.03894316241E-06	-2.58938919515E-06	2.79E-06	-1	4	-1	0	2	8	-5.10E-07
2.86688368690	2.21921396158E-06	1.60128041271E-06	2.74E-06	1	2	1	2	0	6	-7.63E-07
4.61752767999	-6.16168623475E-07	2.63227239025E-06	2.70E-06	0	5	-1	0	1	7	-1.10E-06
3.77558343367	-2.35417647549E-06	9.58400131956E-07	2.54E-06	1	3	0	0	-1	5	-9.85E-07
5.68387370958	-1.41945554543E-06	-2.06345151471E-06	2.50E-06	2	4	-2	0	0	8	-7.23E-07
3.76713248719	-2.64001615450E-06	4.19093721789E-08	2.64E-06	1	3	-1	0	0	5	-7.27E-07
0.70924619656	-2.02440652632E-06	3.97840344722E-07	2.06E-06	-3	4	1	0	2	10	2.80E-07
1.90828997021	1.88089807577E-06	-4.17159855282E-07	1.93E-06	1	1	-2	0	1	5	-4.43E-08
2.70078675746	1.30245497592E-06	1.39387601381E-06	1.91E-06	-1	4	0	0	1	6	-8.06E-07
3.90828220017	-1.57394965446E-06	-7.23905934696E-07	1.73E-06	3	1	-2	0	-1	7	-6.66E-07
1.69274590345	-6.69401762197E-07	1.58551005809E-06	1.72E-06	-2	4	0	-2	0	8	-4.10E-07
5.55117478027	-1.69133959045E-06	-2.54779662574E-07	1.71E-06	0	6	0	0	0	6	-1.20E-06
2.55963754255	-1.09234772947E-06	-4.32820478154E-07	1.17E-06	-3	6	1	0	2	12	-3.69E-07
1.64289263646	-3.24000258975E-07	-1.12293779241E-06	1.17E-06	-3	5	2	0	1	11	-4.82E-07
3.55118290180	9.85884242732E-07	-5.34366185100E-07	1.12E-06	-2	6	0	0	2	10	-2.31E-07

Table C.9: Fourier analysis of the c_9 function in the Earth–Moon case.

f_l	A_l^c	A_l^s	A_l	k_l^1	k_l^2	k_l^3	k_l^4	k_l^5	$ k_l $	$f_l - k_l\omega$
0.00000000000	-7.81507984935E-12	0.00000000000E+00	0.00E+00	0	0	0	0	0	0	0.00E+00
0.84637295298	-7.10110645400E-04	-1.43852321929E-04	7.25E-04	-1	2	0	-1	0	4	-2.04E-07
1.00401861552	6.74520153392E-04	2.64281111393E-04	7.24E-04	1	0	0	1	0	2	-2.23E-07

Table C.9: (continued)

f_l	A_l^c	A_l^s	A_l	k_l^1	k_l^2	k_l^3	k_l^4	k_l^5	$ k_l $	$f_l - k_l \omega$
0.01247357981	1.52072890278E-05	4.57563924719E-05	4.82E-05	0	0	1	1	0	2	-3.71E-08
0.14517208261	-2.28213271180E-05	4.23340872668E-05	4.81E-05	2	-2	-1	1	0	6	1.76E-08
0.77157269561	-4.35749424620E-05	-7.10656156646E-06	4.42E-05	-2	3	0	-1	1	7	-3.24E-08
1.99556365117	-3.50563880350E-05	1.92919302229E-05	4.00E-05	2	0	-1	1	0	4	-4.09E-07
1.83791798820	3.11844099441E-05	-2.50445230538E-05	4.00E-05	0	2	-1	-1	0	4	-3.90E-07
0.92921810798	1.69052805474E-05	5.86793238619E-06	1.79E-05	0	1	0	1	1	3	-3.02E-07
1.07881913140	1.61874627893E-05	7.08790846099E-06	1.77E-05	2	-1	0	1	-1	5	-1.35E-07
1.70521949521	6.74060930318E-07	-8.52185039572E-06	8.55E-06	-2	4	1	-1	0	8	-4.35E-07
0.92117316404	8.34743331304E-06	2.02456789414E-06	8.59E-06	0	1	0	-1	-1	3	-4.21E-07
1.86286515009	-2.13459749749E-06	8.27561715696E-06	8.55E-06	0	2	1	1	0	4	-4.62E-07
2.85441018463	-1.87194327768E-06	-2.59963866843E-06	3.20E-06	1	2	0	1	0	4	-6.49E-07
0.07882277963	-2.69253775656E-07	3.10406177567E-06	3.12E-06	1	-1	0	1	0	3	-6.13E-08
2.69676452295	2.18947891228E-06	2.13661510480E-06	3.06E-06	-1	4	0	-1	0	6	-6.28E-07
1.76311759891	2.04343567765E-06	-1.77557307947E-06	2.71E-06	-1	3	-1	-1	1	7	-3.51E-07
0.21997272376	-1.43137028520E-06	2.41684298328E-06	2.81E-06	3	-3	-1	1	-1	9	2.30E-07
2.98710868548	4.67525721214E-07	-2.41533211754E-06	2.46E-06	3	0	-2	1	0	6	-5.96E-07
2.82946302607	-4.33278704283E-08	2.45206426837E-06	2.45E-06	1	2	-2	-1	0	6	-5.73E-07
0.97907143133	1.11927729455E-06	1.80215133906E-06	2.12E-06	1	0	-2	-1	0	4	-1.73E-07
1.92921432439	1.23598338386E-06	-1.59359447623E-06	2.02E-06	1	1	0	1	0	3	-5.11E-07
1.77156872576	-9.43363804323E-07	1.78275831314E-06	2.02E-06	-1	3	0	-1	0	5	-4.28E-07
0.69677182605	-1.82816610115E-06	-2.20897031991E-07	1.84E-06	-3	4	0	-1	2	10	-4.74E-07
0.08727423872	4.67844537917E-07	1.62326619728E-06	1.69E-06	1	-1	1	1	-1	5	1.93E-07
1.16166428714	1.12275064325E-06	6.83711634756E-07	1.31E-06	3	-2	0	3	0	8	-2.33E-07
1.92076307468	-1.07646614833E-06	6.49460927570E-07	1.26E-06	1	1	-1	1	1	5	-5.57E-07
0.87131994111	-1.04810135219E-06	4.97053684222E-07	1.16E-06	-1	2	2	1	0	6	-4.49E-07
0.06232678652	3.77539650035E-07	-1.00417771242E-06	1.07E-06	1	-1	-1	-1	-1	5	-2.50E-08

Table C.10: Fourier analysis of the c_{10} function in the Earth–Moon case.

f_l	A_l^c	A_l^s	A_l	k_l^1	k_l^2	k_l^3	k_l^4	k_l^5	$ k_l $	$f_l - k_l \omega$
0.00000000000	1.00478110242E+00	0.00000000000E+00	0.00E+00	0	0	0	0	0	0	0.00E+00
0.99154504274	-1.05600563324E-01	1.26826887856E-01	1.65E-01	1	0	-1	0	0	2	-1.79E-07
0.85884652974	3.92056944749E-03	3.22406224965E-02	3.25E-02	-1	2	1	0	0	4	-2.44E-07
1.85039157284	-1.54640947885E-02	-9.98457598191E-03	1.84E-02	0	2	0	0	0	2	-4.22E-07
1.98309009374	-2.44632900752E-03	-1.32858584333E-02	1.35E-02	2	0	-2	0	0	4	-3.49E-07
2.84193661727	3.14452363555E-03	-9.83538606697E-04	3.29E-03	1	2	-1	0	0	4	-5.99E-07
0.13269851611	9.94326126838E-04	1.05575915520E-03	1.45E-03	2	-2	-2	0	0	6	6.81E-08
0.78404586978	2.24819793124E-04	1.38050728856E-03	1.40E-03	-2	3	1	0	1	7	-4.75E-07
1.77559111013	-1.08380091276E-03	-6.41116423496E-04	1.26E-03	-1	3	0	0	1	5	-4.56E-07
2.97463513459	9.43812919630E-04	5.30689368441E-04	1.08E-03	3	0	-3	0	0	6	-5.30E-07
0.91674491440	-6.24261950615E-04	8.09005858916E-04	1.02E-03	0	1	-1	0	1	3	1.21E-07
0.92519583006	-2.52365727320E-04	8.55490881876E-04	8.92E-04	0	1	0	0	0	1	-1.67E-07
1.06634556274	5.60052394795E-04	-6.20796001170E-04	8.36E-04	2	-1	-1	0	-1	5	-8.72E-08
0.101649220452	3.27243933606E-05	-6.21509131672E-04	6.22E-04	1	0	1	2	0	4	-2.51E-07
2.70923810041	2.80594189483E-04	-5.77486671282E-04	6.42E-04	-1	4	1	0	0	6	-6.68E-07
1.71769305471	-5.09936384039E-04	1.25898409588E-04	5.25E-04	-2	4	2	0	0	8	-4.92E-07
0.07480035406	-4.46685055851E-04	-1.72411495031E-05	4.47E-04	1	-1	0	0	-1	3	-7.44E-08
3.83348166121	-1.59647649292E-04	3.87066009309E-04	4.19E-04	2	2	-2	0	0	6	-7.77E-07
3.70078314470	1.16909372133E-04	2.58892494094E-04	2.84E-04	0	4	0	0	0	4	-8.45E-07
2.76713632199	2.32835224471E-04	-8.26729682270E-05	2.47E-04	0	3	-1	0	1	5	-4.66E-07
0.93364709838	-1.70908794849E-05	-2.10879227873E-04	2.12E-04	0	1	1	0	-1	3	-1.04E-07
1.92519179279	1.56046688217E-04	1.09349202009E-04	1.91E-04	1	1	0	0	-1	3	-6.31E-07
1.90828958191	-3.69781758748E-05	-1.64101632818E-04	1.68E-04	1	1	-2	0	1	5	-4.33E-07
1.91674094402	-8.06231829629E-05	-1.20612861734E-04	1.45E-04	1	1	-1	0	0	3	-2.75E-07
2.05789024063	1.95622337954E-05	1.34179335883E-04	1.36E-04	3	-1	-2	0	-1	7	-6.31E-07
0.99998863481	3.81238583071E-05	-1.26885379609E-04	1.32E-04	1	0	0	0	-3	4	-6.43E-07
0.15764565869	-1.35081086420E-04	-2.36793842284E-05	1.37E-04	2	-2	0	2	0	6	-2.32E-08
3.96618016962	-7.98172627890E-05	3.04353779191E-05	8.54E-05	4	0	-4	0	0	8	-7.16E-07
2.00803725218	5.64263007310E-05	5.22470282375E-05	7.69E-05	2	0	0	2	0	4	-4.25E-07
1.14919073108	5.98399637598E-05	-5.06839484809E-05	7.84E-05	3	-2	-1	2	0	8	-1.72E-07
2.63443786601	2.90005883636E-05	-6.58697983387E-05	7.20E-05	-2	5	1	0	1	9	-4.74E-07
1.70079080362	-5.43296237967E-05	-2.93979817907E-05	6.18E-05	-2	4	0	0	2	8	-3.34E-07
4.69232818955	-5.98065718269E-05	-1.65633950745E-05	6.21E-05	1	4	-1	0	0	6	-1.02E-06
0.83389949616	2.80756374439E-05	-4.88746291147E-05	5.64E-05	-1	2	-1	-2	0	6	-4.34E-08
0.20749881825	3.16557502830E-05	3.62919933052E-05	4.82E-05	3	-3	-2	0	-1	9	-5.82E-08

Table C.10: (continued)

f_l	A_l^c	A_l^s	A_l	k_l^1	k_l^2	k_l^3	k_l^4	k_l^5	$ k_l $	$f_l - k_l\omega$
0.70924541540	9.50826404179E-06	4.67635139851E-05	4.77E-05	-3	4	1	0	2	10	-5.01E-07
2.91673702561	-4.90130556817E-05	1.32493383251E-05	5.08E-05	2	1	-1	0	-1	5	-6.19E-07
0.06634897917	4.09707078639E-05	1.75786031143E-05	4.46E-05	1	-1	-1	0	0	3	-2.45E-07
1.64289264251	-4.38667909127E-05	1.26505651740E-05	4.57E-05	-3	5	2	0	1	11	-4.76E-07
4.82502670586	-2.12911183457E-05	-4.03768299911E-05	4.56E-05	3	2	-3	0	0	8	-9.53E-07
1.78404454083	-3.73059201514E-05	-6.73488576434E-06	3.79E-05	-1	3	1	0	0	5	1.77E-06
3.62598256600	1.67393689402E-05	3.34169236904E-05	3.74E-05	-1	5	0	0	1	7	-9.95E-07
0.02494718597	-2.75067682058E-05	2.05486334960E-05	3.43E-05	0	0	2	2	0	4	-4.79E-08
3.75868102259	-1.16819421433E-05	3.19053655570E-05	3.40E-05	1	3	-2	0	1	7	-9.87E-07
2.77558740703	2.17350847511E-05	-1.87177947043E-05	2.87E-05	0	3	0	0	0	3	-5.85E-07
0.72614799035	2.20561162308E-05	1.62268233527E-05	2.74E-05	-3	4	3	0	0	10	-3.35E-07
1.99153780609	1.18796276374E-05	1.89815882443E-05	2.24E-05	2	0	-1	0	-2	5	-2.67E-07
2.89983478751	1.78783889064E-05	9.16620844045E-06	2.01E-05	2	1	-3	0	1	7	-4.48E-07
1.87533906869	1.97561819328E-05	-1.31528665719E-06	1.98E-05	0	2	2	2	0	6	-1.60E-07
1.00844344337	-1.29889681669E-06	-1.86876388755E-05	1.87E-05	1	0	1	0	-3	5	-6.13E-07
0.84194476640	-9.90772912443E-06	1.38812279382E-05	1.71E-05	-1	2	-1	0	2	6	4.02E-07
2.90828602715	1.71433233158E-05	1.81030514264E-06	1.72E-05	2	1	-2	0	0	5	-4.13E-07
3.04943549875	-1.39435507301E-05	-8.56716396989E-06	1.64E-05	4	-1	-3	0	-1	9	-5.94E-07
3.56808462848	1.51664222544E-05	5.21649154548E-06	1.60E-05	-2	6	2	0	0	10	-9.13E-07
2.86688390208	-7.96125818194E-06	1.09958228699E-05	1.36E-05	1	2	1	2	0	6	-5.48E-07
2.69233626781	1.18897146035E-05	-4.71808272291E-06	1.28E-05	-1	4	-1	0	2	8	-9.16E-08
4.55962967194	-1.03586583322E-05	6.28259492196E-06	1.21E-05	-1	6	1	0	0	8	-1.09E-06
2.14073577037	1.01499745479E-07	1.20581197346E-05	1.21E-05	4	-2	-2	2	0	10	-3.54E-07
0.99573422023	-9.34875038714E-06	7.13989772175E-06	1.18E-05	0	1	5	7	7	20	1.07E-04
2.78403855112	-5.09205991997E-06	9.51650410498E-06	1.08E-05	0	3	1	0	-1	5	-6.46E-07
0.14960040882	-9.78876920191E-06	-7.34907030514E-07	9.82E-06	2	-2	0	0	-2	6	-4.48E-07
2.11578859529	-5.74048538255E-06	7.82102259516E-06	9.70E-06	4	-2	-4	0	0	10	-2.96E-07
5.68387323698	8.06628895763E-06	-5.59290727994E-06	9.82E-06	2	4	-2	0	0	8	-1.20E-06
0.79250188257	4.78672903389E-06	8.66544698913E-06	9.90E-06	-2	3	2	0	1	8	7.59E-07
1.05788564142	8.12262742049E-06	-4.63261257024E-06	9.35E-06	2	-1	-2	0	-2	7	-1.66E-06
1.14114595156	6.31528312990E-06	-6.47719160553E-06	9.05E-06	3	-2	-1	0	-2	8	-1.27E-07
2.57653958492	-3.01732840540E-06	-7.94254336518E-06	8.50E-06	-3	6	3	0	0	12	-7.35E-07
4.61752778242	-8.49892042178E-06	-1.99960074994E-06	8.73E-06	0	5	-1	0	1	7	-1.00E-06
3.90828224740	3.58161452104E-06	-7.77905453610E-06	8.56E-06	3	1	-2	0	-1	7	-6.19E-07
1.82544587275	2.84705773979E-06	7.87304612325E-06	8.37E-06	0	2	-2	-2	0	6	1.11E-06
0.23244610265	-7.95044335450E-06	-1.71659115598E-06	8.13E-06	3	-3	0	2	-1	9	-7.73E-09
2.99958232249	-7.50223200186E-06	9.75721518453E-07	7.57E-06	3	0	-1	2	0	6	-5.76E-07
0.00845113758	-6.49218601861E-06	2.4077742852E-06	6.92E-06	0	0	1	0	-1	2	-6.69E-08
4.95772521212	2.15761750489E-06	-6.29848615946E-06	6.66E-06	5	0	-5	0	0	10	-8.95E-07
1.79249332454	6.41737937741E-06	-1.32871311994E-06	6.55E-06	-1	3	2	0	-1	7	-6.51E-07
1.08284063382	2.68121792023E-06	-5.48308048585E-06	6.10E-06	2	-1	0	2	0	5	-1.05E-06
3.77558379708	-2.25045438179E-06	-5.57187040690E-06	6.01E-06	1	3	0	0	-1	5	-6.21E-07
2.55963667120	1.81990735549E-06	-4.67864884704E-06	5.02E-06	-3	6	1	0	2	12	-1.24E-06
5.55117471847	7.02305432908E-07	-4.67338830479E-06	4.73E-06	0	6	0	0	0	6	-1.27E-06
3.76713270159	7.43696320049E-08	4.93353401245E-06	4.93E-06	1	3	-1	0	0	5	-5.12E-07
1.85883682855	4.47111046524E-06	8.43025472707E-07	4.55E-06	0	2	1	0	-3	6	7.77E-07
5.81657175093	4.46430963129E-06	9.47287671576E-07	4.56E-06	4	2	-4	0	0	10	-1.13E-06
4.75022625182	-1.99397789639E-06	-3.44830658587E-06	3.98E-06	2	3	-3	0	1	9	-9.79E-07
0.98750650959	3.47513622749E-06	1.51064324783E-06	3.79E-06	1	0	-1	-1	-6	9	1.57E-06

Table C.11: Fourier analysis of the c_{11} function in the Earth-Moon case.

f_l	A_l^c	A_l^s	A_l	k_l^1	k_l^2	k_l^3	k_l^4	k_l^5	$ k_l $	$f_l - k_l\omega$
0.00000000000	-2.31615183927E-11	0.00000000000E+00	0.00E+00	0	0	0	0	0	0	0.00E+00
1.00401861556	-2.62957098385E-04	6.71140420025E-04	7.21E-04	1	0	0	1	0	2	-2.23E-07
0.84637295300	1.20507162114E-04	-5.94869555210E-04	6.07E-04	-1	2	0	-1	0	4	-2.03E-07
0.14517208285	-4.10209114635E-05	-2.21134827821E-05	4.66E-05	2	-2	-1	1	0	6	1.79E-08
1.99556364909	1.75641442393E-05	3.19160691213E-05	3.64E-05	2	0	-1	1	0	4	-4.11E-07
1.83791798781	-2.28796048820E-05	-2.84886387963E-05	3.65E-05	0	2	-1	-1	0	4	-3.90E-07
0.77157269620	5.36161980094E-06	-3.28746162413E-05	3.33E-05	-2	3	0	-1	1	7	-3.18E-08
0.01247358099	2.99514729452E-05	-9.95427267783E-06	3.16E-05	0	0	1	1	0	2	-3.60E-08
2.85441018262	-1.94803015231E-05	1.40275675185E-05	2.40E-05	1	2	0	1	0	4	-6.51E-07
2.69676451902	1.64899961426E-05	-1.68987306465E-05	2.36E-05	-1	4	0	-1	0	6	-6.32E-07
1.07881913200	-7.46570517510E-06	1.70502141866E-05	1.86E-05	2	-1	0	1	-1	5	-1.35E-07
0.92921810674	-5.26934826526E-06	1.51805672385E-05	1.61E-05	0	1	0	1	1	3	-3.03E-07

Table C.11: (continued)

f_l	A_l^c	A_l^s	A_l	k_l^1	k_l^2	k_l^3	k_l^4	k_l^5	$ k_l $	$f_l - k_l\omega$
0.92117316269	-1.91265178494E-06	7.88658670838E-06	8.12E-06	0	1	0	-1	-1	3	-4.22E-07
1.92921443371	3.47773802547E-06	2.70046322288E-06	4.40E-06	1	1	0	1	0	3	-4.02E-07
1.77156875738	-3.58774716302E-06	-1.89779299304E-06	4.06E-06	-1	3	0	-1	0	5	-3.97E-07
2.98710869353	-3.85229440340E-06	-7.45895268232E-07	3.92E-06	3	0	-2	1	0	6	-5.88E-07
2.82946302583	3.84298193601E-06	6.79044660770E-08	3.84E-06	1	2	-2	-1	0	6	-5.74E-07
1.13671714249	-3.47700073510E-06	1.39682147389E-06	3.75E-06	3	-2	-2	1	0	8	-1.44E-07
2.62196399452	1.96684971020E-06	-2.18123296664E-06	2.94E-06	-2	5	0	-1	1	9	-7.28E-07
0.21997272938	-2.56761035662E-06	-1.52077037405E-06	2.98E-06	3	-3	-1	1	-1	9	2.36E-07
1.76311763637	-1.54296606636E-06	-1.77621956297E-06	2.35E-06	-1	3	-1	-1	1	7	-3.13E-07
0.97907147130	1.98997634696E-06	-1.23530939175E-06	2.34E-06	1	0	-2	-1	0	4	-1.33E-07
3.84595522023	1.50401940535E-07	-2.13761072293E-06	2.14E-06	2	2	-1	1	0	6	-8.35E-07
3.68830955463	2.17068151106E-07	2.09284465235E-06	2.10E-06	0	4	-1	-1	0	6	-8.18E-07
2.77960989333	-1.67110181453E-06	1.30369939250E-06	2.12E-06	0	3	0	1	1	5	-5.12E-07
1.16166428056	-7.71993709850E-07	1.26785508055E-06	1.48E-06	3	-2	0	3	0	8	-2.40E-07
0.71367448891	-7.60568053073E-07	-1.07629116865E-06	1.32E-06	-3	4	2	-1	0	10	-2.20E-07
0.69677178696	1.47578344545E-07	-1.22335890241E-06	1.23E-06	-3	4	0	-1	2	10	-5.13E-07

Table C.12: Fourier analysis of the c_{12} function in the Earth–Moon case.

f_l	A_l^c	A_l^s	A_l	k_l^1	k_l^2	k_l^3	k_l^4	k_l^5	$ k_l $	$f_l - k_l\omega$
0.00000000000	-1.61182681516E-03	0.00000000000E+00	0.00E+00	0	0	0	0	0	0	0.00E+00
0.99154502636	3.44840901270E-02	-4.14218970457E-02	5.39E-02	1	0	-1	0	0	2	-1.95E-07
1.85039157031	2.26157606345E-02	1.46015999173E-02	2.69E-02	0	2	0	0	0	2	-4.25E-07
0.85884654110	-9.71198607479E-04	-7.98989552588E-03	8.05E-03	-1	2	1	0	0	4	-2.32E-07
1.98309004859	1.32888312972E-03	7.20825864013E-03	7.33E-03	2	0	-2	0	0	4	-3.94E-07
2.84193659510	-4.37171699192E-03	1.36790743151E-03	4.58E-03	1	2	-1	0	0	4	-6.21E-07
1.77559129766	1.46568606326E-03	8.68466636104E-04	1.70E-03	-1	3	0	0	1	5	-2.69E-07
2.70923811567	-3.69890070497E-04	7.61142109904E-04	8.46E-04	-1	4	1	0	0	6	-6.53E-07
2.97463506062	-6.76377116344E-04	-3.80012279443E-04	7.76E-04	3	0	-3	0	0	6	-6.04E-07
3.70078314150	-2.34898724225E-04	-5.20142694589E-04	5.71E-04	0	4	0	0	0	4	-8.48E-07
3.83348161711	2.24595070666E-04	-5.44856755035E-04	5.89E-04	2	2	-2	0	0	6	-8.21E-07
0.13269847955	-3.52885845179E-04	-3.74564589632E-04	5.15E-04	2	-2	-2	0	0	6	3.15E-08
2.76713625845	-3.05820363210E-04	1.08804453251E-04	3.25E-04	0	3	-1	0	1	5	-5.29E-07
1.92519217681	-2.49617385101E-04	-1.75598010162E-04	3.05E-04	1	1	0	0	-1	3	-2.47E-07
1.06634540593	-2.05889281666E-04	2.28630911956E-04	3.08E-04	2	-1	-1	0	-1	5	-2.44E-07
0.78404633230	-4.74253763794E-05	-2.95406680955E-04	2.99E-04	-2	3	1	0	1	7	-1.27E-08
0.91674453608	1.78149309873E-04	-2.31892689111E-04	2.92E-04	0	1	-1	0	1	3	-2.57E-07
0.92519571383	7.05063889416E-05	-2.39340278611E-04	2.50E-04	0	1	0	0	0	1	-2.84E-07
1.01649223640	-1.12631124775E-05	2.13560466115E-04	2.14E-04	1	0	1	2	0	4	-2.19E-07
1.71769317104	2.17707306264E-04	-5.36374832485E-05	2.24E-04	-2	4	2	0	0	8	-3.76E-07
4.69232816742	1.21126081872E-04	3.35306581369E-05	1.26E-04	1	4	-1	0	0	6	-1.04E-06
2.63443755440	-3.63397424148E-05	8.29868816024E-05	9.06E-05	-2	5	1	0	1	9	-7.85E-07
1.90828952604	1.85511175495E-05	8.22494796765E-05	8.43E-05	1	1	-2	0	1	5	-4.88E-07
1.70079098649	6.61076440900E-05	3.58064044050E-05	7.52E-05	-2	4	0	0	2	8	-1.51E-07
3.96618011230	6.90982422492E-05	-2.63692452805E-05	7.40E-05	4	0	-4	0	0	8	-7.74E-07
3.62598251873	-3.28054425335E-05	-6.55580975669E-05	7.33E-05	-1	5	0	0	1	7	-1.04E-06
1.91673999259	4.20734300411E-05	6.24530913005E-05	7.53E-05	1	1	-1	0	0	3	-1.23E-06
2.05789039058	-1.13270913607E-05	-7.82455248498E-05	7.91E-05	3	-1	-2	0	-1	7	-4.81E-07
2.91673712405	7.16592442237E-05	-1.93514428660E-05	7.42E-05	2	1	-1	0	-1	5	-5.21E-07
4.82502662357	3.11026185220E-05	5.89289825448E-05	6.66E-05	3	2	-3	0	0	8	-1.04E-06
0.93364721094	4.83867994093E-06	5.96091016180E-05	5.98E-05	0	1	1	0	-1	3	9.04E-09
0.99997149800	-9.20610541922E-06	4.35155537612E-05	4.45E-05	1	0	0	0	-8	9	9.07E-08
3.75868122874	1.58025527203E-05	-4.30247393262E-05	4.58E-05	1	3	-2	0	1	7	-7.81E-07
1.14919068318	-2.37061934773E-05	2.00889333355E-05	3.11E-05	3	-2	-1	2	0	8	-2.20E-07
1.78403331861	2.85700581056E-05	3.87375590019E-06	2.88E-05	-1	3	1	0	-3	8	1.27E-06
4.55962968445	2.03910191254E-05	-1.23659340436E-05	2.38E-05	-1	6	1	0	0	8	-1.08E-06
2.77558742868	1.68401493375E-05	-1.45294363420E-05	2.22E-05	0	3	0	0	0	3	-5.64E-07
2.00803722621	1.55691726935E-05	1.44069771002E-05	2.12E-05	2	0	0	2	0	4	-4.51E-07
3.56808471230	-1.95421062432E-05	-6.72838789342E-06	2.07E-05	-2	6	2	0	0	10	-8.29E-07
5.68387317954	-1.62941249837E-05	1.13044850609E-05	1.98E-05	2	4	-2	0	0	8	-1.25E-06
0.06634940452	-1.58269111470E-05	-6.84511671206E-06	1.72E-05	1	-1	-1	0	0	3	1.81E-07
1.64289301363	1.76092844014E-05	-5.05148338491E-06	1.83E-05	-3	5	2	0	1	11	-1.05E-07
4.61752744504	1.67964505037E-05	3.93214874272E-06	1.73E-05	0	5	-1	0	1	7	-1.34E-06
2.86688383099	9.71333752942E-06	-1.34279637276E-05	1.66E-05	1	2	1	2	0	6	-6.19E-07
0.20749921329	-1.16841068197E-05	-1.34432051241E-05	1.78E-05	3	-3	-2	0	-1	9	3.37E-07

Table C.12: (continued)

f_l	A_l^c	A_l^s	A_l	k_l^1	k_l^2	k_l^3	k_l^4	k_l^5	$ k_l $	$f_l - k_l\omega$
2.69233591613	-1.45687185951E-05	5.82008672823E-06	1.57E-05	-1	4	-1	0	2	8	-4.43E-07
2.78403842512	7.03660998470E-06	-1.31633788551E-05	1.49E-05	0	3	1	0	-1	5	-7.72E-07
0.07480052418	-1.44366842420E-05	-5.69729844622E-07	1.44E-05	1	-1	0	0	-1	3	9.57E-08
2.89983448616	-1.20457877967E-05	-6.15264190788E-06	1.35E-05	2	1	-3	0	1	7	-7.50E-07
3.77558338795	4.71156633019E-06	1.15988235765E-05	1.25E-05	1	3	0	0	-1	5	-1.03E-06
3.04943527872	1.05702430341E-05	6.48115744346E-06	1.24E-05	4	-1	-3	0	-1	9	-8.14E-07
0.83389962025	-6.07782756818E-06	1.05597819860E-05	1.22E-05	-1	2	-1	-2	0	6	8.07E-08
1.99153470174	-6.77281436457E-06	-1.01576575278E-05	1.22E-05	2	0	-1	0	-3	6	2.03E-07
3.90828211086	-5.20855905602E-06	1.13530062588E-05	1.25E-05	3	1	-2	0	-1	7	-7.55E-07
5.55117473637	-1.67326538526E-06	1.11305574804E-05	1.13E-05	0	6	0	0	0	6	-1.25E-06
2.90828543420	-1.19423346309E-05	-1.23824780475E-06	1.20E-05	2	1	-2	0	0	5	-1.01E-06
0.02494722184	9.23825799128E-06	-6.90096821455E-06	1.15E-05	0	0	2	2	0	4	-1.20E-08
1.87534012780	-9.33529981331E-06	5.71966542496E-07	9.35E-06	0	2	2	2	0	6	8.99E-07
0.70924608646	-1.73614567151E-06	-8.67425051056E-06	8.85E-06	-3	4	1	0	2	10	1.70E-07
0.72614869845	-7.00467132054E-06	-5.18461264812E-06	8.71E-06	-3	4	3	0	0	10	3.73E-07
2.11578827454	4.66223706292E-06	-6.36772547044E-06	7.89E-06	4	-2	-4	0	0	10	-6.16E-07
2.14073563137	-6.55361040452E-08	-7.20832321322E-06	7.21E-06	4	-2	-2	2	0	10	-4.93E-07
5.81657166638	-6.81363789922E-06	-1.44285609140E-06	6.96E-06	4	2	-4	0	0	10	-1.21E-06
4.95772511383	-2.15111366979E-06	6.28857973713E-06	6.65E-06	5	0	-5	0	0	10	-9.94E-07
1.00843802634	5.51708876680E-07	6.28290267791E-06	6.31E-06	2	-1	-5	-6	6	20	-4.98E-07
2.55963695345	-2.18738574939E-06	5.58927334285E-06	6.00E-06	-3	6	1	0	2	12	-9.58E-07
3.55118190409	-2.74580538672E-06	-4.98283311885E-06	5.69E-06	-2	6	0	0	2	10	-1.23E-06
4.75022618487	2.81604212551E-06	4.86454467880E-06	5.62E-06	2	3	-3	0	1	9	-1.05E-06
1.12424282917	-5.57851515540E-06	3.58318692008E-07	5.59E-06	3	-2	-3	0	0	8	-8.40E-07
2.57654021117	1.72009406935E-06	4.56237607856E-06	4.88E-06	-3	6	3	0	0	12	-1.09E-07
4.48482928661	3.46599725220E-06	-2.29115136039E-06	4.15E-06	-2	7	1	0	1	11	-1.05E-06
0.84194578643	2.44724309838E-06	-3.41566674085E-06	4.20E-06	-1	2	-1	0	2	6	1.42E-06
0.15764553499	3.83757575184E-06	6.70321958345E-07	3.90E-06	2	-2	0	2	0	6	-1.47E-07
1.14114668405	-2.66355101838E-06	2.74538474454E-06	3.83E-06	3	-2	-1	0	-2	8	6.06E-07
1.82544805407	-1.17966643276E-06	-3.40592171695E-06	3.60E-06	0	2	-2	-2	1	7	-2.81E-07
1.69274806659	3.13386555542E-06	1.35417663363E-06	3.41E-06	-2	4	0	-2	0	8	1.75E-06
2.85033272297	2.00574419620E-06	-2.61638051583E-06	3.30E-06	1	2	0	0	-17	20	1.49E-06
4.76712835294	-3.20845053511E-06	-1.02147947735E-06	3.37E-06	2	3	-1	0	-1	7	-1.29E-06

Table C.13: Fourier analysis of the c_{13} function in the Earth-Moon case.

f_l	A_l^c	A_l^s	A_l	k_l^1	k_l^2	k_l^3	k_l^4	k_l^5	$ k_l $	$f_l - k_l\omega$
0.00000000000	1.00747058775E+00	0.00000000000E+00	0.00E+00	0	0	0	0	0	0	0.00E+00
0.99154504274	-1.05478165168E-01	1.26679890046E-01	1.65E-01	1	0	-1	0	0	2	-1.79E-07
0.85884652974	3.80993429061E-03	3.13308217171E-02	3.16E-02	-1	2	1	0	0	4	-2.44E-07
1.85039157290	-2.23925988594E-02	-1.44580571711E-02	2.67E-02	0	2	0	0	0	2	-4.22E-07
1.98309009373	-2.44099202138E-03	-1.32568671417E-02	1.35E-02	2	0	-2	0	0	4	-3.49E-07
2.84193661727	4.00784500153E-03	-1.25356698070E-03	4.20E-03	1	2	-1	0	0	4	-5.99E-07
1.77559111016	-1.52072571288E-03	-8.99576805769E-04	1.77E-03	-1	3	0	0	1	5	-4.56E-07
0.13269851607	1.00813514094E-03	1.07042080296E-03	1.47E-03	2	-2	-2	0	0	6	6.80E-08
0.78404586978	2.16450443392E-04	1.32911476814E-03	1.35E-03	-2	3	1	0	1	7	-4.75E-07
2.97463513492	9.40915417669E-04	5.29062878968E-04	1.08E-03	3	0	-3	0	0	6	-5.29E-07
0.91674491440	-6.17806113466E-04	8.00639593058E-04	1.01E-03	0	1	-1	0	1	3	1.21E-07
0.92519583057	-2.46742165691E-04	8.36420527563E-04	8.72E-04	0	1	0	0	0	1	-1.67E-07
1.06634556272	5.64409841694E-04	-6.25625906950E-04	8.43E-04	2	-1	-1	0	-1	5	-8.72E-08
2.70923810021	3.56383883664E-04	-7.33469843531E-04	8.15E-04	-1	4	1	0	0	6	-6.68E-07
1.01649220445	3.28856746277E-05	-6.24576837020E-04	6.25E-04	1	0	1	2	0	4	-2.51E-07
3.83348166152	-1.90187603625E-04	4.61107637655E-04	4.99E-04	2	2	-2	0	0	6	-7.76E-07
1.71769305465	-4.98664772686E-04	1.23115635916E-04	5.14E-04	-2	4	2	0	0	8	-4.92E-07
3.70078314491	1.64213771978E-04	3.63648317576E-04	3.99E-04	0	4	0	0	0	4	-8.45E-07
0.07480035379	-3.17085347466E-04	-1.22383602540E-05	3.17E-04	1	-1	0	0	-1	3	-7.47E-08
2.76713632170	2.90731863168E-04	-1.03230861425E-04	3.09E-04	0	3	-1	0	1	5	-4.66E-07
1.92519179534	2.34500701460E-04	1.64329407982E-04	2.86E-04	1	1	0	0	-1	3	-6.28E-07
0.93364709839	-1.67222487925E-05	-2.06332065354E-04	2.07E-04	0	1	1	0	-1	3	-1.04E-07
1.90828958191	-3.65555460978E-05	-1.62225971339E-04	1.66E-04	1	1	-2	0	1	5	-4.33E-07
1.91674094867	-8.01815786472E-05	-1.19950599402E-04	1.44E-04	1	1	-1	0	0	3	-2.70E-07
2.05789024100	1.96857060689E-05	1.35028455434E-04	1.36E-04	3	-1	-2	0	-1	7	-6.30E-07
0.99998863787	3.81733249640E-05	-1.27044015135E-04	1.33E-04	1	0	0	0	-3	4	-6.40E-07
0.15764565741	-1.03879215427E-04	-1.82090791269E-05	1.05E-04	2	-2	0	2	0	6	-2.45E-08
3.96618017460	-7.95081768071E-05	3.03145975212E-05	8.51E-05	4	0	-4	0	0	8	-7.11E-07

Table C.13: (continued)

f_l	A_l^c	A_l^s	A_l	k_l^1	k_l^2	k_l^3	k_l^4	k_l^5	$ k_l $	$f_l - k_l\omega$
2.63443786652	3.63484596818E-05	-8.25586702391E-05	9.02E-05	-2	5	1	0	1	9	-4.73E-07
1.70079079873	-7.31153787897E-05	-3.95600602644E-05	8.31E-05	-2	4	0	0	2	8	-3.39E-07
4.69232818958	-7.90615567806E-05	-2.18960615405E-05	8.20E-05	1	4	-1	0	0	6	-1.02E-06
1.14919073097	6.03954529817E-05	-5.11545272352E-05	7.91E-05	3	-2	-1	2	0	8	-1.72E-07
2.91673702380	-6.34652302864E-05	1.71564995702E-05	6.57E-05	2	1	-1	0	-1	5	-6.21E-07
0.20749881852	3.23666822639E-05	3.71071191790E-05	4.92E-05	3	-3	-2	0	-1	9	-5.80E-08
0.83389949974	2.64075105263E-05	-4.59686445526E-05	5.30E-05	-1	2	-1	-2	0	6	-3.98E-08
4.82502670764	-2.43581417458E-05	-4.61944290892E-05	5.22E-05	3	2	-3	0	0	8	-9.52E-07
3.62598256622	2.33096839394E-05	4.65334061013E-05	5.20E-05	-1	5	0	0	1	7	-9.95E-07
0.06634907294	4.24954859712E-05	1.82722890948E-05	4.63E-05	1	-1	-1	0	0	3	-1.51E-07
2.00803726380	3.40951234835E-05	3.15737376179E-05	4.65E-05	2	0	0	2	0	4	-4.13E-07
0.70924541433	9.09784036786E-06	4.47435151148E-05	4.57E-05	-3	4	1	0	2	10	-5.02E-07
1.64289264360	-4.27430042540E-05	1.23261474164E-05	4.45E-05	-3	5	2	0	1	11	-4.75E-07
1.78404508362	-4.22066433719E-05	-7.75889513837E-06	4.29E-05	-1	3	1	0	1	6	-1.26E-06
3.75868102278	-1.37197339613E-05	3.74709032577E-05	3.99E-05	1	3	-2	0	1	7	-9.87E-07
0.02494717440	-2.75551804397E-05	2.05873061605E-05	3.44E-05	0	0	2	2	0	4	-5.95E-08
0.72614799121	2.20724638156E-05	1.62390392410E-05	2.74E-05	-3	4	3	0	0	10	-3.34E-07
1.99153818895	1.18296448291E-05	1.89389120951E-05	2.23E-05	2	0	-1	0	-2	5	1.16E-07
2.89983478781	1.76638865773E-05	9.05627336799E-06	1.99E-05	2	1	-3	0	1	7	-4.48E-07
1.87533922249	1.93750476903E-05	-1.27291838698E-06	1.94E-05	0	2	2	2	0	6	-6.30E-09
3.56808462835	1.79820593854E-05	6.18490696050E-06	1.90E-05	-2	6	2	0	0	10	-9.13E-07
1.00844346032	-1.29759900120E-06	-1.87186284005E-05	1.88E-05	1	0	1	0	-3	5	-5.96E-07
2.90828607752	1.70746099826E-05	1.80742940171E-06	1.72E-05	2	1	-2	0	0	5	-3.63E-07
0.84194475913	-9.72056684474E-06	1.36199668757E-05	1.67E-05	-1	2	-1	0	2	6	3.95E-07
2.86688390665	-9.56653265698E-06	1.32122957784E-05	1.63E-05	1	2	1	2	0	6	-5.44E-07
3.04943549743	-1.40122111743E-05	-8.60915767730E-06	1.64E-05	4	-1	-3	0	-1	9	-5.95E-07
4.55962967205	-1.37019349158E-05	8.31028924353E-06	1.60E-05	-1	6	1	0	0	8	-1.09E-06
2.69233634811	1.44945829610E-05	-5.74207222916E-06	1.56E-05	-1	4	-1	0	2	8	-1.13E-08
2.78403855834	-6.55859248748E-06	1.22558702819E-05	1.39E-05	0	3	1	0	-1	5	-6.38E-07
5.68387323728	1.01265082194E-05	-7.02139089473E-06	1.23E-05	2	4	-2	0	0	8	-1.20E-06
2.14073574692	1.03662073748E-07	1.21357409043E-05	1.21E-05	4	-2	-2	2	0	10	-3.78E-07
0.99573437574	-9.35012140053E-06	7.12183285492E-06	1.18E-05	0	1	5	7	7	20	1.08E-04
4.61752778262	-1.11333769255E-05	-2.61944541468E-06	1.14E-05	0	5	-1	0	1	7	-1.00E-06
2.11578860820	-5.71480986227E-06	7.78448635708E-06	9.66E-06	4	-2	-4	0	0	10	-2.83E-07
3.90828224591	4.30703252883E-06	-9.35468661853E-06	1.03E-05	3	1	-2	0	-1	7	-6.20E-07
1.05788560184	8.14880043052E-06	-4.65012373629E-06	9.38E-06	2	-1	-2	0	-2	7	-1.70E-06
0.79250186217	4.63655989268E-06	8.39153981402E-06	9.59E-06	-2	3	2	0	1	8	7.39E-07
1.14114595054	6.46664288830E-06	-6.63213112926E-06	9.26E-06	3	-2	-1	0	-2	8	-1.28E-07
3.77558379837	-3.20297747852E-06	-7.93079034523E-06	8.55E-06	1	3	0	0	-1	5	-6.20E-07
2.57653958556	-2.97423261573E-06	-7.82907527671E-06	8.37E-06	-3	6	3	0	0	12	-7.35E-07
1.82544656941	2.73067375014E-06	7.65110670247E-06	8.12E-06	0	2	-2	-2	1	7	-1.77E-06
2.77558755928	6.18641051420E-06	-5.33289991022E-06	8.17E-06	0	3	0	0	0	3	-4.33E-07
0.00845128957	-6.46898380520E-06	2.39199557924E-06	6.90E-06	0	0	1	0	-1	2	8.51E-08
0.14960035934	-6.70836623181E-06	-5.01506951358E-07	6.73E-06	2	-2	0	0	-2	6	-4.98E-07
4.95772522938	2.14829595792E-06	-6.26901411429E-06	6.63E-06	5	0	-5	0	0	10	-8.78E-07
5.55117471881	9.56541900065E-07	-6.36508403852E-06	6.44E-06	0	6	0	0	0	6	-1.27E-06
1.08284060643	2.76973629802E-06	-5.66645972832E-06	6.31E-06	2	-1	0	2	0	5	-1.07E-06
1.79249331810	6.19572083854E-06	-1.28296359086E-06	6.33E-06	-1	3	2	0	-1	7	-6.57E-07
2.55963667163	2.24671033961E-06	-5.77579194280E-06	6.20E-06	-3	6	1	0	2	12	-1.24E-06
0.23244609223	-6.07994884203E-06	-1.31223444897E-06	6.22E-06	3	-3	0	2	-1	9	-1.81E-08
5.81657175339	4.97327144386E-06	1.05536107985E-06	5.08E-06	4	2	-4	0	0	10	-1.13E-06
2.99958234593	-4.58402656390E-06	5.95524774225E-07	4.62E-06	3	0	-1	2	0	6	-5.52E-07
4.75022625405	-2.25692996805E-06	-3.90320117994E-06	4.51E-06	2	3	-3	0	1	9	-9.77E-07
1.85883478214	4.53546434180E-06	7.94264847850E-07	4.60E-06	1	1	-5	-6	7	20	6.89E-07
3.55118216797	1.98448584830E-06	3.61073381747E-06	4.12E-06	-2	6	0	0	2	10	-9.65E-07
0.98750654992	3.47559188040E-06	1.51119557971E-06	3.79E-06	1	0	-1	-1	-6	9	1.61E-06

C.3 Solar System bodies, Earth–Moon case

In tables C.14 to C.38 we give the results of the Fourier analysis of the positions of the Solar System bodies in adimensional coordinates for the Earth–Moon case. We do not

give adjustments of the frequencies as linear combinations of basic ones because they have not been used in any model. In order to save space, every row of these tables correspond to two entries, which are separated by a double vertical line.

Table C.14: Fourier analysis of the x coordinate of Mercury in the Earth–Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.0000000000	-6.1832149315E-02	0.0000000000E+00	0.9251957920	-1.0928063833E+02	3.7077795940E+02
0.6894159197	-1.0101290726E+02	1.0561872925E+02	0.9999964332	8.9935750877E+00	3.6020438652E+01
1.9167408602	-1.7659403352E+01	-2.6374791052E+01	0.3788352812	1.4827352448E+01	1.1066052719E+00
0.0663492681	-1.2130305561E+01	-5.2384722707E+00	1.6809609788	-1.3546555613E+00	-1.1910673956E+01
1.7840423142	-6.0399777014E+00	-9.9527047380E-01	2.7755873701	3.2559715888E+00	-2.8228398320E+00
0.3021291413	-4.0529961158E+00	2.7871949477E-01	0.8503958335	-8.9715754203E-01	3.6202546311E+00
1.9915416053	-2.6594614903E+00	-1.1930071724E+00	2.9082859151	2.4378933530E+00	2.5466184359E-01
1.5482624416	-1.8459849434E+00	-1.3803073693E+00	0.0682546172	-1.3079039259E+00	-1.8541948747E+00
2.5398075035	1.5744072132E+00	-3.7576993313E-01	1.3105776731	1.1647957735E+00	1.9269805437E-01
1.3703803484	-8.4810264639E-01	8.7638456290E-01	0.0084515388	-6.8875342548E-01	8.6205571595E-01
0.1694306054	-5.8750481350E-01	7.1671478126E-01	2.6725060380	7.7318659396E-01	5.0788338438E-01
1.3145999983	-6.8437848778E-01	-4.1822057377E-01	0.6934375512	-7.8430975009E-01	-1.5759580254E-01
1.0828409511	-3.0837951101E-01	6.2830633916E-01	3.7671324360	1.3394409203E-02	6.6478330470E-01
1.0578943232	5.4875428685E-01	-2.7806944362E-01	1.8588429739	-5.0908602645E-01	2.1726123296E-01
1.8419405879	-3.0101281640E-01	-4.1199245476E-01	0.6127097840	2.4014940529E-01	-3.3638981541E-01
0.1411499465	-3.9065397711E-01	-4.6639560025E-02	0.2423259998	-1.0867856784E-01	-3.9575150204E-01
2.8503881520	9.7745522135E-02	-3.6104108644E-01	2.7007870619	2.3998757823E-01	-2.2410520331E-01
1.7092425747	-3.2194983989E-01	-4.2013329944E-02	1.3186213308	4.7482994309E-03	2.9491136099E-01
1.0040184187	-2.3181467869E-01	-9.0670065100E-02	3.5313525748	-1.1085727920E-01	2.2361596283E-01
0.7642165631	1.7699816669E-01	-1.7058558257E-01	1.2376818051	1.0914471880E-02	2.3424807841E-01
0.6146155310	-1.4940790104E-01	1.6875391707E-01	1.1609756477	-4.2600924181E-02	-2.2178724899E-01
2.9830867697	1.8985184390E-01	-1.0049730028E-01	3.8998309641	-1.3278011973E-01	1.2944204328E-01
0.8221144576	1.7796462583E-01	1.3913681574E-03	1.0597996720	1.8551267715E-01	1.4879769349E-02
2.2292268814	-1.3129337808E-01	-9.9398441683E-02	1.8503915261	-1.4456090544E-01	-9.3170475835E-02
3.6344338978	9.6906806343E-02	8.7287062011E-02	1.9416881358	1.0184946842E-01	3.6082771194E-02
2.4650068784	1.0605039349E-01	-2.9939541501E-02	1.4734619748	-8.5242069708E-02	-5.8634187132E-02
1.6061604186	-1.4412913609E-02	9.3303018960E-02	0.4800112365	-1.8324279736E-02	-9.2484918266E-02
1.6211586652	-6.5149745816E-02	7.0693725000E-02	2.6428888361	3.7166649527E-03	-9.2857224421E-02
2.3021224401	-7.3155398059E-02	6.3495335775E-02	2.3619253945	-1.0096588177E-02	-9.3571364234E-02
1.6251815556	7.7405335675E-02	-2.6049374845E-02	0.3828565298	3.8689596818E-02	7.1721118194E-02
1.7557614338	5.8691337990E-03	7.9022914704E-02	0.5529065688	7.4476120146E-02	3.3307795060E-02
1.0080405734	-6.3215274509E-02	4.2482705595E-02	4.7586774916	-5.9887443339E-02	-4.7829555358E-02
3.6640510968	-6.6917623289E-02	2.0347063000E-02	2.3061450689	6.2241956510E-02	-2.1153246754E-02
1.6849787899	4.9140122366E-02	-4.2898604679E-02	1.6146116431	-3.2354180335E-02	-5.6296359295E-02
1.1326951054	4.2482400204E-02	-4.6207942620E-02	0.9232903400	1.6212963977E-02	6.0840872071E-02
4.6259789572	-5.7399035784E-02	8.3302542667E-03	1.0747969770	-1.4614189019E-02	-5.6139418011E-02
2.0494393193	-1.4050409243E-02	6.1489461656E-02	3.6923319466	3.2374159898E-03	5.5445349822E-02
3.8419333407	3.3167430567E-02	4.4008839247E-02	1.2936742428	3.1737088199E-02	-4.3884216444E-02
0.7924971878	-2.6334754802E-02	-4.4815390108E-02	2.8334854729	5.4342641919E-02	3.4346588066E-03
3.3986540236	1.6981573791E-02	4.5757401241E-02	0.7755942437	-7.0649932841E-03	4.5755453648E-02
1.7059088377	3.0961204791E-02	3.3277413563E-02	2.0743862883	-1.7969511597E-02	-4.0450408531E-02
0.0946298940	-2.5648462233E-02	3.4051408107E-02	0.9271022792	2.6631219328E-02	-2.3798423447E-02
2.4071089637	1.7351511214E-02	-3.0236426352E-02	0.3190327967	1.6862574051E-02	2.8019655972E-02
0.7492190805	-1.9237687596E-02	-2.7624667721E-02	1.6292019609	-2.3475354539E-02	-1.8692250086E-02
4.5228976253	-1.1624337814E-02	-2.6298706164E-02	0.8470971490	2.6945611061E-02	-1.0084461040E-02
0.9915539268	1.9053523977E-02	-1.9448278101E-02	0.7675516824	-3.4039509959E-03	2.8162048736E-02
2.8419364190	2.5206870621E-02	-7.9584037846E-03	3.2207719214	2.4732330433E-02	-5.7518871402E-03
1.9186467545	9.6610538920E-04	2.5173018699E-02	0.4536357141	-2.4890942532E-02	-2.8202996153E-03
0.0912947399	-2.4211495121E-02	-6.0836513495E-03	2.3101660046	-1.8873866049E-02	-1.5070693253E-02
0.5358019336	-2.4438757916E-02	-2.9573044012E-03	0.3040346934	2.2926795776E-02	7.8998708934E-04
1.4715571515	2.0087951764E-02	1.1173212204E-02	1.1569235755	-2.3408389881E-02	-3.5426799357E-03
0.2357799381	-2.0967869825E-02	1.0798679184E-02	1.8136594746	-1.4109227679E-02	1.6678856703E-02
0.9830935351	2.1572434452E-02	-3.5236310526E-03	0.2981077931	-1.0250945760E-02	1.8989399232E-02
0.3230550018	-3.1083663701E-03	-2.1330281331E-02	2.0663422442	1.8362142215E-02	1.0602200500E-02
0.2273290275	-2.1026180985E-02	2.2218084172E-03	4.3901990829	-2.0434931289E-02	-7.2072607671E-03
1.9955630308	1.7704957167E-02	-9.7663879593E-03			

Table C.15: Fourier analysis of the y coordinate of Mercury in the Earth–Moon case.

f_i	A_i^c	A_i^s	f_i	A_i^c	A_i^s
0.0000000000	-4.2139923940E-04	0.0000000000E+00	0.9251957920	3.7199834763E+02	1.0963985868E+02
0.6894159197	1.0561709847E+02	1.0101132663E+02	0.9999966996	3.6031719882E+01	-8.9141845910E+00
1.9167408450	-2.6427468092E+01	1.7699376255E+01	0.3788352807	1.1065347156E+00	-1.4827127804E+01
1.6809609788	-1.1910651631E+01	1.3546536334E+00	0.0663492681	3.2910658964E+00	-7.6246850975E+00
1.7840423140	-9.9744458937E-01	6.0530925614E+00	2.7755873778	-2.8254522752E+00	-3.2594102621E+00
0.3021291413	-2.7867367115E-01	-4.0522109790E+00	0.8503951632	3.7999474957E+00	9.8987267714E-01
1.9915416053	-1.1927084739E+00	2.6592758477E+00	2.9082859151	2.5507556991E-01	-2.4418617882E+00
1.5482624416	-1.3803000910E+00	1.8459749237E+00	0.0682546648	-1.8546231364E+00	1.3071639494E+00
2.5398075035	-3.7577231238E-01	-1.5744169462E+00	1.3105776731	1.9266556559E-01	-1.1647737287E+00
1.3703803278	8.7654236579E-01	8.4797295843E-01	0.0084515400	8.5474108961E-01	6.7033534456E-01
0.1694306047	-7.1581540928E-01	-5.8675772335E-01	2.6725060400	5.0789643344E-01	-7.7317954320E-01
1.3146000050	-4.1991055410E-01	6.8705434126E-01	0.6934377448	-1.5933116280E-01	7.8705371928E-01
1.0828411474	6.3387286272E-01	3.1232035017E-01	3.7671324360	6.6530370356E-01	-1.3403638884E-02
1.8588433151	2.1589548004E-01	5.0964300266E-01	1.8419405823	-4.2242064961E-01	3.0435966912E-01
0.6127097865	3.632201972E-01	2.4010818475E-01	0.2423260061	3.9574314671E-01	-1.0866271003E-01
2.8503881520	-3.6101460611E-01	-9.7709785468E-02	2.7007870614	-2.2458042173E-01	-2.4082565876E-01
1.7092416559	-4.0611587612E-02	3.2458264733E-01	1.0578943322	-1.4653063037E-01	-2.8926152500E-01
0.1411500580	2.7088147387E-03	2.8721299863E-01	1.3186213286	2.9755790699E-01	-4.7959391462E-03
1.1609756494	2.5216118465E-01	-4.8471140320E-02	1.0040182453	-9.0715049005E-02	2.3288569940E-01
3.5313525460	2.2364335253E-01	1.1080606139E-01	0.7642159294	-1.7151227528E-01	-1.7614494561E-01
1.2376818002	2.3424723533E-01	-1.0923668875E-02	0.6146155286	1.6872524619E-01	1.4933479633E-01
2.9830867698	-1.0050322403E-01	-1.8981133762E-01	3.8998309641	1.2962044044E-01	1.3296304438E-01
0.8221144575	1.3912154788E-03	-1.7795793266E-01	1.0597996728	1.4880611070E-02	-1.8551335868E-01
2.292268461	-9.9361573476E-02	1.3132252137E-01	1.8503914015	-9.2940556044E-02	1.4452750594E-01
3.6344338977	8.7357487652E-02	-9.6984388192E-02	1.9416879809	3.6023627454E-02	-1.0208491081E-01
2.4650075919	-2.9310685379E-02	-1.0615826855E-01	1.4734619763	-5.8634179724E-02	8.5240707853E-02
1.6061604386	-9.3300482233E-02	1.4398294944E-02	0.4800112528	9.2374702874E-02	-1.8284592571E-02
1.6211587177	7.0677238268E-02	6.5165255816E-02	2.6428888361	-9.3017949906E-02	-3.7235983372E-03
2.3021231766	6.3015804384E-02	7.3479383374E-02	2.3619253941	-9.3571324557E-02	1.0096877149E-02
1.6251815875	-2.6136655648E-02	-7.7720339514E-02	0.3828564706	7.1991084402E-02	-3.887789715E-02
1.7557614338	7.9023406989E-02	-5.8691618262E-03	0.5529070806	-3.3521368603E-02	7.4330084749E-02
1.0080406214	4.3040433886E-02	6.3883785511E-02	4.7586774977	-4.7864583917E-02	5.9925019615E-02
3.6640510968	2.0347067322E-02	6.6917627051E-02	2.3061450726	-2.1160354041E-02	-6.2270010356E-02
1.6849788521	-4.2891780752E-02	-4.9180693778E-02	1.6146116429	-5.6300279073E-02	3.2356529015E-02
1.1326950264	-4.6221267692E-02	-4.2427164162E-02	0.9232904918	-6.0982271238E-02	1.6487164726E-02
4.6259789572	8.3345170637E-03	5.7429574628E-02	1.0747969794	-5.6188286879E-02	1.4606232629E-02
0.7755954413	5.6526427932E-02	1.4674268836E-02	3.6923319463	5.5563261225E-02	-3.2171260298E-03
1.2936741581	4.5185970823E-02	3.2629564759E-02	3.8419333407	4.4000777855E-02	-3.3167695580E-02
0.0912953599	1.3236281363E-02	5.3695320286E-02	2.8334854701	3.6829445617E-03	-5.4978294687E-02
2.0494393861	5.1176796448E-02	1.1719749988E-02	3.3986540235	4.5757531365E-02	-1.6981636963E-02
1.7059087216	3.3249975763E-02	-3.0992869086E-02	2.0743856365	-4.0440544827E-02	1.8221887363E-02
0.7924972522	-3.4906206936E-02	2.0507699882E-02	0.0946304714	-3.3908136553E-02	-2.5789389757E-02
0.7675512164	3.7335133868E-02	4.4101370804E-03	0.9271021911	-2.3812068728E-02	-2.6612832635E-02
2.4071089635	-3.0236380437E-02	-1.7351439153E-02	0.3190329217	2.8650103860E-02	-1.62117531643E-02
0.7492190793	-2.7624426131E-02	1.9237767099E-02	1.6292019653	-1.8860577391E-02	2.3684984714E-02
0.8470876420	-1.2290629014E-02	-2.6669340573E-02	4.5228976253	-2.6298729590E-02	1.1624349362E-02
1.4715555937	-1.2327972262E-02	2.3021533558E-02	2.8419364184	-7.9596044205E-03	-2.5209166543E-02
3.2207719214	-5.7519037054E-03	-2.4732379302E-02	1.9186469351	2.5175937469E-02	-9.3111342172E-04
0.4536354500	-2.7678282358E-03	2.4902630283E-02	0.9915549967	-1.7004982725E-02	-1.7025967311E-02
2.3101660038	-1.5088206669E-02	1.8895983219E-02	0.3040346553	7.8275093538E-04	-2.2903423676E-02
0.2981099929	-1.9786152631E-02	-1.1091442891E-02	0.3230549791	-2.2358418839E-02	3.2951853448E-03
0.2357799900	-1.0778386886E-02	-2.0949732331E-02	1.8136594809	1.6677889064E-02	1.4109912461E-02
0.3270762646	1.5121073625E-02	1.7569778711E-02	2.0663422428	1.0606788092E-02	-1.8365465518E-02
0.2273286915	-2.2752599119E-03	-2.0996325924E-02	4.3901990829	-7.2072565022E-03	2.0434929663E-02
1.9955628418	-9.7991417888E-03	-1.7700752025E-02	2.1694241402	1.8600360946E-02	7.9521204409E-04
2.6146080299	3.8185586397E-03	1.9374805800E-02	0.5115338110	-1.4067930235E-02	1.1396981710E-02
3.4565522967	1.7170645021E-02	7.7245102427E-03	0.5358055130	-2.8157440907E-03	1.8215737765E-02
1.6230630470	1.1602897632E-02	-1.4280612653E-02	0.5567174241	-1.7383263776E-02	9.0643122314E-04
1.0861755967	1.7363327499E-02	-3.9484785337E-03	1.1569170112	-1.8350445075E-03	1.7478817547E-02
2.6259866761	-1.2066157015E-02	-1.1998271362E-02	0.8634832600	-7.3763598754E-03	-1.5465346478E-02
3.5596335699	1.0132465154E-02	-1.2094069866E-02	3.9746315484	1.5252971284E-02	2.5934140392E-03
1.9251975466	1.4050565463E-02	-3.4628167037E-03	0.7905915164	-6.7661683805E-03	1.2680348655E-02
0.5317702407	1.1617938751E-02	7.7683226264E-03	4.8913760485	-1.3851240676E-02	1.0871129399E-03
2.0513447501	1.0265138950E-02	1.0045839957E-02	2.1525204495	-6.6880512542E-03	1.2203500437E-02
0.2159504039	-9.7138579561E-04	1.4335456150E-02	3.1609696356	-8.8231918387E-03	9.6493437804E-03

Table C.15: (continued)

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
2.5977058433	6.6940351636E-03	-1.1065960110E-02	1.6344445652	-1.4886103020E-03	1.2585379945E-02
0.0722759855	-1.1585262111E-02	-4.7438237694E-03	0.0748027138	2.3883240495E-03	1.3266691230E-02
1.9317388241	-1.2617735994E-02	2.8373775756E-03	1.9357657371	1.1304601826E-02	4.7183145108E-03
0.3769294943	3.3486215662E-04	1.2253395380E-02	2.0164837989	-2.5403598344E-03	-1.1723155743E-02
5.6175240041	-9.8775878829E-03	-6.0525734944E-03	1.5522843141	-1.2548539737E-02	-9.5029083678E-04
2.1734465820	-1.1510266844E-02	-5.2485864497E-03	1.2338710813	4.7254693658E-03	-1.0381595461E-02

Table C.16: Fourier analysis of the y coordinate of Mercury in the Earth–Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.0000000000	-2.7803236118E+00	0.0000000000E+00	0.0788228302	-2.9527711603E+00	3.3930352582E+01
0.3105814105	-1.7595438940E+01	-3.1169441528E+00	0.3146027030	5.0147928139E+00	1.2212242845E+01
0.0040220919	-1.9422791393E+00	2.7569144763E+00	0.6211620110	1.3851746533E+00	-1.1800326158E+00
0.6251833349	-1.2835462398E+00	-3.9553212854E-01	0.9127222247	7.6524206371E-01	5.3171925448E-01
1.0703678936	-6.6126578396E-01	-6.5548181581E-01	1.3021264872	3.7214960979E-01	-3.1400830057E-01
0.6809636021	2.4144375633E-01	-4.2288693966E-01	1.3061477844	-3.4052093289E-01	-1.0721803432E-01
0.1569573404	1.8357701045E-01	2.9225587969E-01	0.6769423608	1.7036464852E-01	3.2198602608E-01
0.9317427003	4.3833289579E-03	2.7779766462E-01	0.1536244738	-7.6799311782E-02	2.1523935526E-01
0.9357639905	1.7109866616E-01	-1.1286076416E-01	0.7800236418	1.9239920925E-01	-4.1137225828E-02
0.9376693493	-1.9376625797E-01	6.7253077135E-03	0.9915427262	9.4844768241E-02	-1.1828396760E-01
0.3065589342	-1.0440100971E-01	2.2190455646E-02	0.9955677623	-2.7382449418E-02	-9.2070266856E-02
0.9875230510	8.9299835761E-02	4.9510413408E-03	1.1694278630	4.8182237916E-03	-8.9377679917E-02
0.5482651119	-2.6145950068E-02	-8.5618675652E-02	0.5442438061	7.3545344798E-02	2.0233128374E-02
1.5398101236	6.8086192407E-02	2.8590546847E-02	1.9292143911	4.3190763872E-02	-5.5597017196E-02
2.1609728448	5.4156089663E-02	5.0201642691E-02	1.1734492259	-5.7284023123E-02	3.2093895268E-02
1.7715687461	-3.0151371244E-02	5.7546267867E-02	2.1649942901	9.8979857977E-03	-5.3237745639E-02
1.9042672888	-4.8972562911E-02	1.3521218955E-02	1.2423233016	-3.9303051957E-02	-3.1332237657E-02
1.6127071147	5.3459124144E-04	4.9582380546E-02	0.3703829894	-4.8862933733E-02	8.4471248065E-03
2.0619129550	5.0596036713E-02	-4.8515441201E-03	0.0538758883	-3.3082826746E-02	3.7118286976E-02
1.6167284177	3.0436346323E-02	-1.9818805648E-02	1.2463446081	-3.8975014454E-03	3.6866725523E-02
0.4675388433	-3.4391774412E-02	-4.0462592385E-03	0.3663617227	1.4280195138E-02	-3.4200621437E-02
1.5357888989	-2.1515267838E-02	1.4959028819E-02	2.2936715083	1.7812165917E-04	2.6535049503E-02
1.6725087114	9.2774270875E-03	2.4863599747E-02	1.6934345461	-2.4936713429E-02	1.1563060688E-02
0.8588469936	-3.2237874826E-03	-2.7680161640E-02	0.8628686569	-2.2553149609E-02	-7.3506191079E-03
1.8503923040	1.9254920183E-02	1.2563687729E-02	1.8544136843	1.6863638489E-02	-1.0838828909E-02
2.2976928187	1.6425106086E-02	-1.0561913303E-02	1.6684874188	-1.9418621293E-02	-4.0940708707E-03
0.8548244269	1.3265097684E-02	-1.2868075477E-02	0.2896555878	-4.5469216054E-03	1.7632796729E-02
0.2398024460	-7.3987369355E-03	-1.6252711028E-02	0.3894030832	5.7773676599E-03	1.5611216758E-02
0.0748023690	-1.5623863707E-02	2.8653213604E-04	0.0821565786	7.7368308644E-03	1.1242357975E-02
1.1485031086	-1.2619506472E-02	-1.7668783344E-03	2.9207594804	2.3270021335E-03	1.0584480350E-02
0.8379188509	1.0374128215E-02	4.3095641848E-03			

Table C.17: Fourier analysis of the x coordinate of Venus in the Earth–Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.0000000000	-6.2642839565E-02	0.0000000000E+00	0.9251957863	-1.0927968192E+02	3.7071133481E+02
0.8784059694	-1.6727976517E+02	-2.2427016795E+02	1.9167408301	-1.7639352629E+01	-2.6357601900E+01
1.8699510136	2.2915909188E+01	1.2265613550E+00	0.0663492628	-1.2133818206E+01	-5.2407806300E+00
0.9999957119	1.2161215981E+00	-7.8685997480E+00	0.1131390781	1.8152971635E+00	7.5626398399E+00
1.7840423146	-6.0101531838E+00	-1.0056903515E+00	1.7372524954	3.1925701491E+00	-3.0459186625E+00
2.7755873602	3.2440038185E+00	-2.7915580013E+00	0.8503953778	-9.3197829972E-01	3.6754598218E+00
2.7287975433	2.0910353121E-01	3.0914816967E+00	2.9082858705	2.4343303058E+00	2.5545834861E-01
2.8614960545	-1.2042750353E+00	1.2984462091E+00	0.0195594408	1.5401266546E+00	-8.8150358303E-01
0.7568151567	-8.1015926996E-01	4.8107002580E-01	1.9915410064	5.1345276560E-01	6.2354023452E-01
0.8824266457	-1.0431651749E-01	-7.3673057850E-01	1.1256105586	-5.7501556482E-01	4.7445621660E-01
1.0828414489	-3.1061227002E-01	6.2658562762E-01	1.0578942933	5.4861005448E-01	-2.7785938815E-01
3.7671324045	1.0696507497E-02	6.5979649840E-01	1.1296312066	5.5513082454E-01	-1.0296544012E-01
1.8419399583	-3.0280383812E-01	-4.1409771811E-01	0.9532060021	2.6743972473E-01	3.8718278834E-01
3.7203425812	-3.8696818626E-01	-2.8022914052E-01	0.8036053972	-2.7164735317E-01	-3.3532321251E-01
0.9719855974	-3.8872075375E-01	1.4483597884E-01	1.0111045164	-5.9246282969E-02	3.3548805544E-01
1.7092421686	-3.2166587043E-01	-4.1639927983E-02	2.7007868419	2.3941707385E-01	-2.2306999124E-01
1.1215899802	9.1243184864E-02	-2.2779302746E-01	2.6539968089	2.2828106939E-02	2.0975157964E-01
1.6624521441	1.3800536542E-01	-1.4219405751E-01	1.7951506086	1.8078822837E-01	2.6346610316E-03

Table C.17: (continued)

f_i	A_i^c	A_i^s	f_i	A_i^c	A_i^s
3.8998309205	-1.3262054651E-01	1.2907331935E-01	1.8503916999	-1.4436255009E-01	-9.3273343085E-02
1.9447513124	-1.5110445176E-01	-1.3898887134E-02	1.8588425515	1.6320253602E-01	1.2107757846E-02
0.0084508070	1.1148278332E-01	-8.3359861555E-02	3.8530411098	-1.7171764725E-02	-1.3279052345E-01
0.1411500133	-1.0861867193E-01	-6.1748243747E-02	3.6344338869	9.5279898975E-02	8.6885247056E-02
1.8036019180	1.1665388592E-01	-4.2966476521E-02	2.8503872386	-9.3768209690E-02	9.4172791137E-02
1.9416880330	1.0190835997E-01	3.5993549061E-02	1.1046841152	-9.2963788153E-02	-4.5910918547E-02
2.6428888422	4.1355979272E-03	-9.2011417116E-02	3.5876440683	-9.1770903195E-02	1.7513845610E-02
1.8948981805	-7.2452530610E-02	4.8326034407E-02	0.0943598501	7.2468857435E-02	-3.7843421051E-02
1.7483607061	1.2460610386E-02	-7.6268286095E-02	2.9830856299	-7.4612858219E-02	-1.8992415243E-03
4.7586774505	-5.9193675902E-02	-4.7687822034E-02	2.0494404193	-1.4514324089E-02	6.1311121341E-02
2.5960990296	5.1555781552E-02	4.2370744003E-02	4.2370744003E-02	5.2529459696E-02	3.1449144461E-02
2.1171555677	2.6163984638E-04	-6.1102264350E-02	4.6259789316	-5.6696984634E-02	7.8188095125E-03
1.0360514761	2.6658302614E-02	5.2729326646E-02	2.8334852979	5.4455869179E-02	3.5330842221E-03
3.6923320495	3.0223633853E-03	5.5245460440E-02	4.7118876304	5.3334818325E-02	-1.3599596732E-02
0.7755950721	-1.0735498045E-02	4.9586459130E-02	0.7924973102	-2.6106026837E-02	-4.4731133093E-02
2.1211763726	-2.2650778384E-02	4.0343469150E-02	0.0467907180	2.6918202227E-02	3.6276497783E-02
2.0743864952	-1.7893541495E-02	-4.0480955348E-02	2.0026495641	-2.6999372907E-02	-3.1946144654E-02
0.0383387182	1.0970526166E-02	3.9024998782E-02	4.5791891132	2.0095190635E-02	-3.6285117793E-02
2.8035980446	-1.0533241065E-03	-3.7805935068E-02	3.6455420790	-3.0009438161E-02	-1.9980002293E-02
1.8120527642	-2.6412492844E-02	2.3342690808E-02	0.7457075245	3.3117754723E-02	3.8260795426E-03
0.8971853122	-2.6898815481E-02	1.1779612586E-02	0.9915486447	1.9489784667E-02	-2.0468497276E-02
1.9251844877	2.4442573385E-02	1.5246217549E-02	0.7675501857	-3.2057598954E-03	2.8005880698E-02
0.2347303706	-2.4718773416E-02	8.6728688394E-03	2.8419362600	2.5144481438E-02	-7.9571507884E-03
2.7866958968	-1.6154532240E-02	1.8777973629E-02	0.0912963859	2.4246618069E-02	-5.7890290220E-03
0.1879393019	-4.6184521813E-03	-2.3013742984E-02	0.9679649531	-1.4615824724E-02	1.7092999325E-02
3.8419325579	-1.8039481592E-03	-2.3639982246E-02	0.7247809697	-6.8365222503E-03	-2.1402102692E-02
2.9362965158	1.4654757643E-02	-1.4604588447E-02	0.1091186669	1.35644669620E-02	1.4788807294E-02
2.7951465070	-6.3646856964E-03	1.8013196745E-02	1.9635305928	6.4666102450E-03	-1.8430059301E-02
0.1340654895	-1.9645362086E-02	-3.6702801003E-03	0.9447812537	2.2383164223E-03	1.8363471676E-02
2.1131349751	9.5715200129E-03	1.7702408859E-02	1.8784011296	-1.7920694906E-02	5.4919009209E-03
0.7207600212	-1.4502467862E-02	-1.3632300027E-02	1.0747958353	-4.4143806602E-03	1.8169985741E-02
2.6259864890	1.1922503582E-02	-1.1996342500E-02	1.0187756934	-1.3605985223E-02	-8.8351435862E-03
1.6156607908	-9.1416790623E-03	-1.1743860137E-02	3.5596335866	1.1966568337E-02	1.0095510989E-02
1.0080418678	8.4128168887E-03	-1.1967842436E-02	1.0859060071	-2.9918743621E-03	1.3599741117E-02
2.0275967064	-1.3905440237E-02	-3.2164796985E-03	0.1380864528	-1.0439603603E-02	-8.6922197588E-03
4.8913759607	-1.0717832439E-03	-1.3799703027E-02	1.6344410577	-1.2526838400E-02	-1.0748815782E-03
1.9844067848	-1.0879340298E-02	-5.3769083089E-03	1.0040180653	-1.1641668446E-02	-4.5287310833E-03
5.6175239754	6.0380128768E-03	-9.6882898575E-03	1.7412735557	1.1323287620E-02	-3.0543571113E-03
2.6072064234	1.0460088026E-02	3.9342125884E-04	1.1326949964	1.0001082239E-02	-2.7702064182E-03
2.5791963484	1.4949634627E-03	1.0047858230E-02			

Table C.18: Fourier analysis of the y coordinate of Venus in the Earth–Moon case.

f_i	A_i^c	A_i^s	f_i	A_i^c	A_i^s
0.0000000000	6.8113299129E-05	0.0000000000E+00	0.9251957863	3.7193258140E+02	1.0963971764E+02
0.8784059694	-2.2426664007E+02	1.6727713447E+02	1.9167408301	-2.6412608931E+01	1.7676163469E+01
1.8699510136	1.2265587389E+00	-2.2915863127E+01	0.0663492628	3.2938305799E+00	-7.6258421659E+00
0.9999963579	-7.8655705732E+00	-1.2489546238E+00	0.1131390781	-7.5612286125E+00	1.8149602374E+00
1.7840423129	-1.0078177642E+00	6.0232894094E+00	1.7372524954	-3.0459014220E+00	-3.1925521818E+00
2.7755873570	-2.7944517696E+00	-3.2472327638E+00	0.8503953754	3.7413648812E+00	9.4402318624E-01
2.7287975391	3.0914884044E+00	-2.0918645158E-01	2.9082858792	2.5601194446E-01	-2.4383000096E+00
2.8614960545	1.2984456915E+00	1.2042745389E+00	0.0195594410	-8.7999962200E-01	-1.5375083520E+00
0.7568151569	4.8106096806E-01	8.1014980029E-01	1.9915410065	6.2383475960E-01	-5.1363334705E-01
0.8824266460	-7.3964768194E-01	1.0470921629E-01	1.1256105551	4.7634214627E-01	5.7727721049E-01
1.0828414490	6.3270607303E-01	3.1364557274E-01	3.7671324045	6.6031811646E-01	-1.0705056544E-02
1.1296312075	-1.0388637465E-01	-5.6011189567E-01	1.8419405985	-4.1826634325E-01	3.0351918342E-01
0.9719856104	-1.7771106221E-01	-4.7709099926E-01	0.9532066198	3.8833495270E-01	-2.6597277665E-01
3.7203425865	-2.8024382020E-01	3.8696051329E-01	0.8036053973	-3.3522458354E-01	2.7157420433E-01
1.0111045165	3.3546735075E-01	5.9242940322E-02	1.0578942880	-1.4631511409E-01	-2.8885900510E-01
1.7092415589	-4.0484976942E-02	3.2298070115E-01	2.7007868418	-2.2342368206E-01	-2.3977434531E-01
1.1215898504	-2.2782623242E-01	-9.0989939131E-02	2.6539968089	2.0975318872E-01	-2.282825087E-02
1.6624521441	-1.4219253905E-01	-1.3800375381E-01	1.7951506086	2.6341690112E-03	-1.8078602749E-01
3.898309205	1.2925194703E-01	1.3280407851E-01	1.8503917039	-9.3206211143E-02	-2.8885034030E-01
0.0084508757	-9.0484224956E-02	-1.3002996374E-01	1.9447513125	-1.3899189965E-02	1.5110398952E-01
1.8588425516	1.2125636924E-02	-1.6328858754E-01	3.8530411098	-1.3279051638E-01	1.7171764954E-02

Table C.18: (continued)

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
3.6344338869	8.6955990074E-02	-9.5357530023E-02	1.8036015903	-4.3209814300E-02	-1.1656224962E-01
2.8503878236	9.3809102194E-02	9.4114070585E-02	1.9416880330	3.6063623131E-02	-1.0210668334E-01
1.1046841274	4.7253732523E-02	-9.5668526652E-02	2.6428888420	-9.2172454143E-02	-4.1426808232E-03
3.5876440683	1.7513887103E-02	9.1771157540E-02	1.8948981777	4.8322475280E-02	7.2449471170E-02
0.0943598710	-3.7680037101E-02	-7.2260628225E-02	1.7483606994	-7.6268898947E-02	-1.2457033421E-02
2.9830856300	-1.9049941006E-03	7.4653360172E-02	4.7586774465	-4.7718453837E-02	5.9234774492E-02
2.5960990239	4.2368566846E-02	-5.1556947088E-02	1.8739729371	3.1463324039E-02	-5.2552533429E-02
2.1171555640	-6.1129420646E-02	-2.6075106084E-04	4.6259789326	7.8226768079E-03	5.6727644060E-02
1.0360517864	5.2880607616E-02	-2.6601459813E-02	2.8334852974	3.5350979465E-03	-5.4703978905E-02
0.7755950636	5.2505072951E-02	1.1031616151E-02	2.0494406114	5.0993340617E-02	1.2137876310E-02
0.0912963282	1.2828071502E-02	5.3690840638E-02	3.6923320495	5.5309476841E-02	-3.0277014880E-03
4.7118876304	-1.3599607630E-02	-5.3334859826E-02	2.1211762752	4.0405434312E-02	2.2652535941E-02
0.0467903617	-3.6197373162E-02	2.6961636504E-02	0.1380862282	2.8365473169E-02	-3.4128591768E-02
2.0743864963	-4.0549351193E-02	1.7923342486E-02	2.0026495642	-3.1945545119E-02	2.6998826126E-02
0.0383384591	-3.8882112366E-02	1.1016789790E-02	4.5791891132	-3.6285107281E-02	-2.0095185442E-02
0.7924973141	-3.4794036775E-02	2.0303925287E-02	0.8971854138	-1.3429977403E-02	-3.3687300679E-02
2.8035980434	-3.7805574973E-02	1.0535833316E-03	0.7675501484	3.7133492021E-02	4.2394167679E-03
3.6455420790	-1.9980041400E-02	3.0009508839E-02	1.8120527476	2.3345396694E-02	2.6409997154E-02
0.7457075211	3.8237682881E-03	-3.3104106990E-02	1.9251844784	1.5273959266E-02	-2.4487616925E-02
1.9635306910	2.6709719258E-02	9.3864230435E-03	0.2347303440	-8.6743930567E-03	-2.4711661206E-02
2.8419362615	-7.9578099225E-03	-2.5147587163E-02	0.9915490858	-1.8003314108E-02	-1.7422211814E-02
2.7866958971	1.8777917888E-02	1.6154486817E-02	0.7207600660	-1.8335458546E-02	1.9493523822E-02
0.1879393041	2.3036969294E-02	-4.6122352615E-03	3.8419325580	-2.3648200180E-02	1.8037763151E-03
0.1091186862	-1.5485681730E-02	1.4198973687E-02	2.9362965159	-1.4604514435E-02	-1.4654716469E-02
0.1340684695	-4.2435749923E-03	2.0530315344E-02	2.7951465063	1.8013508596E-02	6.3647856316E-03
0.9447813072	1.8364881766E-02	-2.2367543993E-03	2.1131349760	1.7699015883E-02	-9.5726156670E-03
1.8784011071	5.4958429171E-03	1.7919266589E-02	1.0747958560	1.8135003718E-02	4.4066766419E-03
0.9679649516	1.2709787328E-02	1.0888083053E-02	2.6259864886	-1.2023890182E-02	-1.1946978737E-02
0.7247809502	-1.5920469043E-02	5.0984260156E-03	1.0187756896	-8.6544931277E-03	1.3520551610E-02
1.6156607891	-1.1743802303E-02	9.1417347608E-03	3.5596335865	1.0106139812E-02	-1.1979742559E-02
1.0859060133	1.3396435128E-02	2.9921735386E-03	1.0080418791	-1.1871132010E-02	-8.3965642462E-03
2.0275966997	-3.2156394044E-03	1.3905414032E-02	0.1411499507	-1.2039748859E-02	5.4403418059E-03
4.8913759607	-1.3816585188E-02	1.0730943561E-03	1.6344410566	-1.0762397707E-03	1.2604981126E-02
1.9844089677	-5.5292207050E-03	1.0805111383E-02	1.0040181961	-4.5577478384E-03	1.1683552886E-02
5.6175239754	-9.6926227336E-03	-6.0407110547E-03	1.7412735552	-3.0573810425E-03	-1.1334890792E-02
2.6072064232	3.9344215460E-04	-1.0460186993E-02	1.1326949971	-2.7581905990E-03	-9.9742889674E-03
2.5791963475	1.0049870751E-02	-1.4931048423E-03			

Table C.19: Fourier analysis of the z coordinate of Venus in the Earth–Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.0000000000	-1.3748688892E-01	0.0000000000E+00	0.0788228281	-2.9501695186E+00	3.3923948955E+01
0.1256126465	2.1459842766E+01	-1.3350277422E-01	0.1215919634	-8.0753415704E+00	1.4516220733E+01
0.9127222451	7.6424094936E-01	5.3166634552E-01	1.0703679054	-6.6126797809E-01	-6.5593587481E-01
0.0040226946	1.5486307171E-01	-6.7889319757E-01	0.8659324232	-6.6204022595E-01	2.1921660275E-01
0.0320330098	4.9090119755E-01	4.3932815582E-01	1.1171577282	-9.4122409121E-02	6.7691169107E-01
0.8699531046	4.4479829856E-01	8.4141674675E-02	1.1131370301	-1.6312048345E-01	-4.2223853460E-01
0.1536232116	-3.6398497260E-02	3.1392093830E-01	0.7800236919	1.9158533241E-01	-4.0367903117E-02
0.9376693466	-1.9381628243E-01	6.6540356452E-03	0.7332338730	-6.1594080923E-02	1.3240136462E-01
0.9844591695	7.8802693267E-02	9.7935907836E-02	1.9760042481	-1.0364739036E-01	-1.7683835305E-03
0.7372545799	6.7323888879E-02	-4.8916924662E-02	0.2472038581	5.1926907389E-02	6.7067912543E-02
0.9804384380	-7.7090504377E-02	-3.1332692590E-02	1.9292144233	4.3383904238E-02	-5.5876365861E-02
1.9719835002	6.0569900422E-02	-3.2323839598E-02	1.7287996482	-4.5039222655E-03	6.8499555592E-02
1.7715687696	-3.0158255162E-02	5.6947902150E-02	0.2431829498	-5.1289486069E-02	-2.1859110363E-02
2.0619129897	5.0643320997E-02	-4.8139875448E-03	1.8824246068	-1.3898610590E-02	-5.0757295142E-02
1.9042673201	-4.8909627479E-02	1.3451332293E-02	0.0538757120	-3.3128338863E-02	3.7102838285E-02
1.7247789514	-2.1401016708E-02	-4.5373132842E-02	2.1087028014	-2.5153477573E-02	-2.7654263806E-02
1.8574775141	1.3915282710E-02	-3.5353037581E-02	0.1006656292	3.4725114931E-02	2.9879937326E-03
0.0508121489	-2.8269661821E-02	1.9161382954E-02	0.2004130397	2.7640138918E-02	-1.5745396049E-02
0.1068334253	1.8601609402E-02	1.8058792288E-02	2.1046820937	2.3369635054E-02	7.8963422633E-03
0.9595120675	8.6035676696E-04	2.4283033075E-02	1.8614982595	-1.9052173601E-02	1.5674399380E-02
0.1175710013	-2.6557887766E-04	2.2411496311E-02	0.9875225450	-2.0564200500E-02	-1.1326624509E-02
0.8908795254	8.2429131583E-03	-1.1827065619E-02	0.0748044152	-1.5828039717E-02	6.4255896267E-05
0.8379219601	1.2176369824E-02	7.9411249123E-03	0.0427675521	-1.0330605854E-02	8.5456011381E-03
0.9955680137	7.2293246020E-03	1.1148456113E-02	2.9675493252	7.4165587977E-03	-8.5993703533E-03

Table C.19: (continued)

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
1.0235780772	-1.0125468581E-02	1.4917906465E-03	2.7631138475	-3.9956307133E-03	-9.7435892083E-03
0.7052230765	1.0213585557E-02	-2.5751154966E-03	2.9207595036	2.3302678573E-03	1.0624035126E-02
2.7163240260	7.7205070023E-03	2.0029626227E-03	2.7203447149	-5.4322430475E-03	-5.1669267524E-03
2.9635286401	-1.5267976479E-03	7.3400459448E-03	0.9915450956	4.7958670238E-03	-5.7559609517E-03
0.2115218354	-5.9104467720E-03	4.6249547718E-03	1.9012035937	-6.8435883237E-03	1.6772727766E-04
0.6584332676	-2.5764967286E-03	6.1829361961E-03	0.2583112116	5.7583377089E-03	1.5273264561E-03
0.7911321409	-5.1724911677E-03	1.9294602756E-03	1.6967682705	-2.2573502629E-03	4.6659738734E-03
0.9096590174	3.3233726036E-03	3.8374340290E-03	0.8463728342	4.8796713479E-03	9.8276405052E-04
1.0040186149	-4.6250679238E-03	-1.8134759620E-03	0.8548236371	-4.9701531907E-03	1.5784731556E-03
1.6539992176	-1.2370286297E-04	4.6319741502E-03	1.8971833512	4.0053632226E-03	-2.3287057494E-03
0.8628689919	-4.3274248523E-03	9.1532958368E-04	0.9407330896	4.0335178391E-03	-1.1521847241E-03
0.8268135624	3.2817427243E-03	2.8801237427E-03	0.7995833298	-3.1078825279E-03	2.7557111051E-03
1.1451683780	-2.8701788933E-03	-3.0083728570E-03	1.8544134557	1.9904575143E-03	-3.6647436733E-03
0.2284236030	-5.3849845379E-04	4.0545725089E-03	1.6499784563	-1.6928835713E-03	-3.2479413765E-03
1.8183585943	-3.4695173312E-03	5.4707419804E-04	0.9056381872	-3.2709449492E-03	-1.1900929791E-03
2.8739696861	3.1906581719E-03	1.4530074576E-03	0.6624540696	2.7326467216E-03	-2.1554895175E-03
1.0953149748	3.4271756321E-03	4.7892676580E-04	1.0423569785	-3.0369401679E-04	3.1674012318E-03
2.8958124179	1.2802074079E-03	-2.8178531095E-03	1.0508084440	8.5738646223E-04	3.1064690336E-03
3.0534580599	-1.7591084824E-03	2.5725457058E-03	1.0383365335	-1.1045734034E-03	-2.5521273543E-03
1.1919582167	4.7306866682E-04	-2.6320755834E-03	0.7951528504	2.7508517831E-03	4.1630141644E-04
1.1421047993	-1.2414186392E-03	-2.2492011692E-03	0.8036037911	2.3101973593E-03	-5.1960656881E-04
0.7443414527	5.0116093160E-04	2.2872401131E-03	2.8490225830	1.1163489177E-03	2.0371202445E-03
1.1879374631	7.4107977279E-03	2.1671295222E-03	3.1002478914	2.2865939632E-03	-9.9104434328E-05
1.2387492788	-2.2932746034E-04	-9.3357925207E-03	0.9447533371	-2.2336356320E-03	-5.0918205850E-04
1.0467878563	-1.6589324401E-03	-1.6929950907E-03	2.8348507680	-2.2935614753E-04	-2.1970617000E-03
0.0124767147	-5.7074378123E-04	-2.1127840687E-03	0.0895589893	1.6221774024E-03	1.5055101226E-03
0.2792376440	1.2743215838E-03	-1.5701023549E-03	1.6388701248	6.5947529213E-04	1.9292750039E-03
1.7965160339	-3.0398136544E-04	-1.9617416450E-03	0.0360558014	6.2684330446E-04	1.9316253087E-03
1.8463689072	7.5599141871E-04	-1.7887570278E-03	1.0454205826	-2.8331024166E-04	-1.8813429835E-03
2.7880609497	1.7734078280E-03	1.0610794122E-03	0.0707734873	-4.7179553626E-04	-1.9386789543E-03
2.6304152779	-1.8423796497E-03	-7.0607190673E-04	0.8949001832	-1.5150374630E-03	7.4201383175E-04
1.1380840296	1.4325188227E-03	8.9232099064E-04	0.7483623281	4.3870144212E-04	-1.4551651903E-03
1.9790679719	1.4426728675E-03	-5.1869346021E-04	2.8530432419	8.0659636964E-06	-1.5083768123E-03
2.5836254931	1.2687186558E-03	-7.9806803480E-04	1.2347283005	1.3554401901E-03	-6.8711593648E-04
0.0147560520	1.4534604535E-03	3.2398805382E-04	1.8076240155	-4.5116402360E-04	-1.4210016761E-03
2.5876461963	-1.4573668058E-03	8.0175579070E-05	3.0962271683	-1.2854690353E-03	7.8869617505E-04
2.8308301290	8.3612044159E-04	1.1962582531E-03	1.5920807086	-1.4455121518E-03	-4.7711397341E-04
1.8433056846	-9.5413656230E-04	9.7982660270E-04	0.8588465294	-1.6697856242E-04	-1.3703021691E-03
1.9510571338	-1.0389820984E-03	-8.0351843740E-04	0.8847117883	9.3407176456E-05	1.2619615170E-03

Table C.20: Fourier analysis of the x coordinate of Mars in the Earth–Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.0000000000	-6.3777515384E-02	0.0000000000E+00	0.9602263193	5.7280162792E+02	1.2910915039E+02
0.9251957783	-1.0915700675E+02	3.7066105594E+02	0.9999959171	8.1811931736E+01	-3.5653929512E+01
1.9517713631	-3.8201490333E+01	2.9329264265E+01	1.9167408323	-1.7655078643E+01	-2.6306500364E+01
0.9204565886	-1.9834063177E+01	-1.8876646430E+01	0.0313187261	7.4305777386E+00	-1.4532679174E+01
0.0663492843	-1.2140076013E+01	-5.2408345002E+00	1.8190728461	-9.3063678702E-01	9.2137748189E+00
1.9915410280	-1.9674903702E+00	7.1606676322E+00	2.8106178920	-4.5539849352E+00	-4.6423961956E+00
1.7840423209	-5.9816527057E+00	-9.5307216963E-01	2.7755873355	3.1807367060E+00	-2.8048283095E+00
0.8503953821	-8.4923850732E-01	3.7782804376E+00	0.1013798044	-1.2515660296E+00	3.5067749914E+00
2.9433164076	1.4705161298E-01	-3.7137491641E+00	0.0084509203	2.1380644080E+00	1.1447902444E+00
2.9082858910	2.4303392455E+00	2.4948384329E-01	1.9120016466	2.2306719621E+00	-2.5981218550E-01
0.8806868686	5.1276517406E-01	1.8458206805E+00	1.8588423816	7.5213550055E-01	1.2204692723E+00
1.0478108942	-1.0254471730E+00	-5.9397958196E-01	3.8021629298	9.9943528204E-01	-8.1623702556E-02
2.8503875054	-1.0106520889E+00	-1.3177714459E-01	1.0350269492	-9.5414278558E-01	-2.5553075582E-01
0.8901651494	8.5150985636E-01	3.1178162803E-01	0.8854227169	8.9678457833E-01	1.5421245371E-01
1.0437897773	7.6501168072E-01	-3.7945309718E-01	0.9642360020	3.5845619892E-01	7.7269316586E-01
1.0929247468	-3.6413334629E-01	-6.1536117171E-01	0.0710880828	5.2431319404E-02	7.5994711356E-01
1.0828392504	-3.2069320087E-01	6.1599878692E-01	1.0578942662	5.4796751723E-01	-2.7853093640E-01
3.7671323930	1.9293889726E-02	6.5294972524E-01	2.9830860360	-3.3989817113E-01	-4.7194309063E-01
1.0397640786	4.0274635773E-01	-3.4014666376E-01	1.8419399454	-3.0955133912E-01	-4.1334164747E-01
0.1411495005	3.9367867414E-03	4.6727297381E-01	1.7793032368	2.5806322372E-01	-3.4629963275E-01
2.7358176578	-3.2186079703E-01	-3.0431350838E-01	1.7442725941	-2.6250556139E-02	4.1518121117E-01
1.8769724882	-2.9507339302E-01	2.3985095792E-01	1.7092421702	-3.2151157779E-01	-3.8887541769E-02

Table C.20: (continued)

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
2.7007868268	2.3631803371E-01	-2.2394244972E-01	2.7708481807	7.1153258878E-02	2.9473172711E-01
2.0265716515	2.5983128687E-01	-1.8429454007E-01	3.9348614530	2.0866309654E-01	1.8821425721E-01
1.8854231974	-1.2897541905E-01	2.2666123347E-01	1.0040203310	2.1255860190E-01	8.4698404502E-02
1.0228641519	8.4986611981E-02	2.0011281512E-01	3.6694644231	1.2238346275E-01	-1.5320946368E-01
1.9767179668	4.8959510845E-02	-1.7591084269E-01	3.8998309102	-1.3181381700E-01	1.2918914396E-01
0.0616099706	1.3409592100E-01	-1.1059933968E-01	0.1761801265	-6.3769769211E-02	1.5908710846E-01
1.0080402057	-7.4094887674E-02	-1.6344344299E-01	1.8503918034	-1.4421899646E-01	-9.3227849943E-02
2.9035468905	-9.4881517994E-02	1.4504566671E-01	0.8409172168	4.2128258289E-02	-1.5304766652E-01
1.8722321027	-1.4317799391E-01	-6.4729675590E-02	3.8419325958	1.1542767162E-01	-1.0995802958E-01
1.0747964462	-1.4185517809E-01	5.9511366213E-02	2.6779194134	-1.4002583039E-01	2.8192875248E-03
1.1178720260	-1.1452592221E-01	-4.7946995072E-02	3.6344338780	9.5549331048E-02	8.3675640771E-02
4.7937079773	-6.6449721682E-02	9.4496569357E-02	1.9416905046	1.0171110437E-01	3.7326798411E-02
1.1326944881	-8.1906398429E-02	-5.1075451584E-02	0.0350442147	-2.9193939393E-03	9.5705600119E-02
2.0393558128	9.1138009396E-02	-3.3461334424E-02	4.6610094639	1.7506523455E-02	8.5279097612E-02
2.6428888981	2.6841182189E-01	-9.0971296321E-02	2.0844699017	8.6667165137E-02	1.4046975151E-02
0.0434813120	3.5822499971E-02	7.7103699127E-02	2.8854183593	5.3327732611E-02	5.8797176009E-02
3.7273624742	7.5141679458E-02	-9.1088334089E-03	1.8938737784	1.0520140821E-02	-7.3197798139E-02
4.7586774528	-5.9220853371E-02	-4.6314286187E-02	2.0353356524	-1.6655806172E-02	6.7917443599E-02
0.8153643248	6.3227261129E-02	2.0208420819E-02	0.8275274906	-5.7922198305E-02	3.9251268490E-02
1.9557920377	-6.5847430503E-02	-1.8898420147E-02	2.0494394212	-1.3955295942E-02	6.1334670301E-02
1.9251825083	2.9640249337E-02	5.2927117210E-02	0.7755951152	-4.4550954613E-03	5.6922058959E-02
4.6259788840	-5.5503411497E-02	9.0067544803E-03	2.8334850670	5.4623212728E-02	3.0464976109E-03
1.0875824813	5.5410465104E-02	-8.1281332685E-05	3.6923320366	3.4862603211E-03	5.4897262397E-02
0.1108587987	-3.0247359731E-02	-4.3878850088E-02	0.7924972344	-2.6294643885E-02	-4.4328036018E-02
2.8685172274	4.4615194788E-04	-5.2066079760E-02	0.1061063626	-2.0200920566E-02	4.6054991511E-02
3.7623931348	-4.1960358052E-02	-2.0616712997E-02	2.0663411524	1.5898513093E-02	-4.4830814854E-02
1.8817105823	-3.8578066641E-02	2.2427113741E-02	0.9873858853	-4.4383629684E-02	1.1767771300E-02
2.0313124733	-5.8468356896E-04	4.3105154265E-02	2.0743728011	-1.9738953251E-02	-3.9495446415E-02
3.9746310591	4.4578307226E-02	2.4333280166E-03	0.8025414438	4.1429481542E-02	-8.4647160717E-03
3.0181168267	-3.3956321182E-03	4.3294454399E-02	0.8457095415	-2.2972827339E-02	-3.0913325506E-02
0.9936797842	-1.4883995875E-02	-3.8375443939E-02	2.8769656511	-1.4598258605E-02	-3.7531855965E-02
1.9602213345	2.0509711526E-02	-3.3452096116E-02			

Table C.21: Fourier analysis of the y coordinate of Mars in the Earth–Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.0000000000	-1.4252243158E-03	0.0000000000E+00	0.9602263257	1.2906615176E+02	-5.7279344584E+02
0.9251957881	3.7189513922E+02	1.0947193076E+02	0.9999959456	-3.5676953869E+01	-8.1887208230E+01
1.9517714462	2.9300187177E+01	3.8222775352E+01	1.9167409081	-2.6372482282E+01	1.7675497335E+01
0.9204567430	-1.8940128053E+01	1.9839739817E+01	0.0313187954	1.4522961102E+01	7.4419412504E+00
1.8190727672	9.2150457444E+00	9.1786524916E-01	0.0663493329	3.2950326543E+00	-7.6283884664E+00
1.9915410524	7.1657642293E+00	1.9700462688E+00	2.8106179094	-4.6417865589E+00	4.5545746358E+00
1.7840422222	-9.4511308115E-01	5.9967998645E+00	2.7755873754	-2.8079910877E+00	-3.1842404535E+00
2.9433165682	-3.7134520296E+00	-1.5294309256E-01	0.8503955303	3.6045393016E+00	1.0644111405E+00
0.1013798707	3.5010521851E+00	1.2531136472E+00	2.9082860293	2.5319232536E-01	-2.4339655851E+00
0.0084508462	1.1369027223E+00	-2.1591665721E+00	1.9120018318	-2.5498257802E-01	-2.2348693795E+00
0.8806872563	1.8546770014E+00	-5.0470779054E-01	1.8588424154	1.2211333060E+00	-7.5308512253E-01
1.0478108781	-5.9877773217E-01	1.0348237040E+00	2.8503875283	-1.3165027768E-01	1.0113227654E+00
3.8021630191	-8.1125673601E-02	-9.9947110670E-01	0.8901652497	-3.5527769012E-01	9.6919836683E-01
1.0350271448	-2.6129955316E-01	9.4848547443E-01	0.8854252808	1.5347733780E-01	-8.8677892646E-01
0.9642467864	7.8911566772E-01	-3.1353037503E-01	1.0437904936	-3.7573687191E-01	-7.6921562358E-01
0.0710885474	-7.6056961729E-01	4.8458746811E-02	1.0828414217	6.3260608892E-01	3.1304024335E-01
1.0929249842	-6.1615125325E-01	3.6273886539E-01	3.7671324827	6.5353924621E-01	-1.9028850378E-02
2.9830861599	-4.7254573322E-01	3.3969032339E-01	1.0397667346	-3.2808067608E-01	-4.2549382980E-01
0.1411496406	5.1698628928E-01	-1.0565457787E-01	1.8419401685	-4.1335522281E-01	2.9778504089E-01
2.7358175305	-3.0260213084E-01	3.2069740121E-01	1.7793030759	-3.4747195726E-01	-2.5767987986E-01
1.7442723327	4.1335496185E-01	2.4578746570E-02	1.8769712998	2.3966831500E-01	2.9170704588E-01
2.0265716825	-1.8399861003E-01	-2.5833590312E-01	2.7007869972	-2.2218190180E-01	-2.3594230249E-01
1.0578944565	-1.4580851511E-01	-2.8844291015E-01	1.7092418011	-3.9571588218E-02	3.1944832041E-01
2.7708483793	2.9539620639E-01	-7.0362441072E-02	3.9348616815	1.8867896856E-01	-2.0823833882E-01
1.8854221102	-2.2793760972E-01	1.2693343431E-01	1.0040178004	7.8090094291E-02	-2.1293146814E-01
1.0228638726	-2.0599183788E-01	8.7819143957E-02	3.6694643761	-1.5332861682E-01	-1.2223956634E-01
3.8998311641	1.2902420703E-01	1.3233738861E-01	1.0080412632	-1.6493403495E-01	7.3801997452E-02
1.9767184355	-1.7598086277E-01	-4.9307477034E-02	0.0616102203	-1.1016353653E-01	-1.3403638641E-01
1.8503915750	-9.2883028608E-02	1.4429300836E-01	2.9035469231	1.4512113013E-01	9.5255154029E-02

Table C.21: (continued)

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.1761802020	1.5830794360E-01	6.3277420027E-02	0.8409172435	-1.5391635039E-01	-4.2061481491E-02
3.8419326404	-1.1000208867E-01	-1.1550501297E-01	1.0747961204	6.0037684640E-02	1.4095324347E-01
1.8722322918	-6.5378399470E-02	1.4347416340E-01	2.6779192267	3.1778819526E-03	1.4002447141E-01
3.6344338322	8.3656003497E-02	-9.5732391990E-02	1.1178719450	-4.7774359974E-02	1.1475110059E-01
4.7937081424	9.4407158229E-02	6.6576801945E-02	1.9416878753	3.5911685097E-02	-1.0216025529E-01
1.1326944435	-5.0986808452E-02	8.2229514965E-02	0.0350305454	9.4487949904E-02	-6.1378096196E-03
2.0393559806	-3.3461879810E-02	-9.1256942200E-02	0.0562657557	-9.1777621423E-02	1.5815743627E-02
2.6428886850	-9.1154726944E-02	-2.4412936110E-03	2.0844701291	1.4294995669E-02	-8.6611307210E-02
4.6610094580	8.5262507432E-02	-1.7585526938E-02	0.0434817562	7.6722736940E-02	-3.5418417794E-02
2.8854184717	5.8700676881E-02	-5.2939938345E-02	3.7273627347	-8.8171278250E-03	-7.4816216135E-02
4.7586776042	-4.6421731123E-02	5.9212212445E-02	1.8938732761	-7.2932447823E-02	-1.0283092721E-02
2.0353352850	6.8049555038E-02	1.6230105611E-02	1.9557965951	-2.7455620349E-02	6.3707528705E-02
0.8275276574	3.9236845020E-02	5.7888710220E-02	0.8153643035	-2.1124111494E-02	6.7742076761E-02
0.9299350287	-1.1660540714E-02	-5.5441127607E-02	0.8025806923	2.7185781989E-03	-5.6083163453E-02
4.6259789321	9.390753020E-03	5.5538561057E-02	0.0912963012	1.2816129457E-02	5.3627159017E-02
1.8817103369	-2.8001169463E-02	-4.8337033576E-02	3.6923322005	5.4662015994E-02	-3.2427621665E-03
1.9251916759	5.3684478164E-02	-2.5661852343E-02	0.1108576499	4.3602531785E-02	-3.0763117655E-02
1.0875803033	-1.1147732544E-03	-5.5778087947E-02	2.8334861080	4.4456045707E-03	-5.3958129130E-02
2.0494395674	5.0973104471E-02	1.1700266504E-02	2.8685166193	-5.1714111712E-02	-6.0262790598E-04
0.1061190698	-4.2843836327E-02	-2.3804526436E-02	0.7755947083	4.4297457801E-02	1.7387675575E-02
2.0663413956	-4.4670718525E-02	-1.5867878965E-02	3.7623931682	-2.0557755916E-02	4.2088835187E-02
0.9873856258	1.2783090052E-02	4.4410242097E-02	3.9746313455	2.5764241038E-03	-4.4597227894E-02
2.0313110770	4.4079138006E-02	9.2842780863E-04	2.0743865386	-4.0535021017E-02	1.7985166533E-02
3.0181168886	4.3104646740E-02	3.3782913205E-03	0.8456561839	-2.7795701892E-02	3.1532095735E-02
0.9936908742	-3.9550463738E-02	1.2406010600E-02	1.0835601385	3.3519842922E-02	2.1801859916E-02
0.9244774155	-3.9220990570E-02	-6.5861269838E-03	1.0265753931	-2.3167577988E-02	3.2144815290E-02
0.7924971431	-3.4361347990E-02	2.0514452450E-02	2.8769672305	-3.7407910588E-02	1.4405809285E-02
0.7675501362	3.6950826206E-02	3.9091106374E-03	0.9952641257	2.0031737965E-02	-3.1657413657E-02
0.9830943250	-3.5683068482E-02	-1.2525257348E-02	1.9602217677	-3.3115051402E-02	-1.9503274702E-02

Table C.22: Fourier analysis of the z coordinate of Mars in the Earth–Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.0000000000	2.5290046642E+00	0.0000000000E+00	0.0437922793	-5.2432135542E+01	-8.0053870711E+00
0.0788228161	-2.9481164072E+00	3.3915382126E+01	0.0397718570	1.2849571607E+01	-1.3995350564E+01
0.0040226052	-5.7203907177E+00	-5.6707455799E+00	0.0835619639	2.2940690345E+00	-9.3543835831E-01
1.0353373975	1.0742842139E+00	-9.5020010044E-01	0.9477528423	7.5707437453E-01	-1.2525434354E+00
0.1138533544	-1.3854171460E+00	-3.0034205572E-02	1.0703679359	-6.6183257584E-01	-6.5598387592E-01
0.9127223000	7.6362944501E-01	5.3055082022E-01	0.0795414810	-1.7825255824E-01	8.6921112753E-01
0.9517732711	-5.1716891292E-01	2.4516743753E-02	1.0313169880	6.8450717328E-02	5.1316768663E-01
0.1536231882	-2.1010401885E-01	4.1433624487E-01	0.8150541775	-8.2790566060E-02	-2.9507039803E-01
0.9026387283	7.7339727480E-03	-2.6369110145E-01	1.8941838322	1.6296047861E-01	1.4412341796E-01
0.9875224870	-2.2577893987E-02	-2.2397611451E-01	0.9955678273	2.1269780750E-01	-2.3976938092E-02
0.9376692660	-1.9386682317E-01	7.1397833141E-03	0.7800236422	1.8999401021E-01	-4.1811290611E-02
0.1233315759	-1.0409835403E-01	1.3891023302E-01	0.9915453043	-8.8755826261E-02	1.0547212121E-01
1.9642449102	9.1494284913E-02	6.1838704429E-02	1.8065992968	9.6067622729E-02	4.3084202856E-02
0.8190745788	-6.1741914525E-02	7.2458041096E-02	0.8986183904	7.7338488555E-02	5.5492308060E-02
1.8106197020	-1.3308073006E-02	-7.7355787310E-02	2.0268825172	2.2784575715E-03	7.8415480172E-02
1.9392979617	2.5987342670E-02	7.5380829811E-02	1.8901634124	-7.5977333003E-02	1.9843530629E-02
1.9292144057	4.3744947504E-02	-5.6174201390E-02	0.0188450146	-5.1324783081E-02	-5.1887750825E-02
0.9079831167	-6.0333026382E-02	3.2132307263E-02	0.1185928151	-6.5306830394E-02	-1.2737294795E-02
1.0751070501	-2.0256276944E-02	6.3859116844E-02	0.0310081590	7.1001415882E-02	-7.9109538993E-03
0.1193110355	-2.0664483822E-02	-5.8640280107E-02	1.7715687669	-2.9065158070E-02	5.6739378524E-02
0.0740836169	5.4286021417E-02	3.3827952522E-02	0.1886538284	-5.4568185593E-02	-3.3639808530E-03
2.0619130695	5.0699191725E-02	-4.8451933149E-03	0.0538758963	-3.3220349862E-02	3.7086873953E-02
0.8776917484	3.1856269173E-02	-3.9953304951E-02	0.0357461456	-2.2749120640E-02	4.2385277705E-02
1.9042674266	-4.8793294034E-02	1.3472501124E-02	0.8548237783	-3.7759777944E-02	-2.8559125428E-02
0.8628690791	1.6792958803E-02	-3.1116639061E-02	0.9726997862	3.0462228768E-03	3.0108396832E-02
1.8544141527	1.1187580710E-02	2.6633605529E-02	1.9433183899	1.7027633016E-02	-2.2500828741E-02
2.0228621203	-2.3861934784E-02	-1.5048339379E-02	0.8588460174	3.2938594363E-03	2.5114386138E-02
0.0390527787	2.6502996317E-02	5.4612101823E-04	2.8857289665	-2.3559004709E-02	3.5902443059E-03
0.9120036141	2.1306638932E-02	1.1430331703E-02	1.0710865608	-1.5088432784E-02	-1.8896635595E-02
1.1053984493	1.4146706510E-02	-1.6250448466E-02	1.8503913593	-1.7595109215E-02	-1.1263281744E-02
0.8379219885	1.9106085428E-02	5.3909398709E-03	2.7981444159	-1.5043599265E-02	7.3426891206E-03
1.8463688818	1.5917513517E-02	-3.8151810342E-03	0.0748044020	-1.5943572288E-02	7.5913952692E-05

Table C.22: (continued)

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
2.0040146642	1.5577130977E-02	8.5505408547E-04	0.7752845664	-3.7708913796E-03	1.3808227706E-02
1.8193832593	1.1120319436E-02	9.0268056962E-03	0.7402540697	-4.2188443491E-03	-1.3369020610E-02
0.1631011317	1.4532654865E-03	-1.4337803201E-02	0.0707905917	1.0748780883E-02	-6.6148667162E-03
0.9424082627	6.0491071950E-03	1.0741436796E-02	0.1764909199	-7.0860215403E-03	-1.0300622483E-02
1.9790675917	1.0409240703E-02	6.8082875197E-03	0.8729524031	5.5842597543E-03	-1.0108207468E-02
1.9871129280	-6.1251951825E-03	9.7380245463E-03	0.7052235305	1.0680099554E-02	-3.7531324609E-03
0.0209225083	-1.6314330387E-03	1.0848393987E-02	2.9207595137	2.3508893370E-03	1.0673930966E-02
0.2284234562	-7.5353172354E-03	7.7807191090E-03	0.8278381263	-1.4588586064E-04	-1.0620845677E-02

Table C.23: Fourier analysis of the x coordinate of Jupiter in the Earth–Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.0000000000	-6.2620069503E-02	0.0000000000E+00	0.9936910960	-6.7515670842E+02	-1.8950362120E+03
0.9251958044	-1.0912296311E+02	3.7076492692E+02	1.9852362001	1.5485308750E+02	5.6986877606E+01
0.9999971358	1.4014006220E+02	4.1943410592E+01	0.0021459201	2.8401446492E+01	-4.8171751539E+01
0.9873852483	2.4502387544E+01	-4.2019847693E+01	1.8525375875	2.8377663122E+01	-1.4189733321E+01
1.9167409046	-1.7701839661E+01	-2.6318382324E+01	2.8440827024	-5.1087776872E+00	2.1686743306E+01
0.0663492938	-1.2135392548E+01	-5.2365808369E+00	0.1348445930	1.2446445361E+01	-2.7959799147E+00
2.9767812942	-1.1028766582E+01	6.3645888780E+00	1.9915424272	-9.9360881373E+00	6.7329974282E+00
1.7840423211	-6.0294237244E+00	-9.0369472851E-01	2.7755874081	3.1744286625E+00	-2.8759449165E+00
0.0084519408	1.5253675344E+00	3.7671639155E+00	1.0143462214	3.5992930007E+00	-1.8770499177E+00
1.9789300049	1.3774178995E+00	3.7457448657E+00	0.8503954306	-7.0756754152E-01	3.7230640236E+00
3.8356278113	-2.0640595613E+00	-2.7463764647E+00	1.0684916260	1.0054567652E+00	3.2250810182E+00
0.9188909503	-1.1404378728E+00	-2.8784693211E+00	0.8567005037	-2.4605267853E+00	1.8901804907E+00
1.1263896822	-1.1175948269E+00	2.1799544965E+00	2.9082859971	2.4356729266E+00	2.4520206660E-01
1.8588434371	-3.4511200636E-01	2.2832381374E+00	1.0103257668	-1.7271859706E+00	1.0928998336E+00
0.9810799001	1.7381227635E+00	-2.9505980176E-01	2.8503888099	-1.0862855262E+00	-1.2054983563E+00
0.9977548812	4.6790682650E-01	-1.6590836121E+00	2.7692824933	-2.9349224450E-01	1.4855022738E+00
1.0012231471	5.9204430555E-01	1.3527974344E+00	1.7777370679	1.2452765352E+00	-6.8652028755E-01
0.0041596687	1.3348204868E+00	2.2146112628E-01			

Table C.24: Fourier analysis of the y coordinate of Jupiter in the Earth–Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.0000000000	-1.3465271306E-03	0.0000000000E+00	0.9936911266	-1.8952204249E+03	6.7437770536E+02
0.9251958044	3.7198720968E+02	1.0947929099E+02	1.9852362001	5.6986762439E+01	-1.5485279199E+02
0.9999971358	4.1942515314E+01	-1.4013800227E+02	0.0021460339	-4.8121664794E+01	-2.8468013122E+01
0.9873852483	-4.2019242791E+01	-2.4502032257E+01	1.8525375876	-1.4189602468E+01	-2.8377520698E+01
1.9167408993	-2.6371794306E+01	1.7740554964E+01	2.8440827024	2.1686877135E+01	5.1088014001E+00
0.1348445931	-2.7924296370E+00	-1.2430681365E+01	2.9767813053	6.3631191400E+00	1.1029869447E+01
1.9915418579	6.8117029214E+00	9.8938870267E+00	0.0663492932	3.2809390402E+00	-7.6313379131E+00
1.7840423211	-9.0581603049E-01	6.0425664105E+00	2.7755874081	-2.8788021909E+00	-3.1777012196E+00
1.0143462210	-1.8939111139E+00	-3.6315768487E+00	0.0084519050	3.7580156188E+00	-1.5450515603E+00
1.9789304870	3.7520680625E+00	-1.3532313037E+00	0.8503954176	3.6723487699E+00	1.1912991989E+00
3.8356278113	-2.7463818260E+00	2.0640637725E+00	1.0684916259	3.2257304759E+00	-1.0056642941E+00
0.8567005090	-2.1565034327E+00	-2.8080825290E+00	0.9188903607	-2.8709423805E+00	1.1628611527E+00
1.1263896822	2.1798764036E+00	1.1175546609E+00	2.9082859990	2.4565575422E-01	-2.4396500067E+00
1.8588434370	2.2832481774E+00	3.4502032815E-01	1.0103257661	1.0972389648E+00	1.7340006496E+00
0.9810790243	-3.1491401452E-01	-1.7357094305E+00	2.8503888099	-1.2054778738E+00	1.0863287925E+00
0.9977545523	-1.6663862769E+00	-4.6288453266E-01	2.7692824932	1.4855140411E+00	2.9349256073E-01
1.0012231453	1.3527708267E+00	-5.9206926121E-01	1.7777370664	-6.8652697487E-01	-1.2452350016E+00
0.0041602877	-2.3253674131E-01	1.3312107322E+00	1.9104358470	4.0105950399E-01	-1.2339276495E+00
2.0600365741	-4.1466857581E-01	1.0072049652E+00	3.9683263979	-9.4863489963E-01	-1.6429396592E-01
0.1411502135	8.2473239121E-01	4.1953727314E-01	1.9188869675	-4.8807374904E-02	-8.9257774608E-01
2.9830871189	-9.2441186072E-01	-7.3881252408E-02	0.9894540463	6.2241771201E-01	-5.3224993796E-01
0.9949191960	4.8626143970E-01	6.3399382817E-01	1.8462315590	3.0122283734E-01	-7.0519645665E-01
1.0828414527	6.3288606757E-01	3.1334373423E-01	3.7029292079	-7.3822222882E-02	6.6774044885E-01
3.7671325435	6.6040776105E-01	-2.8796365765E-02	2.0101832298	1.7865673891E-01	6.0005426918E-01
0.9924556118	7.2192515745E-02	5.7887337444E-01			

Table C.25: Fourier analysis of the z coordinate of Jupiter in the Earth–Moon case.

f_i	A_i^c	A_i^s	f_i	A_i^c	A_i^s
0.0000000000	3.3033259990E+00	0.0000000000E+00	0.0103273787	1.1904471018E+02	-1.3730139022E+02
0.0063064257	-2.6650151023E+01	3.7093870877E+01	0.0788228305	-2.9606116217E+00	3.3923832668E+01
0.0040215032	-1.3154524207E+01	-1.0830510215E+00	0.9812176678	-5.0133918651E+00	1.0008898249E-01
0.1473182725	2.4441932234E+00	4.0700076354E+00	1.0018724580	7.9196510071E-01	4.8494847072E+00
0.0166331768	-6.8176758418E-01	-4.3376613865E+00	0.9978512860	-3.1427497499E-01	-1.2044610853E+00
0.9852384759	1.2416062287E+00	8.7559621186E-02	0.8485190829	-7.0401028144E-01	7.7905622805E-01
0.0126115182	2.7497430874E-01	1.0674459762E+00	0.9127222098	7.6593618798E-01	5.2950657989E-01
0.8691739153	7.4932436611E-01	5.0537876300E-01	1.0703678911	-6.6242861398E-01	-6.5473881157E-01
1.8607189668	-7.1567805675E-01	2.0816550195E-01	0.1536233434	-3.8154393908E-01	2.6664309783E-01
1.8400641990	-5.0700317989E-02	-3.5713352905E-01	1.9977097953	1.2094040379E-02	-3.7813749150E-01
0.9955670432	2.4704566283E-01	-2.5764565751E-01	0.9875232927	2.0526806762E-01	-3.0117258878E-01
1.9727627269	1.7059900521E-01	-2.1336585462E-01	1.9934175021	-2.3158227252E-01	-1.3643926130E-01
0.0644729443	-1.5380939080E-01	-1.9163678586E-01	0.0145974433	2.6269897116E-01	1.8426324391E-02
0.0851280785	1.5676499680E-01	-1.6675995725E-01	0.8651528394	-2.0072510025E-01	-1.0984935175E-01
0.8525401935	1.6806064264E-01	-1.5482693134E-01	0.7800236656	1.9094843323E-01	-4.3825900780E-02
0.9376692659	-1.9385291683E-01	7.4259456630E-03	1.8440849905	9.6922044473E-03	1.8845229472E-01
0.9915460840	-1.1634310338E-01	1.3731621213E-01	1.8566977073	1.7557404600E-01	-6.9549974523E-02
0.2221186056	9.0526786216E-02	1.6478038317E-01	0.8442267884	5.7718138595E-02	1.6537441892E-01
0.0229373582	-1.3711117008E-01	-8.0963732094E-02			

Table C.26: Fourier analysis of the x coordinate of Saturn in the Earth–Moon case.

f_i	A_i^c	A_i^s	f_i	A_i^c	A_i^s
0.0000000000	-5.6313503058E-02	0.0000000000E+00	0.9974572831	-1.3520672488E+03	-3.4301936115E+03
0.9251957998	-1.0935675751E+02	3.7117220094E+02	1.9890022576	2.8729378248E+02	9.4362025599E+01
0.9999973154	-4.2310526823E+01	2.9288753500E+02	0.0059120332	4.8965229704E+01	-9.0036007080E+01
0.9949195380	-7.7240809593E+01	-6.5848498748E+01	1.8563036620	5.1064929260E+01	-2.7813269482E+01
2.8478488141	-7.9886919667E+00	4.0045513974E+01	1.9167409088	-1.7758972082E+01	-2.6508504930E+01
1.9915398083	-1.6796565765E+01	-1.7248989562E+01	2.9805474139	-1.9800188004E+01	1.2350814709E+01
0.1386106711	2.2616881165E+01	-5.9185483841E+00	0.0663493049	-1.2102815415E+01	-5.2298772571E+00
0.0084513042	-7.0101665316E+00	4.4174222869E+00	1.9864658629	8.2429373679E+00	-1.2610541812E+00
1.0015050703	-1.3012888866E+00	-6.8569182745E+00	1.0105800111	6.7081543836E+00	-3.2202410586E+00
1.0065582270	-6.8104364618E+00	2.3258088998E+00	1.0722575647	2.0565720605E+00	5.8334394147E+00
1.7840422350	-6.2253475070E+00	-9.9075169256E-01	3.8393938498	-3.9590902212E+00	-4.8953195278E+00
0.8529345024	-4.6392546711E+00	3.3036667180E+00	0.9226568028	-2.2863213991E+00	-5.1902744280E+00
0.9986987265	4.7775867033E+00	-2.3244856363E+00	1.8588422851	-4.6173363745E+00	1.3400789219E-02
1.1301557947	-1.9094476400E+00	4.0633856626E+00	2.7755874823	3.3888494732E+00	-2.9649787109E+00
0.9923803115	-4.0669207645E+00	-7.4847663285E-01	0.8503950447	-7.0842004672E-01	3.2525190551E+00
2.8503878708	2.0720872602E+00	-2.4768951272E+00	0.9962265778	3.1069517569E+00	-2.8461137633E-01
1.0025471230	2.7739452196E+00	-1.4039860786E+00	2.7730479905	-4.1930497079E-01	2.7391776218E+00
0.0033742569	2.9619492329E-02	-2.8203632089E+00	1.7815034401	2.2406931394E+00	-1.3259354032E+00

Table C.27: Fourier analysis of the y coordinate of Saturn in the Earth–Moon case.

f_i	A_i^c	A_i^s	f_i	A_i^c	A_i^s
0.0000000000	-1.0386289903E-03	0.0000000000E+00	0.9974572831	-3.4301407310E+03	1.3520450638E+03
0.9251957998	3.7238587940E+02	1.0971292701E+02	1.9890023479	9.4801376023E+01	-2.8719755479E+02
0.9999943567	2.9336302434E+02	2.7961554215E+01	0.0059120331	-9.0018721215E+01	-4.8955716964E+01
0.9949195380	-6.5847353856E+01	7.7239665854E+01	1.8563036620	-2.7813119832E+01	-5.1064654503E+01
2.8478488141	4.0045760988E+01	7.9887427018E+00	1.9167409087	-2.6562888371E+01	1.7795480271E+01
1.9915398083	-1.7248661943E+01	1.6796346088E+01	2.9805474139	1.2350811243E+01	1.9800182259E+01
0.1386106710	-5.9110692494E+00	-2.2588282006E+01	0.0084513060	4.4095754523E+00	6.9921801386E+00
1.9864658629	-1.2610508308E+00	-8.2429219988E+00	0.0663493038	3.2842653740E+00	-7.6117298974E+00
1.0014665009	-4.7097045143E+00	5.0324656920E+00	1.0105800115	-3.2490956948E+00	-6.7683481695E+00
1.0065582315	2.3344457360E+00	6.8374319486E+00	0.8529345013	-3.7585353451E+00	-5.2781457848E+00
1.0722575647	5.8346179064E+00	-2.0569874549E+00	1.7840423036	-9.9996391537E-01	6.2377265663E+00
3.8393939056	-4.8994732851E+00	3.9550628819E+00	0.9226568033	-5.1888583745E+00	2.2856587664E+00
0.9986858670	-3.3526646682E+00	-4.2899862990E+00	1.8588422851	1.3420753258E-02	4.6172196354E+00
1.1301557947	4.0632340876E+00	1.9093764825E+00	0.8503954061	4.2158034504E+00	1.1725587068E+00
2.7755873262	-2.9772269908E+00	-3.3853952455E+00	0.9923803119	-7.4849113455E-01	4.0668448008E+00
2.8503846354	-2.5694918609E+00	-1.9277975371E+00	0.9962163918	-8.0751917221E-01	-3.0587498443E+00
1.0025177238	-2.6556988988E+00	-1.6699271636E+00	2.7730485218	2.7376027203E+00	4.4346878213E-01
0.0033742329	-2.8198891259E+00	-2.8600101149E-02	1.7815030869	-1.3387455428E+00	-2.2327754109E+00

Table C.28: Fourier analysis of the z coordinate of Saturn in the Earth–Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.0000000000	4.5915192915E+00	0.0000000000E+00	0.0065617705	2.2823704113E+02	-2.4255521617E+02
0.0025411482	-1.2458762909E+02	1.0023067767E+02	0.0788228251	-2.9572906797E+00	3.3971431999E+01
0.0040231243	-6.8621473570E+00	2.5585184091E+01	0.9849834198	-9.1741527935E+00	5.4162792249E-01
0.9981068128	1.0932218475E+00	8.9391850891E+00	0.1510839188	4.7758932526E+00	7.2729362446E+00
0.0091012788	8.7097596112E+00	-2.7236599425E+00	0.0050747138	-4.0451267929E+00	1.2437967444E+00
0.9940860723	6.5784901941E-02	-4.3555407680E+00	0.9890038804	4.2722237237E+00	-8.6105203884E-01
0.8522848313	-1.2335633762E+00	1.4770639605E+00	0.8654082420	1.3353659632E+00	9.8030084339E-01
1.8569533342	-1.3260080876E+00	3.2839429065E-01	0.9127222682	7.6999030490E-01	5.3461766645E-01
1.0703679197	-6.5984366801E-01	-6.5380900595E-01	0.8563055160	4.2454219174E-01	-6.7929665208E-01
0.8613877029	-5.7380959472E-01	-5.5914734242E-01	0.9875209711	6.6324657614E-01	2.9543387729E-01
0.9955686251	-4.1524312596E-01	-5.9111378027E-01	1.8438300282	-1.1764878832E-01	-6.5028977860E-01
1.8478505277	2.0741302985E-01	6.2743282037E-01	1.8529327698	6.5748094017E-01	-6.8587949846E-02
2.0014755366	-5.0329822371E-03	-6.9336946299E-01	1.9765284878	2.9719215267E-01	-4.0294549788E-01
1.9896519752	-4.1364128009E-01	-2.6745240746E-01	0.0682385204	-2.9579631159E-01	-3.3875706588E-01
0.0183852240	4.5244504135E-01	7.8813280569E-02	0.0014052246	-4.1033157472E-01	1.3202950363E-01
0.0813623108	2.9919277997E-01	-2.9331477072E-01	0.1536201327	-1.0436879414E-01	-3.9270449677E-01
0.0116392640	3.6358377758E-01	7.7572492315E-02	0.2258843358	1.7744029361E-01	2.9479875874E-01

Table C.29: Fourier analysis of the x coordinate of Uranus in the Earth–Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.0000000000	-5.3174148761E-02	0.0000000000E+00	0.9991063703	-5.9420596800E+03	4.4441447063E+03
1.9906514810	3.2140035606E+01	-6.0777481061E+02	0.9999960602	-5.2606880750E+02	2.8711188357E+01
0.9251957992	-1.1011371199E+02	3.7079392406E+02	0.0075612667	-2.0065502029E+02	-4.7782978276E+01
0.9982161696	6.0581416981E+01	-1.6614763516E+02	1.8579528743	-8.0912829930E+01	-8.4553459312E+01
2.8494979704	8.1987406360E+01	-5.6385172064E+00	0.1402598665	-2.3416800816E+01	-4.0811217003E+01
2.9821965909	3.4436518753E+01	3.1938593969E+01	1.9915414546	2.6209194950E+01	-3.4349366117E+01
1.9167409048	-1.7432897177E+01	-2.6651925887E+01	1.0089308525	2.7130210939E+00	1.4726196261E+01
0.0084528235	-9.7171379913E+00	-1.1020319018E+01	1.9897614729	7.2672633371E+00	1.2558938398E+01
0.0663493244	-1.2098805931E+01	-5.2667309530E+00	3.8410430551	-7.4231068399E+00	1.0270219157E+01
0.9243058272	-8.8519593688E+00	7.2052059942E+00	1.0739065534	1.0223783642E+01	-7.1127242526E+00
0.8512852328	-3.9854267419E+00	-1.0748099206E+01	1.1318049615	8.8994792978E+00	1.5623860810E+00
1.8588436895	-1.2565907880E+00	-8.2081252491E+00	0.9973383342	-3.1014279979E-01	6.9341212400E+00
1.7840422148	-6.0955540681E+00	-1.3595892874E+00	2.7746975553	5.5477582364E+00	-5.9884897034E-01
2.8503869513	5.0594528028E+00	2.8583548772E+00	1.7831525243	-3.7640757723E+00	-3.6440938599E+00
0.0066705656	4.6169460017E+00	-1.6954471836E+00	1.9158508596	5.1982960629E-02	-4.7803400110E+00
1.0049113661	-3.0190485701E+00	-3.3648949740E+00	1.0031266424	-4.4557034089E+00	4.6560512616E-01
2.7755874371	3.6008034628E+00	-2.6078244947E+00	2.0654521734	-3.8406002172E-01	3.9940098272E+00
0.8503949613	-1.5715811535E+00	3.1907365917E+00	3.9737416918	-3.5220320658E+00	4.5420708832E-01
2.9830867983	7.2033579599E-01	3.2495728946E+00	1.9243021249	-1.1492347034E+00	-3.0890579874E+00
0.1411502904	1.1927524935E-01	-3.4078216705E+00	1.8570615044	2.7299317923E+00	5.8306218547E-01
0.9839838351	1.2234205710E+00	-2.4625776900E+00	2.9082860740	2.4463843133E+00	3.0600223930E-01

Table C.30: Fourier analysis of the y coordinate of Uranus in the Earth–Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.0000000000	1.0781024824E-02	0.0000000000E+00	0.9991063703	4.4440756449E+03	5.9419673329E+03
1.9906514810	-6.0777367014E+02	-3.2139973612E+01	0.9999960602	2.8710429783E+01	5.2606062426E+02
0.9251957992	3.7200582798E+02	1.1048569180E+02	0.0075612367	-4.7673167653E+01	2.0062924934E+02
0.9982161696	-1.6614505111E+02	-6.0580477004E+01	1.8579528541	-8.4522898947E+01	8.0937228327E+01
2.8494979728	-5.6353312617E+00	-8.1987943175E+01	0.1402598672	-4.0760009269E+01	2.3386873242E+01
2.9821965909	3.1938585880E+01	-3.4436508432E+01	1.9915414546	-3.4349006912E+01	-2.6209334135E+01
1.9167409049	-2.6707250537E+01	1.7468414320E+01	1.0089308525	1.4858324358E+01	-2.7372956245E+00
0.0084505745	-1.0652904448E+01	1.0091639319E+01	1.9897614729	1.2558914870E+01	-7.2672494981E+00
3.8410430551	1.0270240191E+01	7.4231219591E+00	0.8512852323	1.2226849299E+01	-4.5337073263E+00
0.9243058273	7.2033095520E+00	8.8497094966E+00	1.0739072178	-6.9931581732E+00	-1.0288869389E+01
1.1318049982	1.5677216808E+00	-8.8985012629E+00	1.8588436892	-8.2080685682E+00	1.2565199914E+00
0.0663493237	3.3451708637E+00	-7.5916034385E+00	0.9973383341	6.9340122044E+00	3.1012608920E-01
1.7840422872	-1.3693542423E+00	6.1074553159E+00	2.7746975556	-5.9882431340E-01	-5.5478120243E+00
2.8503892310	3.0568553688E+00	-4.9681935371E+00	1.7831525244	-3.6440692304E+00	3.7640304224E+00
0.0066705629	-1.6953215371E+00	-4.6160155161E+00	1.9158508596	-4.7803024341E+00	-5.1984735726E-02
1.0049106594	-3.3433340677E+00	3.0702170471E+00	1.0031263519	4.8847687498E-01	4.4730571475E+00
2.7755872992	-2.6192927669E+00	-3.5990804680E+00	0.8503956664	4.2840390935E+00	2.2404430157E-01

Table C.30: (continued)

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
2.0654521734	3.9940346026E+00	3.8406191621E-01	3.9737416918	4.5420698927E-01	3.5220323477E+00
2.9830867983	3.2495662235E+00	-7.2029487965E-01	1.9243021247	-3.0892711130E+00	1.1493251519E+00
0.1411503034	-3.3525608058E+00	-2.2137502334E-01	0.9839838793	2.5332763714E+00	1.2609164037E+00
1.8570615052	5.8308485572E-01	-2.7299102580E+00	2.9082860735	3.0649801547E-01	-2.4503130729E+00

Table C.31: Fourier analysis of the z coordinate of Uranus in the Earth–Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.0000000000	-7.1298225818E+00	0.0000000000E+00	0.0049122179	3.5355617722E+02	5.6941591499E+02
0.0008922515	-9.0731380939E+01	-4.4548503757E+01	0.0040228146	4.3954190343E+01	2.0176729384E+01
0.0788227982	-2.8963894497E+00	3.3960826181E+01	0.9964574459	-1.7938916177E+01	-2.5793880368E+00
0.1527333983	1.1659871980E+01	-1.3066475627E+01	0.9866330049	5.7630795004E+00	1.7573778825E+01
0.0058015152	1.3493918997E-01	-1.6229952074E+01	0.8539341119	3.5200656448E+00	1.6149510916E+00
0.8637585329	-2.5883367299E+00	2.1008933282E+00	0.9924373476	2.5122536748E+00	-1.1266277524E+00
0.9906529811	6.6058503395E-01	-2.6747808336E+00	1.8553037471	4.4196501849E-02	-2.7488252908E+00
0.0017814658	1.2902439827E+00	2.0804766331E+00	2.0031249124	-1.3445573477E+00	3.7374653185E-01
0.9955679708	-1.1842790201E+00	5.5888027396E-01	1.8454793219	-1.2021347286E+00	5.7029514791E-01
0.9875223460	-3.5375918131E-01	1.2854439272E+00	0.1536225387	1.1904503353E+00	-4.0951814863E-02
1.9880025908	7.3672370447E-01	-6.6331559158E-01	1.9781782027	-9.3563156994E-01	-3.7404996310E-01
1.0703680389	-6.5397357793E-01	-6.6090587793E-01	0.9127224147	7.6053781411E-01	5.4439253225E-01
0.0200344965	-8.8331266761E-02	-9.2025246180E-01	0.0698877248	-4.8734671813E-01	7.5029697529E-01
0.0797127453	4.1005838833E-01	7.2756934511E-01	0.2275338577	4.7768708758E-01	-4.9298068135E-01
0.8388118403	-6.4543857800E-01	1.9148483918E-02	0.0066932619	-3.7034678084E-01	4.2121315785E-01
0.8579540005	-2.7932828285E-01	-4.2240668332E-01	0.8597386708	1.6655313573E-01	-4.7806954793E-01
0.9857436297	-3.4616716648E-01	-2.8406804037E-01	0.9973466594	3.3489749404E-01	2.8359236748E-01
1.8494991800	4.1499471257E-01	4.5833193221E-02	0.1518441252	-7.0185899439E-02	4.1809758082E-01
1.8512838825	2.1403837178E-01	3.5869636147E-01	0.9915453277	2.5155698665E-01	-2.9632179893E-01
1.0115797159	-3.1500515630E-01	-2.1665607843E-01	0.0779332712	-2.2690746010E-01	2.6849611635E-01
2.8468489587	2.2762618018E-01	1.9718514242E-01	0.8548231450	1.4994287436E-01	2.3523151918E-01
1.1442785952	3.9365862030E-02	2.6947447332E-01			

Table C.32: Fourier analysis of the x coordinate of Neptune in the Earth–Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.0000000000	-6.1007425273E-02	0.0000000000E+00	0.9995430555	-7.9150670631E+03	8.5363223679E+03
1.9910882886	-1.1854102513E+02	-9.4750312082E+02	0.9251957659	-1.0883477941E+02	3.7096863565E+02
0.0079978362	-3.2320764992E+02	-1.6028489149E+01	1.8583893817	-1.4921878210E+02	-1.0697164602E+02
0.9999954057	1.1454828002E+02	1.0557892193E+02	2.8499345933	1.2489110744E+02	-3.2029333198E+01
0.1406967396	-4.7386830663E+01	-5.6601826369E+01	2.9826334775	6.1937532120E+01	3.9912392862E+01
0.9990922746	3.8637832346E+01	3.7296922108E+01	1.9167409786	-1.7668935278E+01	-2.6396571094E+01
1.0084940753	8.4554691971E-02	2.3492122813E+01	3.8414798068	-8.5903658531E+00	1.7929555606E+01
1.0743435838	1.3785729763E+01	-1.3620093371E+01	0.8508484734	-3.1479736509E+00	-1.7706961752E+01
0.9247431037	-1.1817208613E+01	1.3252326777E+01	1.0044736970	7.2648820802E+00	-1.3928357471E+01
1.0035638016	-4.1881982995E+00	1.5320394318E+01	0.0663494533	-1.2105950089E+01	-5.2846940958E+00
1.1322419515	1.4175958259E+01	1.2677797356E-02	1.9915403982	-1.2536253997E+01	1.9244010827E+00
2.7751342298	8.3269760234E+00	-2.4663661261E+00	1.7835889978	-6.8051683156E+00	-4.4926136421E+00
1.9162876600	-1.2704880960E+00	-7.3310251346E+00	2.0658888147	4.9980756887E-01	6.2293646550E+00
1.7840421230	-6.0828424791E+00	-8.9186690018E-01	3.9741786847	-5.3214397279E+00	1.6505333618E+00
1.9247388279	-2.6458003103E+00	-4.4443477692E+00	1.9906371870	-4.3941184912E+00	5.3888120001E-01
0.0084501344	-2.8514814734E-01	4.3669864212E+00	2.7755873473	3.2180445633E+00	-2.9091534690E+00
0.9835473738	2.6046407463E+00	-3.4392271435E+00	3.7087809010	1.4331979063E+00	3.6141976674E+00
0.8503957525	-7.3560280368E-01	3.5643743724E+00	2.0160349775	2.5401610613E+00	2.5839437439E+00
0.2154970255	-2.0660258109E+00	-2.6486908624E+00	1.0004501983	-2.3902581385E+00	1.5999466830E+00
2.7172357025	1.3213802354E+00	-2.4424252941E+00	1.8588430702	-1.5087805537E+00	1.9182280815E+00
1.1571886556	1.9564521336E+00	-1.4900987235E+00			

Table C.33: Fourier analysis of the y coordinate of Neptune in the Earth–Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.0000000000	-3.1426349714E-03	0.0000000000E+00	0.9995430654	8.5329262062E+03	7.9185190535E+03
1.9910882885	-9.4750090525E+02	1.1854321245E+02	0.9251957659	3.7218937725E+02	1.0918893923E+02

Table C.33: (continued)

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.0079978361	-1.6025318057E+01	3.2314485349E+02	1.8583893817	-1.0697107246E+02	1.4921798015E+02
0.9999954064	1.0558095189E+02	-1.1454286680E+02	2.8499345933	-3.2029531284E+01	-1.2489187901E+02
0.1406967396	-5.6530370080E+01	4.7326762419E+01	2.9826334935	3.9956826667E+01	-6.1915395846E+01
0.9990881804	3.0162766646E+01	-4.4477076299E+01	1.9167409787	-2.6451396540E+01	1.7705708976E+01
1.0084940753	2.3702877016E+01	-8.5323258774E-02	0.8508484724	2.0142771348E+01	-3.5813986640E+00
3.8414798068	1.7929592216E+01	8.5903833667E+00	1.0743435838	-1.3622841042E+01	-1.3788524909E+01
0.9247424145	1.3593364636E+01	1.1433229408E+01	1.0044724021	-1.4381984997E+01	-6.5338988462E+00
1.0035638017	1.5380160358E+01	4.2051630425E+00	1.1322419515	1.2677321944E-02	-1.4175428277E+01
1.9915442797	-1.3527025091E-01	1.2839948642E+01	2.7751342298	-2.4663859294E+00	-8.3270442444E+00
0.0663494578	3.3134907657E+00	-7.6127727579E+00	1.7835889978	-4.4925692925E+00	6.8050995400E+00
1.9162876600	-7.3309591507E+00	1.2704791017E+00	2.0658888147	6.2294037386E+00	-4.9981007611E-01
1.7840421230	-8.9392523970E-01	6.0959583836E+00	3.9741787141	1.6437869891E+00	5.3228774574E+00
1.9247388279	-4.4446627636E+00	2.6459890218E+00	1.9906371872	5.3883783091E-01	4.3941123889E+00
0.0084501236	4.3572242671E+00	2.6644527597E-01	2.7755873473	-2.9120059472E+00	-3.2213016468E+00
0.9835473514	3.5411698128E+00	2.6768016058E+00	0.8503949650	3.7929523750E+00	1.1415877756E+00
3.7087809366	3.6159217487E+00	-1.4276279091E+00	2.0160349770	2.5838197898E+00	-2.5401372840E+00
0.2154970256	-2.6457530262E+00	2.0637308181E+00	1.0004501978	1.5977394999E+00	2.3904933367E+00
2.7172356980	-2.4426103984E+00	-1.3208905560E+00	1.8588430700	1.9182268811E+00	1.5086768863E+00
1.1571886556	-1.4932875215E+00	-1.9606390738E+00			

Table C.34: Fourier analysis of the z coordinate of Neptune in the Earth–Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.0000000000	4.8217094624E+00	0.0000000000E+00	0.0044755045	3.8600983964E+02	9.7817214102E+02
0.0004543249	2.6653120721E+01	-3.4925643181E+02	0.0788227967	-2.9342429558E+00	3.3937953717E+01
0.9960207221	-2.6971847716E+01	-9.0034066205E+00	0.1531700903	1.4311131709E+01	-2.3453524963E+01
0.9870697079	1.3837158961E+01	2.5505752341E+01	0.0040213338	-1.2744157685E+01	6.1026033190E+00
0.9910909263	-7.7433845412E+00	-5.5837433549E+00	0.9919995771	6.8047641686E+00	6.6930300096E+00
0.8543708049	5.8880159198E+00	1.5001908903E+00	0.0049283761	-4.6308587395E+00	1.4562699821E+00
0.8633218298	-4.5857098033E+00	2.5150967689E+00	1.8548670465	8.4168654262E-01	-4.2301508991E+00
2.0035616242	-1.9705541556E+00	9.5429084152E-01	1.8459160239	-1.6950689941E+00	1.2183895588E+00

Table C.35: Fourier analysis of the x coordinate of Pluto in the Earth–Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.0000000000	-1.2239693573E-01	0.0000000000E+00	0.9996954649	5.7931939639E+03	1.3281386122E+04
0.9999969311	-3.4739361425E+03	-4.2846203740E+03	0.9993940377	2.1517267155E+02	1.7651523981E+03
1.9912406200	-1.1407383549E+03	-3.3310303583E+02	1.9915421501	4.5247988845E+02	7.7376214127E+00
0.0081502171	-1.7888942476E+02	3.6087676601E+02	0.9251957554	-1.1453420362E+02	3.6469141813E+02
0.9990925495	-5.4309203179E+01	3.2315401824E+02	1.0002985883	-2.1926279715E+02	1.4659736558E+02
1.8585417623	-1.9622859378E+02	1.1713742435E+02	1.0043200882	1.8656276179E+02	-6.3249595985E+01
1.0037170513	9.4641064135E+01	1.7290500413E+02	2.8500869778	2.5530660648E+01	-1.5844162977E+02
0.0084516500	2.8692031636E+01	-1.5059765190E+02	1.9909392366	-1.2233051760E+02	-7.9391023140E+01
1.0040185562	-1.2887906268E+02	-5.0152747241E+01	0.1408491197	-8.8136341298E+01	2.5956197001E+01
1.8588432309	6.0145606014E+01	-6.2864056691E+01	2.9827858783	7.6375094414E+01	-5.0791329508E+01
0.9987911493	-3.1551374113E+01	6.4073669327E+01	2.8503884206	6.7348196237E+00	6.0732048395E+01
0.0078488073	-3.3744608926E+01	3.6131710374E+01	1.0006000495	-2.5107501645E+01	2.3434341619E+01
0.1411505717	2.9535112437E+01	-1.8583797015E+01	2.9830873861	-2.2934108284E+01	2.6315908346E+01
1.9167411258	-1.3894976943E+01	-2.6685124746E+01	1.8582403039	-2.7170682777E+01	6.9256411782E+00
1.0083416659	-2.6748226833E+01	1.1792488619E+01	1.9906377598	-1.7451880916E+01	-2.0435255306E+01
3.8416322036	1.6180024284E+01	1.8720969570E+01	1.0046215072	1.9655835289E+01	-1.4022130179E+01
1.0744954706	-9.1469299656E+00	-2.2291934307E+01	1.0034156225	5.0045071516E+00	2.3625322947E+01
0.8506960806	1.8631883044E+01	-1.2397099905E+01	0.9248949625	9.7053865890E+00	1.9876044582E+01
1.9918435586	2.1350316113E+00	-2.1533970294E+01	2.8497855652	8.5629800754E+00	-1.7726992254E+01
0.9984897061	-1.1627349269E+01	1.2558373500E+01	1.1323943897	7.0974400723E+00	-1.6151586932E+01
1.9952623052	-1.5845873845E+01	-3.1699670644E+00	1.9958652597	-5.8456055990E+00	1.5072439556E+01
0.0663494867	-1.2279100918E+01	-5.6792792701E+00	1.9955636100	9.9537050799E+00	-5.5520119241E+00
0.1405479364	-1.1282453693E+01	-1.5557622534E-01	0.8503947325	-9.0005277047E+00	6.2034234582E+00
2.7752867850	1.4000801367E+00	-1.0717851772E+01	2.9824845073	1.0762040172E+01	-3.2729856021E+00
1.0080402912	1.1021051681E+00	-1.5665878168E+00	1.7837415354	-8.5424420702E+00	5.4740598810E+00
3.8419336393	-7.8411512156E+00	-5.2262536366E+00	1.9164401921	-8.9852462388E+00	-2.2487678777E+00
1.0747973487	5.4971465258E+00	7.3594908641E+00	0.0075474853	-7.8838728749E+00	4.5635128627E+00
2.0660416108	7.3196516861E+00	2.6564285581E+00	0.0087531786	-7.0124008642E+00	-1.9708828792E+00

Table C.35: (continued)

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
3.9743312411	-8.1006889362E-01	6.8901407214E+00	1.0009014449	-3.6287049062E+00	5.4563462446E+00
1.9248914031	-6.3910351097E+00	7.5914376694E-01	1.1326957787	-9.2598992419E-01	6.6425292431E+00
0.8460713536	3.7156640512E+00	4.6339029830E+00	0.8466744280	5.2120879089E+00	-2.8559199081E+00
1.9903367091	-2.2880243096E+00	-5.3943173879E+00	0.9833948047	5.2297953111E+00	1.2238019587E+00
1.7840422401	-3.5202165712E+00	-3.9710377500E+00	1.8579389161	-5.1633968863E+00	-2.2046640555E-01
0.0127745727	4.5647670490E+00	2.6935965830E+00	0.0121721126	-1.9835195745E+00	4.9160395926E+00
3.7089334279	4.8376215293E+00	1.8925025700E-01	1.0049226377	2.6811739127E+00	-3.5429854272E+00
0.9981883831	-3.7661744081E+00	2.1960083419E+00	1.0031142445	-3.7614638373E-01	4.4278176442E+00

Table C.36: Fourier analysis of the y coordinate of Pluto in the Earth–Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.0000000000	1.0121033631E-01	0.0000000000E+00	0.9996954656	1.3281365185E+04	-5.7926464680E+03
0.9999968558	-4.2732465634E+03	3.4871316471E+03	0.9993940381	1.7651271260E+03	-2.1514452016E+02
1.9912406751	-3.3579236253E+02	1.1401430397E+03	1.9915421531	7.7918721777E+00	-4.5247478093E+02
0.0081502383	3.6063803986E+02	1.7917038506E+02	0.9251957556	3.6595138331E+02	1.1504062301E+02
0.9990925496	3.2314857606E+02	5.4310437563E+01	1.0002984428	1.4793482801E+02	2.1829471139E+02
1.8585417625	1.1713472790E+02	1.9622880785E+02	1.0043200877	-6.3503310586E+01	-1.8729799363E+02
1.0037170520	1.7359060549E+02	-9.5009294814E+01	2.8500869778	-1.5844260784E+02	-2.5530811838E+01
0.0084516468	-1.5055844178E+02	-2.8713321912E+01	1.9909392401	-7.9409486218E+01	1.2231827407E+02
1.0040186094	-5.0634053272E+01	1.2926129917E+02	0.1408491197	2.5923297446E+01	8.8025466379E+01
1.8588432308	-6.2864033012E+01	-6.0145104870E+01	2.9827858502	-5.0873907651E+01	-7.6304568183E+01
0.9987911503	6.4071393715E+01	3.1553745298E+01	2.8503884206	6.0732451846E+01	-6.7348382900E+00
0.0078488055	3.6126662364E+01	3.3735319931E+01	1.0005999511	2.3536602312E+01	2.5004539842E+01
0.1411150574	-1.8497744899E+01	-2.9598635724E+01	2.9830872563	2.6458761546E+01	2.2806135110E+01
1.9167409135	-2.6616595612E+01	1.4158103192E+01	1.8582403867	6.8291635797E+00	2.7193588816E+01
1.0083416043	1.1971599766E+01	2.6965162064E+01	1.9906377932	-2.0453411852E+01	1.7421823320E+01
0.8506960816	1.4103118113E+01	2.1204142331E+01	3.8416322036	1.8721007018E+01	-1.6180057760E+01
1.0046214927	-1.4087072281E+01	-1.9723509408E+01	1.0744960897	-2.2553756979E+01	8.5769883265E+00
1.0034157245	2.3737762967E+01	-4.9205382193E+00	0.9248949630	1.9864126743E+01	-9.7002899233E+00
1.9918436865	-2.1531508369E+01	-2.2515915628E+00	2.8497855652	-1.7727101671E+01	-8.5630325655E+00
0.9984898077	1.2508565474E+01	1.1681402177E+01	1.1323945582	-1.6111835133E+01	-7.2069421470E+00
1.9952623052	-3.1713873664E+00	1.5852896790E+01	1.9958652597	1.5079121866E+01	5.8482161442E+00
1.9955636101	-5.5544260877E+00	-9.9581220719E+00	0.1405479363	-1.5536537747E-01	1.1268254895E+01
2.7752867850	-1.0717884814E+01	-1.4000727942E+00	2.9824845087	-3.2723400143E+00	-1.0762295340E+01
1.0080402889	-1.5813857609E+00	-1.1119574843E+01	1.7837415750	5.4682080504E+00	8.5411260311E+00
3.8419336393	-5.2262713186E+00	7.8411672521E+00	1.9164401774	-2.2431601469E+00	8.9859120606E+00
1.0747973698	7.3641552040E+00	-5.4914265213E+00	0.0075474851	4.5626866656E+00	7.8823400942E+00
0.0663495205	3.8914545870E+00	-7.5348610504E+00	0.8503944980	6.2094251077E-01	-8.3253872556E+00

Table C.37: Fourier analysis of the z coordinate of Pluto in the Earth–Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.0000000000	-1.5398308503E+03	0.0000000000E+00	0.0003015705	3.3658844644E+03	-2.8169622998E+03
0.0043231193	-9.2433100819E+02	9.2669590956E+02	0.0006029692	2.9499712757E+02	-4.4976810097E+02
0.0040216696	4.3344531553E+02	-2.4578877485E+02	0.0046245972	-7.6470340031E+01	1.4127799656E+02
0.9912436888	-1.1779586345E+02	2.0715294233E+01	0.9918467050	2.6697041733E-01	1.1958993194E+02
0.0009043844	2.8191236619E+01	-9.4857881588E+01	0.9915452116	5.3926507220E+01	-6.4296799158E+01
0.9958682938	-3.1922118030E+00	-3.5239253204E+01	0.1533224733	-1.9651471299E+01	-2.7986801226E+01
0.0788227976	-2.5781275807E+00	3.3506479517E+01	0.9872220909	3.5984003861E+01	-3.1119591667E+00
0.0049258229	-5.8099567940E+00	2.9039331228E+01	0.0037200524	1.3568781180E+01	1.9581877327E+01
0.0012057922	-6.2332986833E-02	-2.1592289506E+01	0.8591478395	1.6150934306E+01	1.4918732744E+01
0.8585448006	-1.1920687559E+01	1.8476121082E+01	1.8506930510	-1.7993456785E+01	2.3003825516E+00
1.8500900652	-5.3231766182E+00	-1.7344119371E+01	0.8588463488	-1.9203063409E+00	-1.5306197596E+01
0.9909423140	-1.4549320377E+01	-1.7559120976E+00	0.9921481736	4.2349908869E+00	1.4034380632E+01
0.9955668217	-2.4097839121E+00	1.3235740087E+01	0.1536239620	1.0005977741E+01	8.5708247175E+00
1.8503915149	1.0708939604E+01	6.8814618517E+00	0.9875235503	-1.2888504930E+01	4.7999110654E+00
0.8545231994	4.6411723792E+00	-5.9709679030E+00	0.0052273305	5.7325247670E-01	6.4261584768E+00
1.9827889460	3.2700134473E+00	-5.6373159195E+00	1.9833918880	-5.0076103929E+00	-4.1701317286E+00
0.8631692552	-5.1819972141E+00	-3.9457387054E+00	0.0015071643	-1.5119766460E+00	-4.9540658758E+00
1.8547143548	5.2319944538E+00	-1.2095866116E+00	0.9961698552	-1.5956352543E+00	-4.0466594910E+00
1.9830904308	7.9458424154E-01	4.5036355541E+00	0.1530211118	-1.3169569390E+00	-3.9859868211E+00
0.9869206824	4.3383279667E+00	8.9831958942E-01	0.0034184268	1.3543994906E+00	2.7943732860E+00

Table C.37: (continued)

f_i	A_i^c	A_i^s	f_i	A_i^c	A_i^s
0.8548246148	-1.0920016337E+00	2.6634773049E+00	2.0037140875	1.0059588607E-01	2.7238960268E+00
0.9906408461	-2.4732142848E+00	-1.0732337333E+00	0.8594492814	2.4213321157E+00	1.1818685462E+00
0.9924494699	1.4996174552E+00	2.2408699016E+00	0.8582434573	-2.0563105699E+00	1.7393727616E+00
1.8460685807	5.2878966765E-01	2.5440326168E+00			

Table C.38: Fourier analysis of the x coordinate of the Sun in the Earth–Moon case.

f_i	A_i^c	A_i^s	f_i	A_i^c	A_i^s
0.0000000000	-6.2702298846E-02	0.0000000000E+00	0.9251957863	-1.0927756550E+02	3.7071152326E+02
1.9167408300	-1.7639274483E+01	-2.6355901096E+01	0.0663492628	-1.2134309252E+01	-5.2409110115E+00
0.9999960823	3.2997609728E+00	-9.7947018015E+00	1.7840423142	-6.0086163845E+00	-1.0044529781E+00
2.7755873598	3.2419224811E+00	-2.7911158782E+00	0.8503953768	-9.3088935924E-01	3.6796809468E+00
2.9082858709	2.4341251010E+00	2.5532318120E-01	1.9915412950	5.2525518315E-01	8.5592965380E-01
1.0828414495	-3.1060567852E-01	6.2657819781E-01	1.0578942954	5.4860828546E-01	-2.7786631301E-01
3.7671324039	1.0866755465E-02	6.5947188464E-01	1.8419399637	-3.0298654687E-01	-4.1418523868E-01
1.7092421655	-3.2165100171E-01	-4.1576789123E-02	2.7007868417	2.3932227691E-01	-2.2305757474E-01
0.0084513888	1.8970582511E-01	-7.2961596769E-02	1.8588428256	1.9726931947E-01	4.1106250127E-02
3.8998309221	-1.3259559913E-01	1.2906424508E-01	1.8503916631	-1.4436373779E-01	-9.3275186819E-02
2.8503874966	-1.2471941909E-01	9.9598842084E-02	3.6344338860	9.5245128451E-02	8.6784281475E-02
0.1411498405	-9.8155502398E-02	-4.7134257093E-02	1.9416880465	1.0190766012E-01	3.5997575249E-02
2.6428888417	4.1052420132E-03	-9.1961123868E-02	2.9830865339	-8.8981184774E-02	-1.3011473697E-02
4.7586774496	-5.9175888238E-02	-4.7645233070E-02	2.0494393420	-1.4087275076E-02	6.1402632967E-02
4.6259789311	-5.6644798814E-02	7.8382967226E-03	2.8334853083	5.4465062282E-02	3.5293153200E-03
3.6923320497	3.0311331974E-03	5.5229938189E-02	0.7755951203	-1.0627946547E-02	4.9899625148E-02
0.7924972709	-2.6118430639E-02	-4.4710061957E-02	2.0743865065	-1.7892671009E-02	-4.0483675552E-02
1.9251839192	2.5100577328E-02	1.6301305402E-02	0.9915467636	1.8697889545E-02	-2.0917457108E-02
0.7675501271	-3.1813242947E-03	2.8002004865E-02	3.8419327577	6.0892686650E-04	-2.7838586028E-02
2.8419368412	2.5187974591E-02	-7.8560179516E-03	0.0912963877	2.4246455229E-02	-5.7834454516E-03
1.0747961562	-8.0490549173E-03	2.1265653704E-02	1.0080413430	7.9576864105E-02	-1.7685491312E-02
2.6259864870	1.1918654033E-02	-1.1996903193E-02	3.5596335844	1.1964267442E-03	1.0088460622E-02
4.8913759651	-1.0724400398E-03	-1.3797287070E-02	1.6344410508	-1.2529869533E-02	-1.0706206312E-03
5.6175239744	6.0276435007E-03	-9.6823741726E-03	0.9936994549	3.1503172101E-03	1.0108510474E-02
1.7671405992	-5.9246640154E-03	-7.5755030725E-03	0.0747945153	9.2876301532E-03	1.1614854581E-04
0.8588918809	-1.2840253038E-03	8.7105564891E-03	2.5680883741	4.5750933973E-05	-8.9376072281E-03
1.0187754715	-7.2344733544E-03	-4.6504617893E-03	4.5511782786	-7.9263395863E-03	1.4270219096E-03
0.9210738074	6.0676426862E-03	-4.6142709950E-03	3.9746312268	5.7635756949E-03	-5.1941565362E-03
2.7092401284	3.5020825027E-03	-7.0650942345E-03	1.1326945463	6.5593185387E-03	-3.0155490363E-03
5.7502224914	7.5428171328E-03	-1.5180579481E-03	0.9293279339	1.2957041627E-03	6.7427963109E-03
4.6838773148	-5.5078607946E-03	-4.1089612559E-03	3.0409843848	-3.7952950724E-03	-4.9826991619E-03
0.9719860966	5.9792346163E-03	-2.2061176280E-03	1.1576418504	-2.7953877852E-03	5.1278575240E-03
1.7590955677	4.0284162623E-03	4.2289347879E-03	0.9501329880	2.2023723763E-03	5.1622238723E-03
3.7092342900	-4.0027284968E-03	-3.9417472447E-03	0.9830939719	4.5342478069E-03	-2.5202039457E-03
3.8250305197	-3.6001382485E-03	3.7867719609E-03	1.9830815513	1.0993810246E-03	4.8622074658E-03
2.9167332938	-4.5690264033E-03	1.2955449548E-03			

Table C.39: Fourier analysis of the y coordinate of the Sun in the Earth–Moon case.

f_i	A_i^c	A_i^s	f_i	A_i^c	A_i^s
0.0000000000	1.6078519304E-05	0.0000000000E+00	0.9251957863	3.7193289716E+02	1.0963759943E+02
1.9167408300	-2.6410913630E+01	1.7676092770E+01	0.9999960823	-9.7948122827E+00	-3.2997983410E+00
0.0663492628	3.2937774849E+00	-7.6261019182E+00	1.7840423128	-1.0065940114E+00	6.0217538766E+00
2.7755873598	-2.7940242273E+00	-3.2451369334E+00	0.8503953768	3.7365274672E+00	9.4527069376E-01
2.9082858799	2.5588148482E-01	-2.4380953030E+00	1.9915412950	8.5622374679E-01	-5.2543565599E-01
1.0828414495	6.3269739188E-01	3.1363898961E-01	3.7671324039	6.5999362007E-01	-1.0875352048E-01
1.8419406031	-4.1814359803E-01	3.0326831626E-01	1.0578942917	-1.4630549166E-01	-2.8884221902E-01
1.7092415599	-4.0465757552E-02	3.2287452792E-01	2.7007868417	-2.2338133125E-01	-2.3966964096E-01
0.0084507454	-8.0930825151E-02	-2.0786769619E-01	1.8588428256	4.1124142533E-02	-1.9735504740E-01
3.8998309221	1.2924291825E-01	1.3277916101E-01	1.8503916635	-9.3204969777E-02	1.4425469741E-01
2.8503881018	9.9099371240E-02	1.2508265037E-01	3.6344338860	8.6855037590E-02	-9.5322782680E-02
1.9416880464	3.6067619181E-02	-1.0210601280E-01	2.6428888417	-9.2122181816E-02	-4.1124312300E-03
2.9830859127	-1.2659808599E-02	8.9042519642E-02	4.7586774468	-4.7676239990E-02	5.9216623199E-02
4.6259789311	7.8425448954E-03	5.6675440114E-02	2.8334853083	3.5436755843E-03	-5.4686676786E-02
0.7755951228	5.2181576254E-02	1.1114960902E-02	2.0494393411	5.1082065288E-02	1.1719145039E-02

Table C.39: (continued)

f_i	A_i^c	A_i^s	f_i	A_i^c	A_i^s
0.0912963821	1.2812559567E-02	5.3691306106E-02	3.6923320497	5.5290727481E-02	-3.0344692809E-03
2.0743865064	-4.0551958634E-02	1.7922870953E-02	0.7924972717	-3.4772800665E-02	2.0313257618E-02
0.7675501262	3.7124605760E-02	4.2175543488E-03	1.9251839148	1.6329614943E-02	-2.5145364793E-02
3.8419327577	-2.7846812481E-02	-6.0910640361E-04	2.8419368416	-7.8569193723E-03	-2.5191074878E-02
0.9915470001	-1.8445030558E-02	-1.6641376900E-02	1.0747961706	2.1231103491E-02	8.0418541440E-03
1.0080413377	-1.7640726337E-02	-7.9367637473E-03	2.6259864868	-1.2020374823E-02	-1.1941954663E-02
3.5596335844	1.0098938510E-02	-1.1976693416E-02	4.8913759651	-1.3814172656E-02	1.0737525032E-03
1.6344410509	-1.0764494602E-03	1.2597936417E-02	5.6175239744	-9.6867088191E-03	-6.0303419941E-03
0.9936994524	1.0110699048E-02	-3.1511825661E-03	0.8588864210	1.0110666038E-02	1.1606018848E-03
1.7671405657	-7.6797532286E-03	6.0088615409E-03	0.9830939179	-4.5068761798E-03	-8.1024061433E-03
2.5680883741	-8.9241425243E-03	-4.5859275632E-05	1.0187754705	-4.6556512113E-03	7.2426318691E-03
4.5511782786	1.4279692553E-03	7.9316013795E-03	0.9210739902	-4.6178862612E-03	-6.0961411812E-03
3.9746312268	-5.1967764800E-03	-5.7664825788E-03	2.7092401299	-7.0693810956E-03	-3.5042604593E-03
5.7502224914	-1.5189590081E-03	-7.5472942276E-03	1.1326945447	-3.0034293102E-03	-6.5327706246E-03
0.2239949447	-3.9241425243E-03	5.9705476140E-03	5.9705476140E-03	-6.4927687427E-05	6.4708556709E-03
0.9293281462	6.7641973068E-03	-1.2855414118E-03	4.6838773148	-4.1127195937E-03	5.5128984500E-03
0.9719860981	-2.2052539066E-03	-5.9771253924E-03	1.1576418506	5.3621403455E-03	2.9231081981E-03
3.0409843851	-4.5962290727E-03	3.5009079075E-03	0.1411497872	2.4337475896E-03	-5.0719307017E-03
3.7092342900	-3.9430089313E-03	4.0040102562E-03	1.7590955809	4.1048744669E-03	-3.9096593396E-03
3.8250305197	3.7981766550E-03	3.6109808376E-03	0.9501321237	4.7480610225E-03	-2.0491352182E-03
1.9830812433	4.6921164939E-03	-1.0680914322E-03	2.9167332919	1.2972926309E-03	4.5750811618E-03

Table C.40: Fourier analysis of the z coordinate of the Sun in the Earth–Moon case.

f_i	A_i^c	A_i^s	f_i	A_i^c	A_i^s
0.0000000000	4.2439442250E-04	0.0000000000E+00	0.0788228300	-2.9509730443E+00	3.3923683017E+01
0.9127221954	7.6438340350E-01	5.3137655538E-01	0.0040223167	4.3239896732E-02	-9.1082048260E-01
1.0703678568	-6.6150919031E-01	-6.5574605604E-01	0.1536232108	-4.0411511563E-02	3.1992449774E-01
0.9376693695	-1.9382714589E-01	6.6302812856E-03	0.7800237174	1.9152507923E-01	-4.0362720766E-02
1.9292143996	4.3392479583E-02	-5.5902476647E-02	1.7715687330	-3.0112466621E-02	5.6933509628E-02
2.0619128768	5.0643968672E-02	-4.8535749671E-03	1.9042672216	-4.8895562680E-02	1.3483193430E-02
0.0538751930	-3.3050416832E-02	3.7149639393E-02	0.9875226590	-2.3535118519E-02	-1.7768538741E-02
0.9955668829	1.4017854728E-02	1.2778022357E-02	0.0748075800	-1.5835281332E-02	-6.8352106665E-05
0.8379217864	1.2456172922E-02	7.9589914124E-03	2.7631137630	-4.0018680740E-03	-9.7348495224E-03
2.9207594246	2.3369104733E-03	1.0625832801E-02	0.7052230468	1.0265159016E-02	-2.5971325048E-03
0.2115210359	-5.8877081158E-03	4.6639534744E-03	0.8548239500	-6.3830930631E-03	1.0944292331E-03
1.6967685967	-2.2652329554E-03	4.7058153959E-03	0.8463722907	4.8822588962E-03	9.7752581982E-04
1.0040177884	-4.6356502335E-03	-1.7992392621E-03	0.2284235833	-7.0963691640E-04	4.2773595565E-03
1.1451681951	-2.9043882691E-03	-3.1119395494E-03	1.0953150025	3.4270871490E-03	4.7983221834E-04
0.8628690415	-3.2657630482E-03	2.3831054307E-04	1.8544140499	1.8806136434E-03	-2.6257750586E-03
3.0534578816	-1.7563684845E-03	2.5749067818E-03	2.8958122424	1.2764433001E-03	-2.8191202535E-03
1.8463689339	1.1904061293E-03	-2.0574751610E-03	0.0123969031	-1.3349275904E-03	-1.9350142361E-03
0.0707671856	-9.4876350829E-05	-2.2148866326E-03	2.7880609487	1.7742719657E-03	1.0614939688E-03
1.6388703003	6.5756023986E-04	1.9291362465E-03	2.6304152960	-1.8412160006E-03	-7.0492562798E-04
1.7965159443	-3.0651016333E-04	-1.9615873663E-03	1.0454200663	-2.8520195320E-04	-1.8811954664E-03
1.9790676394	1.8137454088E-03	-4.2461497454E-04	3.9123044457	-1.0031227927E-03	-5.1937315709E-04
1.8294668233	-1.0651051479E-03	3.3860110070E-04	3.7546587883	1.0554106083E-03	3.3136337072E-04
0.1452122811	-6.4531044639E-04	8.7754392398E-04			

C.4 Expansions of the c_i functions, Sun–Earth+Moon case

In tables C.41 to C.53 we give the results of the Fourier analysis of the positions of the c_i functions for the Earth–Moon case. We do not give adjustments of the frequencies as linear combinations of basic ones, because they have been given in Chapter 5 for the functions used in the Sun–Earth+Moon model developed there (tables 5.23 to 5.28). In order to save space, every row of tables C.41 to C.53 consists in to two entries, which are

separated by a double vertical line.

Table C.41: Fourier analysis of the c_1 function in the Sun–Earth+Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.000000000	4.225150901E-10	0.000000000E+00	0.915699384	2.845494144E-05	-2.074365743E-05
0.625524313	2.801784640E-06	3.739727121E-06	0.831393603	3.316734961E-06	7.958528060E-07
0.966048547	2.469412922E-06	-1.932203627E-06	3.152095758	-9.598414660E-07	4.952597435E-07
1.915692038	7.291510422E-07	-4.893071306E-07	7.304188603	9.265802489E-08	-4.297107940E-07
0.932139308	1.387727491E-07	-3.188639342E-07	0.084291268	-2.301767205E-07	-1.811220540E-07
0.747084482	1.275307764E-07	2.475656242E-07	11.456281204	9.378304404E-08	1.183956462E-07
0.468316451	8.984488525E-09	1.380324618E-07	0.988502943	-5.504759840E-08	-1.107963544E-07
0.374472282	7.393616331E-08	-9.015581535E-08	1.831385168	8.165982575E-08	2.384525641E-08
1.966039432	6.334215321E-08	-4.582494230E-08	2.251039912	-4.525712017E-08	4.283826928E-08

Table C.42: Fourier analysis of the c_2 function in the Sun–Earth+Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.000000000	2.955847148E-11	0.000000000E+00	0.915699383	-2.074376729E-05	-2.845501663E-05
0.625524249	-3.739545312E-06	2.802185883E-06	0.831393555	7.956489284E-07	-3.316800066E-06
0.966048547	-1.932199092E-06	-2.469410696E-06	3.152095724	-4.953124633E-07	-9.598311530E-07
1.915691993	-4.893491386E-07	-7.291338967E-07	7.304188615	4.297116082E-07	9.266253341E-08
0.932139346	-3.189012713E-07	-1.387768461E-07	0.084291306	1.810620381E-07	-2.301526011E-07
0.747084256	2.474881326E-07	-1.275970296E-07	11.456281260	-1.184089670E-07	9.378984855E-08
0.468316438	1.380266847E-07	-8.985791564E-09	0.988505599	-1.109132238E-07	5.460008776E-08
0.374472125	-9.005426163E-08	-7.385703339E-08	1.831386016	2.393241772E-08	-8.163107147E-08
1.966039414	-4.583735076E-08	-6.334197731E-08	2.251039310	-4.287303005E-08	-4.522145937E-08

Table C.43: Fourier analysis of the c_3 function in the Sun–Earth+Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.000000000	-1.826440976E-10	0.000000000E+00	0.084318306	4.703667682E-07	-6.424641081E-07
1.625539568	1.349085365E-07	-2.420960039E-07	4.152103415	1.299001181E-07	2.307561571E-08
0.033970453	1.058498988E-07	-8.522817395E-08	0.168614689	-1.853842489E-08	-7.476615864E-08
8.304193949	-4.085168143E-08	3.490005769E-08	12.456294040	-1.842794902E-10	-1.847969428E-08
0.067916199	1.480656445E-08	-2.086408227E-09	1.084309513	4.112977314E-09	-5.195641107E-09
0.915690688	3.611673289E-09	5.554954738E-09	0.252923067	-5.617211903E-09	-2.821536897E-09
16.608382332	4.706305151E-09	3.763768220E-09	0.531698420	-3.016309561E-09	3.311637561E-09
3.251065484	3.414938193E-09	1.457247283E-09	2.625526132	1.188094369E-09	-1.973094664E-09
0.625545877	1.040257148E-09	-2.058393358E-09	20.760472072	-1.668481149E-09	3.570273751E-10
0.101574336	1.475049895E-09	4.466101363E-10			

Table C.44: Fourier analysis of the c_4 function in the Sun–Earth+Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.000000000	1.339875562E-09	0.000000000E+00	0.999992620	1.302693420E-03	-3.334664047E-02
1.999985644	6.530634591E-05	-8.327257692E-04	1.251039976	-3.784040129E-05	-1.090341887E-05
1.831343522	-3.255969095E-05	-9.806791300E-06	0.914730917	2.348110593E-05	1.613777371E-05
2.999974096	2.275490035E-06	-1.958404433E-05	1.876597541	-2.951502515E-06	-8.816919960E-06

Table C.45: Fourier analysis of the c_5 function in the Sun–Earth+Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.000000000	2.000002943E+00	0.000000000E+00	0.999992617	6.669842066E-02	2.605734175E-03
1.999985638	1.388012106E-03	1.088116882E-04	1.251039984	1.852301504E-05	-6.434171710E-05
0.914752035	-3.506788191E-05	5.021465252E-05	1.831346638	1.401276927E-05	-4.650320862E-05
2.999975415	2.996570588E-05	3.495765898E-06	0.625523538	1.754000008E-05	2.346654862E-05

Table C.46: Fourier analysis of the c_6 function in the Sun–Earth+Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.000000000	2.234751919E-08	0.000000000E+00	1.000013170	-3.948751317E-07	-1.392103129E-06
2.251061608	8.998109308E-07	-1.234264382E-07	0.374487295	-7.328260664E-07	-1.648906121E-07
2.876583617	5.389756198E-07	5.338649738E-07	0.251026995	-4.604528488E-07	-3.823749627E-07
3.502118950	-9.340989695E-08	5.981365702E-07	4.127634149	-4.197135105E-07	2.265826231E-07
1.625525694	2.256564674E-07	-4.131392892E-07	0.831395704	4.692444650E-07	1.562418898E-07
0.876462372	-8.264525422E-09	-4.866374513E-07	1.502093224	3.069686548E-07	-1.977196682E-07
4.753164660	-3.360047067E-07	-1.562231692E-07	2.127612982	2.617706049E-07	9.581812962E-08
5.378682060	-5.948860936E-08	-2.783296044E-07	4.152107870	-2.357042344E-07	-4.282190795E-08
6.004206995	1.427616081E-07	-1.635095808E-07	2.753104336	6.536357151E-08	2.030244654E-07
6.629732978	1.640732551E-07	1.248570511E-08	3.378671408	-9.655065413E-08	1.270996613E-07
0.747674549	2.741352668E-09	1.366384226E-07	0.084322469	8.453132459E-08	-1.145117517E-07
4.004208676	-1.195135959E-07	-2.182566486E-09	7.255254892	6.675856454E-08	1.045552528E-07
1.746201467	5.679484243E-08	-9.616479327E-08	1.915709936	-7.027875952E-08	-9.556834017E-08
8.304195888	8.134356138E-08	-6.930373217E-08	7.880776260	-3.259813336E-08	8.728985900E-08
4.629722545	-5.260075405E-08	-7.188270197E-08	8.506297857	-6.685836136E-08	1.977158536E-08
5.255260846	2.037551888E-08	-6.285876487E-08	1.876178156	3.147879340E-08	4.035369681E-08
2.502125530	-2.192461090E-08	4.548177706E-08	0.932946898	4.124128115E-08	2.745543650E-08
5.880801726	4.648813547E-08	-1.508625919E-08	1.374315655	-5.139577198E-08	1.488008645E-09
9.131822350	-4.169802219E-08	-3.108789061E-08	3.127634139	-4.866781258E-08	1.110282497E-08
3.753468029	-2.760559704E-08	-3.580811383E-08	1.999874830	-3.202758641E-08	-3.169258619E-08
0.122686826	3.614373799E-08	2.513347169E-08	2.625336194	8.531964019E-09	-4.320325684E-08
4.378679977	1.403870429E-09	-4.178233554E-08	0.502409909	4.085393952E-08	-1.013468731E-08
1.127977741	3.084628030E-08	2.689538183E-08	1.084419427	-3.001751285E-08	-2.376578023E-08
9.757347269	-4.690426971E-11	-3.870968155E-08	12.456288268	5.355065579E-10	3.674289816E-08
1.251114630	3.635328289E-08	1.145311483E-08	6.506310080	2.960587183E-08	2.051748695E-08
5.004200227	2.968601455E-08	-2.124934071E-08	5.629683839	3.014012818E-08	8.274843065E-09
1.662889566	2.236736849E-08	1.824088271E-08	10.382868088	2.293253748E-08	-1.730995797E-08
0.915706975	2.226754060E-08	-1.677009357E-08	0.063398950	1.978950420E-08	2.260652081E-08
0.168604112	-2.152563376E-08	-1.564821408E-08	6.255253986	8.834567956E-09	2.464509504E-08
2.662813477	1.601367587E-08	-2.111050017E-08	2.831425551	-2.501945239E-08	-8.527034861E-09
7.131846884	5.421187883E-10	2.644980677E-08	0.531697177	-1.802721007E-08	1.870509508E-08
0.625666239	2.210603340E-08	-1.074108320E-08	2.379388254	-2.274722862E-08	7.901942442E-09
0.404939283	1.902200920E-08	1.424871824E-08	25.791296487	-1.344794040E-08	1.730710501E-08
1.468336740	1.325049234E-08	-1.844684928E-08	6.880765500	-1.165699336E-08	1.822659085E-08
1.053944068	2.753708065E-09	-2.130406183E-08	11.008393743	2.043980930E-08	5.934105413E-09
3.250814601	1.711798079E-08	-1.272831138E-08	7.757388911	-1.550088324E-08	1.166368464E-08
3.005468484	-9.344056872E-09	-1.669919374E-08	3.876480378	1.423318917E-08	1.073340441E-08

Table C.47: Fourier analysis of the c_7 function in the Sun–Earth+Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.000000000	1.000420821E+00	0.000000000E+00	0.999992615	5.004157957E-02	1.955082517E-03
1.999985620	1.249649676E-03	9.792092308E-05	0.914759532	-2.774407741E-05	3.945963233E-05
1.251039994	1.165852022E-05	-4.060352316E-05	2.999980105	3.059039865E-05	3.623850013E-06
0.625522693	1.628317525E-05	2.177538916E-05	1.831330067	4.896856255E-06	-1.699758943E-05

Table C.48: Fourier analysis of the c_8 function in the Sun–Earth+Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.000000000	5.928013255E-10	0.000000000E+00	1.831385878	-9.829368623E-06	-2.927946576E-06
1.251048276	-2.458174278E-06	-7.182931795E-07	2.747073502	-2.298066612E-06	8.554502528E-07
0.625524111	1.902199740E-06	-1.426554293E-06	1.876585360	-7.510223822E-07	-2.220761188E-06
2.502096477	1.074925944E-06	-1.681159207E-06	1.747087424	-5.694877626E-07	-1.701026206E-06
3.127620586	1.625590706E-06	-1.209310356E-07	3.753144663	8.541882659E-07	9.790094754E-07
3.152087032	4.747909113E-07	9.045023645E-07	4.378668834	-2.127926577E-07	9.960117510E-07
5.004192968	-7.162276122E-07	3.305927255E-07	2.662774794	-4.975108726E-07	-3.452968753E-07
5.629717072	-5.326478419E-07	-2.878038727E-07	3.662771478	-3.155260317E-07	4.393152388E-07
0.915693464	-3.062500306E-07	-3.984785296E-07	1.932124771	-4.693430882E-07	-1.389273553E-07
6.255241231	-6.775975535E-08	-4.563499912E-07	7.304186416	-4.248178658E-07	-8.919834551E-08
2.831366462	-2.862856063E-07	-2.150262658E-07	6.880765366	2.459721848E-07	-2.483504375E-07
0.831396886	3.491747648E-07	1.535699610E-08	7.506289444	2.610554464E-07	3.616474159E-08
1.915684978	2.029180245E-07	-1.409356473E-07	1.662764154	1.182438338E-07	-1.769342592E-07
8.131813628	9.574995572E-08	1.732718587E-07	1.502110732	1.301824507E-07	-1.387091398E-07

Table C.48: (continued)

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
2.127632571	1.855332500E-07	1.816687576E-08	0.876636579	-1.015497408E-08	-1.772137961E-07
2.753155107	9.120146673E-08	1.471668431E-07	3.578479518	-1.747200889E-07	-4.311599006E-10
0.936633573	2.206922542E-08	1.679256430E-07	3.378683473	-5.752313925E-08	1.438659589E-07
8.757337757	-6.084723462E-08	1.351121532E-07	11.456281224	1.176772501E-07	-9.320769922E-08
0.251054493	-1.272113568E-07	-6.786778332E-08	4.004205801	-1.299909011E-07	3.594649055E-08
1.404949660	-1.328874097E-07	2.565288375E-08	24.737528377	6.573721686E-08	-1.019183134E-07
4.629727348	-9.158718881E-08	-6.953476598E-08	9.382861853	-1.079260697E-07	2.408335038E-08
4.578465821	-1.595843202E-09	1.150770218E-07	3.747189974	-8.602701793E-08	-4.538252373E-08

Table C.49: Fourier analysis of the c_9 function in the Sun–Earth+Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.000000000	-7.246560761E-09	0.000000000E+00	1.000013114	1.974426024E-07	6.960620886E-07
2.251061628	-4.502807278E-07	6.177382233E-08	0.374487215	3.666475348E-07	8.224893170E-08
2.876583227	-2.698084219E-07	-2.672660944E-07	0.251032166	2.298590045E-07	1.927473473E-07
3.502118994	4.687165472E-08	-2.994903862E-07	4.127634078	2.102602881E-07	-1.134148119E-07
1.625525733	-1.129969998E-07	2.069849193E-07	0.831395713	-2.344646624E-07	-7.814520945E-08
0.876464233	3.357400752E-09	2.431952397E-07	1.502094056	-1.537242458E-07	9.840156357E-08
4.753165089	1.682748784E-07	7.839533318E-08	2.127613577	-1.306939659E-07	-4.827737193E-08
5.378682232	2.970142320E-08	1.395095487E-07	4.152107752	1.179234309E-07	2.139515339E-08
6.004206857	-7.161630085E-08	8.191749827E-08	2.753128143	-3.031912829E-08	-1.016718145E-07
6.629732961	-8.226430120E-08	-6.329127392E-09	3.378673911	4.855100561E-08	-6.320066305E-08
0.747765044	2.475965612E-09	-7.313612000E-08	0.084322441	-4.214831095E-08	5.724396117E-08
4.004213281	5.964090788E-08	1.531233123E-09	7.255254901	-3.343256678E-08	-5.247364375E-08
1.746086220	-2.476973434E-08	4.944636886E-08	1.915709863	3.493786468E-08	4.788691095E-08
8.304195964	-4.057011836E-08	3.461291014E-08	7.880776059	1.639668740E-08	-4.377829874E-08
4.629726490	2.597921315E-08	3.604494534E-08	8.506297447	3.356120856E-08	-9.893113927E-09
1.999924628	1.886844197E-08	2.798429195E-08	5.255267510	-1.047252016E-08	3.123316718E-08
1.374346399	3.181602541E-08	1.003824960E-09	1.876220438	-2.013193510E-08	-1.943334309E-08
2.502129486	8.945892424E-09	-2.626131111E-08	0.122817145	-1.839232086E-08	-1.787648297E-08
2.625366721	-6.405641859E-09	2.506195365E-08	3.127636730	2.562581462E-08	-8.474747475E-09
0.932908693	-2.077747850E-08	-1.310811103E-08	5.880812837	-2.326309193E-08	7.197635339E-09
3.753464028	1.636826029E-08	1.788555951E-08	9.131821978	2.091576201E-08	1.562619022E-08
0.502381539	-2.291824501E-08	6.924129870E-09	4.378685616	6.466384767E-10	2.218719605E-08
1.127981823	-1.712783184E-08	-1.465486656E-08	1.251119186	-2.218188740E-08	-1.167112182E-09
9.757346630	6.168128352E-12	1.943907386E-08	1.084420877	1.416975503E-08	1.274995527E-08
12.456288583	-2.697285880E-10	-1.835610179E-08	5.004201444	-1.497144216E-08	1.209304481E-08
6.506318560	-1.461972532E-08	-1.039033812E-08	3.250926415	-1.649317961E-08	6.973220969E-09
5.629685703	-1.600675218E-08	-3.541701389E-09	3.876518929	-1.144225160E-08	-1.003229729E-08
1.662875647	-1.135663659E-08	-8.914669460E-09	10.382866693	-1.152314445E-08	8.683713896E-09
0.915705162	-1.113444075E-08	8.169048464E-09	0.063410647	-9.616705812E-09	-1.129720638E-08
6.255255593	-5.187743399E-09	-1.265630746E-08	2.379356990	1.219442932E-08	-5.092389609E-09
2.662810727	-8.169134333E-09	1.043026074E-08	2.831425602	1.240702184E-08	4.330182373E-09
7.131859363	-5.405049159E-11	-1.316139418E-08	0.531697391	8.914843769E-09	-9.254568843E-09
0.168608152	6.791550990E-09	8.955398598E-09	0.404936729	-9.376656939E-09	-7.052508564E-09
25.791295171	6.717802548E-09	-8.654156957E-09	6.880765127	5.669144298E-09	-9.734590852E-09
4.502002944	1.017373291E-09	-1.064318120E-08	0.625711416	-7.155505462E-09	8.129741949E-09
1.468336268	-6.604713906E-09	9.126527056E-09	3.005428666	5.608142487E-09	8.762032464E-09
1.053953578	-1.506514544E-09	1.064150158E-08	11.008392504	-1.026793798E-08	-2.989557633E-09

Table C.50: Fourier analysis of the c_{10} function in the Sun–Earth+Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.000000000	1.000420821E+00	0.000000000E+00	0.999992615	5.004157957E-02	1.955082517E-03
1.999985620	1.249649675E-03	9.792092346E-05	0.914759532	-2.774407729E-05	3.945963225E-05
1.251039994	1.165851986E-05	-4.060352189E-05	2.999980105	3.059039849E-05	3.623849847E-06
0.625522693	1.628317601E-05	2.177539024E-05	1.831330067	4.896856247E-06	-1.699758964E-05

Table C.51: Fourier analysis of the c_{11} function in the Sun–Earth+Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.000000000	-1.143013482E-08	0.000000000E+00	3.502121722	1.046804228E-06	1.642646845E-07

Table C.51: (continued)

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
2.251060706	-1.394929757E-07	-1.012526489E-06	2.876560187	7.553604017E-07	-7.812777269E-07
4.127632929	4.681819573E-07	8.653893133E-07	4.753174253	-3.749335811E-07	7.937179428E-07
5.378678580	-7.476598163E-07	1.617083157E-07	1.000012690	-6.968157425E-07	1.982052525E-07
6.004204177	-4.914130142E-07	-4.273152613E-07	6.629733774	4.133842616E-08	-5.432361749E-07
4.152108276	-8.900804050E-08	4.891944213E-07	7.255251372	3.783425842E-07	-2.430436681E-07
8.304195038	-2.883075912E-07	-3.381403570E-07	25.791293164	3.035001074E-07	2.347939988E-07
1.625513029	-3.377843556E-07	-1.814873133E-07	7.880776025	3.435212991E-07	1.281861636E-07
8.506300414	8.334929328E-08	2.840022338E-07	2.753074122	2.772598834E-07	-9.511987838E-08
2.127617657	1.029072417E-07	-2.771493024E-07	1.502079396	-1.498689697E-07	-2.288128367E-07
3.378668146	2.144784105E-07	1.624063941E-07	9.131824332	-1.418812907E-07	1.897006811E-07
12.456292408	2.287998933E-07	-2.760155111E-09	4.004202331	-3.216780951E-09	2.385482003E-07
37.205571373	-1.860730727E-07	1.065532303E-07	0.831396174	6.459664939E-08	-1.955045883E-07
4.629811460	-1.721217522E-07	1.112539817E-07	0.876507200	-2.112214071E-07	-3.253350275E-09
9.757347744	-1.878371002E-07	1.839135044E-10	5.255245879	-1.651819174E-07	-5.201784308E-08
10.382864223	-8.950117114E-08	-1.181219350E-07	0.374486992	-3.109609393E-08	1.378504202E-07
5.880809940	-4.372817089E-08	-1.363710162E-07	31.280100029	-1.404783603E-07	3.793175831E-08
48.619848680	-1.666378310E-08	-1.299423438E-07	6.506314950	6.718906909E-08	-9.568838172E-08
19.865824767	6.897429294E-08	8.978239066E-08	11.008393463	3.240637545E-08	-1.115395090E-07
1.915713051	-9.165362050E-08	6.719228237E-08	14.377177528	4.003183205E-08	-9.998348989E-08
1.747514011	-2.243992990E-08	-1.031924875E-07	42.694384921	1.325374243E-08	-9.935459772E-08
2.962719074	-9.995050936E-08	1.301283358E-08	8.451640697	5.816830574E-08	-8.511930153E-08
5.004200687	-5.449222326E-08	-7.662232021E-08	4.378654929	-9.504540338E-08	-1.766280953E-09
11.633917819	8.466852313E-08	-3.187733883E-08	7.131850052	9.410879730E-08	-1.669711793E-09
3.753344856	-6.482332966E-08	5.992601369E-08	60.034121002	8.449278917E-08	2.257599891E-08
5.629696758	2.458929038E-08	-8.620292133E-08	16.608381794	-5.250474735E-08	6.569542215E-08
3.127632518	1.855450601E-08	8.167432850E-08	6.255241394	7.828167265E-08	-2.881243355E-08
6.880771090	6.352563160E-08	4.106404241E-08	7.757384380	4.545347862E-08	5.964146171E-08
0.251002760	-4.639241439E-08	5.734471175E-08	12.259414637	5.978731722E-08	3.641914084E-08
2.502179154	6.176887620E-08	3.267997874E-08	54.108657785	5.992143267E-08	3.450093737E-08
7.506315634	4.163738490E-09	6.701044100E-08	71.448391763	-3.773906351E-08	4.965478672E-08
8.382939583	-1.843872958E-08	5.831917997E-08	1.876381166	5.147939314E-08	-3.005672830E-08
8.131810164	-4.401881731E-08	3.914766998E-08	2.625237631	-5.089184517E-08	-4.840229678E-09
8.757344175	-4.975042330E-08	-1.032016323E-08	65.522933298	-3.927169746E-08	3.033034206E-08
12.884975591	3.772140181E-09	5.365357575E-08	20.760505683	-8.792865377E-09	-4.64462728E-08
0.747498308	4.607674679E-08	-7.839189629E-09	82.862680370	-2.332721527E-08	-4.050299275E-08
9.008414588	-4.343072097E-08	1.644971575E-08	7.304187567	1.453837970E-08	4.236241374E-08
13.510739492	-3.481817763E-08	2.218411669E-08	9.382858041	-1.870775238E-08	-3.887606697E-08
2.831452883	-1.240415720E-08	3.556935614E-08	10.008365320	1.642244163E-08	-3.254319575E-08
9.633950864	-3.018412744E-08	-1.974645530E-08	94.276954803	3.605374934E-08	-4.763555290E-09
1.251082977	9.022469145E-09	-3.402319330E-08	33.729766063	-1.520286148E-08	3.081265109E-08
1.999588313	-1.365561518E-08	3.155169095E-08	76.937209989	-9.724768144E-09	-3.568708796E-08
26.467597137	2.385225716E-08	-2.493824868E-08	2.662821759	-2.801319960E-08	-2.129222412E-08
39.436935473	-3.217203274E-08	3.658821546E-09	3.631432385	-2.794796334E-08	-1.668634714E-08
14.136004939	-3.109803259E-08	-6.492856884E-09	23.341585779	2.681110755E-09	3.004065751E-08
2.380006436	-2.702183532E-09	2.931975051E-08	10.633899506	3.001200003E-08	-5.182476221E-09
105.691225871	-7.385547605E-09	2.818360400E-08	88.351486774	2.823726011E-08	3.576266355E-09
28.022643818	1.501044771E-08	2.663022679E-08	45.144073713	-1.881033948E-08	-2.223594792E-08
3.005226189	-2.255333357E-08	1.756306607E-08	29.048708226	-2.118985522E-08	1.741458571E-08
3.876216487	1.064953194E-08	-2.503081826E-08	10.259487496	-1.309483511E-09	-2.786129132E-08
1.374031067	7.691762048E-09	2.762316867E-08	3.250678906	-2.164630402E-08	-1.706736787E-08
1.127977042	1.612327908E-08	-1.926085970E-08	30.603988711	-6.483883960E-09	-2.510386970E-08
10.456291023	-1.756012939E-08	-1.788449583E-08	42.018070994	2.486465926E-08	5.442478896E-10
36.311001091	1.597547313E-08	-2.101152839E-08	50.851193379	6.822449234E-09	-2.493644357E-08
11.259416029	1.839015216E-08	1.707669233E-08	14.761473489	-1.189835192E-08	-2.255151838E-08
1.662653965	1.180131196E-08	-2.089728632E-08			

Table C.52: Fourier analysis of the c_{12} function in the Sun–Earth+Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.000000000	-1.392996292E-04	0.000000000E+00	0.999992623	-1.668016536E-02	-6.515654284E-04
1.999985650	-6.940978784E-04	-5.444162504E-05	1.831345589	-9.009397147E-06	2.977202207E-05
1.251039872	-6.827843485E-06	2.369082184E-05	2.999972350	-2.245748083E-05	-2.594375582E-06
0.914705134	7.291706252E-06	-1.081655543E-05	1.876596754	-8.309243705E-06	2.770513990E-06
2.502118370	-4.533234277E-06	-2.957272167E-06			

Table C.53: Fourier analysis of the c_{13} function in the Sun–Earth+Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.000000000	1.000420082E+00	0.000000000E+00	0.999992616	5.004134039E-02	1.955026993E-03
1.999985626	1.249606727E-03	9.796646876E-05	1.251040100	1.301854822E-05	-4.528356026E-05
0.914744598	-2.667949264E-05	3.838297436E-05	2.999977291	3.056573501E-05	3.589237519E-06
1.831339554	7.986070341E-06	-2.696503381E-05	0.625524273	9.735437991E-06	1.304398161E-05

C.5 Solar System bodies, Sun–Earth+Moon case

In tables C.54 to C.75 we give the results of the Fourier analysis of the positions of the Solar System bodies in adimensional coordinates for the Sun–Earth+Moon case. We do not give adjustments of the frequencies as linear combinations of basic ones because they have not been used in any model. In order to save space, every row of these tables correspond to two entries, which are separated by a double vertical line.

Table C.54: Fourier analysis of the x coordinate of Mercury in the Sun–Earth+Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.000000000	-8.9213994854E-04	0.000000000E+00	3.1520957062	3.3536270344E-01	-1.7306563999E-01
0.9999971877	1.0933638795E-01	-4.7376269997E-02	7.3041883820	-8.0858953382E-03	3.7532464072E-02
2.1521035278	8.2147521073E-03	-4.6502995741E-03	11.4562813322	-3.6378348284E-03	-4.5928630808E-03
1.9999926055	2.7806868666E-03	-1.0732967451E-03	4.1520864543	-2.8460253810E-03	1.3598794372E-03
5.1520958800	-3.8449355682E-04	-3.0224720241E-03	15.6083737903	1.0595072517E-03	1.9751945381E-05
6.3041923201	-1.6368409767E-04	9.4619871332E-04	8.3041823766	7.7925614509E-05	-3.1093954057E-04
9.3041944975	2.2308657496E-04	1.0870486046E-04	1.1521134279	1.8952309202E-04	-1.1729258560E-04
19.7604670285	-1.3685154465E-04	1.6003022988E-04	10.4562886635	-9.5386530118E-05	-1.1120742820E-04
6.1520850568	-6.6253088533E-06	-7.6001121507E-05	2.9999893860	6.6688904196E-05	-2.3338789447E-05
12.4562716391	2.9087578267E-05	3.9287211344E-05	23.9125592732	-7.7285115551E-06	-4.3743534945E-05
13.4562843045	-2.1924722405E-05	1.6301356095E-05	14.6083845984	2.6489163565E-06	-5.0550317242E-07
5.3041985620	-3.2424443228E-06	2.2640677613E-05	1.9018846483	3.4714843944E-06	9.5589722638E-06
2.2356767644	-9.3746798206E-06	1.6396917826E-06	28.0646528032	8.5053580917E-06	4.8033370560E-06
16.6083673900	-8.8265244377E-06	-4.6790588554E-07	3.3280044049	2.2760102901E-06	6.2565252970E-06

Table C.55: Fourier analysis of the y coordinate of Mercury in the Sun–Earth+Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.000000000	4.3242735169E-04	0.000000000E+00	3.1520957062	1.7306604679E-01	3.3536304778E-01
0.9999971870	-4.7371960260E-02	-1.0934268244E-01	7.3041883820	-3.7532457696E-02	-8.0858790031E-03
2.1521035277	4.6503074193E-03	8.2144267122E-03	11.4562813322	4.5928603367E-03	-3.6378347785E-03
1.9999925864	-1.0734234755E-03	-2.7808723603E-03	4.1520866526	-1.3095097228E-03	-2.8546976764E-03
5.1520958555	-3.0326745083E-03	3.6024138787E-04	15.6083737899	-1.9751780313E-05	1.0595067111E-03
6.3041923199	-9.4625047888E-04	-1.6372048129E-04	8.3041823656	3.0928428427E-04	8.1725825102E-05
9.3041946118	1.1130040188E-04	-2.2231479459E-04	1.1521133280	1.1693599525E-04	1.9003595607E-04
19.7604670282	-1.6003023763E-04	-1.3685138563E-04	10.4562886636	1.1121127116E-04	-9.5387791447E-05
6.1520832553	-7.6063441102E-05	6.4062304645E-06	2.9999817217	-2.2161508027E-05	-6.6594916164E-05
12.4562718656	-3.9582595744E-05	2.8609318234E-05	23.9125592722	4.3743509125E-05	-7.7284916842E-06
13.4562841835	1.5963127479E-05	2.9357568535E-05	14.6083845988	5.0538439942E-07	2.6489626048E-05
5.3041993072	-2.2615682870E-05	-3.1922022133E-06	28.0646528031	-4.8033366846E-06	8.5053493703E-06
2.2354122011	-2.8950335877E-06	-8.7601629794E-06	16.6083674153	5.6077282130E-07	-8.8191281454E-06
3.3280091428	-6.2618522457E-06	2.2513318832E-06			

Table C.56: Fourier analysis of the z coordinate of Mercury in the Sun–Earth+Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.000000000	-7.1284256366E-03	0.000000000E+00	4.1521029390	-4.5375386291E-02	-8.0468375405E-03
8.3041960978	3.5740966125E-03	-3.0407711838E-03	12.4562881950	1.1277255805E-05	7.1633318469E-04
5.1520971896	-3.7566142288E-04	-8.2107074983E-05	3.1521117318	-3.8092396415E-04	-5.2508377223E-05
16.6083815616	-1.0130121359E-04	-8.0850321393E-05	0.9999919737	-1.1884611931E-04	-4.6014269722E-06
7.3042028232	2.8782796883E-05	-2.6519278457E-05	9.3041873191	3.0778827940E-05	-2.4203385977E-05

Table C.56: (continued)

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
20.7604732790	2.5199605453E-05	-5.3338159552E-06	6.1520914874	-6.2026988948E-06	-1.6222237034E-06
2.1521213003	-6.3754123216E-06	-7.4946492867E-07	13.4562833576	-1.4421398642E-07	5.9766072107E-06
11.4562977902	3.2551361432E-07	5.9636578851E-06	24.9125669393	-2.5125034108E-06	4.8189207186E-06
1.9999900793	-2.0135450374E-06	-1.5257516083E-07			

Table C.57: Fourier analysis of the x coordinate of Venus in the Sun–Earth+Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.0000000000	-7.1483976149E-05	0.0000000000E+00	0.6255241203	-4.3334839804E-01	-5.7810339210E-01
0.3744703524	-1.1414093829E-02	1.4040400539E-02	1.0000080520	6.2713308682E-03	3.7581770797E-03
1.6255151622	3.4328320894E-03	4.9617862643E-03	2.2510466731	1.7856312465E-03	-1.6593752648E-03
2.6255548088	-6.1711310663E-04	-3.8523496561E-05	1.3744645033	-2.8235188900E-04	3.2077327503E-04
2.0000047086	1.5305399373E-04	1.0017991998E-04	1.2510576086	3.3228257866E-05	-1.0026330315E-05
3.2510380752	-1.5433114635E-05	1.3289813160E-05	0.2890331269	-6.3361365254E-06	-1.5863949367E-05
3.6255594735	-1.5475683941E-05	-1.9441600858E-06	3.8765723340	9.2826675027E-06	8.1401333328E-06
1.8766021105	-1.0503273935E-05	3.8460284029E-06	2.3743718798	-6.4527823688E-06	8.1236394810E-06

Table C.58: Fourier analysis of the y coordinate of Venus in the Sun–Earth+Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.0000000000	-2.9070508697E-05	0.0000000000E+00	0.6255241204	5.7808268818E-01	-4.3333312026E-01
0.3744703181	1.4019981419E-02	1.1403628987E-02	1.0000081878	3.7577817773E-03	-6.2710864401E-03
1.6255151261	-4.9610904114E-03	3.4222710164E-03	2.2510466204	1.6603090450E-03	1.7857928196E-03
2.6255543063	-8.1346667894E-05	6.4348936709E-04	1.3744660648	3.2050176151E-04	2.8286035493E-04
2.0000037182	1.0031511046E-04	-1.5315558858E-04	1.2510513575	5.1178494885E-05	4.5372825711E-05
3.2510390476	-1.3240329464E-05	-1.5430317866E-05	0.2890042772	-1.5977457055E-05	5.5454182179E-06
3.6255379221	-2.2947869424E-06	1.5934808905E-05	0.8765902777	-2.4579339555E-06	-1.2688937723E-05
3.8765721234	-8.0922656122E-06	9.3065116595E-06	2.3743873285	7.4076745540E-06	6.4712804726E-06
0.9154119593	5.1114829446E-06	5.8381711910E-06			

Table C.59: Fourier analysis of the z coordinate of Venus in the Sun–Earth+Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.0000000000	-3.5576845382E-04	0.0000000000E+00	1.6255398595	-2.0847803029E-02	3.7421166120E-02
2.6255283771	-1.8564463324E-04	3.0537137803E-04	0.6255498595	-1.6191278499E-04	3.1866310282E-04
3.2510561739	-1.3310850369E-04	-5.6399261315E-05	0.9999923837	-5.9073190813E-06	-1.7574281075E-07
3.6255149936	-3.2826093406E-06	4.9768521450E-06	0.3744397546	-1.7131807567E-06	-5.2696346637E-06

Table C.60: Fourier analysis of the x coordinate of Mars in the Sun–Earth+Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.0000000000	1.0432834709E-03	0.0000000000E+00	0.4683164653	-9.8419453476E-02	-1.5130181004E+00
0.9999897985	-1.2129132000E-01	-1.7573755517E-01	0.0633553980	-3.2366633177E-02	-6.2901250820E-02
1.4683080969	-1.0131285483E-03	-3.7893570973E-02	0.5316792701	1.3912834119E-03	-1.2612143186E-02
1.9999812965	-2.8610797057E-03	-4.5065900499E-03	0.5950241825	4.2319221586E-03	2.6120091976E-03
0.9366316807	-9.0972506390E-04	1.5434789051E-03	1.5316539842	-1.1262390159E-03	-8.1215586074E-04
2.4683017740	1.1876292846E-05	-8.9487512271E-04	1.0633569180	2.4440087925E-04	5.3467134969E-04
1.1267048532	-4.0931867015E-04	-8.1846579845E-06	0.4049892842	1.4995338315E-04	-2.4456797650E-05
0.9157137801	-1.1106346324E-04	7.3542356800E-05	2.9999748108	-6.3244409267E-05	-1.0902138915E-04
0.8314205447	6.1672358352E-05	9.5196184594E-05	1.3631083741	-7.9253937230E-05	-3.2907075338E-05
0.0213169010	-4.1965726522E-05	-3.4247536688E-05			

Table C.61: Fourier analysis of the y coordinate of Mars in the Sun–Earth+Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.0000000000	1.4292762266E-03	0.0000000000E+00	0.4683164657	-1.5130068292E+00	9.8418744589E-02
0.9999897969	-1.7572645067E-01	1.2130139997E-01	0.0633554292	6.2872270879E-02	-3.2346064066E-02
1.4683081009	-3.7893449022E-02	1.0131849710E-03	0.5316798228	1.2531893722E-02	1.2970464722E-03

Table C.61: (continued)

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
1.9999812947	-4.5064762566E-03	2.8611881473E-03	0.5950300054	-2.6095261748E-03	4.1763867954E-03
0.9366309954	1.5437642022E-03	9.0871057513E-04	1.5316528078	-7.0689944825E-04	1.1407722787E-03
2.4683017882	-8.9488297200E-04	-1.1889675641E-05	1.0633466863	-5.3560386756E-04	2.5087846000E-04
1.1266922215	4.3307908473E-06	-4.1126203068E-04	0.4048979301	-2.8666129744E-05	-1.4631234519E-04
0.9157134137	7.3542450804E-05	1.1106948421E-04	2.9999748034	-1.0901816185E-04	6.3246899648E-05
0.8314204656	9.5863580214E-05	-6.2188214173E-05	1.3631098804	-3.0708871283E-05	7.3706057924E-05
0.0207686857	-1.8125561495E-05	4.9068202470E-05			

Table C.62: Fourier analysis of the z coordinate of Mars in the Sun–Earth+Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.0000000000	6.5908716055E-03	0.0000000000E+00	0.5317017630	3.3166551046E-02	-3.6075756598E-02
1.0633751187	-4.6229625299E-04	2.2367950125E-03	0.4682755789	2.6602303212E-04	3.0981243756E-04
1.5317008929	2.8860809867E-04	-2.8939178434E-04	1.5950494070	-5.2567666640E-05	-1.5080264115E-04
0.9998500566	1.1087567545E-04	8.3875855024E-08	0.0652148392	-1.2675058142E-05	1.6866761410E-05
2.0633621149	-4.5353108161E-06	1.8493075223E-05	2.1267163382	1.0181067540E-05	8.4650259896E-06
1.4679427670	4.9528494029E-06	4.8612625778E-06	2.5316781855	4.9793443253E-06	-4.6664196119E-06
0.3628083946	5.5322828714E-06	-7.4675270122E-07	0.1698819274	-3.1924640860E-06	-5.5023885850E-07

Table C.63: Fourier analysis of the x coordinate of Jupiter in the Sun–Earth+Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.0000000000	-1.3489221730E-04	0.0000000000E+00	0.9157023655	-4.2048955297E+00	3.0503417231E+00
1.0000001162	2.6789894761E-02	-3.7625726716E-01	0.8314125174	-1.2167988493E-01	-3.0991196842E-02
1.9156876847	-1.0772243332E-01	7.2627842407E-02	0.0842900964	3.4035470995E-02	2.6784951118E-02
1.9999976726	1.0640656742E-03	-9.3720957783E-03	0.7471143257	-1.9850453042E-03	-4.0987395174E-03

Table C.64: Fourier analysis of the y coordinate of Jupiter in the Sun–Earth+Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.0000000000	3.1410639256E-03	0.0000000000E+00	0.9156997799	3.0587826296E+00	4.1985514443E+00
1.0000034255	-3.7648770250E-01	-2.7554775131E-02	1.9156947246	7.1953589463E-02	1.0789872456E-01
0.8313969892	-2.9774129832E-02	1.2207236316E-01	0.0842964019	-2.6924585636E-02	3.3832615794E-02
1.9999950972	-9.3666741419E-03	-1.0475177237E-03	0.7470919900	-4.0715229081E-03	2.0504761011E-03
1.0163888977	-2.4718069656E-03	-2.9022800556E-03	1.8313887443	-9.8701065010E-04	2.9815793462E-03
2.9156868586	1.5960678121E-03	2.6079122462E-03	0.9321609421	1.2722064598E-03	-1.6220014031E-03
0.8993110800	1.4351192623E-03	-4.2341908298E-04	0.9824731487	1.4221968934E-03	-2.0852616443E-04
0.9660452736	8.1677279128E-04	1.0354775256E-03	0.8150103647	6.3090198178E-04	9.5330508760E-04
0.1685959595	2.0774159607E-04	1.0242838473E-03			

Table C.65: Fourier analysis of the z coordinate of Jupiter in the Sun–Earth+Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.0000000000	8.5287815348E-03	0.0000000000E+00	0.0843069506	-6.8912932066E-02	9.5882422759E-02
0.1685652183	7.2426127589E-04	2.7572217996E-03	1.0843031226	-6.0662537266E-04	7.7630014704E-04
0.9156835691	-5.4369773302E-04	-8.2129145241E-04	1.0000175063	1.4213700133E-04	5.6969043619E-06
0.2526782846	9.5604505255E-05	3.9514135112E-05			

Table C.66: Fourier analysis of the x coordinate of Saturn in the Sun–Earth+Moon case.

f_l	A_l^c	A_l^s	f_l	A_l^c	A_l^s
0.0000000000	-6.3735794865E-03	0.0000000000E+00	0.9660402104	-7.4558350142E+00	5.9183490060E+00
1.0000006201	7.6948912665E-01	-1.1680178222E-01	0.9320939210	-9.7492282312E-02	2.3994600655E-01
1.9660322375	-1.9200656910E-01	1.4058755317E-01	0.0339558188	6.0119431815E-02	5.1866620518E-02
1.9999946073	1.9344248570E-02	-2.1228742560E-03			