Ephémérides des satellites de Mars, Jupiter, Saturne et Uranus pour 1994

Th. Derouazi, Ch. Ruatti, W. Thuillot, D.T. Vu

SUPPLÉMENT À LA CONNAISSANCE DES TEMPS – PARIS 1993
BUREAU DES LONGITUDES

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les éditions de physique

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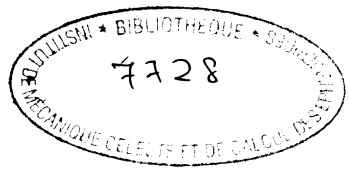

ÉPHÉMÉRIDES DES SATELLITES DE MARS, JUPITER, SATURNE ET URANUS POUR 1994

EPHEMERIDES OF THE SATELLITES OF MARS, JUPITER, SATURN AND URANUS FOR 1994

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PUBLICATIONS DU BUREAU DES LONGITUDES

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Autres suppléments à la *Connaissance des Temps* :

• Éphémérides des satellites faibles de Jupiter (VI, VII, VIII, IX) et de Saturne (IX) pour 1994

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Other supplements to the Connaissance des Temps :

• *Ephemerides of the faint satellites of Jupiter (VI, VII, VIII, IX) and of Saturn (IX) for 1994*

• *Phenomena and configurations of the Galilean satellites of Jupiter for 1994*

• *Configurations of the first eight satellites of Saturn for 1994*

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  - La physique (1981)
  - La terre, les eaux, l'atmosphère (épuisé)
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  - Cahier n° 2 « Stratosphère et couche d'ozone », G. MÉGIE, professeur à l'Université Pierre et Marie Curie
  - Cahier n° 3 « L'Univers en questions », A. MAZURE, G. MATHEZ, Y. MELLIER (en préparation)
- Le Calendrier Républicain (Éditions de l'Observatoire de Paris)

AVERTISSEMENT

Depuis 1980, la *Connaissance des Temps* publie les éphémérides du Soleil, de la Lune, des planètes et des satellites galiléens de Jupiter sous forme de coefficients de Tchébycheff. A partir de 1981, des éphémérides des huit premiers satellites de Saturne ont été publiées sous la même forme dans un supplément à la *Connaissance des Temps*. Ces éphémérides ayant été appréciées par les utilisateurs, nous avons décidé d'étendre ces publications à d'autres satellites naturels du système solaire.

Depuis 1985, nous publions dans un même recueil des éphémérides des satellites galiléens de Jupiter, des huit premiers satellites de Saturne et des cinq satellites d'Uranus. A partir de 1991, les éphémérides des satellites de Mars ont été ajoutées. Les éphémérides ne sont plus représentées à l'aide de coefficients de Tchébycheff, mais à l'aide de fonctions mixtes du paramètre « temps » comprenant des termes séculaires et des termes périodiques. Cette représentation permet de garder une bonne précision tout en diminuant notablement le nombre de valeurs numériques à publier et en autorisant une plus grande facilité d'emploi.

La liste des satellites dont nous publions les éphémérides n'est pas limitative et nous envisageons de l'étendre en fonction des données dont nous disposerons.

En dehors des éphémérides proprement dites cet ouvrage contient des données diverses sur les satellites de Mars, Jupiter, Saturne et Uranus et présente un formulaire permettant de calculer les phénomènes des satellites galiléens de Jupiter.

FOREWORD

Since 1980, Connaissance des Temps has published ephemerides of the Sun, the Moon, the Planets and the Galilean satellites of Jupiter as tables of Chebychev polynomials. From 1981, ephemerides of the first eight satellites of Saturn have been published under the same form in a supplement to the Connaissance des Temps. These ephemerides have been well received by the users ; hence, we now intend to enlarge the publication to incorporate other natural satellites of the planets.

Starting from 1985, we have gathered in this booklet, the ephemerides of the Galilean satellites of Jupiter, the first eight satellites of Saturn and the five satellites of Uranus. From 1991, we added the ephemerides of the Satellites of Mars. The representation does not use Chebychev polynomials. It appears that a mixed form of representation, involving secular and periodic terms and depending directly on time, allows sufficient accuracy and reduces the amount of numerical data to be published. Furthermore, it is very easy to use these tables.

The list of the satellites, the ephemerides of which are published, is not limited and will be extended as soon as it is possible.

Beside the tables, the present publication contains various data concerning the satellites of Mars, Jupiter, Saturn and Uranus. We will also present, a formula which permits the calculation of the phenomena of the Galilean satellites.

J.-E. ARLOT

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PRESENTATION OF THE EPHEMERIDES

CONTENU

On trouve dans cette publication :

— des données sur les satellites galiléens de Jupiter rassemblant les résultats d'un certain nombre de travaux théoriques ou d'observations effectués sur ces satellites, ainsi que des données (en général recommandées par l'UAI) sur l'ensemble des satellites de Mars, Jupiter, Saturne et Uranus ;
— des tables permettant de calculer les positions des satellites de Mars, des satellites galiléens de Jupiter, des huit premiers satellites de Saturne et des cinq satellites d'Uranus ;
— des tables permettant de calculer les prédictions des phénomènes des satellites galiléens de Jupiter.

Les éphémérides des satellites donnent les coordonnées différentielles tangentielles des satellites par rapport au centre de la planète. Soit, au premier ordre :

$$X = \Delta\alpha \cos \delta \text{ et } Y = \Delta\delta$$

où δ est la déclinaison de la planète et où $\Delta\alpha$ et $\Delta\delta$ sont les différences en ascension droite et en déclinaison entre le satellite et la planète.

Ces coordonnées sont des coordonnées moyennes rapportées à l'équateur J2000 pour tous les satellites. L'axe des Y est dirigé vers le pôle de l'équateur moyen des coordonnées (nord) et l'axe des X est orienté dans le sens des ascensions droites croissantes (est).

Les théories utilisées pour la construction des éphémérides sont les suivantes :

— satellites de Mars : la théorie de Chapront-Touzé (1990) ;
— satellites galiléens : la théorie de Sampson (1921) améliorée par Lieske (1977) ; les constantes introduites ont été déterminées par Arlot (1982) ;
— huit premiers satellites de Saturne : les théories issues des travaux de Dourneau (1987), de Rapaport (1977), de Kozaï (1959) et de Struve (1930) ;
— satellites d'Uranus : la théorie de Laskar et Jacobson (1987).

CONTENTS

This publication contains the following :

— data on the Galilean satellites of Jupiter which sum the results of theoretical or observational studies in addition to various data (most of which are recommended by the IAU) concerning all known satellites of Mars, Jupiter, Saturn and Uranus ;
— tables which allow the computation of the positions of the satellites of Mars, the Galilean satellites of Jupiter, the first eight satellites of Saturn and the five satellites of Uranus ;
— tables to calculate the phenomena of the Galilean satellites of Jupiter.

These ephemerides of the satellites give the differential tangential coordinates of the satellites with respect to the centre of mass of the planet. We have, at the first order :

$$X = \Delta\alpha \cos \delta \text{ and } Y = \Delta\delta$$

where δ is the declination of the planet, $\Delta\alpha$ and $\Delta\delta$ the separations in right ascension and declination between the satellite and the planet.

These coordinates are mean coordinates equator J2000 for all the satellites. The Y-axis is set towards the pole of the equator (North) and the X-axis towards the increasing right ascensions (East).

The theories which have been used for the construction of the ephemerides are :

— satellites of Mars : theory from Chapront-Touzé (1990) ;
— Galilean satellites : Sampson's theory (1921) improved by Lieske (1977) ; the constants introduced have been determined by Arlot (1982) ;
— first eight satellites of Saturn : theories from the studies of Dourneau (1987), Rapaport (1977), Kozaï (1959) and Struve (1930) ;
— satellites of Uranus : theory from Laskar and Jacobson (1987).

REPRÉSENTATION DES COORDONNÉES

Soit T une date Julienne appartenant à l'intervalle de temps $T0$, $T0 + \Delta t$, les coordonnées des satellites pour la date T sont données par la formule :

REPRESENTATION OF THE COORDINATES

Let T be a Julian date belonging to the interval of time T0, T0 + Δt. The coordinates of the satellites for the date T are given by the formula :

$$\left.\begin{matrix} X \\ Y \end{matrix}\right\} = A0 + A1 \cdot t + B0 \sin (Nt + F0) + B1 \cdot t \sin (Nt + F1) + B2 \cdot t^2 \sin (Nt + F2) + C0 \sin (2Nt + P0) \qquad (1)$$

où :

- $t = T - T0$;
- $A0, A1, B0, F0, B1, F1, B2, F2, C0, P0$ sont les coefficients numériques valables pour l'intervalle de temps $T0, T0 + \Delta t$ contenant T ;
- N est la fréquence associée au satellite considéré. Cette fréquence est en général proche de celle du satellite lui-même, sauf dans le cas d'Hypérion pour lequel on prend une fréquence proche de celle de Titan du fait de l'existence d'un très gros terme perturbateur de fréquence plus grande que celle du satellite lui-même.

Cette représentation sous forme de fonctions mixtes (termes séculaires et sinusoïdaux) utilise le caractère quasi périodique des variations des positions des satellites naturels des planètes. On trouvera des explications détaillées sur cette représentation dans Chapront et Vu (1984).

where :

- $t = T - T0$;
- *$A0, A1, B0, F0, B1, F1, B2, F2, C0, P0$ are numerical coefficients valid for the time interval $T0, T0 + \Delta t$;*
- *N is the frequency associated with the chosen satellite. Generally, N is close to the natural frequency of the satellite itself. Nevertheless, in the case of Hyperion, N is close to the frequency of Titan because of the appearance of a large disturbing term which frequency is larger than the proper frequency of the satellite.*

This representation with mixed functions (secular and sinusoidal terms) of time, makes use of the quasi-periodic character of the variations of the differential coordinates of the satellites. Detailed explanations about this representation are given in Chapront and Vu (1984).

DESCRIPTION DES ÉPHÉMÉRIDES

Pour chaque satellite et pour chaque intervalle de temps, on donne :

— les dates de début et de fin de l'intervalle de validité ainsi que la date Julienne du début de validité des coefficients ; cet intervalle peut varier de 3 jours à 31 jours ;

— deux jeux de coefficients $A0, A1, B0, F0, B1, F1, B2, F2, C0, P0$: l'un pour la coordonnée X, l'autre pour la coordonnée Y. Notons que pour quelques satellites (Titan, par exemple), certains coefficients ne sont pas donnés car ils sont nuls ;

— la valeur de la fréquence N associée au satellite est indiquée en haut de chaque page.

Les unités sont : la seconde de degré pour les coefficients $A0, B0, C0$, la seconde de degré par jour pour $A1, B1$, la seconde de degré par (jour)^2 pour $B2$; les phases $F0, F1, F2, P0$ sont mesurées en radian. N est en radian par jour et le paramètre « temps » t est compté en jours à partir du début de l'intervalle (époque $T0$).

DESCRIPTION OF THE EPHEMERIDES

The following is given for each satellite and for each time interval :

— the dates of the beginning and end of the interval and the Julian date of the beginning of the validity of the coefficients. The duration of the time interval may cover from 3 days to 31 days ;

— two sets of coefficients $A0, A1, B0, F0, B1, F1, B2, F2, C0, P0$: the first set for the X-coordinate and the second set for the Y-coordinate. Let us note that for some satellites (Titan for example) some coefficients, with zero value, are not listed ;

— the value of frequency N, associated with the satellite is indicated at the top of each page.

Units of the data : $A0, B0, C0$ in arcsecond ; $A1$ and $B1$ in arcsecond per day and $B2$ in arcsecond per (day)^2, For phases $F0, F1, F2, P0$ the unit is the radian. N is expressed in radian per day and t in days from the beginning of the interval (epoch $T0$).

ÉCHELLES DE TEMPS

L'argument « temps » des éphémérides publiées ici est le TDB (temps dynamique barycentrique) que l'on peut confondre, à la précision des éphémérides, avec le TDT (temps dynamique terrestre), proche du TE (temps des éphémérides) et réalisé physiquement par la mesure du TAI (temps atomique international). On a :

$$TDT = TAI + 32{,}184 \text{ s}$$

TIME-SCALES

The time argument of the ephemerides is TDB (barycentric dynamical time) which can be identified with TDT (terrestrial dynamic time) close to the former definition of ET (ephemeris time) and physically made by measuring TAI (international atomic time), so that :

$$TDT = TAI + 32.184 \text{ s}$$

Les événements astronomiques étant mesurés dans l'échelle UTC (temps universel coordonné), le tableau ci-dessous donne la relation (entre le 1 juillet 1985 et le 1 juillet 1994) entre TDT et UTC (d'après la relation entre TAI et UTC publiée par l'IERS).

Astronomical events are measured in the time-scale UTC (coordinated universal time). The table below gives the correspondence (from 1985 July 1 to 1994 July 1) between TDT and UTC (using the relationship between TAI and UTC published by the IERS).

	TDT-UTC
1985 Juil. 1 - 1988 Jan. 1	55.184 s
1988 Jan. 1 - 1990 Jan. 1	56.184 s
1990 Jan. 1 - 1991 Jan. 1	57.184 s
1991 Jan. 1 - 1992 Juil. 1	58.184 s
1992 Juil. 1 - 1993 Juil. 1	59.184 s
1993 Juil. 1 -	60.184 s

Pour 1994, on ne sait pas encore quelle en sera la valeur ; on peut cependant prendre 60 secondes, l'erreur commise n'ayant que peu d'influence sur la valeur des positions calculées des satellites.

For 1994 the value of TDT-UTC is not yet known ; one may take 60 seconds : the error made will have little effect on the values of the calculated positions of the satellites.

EXEMPLE DE CALCUL D'UNE POSITION

Pour calculer les coordonnées X et Y d'un satellite pour une date T exprimée en UTC :

— on effectue une correction déduite du tableau du paragraphe précédent pour se ramener à l'échelle TDT (identifiée à TDB) ;
— on cherche parmi les tableaux représentant X et Y celui qui correspond à l'intervalle $T0$, $T0 + \Delta t$ dans lequel se trouve T ;
— on applique la formule (1) avec $t = T - T0$.

Il faut insister sur le fait que la représentation n'est valable que sur son intervalle de validité : T doit être compris entre $T0$ et $T0 + \Delta t$.

EXEMPLE : Calculer les coordonnées tangentielles de Téthys (3e satellite de Saturne) par rapport à la planète, le 5 janvier 1994 à 23 h 30 min UTC.

On effectue d'abord une correction pour se ramener à l'échelle TDB. Pour 1993 nous avons choisi 59 secondes ; la date T est donc le 5 janvier 1993 à 23 h 30 min 60 s TDB.

Les coefficients nécessaires au calcul de X et Y sont ceux de la page 66 correspondant à l'intervalle du 1er janvier à 0 h au 17 janvier à 0 h. On a, pour X :

$A0 = -0.000\,8$, $A1 = 0.$, $B0 = 38.724\,8$, $B1 = 0.074\,73$, $B2 = 0.000\,387$, $C0 = 0.003\,5$,
$F0 = 0.368\,345$, $F1 = 4.446\,6$, $F2 = 0.005\,0$, $P0 = 0.037\,9$,

et pour Y :

$A0 = -0.000\,5$, $A1 = 0.000\,00$, $B0 = 8.703\,1$, $B1 = 0.039\,27$, $B2 = 0.000\,054$, $C0 = 0.000\,8$,
$F0 = 2.497\,069$, $F1 = 5.645\,2$, $F2 = 3.826\,4$, $P0 = 6.200\,3$.

On applique ensuite la formule (1) :

$$\left.\begin{matrix} X \\ Y \end{matrix}\right\} = A0 + A1 \cdot t + B0 \sin(Nt + F0) + B1 \cdot t \sin(Nt + F1) + B2 \cdot t^2 \sin(Nt + F2) + C0 \sin(2Nt + P0)$$

EXAMPLE OF A POSITION CALCULATION

To compute the X and Y coordinates of a satellite for a date T (expressed in UTC), one has to :

— apply the correction deduced from the preceding table to express the date T in TDT (identified with TDB) ;
— select from the tables of coefficients, the one which corresponds to the time interval $T0$, $T0 + \Delta t$ where T is found ;
— apply formula (1) with $t = T - T0$.

It is important to state that the representation is valid only for its time interval : T must belong to the interval $T0$, $T0 + \Delta t$.

EXAMPLE : Let us compute the tangential coordinates of Tethys (third satellite of Saturn) with respect to the planet for 1994 January 5, 23 h 30 m UTC.

First, the date must be corrected in order to fit with the TDB time-scale. For 1993, we choose 59 seconds ; so, the date T is 1993 January 5, 23 h 60 m 60 s TDB.

The coefficients necessary to compute X and Y are given on page 66 (interval from January, 1, 0 h to January 17, 0 h). We read for X :

$A0 = -0.000\,8$, $A1 = 0.$, $B0 = 38.724\,8$, $B1 = 0.074\,73$, $B2 = 0.000\,387$, $C0 = 0.003\,5$,
$F0 = 0.368\,345$, $F1 = 4.446\,6$, $F2 = 0.005\,0$, $P0 = 0.037\,9$,

and for Y :

$A0 = -0.000\,5$, $A1 = 0.000\,00$, $B0 = 8.703\,1$, $B1 = 0.039\,27$, $B2 = 0.000\,054$, $C0 = 0.000\,8$,
$F0 = 2.497\,069$, $F1 = 5.645\,2$, $F2 = 3.826\,4$, $P0 = 6.200\,3$.

We then apply formula (1) :

$$\left.\begin{matrix} X \\ Y \end{matrix}\right\} = A0 + A1 \cdot t + B0 \sin(Nt + F0) + B1 \cdot t \sin(Nt + F1) + B2 \cdot t^2 \sin(Nt + F2) + C0 \sin(2Nt + P0)$$

On a ici :

N = 3,328 radian/jour

t est le nombre de jours écoulés entre le 1 janvier à 0 h (début de l'intervalle) et le 5 janvier à 23 h 30 m 59 s, soit 4,979 849 jours.

On obtient finalement :

$X = -36{,}24''$
$Y = 1{,}86''$

PRÉCISION DES ÉPHÉMÉRIDES

Les théories dont sont issues les éphémérides sont construites pour la plupart avec une précision meilleure que 0,01" géocentrique.

Les observations utilisées pour l'ajustement des constantes et aussi certains défauts de la théorie ne permettent pas d'obtenir en réalité une précision meilleure que 0,05" ; cette précision peut n'être que de 0,5" pour Hyperion.

La représentation en fonctions mixtes publiée ici a été déterminée de façon à ce que l'écart avec la théorie-source soit de l'ordre de 0,01".

PHÉNOMÈNES DES SATELLITES GALILÉENS DE JUPITER

Les prédictions des phénomènes des satellites galiléens sont données suivant une représentation polynômiale en fonction d'une variable temporelle. La méthode (Thuillot, 1983) permet une représentation compacte puisque 14 coefficients suffisent à représenter chaque type de phénomène (passages, occultations, éclipses, passages d'ombre, débuts ou fins) de chaque satellite pour une année entière avec une précision de l'ordre de la minute de temps.

Des explications sur cette méthode, le formulaire et les tables de coefficients sont donnés pages 51 à 54.

Where :

N = 3.328 radian/day

t is the number of days elapsed between January 1, 0 h (beginning of the interval) and January 5, 23 h 30 m 59 s. Hence t = 4.979 849 days.

Finally, we get :

$X = -36.24''$
$Y = 1.86''$

ACCURACY OF THE EPHEMERIDES

The theories from which are built the ephemerides have an internal precision better than 0.01" (in a geocentric reference frame).

In reality, the observations used to fit the constants and shortcomings in the theories, do not allow a precision better than 0.05" and may reach 0.5" for Hyperion.

The representation in mixed functions, as published here, has been determined in such a way that the difference between the representation and the source always remains around 0.01".

PHENOMENA OF THE GALILEAN SATELLITES OF JUPITER

The predictions of the phenomena of the Galilean satellites are given as a polynomial representation which depends directly on time. The method (Thuillot, 1983) allows a compact representation as only 14 coefficients are sufficient to represent each type of phenomenon (transits, occultations, eclipses, shadow transits, beginnings or ends) for each satellite for a complete year with an accuracy of about one minute of time.

Some explanations about the method, the formulae and the tables of coefficients are given on pages 51 to 54.

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Note : Les calculs nécessaires à l'élaboration de cet ouvrage ont été effectués sur l'ordinateur NAS 9080 du Centre Inter-Régional de Calcul Electronique du CNRS, F-91405 ORSAY (France).

Nota : The calculations performed in order to build these tables have been made on the NAS 9080 computer of the Centre Inter-Régional de Calcul Electronique of the CNRS, F-91405 ORSAY (France).

SATELLITES DE MARS

SATELLITES OF MARS

DONNÉES SUR LES SATELLITES DE MARS

DATA ON THE SATELLITES OF MARS

NOM	masse	rayon	période rotation sidérale	albédo géométrique	magnitude visuelle	période orbitale	élongation maximale	1/2 grand axe	excentricité	inclinaison sur l'équateur de Mars
unité →	masse de Mars	km	jour			jour	(') (")	10^3 km		degré
I Phobos	2.0×10^{-8}	13 x 11 x 9	(S)	0.06	11.6	0.3189	25	9.38	0.0151	1.1
II Deimos	0.3×10^{-8}	8 x 6 x 5	(S)	0.06	12.7	1.262	1 02	23.46	0.0002	0.9/2.7
NAME	*mass*	*radius*	*sidereal period*	*geometrical albedo*	*visual magnitude*	*orbital period*	*greatest elongation*	*semi major axis*	*eccentricity*	*inclination on Mars' equator*
unit →	*Mars' mass*	*km*	*day*			*day*	*(') (")*	*10^3 km*		*degree*

NOTES

(S) : Révolution synchrone

(S) : synchronous revolution

ÉPHÉMÉRIDES DES SATELLITES DE MARS

EPHEMERIDES OF THE SATELLITES OF MARS

Coordonnées différentielles tangentielles données en secondes de degré dans le repère équatorial moyen J2000. On a, au premier ordre :

Differential tangential coordinates given in arcsecond in the mean equatorial frame J2000. We have, at the first order :

$$\Delta\alpha \cos\delta = X$$
$$\Delta\delta = Y$$

$$\left.\begin{matrix} X \\ Y \end{matrix}\right\} = A0 + A1 \cdot t + B0 \sin(Nt + F0) + B1 \cdot t \sin(Nt + F1) + B2 \cdot t^2 \sin(Nt + F2) + C0 \sin(2Nt + P0)$$

où $t = T - T0$ avec $T0$ date du début de l'intervalle et T date du calcul

where $t = T - T0$ with $T0$ date of the beginning of the interval and T the date for the calculation

satellite	intervalle Δt (jours)	N (rad/j)	page
Phobos	7	19.702 7	16
Deimos	7	4.978 8	20
	(days)	*(rad/d)*	

1994 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 1 DE MARS: PHOBOS N=19.7027

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
JAN. 1 (0H)	X:	+0.1105	+0.00045	+ 4.9250	+0.07073	+0.000544	+0.0376
(2449353.5)				0.307777	5.2816	3.6111	-4.2387
A JAN. 8 (0H)	Y:	-0.0447	+0.00076	+ 2.1491	+0.02853	+0.000410	+0.0155
				3.768012	0.1570	4.9279	-0.6992
JAN. 8 (0H)	X:	+0.1133	+0.00047	+ 5.0499	+0.06955	+0.000500	+0.0384
(2449360.5)				6.183997	4.8613	3.1682	-5.0032
A JAN.15 (0H)	Y:	-0.0391	+0.00079	+ 1.9823	+0.02958	+0.000423	+0.0144
				3.511893	5.9333	4.4120	-1.3077
JAN.15 (0H)	X:	+0.1161	+0.00042	+ 5.1655	+0.06856	+0.000512	+0.0390
(2449367.5)				5.781059	4.4431	2.6201	-5.7743
A JAN.22 (0H)	Y:	-0.0334	+0.00084	+ 1.8458	+0.03046	+0.000413	+0.0135
				3.283604	5.4300	3.9255	-1.8943
JAN.22 (0H)	X:	+0.1187	+0.00033	+ 5.2689	+0.06723	+0.000584	+0.0398
(2449374.5)				5.361559	4.0262	2.1425	-0.2648
A JAN.29 (0H)	Y:	-0.0276	+0.00086	+ 1.7562	+0.03130	+0.000390	+0.0131
				3.081027	4.9332	3.3840	-2.4566
JAN.29 (0H)	X:	+0.1208	+0.00023	+ 5.3582	+0.06547	+0.000644	+0.0408
(2449381.5)				4.985078	3.6035	1.7671	-1.0264
A FEV. 5 (0H)	Y:	-0.0216	+0.00088	+ 1.7272	+0.03192	+0.000391	+0.0131
				2.894821	4.4469	2.8017	-3.0069
FEV. 5 (0H)	X:	+0.1223	+0.00013	+ 5.4316	+0.06375	+0.000631	+0.0412
(2449388.5)				4.591297	3.1695	1.4236	-1.7792
A FEV.12 (0H)	Y:	-0.0156	+0.00084	+ 1.7647	+0.03209	+0.000410	+0.0136
				2.709271	3.9642	2.2709	-3.5683
FEV.12 (0H)	X:	+0.1234	+0.00001	+ 5.4872	+0.06261	+0.000553	+0.0413
(2449395.5)				4.199820	2.7281	1.0277	-2.5398
A FEV.19 (0H)	Y:	-0.0097	+0.00076	+ 1.8639	+0.03189	+0.000412	+0.0146
				2.508346	3.4763	1.7875	-4.1515
FEV.19 (0H)	X:	+0.1240	-0.00010	+ 5.5232	+0.06209	+0.000486	+0.0416
(2449402.5)				3.810044	2.2904	0.5313	-3.3035
A FEV.26 (0H)	Y:	-0.0041	+0.00069	+ 2.0123	+0.03161	+0.000397	+0.0159
				2.282145	2.9821	1.2746	-4.7584
FEV.26 (0H)	X:	+0.1238	-0.00014	+ 5.5395	+0.06177	+0.000488	+0.0419
(2449409.5)				3.421263	1.8621	0.0357	-4.0583
A MAR. 5 (0H)	Y:	+0.0009	+0.00066	+ 2.1949	+0.03136	+0.000398	+0.0173
				2.028368	2.4884	0.7151	-5.3897
MAR. 5 (0H)	X:	+0.1231	-0.00011	+ 5.5374	+0.06129	+0.000524	+0.0417
(2449416.5)				3.032800	1.4400	5.9671	-4.8079
A MAR.12 (0H)	Y:	+0.0055	+0.00067	+ 2.3978	+0.03094	+0.000428	+0.0188
				1.749672	1.9958	0.2088	-6.0466
MAR.12 (0H)	X:	+0.1219	-0.00004	+ 5.5196	+0.06076	+0.000524	+0.0413
(2449423.5)				2.644189	1.0151	5.7401	-5.5639
A MAR.19 (0H)	Y:	+0.0099	+0.00066	+ 2.6095	+0.03033	+0.000445	+0.0204
				1.450493	1.4945	6.0758	-0.4421
MAR.19 (0H)	X:	+0.1206	-0.00004	+ 5.4879	+0.06090	+0.000463	+0.0410
(2449430.5)				2.255190	0.5865	5.4981	-0.0431
A MAR.26 (0H)	Y:	+0.0140	+0.00058	+ 2.8207	+0.02995	+0.000422	+0.0221
				1.135023	0.9804	5.6544	-1.1320
MAR.26 (0H)	X:	+0.1194	-0.00017	+ 5.4425	+0.06198	+0.000390	+0.0409
(2449437.5)				1.865393	0.1651	5.0814	-0.8000
A AVR. 2 (0H)	Y:	+0.0180	+0.00044	+ 3.0243	+0.03007	+0.000390	+0.0236
				0.806602	0.4660	5.1371	-1.8299
AVR. 2 (0H)	X:	+0.1180	-0.00038	+ 5.3846	+0.06346	+0.000385	+0.0404
(2449444.5)				1.474038	6.0413	4.5151	-1.5539
A AVR. 9 (0H)	Y:	+0.0213	+0.00030	+ 3.2161	+0.03047	+0.000394	+0.0249
				0.467890	6.2472	4.5780	-2.5375

1994 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 1 DE MARS: PHOBOS N=19.7027

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
AVR. 9 (OH)	X:	+0.1161	-0.00053	+ 5.3175	+0.06461	+0.000444	+0.0397
(2449451.5)				1.080295	5.6432	4.0974	-2.3143
A AVR.16 (OH)	Y:	+0.0240	+0.00023	+ 3.3938	+0.03073	+0.000423	+0.0261
				0.121175	5.7546	4.1191	-3.2576
AVR.16 (OH)	X:	+0.1133	-0.00054	+ 5.2456	+0.06541	+0.000479	+0.0391
(2449458.5)				0.683679	5.2429	3.8633	-3.0849
A AVR.23 (OH)	Y:	+0.0259	+0.00023	+ 3.5553	+0.03091	+0.000420	+0.0274
				6.051645	5.2592	3.7482	-3.9825
AVR.23 (OH)	X:	+0.1099	-0.00046	+ 5.1723	+0.06658	+0.000450	+0.0388
(2449465.5)				0.284097	4.8376	3.6643	-3.8542
A AVR.30 (OH)	Y:	+0.0275	+0.00025	+ 3.6981	+0.03144	+0.000375	+0.0285
				5.694421	4.7630	3.3371	-4.7031
AVR.30 (OH)	X:	+0.1064	-0.00036	+ 5.0991	+0.06856	+0.000382	+0.0384
(2449472.5)				6.164522	4.4372	3.3400	-4.6191
A MAI 7 (OH)	Y:	+0.0288	+0.00023	+ 3.8206	+0.03231	+0.000335	+0.0293
				5.333605	4.2816	2.7890	-5.4283
MAI 7 (OH)	X:	+0.1031	-0.00034	+ 5.0284	+0.07086	+0.000356	+0.0377
(2449479.5)				5.758019	4.0490	2.8256	-5.3925
A MAI 14 (OH)	Y:	+0.0300	+0.00016	+ 3.9227	+0.03302	+0.000348	+0.0299
				4.969940	3.8191	2.2019	-6.1639
MAI 14 (OH)	X:	+0.1000	-0.00041	+ 4.9646	+0.07287	+0.000412	+0.0372
(2449486.5)				5.347287	3.6694	2.3115	-6.1794
A MAI 21 (OH)	Y:	+0.0310	+0.00008	+ 4.0050	+0.03324	+0.000387	+0.0306
				4.604289	3.3642	1.7191	-0.6180
MAI 21 (OH)	X:	+0.0968	-0.00050	+ 4.9134	+0.07445	+0.000492	+0.0372
(2449493.5)				4.932293	3.2891	1.9447	-0.6837
A MAI 28 (OH)	Y:	+0.0315	+0.00002	+ 4.0675	+0.03309	+0.000399	+0.0311
				4.237609	2.9032	1.2965	-1.3467
MAI 28 (OH)	X:	+0.0932	-0.00056	+ 4.8794	+0.07605	+0.000508	+0.0371
(2449500.5)				4.513492	2.9022	1.6445	-1.4625
A JUN. 4 (OH)	Y:	+0.0318	+0.00000	+ 4.1094	+0.03296	+0.000365	+0.0312
				3.870729	2.4353	0.8021	-2.0758
JUN. 4 (OH)	X:	+0.0895	-0.00061	+ 4.8655	+0.07805	+0.000448	+0.0368
(2449507.5)				4.091501	2.5127	1.2982	-2.2498
A JUN.11 (OH)	Y:	+0.0319	-0.00002	+ 4.1298	+0.03281	+0.000341	+0.0312
				3.504217	1.9718	0.1677	-2.8136
JUN.11 (OH)	X:	+0.0857	-0.00064	+ 4.8742	+0.08027	+0.000371	+0.0368
(2449514.5)				3.666963	2.1280	0.7983	-3.0507
A JUN.18 (OH)	Y:	+0.0319	-0.00004	+ 4.1286	+0.03224	+0.000368	+0.0313
				3.138604	1.5146	5.8238	-3.5488
JUN.18 (OH)	X:	+0.0817	-0.00064	+ 4.9080	+0.08220	+0.000363	+0.0375
(2449521.5)				3.240653	1.7506	0.1846	-3.8474
A JUN.25 (OH)	Y:	+0.0318	-0.00002	+ 4.1061	+0.03106	+0.000409	+0.0311
				2.774551	1.0538	5.3355	-4.2747
JUN.25 (OH)	X:	+0.0776	-0.00057	+ 4.9696	+0.08343	+0.000420	+0.0382
(2449528.5)				2.813554	1.3770	6.0221	-4.6317
A JUL. 2 (OH)	Y:	+0.0317	+0.00002	+ 4.0625	+0.02946	+0.000409	+0.0306
				2.412851	0.5756	4.9222	-4.9967
JUL. 2 (OH)	X:	+0.0734	-0.00043	+ 5.0615	+0.08394	+0.000453	+0.0386
(2449535.5)				2.386986	1.0005	5.7716	-5.4198
A JUL. 9 (OH)	Y:	+0.0317	+0.00010	+ 3.9978	+0.02789	+0.000372	+0.0299
				2.054440	0.0769	4.4651	-5.7220
JUL. 9 (OH)	X:	+0.0695	-0.00031	+ 5.1838	+0.08437	+0.000418	+0.0396
(2449542.5)				1.962530	0.6189	5.5449	-6.2161
A JUL.16 (OH)	Y:	+0.0320	+0.00014	+ 3.9122	+0.02659	+0.000354	+0.0293
				1.700285	5.8525	3.9124	-0.1596

1994 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 1 DE MARS: PHOBOS N=19.7027

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
JUL.16 (OH) (2449549.5)	X:	+0.0662	-0.00030	+ 5.3337 1.541465	+0.08516 0.2374	+0.000339 5.1529	+0.0411 -0.7201
A JUL.23 (OH)	Y:	+0.0326	+0.00013	+ 3.8061 1.351289	+0.02538 5.3414	+0.000387 3.3951	+0.0285 -0.8683
JUL.23 (OH) (2449556.5)	X:	+0.0634	-0.00043	+ 5.5077 1.124439	+0.08613 6.1453	+0.000306 4.4768	+0.0426 -1.4939
A JUL.30 (OH)	Y:	+0.0335	+0.00009	+ 3.6812 1.008399	+0.02419 4.8165	+0.000425 2.9749	+0.0274 -1.5692
JUL.30 (OH) (2449563.5)	X:	+0.0608	-0.00056	+ 5.7036 0.711668	+0.08651 5.7771	+0.000377 3.9115	+0.0439 -2.2650
A AOU. 6 (OH)	Y:	+0.0344	+0.00008	+ 3.5401 0.672776	+0.02329 4.2666	+0.000426 2.5859	+0.0262 -2.2660
AOU. 6 (OH) (2449570.5)	X:	+0.0579	-0.00058	+ 5.9207 0.303549	+0.08587 5.4086	+0.000437 3.6341	+0.0454 -3.0404
A AOU.13 (OH)	Y:	+0.0355	+0.00014	+ 3.3866 0.345984	+0.02312 3.7009	+0.000396 2.1342	+0.0250 -2.9552
AOU.13 (OH) (2449577.5)	X:	+0.0548	-0.00044	+ 6.1562 6.183848	+0.08478 5.0329	+0.000411 3.4496	+0.0475 -3.8085
A AOU.20 (OH)	Y:	+0.0366	+0.00024	+ 3.2248 0.029858	+0.02369 3.1466	+0.000383 1.6037	+0.0239 -3.6283
AOU.20 (OH) (2449584.5)	X:	+0.0519	-0.00022	+ 6.4052 5.786352	+0.08411 4.6535	+0.000319 3.1983	+0.0497 -4.5641
A AOU.27 (OH)	Y:	+0.0382	+0.00033	+ 3.0594 6.009406	+0.02459 2.6105	+0.000401 1.1015	+0.0226 -4.2874
AOU.27 (OH) (2449591.5)	X:	+0.0496	-0.00006	+ 6.6634 5.393835	+0.08396 4.2808	+0.000243 2.7016	+0.0515 -5.3141
A SEP. 3 (OH)	Y:	+0.0401	+0.00038	+ 2.8972 5.720061	+0.02569 2.0838	+0.000409 0.6689	+0.0214 -4.9344
SEP. 3 (OH) (2449598.5)	X:	+0.0482	-0.00002	+ 6.9295 5.005769	+0.08379 3.9201	+0.000271 2.0814	+0.0533 -6.0675
A SEP.10 (OH)	Y:	+0.0425	+0.00036	+ 2.7472 5.446738	+0.02713 1.5665	+0.000391 0.2486	+0.0203 -5.5645
SEP.10 (OH) (2449605.5)	X:	+0.0474	-0.00005	+ 7.2046 4.621902	+0.08307 3.5655	+0.000350 1.7416	+0.0556 -0.5360
A SEP.17 (OH)	Y:	+0.0451	+0.00034	+ 2.6196 5.190611	+0.02893 1.0687	+0.000370 6.0760	+0.0195 -6.1764
SEP.17 (OH) (2449612.5)	X:	+0.0470	-0.00005	+ 7.4891 4.242185	+0.08212 3.2078	+0.000371 1.5466	+0.0582 -1.2745
A SEP.24 (OH)	Y:	+0.0478	+0.00036	+ 2.5253 4.951458	+0.03089 0.5932	+0.000371 5.5994	+0.0190 -0.4881
SEP.24 (OH) (2449619.5)	X:	+0.0467	-0.00001	+ 7.7827 3.866401	+0.08153 2.8472	+0.000311 1.3662	+0.0603 -2.0069
A OCT. 1 (OH)	Y:	+0.0505	+0.00042	+ 2.4744 4.726730	+0.03283 0.1308	+0.000383 5.1716	+0.0188 -1.0720
OCT. 1 (OH) (2449626.5)	X:	+0.0468	+0.00004	+ 8.0858 3.494202	+0.08159 2.4905	+0.000197 1.1212	+0.0622 -2.7430
A OCT. 8 (OH)	Y:	+0.0533	+0.00049	+ 2.4757 4.511124	+0.03488 5.9588	+0.000375 4.7873	+0.0190 -1.6503
OCT. 8 (OH) (2449633.5)	X:	+0.0475	+0.00008	+ 8.4004 3.125279	+0.08215 2.1443	+0.000084 0.5159	+0.0647 -3.4804
A OCT.15 (OH)	Y:	+0.0565	+0.00053	+ 2.5349 4.297476	+0.03716 5.5153	+0.000349 4.3924	+0.0197 -2.2282
OCT.15 (OH) (2449640.5)	X:	+0.0488	+0.00012	+ 8.7292 2.759365	+0.08283 1.8113	+0.000054 5.5442	+0.0677 -4.2060
A OCT.22 (OH)	Y:	+0.0599	+0.00052	+ 2.6529 4.078719	+0.03958 5.0881	+0.000336 3.9617	+0.0208 -2.8136

1994 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 1 DE MARS: PHOBOS N=19.7027

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
OCT.22 (OH)	X:	+0.0504	+0.00026	+ 9.0768	+0.08338	+0.000028	+0.0703
(2449647.5)				2.396300	1.4907	5.6974	-4.9242
A OCT.29 (OH)	Y:	+0.0635	+0.00046	+ 2.8266	+0.04200	+0.000345	+0.0222
				3.849691	4.6745	3.5490	-3.4123
OCT.29 (OH)	X:	+0.0524	+0.00056	+ 9.4487	+0.08405	+0.000089	+0.0728
(2449654.5)				2.036136	1.1790	1.0493	-5.6459
A NOV. 5 (OH)	Y:	+0.0671	+0.00041	+ 3.0501	+0.04436	+0.000352	+0.0241
				3.607730	4.2692	3.2121	-4.0269
NOV. 5 (OH)	X:	+0.0553	+0.00089	+ 9.8504	+0.08526	+0.000225	+0.0759
(2449661.5)				1.679098	0.8729	1.1457	-0.0846
A NOV.12 (OH)	Y:	+0.0705	+0.00040	+ 3.3163	+0.04679	+0.000328	+0.0263
				3.352317	3.8702	2.9461	-4.6529
NOV.12 (OH)	X:	+0.0598	+0.00108	+10.2865	+0.08760	+0.000378	+0.0796
(2449668.5)				1.325422	0.5717	1.1993	-0.7996
A NOV.19 (OH)	Y:	+0.0736	+0.00044	+ 3.6184	+0.04948	+0.000269	+0.0287
				3.084383	3.4828	2.6734	-5.2847
NOV.19 (OH)	X:	+0.0661	+0.00110	+10.7617	+0.09133	+0.000503	+0.0835
(2449675.5)				0.975135	0.2847	1.2046	-1.5066
A NOV.26 (OH)	Y:	+0.0766	+0.00048	+ 3.9511	+0.05224	+0.000199	+0.0312
				2.805797	3.1128	2.2690	-5.9273
NOV.26 (OH)	X:	+0.0740	+0.00106	+11.2842	+0.09595	+0.000574	+0.0875
(2449682.5)				0.628345	0.0183	1.1221	-2.2114
A DEC. 3 (OH)	Y:	+0.0794	+0.00047	+ 4.3096	+0.05460	+0.000150	+0.0339
				2.518815	2.7589	1.7076	-0.2983
DEC. 3 (OH)	X:	+0.0832	+0.00122	+11.8638	+0.10078	+0.000621	+0.0920
(2449689.5)				0.285550	6.0534	0.9143	-2.9146
A DEC.10 (OH)	Y:	+0.0822	+0.00037	+ 4.6881	+0.05607	+0.000112	+0.0369
				2.225614	2.4160	1.1652	-0.9588
DEC.10 (OH)	X:	+0.0936	+0.00171	+12.5078	+0.10560	+0.000727	+0.0970
(2449696.5)				6.230716	5.8168	0.5971	-3.6157
A DEC.17 (OH)	Y:	+0.0845	+0.00017	+ 5.0784	+0.05654	+0.000050	+0.0400
				1.928003	2.0811	0.3740	-1.6196
DEC.17 (OH)	X:	+0.1063	+0.00243	+13.2195	+0.11093	+0.000929	+0.1030
(2449703.5)				5.898275	5.5905	0.3215	-4.3097
A DEC.24 (OH)	Y:	+0.0860	-0.00004	+ 5.4706	+0.05599	+0.000130	+0.0430
				1.627360	1.7570	4.6843	-2.2796
DEC.24 (OH)	X:	+0.1227	+0.00313	+13.9984	+0.11734	+0.001172	+0.1094
(2449710.5)				5.572194	5.3781	0.1926	-4.9909
A DEC.31 (OH)	Y:	+0.0860	-0.00024	+ 5.8522	+0.05376	+0.000384	+0.0456
				1.324746	1.4499	4.3842	-2.9449
DEC.31 (OH)	X:	+0.1437	+0.00371	+14.8392	+0.12428	+0.001375	+0.1157
(2449717.5)				5.253263	5.1863	0.1925	-5.6660
A JAN. 7 (OH)	Y:	+0.0844	-0.00043	+ 6.2052	+0.04836	+0.000720	+0.0482
				1.020997	1.1603	4.2011	-3.6152

1994 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 2 DE MARS: DEIMOS N= 4.9788

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
JAN. 1 (0H) (2449353.5)	X:	+0.0011	-0.00008	+12.3624 0.770534	+0.19494 5.7054	+0.001587 3.9538	+0.0008 2.4647
A JAN. 8 (0H)	Y:	+0.0000	+0.00007	+ 5.1969 4.165167	+0.06866 0.7297	+0.001134 5.3918	+0.0004 5.8122
JAN. 8 (0H) (2449360.5)	X:	+0.0015	-0.00009	+12.6569 4.100192	+0.19170 2.7440	+0.001566 1.0442	+0.0012 2.6716
A JAN.15 (0H)	Y:	+0.0000	+0.00009	+ 4.7599 1.357469	+0.06977 3.9330	+0.001115 2.3079	+0.0004 5.9393
JAN.15 (0H) (2449367.5)	X:	+0.0019	-0.00010	+12.9329 1.150496	+0.19044 6.0641	+0.001626 4.1967	+0.0013 2.8840
A JAN.22 (0H)	Y:	+0.0000	+0.00008	+ 4.3903 4.862686	+0.07059 0.8627	+0.001130 5.5578	+0.0003 0.0157
JAN.22 (0H) (2449374.5)	X:	+0.0020	-0.00004	+13.1844 4.486941	+0.18501 3.0989	+0.001611 1.4290	+0.0012 3.0906
A JAN.29 (0H)	Y:	+0.0001	+0.00008	+ 4.1304 2.113870	+0.07207 4.0760	+0.001100 2.4272	+0.0001 1.3120
JAN.29 (0H) (2449381.5)	X:	+0.0022	-0.00003	+13.4024 1.543705	+0.18429 0.1277	+0.001602 4.5322	+0.0007 3.5460
A FEV. 5 (0H)	Y:	+0.0004	+0.00006	+ 4.0184 5.669763	+0.07243 1.0141	+0.001101 5.7081	+0.0003 2.4810
FEV. 5 (0H) (2449388.5)	X:	+0.0025	+0.00000	+13.5823 4.885628	+0.17839 3.4445	+0.001614 1.8574	+0.0007 4.7234
A FEV.12 (0H)	Y:	+0.0005	+0.00009	+ 4.0753 2.946592	+0.07384 4.2390	+0.001136 2.5432	+0.0005 2.7386
FEV.12 (0H) (2449395.5)	X:	+0.0026	+0.00002	+13.7225 1.947158	+0.17938 0.4691	+0.001537 4.8631	+0.0011 5.3453
A FEV.19 (0H)	Y:	+0.0006	+0.00009	+ 4.2947 0.209817	+0.07355 1.1744	+0.001082 5.8541	+0.0004 2.9981
FEV.19 (0H) (2449402.5)	X:	+0.0026	+0.00006	+13.8198 5.292820	+0.17427 3.7868	+0.001568 2.2007	+0.0016 5.6504
A FEV.26 (0H)	Y:	+0.0008	+0.00008	+ 4.6467 3.729212	+0.07453 4.4037	+0.001159 2.7264	+0.0003 3.5825
FEV.26 (0H) (2449409.5)	X:	+0.0028	+0.00006	+13.8771 2.357066	+0.17495 0.8123	+0.001421 5.3529	+0.0016 5.7923
A MAR. 5 (0H)	Y:	+0.0010	+0.00009	+ 5.0922 0.936039	+0.07461 1.3389	+0.001123 5.9990	+0.0003 5.1003
MAR. 5 (0H) (2449416.5)	X:	+0.0028	+0.00010	+13.8916 5.704765	+0.17281 4.1346	+0.001538 2.5436	+0.0013 6.0506
A MAR.12 (0H)	Y:	+0.0010	+0.00012	+ 5.5932 4.398664	+0.07544 4.5632	+0.001157 2.9428	+0.0006 5.5183
MAR.12 (0H) (2449423.5)	X:	+0.0029	+0.00012	+13.8718 2.769754	+0.17347 1.1630	+0.001321 5.8369	+0.0008 0.2762
A MAR.19 (0H)	Y:	+0.0011	+0.00011	+ 6.1204 1.555735	+0.07638 1.5031	+0.001164 6.2010	+0.0008 5.8207
MAR.19 (0H) (2449430.5)	X:	+0.0030	+0.00010	+13.8149 6.117550	+0.17421 4.4912	+0.001463 2.8630	+0.0007 1.5639
A MAR.26 (0H)	Y:	+0.0013	+0.00010	+ 6.6508 4.978349	+0.07789 4.7248	+0.001115 3.1596	+0.0007 6.0334
MAR.26 (0H) (2449437.5)	X:	+0.0031	+0.00013	+13.7309 3.181306	+0.17378 1.5261	+0.001298 0.1290	+0.0013 2.1187
A AVR. 2 (0H)	Y:	+0.0013	+0.00012	+ 7.1674 2.103849	+0.07945 1.6825	+0.001235 0.1749	+0.0005 0.4569
AVR. 2 (0H) (2449444.5)	X:	+0.0030	+0.00016	+13.6183 0.244207	+0.17794 4.8597	+0.001395 3.2136	+0.0017 2.3865
A AVR. 9 (0H)	Y:	+0.0014	+0.00012	+ 7.6588 5.502358	+0.08236 4.9046	+0.001036 3.3670	+0.0006 1.5051

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DU SATELLITE 2 DE MARS: DEIMOS N= 4.9788

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
AVR. 9 (OH)	X:	+0.0031	+0.00015	+13.4872	+0.17770	+0.001305	+0.0018
(2449451.5)				3.588078	1.9038	0.5627	2.5765
A AVR.16 (OH)	Y:	+0.0015	+0.00009	+ 8.1160	+0.08422	+0.001218	+0.0009
				2.608964	1.8834	0.4305	2.0988
AVR.16 (OH)	X:	+0.0032	+0.00015	+13.3407	+0.18258	+0.001308	+0.0015
(2449458.5)				0.647126	5.2405	3.6861	2.7902
A AVR.23 (OH)	Y:	+0.0016	+0.00008	+ 8.5346	+0.08776	+0.001016	+0.0012
				5.992944	5.1237	3.6084	2.3200
AVR.23 (OH)	X:	+0.0030	+0.00020	+13.1857	+0.18381	+0.001313	+0.0011
(2449465.5)				3.986362	2.2936	0.9770	3.2965
A AVR.30 (OH)	Y:	+0.0015	+0.00011	+ 8.9081	+0.08978	+0.001176	+0.0012
				3.088355	2.1178	0.6541	2.5278
AVR.30 (OH)	X:	+0.0030	+0.00019	+13.0290	+0.18905	+0.001275	+0.0009
(2449472.5)				1.039848	5.6336	4.1742	4.0907
A MAI 7 (OH)	Y:	+0.0016	+0.00008	+ 9.2369	+0.09288	+0.000982	+0.0010
				0.180440	5.3755	3.8647	2.8383
MAI 7 (OH)	X:	+0.0030	+0.00016	+12.8771	+0.19236	+0.001290	+0.0013
(2449479.5)				4.372940	2.6937	1.3125	4.8314
A MAI 14 (OH)	Y:	+0.0016	+0.00007	+ 9.5153	+0.09504	+0.001068	+0.0007
				3.552590	2.3806	0.8116	3.4625
MAI 14 (OH)	X:	+0.0029	+0.00017	+12.7394	+0.19608	+0.001305	+0.0017
(2449486.5)				1.419358	6.0384	4.7280	5.1192
A MAI 21 (OH)	Y:	+0.0015	+0.00006	+ 9.7469	+0.09587	+0.001007	+0.0008
				0.639608	5.6607	4.1790	4.5227
MAI 21 (OH)	X:	+0.0027	+0.00017	+12.6237	+0.20188	+0.001287	+0.0017
(2449493.5)				4.745549	3.1026	1.6429	5.3585
A MAI 28 (OH)	Y:	+0.0014	+0.00006	+ 9.9262	+0.09836	+0.001022	+0.0011
				4.008811	2.6564	0.9022	4.9856
MAI 28 (OH)	X:	+0.0028	+0.00011	+12.5385	+0.20461	+0.001348	+0.0016
(2449500.5)				1.784640	0.1677	5.1961	5.6120
A JUN. 4 (OH)	Y:	+0.0014	+0.00001	+10.0564	+0.09663	+0.000986	+0.0014
				1.093822	5.9588	4.4074	5.2944
JUN. 4 (OH)	X:	+0.0028	+0.00008	+12.4931	+0.21140	+0.001269	+0.0012
(2449507.5)				5.104024	3.5173	2.0290	5.9730
A JUN.11 (OH)	Y:	+0.0013	+0.00001	+10.1340	+0.09796	+0.001011	+0.0014
				4.462627	2.9679	1.0583	5.4970
JUN.11 (OH)	X:	+0.0027	+0.00007	+12.4955	+0.21330	+0.001426	+0.0010
(2449514.5)				2.136852	0.5878	5.6335	0.4692
A JUN.18 (OH)	Y:	+0.0012	-0.00001	+10.1605	+0.09394	+0.000971	+0.0010
				1.548384	6.2618	4.6362	5.9209
JUN.18 (OH)	X:	+0.0027	+0.00003	+12.5552	+0.22057	+0.001237	+0.0013
(2449521.5)				5.451416	3.9364	2.3966	1.1297
A JUN.25 (OH)	Y:	+0.0012	-0.00004	+10.1351	+0.09412	+0.001071	+0.0008
				4.919460	3.2673	1.2165	0.3483
JUN.25 (OH)	X:	+0.0027	-0.00001	+12.6746	+0.22220	+0.001436	+0.0017
(2449528.5)				2.480948	1.0107	5.9669	1.5594
A JUL. 2 (OH)	Y:	+0.0012	-0.00006	+10.0565	+0.08855	+0.000986	+0.0010
				2.008764	0.2688	4.7431	1.1713
JUL. 2 (OH)	X:	+0.0025	-0.00002	+12.8621	+0.22750	+0.001235	+0.0020
(2449535.5)				5.793980	4.3597	2.8906	1.7603
A JUL. 9 (OH)	Y:	+0.0010	-0.00005	+ 9.9263	+0.08609	+0.001050	+0.0014
				5.384658	3.5456	1.4910	1.5672
JUL. 9 (OH)	X:	+0.0024	-0.00006	+13.1151	+0.23011	+0.001441	+0.0020
(2449542.5)				2.824383	1.4374	6.2414	1.9660
A JUL.16 (OH)	Y:	+0.0010	-0.00009	+ 9.7435	+0.08039	+0.001071	+0.0015
				2.480638	0.5360	4.8882	1.7947

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DU SATELLITE 2 DE MARS: DEIMOS N= 4.9788

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
JUL.16 (0H)	X:	+0.0023	-0.00010	+13.4394	+0.23264	+0.001262	+0.0018
(2449549.5)				6.140159	4.7867	3.3339	2.2273
A JUL.23 (0H)	Y:	+0.0009	-0.00008	+ 9.5130	+0.07621	+0.001039	+0.0013
				5.864627	3.7858	1.7504	2.0614
JUL.23 (0H)	X:	+0.0020	-0.00010	+13.8244	+0.23579	+0.001370	+0.0013
(2449556.5)				3.175669	1.8631	0.2402	2.6542
A JUL.30 (0H)	Y:	+0.0007	-0.00007	+ 9.2337	+0.07117	+0.001101	+0.0009
				2.970929	0.7544	5.0556	2.4139
JUL.30 (0H)	X:	+0.0018	-0.00014	+14.2727	+0.23516	+0.001338	+0.0012
(2449563.5)				0.214580	5.2180	3.8242	3.5278
A AOU. 6 (0H)	Y:	+0.0006	-0.00007	+ 8.9140	+0.06613	+0.000962	+0.0006
				0.083783	3.9601	2.0224	3.3776
AOU. 6 (0H)	X:	+0.0017	-0.00019	+14.7727	+0.23924	+0.001293	+0.0016
(2449570.5)				3.541281	2.2920	0.5171	4.1544
A AOU.13 (0H)	Y:	+0.0006	-0.00010	+ 8.5572	+0.06263	+0.001224	+0.0008
				3.488294	0.9095	5.2806	4.1869
AOU.13 (0H)	X:	+0.0014	-0.00020	+15.3230	+0.23654	+0.001345	+0.0022
(2449577.5)				0.588774	5.6531	4.1900	4.5394
A AOU.20 (0H)	Y:	+0.0004	-0.00007	+ 8.1759	+0.05903	+0.000977	+0.0011
				0.618678	4.0711	2.2603	4.5860
AOU.20 (0H)	X:	+0.0012	-0.00022	+15.9134	+0.23903	+0.001200	+0.0025
(2449584.5)				3.924660	2.7263	0.9804	4.7367
A AOU.27 (0H)	Y:	+0.0004	-0.00008	+ 7.7796	+0.05738	+0.001168	+0.0011
				4.044134	0.9868	5.5369	4.8174
AOU.27 (0H)	X:	+0.0011	-0.00030	+16.5392	+0.23676	+0.001262	+0.0023
(2449591.5)				0.981536	6.0922	4.5884	5.0128
A SEP. 3 (0H)	Y:	+0.0004	-0.00009	+ 7.3842	+0.05702	+0.000990	+0.0008
				1.199176	4.1348	2.4822	5.1938
SEP. 3 (0H)	X:	+0.0008	-0.00031	+17.1972	+0.23819	+0.001098	+0.0019
(2449598.5)				4.326461	3.1702	1.4565	5.3864
A SEP.10 (0H)	Y:	+0.0005	-0.00009	+ 7.0087	+0.05763	+0.001126	+0.0006
				4.652987	1.0420	5.7949	5.9322
SEP.10 (0H)	X:	+0.0004	-0.00028	+17.8834	+0.23709	+0.001082	+0.0015
(2449605.5)				1.392301	0.2567	4.9227	6.0737
A SEP.17 (0H)	Y:	+0.0004	-0.00006	+ 6.6760	+0.06017	+0.001038	+0.0007
				1.839834	4.2163	2.7661	0.6688
SEP.17 (0H)	X:	+0.0002	-0.00032	+18.5968	+0.23619	+0.001064	+0.0021
(2449612.5)				4.745474	3.6294	2.1488	0.5177
A SEP.24 (0H)	Y:	+0.0004	-0.00006	+ 6.4118	+0.06378	+0.001066	+0.0009
				5.327007	1.1384	6.0288	1.0745
SEP.24 (0H)	X:	+0.0001	-0.00035	+19.3377	+0.23837	+0.000825	+0.0027
(2449619.5)				1.819496	0.7176	5.2580	0.8911
A OCT. 1 (0H)	Y:	+0.0005	-0.00007	+ 6.2421	+0.06793	+0.001057	+0.0009
				2.546603	4.3561	3.1154	1.3740
OCT. 1 (0H)	X:	-0.0004	-0.00027	+20.1092	+0.23665	+0.000967	+0.0031
(2449626.5)				5.179936	4.1057	2.8001	1.1868
A OCT. 8 (0H)	Y:	+0.0006	-0.00005	+ 6.1934	+0.07409	+0.001065	+0.0007
				6.060912	1.3173	0.0205	1.7419
OCT. 8 (0H)	X:	-0.0010	-0.00025	+20.9176	+0.24067	+0.000561	+0.0030
(2449633.5)				2.261055	1.2021	5.7499	1.4048
A OCT.15 (0H)	Y:	+0.0006	-0.00004	+ 6.2823	+0.07932	+0.001045	+0.0004
				3.297858	4.5710	3.4810	2.7848
OCT.15 (0H)	X:	-0.0012	-0.00028	+21.7664	+0.23930	+0.000962	+0.0022
(2449640.5)				5.628135	4.6075	3.5211	1.8502
A OCT.22 (0H)	Y:	+0.0007	-0.00005	+ 6.5182	+0.08716	+0.001073	+0.0007
				0.532648	1.5745	0.3555	3.7181

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DU SATELLITE 2 DE MARS: DEIMOS N= 4.9788

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
OCT.22 (OH)	X:	-0.0017	-0.00025	+22.6679	+0.24565	+0.000182	+0.0019
(2449647.5)				2.715761	1.7101	0.5589	2.6183
A OCT.29 (OH)	Y:	+0.0009	-0.00007	+ 6.8971	+0.09340	+0.001004	+0.0010
				4.043367	4.8583	3.8980	4.1432
OCT.29 (OH)	X:	-0.0024	-0.00018	+23.6267	+0.24732	+0.000664	+0.0026
(2449654.5)				6.089050	5.1350	4.2693	3.4326
A NOV. 5 (OH)	Y:	+0.0010	-0.00006	+ 7.4050	+0.10200	+0.001035	+0.0011
				1.258544	1.8952	0.7967	4.4126
NOV. 5 (OH)	X:	-0.0027	-0.00023	+24.6656	+0.25257	+0.000500	+0.0038
(2449661.5)				3.182712	2.2604	2.3168	3.7997
A NOV.12 (OH)	Y:	+0.0012	-0.00007	+ 8.0386	+0.10940	+0.000949	+0.0008
				4.744017	5.2136	4.2694	4.9233
NOV.12 (OH)	X:	-0.0031	-0.00022	+25.7854	+0.26008	+0.000335	+0.0043
(2449668.5)				0.279477	5.6965	5.7042	4.0593
A NOV.19 (OH)	Y:	+0.0015	-0.00010	+ 8.7684	+0.11769	+0.000896	+0.0008
				1.933164	2.2730	1.2751	5.8922
NOV.19 (OH)	X:	-0.0037	-0.00017	+27.0157	+0.26458	+0.000917	+0.0043
(2449675.5)				3.662864	2.8499	3.1963	4.3326
A NOV.26 (OH)	Y:	+0.0017	-0.00010	+ 9.5835	+0.12506	+0.000846	+0.0013
				5.394370	5.6247	4.6966	0.3201
NOV.26 (OH)	X:	-0.0042	-0.00016	+28.3598	+0.27714	+0.000932	+0.0034
(2449682.5)				0.767045	0.0147	1.1590	4.7315
A DEC. 3 (OH)	Y:	+0.0017	-0.00008	+10.4680	+0.13251	+0.000610	+0.0018
				2.563132	2.7025	1.7496	0.6647
DEC. 3 (OH)	X:	-0.0046	-0.00014	+29.8489	+0.28217	+0.001241	+0.0032
(2449689.5)				4.158241	3.4954	3.9607	5.5371
A DEC.10 (OH)	Y:	+0.0020	-0.00012	+11.4080	+0.13774	+0.000680	+0.0019
				6.007659	6.0899	4.8563	0.9232
DEC.10 (OH)	X:	-0.0052	-0.00006	+31.4887	+0.29799	+0.001898	+0.0042
(2449696.5)				1.271799	0.6713	2.0637	6.2065
A DEC.17 (OH)	Y:	+0.0022	-0.00014	+12.3814	+0.14120	+0.000212	+0.0016
				3.164040	3.1772	1.2959	1.3667
DEC.17 (OH)	X:	-0.0062	+0.00002	+33.2940	+0.30462	+0.001619	+0.0057
(2449703.5)				4.673377	4.1909	5.1548	0.3832
A DEC.24 (OH)	Y:	+0.0023	-0.00014	+13.3662	+0.14065	+0.000655	+0.0013
				0.316142	0.3082	4.3055	2.1337
DEC.24 (OH)	X:	-0.0067	+0.00001	+35.2667	+0.31812	+0.002878	+0.0064
(2449710.5)				1.798819	1.4020	2.8726	0.6722
A DEC.31 (OH)	Y:	+0.0024	-0.00014	+14.3288	+0.13489	+0.001012	+0.0019
				3.749456	3.6939	0.7581	3.0242
DEC.31 (OH)	X:	-0.0076	+0.00012	+37.3918	+0.32555	+0.002403	+0.0056
(2449717.5)				5.214196	4.9627	0.2915	1.1191
A JAN. 7 (OH)	Y:	+0.0028	-0.00024	+15.2212	+0.12118	+0.001830	+0.0026
				0.897486	0.8233	4.3005	3.4458

SATELLITES DE JUPITER

SATELLITES OF JUPITER

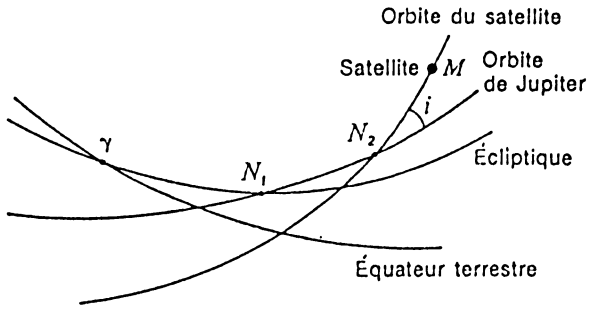
DONNÉES SUR LES SATELLITES GALILÉENS

DATA ON THE GALILEAN SATELLITES

	IO (I)	EUROPE (II)	GANYMÈDE (III)	CALLISTO (IV)
Masses (10^{-5} masse de Jupiter)				
Sampson (1921) :	4.50	2.54	7.99	4.50
De Sitter (1931) :	3.81	2.48	8.17	5.09
Pioneer 11 (1976) :	4.68	2.52	7.80	5.66
Rayons (km)				
Danjon (1954) :	1650	1400	2450	2300
Dollfus (1961) :	1775	1550	2800	2525
Pioneer 11 (1976) :	1840	1552	2650	2420
Voyager (1983) :	1816	1563	2638	2410
Magnitudes visuelles à l'opposition de Jupiter :				
Harris (1961) :	4.8	5.2	4.5	5.5
Albedos géométriques (Harris, 1961)				
U : 353 nm	0.19	0.47	0.29	0.14
B : 448 nm	0.56	0.67	0.41	0.21
V : 554 nm	0.92	0.83	0.49	0.26
R : 690 nm	1.12	0.93	0.56	0.30
I : 820 nm	1.15	0.95	0.57	0.31
Albédo de Bond (visuel)	0.54	0.49	0.29	0.15
Demi-grand axe (Sampson, 1921)				
en UA :	0.002820	0.004486	0.007155	0.012586
en rayons de Jupiter :	5.87	9.34	14.91	26.22
en kilomètres :	421810	671140	1070500	1882900
Plus grande élongation à l'opposition de Jupiter (minutes et secondes de degré)				
Sampson (1921) :	2' 17"	3' 40"	5' 48"	10' 13"
Période synodique (jours)				
Sampson (1921) :	1.7698604883	3.5540941742	7.1663872292	16.7535523007
Inclinaison moyenne sur l'équateur de Jupiter pour 1994.5 (minutes et secondes de degré)				
Sampson (1921) :	1' 12"	27' 7"	9' 50"	21' 58"
Valeur moyenne de l'excentricité pour 1994.5				
Sampson (1921) :	0.004	0.009	0.001	0.007
Partie séculaire du mouvement (degrés par an)				
nœud :	− 48.5	− 11.9	− 2.6	− 0.6
périjove :	57.0	14.6	2.7	0.7
Sampson (1921)				

Théorie du mouvement des satellites galiléens

Theory of the motion of the Galilean satellites



(repère moyen de la date)
(mean frame of the date)

Du fait de la complexité du mouvement des satellites galiléens, il est difficile de donner des valeurs précises sur les nœuds et les périjoves. En effet, les excentricités et les inclinaisons sont faibles (cf. tableau précédent) et tous ces éléments sont soumis à de grandes variations.

On donne ci-après les longitudes moyennes (d'après Sampson, 1921) dans le plan des orbites, ce plan étant confondu avec l'équateur de Jupiter.

Si τ est le temps en jours moyens compté à partir de 1900,0 on a :

Because of the complexity of the motion of the Galilean satellites of Jupiter it is difficult to provide precise values for nodes and perijoves. Indeed, eccentricities and inclinations are small (see the preceding table) and all these elements undergo large variations.

The mean longitudes (Sampson, 1921) in the orbital planes identified with Jupiter's equator are given below.

If τ is the time in days which has elapsed from 1900.0, one gets :

$$\gamma N_1 N_2 = 316.051° + 0.00003559\,\tau,\ i = 3.10350°$$

	$\gamma N_1 + N_1N_2 + N_2M$	Période sidérale en jours *Sidereal period in days*
Io	142.59987° + 203.488992435 τ	1.7691374639
Europe	99.55081° + 101.374761672 τ	3.5511797420
Ganymède	168.02628° + 50.317646290 τ	7.1545476894
Callisto	234.40790° + 21.571109630 τ	16.6889884746

DONNÉES SUR L'ENSEMBLE DES SATELLITES DE JUPITER

DATA ON THE GALILEAN AND OTHER SATELLITES OF JUPITER

	NOM	masse	rayon	période rotation sidérale	albédo géométrique	magnitude visuelle	période orbitale	élongation maximale	1/2 grand axe	excentricité	inclinaison sur l'équateur de Jupiter
	unité →	masse de Jupiter	km	jour			jour	(°) (') (")	10^3 km		degré
I	Io	4.70×10^{-5}	1 815	(S)	0.61	5.02	1.769 137	2 18	422	0.004	0.04
II	Europa	2.56×10^{-5}	1 569	(S)	0.64	5.29	3.551 181	3 40	671	0.009	0.47
III	Ganymede	7.84×10^{-5}	2 631	(S)	0.42	4.61	7.154 552	5 51	1 070	0.002	0.21
IV	Callisto	5.6×10^{-5}	2 400	(S)	0.20	5.65	16.689 018	10 18	1 883	0.007	0.51
V	Amalthea	$38. \times 10^{-10}$	135 × 85 × 75	(S)	0.05	14.1	0.498 179	59	181	0.003	0.40
VI	Himalia	$50. \times 10^{-10}$	90	0.4	0.03	14.84	250.566 2	1 02 46	11 480	0.158	27.63 (1) (2)
VII	Elara	$4. \times 10^{-10}$	40	0.5	0.03	16.77	259.652 8	1 04 10	11 737	0.207	24.77 (1) (2)
VIII	Pasiphae	$1. \times 10^{-10}$				17.0	735. (R)	2 08 26	23 500	0.378	145. (1) (2)
IX	Sinope	0.4×10^{-10}	15			18.3	758. (R)	2 09 31	23 700	0.275	153. (1) (2)
X	Lysithea	0.4×10^{-10}	10			18.4	259.22	1 04 04	11 720	0.107	29.02 (2)
XI	Carme	0.5×10^{-10}	15			18.0	692. (R)	2 03 31	22 600	0.207	164. (2)
XII	Ananke	0.2×10^{-10}	10			18.9	631. (R)	1 55 52	21 200	0.169	147. (2)
XIII	Leda	0.03×10^{-10}	8			20.	238.72	1 00 39	11 094	0.148	26.07 (2)
XIV	Thebe	$4. \times 10^{-10}$	40		0.05	16.0	0.674 55	1 13	221		
XV	Adrastea	0.1×10^{-10}	10		0.05	18.9	0.298	42	129		
XVI	Metis	0.5×10^{-10}	20		0.05	17.5	0.294 79	42	128		
	NAME	*mass*	*radius*	*sidereal rotation*	*geometrical albedo*	*visual magnitude*	*orbital period*	*greatest elongation*	*semi major axis*	*eccentricity*	*inclination on Jupiter's equator*
	unit →	*Jupiter's mass*	*km*	*day*			*day*	*(°) (') (")*	*10^3 km*		*degree*

NOTES

(S) : révolution synchrone
(R) : révolution rétrograde
(1) : les éphémérides des satellites VI, VII, VIII et IX sont données sous forme de coefficients de Tchébycheff dans le *« Supplément à la Connaissance des Temps : Satellites faibles... »*
(2) : inclinaison sur l'orbite de Jupiter

Données extraites de l'*Encyclopédie du Bureau des Longitudes.*

(S) : synchronous revolution
(R) : retrograde revolution
(1) : the ephemerides for satellites VI, VII, VIII and IX are given as Chebychev coefficients in the « Supplément à la Connaissance des Temps : Faint satellites... »
(2) : inclinaison on Jupiter's orbit

Data from the Encyclopédie du Bureau des Longitudes.

ÉPHÉMÉRIDES DES SATELLITES GALILÉENS

EPHEMERIDES OF THE GALILEAN SATELLITES

Coordonnées différentielles tangentielles données en secondes de degré dans le repère équatorial moyen J2000. On a, au premier ordre (voir note) :

Differential tangential coordinates given in arcsecond in the mean equatorial frame J2000. We have, at the first order (cf. note below) :

$$\Delta\alpha \cos\delta = X$$
$$\Delta\delta = Y$$

$$\left.\begin{matrix} X \\ Y \end{matrix}\right\} = A0 + A1 \cdot t + B0 \sin(Nt + F0) + B1 \cdot t \sin(Nt + F1) + B2 \cdot t^2 \sin(Nt + F2) + C0 \sin(2Nt + P0)$$

où $t = T - T0$ avec $T0$ date du début de l'intervalle et T date du calcul

where $t = T - T0$ with $T0$ date of beginning of the interval and T the date for the calculation

satellite	intervalle Δt (jours)	N (rad/j)	page
Io	3	3.551 6	30
Europe	4	1.769 3	38
Ganymède	9	0.878 2	44
Callisto	10	0.376 5	47
	(days)	*(rad/d)*	

Note : le premier ordre n'est pas suffisant lorsque le satellite s'éloigne beaucoup de la planète (tel Callisto). On a alors :

Note : the first order is not sufficient for satellite with large elongation (such as Callisto). So, we have then :

$$\Delta\alpha \cos\delta - \Delta\alpha\,\Delta\delta \sin\delta = X$$
$$\Delta\delta + \frac{(\Delta\alpha)^2}{2} \sin\delta \cos\delta = Y$$

ou bien :

or :

$$\Delta\alpha \cos\delta = X + XY \operatorname{tg}\delta$$
$$\Delta\delta = Y - \frac{X^2}{2} \operatorname{tg}\delta$$

1994 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 1 DE JUPITER: IO N=3.5516

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
JAN. 1 (0H)	X:	-0.0960	+0.01494	+ 93.6422	+0.38315	+0.013825	+0.1731
(2449353.5)				4.264690	3.5547	0.6633	2.0950
A JAN. 4 (0H)	Y:	+0.0633	-0.00132	+ 33.2161	+0.06029		+0.0607
				1.293309	6.2205		5.4148
JAN. 4 (0H)	X:	-0.0645	+0.01467	+ 94.4489	+0.34522	+0.015437	+0.1740
(2449356.5)				2.345994	1.5189	3.3603	4.5964
A JAN. 7 (0H)	Y:	+0.0642	-0.00894	+ 33.2522	+0.05859		+0.0603
				5.659556	4.4071		1.6365
JAN. 7 (0H)	X:	-0.0023	+0.01672	+ 95.2387	+0.30412	+0.013964	+0.1744
(2449359.5)				0.427315	6.0198	0.2161	0.8067
A JAN.10 (0H)	Y:	+0.0305	-0.00115	+ 33.3020	+0.05934		+0.0600
				3.743042	2.5850		4.1217
JAN.10 (0H)	X:	+0.0212	-0.00305	+ 96.0309	+0.35562	+0.008202	+0.1754
(2449362.5)				4.792577	4.2281	2.1579	3.3066
A JAN.13 (0H)	Y:	+0.0320	+0.00150	+ 33.3711	+0.05703		+0.0602
				1.826705	0.7203		0.3421
JAN.13 (0H)	X:	+0.0215	+0.00842	+ 96.8929	+0.35101	+0.007868	+0.1776
(2449365.5)				2.874986	2.2357	4.4589	5.8020
A JAN.16 (0H)	Y:	+0.0341	-0.00482	+ 33.4491	+0.05480		+0.0608
				6.193813	5.1960		2.8404
JAN.16 (0H)	X:	+0.0414	+0.00395	+ 97.7656	+0.31807	+0.009510	+0.1782
(2449368.5)				0.957459	0.3771	1.1249	2.0249
A JAN.19 (0H)	Y:	+0.0215	+0.00117	+ 33.5401	+0.05435		+0.0605
				4.278118	3.3931		5.3441
JAN.19 (0H)	X:	+0.0461	+0.02466	+ 98.6217	+0.35342	+0.005178	+0.1804
(2449371.5)				5.323714	4.8726	3.1011	4.5302
A JAN.22 (0H)	Y:	+0.0235	-0.00958	+ 33.6432	+0.05655		+0.0612
				2.362805	1.6082		1.5717
JAN.22 (0H)	X:	+0.1360	+0.01219	+ 99.5317	+0.38262	+0.012606	+0.1810
(2449374.5)				3.407423	2.8938	5.7234	0.7437
A JAN.25 (0H)	Y:	-0.0096	-0.00278	+ 33.7663	+0.05722		+0.0605
				0.447842	6.0431		4.0752
JAN.25 (0H)	X:	+0.1448	+0.01194	+100.4943	+0.30983	+0.015311	+0.1822
(2449377.5)				1.491008	0.9835	1.7619	3.2452
A JAN.28 (0H)	Y:	-0.0115	-0.00129	+ 33.9011	+0.05804		+0.0603
				4.816333	4.2445		0.2937
JAN.28 (0H)	X:	+0.1953	-0.00096	+101.4178	+0.31757	+0.014329	+0.1842
(2449380.5)				5.858203	5.5620	4.8720	5.7430
A JAN.31 (0H)	Y:	-0.0226	-0.00122	+ 34.0484	+0.06160		+0.0608
				2.902012	2.4604		2.7813
JAN.31 (0H)	X:	+0.1737	+0.00454	+102.3471	+0.39365	+0.016534	+0.1864
(2449383.5)				3.943115	3.6538	1.0798	1.9674
A FEV. 3 (0H)	Y:	-0.0209	+0.00160	+ 34.2146	+0.06601		+0.0615
				0.988105	0.6304		5.2932
FEV. 3 (0H)	X:	+0.1802	+0.02374	+103.3660	+0.34969	+0.008343	+0.1885
(2449386.5)				2.028195	1.6558	3.6635	4.4667
A FEV. 6 (0H)	Y:	-0.0179	-0.01002	+ 34.3991	+0.06843		+0.0622
				5.357644	5.0842		1.5159
FEV. 6 (0H)	X:	+0.2631	+0.00782	+104.3556	+0.32995	+0.005052	+0.1892
(2449389.5)				0.113467	6.1442	0.0367	0.6908
A FEV. 9 (0H)	Y:	-0.0506	-0.00069	+ 34.5954	+0.07422		+0.0622
				3.444422	3.2477		4.0221
FEV. 9 (0H)	X:	+0.2679	+0.02357	+105.3297	+0.37766	+0.009542	+0.1922
(2449392.5)				4.482708	4.2682	1.1967	3.1965
A FEV.12 (0H)	Y:	-0.0516	-0.00595	+ 34.8100	+0.07977		+0.0632
				1.531558	1.4010		0.2498
FEV.12 (0H)	X:	+0.3655	-0.01063	+106.3648	+0.37355	+0.022592	+0.1937
(2449395.5)				2.569443	2.2138	4.4152	5.6957
A FEV.15 (0H)	Y:	-0.0725	-0.00091	+ 35.0423	+0.08569		+0.0628
				5.902375	5.7928		2.7505
FEV.15 (0H)	X:	+0.3114	+0.00611	+107.4245	+0.28121	+0.021223	+0.1958
(2449398.5)				0.655859	0.4307	1.1028	1.9240
A FEV.18 (0H)	Y:	-0.0679	+0.00302	+ 35.2968	+0.08688		+0.0633
				3.990231	3.9290		5.2556

1994 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 1 DE JUPITER: IO N=3.5516

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
FEV.18 (0H) (2449401.5)	X:	+0.3391	+0.00942	+108.4062 5.026033	+0.31965 5.0788	+0.014917 4.0778	+0.1981 4.4247
A FEV.21 (0H)	Y:	-0.0658	-0.00753	+ 35.5617 2.078373	+0.09259 2.0982		+0.0644 1.4684
FEV.21 (0H) (2449404.5)	X:	+0.3740	+0.00515	+109.4076 3.114083	+0.36307 3.0714	+0.007796 5.9064	+0.1998 0.6460
A FEV.24 (0H)	Y:	-0.0838	-0.00179	+ 35.8419 0.166959	+0.10018 0.2348		+0.0651 3.9835
FEV.24 (0H) (2449407.5)	X:	+0.3831	+0.03207	+110.4507 1.202266	+0.32648 1.1953	+0.005543 2.2162	+0.2028 3.1479
A FEV.27 (0H)	Y:	-0.0899	-0.00942	+ 36.1428 4.539094	+0.10474 4.6415		+0.0660 0.2033
FEV.27 (0H) (2449410.5)	X:	+0.4999	-0.01012	+111.4550 5.573855	+0.32640 5.7495	+0.009390 4.6707	+0.2046 5.6594
A MAR. 2 (0H)	Y:	-0.1229	+0.00226	+ 36.4554 2.628298	+0.11123 2.7869		+0.0663 2.7106
MAR. 2 (0H) (2449413.5)	X:	+0.4462	+0.00915	+112.4158 3.663266	+0.38491 3.7804	+0.014003 0.6361	+0.2082 1.8879
A MAR. 5 (0H)	Y:	-0.1097	-0.00107	+ 36.7815 0.718045	+0.11910 0.8911		+0.0677 5.2286
MAR. 5 (0H) (2449416.5)	X:	+0.4920	-0.00250	+113.4365 1.753212	+0.34349 1.7598	+0.017871 3.6959	+0.2092 4.3904
A MAR. 8 (0H)	Y:	-0.1170	-0.00305	+ 37.1267 5.091323	+0.12398 5.2776		+0.0677 1.4481
MAR. 8 (0H) (2449419.5)	X:	+0.4784	+0.00061	+114.4332 6.126163	+0.30808 0.0746	+0.004239 0.0611	+0.2109 0.6153
A MAR.11 (0H)	Y:	-0.1203	-0.00055	+ 37.4901 3.181734	+0.12525 3.3879		+0.0687 3.9537
MAR.11 (0H) (2449422.5)	X:	+0.4885	+0.03590	+115.3627 4.216547	+0.34027 4.5478	+0.007444 1.7443	+0.2143 3.1137
A MAR.14 (0H)	Y:	-0.1277	-0.01143	+ 37.8609 1.272327	+0.13000 1.5291		+0.0701 0.1686
MAR.14 (0H) (2449425.5)	X:	+0.6098	-0.01392	+116.2866 2.307872	+0.33069 2.4983	+0.020260 4.4870	+0.2170 5.6227
A MAR.17 (0H)	Y:	-0.1597	+0.00055	+ 38.2399 5.646569	+0.13685 5.9208		+0.0707 2.6803
MAR.17 (0H) (2449428.5)	X:	+0.5651	+0.01500	+117.2012 0.399044	+0.29614 0.7913	+0.008110 1.6837	+0.2199 1.8500
A MAR.20 (0H)	Y:	-0.1540	-0.00351	+ 38.6351 3.737885	+0.13861 4.0398		+0.0722 5.1856
MAR.20 (0H) (2449431.5)	X:	+0.6286	-0.01407	+118.0521 4.773814	+0.31110 5.3453	+0.004227 4.0182	+0.2213 4.3637
A MAR.23 (0H)	Y:	-0.1707	+0.00294	+ 39.0344 1.829420	+0.14205 2.1718		+0.0731 1.4157
MAR.23 (0H) (2449434.5)	X:	+0.5749	-0.00302	+118.8482 2.866257	+0.30935 3.3672	+0.009419 4.7832	+0.2243 0.5873
A MAR.26 (0H)	Y:	-0.1527	-0.00315	+ 39.4323 6.204559	+0.14884 0.2771		+0.0744 3.9302
MAR.26 (0H) (2449437.5)	X:	+0.5796	+0.03388	+119.6459 0.958943	+0.26937 1.5974	+0.013308 1.6453	+0.2256 3.0861
A MAR.29 (0H)	Y:	-0.1688	-0.00838	+ 39.8445 4.296903	+0.14811 4.6545		+0.0746 0.1446
MAR.29 (0H) (2449440.5)	X:	+0.6805	-0.01437	+120.3636 5.334778	+0.32467 6.2075	+0.018542 4.1875	+0.2287 5.5962
A AVR. 1 (0H)	Y:	-0.1903	-0.00098	+ 40.2606 2.389311	+0.14594 2.7842		+0.0758 2.6548
AVR. 1 (0H) (2449443.5)	X:	+0.6414	+0.03261	+121.0008 3.428283	+0.35281 4.1690	+0.021078 0.8513	+0.2319 1.8199
A AVR. 4 (0H)	Y:	-0.1956	-0.00607	+ 40.6704 0.481899	+0.14703 0.9193		+0.0773 5.1559
AVR. 4 (0H) (2449446.5)	X:	+0.7372	-0.02419	+121.6306 1.522195	+0.29403 2.2447	+0.014377 4.0284	+0.2328 4.3321
A AVR. 7 (0H)	Y:	-0.2146	+0.00490	+ 41.0716 4.858017	+0.15007 5.3078		+0.0783 1.3816

1994 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 1 DE JUPITER: IO N=3.5516

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
AVR. 7 (OH)	X:	+0.6529	+0.00094	+122.1983	+0.29125	+0.006233	+0.2354
(2449449.5)				5.899217	0.4958	2.5386	0.5569
A AVR.10 (OH)	Y:	-0.1914	-0.00283	+ 41.4774	+0.14488		+0.0805
				2.951168	3.4200		3.8895
AVR.10 (OH)	X:	+0.6691	+0.01641	+122.6774	+0.30441	+0.014539	+0.2370
(2449452.5)				3.993326	4.9320	0.9336	3.0642
A AVR.13 (OH)	Y:	-0.2098	-0.00264	+ 41.8678	+0.14410		+0.0809
				1.044261	1.5669		0.1205
AVR.13 (OH)	X:	+0.7126	-0.00967	+123.1130	+0.22812	+0.025195	+0.2402
(2449455.5)				2.088060	3.0244	4.0405	5.5718
A AVR.16 (OH)	Y:	-0.2106	-0.00508	+ 42.2401	+0.14430		+0.0819
				5.420857	5.9605		2.6295
AVR.16 (OH)	X:	+0.6983	+0.03849	+123.4995	+0.23231	+0.021520	+0.2410
(2449458.5)				0.182450	1.5883	0.8481	1.7936
A AVR.19 (OH)	Y:	-0.2311	-0.00726	+ 42.6045	+0.13868		+0.0825
				3.514495	4.0640		5.1270
AVR.19 (OH)	X:	+0.8033	-0.02980	+123.7599	+0.30866	+0.013678	+0.2421
(2449461.5)				4.560071	5.9910	3.5423	4.3084
A AVR.22 (OH)	Y:	-0.2508	+0.00640	+ 42.9585	+0.12962		+0.0835
				1.608047	2.2124		1.3565
AVR.22 (OH)	X:	+0.7109	+0.00758	+123.9307	+0.29723	+0.011040	+0.2443
(2449464.5)				2.655043	3.9914	0.0090	0.5242
A AVR.25 (OH)	Y:	-0.2305	-0.00238	+ 43.2841	+0.12548		+0.0849
				5.984757	0.3660		3.8516
AVR.25 (OH)	X:	+0.7346	-0.00207	+124.0758	+0.26664	+0.005135	+0.2451
(2449467.5)				0.750071	2.2895	1.6289	3.0305
A AVR.28 (OH)	Y:	-0.2413	+0.00101	+ 43.5833	+0.12140		+0.0860
				4.078408	4.7711		0.0756
AVR.28 (OH)	X:	+0.7064	+0.00387	+124.1049	+0.29634	+0.011101	+0.2477
(2449470.5)				5.128156	0.3626	3.0412	5.5397
A MAI 1 (OH)	Y:	-0.2297	-0.00559	+ 43.8621	+0.11219		+0.0880
				2.172138	2.8883		2.5912
MAI 1 (OH)	X:	+0.7316	+0.03203	+124.0535	+0.28889	+0.024976	+0.2485
(2449473.5)				3.223164	4.6601	0.4803	1.7646
A MAI 4 (OH)	Y:	-0.2600	-0.00471	+ 44.1181	+0.10304		+0.0876
				0.265583	1.0836		5.0987
MAI 4 (OH)	X:	+0.8057	-0.01962	+123.9802	+0.22474	+0.014647	+0.2492
(2449476.5)				1.318316	3.0529	3.4534	4.2735
A MAI 7 (OH)	Y:	-0.2684	+0.00254	+ 44.3317	+0.09857		+0.0885
				4.642249	5.5037		1.3154
MAI 7 (OH)	X:	+0.7549	+0.00750	+123.8276	+0.27290	+0.007394	+0.2486
(2449479.5)				5.696135	1.3828	5.8736	0.4903
A MAI 10 (OH)	Y:	-0.2610	-0.00305	+ 44.5226	+0.08845		+0.0891
				2.735696	3.6654		3.8125
MAI 10 (OH)	X:	+0.7660	-0.01471	+123.5466	+0.28974	+0.018824	+0.2501
(2449482.5)				3.790686	5.6115	1.4605	2.9955
A MAI 13 (OH)	Y:	-0.2717	+0.00910	+ 44.6833	+0.08020		+0.0896
				0.828866	1.8822		0.0372
MAI 13 (OH)	X:	+0.7055	+0.00232	+123.2390	+0.24251	+0.014735	+0.2520
(2449485.5)				1.885338	3.9213	4.4383	5.4932
A MAI 16 (OH)	Y:	-0.2423	-0.00722	+ 44.8067	+0.07372		+0.0910
				5.205025	0.1075		2.5275
MAI 16 (OH)	X:	+0.7360	+0.01715	+122.8624	+0.28408	+0.009158	+0.2513
(2449488.5)				6.262687	2.2256	0.6494	1.7191
A MAI 19 (OH)	Y:	-0.2692	-0.00420	+ 44.8915	+0.06757		+0.0917
				3.297864	4.5863		5.0374
MAI 19 (OH)	X:	+0.7632	-0.00596	+122.3805	+0.29797	+0.008959	+0.2523
(2449491.5)				4.356591	0.2423	2.7843	4.2275
A MAI 22 (OH)	Y:	-0.2747	+0.00062	+ 44.9442	+0.05964		+0.0924
				1.390502	2.8165		1.2664
MAI 22 (OH)	X:	+0.7677	+0.00429	+121.8382	+0.24872	+0.016530	+0.2514
(2449494.5)				2.450511	4.6313	5.7329	0.4452
A MAI 25 (OH)	Y:	-0.2837	-0.00091	+ 44.9670	+0.05200		+0.0915
				5.766068	1.1593		3.7627

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		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
MAI 25 (0H) (2449497.5)	X:	+0.7545	-0.01755	+121.3105 0.543965	+0.29753 3.1032	+0.015161 1.2807	+0.2517 2.9458
A MAI 28 (0H)	Y:	-0.2803	+0.00894	+ 44.9501 3.858033	+0.05147 5.7677		+0.0927 6.2620
MAI 28 (0H) (2449500.5)	X:	+0.6992	-0.00449	+120.6618 4.919956	+0.33863 1.0713	+0.020427 4.0644	+0.2515 5.4427
A MAI 31 (0H)	Y:	-0.2513	-0.00572	+ 44.9003 1.949819	+0.05010 4.1104		+0.0930 2.4762
MAI 31 (0H) (2449503.5)	X:	+0.6953	+0.00927	+119.9381 3.012707	+0.28451 5.3165	+0.026779 0.8360	+0.2517 1.6651
A JUN. 3 (0H)	Y:	-0.2753	+0.00410	+ 44.8228 0.041077	+0.05740 2.4371		+0.0929 4.9766
JUN. 3 (0H) (2449506.5)	X:	+0.6970	+0.00330	+119.2356 1.105309	+0.25609 3.7519	+0.013712 3.9677	+0.2516 4.1606
A JUN. 6 (0H)	Y:	-0.2591	-0.00710	+ 44.7044 4.415194	+0.06198 0.6695		+0.0939 1.1813
JUN. 6 (0H) (2449509.5)	X:	+0.7376	+0.00146	+118.4869 5.480184	+0.31675 1.9236	+0.006424 5.4757	+0.2495 0.3809
A JUN. 9 (0H)	Y:	-0.2848	-0.00014	+ 44.5543 2.505798	+0.06685 5.1779		+0.0936 3.6898
JUN. 9 (0H) (2449512.5)	X:	+0.7158	-0.01964	+117.6493 3.571622	+0.28758 6.2410	+0.011686 1.5194	+0.2504 2.8826
A JUN.12 (0H)	Y:	-0.2787	+0.00978	+ 44.3745 0.596078	+0.07075 3.4026		+0.0939 6.1920
JUN.12 (0H) (2449515.5)	X:	+0.6782	-0.01230	+116.8075 1.662999	+0.24484 4.6164	+0.019708 4.3391	+0.2494 5.3764
A JUN.15 (0H)	Y:	-0.2553	-0.00231	+ 44.1682 4.969161	+0.07700 1.6333		+0.0932 2.3971
JUN.15 (0H) (2449518.5)	X:	+0.6410	-0.00586	+115.9931 6.036629	+0.33629 2.8094	+0.015206 0.6238	+0.2484 1.5944
A JUN.18 (0H)	Y:	-0.2579	+0.00534	+ 43.9381 3.058629	+0.08654 6.1166		+0.0935 4.8988
JUN.18 (0H) (2449521.5)	X:	+0.6182	+0.00532	+115.0964 4.126291	+0.36034 0.7448	+0.020412 3.5287	+0.2470 4.0876
A JUN.21 (0H)	Y:	-0.2396	-0.00786	+ 43.6786 1.147670	+0.09320 4.2801		+0.0927 1.1075
JUN.21 (0H) (2449524.5)	X:	+0.6651	-0.00279	+114.1456 2.216059	+0.27310 5.1735	+0.016199 6.0508	+0.2459 0.3004
A JUN.24 (0H)	Y:	-0.2717	+0.00359	+ 43.4017 5.519478	+0.10260 2.4412		+0.0921 3.6010
JUN.24 (0H) (2449527.5)	X:	+0.6338	-0.00992	+113.2503 0.305236	+0.30673 3.4511	+0.004276 2.7435	+0.2457 2.7922
A JUN.27 (0H)	Y:	-0.2523	+0.00220	+ 43.1002 3.607488	+0.11053 0.5462		+0.0932 6.0902
JUN.27 (0H) (2449530.5)	X:	+0.6247	-0.01369	+112.3291 4.676815	+0.34078 1.5142	+0.009678 4.3005	+0.2440 5.2919
A JUN.30 (0H)	Y:	-0.2495	+0.00299	+ 42.7747 1.695194	+0.11575 4.9589		+0.0925 2.3096
JUN.30 (0H) (2449533.5)	X:	+0.5676	-0.01670	+111.3546 2.764879	+0.29841 5.8766	+0.011971 1.0241	+0.2441 1.5064
A JUL. 3 (0H)	Y:	-0.2357	+0.00878	+ 42.4303 6.065678	+0.11971 3.0852		+0.0924 4.8048
JUL. 3 (0H) (2449536.5)	X:	+0.5230	+0.00709	+110.4126 0.852893	+0.29169 4.2376	+0.011292 3.5265	+0.2416 3.9950
A JUL. 6 (0H)	Y:	-0.2126	-0.00705	+ 42.0740 4.152627	+0.12640 1.2255		+0.0913 1.0090
JUL. 6 (0H) (2449539.5)	X:	+0.5641	-0.01079	+109.5058 5.222983	+0.35224 2.2507	+0.010798 5.0924	+0.2397 0.2053
A JUL. 9 (0H)	Y:	-0.2340	+0.00312	+ 41.7039 2.239102	+0.13394 5.6276		+0.0906 3.5061
JUL. 9 (0H) (2449542.5)	X:	+0.5188	+0.00524	+108.5479 3.309471	+0.32429 0.2911	+0.014806 2.0163	+0.2392 2.6930
A JUL.12 (0H)	Y:	-0.2206	-0.00011	+ 41.3168 0.325145	+0.13801 3.7396		+0.0900 5.9875

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		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
JUL.12 (OH)	X:	+0.5575	-0.02392	+107.5831	+0.27814	+0.015887	+0.2384
(2449545.5)				1.395916	4.8839	4.7838	5.1871
A JUL.15 (OH)	Y:	-0.2280	+0.00582	+ 40.9171	+0.14079		+0.0897
				4.694038	1.8654		2.1932
JUL.15 (OH)	X:	+0.4736	-0.01907	+106.6852	+0.32265	+0.005645	+0.2373
(2449548.5)				5.764802	3.0251	2.0082	1.3937
A JUL.18 (OH)	Y:	-0.1997	+0.00687	+ 40.5154	+0.14874		+0.0902
				2.779287	6.2581		4.6845
JUL.18 (OH)	X:	+0.4294	-0.00031	+105.7810	+0.34498	+0.007305	+0.2349
(2449551.5)				3.849805	1.0532	3.6103	3.8879
A JUL.21 (OH)	Y:	-0.1840	-0.00181	+ 40.0964	+0.15097		+0.0887
				0.864049	4.3528		0.9004
JUL.21 (OH)	X:	+0.4340	-0.01413	+104.8527	+0.31624	+0.003542	+0.2345
(2449554.5)				1.934667	5.5301	5.2624	0.0946
A JUL.24 (OH)	Y:	-0.1876	+0.00430	+ 39.6694	+0.15280		+0.0882
				5.231716	2.4621		3.3921
JUL.24 (OH)	X:	+0.3826	+0.01803	+103.9850	+0.35914	+0.011466	+0.2323
(2449557.5)				0.019200	3.7076	1.2045	2.5779
A JUL.27 (OH)	Y:	-0.1754	-0.00376	+ 39.2396	+0.15670		+0.0869
				3.315913	0.5787		5.8751
JUL.27 (OH)	X:	+0.4520	-0.02747	+103.1357	+0.37485	+0.016685	+0.2312
(2449560.5)				4.385993	1.6785	4.2910	5.0730
A JUL.30 (OH)	Y:	-0.1901	+0.00693	+ 38.8099	+0.16332		+0.0862
				1.399647	4.9531		2.0834
JUL.30 (OH)	X:	+0.3504	-0.00701	+102.2462	+0.31682	+0.018080	+0.2305
(2449563.5)				2.469272	6.0162	1.2264	1.2743
A AOU. 2 (OH)	Y:	-0.1628	+0.00685	+ 38.3664	+0.16401		+0.0859
				5.766154	3.0381		4.5623
AOU. 2 (OH)	X:	+0.3351	-0.01134	+101.3969	+0.31253	+0.006092	+0.2284
(2449566.5)				0.552671	4.3206	4.2529	3.7612
A AOU. 5 (OH)	Y:	-0.1491	+0.00218	+ 37.9214	+0.16347		+0.0851
				3.849255	1.1449		0.7705
AOU. 5 (OH)	X:	+0.2894	-0.01296	+100.5898	+0.32362	+0.004056	+0.2274
(2449569.5)				4.918594	2.4530	2.1493	6.2477
A AOU. 8 (OH)	Y:	-0.1354	+0.00479	+ 37.4759	+0.16622		+0.0849
				1.932095	5.5398		3.2610
AOU. 8 (OH)	X:	+0.2515	+0.01630	+ 99.8011	+0.32297	+0.006232	+0.2257
(2449572.5)				3.000742	0.5097	1.4674	2.4542
A AOU.11 (OH)	Y:	-0.1261	-0.00434	+ 37.0298	+0.16891		+0.0833
				0.014457	3.6228		5.7515
AOU.11 (OH)	X:	+0.3103	-0.02375	+ 99.0095	+0.31938	+0.007941	+0.2254
(2449575.5)				1.082883	5.0313	4.1549	4.9436
A AOU.14 (OH)	Y:	-0.1400	+0.00674	+ 36.5756	+0.16752		+0.0826
				4.379811	1.7241		1.9572
AOU.14 (OH)	X:	+0.2262	-0.00070	+ 98.2910	+0.36523	+0.009647	+0.2229
(2449578.5)				5.447816	3.1314	0.6200	1.1427
A AOU.17 (OH)	Y:	-0.1164	+0.00316	+ 36.1271	+0.16999		+0.0813
				2.461776	6.1110		4.4376
AOU.17 (OH)	X:	+0.2326	-0.02137	+ 97.5819	+0.35381	+0.005946	+0.2212
(2449581.5)				3.528813	1.1436	3.3632	3.6306
A AOU.20 (OH)	Y:	-0.1120	+0.00701	+ 35.6825	+0.17391		+0.0804
				0.543389	4.1959		0.6435
AOU.20 (OH)	X:	+0.1512	-0.01464	+ 96.8749	+0.33407	+0.004066	+0.2209
(2449584.5)				1.609570	5.5346	0.4634	6.1087
A AOU.23 (OH)	Y:	-0.0843	+0.00501	+ 35.2341	+0.17393		+0.0800
				4.907800	2.2674		3.1217
AOU.23 (OH)	X:	+0.1159	+0.01211	+ 96.1977	+0.34835	+0.004500	+0.2193
(2449587.5)				5.973520	3.7045	0.8409	2.3113
A AOU.26 (OH)	Y:	-0.0760	-0.00286	+ 34.7814	+0.17114		+0.0788
				2.988940	0.3658		5.6107
AOU.26 (OH)	X:	+0.1424	-0.01447	+ 95.5481	+0.33856	+0.000888	+0.2186
(2449590.5)				4.053784	1.8126	4.2300	4.8003
A AOU.29 (OH)	Y:	-0.0823	+0.00544	+ 34.3356	+0.17203		+0.0783
				1.069857	4.7415		1.8159

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		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
AOU.29 (OH) (2449593.5)	X:	+0.0922	+0.00599	+ 94.9221 2.133642	+0.31981 6.1744	+0.006819 0.6950	+0.2169 1.0043
A SEP. 1 (OH)	Y:	-0.0670	-0.00021	+ 33.8909 5.433722	+0.17282 2.8288		+0.0769 4.3039
SEP. 1 (OH) (2449596.5)	X:	+0.1098	-0.02258	+ 94.3289 0.213562	+0.34717 4.3209	+0.004800 0.9800	+0.2159 3.4872
A SEP. 4 (OH)	Y:	-0.0705	+0.00980	+ 33.4435 3.514215	+0.17082 0.9198		+0.0761 0.5077
SEP. 4 (OH) (2449599.5)	X:	+0.0255	-0.01680	+ 93.7626 4.576244	+0.34037 2.4014	+0.006906 4.1893	+0.2139 5.9644
A SEP. 7 (OH)	Y:	-0.0357	+0.00364	+ 33.0024 1.594650	+0.17158 5.3021		+0.0748 2.9847
SEP. 7 (OH) (2449602.5)	X:	-0.0137	+0.00483	+ 93.2196 2.655334	+0.31201 0.5004	+0.012142 1.1614	+0.2134 2.1690
A SEP.10 (OH)	Y:	-0.0312	+0.00143	+ 32.5685 5.957928	+0.17387 3.3741		+0.0738 5.4720
SEP.10 (OH) (2449605.5)	X:	-0.0133	-0.01569	+ 92.7014 0.734487	+0.32710 4.9898	+0.008225 4.1720	+0.2131 4.6486
A SEP.13 (OH)	Y:	-0.0223	+0.00254	+ 32.1319 4.037793	+0.17243 1.4448		+0.0732 1.6677
SEP.13 (OH) (2449608.5)	X:	-0.0453	+0.00930	+ 92.2264 5.096455	+0.34716 3.0457	+0.003485 6.2460	+0.2109 0.8516
A SEP.16 (OH)	Y:	-0.0186	-0.00163	+ 31.6941 2.117604	+0.16914 5.8138		+0.0719 4.1566
SEP.16 (OH) (2449611.5)	X:	-0.0185	-0.02441	+ 91.7636 3.175056	+0.34229 1.1762	+0.001960 5.4493	+0.2104 3.3380
A SEP.19 (OH)	Y:	-0.0232	+0.00858	+ 31.2640 0.197406	+0.16953 3.9063		+0.0716 0.3607
SEP.19 (OH) (2449614.5)	X:	-0.0964	-0.01318	+ 91.3279 1.253435	+0.34090 5.5936	+0.005722 4.0454	+0.2091 5.8183
A SEP.22 (OH)	Y:	+0.0066	+0.00214	+ 30.8362 4.560103	+0.16863 1.9784		+0.0701 2.8458
SEP.22 (OH) (2449617.5)	X:	-0.1284	-0.00700	+ 90.9405 5.614953	+0.37504 3.6413	+0.012101 0.4837	+0.2085 2.0187
A SEP.25 (OH)	Y:	+0.0082	+0.00575	+ 30.4070 2.639644	+0.16605 0.0673		+0.0689 5.3326
SEP.25 (OH) (2449620.5)	X:	-0.1634	-0.01411	+ 90.5664 3.692749	+0.34850 1.6534	+0.014038 3.6712	+0.2069 4.4990
A SEP.28 (OH)	Y:	+0.0305	+0.00041	+ 29.9835 0.719184	+0.16528 4.4425		+0.0676 1.5256
SEP.28 (OH) (2449623.5)	X:	-0.1857	+0.01202	+ 90.1967 1.770548	+0.31161 6.1241	+0.010216 0.2736	+0.2058 0.7024
A OCT. 1 (OH)	Y:	+0.0263	-0.00156	+ 29.5688 5.081735	+0.16681 2.5162		+0.0666 4.0132
OCT. 1 (OH) (2449626.5)	X:	-0.1596	-0.01861	+ 89.8745 6.131572	+0.33314 4.2649	+0.002236 3.4974	+0.2057 3.1791
A OCT. 4 (OH)	Y:	+0.0243	+0.00579	+ 29.1526 3.160872	+0.16470 0.5786		+0.0662 0.2078
OCT. 4 (OH) (2449629.5)	X:	-0.2134	-0.00568	+ 89.5828 4.209149	+0.33769 2.3335	+0.003529 4.1933	+0.2039 5.6635
A OCT. 7 (OH)	Y:	+0.0415	+0.00127	+ 28.7366 1.240100	+0.16196 4.9428		+0.0649 2.6944
OCT. 7 (OH) (2449632.5)	X:	-0.2243	-0.02083	+ 89.3025 2.286647	+0.33025 0.4851	+0.002805 0.3650	+0.2040 1.8669
A OCT.10 (OH)	Y:	+0.0446	+0.00686	+ 28.3251 5.602545	+0.16038 3.0281		+0.0643 5.1851
OCT.10 (OH) (2449635.5)	X:	-0.2952	-0.01026	+ 89.0514 0.364178	+0.34680 4.9522	+0.010646 3.3141	+0.2027 4.3474
A OCT.13 (OH)	Y:	+0.0705	+0.00005	+ 27.9210 3.681711	+0.16103 1.0976		+0.0626 1.3878
OCT.13 (OH) (2449638.5)	X:	-0.3015	+0.00268	+ 88.8639 4.724562	+0.35872 2.9110	+0.008651 5.4238	+0.2013 0.5481
A OCT.16 (OH)	Y:	+0.0646	-0.00030	+ 27.5138 1.760847	+0.15789 5.4535		+0.0613 3.8719

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DU SATELLITE 1 DE JUPITER: IO N=3.5516

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
OCT.16 (0H) (2449641.5)	X:	-0.3028	-0.00871	+ 88.6730 2.801614	+0.33455 0.9977	+0.008213 2.4455	+0.2004 3.0267
A OCT.19 (0H)	Y:	+0.0682	+0.00198	+ 27.1105 6.123312	+0.15562 3.5383		+0.0605 0.0626
OCT.19 (0H) (2449644.5)	X:	-0.3134	-0.00441	+ 88.4872 0.878741	+0.32154 5.5218	+0.010411 4.7478	+0.2004 5.5109
A OCT.22 (0H)	Y:	+0.0719	-0.00028	+ 26.7136 4.202537	+0.15446 1.6104		+0.0596 2.5499
OCT.22 (0H) (2449647.5)	X:	-0.3225	-0.02237	+ 88.3727 5.239019	+0.34795 3.5558	+0.003655 0.9650	+0.2001 1.7062
A OCT.25 (0H)	Y:	+0.0721	+0.00787	+ 26.3194 2.281732	+0.15313 5.9598		+0.0590 5.0315
OCT.25 (0H) (2449650.5)	X:	-0.4001	-0.00564	+ 88.2650 3.315861	+0.33504 1.6118	+0.005413 3.3311	+0.1983 4.1929
A OCT.28 (0H)	Y:	+0.0980	-0.00050	+ 25.9242 0.361039	+0.14996 4.0363		+0.0577 1.2382
OCT.28 (0H) (2449653.5)	X:	-0.4012	-0.00527	+ 88.1675 1.392838	+0.33079 6.0700	+0.003068 5.6188	+0.1984 0.3965
A OCT.31 (0H)	Y:	+0.0940	+0.00125	+ 25.5348 4.723639	+0.14846 2.1134		+0.0569 3.7298
OCT.31 (0H) (2449656.5)	X:	-0.4365	+0.00392	+ 88.1156 5.753184	+0.36747 4.1879	+0.009458 1.6313	+0.1972 2.8747
A NOV. 3 (0H)	Y:	+0.1011	+0.00001	+ 25.1491 2.803164	+0.14782 0.1916		+0.0553 6.2100
NOV. 3 (0H) (2449659.5)	X:	-0.4057	-0.00192	+ 88.1183 3.829875	+0.35748 2.1383	+0.013097 4.3176	+0.1966 5.3606
A NOV. 6 (0H)	Y:	+0.0960	-0.00150	+ 24.7676 0.882682	+0.14749 4.5377		+0.0543 2.4111
NOV. 6 (0H) (2449662.5)	X:	-0.4200	-0.01323	+ 88.0971 1.906475	+0.31001 0.2762	+0.013402 1.1579	+0.1963 1.5573
A NOV. 9 (0H)	Y:	+0.0955	+0.00586	+ 24.3856 5.245499	+0.14444 2.6047		+0.0536 4.8902
NOV. 9 (0H) (2449665.5)	X:	-0.4648	-0.00676	+ 88.0998 6.266705	+0.33043 4.8090	+0.008479 3.7543	+0.1955 4.0415
A NOV.12 (0H)	Y:	+0.1126	-0.00036	+ 24.0088 3.325264	+0.14253 0.6720		+0.0525 1.1003
NOV.12 (0H) (2449668.5)	X:	-0.4738	-0.01375	+ 88.1683 4.343613	+0.34520 2.8427	+0.002050 0.2447	+0.1953 0.2388
A NOV.15 (0H)	Y:	+0.1101	+0.00402	+ 23.6337 1.405128	+0.13989 5.0214		+0.0518 3.5834
NOV.15 (0H) (2449671.5)	X:	-0.5304	+0.00708	+ 88.2496 2.420332	+0.32936 0.8998	+0.005563 2.1823	+0.1940 2.7267
A NOV.18 (0H)	Y:	+0.1251	-0.00318	+ 23.2605 5.768348	+0.13686 3.0889		+0.0505 6.0728
NOV.18 (0H) (2449674.5)	X:	-0.4877	+0.00145	+ 88.3258 0.497319	+0.33158 5.3965	+0.005984 4.4716	+0.1946 5.2149
A NOV.21 (0H)	Y:	+0.1118	-0.00098	+ 22.8905 3.848664	+0.13415 1.1667		+0.0498 2.2846
NOV.21 (0H) (2449677.5)	X:	-0.5009	-0.00388	+ 88.4682 4.857798	+0.37662 3.4606	+0.010274 0.6890	+0.1935 1.4108
A NOV.24 (0H)	Y:	+0.1114	+0.00320	+ 22.5258 1.929136	+0.13271 5.5223		+0.0484 4.7666
NOV.24 (0H) (2449680.5)	X:	-0.5102	-0.00234	+ 88.6470 2.934594	+0.34961 1.4699	+0.006581 3.3717	+0.1924 3.8977
A NOV.27 (0H)	Y:	+0.1185	-0.00096	+ 22.1656 0.009835	+0.13235 3.5934		+0.0475 0.9715
NOV.27 (0H) (2449683.5)	X:	-0.5210	-0.01814	+ 88.8229 1.011431	+0.32174 5.8829	+0.007440 0.2070	+0.1925 0.0936
A NOV.30 (0H)	Y:	+0.1179	+0.00492	+ 21.8079 4.373815	+0.13081 1.6512		+0.0468 3.4537
NOV.30 (0H) (2449686.5)	X:	-0.5912	+0.01229	+ 89.0155 5.372023	+0.36201 4.0696	+0.008070 1.7778	+0.1923 2.5788
A DEC. 3 (0H)	Y:	+0.1321	-0.00280	+ 21.4514 2.454903	+0.12770 6.0036		+0.0455 5.9454

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DU SATELLITE 1 DE JUPITER: IO N=3.5516

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
DEC. 3 (0H) (2449689.5)	X:	-0.5455	+0.00112	+ 89.2654 3.449120	+0.35230 2.1206	+0.003110 5.3524	+0.1923 5.0656
A DEC. 6 (0H)	Y:	+0.1202	-0.00046	+ 21.1013 0.536166	+0.12641 4.0635		+0.0449 2.1486
DEC. 6 (0H) (2449692.5)	X:	-0.5595	+0.00516	+ 89.5319 1.526221	+0.33146 0.1938	+0.005207 1.3366	+0.1913 1.2721
A DEC. 9 (0H)	Y:	+0.1226	-0.00114	+ 20.7520 4.900857	+0.12353 2.1226		+0.0439 4.6432
DEC. 9 (0H) (2449695.5)	X:	-0.5342	+0.00305	+ 89.8046 5.886870	+0.34449 4.6278	+0.001622 0.7237	+0.1916 3.7589
A DEC.12 (0H)	Y:	+0.1149	+0.00029	+ 20.4045 2.982726	+0.11950 0.1915		+0.0431 0.8591
DEC.12 (0H) (2449698.5)	X:	-0.5342	-0.02206	+ 90.1309 3.964517	+0.35472 2.6854	+0.006483 4.7328	+0.1905 6.2373
A DEC.15 (0H)	Y:	+0.1185	+0.00361	+ 20.0650 1.064995	+0.11800 4.5502		+0.0416 3.3411
DEC.15 (0H) (2449701.5)	X:	-0.6060	+0.01391	+ 90.4846 2.041874	+0.31512 0.7718	+0.012101 1.4491	+0.1905 2.4448
A DEC.18 (0H)	Y:	+0.1290	-0.00264	+ 19.7307 5.430610	+0.11695 2.6084		+0.0407 5.8321
DEC.18 (0H) (2449704.5)	X:	-0.5582	-0.01108	+ 90.6316 0.119647	+0.32459 5.2824	+0.010523 4.5756	+0.1913 4.9290
A DEC.21 (0H)	Y:	+0.1202	+0.00074	+ 19.3988 3.513384	+0.11457 0.6693		+0.0402 2.0372
DEC.21 (0H) (2449707.5)	X:	-0.5969	+0.01656	+ 91.2270 4.480962	+0.35965 3.3618	+0.005164 1.1212	+0.1904 1.1351
A DEC.24 (0H)	Y:	+0.1231	-0.00306	+ 19.0701 1.596511	+0.11109 5.0162		+0.0392 4.5348
DEC.24 (0H) (2449710.5)	X:	-0.5350	+0.00485	+ 91.6580 2.558991	+0.35822 1.4576	+0.004593 5.6587	+0.1906 3.6230
A DEC.27 (0H)	Y:	+0.1107	-0.00080	+ 18.7489 5.963277	+0.10964 3.0914		+0.0388 0.7435
DEC.27 (0H) (2449713.5)	X:	-0.5336	-0.01391	+ 92.1129 0.637080	+0.34867 5.8339	+0.002233 4.1024	+0.1901 6.1118
A DEC.30 (0H)	Y:	+0.1126	+0.00205	+ 18.4321 4.047020	+0.10783 1.1424		+0.0377 3.2426
DEC.30 (0H) (2449716.5)	X:	-0.5758	+0.01213	+ 92.5871 4.998883	+0.38293 3.9089	+0.011155 0.6577	+0.1909 2.3187
A JAN. 2 (0H)	Y:	+0.1150	-0.00064	+ 18.1170 2.131224	+0.10356 5.4849		+0.0368 5.7451

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DU SATELLITE 2 DE JUPITER: EUROPE N=1.7693

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
JAN. 1 (0H) (2449353.5)	X:	+0.0000	+0.13446	+149.0278 5.334273	+0.60698 5.3623	+0.114942 3.6899	+0.7689 1.1382
A JAN. 5 (0H)	Y:	-0.1843	+0.00130	+ 52.1411 2.380807	+0.10280 0.9657		+0.2606 4.4938
JAN. 5 (0H) (2449357.5)	X:	+1.9082	-0.96766	+151.2184 6.107387	+1.34941 2.4389	+0.433636 6.0455	+0.8220 2.7787
A JAN. 9 (0H)	Y:	-0.1256	-0.01551	+ 52.2334 3.168268	+0.12259 1.7613		+0.2643 6.1160
JAN. 9 (0H) (2449361.5)	X:	-1.5797	+0.74354	+153.8251 0.628445	+1.97310 5.5537	+0.342444 2.6910	+0.7942 4.4635
A JAN.13 (0H)	Y:	-0.1656	+0.02770	+ 52.2703 3.954509	+0.09386 2.9832		+0.2634 1.4769
JAN.13 (0H) (2449365.5)	X:	+1.0476	-0.59426	+153.1363 1.407997	+1.53609 1.5875	+0.239235 5.5427	+0.7684 6.0951
A JAN.17 (0H)	Y:	-0.0827	+0.01498	+ 52.4404 4.742062	+0.08978 3.7789		+0.2629 3.1105
JAN.17 (0H) (2449369.5)	X:	-0.8481	+0.20354	+156.5859 2.189226	+0.08794 0.0712	+0.115445 2.2563	+0.7662 1.3810
A JAN.21 (0H)	Y:	-0.0409	+0.01273	+ 52.6325 5.530648	+0.09039 4.6628		+0.2634 4.7231
JAN.21 (0H) (2449373.5)	X:	-1.0381	+0.31985	+158.3712 2.975542	+0.12272 0.1218	+0.158112 3.1911	+0.7726 3.0215
A JAN.25 (0H)	Y:	+0.0065	+0.00712	+ 52.8527 0.036069	+0.08849 5.6235		+0.2657 0.0848
JAN.25 (0H) (2449377.5)	X:	+1.0182	-0.86393	+161.0936 3.774609	+1.97428 2.6599	+0.365213 6.1332	+0.8010 4.5793
A JAN.29 (0H)	Y:	+0.0321	+0.01248	+ 53.1258 0.825742	+0.08845 0.2366		+0.2680 1.6994
JAN.29 (0H) (2449381.5)	X:	-2.5370	+0.87362	+160.2772 4.554973	+2.14516 5.0974	+0.402978 2.7023	+0.8580 6.2303
A FEV. 2 (0H)	Y:	+0.0615	+0.02610	+ 53.4544 1.615397	+0.08104 1.1301		+0.2715 3.3330
FEV. 2 (0H) (2449385.5)	X:	+0.9123	-0.83696	+165.4014 5.334811	+1.81379 2.0312	+0.387546 5.5604	+0.8953 1.6364
A FEV. 6 (0H)	Y:	+0.2021	-0.02192	+ 53.7877 2.408204	+0.12946 1.7992		+0.2761 4.9809
FEV. 6 (0H) (2449389.5)	X:	-0.8349	-0.15027	+166.6424 6.133058	+0.36217 4.8695	+0.122564 0.6307	+0.8716 3.2702
A FEV.10 (0H)	Y:	+0.1773	+0.00209	+ 54.1751 3.198194	+0.11932 2.9099		+0.2742 0.3250
FEV.10 (0H) (2449393.5)	X:	-2.6743	+0.80547	+169.4935 0.648595	+2.00895 5.7672	+0.387520 2.8684	+0.8919 4.9476
A FEV.14 (0H)	Y:	+0.1524	+0.03579	+ 54.5616 3.990179	+0.15270 3.8845		+0.2792 1.9744
FEV.14 (0H) (2449397.5)	X:	+0.4307	-0.86128	+168.9482 1.431973	+1.99624 2.0013	+0.347975 5.8981	+0.8397 0.2847
A FEV.18 (0H)	Y:	+0.2566	+0.00971	+ 55.1209 4.782421	+0.13393 4.7525		+0.2783 3.5971
FEV.18 (0H) (2449401.5)	X:	-2.9881	+0.75833	+173.8930 2.216656	+1.02614 5.3074	+0.337271 2.6821	+0.8316 1.8701
A FEV.22 (0H)	Y:	+0.2946	+0.01590	+ 55.6592 5.576082	+0.15273 5.5455		+0.2799 5.2374
FEV.22 (0H) (2449405.5)	X:	-0.0486	-0.69616	+175.1872 3.025444	+1.83846 2.3037	+0.313059 5.6847	+0.8868 3.4550
A FEV.26 (0H)	Y:	+0.3676	-0.00746	+ 56.2327 0.086327	+0.16442 0.2458		+0.2850 0.5675
FEV.26 (0H) (2449409.5)	X:	-1.5076	-0.12982	+176.9566 3.811767	+0.98277 3.7474	+0.122547 0.8100	+0.9038 5.1182
A MAR. 2 (0H)	Y:	+0.3577	+0.01606	+ 56.9092 0.881217	+0.16178 0.9981		+0.2892 2.2216
MAR. 2 (0H) (2449413.5)	X:	-3.5982	+0.99649	+177.3798 4.603730	+2.38257 5.4607	+0.479481 3.0282	+0.9625 0.4484
A MAR. 6 (0H)	Y:	+0.3943	+0.02610	+ 57.5965 1.676776	+0.16413 1.7984		+0.2923 3.8471

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DU SATELLITE 2 DE JUPITER: EUROPE N=1.7693

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
MAR. 6 (OH) (2449417.5)	X:	+0.4013	-1.14562	+182.9646 5.391209	+1.78798 2.1697	+0.500645 5.8856	+0.9828 2.1547
A MAR.10 (OH)	Y:	+0.5202	-0.01819	+ 58.2938 2.473516	+0.19852 2.5245		+0.2981 5.4962
MAR.10 (OH) (2449421.5)	X:	-4.0460	+0.94818	+183.8824 6.209104	+2.35673 5.3282	+0.443105 2.4249	+0.9566 3.8496
A MAR.14 (OH)	Y:	+0.4683	+0.02182	+ 58.9969 3.269058	+0.22558 3.4886		+0.2985 0.8695
MAR.14 (OH) (2449425.5)	X:	-1.4374	-0.25370	+184.7397 0.709443	+1.10223 1.3528	+0.120007 5.0626	+0.9194 5.4439
A MAR.18 (OH)	Y:	+0.5158	+0.01556	+ 59.8305 4.066015	+0.22091 4.3474		+0.3008 2.4922
MAR.18 (OH) (2449429.5)	X:	-1.2654	-0.50038	+186.3892 1.507786	+1.38806 2.2973	+0.210124 6.1635	+0.9203 0.8177
A MAR.22 (OH)	Y:	+0.5798	+0.01017	+ 60.6644 4.863601	+0.22584 5.1798		+0.3044 4.1455
MAR.22 (OH) (2449433.5)	X:	-3.6079	+0.71073	+190.0955 2.302075	+0.94375 5.3744	+0.314621 3.0281	+0.9073 2.3903
A MAR.26 (OH)	Y:	+0.6335	+0.00493	+ 61.5153 5.661756	+0.22841 6.0477		+0.3085 5.7662
MAR.26 (OH) (2449437.5)	X:	-0.1423	-1.11889	+190.9716 3.118215	+2.33190 2.4681	+0.496239 5.9210	+0.9480 3.9979
A MAR.30 (OH)	Y:	+0.7016	-0.01486	+ 62.3521 0.177141	+0.24469 0.6119		+0.3111 1.1274
MAR.30 (OH) (2449441.5)	X:	-5.0934	+1.29341	+189.9417 3.898040	+3.18623 5.1924	+0.599786 2.6178	+1.0390 5.6670
A AVR. 3 (OH)	Y:	+0.6053	+0.04842	+ 63.3290 0.976923	+0.18808 1.4068		+0.3221 2.7644
AVR. 3 (OH) (2449445.5)	X:	-1.8425	-0.23257	+194.2897 4.704831	+0.64358 0.8531	+0.165615 4.9243	+1.0056 1.0677
A AVR. 7 (OH)	Y:	+0.7376	+0.00163	+ 64.1006 1.777036	+0.23213 2.1648		+0.3216 4.4197
AVR. 7 (OH) (2449449.5)	X:	-1.0410	-0.86424	+196.0318 5.503853	+1.41350 2.4021	+0.418813 6.2558	+1.0340 2.7336
A AVR.11 (OH)	Y:	+0.8136	-0.01590	+ 64.9279 2.577782	+0.23507 2.8986		+0.3262 6.0617
AVR.11 (OH) (2449453.5)	X:	-4.7456	+1.07089	+196.1613 0.038066	+2.07264 5.6124	+0.486743 2.7768	+0.9910 4.4168
A AVR.15 (OH)	Y:	+0.7513	+0.02954	+ 65.7216 3.376689	+0.25134 3.9280		+0.3272 1.4280
AVR.15 (OH) (2449457.5)	X:	-0.4662	-1.05670	+194.6404 0.823286	+2.60562 2.0731	+0.444003 5.7391	+0.9265 6.0576
A AVR.19 (OH)	Y:	+0.8300	+0.00429	+ 66.5500 4.177571	+0.22580 4.7508		+0.3264 3.0790
AVR.19 (OH) (2449461.5)	X:	-4.2625	+0.75736	+198.9141 1.628932	+1.31674 4.9820	+0.329291 2.6386	+0.9325 1.3269
A AVR.23 (OH)	Y:	+0.8406	+0.01362	+ 67.2973 4.978596	+0.21473 5.6099		+0.3288 4.7019
AVR.23 (OH) (2449465.5)	X:	-2.1917	-0.22420	+197.5780 2.437411	+0.54997 2.4381	+0.144865 5.2096	+0.9614 2.9870
A AVR.27 (OH)	Y:	+0.9332	-0.01492	+ 67.9815 5.773977	+0.20996 0.2641		+0.3336 0.0732
AVR.27 (OH) (2449469.5)	X:	-2.0297	-0.47999	+197.6988 3.240924	+0.93026 3.4212	+0.261606 0.3283	+0.9846 4.6061
A MAI 1 (OH)	Y:	+0.8918	+0.01369	+ 68.6478 0.297678	+0.16576 1.1016		+0.3361 1.7141
MAI 1 (OH) (2449473.5)	X:	-4.9283	+1.12585	+196.0905 4.033660	+2.65533 5.5272	+0.500181 2.8648	+1.0210 6.2730
A MAI 5 (OH)	Y:	+0.8839	+0.02390	+ 69.2085 1.098558	+0.14714 2.0079		+0.3398 3.3580
MAI 5 (OH) (2449477.5)	X:	+0.4969	-1.58918	+200.8588 4.837844	+3.29291 2.0239	+0.716163 5.7840	+1.0491 1.7178
A MAI 9 (OH)	Y:	+1.0261	-0.03475	+ 69.5656 1.901114	+0.15082 2.4659		+0.3446 5.0197

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		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
MAI 9 (0H) (2449481.5)	X:	-4.1564	+0.61074	+196.7396 5.653127	+1.12641 5.2745	+0.299348 2.3419	+0.9555 3.3651
A MAI 13 (0H)	Y:	+0.9286	+0.02394	+ 69.9703 2.699917	+0.15205 3.7540		+0.3371 0.3733
MAI 13 (0H) (2449485.5)	X:	-3.2352	+0.28964	+196.2057 0.167362	+0.55083 0.4959	+0.188767 3.4127	+0.9450 5.0165
A MAI 17 (0H)	Y:	+0.9536	+0.02360	+ 70.2129 3.500521	+0.14689 4.5873		+0.3385 2.0273
MAI 17 (0H) (2449489.5)	X:	-1.8060	-0.51130	+194.8560 0.964035	+1.41331 2.6386	+0.229529 6.0917	+0.9050 0.3435
A MAI 21 (0H)	Y:	+1.0069	-0.00393	+ 70.4709 4.300791	+0.11422 5.7507		+0.3348 3.6558
MAI 21 (0H) (2449493.5)	X:	-4.5427	+0.93342	+196.3556 1.765712	+1.90821 5.1723	+0.386997 2.8280	+0.8778 1.9530
A MAI 25 (0H)	Y:	+1.0039	-0.00266	+ 70.5398 5.100695	+0.10257 0.4056		+0.3326 5.3119
MAI 25 (0H) (2449497.5)	X:	-0.2520	-1.24535	+192.3628 2.581804	+2.05457 2.3811	+0.553374 5.9497	+0.9466 3.5436
A MAI 29 (0H)	Y:	+1.0502	-0.02299	+ 70.5386 5.899491	+0.12043 1.5674		+0.3343 0.6498
MAI 29 (0H) (2449501.5)	X:	-4.2387	+0.71923	+191.2526 3.363178	+1.98643 5.2972	+0.333963 2.4488	+0.9528 5.2540
A JUN. 2 (0H)	Y:	+0.9705	+0.01818	+ 70.4773 0.416018	+0.09525 2.8379		+0.3355 2.3151
JUN. 2 (0H) (2449505.5)	X:	-2.5092	+0.05883	+190.9843 4.169089	+1.22584 0.7000	+0.190876 4.2160	+0.9470 0.6386
A JUN. 6 (0H)	Y:	+1.0212	-0.00833	+ 70.2075 1.214589	+0.08405 3.7547		+0.3313 3.9610
JUN. 6 (0H) (2449509.5)	X:	-1.0576	-0.79425	+190.4086 4.968223	+1.86056 2.2220	+0.367207 6.1225	+0.9318 2.3039
A JUN.10 (0H)	Y:	+1.0054	-0.01317	+ 69.9137 2.012045	+0.09215 4.6595		+0.3304 5.5973
JUN.10 (0H) (2449513.5)	X:	-5.0020	+1.22896	+186.2797 5.781702	+2.06203 5.3111	+0.542334 2.6845	+0.8814 4.0101
A JUN.14 (0H)	Y:	+0.9187	+0.03153	+ 69.4954 2.807726	+0.12370 5.3257		+0.3240 0.9791
JUN.14 (0H) (2449517.5)	X:	-0.8531	-0.77597	+184.5303 0.275097	+1.93533 2.2977	+0.339579 5.7162	+0.8143 5.5793
A JUN.18 (0H)	Y:	+0.9965	-0.00737	+ 69.1174 3.604766	+0.14471 0.2420		+0.3168 2.5953
JUN.18 (0H) (2449521.5)	X:	-3.1857	+0.37027	+184.3025 1.080621	+1.07020 4.6258	+0.147899 2.3774	+0.8242 0.9134
A JUN.22 (0H)	Y:	+0.9763	-0.01228	+ 68.5655 4.400238	+0.15090 1.1094		+0.3137 4.2490
JUN.22 (0H) (2449525.5)	X:	-2.0565	-0.04703	+181.4123 1.878268	+0.18722 5.8193	+0.101322 4.8472	+0.8375 2.5258
A JUN.26 (0H)	Y:	+0.9741	-0.02826	+ 67.9984 5.194681	+0.18813 1.9506		+0.3131 5.8723
JUN.26 (0H) (2449529.5)	X:	-1.1972	-0.54972	+179.0675 2.676726	+0.58141 2.4794	+0.258128 6.2363	+0.8333 4.1671
A JUN.30 (0H)	Y:	+0.9147	-0.00949	+ 67.3201 5.989263	+0.18278 2.8718		+0.3066 1.2428
JUN.30 (0H) (2449533.5)	X:	-4.7602	+1.33477	+176.5763 3.452676	+2.89912 5.6156	+0.599264 2.8182	+0.8917 5.8283
A JUL. 4 (0H)	Y:	+0.8266	+0.03089	+ 66.6758 0.500230	+0.22649 3.8898		+0.3082 2.8736
JUL. 4 (0H) (2449537.5)	X:	-0.4106	-0.77105	+177.3196 4.262185	+2.05784 1.9055	+0.357045 5.7225	+0.8322 1.2525
A JUL. 8 (0H)	Y:	+0.9012	-0.02818	+ 65.8107 1.292601	+0.18313 4.6412		+0.3007 4.5316
JUL. 8 (0H) (2449541.5)	X:	-2.5396	+0.23597	+173.1583 5.056520	+0.50822 3.8321	+0.155485 1.6805	+0.7980 2.9005
A JUL.12 (0H)	Y:	+0.8232	-0.01167	+ 65.0206 2.084017	+0.20113 5.4370		+0.2938 6.1709

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		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
JUL.12 (0H) (2449545.5)	X:	-2.3022	+0.28601	+171.2840 5.846770	+0.13605 5.0341	+0.144490 3.2243	+0.7664 4.5131
A JUL.16 (0H)	Y:	+0.7590	+0.00919	+ 64.2106 2.874874	+0.22038 6.1958		+0.2888 1.5141
JUL.16 (0H) (2449549.5)	X:	-0.4255	-0.65993	+168.9964 0.345030	+1.47632 2.6059	+0.296715 5.9287	+0.7247 6.1603
A JUL.20 (0H)	Y:	+0.7848	-0.01727	+ 63.3692 3.665649	+0.23732 0.7939		+0.2807 3.1672
JUL.20 (0H) (2449553.5)	X:	-3.1756	+0.80139	+169.1684 1.145661	+1.86136 5.2356	+0.320965 2.8482	+0.7313 1.4219
A JUL.24 (0H)	Y:	+0.7389	-0.01549	+ 62.4813 4.455595	+0.24545 1.6111		+0.2775 4.7828
JUL.24 (0H) (2449557.5)	X:	-0.2413	-0.58635	+164.6765 1.936680	+0.80408 2.0141	+0.278049 5.7878	+0.7592 3.0776
A JUL.28 (0H)	Y:	+0.7041	-0.02761	+ 61.5690 5.244269	+0.25146 2.3830		+0.2743 0.1431
JUL.28 (0H) (2449561.5)	X:	-2.3443	+0.42980	+164.0125 2.714727	+1.28360 5.3835	+0.226889 2.2083	+0.7725 4.7463
A AOU. 1 (0H)	Y:	+0.5761	+0.01702	+ 60.6742 6.034322	+0.27400 3.3557		+0.2721 1.7866
AOU. 1 (0H) (2449565.5)	X:	-1.8709	+0.36379	+162.0922 3.505535	+0.97290 0.1332	+0.177258 3.2476	+0.7508 0.1062
A AOU. 5 (0H)	Y:	+0.5882	-0.00421	+ 59.7031 0.538229	+0.25754 4.0912		+0.2647 3.4202
AOU. 5 (0H) (2449569.5)	X:	+0.6970	-0.92675	+162.2671 4.300445	+2.45029 2.1798	+0.438069 5.9274	+0.7586 1.8019
A AOU. 9 (0H)	Y:	+0.6224	-0.04490	+ 58.6876 1.325981	+0.23149 4.9658		+0.2629 5.0704
AOU. 9 (0H) (2449573.5)	X:	-2.4466	+0.71848	+157.4974 5.088177	+0.98825 5.0585	+0.301638 2.6465	+0.6881 3.4320
A AOU.13 (0H)	Y:	+0.4671	+0.00355	+ 57.8135 2.111533	+0.26310 5.6159		+0.2532 0.4150
AOU.13 (0H) (2449577.5)	X:	-0.1882	-0.28518	+157.1301 5.864038	+0.86557 2.4749	+0.140165 5.4541	+0.6706 5.0340
A AOU.17 (0H)	Y:	+0.4399	-0.00594	+ 56.8500 2.898105	+0.26149 0.1757		+0.2486 2.0534
AOU.17 (0H) (2449581.5)	X:	-1.0922	+0.14405	+155.8802 0.372780	+0.82726 4.4654	+0.069412 2.0243	+0.6733 0.3381
A AOU.21 (0H)	Y:	+0.4086	-0.00674	+ 55.9058 3.684215	+0.26756 0.9887		+0.2438 3.6682
AOU.21 (0H) (2449585.5)	X:	-1.2404	+0.34770	+154.6124 1.157707	+1.04810 5.4062	+0.137266 3.1007	+0.6651 1.9773
A AOU.25 (0H)	Y:	+0.3768	-0.01634	+ 54.9541 4.469427	+0.27030 1.7884		+0.2397 5.3191
AOU.25 (0H) (2449589.5)	X:	+1.0295	-0.78026	+151.2697 1.944738	+1.14501 2.2100	+0.369456 6.0718	+0.7036 3.5682
A AOU.29 (0H)	Y:	+0.3343	-0.02470	+ 54.0173 5.254409	+0.28148 2.5796		+0.2367 0.6520
AOU.29 (0H) (2449593.5)	X:	-1.6393	+0.65165	+151.6852 2.715512	+1.45500 5.6628	+0.281749 2.6607	+0.7015 5.2700
A SEP. 2 (0H)	Y:	+0.2261	+0.00581	+ 53.0607 6.039544	+0.27637 3.4454		+0.2336 2.3008
SEP. 2 (0H) (2449597.5)	X:	+0.6471	-0.35431	+150.8600 3.512330	+1.50495 1.6108	+0.202716 5.2740	+0.6867 0.6591
A SEP. 6 (0H)	Y:	+0.2527	-0.02416	+ 52.0634 0.540094	+0.25368 4.2281		+0.2276 3.9467
SEP. 6 (0H) (2449601.5)	X:	+0.0936	-0.12752	+149.0921 4.291488	+0.80367 2.4790	+0.093460 0.2735	+0.6603 2.2726
A SEP.10 (0H)	Y:	+0.1885	-0.01587	+ 51.1559 1.323622	+0.25969 4.9766		+0.2230 5.5661
SEP.10 (0H) (2449605.5)	X:	-1.2314	+0.66333	+146.6924 5.076052	+0.92562 5.0548	+0.274733 2.7975	+0.6417 3.9472
A SEP.14 (0H)	Y:	+0.1012	-0.00023	+ 50.2414 2.106401	+0.26490 5.7126		+0.2183 0.9371

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		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
SEP.14 (OH) (2449609.5)	X:	+1.2341	-0.51737	+147.1376 5.846865	+1.20574 2.6738	+0.233535 5.9132	+0.6118 5.5005
A SEP.18 (OH)	Y:	+0.0812	-0.01181	+ 49.3253 2.890426	+0.26821 0.2651		+0.2133 2.5429
SEP.18 (OH) (2449613.5)	X:	-0.6791	+0.48696	+146.4269 0.358164	+1.40267 5.0319	+0.202677 2.6177	+0.6271 0.8236
A SEP.22 (OH)	Y:	+0.0245	-0.00325	+ 48.3955 3.673203	+0.26027 1.0490		+0.2095 4.1846
SEP.22 (OH) (2449617.5)	X:	+1.1931	-0.33972	+144.1091 1.133038	+0.42866 1.5692	+0.189257 5.5451	+0.6589 2.4526
A SEP.26 (OH)	Y:	+0.0375	-0.02747	+ 47.5301 4.456036	+0.28040 1.8179		+0.2089 5.8065
SEP.26 (OH) (2449621.5)	X:	+0.8607	-0.18829	+143.8270 1.914488	+0.13565 0.9826	+0.116249 0.2326	+0.6485 4.0967
A SEP.30 (OH)	Y:	-0.0489	-0.00724	+ 46.5927 5.238937	+0.26112 2.6462		+0.2034 1.1665
SEP.30 (OH) (2449625.5)	X:	-0.9346	+0.85278	+144.1032 2.684968	+1.73151 5.8089	+0.376605 2.8697	+0.6841 5.7511
A OCT. 4 (OH)	Y:	-0.1209	+0.00831	+ 45.7050 6.022232	+0.26702 3.4998		+0.2019 2.7936
OCT. 4 (OH) (2449629.5)	X:	+2.0724	-0.61529	+143.5051 3.483540	+1.77846 2.0123	+0.281220 5.8053	+0.6448 1.1493
A OCT. 8 (OH)	Y:	-0.0940	-0.02182	+ 44.7789 0.520066	+0.23657 4.1850		+0.1962 4.4386
OCT. 8 (OH) (2449633.5)	X:	+0.0734	+0.37418	+141.3731 4.255038	+0.49067 4.2980	+0.158735 2.2758	+0.6182 2.7763
A OCT.12 (OH)	Y:	-0.1513	-0.00940	+ 43.9306 1.302343	+0.24629 4.9689		+0.1913 6.0734
OCT.12 (OH) (2449637.5)	X:	+1.1375	-0.02504	+141.9016 5.033440	+0.47907 2.7005	+0.057455 4.7283	+0.6085 4.3554
A OCT.16 (OH)	Y:	-0.1862	-0.00738	+ 43.0756 2.084568	+0.24886 5.7301		+0.1876 1.4055
OCT.16 (OH) (2449641.5)	X:	+1.7564	-0.32467	+141.6806 5.810512	+0.82942 3.1202	+0.154978 6.1394	+0.6007 5.9909
A OCT.20 (OH)	Y:	-0.2222	-0.00910	+ 42.2197 2.866871	+0.24791 0.2439		+0.1841 3.0510
OCT.20 (OH) (2449645.5)	X:	-0.1048	+0.71152	+141.5171 0.319800	+1.75763 5.3454	+0.299231 2.9369	+0.6177 1.2560
A OCT.24 (OH)	Y:	-0.2512	-0.00595	+ 41.3689 3.649137	+0.24613 1.0104		+0.1811 4.6626
OCT.24 (OH) (2449649.5)	X:	+2.5361	-0.59464	+139.5475 1.087592	+0.79775 1.9246	+0.270733 5.8205	+0.6510 2.9222
A OCT.28 (OH)	Y:	-0.2641	-0.00970	+ 40.5345 4.431193	+0.24601 1.7859		+0.1791 0.0187
OCT.28 (OH) (2449653.5)	X:	+0.2109	+0.54062	+141.6096 1.864413	+1.39954 5.4367	+0.255571 2.3250	+0.6691 4.5986
A NOV. 1 (OH)	Y:	-0.3324	+0.01191	+ 39.6719 5.214949	+0.23684 2.6725		+0.1775 1.6609
NOV. 1 (OH) (2449657.5)	X:	+1.2986	+0.15279	+140.7067 2.648197	+0.77084 0.6636	+0.091621 3.6120	+0.6447 6.2259
A NOV. 5 (OH)	Y:	-0.3155	-0.00728	+ 38.8489 5.995911	+0.22733 3.3429		+0.1715 3.2835
NOV. 5 (OH) (2449661.5)	X:	+2.9449	-0.69109	+140.8839 3.437231	+1.92964 2.2127	+0.318478 5.9869	+0.6534 1.6244
A NOV. 9 (OH)	Y:	-0.3109	-0.02082	+ 37.9945 0.495140	+0.20754 4.1106		+0.1701 4.9329
NOV. 9 (OH) (2449665.5)	X:	+0.3998	+0.62923	+139.2920 4.203363	+0.78889 5.0833	+0.265563 2.7583	+0.6049 3.2213
A NOV.13 (OH)	Y:	-0.3674	+0.00297	+ 37.2415 1.277753	+0.22848 4.8518		+0.1642 0.2667
NOV.13 (OH) (2449669.5)	X:	+2.8257	-0.53414	+141.6212 4.981427	+1.32740 2.5013	+0.239319 5.7458	+0.6014 4.8005
A NOV.17 (OH)	Y:	-0.3620	-0.00600	+ 36.4259 2.061168	+0.21921 5.6634		+0.1612 1.9031

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		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
NOV.17 (0H) (2449673.5)	X:	+0.8700	+0.42581	+140.5823 5.771102	+1.31147 4.8349	+0.189786 2.4667	+0.6385 0.1004
A NOV.21 (0H)	Y:	-0.3909	+0.00089	+ 35.6354 2.843992	+0.21780 0.1061		+0.1595 3.5125
NOV.21 (0H) (2449677.5)	X:	+1.5727	+0.18965	+140.9522 0.262426	+0.80847 5.5782	+0.108012 3.5300	+0.6420 1.7481
A NOV.25 (0H)	Y:	-0.3957	-0.00238	+ 34.8564 3.627788	+0.21566 0.9089		+0.1566 5.1591
NOV.25 (0H) (2449681.5)	X:	+3.3990	-0.80237	+140.0495 1.034044	+1.10640 2.2727	+0.371705 6.1069	+0.6878 3.3594
A NOV.29 (0H)	Y:	-0.3953	-0.00477	+ 34.0828 4.411888	+0.21671 1.6927		+0.1539 0.4976
NOV.29 (0H) (2449685.5)	X:	+0.3609	+0.76569	+143.2535 1.814299	+1.72946 5.6613	+0.335508 2.7165	+0.6903 5.0604
A DEC. 3 (0H)	Y:	-0.4236	+0.01223	+ 33.2964 5.196477	+0.19906 2.5013		+0.1524 2.1398
DEC. 3 (0H) (2449689.5)	X:	+3.1900	-0.56209	+141.9528 2.607415	+1.76117 1.7425	+0.258924 5.5287	+0.6651 0.4413
A DEC. 7 (0H)	Y:	-0.3855	-0.01007	+ 32.5238 5.979922	+0.18923 3.1847		+0.1474 3.7868
DEC. 7 (0H) (2449693.5)	X:	+1.6131	+0.14934	+142.5047 3.374988	+0.28088 3.0120	+0.087101 1.9080	+0.6424 2.0228
A DEC.11 (0H)	Y:	-0.4072	-0.00226	+ 31.8021 0.481933	+0.19411 3.9487		+0.1439 5.4009
DEC.11 (0H) (2449697.5)	X:	+1.3345	+0.36378	+142.8766 4.153888	+0.32183 4.8164	+0.165204 3.0371	+0.6437 3.6639
A DEC.15 (0H)	Y:	-0.4192	+0.00617	+ 31.0715 1.267422	+0.19267 4.7181		+0.1414 0.7675
DEC.15 (0H) (2449701.5)	X:	+3.2593	-0.67420	+145.4388 4.934012	+1.52198 2.7484	+0.294314 6.0898	+0.6372 5.2077
A DEC.19 (0H)	Y:	-0.3967	-0.00073	+ 30.3443 2.053731	+0.18809 5.4911		+0.1385 2.3755
DEC.19 (0H) (2449705.5)	X:	+0.4631	+0.75987	+144.3449 5.726180	+1.95689 5.1516	+0.333628 2.7276	+0.6827 0.5365
A DEC.23 (0H)	Y:	-0.4043	+0.00406	+ 29.6262 2.840057	+0.18083 6.2410		+0.1364 4.0141
DEC.23 (0H) (2449709.5)	X:	+3.6723	-0.77592	+145.0645 0.202237	+1.19049 1.9892	+0.366285 5.6588	+0.7371 2.1971
A DEC.27 (0H)	Y:	-0.3681	-0.01429	+ 28.9593 3.628011	+0.19321 0.7855		+0.1361 5.6408
DEC.27 (0H) (2449713.5)	X:	+1.8997	-0.01065	+147.0279 0.992494	+0.46685 5.4706	+0.086786 1.1346	+0.7147 3.8523
A DEC.31 (0H)	Y:	-0.4050	+0.01067	+ 28.2296 4.415642	+0.16556 1.5262		+0.1314 1.0066
DEC.31 (0H) (2449717.5)	X:	+0.5987	+0.71744	+149.1643 1.772528	+1.68242 5.9190	+0.344352 2.9470	+0.7475 5.5093
A JAN. 4 (0H)	Y:	-0.4014	+0.01655	+ 27.5501 5.204635	+0.15648 2.3347		+0.1301 2.6398

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		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
JAN. 1 (OH) (2449353.5)	X:	-0.2337	-0.02211	+237.5195 4.301519	+0.92484 3.4736	+0.010316 5.8246	+0.1217 1.2111
A JAN.10 (OH)	Y:	+0.2007	-0.01060	+ 84.9669 1.320582	+0.17012 0.0501		+0.0413 4.4634
JAN.10 (OH) (2449362.5)	X:	-0.1769	-0.02517	+243.4342 5.899407	+0.84163 5.2671	+0.006709 5.7190	+0.0999 4.1576
A JAN.19 (OH)	Y:	+0.1497	-0.00352	+ 85.4065 2.924460	+0.16071 1.8767		+0.0359 1.2609
JAN.19 (OH) (2449371.5)	X:	-0.3916	+0.01734	+250.0874 1.218687	+0.92670 0.5916	+0.011137 2.6741	+0.1206 0.9432
A JAN.28 (OH)	Y:	+0.0902	+0.01331	+ 86.0896 4.531385	+0.17088 3.7979		+0.0431 4.3068
JAN.28 (OH) (2449380.5)	X:	-0.6994	+0.07504	+257.0638 2.821878	+0.73961 2.4988	+0.018442 2.4913	+0.1389 4.3078
A FEV. 6 (OH)	Y:	+0.1441	+0.00720	+ 87.1927 6.140895	+0.17761 5.6334		+0.0432 1.2456
FEV. 6 (OH) (2449389.5)	X:	-0.2662	-0.00766	+264.5642 4.432291	+0.90941 4.0443	+0.012083 6.0570	+0.1178 1.4661
A FEV.15 (OH)	Y:	+0.2169	-0.01553	+ 88.5651 1.470655	+0.21575 1.2206		+0.0369 4.7618
FEV.15 (OH) (2449398.5)	X:	+0.0181	-0.04674	+272.1327 6.043635	+0.81755 5.9951	+0.009351 5.6696	+0.0678 4.7726
A FEV.24 (OH)	Y:	+0.1360	-0.00627	+ 90.3942 3.086447	+0.24299 3.0168		+0.0264 1.8911
FEV.24 (OH) (2449407.5)	X:	-0.4552	+0.06710	+280.2933 1.378394	+0.71440 1.1834	+0.024247 2.4863	+0.0442 1.0818
A MAR. 5 (OH)	Y:	+0.0173	+0.01785	+ 92.5172 4.706577	+0.29535 4.7367		+0.0200 4.4806
MAR. 5 (OH) (2449416.5)	X:	+0.0743	-0.06060	+287.6074 3.000577	+0.90794 2.9801	+0.021751 5.3663	+0.0673 3.8628
A MAR.14 (OH)	Y:	+0.1326	-0.00237	+ 95.0787 0.045377	+0.32607 0.2293		+0.0260 0.9036
MAR.14 (OH) (2449425.5)	X:	-0.3731	+0.02956	+294.6390 4.625282	+0.88552 4.9387	+0.010443 1.3884	+0.0986 0.9404
A MAR.23 (OH)	Y:	+0.1499	-0.00554	+ 97.9343 1.671662	+0.35621 1.9298		+0.0335 4.2478
MAR.23 (OH) (2449434.5)	X:	-0.4277	+0.04067	+301.2917 6.255409	+0.78819 0.3587	+0.019790 2.4211	+0.1008 4.4528
A AVR. 1 (OH)	Y:	+0.0965	+0.00805	+100.9566 3.300471	+0.38181 3.6591		+0.0310 1.5052
AVR. 1 (OH) (2449443.5)	X:	-0.2204	+0.00105	+306.8317 1.604838	+0.75304 2.4277	+0.004043 4.7392	+0.0747 1.4223
A AVR.10 (OH)	Y:	+0.1271	-0.00013	+104.1402 4.932512	+0.37530 5.3687		+0.0260 4.7197
AVR.10 (OH) (2449452.5)	X:	+0.1512	-0.05958	+311.1554 3.242676	+0.61469 4.0374	+0.028174 5.6839	+0.0606 3.9925
A AVR.19 (OH)	Y:	+0.1616	-0.01734	+107.1526 0.283070	+0.37138 0.8355		+0.0249 1.2380
AVR.19 (OH) (2449461.5)	X:	-0.1897	+0.01913	+313.5563 4.880574	+0.77480 6.1115	+0.016647 2.1470	+0.1147 0.7309
A AVR.28 (OH)	Y:	+0.0007	+0.01778	+109.9829 1.918412	+0.32791 2.6269		+0.0435 4.0786
AVR.28 (OH) (2449470.5)	X:	-0.5846	+0.07953	+314.9698 0.239014	+0.46463 1.8725	+0.026582 2.4369	+0.1636 4.2049
A MAI 7 (OH)	Y:	+0.0705	+0.01295	+112.2359 3.555388	+0.28251 4.3812		+0.0540 1.1432

1994 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 3 DE JUPITER: GANYMEDE N=0.8782

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
MAI 7 (0H)	X:	+0.0371	-0.06877	+313.6125	+0.71448	+0.027595	+0.1670
(2449479.5)				1.878774	3.4955	5.4673	1.3579
A MAI 16 (0H)	Y:	+0.2447	-0.02338	+113.9552	+0.23242		+0.0544
				5.190988	0.0756		4.6557
MAI 16 (0H)	X:	-0.2068	-0.00780	+311.4615	+0.70734	+0.010133	+0.1344
(2449488.5)				3.518175	5.6360	0.5971	4.7270
A MAI 25 (0H)	Y:	+0.1080	-0.00039	+114.8817	+0.17554		+0.0530
				0.543953	2.0665		1.8904
MAI 25 (0H)	X:	-0.3839	+0.04536	+307.2866	+0.69363	+0.020331	+0.1130
(2449497.5)				5.156136	1.0799	2.6265	1.4908
A JUN. 3 (0H)	Y:	+0.0174	+0.02200	+114.9744	+0.17705		+0.0486
				2.176935	4.2139		4.8473
JUN. 3 (0H)	X:	-0.0176	-0.03262	+302.2573	+0.86109	+0.015351	+0.1324
(2449506.5)				0.507267	3.0120	5.4925	4.5487
A JUN.12 (0H)	Y:	+0.1565	-0.01196	+114.3624	+0.19196		+0.0534
				3.808772	0.1308		1.5221
JUN.12 (0H)	X:	-0.1781	-0.00058	+296.1782	+0.78020	+0.006308	+0.1658
(2449515.5)				2.139354	4.9091	0.0159	1.5464
A JUN.21 (0H)	Y:	+0.1591	-0.01603	+112.9364	+0.23561		+0.0608
				5.436356	2.0056		4.8124
JUN.21 (0H)	X:	-0.3118	+0.01015	+289.3417	+0.78839	+0.013233	+0.1894
(2449524.5)				3.766754	0.3554	2.1122	4.9800
A JUN.30 (0H)	Y:	+0.0354	+0.01662	+111.0016	+0.28887		+0.0721
				0.778056	3.8872		2.0590
JUN.30 (0H)	X:	-0.2767	-0.01386	+282.3814	+0.83676	+0.003936	+0.1773
(2449533.5)				5.390591	2.2809	5.3095	2.1161
A JUL. 9 (0H)	Y:	+0.1205	+0.00689	+108.4455	+0.31867		+0.0683
				2.399063	5.6416		5.4018
JUL. 9 (0H)	X:	-0.0117	-0.05476	+274.8757	+0.71346	+0.022193	+0.1462
(2449542.5)				0.725990	3.8314	5.3623	5.4236
A JUL.18 (0H)	Y:	+0.2018	-0.01506	+105.6632	+0.36889		+0.0573
				4.016278	1.0801		2.3280
JUL.18 (0H)	X:	-0.3783	+0.03540	+268.2103	+0.86661	+0.009724	+0.1325
(2449551.5)				2.341074	5.7406	1.9952	2.1661
A JUL.27 (0H)	Y:	+0.1210	-0.00486	+102.4883	+0.38462		+0.0506
				5.630138	2.7794		5.4274
JUL.27 (0H)	X:	-0.4542	+0.04785	+261.0596	+0.67755	+0.017631	+0.1653
(2449560.5)				3.952100	1.1556	2.2939	5.2347
A AOU. 5 (0H)	Y:	+0.0572	+0.00903	+ 99.2122	+0.40745		+0.0606
				0.957199	4.4481		2.3094
AOU. 5 (0H)	X:	+0.0418	-0.07722	+255.1884	+0.92208	+0.021576	+0.1894
(2449569.5)				5.558547	2.8323	5.3907	2.2747
A AOU.14 (0H)	Y:	+0.1314	-0.00134	+ 95.8149	+0.42090		+0.0676
				2.564847	6.1251		5.6092
AOU.14 (0H)	X:	-0.3426	-0.00345	+249.1472	+0.79941	+0.002165	+0.1880
(2449578.5)				0.880246	4.7400	5.6150	5.6704
A AOU.23 (0H)	Y:	+0.1510	-0.00052	+ 92.3878	+0.42682		+0.0678
				4.168894	1.4683		2.6688
AOU.23 (0H)	X:	-0.3590	-0.00407	+243.8433	+0.79767	+0.003539	+0.1667
(2449587.5)				2.480844	0.1623	1.2740	2.7397
A SEP. 1 (0H)	Y:	+0.1485	-0.00006	+ 88.9545	+0.42866		+0.0594
				5.771037	3.1105		6.0380
SEP. 1 (0H)	X:	-0.2060	-0.03219	+239.2690	+0.89575	+0.008316	+0.1406
(2449596.5)				4.078896	1.8888	5.3461	5.9655
A SEP.10 (0H)	Y:	+0.1596	-0.00521	+ 85.5336	+0.42316		+0.0515
				1.087710	4.7394		2.9444

1994 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 3 DE JUPITER: GANYMEDE N=0.8782

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
SEP.10 (OH)	X:	-0.3884	+0.02281	+234.9685	+0.76862	+0.006991	+0.1364
(2449605.5)				5.673954	3.5948	3.7123	2.7679
A SEP.19 (OH)	Y:	+0.1281	-0.00193	+ 82.2153	+0.42521		+0.0497
				2.685711	0.0633		6.0683
SEP.19 (OH)	X:	-0.4947	+0.02969	+231.7266	+0.90175	+0.009166	+0.1625
(2449614.5)				0.983998	5.2247	1.9854	5.8906
A SEP.28 (OH)	Y:	+0.1080	+0.00533	+ 78.9146	+0.41438		+0.0539
				4.282388	1.6762		2.9558
SEP.28 (OH)	X:	-0.4268	-0.00328	+228.6254	+0.77902	+0.004837	+0.1854
(2449623.5)				2.574846	0.6511	1.3482	2.9873
A OCT. 7 (OH)	Y:	+0.1479	+0.00104	+ 75.7058	+0.40743		+0.0597
				5.877752	3.2701		0.0154
OCT. 7 (OH)	X:	-0.1608	-0.06451	+226.7784	+0.96722	+0.017745	+0.1815
(2449632.5)				4.165066	2.2179	5.0334	0.1118
A OCT.16 (OH)	Y:	+0.1968	-0.00757	+ 72.5317	+0.39467		+0.0548
				1.189748	4.8808		3.3712
OCT.16 (OH)	X:	-0.5190	+0.01926	+224.7631	+0.83642	+0.002477	+0.1600
(2449641.5)				5.753760	4.0515	2.7302	3.3898
A OCT.25 (OH)	Y:	+0.1374	+0.00189	+ 69.4783	+0.38432		+0.0475
				2.783596	0.1614		0.4221
OCT.25 (OH)	X:	-0.4194	+0.00365	+223.7854	+0.82879	+0.002930	+0.1379
(2449650.5)				1.057911	5.6678	0.6823	0.2564
A NOV. 3 (OH)	Y:	+0.1263	+0.00224	+ 66.4770	+0.37373		+0.0404
				4.378257	1.7527		3.6073
NOV. 3 (OH)	X:	-0.2547	-0.02909	+223.3156	+0.89548	+0.004741	+0.1410
(2449659.5)				2.645570	1.1136	5.0706	3.3208
A NOV.12 (OH)	Y:	+0.1415	-0.00200	+ 63.5263	+0.35802		+0.0419
				5.972743	3.3233		0.3920
NOV.12 (OH)	X:	-0.6785	+0.05266	+223.2991	+0.74048	+0.015355	+0.1582
(2449668.5)				4.231202	2.8332	2.6708	0.2344
A NOV.21 (OH)	Y:	+0.1520	-0.00362	+ 60.6721	+0.34661		+0.0418
				1.285227	4.9001		3.6340
NOV.21 (OH)	X:	-0.4699	-0.00767	+224.3758	+0.86964	+0.003701	+0.1754
(2449677.5)				5.818008	4.3737	0.0521	3.6159
A NOV.30 (OH)	Y:	+0.1203	+0.00412	+ 57.8721	+0.32966		+0.0421
				2.881261	0.1681		0.7376
NOV.30 (OH)	X:	-0.3755	-0.02238	+225.5906	+0.82999	+0.007347	+0.1677
(2449686.5)				1.121309	6.1361	5.6870	0.7642
A DEC. 9 (OH)	Y:	+0.1312	+0.00222	+ 55.1564	+0.31539		+0.0396
				4.479497	1.7367		4.1461
DEC. 9 (OH)	X:	-0.5449	+0.03445	+227.8404	+0.85371	+0.011877	+0.1432
(2449695.5)				2.708206	1.3479	2.9228	4.0765
A DEC.18 (OH)	Y:	+0.1404	-0.00230	+ 52.5136	+0.29912		+0.0335
				6.079387	3.2953		1.0551
DEC.18 (OH)	X:	-0.4763	+0.01954	+230.2763	+0.90045	+0.003986	+0.1217
(2449704.5)				4.296482	3.1648	1.8094	0.9197
A DEC.27 (OH)	Y:	+0.1357	-0.00689	+ 49.9675	+0.28099		+0.0262
				1.398495	4.8479		4.2747
DEC.27 (OH)	X:	-0.2731	-0.02712	+233.6423	+0.85703	+0.007601	+0.1303
(2449713.5)				5.884787	4.7422	5.8303	3.9609
A JAN. 5 (OH)	Y:	+0.0910	+0.00161	+ 47.5260	+0.26287		+0.0252
				3.003248	0.1069		1.2083

1994 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 4 DE JUPITER: CALLISTO N=0.3765

		AO	A1	BO FO	B1 F1	CO PO
JAN. 1 (OH)	X:	- 1.5802	- 0.40471	+415.9087	+ 1.58179	+1.8735
(2449353.5)				1.825630	1.2787	1.2825
A JAN.11 (OH)	Y:	+ 0.2328	+ 0.16688	+146.9357	+ 0.26364	+0.6651
				5.130799	4.2832	4.6178
JAN.11 (OH)	X:	- 3.7927	+ 0.01128	+429.8042	+ 1.54640	+1.9558
(2449363.5)				5.565456	4.9887	2.3450
A JAN.21 (OH)	Y:	+ 1.0540	+ 0.02917	+148.8037	+ 0.26533	+0.6772
				2.592165	1.5232	5.6683
JAN.21 (OH)	X:	- 4.1984	+ 0.10178	+443.6016	+ 1.56196	+1.8641
(2449373.5)				3.027071	2.4383	3.6637
A JAN.31 (OH)	Y:	+ 1.0849	- 0.01580	+150.3703	+ 0.30193	+0.6335
				0.060021	5.4651	0.7127
JAN.31 (OH)	X:	- 5.2181	+ 0.18973	+457.2393	+ 1.72994	+2.1496
(2449383.5)				0.495045	0.0577	4.8315
A FEV.10 (OH)	Y:	+ 1.9882	- 0.14001	+152.6075	+ 0.42707	+0.7180
				3.817935	3.2157	1.8929
FEV.10 (OH)	X:	- 5.4148	+ 0.02717	+470.3449	+ 1.77496	+2.1347
(2449393.5)				4.245253	4.0829	6.0288
A FEV.20 (OH)	Y:	+ 1.5467	+ 0.00142	+154.9453	+ 0.46523	+0.7056
				1.267423	1.1312	3.0611
FEV.20 (OH)	X:	- 1.1462	- 0.59732	+483.3960	+ 1.83391	+2.2471
(2449403.5)				1.718311	1.8762	1.1070
A MAR. 2 (OH)	Y:	+ 0.3214	+ 0.16300	+158.1602	+ 0.57490	+0.7399
				5.047878	5.1833	4.4516
MAR. 2 (OH)	X:	- 5.3808	+ 0.22724	+500.7246	+ 1.61587	+2.3877
(2449413.5)				5.481578	5.7487	2.2152
A MAR.12 (OH)	Y:	+ 1.3188	+ 0.00351	+163.7820	+ 0.53777	+0.7853
				2.528449	2.7160	5.5324
MAR.12 (OH)	X:	- 5.2906	+ 0.05807	+516.3926	+ 1.37646	+2.2548
(2449423.5)				2.967084	3.3372	3.5561
A MAR.22 (OH)	Y:	+ 1.2269	+ 0.01065	+169.1637	+ 0.60072	+0.7512
				0.016652	0.2009	0.5972
MAR.22 (OH)	X:	- 5.3699	+ 0.16703	+529.3382	+ 1.36589	+2.6706
(2449433.5)				0.460502	0.9525	4.7632
A AVR. 1 (OH)	Y:	+ 2.0568	- 0.12575	+175.1995	+ 0.66238	+0.6871
				3.793568	3.9669	1.8078
AVR. 1 (OH)	X:	- 7.5736	+ 0.34833	+537.9416	+ 1.64846	+2.5489
(2449443.5)				4.234377	5.1581	6.0097
A AVR.11 (OH)	Y:	+ 2.3269	- 0.11638	+180.1457	+ 0.77099	+0.8660
				1.281033	1.7952	3.0268
AVR.11 (OH)	X:	- 0.0099	- 0.95915	+542.9419	+ 2.02643	+2.7161
(2449453.5)				1.733321	2.8600	1.1129
A AVR.21 (OH)	Y:	- 0.0519	+ 0.30471	+185.1554	+ 0.85458	+0.9359
				5.061514	5.7067	4.4248
AVR.21 (OH)	X:	- 4.0183	+ 0.07185	+552.8757	+ 1.50966	+2.7353
(2449463.5)				5.518759	0.8164	2.2826
A MAI 1 (OH)	Y:	+ 0.9350	+ 0.02375	+192.2364	+ 0.57560	+0.9663
				2.557402	3.4599	5.5856
MAI 1 (OH)	X:	- 7.7322	+ 0.47366	+555.2254	+ 1.55649	+2.5035
(2449473.5)				3.020085	5.0254	3.6247
A MAI 11 (OH)	Y:	+ 2.3519	- 0 13202	+196.5075	+ 0.45988	+0.8917
				0.055941	1.2324	0.6361
MAI 11 (OH)	X:	- 5.3656	+ 0.13499	+551.7160	+ 1.17609	+2.8645
(2449483.5)				0.530310	2.6627	4.8860
A MAI 21 (OH)	Y:	+ 1.7014	- 0.05080	+199.2346	+ 0.29985	+1.0526
				3.843845	5.0518	1.8999

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DU SATELLITE 4 DE JUPITER: CALLISTO N=0.3765

		A0	A1	B0 F0	B1 F1	C0 P0
MAI 21 (OH)	X:	- 5.9773	+ 0.31704	+543.8591	+ 1.53118	+2.5435
(2449493.5)				4.311422	0.2719	6.0958
A MAI 31 (OH)	Y:	+ 2.3596	- 0.18821	+199.2453	+ 0.42491	+0.9363
				1.336151	3.0194	3.1042
MAI 31 (OH)	X:	- 0.7866	- 0.80660	+531.3036	+ 1.59160	+2.6986
(2449503.5)				1.810122	3.9603	1.2378
A JUN.10 (OH)	Y:	+ 0.0160	+ 0.33407	+197.5737	+ 0.44522	+1.0173
				5.115308	0.5902	4.5230
JUN.10 (OH)	X:	- 2.2756	- 0.24022	+525.6237	+ 1.68379	+2.5014
(2449513.5)				5.588633	2.1358	2.3733
A JUN.20 (OH)	Y:	+ 0.4791	+ 0.10247	+197.6122	+ 0.50931	+0.9495
				2.604627	5.4100	5.6747
JUN.20 (OH)	X:	- 7.0378	+ 0.63137	+513.3687	+ 1.94676	+2.2714
(2449523.5)				3.076248	6.0799	3.7169
A JUN.30 (OH)	Y:	+ 2.4525	- 0.21965	+194.0790	+ 0.65926	+0.8560
				0.089640	3.0971	0.7182
JUN.30 (OH)	X:	- 5.7883	+ 0.27793	+498.1630	+ 1.39481	+2.4356
(2449533.5)				0.570760	3.9449	4.9473
A JUL.10 (OH)	Y:	+ 1.8636	- 0.09870	+189.0633	+ 0.55368	+0.9364
				3.864185	0.9806	1.9558
JUL.10 (OH)	X:	- 3.2851	- 0.07398	+483.6613	+ 1.44356	+2.1302
(2449543.5)				4.331620	1.4742	6.1114
A JUL.20 (OH)	Y:	+ 1.3613	- 0.02657	+183.1089	+ 0.62155	+0.8027
				1.339131	4.6881	3.1237
JUL.20 (OH)	X:	- 1.2199	- 0.54959	+466.5942	+ 1.11478	+2.2097
(2449553.5)				1.803637	5.0568	1.2315
A JUL.30 (OH)	Y:	+ 0.1452	+ 0.24244	+175.7668	+ 0.53634	+0.8391
				5.094547	2.0123	4.5218
JUL.30 (OH)	X:	- 3.1771	- 0.06900	+457.0060	+ 1.48992	+2.0318
(2449563.5)				5.558043	2.9103	2.3089
A AOU. 9 (OH)	Y:	+ 0.9839	+ 0.02227	+170.7767	+ 0.73558	+0.7598
				2.564421	6.0429	5.6169
AOU. 9 (OH)	X:	- 5.4242	+ 0.43115	+446.3263	+ 1.74849	+1.8606
(2449573.5)				3.020911	0.4240	3.6393
A AOU.19 (OH)	Y:	+ 1.8091	- 0.14137	+164.5551	+ 0.84446	+0.6811
				0.027610	3.5135	0.6564
AOU.19 (OH)	X:	- 5.1205	+ 0.23255	+434.0041	+ 1.51155	+1.9768
(2449583.5)				0.489448	4.5573	4.8214
A AOU.29 (OH)	Y:	+ 1.7044	- 0.10799	+157.5230	+ 0.73926	+0.7225
				3.780989	1.2201	1.8450
AOU.29 (OH)	X:	- 2.7052	- 0.19504	+424.2483	+ 1.52891	+1.7615
(2449593.5)				4.229686	2.1123	5.9739
A SEP. 8 (OH)	Y:	+ 0.9938	+ 0.04197	+150.8191	+ 0.74942	+0.6199
				1.238684	4.9378	3.0110
SEP. 8 (OH)	X:	- 1.5277	- 0.42795	+413.1756	+ 1.07943	+1.8180
(2449603.5)				1.679602	5.8202	1.0546
A SEP.18 (OH)	Y:	+ 0.1609	+ 0.18763	+143.1484	+ 0.60238	+0.6308
				4.975467	2.2275	4.3733
SEP.18 (OH)	X:	- 4.1113	+ 0.10643	+407.8188	+ 1.34393	+1.7108
(2449613.5)				5.416581	3.4324	2.1082
A SEP.28 (OH)	Y:	+ 1.3258	- 0.05081	+137.5324	+ 0.69051	+0.5738
				2.432883	6.1021	5.4431
SEP.28 (OH)	X:	- 5.0926	+ 0.33399	+404.3094	+ 1.61356	+1.5939
(2449623.5)				2.863542	0.8034	3.4233
A OCT. 8 (OH)	Y:	+ 1.4622	- 0.08629	+131.8806	+ 0.78077	+0.5134
				6.166705	3.5048	0.4786

1994 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 4 DE JUPITER: CALLISTO N=0.3765

		A0	A1	B0 F0	B1 F1	C0 P0
OCT. 8 (0H) (2449633.5)	X:	- 4.4588	+ 0.09983	+398.5681 0.315613	+ 1.53707 4.8375	+1.7144 4.5774
A OCT.18 (0H)	Y:	+ 1.4404	- 0.08717	+125.3770 3.626022	+ 0.67566 1.1148	+0.5415 1.6411
OCT.18 (0H) (2449643.5)	X:	- 2.7348	- 0.23297	+395.5891 4.046336	+ 1.63925 2.4200	+1.5710 5.7330
A OCT.28 (0H)	Y:	+ 0.8259	+ 0.05897	+119.4892 1.077586	+ 0.67442 4.8284	+0.4365 2.8190
OCT.28 (0H) (2449653.5)	X:	- 2.1946	- 0.32814	+392.0332 1.485601	+ 1.23072 6.2033	+1.6324 0.7631
A NOV. 7 (0H)	Y:	+ 0.2061	+ 0.13880	+112.7741 4.807688	+ 0.54649 2.0626	+0.4660 4.1567
NOV. 7 (0H) (2449663.5)	X:	- 4.9278	+ 0.21118	+392.0477 5.214890	+ 1.37174 3.7727	+1.5778 1.8332
A NOV.17 (0H)	Y:	+ 1.3748	- 0.07582	+107.4915 2.263602	+ 0.56556 5.8868	+0.4279 5.2205
NOV.17 (0H) (2449673.5)	X:	- 5.3474	+ 0.30226	+395.8167 2.657007	+ 1.60045 1.0464	+1.4992 3.1439
A NOV.27 (0H)	Y:	+ 1.1748	- 0.05299	+102.6151 5.997442	+ 0.63899 3.2760	+0.3815 0.2665
NOV.27 (0H) (2449683.5)	X:	- 4.1314	- 0.03224	+396.7610 0.102800	+ 1.57060 5.0024	+1.6350 4.2815
A DEC. 7 (0H)	Y:	+ 1.2178	- 0.07026	+ 96.9051 3.458403	+ 0.53608 0.8159	+0.3992 1.4165
DEC. 7 (0H) (2449693.5)	X:	- 2.9159	- 0.27359	+400.1071 3.833869	+ 1.79433 2.6104	+1.5464 5.4528
A DEC.17 (0H)	Y:	+ 0.6257	+ 0.06417	+ 91.8406 0.916131	+ 0.52422 4.5330	+0.3467 2.6145
DEC.17 (0H) (2449703.5)	X:	- 3.0880	- 0.22934	+403.9047 1.272962	+ 1.44153 0.1522	+1.6214 0.4817
A DEC.27 (0H)	Y:	+ 0.2832	+ 0.08265	+ 86.2139 4.652956	+ 0.44140 1.7167	+0.3402 3.9458
DEC.27 (0H) (2449713.5)	X:	- 5.9371	+ 0.29796	+409.4144 5.003114	+ 1.50359 4.0539	+1.6123 1.5386
A JAN. 6 (0H)	Y:	+ 1.1681	- 0.05962	+ 81.6120 2.119448	+ 0.42046 5.5002	+0.3163 5.0133

PHÉNOMÈNES DES SATELLITES GALILÉENS

DESCRIPTION

Les satellites galiléens, dont les orbites sont faiblement inclinées sur l'équateur et sur l'écliptique, présentent de nombreux phénomènes. Au cours de chaque révolution, les trois premiers satellites, et en général le quatrième satellite, traversent le cône de visibilité et le cône d'ombre qui s'appuient sur la planète. On peut alors observer les passages des satellites devant Jupiter et les occultations par Jupiter lors de la traversée du cône de visibilité, ou les éclipses ou les passages d'ombre sur la planète lors de la traversée du cône d'ombre. Au cours d'une année, environ 3 000 tels événements (passages début ou fin, éclipses début ou fin, occultations début ou fin, passages d'ombre début ou fin) sont calculables (mais environ 2 200 seulement sont observables). Nous donnons ici une représentation compacte de ces prédictions utilisant un développement polynômial.

MÉTHODE DE CALCUL

Les tables des pages 53 et 54 permettent de calculer les dates en TDT des phénomènes des satellites galiléens de la manière suivante.

Soit P la période synodique moyenne d'un satellite ; la date approchée $T1$ du phénomène proche de la date T est donnée par la relation :

$$T1 = K \times P + \tau/24 + T0 \qquad (2)$$

où K représente la partie entière de la quantité $(T - T0)/P$ et où τ est donné, sur l'intervalle $T0$, $T0 + DT$ par un polynôme de la forme :

$$\tau = C0 + C1\,x + C2\,x^2 + \ldots\ldots + Cn\,x^n \qquad (3)$$

avec
$$x = \{2(T - T0)/DT\} - 1 \qquad (4)$$

$T1$ ayant été obtenu par la relation (2), on peut réitérer le calcul en substituant $T1$ à T dans la formule (4) pour obtenir une date $T2$ plus proche du phénomène recherché que $T1$. La précision de ce type de prédiction est meilleure que 60 secondes de temps.

Les tables donnent les coefficients Ci de la formule (3), numérotés de $C0$ à $C11$ pour les quatre satellites et pour les phénomènes :

— débuts et fins des éclipses des satellites par Jupiter (notées respectivement EC.D et EC.F),

— débuts et fins des occultations des satellites par Jupiter (notées OC.D et OC.F),

— débuts et fins des passages de l'ombre des satellites sur le disque de Jupiter (OM.D et OM.F),

— débuts et fins des passages des satellites devant la planète (PA.D et PA.F).

EXEMPLE D'UTILISATION

Déterminons les dates des phénomènes du satellite I (Io) au voisinage du 30 juin 1994.

PHENOMENA OF THE GALILEAN SATELLITES

DESCRIPTION

The Galilean satellites which orbits have low inclinations upon the equator and the ecliptic, display many phenomena. During each revolution, the first three satellites and, often the fourth one, pass through the visibility and shadow cones which are tangent to the planet. It is then possible to observe the transits of the satellites across Jupiter and their occultations by Jupiter when they pass through the visibility cone, or the eclipses and the shadow transits when the shadow cone is involved. In the course of a year 3 000 such events may be computed (transits ingress and egress, eclipses disappearance and reappearance, occultations disappearance and reappearance, transits of the shadow ingress and egress). Only about 2 200 are observable. A compact representation of these predictions using a polynomial approximation is given here.

COMPUTATIONAL METHOD

The tables on p. 53 and 54 permit the computation of the dates in TDT of phenomena of the satellites of Jupiter in the following way.

Let P be the mean synodic period of a satellite ; the approximate date $T1$ of a phenomenon close to a date T is given by :

$$T1 = K \times P + \tau/24 + T0 \qquad (2)$$

where K is the integer part of $(T - T0)/P$ and where τ is given (on the interval $T0$, $T0 + DT$) by a polynomial :

$$\tau = C0 + C1\,x + C2\,x^2 + \ldots\ldots + Cn\,x^n \qquad (3)$$

with
$$x = \{2(T - T0)/DT\} - 1 \qquad (4)$$

The value $T1$ deduced from equation (2) is then substituted in place of T in equation (4). The new iteration yields a date $T2$ closer to the date of the phenomenon than $T1$. The precision of this type of prediction is better than 60 seconds of time. The tables give the coefficients Ci in formula (3), numbered from $C0$ to $C11$, for the four satellites and for the following phenomena :

— disappearance and reappearance of the satellites eclipsed by Jupiter (denoted respectively by EC.D and EC.F),

— disappearance and reappearance of the satellites occulted by Jupiter (denoted OC.D and OC.F),

— ingress and egress of the transits of the satellites shadow across the disc of Jupiter (OM.D and OM.F),

— ingress and egress of the satellites transits across the planet (PA.D and PA.F).

EXAMPLE

Let us find the dates of the phenomena of satellite I (Io) which takes place near the 30th of June 1994.

Voyons tout d'abord le calcul pour le début d'occultation pour lequel les tables donnent :

$T0 = 0$; $P = 1{,}769\,860\,5$; $DT = 366$

Du 0 janvier au 30 juin 1994, 181 jours se sont écoulés, on a donc :

$T = 181$ et la formule (4) donne alors :

$x = 2\,(181 - 0)/366 - 1 = -0{,}010\,928\,962$

La formule (3) donne ensuite :

$$\tau = 35.044\,215 + 0.300\,267\,x + 0.421\,772\,x^2 - 0.703\,349\,x^3 - 0.116\,584\,x^4 + 0.351\,586\,x^5 - 0.143\,326\,x^6 + 0.138\,360\,x^7 + 0.083\,503\,x^8 - 0.337\,294\,x^9 - 0.004\,582\,x^{10} + 0.148\,354\,x^{11}$$

d'où $\tau = 35{,}040\,984\,7$

On a d'autre part :

K = partie entière de $(181 - 0)/1{,}769\,860\,5 = 102$

La formule (2) donne alors :

$T1 = 102 \times 1{,}769\,860\,5 + 35{,}040\,984\,7/24 + 0$

$T1 = 181{,}985\,812$ jours depuis le 0 janvier (début de l'intervalle pour les occultations) soit EC.D le 30 juin 1994 à 23 h 39 m 34 s TDT. Le calcul réitéré donne $T2 = 181{,}985\,877\,8$ jours soit le 30 juin 1994 à 23 h 39 m 39 s TDT.

On trouverait de même pour les autres phénomènes :

PA.D	le 30 juin	à	1 h	23 m	23 s
OM.D	le 30 juin	à	2 h	30 m	47 s
PA.F	le 30 juin	à	3 h	32 m	22 s
OM.F	le 30 juin	à	4 h	39 m	26 s
OC.D	le 30 juin	à	22 h	30 m	45 s
OC.F	le 1 juil.	à	0 h	41 m	17 s
EC.F	le 1 juil.	à	1 h	49 m	52 s

IMPORTANT : Conditions d'existence des phénomènes

Le recouvrement des cônes d'ombre et de visibilité, rend inexistants certains phénomènes. Ainsi, avant (ou après) l'opposition de Jupiter, les fins (respectivement débuts) d'éclipses et les débuts (respectivement fins) d'occultations sont inobservables. Ceci ne pouvant être pris en compte dans la représentation, il est nécessaire que l'utilisateur vérifie les conditions d'existence pour les éclipses et les occultations en calculant les quatre phases EC.D, EC.F, OC.D et OC.F. Ainsi, dans l'exemple précédent, on a dans l'ordre chronologique :

OC.D	le 30 juin	à	22 h	30 m	45 s	observable
EC.D	le 30 juin	à	23 h	39 m	34 s	inobservable car déjà occulté
OC.F	le 1 juil.	à	0 h	41 m	17 s	inobservable car éclipsé
EC.F	le 1 juil.	à	1 h	49 m	52 s	observable.

D'autre part, les caractéristiques de l'orbite du satellite IV (Callisto) font qu'il n'existe pas toujours de phénomènes. Les coefficients relatifs à ce satellite ne sont donc donnés que sur l'intervalle où ils existent.

Let us start with the computation of the disappearance for the occultation of the satellite for which the tables give :

$T0 = 0$; $P = 1.769\,860\,5$; $DT = 366$

Between January 0 to June the 30 th 1994, 181 days have elapsed

$T = 181$ and formula (4) gives :

$x = 2\,(181 - 0)/366 - 1 = -0.010\,928\,962$

Formula (3) then gives :

$$\tau = 35.044\,215 + 0.300\,267\,x + 0.421\,772\,x^2 - 0.703\,349\,x^3 - 0.116\,584\,x^4 + 0.351\,586\,x^5 - 0.143\,326\,x^6 + 0.138\,360\,x^7 + 0.083\,503\,x^8 - 0.337\,294\,x^9 - 0.004\,582\,x^{10} + 0.148\,354\,x^{11}$$

therefore $\tau = 35.040\,984\,7$

On the other hand,

K = integer part of $(181 - 0)/1.769\,860\,5 = 102$

Formula (2) then gives :

$T1 = 102 \times 1.769\,860\,5 + 35.040\,984\,7/24 + 0$

$T1 = 181.985\,812$ days from January 0 (beginning of the interval for the occultations) that is June the 30th 1994 at 23 h 39 m 34 s TDT. Another iteration gives $T2 = 181.985\,877\,8$ days that is June the 30th 1994 at 23 h 39 m 39 s TDT.

One would find as well for the other phenomena :

PA.D	*the June 30th*	*at*	*1 h*	*23 m*	*23 s*
OM.D	*the June 30th*	*at*	*2 h*	*30 m*	*47 s*
PA.F	*the June 30th*	*at*	*3 h*	*32 m*	*22 s*
OM.F	*the June 30th*	*at*	*4 h*	*39 m*	*26 s*
OC.D	*the June 30th*	*at*	*22 h*	*30 m*	*45 s*
OC.F	*the July 1st*	*at*	*0 h*	*41 m*	*17 s*
EC.F	*the July 1st*	*at*	*1 h*	*49 m*	*52 s*

IMPORTANT : Conditions for the existence of the phenomena

As the visibility and shadow cones may sometimes overlap, some of the computed phenomena may not exist. Thus, before (or after) the opposition of Jupiter, the reappearances (respectively the disappearances) for the eclipses, and the disappearances (respectively reappearances) for the occultations are not observable. This could not be taken into account in the representation ; so the user will have to check the existence conditions of the eclipses and occultations by computing the four steps EC.D, EC.F, OC.D and OC.F For instance, in the example above one has, in chronological order :

OC.D	*June 30th at*	*22 h*	*30 m*	*45 s*	*observable*
EC.D	*June 30th at*	*23 h*	*39 m*	*34 s*	*unobservable as occulted*
OC.F	*July 1st at*	*0 h*	*41 m*	*17 s*	*unobservable as eclipsed*
EC.F	*July 1st at*	*1 h*	*49 m*	*52 s*	*observable.*

Moreover, the orbit of satellite IV (Callisto) is such that phenomena are not always present. The coefficients for this satellite are given on the interval for which they exist.

Année 1994 Satellite 1 P = 1.7698605 jours T0 = 0.0 DT = 366. jours

	EC.D		EC.F		OM.D		OM.F
0	35.044215	0	37.216016	0	13.895868	0	16.039398
1	0.300267	1	0.312311	1	0.124244	1	0.061501
2	0.421772	2	0.415487	2	0.088967	2	0.238300
3	-0.703349	3	-0.707526	3	-0.479764	3	-0.207509
4	-0.116584	4	-0.120108	4	0.342851	4	-0.200093
5	0.351586	5	0.305662	5	-0.018027	5	-0.351530
6	-0.143326	6	-0.125009	6	-0.823748	6	0.142969
7	0.138360	7	0.234506	7	0.760120	7	0.780781
8	0.083503	8	0.070275	8	0.683609	8	-0.119832
9	-0.337294	9	-0.422426	9	-0.791985	9	-0.594416
10	-0.004582	10	-0.001711	10	-0.207456	10	0.045927
11	0.148354	11	0.176599	11	0.265425	11	0.170129

	OC.D		OC.F		PA.D		PA.F
0	33.877602	0	36.054202	0	12.754145	0	14.903951
1	-1.428028	1	-1.338734	1	-1.499611	1	-1.489332
2	6.495966	2	6.396046	2	6.072863	2	6.101557
3	-0.684506	3	-0.827324	3	-1.120798	3	-0.935487
4	-7.905656	4	-7.606159	4	-7.306318	4	-7.459856
5	7.168219	5	7.167040	5	8.563016	5	8.070227
6	5.527180	6	5.087439	6	4.661812	6	5.059327
7	-10.521510	7	-10.306328	7	-12.368913	7	-11.853473
8	-2.146773	8	-1.814366	8	-1.354311	8	-1.745963
9	7.086956	9	6.857250	9	8.382997	9	8.112492
10	0.320623	10	0.220645	10	0.034254	10	0.170336
11	-1.895076	11	-1.817369	11	-2.272296	11	-2.213289

TO = O CORRESPOND AU O JANVIER 1994 à O H SOIT LA DATE JULIENNE 2449352.5

Année 1994 Satellite 2 P = 3.5540942 jours T0 = 0.0 DT = 366. jours

	EC.D		EC.F		OM.D		OM.F
0	33.040517	0	35.406568	0	75.301583	0	77.658843
1	-0.342235	1	-0.327495	1	0.521236	1	0.530947
2	-0.353779	2	-0.308241	2	0.878268	2	1.025763
3	-0.193871	3	-0.157249	3	-1.255104	3	-1.001018
4	0.197539	4	0.252173	4	0.154756	4	-0.423948
5	0.472346	5	0.372620	5	0.972188	5	0.605954
6	0.062049	6	-0.125107	6	-1.554962	6	-0.473316
7	-0.587637	7	-0.307647	7	-1.024982	7	-0.950567
8	-0.227461	8	0.021433	8	1.642677	8	0.730531
9	0.428546	9	0.070804	9	1.002321	9	1.149810
10	0.120267	10	0.006636	10	-0.594251	10	-0.304176
11	-0.131943	11	0.025910	11	-0.406780	11	-0.482211

	OC.D		OC.F		PA.D		PA.F
0	30.738231	0	33.106459	0	72.964219	0	75.320032
1	-3.693120	1	-3.414823	1	-3.031602	1	-2.748246
2	11.833213	2	11.517307	2	13.097743	2	12.931441
3	-0.990960	3	-1.363655	3	-1.088970	3	-1.311219
4	-15.414044	4	-14.029399	4	-15.865226	4	-15.161592
5	15.612593	5	15.258557	5	15.349786	5	14.851571
6	11.292179	6	9.102278	6	10.533927	6	9.518023
7	-23.164456	7	-21.568472	7	-24.313163	7	-22.997949
8	-4.481591	8	-2.778956	8	-3.349504	8	-2.622956
9	15.794668	9	14.114277	9	17.585224	9	16.379633
10	0.671216	10	0.148306	10	0.191427	10	-0.015042
11	-4.290294	11	-3.695953	11	-5.031935	11	-4.632942

TO = O CORRESPOND AU O JANVIER 1994 à O H SOIT LA DATE JULIENNE 2449352.5

Année 1994 Satellite 3 P = 7.1663872 jours T0 = 0.0 DT = 366. jours

	EC.D		EC.F		OM.D		OM.F
0	71.685565	0	73.745439	0	157.640619	0	159.666385
1	-0.124599	1	-0.247552	1	-0.220436	1	-0.380057
2	0.396422	2	0.536898	2	0.075673	2	0.324115
3	-0.652139	3	-0.644068	3	-0.425431	3	-0.211909
4	-0.721677	4	-0.773203	4	0.801708	4	0.250814
5	0.302048	5	0.325140	5	-0.452422	5	-0.603207
6	1.923840	6	1.992555	6	-2.367433	6	-1.372510
7	0.212199	7	0.162151	7	1.761035	7	1.488541
8	-2.529310	8	-2.576944	8	2.605715	8	1.780825
9	-0.390215	9	-0.326890	9	-1.751031	9	-1.336656
10	1.104233	10	1.116538	10	-1.013895	10	-0.756255
11	0.156379	11	0.125379	11	0.591183	11	0.439653

	OC.D		OC.F		PA.D		PA.F
0	66.931625	0	69.127749	0	152.889333	0	155.050576
1	-7.480653	1	-6.363749	1	-7.523163	1	-6.435869
2	25.821871	2	23.730335	2	25.546478	2	23.473177
3	-1.001438	3	-1.594965	3	-1.435934	3	-1.594609
4	-34.547865	4	-28.250387	4	-33.238726	4	-27.019578
5	31.514635	5	25.533619	5	32.927951	5	25.643664
6	27.552531	6	19.513140	6	23.656295	6	15.815263
7	-49.414030	7	-36.281596	7	-51.168218	7	-36.139240
8	-12.994317	8	-7.978767	8	-8.172425	8	-3.373320
9	34.759678	9	23.686201	9	35.900995	9	23.380426
10	2.699708	10	1.467795	10	0.674463	10	-0.474738
11	-9.628548	11	-6.214239	11	-9.957414	11	-6.089650

T0 = 0 CORRESPOND AU 0 JANVIER 1994 à 0 H SOIT LA DATE JULIENNE 2449352.5

SATELLITES DE SATURNE

SATELLITES OF SATURN

DONNÉES SUR LES SATELLITES DE SATURNE

DATA ON THE SATELLITES OF SATURN

	NOM	masse	rayon	période rotation sidérale	albédo géométrique	magnitude visuelle	période orbitale	élongation maximale	1/2 grand axe	excentricité	inclinaison sur l'équateur de Saturne
	unité →	masse de Saturne	km	jour			jour	(') (")	10^3 km		degré
I	Mimas	6.5×10^{-8}	199	(S)	0.53	12.9	0.942 421 95	30	184.85	0.0191	1.56
II	Enceladus	2.1×10^{-7}	251	(S)	0.99	11.7	1.370 218 081	38	237.39	0.0049	0.026
III	Tethys	1.09×10^{-6}	524	(S)	0.88	10.2	1.887 802 524	48	293.99	0.	1.098
IV	Dione	1.95×10^{-6}	559	(S)	0.65	10.4	2.736 915 55	1 01	376.37	0.00216	0.014
V	Rhea	4.1×10^{-6}	764	(S)	0.67	9.7	4.517 502 66	1 25	525.58	0.000 27 (6)	0.347
VI	Titan	2.367×10^{-4}	2 575	(S)	0.21	8.28	15.945 446 3	3 17	1 217.66	0.029 09	0.30
VII	Hyperion	$3. \times 10^{-8}$	370 x 280 x 225		0.3	14.19	21.276 673 3	3 59	1 476.0	0.103 46	0.644
VIII	Iapetus	2.8×10^{-6}	718	(S)	0.5-0.05	11.2	79.330 954	9 34	3 549.77	0.028 30	18.460 (1)
IX	Phoebe	$7. \times 10^{-10}$	221 x 212	0.4	0.06	16.45	(R) 550.48	34 51	12 952.	0.163 2	177. (1)
X	Janus (5)		110 x 100 x 80	(S)	0.4	14.	0.694 5	24	151.472	0.007	0.14
XI	Epimetheus (5)		70 x 60 x 50	(S)	0.4	15.	0.694 2	24	151.422	0.009	0.34
XII	Hélène (2)		18 x 16 x 15		0.5	17.	2.736 9	1 01	377.40	0.005	0.2
XIII	Telesto (3)		17 x 14 x 13		0.6	18.	1.887 8	48	294.66		
XIV	Calypso (3)		17 x 11 x 11		0.8	18.5	1.887 8	48	294.66		
XV	Atlas		20 x 10		0.4	18.	0.601 9	22	137.670		0.3
XVI	Prometheus (4)		70 x 11 x 40		0.6	15.	0.613 0	23	139.353		0.
XVII	Pandora (4)		55 x 45 x 35		0.6	15.5	0.628 5	23	141.700	0.004	0.1

NAME	*mass*	*radius*	*sidereal period*	*geometrical albedo*	*visual magnitude*	*orbital period*	*greatest elongation*	*semi major axis*	*eccentricity*	*inclination on Saturn's equator*
unit →	*Saturn's mass*	*km*	*day*			*day*	*(') (")*	*10^3 km*		*degree*

NOTES

(S) : révolution synchrone
(R) : révolution rétrograde
(1) : inclinaison par rapport à l'écliptique.
Les éphémérides de Phœbé sont données sous la forme de coefficients de Tchébycheff dans le *« Supplément à la Connaissance des Temps : Satellites faibles... »*
(2) : Hélène : même orbite que Dioné
(3) : Telesto et Calypso : même orbite que Téthys
(4) : satellites coorbitaux « gardiens » de l'anneau F
(5) : Janus et Epimetheus : même orbite
(6) : excentricité propre. L'excentricité forcée due à Titan est de 0,0010

(S) : synchronous revolution
(R) : retrograde revolution
(1) : inclination on the ecliptic.
The ephemerides of Phœbe are given as Chebychev coefficients in the « Supplément à la Connaissance des Temps : Faint Satellites... »
(2) : Helene : same orbit as Dione
(3) : Telesto and Calypso : same orbit as Tethys
(4) : satellites on the same orbit « shepherding » F ring
(5) : Janus and Epimetheus : same orbit
(6) : proper eccentricity. The forced eccentricity due to Titan is 0.0010

ÉPHÉMÉRIDES DES HUIT PREMIERS SATELLITES DE SATURNE

EPHEMERIDES OF THE FIRST EIGHT SATELLITES OF SATURN

Coordonnées différentielles tangentielles données en secondes de degré dans le repère équatorial moyen J2000. On a, au premier ordre (voir note) :

Differential tangential coordinates given in arcsecond in the mean equatorial frame J2000. We have, at the first order (cf. note) :

$$\Delta\alpha \cos\delta = X$$
$$\Delta\delta = Y$$

$$\left.\begin{matrix} X \\ Y \end{matrix}\right\} = A0 + A1 \cdot t + B0 \sin(Nt + F0) + B1 \cdot t \sin(Nt + F1) + B2 \cdot t^2 \sin(Nt + F2) + C0 \sin(2Nt + P0)$$

où $t = T - T0$ avec $T0$ date du début de l'intervalle et T date du calcul

where $t = T - T0$ with $T0$ date of the beginning of the interval and T the date for the calculation

satellite	intervalle Δt (jours)	N (rad/j)	page
Mimas	4	6.667 0	58
Encelade	16	4.586 0	64
Téthys	16	3.328 0	66
Dioné	16	2.296 0	68
Rhéa	16	1.391 0	70
Titan	11	0.394 0	72
Hypérion	8	0.394 0	75
Japet	16	0.079 0	78
	(days)	*(rad/d)*	

Note : le premier ordre n'est pas suffisant lorsque le satellite s'éloigne beaucoup de la planète (tel Japet). On a alors :

Note : the first order is not sufficient for satellite with large elongation (such as Iapetus). So, we have then :

$$\Delta\alpha \cos\delta - \Delta\alpha\,\Delta\delta \sin\delta = X$$
$$\Delta\delta + \frac{(\Delta\alpha)^2}{2} \sin\delta \cos\delta = Y$$

ou bien :

or :

$$\Delta\alpha \cos\delta = X + XY \operatorname{tg}\delta$$
$$\Delta\delta = Y - \frac{X^2}{2} \operatorname{tg}\delta$$

1994 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 1 DE SATURNE: MIMAS N=6.667

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
JAN. 1 (0H)	X:	+0.6974	-0.00053	+24.4507	+0.06001	+0.001089	+0.2328
(2449353.6)				3.445623	1.4320	5.4779	2.1488
A JAN. 5 (0H)	Y:	-0.0538	-0.00216	+ 5.2746	+0.01574	+0.000210	+0.0498
				5.387651	2.9931	1.8784	4.0974
JAN. 5 (0H)	X:	+0.6956	-0.00229	+24.3381	+0.05269	+0.001199	+0.2305
(2449357.6)				4.972470	3.0069	2.2745	5.1371
A JAN. 9 (0H)	Y:	-0.0624	-0.00191	+ 5.2262	+0.01501	+0.000045	+0.0496
				0.631765	4.4345	5.0076	0.8041
JAN. 9 (0H)	X:	+0.6860	-0.00158	+24.2444	+0.05198	+0.001589	+0.2284
(2449361.6)				0.216039	4.3983	5.5100	1.8480
A JAN.13 (0H)	Y:	-0.0701	-0.00195	+ 5.1791	+0.01499	+0.000188	+0.0492
				2.159818	5.8878	2.2977	3.7905
JAN.13 (0H)	X:	+0.6797	-0.00359	+24.1546	+0.06089	+0.001647	+0.2279
(2449365.6)				1.743206	6.0068	2.5038	4.8433
A JAN.17 (0H)	Y:	-0.0779	-0.00173	+ 5.1320	+0.01453	+0.000285	+0.0485
				3.668793	1.1485	4.9949	0.4972
JAN.17 (0H)	X:	+0.6656	-0.00284	+24.0642	+0.05742	+0.001264	+0.2284
(2449369.6)				3.270021	1.4088	5.5956	1.5509
A JAN.21 (0H)	Y:	-0.0850	-0.00173	+ 5.0855	+0.01322	+0.000139	+0.0478
				5.218369	2.6090	0.7977	3.4947
JAN.21 (0H)	X:	+0.6540	-0.00457	+23.9861	+0.05052	+0.001138	+0.2283
(2449373.6)				4.796542	2.9616	2.3335	4.5367
A JAN.25 (0H)	Y:	-0.0918	-0.00158	+ 5.0398	+0.01264	+0.000153	+0.0475
				0.465646	4.0739	1.8186	0.2124
JAN.25 (0H)	X:	+0.6356	-0.00393	+23.9238	+0.04863	+0.001459	+0.2268
(2449377.6)				0.039903	4.3881	5.2619	1.2398
A JAN.29 (0H)	Y:	-0.0983	-0.00143	+ 4.9949	+0.01168	+0.000046	+0.0473
				1.996817	5.4809	3.0945	3.2093
JAN.29 (0H)	X:	+0.6198	-0.00567	+23.8683	+0.05632	+0.001486	+0.2250
(2449381.6)				1.566882	5.9517	2.1513	4.2316
A FEV. 2 (0H)	Y:	-0.1040	-0.00136	+ 4.9514	+0.01192	+0.000216	+0.0470
				3.529088	0.6508	4.2809	6.2011
FEV. 2 (0H)	X:	+0.5974	-0.00501	+23.8127	+0.05389	+0.000978	+0.2244
(2449385.6)				3.093663	1.3591	5.4362	0.9449
A FEV. 6 (0H)	Y:	-0.1095	-0.00116	+ 4.9078	+0.01136	+0.000265	+0.0464
				5.062363	2.1345	0.1025	2.9112
FEV. 6 (0H)	X:	+0.5767	-0.00640	+23.7707	+0.04849	+0.000720	+0.2252
(2449389.6)				4.620316	2.8964	2.6581	3.9394
A FEV.10 (0H)	Y:	-0.1142	-0.00111	+ 4.8644	+0.01065	+0.000285	+0.0458
				0.313388	3.5891	1.9040	5.9123
FEV.10 (0H)	X:	+0.5514	-0.00618	+23.7394	+0.04691	+0.000901	+0.2259
(2449393.6)				6.147093	4.4108	5.1711	0.6448
A FEV.14 (0H)	Y:	-0.1167	-0.00082	+ 4.8214	+0.00985	+0.000133	+0.0453
				1.848329	4.9052	4.5252	2.6354
FEV.14 (0H)	X:	+0.5265	-0.00722	+23.7187	+0.04995	+0.001105	+0.2254
(2449397.6)				1.390966	5.9345	1.6454	3.6308
A FEV.18 (0H)	Y:	-0.1220	-0.00083	+ 4.7808	+0.01118	+0.000185	+0.0451
				3.384447	0.0392	3.5734	5.6395
FEV.18 (0H)	X:	+0.4978	-0.00709	+23.7011	+0.05015	+0.000609	+0.2241
(2449401.6)				2.918114	1.2993	4.5141	0.3384
A FEV.22 (0H)	Y:	-0.1254	-0.00050	+ 4.7396	+0.01089	+0.000361	+0.0449
				4.921890	1.5746	6.1846	2.3550
FEV.22 (0H)	X:	+0.4689	-0.00786	+23.6947	+0.04703	+0.000270	+0.2234
(2449405.6)				4.445288	2.8581	3.9182	3.3358
A FEV.26 (0H)	Y:	-0.1274	-0.00049	+ 4.6983	+0.01028	+0.000322	+0.0444
				0.177017	2.9788	2.0296	5.3535
FEV.26 (0H)	X:	+0.4380	-0.00819	+23.6952	+0.04623	+0.000130	+0.2241
(2449409.6)				5.972631	4.4618	5.8990	0.0507
A MAR. 2 (0H)	Y:	-0.1295	-0.00013	+ 4.6576	+0.01066	+0.000189	+0.0438
				1.716146	4.2926	4.5791	2.0750
MAR. 2 (0H)	X:	+0.4049	-0.00838	+23.7091	+0.04334	+0.000727	+0.2254
(2449413.6)				1.216688	5.9872	0.8069	3.0428
A MAR. 6 (0H)	Y:	-0.1300	-0.00016	+ 4.6194	+0.01261	+0.000150	+0.0433
				3.256429	5.7702	2.9304	5.0863

1994 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 1 DE SATURNE: MIMAS N=6.667

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
MAR. 6 (OH)	X:	+0.3714	-0.00898	+23.7307	+0.04588	+0.000980	+0.2259
(2449417.6)				2.744744	1.2548	3.4220	6.0304
A MAR.10 (OH)	Y:	-0.1306	+0.00023	+ 4.5808	+0.01231	+0.000358	+0.0431
				4.798175	1.0490	6.0179	1.8143
MAR.10 (OH)	X:	+0.3352	-0.00900	+23.7580	+0.04606	+0.000719	+0.2253
(2449421.6)				4.272748	2.8706	5.4231	2.7377
A MAR.14 (OH)	Y:	-0.1298	+0.00023	+ 4.5418	+0.01220	+0.000287	+0.0430
				0.057522	2.4461	2.1455	4.8210
MAR.14 (OH)	X:	+0.2997	-0.00983	+23.7913	+0.04551	+0.000637	+0.2245
(2449425.6)				5.800880	4.5370	1.7881	5.7352
A MAR.18 (OH)	Y:	-0.1288	+0.00058	+ 4.5041	+0.01338	+0.000150	+0.0426
				1.600940	3.8619	4.6057	1.5420
MAR.18 (OH)	X:	+0.2599	-0.00931	+23.8397	+0.03852	+0.000776	+0.2250
(2449429.6)				1.045851	6.1191	5.9820	2.4523
A MAR.22 (OH)	Y:	-0.1265	+0.00060	+ 4.4684	+0.01505	+0.000118	+0.0420
				3.145413	5.3769	2.3593	4.5508
MAR.22 (OH)	X:	+0.2227	-0.01053	+23.8999	+0.04082	+0.001444	+0.2267
(2449433.6)				2.574675	1.2607	2.9567	5.4482
A MAR.26 (OH)	Y:	-0.1241	+0.00097	+ 4.4332	+0.01485	+0.000277	+0.0415
				4.691256	0.6563	5.7662	1.2835
MAR.26 (OH)	X:	+0.1806	-0.00983	+23.9599	+0.04502	+0.001290	+0.2282
(2449437.6)				4.103764	2.9275	5.6621	2.1556
A MAR.30 (OH)	Y:	-0.1203	+0.00099	+ 4.3978	+0.01505	+0.000214	+0.0414
				6.237831	2.0936	2.1574	4.3019
MAR.30 (OH)	X:	+0.1414	-0.01100	+24.0270	+0.04405	+0.001001	+0.2283
(2449441.6)				5.632896	4.6349	2.0229	5.1466
A AVR. 3 (OH)	Y:	-0.1163	+0.00129	+ 4.3642	+0.01628	+0.000064	+0.0413
				1.502061	3.5837	4.8056	1.0327
AVR. 3 (OH)	X:	+0.0969	-0.01008	+24.1090	+0.03669	+0.001058	+0.2277
(2449445.6)				0.878936	6.2792	5.4560	1.8602
A AVR. 7 (OH)	Y:	-0.1111	+0.00136	+ 4.3320	+0.01729	+0.000076	+0.0410
				3.050374	5.1027	1.9602	4.0426
AVR. 7 (OH)	X:	+0.0567	-0.01154	+24.2045	+0.03611	+0.001627	+0.2252
(2449449.6)				2.408904	1.3479	2.5953	4.8616
A AVR.11 (OH)	Y:	-0.1057	+0.00163	+ 4.3013	+0.01738	+0.000176	+0.0406
				4.599743	0.3757	5.3260	0.7719
AVR.11 (OH)	X:	+0.0107	-0.01039	+24.2964	+0.04371	+0.001548	+0.2302
(2449453.6)				3.939251	3.0075	5.6259	1.5758
A AVR.15 (OH)	Y:	-0.0992	+0.00168	+ 4.2709	+0.01747	+0.000130	+0.0401
				6.149792	1.8563	1.8567	3.7921
AVR.15 (OH)	X:	-0.0311	-0.01165	+24.3969	+0.04254	+0.001026	+0.2325
(2449457.6)				5.469588	4.7482	2.2530	4.5735
A AVR.19 (OH)	Y:	-0.0924	+0.00189	+ 4.2426	+0.01833	+0.000026	+0.0399
				1.417290	3.3784	0.5959	0.5329
AVR.19 (OH)	X:	-0.0778	-0.01064	+24.5108	+0.03728	+0.001031	+0.2335
(2449461.6)				0.717007	0.1200	5.3277	1.2828
A AVR.23 (OH)	Y:	-0.0849	+0.00199	+ 4.2155	+0.01865	+0.000022	+0.0399
				2.968631	4.8926	1.7591	3.5525
AVR.23 (OH)	X:	-0.1202	-0.01185	+24.6370	+0.03403	+0.001510	+0.2334
(2449465.6)				2.248266	1.5265	2.2614	4.2792
A AVR.27 (OH)	Y:	-0.0769	+0.00212	+ 4.1906	+0.01902	+0.000102	+0.0398
				4.520546	0.1562	4.4878	0.2831
AVR.27 (OH)	X:	-0.1676	-0.01065	+24.7601	+0.04207	+0.001420	+0.2339
(2449469.6)				3.780008	3.1044	5.3771	0.9989
A MAI 1 (OH)	Y:	-0.0684	+0.00220	+ 4.1668	+0.01877	+0.000086	+0.0394
				6.073015	1.6784	0.9560	3.2984
MAI 1 (OH)	X:	-0.2107	-0.01167	+24.8912	+0.04199	+0.000759	+0.2360
(2449473.6)				5.311766	4.8501	2.3777	4.0033
A MAI 5 (OH)	Y:	-0.0596	+0.00230	+ 4.1447	+0.01906	+0.000046	+0.0390
				1.342590	3.2046	1.2825	0.0380
MAI 5 (OH)	X:	-0.2570	-0.01079	+25.0331	+0.03921	+0.000623	+0.2389
(2449477.6)				0.560760	0.1860	5.5637	0.7196
A MAI 9 (OH)	Y:	-0.0504	+0.00239	+ 4.1240	+0.01885	+0.000024	+0.0389
				2.895648	4.7167	5.0127	3.0649

1994 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 1 DE SATURNE: MIMAS N=6.667

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
MAI 9 (OH)	X:	-0.3003	-0.01136	+25.1841	+0.03651	+0.001091	+0.2407
(2449481.6)				2.093414	1.7247	1.9823	3.7143
A MAI 13 (OH)	Y:	-0.0408	+0.00239	+ 4.1057	+0.01933	+0.000110	+0.0389
				4.448725	6.2529	3.3027	6.0872
MAI 13 (OH)	X:	-0.3457	-0.01050	+25.3363	+0.04089	+0.001138	+0.2412
(2449485.6)				3.626628	3.2328	4.8762	0.4281
A MAI 17 (OH)	Y:	-0.0313	+0.00247	+ 4.0894	+0.01871	+0.000111	+0.0389
				6.002083	1.5236	6.2136	2.8195
MAI 17 (OH)	X:	-0.3882	-0.01090	+25.4932	+0.04279	+0.000311	+0.2417
(2449489.6)				5.160006	4.9228	1.6914	3.4323
A MAI 21 (OH)	Y:	-0.0213	+0.00244	+ 4.0742	+0.01824	+0.000035	+0.0387
				1.272135	3.0421	1.9809	5.8354
MAI 21 (OH)	X:	-0.4312	-0.01028	+25.6574	+0.04204	+0.000338	+0.2436
(2449493.6)				0.410670	0.2260	0.7605	0.1571
A MAI 25 (OH)	Y:	-0.0116	+0.00250	+ 4.0605	+0.01771	+0.000052	+0.0383
				2.825159	4.5529	5.5792	2.5747
MAI 25 (OH)	X:	-0.4728	-0.01002	+25.8265	+0.04244	+0.000378	+0.2466
(2449497.6)				1.944821	1.8639	1.6753	3.1608
A MAI 29 (OH)	Y:	-0.0016	+0.00238	+ 4.0491	+0.01809	+0.000180	+0.0382
				4.377655	6.0825	2.6549	5.6009
MAI 29 (OH)	X:	-0.5126	-0.00968	+26.0020	+0.04128	+0.000937	+0.2492
(2449501.6)				3.479551	3.3966	4.1472	6.1584
A JUN. 2 (OH)	Y:	+0.0076	+0.00245	+ 4.0399	+0.01716	+0.000169	+0.0384
				5.930017	1.3823	5.5222	2.3395
JUN. 2 (OH)	X:	-0.5518	-0.00918	+26.1773	+0.04421	+0.000754	+0.2502
(2449505.6)				5.014668	4.9708	0.2117	2.8733
A JUN. 6 (OH)	Y:	+0.0176	+0.00229	+ 4.0312	+0.01586	+0.000039	+0.0385
				1.198682	2.8874	2.8683	5.3541
JUN. 6 (OH)	X:	-0.5880	-0.00889	+26.3553	+0.04571	+0.000789	+0.2507
(2449509.6)				0.266984	0.2700	1.8144	5.8784
A JUN.10 (OH)	Y:	+0.0266	+0.00232	+ 4.0239	+0.01519	+0.000103	+0.0383
				2.749719	4.3898	6.2614	2.0843
JUN.10 (OH)	X:	-0.6243	-0.00781	+26.5348	+0.04912	+0.000474	+0.2521
(2449513.6)				1.802689	1.9481	5.0728	2.6051
A JUN.14 (OH)	Y:	+0.0361	+0.00210	+ 4.0184	+0.01521	+0.000263	+0.0381
				4.299760	5.9175	2.4285	5.1026
JUN.14 (OH)	X:	-0.6553	-0.00792	+26.7240	+0.04404	+0.000862	+0.2552
(2449517.6)				3.338945	3.5715	3.3017	5.6123
A JUN.18 (OH)	Y:	+0.0445	+0.00216	+ 4.0152	+0.01403	+0.000253	+0.0380
				5.849153	1.2433	5.0475	1.8415
JUN.18 (OH)	X:	-0.6870	-0.00644	+26.9075	+0.04506	+0.001409	+0.2582
(2449521.6)				4.875819	5.0293	6.2597	2.3298
A JUN.22 (OH)	Y:	+0.0531	+0.00189	+ 4.0119	+0.01194	+0.000035	+0.0382
				1.114515	2.7325	2.9876	4.6599
JUN.22 (OH)	X:	-0.7127	-0.00644	+27.0876	+0.04927	+0.001269	+0.2598
(2449525.6)				0.129716	0.3339	2.2419	5.3295
A JUN.26 (OH)	Y:	+0.0607	+0.00191	+ 4.0096	+0.01124	+0.000189	+0.0384
				2.661681	4.2108	0.2414	1.5878
JUN.26 (OH)	X:	-0.7391	-0.00470	+27.2672	+0.05365	+0.001114	+0.2600
(2449529.6)				1.666961	2.0166	4.9904	2.0512
A JUN.30 (OH)	Y:	+0.0684	+0.00165	+ 4.0086	+0.01077	+0.000321	+0.0383
				4.207524	5.7466	2.3917	4.5954
JUN.30 (OH)	X:	-0.7575	-0.00498	+27.4549	+0.04797	+0.000962	+0.2610
(2449533.6)				3.204679	3.7148	2.4841	5.0619
A JUL. 4 (OH)	Y:	+0.0749	+0.00167	+ 4.0096	+0.00937	+0.000330	+0.0381
				5.752253	1.0949	4.7384	1.3231
JUL. 4 (OH)	X:	-0.7775	-0.00276	+27.6331	+0.04460	+0.001683	+0.2638
(2449537.6)				4.743138	5.1268	6.0820	1.7885
A JUL. 8 (OH)	Y:	+0.0816	+0.00136	+ 4.0101	+0.00680	+0.000027	+0.0380
				1.012690	2.5585	0.8776	4.3381
JUL. 8 (OH)	X:	-0.7888	-0.00293	+27.8012	+0.05112	+0.001633	+0.2672
(2449541.6)				6.281644	0.4178	2.4867	4.7928
A JUL.12 (OH)	Y:	+0.0871	+0.00138	+ 4.0111	+0.00603	+0.000242	+0.0382
				2.554551	3.9559	0.3412	1.0680

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DU SATELLITE 1 DE SATURNE: MIMAS N=6.667

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
JUL.12 (OH)	X:	-0.8006	-0.00078	+27.9675	+0.05445	+0.001353	+0.2689
(2449545.6)				1.537116	2.1033	5.0676	1.5104
A JUL.16 (OH)	Y:	+0.0926	+0.00111	+ 4.0134	+0.00505	+0.000328	+0.0385
				4.094907	5.4968	2.4454	4.0735
JUL.16 (OH)	X:	-0.8035	-0.00088	+28.1353	+0.05049	+0.001099	+0.2691
(2449549.6)				3.076144	3.8203	1.8939	4.5148
A JUL.20 (OH)	Y:	+0.0971	+0.00109	+ 4.0168	+0.00351	+0.000341	+0.0385
				5.633822	0.6327	4.4781	0.7902
JUL.20 (OH)	X:	-0.8072	+0.00153	+28.2915	+0.04301	+0.001456	+0.2695
(2449553.6)				4.615849	5.2805	5.8441	1.2420
A JUL.24 (OH)	Y:	+0.1014	+0.00083	+ 4.0202	+0.00112	+0.000103	+0.0384
				0.688279	1.9281	0.1931	3.7916
JUL.24 (OH)	X:	-0.8012	+0.00147	+28.4314	+0.04924	+0.001664	+0.2717
(2449557.6)				6.155505	0.5280	2.5538	4.2543
A JUL.28 (OH)	Y:	+0.1048	+0.00082	+ 4.0236	+0.00133	+0.000210	+0.0383
				2.424141	2.2890	0.4102	0.5150
JUL.28 (OH)	X:	-0.7948	+0.00368	+28.5673	+0.05106	+0.001188	+0.2748
(2449561.6)				1.412073	2.2233	5.2216	0.9782
A AOU. 1 (OH)	Y:	+0.1080	+0.00061	+ 4.0280	+0.00185	+0.000261	+0.0385
				3.956492	3.0252	2.5159	3.5215
AOU. 1 (OH)	X:	-0.7802	+0.00399	+28.6958	+0.04918	+0.000966	+0.2766
(2449565.6)				2.952075	3.9044	1.4350	3.9802
A AOU. 5 (OH)	Y:	+0.1105	+0.00052	+ 4.0328	+0.00305	+0.000272	+0.0388
				5.491296	4.3222	4.1171	0.2377
AOU. 5 (OH)	X:	-0.7643	+0.00609	+28.8127	+0.04143	+0.000851	+0.2765
(2449569.6)				4.492506	5.4781	5.4768	0.7001
A AOU. 9 (OH)	Y:	+0.1125	+0.00038	+ 4.0386	+0.00477	+0.000186	+0.0389
				0.739600	5.6547	6.0992	3.2298
AOU. 9 (OH)	X:	-0.7402	+0.00634	+28.9095	+0.04351	+0.001266	+0.2762
(2449573.6)				6.032902	0.6968	2.4272	3.7099
A AOU.13 (OH)	Y:	+0.1141	+0.00028	+ 4.0441	+0.00645	+0.000102	+0.0388
				2.269671	0.9178	0.7150	6.2220
AOU.13 (OH)	X:	-0.7141	+0.00816	+28.9976	+0.04441	+0.000778	+0.2774
(2449577.6)				1.290095	2.3922	5.3097	0.4401
A AOU.17 (OH)	Y:	+0.1151	+0.00018	+ 4.0501	+0.00782	+0.000110	+0.0387
				3.798377	2.4216	2.3830	2.9364
AOU.17 (OH)	X:	-0.6821	+0.00890	+29.0700	+0.04333	+0.000646	+0.2796
(2449581.6)				2.830557	4.0080	0.6379	3.4491
A AOU.21 (OH)	Y:	+0.1159	+0.00001	+ 4.0559	+0.00873	+0.000205	+0.0388
				5.325659	4.0003	3.3019	5.9360
AOU.21 (OH)	X:	-0.6463	+0.01013	+29.1318	+0.03994	+0.000257	+0.2811
(2449585.6)				4.371071	5.6928	3.7896	0.1679
A AOU.25 (OH)	Y:	+0.1159	+0.00002	+ 4.0634	+0.00935	+0.000259	+0.0390
				0.568610	5.4215	5.6860	2.6470
AOU.25 (OH)	X:	-0.6059	+0.01091	+29.1741	+0.03634	+0.000622	+0.2807
(2449589.6)				5.911619	0.9840	1.8747	3.1695
A AOU.29 (OH)	Y:	+0.1160	-0.00020	+ 4.0704	+0.01141	+0.000095	+0.0393
				2.093977	0.6310	2.3383	5.6335
AOU.29 (OH)	X:	-0.5617	+0.01186	+29.2010	+0.03614	+0.000337	+0.2795
(2449593.6)				1.168815	2.6347	4.4689	6.1773
A SEP. 2 (OH)	Y:	+0.1151	-0.00016	+ 4.0767	+0.01266	+0.000104	+0.0393
				3.618227	2.2033	0.0167	2.3350
SEP. 2 (OH)	X:	-0.5150	+0.01292	+29.2084	+0.03494	+0.000918	+0.2792
(2449597.6)				2.709064	4.1894	5.8631	2.9065
A SEP. 6 (OH)	Y:	+0.1145	-0.00042	+ 4.0827	+0.01279	+0.000275	+0.0391
				5.141326	3.7791	2.5474	5.3239
SEP. 6 (OH)	X:	-0.4628	+0.01304	+29.2063	+0.03808	+0.001013	+0.2804
(2449601.6)				4.249003	5.9160	2.3959	5.9155
A SEP.10 (OH)	Y:	+0.1127	-0.00030	+ 4.0904	+0.01249	+0.000308	+0.0391
				0.380440	5.1987	5.2801	2.0337
SEP.10 (OH)	X:	-0.4107	+0.01431	+29.1888	+0.03302	+0.000504	+0.2814
(2449605.6)				5.789027	1.4185	0.1206	2.6338
A SEP.14 (OH)	Y:	+0.1115	-0.00063	+ 4.0971	+0.01469	+0.000180	+0.0393
				1.902604	0.3769	2.5917	5.0245

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DU SATELLITE 1 DE SATURNE: MIMAS N=6.667

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
SEP.14 (OH)	X:	-0.3533	+0.01411	+29.1492	+0.02932	+0.000793	+0.2806
(2449609.6)				1.045566	3.0210	3.3298	5.6331
A SEP.18 (OH)	Y:	+0.1090	-0.00049	+ 4.1015	+0.01552	+0.000261	+0.0395
				3.423960	1.9728	6.0404	1.7258
SEP.18 (OH)	X:	-0.2974	+0.01529	+29.0914	+0.02810	+0.001471	+0.2784
(2449613.6)				2.584876	4.5373	5.6293	2.3540
A SEP.22 (OH)	Y:	+0.1070	-0.00080	+ 4.1056	+0.01485	+0.000331	+0.0396
				4.944533	3.5124	2.3037	4.7061
SEP.22 (OH)	X:	-0.2357	+0.01441	+29.0257	+0.03562	+0.001775	+0.2768
(2449617.6)				4.123631	6.1834	2.1159	5.3630
A SEP.26 (OH)	Y:	+0.1038	-0.00065	+ 4.1103	+0.01432	+0.000297	+0.0394
				0.181546	4.9328	4.9446	1.4052
SEP.26 (OH)	X:	-0.1782	+0.01585	+28.9507	+0.03618	+0.001015	+0.2768
(2449621.6)				5.662439	1.8328	5.5484	2.0872
A SEP.30 (OH)	Y:	+0.1011	-0.00099	+ 4.1136	+0.01619	+0.000185	+0.0393
				1.701952	0.1041	2.4314	4.3926
SEP.30 (OH)	X:	-0.1149	+0.01458	+28.8503	+0.02893	+0.001258	+0.2774
(2449625.6)				0.917698	3.5230	3.1332	5.0879
A OCT. 4 (OH)	Y:	+0.0972	-0.00083	+ 4.1137	+0.01656	+0.000295	+0.0393
				3.221891	1.6916	5.8722	1.0992
OCT. 4 (OH)	X:	-0.0565	+0.01568	+28.7364	+0.02790	+0.001765	+0.2764
(2449629.6)				2.455464	5.0075	5.7090	1.8012
A OCT. 8 (OH)	Y:	+0.0937	-0.00111	+ 4.1132	+0.01562	+0.000270	+0.0395
				4.741419	3.1878	2.1861	4.0847
OCT. 8 (OH)	X:	+0.0064	+0.01418	+28.6167	+0.03502	+0.002091	+0.2736
(2449633.6)				3.992604	0.2499	1.9947	4.8001
A OCT.12 (OH)	Y:	+0.0893	-0.00103	+ 4.1117	+0.01538	+0.000187	+0.0396
				6.260919	4.6341	4.5231	0.7812
OCT.12 (OH)	X:	+0.0630	+0.01533	+28.4925	+0.04222	+0.001400	+0.2710
(2449637.6)				5.529637	2.1049	5.0594	1.5211
A OCT.16 (OH)	Y:	+0.0851	-0.00126	+ 4.1085	+0.01632	+0.000104	+0.0395
				1.497461	6.0919	2.1164	3.7598
OCT.16 (OH)	X:	+0.1241	+0.01347	+28.3455	+0.03605	+0.001181	+0.2701
(2449641.6)				0.783109	3.8887	2.9350	4.5263
A OCT.20 (OH)	Y:	+0.0801	-0.00120	+ 4.1022	+0.01652	+0.000200	+0.0392
				3.017147	1.3524	5.4757	0.4605
OCT.20 (OH)	X:	+0.1785	+0.01425	+28.1906	+0.03434	+0.001653	+0.2702
(2449645.6)				2.318925	5.3684	5.8676	1.2431
A OCT.24 (OH)	Y:	+0.0751	-0.00136	+ 4.0946	+0.01595	+0.000117	+0.0390
				4.536761	2.8325	1.6903	3.4499
OCT.24 (OH)	X:	+0.2353	+0.01263	+28.0327	+0.03908	+0.001757	+0.2692
(2449649.6)				3.854189	0.6079	1.9826	4.2371
A OCT.28 (OH)	Y:	+0.0696	-0.00139	+ 4.0847	+0.01582	+0.000104	+0.0391
				6.056526	4.3292	2.9807	0.1548
OCT.28 (OH)	X:	+0.2858	+0.01306	+27.8728	+0.04705	+0.001449	+0.2664
(2449653.6)				5.389113	2.2801	4.6353	0.9476
A NOV. 1 (OH)	Y:	+0.0641	-0.00143	+ 4.0737	+0.01550	+0.000034	+0.0391
				1.293214	5.7842	5.8242	3.1365
NOV. 1 (OH)	X:	+0.3379	+0.01132	+27.6989	+0.04570	+0.000611	+0.2633
(2449657.6)				0.640504	4.0403	2.4382	3.9465
A NOV. 5 (OH)	Y:	+0.0584	-0.00153	+ 4.0605	+0.01596	+0.000129	+0.0390
				2.813527	0.9842	4.2988	6.1145
NOV. 5 (OH)	X:	+0.3638	+0.01148	+27.5206	+0.04381	+0.001084	+0.2615
(2449661.6)				2.174269	5.5706	6.0197	0.6661
A NOV. 9 (OH)	Y:	+0.0522	-0.00151	+ 4.0448	+0.01590	+0.000171	+0.0386
				4.334074	2.4916	0.0213	2.8130
NOV. 9 (OH)	X:	+0.4290	+0.01017	+27.3414	+0.04701	+0.000934	+0.2611
(2449665.6)				3.707557	0.8600	2.1079	3.6655
A NOV.13 (OH)	Y:	+0.0462	-0.00166	+ 4.0265	+0.01530	+0.000247	+0.0383
				5.854822	4.0225	2.1575	5.8013
NOV.13 (OH)	X:	+0.4700	+0.00969	+27.1615	+0.04961	+0.001133	+0.2602
(2449669.6)				5.240278	2.4194	4.1092	0.3746
A NOV.17 (OH)	Y:	+0.0394	-0.00153	+ 4.0077	+0.01401	+0.000146	+0.0381
				1.092497	5.4528	5.1091	2.5082

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DU SATELLITE 1 DE SATURNE: MIMAS N=6.667

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
NOV.17 (OH) (2449673.6)	X:	+0.5086	+0.00864	+26.9801 0.489503	+0.05333 4.0745	+0.000522 0.4990	+0.2579 3.3640
A NOV.21 (OH)	Y:	+0.0333	-0.00175	+ 3.9877 2.614232	+0.01491 0.6046	+0.000196 3.3307	+0.0381 5.4936
NOV.21 (OH) (2449677.6)	X:	+0.5435	+0.00796	+26.7961 2.021338	+0.05310 5.6747	+0.000143 0.2207	+0.2547 0.0749
A NOV.25 (OH)	Y:	+0.0262	-0.00159	+ 3.9645 4.136481	+0.01494 2.1614	+0.000322 5.9947	+0.0379 2.1908
NOV.25 (OH) (2449681.6)	X:	+0.5747	+0.00724	+26.6119 3.552714	+0.05452 0.9958	+0.000094 3.8456	+0.2522 3.0745
A NOV.29 (OH)	Y:	+0.0199	-0.00179	+ 3.9393 5.658972	+0.01364 3.6866	+0.000324 2.0235	+0.0376 5.1721
NOV.29 (OH) (2449685.6)	X:	+0.6043	+0.00594	+26.4286 5.083396	+0.05124 2.5290	+0.000924 3.1677	+0.2511 6.0730
A DEC. 3 (OH)	Y:	+0.0126	-0.00158	+ 3.9138 0.898627	+0.01222 5.0771	+0.000190 4.8347	+0.0371 1.8761
DEC. 3 (OH) (2449689.6)	X:	+0.6278	+0.00578	+26.2554 0.330617	+0.05705 4.0541	+0.001163 6.0342	+0.2506 2.7813
A DEC. 7 (OH)	Y:	+0.0063	-0.00182	+ 3.8878 2.422604	+0.01332 0.2069	+0.000223 2.9343	+0.0367 4.8681
DEC. 7 (OH) (2449693.6)	X:	+0.6510	+0.00424	+26.0800 1.860794	+0.06031 5.7116	+0.000868 2.7321	+0.2490 5.7681
A DEC.11 (OH)	Y:	-0.0009	-0.00159	+ 3.8583 3.947381	+0.01306 1.7880	+0.000366 5.8163	+0.0366 1.5758
DEC.11 (OH) (2449697.6)	X:	+0.6676	+0.00422	+25.9043 3.390449	+0.05878 1.0560	+0.000774 5.3880	+0.2461 2.4746
A DEC.15 (OH)	Y:	-0.0074	-0.00177	+ 3.8276 5.472555	+0.01146 3.2598	+0.000281 1.9398	+0.0365 4.5618
DEC.15 (OH) (2449701.6)	X:	+0.6850	+0.00239	+25.7332 4.919422	+0.05211 2.5904	+0.001244 2.4696	+0.2432 5.4700
A DEC.19 (OH)	Y:	-0.0145	-0.00157	+ 3.7966 0.715291	+0.01066 4.6269	+0.000127 4.5198	+0.0361 1.2626
DEC.19 (OH) (2449705.6)	X:	+0.6942	+0.00289	+25.5789 0.164994	+0.05706 4.0180	+0.001634 5.6363	+0.2417 2.1839
A DEC.23 (OH)	Y:	-0.0208	-0.00172	+ 3.7651 2.242406	+0.01142 6.0417	+0.000177 2.7158	+0.0356 4.2507
DEC.23 (OH) (2449709.6)	X:	+0.7057	+0.00078	+25.4235 1.693848	+0.06389 5.6949	+0.001469 2.6202	+0.2415 5.1758
A DEC.27 (OH)	Y:	-0.0277	-0.00151	+ 3.7311 3.770622	+0.01098 1.3069	+0.000306 5.5417	+0.0352 0.9626
DEC.27 (OH) (2449713.6)	X:	+0.7090	+0.00130	+25.2673 3.222126	+0.05951 1.0607	+0.001195 5.6100	+0.2408 1.8790
A DEC.31 (OH)	Y:	-0.0339	-0.00160	+ 3.6960 5.299552	+0.00988 2.7076	+0.000180 1.6060	+0.0349 3.9606
DEC.31 (OH) (2449717.5)	X:	+0.7143	-0.00066	+25.1203 4.749859	+0.05271 2.5855	+0.001403 2.3099	+0.2386 4.8651
A JAN. 4 (OH)	Y:	-0.0403	-0.00146	+ 3.6604 0.546430	+0.00976 4.0963	+0.000064 2.8179	+0.0347 0.6716

1994 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 2 DE SATURNE: ENCELADE N=4.586

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
JAN. 1 (0H)	X:	+0.1694	-0.00085	+31.3179	+0.08428	+0.000238	+0.0733
(2449353.9)				3.319344	1.3085	3.1807	1.1446
A JAN.17 (0H)	Y:	-0.0489	+0.00010	+ 7.1868	+0.03072	+0.000064	+0.0164
				5.364751	2.4767	0.6083	3.2036
JAN.17 (0H)	X:	+0.1580	-0.00078	+30.8248	+0.08294	+0.000243	+0.0721
(2449369.9)				1.257243	5.6636	1.3777	3.2348
A FEV. 2 (0H)	Y:	-0.0473	+0.00016	+ 6.7134	+0.03003	+0.000082	+0.0153
				3.326600	0.3814	4.4767	5.3188
FEV. 1 (0H)	X:	+0.1465	-0.00077	+30.5244	+0.08026	+0.000240	+0.0716
(2449364.9)				0.893468	5.4286	1.1579	2.4455
A FEV.17 (0H)	Y:	-0.0450	+0.00016	+ 6.2806	+0.02867	+0.000102	+0.0143
				2.990277	6.2646	3.8905	4.5617
FEV.17 (0H)	X:	+0.1342	-0.00059	+30.3827	+0.07754	+0.000278	+0.0714
(2449400.9)				5.113310	3.5095	5.6025	4.5420
A MAR. 5 (0H)	Y:	-0.0427	+0.00018	+ 5.8429	+0.02647	+0.000114	+0.0133
				0.961215	4.1525	1.6714	0.4084
MAR. 1 (0H)	X:	+0.1263	-0.00075	+30.4010	+0.07540	+0.000340	+0.0717
(2449412.9)				3.566717	2.0689	4.0987	1.4005
A MAR.17 (0H)	Y:	-0.0403	+0.00017	+ 5.5382	+0.02442	+0.000115	+0.0126
				5.726771	2.5604	0.0338	3.5834
MAR.17 (0H)	X:	+0.1162	-0.00070	+30.5828	+0.07180	+0.000347	+0.0721
(2449428.9)				1.506618	0.1763	2.1354	3.5021
A AVR. 2 (0H)	Y:	-0.0377	+0.00019	+ 5.1723	+0.02141	+0.000121	+0.0118
				3.709493	0.4336	4.0879	5.7273
AVR. 1 (0H)	X:	+0.1058	-0.00080	+30.9154	+0.06893	+0.000350	+0.0731
(2449443.9)				1.149233	6.2770	1.9281	2.7265
A AVR.17 (0H)	Y:	-0.0350	+0.00018	+ 4.8802	+0.01833	+0.000134	+0.0112
				3.395247	0.0053	3.5466	4.9975
AVR.17 (0H)	X:	+0.0923	-0.00075	+31.4367	+0.06672	+0.000388	+0.0745
(2449459.9)				5.380100	4.4159	0.0178	4.8413
A MAI 3 (0H)	Y:	-0.0323	+0.00016	+ 4.6307	+0.01448	+0.000147	+0.0106
				1.389671	4.1455	1.3360	0.8731
MAI 1 (0H)	X:	+0.0812	-0.00100	+32.0222	+0.06447	+0.000366	+0.0758
(2449473.9)				0.446887	5.9505	1.4532	1.1972
A MAI 17 (0H)	Y:	-0.0299	+0.00014	+ 4.4724	+0.01073	+0.000166	+0.0103
				2.778553	5.3900	2.5648	3.5469
MAI 17 (0H)	X:	+0.0667	-0.00109	+32.8147	+0.06312	+0.000378	+0.0779
(2449489.9)				4.688149	4.1236	5.8963	3.3204
A JUN. 2 (0H)	Y:	-0.0278	+0.00013	+ 4.3667	+0.00596	+0.000186	+0.0102
				0.774141	3.0952	0.3996	5.7036
JUN. 1 (0H)	X:	+0.0505	-0.00133	+33.6503	+0.06173	+0.000399	+0.0799
(2449504.9)				4.350431	3.9869	5.7541	2.5698
A JUN.17 (0H)	Y:	-0.0259	+0.00011	+ 4.3449	+0.00254	+0.000201	+0.0102
				0.460700	1.5895	6.2750	4.9689
JUN.17 (0H)	X:	+0.0287	-0.00140	+34.5921	+0.05990	+0.000405	+0.0821
(2449520.9)				2.320995	2.1853	4.0752	4.7037
A JUL. 3 (0H)	Y:	-0.0243	+0.00007	+ 4.4081	+0.00678	+0.000204	+0.0105
				4.724712	4.6207	4.1780	0.8235

1994 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 2 DE SATURNE: ENCELADE N=4.586

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
JUL. 1 (OH) (2449534.9)	X:	+0.0085	-0.00169	+35.4085 3.692241	+0.05761 3.7476	+0.000478 5.7566	+0.0839 1.0802
A JUL.17 (OH)	Y:	-0.0231	+0.00005	+ 4.5362 6.090159	+0.01230 5.7903	+0.000181 5.5033	+0.0109 3.4681
JUL.17 (OH) (2449550.9)	X:	-0.0171	-0.00180	+36.2671 1.674393	+0.05251 1.9852	+0.000521 4.1523	+0.0855 3.2253
A AOU. 2 (OH)	Y:	-0.0226	+0.00005	+ 4.7628 4.050314	+0.01810 3.6745	+0.000130 3.4095	+0.0115 5.5825
AOU. 1 (OH) (2449565.9)	X:	-0.0442	-0.00191	+36.9224 1.357799	+0.04592 1.9452	+0.000608 4.2034	+0.0870 2.4889
A AOU.17 (OH)	Y:	-0.0220	+0.00007	+ 5.0397 3.701952	+0.02216 3.3054	+0.000056 2.7232	+0.0122 4.8141
AOU.17 (OH) (2449581.9)	X:	-0.0754	-0.00178	+37.3856 5.630817	+0.03632 0.3285	+0.000654 2.5054	+0.0879 4.6382
A SEP. 2 (OH)	Y:	-0.0211	+0.00007	+ 5.3764 1.652025	+0.02385 1.2470	+0.000065 4.9148	+0.0130 0.6367
SEP. 1 (OH) (2449596.9)	X:	-0.1027	-0.00169	+37.5426 5.317689	+0.02977 0.5728	+0.000712 2.5163	+0.0882 3.8992
A SEP.17 (OH)	Y:	-0.0200	+0.00013	+ 5.6925 1.301843	+0.02229 0.8825	+0.000157 4.3577	+0.0138 6.1495
SEP.17 (OH) (2449612.9)	X:	-0.1319	-0.00143	+37.3892 3.306458	+0.02984 5.6008	+0.000719 0.7856	+0.0877 6.0401
A OCT. 3 (OH)	Y:	-0.0176	+0.00017	+ 5.9799 5.539089	+0.01743 5.0581	+0.000232 2.2914	+0.0144 1.9729
OCT. 1 (OH) (2449626.9)	X:	-0.1512	-0.00132	+37.0030 4.684832	+0.03827 1.2503	+0.000665 2.4652	+0.0868 2.4098
A OCT.17 (OH)	Y:	-0.0152	+0.00025	+ 6.1523 0.610611	+0.01161 6.2202	+0.000267 3.6113	+0.0147 4.6083
OCT.17 (OH) (2449642.9)	X:	-0.1717	-0.00089	+36.3163 2.663794	+0.05041 5.9096	+0.000610 0.6843	+0.0852 4.5379
A NOV. 2 (OH)	Y:	-0.0116	+0.00027	+ 6.2301 4.854575	+0.00616 3.3692	+0.000266 1.5727	+0.0147 0.4400
NOV. 1 (OH) (2449657.9)	X:	-0.1852	-0.00068	+35.5127 2.333096	+0.06181 5.8445	+0.000502 0.6027	+0.0833 3.7755
A NOV.17 (OH)	Y:	-0.0076	+0.00029	+ 6.1786 4.515995	+0.00902 1.9884	+0.000241 1.1969	+0.0145 5.9574
NOV.17 (OH) (2449673.9)	X:	-0.1980	-0.00037	+34.5752 0.296978	+0.07197 4.0166	+0.000410 5.1828	+0.0816 5.8877
A DEC. 3 (OH)	Y:	-0.0030	+0.00025	+ 6.0008 2.481737	+0.01539 5.8971	+0.000189 5.3256	+0.0140 1.7957
DEC. 1 (OH) (2449687.9)	X:	-0.2027	-0.00039	+33.7466 1.650507	+0.07742 5.5290	+0.000311 0.3938	+0.0799 2.2306
A DEC.17 (OH)	Y:	+0.0008	+0.00026	+ 5.7583 3.845560	+0.02019 0.8437	+0.000141 0.2674	+0.0134 4.4376
DEC.17 (OH) (2449703.9)	X:	-0.2081	-0.00013	+32.8660 5.883798	+0.08210 3.6311	+0.000255 5.0531	+0.0781 4.3302
A JAN. 2 (OH)	Y:	+0.0046	+0.00023	+ 5.4069 1.817846	+0.02406 4.9977	+0.000100 4.1653	+0.0125 0.2814

1994 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 3 DE SATURNE: TETHYS N=3.328

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
JAN. 1 (0H)	X:	-0.0008	+0.00000	+38.7248	+0.07473	+0.000387	+0.0035
(2449353.9)				0.368345	4.4466	0.0050	4.0379
A JAN.17 (0H)	Y:	-0.0005	+0.00000	+ 8.7031	+0.03927	+0.000054	+0.0008
				2.497069	5.6452	3.8264	6.2003
JAN.17 (0H)	X:	-0.0008	+0.00000	+38.1222	+0.07230	+0.000382	+0.0034
(2449369.9)				3.324691	1.3124	3.2260	3.6842
A FEV. 2 (0H)	Y:	-0.0005	+0.00001	+ 8.0784	+0.03885	+0.000082	+0.0007
				5.480767	2.3004	0.0906	5.8379
FEV. 1 (0H)	X:	-0.0008	+0.00000	+37.7573	+0.06937	+0.000394	+0.0034
(2449384.9)				2.953023	1.1234	3.0438	2.9439
A FEV.17 (0H)	Y:	-0.0004	+0.00000	+ 7.5078	+0.03749	+0.000103	+0.0007
				5.140207	1.9021	5.8326	5.1369
FEV.17 (0H)	X:	-0.0008	+0.00000	+37.5888	+0.06603	+0.000408	+0.0034
(2449400.9)				5.907250	4.2865	6.1758	2.5684
A MAR. 5 (0H)	Y:	-0.0004	+0.00000	+ 6.9315	+0.03523	+0.000118	+0.0006
				1.850293	4.8181	2.3618	4.8111
MAR. 1 (0H)	X:	-0.0008	+0.00000	+37.6139	+0.06383	+0.000426	+0.0034
(2449412.9)				1.840330	0.3858	2.2187	0.7164
A MAR.17 (0H)	Y:	-0.0003	+0.00000	+ 6.5305	+0.03316	+0.000127	+0.0006
				4.099633	0.7168	4.4640	3.0024
MAR.17 (0H)	X:	-0.0008	+0.00000	+37.8466	+0.06167	+0.000447	+0.0034
(2449428.9)				4.797129	3.5848	5.3256	0.3564
A AVR. 2 (0H)	Y:	-0.0003	+0.00000	+ 6.0474	+0.02988	+0.000139	+0.0005
				0.821821	3.6209	0.9803	2.7023
AVR. 1 (0H)	X:	-0.0008	+0.00000	+38.2667	+0.06096	+0.000475	+0.0035
(2449443.9)				4.430345	3.4576	5.0926	5.9041
A AVR.17 (0H)	Y:	-0.0002	+0.00000	+ 5.6584	+0.02635	+0.000155	+0.0005
				0.503794	3.1978	0.4581	2.0314
AVR.17 (0H)	X:	-0.0008	+0.00000	+38.9184	+0.06187	+0.000495	+0.0037
(2449459.9)				1.110902	0.4047	1.9358	5.5621
A MAI 3 (0H)	Y:	-0.0002	+0.00000	+ 5.3212	+0.02188	+0.000174	+0.0005
				3.520219	6.0909	3.2712	1.6886
MAI 1 (0H)	X:	-0.0009	+0.00000	+39.6462	+0.06417	+0.000522	+0.0039
(2449473.9)				3.708235	3.2315	4.6980	4.4621
A MAI 17 (0H)	Y:	-0.0001	+0.00000	+ 5.0990	+0.01740	+0.000199	+0.0005
				6.160717	2.3269	5.7584	0.6437
MAI 17 (0H)	X:	-0.0008	+0.00000	+40.6325	+0.06803	+0.000542	+0.0040
(2449489.9)				0.398738	0.1776	1.6124	4.1431
A JUN. 2 (0H)	Y:	-0.0001	+0.00000	+ 4.9341	+0.01144	+0.000225	+0.0005
				2.891980	5.1515	2.3550	0.3796
JUN. 1 (0H)	X:	-0.0008	+0.00000	+41.6699	+0.07236	+0.000573	+0.0042
(2449504.9)				0.050636	0.0566	1.5185	3.4407
A JUN.17 (0H)	Y:	-0.0001	+0.00000	+ 4.8697	+0.00558	+0.000248	+0.0005
				2.568382	4.3863	1.9501	5.9717
JUN.17 (0H)	X:	-0.0010	+0.00001	+42.8413	+0.07664	+0.000604	+0.0046
(2449520.9)				3.036725	3.2795	4.8152	3.1391
A JUL. 3 (0H)	Y:	-0.0001	+0.00000	+ 4.8998	+0.00517	+0.000253	+0.0005
				5.561048	5.7000	4.9034	5.6557

1994 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 3 DE SATURNE: TETHYS N=3.328

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
JUL. 1 (OH)	X:	-0.0009	-0.00001	+43.8589	+0.07963	+0.000652	+0.0048
(2449534.9)				5.654942	6.1033	1.4630	2.0709
A JUL.17 (OH)	Y:	-0.0001	+0.00000	+ 5.0108	+0.01143	+0.000237	+0.0006
				1.883529	1.5595	1.2271	4.6011
JUL.17 (OH)	X:	-0.0012	+0.00001	+44.9273	+0.08096	+0.000714	+0.0050
(2449550.9)				2.369771	3.0640	4.8208	1.8246
A AOU. 2 (OH)	Y:	-0.0002	+0.00000	+ 5.2326	+0.01880	+0.000178	+0.0006
				4.847914	4.4096	4.2233	4.2209
AOU. 1 (OH)	X:	-0.0012	+0.00001	+45.7441	+0.08027	+0.000791	+0.0050
(2449565.9)				2.043480	2.9862	4.8361	1.1698
A AOU.17 (OH)	Y:	-0.0003	+0.00000	+ 5.5218	+0.02421	+0.000083	+0.0007
				4.476598	4.0233	3.8768	3.5105
AOU.17 (OH)	X:	-0.0010	-0.00001	+46.3208	+0.07721	+0.000849	+0.0053
(2449581.9)				5.049877	0.0077	1.8960	0.8696
A SEP. 2 (OH)	Y:	-0.0002	+0.00000	+ 5.8895	+0.02681	+0.000045	+0.0006
				1.145175	0.7090	3.9881	3.2665
SEP. 1 (OH)	X:	-0.0011	-0.00001	+46.5178	+0.07365	+0.000890	+0.0053
(2449596.9)				4.727966	0.0015	1.8825	0.2337
A SEP.17 (OH)	Y:	-0.0003	+0.00000	+ 6.2459	+0.02555	+0.000170	+0.0007
				0.773012	0.3569	3.5922	2.5165
SEP.17 (OH)	X:	-0.0013	+0.00001	+46.3309	+0.07021	+0.000880	+0.0050
(2449612.9)				1.451251	3.3818	5.1906	6.2538
A OCT. 3 (OH)	Y:	-0.0004	+0.00000	+ 6.5794	+0.02001	+0.000268	+0.0008
				3.732544	3.3131	0.3339	2.2547
OCT. 1 (OH)	X:	-0.0011	+0.00000	+45.8506	+0.06908	+0.000846	+0.0051
(2449626.9)				4.078891	0.0680	1.8013	5.2338
A OCT.17 (OH)	Y:	-0.0004	+0.00000	+ 6.7851	+0.01265	+0.000318	+0.0008
				0.044213	5.8270	2.9802	1.1593
OCT.17 (OH)	X:	-0.0013	+0.00001	+45.0038	+0.06975	+0.000765	+0.0048
(2449642.9)				0.793313	3.4436	5.0818	4.9151
A NOV. 2 (OH)	Y:	-0.0004	+0.00000	+ 6.8835	+0.00413	+0.000318	+0.0007
				3.015029	1.7113	5.9871	0.8574
NOV. 1 (OH)	X:	-0.0013	+0.00001	+44.0130	+0.07202	+0.000679	+0.0046
(2449657.9)				0.455480	3.4253	5.0205	4.2348
A NOV.17 (OH)	Y:	-0.0004	+0.00000	+ 6.8298	+0.00878	+0.000282	+0.0007
				2.662562	6.0849	5.6346	0.1860
NOV.17 (OH)	X:	-0.0011	+0.00000	+42.8536	+0.07448	+0.000580	+0.0043
(2449673.9)				3.438599	0.4204	2.0054	3.9477
A DEC. 3 (OH)	Y:	-0.0004	+0.00001	+ 6.6243	+0.01738	+0.000222	+0.0007
				5.641051	2.5566	2.2748	6.1145
DEC. 1 (OH)	X:	-0.0012	+0.00001	+41.8357	+0.07620	+0.000510	+0.0042
(2449687.9)				6.042552	3.2480	4.8869	2.8579
A DEC.17 (OH)	Y:	-0.0003	+0.00000	+ 6.3391	+0.02359	+0.000166	+0.0006
				1.966921	5.0936	4.7559	5.0957
DEC.17 (OH)	X:	-0.0011	+0.00000	+40.7459	+0.07667	+0.000445	+0.0039
(2449703.9)				2.728803	0.1601	1.8732	2.5108
A JAN. 2 (OH)	Y:	-0.0003	+0.00000	+ 5.9222	+0.02865	+0.000115	+0.0006
				4.952889	1.7323	1.1791	4.7415

1994 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 4 DE SATURNE: DIONE N=2.296

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
JAN. 1 (0H)	X:	+0.0402	-0.00008	+49.6551	+0.11768	+0.000461	+0.0589
(2449353.9)				1.236957	5.4395	0.8531	5.3656
A JAN.17 (0H)	Y:	+0.0263	-0.00012	+11.3809	+0.04798	+0.000080	+0.0130
				3.283304	0.3168	4.7067	1.1333
JAN.17 (0H)	X:	+0.0388	-0.00009	+48.8749	+0.11670	+0.000448	+0.0579
(2449369.9)				0.239303	4.5997	0.0576	3.3648
A FEV. 2 (0H)	Y:	+0.0242	-0.00013	+10.6290	+0.04723	+0.000116	+0.0122
				2.309521	5.5831	3.3303	5.4600
FEV 1 (0H)	X:	+0.0374	-0.00008	+48.3983	+0.11527	+0.000438	+0.0576
(2449384.9)				3.229066	1.4563	3.2954	3.0666
A FEV.17 (0H)	Y:	+0.0222	-0.00012	+ 9.9408	+0.04519	+0.000146	+0.0114
				5.326464	2.2639	6.1609	5.1947
FEV.17 (0H)	X:	+0.0359	-0.00006	+48.1741	+0.11261	+0.000459	+0.0570
(2449400.9)				2.228591	0.6156	2.4604	1.0806
A MAR. 5 (0H)	Y:	+0.0201	-0.00011	+ 9.2456	+0.04192	+0.000168	+0.0107
				4.360157	1.2254	5.0077	3.2302
MAR. 1 (0H)	X:	+0.0350	-0.00005	+48.1995	+0.11026	+0.000462	+0.0578
(2449412.9)				4.620135	3.1324	4.9367	5.8673
A MAR.17 (0H)	Y:	+0.0186	-0.00011	+ 8.7618	+0.03888	+0.000178	+0.0100
				0.497496	3.5816	1.0137	1.7705
MAR.17 (0H)	X:	+0.0339	-0.00003	+48.4891	+0.10768	+0.000492	+0.0578
(2449428.9)				3.621529	2.3070	4.1113	3.8806
A AVR. 2 (0H)	Y:	+0.0167	-0.00010	+ 8.1809	+0.03417	+0.000193	+0.0095
				5.824561	2.5289	6.1546	6.1130
AVR. 1 (0H)	X:	+0.0334	+0.00000	+49.0200	+0.10539	+0.000535	+0.0588
(2449443.9)				0.331601	5.4677	0.9432	3.5907
A AVR.17 (0H)	Y:	+0.0151	-0.00009	+ 7.7163	+0.02921	+0.000212	+0.0090
				2.577531	5.4596	2.6980	5.6646
AVR.17 (0H)	X:	+0.0333	+0.00005	+49.8468	+0.10325	+0.000558	+0.0603
(2449459.9)				5.622411	4.6667	0.1026	1.6194
A MAI 3 (0H)	Y:	+0.0135	-0.00007	+ 7.3197	+0.02301	+0.000232	+0.0086
				1.631636	4.3851	1.5511	3.9276
MAI 1 (0H)	X:	+0.0340	+0.00010	+50.7719	+0.10209	+0.000592	+0.0617
(2449473.9)				0.045541	5.5461	0.9954	3.0271
A MAI 17 (0H)	Y:	+0.0123	-0.00006	+ 7.0680	+0.01699	+0.000262	+0.0084
				2.376410	4.9928	2.1401	5.3806
MAI 17 (0H)	X:	+0.0356	+0.00018	+52.0278	+0.10048	+0.000620	+0.0632
(2449489.9)				5.345853	4.7705	0.2377	1.0672
A JUN. 2 (0H)	Y:	+0.0112	-0.00004	+ 6.8992	+0.00924	+0.000291	+0.0083
				1.430711	3.7671	1.0450	3.4450
JUN. 1 (0H)	X:	+0.0382	+0.00026	+53.3489	+0.09913	+0.000672	+0.0651
(2449504.9)				2.073788	1.6993	3.5400	0.7996
A JUN.17 (0H)	Y:	+0.0105	-0.00002	+ 6.8641	+0.00380	+0.000316	+0.0083
				4.465738	5.5596	3.9875	3.1958
JUN.17 (0H)	X:	+0.0423	+0.00034	+54.8432	+0.09574	+0.000730	+0.0673
(2449520.9)				1.103219	0.9534	2.8596	5.1302
A JUL. 3 (0H)	Y:	+0.0101	+0.00000	+ 6.9639	+0.01085	+0.000316	+0.0085
				3.505014	3.3766	2.9716	1.2487

1994 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 4 DE SATURNE: DIONE N=2.296

		AO	A1	BO FO	B1 F1	B2 F2	CO PO
JUL. 1 (OH)	X:	+0.0468	+0.00042	+56.1405	+0.09165	+0.000794	+0.0688
(2449534.9)				1.830217	1.8958	3.9075	0.2857
A JUL.17 (OH)	Y:	+0.0101	+0.00002	+ 7.1678	+0.01947	+0.000289	+0.0089
				4.225990	3.9182	3.6725	2.6662
JUL.17 (OH)	X:	+0.0534	+0.00048	+57.5037	+0.08392	+0.000876	+0.0703
(2449550.9)				0.871847	1.2115	3.2829	4.6307
A AOU. 2 (OH)	Y:	+0.0104	+0.00004	+ 7.5279	+0.02864	+0.000204	+0.0094
				3.245225	2.8726	2.6807	0.7052
AOU. 1 (OH)	X:	+0.0606	+0.00049	+58.5448	+0.07521	+0.000967	+0.0716
(2449565.9)				3.905284	4.5540	0.3777	4.3849
A AOU.17 (OH)	Y:	+0.0110	+0.00004	+ 7.9681	+0.03499	+0.000080	+0.0098
				6.246608	5.8631	5.5102	0.4165
AOU.17 (OH)	X:	+0.0685	+0.00049	+59.2785	+0.06494	+0.001041	+0.0720
(2449581.9)				2.955960	4.0168	6.0335	2.4526
A SEP. 2 (OH)	Y:	+0.0117	+0.00003	+ 8.5039	+0.03748	+0.000094	+0.0107
				5.257308	4.8800	2.0104	4.7313
SEP. 1 (OH)	X:	+0.0761	+0.00046	+59.5270	+0.05895	+0.001076	+0.0719
(2449596.9)				5.994524	1.2651	3.1009	2.2063
A SEP.17 (OH)	Y:	+0.0123	+0.00003	+ 9.0072	+0.03486	+0.000246	+0.0111
				1.975458	1.6017	4.9020	4.4613
SEP.17 (OH)	X:	+0.0834	+0.00037	+59.2633	+0.05980	+0.001066	+0.0711
(2449612.9)				5.046123	0.8933	2.4555	0.2693
A OCT. 3 (OH)	Y:	+0.0127	+0.00000	+ 9.4656	+0.02689	+0.000371	+0.0116
				0.992269	0.5936	3.9456	2.4806
OCT. 1 (OH)	X:	+0.0885	+0.00028	+58.6655	+0.06758	+0.001009	+0.0697
(2449626.9)				5.784405	2.0845	3.4715	1.7107
A OCT.17 (OH)	Y:	+0.0127	-0.00001	+ 9.7420	+0.01682	+0.000429	+0.0117
				1.706731	1.1948	4.6891	3.9054
OCT.17 (OH)	X:	+0.0930	+0.00017	+57.5771	+0.07969	+0.000917	+0.0682
(2449642.9)				4.827910	1.5326	2.7923	6.0446
A NOV. 2 (OH)	Y:	+0.0123	-0.00004	+ 9.8689	+0.00611	+0.000424	+0.0117
				0.732014	5.6218	3.7327	1.9455
NOV. 1 (OH)	X:	+0.0955	+0.00006	+56.3062	+0.09215	+0.000800	+0.0662
(2449657.9)				1.568780	4.8498	6.1273	5.7761
A NOV.17 (OH)	Y:	+0.0116	-0.00005	+ 9.7913	+0.01242	+0.000371	+0.0115
				3.748230	0.9598	0.4501	1.6745
NOV.17 (OH)	X:	+0.0964	-0.00001	+54.8178	+0.10247	+0.000707	+0.0640
(2449673.9)				0.598237	4.1272	5.4312	3.8040
A DEC. 3 (OH)	Y:	+0.0106	-0.00007	+ 9.5119	+0.02358	+0.000288	+0.0111
				2.779448	6.0290	5.6915	5.9936
DEC. 1 (OH)	X:	+0.0964	-0.00007	+53.5115	+0.10980	+0.000607	+0.0624
(2449687.9)				1.313632	5.0310	0.1563	5.2236
A DEC.17 (OH)	Y:	+0.0095	-0.00008	+ 9.1292	+0.03155	+0.000214	+0.0104
				3.505019	0.3863	6.2779	1.1347
DEC.17 (OH)	X:	+0.0952	-0.00010	+52.1127	+0.11442	+0.000546	+0.0608
(2449703.9)				0.329433	4.2334	5.7128	3.2345
A JAN. 2 (OH)	Y:	+0.0081	-0.00009	+ 8.5744	+0.03794	+0.000150	+0.0097
				2.542880	5.6353	4.9785	5.4714

1994 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 5 DE SATURNE: RHEA N=1.391

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
JAN. 1 (0H)	X:	+0.0016	+0.00020	+69.3018	+0.15207	+0.000677	+0.0319
(2449353.9)				2.920521	0.7968	2.4471	5.8357
A JAN.17 (0H)	Y:	-0.0295	+0.00013	+16.2207	+0.06687	+0.000100	+0.0073
				4.979329	1.9561	0.0835	1.6215
JAN.17 (0H)	X:	+0.0049	+0.00022	+68.2122	+0.15171	+0.000644	+0.0316
(2449369.9)				0.012281	4.3469	6.0757	0.0501
A FEV. 2 (0H)	Y:	-0.0275	+0.00011	+15.1639	+0.06594	+0.000152	+0.0068
				2.095924	5.3163	3.0266	2.1512
FEV. 1 (0H)	X:	+0.0084	+0.00023	+67.5486	+0.15004	+0.000646	+0.0315
(2449384.9)				1.995942	0.2067	1.9541	4.0537
A FEV.17 (0H)	Y:	-0.0257	+0.00011	+14.1986	+0.06311	+0.000192	+0.0064
				4.107822	0.9935	4.8588	6.1859
FEV.17 (0H)	X:	+0.0120	+0.00025	+67.2347	+0.14770	+0.000649	+0.0315
(2449400.9)				5.367429	3.7517	5.5111	4.5538
A MAR. 5 (0H)	Y:	-0.0238	+0.00011	+13.2257	-0.05859	+0.000226	+0.0060
				1.231530	4.3304	1.8132	0.4368
MAR. 1 (0H)	X:	+0.0150	+0.00024	+67.2705	+0.14584	+0.000668	+0.0315
(2449412.9)				3.183750	1.6990	3.4442	0.2187
A MAR.17 (0H)	Y:	-0.0225	+0.00010	+12.5508	+0.05443	+0.000246	+0.0057
				5.360969	2.1134	5.8140	2.4141
MAR.17 (0H)	X:	+0.0190	+0.00023	+67.6745	+0.14363	+0.000690	+0.0317
(2449428.9)				0.273311	5.2533	0.7062	0.7211
A AVR. 2 (0H)	Y:	-0.0209	+0.00009	+11.7425	+0.04790	+0.000271	+0.0053
				2.494397	5.4326	2.7643	2.9699
AVR. 1 (0H)	X:	+0.0226	+0.00022	+68.4149	+0.14189	+0.000731	+0.0320
(2449443.9)				2.259335	1.1299	2.8365	4.7314
A AVR.17 (0H)	Y:	-0.0194	+0.00007	+11.0989	+0.04090	+0.000296	+0.0050
				4.524355	1.0724	4.6103	0.7380
AVR.17 (0H)	X:	+0.0262	+0.00021	+69.5682	+0.14064	+0.000764	+0.0325
(2449459.9)				5.637749	4.7028	0.1254	5.2410
A MAI 3 (0H)	Y:	-0.0183	+0.00006	+10.5537	+0.03233	+0.000329	+0.0048
				1.667119	4.3657	1.5652	1.2948
MAI 1 (0H)	X:	+0.0293	+0.00017	+70.8597	+0.13989	+0.000819	+0.0329
(2449473.9)				6.241312	5.4800	0.9130	0.1936
A MAI 17 (0H)	Y:	-0.0175	+0.00004	+10.2108	+0.02397	+0.000369	+0.0046
				2.309898	4.8600	2.0531	2.5725
MAI 17 (0H)	X:	+0.0319	+0.00017	+72.6128	+0.13868	+0.000873	+0.0336
(2449489.9)				3.345674	2.7915	4.5382	0.7150
A JUN. 2 (0H)	Y:	-0.0168	+0.00001	+ 9.9859	+0.01336	+0.000407	+0.0045
				5.735296	1.6911	5.3334	3.1144
JUN. 1 (0H)	X:	+0.0345	+0.00008	+74.4578	+0.13708	+0.000945	+0.0342
(2449504.9)				5.348870	4.9980	0.5286	4.7394
A JUN.17 (0H)	Y:	-0.0166	+0.00000	+ 9.9467	+0.00644	+0.000440	+0.0045
				1.479738	2.5542	0.9833	0.8780
JUN.17 (0H)	X:	+0.0356	+0.00007	+76.5426	+0.13330	+0.001034	+0.0346
(2449520.9)				2.465427	2.3451	4.2316	5.2697
A JUL. 3 (0H)	Y:	-0.0168	-0.00003	+10.0949	+0.01555	+0.000441	+0.0046
				4.889803	4.8144	4.3307	1.4074

1994 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 5 DE SATURNE: RHEA N=1.391

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
JUL. 1 (OH)	X:	+0.0362	+0.00003	+78.3541	+0.12815	+0.001147	+0.0351
(2449534.9)				3.089549	3.1881	5.1416	0.2350
A JUL.17 (OH)	Y:	-0.0173	-0.00006	+10.3851	+0.02733	+0.000399	+0.0047
				5.508261	5.2249	4.9264	2.6510
JUL.17 (OH)	X:	+0.0366	-0.00011	+80.2559	+0.11923	+0.001261	+0.0357
(2449550.9)				0.218544	0.6030	2.6091	0.7718
A AOU. 2 (OH)	Y:	-0.0185	-0.00007	+10.8908	+0.03989	+0.000281	+0.0049
				2.615176	2.2534	2.0304	3.1426
AOU. 1 (OH)	X:	+0.0344	-0.00008	+81.7083	+0.10938	+0.001392	+0.0359
(2449565.9)				2.244540	2.9431	4.9536	4.8059
A AOU.17 (OH)	Y:	-0.0200	-0.00008	+11.5049	+0.04848	+0.000106	+0.0051
				4.609209	4.2303	3.9061	0.8619
AOU.17 (OH)	X:	+0.0328	-0.00023	+82.7325	+0.09874	+0.001463	+0.0359
(2449581.9)				5.666341	0.4901	2.4187	5.3447
A SEP. 2 (OH)	Y:	-0.0215	-0.00009	+12.2485	+0.05175	+0.000133	+0.0056
				1.707648	1.3357	4.6583	1.3610
SEP. 1 (OH)	X:	+0.0289	-0.00015	+83.0785	+0.09347	+0.001507	+0.0359
(2449596.9)				1.414915	2.9696	4.7637	3.0939
A SEP.17 (OH)	Y:	-0.0233	-0.00005	+12.9441	+0.04800	+0.000354	+0.0058
				3.701782	3.3381	0.2895	5.3565
SEP.17 (OH)	X:	+0.0263	-0.00023	+82.7389	+0.09491	+0.001457	+0.0356
(2449612.9)				4.838420	0.6145	2.2187	3.6212
A OCT. 3 (OH)	Y:	-0.0243	-0.00006	+13.5754	+0.03649	+0.000521	+0.0060
				0.806728	0.4330	3.7200	5.8670
OCT. 1 (OH)	X:	+0.0229	-0.00014	+81.8765	+0.10296	+0.001383	+0.0353
(2449626.9)				5.475442	1.6559	3.1487	4.8725
A OCT.17 (OH)	Y:	-0.0252	-0.00001	+13.9522	+0.02207	+0.000602	+0.0062
				1.419455	0.9645	4.3712	0.8053
OCT.17 (OH)	X:	+0.0205	-0.00014	+80.3580	+0.11520	+0.001262	+0.0350
(2449642.9)				2.608335	5.4591	0.5881	5.3924
A NOV. 2 (OH)	Y:	-0.0256	+0.00002	+14.1187	+0.00611	+0.000592	+0.0062
				4.816969	3.3730	1.5045	1.3142
NOV. 1 (OH)	X:	+0.0184	-0.00003	+78.5822	+0.12722	+0.001127	+0.0345
(2449557.9)				4.626838	1.4945	2.9008	3.1274
A NOV.17 (OH)	Y:	-0.0254	+0.00006	+13.9998	+0.01723	+0.000520	+0.0062
				0.544336	3.8692	3.5123	5.3291
NOV.17 (OH)	X:	+0.0178	+0.00000	+76.5053	+0.13766	+0.000991	+0.0340
(2449673.9)				1.746135	5.1643	0.3100	3.6469
A DEC. 3 (OH)	Y:	-0.0244	+0.00007	+13.5988	+0.03327	+0.000406	+0.0060
				3.948775	0.8189	0.5660	5.8603
DEC. 1 (OH)	X:	+0.0181	+0.00004	+74.6819	+0.14467	+0.000893	+0.0335
(2449687.9)				2.360960	5.9821	1.1890	4.8774
A DEC.17 (OH)	Y:	-0.0233	+0.00010	+13.0563	+0.04460	+0.000299	+0.0058
				4.574264	1.3818	1.0510	0.8217
DEC.17 (OH)	X:	+0.0188	+0.00014	+72.7298	+0.14945	+0.000790	+0.0330
(2449703.9)				5.749646	3.2968	4.8546	5.3819
A JAN. 2 (OH)	Y:	-0.0217	+0.00011	+12.2740	+0.05368	+0.000201	+0.0054
				1.702803	4.7320	4.1487	1.3527

1994 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 6 DE SATURNE: TITAN N=0.394

		A0	A1	B0 F0	B1 F1	C0 P0
JAN. 1 (0H) (2449353.7)	X:	+ 4.0912	- 0.88248	+162.4671 0.134630	+ 0.88480 3.1784	+2.0300 0.4911
A JAN.12 (0H)	Y:	- 2.8384	+ 0.25391	+ 37.3451 2.183438	+ 0.36780 5.4811	+0.4111 2.5392
JAN.12 (0H) (2449364.7)	X:	+ 2.3380	- 0.56525	+160.7540 4.497286	+ 0.84092 2.8393	+2.5727 2.6843
A JAN.23 (0H)	Y:	- 2.8850	+ 0.29586	+ 34.1620 0.301573	+ 0.18707 5.0889	+0.5849 4.8236
JAN.23 (0H) (2449375.7)	X:	+ 0.6812	- 0.23784	+155.6799 2.507553	+ 0.11836 2.3035	+2.1297 4.8764
A FEV. 3 (0H)	Y:	- 2.3720	+ 0.21654	+ 31.4507 4.564124	+ 0.18224 0.3267	+0.4353 0.6268
FEV. 1 (0H) (2449384.7)	X:	+ 6.5826	- 1.10291	+159.7860 6.000064	+ 0.93591 2.7779	+1.9385 6.0352
A FEV.12 (0H)	Y:	- 1.5572	+ 0.03815	+ 31.5792 1.833284	+ 0.20434 4.8243	+0.4026 1.8019
FEV.12 (0H) (2449395.7)	X:	+ 7.4044	- 1.26428	+160.9289 4.107435	+ 1.39551 2.5128	+2.7105 1.9007
A FEV.23 (0H)	Y:	- 2.0810	+ 0.14997	+ 29.5642 6.212985	+ 0.10390 4.1573	+0.4808 4.0944
FEV.23 (0H) (2449406.7)	X:	+ 6.6048	- 1.13072	+149.0115 2.106996	+ 0.90256 2.2925	+1.9512 4.0313
A MAR. 6 (0H)	Y:	- 1.9375	+ 0.14319	+ 27.4279 4.215074	+ 0.14964 0.1060	+0.3793 6.2420
MAR. 1 (0H) (2449412.7)	X:	+ 2.3386	- 0.45463	+157.2004 4.465780	+ 0.78863 3.0947	+2.5156 2.7220
A MAR.12 (0H)	Y:	- 2.2785	+ 0.23640	+ 27.4197 0.366782	+ 0.13110 5.1495	+0.4697 4.9548
MAR.12 (0H) (2449423.7)	X:	+ 0.7359	- 0.13880	+155.2485 2.472515	+ 0.20001 2.4671	+2.1731 4.9047
A MAR.23 (0H)	Y:	- 1.7657	+ 0.15414	+ 25.3176 4.642385	+ 0.15266 0.3683	+0.3521 0.7825
MAR.23 (0H) (2449434.7)	X:	- 2.9270	+ 0.56322	+159.7461 0.531549	+ 0.83634 5.3501	+1.8411 1.1493
A AVR. 3 (0H)	Y:	- 1.2918	+ 0.08955	+ 25.3760 2.710076	+ 0.17806 5.8655	+0.3015 3.4967
AVR. 1 (0H) (2449443.7)	X:	+ 8.1684	- 1.30254	+163.3659 4.079595	+ 1.40353 2.6495	+2.7784 1.9360
A AVR.12 (0H)	Y:	- 1.8672	+ 0.15775	+ 23.9340 0.033292	+ 0.07543 4.7901	+0.3997 4.2697
AVR.12 (0H) (2449454.7)	X:	+ 7.2947	- 1.16369	+153.3362 2.078230	+ 1.09348 2.3633	+2.0442 4.0684
A AVR.23 (0H)	Y:	- 1.6658	+ 0.13927	+ 22.3444 4.318230	+ 0.14112 6.1153	+0.3154 0.1027
AVR.23 (0H) (2449465.7)	X:	+ 4.0015	- 0.62016	+164.3852 0.087546	+ 0.35033 3.4076	+2.0494 0.5315
A MAI 4 (0H)	Y:	- 1.7156	+ 0.16822	+ 23.2079 2.382069	+ 0.19414 5.5254	+0.2637 2.9029

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DU SATELLITE 6 DE SATURNE: TITAN N=0.394

		A0	A1	B0 F0	B1 F1	C0 P0
MAI 1 (OH) (2449473.7)	X:	- 2.9763	+ 0.91957	+166.4556 3.218743	+ 0.51454 6.1249	+2.5963 0.2383
A MAI 12 (OH)	Y:	+ 0.1439	- 0.17934	+ 22.8293 5.543228	+ 0.19282 2.4438	+0.3658 2.6019
MAI 12 (OH) (2449484.7)	X:	+ 0.6273	+ 0.33352	+167.1680 1.299112	+ 0.71408 0.4869	+2.0300 2.7075
A MAI 23 (OH)	Y:	- 0.0506	- 0.13815	+ 21.5524 3.670503	+ 0.08995 2.5935	+0.2424 5.0586
MAI 23 (OH) (2449495.7)	X:	+ 4.2723	- 0.33824	+171.2549 5.593795	+ 0.15022 1.0325	+2.2884 5.2900
A JUN. 3 (OH)	Y:	- 0.5090	- 0.06382	+ 20.8955 1.684011	+ 0.07859 3.1459	+0.3058 1.4162
JUN. 1 (OH) (2449504.7)	X:	- 6.1578	+ 1.37425	+176.8584 2.824436	+ 0.87301 5.5508	+2.8267 5.7668
A JUN.12 (OH)	Y:	- 0.1171	- 0.10454	+ 21.8021 5.232992	+ 0.08101 2.1591	+0.3374 1.9352
JUN.12 (OH) (2449515.7)	X:	- 4.6194	+ 1.21796	+179.7794 0.948243	+ 1.16011 6.0598	+1.9373 2.0286
A JUN.23 (OH)	Y:	+ 0.0841	- 0.14179	+ 21.3470 3.346360	+ 0.14783 2.5286	+0.2431 4.3418
JUN.23 (OH) (2449526.7)	X:	- 3.2609	+ 1.02203	+173.2792 5.248755	+ 1.16571 5.7858	+2.7756 4.6002
A JUL. 4 (OH)	Y:	+ 0.0440	- 0.15422	+ 20.8685 1.332035	+ 0.14515 2.1741	+0.3267 0.7587
JUL. 1 (OH) (2449534.7)	X:	+ 7.4714	- 1.16321	+174.8799 2.119659	+ 1.30071 2.6904	+2.3788 4.2547
A JUL.12 (OH)	Y:	- 1.7204	+ 0.16229	+ 21.1792 4.478898	+ 0.16570 5.2277	+0.3060 0.2904
JUL.12 (OH) (2449545.7)	X:	+ 3.2024	- 0.40777	+186.4723 0.162512	+ 0.25397 2.5851	+2.3331 0.6780
A JUL.23 (OH)	Y:	- 1.5649	+ 0.14423	+ 23.5820 2.523526	+ 0.07053 0.3263	+0.2746 3.0725
JUL.23 (OH) (2449556.7)	X:	- 0.2716	+ 0.15642	+185.0427 4.519266	+ 0.62265 4.7578	+2.9682 3.0449
A AOU. 3 (OH)	Y:	- 1.5421	+ 0.12900	+ 23.8761 0.612171	+ 0.21052 6.1923	+0.3988 5.3428
AOU. 1 (OH) (2449565.7)	X:	+ 9.5056	- 1.38461	+180.7733 1.783703	+ 1.45093 2.5120	+2.4771 3.5625
A AOU.12 (OH)	Y:	- 1.4356	+ 0.06517	+ 24.1172 4.102258	+ 0.15562 4.2784	+0.3340 5.9124
AOU.12 (OH) (2449576.7)	X:	+ 8.9600	- 1.35774	+194.9769 6.092153	+ 1.18988 2.3578	+2.4080 0.1076
A AOU.23 (OH)	Y:	- 1.8803	+ 0.14840	+ 26.7316 2.132842	+ 0.07020 0.2940	+0.3092 2.3047
AOU.23 (OH) (2449587.7)	X:	+ 7.9915	- 1.30879	+196.8150 4.226050	+ 0.89165 2.8062	+3.3357 2.3054
A SEP. 3 (OH)	Y:	- 2.2187	+ 0.20436	+ 27.0585 0.232797	+ 0.27664 5.8139	+0.4722 4.6054

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DU SATELLITE 6 DE SATURNE: TITAN N=0.394

		A0	A1	B0 F0	B1 F1	C0 P0
SEP. 1 (OH) (2449596.7)	X:	+ 4.1658	- 0.35434	+189.4813 1.471343	+ 0.52796 2.2489	+2.4454 3.0110
A SEP.12 (OH)	Y:	- 0.5246	- 0.13013	+ 27.9679 3.744956	+ 0.21326 3.1950	+0.3308 5.2514
SEP.12 (OH) (2449607.7)	X:	+ 7.8779	- 1.04785	+195.8767 5.785142	+ 1.13780 2.0830	+2.4538 5.6989
A SEP.23 (OH)	Y:	- 1.0735	- 0.04027	+ 28.9891 1.749411	+ 0.07554 2.2981	+0.3987 1.5695
SEP.23 (OH) (2449618.7)	X:	+ 9.6860	- 1.47488	+196.1621 3.921443	+ 1.05174 2.2885	+3.3377 1.6535
A OCT. 4 (OH)	Y:	- 1.5039	+ 0.03758	+ 30.0520 6.100311	+ 0.09698 5.2550	+0.4897 3.8172
OCT. 1 (OH) (2449626.7)	X:	- 5.7910	+ 1.16712	+194.1070 0.790918	+ 0.85095 5.3137	+2.0844 1.6524
A OCT.12 (OH)	Y:	- 0.7733	- 0.05533	+ 30.4411 2.966458	+ 0.08953 2.1206	+0.3628 3.8245
OCT.12 (OH) (2449637.7)	X:	- 7.0694	+ 1.50246	+178.3728 5.106083	+ 1.19090 5.9479	+2.9812 4.2583
A OCT.23 (OH)	Y:	- 0.0353	- 0.18574	+ 29.6076 0.972689	+ 0.16374 2.2357	+0.4525 0.1282
OCT.23 (OH) (2449648.7)	X:	- 5.9189	+ 1.33627	+187.7801 3.121324	+ 1.44089 5.8891	+2.9044 6.2761
A NOV. 3 (OH)	Y:	+ 0.0840	- 0.21021	+ 32.0612 5.310629	+ 0.20861 2.3303	+0.5130 2.2159
NOV. 1 (OH) (2449657.7)	X:	- 1.1997	+ 0.19397	+184.3493 0.435291	+ 0.58720 4.0924	+2.1926 1.0315
A NOV.12 (OH)	Y:	- 1.9718	+ 0.15671	+ 31.4019 2.577701	+ 0.18504 5.8252	+0.3634 3.2829
NOV.12 (OH) (2449668.7)	X:	- 4.9284	+ 0.91899	+172.5436 4.761891	+ 0.57444 5.6183	+2.7497 3.5239
A NOV.23 (OH)	Y:	- 1.3089	+ 0.06337	+ 29.8633 0.657173	+ 0.02033 5.4378	+0.4746 5.6175
NOV.23 (OH) (2449679.7)	X:	- 5.7424	+ 1.11948	+179.0002 2.774622	+ 1.21993 5.6928	+2.7321 5.5819
A DEC. 4 (OH)	Y:	- 0.9779	+ 0.00604	+ 29.3645 4.972262	+ 0.13868 1.4555	+0.4276 1.5275
DEC. 1 (OH) (2449687.7)	X:	+ 8.0481	- 1.22802	+177.1228 5.919373	+ 1.30903 2.5894	+2.1362 5.9741
A DEC.12 (OH)	Y:	- 1.4195	+ 0.03035	+ 28.8064 1.842075	+ 0.16793 4.7048	+0.3684 1.8117
DEC.12 (OH) (2449698.7)	X:	+ 8.6944	- 1.38979	+174.9564 4.041428	+ 1.36350 2.3177	+2.9434 1.8648
A DEC.23 (OH)	Y:	- 1.8971	+ 0.13990	+ 27.2176 6.227207	+ 0.07983 4.1511	+0.4467 4.1219
DEC.23 (OH) (2449709.7)	X:	+ 7.2083	- 1.15600	+160.0617 2.046923	+ 0.68419 2.5324	+2.0854 4.0009
A JAN. 3 (OH)	Y:	- 1.8411	+ 0.14581	+ 25.2510 4.232353	+ 0.16534 0.1144	+0.3491 6.2762

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DU SATELLITE 7 DE SATURNE: HYPERION N=0.394

		A0	A1	B0 F0	B1 F1	C0 P0
JAN. 1 (OH)	X:	+28.2621	- 6.63290	+161.3736	+ 8.51380	+2.9004
(2449353.7)				1.219609	5.6573	6.0210
A JAN. 9 (OH)	Y:	+ 0.4776	- 0.58792	+ 35.2171	+ 2.02398	+0.6624
				3.388876	1.6365	1.9069
JAN. 9 (OH)	X:	-51.6862	+ 2.68136	+172.4593	+13.19368	+0.5208
(2449361.7)				3.670798	1.6518	1.1970
A JAN.17 (OH)	Y:	+ 4.8564	+ 0.76850	+ 34.2072	+ 2.55843	+0.0740
				5.609475	3.8135	3.5042
JAN.17 (OH)	X:	-26.4596	+ 9.01534	+134.6563	+ 9.57825	+0.6357
(2449369.7)				6.131107	4.7736	1.8283
A JAN.25 (OH)	Y:	+14.9966	- 2.26407	+ 24.6692	+ 1.15798	+0.2770
				1.719722	0.3184	4.0694
JAN.25 (OH)	X:	+19.3348	-11.88958	+135.5873	+ 4.95848	+1.8171
(2449377.7)				2.041691	0.1242	2.1210
A FEV. 2 (OH)	Y:	- 7.6863	+ 1.84773	+ 30.4433	+ 1.49666	+0.1996
				3.989248	1.7054	4.2580
FEV. 1 (OH)	X:	-51.9590	+ 4.04463	+159.7584	+12.62906	+0.4948
(2449384.7)				4.169235	2.2531	2.0556
A FEV. 9 (OH)	Y:	+ 6.3294	+ 0.43442	+ 30.2342	+ 2.40837	+0.0974
				0.080047	4.4631	4.4840
FEV. 9 (OH)	X:	+18.3451	- 0.41260	+160.2568	+ 8.92089	+2.3412
(2449392.7)				0.146946	4.6965	3.6329
A FEV.17 (OH)	Y:	+ 8.8797	- 1.85852	+ 23.6571	+ 1.08021	+0.3080
				2.339503	0.8894	5.6304
FEV.17 (OH)	X:	-27.1606	- 3.88172	+167.4282	+10.38240	+0.5308
(2449400.7)				2.594506	0.5352	2.7371
A FEV.25 (OH)	Y:	- 3.3206	+ 1.57025	+ 26.4306	+ 1.44489	+0.1404
				4.647901	2.4397	5.7248
FEV.25 (OH)	X:	-48.2565	+ 6.30110	+143.0455	+11.07502	+0.1207
(2449408.7)				4.969504	3.2811	4.6089
A MAR. 5 (OH)	Y:	+ 8.0403	- 0.10048	+ 25.9661	+ 2.07254	+0.0474
				0.890083	5.4340	5.6322
MAR. 1 (OH)	X:	-16.2228	+ 6.93288	+140.4947	+ 8.99244	+1.0467
(2449412.7)				6.184369	4.7695	2.7373
A MAR. 9 (OH)	Y:	+11.6468	- 2.05285	+ 19.2540	+ 0.77188	+0.2514
				1.932088	0.6696	4.4978
MAR. 9 (OH)	X:	+ 2.7527	- 9.49142	+146.2507	+ 6.79349	+1.4040
(2449420.7)				2.178169	0.1873	2.3886
A MAR.17 (OH)	Y:	- 5.7284	+ 1.67262	+ 23.9682	+ 1.19698	+0.1621
				4.206536	1.8723	5.1065
MAR.17 (OH)	X:	-51.7206	+ 5.01125	+151.8767	+12.06093	+0.3018
(2449428.7)				4.575279	2.7893	3.0040
A MAR.25 (OH)	Y:	+ 6.3933	+ 0.10925	+ 24.0178	+ 1.94634	+0.0682
				0.578923	5.0626	5.2787
MAR.25 (OH)	X:	+28.1310	- 4.63890	+168.0330	+ 9.20656	+3.0732
(2449436.7)				0.507467	4.9024	4.6830
A AVR. 2 (OH)	Y:	+ 1.4311	- 0.46931	+ 23.8075	+ 1.32678	+0.4442
				2.856687	1.0465	0.7648
AVR. 1 (OH)	X:	-37.7910	- 2.10168	+176.4403	+11.97058	+0.0913
(2449443.7)				2.710535	0.6435	2.4610
A AVR. 9 (OH)	Y:	- 0.4869	+ 0.98008	+ 22.4660	+ 1.37637	+0.0619
				4.950876	2.8315	6.1257
AVR. 9 (OH)	X:	-52.3833	+ 7.38418	+141.8612	+10.59888	+0.2893
(2449451.7)				5.079084	3.4843	6.1510
A AVR.17 (OH)	Y:	+ 7.2046	- 0.28402	+ 20.9571	+ 1.60639	+0.0084
				1.099492	5.7026	4.7008
AVR.17 (OH)	X:	+25.5512	- 6.27841	+164.6901	+ 8.59958	+2.8409
(2449459.7)				1.050446	5.4886	6.0774
A AVR.25 (OH)	Y:	+ 0.1147	- 0.31318	+ 21.7100	+ 1.22654	+0.4092
				3.486887	1.7508	2.2302
AVR.25 (OH)	X:	-54.4175	+ 1.75539	+176.9021	+13.83389	+0.5684
(2449467.7)				3.526805	1.5520	1.3033
A MAI 3 (OH)	Y:	+ 3.4771	+ 0.39762	+ 21.3234	+ 1.62661	+0.0527
				5.919166	3.9570	3.8003

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DU SATELLITE 7 DE SATURNE: HYPERION N=0.394

		A0	A1	B0 F0	B1 F1	C0 P0
MAI 1 (0H)	X:	-56.3498	+ 9.58151	+136.4195	+ 9.57199	+0.7153
(2449473.7)				5.298346	3.8552	0.4273
A MAI 9 (0H)	Y:	+ 7.7385	- 0.63098	+ 18.5324	+ 1.27824	+0.0652
				1.319410	5.9974	3.5428
MAI 9 (0H)	X:	+35.6028	-10.58242	+158.3637	+ 6.69273	+2.1308
(2449481.7)				1.199510	5.5062	0.5075
A MAI 17 (0H)	Y:	- 1.9888	+ 0.22771	+ 20.7318	+ 1.08814	+0.3140
				3.682383	1.8083	2.7888
MAI 17 (0H)	X:	-57.9554	+ 2.52406	+178.9650	+14.25687	+0.6021
(2449489.7)				3.745666	1.8169	1.6758
A MAI 25 (0H)	Y:	+ 4.2228	+ 0.27055	+ 20.2638	+ 1.60732	+0.0635
				6.193722	4.2818	4.3069
MAI 25 (0H)	X:	-15.5857	+ 6.30590	+159.9678	+ 9.25544	+1.7995
(2449497.7)				6.100934	4.6282	2.9890
A JUN. 2 (0H)	Y:	+ 7.3002	- 1.47054	+ 15.0375	+ 0.64432	+0.1978
				2.153335	0.9139	5.0174
JUN. 1 (0H)	X:	+22.3898	-13.49797	+152.6799	+ 5.70820	+1.6045
(2449504.7)				1.769350	5.9575	2.1539
A JUN. 9 (0H)	Y:	- 4.9266	+ 1.39261	+ 19.0262	+ 0.93294	+0.1296
				4.061534	1.7410	4.7442
JUN. 9 (0H)	X:	-60.9317	+ 4.22006	+175.9976	+14.17555	+0.4526
(2449512.7)				4.264011	2.4527	2.6197
A JUN.17 (0H)	Y:	+ 5.6149	+ 0.02324	+ 19.7670	+ 1.63508	+0.0651
				0.441222	4.9159	5.1831
JUN.17 (0H)	X:	+25.3525	- 3.76595	+194.4586	+10.71461	+3.7208
(2449520.7)				0.202659	4.5964	4.1958
A JUN.25 (0H)	Y:	+ 1.1985	- 0.41760	+ 20.2403	+ 1.13807	+0.3842
				2.706081	0.9398	0.4330
JUN.25 (0H)	X:	-46.6076	- 1.89010	+202.4119	+14.26206	+0.1461
(2449528.7)				2.721006	0.6614	0.2348
A JUL. 3 (0H)	Y:	+ 0.9535	+ 0.80280	+ 20.3616	+ 1.36123	+0.0185
				5.121292	3.0679	0.0679
JUL. 1 (0H)	X:	-62.5046	+ 4.97540	+178.1487	+14.27465	+0.3284
(2449534.7)				4.500513	2.7547	3.2091
A JUL. 9 (0H)	Y:	+ 6.3659	- 0.08760	+ 20.2554	+ 1.69429	+0.0595
				0.650826	5.1857	5.6494
JUL. 9 (0H)	X:	+21.2438	- 3.59662	+198.8210	+11.10329	+3.9181
(2449542.7)				0.483695	4.9270	4.8636
A JUL.17 (0H)	Y:	+ 0.2239	- 0.27811	+ 21.8147	+ 1.27219	+0.4369
				2.929192	1.1545	1.0041
JUL.17 (0H)	X:	-55.1872	- 0.46305	+209.4145	+15.51707	+0.4376
(2449550.7)				2.969316	0.9297	0.4669
A JUL.25 (0H)	Y:	+ 2.2900	+ 0.70098	+ 22.0561	+ 1.59939	+0.0232
				5.355909	3.3492	3.1535
JUL.25 (0H)	X:	-71.0712	+12.25690	+150.4079	+10.02290	+1.1743
(2449558.7)				5.333803	4.0020	0.6052
A AOU. 2 (0H)	Y:	+ 9.1702	- 0.92242	+ 19.6488	+ 1.32982	+0.1060
				1.318912	6.0820	3.4154
AOU. 1 (0H)	X:	+28.4212	- 7.47267	+193.9253	+ 9.62417	+3.3679
(2449565.7)				1.013906	5.4345	6.2449
A AOU. 9 (0H)	Y:	- 0.7374	- 0.22916	+ 23.4607	+ 1.35770	+0.4622
				3.467081	1.7711	2.3534
AOU. 9 (0H)	X:	-63.5472	+ 1.49976	+206.8644	+16.35143	+0.6906
(2449573.7)				3.522934	1.5623	1.3600
A AOU.17 (0H)	Y:	+ 4.6399	+ 0.48867	+ 24.2843	+ 1.94709	+0.0796
				5.871622	3.9538	4.0538
AOU.17 (0H)	X:	-47.8277	+12.29555	+159.2242	+ 9.72648	+1.4883
(2449581.7)				5.922841	4.6866	2.1165
A AOU.25 (0H)	Y:	+11.7909	- 2.10327	+ 17.9994	+ 0.68157	+0.2947
				1.698479	0.5559	4.2126
AOU.25 (0H)	X:	+14.5511	-13.69497	+176.0987	+ 7.25908	+1.9399
(2449589.7)				1.870010	6.0273	2.3709
A SEP. 2 (0H)	Y:	- 7.0902	+ 1.93114	+ 25.3566	+ 1.33510	+0.1588
				3.977111	1.6572	4.9495

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		A0	A1	B0 F0	B1 F1	C0 P0
SEP. 1 (OH) (2449596.7)	X:	-68.0964	+ 3.53771	+198.1190 4.055844	+16.05424 2.1897	+0.6264 2.2009
A SEP. 9 (OH)	Y:	+ 6.7763	+ 0.24661	+ 26.5559 0.066165	+ 2.23546 4.5164	+0.1044 4.7813
SEP. 9 (OH) (2449604.7)	X:	+17.0050	- 1.44304	+207.8440 0.001016	+11.22782 4.4337	+3.9876 3.7136
A SEP.17 (OH)	Y:	+ 6.0834	- 1.42602	+ 24.3563 2.294386	+ 1.18006 0.7224	+0.4341 5.9375
SEP.17 (OH) (2449612.7)	X:	-39.3183	- 4.12350	+211.9465 2.500040	+14.00485 0.4035	+0.2570 3.3565
A SEP.25 (OH)	Y:	- 2.5656	+ 1.56165	+ 27.3597 4.630710	+ 1.66890 2.4854	+0.0983 5.9891
SEP.25 (OH) (2449620.7)	X:	-69.0685	+ 7.23264	+175.4697 4.870472	+13.53264 3.2278	+0.2071 5.5712
A OCT. 3 (OH)	Y:	+ 8.8532	- 0.08723	+ 27.5392 0.828622	+ 2.30066 5.4565	+0.0563 0.1214
OCT. 1 (OH) (2449626.7)	X:	+25.3577	- 4.07497	+208.4130 0.211306	+11.46363 4.5637	+4.3182 4.2222
A OCT. 9 (OH)	Y:	+ 3.1571	- 0.84872	+ 28.9380 2.497841	+ 1.60016 0.7348	+0.6048 0.2325
OCT. 9 (OH) (2449634.7)	X:	-49.5226	- 1.96197	+211.8244 2.736310	+15.13391 0.6444	+0.2708 5.9590
A OCT.17 (OH)	Y:	- 0.5402	+ 1.27413	+ 29.2335 4.890964	+ 1.95876 2.7986	+0.0456 0.4788
OCT.17 (OH) (2449642.7)	X:	-71.4098	+ 9.38239	+160.2324 5.085640	+11.68097 3.5494	+0.6122 0.1393
A OCT.25 (OH)	Y:	+ 9.8406	- 0.28237	+ 27.7768 1.002520	+ 2.21470 5.6727	+0.0198 1.7708
OCT.25 (OH) (2449650.7)	X:	+29.2492	- 7.67281	+185.4278 1.049007	+ 9.01304 5.4382	+3.3162 0.0866
A NOV. 2 (OH)	Y:	+ 0.8103	- 0.77000	+ 29.0456 3.392392	+ 1.63806 1.7358	+0.6249 2.3639
NOV. 1 (OH) (2449657.7)	X:	-57.5037	- 0.08271	+199.4086 3.265181	+15.58668 1.2443	+0.6434 0.8641
A NOV. 9 (OH)	Y:	+ 2.4420	+ 0.89567	+ 29.2293 5.459713	+ 2.21490 3.4590	+0.0650 3.0829
NOV. 9 (OH) (2449665.7)	X:	-70.6684	+14.35963	+132.7021 5.635238	+ 8.84749 4.4855	+1.4375 1.0070
A NOV.17 (OH)	Y:	+13.7627	- 1.63809	+ 23.6341 1.326352	+ 1.22632 6.1292	+0.2719 3.7122
NOV.17 (OH) (2449673.7)	X:	+41.7201	-16.01080	+151.1721 1.434699	+ 4.96436 5.3414	+2.1591 1.8740
A NOV.25 (OH)	Y:	- 6.7784	+ 1.21668	+ 29.4715 3.643836	+ 1.51842 1.4269	+0.2393 3.6421
NOV.25 (OH) (2449681.7)	X:	-65.4590	+ 3.08236	+178.1549 4.023576	+14.75512 2.1382	+0.6579 2.1120
A DEC. 3 (OH)	Y:	+ 5.3179	+ 0.53052	+ 27.1025 0.001351	+ 2.25955 4.4280	+0.1023 4.6305
DEC. 1 (OH) (2449687.7)	X:	-58.4589	+13.48983	+131.6820 5.830860	+ 8.50371 4.6899	+1.3767 1.5995
A DEC. 9 (OH)	Y:	+14.2121	- 2.12637	+ 20.2632 1.466061	+ 0.71298 0.0848	+0.3458 4.0069
DEC. 9 (OH) (2449695.7)	X:	+26.0052	-14.28307	+148.5404 1.676953	+ 5.57270 5.6834	+1.9520 2.2943
A DEC.17 (OH)	Y:	- 7.3994	+ 1.62937	+ 26.8464 3.789923	+ 1.46861 1.4175	+0.1724 4.6842
DEC.17 (OH) (2449703.7)	X:	-64.9386	+ 3.61893	+167.8071 4.184857	+13.98528 2.3442	+0.5601 2.4441
A DEC.25 (OH)	Y:	+ 5.3551	+ 0.42318	+ 24.6566 0.204229	+ 2.07513 4.6655	+0.0911 4.9518
DEC.25 (OH) (2449711.7)	X:	+19.4909	- 2.81845	+183.1224 0.079429	+10.35933 4.4271	+3.9553 4.0145
A JAN. 2 (OH)	Y:	+ 4.1517	- 0.87486	+ 23.7525 2.414085	+ 1.26208 0.6131	+0.5137 0.0839

1994 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 8 DE SATURNE: JAPET N=0.079

		A0	A1	B0 F0	C0 P0
JAN. 1 (0H) (2449353.9)	X:	+ 8.1329	- 1.52723	+472.8581 0.368168	+ 9.5423 1.1972
A JAN.17 (0H)	Y:	+ 9.4676	- 0.95678	+ 40.7414 6.100542	+ 3.0122 2.6038
JAN.17 (0H) (2449369.9)	X:	+22.3114	- 2.62352	+421.7348 1.600599	+11.3750 2.5278
A FEV. 2 (0H)	Y:	-10.4287	+ 1.48455	+ 43.9471 1.821808	+ 4.8573 4.9013
FEV. 1 (0H) (2449384.9)	X:	+10.3984	- 2.50089	+413.6075 2.868974	+ 4.0545 5.4521
A FEV.17 (0H)	Y:	+ 9.0126	- 1.69827	+ 10.3788 1.328419	+ 2.7298 1.6677
FEV.17 (0H) (2449400.9)	X:	-12.1280	- 1.28305	+447.6501 4.111489	+10.8523 1.0992
A MAR. 5 (0H)	Y:	-14.2043	+ 0.43063	+ 37.4700 3.157934	+ 0.5456 3.7362
MAR. 1 (0H) (2449412.9)	X:	-36.9099	+ 2.78410	+417.6058 4.918163	+ 3.1775 3.5271
A MAR.17 (0H)	Y:	- 8.7833	+ 0.68545	+ 38.2475 4.124989	+ 1.2802 2.7727
MAR.17 (0H) (2449428.9)	X:	-14.1240	+ 2.27534	+418.7582 6.250710	+ 8.9026 5.2856
A AVR. 2 (0H)	Y:	+ 9.8301	- 0.10349	+ 52.6981 5.449058	+ 0.5093 1.6281
AVR. 1 (0H) (2449443.9)	X:	+ 1.2981	- 0.02394	+456.2306 1.105206	+ 2.6392 1.9765
A AVR.17 (0H)	Y:	+26.9391	- 2.76088	+ 86.7947 6.206455	+ 6.0858 1.9183
AVR.17 (0H) (2449459.9)	X:	- 9.0041	- 1.11377	+455.6873 2.326738	+ 5.8972 4.5932
A MAI 3 (0H)	Y:	- 8.7850	+ 0.82228	+ 71.5452 1.812858	+ 3.3518 4.9032
MAI 1 (0H) (2449473.9)	X:	-33.8348	+ 1.02625	+484.5278 3.387644	+ 8.2486 6.2096
A MAI 17 (0H)	Y:	- 4.4498	+ 0.44742	+ 71.9162 2.771192	+ 3.2373 6.1064
MAI 17 (0H) (2449489.9)	X:	-18.9605	+ 1.70373	+482.2833 4.632857	+ 7.3389 2.5801
A JUN. 2 (0H)	Y:	+13.1079	- 1.69591	+ 72.8430 4.449566	+ 6.4733 1.8669
JUN. 1 (0H) (2449504.9)	X:	- 6.8990	+ 1.22022	+485.1750 5.862890	+12.1403 4.6097
A JUN.17 (0H)	Y:	-11.3841	+ 1.78316	+ 46.2544 4.888550	+ 5.1701 4.7189
JUN.17 (0H) (2449520.9)	X:	- 8.7560	- 0.46564	+526.8147 0.836181	+ 3.6566 0.5674
A JUL. 3 (0H)	Y:	+15.9260	- 1.28475	+ 86.5157 6.240711	+ 3.6807 1.0121

1994 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 8 DE SATURNE: JAPET N=0.079

		A0	A1	B0 F0	C0 P0
JUL. 1 (OH)	X:	-43.4616	+ 2.11849	+573.9673	+ 7.5525
(2449534.9)				1.975569	4.3786
A JUL.17 (OH)	Y:	+10.3341	- 1.40645	+ 70.7556	+ 3.9863
				0.990027	1.9013
JUL.17 (OH)	X:	-43.2185	+ 3.13593	+583.2002	+ 7.4920
(2449550.9)				3.164126	5.5611
A AOU. 2 (OH)	Y:	-22.5670	+ 3.15911	+129.2876	+ 7.4891
				2.583463	5.0652
AOU. 1 (OH)	X:	-10.1714	+ 1.07909	+553.4578	+ 8.5562
(2449565.9)				4.405849	2.6587
A AOU.17 (OH)	Y:	+ 5.3647	+ 0.35492	+ 82.2913	+ 1.2589
				3.786148	6.2078
AOU.17 (OH)	X:	-23.1959	+ 0.73938	+546.4326	+15.9875
(2449581.9)				5.745080	4.5808
A SEP. 2 (OH)	Y:	- 0.3873	- 0.50202	+ 74.5210	+ 2.0469
				5.256148	4.0774
SEP. 1 (OH)	X:	-25.3424	- 0.48695	+578.0189	+ 9.6304
(2449596.9)				0.641145	0.7760
A SEP.17 (OH)	Y:	-28.5737	+ 2.97419	+ 46.3827	+ 7.5474
				0.996001	5.3145
SEP.17 (OH)	X:	-41.0056	+ 2.98021	+603.5898	+ 9.0130
(2449612.9)				1.971586	3.5327
A OCT. 3 (OH)	Y:	+ 7.3096	- 0.76135	+ 55.2767	+ 3.8267
				1.195619	1.9041
OCT. 1 (OH)	X:	+24.5238	- 3.17048	+505.5417	+ 3.1393
(2449626.9)				3.126555	2.1800
A OCT.17 (OH)	Y:	+ 7.7198	- 0.94520	+ 42.3637	+ 2.6239
				2.478874	2.8331
OCT.17 (OH)	X:	+19.4778	- 3.92994	+557.6403	+11.5024
(2449642.9)				4.454581	1.9196
A NOV. 2 (OH)	Y:	-17.0803	+ 2.35171	+ 78.2967	+ 6.4410
				3.276309	5.0769
NOV. 1 (OH)	X:	+ 9.0000	- 4.59146	+603.2762	+ 6.0399
(2449657.9)				5.563133	2.3670
A NOV.17 (OH)	Y:	+ 9.9391	- 1.22726	+ 71.8364	+ 2.7270
				5.173600	1.7850
NOV.17 (OH)	X:	+ 1.9496	- 2.24245	+531.1869	+14.6350
(2449673.9)				0.439012	1.2954
A DEC. 3 (OH)	Y:	- 9.6560	+ 0.77164	+ 46.0458	+ 1.8655
				0.224640	4.3682
DEC. 1 (OH)	X:	+10.3192	- 0.85086	+479.1259	+11.6177
(2449687.9)				1.598020	2.4875
A DEC.17 (OH)	Y:	-15.3889	+ 1.98008	+ 66.3842	+ 4.5405
				1.587734	4.7542
DEC.17 (OH)	X:	+22.4206	- 2.42703	+448.9792	+ 3.8666
(2449703.9)				2.919915	5.2597
A JAN. 2 (OH)	Y:	+15.0772	- 2.06896	+ 21.4232	+ 3.4517
				1.818901	1.9215

SATELLITES D'URANUS

SATELLITES OF URANUS

DONNÉES SUR LES SATELLITES D'URANUS

DATA ON THE SATELLITES OF URANUS

NOM	masse	rayon	période rotation sidérale	albédo géométrique	magnitude visuelle	période orbitale	élongation maximale	1/2 grand axe	excentricité	inclinaison sur l'équateur d'Uranus
unité →	masse d'Uranus	km	jour			jour	(")	10^3 km		degré
I Ariel	1.49×10^{-5}	580		0.40	14.4	2.520 379 05	14	190.945	0.001 78	0.071
II Umbriel	1.45×10^{-5}	595		0.19	15.3	4.144 176 46	20	265.998	0.004 33	0.128
III Titania	3.97×10^{-5}	805		0.28	14.0	8.705 866 94	33	436.298	0.002 15	0.047
IV Oberon	3.45×10^{-5}	775	(S)	0.24	14.2	13.463 234 20	44	583.519	0.001 56	0.117
V Miranda	0.075×10^{-5}	242		0.34	16.5	1.413 479 41	10	129.872	0.001 52	4.339
NAME	*mass*	*radius*	*sidereal rotation*	*geometrical albedo*	*visual magnitude*	*orbital period*	*greatest elongation*	*semi major axis*	*eccentricity*	*inclination on Uranus' equator*
unit →	*Uranus' mass*	*km*	*day*			*day*	*(")*	*10^3 km*		*degree*

NOTES

(S) : rotation synchrone

Données extraites de *Science* (vol. 233, 1986, p. 41) pour les valeurs des rayons et des albédos, et de *Astronomy and Astrophysics* (vol. 188, 1987, p. 212 : GUST86, J. Laskar et R.A. Jacobson) pour les autres données.

(S) synchronous rotation

Data from Science (vol. 233, 1986, p. 41) for the values of the radii and the albedoes, and from Astronomy and Astrophysics (vol. 188, 1987, p. 212 : GUST86, J. Laskar and R.A. Jacobson) for the other data.

ÉPHÉMÉRIDES DES CINQ PREMIERS SATELLITES D'URANUS

EPHEMERIDES OF THE FIRST FIVE SATELLITES OF URANUS

Coordonnées différentielles tangentielles données en secondes de degré dans le repère équatorial moyen J2000. On a, au premier ordre :

Differential tangential coordinates given in arcsecond in the mean equatorial frame J2000. We have, at the first order :

$$\Delta\alpha \cos\delta = X$$
$$\Delta\delta = Y$$

$$\left.\begin{matrix} X \\ Y \end{matrix}\right\} = A0 + A1 \cdot t + B0 \sin(Nt + F0) + B1 \cdot t \sin(Nt + F1) + B2 \cdot t^2 \sin(Nt + F2) + C0 \sin(2Nt + P0)$$

où $t = T - T0$ avec $T0$ date du début de l'intervalle et T date du calcul

where $t = T - T0$ with $T0$ date of the beginning of the interval and T the date for the calculation

satellite	intervalle Δt (jours)	N (rad/j)	page
Miranda	9	4.488 0	84
Ariel	31	2.493 0	87
Umbriel	27	1.516 2	88
Titania	17	0.721 7	89
Obéron	22	0.466 7	91
	(days)	*(rad/d)*	

1994 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 5 D'URANUS: MIRANDA N=4.4880

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
JAN. 1 (0H)	X:	-0.0059	-0.00014	+ 6.9517	+0.30659	+0.006463	+0.0043
(2449353.5)				0.715017	5.4036	3.6220	0.5013
A JAN.10 (0H)	Y:	-0.0160	+0.00041	+ 8.6919	+0.38052	+0.007999	+0.0052
				2.296026	0.7188	5.2335	2.2018
JAN.10 (0H)	X:	-0.0037	-0.00052	+ 6.9000	+0.30397	+0.006497	+0.0035
(2449362.5)				3.016715	1.4270	5.9284	5.0683
A JAN.19 (0H)	Y:	-0.0149	+0.00008	+ 8.6836	+0.38029	+0.008000	+0.0063
				4.601004	3.0264	1.2497	0.5021
JAN.19 (0H)	X:	-0.0061	+0.00007	+ 6.8565	+0.30122	+0.006322	+0.0038
(2449371.5)				5.318935	3.7293	1.9583	3.4698
A JAN.28 (0H)	Y:	-0.0112	-0.00059	+ 8.6823	+0.37876	+0.008048	+0.0057
				0.623084	5.3371	3.5769	5.0595
JAN.28 (0H)	X:	-0.0077	+0.00033	+ 6.8198	+0.29974	+0.006294	+0.0038
(2449380.5)				1.338762	6.0356	4.2553	1.6002
A FEV. 6 (0H)	Y:	-0.0123	-0.00021	+ 8.6939	+0.37934	+0.007946	+0.0059
				2.929254	1.3603	5.8746	3.3744
FEV. 6 (0H)	X:	-0.0072	+0.00013	+ 6.7898	+0.29785	+0.006409	+0.0042
(2449389.5)				3.642241	2.0642	0.2890	0.2864
A FEV.15 (0H)	Y:	-0.0166	+0.00064	+ 8.7141	+0.37844	+0.007903	+0.0053
				5.235899	3.6691	1.9196	1.5501
FEV.15 (0H)	X:	-0.0050	-0.00032	+ 6.7726	+0.29640	+0.006180	+0.0041
(2449398.5)				5.946472	4.3665	2.5966	4.7061
A FEV.24 (0H)	Y:	-0.0150	+0.00015	+ 8.7417	+0.37922	+0.007919	+0.0053
				1.260206	5.9796	4.2293	0.0151
FEV.24 (0H)	X:	-0.0042	-0.00039	+ 6.7629	+0.29551	+0.006183	+0.0048
(2449407.5)				1.965303	0.3926	4.9062	3.1422
A MAR. 5 (0H)	Y:	-0.0120	-0.00046	+ 8.7765	+0.38103	+0.008097	+0.0045
				3.568359	2.0105	0.2482	4.5244
MAR. 5 (0H)	X:	-0.0077	+0.00036	+ 6.7616	+0.29459	+0.006202	+0.0045
(2449416.5)				4.274008	2.7035	0.9423	1.3263
A MAR.14 (0H)	Y:	-0.0119	-0.00034	+ 8.8226	+0.38067	+0.007991	+0.0048
				5.876823	4.3191	2.5846	3.0090
MAR.14 (0H)	X:	-0.0082	+0.00035	+ 6.7707	+0.29495	+0.006148	+0.0044
(2449425.5)				0.297546	5.0123	3.2450	5.9937
A MAR.23 (0H)	Y:	-0.0141	+0.00014	+ 8.8752	+0.38388	+0.008000	+0.0051
				1.903267	0.3460	4.8780	1.2973
MAR.23 (0H)	X:	-0.0055	-0.00029	+ 6.7882	+0.29375	+0.006194	+0.0043
(2449434.5)				2.604652	1.0423	5.5852	4.1212
A AVR. 1 (0H)	Y:	-0.0166	+0.00057	+ 8.9316	+0.38625	+0.008166	+0.0054
				4.213066	2.6604	0.9055	6.0880
AVR. 1 (0H)	X:	-0.0051	-0.00031	+ 6.8164	+0.29514	+0.006148	+0.0040
(2449443.5)				4.913124	3.3519	1.6005	2.6104
A AVR.10 (0H)	Y:	-0.0136	-0.00018	+ 8.9969	+0.38762	+0.008061	+0.0058
				0.239992	4.9683	3.2302	4.1999
AVR.10 (0H)	X:	-0.0063	+0.00001	+ 6.8508	+0.29709	+0.006236	+0.0037
(2449452.5)				0.939186	5.6663	3.9002	0.8340
A AVR.19 (0H)	Y:	-0.0105	-0.00074	+ 9.0630	+0.39014	+0.008233	+0.0063
				2.550481	0.9991	5.5454	2.6596
AVR.19 (0H)	X:	-0.0087	+0.00041	+ 6.8952	+0.29685	+0.006234	+0.0037
(2449461.5)				3.248614	1.6956	6.2436	5.5821
A AVR.28 (0H)	Y:	-0.0137	+0.00009	+ 9.1329	+0.39281	+0.008260	+0.0063
				4.861219	3.3093	1.5729	0.8454
AVR.28 (0H)	X:	-0.0081	+0.00015	+ 6.9479	+0.29947	+0.006217	+0.0041
(2449470.5)				5.559384	4.0063	2.2612	3.9157
A MAI 7 (0H)	Y:	-0.0159	+0.00047	+ 9.2029	+0.39698	+0.008323	+0.0057
				0.889327	5.6193	3.8687	5.4888

1994 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 5 D'URANUS: MIRANDA N=4.4880

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
MAI 7 (OH)	X:	-0.0050	-0.00052	+ 7.0044	+0.30141	+0.006275	+0.0041
(2449479.5)				1.587194	0.0371	4.5794	2.3669
A MAI 16 (OH)	Y:	-0.0149	+0.00011	+ 9.2694	+0.39868	+0.008559	+0.0060
				3.200110	1.6511	6.1969	3.6811
MAI 16 (OH)	X:	-0.0063	-0.00013	+ 7.0673	+0.30330	+0.006326	+0.0048
(2449488.5)				3.898686	2.3495	0.6177	0.5685
A MAI 25 (OH)	Y:	-0.0124	-0.00042	+ 9.3394	+0.40227	+0.008439	+0.0053
				5.511288	3.9561	2.2090	2.1397
MAI 25 (OH)	X:	-0.0092	+0.00044	+ 7.1308	+0.30606	+0.006516	+0.0048
(2449497.5)				6.210576	4.6658	2.9317	5.2300
A JUN. 3 (OH)	Y:	-0.0110	-0.00053	+ 9.4012	+0.40592	+0.008501	+0.0050
				1.539294	6.2653	4.5090	0.4319
JUN. 3 (OH)	X:	-0.0091	+0.00022	+ 7.1982	+0.30849	+0.006493	+0.0050
(2449506.5)				2.239368	0.6925	5.2457	3.4943
A JUN.12 (OH)	Y:	-0.0154	+0.00045	+ 9.4562	+0.40718	+0.008624	+0.0050
				3.849773	2.2926	0.5494	5.0953
JUN.12 (OH)	X:	-0.0076	-0.00016	+ 7.2651	+0.31252	+0.006557	+0.0045
(2449515.5)				4.551983	3.0024	1.2548	1.7467
A JUN.21 (OH)	Y:	-0.0167	+0.00055	+ 9.5059	+0.41011	+0.008676	+0.0057
				6.160432	4.5996	2.8495	3.5134
JUN.21 (OH)	X:	-0.0060	-0.00041	+ 7.3261	+0.31503	+0.006729	+0.0047
(2449524.5)				0.580794	5.3166	3.5725	0.0595
A JUN.30 (OH)	Y:	-0.0124	-0.00041	+ 9.5441	+0.41122	+0.008688	+0.0056
				2.187280	0.6238	5.1684	1.8591
JUN.30 (OH)	X:	-0.0083	+0.00011	+ 7.3868	+0.31766	+0.006670	+0.0042
(2449533.5)				2.892622	1.3391	5.8770	4.7083
A JUL. 9 (OH)	Y:	-0.0115	-0.00043	+ 9.5731	+0.41372	+0.008787	+0.0064
				4.497158	2.9309	1.1759	0.1651
JUL. 9 (OH)	X:	-0.0114	+0.00062	+ 7.4395	+0.32001	+0.006724	+0.0039
(2449542.5)				5.204204	3.6472	1.9074	3.0624
A JUL.18 (OH)	Y:	-0.0133	+0.00009	+ 9.5877	+0.41564	+0.008987	+0.0066
				0.523366	5.2402	3.4753	4.7061
JUL.18 (OH)	X:	-0.0089	-0.00007	+ 7.4819	+0.32218	+0.006811	+0.0042
(2449551.5)				1.231899	5.9559	4.2134	1.3782
A JUL.27 (OH)	Y:	-0.0159	+0.00053	+ 9.5935	+0.41559	+0.008848	+0.0065
				2.831931	1.2596	5.7854	3.0612
JUL.27 (OH)	X:	-0.0068	-0.00044	+ 7.5151	+0.32482	+0.006953	+0.0043
(2449560.5)				3.542388	1.9809	0.2254	6.1566
A AOU. 5 (OH)	Y:	-0.0153	+0.00030	+ 9.5885	+0.41695	+0.008834	+0.0062
				5.140378	3.5626	1.7900	1.2252
AOU. 5 (OH)	X:	-0.0084	-0.00002	+ 7.5373	+0.32524	+0.006968	+0.0046
(2449569.5)				5.851800	4.2863	2.5491	4.4186
A AOU.14 (OH)	Y:	-0.0105	-0.00062	+ 9.5671	+0.41650	+0.008865	+0.0058
				1.164725	5.8682	4.0969	5.8795
AOU.14 (OH)	X:	-0.0104	+0.00033	+ 7.5489	+0.32768	+0.006982	+0.0047
(2449578.5)				1.877567	0.3063	4.8258	2.7814
A AOU.23 (OH)	Y:	-0.0113	-0.00022	+ 9.5364	+0.41573	+0.008809	+0.0055
				3.471604	1.8878	0.1125	4.1850
AOU.23 (OH)	X:	-0.0113	+0.00037	+ 7.5463	+0.32892	+0.007099	+0.0054
(2449587.5)				4.185560	2.6121	0.8375	1.0065
A SEP. 1 (OH)	Y:	-0.0156	+0.00070	+ 9.4950	+0.41326	+0.008837	+0.0046
				5.777724	4.1924	2.4319	2.5431
SEP. 1 (OH)	X:	-0.0082	-0.00030	+ 7.5333	+0.32832	+0.007005	+0.0048
(2449596.5)				0.209135	4.9124	3.1476	5.6514
A SEP.10 (OH)	Y:	-0.0146	+0.00035	+ 9.4439	+0.41224	+0.008733	+0.0055
				1.800291	0.2113	4.7248	0.8767

1994 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 5 D'URANUS: MIRANDA N=4.4880

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
SEP.10 (0H) (2449605.5)	X:	-0.0069	-0.00048	+ 7.5089 2.515148	+0.32822 0.9312	+0.007023 5.4412	+0.0051 3.8129
A SEP.19 (0H)	Y:	-0.0119	-0.00019	+ 9.3838 4.105654	+0.41191 2.5166	+0.008832 0.7246	+0.0050 5.6289
SEP.19 (0H) (2449614.5)	X:	-0.0106	+0.00035	+ 7.4726 4.820167	+0.32703 3.2320	+0.006974 1.4624	+0.0043 2.1325
A SEP.28 (0H)	Y:	-0.0101	-0.00039	+ 9.3192 0.126685	+0.40766 4.8197	+0.008756 3.0522	+0.0059 3.8981
SEP.28 (0H) (2449623.5)	X:	-0.0114	+0.00040	+ 7.4262 0.841347	+0.32649 5.5331	+0.006971 3.7470	+0.0044 0.4702
A OCT. 7 (0H)	Y:	-0.0120	+0.00012	+ 9.2517 2.430830	+0.40642 0.8371	+0.008613 5.3344	+0.0055 2.2033
OCT. 7 (0H) (2449632.5)	X:	-0.0092	-0.00015	+ 7.3707 3.144420	+0.32360 1.5540	+0.007044 6.0641	+0.0035 5.0176
A OCT.16 (0H)	Y:	-0.0155	+0.00081	+ 9.1800 4.734399	+0.40391 3.1409	+0.008596 1.3519	+0.0068 0.5081
OCT.16 (0H) (2449641.5)	X:	-0.0078	-0.00035	+ 7.3111 5.447192	+0.32182 3.8506	+0.006865 2.0716	+0.0042 3.4649
A OCT.25 (0H)	Y:	-0.0122	+0.00002	+ 9.1085 0.754264	+0.40021 5.4425	+0.008462 3.6647	+0.0055 5.0505
OCT.25 (0H) (2449650.5)	X:	-0.0082	-0.00016	+ 7.2444 1.466404	+0.32082 6.1513	+0.006853 4.3461	+0.0037 1.8204
A NOV. 3 (0H)	Y:	-0.0088	-0.00058	+ 9.0355 3.057158	+0.39761 1.4657	+0.008533 5.9658	+0.0062 3.2943
NOV. 3 (0H) (2449659.5)	X:	-0.0112	+0.00044	+ 7.1740 3.767517	+0.31652 2.1697	+0.006813 0.3889	+0.0044 0.2000
A NOV.12 (0H)	Y:	-0.0109	+0.00005	+ 8.9679 5.359760	+0.39387 3.7671	+0.008357 1.9949	+0.0053 1.5343
NOV.12 (0H) (2449668.5)	X:	-0.0108	+0.00024	+ 7.1023 6.068702	+0.31424 4.4683	+0.006705 2.6775	+0.0043 4.6933
A NOV.21 (0H)	Y:	-0.0127	+0.00045	+ 8.9037 1.379605	+0.39247 6.0701	+0.008280 4.2795	+0.0052 6.2179
NOV.21 (0H) (2449677.5)	X:	-0.0071	-0.00053	+ 7.0293 2.086157	+0.31087 0.4857	+0.006625 4.9821	+0.0050 3.1140
A NOV.30 (0H)	Y:	-0.0129	+0.00037	+ 8.8410 3.682157	+0.38910 2.0961	+0.008389 0.3124	+0.0045 4.4205
NOV.30 (0H) (2449686.5)	X:	-0.0078	-0.00023	+ 6.9573 4.386684	+0.30751 2.7858	+0.006542 1.0019	+0.0043 1.2525
A DEC. 9 (0H)	Y:	-0.0098	-0.00027	+ 8.7910 5.985081	+0.38623 4.3964	+0.008136 2.6197	+0.0049 2.9201
DEC. 9 (0H) (2449695.5)	X:	-0.0100	+0.00027	+ 6.8843 0.404199	+0.30529 5.0913	+0.006618 3.2938	+0.0046 5.8554
A DEC.18 (0H)	Y:	-0.0077	-0.00054	+ 8.7459 2.005335	+0.38454 0.4177	+0.008042 4.9197	+0.0048 1.2377
DEC.18 (0H) (2449704.5)	X:	-0.0104	+0.00025	+ 6.8182 2.704503	+0.30125 1.1069	+0.006423 5.6074	+0.0043 4.0836
A DEC.27 (0H)	Y:	-0.0116	+0.00039	+ 8.7070 4.308644	+0.38137 2.7262	+0.008062 0.9586	+0.0052 5.9446
DEC.27 (0H) (2449713.5)	X:	-0.0091	-0.00008	+ 6.7565 5.005516	+0.29905 3.4072	+0.006315 1.6127	+0.0038 2.4482
A JAN. 5 (0H)	Y:	-0.0129	+0.00054	+ 8.6782 0.329691	+0.38040 5.0328	+0.008048 3.2580	+0.0057 4.1520

1994 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 1 D'URANUS: ARIEL N=2.4930

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
JAN. 1 (0H) (2449353.5)	X:	+0.0248	+0.00000	+10.5100 4.554325	+0.01095 1.9509	+0.000073 4.9368	+0.0085 4.2897
A FEV. 1 (0H)	Y:	-0.0023	+0.00007	+12.7638 6.088935	+0.00474 4.0899	+0.000092 0.1231	+0.0105 5.8100
FEV. 1 (0H) (2449384.5)	X:	+0.0253	-0.00003	+10.2846 0.141424	+0.00636 3.9577	+0.000084 0.4642	+0.0091 1.7727
A MAR. 4 (0H)	Y:	-0.0013	+0.00000	+12.7870 1.682199	+0.00418 1.0796	+0.000085 2.0942	+0.0107 3.2618
MAR. 4 (0H) (2449415.5)	X:	+0.0242	+0.00004	+10.2078 2.016694	+0.00204 0.5125	+0.000090 2.3867	+0.0089 5.4856
A AVR. 4 (0H)	Y:	-0.0008	-0.00001	+12.9680 3.563876	+0.00819 3.5125	+0.000063 4.1743	+0.0110 0.8566
AVR. 4 (0H) (2449446.5)	X:	+0.0245	+0.00004	+10.2914 3.898461	+0.00550 3.9141	+0.000073 4.4348	+0.0083 3.0131
A MAI 5 (0H)	Y:	-0.0020	+0.00004	+13.2689 5.450230	+0.01156 5.5859	+0.000018 0.7673	+0.0121 4.5793
MAI 5 (0H) (2449477.5)	X:	+0.0257	+0.00001	+10.5213 5.786868	+0.00974 6.0180	+0.000032 0.3563	+0.0094 0.5956
A JUN. 5 (0H)	Y:	-0.0014	+0.00000	+13.6228 1.056496	+0.01193 1.3153	+0.000051 4.3573	+0.0116 1.9782
JUN. 5 (0H) (2449508.5)	X:	+0.0255	+0.00005	+10.8343 1.397017	+0.01133 1.7147	+0.000044 4.4444	+0.0097 4.2804
A JUL. 6 (0H)	Y:	-0.0017	+0.00002	+13.9310 2.947586	+0.00880 3.2642	+0.000097 6.2096	+0.0119 5.9179
JUL. 6 (0H) (2449539.5)	X:	+0.0265	+0.00000	+11.1248 3.291808	+0.00882 3.7148	+0.000103 0.4498	+0.0094 1.8226
A AOU. 6 (0H)	Y:	-0.0036	+0.00008	+14.0971 4.837544	+0.00279 5.5579	+0.000111 1.9271	+0.0117 3.3444
AOU. 6 (0H) (2449570.5)	X:	+0.0280	-0.00006	+11.2801 5.183835	+0.00261 5.9901	+0.000119 2.4506	+0.0089 5.5319
A SEP. 6 (0H)	Y:	-0.0031	+0.00000	+14.0588 0.441366	+0.00482 3.5361	+0.000093 4.0229	+0.0123 0.8755
SEP. 6 (0H) (2449601.5)	X:	+0.0272	-0.00004	+11.2310 0.786720	+0.00543 4.1687	+0.000087 4.3066	+0.0095 3.1647
A OCT. 7 (0H)	Y:	-0.0027	-0.00001	+13.8297 2.324019	+0.01031 5.6849	+0.000046 6.1522	+0.0109 4.4540
OCT. 7 (0H) (2449632.5)	X:	+0.0268	-0.00007	+10.9910 2.664976	+0.01112 6.1412	+0.000046 0.1261	+0.0092 0.4205
A NOV. 7 (0H)	Y:	-0.0029	-0.00001	+13.4852 4.201465	+0.01254 1.3781	+0.000029 3.2431	+0.0102 2.1384
NOV. 7 (0H) (2449663.5)	X:	+0.0256	-0.00004	+10.6310 4.536853	+0.01389 1.7940	+0.000008 3.5298	+0.0079 4.2613
A DEC. 8 (0H)	Y:	-0.0019	-0.00007	+13.1353 6.075445	+0.01200 3.3998	+0.000065 6.2400	+0.0109 5.7655
DEC. 8 (0H) (2449694.5)	X:	+0.0233	+0.00002	+10.2411 0.121513	+0.01363 3.7115	+0.000041 0.3097	+0.0078 1.6943
A JAN. 8 (0H)	Y:	-0.0023	-0.00001	+12.8658 1.664851	+0.00846 5.4529	+0.000087 2.0018	+0.0101 3.2488

1994 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 2 D'URANUS: UMBRIEL N=1.5162

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
JAN. 1 (0H)	X:	+0.0672	+0.00006	+14.6345	+0.01527	+0.000108	+0.0290
(2449353.5)				3.612013	0.9555	3.7274	3.1729
A JAN.28 (0H)	Y:	+0.0577	+0.00082	+17.7821	+0.00688	+0.000122	+0.0356
				5.148028	3.2241	5.6196	4.7396
JAN.28 (0H)	X:	+0.0672	-0.00080	+14.3486	+0.01008	+0.000119	+0.0286
(2449380.5)				0.554305	4.3462	0.7244	3.4980
A FEV.24 (0H)	Y:	+0.0851	-0.00012	+17.7978	+0.00609	+0.000128	+0.0364
				2.095626	1.2037	2.5658	5.0374
FEV.24 (0H)	X:	+0.0450	+0.00030	+14.2175	+0.00569	+0.000138	+0.0244
(2449407.5)				3.782188	1.8793	4.2416	3.6145
A MAR.23 (0H)	Y:	+0.0765	-0.00073	+17.9811	+0.01054	+0.000078	+0.0314
				5.328935	5.1054	5.7243	5.1916
MAR.23 (0H)	X:	+0.0600	+0.00038	+14.2557	+0.00576	+0.000116	+0.0282
(2449434.5)				0.730216	0.2167	1.3075	3.6981
A AVR.19 (0H)	Y:	+0.0551	+0.00092	+18.3087	+0.01441	+0.000036	+0.0365
				2.281583	2.3091	2.2614	5.2899
AVR.19 (0H)	X:	+0.0693	-0.00062	+14.4636	+0.01053	+0.000084	+0.0304
(2449461.5)				3.966395	3.9828	4.6017	4.0230
A MAI 16 (0H)	Y:	+0.0825	+0.00039	+18.7216	+0.01658	+0.000029	+0.0392
				5.520626	5.6261	2.4194	5.5834
MAI 16 (0H)	X:	+0.0471	+0.00026	+14.7974	+0.01460	+0.000012	+0.0260
(2449488.5)				0.924129	1.1374	2.0991	4.2148
A JUN.12 (0H)	Y:	+0.0867	-0.00089	+19.1463	+0.01509	+0.000093	+0.0335
				2.478162	2.6225	5.6262	5.8010
JUN.12 (0H)	X:	+0.0571	+0.00078	+15.1836	+0.01544	+0.000087	+0.0288
(2449515.5)				4.168459	4.4575	1.0246	4.2832
A JUL. 9 (0H)	Y:	+0.0598	+0.00051	+19.4851	+0.00931	+0.000115	+0.0366
				5.719558	5.8968	2.3443	5.8503
JUL. 9 (0H)	X:	+0.0771	-0.00050	+15.5198	+0.01152	+0.000138	+0.0325
(2449542.5)				1.131088	1.5762	4.5431	4.5814
A AOU. 5 (0H)	Y:	+0.0809	+0.00050	+19.6485	+0.00257	+0.000147	+0.0404
				2.677794	3.3966	5.8433	6.1307
AOU. 5 (0H)	X:	+0.0573	-0.00015	+15.7024	+0.00385	+0.000155	+0.0281
(2449569.5)				4.376250	5.1438	1.5312	4.8464
A SEP. 1 (0H)	Y:	+0.0942	-0.00113	+19.5898	+0.00599	+0.000148	+0.0340
				5.918077	2.5866	3.1415	0.1135
SEP. 1 (0H)	X:	+0.0573	+0.00067	+15.6701	+0.00606	+0.000122	+0.0285
(2449596.5)				1.333916	4.5231	4.7642	4.8850
A SEP.28 (0H)	Y:	+0.0620	+0.00000	+19.3293	+0.01250	+0.000092	+0.0340
				2.872951	6.1439	0.0835	0.1378
SEP.28 (0H)	X:	+0.0799	-0.00051	+15.4239	+0.01318	+0.000088	+0.0322
(2449623.5)				4.569906	1.6037	2.1080	5.1132
A OCT.25 (0H)	Y:	+0.0685	+0.00077	+18.9341	+0.01625	+0.000049	+0.0387
				6.107669	3.1377	4.2294	0.3625
OCT.25 (0H)	X:	+0.0622	-0.00054	+15.0244	+0.01767	+0.000034	+0.0280
(2449650.5)				1.518383	4.9794	5.2544	5.3985
A NOV.21 (0H)	Y:	+0.0882	-0.00078	+18.4990	+0.01728	+0.000085	+0.0337
				3.056921	0.2002	2.7516	0.6627
NOV.21 (0H)	X:	+0.0498	+0.00059	+14.5526	+0.01867	+0.000020	+0.0257
(2449677.5)				4.745190	1.9788	3.7993	5.4355
A DEC.18 (0H)	Y:	+0.0598	-0.00015	+18.1145	+0.01496	+0.000134	+0.0314
				0.003735	3.5705	0.0834	0.6927
DEC.18 (0H)	X:	+0.0692	-0.00017	+14.0952	+0.01797	+0.000069	+0.0291
(2449704.5)				1.686474	5.2802	1.8941	5.6054
A JAN.14 (0H)	Y:	+0.0574	+0.00097	+17.8394	+0.00894	+0.000120	+0.0369
				3.233101	0.7430	3.4174	0.8505

1994 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 3 D'URANUS: TITANIA N=0.7217

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
JAN. 1 (OH) (2449353.5)	X:	-0.0828	+0.00014	+23.9879 4.787673	+0.02617 2.2776	+0.000380 6.0397	+0.0254 1.4963
A JAN.18 (OH)	Y:	+0.0479	-0.00359	+29.1541 0.039031	+0.01575 4.8103	+0.000525 1.9576	+0.0321 3.0344
JAN.18 (OH) (2449370.5)	X:	-0.0924	+0.00178	+23.6602 4.482002	+0.01474 1.4161	+0.000597 3.1411	+0.0248 0.8714
A FEV. 4 (OH)	Y:	+0.0157	+0.00001	+29.1420 6.019562	+0.00396 0.0538	+0.000511 4.7036	+0.0316 2.4048
FEV. 4 (OH) (2449387.5)	X:	-0.0499	-0.00032	+23.4416 4.178347	+0.01436 1.7643	+0.000229 4.6879	+0.0163 0.4225
A FEV.21 (OH)	Y:	+0.0000	+0.00041	+29.2493 5.719291	+0.01078 5.0164	+0.000283 0.2242	+0.0210 1.9401
FEV.21 (OH) (2449404.5)	X:	-0.0495	+0.00166	+23.3182 3.874841	+0.01117 1.9902	+0.000302 5.0464	+0.0161 5.3650
A MAR.10 (OH)	Y:	+0.0429	-0.00023	+29.4393 5.418204	+0.01682 5.4326	+0.000109 4.6391	+0.0193 0.5900
MAR.10 (OH) (2449421.5)	X:	-0.0199	-0.00308	+23.3268 3.572320	+0.00462 0.9320	+0.000634 3.2264	+0.0196 4.8548
A MAR.27 (OH)	Y:	+0.0245	+0.00286	+29.7478 5.120397	+0.02099 5.1914	+0.000352 3.8571	+0.0244 0.1990
MAR.27 (OH) (2449438.5)	X:	-0.0466	-0.00030	+23.4074 3.271817	+0.00953 2.7531	+0.000309 4.0874	+0.0242 4.0416
A AVR.13 (OH)	Y:	+0.0795	-0.00055	+30.1282 4.822012	+0.02361 4.7651	+0.000211 5.9697	+0.0319 5.5924
AVR.13 (OH) (2449455.5)	X:	-0.0824	-0.00005	+23.6066 2.971857	+0.01583 3.1708	+0.000159 2.4962	+0.0327 3.7307
A AVR.30 (OH)	Y:	+0.0681	+0.00070	+30.5546 4.524077	+0.02625 4.6783	+0.000041 3.4953	+0.0427 5.2718
AVR.30 (OH) (2449472.5)	X:	-0.0565	-0.00316	+23.9366 2.677159	+0.01405 2.3183	+0.000607 3.3586	+0.0292 3.3218
A MAI 17 (OH)	Y:	+0.0844	-0.00405	+31.0124 4.229101	+0.02368 4.2066	+0.000108 4.5466	+0.0359 4.8516
MAI 17 (OH) (2449489.5)	X:	-0.1063	+0.00119	+24.2719 2.380181	+0.02496 2.7008	+0.000062 1.2189	+0.0335 2.7930
A JUN. 3 (OH)	Y:	+0.0382	+0.00083	+31.4233 3.932673	+0.02603 4.0207	+0.000347 0.1456	+0.0433 4.3622
JUN. 3 (OH) (2449506.5)	X:	-0.0788	-0.00052	+24.6757 2.086473	+0.02625 2.4657	+0.000106 6.1157	+0.0265 2.5177
A JUN.20 (OH)	Y:	+0.0123	-0.00038	+31.7969 3.636637	+0.02089 4.0781	+0.000216 1.3675	+0.0337 4.0522
JUN.20 (OH) (2449523.5)	X:	-0.0771	+0.00168	+25.0793 1.796695	+0.02262 1.5753	+0.000680 3.6495	+0.0196 1.7086
A JUL. 7 (OH)	Y:	+0.0315	-0.00135	+32.0852 3.343611	+0.01017 2.8456	+0.000494 4.9787	+0.0258 3.2230
JUL. 7 (OH) (2449540.5)	X:	-0.0567	-0.00024	+25.4066 1.502293	+0.02168 2.1011	+0.000291 5.2862	+0.0191 1.2485
A JUL.24 (OH)	Y:	-0.0147	+0.00337	+32.1876 3.047003	+0.01824 3.9417	+0.000799 0.6619	+0.0237 2.7165
JUL.24 (OH) (2449557.5)	X:	-0.0400	+0.00041	+25.6454 1.210324	+0.01488 1.9361	+0.000287 4.7773	+0.0170 6.2468
A AOU.10 (OH)	Y:	+0.0539	-0.00087	+32.2269 2.752554	+0.00817 5.1532	+0.000145 5.9908	+0.0206 1.4943
AOU.10 (OH) (2449574.5)	X:	-0.0444	-0.00140	+25.7545 0.919231	+0.00590 0.1674	+0.000696 3.1438	+0.0267 5.7085
A AOU.27 (OH)	Y:	+0.0464	+0.00310	+32.0752 2.458673	+0.01170 6.1548	+0.000632 4.7169	+0.0336 0.9782

1994 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 3 D'URANUS: TITANIA N=0.7217

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
AOU.27 (OH)	X:	-0.0378	-0.00252	+25.7075 0.623750	+0.01258 2.4375	+0.000697 4.7540	+0.0267 5.1273
A SEP.13 (OH)	Y:	+0.0757	-0.00003	+31.7930 2.161100	+0.02162 4.5830	+0.000851 0.2330	+0.0339 0.3793
SEP.13 (OH)	X:	-0.0940	+0.00066	+25.5486 0.328885	+0.01599 3.3583	+0.000125 3.6607	+0.0360 4.6941
A SEP.30 (OH)	Y:	+0.0809	-0.00006	+31.4355 1.865447	+0.02393 4.9888	+0.000105 4.9863	+0.0439 6.2120
SEP.30 (OH)	X:	-0.0790	-0.00218	+25.2269 0.032221	+0.01744 3.4669	+0.000457 2.8173	+0.0325 4.4153
A OCT.17 (OH)	Y:	+0.0473	-0.00117	+31.0092 1.567506	+0.02858 4.8070	+0.000165 2.7050	+0.0394 5.9969
OCT.17 (OH)	X:	-0.1107	+0.00276	+24.8502 6.016176	+0.02832 2.9242	+0.000315 4.6124	+0.0286 3.7723
A NOV. 3 (OH)	Y:	+0.0410	-0.00091	+30.5467 1.268525	+0.02921 4.1183	+0.000879 6.2287	+0.0365 5.3409
NOV. 3 (OH)	X:	-0.0802	+0.00029	+24.3817 5.715318	+0.03060 2.8360	+0.000109 0.8151	+0.0252 3.4607
A NOV.20 (OH)	Y:	+0.0005	+0.00076	+30.1134 0.969528	+0.02609 4.3190	+0.000177 1.5162	+0.0308 5.0074
NOV.20 (OH)	X:	-0.0455	+0.00013	+23.8856 5.411610	+0.02967 2.4008	+0.000204 4.1406	+0.0141 2.6303
A DEC. 7 (OH)	Y:	+0.0265	-0.00111	+29.7178 0.668741	+0.01981 4.0709	+0.000054 1.2355	+0.0175 4.1514
DEC. 7 (OH)	X:	-0.0589	+0.00123	+23.4088 5.109909	+0.03201 2.3537	+0.000170 5.0819	+0.0193 1.7965
A DEC.24 (OH)	Y:	-0.0108	+0.00543	+29.4471 0.368685	+0.02520 3.7446	+0.000727 0.1929	+0.0227 3.3434
DEC.24 (OH)	X:	-0.0310	-0.00055	+22.9514 4.804089	+0.02808 2.0257	+0.000185 5.1396	+0.0159 0.8605
A JAN.10 (OH)	Y:	+0.0527	-0.00076	+29.1954 0.067441	+0.01017 3.9082	+0.000156 1.1040	+0.0201 2.4270

1994 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 4 D'URANUS: OBERON N=0.4667

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
JAN. 1 (0H)	X:	-0.0180	+0.00013	+32.1643	+0.03651	+0.000369	+0.0077
(2449353.5)				5.743995	3.0324	5.8323	2.3482
A JAN.23 (0H)	Y:	-0.0188	+0.00399	+39.0335	+0.01605	+0.000687	+0.0099
				0.993466	4.5562	0.8969	3.7570
JAN.23 (0H)	X:	-0.0271	-0.00182	+31.6129	+0.02295	+0.000469	+0.0182
(2449375.5)				3.434003	0.5530	2.8052	4.6315
A FEV.14 (0H)	Y:	+0.0704	-0.00306	+39.0226	+0.00701	+0.000850	+0.0230
				4.970711	0.4924	4.2724	6.1734
FEV.14 (0H)	X:	-0.0394	-0.00346	+31.2623	+0.00762	+0.000201	+0.0237
(2449397.5)				1.126572	5.7057	5.1979	0.5454
A MAR. 8 (0H)	Y:	-0.0132	+0.00164	+39.1880	+0.02868	+0.000772	+0.0320
				2.667184	3.1351	1.0950	2.0839
MAR. 8 (0H)	X:	-0.1244	+0.00452	+31.1919	+0.02206	+0.000528	+0.0261
(2449419.5)				5.105161	4.1499	0.9650	2.6321
A MAR.30 (0H)	Y:	+0.0387	-0.00604	+39.6530	+0.04189	+0.000479	+0.0331
				0.367006	0.3155	3.6528	4.2981
MAR.30 (0H)	X:	-0.0372	-0.00152	+31.4381	+0.02268	+0.000898	+0.0245
(2449441.5)				2.801154	1.6584	4.0598	4.6793
A AVR.21 (0H)	Y:	-0.0722	+0.00076	+40.3691	+0.03857	+0.000472	+0.0277
				4.350384	4.0585	6.1228	0.0823
AVR.21 (0H)	X:	-0.0622	+0.00388	+31.8682	+0.01577	+0.000793	+0.0143
(2449463.5)				0.498864	6.1721	1.2430	0.8739
A MAI 13 (0H)	Y:	-0.0924	+0.00380	+41.1678	+0.02756	+0.000380	+0.0210
				2.049616	2.0447	2.4403	2.3239
MAI 13 (0H)	X:	+0.0157	-0.00163	+32.4282	+0.02638	+0.000269	+0.0035
(2449485.5)				4.483292	4.6019	5.0091	3.4933
A JUN. 4 (0H)	Y:	-0.0062	-0.00036	+41.8935	+0.03369	+0.000221	+0.0058
				6.034691	6.2001	3.9635	5.2342
JUN. 4 (0H)	X:	-0.0092	-0.00146	+33.0969	+0.03462	+0.000238	+0.0114
(2449507.5)				2.188895	2.3275	4.8514	1.6305
A JUN.26 (0H)	Y:	+0.0287	+0.00087	+42.5420	+0.02768	+0.000352	+0.0150
				3.737918	3.8535	0.5913	3.2571
JUN.26 (0H)	X:	-0.0629	-0.00057	+33.7579	+0.03048	+0.000313	+0.0239
(2449529.5)				6.179032	0.1301	2.7494	4.0416
A JUL.18 (0H)	Y:	+0.0480	-0.00097	+42.9747	+0.01507	+0.000412	+0.0295
				1.441857	1.6354	4.4750	5.5861
JUL.18 (0H)	X:	-0.0676	-0.00232	+34.2982	+0.01588	+0.000047	+0.0291
(2449551.5)				3.885876	4.6822	1.6739	0.0040
A AOU. 9 (0H)	Y:	-0.0114	-0.00023	+43.1243	+0.00350	+0.000309	+0.0373
				5.429450	2.1881	1.8244	1.5563
AOU. 9 (0H)	X:	-0.1263	+0.00460	+34.5410	+0.02211	+0.000576	+0.0291
(2449573.5)				1.591366	3.4763	0.3633	2.1909
A AOU.31 (0H)	Y:	-0.0269	-0.00236	+42.9404	+0.02562	+0.000312	+0.0340
				3.131482	5.7954	1.6295	3.7857
AOU.31 (0H)	X:	-0.0175	-0.00166	+34.3887	+0.02737	+0.000953	+0.0211
(2449595.5)				5.578808	1.2477	3.7937	4.4910
A SEP.22 (0H)	Y:	-0.0336	-0.00275	+42.3867	+0.02139	+0.000843	+0.0247
				0.834487	3.3701	4.7412	5.8466
SEP.22 (0H)	X:	-0.0615	+0.00427	+33.9600	+0.01385	+0.000835	+0.0075
(2449617.5)				3.283449	5.8791	0.6905	0.3485
A OCT.14 (0H)	Y:	-0.1189	+0.00826	+41.6773	+0.01852	+0.000957	+0.0142
				4.820796	2.1155	1.5060	1.8681
OCT.14 (0H)	X:	+0.0176	-0.00239	+33.3549	+0.03003	+0.000356	+0.0024
(2449639.5)				0.984377	4.4310	3.6976	5.3256
A NOV. 5 (0H)	Y:	+0.0408	-0.00296	+40.9816	+0.04282	+0.000974	+0.0057
				-2.521472	0.0192	4.3239	0.0216

1994 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 4 D'URANUS: OBERON N=0.4667

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
NOV. 5 (OH) (2449661.5)	X:	-0.0046	-0.00317	+32.6078 4.963721	+0.04652 2.0633	+0.000320 5.3501	+0.0149 1.1644
A NOV.27 (OH)	Y:	+0.0032	+0.00301	+40.2541 0.218491	+0.04643 3.7610	+0.000816 1.0559	+0.0190 2.7591
NOV.27 (OH) (2449683.5)	X:	-0.0804	+0.00092	+31.7346 2.657780	+0.04220 6.0305	+0.000297 2.0925	+0.0234 3.4120
A DEC.19 (OH)	Y:	+0.0592	-0.00319	+39.5996 4.197961	+0.03397 1.3370	+0.000525 4.3693	+0.0297 4.9537
DEC.19 (OH) (2449705.5)	X:	-0.0826	-0.00009	+30.9157 0.350437	+0.03643 3.8904	+0.000097 5.9916	+0.0266 5.6084
A JAN.10 (OH)	Y:	-0.0216	-0.00036	+39.1195 1.894613	+0.01740 5.4682	+0.000320 1.5752	+0.0342 0.9067

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Ces éphémérides donnent les positions des satellites de Mars, des satellites galiléens de Jupiter, des huit premiers satellites de Saturne et des cinq satellites d'Uranus pour 1994 avec une précision de 0.01 seconde de degré ('').

Elles sont ainsi très utiles aux astronomes pour préparer ou réduire des observations de haute précision ainsi que pour étudier les mouvements des satellites naturels des planètes.

Les positions sont données sous forme de coefficients de fonctions élémentaires dépendant directement du temps. Les calculs sont faciles à programmer sur une calculatrice de poche ou sur un micro-ordinateur.

Cet ouvrage donne aussi une méthode pour effectuer les prédictions des phénomènes des satellites de Jupiter en 1994.

De telles éphémérides, uniques par leur contenu, méritent de figurer dans les bibliothèques des Universités et des Observatoires.

These ephemerides give the positions of the satellites of Mars, of the Galilean satellites of Jupiter, of the first eight satellites of Saturn and of the five satellites of Uranus for 1994 with an accuracy of 0.01 arcsecond ('').

Thus, they are very useful to astronomers in order to prepare or reduce precise observations and to study the motions of the natural satellites of the planets.

The positions are given as coefficients of elementary functions depending directly on time. The calculations are easy to program on a pocket calculator or on a micro-computer.

This booklet also contains a method of calculation to predict the phenomena of the satellites of Jupiter in 1994 .

Such ephemerides of unique nature, have their place in the libraries of Universities and Observatories.

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