Ephémérides des satellites de Mars, Jupiter, Saturne et Uranus pour 1995

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

SUPPLÉMENT À LA CONNAISSANCE DES TEMPS - PARIS 1994
BUREAU DES LONGITUDES

ÉPHÉMÉRIDES DES SATELLITES DE MARS, JUPITER, SATURNE ET URANUS POUR 1995

EPHEMERIDES OF THE SATELLITES OF MARS, JUPITER, SATURN AND URANUS FOR 1995

les éditions de physique

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PUBLICATIONS DU BUREAU DES LONGITUDES

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• *The Connaissance des Temps (Astronomical Ephemerides of the Sun, of the Moon and the Planets for 1995). Published by EPSHOM, BP426, F-29275 Brest Cedex, France*

Other supplements to the Connaissance des Temps :

• *Ephemerides of the faint satellites of Jupiter (VI, VII, VIII, IX) and of Saturn (IX) for 1995*

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- Éphémérides nautiques pour l'an 1993 (Bordas, Paris)
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  - La physique (1981)
  - La terre, les eaux, l'atmosphère (épuisé)
  - Les étoiles, le système solaire (réédition, 1985)
  - La Galaxie, l'univers extra-galactique (réédition, 1988)
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  - Cahier n° 1 « Les profondeurs de la Terre », J.P. POIRIER, I.P.G.
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  - Cahier n° 3 « Chronique de l'espace-temps, du vide quantique à l'expansion cosmique », A. MAZURE, G. MATHEZ, Y. MELLIER
- Le Calendrier Républicain

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

Responsable de la publication
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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 :

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

REPRESENTATION OF THE COORDINATES

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

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 janvier1988 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 1988 January 1 to 1994 July 1) between TDT and UTC (using the relationship between TAI and UTC published by the IERS).

	TDT-UTC
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 - 1994 Juil. 1	60.184 s
1994 Juil. 1 -	61.184 s

Pour 1995, on ne sait pas encore quelle en sera la valeur ; on peut cependant prendre 61 secondes, l'erreur commise n'ayant que peu d'influence sur la valeur des positions calculées des satellites.

For 1995 the value of TDT-UTC is not yet known ; one may take 61 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 1995 à 23 h 30 min UTC.

On effectue d'abord une correction pour se ramener à l'échelle TDB. Pour 1994 nous avons choisi 61 secondes ; la date T est donc le 5 janvier 1995 à 23 h 30 min 61 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 :

$A0 = -0.0011$, $A1 = 0.$, $B0 = 39.851\,6$, $B1 = 0.07596$, $B2 = 0.000\,412$, $C0 = 0.003\,8$,
$F0 = 2.365795$, $F1 = 6.273\,7$, $F2 = 1.807\,3$, $P0 = 1.779\,4$,

et pour Y :

$A0 = -0.000\,2$, $A1 = 0.000\,00$, $B0 = 5.473\,4$, $B1 = 0.031\,68$, $B2 = 0.000\,084$, $C0 = 0.000\,5$,
$F0 = 4.616\,402$, $F1 = 1.330\,4$, $F2 = 0.374\,7$, $P0 = 4.084\,8$.

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 + Δt 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 + Δt.

EXAMPLE : Let us compute the tangential coordinates of Tethys (third satellite of Saturn) with respect to the planet for 1995 January 5, 23 h 30 m UTC.

First, the date must be corrected in order to fit with the TDB time-scale. For 1994, we choose 61 seconds ; so, the date T is 1995 January 5, 23 h 60 m 61 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 :

$A0 = -0.0011$, $A1 = 0.$, $B0 = 39.851\,6$, $B1 = 0.07596$, $B2 = 0.000\,412$, $C0 = 0.003\,8$,
$F0 = 2.365795$, $F1 = 6.273\,7$, $F2 = 1.807\,3$, $P0 = 1.779\,4$,

and for Y :

$A0 = -0.000\,2$, $A1 = 0.000\,00$, $B0 = 5.473\,4$, $B1 = 0.031\,68$, $B2 = 0.000\,084$, $C0 = 0.000\,5$,
$F0 = 4.616\,402$, $F1 = 1.330\,4$, $F2 = 0.374\,7$, $P0 = 4.084\,8$.

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 61 s, soit 4,979 873 jours.

On obtient finalement :

X = 3,26"
Y = 3,80"

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 61 s. Hence t = 4.979 873 days.

Finally, we get :

X = 3.26"
Y = 3.80"

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)*	

1995 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 1 DE MARS: PHOBOS N=19.7027

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
JAN. 1 (OH) (2449718.5)	X:	+0.1479	+0.00359	+14.9641 6.105805	+0.12571 6.0634	+0.001327 1.2122	+0.1164 -3.9741
A JAN. 8 (OH)	Y:	+0.0844	-0.00052	+ 6.2536 1.875320	+0.04659 2.0127	+0.000713 5.0509	+0.0486 -1.9147
JAN. 8 (OH) (2449725.5)	X:	+0.1730	+0.00444	+15.8579 5.796001	+0.12973 5.9005	+0.001539 1.1886	+0.1238 -4.6430
A JAN.15 (OH)	Y:	+0.0812	-0.00081	+ 6.5410 1.570624	+0.03618 1.7274	+0.001068 4.8178	+0.0504 -2.5814
JAN.15 (OH) (2449732.5)	X:	+0.2033	+0.00498	+16.7542 5.494752	+0.13117 5.7624	+0.001899 1.2502	+0.1305 -5.2996
A JAN.22 (OH)	Y:	+0.0758	-0.00098	+ 6.7374 1.264149	+0.02098 1.4542	+0.001450 4.6264	+0.0514 -3.2554
JAN.22 (OH) (2449739.5)	X:	+0.2381	+0.00509	+17.5975 5.201914	+0.12831 5.6641	+0.002447 1.3463	+0.1361 -5.9525
A JAN.29 (OH)	Y:	+0.0686	-0.00102	+ 6.8112 0.954384	+0.00066 0.6856	+0.001708 4.4447	+0.0515 -3.9339
JAN.29 (OH) (2449746.5)	X:	+0.2746	+0.00477	+18.3122 4.916721	+0.11943 5.6302	+0.003071 1.4159	+0.1406 -0.3199
A FEV. 5 (OH)	Y:	+0.0607	-0.00098	+ 6.7371 0.638658	+0.02352 4.1296	+0.001644 4.2551	+0.0504 -4.6187
FEV. 5 (OH) (2449753.5)	X:	+0.3092	+0.00406	+18.8088 4.637317	+0.10634 5.6912	+0.003540 1.4300	+0.1436 -0.9661
A FEV.12 (OH)	Y:	+0.0532	-0.00089	+ 6.5119 0.313420	+0.04670 3.8747	+0.001204 4.0464	+0.0480 -5.3175
FEV.12 (OH) (2449760.5)	X:	+0.3381	+0.00301	+19.0134 4.360598	+0.09633 5.8654	+0.003659 1.4060	+0.1438 -1.6100
A FEV.19 (OH)	Y:	+0.0467	-0.00076	+ 6.1666 6.258941	+0.06360 3.6125	+0.000532 3.7802	+0.0450 -6.0362
FEV.19 (OH) (2449767.5)	X:	+0.3587	+0.00166	+18.8947 4.083356	+0.09696 6.0885	+0.003365 1.3710	+0.1413 -2.2608
A FEV.26 (OH)	Y:	+0.0415	-0.00062	+ 5.7587 5.908521	+0.07096 3.3285	+0.000150 0.7336	+0.0422 -0.4802
FEV.26 (OH) (2449774.5)	X:	+0.3697	+0.00019	+18.4711 3.801829	+0.10732 6.2361	+0.002776 1.3602	+0.1374 -2.9211
A MAR. 5 (OH)	Y:	+0.0372	-0.00054	+ 5.3486 5.549010	+0.06884 3.0117	+0.000649 0.2126	+0.0392 -1.2048
MAR. 5 (OH) (2449781.5)	X:	+0.3710	-0.00103	+17.8037 3.513124	+0.11936 6.2644	+0.002130 1.3808	+0.1322 -3.5863
A MAR.12 (OH)	Y:	+0.0335	-0.00057	+ 4.9791 5.187684	+0.05983 2.6541	+0.000890 6.1425	+0.0364 -1.9347
MAR.12 (OH) (2449788.5)	X:	+0.3639	-0.00178	+16.9784 3.215267	+0.12753 6.1992	+0.001636 1.4014	+0.1255 -4.2591
A MAR.19 (OH)	Y:	+0.0296	-0.00069	+ 4.6675 4.832557	+0.04801 2.2500	+0.000912 5.7789	+0.0341 -2.6652
MAR.19 (OH) (2449795.5)	X:	+0.3511	-0.00208	+16.0784 2.907544	+0.13108 6.0703	+0.001344 1.3767	+0.1179 -4.9444
A MAR.26 (OH)	Y:	+0.0251	-0.00081	+ 4.4125 4.489016	+0.03672 1.7961	+0.000821 5.4003	+0.0326 -3.3796
MAR.26 (OH) (2449802.5)	X:	+0.3352	-0.00211	+15.1663 2.590222	+0.13161 5.8997	+0.001188 1.3373	+0.1107 -5.6446
A AVR. 2 (OH)	Y:	+0.0198	-0.00088	+ 4.2062 4.158752	+0.02737 1.2893	+0.000682 5.0029	+0.0313 -4.0744
AVR. 2 (OH) (2449809.5)	X:	+0.3186	-0.00211	+14.2812 2.264054	+0.12999 5.7031	+0.001026 1.3258	+0.1046 -0.0703
A AVR. 9 (OH)	Y:	+0.0137	-0.00088	+ 4.0429 3.940760	+0.02028 0.7257	+0.000512 4.5508	+0.0301 -4.7608

1995 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) (2449816.5)	X:	+0.3024	-0.00223	+13.4459 1.929994	+0.12659 5.4863	+0.000802 1.3671	+0.0989 -0.7804
A AVR.16 (OH)	Y:	+0.0071	-0.00084	+ 3.9190 3.532429	+0.01532 0.1236	+0.000366 3.9797	+0.0293 -5.4435
AVR.16 (OH) (2449823.5)	X:	+0.2870	-0.00240	+12.6708 1.589049	+0.12190 5.2479	+0.000566 1.4631	+0.0931 -1.4962
A AVR.23 (OH)	Y:	+0.0006	-0.00084	+ 3.8318 3.230300	+0.01177 5.7997	+0.000291 3.2884	+0.0288 -6.1202
AVR.23 (OH) (2449830.5)	X:	+0.2719	-0.00241	+11.9589 1.242145	+0.11659 4.9847	+0.000384 1.5226	+0.0676 -2.2217
A AVR.30 (OH)	Y:	-0.0056	-0.00088	+ 3.7775 2.930876	+0.00885 5.1901	+0.000282 2.6289	+0.0285 -0.5133
AVR.30 (OH) (2449837.5)	X:	+0.2569	-0.00216	+11.3092 0.890154	+0.11129 4.6975	+0.000255 1.3282	+0.0829 -2.9560
A MAI 7 (OH)	Y:	-0.0118	-0.00091	+ 3.7522 2.631204	+0.00614 4.5092	+0.000289 2.0839	+0.0284 -1.1897
MAI 7 (OH) (2449844.5)	X:	+0.2427	-0.00175	+10.7182 0.534086	+0.10678 4.3933	+0.000225 0.8484	+0.0792 -3.6905
A MAI 14 (OH)	Y:	-0.0179	-0.00089	+ 3.7515 2.328895	+0.00404 3.5431	+0.000278 1.5865	+0.0285 -1.8666
MAI 14 (OH) (2449851.5)	X:	+0.2298	-0.00139	+10.1786 0.174807	+0.10305 4.0830	+0.000261 0.6212	+0.0755 -4.4226
A MAI 21 (OH)	Y:	-0.0238	-0.00082	+ 3.7707 2.022182	+0.00420 2.2751	+0.000258 1.0509	+0.0287 -2.5511
MAI 21 (OH) (2449858.5)	X:	+0.2186	-0.00122	+ 9.6824 6.095927	+0.09955 3.7707	+0.000295 0.6576	+0.0716 -5.1601
A MAI 28 (OH)	Y:	-0.0294	-0.00072	+ 3.8050 1.710013	+0.00637 1.3880	+0.000250 0.4772	+0.0290 -3.2455
MAI 28 (OH) (2449865.5)	X:	+0.2088	-0.00122	+ 9.2246 5.731180	+0.09580 3.4545	+0.000325 0.8046	+0.0681 -5.9067
A JUN. 4 (OH)	Y:	-0.0346	-0.00064	+ 3.8502 1.391967	+0.00904 0.7801	+0.000260 6.1753	+0.0295 -3.9441
JUN. 4 (OH) (2449872.5)	X:	+0.1999	-0.00126	+ 8.8029 5.363914	+0.09188 3.1280	+0.000351 0.8901	+0.0653 -0.3725
A JUN.11 (OH)	Y:	-0.0392	-0.00058	+ 3.9025 1.068074	+0.01170 0.2604	+0.000277 5.6637	+0.0300 -4.6418
JUN.11 (OH) (2449879.5)	X:	+0.1913	-0.00123	+ 8.4150 4.994475	+0.08842 2.7871	+0.000333 0.7980	+0.0629 -1.1132
A JUN.18 (OH)	Y:	-0.0434	-0.00053	+ 3.9584 0.738579	+0.01438 6.0538	+0.000272 5.2395	+0.0303 -5.3473
JUN.18 (OH) (2449886.5)	X:	+0.1831	-0.00115	+ 8.0562 4.623163	+0.08593 2.4361	+0.000270 0.4283	+0.0599 -1.8554
A JUN.25 (OH)	Y:	-0.0472	-0.00045	+ 4.0145 0.403757	+0.01714 5.5906	+0.000237 4.8338	+0.0307 -6.0647
JUN.25 (OH) (2449893.5)	X:	+0.1754	-0.00109	+ 7.7213 4.249966	+0.08410 2.0845	+0.000248 6.0649	+0.0571 -2.6096
A JUL. 2 (OH)	Y:	-0.0506	-0.00036	+ 4.0682 0.063917	+0.01985 5.1576	+0.000196 4.3170	+0.0312 -0.5018
JUL. 2 (OH) (2449900.5)	X:	+0.1682	-0.00104	+ 7.4070 3.874727	+0.08236 1.7365	+0.000301 5.5575	+0.0551 -3.3667
A JUL. 9 (OH)	Y:	-0.0536	-0.00031	+ 4.1179 6.002615	+0.02227 4.7460	+0.000192 3.6748	+0.0316 -1.2202
JUL. 9 (OH) (2449907.5)	X:	+0.1614	-0.00095	+ 7.1118 3.497256	+0.08029 1.3899	+0.000350 5.3556	+0.0532 -4.1152
A JUL.16 (OH)	Y:	-0.0559	-0.00031	+ 4.1625 5.653907	+0.02420 4.3387	+0.000231 3.2027	+0.0318 -1.9407

1995 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) (2449914.5)	X:	+0.1549	-0.00078	+ 6.8350 3.117365	+0.07798 1.0373	+0.000340 5.3158	+0.0510 -4.8631
A JUL.23 (OH)	Y:	-0.0579	-0.00033	+ 4.2013 5.301529	+0.02585 3.9217	+0.000256 2.9319	+0.0319 -2.6712
JUL.23 (OH) (2449921.5)	X:	+0.1488	-0.00060	+ 6.5761 2.734967	+0.07613 0.6758	+0.000281 5.2876	+0.0488 -5.6242
A JUL.30 (OH)	Y:	-0.0597	-0.00032	+ 4.2326 4.946002	+0.02764 3.5021	+0.000237 2.6393	+0.0322 -3.4057
JUL.30 (OH) (2449928.5)	X:	+0.1433	-0.00052	+ 6.3340 2.350035	+0.07523 0.3109	+0.000208 5.0512	+0.0472 -0.1060
A AOU. 6 (OH)	Y:	-0.0614	-0.00021	+ 4.2551 4.587665	+0.02962 3.0928	+0.000195 2.1030	+0.0325 -4.1369
AOU. 6 (OH) (2449935.5)	X:	+0.1387	-0.00061	+ 6.1067 1.962390	+0.07509 6.2332	+0.000185 4.4226	+0.0458 -0.8659
A AOU.13 (OH)	Y:	-0.0629	-0.00005	+ 4.2680 4.226669	+0.03141 2.6952	+0.000205 1.3415	+0.0325 -4.8677
AOU.13 (OH) (2449942.5)	X:	+0.1345	-0.00076	+ 5.8928 1.571542	+0.07504 5.8774	+0.000252 3.9355	+0.0441 -1.6255
A AOU.20 (OH)	Y:	-0.0639	+0.00006	+ 4.2713 3.863146	+0.03263 2.2975	+0.000263 0.8349	+0.0323 -5.6046
AOU.20 (OH) (2449949.5)	X:	+0.1302	-0.00082	+ 5.6930 1.176850	+0.07459 5.5204	+0.000327 3.7761	+0.0424 -2.3952
A AOU.27 (OH)	Y:	-0.0642	+0.00009	+ 4.2653 3.497471	+0.03338 1.8869	+0.000290 0.5369	+0.0323 -0.0649
AOU.27 (OH) (2449956.5)	X:	+0.1255	-0.00073	+ 5.5097 0.778056	+0.07406 5.1540	+0.000352 3.7030	+0.0411 -3.1742
A SEP. 3 (OH)	Y:	-0.0640	+0.00004	+ 4.2493 3.130231	+0.03418 1.4647	+0.000262 0.2125	+0.0323 -0.8049
SEP. 3 (OH) (2449963.5)	X:	+0.1208	-0.00053	+ 5.3439 0.375284	+0.07414 4.7796	+0.000324 3.5614	+0.0402 -3.9516
A SEP.10 (OH)	Y:	-0.0635	-0.00001	+ 4.2215 2.761825	+0.03514 1.0447	+0.000227 5.9634	+0.0321 -1.5415
SEP.10 (OH) (2449970.5)	X:	+0.1165	-0.00037	+ 5.1949 6.251720	+0.07503 4.4056	+0.000281 3.2156	+0.0392 -4.7265
A SEP.17 (OH)	Y:	-0.0630	+0.00000	+ 4.1808 2.392398	+0.03590 0.6322	+0.000248 5.3106	+0.0316 -2.2818
SEP.17 (OH) (2449977.5)	X:	+0.1130	-0.00034	+ 5.0625 5.840636	+0.07630 4.0377	+0.000294 2.6243	+0.0379 -5.5103
A SEP.24 (OH)	Y:	-0.0626	+0.00008	+ 4.1266 2.022108	+0.03612 0.2202	+0.000317 4.8216	+0.0311 -3.0294
SEP.24 (OH) (2449984.5)	X:	+0.1099	-0.00039	+ 4.9492 5.424859	+0.07730 3.6721	+0.000389 2.1270	+0.0371 -0.0260
A OCT. 1 (OH)	Y:	-0.0619	+0.00018	+ 4.0593 1.651428	+0.03584 6.0784	+0.000370 4.4472	+0.0307 -3.7745
OCT. 1 (OH) (2449991.5)	X:	+0.1070	-0.00043	+ 4.8585 5.004595	+0.07788 3.2993	+0.000477 1.8062	+0.0369 -0.8206
A OCT. 8 (OH)	Y:	-0.0609	+0.00024	+ 3.9783 1.281122	+0.03552 5.6349	+0.000375 4.0318	+0.0301 -4.5102
OCT. 8 (OH) (2449998.5)	X:	+0.1040	-0.00045	+ 4.7925 4.580617	+0.07850 2.9152	+0.000489 1.5200	+0.0365 -1.6081
A OCT.15 (OH)	Y:	-0.0595	+0.00026	+ 3.8817 0.911888	+0.03535 5.1811	+0.000364 3.4865	+0.0291 -5.2478
OCT.15 (OH) (2450005.5)	X:	+0.1011	-0.00047	+ 4.7509 4.153766	+0.07953 2.5249	+0.000435 1.1398	+0.0359 -2.4073
A OCT.22 (OH)	Y:	-0.0578	+0.00027	+ 3.7678 0.544288	+0.03507 4.7238	+0.000391 2.8822	+0.0281 -5.9913

1995 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 1 DE MARS: PHOBOS N=19.7027

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
OCT.22 (0H)	X:	+0.0983	-0.00048	+ 4.7330	+0.08081	+0.000390	+0.0358
(2450012.5)				3.724814	2.1364	0.5593	-3.2186
A OCT.29 (0H)	Y:	-0.0560	+0.00028	+ 3.6356	+0.03438	+0.000447	+0.0272
				0.179028	4.2596	2.3678	-0.4461
OCT.29 (0H)	X:	+0.0954	-0.00046	+ 4.7384	+0.08163	+0.000441	+0.0363
(2450019.5)				3.294547	1.7522	6.2425	-4.0188
A NOV. 5 (0H)	Y:	-0.0542	+0.00027	+ 3.4854	+0.03330	+0.000480	+0.0260
				6.100332	3.7775	1.9521	-1.1697
NOV. 5 (0H)	X:	+0.0925	-0.00036	+ 4.7670	+0.08149	+0.000529	+0.0365
(2450026.5)				2.864005	1.3662	5.8665	-4.8092
A NOV.12 (0H)	Y:	-0.0523	+0.00025	+ 3.3177	+0.03233	+0.000465	+0.0245
				5.743323	3.2722	1.5342	-1.8904
NOV.12 (0H)	X:	+0.0896	-0.00021	+ 4.8174	+0.08070	+0.000559	+0.0366
(2450033.5)				2.434537	0.9707	5.5868	-5.6096
A NOV.19 (0H)	Y:	-0.0503	+0.00022	+ 3.1329	+0.03183	+0.000440	+0.0230
				5.393081	2.7556	1.0308	-2.6128
NOV.19 (0H)	X:	+0.0871	-0.00013	+ 4.8859	+0.07996	+0.000514	+0.0372
(2450040.5)				2.007486	0.5653	5.2353	-0.1302
A NOV.26 (0H)	Y:	-0.0485	+0.00021	+ 2.9326	+0.03161	+0.000452	+0.0215
				5.051844	2.2401	0.4886	-3.3205
NOV.26 (0H)	X:	+0.0851	-0.00021	+ 4.9665	+0.07952	+0.000467	+0.0381
(2450047.5)				1.583763	0.1570	4.6844	-0.9214
A DEC. 3 (0H)	Y:	-0.0468	+0.00024	+ 2.7202	+0.03140	+0.000482	+0.0199
				4.722316	1.7242	0.0091	-4.0076
DEC. 3 (0H)	X:	+0.0834	-0.00038	+ 5.0533	+0.07881	+0.000524	+0.0388
(2450054.5)				1.163649	6.0355	4.0831	-1.7020
A DEC.10 (0H)	Y:	-0.0452	+0.00027	+ 2.5018	+0.03126	+0.000483	+0.0182
				4.407894	1.2011	5.8597	-4.6803
DEC.10 (0H)	X:	+0.0814	-0.00052	+ 5.1420	+0.07713	+0.000625	+0.0392
(2450061.5)				0.747152	5.6304	3.6787	-2.4865
A DEC.17 (0H)	Y:	-0.0436	+0.00026	+ 2.2858	+0.03148	+0.000452	+0.0165
				4.112936	0.6750	5.3823	-5.3379
DEC.17 (0H)	X:	+0.0789	-0.00050	+ 5.2294	+0.07467	+0.000652	+0.0399
(2450068.5)				0.334542	5.2144	3.3776	-3.2730
A DEC.24 (0H)	Y:	-0.0420	+0.00020	+ 2.0834	+0.03197	+0.000431	+0.0152
				3.842545	0.1593	4.8189	-5.9659
DEC.24 (0H)	X:	+0.0759	-0.00035	+ 5.3107	+0.07230	+0.000592	+0.0407
(2450075.5)				6.209320	4.7855	3.0385	-4.0504
A DEC.31 (0H)	Y:	-0.0406	+0.00013	+ 1.9086	+0.03228	+0.000440	+0.0140
				3.601059	5.9369	4.2596	-0.2754
DEC.31 (0H)	X:	+0.0731	-0.00020	+ 5.3799	+0.07054	+0.000526	+0.0412
(2450082.5)				5.804990	4.3527	2.5688	-4.8169
A JAN. 7 (0H)	Y:	-0.0395	+0.00008	+ 1.7780	+0.03224	+0.000445	+0.0132
				3.389100	5.4383	3.7535	-0.8441

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DU SATELLITE 2 DE MARS: DEIMOS N= 4.9788

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
JAN. 1 (0H)	X:	-0.0063	-0.00042	+37.7062	+0.32801	+0.003680	+0.0071
(2449718.5)				3.907934	3.6495	5.3509	5.1894
A JAN. 8 (0H)	Y:	+0.0013	+0.00020	+15.3399	+0.11837	+0.001849	+0.0021
				5.875805	5.7731	2.7972	1.1252
JAN. 8 (0H)	X:	-0.0064	-0.00047	+39.9504	+0.32647	+0.003236	+0.0070
(2449725.5)				1.049594	0.9571	2.8019	5.5484
A JAN.15 (0H)	Y:	+0.0014	+0.00019	+16.0717	+0.09313	+0.002841	+0.0029
				3.022019	2.8779	0.1386	1.6589
JAN.15 (0H)	X:	-0.0070	-0.00045	+42.1945	+0.31766	+0.005194	+0.0057
(2449732.5)				4.483856	4.5340	0.2461	6.1767
A JAN.22 (0H)	Y:	+0.0015	+0.00017	+16.5828	+0.05810	+0.003479	+0.0033
				0.166515	6.0491	3.5355	1.9433
JAN.22 (0H)	X:	-0.0068	-0.00056	+44.2959	+0.29643	+0.006049	+0.0067
(2449739.5)				1.643416	1.9154	4.1380	0.7626
A JAN.29 (0H)	Y:	+0.0012	+0.00022	+16.7902	+0.03429	+0.004174	+0.0029
				3.589967	2.1943	0.7847	2.3471
JAN.29 (0H)	X:	-0.0064	-0.00066	+46.0624	+0.25490	+0.007698	+0.0087
(2449746.5)				5.094837	5.6269	1.5129	1.3632
A FEV. 5 (0H)	Y:	+0.0012	+0.00018	+16.6435	+0.07308	+0.003819	+0.0023
				0.723864	4.6939	4.2799	2.9274
FEV. 5 (0H)	X:	-0.0072	-0.00038	+47.2652	+0.21204	+0.008772	+0.0101
(2449753.5)				2.269397	3.2117	5.2822	1.7943
A FEV.12 (0H)	Y:	+0.0013	+0.00014	+16.1354	+0.12512	+0.002755	+0.0021
				4.131147	1.6787	1.4256	3.7925
FEV.12 (0H)	X:	-0.0065	-0.00048	+47.7322	+0.18879	+0.008432	+0.0086
(2449760.5)				5.730890	0.9873	2.7565	2.2161
A FEV.19 (0H)	Y:	+0.0010	+0.00012	+15.3516	+0.16276	+0.001238	+0.0027
				1.243190	5.0545	4.9085	4.4083
FEV.19 (0H)	X:	-0.0058	-0.00058	+47.3797	+0.20191	+0.007892	+0.0064
(2449767.5)				2.909586	5.0433	0.0764	2.9641
A FEV.26 (0H)	Y:	+0.0008	+0.00016	+14.4263	+0.18005	+0.000922	+0.0027
				4.627785	2.1948	6.0782	4.7978
FEV.26 (0H)	X:	-0.0062	-0.00032	+46.2768	+0.25296	+0.006848	+0.0066
(2449774.5)				0.084735	2.6354	3.9743	3.8859
A MAR. 5 (0H)	Y:	+0.0011	+0.00004	+13.4961	+0.17020	+0.001705	+0.0025
				1.722265	5.5799	2.8107	5.1848
MAR. 5 (0H)	X:	-0.0055	-0.00041	+44.5693	+0.29025	+0.004755	+0.0082
(2449781.5)				3.537305	0.1179	1.3290	4.5065
A MAR.12 (0H)	Y:	+0.0010	+0.00006	+12.6588	+0.14759	+0.002608	+0.0018
				5.101977	2.6709	6.2555	5.6611
MAR.12 (0H)	X:	-0.0050	-0.00048	+42.4820	+0.31872	+0.004537	+0.0081
(2449788.5)				0.697899	3.7504	5.2166	4.8828
A MAR.19 (0H)	Y:	+0.0009	+0.00005	+11.9398	+0.11505	+0.002173	+0.0015
				2.207122	5.9679	3.3305	0.2101
MAR.19 (0H)	X:	-0.0043	-0.00049	+40.2187	+0.33093	+0.002643	+0.0066
(2449795.5)				4.133023	1.0932	2.6741	5.3150
A MAR.26 (0H)	Y:	+0.0011	+0.00001	+11.3372	+0.08953	+0.002198	+0.0017
				5.609959	2.9520	0.4310	0.9440
MAR.26 (0H)	X:	-0.0042	-0.00043	+37.9314	+0.33247	+0.002648	+0.0046
(2449802.5)				1.275432	4.6452	0.0787	5.9084
A AVR. 2 (0H)	Y:	+0.0012	+0.00002	+10.8313	+0.06706	+0.001517	+0.0020
				2.743791	6.1223	3.7312	1.4079
AVR. 2 (0H)	X:	-0.0040	-0.00043	+35.7182	+0.32846	+0.001945	+0.0044
(2449809.5)				4.692735	1.9057	3.8575	0.5007
A AVR. 9 (0H)	Y:	+0.0012	+0.00003	+10.4175	+0.05361	+0.001283	+0.0019
				6.174491	2.9935	0.6146	1.6968

1995 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 2 DE MARS: DEIMOS N= 4.9788

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
AVR. 9 (OH)	X:	-0.0033	-0.00053	+33.6367	+0.31940	+0.001438	+0.0051
(2449816.5)				1.819091	5.4219	1.3203	1.0193
A AVR.16 (OH)	Y:	+0.0012	+0.00002	+10.0881	+0.04237	+0.000909	+0.0014
				3.332228	6.1379	3.8993	2.1206
AVR.16 (OH)	X:	-0.0035	-0.00040	+31.7136	+0.30768	+0.001233	+0.0053
(2449823.5)				5.221913	2.6263	4.8665	1.4032
A AVR.23 (OH)	Y:	+0.0014	+0.00002	+ 9.8476	+0.03583	+0.000831	+0.0009
				0.496502	3.0065	0.4857	2.8263
AVR.23 (OH)	X:	-0.0038	-0.00032	+29.9504	+0.29776	+0.000991	+0.0045
(2449830.5)				2.336158	6.1083	2.6996	1.6752
A AVR.30 (OH)	Y:	+0.0014	+0.00001	+ 9.6862	+0.02712	+0.000682	+0.0011
				3.947267	6.1994	3.8945	3.8680
AVR.30 (OH)	X:	-0.0036	-0.00036	+28.3381	+0.28361	+0.000736	+0.0029
(2449837.5)				5.728495	3.2720	5.6605	2.1428
A MAI 7 (OH)	Y:	+0.0015	+0.00002	+ 9.6014	+0.02214	+0.000829	+0.0014
				1.114221	3.0165	0.3935	4.3019
MAI 7 (OH)	X:	-0.0036	-0.00033	+26.8667	+0.27635	+0.001105	+0.0022
(2449844.5)				2.834081	0.4487	3.8068	2.9624
A MAI 14 (OH)	Y:	+0.0016	+0.00000	+ 9.5819	+0.01328	+0.000579	+0.0014
				4.562421	6.0100	3.9920	4.6475
MAI 14 (OH)	X:	-0.0040	-0.00024	+25.5205	+0.26148	+0.000464	+0.0027
(2449851.5)				6.218676	3.8732	0.8694	3.8001
A MAI 21 (OH)	Y:	+0.0018	-0.00001	+ 9.6172	+0.01199	+0.000811	+0.0011
				1.722198	2.4982	0.5895	4.9669
MAI 21 (OH)	X:	-0.0040	-0.00024	+24.2894	+0.25476	+0.000880	+0.0034
(2449858.5)				3.318064	1.0193	4.5434	4.1568
A MAI 28 (OH)	Y:	+0.0019	-0.00001	+ 9.6942	+0.01340	+0.000598	+0.0007
				5.160126	5.0274	4.0736	5.7644
MAI 28 (OH)	X:	-0.0038	-0.00028	+23.1511	+0.24350	+0.000655	+0.0034
(2449865.5)				0.414337	4.4371	2.0398	4.4096
A JUN. 4 (OH)	Y:	+0.0020	-0.00003	+ 9.7999	+0.01962	+0.000761	+0.0009
				2.308125	1.8207	0.8349	0.4224
JUN. 4 (OH)	X:	-0.0040	-0.00020	+22.1041	+0.23657	+0.000702	+0.0028
(2449872.5)				3.791592	1.5618	5.2918	4.6697
A JUN.11 (OH)	Y:	+0.0022	-0.00005	+ 9.9265	+0.02694	+0.000623	+0.0013
				5.733380	4.9260	4.3049	0.8935
JUN.11 (OH)	X:	-0.0041	-0.00016	+21.1296	+0.22910	+0.000891	+0.0018
(2449879.5)				0.883450	4.9744	2.6847	5.0496
A JUN.18 (OH)	Y:	+0.0022	-0.00003	+10.0610	+0.03470	+0.000637	+0.0015
				2.868959	1.9219	1.0740	1.1256
JUN.18 (OH)	X:	-0.0040	-0.00017	+20.2259	+0.22045	+0.000465	+0.0014
(2449886.5)				4.256157	2.0822	0.0478	5.9550
A JUN.25 (OH)	Y:	+0.0023	-0.00004	+10.1997	+0.04081	+0.000742	+0.0013
				6.281837	5.1980	4.5707	1.3358
JUN.25 (OH)	X:	-0.0040	-0.00012	+19.3795	+0.21799	+0.001028	+0.0016
(2449893.5)				1.344023	5.4910	3.2387	0.3425
A JUL. 2 (OH)	Y:	+0.0024	-0.00007	+10.3308	+0.04973	+0.000530	+0.0009
				3.406322	2.2247	1.2448	1.7817
JUL. 2 (OH)	X:	-0.0043	-0.00005	+18.5875	+0.20934	+0.000525	+0.0022
(2449900.5)				4.712219	2.5913	0.8667	0.7459
A JUL. 9 (OH)	Y:	+0.0025	-0.00007	+10.4548	+0.05435	+0.000749	+0.0006
				0.525303	5.5489	4.8404	2.7611
JUL. 9 (OH)	X:	-0.0044	-0.00002	+17.8447	+0.20836	+0.000945	+0.0022
(2449907.5)				1.795527	5.9909	3.8351	0.9299
A JUL.16 (OH)	Y:	+0.0025	-0.00007	+10.5640	+0.06263	+0.000533	+0.0010
				3.923408	2.5899	1.5160	3.6035

1995 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 2 DE MARS: DEIMOS N= 4.9788

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
JUL.16 (OH) (2449914.5)	X:	-0.0044	+0.00000	+17.1460 5.158927	+0.20107 3.0890	+0.000640 1.6339	+0.0016 1.1963
A JUL.23 (OH)	Y:	+0.0026	-0.00012	+10.6569 1.033630	+0.06642 5.9273	+0.000753 5.1204	+0.0012 3.8784
JUL.23 (OH) (2449921.5)	X:	-0.0046	+0.00006	+16.4899 2.237093	+0.20213 0.1961	+0.000869 4.4131	+0.0011 1.6991
A JUL.30 (OH)	Y:	+0.0027	-0.00014	+10.7300 4.423822	+0.07394 2.9752	+0.000559 1.7722	+0.0012 4.1166
JUL.30 (OH) (2449928.5)	X:	-0.0047	+0.00007	+15.8706 5.594854	+0.19721 3.5784	+0.000776 2.0259	+0.0008 2.7839
A AOU. 6 (OH)	Y:	+0.0027	-0.00013	+10.7817 1.526934	+0.07754 0.0324	+0.000660 5.2996	+0.0010 4.3265
AOU. 6 (OH) (2449935.5)	X:	-0.0046	+0.00008	+15.2922 2.666560	+0.19722 0.6741	+0.000714 5.2087	+0.0014 3.4093
A AOU.13 (OH)	Y:	+0.0027	-0.00014	+10.8107 4.910439	+0.08259 3.3696	+0.000642 2.1970	+0.0006 5.0301
AOU.13 (OH) (2449942.5)	X:	-0.0047	+0.00012	+14.7483 6.017754	+0.19595 4.0594	+0.000934 2.4382	+0.0017 3.6491
A AOU.20 (OH)	Y:	+0.0028	-0.00018	+10.8152 2.007949	+0.08670 0.4252	+0.000680 5.4109	+0.0007 6.0714
AOU.20 (OH) (2449949.5)	X:	-0.0047	+0.00013	+14.2453 3.081874	+0.19553 1.1455	+0.000746 5.9629	+0.0018 3.8336
A AOU.27 (OH)	Y:	+0.0026	-0.00015	+10.7936 5.386149	+0.08961 3.7592	+0.000693 2.5337	+0.0010 0.3111
AOU.27 (OH) (2449956.5)	X:	-0.0045	+0.00012	+13.7778 0.141982	+0.19727 4.5275	+0.000975 2.8605	+0.0014 3.9640
A SEP. 3 (OH)	Y:	+0.0025	-0.00013	+10.7443 2.479235	+0.09360 0.8126	+0.000717 5.5557	+0.0013 0.4977
SEP. 3 (OH) (2449963.5)	X:	-0.0045	+0.00016	+13.3540 3.480425	+0.19613 1.6109	+0.000874 0.3379	+0.0009 4.3362
A SEP.10 (OH)	Y:	+0.0024	-0.00015	+10.6664 5.853370	+0.09417 4.1428	+0.000764 2.8718	+0.0011 0.6296
SEP.10 (OH) (2449970.5)	X:	-0.0044	+0.00019	+12.9729 0.531584	+0.20011 4.9865	+0.001031 3.3325	+0.0006 5.2258
A SEP.17 (OH)	Y:	+0.0023	-0.00015	+10.5584 2.943401	+0.09791 1.1686	+0.000797 5.7413	+0.0008 0.8912
SEP.17 (OH) (2449977.5)	X:	-0.0042	+0.00017	+12.6397 3.860630	+0.19976 2.0661	+0.001021 0.7435	+0.0008 6.2492
A SEP.24 (OH)	Y:	+0.0021	-0.00011	+10.4166 0.031852	+0.09698 4.5117	+0.000837 3.0359	+0.0003 1.5611
SEP.24 (OH) (2449984.5)	X:	-0.0041	+0.00018	+12.3578 0.902225	+0.20345 5.4345	+0.001062 3.9162	+0.0012 0.2433
A OCT. 1 (OH)	Y:	+0.0019	-0.00012	+10.2413 3.403351	+0.09857 1.5436	+0.000852 6.0851	+0.0005 3.0467
OCT. 1 (OH) (2449991.5)	X:	-0.0041	+0.00023	+12.1312 4.222268	+0.20494 2.5147	+0.001132 1.0862	+0.0012 0.4289
A OCT. 8 (OH)	Y:	+0.0019	-0.00014	+10.0270 0.491295	+0.09737 4.8591	+0.000958 3.1680	+0.0009 3.3773
OCT. 8 (OH) (2449998.5)	X:	-0.0038	+0.00020	+11.9650 1.255356	+0.20754 5.8740	+0.001172 4.4066	+0.0011 0.6141
A OCT.15 (OH)	Y:	+0.0016	-0.00011	+ 9.7753 3.863115	+0.09657 1.8719	+0.000944 0.1078	+0.0010 3.5653
OCT.15 (OH) (2450005.5)	X:	-0.0035	+0.00018	+11.8601 4.568462	+0.21030 2.9481	+0.001230 1.3938	+0.0008 0.8200
A OCT.22 (OH)	Y:	+0.0014	-0.00009	+ 9.4796 0.953067	+0.09524 5.1707	+0.001107 3.3310	+0.0009 3.6738

1995 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 2 DE MARS: DEIMOS N= 4.9788

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
OCT.22 (0H) (2450012.5)	X:	-0.0033	+0.00018	+11.8183 1.595883	+0.21063 0.0190	+0.001314 4.8826	+0.0005 1.6888
A OCT.29 (0H)	Y:	+0.0013	-0.00009	+ 9.1408 4.328081	+0.09207 2.1583	+0.001002 0.4259	+0.0005 4.0094
OCT.29 (0H) (2450019.5)	X:	-0.0031	+0.00017	+11.8392 4.905753	+0.21463 3.3684	+0.001338 1.6510	+0.0006 2.6354
A NOV. 5 (0H)	Y:	+0.0012	-0.00007	+ 8.7560 1.423621	+0.09105 5.4406	+0.001280 3.5430	+0.0003 5.0970
NOV. 5 (0H) (2450026.5)	X:	-0.0026	+0.00011	+11.9180 1.931912	+0.21284 0.4339	+0.001459 5.2147	+0.0010 3.1159
A NOV.12 (0H)	Y:	+0.0009	-0.00003	+ 8.3266 4.806280	+0.08702 2.3977	+0.001097 0.6509	+0.0005 6.1283
NOV.12 (0H) (2450033.5)	X:	-0.0022	+0.00010	+12.0491 5.243062	+0.21520 3.7735	+0.001448 1.9974	+0.0012 3.2607
A NOV.19 (0H)	Y:	+0.0008	-0.00003	+ 7.8543 1.912640	+0.08573 5.6540	+0.001334 3.8079	+0.0007 0.0528
NOV.19 (0H) (2450040.5)	X:	-0.0018	+0.00008	+12.2211 2.272602	+0.21190 0.8331	+0.001618 5.5257	+0.0011 3.3768
A NOV.26 (0H)	Y:	+0.0006	-0.00001	+ 7.3432 5.309967	+0.08255 2.5862	+0.001146 0.8667	+0.0006 0.1884
NOV.26 (0H) (2450047.5)	X:	-0.0013	+0.00003	+12.4261 5.588907	+0.21250 4.1612	+0.001535 2.3106	+0.0008 3.5971
A DEC. 3 (0H)	Y:	+0.0005	+0.00000	+ 6.8036 2.435915	+0.08172 5.8238	+0.001340 4.0312	+0.0004 0.3621
DEC. 3 (0H) (2450054.5)	X:	-0.0009	+0.00001	+12.6470 2.625031	+0.20804 1.2133	+0.001726 5.7588	+0.0003 4.0864
A DEC.10 (0H)	Y:	+0.0004	+0.00001	+ 6.2473 5.859225	+0.07977 2.7468	+0.001206 1.0459	+0.0001 1.3556
DEC.10 (0H) (2450061.5)	X:	-0.0005	+0.00001	+12.8752 5.948561	+0.20492 4.5322	+0.001602 2.7418	+0.0005 5.9673
A DEC.17 (0H)	Y:	+0.0005	+0.00000	+ 5.6965 3.018845	+0.07945 5.9660	+0.001230 4.2114	+0.0003 3.1167
DEC.17 (0H) (2450068.5)	X:	+0.0000	-0.00003	+13.0920 2.992724	+0.20143 1.5750	+0.001811 6.0015	+0.0010 0.0015
A DEC.24 (0H)	Y:	+0.0005	+0.00001	+ 5.1753 0.202632	+0.07813 2.8998	+0.001215 1.2236	+0.0005 3.2887
DEC.24 (0H) (2450075.5)	X:	+0.0003	-0.00005	+13.2928 0.040592	+0.19569 4.8868	+0.001645 3.1240	+0.0013 0.1729
A DEC.31 (0H)	Y:	+0.0005	+0.00000	+ 4.7222 3.698268	+0.07816 6.1154	+0.001170 4.3389	+0.0004 3.4764
DEC.31 (0H) (2450082.5)	X:	+0.0006	-0.00004	+13.4619 3.375482	+0.19285 1.9198	+0.001788 0.0080	+0.0014 0.2585
A JAN. 7 (0H)	Y:	+0.0006	+0.00002	+ 4.3764 0.941377	+0.07649 3.0562	+0.001175 1.3602	+0.0002 3.7003

SATELLITES DE JUPITER

SATELLITES OF JUPITER

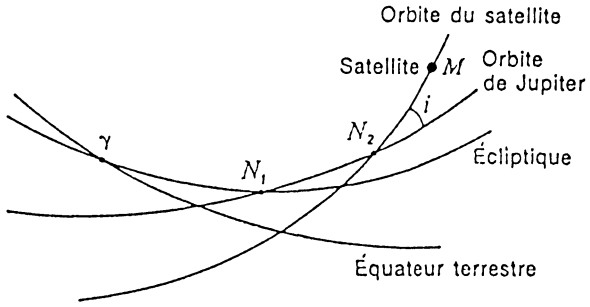
DONNÉES SUR LES SATELLITES GALILÉENS

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 1995.5 (minutes et secondes de degré)				
Sampson (1921) :	1' 01"	27' 25"	9' 25"	22' 26"
Valeur moyenne de l'excentricité pour 1995.5				
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 :

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

1995 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 1 DE JUPITER: IO N=3.5516

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
JAN. 1 (OH)	X:	-0.5474	-0.00842	+ 92.9361	+0.33398	+0.004990	+0.1890
(2449718.5)				5.811996	4.7322	5.3946	3.9759
A JAN. 5 (OH)	Y:	+0.1122	+0.00125	+ 17.9130	+0.10210		+0.0361
				2.948670	0.0026		1.1265
JAN. 5 (OH)	X:	-0.5914	+0.02090	+ 93.6484	+0.34777	+0.005844	+0.1891
(2449722.5)				1.156024	0.0793	1.6417	1.0209
A JAN. 9 (OH)	Y:	+0.1176	-0.00456	+ 17.5129	+0.09953		+0.0353
				4.584098	1.6062		4.4565
JAN. 9 (OH)	X:	-0.5015	-0.00406	+ 94.3835	+0.36469	+0.003223	+0.1892
(2449726.5)				2.783562	1.7956	4.5220	4.3371
A JAN.13 (OH)	Y:	+0.1008	+0.00089	+ 17.1214	+0.09535		+0.0340
				6.220390	3.2215		1.4898
JAN.13 (OH)	X:	-0.5109	+0.00627	+ 95.1911	+0.34232	+0.003569	+0.1905
(2449730.5)				4.411202	3.4693	4.1026	1.3789
A JAN.17 (OH)	Y:	+0.1011	-0.00063	+ 16.7427	+0.09087		+0.0329
				1.574006	4.8159		4.8370
JAN.17 (OH)	X:	-0.5135	-0.00771	+ 96.0584	+0.35417	+0.007207	+0.1899
(2449734.5)				6.039607	5.0756	0.5686	4.6981
A JAN.21 (OH)	Y:	+0.1033	+0.00019	+ 16.3806	+0.08777		+0.0321
				3.211737	0.1304		1.8934
JAN.21 (OH)	X:	-0.5149	+0.01586	+ 96.9348	+0.37214	+0.004704	+0.1915
(2449738.5)				1.385161	0.5392	3.8289	1.7369
A JAN.25 (OH)	Y:	+0.0992	-0.00246	+ 16.0306	+0.08422		+0.0315
				4.850355	1.7423		5.2141
JAN.25 (OH)	X:	-0.4800	+0.01120	+ 97.8770	+0.35616	+0.004425	+0.1905
(2449742.5)				3.014153	2.2596	0.8263	5.0621
A JAN.29 (OH)	Y:	+0.0940	-0.00207	+ 15.6948	+0.07899		+0.0301
				0.206512	3.3498		2.2621
JAN.29 (OH)	X:	-0.4009	-0.00543	+ 98.9038	+0.32346	+0.006590	+0.1913
(2449746.5)				4.643677	3.8767	4.0882	2.0997
A FEV. 2 (OH)	Y:	+0.0813	+0.00173	+ 15.3783	+0.07452		+0.0294
				1.846469	4.9385		5.6067
FEV. 2 (OH)	X:	-0.4603	+0.00853	+ 99.9622	+0.34565	+0.008855	+0.1912
(2449750.5)				6.274191	5.4620	0.5185	5.4351
A FEV. 6 (OH)	Y:	+0.0914	-0.00199	+ 15.0815	+0.07018		+0.0290
				3.487453	0.2626		2.6608
FEV. 6 (OH)	X:	-0.4061	+0.00026	+101.0261	+0.36709	+0.003610	+0.1921
(2449754.5)				1.621614	0.9149	2.8488	2.4763
A FEV.10 (OH)	Y:	+0.0826	-0.00039	+ 14.8018	+0.06464		+0.0279
				5.129085	1.8645		5.9793
FEV.10 (OH)	X:	-0.4099	+0.02801	+102.1580	+0.36594	+0.003377	+0.1941
(2449758.5)				3.253063	2.6078	4.3928	5.8101
A FEV.14 (OH)	Y:	+0.0806	-0.00343	+ 14.5447	+0.05881		+0.0268
				0.488157	3.4538		3.0477
FEV.14 (OH)	X:	-0.2996	-0.00961	+103.3451	+0.36282	+0.002320	+0.1944
(2449762.5)				4.884920	4.3002	6.0935	2.8507
A FEV.18 (OH)	Y:	+0.0682	+0.00172	+ 14.3115	+0.05379		+0.0265
				2.130968	5.0343		0.1137
FEV.18 (OH)	X:	-0.3274	+0.00895	+104.5600	+0.37679	+0.003606	+0.1966
(2449766.5)				0.234344	6.0091	3.1560	6.1799
A FEV.22 (OH)	Y:	+0.0719	-0.00089	+ 14.1028	+0.04781		+0.0262
				3.774520	0.3508		3.4431
FEV.22 (OH)	X:	-0.3210	+0.00470	+105.8378	+0.34639	+0.007296	+0.1964
(2449770.5)				1.867324	1.4666	0.6207	3.2286
A FEV.26 (OH)	Y:	+0.0730	-0.00165	+ 13.9191	+0.04118		+0.0251
				5.418336	1.9151		0.5023
FEV.26 (OH)	X:	-0.2614	+0.01939	+107.1722	+0.33297	+0.009249	+0.1981
(2449774.5)				3.501452	3.0327	3.6774	0.2727
A MAR. 2 (OH)	Y:	+0.0621	-0.00138	+ 13.7656	+0.03473		+0.0247
				0.779418	3.4702		3.8616
MAR. 2 (OH)	X:	-0.2172	+0.00938	+108.4912	+0.37051	+0.006719	+0.1985
(2449778.5)				5.136300	4.7002	0.2279	3.6132
A MAR. 6 (OH)	Y:	+0.0596	-0.00090	+ 13.6403	+0.02807		+0.0250
				2.423891	4.9896		0.9223

1995 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 1 DE JUPITER: IO N=3.5516

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
MAR. 6 (OH) (2449782.5)	X:	-0.1491	-0.00835	+109.8388 0.488378	+0.38881 0.1722	+0.004806 3.1413	+0.1997 0.6618
A MAR.10 (OH)	Y:	+0.0528	+0.00162	+ 13.5464 4.068487	+0.02081 0.1589		+0.0246 4.2391
MAR.10 (OH) (2449786.5)	X:	-0.2148	+0.01992	+111.2628 2.124262	+0.35351 1.9062	+0.004472 1.5070	+0.2022 4.0068
A MAR.14 (OH)	Y:	+0.0624	-0.00335	+ 13.4851 5.712797	+0.01583 1.3902		+0.0239 1.3141
MAR.14 (OH) (2449790.5)	X:	-0.1107	+0.00643	+112.6920 3.761348	+0.36242 3.5263	+0.005004 4.9380	+0.2034 1.0557
A MAR.18 (OH)	Y:	+0.0486	-0.00010	+ 13.4611 1.073913	+0.01339 2.4694		+0.0240 4.6702
MAR.18 (OH) (2449794.5)	X:	-0.0843	+0.02360	+114.1169 5.398933	+0.37941 5.2771	+0.002726 2.1768	+0.2066 4.3936
A MAR.22 (OH)	Y:	+0.0454	-0.00160	+ 13.4698 2.717838	+0.01690 3.4899		+0.0245 1.7070
MAR.22 (OH) (2449798.5)	X:	-0.0015	-0.01413	+115.5877 0.754217	+0.36000 0.6840	+0.002373 1.4667	+0.2066 1.4496
A MAR.26 (OH)	Y:	+0.0413	+0.00143	+ 13.5183 4.361328	+0.02372 4.7944		+0.0239 5.0340
MAR.26 (OH) (2449802.5)	X:	-0.0410	+0.01775	+117.0517 2.393593	+0.36005 2.3538	+0.004420 3.8503	+0.2093 4.7869
A MAR.30 (OH)	Y:	+0.0449	-0.00201	+ 13.6037 6.004262	+0.03237 6.2558		+0.0238 2.1184
MAR.30 (OH) (2449806.5)	X:	+0.0016	+0.01298	+118.4836 4.033701	+0.39095 4.0779	+0.007670 0.7440	+0.2102 1.8516
A AVR. 3 (OH)	Y:	+0.0411	-0.00203	+ 13.7297 1.363452	+0.04147 1.4794		+0.0245 5.4717
AVR. 3 (OH) (2449810.5)	X:	+0.1003	+0.01543	+119.9453 5.674380	+0.36680 5.8840	+0.006666 4.2109	+0.2123 5.1898
A AVR. 7 (OH)	Y:	+0.0269	+0.00011	+ 13.8937 3.004936	+0.05247 3.0598		+0.0248 2.4985
AVR. 7 (OH) (2449814.5)	X:	+0.1174	+0.00281	+121.3986 1.033183	+0.32782 1.2084	+0.008736 1.7263	+0.2150 2.2589
A AVR.11 (OH)	Y:	+0.0311	-0.00107	+ 14.1032 4.645739	+0.06159 4.6568		+0.0247 5.8458
AVR.11 (OH) (2449818.5)	X:	+0.1592	-0.00393	+122.7651 2.675870	+0.35817 2.6539	+0.010117 4.6297	+0.2171 5.5988
A AVR.15 (OH)	Y:	+0.0263	+0.00039	+ 14.3495 0.002813	+0.07206 6.2560		+0.0252 2.9288
AVR.15 (OH) (2449822.5)	X:	+0.1175	+0.03197	+124.0972 4.319056	+0.38023 4.6157	+0.009758 0.8035	+0.2213 2.6598
A AVR.19 (OH)	Y:	+0.0285	-0.00405	+ 14.6370 1.642253	+0.08199 1.5905		+0.0265 6.2672
AVR.19 (OH) (2449826.5)	X:	+0.2676	+0.00032	+125.4189 5.962954	+0.35993 0.1316	+0.003542 2.9767	+0.2221 6.0018
A AVR.23 (OH)	Y:	+0.0108	+0.00070	+ 14.9635 3.261106	+0.09166 3.2197		+0.0268 3.3012
AVR.23 (OH) (2449830.5)	X:	+0.2698	+0.01595	+126.6612 1.324741	+0.34756 1.8046	+0.006813 3.9532	+0.2250 3.0596
A AVR.27 (OH)	Y:	+0.0115	-0.00159	+ 15.3303 4.919563	+0.09952 4.8407		+0.0273 0.3613
AVR.27 (OH) (2449834.5)	X:	+0.3044	-0.01143	+127.8059 2.970154	+0.36220 3.5707	+0.008071 0.2609	+0.2259 0.1290
A MAI 1 (OH)	Y:	+0.0109	-0.00001	+ 15.7283 0.274483	+0.10895 0.1819		+0.0283 3.7164
MAI 1 (OH) (2449838.5)	X:	+0.2917	+0.02665	+128.9060 4.616268	+0.32443 5.3669	+0.002488 4.3354	+0.2283 3.4704
A MAI 5 (OH)	Y:	+0.0057	-0.00301	+ 16.1621 1.912075	+0.11617 1.8263		+0.0295 0.7584
MAI 5 (OH) (2449842.5)	X:	+0.3613	+0.01419	+129.8919 6.263176	+0.29132 0.7733	+0.007863 1.3138	+0.2307 0.5431
A MAI 9 (OH)	Y:	-0.0025	-0.00248	+ 16.6254 3.549714	+0.12160 3.4646		+0.0301 4.0929

1995 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 1 DE JUPITER: IO N=3.5516

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
MAI 9 (0H) (2449846.5)	X:	+0.4654	-0.00224	+130.7123 1.627432	+0.30575 2.3543	+0.015897 4.0380	+0.2321 3.8861
A MAI 13 (0H)	Y:	-0.0169	+0.00090	+ 17.1107 5.187366	+0.12603 5.1007		+0.0308 1.1453
MAI 13 (0H) (2449850.5)	X:	+0.4037	+0.00733	+131.4340 3.274763	+0.34164 4.1903	+0.012773 0.3114	+0.2361 0.9534
A MAI 17 (0H)	Y:	-0.0080	-0.00256	+ 17.6127 0.541772	+0.13000 0.4620		+0.0320 4.4901
MAI 17 (0H) (2449854.5)	X:	+0.4638	+0.00147	+132.0902 4.922757	+0.30680 6.0635	+0.002408 1.6762	+0.2366 4.2970
A MAI 21 (0H)	Y:	-0.0210	-0.00075	+ 18.1309 2.179465	+0.13089 2.1143		+0.0330 1.5488
MAI 21 (0H) (2449858.5)	X:	+0.4585	+0.03283	+132.5643 0.288029	+0.29159 1.4963	+0.006943 3.0864	+0.2393 1.3563
A MAI 25 (0H)	Y:	-0.0245	-0.00513	+ 18.6548 3.817575	+0.12983 3.7542		+0.0342 4.8871
MAI 25 (0H) (2449862.5)	X:	+0.5920	-0.01291	+132.8799 1.936516	+0.30061 3.2308	+0.009496 5.2633	+0.2386 4.7072
A MAI 29 (0H)	Y:	-0.0435	+0.00166	+ 19.1754 5.455951	+0.12844 5.3950		+0.0352 1.9390
MAI 29 (0H) (2449866.5)	X:	+0.5481	+0.00769	+133.0955 3.585002	+0.30374 5.1404	+0.004131 2.2813	+0.2403 1.7670
A JUN. 2 (0H)	Y:	-0.0400	-0.00200	+ 19.6884 0.811264	+0.12473 0.7670		+0.0362 5.2715
JUN. 2 (0H) (2449870.5)	X:	+0.5435	-0.00222	+133.1365 5.233984	+0.24602 0.6443	+0.009372 0.6437	+0.2417 5.1212
A JUN. 6 (0H)	Y:	-0.0418	-0.00248	+ 20.1879 2.450226	+0.11782 2.4127		+0.0375 2.3443
JUN. 6 (0H) (2449874.5)	X:	+0.6014	+0.01990	+132.9718 0.599243	+0.25991 2.2042	+0.014159 3.5992	+0.2425 2.1782
A JUN.10 (0H)	Y:	-0.0583	-0.00310	+ 20.6593 4.089447	+0.11062 4.0540		+0.0390 5.6721
JUN.10 (0H) (2449878.5)	X:	+0.6396	+0.00449	+132.7259 2.247255	+0.29675 4.0536	+0.008797 6.1274	+0.2450 5.5257
A JUN.14 (0H)	Y:	-0.0655	-0.00164	+ 21.1019 5.728798	+0.10226 5.7037		+0.0399 2.7089
JUN.14 (0H) (2449882.5)	X:	+0.6952	-0.01502	+132.3646 3.895286	+0.29939 5.9567	+0.002091 3.0667	+0.2448 2.5830
A JUN.18 (0H)	Y:	-0.0776	+0.00192	+ 21.5100 1.085116	+0.09121 1.0812		+0.0400 6.0485
JUN.18 (0H) (2449886.5)	X:	+0.5956	+0.01683	+131.8119 5.543213	+0.25762 1.4243	+0.009128 1.7875	+0.2469 5.9205
A JUN.22 (0H)	Y:	-0.0641	-0.00531	+ 21.8775 2.725030	+0.07832 2.7082		+0.0415 3.1159
JUN.22 (0H) (2449890.5)	X:	+0.6932	+0.00145	+131.1315 0.907003	+0.28945 3.0940	+0.009535 4.7242	+0.2453 2.9797
A JUN.26 (0H)	Y:	-0.0877	-0.00052	+ 22.1917 4.364891	+0.06715 4.3453		+0.0425 0.1597
JUN.26 (0H) (2449894.5)	X:	+0.6969	+0.01764	+130.3754 2.553668	+0.30908 4.9758	+0.002701 1.7687	+0.2454 0.0316
A JUN.30 (0H)	Y:	-0.0931	-0.00322	+ 22.4608 6.004691	+0.05304 5.9864		+0.0426 3.4747
JUN.30 (0H) (2449898.5)	X:	+0.7535	-0.02300	+129.4671 4.199766	+0.29312 0.4290	+0.003728 1.2060	+0.2452 3.3799
A JUL. 4 (0H)	Y:	-0.1019	+0.00245	+ 22.6732 1.361375	+0.03909 1.3131		+0.0425 0.5443
JUL. 4 (0H) (2449902.5)	X:	+0.6808	+0.01120	+128.4604 5.845062	+0.29721 2.1266	+0.006968 3.4687	+0.2448 0.4296
A JUL. 8 (0H)	Y:	-0.0949	-0.00327	+ 22.8306 3.001104	+0.02505 2.8601		+0.0438 3.8862
JUL. 8 (0H) (2449906.5)	X:	+0.6966	+0.00624	+127.4048 1.206396	+0.33636 3.9098	+0.007114 0.4158	+0.2458 3.7703
A JUL.12 (0H)	Y:	-0.1023	-0.00254	+ 22.9291 4.640589	+0.01236 4.3287		+0.0448 0.9232

1995 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 1 DE JUPITER: IO N=3.5516

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
JUL.12 (OH)	X:	+0.7725	+0.00373	+126.2580	+0.32651	+0.006608	+0.2441
(2449910.5)				2.850476	5.7647	4.0016	0.8181
A JUL.16 (OH)	Y:	-0.1226	+0.00009	+ 22.9759	+0.00623		+0.0441
				6.279906	4.0425		4.2453
JUL.16 (OH)	X:	+0.7408	-0.00508	+125.0032	+0.29119	+0.008863	+0.2450
(2449914.5)				4.493456	1.1280	1.3370	4.1508
A JUL.20 (OH)	Y:	-0.1147	-0.00081	+ 22.9607	+0.01834		+0.0444
				1.635905	5.2005		1.3054
JUL.20 (OH)	X:	+0.7518	-0.01415	+123.7404	+0.31596	+0.008248	+0.2426
(2449918.5)				6.135437	2.7764	4.0015	1.2003
A JUL.24 (OH)	Y:	-0.1202	+0.00173	+ 22.8936	+0.03140		+0.0452
				3.274577	0.4131		4.6369
JUL.24 (OH)	X:	+0.6713	+0.02390	+122.4585	+0.35117	+0.008299	+0.2419
(2449922.5)				1.493505	4.5022	0.3035	4.5264
A JUL.28 (OH)	Y:	-0.1121	-0.00512	+ 22.7738	+0.04411		+0.0456
				4.913044	2.0168		1.6604
JUL.28 (OH)	X:	+0.7867	-0.01207	+121.1279	+0.35809	+0.004823	+0.2400
(2449926.5)				3.134144	0.0019	2.4933	1.5805
A AOU. 1 (OH)	Y:	-0.1352	+0.00219	+ 22.6038	+0.05684		+0.0447
				0.267973	3.6377		4.9899
AOU. 1 (OH)	X:	+0.7400	+0.00460	+119.7586	+0.35672	+0.006044	+0.2390
(2449930.5)				4.773693	1.6995	3.9767	4.9069
A AOU. 5 (OH)	Y:	-0.1275	-0.00112	+ 22.3827	+0.06720		+0.0443
				1.905775	5.2752		2.0390
AOU. 5 (OH)	X:	+0.7319	-0.02034	+118.3983	+0.37130	+0.006243	+0.2394
(2449934.5)				0.129277	3.4602	0.4633	1.9564
A AOU. 9 (OH)	Y:	-0.1252	+0.00231	+ 22.1193	+0.07797		+0.0447
				3.543079	0.6057		5.3647
AOU. 9 (OH)	X:	+0.6828	+0.01375	+117.0059	+0.34267	+0.003958	+0.2378
(2449938.5)				1.767124	5.1968	4.3124	5.2777
A AOU.13 (OH)	Y:	-0.1231	-0.00228	+ 21.8128	+0.06797		+0.0441
				5.180183	2.2456		2.3916
AOU.13 (OH)	X:	+0.7063	+0.00145	+115.6307	+0.32472	+0.007830	+0.2383
(2449942.5)				3.403921	0.5555	0.9206	2.3180
A AOU.17 (OH)	Y:	-0.1279	-0.00075	+ 21.4676	+0.09677		+0.0434
				0.533613	3.8748		5.7239
AOU.17 (OH)	X:	+0.7515	-0.01312	+114.3095	+0.35377	+0.011411	+0.2357
(2449946.5)				5.039788	2.1460	3.7534	5.6418
A AOU.21 (OH)	Y:	-0.1360	+0.00291	+ 21.0884	+0.10480		+0.0427
				2.169939	5.5067		2.7772
AOU.21 (OH)	X:	+0.6540	-0.00362	+113.0072	+0.39058	+0.008202	+0.2354
(2449950.5)				0.392153	3.9150	0.1833	2.6757
A AOU.25 (OH)	Y:	-0.1173	-0.00034	+ 20.6779	+0.11291		+0.0427
				3.805997	0.8514		6.0922
AOU.25 (OH)	X:	+0.6649	-0.00882	+111.6701	+0.36327	+0.000881	+0.2331
(2449954.5)				2.026756	5.6673	6.2458	6.0022
A AOU.29 (OH)	Y:	-0.1228	+0.00178	+ 20.2351	+0.11945		+0.0419
				5.441902	2.4913		3.1276
AOU.29 (OH)	X:	+0.6190	+0.01620	+110.3945	+0.36482	+0.003683	+0.2317
(2449958.5)				3.660355	1.0366	2.6549	3.0354
A SEP. 2 (OH)	Y:	-0.1160	-0.00285	+ 19.7653	+0.12476		+0.0411
				0.794210	4.1150		0.1700
SEP. 2 (OH)	X:	+0.6876	-0.02232	+109.1640	+0.37869	+0.005162	+0.2312
(2449962.5)				5.293305	2.7116	4.9090	0.0796
A SEP. 6 (OH)	Y:	-0.1258	+0.00423	+ 19.2733	+0.13038		+0.0406
				2.429584	5.7423		3.5001
SEP. 6 (OH)	X:	+0.6022	-0.00340	+107.9406	+0.36844	+0.001703	+0.2298
(2449966.5)				0.642493	4.4647	3.2342	3.3936
A SEP.10 (OH)	Y:	-0.1103	+0.00051	+ 18.7591	+0.13508		+0.0398
				4.064864	1.0883		0.5256
SEP.10 (OH)	X:	+0.5641	-0.01123	+106.7660	+0.34265	+0.007933	+0.2301
(2449970.5)				2.273753	6.0745	0.5170	0.4277
A SEP.14 (OH)	Y:	-0.1041	+0.00137	+ 18.2256	+0.13839		+0.0389
				5.700025	2.7149		3.8428

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DU SATELLITE 1 DE JUPITER: IO N=3.5516

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
SEP.14 (0H)	X:	+0.5542	+0.00802	+105.6773	+0.38432	+0.006968	+0.2274
(2449974.5)				3.904742	1.4479	3.6684	3.7420
A SEP.18 (0H)	Y:	-0.1052	-0.00043	+ 17.6780	+0.14225		+0.0378
				1.051955	4.3312		0.8876
SEP.18 (0H)	X:	+0.5539	-0.00983	+104.5838	+0.38145	+0.002193	+0.2270
(2449978.5)				5.535218	3.2027	0.9555	0.7719
A SEP.22 (0H)	Y:	-0.1014	+0.00142	+ 17.1149	+0.14608		+0.0370
				2.687358	5.9597		4.2079
SEP.22 (0H)	X:	+0.5443	-0.01917	+103.5262	+0.35413	+0.006179	+0.2248
(2449982.5)				0.881634	4.8911	4.6296	4.0904
A SEP.26 (0H)	Y:	-0.0991	+0.00372	+ 16.5359	+0.14802		+0.0357
				4.322826	1.3003		1.2432
SEP.26 (0H)	X:	+0.4325	-0.00075	+102.5578	+0.35792	+0.009495	+0.2237
(2449986.5)				2.510511	0.1689	1.3815	1.1173
A SEP.30 (0H)	Y:	-0.0807	-0.00056	+ 15.9476	+0.14993		+0.0344
				5.958453	2.9170		4.5638
SEP.30 (0H)	X:	+0.4584	-0.00847	+101.6322	+0.39416	+0.006298	+0.2228
(2449990.5)				4.139362	1.8806	4.3613	4.4383
A OCT. 4 (0H)	Y:	-0.0861	+0.00195	+ 15.3510	+0.15236		+0.0334
				1.311376	4.5346		1.6141
OCT. 4 (0H)	X:	+0.4165	+0.00385	+100.7131	+0.37496	+0.001474	+0.2216
(2449994.5)				5.767494	3.6140	2.4338	1.4655
A OCT. 8 (0H)	Y:	-0.0785	-0.00014	+ 14.7438	+0.15337		+0.0322
				2.948088	6.1577		4.9321
OCT. 8 (0H)	X:	+0.4298	-0.02914	+ 99.6704	+0.37064	+0.001347	+0.2223
(2449998.5)				1.111844	5.2559	6.2645	4.7799
A OCT.12 (0H)	Y:	-0.0764	+0.00407	+ 14.1304	+0.15396		+0.0308
				4.585221	1.4844		1.9756
OCT.12 (0H)	X:	+0.3208	-0.00080	+ 99.0870	+0.37745	+0.001962	+0.2204
(2450002.5)				2.739028	0.6198	2.7842	1.8054
A OCT.16 (0H)	Y:	-0.0627	+0.00029	+ 13.5142	+0.15573		+0.0295
				6.223302	3.0977		5.3044
OCT.16 (0H)	X:	+0.2986	-0.00835	+ 98.3251	+0.37367	+0.005059	+0.2203
(2450006.5)				4.365963	2.3514	1.0331	5.1138
A OCT.20 (0H)	Y:	-0.0590	+0.00081	+ 12.8917	+0.15676		+0.0286
				1.579333	4.7152		2.3438
OCT.20 (0H)	X:	+0.3018	-0.00214	+ 97.6164	+0.34347	+0.008601	+0.2180
(2450010.5)				5.992149	3.9793	3.9691	2.1450
A OCT.24 (0H)	Y:	-0.0599	+0.00124	+ 12.2651	+0.15665		+0.0271
				3.219705	0.0464		5.6652
OCT.24 (0H)	X:	+0.2572	-0.01616	+ 97.0017	+0.36846	+0.007283	+0.2175
(2450014.5)				1.335051	5.5539	0.7144	5.4518
A OCT.28 (0H)	Y:	-0.0504	+0.00166	+ 11.6384	+0.15718		+0.0255
				4.861477	1.6517		2.7113
OCT.28 (0H)	X:	+0.2213	-0.01953	+ 96.4083	+0.39412	+0.005705	+0.2165
(2450018.5)				2.961084	0.9620	3.4334	2.4857
A NOV. 1 (0H)	Y:	-0.0464	+0.00243	+ 11.0116	+0.15804		+0.0243
				0.222193	3.2655		6.0492
NOV. 1 (0H)	X:	+0.1169	+0.00580	+ 95.8261	+0.39101	+0.005146	+0.2154
(2450022.5)				4.586732	2.7131	0.5168	5.7921
A NOV. 5 (0H)	Y:	-0.0361	-0.00084	+ 10.3829	+0.15767		+0.0230
				1.868306	4.8757		3.0811
NOV. 5 (0H)	X:	+0.1661	-0.01505	+ 95.3162	+0.36443	+0.002752	+0.2158
(2450026.5)				6.211698	4.3524	3.7354	2.8230
A NOV. 9 (0H)	Y:	-0.0403	+0.00186	+ 9.7578	+0.15752		+0.0213
				3.517036	0.1986		0.1325
NOV. 9 (0H)	X:	+0.0975	-0.00360	+ 94.8779	+0.37631	+0.001204	+0.2146
(2450030.5)				1.553567	5.9822	3.1116	6.1287
A NOV.13 (0H)	Y:	-0.0324	+0.00059	+ 9.1375	+0.15801		+0.0198
				5.169147	1.8029		3.4886
NOV.13 (0H)	X:	+0.0723	-0.02665	+ 94.4600	+0.36806	+0.003837	+0.2150
(2450034.5)				3.178411	1.3909	0.2468	3.1517
A NOV.17 (0H)	Y:	-0.0283	+0.00190	+ 8.5230	+0.15822		+0.0188
				0.542424	3.4143		0.5489

1995 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 1 DE JUPITER: IO N=3.5516

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
NOV.17 (0H) (2450038.5)	X:	-0.0210	+0.00373	+ 94.1064 4.802960	+0.35730 3.0068	+0.004057 3.1869	+0.2129 0.1779
A NOV.21 (0H)	Y:	-0.0237	-0.00019	+ 7.9151 2.203831	+0.15770 5.0183		+0.0173 3.8807
NOV.21 (0H) (2450042.5)	X:	-0.0239	-0.00784	+ 93.8151 0.144355	+0.37441 4.6026	+0.005909 0.0698	+0.2125 3.4834
A NOV.25 (0H)	Y:	-0.0222	+0.00015	+ 7.3206 3.871537	+0.15805 0.3398		+0.0157 0.9601
NOV.25 (0H) (2450046.5)	X:	-0.0248	-0.01100	+ 93.5314 1.769062	+0.39914 0.0563	+0.006551 3.5216	+0.2116 0.5158
A NOV.29 (0H)	Y:	-0.0230	+0.00137	+ 6.7405 5.547296	+0.15809 1.9453		+0.0146 4.3508
NOV.29 (0H) (2450050.5)	X:	-0.1060	-0.01532	+ 93.2892 3.393131	+0.36661 1.7567	+0.005169 0.5261	+0.2110 3.8210
A DEC. 3 (0H)	Y:	-0.0159	+0.00016	+ 6.1808 0.949663	+0.15789 3.5521		+0.0136 1.4193
DEC. 3 (0H) (2450054.5)	X:	-0.1411	-0.01157	+ 93.1423 5.017261	+0.36384 3.3220	+0.003597 4.5894	+0.2112 0.8523
A DEC. 7 (0H)	Y:	-0.0172	+0.00054	+ 5.6480 2.647262	+0.15758 5.1526		+0.0121 4.7901
DEC. 7 (0H) (2450058.5)	X:	-0.2086	+0.00723	+ 93.0231 0.358409	+0.38025 4.9761	+0.004294 1.1705	+0.2102 4.1582
A DEC.11 (0H)	Y:	-0.0146	-0.00091	+ 5.1542 4.359868	+0.15814 0.4740		+0.0109 1.9400
DEC.11 (0H) (2450062.5)	X:	-0.1601	-0.01970	+ 92.9246 1.982680	+0.38197 0.4127	+0.004720 4.3343	+0.2112 1.1844
A DEC.15 (0H)	Y:	-0.0169	+0.00082	+ 4.7089 6.090967	+0.15798 2.0784		+0.0104 5.3661
DEC.15 (0H) (2450066.5)	X:	-0.2512	-0.00557	+ 92.8962 3.606691	+0.36116 2.0379	+0.001195 2.0504	+0.2094 4.4924
A DEC.19 (0H)	Y:	-0.0147	-0.00009	+ 4.3292 1.559652	+0.15820 3.6835		+0.0094 2.4937
DEC.19 (0H) (2450070.5)	X:	-0.2820	-0.01949	+ 92.9184 5.231046	+0.37592 3.6725	+0.002935 0.1530	+0.2094 1.5152
A DEC.23 (0H)	Y:	-0.0146	-0.00057	+ 4.0334 3.333720	+0.15804 5.2865		+0.0085 5.9820
DEC.23 (0H) (2450074.5)	X:	-0.3421	+0.00980	+ 92.9666 0.572067	+0.36144 5.3655	+0.002508 4.4858	+0.2080 4.8311
A DEC.27 (0H)	Y:	-0.0178	-0.00029	+ 3.8424 5.127030	+0.15846 0.6079		+0.0085 3.2220
DEC.27 (0H) (2450078.5)	X:	-0.3225	-0.01282	+ 93.0814 2.196386	+0.35383 0.6958	+0.004224 1.4946	+0.2080 1.8556
A DEC.31 (0H)	Y:	-0.0175	-0.00051	+ 3.7726 0.649499	+0.15844 2.2126		+0.0087 0.3874
DEC.31 (0H) (2450082.5)	X:	-0.3461	-0.01245	+ 93.2505 3.820965	+0.36914 2.2983	+0.008067 4.1870	+0.2083 5.1717
A JAN. 4 (0H)	Y:	-0.0202	+0.00017	+ 3.8302 2.455674	+0.15882 3.8191		+0.0086 3.8677

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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 (OH)	X:	+0.3715	+0.77033	+147.1483	+1.04697	+0.334081	+0.6618
(2449718.5)				3.530682	5.1572	2.7117	2.7807
A JAN. 5 (OH)	Y:	-0.3803	+0.00660	+ 27.4112	+0.16788		+0.1269
				0.686390	4.0129		6.2022
JAN. 5 (OH)	X:	+3.3852	-0.72189	+150.6934	+1.78124	+0.316281	+0.6855
(2449722.5)				4.323116	2.4528	5.8231	4.3076
A JAN. 9 (OH)	Y:	-0.3560	-0.00223	+ 26.7550	+0.15989		+0.1247
				1.478051	4.7799		1.5261
JAN. 9 (OH)	X:	+1.2989	-0.24531	+149.8965	+1.15485	+0.141419	+0.7207
(2449726.5)				5.105822	4.5607	2.1479	5.9598
A JAN.13 (OH)	Y:	-0.3632	+0.00543	+ 26.1237	+0.15565		+0.1231
				2.267837	5.5231		3.1726
JAN.13 (OH)	X:	+1.3578	+0.31740	+151.2540	+1.05267	+0.188896	+0.7494
(2449730.5)				5.886646	5.6017	3.4789	1.2886
A JAN.17 (OH)	Y:	-0.3301	-0.00432	+ 25.5247	+0.15562		+0.1215
				3.059610	0.0742		4.8054
JAN.17 (OH)	X:	+3.3012	-0.80003	+152.3349	+1.03811	+0.351948	+0.7837
(2449734.5)				0.373954	2.1796	6.0003	2.9418
A JAN.21 (OH)	Y:	-0.3228	-0.00045	+ 24.9236	+0.14450		+0.1190
				3.850939	0.8103		0.1574
JAN.21 (OH)	X:	-0.4223	+1.02826	+156.6313	+2.42927	+0.468992	+0.8006
(2449738.5)				1.166742	5.5032	2.6159	4.6441
A JAN.25 (OH)	Y:	-0.3537	+0.01995	+ 24.3136	+0.11832		+0.1179
				4.644299	1.6109		1.8135
JAN.25 (OH)	X:	+2.7488	-0.50806	+155.0278	+1.52758	+0.220273	+0.7462
(2449742.5)				1.953365	1.6911	5.5940	6.2601
A JAN.29 (OH)	Y:	-0.2984	-0.00137	+ 23.7997	+0.12874		+0.1133
				5.435912	2.2516		3.4454
JAN.29 (OH)	X:	+1.6725	-0.09242	+157.2687	+0.66764	+0.069009	+0.7594
(2449746.5)				2.731733	2.4070	0.6799	1.5951
A FEV. 2 (OH)	Y:	-0.2912	+0.00175	+ 23.2760	+0.11905		+0.1121
				6.230118	3.0124		5.0895
FEV. 2 (OH)	X:	+0.8977	+0.33194	+159.0351	+0.13322	+0.164508	+0.7507
(2449750.5)				3.512121	5.1558	3.2111	3.1847
A FEV. 6 (OH)	Y:	-0.2795	+0.00420	+ 22.8026	+0.11677		+0.1099
				0.742134	3.8051		0.4266
FEV. 6 (OH)	X:	+2.8678	-0.77399	+162.2972	+1.71850	+0.331049	+0.7636
(2449754.5)				4.303221	2.6559	6.0053	4.7794
A FEV.10 (OH)	Y:	-0.2605	+0.00108	+ 22.3388	+0.10531		+0.1080
				1.537844	4.5595		2.0728
FEV.10 (OH)	X:	-0.9436	+1.11835	+160.6885	+2.71099	+0.509272	+0.8444
(2449758.5)				5.092900	5.1913	2.7297	0.0902
A FEV.14 (OH)	Y:	-0.2623	+0.00634	+ 21.9272	+0.10477		+0.1071
				2.333865	5.3102		3.6917
FEV.14 (OH)	X:	+2.3133	-0.49862	+164.6752	+0.56741	+0.228666	+0.8522
(2449762.5)				5.864061	1.6767	5.4913	1.7912
A FEV.18 (OH)	Y:	-0.2255	-0.00629	+ 21.5457	+0.09050		+0.1064
				3.131896	6.1816		5.3532
FEV.18 (OH)	X:	+1.5653	-0.33169	+166.7192	+0.22338	+0.204365	+0.8754
(2449766.5)				0.371435	3.6942	0.4192	3.4288
A FEV.22 (OH)	Y:	-0.2384	+0.00599	+ 21.1740	+0.07375		+0.1041
				3.929170	0.5875		0.7155
FEV.22 (OH)	X:	-0.2430	+0.62572	+169.7204	+1.49450	+0.293181	+0.8704
(2449770.5)				1.163926	5.9077	2.8821	5.0866
A FEV.26 (OH)	Y:	-0.2267	+0.00825	+ 20.8671	+0.06174		+0.1035
				4.727064	1.2706		2.3525
FEV.26 (OH)	X:	+2.8478	-0.97639	+168.8822	+2.44224	+0.405443	+0.8432
(2449774.5)				1.955228	1.9965	5.7961	0.4757
A MAR. 2 (OH)	Y:	-0.1990	-0.00092	+ 20.6083	+0.05900		+0.1020
				5.524285	1.8976		4.0127
MAR. 2 (OH)	X:	-0.6237	+0.67864	+173.0389	+0.84921	+0.303583	+0.8257
(2449778.5)				2.728543	5.1602	2.6880	2.0239
A MAR. 6 (OH)	Y:	-0.2051	+0.00722	+ 20.4077	+0.04734		+0.1008
				0.040460	2.7451		5.6287

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		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
MAR. 6 (OH) (2449782.5)	X:	+1.4415	-0.37437	+175.4948 3.529375	+1.11836 2.4257	+0.171491 5.4579	+0.8645 3.6454
A MAR.10 (OH)	Y:	-0.1796	+0.00296	+ 20.2325 0.838677	+0.03565 3.2636		+0.1008 0.9893
MAR.10 (OH) (2449786.5)	X:	+0.6651	-0.17921	+177.1601 4.317552	+1.03221 3.8251	+0.135088 0.8016	+0.8977 5.2572
A MAR.14 (OH)	Y:	-0.1785	+0.00858	+ 20.1375 1.636936	+0.03199 4.0157		+0.1015 2.6155
MAR.14 (OH) (2449790.5)	X:	-1.2183	+0.82837	+177.9397 5.109986	+2.16623 5.3843	+0.382144 2.9344	+0.9335 0.6026
A MAR.18 (OH)	Y:	-0.1519	-0.00052	+ 20.0707 2.435740	+0.01674 4.1751		+0.1004 4.2681
MAR.18 (OH) (2449794.5)	X:	+3.0744	-1.39935	+182.4215 5.882579	+2.31712 2.1162	+0.619242 5.8464	+1.0079 2.2859
A MAR.22 (OH)	Y:	-0.1212	-0.01328	+ 20.0872 3.234791	+0.00737 3.0489		+0.1026 5.9040
MAR.22 (OH) (2449798.5)	X:	-1.2209	+0.59794	+185.0276 0.412875	+1.59256 5.4755	+0.295157 2.4133	+0.9596 3.9614
A MAR.26 (OH)	Y:	-0.1481	+0.00717	+ 20.1102 4.031067	+0.03643 4.3471		+0.1019 1.2784
MAR.26 (OH) (2449802.5)	X:	-0.1226	+0.09002	+186.3273 1.201769	+1.01760 0.6997	+0.138354 3.6614	+0.9639 5.5963
A MAR.30 (OH)	Y:	-0.1339	+0.00751	+ 20.2294 4.827748	+0.05084 4.9552		+0.1029 2.9163
MAR.30 (OH) (2449806.5)	X:	+0.6307	-0.45157	+187.9171 1.994963	+1.38629 2.3050	+0.189793 6.1625	+0.9431 0.9368
A AVR. 3 (OH)	Y:	-0.1201	+0.00502	+ 20.4212 5.623669	+0.06224 5.6746		+0.1036 4.5387
AVR. 3 (OH) (2449810.5)	X:	-1.8558	+0.76845	+191.3543 2.779693	+1.14423 5.1258	+0.343357 2.8462	+0.9257 2.5603
A AVR. 7 (OH)	Y:	-0.1118	+0.00716	+ 20.6685 0.135432	+0.07720 0.1327		+0.1050 6.1866
AVR. 7 (OH) (2449814.5)	X:	+1.9559	-1.22082	+194.5373 3.593933	+2.44185 2.5115	+0.520048 5.9470	+0.9757 4.1128
A AVR.11 (OH)	Y:	-0.0896	+0.00356	+ 20.9761 0.929774	+0.09361 0.9136		+0.1068 1.5147
AVR.11 (OH) (2449818.5)	X:	-2.0597	+0.66115	+193.8885 4.379277	+2.05562 5.0318	+0.322106 2.4804	+1.0294 5.7961
A AVR.15 (OH)	Y:	-0.0837	+0.01023	+ 21.3631 1.722777	+0.10193 1.6955		+0.1095 3.1565
AVR.15 (OH) (2449822.5)	X:	-0.4112	-0.05588	+197.7150 5.173990	+0.86854 0.3698	+0.195580 4.4148	+1.0609 1.1660
A AVR.19 (OH)	Y:	-0.0336	-0.00886	+ 21.8029 2.517634	+0.12511 2.3183		+0.1124 4.8052
AVR.19 (OH) (2449826.5)	X:	+0.7611	-0.86177	+200.2320 5.967362	+1.35626 2.1538	+0.385891 6.1201	+1.0749 2.8242
A AVR.23 (OH)	Y:	-0.0314	-0.00622	+ 22.3051 3.309123	+0.13800 3.1465		+0.1145 0.1494
AVR.23 (OH) (2449830.5)	X:	-3.8051	+1.38264	+203.4898 0.502431	+2.84721 5.5117	+0.643964 2.6866	+1.0849 4.5398
A AVR.27 (OH)	Y:	-0.0549	+0.01425	+ 22.8306 4.100703	+0.16654 3.9850		+0.1184 1.8039
AVR.27 (OH) (2449834.5)	X:	+0.6093	-0.84907	+201.7253 1.289503	+2.21772 2.0159	+0.344101 5.6870	+1.0101 6.1464
A MAI 1 (OH)	Y:	-0.0145	+0.00527	+ 23.4723 4.891565	+0.16986 4.7805		+0.1204 3.4213
MAI 1 (OH) (2449838.5)	X:	-2.0497	+0.32421	+205.7424 2.086287	+0.64280 4.2183	+0.152736 2.3159	+1.0138 1.4803
A MAI 5 (OH)	Y:	-0.0004	+0.00805	+ 24.1446 5.682753	+0.18417 5.5586		+0.1232 5.0593
MAI 5 (OH) (2449842.5)	X:	-1.1629	-0.04847	+207.0017 2.891625	+0.31110 2.9150	+0.096423 4.6868	+1.0370 3.0873
A MAI 9 (OH)	Y:	+0.0321	-0.00147	+ 24.8558 0.189900	+0.19338 0.1231		+0.1278 0.3884

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		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
MAI 9 (0H) (2449846.5)	X:	-0.0279	-0.80084	+208.8981 3.697575	+1.29494 2.8505	+0.353072 6.1995	+1.0443 4.7157
A MAI 13 (0H)	Y:	+0.0394	+0.00610	+ 25.6278 0.980904	+0.19697 0.8989		+0.1313 2.0369
MAI 13 (0H) (2449850.5)	X:	-4.6628	+1.53954	+206.2595 4.491571	+3.66107 5.4675	+0.712470 2.8317	+1.1384 0.0601
A MAI 17 (0H)	Y:	+0.0439	+0.01874	+ 26.4372 1.771786	+0.18925 1.6890		+0.1360 3.6541
MAI 17 (0H) (2449854.5)	X:	+0.5669	-1.11607	+212.0455 5.287259	+2.23293 1.8867	+0.495566 5.7198	+1.1345 1.7825
A MAI 21 (0H)	Y:	+0.1142	-0.00649	+ 27.2350 2.564404	+0.20703 2.4284		+0.1409 5.3076
MAI 21 (0H) (2449858.5)	X:	-2.5988	+0.25422	+211.5965 6.102778	+0.68735 4.7654	+0.230379 1.6830	+1.1106 3.4509
A MAI 25 (0H)	Y:	+0.1038	+0.00632	+ 28.0376 3.355479	+0.21123 3.2631		+0.1435 0.6658
MAI 25 (0H) (2449862.5)	X:	-2.7731	+0.48258	+212.0355 0.621456	+0.74380 6.1747	+0.263075 3.1382	+1.0845 5.0927
A MAI 29 (0H)	Y:	+0.1201	+0.01141	+ 28.8602 4.147064	+0.20801 4.0967		+0.1471 2.2919
MAI 29 (0H) (2449866.5)	X:	+0.1361	-1.11204	+209.6980 1.420151	+2.57249 2.3365	+0.469550 5.8714	+1.0420 0.4852
A JUN. 2 (0H)	Y:	+0.1682	+0.00448	+ 29.6805 4.939006	+0.19809 4.9089		+0.1501 3.9416
JUN. 2 (0H) (2449870.5)	X:	-4.2258	+1.04290	+213.5431 2.215953	+2.11930 5.1594	+0.438773 2.8045	+1.0072 2.0392
A JUN. 6 (0H)	Y:	+0.1948	+0.00236	+ 30.4680 5.731804	+0.18893 5.7238		+0.1532 5.5590
JUN. 6 (0H) (2449874.5)	X:	-0.4158	-0.87415	+212.0582 3.034771	+1.41166 2.3038	+0.392902 5.7940	+1.0548 3.6698
A JUN.10 (0H)	Y:	+0.2353	-0.00941	+ 31.2054 0.241274	+0.18252 0.2917		+0.1566 0.9163
JUN.10 (0H) (2449878.5)	X:	-3.7718	+0.65378	+210.0022 3.824577	+2.09260 5.1941	+0.360604 2.3080	+1.1089 5.3258
A JUN.14 (0H)	Y:	+0.1903	+0.02434	+ 31.9695 1.035104	+0.14272 1.0165		+0.1633 2.5516
JUN.14 (0H) (2449882.5)	X:	-3.1599	+0.47685	+210.0355 4.629653	+1.41560 6.1516	+0.259955 3.2864	+1.0871 0.6984
A JUN.18 (0H)	Y:	+0.2472	+0.01190	+ 32.5894 1.828644	+0.14042 1.8410		+0.1640 4.1922
JUN.18 (0H) (2449886.5)	X:	+0.6157	-1.59399	+212.1800 5.423068	+3.45129 2.2256	+0.718399 5.9968	+1.1418 2.3902
A JUN.22 (0H)	Y:	+0.3135	-0.00799	+ 33.1617 2.624154	+0.13492 2.4981		+0.1685 5.8322
JUN.22 (0H) (2449890.5)	X:	-4.9171	+1.18090	+209.3045 6.246924	+2.00464 5.2737	+0.531636 2.6427	+1.0533 4.0778
A JUN.26 (0H)	Y:	+0.2788	+0.01808	+ 33.6493 3.416532	+0.11789 3.5284		+0.1681 1.1933
JUN.26 (0H) (2449894.5)	X:	-0.9871	-0.68827	+206.1067 0.749361	+1.77222 2.1095	+0.308470 5.4354	+0.9926 5.7090
A JUN.30 (0H)	Y:	+0.3264	+0.00666	+ 34.1007 4.210883	+0.09088 4.2795		+0.1677 2.8350
JUN.30 (0H) (2449898.5)	X:	-2.8515	+0.08329	+206.5821 1.551872	+0.89504 4.1873	+0.077964 1.5902	+0.9846 1.0150
A JUL. 4 (0H)	Y:	+0.3570	+0.00315	+ 34.4591 5.004897	+0.06366 5.1390		+0.1684 4.4588
JUL. 4 (0H) (2449902.5)	X:	-3.5355	+0.49405	+205.3693 2.350380	+1.33608 5.4041	+0.212485 3.1008	+0.9627 2.6558
A JUL. 8 (0H)	Y:	+0.3965	-0.00654	+ 34.7145 5.798755	+0.04318 6.0547		+0.1693 6.1096
JUL. 8 (0H) (2449906.5)	X:	-0.5983	-1.09263	+203.0779 3.162770	+1.56432 2.3470	+0.480312 6.1366	+0.9919 4.2343
A JUL.12 (0H)	Y:	+0.3932	-0.00176	+ 34.8919 0.309946	+0.01673 0.6425		+0.1694 1.4538

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		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
JUL.12 (OH)	X:	-5.0248	+1.18718	+199.1285	+2.59377	+0.531858	+1.0366
(2449910.5)				3.944043	5.5550	2.7221	5.9187
A JUL.16 (OH)	Y:	+0.3714	+0.01541	+ 34.9991	+0.01584		+0.1719
				1.103715	4.4588		3.0958
JUL.16 (OH)	X:	-0.4351	-1.02581	+201.4647	+2.78203	+0.482599	+1.0311
(2449914.5)				4.745083	1.8557	5.5459	1.3415
A JUL.20 (OH)	Y:	+0.4416	-0.00836	+ 34.9458	+0.02344		+0.1716
				1.898700	6.0566		4.7469
JUL.20 (OH)	X:	-2.7554	-0.05805	+197.4037	+0.72706	+0.136618	+0.9697
(2449918.5)				5.547397	3.0441	0.9928	2.9782
A JUL.24 (OH)	Y:	+0.4173	+0.00974	+ 34.8590	+0.04110		+0.1676
				2.690481	5.8523		0.0921
JUL.24 (OH)	X:	-4.6639	+1.02806	+195.2179	+1.70672	+0.466402	+0.9587
(2449922.5)				0.068899	5.3216	2.8910	4.6640
A JUL.28 (OH)	Y:	+0.4107	+0.01832	+ 34.6510	+0.04919		+0.1672
				3.483345	0.2692		1.7447
JUL.28 (OH)	X:	-0.7452	-0.96001	+191.3309	+1.95071	+0.420538	+0.8729
(2449926.5)				0.848023	2.5218	5.8997	6.2634
A AOU. 1 (OH)	Y:	+0.4586	-0.00466	+ 34.4502	+0.09157		+0.1621
				4.276100	1.2162		3.3668
AOU. 1 (OH)	X:	-4.3733	+0.83993	+192.5132	+2.18561	+0.352080	+0.8595
(2449930.5)				1.645307	5.1457	2.6303	1.5664
A AOU. 5 (OH)	Y:	+0.4571	-0.00083	+ 34.1026	+0.10224		+0.1596
				5.068733	2.0563		5.0133
AOU. 5 (OH)	X:	-0.9704	-0.80352	+187.8675	+1.19760	+0.364763	+0.9100
(2449934.5)				2.450032	1.9231	5.7608	3.1635
A AOU. 9 (OH)	Y:	+0.4829	-0.01215	+ 33.6983	+0.12513		+0.1587
				5.860141	2.7631		0.3447
AOU. 9 (OH)	X:	-2.7285	-0.00555	+186.1595	+0.32139	+0.109569	+0.8913
(2449938.5)				3.233922	5.6797	1.1701	4.8385
A AOU.13 (OH)	Y:	+0.4545	+0.00000	+ 33.2364	+0.13924		+0.1560
				0.369412	3.6761		2.0041
AOU.13 (OH)	X:	-4.1870	+0.90841	+183.1362	+1.78304	+0.429210	+0.9264
(2449942.5)				4.020054	6.0371	3.1003	0.1898
A AOU.17 (OH)	Y:	+0.4453	+0.00332	+ 32.6996	+0.15509		+0.1534
				1.161012	4.5009		3.6327
AOU.17 (OH)	X:	-0.3915	-1.05841	+184.2495	+2.69384	+0.471053	+0.9040
(2449946.5)				4.814541	2.2020	5.9118	1.8888
A AOU.21 (OH)	Y:	+0.4608	-0.00894	+ 32.0922	+0.15409		+0.1509
				1.952191	5.2970		5.2731
AOU.21 (OH)	X:	-4.6236	+1.01001	+179.0654	+1.84013	+0.446262	+0.8391
(2449950.5)				5.618990	4.9474	2.5056	3.5727
A AOU.25 (OH)	Y:	+0.4165	+0.01332	+ 31.4351	+0.16524		+0.1448
				2.741439	5.9591		0.6475
AOU.25 (OH)	X:	-1.7547	-0.27759	+177.4786	+0.74890	+0.150483	+0.7979
(2449954.5)				0.109575	2.4711	5.2482	5.1410
A AOU.29 (OH)	Y:	+0.4379	-0.00009	+ 30.7762	+0.18495		+0.1405
				3.532446	0.5132		2.2590
AOU.29 (OH)	X:	-1.8709	-0.26703	+175.5366	+0.70224	+0.147267	+0.7838
(2449958.5)				0.899463	3.5381	0.0474	0.4979
A SEP. 2 (OH)	Y:	+0.4387	-0.00876	+ 30.0507	+0.19758		+0.1362
				4.322612	1.3111		3.9136
SEP. 2 (OH)	X:	-3.4109	+0.62929	+175.0680	+1.71450	+0.261091	+0.7710
(2449962.5)				1.688938	5.5054	3.0036	2.0663
A SEP. 6 (OH)	Y:	+0.4193	-0.00626	+ 29.2835	+0.20866		+0.1328
				5.112699	2.0962		5.5302
SEP. 6 (OH)	X:	-0.5406	-0.83512	+171.0967	+1.34012	+0.371310	+0.7999
(2449966.5)				2.485364	1.9793	5.9591	3.6864
A SEP.10 (OH)	Y:	+0.4116	-0.00770	+ 28.4706	+0.21127		+0.1286
				5.902515	2.8796		0.8905
SEP.10 (OH)	X:	-4.3591	+1.08287	+169.4297	+2.22760	+0.489045	+0.8441
(2449970.5)				3.250466	5.5441	2.6253	5.3632
A SEP.14 (OH)	Y:	+0.3651	+0.00960	+ 27.6644	+0.22995		+0.1269
				0.410057	3.7336		2.5234

1995 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 2 DE JUPITER: EUROPE N=1.7693

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
SEP.14 (0H) (2449974.5)	X:	-1.3786	-0.24811	+169.1003 4.049984	+1.33519 1.6677	+0.155514 5.2173	+0.7900 0.7502
A SEP.18 (0H)	Y:	+0.3887	-0.01443	+ 26.7580 1.199519	+0.21262 4.4736		+0.1209 4.1768
SEP.18 (0H) (2449978.5)	X:	-0.8769	-0.56995	+167.6658 4.834412	+1.81019 2.5552	+0.297539 6.2373	+0.7958 2.3994
A SEP.22 (0H)	Y:	+0.3633	-0.01197	+ 25.8729 1.989391	+0.21746 5.2609		+0.1167 5.8089
SEP.22 (0H) (2449982.5)	X:	-3.2235	+0.72784	+164.1573 5.625854	+1.19870 5.0577	+0.317679 2.8388	+0.7379 4.0441
A SEP.26 (0H)	Y:	+0.3107	+0.00810	+ 24.9788 2.778017	+0.23068 5.9633		+0.1111 1.1670
SEP.26 (0H) (2449986.5)	X:	-0.2391	-0.71391	+162.8013 0.109879	+1.39073 2.4890	+0.319930 5.7648	+0.6940 5.6544
A SEP.30 (0H)	Y:	+0.3262	-0.00736	+ 24.0669 3.569026	+0.23735 0.5013		+0.1055 2.8134
SEP.30 (0H) (2449990.5)	X:	-2.9394	+0.65680	+163.0728 0.906291	+1.81574 5.1628	+0.267509 2.6473	+0.7120 0.9149
A OCT. 4 (0H)	Y:	+0.2989	-0.00546	+ 23.1271 4.359860	+0.24098 1.2795		+0.1017 4.4296
OCT. 4 (0H) (2449994.5)	X:	-1.2204	-0.06916	+160.1481 1.686977	+0.51630 0.1535	+0.078126 4.9871	+0.7188 2.5778
A OCT. 8 (0H)	Y:	+0.2771	-0.00658	+ 22.1701 5.150911	+0.24249 2.0522		+0.0977 6.0819
OCT. 8 (0H) (2449998.5)	X:	-0.7733	-0.35631	+158.5655 2.470244	+0.40877 1.9828	+0.198041 0.2559	+0.7372 4.1881
A OCT.12 (0H)	Y:	+0.2426	+0.00281	+ 21.2138 5.943673	+0.24646 2.8667		+0.0939 1.4366
OCT.12 (0H) (2450002.5)	X:	-2.7025	+0.75168	+157.5341 3.240826	+1.35808 5.8661	+0.325823 2.8411	+0.7473 5.8522
A OCT.16 (0H)	Y:	+0.2386	-0.00354	+ 20.2299 0.452550	+0.24358 3.6117		+0.0890 3.0763
OCT.16 (0H) (2450006.5)	X:	+0.7734	-0.89971	+158.4400 4.037421	+2.59971 2.0749	+0.426162 5.7325	+0.7393 1.2755
A OCT.20 (0H)	Y:	+0.2515	-0.02146	+ 19.2161 1.246769	+0.22921 4.3766		+0.0853 4.7432
OCT.20 (0H) (2450010.5)	X:	-1.7541	+0.36242	+154.7417 4.814945	+0.62325 4.1863	+0.157173 2.2920	+0.6843 2.8737
A OCT.24 (0H)	Y:	+0.1851	-0.00036	+ 18.2633 2.040269	+0.24816 5.1122		+0.0788 0.0905
OCT.24 (0H) (2450014.5)	X:	-1.2232	+0.24306	+154.0855 5.594349	+0.42463 4.5359	+0.115474 3.2549	+0.6784 4.5089
A OCT.28 (0H)	Y:	+0.1653	+0.00233	+ 17.2677 2.836735	+0.24812 5.8715		+0.0750 1.7508
OCT.28 (0H) (2450018.5)	X:	-0.0041	-0.38178	+153.4072 0.085370	+0.77360 3.1741	+0.179256 6.1119	+0.6540 6.0959
A NOV. 1 (0H)	Y:	+0.1665	-0.00479	+ 16.2902 3.636287	+0.25214 0.3856		+0.0701 3.3829
NOV. 1 (0H) (2450022.5)	X:	-1.8330	+0.64514	+153.6124 0.874685	+1.75124 5.3454	+0.260646 2.8036	+0.6579 1.4062
A NOV. 5 (0H)	Y:	+0.1474	-0.00486	+ 15.2939 4.437435	+0.25052 1.1516		+0.0661 5.0439
NOV. 5 (0H) (2450026.5)	X:	+1.1712	-0.77337	+150.1315 1.653196	+1.28366 1.9077	+0.367380 5.8468	+0.7088 3.0153
A NOV. 9 (0H)	Y:	+0.1277	-0.00356	+ 14.3080 5.241899	+0.25156 1.9257		+0.0621 0.3968
NOV. 9 (0H) (2450030.5)	X:	-0.9417	+0.30050	+151.2721 2.425341	+0.76147 5.7876	+0.142525 2.2483	+0.6938 4.7035
A NOV.13 (0H)	Y:	+0.1024	+0.00390	+ 13.3246 6.050507	+0.24691 2.7045		+0.0582 2.0723
NOV.13 (0H) (2450034.5)	X:	-0.8628	+0.42441	+150.5601 3.204949	+0.95480 0.3211	+0.213576 3.2882	+0.7070 0.0524
A NOV.17 (0H)	Y:	+0.1183	-0.00824	+ 12.3328 0.579124	+0.24284 3.4326		+0.0530 3.7465

1995 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 2 DE JUPITER: EUROPE N=1.7693

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
NOV.17 (OH) (2450038.5)	X:	+1.0147	-0.53190	+150.6912 3.992798	+1.70247 2.2831	+0.253167 5.9952	+0.6850 1.7174
A NOV.21 (OH)	Y:	+0.1050	-0,00939	+ 11.3775 1.397547	+0.24347 4.1861		+0.0493 5.4117
NOV.21 (OH) (2450042.5)	X:	-1.4038	+0.75501	+147.7872 4.770156	+1.22105 4.8464	+0.308809 2.5924	+0.6506 3.3770
A NOV.25 (OH)	Y:	+0.0702	+0.00211	+ 10.4483 2.221690	+0.25343 4.9372		+0.0447 0.8397
NOV.25 (OH) (2450046.5)	X:	+1.1723	-0.41710	+149.3309 5.540127	+1.00716 2.6672	+0.193465 5.7208	+0.6328 4.9189
A NOV.29 (OH)	Y:	+0.0692	-0.00031	+ 9.5386 3.058174	+0.25266 5.7138		+0.0410 2.4992
NOV.29 (OH) (2450050.5)	X:	+0.2437	+0.05369	+148.6873 0.042202	+0.80227 4.5270	+0.054409 1.4450	+0.6450 0.2738
A DEC. 3 (OH)	Y:	+0.0711	-0.00281	+ 8.6655 3.906062	+0.25295 0.2045		+0.0375 4.2203
DEC. 3 (OH) (2450054.5)	X:	+0.0189	+0.31235	+148.4550 0.822793	+1.05520 5.7065	+0.137064 3.4284	+0.6591 1.8619
A DEC. 7 (OH)	Y:	+0.0668	-0.00301	+ 7.8385 4.769310	+0.25309 0.9712		+0.0345 5.9104
DEC. 7 (OH) (2450058.5)	X:	+1.8647	-0.60215	+146.7652 1.599448	+0.94821 1.8795	+0.282706 5.9890	+0.6806 3.4902
A DEC.11 (OH)	Y:	+0.0461	+0.00635	+ 7.0743 5.653802	+0.24467 1.7330		+0.0312 1.3949
DEC.11 (OH) (2450062.5)	X:	-1.1228	+0.95763	+148.9846 2.366052	+1.94282 5.6015	+0.421975 2.6454	+0.7191 5.1767
A DEC.15 (OH)	Y:	+0.0527	+0.00473	+ 6.4100 0.276213	+0.24531 2.4889		+0.0285 3.1355
DEC.15 (OH) (2450066.5)	X:	+1.6006	-0.28563	+148.1354 3.160270	+1.31084 1.7236	+0.150703 5.3949	+0.6741 0.5416
A DEC.19 (OH)	Y:	+0.0770	-0.00685	+ 5.8565 1.208774	+0.24602 3.2042		+0.0269 4.9640
DEC.19 (OH) (2450070.5)	X:	+1.4159	-0.22814	+148.0043 3.936804	+1.14658 2.6015	+0.144492 0.1185	+0.6767 2.1811
A DEC.23 (OH)	Y:	+0.0672	-0.00176	+ 5.4988 2.166405	+0.25022 3.9772		+0.0253 0.4890
DEC.23 (OH) (2450074.5)	X:	+0.2236	+0.50401	+147.0198 4.712357	+0.66882 4.8652	+0.206695 2.9247	+0.6477 3.7981
A DEC.27 (OH)	Y:	+0.0606	+0.00363	+ 5.3364 3.142621	+0.25518 4.7443		+0.0255 2.2930
DEC.27 (OH) (2450078.5)	X:	+2.5432	-0.61119	+148.8754 5.483613	+1.26787 2.6878	+0.273461 5.9052	+0.6295 5.3928
A DEC.31 (OH)	Y:	+0.0719	+0.00183	+ 5.3996 4.124790	+0.25421 5.5134		+0.0260 4.1092
DEC.31 (OH) (2450082.5)	X:	-0.1676	+0.78190	+148.5930 6.279872	+2.05226 5.1990	+0.333773 2.7146	+0.6673 0.6614
A JAN. 4 (OH)	Y:	+0.0893	-0.00320	+ 5.6815 5.093511	+0.25406 0.0160		+0.0280 5.8832

1995 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 3 DE JUPITER: GANYMEDE N=0.8782

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
JAN. 1 (0H) (2449718.5)	X:	-0.4085	-0.00908	+235.6512 3.975978	+0.91347 2.9453	+0.003422 1.6161	+0.1363 0.1600
A JAN. 9 (0H)	Y:	+0.1275	-0.00340	+ 46.2218 1.104014	+0.25232 4.4675		+0.0260 3.5942
JAN. 9 (0H) (2449726.5)	X:	-0.5525	+0.03054	+239.2849 4.691964	+0.90506 3.7541	+0.005264 3.3835	+0.1572 1.7336
A JAN.17 (0H)	Y:	+0.1444	-0.00821	+ 44.2186 1.837142	+0.23061 5.1579		+0.0280 5.2026
JAN.17 (0H) (2449734.5)	X:	-0.4571	+0.00315	+243.6077 5.409631	+0.97191 4.4512	+0.008907 0.5097	+0.1650 3.4140
A JAN.25 (0H)	Y:	+0.1325	-0.00753	+ 42.3528 2.572663	+0.21143 5.8315		+0.0257 0.6133
JAN.25 (0H) (2449742.5)	X:	-0.5757	+0.05827	+248.3122 6.129235	+1.03941 5.2891	+0.010887 2.3779	+0.1550 5.0174
A FEV. 2 (0H)	Y:	+0.1018	-0.00349	+ 40.6422 3.310970	+0.19240 0.2063		+0.0239 2.2770
FEV. 2 (0H) (2449750.5)	X:	-0.4093	+0.03686	+253.5603 0.566507	+0.98717 6.0679	+0.006352 2.5877	+0.1223 0.2487
A FEV.10 (0H)	Y:	+0.0807	-0.00155	+ 39.0949 4.052627	+0.16726 0.8833		+0.0195 3.7954
FEV.10 (0H) (2449758.5)	X:	-0.3855	+0.02893	+259.3266 1.289118	+0.90441 0.5149	+0.014879 2.0500	+0.0966 1.6216
A FEV.18 (0H)	Y:	+0.0365	+0.00762	+ 37.7323 4.797523	+0.13358 1.5686		+0.0156 5.0424
FEV.18 (0H) (2449766.5)	X:	-0.5222	+0.06184	+265.5059 2.014016	+0.86480 1.3165	+0.019110 2.8598	+0.1000 3.0038
A FEV.26 (0H)	Y:	+0.0330	+0.01103	+ 36.6438 5.544328	+0.10398 2.2464		+0.0143 0.1579
FEV.26 (0H) (2449774.5)	X:	-0.3124	+0.00431	+271.8083 2.742470	+0.94646 2.2591	+0.005432 3.8089	+0.1306 4.4637
A MAR. 6 (0H)	Y:	+0.0418	+0.01184	+ 35.8204 0.009331	+0.07175 2.8966		+0.0167 1.6702
MAR. 6 (0H) (2449782.5)	X:	-0.7858	+0.12970	+278.5272 3.471676	+0.76610 3.3062	+0.028668 3.0822	+0.1504 6.0625
A MAR.14 (0H)	Y:	+0.0692	+0.00781	+ 35.2806 0.758177	+0.03542 3.3365		+0.0144 3.3304
MAR.14 (0H) (2449790.5)	X:	-0.2346	+0.01721	+285.8918 4.207053	+0.92217 3.9268	+0.009570 5.2668	+0.1330 1.5291
A MAR.22 (0H)	Y:	+0.1130	-0.00465	+ 35.0519 1.507323	+0.02749 2.1481		+0.0147 5.3183
MAR.22 (0H) (2449798.5)	X:	-0.1774	+0.00859	+293.1695 4.944343	+0.99837 4.7689	+0.012922 0.8408	+0.1017 3.3032
A MAR.30 (0H)	Y:	+0.1259	-0.01109	+ 35.2226 2.255598	+0.07107 2.3242		+0.0134 0.6856
MAR.30 (0H) (2449806.5)	X:	-0.6328	+0.15214	+300.3268 5.685851	+1.20756 5.6664	+0.032797 2.8198	+0.0785 5.0045
A AVR. 7 (0H)	Y:	+0.1315	-0.01657	+ 35.8104 3.001774	+0.11609 2.9086		+0.0099 2.0957
AVR. 7 (0H) (2449814.5)	X:	+0.2461	-0.08526	+307.8287 0.143886	+0.86374 0.4491	+0.010970 0.0204	+0.0447 5.9735
A AVR.15 (0H)	Y:	+0.1003	-0.01101	+ 36.7758 3.744560	+0.16620 3.6378		+0.0088 3.2786
AVR.15 (0H) (2449822.5)	X:	-0.5054	+0.08985	+315.1824 0.892693	+0.82199 0.9461	+0.032171 2.8600	+0.0748 0.6962
A AVR.23 (0H)	Y:	+0.0523	+0.00179	+ 38.1173 4.485495	+0.22332 4.3778		+0.0119 4.2963

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DU SATELLITE 3 DE JUPITER: GANYMEDE N=0.8782

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
AVR.23 (OH)	X:	-0.0352	-0.01853	+321.2203	+0.92860	+0.018560	+0.0872
(2449830.5)				1.642444	2.0532	4.4970	2.3785
A MAI 1 (OH)	Y:	+0.0417	+0.00727	+ 39.9017	+0.26804		+0.0107
				5.224685	5.1038		5.8216
MAI 1 (OH)	X:	-0.0253	-0.02081	+326.9029	+0.88052	+0.013365	+0.0877
(2449838.5)				2.395513	3.0349	5.5357	4.3358
A MAI 9 (OH)	Y:	+0.0434	+0.00827	+ 42.0476	+0.30364		+0.0105
				5.962473	5.8421		1.5731
MAI 9 (OH)	X:	-0.2199	+0.07219	+331.7422	+0.69721	+0.016695	+0.0778
(2449846.5)				3.150649	4.1828	4.1721	0.0777
A MAI 17 (OH)	Y:	+0.0693	+0.00091	+ 44.4552	+0.32730		+0.0072
				0.416289	0.3276		3.4729
MAI 17 (OH)	X:	+0.6807	-0.16105	+335.5911	+0.47398	+0.047470	+0.0546
(2449854.5)				3.910179	4.7099	6.1376	2.1178
A MAI 25 (OH)	Y:	+0.0782	-0.00556	+ 47.0501	+0.33613		+0.0051
				1.154124	1.1009		5.4202
MAI 25 (OH)	X:	-0.2445	+0.05656	+336.7900	+0.86582	+0.027282	+0.0159
(2449862.5)				4.668275	5.8654	2.0061	5.5603
A JUN. 2 (OH)	Y:	+0.0300	+0.00501	+ 49.7309	+0.31952		+0.0030
				1.892889	1.8746		3.6443
JUN. 2 (OH)	X:	+0.3976	-0.09921	+337.9065	+0.88085	+0.014226	+0.0452
(2449870.5)				5.426739	1.0095	5.2133	2.1659
A JUN.10 (OH)	Y:	+0.0275	+0.00884	+ 52.2937	+0.29027		+0.0061
				2.633528	2.6479		5.6756
JUN.10 (OH)	X:	+0.2723	-0.09679	+336.7527	+0.89470	+0.009729	+0.0457
(2449878.5)				6.186637	1.8828	5.6507	4.1893
A JUN.18 (OH)	Y:	+0.0203	+0.01541	+ 54.5969	+0.24892		+0.0075
				3.375211	3.4494		1.3106
JUN.18 (OH)	X:	-0.2659	+0.05620	+334.3881	+0.67442	+0.020292	+0.0431
(2449886.5)				0.663765	2.7519	3.7985	0.3972
A JUN.26 (OH)	Y:	+0.0765	+0.00389	+ 56.5649	+0.18848		+0.0020
				4.113408	4.2211		4.1196
JUN.26 (OH)	X:	+0.6889	-0.17224	+329.9553	+0.93105	+0.050385	+0.0449
(2449894.5)				1.420541	3.3498	5.8759	2.6074
A JUL. 4 (OH)	Y:	+0.1354	-0.01535	+ 58.0798	+0.10879		+0.0067
				4.861488	5.0601		0.3717
JUL. 4 (OH)	X:	-0.0228	+0.01523	+325.9031	+0.85330	+0.009343	+0.0207
(2449902.5)				2.175653	4.7087	0.4657	5.7701
A JUL.12 (OH)	Y:	+0.1347	-0.02182	+ 58.9696	+0.04635		+0.0050
				5.604739	6.1624		2.6377
JUL.12 (OH)	X:	+0.2346	-0.03878	+320.1551	+0.74365	+0.012745	+0.0454
(2449910.5)				2.928822	5.6999	0.0132	2.3024
A JUL.20 (OH)	Y:	+0.1033	-0.02001	+ 59.2708	+0.02934		+0.0058
				0.064868	2.4989		5.4675
JUL.20 (OH)	X:	+0.3430	-0.09859	+314.0382	+0.74333	+0.020685	+0.0545
(2449918.5)				3.678591	0.4363	0.5262	4.1309
A JUL.28 (OH)	Y:	+0.0318	-0.00273	+ 59.0930	+0.09636		+0.0067
				0.807592	3.9432		1.9158
JUL.28 (OH)	X:	-0.1342	+0.01936	+307.0921	+0.83720	+0.013624	+0.0510
(2449926.5)				4.423783	1.1421	2.7384	0.1052
A AOU. 5 (OH)	Y:	-0.0067	+0.01005	+ 58.3472	+0.16274		+0.0124
				1.548342	4.7491		3.7143
AOU. 5 (OH)	X:	+0.0133	-0.02554	+300.3557	+0.92409	+0.004844	+0.0341
(2449934.5)				5.166641	2.1615	5.9921	2.2945
A AOU.13 (OH)	Y:	+0.0016	+0.01081	+ 57.0627	+0.21127		+0.0074
				2.287922	5.5090		5.3311

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DU SATELLITE 3 DE JUPITER: GANYMEDE N=0.8782

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
AOU.13 (OH) (2449942.5)	X:	-0.0106	+0.00356	+293.3547 5.905843	+0.87361 2.9620	+0.006057 4.3667	+0.0108 3.7565
A AOU.21 (OH)	Y:	-0.0035	+0.01172	+ 55.3781 3.026188	+0.25451 6.2543		+0.0035 0.4960
AOU.21 (OH) (2449950.5)	X:	+0.0847	-0.01018	+286.5711 0.358577	+0.89650 3.7901	+0.009878 5.6798	+0.0302 3.1360
A AOU.29 (OH)	Y:	+0.0265	+0.00238	+ 53.3575 3.763725	+0.29312 0.7427		+0.0071 0.4013
AOU.29 (OH) (2449958.5)	X:	-0.2224	+0.06154	+280.3566 1.091833	+1.05843 4.7278	+0.015032 1.8442	+0.0611 4.9374
A SEP. 6 (OH)	Y:	+0.0225	+0.00063	+ 51.0180 4.499872	+0.32299 1.4863		+0.0099 2.0190
SEP. 6 (OH) (2449966.5)	X:	+0.1634	-0.03948	+273.6999 1.821816	+0.83231 5.5561	+0.008264 0.0204	+0.0645 0.5420
A SEP.14 (OH)	Y:	+0.0438	-0.00303	+ 48.4488 5.234699	+0.34782 2.2026		+0.0101 3.8925
SEP.14 (OH) (2449974.5)	X:	-0.2677	+0.04856	+268.0760 2.547783	+0.92822 6.2529	+0.014051 2.2195	+0.0595 2.5035
A SEP.22 (OH)	Y:	+0.0560	-0.00512	+ 45.6746 5.969436	+0.36432 2.9201		+0.0104 5.9358
SEP.22 (OH) (2449982.5)	X:	-0.3854	+0.07628	+262.6139 3.272068	+0.89315 0.7136	+0.023233 2.7356	+0.0536 4.2988
A SEP.30 (OH)	Y:	+0.0461	-0.00202	+ 42.7661 0.421693	+0.37881 3.6462		+0.0087 1.3647
SEP.30 (OH) (2449990.5)	X:	+0.0279	-0.01877	+257.8318 3.995776	+0.93575 1.7670	+0.003142 5.8743	+0.0274 5.4492
A OCT. 8 (OH)	Y:	+0.0534	-0.00631	+ 39.7236 1.157676	+0.38359 4.3517		+0.0050 2.8163
OCT. 8 (OH) (2449998.5)	X:	-0.4293	+0.10229	+252.9218 4.716016	+0.70874 2.6627	+0.022656 2.7220	+0.0430 5.9907
A OCT.16 (OH)	Y:	+0.0285	-0.00265	+ 36.6234 1.895245	+0.39161 5.0526		+0.0060 3.4671
OCT.16 (OH) (2450006.5)	X:	-0.0757	+0.02510	+249.3975 5.434037	+0.84457 3.3521	+0.009414 3.7274	+0.0552 1.2984
A OCT.24 (OH)	Y:	+0.0142	-0.00032	+ 33.4664 2.635948	+0.39761 5.7495		+0.0075 4.8095
OCT.24 (OH) (2450014.5)	X:	-0.1113	+0.01182	+246.0922 6.151125	+0.93976 4.1658	+0.002132 1.8714	+0.0749 3.1549
A NOV. 1 (OH)	Y:	-0.0020	+0.00458	+ 30.2574 3.381180	+0.39698 0.1528		+0.0078 0.3035
NOV. 1 (OH) (2450022.5)	X:	-0.4009	+0.07029	+243.3157 0.583915	+1.05777 5.0015	+0.016242 2.6720	+0.0882 4.9962
A NOV. 9 (OH)	Y:	-0.0106	+0.00908	+ 27.0392 4.133723	+0.39347 0.8381		+0.0080 2.3103
NOV. 9 (OH) (2450030.5)	X:	-0.1765	+0.00886	+240.7539 1.296971	+0.92418 5.7200	+0.001349 3.5289	+0.0775 0.3282
A NOV.17 (OH)	Y:	+0.0096	+0.00617	+ 23.8797 4.896329	+0.39694 1.5258		+0.0065 4.1143
NOV.17 (OH) (2450038.5)	X:	-0.3027	+0.04362	+238.9105 2.009678	+0.94457 0.1374	+0.008746 2.5853	+0.0491 1.8957
A NOV.25 (OH)	Y:	+0.0215	+0.00364	+ 20.7626 5.674216	+0.39769 2.2071		+0.0050 5.9604
NOV.25 (OH) (2450046.5)	X:	-0.1585	+0.02276	+237.3872 2.722354	+0.94744 0.9282	+0.009575 3.2375	+0.0354 3.1163
A DEC. 3 (OH)	Y:	+0.0373	-0.00079	+ 17.7400 0.191957	+0.39765 2.8787		+0.0047 0.7824

1995 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 3 DE JUPITER: GANYMEDE N=0.8782

.		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
DEC. 3 (0H) (2450054.5)	X:	-0.2430	+0.03884	+236.2757 3.433633	+0.85174 1.7259	+0.008864 2.9069	+0.0496 4.3913
A DEC.11 (0H)	Y:	+0.0520	-0.00614	+ 14.9077 1.029653	+0.39575 3.5464		+0.0040 1.7950
DEC.11 (0H) (2450062.5)	X:	-0.0396	-0.02113	+235.8818 4.145686	+0.92892 2.5250	+0.002427 4.7940	+0.0736 5.8594
A DEC.19 (0H)	Y:	+0.0539	-0.00833	+ 12.4360 1.923967	+0.39323 4.2228		+0.0038 3.5605
DEC.19 (0H) (2450070.5)	X:	-0.2135	+0.01168	+235.7569 4.856794	+0.86095 3.2899	+0.010272 4.0859	+0.0895 1.2144
A DEC.27 (0H)	Y:	+0.0484	-0.00872	+ 10.5878 2.895234	+0.39299 4.9023		+0.0033 5.4915
DEC.27 (0H) (2450078.5)	X:	-0.2234	+0.00060	+236.2198 5.568298	+0.91928 4.0909	+0.002136 5.4987	+0.0866 2.9919
A JAN. 4 (0H)	Y:	+0.0177	-0.00208	+ 9.6866 3.942255	+0.39748 5.5686		+0.0031 2.0241

1995 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 4 DE JUPITER: CALLISTO N=0.3765

		A0	A1	B0 F0	B1 F1	C0 P0
JAN. 1 (0H) (2449718.5)	X:	- 7.1652	+ 0.62761	+414.6833 0.594096	+ 2.06962 5.9153	+1.7507 5.4403
A JAN. 9 (0H)	Y:	+ 1.6288	- 0.22466	+ 79.7724 4.006904	+ 0.37629 1.4702	+0.3492 2.6415
JAN. 9 (0H) (2449726.5)	X:	- 3.2842	- 0.16522	+421.6653 3.574335	+ 1.85726 2.5539	+1.5545 5.0623
A JAN.17 (0H)	Y:	+ 0.3575	+ 0.07121	+ 76.2512 0.717085	+ 0.40353 4.1877	+0.2739 2.2749
JAN.17 (0H) (2449734.5)	X:	- 3.4774	- 0.35060	+429.6366 0.271381	+ 1.49920 5.5175	+1.7345 4.7131
A JAN.25 (0H)	Y:	+ 0.9672	- 0.04773	+ 72.8280 3.719160	+ 0.35869 0.7954	+0.2927 1.9861
JAN.25 (0H) (2449742.5)	X:	- 3.8154	- 0.06148	+437.3633 3.265175	+ 1.85140 2.3685	+1.6315 4.4706
A FEV. 2 (0H)	Y:	+ 0.5027	+ 0.00939	+ 69.8880 0.441915	+ 0.35098 3.7443	+0.2590 1.7475
FEV. 2 (0H) (2449750.5)	X:	- 3.4876	- 0.40569	+447.5426 6.249787	+ 1.51677 5.3514	+1.8691 4.1312
A FEV.10 (0H)	Y:	+ 0.8768	- 0.02291	+ 67.0376 3.452373	+ 0.28544 0.4015	+0.2672 1.4280
FEV.10 (0H) (2449758.5)	X:	- 4.0739	- 0.16953	+455.5771 2.963795	+ 1.81134 2.3229	+1.7931 3.9242
A FEV.18 (0H)	Y:	+ 0.3291	+ 0.04101	+ 64.6265 0.184306	+ 0.22304 3.3821	+0.2513 1.1880
FEV.18 (0H) (2449766.5)	X:	- 2.7121	- 0.65726	+469.6594 5.952756	+ 1.48111 5.1226	+2.0311 3.5736
A FEV.26 (0H)	Y:	+ 0.4542	+ 0.09005	+ 63.0099 3.191299	+ 0.25870 0.0825	+0.2659 0.8416
FEV.26 (0H) (2449774.5)	X:	- 6.2703	+ 0.28816	+479.6861 2.669175	+ 1.59861 2.0760	+1.7558 3.3871
A MAR. 6 (0H)	Y:	+ 0.7447	- 0.07054	+ 61.4222 6.209735	+ 0.17660 3.0385	+0.2278 0.7340
MAR. 6 (0H) (2449782.5)	X:	- 5.4946	- 0.00193	+490.2933 5.669784	+ 1.68790 5.3484	+1.9894 3.0164
A MAR.14 (0H)	Y:	+ 0.4765	+ 0.06953	+ 60.4490 2.945186	+ 0.09890 6.1121	+0.2464 0.2963
MAR.14 (0H) (2449790.5)	X:	- 5.9629	+ 0.08357	+503.5333 2.389204	+ 1.59594 2.1224	+1.8945 2.8295
A MAR.22 (0H)	Y:	+ 0.6691	- 0.04900	+ 59.9666 5.964393	+ 0.00840 3.6723	+0.2340 0.1830
MAR.22 (0H) (2449798.5)	X:	- 6.5034	+ 0.65350	+512.4223 5.395368	+ 1.97005 5.5375	+2.0565 2.4302
A MAR.30 (0H)	Y:	+ 0.6056	+ 0.04021	+ 60.1599 2.699610	+ 0.09979 2.4369	+0.2401 6.0467
MAR.30 (0H) (2449806.5)	X:	- 5.7667	+ 0.02519	+529.0196 2.122074	+ 1.63842 2.1409	+2.0564 2.2638
A AVR. 7 (0H)	Y:	+ 0.9575	- 0.10642	+ 61.4148 5.712129	+ 0.15468 5.2627	+0.2297 5.9105
AVR. 7 (0H) (2449814.5)	X:	-10.2826	+ 0.99305	+536.6027 5.131958	+ 2.14047 5.6458	+2.2115 1.6748
A AVR.15 (0H)	Y:	+ 0.8395	- 0.02989	+ 62.3534 2.444192	+ 0.31537 2.4020	+0.2480 5.4123
AVR.15 (0H) (2449822.5)	X:	- 4.1856	- 0.33852	+551.9991 1.867054	+ 1.78595 2.3138	+2.2268 1.7574
A AVR.23 (0H)	Y:	+ 0.8424	- 0.06208	+ 65.2131 5.454321	+ 0.36707 5.1958	+0.2562 5.3469

1995 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 4 DE JUPITER: CALLISTO N=0.3765

		A0	A1	B0 F0	B1 F1	C0 P0
AVR.23 (OH) (2449830.5)	X:	-10.6291	+ 0.95727	+560.5273 4.882778	+ 2.13202 5.6975	+2.3746 1.3837
A MAI 1 (OH)	Y:	+ 1.0347	- 0.06204	+ 67.5743 2.178684	+ 0.50343 2.1524	+0.2800 4.8513
MAI 1 (OH) (2449838.5)	X:	- 2.7804	- 0.65666	+571.6906 1.623675	+ 1.93298 2.4919	+2.4135 1.2739
A MAI 9 (OH)	Y:	+ 0.7814	- 0.02388	+ 71.7708 5.187002	+ 0.53243 5.0225	+0.2981 4.7759
MAI 9 (OH) (2449846.5)	X:	- 8.1979	+ 0.30196	+581.8487 4.649220	+ 1.67271 5.6937	+2.4543 0.9701
A MAI 17 (OH)	Y:	+ 1.0441	- 0.05340	+ 75.5438 1.907395	+ 0.56992 1.9107	+0.3363 4.3930
MAI 17 (OH) (2449854.5)	X:	- 3.8567	- 0.40782	+587.0268 1.392899	+ 1.73225 2.5994	+2.5664 0.7776
A MAI 25 (OH)	Y:	+ 0.5650	+ 0.04290	+ 80.1476 4.916517	+ 0.60655 4.8957	+0.3473 4.2592
MAI 25 (OH) (2449862.5)	X:	- 6.7864	- 0.13099	+592.6647 4.424588	+ 1.36375 5.7490	+2.3314 0.4955
A JUN. 2 (OH)	Y:	+ 0.9725	+ 0.01932	+ 84.9305 1.643229	+ 0.60785 1.6135	+0.3419 3.9373
JUN. 2 (OH) (2449870.5)	X:	- 4.0971	- 0.41441	+592.3341 1.166362	+ 1.67768 2.8652	+2.5602 0.3040
A JUN.10 (OH)	Y:	+ 0.5527	+ 0.06841	+ 89.1936 4.650159	+ 0.52959 4.7592	+0.3905 3.7272
JUN.10 (OH) (2449878.5)	X:	- 5.8561	- 0.24044	+592.5340 4.200583	+ 1.21616 6.0650	+2.3061 0.0024
A JUN.18 (OH)	Y:	+ 1.0859	+ 0.00965	+ 93.4556 1.380985	+ 0.47160 1.4489	+0.3670 3.4411
JUN.18 (OH) (2449886.5)	X:	- 8.3584	+ 0.50038	+589.1515 0.948143	+ 0.99774 3.1722	+2.7869 6.1008
A JUN.26 (OH)	Y:	+ 0.8489	+ 0.01303	+ 96.9677 4.392840	+ 0.33462 4.5207	+0.4549 3.1956
JUN.26 (OH) (2449894.5)	X:	- 6.6470	+ 0.01969	+581.5944 3.970474	+ 1.45094 0.0508	+2.4006 5.7959
A JUL. 4 (OH)	Y:	+ 1.2294	+ 0.00850	+ 99.3939 1.123458	+ 0.26370 1.3529	+0.3952 2.9036
JUL. 4 (OH) (2449902.5)	X:	- 7.9396	+ 0.37170	+573.9466 0.715859	+ 1.19097 3.4480	+2.6728 5.6547
A JUL.12 (OH)	Y:	+ 1.1415	- 0.05793	+101.3234 4.139263	+ 0.11559 4.1238	+0.4949 2.7525
JUL.12 (OH) (2449910.5)	X:	- 8.2710	+ 0.65326	+564.4897 3.728969	+ 2.01442 0.2537	+2.3449 5.4064
A JUL.20 (OH)	Y:	+ 1.6094	- 0.11108	+101.7630 0.860268	+ 0.12907 3.2356	+0.4122 2.5074
JUL.20 (OH) (2449918.5)	X:	- 8.8955	+ 0.62574	+552.4306 0.476535	+ 1.13340 3.6677	+2.4984 5.2130
A JUL.28 (OH)	Y:	+ 1.2138	- 0.07743	+101.5576 3.881589	+ 0.11758 1.0085	+0.4794 2.3034
JUL.28 (OH) (2449926.5)	X:	- 7.0577	+ 0.46818	+542.1869 3.482918	+ 1.94633 0.3408	+2.1442 4.9004
A AOU. 5 (OH)	Y:	+ 1.4004	- 0.07231	+100.2860 0.601572	+ 0.31446 3.6799	+0.3866 2.0018
AOU. 5 (OH) (2449934.5)	X:	- 5.2901	- 0.15088	+529.2868 0.214674	+ 1.71287 3.5102	+2.2437 4.6247
A AOU.13 (OH)	Y:	+ 1.0635	- 0.05531	+ 98.0312 3.617081	+ 0.32468 0.6028	+0.4328 1.7959

1995 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 4 DE JUPITER: CALLISTO N=0.3765

		A0	A1	B0 F0	B1 F1	C0 P0
ADU.13 (OH) (2449942.5)	X:	- 7.9734	+ 0.76443	+519.1922 3.219649	+ 2.18972 0.3273	+1.9761 4.4040
A ADU.21 (OH)	Y:	+ 1.5138	- 0.12900	+ 95.5143 0.333167	+ 0.53996 3.5297	+0.3559 1.5317
ADU.21 (OH) (2449950.5)	X:	- 3.0691	- 0.62558	+506.7844 6.226109	+ 2.06417 3.4344	+2.1797 4.0605
A ADU.29 (OH)	Y:	+ 0.4486	+ 0.08851	+ 91.8983 3.341022	+ 0.57304 0.2837	+0.3998 1.2047
ADU.29 (OH) (2449958.5)	X:	- 6.4317	+ 0.30350	+494.3031 2.948107	+ 1.83890 0.2676	+1.9462 3.8638
A SEP. 6 (OH)	Y:	+ 1.1972	- 0.05265	+ 87.8209 0.065045	+ 0.60595 3.2873	+0.3345 1.0152
SEP. 6 (OH) (2449966.5)	X:	- 2.5398	- 0.65380	+484.9413 5.945855	+ 2.09598 3.3655	+2.0741 3.5334
A SEP.14 (OH)	Y:	+ 0.6146	+ 0.03565	+ 83.3290 3.070669	+ 0.63593 0.0447	+0.3503 0.7112
SEP.14 (OH) (2449974.5)	X:	- 6.5480	+ 0.30817	+473.2736 2.661174	+ 1.82625 0.1532	+1.7949 3.3380
A SEP.22 (OH)	Y:	+ 0.9616	- 0.02093	+ 78.4545 6.074988	+ 0.65692 3.0016	+0.2924 0.5066
SEP.22 (OH) (2449982.5)	X:	- 2.7477	- 0.53751	+464.9958 5.655816	+ 1.99410 3.2922	+1.9175 3.0024
A SEP.30 (OH)	Y:	+ 0.2851	+ 0.10349	+ 73.7872 2.794195	+ 0.73653 6.0616	+0.3190 0.1891
SEP.30 (OH) (2449990.5)	X:	- 5.9764	+ 0.13420	+454.5907 2.364558	+ 1.69955 0.0175	+1.7117 2.7936
A OCT. 8 (OH)	Y:	+ 0.7564	+ 0.00701	+ 67.9852 5.801043	+ 0.68445 2.6612	+0.2531 0.0324
OCT. 8 (OH) (2449998.5)	X:	- 5.6177	+ 0.19261	+444.9094 5.356043	+ 1.45875 3.2015	+1.7002 2.4060
A OCT.16 (OH)	Y:	+ 0.8423	- 0.04430	+ 62.4100 2.526799	+ 0.65842 5.6840	+0.2415 5.9647
OCT.16 (OH) (2450006.5)	X:	- 4.7754	- 0.12040	+438.7354 2.059305	+ 1.51016 6.1681	+1.6558 2.2383
A OCT.24 (OH)	Y:	+ 0.2773	+ 0.07833	+ 56.6637 5.535867	+ 0.66200 2.2738	+0.2186 5.8460
OCT.24 (OH) (2450014.5)	X:	- 6.2250	+ 0.36590	+431.1682 5.045811	+ 1.33597 3.0300	+1.6203 1.8012
A NOV. 1 (OH)	Y:	+ 0.6340	- 0.01287	+ 51.4304 2.269348	+ 0.68499 5.3462	+0.1980 5.4815
NOV. 1 (OH) (2450022.5)	X:	- 4.7801	- 0.00833	+427.9406 1.748340	+ 1.58196 6.0718	+1.5813 1.6345
A NOV. 9 (OH)	Y:	+ 0.2528	+ 0.03462	+ 45.6454 5.287816	+ 0.68345 1.9503	+0.1623 5.3540
NOV. 9 (OH) (2450030.5)	X:	- 6.2228	+ 0.36314	+421.8371 4.730202	+ 1.34298 2.8539	+1.5790 1.2163
A NOV.17 (OH)	Y:	+ 0.7107	- 0.05729	+ 39.9962 2.038424	+ 0.67856 4.9161	+0.1519 4.9402
NOV.17 (OH) (2450038.5)	X:	- 3.3486	- 0.26401	+418.9449 1.429905	+ 1.39487 5.9047	+1.5574 1.0873
A NOV.25 (OH)	Y:	- 0.0623	+ 0.05695	+ 34.3806 5.084433	+ 0.67102 1.5393	+0.1322 4.9717
NOV.25 (OH) (2450046.5)	X:	- 3.9391	- 0.14909	+417.9337 4.415505	+ 1.73515 2.7263	+1.5211 0.7105
A DEC. 3 (OH)	Y:	+ 0.2526	+ 0.02053	+ 29.5919 1.878087	+ 0.68641 4.6032	+0.1211 4.6796

1995 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 4 DE JUPITER: CALLISTO N=0.3765

		A0	A1	B0 F0	B1 F1	C0 P0
DEC. 3 (OH) (2450054.5)	X:	- 4.4659	+ 0.02439	+415.5146 1.112242	+ 1.58795 5.7778	+1.5482 0.4777
A DEC.11 (OH)	Y:	+ 0.1068	- 0.01763	+ 24.4253 4.990855	+ 0.66365 1.2134	+0.0972 4.5895
DEC.11 (OH) (2450062.5)	X:	- 2.2144	- 0.58323	+415.5152 4.100117	+ 2.01017 2.6544	+1.3489 0.1139
A DEC.19 (OH)	Y:	+ 0.1771	+ 0.00581	+ 20.2149 1.880991	+ 0.68874 4.1823	+0.0921 4.4340
DEC.19 (OH) (2450070.5)	X:	- 3.3368	- 0.25671	+414.3796 0.786923	+ 1.45969 5.4775	+1.4160 6.1593
A DEC.27 (OH)	Y:	+ 0.0622	- 0.03699	+ 16.9911 5.152759	+ 0.65516 0.8128	+0.0816 4.5079
DEC.27 (OH) (2450078.5)	X:	- 2.3000	- 0.51273	+415.3743 3.777653	+ 1.94978 2.4614	+1.3485 5.7671
A JAN. 4 (OH)	Y:	- 0.1033	+ 0.03875	+ 15.8954 2.211761	+ 0.67077 3.7954	+0.0783 4.4326

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 :

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

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 1995.

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 :

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

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 1995.

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 1995, 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 :

$$\tau = 24.9210\,33 + 0.043\,994\,x + 0.753\,767\,x^2 - 0.379\,948\,x^3 - 0.645\,771\,x^4 + 0.494\,912\,x^5 + 0.461\,648\,x^6 - 0.446\,405\,x^7 - 0.419\,710\,x^8 + 0.241\,762\,x^9 + 0.287\,486\,x^{10} - 0.057\,943\,x^{11} - 0.087\,120\,x^{12}$$

d'où $\tau = 24,\,920\,643$

On a d'autre part :

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

La formule (2) donne alors :

$T1 = 102 \times 1{,}769\,860\,5 + 24{,}920\,643/24 + 0$

$T1 = 181{,}564\,131$ jours depuis le 0 janvier (début de l'intervalle pour les occultations) soit EC.D le 30 juin 1995 à 13 h 32 m 21 s TDT. Le calcul réitéré donne $T2 = 181{,}564\,135$ jours soit le 30 juin 1994 à 13 h 32 m 21 s TDT.

On trouverait de même pour les autres phénomènes :

PA.D	le 29 juin à	15 h	45 m	33 s
OM.D	le 29 juin à	16 h	24 m	7 s
PA.F	le 29 juin à	17 h	56 m	5 s
OM.F	le 29 juin à	18 h	35 m	22 s
OC.D	le 30 juin à	12 h	52 m	43 s
OC.F	le 30 juin à	15 h	3 m	19 s
EC.F	le 30 juin à	15 h	43 m	42 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 12 h 52 m 43 s	observable
EC.D	le 30 juin à 13 h 32 m 21 s	inobservable car déjà occulté
OC.F	le 30 juin à 15 h 3 m 19 s	inobservable car éclipsé
EC.F	le 30 juin à 15 h 43 m 42 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 1995, 181 days have elapsed

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

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

Formula (3) then gives :

$$\tau = 24.9210\,33 + 0.043\,994\,x + 0.753\,767\,x^2 - 0.379\,948\,x^3 - 0.645\,771\,x^4 + 0.494\,912\,x^5 + 0.461\,648\,x^6 - 0.446\,405\,x^7 - 0.419\,710\,x^8 + 0.241\,762\,x^9 + 0.287\,486\,x^{10} - 0.057\,943\,x^{11} - 0.087\,120\,x^{12}$$

therefore $\tau = 24.920\,643$

On the other hand,

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

Formula (2) then gives :

$T1 = 102 \times 1.769\,860\,5 + 24.920\,643/24 + 0$

$T1 = 181.564\,131$ days from January 0 (beginning of the interval for the occultations) that is June the 30th 1995 at 13 h 32 m 21 s TDT. Another iteration gives $T2 = 181.564\,135$ days that is June the 30th 1995 at 13 h 32 m 21 s TDT.

One would find as well for the other phenomena :

PA.D	June the 29th at	15 h	45 m	33 s
OM.D	June the 29th at	16 h	24 m	7 s
PA.F	June the 29th at	17 h	56 m	5 s
OM.F	June the 29th at	18 h	35 m	22 s
OC.D	June the 30th at	12 h	52 m	43 s
OC.F	June the 30th at	15 h	3 m	19 s
EC.F	June the 30th at	15 h	43 m	42 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 12 h 52 m 43 s	observable
EC.D	June 30th at 13 h 32 m 21 s	unobservable as occulted
OC.F	June 30th at 15 h 3 m 19 s	unobservable as eclipsed
EC.F	June 30th at 15 h 43 m 42 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 1995 Satellite 1 P = 1.7698605 jours T0 = 0.0 DT = 366. jours

	EC.D		EC.F		OM.D		OM.F
0	24.921033	0	27.110604	0	3.785589	0	5.972370
1	0.043994	1	0.088318	1	0.172105	1	0.118012
2	0.753767	2	0.764578	2	0.392424	2	0.298182
3	-0.379948	3	-0.391416	3	-0.710011	3	-0.218283
4	-0.645771	4	-0.608270	4	0.048061	4	0.286652
5	0.494912	5	0.456495	5	1.154542	5	-0.147971
6	0.461648	6	0.318429	6	-1.510556	6	-1.583148
7	-0.446405	7	-0.356837	7	-1.341966	7	0.488236
8	-0.419710	8	-0.203068	8	2.779878	8	2.437375
9	0.241762	9	0.156634	9	0.895522	9	-0.434228
10	0.287486	10	0.137639	10	-2.223350	10	-1.795489
11	-0.057943	11	-0.027828	11	-0.252599	11	0.135691
12	-0.087120	12	-0.048419	12	0.677945	12	0.523299

	OC.D		OC.F		PA.D		PA.F
0	24.231031	0	26.409764	0	3.095732	0	5.272744
1	-3.620421	1	-3.556711	1	-3.448142	1	-3.471444
2	5.146149	2	5.198350	2	5.053289	2	4.991796
3	6.321839	3	6.185799	3	5.874963	3	6.178486
4	-10.240792	4	-10.271498	4	-11.086489	4	-10.832261
5	-4.822663	5	-4.516913	5	-3.888523	5	-4.700430
6	15.838771	6	15.778054	6	17.882982	6	17.575504
7	2.224877	7	1.808465	7	0.746931	7	1.878625
8	-16.829454	8	-16.667067	8	-19.311906	8	-19.146183
9	-0.380340	9	-0.086125	9	0.887205	9	0.074441
10	10.208475	10	10.072119	10	11.826535	10	11.800871
11	-0.062988	11	-0.146270	11	-0.490854	11	-0.255861
12	-2.620904	12	-2.580969	12	-3.053195	12	-3.059624

T0 = 0 CORRESPOND AU 0 JANVIER 1995 à 0 H SOIT LA DATE JULIENNE 2449717.5

Année 1995 Satellite 2 P = 3.5540942 jours T0 = 0.0 DT = 366. jours

	EC.D		EC.F		OM.D		OM.F
0	58.163833	0	60.731058	0	15.052087	0	17.595710
1	0.202027	1	0.295605	1	-0.278353	1	-0.175465
2	-0.077395	2	-0.101926	2	1.426227	2	1.361314
3	-0.617882	3	-0.590564	3	-0.345357	3	0.128712
4	-0.766299	4	-0.694838	4	-0.509024	4	-0.225714
5	0.181189	5	0.173277	5	1.124525	5	-0.262884
6	2.621357	6	2.426297	6	-1.373432	6	-1.647847
7	0.482751	7	0.523233	7	-1.863449	7	0.072400
8	-4.387102	8	-4.085011	8	2.260128	8	2.292323
9	-0.774112	9	-0.845868	9	1.757615	9	0.364104
10	3.685893	10	3.469289	10	-1.227339	10	-1.151118
11	0.347458	11	0.382498	11	-0.672087	11	-0.265675
12	-1.211850	12	-1.154435	12	0.158272	12	0.129930

	OC.D		OC.F		PA.D		PA.F
0	56.776618	0	59.297443	0	13.691642	0	16.186136
1	-7.148083	1	-7.021290	1	-7.568958	1	-7.455991
2	9.241959	2	9.423340	2	10.053127	2	10.215809
3	12.800039	3	12.364997	3	13.087976	3	13.231665
4	-21.532836	4	-21.575176	4	-20.131506	4	-20.205658
5	-10.447203	5	-9.104981	5	-9.657697	5	-9.958328
6	35.452336	6	34.622722	6	32.032206	6	32.081078
7	5.871277	7	4.004042	7	3.448791	7	3.751675
8	-38.928833	8	-37.023353	8	-35.116797	8	-35.175055
9	-2.121883	9	-0.833703	9	0.780503	9	0.596192
10	24.451625	10	22.774685	10	22.103305	10	22.115904
11	0.390296	11	0.038852	11	-0.831007	11	-0.778856
12	-6.515117	12	-5.982795	12	-5.930712	12	-5.921405

T0 = 0 CORRESPOND AU 0 JANVIER 1995 à 0 H SOIT LA DATE JULIENNE 2449717.5

Année 1995 Satellite 3 P = 7.1663872 jours T0 = -1.0 DT = 367. jours

	EC.D		EC.F		OM.D		OM.F
0	106.185379	0	108.512382	0	20.211820	0	22.512939
1	-0.363934	1	-0.021541	1	-0.298188	1	-0.008021
2	0.721669	2	0.780882	2	0.455803	2	0.428614
3	-0.511066	3	-0.523123	3	-0.254827	3	0.206036
4	-0.975363	4	-0.892879	4	0.601825	4	0.834685
5	0.977596	5	0.991926	5	-0.736425	5	-2.072376
6	2.474448	6	2.161483	6	-4.898228	6	-4.839024
7	-0.953900	7	-1.035591	7	2.344498	7	4.254342
8	-5.182237	8	-4.575971	8	10.534548	8	9.857490
9	0.120943	9	0.223448	9	-2.222440	9	-3.632986
10	5.248821	10	4.688386	10	-9.973729	10	-9.216133
11	0.219731	11	0.179060	11	0.673875	11	1.092048
12	-1.958390	12	-1.763829	12	3.496228	12	3.225326

	OC.D		OC.F		PA.D		PA.F
0	103.478103	0	105.667577	0	17.495539	0	19.653408
1	-15.532932	1	-14.646152	1	-15.505528	1	-14.645394
2	18.580731	2	18.912563	2	18.573890	2	18.820614
3	28.218643	3	25.526642	3	28.529640	3	26.129395
4	-41.215843	4	-40.410942	4	-40.836571	4	-39.720645
5	-24.009046	5	-17.774718	5	-25.526670	5	-20.052629
6	68.563306	6	64.810335	6	63.635037	6	59.647886
7	14.203583	7	5.989541	7	16.646404	7	9.443488
8	-77.246886	8	-70.810954	8	-64.032867	8	-57.892992
9	-5.306546	9	0.388580	9	-6.568018	9	-1.588722
10	49.609813	10	44.556514	10	35.622767	10	31.125181
11	0.994013	11	-0.610215	11	1.006169	11	-0.390555
12	-13.445235	12	-11.930224	12	-8.217834	12	-6.940334

TO = 0 CORRESPOND AU 0 JANVIER 1995 à 0 H SOIT LA DATE JULIENNE 2449717.5

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
XVIII	Pan						0.5750	21	133.583		

	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 :

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

1995 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) (2449718.6)	X:	+0.7144	-0.00071	+25.0855 5.131867	+0.05463 2.9852	+0.000944 2.4824	+0.2367 5.6174
A JAN. 5 (0H)	Y:	-0.0419	-0.00139	+ 3.6510 0.929018	+0.00924 4.4230	+0.000123 4.3625	+0.0346 1.4123
JAN. 5 (0H) (2449722.6)	X:	+0.7112	-0.00026	+24.9568 0.376201	+0.05601 4.4047	+0.001454 5.7945	+0.2358 2.3300
A JAN. 9 (0H)	Y:	-0.0475	-0.00150	+ 3.6151 2.460624	+0.01030 5.8325	+0.000165 2.8713	+0.0341 4.4066
JAN. 9 (0H) (2449726.6)	X:	+0.7101	-0.00214	+24.8310 1.903948	+0.06337 6.0342	+0.001494 2.6866	+0.2358 5.3199
A JAN.13 (0H)	Y:	-0.0535	-0.00125	+ 3.5770 3.993676	+0.00988 1.0767	+0.000315 5.6427	+0.0336 1.1245
JAN.13 (0H) (2449730.6)	X:	+0.7016	-0.00162	+24.7054 3.431298	+0.06049 1.4092	+0.001174 5.53[illegible]8	+0.2352 2.0219
A JAN.17 (0H)	Y:	-0.0587	-0.00131	+ 3.5380 5.527691	+0.00932 2.4306	+0.000202 1.65[illegible]7	+0.0334 4.1272
JAN.17 (0H) (2449734.6)	X:	+0.6953	-0.00343	+24.5890 4.958207	+0.05308 2.9778	+0.001249 2.2735	+0.2331 5.0085
A JAN.21 (0H)	Y:	-0.0639	-0.00112	+ 3.4988 0.779863	+0.00982 3.6063	+0.000071 3.0890	+0.0332 0.8423
JAN.21 (0H) (2449738.6)	X:	+0.6812	-0.00268	+24.4912 0.201827	+0.05218 4.3716	+0.001628 5.4361	+0.2307 1.7175
A JAN.25 (0H)	Y:	-0.0684	-0.00109	+ 3.4593 2.316705	+0.01065 5.2275	+0.000091 3.0482	+0.0328 3.8378
JAN.25 (0H) (2449742.6)	X:	+0.6704	-0.00470	+24.3983 1.729046	+0.06131 5.9745	+0.001656 2.4280	+0.2297 4.7130
A JAN.29 (0H)	Y:	-0.0728	-0.00091	+ 3.4188 3.855207	+0.01087 0.4286	+0.000225 5.2942	+0.0322 0.5542
JAN.29 (0H) (2449746.6)	X:	+0.6519	-0.00390	+24.3042 3.255915	+0.05775 1.3802	+0.001248 5.5984	+0.2301 1.4225
A FEV. 2 (0H)	Y:	-0.0765	-0.00084	+ 3.3776 5.395072	+0.01122 1.8375	+0.000159 0.9973	+0.0317 3.5623
FEV. 2 (0H) (2449750.6)	X:	+0.6360	-0.00559	+24.2232 4.782493	+0.05109 2.9251	+0.001090 2.3930	+0.2304 4.4096
A FEV. 6 (0H)	Y:	-0.0799	-0.00070	+ 3.3362 0.653383	+0.01192 3.2909	+0.000152 2.1671	+0.0314 0.2913
FEV. 6 (0H) (2449754.6)	X:	+0.6136	-0.00500	+24.1570 0.025901	+0.04933 4.3693	+0.001396 5.2265	+0.2293 1.1117
A FEV.10 (0H)	Y:	-0.0828	-0.00054	+ 3.2944 2.196366	+0.01269 4.7143	+0.000083 4.0049	+0.0311 3.3000
FEV.10 (0H) (2449758.6)	X:	+0.5935	-0.00661	+24.0990 1.552878	+0.05636 5.9250	+0.001431 2.0450	+0.2274 4.1014
A FEV.14 (0H)	Y:	-0.0850	-0.00043	+ 3.2532 3.741183	+0.01368 6.2093	+0.000147 4.8253	+0.0308 0.0211
FEV.14 (0H) (2449762.6)	X:	+0.5673	-0.00601	+24.0413 3.079696	+0.05433 1.3259	+0.000880 5.3330	+0.2264 0.8140
A FEV.18 (0H)	Y:	-0.0867	-0.00025	+ 3.2117 5.287783	+0.01420 1.4116	+0.000199 0.4508	+0.0303 3.0283
FEV.18 (0H) (2449766.6)	X:	+0.5426	-0.00727	+23.9971 4.606389	+0.04935 2.8621	+0.000624 2.7861	+0.2268 3.8100
A FEV.22 (0H)	Y:	-0.0877	-0.00013	+ 3.1703 0.552938	+0.01486 2.8941	+0.000212 2.0556	+0.0297 6.0445
FEV.22 (0H) (2449770.6)	X:	+0.5139	-0.00714	+23.9627 6.133197	+0.04806 4.3967	+0.000748 5.1795	+0.2277 0.5173
A FEV.26 (0H)	Y:	-0.0883	+0.00009	+ 3.1290 2.102876	+0.01577 4.3393	+0.000134 4.3302	+0.0293 2.7830
FEV.26 (0H) (2449774.6)	X:	+0.4852	-0.00798	+23.9398 1.377021	+0.04988 5.9174	+0.001021 1.4855	+0.2277 3.5033
A MAR. 2 (0H)	Y:	-0.0880	+0.00016	+ 3.0894 3.654703	+0.01721 5.8570	+0.000086 4.3900	+0.0291 5.8023
MAR. 2 (0H) (2449778.6)	X:	+0.4534	-0.00797	+23.9213 2.904170	+0.05074 1.2639	+0.000631 4.1796	+0.2265 0.2088
A MAR. 6 (0H)	Y:	-0.0873	+0.00041	+ 3.0502 5.208623	+0.01756 1.0987	+0.000226 0.2326	+0.0288 2.5335

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DU SATELLITE 1 DE SATURNE: MIMAS N=6.667

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
MAR. 6 (OH)	X:	+0.4210	-0.00856	+23.9130	+0.04828	+0.000289	+0.2255
(2449782.6)				4.431343	2.8324	4.5038	3.2045
A MAR.10 (OH)	Y:	-0.0856	+0.00051	+ 3.0118	+0.01821	+0.000209	+0.0284
				0.481076	2.5912	2.1081	5.5502
MAR.10 (OH)	X:	+0.3874	-0.00898	+23.9115	+0.04758	+0.000140	+0.2257
(2449786.6)				5.958658	4.4501	1.0734	6.2033
A MAR.14 (OH)	Y:	-0.0836	+0.00075	+ 2.9745	+0.01918	+0.000147	+0.0279
				2.038403	4.0703	4.3422	2.2918
MAR.14 (OH)	X:	+0.3510	-0.00895	+23.9242	+0.04349	+0.000698	+0.2270
(2449790.6)				1.202827	5.9822	0.5287	2.9143
A MAR.18 (OH)	Y:	-0.0806	+0.00082	+ 2.9398	+0.02062	+0.000027	+0.0275
				3.597522	5.5993	3.9645	5.3231
MAR.18 (OH)	X:	+0.3153	-0.00969	+23.9460	+0.04638	+0.001109	+0.2279
(2449794.6)				2.730640	1.2229	3.2809	5.9025
A MAR.22 (OH)	Y:	-0.0773	+0.00108	+ 2.9068	+0.02083	+0.000199	+0.0274
				5.158765	0.8580	0.1112	2.0694
MAR.22 (OH)	X:	+0.2763	-0.00949	+23.9723	+0.04745	+0.000864	+0.2276
(2449798.6)				4.258605	2.8513	5.5231	2.6081
A MAR.26 (OH)	Y:	-0.0730	+0.00115	+ 2.8753	+0.02144	+0.000169	+0.0272
				0.438382	2.3604	2.2696	5.0944
MAR.26 (OH)	X:	+0.2388	-0.01039	+24.0050	+0.04672	+0.000754	+0.2267
(2449802.6)				5.786652	4.5236	1.8560	5.6033
A MAR.30 (OH)	Y:	-0.0684	+0.00137	+ 2.8461	+0.02234	+0.000115	+0.0269
				2.002771	3.6703	4.3693	1.8370
MAR.30 (OH)	X:	+0.1967	-0.00970	+24.0530	+0.03922	+0.000869	+0.2267
(2449806.6)				1.031508	6.1138	5.8066	2.3201
A AVR. 3 (OH)	Y:	-0.0629	+0.00143	+ 2.8201	+0.02346	+0.000024	+0.0265
				3.568668	5.4034	1.2653	4.8704
AVR. 3 (OH)	X:	+0.1580	-0.01100	+24.1142	+0.04131	+0.001530	+0.2283
(2449810.6)				2.560222	1.2352	2.8583	5.3178
A AVR. 7 (OH)	Y:	-0.0572	+0.00164	+ 2.7970	+0.02360	+0.000133	+0.0262
				5.136329	0.6701	6.2082	1.6267
AVR. 7 (OH)	X:	+0.1140	-0.01011	+24.1744	+0.04641	+0.001397	+0.2301
(2449814.6)				4.089219	2.9080	5.6745	2.0265
A AVR.11 (OH)	Y:	-0.0506	+0.00168	+ 2.7763	+0.02401	+0.000122	+0.0262
				0.421998	2.1825	2.5002	4.6652
AVR.11 (OH)	X:	+0.0736	-0.01131	+24.2425	+0.04503	+0.001044	+0.2307
(2449818.6)				5.618219	4.6186	2.0911	5.0165
A AVR.15 (OH)	Y:	-0.0439	+0.00183	+ 2.7590	+0.02470	+0.000064	+0.0262
				1.991961	3.7125	4.7340	1.4150
AVR.15 (OH)	X:	+0.0280	-0.01029	+24.3255	+0.03778	+0.001115	+0.2302
(2449822.6)				0.864135	6.2589	5.4056	1.7278
A AVR.19 (OH)	Y:	-0.0365	+0.00187	+ 2.7451	+0.02535	+0.000053	+0.0260
				3.562893	5.2492	1.1372	4.4476
AVR.19 (OH)	X:	-0.0130	-0.01171	+24.4228	+0.03683	+0.001648	+0.2302
(2449826.5)				2.393947	1.3302	2.5012	4.7281
A AVR.23 (OH)	Y:	-0.0290	+0.00200	+ 2.7349	+0.02542	+0.000062	+0.0258
				5.134832	0.5208	5.6882	1.2033
AVR.23 (OH)	X:	-0.0597	-0.01046	+24.5165	+0.04490	+0.001557	+0.2319
(2449830.6)				3.924159	2.9813	5.5832	1.4463
A AVR.27 (OH)	Y:	-0.0211	+0.00199	+ 2.7275	+0.02545	+0.000086	+0.0257
				0.424196	2.0436	2.7784	4.2484
AVR.27 (OH)	X:	-0.1019	-0.01168	+24.6192	+0.04349	+0.000996	+0.2345
(2449834.6)				5.454332	4.7215	2.3117	4.4428
A MAI 1 (OH)	Y:	-0.0131	+0.00207	+ 2.7237	+0.02590	+0.000064	+0.0258
				1.997047	3.5843	5.7589	1.0081
MAI 1 (OH)	X:	-0.1486	-0.01064	+24.7355	+0.03858	+0.000982	+0.2360
(2449838.6)				0.701609	0.0776	5.3601	1.1521
A MAI 5 (OH)	Y:	-0.0048	+0.00205	+ 2.7232	+0.02601	+0.000067	+0.0259
				3.570133	5.1272	1.3698	4.0444
MAI 5 (OH)	X:	-0.1911	-0.01170	+24.8642	+0.03544	+0.001466	+0.2361
(2449842.6)				2.232673	1.5094	2.1827	4.1464
A MAI 9 (OH)	Y:	+0.0033	+0.00208	+ 2.7262	+0.02590	+0.000056	+0.0259
				5.143244	0.4005	4.1738	0.7956

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DU SATELLITE 1 DE SATURNE: MIMAS N=6.667

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
MAI 9 (OH) (2449846.6)	X:	-0.2378	-0.01051	+24.9912 3.764242	+0.04307 3.0756	+0.001366 5.2734	+0.2363 0.8643
A MAI 13 (OH)	Y:	+0.0116	+0.00200	+ 2.7317 0.433040	+0.02545 1.9333	+0.000058 3.1808	+0.0258 3.8357
MAI 13 (OH) (2449850.6)	X:	-0.2804	-0.01140	+25.1259 5.295839	+0.04306 4.8110	+0.000661 2.3648	+0.2380 3.8692
A MAI 17 (OH)	Y:	+0.0196	+0.00200	+ 2.7400 2.005413	+0.02555 3.4791	+0.000108 5.9922	+0.0259 0.5980
MAI 17 (OH) (2449854.6)	X:	-0.3255	-0.01053	+25.2715 0.544683	+0.04062 0.1315	+0.000529 5.7574	+0.2409 0.5874
A MAI 21 (OH)	Y:	+0.0276	+0.00190	+ 2.7508 3.577252	+0.02516 5.0321	+0.000082 1.5887	+0.0262 3.6399
MAI 21 (OH) (2449858.6)	X:	-0.3679	-0.01090	+25.4258 2.077132	+0.03857 1.6945	+0.[illegible]969 1.9[illegible]2	+0.2432 3.5830
A MAI 25 (OH)	Y:	+0.0352	+0.00183	+ 2.7638 5.148239	+0.02481 0.3052	+0.0[illegible]0105 3.[illegible]72	+0.0264 0.3905
MAI 25 (OH) (2449862.6)	X:	-0.4114	-0.01012	+25.5834 3.610147	+0.04189 3.2044	+0.001093 4.6998	+0.2441 0.2951
A MAI 29 (OH)	Y:	+0.0425	+0.00169	+ 2.7782 0.435239	+0.02391 1.8512	+0.000053 4.0974	+0.0265 3.4216
MAI 29 (OH) (2449866.6)	X:	-0.4523	-0.01031	+25.7453 5.143372	+0.04406 4.8716	+0.000301 1.0586	+0.2445 3.2970
A JUN. 2 (OH)	Y:	+0.0493	+0.00161	+ 2.7938 2.004137	+0.02348 3.3994	+0.000140 5.9128	+0.0265 0.1752
JUN. 2 (OH) (2449870.6)	X:	-0.4929	-0.00975	+25.9145 0.393870	+0.04378 0.1712	+0.000431 1.1341	+0.2460 0.0215
A JUN. 6 (OH)	Y:	+0.0557	+0.00145	+ 2.8103 3.571833	+0.02262 4.9634	+0.000104 1.5704	+0.0267 3.2162
JUN. 6 (OH) (2449874.6)	X:	-0.5325	-0.00926	+26.0882 1.927829	+0.04487 1.8239	+0.000197 1.4804	+0.2488 3.0271
A JUN.10 (OH)	Y:	+0.0615	+0.00129	+ 2.8269 5.138043	+0.02198 0.2358	+0.000163 3.0783	+0.0270 6.2524
JUN.10 (OH) (2449878.6)	X:	-0.5695	-0.00904	+26.2706 3.462366	+0.04257 3.3724	+0.000929 3.9348	+0.2518 6.0261
A JUN.14 (OH)	Y:	+0.0667	+0.00114	+ 2.8435 0.419732	+0.02075 1.8041	+0.000112 4.6613	+0.0272 2.9964
JUN.14 (OH) (2449882.6)	X:	-0.6058	-0.00828	+26.4521 4.997358	+0.04551 4.9179	+0.000949 0.1082	+0.2534 2.7399
A JUN.18 (OH)	Y:	+0.0712	+0.00096	+ 2.8591 1.983006	+0.01960 3.3591	+0.000147 5.7615	+0.0273 6.0210
JUN.18 (OH) (2449886.6)	X:	-0.6365	-0.00806	+26.6359 0.249512	+0.04772 0.2216	+0.000914 1.9163	+0.2539 5.7425
A JUN.22 (OH)	Y:	+0.0750	+0.00079	+ 2.8735 3.544601	+0.01840 4.9342	+0.000138 1.2717	+0.0273 2.7674
JUN.22 (OH) (2449890.6)	X:	-0.6715	-0.00679	+26.8214 1.785049	+0.05139 1.9050	+0.000637 5.0176	+0.2549 2.4683
A JUN.26 (OH)	Y:	+0.0783	+0.00057	+ 2.8858 5.104339	+0.01748 0.2116	+0.000240 2.7905	+0.0274 5.8003
JUN.26 (OH) (2449894.6)	X:	-0.6984	-0.00698	+27.0180 3.321128	+0.04573 3.5427	+0.000903 3.0975	+0.2576 5.4769
A JUN.30 (OH)	Y:	+0.0805	+0.00044	+ 2.8966 0.379154	+0.01614 1.8205	+0.000216 4.7540	+0.0276 2.5450
JUN.30 (OH) (2449898.6)	X:	-0.7263	-0.00528	+27.2089 4.857889	+0.04634 4.9822	+0.001553 6.1995	+0.2610 2.1963
A JUL. 4 (OH)	Y:	+0.0823	+0.00020	+ 2.9043 1.935461	+0.01420 3.4060	+0.000136 5.7165	+0.0278 5.5637
JUL. 4 (OH) (2449902.6)	X:	-0.7475	-0.00535	+27.3958 0.111649	+0.05141 0.2928	+0.001381 2.3046	+0.2633 5.1956
A JUL. 8 (OH)	Y:	+0.0831	+0.00008	+ 2.9086 3.489687	+0.01277 4.9975	+0.000200 0.9454	+0.0278 2.2962
JUL. 8 (OH) (2449906.6)	X:	-0.7694	-0.00348	+27.5828 1.648774	+0.05545 1.9780	+0.001192 4.9993	+0.2638 1.9150
A JUL.12 (OH)	Y:	+0.0834	-0.00016	+ 2.9092 5.041769	+0.01168 0.3077	+0.000323 2.6364	+0.0277 5.3154

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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 (0H) (2449910.6)	X:	-0.7829	-0.00376	+27.7779 3.186362	+0.04973 3.6774	+0.001028 2.3457	+0.2644 4.9242
A JUL.16 (0H)	Y:	+0.0827	-0.00022	+ 2.9070 0.308603	+0.01063 2.0068	+0.000324 4.7136	+0.0276 2.0545
JUL.16 (0H) (2449914.6)	X:	-0.7980	-0.00141	+27.9639 4.724721	+0.04578 5.0880	+0.001716 6.0089	+0.2667 1.6518
A JUL.20 (0H)	Y:	+0.0818	-0.00048	+ 2.9003 1.856872	+0.00849 3.7378	+0.000122 5.9430	+0.0276 5.0723
JUL.20 (0H) (2449918.6)	X:	-0.8040	-0.00162	+28.1392 6.263122	+0.05289 0.3789	+0.001685 2.4993	+0.2702 4.6582
A JUL.24 (0H)	Y:	+0.0799	-0.00051	+ 2.8885 3.402721	+0.00715 5.4207	+0.000263 0.7689	+0.0276 1.7985
JUL.24 (0H) (2449922.6)	X:	-0.8104	+0.00058	+28.3134 1.518507	+0.05567 2.0673	+0.001313 5.0999	+0.2727 1.3763
A JUL.28 (0H)	Y:	+0.0778	-0.00073	+ 2.8725 4.946106	+0.00659 0.8806	+0.000380 2.6051	+0.0275 4.8028
JUL.28 (0H) (2449926.6)	X:	-0.8079	+0.00055	+28.4882 3.057453	+0.05198 3.7718	+0.001091 1.8177	+0.2732 4.3789
A AOU. 1 (0H)	Y:	+0.0748	-0.00071	+ 2.8527 0.203898	+0.00696 2.7389	+0.000387 4.6362	+0.0271 1.5257
AOU. 1 (0H) (2449930.6)	X:	-0.8058	+0.00299	+28.6524 4.597071	+0.04444 5.2461	+0.001390 5.7550	+0.2734 1.1042
A AOU. 5 (0H)	Y:	+0.0719	-0.00093	+ 2.8284 1.742831	+0.00734 4.7102	+0.000145 0.0127	+0.0268 4.5347
AOU. 5 (0H) (2449934.6)	X:	-0.7941	+0.00293	+28.7997 6.136676	+0.05043 0.4920	+0.001617 2.5164	+0.2751 4.1170
A AOU. 9 (0H)	Y:	+0.0682	-0.00086	+ 2.7986 3.279016	+0.00755 0.2192	+0.000271 0.7102	+0.0266 1.2582
AOU. 9 (0H) (2449938.6)	X:	-0.7818	+0.00510	+28.9429 1.393202	+0.05176 2.1881	+0.001077 5.2599	+0.2782 0.8431
A AOU.13 (0H)	Y:	+0.0647	-0.00101	+ 2.7652 4.812390	+0.00871 1.8960	+0.000363 2.6338	+0.0264 4.2565
AOU.13 (0H) (2449942.6)	X:	-0.7617	+0.00550	+29.0772 2.933169	+0.05002 3.8484	+0.000849 1.3355	+0.2805 3.8463
A AOU.17 (0H)	Y:	+0.0606	-0.00094	+ 2.7282 0.059840	+0.01042 3.5481	+0.000356 4.5254	+0.0261 0.9643
AOU.17 (0H) (2449946.6)	X:	-0.7397	+0.00744	+29.2008 4.473520	+0.04303 5.4377	+0.000728 5.3426	+0.2810 0.5648
A AOU.21 (0H)	Y:	+0.0568	-0.00104	+ 2.6879 1.587895	+0.01253 5.2237	+0.000196 0.0842	+0.0255 3.9542
AOU.21 (0H) (2449950.6)	X:	-0.7101	+0.00781	+29.3045 6.013901	+0.04418 0.6639	+0.001148 2.3035	+0.2805 3.5725
A AOU.25 (0H)	Y:	+0.0527	-0.00094	+ 2.6438 3.112958	+0.01374 0.5923	+0.000201 0.8412	+0.0250 0.6643
AOU.25 (0H) (2449954.6)	X:	-0.6782	+0.00947	+29.3984 1.271088	+0.04477 2.3512	+0.000626 5.2322	+0.2812 0.3025
A AOU.29 (0H)	Y:	+0.0488	-0.00098	+ 2.5977 4.634900	+0.01517 2.1767	+0.000252 2.6876	+0.0246 3.6575
AOU.29 (0H) (2449958.6)	X:	-0.6409	+0.01031	+29.4755 2.811553	+0.04373 3.9488	+0.000600 0.2651	+0.2832 3.3136
A SEP. 2 (0H)	Y:	+0.0449	-0.00092	+ 2.5495 6.153765	+0.01655 3.7655	+0.000230 4.2872	+0.0243 0.3601
SEP. 2 (0H) (2449962.6)	X:	-0.5995	+0.01128	+29.5419 4.352021	+0.04155 5.6430	+0.000324 3.1022	+0.2851 0.0342
A SEP. 6 (0H)	Y:	+0.0411	-0.00087	+ 2.5007 1.386308	+0.01801 5.3252	+0.000222 6.1900	+0.0239 3.3365
SEP. 6 (0H) (2449966.6)	X:	-0.5544	+0.01221	+29.5895 5.892588	+0.03691 0.9618	+0.000551 1.5437	+0.2853 3.0349
A SEP.10 (0H)	Y:	+0.0376	-0.00084	+ 2.4513 2.899165	+0.01950 0.6229	+0.000120 1.5517	+0.0234 0.0257
SEP.10 (0H) (2449970.6)	X:	-0.5051	+0.01291	+29.6195 1.149811	+0.03611 2.5908	+0.000405 3.9076	+0.2841 6.0405
A SEP.14 (0H)	Y:	+0.0342	-0.00075	+ 2.4021 4.408995	+0.02066 2.1990	+0.000069 2.8359	+0.0228 3.0006

1995 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 1 DE SATURNE: MIMAS N=6.667

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
SEP.14 (OH) (2449974.6)	X:	-0.4542	+0.01402	+29.6294 2.690073	+0.03511 4.1353	+0.001083 5.7116	+0.2832 2.7689
A SEP.18 (OH)	Y:	+0.0312	-0.00076	+ 2.3534 5.915714	+0.02122 3.7765	+0.000112 3.4143	+0.0223 5.9777
SEP.18 (OH) (2449978.6)	X:	-0.3976	+0.01388	+29.6294 4.229996	+0.03925 5.8620	+0.001199 2.2671	+0.2839 5.7795
A SEP.22 (OH)	Y:	+0.0281	-0.00060	+ 2.3074 1.136126	+0.02147 5.3000	+0.000213 5.8728	+0.0219 2.6672
SEP.22 (OH) (2449982.6)	X:	-0.3422	+0.01524	+29.6148 5.770052	+0.03405 1.3961	+0.000607 6.1893	+0.2852 2.4998
A SEP.26 (OH)	Y:	+0.0257	-0.00067	+ 2.2643 2.637644	+0.02284 0.5555	+0.000163 2.4115	+0.0216 5.6312
SEP.26 (OH) (2449986.6)	X:	-0.2812	+0.01475	+29.5757 1.026646	+0.02931 2.9853	+0.[illegible]997 3.28[illegible]3	+0.2851 5.4989
A SEP.30 (OH)	Y:	+0.0229	-0.00050	+ 2.2233 4.136948	+0.02351 2.1365	+0.0[illegible]121 5.6[illegible]6	+0.0213 2.3058
SEP.30 (OH) (2449990.6)	X:	-0.2225	+0.01593	+29.5180 2.565985	+0.02861 4.4982	+0.001622 5.6219	+0.2830 2.2176
A OCT. 4 (OH)	Y:	+0.0209	-0.00060	+ 2.1854 5.633894	+0.02307 3.7025	+0.000145 2.2913	+0.0208 5.2641
OCT. 4 (OH) (2449994.6)	X:	-0.1582	+0.01485	+29.4514 4.104769	+0.03639 6.1454	+0.001921 2.0498	+0.2808 5.2252
A OCT. 8 (OH)	Y:	+0.0184	-0.00041	+ 2.1524 0.845787	+0.02234 5.2107	+0.000163 5.5227	+0.0204 1.9430
OCT. 8 (OH) (2449998.6)	X:	-0.0990	+0.01627	+29.3758 5.643603	+0.03749 1.8022	+0.001098 5.4197	+0.2803 1.9505
A OCT.12 (OH)	Y:	+0.0168	-0.00056	+ 2.1241 2.340421	+0.02315 0.4400	+0.000209 2.6074	+0.0201 4.9067
OCT.12 (OH) (2450002.6)	X:	-0.0340	+0.01477	+29.2732 0.898914	+0.02952 3.5008	+0.001347 3.1171	+0.2810 4.9533
A OCT.16 (OH)	Y:	+0.0146	-0.00037	+ 2.0986 3.834465	+0.02324 2.0199	+0.000230 5.5585	+0.0200 1.5837
OCT.16 (OH) (2450006.6)	X:	+0.0251	+0.01580	+29.1569 2.436708	+0.02900 4.9759	+0.001836 5.7400	+0.2806 1.6672
A OCT.20 (OH)	Y:	+0.0130	-0.00052	+ 2.0773 5.327797	+0.02200 3.5711	+0.000158 1.8616	+0.0199 4.5387
OCT.20 (OH) (2450010.6)	X:	+0.0886	+0.01420	+29.0340 3.973909	+0.03595 0.2349	+0.002107 1.9619	+0.2781 4.6644
A OCT.24 (OH)	Y:	+0.0109	-0.00039	+ 2.0608 0.538148	+0.02088 5.0758	+0.000064 5.2003	+0.0198 1.2086
OCT.24 (OH) (2450014.6)	X:	+0.1452	+0.01519	+28.9060 5.510963	+0.04338 2.0702	+0.001436 4.9328	+0.2751 1.3835
A OCT.28 (OH)	Y:	+0.0093	-0.00053	+ 2.0482 2.032922	+0.02080 0.2947	+0.000187 2.7076	+0.0196 4.1654
OCT.28 (OH) (2450018.6)	X:	+0.2058	+0.01324	+28.7550 0.764480	+0.03755 3.8563	+0.001105 2.8987	+0.2735 4.3889
A NOV. 1 (OH)	Y:	+0.0072	-0.00043	+ 2.0379 3.528910	+0.02031 1.8566	+0.000245 5.2874	+0.0194 0.8461
NOV. 1 (OH) (2450022.6)	X:	+0.2593	+0.01367	+28.5954 2.300339	+0.03613 5.3403	+0.001617 5.9050	+0.2734 1.1078
A NOV. 5 (OH)	Y:	+0.0053	-0.00055	+ 2.0305 5.026047	+0.01876 3.3908	+0.000128 1.1302	+0.0194 3.8135
NOV. 5 (OH) (2450026.6)	X:	+0.3145	+0.01223	+28.4320 3.835663	+0.04076 0.6042	+0.001628 1.9853	+0.2729 4.1031
A NOV. 9 (OH)	Y:	+0.0032	-0.00052	+ 2.0258 0.241915	+0.01758 4.9023	+0.000076 2.0136	+0.0194 0.4957
NOV. 9 (OH) (2450030.6)	X:	+0.3634	+0.01242	+28.2657 5.370589	+0.04787 2.2536	+0.001415 4.5054	+0.2706 0.8126
A NOV.13 (OH)	Y:	+0.0010	-0.00059	+ 2.0231 1.743118	+0.01653 0.1240	+0.000133 2.9956	+0.0195 3.4573
NOV.13 (OH) (2450034.6)	X:	+0.4130	+0.01074	+28.0870 0.621995	+0.04748 3.9994	+0.000461 2.1888	+0.2673 3.8093
A NOV.17 (OH)	Y:	-0.0013	-0.00060	+ 2.0215 3.246764	+0.01563 1.6471	+0.000212 4.8193	+0.0194 0.1373

1995 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 1 DE SATURNE: MIMAS N=6.667

		AO	A1	BO FO	B1 F1	B2 F2	CO PO
NOV.17 (OH)	X:	+0.4565	+0.01068	+27.9029	+0.04596	+0.000930	+0.2648
(2450038.6)				2.155812	5.5451	6.0430	0.5283
A NOV.21 (OH)	Y:	-0.0038	-0.00065	+ 2.0207	+0.01427	+0.000184	+0.0193
				4.752747	3.1702	0.2500	3.1082
NOV.21 (OH)	X:	+0.4985	+0.00943	+27.7172	+0.04905	+0.000739	+0.2640
(2450042.6)				3.689156	0.8490	2.1491	3.5294
A NOV.25 (OH)	Y:	-0.0063	-0.00070	+ 2.0200	+0.01300	+0.000207	+0.0192
				6.261312	4.6974	1.8832	6.0869
NOV.25 (OH)	X:	+0.5366	+0.00869	+27.5296	+0.05050	+0.001072	+0.2634
(2450046.6)				5.221878	2.4001	3.9047	0.2404
A NOV.29 (OH)	Y:	-0.0092	-0.00068	+ 2.0197	+0.01117	+0.000123	+0.0193
				1.489104	6.2026	3.5457	2.7840
NOV.29 (OH)	X:	+0.5712	+0.00780	+27.3428	+0.05493	+0.000678	+0.2616
(2450050.6)				0.471094	4.0311	0.1944	3.2296
A DEC. 3 (OH)	Y:	-0.0120	-0.00078	+ 2.0195	+0.01005	+0.000190	+0.0194
				3.003145	1.3705	4.2847	5.7606
DEC. 3 (OH)	X:	+0.6027	+0.00686	+27.1524	+0.05541	+0.000122	+0.2584
(2450054.6)				2.002979	5.6505	2.2923	6.2214
A DEC. 7 (OH)	Y:	-0.0151	-0.00073	+ 2.0181	+0.00903	+0.000272	+0.0194
				4.520072	2.8905	6.1843	2.4528
DEC. 7 (OH)	X:	+0.6295	+0.00626	+26.9613	+0.05626	+0.000216	+0.2554
(2450058.6)				3.534380	0.9791	4.9613	2.9363
A DEC.11 (OH)	Y:	-0.0181	-0.00083	+ 2.0155	+0.00751	+0.000268	+0.0192
				6.039602	4.4298	1.8024	5.4337
DEC.11 (OH)	X:	+0.6552	+0.00475	+26.7708	+0.05197	+0.001006	+0.2537
(2450062.6)				5.065060	2.5108	2.9371	5.9356
A DEC.15 (OH)	Y:	-0.0215	-0.00075	+ 2.0124	+0.00541	+0.000140	+0.0191
				1.278472	5.8860	3.7000	2.1403
DEC.15 (OH)	X:	+0.6739	+0.00475	+26.5922	+0.05813	+0.001339	+0.2532
(2450066.6)				0.312263	4.0128	5.9085	2.6461
A DEC.19 (OH)	Y:	-0.0245	-0.00086	+ 2.0090	+0.00442	+0.000171	+0.0190
				2.803765	0.8574	3.9190	5.1349
DEC.19 (OH)	X:	+0.6929	+0.00298	+26.4108	+0.06233	+0.001050	+0.2521
(2450070.6)				1.842490	5.6829	2.7209	5.6334
A DEC.23 (OH)	Y:	-0.0280	-0.00075	+ 2.0035	+0.00362	+0.000305	+0.0191
				4.332182	2.3183	5.9999	1.8451
DEC.23 (OH)	X:	+0.7046	+0.00309	+26.2285	+0.06001	+0.000905	+0.2495
(2450074.6)				3.372153	1.0326	5.4756	2.3381
A DEC.27 (OH)	Y:	-0.0310	-0.00083	+ 1.9966	+0.00205	+0.000254	+0.0191
				5.863184	3.5539	1.6999	4.8359
DEC.27 (OH)	X:	+0.7175	+0.00115	+26.0512	+0.05311	+0.001353	+0.2462
(2450078.6)				4.901131	2.5641	2.4066	5.3313
A DEC.31 (OH)	Y:	-0.0344	-0.00072	+ 1.9890	+0.00179	+0.000134	+0.0189
				1.113791	3.9848	3.4220	1.5461
DEC.31 (OH)	X:	+0.7218	+0.00173	+25.8912	+0.05794	+0.001734	+0.2442
(2450082.6)				0.146681	3.9835	5.5458	2.0451
A JAN. 4 (OH)	Y:	-0.0373	-0.00078	+ 1.9810	+0.00321	+0.000144	+0.0187
				2.650811	5.1600	3.7633	4.5477

1995 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 2 DE SATURNE: ENCELADE N=4.586

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
JAN. 1 (OH)	X:	-0.2104	-0.00015	+32.1431	+0.08353	+0.000243	+0.0768
(2449718.9)				5.527583	3.4026	4.9525	3.5459
A JAN.17 (OH)	Y:	+0.0080	+0.00021	+ 5.0313	+0.02629	+0.000085	+0.0116
				1.493348	4.5842	3.2875	5.8178
JAN.17 (OH)	X:	-0.2147	-0.00002	+31.5144	+0.08314	+0.000228	+0.0756
(2449734.9)				3.468130	1.4793	3.1908	5.6378
A FEV. 2 (OH)	Y:	+0.0111	+0.00016	+ 4.6070	+0.02726	+0.000088	+0.0106
				5.763632	2.4630	0.8381	1.6811
FEV. 1 (OH)	X:	-0.2158	-0.00004	+31.0822	+0.08166	+0.000255	+0.0749
(2449749.9)				3.105879	1.2393	3.0530	4.8525
A FEV.17 (OH)	Y:	+0.0135	+0.00014	+ 4.2083	+0.02729	+0.000097	+0.0097
				5.458664	2.0415	0.2153	0.9607
FEV.17 (OH)	X:	-0.2182	-0.00017	+30.7950	+0.07920	+0.000269	+0.0745
(2449765.9)				1.042976	5.6013	1.2470	0.6644
A MAR. 5 (OH)	Y:	+0.0158	+0.00009	+ 3.8035	+0.02670	+0.000102	+0.0088
				3.473350	6.1921	4.2270	3.1412
MAR. 1 (OH)	X:	-0.2186	-0.00013	+30.7005	+0.07718	+0.000279	+0.0747
(2449777.9)				5.779136	4.1716	6.2235	3.8072
A MAR.17 (OH)	Y:	+0.0169	+0.00009	+ 3.5251	+0.02598	+0.000101	+0.0082
				1.996813	4.5871	2.4918	0.0796
MAR.17 (OH)	X:	-0.2231	-0.00013	+30.7420	+0.07369	+0.000294	+0.0751
(2449793.9)				3.717663	2.2676	4.2483	5.9060
A AVR. 2 (OH)	Y:	+0.0182	+0.00005	+ 3.2023	+0.02459	+0.000102	+0.0075
				0.046516	2.4483	0.2472	2.2985
AVR. 1 (OH)	X:	-0.2257	-0.00014	+30.9514	+0.07041	+0.000304	+0.0760
(2449808.9)				3.358131	2.0671	3.9357	5.1304
A AVR.17 (OH)	Y:	+0.0189	+0.00003	+ 2.9633	+0.02295	+0.000105	+0.0070
				6.090255	2.0144	5.9685	1.6492
AVR.17 (OH)	X:	-0.2288	-0.00029	+31.3465	+0.06816	+0.000338	+0.0773
(2449824.9)				1.302701	0.1954	2.0529	0.9592
A MAI 3 (OH)	Y:	+0.0195	+0.00000	+ 2.7869	+0.02082	+0.000111	+0.0067
				4.172967	6.1591	3.6648	3.8974
MAI 1 (OH)	X:	-0.2314	-0.00021	+31.8342	+0.06630	+0.000379	+0.0787
(2449838.9)				2.649451	1.7062	3.4553	3.5952
A MAI 17 (OH)	Y:	+0.0196	+0.00000	+ 2.7004	+0.01848	+0.000123	+0.0066
				5.640066	1.1436	4.7921	0.3665
MAI 17 (OH)	X:	-0.2369	-0.00014	+32.5352	+0.06470	+0.000404	+0.0810
(2449854.9)				0.603081	6.1462	1.5464	5.7183
A JUN. 2 (OH)	Y:	+0.0195	-0.00002	+ 2.6712	+0.01517	+0.000149	+0.0066
				3.717132	5.2781	2.5573	2.6005
JUN. 1 (OH)	X:	-0.2397	-0.00003	+33.3097	+0.06410	+0.000432	+0.0832
(2449869.9)				0.260735	6.0023	1.4447	4.9646
A JUN.17 (OH)	Y:	+0.0191	-0.00002	+ 2.6940	+0.01127	+0.000174	+0.0067
				3.465249	4.7917	2.0934	1.9208
JUN.17 (OH)	X:	-0.2414	-0.00002	+34.2304	+0.06291	+0.000436	+0.0858
(2449885.9)				4.509304	4.1866	5.9583	0.8161
A JUL. 3 (OH)	Y:	+0.0186	-0.00002	+ 2.7494	+0.00664	+0.000202	+0.0069
				1.490768	2.4094	6.2579	4.0940

1995 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 2 DE SATURNE: ENCELADE N=4.586

		AO	A1	BO FO	B1 F1	B2 F2	CO PO
JUL. 1 (OH) (2449899.9)	X:	-0.2404	+0.00019	+35.0735 5.875915	+0.06197 5.7558	+0.000452 1.4342	+0.0882 3.4754
A JUL.17 (OH)	Y:	+0.0181	-0.00001	+ 2.8080 2.875150	+0.00439 2.7743	+0.000214 1.2780	+0.0071 0.4674
JUL.17 (OH) (2449915.9)	X:	-0.2391	+0.00050	+36.0243 3.853422	+0.05876 3.9650	+0.000498 6.0721	+0.0906 5.6214
A AOU. 2 (OH)	Y:	+0.0179	+0.00000	+ 2.8767 0.631348	+0.00853 6.0874	+0.000212 5.4985	+0.0072 2.5701
AOU. 1 (OH) (2449930.9)	X:	-0.2321	+0.00080	+36.8326 3.533378	+0.05347 3.8893	+0.000548 6.1373	+0.0927 4.8915
A AOU.17 (OH)	Y:	+0.0179	+0.00001	+ 2.9448 0.452894	+0.01434 5.5167	+0.000178 5.1295	+0.0074 1.7653
AOU.17 (OH) (2449946.9)	X:	-0.2201	+0.00105	+37.5162 1.520947	+0.04550 2.1790	+0.000636 4.4649	+0.0944 0.7620
A SEP. 2 (OH)	Y:	+0.0182	+0.00006	+ 3.0336 4.627953	+0.01979 3.3916	+0.000104 2.9688	+0.0077 3.8132
SEP. 1 (OH) (2449961.9)	X:	-0.2044	+0.00141	+37.9209 1.207588	+0.03649 2.2727	+0.000675 4.4826	+0.0954 0.0342
A SEP.17 (OH)	Y:	+0.0190	+0.00005	+ 3.1440 4.206267	+0.02274 3.0112	+0.000034 1.5961	+0.0080 2.9749
SEP.17 (OH) (2449977.9)	X:	-0.1807	+0.00154	+38.0383 5.481334	+0.03017 0.8984	+0.000721 2.7807	+0.0953 2.1846
A OCT. 3 (OH)	Y:	+0.0196	+0.00006	+ 3.2883 2.079828	+0.02276 0.9420	+0.000108 4.4928	+0.0084 5.0138
OCT. 1 (OH) (2449991.9)	X:	-0.1592	+0.00183	+37.8599 0.579854	+0.03120 2.9547	+0.000678 4.3646	+0.0946 4.8512
A OCT.17 (OH)	Y:	+0.0204	+0.00000	+ 3.4170 3.371625	+0.02011 2.2535	+0.000189 5.7108	+0.0087 1.3163
OCT.17 (OH) (2450007.9)	X:	-0.1317	+0.00177	+37.3605 4.847317	+0.04134 1.5071	+0.000646 2.6247	+0.0930 0.7088
A NOV. 2 (OH)	Y:	+0.0207	-0.00004	+ 3.5326 1.277386	+0.01450 0.0920	+0.000241 3.6544	+0.0090 3.3946
NOV. 1 (OH) (2450022.9)	X:	-0.1054	+0.00176	+36.6618 4.522487	+0.05280 1.5271	+0.000574 2.5033	+0.0909 6.2410
A NOV.17 (OH)	Y:	+0.0201	-0.00010	+ 3.5785 0.906487	+0.00842 5.6890	+0.000250 3.2983	+0.0090 2.6136
NOV.17 (OH) (2450038.9)	X:	-0.0765	+0.00146	+35.7628 2.493149	+0.06496 6.0424	+0.000455 0.7834	+0.0887 2.0839
A DEC. 3 (OH)	Y:	+0.0183	-0.00014	+ 3.5426 5.141734	+0.00600 2.5431	+0.000229 1.1873	+0.0088 4.7354
DEC. 1 (OH) (2450052.9)	X:	-0.0551	+0.00148	+34.9171 3.852334	+0.07256 1.2838	+0.000424 2.3486	+0.0864 4.7192
A DEC.17 (OH)	Y:	+0.0160	-0.00019	+ 3.4402 0.227486	+0.00976 3.2114	+0.000191 2.4315	+0.0084 1.1123
DEC.17 (OH) (2450068.9)	X:	-0.0334	+0.00125	+33.9608 1.808367	+0.07915 5.6943	+0.000345 0.6450	+0.0840 0.5430
A JAN. 2 (OH)	Y:	+0.0129	-0.00024	+ 3.2582 4.508052	+0.01481 0.8919	+0.000152 0.1854	+0.0079 3.2780

1995 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) (2449718.9)	X:	-0.0011	+0.00000	+39.8516 2.365795	+0.07596 6.2737	+0.000412 1.8073	+0.0038 1.7794
A JAN.17 (0H)	Y:	-0.0002	+0.00000	+ 5.4734 4.616402	+0.03168 1.3304	+0.000084 0.3747	+0.0005 4.0848
JAN.17 (0H) (2449734.9)	X:	-0.0011	+0.00001	+39.0760 5.325336	+0.07378 3.1458	+0.000395 5.0312	+0.0037 1.4361
A FEV. 2 (0H)	Y:	-0.0002	+0.00000	+ 4.9633 1.334283	+0.03326 4.2470	+0.000077 2.8178	+0.0005 3.7205
FEV. 1 (0H) (2449749.9)	X:	-0.0011	+0.00001	+38.5395 4.955636	+0.07104 2.9601	+0.000395 4.8921	+0.0036 0.6946
A FEV.17 (0H)	Y:	-0.0001	+0.00000	+ 4.4810 1.017922	+0.03367 3.8330	+0.000083 2.0342	+0.0004 3.0646
FEV.17 (0H) (2449765.9)	X:	-0.0010	+0.00000	+38.1862 1.627693	+0.06762 6.1171	+0.000405 1.7470	+0.0036 0.3204
A MAR. 5 (0H)	Y:	-0.0001	+0.00000	+ 3.9868 4.048307	+0.03316 0.4534	+0.000091 4.7137	+0.0003 2.7767
MAR. 1 (0H) (2449777.9)	X:	-0.0010	+0.00000	+38.0727 3.843981	+0.06519 2.2124	+0.000415 4.0973	+0.0036 4.7517
A MAR.17 (0H)	Y:	+0.0000	+0.00000	+ 3.6440 0.052063	+0.03234 2.6284	+0.000098 0.4500	+0.0003 1.0186
MAR.17 (0H) (2449793.9)	X:	-0.0010	+0.00000	+38.1257 0.516717	+0.06241 5.3983	+0.000433 0.9081	+0.0036 4.3846
A AVR. 2 (0H)	Y:	+0.0000	+0.00000	+ 3.2429 3.123097	+0.03068 5.5268	+0.000104 3.1853	+0.0003 0.7934
AVR. 1 (0H) (2449808.9)	X:	-0.0010	+0.00000	+38.3835 0.148170	+0.06095 5.2634	+0.000452 0.6800	+0.0037 3.6459
A AVR.17 (0H)	Y:	+0.0000	+0.00000	+ 2.9423 2.883495	+0.02862 5.1023	+0.000114 2.5896	+0.0003 0.2104
AVR.17 (0H) (2449824.9)	X:	-0.0010	+0.00000	+38.8745 3.109132	+0.06088 2.2006	+0.000478 3.7817	+0.0038 3.2952
A MAI 3 (0H)	Y:	+0.0000	+0.00000	+ 2.7172 5.997537	+0.02579 1.7190	+0.000129 5.3231	+0.0003 6.2196
MAI 1 (0H) (2449838.9)	X:	-0.0011	+0.00000	+39.4764 5.703290	+0.06236 5.0272	+0.000495 0.2429	+0.0040 2.1940
A MAI 17 (0H)	Y:	+0.0000	+0.00000	+ 2.6039 2.444043	+0.02265 4.2560	+0.000150 1.4570	+0.0002 5.2549
MAI 17 (0H) (2449854.9)	X:	-0.0011	+0.00000	+40.3439 2.389468	+0.06556 1.9709	+0.000523 3.4006	+0.0041 1.8533
A JUN. 2 (0H)	Y:	+0.0001	+0.00000	+ 2.5585 5.551778	+0.01820 0.8665	+0.000183 4.2808	+0.0003 5.1196
JUN. 1 (0H) (2449869.9)	X:	-0.0011	+0.00000	+41.3053 2.036731	+0.06971 1.8518	+0.000542 3.2723	+0.0043 1.1414
A JUN.17 (0H)	Y:	+0.0001	+0.00000	+ 2.5738 5.297070	+0.01300 0.4058	+0.000217 3.8387	+0.0003 4.4916
JUN.17 (0H) (2449885.9)	X:	-0.0011	+0.00000	+42.4463 5.017516	+0.07452 5.0684	+0.000576 0.2446	+0.0046 0.8355
A JUL. 3 (0H)	Y:	+0.0001	+0.00000	+ 2.6212 2.053308	+0.00662 3.0619	+0.000253 0.4885	+0.0003 4.1206

1995 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 3 DE SATURNE: TETHYS N=3.328

		AO	A1	BO FO	B1 F1	B2 F2	CO PO
JUL. 1 (OH)	X:	-0.0011	+0.00000	+43.4946	+0.07838	+0.000605	+0.0049
(2449899.9)				1.347843	1.6027	3.1463	6.0434
A JUL.17 (OH)	Y:	+0.0001	+0.00000	+ 2.6695	+0.00373	+0.000268	+0.0003
				4.674212	4.2752	3.0871	3.0769
JUL.17 (OH)	X:	-0.0012	+0.00000	+44.6738	+0.08145	+0.000665	+0.0050
(2449915.9)				4.340807	4.8284	0.2109	5.7674
A AOU. 2 (OH)	Y:	+0.0001	+0.00000	+ 2.7250	+0.01063	+0.000260	+0.0003
				1.339916	0.1168	6.0869	2.6795
AOU. 1 (OH)	X:	-0.0013	+0.00000	+45.6750	+0.08231	+0.000729	+0.0052
(2449930.9)				4.010577	4.7308	0.2308	5.0977
A AOU.17 (OH)	Y:	+0.0001	+0.00000	+ 2.7892	+0.01837	+0.000211	+0.0003
				0.919736	5.9198	5.7768	1.8735
AOU.17 (OH)	X:	-0.0013	+0.00000	+46.5238	+0.08088	+0.000816	+0.0056
(2449946.9)				0.730932	1.7219	3.5022	4.8181
A SEP. 2 (OH)	Y:	+0.0000	+0.00000	+ 2.8996	+0.02524	+0.000115	+0.0003
				3.786658	2.5809	2.5322	1.6006
SEP. 1 (OH)	X:	-0.0013	+0.00000	+47.0238	+0.07756	+0.000874	+0.0056
(2449961.9)				0.408082	1.6893	3.5866	4.1795
A SEP.17 (OH)	Y:	+0.0000	+0.00000	+ 3.0659	+0.02889	+0.000006	+0.0003
				3.317683	2.2306	5.1898	0.6794
SEP.17 (OH)	X:	-0.0012	+0.00000	+47.1697	+0.07366	+0.000914	+0.0054
(2449977.9)				3.415588	5.0466	0.6313	3.8945
A OCT. 3 (OH)	Y:	+0.0000	+0.00000	+ 3.3050	+0.02875	+0.000141	+0.0004
				6.176793	5.2168	2.1161	0.3819
OCT. 1 (OH)	X:	-0.0013	+0.00001	+46.9503	+0.07103	+0.000894	+0.0055
(2449991.9)				6.045870	1.7331	3.5257	2.8903
A OCT.17 (OH)	Y:	+0.0000	+0.00000	+ 3.5322	+0.02493	+0.000234	+0.0004
				2.416111	1.5396	4.7713	5.4443
OCT.17 (OH)	X:	-0.0012	+0.00000	+46.3331	+0.07058	+0.000845	+0.0053
(2450007.9)				2.764899	5.1260	0.5436	2.5739
A NOV. 2 (OH)	Y:	+0.0000	+0.00000	+ 3.7540	+0.01737	+0.000299	+0.0004
				5.328287	4.4842	1.5039	5.1260
NOV. 1 (OH)	X:	-0.0011	+0.00000	+45.4695	+0.07207	+0.000756	+0.0051
(2450022.9)				2.432438	5.1439	0.4848	1.9079
A NOV.17 (OH)	Y:	-0.0001	+0.00000	+ 3.8779	+0.00856	+0.000308	+0.0004
				4.943528	3.9669	1.1656	4.4209
NOV.17 (OH)	X:	-0.0013	+0.00001	+44.3530	+0.07485	+0.000662	+0.0048
(2450038.9)				5.421749	2.1751	3.7729	1.6263
A DEC. 3 (OH)	Y:	-0.0001	+0.00000	+ 3.8920	+0.00344	+0.000282	+0.0004
				1.625718	5.1476	4.1212	4.0710
DEC. 1 (OH)	X:	-0.0011	+0.00000	+43.3014	+0.07691	+0.000572	+0.0047
(2450052.9)				1.747830	5.0321	0.3624	0.5503
A DEC.17 (OH)	Y:	+0.0000	+0.00000	+ 3.8033	+0.01021	+0.000238	+0.0004
				4.239461	0.7444	0.3833	3.0716
DEC.17 (OH)	X:	-0.0011	+0.00001	+42.1125	+0.07832	+0.000498	+0.0043
(2450068.9)				4.722802	1.9687	3.6534	0.2033
A JAN. 2 (OH)	Y:	-0.0001	+0.00001	+ 3.6059	+0.01753	+0.000185	+0.0004
				0.965485	3.5728	3.2216	2.7698

1995 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:	+0.0936	-0.00011	+50.9637	+0.11708	+0.000470	+0.0595
(2449718.9)				3.328394	1.1158	2.7526	2.9422
A JAN.17 (0H)	Y:	+0.0066	-0.00009	+ 7.9810	+0.04169	+0.000118	+0.0089
				5.573219	2.3106	1.1895	5.2227
JAN.17 (0H)	X:	+0.0917	-0.00010	+49.9683	+0.11729	+0.000465	+0.0578
(2449734.9)				2.333941	0.2820	2.0072	0.9534
A FEV. 2 (0H)	Y:	+0.0051	-0.00009	+ 7.3105	+0.04349	+0.000118	+0.0082
				4.625026	1.2700	6.0003	3.2748
FEV. 1 (0H)	X:	+0.0899	-0.00009	+49.2784	+0.11597	+0.000445	+0.0572
(2449749.9)				5.325669	3.4255	5.1939	0.6540
A FEV.17 (0H)	Y:	+0.0036	-0.00009	+ 6.6802	+0.04370	+0.000129	+0.0075
				1.390504	4.2124	2.3967	3.0506
FEV.17 (0H)	X:	+0.0883	-0.00008	+48.8234	+0.11377	+0.000445	+0.0571
(2449765.9)				4.326284	2.5873	4.3[illegible]4	4.9544
A MAR. 5 (0H)	Y:	+0.0019	-0.00009	+ 6.0395	+0.04283	+0.000144	+0.0067
				0.468374	3.1562	1.1[illegible]32	1.1292
MAR. 1 (0H)	X:	+0.0872	-0.00006	+48.6777	+0.11194	+0.000470	+0.0570
(2449777.9)				0.434757	5.0999	0.6100	3.4500
A MAR.17 (0H)	Y:	+0.0007	-0.00010	+ 5.5985	+0.04164	+0.000149	+0.0063
				2.930257	5.4987	3.3877	6.0106
MAR.17 (0H)	X:	+0.0861	-0.00001	+48.7438	+0.10926	+0.000488	+0.0572
(2449793.9)				5.718551	4.2690	6.0283	1.4697
A AVR. 2 (0H)	Y:	-0.0009	-0.00009	+ 5.0870	+0.03936	+0.000153	+0.0058
				2.041490	4.4303	2.2078	4.1277
AVR. 1 (0H)	X:	+0.0857	+0.00003	+49.0719	+0.10749	+0.000505	+0.0578
(2449808.9)				2.426977	1.1444	2.9261	1.1763
A AVR.17 (0H)	Y:	-0.0025	-0.00009	+ 4.7082	+0.03676	+0.000165	+0.0054
				5.152548	1.0701	4.9778	3.9655
AVR.17 (0H)	X:	+0.0862	+0.00008	+49.7000	+0.10559	+0.000551	+0.0592
(2449824.9)				1.431934	0.3290	2.0619	5.4748
A MAI 3 (0H)	Y:	-0.0041	-0.00009	+ 4.4279	+0.03325	+0.000178	+0.0051
				4.295200	6.2785	3.7461	2.1256
MAI 1 (0H)	X:	+0.0871	+0.00014	+50.4690	+0.10446	+0.000562	+0.0599
(2449838.9)				2.135123	1.2017	2.9307	0.6025
A MAI 17 (0H)	Y:	-0.0055	-0.00008	+ 4.2904	+0.02940	+0.000200	+0.0051
				5.118499	0.6226	4.2614	3.6567
MAI 17 (0H)	X:	+0.0893	+0.00020	+51.5791	+0.10339	+0.000612	+0.0618
(2449854.9)				1.147971	0.4083	2.1294	4.9186
A JUN. 2 (0H)	Y:	-0.0068	-0.00007	+ 4.2436	+0.02405	+0.000237	+0.0050
				4.254600	5.8144	3.0966	1.7900
JUN. 1 (0H)	X:	+0.0922	+0.00027	+52.8080	+0.10241	+0.000616	+0.0634
(2449869.9)				4.154404	3.6112	5.3810	4.6487
A JUN.17 (0H)	Y:	-0.0080	-0.00005	+ 4.2802	+0.01786	+0.000277	+0.0052
				1.068326	2.3901	5.9827	1.5880
JUN.17 (0H)	X:	+0.0964	+0.00034	+54.2669	+0.10086	+0.000686	+0.0653
(2449885.9)				3.178437	2.8439	4.6963	2.6832
A JUL. 3 (0H)	Y:	-0.0089	-0.00003	+ 4.3695	+0.01058	+0.000319	+0.0052
				0.152618	1.0553	4.9187	5.9579

1995 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 4 DE SATURNE: DIONE N=2.296

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
JUL. 1 (OH)	X:	+0.1012	+0.00040	+55.6079	+0.09789	+0.000725	+0.0668
(2449899.9)				3.900574	3.7645	5.7004	4.1242
A JUL.17 (OH)	Y:	-0.0095	-0.00001	+ 4.4650	+0.00709	+0.000339	+0.0054
				0.892732	0.7932	5.5920	1.1101
JUL.17 (OH)	X:	+0.1075	+0.00046	+57.1148	+0.09264	+0.000829	+0.0688
(2449915.9)				2.936901	3.0403	5.0826	2.1761
A AOU. 2 (OH)	Y:	-0.0098	+0.00000	+ 4.5776	+0.01358	+0.000329	+0.0055
				6.191432	5.1781	4.5905	5.4022
AOU. 1 (OH)	X:	+0.1145	+0.00047	+58.3951	+0.08467	+0.000903	+0.0701
(2449930.9)				5.966086	0.0491	2.1592	1.9309
A AOU.17 (OH)	Y:	-0.0097	+0.00002	+ 4.6897	+0.02259	+0.000272	+0.0057
				2.879711	1.6713	1.3074	5.0943
AOU.17 (OH)	X:	+0.1222	+0.00046	+59.4790	+0.07433	+0.001015	+0.0708
(2449946.9)				5.013482	5.7164	1.5552	6.2752
A SEP. 2 (OH)	Y:	-0.0093	+0.00003	+ 4.8346	+0.03097	+0.000153	+0.0058
				1.832385	0.6075	0.2208	3.0293
SEP. 1 (OH)	X:	+0.1290	+0.00041	+60.1172	+0.06423	+0.001077	+0.0713
(2449961.9)				1.767506	2.8809	4.8983	6.0366
A SEP.17 (OH)	Y:	-0.0089	+0.00003	+ 5.0129	+0.03546	+0.000041	+0.0061
				4.762453	3.5806	1.7656	2.6807
SEP.17 (OH)	X:	+0.1355	+0.00032	+60.3027	+0.05860	+0.001110	+0.0706
(2449977.9)				0.819672	2.4879	4.2733	4.0990
A OCT. 3 (OH)	Y:	-0.0084	+0.00003	+ 5.2434	+0.03522	+0.000187	+0.0063
				3.698995	2.5796	6.0234	0.6438
OCT. 1 (OH)	X:	+0.1401	+0.00021	+60.0212	+0.06085	+0.001078	+0.0700
(2449991.9)				1.560216	3.7491	5.2778	5.5451
A OCT.17 (OH)	Y:	-0.0079	+0.00002	+ 5.4493	+0.03043	+0.000302	+0.0065
				4.350570	3.2552	0.3794	2.0132
OCT.17 (OH)	X:	+0.1434	+0.00009	+59.2315	+0.07145	+0.001021	+0.0684
(2450007.9)				0.607920	3.2926	4.6386	3.5945
A NOV. 2 (OH)	Y:	-0.0076	+0.00001	+ 5.6320	+0.02112	+0.000381	+0.0066
				3.320741	2.1669	5.6875	6.2805
NOV. 1 (OH)	X:	+0.1449	+0.00000	+58.1273	+0.08395	+0.000890	+0.0668
(2450022.9)				3.637061	0.4006	1.6524	3.3332
A NOV.17 (OH)	Y:	-0.0076	+0.00000	+ 5.7036	+0.01125	+0.000393	+0.0066
				0.021371	4.7997	2.3955	5.9911
NOV.17 (OH)	X:	+0.1448	-0.00008	+56.7014	+0.09697	+0.000784	+0.0643
(2450038.9)				2.672508	6.0083	1.0139	1.3741
A DEC. 3 (OH)	Y:	-0.0077	-0.00001	+ 5.6446	+0.00878	+0.000357	+0.0064
				5.321962	2.4868	1.3663	4.0222
DEC. 1 (OH)	X:	+0.1434	-0.00013	+55.3577	+0.10568	+0.000668	+0.0631
(2450052.9)				3.393097	0.6585	1.9860	2.7896
A DEC.17 (OH)	Y:	-0.0079	-0.00001	+ 5.4798	+0.01609	+0.000300	+0.0061
				6.052530	2.6157	1.9920	5.4784
DEC.17 (OH)	X:	+0.1412	-0.00016	+53.8412	+0.11304	+0.000601	+0.0607
(2450068.9)				2.414427	6.1653	1.3445	0.8078
A JAN. 2 (OH)	Y:	-0.0083	-0.00002	+ 5.1893	+0.02459	+0.000237	+0.0058
				5.115563	1.4236	0.8388	3.5434

1995 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 5 DE SATURNE: RHEA N=1.391

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
JAN. 1 (OH)	X:	+0.0208	+0.00014	+71.1274	+0.15168	+0.000725	+0.0325
(2449718.9)				1.460143	5.4703	0.8274	3.1058
A JAN.17 (OH)	Y:	-0.0199	+0.00012	+11.4404	+0.05888	+0.000152	+0.0051
				3.728683	0.4082	5.6587	5.4014
JAN.17 (OH)	X:	+0.0231	+0.00021	+69.7379	+0.15178	+0.000687	+0.0322
(2449734.9)				4.838461	2.7461	4.4414	3.6062
A FEV. 2 (OH)	Y:	-0.0180	+0.00014	+10.5023	+0.06144	+0.000150	+0.0047
				0.871364	3.7465	2.2330	5.9475
FEV. 1 (OH)	X:	+0.0261	+0.00020	+68.7758	+0.15066	+0.000661	+0.0320
(2449749.9)				0.541157	4.8982	0.3578	1.3257
A FEV.17 (OH)	Y:	-0.0160	+0.00012	+ 9.6248	+0.06187	+0.000171	+0.0043
				2.915460	5.6889	3.8405	3.7394
FEV.17 (OH)	X:	+0.0294	+0.00024	+68.1422	+0.14859	+0.000660	+0.0320
(2449765.9)				3.913987	2.1617	3.9 73	1.8248
A MAR. 5 (OH)	Y:	-0.0140	+0.00013	+ 8.7369	+0.06063	+0.000191	+0.0039
				0.083490	2.7239	0.7 16	4.3245
MAR. 1 (OH)	X:	+0.0323	+0.00023	+67.9380	+0.14692	+0.000661	+0.0320
(2449777.9)				1.730604	0.1110	1.8562	3.7713
A MAR.17 (OH)	Y:	-0.0124	+0.00012	+ 8.1295	+0.05890	+0.000205	+0.0037
				4.254069	0.4954	4.6519	0.0663
MAR.17 (OH)	X:	+0.0359	+0.00025	+68.0311	+0.14476	+0.000679	+0.0322
(2449793.9)				5.102850	3.6615	5.3762	4.2738
A AVR. 2 (OH)	Y:	-0.0105	+0.00012	+ 7.4310	+0.05573	+0.000216	+0.0034
				1.453460	3.8013	1.5612	0.6852
AVR. 1 (OH)	X:	+0.0397	+0.00024	+68.4908	+0.14333	+0.000698	+0.0325
(2449808.9)				0.804273	5.8187	1.2372	1.9985
A AVR.17 (OH)	Y:	-0.0088	+0.00010	+ 6.9195	+0.05199	+0.000231	+0.0032
				3.555854	5.7183	3.3451	4.8153
AVR.17 (OH)	X:	+0.0434	+0.00026	+69.3675	+0.14230	+0.000742	+0.0329
(2449824.9)				4.180243	3.0977	4.7707	2.5066
A MAI 3 (OH)	Y:	-0.0072	+0.00010	+ 6.5483	+0.04706	+0.000250	+0.0030
				0.782743	2.7318	0.2128	5.4636
MAI 1 (OH)	X:	+0.0469	+0.00024	+70.4423	+0.14190	+0.000769	+0.0334
(2449838.9)				4.780864	3.8684	5.5442	3.7413
A MAI 17 (OH)	Y:	-0.0059	+0.00009	+ 6.3732	+0.04169	+0.000279	+0.0030
				1.499173	3.2553	0.6281	0.5216
MAI 17 (OH)	X:	+0.0508	+0.00019	+71.9921	+0.14155	+0.000824	+0.0340
(2449854.9)				1.881078	1.1655	2.8511	4.2573
A JUN. 2 (OH)	Y:	-0.0045	+0.00005	+ 6.3246	+0.03424	+0.000331	+0.0030
				5.000644	0.2485	3.8333	1.1414
JUN. 1 (OH)	X:	+0.0535	+0.00020	+73.7089	+0.14109	+0.000880	+0.0346
(2449869.9)				3.879711	3.3566	5.0943	1.9985
A JUN.17 (OH)	Y:	-0.0037	+0.00004	+ 6.3895	+0.02569	+0.000386	+0.0030
				0.802482	2.0962	5.7074	5.2410
JUN.17 (OH)	X:	+0.0568	+0.00010	+75.7462	+0.13937	+0.000963	+0.0353
(2449885.9)				0.990884	0.6812	2.4913	2.5229
A JUL. 3 (OH)	Y:	-0.0031	+0.00000	+ 6.5274	+0.01571	+0.000446	+0.0030
				4.254560	5.1402	2.7327	5.7941

1995 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:	+0.0585	+0.00008	+77.6176	+0.13610	+0.001041	+0.0358
(2449899.9)				1.610090	1.5019	3.3990	3.7726
A JUL.17 (OH)	Y:	-0.0030	-0.00001	+ 6.6712	+0.01059	+0.000471	+0.0031
				4.891416	4.8504	3.3003	0.7651
JUL.17 (OH)	X:	+0.0599	-0.00002	+79.7211	+0.12980	+0.001181	-0.0366
(2449915.9)				5.016838	5.1585	0.8625	4.3098
A AOU. 2 (OH)	Y:	-0.0033	-0.00004	+ 6.8392	+0.01872	+0.000458	+0.0031
				1.996063	1.0242	0.3890	1.2622
AOU. 1 (OH)	X:	+0.0599	-0.00006	+81.5077	+0.12040	+0.001298	+0.0369
(2449930.9)				0.755214	1.1680	3.2002	2.0606
A AOU.17 (OH)	Y:	-0.0042	-0.00005	+ 7.0016	+0.03110	+0.000371	+0.0032
				3.963758	2.7697	2.3695	5.2322
AOU.17 (OH)	X:	+0.0589	-0.00016	+83.0204	+0.10883	+0.001443	+0.0370
(2449946.9)				4.173491	4.9315	0.6739	2.6048
A SEP. 2 (OH)	Y:	-0.0051	-0.00011	+ 7.2037	+0.04257	+0.000206	+0.0033
				1.009764	6.0649	5.6666	5.6620
SEP. 1 (OH)	X:	+0.0568	-0.00019	+83.9106	+0.09828	+0.001508	+0.0371
(2449961.9)				6.203633	1.0788	3.0053	0.3581
A SEP.17 (OH)	Y:	-0.0067	-0.00008	+ 7.4430	+0.04860	+0.000069	+0.0033
				2.938252	1.7481	6.1579	3.2938
SEP.17 (OH)	X:	+0.0538	-0.00025	+84.1686	+0.09349	+0.001543	+0.0367
(2449977.9)				3.344211	5.0014	0.4727	0.8859
A OCT. 3 (OH)	Y:	-0.0082	-0.00009	+ 7.7472	+0.04808	+0.000265	+0.0035
				6.251422	5.1134	2.2643	3.7568
OCT. 1 (OH)	X:	+0.0509	-0.00027	+83.7746	+0.09645	+0.001494	+0.0366
(2449991.9)				3.983232	6.0895	1.3863	2.1359
A OCT.17 (OH)	Y:	-0.0094	-0.00008	+ 8.0151	+0.04125	+0.000425	+0.0036
				0.521319	5.6863	2.8059	4.9164
OCT.17 (OH)	X:	+0.0465	-0.00014	+82.6713	+0.10715	+0.001393	+0.0361
(2450007.9)				1.120110	3.6786	5.1218	2.6653
A NOV. 2 (OH)	Y:	-0.0107	-0.00002	+ 8.2477	+0.02817	+0.000537	+0.0037
				3.865814	2.6819	6.1958	5.3832
NOV. 1 (OH)	X:	+0.0445	-0.00018	+81.1307	+0.12002	+0.001256	+0.0356
(2450022.9)				3.143514	6.0502	1.1632	0.4012
A NOV.17 (OH)	Y:	-0.0112	+0.00000	+ 8.3297	+0.01434	+0.000546	+0.0037
				5.844789	4.2684	1.9034	3.0885
NOV.17 (OH)	X:	+0.0415	-0.00004	+79.1391	+0.13286	+0.001111	+0.0349
(2450038.9)				0.258697	3.4776	4.8872	0.9161
A DEC. 3 (OH)	Y:	-0.0111	+0.00003	+ 8.2326	+0.01253	+0.000497	+0.0036
				2.952333	6.2469	5.2581	3.6069
DEC. 1 (OH)	X:	+0.0406	-0.00001	+77.2645	+0.14154	+0.000978	+0.0344
(2450052.9)				0.888721	4.3237	5.7752	2.1514
A DEC.17 (OH)	Y:	-0.0106	+0.00005	+ 7.9945	+0.02346	+0.000417	+0.0035
				3.582443	0.0646	5.7910	4.8632
DEC.17 (OH)	X:	+0.0402	+0.00006	+75.1473	+0.14860	+0.000872	+0.0339
(2450068.9)				4.283189	1.6600	3.1966	2.6536
A JAN. 2 (OH)	Y:	-0.0098	+0.00010	+ 7.5861	+0.03554	+0.000325	+0.0034
				0.735130	3.2697	2.7365	5.4217

1995 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 6 DE SATURNE: TITAN N=0.394

		A0	A1	B0 F0	B1 F1	C0 P0
JAN. 1 (0H) (2449718.7)	X:	+ 2.5867	- 0.10997	+165.0940 5.562152	+ 0.35393 2.2621	+2.2549 5.1676
A JAN.12 (0H)	Y:	- 0.1549	- 0.15411	+ 24.0320 1.503846	+ 0.18860 3.5778	+0.3627 1.2104
JAN.12 (0H) (2449729.7)	X:	+ 4.5862	- 0.46096	+164.7815 3.628693	+ 0.78474 1.7468	+2.6054 1.0839
A JAN.23 (0H)	Y:	- 0.6301	- 0.06182	+ 23.7345 5.867313	+ 0.19792 2.6995	+0.3689 3.3354
JAN.23 (0H) (2449740.7)	X:	+ 5.9276	- 0.71655	+155.5502 1.644361	+ 0.43499 1.7889	+2.0423 3.2911
A FEV. 3 (0H)	Y:	- 0.8164	- 0.01148	+ 21.7377 3.948332	+ 0.10826 0.4570	+0.2727 5.7294
FEV. 1 (0H) (2449749.7)	X:	- 4.0832	+ 1.07430	+153.1611 5.175431	+ 0.67440 5.6004	+2.4615 4.4461
A FEV.12 (0H)	Y:	+ 0.2469	- 0.16736	+ 19.7083 1.195298	+ 0.21134 3.1719	+0.3065 0.6116
FEV.12 (0H) (2449760.7)	X:	- 2.8215	+ 0.90967	+160.5622 3.173916	+ 0.79358 0.0654	+2.4644 0.1843
A FEV.23 (0H)	Y:	+ 0.0709	- 0.14045	+ 19.9545 5.568769	+ 0.24989 2.2985	+0.3172 2.6521
FEV.23 (0H) (2449771.7)	X:	- 0.0691	+ 0.46679	+158.5814 1.249202	+ 0.77670 6.1365	+1.8583 2.6537
A MAR. 6 (0H)	Y:	- 0.0993	- 0.09536	+ 17.9525 3.714438	+ 0.07093 0.5366	+0.2032 5.1706
MAR. 1 (0H) (2449777.7)	X:	+ 5.5718	- 0.54966	+159.6227 3.608227	+ 0.85422 2.0334	+2.5588 1.1262
A MAR.12 (0H)	Y:	- 0.7135	+ 0.00753	+ 17.2629 6.081108	+ 0.12687 2.5979	+0.2738 3.6597
MAR.12 (0H) (2449788.7)	X:	+ 7.0383	- 0.81706	+151.8236 1.613511	+ 0.65861 1.8291	+2.0334 3.3039
A MAR.23 (0H)	Y:	- 0.7301	+ 0.03208	+ 15.7375 4.172635	+ 0.13204 0.0714	+0.2117 6.0110
MAR.23 (0H) (2449799.7)	X:	+ 8.4307	- 1.14305	+162.2281 5.891054	+ 0.87673 2.8173	+1.9243 6.0733
A AVR. 3 (0H)	Y:	- 0.9751	+ 0.08979	+ 15.3915 2.269793	+ 0.18132 4.6715	+0.1879 2.4799
AVR. 1 (0H) (2449808.7)	X:	- 1.7989	+ 0.84788	+161.1553 3.147074	+ 0.59667 0.1219	+2.4973 0.2245
A AVR.12 (0H)	Y:	+ 0.0530	- 0.09378	+ 14.6739 5.874623	+ 0.17731 2.2245	+0.2365 3.0282
AVR.12 (0H) (2449819.7)	X:	+ 1.3052	+ 0.34854	+160.1946 1.218166	+ 0.73140 0.1912	+1.9324 2.6694
A AVR.23 (0H)	Y:	- 0.1424	- 0.04121	+ 13.6413 4.047652	+ 0.06887 6.0520	+0.1687 5.5789
AVR.23 (0H) (2449830.7)	X:	+ 5.2080	- 0.35920	+163.4742 5.503742	+ 0.17262 2.6115	+2.1418 5.2491
A MAI 4 (0H)	Y:	- 0.4043	+ 0.01048	+ 13.1164 2.151465	+ 0.12313 4.0689	+0.1880 1.9564

1995 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 6 DE SATURNE: TITAN N=0.394

		A0	A1	B0 F0	B1 F1	C0 P0
MAI 1 (OH) (2449838.7)	X:	+ 0.9406	+ 0.13814	+163.6405 2.363379	+ 0.08273 3.1570	+2.3891 4.9688
A MAI 12 (OH)	Y:	- 0.0666	- 0.02199	+ 13.0267 5.362320	+ 0.11352 1.0905	+0.1971 1.7562
MAI 12 (OH) (2449849.7)	X:	- 2.3489	+ 0.80154	+167.6313 0.442964	+ 0.99444 5.5630	+1.9113 1.1766
A MAI 23 (OH)	Y:	+ 0.0969	- 0.04365	+ 12.8823 3.528893	+ 0.03582 4.9542	+0.1569 4.3241
MAI 23 (OH) (2449860.7)	X:	- 4.2994	+ 1.21475	+160.7603 4.726681	+ 1.14772 5.2686	+2.6006 3.7706
A JUN. 3 (OH)	Y:	+ 0.3378	- 0.09009	+ 12.1587 1.617908	+ 0.13575 2.6959	+0.2075 0.7031
JUN. 1 (OH) (2449869.7)	X:	+ 8.5861	- 1.12389	+164.1706 1.986721	+ 1.15972 2.4866	+2.2497 4.1584
A JUN.12 (OH)	Y:	- 0.4333	+ 0.06080	+ 12.5191 5.213217	+ 0.10164 6.2822	+0.1733 1.1567
JUN.12 (OH) (2449880.7)	X:	+ 4.4141	- 0.39655	+175.9969 0.022107	+ 0.17475 3.8420	+2.1783 0.5783
A JUN.23 (OH)	Y:	- 0.2413	+ 0.03256	+ 13.1946 3.297491	+ 0.03385 5.4623	+0.1679 3.8545
JUN.23 (OH) (2449891.7)	X:	+ 1.8277	+ 0.04641	+175.5380 4.365594	+ 0.66162 4.2267	+2.7946 2.9342
A JUL. 4 (OH)	Y:	- 0.0033	- 0.01759	+ 13.0786 1.383423	+ 0.04376 1.6226	+0.2103 6.2714
JUL. 1 (OH) (2449899.7)	X:	+ 4.2899	- 0.01045	+178.1257 1.232554	+ 0.65936 1.1446	+2.2802 2.7762
A JUL.12 (OH)	Y:	- 0.2238	+ 0.00723	+ 13.3003 4.541637	+ 0.04100 4.2131	+0.1678 6.0673
JUL.12 (OH) (2449910.7)	X:	+ 7.7507	- 0.67120	+186.4040 5.540627	+ 0.40803 1.6940	+2.3735 5.4139
A JUL.23 (OH)	Y:	- 0.6705	+ 0.08296	+ 14.0061 2.547281	+ 0.05642 5.9842	+0.1717 2.4367
JUL.23 (OH) (2449921.7)	X:	+10.6592	- 1.23591	+189.4801 3.656327	+ 1.07935 2.6048	+3.2302 1.3945
A AOU. 3 (OH)	Y:	- 0.7028	+ 0.08161	+ 14.1671 0.635395	+ 0.13385 5.5135	+0.2322 4.6453
AOU. 1 (OH) (2449930.7)	X:	- 2.2025	+ 1.10205	+191.7575 0.914606	+ 0.92294 6.1966	+2.1348 2.1564
A AOU.12 (OH)	Y:	+ 0.2962	- 0.09541	+ 14.3672 4.143033	+ 0.15893 2.7455	+0.1494 5.3379
AOU.12 (OH) (2449941.7)	X:	+ 0.0531	+ 0.74030	+187.1839 5.223147	+ 0.98425 6.1133	+2.8618 4.7369
A AOU.23 (OH)	Y:	- 0.1418	- 0.03472	+ 14.1702 2.097317	+ 0.06845 1.1170	+0.2029 1.5727
AOU.23 (OH) (2449952.7)	X:	+ 2.7723	+ 0.25424	+195.5615 3.286396	+ 0.32129 6.0808	+3.1047 0.6288
A SEP. 3 (OH)	Y:	- 0.1198	- 0.04622	+ 14.8449 0.073400	+ 0.09487 4.7094	+0.2232 3.6339

1995 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 6 DE SATURNE: TITAN N=0.394

		A0	A1	B0 F0	B1 F1	C0 P0
SEP. 1 (0H)	X:	- 3.6408	+ 1.15523	+197.4326	+ 0.79072	+2.1764
(2449961.7)				0.597680	5.7125	1.4863
A SEP.12 (0H)	Y:	+ 0.2706	- 0.10276	+ 15.1987	+ 0.19792	+0.1606
				3.613380	2.3659	4.4074
SEP.12 (0H)	X:	- 5.7837	+ 1.60571	+185.2555	+ 1.56025	+3.0810
(2449972.7)				4.905648	5.8221	4.1270
A SEP.23 (0H)	Y:	+ 0.2615	- 0.11809	+ 14.8296	+ 0.10017	+0.2282
				1.537851	1.3833	0.7134
SEP.23 (0H)	X:	- 5.0300	+ 1.50315	+199.6257	+ 1.48047	+3.1587
(2449983.7)				2.936524	5.6703	6.1522
A OCT. 4 (0H)	Y:	+ 0.2741	- 0.12567	+ 16.5199	+ 0.08458	+0.2615
				5.781666	3.5059	2.6600
OCT. 1 (0H)	X:	+ 9.3024	- 1.26090	+198.1337	+ 1.30848	+2.4275
(2449991.7)				6.104657	2.5506	0.2617
A OCT.12 (0H)	Y:	- 1.0410	+ 0.10351	+ 16.8769	+ 0.08580	+0.1900
				2.618069	0.4141	2.9995
OCT.12 (0H)	X:	+ 6.6946	- 0.89387	+194.8775	+ 0.60002	+3.2071
(2450002.7)				4.223885	2.6843	2.4971
A OCT.23 (0H)	Y:	- 1.0237	+ 0.10712	+ 16.9930	+ 0.15409	+0.2855
				0.684749	5.8802	5.1929
OCT.23 (0H)	X:	+ 3.4345	- 0.35296	+188.3210	+ 0.54508	+2.6090
(2450013.7)				2.255567	3.9800	4.7167
A NOV. 3 (0H)	Y:	- 1.0690	+ 0.11106	+ 16.5209	+ 0.08365	+0.2303
				4.936910	5.5980	1.0405
NOV. 1 (0H)	X:	+10.1872	- 1.30371	+193.1474	+ 1.42807	+2.3110
(2450022.7)				5.778563	2.3765	5.8769
A NOV.12 (0H)	Y:	- 0.9520	+ 0.05841	+ 17.6108	+ 0.06199	+0.2118
				2.174586	5.4400	2.1801
NOV.12 (0H)	X:	+10.9442	- 1.53101	+189.4431	+ 1.24291	+3.2247
(2450033.7)				3.914025	2.2826	1.8095
A NOV.23 (0H)	Y:	- 1.2122	+ 0.12068	+ 17.2413	+ 0.08866	+0.2944
				0.274958	5.3819	4.4719
NOV.23 (0H)	X:	+ 8.9182	- 1.24555	+174.1353	+ 0.82386	+2.3040
(2450044.7)				1.922936	2.8481	3.9460
A DEC. 4 (0H)	Y:	- 1.2794	+ 0.13326	+ 16.1668	+ 0.11879	+0.2278
				4.547018	6.0307	0.3170
DEC. 1 (0H)	X:	- 4.1890	+ 1.26946	+171.5530	+ 0.84561	+2.7737
(2450052.7)				5.071920	6.0233	4.3811
A DEC.12 (0H)	Y:	+ 0.3349	- 0.14762	+ 15.7246	+ 0.14637	+0.2519
				1.420668	2.9379	0.8014
DEC.12 (0H)	X:	- 2.6436	+ 1.03284	+178.6933	+ 1.17003	+2.7401
(2450063.7)				3.090624	6.1278	0.1311
A DEC.23 (0H)	Y:	+ 0.1227	- 0.11120	+ 16.5027	+ 0.17039	+0.2651
				5.771260	2.3629	2.8454
DEC.23 (0H)	X:	+ 0.1050	+ 0.54343	+173.6911	+ 0.68680	+2.0159
(2450074.7)				1.179847	5.7200	2.6112
A JAN. 3 (0H)	Y:	- 0.1456	- 0.06226	+ 15.3607	+ 0.04476	+0.1787
				3.909942	0.3759	5.3889

1995 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 7 DE SATURNE: HYPERION N=0.394

		A0	A1	B0 F0	B1 F1	C0 P0
JAN. 1 (0H) (2449718.7)	X:	-21.6324	- 6.20248	+173.2711 2.269367	+10.90081 0.1505	+0.5275 3.0986
A JAN. 9 (0H)	Y:	- 3.4520	+ 1.26134	+ 23.0819 4.419901	+ 1.38731 2.1519	+0.1254 5.9629
JAN. 9 (0H) (2449726.7)	X:	-63.8778	+ 5.11983	+153.3876 4.619163	+12.57065 2.9124	+0.2398 3.7002
A JAN.17 (0H)	Y:	+ 5.8945	+ 0.20993	+ 21.4873 0.700117	+ 1.80736 5.2692	+0.0566 5.9080
JAN.17 (0H) (2449734.7)	X:	+ 7.8345	- 0.82478	+172.1156 0.643703	+10.35953 5.1550	+3.9390 5.3596
A JAN.25 (0H)	Y:	+ 2.6154	- 0.75250	+ 20.7542 3.013920	+ 1.15867 1.3068	+0.4795 1.4639
JAN.25 (0H) (2449742.7)	X:	-47.9877	- 1.38983	+174.3009 3.052115	+13.72623 1.0260	+0.5626 0.6626
A FEV. 2 (0H)	Y:	+ 1.2915	+ 0.58125	+ 20.3801 5.408124	+ 1.52362 3.3613	+0.0495 2.6389
FEV. 1 (0H) (2449749.7)	X:	-69.2757	+ 9.05627	+131.8480 5.020079	+ 9.41277 3.5448	+0.7422 0.2344
A FEV. 9 (0H)	Y:	+ 6.9372	- 0.27576	+ 17.7246 1.143395	+ 1.30870 5.8214	+0.0467 3.2254
FEV. 9 (0H) (2449757.7)	X:	+30.9509	- 7.95855	+157.6627 0.939419	+ 7.31954 5.2405	+2.5257 0.2597
A FEV.17 (0H)	Y:	- 0.0433	- 0.29007	+ 18.2987 3.534869	+ 0.94632 1.7605	+0.3612 2.7374
FEV.17 (0H) (2449765.7)	X:	-55.1621	+ 0.23299	+166.7880 3.481031	+13.90798 1.5362	+0.7178 1.4488
A FEV.25 (0H)	Y:	+ 2.3554	+ 0.40862	+ 17.0175 5.998562	+ 1.34813 4.0585	+0.0515 3.9444
FEV.25 (0H) (2449773.7)	X:	-48.1913	+11.39652	+125.2342 5.785565	+ 7.06528 4.5891	+1.5919 2.1584
A MAR. 5 (0H)	Y:	+ 8.0337	- 1.39940	+ 11.4474 1.848974	+ 0.31677 0.7585	+0.2207 4.5622
MAR. 1 (0H) (2449777.7)	X:	+ 5.0497	- 0.12383	+167.2463 0.646557	+10.15619 5.1907	+3.8659 5.5149
A MAR. 9 (0H)	Y:	+ 1.9896	- 0.56364	+ 15.4357 3.269685	+ 0.86864 1.6239	+0.3715 1.9019
MAR. 9 (0H) (2449785.7)	X:	-46.5001	- 1.66865	+169.5987 3.040619	+13.56295 1.0394	+0.5851 0.7913
A MAR.17 (0H)	Y:	+ 1.8729	+ 0.32795	+ 15.3139 5.666949	+ 1.15353 3.6444	+0.0380 3.0591
MAR.17 (0H) (2449793.7)	X:	-75.6714	+13.44264	+111.8535 5.279268	+ 6.62506 4.1972	+1.5659 0.8294
A MAR.25 (0H)	Y:	+ 7.0289	- 0.93026	+ 10.8255 1.575546	+ 0.46881 0.2456	+0.1580 3.8598
MAR.25 (0H) (2449801.7)	X:	+43.5372	-14.24524	+144.2967 1.090288	+ 5.94718 4.9369	+1.6834 1.6808
A AVR. 2 (0H)	Y:	- 3.1637	+ 0.82797	+ 13.4303 3.877250	+ 0.62771 1.4756	+0.1257 4.3522
AVR. 1 (0H) (2449808.7)	X:	-55.2251	+ 0.10776	+166.8998 3.464349	+14.04366 1.5452	+0.7252 1.5337
A AVR. 9 (0H)	Y:	+ 2.7916	+ 0.16348	+ 13.2168 0.042107	+ 1.05228 4.4126	+0.0408 4.3797
AVR. 9 (0H) (2449816.7)	X:	-43.7287	+10.39808	+133.3777 5.740223	+ 6.94477 4.4435	+1.9434 2.4408
A AVR.17 (0H)	Y:	+ 4.4481	- 0.86688	+ 9.7914 2.326748	+ 0.38985 1.1312	+0.1639 5.2852
AVR.17 (0H) (2449824.7)	X:	+ 8.6880	-10.74842	+154.3504 1.710008	+ 8.09000 5.7962	+1.1590 2.6388
A AVR.25 (0H)	Y:	- 0.7749	+ 0.70977	+ 11.6922 4.679190	+ 0.58269 2.4006	+0.0985 5.7285
AVR.25 (0H) (2449832.7)	X:	-62.7009	+ 2.76735	+160.4146 4.166413	+13.62914 2.4208	+0.4664 2.9293
A MAI 3 (0H)	Y:	+ 3.5987	- 0.05620	+ 11.7636 0.990153	+ 0.96357 5.5442	+0.0277 6.1801

1995 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 7 DE SATURNE: HYPERION N=0.394

		A0	A1	B0 F0	B1 F1	C0 P0
MAI 1 (OH) (2449838.7)	X:	-20.4168	+ 5.65285	+159.4060 5.844607	+ 8.39822 4.2092	+2.9709 3.0844
A MAI 9 (OH)	Y:	+ 1.4961	- 0.32882	+ 11.4957 2.687654	+ 0.55856 1.0228	+0.2230 6.2279
MAI 9 (OH) (2449846.7)	X:	- 7.7029	- 8.17610	+168.5095 1.928039	+10.30937 6.0856	+0.6428 2.9562
A MAI 17 (OH)	Y:	+ 1.1438	+ 0.42917	+ 12.1532 5.141983	+ 0.72192 3.0098	+0.0499 6.1230
MAI 17 (OH) (2449854.7)	X:	-64.2547	+ 3.25421	+162.7698 4.322187	+13.64499 2.6379	+0.3352 3.5043
A MAI 25 (OH)	Y:	+ 3.8958	- 0.19605	+ 11.3040 1.322764	+ 0.91183 5.9386	+0.0170 0.8295
MAI 25 (OH) (2449862.7)	X:	- 1.9956	+ 1.79600	+179.0363 0.382987	+10.83684 4.9655	+4.2206 5.1764
A JUN. 2 (OH)	Y:	+ 0.1451	- 0.03721	+ 12.4095 3.705550	+ 0.72515 1.998	+0.2967 2.2314
JUN. 1 (OH) (2449869.7)	X:	-34.5812	- 4.01853	+185.6778 2.463323	+13.80783 0.4193	+0.3254 6.1327
A JUN. 9 (OH)	Y:	+ 3.1633	+ 0.10727	+ 13.1337 5.823229	+ 0.96676 3.7647	+0.0252 3.0576
JUN. 9 (OH) (2449877.7)	X:	-77.7105	+ 8.42978	+150.2592 4.716875	+10.37926 3.2397	+0.9123 0.2064
A JUN.17 (OH)	Y:	+ 4.9603	- 0.65803	+ 9.8030 1.867350	+ 0.65371 0.4684	+0.0745 3.5006
JUN.17 (OH) (2449885.7)	X:	+30.3267	- 6.75283	+182.7133 0.706260	+ 8.76198 5.0249	+2.8061 0.0957
A JUN.25 (OH)	Y:	- 2.4263	+ 0.70683	+ 11.7769 4.091120	+ 0.49177 2.0276	+0.1755 3.6391
JUN.25 (OH) (2449893.7)	X:	-54.5593	- 1.00264	+188.5509 3.264423	+15.65942 1.3576	+0.7488 1.3983
A JUL. 3 (OH)	Y:	+ 4.2215	- 0.06977	+ 12.8176 0.409594	+ 1.05539 4.7695	+0.0499 4.7132
JUL. 1 (OH) (2449899.7)	X:	-88.7774	+12.66955	+140.8668 4.868327	+ 7.85572 3.5949	+1.7155 0.5715
A JUL. 9 (OH)	Y:	+ 5.5167	- 0.94341	+ 8.9986 2.109175	+ 0.54944 0.9418	+0.1111 3.8526
JUL. 9 (OH) (2449907.7)	X:	+48.1040	-12.95671	+183.2238 0.796306	+ 8.18275 4.7943	+1.8684 0.9377
A JUL.17 (OH)	Y:	- 3.3228	+ 1.06747	+ 11.2279 4.221713	+ 0.43856 1.8343	+0.1369 4.5617
JUL.17 (OH) (2449915.7)	X:	-59.5675	- 0.14638	+193.7397 3.468999	+16.23455 1.6047	+0.7516 1.7409
A JUL.25 (OH)	Y:	+ 4.6460	- 0.12142	+ 12.7891 0.585357	+ 1.08022 4.9798	+0.0531 5.0115
JUL.25 (OH) (2449923.7)	X:	-30.4029	+ 7.35732	+181.1633 5.726949	+ 9.12405 4.1132	+3.4249 2.9884
A AOU. 2 (OH)	Y:	+ 0.7681	- 0.30532	+ 12.4767 2.818451	+ 0.68327 1.1076	+0.2350 0.1180
AOU. 1 (OH) (2449930.7)	X:	+25.4902	-13.93863	+181.3401 1.410565	+ 8.88786 5.4028	+1.6046 2.4498
A AOU. 9 (OH)	Y:	- 1.1407	+ 0.91799	+ 11.6355 4.803384	+ 0.58944 2.5777	+0.0979 5.7120
AOU. 9 (OH) (2449938.7)	X:	-65.5703	+ 1.39651	+193.2922 3.986823	+16.26077 2.2440	+0.5612 2.7919
A AOU.17 (OH)	Y:	+ 5.0883	- 0.23721	+ 12.3593 0.967450	+ 1.06168 5.4772	+0.0400 5.8518
AOU.17 (OH) (2449946.7)	X:	- 0.0745	+ 0.82576	+210.2289 6.261396	+12.06654 4.4464	+4.7785 4.3592
A AOU.25 (OH)	Y:	- 0.4817	- 0.03207	+ 13.6260 3.201691	+ 0.82713 1.3760	+0.3033 1.2925
AOU.25 (OH) (2449954.7)	X:	-37.2546	- 4.11228	+211.9193 2.450126	+15.62622 0.4103	+0.3658 6.0780
A SEP. 2 (OH)	Y:	+ 2.3520	+ 0.38246	+ 13.4841 5.616279	+ 1.03427 3.5831	+0.0295 3.1937

1995 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 7 DE SATURNE: HYPERION N=0.394

		A0	A1	B0 F0	B1 F1	C0 P0
SEP. 1 (OH)	X:	-75.1330	+ 4.83867	+185.0826	+14.24958	+0.3338
(2449961.7)				4.486894	2.8926	5.8275
A SEP. 9 (OH)	Y:	+ 5.5612	- 0.40223	+ 12.0989	+ 0.98285	+0.0138
				1.281045	5.9473	2.0740
SEP. 9 (OH)	X:	+ 5.4483	+ 0.27264	+206.5134	+11.41923	+4.4467
(2449969.7)				0.583798	5.1400	5.8266
A SEP.17 (OH)	Y:	- 0.6453	- 0.08184	+ 13.8169	+ 0.82259	+0.2952
				3.613618	1.8974	2.5407
SEP.17 (OH)	X:	-50.1530	- 2.25524	+208.5950	+16.64611	+0.6766
(2449977.7)				3.033771	1.0875	0.9911
A SEP.25 (OH)	Y:	+ 3.1285	+ 0.29270	+ 14.0115	+ 1.16503	+0.0553
				5.992093	4.0616	4.1119
SEP.25 (OH)	X:	-90.3584	+17.24464	+139.7264	+ 6.08201	+2.3713
(2449985.7)				5.271673	4.3449	1.3885
A OCT. 3 (OH)	Y:	+ 7.3570	- 1.34049	+ 9.7763	+ 0.35998	+0.1857
				1.767651	0.7724	4.2408
OCT. 1 (OH)	X:	+33.2939	- 7.45386	+202.0698	+ 9.36546	+2.9222
(2449991.7)				0.701272	4.9650	0.1837
A OCT. 9 (OH)	Y:	- 2.1247	+ 0.24163	+ 14.9463	+ 0.78257	+0.2341
				3.605559	1.7157	2.9427
OCT. 9 (OH)	X:	-54.2739	- 1.37331	+203.6566	+16.64360	+0.7289
(2449999.7)				3.298486	1.3950	1.4223
A OCT.17 (OH)	Y:	+ 3.2266	+ 0.26925	+ 14.8519	+ 1.24838	+0.0602
				6.101919	4.2196	4.3859
OCT.17 (OH)	X:	-58.6503	+12.59817	+161.1305	+ 7.24492	+2.6129
(2450007.7)				5.573110	4.2427	2.4137
A OCT.25 (OH)	Y:	+ 6.4142	- 1.28250	+ 11.2382	+ 0.38262	+0.2093
				1.938980	0.7385	4.9496
OCT.25 (OH)	X:	+11.9508	-11.48927	+187.1327	+10.01120	+1.3018
(2450015.7)				1.608168	5.6675	2.6730
A NOV. 2 (OH)	Y:	- 3.0821	+ 1.03050	+ 14.9994	+ 0.85423	+0.0962
				4.251737	1.9636	5.6597
NOV. 1 (OH)	X:	-61.0020	+ 0.47193	+191.7364	+16.03241	+0.6049
(2450022.7)				3.843114	2.0506	2.3925
A NOV. 9 (OH)	Y:	+ 3.7614	+ 0.16738	+ 15.1534	+ 1.29032	+0.0538
				0.288103	4.7992	5.2728
NOV. 9 (OH)	X:	- 0.7200	+ 0.69882	+204.5898	+11.69698	+4.6392
(2450030.7)				6.083187	4.2042	3.9480
A NOV.17 (OH)	Y:	+ 1.4575	- 0.35562	+ 15.9750	+ 0.90541	+0.3699
				2.522165	0.7039	0.3893
NOV.17 (OH)	X:	-27.6883	- 4.70073	+198.8689	+14.18623	+0.2571
(2450038.7)				2.286007	0.2082	5.2922
A NOV.25 (OH)	Y:	+ 0.0905	+ 0.54253	+ 15.6914	+ 1.08681	+0.0237
				4.954033	2.8679	1.1212
NOV.25 (OH)	X:	-76.6324	+ 6.63767	+163.5229	+11.54342	+0.7238
(2450046.7)				4.593893	3.0440	0.1635
A DEC. 3 (OH)	Y:	+ 5.0014	- 0.14544	+ 14.1724	+ 1.06767	+0.0357
				1.061613	5.7766	2.8862
DEC. 1 (OH)	X:	- 6.5341	+ 2.51202	+189.5508	+10.97513	+4.3671
(2450052.7)				0.118242	4.6412	4.7027
A DEC. 9 (OH)	Y:	+ 1.5109	- 0.40545	+ 14.9992	+ 0.82909	+0.3510
				2.836295	1.0891	1.1309
DEC. 9 (OH)	X:	-33.2142	- 3.68818	+190.0179	+14.35204	+0.4319
(2450060.7)				2.551459	0.5181	6.2626
A DEC.17 (OH)	Y:	+ 0.9805	+ 0.37486	+ 15.0343	+ 1.09669	+0.0286
				5.279530	3.2379	2.4145
DEC.17 (OH)	X:	-85.7611	+11.11326	+139.9465	+ 7.72618	+1.5717
(2450068.7)				4.762187	3.3899	0.5503
A DEC.25 (OH)	Y:	+ 5.9512	- 0.54176	+ 12.2101	+ 0.69454	+0.1181
				1.260379	6.0490	3.5595
DEC.25 (OH)	X:	+42.4744	-10.31699	+175.0298	+ 8.10363	+1.8116
(2450076.7)				0.722938	4.7474	0.7487
A JAN. 2 (OH)	Y:	- 2.3156	+ 0.40879	+ 14.1994	+ 0.66405	+0.1635
				3.617223	1.4681	3.4392

1995 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 8 DE SATURNE: JAPET N=0.079

		A0	A1	B0 F0	C0 P0
JAN. 1 (0H) (2449718.9)	X:	- 7.4124	- 1.01951	+472.8914 4.065609	+ 8.5851 0.7628
A JAN.17 (0H)	Y:	- 5.9455	- 0.34094	+ 45.8108 3.386365	+ 1.0996 2.2214
JAN.17 (0H) (2449734.9)	X:	-22.9035	+ 0.77278	+453.9794 5.262377	+ 1.9223 3.5174
A FEV. 2 (0H)	Y:	-11.5907	+ 1.59131	+ 52.8253 4.151721	+ 1.9532 4.9728
FEV. 1 (0H) (2449749.9)	X:	-18.6717	+ 2.60042	+420.9092 0.199332	+ 8.2153 5.9717
A FEV.17 (0H)	Y:	+18.5971	- 1.56249	+ 91.4919 5.689580	+ 4.0381 1.9800
FEV.17 (0H) (2449765.9)	X:	+ 5.9233	+ 0.34853	+446.0295 1.407422	+ 4.9523 2.7350
A MAR. 5 (0H)	Y:	- 3.7400	+ 0.80767	+ 67.4329 0.897929	+ 2.6667 4.3712
MAR. 1 (0H) (2449777.9)	X:	+11.9610	- 1.99700	+421.1270 2.300588	+ 5.7516 4.2057
A MAR.17 (0H)	Y:	- 4.6936	+ 0.52013	+ 79.1679 1.686665	+ 3.1390 4.6920
MAR.17 (0H) (2449793.9)	X:	-24.6707	+ 0.26499	+449.6728 3.519081	+ 7.9360 0.0077
A AVR. 2 (0H)	Y:	+ 9.7169	- 1.59188	+ 51.6799 2.990258	+ 4.1040 1.1110
AVR. 1 (0H) (2449808.9)	X:	-25.5653	+ 1.37329	+443.0067 4.667132	+ 5.6462 2.5271
A AVR.17 (0H)	Y:	+ 5.6161	- 1.10847	+ 80.1409 4.225787	+ 5.4808 1.8335
AVR.17 (0H) (2449824.9)	X:	- 5.5627	+ 1.20925	+445.4179 5.941922	+ 7.0951 4.8470
A MAI 3 (0H)	Y:	- 6.3149	+ 1.74788	+ 65.9499 4.945321	+ 3.9393 4.8586
MAI 1 (0H) (2449838.9)	X:	- 2.5966	+ 0.58432	+470.9114 0.766410	+ 0.7212 1.4293
A MAI 17 (0H)	Y:	+14.1843	- 0.26779	+ 92.0187 6.183175	+ 1.9488 0.4238
MAI 17 (0H) (2449854.9)	X:	-14.6783	+ 0.05748	+491.7901 1.984570	+ 7.8557 4.3481
A JUN. 2 (0H)	Y:	+ 7.5063	- 0.91684	+ 97.2861 1.098137	+ 1.9035 2.7978
JUN. 1 (0H) (2449869.9)	X:	-40.1246	+ 1.81917	+514.6313 3.102977	+ 8.3864 5.7848
A JUN.17 (0H)	Y:	-22.9266	+ 2.63046	+149.0380 2.445998	+ 7.9120 5.2205
JUN.17 (0H) (2449885.9)	X:	-23.9496	+ 2.49304	+500.8869 4.347908	+ 7.1543 2.5152
A JUL. 3 (0H)	Y:	+10.5024	- 0.81302	+106.5072 3.843273	+ 5.0655 1.4987

1995 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 8 DE SATURNE: JAPET N=0.079

		A0	A1	B0 F0	C0 P0
JUL. 1 (OH)	X:	+ 5.6607	- 0.38777	+533.7370	+11.0403
(2449899.9)				5.534148	3.9269
A JUL.17 (OH)	Y:	+ 7.6402	- 0.74931	+117.5710	+ 3.7463
				4.910890	3.0139
JUL.17 (OH)	X:	+ 6.5525	- 2.25706	+563.7734	+ 5.8500
(2449915.9)				0.464919	0.9886
A AOU. 2 (OH)	Y:	-13.9356	+ 2.15081	+ 77.9812	+ 7.2425
				0.005242	5.2931
AOU. 1 (OH)	X:	-17.0364	- 1.00170	+551.1228	+ 6.7159
(2449930.9)				1.678402	2.7540
A AOU.17 (OH)	Y:	+10.8599	- 1.19879	+111.6334	+ 4.1412
				0.836482	1.6712
AOU.17 (OH)	X:	- 4.1652	- 0.94587	+541.2668	+ 3.6864
(2449946.9)				3.009660	1.1081
A SEP. 2 (OH)	Y:	- 9.1090	+ 1.12143	+130.7328	+ 3.1001
				2.311057	4.4712
SEP. 1 (OH)	X:	+31.7860	- 3.30809	+583.3497	+16.2410
(2449961.9)				4.307182	2.0490
A SEP.17 (OH)	Y:	- 8.5734	+ 2.11964	+135.5415	+ 4.5321
				3.314235	5.1175
SEP.17 (OH)	X:	+27.3363	- 5.01431	+647.8976	+ 6.3519
(2449977.9)				5.527353	3.3495
A OCT. 3 (OH)	Y:	+20.4209	- 2.53776	+136.7272	+ 4.1137
				5.072011	2.3212
OCT. 1 (OH)	X:	+15.4013	- 3.94345	+602.4831	+16.7321
(2449991.9)				0.245281	0.9397
A OCT.17 (OH)	Y:	- 4.8794	- 0.33835	+108.9744	+ 0.8059
				6.018088	6.1799
OCT.17 (OH)	X:	+ 4.9311	- 1.49879	+532.6135	+14.4250
(2450007.9)				1.583297	2.2964
A NOV. 2 (OH)	Y:	-13.8247	+ 1.81461	+101.6716	+ 1.7608
				1.278055	5.0804
NOV. 1 (OH)	X:	+21.2313	- 1.16484	+524.3317	+ 3.0342
(2450022.9)				2.863706	5.1225
A NOV.17 (OH)	Y:	+20.2980	- 2.03693	+ 59.9306	+ 4.4487
				1.984014	2.1798
NOV.17 (OH)	X:	+23.2505	- 3.11576	+536.1157	+ 9.7079
(2450038.9)				4.189333	1.3719
A DEC. 3 (OH)	Y:	-11.6122	+ 1.29159	+103.1002	+ 3.7076
				3.217748	4.8794
DEC. 1 (OH)	X:	-29.4678	+ 1.39050	+488.3069	+ 6.7417
(2450052.9)				5.179973	4.7481
A DEC.17 (OH)	Y:	-11.4698	+ 1.52608	+ 81.3394	+ 3.2211
				4.219775	4.9587
DEC.17 (OH)	X:	-30.4241	+ 2.91105	+460.7715	+10.9400
(2450068.9)				0.235899	6.2220
A JAN. 2 (OH)	Y:	+14.2601	- 1.61706	+117.2649	+ 4.0147
				5.740685	1.7931

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)*	

1995 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) (2449718.5)	X:	-0.0097	+0.00020	+ 6.7225 2.094939	+0.29720 0.4997	+0.006317 4.9925	+0.0044 3.0628
A JAN.10 (0H)	Y:	-0.0081	-0.00036	+ 8.6667 3.704257	+0.37952 2.1238	+0.007930 0.3494	+0.0050 4.4991
JAN.10 (0H) (2449727.5)	X:	-0.0111	+0.00039	+ 6.6675 4.396417	+0.29521 2.8039	+0.006293 1.0048	+0.0046 1.2556
A JAN.19 (0H)	Y:	-0.0116	+0.00042	+ 8.6507 6.008966	+0.37691 4.4350	+0.008022 2.6832	+0.0045 3.0115
JAN.19 (0H) (2449736.5)	X:	-0.0083	-0.00022	+ 6.6198 0.414674	+0.29165 5.1060	+0.006132 3.3270	+0.0040 5.8975
A JAN.28 (0H)	Y:	-0.0118	+0.00034	+ 8.6460 2.031501	+0.37702 0.4580	+0.007894 4.9787	+0.0050 1.2248
JAN.28 (0H) (2449745.5)	X:	-0.0065	-0.00048	+ 6.5788 2.716825	+0.28939 1.1300	+0.006152 5.6347	+0.0042 4.0328
A FEV. 6 (0H)	Y:	-0.0100	-0.00009	+ 8.6500 4.337889	+0.37757 2.7680	+0.007940 0.9931	+0.0053 6.0310
FEV. 6 (0H) (2449754.5)	X:	-0.0095	+0.00021	+ 6.5462 5.019700	+0.28734 3.4340	+0.006025 1.6613	+0.0037 2.4369
A FEV.15 (0H)	Y:	-0.0072	-0.00055	+ 8.6626 0.361311	+0.37598 5.0796	+0.007979 3.3301	+0.0055 4.2267
FEV.15 (0H) (2449763.5)	X:	-0.0106	+0.00035	+ 6.5213 1.040228	+0.28614 5.7407	+0.005979 3.9626	+0.0039 0.7816
A FEV.24 (0H)	Y:	-0.0088	-0.00008	+ 8.6871 2.669021	+0.37754 1.1041	+0.007894 5.6250	+0.0054 2.5664
FEV.24 (0H) (2449772.5)	X:	-0.0092	-0.00001	+ 6.5033 3.344401	+0.28421 1.7709	+0.006101 0.0064	+0.0031 5.5108
A MAR. 5 (0H)	Y:	-0.0127	+0.00068	+ 8.7193 4.977128	+0.37786 3.4143	+0.007880 1.6618	+0.0061 0.7552
MAR. 5 (0H) (2449781.5)	X:	-0.0076	-0.00032	+ 6.4986 5.649696	+0.28361 4.0745	+0.005902 2.3094	+0.0039 3.7834
A MAR.14 (0H)	Y:	-0.0103	+0.00004	+ 8.7590 1.002659	+0.37859 5.7255	+0.007897 3.9815	+0.0051 5.3714
MAR.14 (0H) (2449790.5)	X:	-0.0075	-0.00024	+ 6.5011 1.672691	+0.28356 0.1017	+0.005904 4.6146	+0.0037 2.2864
A MAR.23 (0H)	Y:	-0.0072	-0.00057	+ 8.8041 3.311992	+0.38090 1.7574	+0.008095 0.0023	+0.0056 3.5893
MAR.23 (0H) (2449799.5)	X:	-0.0107	+0.00041	+ 6.5120 3.979400	+0.28269 2.4149	+0.005960 0.6613	+0.0042 0.5254
A AVR. 1 (0H)	Y:	-0.0081	-0.00020	+ 8.8597 5.621563	+0.38142 4.0662	+0.007993 2.3325	+0.0048 1.9533
AVR. 1 (0H) (2449808.5)	X:	-0.0108	+0.00028	+ 6.5339 0.004180	+0.28360 4.7240	+0.005901 2.9647	+0.0039 5.0808
A AVR.10 (0H)	Y:	-0.0104	+0.00027	+ 8.9200 1.648967	+0.38500 0.0934	+0.008012 4.6279	+0.0053 0.3836
AVR.10 (0H) (2449817.5)	X:	-0.0078	-0.00039	+ 6.5634 2.312591	+0.28328 0.7541	+0.005925 5.2997	+0.0046 3.3588
A AVR.19 (0H)	Y:	-0.0119	+0.00047	+ 8.9815 3.959509	+0.38777 2.4094	+0.008242 0.6560	+0.0044 5.0403
AVR.19 (0H) (2449826.5)	X:	-0.0081	-0.00025	+ 6.6022 4.622216	+0.28479 3.0662	+0.005943 1.3225	+0.0040 1.6054
A AVR.28 (0H)	Y:	-0.0086	-0.00028	+ 9.0519 6.270215	+0.38951 4.7161	+0.008101 2.9783	+0.0057 3.3997
AVR.28 (0H) (2449835.5)	X:	-0.0099	+0.00017	+ 6.6462 0.649511	+0.28723 5.3820	+0.006061 3.6226	+0.0042 6.1919
A MAI 7 (0H)	Y:	-0.0059	-0.00071	+ 9.1209 2.295021	+0.39238 0.7454	+0.008228 5.2926	+0.0054 1.8183

1995 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:	-0.0114	+0.00036	+ 6.6993	+0.28761	+0.006034	+0.0039
(2449844.5)				2.960139	1.4109	5.9617	4.4837
A MAI 16 (OH)	Y:	-0.0098	+0.00025	+ 9.1898	+0.39525	+0.008333	+0.0060
				4.608950	3.0570	1.3195	0.1103
MAI 16 (OH)	X:	-0.0104	+0.00003	+ 6.7591	+0.29058	+0.006030	+0.0038
(2449853.5)				5.272078	3.7218	1.9786	2.9749
A MAI 25 (OH)	Y:	-0.0116	+0.00052	+ 9.2561	+0.39920	+0.008404	+0.0058
				0.637015	5.3663	3.6181	4.6024
MAI 25 (OH)	X:	-0.0077	-0.00050	+ 6.8199	+0.29314	+0.006118	+0.0036
(2449862.5)				1.300996	6.0367	4.2915	1.2708
A JUN. 3 (OH)	Y:	-0.0095	-0.00005	+ 9.3202	+0.40078	+0.008598	+0.0064
				2.947647	1.3962	5.9467	2.9312
JUN. 3 (OH)	X:	-0.0096	-0.00003	+ 6.8858	+0.29493	+0.006138	+0.0042
(2449871.5)				3.613291	2.0650	0.3334	6.0205
A JUN.12 (OH)	Y:	-0.0073	-0.00044	+ 9.3823	+0.40463	+0.008546	+0.0058
				5.258496	3.7016	1.9518	1.1813
JUN.12 (OH)	X:	-0.0125	+0.00052	+ 6.9505	+0.29746	+0.006299	+0.0042
(2449880.5)				5.925906	4.3800	2.6533	4.3659
A JUN.21 (OH)	Y:	-0.0067	-0.00035	+ 9.4343	+0.40836	+0.008626	+0.0055
				1.286030	6.0098	4.2463	5.7528
JUN.21 (OH)	X:	-0.0115	+0.00011	+ 7.0148	+0.30030	+0.006316	+0.0043
(2449889.5)				1.955328	0.4074	4.9606	2.6922
A JUN.30 (OH)	Y:	-0.0109	+0.00053	+ 9.4775	+0.40909	+0.008691	+0.0056
				3.595809	2.0351	0.2868	4.0816
JUN.30 (OH)	X:	-0.0098	-0.00026	+ 7.0764	+0.30413	+0.006417	+0.0047
(2449898.5)				4.268227	2.7178	0.9702	0.8975
A JUL. 9 (OH)	Y:	-0.0115	+0.00050	+ 9.5141	+0.41146	+0.008712	+0.0050
				5.905621	4.3403	2.5849	2.5441
JUL. 9 (OH)	X:	-0.0093	-0.00028	+ 7.1302	+0.30619	+0.006580	+0.0046
(2449907.5)				0.297154	5.0309	3.2923	5.5021
A JUL.18 (OH)	Y:	-0.0067	-0.00053	+ 9.5369	+0.41239	+0.008689	+0.0053
				1.931625	0.3625	4.8977	0.8806
JUL.18 (OH)	X:	-0.0116	+0.00020	+ 7.1809	+0.30911	+0.006521	+0.0046
(2449916.5)				2.608981	1.0525	5.5852	3.7834
A JUL.27 (OH)	Y:	-0.0064	-0.00037	+ 9.5484	+0.41382	+0.008784	+0.0054
				4.240388	2.6689	0.9097	5.5855
JUL.27 (OH)	X:	-0.0140	+0.00056	+ 7.2216	+0.31143	+0.006565	+0.0042
(2449925.5)				4.920331	3.3592	1.6077	1.9809
A AOU. 5 (OH)	Y:	-0.0091	+0.00031	+ 9.5461	+0.41437	+0.008986	+0.0061
				0.265357	4.9774	3.2160	3.9382
AOU. 5 (OH)	X:	-0.0110	-0.00017	+ 7.2503	+0.31288	+0.006628	+0.0045
(2449934.5)				0.947507	5.6664	3.9174	0.4267
A AOU.14 (OH)	Y:	-0.0106	+0.00050	+ 9.5345	+0.41415	+0.008815	+0.0057
				2.572864	0.9953	5.5191	2.2132
AOU.14 (OH)	X:	-0.0092	-0.00046	+ 7.2686	+0.31471	+0.006740	+0.0037
(2449943.5)				3.257219	1.6901	6.2136	5.0350
A AOU.23 (OH)	Y:	-0.0092	+0.00015	+ 9.5117	+0.41516	+0.008828	+0.0065
				4.880150	3.2983	1.5184	0.4693
AOU.23 (OH)	X:	-0.0117	+0.00013	+ 7.2756	+0.31465	+0.006708	+0.0041
(2449952.5)				5.565851	3.9933	2.2511	3.4821
A SEP. 1 (OH)	Y:	-0.0050	-0.00060	+ 9.4746	+0.41365	+0.008875	+0.0060
				0.903231	5.6036	3.8296	4.9823
SEP. 1 (OH)	X:	-0.0132	+0.00036	+ 7.2705	+0.31642	+0.006737	+0.0039
(2449961.5)				1.590727	0.0133	4.5279	1.7894
A SEP.10 (OH)	Y:	-0.0065	-0.00010	+ 9.4300	+0.41250	+0.008747	+0.0059
				3.208959	1.6213	6.1240	3.3239

1995 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) (2449970.5)	X:	-0.0130	+0.00020	+ 7.2517 3.897579	+0.31667 2.3198	+0.006885 0.5435	+0.0045 0.2609
A SEP.19 (0H)	Y:	-0.0108	+0.00080	+ 9.3767 5.513965	+0.40964 3.9245	+0.006727 2.1558	+0.0055 1.4378
SEP.19 (0H) (2449979.5)	X:	-0.0103	-0.00033	+ 7.2248 6.203338	+0.31558 4.6180	+0.006741 2.8512	+0.0042 4.7012
A SEP.28 (0H)	Y:	-0.0088	+0.00023	+ 9.3152 1.535454	+0.40775 6.2265	+0.008635 4.4527	+0.0055 6.2556
SEP.28 (0H) (2449988.5)	X:	-0.0095	-0.00038	+ 7.1872 2.225207	+0.31528 0.6356	+0.006727 5.1378	+0.0048 3.0603
A OCT. 7 (0H)	Y:	-0.0057	-0.00034	+ 9.2465 3.839811	+0.40674 2.2490	+0.008734 0.4551	+0.0048 4.4711
OCT. 7 (0H) (2449997.5)	X:	-0.0132	+0.00042	+ 7.1390 4.529087	+0.31342 2.9373	+0.006719 1.1606	+0.0047 1.2101
A OCT.16 (0H)	Y:	-0.0052	-0.00025	+ 9.1773 6.143208	+0.40195 4.5512	+0.008610 2.7837	+0.0049 2.9924
OCT.16 (0H) (2450006.5)	X:	-0.0133	+0.00035	+ 7.0833 0.549215	+0.31218 5.2371	+0.006674 3.4484	+0.0043 5.8505
A OCT.25 (0H)	Y:	-0.0072	+0.00025	+ 9.1072 2.163642	+0.40059 0.5686	+0.008462 5.0645	+0.0051 1.2233
OCT.25 (0H) (2450015.5)	X:	-0.0104	-0.00031	+ 7.0207 2.851319	+0.30890 1.2565	+0.006690 5.7643	+0.0045 3.9768
A NOV. 3 (0H)	Y:	-0.0098	+0.00071	+ 9.0340 4.466783	+0.39807 2.8742	+0.008496 1.0808	+0.0054 6.0434
NOV. 3 (0H) (2450024.5)	X:	-0.0098	-0.00031	+ 6.9552 5.153215	+0.30674 3.5538	+0.006549 1.7715	+0.0039 2.4724
A NOV.12 (0H)	Y:	-0.0063	-0.00009	+ 8.9657 0.486369	+0.39392 5.1754	+0.008322 3.3987	+0.0054 4.1401
NOV.12 (0H) (2450033.5)	X:	-0.0109	+0.00000	+ 6.8841 1.171735	+0.30560 5.8552	+0.006555 4.0467	+0.0038 0.6935
A NOV.21 (0H)	Y:	-0.0032	-0.00061	+ 8.8982 2.789279	+0.39124 1.1980	+0.008331 5.7020	+0.0057 2.5142
NOV.21 (0H) (2450042.5)	X:	-0.0129	+0.00039	+ 6.8125 3.472174	+0.30094 1.8728	+0.006471 0.0901	+0.0035 5.4579
A NOV.30 (0H)	Y:	-0.0062	+0.00019	+ 8.8363 5.092074	+0.38789 3.5017	+0.008221 1.7287	+0.0060 0.6987
NOV.30 (0H) (2450051.5)	X:	-0.0121	+0.00012	+ 6.7418 5.772919	+0.29847 4.1709	+0.006343 2.3793	+0.0040 3.7682
A DEC. 9 (0H)	Y:	-0.0078	+0.00050	+ 8.7803 1.112296	+0.38642 5.8057	+0.008161 4.0180	+0.0052 5.2692
DEC. 9 (0H) (2450060.5)	X:	-0.0087	-0.00054	+ 6.6703 1.790196	+0.29555 0.1891	+0.006278 4.6783	+0.0036 2.2383
A DEC.18 (0H)	Y:	-0.0069	+0.00017	+ 8.7277 3.415412	+0.38307 1.8324	+0.008242 0.0556	+0.0057 3.5000
DEC.18 (0H) (2450069.5)	X:	-0.0099	-0.00013	+ 6.6022 4.090444	+0.29182 2.4898	+0.006192 0.7059	+0.0041 0.3980
A DEC.27 (0H)	Y:	-0.0041	-0.00034	+ 8.6883 5.719157	+0.38083 4.1344	+0.008024 2.3591	+0.0048 1.8892
DEC.27 (0H) (2450078.5)	X:	-0.0123	+0.00037	+ 6.5352 0.107866	+0.28917 4.7954	+0.006244 3.0081	+0.0042 4.9973
A JAN. 5 (0H)	Y:	-0.0029	-0.00043	+ 8.6554 1.740519	+0.38000 0.1564	+0.007927 4.6547	+0.0048 0.2418

1995 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 1 D'URANUS: ARIEL N=2.4930

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
JAN. 1 (OH) (2449718.5)	X:	+0.0236	-0.00001	+ 9.9703 3.391015	+0.01174 0.7498	+0.000063 3.6668	+0.0070 1.9223
A FEV. 1 (OH)	Y:	-0.0018	-0.00007	+12.7512 4.939814	+0.00471 2.7154	+0.000091 5.2275	+0.0108 3.5083
FEV. 1 (OH) (2449749.5)	X:	+0.0225	+0.00001	+ 9.7104 5.259644	+0.00786 2.7363	+0.000083 5.6197	+0.0084 5.7440
A MAR. 4 (OH)	Y:	-0.0026	-0.00002	+12.7467 0.534418	+0.00344 6.0860	+0.000092 1.0362	+0.0092 0.8351
MAR. 4 (OH) (2449780.5)	X:	+0.0222	+0.00002	+ 9.5675 0.849380	+0.00284 5.0643	+0.000088 1.1954	+0.0076 3.0210
A AVR. 4 (OH)	Y:	-0.0025	-0.00005	+12.9021 2.416829	+0.00761 2.4270	+0.000057 2.8739	+0.0106 4.8333
AVR. 4 (OH) (2449811.5)	X:	+0.0214	+0.00007	+ 9.6256 2.729263	+0.00392 2.5915	+0.000084 3.2398	+0.0074 0.6676
A MAI 5 (OH)	Y:	-0.0035	+0.00000	+13.1670 4.303654	+0.01101 4.4696	+0.000017 5.0587	+0.0112 2.1666
MAI 5 (OH) (2449842.5)	X:	+0.0225	+0.00002	+ 9.8152 4.616287	+0.00866 4.8243	+0.000046 5.3968	+0.0080 4.3698
A JUN. 5 (OH)	Y:	-0.0052	+0.00005	+13.5338 6.193401	+0.01199 0.1298	+0.000042 3.1158	+0.0105 5.9365
JUN. 5 (OH) (2449873.5)	X:	+0.0242	+0.00000	+10.1073 0.226210	+0.01130 0.5574	+0.000031 3.3058	+0.0086 1.8664
A JUL. 6 (OH)	Y:	-0.0043	-0.00004	+13.8552 1.800614	+0.00929 2.0739	+0.000086 5.1133	+0.0115 3.4144
JUL. 6 (OH) (2449904.5)	X:	+0.0236	+0.00006	+10.4081 2.122009	+0.00972 2.5385	+0.000089 5.5725	+0.0092 5.6376
A AOU. 6 (OH)	Y:	-0.0040	-0.00004	+14.0487 3.689886	+0.00346 4.1106	+0.000108 0.7545	+0.0112 0.9744
AOU. 6 (OH) (2449935.5)	X:	+0.0240	+0.00003	+10.6010 4.015910	+0.00408 4.5697	+0.000115 1.2026	+0.0080 3.0972
A SEP. 6 (OH)	Y:	-0.0055	+0.00004	+14.0444 5.576263	+0.00366 2.4873	+0.000100 2.7402	+0.0126 4.7545
SEP. 6 (OH) (2449966.5)	X:	+0.0243	+0.00000	+10.6047 5.903558	+0.00366 2.8647	+0.000098 3.1994	+0.0091 0.7185
A OCT. 7 (OH)	Y:	-0.0053	+0.00001	+13.8413 1.175190	+0.00951 4.5020	+0.000059 5.0424	+0.0110 2.0526
OCT. 7 (OH) (2449997.5)	X:	+0.0231	+0.00001	+10.4085 1.500150	+0.00967 4.9839	+0.000058 5.0660	+0.0088 4.2951
A NOV. 7 (OH)	Y:	-0.0058	+0.00005	+13.5112 3.053310	+0.01260 0.2332	+0.000018 2.4200	+0.0108 6.0203
NOV. 7 (OH) (2450028.5)	X:	+0.0232	-0.00005	+10.0720 3.372389	+0.01331 0.6189	+0.000016 1.2435	+0.0081 1.8681
A DEC. 8 (OH)	Y:	-0.0070	+0.00009	+13.1561 4.927948	+0.01212 2.2005	+0.000059 5.0982	+0.0107 3.3787
DEC. 8 (OH) (2450059.5)	X:	+0.0230	-0.00006	+ 9.6854 5.239722	+0.01395 2.5340	+0.000033 5.3368	+0.0076 5.5488
A JAN. 8 (OH)	Y:	-0.0056	+0.00000	+12.8689 0.518499	+0.00854 4.1881	+0.000079 0.7557	+0.0109 0.9478

1995 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) (2449718.5)	X:	+0.0691	-0.00065	+13.8836 4.055915	+0.01624 1.3905	+0.000084 4.1687	+0.0284 4.1629
A JAN.28 (0H)	Y:	+0.0741	+0.00037	+17.7633 5.606215	+0.00563 3.2852	+0.000117 5.5566	+0.0365 5.6856
JAN.28 (0H) (2449745.5)	X:	+0.0462	+0.00001	+13.5571 0.996795	+0.01190 4.7555	+0.000108 1.2004	+0.0235 4.3754
A FEV.24 (0H)	Y:	+0.0813	-0.00094	+17.7472 2.555039	+0.00452 1.5791	+0.000117 2.8573	+0.0311 5.9132
FEV.24 (0H) (2449772.5)	X:	+0.0499	+0.00059	+13.3728 4.222379	+0.00643 2.0758	+0.000112 4.6241	+0.0243 4.3940
A MAR.23 (0H)	Y:	+0.0544	+0.00032	+17.9023 5.789227	+0.00842 5.4699	+0.000137 0.0073	+0.0340 5.9626
MAR.23 (0H) (2449799.5)	X:	+0.0668	-0.00048	+13.3545 1.168753	+0.00354 0.4112	+0.000120 1.4374	+0.0276 4.6596
A AVR.19 (0H)	Y:	+0.0707	+0.00066	+18.2008 2.742873	+0.01356 2.7324	+0.000058 3.3331	+0.0390 6.2315
AVR.19 (0H) (2449826.5)	X:	+0.0501	-0.00023	+13.5069 4.404192	+0.00863 4.3057	+0.000108 5.0201	+0.0245 4.9442
A MAI 16 (0H)	Y:	+0.0691	-0.00090	+18.5961 5.982152	+0.01689 6.0506	+0.000038 2.5198	+0.0344 0.2246
MAI 16 (0H) (2449853.5)	X:	+0.0481	+0.00069	+13.8012 1.360711	+0.01309 1.5347	+0.000051 2.1467	+0.0249 4.9788
A JUN.12 (0H)	Y:	+0.0599	+0.00010	+19.0227 2.939296	+0.01622 3.0610	+0.000106 6.1962	+0.0355 0.2603
JUN.12 (0H) (2449880.5)	X:	+0.0709	-0.00022	+14.1747 4.605196	+0.01502 4.8988	+0.000046 1.2383	+0.0298 5.1960
A JUL. 9 (0H)	Y:	+0.0654	+0.00104	+19.3815 6.180057	+0.01155 0.0790	+0.000150 3.0894	+0.0413 0.4874
JUL. 9 (0H) (2449907.5)	X:	+0.0597	-0.00040	+14.5286 1.568856	+0.01284 1.9553	+0.000130 4.8789	+0.0274 5.5277
A AOU. 5 (0H)	Y:	+0.0921	-0.00066	+19.5856 3.137636	+0.00362 3.7096	+0.000138 0.3150	+0.0372 0.8060
AOU. 5 (0H) (2449934.5)	X:	+0.0488	+0.00074	+14.7554 4.814729	+0.00666 5.3868	+0.000175 1.9656	+0.0258 5.5695
A SEP. 1 (0H)	Y:	+0.0659	-0.00034	+19.5741 0.093803	+0.00584 3.2110	+0.000102 3.5346	+0.0342 0.8728
SEP. 1 (0H) (2449961.5)	X:	+0.0716	+0.00005	+14.7853 1.774074	+0.00329 4.7103	+0.000145 5.1791	+0.0300 5.7375
A SEP.28 (0H)	Y:	+0.0590	+0.00092	+19.3423 3.331179	+0.01204 0.3181	+0.000077 0.4449	+0.0394 1.0333
SEP.28 (0H) (2449988.5)	X:	+0.0667	-0.00064	+14.5964 5.011608	+0.01109 2.0205	+0.000107 2.4973	+0.0278 6.0903
A OCT.25 (0H)	Y:	+0.0879	-0.00054	+18.9647 0.283336	+0.01600 3.6414	+0.000029 4.1370	+0.0365 1.3662
OCT.25 (0H) (2450015.5)	X:	+0.0479	+0.00039	+14.2384 1.960379	+0.01676 5.3930	+0.000051 6.0025	+0.0242 6.1666
A NOV.21 (0H)	Y:	+0.0704	-0.00082	+18.5282 3.516141	+0.01678 0.7154	+0.000038 4.1055	+0.0319 1.4799
NOV.21 (0H) (2450042.5)	X:	+0.0645	+0.00010	+13.7847 5.187185	+0.01921 2.3952	+0.000029 4.5486	+0.0271 6.2552
A DEC.18 (0H)	Y:	+0.0516	+0.00078	+18.1293 0.463550	+0.01406 3.9645	+0.000082 0.5160	+0.0359 1.5560
DEC.18 (0H) (2450069.5)	X:	+0.0661	-0.00079	+13.3167 2.128040	+0.01842 5.7028	+0.000052 2.2019	+0.0267 0.3037
A JAN.14 (0H)	Y:	+0.0781	-0.00005	+17.8384 3.694375	+0.00963 0.9478	+0.000136 3.6174	+0.0354 1.8824

1995 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) (2449718.5)	X:	-0.0297	-0.00248	+22.7634 4.291539	+0.02812 1.5445	+0.000303 3.9658	+0.0211 0.0379
A JAN.18 (OH)	Y:	+0.0173	+0.00441	+29.1694 5.840663	+0.01869 3.4097	+0.000685 6.2625	+0.0284 1.5426
JAN.18 (OH) (2449735.5)	X:	-0.0528	+0.00024	+22.3922 3.985864	+0.02192 1.3994	+0.000209 4.9757	+0.0247 5.5008
A FEV. 4 (OH)	Y:	+0.0828	-0.00114	+29.0817 5.538630	+0.00234 4.3583	+0.000183 5.3842	+0.0321 0.7655
FEV. 4 (OH) (2449752.5)	X:	-0.0774	-0.00028	+22.1155 3.679938	+0.01539 0.9525	+0.000248 3.2507	+0.0308 5.1961
A FEV.21 (OH)	Y:	+0.0623	+0.00060	+29.1459 5.238436	+0.00722 5.2727	+0.000210 4.7082	+0.0411 0.4658
FEV.21 (OH) (2449769.5)	X:	-0.0632	-0.00190	+21.9498 3.377489	+0.01784 1.1353	+0.000509 4.0374	+0.0259 4.7773
A MAR.10 (OH)	Y:	+0.0583	-0.00196	+29.3322 4.942063	+0.02087 4.0092	+0.000753 0.0457	+0.0356 0.0980
MAR.10 (OH) (2449786.5)	X:	-0.1043	+0.00211	+21.8467 3.072604	+0.00373 2.7043	+0.000243 1.4167	+0.0280 4.2498
A MAR.27 (OH)	Y:	+0.0359	-0.00003	+29.5907 4.641364	+0.01878 4.7550	+0.000130 4.1946	+0.0398 5.8106
MAR.27 (OH) (2449803.5)	X:	-0.0641	-0.00052	+21.9089 2.771045	+0.00584 2.1521	+0.000243 2.9707	+0.0214 3.9579
A AVR.13 (OH)	Y:	+0.0048	-0.00034	+29.9413 4.343618	+0.02376 4.4507	+0.000096 3.4262	+0.0287 5.5161
AVR.13 (OH) (2449820.5)	X:	-0.0641	+0.00207	+22.0583 2.472707	+0.01655 1.7960	+0.000525 3.9254	+0.0154 2.9852
A AVR.30 (OH)	Y:	+0.0101	+0.00111	+30.3514 4.048211	+0.03059 3.6520	+0.000756 5.8464	+0.0206 4.5921
AVR.30 (OH) (2449837.5)	X:	-0.0477	+0.00039	+22.2953 2.172586	+0.02180 2.6224	+0.000433 0.6433	+0.0151 2.3660
A MAI 17 (OH)	Y:	-0.0057	+0.00352	+30.7758 3.749834	+0.03362 4.0598	+0.000609 1.6354	+0.0209 3.9783
MAI 17 (OH) (2449854.5)	X:	-0.0335	-0.00016	+22.6354 1.877864	+0.02220 2.0400	+0.000118 3.2225	+0.0171 1.2367
A JUN. 3 (OH)	Y:	+0.0662	-0.00081	+31.2389 3.454019	+0.02322 3.5674	+0.000072 5.1668	+0.0241 2.7991
JUN. 3 (OH) (2449871.5)	X:	-0.0565	-0.00076	+23.0203 1.584071	+0.02303 1.7344	+0.000293 3.1419	+0.0281 0.8470
A JUN.20 (OH)	Y:	+0.0523	+0.00329	+31.6039 3.159031	+0.02731 3.0392	+0.000706 5.7101	+0.0370 2.3883
JUN.20 (OH) (2449888.5)	X:	-0.0564	-0.00126	+23.4061 1.291234	+0.02880 1.9255	+0.000599 5.9206	+0.0268 0.3018
A JUL. 7 (OH)	Y:	+0.0916	-0.00226	+31.9296 2.862957	+0.01624 3.4530	+0.000444 0.9381	+0.0352 1.8816
JUL. 7 (OH) (2449905.5)	X:	-0.0934	+0.00047	+23.7716 1.000584	+0.02102 1.3940	+0.000201 3.6000	+0.0338 6.1547
A JUL.24 (OH)	Y:	+0.0728	-0.00024	+32.1155 2.567862	+0.00593 2.8584	+0.000288 4.9185	+0.0449 1.4274
JUL.24 (OH) (2449922.5)	X:	-0.0804	-0.00133	+24.0497 0.709142	+0.01694 1.1853	+0.000335 3.6147	+0.0299 5.9001
A AOU.10 (OH)	Y:	+0.0272	+0.00016	+32.1502 2.271269	+0.00945 3.9737	+0.000336 6.1263	+0.0404 1.1804
AOU.10 (OH) (2449939.5)	X:	-0.1130	+0.00400	+24.2465 0.417794	+0.00902 2.1244	+0.000306 5.7800	+0.0259 5.2315
A AOU.27 (OH)	Y:	+0.0500	-0.00229	+32.0609 1.977514	+0.01159 4.9087	+0.000230 6.0558	+0.0338 0.4456

1995 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) (2449956.5)	X:	-0.0708	-0.00025	+24.2488 0.124773	+0.00466 2.1717	+0.000296 3.0768	+0.0230 4.8783
A SEP.13 (OH)	Y:	+0.0018	+0.00067	+31.8235 1.680587	+0.01877 4.7114	+0.000110 4.3568	+0.0295 0.1566
SEP.13 (OH) (2449973.5)	X:	-0.0455	+0.00042	+24.1346 6.112324	+0.01305 2.4766	+0.000284 3.9025	+0.0136 3.8953
A SEP.30 (OH)	Y:	+0.0266	-0.00048	+31.4745 1.363051	+0.02353 4.3135	+0.000243 5.7405	+0.0172 5.4685
SEP.30 (OH) (2449990.5)	X:	-0.0645	+0.00218	+23.9139 5.818001	+0.02663 3.0154	+0.000396 0.5668	+0.0190 3.0525
A OCT.17 (OH)	Y:	+0.0111	+0.00415	+31.0664 1.087331	+0.02831 4.4956	+0.000161 2.4162	+0.0265 4.6475
OCT.17 (OH) (2450007.5)	X:	-0.0242	-0.00145	+23.5237 5.517219	+0.02337 2.3041	+0.000293 3.6322	+0.0177 2.2733
A NOV. 3 (OH)	Y:	+0.0664	-0.00106	+30.5976 0.787809	+0.02400 4.0290	+0.000178 3.6790	+0.0239 3.7766
NOV. 3 (OH) (2450024.5)	X:	-0.0627	+0.00020	+23.0938 5.216831	+0.02735 2.1929	+0.000165 3.3182	+0.0293 1.7250
A NOV.20 (OH)	Y:	+0.0798	+0.00054	+30.1595 0.468112	+0.02565 3.6233	+0.000213 5.6725	+0.0376 3.2891
NOV.20 (OH) (2450041.5)	X:	-0.0650	-0.00157	+22.6213 4.916856	+0.03375 2.3530	+0.000502 0.3546	+0.0289 1.4126
A DEC. 7 (OH)	Y:	+0.0689	-0.00088	+29.7622 0.190326	+0.02697 3.9040	+0.000563 1.5057	+0.0378 2.9943
DEC. 7 (OH) (2450058.5)	X:	-0.0874	+0.00079	+22.1252 4.610558	+0.02781 1.6303	+0.000306 3.0060	+0.0290 0.8108
A DEC.24 (OH)	Y:	+0.0876	-0.00351	+29.3930 6.171638	+0.01155 2.5401	+0.000612 4.3404	+0.0386 2.4015
DEC.24 (OH) (2450075.5)	X:	-0.0818	-0.00022	+21.6601 4.305544	+0.02794 1.4784	+0.000136 3.6075	+0.0272 0.5517
A JAN.10 (OH)	Y:	+0.0140	+0.00078	+29.1868 5.872333	+0.01359 3.0829	+0.000278 6.1987	+0.0371 2.1231

1995 COORDONNEES EQUATORIALES DIFFERENTIELLES

DU SATELLITE 4 D'URANUS: OBERON N=0.4667

		A0	A1	B0 F0	B1 F1	B2 F2	C0 P0
JAN. 1 (OH)	X:	-0.0372	-0.00250	+30.4282 0.126592	+0.02101 3.2544	+0.000730 4.6143	+0.0255 5.5117
(2449718.5)							
A JAN.23 (OH)	Y:	-0.0436	-0.00081	+38.9641 1.673993	+0.01020 4.4692	+0.000507 0.8069	+0.0301 0.8728
JAN.23 (OH)	X:	-0.1082	+0.00670	+29.8099 4.102271	+0.01598 2.1332	+0.000533 1.0776	+0.0191 1.5051
(2449740.5)							
A FEV.14 (OH)	Y:	-0.0743	+0.00197	+38.8806 5.655636	+0.01435 4.9761	+0.000227 1.6900	+0.0230 2.8788
FEV.14 (OH)	X:	+0.0208	-0.00271	+29.4634 1.794375	+0.02603 0.0126	+0.000581 3.6870	+0.0077 3.6948
(2449762.5)							
A MAR. 8 (OH)	Y:	-0.0304	-0.00055	+39.1307 3.353609	+0.01953 2.2424	+0.000838 4.4458	+0.0141 5.1772
MAR. 8 (OH)	X:	-0.0078	-0.00023	+29.3304 5.768394	+0.01827 3.8387	+0.000586 0.2737	+0.0026 1.9184
(2449784.5)							
A MAR.30 (OH)	Y:	-0.0481	+0.00542	+39.5873 1.051441	+0.01400 0.2952	+0.000913 1.5982	+0.0051 3.2860
MAR.30 (OH)	X:	-0.0229	-0.00110	+29.3962 3.462484	+0.01084 2.6689	+0.000324 3.8009	+0.0139 4.5038
(2449806.5)							
A AVR.21 (OH)	Y:	+0.0667	-0.00268	+40.1589 5.033918	+0.02460 5.0924	+0.000459 4.9496	+0.0191 6.0858
AVR.21 (OH)	X:	-0.0653	-0.00076	+29.7025 1.160550	+0.02095 1.0219	+0.000166 1.7332	+0.0227 0.5009
(2449828.5)							
A MAI 13 (OH)	Y:	+0.0258	-0.00045	+40.8636 2.735444	+0.03762 2.7456	+0.000128 6.2321	+0.0318 2.0561
MAI 13 (OH)	X:	-0.0690	+0.00056	+30.2260 5.145403	+0.02902 5.1514	+0.000161 0.2438	+0.0263 2.7472
(2449850.5)							
A JUN. 4 (OH)	Y:	-0.0104	-0.00192	+41.6172 0.437542	+0.03838 0.4407	+0.000316 3.6037	+0.0371 4.3443
JUN. 4 (OH)	X:	-0.0433	-0.00089	+30.9092 2.850500	+0.02822 2.8843	+0.000306 4.2721	+0.0242 4.9974
(2449872.5)							
A JUN.26 (OH)	Y:	-0.0541	-0.00152	+42.3183 4.422502	+0.02576 4.5543	+0.000127 1.5329	+0.0310 0.2917
JUN.26 (OH)	X:	-0.0615	+0.00382	+31.5952 0.555747	+0.02366 1.1184	+0.000233 0.4977	+0.0149 1.0450
(2449894.5)							
A JUL.18 (OH)	Y:	-0.0909	+0.00340	+42.8234 2.123994	+0.01762 3.1331	+0.000471 0.6717	+0.0207 2.4562
JUL.18 (OH)	X:	-0.0005	-0.00037	+32.1272 4.546345	+0.02782 5.3182	+0.000416 2.3957	+0.0018 3.3333
(2449916.5)							
A AOU. 9 (OH)	Y:	+0.0065	-0.00155	+42.9505 6.109209	+0.02662 1.1273	+0.001053 4.1550	+0.0062 5.1981
AOU. 9 (OH)	X:	+0.0000	-0.00264	+32.4227 2.255216	+0.01962 2.9434	+0.000572 5.6440	+0.0082 1.9221
(2449938.5)							
A AOU.31 (OH)	Y:	-0.0532	+0.00727	+42.7682 3.813664	+0.01307 4.7738	+0.001233 1.0479	+0.0136 3.4181
AOU.31 (OH)	X:	-0.0466	-0.00059	+32.4762 6.245705	+0.00504 3.4214	+0.000563 2.4667	+0.0192 4.0725
(2449960.5)							
A SEP.22 (OH)	Y:	+0.0961	-0.00569	+42.4052 1.517901	+0.01363 5.3201	+0.000965 4.2927	+0.0253 5.6501
SEP.22 (OH)	X:	-0.0604	-0.00210	+32.2148 3.949293	+0.02690 0.9792	+0.000268 5.4320	+0.0256 6.2409
(2449982.5)							
A OCT.14 (OH)	Y:	+0.0081	-0.00057	+41.8319 5.502281	+0.03968 2.6990	+0.000564 0.7508	+0.0343 1.5365
OCT.14 (OH)	X:	-0.1162	+0.00351	+31.6519 1.648854	+0.03919 4.6458	+0.000262 1.3200	+0.0276 2.1462
(2450004.5)							
A NOV. 5 (OH)	Y:	-0.0216	-0.00168	+41.0667 3.201894	+0.04237 0.2289	+0.000315 3.5894	+0.0341 3.7241

1995 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) (2450026.5)	X:	-0.0376	-0.00057	+30.8698 5.629282	+0.03729 2.5909	+0.000312 4.0840	+0.0219 4.4053
A NOV.27 (OH)	Y:	-0.0726	+0.00040	+40.2735 0.900722	+0.03518 4.2357	+0.000168 0.8275	+0.0279 5.8850
NOV.27 (OH) (2450048.5)	X:	-0.0187	+0.00099	+30.0306 3.324005	+0.03571 0.4665	+0.000123 1.5436	+0.0104 0.4090
A DEC.19 (OH)	Y:	-0.0612	+0.00181	+39.5912 4.882209	+0.02594 2.1394	+0.000081 5.8161	+0.0151 1.9508
DEC.19 (OH) (2450070.5)	X:	-0.0079	+0.00016	+29.2154 1.015410	+0.04067 4.5278	+0.000183 0.9375	+0.0027 5.0527
A JAN.10 (OH)	Y:	+0.0137	-0.00031	+39.1131 2.580046	+0.02166 0.0873	+0.000301 3.4681	+0.0051 0.0494

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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 1995 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 1995.

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 1995 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 1995 .

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