



IERS TECHNICAL NOTE 24

Results and Analysis of the ITRF96

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IERS Technical Notes

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Summary

The ITRF96 solution described in this Technical Note represents a new generation of realization of the International Terrestrial Reference System (ITRS). It is achieved by combining simultaneously station positions and velocities using full variance-covariance information provided, in SINEX format, by the IERS analysis centers. Moreover, a rigorous weighting scheme is used, based on the analysis and estimation of the variance components using Helmert method.

The reference frame definition (origin, scale, orientation and time evolution) is achieved in such a way that ITRF96 is in the same system as the ITRF94. In addition, station velocities are constrained to be the same for all points within each site.

The ITRF96 contains more than 500 stations located on 290 sites. Figure 1 shows the coverage of these sites.

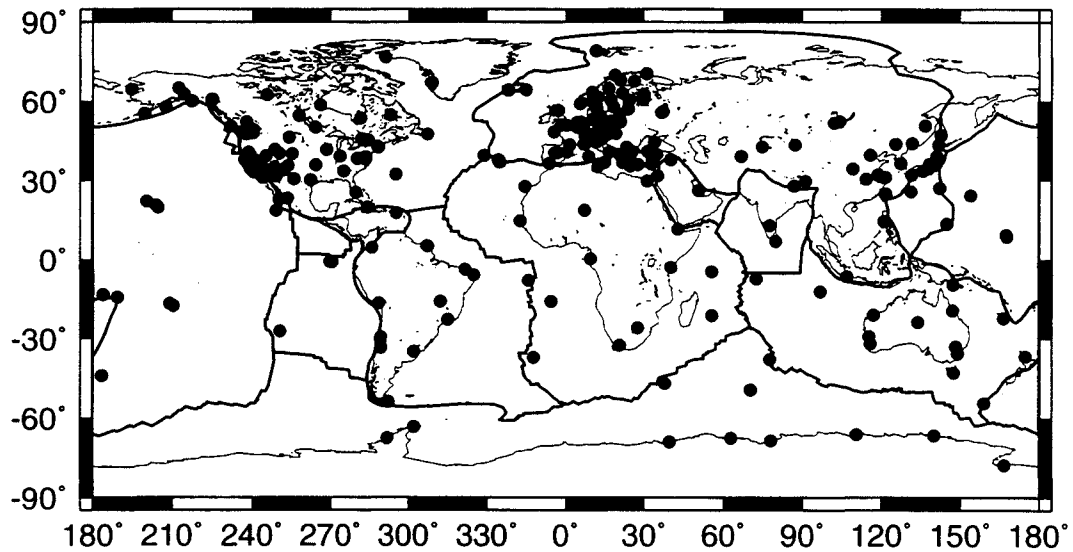


Figure 1. ITRF96 Sites

I. Introduction

Since its establishment in 1988, the International Earth Rotation Service (IERS) published on an annual basis a new complete realization of the International Terrestrial Reference System (ITRS).

Each year, the IERS Central Bureau collected among contributing analysis centers their solutions for Earth Rotation Parameters together with the associated Terrestrial Reference Frame (TRF) (and Celestial if available) data. These contributions are currently available for several space techniques: Satellite Laser Ranging (SLR), Lunar Laser Ranging (LLR), VLBI, GPS and DORIS.

Such a realization is now widely known under the label ITRF_{yy}. Up to yy=94, this solution was obtained by a combination of all data submitted to the IERS central bureau at the beginning of yy+1. It was assumed that all individual analysis centers would provide by this was their best and most complete individual solution, in particular including data for the year yy.

The succession of these results, from ITRF88 to ITRF94, did actually show an improvement both in accuracy for positions of stations as well as in the geographical coverage of the corresponding network. Nevertheless, the accuracy reached was ranging from a few millimeters to a few centimeters, and a lot of details concerning modeling were raised at this level (in particular relativistic and geodynamical effects).

At that time, IERS decided to establish a primary solution upon specifications of an international working group (WG on ITRF datum). Although this is exactly a task for this WG to recommend the precise definition of what should be a primary ITRF solution, the main concept is to provide a consistent, homogeneous set of positions (and time variations) at the subcentimetric level (in precision and reliability) for a well distributed network. This work is presently in progress, in particular by performing pilot experiments on the geocenter which is one of the new topics to be investigated before establishing these general recommendations. The final recommendations of this group are expected at the ITRF Workshop in 1998.

Considering on the other hand the numerous and increasing requirements of the users, mostly outside the restricted IERS community, IERS decided to continue the annual series of ITRF publications for a complete solution along the line of the series up to ITRF94.

ITRF_{yy} is specified to be the best complete solution produced on an annual basis by IERS. In particular, any data set estimated to bring a useful contribution should be included, and not only the data from the annual submission to the Central Bureau. In this scope, a specific work was done for GPS and DORIS contributions. A close cooperation with IGS permitted to obtain very useful contributions as shown after. Furthermore, in the case of VLBI, we reutilized a past solution from an analysis center which stopped its activity in this field (NOAA). Multiple solutions for each technique are a key condition for a good combination.

II. Current methodology for TRF combination

The current strategy adopted for Terrestrial Reference Frame combination analysis is twofold: simultaneous combination of station positions and velocities using full variance / covariance matrices; rigorous weighting scheme based on the analysis and estimation of the variance components using Helmert method.

II.1. Physical model for simultaneous combination of station positions and velocities

Assuming that for each individual solution s , and each point i , we have position X_s^i at epoch t_s , and velocity $\dot{X}_s^i$, expressed in a given TRF k .

The combination consists on estimating:

- Positions X_{itr}^i at a given epoch t_0 and velocities $\dot{X}_{itr}^i$ in ITRS
- Transformation parameters T_k at an epoch t_k and their rates $\dot{T}_k$, from the ITRF to each individual frame k

The general physical model used is given by the following equation (II.1):

$$\begin{cases} X_s^i = X_{itr}^i + (t_s - t_0)\dot{X}_{itr}^i + T_k + D_k X_{itr}^i + R_k X_{itr}^i \\ \quad \quad \quad + (t_s - t_k) [\dot{T}_k + \dot{D}_k X_{itr}^i + \dot{R}_k X_{itr}^i] \\ \dot{X}_s^i = \dot{X}_{itr}^i + \dot{T}_k + \dot{D}_k X_{itr}^i + \dot{R}_k X_{itr}^i \end{cases} \quad (II.1)$$

where for each individual frame k , D_k is the scale factor, the translation vector T_k and rotation matrix R_k are respectively defined (following IERS conventions) by :

$$T_k = \begin{pmatrix} T1_k \\ T2_k \\ T3_k \end{pmatrix} \quad \text{and} \quad R_k = \begin{pmatrix} 0 & -R3_k & R2_k \\ R3_k & 0 & -R1_k \\ -R2_k & R1_k & 0 \end{pmatrix}$$

The dotted parameters designate their derivatives with respect to time. $T1, T2, T3$ are the 3 origin components, $R1, R2, R3$ are the three small rotations according to the 3 axes, respectively X, Y, Z .

II.2. Statistical and variance estimation modeling

Combining heterogeneous data has been, since the beginning of ITRF combinations, one of the key element of ITRF analysis. The problem is, by essence, statistic. Up to now, the data were homogenized by the use of an empirical weighting scheme. For the ITRF96, a theoretical estimate of weights has been built and used in a rigorous stochastic framework.

The individual solutions, as well as the eccentricities are considered to be statistically independent populations. In addition, their variance matrix is supposed to be known except from a multiplicative factor (the variance factor). Therefore, for the ℓ^{th} set, we can postulate¹:

$$\begin{cases} E(Y_\ell) &= \dot{Y}_\ell \\ cov(Y_k, Y_\ell) &= \delta_\ell^k \sigma_\ell^2 \Sigma_\ell \end{cases} \quad (II.2)$$

where Y_ℓ is the vector of observations (coordinates and velocities) in the ℓ^{th} set and δ_ℓ^k is the Kronecker symbol ($1 \leq \ell \leq p$). The variance factor σ_ℓ^2 is unknown and estimated iteratively through the Helmert-variance components estimation technique (Grafarend, 1984; Rao, 1973; Rao and Kleffe, 1988). The estimate $\hat{s}$ of the vector $s = (\sigma_1^2, \dots, \sigma_p^2)^T$ is given by :

$$\begin{cases} \hat{s} = \begin{pmatrix} \widehat{\sigma_1^2} \\ \vdots \\ \widehat{\sigma_p^2} \end{pmatrix} = H^{-1} \cdot q \\ H_{\ell,k} = \delta_\ell^k [n_\ell - 2tr(\nu N_\ell)] + tr(\nu N_\ell \nu N_k) \\ q_\ell = V_\ell^T \Sigma_\ell^{-1} V_\ell \end{cases} \quad (II.3)$$

where tr is the function trace and ν is the inverse of normal matrix of the whole adjustment. N_ℓ is the normal matrix of the ℓ^{th} solution and for which n_ℓ is the total number of observations; V_ℓ is the position and velocity residual vector of the combination. $\hat{s}$ is an unbiased estimate of s and the basic idea of constructing such estimator is to minimize, in the sense of the Gauss-Markov theorem, the variance of the resulting least square estimate (ν).

¹ $E(Y)$ is the expectancy of the random variable Y and $\dot{Y}$ is the exact value of Y ; $cov(X, Y)$ is the covariance matrix of X and Y .

III. Selected data for ITRF96

III.1. Solutions submitted by the IERS analysis centers

The selected solutions for the ITRF96 combination are coming from those received in 1997 as well as some past data. Table 1 summarizes the solutions used in the ITRF96 combination. For each individual solution, a summary description is given in the next section, as provided by the analysis centers.

Table 1. Selected Solutions for the ITRF96 analysis

Solution	Ref. Epoch	Data Span
<u>VLBI</u>		
SSC(GSFC) 97 R 01	93:001	79-97
SSC(GIUB) 97 R 01	93:001	84-96
SSC(NOAA) 95 R 01	93:001	79-94
SSC(JPL) 97 R 01	93:001	91-96
<u>SLR</u>		
SSC(CSR) 96 L 01	93:001	76-96
SSC(GSFC) 97 L 01	86:182	80-96
<u>GPS</u>		
SSC(EMR) 97 P 01	96:001	95-97
SSC(GFZ) 97 P 02	94:365	93-96
SSC(CODE) 97 P 02	95:076	93-97
SSC(EUR) 97 P 04	96:090	95-96
SSC(EUR) 97 P 03	96:339	96-97
SSC(MIT) 97 P 01	97:151	94-97
SSC(NCL) 97 P 01	96:001	95-97
SSC(JPL) 97 P 02	96:001	91-96
<u>DORIS</u>		
SSC(GRGS) 97 D 01	93:001	93-96
SSC(CSR) 96 D 01	93:001	93-96
SSC(IGN) 97 D 04	95:100	90-97

III.1.1. Summary of the VLBI solutions

III.1.1.1. SSC(GSFC) 97 R 01

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Mark III VLBI delay observations between Aug 1979 and Jan 1997 acquired by the NASA Crustal Dynamics Project, POLARIS/IRIS organized by NOAA, the Communications Research Laboratory (Japan), the Geographical Survey Institute (Japan), the University of Bonn Geodetic Institute, the National Astronomical Observatory (Japan), the Naval Research Laboratory Reference Frame Program, the USNO NAVNET/ NAVEX, the NASA Space Geodesy Program-GSFC, and the National Earth Orientation Service (USA) have been analyzed for the complete set of RSC, SSC, SSV, and EOP. There are 128 points in the TRF and the CRF includes 600 radio sources. The origin and orientation of the TRF are connected to ITRF94 at 1993.0 by applying no net horizontal translation and no net rotation constraints to the position adjustments of nine stations with uniform station weighting for both constraints. The evolution of the TRF is connected to NNR-NUVEL1A by applying no net horizontal translation and no net rotation constraints to the velocity adjustments of five (of the nine above) stations with uniform station weighting for both constraints. The right ascension origin and orientation of the CRF are connected to ITRF95 by applying a no net rotation constraint to the position adjustments of the 212 ITRF95 defining sources with weighting proportional to the precision of the source positions. Three-dimensional velocities are adjusted for all sites with constraints for those sites with insufficient data. EOP values from 24-hr sessions are available at minimum weekly, and there are continuous periods up to two-weeks duration.

III.1.1.2. SSC(GIUB) 97 R 01

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V. Thorandt, D. Ullrich Institute for Applied Geodesy (IfAG) Karl-Rothe-Strasse 10-14 D-04105 Leipzig, Germany E-mail: vt@leipzig.ifag.de

G.D. Nicolson Hartebeesthoek Radio Astronomy Observatory (HartRAO) PO Box 443, Krugersdorp 1740, South Africa E-mail: george@bootes.hartrao.ac.za

Observing technique: VLBI, group delay observables Data span: January 1994 - December 1996 (1052 sessions) Type of results: EOP, RSC, SSC - station coordinates and velocities ($X_0, Y_0, Z_0, \dot{X}, \dot{Y}, \dot{Z}$) - right ascension and declination of radio sources - earth orientation parameters ($X, Y, UT1-UTC, d\psi, d\epsilon$) - others: clock polynomials, wet zenith tropospheric delays - reference epochs for UT1-UTC and polarmotion: midnight epochs of each measurement - nutation offsets were estimated at the beginning of each experiment - number of sites: 43, number of radio sources: 293 - The orientation of the Celestial Reference Frame is defined by the ICRF (1995) WGRF Right Ascension value of OJ287 and fixing the nutations to the model values on April 2, 1988. The initial orientation and translation of the terrestrial reference frame is defined by fixing the ITRF94 coordinates of Wettzell and the IERS Rapid service EOP values on April 2, 1988. To avoid the singularities of the velocity vector field another 6 parameters were modelled, i.e. the height changes of HARTRAO were fixed to be zero and the motion of the station Wettzell as well as the orientation of the Wettzell- Westford baseline vector were modelled according to NNR-NUVEL-1A.

III.1.1.3. SSC(NOAA) 95 R 01

J.R. Ray, M.D. Abell, W.E. Carter, W.H. Dillinger, and M.L. Morrison, Geosciences Laboratory, NOAA N/OES13, SSMC-4, 1305 East-West Highway, Silver Spring, Maryland 20910-3281, USA

Two solutions are submitted using most of the available Mark III VLBI data from 1980 September through 1994, including 1216103 group delay observations from 1774 24-hour sessions. NOAA 95 R 01 includes estimated values for radio source coordinates, terrestrial site coordinates and velocities, and a time series of Earth orientation parameter values. A separate series of quasi-daily UT1 values is provided in NOAA 95 R 02, referred to the NOAA 94 R 01 reference frames.

The geocentric origin of the SSC(NOAA)95R01 terrestrial reference frame is specified for the epoch 1988.0 by constraining the vector sum of the adjusted coordinates for 20 VLBI sites to equal the corresponding sum for ITRF92. The net translational and rotation motions of the frame are specified by constraints on the vector sums of the respective adjusted velocity components for 10 VLBI sites using the NNR-NUVEL-1A model as the reference. Coordinates and velocity estimates are reported for 111 sites at epoch 1993.0; coordinates for 30 sites with insufficient data are projected using NNR-NUVEL-1A velocities. The full covariance matrix is also provided.

The right ascension origin of the RSC(NOAA)95R01 celestial reference frame at epoch J2000.0 is specified by constraining the sum of the adjusted RA values for 71 radio sources (weighted by cosine of declination) to equal the sum from RSC(IERS)93R01. Coordinates for 249 radio sources are reported.

EOP(NOAA)95R01 gives the adjusted EOP values for 1772 epochs; EOP values for the reference epoch 1991 August 12 19:49:50 have been held fixed at the interpolated values from the EOP(IERS) 90 C04 series. UT1 estimates are reported for 2397 epochs in EOP (NOAA) 95 R02. All tidal effects are included, including diurnal and semi-diurnal variations.

III.1.1.4. SSC(JPL) 97 R 01

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JPL. NASA's Deep Space Network operates radio telescopes in three complexes: in Australia, Spain, and the USA (California). VLBI data collected from these sites by JPL between 1978 and 1997 were analyzed for celestial and terrestrial frames and earth rotation parameters, and reported as JPL 97 R 01. The celestial frame gives coordinates for 287 radio sources and is tied to RSC(IERS)94 C 01 through three coordinates of two sources. The terrestrial frame gives station coordinates and velocities for 10 stations in 3 sites, and is tied to ITRF-93 in both location and velocity using one station in each site. The analysis gives a time series EOP(JPL)97 R 01 containing the UT0-UTC and Variation of Latitude of a baseline vector at a frequency of two measurements per week. Additional earth rotation information is provided in estimated corrections to precession, obliquity rate, celestial pole offsets at epoch, 23 coefficients of nutation terms, and 40 coefficients of a parametric model for the nearly-diurnal and nearly- semidiurnal tidal frequency variations of UT1 and polar motion.

III.1.2. Summary of the SLR solutions

III.1.2.1. SSC(CSR) 96 L 01

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M. M. Watkins Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA 91109

Station positions and velocities were derived from a combination of Lageos-1 and Lageos-2 SLR data. Lageos-1 data from May 7, 1976 through February 6, 1996 and Lageos-2 data from October 25, 1992 through February 6, 1996 was used. Earth orientation parameters were computed only from the Lageos-1 data. Epoch positions and velocities were adjusted for all sites using 100 mm/yr a priori sigma for the velocities. This constraint was insignificant for the strongest sites, while for the weakest sites it resulted in velocities

which deviated only slightly from their a priori values. When available, a priori positions and velocities were taken from ITRF94. Otherwise, a priori positions were from earlier SLR solutions and velocities were from the NUVEL-1 NNR plate motion model. The velocities of all points at a given site were constrained to be equal. The solution for both positions and velocities was fiducial free, and the reference frame singularities were removed by using internal constraints on the rotation and rotation rate. The solution was then transformed to have no rotation or rotation rate with respect to ITRF94. The resulting polar motion series had significant linear trends with respect to the IERS C04 series, hence additional rotations and rotation rates about the x and y axes were applied to remove them. Earth orientation parameter solutions were made at 3-day intervals subject to the condition that the posteriori uncertainties were less than specified values. If the solution for a given 3 day interval yielded unacceptably large uncertainties the interval was extended by 3 days and the solution repeated. UT1 estimates were obtained from the Lageos-1 node residuals, with the constraint that they follow the JPL COMB95 series at periods longer than about 30 days.

III.1.2.2. SSC(GSFC) 97 L 01

D.E.Smith and R.Kolenkiewicz NASA/Goddard Space Flight Center, Greenbelt MD 20771
P.J.Dunn and M.H.Torrence Hughes STX Corp.,Greenbelt, MD 20770
E.C.Pavlis U. of Md. Dept. of Astronomy and NASA/GSFC, Greenbelt, MD 20771

The GSFC 97L solution was obtained by fitting data from LAGEOS I between January 1980 and December 1996 in 30 day arcs, and once per year (in July) in 35 day arcs, using normal points from the global SLR tracking network. The monthly arcs were combined to derive a set of station positions and station velocities. Earth Orientation Parameters were estimated as independent values of time and polar motion at 5 day intervals from January 1980 through December 1982, and daily intervals since January 1983. The LOD values given are for an epoch midway between the Xp Yp values. Orbit and force model parameters were adjusted at 15 day intervals until January 1990, and at 5 day intervals thereafter. The IERS standards were followed except that the JGM3 gravity field with expanded ocean tidal terms, and a value of GM 398600.4415 km³/s² were adopted.

III.1.3. Summary of the GPS solutions

III.1.3.1. SSC(EMR) 97 P 01

R. Ferland, P. Tetreault, D. Hutchison, C. Huot, J. Kouba, J. Popelar, Geodetic Survey Division (GSD), Geomatics Canada, Natural Resources Canada (NRCan) (Formerly: Energy Mines and Resources (EMR)), 615 Booth St., Ottawa, Ont. K1A 0E9

NRCan (formerly EMR). The 1995 and 1996 daily solutions were rigorously combined using unconstrained variance-covariance matrices to derive consistent sets of SSC(EMR) 97 P 01 (epoch 1996.0), and EOP(EMR) 97 P 01. The new EOP(EMR) 97 P 01 solution contains daily PM x, y and UT1-UTC, LOD, apriori PM x,y rates and apriori CP(IERS Bull A) corrections from Jan. 01/96 (MJD 50083.5), from June 30/96 (MJD 50264.5) to Dec. 31/96 estimated PM x,y rates and sigmas. Additionally, from June 30/96 as recommended by IGS, the IERS subdaily EOP model is employed in EMR analysis. However, the reported EOP, as it is now required by IERS, do not include the subdaily EOP effects. The terrestrial reference frame origin and orientation are determined by the ITRF94 coordinates and velocities of the 13 fiducial stations, as recommended by IGS. The time evolution is highly constrained by the ITRF94 station velocities for the 13 stations. The EOP orientation and time evolution is thus consistent with the ITRF94 station coordinates/velocities and the SSC(EMR) 97 P 01. The estimated UT1-UTC is continuous and it was initialized on Jan. 2, 1994 to a Bull. A value. Although complete variance-covariance matrices between SSC/SSV and EOP were evaluated and are available, only a fully populated SSC/SSV covariance matrix was submitted for the SSC(EMR) 97 P 01.

III.1.3.2. SSC(GFZ) 97 P 02

G. Gendt, G. Dick, Ch. Reigber, W. Sommerfeld, Th. Nischan, G. Beeskow GeoForschungs Zentrum (GFZ) Potsdam

A global Set of Station Coordinates (SSC(GFZ) 97 P01) and Earth Rotation Parameters (ERP(GFZ) 97 P01) have been computed using the global GPS data spanning 4 years from January 1, 1993, to December 31, 1996, and the GFZ analysis software package EPOS.P.V2.

The number of sites used varies from 23 in 1993 to 63 in 1996. To solve for the SSC(GFZ) 97 P01 the site velocities were fixed to the ITRF94 velocities and the station coordinates were aligned to the ITRF94 system by a 7-parameter similarity transformation. The daily ERP results (ERP(GFZ) 97 P01 with x, y, LODR) are consistent with this coordinate set. Since June, 30 1996 the the daily and sub-daily polar motion and UT1 are modelled according IERS 1996 Standards.

In addition results from simultaneous adjustment of station coordinates and velocities are presented (SSC(GFZ) 97 P02). The velocities for all sites with more than half a year of observations were computed, the velocities for the other sites were fixed to ITRF94.

III.1.3.3. SSC(CODE) 97 P 02

M. Rothacher, G. Beutler, E. Brockmann, S. Fankhauser, S. Schaer, T. Springer (Astronomical Institute, University of Berne, rothacher@aiub.unibe.ch); U. Wild, A. Wiget (Federal Office of Topography, Wabern, adrian.wiget@se264.lt.admin.ch);

H. Seeger (Institute for Applied Geodesy, Frankfurt, seeger@gps.ifag.de);

C. Boucher (Institut Geographique National, Paris, boucher@ensg.ign.fr)

The solution made available to the IERS by the CODE Analysis Center of the IGS for the 1996 submission was produced as a combined, consistent analysis of both, the earth rotation parameters (x, y of pole and UT1-UTC) and the station coordinates and velocities using as observations the GPS data of the global IGS network. The UT1-UTC series was obtained by integration of the estimated LOD values (the first UT1-UTC value fixed to the Bulletin A solution). The time interval covered by the solution starts on day 200 of the year 1993 (July 19, 1993) and ends on day 060, 1997 (March 1, 1997). The spacing between subsequent EOP values is one day. The number of daily global IGS stations processed at CODE grew from about 35 (in 1993) to about 85 (in 1997). Regarding the satellite orbits the series is not homogeneous because the satellite orbit modeling was changed (improved) a few times. Concerning the EOP series we have to mention that sub-daily EOP variations were modeled (Ray model) starting with June 30, 1996, only.

III.1.3.4. SSC(EUR) 97 P 03 and P04

T.A. Springer, G. Beutler, W. Gurtner, M. Rothacher, S. Schaer (Astronomical Institute, University of Berne, springer@aiub.unibe.ch);

The solutions made available to the IERS by the EUREF combination center for the 1997 submission were produced based on the weekly EUREF combined solutions. It contains only site coordinates and velocities in the SINEX format. All results are based on GPS observations only! Two solutions were generated: EUR97P93 which is based on all results prior to GPS week 860, and EUR97P94 which is based on all results from GPS week 860 to 904. This was necessary since in week 860 the reference frame, as given by the (IGS) orbits of the GPS satellites, was changed from the ITRF93 to the ITRF94. Therefore a "jump" is present in the EUREF coordinates solutions. The IERS requested the submission of 2 separate solutions.

The EUREF weekly combinations are based on the results produced by the following EUREF Analysis Centers:

Contributing Solutions:

Group Description	STA	DATA-SPAN (gpsweek)	WEEKS
ASI - Nuova Telespazio S.p.A., Space Geodesy Center	7	0867-0904	35
BEK - International Commission for Global Geodesy of the Bavarian Academy of Sciences (BEK)	14	0834-0904	71
COE - European solution created at CODE (Center for Orbit Determination in Europe)	37	0834-0904	71
GOP - Geodetic Observatory Pecny, Czech Republic	11	0890-0904	15
IFG - Institute for Applied Geodesy in Germany (IfAG)	16	0834-0904	71
LPT - Bundesamt fuer Landestopographie (L+T), Switzerland	6	0880-0904	25
NKG - Nordic Geodetic Commision (NKG)	27	0878-0904	26
OLG - Observatory Lustbuehel Graz (OLG)	17	0853-0904	51
ROB - Royal Observatory of Belgium (ROB)	12	0836-0904	69
WUT - Warsaw University of Technology (WUT)	16	0834-0904	66
EUR - Euref Combined solution in ITRF93 (EUR97P93)	39	0834-0859	26
EUR - Euref Combined solution in ITRF94 (EUR97P94)	57	0860-0904	45

Each of the EUREF Analysis Centers provides a weekly SINEX file containing their coordinate estimates. These individual solutions are combined to give the official EUREF solution which is submitted to the IGS to be included in the IGS densification project. These weekly EUREF results have been combined to produce this EUREF contribution to the IERS. The EUREF combinations are performed officially since gpsweek 0860 (June 30, 1996) but have been available since gpsweek 0834. Because of some problems with the earlier EUREF weekly SINEX files all weekly combinations have been redone in order to get a clean set of weekly EUREF SINEX files.

Note that for the following sites, which were available for only a few weeks in either one of the two solutions, the velocity was constrained to the Nuvel-1 velocities.

These sites are:

SITE	WEEKS	
SFER 13402M004	3	EUR97P93
OBER 14208M001	18	EUR97P94
SODA 10513M001	12	EUR97P94

III.1.3.5. SSC(MIT) 97 P 01

Tom Herring Massachusetts Institute of Techonology, Cambridge, Massachusetts, USA

We combined GPS SINEX files submitted to the CDDIS by the 7 IGS analysis centers and the 6 regional analysis centers for the period from GPS week 818 to Week 900. In the combination, the station positions were assumed to evolve with linear rates after correcting most of the height discontinuities in the original SINEX files due to incorrect antenna heights (XIAN was one case missed in applying these corrections). The weights for the individual centers were determined using the algorithm discussed in our weekly SINEX summary files submitted to the CDDIS. In the combination, each center's station coordinates were allowed to rotate week-to-week, and between centers, but no explicit translation parameters were estimated. All centers were deconstrained to levels between 1-5 meters before combination. For some centers, in some weeks, we needed to scale the diagonal elements of the covariance matrix by typically 1 part-per- million after deconstraining because of numerical stability problems in the matrices.

III.1.3.6. SSC(NCL) 97 P 01

Description not available

III.1.3.7. SSC(JPL) 97 P 02

M. B. Heflin, M. M. Watkins, D. C. Jefferson, F. H. Webb, and J. F. Zumberge Jet Propulsion Laboratory, California Institute of Technology, Pasadena, USA

Velocities and positions for 219 sites are based on 90174 station days of GPS data spanning six years from 1991 through 1996. Daily estimation was carried out with JPL's GIPSY software using strategies which generally adhered to IERS/IGS standards as described by Zumberge and Jefferson (1992), Heflin et al. (1992, 1994), Blewitt et al. (1992), Vigue et al. (1994), Zumberge et al. (1995), Bar Sever et al. (1995), and Zumberge et al. (1996). Post-processing involved the following steps. First, antenna heights were corrected on each day by comparing the value used during analysis with the true value from the IGS site logs. Second, all solutions were combine with their full covariance matrices to obtain position and velocity estimates. Next, the reference frame was defined by application of internal constraints and transformation into ITRF94. Site positions and velocities were backsubstituted into the the daily normal equations to produce an improved, consistent EOP series.

III.1.4. Summary of the DORIS solutions

III.1.4.1. SSC(GRGS) 97 D 01

L. Soudarin, J.F. Cretaux and A. Cazenave Groupe de Recherche de Geodesie Spatiale, Toulouse, France

The solution gives the station coordinates and velocities of 48 DORIS sites with good observing histories. The DORIS data of 4 years of SPOT2, SPOT3 and TOPEX / POSEIDON (january 1993 to december 1996) were treated for this solution. The data were computed on a daily basis for the SPOT2 and SPOT3 satellites and on a 3-days basis for the TOPEX/ POSEIDON satellites. The computations were made by a semi-dynamical approach in which the satellite orbits, station positions and velocities, and Earth orientation parameters are determined in a single inversion, together with selected parameters required to improve the force model and the measurement corrections. This method uses the GINS/ DYNAMO software developped for precise orbit computation and geopotential modelling. For the SSC solutions, the EOP parameters are being fixed to the IERS EOPC04 values. The gravity field model is JGM3 and the ocean tide model is FE95. The stations parameters (positions and velocities) were all estimated, to make the frame entirely free and connected to the IERS only by the EOP.

III.1.4.2. SSC(CSR) 96 D 01

M. M. Watkins Jet Propulsion Laboratory, California Institute of Technology, Pasadena, USA

J. C. Ries Center for Space Research, The University of Texas at Austin, Austin, USA

Positions and velocities have been computed for 47 separate DORIS beacons. The data set used consisted of 125 cycles (3.4 years) of tracking data to the Topex/Poseidon satellite. Although a total of over 60 beacons have tracked the Topex/Poseidon, SPOT-2, and SPOT-3 spacecraft, only 54 have sufficient data to estimate a reasonable velocity. The solution was performed without fiducial constraints on any site. Rotational constraints were applied to the network as a whole to remove the rotational singularity, and the network was aligned in rotation and rotation rate to the ITRF94 solution. Translation (geocenter)

and scale are left as estimated from the DORIS data. The force and measurement models generally adhered to the IERS standards. Earth rotation parameters were held fixed to the operational values from the University of Texas Center for Space Research CSR95L02 series.

III.1.4.3. SSC(IGN) 97 D 04

P. Willis, P. Sillard, Institut Geographique National, ENSG/LAREG, Marne-la-Vallee, France

Positions and velocities have been computed for all available DORIS beacons in the DORIS/IERS data sets (total of 70 stations including all the stations relocations). The data used was for SPOT-2 (1990: April to June; 1992: January to March; from March 1994 to July 1997), for SPOT3 (from March 1994 to October 1996) and for TOPEX (from October 1992 to July 1997), equivalent to 61 months in total. DORIS data were computed on a daily basis using a free-network approach (loose constraints). Daily stations coordinates covariance matrices were combined on a monthly basis and then combined in a global adjustment in order to obtain a global position/velocity matrix in the SINEX format. All stations were kept in this solution (even with very few data available), no local tie information was added. The solution was approximately aligned in rotation (only) to ITRF94 solution leaving the scale and origin information coming from the DORIS data. In the daily solutions, the pole was also estimated. In the DORIS data computation (done with the JPL GIPSY/OASIS software), models generally adhered to the IERS standards. The gravity field model used was JGM-3. The troposphere correction was estimated by pass using a constrained between passes (equivalent to 5 cm for 1 day between passes).

III.1.5. Local surveys

As an improvement of the use of the local ties, all the eccentricities of colocated sites were converted into a complete set of positions for each site, provided in SINEX format. Each SINEX file reflects correlations between the cartesian components of the points within each site. This has been achieved by solving for the following system of observation equations (III.1):

$$\begin{pmatrix} \Delta x_s^{i,j} \\ \Delta y_s^{i,j} \\ \Delta z_s^{i,j} \end{pmatrix} = \begin{pmatrix} x^j - x^i \\ y^j - y^i \\ z^j - z^i \end{pmatrix} \quad (\text{III.1})$$

Where $(\Delta x_s^{i,j}, \Delta y_s^{i,j}, \Delta z_s^{i,j})$ are the geocentric components of the tie vector linking two points i and j , of a given data set s . The standard deviations (SD) $(\sigma \Delta x_s^{i,j}, \sigma \Delta y_s^{i,j}, \sigma \Delta z_s^{i,j})$ for each local tie vector are used to compute a diagonal variance matrix. If these SD are not available, they are computed by :

$$\sigma_{computed} = \sqrt{\sigma_1^2 + \sigma_2^2} \quad (\text{III.2})$$

where,

$$\sigma_1 = 3 \text{ mm} \quad \text{et} \quad \sigma_2 = 10^{-6} \times \sqrt{(\Delta x_s^{i,j})^2 + (\Delta y_s^{i,j})^2 + (\Delta z_s^{i,j})^2}$$

The equation system (III.1) needs of course initial coordinates for one point per tie vector set s , which are taken from ITRF94 solution with 1 meter as standard deviation.

Table T3 of the appendix lists the local ties vectors used in the ITRF96 combination.

IV. The ITRF96 Data Analysis

The data analysis performed in view of the ITRF96 establishment are mainly: comparison of the individual solutions with ITRF94, combination of the solutions within each technique and a global combination of all the solutions together with the local ties of colocated stations.

IV.1. Comparison to ITRF94

Among those selected for the ITRF96 combination, each individual solution was compared to the ITRF94 in order in one hand to estimate the transformation parameters of the system attached to the solution with respect to ITRF94 and, on the other hand, the level of agreement with the ITRF94 values.

IV.2. Combination per Technique

In order to assess the relative quality of the individual solutions, independently from the influence of local ties, a combination within each technique was also performed. Matrix Scaling Factors have been rigorously estimated during the combined adjustment of the solutions.

IV.3. The ITRF96 Global Combination

The ITRF96 global combination is achieved with the following properties:

- It includes the 17 selected space geodetic solutions provided by the IERS analysis centers and 70 SINEX files containing positions and covariances, computed from local ties;
- The reference frame definition (origin, scale, orientation and time evolution) of the combination is achieved in such a way that ITRF96 is in the same system as the ITRF94, for more details about the latter, see (Boucher et al., 1996);
- Velocities are constrained to be the same for all points within each site;
- Matrix Scaling Factors have been rigorously estimated during this combined adjustment which was then iterated.

V. ITRF96 Results

The ITRF96 adjusted coordinates at epoch 1997.0 and velocities were split into 4 tables corresponding to the 4 techniques: VLBI, SLR, GPS and DORIS. These Tables are available in the Appendix (Tables: T4, T5, T6 and T7). The ITRF96 SINEX file as well as SINEX per technique are all available, (see section 4 hereafter).

Table T8 of the Appendix contains the adjusted transformation parameters at the epoch of each individual solution as well as the corresponding rates. The transformation parameters are from each individual solution to the ITRF96 and should be used with the equation (V.1). The rates have to be considered as annual variations to the transformation parameters and should be used with equation (V.2). On the other hand, for a given transformation parameter T provided at an epoch t_k , its value at an epoch t in years could be obtained by equation (V.3).

$$\begin{pmatrix} X_s \\ Y_s \\ Z_s \end{pmatrix} = \begin{pmatrix} X \\ Y \\ Z \end{pmatrix} + \begin{pmatrix} T1 \\ T2 \\ T3 \end{pmatrix} + \begin{pmatrix} D & -R3 & R2 \\ R3 & D & -R1 \\ -R2 & R1 & D \end{pmatrix} \begin{pmatrix} X \\ Y \\ Z \end{pmatrix} \quad (V.1)$$

$$\begin{pmatrix} \dot{X}_s \\ \dot{Y}_s \\ \dot{Z}_s \end{pmatrix} = \begin{pmatrix} \dot{X} \\ \dot{Y} \\ \dot{Z} \end{pmatrix} + \begin{pmatrix} \dot{T1} \\ \dot{T2} \\ \dot{T3} \end{pmatrix} + \begin{pmatrix} \dot{D} & -\dot{R3} & \dot{R2} \\ \dot{R3} & \dot{D} & -\dot{R1} \\ -\dot{R2} & \dot{R1} & \dot{D} \end{pmatrix} \begin{pmatrix} X \\ Y \\ Z \end{pmatrix} \quad (V.2)$$

With, X, Y, Z are the coordinates in the ITRF96, and X_s, Y_s, Z_s are the coordinates in the individual system.

$$T(t) = T(t_k) + \dot{T} \times (t - t_k) \quad (V.3)$$

VI. Analysis of the ITRF96 results

The quality analysis of the ITRF96 results is based more specifically on global residuals per solution (Table 2) as well as per site. All residuals on a site-by-site basis resulting from the combination are available in the Appendix. In terms of ITRF96 quality, the position and velocity spherical formal errors plotted in Figure 2 demonstrate an improvement of the ITRF96 with respect to ITRF94.

Table 2. Global ITRF96 residuals per solution

Solution	Number of points	Position RMS mm	Epoch	Velocity RMS mm/y
<u>VLBI</u>				
SSC(GSFC) 97 R 01	120	5.80	93:001	1.90
SSC(GIUB) 97 R 01	43	13.60	93:001	.50
SSC(NOAA) 95 R 01	111	14.70	93:001	1.90
SSC(JPL) 97 R 01	8	20.70	93:001	
<u>SLR</u>				
SSC(CSR) 96 L 01	89	11.10	93:001	3.80
SSC(GSFC) 97 L 01	38	10.90	86:182	1.70
<u>GPS</u>				
SSC(EMR) 97 P 01	36	10.00	96:001	3.50
SSC(GFZ) 97 P 02	66	16.80	94:365	3.30
SSC(CODE) 97 P 02	100	7.10	95:076	1.90
SSC(EUR) 97 P 04	39	2.40	96:090	.30
SSC(EUR) 97 P 03	58	2.90	96:339	.30
SSC(MIT) 97 P 01	132	8.50	97:151	9.20
SSC(NCL) 97 P 01	114	5.40	96:001	6.30
SSC(JPL) 97 P 02	113	9.40	96:001	3.80
<u>DORIS</u>				
SSC(GRGS) 97 D 01	48	26.90	93:001	8.00
SSC(CSR) 96 D 01	54	26.10	93:001	10.60
SSC(IGN) 97 D 04	62	28.30	95:100	12.80

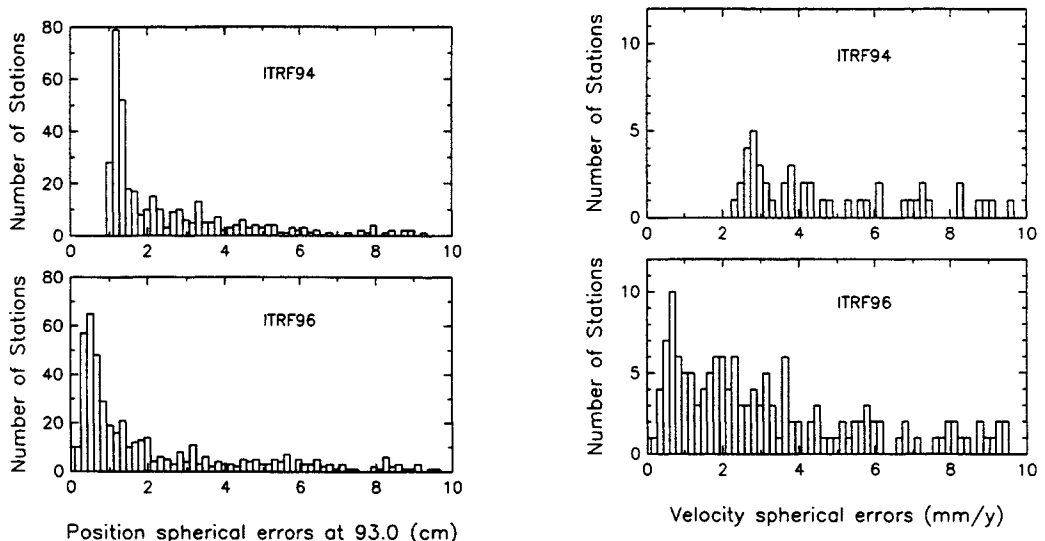


Figure 2. Position and velocity spherical formal errors

VII. Solutions not included in ITRF96

VII.1. Description of the solutions

VII.1.1. Summary of the VLBI solutions

VII.1.1.1. SSC(IAA) 97 R 01

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The VLBI group at the Institute of Applied Astronomy (IAA) have analyzed 192 VLBI sessions from NEOS-A network from 05-May-1993 till 30-December-1996. The SSC(IAA)97R01 solution includes terrestrial reference frame: SSC (positions

of 8 stations) and SSV (velocities of 6 stations). Reference frame is established by ICRF 94 and coordinates of Wettzell from ITRF 94. The orientation of the TRF and CRF is defined by one-day EOP (IERS) C 04 values. The EOP(IAA)97R01 solution includes EOP estimates with 7-day intervals. CRF is established by ICRF 94. TRF is close to ITRF 94 exception KAUAI, NRAO20 and MIAMI20 coordinates which have been taken from IAA 97 R01.

VII.1.1.2. SSC(GAOUA) 97 R 01

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The GAOUA 97 R 01 solution is based on the VLBI data acquired on various networks during 6 years since 02 January 91 till 28 January 97. The solution consist of RSC (129 radio sources), SSC (39 stations), SSV (26 stations) and EOP. The radio sources coordinates have been constarined by requiring the sum of right ascension of 46 sources equals the corresponding sum from the solution RSC(IERS)95C02. The same no-translation constraint have been applied to fix the origin (coordinates of 17 stations linked to the ITRF94) and the rotation (velocities of 15 stations linked to NNR-NUVEL1A) of the terrestrial reference frame. The orientation between celestial and terrestrial reference frames is defined by the EOP(IERS)97C04 values for the date 13 November 1995.

VII.1.2. Summary of the LLR solutions

VII.1.2.1. SSC(FSG) 97 M 01

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H.Ruder, Theoretical Astrophysics, University Tuebingen Auf der Morgenstelle 10, 72076 Tuebingen, Germany

The solution is based on the LLR data acquired since the beginning of the observations (1970) until February, 1997. The station coordinates of five sites are estimated using the NNR-Nuvel1 plate motion model. The ephemeris of the major solar system bodies are computed with the FSG ephemeris programm; the lunar librations were integrated simultaneously. The initial values for the integration are taken from the ephemeris DE200. But the geocentric position and velocity of the Moon and the barycentric position and velocity of the Earth for a certain epoch are estimated during the fit. Corrections to precession and some nutation terms are applied or estimated. Input Earth rotation values are taken

from a solution from R. Gross (JPL). This solution is called COMB96 and is aligned with the IERS system. The estimated EOP result in time series of UT0-UTC and in time series of the variation of latitude (VOL) for the various stations. 1098 values for UT0-UTC and VOL have been computed. The intervals between the EOP values depend on the observations; the intervals are irregular (from less than 1 day up to several months).

VII.1.2.2. SSC(JPL) 97 M 01

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Lunar Laser Ranging (LLR) data between April 1970 and November 1996 have been analyzed to produce earth rotation values and station locations. There are 11218 ranges from McDonald (three sites), Grasse (OCA/CERGA), and Haleakala Observatories to four retroreflectors on the moon. These data have been analyzed in a global solution to estimate station locations, precession, 18.6 yr nutation and other parameters. After the global solution, values of UT0-UTC and variation of latitude (VOL) are generated for individual stations on individual days which have sufficient data. These 1670 UT0 and VOL values are irregularly spaced over a 26 year span. Solutions were made using the ephemeris DE330. The station location solution is designated SSC(JPL) 97 M 01 and the UT0/VOL values are called EOP(JPL) 97 M 01. DE330 is nominally on the IERS celestial reference frame.

VII.1.2.3. SSC(SHA) 97 M 01

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Lunar Laser Ranging (LLR) data have been analyzed during JD 2447187.0 - JD 2450435.0. These data from McDonald (71111, 71112), Grasse (1910) and Haleakala(56610) contain 6209 normal points reflected from four reflectors during Jan. 1988 - Dec. 1996. The 750 value of UT1 and the coordinates of the observing station 71112, 1910, 56610(the velocities of stations are fixed on the NNR-NUVEL1A model) and the lunar retro-reflectors are solved and submitted to IERS.

VII.1.3. Summary of the SLR solutions

VII.1.3.1. SSC(SHA) 97 L 01

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The solution EOP(SHA) 96 L 01 and were derived from Lageos quicklook normal point data of laser ranging from Jan.1,1995 to Dec.20,1996. The interval between the values in EOP(SHA) 96 L 01 is about 5 days. The SSC(SHA) 96 L 01 are from ITRF94 at epoch 93.0. There are 26 sites in the terrestrial frame. The most station coordinates of SSC(SHA) 96 L 01 were fixed except for 1884,1953,7295,7810,7811,7835,7838. But 7837 station coordinates are fixed at the values which are different from the values of 7837 in ITRF94. Because 7837 station coordinates in ITRF94 include about a system error about 10 cm.

VII.1.3.2. SSC(CGS) 97 L 01

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The CGS 97 L 01 solution is derived from a combination of Lageos -I observations acquired from January 1985 to December 1996, and Lageos-II observations from November 1992 to the same end date. The gravity model used is JGM-3. Station coordinates at epoch January 1993 have been adjusted for the global network of mobile and fixed SLR sites, keeping the orientation of the terrestrial system by constraining the cartesian coordinates of Herstmonceux (7840) and Washington (7105) to the a-priori values. The time evolution of the terrestrial system is constrained to the ITRF94 velocity field for all the sites. The main objective of this solution is the estimation of daily values for Earth orientation parameters (x , y and UT1R-UTC, EOP(CGS 97 L 01)), keeping UT1R fixed to IERS bulletin B values at the epochs when satellites node have been estimated (every 30 days).

VII.1.3.3. SSC(GAOUA) 97 L 01

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The solution GAOUA 97 L 01 is based on the SLR global network data of Lageos-1 since September 1, 1983 through December 28, 1996 and Lageos-2 since October 24, 1992 through December 30, 1996. Totally 1,065,896 normal points have been processed using Kiev-Geodynamics-5.2 software. The solution consists of ERP (X_p , Y_p , UT1-UTC) sets at three-day intervals from MJD 45583 till MJD 50440, coordinates of 98 stations at epoch January 1, 1993 (MJD 48898) and velocities of 43 sites (58 stations) with good observing histories. Terrestrial reference frame is attached to ITRF94 by fixing the latitude of station 7105 (Greenbelt) and 7210 (Haleakala) and longitude of station 7105. The station velocities are linked to NNR-NUVEL1A by fixing the rate of these parameters to the values given by the NNR-NUVEL1A model. Transformation from the Celestial Reference Frame to the Terrestrial Reference Frame is modelled using IAU (1976) precession model, IAU (1980) nutation model, a priori values of celestial pole offsets and ERP from EOP(IERS97)97C04 series.

VII.1.3.4. SSC(GZ) 97 L 01 & 02

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The GeoZUP solutions GZ97101 and GZ97102 are based on QL-NP data for both Lageos from the end of 92 to the end of 96. Both solutions are monoteknique/multisatellite and estimate laser network simultaneously with 6-days SV and some biases. The first was done for Russian Mission Control Center specially to adjust laser network and EOP(IERS)C04 serie and finally to improve accuracy of operational PM and LOD values calculated in MCC. It is used in MCC computations of PM and length of day from May 1997. The second one is primary solution with 3-days interval between PM parameters. 50 stations and 30 site velocities were computed in both solutions. Orientation and time evolution are in agreement with latitude and longitude of 7105 and latitude 7840 and their rates from ITRF94. Weighted RMS of residuals in solutions are equal 2cm and 1.9cm respectively.

VII.1.3.5. SSC(IFAG) 97 L 01

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Earth orientation parameters and station positions were derived from the analysis of Lageos-1 SLR data with UTOPIA software. Observation data from January to December 1996 was used. The EOPs have been determined for 3-day intervals. The number of observation sites is 37. Coordinates have been estimated for 35 stations. The terrestrial reference frame is oriented to agree with ITRF93 by fixing the latitude and longitude of the site

Maui (7210) and the latitude of the site Greenbelt (7105). The time evolution of the system is modelled by NNR-NUVEL1A. The UT1 results are constrained to follow the EOP(IERS) 97 C 04 series at intervals of 30 days.

VII.1.3.6. SSC(DUT) 97 L 01

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The solution EOP(DUT) 97L01 consists of a coherent set of Earth Orientation Parameters (EOPs), determined from SLR observations of LAGEOS-1 taken in the period September 1983 to December 1993 and of LAGEOS-2 in the period October 1992 to December 1993. The solutions are obtained for 3-day intervals. Essential for this computation was the development of the model representing the instantaneous positions for the observing stations. This model, SSC(DUT) 97C01, was derived in a combined analysis of the SLR data mentioned above, and GPS data taken during the EUREF89 campaign (May 1989), the WEGENER/GPS92 and WEGENER/GPS94 campaigns (August 1992 and 1994, respectively), and the European component of the IGS network (January 1993 to December 1996). The ground segment includes a total of 101 stations. The reference epoch is January 1, 1993. The kinematic component of SSC(DUT) 97C01 basically follows the NUVEL-1A NNR model, which is effectuated by constraining the motion solutions for 15 globally distributed stations in a Bayesian way to the corresponding geophysical values.

VII.2. Analysis of the solutions

The solutions submitted in 1997 and not included in ITRF96 combination were a posteriori compared to the ITRF96, using diagonal variances only. Tables T10 and T11 of the appendix give respectively the transformation parameters and global residuals with respect to ITRF96.

The causes of rejection of these solutions from the ITRF96 combination are mainly due to:

- structure and format SINEX problems for some solutions
- some other solutions did not estimate velocities.

VIII. Access to the ITRF96 files

All the ITRF96 related files are available via Internet:

<http://lareg.ensg.ign.fr/ITRF/ITRF96.html>

The SINEX files are available by anonymousftp :

ftp lareg.ensg.ign.fr (195.220.92.14)

username: anonymous

password: e-mail address

move to the itrf96 directory (cd pub/itrf/itrf96

- compressed ITRF96 SINEX file (ITRF96.SNX.gz, about 52 Mbytes)
- compressed ITRF96_VLBI SINEX file (ITRF96_VLBI.SNX.gz, about 3.7 Mbytes)
- compressed ITRF96_SLR SINEX file (ITRF96_SLR.SNX.gz, about 3.3 Mbytes)
- compressed ITRF96_GPS SINEX file (ITRF96_GPS.SNX.gz, about 7.6 Mbytes)
- compressed ITRF96_DORIS SINEX file (ITRF96_DORIS.SNX.gz, about 0.8 Mbytes)
- compressed ITRF96_EUR_GPS_PERM SINEX file (ITRF96_EUR_GPS_PERM.SNX.gz, about 0.6 Mbytes)
- compressed ITRF96_EUROPE SINEX file (ITRF96_EUROPE.SNX.gz, about 4.1 Mbytes)
- compressed ITRF96_IGS_RS47 SINEX file (ITRF96_IGS_RS47.SNX.gz, about 0.5 Mbytes)

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APPENDIX

Tables:

- T1: Catalogue of the IERS sites
- T2: Directory of the IERS stations
- T3: Local eccentricities for IERS sites
- T4: ITRF96 VLBI Station Coordinates at epoch 1997.0 and velocities
- T5: ITRF96 SLR Station Coordinates at epoch 1997.0 and velocities
- T6: ITRF96 GPS Station Coordinates at epoch 1997.0 and velocities
- T7: ITRF96 DORIS Station Coordinates at epoch 1997.0 and velocities
- T8: Transformation parametres from ITRF96 to individual solutions
- T9: Residuals per site of the ITRF96 combination
- T10: Transformation parameters and their rates from ITRF96 to individual frames not included in the ITRF96 combination
- T11: Global residuals of the individual solutions not included in the ITRF96 combination

Table T1: Catalogue of the IERS sites

DOMES Number	Name	Country	Long. d m	Lat. d m	Plate
10002	GRASSE	France	6 55	43 45	EUR A
10003	TOULOUSE	France	1 29	43 34	EUR A
10004	BREST	France	355 30	48 24	EUR A
10077	AJACCIO	France	8 44	41 56	EUR A
10101	COPENHAGUE	Denmark	12 30	55 44	EUR A
10112	HOVVIG	Denmark	8 07	56 10	EUR A
10202	REYKJAVIK	Island	338 07	64 14	EUR A
10204	HOFN	Island	350 48	64 16	EUR A
10302	TROMSO	Norway	18 56	69 40	EUR A
10307	OSLO	Norway	10 39	59 50	EUR A
10317	NY-ALESUND	Norway	11 56	78 55	EUR A
10322	DOMEN	Norway	31 02	70 20	EUR A
10325	HONEFOS	Norway	10 15	60 36	EUR A
10329	TRYSIL	Norway	12 23	61 25	EUR A
10330	STAVANGER	Norway	5 36	59 01	EUR A
10331	TRONDHEIM	Norway	10 19	63 22	EUR A
10402	ONSALA	Sweden	11 55	57 24	EUR A
10403	KIRUNA	Sweden	20 25	67 50	EUR A
10405	MARTSBO	Sweden	17 16	60 36	EUR A
10422	KIRUNA/ESRANGE	Sweden	21 04	67 53	EUR A
10423	VISBY	Sweden	18 22	57 39	EUR A
10424	VILHELMINA	Sweden	16 34	64 42	EUR A
10503	METSAHOVI	Finland	24 23	60 13	EUR A
10511	VAASA	Finland	21 46	62 58	EUR A
10512	JOENSUU	Finland	30 06	62 23	EUR A
10513	SODANKYLA/PITT.	Finland	26 23	67 25	EUR A
11001	GRAZ	Austria	15 30	47 04	EUR A
11005	PFANDER	Austria	9 47	47 30	EUR A
11006	INNSBRUCK/HAFEL.	Austria	11 22	47 15	EUR A
11028	REISSECK	Austria	13 22	46 55	EUR A
11029	PATSCHERKOFEL	Austria	11 29	47 13	EUR A
11101	SOFIA	Bulgaria	23 21	42 41	EUR A
11206	PENC	Hungary	19 17	47 48	EUR A
11502	PECNY/ONDREJOV	Czech Repub.	14 47	49 55	EUR A
11507	MODRA-PIESOK	Czech Repub.	17 16	48 21	EUR A
12108	LJUBLJANA	Slovenia	14 30	46 05	EUR A
12204	JOZEFOSLAW	Poland	21 02	52 13	EUR A
12205	BOROWIEC	Poland	17 04	52 17	EUR A
12207	BOROWA GORA	Poland	21 02	52 29	EUR A
12209	LAMKOWKO	Poland	20 40	53 54	EUR A
12217	WROCLAW	Poland	17 04	51 07	EUR A
12309	MENDELEEVO	Russia	37 13	56 02	EUR A
12302	RIGA	Latvia	24 04	56 57	EUR A
12313	IRKOUTSK	Russia	104 21	52 17	EUR A
12329	SAKHALINSK	Russia	142 42	46 57	EUR A
12330	ZWENIGOROD	Russia	36 47	55 42	EUR A
12334	KITAB	Uzbekistan	66 53	39 08	EUR A
12337	SIMEIS-KATZIVELY	Ukraine	33 58	44 24	EUR A

12338	BADARY	Russia	102	15	51	45	EURA
12340	MAIDANAK	Russia	66	57	38	41	EURA
12341	KOMSOMOLSK-NA-AM.	Russia	136	45	50	42	EURA
12342	USSURIISK	Russia	136	45	50	42	EURA
12343	BALKHASH	Russia	136	45	50	42	EURA
12344	EVPATORIA	Russia	33	10	45	13	EURA
12347	DUNAOVCY	Russia	26	43	48	51	EURA
12348	BISHKEK	Russia	74	42	40	41	EURA
12349	KRASNOYARSK	Russia	92	50	56	00	EURA
12350	SVETLOE	Russia	29	47	60	32	EURA
12351	ZELENCHUKSKAYA	Russia	41	34	43	47	EURA
12352	SELEZASCHITA	Russia	77	01	43	11	EURA
12353	YAKUTSK	Russia	129	40	62	02	EURA
12354	MAGADAN	Russia	150	46	59	35	NOAM
12355	PETROPAVLOVSK-KAM.	Russia	158	36	53	04	NOAM
12602	DIONYSOS	Greece	23	56	38	05	EURA
12612	ASKITES	Greece	25	34	40	56	EURA
12613	ROUMELLI	Greece	24	42	35	24	EURA
12614	KARITSA	Greece	20	40	39	44	EURA
12615	KATAVIA	Greece	27	47	35	57	EURA
12616	XRISOKALARIA	Greece	21	53	36	47	EURA
12706	LAMPEDUSA	Italy	12	34	35	31	AFRC
12711	BOLOGNA	Italy	11	21	44	29	EURA
12717	NOTO	Italy	14	59	36	53	AFRC
12718	TRIESTE	Italy	13	53	45	39	EURA
12725	CAGLIARI	Italy	9	00	39	08	EURA
12734	MATERA	Italy	16	37	40	42	EURA
12741	VENEZIA	Italy	12	20	45	26	EURA
12749	MONTE VENDA	Italy	11	42	45	19	EURA
12750	PADOVA	Italy	11	53	45	25	EURA
13101	BRUSSELS	Belgium	4	22	50	48	EURA
13112	DENTERGEM	Belgium	3	24	50	56	EURA
13113	DOUBES	Belgium	4	35	50	06	EURA
13114	WAREMME	Belgium	5	15	50	42	EURA
13201	CHILBOLTON	UK	358	37	51	11	EURA
13212	HERSIMONCEUX	UK	21	50	52		EURA
13296	CARNUTSY	UK	357	13	56	29	EURA
13299	MORPETH	UK	358	19	55	13	EURA
13402	SAN FERNANDO	Spain	353	48	36	28	EURA
13406	VILLAFRANCA	Spain	356	03	40	27	EURA
13407	MADRID-ROBLEDO	Spain	355	44	40	26	EURA
13410	ROQUETES - TORTO.	Spain	0	30	40	49	EURA
13411	MADRID-FACULTAD	Spain	356	16	40	27	EURA
13420	YEBES	Spain	356	54	40	32	EURA
13502	DELFT	Netherlands	4	23	51	59	EURA
13504	KOOTWIJK	Netherlands	5	49	52	11	EURA
13506	WESTERBORK	Netherlands	6	36	52	55	EURA
13533	EIJSDEN	Netherlands	5	44	50	47	EURA
13534	TERSCHELLING	Netherlands	5	13	53	22	EURA
14001	ZIMMERWALD	Switzerland	7	28	46	53	EURA
14005	MONTE GENEROSO	Switzerland	9	01	45	56	EURA
14106	POTSDAM	Germany	13	04	52	23	EURA
14201	WETTZELL	Germany	12	53	49	09	EURA

14202	HOHENBUNSTORF	Germany	10	29	53	03	EURA
14208	OBERPFAFFENHOFEN	Germany	11	17	48	05	EURA
14209	EFFELSBERG	Germany	6	53	50	32	EURA
14213	HOHENPEISSENBERG	Germany	11	01	47	48	EURA
14216	KARLSRUHE	Germany	8	25	49	01	EURA
14260	KARLSBURG	Germany	13	37	53	59	EURA
14261	KIRSCHBERG	Germany	14	17	51	13	EURA
14302	NICOSIA-ATHALASSA	Cyprus	33	24	35	08	EURA
20101	RIYADH	Saudi Arabia	46	24	24	55	ARAB
20702	BAR GIYYORA	Israel	35	05	31	43	AFRC
20801	DIYARBAKIR	Turkey	40	12	37	55	EURA
20802	YOZGAT	Turkey	34	49	39	48	EURA
20803	MELENGICLICK	Turkey	33	11	37	23	EURA
20804	YIGILCA	Turkey	31	26	40	56	EURA
20805	ANKARA	Turkey	32	45	39	53	EURA
21501	EVEREST	Nepal	86	49	27	57	EURA
21601	PEKIN	China	116	19	40	06	EURA
21602	WUHAN	China	114	20	30	32	EURA
21604	PURPLE M	China	118	49	32	04	EURA
21605	SHANGHAI	China	121	26	31	01	EURA
21611	CHANGCHUN	China	125	27	43	47	EURA
21612	URUMQI	China	87	11	43	28	EURA
21613	LHASA	China	91	06	29	39	EURA
21614	SHAANKI	China	109	13	34	22	EURA
21701	KASHIMA	Japan	140	40	35	57	NOAM
21702	MIZUSAWA	Japan	141	12	39	07	NOAM
21704	TOKYO	Japan	139	29	35	43	NOAM
21705	DODAIRA	Japan	139	12	36	00	EURA
21709	OKINAWA	Japan	127	43	26	08	EURA
21718	MIYAZAKI	Japan	131	29	32	05	EURA
21725	NOBEYAMA	Japan	138	28	35	56	NOAM
21726	SIMOSATO	Japan	135	56	33	34	EURA
21729	USUDA	Japan	138	29	36	12	EURA
21730	TSUKUBA	Japan	140	05	36	06	NOAM
21731	SHINTOTSUGAWA	Japan	141	51	43	32	NOAM
21732	CHICHIJIMA	Japan	142	13	27	06	PHIL
21733	MINAMI TORI SHIMA	Japan	153	59	24	17	PCFC
21735	TSUSHIMA	Japan	129	25	34	24	EURA
21736	ISHIGAKI SHIMA	Japan	124	10	24	21	PCFC
21737	SAGARA	Japan	138	11	34	41	NOAM
21738	DAITO	Japan	131	14	25	50	PHIL
22006	MANILLE	Philippine	120	02	14	32	EURA
22306	BANGALORE	India	77	34	13	01	INDI
22601	SINGAPORE	Singapore	103	41	1	21	EURA
23101	CIBINONG	Indonesia	106	50	-6	29	EURA
23501	COLOMBO	Srilanka	79	52	6	54	INDI
23601	TAIPEI	Taiwan	121	32	25	01	EURA
23902	DAEJEON	Korea	127	23	36	24	EURA
23903	SUWON-SHI	Korea	127	03	37	17	EURA
24901	BAHREIN (JUFFAR)	Bahrein	50	36	26	13	ARAB
30101	HELWAN	Egypt	31	21	29	52	AFRC
30302	HARTEBEEESTHOEK	S. Africa	27	42	-25	53	AFRC
30304	OLIFANTSFONTEIN	S. Africa	28	15	-25	58	AFRC

30313	MARION ISLAND	S. Africa	37	51	-46	53	AFRC
30314	SUTHERLAND	S. Africa	20	48	-32	23	AFRC
30602	ASCENSION	GB	345	40	-7	57	AFRC
30604	TRISTAN DA CUNHA	GB	347	41	-37	03	AFRC
30606	SAINT-E-H	GB	354	17	-15	57	AFRC
30607	SIGNY ISLAND	GB	-45	36	-60	42	PCFC
30802	DIEGO GARCIA	GB	72	22	-7	15	INDI
31303	MASPALOMAS	Spain	344	22	27	46	AFRC
31901	FLORES	Portugal	328	52	39	27	AFRC
31903	SANTA MA	Portugal	334	55	37	00	AFRC
31906	SAO MIGUEL	Portugal	343	40	33	03	AFRC
32901	KUMASI	Ghana	-1	34	6	40	AFRC
34101	DAKAR	Senegal	-17	29	14	44	AFRC
32809	LIBREVILLE	Gabon	9	24	0	24	AFRC
33201	MALINDI	Kenya	40	13	-2	56	AFRC
33710	ARLIT	Niger	7	23	18	44	AFRC
39801	MAHE ISLAND	Seychelles	55	29	-4	40	AFRC
39901	DJIBOUTI	Djibouti	42	51	11	32	AFRC
40101	ST JOHNS	Canada	307	09	47	36	NOAM
40102	OTTAWA	Canada	284	05	45	24	NOAM
40103	PRINCE ALBERT	Canada	254	04	53	13	NOAM
40104	ALGONQUIN	Canada	281	56	45	57	NOAM
40105	PENITICTON	Canada	240	23	49	19	NOAM
40114	OTTAWA	Canada	284	17	45	24	NOAM
40118	WHITEHORSE	Canada	224	55	60	44	NOAM
40124	CALGARY	Canada	245	42	50	52	NOAM
40127	YELLOWKNIFE	Canada	245	32	62	29	NOAM
40128	CHURCHILL	Canada	-94	05	58	35	NOAM
40129	VICTORIA	Canada	236	31	48	23	NOAM
40130	HOLBERG	Canada	237	52	50	38	NOAM
40132	LA GRANDE	Canada	281	26	51	42	NOAM
40133	SCHEFFERVILLE	Canada	293		55		NOAM
40134	WILLIAMS LAKE	Canada	237	50	52	14	NOAM
40135	FLIN FLON	Canada	-101	59	54	44	NOAM
40136	WHITEHORSE GPS	Canada	224	47	60	45	NOAM
40137	LAC DU BONNET	Canada	264	08	50	16	NOAM
40138	NANOOSE	Canada	235	55	49	18	NOAM
40139	CHEEKA PEAK	Canada	235	23	48	18	NOAM
40140	UCLUELET	Canada	234	28	48	56	NOAM
40141	WHISTLER	Canada	237	05	50	07	NOAM
40400	PASADENA	USA	241	50	34	12	PCFC
40403	PALOS VERDES	USA	241	36	33	45	PCFC
40404	PEARLBLOSSOM	USA	242	05	34	31	PCFC
40405	GOLDSTONE	USA	243	06	35	20	NOAM
40406	SAN FRANCISCO	USA	237	33	37	48	PCFC
40407	PINYON FLATS	USA	243	33	33	26	PCFC
40408	FAIRBANKS	USA	212	29	64	58	NOAM
40409	KAENA POINT	USA	201	44	21	35	PCFC
40410	POINT REYES	USA	237	04	38	06	PCFC
40412	AUSTIN	USA	262	20	30	25	NOAM
40416	YAKATAGA	USA	217	31	60	05	PCFC
40417	PATRICK AFB	USA	279	24	28	14	NOAM
40419	KODIAK	USA	207	30	57	44	NOAM

40420	VANDENBERG AFB	USA	239	26	34	35	PCFC
40421	NOME	USA	194	38	64	34	NOAM
40423	SANDPOINT	USA	343	31	55	21	NOAM
40424	KAUAI	USA	200	20	22	08	PCFC
40425	SOURDOUGH	USA	214	31	62	40	NOAM
40427	FORT ORD	USA	238	14	36	29	PCFC
40428	SANTA PAOLA	USA	241	00	34	12	PCFC
40430	BLACK BUTTE	USA	244	17	33	40	NOAM
40431	DEADMAN LAKE	USA	243	43	34	15	NOAM
40432	ELY	USA	244	55	39	19	NOAM
40433	QUINCY	USA	239	04	39	58	NOAM
40434	MOUNT HOPKINS	USA	249	07	31	41	NOAM
40436	SAN DIEGO	USA	243	10	32	36	PCFC
40437	MAMMOTH LAKES	USA	241	04	37	38	NOAM
40438	BEAR LAKE	USA	248	35	41	56	NOAM
40439	OWENS VALLEY	USA	241	22	37	14	NOAM
40440	WESTFORD	USA	288	31	42	37	NOAM
40441	GREENBANK	USA	280	10	38	26	NOAM
40442	FORT DAVIS	USA	255	59	30	40	NOAM
40445	MAUI	USA	203	44	20	43	PCFC
40449	OCOTILLO	USA	244	12	32	47	PCFC
40451	WASHINGTON	USA	282	56	38	55	NOAM
40452	BLOOMINGTON	USA	273	30	39	11	NOAM
40453	CARROLLTON	USA	274	53	33	34	NOAM
40454	LEONARD	USA	264	12	35	55	NOAM
40455	MILES CITY	USA	254	08	46	24	NOAM
40456	PIETOWN	USA	251	53	34	18	NOAM
40457	SEATTLE	USA	237	45	47	41	NOAM
40458	MALIBU/SADDLE PEAK	USA	241	21	34	04	NOAM
40460	LA JOLLA	USA	242	45	32	52	NOAM
40461	WHITTIER	USA	241	58	33	59	PCFC
40463	LOS ALAMOS	USA	253	45	35	47	NOAM
40464	CARR HILL	USA	239	34	35	53	NOAM
40465	NORTH LIBERTY	USA	268	26	41	46	NOAM
40466	KITT PEAK	USA	248	23	31	57	NOAM
40469	CHINA LAKE	USA	242	11	35	59	NOAM
40471	HANCOCK	USA	288	01	42	56	NOAM
40472	COLORADO SPRINGS	USA	255	07	39	00	NOAM
40473	BREWSTER	USA	240	19	48	08	NOAM
40474	LAKE MATHEWS	USA	242	34	33	51	NOAM
40475	WAIMEA	USA	155	40	20	01	PCFC
40476	HAWAIIAN	USA	155	17	19	25	PCFC
40478	CHATSWORTH	USA	241	22	34	15	PCFC
40479	BLYTHE	USA	251	17	33	37	NOAM
40477	MAUNA KEA	USA	204	33	19	48	NOAM
40480	BOMMER CANYON	USA	248	12	33	37	NOAM
40481	YUCAIPA	USA	248	54	34	02	NOAM
40482	LONG BEACH CITY	USA	241	48	33	47	NOAM
40483	WESTLAKE/ALLEN OS.	USA	241	10	34	10	PCFC
40484	CHILAO FLATES	USA	247	59	34	20	PCFC
40485	LONGDON YARD/IRW.	USA	242	00	34	07	PCFC
40486	PINEMEADOW	USA	243	23	33	37	PCFC
40487	LOS ANGELES	USA	241	43	34	01	PCFC

40488	CATALINA ISLAND	USA	241	31	33	26	PCFC
40489	HAT CREEK	USA	238	32	40	49	NOAM
40490	MARYLAND POINT	USA	282	46	38	22	NOAM
40491	FLAGSTAFF	USA	258	22	35	13	NOAM
40492	VERNAL	USA	250	26	40	20	NOAM
40493	YUMA	USA	245	48	32	56	NOAM
40496	PLATTEVILLE	USA	255	16	40	11	NOAM
40497	MONUMENT PEAK	USA	243	35	32	54	PCFC
40498	VLA	USA	252	23	34	05	NOAM
40499	RICHMOND	USA	279	37	25	37	NOAM
40503	SOCORRO	Mexico	249	03	18	44	PCFC
40504	MAZATLAN	Mexico	253	33	23	14	NOAM
40505	CABO SAN LUCAS	Mexico	250	08	22	55	PCFC
40506	ENSENADA	Mexico	243	50	31	15	PCFC
40508	CICESE	Mexico	243	20	31	52	PCFC
40601	MOIN	Costa-Rica	276	58	9	55	CARB
40701	SANTIAGO DE CUBA	Cuba	284	14	20	01	NOAM
41505	BUENOS AIRES	Argentina	301	29	-34	34	SOAM
41507	RIO GRANDE	Argentina	292	15	-53	47	SOAM
41510	LA PLATA	Argentina	302	04	-34	54	SOAM
41602	FORTALEZA	Brazil	321	34	-03	53	SOAM
41604	NATAL	Brazil	324	40	-5	56	SOAM
41606	BRASILIA	Brazil	-47	50	-15	45	SOAM
41609	CACHOEIRA	Brazil	315	00	22	40	SOAM
41703	EASTER ISLAND	Chile	250	34	-27	11	NAZC
41705	SANTIAGO	Chile	289	20	-33	09	SOAM
41706	CERRO TOLOLO	Chile	289	12	-30	10	SOAM
41709	SEST	Chile	289	16	-29	16	SOAM
41901	BOGOTA	Colombia	285	56	4	49	SOAM
42001	QUITO	Ecuador	281	25	-0	37	SOAM
42004	SAN CRISTOBAL	Ecuador	270	23	-0	54	NAZC
42005	SANTA CRUZ	Ecuador	269	42	-0	45	NAZC
42202	AREQUIPA	Peru	288	30	-16	28	SOAM
42501	BERMUDA	UK	295	21	32	21	NOAM
43001	THULE	Greenland	291	14	76	32	NOAM
43005	KELLYVILLE	Greenland	309	09	66	59	NOAM
43201	SAINTE CROIX	USA	295	25	17	46	CARB
43401	BRIDGETOWN	Barbados	300	24	13	05	CARB
43602	GRAND TURK	Bahama Is.	288	42	21	28	SOAM
49901	WRIGHTWOOD	USA	242	19	34	23	NOAM
49902	MOUNT LEE	USA	241	41	34	08	PCFC
49903	HOLLYDALE	USA	241	50	33	55	PCFC
49904	DURMID HILL	USA	244	13	33	23	PCFC
49905	PACIMA	USA	241	36	34	20	PCFC
49906	CLAREMONT	USA	242	17	34	07	PCFC
49907	SOLOMONS ISLAND	USA	283	33	38	19	NOAM
49908	ANNAPOLIS	USA	283	31	38	59	NOAM
49909	SAN NICOLAS IS.	USA	240	29	33	15	NOAM
49910	NORTHRIDGE	USA	241	29	34	15	PCFC
49911	AZUSA	USA	242	06	34	08	PCFC
49912	TORRANCE	USA	241	40	33	48	PCFC
49913	HORN POINT	USA	283	52	38	35	NOAM
49914	KEYBISCAYNE/MIAMI	USA	279	50	25	44	NOAM

50103	CANBERRA	Australia	148	59	-35	35	AUST
50106	SMITHFIELD	Australia	138	39	-34	41	AUST
50107	YARRAGADEE	Australia	115	25	-29	05	AUST
50116	HOBART	Australia	147	26	-42	48	AUST
50126	TOWNSVILLE	Australia	146	46	-19	17	AUST
50127	COCO ISLANDS	Australia	96	5	-12	12	AUST
50133	PERTH	Australia	115	45	-31	58	AUST
50134	DARWIN	Australia	131	08	-12	51	AUST
50135	MACQUARIE ISLAND	Australia	158	56	-54	30	AUST
50136	JABIRU	Australia	132	54	-12	40	AUST
50137	ALICE SPRINGS/TEL	Australia	133	53	-23	40	AUST
50138	CECUNA	Australia	133	49	-31	52	AUST
50139	KARRATHA	Australia	117	06	-20	59	AUST
50140	TOWNSVILLE/CAPE	Australia	147	03	-19	16	AUST
50108	PARKES	Australia	148	16	-33	00	AUST
50207	CHATHAM ISLAND	Australia	183	26	-43	57	PCFC
50208	WELLINGTON	N. Zealand	174	47	-41	17	AUST
50209	AUCKLAND	N. Zealand	174	50	-36	36	AUST
50501	GUAM	USA	144	44	13	19	PCFC
50503	AMERICAN SAMOA	USA	189	17	-14	20	PCFC
50505	KWAJALEIN ATOLL	USA	167	29	9	24	PCFC
50506	KWAJALEIN ATOLL	USA	167	43	8	43	PCFC
50801	SUVA	FIJI	178	27	-18	09	AUST
51001	PORT MORESEY	New Guinea	147	10	9	24	AUST
66001	MC MURDO	Antarctica	166	40	-77	51	ANIA
66004	MAWSON STATION	Antarctica	62	52	-67	36	ANIA
66007	ROTHERA	Antarctica	291	53	-67	34	ANIA
66006	SYOWA	Antarctica	39	35	-69	00	ANIA
66008	O'HIGGINS	Antarctica	302	06	-63	19	ANIA
66010	DAVIS	Antarctica	77	58	-68	35	ANIA
66011	CASEY	Antarctica	110	31	-66	17	ANIA
91201	KERGUELEN	France	70	14	49	21	ANIA
91401	AMSTERDAM	France	77	34	-37	48	ANIA
91501	ILE DES PETRELS	France	140	01	-66	40	ANIA
92201	PAMATAI	France	210	26	-17	34	PCFC
92202	HUAHINE	France	208	58	-16	44	PCFC
92403	RAPA	Tubai Is.	-147	36	-23	21	PCFC
92701	NOUMEA	France	166	26	-22	18	AUST
92901	WALLIS	France	176	10	-13	17	PCFC
97101	LE MOULE	France	298	40	16	20	CARB
97301	KOUROU	France	307	21	5	07	SOAM
97401	LA REUNION	France	55	36	-21	12	AFRC

Table T2: Directory of IERS stations

DOMES Number	SITE	CDP	IGS DORIS DESIGNATION
10002	GRASSE		
M001			Mark Caussols 3 (F 2)
M003		7605	Mobile VLBI mark 1989
M006		GRAS	GPS Pillar/brass mark
M008			SELF 2 mark
S001		7835	SLR IAR
S002		7845	LLR IAR
S014			GRAA DORIS Ant. Ref. Pt.
S016			GR2B DORIS antenna ref. pt. (Starec type)
10003	TOULOUSE		
M003		7608	VLBI mark
M004		TOUL	TOUL IGS mark
M005			DORIS 1 mark
M006			DORIS 2 mark
S001			TLSA DORIS 1 antenna ref. pt (Alcatel type)
S003			TLHA DORIS 2 antenna ref. pt (Alcatel type)
10004	BREST		
M002		7604	Mobile VLBI mark 1989
S001			DORIS Ant. Ref. Pt.
10077	AJACCIO		
S001			AJAB DORIS antenna ref. pt. (Starec type)
10101	COPENHAGUE		
S001		BUDD	GPS Ant. Ref. Point
10112	HOVVIG		
S001		HVIG	GPS Ant. Ref. Point
10202	REYKJAVIK		
M001		REYK	Univ/bolt GPS marker
M002			DORIS mark
S001		REYA	DORIS antenna ref. pt (Alcatel type)
10204	HOFN		
M001		7635	VLBI monument 1992/brass marker in bedrock
M002		HOFN	IFAG GPS monument/chimney pillar /steel plate
M003			Statens kartverk GPS monument / chimney pillar/steel plate
M004			PRARE monument/observation tower/concrete pillar
M005			EUREF monument/concrete pillar/brass marker
10302	TROMSO		
M001			Trig. point (N 5481)
M002		7602	Mobile VLBI and SLR mark
M003		TROM	GPS marker TSS GPSM
M004			Mark TSS III
M005			Mark WMC2
M006			Hole top center/horizontal top plate/steel tower/bedrock
S001			TI4100/L1 20-DEC-87 - 26-OCT-88
S002			TI4100/L1 28-OCT-88 - 07-NOV-88
S003			TI4100/L1 07-NOV-88 - 21-SEP-89

S004			TI4100/L1 21-SEP-89 - 17-JUL-90
S006			TI4100/L1 17-JUL-90 - 22-AUG-90
S007			ROGUE SNR-8/DM B/L1 28-MAY-90 - 30-JUN-90
S008			ROGUE SNR-8/DM B/L1 01-JUL-90 - 18-JUL-90
S009			ROGUE SNR-8/DM B/L1 18-JUL-90 -
S010			TROA DORIS antenna ref. pt (Alcatel type)
10307	OSLO		
M001		OSLO	BOLT IN SOLID ROCK
10317	NY-ALESUND		
M001		NYAL	GPS Mark
M003			Hole top center/horizontal top plate/steel tower/bedrock
M004			DORIS mark
S001			ROGUE SNR-8/DM B/L1 17-JAN-91
S002			SPIA DORIS antenna ref. pt (Alcatel type)
S003		7331	20 m VLBI antenna reference point
10322	DOMEN		
M002		VADR	BOLT IN SOLID ROCK
10325	HONEFOSS		
M001		HONE	SK Tower GPS mark
S001			
10329	TRYSIL		
M001		7607	VLBI mark
10330	STAVANGER		
M001		STAV	BOLT IN SOLID ROCK
10331	TRONDHEIM		
M001		TRON	BOLT IN SOLID ROCK
10402	ONSALA		
M003			NLS Mark 761331 (S7331)
M004		ONSA	Mark 301 GPSM
M005			Mark 401
M006		7211	Mobile VLBI mark 1992
S001		7212	VLBI ref. pt. ONSALA85
S002		7213	VLBI ref. pt. ONSALA60
S011			TI4100/L1 18-DEC-87 -23-JAN-91
S012			ASHTECH/L1 27-JAN-91 -20-MAY-91
S013			ROGUE SNR-8/DM B/L1 31-MAY-91
10403	KIRUNA		
M002		KIRU	GPS mark
10405	MARTSBO		
M002		MAR6	STAINLESS PLATE/PILLAR/BEDROCK
S005			ASHTECH/L1 22-JAN-91 - 13-FEB-91
10422	KIRUNA/ESRANGE		
M001		KIR0	STAINLESS PLATE/PILLAR/BEDROCK
10423	VISBY		
M001		VIS0	STAINLESS PLATE/PILLAR/BEDROCK
10424	VILHELMINA		
M001		VIL0	STAINLESS PLATE/PILLAR/BEDROCK
10503	METSAHOVI		

M001			Mark (SF 348)
M002	7601		Mobile VLBI mark 1989
M003			24 m high bilby tower
M004			Upper bench mark (FGI) under the DORIS antenna
S001	7805		SLR IAR
S009			ASHTECH L-XII/L1 ??-MAY-91
S010			ROGUE SNR-8/DM B/L1 01-JAN-92
S011		METS	ROGUE SNR-8/DM B/Bottom of the choke ring
S013		META	DORIS antenna ref. pt (Alcatel type)
10511	VAASA		
M001		VAAS	BOLT/TOP OF STEEL GRID MAST
10512	JOENSUU		
M001		JOEN	BOLT/TOP OF STEEL GRID MAST
10513	SODANKYLA/PITTIOVAARA		
M001		SODA	BOLT/TOP OF STEEL GRID MAST
11001	GRAZ		
M001			Mark (A171)
M002		GRAZ	GPS Mark
S002	7839		Fixed Laser / intersection of axes
11005	PFANDER		
M001			A 102 BREGENZ PILLAR
M002			CENTRAL MARKER/BED ROCK/BRASS BOLT
S002		PFAN	MINI-ROGUE / DM B /ARP
11006	INNSBRUCK/HAFELEKAR		
M001			HAFELEKAR/CENTRAL MARKER/BED ROCK/BRASS BOLT
S003		HFLK	HAFELEKAR/MINI-ROGUE / DM B /ARP
11028	REISSECK		
M001			CENTRAL MARKER/BED ROCK/BRASS BOLT
S001		GRMS	MINI-ROGUE / DM B /ARP
11029	PATSCHERKOFEL		
M001			CENTRAL MARKER/BED ROCK/BRASS BOLT
S001		PATK	MINI-ROGUE / DM B /ARP
11101	SOFIA		
M001	7505		SLR MARKER 7505
M002		SOFI	PILLAR ON THE FLAT-ROOF
11206	PENC		
M006		PENC	CONCRETE PILLAR ON THE ROOF OF THE MAIN BUILDING
11502	PECNY/ONDREJOV		
M002		GOPE	GEODYNAMICAL PILLAR/ROOF MAIN BUILDING
11507	MODRA-PIESOK		
M001		MOPI	CONCRETE PILLAR/BEDROCK
12108	LJUBLJANA		
M001		LJUB	GPS Marker
12204	JOZEFOSLAW-WARSZAW		
M001		JOZE	Geodynamical Pillar
12205	BOROWIEC		
M002		BOR1	Geodynamical pillar on roof/main building

S001	7811	SLR IAR
12207	BOROWA GORA	
M002	BOGO	PILLAR/ROOF OBSERVATORY MAIN BUILDING
12209	LAMKOWKO	
M001	LAM0	Concret Pillar
12217	WROCLAW	
M001	WROC	PILLAR/ROOF MOUNT
12302	RIGA	
M001	7560	SLR mark
M002	RIGA	CONCRETE MONOLITH 10371
S002	1884	SLR IAR
S006	1885	FIXED LASER /ULISS CDP 1885
12309	MENDELEEV0	
M001	MDVO	Roof/1 m square metallic plate
M002	MDVO	ROOF/2ND GPS MARKER
12313	IRKOUTSK	
M001	IRKT	2-3M PILLAR
12329	YUZHNO-SAKHALINSK	
M002		DORIS mark
S001		SAKA DORIS antenna ref. pt (Alcatel type)
12330	ZWENIGOROD	
M001	ZWEN	Roof main building/GPS pillar
12334	KITAB	
M001	KIT3	Thread mark in rock
M002		DORIS mark
S004		KITA DORIS 1 antenna ref. pt. (Alcatel type)
S005		KITB DORIS 2 antenna ref. pt. (Starec type)
12337	SIMEIS	
M001	7561	Simeis SLR mark
S003	1873	Simeis fixed SLR IAR
S006	1893	Katzively Crimea fixed SLR IAR
S008	7332	22 m AZ-EL Paraboloidal Radiotelescope Ref. pt.
12338	BADARY	
M001		Hole in aluminium plate (DORIS mark)
S001		BADA DORIS antenna ref. pt (Alcatel type)
12340	MAIDANAK	
S001	1863	MDN. FIXED LASER 1863
S002	1864	MDN2. FIXED LASER 1864
12341	KOMSOMOLSK-NA-AMURE	
S001	1868	KOM. FIXED LASER 1868
12342	USSURIISK	
S001	7247	70 m VLBI antenna ref. pt.
12343	BALKHASH	
S001	1869	Balkhash fixed laser
12344	EVPAORIA	
S001	1867	EVP. FIXED LASER 1867

12347	DUNAOVCY	1866	Dun. Fixed SLR system
S001			
12348	BISHKEK	POL2	14 CM DIAMETER PIPE/PLATE
M001			
12349	KRASNOYARSK		
M001			DORIS mark
M002		KSTU	PILLAR/mark under ROGUE antenna
12350	SVETLOE	SVTL	STAINLESS PLATE/CONCRETE PEDESTAL
M001			
12351	ZELENCHUKSKAYA	ZECK	BOLT/PILLAR/OBSERVATION TOWER
M001			
12352	SELEZASCHITA	SELE	Top of metallic tube (4m height 0.12m diameter)
M001			
12353	YAKUTSK	YAKA	Top of 5/8-11" diameter stainless steel rod
M001			
12354	MAGADAN	MAGO	Top of 5/8-11" diameter stainless steel rod
M001			
12355	PETROPAVLOVSK-KAMCHATKA	PETR	Top of 5/8-11" diameter stainless steel rod
M001			
12602	DIONYSOS		
M001			Central Pillar
M002		7515	Mark SLR Standard WEGENER disk
M003			DORIS mark
S001		7940	SLR IAR
S011			DIOA DORIS antenna ref. pt (Alcatel type)
12612	ASKITES	7510	Mark SLR 7510
M001			
12613	ROUMELLI	7517	Mark SLR 7517
M001			
12614	KARITSA	7520	Mark SLR 7520
M001			
12615	KATAVIA	7512	Mark SLR 7512
M001			
12616	XRISOKALARIA	7525	Mark SLR 7525
M001			
12706	LAMPEDUSA	7544	Mark SLR 7544
M001			
12711	BOLOGNE		
M001			Pillar
M002		7546	Mark SLR 7546
M003		MEDI	PILLAR MARKER R
S001		7230	Radiotelescope ref. pt.
12717	NOTO	7543	Mark SLR
M001			

M002			BOLT GPS EUREF 89 (G)
M003		NOTO	PILLAR MARKER R
S001	7547		Radiotelescope ref. pt.
12718	TRIESTE		
M001			Mark (I 400130)
M002	7550		Mark SLR 7550
12725	CAGLIARI		
M001			ILS Mark (I 234165)
M002	7545		Mark SLR 7545
M003		CAGL	PILLAR MARKER G
S013	7548		Fixed SLR system
12734	MATERA		
M001			Mark (I 201130)
M004	7541		Mark SLR 7541 "C"
M005	7540		Mark SLR 7540 "B"
M007			Roof GPS Mark
M008		MATE	Pole (CIGNET GPS mark)
S001	7939		SLR IAR
S005	7243		Fixed VLBI antenna
S006			ROGUE SNR-8/DM B/L1 22-JAN-91
S007			ROGUE SNR-8/DM B/L1 16-APR-91
12741	VENEZIA		
M001		VENE	METALLIC PILAR ON THE ROOF
12749	MONTE VENDA		
M001	7542		SLR mark
12750	PADOVA		
M001		UPAD	Concrete pillar
M002		UPAD	Screw under plastic mast
13101	BRUSSELS		
M004		BRUS	GPS ASTROLAB/OLD ASTROLAB OBSERVATION DOME
13112	DENTERGEM		
M001		DENT	PILLAR (EUREF # 0705)
13113	DOURBES		
M001		DOUR	PILLAR (EUREF # 0708)
13114	WAREMME		
M001		WARE	PILLAR (EUREF # 0706)
13201	BARTON STACEY/CHILBOLTON		
S002	7215		25m radiotelescope ref. pt.
S301			Hermitage / GPS DMA TI4100 / L1
13212	HERSTMONCEUX		
M002			Primary pillar (GB 481)
M005			Solar pillar
M007		HERS	GPS reference mark
S001	7840		SLR IAR
S012			ROGUE SNR-8A/DM B/L1 04-SEP-91-
13296	BUDDON - CARNUSTY		
M002	7603		Mobile VLBI mark 1989
13299	MORPETH		
S001		MORP	INTERSECTION OF THE VERTICAL AXIS FROM THE

HORIZONTAL BENCHMARK (FORCED CENTRING PLATE)
WITH THE HORIZONTAL PLANE TANGENT TO THE
HEIGHT BENCHMARK (VERTICAL BOLT)

13402	SAN FERNANDO		
M004		SFER	TOP OF TOWER/GPS MARKER
S004	7824		Fixed SLR system
13406	VILLAFRANCA		
M001		VILL	ESA GPS marker
13407	MADRID-ROBLEDO		
S001	1563		64m antenna DSS63
S003	1561		26(34) antenna DSS61
S010	1565		34m antenna DSS65
S011			ROGUE SNR-8/DM R/L1 21-MAR-90
S012		MADR	ROGUE SNR-8/DM R/Bottom of the choke ring 21-MAR-90
S013			ROGUE SNR-8/DM R/Top of the choke ring 21-MAR-90
13410	ROQUETES - TORTOSA		
M001		EBRE	Geodetic Pillar
13411	MADRID-FACULTAD		
S001			TRIMBLE 4000SLD/L1 22-JAN-91 - 13-FEB-91
13420	YEBES		
S001	7333		14M RADIOTELESCOPE
13502	DELFT		
M002			GPS EUREF 89 (MARK # 18)
M003			GPS MARK # 15
M004		DELF	GPS MARK # 16
M005			GPS MARK # 19
M006			GPS MARK # 20
M007			GPS MARK # 21
13504	KOOTWIJK		
M001			Perm. mark 1980
M002	8833		Monument MTLRS 1984
M003		KOSG	GPS mark 339334-25
S001	7833		SLR IAR (NL 233)
S013			ROGUE SNR-8/DM B/L1 20-JAN-91
13533	EIJSDEN		
M001		EIJS	TOP OF MAST (MARK #1)/RD 610326/NAP 61H002
13534	TERSCHELLING		
M001		TERS	TOP OF MAST (MARK #01)/RD 059306/NAP 0A-403
14001	ZIMMERWALD		
M001			Mark (CH 99)
M002		ZIMA	DOPPLER Mark
M004		ZIMM	GPS Marker (MAST) (L+T 88)
S001	7810		Fixed Laser / intersection of axes
14005	MONTE GENEROSO		
M001			Mark (CH 65)
M002	7590		SLR Mark
14106	POTSDAM		
M001			Pillar tour Helmert

M003		POTS	Geodetic pillar N-E / building A17
S001	1181		SLR IAR
S009	7836		POTLAS / intersection of axes
14201	WETTZELL		
M001			Astro. Pillar
M002			Trig. Point (D6843)
M003	7595		SLR and GPS mark
M004	7596		SLR mark
M005	7597		SLR mark
M006	7598		SLR and GPS (ROGUE) mark
M007	7599		SLR mark
M008			Mark 1000 (bottom TI4100 12-NOV-90 - 27-JUL-89)
M009		WETT	GPS mark 1200/top of tower
M010		WTZR	Pillar 1202
S002	7834		SLR IAR
S004	7224		VLBI Ref. Point
S013			TI4100/L1 12-NOV-87 - 27-JUL-89
S016			MINI MAC/L1 23-MAY-89 -
S017			ROGUE SNR-800/DM B/L1 20-DEC-90
S018	8834		SLR WLRS IAR
S019			ROGUE SNR-800/DM B/L1 22-JUL-91-
S020			ROGUE SNR-800/DM B/Bottom of the choke ring 22-JUL-91-
14202	HOHENBUNSTORF		
M002	7600		Mobile VLBI mark 1989
14208	OBERPFAFFENHOFEN		
M001		OBER	STEEL PILLAR/ROOF/DLR/D-PAF BUILDING
14209	EFFELSBERG		
M001			Control network mark
S001	7203		100m radiotelescope ref. pt.
14213	HOHENPEISSENBERG		
M002	7630		Mobile VLBI mark 1992
14216	KARLSRUHE		
M001		KARL	PLATE & BOLT/SURVEY TOWER/TECHNICAL UNIVERSITY
14260	KARLSBURG		
M001	7632		Mobile VLBI mark 1992
14261	KIRSCHBERG		
M001	7631		Mobile VLBI mark 1992
14302	NICOSIA-ATHALASSA		
M001		NICO	BOLT ON PILLAR
20101	RIYADH		
S001	7832		FIXED LASER / SALRO
20702	BAR GIYYORA		
M001	7530		SLR mark 7530
M002		BARG	GPS Mark
S001	7530		MOBLAS-2
20801	DIYARBAKIR		
M001	7575		Mark SLR
20802	YOZGAT		

M001		7585	Mark SLR
20803	MELENGICLICK		
M001		7580	Mark SLR
20804	YIGILCA		
M001		7587	Mark SLR
20805	ANKARA		
M001		7589	SLR mark 1993
M002	ANKR		GPS Pillar
21501	EVEREST		
M001			DORIS mark
S001			EVEB DORIS antenna ref. pt. (Starec type)
21601	PEKIN		
S004		7249	BEIJ fixed SLR system
21602	WUHAN		
M001			GPS mark
S003		7236	Wuhan fixed laser
21604	PURPLE MOUNTAIN		
M002			DORIS mark
S003			PURA DORIS antenna ref. pt (Alcatel type)
21605	SHANGHAI		
M001			Mark connect with bedrock
M002		SHAO	GPS marker JPL 4027-S
S001		7837	SLR IAR
S008		7226	VLBI 6m radiotelescope ref. pt.
S009		7227	VLBI 25m antenna ref. pt.
21611	CHANGCHUN		
S001		7237	CHALAS / intersection of axes
21612	URUMQI		
S001		7330	25 m VLBI antenna reference point
21613	LHASA		
M001		LHAS	GPS PILLAR / BOLT LS 12
21614	SHAANXI		
M001		XIAN	GPS MARK JPL 3233-S
21701	KASHIMA		
M001			Metal station mark (Denken 1)
S001		1856	26m VLBI antenna
S004		1857	34m VLBI antenna
21702	MIZUSAWA		
M001		7314	Mobile VLBI marker
S009		7314	Mobile VLBI
S010		7324	10-m VLBI antenna/AZ-EL (MIZNAO10)
21704	TOKYO		
S002		7308	SLR CRLAS IAR
21705	DODAIRA		
S001		7935	DDR Fixed SLR system
21709	OKINAWA		

S001		7301	SLR IAR HTLRS-1
21718	MIYAZAKI		
S001		7312	5m mobile VLBI
21725	NOBEYAMA		
S001		7244	6m VLBI antenna ref. pt.
21726	SIMOSATO		
M001			Stone marker
M002		7838	SLR mark (center of the ring of the base pier)
S001		7838	SLR IAR fixed
21729	USUDA		
M001			GPS mark Control RM roof
S001		7246	64M VLBI antenna IAR
S002			ROGUE SNR-8/DM R/L1 29-JAN-91/09-AUG-92
S003		USUD	ROGUE SNR-8/DM R/Bottom of the choke ring 29-JAN-91/09-AUG-92
S004			ROGUE SNR-8/DM R/Top of the choke ring 29-JAN-91/09-AUG-92
S005		USUD	ROGUE SNR-8/DM R/Bottom of the choke ring 09-AUG-92/29-OCT-92
S007		USUD	ROGUE SNR-8/DM R/Bottom of the choke ring 29-OCT-92/
21730	TSUKUBA		
M001		7311	Mobile VLBI marker
S001		7311	5m mobile VLBI
S002			MINI MAC2816AT/L1 10-JUL-88 - 17-DEC-91
S003			MINI MAC2816AT/L1 18-DEC-91
S004		TSUK	MINI MAC2816AT / Bottom of the antenna
S005		TSKB	TurboRogue/DM T/ARP 15-DEC-93
21731	SHINTOTSUGAWA		
M001		7315	Mobile VLBI marker
S001		7315	Mobile VLBI
21732	CHICHIJIMA		
S001		7316	mobile VLBI
S002		7844	SLR IAR HTLRS-1
21733	MINAMI TORI	SIMA (MARCUS)	
S001		7300	SLR IAR HTLRS-1
S002		7310	mobile VLBI
21735	TSUSHIMA		
S001		7302	SLR IAR HTLRS-1
21736	ISHIGAKI SHIMA		
S001		7307	SLR IAR HTLRS-1
21737	SAGARA		
S001		7325	VLBI antenna Ref. Pt.
21738	DAITO		
S001		7326	VLBI antenna Ref. Pt.
22006	MANILLE		
M002			DORIS mark
S001			MANA DORIS antenna ref. pt (Alcatel type)
22306	BANGALORE		

M001		IISC	Granite Monument 250 m2
M002		IISC	CIRCLE AND DOT
22601	SINGAPOUR		
M001		NTUS	MARKER NTUS-01 / STEEL POLE / ROOF OF THE SCHOOL CIVIL ENGINEERING
23101	CIBINONG		
M001			DORIS mark
M002			Concrete monument TTG1
S001			CIBB DORIS antenna ref. pt. (Starec type)
23501	COLOMBO		
M001			Mark on roof (Epoch 92)
M002			DORIS mark
S001			COLA DORIS antenna ref. pt (Alcatel type)
23601	TAIPEI		
M001		TAIW	GPS mark
23902	TAEJON		
M001		TAEJ	KAO GPS STATION
S001			TRIMBLE 4000SDT/L1
23903	SUWON-SHI		
M001		SUWN	Concrete base marker
24901	BAHREIN (JUFFAR)		
M001			RM1-31314 DMA 35012 (OLD DOPPLER 31482)
M002		BAHR	WM1 DMA 32021
S001			GPS DMA TI4100 / L1
30101	HELWAN		
S001		7831	SLR IAR fixed
30302	HARTEBEEESTHOEK		
M002		HART	Engraved plate below ROGUE antenna
M003		7501	SLR mark 1993
M004		HRAO	KRUGERSDORP/SS6TRI MONUMENT
M005			DORIS 1 mark
M006			DORIS 2 mark
M007		HARK	ENGRAVED PLATE
S001		7232	26m VLBI antenna ref. pt.
S005			HBLA DORIS 2 antenna ref. pt. (Alcatel type)
S202			HBKA DORIS 1 antenna ref. pt. (Alcatel type)
30304	OLIFANTSFONTEIN		
S001		7902	Fixed SLR / Laser Mount Rotation Axes
30313	MARION ISLAND (PRINCE EDWARD ISLANDS)		
M001			DORIS mark
S001			MARA DORIS antenna ref. pt (Alcatel type)
30314	SUTHERLAND		
M001		7502	SLR mark 1993
30602	ASCENSION		
M001		ASC1	PLATE/I-BEAM MAST/ROOF MOUNT
M002			Ariane station / DORIS mark
S003			GPS OCS monitor station
S004			ASDB DORIS 2 antenna ref. pt. (Starec type)
30604	TRISTAN DA CUNHA		

S001			TRIA DORIS antenna ref. pt (Alcatel type)
30606	SAINTE-HELENE		
M002			DORIS 2 mark
S002			HELA DORIS 1 antenna ref. pt. (Alcatel type)
S003			HELB DORIS 2 antenna ref. pt. (Starec type)
30607	SIGNY ISLAND		
S001			SIGA DORIS antenna ref. pt (Alcatel type)
30802	DIEGO GARCIA		
M001		DGAR	GPS MARKER/ROOF MOUNT
S002			GPS OCS monitor station
31303	MASPALOMAS		
M001		MASP	PILLAR MPA1
M002		MAS1	GPS mark
31901	FLORES		
S001			FLOA DORIS antenna ref. pt (Alcatel type)
31903	SANTA MARIA		
S001			SAMB DORIS antenna ref. pt. (Starec type)
31906	SAO MIGUEL		
M001	7609		Ponta Delgada / Mobile VLBI mark 1992
32809	LIBREVILLE		
M001			N'Koltang / Borne 1988
S001			TRIMBLE SLD/L1 22-JAN-91 - 13-FEB-91
S002			LIBA DORIS antenna ref. pt (Alcatel type)
32901	KUMASI		
M001		KUMA	PILLAR UST 1/68/SS1
33201	MALINDI		
M001		MALI	METAL PLATE / CONCRETE MONUMENT
33710	ARLIT		
M002			DORIS 2 mark
S001			ARLA DORIS 1 antenna ref. pt (Alcatel type)
S002			ARMA DORIS 2 antenna ref. pt (Alcatel type)
34101	DAKAR		
M003			DORIS mark
S004			DAKA DORIS antenna ref. pt (Alcatel type)
39801	MAHE ISLAND		
M001		SEY1	MONUMENT CONNECTED TO A CONCRETE WELL-HEAD JPL 4016-S
39901	DJIBOUTI		
M002			DORIS mark
S002			DJIA DORIS antenna ref. pt (Alcatel type)
40101	ST JOHN'S		
M001		STJO	920000 Concrete pillar on bedrock/plate
40102	ONTARIO-OTTAWA		
S005			OTTA DORIS antenna ref. pt (Alcatel type)
S006			OTTB DORIS antenna ref. pt (Alcatel type) after the fall

40103	PRINCE ALBERT		
M001		PRAL	GPS Mark
40104	ALGONQUIN		
M002		ALGO	883160 GPS ARO N. pier
M003	7410		SLR Mark (933000)
S001	7282		46m VLBI antenna ref. pt.
S003			ROGUE SNR-8/DORNE-MARGOLIN B/L1 16-JAN-91 -
40105	PENTICTON		
M001	7283		Mobile VLBI mark 7283
M002		DRAO	GPS MARK 887006
S002			TI4100/L1
S003			ROGUE SNR-8/DM B/L1 27-FEB-91
40114	OTTAWA		
M001		NRC1	GPS MARKER
40118	WHITEHORSE		
M001	7284		Mobile VLBI mark 7284
M002	7284		Mobile VLBI mark 7284 PEQ
40124	CALGARY		
M001		PRDS	PRIDDIS/GPS Mark
40127	YELLOWKNIFE		
M001	7285		Mobile VLBI mark (LBI 829098)
M002			Mark 869211
M003		YELL	Mark 889201
M004	7296		Mobile VLBI MARK (LBI 909012)
S003			TI4100/L1 01-JAN-87 - 02-JUL-89
S004			TI4100/L1 07-JUL-89 - 21-JAN-91
S005			ROGUE SNR-8/DORNE-MARGOLIN B/L1 21-JAN-91 -
			19-MAR-91
S006			Mini ROGUE SNR-8C/DORNE-MARGOLIN B/L1
			20-MAR-91-
S007		YELA	DORIS antenna ref. pt (Alcatel type)
40128	CHURCHILL		
M002		CHUR	PLATE/CONCRETE PILLAR
40129	VICTORIA		
M001	7289		Mobile VLBI mark
M002		PGC1	Marker 867001/Centre-punch on brass
			control-point marker set into concrete flush
			with ground level
M003		ALBH	Albert Head GPS Mark 927000
S001			VICTORIA/ROGUE/L1 16-JAN-91 -
40130	HOLBERG		
M001		HOLB	GPS mark
40132	LA GRANDE		
M001	7411		Mobile SLR MARKER 7411
40133	SCHEFFERVILLE		
M001		SCHE	GPS MARKER (SCHE)
M002		SCH2	Brass plate/bolt/concrete pier
40134	WILLIAMS LAKE		
M001		WILL	GPS MARKER
40135	FLIN FLON		

M001		FLIN	GPS MARKER 965000
40136	WHITEHORSE GPS SITE		
M001		WHIT	MONUMENT 7787017
40137	LAC DU BONNET		
M001		DUBO	TOP OF CONCRETE PIER 924000
40138	NANOOSE		
M001		NANO	Brass plate on top of concrete pillar anchored into bedrock
40139	CHEEKA PEAK		
M001		NEAH	Brass plate on top of concrete pillar anchored into bedrock
40140	UCLUELET		
M001		UCLU	Brass plate on top of concrete pillar anchored into bedrock
40141	WHISTLER		
M001		WSLR	Brass plate on top of concrete pillar anchored into bedrock
40400	PASADENA		
M001		7896	Mark SLR (JPL aries 2 1975)
M003		7263	Mobile VLBI Mark
M005		7264	Mobile VLBI MARK
M006		7272 JPLM	Mobile VLBI mark (JPL MV3 1983)
M007		7272 JPLM	Mobile VLBI mark (JPL MV3 1983) PEQ
M101		WLSN	Mt. Wilson/bedrock/concrete block JPL 4028-s
M301		BRAN	Burbank/pipe with fitting adaptor
S004			ROGUE SNR-8/DM R/L1 6-NOV-90 -
S201		CIT1	CALTECH/NORTH MUDD BUILDING/ROGUE SNR-8000/DM T/ARP
40403	PALOS VERDES		
M001		7268	Mobile VLBI mark
M002		PVEP	PGGA Mark
40404	PEARBLOSSOM		
M001		7254	Mobile VLBI mark (NCMN 1983)
M002		7253	Mobile VLBI mark
M101		HOLC	HOLCOMB RIDGE/ 3/4" Vert. Stainless steel rod
40405	GOLDSTONE		
M001		7085	MOBLAS 7085 Goldstone val
M002		7115	MOBLAS 7115-1979 standard NASA disk
M006		7265	Mojave NCMN 1983 NGS station disk
M010		7287	Mojave TLRS 1984 standard NASA disk
M011			Mojave NCMN 1 1983
M013		7288	Mojave mobile VLBI and TLRS mark(Punchmark on sheared surface of 7287 mark)
M014			DORIS mark
S001		1514	Mars 64m fixed VLBI ref. point (DSS14)
S003		1512	(26) 34m fixed VLBI ref. point (DSS12)
S005			GOMA DORIS 2 antenna ref. pt (Alcatel type)
S009		7222	Mojave fixed 12m VLBI ref. point
S014		1513	Venus 26m fixed VLBI ref. point (DSS13)
S019		7231	Mars 34m fixed VLBI ref. point (DSS15)
S020			TI4100/L1 11-NOV-86 - 18-JUL-88
S024			TI4100 FRPA-2/L1/L2 19-JUL-88
S025			MINI MAC 2816AT/L1 05-FEB-89

S026			ROGUE SNR-8/DM R/L1 14-DEC-89
S028		GOLD	Goldstone/ ROGUE SNR-8/DM R/Bottom of the choke ring 14-DEC-
S029		MOJ1	Mojave/MINI MAC 2816AT/Bottom of the antenna 05-FEB-89
S030			Goldstone/ ROGUE SNR-8/DM R/Top of the choke ring 14-DEC-89
S031		GOLD	Goldstone/ ROGUE SNR-8/DM R/Bottom choke ring PEQ 28-JUN-92-
S032			Goldstone/ ROGUE SNR-8/DM R/Top choke ring PEQ
S033	7222		Mojave fixed 12m VLBI ref. point PEQ 28-JUN-92-
S034	7231		Mars 34m fixed VLBI ref. point (DSS15)
S035		GOLA	DORIS 1 antenna ref. pt (Alcatel type)
S037		GOMB	DORIS 3 antenna ref. pt. (Starec type)
40406	SAN FRANCISCO (PRESIDIO)		
M001	7252		Mobile VLBI mark
M002	7252		Mobile VLBI mark PEQ
40407	PINYON FLATS		
M001	7256		Mobile VLBI mark (NCMN 1981)
M002		PIN1	Pinyon 1
M003		PIN1	Pinyon 1 PEQ
M004		PIN2	Pinyon 2
S001			ROGUE SNR-8/DM B/L1 6-NOV-90 -
40408	FAIRBANKS		
M001		FAIR	GPS pillar
M002			Engraved cross under the DORIS antenna
S001			26m antenna ref. pt.
S002	7225		26m VLBI ref. point (GILMORE CREEK)
S003			ROGUE SNR-8/DM R/L1 17-JAN-91
S004		FAIA	DORIS antenna ref. pt (Alcatel type)
40409	KAENA POINT (HAWAII)		
S001			GPS OCS monitor station
40410	POINT REYES		
M001	7251		Mobile VLBI mark
40412	AUSTIN		
M001	7890		Mark SLR 7890
M002			Austin monument
M003	7271		Mobile VLBI mark
40416	YAKATAGA		
M001	7277		Mobile VLBI mark
M002	7277		Mobile VLBI mark PEQ
40417	PATRICK AFB		
M001	7081		Mark SLR
M002	7069		Mark SLR
40419	KODIAK		
M001	7278		Mobile VLBI mark
40420	VANDENBERG AFB		
M001	7111		DMA disk MOBLAS 7111 (1981)
M002	7223		DMA disk VLBI 7223 (1983)
M003	7880		DMA disk TLRS 7880 (1983)
M004	7887		DMA disk TLRS 7887 (1983)
M006		VNDP	PGGA 1991

M007		VNDP	PGGA 1991 PEQ
M101		HARV	HARVEST PLATFORM/GPS pier
40421	NOME		
M001	7279		Mobile VLBI mark
40423	SANDPOINT		
M001	7280		Mobile VLBI mark
40424	KAUAI		
M004		KOKB	VERLOT radar building JPL GPS mark 3028-S
M005			CIGNET-GPS survey marker
M006			JPL GPS temporary mark
S001	1311		9m VLBI ref. point
S002			TI4100/L1 - -86 -
S003			TI4100 FRPA-2/L1 -APR-88 - 02-JUL-90
S004			TRIMBLE 4000SST/L1 02-JUL-90 - 17-MAR-92
S006			ROGUE SNR-8/DM R/L1 21-NOV-90 -
S007	7298		20-m VLBI antenna/AZ-EL
S008		KOKA	DORIS antenna ref. pt (Alcatel type)
40425	SOURDOUGH		
M001	7281		Mobile VLBI mark
M002	7281		Mobile VLBI mark PEQ
40427	FORT ORD		
M001	7266		Mobile VLBI mark (NCMN 1981)
M002	7241		Mobile VLBI mark
M003	7241		Mobile VLBI mark PEQ
40428	SANTA PAOLA		
M001	7255		Mobile VLBI mark
40430	BLACK BUTTE		
M001	7269		Mobile VLBI mark (NCMN 1982)
40431	DEADMAN LAKE		
M001	7267		Mobile VLBI mark
40432	ELY		
M001	7286		Mobile VLBI mark/ELY AIRPORT R.M. NO. 2 1954
M002	7257		Mobile VLBI mark/ELY AIRPORT 1954
40433	QUINCY		
M001	7051		Steel plate MOBLAS 7051
M002	7109		MOBLAS 7109 (1981) Standard NASA disk
M004	7221	QUIN	QUINCY NCMN Standard NASA disk (7221-1982)
M005	7886		TLRS 7886 (1982) standard NASA disk
M006	7260		Quincy ARIES 1979
40434	MOUNT HOPKINS		
M002	7888		Mark SLR
S001	7921		SLR IAR (SAO)
40436	SAN DIEGO - OTAY MT.		
M002	7062		Mark SLR Circular 5" steel plate
M003	7035		Mark SLR 7035 1988
40437	MAMMOTH LAKES		
M001	7259		Mobile VLBI mark
M002		CASA	GPS Mark JPL 4087-S
40438	BEAR LAKE		

M001	7082	Mark SLR (4" x 4" Steel plate)
M002	7046	SLR mark
40439 OWENS VALLEY		
M001	7114	MOBLAS 7114 (1979) standard NASA disk
M003	7084	MOBLAS, TLRs 7084 standard NASA disk
M004	7853	Mobile VLBI Jul 87 standard NASA disk
S002	7207	40m VLBI ref. point
S006	7616	VLBA antenna reference point
40440 WESTFORD		
M001	7091	MOBLAS Haystack Inter Comp 1977
M004		Monument MICRO
S002	7205	Haystack / 37m VLBI ref. point
S003	7209	Westford / 18m VLBI ref. point
S014		TI4100/L1 -OCT-86 - 04-AUG-88
S016		TI4100 FRPA-2/L1/L2 05-AUG-88 - 14-FEB-89
S017		MINI MAC 2816AT/L1 29-JAN-89 -
S019	WES1	MINI MAC 2816AT / Bottom of the antenna
S020	WES2	Rogue SNR-8000/DM T/BPA 08-FEB-93
40441 GREENBANK		
S001	7204	43m radiotelescope ref. pt.
S004	7214	85-foot antenna ref. pt. NRAO85-3
S005	7248	85-foot antenna ref. pt. NRAO85-1
S006	7214	85-foot antenna ref. pt. NRAO85-3 PEQ
S007	7208	20-m antenna ref. pt.
40442 FORT DAVIS		
M001	7086	MLRS, MOBLAS, TLRs-1 standard NASA disk
M004		McDonald RM4 1977
M005	7885	MLRS, MOBLAS, TLRs-1 standard NASA disk
M006	7080	MLRS mark 7080 1988
M008	7850	Mobile VLBI and SLR mark 7850 1988
M009	7900	Mobile VLBI mark (Havard RM 5 1977)
M010	7897	SLR Mark 7850
M011	7851	SLR MARK 7851
M012	MDO1	GPS Mark 4011-S
S001	7086	LLR MLRS
S002	7206	LLR McDonald 2
S003	7216	85-foot VLBI ref. point (HRAS 085)
S017	7613	VLBA antenna reference point
40445 MAUI		
M001	7210	HOLLAS fixed carriage bolt
M002	7120	MOBLAS 7120 (1980)
S005		LLR Haleakala transmitter
40449 OCOTILLO		
M001	7270	Mobile VLBI mark (NCMN 1982)
40451 WASHINGTON		
M101	7101	MOBLAS 7101-1977 standard NASA disk
M102	7102	Mobile SLR 7102-1978 standard NASA disk
M103	7103	Mobile SLR 7103-1978 standard NASA disk
M104	7104	Mobile SLR 7104-1978 standard NASA disk
M105	7105	MOBLAS -7 7105-1981 standard NASA disk
M106	7100	Mobile SLR 7100-1977 standard NASA disk
M107	7064	Mobile SLR 7064 standard NASA disk
M108	7065	Mobile SLR 7065 standard NASA disk
M110		Greenbelt north GEOS(GSFC) GORF
M111	7899	TLRS 7899-1980 standards NASA disk
M112	7063	STALAS fixed Laser standard NASA disk

M113	7106		SLR mark
M114	7125		SLR mark 7125 1985 standard NASA disk
M115	8213		SLR mark
M116	7130		SLR mark 7130 1985 standard NASA disk
M117	7920		SLR mark 7125-B standard NASA disk
M118	7889		SLR mark 7889 1981 standard NASA disk
M119	7917		SLR mark 7917 Steel plate SAO-3
M120	7918		SLR mark standard NASA disk
M121	7919		SLR mark standard NASA disk
M122	7083		SLR mark standard NASA disk
M123		GODE	GPS Mark East (JPL 4006)
M124		GODW	GPS Mark West (JPL 4005)
M125	7108		Mark SGP 7108-1993
40452	BLOOMINGTON		
M001	7291		Mobile VLBI mark
40453	CARROLLTON		
M001	7228		Mobile VLBI mark
40454	LEONARD		
M001	7292		Mobile VLBI mark
40455	MILES CITY		
M001	7038		Mobile VLBI mark
40456	PIETOWN		
M001		PIE1	Concrete GPS pier JPL 4009 S
S001	7234		VLBA antenna reference point
40457	SEATTLE		
M001	7229		Mobile VLBI mark
40458	MALIBU/SADDLE PEAK		
M001		SPK1	STEEL MONUMENT/ROOF CONCRETE BUNKER JPL 4504-S
40460	LA JOLLA/SCRIPPS		
M001		SIO1	SCRIPPS 1 1989 UCSD IGPP
M002		SIO2	SCRIPPS 2
M003		SIO2	SCRIPPS 2 PEQ
M004		SIO3	SCRIPPS 3
40461	WHITTIER		
M001		WHC1	WHITTIER COLLEGE/STEEL MON./SIDE BULIDING 4505-S
M002		WHI1	WHITTIER LIBRARY/STEEL MON./SIDE BULIDING 4502-S
40463	LOS ALAMOS		
S001	7611		VLBA antenna reference point
40464	CARR HIL		
M001		CARR	GPS Mark
40465	NORTH LIBERTY		
M001		NLIB	Concrete GPS pier JPL 4007 S
S001	7612		VLBA reference point (intersection of axes)
40466	KITT PEAK		
S001	7610		25-m VLBA antenna reference point
40469	CHINA LAKE		
M001		COSO	1" DIAMETER RING/ 0.75" ROD /GRANITIC BASEMENT

40471	HANCOCK		
S001		7618	25-M VLBA antenna reference point
40472	COLORADO SPRINGS		
S001			GPS OCS monitor station
40473	BREWSTER		
S001		7614	25-M VLBA antenna reference point
40474	LAKE MATHEWS		
M001		MATH	PGGA Mark
40475	WAIMEA (HAWAII)		
S001			WAIA DORIS antenna ref. pt (Alcatel type)
40476	HAWAIIAN VOLCANO OBSERVATORY		
S001			HVOA DORIS antenna ref. pt (Alcatel type)
40477	MAUNA KEA		
M001		MKEA	GPS MARKER
S001		7617	25-M VLBA antenna reference point
40478	CHATSWORTH		
M001		CHTP	PGGA Mark (stainless steel pin in rock)
M002		ROCK	ROCKETDYNE/PIPE IN SANDSTONE
M101		OATT	Oatt Mountain/concrete bunker/ss-pin JPL 4029-s
S101		OAT2	OATT MOUNTAIN / DM T ANTENNA / ARP
40479	BLYTHE		
M001		BLYT	PGGA Mark Nov. 1993
40480	BOMMER CANYON		
M001		TRAK	PGGA Mark sandstone rock/stainless steel rod
40481	YUCAIPA		
M001		CRFP	PGGA Mark
40482	LONG BEACH CITY		
M001		LBCH	JPL 4500-s
40483	WESTLAKE/ALLEN OSBORNE AND ASSOCIATES		
S001		AOA1	ROGUE SNR-8000/DM T/ARP 07-SEP-94 -
40484	CHILAO FLATES/SAN GABRIEL MOUNTAINS		
M001		CHIL	3/4" Vert. Stainless steel rod with brass adaptor
40485	LONGDON YARD/IRWINDALE		
M001		LONG	3/4" Vert. Stainless steel rod with brass adaptor
40486	PINEMEADOW		
M001		ROCH	PGGA Marker
40487	LOS ANGELES		
M001		USC1	Univ. of South Calif./Steel Pillar on Vault
M002		UCLP	Univ. of Calif./ GPS marker
40488	CATALINA ISLAND		
M001		CAT1	STAINLESS STEAL PIN JPL 4506-S

40489	HAT CREEK			Mark NCMN B
M001				
S001		7218		26m VLBI ref. point of radio telescope
40490	MARYLAND POINT			
S001		7217		(26m) 85-foot radiotelescope
40491	FLAGSTAFF			
M002		7891		Mark SLR (RMT N 4 1981)
M003		7261		Mobile VLBI mark
40492	VERNAL			
M001		7892		Mobile SLR and VLBI mark (NCMN 1981)
M002		7290		Mobile SLR and VLBI mark (NCMN 1985)
40493	YUMA			
M001		7894		Mobile SLR and VLBI mark
40496	PLATTEVILLE			
M001		7112		Moblas 7112-1980 standard NASA disk
M002		7258		NCMN 1981 mobile VLBI NGS station disk
40497	MONUMENT PEAK			
M001		7110		ORT station 7110-1981 standard NASA disk
M002		7220		ARIES ORION STA 7220-1981
M003		7274		NCMN 1983 mobile VLBI NGS disk
M004			MONP	PGGA MARK
40498	VLA			
S001		7619		VLA INTERFEROMETER Ref. Pt.
40499	RICHMOND			
M001				Timer 1962
M002		7295	RCM2	Mark SLR
M005			RCM4	Stainless steel plate (Richmond 1993)
S001		7219		65 foot VLBI antenna
S009				TI4100 FRPA-2/L1/L2 09-FEB-88 - 24-FEB-89
S011				MINI MAC 2816AT/L1 05-FEB-89 -
S013				MINI MAC 2816AT/Bottom of the antenna
S015			RICA	DORIS 1 antenna ref. pt (Alcatel type)
S016			RIDA	DORIS 2 antenna ref. pt (Alcatel type)
S017			RCM3	Turbo Rogue SNR-8000/DM T/BPA 26-OCT-93
S018			RCM5	Turbo Rogue SNR-8000/DM T/BPA 11-OCT-93
S019		7201		VLBI ANTENNA REF. POINT
S020			RCM6	Turbo Rogue SNR-8000/DM T/BPA 1-NOV-96
40503	SOCORRO ISLAND			
M002				DORIS 2 mark
S002				SODA DORIS 1 antenna ref. pt (Alcatel type)
S003				SODA DORIS 2 antenna ref. pt (Alcatel type)
40504	MAZATLAN			
M001		7122		MOBLAS 7122-1983 standard NASA disk
40505	CABO SAN LUCAS			
M001		7882		Mark SLR 7882 1983
40506	ENSENADA			
M001		7883		SLR mark 7883
40508	CICESE			
M001			CICE	HIGH CONCRETE PILLAR JPL 3235

40601	MOIN/COSTA-RICA		
M001		MOIN	UNAVCO antenna mount/Pillar/Roof RECOPE building
40701	SANTIAGO DE CUBA		
S001	1953		SLR IAR
41505	BUENOS-AIRES		
S006			GPS DMA TI4100 / L1
41507	RIO GRANDE		
M002			DORIS 2 mark
S003			RIOA DORIS 1 antenna ref. pt (Alcatel type)
S004			RIOB DORIS antenna ref. pt. (Starec type)
41510	LA PLATA		
M001		LPGS	CONCRETE PILLAR
41602	FORTALEZA		
M001		FORT	Bronze plate SAT92009
S001	7297		45-foot VLBI antenna
41604	NATAL		
S001	7929		SLR IAR
41606	BRASILIA		
M001		BRAZ	CONCRETE PILLAR JPL 4024-S
41609	CACHOEIRA PAULISTA		
M002			DORIS mark
S001			CACB DORIS antenna ref. pt. (Starec type)
41703	EASTER ISLAND		
M001	7061		TLRS-2 7061-1983 NASA-GSFC station disk
M002	7097		TLRS-2 7097-1986 NASA brass disk
M003		EIS1	GPS mark JPL 4008-S
M004			DORIS mark
S008			EASA DORIS antenna ref. pt (Alcatel type)
41705	SANTIAGO		
M001	7400		Mark SLR
M002			GPS Mark (GIG'91)
M003		SANT	GPS Mark JPL 4001-S
M004	7404		SLR MARKER 7404
S004			ROGUE SNR-8/DM R/L1 15-JAN-91 -
S006	1404		12m VLBI antenna IAR
S007		SANA	DORIS 1 antenna ref. pt. (Alcatel type)
S008		SAOB	DORIS 2 antenna ref. pt.
41706	CERRO TOLOLO		
M001	7401		Mark SLR
41709	SEST		
S001	7239		VLBI antenna
41901	BOGOTA		
M001		BOGT	GPS MARKER JPL 4022-S/INGEOMINAS COMPLEX
42003	QUITO		
S001			GPS DMA TI4100 / L1
42004	SAN CRISTOBAL (GALAPAGOS)		
M002			DORIS mark

S001			GALA DORIS antenna ref. pt (Alcatel type)
42005	SANTA CRUZ		
M001		GALA	DARWIN STATION / GPS MARKER
42202	AREQUIPA		
M002			Satellite mark 1961
M003		7403	Mark SLR
M004			East Satellite mark Ref. 1
M005		AREQ	GPS marker JPL 4021-s
M006			DORIS mark
S001		7907	SAO-2 fixed laser
S005		AREA	DORIS antenna ref. pt (Alcatel type)
42501	BERMUDA		
M001		7067	Mark SLR
M002		7294	Mobile VLBI mark
S004		BRMU	Turbo Rogue SNR-8000/DM T/BPA 12-MAR-93
43001	THULE		
M001		THU1	BUILDING ROOF/RECTANGULAR PLATE
43005	KELLYVILLE (KANGERLUSSUAQ)		
M001		KELY	KELLYVILLE/1M CONCRETE PILLAR/STEEL PLATE
43201	SAINTE CROIX		
M001			VLBA RM 1 JPL 4023
S001		7615	25-M VLBA antenna reference point
43401	BRIDGETOWN		
S001		BARB	BPA/Ashtech Chokering with Dome CR1537
43602	GRAND TURK		
M001			Mark SKI 1952
M002		7068	Mark SLR
49901	WRIGHTWOOD		
M001		TABL	TABLE MOUNTAIN/SCRIPPS TETRAPOD MONUMENT
49902	MOUNT LEE		
M001		LEEP	SCIGN GPS MARKER
49903	HOLLYDALE		
M001		HOLP	SCIGN GPS MARKER
49904	DURMID HILL		
M001		DHLG	PGGA GPS MARKER /HOLE IN STAINLESS STEEL ROD
49905	PACIMA		
M001		DAM1	SCIGN GPS MARKER/THREADED ROCK PIN
M002		DAM2	SCIGN GPS MARKER/BUILT PIER
M003		CMP9	FIRE CAMP 9/ SCIGN GPS MARKER /THREADED ROCK PIN
49906	CLAREMONT		
M001		CLAR	SCIGN GPS MARKER/DRIVEN-ROD
49907	SOLOMONS ISLAND		
S001		SOL1	DM T ANTENNA /BPA
49908	ANNAPOLIS		
S001		USNA	DM T ANTENNA /BPA

49909	SAN NICOLAS ISLAND		
S001		SNI1	DM T ANTENNA / ARP /JPL 4507-S
49910	NORTHRIDGE		
S001		CSN1	DM T ANTENNA / ARP
49911	AZUSA		
M001		AZU1	GPS MARKER
49912	TORRANCE		
M001		TORP	SCIGN GPS Marker/Drilled hole in the vertical pipe
49913	HORN POINT		
S001		HNPT	Rogue SNR-12/DM T/ARP/Bottom of Flange 13-DEC-1995
49914	KEYBISCAYNE/MIAMI		
S001		AOML	BPA/Dorne Margolin T 148
50103	CANBERRA		
M106		7843	Orroral/center ground mark 7843
M107		ORRO	Orroral/Mark AU005/PLATE ON COLLIMATION TOWER
M108		TIDB	Tidbinbilla/SPC40 (AU017) (JPL 4002 - S 1992)
M109			Tidbinbilla/NM/C/194
M110			Tidbinbilla/NM/C/196
M111			DORIS mark
S001		1543	DSS43 Antenna
S003		7943	SAO-3 fixed laser
S005		1542	DSS42 Antenna
S006		1544	DSS44 Antenna
S007		7843	NLRS (coude mirror 7)
S008		7843	NLRS (coude mirror 7)
S010		1545	DSS45 Antenna
S012			Tidbinbilla/ROGUE SNR-8/DM R/L1 20-MAR-90-03-FEB-92
S013			Orroral/TRIMBLE SST /L1
S014			Tidbinbilla/ROGUE SNR-8/DM R/L1 03-FEB-92-10-MAY-92
S015			Tidbinbilla/ROGUE SNR-8/DM R/L1 11-MAY-92-
S016			Orroral/ASHTech/L1 15-MAY-92-
S017			Tidbinbilla/ROGUE SNR-8/DM R/Bottom of the choke ring 11-MAY
S018			Orroral/ASHTech/Bottom antenna 15-MAY-92-
S019			Tidbinbilla/ROGUE SNR-8/DM R/Top of the choke ring 20-MAR-90
S020		DS40	Tidbinbilla/ROGUE SNR-8/DM R/Bottom of the choke ring 20-MAR
S021		DS41	Tidbinbilla/ROGUE SNR-8/DM R/Bottom of the choke ring 03-FEB
S201			ORRA DORIS 1 antenna ref. pt. (Alcatel type)
S202			ORRB DORIS 2 antenna ref. pt.
50106	SMITHFIELD		
S005			GPS DMA TI4100 / L1
50107	YARRAGADEE		
M001		7090	MOBLAS 7090 brass disk
M004		YAR1	Mark RM-4
S005			ROGUE SNR-8/DM R/L1 15-DEC-90 -
S006			YARA DORIS antenna ref. pt (Alcatel type)
S009		7847	PSLR

50108	PARKES		
S001		7202	64-m Radiotelescope Ref. point
50116	HOBART		
M001			West pillar
M002			North pillar
M003		HOB1	U-Chanel plate
M004		HOB2	Pillar/stainless steel plate (AU16)
S002		7242	VLBI antenna ref. pt.
S003			MINIMAC 2816AT/L1 21-JAN-90 -
S004			MINIMAC 2816AT/Bottom of the antenna
50126	TOWNSVILLE		
M001			Pillar on the office building roof
S002			TRIMBLE 4000SST/L1 25-JUL-90 -
S004		TOWN	TRIMBLE 4000SST/Bottom of the antenna
50127	COCO ISLANDS		
M001		COCO	MOMUMENT AU018
50133	PERTH		
M001		PERT	GPS Mark
50134	DARWIN		
M001		DARW	GPS Mark
50135	MACQUARIE ISLAND		
M001		MAC1	pillar/atainless steel plate
50136	JABIRU		
M001		JAB1	ERISS/MONUMENT AU043
50137	ALICE SPRINGS/TELEGRAPH HILL		
M001		ALIC	MONUMENT AU012
50138	CEDUNA		
M001		CEDU	UTAS / MONUMENT AU019
50139	KARRATHA		
M001		KARR	HARDING DAM TELSTRA TOWER/MONUMENT AU013
50140	TOWNSVILLE/CAPE FERGUSON		
M001		TOW2	AIMS/MONUMENT AU028
50207	CHATHAM ISLAND		
M001		CHAT	PILLAR/15CM DIAMETER PLATE
50208	WELLINGTON		
M001			Pillar on the DOSLI building roof
M002		WEL2	AIRPORT/MONUMENT AUS360
S001			TRIMBLE 4000SST/L1 15-FEB-90 -
S002		WELL	TRIMBLE 4000SST/Bottom of the antenna
50209	AUCKLAND		
M001		AUCK	PILLAR/15CM DIAMETER PLATE
50501	GUAM		
M002		GUAM	GUAM OBS./ROOF/GUMO 1992-LAMONT-DOHERTY EARTH OBSERVATORY
S001		GUAB	DORIS antenna ref. pt. (Starec type)
50503	AMERICAN SAMOA		
M001		7096	Mark SLR

50505	KWAJALEIN ATOLL I		
M001		7092	Mark SLR
S003		4968	Tardex 26m antenna ref. pt.
S004			GPS OCS monitor station
50506	KWAJALEIN ATOLL II		
M001		KWJ1	GPS MARKER/ROOF MOUNT
50801	SUVA		
M001		FIJI	UNIVERSITY OF SOUTH PACIFIC/MONUMENT AU361
51001	PORT MORESBY		
S001			MORA DORIS antenna ref. pt (Alcatel type)
66001	MC MURDO		
M001		MCMU	GPS mark (MCMGPS) (11-FEB-92 - 31-OCT-93)
M003		MCM4	GPS MARK new location
S001			ROGUE SNR-8/DM R/L1 11-FEB-92/31-OCT-93
S006		MCM2	ROGUE SNR-8/DM R/ARP 31-OCT-93 - ?
66004	MAWSON STATION		
M001		MAW1	MONUMENT AUS64
66006	SYOWA		
M001			DORIS mark
M002			SCAR mark
S001			SYOB DORIS antenna ref. pt. (Starec type)
66007	ROTHERA		
M001			GAP 1995 mark
S001			ROTA DORIS 1 antenna ref. pt. (Alcatel type)
66008	O'HIGGINS		
M001		OHIG	METAL PLATE/PILLAR K5
M002			BOLT/PILLAR K5
S001		7245	9-m VLBI antenna
66010	DAVIS		
M001		DAV1	pillar/atainless steel plate (AUS99)
66011	CASEY		
M001		CAS1	pillar/atainless steel plate (AUS100)
91201	KERGUELEN		
M002		KERG	IGNF BRASS MARK RBGM
S002			KERA DORIS antenna ref. pt (Alcatel type)
S003			KERB DORIS antenna ref. pt. (Starec type)
91401	AMSTERDAM		
M001			DORIS 1 mark
M002			DORIS 2 mark on pillar
M003			NIVMER pillar
S001			AMSA DORIS 1 antenna ref. pt. (Alcatel type)
S002			AMSB DORIS 2 antenna ref. pt. (Starec type)
91501	ILE DES PETRELS		
M001			Plate/GPS pillar (SCAR 95)
S001			ADEA DORIS antenna ref. pt (Alcatel type)
92201	PAPEETE (TAHITI)		
M003		PAMA	IGN brass mark
M006		TAHI	12 MM DOMED MARK UGP1

S003		ASHTECH/L1 22-JAN-91 - 13-FEB-91-
S004		ROGUE SNR-8/DM R/L1 01-JAN-92
S007		PAPB DORIS antenna ref. pt. (Starec type)
92202	HUAHINE (MOTU HIUMOO)	
M001		Tube Huahine no. 5
M002	7121	MOBLAS-1 7121-1982 standard NASA disk
M003	7123	TLRS-2 7123 CSR reference
M004	7123	TLRS-2 7123 standard NASA disk
M005		Mark RM-1
S008		ASHTECH/L1 22-JAN-91 - 13-FEB-91
S009		HUAA DORIS antenna ref. pt (Alcatel type)
92403	RAPA	
M001		DORIS mark
S001		RAQB DORIS 2 antenna ref. pt. (Starec type)
92701	NOUMEA	
M002		DORIS mark
M003	NOUM	Center of stainless steel plate fixed to the top of 4" steel pillar
S001		NOUA DORIS antenna ref. pt (Alcatel type)
92901	WALLIS	
M001		DORIS mark
S001		WALA DORIS antenna ref. pt (Alcatel type)
97101	LE MOULE	
M001		RBGM / Borne
S001		ASHTECH/L1 22-JAN-91 - 13-FEB-91
97301	KOUROU	
M201		Pillar Diane I (84)
M210	KOUR	Mark at the center of a horizontal metal plate embedded on the concrete monument
M401		DORIS 2 mark
S001		ASHTECH/L1 22-JAN-91 - 13-FEB-91
S004		KRUB DORIS antenna ref. pt. (Starec type)
S005		KRUA DORIS 1 antenna ref. pt (Alcatel type)
97401	LA REUNION	
M002		DORIS mark
S001		REUA DORIS antenna ref. pt (Alcatel type)

Table T3: Local eccentricities for IERS sites

		DX/sigX m	DY/sigY m	DZ/sigZ m	Ref.
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10002 GRASSE					

S001	S002	0.542	36.489	-4.421	Ref: (3)
		0.003	0.003	0.003	
	M003	6.007	-33.777	-8.036	Ref: (3)
		0.003	0.003	0.003	
	S014	-11.353	6.551	11.633	Ref: (3)
	M006	-0.632	-44.858	1.199	Ref: (3)
10003 TOULOUSE					

M003	S001	97.450	-173.325	-75.239	Ref: (3)
		0.003	0.003	0.003	
M003	M004	-103.8755	-214.4924	136.6852	Ref: (3)
S001	S003	646.213	314.389	683.489	Ref: (3)
10004 BREST					

M002	S001	1.232	-0.097	1.393	Ref: (3)
		0.003	0.003	0.003	
10302 TROMSO					

M002	M003	36.289	-33.115	-9.215	Ref: (13)
		0.003	0.003	0.003	
	S010	11.225	-1.567	-0.514	Ref: (3)
		0.003	0.003	0.003	
10317 NY-ALESUND					

M001	S002	363.330	1536.449	-158.180	Ref: (3)
		0.003	0.003	0.003	
10402 ONSALA					

S002	M006	35.927	-51.366	-34.575	Ref: (13)
		0.003	0.003	0.003	
	M004	52.631	-40.464	-43.865	Ref: (20)
		0.003	0.003	0.003	

10503 METSAHOVI

M002	S011	1918.178	1548.001	-1324.664	Ref: (16)
		0.004	0.004	0.004	
	S001	1942.700	1512.472	-1347.868	Ref: (9)
		0.004	0.004	0.004	
	S013	-11.609	15.220	6.232	Ref: (3)
		0.003	0.003	0.003	

11001 GRAZ

S002	M002	-2.558	8.516	-1.321	Ref: (20)
		0.003	0.003	0.003	

12205 BOROWIEC

S001	M002	25.767	-72.908	-0.324	Ref: (20)
		0.003	0.003	0.003	

12302 RIGA

M002	S002	-3.401	18.661	-6.963	Ref: (20)
	M001	14.834	-4.832	-13.919	Ref: (20)

12334 KITAB

M001	S004	79.2680	56.6888	-90.1138	Ref: (20)
		.0015	.0015	.0015	

12602 DIONYSOS

M002	S011	-1.226	40.030	-14.416	Ref: (3)
		0.003	0.003	0.003	
	S001	1.953	29.359	-15.192	Ref: (3)
		0.003	0.003	0.003	

12711 BOLOGNA-MEDICINA

M002	S001	-29.531	29.904	48.556	Ref: (1,2)
		0.001	0.001	0.005	
M002	M003	1.386	26.495	-5.965	Ref: (20)
		.0015	.0015	.0015	

12717 NOTO

M001	S001	34.242 0.003	67.907 0.003	-38.223 0.003	Ref: (5)
M001	M003	-0.220 .0015	128.861 .0015	-43.217 .0015	Ref: (20)

12734 MATERA

S001	S005	-26.120 0.007	-67.073 0.007	63.166 0.007	Ref: (17)
	M008	-15.173 0.003	-24.827 0.003	24.964 0.003	Ref: (17)
	M005	19.533 0.003	-12.202 0.003	-28.771 0.003	Ref: (17)
	M004	25.263 0.003	-27.625 0.003	-30.369 0.003	Ref: (17)
	M007	-14.128 0.003	-13.229 0.003	18.027 0.003	Ref: (17)

13212 HERSTIMONCEUX

S001	M007	6.505 0.003	10.278 0.003	-3.945 0.003	Ref: (18)
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13407 MADRID

S010	S012	-134.246 0.003	159.664 0.003	164.275 0.003	Ref: (14)
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13504 KOOTWIJK

M002	M003	-12.458 0.003	-37.501 0.003	23.025 0.003	Ref: (5)
	S001	-13.621 0.003	-26.287 0.003	18.705 0.003	Ref: (3)

14001 ZIMMERWALD

S001	M004	13.680 0.003	6.012 0.003	-6.242 0.003	Ref: (20)
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14106 POTSDAM

S009	M003	50.091 0.003	95.219 0.003	-40.438 0.003	Ref: (20)
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14201 WETTZELL

S002	S004	10.003 0.003	-46.149 0.003	11.072 0.003	Ref: (3,4)
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M004	52.559	55.916	-58.337	Ref: (11)
	0.003	0.003	0.003	
M005	72.017	45.135	-70.501	Ref: (11)
	0.003	0.003	0.003	
M009	48.700	71.268	-48.250	Ref: (15)
	0.003	0.003	0.003	
S018	46.976	4.049	-34.728	Ref: (5)
	0.003	0.003	0.003	
M010	50.805	72.249	-50.245	Ref: (20)
	0.003	0.003	0.003	
M003	21.341	44.130	-30.432	Ref: (11)
	0.003	0.003	0.003	
M006	49.387	25.829	-47.290	Ref: (11)
	0.003	0.003	0.003	

20805 ANKARA

M001	M002	14.2608	-2.0499	-11.4556	Ref: (20)
		0.0075	0.0079	0.0048	

21605 SHANGHAI

S001	S009	-598.875	-469.603	154.995	Ref: (2)
		0.010	0.010	0.010	
S001	S009	-598.7945	-469.6798	154.8482	Ref: (23) (update)

21730 TSUKUBA

S001	S005	-26.306	-38.284	2.761	Ref: (20)
		0.003	0.003	0.003	

21732 CHICHIJIMA

S001	S002	-1716.283	-1462.147	-539.508	Ref: (10)
		0.040	0.040	0.040	

30302 HARTEBEESTHOEK

S001	M002	-817.332	2103.129	203.079	Ref: (3)
		0.010	0.010	0.010	
	S202	-801.257	2086.234	199.848	Ref: (3)
		0.010	0.010	0.010	
M002	M007	-.145	-.374	-.623	Ref: (24)

31903 SANTA MARIA / 31906 SAO MIGUEL

/M001	S001	65216.646	17120.897	-67374.720	Ref: (3)
		0.040	0.040	0.040	
33710 ARLITT					

S001	S002	-1362.690	-2163.732	4825.937	Ref: (3)
		0.006	0.006	0.006	
40102 OTTAWA / 40104 ALGONQUIN					

/M002	/S001	-94.756	-61.021	-6.665	Ref: (12)
		0.003	0.003	0.003	
/M003		83.510	4.669	-20.142	Ref: (20)
		0.003	0.003	0.003	
S005		189494.025	-1182.617	-43239.634	Ref: (3)
		0.050	0.050	0.050	
40104 ALGONQUIN (see 40102 OTTAWA)					
40105 PENTICTON					

M001	M002	-324.180	178.052	11.636	Ref: (19)
		0.003	0.003	0.003	
40127 YELLOWKNIFE					

M001	M003	-327.855	314.587	82.910	Ref: (20)
		0.003	0.003	0.003	
M004		-274.922	257.432	64.914	Ref: (20)
		0.003	0.003	0.003	
S007		-299.391	303.283	89.824	Ref: (3)
		0.003	0.003	0.003	
40129 VICTORIA					

M001	M003	-22.740	34.377	23.036	Ref: (20)
		0.003	0.003	0.003	
40400 PASADENA					

M003	M001	94.064	-31.945	55.121	Ref: (2)
		0.003	0.002	0.002	
M006		1.987	-18.063	-22.052	Ref: (12)
		0.003	0.003	0.003	
M005		-21.464	19.012	10.889	Ref: (5)
		0.003	0.003	0.003	
40405 GOLDSTONE					

S009	M013	-323.113	148.213	-43.993	Ref: (2)
		0.007	0.013	0.010	

M006		-304.746 0.003	137.590 0.003	-45.871 0.003	Ref: (3)
M001	S001	-227.005 0.003	188.001 0.003	153.150 0.003	Ref: (5)
	S019	-144.572 0.003	-119.976 0.003	-229.148 0.003	Ref: (2)
	M013	-3099.925 0.011	-5078.130 0.011	-8472.555 0.011	Ref: (22)
	M002	2532.581 0.022	-14016.673 0.022	-15901.337 0.022	Ref: (22)
M013	S028	2880.020 0.011	5222.261 0.011	8549.860 0.011	Ref: (14)
	S035	-9.691 0.003	23.663 0.003	26.579 0.003	Ref: (3)
M002	S014	-267.503 0.002	69.179 0.003	-40.943 0.002	Ref: (2)
M002	S037	3.047 0.002	0.448 0.002	6.936 0.002	Ref: (3)
S037	S005	0.028 0.002	0.055 0.002	-0.044 0.002	Ref: (3)

40407 PINYON FLATS

M001	M002	125.588 0.003	117.655 0.003	279.910 0.003	Ref: (12)
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40408 FAIRBANKS

S002	M001	-74.141 0.003	49.280 0.003	-31.231 0.003	Ref: (14)
	S004	-955.770 0.003	228.045 0.003	-298.634 0.003	Ref: (3)

40420 VANDENBERG

M002	M007	5.037 0.003	12.908 0.003	21.229 0.003	Ref: (5)
	M001	9278.854 0.011	-5310.196 0.011	1277.219 0.011	Ref: (5)
	M004	9226.714 0.011	-5291.788 0.011	1274.701 0.011	Ref: (5)

40424 KAUAI

S001	M004	7.941 0.003	-23.616 0.003	-4.407 0.003	Ref: (12,13)
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S008	-128.587	-26.268	-325.949	Ref: (3)
	0.003	0.003	0.003	

40432 ELY

M001	M002	16.416	-9.261	-2.199	Ref: (5)
		0.003	0.003	0.003	

40433 QUINCY

M002	M001	341.581	-288.817	-158.149	Ref: (5)
		0.003	0.003	0.003	
	M004	3.890	-38.987	-38.409	Ref: (8)
		0.002	0.001	0.001	
	M005	-7.611	5.310	0.619	Ref: (5)
		0.003	0.003	0.003	
	M006	250.895	-256.065	-178.592	Ref: (5)
		0.003	0.003	0.003	

40436 SAN DIEGO-OTAY MOUNTAIN / 40497 MONUMENT PEAK

M002	/M003	42536.518	-2596.062	27611.264	Ref: (5)
		0.051	0.051	0.051	
	M003	-0.756	-3.831	-5.638	Ref: (5)
		0.003	0.003	0.003	
/M001	/M002	-14.269	6.872	-0.596	Ref: (3)
		0.003	0.003	0.003	
	/M003	-11.395	7.802	2.523	Ref: (2)
		0.003	0.003	0.003	

40438 BEAR LAKE

M002	M001	5.825	1.270	3.391	Ref: (5)
		0.003	0.003	0.003	

40439 OWENS VALLEY

M004	M001	-1.223	-2.261	-3.617	Ref: (3)
		0.003	0.003	0.003	
	S002	820.489	-549.119	-87.117	Ref: (2)
		0.005	0.009	0.009	
	M003	-169.108	55.235	-41.459	Ref: (5)
		0.003	0.003	0.003	

40440 WESTFORD

M001	S002	-48.865	12.264	65.806	Ref: (2,3)
		0.001	0.002	0.002	
	S003	-247.002	-851.720	-800.428	Ref: (2,3)

		0.003	0.004	0.004	
S003	S020	26.807	40.999	30.496	Ref: (20)
		0.100	0.100	0.100	
40442 FORT DAVIS					

M001	S001	4.356	-5.631	-3.556	Ref: (3)
		0.003	0.003	0.003	
	S002	-655.977	-228.944	-452.568	Ref: (3)
		0.003	0.003	0.003	
	M005	0.000	0.000	0.000	Ref: (3)
		0.003	0.003	0.003	
	S003	5914.397	-3496.510	-4031.862	Ref: (2)
		0.004	0.012	0.007	
	M008	117.202	135.062	352.484	Ref: (5)
		0.003	0.003	0.003	
S003	M006	-5810.069	3621.294	4362.423	Ref: (2)
		0.003	0.010	0.006	
	M009	-16.971	-39.906	-95.339	Ref: (5)
		0.003	0.003	0.003	
	S017	201.879	-158.810	-155.893	Ref: (6)
		0.003	0.003	0.003	
M008	M012	9.512	-1.795	1.484	Ref: (6)
		0.003	0.003	0.003	
40445 MAUI					

M001	S005	-.483	-.212	1.003	Ref: (3)
		0.003	0.003	0.003	
	M002	8.044	19.381	40.992	Ref: (3)
		0.003	0.003	0.003	
40451 WASHINGTON					

M105	M112	-4.947	-17.162	-19.125	Ref: (3)
		0.003	0.003	0.003	
	M106	635.813	182.229	25.164	Ref: (3)
		0.003	0.003	0.003	
	M101	520.577	170.825	41.961	Ref: (3)
		0.003	0.003	0.003	
	M102	-33.112	-2.452	4.398	Ref: (3)
		0.003	0.003	0.003	
	M103	-34.066	1.868	9.839	Ref: (3)
		0.003	0.003	0.003	
	M104	376.110	153.626	64.228	Ref: (3)
		0.003	0.003	0.003	
	M111	645.036	181.778	22.412	Ref: (3)
		0.003	0.003	0.003	
	M125	75.125	116.762	110.510	Ref: (3)
		0.003	0.003	0.003	

M114	26.038	-17.460	-29.389	Ref: (5)
	0.003	0.003	0.003	
M117	22.182	-19.215	-30.410	Ref: (5)
	0.003	0.003	0.003	
M120	-14.419	5.137	9.456	Ref: (5)
	0.003	0.003	0.003	
M123	54.241	97.013	93.863	Ref: (5)
	0.003	0.003	0.003	
M107	-30.463	8.595	16.961	Ref: (5)
	0.003	0.003	0.003	
M108	-28.408	-0.491	5.446	Ref: (5)
	0.003	0.003	0.003	
M116	15.577	25.904	25.854	Ref: (5)
	0.003	0.003	0.003	
M118	14.413	26.236	26.367	Ref: (5)
	0.003	0.003	0.003	

40456 PIETOWN

S001	M001	36.916	34.827	35.255	Ref: (5)
		0.003	0.003	0.003	

40465 NORTH LIBERTY

S001	M001	-62.228	25.387	3.626	Ref: (20)
		0.003	0.003	0.003	

40491 FLAGSTAF

M002	M003	-15.933	17.213	14.367	Ref: (2)
		0.001	0.003	0.003	

40496 PLATTEVILLE

M001	M002	-29.894	9.036	1.025	Ref: (2)
		0.001	0.001	0.001	

40497 MONUMENT PEAK (see 40436 SAN DIEGO-OTAY MOUNTAIN)

40499 RICHMOND

M002	S001	-60.877	0.931	44.212	Ref: (2,4)
		0.003	0.002	0.002	
	M005	-76.090	69.330	168.048	Ref: (20)
		0.003	0.003	0.003	
	S018	15.832	16.844	45.521	Ref: (20)
		0.003	0.003	0.003	
	S015	-239.169	514.840	1149.683	Ref: (3)
		0.003	0.003	0.003	
	S016	-562.116	405.892	1039.924	Ref: (3)
		0.003	0.003	0.003	

40503 SOCORRO ISLAND

S003	S002	-202.980	30.260	-148.510	Ref: (3)
		0.003	0.003	0.003	

41507 RIO GRANDE

S004	S003	-4.283	-4.105	2.101	Ref: (3)
		0.003	0.003	0.003	

41602 FORTALEZA

M001	S001	-16.598	-21.732	-45.805	Ref: (20)
		0.003	0.003	0.003	

41703 EASTER ISLAND

M002	M001	0.424	1.204	0.650	Ref: (5)
		0.003	0.003	0.003	
	M003	32.016	12.485	-37.088	Ref: (20)
		0.003	0.003	0.003	
	S008	-9.956	3.329	-5.267	Ref: (3)
		0.003	0.003	0.003	

41705 SANTIAGO

M003	M001	6.309	-38.829	61.146	Ref: (20)
		0.003	0.003	0.003	
	M002	31.374	61.808	-75.245	
		0.003	0.003	0.003	
	S006	-0.230	69.610	-113.927	Ref: (20)
		0.003	0.003	0.003	
S007	S006	-6653.688	-17960.224	22748.646	Ref: (3)
		0.100	0.100	0.100	
S007	S006	-6653.652	-17960.224	22748.646	Ref: (3) (update)
S008	M001	-0.674	1.921	1.330	Ref: (3)

42202 AREQUIPA

M003	M004	-23.075	-11.900	4.458	Ref: (3)
		0.003	0.003	0.003	
	M005	18.615	-0.548	21.499	Ref: (20)

		0.003	0.003	0.003	
S001		-16.022	-7.911	-3.665	Ref: (3)
		0.003	0.003	0.003	
S005		-11.368	-8.020	-3.627	Ref: (3)
		0.003	0.003	0.003	

50103 CANBERRA-ORRORAL-TIDBINBILLA

S007	S003	-1072.033	-992.958	1255.113	Ref: (7)
		0.010	0.010	0.010	
	S010	-14458.373	4638.716	21870.004	Ref: (7)
		0.027	0.027	0.027	
	S201	6.411	-25.040	-22.873	Ref: (3)
		0.003	0.003	0.003	
S010	S001	40.710	-404.168	-367.147	Ref: (21)
		0.003	0.003	0.003	
	S005	-45.694	-352.212	-200.582	Ref: (7)
		0.003	0.003	0.003	
	M108	-60.720	-208.617	-62.493	Ref: (21)
		0.005	0.005	0.005	
S007	S202	6.249	-24.942	-23.008	Ref: (3)

50107 YARRAGADEE

M001	M004	-18.605	-12.471	-5.835	Ref: (7,14)
		0.003	0.003	0.003	
	S006	2.990	11.270	11.823	Ref: (3)
		0.003	0.003	0.003	

50501 GUAM

M002	S001	-3965.701	-3252.703	-5313.389	Ref: (3)
		.005	.005	.005	

50505 KWAJALEIN ATOLL

M001	S003	-89.234	-702.977	544.240	Ref: (3,4)
		0.003	0.003	0.003	

66008 O'HIGGINS

S001	M001	39.447	-17.634	28.448	Ref: (20)
		0.003	0.003	0.003	

91201 KERGUELEN

M002	S002	-510.991	120.575	-36.781	Ref: (3)
		0.003	0.003	0.003	

S003	-510.926	120.724	-36.935	Ref: (3)
	0.003	0.003	0.003	

91501 ILE DES PETRELS

S001	M001	175.663	-175.752	-104.366	Ref: (3)
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92201 PAPEETE

M006	S007	-11.033	16.403	0.416	Ref: (3)
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92202 HUAHINE

M004	S009	-6.282	7.965	-0.173	Ref: (3)
		0.003	0.003	0.003	
	M002	1.458	0.807	0.501	Ref: (5)

97301 KOUROU

M210	S004	15669.825	9832.780	-16899.080	Ref: (3)
		0.025	0.025	0.025	
	S005	15123.675	9589.762	-15209.338	Ref: (3)
		0.024	0.024	0.024	

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Table T4: ITRF96 VLBI Station Coordinates at epoch 1997.0 and Velocities

DOMES NB.	SITE NAME	TECH.	ID.	X/Vx	Y/Vy	Z/Vz	Sigmas		
				-----m/m/y-----					
10002M003	GRASSE	VLBI	7605	4581697.680	556125.772	4389351.462	.004	.004	.004
10002M003				-.0120	.0189	.0106	.0003	.0004	.0003
10003M003	TOULOUSE	VLBI	7608	4627949.964	119843.760	4372863.102	.015	.026	.014
10003M003				-.0221	.0356	.0229	.0035	.0071	.0037
10004M002	BREST	VLBI	7604	4228877.122	-333104.172	4747181.008	.051	.034	.056
10004M002				-.0088	.0180	.0100	.0054	.0062	.0047
10204M001	HOEFN	VLBI	7635	2679650.258	-727916.435	5722807.238	.082	.084	.082
10204M001				-.0095	.0136	.0075	.0180	.0198	.0086
10302M002	TROMSO	VLBI	7602	2102904.058	721602.508	5958201.318	.004	.004	.004
10302M002				-.0182	.0074	.0047	.0005	.0006	.0003
10317S003	NY-ALESUND	VLBI	7331	1202462.764	252734.408	6237766.020	.003	.003	.004
10317S003				-.0168	.0076	.0009	.0006	.0006	.0006
10329M001	TRYSIL	VLBI	7607	2988029.187	655957.087	5578669.163	.108	.035	.197
10329M001				-.0061	.0106	.0212	.0228	.0074	.0413
10402M006	ONSALA	VLBI	7211	3370641.963	711866.129	5349796.154	.004	.004	.004
10402M006				-.0143	.0147	.0072	.0002	.0002	.0002
10402S002	ONSALA	VLBI	7213	3370606.036	711917.495	5349830.729	.003	.002	.003
10402S002				-.0143	.0147	.0072	.0002	.0002	.0002
10503M002	METSAHOVI	VLBI	7601	2890652.755	1310295.341	5513958.711	.005	.004	.005
10503M002				-.0171	.0135	.0062	.0004	.0005	.0002
12337S008	SIMEIS	VLBI	7332	3785231.081	2551207.426	4439796.369	.025	.016	.029
12337S008				-.0195	.0159	.0048	.0071	.0047	.0084
12342S001	USSURIISK	VLBI	7247	-3059725.133	3427256.737	4409485.417	.851	.936	1.096
12342S001				-.0233	-.0085	-.0086	.0200	.0192	.0164
12711S001	BOLOGNA	VLBI	7230	4461369.998	919596.840	4449559.195	.003	.003	.003
12711S001				-.0142	.0214	.0118	.0002	.0003	.0003
12717S001	NOTO	VLBI	7547	4934563.134	1321201.275	3806484.493	.004	.003	.004
12717S001				-.0163	.0188	.0157	.0004	.0005	.0004
12734S005	MATERA	VLBI	7243	4641938.777	1393003.028	4133325.535	.003	.003	.004
12734S005				-.0189	.0192	.0136	.0003	.0004	.0003
13201S002	CHILBOLTON	VLBI	7215	4008310.093	-100650.753	4943794.786	.033	.018	.037
13201S002				-.0099	.0172	.0092	.0014	.0016	.0011
13296M002	CARNUSTY	VLBI	7603	3526416.365	-171421.084	5294098.821	.069	.053	.080
13296M002				-.0096	.0177	.0079	.0084	.0098	.0056
13407S001	MADRID	VLBI	1563	4849092.652	-360180.495	4115109.176	.009	.009	.013
13407S001				-.0053	.0201	.0140	.0003	.0004	.0003
13407S003	MADRID	VLBI	1561	4849245.219	-360278.092	4114884.512	.024	.014	.024
13407S003				-.0053	.0201	.0140	.0003	.0004	.0003
13407S010	MADRID	VLBI	1565	4849336.710	-360488.779	4114748.831	.003	.003	.004
13407S010				-.0053	.0201	.0140	.0003	.0004	.0003
13420S001	YEBES	VLBI	7333	4848780.333	-261702.068	4123035.759	.042	.015	.035
13420S001				-.0079	.0189	.0112	.0038	.0054	.0044
14201S004	WETTZEIL	VLBI	7224	4075539.893	931735.272	4801629.356	.003	.002	.003
14201S004				-.0159	.0174	.0070	.0000	.0000	.0001
14202M002	HOHENBUNSTORF	VLBI	7600	3778214.880	698644.788	5074053.612	.027	.023	.031
14202M002				-.0129	.0172	.0078	.0037	.0048	.0026
14209S001	EFFELSBERG	VLBI	7203	4033947.460	486990.521	4900430.776	.007	.003	.009
14209S001				-.0153	.0175	.0060	.0016	.0006	.0020
14209S001	EFFELSBERG	VLBI	7203	4033947.497	486990.522	4900430.831	.030	.013	.033
14209S001				-.0153	.0175	.0060	.0016	.0006	.0020
14213M002	HOHENPEIJSSENBERG	VLBI	7630	4213687.239	820422.962	4702784.264	.090	.086	.087
14213M002				-.0135	.0176	.0094	.0157	.0206	.0141
14260M001	KARLSBURG	VLBI	7632	3653204.249	884427.591	5135732.152	.097	.090	.107
14260M001				-.0155	.0164	.0087	.0174	.0209	.0126
14261M001	KIRSCHBERG	VLBI	7631	3879830.735	987963.335	4948713.391	.067	.076	.061
14261M001				-.0139	.0159	.0082	.0138	.0181	.0111
21605S008	SHANGHAI	VLBI	7226	-2847698.275	4659872.587	3283958.582	1.105	.961	.866
21605S008				-.0309	-.0117	-.0120	.0019	.0025	.0019
21605S009	SHANGHAI	VLBI	7227	-2831686.904	4675733.678	3275327.683	.012	.015	.012
21605S009				-.0309	-.0117	-.0120	.0019	.0025	.0019
21612S001	URUMQI	VLBI	7330	228310.741	4631922.911	4367064.065	.056	.085	.086
21612S001				-.0268	-.0045	.0056	.0190	.0127	.0134
* AFTER 96:309									

* AFTER 96:309

21701S001	KASHIMA	VLBI	1856	-3997892.263	3276581.277	3724118.220	.009	.007	.009
21701S001				-.0013	.0024	-.0129	.0014	.0008	.0014
21701S004	KASHIMA	VLBI	1857	-3997649.226	3276690.758	3724278.813	.008	.006	.008
21701S004				-.0013	.0024	-.0129	.0014	.0008	.0014
21702S009	MIZUSAWA	VLBI	7314	-3862411.941	3105015.048	4001944.849	.200	.139	.130
21702S009				-.0080	.0040	-.0094	.0069	.0100	.0100
21702S010	MIZUSAWA	VLBI	7324	-3857236.136	3108803.235	4003883.069	.038	.042	.046
21702S010				-.0080	.0040	-.0094	.0069	.0100	.0100
21718S001	MIYAZAKI	VLBI	7312	-3582768.062	4052033.965	3369020.575	.742	.500	.763
21718S001				-.0232	-.0109	-.0106	.0183	.0160	.0189
21725S001	NOBEYAMA	VLBI	7244	-3871168.428	3428273.937	3723697.582	.202	.184	.196
21725S001				-.0274	-.0049	-.0134	.0418	.0381	.0407
21729S001	USUDA	VLBI	7246	-3855355.409	3427427.603	3740971.286	.255	.226	.291
21729S001				-.0052	.0011	-.0052	.0009	.0010	.0008
21730S001	TSUKUBA	VLBI	7311	-3957172.926	3310237.956	3737708.939	.005	.004	.005
21730S001				-.0005	.0025	-.0118	.0020	.0018	.0018
21731S001	SHINJITSUGAWA	VLBI	7315	-3642141.966	2861496.556	4370361.656	.651	.628	.470
21731S001				-.0171	-.0041	-.0101	.0187	.0204	.0165
21732S001	CHICHIJIMA	VLBI	7316	-4489356.600	3482989.625	2887931.246	.746	.831	.490
21732S001				.0111	.0124	.0040	.0158	.0191	.0191
21733S002	MINAMI TORI SIMA	VLBI	7310	-5227446.489	2551379.696	2607604.983	.123	.072	.078
21733S002				.0404	.0580	.0226	.0279	.0165	.0188
21737S001	SAGARA	VLBI	7325	-3913437.823	3501122.790	3608593.520	.328	.209	.314
21737S001				-.0147	-.0037	-.0110	.0180	.0190	.0187
21738S001	DAITO	VLBI	7326	-3786460.625	4320156.047	2762038.888	.503	.582	.520
21738S001				.0218	.0083	.0177	.0181	.0165	.0203
30302S001	HARTBEESTHOEK	VLBI	7232	5085442.780	2668263.483	-2768697.034	.006	.005	.005
30302S001				.0007	.0192	.0164	.0009	.0010	.0007
31906M001	SAO MIGUEL	VLBI	7609	4552174.608	-2186664.682	3882779.801	.061	.070	.066
31906M001				-.0024	.0165	.0140	.0126	.0162	.0145
40104S001	ALGONQUIN	VLBI	7282	918034.752	-4346132.254	4561971.160	.002	.003	.003
40104S001				-.0157	-.0023	.0003	.0004	.0008	.0008
40105M001	PENITICTON	VLBI	7283	-2058840.495	-3621286.441	4814420.745	.004	.004	.004
40105M001				-.0154	-.0019	-.0065	.0008	.0011	.0013
40118M001	WHITEHORSE	VLBI	7284	-2215213.732	-2209261.554	5540292.351	.177	.163	.396
40118M001				-.0219	.0038	-.0198	.0203	.0186	.0456
40118M001	WHITEHORSE	VLBI	7284	-2215213.740	-2209261.565	5540292.368	.164	.151	.368
40118M001				-.0219	.0038	-.0198	.0203	.0186	.0456
40127M001	YELLOWKNIFE	VLBI	7285	-1224124.639	-2689530.693	5633555.374	.003	.003	.004
40127M001				-.0196	-.0030	-.0048	.0005	.0007	.0012
40127M004	YELLOWKNIFE	VLBI	7296	-1224399.562	-2689273.257	5633620.285	.003	.004	.005
40127M004				-.0196	-.0030	-.0048	.0005	.0007	.0012
40129M001	VICTORIA	VLBI	7289	-2341310.138	-3539083.888	4745768.339	.004	.004	.004
40129M001				-.0095	-.0041	-.0038	.0008	.0007	.0005
40400M003	PASADENA	VLBI	7263	-2493306.142	-4655197.406	3565519.424	.019	.031	.023
40400M003				-.0247	.0225	.0056	.0017	.0026	.0019
40403M001	PALOS VERDES	VLBI	7268	-2525452.975	-4670035.430	3522886.908	.070	.119	.089
40403M001				-.0276	.0275	.0127	.0078	.0133	.0098
40404M001	PEARLOSSOM	VLBI	7254	-2464071.045	-4649425.489	3593905.758	.107	.193	.144
40404M001				-.0213	.0165	.0025	.0102	.0184	.0138
40405M013	GOLDSTONE	VLBI	7288	-2356494.167	-4646607.648	3668426.617	.005	.007	.006
40405M013				-.0144	.0040	-.0040	.0002	.0003	.0003
40405S001	GOLDSTONE	VLBI	1514	-2353621.253	-4641341.517	3677052.313	.006	.009	.008
40405S001				-.0144	.0040	-.0040	.0002	.0003	.0003
40405S003	GOLDSTONE	VLBI	1512	-2350443.821	-4651980.779	3665630.932	.019	.023	.021
40405S003				-.0144	.0040	-.0040	.0002	.0003	.0003
40405S009	GOLDSTONE	VLBI	7222	-2356171.049	-4646755.854	3668470.605	.003	.004	.003
40405S009				-.0144	.0040	-.0040	.0002	.0003	.0003
40405S009	GOLDSTONE	VLBI	7222	-2356171.070	-4646755.861	3668470.601	.006	.011	.010
40405S009				-.0144	.0040	-.0040	.0002	.0003	.0003
40405S014	GOLDSTONE	VLBI	1513	-2351129.188	-4655477.038	3660956.905	.005	.008	.007
40405S014				-.0145	.0040	-.0040	.0002	.0003	.0003
40405S019	GOLDSTONE	VLBI	1515	-2353538.816	-4641649.492	3676670.007	.006	.008	.008
40405S019				-.0145	.0040	-.0040	.0002	.0003	.0003
40405S019	GOLDSTONE	VLBI	1515	-2353538.832	-4641649.480	3676669.985	.006	.009	.009
40405S019				-.0145	.0040	-.0040	.0002	.0003	.0003
40406M001	PRESIDIO	VLBI	7252	-2707704.955	-4257609.368	3888374.206	.082	.126	.117
40406M001				-.0177	.0259	.0004	.0090	.0140	.0130
40406M001	PRESIDIO	VLBI	7252	-2707704.954	-4257609.365	3888374.201	.071	.109	.101
40406M001				-.0177	.0259	.0004	.0090	.0140	.0130

* AFTER 88:217

* AFTER 92:181

* AFTER 92:181

* AFTER 89:294

40407M001	PINYON FLATS	VLBI	7256	-2369636.040	-4761324.772	3511116.266	.018	.029	.021	
40407M001				-.0187	.0165	.0087	.0025	.0045	.0033	
40408S002	FAIRBANKS	VLBI	7225	-2281547.295	-1453645.072	5756993.155	.003	.003	.003	
40408S002				-.0215	-.0042	-.0097	.0003	.0004	.0006	
40410M001	POINT REYES	VLBI	7251	-2732333.271	-4217634.714	3914491.265	.084	.124	.118	
40410M001				-.0261	.0208	.0206	.0101	.0149	.0141	
40412M003	AUSTIN	VLBI	7271	-737793.848	-5459892.305	3202990.475	.043	.107	.071	
40412M003				-.0122	-.0046	-.0045	.0055	.0037	.0062	
40416M001	YAKATAGA	VLBI	7277	-2529744.282	-1942091.087	5505028.100	.225	.179	.466	
40416M001				-.0145	.0237	.0122	.0225	.0178	.0467	
40416M001	YAKATAGA	VLBI	7277	-2529744.333	-1942091.058	5505028.025	.172	.137	.357	* AFTER 88:203
40416M001				-.0145	.0237	.0122	.0225	.0178	.0467	
40419M001	KODIAK	VLBI	7278	-3026940.332	-1575911.785	5370362.570	.138	.080	.232	
40419M001				-.0260	-.0005	.0076	.0162	.0095	.0273	
40420M002	VANDENBERG	VLBI	7223	-2678094.924	-4525450.535	3597410.309	.007	.010	.008	
40420M002				-.0280	.0324	.0157	.0009	.0012	.0010	
40421M001	NOME	VLBI	7279	-2658150.635	-693821.991	5737236.645	.128	.052	.261	
40421M001				-.0299	-.0107	.0006	.0136	.0056	.0274	
40423M001	SANDPOINT	VLBI	7280	-3425462.014	-1214669.103	5223858.170	.159	.080	.234	
40423M001				-.0200	.0022	-.0121	.0198	.0102	.0292	
40424S001	KAUAI	VLBI	1311	-5543846.049	-2054563.636	2387814.112	.003	.003	.004	
40424S001				-.0081	.0618	.0302	.0005	.0003	.0004	
40424S007	KAUAI	VLBI	7298	-5543837.612	-2054567.851	2387851.938	.003	.003	.004	
40424S007				-.0081	.0618	.0302	.0005	.0003	.0004	
40425M001	SOURDOUGH	VLBI	7281	-2419993.612	-1664228.780	5643538.228	.095	.068	.212	
40425M001				-.0220	-.0041	-.0079	.0096	.0070	.0216	
40425M001	SOURDOUGH	VLBI	7281	-2419993.610	-1664228.782	5643538.226	.083	.060	.186	* AFTER 88:210
40425M001				-.0220	-.0041	-.0079	.0096	.0070	.0216	
40427M001	FORT ORD	VLBI	7266	-2697026.969	-4354393.087	3788077.845	.138	.220	.190	
40427M001				-.0310	.0243	.0241	.0140	.0223	.0192	
40427M002	FORT ORD	VLBI	7241	-2699840.469	-4359126.871	3781051.202	.115	.183	.157	
40427M002				-.0310	.0243	.0241	.0140	.0223	.0192	
40427M002	FORT ORD	VLBI	7241	-2699840.444	-4359126.845	3781051.241	.096	.152	.132	* AFTER 89:297
40427M002				-.0310	.0243	.0241	.0140	.0223	.0192	
40428M001	SANTA PAOLA	VLBI	7255	-2554476.917	-4608627.258	3582138.464	.162	.290	.221	
40428M001				-.0353	.0138	.0153	.0190	.0342	.0261	
40430M001	BLACK BUTTE	VLBI	7269	-2306306.996	-4787914.338	3515736.325	.168	.341	.241	
40430M001				-.0126	.0102	-.0140	.0170	.0344	.0244	
40431M001	DEADMAN LAKE	VLBI	7267	-2336819.705	-4732586.983	3570329.927	.083	.158	.116	
40431M001				-.0138	-.0023	-.0092	.0142	.0265	.0197	
40432M001	ELY	VLBI	7286	-2077236.385	-4486712.696	4018753.671	.093	.197	.164	
40432M001				-.0156	.0023	-.0128	.0104	.0222	.0185	
40433M004	QUINCY	VLBI	7221	-2517230.998	-4198595.166	4076531.255	.002	.002	.003	
40433M004				-.0195	.0065	-.0052	.0003	.0004	.0004	
40437M001	MAMMOTH LAKES	VLBI	7259	-2448246.889	-4426738.410	3875435.887	.044	.078	.066	
40437M001				-.0251	-.0097	-.0013	.0025	.0039	.0033	
40439M004	OWENS VALLEY	VLBI	7853	-2410421.286	-4477800.425	3838690.197	.007	.011	.010	
40439M004				-.0135	.0023	-.0183	.0002	.0002	.0002	
40439S002	OWENS VALLEY	VLBI	7207	-2409600.796	-4478349.554	3838603.074	.005	.008	.007	
40439S002				-.0135	.0023	-.0183	.0002	.0002	.0002	
40439S006	OWENS VALLEY	VLBI	7616	-2409150.098	-4478573.238	3838617.370	.002	.003	.003	
40439S006				-.0135	.0023	-.0183	.0002	.0002	.0002	
40440S002	WESTFORD	VLBI	7205	1492404.740	-4457266.517	4296881.774	.002	.004	.004	
40440S002				-.0150	-.0012	.0019	.0002	.0004	.0004	
40440S003	WESTFORD	VLBI	7209	1492206.598	-4458130.509	4296015.541	.002	.003	.003	
40440S003				-.0150	-.0012	.0019	.0002	.0004	.0004	
40441S001	GREENBANK	VLBI	7204	882879.894	-4924482.307	3944130.691	.003	.006	.005	
40441S001				-.0143	-.0005	-.0004	.0004	.0010	.0008	
40441S004	GREENBANK	VLBI	7214	882325.569	-4925137.995	3943397.684	.002	.004	.004	
40441S004				-.0143	-.0005	-.0004	.0004	.0010	.0008	
40441S004	GREENBANK	VLBI	7214	882325.569	-4925137.989	3943397.684	.002	.005	.004	* AFTER 90:340
40441S004				-.0143	-.0005	-.0004	.0004	.0010	.0008	
40441S005	GREENBANK	VLBI	7248	883555.559	-4924490.889	3943961.965	.008	.029	.021	
40441S005				-.0143	-.0005	-.0004	.0004	.0010	.0008	
40441S007	GREENBANK	VLBI	7208	883772.757	-4924385.591	3944042.493	.002	.004	.004	
40441S007				-.0143	-.0005	-.0004	.0004	.0010	.0008	
40442M008	FORT DAVIS	VLBI	7850	-1330008.184	-5328391.593	3236502.713	.003	.004	.004	
40442M008				-.0117	-.0034	-.0064	.0003	.0005	.0004	
40442M009	FORT DAVIS	VLBI	7900	-1324227.963	-5332063.070	3232023.026	.004	.005	.005	
40442M009				-.0117	-.0034	-.0064	.0003	.0005	.0004	

40442S003	FORT DAVIS	VLBI	7216	-1324210.991	-5332023.164	3232118.365	.003	.004	.003
40442S003				-.0117	-.0034	-.0064	.0003	.0005	.0004
40442S017	FORT DAVIS	VLBI	7613	-1324009.120	-5332181.975	3231962.475	.002	.003	.003
40442S017				-.0117	-.0034	-.0064	.0003	.0005	.0004
40445M002	MAUI	VLBI	7120	-5465998.558	-2404408.033	2242228.745	.004	.003	.004
40445M002				-.0122	.0609	.0303	.0005	.0003	.0004
40449M001	OCOTILLO	VLBI	7270	-2335601.361	-4832243.875	3434392.774	.064	.130	.092
40449M001				-.0313	.0247	.0193	.0035	.0027	.0038
40451M102	WASHINGTON	VLBI	7102	1130686.511	-4831353.020	3994110.933	.003	.003	.003
40451M102				-.0178	.0009	.0001	.0000	.0000	.0000
40451M125	WASHINGTON	VLBI	7108	1130794.760	-4831233.802	3994217.045	.002	.003	.003
40451M125				-.0178	.0009	.0001	.0000	.0000	.0000
40452M001	BLOOMINGTON	VLBI	7291	302384.405	-4941699.081	4007908.519	.176	.251	.231
40452M001				-.0133	-.0040	.0006	.0192	.0131	.0163
40453M001	CARROLLTON	VLBI	7228	453520.574	-5300506.749	3507207.452	.152	.242	.182
40453M001				-.0125	-.0031	.0021	.0172	.0077	.0116
40454M001	LEONARD	VLBI	7292	-522231.629	-5145676.910	3720152.372	.042	.107	.081
40454M001				-.0127	-.0039	-.0020	.0060	.0052	.0071
40455M001	MILES CITY	VLBI	7038	-1204439.087	-4239211.107	4596266.034	.083	.175	.179
40455M001				-.0169	-.0045	-.0045	.0106	.0097	.0091
40456S001	PIETOWN	VLBI	7234	-1640953.700	-5014816.025	3575411.882	.002	.003	.003
40456S001				-.0133	-.0027	-.0078	.0004	.0007	.0006
40457M001	SEATTLE	VLBI	7229	-2295348.032	-3638029.467	4693408.620	.200	.384	.446
40457M001				-.0138	-.0027	-.0092	.0262	.0533	.0598
40463S001	LOS ALAMOS	VLBI	7611	-1449752.350	-4975298.591	3709123.925	.003	.004	.004
40463S001				-.0123	-.0001	-.0084	.0005	.0010	.0008
40465S001	NORTH LIBERTY	VLBI	7612	-130872.246	-4762317.115	4226851.039	.002	.004	.004
40465S001				-.0150	.0009	-.0050	.0005	.0013	.0011
40466S001	KITT PEAK	VLBI	7610	-1995678.618	-5037317.718	3357328.122	.003	.006	.005
40466S001				-.0122	-.0022	-.0121	.0012	.0023	.0018
40471S001	HANCOCK	VLBI	7618	1446375.124	-4447939.657	4322306.129	.003	.007	.007
40471S001				-.0150	-.0011	.0038	.0010	.0027	.0024
40473S001	BREWSTER	VLBI	7614	-2112064.972	-3705356.521	4726813.792	.003	.005	.005
40473S001				-.0159	-.0036	-.0123	.0009	.0014	.0015
40477S001	MAUNA KEA	VLBI	7617	-5464074.957	-2495249.114	2148296.841	.005	.005	.005
40477S001				-.0138	.0601	.0286	.0008	.0008	.0009
40489S001	HAT CREEK	VLBI	7218	-2523970.031	-4123506.318	4147752.553	.013	.021	.020
40489S001				-.0181	.0045	-.0077	.0015	.0024	.0023
40490S001	MARYLAND POINT	VLBI	7217	1106629.299	-4882907.173	3938086.961	.025	.078	.060
40490S001				-.0152	.0014	-.0024	.0027	.0088	.0069
40491M003	FLAGSTAFF	VLBI	7261	-1923992.768	-4850854.648	3658589.345	.091	.218	.167
40491M003				-.0179	-.0136	.0005	.0096	.0232	.0176
40492M002	VERNAL	VLBI	7290	-1631473.361	-4589128.999	4106759.887	.087	.217	.189
40492M002				-.0143	-.0096	-.0029	.0103	.0255	.0221
40493M001	YUMA	VLBI	7894	-2196777.991	-4887337.145	3448425.238	.101	.219	.153
40493M001				-.0152	-.0093	-.0040	.0102	.0222	.0155
40496M002	PLATTEVILLE	VLBI	7258	-1240708.188	-4720454.347	4094481.599	.019	.038	.034
40496M002				-.0138	-.0004	-.0088	.0019	.0041	.0038
40497M003	MONUMENT PEAK	VLBI	7274	-2386289.608	-4802346.334	3444884.123	.003	.003	.004
40497M003				-.0308	.0263	.0138	.0003	.0004	.0004
40498S001	VLA	VLBI	7619	-1601185.315	-5041977.549	3554875.978	.410	.796	.643
40498S001				-.0116	-.0043	-.0057	.0221	.0140	.0189
40499S001	RICHMOND	VLBI	7219	961258.066	-5674090.086	2740533.833	.003	.004	.003
40499S001				-.0079	-.0059	.0041	.0003	.0006	.0005
40499S019	RICHMOND	VLBI	7201	961255.338	-5674092.597	2740533.798	.007	.020	.012
40499S019				-.0079	-.0059	.0041	.0003	.0006	.0005
41602S001	FORTALEZA	VLBI	7297	4985370.041	-3955020.313	-428472.299	.004	.004	.003
41602S001				.0010	-.0036	.0114	.0017	.0016	.0007
41705S006	SANTIAO	VLBI	1404	1769693.108	-5044504.535	-3468434.988	.004	.005	.004
41705S006				.0219	-.0074	.0070	.0013	.0019	.0013
41709S001	SEST	VLBI	7239	1838237.888	-5258699.290	-3100588.758	.092	.093	.084
41709S001				-.0003	-.0084	.0099	.0169	.0099	.0153
42501M002	BERMUDA	VLBI	7294	2307209.449	-4874215.857	3394317.980	.032	.087	.059
42501M002				-.0113	-.0030	.0079	.0007	.0005	.0005
43201S001	SAINTIE CROIX	VLBI	7615	2607848.530	-5488069.687	1932739.545	.005	.006	.005
43201S001				.0079	.0085	.0145	.0012	.0011	.0012
50103S001	CANBERRA	VLBI	1543	-4460894.702	2682361.532	-3674748.354	.005	.005	.005
50103S001				-.0368	-.0045	.0479	.0011	.0008	.0010
50103S005	CANBERRA	VLBI	1542	-4460981.105	2682413.487	-3674581.789	.006	.005	.005
50103S005				-.0368	-.0045	.0479	.0011	.0008	.0010

50103S010	CANBERRA	VLEI	1545	-4460935.411	2682765.699	-3674381.206	.005	.004	.005
50103S010				-.0368	-.0045	.0479	.0011	.0008	.0010
50108S001	PARKES	VLEI	7202	-4554232.040	2816758.975	-3454035.878	.201	.151	.170
50108S001				-.0492	.0014	.0385	.0770	.0590	.0670
50116S002	HOBART	VLEI	7242	-3950236.746	2522347.550	-4311562.552	.008	.006	.008
50116S002				-.0409	.0048	.0419	.0018	.0013	.0018
50505S003	KWAJALEIN ATOLL	VLEI	4968	-6143536.280	1363997.781	1034707.654	.268	.074	.098
50505S003				.0225	.0657	.0243	.0253	.0069	.0098
66008S001	O'HIGGIN	VLEI	7245	1525833.029	-2432463.666	-5676174.541	.006	.006	.006
66008S001				.0179	.0006	.0025	.0021	.0019	.0012

Table T5: ITRF96 SLR Station Coordinates at epoch 1997.0 and Velocities

DOMES NB.	SITE NAME	TECH.	ID.	X/\x	Y/\y	Z/\z	Sigmas		
				-----m/m/y-----					
10002S001	GRASSE	SLR	7835	4581691.675	556159.550	4389359.496	.002	.002	.003
10002S001				-.0120	.0189	.0106	.0003	.0004	.0003
10302M002	TROMSO	SLR	7602	2102904.058	721602.508	5958201.318	.004	.004	.004
10302M002				-.0182	.0074	.0047	.0005	.0006	.0003
10503S001	METSAHOVI	SLR	7805	2892595.455	1311807.813	5512610.843	.006	.006	.006
10503S001				-.0171	.0135	.0062	.0004	.0005	.0002
11001S002	GRAZ	SLR	7839	4194426.528	1162694.042	4647246.639	.002	.002	.002
11001S002				-.0154	.0187	.0104	.0003	.0003	.0002
11101M001	SOFIA	SLR	7505	4319397.436	1868697.893	4292024.762	.423	.393	.408
11101M001				-.0684	-.0385	-.0503	.3290	.3175	.3188
12205S001	BOROWIEC	SLR	7811	3738332.844	1148246.500	5021816.021	.004	.004	.004
12205S001				-.0158	.0153	.0083	.0006	.0006	.0004
12302M001	RIGA	SLR	7560	3183914.191	1421473.552	5322796.805	.005	.004	.007
12302M001				-.0163	.0046	.0092	.0063	.0056	.0043
12302S002	RIGA	SLR	1884	3183895.956	1421497.045	5322803.761	.005	.004	.007
12302S002				-.0163	.0046	.0092	.0063	.0056	.0043
12337M001	SIMEIS	SLR	7561	3783746.489	2551362.685	4441445.127	.130	.094	.159
12337M001				-.0195	.0159	.0048	.0071	.0047	.0084
12337S003	SIMEIS	SLR	1873	3783902.546	2551405.070	4441257.642	.571	.501	.678
12337S003				-.0195	.0159	.0048	.0071	.0047	.0084
12337S006	KATZIVELY	SLR	1893	3785944.615	2550780.601	4439461.344	.624	.461	.608
12337S006				-.0195	.0159	.0048	.0071	.0047	.0084
12341S001	QMSQOLSK-NA-MUR	SLR	1868	-2948544.716	2774312.774	4912302.949	.833	.824	1.031
12341S001				.0136	.0948	-.0255	.3209	.3175	.3200
12602M002	DIONYSOS	SLR	7515	4595216.447	2039435.445	3912629.478	.027	.030	.021
12602M002				.0015	.0132	-.0047	.0040	.0044	.0034
12612M001	ASKITES	SLR	7510	4353444.687	2082666.497	4156506.751	.105	.099	.093
12612M001				-.0237	.0227	.0090	.0122	.0121	.0109
12613M001	ROUMELLI	SLR	7517	4728694.684	2174373.471	3674572.879	.091	.075	.090
12613M001				.0003	.0102	-.0104	.0105	.0093	.0103
12614M001	KARITSA	SLR	7520	4596042.475	1733476.892	4055720.977	.042	.029	.040
12614M001				-.0191	.0176	.0115	.0067	.0052	.0070
12615M001	KATAVIA	SLR	7512	4573400.012	2409322.371	3723881.694	.148	.091	.150
12615M001				-.0043	.0160	-.0106	.0186	.0119	.0184
12616M001	XRISOKALARIA	SLR	7525	4745949.569	1905705.992	3799169.018	.033	.030	.031
12616M001				.0019	.0056	-.0055	.0057	.0052	.0051
12706M001	LAMPEDUSA	SLR	7544	5072831.846	1130886.437	3684837.146	.222	.075	.177
12706M001				-.0198	.0213	.0157	.0289	.0112	.0240
12711M002	BOLOGNA	SLR	7546	4461399.528	919566.936	4449510.640	.003	.002	.003
12711M002				-.0142	.0214	.0118	.0002	.0003	.0003
12717M001	NOTO	SLR	7543	4934528.888	1321133.371	3806522.725	.003	.003	.003
12717M001				-.0163	.0188	.0157	.0004	.0005	.0004
12718M002	TRIESTE	SLR	7550	4336738.338	1071271.567	4537910.835	1.782	.828	1.672
12718M002				-.0294	.0091	-.0244	.1785	.0860	.1697
12725M002	CAGLIARI	SLR	7545	4893397.984	772673.477	4004141.107	.003	.003	.003
12725M002				-.0071	.0127	.0079	.0002	.0001	.0002
12725S013	CAGLIARI	SLR	7548	4893347.454	772583.288	4004255.139	1.845	2.394	1.601
12725S013				-.0070	.0127	.0079	.0002	.0001	.0002
12734M004	MATERA	SLR	7541	4641990.155	1393042.480	4133232.002	.005	.004	.005
12734M004				-.0189	.0192	.0136	.0003	.0004	.0003
12734M005	MATERA	SLR	7540	4641984.426	1393057.903	4133233.600	.005	.004	.005
12734M005				-.0189	.0192	.0136	.0003	.0004	.0003
12734S001	MATERA	SLR	7939	4641964.893	1393070.105	4133262.371	.004	.003	.004
12734S001				-.0189	.0192	.0136	.0003	.0004	.0003
12749M001	MONTE VENDA	SLR	7542	4399363.271	910506.507	4512940.288	2.168	2.024	2.068
12749M001				-.0486	-.0017	-.1218	.3899	.3646	.3761
13212S001	HERSIMONCEUX	SLR	7840	4033463.730	23662.489	4924305.177	.002	.002	.002
13212S001				-.0102	.0182	.0128	.0003	.0005	.0003
13504M002	KOOTWIJK	SLR	8833	3899237.717	396769.320	5015055.320	.004	.004	.004
13504M002				-.0132	.0163	.0100	.0003	.0004	.0002
13504S001	KOOTWIJK	SLR	7833	3899224.096	396743.033	5015074.025	.005	.005	.005
13504S001				-.0132	.0163	.0100	.0003	.0004	.0002
14001S001	ZIMMERWALD	SLR	7810	4331283.520	567549.727	4633140.082	.004	.003	.004
14001S001				-.0111	.0173	.0126	.0003	.0004	.0003

14106S001	POTSDAM	SLR	1181	3800621.169	882005.514	5028859.568	.017	.016	.012
14106S001				-.0128	.0175	.0120	.0004	.0005	.0003
14106S009	POTSDAM	SLR	7836	3800639.691	881982.050	5028831.678	.004	.004	.004
14106S009				-.0128	.0175	.0120	.0004	.0005	.0003
14201M004	WETTZELL	SLR	7596	4075582.449	931837.337	4801559.948	.004	.004	.004
14201M004				-.0159	.0174	.0070	.0000	.0000	.0001
14201M005	WETTZELL	SLR	7597	4075601.907	931826.556	4801547.784	.004	.004	.004
14201M005				-.0159	.0174	.0070	.0000	.0000	.0001
14201M007	WETTZELL	SLR	7599	4075515.132	931753.670	4801631.136	2.037	1.093	2.506
14201M007				-.0159	.0174	.0069	.0001	.0000	.0001
14201S002	WETTZELL	SLR	7834	4075529.890	931781.421	4801618.286	.003	.003	.003
14201S002				-.0159	.0174	.0070	.0000	.0000	.0001
14201S018	WETTZELL	SLR	8834	4075576.866	931785.469	4801583.558	.004	.004	.004
14201S018				-.0159	.0174	.0070	.0000	.0000	.0001
20702M001	BAR GIYYORA	SLR	7530	4443965.778	3121945.343	3334693.829	.219	.165	.175
20702M001				-.0287	.0142	.0177	.0430	.0335	.0348
20801M001	DIYARBAKIR	SLR	7575	3848635.690	3251760.972	3898909.373	.702	.604	.779
20801M001				-.0334	.0015	.0091	.0908	.0783	.1009
20802M001	YOZGAT	SLR	7585	4029730.481	2802093.255	4062068.170	.110	.116	.099
20802M001				-.0196	-.0041	.0186	.0165	.0180	.0140
20803M001	MELENGICLICK	SLR	7580	4247620.320	2778638.995	3851607.628	.104	.105	.100
20803M001				-.0187	.0011	.0118	.0138	.0146	.0127
20804M001	YIGILCA	SLR	7587	4117361.828	2517076.972	4157679.228	.143	.092	.128
20804M001				-.0189	.0142	.0186	.0185	.0130	.0158
20805M001	ANKARA	SLR	7589	4121934.341	2652190.006	4069035.127	.008	.008	.006
20805M001				-.0072	-.0023	.0077	.0011	.0013	.0010
21601S004	BEIJING	SLR	7249	-2148759.966	4426759.580	4044509.328	1.600	1.971	1.960
21601S004				.0288	.0651	-.0340	.3249	.3264	.3234
21602S003	WUHAN	SLR	7236	-2266555.843	5009079.404	3222266.134	.197	.329	.252
21602S003				-.0350	-.0114	-.0061	.0045	.0026	.0032
21605S001	SHANGHAI	SLR	7837	-2831088.109	4676203.358	3275172.834	.012	.016	.012
21605S001				-.0309	-.0117	-.0120	.0019	.0025	.0019
21611S001	CHANGCHUN	SLR	7237	-2674386.553	3757189.577	4391508.208	1.432	1.455	1.658
21611S001				.0369	.0894	-.0391	.3324	.3306	.3294
21704S002	TOKYO	SLR	7308	-3942020.122	3368097.594	3702191.014	1.084	1.061	1.044
21704S002				-.0018	.0087	-.0038	.1784	.1751	.1787
21726S001	SIMOSATO	SLR	7838	-3822388.367	3699363.547	3507573.115	.021	.020	.020
21726S001				.0030	-.0014	-.0075	.0023	.0026	.0025
30101S001	HELIWAN	SLR	7831	4728283.350	2879670.437	3156894.718	.104	.063	.080
30101S001				-.0290	.0152	.0160	.0202	.0133	.0158
30302M003	HARTERESTHOEK	SLR	7501	5085401.135	2668330.108	-2768688.865	.101	.063	.071
30302M003				.0007	.0192	.0164	.0009	.0010	.0007
30314M001	SUTHERLAND	SLR	7502	5041542.987	1915352.713	-3396942.418	.869	.788	.875
30314M001				-.1285	-.1097	-.0141	.2607	.2376	.2637
40104M003	ALGONQUIN	SLR	7410	918213.019	-4346066.562	4561957.676	.004	.004	.004
40104M003				-.0157	-.0023	.0003	.0004	.0008	.0008
40132M001	LA GRANDE	SLR	7411	749864.573	-3709310.648	5116946.011	.690	.739	.664
40132M001				-.1447	.0749	.0136	.2937	.3130	.2758
40405M001	GOLDSTONE	SLR	7085	-2353394.246	-4641529.517	3676899.160	.006	.008	.008
40405M001				-.0145	.0040	-.0040	.0003	.0003	.0003
40405M002	GOLDSTONE	SLR	7115	-2350861.685	-4655546.217	3660997.847	.006	.008	.008
40405M002				-.0145	.0040	-.0040	.0003	.0003	.0003
40405M006	GOLDSTONE	SLR	7265	-2356475.795	-4646618.264	3668424.734	.004	.005	.004
40405M006				-.0144	.0040	-.0040	.0002	.0003	.0003
40405M013	GOLDSTONE	SLR	7288	-2356494.167	-4646607.648	3668426.617	.005	.007	.006
40405M013				-.0144	.0040	-.0040	.0002	.0003	.0003
40433M001	QUINCY	SLR	7051	-2516893.309	-4198844.996	4076411.515	.004	.004	.004
40433M001				-.0195	.0065	-.0052	.0003	.0004	.0004
40433M002	QUINCY	SLR	7109	-2517234.890	-4198556.179	4076569.664	.002	.002	.002
40433M002				-.0195	.0065	-.0052	.0003	.0004	.0004
40433M005	QUINCY	SLR	7886	-2517242.501	-4198550.869	4076570.283	.003	.004	.004
40433M005				-.0195	.0065	-.0052	.0003	.0004	.0004
40434M002	MOUNT HOPKINS	SLR	7888	-1936744.060	-5077637.553	3331993.896	1.429	2.022	1.509
40434M002				.0104	.0968	-.0044	.0960	.1352	.1008
40434S001	MOUNT HOPKINS	SLR	7921	-1936759.847	-5077705.163	3331922.621	1.841	2.601	1.930
40434S001				.0104	.0968	-.0044	.0960	.1352	.1008
40436M002	SAN DIEGO	SLR	7062	-2428826.113	-4799750.273	3417272.849	.063	.064	.061
40436M002				-.0281	.0242	.0139	.0062	.0062	.0063
40436M003	SAN DIEGO	SLR	7035	-2428826.869	-4799754.104	3417267.211	.063	.064	.061
40436M003				-.0281	.0242	.0139	.0062	.0062	.0063

40438M001	BEAR LAKE	SLR	7082	-1735997.316	-4425048.385	4241430.440	.066	.081	.083
40438M001				-.0180	-.0045	-.0104	.0092	.0121	.0132
40438M002	BEAR LAKE	SLR	7046	-1736003.141	-4425049.655	4241427.049	.066	.081	.083
40438M002				-.0180	-.0045	-.0104	.0092	.0121	.0132
40439M001	OWENS VALLEY	SLR	7114	-2410422.509	-4477802.686	3838686.580	.007	.011	.010
40439M001				-.0135	.0024	-.0182	.0002	.0002	.0002
40439M003	OWENS VALLEY	SLR	7084	-2410590.394	-4477745.190	3838648.738	.007	.011	.010
40439M003				-.0135	.0024	-.0182	.0002	.0002	.0002
40439M004	OWENS VALLEY	SLR	7853	-2410421.286	-4477800.425	3838690.197	.007	.011	.010
40439M004				-.0135	.0023	-.0183	.0002	.0002	.0002
40440M001	WESTFORD	SLR	7091	1492453.605	-4457278.783	4296815.968	.003	.004	.004
40440M001				-.0150	-.0012	.0019	.0002	.0004	.0004
40442M001	FORT DAVIS	SLR	7086	-1330125.387	-5328526.655	3236150.227	.003	.005	.004
40442M001				-.0117	-.0034	-.0064	.0003	.0005	.0004
40442M005	FORT DAVIS	SLR	7885	-1330125.387	-5328526.655	3236150.227	.004	.006	.005
40442M005				-.0117	-.0034	-.0064	.0003	.0005	.0004
40442M006	FORT DAVIS	SLR	7080	-1330021.058	-5328401.866	3236480.779	.002	.003	.002
40442M006				-.0117	-.0034	-.0064	.0003	.0005	.0004
40442M008	FORT DAVIS	SLR	7850	-1330008.184	-5328391.593	3236502.713	.003	.004	.004
40442M008				-.0117	-.0034	-.0064	.0003	.0005	.0004
40445M001	MAUI	SLR	7210	-5466006.602	-2404427.414	2242187.753	.003	.002	.002
40445M001				-.0122	.0609	.0303	.0005	.0003	.0004
40445M002	MAUI	SLR	7120	-5465998.558	-2404408.033	2242228.745	.004	.003	.004
40445M002				-.0122	.0609	.0303	.0005	.0003	.0004
40451M101	WASHINGTON	SLR	7101	1131240.204	-4831179.743	3994148.494	.003	.003	.003
40451M101				-.0178	.0009	.0001	.0000	.0000	.0000
40451M102	WASHINGTON	SLR	7102	1130686.511	-4831353.020	3994110.933	.003	.003	.003
40451M102				-.0178	.0009	.0001	.0000	.0000	.0000
40451M103	WASHINGTON	SLR	7103	1130685.561	-4831348.700	3994116.372	.003	.003	.003
40451M103				-.0178	.0009	.0001	.0000	.0000	.0000
40451M104	WASHINGTON	SLR	7104	1131095.737	-4831196.942	3994170.761	.003	.003	.003
40451M104				-.0178	.0009	.0001	.0000	.0000	.0000
40451M105	WASHINGTON	SLR	7105	1130719.627	-4831350.568	3994106.533	.001	.002	.002
40451M105				-.0178	.0009	.0001	.0000	.0000	.0000
40451M106	WASHINGTON	SLR	7100	1131355.440	-4831168.339	3994131.697	.003	.003	.003
40451M106				-.0178	.0009	.0001	.0000	.0000	.0000
40451M108	WASHINGTON	SLR	7065	1130691.219	-4831351.059	3994111.979	.003	.003	.003
40451M108				-.0178	.0009	.0001	.0000	.0000	.0000
40451M111	WASHINGTON	SLR	7899	1131364.663	-4831168.790	3994128.945	.003	.003	.003
40451M111				-.0178	.0009	.0001	.0000	.0000	.0000
40451M112	WASHINGTON	SLR	7063	1130714.680	-4831367.730	3994087.408	.003	.003	.003
40451M112				-.0178	.0009	.0001	.0000	.0000	.0000
40451M114	WASHINGTON	SLR	7125	1130745.665	-4831368.028	3994077.144	.003	.003	.003
40451M114				-.0178	.0009	.0001	.0000	.0000	.0000
40451M116	WASHINGTON	SLR	7130	1130735.204	-4831324.664	3994132.387	.003	.003	.003
40451M116				-.0178	.0009	.0001	.0000	.0000	.0000
40451M117	WASHINGTON	SLR	7920	1130741.809	-4831369.783	3994076.123	.003	.003	.003
40451M117				-.0178	.0009	.0001	.0000	.0000	.0000
40451M120	WASHINGTON	SLR	7918	1130705.209	-4831345.431	3994115.989	.003	.003	.003
40451M120				-.0178	.0009	.0001	.0000	.0000	.0000
40451M121	WASHINGTON	SLR	7919	1130705.690	-4831347.308	3994117.537	.762	1.497	1.055
40451M121				-.0178	.0009	.0001	.0000	.0000	.0000
40492M001	VERNAL	SLR	7892	-1631484.799	-4589134.007	4106749.606	.217	.448	.421
40492M001				-.0143	-.0096	-.0029	.0103	.0255	.0221
40493M001	YUMA	SLR	7894	-2196777.991	-4887337.145	3448425.238	.101	.219	.153
40493M001				-.0152	-.0093	-.0040	.0102	.0222	.0155
40496M001	PLATTEVILLE	SLR	7112	-1240678.294	-4720463.383	4094480.574	.019	.038	.034
40496M001				-.0138	-.0004	-.0088	.0019	.0041	.0038
40497M001	MONUMENT PEAK	SLR	7110	-2386278.211	-4802354.139	3444881.596	.002	.002	.002
40497M001				-.0308	.0263	.0138	.0003	.0004	.0004
40497M002	MONUMENT PEAK	SLR	7220	-2386292.481	-4802347.267	3444881.000	.003	.004	.004
40497M002				-.0308	.0263	.0138	.0003	.0004	.0004
40497M003	MONUMENT PEAK	SLR	7274	-2386289.608	-4802346.334	3444884.123	.003	.003	.004
40497M003				-.0308	.0263	.0138	.0003	.0004	.0004
40499M002	RICHMOND	SLR	7295	961318.936	-5674091.018	2740489.627	.003	.004	.003
40499M002				-.0079	-.0059	.0041	.0003	.0006	.0005
40504M001	MAZATLAN	SLR	7122	-1660089.389	-5619100.431	2511637.832	.008	.025	.011
40504M001				-.0097	.0002	-.0083	.0011	.0027	.0014
40505M001	CABO SAN LUCAS	SLR	7882	-1997242.136	-5528041.092	2468355.411	.038	.069	.042
40505M001				-.0423	.0194	.0123	.0081	.0161	.0088

40506MD01	ENSENADA	SLR	7883	-2406127.049	-4898368.185	3290336.767	.065	.063	.057
40506MD01				-.0298	.0248	.0170	.0157	.0140	.0126
40701S001	SANTIAGO DE CUBA	SLR	1953	1474548.292	-5811242.164	2168944.907	.476	.951	.558
40701S001				-.0238	-.0088	.0017	.0888	.1681	.1016
41604S001	NATAL	SLR	7929	5186467.496	-3653856.333	-654322.034	3.157	2.392	1.945
41604S001				-.0325	.0011	.0072	.1690	.1310	.1097
41703MD02	EASTER ISLAND	SLR	7097	-1884983.776	-5357608.355	-2892853.417	.006	.006	.005
41703MD02				.0643	-.0210	-.0070	.0016	.0020	.0014
41705MD01	SANTIAGO	SLR	7400	1769699.649	-5044612.975	-3468259.915	.005	.005	.004
41705MD01				.0219	-.0074	.0070	.0013	.0019	.0013
41705MD04	SANTIAGO	SLR	7404	1769714.752	-5044609.673	-3468260.692	1.298	1.491	1.362
41705MD04				.0219	-.0074	.0070	.0013	.0019	.0013
41706MD01	CERRO TOLOLO	SLR	7401	1815517.455	-5213464.894	-3187999.185	.061	.174	.110
41706MD01				.0233	-.0076	.0119	.0091	.0249	.0161
42202MD03	AREQUIPA	SLR	7403	1942808.115	-5804069.699	-1796915.473	.003	.004	.003
42202MD03				.0114	.0013	.0123	.0006	.0008	.0006
42202S001	AREQUIPA	SLR	7907	1942792.095	-5804077.610	-1796919.135	.005	.005	.004
42202S001				.0114	.0013	.0123	.0006	.0008	.0006
50103S003	CANBERRA	SLR	7943	-4447549.106	2677134.032	-3694996.130	.012	.011	.012
50103S003				-.0368	-.0045	.0479	.0011	.0008	.0010
50103S007	CANBERRA	SLR	7843	-4446477.074	2678126.991	-3696251.243	.007	.005	.007
50103S007				-.0368	-.0045	.0479	.0011	.0008	.0010
50107MD01	YARRAGADEE	SLR	7090	-2389006.935	5043329.339	-3078524.905	.002	.002	.003
50107MD01				-.0498	.0056	.0491	.0003	.0005	.0005
50503MD01	AMERICAN SAMOA	SLR	7096	-6100045.239	-996202.911	-1568974.484	3.531	3.226	2.872
50503MD01				.0293	.0387	.1242	.2131	.1945	.1732
92202MD02	HUAHINE	SLR	7121	-5345865.691	-2958246.206	-1824623.534	.032	.025	.020
92202MD02				-.0432	.0499	.0316	.0035	.0032	.0026
92202MD04	HUAHINE	SLR	7123	-5345867.149	-2958247.013	-1824624.035	.032	.025	.020
92202MD04				-.0432	.0499	.0316	.0035	.0032	.0026

Table T6: ITRF96 GPS Station Coordinates at epoch 1997.0 and Velocities

DOMES NB.	SITE NAME	TECH.	ID.	X/Vx	Y/Vy	Z/Vz	Sigmas		
				-----m/m/y-----					
10002M003	GRASSE	GPS	7605	4581697.680	556125.772	4389351.462	.004	.004	.004
10002M003				-.0120	.0189	.0106	.0003	.0004	.0003
10002M006	GRASSE	GPS	GRAS	4581691.030	556114.691	4389360.693	.002	.002	.003
10002M006				-.0120	.0189	.0106	.0003	.0004	.0003
10002M006	GRASSE	GPS	GRAS	4581691.023	556114.691	4389360.685	.011	.003	.010
10002M006				-.0120	.0189	.0106	.0003	.0004	.0003
10202M001	REYKJAVIK	GPS	REYK	2587384.501	-1043033.496	5716563.974	.002	.002	.003
10202M001				-.0220	-.0039	.0096	.0013	.0013	.0008
10302M003	TROMSO	GPS	TROM	2102940.348	721569.386	5958192.103	.003	.002	.003
10302M003				-.0182	.0074	.0047	.0005	.0006	.0003
10307M001	OSLO	GPS	OSLO	3169982.037	579956.712	5485936.647	.004	.002	.006
10307M001				-.0236	.0331	.0114	.0064	.0055	.0038
10317M001	NY-ALESUND	GPS	NYAL	1202430.653	252626.655	6237767.515	.003	.002	.004
10317M001				-.0168	.0076	.0009	.0006	.0006	.0006
10322M002	DOMEN/VARDO	GPS	VARO	1844607.490	1109719.131	5983936.182	.003	.002	.007
10322M002				-.0162	.0154	.0011	.0063	.0056	.0023
10325M001	HONEFOSS	GPS	HONE	3132540.315	566402.565	5508611.05813.826	9.25320.062		
10325M001				.2198	.1395	.20512.34081.56693.3961			
10330M001	STAVANGER	GPS	STAV	3275753.751	321110.944	5445042.017	.004	.002	.006
10330M001				-.0157	.0168	.0100	.0055	.0048	.0033
10331M001	TRONDHEIM	GPS	TRON	2820171.021	513485.956	5678935.949	.004	.002	.006
10331M001				-.0210	.0234	.0091	.0060	.0051	.0030
10402M004	ONSALA	GPS	ONSA	3370658.674	711877.032	5349786.866	.003	.002	.003
10402M004				-.0143	.0147	.0072	.0002	.0002	.0002
10403M002	KIRUNA	GPS	KIRU	2251420.935	862817.143	5885476.602	.003	.002	.004
10403M002				-.0153	.0106	.0048	.0010	.0013	.0005
10405M002	MAARTISBO	GPS	MAR6	2998189.538	931451.668	5533398.570	.004	.002	.006
10405M002				-.0124	.0057	.0066	.0057	.0049	.0033
10422M001	KIRUNA	GPS	KIRO	2248123.333	865686.595	5886425.681	.004	.003	.008
10422M001				-.0151	.0101	.0040	.0010	.0013	.0005
10423M001	VISEY	GPS	VISO	3246470.393	1077900.400	5365278.012	.004	.002	.006
10423M001				-.0180	.0076	.0104	.0055	.0049	.0035
10424M001	VILHELMINA	GPS	VIL0	2620258.720	779138.055	5743799.367	.004	.002	.006
10424M001				-.0104	-.0027	.0056	.0056	.0048	.0027
10503S011	METSAHOVI	GPS	METS	2892570.935	1311843.339	5512634.049	.003	.002	.003
10503S011				-.0171	.0135	.0062	.0004	.0005	.0002
10511M001	VAASA	GPS	VAAS	2699864.459	1078263.899	5658064.764	.004	.002	.006
10511M001				-.0108	.0021	.0051	.0063	.0054	.0033
10512M001	JOENSUU	GPS	JOEN	2564139.238	1486149.662	5628951.350	.005	.004	.009
10512M001				-.0152	.0094	.0043	.0080	.0074	.0044
10513M001	SODANKYLA/PITTIO	GPS	SODA	2200146.819	1091638.256	5866870.686	.006	.004	.015
10513M001				-.0104	.0142	.0009	.0013	.0010	.0007
11001M002	GRAZ	GPS	GRAZ	4194423.971	1162702.560	4647245.319	.002	.002	.003
11001M002				-.0154	.0187	.0104	.0003	.0003	.0002
11001M002	GRAZ	GPS	GRAZ	4194423.968	1162702.559	4647245.314	.008	.003	.008
11001M002				-.0154	.0187	.0104	.0003	.0003	.0002
11006S003	HAFELEKAR	GPS	HFLK	4248505.189	855575.605	4667172.186	.003	.002	.003
11006S003				-.0147	.0207	.0117	.0010	.0010	.0009
11206M006	PENC	GPS	PENC	4052449.640	1417680.998	4701407.027	.003	.002	.003
11206M006				-.0152	.0184	.0090	.0011	.0012	.0010
11502M002	PECNY/ONDREJOV	GPS	GOPE	3979316.275	1050312.351	4857067.013	.003	.002	.003
11502M002				-.0138	.0182	.0092	.0007	.0007	.0006
11507M001	MODRA-PIESKY	GPS	MOPI	4053738.020	1260571.474	4744940.751	.004	.002	.004
11507M001				-.0065	.0184	.0023	.0034	.0036	.0030
12204M001	JOZEFOSLAW	GPS	JOZE	3664940.331	1409153.752	5009571.315	.003	.002	.003
12204M001				-.0155	.0155	.0093	.0005	.0006	.0004
12205M002	BOROWIEC	GPS	BOR1	3738358.611	1148173.592	5021815.697	.003	.002	.003
12205M002				-.0158	.0153	.0083	.0006	.0006	.0004
12207M002	BOROWA GORA	GPS	BOGO	3633739.128	1397434.014	5035353.381	.003	.002	.003
12207M002				-.0153	.0148	.0082	.0015	.0014	.0011
12209M001	LAMKOWO	GPS	LAMA	3524523.087	1329693.528	5129846.282	.003	.002	.003
12209M001				-.0160	.0134	.0088	.0007	.0006	.0005
12217M001	WROCLAW	GPS	WROC	3835751.439	1177249.840	4941605.149	.004	.002	.005
12217M001				-.0140	.0145	.0090	.0051	.0049	.0041

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12302M002	RIGA	GPS	RIGA	3183899.357	1421478.384	5322810.724	.005	.003	.006
12302M002				-.0163	.0046	.0092	.0063	.0056	.0043
12309M001	MENDELEVO	GPS	MDVO	2844672.178	2161066.452	5266365.656	.016	.013	.028
12309M001				-.0240	.0089	.0086	.0014	.0013	.0009
12309M002	MENDELEVO	GPS	MDVO	2844672.286	2161070.096	5266363.814	.003	.003	.004
12309M002				-.0240	.0089	.0086	.0014	.0013	.0009
12313M001	IRKOUTSK	GPS	IRKT	-968332.180	3794425.419	5018167.751	.004	.003	.004
12313M001				-.0256	-.0012	-.0042	.0028	.0015	.0013
12330M001	ZWENIGOROD	GPS	ZWEN	2886325.555	2155998.407	5245816.135	.003	.003	.004
12330M001				-.0200	.0109	.0059	.0013	.0015	.0008
12334M001	KITAB	GPS	KIT3	1944945.365	4556652.206	4004325.969	.003	.003	.003
12334M001				-.0278	.0107	.0043	.0019	.0024	.0021
12348M001	BISHKEK	GPS	POL2	1239971.593	4530790.063	4302578.765	.004	.004	.004
12348M001				-.0290	.0056	.0039	.0036	.0018	.0017
12350M001	SVEILOE	GPS	SVIL	2730155.526	1562364.631	5529989.202	.005	.003	.007
12350M001				-.0193	.0046	.0082	.0093	.0101	.0053
12711M003	MEDICINA	GPS	MEDI	4461400.911	919593.430	4449504.675	.003	.002	.003
12711M003				-.0142	.0214	.0118	.0002	.0003	.0003
12717M003	NOTO	GPS	NOTO	4934528.667	1321262.233	3806479.510	.003	.002	.003
12717M003				-.0163	.0188	.0157	.0004	.0005	.0004
12725M003	CAGLIARI	GPS	CAGL	4893378.948	772649.633	4004182.054	.003	.002	.003
12725M003				-.0070	.0127	.0079	.0002	.0001	.0002
12734M008	MATERA	GPS	MATE	4641949.718	1393045.282	4133287.333	.003	.002	.003
12734M008				-.0189	.0192	.0136	.0003	.0004	.0003
12741M001	VENICE	GPS	VEVE	4379724.880	957495.740	4521605.120	.004	.002	.004
12741M001				-.0153	.0136	.0140	.0028	.0040	.0026
12750M001	PADOVA	GPS	UPAD	4389529.858	923254.872	4519262.327	.099	.058	.101
12750M001				-.0140	.0166	.0121	.0006	.0007	.0006
12750M002	PADOVA	GPS	UPAD	4389531.299	923253.651	4519256.340	.003	.002	.003
12750M002				-.0140	.0166	.0121	.0006	.0007	.0006
13101M004	BRUSSELS	GPS	BRUS	4027893.866	307045.699	4919475.031	.003	.002	.003
13101M004				-.0103	.0176	.0120	.0004	.0006	.0004
13112M001	DENTERGEM	GPS	DENT	4020711.606	238850.987	4928949.566	.003	.002	.003
13112M001				-.0117	.0186	.0109	.0014	.0015	.0011
13113M001	DOURBES	GPS	DOUR	4086778.277	328451.858	4869782.545	.003	.002	.003
13113M001				-.0123	.0174	.0114	.0014	.0014	.0012
13114M001	WAREME	GPS	WARE	4031947.322	370150.907	4911905.900	.003	.002	.003
13114M001				-.0113	.0176	.0101	.0015	.0015	.0012
13212M007	HERSTIMONCEUX	GPS	HERS	4033470.236	23672.761	4924301.225	.002	.002	.002
13212M007				-.0102	.0182	.0128	.0003	.0005	.0003
13402M004	SAN FERNANDO	GPS	SFER	5105519.097	-555145.998	3769803.253	.005	.002	.004
13402M004				-.0054	.0221	.0125	.0013	.0018	.0014
13406M001	VILLAFRANCA	GPS	VILL	4849833.799	-335049.177	4116014.831	.003	.002	.003
13406M001				-.0071	.0188	.0122	.0007	.0013	.0008
13407S012	MADRID	GPS	MADR	4849202.472	-360329.113	4114913.100	.003	.002	.003
13407S012				-.0053	.0201	.0140	.0003	.0004	.0003
13407S012	MADRID	GPS	MADR	4849202.465	-360329.113	4114913.097	.008	.003	.007
13407S012				-.0053	.0201	.0140	.0003	.0004	.0003
13410M001	ROQUETES	GPS	RERE	4833520.258	41536.952	4147461.441	.004	.002	.004
13410M001				-.0126	.0140	.0169	.0021	.0031	.0024
13502M004	DELFT	GPS	DELF	3924687.566	301132.866	5001910.897	.003	.002	.003
13502M004				-.0111	.0168	.0099	.0015	.0015	.0011
13504M003	KOOTWILJK	GPS	KOSG	3899225.259	396731.819	5015078.345	.002	.002	.003
13504M003				-.0132	.0163	.0100	.0003	.0004	.0002
14001M004	ZIMMERWALD	GPS	ZIMM	4331297.201	567555.740	4633133.843	.003	.002	.003
14001M004				-.0111	.0173	.0126	.0003	.0004	.0003
14106M003	POTSDAM	GPS	POTS	3800689.782	882077.269	5028791.240	.003	.002	.003
14106M003				-.0128	.0175	.0120	.0004	.0005	.0003
14201M009	WETTIZELL	GPS	WETT	4075578.588	931852.690	4801570.033	.003	.002	.003
14201M009				-.0159	.0174	.0069	.0000	.0000	.0001
14201M010	WETTIZELL	GPS	WITZ	4075580.697	931853.669	4801568.044	.002	.002	.003
14201M010				-.0159	.0174	.0070	.0000	.0000	.0001
14208M001	OBERFFAFFENHOFEN	GPS	OBER	4186558.547	835027.058	4723759.254	.004	.002	.004
14208M001				-.0141	.0190	.0112	.0002	.0002	.0002
20805M002	ANKARA	GPS	ANKR	4121948.602	2652187.958	4069023.671	.003	.003	.003
20805M002				-.0072	-.0023	.0077	.0011	.0013	.0010
21602M001	WUHAN	GPS	WUHN	-2267749.154	5009154.327	3221290.753	.004	.005	.004
21602M001				-.0350	-.0114	-.0061	.0045	.0026	.0032
21605M002	SHANGHAI	GPS	SHAO	-2831733.262	4675666.046	3275369.515	.004	.004	.004
21605M002				-.0309	-.0117	-.0120	.0019	.0025	.0019

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21613M001	LHASA	GPS	LHAS	-106937.663	5549269.597	3139215.753	.004	.004	.004	
21613M001				-.0443	-.0078	.0160	.0027	.0013	.0013	
21614M001	SHANNI	GPS	XIAN	-1735212.500	4976840.116	3580538.361	.005	.010	.008	
21614M001				-.0248	-.0011	-.0097	.0009	.0009	.0013	
21729S007	USUDA	GPS	USUD	-3855262.992	3427432.525	3741020.358	.003	.003	.003	
21729S007				-.0052	.0011	-.0052	.0009	.0010	.0008	
21730S005	TSUKUBA	GPS	TSKB	-3957199.232	3310199.672	3737711.700	.004	.003	.004	
21730S005				-.0005	.0025	-.0118	.0020	.0018	.0018	
22306M001	BANGALORE	GPS	IISC	1337937.273	6070315.394	1427876.248	.056	.112	.037	
22306M001				-.0392	.0020	.0358	.0039	.0012	.0020	
22306M002	BANGALORE	GPS	IISC	1337936.830	6070317.168	1427876.518	.004	.004	.004	
22306M002				-.0392	.0020	.0358	.0039	.0012	.0020	
23601M001	TAIPEI	GPS	TAIW	-3024781.979	4928936.823	2681234.453	.004	.004	.004	
23601M001				-.0310	-.0192	-.0125	.0018	.0023	.0014	
23601M001	TAIPEI	GPS	TAIW	-3024781.980	4928936.824	2681234.454	.006	.009	.006	* AFTER 96:125
23601M001				-.0310	-.0192	-.0125	.0018	.0023	.0014	
23902M001	TAEJON	GPS	TAEJ	-3120422.919	4086355.455	3761769.615	.004	.004	.004	
23902M001				-.0292	-.0109	-.0125	.0023	.0020	.0019	
23902M001	TAEJON	GPS	TAEJ	-3120422.917	4086355.453	3761769.614	.012	.015	.014	* AFTER 96:363
23902M001				-.0292	-.0109	-.0125	.0023	.0020	.0019	
24901M002	BAHRAIN	GPS	BAHR	3633909.068	4425275.486	2799861.265	.004	.004	.004	
24901M002				-.0307	.0091	.0301	.0045	.0038	.0032	
30302M002	HARTEBEESTHOK	GPS	HART	5084625.441	2670366.601	-2768493.940	.004	.004	.004	
30302M002				.0007	.0192	.0164	.0009	.0010	.0007	
30302M004	HARTEBEESTHOK	GPS	HRAO	5085352.500	2668395.681	-2768731.692	.009	.007	.006	
30302M004				.0007	.0192	.0164	.0009	.0010	.0007	
30602M001	ASCENSION	GPS	ASCI	6118526.086	-1572344.690	-876451.182	.004	.004	.003	
30602M001				.0032	-.0002	.0072	.0016	.0051	.0027	
30802M001	DIEGO GARCIA	GPS	DGAR	1916269.783	6029977.331	-801720.187	.012	.026	.006	
30802M001				-.0205	.0106	.0120	.0011	.0011	.0012	
31303M001	MASPALOMAS	GPS	MASP	5439189.146	-1522054.781	2953464.275	.003	.003	.003	
31303M001				.0002	.0176	.0153	.0007	.0009	.0006	
31303M002	MASPALOMAS	GPS	MASP	5439192.266	-1522055.626	2953454.712	.003	.003	.003	
31303M002				.0002	.0176	.0153	.0007	.0009	.0006	
31303M002	MASPALOMAS	GPS	MASP	5439192.259	-1522055.622	2953454.708	.008	.004	.005	* AFTER 94:218
31303M002				.0002	.0176	.0153	.0007	.0009	.0006	
33201M001	MALINDI	GPS	MALI	4865366.492	4110737.456	-331121.726	.004	.004	.003	
33201M001				-.0105	.0177	.0130	.0031	.0036	.0020	
39801M001	SEYCHELLES	GPS	SEY1	3602870.770	5238174.333	-516275.526	.009	.011	.005	
39801M001				-.0139	.0142	.0142	.0017	.0014	.0019	
40101M001	ST. JOHNS	GPS	STJO	2612631.240	-3426807.018	4686757.797	.002	.002	.003	
40101M001				-.0171	-.0025	.0061	.0010	.0011	.0013	
40104M002	ALGONQUIN	GPS	ALGO	918129.509	-4346071.231	4561977.818	.002	.002	.003	
40104M002				-.0157	-.0023	.0003	.0004	.0008	.0008	
40105M002	PENTICTON	GPS	DRAO	-2059164.675	-3621108.389	4814432.380	.002	.003	.003	
40105M002				-.0154	-.0019	-.0065	.0008	.0011	.0013	
40114M001	OTTAWA NRC	GPS	NRC1	1112777.332	-4341475.820	4522955.772	.003	.004	.004	
40114M001				-.0158	.0018	.0014	.0025	.0037	.0037	
40127M003	YELLOWKNIFE	GPS	YELL	-1224452.492	-2689216.103	5633638.281	.002	.002	.003	
40127M003				-.0196	-.0030	-.0048	.0005	.0007	.0012	
40127M003	YELLOWKNIFE	GPS	YELL	-1224452.494	-2689216.104	5633638.286	.002	.003	.006	* AFTER 94:092
40127M003				-.0196	-.0030	-.0048	.0005	.0007	.0012	
40128M002	CHURCHILL	GPS	CHUR	-236438.698	-3307616.783	5430049.171	.002	.003	.004	
40128M002				-.0190	-.0013	-.0028	.0025	.0015	.0011	
40129M002	VICTORIA	GPS	FGC1	-2327188.109	-3522529.016	4764832.376	.024	.032	.035	
40129M002				-.0095	-.0041	-.0038	.0008	.0007	.0005	
40129M003	ALBERT HEAD	GPS	ALBH	-2341332.878	-3539049.511	4745791.376	.002	.003	.003	
40129M003				-.0095	-.0041	-.0038	.0008	.0007	.0005	
40130M001	HOLBERG	GPS	HOLB	-2503040.408	-3188233.331	4908701.564	.024	.023	.019	
40130M001				-.0179	-.0097	.0123	.0223	.0246	.0299	
40133M001	SCHIEFFERVILLE	GPS	SCHE	1450982.845	-3386934.278	5189301.348	.008	.010	.013	
40133M001				-.0165	-.0098	.0169	.0078	.0097	.0133	
40134M001	WILLIAMS LAKE	GPS	WILL	-2084258.000	-3313872.985	5019853.101	.004	.004	.005	
40134M001				-.0180	-.0040	-.0044	.0035	.0039	.0049	
40135M001	FLIN FLON	GPS	FLIN	-766174.407	-3611375.300	5184056.254	.002	.003	.004	
40135M001				-.0165	-.0097	-.0106	.0031	.0027	.0020	
40136M001	WHITEHORSE	GPS	WHIT	-2218337.810	-2201205.107	5543057.590	.003	.003	.004	
40136M001				-.0180	-.0041	-.0105	.0036	.0037	.0021	
40137M001	LAC DU BONNET	GPS	DUBO	-417603.540	-4064529.809	4881432.200	.011	.016	.017	
40137M001				-.0265	.0154	-.0180	.0395	.0611	.0679	

40400M006	PASADENA	GPS	JPL0	-2493304.155	-4655215.469	3565497.372	.020	.031	.023
40400M006				-.0247	.0225	.0056	.0017	.0026	.0019
40400M007	PASADENA	GPS	JPLM	-2493304.189	-4655215.447	3565497.380	.003	.004	.003
40400M007				-.0247	.0225	.0056	.0017	.0026	.0019
40400M101	MOUNT WILSON	GPS	WLSN	-2483640.626	-4660073.137	3568172.099	.008	.010	.007
40400M101				-.0247	.0225	.0056	.0017	.0026	.0019
40400M301	BURBANK	GPS	BRAN	-2502254.454	-4651654.372	3563569.189	.008	.010	.008
40400M301				-.0247	.0225	.0056	.0017	.0026	.0019
40400S201	PASADENA	GPS	CIT1	-2491489.927	-4660803.490	3559128.861	.007	.009	.007
40400S201				-.0247	.0225	.0056	.0017	.0026	.0019
40403M002	PALOS VERDES	GPS	FVEP	-2525523.178	-4670030.727	3522843.121	.011	.018	.013
40403M002				-.0276	.0275	.0127	.0078	.0133	.0098
40404M101	HOLCOMB/PEARLOS	GPS	HOLC	-2459517.934	-4655992.282	3589168.806	.012	.021	.016
40404M101				-.0213	.0165	.0025	.0102	.0184	.0138
40405S028	GOLDSTONE	GPS	GOL0	-2353614.145	-4641385.389	3676976.475	.010	.012	.010
40405S028				-.0145	.0040	-.0040	.0002	.0003	.0003
40405S031	GOLDSTONE	GPS	GOLD	-2353614.171	-4641385.389	3676976.457	.002	.003	.003
40405S031				-.0145	.0040	-.0040	.0002	.0003	.0003
40405S031	GOLDSTONE	GPS	GOLD	-2353614.170	-4641385.378	3676976.448	.007	.010	.008
40405S031				-.0145	.0040	-.0040	.0002	.0003	.0003
40407M002	PINYON	GPS	PIN1	-2369510.451	-4761207.116	3511396.178	.017	.028	.020
40407M002				-.0187	.0165	.0087	.0025	.0045	.0033
40407M003	PINYON	GPS	PIN1	-2369510.470	-4761207.140	3511396.195	.007	.010	.007
40407M003				-.0187	.0165	.0087	.0025	.0045	.0033
40408M001	FAIRBANKS	GPS	FAIR	-2281621.428	-1453595.789	5756961.923	.002	.002	.003
40408M001				-.0215	-.0042	-.0097	.0003	.0004	.0006
40420M007	VANDENBERG	GPS	VNDP	-2678089.890	-4525437.625	3597431.540	.007	.010	.008
40420M007				-.0280	.0324	.0157	.0009	.0012	.0010
40420M101	VANDENB/HARVEST	GPS	HARV	-2686069.285	-4527084.315	3589502.306	.005	.007	.005
40420M101				-.0280	.0324	.0157	.0009	.0012	.0010
40424M004	KOKEE PARK	GPS	KOKB	-5543838.106	-2054587.254	2387809.703	.003	.003	.003
40424M004				-.0081	.0618	.0302	.0005	.0003	.0004
40424M006	KALAI TEMPORARY	GPS	KOK2	-5543806.754	-2054589.682	2387875.635	.010	.007	.005
40424M006				-.0081	.0618	.0302	.0005	.0003	.0004
40433M004	QUINCY	GPS	7221	-2517230.998	-4198595.166	4076531.255	.002	.002	.003
40433M004				-.0195	.0065	-.0052	.0003	.0004	.0004
40437M002	MAMMOTH LAKES	GPS	CASA	-2444430.251	-4428687.691	3875747.410	.004	.006	.006
40437M002				-.0251	-.0097	-.0013	.0025	.0039	.0033
40440S020	WESTFORD	GPS	WES2	1492233.388	-4458089.475	4296045.997	.002	.003	.003
40440S020				-.0150	-.0012	.0019	.0002	.0004	.0004
40442M012	MCDONALD	GPS	MDO1	-1329998.670	-5328393.387	3236504.199	.002	.003	.003
40442M012				-.0117	-.0034	-.0064	.0003	.0005	.0004
40451M123	GREENBELT	GPS	GODE	1130773.872	-4831253.567	3994200.396	.002	.002	.002
40451M123				-.0178	.0009	.0001	.0000	.0000	.0000
40456M001	PIETOWN	GPS	PIE1	-1640916.785	-5014781.200	3575447.139	.002	.003	.003
40456M001				-.0133	-.0027	-.0078	.0004	.0007	.0006
40458M001	SADDLE PEAK	GPS	SPK1	-2535991.592	-4642435.279	3552148.089	.023	.031	.023
40458M001				-.0282	.0188	.0161	.0244	.0328	.0241
40460M004	SCRIPPS_3	GPS	SIO3	-2455456.493	-4767480.669	3441383.635	.014	.020	.014
40460M004				-.0088	.0559	-.0068	.0109	.0157	.0111
40461M001	WHITTIER	GPS	WHC1	-2488199.002	-4673487.481	3544649.151	.014	.019	.014
40461M001				-.0268	.0227	.0110	.0117	.0161	.0119
40461M002	WHITTIER	GPS	WHI1	-2488634.179	-4673655.791	3544074.078	.014	.019	.014
40461M002				-.0268	.0227	.0110	.0117	.0161	.0119
40465M001	NORTH LIBERTY	GPS	NLTB	-130934.472	-4762291.729	4226854.663	.002	.003	.003
40465M001				-.0150	.0009	-.0050	.0005	.0013	.0011
40469M001	CHINA LAKE	GPS	COSO	-2411148.233	-4571430.494	3727461.549	.022	.031	.024
40469M001				.0097	.0317	-.0274	.0247	.0347	.0271
40474M001	LAKE MATHEWS	GPS	MATH	-2443215.363	-4706037.511	3533477.628	.014	.021	.015
40474M001				-.0263	.0201	.0119	.0108	.0155	.0113
40477M001	MALINA KEA	GPS	MKEA	-5464105.092	-2495166.894	2148290.940	.005	.004	.003
40477M001				-.0138	.0601	.0286	.0008	.0008	.0009
40478M002	ROCKETDYNE	GPS	ROCK	-2533219.937	-4631543.812	3568400.453	.013	.019	.014
40478M002				-.0294	.0142	.0185	.0124	.0171	.0127
40478S101	QATT MOUNTAIN	GPS	QAT2	-2524553.520	-4630094.333	3577352.089	.015	.021	.016
40478S101				-.0294	.0142	.0185	.0124	.0171	.0127
40479M001	ELYTHE	GPS	ELYT	-2223206.568	-4830299.773	3510587.645	.013	.020	.014
40479M001				.0054	.0388	-.0398	.0099	.0150	.0107
40480M001	BOMMER CANYON	GPS	TRAK	-2480028.986	-4703110.991	3511298.441	.017	.025	.018
40480M001				.0169	.0952	-.0346	.0150	.0212	.0154

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40481M001	YUCAIPA	GPS	CRFP	-2410446.512	-4710490.562	3550422.372	.016	.023	.017
40481M001				-.0052	.0352	-.0111	.0139	.0200	.0146
40482M001	LONG BEACH CITY	GPS	LBCH	-2507798.441	-4676370.038	3526890.659	.017	.024	.018
40482M001				-.0269	.0295	.0146	.0124	.0172	.0126
40483S001	WESTLAKE	GPS	AOA1	-2547879.902	-4628773.869	3561049.913	.020	.028	.021
40483S001				-.0304	.0227	.0169	.0181	.0242	.0181
40484M001	CHILAO FLATES	GPS	CHIL	-2478003.252	-4655349.709	3577932.531	.018	.026	.019
40484M001				-.0282	.0124	.0108	.0171	.0240	.0179
40485M001	LONDON YARD	GPS	LONG	-2482077.343	-4667439.227	3556771.581	.025	.036	.026
40485M001				-.0285	.0265	.0073	.0220	.0313	.0230
40487M001	LOS ANGELES	GPS	USC1	-2507564.590	-4659953.552	3548660.891	.014	.019	.015
40487M001				-.0295	.0207	.0161	.0108	.0149	.0112
40487M002	LOS ANGELES	GPS	UCLP	-2519006.897	-4650672.616	3552862.643	.013	.019	.014
40487M002				-.0295	.0207	.0161	.0108	.0149	.0112
40488M001	CATALINA ISLAND	GPS	CAT1	-2540621.950	-4682555.611	3495319.213	.019	.026	.019
40488M001				-.0281	.0209	.0192	.0175	.0240	.0174
40497M004	MONUMENT PEAK	GPS	MONP	-2386246.837	-4802359.594	3444902.124	.003	.005	.004
40497M004				-.0308	.0263	.0138	.0003	.0004	.0004
40499M002	RICHMOND	GPS	7295	961318.936	-5674091.018	2740489.627	.003	.004	.003
40499M002				-.0079	-.0059	.0041	.0003	.0006	.0005
40499M005	RICHMOND	GPS	ROM4	961242.845	-5674021.688	2740657.676	.004	.005	.004
40499M005				-.0079	-.0059	.0041	.0003	.0006	.0005
40499S018	RICHMOND	GPS	ROM5	961334.762	-5674074.180	2740535.155	.002	.003	.003
40499S018				-.0079	-.0059	.0041	.0003	.0006	.0005
40499S020	RICHMOND	GPS	ROM6	961334.759	-5674074.118	2740535.130	.002	.005	.003
40499S020				-.0079	-.0059	.0041	.0003	.0006	.0005
40508M001	CICESE	GPS	CICE	-2433307.440	-4844963.196	3348363.242	.015	.023	.016
40508M001				-.0048	.0675	-.0132	.0137	.0203	.0138
41510M001	LA PLATA	GPS	LPGS	2780102.974	-4437418.860	-3629404.597	.004	.004	.004
41510M001				.0034	-.0061	.0080	.0022	.0017	.0015
41602M001	FORTALEZA	GPS	FORT	4985386.634	-3954998.579	-428426.495	.004	.004	.003
41602M001				.0010	-.0036	.0114	.0017	.0016	.0007
41606M001	BRASILIA	GPS	BRAZ	4115014.089	-4550641.526	-1741444.074	.005	.006	.003
41606M001				-.0089	.0017	.0115	.0049	.0053	.0023
41703M003	EASTER ISLAND	GPS	EISL	-1884951.760	-5357595.870	-2892890.507	.005	.005	.004
41703M003				.0643	-.0210	-.0070	.0016	.0020	.0014
41705M003	SANTIAGO	GPS	SANT	1769693.339	-5044574.146	-3468321.062	.004	.004	.003
41705M003				.0219	-.0074	.0070	.0013	.0019	.0013
41901M001	BOGOTA	GPS	BOGT	1744399.113	-6116037.818	512731.623	.004	.005	.003
41901M001				.0076	.0034	.0161	.0032	.0012	.0015
42005M001	SANTA CRUZ	GPS	GALA	-33796.091	-6377522.659	-82120.901	.145	.295	.034
42005M001				.0772	-.0240	.0191	.1968	.3954	.0453
42202M004	AREQUIPA	GPS	AREQ	1942785.040	-5804081.599	-1796911.015	.004	.005	.004
42202M004				.0114	.0013	.0123	.0006	.0008	.0006
42202M005	AREQUIPA	GPS	AREQ	1942826.731	-5804070.246	-1796893.977	.003	.004	.003
42202M005				.0114	.0013	.0123	.0006	.0008	.0006
42501S004	BERMUDA	GPS	BRMU	2304703.593	-4874817.173	3395186.889	.002	.003	.003
42501S004				-.0113	-.0030	.0079	.0007	.0005	.0005
43001M001	THULE	GPS	THUL	538981.432	-1388714.784	6181005.131	.002	.002	.004
43001M001				-.0243	-.0022	-.0023	.0012	.0012	.0011
43005M001	KELLYVILLE	GPS	KELY	1575559.290	-1941827.923	5848076.494	.003	.003	.004
43005M001				-.0224	-.0050	.0022	.0025	.0023	.0013
43201M001	SAINTE CROIX	GPS	CRO1	2607771.193	-5488076.830	1932767.698	.003	.004	.003
43201M001				.0079	.0085	.0145	.0012	.0011	.0012
49901M001	WRIGHTWOOD	GPS	TABL	-2448549.833	-4668099.316	3582740.957	.030	.043	.032
49901M001				-.0252	.0141	.0017	.0358	.0507	.0374
49902M001	MOUNT LEEP	GPS	LEEP	-2507463.143	-4652632.396	3559086.785	.020	.029	.021
49902M001				-.0283	.0105	.0139	.0212	.0297	.0219
49903M001	HOLLYDALE	GPS	HOLP	-2500945.860	-4670473.352	3539500.509	.023	.032	.024
49903M001				-.0289	.0064	.0201	.0239	.0336	.0249
49904M001	DURMIDHILL	GPS	DHLG	-2319098.991	-4799846.383	3490090.313	.174	.249	.177
49904M001				.7792	1.5825	-1.1896	.94511	.3786	.9772
49905M001	PACOIMA	GPS	DPM1	-2507721.121	-4638444.616	3577430.091	.018	.026	.019
49905M001				-.0287	.0078	.0143	.0167	.0243	.0179
49905M002	PACOIMA	GPS	DPM2	-2507655.608	-4638419.633	3577506.587	.017	.025	.019
49905M002				-.0287	.0078	.0143	.0167	.0243	.0179
49905M003	PACOIMA/FIRE CAM	GPS	CMF9	-2508505.855	-4637175.145	3579499.874	.017	.025	.019
49905M003				-.0287	.0078	.0143	.0167	.0243	.0179
49906M001	CLAREMONT	GPS	CLAR	-2458218.206	-4680467.827	3556758.472	.022	.031	.023
49906M001				-.0257	.0028	.0152	.0226	.0320	.0235

49907S001	SOLOMONS ISLAND	GPS	SOL1	1173608.876	-4871160.854	3933263.095	.019	.033	.026
49907S001				-.0109	-.0082	.0006	.0243	.0425	.0330
49908S001	ANNAPOLIS	GPS	USNA	1160668.959	-4826883.396	3990863.112	.021	.036	.028
49908S001				-.0116	-.0123	-.0025	.0240	.0419	.0334
49909S001	SAN NICOLAS IS.	GPS	SNIL	-2631346.552	-4646278.960	3477113.241	.047	.068	.049
49909S001				-.0280	.0384	.0069	.0484	.0701	.0503
49910S001	NORTHBRIDGE	GPS	CSN1	-2520225.798	-4637082.564	3569875.394	.272	.372	.277
49910S001				-.0813	.0406	.0258	.4568	.6270	.4664
49911M001	AZUSA	GPS	AZU1	-2472979.065	-4671338.088	3558107.568	.151	.224	.168
49911M001				.6973	1.3731	-1.01541	.02681	.51941	.1383
50103M108	TIDEINBILLA	GPS	TIIB	-4460996.134	2682557.080	-3674443.702	.004	.003	.004
50103M108				-.0368	-.0045	.0479	.0011	.0008	.0010
50103M108	TIDEINBILLA	GPS	TIIB	-4460996.154	2682557.093	-3674443.720	.005	.004	.004
50103M108				-.0368	-.0045	.0479	.0011	.0008	.0010
50107M004	YARRAGADEE	GPS	YAR1	-2389025.539	5043316.874	-3078530.738	.003	.003	.004
50107M004				-.0498	.0056	.0491	.0003	.0005	.0005
50116M003	HOBART	GPS	HOB1	-3950184.083	2522364.462	-4311588.184	.008	.007	.008
50116M003				-.0409	.0048	.0419	.0018	.0013	.0018
50116M004	HOBART	GPS	HOB2	-3950071.365	2522415.187	-4311638.367	.004	.004	.004
50116M004				-.0409	.0048	.0419	.0018	.0013	.0018
50127M001	COCO ISLAND	GPS	COCO	-741950.004	6190961.634	-1337768.594	.005	.005	.004
50127M001				-.0423	.0084	.0544	.0019	.0010	.0018
50133M001	PERTH	GPS	PERT	-2368686.972	4881316.520	-3341796.170	.003	.004	.004
50133M001				-.0514	.0075	.0476	.0020	.0032	.0023
50135M001	MACQUARIE ISLAND	GPS	MAC1	-3464038.503	1334172.762	-5169224.328	.004	.004	.004
50135M001				-.0230	.0102	.0171	.0015	.0020	.0012
50137M001	ALICE SPRINGS	GPS	ALIC	-4052051.842	4212836.121	-2545105.850	.017	.017	.018
50137M001				-.0389	.0130	.0575	.0422	.0451	.0284
50139M001	KARRATHA	GPS	KARR	-2713832.272	5303935.129	-2269515.041	.018	.015	.018
50139M001				-.0304	-.0663	.0870	.0361	.0586	.0274
50140M001	TOWNSVILLE	GPS	TOW2	-5054582.692	3275504.448	-2091539.691	.015	.018	.018
50140M001				-.0082	.0137	.0437	.0556	.0423	.0289
50207M001	CHATHAM ISLAND	GPS	CHAT	-4590670.919	-275483.000	-4404596.788	.004	.004	.004
50207M001				-.0240	.0138	.0247	.0012	.0016	.0012
50209M001	AUCKLAND	GPS	AUCK	-5105681.020	461564.046	-3782181.767	.004	.004	.004
50209M001				-.0247	-.0194	.0320	.0013	.0024	.0014
50501M002	GUAM	GPS	GUAM	-5071312.795	3568363.498	1488904.313	.004	.003	.004
50501M002				.0066	.0068	.0042	.0017	.0019	.0011
50506M001	KWAJALEIN ATOLL	GPS	KWU1	-6160881.011	1339882.965	960810.459	.004	.004	.003
50506M001				.0241	.0694	.0303	.0010	.0017	.0015
66001M001	MC MURDO	GPS	MCU1	-1310695.203	310468.793	-6213363.554	.018	.015	.041
66001M001				.0013	-.0178	-.0292	.0021	.0021	.0042
66001M003	MC MURDO	GPS	MCU4	-1311703.254	310815.107	-6213255.139	.004	.004	.005
66001M003				.0013	-.0178	-.0292	.0021	.0021	.0042
66001S006	MC MURDO	GPS	MCU2	-1310621.753	310414.119	-6213400.435	.007	.007	.017
66001S006				.0013	-.0178	-.0292	.0021	.0021	.0042
66004M001	MAWSON STATION	GPS	MAW1	1111287.175	2168911.281	-5874493.598	.019	.019	.017
66004M001				.0049	.0088	-.0384	.0334	.0375	.0845
66008M001	O'HIGGINS	GPS	OHIG	1525872.478	-2432481.299	-5676146.095	.005	.005	.005
66008M001				.0179	.0006	.0025	.0021	.0019	.0012
66010M001	DAVIS	GPS	DAV1	486854.548	2285099.304	-5914955.697	.004	.004	.005
66010M001				.0041	-.0107	-.0052	.0020	.0023	.0040
66011M001	CASEY	GPS	CAS1	-901776.164	2409383.423	-5816748.437	.004	.004	.005
66011M001				-.0008	-.0099	-.0192	.0020	.0022	.0038
91201M002	KERGUELEN	GPS	KERG	1406337.337	3918161.103	-4816167.368	.004	.004	.004
91201M002				-.0001	-.0008	-.0098	.0021	.0023	.0024
92201M003	PAMATAI	GPS	PAMA	-5245195.335	-3080472.189	-1912825.385	.005	.005	.003
92201M003				-.0424	.0432	.0289	.0039	.0033	.0016
92201M006	PAPEETE	GPS	TAHI	-5246568.791	-3076989.493	-1913777.531	.012	.010	.008
92201M006				-.0424	.0432	.0289	.0039	.0033	.0016
97301M210	KOUROU	GPS	KOUR	3839591.428	-5059567.540	579956.924	.005	.006	.003
97301M210				-.0010	.0001	.0114	.0025	.0029	.0008

* AFTER 96:174

Table T7: ITRF96 DORIS Station Coordinates at epoch 1997.0 and Velocities

DOMES NB.	SITE NAME	TECH. ID.	X/\x	Y/\y	Z/\z	Sigmas		
			-----m/m/y-----					
10003S001	TOULOUSE	DORIS TLSA	4628047.415	119670.433	4372787.862	.014	.025	.014
10003S001			-.0221	.0356	.0229	.0035	.0071	.0037
10202S001	REYKJAVIK	DORIS REYA	2585528.202	-1044368.123	5717159.014	.012	.011	.011
10202S001			-.0220	-.0039	.0096	.0013	.0013	.0008
10317S002	NY-ALESUND	DORIS SPJA	1202793.983	254163.101	6237609.328	.004	.004	.005
10317S002			-.0168	.0076	.0009	.0006	.0006	.0006
10503S013	METSAHOVI	DORIS META	2890641.145	1310310.563	5513964.941	.005	.005	.005
10503S013			-.0171	.0135	.0062	.0004	.0005	.0002
12329S001	SAKHALINS	DORIS SAKA	-3465326.149	2638266.727	4644082.326	.031	.033	.028
12329S001			-.0343	-.0096	-.0209	.0116	.0124	.0102
12334S004	KITAB	DORIS KITA	1945024.632	4556708.894	4004235.855	.004	.004	.004
12334S004			-.0278	.0107	.0043	.0019	.0024	.0021
12334S005	KITAB	DORIS KITB	1945024.331	4556708.351	4004235.378	.062	.050	.041
12334S005			-.0278	.0107	.0043	.0019	.0024	.0021
12338S001	BADARY	DORIS BADA	-838277.769	3865776.963	4987626.689	.024	.018	.019
12338S001			-.0415	-.0069	.0029	.0099	.0084	.0083
12602S011	DIONYSOS	DORIS DIOA	4595215.221	2039475.475	3912615.062	.027	.030	.021
12602S011			.0015	.0132	-.0047	.0040	.0044	.0034
21501S001	EVEREST	DORIS EVEB	313666.400	5633552.658	2974736.784	.058	.041	.029
21501S001			-.0509	-.0029	.0364	.0262	.0180	.0134
21604S003	PURPLE MOUNTAIN	DORIS PURA	-2608502.034	4739980.342	3366883.068	.036	.030	.023
21604S003			-.0272	-.0064	-.0097	.0152	.0127	.0096
22006S001	MANILLE	DORIS MANA	-3184357.592	5291042.183	1590419.452	.041	.036	.021
22006S001			.0295	.0109	-.0093	.0177	.0153	.0092
23101S001	CIBINONG	DORIS CIEB	-1836963.593	6065626.713	-716217.280	.045	.034	.022
23101S001			-.0074	-.0060	-.0062	.0212	.0158	.0104
23501S001	COLOMBO	DORIS COLA	1113278.478	6233646.290	760276.752	.041	.031	.021
23501S001			-.0736	.0074	.0290	.0185	.0134	.0094
30302S005	HARTEBEESTHOEK	DORIS HELA	5084641.525	2670349.942	-2768497.868	.155	.195	.105
30302S005			.0007	.0192	.0164	.0009	.0010	.0007
30302S202	HARTEBEESTHOEK	DORIS HEKA	5084641.536	2670349.725	-2768497.177	.009	.010	.008
30302S202			.0007	.0192	.0164	.0009	.0010	.0007
30313S001	MARION ISLAND	DORIS MARA	3448405.633	2680356.301	-4632640.368	.029	.031	.024
30313S001			.0011	.0048	.0124	.0103	.0111	.0085
30602S004	ASCENSION	DORIS ASDB	6121161.641	-1563943.229	-872612.887	1.033	1.851	.685
30602S004			.0032	-.0002	.0072	.0016	.0051	.0027
30604S001	TRISTAN DA CUNHA	DORIS TRIA	4978463.241	-1086620.693	-3823205.473	.025	.033	.022
30604S001			.0241	.0141	.0403	.0101	.0134	.0087
30606S002	SAINT-HELENE	DORIS HELA	6104828.435	-605837.464	-1740706.361	.032	.046	.023
30606S002			.0171	.0131	.0372	.0129	.0189	.0093
31901S001	FLORES	DORIS FLOA	4221385.103	-2549305.709	4031509.438	.188	.207	.134
31901S001			-.0466	.0016	.0393	.0439	.0479	.0296
31903S001	SANTA MARIA	DORIS SAMB	4617391.201	-2169543.815	3815405.126	.038	.043	.031
31903S001			-.0100	.0099	.0227	.0167	.0166	.0145
32809S002	LIBREVILLE	DORIS LIBA	6287388.576	1071574.280	39147.203	.030	.041	.019
32809S002			-.0022	.0219	.0304	.0119	.0165	.0078
33710S001	ARLIT	DORIS ARLA	5992632.027	775892.325	2035862.615	.045	.063	.033
33710S001			-.0162	.0117	.0263	.0187	.0267	.0135
33710S002	ARLIT	DORIS ARMA	5991269.337	773728.593	2040688.552	.044	.063	.032
33710S002			-.0162	.0117	.0263	.0187	.0267	.0135
34101S004	DAKAR	DORIS DAKA	5886437.383	-1848461.534	1611441.844	.028	.039	.019
34101S004			.0010	.0085	.0370	.0123	.0171	.0081
39901S002	DJIBOUTI	DORIS DJIA	4583119.424	4250952.194	1266247.694	.030	.030	.017
39901S002			-.0092	.0219	.0151	.0133	.0137	.0078
40102S005	OTTAWA	DORIS OTTA	1107623.504	-4347253.857	4518738.205	.072	.057	.055
40102S005			-.0213	.0059	-.0041	.0145	.0106	.0104
40102S006	OTTAWA	DORIS OTTB	1107623.480	-4347253.844	4518738.017	.028	.021	.020
40102S006			-.0213	.0059	-.0041	.0145	.0106	.0104
40127S007	YELLOWKNIFE	DORIS YELA	-1224424.030	-2689227.416	5633645.203	.004	.004	.005
40127S007			-.0196	-.0030	-.0048	.0005	.0007	.0012
40405S005	GOLDSTONE	DORIS GOMA	-2350858.611	-4655545.714	3661004.738	.007	.009	.008
40405S005			-.0144	.0040	-.0040	.0002	.0003	.0003
40405S035	GOLDSTONE	DORIS GOLA	-2356503.858	-4646583.984	3668453.197	.006	.008	.007
40405S035			-.0145	.0040	-.0040	.0002	.0003	.0003

40405S037	GOLDSTONE	DORIS GOMB	-2350858.638	-4655545.769	3661004.783	.006	.008	.008
40405S037			-.0145	.0040	-.0040	.0002	.0003	.0003
40408S004	FAIRBANKS	DORIS FAIA	-2282503.060	-1453417.016	5756694.524	.004	.004	.004
40408S004			-.0215	-.0042	-.0097	.0003	.0004	.0006
40424S008	KAUAI	DORIS KOKA	-5543974.638	-2054589.905	2387488.164	.004	.004	.004
40424S008			-.0081	.0618	.0302	.0005	.0003	.0004
40499S015	RICHMOND	DORIS RICA	961079.767	-5673576.178	2741639.310	.004	.005	.005
40499S015			-.0079	-.0059	.0041	.0003	.0006	.0005
40499S016	RICHMOND	DORIS RIDA	960756.819	-5673685.129	2741529.548	.004	.005	.004
40499S016			-.0079	-.0059	.0041	.0003	.0006	.0005
40503S002	SOCORRO ISLAND	DORIS SOCA	-2160928.360	-5642986.965	2034688.380	.041	.033	.022
40503S002			-.0535	.1096	.0504	.0173	.0137	.0091
40503S003	SOCORRO ISLAND	DORIS SODA	-2160725.380	-5643017.226	2034836.890	.041	.033	.021
40503S003			-.0535	.1096	.0504	.0173	.0137	.0091
41507S003	RIO GRANDE	DORIS RIOA	1429849.868	-3495346.414	-5122723.051	.027	.024	.023
41507S003			-.0031	-.0102	.0175	.0101	.0088	.0086
41507S004	RIO GRANDE	DORIS RIOB	1429854.150	-3495342.309	-5122725.152	.027	.024	.023
41507S004			-.0031	-.0102	.0175	.0101	.0088	.0086
41609S001	CACHOEIRA PAULIS	DORIS CACB	4163493.941	-4163782.257	-2444561.583	.034	.038	.022
41609S001			-.0098	-.0291	.0137	.0151	.0174	.0101
41703S008	EASTER ISLAND	DORIS EASA	-1884993.735	-5357605.013	-2892858.682	.006	.006	.005
41703S008			.0643	-.0210	-.0070	.0016	.0020	.0014
41705S007	SANTIAGO	DORIS SANA	1776346.761	-5026544.301	-3491183.639	.019	.015	.013
41705S007			.0219	-.0074	.0070	.0013	.0019	.0013
41705S008	SANTIAGO	DORIS SAOB	1769700.323	-5044614.896	-3468261.245	.006	.006	.005
41705S008			.0219	-.0074	.0070	.0013	.0019	.0013
42004S001	SAN CRISTOBAL	DORIS GALA	42716.690	-6377216.473	-99590.660	.052	.034	.023
42004S001			.0498	-.0013	.0042	.0211	.0139	.0096
42202S005	AREQUIPA	DORIS AREA	1942796.747	-5804077.719	-1796919.101	.004	.005	.004
42202S005			.0114	.0013	.0123	.0006	.0008	.0006
50103S201	CANBERRA	DORIS ORRA	-4446470.656	2678101.947	-3696274.114	.008	.006	.007
50103S201			-.0368	-.0045	.0479	.0011	.0008	.0010
50103S202	CANBERRA/OTRORAL	DORIS ORRB	-4446470.825	2678102.049	-3696274.251	.008	.006	.007
50103S202			-.0368	-.0045	.0479	.0011	.0008	.0010
50107S006	YARRAGADEE	DORIS YARA	-2389003.943	5043340.608	-3078513.083	.003	.004	.004
50107S006			-.0498	.0056	.0491	.0003	.0005	.0005
50501S001	GUAM	DORIS GUAB	-5075278.498	3565110.795	1483590.918	.006	.006	.006
50501S001			.0066	.0068	.0042	.0017	.0019	.0011
51001S001	PORT MORESEY	DORIS MORA	-5288462.907	3410034.488	-1038802.601	.065	.070	.037
51001S001			-.0126	-.0179	.0408	.0214	.0233	.0125
66006S001	SYOWA	DORIS SYOB	1766498.945	1460274.416	-5932211.697	.017	.016	.018
66006S001			.0150	-.0023	.0016	.0079	.0075	.0086
66007S001	ROTHERA	DORIS ROTA	909378.219	-2264934.504	-5872956.865	.019	.017	.020
66007S001			.0245	.0019	.0089	.0079	.0075	.0085
91201S002	KERGUELEN	DORIS KERA	1405826.342	3918281.678	-4816204.145	.005	.005	.005
91201S002			-.0001	-.0008	-.0098	.0021	.0023	.0024
91201S003	KERGUELEN	DORIS KERB	1405826.413	3918281.829	-4816204.304	.005	.005	.005
91201S003			-.0001	-.0008	-.0098	.0021	.0023	.0024
91401S001	AMSTERDAM	DORIS AMSA	1086061.543	4927963.013	-3887828.277	.033	.024	.020
91401S001			-.0105	-.0055	-.0008	.0135	.0099	.0084
91501S001	ILE DES PETRELS	DORIS ADEA	-1941059.579	1628659.353	-5833613.495	.017	.016	.016
91501S001			.0199	-.0063	-.0019	.0067	.0062	.0065
92201S007	PAPEETE	DORIS PAPB	-5246579.824	-3076973.090	-1913777.115	.013	.010	.009
92201S007			-.0424	.0432	.0289	.0039	.0033	.0016
92202S009	HUAHINE	DORIS HUPA	-5345873.431	-2958239.049	-1824624.208	.032	.025	.020
92202S009			-.0432	.0499	.0316	.0035	.0032	.0026
92701S001	NOUMEA	DORIS NOUA	-5739993.699	1387548.343	-2402085.312	.035	.045	.025
92701S001			-.0101	-.0171	.0373	.0143	.0198	.0107
92901S001	WALLIS	DORIS WALA	-6195393.716	-413727.903	-1454075.319	.031	.044	.022
92901S001			-.0034	.0766	.0249	.0117	.0167	.0084
97301S004	KOUROU	DORIS KRUB	3855261.264	-5049734.775	563057.823	.015	.015	.010
97301S004			-.0010	.0001	.0114	.0025	.0029	.0008
97301S005	KOUROU	DORIS KRUA	3854715.108	-5049977.779	564747.584	.024	.024	.022
97301S005			-.0010	.0001	.0114	.0025	.0029	.0008
97401S001	LA REUNION	DORIS REUA	3364093.807	4907945.472	-2293482.320	.032	.028	.017
97401S001			-.0076	.0149	.0145	.0132	.0116	.0071

Table T8: Transformation parameters and their rates of change from ITRF96 to individual frames

Solution	T1 cm	T2 cm	T3 cm	D 10-8	R1 .001"	R2 .001"	R3 .001"	Epoch y
	T1 -----cm/y-----	T2 -----cm/y-----	T3 -----cm/y-----	D 10-8/y	R1 -----"	R2 -----"	R3 -----"	

VERY LONG BASELINE INTERFEROMETRY

(GSFC) 97 R 01	.10 .21	-.23 .20	.01 .20	-.010 .038	.247 .087	.181 .090	.198 .081	93: 1
	.11 .03	.21 .04	-.06 .03	-.013 .005	-.006 .013	-.054 .012	-.097 .010	
(GIUB) 97 R 01	-1.17 .43	-2.71 .38	1.67 .35	.104 .037	-.911 .141	.758 .186	.098 .098	93: 1
	-.05 .08	.04 .08	.21 .06	-.005 .007	-.041 .032	.043 .030	-.042 .014	
(NOAA) 95 R 01	.88 .43	1.23 .43	.54 .29	.024 .034	.835 .147	.232 .131	.288 .091	93: 1
	.01 .07	.04 .09	.14 .05	-.005 .005	-.009 .030	-.015 .020	-.021 .014	
(JPL) 97 R 01	-.35 .27	-.40 .31	-.22 .28	-.050 .110	-.559 .143	-.178 .104	-.637 .121	93: 1

SATELLITE LASER RANGING

(CSR) 96 L 01	-.47 .00	-.56 .00	.73 .00	-.131 .000	-.696 .000	.117 .000	.218 .000	93: 1
	.26 .00	.25 .00	.26 .00	.038 .000	-.049 .000	-.124 .000	.093 .000	
(GSFC) 97 L 01	-.13 .14	-.55 .19	.11 .49	-.268 .042	-.251 .170	1.886 .122	-1.785 .126	86:182
	-.01 .02	.00 .02	.05 .05	.020 .006	.008 .016	-.044 .014	.130 .013	

GLOBAL POSITIONING SYSTEM

(EMR)	97 P 01	.53	-1.86	-.04	.001	-.144	-.010	.215	96: 1
		.17	.19	.17	.036	.078	.084	.074	
		.06	-.20	.12	-.032	-.059	-.016	-.022	
		.03	.03	.03	.020	.011	.010	.008	
(GFZ)	97 P 02	5.08	6.24	-3.17	-.038	10.496	1.136	.034	94:365
		.18	.19	.46	.034	.082	.088	.087	
		-.25	-.05	.07	-.019	-.036	-.115	.133	
		.05	.06	.06	.007	.031	.036	.039	
(CODE)	97 P 02	1.34	-.38	-.65	-.007	.022	-.447	.023	95: 76
		.17	.17	.18	.030	.078	.088	.074	
		-.17	-.12	.10	-.009	-.033	.035	-.015	
		.05	.06	.05	.006	.026	.021	.015	
(EUR)	97 P 04	3.19	-1.34	-2.68	-.053	-1.309	-1.503	-.835	96: 90
		.29	.31	.25	.032	.104	.126	.090	
		-1.76	.03	-1.97	.386	.284	-.271	.227	
		.26	.13	.34	.067	.141	.037	.165	
(EUR)	97 P 03	-5.68	-2.19	-5.53	.219	-.359	.119	.678	96:339
		.44	.36	.32	.043	.111	.132	.095	
		-1.75	.03	-1.96	.384	.206	.049	.043	
		.26	.13	.35	.067	.070	.025	.077	
(MIT)	97 P 01	-.60	.95	-1.29	-.147	-.444	-.762	-3.427	97:151
		.17	.18	.19	.033	.097	.140	.104	
		-.59	-.33	.07	-.060	-.678	-1.289	-1.018	
		.06	.06	.06	.015	.042	.054	.028	
(NCL)	97 P 01	.31	-.41	.61	-.008	.221	.004	.233	96: 1
		.18	.18	.20	.032	.077	.084	.074	
		.09	.35	-.25	-.021	.047	-.033	-.072	
		.11	.11	.15	.028	.027	.025	.015	
(JPL)	97 P 02	.12	-.06	-.24	.149	.261	.028	.226	96: 1
		.15	.15	.16	.030	.073	.082	.074	
		.08	.05	.06	.001	.035	-.045	-.003	
		.04	.04	.04	.009	.013	.013	.012	

DORIS

(GRGS)	97 D 01	2.09	.06	-7.01	.582	-.710	.504	-4.132	93: 1
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			.52	.45	.47	.141	.151	.182	.225	
			-.34	-.33	-.07	-.017	.105	.072	-.073	
			.21	.18	.18	.058	.057	.068	.092	
(CSR)	96 D 01	1.44	-.15	.48	.082	.220	.648	-.099	93:	1
		.55	.53	.41	.080	.155	.186	.277		
			-.53	-.16	-.04	.042	-.003	.161	-.050	
			.23	.23	.16	.032	.063	.072	.120	
(IGN)	97 D 04	-.11	.34	-1.20	-.201	.287	-.384	.808	95:100	
		.38	.33	.74	1.529	.113	.139	.187		
			.10	.36	2.01	.035	-.035	.420	.438	
			.25	.22	.59	1.682	.068	.078	.131	

Table T9:Residuals per site of the ITRF96 combination

10002 GRASSE

DOMES CDP NUM. NUM. *	RX m	RY m	RZ m	NX	NY	NZ	RE m	RN m	RU m	EPOCH y

Positions										
M003 7605 TIE10002	-.0012	-.0007	.0013	2.6	.1	.7	-.0005	.0018	-.0001	93: 1
M003 7605 R GSFC	.0277	.0078	.0170	.3	.1	.0	.0045	-.0073	.0323	93: 1
M003 7605 R NOAA	.0112	.0043	.0099	.1	.4	-.5	.0029	-.0009	.0153	93: 1
M003 7605 P CODE	.0081	-.0036	.0039	.3	-.2	-.3	-.0046	-.0024	.0082	95: 76
M006 GRAS TIE10002	-.0123	-.0012	-.0019	.0	.0	.0	.0003	.0071	-.0102	93: 1
M006 GRAS P CODE	.0051	.0000	.0052	.7	.4	-.5	-.0006	.0003	.0072	95: 76
M006 GRAS P CODE	.0016	.0013	.0040	.0	.0	.0	.0011	.0017	.0040	95: 76
M006 GRAS P04 EUR	.0047	.0006	.0040	.5	.0	-.1	.0000	-.0003	.0062	96: 90
M006 GRAS P03 EUR	.0022	-.0015	.0023	.9	.4	-.1	-.0018	.0003	.0030	96:339
M006 GRAS P MIT	.0074	-.0025	.0081	.3	.0	.4	-.0034	.0010	.0107	97:151
M006 GRAS P NCL	.0017	-.0034	.0031	.1	-.8	.5	-.0036	.0014	.0030	96: 1
M006 GRAS P JPL	.0115	.0012	.0114	1.2	.0	1.5	-.0002	.0003	.0162	96: 1
S001 7835 TIE10002	.0000	.0000	.0000	3.2	.4	.2	.0000	.0000	.0000	93: 1
S001 7835 L CSR	-.0028	.0005	.0044	-.2	.0	1.4	.0009	.0051	.0010	93: 1
S001 7835 L GSFC	.0087	-.0080	-.0130	.6	.8	-1.5	-.0090	-.0147	-.0035	86:182
S002 7845 TIE10002	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
S014 TIE10002	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1

	RVX m/y	RVY m/y	RVZ m/y	NVX	NVY	NVZ	RVE m/y	RVN m/y	RVU m/y	

Velocities

M003 7605 R GSFC	-.0002	.0001	.0001	-.8	-.3	.0	.0001	.0002	.0000	
M003 7605 R NOAA	-.0002	.0002	.0017	.0	.0	.0	.0002	.0014	.0011	
M003 7605 P CODE	-.0005	-.0015	.0013	-.1	-.7	1.0	-.0014	.0014	.0004	
M006 GRAS P CODE	-.0005	-.0014	.0013	.5	.1	.3	-.0014	.0015	.0004	
M006 GRAS P CODE	-.0005	-.0015	.0013	.3	.0	.4	-.0014	.0014	.0004	
M006 GRAS P04 EUR	.0006	.0095	-.0017	.0	.7	.3	.0093	-.0025	.0000	
M006 GRAS P03 EUR	.0016	-.0010	-.0014	.2	.4	.4	-.0012	-.0020	.0000	
M006 GRAS P MIT	-.0036	.0006	.0029	-1.1	-.5	-.3	.0010	.0045	-.0005	
M006 GRAS P NCL	.0040	.0050	.0026	1.7	-.2	.7	.0045	-.0012	.0051	
M006 GRAS P JPL	-.0014	-.0023	-.0021	-.3	-.1	-.2	-.0021	-.0004	-.0027	
S001 7835 L CSR	.0011	.0003	.0061	2.9	.7	2.0	.0002	.0037	.0050	
S001 7835 L GSFC	-.0007	.0010	.0019	.1	.5	-.1	.0011	.0018	.0009	

10003 TOULOUSE

Positions

M003 7608 TIE10003	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M003 7608 R GSFC	.0061	.0098	.0370	.1	.4	.7	.0097	.0224	.0301	93: 1
M003 7608 R NOAA	.0051	.0133	.0402	.0	.9	1.2	.0132	.0254	.0316	93: 1
M004 TOUL TIE10003	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
S001 TLSA TIE10003	-.0006	.0005	.0006	-.1	.1	.1	.0005	.0008	.0000	93: 1
S001 TLSA D GRGS	.0210	-.0345	-.0344	.6	-.6	-1.3	-.0350	-.0388	-.0091	93: 1
S001 TLSA D CSR	.0082	-.0116	-.0044	.2	-.2	-.1	-.0118	-.0086	.0027	93: 1
S001 TLSA D IGN	-.0133	-.0036	.0064	-.4	-.1	1.1	-.0032	.0139	-.0053	95:100
S003 TLHA TIE10003	-.0006	.0005	.0006	-.1	.1	.1	.0005	.0008	.0000	93: 1

Velocities

M003 7608 R GSFC	-.0118	.0168	.0119	-.5	.6	.0	.0171	.0165	.0000	
M003 7608 R NOAA	-.0117	.0168	.0134	.0	.0	.0	.0171	.0175	.0011	
S001 TLSA D GRGS	-.0067	.0089	.0066	.2	-.4	-1.2	.0091	.0093	-.0001	
S001 TLSA D CSR	-.0031	.0101	.0062	.1	.2	.3	.0102	.0064	.0022	
S001 TLSA D IGN	-.0109	.0170	.0118	-.5	1.1	.4	.0173	.0158	.0006	

10004 BREST

Positions

M002 7604 TIE10004	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M002 7604 R GSFC	-.0135	-.0018	-.0151	-.1	.0	-.1	-.0029	-.0001	-.0202	93: 1
M002 7604 R NOAA	.0098	-.0010	.0153	.0	.0	.0	-.0002	.0028	.0180	93: 1
S001 TIE10004	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1

Velocities

M002 7604 R GSFC	.0007	.0004	-.0006	.0	.0	.0	.0005	-.0009	.0000
M002 7604 R NOAA	.0010	.0003	.0011	.0	.0	.0	.0003	.0000	.0015

10202 REYKJAVIK

Positions

M001 REYK P CODE	.0084	.0003	.0071	.7	.4	.2	.0034	-.0038	.0097	95: 76
M001 REYK P04 EUR	.0024	-.0010	.0101	-.1	-.2	1.7	-.0001	.0020	.0102	96: 90
M001 REYK P03 EUR	.0020	-.0021	.0042	.8	.9	.3	-.0011	-.0006	.0049	96:339
M001 REYK P MIT	-.0045	-.0024	-.0008	-1.3	-.4	.4	-.0040	.0026	-.0022	97:151
M001 REYK P NCL	.0029	-.0047	.0038	.5	-1.1	-1.0	-.0032	-.0023	.0054	96: 1
M001 REYK P JPL	.0004	-.0078	.0051	-.1	-1.0	.2	-.0071	-.0008	.0061	96: 1
S001 REYA D GRGS	-.0351	.0251	.0026	-1.0	1.1	.4	.0101	.0389	-.0159	93: 1
S001 REYA D CSR	-.0156	-.0278	-.0293	-.4	-.6	-.7	-.0317	-.0091	-.0282	93: 1
S001 REYA D IGN	.0112	.0025	-.0076	1.1	-.4	.1	.0065	-.0118	-.0027	95:100

Velocities

M001 REYK P CODE	-.0025	-.0046	.0004	.1	-.1	.4	-.0052	.0007	.0002
M001 REYK P04 EUR	-.0075	-.0423	-.0043	-.3	-3.0	-.1	-.0420	-.0099	.0000
M001 REYK P03 EUR	-.0081	-.0104	.0018	-.3	-1.5	.1	-.0127	.0041	.0000
M001 REYK P MIT	-.0050	.0008	-.0005	-1.4	-.3	.7	-.0011	.0042	-.0026
M001 REYK P NCL	-.0052	.0069	-.0084	-.8	.6	-.2	.0045	.0030	-.0108
M001 REYK P JPL	-.0010	.0079	-.0039	.1	-.3	.3	.0070	.0018	-.0052
S001 REYA D GRGS	.0054	-.0051	.0020	-1.0	1.0	.8	-.0027	-.0054	.0048
S001 REYA D CSR	.0050	-.0037	.0122	-.4	-.7	.3	-.0016	-.0002	.0136
S001 REYA D IGN	-.0007	.0108	.0062	.3	.7	.1	.0097	.0069	.0035

10204 HOEFN

Positions

M001 7635 R GSFC	.0046	-.0027	.0134	.1	.1	.0	-.0014	.0012	.0143	93: 1
M001 7635 R NOAA	.0005	-.0015	.0074	-.1	.0	.0	-.0013	.0024	.0071	93: 1

Velocities

M001 7635 R GSFC	.0008	.0007	-.0003	.0	.0	.0	.0009	-.0007	.0000
M001 7635 R NOAA	.0013	.0000	.0018	.0	.0	.0	.0003	-.0004	.0021

10302 TROMSO

Positions

M002 7602 TIE10302	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M002 7602 R GSFC	.0054	-.0445	-.0033	.2	-3.2	.5	-.0439	.0076	-.0063	93: 1
M002 7602 R NOAA	.0176	-.0421	.0375	.5	-4.5	1.2	-.0456	.0103	.0362	93: 1
M002 7602 L CSR	-.0213	-.0136	-.0429	.3	.3	-.1	-.0060	.0082	-.0487	93: 1
M003 TROM TIE10302	.0009	-.0069	.0005	.3	-2.3	.2	-.0068	.0015	.0000	93: 1
M003 TROM P EMR	.0022	-.0076	.0089	.7	.5	-.3	-.0078	.0035	.0082	96: 1
M003 TROM P GFZ	-.0116	-.0140	.0197	-.1	.8	.0	-.0094	.0214	.0131	94:365
M003 TROM P CODE	.0000	-.0018	-.0029	-.7	.7	.2	-.0017	-.0004	-.0029	95: 76
M003 TROM P04 EUR	.0010	-.0004	-.0038	-.3	.8	-.4	-.0007	-.0021	-.0033	96: 90
M003 TROM P03 EUR	-.0037	.0004	-.0106	-.6	2.4	-1.2	.0016	-.0005	-.0111	96:339
M003 TROM P MIT	-.0047	-.0002	-.0106	-.6	.3	-1.1	.0014	.0005	-.0115	97:151
M003 TROM P NCL	.0033	-.0029	.0076	1.1	-.6	.0	-.0038	.0006	.0079	96: 1
M003 TROM P JPL	.0028	.0010	.0067	.8	.4	.2	.0001	-.0005	.0073	96: 1

S010 TROA TIE10302	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
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Velocities

M002 7602 R GSFC	-.0006	-.0134	-.0062	.1	.8	.0	-.0124	.0025	-.0075
M002 7602 R NOAA	.0011	-.0157	.0053	-.3	.1	.2	-.0152	.0056	.0035
M002 7602 L CSR	-.0112	-.0160	-.0123	.1	.0	-.1	-.0115	.0105	-.0171
M003 TROM P EMR	-.0001	-.0009	-.0016	-.1	.1	-.4	-.0008	-.0002	-.0017
M003 TROM P GFZ	-.0039	-.0016	-.0030	-.5	-.9	.4	-.0003	.0029	-.0042
M003 TROM P CODE	.0002	-.0044	.0025	-.2	-1.7	.4	-.0042	.0021	.0019
M003 TROM P04 EUR	-.0231	-.0337	.0122	-.6	-2.2	.0	-.0244	.0350	.0000
M003 TROM P03 EUR	-.0031	.0187	-.0012	.7	1.9	.1	.0187	-.0034	.0000
M003 TROM P MIT	-.0054	.0041	-.0093	.5	.9	-.1	.0057	.0003	-.0101
M003 TROM P NCL	-.0056	.0016	-.0147	-.5	-1.4	-.1	.0033	-.0007	-.0154
M003 TROM P JPL	-.0008	-.0029	-.0004	-.5	-1.8	-.1	-.0025	.0015	-.0010

10307 OSLO

Positions

M001 OSLO P03 EUR	.0028	-.0022	.0042	.5	-.6	.0	-.0027	.0001	.0048	96:339
M001 OSLO P MIT	.0263	.0022	.0462	1.3	.1	1.0	-.0025	.0006	.0531	97:151
M001 OSLO P NCL	-.0758	.0322	-.1123	-1.3	4.6	-.1	.0453	.0028	-.1316	96: 1

Velocities

M001 OSLO P03 EUR	-.0122	.0255	.0043	-.8	3.8	.0	.0273	.0085	.0000
M001 OSLO P MIT	.0614	.0090	.1137	.7	-.1	.2	-.0022	.0037	.1295
M001 OSLO P NCL	.0740	-.0329	.1081	-.2	-2.0	-.1	-.0457	-.0033	.1271

10317 NY-ALESUND

Positions

M001 NYAL TIE10317	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M001 NYAL P GFZ	-.0091	-.0194	.0309	.4	-.4	.1	-.0171	.0186	.0278	94:365
M001 NYAL P CODE	.0038	-.0020	.0015	1.0	-1.3	-.5	-.0028	-.0030	.0021	95: 76
M001 NYAL P04 EUR	.0037	-.0008	.0000	.2	.7	-.3	-.0015	-.0034	.0006	96: 90
M001 NYAL P03 EUR	-.0028	-.0019	-.0124	-1.0	.6	.1	-.0013	.0007	-.0127	96:339
M001 NYAL P MIT	-.0067	-.0009	-.0146	-.7	.0	-2.1	.0004	.0038	-.0156	97:151
M001 NYAL P NCL	.0015	-.0028	.0066	.1	.0	.5	-.0031	.0004	.0067	96: 1
S002 SPIA TIE10317	.0000	-.0032	-.0075	.0	-.9	-2.2	-.0031	-.0008	-.0075	93: 1
S002 SPIA D GRGS	-.0043	.0091	.0396	-.2	.5	1.8	.0098	.0099	.0385	93: 1
S002 SPIA D CSR	-.0467	-.0500	.1389	-.2	-.2	.4	-.0393	.0817	.1256	93: 1
S002 SPIA D IGN	-.0168	.0078	.0393	-1.7	1.0	4.4	.0111	.0221	.0358	95:100
S003 7331 R GSFC	.0013	-.0033	.0052	.3	.0	-.2	-.0035	.0005	.0052	93: 1
S003 7331 R GIUB	.0207	-.0100	.0462	.4	1.0	1.7	-.0141	-.0090	.0488	93: 1
S003 7331 R NOAA	.0079	-.0003	.0291	1.1	.5	.5	-.0019	-.0019	.0301	93: 1

Velocities

M001 NYAL P GFZ	-.0055	.0022	-.0102	-.7	-.2	.3	.0033	.0029	-.0109
M001 NYAL P CODE	-.0008	-.0030	-.0010	-.2	-2.0	.3	-.0028	.0012	-.0012
M001 NYAL P04 EUR	-.0261	-.0467	.0069	-.1	-2.4	.1	-.0403	.0358	.0000
M001 NYAL P03 EUR	-.0199	.0022	.0037	-1.8	1.3	.2	.0063	.0194	.0000
M001 NYAL P MIT	-.0083	.0030	-.0091	.4	.4	.4	.0047	.0056	-.0104
M001 NYAL P NCL	-.0032	.0037	-.0141	-.4	-.5	.2	.0043	-.0004	-.0143
S002 SPIA D GRGS	.0057	.0053	-.0075	1.1	2.5	1.9	.0040	-.0080	-.0061
S002 SPIA D CSR	.0044	.0097	-.0126	-.2	-.1	.4	.0085	-.0086	-.0112
S002 SPIA D IGN	-.0006	.0015	.0027	.4	.3	-.9	.0016	.0008	.0026
S003 7331 R GSFC	-.0007	.0005	-.0015	-.2	-.6	-1.2	.0006	.0003	-.0016
S003 7331 R GIUB	-.0003	-.0010	-.0002	.0	.0	.0	-.0009	.0005	-.0003
S003 7331 R NOAA	-.0016	-.0017	-.0005	.0	.0	.0	-.0014	.0018	-.0008

10322 DOMEN/VARDO

Positions

M002 VARD P03 EUR	.0012	.0004	.0030	.5	.6	.0	-.0003	-.0002	.0033	96:339
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M002 VARD P MIT	-.0006	.0018	-.0068	.1	-.2	-.1	.0019	-.0027	-.0062	97:151
M002 VARD P NCL	.0275	.0081	.0676	.5	.0	.0	-.0072	-.0034	.0730	96: 1

Velocities

M002 VARD P03 EUR	-.0093	-.0056	.0039	.5	-.1	.0	.0000	.0115	.0000
M002 VARD P MIT	-.0114	.0031	-.0149	-.4	.5	-.5	.0085	.0027	-.0168
M002 VARD P NCL	-.0282	-.0072	-.0695	-.1	.1	.3	.0083	.0029	-.0748

10325 HONEFOSS

Positions

M001 HONE P JPL	-.1081	.0647	-.1288	.0	.0	.0	.0829	.0182	-.1589	96: 1
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Velocities

M001 HONE P JPL	-.0232	.0116	-.0268	-.1	-.3	.2	.0155	.0047	-.0336
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10329 TRYSIL

Positions

M001 7607 R GSFC	.0000	-.0025	.0052	.0	.0	-.1	-.0025	.0029	.0043	93: 1
M001 7607 R NOAA	.0032	-.0014	.0156	.0	.0	.0	-.0020	.0049	.0150	93: 1

Velocities

M001 7607 R GSFC	.0005	.0017	.0024	.0	.2	.2	.0016	.0004	.0025
M001 7607 R NOAA	-.0009	-.0013	-.0014	.0	-.1	-.1	-.0010	.0004	-.0018

10330 STAVANGER

Positions

M001 STAV P03 EUR	.0018	-.0029	.0034	.5	-1.0	.2	-.0031	.0004	.0037	96:339
M001 STAV P MIT	.0073	-.0052	.0124	.3	-.2	.1	-.0059	.0006	.0141	97:151
M001 STAV P NCL	-.0007	.0050	-.0185	.0	.6	-.7	.0050	-.0093	-.0160	96: 1

Velocities

M001 STAV P03 EUR	-.0022	.0093	.0008	.4	1.2	.0	.0094	.0015	.0000
M001 STAV P MIT	.0132	-.0086	.0283	.4	-1.0	.1	-.0099	.0040	.0306
M001 STAV P NCL	-.0005	-.0043	.0163	-.3	-.3	.2	-.0042	.0092	.0135

10331 TRONDHEIM

Positions

M001 TRON P03 EUR	.0020	-.0008	.0048	.5	.1	.3	-.0012	.0005	.0051	96:339
M001 TRON P MIT	.0035	.0019	.0068	.2	.2	-.1	.0012	-.0003	.0077	97:151
M001 TRON P NCL	.0230	-.0008	.0246	.5	-.5	-.4	-.0049	-.0091	.0321	96: 1

Velocities

M001 TRON P03 EUR	-.0030	-.0050	.0019	.5	-.5	.0	-.0044	.0043	.0000
M001 TRON P MIT	.0026	.0061	.0157	.3	.7	-.1	.0056	.0038	.0157
M001 TRON P NCL	-.0244	.0017	-.0278	-.3	.3	.1	.0061	.0088	-.0355

10402 ONSALA

Positions

M004 ONSA TIE10402	.0072	.0015	.0017	.0	.0	.0	.0000	-.0053	.0054	93: 1
M004 ONSA P GFZ	-.0122	-.0177	.0148	-2.4	-3.2	2.5	-.0148	.0211	.0040	94:365
M004 ONSA P CODE	-.0002	-.0034	.0003	-.1	-2.0	.8	-.0033	.0009	-.0002	95: 76
M004 ONSA P04 EUR	-.0007	-.0014	-.0029	-.2	-.7	.1	-.0012	-.0007	-.0029	96: 90
M004 ONSA P03 EUR	-.0037	-.0022	-.0059	-.9	1.2	-1.0	-.0014	.0003	-.0071	96:339
M004 ONSA P MIT	-.0048	-.0021	-.0041	-.9	.1	-1.0	-.0010	.0021	-.0063	97:151
M004 ONSA P NCL	-.0001	-.0034	.0018	-.3	-.3	.9	-.0034	.0016	.0011	96: 1
M004 ONSA P JPL	-.0001	.0001	.0015	-.1	.1	.6	.0001	.0008	.0012	96: 1
M006 7211 TIE10402	.0000	.0000	.0000	-1.7	-.4	-.4	.0000	.0000	.0000	93: 1
M006 7211 R GSFC	.0045	-.0009	.0159	.2	.1	.1	-.0018	.0051	.0157	93: 1

S002 7213 TIE10402	.0000	.0001	.0001	-1.7	-.3	-.3	.0001	.0000	.0001	93:	1
S002 7213 R GSFC	.0008	-.0026	.0088	.9	-.7	1.5	-.0027	.0045	.0076	93:	1
S002 7213 R GIUB	.0085	-.0032	.0105	1.2	-.4	.6	-.0049	-.0008	.0130	93:	1
S002 7213 R NOAA	.0018	-.0015	.0105	.8	-.4	.8	-.0018	.0044	.0096	93:	1

Velocities

M004 QNSA P GFZ	-.0030	.0026	-.0005	-1.7	-.5	.8	.0032	.0017	-.0017
M004 QNSA P CODE	-.0005	-.0008	.0023	-.4	-.5	.4	-.0007	.0017	.0016
M004 QNSA P04 EUR	-.0057	-.0070	.0045	-.3	-1.2	.3	-.0056	.0083	.0000
M004 QNSA P03 EUR	-.0033	.0017	.0019	.0	1.2	.4	.0023	.0035	.0000
M004 QNSA P MIT	-.0102	.0023	-.0097	-.9	.3	-2.0	.0044	.0027	-.0132
M004 QNSA P NCL	-.0041	.0033	-.0107	-1.3	-.5	-1.5	.0041	-.0030	-.0108
M004 QNSA P JPL	-.0015	.0003	-.0008	.0	1.1	-.4	.0006	.0008	-.0015
M006 7211 R GSFC	-.0017	.0000	-.0025	.0	.0	.0	.0004	.0001	-.0030
S002 7213 R GSFC	-.0017	.0000	-.0025	-1.4	-1.1	-.3	.0004	.0001	-.0030
S002 7213 R GIUB	.0002	-.0007	-.0001	-1.5	.3	-.3	-.0007	-.0001	.0000
S002 7213 R NOAA	-.0013	-.0004	-.0006	-1.2	.1	-.1	-.0001	.0008	-.0012

10403 KIRUNA

Positions

M002 KIRU P04 EUR	.0039	-.0009	-.0020	.1	-.2	-1.1	-.0022	-.0038	-.0006	96:	90
M002 KIRU P03 EUR	-.0040	-.0038	-.0105	-.7	-.6	-.5	-.0021	.0008	-.0116	96:	339
M002 KIRU P MIT	-.0076	-.0034	-.0173	-.8	-.2	-1.7	-.0004	.0012	-.0192	97:	151
M002 KIRU P NCL	.0106	-.0011	.0217	2.7	-.3	.4	-.0048	-.0006	.0236	96:	1
M002 KIRU P JPL	.0041	.0004	.0091	1.1	-.2	.6	-.0011	-.0003	.0099	96:	1

Velocities

M002 KIRU P04 EUR	-.0172	-.0286	.0107	-.2	-2.0	.0	-.0206	.0284	.0000
M002 KIRU P03 EUR	-.0095	-.0045	.0043	-.7	-1.3	.1	-.0008	.0113	.0000
M002 KIRU P MIT	-.0145	.0003	-.0191	-.7	.2	-.3	.0055	.0052	-.0228
M002 KIRU P NCL	-.0200	.0003	-.0417	-2.0	.7	.2	.0074	.0015	-.0457
M002 KIRU P JPL	.0001	-.0014	-.0033	-.1	-.1	-1.1	-.0013	-.0009	-.0032

10405 MAARTSBO

Positions

M002 MAR6 P03 EUR	-.0006	-.0012	-.0013	.1	.3	-.1	-.0010	.0001	-.0016	96:	339
M002 MAR6 P MIT	.0002	.0016	.0014	.1	.0	.0	.0015	.0001	.0015	97:	151
M002 MAR6 P NCL	.0107	-.0120	.0144	.2	-1.2	.1	-.0146	.0013	.0158	96:	1

Velocities

M002 MAR6 P03 EUR	-.0051	-.0087	.0042	.1	-1.3	.0	-.0068	.0086	.0000
M002 MAR6 P MIT	-.0075	.0066	-.0017	-.2	.7	-.3	.0085	.0037	-.0041
M002 MAR6 P NCL	-.0113	.0132	-.0161	-.3	.6	-.3	.0160	-.0020	-.0174

10422 KIRUNA

Positions

M001 KIRO P03 EUR	.0002	-.0009	-.0003	.4	.0	.0	-.0009	.0000	-.0003	96:	339
M001 KIRO P MIT	-.0075	-.0091	-.0266	-.2	-.7	-.8	-.0058	-.0005	-.0285	97:	151

Velocities

M001 KIRO P03 EUR	-.0095	-.0045	.0043	.0	.0	.0	-.0008	.0113	.0000
M001 KIRO P MIT	-.0300	-.0291	-.0735	-.3	-1.8	-.7	-.0164	.0079	-.0826

10423 VISEY

Positions

M001 VISO P03 EUR	-.0010	-.0014	-.0022	-.1	.4	-.2	-.0010	-.0001	-.0026	96:	339
M001 VISO P MIT	.0016	.0021	.0034	.1	.1	.0	.0015	.0000	.0040	97:	151
M001 VISO P NCL	.0081	-.0055	.0157	.1	-.1	.3	-.0078	.0033	.0165	96:	1

Velocities

M001 VISO P03 EUR	-.0063	-.0061	.0050	-.3	-.4	.0	-.0038	.0093	.0000
M001 VISO P MIT	-.0058	.0082	-.0002	-.1	.7	-.4	.0096	.0023	-.0017
M001 VISO P NCL	-.0087	.0065	-.0174	-.1	.2	-.2	.0089	-.0041	-.0180

10424 VILHELMINA

Positions

M001 VIL0 P03 EUR	.0006	-.0002	-.0005	.4	.6	-.3	-.0003	-.0007	-.0003	96:339
M001 VIL0 P MIT	-.0028	.0021	-.0090	.0	.1	-.4	.0028	-.0019	-.0091	97:151
M001 VIL0 P NCL	.0270	-.0104	.0485	.5	-1.3	.4	-.0177	.0000	.0536	96: 1

Velocities

M001 VIL0 P03 EUR	-.0092	-.0125	.0059	.0	-1.5	.0	-.0094	.0138	.0000
M001 VIL0 P MIT	-.0145	.0057	-.0240	-.1	.9	-.7	.0096	.0008	-.0270
M001 VIL0 P NCL	-.0274	.0118	-.0499	.0	.6	-.1	.0191	-.0006	-.0549

10503 METSAHOVI

Positions

M002 7601 TIE10503	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M002 7601 R GSFC	.0097	.0001	.0097	.1	.0	-.1	-.0039	-.0028	.0128	93: 1
M002 7601 R NOAA	.0248	.0050	.0345	.6	-.2	-.3	-.0056	-.0042	.0422	93: 1
S001 7805 TIE10503	.0000	.0001	.0000	.0	.0	.0	.0001	.0000	.0000	93: 1
S001 7805 L CSR	.0821	-.1130	.1269	.4	-.9	.2	-.1368	.0386	.1241	93: 1
S011 METS TIE10503	.0020	-.0031	.0024	.5	-.8	.6	-.0036	.0007	.0023	93: 1
S011 METS P GFZ	-.0119	-.0121	.0170	-.1	1.0	-.2	-.0061	.0222	.0069	94:365
S011 METS P CODE	.0011	-.0023	.0025	.4	-.4	.4	-.0025	.0012	.0022	95: 76
S011 METS P04 EUR	.0017	-.0015	-.0031	-1.0	-1.7	-2.4	-.0020	-.0024	-.0022	96: 90
S011 METS P03 EUR	-.0025	-.0027	-.0026	-.5	.3	.2	-.0014	.0017	-.0039	96:339
S011 METS P MIT	-.0053	-.0033	-.0029	-.9	-.2	-.4	-.0008	.0039	-.0056	97:151
S011 METS P NCL	.0006	-.0035	.0011	-.2	-.5	.2	-.0034	.0014	.0005	96: 1
S011 METS P JPL	.0021	.0023	.0056	.4	.5	.6	.0012	.0004	.0063	96: 1
S013 META TIE10503	-.0005	.0015	-.0015	-.2	.5	-.5	.0016	-.0009	-.0012	93: 1
S013 META D GRGS	.0043	-.0118	-.0065	.1	-.1	.1	-.0125	-.0024	-.0061	93: 1
S013 META D CSR	.0130	-.0293	.0194	.1	-.6	.4	-.0320	.0099	.0167	93: 1
S013 META D IGN	-.0010	-.0347	.0157	.1	-1.6	1.7	-.0312	.0210	.0061	95:100

Velocities

M002 7601 R GSFC	.0002	-.0003	.0000	-.3	-.2	.0	-.0003	-.0001	.0000
M002 7601 R NOAA	-.0001	-.0007	.0019	.0	.0	.0	-.0006	.0013	.0015
S001 7805 L CSR	-.0103	.0550	-.0320	.1	1.2	-.7	.0543	-.0274	-.0212
S011 METS P GFZ	-.0042	-.0007	-.0041	-.6	.2	-.9	.0011	.0015	-.0056
S011 METS P CODE	-.0020	-.0034	-.0003	-1.0	-1.4	.4	-.0023	.0027	-.0019
S011 METS P04 EUR	-.0109	-.0075	.0073	-.5	-1.1	-1.5	-.0023	.0149	-.0002
S011 METS P03 EUR	-.0077	.0004	.0037	-1.9	-.4	-1.7	.0036	.0078	-.0002
S011 METS P MIT	-.0090	.0012	-.0023	-.5	.1	.0	.0049	.0056	-.0058
S011 METS P NCL	-.0027	.0034	-.0066	-.7	-.3	-.8	.0042	-.0024	-.0063
S011 METS P JPL	-.0024	-.0022	-.0033	-1.0	-.4	-1.1	-.0010	.0010	-.0044
S013 META D GRGS	.0136	-.0008	.0078	1.5	.1	.6	-.0064	-.0066	.0127
S013 META D CSR	.0147	.0064	.0030	.7	-.7	.6	-.0003	-.0124	.0105
S013 META D IGN	-.0003	-.0095	-.0033	.1	-.5	-.9	-.0085	.0020	-.0050

10511 VAASA

Positions

M001 VAAS P03 EUR	.0013	.0002	.0023	.4	.7	.0	-.0003	-.0001	.0026	96:339
M001 VAAS P MIT	.0062	.0035	.0119	.4	.0	.3	.0010	-.0009	.0138	97:151
M001 VAAS P NCL	.0155	-.0112	.0210	.3	-1.2	.3	-.0161	.0005	.0234	96: 1

Velocities

M001 VAAS P03 EUR	-.0059	-.0099	.0047	.2	-1.1	.0	-.0070	.0102	.0000
M001 VAAS P MIT	.0067	.0110	.0264	-.1	.5	-.4	.0077	.0029	.0282

M001 VAAS P NCL	-.0168	.0120	-.0244	-.3	.5	-.1	.0174	-.0011	-.0268
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10512 JOENSUU

Positions

M001 JOEN P03 EUR	-.0009	-.0009	-.0025	.2	.5	-.1	-.0003	-.0001	-.0028	96:339
M001 JOEN P MIT	-.0013	-.0003	-.0058	-.1	-.1	.0	.0004	-.0015	-.0057	97:151

Velocities

M001 JOEN P03 EUR	-.0076	-.0058	.0050	-.2	-.4	.0	-.0012	.0108	.0000
M001 JOEN P MIT	-.0156	.0001	-.0217	-.4	.4	-.6	.0079	.0018	-.0254

10513 SODANKYLA/PITTIO

Positions

M001 SODA P03 EUR	-.0025	-.0021	.0019	.0	.0	.0	-.0007	.0036	.0005	96:339
M001 SODA P MIT	.0074	-.0012	-.0070	.3	-.5	-.4	-.0044	-.0083	-.0041	97:151

Velocities

M001 SODA P03 EUR	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000
M001 SODA P MIT	.0184	-.0066	-.0287	.4	-.2	-.6	-.0141	-.0236	-.0213

11001 GRAZ

Positions

M002 GRAZ TIE11001	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M002 GRAZ P CODE	-.0056	-.0025	-.0075	-1.4	.2	-1.8	-.0009	-.0007	-.0097	95: 76
M002 GRAZ P CODE	-.0003	-.0019	.0019	.1	.0	.0	-.0017	.0019	.0009	95: 76
M002 GRAZ P04 EUR	-.0006	-.0005	-.0040	-.4	.2	-1.9	-.0003	-.0022	-.0034	96: 90
M002 GRAZ P03 EUR	-.0016	-.0024	-.0004	-.2	.5	1.1	-.0019	.0014	-.0018	96:339
M002 GRAZ P MIT	.0059	-.0006	.0132	.2	.1	1.3	-.0022	.0049	.0134	97:151
M002 GRAZ P NCL	-.0034	-.0046	-.0048	-.8	-.9	-1.0	-.0035	.0001	-.0066	96: 1
M002 GRAZ P JPL	.0083	.0027	.0078	1.1	.2	.1	.0004	-.0011	.0117	96: 1
S002 7839 TIE11001	-.0009	-.0014	-.0011	-.3	-.5	-.4	-.0011	.0002	-.0017	93: 1
S002 7839 L CSR	-.0012	.0006	.0026	1.1	.0	-.5	.0009	.0026	.0012	93: 1
S002 7839 L GSFC	-.0174	-.0250	-.0162	-1.0	-.6	-1.8	-.0194	.0061	-.0279	86:182

Velocities

M002 GRAZ P CODE	.0007	-.0002	.0037	.3	-.6	2.0	-.0004	.0021	.0031
M002 GRAZ P CODE	.0007	-.0002	.0037	.0	.0	.0	-.0004	.0021	.0031
M002 GRAZ P04 EUR	-.0045	-.0021	.0045	.3	-.4	-.4	-.0008	.0067	-.0001
M002 GRAZ P03 EUR	.0007	.0026	-.0013	.3	.8	-.5	.0023	-.0019	.0000
M002 GRAZ P MIT	.0028	.0046	.0114	1.1	.3	1.3	.0037	.0049	.0110
M002 GRAZ P NCL	.0059	.0059	.0089	.0	-.8	1.9	.0042	.0007	.0114
M002 GRAZ P JPL	.0038	-.0001	.0054	.5	-.2	1.1	-.0011	.0010	.0064
S002 7839 L CSR	.0049	.0022	.0071	8.0	2.9	-2.4	.0008	.0009	.0089
S002 7839 L GSFC	.0016	.0028	-.0003	-.8	.1	-3.0	.0023	-.0019	.0014

11006 HAFELEKAR

Positions

S003 HFLK P04 EUR	.0064	.0021	.0018	1.3	1.3	-3.2	.0008	-.0037	.0058	96: 90
S003 HFLK P03 EUR	-.0009	-.0025	-.0012	.1	-.4	-.6	-.0023	.0002	-.0019	96:339
S003 HFLK P MIT	.0017	-.0013	.0012	-.1	.1	-.3	-.0016	-.0002	.0018	97:151
S003 HFLK P NCL	.0030	-.0058	.0072	.4	-2.1	1.3	-.0063	.0036	.0065	96: 1
S003 HFLK P JPL	.0681	.0446	.0772	.1	.1	.0	.0303	-.0033	.1080	96: 1

Velocities

S003 HFLK P04 EUR	-.0036	-.0047	.0041	-.1	-.8	.0	-.0039	.0061	.0000
S003 HFLK P03 EUR	.0046	.0014	-.0044	2.0	.7	-.1	.0004	-.0065	.0000
S003 HFLK P MIT	-.0049	.0030	-.0083	-.2	.2	-1.3	.0039	-.0025	-.0089
S003 HFLK P NCL	-.0035	.0074	-.0076	-.7	.4	.7	.0080	-.0037	-.0069
S003 HFLK P JPL	-.0717	-.0535	-.0794	.2	-.1	.8	-.0383	.0056	-.1132

11101 SOFIA

Positions

M001 7505 L CSR	.1486	.1601	.1809	.3	.1	-.1	.0880	-.0020	.2697	93: 1
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Velocities

M001 7505 L CSR	-.0610	-.0553	-.0531	.1	-.1	-.3	-.0265	.0136	-.0933
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11206 PENC

Positions

M006 PENC P04 EUR	.0035	-.0016	.0010	.2	-.7	.1	-.0027	-.0014	.0026	96: 90
M006 PENC P03 EUR	-.0011	-.0025	-.0012	.0	-.3	-.5	-.0020	.0006	-.0021	96:339
M006 PENC P MIT	.0080	-.0002	.0131	.3	.2	.6	-.0029	.0032	.0147	97:151
M006 PENC P NCL	-.0079	-.0052	-.0124	-.8	.1	-.8	-.0023	-.0016	-.0153	96: 1
M006 PENC P JPL	.0540	.0575	.0362	.1	.1	-.1	.0364	-.0275	.0738	96: 1

Velocities

M006 PENC P04 EUR	-.0067	.0111	.0024	.0	-.4	.0	.0127	.0036	.0000
M006 PENC P03 EUR	.0013	.0026	-.0019	.8	.1	-.1	.0020	-.0028	.0000
M006 PENC P MIT	.0019	.0045	.0086	.6	.0	.3	.0036	.0034	.0085
M006 PENC P NCL	.0108	.0070	.0170	.2	.1	.5	.0030	.0022	.0210
M006 PENC P JPL	-.1170	-.0835	-.1118	-1.6	-.4	-.3	-.0402	.0271	-.1755

11502 PECNY/ONDREJOV

Positions

M002 GOPE P CODE	-.0025	-.0043	.0009	-.1	-.7	.8	-.0035	.0032	-.0016	95: 76
M002 GOPE P04 EUR	.0007	-.0004	.0020	-.1	.1	.3	-.0005	.0008	.0019	96: 90
M002 GOPE P03 EUR	-.0004	-.0024	.0003	.3	-.4	.5	-.0023	.0010	-.0005	96:339
M002 GOPE P MIT	.0019	-.0016	.0075	-.2	.0	.6	-.0021	.0038	.0067	97:151
M002 GOPE P NCL	.0011	-.0017	.0002	.1	.9	-1.0	-.0019	-.0004	.0006	96: 1
M002 GOPE P JPL	-.0496	-.0107	-.0661	-4.5	-.3	-1.5	.0023	-.0038	-.0833	96: 1

Velocities

M002 GOPE P CODE	.0046	.0014	.0073	.5	-.5	.6	.0002	.0011	.0087
M002 GOPE P04 EUR	.0033	-.0010	-.0025	.4	-.6	.0	-.0018	-.0038	.0000
M002 GOPE P03 EUR	.0004	.0037	-.0011	.5	1.8	.0	.0035	-.0017	.0000
M002 GOPE P MIT	-.0054	.0017	.0014	-.5	.0	-.1	.0030	.0046	-.0020
M002 GOPE P NCL	.0005	.0030	.0021	.3	.2	.3	.0027	.0004	.0024
M002 GOPE P JPL	.0073	-.0081	.0042	-1.8	-.7	-.4	-.0097	-.0011	.0065

11507 MODRA-PIESKY

Positions

M001 MOPI P03 EUR	.0018	-.0018	.0030	.5	.2	.4	-.0022	.0012	.0030	96:339
M001 MOPI P MIT	.0378	.0110	.0491	2.1	.6	2.1	-.0007	.0032	.0629	97:151
M001 MOPI P NCL	-.0713	-.0393	-.0872	-1.5	-1.7	-.2	-.0164	.0017	-.1182	96: 1

Velocities

M001 MOPI P03 EUR	.0011	-.0004	-.0008	.1	-.9	.0	-.0007	-.0013	.0000
M001 MOPI P MIT	.0875	.0353	.1106	1.9	.8	.6	.0078	.0032	.1452
M001 MOPI P NCL	.0682	.0395	.0843	-.9	1.1	-.4	.0174	-.0015	.1141

12204 JOZEFOSLAW

Positions

M001 JOZE P CODE	-.0027	-.0039	-.0011	-.4	-.5	.7	-.0026	.0024	-.0032	95: 76
M001 JOZE P04 EUR	.0058	.0008	.0062	.7	.1	-.3	-.0013	-.0007	.0084	96: 90
M001 JOZE P03 EUR	.0009	-.0018	.0021	1.0	-.2	.4	-.0020	.0012	.0018	96:339
M001 JOZE P MIT	.0051	-.0010	.0116	.1	.0	1.4	-.0027	.0036	.0119	97:151
M001 JOZE P JPL	-.0382	-.0115	-.0591	-5.4	-.6	-2.9	.0029	-.0049	-.0711	96: 1

Velocities

M001 JOZE P CODE	.0059	.0017	.0113	1.4	.0	.6	-.0005	.0021	.0127
M001 JOZE P04 EUR	-.0014	.0058	-.0006	.5	.4	-.1	.0060	-.0010	.0000
M001 JOZE P03 EUR	-.0006	.0030	-.0004	.1	.4	.0	.0030	-.0006	.0000
M001 JOZE P MIT	-.0046	.0006	.0034	-.3	-.5	.0	.0022	.0053	.0002
M001 JOZE P JPL	.0030	-.0017	.0016	1.0	-.2	.7	-.0027	-.0007	.0026

12205 BOROWIEC

Positions

M002 BOR1 TIE12205	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M002 BOR1 P CODE	.0002	-.0022	.0011	.4	-.2	-.3	-.0022	.0010	.0007	95: 76
M002 BOR1 P04 EUR	.0015	-.0004	.0005	.1	-.2	-.6	-.0009	-.0007	.0011	96: 90
M002 BOR1 P03 EUR	-.0021	-.0032	-.0021	-.5	-.6	.5	-.0024	.0011	-.0035	96:339
M002 BOR1 P MIT	-.0010	.0007	.0048	-.3	.2	.7	.0009	.0036	.0033	97:151
M002 BOR1 P NCL	.0002	-.0028	.0016	-.1	-.6	.1	-.0028	.0015	.0009	96: 1
M002 BOR1 P JPL	.0032	.0002	.0035	.7	-.6	.5	-.0007	-.0004	.0047	96: 1
S001 7811 TIE12205	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
S001 7811 L CSR	.0153	-.0038	-.0058	.1	-.1	-.2	-.0082	-.0142	.0037	93: 1

Velocities

M002 BOR1 P CODE	.0010	-.0004	.0053	.2	.4	.4	-.0007	.0026	.0047
M002 BOR1 P04 EUR	-.0020	.0004	.0014	.3	-.8	.0	.0010	.0022	.0000
M002 BOR1 P03 EUR	-.0027	.0035	.0012	-1.7	1.4	.1	.0041	.0019	.0000
M002 BOR1 P MIT	-.0062	.0012	.0003	-.8	-.1	-.7	.0030	.0046	-.0032
M002 BOR1 P NCL	-.0012	.0036	-.0038	-.4	.2	-.6	.0038	-.0023	-.0031
M002 BOR1 P JPL	-.0024	-.0032	-.0015	-.2	-.5	1.3	-.0024	.0017	-.0032
S001 7811 L CSR	-.0051	.0064	.0115	.0	.1	.0	.0076	.0095	.0073

12207 BOROWA GORA

Positions

M002 BOGO P03 EUR	-.0016	-.0027	-.0015	-.4	-.1	-.3	-.0020	.0010	-.0027	96:339
M002 BOGO P MIT	.0051	-.0008	.0109	.2	.0	.7	-.0026	.0031	.0113	97:151
M002 BOGO P NCL	-.0043	-.0039	-.0061	-.5	.0	-.4	-.0021	.0006	-.0081	96: 1

Velocities

M002 BOGO P03 EUR	-.0021	.0031	.0006	-.1	.3	.0	.0037	.0010	.0000
M002 BOGO P MIT	-.0028	.0032	.0067	.1	.0	.2	.0040	.0052	.0044
M002 BOGO P NCL	.0063	.0054	.0089	.5	.0	.4	.0028	-.0008	.0118

12209 LAMKOWKO

Positions

M001 LAMA P CODE	-.0065	-.0038	-.0071	-1.0	.7	-.1	-.0013	.0018	-.0101	95: 76
M001 LAMA P04 EUR	.0027	.0000	.0020	-.3	-.8	.0	-.0009	-.0009	.0031	96: 90
M001 LAMA P03 EUR	.0005	-.0022	.0012	.6	-.8	-.2	-.0023	.0009	.0008	96:339
M001 LAMA P MIT	-.0008	-.0006	.0037	-.4	.0	.4	-.0003	.0030	.0024	97:151
M001 LAMA P NCL	-.0051	-.0067	-.0088	-.8	-1.4	-.5	-.0044	.0006	-.0113	96: 1
M001 LAMA P JPL	.0037	-.0007	.0052	.3	-.3	1.3	-.0020	.0004	.0061	96: 1

Velocities

M001 LAMA P CODE	.0026	-.0002	.0069	-.6	1.1	-.2	-.0011	.0021	.0070
M001 LAMA P04 EUR	.0017	.0017	-.0016	.7	.2	.0	.0010	-.0027	.0000
M001 LAMA P03 EUR	-.0032	.0038	.0012	-.6	.7	.0	.0047	.0020	.0000
M001 LAMA P MIT	-.0045	.0049	.0036	.0	.5	.2	.0061	.0041	.0014
M001 LAMA P NCL	.0074	.0087	.0126	.2	.2	.1	.0055	-.0007	.0160
M001 LAMA P JPL	.0013	-.0038	-.0004	-.1	-.3	.1	-.0040	-.0001	-.0004

12217 WROCLAW

Positions

M001 WROC P03 EUR	-.0018	-.0024	-.0017	.0	.2	-.1	-.0018	.0008	-.0028	96:339
M001 WROC P MIT	.0031	-.0006	.0080	.0	.1	.1	-.0015	.0029	.0080	97:151
M001 WROC P NCL	.0129	.0029	.0078	.2	.1	-.2	-.0010	-.0053	.0144	96: 1

Velocities

M001 WROC P03 EUR	-.0009	.0008	.0005	.1	.1	.0	.0010	.0008	.0000
M001 WROC P MIT	-.0048	.0048	.0025	-.2	.4	-.3	.0060	.0040	-.0001
M001 WROC P NCL	-.0110	-.0014	-.0055	-.1	-.1	.0	.0019	.0050	-.0112

12302 RIGA

Positions

M001 7560 TIE12302	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M001 7560 L CSR	.0193	.0497	.0068	.1	.3	-.2	.0375	-.0280	.0264	93: 1
M002 RIGA TIE12302	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M002 RIGA P03 EUR	-.0008	-.0017	-.0022	.0	.3	-.1	-.0012	.0000	-.0026	96:339
M002 RIGA P MIT	.0108	.0054	.0175	.5	.1	.4	.0005	-.0005	.0212	97:151
M002 RIGA P NCL	-.0301	-.0264	-.0524	-.4	-.9	-.1	-.0119	.0035	-.0648	96: 1
S002 1884 TIE12302	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
S002 1884 L CSR	-.0027	.0379	-.0054	.0	.2	-.1	.0358	-.0138	.0025	93: 1

Velocities

M001 7560 L CSR	.0023	-.0148	-.0004	.0	.0	.0	-.0145	.0031	-.0025
M002 RIGA P03 EUR	-.0046	-.0045	.0039	.0	-.3	.0	-.0022	.0072	.0000
M002 RIGA P MIT	.0161	.0175	.0354	.0	.5	-.4	.0094	.0010	.0416
M002 RIGA P NCL	.0291	.0273	.0502	-.2	.5	.0	.0130	-.0042	.0627
S002 1884 L CSR	.0023	-.0148	-.0004	.0	-.2	.0	-.0145	.0031	-.0025

12309 MENDELEEVO

Positions

M001 MDVO P CODE	-.0010	-.0029	.0016	.0	.0	.0	-.0017	.0030	-.0001	95: 76
M002 MDVO P CODE	.0093	.0044	.0261	2.8	-.1	.9	-.0021	.0062	.0273	95: 76
M002 MDVO P04 EUR	.0123	.0061	.0225	1.4	-.3	.9	-.0026	.0014	.0262	96: 90
M002 MDVO P03 EUR	.0040	.0021	.0090	1.7	.7	.1	-.0007	.0013	.0100	96:339
M002 MDVO P MIT	.0006	-.0011	.0018	.0	.1	.0	-.0013	.0011	.0014	97:151
M002 MDVO P JPL	-.0380	-.0260	-.0740	-3.5	-1.0	-1.9	.0023	-.0032	-.0870	96: 1

Velocities

M001 MDVO P CODE	.0039	.0003	.0053	.3	-.2	-.9	-.0022	.0002	.0062
M002 MDVO P CODE	.0039	.0003	.0053	.5	-.3	.2	-.0022	.0002	.0062
M002 MDVO P04 EUR	-.0233	-.0081	.0158	-1.3	-1.1	.1	.0076	.0283	.0000
M002 MDVO P03 EUR	-.0079	.0013	.0037	-.9	-.7	.0	.0058	.0067	.0000
M002 MDVO P MIT	.0004	.0033	.0057	1.2	-.1	.5	.0024	.0013	.0060
M002 MDVO P JPL	.0076	.0050	.0077	-4.6	-.5	-3.5	-.0006	-.0032	.0115

12313 IRKOUTSK

Positions

M001 IRKT P EMR	-.0055	-.0063	.0067	-.5	.2	.1	.0069	.0079	.0024	96: 1
M001 IRKT P GFZ	-.0076	.0003	.0328	-.5	.6	.8	.0073	.0184	.0272	94:365
M001 IRKT P CODE	-.0022	.0101	.0311	.3	1.7	1.4	-.0003	.0109	.0309	95: 76
M001 IRKT P MIT	-.0010	.0031	.0118	-.6	1.0	2.1	.0001	.0046	.0113	97:151
M001 IRKT P JPL	.0022	-.0235	-.0317	.4	-3.7	-1.3	.0037	-.0009	-.0393	96: 1

Velocities

M001 IRKT P EMR	.0009	-.0023	-.0032	-1.2	.2	.4	-.0003	.0000	-.0041
M001 IRKT P GFZ	-.0052	-.0029	-.0084	.0	.9	-.4	.0058	-.0039	-.0076
M001 IRKT P CODE	.0007	-.0026	.0017	.5	-.5	-.1	.0000	.0032	-.0003
M001 IRKT P MIT	-.0078	.0122	.0092	-.6	1.4	-.9	.0045	-.0052	.0157
M001 IRKT P JPL	.0093	-.0056	-.0066	2.0	-2.9	-1.4	-.0077	.0021	-.0100

12329 SAKHALINS

Positions

S001 SAKA D CSR	.0076	.0093	-.0112	.0	.1	-.3	-.0121	-.0073	-.0085	93: 1
S001 SAKA D IGN	.0050	-.0058	-.0049	-.2	-.1	-.1	.0016	.0022	-.0087	95:100

Velocities

S001 SAKA D CSR	-.0044	-.0063	-.0009	-.3	.2	-.6	.0077	-.0004	-.0009	
S001 SAKA D IGN	.0033	-.0004	.0040	.3	.2	-.1	-.0017	.0049	.0010	

12330 ZWENIGOROD

Positions

M001 ZWEN P GFZ	-.0134	-.0103	.0165	-.1	.3	.2	-.0002	.0233	.0041	94:365
M001 ZWEN P04 EUR	.0076	.0025	.0076	1.0	-.5	-.9	-.0026	-.0020	.0105	96: 90
M001 ZWEN P03 EUR	-.0043	-.0043	-.0044	-.7	.2	.4	-.0009	.0026	-.0070	96:339
M001 ZWEN P MIT	-.0025	-.0037	-.0026	-.4	-.2	-.2	-.0014	.0020	-.0045	97:151
M001 ZWEN P NCL	.0011	-.0014	.0053	-.1	.1	-.1	-.0018	.0029	.0044	96: 1
M001 ZWEN P JPL	.0035	.0024	.0062	.4	.2	1.0	-.0002	.0000	.0075	96: 1

Velocities

M001 ZWEN P GFZ	-.0012	-.0036	-.0032	.2	-.9	-1.2	-.0021	.0008	-.0044	
M001 ZWEN P04 EUR	-.0112	.0019	.0053	-.3	-.1	.1	.0082	.0095	.0000	
M001 ZWEN P03 EUR	-.0087	.0015	.0042	-.7	-.5	.0	.0064	.0074	.0000	
M001 ZWEN P MIT	-.0072	.0016	-.0018	.1	.2	.2	.0056	.0029	-.0042	
M001 ZWEN P NCL	-.0016	.0015	-.0077	.0	.0	-.1	.0021	-.0040	-.0066	
M001 ZWEN P JPL	.0026	-.0011	.0078	.1	.0	.8	-.0024	.0032	.0073	

12334 KITAB

Positions

M001 KIT3 TIE12334	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M001 KIT3 P EMR	-.0090	-.0076	-.0022	-1.4	.3	.7	.0053	.0050	-.0095	96: 1
M001 KIT3 P GFZ	-.0080	-.0089	.0158	-.2	-.1	.0	.0038	.0194	.0012	94:365
M001 KIT3 P CODE	-.0018	-.0116	.0034	-.2	-.5	.6	-.0029	.0098	-.0067	95: 76
M001 KIT3 P MIT	.0028	.0002	.0005	-.3	.6	-.5	-.0025	-.0004	.0014	97:151
M001 KIT3 P NCL	-.0025	-.0056	-.0015	-1.1	-.3	.0	.0001	.0026	-.0057	96: 1
M001 KIT3 P JPL	.0020	.0005	.0009	.6	-.2	.4	-.0017	-.0001	.0015	96: 1
S004 KITA TIE12334	-.0004	-.0002	.0002	-.3	-.2	.1	.0003	.0004	-.0002	93: 1
S004 KITA D GRGS	.0304	-.0006	.0054	.5	.3	.2	-.0282	-.0030	.0122	93: 1
S004 KITA D CSR	.0462	.0219	-.0221	.6	.8	-.8	-.0339	-.0413	.0157	93: 1
S004 KITA D IGN	.0313	-.0160	-.0027	1.4	-.1	-.1	-.0351	-.0005	-.0036	95:100
S005 KITB D IGN	-.0029	-.0457	.0461	.1	-.2	.3	-.0152	.0630	-.0044	95:100

Velocities

M001 KIT3 P EMR	.0113	-.0005	.0014	.7	.0	-.2	-.0106	-.0015	.0040	
M001 KIT3 P GFZ	-.0014	-.0008	-.0007	1.1	-.8	-.7	.0009	.0003	-.0014	
M001 KIT3 P CODE	.0016	.0081	.0109	.5	.2	.4	.0017	.0033	.0131	
M001 KIT3 P MIT	-.0023	.0066	.0034	.5	.8	.3	.0047	-.0007	.0062	
M001 KIT3 P NCL	.0038	.0068	.0025	.1	.0	.1	-.0008	-.0030	.0076	
M001 KIT3 P JPL	-.0002	.0037	.0036	-.3	.7	.2	.0017	.0007	.0049	
S004 KITA D GRGS	-.0023	-.0004	-.0005	1.0	.4	.3	.0019	.0004	-.0013	
S004 KITA D CSR	-.0008	.0044	-.0006	.8	1.6	-.9	.0025	-.0029	.0025	
S004 KITA D IGN	.0055	-.0158	.0128	.1	-.8	.5	-.0112	.0177	-.0015	
S005 KITB D IGN	-.0035	.0174	-.0215	-.1	.1	-.1	.0101	-.0259	-.0022	

12337 SIMEIS

Positions

M001 7561 L CSR	-.0083	.0113	.0154	.0	.0	.0	.0141	.0114	.0104	93: 1
S003 1873 L CSR	.0158	.0251	-.0043	.0	.0	.0	.0120	-.0221	.0164	93: 1
S006 1893 L CSR	.0156	.0189	.0006	.0	.0	.0	.0070	-.0160	.0172	93: 1
S008 7332 R GSFC	.0239	-.0007	.0241	.4	-.6	-.2	-.0139	.0036	.0307	93: 1
S008 7332 R GIUB	-.0039	.0047	.0242	.0	-.1	-.4	.0060	.0177	.0165	93: 1

S008 7332 R NOAA	.0197	.0062	.0391	.7	-.3	.0	-.0059	.0141	.0415	93: 1
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Velocities

M001 7561 L CSR	.0022	.0070	.0137	.0	-.1	.0	.0046	.0058	.0137
S003 1873 L CSR	.0022	.0070	.0137	.0	.1	.1	.0046	.0058	.0137
S006 1893 L CSR	.0022	.0070	.0137	.0	.1	.0	.0046	.0058	.0137
S008 7332 R GSFC	-.0098	.0007	-.0061	.0	.0	.0	.0061	.0011	-.0098
S008 7332 R GIUB	-.0001	.0000	-.0011	.0	.0	.0	.0000	-.0008	-.0008
S008 7332 R NOAA	-.0010	-.0003	-.0003	.0	.0	.0	.0003	.0005	-.0009

12338 BADARY

Positions

S001 BADA D GRGS	.0352	.0140	-.0092	.8	.4	-.2	-.0374	-.0105	-.0034	93: 1
S001 BADA D CSR	.0107	-.0221	.0100	-.1	-.6	.1	-.0058	.0249	-.0070	93: 1
S001 BADA D IGN	-.0027	.0002	-.0112	-.1	.5	-.4	.0026	-.0076	-.0084	95:100

Velocities

S001 BADA D GRGS	-.0103	-.0057	.0029	.5	.0	.2	.0113	.0045	.0002
S001 BADA D CSR	-.0097	-.0101	.0040	-.7	-1.1	.5	.0116	.0086	-.0017
S001 BADA D IGN	.0003	-.0025	.0074	.0	.1	.2	.0002	.0065	.0043

12341 OMSOMOLSK-NA-MUR

Positions

S001 1868 L CSR	-.0389	-.2767	-.0619	.0	-.3	.0	.2282	.0856	-.1501	93: 1
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Velocities

S001 1868 L CSR	.0213	.0999	.0030	.0	.1	.0	-.0873	-.0391	.0358
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12342 USSURIISK

Positions

S001 7247 R GSFC	.0048	-.0032	-.0031	.0	.0	.0	-.0015	.0016	-.0061	93: 1
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Velocities

S001 7247 R GSFC	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000
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12348 BISHKEK

Positions

M001 POL2 P CODE	.0039	.0005	.0121	.2	.3	-.1	-.0036	.0079	.0093	95: 76
M001 POL2 P MIT	.0013	.0017	.0059	-.1	.4	.3	-.0008	.0030	.0054	97:151
M001 POL2 P NCL	-.0013	-.0047	-.0006	-.1	-.2	.0	.0000	.0029	-.0040	96: 1
M001 POL2 P JPL	-.0027	.0019	-.0018	-.3	.2	.3	.0031	-.0021	-.0004	96: 1

Velocities

M001 POL2 P CODE	-.0026	-.0028	.0037	.1	.0	-.1	.0018	.0050	.0000
M001 POL2 P MIT	-.0042	.0038	-.0003	.1	-.4	-.7	.0051	-.0020	.0016
M001 POL2 P NCL	.0012	.0023	-.0023	-.4	-.5	-.2	-.0006	-.0034	.0003
M001 POL2 P JPL	.0062	-.0074	.0016	-.1	.0	.9	-.0079	.0049	-.0030

12350 SVETLOE

Positions

M001 SVTL P03 EUR	.0002	-.0003	-.0011	.0	.3	.0	-.0003	-.0006	-.0009	96:339
M001 SVTL P MIT	.0028	.0019	.0033	.1	.0	.2	.0003	-.0013	.0045	97:151
M001 SVTL P NCL	.0083	-.0236	.0116	.1	-.7	.3	-.0246	.0096	.0079	96: 1

Velocities

M001 SVTL P03 EUR	-.0071	-.0102	.0063	-.4	-.6	.0	-.0053	.0128	.0000
M001 SVTL P MIT	-.0054	.0073	.0017	-.3	.4	-.4	.0090	.0018	.0010
M001 SVTL P NCL	-.0095	.0244	-.0144	-.2	.3	.0	.0259	-.0105	-.0106

12602 DIONYSOS

Positions

M002 7515 TIE12602	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M002 7515 L CSR	-.0067	.0235	.0267	.1	.3	.1	.0242	.0189	.0191	93: 1
M002 7515 L GSFC	.0143	-.0260	-.0222	.4	-.1	-.6	-.0296	-.0190	-.0117	86:182
S001 7940 TIE12602	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
S011 DIOA TIE12602	.0000	.0001	.0001	.0	.0	.0	.0001	.0000	.0001	93: 1
S011 DIOA D GRGS	-.0147	-.0579	-.0197	-.1	-.6	.0	-.0470	.0073	-.0413	93: 1
S011 DIOA D CSR	.0285	.0616	-.0053	.1	.6	.1	.0447	-.0356	.0370	93: 1
S011 DIOA D IGN	-.0205	-.0187	.0116	-.4	-.4	1.5	-.0088	.0254	-.0135	95:100

Velocities

M002 7515 L CSR	.0001	.0072	.0136	.3	.1	.0	.0065	.0089	.0108
M002 7515 L GSFC	-.0005	.0088	.0090	.3	.3	.6	.0082	.0052	.0080
S011 DIOA D GRGS	.0042	.0224	-.0029	-.1	.1	-.9	.0188	-.0102	.0084
S011 DIOA D CSR	.0009	-.0050	.0038	.5	.7	.1	-.0050	.0038	.0014
S011 DIOA D IGN	-.0159	.0150	.0050	-.1	.4	.0	.0202	.0092	-.0036

12612 ASKITES

Positions

M001 7510 L CSR	.0059	.0084	.0331	.2	.0	.1	.0051	.0191	.0284	93: 1
M001 7510 L GSFC	.0190	-.0175	-.0080	.4	.1	-.1	-.0240	-.0123	.0020	86:182

Velocities

M001 7510 L CSR	.0033	.0037	.0169	.3	.2	.0	.0019	.0097	.0145
M001 7510 L GSFC	-.0032	.0040	.0006	.2	.2	.0	.0050	.0012	-.0005

12613 ROUMELLI

Positions

M001 7517 L CSR	-.0251	.0034	-.0029	-.1	.1	-.1	.0135	.0100	-.0191	93: 1
M001 7517 L GSFC	.0161	-.0133	-.0103	.3	.2	.0	-.0188	-.0137	.0015	86:182

Velocities

M001 7517 L CSR	-.0054	.0025	.0058	.1	.2	.0	.0045	.0070	.0002
M001 7517 L GSFC	-.0025	.0008	.0019	.1	.0	.0	.0018	.0027	-.0004

12614 KARITSA

Positions

M001 7520 L CSR	-.0196	-.0011	-.0108	-.2	-.1	-.3	.0059	.0037	-.0213	93: 1
M001 7520 L GSFC	.0203	-.0145	-.0003	.4	.1	.0	-.0207	-.0091	.0105	86:182

Velocities

M001 7520 L CSR	.0007	.0019	.0086	.5	.0	-.6	.0015	.0058	.0065
M001 7520 L GSFC	-.0035	.0025	.0004	-.3	.1	.1	.0036	.0018	-.0016

12615 KATAVIA

Positions

M001 7512 L CSR	-.0150	.0055	-.0064	.0	.1	-.2	.0119	.0011	-.0124	93: 1
M001 7512 L GSFC	.0182	-.0100	-.0030	.2	.0	-.3	-.0173	-.0092	.0075	86:182

Velocities

M001 7512 L CSR	-.0033	.0026	.0048	.1	.2	.0	.0038	.0049	.0015
M001 7512 L GSFC	-.0017	.0003	.0029	.1	.0	.2	.0010	.0031	.0006

12616 XRISOKALARIA

Positions

M001 7525 L CSR	-.0114	.0017	-.0006	.0	.0	-.3	.0058	.0055	-.0083	93: 1
M001 7525 L GSFC	.0127	-.0164	-.0047	.3	.1	.0	-.0200	-.0071	.0017	86:182

Velocities

M001 7525 L CSR	-.0004	.0019	.0068	.4	-.1	-.8	.0020	.0052	.0044
M001 7525 L GSFC	-.0020	.0019	.0005	-.2	.0	.2	.0025	.0011	-.0006

12706 LAMPEDUSA

Positions

M001 7544 L CSR	-.0256	.0013	.0013	-.1	.0	.0	.0068	.0154	-.0194	93: 1
M001 7544 L GSFC	.0006	-.0152	-.0124	.0	.0	-.1	-.0150	-.0085	-.0094	86:182

Velocities

M001 7544 L CSR	-.0065	.0029	.0048	.1	.1	-.4	.0042	.0072	-.0019
M001 7544 L GSFC	.0048	.0043	.0041	.2	.2	.0	.0032	.0000	.0070

12711 BOLOGNA

Positions

M002 7546 TIE12711	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M002 7546 L CSR	-.1013	-.1208	-.0779	.0	.0	.0	-.0979	.0312	-.1427	93: 1
M003 MEDI TIE12711	-.0030	-.0006	.0001	-2.0	-.4	.1	.0000	.0022	-.0021	93: 1
M003 MEDI P04 EUR	.0092	.0056	.0018	1.3	2.8	-3.4	.0036	-.0058	.0084	96: 90
M003 MEDI P03 EUR	.0000	-.0028	.0009	.5	-1.2	1.0	-.0028	.0010	.0002	96:339
M003 MEDI P MIT	.0018	-.0079	.0164	-.2	-.3	.9	-.0081	.0116	.0117	97:151
M003 MEDI P NCL	.0098	.0067	-.0101	1.1	5.5	-8.5	.0046	-.0149	.0007	96: 1
M003 MEDI P JPL	-.4592	-.1419	-.5033	-.5	-.2	-.3	-.0463	-.0234	-.6940	96: 1
S001 7230 TIE12711	.0013	.0003	-.0012	1.3	.3	-.2	.0000	-.0018	.0001	93: 1
S001 7230 R GSFC	-.0024	-.0012	.0038	.0	.6	.3	-.0006	.0045	.0008	93: 1
S001 7230 R GIUB	-.0125	.0000	-.0113	-1.8	-.3	.8	.0025	.0005	-.0166	93: 1
S001 7230 R NOAA	-.0075	-.0016	.0047	-3.2	-.1	.2	-.0001	.0087	-.0021	93: 1

Velocities

M002 7546 L CSR	-.0146	.0003	-.0004	.1	.5	.1	.0032	.0097	-.0105
M003 MEDI P04 EUR	-.0081	-.0053	.0091	.3	1.6	-.3	-.0036	.0128	.0000
M003 MEDI P03 EUR	-.0033	-.0097	.0053	-3.0	-5.6	-.2	-.0088	.0074	.0000
M003 MEDI P MIT	-.0107	-.0095	.0116	-1.1	-1.1	2.3	-.0071	.0170	-.0007
M003 MEDI P NCL	-.0075	-.0068	.0168	1.0	-1.1	1.9	-.0052	.0181	.0056
M003 MEDI P JPL	.5328	.1624	.5849	-.2	-.2	.8	.0515	.0281	.8056
S001 7230 R GSFC	.0039	.0018	.0035	2.3	1.7	.1	.0010	-.0004	.0054
S001 7230 R GIUB	.0038	.0023	.0038	1.3	1.5	.4	.0015	-.0002	.0056
S001 7230 R NOAA	.0030	.0016	.0046	2.3	1.4	.2	.0010	.0010	.0055

12717 NOTO

Positions

M001 7543 TIE12717	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M001 7543 L CSR	-.0164	.0029	-.0105	-.1	.0	-.3	.0071	.0007	-.0184	93: 1
M003 NOTO TIE12717	-.0009	.0008	.0022	-.6	.6	1.5	.0010	.0022	.0008	93: 1
M003 NOTO P04 EUR	.0051	.0006	.0030	.4	-.8	-.6	-.0008	-.0007	.0059	96: 90
M003 NOTO P03 EUR	-.0028	-.0028	-.0023	-.5	.6	.1	-.0020	.0002	-.0042	96:339
M003 NOTO P MIT	-.0087	-.0052	.0033	-1.2	.1	.3	-.0028	.0085	-.0059	97:151
M003 NOTO P NCL	-.0020	-.0068	-.0013	-.4	-2.2	.0	-.0060	.0012	-.0037	96: 1
M003 NOTO P JPL	.0042	-.0008	.0030	.2	-.3	.5	-.0018	.0001	.0049	96: 1
S001 7547 TIE12717	.0038	-.0033	-.0089	1.3	-1.1	-3.0	-.0042	-.0088	-.0031	93: 1
S001 7547 R GSFC	.0023	.0020	.0091	.4	.3	.4	.0014	.0056	.0077	93: 1
S001 7547 R GIUB	-.0062	.0110	-.0005	1.1	1.3	.8	.0123	.0014	-.0028	93: 1
S001 7547 R NOAA	.0082	.0068	.0199	.9	1.3	.0	.0044	.0101	.0196	93: 1

Velocities

M001 7543 L CSR	.0043	.0001	.0066	.2	-.2	-.1	-.0010	.0027	.0073
M003 NOTO P04 EUR	-.0008	.0169	-.0048	-.1	1.6	.0	.0166	-.0060	.0000

M003 NOTO P03 EUR	.0017	.0035	-.0034	-.3	1.5	.0	.0030	-.0042	.0000
M003 NOTO P MIT	-.0143	.0022	-.0015	-.3	.4	.1	.0058	.0068	-.0115
M003 NOTO P NCL	.0026	.0085	.0022	-.8	.8	-.3	.0075	-.0011	.0051
M003 NOTO P JPL	-.0110	-.0084	-.0073	-.3	-1.0	.6	-.0053	.0019	-.0146
S001 7547 R GSFC	.0013	.0007	.0026	-.1	.1	1.3	.0003	.0012	.0027
S001 7547 R GIUB	.0023	.0013	.0042	1.2	-.7	1.9	.0007	.0018	.0045
S001 7547 R NOAA	.0019	.0018	.0036	-.2	-.5	.1	.0012	.0015	.0040

12718 TRIESTE

Positions

M002 7550 L CSR	-.0574	-.0042	-.1095	.0	.0	-.1	.0097	-.0360	-.1180	93: 1
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Velocities

M002 7550 L CSR	-.0109	-.0012	-.0139	.0	.0	.0	.0014	-.0019	-.0175
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12725 CAGLIARI

Positions

M002 7545 TIE12725	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M002 7545 L CSR	-.0325	.0435	.0186	-.2	1.0	.0	.0480	.0304	-.0079	93: 1
M002 7545 L GSFC	-.0489	.0625	.0364	-.9	1.3	.5	.0693	.0526	-.0069	86:182
M003 CAGL TIE12725	-.0001	.0002	.0001	-.1	.2	.1	.0002	.0001	.0000	93: 1
M003 CAGL P04 EUR	-.0021	.0046	.0045	-.7	1.7	1.4	.0049	.0043	.0018	96: 90
M003 CAGL P03 EUR	-.0011	-.0032	-.0015	-.2	-1.6	-.5	-.0030	-.0002	-.0022	96:339
M003 CAGL P MIT	.0010	-.0051	.0031	-.3	-.1	.0	-.0052	.0023	.0021	97:151
M003 CAGL P NCL	.0053	-.0002	.0064	.4	.9	.3	-.0011	.0017	.0081	96: 1
M003 CAGL P JPL	.1067	.0043	.0548	.1	.0	-.1	-.0124	-.0245	.1169	96: 1
S013 7548 L CSR	.2366	.2077	-.0105	.1	.2	-.1	.1683	-.1761	.1998	93: 1

Velocities

M002 7545 L CSR	.0010	.0000	.0006	.5	-1.6	-1.7	-.0001	-.0001	.0012
M002 7545 L GSFC	.0071	-.0075	-.0043	-.3	.4	.5	-.0085	-.0070	.0018
M003 CAGL P04 EUR	.0083	.0004	-.0104	-.2	.3	-1.0	-.0009	-.0133	-.0001
M003 CAGL P03 EUR	.0045	-.0050	-.0048	1.6	-1.3	-1.6	-.0056	-.0060	-.0001
M003 CAGL P MIT	-.0101	-.0043	-.0104	-.6	-.3	-.8	-.0027	-.0014	-.0148
M003 CAGL P NCL	-.0036	.0009	-.0052	.6	-.6	-.1	.0015	-.0019	-.0060
M003 CAGL P JPL	-.1207	-.0068	-.0569	.1	-.1	1.3	.0122	.0318	-.1292
S013 7548 L CSR	.0010	.0000	.0007	-3.6	-.4	-2.9	-.0001	-.0001	.0012

12734 MATERA

Positions

M004 7541 TIE12734	.0017	-.0034	.0018	.0	.0	.0	-.0038	.0010	.0017	93: 1
M004 7541 L CSR	.0069	.0097	-.0078	.2	.2	-.5	.0073	-.0120	.0020	93: 1
M005 7540 TIE12734	.0017	-.0034	.0017	.0	.0	.0	-.0037	.0009	.0017	93: 1
M005 7540 L CSR	.0018	-.0026	-.0176	-.1	-.2	.0	-.0030	-.0140	-.0107	93: 1
M007 TIE12734	.0017	-.0034	.0017	.0	.0	.0	-.0037	.0009	.0017	93: 1
M008 MATE TIE12734	.0000	.0000	.0000	-.5	1.0	-.5	.0000	.0000	.0000	93: 1
M008 MATE P GFZ	-.0136	-.0153	.0115	-.5	.3	-.4	-.0107	.0201	-.0057	94:365
M008 MATE P CODE	-.0001	-.0029	.0016	.6	-1.8	1.4	-.0027	.0018	.0003	95: 76
M008 MATE P04 EUR	.0024	-.0035	.0027	.2	-2.3	.3	-.0040	.0012	.0027	96: 90
M008 MATE P03 EUR	-.0022	-.0019	-.0023	-.3	1.3	-.9	-.0012	.0000	-.0035	96:339
M008 MATE P MIT	-.0010	-.0021	.0044	-.9	.1	.3	-.0017	.0043	.0017	97:151
M008 MATE P JPL	.0078	.0019	.0083	.8	.0	.8	-.0004	.0011	.0116	96: 1
S001 7939 TIE12734	.0017	-.0034	.0017	.3	-.6	.3	-.0037	.0009	.0017	93: 1
S001 7939 L CSR	.0197	.0112	.0117	.6	.9	-.7	.0051	-.0055	.0244	93: 1
S001 7939 L GSFC	.0015	-.0120	-.0060	-.4	-.1	-.1	-.0119	-.0033	-.0054	86:182
S005 7243 TIE12734	.0067	-.0072	.0001	.7	-.5	-.2	-.0088	-.0028	.0034	93: 1
S005 7243 R GSFC	-.0027	-.0002	.0024	-.5	.5	-.6	.0006	.0035	-.0004	93: 1
S005 7243 R GIUB	-.0069	.0049	-.0024	.4	.3	.8	.0067	.0015	-.0055	93: 1
S005 7243 R NOAA	.0045	.0022	.0175	.6	.2	.6	.0008	.0100	.0152	93: 1

Velocities

M004 7541 L CSR	.0018	.0017	.0046	1.1	.2	-1.7	.0011	.0021	.0047
M005 7540 L CSR	.0018	.0017	.0046	.0	.0	.0	.0011	.0021	.0047
M008 MATE P GFZ	-.0034	.0003	-.0006	-.7	-.9	-.8	.0012	.0016	-.0028
M008 MATE P CODE	-.0006	.0013	.0035	-.3	-.2	1.2	.0015	.0027	.0021
M008 MATE P04 EUR	.0010	.0016	-.0016	-.3	2.3	.0	.0012	-.0021	.0000
M008 MATE P03 EUR	.0002	.0010	-.0005	-.6	.0	-.1	.0009	-.0007	.0000
M008 MATE P MIT	-.0117	.0017	-.0076	-1.6	.2	-1.1	.0050	.0013	-.0131
M008 MATE P JPL	.0017	-.0004	.0030	.0	-.1	.4	-.0009	.0013	.0031
S001 7939 L CSR	.0018	.0017	.0046	.0	.0	.0	.0011	.0021	.0047
S001 7939 L GSFC	.0003	.0016	-.0011	.5	.1	-.2	.0014	-.0013	-.0002
S005 7243 R GSFC	.0000	-.0002	.0017	-.6	-.4	.5	-.0002	.0013	.0011
S005 7243 R GIUB	-.0015	.0005	.0000	-.9	-.2	.0	.0009	.0008	-.0009
S005 7243 R NOAA	.0022	-.0001	.0045	.6	-.8	.9	-.0007	.0021	.0045

12741 VENICE

Positions

M001 VENE P03 EUR	-.0013	-.0022	-.0006	.0	.1	.1	-.0019	.0008	-.0017	96:339
M001 VENE P MIT	-.0034	-.0030	.0011	-.4	.1	-.4	-.0022	.0036	-.0020	97:151
M001 VENE P NCL	.0128	-.0059	.0195	.3	-.8	1.4	-.0085	.0057	.0218	96: 1

Velocities

M001 VENE P03 EUR	-.0032	-.0051	.0042	-1.1	-1.0	.0	-.0043	.0059	.0000
M001 VENE P MIT	-.0190	-.0002	-.0137	-.4	.3	-.3	.0039	.0036	-.0228
M001 VENE P NCL	-.0109	.0073	-.0178	.0	.5	-1.0	.0095	-.0060	-.0190

12749 MONTE VENDA

Positions

M001 7542 L CSR	-.0901	-.0083	-.1787	.0	.1	-.2	.0101	-.0617	-.1903	93: 1
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Velocities

M001 7542 L CSR	-.0548	-.0095	-.1209	.0	.0	.0	.0018	-.0455	-.1251
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12750 PADOVA

Positions

M001 UPAD P CODE	-.0001	-.0018	.0014	.0	.0	.0	-.0017	.0013	.0007	95: 76
M002 UPAD P CODE	.0002	-.0022	.0024	.5	-.8	.8	-.0022	.0019	.0015	95: 76
M002 UPAD P04 EUR	.0004	.0002	.0031	.1	.2	.9	.0001	.0018	.0025	96: 90
M002 UPAD P03 EUR	-.0006	-.0024	.0003	.3	-.4	.7	-.0023	.0010	-.0006	96:339
M002 UPAD P MIT	.0038	-.0030	.0099	-.1	-.1	.7	-.0037	.0047	.0092	97:151
M002 UPAD P NCL	-.0056	-.0032	-.0069	-1.2	.8	-.7	-.0020	-.0005	-.0093	96: 1
M002 UPAD P JPL	-.0444	-.0058	-.0484	-4.8	.0	-1.1	.0035	-.0022	-.0658	96: 1

Velocities

M001 UPAD P CODE	.0026	.0002	.0054	.2	-.3	.0	-.0004	.0020	.0056
M002 UPAD P CODE	.0026	.0002	.0054	-.1	-1.0	.4	-.0004	.0020	.0056
M002 UPAD P04 EUR	-.0036	-.0080	.0051	-.8	-1.1	.0	-.0071	.0072	.0000
M002 UPAD P03 EUR	.0022	.0018	-.0025	.7	.8	-.1	.0013	-.0036	.0000
M002 UPAD P MIT	-.0029	.0001	.0042	-.3	-.4	.3	.0007	.0050	.0011
M002 UPAD P NCL	.0097	.0050	.0116	.8	.6	-.4	.0029	.0006	.0156
M002 UPAD P JPL	.0013	-.0045	.0013	.3	-.5	.9	-.0047	.0006	.0012

13101 BRUSSELS

Positions

M004 BRUS P CODE	-.0017	-.0026	-.0007	-.7	-.2	.4	-.0025	.0010	-.0018	95: 76
M004 BRUS P04 EUR	-.0008	-.0002	-.0010	.3	-.3	.3	-.0001	.0000	-.0013	96: 90
M004 BRUS P03 EUR	-.0018	-.0024	-.0015	-.4	.1	.6	-.0022	.0006	-.0024	96:339
M004 BRUS P MIT	-.0010	-.0014	.0058	-.2	.2	.2	-.0013	.0045	.0038	97:151
M004 BRUS P NCL	.0018	-.0028	.0018	.3	-.6	-1.1	-.0029	-.0001	.0024	96: 1

M004 BRUS P JPL	.0049	.0003	.0071	1.0	-.1	1.1	-.0001	.0007	.0086	96: 1
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Velocities

M004 BRUS P CODE	.0012	-.0003	.0027	.0	-.6	-.4	-.0004	.0008	.0029
M004 BRUS P04 EUR	.0010	-.0039	-.0006	.2	-1.1	-.1	-.0040	-.0009	.0000
M004 BRUS P03 EUR	-.0015	-.0018	.0013	-.8	-.4	.0	-.0017	.0021	.0000
M004 BRUS P MIT	-.0057	.0027	.0030	-.7	-.1	-.5	.0031	.0061	-.0011
M004 BRUS P NCL	-.0016	.0040	-.0013	.1	.2	.1	.0041	.0002	-.0018
M004 BRUS P JPL	-.0014	-.0017	-.0013	-.1	.0	.1	-.0016	.0003	-.0020

13112 DENTERGEM

Positions

M001 DENT P04 EUR	-.0027	-.0011	-.0011	-.3	-.5	.8	-.0009	.0014	-.0026	96: 90
M001 DENT P03 EUR	-.0011	-.0021	-.0006	.0	.4	.0	-.0020	.0005	-.0012	96:339
M001 DENT P MIT	.0002	-.0032	.0044	-.2	.0	.0	-.0032	.0028	.0035	97:151
M001 DENT P NCL	.0025	-.0012	.0030	.2	.6	.0	-.0013	.0000	.0038	96: 1

Velocities

M001 DENT P04 EUR	.0041	-.0031	-.0032	.3	.4	-.1	-.0033	-.0050	.0000
M001 DENT P03 EUR	-.0019	-.0022	.0016	-.4	-.3	.1	-.0020	.0026	.0000
M001 DENT P MIT	-.0051	-.0018	.0013	-.4	-.4	.0	-.0015	.0049	-.0022
M001 DENT P NCL	-.0011	.0022	-.0016	.2	.0	-.2	.0023	-.0003	-.0018

13113 DOORBES

Positions

M001 DOUR P04 EUR	.0002	.0006	.0020	.3	.6	.7	.0005	.0011	.0017	96: 90
M001 DOUR P03 EUR	-.0012	-.0022	-.0006	.0	.1	.2	-.0021	.0007	-.0014	96:339
M001 DOUR P MIT	.0027	-.0020	.0076	.0	.1	.2	-.0022	.0029	.0075	97:151
M001 DOUR P NCL	-.0027	-.0040	-.0028	-.4	-.6	.0	-.0038	.0005	-.0040	96: 1

Velocities

M001 DOUR P04 EUR	.0001	-.0114	.0007	-.3	-.7	-.1	-.0113	.0010	.0000
M001 DOUR P03 EUR	-.0016	-.0007	.0014	-.2	.3	.0	-.0006	.0022	.0000
M001 DOUR P MIT	-.0006	.0009	.0063	.0	.0	.2	.0009	.0044	.0045
M001 DOUR P NCL	.0046	.0055	.0048	.1	.0	-.2	.0051	-.0008	.0069

13114 WAREMME

Positions

M001 WARE P04 EUR	.0010	.0004	.0040	.5	.4	.9	.0004	.0018	.0038	96: 90
M001 WARE P03 EUR	-.0013	-.0023	-.0012	.0	-.1	-.1	-.0022	.0004	-.0019	96:339
M001 WARE P MIT	.0024	-.0024	.0078	.0	.0	.2	-.0026	.0032	.0074	97:151
M001 WARE P NCL	-.0007	-.0043	-.0031	-.1	-.5	-.6	-.0042	-.0011	-.0031	96: 1

Velocities

M001 WARE P04 EUR	.0050	-.0099	-.0033	.3	-.4	-.1	-.0103	-.0053	.0000
M001 WARE P03 EUR	-.0015	-.0011	.0013	-.2	.1	.0	-.0009	.0021	.0000
M001 WARE P MIT	-.0011	.0004	.0074	.0	-.1	.3	.0005	.0055	.0051
M001 WARE P NCL	.0020	.0058	.0047	-.3	.2	-.2	.0055	.0011	.0052

13201 CHILBOLTON

Positions

S002 7215 R GSFC	.0250	-.0003	.0121	.1	.0	.0	.0003	-.0119	.0251	93: 1
S002 7215 R NOAA	.0073	.0040	.0031	.0	-.1	.0	.0042	-.0036	.0069	93: 1

Velocities

S002 7215 R GSFC	.0009	.0000	-.0007	.0	.0	.0	.0001	-.0011	.0000
S002 7215 R NOAA	.0011	-.0001	.0010	.0	.0	.0	-.0001	-.0002	.0015

13212 HERSTMONCEUX

Positions

M007 HERS TIE13212	.0004	-.0058	-.0065	.0	.0	.0	-.0058	-.0044	-.0048	93: 1
M007 HERS P CODE	-.0023	-.0015	-.0024	-.9	-.5	1.4	-.0015	.0003	-.0034	95: 76
M007 HERS P04 EUR	-.0037	.0008	-.0014	-1.1	1.3	2.2	.0008	.0020	-.0034	96: 90
M007 HERS P03 EUR	.0009	-.0023	.0013	.7	-.3	-.1	-.0024	.0001	.0016	96:339
M007 HERS P MIT	.0035	-.0030	.0062	.1	.0	-.1	-.0030	.0012	.0070	97:151
M007 HERS P NCL	-.0015	-.0022	.0020	-.4	.6	2.1	-.0022	.0024	.0006	96: 1
M007 HERS P JPL	.0045	.0007	.0077	.7	.2	1.1	.0007	.0014	.0089	96: 1
S001 7840 TIE13212	.0000	.0000	.0000	-.1	1.9	2.2	.0000	.0000	.0000	93: 1
S001 7840 L CSR	-.0026	.0002	-.0002	-.7	-.2	-1.0	.0003	.0019	-.0019	93: 1
S001 7840 L GSFC	-.0147	-.0184	-.0087	-1.2	-.5	-2.0	-.0183	.0060	-.0161	86:182

Velocities

M007 HERS P CODE	.0010	-.0001	.0035	-.1	-.4	2.1	-.0001	.0014	.0034
M007 HERS P04 EUR	.0039	-.0179	-.0032	.6	-1.4	-.3	-.0179	-.0050	.0000
M007 HERS P03 EUR	.0010	.0001	-.0008	.6	.9	-.4	.0001	-.0013	.0000
M007 HERS P MIT	.0044	.0003	.0074	.6	-.1	.1	.0003	.0012	.0085
M007 HERS P NCL	.0051	.0030	.0010	1.0	-.7	-1.2	.0030	-.0033	.0041
M007 HERS P JPL	.0003	.0009	.0033	-.2	.5	.9	.0009	.0019	.0028
S001 7840 L CSR	.0059	.0014	.0088	.5	.1	.6	.0014	.0010	.0105
S001 7840 L GSFC	.0030	.0025	.0014	.3	.7	1.8	.0024	-.0015	.0030

13296 CARNUSTY

Positions

M002 7603 R GSFC	-.0182	.0034	-.0321	-.1	.1	-.2	.0025	-.0025	-.0369	93: 1
M002 7603 R NOAA	.0116	-.0007	.0220	.0	.0	.1	-.0001	.0025	.0247	93: 1

Velocities

M002 7603 R GSFC	.0017	.0020	-.0011	.0	.0	.0	.0021	-.0020	.0000
M002 7603 R NOAA	.0020	.0017	.0008	.0	.0	.0	.0018	-.0012	.0017

13402 SAN FERNANDO

Positions

M004 SFER P04 EUR	-.0067	-.0039	-.0048	.1	-.2	.0	-.0046	-.0002	-.0078	96: 90
M004 SFER P03 EUR	-.0004	-.0009	-.0007	-.1	1.1	-.1	-.0009	-.0004	-.0006	96:339
M004 SFER P MIT	.0053	.0045	.0029	.2	.2	.3	.0050	-.0005	.0056	97:151
M004 SFER P NCL	.0011	-.0105	.0050	.0	-2.3	.9	-.0103	.0027	.0048	96: 1

Velocities

M004 SFER P04 EUR	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000
M004 SFER P03 EUR	.0075	.0104	-.0085	1.3	2.6	-.1	.0111	-.0106	.0000
M004 SFER P MIT	.0021	.0096	-.0062	-.2	.6	-.6	.0097	-.0057	-.0029
M004 SFER P NCL	-.0002	.0128	-.0046	-.1	.0	.0	.0127	-.0028	-.0040

13406 VILLAFRANCA

Positions

M001 VILL P04 EUR	-.0034	-.0002	-.0007	-.2	-.3	.9	-.0004	.0017	-.0030	96: 90
M001 VILL P03 EUR	-.0016	-.0021	-.0008	-.2	.1	.4	-.0022	.0003	-.0016	96:339
M001 VILL P MIT	.0044	-.0033	.0009	.5	-.3	-.1	-.0030	-.0023	.0040	97:151
M001 VILL P NCL	-.0008	-.0020	-.0004	-.2	.4	-.6	-.0021	.0001	-.0007	96: 1
M001 VILL P JPL	.0009	-.0011	.0015	-.2	-.1	.8	-.0010	.0006	.0017	96: 1

Velocities

M001 VILL P04 EUR	.0054	.0000	-.0063	.9	.0	.0	.0004	-.0083	.0000
M001 VILL P03 EUR	.0024	-.0025	-.0030	-.2	-.2	-.1	-.0023	-.0040	.0000
M001 VILL P MIT	-.0039	.0021	-.0051	-1.3	.5	-.7	.0018	-.0013	-.0063
M001 VILL P NCL	.0023	.0028	.0019	-.1	.0	-.2	.0030	.0001	.0028
M001 VILL P JPL	.0035	-.0046	.0043	.3	-.5	.4	-.0043	.0008	.0057

13407 MADRID

Positions

S001 1563 R JPL	.0150	.0016	-.0042	.0	.0	.0	.0027	-.0128	.0086	93:	1
S003 1561 R GSFC	-.0254	.0504	-.0673	-.1	.6	-.4	.0484	-.0323	-.0658	93:	1
S003 1561 R JPL	.0153	.0012	-.0022	.0	-.1	.2	.0024	-.0115	.0102	93:	1
S010 1565 TIE13407	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93:	1
S010 1565 R GSFC	.0020	-.0006	.0017	.8	.0	-.7	-.0004	.0000	.0027	93:	1
S010 1565 R GIUB	-.0087	.0044	-.0240	1.3	.0	-1.3	.0038	-.0125	-.0224	93:	1
S010 1565 R NOAA	-.0051	.0023	.0012	-.1	.4	-.3	.0019	.0043	-.0032	93:	1
S010 1565 R JPL	-.0093	.0068	-.0115	.0	.0	.0	.0061	-.0025	-.0149	93:	1
S012 MADR TIE13407	.0086	.0012	-.0063	2.9	.4	-2.1	.0018	-.0103	.0024	93:	1
S012 MADR P EMR	.0029	-.0036	.0035	.2	1.0	.7	-.0033	.0007	.0046	96:	1
S012 MADR P GFZ	-.0242	-.0167	.0027	-3.3	-.2	-.2	-.0185	.0169	-.0157	94:	365
S012 MADR P CODE	-.0132	-.0010	-.0102	-2.7	-.2	.6	-.0020	.0007	-.0166	95:	76
S012 MADR P CODE	.0031	-.0036	.0049	.4	-.4	.2	-.0034	.0016	.0058	95:	76
S012 MADR P04 EUR	-.0114	-.0001	-.0081	-1.2	-.6	.5	-.0009	.0012	-.0139	96:	90
S012 MADR P03 EUR	-.0030	-.0017	-.0025	-.1	.2	-.3	-.0019	-.0001	-.0038	96:	339
S012 MADR P03 EUR	-.0066	-.0035	-.0034	-.7	-.3	.2	-.0040	.0016	-.0070	96:	339
S012 MADR P MIT	.0154	.0013	.0028	2.2	.4	-.6	.0024	-.0077	.0134	97:	151
S012 MADR P NCL	-.0009	-.0033	.0010	-.7	-.5	.3	-.0034	.0012	.0002	96:	1
S012 MADR P JPL	.0094	-.0011	.0094	1.8	-.1	1.4	-.0004	.0010	.0133	96:	1

Velocities

S003 1561 R GSFC	.0012	.0007	.0015	.6	.5	.7	.0008	.0004	.0018		
S010 1565 R GSFC	.0012	.0007	.0015	.0	.0	.0	.0008	.0004	.0018		
S010 1565 R GIUB	.0026	.0016	.0025	.5	-.6	-.1	.0017	.0003	.0035		
S010 1565 R NOAA	-.0013	.0007	-.0005	-.5	-.4	.1	.0006	.0005	-.0013		
S012 MADR P EMR	.0021	.0000	.0008	.6	.3	-.5	.0001	-.0008	.0021		
S012 MADR P GFZ	.0011	.0035	.0026	.2	.2	-.5	.0035	.0014	.0023		
S012 MADR P CODE	.0022	.0012	.0023	.4	-.1	.2	.0013	.0004	.0032		
S012 MADR P CODE	.0022	.0012	.0023	.0	-.2	.1	.0013	.0004	.0032		
S012 MADR P04 EUR	.0014	.0060	-.0012	.2	.6	.0	.0061	-.0015	.0000		
S012 MADR P03 EUR	.0009	-.0099	-.0019	.0	.0	.0	-.0098	-.0025	.0000		
S012 MADR P03 EUR	.0009	-.0099	-.0019	.6	-.9	-.1	-.0098	-.0025	.0000		
S012 MADR P MIT	.0108	.0053	.0017	.6	1.1	-.8	.0061	-.0054	.0090		
S012 MADR P NCL	.0099	.0046	.0049	1.3	.6	-1.2	.0053	-.0025	.0104		
S012 MADR P JPL	.0023	.0002	.0026	-.2	.5	-.2	.0004	.0005	.0034		

13410 ROQUETES

Positions

M001 EBRE P03 EUR	-.0020	-.0020	-.0013	.1	.1	-.2	-.0020	.0003	-.0024	96:	339
M001 EBRE P MIT	-.0032	-.0006	-.0007	-.7	.0	-.1	-.0006	.0015	-.0029	97:	151
M001 EBRE P NCL	.0113	-.0078	.0169	.3	-1.2	.9	-.0079	.0054	.0196	96:	1
M001 EBRE P JPL	.0147	.0036	.0009	.4	.2	-.6	.0035	-.0089	.0117	96:	1

Velocities

M001 EBRE P03 EUR	-.0001	-.0070	.0002	-.4	-1.2	.0	-.0070	.0002	.0000		
M001 EBRE P MIT	-.0149	.0023	-.0153	-.4	-.2	-.1	.0024	-.0019	-.0213		
M001 EBRE P NCL	-.0101	.0091	-.0159	.1	.3	.1	.0092	-.0055	-.0180		
M001 EBRE P JPL	-.0084	-.0113	.0099	.3	-.3	1.0	-.0112	.0130	.0000		

13420 YEBES

Positions

S001 7333 R GSFC	.0044	-.0038	.0167	.0	-.1	.2	-.0036	.0097	.0143	93:	1
S001 7333 R GIUB	-.0238	.0093	-.0334	-.2	.0	-.1	.0080	-.0096	-.0401	93:	1

Velocities

S001 7333 R GSFC	.0013	.0011	-.0015	.0	.0	.0	.0012	-.0019	.0000		
S001 7333 R GIUB	.0012	-.0002	.0003	.0	.0	.0	-.0002	-.0006	.0011		

13502 DELFT

Positions

M004 DELF P04 EUR	-.0042	-.0001	.0001	-.6	.2	1.1	.0002	.0033	-.0025	96: 90
M004 DELF P03 EUR	-.0011	-.0023	-.0011	-.1	.0	-.2	-.0022	.0004	-.0017	96:339
M004 DELF P MIT	.0012	-.0025	.0067	-.1	.0	.1	-.0026	.0033	.0059	97:151
M004 DELF P NCL	.0002	-.0037	-.0027	-.1	-.5	-.9	-.0037	-.0016	-.0022	96: 1

Velocities

M004 DELF P04 EUR	.0094	-.0102	-.0067	.0	-.3	.0	-.0109	-.0109	.0000
M004 DELF P03 EUR	-.0021	-.0019	.0018	-.4	-.1	.1	-.0018	.0029	.0000
M004 DELF P MIT	-.0031	-.0003	.0066	-.3	-.2	.3	.0000	.0065	.0032
M004 DELF P NCL	.0018	.0052	.0053	.5	.3	-.4	.0051	.0015	.0055

13504 KOOTWIJK

Positions

M002 8833 TIE13504	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M002 8833 L CSR	.0048	-.0229	.0064	.1	-.1	.0	-.0233	.0019	.0066	93: 1
M003 KOSG TIE13504	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M003 KOSG P EMR	-.0004	-.0066	.0029	-.6	.8	1.1	-.0065	.0026	.0016	96: 1
M003 KOSG P GFZ	-.0101	-.0175	.0162	-.7	-.6	-.4	-.0164	.0193	.0055	94:365
M003 KOSG P CODE	.0006	-.0016	.0015	.2	-.6	1.3	-.0016	.0006	.0014	95: 76
M003 KOSG P04 EUR	-.0052	-.0020	-.0056	-1.4	-2.0	1.4	-.0015	.0008	-.0078	96: 90
M003 KOSG P03 EUR	-.0020	-.0022	-.0024	-.7	.9	-.1	-.0020	.0003	-.0032	96:339
M003 KOSG P MIT	-.0002	-.0012	.0040	.1	.2	.1	-.0012	.0027	.0029	97:151
M003 KOSG P NCL	.0013	-.0031	.0036	.1	-.4	1.2	-.0032	.0014	.0034	96: 1
M003 KOSG P JPL	.0049	-.0006	.0063	1.4	-.4	.4	-.0011	.0001	.0080	96: 1
S001 7833 TIE13504	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
S001 7833 L CSR	-.0117	.0147	-.0292	-.6	.1	-.1	.0158	-.0099	-.0293	93: 1

Velocities

M002 8833 L CSR	.0093	-.0037	.0131	.2	.1	.0	-.0046	.0010	.0158
M003 KOSG P EMR	.0010	.0002	-.0001	.3	.5	-.1	.0001	-.0008	.0005
M003 KOSG P GFZ	-.0020	.0007	.0007	-.3	-1.5	.2	.0009	.0020	-.0007
M003 KOSG P CODE	-.0003	-.0010	.0016	.0	-1.4	.5	-.0009	.0013	.0010
M003 KOSG P04 EUR	.0009	-.0055	-.0003	.5	-.4	-.1	-.0056	-.0004	.0000
M003 KOSG P03 EUR	-.0011	-.0021	.0010	-.8	-1.0	.1	-.0020	.0017	.0000
M003 KOSG P MIT	-.0037	.0027	.0040	.1	-.2	.0	.0031	.0051	.0011
M003 KOSG P NCL	.0012	.0046	-.0019	.1	.5	-.8	.0045	-.0024	-.0005
M003 KOSG P JPL	-.0004	-.0012	.0008	-.8	-.7	.7	-.0011	.0010	.0003
S001 7833 L CSR	.0093	-.0037	.0131	.0	.0	.0	-.0046	.0010	.0158

14001 ZIMMERWALD

Positions

M004 ZIMM TIE14001	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M004 ZIMM P CODE	.0035	-.0026	.0051	1.5	-1.8	1.0	-.0031	.0012	.0058	95: 76
M004 ZIMM P04 EUR	-.0031	.0007	-.0019	-.7	1.7	.8	.0011	.0009	-.0035	96: 90
M004 ZIMM P03 EUR	-.0013	-.0022	-.0010	-.1	.6	.4	-.0021	.0005	-.0018	96:339
M004 ZIMM P MIT	.0035	-.0041	.0121	-.1	-.2	.9	-.0045	.0061	.0109	97:151
M004 ZIMM P JPL	-.0411	-.0034	-.0492	-4.9	-.1	-2.3	.0019	-.0035	-.0641	96: 1
S001 7810 TIE14001	-.0008	-.0009	-.0021	-.3	-.3	-.7	-.0008	-.0008	-.0022	93: 1
S001 7810 L CSR	-.0115	-.0003	-.0119	-.5	-.3	-1.0	.0012	.0002	-.0165	93: 1
S001 7810 L GSFC	-.0081	-.0136	-.0071	-.1	.1	-.6	-.0124	.0023	-.0119	86:182

Velocities

M004 ZIMM P CODE	.0004	.0004	.0031	.1	-1.1	.7	.0003	.0018	.0026
M004 ZIMM P04 EUR	.0016	.0009	-.0016	.3	-.4	.0	.0006	-.0024	.0000
M004 ZIMM P03 EUR	-.0011	-.0044	.0016	-1.2	-2.4	.1	-.0043	.0024	.0000
M004 ZIMM P MIT	-.0027	-.0025	.0088	-.6	-.9	1.3	-.0021	.0082	.0044
M004 ZIMM P JPL	-.0023	-.0047	-.0025	.7	-.3	.3	-.0044	.0004	-.0038
S001 7810 L CSR	.0038	-.0010	.0046	1.7	-.7	-1.4	-.0015	.0005	.0058

S001 7810 L GSFC	.0039	.0019	.0023	1.1	.2	2.5	.0013	-.0014	.0044
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14106 POTSDAM

Positions

M003 POTS TIE14106	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M003 POTS P GFZ	-.0151	-.0150	.0091	-.6	.3	-.7	-.0112	.0199	-.0038	94:365
M003 POTS P CODE	-.0031	-.0024	-.0027	-.9	.7	.0	-.0017	.0012	-.0043	95: 76
M003 POTS P04 EUR	.0022	.0000	.0022	.6	-1.0	.3	-.0005	-.0004	.0030	96: 90
M003 POTS P03 EUR	.0008	-.0019	.0020	1.0	.1	.5	-.0020	.0010	.0018	96:339
M003 POTS P MIT	.0008	-.0013	.0021	-.3	.2	.1	-.0015	.0009	.0019	97:151
M003 POTS P NCL	-.0012	-.0036	-.0007	-.5	-.2	.1	-.0032	.0011	-.0018	96: 1
M003 POTS P JPL	.0041	.0020	.0066	.4	.4	1.4	.0010	.0005	.0080	96: 1
S001 1181 L CSR	.0370	.0652	-.0792	.0	.4	-.7	.0552	-.0886	-.0317	93: 1
S001 1181 L GSFC	-.0093	-.0086	-.0036	-.6	-.6	-1.1	-.0063	.0066	-.0096	86:182
S009 7836 TIE14106	-.0007	.0002	.0004	-.2	.1	.1	.0003	.0008	.0000	93: 1
S009 7836 L CSR	-.0122	-.0028	-.0246	.0	-.3	-.7	.0001	-.0051	-.0271	93: 1

Velocities

M003 POTS P GFZ	-.0022	-.0005	.0008	-.7	-.3	-.3	.0000	.0023	-.0008	
M003 POTS P CODE	.0001	-.0012	.0030	-.8	.1	.3	-.0012	.0020	.0022	
M003 POTS P04 EUR	-.0013	-.0034	.0015	.0	-.4	-.2	-.0031	.0025	.0000	
M003 POTS P03 EUR	-.0014	.0023	.0007	-.3	1.2	-.2	.0026	.0011	.0000	
M003 POTS P MIT	-.0040	.0039	.0035	.2	.5	.4	.0047	.0045	.0009	
M003 POTS P NCL	.0023	.0047	.0017	-.3	.2	-.7	.0040	-.0016	.0034	
M003 POTS P JPL	-.0037	-.0016	-.0038	-.4	.0	.0	-.0007	.0008	-.0054	
S001 1181 L CSR	.0071	.0025	.0156	.0	.0	.0	.0008	.0036	.0169	
S001 1181 L GSFC	.0082	.0037	.0015	2.9	1.2	3.1	.0017	-.0061	.0066	
S009 7836 L CSR	.0071	.0025	.0156	.8	-.2	-1.4	.0008	.0036	.0169	

14201 WETTZELL

Positions

M003 7595 TIE14201	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M004 7596 TIE14201	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M004 7596 L CSR	-.0553	.0578	-.0456	-.2	.5	.3	.0687	.0012	-.0613	93: 1
M005 7597 TIE14201	.0000	.0001	.0000	.0	.0	.0	.0001	.0000	.0000	93: 1
M005 7597 L CSR	-.0172	-.0046	-.0111	-.1	-.2	-.2	-.0006	.0062	-.0200	93: 1
M006 7598 TIE14201	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M007 7599 L CSR	.2861	.0822	.0823	.1	-.1	.1	.0164	-.1710	.2567	93: 1
M009 WETT TIE14201	-.0024	.0005	-.0029	-.7	.1	-.9	.0010	-.0002	-.0037	93: 1
M009 WETT P EMR	.0023	-.0037	.0075	.4	.3	1.2	-.0041	.0039	.0066	96: 1
M009 WETT P GFZ	-.0108	-.0148	.0158	.1	.3	.3	-.0120	.0208	.0030	94:365
M009 WETT P CODE	-.0021	-.0016	-.0018	-.2	.3	.4	-.0011	.0007	-.0029	95: 76
M009 WETT P04 EUR	.0002	-.0040	-.0069	-.1	-3.5	-3.0	-.0039	-.0040	-.0057	96: 90
M009 WETT P MIT	.0057	-.0058	-.0038	.4	-.1	-1.7	-.0070	-.0057	-.0001	97:151
M009 WETT P NCL	.0006	-.0021	.0028	-.1	.9	.7	-.0022	.0017	.0021	96: 1
M009 WETT P JPL	.0071	.0007	.0077	1.0	.0	.1	-.0009	-.0004	.0104	96: 1
M010 WIZR TIE14201	.0016	-.0007	.0038	.6	-.3	1.3	-.0011	.0014	.0038	93: 1
M010 WIZR P EMR	.0032	-.0048	.0053	-.1	.0	1.0	-.0054	.0019	.0054	96: 1
M010 WIZR P GFZ	-.0137	-.0162	.0140	-.4	-.6	-.2	-.0128	.0220	-.0005	94:365
M010 WIZR P CODE	.0004	-.0027	.0030	-.6	-.3	.6	-.0028	.0021	.0021	95: 76
M010 WIZR P04 EUR	-.0006	.0005	.0001	.1	.2	.3	.0006	.0004	-.0002	96: 90
M010 WIZR P03 EUR	-.0029	-.0026	-.0029	-1.1	.6	-.5	-.0018	.0007	-.0044	96:339
M010 WIZR P MIT	.0005	-.0011	.0034	-.1	.4	.3	-.0012	.0020	.0027	97:151
M010 WIZR P NCL	.0007	-.0039	.0013	.0	-1.2	.6	-.0039	.0010	.0008	96: 1
M010 WIZR P JPL	.0077	.0008	.0088	.5	.2	.6	-.0009	-.0001	.0117	96: 1
S002 7834 TIE14201	.0000	.0000	.0000	.1	.0	-.1	.0000	.0000	.0000	93: 1
S002 7834 L CSR	-.0165	-.0068	-.0194	-.6	-.9	1.3	-.0030	.0006	-.0262	93: 1
S002 7834 L GSFC	-.0088	-.0177	-.0066	-.2	-.2	-1.2	-.0153	.0052	-.0132	86:182
S004 7224 TIE14201	-.0007	.0001	-.0016	-.2	.0	-.5	.0003	-.0006	-.0016	93: 1
S004 7224 R GSFC	-.0016	-.0022	.0040	-1.3	-.3	-.9	-.0018	.0042	.0016	93: 1
S004 7224 R GIUB	.0008	-.0002	.0017	.0	.0	.0	-.0004	.0005	.0017	93: 1

S004 7224 R NOAA	.0053	.0004	.0170	1.8	.9	1.9	-.0008	.0071	.0163	93:	1
S018 8834 TIE14201	-.0003	-.0013	.0001	-1.1	-.4	.0	-.0012	.0005	-.0003	93:	1
S018 8834 L CSR	.0085	.0069	.0239	.7	.8	-.3	.0049	.0082	.0245	93:	1

Velocities

M004 7596 L CSR	-.0001	.0000	-.0003	-.1	.0	-.1	.0000	-.0001	-.0003
M005 7597 L CSR	-.0001	.0000	-.0003	.3	.0	-1.5	.0000	-.0001	-.0003
M007 7599 L CSR	-.0001	.0000	-.0003	1.8	.4	2.8	.0000	-.0001	-.0003
M009 WETT P EMR	.0010	-.0011	-.0005	.1	-.1	-.6	-.0013	-.0008	.0001
M009 WETT P GFZ	-.0024	.0001	-.0018	-.2	-.7	-1.4	.0007	.0006	-.0029
M009 WETT P CODE	-.0001	-.0008	.0010	.7	-1.3	1.2	-.0007	.0009	.0006
M009 WETT P04 EUR	.0062	.0009	-.0051	.8	.6	1.9	-.0005	-.0081	.0002
M009 WETT P MIT	-.0037	.0011	-.0042	.4	.1	-1.3	.0019	-.0002	-.0054
M009 WETT P NCL	.0281	-.0097	-.0134	1.3	-1.2	-.4	-.0157	-.0279	.0064
M009 WETT P JPL	.0007	-.0020	.0009	-.3	-.9	-.2	-.0021	.0004	.0008
M010 WIZR P EMR	.0000	-.0004	-.0006	.5	-.4	-.4	-.0004	-.0004	-.0005
M010 WIZR P GFZ	-.0025	.0001	-.0017	.0	-.3	-.1	.0007	.0007	-.0029
M010 WIZR P CODE	-.0004	-.0004	.0012	-.3	-1.1	1.7	-.0003	.0012	.0006
M010 WIZR P04 EUR	.0001	.0001	.0001	1.6	1.0	-.9	.0000	.0000	.0002
M010 WIZR P03 EUR	.0002	.0000	.0002	1.9	.4	1.8	.0000	.0000	.0002
M010 WIZR P MIT	-.0059	.0033	.0000	-.5	.2	-.3	.0045	.0037	-.0033
M010 WIZR P NCL	.0009	.0056	.0010	-.3	.8	-1.1	.0052	-.0010	.0021
M010 WIZR P JPL	-.0070	-.0040	-.0062	.4	-.2	.8	-.0023	.0017	-.0097
S002 7834 L CSR	-.0001	.0000	-.0003	-.6	-.1	-.9	.0000	-.0001	-.0003
S002 7834 L GSFC	.0022	.0016	-.0003	.3	-.1	.5	.0011	-.0021	.0014
S004 7224 R GSFC	-.0006	.0002	-.0009	-.5	1.3	-1.3	.0004	-.0002	-.0010
S004 7224 R GIUB	-.0010	.0003	-.0010	.0	.0	.0	.0005	.0000	-.0014
S004 7224 R NOAA	-.0002	.0003	.0014	.2	.5	.6	.0003	.0010	.0010
S018 8834 L CSR	-.0001	.0000	-.0003	.3	.0	.5	.0000	-.0001	-.0003

14202 HOHENBUNSTORF

Positions

M002 7600 R GSFC	.0150	.0001	.0163	.2	.1	.2	-.0027	-.0020	.0219	93:	1
M002 7600 R NOAA	.0019	-.0017	.0069	-.2	.0	.0	-.0020	.0029	.0065	93:	1

Velocities

M002 7600 R GSFC	.0011	.0007	-.0009	.0	.0	.0	.0005	-.0015	.0000
M002 7600 R NOAA	.0009	.0005	.0009	.0	.0	.0	.0003	-.0003	.0013

14208 OBERPFAFFENHOFEN

Positions

M001 OBER P GFZ	-.0022	-.0207	.0088	.7	-.1	-.2	-.0199	.0105	.0024	94:365
M001 OBER P03 EUR	-.0019	-.0020	-.0019	.0	.4	-.2	-.0016	.0004	-.0029	96:339
M001 OBER P MIT	.0018	-.0036	.0103	.1	.0	.6	-.0039	.0061	.0083	97:151
M001 OBER P NCL	.0055	-.0115	-.0030	.2	-.6	-.4	-.0124	-.0044	-.0001	96: 1
M001 OBER P JPL	.0702	.0133	.1014	.0	.0	.1	-.0007	.0145	.1231	96: 1

Velocities

M001 OBER P GFZ	-.0069	.0024	.0046	-.6	-1.1	-.2	.0037	.0077	-.0008
M001 OBER P03 EUR	.0000	.0000	.0000	.1	.0	.0	.0000	.0000	.0000
M001 OBER P MIT	-.0032	.0069	.0134	-.2	.6	.9	.0074	.0103	.0087
M001 OBER P NCL	-.0051	.0119	.0035	-.3	.0	-.3	.0127	.0043	.0008
M001 OBER P JPL	-.0778	-.0208	-.1110	.0	-.3	1.0	-.0052	-.0143	-.1363

14209 EFFELSBERG

Positions

S001 7203 R GSFC	-.0123	-.0029	-.0072	-1.5	-.6	.6	-.0014	.0051	-.0135	93:	1
S001 7203 R GSFC	.0066	-.0003	.0144	.0	.0	.0	-.0011	.0041	.0152	93:	1
S001 7203 R GIUB	.0011	-.0024	-.0065	.1	-.4	-1.1	-.0026	-.0048	-.0045	93:	1
S001 7203 R NOAA	.0100	.0006	.0195	.9	-.3	1.7	-.0006	.0046	.0214	93:	1

Velocities

S001 7203 R GSFC	-.0018	-.0002	-.0023	-.7	-.1	-.1	.0001	-.0001	-.0030
S001 7203 R GSFC	-.0157	.0178	.0058	.0	.0	.0	.0195	.0141	-.0041
S001 7203 R GIUB	.0036	.0014	.0070	.7	-.2	.2	.0009	.0015	.0078
S001 7203 R NOAA	-.0013	-.0007	-.0012	-.1	-.6	.1	-.0006	.0003	-.0018

14213 HOHENPEISSENBERG

Positions

M002 7630 R GSFC	.0117	-.0003	.0191	.1	.0	.0	-.0026	.0044	.0219	93: 1
M002 7630 R NOAA	.0008	-.0005	.0111	-.1	.0	.0	-.0006	.0070	.0087	93: 1

Velocities

M002 7630 R GSFC	.0001	-.0001	.0000	.0	.0	.0	-.0001	-.0001	.0000
M002 7630 R NOAA	-.0001	-.0001	.0016	.0	.0	.0	-.0001	.0012	.0011

14260 KARLSBURG

Positions

M001 7632 R GSFC	-.0045	-.0029	.0043	.0	.0	.1	-.0017	.0066	.0005	93: 1
M001 7632 R NOAA	.0054	-.0005	.0143	.0	.0	-.1	-.0017	.0043	.0146	93: 1

Velocities

M001 7632 R GSFC	-.0007	.0003	.0005	.0	.0	.0	.0004	.0008	.0000
M001 7632 R NOAA	-.0008	.0000	.0022	.0	.0	.0	.0002	.0019	.0013

14261 KIRSCHBERG

Positions

M001 7631 R GSFC	.0044	-.0029	.0109	.1	-.1	.0	-.0039	.0041	.0107	93: 1
M001 7631 R NOAA	.0039	-.0001	.0146	.0	.0	.1	-.0011	.0062	.0138	93: 1

Velocities

M001 7631 R GSFC	.0008	-.0009	-.0004	.0	.0	.0	-.0010	-.0007	.0000
M001 7631 R NOAA	.0007	-.0010	.0013	.0	.0	.0	-.0012	.0005	.0012

20702 BAR GIYYORA

Positions

M001 7530 L CSR	-.0122	.0040	.0097	.0	.0	.0	.0103	.0122	-.0014	93: 1
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Velocities

M001 7530 L CSR	-.0063	.0009	.0074	.0	-.1	-.3	.0043	.0088	-.0001
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20801 DIYARBAKIR

Positions

M001 7575 L CSR	-.0089	-.0062	-.0412	.0	.1	-.1	.0010	-.0258	-.0339	93: 1
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Velocities

M001 7575 L CSR	-.0046	-.0021	-.0021	.0	.0	.0	.0013	.0014	-.0051
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20802 YOZGAT

Positions

M001 7585 L CSR	-.0604	-.0235	-.0389	-.4	-.2	-.1	.0152	.0104	-.0733	93: 1
M001 7585 L GSFC	.0178	-.0058	-.0107	.1	.1	-.1	-.0149	-.0155	.0018	86:182

Velocities

M001 7585 L CSR	-.0132	-.0019	.0025	.2	.3	.0	.0060	.0096	-.0076
M001 7585 L GSFC	-.0021	.0051	.0005	.0	.5	.0	.0054	-.0004	.0013

20803 MELENGICLICK

Positions

M001 7580 L CSR	-.0366	-.0073	-.0183	-.2	.0	-.2	.0139	.0064	-.0386	93: 1
M001 7580 L GSFC	.0176	-.0094	-.0122	.2	.1	-.1	-.0175	-.0155	.0002	86:182

Velocities

M001 7580 L CSR	-.0072	-.0003	.0032	.3	.0	-.4	.0037	.0063	-.0030
M001 7580 L GSFC	-.0015	.0005	.0020	.2	.1	.1	.0012	.0022	.0004

20804 YIGILCA

Positions

M001 7587 L CSR	-.0083	.0052	.0085	.1	.0	-.1	.0087	.0093	.0023	93: 1
M001 7587 L GSFC	.0219	-.0002	-.0143	.2	.2	-.2	-.0116	-.0230	.0047	86:182

Velocities

M001 7587 L CSR	-.0020	.0036	.0105	.2	.1	-.3	.0042	.0079	.0070
M001 7587 L GSFC	-.0045	-.0003	.0023	.0	.1	.1	.0021	.0044	-.0015

20805 ANKARA

Positions

M001 7589 TIE20805	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M001 7589 L CSR	.1024	.1982	.1574	.9	1.4	.1	.1113	-.0033	.2493	93: 1
M002 ANKR TIE20805	-.0003	.0020	.0000	.0	.2	.0	.0018	-.0006	.0006	93: 1
M002 ANKR P CODE	.0020	-.0014	.0059	-.2	-.2	.0	-.0023	.0039	.0045	95: 76
M002 ANKR P04 EUR	.0153	.0075	.0126	1.5	-1.1	-.9	-.0020	-.0012	.0211	96: 90
M002 ANKR P03 EUR	-.0024	-.0028	-.0021	.1	.6	.0	-.0011	.0007	-.0040	96:339
M002 ANKR P MIT	-.0013	-.0019	.0027	-.5	.1	.1	-.0008	.0034	.0001	97:151
M002 ANKR P NCL	-.0004	-.0032	.0012	-.1	-.5	.0	-.0025	.0022	-.0009	96: 1
M002 ANKR P JPL	.0041	.0013	.0038	.3	.0	.9	-.0011	.0002	.0056	96: 1

Velocities

M001 7589 L CSR	-.0107	-.0422	.0311	.2	1.4	.0	-.0297	.0442	-.0045
M002 ANKR P CODE	-.0040	-.0013	.0013	-1.4	-1.4	-2.6	.0011	.0037	-.0023
M002 ANKR P04 EUR	.0087	.0014	-.0096	.5	.0	.3	-.0035	-.0125	.0000
M002 ANKR P03 EUR	-.0014	.0033	-.0007	-.7	.0	.2	.0035	-.0009	.0000
M002 ANKR P MIT	-.0088	.0032	-.0012	-.4	.1	-.3	.0075	.0027	-.0051
M002 ANKR P NCL	-.0004	.0028	-.0020	-.2	-.3	.3	.0026	-.0022	-.0004
M002 ANKR P JPL	-.0019	-.0064	-.0024	.1	-.3	.7	-.0044	.0014	-.0054

21501 EVEREST

Positions

S001 EVEB D GRGS	.0564	-.0255	-.0249	.5	-.3	-.4	-.0577	-.0115	-.0314	93: 1
S001 EVEB D CSR	-.0241	.0078	.0332	-.4	.1	.6	.0244	.0262	.0213	93: 1
S001 EVEB D IGN	.0146	-.0134	-.0303	.2	-.5	-1.2	-.0153	-.0209	-.0253	95:100

Velocities

S001 EVEB D GRGS	-.0190	.0070	.0140	.4	-.1	.8	.0194	.0095	.0118
S001 EVEB D CSR	-.0116	-.0068	.0128	-.9	-.1	1.6	.0112	.0147	-.0005
S001 EVEB D IGN	.0009	.0070	.0096	-.1	.9	-.1	-.0005	.0052	.0107

21601 BEIJING

Positions

S004 7249 L CSR	.0420	-.1938	-.2444	.1	-.1	-.2	.0468	-.0655	-.3043	93: 1
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Velocities

S004 7249 L CSR	.0485	.0681	-.0148	.0	.1	.0	-.0734	-.0370	.0214
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21602 WUHAN

Positions

M001 WUHN P CODE	-.0061	-.0092	.0094	.5	-.4	-.4	.0094	.0111	-.0003	95: 76
M001 WUHN P MIT	.0060	-.0089	-.0033	.4	-1.3	-.6	-.0018	.0025	-.0107	97:151
M001 WUHN P NCL	-.0090	.0082	.0116	-.2	-.2	.2	.0048	.0043	.0155	96: 1
M001 WUHN P JPL	-.0271	.0246	.0281	-.3	-.1	.3	.0146	.0071	.0432	96: 1
S003 7236 L CSR	.0024	-.0015	-.0175	.1	.1	-.1	-.0015	-.0139	-.0109	93: 1

Velocities

M001 WUHN P CODE	.0055	-.0006	.0049	.3	.0	.0	-.0048	.0057	.0001
M001 WUHN P MIT	.0081	-.0213	-.0139	1.0	-1.0	-.2	.0014	-.0004	-.0266
M001 WUHN P NCL	.0084	-.0012	-.0091	-.6	.3	.0	-.0072	-.0055	-.0085
M001 WUHN P JPL	.0217	-.0033	-.0166	-1.1	.4	.1	-.0184	-.0082	-.0187
S003 7236 L CSR	.0096	.0068	.0020	.1	.1	-.1	-.0115	.0005	.0030

21604 PURPLE MOUNTAIN

Positions

S003 PURA D GRGS	-.0036	.0196	.0015	.0	.4	.0	-.0063	-.0088	.0168	93: 1
S003 PURA D CSR	-.0273	-.0094	-.0141	-.4	.0	-.2	.0285	-.0146	-.0034	93: 1
S003 PURA D IGN	.0092	.0044	-.0049	.3	.3	-.4	-.0101	-.0038	-.0031	95:100

Velocities

S003 PURA D GRGS	-.0005	-.0159	-.0021	.1	-.7	.3	.0081	.0055	-.0127
S003 PURA D CSR	.0169	.0034	.0032	.1	.0	-.2	-.0165	.0055	-.0027
S003 PURA D IGN	-.0002	.0004	.0072	-.2	.3	.0	.0000	.0058	.0042

21605 SHANGHAI

Positions

M002 SHAO P CODE	-.0038	-.0215	-.0009	.1	.0	-.4	.0144	.0077	-.0145	95: 76
M002 SHAO P MIT	.0046	-.0004	.0009	-.1	.0	-.2	-.0038	.0022	-.0019	97:151
M002 SHAO P NCL	-.0011	-.0024	.0016	.2	.3	.1	.0021	.0021	-.0004	96: 1
M002 SHAO P JPL	-.0031	.0024	.0010	-1.0	.0	-.1	.0014	-.0010	.0036	96: 1
S001 7837 TIE21605	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
S001 7837 L CSR	-.0217	.0178	.0198	.0	.2	.1	.0094	.0033	.0329	93: 1
S001 7837 L GSFC	.0183	-.0339	.0575	.1	-.3	.9	.0019	.0691	-.0033	86:182
S008 7226 R GSFC	.0015	.0063	.0182	.0	.0	.1	-.0045	.0132	.0133	93: 1
S009 7227 TIE21605	-.0001	-.0004	.0007	.0	-.1	.2	.0003	.0007	.0001	93: 1
S009 7227 R GSFC	-.0010	.0013	.0061	-.2	.1	-.3	.0002	.0044	.0046	93: 1
S009 7227 R GIUB	-.0180	-.0525	.0012	.1	-1.0	-.2	.0426	.0194	-.0298	93: 1
S009 7227 R NOAA	.0050	-.0035	.0112	.3	.2	-.2	-.0025	.0125	.0010	93: 1

Velocities

M002 SHAO P CODE	.0012	.0126	.0149	.0	.2	.6	-.0076	.0075	.0163
M002 SHAO P MIT	-.0008	.0006	-.0031	.2	-.4	-1.2	.0003	-.0031	-.0008
M002 SHAO P NCL	.0030	.0026	-.0036	-.2	-.7	-.4	-.0040	-.0034	-.0013
M002 SHAO P JPL	.0027	.0018	.0028	-1.9	-1.1	-.8	-.0033	.0024	.0016
S001 7837 L CSR	-.0053	.0107	.0063	.0	.4	-.3	-.0010	-.0008	.0134
S001 7837 L GSFC	-.0057	.0070	-.0014	-1.0	-.1	1.2	.0013	-.0058	.0069
S008 7226 R GSFC	.0017	.0020	.0002	.3	.7	.8	-.0025	-.0003	.0008
S009 7227 R GSFC	.0017	.0019	.0002	.5	-.7	-.2	-.0025	-.0003	.0007
S009 7227 R GIUB	-.0071	-.0046	.0010	.0	.0	.0	.0085	.0010	.0003
S009 7227 R NOAA	-.0004	.0018	.0074	-.5	.4	.5	-.0006	.0054	.0053

21611 CHANGCHUN

Positions

S001 7237 L CSR	-.0001	-.1165	-.0850	.1	-.1	.0	.0676	.0043	-.1273	93: 1
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Velocities

S001 7237 L CSR	.0554	.0919	-.0183	.0	.1	.0	-.0984	-.0428	.0181
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21612 URUMQI

Positions

S001 7330 R GSFC	-.0025	.0001	-.0339	.0	.0	-.6	.0025	-.0246	-.0233	93:	1
S001 7330 R NOAA	-.0030	.0478	.1042	-.1	.3	.6	.0053	.0429	.1062	93:	1

Velocities

S001 7330 R GSFC	.0007	-.0062	.0065	.0	.0	.0	-.0010	.0090	.0000
S001 7330 R NOAA	-.0016	-.0091	.0107	.0	.0	.0	.0012	.0141	.0007

21613 LHASA

Positions

M001 LHAS P GFZ	.0050	-.0144	.0080	.4	-.3	-.8	-.0048	.0141	-.0086	94:	365
M001 LHAS P CODE	-.0085	-.0042	.0099	-.3	.2	.2	.0086	.0106	.0014	95:	76
M001 LHAS P MIT	.0026	-.0049	-.0023	-.2	-1.3	-1.0	-.0025	.0005	-.0054	97:	151
M001 LHAS P NCL	-.0021	.0050	.0059	-.2	.9	.5	.0020	.0027	.0073	96:	1
M001 LHAS P JPL	.0003	.0066	.0041	-.1	.6	.5	-.0005	.0003	.0077	96:	1

Velocities

M001 LHAS P GFZ	-.0130	.0000	.0008	-.5	.4	.2	.0130	.0006	.0006
M001 LHAS P CODE	.0048	.0020	.0076	.2	.1	.3	-.0048	.0057	.0054
M001 LHAS P MIT	-.0033	-.0072	-.0032	.1	-2.2	-.1	.0035	.0008	-.0078
M001 LHAS P NCL	.0032	-.0052	-.0068	.0	-.2	-.2	-.0031	-.0033	-.0079
M001 LHAS P JPL	.0001	-.0061	-.0020	-.3	-.1	-.1	.0000	.0013	-.0063

21614 SHAANXI

Positions

M001 XIAN P CODE	.0000	-.0007	.0245	-.1	.2	.0	.0002	.0207	.0133	95:	76
M001 XIAN P NCL	-.0196	-.0042	.0149	-.2	-.5	.3	.0198	.0109	.0105	96:	1
M001 XIAN P JPL	.0345	-.1448	-.0981	.3	-.6	.2	.0150	.0026	-.1776	96:	1

Velocities

M001 XIAN P CODE	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000
M001 XIAN P NCL	.0206	.0063	-.0146	.0	.2	.5	-.0215	-.0116	-.0089
M001 XIAN P JPL	-.0483	.1828	.1288	.0	-.3	.2	-.0146	-.0001	.2283

21701 KASHIMA

Positions

S001 1856 R GSFC	-.0007	-.0011	.0070	-.2	-.1	-.2	.0013	.0057	.0040	93:	1
S001 1856 R GIUB	-.0281	.0076	.0977	-.6	.6	-.2	.0119	.0635	.0788	93:	1
S001 1856 R NOAA	.0092	-.0072	.0053	1.1	-.5	-.1	-.0003	.0111	-.0063	93:	1
S004 1857 R GSFC	-.0095	.0043	.0134	-1.4	.4	.2	.0027	.0049	.0160	93:	1
S004 1857 R GIUB	-.0281	.0064	.1030	-.7	.5	.4	.0129	.0682	.0814	93:	1
S004 1857 R NOAA	.0040	-.0017	.0073	.3	.4	-.4	-.0012	.0084	.0009	93:	1

Velocities

S001 1856 R GSFC	.0020	.0001	-.0033	1.5	-.1	-.1	-.0014	-.0018	-.0031
S001 1856 R GIUB	-.0014	.0020	.0204	.1	-.2	-.1	-.0007	.0151	.0139
S001 1856 R NOAA	.0012	-.0005	.0035	.0	.3	.1	-.0004	.0035	.0011
S004 1857 R GSFC	-.0012	.0014	-.0019	-.4	-.1	-.6	-.0003	-.0026	.0004
S004 1857 R GIUB	-.0014	.0020	.0204	.0	.0	.0	-.0007	.0151	.0139
S004 1857 R NOAA	-.0079	.0061	.0105	-2.0	1.1	-.1	.0003	.0026	.0143

21702 MIZUSAWA

Positions

S009 7314 R GSFC	.0062	.0077	.0123	.0	.1	.0	-.0099	.0096	.0078	93:	1
S010 7324 R GSFC	-.0097	.0040	.0174	-.2	.0	.2	.0030	.0071	.0188	93:	1
S010 7324 R NOAA	-.0034	-.0112	.0040	-.1	-.4	-.3	.0108	.0059	-.0008	93:	1

Velocities
S009 7314 R GSFC .0079 .0082 .0012 .5 .2 .0 -.0113 .0016 .0000
S010 7324 R GSFC .0071 .0061 .0021 .5 .0 .0 -.0092 .0027 .0000
S010 7324 R NOAA .0062 .0052 .0045 .0 .0 .0 -.0080 .0045 .0017

21704 TOKYO

Positions
S002 7308 L CSR .0145 -.0078 -.0358 .0 .0 .0 -.0035 -.0197 -.0340 93: 1

Velocities
S002 7308 L CSR -.0014 .0062 .0097 .0 .1 .0 -.0038 .0049 .0098

21718 MIYAZAKI

Positions
S001 7312 R GSFC -.0102 -.0003 .0229 .0 .0 .0 .0078 .0160 .0177 93: 1

Velocities
S001 7312 R GSFC .0002 .0003 -.0002 .0 .0 .0 -.0003 -.0002 .0000

21725 NOBEYAMA

Positions
S001 7244 R GSFC .0472 -.1238 -.0857 .1 -.5 -.2 .0614 -.0005 -.1453 93: 1
S001 7244 R NOAA .0065 -.0031 -.0028 .1 .1 -.1 -.0020 .0018 -.0072 93: 1

Velocities
S001 7244 R GSFC .0215 -.0505 -.0420 .0 .0 -.1 .0236 -.0049 -.0648
S001 7244 R NOAA -.0074 .0044 .0000 .0 .0 .0 .0016 -.0049 .0069

21726 SIMOSATO

Positions
S001 7838 L CSR -.0066 -.0001 -.0032 .1 .4 .0 .0046 -.0052 .0021 93: 1
S001 7838 L GSFC .0229 .0364 .0104 .7 1.9 -.1 -.0421 .0038 .0132 86:182

Velocities
S001 7838 L CSR -.0027 -.0026 .0033 .1 1.0 -.2 .0038 .0026 .0019
S001 7838 L GSFC -.0038 -.0059 -.0011 -.2 -.3 .1 .0069 -.0002 -.0017

21729 USUDA

Positions
S001 7246 R GSFC .0351 .0305 .0275 .2 .7 .3 -.0461 .0257 .0114 93: 1
S007 USUD P GFZ .0021 .0006 .0200 1.7 1.5 1.7 -.0018 .0168 .0109 94:365
S007 USUD P CODE -.0029 -.0190 -.0011 1.2 -.4 -1.5 .0161 .0053 -.0091 95: 76
S007 USUD P MIT .0054 -.0032 .0035 .2 -.7 1.2 -.0012 .0065 -.0029 97:151
S007 USUD P NCL -.0017 -.0022 .0022 .4 -.2 .3 .0028 .0019 .0011 96: 1
S007 USUD P JPL .0001 .0014 -.0017 -.1 .1 -.7 -.0011 -.0019 -.0003 96: 1

Velocities
S001 7246 R GSFC .0168 .0132 .0052 .6 .2 .0 -.0210 .0064 .0000
S007 USUD P GFZ -.0097 -.0099 -.0073 -.2 -1.1 -1.1 .0138 -.0063 -.0038
S007 USUD P CODE -.0035 .0140 .0178 -2.0 .8 2.4 -.0082 .0074 .0202
S007 USUD P MIT -.0011 .0017 -.0029 .0 .1 -.7 -.0005 -.0035 -.0002
S007 USUD P NCL .0038 .0035 -.0050 -.5 .3 -1.3 -.0051 -.0037 -.0033
S007 USUD P JPL .0012 -.0044 .0040 .0 -.4 1.2 .0025 .0054 -.0007

21730 TSUKUBA

Positions
S001 7311 TIE21730 .0000 .0000 .0000 .0 .0 .0 .0000 .0000 .0000 93: 1

S001 7311 R GSFC	-.0194	.0031	.0267	-.2	-.2	.0	.0100	.0116	.0293	93:	1
S005 TSKB TIE21730	-.0003	-.0003	-.0001	-.1	-.1	.0	.0004	-.0001	.0000	93:	1
S005 TSKB P EMR	-.0085	-.0141	.0046	-.6	-1.5	.5	.0162	.0052	.0006	96:	1
S005 TSKB P GFZ	.0037	-.0014	.0181	.3	.3	.3	-.0013	.0169	.0077	94:	365
S005 TSKB P CODE	-.0011	-.0191	-.0028	1.1	.5	-1.2	.0154	.0045	-.0108	95:	76
S005 TSKB P MIT	.0073	-.0037	-.0026	.5	-.5	-.1	-.0018	.0027	-.0080	97:	151
S005 TSKB P NCL	-.0034	-.0017	.0033	-.2	-.7	.1	.0035	.0018	.0032	96:	1
S005 TSKB P JPL	-.0019	.0004	.0002	.0	-.1	.2	.0009	-.0008	.0015	96:	1

Velocities

S001 7311 R GSFC	.0036	-.0004	-.0023	.5	.5	.2	-.0020	-.0001	-.0038
S005 TSKB P EMR	-.0100	.0091	.0102	-1.7	.2	.6	-.0005	.0003	.0170
S005 TSKB P GFZ	-.0104	-.0083	-.0067	.5	-.1	-.4	.0130	-.0069	-.0018
S005 TSKB P CODE	-.0030	.0124	.0172	-.7	.1	.5	-.0075	.0079	.0184
S005 TSKB P MIT	.0029	.0005	-.0078	.6	.3	-2.0	-.0022	-.0052	-.0062
S005 TSKB P NCL	.0056	.0038	-.0055	-.7	1.0	-1.1	-.0065	-.0033	-.0047
S005 TSKB P JPL	-.0014	-.0013	.0030	-.5	-.2	.0	.0018	.0023	.0019

21731 SHINTOTSUGAWA

Positions

S001 7315 R GSFC	-.0058	-.0009	.0165	.0	.0	.0	.0043	.0092	.0143	93:	1
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Velocities

S001 7315 R GSFC	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000
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21732 CHICHIJIMA

Positions

S001 7316 TIE21732	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93:	1
S001 7316 R GSFC	-.0097	-.0013	.0184	.0	.0	.0	.0069	.0132	.0145	93:	1
S002 7844 TIE21732	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93:	1

Velocities

S001 7316 R GSFC	-.0001	.0000	-.0002	.0	.0	.0	.0000	-.0002	.0000
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21733 MINAMI TORI SIMA

Positions

S002 7310 R GSFC	-.0090	-.0005	.0057	-.2	-.2	-.2	.0044	.0019	.0095	93:	1
S002 7310 R NOAA	.0099	-.0013	.0104	.1	.0	.4	-.0032	.0134	-.0044	93:	1

Velocities

S002 7310 R GSFC	.0009	.0004	-.0032	.0	.0	.1	-.0008	-.0027	-.0019
S002 7310 R NOAA	-.0026	.0033	.0024	-.1	-.1	-.1	-.0018	.0007	.0044

21737 SAGARA

Positions

S001 7325 R GSFC	-.0007	-.0011	.0067	.0	.0	.0	.0013	.0057	.0036	93:	1
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Velocities

S001 7325 R GSFC	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000
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21738 DAITO

Positions

S001 7326 R GSFC	-.0070	-.0025	.0099	.0	.0	.0	.0070	.0077	.0068	93:	1
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Velocities

S001 7326 R GSFC	.0000	.0001	.0000	.0	.0	.0	-.0001	.0000	.0000
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22006 MANILLE

Positions

S001 MANA D GRGS	-.0204	.0007	.0066	-.2	.2	.3	.0171	.0036	.0124	93: 1
S001 MANA D CSR	.0385	.0143	-.0096	.3	-.1	-.4	-.0404	-.0073	-.0098	93: 1
S001 MANA D IGN	.0129	-.0100	-.0092	.2	-.1	-.7	-.0059	-.0050	-.0171	95:100

Velocities

S001 MANA D GRGS	.0000	-.0028	.0006	-.3	.1	.6	.0015	.0012	-.0022
S001 MANA D CSR	.0014	-.0035	-.0027	.3	.1	-.5	.0006	-.0017	-.0043
S001 MANA D IGN	.0056	.0009	.0069	.2	.2	.0	-.0053	.0072	-.0003

22306 BANGALORE

Positions

M001 IIISC P CODE	-.0035	-.0064	.0074	.0	.0	.0	.0021	.0088	-.0052	95: 76
M002 IIISC P EMR	-.0009	.0197	.0077	.1	.6	.7	.0051	.0033	.0203	96: 1
M002 IIISC P GFZ	-.0015	.0113	.0295	.1	.8	.5	.0039	.0263	.0170	94:365
M002 IIISC P CODE	.0177	.0489	.0249	1.8	2.6	.6	-.0067	.0126	.0559	95: 76
M002 IIISC P MIT	.0057	.0217	.0092	.5	3.8	.4	-.0009	.0039	.0239	97:151
M002 IIISC P JPL	.0057	.0394	.0079	.4	2.8	.0	.0029	-.0013	.0405	96: 1

Velocities

M001 IIISC P CODE	-.0054	-.0005	.0063	-.3	.0	-.5	.0051	.0065	-.0001
M002 IIISC P EMR	.0022	.0121	-.0067	.0	2.3	-.2	.0004	-.0092	.0104
M002 IIISC P GFZ	.0010	.0010	-.0064	.5	.0	-.5	-.0007	-.0065	-.0003
M002 IIISC P CODE	-.0054	-.0004	.0063	.0	-.3	.1	.0051	.0065	-.0001
M002 IIISC P MIT	.0099	.0585	.0164	2.3	6.2	.1	.0029	.0026	.0614
M002 IIISC P JPL	.0058	.0076	.0068	.9	2.1	.4	-.0041	.0047	.0100

23101 CIBINONG

Positions

S001 CIBB D GRGS	-.0638	.0212	.0296	-.5	.4	.9	.0549	.0338	.0352	93: 1
S001 CIBB D CSR	-.0084	-.0063	-.0037	.0	-.2	-.3	.0099	-.0041	-.0031	93: 1
S001 CIBB D IGN	.0317	-.0110	-.0180	1.0	-.2	-.8	-.0272	-.0201	-.0175	95:100

Velocities

S001 CIBB D GRGS	.0092	-.0094	-.0036	-.7	.1	1.2	-.0061	-.0049	-.0112
S001 CIBB D CSR	.0266	.0014	-.0140	.7	.1	-.8	-.0259	-.0146	-.0048
S001 CIBB D IGN	-.0042	.0036	.0101	-.3	.3	-.1	.0030	.0106	.0035

23501 COLOMBO

Positions

S001 COLA D CSR	-.0078	-.0036	.0016	-.2	.0	.1	.0070	.0022	-.0047	93: 1
S001 COLA D IGN	.0214	-.0108	-.0091	.9	.0	-.7	-.0230	-.0082	-.0079	95:100

Velocities

S001 COLA D CSR	-.0294	.0040	.0082	-1.3	.0	.7	.0296	.0083	-.0002
S001 COLA D IGN	-.0043	-.0029	.0096	-.1	-.1	.0	.0037	.0099	-.0025

23601 TAIPEI

Positions

M001 TAIW P EMR	-.0068	-.0141	-.0001	-.3	-1.1	.8	.0131	.0035	-.0077	96: 1
M001 TAIW P GFZ	.0101	.0005	.0175	1.4	1.5	-1.4	-.0089	.0179	.0029	94:365
M001 TAIW P CODE	-.0040	-.0216	.0025	-.8	-3.2	2.1	.0147	.0092	-.0138	95: 76
M001 TAIW P CODE	-.0022	-.0229	.0041	-.1	.0	-.1	.0139	.0115	-.0149	95: 76
M001 TAIW P MIT	.0114	-.0089	.0018	.9	-1.3	.7	-.0051	.0073	-.0115	97:151
M001 TAIW P NCL	-.0044	.0003	.0019	-.4	-.3	-1.0	.0036	.0007	.0032	96: 1
M001 TAIW P JPL	-.0078	.0034	-.0004	-1.0	-.3	-1.5	.0049	-.0033	.0061	96: 1

Velocities

M001 TAIW P EMR	-.0039	.0112	.0054	-1.1	.3	.0	-.0025	.0000	.0128
M001 TAIW P GFZ	-.0145	-.0053	-.0045	-.4	.3	-.7	.0152	-.0054	.0008
M001 TAIW P CODE	.0003	.0136	.0115	-.7	1.0	1.7	-.0074	.0056	.0152
M001 TAIW P CODE	.0004	.0136	.0116	.1	.0	.0	-.0074	.0057	.0152
M001 TAIW P MIT	.0070	-.0050	-.0012	1.4	-.7	.6	-.0034	.0023	-.0077
M001 TAIW P NCL	.0052	.0048	-.0001	-.6	.4	.8	-.0069	-.0007	.0012
M001 TAIW P JPL	-.0013	-.0023	.0036	.7	-.2	1.9	.0023	.0038	.0004

23902 TAEJON

Positions

M001 TAEJ P CODE	-.0176	.0019	.0235	-.7	1.2	1.6	.0128	.0117	.0238	95: 76
M001 TAEJ P CODE	-.0116	-.0042	.0186	.0	.0	.0	.0117	.0128	.0140	95: 76
M001 TAEJ P MIT	.0089	-.0055	.0012	.6	-.7	.6	-.0037	.0068	-.0072	97:151
M001 TAEJ P JPL	.0201	-.0320	-.0336	1.4	-1.4	-1.0	.0035	-.0047	-.0502	96: 1

Velocities

M001 TAEJ P CODE	.0061	.0018	.0031	.2	-.3	.3	-.0060	.0039	.0000
M001 TAEJ P CODE	.0061	.0018	.0031	.0	.0	.0	-.0060	.0039	.0000
M001 TAEJ P MIT	.0110	-.0026	-.0074	2.1	.0	-.6	-.0072	-.0007	-.0114
M001 TAEJ P JPL	.0063	-.0103	-.0093	1.6	-1.7	-1.5	.0013	-.0004	-.0152

24901 BAHRAIN

Positions

M002 BAHR P CODE	.0119	.0185	.0253	.3	1.1	1.1	.0025	.0130	.0308	95: 76
M002 BAHR P MIT	-.0237	-.0302	-.0110	-4.1	-3.2	-.2	-.0009	.0071	-.0392	97:151
M002 BAHR P NCL	-.0026	-.0230	-.0087	-.1	-.8	-.2	-.0126	.0007	-.0212	96: 1
M002 BAHR P JPL	-.0211	-.0266	-.0273	-.2	-.1	-.7	-.0006	-.0095	-.0425	96: 1

Velocities

M002 BAHR P CODE	-.0007	.0003	.0009	-.3	.6	-.2	.0008	.0009	.0002
M002 BAHR P MIT	-.0479	-.0481	-.0334	-1.2	-1.1	-1.0	.0065	-.0001	-.0754
M002 BAHR P NCL	.0134	.0378	.0180	1.8	.8	.3	.0137	-.0005	.0418
M002 BAHR P JPL	.0370	.0352	.0405	.5	-.4	.7	-.0062	.0140	.0634

30101 HELWAN

Positions

S001 7831 L CSR	-.0091	.0027	.0071	.0	.0	.0	.0070	.0094	-.0020	93: 1
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Velocities

S001 7831 L CSR	-.0038	.0023	.0074	.1	.0	-.3	.0039	.0074	.0019
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30302 HARTEBEEESTHOEK

Positions

M002 HART TIE30302	-.0068	-.0107	.0153	.0	.0	.0	-.0063	.0090	-.0166	93: 1
M002 HART P EMR	.0163	-.0222	-.0129	.6	.4	-.6	-.0272	-.0098	.0093	96: 1
M002 HART P GFZ	-.0192	-.0053	.0024	-.9	.5	-3.5	.0043	-.0063	-.0186	94:365
M002 HART P CODE	.0067	.0009	.0007	.6	-.7	-.3	-.0023	.0034	.0054	95: 76
M002 HART P MIT	.0005	.0022	-.0006	-.8	.4	-.3	.0017	.0001	.0016	97:151
M002 HART P JPL	-.0109	-.0081	.0096	-1.1	-.7	1.4	-.0021	.0028	-.0163	96: 1
M003 7501 L CSR	-.0009	.0218	.0281	-.1	-.2	-.1	.0197	.0294	-.0039	93: 1
M004 HRAO P CODE	-.0038	.0066	.0086	-.2	.2	-.1	.0076	.0076	-.0040	95: 76
M004 HRAO P MIT	-.0017	-.0008	.0046	-.4	.5	-.1	.0001	.0033	-.0037	97:151
M004 HRAO P NCL	-.0288	-.0252	.0230	-.1	-.1	.0	-.0090	.0045	-.0436	96: 1
M004 HRAO P JPL	.0860	.0300	-.0392	.1	.0	.0	-.0134	.0041	.0982	96: 1
M007 HARK TIE30302	-.0068	-.0107	.0153	.0	.0	.0	-.0063	.0090	-.0166	93: 1
S001 7232 TIE30302	.0000	.0000	.0000	.7	1.1	-1.5	.0000	.0000	.0000	93: 1
S001 7232 R GSFC	-.0142	-.0024	-.0029	-.3	-.5	-.3	.0045	-.0086	-.0111	93: 1
S001 7232 R GIUB	-.0866	.0304	-.0103	-.7	.4	-.9	.0672	-.0366	-.0518	93: 1
S001 7232 R NOAA	.0021	.0115	.0263	-.5	.9	1.0	.0091	.0268	-.0050	93: 1

S005 HBLA D IGN	.7165	-1.0195	-.0646	.0	-.1	.0	-1.2357	.0119	.1725	95:100
S202 HBKA TIE30302	.0127	.0080	.0085	1.3	.8	.8	.0012	.0141	.0097	93: 1
S202 HBKA D GRGS	-.0293	-.0065	.0039	-.6	-.2	.1	.0079	-.0092	-.0277	93: 1
S202 HBKA D CSR	-.0132	-.0096	-.0267	-.3	-.3	-.7	-.0024	-.0311	-.0029	93: 1
S202 HBKA D IGN	-.0189	-.0319	.0182	-.6	-1.4	1.1	-.0194	.0026	-.0364	95:100

Velocities

M002 HART P EMR	.0069	-.0017	.0011	1.0	-.3	.6	-.0047	.0033	.0043
M002 HART P GFZ	.0028	-.0015	.0040	.7	.8	-1.1	-.0026	.0044	-.0001
M002 HART P CODE	.0035	.0089	-.0013	1.4	.4	.4	.0062	.0020	.0071
M002 HART P MIT	-.0026	.0096	-.0007	1.4	1.1	.1	.0097	.0003	.0023
M002 HART P JPL	.0022	.0000	.0032	.4	-.2	1.9	-.0010	.0038	.0004
M003 7501 L CSR	.0063	-.0035	-.0182	.1	.0	-.1	-.0060	-.0146	.0115
M004 HRAO P CODE	-.0002	.0005	-.0016	.1	.6	-.9	.0006	-.0014	.0007
M004 HRAO P MIT	.0004	.0028	.0042	1.1	.3	.2	.0023	.0045	-.0003
M004 HRAO P NCL	.0463	.0308	-.0314	.5	-.2	.0	.0058	-.0040	.0635
M004 HRAO P JPL	-.0790	-.0344	.0409	.7	-.2	1.1	.0062	-.0007	-.0952
S001 7232 R GSFC	.0053	-.0010	.0031	.4	-1.1	1.0	-.0034	.0046	.0024
S001 7232 R GIUB	-.0019	.0058	.0021	.9	.2	.0	.0061	.0023	.0000
S001 7232 R NOAA	.0035	.0047	.0060	.7	.3	.8	.0025	.0078	.0021
S005 HBLA D IGN	-.3249	.4536	.0397	.0	.0	.0	.5527	.0022	-.0864
S202 HBKA D GRGS	.0045	.0027	-.0070	-.8	.0	-.9	.0003	-.0040	.0078
S202 HBKA D CSR	.0084	.0045	-.0113	.0	-.1	-2.2	.0001	-.0060	.0135
S202 HBKA D IGN	-.0102	.0021	.0100	-.6	.4	-.6	.0066	.0055	-.0116

30313 MARION ISLAND

Positions

S001 MARA D GRGS	-.0034	.0082	-.0149	-.1	.2	-.2	.0085	-.0085	.0125	93: 1
S001 MARA D CSR	-.0147	-.0175	.0039	-.2	-.4	.2	-.0048	-.0137	-.0181	93: 1
S001 MARA D IGN	.0064	-.0152	.0051	1.1	.0	.1	-.0159	.0004	-.0066	95:100

Velocities

S001 MARA D GRGS	.0015	.0029	.0008	.0	.7	-.1	.0014	.0027	.0014
S001 MARA D CSR	-.0069	-.0003	-.0077	-.8	-.2	-.2	.0040	-.0094	.0017
S001 MARA D IGN	-.0019	-.0044	.0119	-.6	-.2	-.4	-.0023	.0050	-.0115

30314 SUTHERLAND

Positions

M001 7502 L CSR	.0812	.0992	.0325	.2	.0	.1	.0639	.0870	.0764	93: 1
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Velocities

M001 7502 L CSR	-.1100	-.1115	-.0210	-.2	-.1	-.2	-.0652	-.0940	-.1091
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30602 ASCENSION

Positions

M001 ASC1 P GFZ	-.0146	-.0257	.0076	-.3	-.2	.5	-.0285	.0065	-.0088	94:365
M001 ASC1 P CODE	-.0025	.0107	-.0069	.1	.1	-.3	.0098	-.0075	-.0040	95: 76
M001 ASC1 P MIT	-.0088	.0021	-.0038	-1.1	.2	-.2	-.0002	-.0050	-.0085	97:151
M001 ASC1 P NCL	.0040	-.0037	.0027	.1	-.1	-.1	-.0026	.0033	.0043	96: 1
M001 ASC1 P JPL	.0083	-.0055	.0027	.2	-.1	.6	-.0033	.0040	.0090	96: 1
S004 ASDB D IGN	-.0025	-.0224	-.0689	.0	.0	.0	-.0223	-.0678	.0126	95:100

Velocities

M001 ASC1 P GFZ	.0068	.0114	.0028	-.3	-.2	-1.3	.0127	.0033	.0034
M001 ASC1 P CODE	-.0002	-.0018	.0015	.1	-.1	-.2	-.0018	.0015	.0000
M001 ASC1 P MIT	-.0104	.0073	.0004	.0	.6	.4	.0044	-.0012	-.0118
M001 ASC1 P NCL	-.0012	.0037	-.0039	.5	-.5	.9	.0032	-.0042	-.0015
M001 ASC1 P JPL	-.0017	.0008	-.0016	.5	-.3	.6	.0003	-.0019	-.0016
S004 ASDB D IGN	-.0067	.0190	.0440	.0	.0	.0	.0167	.0421	-.0172

30604 TRISTAN DA CUNHA

Positions

S001 TRIA D GRGS	-.0036	-.0397	-.0208	-.2	-.7	-.5	-.0395	-.0136	.0165	93: 1
S001 TRIA D CSR	.0018	.0257	.0360	.0	.4	.9	.0255	.0265	-.0246	93: 1
S001 TRIA D IGN	-.0102	.0188	-.0223	-.1	.9	-1.4	.0162	-.0262	.0023	95:100

Velocities

S001 TRIA D GRGS	.0052	-.0009	.0127	.5	-1.1	1.2	.0003	.0133	-.0035
S001 TRIA D CSR	.0087	-.0127	.0168	.5	-.1	2.1	-.0105	.0202	-.0011
S001 TRIA D IGN	-.0074	.0025	.0130	-.6	-.4	-.1	.0009	.0057	-.0140

30606 SAINTE-HELENE

Positions

S002 HELA D GRGS	.0063	-.0218	.0053	.1	-.2	.2	-.0211	.0075	.0067	93: 1
S002 HELA D CSR	.0135	.0324	.0227	.1	.3	.3	.0335	.0246	.0036	93: 1
S002 HELA D IGN	-.0064	.0138	-.0226	.1	.4	-1.7	.0131	-.0238	-.0012	95:100

Velocities

S002 HELA D GRGS	.0004	-.0176	.0100	.3	-1.3	1.7	-.0174	.0102	-.0007
S002 HELA D CSR	-.0109	-.0009	.0094	-.5	.5	.8	-.0019	.0061	-.0129
S002 HELA D IGN	-.0015	.0042	.0076	.1	.1	.0	.0040	.0068	-.0040

30802 DIEGO GARCIA

Positions

M001 DGAR P CODE	-.0056	-.0132	.0203	-.2	-.1	-.7	.0014	.0183	-.0167	95: 76
M001 DGAR P JPL	-.0395	.0149	.0323	-.3	.1	.8	.0422	.0324	-.0019	96: 1

Velocities

M001 DGAR P CODE	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000
M001 DGAR P JPL	.0532	-.0070	-.0312	.3	.1	1.3	-.0528	-.0298	.0133

31303 MASPALOMAS

Positions

M001 MASP P GFZ	-.0210	-.0125	.0053	-.8	.5	-.1	-.0177	.0126	-.0124	94:365
M001 MASP P CODE	.0026	.0001	.0021	.1	.2	.9	.0008	.0007	.0032	95: 76
M001 MASP P JPL	-.0055	.0082	-.0003	.1	.0	.3	.0064	.0033	-.0067	96: 1
M002 MAS1 P GFZ	-.0210	-.0123	.0054	-.1	.3	.3	-.0175	.0126	-.0125	94:365
M002 MAS1 P CODE	-.0021	-.0004	-.0020	-.1	-.2	-.2	-.0009	-.0009	-.0026	95: 76
M002 MAS1 P CODE	-.0041	-.0020	-.0024	-.1	-.1	.2	-.0030	-.0005	-.0042	95: 76
M002 MAS1 P04 EUR	.0061	-.0019	.0036	.4	-.2	.6	-.0002	.0002	.0073	96: 90
M002 MAS1 P03 EUR	.0022	-.0027	.0012	.4	.1	.5	-.0020	-.0003	.0031	96:339
M002 MAS1 P MIT	-.0036	-.0020	-.0049	-.9	-.4	.0	-.0029	-.0030	-.0048	97:151
M002 MAS1 P NCL	.0018	-.0032	.0024	.0	.1	-.7	-.0026	.0009	.0034	96: 1
M002 MAS1 P JPL	.0032	-.0037	.0037	.7	-.8	.6	-.0027	.0013	.0053	96: 1

Velocities

M001 MASP P GFZ	.0049	.0006	.0055	-.5	-.3	.7	.0018	.0027	.0066
M001 MASP P CODE	.0016	.0047	-.0002	.3	1.2	.4	.0050	-.0003	.0002
M001 MASP P JPL	-.0013	.0041	.0003	.3	.1	.0	.0036	.0014	-.0019
M002 MAS1 P GFZ	.0048	.0006	.0055	-.4	.1	.8	.0018	.0027	.0065
M002 MAS1 P CODE	.0016	.0047	-.0002	.0	.0	.0	.0050	-.0003	.0002
M002 MAS1 P CODE	.0016	.0047	-.0002	.1	.2	.0	.0050	-.0003	.0002
M002 MAS1 P04 EUR	.0073	.0183	-.0041	.2	1.0	.0	.0196	-.0046	.0000
M002 MAS1 P03 EUR	.0050	-.0010	-.0097	1.6	.3	-.2	.0004	-.0109	.0000
M002 MAS1 P MIT	-.0040	.0040	-.0058	-.3	.3	-.2	.0028	-.0029	-.0070
M002 MAS1 P NCL	-.0031	.0032	-.0026	-.3	-1.1	.4	.0023	-.0005	-.0046
M002 MAS1 P JPL	-.0005	-.0006	.0001	-.1	-.3	.2	-.0007	.0002	-.0002

31901 FLORES

Positions
 S001 FLOA D CSR -.0129 .0033 -.0125 .0 .0 .0 -.0039 -.0015 -.0177 93: 1
 S001 FLOA D IGN -.0304 -.0309 -.0502 -.2 -.2 -.5 -.0422 -.0324 -.0396 95:100

Velocities
 S001 FLOA D CSR .0210 -.0021 -.0069 .0 .0 .0 .0091 -.0174 .0104
 S001 FLOA D IGN -.0113 -.0081 -.0071 .2 -.2 .5 -.0128 -.0020 -.0087

31903 SANTA MARIA

Positions
 S001 SAMB TIE31903 -.0234 -.0043 .0101 .0 .0 .0 -.0139 .0197 -.0094 93: 1
 S001 SAMB D GRGS -.0388 .0656 .0279 -.3 .7 .5 .0429 .0602 -.0336 93: 1
 S001 SAMB D CSR .0402 -.0475 -.0220 -.2 -.9 -.4 -.0259 -.0516 .0319 93: 1
 S001 SAMB D IGN .0539 .0353 -.0068 .7 -.2 .0 .0548 -.0257 .0229 95:100

Velocities
 S001 SAMB D GRGS -.0141 -.0217 -.0109 -1.7 1.1 .7 -.0256 -.0066 -.0094
 S001 SAMB D CSR -.0202 -.0234 .0144 -.2 -1.3 .7 -.0298 .0165 .0020
 S001 SAMB D IGN -.0363 -.0286 .0135 .3 .0 -.1 -.0413 .0232 -.0084

31906 SAO MIGUEL

Positions
 M001 7609 TIE31903 .0000 .0000 .0000 .6 .1 -.3 .0000 .0000 .0000 93: 1
 M001 7609 R GSFC -.0060 -.0015 .0009 -.1 -.1 .1 -.0040 .0036 -.0032 93: 1
 M001 7609 R NOAA -.0108 .0062 .0005 -.3 .0 .1 .0009 .0080 -.0095 93: 1

Velocities
 M001 7609 R GSFC -.0015 -.0013 .0010 .0 .0 .0 -.0018 .0013 .0000
 M001 7609 R NOAA .0004 .0023 .0035 .0 .0 .0 .0022 .0031 .0016

32809 LIBREVILLE

Positions
 S002 LIBA D GRGS .0074 -.0165 -.0236 .1 -.1 -.6 -.0175 -.0236 .0044 93: 1
 S002 LIBA D CSR .0054 .0143 -.0001 .1 .1 -.2 .0132 -.0001 .0077 93: 1
 S002 LIBA D IGN -.0130 -.0015 .0114 -.2 .0 1.1 .0007 .0115 -.0130 95:100

Velocities
 S002 LIBA D GRGS -.0005 -.0019 .0016 .2 -.2 -.9 -.0018 .0016 -.0008
 S002 LIBA D CSR -.0060 .0145 .0142 -.2 .4 .3 .0153 .0142 -.0034
 S002 LIBA D IGN -.0015 .0003 .0096 .2 .1 -.3 .0006 .0096 -.0013

33201 MALINDI

Positions
 M001 MALI P EMR -.0145 .0190 -.0041 -.4 1.3 .3 .0239 -.0041 .0014 96: 1
 M001 MALI P GFZ .0003 -.0297 .0016 .1 -.6 -.4 -.0229 .0006 -.0189 94:365
 M001 MALI P CODE -.0014 -.0030 .0046 .6 -.1 .1 -.0013 .0044 -.0033 95: 76
 M001 MALI P MIT .0015 -.0031 .0013 -.5 -.3 -.4 -.0033 .0013 -.0009 97:151
 M001 MALI P NCL .0074 .0002 .0013 .5 -.3 .1 -.0047 .0016 .0057 96: 1
 M001 MALI P JPL .0059 .0088 -.0009 .2 .3 .5 .0029 -.0004 .0103 96: 1

Velocities
 M001 MALI P EMR .0254 -.0487 -.0021 -.6 1.3 .7 -.0536 -.0027 -.0119
 M001 MALI P GFZ -.0155 .0161 .0056 -1.6 1.3 -1.3 .0223 .0055 -.0017
 M001 MALI P CODE -.0009 .0015 .0044 -.1 -.3 -.5 .0018 .0044 .0000
 M001 MALI P MIT -.0026 .0069 .0025 1.0 .6 .3 .0070 .0026 .0023
 M001 MALI P NCL -.0088 -.0039 -.0005 .3 -.4 .3 .0027 -.0010 -.0092
 M001 MALI P JPL .0027 -.0185 .0055 .3 -.4 1.0 -.0159 .0050 -.0101

33710 ARLIT

Positions

S001 ARLA TIE33710	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
S001 ARLA D CSR	-.0406	.0246	.1125	.1	.1	.0	.0296	.1185	.0010	93: 1
S001 ARLA D IGN	-.0437	-.1633	.2812	.0	-.2	.9	-.1563	.2870	.0295	95:100
S002 ARMA TIE33710	.0001	.0000	.0002	.0	.0	.0	.0000	.0001	.0002	93: 1
S002 ARMA D GRGS	.0157	.0224	-.0225	.2	.2	-.3	.0203	-.0273	.0102	93: 1
S002 ARMA D CSR	-.0396	.0031	.0305	-.3	-.4	.4	.0082	.0414	-.0270	93: 1
S002 ARMA D IGN	-.0153	-.0054	.0047	-.4	-.5	1.1	-.0033	.0095	-.0135	95:100

Velocities

S001 ARLA D CSR	.0095	.0130	.0088	1.9	-1.3	-.1	.0117	.0048	.0134
S001 ARLA D IGN	-.0120	-.0373	.0778	.0	.0	.0	-.0355	.0791	.0092
S002 ARMA D GRGS	.0041	-.0118	.0014	.6	.0	-.5	-.0123	.0005	.0029
S002 ARMA D CSR	.0092	.0133	.0088	-.4	.4	.8	.0120	.0048	.0131
S002 ARMA D IGN	-.0041	-.0065	.0129	.2	.2	-.8	-.0059	.0138	-.0005

34101 DAKAR

Positions

S004 DAKA D GRGS	-.0335	-.0094	.0116	-.4	.1	.2	-.0190	.0187	-.0253	93: 1
S004 DAKA D CSR	.0071	.0142	-.0031	.1	.2	-.1	.0157	-.0036	.0016	93: 1
S004 DAKA D IGN	.0129	.0230	-.0221	.9	.6	-1.5	.0258	-.0228	-.0004	95:100

Velocities

S004 DAKA D GRGS	-.0034	-.0192	.0077	-1.1	-.7	1.5	-.0193	.0068	.0044
S004 DAKA D CSR	-.0073	-.0084	.0295	-.2	.0	1.1	-.0102	.0297	.0032
S004 DAKA D IGN	-.0028	.0043	.0063	.0	.1	-.2	.0032	.0071	-.0022

39801 SEYCHELLES

Positions

M001 SEY1 P GFZ	-.0109	.0150	.0062	.0	.5	-.7	.0175	.0067	.0056	94:365
M001 SEY1 P CODE	-.0335	.0210	-.0039	-.6	.4	-.5	.0396	-.0040	-.0014	95: 76
M001 SEY1 P MIT	.0183	-.0018	.0094	.7	-.6	.7	-.0161	.0100	.0081	97:151
M001 SEY1 P JPL	-.0146	.0081	-.0010	-.3	.3	.1	.0166	-.0011	-.0015	96: 1

Velocities

M001 SEY1 P GFZ	-.0004	-.0002	-.0004	-.8	-.6	-.8	.0002	-.0004	-.0003
M001 SEY1 P CODE	.0186	-.0114	.0122	.2	-.1	.2	-.0218	.0123	.0001
M001 SEY1 P MIT	.0168	.0045	.0093	1.2	-.3	.6	-.0113	.0104	.0124
M001 SEY1 P JPL	.0011	.0297	-.0027	.3	-.2	.0	.0159	-.0007	.0252

39901 DJIBOUTI

Positions

S002 DJIA D GRGS	-.0284	.0231	.0024	-.5	.3	.3	.0363	.0033	-.0045	93: 1
S002 DJIA D CSR	.0176	.0122	-.0279	.2	.4	-.5	-.0030	-.0315	.0152	93: 1
S002 DJIA D IGN	-.0093	-.0256	.0112	-.1	-.8	1.4	-.0124	.0158	-.0215	95:100

Velocities

S002 DJIA D GRGS	.0041	-.0006	-.0052	-.6	.7	-.6	-.0032	-.0056	.0016
S002 DJIA D CSR	.0122	-.0013	-.0062	1.1	.7	-1.2	-.0093	-.0077	.0067
S002 DJIA D IGN	-.0005	.0014	.0087	.2	.2	-.3	.0014	.0084	.0023

40101 ST. JOHNS

Positions

M001 STJO P EMR	-.0011	-.0069	-.0048	-.5	.6	-1.6	-.0050	-.0068	-.0003	96: 1
M001 STJO P GFZ	-.0184	-.0133	.0076	-1.0	.2	-.1	-.0226	.0056	.0052	94:365
M001 STJO P CODE	.0062	-.0039	.0043	1.7	-.3	.5	.0025	-.0022	.0079	95: 76
M001 STJO P MIT	-.0043	.0016	-.0010	-.8	.6	.6	-.0024	.0022	-.0034	97:151

M001 STJO P NCL	.0018	-.0023	.0026	-.1	-1.0	-1.3	.0000	-.0004	.0039	96:	1
M001 STJO P JPL	-.0002	-.0043	.0021	.2	-.9	-.4	-.0028	-.0010	.0038	96:	1

Velocities

M001 STJO P EMR	-.0023	-.0020	.0086	.0	-.3	3.0	-.0030	.0057	.0065
M001 STJO P GFZ	.0011	-.0013	.0038	-.2	-1.2	.2	.0001	.0013	.0039
M001 STJO P CODE	.0006	-.0002	-.0028	.5	-.8	-.9	.0003	-.0022	-.0017
M001 STJO P MIT	-.0022	.0038	-.0041	-.4	.7	-.5	.0006	.0005	-.0059
M001 STJO P NCL	-.0034	.0057	-.0026	-.2	1.2	2.5	.0007	.0031	-.0063
M001 STJO P JPL	-.0005	-.0011	.0007	-.1	-.6	-.6	-.0011	.0001	.0009

40102 OTTAWA

Positions

S005 OTTA TIE40104	-.0080	-.0420	.0385	-.2	-.8	.8	-.0181	-.0005	.0545	93:	1
S005 OTTA D CSR	-.0070	.0386	-.0293	.0	.0	.0	.0027	.0073	-.0484	93:	1
S005 OTTA D IGN	-.0227	-.0097	-.1147	-.1	.0	-.5	-.0244	-.0833	-.0790	95:	100
S006 OTTB D GRGS	.0162	-.0117	.0124	.2	-.3	.3	.0129	-.0022	.0196	93:	1
S006 OTTB D CSR	-.0471	-.0492	-.1201	-.3	-.4	-1.4	-.0578	-.1100	-.0602	93:	1
S006 OTTB D IGN	-.0053	.0063	.0168	-.3	.7	.9	-.0035	.0171	.0068	95:	100

Velocities

S005 OTTA D CSR	.0187	.0187	.0082	.0	.0	.0	.0227	.0153	-.0036
S005 OTTA D IGN	-.0142	-.0172	-.0086	-.4	-1.1	.8	-.0180	-.0154	.0032
S006 OTTB D GRGS	.0009	-.0003	-.0009	.8	-.6	.5	.0008	-.0010	-.0003
S006 OTTB D CSR	.0187	.0187	.0082	.0	-.2	-3.1	.0227	.0153	-.0036
S006 OTTB D IGN	.0007	.0133	-.0123	.3	.3	-.2	.0040	.0004	-.0177

40104 ALGONQUIN

Positions

M002 ALGO TIE40104	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93:	1
M002 ALGO P EMR	.0026	-.0075	-.0013	.6	-.9	-1.2	.0010	-.0065	.0045	96:	1
M002 ALGO P GFZ	-.0171	-.0143	.0119	-.4	-.1	1.4	-.0197	.0007	.0158	94:	365
M002 ALGO P CODE	.0041	-.0053	.0046	.8	-1.4	.9	.0029	-.0011	.0076	95:	76
M002 ALGO P MIT	-.0036	-.0034	.0018	-.2	-.5	.7	-.0042	-.0006	.0030	97:	151
M002 ALGO P NCL	.0010	-.0020	.0033	.2	-.2	.1	.0006	.0008	.0039	96:	1
M002 ALGO P JPL	-.0007	-.0062	.0039	-.4	-1.9	-1.1	-.0020	-.0015	.0070	96:	1
M003 7410 TIE40104	.0000	.0000	.0000	.0	.0	.0	.0000	-.0001	.0000	93:	1
M003 7410 L CSR	-.0142	.0043	.0135	-.1	.2	.1	-.0130	.0145	.0047	93:	1
S001 7282 TIE40104	-.0018	-.0021	.0063	-.6	-.7	2.1	-.0022	.0032	.0057	93:	1
S001 7282 R GSFC	.0003	.0032	-.0028	-.6	1.3	-.8	.0010	.0002	-.0041	93:	1
S001 7282 R GIUB	.0037	-.0015	.0066	-.1	.1	.0	.0033	.0029	.0063	93:	1
S001 7282 R NOAA	.0009	.0058	.0004	-.6	.9	-.6	.0021	.0043	-.0035	93:	1

Velocities

M002 ALGO P EMR	-.0030	.0016	-.0026	-.7	.6	-.5	-.0026	-.0003	-.0034
M002 ALGO P GFZ	-.0005	-.0005	.0008	-1.5	-.3	.5	-.0006	.0003	.0008
M002 ALGO P CODE	.0006	.0017	-.0041	.1	.7	-.1	.0009	-.0018	-.0041
M002 ALGO P MIT	-.0012	-.0020	.0005	.1	-.5	-.3	-.0016	-.0009	.0015
M002 ALGO P NCL	-.0013	.0044	-.0062	-.1	.6	-.2	-.0003	-.0010	-.0076
M002 ALGO P JPL	-.0025	.0007	.0000	-1.5	.8	.9	-.0023	.0009	-.0008
M003 7410 L CSR	.0162	.0017	-.0039	.0	.1	.3	.0162	-.0040	-.0016
S001 7282 R GSFC	-.0012	.0033	-.0036	-.7	2.0	.0	-.0004	.0000	-.0050
S001 7282 R GIUB	.0007	.0022	-.0001	-1.0	.9	.3	.0011	.0014	-.0015
S001 7282 R NOAA	-.0004	.0013	-.0010	-.4	.7	.4	-.0001	.0003	-.0016

40105 PENTICTON

Positions

M001 7283 TIE40105	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93:	1
M001 7283 R GSFC	.0201	.0334	-.0496	.2	.1	-.1	.0009	-.0028	-.0630	93:	1
M001 7283 R NOAA	.0447	.0772	-.1013	.4	.2	-.1	.0007	.0016	-.1350	93:	1

M002	DRAO	TIE40105	-.0001	-.0004	-.0003	.0	-.1	-.1	.0001	-.0005	.0000	93:	1
M002	DRAO	P EMR	.0014	-.0116	.0028	-.9	-.9	.2	.0070	-.0053	.0083	96:	1
M002	DRAO	P GFZ	-.0153	-.0067	.0087	.0	1.0	.5	-.0100	-.0045	.0153	94:	365
M002	DRAO	P CODE	.0020	.0005	-.0022	.2	.1	.9	.0015	-.0003	-.0025	95:	76
M002	DRAO	P MIT	-.0047	.0037	-.0031	.0	.9	-.2	-.0059	-.0013	-.0029	97:	151
M002	DRAO	P NCL	-.0002	-.0037	.0053	-.8	-.4	-.1	.0017	.0009	.0062	96:	1

Velocities

M001	7283	R GSFC	.0062	.0151	-.0189	.3	.3	.4	-.0021	.0000	-.0249		
M001	7283	R NOAA	.0146	.0270	-.0333	.5	.2	.4	-.0006	.0016	-.0453		
M002	DRAO	P EMR	.0000	.0040	-.0074	.2	1.6	-1.4	-.0020	-.0022	-.0079		
M002	DRAO	P GFZ	-.0014	-.0049	.0008	-.7	-.2	.9	.0012	-.0033	.0039		
M002	DRAO	P CODE	.0005	-.0038	.0042	-.8	-.6	-.3	.0023	.0004	.0052		
M002	DRAO	P MIT	-.0025	.0028	-.0037	.4	.5	-.4	-.0036	-.0015	-.0036		
M002	DRAO	P NCL	.0022	.0089	-.0115	.8	.7	.1	-.0025	-.0008	-.0145		

40114 OTTAWA NRC

Positions

M001	NRC1	P EMR	.0027	-.0090	-.0003	.5	-.1	-.9	.0003	-.0068	.0064	96:	1
M001	NRC1	P MIT	-.0037	.0000	-.0019	-.2	.1	.1	-.0036	-.0006	-.0020	97:	151
M001	NRC1	P NCL	.0018	-.0023	.0047	.1	-.1	.3	.0012	.0014	.0053	96:	1

Velocities

M001	NRC1	P EMR	-.0045	-.0018	.0025	-.7	-.4	1.0	-.0048	.0013	.0022		
M001	NRC1	P MIT	-.0014	.0019	-.0024	.2	.0	.0	-.0008	-.0001	-.0033		
M001	NRC1	P NCL	-.0022	.0027	-.0051	.0	-.1	.2	-.0014	-.0013	-.0058		

40118 WHITEHORSE

Positions

M001	7284	R GSFC	-.2608	-.2279	.3899	-.7	.0	-.7	-.0228	-.1107	.5091	93:	1
M001	7284	R GSFC	-.1553	-.1314	.2275	.0	.0	.0	-.0166	-.0656	.2976	93:	1
M001	7284	R NOAA	.0154	.0089	-.0086	.1	.0	.2	.0046	.0108	-.0159	93:	1

Velocities

M001	7284	R GSFC	-.0410	-.0324	.0543	.1	.1	.0	-.0060	-.0188	.0728		
M001	7284	R GSFC	-.0230	.0074	-.0216	.0	.0	.0	-.0214	-.0202	-.0135		
M001	7284	R NOAA	.0030	.0016	-.0027	.0	.0	.0	.0010	.0015	-.0039		

40127 YELLOWKNIFE

Positions

M001	7285	TIE40127	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93:	1
M001	7285	R GSFC	-.0038	-.0273	.0523	-.1	-.3	.0	.0079	.0008	.0586	93:	1
M001	7285	R NOAA	-.0029	.0135	.0005	-.5	-.4	-.2	-.0082	.0101	-.0047	93:	1
M003	YELL	TIE40127	.0018	.0028	-.0026	.6	.9	-.9	.0005	.0017	-.0038	93:	1
M003	YELL	P EMR	.0042	-.0086	-.0045	.5	.2	.0	.0073	-.0074	-.0012	96:	1
M003	YELL	P GFZ	-.0181	-.0103	.0106	-1.7	1.0	.0	-.0122	-.0101	.0172	94:	365
M003	YELL	P CODE	-.0107	.0018	.0104	-2.7	1.9	1.3	-.0105	.0023	.0105	95:	76
M003	YELL	P CODE	.0028	-.0023	.0034	-.4	.9	1.0	.0035	.0007	.0034	95:	76
M003	YELL	P MIT	-.0100	-.0063	.0127	-1.2	-1.1	3.2	-.0065	-.0029	.0158	97:	151
M003	YELL	P NCL	.0034	.0020	-.0039	1.2	-.5	.3	.0022	.0011	-.0049	96:	1
M003	YELL	P JPL	-.0015	-.0031	.0025	-.5	-.6	-.6	-.0001	-.0019	.0038	96:	1
M004	7296	TIE40127	-.0012	.0037	-.0028	-.4	1.2	-.9	-.0027	.0012	-.0038	93:	1
M004	7296	R GSFC	-.0042	-.0194	.0392	-1.2	-2.0	1.1	.0042	.0009	.0437	93:	1
M004	7296	R NOAA	-.0036	-.0160	.0351	-1.6	-2.0	.9	.0033	.0020	.0385	93:	1
S007	YELA	TIE40127	-.0003	-.0069	.0053	-.1	-2.3	1.8	.0026	-.0032	.0077	93:	1
S007	YELA	D GRGS	.0061	.0473	-.0477	.0	2.0	-.9	-.0141	.0184	-.0634	93:	1
S007	YELA	D CSR	.0049	.0244	-.0560	.0	.4	-2.0	-.0057	-.0044	-.0608	93:	1
S007	YELA	D IGN	-.0022	.0529	-.0525	-.3	4.2	-2.2	-.0239	.0177	-.0684	95:	100

Velocities

M001 7285 R GSFC	.0004	.0045	-.0080	.5	1.1	.0	-.0015	.0001	-.0090
M001 7285 R NOAA	.0016	.0076	-.0120	.0	.0	.0	-.0017	.0012	-.0141
M003 YELL P EMR	-.0015	.0003	-.0023	.0	.0	.0	-.0015	-.0013	-.0019
M003 YELL P GFZ	-.0018	-.0006	-.0037	.2	1.1	.2	-.0014	-.0028	-.0026
M003 YELL P CODE	.0004	-.0004	-.0010	.4	-1.3	-.8	.0005	-.0007	-.0008
M003 YELL P CODE	.0007	-.0007	-.0010	-.3	-.2	.0	.0009	-.0008	-.0007
M003 YELL P MIT	-.0109	-.0059	.0129	-1.6	-.8	1.3	-.0075	-.0028	.0160
M003 YELL P NCL	-.0046	-.0040	.0077	-.3	-.2	-.3	-.0025	-.0014	.0093
M003 YELL P JPL	.0004	.0017	-.0039	1.4	1.0	-.5	-.0003	-.0003	-.0042
M004 7296 R GSFC	.0004	.0045	-.0080	.0	.0	.0	-.0015	.0001	-.0090
M004 7296 R NOAA	.0016	.0076	-.0120	.4	1.9	-.2	-.0017	.0012	-.0141
S007 YELA D GRGS	.0005	.0010	.0003	.2	4.1	-1.6	.0000	.0011	-.0003
S007 YELA D CSR	.0106	-.0021	.0009	.9	.7	-2.7	.0105	.0026	-.0004
S007 YELA D IGN	-.0025	.0016	-.0009	-.1	-1.2	.5	-.0029	.0000	-.0010

40128 CHURCHILL

Positions

M002 CHUR P EMR	.0027	-.0115	.0017	.2	-.7	.2	.0036	-.0088	.0073	96: 1
M002 CHUR P CODE	.0017	-.0012	.0038	-.2	.1	.0	.0018	.0010	.0038	95: 76
M002 CHUR P MIT	-.0053	.0018	-.0028	-.4	.4	-.1	-.0054	-.0002	-.0031	97:151
M002 CHUR P NCL	.0003	-.0028	.0073	-.2	-.1	.5	.0005	.0014	.0077	96: 1
M002 CHUR P JPL	-.0033	-.0062	.0033	.0	.0	.0	-.0029	-.0038	.0062	96: 1

Velocities

M002 CHUR P EMR	-.0027	.0043	-.0057	-.2	.5	.3	-.0030	.0006	-.0070
M002 CHUR P CODE	.0019	-.0022	-.0012	.2	-.3	.2	.0020	-.0024	.0000
M002 CHUR P MIT	-.0040	.0000	-.0017	-.1	-.4	-.1	-.0040	-.0011	-.0013
M002 CHUR P NCL	-.0008	.0044	-.0099	-.3	.3	-.1	-.0011	-.0014	-.0107
M002 CHUR P JPL	.0015	.0031	.0035	-.1	-.1	.2	.0012	.0046	.0014

40129 ALBERT_HEAD

Positions

M001 7289 TIE40129	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M001 7289 R GSFC	.0074	.0003	.0207	.1	.0	.2	.0060	.0170	.0126	93: 1
M001 7289 R NOAA	.0175	.0061	.0074	.2	-.4	.6	.0112	.0159	-.0043	93: 1
M002 PGC1 P JPL	.0571	-.1847	.0854	.1	-.1	.1	.1495	-.0357	.1451	96: 1
M003 ALBH TIE40129	.0001	.0001	.0001	.0	.0	.0	.0001	.0002	.0000	93: 1
M003 ALBH P EMR	.0026	-.0093	-.0005	.7	-2.5	-1.9	.0073	-.0050	.0038	96: 1
M003 ALBH P CODE	-.0006	-.0072	.0068	-.4	-.9	.8	.0034	-.0002	.0093	95: 76
M003 ALBH P MIT	-.0071	-.0018	.0011	-.5	.0	.2	-.0050	-.0033	.0045	97:151
M003 ALBH P NCL	.0003	-.0030	.0049	.1	-.9	.7	.0019	.0015	.0053	96: 1
M003 ALBH P JPL	-.0025	-.0034	.0023	-.6	-.4	-.7	-.0002	-.0016	.0045	96: 1

Velocities

M001 7289 R GSFC	.0067	.0006	.0037	.5	.0	.0	.0052	.0056	.0000
M001 7289 R NOAA	.0076	-.0022	.0066	.0	.0	.0	.0075	.0062	.0034
M002 PGC1 P JPL	.0151	-.0519	.0250	.0	.0	-.1	.0412	-.0098	.0418
M003 ALBH P EMR	-.0013	-.0033	.0026	-.5	-.4	-.1	.0007	-.0009	.0043
M003 ALBH P CODE	.0020	.0014	-.0013	1.8	1.5	-2.4	.0009	.0008	-.0025
M003 ALBH P MIT	-.0071	-.0032	.0026	-.3	-.5	.0	-.0042	-.0032	.0063
M003 ALBH P NCL	.0003	.0047	-.0073	.2	.2	.0	-.0023	-.0017	-.0082
M003 ALBH P JPL	-.0017	-.0018	.0024	-.4	-.2	.2	-.0004	-.0002	.0034

40130 HOLBERG

Positions

M001 HOLB P MIT	-.0066	-.0011	.0042	-.1	.0	.2	-.0045	-.0012	.0064	97:151
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Velocities

M001 HOLB P MIT	-.0087	-.0060	.0100	-.1	-.1	.0	-.0031	-.0015	.0141
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40132 LA GRANDE

Positions

M001 7411 L CSR	.2124	-.1365	-.0208	.3	-.1	-.1	.1812	-.1541	.0874	93:	1
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Velocities

M001 7411 L CSR	-.1278	.0732	.0103	.0	.0	.0	-.1108	.0843	-.0492	
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40133 SCHEFFERVILLE

Positions

M001 SCHE P EMR	.0012	-.0094	-.0015	.2	.0	.0	-.0026	-.0083	.0041	96:	1
M001 SCHE P MIT	-.0044	.0050	-.0060	-.1	.1	.1	-.0021	.0017	-.0085	97:151	
M001 SCHE P NCL	.0012	-.0033	.0056	.0	-.3	.2	-.0002	.0004	.0066	96:	1

Velocities

M001 SCHE P EMR	-.0033	-.0028	.0036	-.1	-.2	.1	-.0041	.0010	.0037	
M001 SCHE P MIT	-.0037	.0065	-.0048	.1	.1	.1	-.0009	.0033	-.0082	
M001 SCHE P NCL	-.0013	.0070	-.0068	.0	.1	.2	.0016	.0018	-.0096	

40134 WILLIAMS LAKE

Positions

M001 WILL P EMR	.0023	-.0106	.0009	.1	-.1	.3	.0076	-.0056	.0055	96:	1
M001 WILL P MIT	-.0073	-.0030	.0047	-.3	-.2	.6	-.0046	-.0022	.0076	97:151	
M001 WILL P NCL	.0004	-.0018	.0043	-.2	-.1	.4	.0013	.0016	.0042	96:	1

Velocities

M001 WILL P EMR	-.0004	.0004	-.0026	.2	.2	-.2	-.0005	-.0015	-.0021	
M001 WILL P MIT	-.0042	-.0006	.0036	.4	-.3	-.2	-.0032	.0000	.0045	
M001 WILL P NCL	.0010	.0033	-.0071	.1	.0	-.1	-.0009	-.0018	-.0076	

40135 FLIN FLON

Positions

M001 FLIN P CODE	.0006	-.0009	.0044	-.2	.1	.2	.0008	.0020	.0040	95:	76
M001 FLIN P MIT	-.0057	-.0020	.0017	-.5	-.1	.3	-.0052	-.0016	.0032	97:151	
M001 FLIN P NCL	-.0032	-.0162	.0252	-.6	-.2	.2	.0002	.0010	.0301	96:	1
M001 FLIN P JPL	-.0093	-.0070	-.0205	.0	.1	-.2	-.0077	-.0190	-.0117	96:	1

Velocities

M001 FLIN P CODE	.0023	-.0024	-.0013	.1	-.1	.3	.0027	-.0023	.0000	
M001 FLIN P MIT	-.0061	-.0031	.0041	-.5	-.1	.0	-.0053	-.0011	.0058	
M001 FLIN P NCL	.0040	.0216	-.0332	.3	.5	-.3	-.0005	-.0012	-.0398	
M001 FLIN P JPL	.0072	-.0051	.0413	-.4	-.7	.1	.0081	.0210	.0357	

40136 WHITEHORSE GPS

Positions

M001 WHIT P CODE	.0026	.0014	.0032	.1	.2	.0	.0009	.0040	.0014	95:	76
M001 WHIT P MIT	-.0065	-.0029	.0107	-.3	-.1	1.5	-.0025	-.0006	.0126	97:151	
M001 WHIT P NCL	.0042	.0057	-.0116	.2	.2	-.1	-.0010	.0005	-.0135	96:	1
M001 WHIT P JPL	.0120	-.0403	-.1107	.0	-.1	-.3	.0371	-.0714	-.0869	96:	1

Velocities

M001 WHIT P CODE	.0019	-.0030	-.0005	.0	-.1	.1	.0035	-.0009	.0000	
M001 WHIT P MIT	-.0147	-.0084	.0189	-.8	-.4	.1	-.0044	-.0051	.0245	
M001 WHIT P NCL	-.0041	-.0056	.0111	.5	.0	-.7	.0011	-.0006	.0131	
M001 WHIT P JPL	-.0200	.0468	.1438	-.2	.1	.4	-.0473	.0866	.1163	

40137 LAC DU BONNET

Positions

M001 DUBO P MIT	-.0049	-.0055	.0025	-.2	-.2	.0	-.0043	-.0030	.0058	97:151
M001 DUBO P JPL	.1445	-.1030	.0206	.2	-.1	-.2	.1543	-.0543	.0719	96: 1

Velocities

M001 DUBO P MIT	.0036	-.0207	.0296	.4	-.2	.3	.0057	.0033	.0357
M001 DUBO P JPL	-.1664	.1113	-.0110	.0	-.3	.3	-.1769	.0650	-.0684

40400 PASADENA

Positions

M001 7896 TIE40400	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M003 7263 TIE40400	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M003 7263 R GSFC	.0462	.0423	-.0238	.4	-.3	.8	.0208	.0135	-.0622	93: 1
M003 7263 R NOAA	.0181	.0124	-.0139	.0	-.1	.1	.0101	-.0005	-.0239	93: 1
M005 7264 TIE40400	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M006 JPL0 TIE40400	-.0004	.0001	.0000	-.1	.0	.0	-.0005	-.0001	.0000	93: 1
M006 JPL0 P JPL	.0601	-.0440	.0141	.4	-.4	.0	.0738	.0058	.0165	96: 1
M007 JPLM P GFZ	-.0154	-.0054	.0101	.2	.2	.4	-.0110	.0016	.0156	94:365
M007 JPLM P MIT	-.0011	-.0025	.0033	.4	-.4	.5	.0002	.0012	.0041	97:151
M007 JPLM P NCL	-.0007	.0003	.0018	-.4	.7	-.3	-.0008	.0015	.0010	96: 1
M007 JPLM P JPL	-.0031	-.0054	.0031	-.7	-.5	-.2	-.0002	-.0009	.0069	96: 1
M101 WLSN P JPL	.0009	.0006	-.0010	.7	-.2	-.7	.0005	-.0003	-.0014	96: 1
M301 BRAN P JPL	.0002	.0002	-.0003	.1	.1	-.1	.0000	.0000	-.0004	96: 1
S201 CIT1 P JPL	.0005	.0003	-.0006	.1	.1	-.2	.0003	-.0002	-.0008	96: 1

Velocities

M003 7263 R GSFC	.0078	.0093	-.0074	.3	-.7	1.2	.0025	.0005	-.0140
M003 7263 R NOAA	.0029	.0025	-.0036	.2	-.3	-.3	.0014	-.0010	-.0049
M006 JPL0 P JPL	.0087	-.0102	.0063	-.7	.5	.1	.0125	.0025	.0076
M007 JPLM P GFZ	-.0012	-.0070	.0017	-1.1	.9	.2	.0022	-.0024	.0065
M007 JPLM P MIT	-.0003	-.0021	.0029	.1	.1	.4	.0007	.0012	.0033
M007 JPLM P NCL	.0041	.0024	-.0057	.4	.1	-.4	.0024	-.0024	-.0065
M007 JPLM P JPL	.0020	.0037	-.0031	.1	.3	-.4	.0000	-.0002	-.0052
M101 WLSN P JPL	.0062	.0048	-.0079	.5	.1	-.5	.0032	-.0025	-.0104
M301 BRAN P JPL	.0043	.0075	-.0075	.2	.3	-.3	.0003	-.0014	-.0114
S201 CIT1 P JPL	.0043	.0040	-.0063	.2	.1	-.4	.0020	-.0021	-.0081

40403 PALOS_VERDES

Positions

M001 7268 R GSFC	-.0122	-.0349	.0383	-.1	-.1	.3	.0059	.0116	.0516	93: 1
M001 7268 R NOAA	-.0218	-.0402	.0528	-.3	.0	.5	.0000	.0185	.0673	93: 1
M002 FVEP P JPL	.0002	.0003	-.0005	.2	.0	-.4	.0000	-.0002	-.0006	96: 1

Velocities

M001 7268 R GSFC	-.0036	-.0064	.0051	-.1	.1	.0	-.0001	.0002	.0089
M001 7268 R NOAA	-.0058	-.0098	.0115	-.1	-.1	.3	-.0005	.0032	.0159
M002 FVEP P JPL	.0008	.0017	-.0026	.1	.1	-.2	-.0001	-.0011	-.0030

40404 HOLCOMB/PEARBLOS

Positions

M001 7254 R GSFC	-.0232	-.0507	.0440	-.2	.1	.2	.0032	.0047	.0708	93: 1
M001 7254 R NOAA	-.0482	-.0893	.0702	-.4	-.1	.2	-.0008	.0004	.1234	93: 1
M101 HOLC P JPL	.0001	.0001	-.0001	.1	.1	-.1	.0000	.0000	-.0002	96: 1

Velocities

M001 7254 R GSFC	-.0043	-.0077	.0045	-.2	-.3	.3	-.0002	-.0013	.0098
M001 7254 R NOAA	-.0085	-.0147	.0108	.1	.0	.0	-.0007	-.0007	.0200
M101 HOLC P JPL	.0035	.0078	-.0066	.2	.3	-.2	-.0006	-.0006	-.0108

40405 GOLDSTONE

Positions

M001 7085 TIE40405	-.0043	.0005	-.0123	.0	.0	.0	-.0041	-.0109	-.0059	93:	1
M001 7085 L CSR	-.2508	-.1514	-.2544	-.3	-.1	-.5	-.1552	-.3513	.0550	93:	1
M002 7115 TIE40405	-.0241	-.0258	.0123	-.9	-1.2	1.1	-.0099	-.0095	.0348	93:	1
M002 7115 L CSR	-.0706	-.0351	.0266	.0	-1.5	-.8	-.0472	-.0147	.0669	93:	1
M006 7265 TIE40405	.0049	.0063	-.0046	.7	.3	.5	.0015	.0008	-.0091	93:	1
M006 7265 L CSR	-.0099	.0461	-.0406	.3	-.3	-.3	-.0297	-.0120	-.0534	93:	1
M013 7288 TIE40405	.0000	.0000	.0000	-.3	-.3	1.1	.0000	.0000	.0000	93:	1
M013 7288 R GSFC	.0002	-.0004	-.0001	.1	.1	.0	.0003	-.0002	.0002	93:	1
M013 7288 R NOAA	.0062	.0042	.0012	.0	.0	.1	.0036	.0048	-.0047	93:	1
M013 7288 L CSR	-.0037	.0204	-.0166	.4	-.2	-.1	-.0125	-.0039	-.0231	93:	1
M013 7288 L GSFC	-.0041	.0190	-.0191	.4	.3	-1.1	-.0123	-.0069	-.0234	86:182	
S001 1514 TIE40405	-.0065	-.0003	-.0094	-.7	-.3	.9	-.0057	-.0095	-.0028	93:	1
S001 1514 R JPL	.0232	-.0005	-.0168	2.3	-.6	-1.6	.0209	-.0078	-.0179	93:	1
S003 1512 R JPL	.0157	.0290	-.0119	.8	1.1	.2	.0009	.0093	-.0338	93:	1
S005 GOMA TIE40405	-.0249	-.0265	.0108	-.2	-.2	-.4	-.0103	-.0113	.0347	93:	1
S005 GOMA D GRGS	-.0337	.0097	.0192	-.2	.0	.2	-.0345	.0119	.0164	93:	1
S005 GOMA D CSR	.0170	-.0146	.1499	.3	-.9	1.8	.0217	.1193	.0909	93:	1
S005 GOMA D IGN	.0092	.0273	-.0124	.4	1.1	.2	-.0041	.0063	-.0305	95:100	
S009 7222 TIE40405	.0049	.0063	-.0046	.3	.1	-.1	.0016	.0007	-.0091	93:	1
S009 7222 R GSFC	-.0002	-.0062	.0071	-.9	.5	1.0	.0026	.0025	.0087	93:	1
S009 7222 R GSFC	-.0002	-.0063	.0088	-.2	-.1	.2	.0026	.0039	.0098	93:	1
S009 7222 R GIUB	-.0088	-.0083	.0500	-.8	-.7	1.6	-.0041	.0342	.0382	93:	1
S009 7222 R NOAA	.0024	.0000	.0085	-.1	-.6	2.9	.0021	.0076	.0040	93:	1
S009 7222 R NOAA	.0033	.0009	.0054	.2	.2	-.1	.0025	.0057	.0012	93:	1
S014 1513 TIE40405	-.0240	-.0260	.0129	.1	-.1	.3	-.0097	-.0091	.0352	93:	1
S014 1513 R GSFC	-.0034	-.0040	.0098	-.4	.3	1.1	-.0013	.0051	.0098	93:	1
S014 1513 R NOAA	-.0034	-.0041	.0214	.5	-.1	1.1	-.0012	.0145	.0165	93:	1
S014 1513 R JPL	.0237	.0427	-.0205	1.4	1.2	.4	.0019	.0114	-.0517	93:	1
S019 1515 TIE40405	-.0021	.0019	-.0165	.7	.4	-1.4	-.0027	-.0131	-.0102	93:	1
S019 1515 R GSFC	.0128	-.0072	.0193	.1	-.3	1.0	.0147	.0154	.0117	93:	1
S019 1515 R GSFC	-.0039	.0022	-.0054	.2	.1	.4	-.0045	-.0043	-.0033	93:	1
S019 1515 R NOAA	.0063	-.0004	.0016	.1	-.6	1.0	.0058	.0027	-.0011	93:	1
S019 1515 R NOAA	-.0013	-.0040	.0046	-.4	-.1	-.5	.0007	.0013	.0061	93:	1
S019 1515 R JPL	-.0009	-.0105	.0079	-1.1	-2.0	.1	.0040	.0008	.0125	93:	1
S028 GOL0 TIE40405	.0017	-.0027	-.0020	.2	-.2	-.2	.0028	-.0026	.0001	93:	1
S028 GOL0 P JPL	.0149	-.0147	.0180	.1	-.1	.2	.0199	.0110	.0157	96:	1
S031 GOLD P EMR	-.0005	-.0110	.0036	-.6	-.1	-.8	.0045	-.0029	.0103	96:	1
S031 GOLD P GFZ	-.0195	-.0053	.0102	-1.9	1.9	-.4	-.0149	.0005	.0170	94:365	
S031 GOLD P GFZ	-.0210	-.0026	.0081	-.5	1.0	-.2	-.0176	-.0002	.0143	94:365	
S031 GOLD P CODE	.0018	.0093	-.0096	-1.1	4.3	-1.4	-.0026	-.0025	-.0130	95:	76
S031 GOLD P MIT	-.0016	.0027	-.0043	.6	.4	-.1	-.0027	-.0026	-.0038	97:151	
S031 GOLD P NCL	-.0004	-.0026	.0046	-.7	.7	.8	.0008	.0023	.0047	96:	1
S031 GOLD P JPL	-.0024	-.0075	.0036	-.6	-.9	-.7	.0012	-.0016	.0084	96:	1
S035 GOLA TIE40405	-.0003	.0004	.0010	-.1	.1	.3	-.0004	.0009	.0004	93:	1
S035 GOLA D GRGS	.0448	-.0195	-.0234	.3	.0	-.2	.0488	-.0174	-.0158	93:	1
S035 GOLA D CSR	.0340	.0020	-.0138	.5	-.2	-.3	.0294	-.0014	-.0220	93:	1
S035 GOLA D IGN	.0084	.0037	-.0628	-.3	.4	-1.4	.0058	-.0471	-.0421	95:100	
S037 GOMB TIE40405	-.0244	-.0260	.0118	.0	.0	.0	-.0101	-.0101	.0348	93:	1
S037 GOMB D IGN	-.1497	.1526	-.0046	-.1	.3	.0	-.2024	.0359	-.0588	95:100	

Velocities

M001 7085 L CSR	-.0009	-.0012	-.0017	.1	.4	.4	-.0003	-.0023	.0002		
M002 7115 L CSR	-.0009	-.0012	-.0017	.5	.3	-.5	-.0003	-.0023	.0002		
M006 7265 L CSR	-.0009	-.0012	-.0017	.0	.2	.9	-.0003	-.0022	.0002		
M013 7288 R GSFC	-.0005	.0000	-.0013	.1	.1	.1	-.0005	-.0012	-.0006		
M013 7288 R NOAA	-.0003	-.0006	.0013	.2	.1	.1	.0000	.0006	.0013		
M013 7288 L CSR	-.0009	-.0012	-.0017	-2.7	-2.5	-4.6	-.0003	-.0022	.0002		
M013 7288 L GSFC	.0018	.0029	.0028	.3	1.1	-.7	.0003	.0043	-.0012		
S005 GOMA D GRGS	.0211	-.0053	.0017	.6	.4	1.5	.0213	.0041	-.0029		
S005 GOMA D CSR	.0111	-.0189	-.0293	-4.4	-3.5	-1.2	.0185	-.0308	-.0072		
S005 GOMA D IGN	.0036	-.0020	.0086	.2	.4	.2	.0041	.0070	.0051		
S009 7222 R GSFC	-.0005	.0000	-.0013	.4	-1.1	1.7	-.0005	-.0012	-.0006		

S009 7222 R GSFC	-.0161	.0079	-.0056	.0	.0	.0	-.0180	-.0047	-.0031
S009 7222 R GIUB	-.0014	-.0015	.0112	-.2	.6	1.1	-.0006	.0080	.0081
S009 7222 R NOAA	-.0003	-.0006	.0013	-.9	.4	1.4	.0000	.0006	.0013
S009 7222 R NOAA	-.0003	-.0006	.0013	.0	.0	.0	.0000	.0006	.0013
S014 1513 R GSFC	-.0004	.0004	-.0011	.2	-.9	2.1	-.0005	-.0008	-.0007
S014 1513 R NOAA	-.0020	-.0028	.0049	-.4	1.0	2.3	-.0006	.0020	.0056
S019 1515 R GSFC	.0028	.0006	.0010	.6	-.3	-.6	.0022	.0019	-.0009
S019 1515 R GSFC	-.0162	.0079	-.0056	.0	.0	.0	-.0180	-.0047	-.0031
S019 1515 R NOAA	-.0003	-.0007	.0013	-.3	-.1	-.1	.0000	.0006	.0013
S019 1515 R NOAA	-.0003	-.0007	.0013	-.3	-.1	.0	.0000	.0006	.0013
S028 GOL0 P JPL	.0011	-.0048	.0067	-.2	.0	.1	.0031	.0033	.0070
S031 GOLD P EMR	.0006	-.0033	.0006	.1	.3	.6	.0020	-.0011	.0026
S031 GOLD P GFZ	.0028	-.0076	.0012	.4	-.6	.0	.0060	-.0022	.0052
S031 GOLD P GFZ	.0028	-.0076	.0012	-.4	.2	-.2	.0059	-.0022	.0052
S031 GOLD P CODE	.0034	-.0036	.0033	.3	-2.4	1.0	.0047	.0018	.0033
S031 GOLD P MIT	-.0044	-.0030	-.0016	-.6	-1.0	-.3	-.0026	-.0040	.0029
S031 GOLD P NCL	.0030	.0015	-.0054	1.1	-2.7	.7	.0020	-.0028	-.0053
S031 GOLD P JPL	.0008	-.0013	.0033	.2	.0	1.3	.0013	.0022	.0026
S035 GOLA D GRGS	-.0053	-.0070	.0125	.6	-.2	-.4	-.0016	.0052	.0142
S035 GOLA D CSR	.0126	-.0180	-.0293	9.0	3.9	.1	.0194	-.0299	-.0085
S035 GOLA D IGN	-.0038	.0043	-.0084	-.3	-.2	1.0	-.0053	-.0056	-.0066
S037 GOMB D IGN	.1016	-.0784	.0060	.6	.0	.3	.1260	-.0090	.0232

40406 PRESIDIO

Positions

M001 7252 R GSFC	.0154	.0035	-.0198	.0	-.1	-.2	.0111	-.0088	-.0210	93: 1
M001 7252 R GSFC	.0067	.0004	-.0071	.0	.0	.0	.0054	-.0031	-.0075	93: 1
M001 7252 R NOAA	.0083	.0028	.0011	.0	.0	.1	.0055	.0051	-.0047	93: 1

Velocities

M001 7252 R GSFC	.0017	.0016	-.0063	.0	.0	.0	.0005	-.0036	-.0056
M001 7252 R GSFC	-.0193	.0299	-.0013	.0	.0	.0	-.0323	.0081	-.0126
M001 7252 R NOAA	.0010	.0007	-.0004	.0	.0	.0	.0005	.0004	-.0012

40407 PINYON

Positions

M001 7256 TIE40407	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M001 7256 R GSFC	.0298	.0110	.0349	.3	-.6	1.3	.0218	.0419	.0000	93: 1
M001 7256 R NOAA	.0102	-.0233	.0690	.0	-.7	1.7	.0195	.0484	.0518	93: 1
M002 PIN1 TIE40407	.0010	.0009	.0021	.3	.3	.7	.0005	.0024	.0001	93: 1
M002 PIN1 P JPL	.0222	.0282	-.0365	.1	.0	-.5	.0073	-.0110	-.0495	96: 1
M003 PIN1 P JPL	-.0015	-.0007	.0026	-.3	.1	.9	-.0011	.0014	.0025	96: 1

Velocities

M001 7256 R GSFC	.0052	.0045	.0009	.2	-.1	-.4	.0027	.0042	-.0048
M001 7256 R NOAA	.0017	-.0028	.0090	.3	-.1	-.6	.0028	.0065	.0064
M002 PIN1 P JPL	.0070	.0080	-.0081	-.4	-.3	1.5	.0027	-.0011	-.0131
M003 PIN1 P JPL	-.0063	-.0036	.0124	-.7	.1	2.4	-.0041	.0069	.0119

40408 FAIRBANKS

Positions

M001 FAIR TIE40408	.0080	.0034	-.0013	.0	.0	.0	.0014	.0072	-.0048	93: 1
M001 FAIR P EMR	.0011	-.0159	.0062	-1.0	-1.5	.6	.0140	-.0043	.0088	96: 1
M001 FAIR P GFZ	-.0064	-.0079	.0001	1.6	.9	-.1	.0032	-.0087	.0042	94:365
M001 FAIR P CODE	.0048	.0022	-.0100	3.1	-.4	-1.3	.0007	.0005	-.0113	95: 76
M001 FAIR P MIT	-.0076	-.0032	.0123	-.8	-.4	2.9	-.0014	-.0022	.0146	97:151
M001 FAIR P NCL	.0004	.0009	-.0016	-.2	1.3	-.8	-.0005	.0001	-.0018	96: 1
M001 FAIR P JPL	-.0039	-.0029	.0079	-1.4	-.6	.1	.0004	-.0011	.0092	96: 1
S002 7225 TIE40408	.0000	.0000	.0000	-2.7	-1.1	.4	.0000	.0000	.0000	93: 1
S002 7225 R GSFC	.0024	-.0014	.0033	2.0	1.0	-.5	.0025	.0026	.0025	93: 1

S002 7225 R GIUB	.0129	-.0102	.0492	1.0	1.2	-1.2	.0156	.0257	.0423	93:	1
S002 7225 R NOAA	.0004	-.0039	.0123	-1.1	-2.7	.2	.0035	.0036	.0118	93:	1
S004 FAIA TIE40408	.0048	.0112	.0035	1.5	3.5	1.1	-.0069	.0106	-.0011	93:	1
S004 FAIA D GRGS	-.0156	-.0541	-.0262	-1.1	-1.8	-1.3	.0373	-.0493	-.0059	93:	1
S004 FAIA D CSR	.0081	-.0005	.0122	.1	-.2	.4	.0047	.0111	.0083	93:	1
S004 FAIA D IGN	-.0153	-.0587	-.0164	-2.0	-5.7	-1.7	.0413	-.0472	.0040	95:100	

Velocities

M001 FAIR P EMR	-.0025	-.0009	.0034	-.7	-.5	.9	-.0006	-.0009	.0042		
M001 FAIR P GFZ	-.0096	-.0028	.0038	-2.3	2.0	-.6	-.0028	-.0071	.0075		
M001 FAIR P CODE	.0035	-.0028	.0014	1.6	-1.1	-.6	.0043	.0020	.0007		
M001 FAIR P MIT	-.0084	-.0048	.0091	-.4	-.9	-.2	-.0005	-.0050	.0123		
M001 FAIR P NCL	-.0044	-.0037	.0124	-1.6	-1.1	.8	.0008	.0001	.0136		
M001 FAIR P JPL	-.0023	-.0014	.0031	-.5	-.2	-.2	-.0001	-.0011	.0040		
S002 7225 R GSFC	-.0003	.0009	-.0024	2.1	1.0	-.8	-.0009	-.0008	-.0022		
S002 7225 R GIUB	.0038	-.0016	.0110	.6	1.2	-.1	.0034	.0068	.0090		
S002 7225 R NOAA	.0002	-.0010	.0010	.1	-.1	-1.2	.0009	.0001	.0010		
S004 FAIA D GRGS	.0004	-.0071	.0028	-1.9	-4.6	-2.6	.0062	-.0020	.0040		
S004 FAIA D CSR	.0083	-.0058	-.0002	.6	-.6	.6	.0094	.0034	-.0018		
S004 FAIA D IGN	.0022	-.0072	.0017	.1	-.1	-.5	.0073	-.0011	.0024		

40410 POINT REYES

Positions

M001 7251 R GSFC	.0067	.0044	-.0092	.0	.0	.0	.0032	-.0027	-.0114	93:	1
M001 7251 R NOAA	.0029	.0005	.0047	.0	.0	.0	.0022	.0049	.0014	93:	1

Velocities

M001 7251 R GSFC	.0016	.0033	-.0057	.1	-.1	.2	-.0005	-.0023	-.0064		
M001 7251 R NOAA	-.0005	-.0007	.0010	-.1	.0	-.2	-.0001	.0002	.0013		

40412 AUSTIN

Positions

M003 7271 R GSFC	-.0094	-.0057	.0018	-.1	.0	-.1	-.0086	-.0019	.0068	93:	1
M003 7271 R NOAA	.0019	-.0005	.0122	.0	-.1	.1	.0020	.0104	.0063	93:	1

Velocities

M003 7271 R GSFC	-.0020	-.0006	-.0015	.0	.0	.0	-.0019	-.0018	.0000		
M003 7271 R NOAA	-.0005	-.0030	.0010	.0	.0	.0	-.0001	-.0007	.0031		

40416 YAKATAGA

Positions

M001 7277 R GSFC	.0516	.0217	-.0819	.2	.1	-.2	.0142	.0062	-.0980	93:	1
M001 7277 R GSFC	.0268	.0089	-.0383	-.2	.1	.2	.0093	.0040	-.0465	93:	1
M001 7277 R NOAA	-.0354	-.0287	.1079	-.2	.0	.3	.0012	.0144	.1163	93:	1
M001 7277 R NOAA	-.0177	-.0159	.0640	.2	-.1	-.2	.0019	.0113	.0673	93:	1

Velocities

M001 7277 R GSFC	.0084	.0046	-.0184	.1	-.1	-.4	.0014	-.0010	-.0207		
M001 7277 R GSFC	-.0153	.0274	.0102	.0	.0	.0	-.0311	.0090	.0066		
M001 7277 R NOAA	-.0063	-.0051	.0189	-.1	.1	.3	.0002	.0025	.0204		
M001 7277 R NOAA	-.0063	-.0051	.0189	.0	.0	.0	.0002	.0025	.0204		

40419 KODIAK

Positions

M001 7278 R GSFC	-.0118	-.0069	.0336	-.1	.1	.1	.0007	.0064	.0358	93:	1
M001 7278 R NOAA	.0126	.0012	-.0086	.1	-.1	-.1	.0048	.0053	-.0135	93:	1

Velocities

M001 7278 R GSFC	-.0039	-.0008	.0042	-.1	-.1	-.3	-.0011	-.0010	.0056		
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M001 7278 R NOAA .0033 .0004 -.0034 .1 .0 .2 .0011 .0008 -.0045

40420 VANDENB/HARVEST

Positions

M001 7111 TIE40420 .0000 .0000 .0000 .0 .0 .0 .0000 .0000 .0000 93: 1
M002 7223 TIE40420 .0000 .0000 .0000 .0 .0 .0 .0000 .0000 .0000 93: 1
M002 7223 R GSFC .0084 .0160 -.0161 .4 1.2 -.5 -.0009 -.0030 -.0241 93: 1
M002 7223 R NOAA .0173 .0307 -.0221 .9 1.6 -.9 -.0008 .0018 -.0416 93: 1
M004 7887 TIE40420 .0000 .0000 .0000 .0 .0 .0 .0000 .0000 .0000 93: 1
M007 VNDP TIE40420 -.0025 .0022 .0013 -.8 .7 .4 -.0033 .0014 .0003 93: 1
M007 VNDP P JPL -.0091 -.0294 .0163 -1.3 -2.6 -.8 .0071 -.0036 .0340 96: 1
M101 HARV P MIT -.0045 -.0157 .0215 .0 -.3 .5 .0042 .0088 .0252 97:151
M101 HARV P NCL .0078 .0008 .0057 .4 -.3 1.2 .0063 .0074 -.0006 96: 1
M101 HARV P JPL .0005 -.0058 .0068 .0 -.9 1.6 .0034 .0029 .0078 96: 1

Velocities

M002 7223 R GSFC .0018 .0055 -.0070 .9 .9 -.1 -.0013 -.0025 -.0086
M002 7223 R NOAA .0025 .0054 -.0047 .1 .2 -.3 -.0006 -.0005 -.0076
M007 VNDP P JPL -.0136 -.0228 .0179 -2.9 -1.2 -.2 -.0001 -.0003 .0320
M101 HARV P MIT -.0052 -.0141 .0127 -.4 .1 -.6 .0027 .0021 .0194
M101 HARV P NCL -.0019 -.0045 .0064 .0 -.6 .1 .0007 .0026 .0076
M101 HARV P JPL -.0013 -.0058 .0094 -.2 -.9 2.3 .0019 .0045 .0100

40421 NOME

Positions

M001 7279 R GSFC -.0146 -.0126 .0369 -.1 -.2 .0 .0085 .0002 .0408 93: 1
M001 7279 R NOAA .0071 .0024 -.0017 .1 .2 .0 -.0006 .0060 -.0047 93: 1

Velocities

M001 7279 R GSFC -.0030 -.0012 .0032 .1 -.1 .0 .0004 -.0015 .0043
M001 7279 R NOAA .0009 .0001 -.0004 -.1 .1 -.1 .0001 .0006 -.0007

40423 SANDPOINT

Positions

M001 7280 R GSFC .0022 -.0019 .0135 .0 .0 .1 .0025 .0089 .0103 93: 1
M001 7280 R NOAA -.0014 -.0039 .0130 .0 .0 -.1 .0032 .0052 .0122 93: 1

Velocities

M001 7280 R GSFC .0004 .0006 -.0017 .1 -.1 -.2 -.0005 -.0005 -.0017
M001 7280 R NOAA -.0008 -.0010 .0028 -.1 .1 .1 .0007 .0007 .0029

40424 KAUAI

Positions

M004 KOKB TIE40424 .0024 -.0018 -.0022 .0 .0 .0 .0025 -.0014 -.0023 93: 1
M004 KOKB P EMR -.0007 -.0012 .0010 -.2 1.6 -1.1 .0009 .0006 .0014 96: 1
M004 KOKB P GFZ -.0099 -.0022 .0181 -1.0 -.3 .0 -.0014 .0130 .0162 94:365
M004 KOKB P CODE -.0051 -.0072 -.0012 -.9 -1.0 -1.7 .0050 -.0039 .0063 95: 76
M004 KOKB P MIT -.0064 -.0013 .0054 -1.1 -.3 1.5 -.0010 .0026 .0081 97:151
M004 KOKB P NCL .0021 .0024 .0005 .2 .9 .2 -.0015 .0015 -.0024 96: 1
M004 KOKB P JPL .0015 .0024 -.0024 .3 .6 -1.1 -.0017 -.0014 -.0029 96: 1
M006 KOK2 P NCL .0088 -.0024 .0001 .3 -.3 .2 .0053 .0028 -.0068 96: 1
M006 KOK2 P JPL -.0004 -.0062 .0018 .0 -.6 .1 .0057 .0007 .0031 96: 1
S001 1311 TIE40424 .0000 .0000 .0000 -.8 .6 .7 .0000 .0000 .0000 93: 1
S001 1311 R GSFC .0024 -.0006 .0023 .2 .4 .6 .0014 .0029 -.0010 93: 1
S001 1311 R GIUB -.0134 .0032 .0836 1.4 .5 1.1 -.0077 .0732 .0421 93: 1
S001 1311 R NOAA .0014 -.0007 .0066 -.4 -.6 -2.4 .0011 .0065 .0015 93: 1
S007 7298 R GSFC -.0004 -.0013 .0010 -.4 -.3 -.8 .0011 .0006 .0012 93: 1
S007 7298 R GIUB -.0225 .0012 .0835 -.8 .2 1.2 -.0089 .0696 .0506 93: 1
S007 7298 R NOAA -.0097 -.0050 .0115 -2.7 .2 -3.0 .0013 .0066 .0143 93: 1

S008 KOKA TIE40424	-.0015	-.0013	.0005	-.5	-.4	.2	.0006	-.0002	.0019	93:	1
S008 KOKA D GRGS	.0193	.0264	.0072	.3	.9	.6	-.0181	.0170	-.0226	93:	1
S008 KOKA D CSR	.0107	.0317	.0074	.3	.2	.0	-.0260	.0148	-.0167	93:	1
S008 KOKA D IGN	.0221	.0175	-.0279	1.3	1.2	-1.6	-.0088	-.0158	-.0353	95:	100

Velocities

M004 KOKB P EMR	-.0001	-.0032	-.0001	.0	-.2	-.3	.0030	-.0006	.0011
M004 KOKB P GFZ	-.0013	-.0064	-.0062	-1.3	-.9	-.1	.0056	-.0071	.0008
M004 KOKB P CODE	-.0020	.0011	.0083	-.2	.2	.4	-.0017	.0071	.0045
M004 KOKB P MIT	-.0068	-.0043	.0010	-.5	-.4	-.7	.0017	-.0021	.0077
M004 KOKB P NCL	-.0063	-.0064	.0003	-.8	-1.2	.1	.0038	-.0028	.0076
M004 KOKB P JPL	-.0022	-.0028	.0038	-.6	-.6	1.6	.0018	.0024	.0043
M006 KOK2 P NCL	.0407	-.0234	-.0082	.1	-.5	.2	.0360	.0037	-.0309
M006 KOK2 P JPL	.0265	-.0247	.0014	.4	-.1	.0	.0324	.0074	-.0146
S001 1311 R GSFC	.0021	.0020	-.0042	.9	-.1	-.3	-.0011	-.0028	-.0040
S001 1311 R GIUB	.0000	.0024	.0162	.0	.0	.0	-.0022	.0153	.0053
S001 1311 R NOAA	.0019	.0017	-.0002	-.5	.3	-.3	-.0010	.0007	-.0023
S007 7298 R GSFC	.0032	.0022	-.0023	1.6	.2	3.6	-.0009	-.0007	-.0044
S007 7298 R GIUB	.0000	.0024	.0162	1.5	.9	3.4	-.0022	.0153	.0053
S007 7298 R NOAA	.0019	.0017	-.0002	-.2	.0	-.1	-.0010	.0007	-.0023
S008 KOKA D GRGS	-.0005	.0010	-.0023	.9	2.1	1.0	-.0011	-.0021	-.0008
S008 KOKA D CSR	.0010	.0072	.0065	.4	.8	.6	-.0064	.0074	-.0008
S008 KOKA D IGN	.0101	.0023	.0039	.5	.1	.5	.0013	.0074	-.0080

40425 SOURDOUGH

Positions

M001 7281 R GSFC	.0295	-.0459	.1025	.1	-.7	.6	.0545	.0456	.0919	93:	1
M001 7281 R GSFC	.0192	-.0251	.0505	.0	.0	.0	.0316	.0246	.0441	93:	1
M001 7281 R NOAA	-.0049	-.0022	.0175	-.1	.2	-.1	-.0010	.0034	.0180	93:	1

Velocities

M001 7281 R GSFC	.0038	-.0053	.0104	.1	-.1	-.3	.0065	.0049	.0091
M001 7281 R GSFC	-.0228	-.0005	-.0099	.0	.0	.0	-.0125	-.0215	.0000
M001 7281 R NOAA	-.0009	-.0006	.0027	-.1	.1	.1	.0000	.0002	.0029

40427 FORT ORD

Positions

M001 7266 R GSFC	-.0016	-.0080	.0075	.0	.0	.3	.0029	.0015	.0106	93:	1
M001 7266 R NOAA	.0141	.0154	-.0196	.1	-.1	-.4	.0038	-.0035	-.0281	93:	1
M002 7241 R GSFC	-.0016	-.0065	.0048	.1	-.1	.1	.0021	.0001	.0079	93:	1
M002 7241 R GSFC	-.0019	-.0058	.0033	.0	.0	-.1	.0014	-.0009	.0068	93:	1
M002 7241 R NOAA	.0126	.0133	-.0157	-.1	.0	.0	.0037	-.0019	-.0238	93:	1
M002 7241 R NOAA	.0118	.0132	-.0106	.0	.0	.1	.0031	.0019	-.0203	93:	1

Velocities

M001 7266 R GSFC	-.0016	-.0009	-.0016	-.2	.2	.1	-.0009	-.0022	.0003
M001 7266 R NOAA	.0026	.0034	-.0045	.2	-.2	-.1	.0004	-.0011	-.0061
M002 7241 R GSFC	-.0015	-.0009	-.0016	1.0	-.2	-.3	-.0008	-.0022	.0003
M002 7241 R GSFC	-.0326	.0284	.0224	.0	.0	.0	-.0426	.0221	.0077
M002 7241 R NOAA	.0026	.0034	-.0045	.0	.0	.0	.0004	-.0011	-.0061
M002 7241 R NOAA	.0026	.0034	-.0045	.0	.0	.0	.0004	-.0011	-.0061

40428 SANTA PAOLA

Positions

M001 7255 R GSFC	-.0015	-.0116	-.0006	-.1	.0	-.1	.0043	-.0066	.0086	93:	1
M001 7255 R NOAA	.0133	.0214	-.0078	.1	.1	.1	.0013	.0077	-.0252	93:	1

Velocities

M001 7255 R GSFC	-.0004	-.0008	-.0034	.0	.0	.0	.0000	-.0033	-.0012
M001 7255 R NOAA	.0018	.0038	-.0020	.0	.0	.0	-.0003	.0008	-.0046

40430 BLACK BUTTE

Positions

M001 7269 R GSFC	.0125	.0083	-.0065	.1	-.1	.0	.0076	.0018	-.0143	93:	1
M001 7269 R NOAA	-.0011	-.0074	.0115	-.1	.1	.0	.0022	.0055	.0123	93:	1

Velocities

M001 7269 R GSFC	.0010	.0012	-.0024	-.1	-.1	.0	.0004	-.0012	-.0025
M001 7269 R NOAA	-.0008	-.0014	.0013	.0	.1	.0	-.0001	.0002	.0020

40431 DEADMAN LAKE

Positions

M001 7267 R GSFC	.1353	.2069	-.1761	.3	-.1	-.2	.0297	-.0074	-.3020	93:	1
M001 7267 R NOAA	.0029	.0018	.0035	.0	.0	.0	.0018	.0045	-.0005	93:	1

Velocities

M001 7267 R GSFC	.0243	.0390	-.0348	.0	.0	.0	.0045	-.0030	-.0574
M001 7267 R NOAA	-.0008	-.0007	.0017	.0	.0	.0	-.0004	.0009	.0018

40432 ELY

Positions

M001 7286 TIE40432	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93:	1
M001 7286 R GSFC	.0001	-.0123	.0083	.0	-.1	.0	.0052	-.0006	.0139	93:	1
M001 7286 R NOAA	.0045	.0070	.0019	.0	.1	.0	.0012	.0068	-.0052	93:	1
M002 7257 TIE40432	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93:	1

Velocities

M001 7286 R GSFC	-.0001	-.0005	-.0018	.0	-.1	.1	.0002	-.0017	-.0008
M001 7286 R NOAA	.0004	.0007	-.0001	.0	.1	.0	.0001	.0004	-.0007

40433 QUINCY

Positions

M001 7051 TIE40433	.0000	-.0001	-.0001	.0	.0	.0	.0001	-.0001	.0000	93:	1
M001 7051 L CSR	-.0234	-.0333	.0908	-.4	.2	.6	-.0029	.0435	.0895	93:	1
M002 7109 TIE40433	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93:	1
M002 7109 L CSR	-.0001	-.0011	-.0024	.5	-.5	-.2	.0005	-.0024	-.0008	93:	1
M002 7109 L GSFC	-.0144	.0089	.0108	1.6	-.5	.9	-.0169	.0084	.0068	86:182	
M004 7221 TIE40433	.0016	.0001	.0001	.8	.1	.1	.0013	.0007	-.0006	93:	1
M004 7221 R GSFC	-.0031	-.0113	.0084	-.1	-.1	.7	.0032	-.0008	.0141	93:	1
M004 7221 R NOAA	.0255	.0362	-.0245	.4	.2	.6	.0033	.0096	-.0495	93:	1
M004 7221 P CODE	.0044	.0016	-.0050	1.5	-.8	-1.3	.0030	-.0015	-.0060	95:	76
M004 7221 P MIT	.0003	.0103	-.0082	.4	.9	-.5	-.0051	-.0005	-.0122	97:151	
M004 7221 P NCL	.0010	-.0009	.0021	.1	-.1	-.2	.0013	.0015	.0015	96:	1
M004 7221 P JPL	-.0063	-.0155	.0119	-1.0	-1.6	-.3	.0026	-.0015	.0203	96:	1
M005 7886 TIE40433	.0001	-.0001	.0000	.0	.0	.0	.0002	-.0001	.0000	93:	1
M005 7886 L CSR	-.0146	.0211	-.0183	-.2	.7	.3	-.0233	-.0072	-.0199	93:	1
M006 7260 TIE40433	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93:	1

Velocities

M001 7051 L CSR	.0012	-.0029	-.0006	.0	.0	.0	.0025	-.0017	.0011
M002 7109 L CSR	.0012	-.0029	-.0006	1.4	-2.2	.5	.0025	-.0017	.0011
M002 7109 L GSFC	.0024	-.0010	-.0013	-.4	.6	.1	.0026	-.0008	-.0011
M004 7221 R GSFC	-.0006	-.0001	-.0006	.3	-1.0	1.4	-.0005	-.0007	-.0001
M004 7221 R NOAA	.0061	.0095	-.0058	.5	.3	1.0	.0003	.0028	-.0124
M004 7221 P CODE	.0004	.0015	.0005	.7	.0	.3	-.0005	.0014	-.0008
M004 7221 P MIT	-.0022	.0036	-.0066	.0	.2	-.4	-.0037	-.0038	-.0058
M004 7221 P NCL	.0012	.0094	-.0100	.3	2.2	-.1	-.0038	-.0021	-.0131
M004 7221 P JPL	-.0025	-.0016	.0042	.3	1.4	.5	-.0013	.0015	.0047
M005 7886 L CSR	.0012	-.0029	-.0006	.0	.0	.0	.0025	-.0017	.0011

40434 MOUNT HOPKINS

Positions

M002 7888 L CSR	.3036	.4529	.1242	.5	.1	.3	.1223	.3848	-.3869	93: 1
S001 7921 L CSR	.4064	.6582	.1686	.4	.2	.0	.1451	.5426	-.5580	93: 1

Velocities

M002 7888 L CSR	.0320	.0353	.0085	.0	.0	.0	.0173	.0305	-.0333
S001 7921 L CSR	.0320	.0353	.0085	.0	.0	.0	.0173	.0305	-.0333

40436 SAN DIEGO

Positions

M002 7062 TIE40436	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M002 7062 L CSR	.1045	-.0937	-.2953	-.2	-.2	-.2	.1355	-.2683	-.1284	93: 1
M003 7035 TIE40436	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M003 7035 L CSR	.0469	-.0262	-.1268	.2	-.2	-.5	.0537	-.1080	-.0665	93: 1
M003 7035 L GSFC	-.0293	.0129	.0083	-.7	.2	.3	-.0320	.0061	.0059	86:182

Velocities

M002 7062 L CSR	.0149	-.0118	-.0312	.0	.0	.0	.0186	-.0283	-.0136
M003 7035 L CSR	.0149	-.0118	-.0312	.0	.1	-.3	.0186	-.0283	-.0136
M003 7035 L GSFC	.0034	-.0023	.0020	.5	-.3	.1	.0041	.0014	.0015

40437 MAMMOTH LAKES

Positions

M001 7259 R GSFC	-.0390	-.1775	.0615	-.2	-.3	-.1	.0517	-.0577	.1755	93: 1
M001 7259 R NOAA	-.0162	-.0189	.0227	-.4	.5	.1	-.0050	.0031	.0332	93: 1
M002 CASA P MIT	-.0061	-.0050	.0023	-.1	-.4	.0	-.0029	-.0027	.0072	97:151
M002 CASA P NCL	-.0013	-.0040	.0093	-.1	.1	.4	.0008	.0048	.0090	96: 1
M002 CASA P JPL	-.0002	-.0010	.0002	-.1	-.3	-.1	.0003	-.0004	.0008	96: 1

Velocities

M001 7259 R GSFC	-.0122	-.0296	.0110	-.6	.9	.0	.0036	-.0107	.0319
M001 7259 R NOAA	-.0111	-.0081	.0099	.0	.0	.0	-.0058	.0002	.0159
M002 CASA P MIT	-.0083	-.0109	.0089	-.3	-.2	.1	-.0020	-.0012	.0161
M002 CASA P NCL	.0067	.0103	-.0181	.5	-.3	-.2	.0008	-.0068	-.0207
M002 CASA P JPL	.0006	-.0016	.0025	.5	-.6	.2	.0013	.0013	.0025

40438 BEAR LAKE

Positions

M001 7082 TIE40438	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M001 7082 L CSR	.0197	-.1018	-.0968	-.1	-.3	.0	.0555	-.1306	.0004	93: 1
M001 7082 L GSFC	-.0133	.0204	-.0099	-.1	.3	-.1	-.0199	.0021	-.0171	86:182
M002 7046 TIE40438	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M002 7046 L CSR	.0042	-.0162	-.0247	.0	-.1	-.1	.0098	-.0275	-.0064	93: 1

Velocities

M001 7082 L CSR	.0073	-.0113	-.0170	.0	.0	.0	.0110	-.0179	-.0055
M001 7082 L GSFC	.0010	-.0039	.0014	.0	-.1	-.1	.0023	-.0011	.0034
M002 7046 L CSR	.0073	-.0113	-.0170	-.1	.1	-.3	.0110	-.0179	-.0055

40439 OWENS VALLEY

Positions

M001 7114 TIE40439	-.0001	.0000	-.0001	.0	.0	.0	-.0001	-.0001	.0000	93: 1
M001 7114 L CSR	-.0559	.0616	.0976	.0	-.8	.3	-.0784	.0945	.0370	93: 1
M003 7084 TIE40439	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M003 7084 L CSR	-.2827	.2291	.1051	-.3	.4	.2	-.3575	.1246	.0096	93: 1
M004 7853 TIE40439	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1

M004 7853 R GSFC	.0021	-.0595	-.0500	-.9	-.2	-.3	.0301	-.0709	.0107	93:	1
M004 7853 R NOAA	.0123	-.0464	-.0625	-.4	-.6	-.4	.0328	-.0710	-.0099	93:	1
M004 7853 L CSR	-.0063	-.0429	-.0237	.3	-1.5	-1.6	.0148	-.0436	.0181	93:	1
S002 7207 TIE40439	.0010	-.0099	-.0059	.2	-1.1	-.7	.0056	-.0097	.0030	93:	1
S002 7207 R GSFC	.0222	-.0353	-.0792	1.5	-3.6	-7.2	.0363	-.0755	-.0316	93:	1
S002 7207 R GIUB	.0040	.0166	-.0449	.3	1.8	-1.6	-.0043	-.0257	-.0403	93:	1
S002 7207 R NOAA	.0184	-.0486	-.0686	.4	-.5	-1.1	.0392	-.0752	-.0144	93:	1
S006 7616 R GSFC	-.0014	.0100	.0138	-1.0	3.8	5.6	-.0060	.0159	.0019	93:	1
S006 7616 R GIUB	-.0061	-.0093	.0676	-.1	-1.3	3.9	-.0010	.0472	.0497	93:	1
S006 7616 R NOAA	.0008	.0119	.0212	.6	2.7	2.8	-.0050	.0235	.0042	93:	1

Velocities

M001 7114 L CSR	.0000	.0014	.0014	.0	.4	.5	-.0006	.0019	-.0001		
M003 7084 L CSR	.0000	.0014	.0014	.1	.0	.1	-.0006	.0019	-.0001		
M004 7853 R GSFC	.0021	-.0028	-.0151	.0	.0	.0	.0032	-.0129	-.0079		
M004 7853 R NOAA	.0026	-.0042	-.0126	.0	.0	-.1	.0043	-.0115	-.0057		
M004 7853 L CSR	.0000	.0013	.0014	.1	4.9	5.7	-.0006	.0018	-.0001		
S002 7207 R GSFC	.0021	-.0028	-.0151	.7	-.1	-2.3	.0032	-.0129	-.0079		
S002 7207 R GIUB	.0005	.0048	-.0052	.0	.0	.0	-.0019	-.0014	-.0066		
S002 7207 R NOAA	.0026	-.0042	-.0126	1.4	-3.1	-8.3	.0043	-.0115	-.0057		
S006 7616 R GSFC	.0012	-.0068	-.0111	-.8	-3.2	-7.9	.0043	-.0121	-.0024		
S006 7616 R GIUB	.0005	.0048	-.0052	.0	.0	.0	-.0019	-.0014	-.0066		
S006 7616 R NOAA	.0026	-.0042	-.0126	-.1	.2	.2	.0043	-.0115	-.0057		

40440 WESTFORD

Positions

M001 7091 TIE40440	.0047	.0063	-.0005	.0	.0	.0	.0064	.0027	-.0036	93:	1
M001 7091 L CSR	-.0006	-.0506	.0523	.1	-.5	.4	-.0166	.0061	.0705	93:	1
S002 7205 TIE40440	.0051	.0079	-.0006	.4	.8	-.1	.0074	.0035	-.0047	93:	1
S002 7205 R GSFC	-.0025	-.0041	.0038	-.5	-.7	.1	-.0037	.0007	.0048	93:	1
S002 7205 R GIUB	-.0012	-.0015	.0027	.2	-.3	.3	-.0016	.0013	.0026	93:	1
S002 7205 R NOAA	-.0006	.0057	.0021	.8	1.8	.2	.0012	.0054	-.0027	93:	1
S003 7209 TIE40440	.0000	.0000	.0000	-1.6	-1.6	.1	.0000	.0000	.0000	93:	1
S003 7209 R GSFC	.0021	-.0044	.0065	1.8	-.4	.7	.0006	.0015	.0079	93:	1
S003 7209 R GIUB	-.0013	.0013	-.0019	-1.9	-.2	-.8	-.0008	-.0002	-.0025	93:	1
S003 7209 R NOAA	.0007	.0040	.0027	-1.0	2.8	.6	.0020	.0044	-.0007	93:	1
S020 WES2 TIE40440	-.0066	.0124	-.0200	-1.6	2.1	-3.3	-.0023	-.0053	-.0237	93:	1
S020 WES2 P GFZ	-.0185	-.0134	.0086	-.7	-.5	-.8	-.0218	.0017	.0108	94:	365
S020 WES2 P CODE	.0068	-.0078	.0049	1.9	-.7	-1.3	.0040	-.0029	.0103	95:	76
S020 WES2 P MIT	-.0054	-.0059	.0022	-.4	-.6	.5	-.0070	-.0010	.0044	97:	151
S020 WES2 P NCL	.0014	-.0012	.0054	.1	-.5	2.0	.0009	.0029	.0048	96:	1
S020 WES2 P JPL	-.0015	-.0059	.0035	-.1	-1.1	-.3	-.0032	-.0008	.0061	96:	1

Velocities

M001 7091 L CSR	.0088	-.0209	.0188	2.5	-1.2	1.4	.0017	-.0015	.0293		
S002 7205 R GSFC	-.0019	.0017	-.0027	-2.4	.5	-1.6	-.0013	-.0005	-.0034		
S002 7205 R GIUB	.0001	.0002	.0000	.0	.0	.0	.0001	.0001	-.0001		
S002 7205 R NOAA	-.0010	.0016	-.0021	1.3	1.9	-.6	-.0004	-.0003	-.0028		
S003 7209 R GSFC	-.0009	.0015	-.0019	-.9	2.3	-1.3	-.0004	-.0003	-.0025		
S003 7209 R GIUB	.0001	.0002	.0000	.3	.0	.0	.0001	.0001	-.0001		
S003 7209 R NOAA	-.0004	.0006	-.0015	.3	.4	-.8	-.0001	-.0006	-.0015		
S020 WES2 P GFZ	.0011	-.0020	.0050	-.3	-.7	1.8	.0004	.0022	.0051		
S020 WES2 P CODE	-.0008	.0032	-.0042	-.5	.5	1.7	.0003	-.0008	-.0053		
S020 WES2 P MIT	-.0035	.0044	-.0088	-.4	1.1	-1.6	-.0019	-.0029	-.0099		
S020 WES2 P NCL	-.0024	.0044	-.0083	-.4	.5	.4	-.0009	-.0028	-.0093		
S020 WES2 P JPL	-.0013	-.0011	.0031	.1	.0	1.3	-.0015	.0019	.0025		

40441 GREENBANK

Positions

S001 7204 R GSFC	.0012	-.0039	.0026	.2	-.2	-.6	.0004	-.0005	.0048	93:	1
S001 7204 R NOAA	.0031	.0112	.0119	.6	1.1	2.5	.0051	.0158	-.0008	93:	1

S004 7214 R GSFC	-.0063	-.0158	.0122	-1.6	-1.5	.2	-.0090	.0006	.0189	93:	1
S004 7214 R GSFC	.0020	-.0040	.0035	.0	.0	-.1	.0013	.0001	.0055	93:	1
S004 7214 R GIUB	-.0011	-.0036	.0091	1.4	-.1	.4	-.0017	.0050	.0083	93:	1
S004 7214 R NOAA	.0014	.0021	.0060	-1.1	.5	.0	.0018	.0058	.0023	93:	1
S005 7248 R GSFC	.0016	-.0035	.0032	.0	.0	.0	.0010	.0002	.0049	93:	1
S007 7208 R GSFC	-.0006	.0108	-.0019	.5	1.0	.9	.0014	.0052	-.0096	93:	1

Velocities

S001 7204 R GSFC	-.0013	.0016	-.0021	-.4	.1	-.2	-.0010	-.0005	-.0027		
S001 7204 R NOAA	-.0006	.0012	-.0012	-.3	.3	-.9	-.0003	-.0001	-.0018		
S004 7214 R GSFC	-.0012	.0015	-.0014	-.2	.5	.8	-.0010	-.0001	-.0022		
S004 7214 R GSFC	-.0166	.0019	-.0012	.0	.0	.0	-.0160	.0021	-.0045		
S004 7214 R GIUB	.0006	.0010	-.0003	1.4	-.3	-.1	.0007	.0003	-.0009		
S004 7214 R NOAA	.0003	.0013	-.0012	-.4	1.1	.6	.0006	-.0002	-.0017		
S005 7248 R GSFC	-.0013	.0016	-.0021	.0	.0	.0	-.0010	-.0005	-.0027		
S007 7208 R GSFC	.0000	-.0034	.0001	-.1	-.2	-.2	-.0006	-.0020	.0027		

40442 FORT DAVIS

Positions

M001 7086 TIE40442	.0008	-.0006	-.0001	.0	.0	.0	.0009	-.0003	.0003	93:	1
M001 7086 L CSR	.0061	-.0452	.0170	-.1	-.6	.6	.0168	-.0070	.0451	93:	1
M005 7885 TIE40442	.0008	-.0006	-.0001	.0	.0	.0	.0009	-.0003	.0003	93:	1
M005 7885 L CSR	.0511	-.0937	.0338	.0	-.1	.0	.0723	-.0110	.0848	93:	1
M006 7080 TIE40442	.0023	.0043	-.0091	.3	.3	-1.0	.0012	-.0054	-.0087	93:	1
M006 7080 L CSR	.0001	-.0028	-.0008	.0	-.4	.7	.0008	-.0021	.0019	93:	1
M006 7080 L GSFC	-.0146	.0368	-.0184	-.9	1.8	-.3	-.0231	.0006	-.0371	86:	182
M008 7850 TIE40442	.0022	-.0005	.0016	.5	.0	.6	.0023	.0013	.0008	93:	1
M008 7850 R GSFC	-.0002	-.0144	.0094	.1	-.1	.2	.0033	.0010	.0169	93:	1
M008 7850 L CSR	-.0023	-.0070	.0180	-.2	.1	1.0	-.0006	.0117	.0155	93:	1
M009 7900 TIE40442	-.0005	.0001	-.0001	-.6	-.3	1.0	-.0006	-.0001	.0000	93:	1
M009 7900 R GSFC	.0165	-.0020	.0005	.8	-.6	.2	.0165	.0015	-.0015	93:	1
M012 MDO1 TIE40442	.0036	-.0003	.0037	.5	.1	.7	.0036	.0035	.0014	93:	1
M012 MDO1 P GFZ	-.0165	-.0078	.0120	.1	-.1	.8	-.0141	.0044	.0161	94:	365
M012 MDO1 P CODE	.0045	.0067	-.0062	.5	.2	.7	.0028	-.0015	-.0097	95:	76
M012 MDO1 P MIT	-.0048	.0049	-.0095	.1	.9	-1.2	-.0058	-.0063	-.0079	97:	151
M012 MDO1 P NCL	.0018	.0011	.0019	.0	.6	.4	.0015	.0024	-.0003	96:	1
M012 MDO1 P JPL	-.0033	-.0144	.0072	-.8	-1.7	-.6	.0003	-.0014	.0164	96:	1
S001 7086 TIE40442	.0008	-.0006	-.0001	.0	.0	.0	.0009	-.0003	.0003	93:	1
S002 7206 TIE40442	.0008	-.0006	-.0001	.0	.0	.0	.0009	-.0003	.0003	93:	1
S003 7216 TIE40442	.0000	.0000	.0000	-.5	-.1	.7	.0000	.0000	.0000	93:	1
S003 7216 R GSFC	-.0036	-.0206	.0113	-2.0	.1	1.4	.0015	-.0010	.0237	93:	1
S003 7216 R GIUB	-.0094	-.0054	.0373	.4	-.3	.9	-.0078	.0283	.0254	93:	1
S003 7216 R NOAA	.0025	-.0005	.0062	-1.0	1.0	3.7	.0025	.0054	.0031	93:	1
S017 7613 TIE40442	-.0076	-.0013	.0023	-2.5	-.4	.8	-.0071	.0004	.0038	93:	1
S017 7613 R GSFC	.0020	-.0028	.0019	.7	-.2	-1.0	.0026	.0005	.0029	93:	1
S017 7613 R GIUB	-.0115	.0041	.0286	.1	.6	-.1	-.0122	.0252	.0136	93:	1
S017 7613 R NOAA	.0013	.0046	.0046	-.5	1.5	.8	.0002	.0064	-.0018	93:	1

Velocities

M001 7086 L CSR	.0028	-.0074	.0008	.0	.0	.0	.0045	-.0026	.0060		
M005 7885 L CSR	.0028	-.0074	.0008	.0	.0	.0	.0045	-.0026	.0060		
M006 7080 L CSR	.0028	-.0074	.0008	.7	-1.5	2.3	.0045	-.0026	.0060		
M006 7080 L GSFC	.0026	-.0044	.0014	.7	-.2	-.5	.0036	-.0006	.0039		
M008 7850 R GSFC	-.0010	-.0027	-.0009	.2	.1	.3	-.0003	-.0022	.0020		
M008 7850 L CSR	.0028	-.0074	.0008	.0	.0	.0	.0045	-.0026	.0060		
M009 7900 R GSFC	-.0010	-.0027	-.0009	-.2	.0	-.2	-.0003	-.0022	.0020		
M012 MDO1 P GFZ	.0018	-.0054	-.0008	.2	-.3	-1.3	.0030	-.0031	.0037		
M012 MDO1 P CODE	.0004	.0015	-.0025	.5	.3	-.4	.0000	-.0013	-.0026		
M012 MDO1 P MIT	-.0037	.0019	-.0051	-.4	-.1	-.6	-.0041	-.0039	-.0034		
M012 MDO1 P NCL	-.0001	.0059	-.0090	.5	.7	-1.1	-.0015	-.0048	-.0095		
M012 MDO1 P JPL	-.0015	-.0022	.0012	.4	.7	-1.2	-.0009	-.0002	.0027		
S003 7216 R GSFC	-.0010	-.0027	-.0009	-1.5	.3	1.8	-.0003	-.0022	.0020		

S003 7216 R GIUB	-.0014	-.0008	.0082	.9	-.1	-1.4	-.0012	.0065	.0052
S003 7216 R NOAA	.0000	-.0007	-.0006	-4.5	1.7	4.1	.0002	-.0009	.0003
S017 7613 R GSFC	.0003	.0002	-.0033	.5	-1.8	-3.4	.0002	-.0027	-.0019
S017 7613 R GIUB	-.0001	-.0012	.0030	.0	.0	.0	.0002	.0020	.0026
S017 7613 R NOAA	.0016	-.0019	-.0010	.8	-.6	.4	.0020	-.0016	.0008

40445 MAUI

Positions

M001 7210 TIE40445	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M001 7210 L CSR	-.0003	-.0014	-.0029	-.1	.0	.3	.0011	-.0030	-.0002	93: 1
M001 7210 L GSFC	-.0157	.0313	.0007	.9	1.3	.0	-.0350	.0000	.0019	86:182
M002 7120 TIE40445	.0002	-.0002	.0001	.1	-.1	.0	.0003	.0001	.0000	93: 1
M002 7120 R GSFC	.0092	-.0031	-.0069	.1	-.2	-.3	.0066	-.0039	-.0092	93: 1
M002 7120 R NOAA	-.0133	-.0008	.0110	-.1	.7	.0	-.0046	.0059	.0156	93: 1
M002 7120 L CSR	-.0750	-.0341	-.0040	.2	-.3	.0	.0010	-.0329	.0757	93: 1
S005 7210 TIE40445	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1

Velocities

M001 7210 L CSR	-.0029	-.0030	-.0001	-3.5	1.1	.3	.0016	-.0015	.0035
M001 7210 L GSFC	.0044	-.0030	-.0011	1.1	.7	.0	.0045	.0000	-.0030
M002 7120 R GSFC	.0021	.0020	-.0041	.2	.1	.3	-.0010	-.0029	-.0040
M002 7120 R NOAA	.0008	.0042	.0012	.0	.0	.0	-.0035	.0020	-.0018
M002 7120 L CSR	-.0029	-.0030	-.0001	.0	.0	.0	.0016	-.0015	.0035

40449 OCOTILLO

Positions

M001 7270 R GSFC	.0093	.0492	-.0163	.0	.2	.0	-.0130	.0124	-.0495	93: 1
M001 7270 R NOAA	.0025	-.0116	.0093	.0	-.1	.1	.0073	.0028	.0129	93: 1

Velocities

M001 7270 R GSFC	-.0020	.0010	.0000	.0	.0	.0	-.0023	.0000	.0000
M001 7270 R NOAA	-.0003	-.0028	.0020	.0	.0	.0	.0009	.0003	.0033

40451 WASHINGTON

Positions

M101 7101 TIE40451	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M101 7101 L CSR	-.0765	-.0191	.0821	-.1	-.1	.1	-.0789	.0631	.0526	93: 1
M102 7102 TIE40451	-.0047	.0006	.0018	-1.1	.1	.4	-.0044	.0024	-.0001	93: 1
M102 7102 R GSFC	.0089	-.0062	.0035	.5	.4	-.3	.0073	-.0024	.0085	93: 1
M102 7102 R NOAA	.0085	-.0092	.0054	.6	.1	-.8	.0062	-.0026	.0119	93: 1
M102 7102 L CSR	-.0084	.0052	.0163	.4	-.3	-.2	-.0070	.0171	.0048	93: 1
M103 7103 TIE40451	-.0001	.0000	.0000	.6	-.1	-.2	-.0001	.0000	.0000	93: 1
M103 7103 L CSR	.0446	-.0208	.0313	1.0	-.1	-.3	.0387	.0051	.0433	93: 1
M104 7104 TIE40451	.0000	.0000	.0000	.5	-.1	-.2	.0000	.0000	.0000	93: 1
M104 7104 L CSR	-.1137	.0447	-.0487	-.3	-.1	-.2	-.1005	.0059	-.0846	93: 1
M105 7105 TIE40451	.0000	.0000	.0000	.8	-.1	-.3	.0000	.0000	.0000	93: 1
M105 7105 L CSR	-.0003	-.0010	.0007	-.2	-.5	.9	-.0005	.0000	.0011	93: 1
M105 7105 L GSFC	.0026	-.0110	.0092	2.1	-.3	.0	.0000	.0000	.0146	86:182
M106 7100 TIE40451	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M106 7100 L CSR	-.0544	-.1232	-.4058	-.1	-.1	-.4	-.0811	-.3829	-.1720	93: 1
M107 7064 TIE40451	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M108 7065 TIE40451	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M108 7065 L CSR	-.5214	.0965	.5306	.1	.1	.5	-.4857	.5462	.1688	93: 1
M111 7899 TIE40451	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M111 7899 L CSR	.0273	-.0437	.0315	.4	.0	-.2	.0166	-.0062	.0577	93: 1
M112 7063 TIE40451	-.0003	.0000	-.0001	-.1	.0	.0	-.0003	-.0001	-.0001	93: 1
M112 7063 L CSR	.0005	-.0093	.0730	.9	-.6	.2	-.0017	.0509	.0531	93: 1
M114 7125 TIE40451	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M114 7125 L CSR	-.0275	.0564	.0290	.0	.2	.4	-.0139	.0610	-.0292	93: 1
M116 7130 TIE40451	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1

M116	7130	L	CSR	.0078	-.0081	.0053	.1	.0	.0	.0057	-.0019	.0108	93:	1
M117	7920	TIE40451		.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93:	1
M117	7920	L	CSR	-.0070	-.0019	-.0050	.1	-.1	-.2	-.0073	-.0041	-.0029	93:	1
M118	7889	TIE40451		.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93:	1
M120	7918	TIE40451		.0008	.0000	-.0001	.3	.0	.0	.0007	-.0002	.0001	93:	1
M120	7918	L	CSR	-.0013	-.0015	-.0029	-.4	-.2	.2	-.0016	-.0030	-.0010	93:	1
M121	7919	L	CSR	.0543	.0598	.0185	.2	.0	-.1	.0665	.0433	-.0239	93:	1
M123	GODE	TIE40451		.0038	-.0112	-.0003	1.3	-3.7	-.1	.0011	-.0077	.0090	93:	1
M123	GODE	P	CODE	.0052	.0070	-.0063	.1	2.0	.3	.0067	-.0014	-.0084	95:	76
M123	GODE	P	MIT	-.0121	.0154	-.0151	-1.3	1.9	-.8	-.0083	-.0006	-.0233	97:	151
M123	GODE	P	NCL	-.0002	.0115	-.0075	-.8	2.0	-.3	.0024	.0013	-.0134	96:	1
M125	7108	TIE40451		.0078	.0039	.0022	2.6	1.3	.7	.0085	.0030	-.0001	93:	1
M125	7108	R	GSFC	.0048	-.0091	.0018	-.8	-.5	-.9	.0026	-.0049	.0088	93:	1
M125	7108	R	NOAA	.0037	-.0081	.0090	-.5	-1.4	-.1	.0018	.0015	.0124	93:	1

Velocities

M101	7101	L	CSR	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000		
M102	7102	R	GSFC	-.0036	.0030	-.0014	-1.3	-.9	.8	-.0028	.0013	-.0038		
M102	7102	R	NOAA	-.0031	.0001	-.0001	-1.4	-1.1	1.0	-.0030	.0005	-.0007		
M102	7102	L	CSR	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000		
M103	7103	L	CSR	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000		
M104	7104	L	CSR	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000		
M105	7105	L	CSR	.0000	.0000	.0000	-3.8	1.8	3.0	.0000	.0000	.0000		
M105	7105	L	GSFC	-.0006	.0025	-.0020	-2.4	.3	-.1	.0000	.0000	-.0032		
M106	7100	L	CSR	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000		
M108	7065	L	CSR	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000		
M111	7899	L	CSR	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000		
M112	7063	L	CSR	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000		
M114	7125	L	CSR	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000		
M116	7130	L	CSR	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000		
M117	7920	L	CSR	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000		
M120	7918	L	CSR	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000		
M121	7919	L	CSR	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000		
M123	GODE	P	CODE	-.0033	.0044	-.0068	-2.5	.6	.0	-.0022	-.0021	-.0082		
M123	GODE	P	MIT	-.0070	.0053	-.0048	-.7	-.4	.1	-.0056	.0005	-.0082		
M123	GODE	P	NCL	-.0062	.0050	-.0057	-2.9	-.4	.5	-.0049	-.0005	-.0084		
M125	7108	R	GSFC	-.0036	.0030	-.0014	.0	.0	.0	-.0028	.0013	-.0038		
M125	7108	R	NOAA	-.0031	.0001	-.0001	.0	.0	.0	-.0030	.0005	-.0007		

40452 BLOOMINGTON

Positions

M001	7291	R	GSFC	.0019	.0063	.0015	.0	.0	.0	.0022	.0050	-.0038	93:	1
M001	7291	R	NOAA	.0013	-.0254	.0360	.0	-.1	.1	-.0003	.0119	.0424	93:	1

Velocities

M001	7291	R	GSFC	-.0003	-.0002	-.0002	.0	.0	.0	-.0003	-.0003	.0000		
M001	7291	R	NOAA	.0012	-.0021	.0022	.0	.0	.0	.0011	.0004	.0031		

40453 CARROLLTON

Positions

M001	7228	R	GSFC	-.0104	.0338	-.0063	-.1	.1	.0	-.0074	.0139	-.0323	93:	1
M001	7228	R	NOAA	.0105	-.1848	.1291	.1	-.3	.0	-.0053	.0052	.2255	93:	1

Velocities

M001	7228	R	GSFC	-.0014	.0005	.0010	.0	.0	.0	-.0013	.0011	.0000		
M001	7228	R	NOAA	.0002	-.0014	.0033	.0	.0	.0	.0000	.0020	.0030		

40454 LEONARD

Positions

M001	7292	R	GSFC	.0009	.0015	.0091	.0	.1	.0	.0008	.0083	.0041	93:	1
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M001 7292 R NOAA	.0013	-.0071	.0156	.0	-.1	.1	.0020	.0085	.0147	93:	1
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Velocities

M001 7292 R GSFC	-.0007	.0001	.0001	.0	.0	.0	-.0007	.0001	.0000
M001 7292 R NOAA	.0008	-.0021	.0027	.0	.0	.0	.0010	.0010	.0032

40455 MILES CITY

Positions

M001 7038 R GSFC	-.0014	.0100	-.0033	.0	.1	.0	-.0041	.0044	-.0088	93:	1
M001 7038 R NOAA	-.0009	-.0038	.0157	.0	-.1	.0	.0002	.0080	.0140	93:	1

Velocities

M001 7038 R GSFC	-.0016	-.0001	-.0005	.0	.0	.1	-.0015	-.0007	.0000
M001 7038 R NOAA	-.0003	-.0025	.0022	.0	.0	.0	.0004	-.0003	.0033

40456 PIETOWN

Positions

M001 PIEL TIE40456	-.0008	-.0016	.0022	.0	.0	.0	-.0003	.0008	.0027	93:	1
M001 PIEL P CODE	.0058	.0100	-.0091	1.8	.4	1.3	.0024	-.0011	-.0145	95:	76
M001 PIEL P MIT	-.0053	.0015	-.0040	.0	.3	-.2	-.0055	-.0034	-.0021	97:	151
M001 PIEL P NCL	.0035	.0056	-.0015	.9	.4	.2	.0016	.0024	-.0061	96:	1
M001 PIEL P JPL	-.0029	-.0127	.0067	-.7	-1.6	-.7	.0012	-.0018	.0145	96:	1
S001 7234 TIE40456	.0000	.0000	.0000	.3	.5	-.7	.0000	.0000	.0000	93:	1
S001 7234 R GSFC	.0019	-.0002	.0008	.6	.6	-1.0	.0019	.0009	.0001	93:	1
S001 7234 R GIUB	-.0076	-.0065	.0388	-.5	-1.1	1.6	-.0052	.0272	.0289	93:	1
S001 7234 R NOAA	.0014	-.0011	.0086	-2.3	-.3	.6	.0016	.0067	.0053	93:	1

Velocities

M001 PIEL P CODE	.0011	.0022	-.0032	1.2	.7	-2.2	.0004	-.0012	-.0038
M001 PIEL P MIT	-.0039	.0009	-.0060	-.4	.2	-1.1	-.0040	-.0052	-.0031
M001 PIEL P NCL	-.0007	.0044	-.0085	1.1	.8	-1.6	-.0020	-.0048	-.0081
M001 PIEL P JPL	-.0008	.0009	-.0009	.4	1.3	-1.9	-.0010	-.0004	-.0009
S001 7234 R GSFC	.0000	.0000	-.0019	.8	-1.7	-.6	.0000	-.0016	-.0011
S001 7234 R GIUB	-.0016	-.0013	.0092	-1.4	.1	.8	-.0011	.0066	.0066
S001 7234 R NOAA	-.0004	-.0013	.0010	-.9	-.9	-.2	.0000	.0001	.0017

40457 SEATTLE

Positions

M001 7229 R GSFC	-.0177	-.0299	.0360	-.1	.1	.0	.0009	-.0014	.0500	93:	1
M001 7229 R NOAA	.0168	.0214	-.0176	.1	.0	.0	.0028	.0081	-.0312	93:	1

Velocities

M001 7229 R GSFC	-.0062	-.0065	.0060	-.1	.1	.0	-.0018	-.0025	.0104
M001 7229 R NOAA	.0048	.0065	-.0073	.1	.0	.0	.0006	.0011	-.0108

40458 SADDLE PEAK

Positions

M001 SPK1 P JPL	.0000	.0000	.0000	.1	.0	-.2	.0000	.0000	.0000	96:	1
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Velocities

M001 SPK1 P JPL	.0000	.0000	.0000	.1	.0	.0	.0000	.0000	.0000
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40460 SCRIPPS_3

Positions

M004 SIO3 P JPL	.0000	.0000	.0000	.2	.0	-.3	.0000	.0000	.0000	96:	1
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Velocities

M004 SIO3 P JPL	.0000	.0000	.0000	.0	.1	.2	.0000	.0000	.0000
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40461 WHITTIER

Positions

M001 WHC1 P JPL	-.0001	-.0001	.0001	.2	.0	-.3	-.0001	.0000	.0002	96:	1
M002 WHI1 P JPL	.0001	.0000	-.0001	.3	.0	-.3	.0001	.0000	-.0001	96:	1

Velocities

M001 WHC1 P JPL	.0004	-.0007	.0029	.1	.0	.7	.0007	.0022	.0020
M002 WHI1 P JPL	-.0004	.0006	-.0025	.1	.1	-.2	-.0007	-.0019	-.0017

40463 LOS ALAMOS

Positions

S001 7611 R GSFC	.0010	-.0035	.0020	-.7	-.1	-1.2	.0019	-.0002	.0037	93:	1
S001 7611 R GIUB	-.0056	-.0007	.0308	.3	.0	2.2	-.0051	.0236	.0198	93:	1
S001 7611 R NOAA	.0023	.0008	.0056	-.2	.4	-.1	.0020	.0053	.0021	93:	1

Velocities

S001 7611 R GSFC	.0007	.0008	-.0036	.5	-1.0	-2.4	.0004	-.0023	-.0028
S001 7611 R GIUB	-.0014	.0003	.0052	-1.1	.2	1.8	-.0015	.0041	.0031
S001 7611 R NOAA	.0001	.0006	-.0021	-.2	.2	-.5	-.0001	-.0013	-.0017

40465 NORTH LIBERTY

Positions

M001 NLIB TIE40465	.0024	-.0009	-.0014	.0	.0	.0	.0024	-.0016	-.0003	93:	1
M001 NLIB P GFZ	-.0188	-.0054	.0084	-.7	.8	1.5	-.0187	.0024	.0100	94:	365
M001 NLIB P CODE	.0039	.0005	-.0002	.4	.0	.9	.0038	.0002	-.0006	95:	76
M001 NLIB P MIT	-.0049	.0018	-.0058	-.2	.5	-.5	-.0049	-.0032	-.0051	97:	151
M001 NLIB P NCL	.0011	.0004	.0018	-.5	.4	.2	.0011	.0016	.0008	96:	1
M001 NLIB P JPL	-.0009	-.0044	.0023	-.2	-.6	-.4	-.0008	-.0013	.0049	96:	1
S001 7612 TIE40465	.0000	.0000	.0000	-.8	.3	.5	.0000	.0000	.0000	93:	1
S001 7612 R GSFC	.0030	-.0082	.0090	.4	-.7	.9	.0032	.0013	.0120	93:	1
S001 7612 R GIUB	.0003	-.0046	.0231	-.2	-.1	-.6	.0005	.0141	.0188	93:	1
S001 7612 R NOAA	.0040	.0117	-.0023	.4	.5	.0	.0037	.0061	-.0103	93:	1

Velocities

M001 NLIB P GFZ	.0003	-.0070	.0028	-1.3	-.2	.0	.0005	-.0026	.0071
M001 NLIB P CODE	.0002	.0000	-.0036	.2	.3	-.2	.0002	-.0027	-.0024
M001 NLIB P MIT	-.0015	.0012	-.0041	-.1	.0	-.5	-.0015	-.0023	-.0035
M001 NLIB P NCL	-.0015	.0014	-.0049	.2	.2	-.7	-.0015	-.0027	-.0042
M001 NLIB P JPL	-.0024	.0006	.0002	-.6	.4	-.3	-.0024	.0005	-.0002
S001 7612 R GSFC	-.0010	.0026	-.0041	.1	.3	.5	-.0010	-.0013	-.0047
S001 7612 R GIUB	.0003	.0034	-.0005	.0	.0	.0	.0002	.0019	-.0029
S001 7612 R NOAA	-.0011	-.0122	.0074	.0	-.9	-1.5	-.0007	-.0026	.0140

40466 KITT PEAK

Positions

S001 7610 R GSFC	.0011	-.0014	.0057	-.1	.1	.7	.0015	.0043	.0038	93:	1
S001 7610 R GIUB	-.0126	-.0052	.0535	.0	.1	-.5	-.0098	.0404	.0364	93:	1
S001 7610 R NOAA	.0024	.0122	.0067	.2	.7	1.1	-.0022	.0121	-.0068	93:	1

Velocities

S001 7610 R GSFC	.0008	.0003	-.0058	.4	-.7	-2.2	.0006	-.0046	-.0035
S001 7610 R GIUB	-.0001	.0000	-.0003	.0	.0	.0	-.0001	-.0002	-.0001
S001 7610 R NOAA	-.0007	-.0107	.0014	-.3	.0	-.3	.0033	-.0043	.0094

40469 CHINA LAKE

Positions

M001 COSO P JPL	.0000	.0000	.0000	.0	.0	-.1	.0000	.0000	.0000	96:	1
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Velocities
M001 COSO P JPL .0000 .0000 .0000 .0 .1 .0 .0000 .0000 .0000

40471 HANCOCK

Positions
S001 7618 R GSFC .0057 -.0134 .0063 1.1 -.5 -.8 .0013 -.0053 .0149 93: 1
S001 7618 R GIUB .0004 -.0043 .0023 -.1 -.4 -1.4 -.0010 -.0012 .0047 93: 1
S001 7618 R NOAA .0050 .0124 -.0150 -.3 .4 -1.2 .0086 -.0040 -.0177 93: 1

Velocities
S001 7618 R GSFC -.0020 .0027 .0003 -.8 -1.0 1.4 -.0011 .0024 -.0021
S001 7618 R GIUB .0006 .0013 .0022 .0 .0 .0 .0010 .0023 .0007
S001 7618 R NOAA -.0031 -.0070 .0093 -.2 -.2 -1.7 -.0051 .0029 .0106

40473 BREWSTER

Positions
S001 7614 R GSFC .0066 .0053 .0034 .9 -.7 .3 .0031 .0082 -.0028 93: 1
S001 7614 R GIUB .0066 -.0084 .0603 -.8 .5 1.3 .0099 .0372 .0476 93: 1
S001 7614 R NOAA .0133 .0129 -.0011 .3 .0 .1 .0052 .0125 -.0127 93: 1

Velocities
S001 7614 R GSFC -.0034 -.0045 -.0025 -.7 -.6 .7 -.0008 -.0059 .0019
S001 7614 R GIUB .0015 -.0008 -.0007 .0 .0 .0 .0017 -.0004 -.0006
S001 7614 R NOAA -.0058 -.0065 .0024 2.8 1.1 .9 -.0018 -.0048 .0075

40474 LAKE_MATHEWS

Positions
M001 MATH P JPL .0000 .0000 .0000 .0 .1 -.1 .0000 .0000 .0000 96: 1

Velocities
M001 MATH P JPL .0000 .0000 .0000 .0 .1 .1 .0000 .0000 .0000

40477 MAUNA KEA

Positions
M001 MKEA P CODE -.0038 -.0025 .0110 -.1 .3 1.0 .0007 .0088 .0080 95: 76
M001 MKEA P MIT -.0018 .0018 -.0013 -.2 -.1 .2 -.0024 -.0015 .0004 97:151
M001 MKEA P NCL -.0189 -.0027 .0082 -.3 .1 .0 -.0054 .0015 .0200 96: 1
M001 MKEA P JPL .1065 .0658 -.0588 .3 .2 -.2 -.0156 -.0132 -.1368 96: 1
S001 7617 R GSFC .0035 .0039 -.0013 .1 -.4 -1.0 -.0021 .0004 -.0049 93: 1
S001 7617 R GIUB -.0226 .0004 .1033 1.2 -.8 .1 -.0097 .0902 .0542 93: 1
S001 7617 R NOAA .0127 .0107 .0090 .5 .4 .5 -.0045 .0139 -.0120 93: 1

Velocities
M001 MKEA P CODE .0002 -.0006 -.0008 .2 -1.2 -2.1 .0006 -.0008 -.0002
M001 MKEA P MIT -.0003 -.0006 -.0041 .0 .1 -.6 .0004 -.0040 -.0009
M001 MKEA P NCL .0204 .0012 -.0101 .2 .1 -.2 .0074 -.0031 -.0213
M001 MKEA P JPL -.1304 -.0814 .0747 .0 -.1 .6 .0199 .0186 .1688
S001 7617 R GSFC -.0004 -.0001 -.0022 -1.1 1.3 1.7 -.0001 -.0022 -.0004
S001 7617 R GIUB .0003 .0044 .0020 .0 .0 .0 -.0038 .0026 -.0013
S001 7617 R NOAA -.0091 -.0080 .0005 -.3 -.2 .9 .0035 -.0035 .0111

40478 OATT MOUNTAIN

Positions
M002 ROCK P JPL .0004 .0000 -.0001 .2 .0 -.2 .0003 .0000 -.0002 96: 1
S101 OAT2 P JPL .0001 .0000 .0000 .1 .0 -.2 .0001 .0000 .0000 96: 1

Velocities

M002 ROCK P JPL	-.0031	.0003	.0010	-.1	.1	.0	-.0029	.0002	.0016	
S101 OAT2 P JPL	.0015	-.0001	-.0005	.1	.0	.1	.0014	-.0001	-.0008	
40479 BLYTHE										
Positions										
M001 BLYT P JPL	.0000	.0000	.0000	.1	.0	-.1	.0000	.0000	.0000	96: 1
Velocities										
M001 BLYT P JPL	.0000	.0000	.0000	-.1	.1	.1	.0000	.0000	.0000	
40480 BOMMER CANYON										
Positions										
M001 TRAK P JPL	-.0001	-.0001	.0000	-.1	-.1	-.1	.0000	-.0001	.0001	96: 1
Velocities										
M001 TRAK P JPL	.0003	.0006	-.0001	-.1	.0	-.1	.0000	.0002	-.0006	
40481 YUCAIPA										
Positions										
M001 CRFP P JPL	.0000	.0000	.0000	.1	.1	-.1	.0000	.0000	.0000	96: 1
Velocities										
M001 CRFP P JPL	.0000	.0000	.0000	-.1	.1	.1	.0000	.0000	.0000	
40482 LONG BEACH CITY										
Positions										
M001 LBCH P JPL	-.0003	-.0007	.0001	-.1	-.1	-.1	.0001	-.0003	.0007	96: 1
Velocities										
M001 LBCH P JPL	.0010	.0027	-.0001	.0	.0	.0	-.0004	.0015	-.0025	
40483 WESTLAKE										
Positions										
S001 AOA1 P JPL	.0000	-.0001	.0000	-.1	.0	.0	.0000	.0000	.0001	96: 1
Velocities										
S001 AOA1 P JPL	.0000	.0000	.0000	-.1	.0	.0	.0000	.0000	-.0001	
40484 CHILAO FLATES										
Positions										
M001 CHIL P JPL	.0000	.0000	.0000	.1	.0	-.1	.0000	.0000	.0000	96: 1
Velocities										
M001 CHIL P JPL	.0000	.0000	.0000	.0	.1	.1	.0000	.0000	.0000	
40485 LONGDON YARD										
Positions										
M001 LONG P JPL	.0000	.0000	.0000	.0	.1	.0	.0000	.0000	.0000	96: 1
Velocities										
M001 LONG P JPL	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	
40487 LOS ANGELES										
Positions										
M001 USC1 P JPL	.0000	-.0001	.0001	.1	.0	-.3	.0000	.0001	.0002	96: 1

M002 UCLP P JPL	.0000	.0000	-.0001	.2	.0	-.4	.0000	.0000	-.0001	96:	1
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Velocities

M001 USC1 P JPL	.0002	-.0005	.0009	.0	.0	.3	.0004	.0006	.0008
M002 UCLP P JPL	-.0002	.0003	-.0007	.0	.1	.0	-.0003	-.0005	-.0005

40488 CATALINA ISLAND

Positions

M001 CAT1 P NCL	.0030	.0009	-.0010	.0	.0	-.1	.0022	.0004	-.0024	96:	1
M001 CAT1 P JPL	-.0005	-.0006	.0002	-.1	-.1	-.1	-.0002	-.0003	.0007	96:	1

Velocities

M001 CAT1 P NCL	.0009	.0127	-.0236	-.1	.0	-.1	-.0053	-.0133	-.0227
M001 CAT1 P JPL	.0011	.0016	-.0003	-.1	.0	-.1	.0002	.0008	-.0018

40489 HAT CREEK

Positions

S001 7218 R GSFC	.0040	.0015	-.0014	.1	.0	1.1	.0027	.0012	-.0035	93:	1
S001 7218 R GIUB	-.0063	.0262	.0301	-.2	.9	1.2	-.0190	.0352	.0052	93:	1
S001 7218 R NOAA	.0057	.0029	.0000	.1	-.3	-.1	.0033	.0035	-.0041	93:	1

Velocities

S001 7218 R GSFC	.0004	.0015	-.0041	.6	-1.5	-.8	-.0005	-.0021	-.0038
S001 7218 R GIUB	-.0009	.0034	.0082	-.1	1.2	-.8	-.0025	.0079	.0035
S001 7218 R NOAA	.0005	.0001	.0004	.1	.4	1.5	.0004	.0006	.0000

40490 MARYLAND POINT

Positions

S001 7217 R GSFC	-.0041	-.0193	.0035	-.3	-.6	-.4	-.0082	-.0084	.0162	93:	1
S001 7217 R GIUB	-.0080	.0128	.0003	-.2	-.2	.5	-.0050	.0091	-.0110	93:	1
S001 7217 R NOAA	.0006	.0413	-.0329	-.1	.6	-.3	.0097	-.0009	-.0519	93:	1

Velocities

S001 7217 R GSFC	-.0014	-.0004	-.0021	.0	.2	.4	-.0015	-.0017	-.0013
S001 7217 R GIUB	-.0010	.0037	-.0025	.0	.0	.0	-.0001	.0004	-.0046
S001 7217 R NOAA	.0003	.0043	-.0062	.3	.0	-.3	.0012	-.0023	-.0071

40491 FLAGSTAFF

Positions

M002 7891 TIE40491	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93:	1
M003 7261 TIE40491	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93:	1
M003 7261 R GSFC	.0039	.0024	.0011	.0	.0	.0	.0028	.0030	-.0024	93:	1
M003 7261 R NOAA	.0022	-.0027	.0062	.0	.0	.0	.0030	.0040	.0050	93:	1

Velocities

M003 7261 R GSFC	-.0005	-.0004	-.0012	-.2	.0	.1	-.0003	-.0013	-.0002
M003 7261 R NOAA	.0004	.0003	-.0006	.1	.0	.0	.0003	-.0002	-.0007

40492 VERNAL

Positions

M001 7892 L CSR	-.4226	-.7603	-.3946	.2	-.2	-.2	-.1435	-.8560	.3987	93:	1
M002 7290 R GSFC	.0043	-.0007	-.0018	.0	.0	-.1	.0043	-.0009	-.0018	93:	1
M002 7290 R NOAA	.0054	.0076	.0024	.0	.0	.0	.0026	.0076	-.0053	93:	1

Velocities

M001 7892 L CSR	-.0362	-.0773	-.0389	-.1	.0	.1	-.0083	-.0846	.0396
M002 7290 R GSFC	.0010	.0033	-.0054	.1	.1	-.1	-.0001	-.0019	-.0062
M002 7290 R NOAA	.0010	.0010	-.0003	.0	-.1	.0	.0006	.0006	-.0012

40493 YUMA

Positions

M001 7894 R GSFC	.0110	.0146	-.0163	.1	.0	-.2	.0041	-.0040	-.0238	93:	1
M001 7894 R NOAA	-.0010	-.0097	.0149	-.1	.0	.1	.0031	.0075	.0159	93:	1
M001 7894 L CSR	-.3805	.1379	.2161	.3	.0	-.3	-.4035	.1649	.1429	93:	1

Velocities

M001 7894 R GSFC	.0011	.0027	-.0048	-.1	-.2	-.1	-.0001	-.0025	-.0050		
M001 7894 R NOAA	-.0006	-.0015	.0015	.1	.0	.1	.0001	.0003	.0022		
M001 7894 L CSR	-.0360	.0061	.0236	.1	.0	.0	-.0353	.0148	.0206		

40496 PLATTEVILLE

Positions

M001 7112 TIE40496	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93:	1
M001 7112 L CSR	.0042	.0260	-.0317	.3	.3	.2	-.0026	-.0073	-.0405	93:	1
M001 7112 L GSFC	-.0089	.0143	.0127	.7	.4	.3	-.0123	.0172	-.0007	86:182	
M002 7258 TIE40496	.0000	.0000	.0001	.0	.0	.1	.0000	.0001	.0000	93:	1
M002 7258 R GSFC	.0121	.0276	-.0224	.3	.1	.1	.0047	.0020	-.0372	93:	1
M002 7258 R NOAA	.0048	.0079	.0064	-.2	.2	-.2	.0026	.0106	-.0026	93:	1

Velocities

M001 7112 L CSR	.0029	.0012	-.0075	.3	.9	.1	.0025	-.0045	-.0063		
M001 7112 L GSFC	.0014	-.0033	-.0013	-.7	-.5	-.3	.0022	-.0028	.0014		
M002 7258 R GSFC	.0013	.0047	-.0054	.1	-.3	.4	.0000	-.0010	-.0072		
M002 7258 R NOAA	.0005	-.0003	.0017	.0	.0	.1	.0005	.0012	.0012		

40497 MONUMENT PEAK

Positions

M001 7110 TIE40497	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93:	1
M001 7110 L CSR	.0001	-.0009	-.0022	.2	-.1	-.3	.0005	-.0022	-.0005	93:	1
M001 7110 L GSFC	-.0214	-.0014	.0130	.6	-1.8	1.6	-.0185	.0050	.0161	86:182	
M002 7220 TIE40497	-.0001	.0000	.0000	.0	.0	.0	-.0001	.0000	.0000	93:	1
M002 7220 L CSR	.0253	-.0323	-.0097	.4	-.3	.2	.0371	-.0177	.0096	93:	1
M003 7274 TIE40436	-.0023	-.0073	.0097	.0	-.1	.2	.0012	.0040	.0116	93:	1
M003 7274 TIE40497	-.0013	.0032	.0037	-.4	1.1	1.2	-.0026	.0044	.0001	93:	1
M003 7274 R GSFC	.0117	-.0102	.0231	.1	-.3	1.5	.0150	.0173	.0158	93:	1
M003 7274 R NOAA	.0308	.0112	.0127	.5	-1.4	1.0	.0226	.0235	-.0130	93:	1
M003 7274 L CSR	.0012	-.0514	-.0108	.1	-.3	-.2	.0239	-.0338	.0324	93:	1
M004 MONP P CODE	.0033	-.0021	-.0035	-.1	-.5	.1	.0038	-.0032	-.0016	95:	76
M004 MONP P MIT	-.0022	-.0004	.0028	.2	.0	.4	-.0018	.0016	.0026	97:151	
M004 MONP P NCL	.0086	.0129	-.0119	.2	-.1	-.3	.0019	-.0016	-.0194	96:	1
M004 MONP P JPL	.0053	-.0032	-.0033	.9	-1.0	-2.0	.0062	-.0031	-.0014	96:	1

Velocities

M001 7110 L CSR	.0011	-.0028	-.0011	-.4	-1.2	-.9	.0023	-.0020	.0011		
M001 7110 L GSFC	.0030	.0003	-.0016	-.6	.6	.0	.0025	-.0005	-.0023		
M002 7220 L CSR	.0011	-.0028	-.0011	.0	.2	.0	.0023	-.0020	.0011		
M003 7274 R GSFC	.0007	-.0016	.0032	-.1	.0	2.6	.0014	.0021	.0027		
M003 7274 R NOAA	.0038	.0004	.0034	-.2	.1	1.2	.0032	.0040	.0001		
M003 7274 L CSR	.0011	-.0028	-.0011	.0	.0	.0	.0023	-.0020	.0011		
M004 MONP P CODE	-.0001	.0012	.0016	-1.1	1.2	1.8	-.0006	.0019	.0000		
M004 MONP P MIT	-.0052	-.0096	.0064	-.2	-.4	.2	-.0004	-.0006	.0127		
M004 MONP P NCL	-.0089	-.0128	.0123	-.1	.8	.5	-.0023	.0019	.0196		
M004 MONP P JPL	-.0147	-.0107	.0145	-1.0	.3	1.3	-.0084	.0035	.0214		

40498 VLA

Positions

S001 7619 R GSFC	.0030	-.0019	.0369	.0	.0	.0	.0034	.0301	.0214	93:	1
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Velocities

S001 7619 R GSFC .0000 .0000 .0000 .0 .0 .0 .0000 .0000 .0000

40499 RICHMOND

Positions

M002 7295 TIE40499	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M002 7295 L CSR	.0003	-.0128	.0056	.0	-.2	.4	-.0018	-.0004	.0138	93: 1
M002 7295 L GSFC	-.0937	.0131	-.0294	-.5	.2	-.4	-.0902	-.0142	-.0385	86:182
M002 7295 P GFZ	-.0133	-.0151	.0042	.6	-.4	-1.6	-.0156	-.0017	.0133	94:365
M002 7295 P CODE	.0066	.0031	-.0102	.4	.3	-1.3	.0070	-.0084	-.0062	95: 76
M002 7295 P JPL	.0064	-.0027	.0032	.1	.0	-.1	.0059	.0013	.0048	96: 1
M005 RCM4 TIE40499	-.0002	.0003	.0004	-.1	.1	.1	-.0001	.0005	-.0001	93: 1
M005 RCM4 P GFZ	-.0160	-.0083	.0049	.1	.3	-.3	-.0172	.0020	.0070	94:365
M005 RCM4 P CODE	.0038	-.0064	-.0003	.0	-.2	.2	.0027	-.0033	.0062	95: 76
M005 RCM4 P JPL	-.0084	-.0557	.0321	.0	-.1	.0	-.0176	.0058	.0621	96: 1
S001 7219 TIE40499	.0079	.0013	-.0066	2.6	.7	-3.3	.0080	-.0059	-.0028	93: 1
S001 7219 R GSFC	.0037	-.0192	.0116	1.3	-1.7	-2.2	.0004	.0020	.0226	93: 1
S001 7219 R GIUB	-.0140	-.0162	.0168	.4	-2.9	1.8	-.0165	.0093	.0195	93: 1
S001 7219 R NOAA	.0037	-.0077	.0165	.3	-1.6	3.7	.0023	.0114	.0145	93: 1
S015 RICA TIE40499	.0000	-.0001	-.0001	.0	.0	.0	.0000	-.0001	.0001	93: 1
S015 RICA D IGN	-.0587	.0621	.0327	-.1	.2	.5	-.0475	.0602	-.0499	95:100
S016 RIDA TIE40499	-.0001	-.0027	-.0032	.0	-.8	-1.0	-.0006	-.0040	.0011	93: 1
S016 RIDA D GRGS	.0135	.0593	.0182	-.1	1.2	1.1	.0232	.0407	-.0428	93: 1
S016 RIDA D CSR	-.0126	-.0295	-.0265	.0	-.4	-.3	-.0174	-.0356	.0129	93: 1
S016 RIDA D IGN	.0065	.0457	.0164	.0	2.2	2.3	.0141	.0338	-.0326	95:100
S018 RCM5 TIE40499	-.0051	-.0060	.0073	-1.7	-2.0	2.4	-.0060	.0044	.0077	93: 1
S018 RCM5 P EMR	.0094	-.0031	-.0001	1.3	1.1	-.7	.0087	-.0020	.0041	96: 1
S018 RCM5 P GFZ	-.0211	.0144	-.0028	-.8	2.5	-.1	-.0184	.0051	-.0172	94:365
S018 RCM5 P CODE	.0055	-.0022	-.0020	.3	-.8	.1	.0051	-.0031	.0019	95: 76
S018 RCM5 P MIT	-.0112	-.0003	-.0070	-1.1	-.2	-.5	-.0111	-.0056	-.0045	97:151
S018 RCM5 P NCL	.0019	.0063	-.0007	-.6	1.0	-.6	.0029	.0019	-.0056	96: 1
S018 RCM5 P JPL	-.0013	-.0035	.0014	.0	-.4	.3	-.0019	-.0001	.0035	96: 1
S019 7201 R GSFC	-.0023	.0101	-.0070	-.1	.0	.0	-.0006	-.0018	-.0124	93: 1
S019 7201 R GIUB	-.0002	.0038	-.0131	.3	.1	-.1	.0005	-.0102	-.0091	93: 1
S020 RCM6 P GFZ	-.0112	-.0158	.0119	.3	.0	-.1	-.0136	.0048	.0175	94:365
S020 RCM6 P CODE	.0059	-.0014	-.0024	-.1	.2	.2	.0056	-.0032	.0011	95: 76
S020 RCM6 P MIT	-.0086	.0001	-.0042	-.9	-.1	-.2	-.0085	-.0031	-.0032	97:151
S020 RCM6 P NCL	.0313	-.0597	.0172	1.3	.4	-.8	.0209	-.0122	.0653	96: 1

Velocities

M002 7295 L CSR	.0059	-.0059	.0032	.3	.0	.4	.0048	-.0001	.0076
M002 7295 L GSFC	.0138	-.0039	.0059	.3	-.4	.9	.0129	.0027	.0081
M002 7295 P GFZ	.0036	-.0096	.0057	-.4	-.9	.9	.0019	.0008	.0116
M002 7295 P CODE	-.0016	.0030	-.0040	-.9	-.1	.8	-.0011	-.0022	-.0046
M002 7295 P JPL	-.0006	.0090	-.0010	-.5	1.2	.9	.0009	.0029	-.0086
M005 RCM4 P GFZ	.0036	-.0096	.0057	.0	.0	.1	.0019	.0008	.0116
M005 RCM4 P CODE	-.0016	.0030	-.0040	.0	.0	.0	-.0011	-.0022	-.0046
M005 RCM4 P JPL	-.0067	-.0112	.0097	-.2	.6	.2	-.0085	.0045	.0131
S001 7219 R GSFC	.0006	-.0031	.0016	-.1	-.3	.0	.0000	.0001	.0035
S001 7219 R GIUB	-.0027	-.0033	.0041	1.5	.7	.8	-.0032	.0025	.0043
S001 7219 R NOAA	.0006	-.0028	.0017	.8	.1	-1.0	.0001	.0002	.0033
S015 RICA D IGN	-.0113	-.0028	.0176	.1	-.9	-.1	-.0116	.0155	.0084
S016 RIDA D GRGS	.0002	-.0038	-.0020	.3	1.8	1.5	-.0004	-.0034	.0025
S016 RIDA D CSR	.0146	-.0003	-.0007	.3	-.7	-.2	.0143	-.0019	.0021
S016 RIDA D IGN	.0102	.0073	.0096	.6	-.2	.6	.0113	.0110	-.0008
S018 RCM5 P EMR	.0067	-.0158	.0090	1.1	-.6	.2	.0040	.0009	.0190
S018 RCM5 P GFZ	.0036	-.0096	.0057	.0	-.1	-.5	.0019	.0008	.0116
S018 RCM5 P CODE	-.0016	.0030	-.0040	-.1	.0	.1	-.0011	-.0022	-.0046
S018 RCM5 P MIT	-.0081	-.0014	-.0038	-.8	-.8	-.4	-.0082	-.0035	-.0016
S018 RCM5 P NCL	-.0038	-.0112	.0030	-.3	-.1	.6	-.0056	-.0018	.0107
S018 RCM5 P JPL	-.0007	-.0095	.0054	.2	-1.7	.1	-.0023	.0009	.0107

S019 7201 R GSFC	.0006	-.0031	.0016	.0	.0	.0	.0000	.0001	.0035
S019 7201 R GIUB	-.0027	-.0033	.0041	.0	.0	.0	-.0032	.0025	.0043
S020 RCM6 P GFZ	.0019	-.0017	.0014	1.1	-1.9	-.7	.0016	.0004	.0024
S020 RCM6 P CODE	-.0016	.0030	-.0040	.0	.1	.2	-.0011	-.0022	-.0046
S020 RCM6 P MIT	-.0034	.0102	-.0079	.3	.3	-.3	-.0016	-.0025	-.0130
S020 RCM6 P NCL	-.0314	.0577	-.0181	-.2	.1	.0	-.0213	.0106	-.0639

40503 SOCORRO ISLAND

Positions

S002 SOCA TIE40503	.0000	.0001	.0001	.0	.0	.0	.0000	.0001	.0000	93: 1
S002 SOCA D IGN	.7662	-1.3475	-.2410	.0	-.1	.0	1.1974	-.5442	.8549	95:100
S003 SODA TIE40503	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
S003 SODA D CSR	-.0277	.0884	.0468	-.2	1.2	.7	-.0574	.0676	-.0538	93: 1
S003 SODA D IGN	-.0033	-.0047	-.0047	-.1	-.4	.4	-.0014	-.0063	.0038	95:100

Velocities

S002 SOCA D IGN	.1465	-.2580	-.0334	-.4	.8	1.0	.2290	-.0922	.1678
S003 SODA D CSR	.0083	-.0205	-.0266	-.2	.7	-.3	.0151	-.0304	.0068
S003 SODA D IGN	.0045	.0097	.0049	.0	.0	-.1	.0007	.0081	-.0086

40504 MAZATLAN

Positions

M001 7122 L CSR	.0006	-.0038	-.0034	.1	-.1	-.1	.0017	-.0045	.0019	93: 1
M001 7122 L GSFC	-.0146	.0106	-.0006	1.2	.0	-.9	-.0170	.0018	-.0058	86:182

Velocities

M001 7122 L CSR	.0022	-.0040	-.0018	-.1	.3	.0	.0032	-.0029	.0022
M001 7122 L GSFC	.0039	.0042	-.0056	.1	.3	-.6	.0026	-.0031	-.0069

40505 CABO SAN LUCAS

Positions

M001 7882 L CSR	-.0020	-.0049	-.0032	-.2	.2	.2	-.0002	-.0051	.0037	93: 1
M001 7882 L GSFC	-.0396	.0201	.0112	-.1	.1	.1	-.0441	.0124	-.0007	86:182

Velocities

M001 7882 L CSR	.0027	-.0069	-.0013	-.2	.1	.1	.0049	-.0034	.0046
M001 7882 L GSFC	.0094	-.0048	-.0035	.6	-.3	-.2	.0105	-.0038	-.0002

40506 ENSENADA

Positions

M001 7883 L CSR	-.0035	-.0203	.0027	-.2	-.3	.1	.0058	-.0079	.0184	93: 1
M001 7883 L GSFC	-.0202	.0252	.0101	.0	.1	-.1	-.0292	.0158	-.0064	86:182

Velocities

M001 7883 L CSR	.0051	-.0070	-.0028	.0	.1	.1	.0077	-.0045	.0020
M001 7883 L GSFC	.0028	-.0028	-.0016	-.1	.0	.1	.0037	-.0020	.0002

40508 CICESE

Positions

M001 CICE P MIT	.0010	.0632	-.0756	.2	.7	-1.0	-.0274	-.0341	-.0882	97:151
M001 CICE P NCL	.0016	.0005	.0026	.1	.1	.2	.0012	.0028	.0004	96: 1
M001 CICE P JPL	.0017	.0044	-.0036	.4	.5	-.3	-.0004	-.0006	-.0059	96: 1

Velocities

M001 CICE P MIT	-.0018	.0435	-.0585	-.2	.6	-1.0	-.0212	-.0296	-.0632
M001 CICE P NCL	.0142	.0458	-.0346	.3	.5	-.3	-.0079	-.0044	-.0585
M001 CICE P JPL	-.0032	-.0124	.0102	-.5	-.7	.4	.0027	.0021	.0161

40701 SANTIAGO DE CUBA

Positions

S001 1953 L CSR	.0104	-.0087	-.0001	.0	.0	.0	.0079	-.0039	.0103	93:	1
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Velocities

S001 1953 L CSR	-.0055	.0149	-.0043	-.1	.1	.0	-.0017	.0014	-.0163
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41507 RIO GRANDE

Positions

S003 RIOA TIE41507	.0005	.0001	-.0008	.0	.0	.0	.0005	-.0004	.0007	93:	1
S003 RIOA D GRGS	.0187	.0043	.0016	.5	.2	.0	.0189	.0035	.0005	93:	1
S003 RIOA D CSR	-.0057	.0086	.0109	-.3	.3	.2	-.0020	-.0017	-.0147	93:	1
S003 RIOA D IGN	.0251	.0090	.0091	.6	-.2	.4	.0266	.0063	-.0067	95:	100
S004 RIOB TIE41507	.0000	.0000	.0000	-.2	.0	.3	.0000	.0000	.0000	93:	1
S004 RIOB D GRGS	.0257	.0052	-.0085	.5	.0	-.8	.0257	-.0010	.0097	93:	1
S004 RIOB D IGN	.0623	-.0284	.0095	1.0	-.4	.0	.0469	.0459	.0218	95:	100

Velocities

S003 RIOA D GRGS	-.0145	-.0030	.0025	-.5	.1	.5	-.0145	-.0007	-.0036
S003 RIOA D CSR	-.0094	-.0156	-.0034	-.8	-.3	.0	-.0146	.0068	.0092
S003 RIOA D IGN	.0139	.0083	.0196	-.2	.3	.5	.0159	.0096	-.0172
S004 RIOB D GRGS	-.0145	-.0030	.0025	.0	.0	.0	-.0145	-.0007	-.0036
S004 RIOB D IGN	-.0463	.0214	.0044	.0	-.1	.2	-.0347	-.0275	-.0256

41510 LA PLATA

Positions

M001 LPGS P GFZ	-.0214	-.0065	.0051	-.2	.2	-.2	-.0215	.0008	-.0077	94:	365
M001 LPGS P CODE	.0018	.0007	.0022	-.5	.2	.1	.0019	.0020	-.0009	95:	76
M001 LPGS P MIT	-.0097	.0116	-.0031	-.6	.8	-.5	-.0021	-.0112	-.0105	97:	151
M001 LPGS P NCL	.0036	-.0045	.0030	.4	-.3	-.1	.0006	.0057	.0030	96:	1
M001 LPGS P JPL	.0018	-.0033	-.0005	.5	.0	.1	-.0003	.0017	.0034	96:	1

Velocities

M001 LPGS P GFZ	.0101	-.0052	.0039	-.4	-1.2	.3	.0058	.0088	.0058
M001 LPGS P CODE	-.0008	.0080	-.0104	-.2	-.3	.0	.0036	-.0126	.0000
M001 LPGS P MIT	-.0083	.0126	-.0002	-.6	.6	-.1	-.0003	-.0088	-.0122
M001 LPGS P NCL	-.0079	.0110	-.0036	-.4	.3	.1	-.0009	-.0106	-.0090
M001 LPGS P JPL	-.0035	-.0003	.0010	.4	-.1	.2	-.0031	-.0001	-.0019

41602 FORTALEZA

Positions

M001 FORT TIE41602	-.0048	.0024	-.0009	.0	.0	.0	-.0011	-.0013	-.0051	93:	1
M001 FORT P EMR	.0144	-.0131	.0021	1.7	1.2	-.7	-.0013	.0034	.0193	96:	1
M001 FORT P GFZ	.0021	-.0194	.0054	1.7	.2	-1.2	-.0139	.0063	.0133	94:	365
M001 FORT P CODE	.0230	-.0180	-.0044	2.1	-.6	-.4	.0002	-.0024	.0294	95:	76
M001 FORT P MIT	-.0078	.0032	-.0085	-.9	.4	-1.3	-.0024	-.0090	-.0075	97:	151
M001 FORT P NCL	.0081	-.0043	.0044	.9	.4	.3	.0017	.0050	.0087	96:	1
M001 FORT P JPL	-.0047	-.0015	.0031	-.3	-.7	2.1	-.0041	.0029	-.0030	96:	1
S001 7297 TIE41602	.0000	.0000	.0000	1.6	-.8	.3	.0000	.0000	.0000	93:	1
S001 7297 R GSFC	-.0133	.0087	-.0068	-1.0	.2	-.3	-.0014	-.0078	-.0153	93:	1
S001 7297 R GIUB	-.0507	.0195	-.0395	-3.3	-1.2	-2.5	-.0162	-.0429	-.0491	93:	1
S001 7297 R NOAA	.0037	.0074	.0092	.0	.3	-.1	.0081	.0091	-.0023	93:	1

Velocities

M001 FORT P EMR	-.0002	-.0063	.0046	.5	-.2	.9	-.0050	.0048	.0034
M001 FORT P GFZ	.0093	-.0021	.0042	1.4	.2	-1.6	.0041	.0047	.0083
M001 FORT P CODE	-.0042	.0078	-.0044	.7	-1.0	.3	.0035	-.0049	-.0079
M001 FORT P MIT	-.0087	.0084	-.0038	-.9	.5	-.3	.0012	-.0046	-.0117
M001 FORT P NCL	-.0162	.0071	-.0071	-.7	-1.2	-.6	-.0045	-.0083	-.0165

M001 FORT P JPL	.0026	.0030	.0008	.4	.2	.5	.0040	.0008	.0002
S001 7297 R GSFC	.0011	.0021	.0015	-3.0	2.2	.4	.0023	.0015	-.0005
S001 7297 R GIUB	-.0032	.0052	-.0013	-.9	-.5	-.6	.0021	-.0017	-.0057
S001 7297 R NOAA	-.0022	.0025	.0030	-.6	-.1	1.4	.0006	.0027	-.0035

41604 NATAL

Positions

S001 7929 L CSR	.4429	-.2623	-.1374	.0	.0	.0	.0406	-.0837	.5246	93: 1
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Velocities

S001 7929 L CSR	.0337	-.0096	-.0064	.0	.0	.0	.0116	-.0029	.0336
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41606 BRASILIA

Positions

M001 BRAZ P GFZ	-.0072	-.0083	.0048	.4	.6	.0	-.0110	.0050	.0000	94:365
M001 BRAZ P CODE	.0117	-.0140	-.0075	.1	-.3	-.3	-.0008	-.0022	.0196	95: 76
M001 BRAZ P MIT	-.0064	.0005	-.0081	-.4	-.1	-.8	-.0044	-.0090	-.0022	97:151
M001 BRAZ P NCL	-.0005	.0024	.0049	-.1	.4	-.7	.0012	.0041	-.0034	96: 1
M001 BRAZ P JPL	-.0024	-.0054	.0020	.0	-.5	.8	-.0054	.0026	.0018	96: 1

Velocities

M001 BRAZ P GFZ	-.0018	.0008	.0058	-.4	-.5	-.5	-.0008	.0051	-.0033
M001 BRAZ P CODE	-.0068	.0157	-.0027	.0	.4	.0	.0055	-.0071	-.0148
M001 BRAZ P MIT	-.0003	-.0009	-.0057	.3	-.3	-.3	-.0008	-.0053	.0020
M001 BRAZ P NCL	-.0020	-.0014	-.0077	-.1	-.7	.8	-.0024	-.0075	.0019
M001 BRAZ P JPL	-.0107	.0137	.0033	-.6	.2	-.8	.0013	-.0016	-.0176

41609 CACHOEIRA PAULIS

Positions

S001 CACB D GRGS	.0582	.0514	.0257	.9	.4	.9	.0775	.0255	-.0055	93: 1
S001 CACB D CSR	.0264	-.0239	-.0007	.4	-.3	-.1	.0017	.0131	.0331	93: 1
S001 CACB D IGN	-.0049	.0006	-.0117	.5	.2	-.6	-.0030	-.0123	.0009	95:100

Velocities

S001 CACB D GRGS	-.0172	-.0117	-.0025	.7	.6	1.1	-.0204	-.0038	-.0026
S001 CACB D CSR	-.0473	-.0046	-.0109	-1.6	.1	-.4	-.0366	-.0217	-.0236
S001 CACB D IGN	.0037	.0002	.0145	.0	-.6	.3	.0028	.0144	-.0033

41703 EASTER ISLAND

Positions

M001 7061 TIE41703	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M002 7097 TIE41703	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M002 7097 L CSR	.0019	.0077	-.0052	-.4	.5	.0	-.0008	-.0082	-.0047	93: 1
M002 7097 L GSFC	-.0096	.0403	.0071	1.0	1.2	.6	-.0225	-.0095	-.0343	86:182
M003 EISL TIE41703	.0000	-.0004	-.0020	.0	-.1	-.7	.0002	-.0016	.0013	93: 1
M003 EISL P GFZ	-.0265	-.0194	.0070	-1.0	-1.2	2.0	-.0186	.0186	.0209	94:365
M003 EISL P CODE	.0140	-.0348	-.0231	-.1	-2.8	-1.2	.0248	-.0077	.0356	95: 76
M003 EISL P MIT	-.0044	.0206	.0035	.3	1.6	.1	-.0110	-.0051	-.0175	97:151
M003 EISL P JPL	-.0026	.0066	.0051	-.4	.9	.9	-.0046	.0021	-.0071	96: 1
S008 EASA TIE41703	-.0010	.0010	.0019	-.3	.3	.6	-.0013	.0014	-.0014	93: 1
S008 EASA D GRGS	.0282	-.0538	-.0232	.7	-1.1	-.6	.0445	-.0018	.0475	93: 1
S008 EASA D CSR	.0061	-.0023	.0010	.3	.0	.0	.0065	.0009	-.0003	93: 1
S008 EASA D IGN	.0361	-.0190	-.0209	1.9	-1.1	-1.9	.0404	-.0158	.0148	95:100

Velocities

M002 7097 L CSR	.0052	.0022	-.0024	1.2	-.9	.0	.0042	-.0039	-.0023
M002 7097 L GSFC	.0026	-.0031	-.0107	.3	.4	-1.6	.0035	-.0086	.0067
M003 EISL P GFZ	.0097	-.0079	-.0030	-1.5	-.5	-.7	.0118	-.0007	.0051
M003 EISL P CODE	-.0095	.0376	.0126	.1	.6	-.3	-.0214	-.0035	-.0345

M003 EISL P MIT	-.0034	.0071	-.0018	-.6	-1.9	-.1	-.0056	-.0041	-.0041	
M003 EISL P JPL	.0029	.0093	.0039	.2	.2	.3	-.0004	-.0010	-.0105	
S008 EASA D GRGS	-.0084	.0139	.0038	.6	-.5	-.8	-.0126	-.0013	-.0109	
S008 EASA D CSR	-.0154	.0018	-.0077	-.3	-.2	-.5	-.0152	-.0053	.0066	
S008 EASA D IGN	.0007	.0001	.0042	-.6	.0	-.3	.0006	.0037	-.0022	

41705 SANTIAGO

Positions

M001 7400 TIE41705	.0003	.0000	.0001	.0	.0	.0	.0002	.0001	.0000	93: 1
M001 7400 L CSR	-.4119	.0902	-.0421	-3.2	-.2	-.8	-.3588	-.1563	-.1624	93: 1
M002 TIE41705	.0000	.0000	.0000	-.1	.0	.0	.0000	.0000	.0000	93: 1
M003 SANT TIE41705	.0000	.0000	.0000	-.1	.0	.0	.0000	.0000	.0000	93: 1
M003 SANT P EMR	-.0125	-.0116	.0151	-.8	.1	.2	-.0157	.0163	-.0025	96: 1
M003 SANT P GFZ	-.0207	-.0081	.0058	.3	-.5	-.7	-.0222	.0052	-.0025	94:365
M003 SANT P CODE	.0106	-.0166	-.0109	.5	-2.0	.4	.0045	.0014	.0220	95: 76
M003 SANT P MIT	-.0078	.0053	-.0063	-.4	.5	-.6	-.0057	-.0095	-.0029	97:151
M003 SANT P NCL	.0033	-.0054	.0018	.4	-.5	-1.1	.0013	.0049	.0042	96: 1
M003 SANT P JPL	-.0032	.0035	.0055	-.7	.3	1.7	-.0019	.0023	-.0067	96: 1
M004 7404 L CSR	.2415	-.2103	-.0866	.1	-.1	.1	.1583	.0798	.2804	93: 1
S006 1404 TIE41705	-.0015	.0011	.0002	-.5	.4	.1	-.0011	-.0007	-.0014	93: 1
S006 1404 R GSFC	.0029	-.0003	-.0088	.7	.1	-.1	.0026	-.0067	.0059	93: 1
S006 1404 R GIUB	-.0753	.0125	-.0139	.5	-1.1	.4	-.0670	-.0317	-.0231	93: 1
S006 1404 R NOAA	.0077	.0006	.0160	.3	-.4	1.3	.0075	.0144	-.0071	93: 1
S007 SANA TIE41705	-.0008	.0138	.0131	.0	.4	.4	.0039	.0036	-.0183	93: 1
S007 SANA D GRGS	-.0036	-.0186	.0245	.1	-.2	.6	-.0096	.0294	.0002	93: 1
S007 SANA D CSR	.0046	-.0040	-.0090	.1	.0	-.1	.0030	-.0046	.0094	93: 1
S007 SANA D IGN	-.0026	-.0006	.0097	.1	-.3	.6	-.0027	.0079	-.0055	95:100
S008 SAOB TIE41705	.0003	-.0001	.0002	.0	.0	.0	.0002	.0002	.0000	93: 1
S008 SAOB D IGN	-.0050	.1543	.0301	.0	.1	-.5	.0464	-.0553	-.1398	95:100

Velocities

M001 7400 L CSR	.0075	.0121	-.0112	.0	.0	.0	.0110	-.0143	-.0014	
M003 SANT P EMR	-.0023	-.0005	.0036	-.5	-.1	.8	-.0024	.0028	-.0022	
M003 SANT P GFZ	.0152	-.0112	-.0020	1.2	-.5	-2.2	.0106	.0068	.0142	
M003 SANT P CODE	-.0056	.0159	-.0041	.1	.3	-1.1	-.0001	-.0126	-.0119	
M003 SANT P MIT	-.0046	.0045	-.0041	-.1	.0	-.1	-.0029	-.0065	-.0026	
M003 SANT P NCL	-.0062	.0128	-.0018	-.6	.4	.7	-.0016	-.0093	-.0109	
M003 SANT P JPL	.0025	.0023	-.0018	.6	.2	-1.3	.0031	-.0023	-.0001	
M004 7404 L CSR	.0075	.0121	-.0112	.2	.0	.0	.0110	-.0143	-.0014	
S006 1404 R GSFC	.0001	.0004	-.0028	-.3	-.5	-1.5	.0002	-.0025	.0012	
S006 1404 R GIUB	-.0044	.0042	-.0040	.7	-.6	-.5	-.0027	-.0064	-.0023	
S006 1404 R NOAA	-.0016	.0060	-.0062	-.2	-.2	-.3	.0005	-.0086	-.0018	
S007 SANA D GRGS	.0063	.0004	-.0142	.6	-.5	-.1	.0061	-.0109	.0092	
S007 SANA D CSR	-.0239	.0067	-.0202	-1.0	.6	-1.5	-.0203	-.0247	-.0009	
S007 SANA D IGN	-.0052	-.0042	.0133	-.3	-.3	.0	-.0063	.0123	-.0055	
S008 SAOB D IGN	-.0040	-.0674	-.0297	.0	.0	.0	-.0261	.0092	.0684	

41706 CERRO TOLOLO

Positions

M001 7401 L CSR	.0108	.0037	.0015	.0	.0	.0	.0114	.0013	-.0007	93: 1
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Velocities

M001 7401 L CSR	.0061	.0061	-.0005	.0	.0	.1	.0078	-.0023	-.0030	
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41709 SEST

Positions

S001 7239 R GSFC	-.0006	-.0215	-.0040	.1	-.3	.1	-.0077	.0064	.0195	93: 1
S001 7239 R NOAA	.0027	.0158	.0178	.0	.2	.0	.0078	.0087	-.0209	93: 1

Velocities

S001 7239 R GSFC	-.0012	-.0017	.0022	.0	.0	.0	-.0017	.0025	.0000
S001 7239 R NOAA	-.0008	-.0032	.0036	.0	.0	.0	-.0018	.0045	.0006

41901 BOGOTA

Positions

M001 BOGT P GFZ	-.0086	.0073	.0129	.9	1.2	1.9	-.0063	.0136	-.0083	94:365
M001 BOGT P CODE	.0093	.0176	-.0010	-1.0	1.3	1.7	.0137	.0001	-.0144	95: 76
M001 BOGT P MIT	-.0029	-.0066	.0029	.3	-.5	1.8	-.0046	.0024	.0058	97:151
M001 BOGT P JPL	-.0183	-.0046	-.0073	-.8	-.5	-1.5	-.0188	-.0072	-.0012	96: 1

Velocities

M001 BOGT P GFZ	-.0006	.0008	-.0030	1.3	1.3	-1.7	-.0003	-.0029	-.0012
M001 BOGT P CODE	-.0043	-.0022	-.0077	.3	-.6	.4	-.0047	-.0078	.0004
M001 BOGT P MIT	.0115	-.0044	.0143	2.0	.9	5.2	.0098	.0136	.0085
M001 BOGT P JPL	.0158	-.0104	-.0077	-.6	-1.1	-3.6	.0123	-.0089	.0137

42004 SAN CRISTOBAL

Positions

S001 GALA D GRGS	.0092	.0264	.0137	.2	.6	.4	.0094	.0133	-.0265	93: 1
S001 GALA D CSR	-.0186	-.0142	-.0550	-.1	-.1	-.8	-.0187	-.0548	.0149	93: 1
S001 GALA D IGN	.0003	.0140	.0009	.1	.4	.0	.0004	.0006	-.0140	95:100

Velocities

S001 GALA D GRGS	-.0021	-.0166	-.0056	.2	-.4	-.2	-.0022	-.0054	.0166
S001 GALA D CSR	-.0062	.0086	.0211	.1	.0	-.3	-.0062	.0209	-.0090
S001 GALA D IGN	-.0025	.0112	.0095	-.3	.2	.2	-.0024	.0093	-.0114

42005 SANTA CRUZ

Positions

M001 GALA P JPL	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	96: 1
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Velocities

M001 GALA P JPL	.0000	.0000	.0000	.1	.1	-.1	.0000	.0000	.0000
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42202 AREQUIPA

Positions

M003 7403 TIE42202	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M003 7403 L CSR	.0035	.0011	-.0008	.5	.1	-.1	.0037	-.0008	.0003	93: 1
M003 7403 L GSFC	-.0259	-.0032	-.0100	1.2	.7	-2.1	-.0256	-.0110	-.0021	86:182
M004 AREQ TIE42202	-.0001	.0001	-.0003	.0	.0	-.1	.0000	-.0003	.0000	93: 1
M004 AREQ P CODE	.0128	-.0142	-.0044	.2	.0	.2	.0076	.0007	.0180	95: 76
M005 AREQ TIE42202	.0014	.0008	-.0036	.5	.3	-1.2	.0016	-.0035	.0007	93: 1
M005 AREQ P EMR	-.0086	-.0173	.0088	-1.2	-2.2	2.5	-.0136	.0123	.0106	96: 1
M005 AREQ P GFZ	-.0136	-.0268	.0026	1.1	-1.5	1.0	-.0214	.0085	.0195	94:365
M005 AREQ P CODE	.0133	-.0203	-.0085	1.4	-.1	-.4	.0062	-.0015	.0249	95: 76
M005 AREQ P MIT	-.0076	.0101	-.0096	-.4	1.1	-1.4	-.0040	-.0126	-.0088	97:151
M005 AREQ P NCL	.0008	-.0020	.0054	.0	-.2	.8	.0001	.0058	.0006	96: 1
M005 AREQ P JPL	-.0075	.0024	.0045	-1.3	-.7	1.9	-.0064	.0030	-.0057	96: 1
S001 7907 TIE42202	.0021	-.0001	.0025	.7	.0	.8	.0020	.0026	.0000	93: 1
S001 7907 L CSR	-.0127	.0142	-.0212	-1.6	-.7	-2.1	-.0075	-.0253	-.0108	93: 1
S005 AREA TIE42202	.0000	-.0004	-.0010	.0	-.1	-.3	-.0001	-.0008	.0006	93: 1
S005 AREA D GRGS	.0305	-.0184	.0240	.2	-.1	.4	.0231	.0307	.0192	93: 1
S005 AREA D CSR	.0247	-.0061	.0098	.2	.0	.2	.0214	.0133	.0103	93: 1
S005 AREA D IGN	-.0021	.0450	.0310	-.1	1.3	1.2	.0123	.0175	-.0504	95:100

Velocities

M003 7403 L CSR	.0021	.0044	-.0016	-.6	-.3	-.8	.0034	-.0025	-.0029
M003 7403 L GSFC	.0025	-.0004	.0008	-1.0	-1.0	.0	.0022	.0011	.0009
M004 AREQ P CODE	-.0058	.0158	-.0054	-.6	.1	-.9	-.0005	-.0100	-.0146

M005 AREQ P EMR	-.0050	.0075	.0041	-.7	.4	1.1	-.0024	.0015	-.0095
M005 AREQ P GFZ	.0098	.0022	.0032	.7	-.6	-1.1	.0100	.0034	.0001
M005 AREQ P CODE	-.0058	.0158	-.0054	.2	.2	-.5	-.0005	-.0100	-.0146
M005 AREQ P MIT	-.0001	.0088	-.0070	.9	.2	-1.1	.0027	-.0091	-.0061
M005 AREQ P NCL	-.0047	.0110	-.0090	-1.0	.9	-1.8	-.0010	-.0120	-.0089
M005 AREQ P JPL	-.0004	.0057	.0002	-.1	-.1	-.3	.0014	-.0014	-.0054
S001 7907 L CSR	.0021	.0044	-.0016	.0	.0	.0	.0034	-.0025	-.0029
S005 AREA D GRGS	-.0057	.0100	.0013	.4	.3	.8	-.0022	-.0019	-.0112
S005 AREA D CSR	-.0243	.0144	-.0011	-.4	.5	.7	-.0184	-.0071	-.0202
S005 AREA D IGN	-.0123	.0033	.0137	-.5	.0	.0	-.0107	.0111	-.0106

42501 BERMUDA

Positions

M002 7294 R GSFC	-.0142	.0461	-.0311	-.2	.2	-.1	.0069	-.0007	-.0570	93: 1
M002 7294 R NOAA	.0032	.0000	.0209	.0	.0	.5	.0029	.0169	.0124	93: 1
S004 BRMU P GFZ	-.0228	-.0024	.0033	-.5	.5	.6	-.0216	.0069	-.0046	94:365
S004 BRMU P CODE	.0045	.0006	-.0027	-.6	.3	-.3	.0043	-.0030	-.0002	95: 76
S004 BRMU P MIT	-.0063	.0013	-.0058	-.6	.3	-.4	-.0052	-.0028	-.0064	97:151
S004 BRMU P NCL	.0028	-.0022	.0041	.8	.9	-.2	.0016	.0018	.0048	96: 1
S004 BRMU P JPL	-.0003	-.0088	.0052	.3	-1.4	.7	-.0040	.0002	.0094	96: 1

Velocities

M002 7294 R GSFC	-.0007	.0000	.0005	.0	.3	.0	-.0007	.0006	.0000
M002 7294 R NOAA	.0009	-.0012	.0024	.0	.0	.0	.0003	.0013	.0025
S004 BRMU P GFZ	.0057	-.0069	.0062	.1	-.4	-.3	.0023	.0006	.0106
S004 BRMU P CODE	-.0004	.0015	-.0034	-.1	-.1	-.1	.0003	-.0021	-.0031
S004 BRMU P MIT	-.0040	.0057	-.0065	-.6	1.0	-.6	-.0012	-.0018	-.0093
S004 BRMU P NCL	-.0038	.0030	-.0053	-.3	-.6	.5	-.0022	-.0022	-.0065
S004 BRMU P JPL	.0014	-.0043	.0048	.6	-.4	.5	-.0005	.0017	.0063

43001 THULE

Positions

M001 THUL P GFZ	-.0106	-.0200	.0203	1.1	-.2	-.4	-.0171	-.0097	.0232	94:365
M001 THUL P CODE	.0039	.0010	.0029	-.1	.6	.8	.0040	.0002	.0030	95: 76
M001 THUL P04 EUR	.0067	-.0047	.0157	.7	-.1	-.2	.0046	-.0030	.0169	96: 90
M001 THUL P03 EUR	.0000	-.0008	-.0060	.0	.3	-.7	-.0003	-.0021	-.0056	96:339
M001 THUL P MIT	.0088	-.0057	.0454	.3	-.1	.4	.0062	.0023	.0462	97:151
M001 THUL P NCL	.0021	-.0030	.0081	.9	.3	1.3	.0008	-.0016	.0087	96: 1
M001 THUL P JPL	.0005	-.0050	.0105	.2	-1.3	.2	-.0014	-.0023	.0113	96: 1

Velocities

M001 THUL P GFZ	-.0076	.0029	-.0041	-1.7	-.9	.0	-.0060	.0044	-.0052
M001 THUL P CODE	.0006	-.0043	.0012	.0	.5	.0	-.0010	-.0038	.0021
M001 THUL P04 EUR	-.0164	-.0545	-.0107	.9	-1.3	.1	-.0351	-.0462	.0000
M001 THUL P03 EUR	-.0170	-.0014	.0012	-.6	.7	.2	-.0164	.0050	.0000
M001 THUL P MIT	.0005	-.0046	.0301	-.4	-.2	.1	-.0012	.0026	.0303
M001 THUL P NCL	-.0035	.0063	-.0181	-.5	1.0	-.5	-.0010	.0027	-.0193
M001 THUL P JPL	-.0033	.0023	-.0093	-.5	-.5	.1	-.0022	.0011	-.0098

43005 KELLYVILLE

Positions

M001 KELY P04 EUR	.0050	.0013	.0043	-.1	.4	.2	.0047	-.0003	.0048	96: 90
M001 KELY P03 EUR	.0028	-.0050	.0084	.9	-.1	-.1	-.0010	-.0020	.0099	96:339
M001 KELY P MIT	-.0052	-.0027	.0030	-.9	-.2	.7	-.0058	.0023	.0023	97:151
M001 KELY P NCL	-.0013	-.0015	-.0016	-.4	-.2	-.2	-.0020	-.0010	-.0014	96: 1
M001 KELY P JPL	-.0019	.0002	-.0017	-.2	.0	.1	-.0014	.0006	-.0021	96: 1

Velocities

M001 KELY P04 EUR	-.0185	-.0578	-.0141	.5	-.7	.0	-.0507	-.0361	.0000
M001 KELY P03 EUR	-.0138	-.0067	.0015	-.9	-.3	.1	-.0150	.0038	.0000

M001 KELY P MIT	-.0023	-.0023	.0047	-.3	-.3	.2	-.0032	.0016	.0045
M001 KELY P NCL	.0006	.0037	-.0015	-.4	.2	.0	.0028	.0017	-.0023
M001 KELY P JPL	-.0024	-.0027	.0043	-.2	-.2	.3	-.0036	.0011	.0042

43201 SAINTE CROIX

Positions

M001 CRO1 P CODE	.0165	-.0383	.0120	1.4	-3.3	.9	-.0015	-.0013	.0434	95: 76
M001 CRO1 P MIT	.0041	-.0216	.0075	1.1	-2.3	.8	-.0056	.0006	.0225	97:151
M001 CRO1 P NCL	.0011	.0035	.0023	-.1	.8	-.1	.0025	.0030	-.0019	96: 1
M001 CRO1 P JPL	-.0163	.0317	-.0105	-2.1	2.2	.3	-.0011	.0009	-.0371	96: 1
S001 7615 R GSFC	.0141	-.0229	.0028	2.4	.8	-.9	.0029	-.0054	.0263	93: 1
S001 7615 R GIUB	-.0398	.0011	-.0219	-3.1	-1.8	-1.1	-.0355	-.0154	-.0239	93: 1
S001 7615 R NOAA	.0153	.0062	.0100	.4	.7	.4	.0165	.0092	.0040	93: 1

Velocities

M001 CRO1 P CODE	.0040	.0007	-.0047	-.2	-.2	-.5	.0039	-.0048	-.0004
M001 CRO1 P MIT	.0163	-.0346	.0120	2.1	-3.3	.5	-.0001	-.0002	.0401
M001 CRO1 P NCL	.0185	-.0460	.0115	3.8	-1.8	.1	-.0030	-.0041	.0506
M001 CRO1 P JPL	-.0081	.0057	-.0018	-2.5	1.3	.2	-.0048	.0009	-.0087
S001 7615 R GSFC	-.0035	.0087	.0005	-.1	-.6	-.4	.0006	.0033	-.0088
S001 7615 R GIUB	.0143	.0098	.0090	.0	.0	.0	.0171	.0094	.0001
S001 7615 R NOAA	-.0125	-.0018	-.0052	-.3	.4	1.0	-.0121	-.0038	-.0051

49901 WRIGHTWOOD

Positions

M001 TABL P JPL	.0000	.0000	.0000	.1	.0	-.1	.0000	.0000	.0000	96: 1
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Velocities

M001 TABL P JPL	.0000	.0000	.0000	.1	.0	-.1	.0000	.0000	.0000
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49902 MOUNT LEEP

Positions

M001 LEEP P JPL	.0000	.0000	.0000	.0	.1	-.1	.0000	.0000	.0000	96: 1
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Velocities

M001 LEEP P JPL	.0000	.0000	.0000	.0	.1	.0	.0000	.0000	.0000
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49903 HOLLYDALE

Positions

M001 HOLP P JPL	.0000	.0000	.0000	.0	.1	-.1	.0000	.0000	.0000	96: 1
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Velocities

M001 HOLP P JPL	.0000	.0000	.0000	.0	.1	.0	.0000	.0000	.0000
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49904 DURMIDHILL

Positions

M001 DHLG P JPL	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	96: 1
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Velocities

M001 DHLG P JPL	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000
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49905 PACOIMA/FIRE CAM

Positions

M001 DAM1 P JPL	.0002	-.0001	.0002	.1	.0	.0	.0002	.0001	.0001	96: 1
M002 DAM2 P JPL	.0015	-.0015	-.0002	.1	-.1	-.1	.0020	-.0005	.0004	96: 1
M003 CMP9 P JPL	-.0001	.0000	.0000	.0	.1	-.1	-.0001	.0000	.0000	96: 1

Velocities

M001 DAM1 P JPL	-.0014	.0019	-.0020	.0	.1	-.1	-.0021	-.0011	-.0020
M002 DAM2 P JPL	-.0041	.0045	.0004	.0	.1	.0	-.0057	.0015	-.0015
M003 CMP9 P JPL	.0015	-.0013	.0007	.0	.0	.1	.0019	.0003	.0007

49906 CLAREMONT

Positions

M001 CLAR P JPL	.0000	.0000	.0000	.1	.0	-.1	.0000	.0000	.0000	96: 1
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Velocities

M001 CLAR P JPL	.0000	.0000	.0000	.0	.1	.0	.0000	.0000	.0000
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49907 SOLOMONS ISLAND

Positions

S001 SOL1 P JPL	.0000	.0000	.0000	.0	.0	.2	.0000	.0000	.0000	96: 1
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Velocities

S001 SOL1 P JPL	.0000	.0000	.0000	.0	.1	.4	.0000	.0000	.0000
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49908 ANNAPOLIS

Positions

S001 USNA P JPL	.0000	.0000	.0000	.0	.0	.3	.0000	.0000	.0000	96: 1
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Velocities

S001 USNA P JPL	.0000	.0000	.0000	.0	.0	.6	.0000	.0000	.0000
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49909 SAN NICOLAS IS.

Positions

S001 SNI1 P JPL	-.0006	-.0020	.0010	.0	.0	.0	.0005	-.0003	.0022	96: 1
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Velocities

S001 SNI1 P JPL	.0008	.0027	-.0014	.0	.0	.0	-.0006	.0003	-.0031
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49910 NORTHRIDGE

Positions

S001 CSN1 P JPL	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	96: 1
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Velocities

S001 CSN1 P JPL	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000
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49911 AZUSA

Positions

M001 AZU1 P JPL	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	96: 1
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Velocities

M001 AZU1 P JPL	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000
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50103 CANBERRA/ORRORAL

Positions

M108 TIDB TIE50103	-.0027	-.0021	-.0035	.0	.0	.0	.0032	-.0021	.0030	93: 1
M108 TIDB P EMR	.0101	-.0294	.0053	1.7	1.4	.9	.0200	-.0095	-.0225	96: 1
M108 TIDB P GFZ	-.0228	-.0009	.0158	-2.5	-1.3	1.1	.0125	.0239	.0064	94:365
M108 TIDB P CODE	.0092	-.0096	.0089	.3	-1.0	1.8	.0035	-.0002	-.0156	95: 76
M108 TIDB P CODE	.0198	-.0159	.0144	.7	-.5	.7	.0034	-.0028	-.0289	95: 76
M108 TIDB P MIT	-.0096	.0121	-.0086	-1.9	1.4	-.8	-.0054	.0013	.0168	97:151
M108 TIDB P MIT	-.0197	.0235	-.0142	-2.9	2.5	-.3	-.0100	.0052	.0319	97:151

M108 TIDB P NCL	.0089	-.0067	.0062	1.7	-.4	-.1	.0012	-.0014	-.0126	96:	1
M108 TIDB P JPL	.0065	-.0036	.0068	.1	-.9	.7	-.0002	.0012	-.0100	96:	1
S001 1543 TIE50103	-.0016	.0009	-.0010	.2	.7	.6	.0000	.0003	.0021	93:	1
S001 1543 R GSFC	-.3225	.2699	-.3847	-.1	.0	.1	-.0651	-.0729	.5615	93:	1
S001 1543 R JPL	.0525	-.0039	.0296	2.9	-.9	1.0	-.0237	-.0031	-.0555	93:	1
S003 7943 TIE50103	-.0356	.0071	-.0332	-1.2	.3	-1.1	.0123	-.0071	.0471	93:	1
S003 7943 L CSR	-.1867	.1345	-.1449	.0	.0	.0	-.0190	.0158	.2708	93:	1
S005 1542 TIE50103	.0001	-.0001	-.0010	.7	.1	.4	.0000	-.0009	.0004	93:	1
S005 1542 R JPL	.0782	-.0182	.0832	2.4	-.2	2.4	-.0247	.0235	-.1105	93:	1
S007 7843 TIE50103	-.0361	.0076	-.0334	-.5	.1	-.4	.0121	-.0069	.0478	93:	1
S007 7843 L CSR	.0030	-.0009	-.0042	.3	.2	-.5	-.0008	-.0051	.0000	93:	1
S007 7843 L GSFC	.0692	.0326	.0130	1.8	1.3	-.6	-.0637	-.0141	-.0421	86:182	
S010 1545 TIE50103	.0000	.0000	.0000	.9	.2	1.1	.0000	.0000	.0000	93:	1
S010 1545 R GSFC	-.0100	.0085	-.0141	-2.0	-.3	-.1	-.0021	-.0040	.0187	93:	1
S010 1545 R GIUB	-.0820	.0301	.0687	.5	.6	-.8	.0165	.1057	.0302	93:	1
S010 1545 R NOAA	-.0134	.0152	.0084	-1.5	.6	-.2	-.0061	.0181	.0109	93:	1
S010 1545 R JPL	.0110	.0047	.0017	-.3	.0	.0	-.0097	-.0027	-.0067	93:	1
S201 ORRA TIE50103	-.0338	.0067	-.0358	.8	-.3	-.8	.0117	-.0102	.0472	93:	1
S201 ORRA D GRGS	-.0405	-.0236	.0440	-.6	-.2	.9	.0411	.0488	-.0073	93:	1
S201 ORRA D CSR	-.0182	.0143	.0299	-.6	.2	1.3	-.0029	.0377	.0012	93:	1
S201 ORRA D IGN	-.0813	-.0121	.0484	-1.3	.9	2.1	.0523	.0763	.0233	95:100	
S202 ORRB TIE50103	-.0360	.0074	-.0335	.0	-.1	.0	.0122	-.0071	.0477	93:	1
S202 ORRB D IGN	.0988	.0420	-.0840	-.4	1.0	-.1	-.0870	-.1050	-.0022	95:100	

Velocities

M108 TIDB P EMR	.0046	-.0030	.0051	.9	1.2	.5	.0002	.0009	-.0074		
M108 TIDB P GFZ	.0048	-.0152	-.0009	-.4	-2.5	1.3	.0106	-.0076	-.0093		
M108 TIDB P CODE	-.0125	.0083	.0007	-.9	.2	.5	-.0007	.0093	.0118		
M108 TIDB P CODE	-.0125	.0083	.0007	.5	-.2	.2	-.0007	.0093	.0118		
M108 TIDB P MIT	-.0125	.0081	-.0076	-1.1	1.4	-.3	-.0005	.0024	.0165		
M108 TIDB P MIT	-.0055	.0075	-.0031	2.5	.2	.6	-.0036	.0025	.0088		
M108 TIDB P NCL	-.0112	.0117	-.0133	-.8	1.1	-.7	-.0043	-.0018	.0204		
M108 TIDB P JPL	-.0142	.0120	-.0133	-.8	.2	-.2	-.0030	-.0002	.0227		
S001 1543 R GSFC	.0045	-.0032	.0046	.0	.0	.0	.0004	.0006	-.0072		
S003 7943 L CSR	-.0052	.0028	-.0006	.0	-.1	.0	.0003	.0029	.0052		
S007 7843 L CSR	-.0052	.0028	-.0006	-2.0	1.1	.5	.0003	.0029	.0052		
S007 7843 L GSFC	-.0093	-.0047	-.0014	.0	-.3	.5	.0089	.0021	.0053		
S010 1545 R GSFC	.0045	-.0032	.0046	1.3	.1	-.4	.0004	.0006	-.0072		
S010 1545 R GIUB	-.0184	.0034	.0218	-.7	-1.3	.2	.0066	.0279	.0017		
S010 1545 R NOAA	.0032	-.0011	.0089	1.0	-1.2	1.3	-.0007	.0053	-.0078		
S201 ORRA D GRGS	-.0283	.0101	-.0093	-2.3	.9	1.6	.0060	.0096	.0294		
S201 ORRA D CSR	-.0013	-.0118	-.0002	-.3	-.4	.4	.0108	-.0030	-.0039		
S201 ORRA D IGN	-.0149	-.0112	.0193	1.0	-.8	-1.5	.0173	.0197	-.0056		
S202 ORRB D IGN	-.0665	.0192	.0531	-.1	.7	.5	.0178	.0821	.0234		

50107 YARRAGADEE

Positions

M001 7090 TIE50107	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93:	1
M001 7090 L CSR	-.0003	.0003	-.0008	-.1	.0	-.9	.0001	-.0005	.0007	93:	1
M001 7090 L GSFC	.0434	.0230	.0078	4.1	1.4	-.7	-.0491	.0079	-.0018	86:182	
M004 YAR1 TIE50107	.0008	.0065	.0011	.3	2.2	.4	-.0035	.0037	.0043	93:	1
M004 YAR1 P EMR	.0033	-.0215	-.0085	1.0	.4	-.1	.0062	-.0175	-.0141	96:	1
M004 YAR1 P GFZ	-.0150	.0023	.0167	-.7	.9	.4	.0125	.0187	-.0007	94:365	
M004 YAR1 P CODE	.0024	-.0041	.0078	-.7	-.2	1.4	-.0004	.0045	-.0079	95:76	
M004 YAR1 P MIT	.0047	-.0099	.0157	.6	-2.2	2.4	.0000	.0084	-.0172	97:151	
M004 YAR1 P NCL	.0016	-.0020	-.0005	-.3	-.7	-.9	-.0006	-.0016	-.0019	96:	1
M004 YAR1 P JPL	-.0022	.0047	-.0020	-.6	.8	.6	.0000	.0008	.0055	96:	1
S006 YARA TIE50107	.0016	-.0007	-.0014	.5	-.2	-.5	-.0011	-.0019	-.0005	93:	1
S006 YARA D GRGS	-.0269	-.0111	.0350	-.7	.0	1.1	.0291	.0313	-.0157	93:	1
S006 YARA D CSR	-.0283	-.0006	.0014	-.6	.2	.2	.0258	.0068	.0095	93:	1
S006 YARA D IGN	-.0214	-.0158	-.0055	-.7	-.1	-.2	.0262	-.0073	-.0018	95:100	

Velocities

M001 7090 L CSR	-.0014	.0016	.0021	3.0	1.0	-2.3	.0006	.0028	.0008
M001 7090 L GSFC	-.0063	-.0034	-.0010	-1.7	-.6	1.4	.0071	-.0011	.0002
M004 YAR1 P EMR	.0010	-.0084	.0027	-.3	-.5	.2	.0027	-.0015	-.0083
M004 YAR1 P GFZ	-.0021	-.0185	-.0021	.0	-2.2	-.5	.0098	-.0095	-.0128
M004 YAR1 P CODE	-.0050	.0001	.0076	.2	-.9	1.3	.0045	.0077	-.0017
M004 YAR1 P MIT	-.0028	-.0070	.0055	-1.0	-.4	1.2	.0055	.0023	-.0072
M004 YAR1 P NCL	.0031	-.0088	.0048	.0	-.3	-.7	.0010	-.0003	-.0104
M004 YAR1 P JPL	.0024	-.0026	.0021	.8	-.8	.1	-.0011	.0002	-.0040
S006 YARA D GRGS	-.0089	.0048	.0067	-1.7	.4	3.0	.0060	.0099	.0038
S006 YARA D CSR	-.0147	.0024	-.0073	-1.4	.6	-.4	.0122	-.0023	.0110
S006 YARA D IGN	.0041	-.0080	.0051	.2	-.5	-.7	-.0003	.0000	-.0104

50108 PARKES

Positions

S001 7202 R GSFC	-.0092	.0082	-.0138	.0	.0	.0	-.0021	-.0049	.0177	93: 1
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Velocities

S001 7202 R GSFC	.0068	-.0031	.0057	.0	.0	.0	-.0009	.0008	-.0093
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50116 HOBART

Positions

M003 HOB1 P GFZ	-.0164	-.0047	.0268	.1	-.4	1.3	.0127	.0274	-.0099	94:365
M003 HOB1 P CODE	.0029	-.0007	.0032	-.8	.5	1.2	-.0010	.0004	-.0043	95: 76
M004 HOB2 P GFZ	-.0310	-.0027	.0064	-.9	-1.7	-.7	.0189	.0215	.0137	94:365
M004 HOB2 P CODE	.0117	-.0087	.0081	1.1	.3	.0	.0010	-.0039	-.0162	95: 76
M004 HOB2 P MIT	-.0027	.0095	.0028	-.5	.8	.9	-.0066	.0071	.0035	97:151
M004 HOB2 P NCL	.0026	-.0019	.0004	.2	-.5	-.8	.0002	-.0019	-.0026	96: 1
M004 HOB2 P JPL	-.0014	-.0013	.0019	.3	-.4	.4	.0018	.0017	-.0009	96: 1
S002 7242 R GSFC	-.0046	.0075	-.0092	-.2	.0	.0	-.0038	-.0013	.0120	93: 1
S002 7242 R GIUB	-.1161	.0427	.0548	-1.1	.5	-.6	.0265	.1223	.0514	93: 1
S002 7242 R NOAA	-.0034	.0093	.0165	-.3	-.6	-.1	-.0060	.0175	-.0055	93: 1

Velocities

M003 HOB1 P GFZ	.0093	-.0169	.0072	1.4	.1	.3	.0092	-.0062	-.0173
M003 HOB1 P CODE	-.0149	.0096	-.0003	-1.0	-.5	1.3	.0000	.0118	.0132
M004 HOB2 P GFZ	.0092	-.0168	.0073	-.3	-.2	.3	.0092	-.0061	-.0173
M004 HOB2 P CODE	-.0149	.0096	-.0002	-.4	.3	.5	.0000	.0119	.0132
M004 HOB2 P MIT	-.0016	.0015	.0057	.9	.3	.9	-.0003	.0057	-.0023
M004 HOB2 P NCL	.0033	.0012	.0035	.6	.8	1.6	-.0027	.0011	-.0039
M004 HOB2 P JPL	-.0023	.0034	.0023	.4	.0	.6	-.0017	.0042	.0012
S002 7242 R GSFC	.0031	-.0015	.0024	.1	.0	-.1	-.0004	-.0006	-.0042
S002 7242 R GIUB	-.0061	.0007	.0242	-1.2	-.3	.5	.0027	.0215	-.0124
S002 7242 R NOAA	.0017	.0010	.0054	-.2	-.7	-.6	-.0017	.0034	-.0044

50127 COCO ISLAND

Positions

M001 COCO P GFZ	-.0238	-.0209	.0106	-.5	-.4	-.2	.0261	.0066	-.0197	94:365
M001 COCO P CODE	-.0017	.0187	-.0039	-.1	1.1	-.4	-.0006	.0002	.0191	95: 76
M001 COCO P MIT	.0042	.0017	.0084	.6	-.3	.6	-.0043	.0085	-.0006	97:151
M001 COCO P JPL	-.0234	-.0120	-.0092	-.3	-.2	-.7	.0247	-.0109	-.0070	96: 1

Velocities

M001 COCO P GFZ	-.0002	.0000	-.0008	-.3	.6	.0	.0002	-.0007	.0002
M001 COCO P CODE	-.0028	.0020	.0109	.2	-.5	.0	.0025	.0111	-.0001
M001 COCO P MIT	.0011	.0039	.0125	1.3	.2	.6	-.0015	.0130	.0010
M001 COCO P JPL	.0340	.0105	.0181	-.3	-.4	.3	-.0350	.0190	.0024

50133 PERTH

Positions

M001 PERT P CODE	-.0057	.0143	-.0058	-.7	.4	-.4	-.0011	.0031	.0161	95: 76
M001 PERT P MIT	.0039	-.0029	.0051	.3	-.9	.1	-.0023	.0021	-.0063	97:151
M001 PERT P NCL	.0022	-.0030	.0002	.2	-.1	-.5	-.0006	-.0017	-.0032	96: 1
M001 PERT P JPL	.0002	-.0036	.0031	.4	-1.1	.1	.0014	.0009	-.0045	96: 1

Velocities

M001 PERT P CODE	-.0041	-.0017	.0097	-1.3	.8	.2	.0045	.0084	-.0049
M001 PERT P MIT	-.0008	-.0059	.0086	.6	-1.0	.1	.0033	.0047	-.0087
M001 PERT P NCL	.0002	-.0012	.0009	-.2	-1.3	-.1	.0003	.0002	-.0015
M001 PERT P JPL	-.0004	.0042	-.0018	-.4	.2	.0	-.0015	.0005	.0043

50135 MACQUARIE ISLAND

Positions

M001 MAC1 P GFZ	-.0269	-.0060	.0176	-.7	-.3	.6	.0153	.0289	-.0010	94:365
M001 MAC1 P CODE	.0106	-.0014	.0066	.8	.9	.3	-.0025	-.0046	-.0114	95: 76
M001 MAC1 P MIT	.0012	.0075	.0041	.1	1.0	1.1	-.0074	.0037	-.0024	97:151
M001 MAC1 P NCL	.0012	-.0013	-.0021	.0	-.1	-.8	.0007	-.0025	.0008	96: 1
M001 MAC1 P JPL	-.0048	.0044	-.0051	-.8	.4	.2	-.0024	.0020	.0077	96: 1

Velocities

M001 MAC1 P GFZ	.0028	-.0137	-.0057	-.8	-.8	-.3	.0118	-.0095	.0002
M001 MAC1 P CODE	-.0073	.0020	.0053	.2	.1	.3	.0008	.0092	.0000
M001 MAC1 P MIT	.0011	.0000	.0062	.8	.6	.4	-.0004	.0028	-.0056
M001 MAC1 P NCL	.0030	.0005	.0034	.4	-.1	.5	-.0015	-.0001	-.0043
M001 MAC1 P JPL	-.0028	-.0020	-.0014	.2	-.6	.0	.0029	.0007	.0022

50137 ALICE SPRINGS

Positions

M001 ALIC P MIT	-.0003	.0022	.0048	.0	.0	.4	-.0013	.0051	-.0003	97:151
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Velocities

M001 ALIC P MIT	-.0056	-.0003	.0014	.1	.2	.6	.0043	.0027	.0028
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50139 KARRATHA

Positions

M001 KARR P MIT	.0009	.0005	.0078	.2	.1	.2	-.0010	.0072	-.0028	97:151
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Velocities

M001 KARR P MIT	-.0040	-.0026	.0062	.0	.1	.6	.0047	.0056	-.0026
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50140 TOWNSVILLE

Positions

M001 TOW2 P MIT	-.0019	.0028	.0024	-.2	-.1	.4	-.0013	.0033	.0021	97:151
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Velocities

M001 TOW2 P MIT	-.0086	.0013	-.0027	-.1	-.3	-.3	.0036	.0001	.0084
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50207 CHATHAM ISLAND

Positions

M001 CHAT P GFZ	-.0058	-.0354	.0097	.9	-1.8	-2.3	.0349	.0125	-.0011	94:365
M001 CHAT P CODE	-.0109	.0292	-.0149	-1.5	2.1	-.6	-.0298	-.0044	.0169	95: 76
M001 CHAT P MIT	-.0130	-.0081	-.0165	-2.4	-2.2	-2.2	.0073	-.0026	.0211	97:151
M001 CHAT P NCL	-.0079	.0110	-.0073	-.9	2.8	.4	-.0115	-.0002	.0103	96: 1
M001 CHAT P JPL	.0456	.0148	.0454	4.3	2.2	1.8	-.0121	.0005	-.0649	96: 1

Velocities

M001 CHAT P GFZ	-.0013	.0037	.0014	-.8	3.6	.9	-.0037	.0017	-.0002
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M001 CHAT P CODE	-.0037	-.0182	.0055	-.1	.1	.6	.0179	.0073	-.0004
M001 CHAT P MIT	-.0251	-.0178	-.0256	-3.3	-3.6	-2.1	.0162	-.0003	.0366
M001 CHAT P NCL	.0036	-.0174	-.0024	-1.2	-1.8	-.7	.0176	-.0035	-.0002
M001 CHAT P JPL	-.0510	-.0189	-.0466	1.7	.9	1.5	.0159	.0026	.0698

50209 AUCKLAND

Positions

M001 AUCK P CODE	-.0187	.0203	-.0202	-2.3	-1.4	-1.3	-.0186	-.0040	.0285	95: 76
M001 AUCK P MIT	-.0119	-.0004	-.0114	-1.7	-.4	-.9	.0014	-.0021	.0163	97:151
M001 AUCK P NCL	-.0100	.0074	-.0089	-1.2	1.6	-1.1	-.0065	-.0008	.0138	96: 1
M001 AUCK P JPL	.0617	.0005	.0458	6.6	.6	1.6	-.0060	.0001	-.0766	96: 1

Velocities

M001 AUCK P CODE	-.0058	-.0113	.0072	.3	.2	.6	.0118	.0086	-.0004
M001 AUCK P MIT	-.0257	-.0074	-.0160	-3.7	-.5	-.2	.0097	.0021	.0295
M001 AUCK P NCL	-.0051	-.0091	-.0061	-2.7	-.8	-1.8	.0096	-.0024	.0070
M001 AUCK P JPL	-.0006	-.0035	.0016	2.0	.1	1.0	.0035	.0014	-.0007

50501 GUAM

Positions

M002 GUAM TIE50501	.0017	.0002	.0052	.0	.0	.0	-.0011	.0053	.0000	93: 1
M002 GUAM P EMR	-.0099	-.0146	.0024	-1.3	-1.9	1.1	.0176	.0024	.0003	96: 1
M002 GUAM P GFZ	.0141	-.0005	.0150	-.5	-.1	-1.4	-.0077	.0174	-.0080	94:365
M002 GUAM P CODE	.0048	-.0227	-.0026	-.1	.6	-1.2	.0158	.0015	-.0171	95: 76
M002 GUAM P MIT	.0048	.0013	-.0030	-.2	-.2	-.8	-.0039	-.0021	-.0038	97:151
M002 GUAM P NCL	-.0039	-.0009	.0018	-.5	-.1	.8	.0030	.0011	.0031	96: 1
M002 GUAM P JPL	-.0119	.0037	.0027	-1.3	-.8	.5	.0038	-.0002	.0122	96: 1
S001 GUAB TIE50501	.0000	.0000	.0000	-.3	.0	-1.0	.0000	.0000	.0000	93: 1
S001 GUAB D GRGS	-.0065	.0348	-.0168	-.1	.2	-.3	-.0247	-.0222	.0207	93: 1
S001 GUAB D CSR	.0503	-.0004	-.0578	.0	-.3	-.8	-.0286	-.0465	-.0538	93: 1
S001 GUAB D IGN	.0261	-.0038	.0288	.8	.3	2.2	-.0119	.0335	-.0161	95:100

Velocities

M002 GUAM P EMR	-.0020	.0097	.0039	-.2	.8	1.3	-.0068	.0021	.0079
M002 GUAM P GFZ	-.0089	-.0101	-.0051	-.2	1.4	-1.0	.0134	-.0053	.0002
M002 GUAM P CODE	-.0005	.0126	.0128	.5	.0	-.6	-.0100	.0107	.0105
M002 GUAM P MIT	-.0006	.0018	-.0009	-.4	.0	-.4	-.0011	-.0012	.0013
M002 GUAM P NCL	.0083	.0014	-.0041	.2	.2	.1	-.0059	-.0026	-.0067
M002 GUAM P JPL	.0045	-.0013	.0014	-.2	.2	-.2	-.0015	.0024	-.0040
S001 GUAB D GRGS	.0067	-.0012	.0081	.1	.3	.8	-.0029	.0093	-.0041
S001 GUAB D CSR	-.0112	-.0023	.0187	.2	-.2	-.3	.0083	.0163	.0120
S001 GUAB D IGN	.0086	.0061	.0051	.1	.0	.0	-.0099	.0058	-.0022

50503 AMERICAN SAMOA

Positions

M001 7096 L CSR	.8781	.1059	1.0804	.2	-.1	.0	.0370	.8280	-1.1237	93: 1
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Velocities

M001 7096 L CSR	.0713	.0037	.0877	-.1	.1	.0	.0078	.0674	-.0905
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50505 KWAJALEIN ATOLL

Positions

M001 7092 TIE50505	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
S003 4968 TIE50505	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
S003 4968 R GSFC	.0370	-.0079	-.0112	.1	-.1	.0	-.0003	-.0049	-.0391	93: 1
S003 4968 R NOAA	-.0067	.0121	.0102	-.2	.0	-.1	-.0104	.0085	.0107	93: 1

Velocities

S003 4968 R GSFC	.0078	.0006	-.0049	.1	.1	.3	-.0023	-.0036	-.0082
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S003 4968 R NOAA -.0008 .0038 .0021 .0 .0 -.3 -.0035 .0018 .0019

50506 KWAJALEIN ATOLL

Positions

M001 KWI1 P GFZ	-.0246	-.0084	.0139	-.5	-.2	-1.0	.0134	.0104	.0241	94:365
M001 KWI1 P CODE	-.0141	-.0050	-.0126	-.7	.5	-.5	.0079	-.0143	.0106	95: 76
M001 KWI1 P MIT	.0081	.0063	.0008	.3	1.1	.7	-.0079	.0018	-.0064	97:151
M001 KWI1 P NCL	-.0010	-.0031	-.0055	-.1	-.3	-2.1	.0032	-.0055	-.0005	96: 1
M001 KWI1 P JPL	.0049	-.0066	-.0110	.2	-.3	-1.4	.0054	-.0099	-.0077	96: 1

Velocities

M001 KWI1 P GFZ	.0026	-.0009	-.0019	.2	-.4	.0	.0003	-.0015	-.0029	
M001 KWI1 P CODE	.0027	.0047	.0183	-.7	1.1	.8	-.0052	.0184	.0012	
M001 KWI1 P MIT	.0112	.0041	.0005	.1	.8	1.0	-.0064	.0020	-.0098	
M001 KWI1 P NCL	.0055	.0038	.0050	.3	.1	.5	-.0048	.0056	-.0037	
M001 KWI1 P JPL	-.0086	.0092	.0176	-.1	.0	.1	-.0072	.0159	.0129	

51001 PORT MORESBY

Positions

S001 MORA D GRGS	.0047	.0119	.0009	-.1	-.1	.1	-.0125	.0013	.0024	93: 1
S001 MORA D CSR	-.0044	-.0024	-.0079	-.2	-.1	-.1	.0043	-.0074	.0036	93: 1
S001 MORA D IGN	.0196	-.0062	.0248	.4	.0	.6	-.0054	.0212	-.0236	95:100

Velocities

S001 MORA D GRGS	-.0063	.0069	-.0075	-.3	.3	-.2	-.0024	-.0059	.0101	
S001 MORA D CSR	.0128	-.0016	-.0199	.4	-.2	-1.2	-.0056	-.0215	-.0082	
S001 MORA D IGN	.0079	-.0004	.0168	-.1	.0	-.2	-.0040	.0154	-.0095	

66001 MC MURDO

Positions

M001 MCMU P CODE	-.0067	-.0092	-.0512	-.4	-.4	-1.2	.0104	-.0065	.0509	95: 76
M003 MCM4 P EMR	.0017	-.0436	.0147	1.5	-.1	2.9	.0420	-.0083	-.0168	96: 1
M003 MCM4 P GFZ	-.0146	-.0056	.0891	1.8	-.4	2.2	.0088	.0314	-.0844	94:365
M003 MCM4 P CODE	.0309	-.0005	.0753	2.7	-.6	3.5	-.0066	-.0136	-.0800	95: 76
M003 MCM4 P MIT	.0039	.0073	.0217	1.0	1.2	3.9	-.0080	.0025	-.0217	97:151
M003 MCM4 P JPL	.0027	.0030	.0140	.7	.9	1.0	-.0036	.0010	-.0140	96: 1
S006 MCM2 P GFZ	-.0311	-.0048	.0017	-2.0	-.4	-.5	.0118	.0289	.0044	94:365
S006 MCM2 P CODE	.0102	.0057	-.0228	.6	1.0	-.3	-.0079	-.0132	.0205	95: 76
S006 MCM2 P JPL	-.0012	-.0012	-.0253	.5	.1	-.3	.0014	-.0044	.0249	96: 1

Velocities

M001 MCMU P CODE	-.0210	.0059	-.0343	-1.9	.5	-1.6	-.0009	.0141	.0381	
M003 MCM4 P EMR	-.0047	-.0015	-.0174	-1.0	.3	-.8	.0026	.0005	.0179	
M003 MCM4 P GFZ	.0053	-.0133	-.0176	-.4	-.2	.5	.0118	-.0118	.0155	
M003 MCM4 P CODE	-.0210	.0059	-.0343	-.1	.1	.2	-.0009	.0141	.0381	
M003 MCM4 P MIT	.0083	.0003	.0548	2.3	1.0	8.7	-.0022	.0037	-.0553	
M003 MCM4 P JPL	-.0080	.0009	-.0237	-1.3	-.9	-.6	.0010	.0028	.0248	
S006 MCM2 P GFZ	.0053	-.0134	-.0176	.8	-.5	-.9	.0118	-.0118	.0155	
S006 MCM2 P CODE	-.0210	.0059	-.0343	.0	.0	.0	-.0009	.0141	.0381	
S006 MCM2 P JPL	-.0010	-.0045	-.0116	.1	-.4	.8	.0046	-.0025	.0114	

66004 MAWSON STATION

Positions

M001 MAW1 P MIT	.0009	.0023	.0047	-.6	.0	-.5	.0002	.0041	-.0034	97:151
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Velocities

M001 MAW1 P MIT	-.0026	-.0017	.0071	-.1	-.4	.4	.0015	.0002	-.0076	
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66006 SYOWA

Positions

S001 SYOB D GRGS	-.0102	-.0086	.0325	-.8	-.1	1.1	-.0001	-.0008	-.0352	93: 1
S001 SYOB D CSR	.0044	-.0263	-.0802	.1	-.4	-1.2	-.0231	-.0412	.0700	93: 1
S001 SYOB D IGN	.0028	-.0052	-.0111	1.4	.5	-.8	-.0058	-.0050	.0100	95:100

Velocities

S001 SYOB D GRGS	.0025	.0003	-.0041	-1.4	.0	2.0	-.0013	.0005	.0046	
S001 SYOB D CSR	-.0001	.0017	.0245	-.3	-.8	-.7	.0014	.0097	-.0225	
S001 SYOB D IGN	.0028	-.0038	.0116	-1.3	-1.1	.1	-.0047	.0039	-.0109	

66007 ROTHERA

Positions

S001 ROTA D GRGS	.0002	-.0049	.0007	.0	.4	.1	-.0017	.0045	.0012	93: 1
S001 ROTA D CSR	-.0123	-.0079	.0188	-.5	.0	.1	-.0144	.0097	-.0163	93: 1
S001 ROTA D IGN	.0060	-.0005	-.0046	1.0	-.1	.0	.0053	.0007	.0052	95:100

Velocities

S001 ROTA D GRGS	-.0031	.0001	.0014	-.4	.6	.7	-.0028	-.0006	-.0017	
S001 ROTA D CSR	.0040	.0000	.0061	-.5	.2	.4	.0038	.0037	-.0051	
S001 ROTA D IGN	-.0021	.0011	.0132	-.8	-.3	-.1	-.0015	.0033	-.0129	

66008 O'HIGGIN

Positions

M001 OHIG TIE66008	.0018	.0015	-.0023	.0	.0	.0	.0023	-.0013	.0019	93: 1
M001 OHIG P GFZ	-.0376	-.0124	.0150	.0	-1.6	.6	-.0385	-.0017	-.0177	94:365
M001 OHIG P CODE	.0025	-.0101	.0045	-.4	-.4	.6	-.0032	.0109	.0004	95: 76
M001 OHIG P MIT	-.0072	.0147	.0077	-.4	2.0	1.2	.0017	-.0111	-.0142	97:151
M001 OHIG P JPL	-.0044	-.0027	.0040	-.5	-.7	.6	-.0052	.0018	-.0036	96: 1
S001 7245 TIE66008	.0000	.0000	.0000	-.6	-.5	.8	.0000	.0000	.0000	93: 1
S001 7245 R GSFC	.0197	-.0222	-.0749	.9	-.4	-.9	.0049	-.0075	.0801	93: 1
S001 7245 R GIUB	-.0890	.0140	-.0447	1.1	-1.1	-1.2	-.0680	-.0730	.0134	93: 1
S001 7245 R NOAA	.0293	-.0174	-.0584	1.8	-.9	-1.8	.0156	.0009	.0658	93: 1

Velocities

M001 OHIG P GFZ	.0179	-.0034	-.0011	-.5	-1.1	.2	.0134	.0105	.0066	
M001 OHIG P CODE	-.0035	.0198	-.0097	.0	.5	-.4	.0075	-.0210	.0004	
M001 OHIG P MIT	-.0058	.0119	.0085	-.2	1.0	.3	.0015	-.0080	-.0135	
M001 OHIG P JPL	.0009	.0074	.0039	-.2	.1	.1	.0047	-.0034	-.0060	
S001 7245 R GSFC	.0008	.0081	.0117	1.3	.4	-1.2	.0050	-.0005	-.0134	
S001 7245 R GIUB	-.0052	.0079	-.0020	1.0	-.1	-.7	-.0002	-.0094	-.0025	
S001 7245 R NOAA	-.0006	-.0002	-.0002	.0	.0	.0	-.0006	-.0002	.0001	

66010 DAVIS

Positions

M001 DAV1 P EMR	.0093	-.0452	-.0015	.5	-2.3	-.7	-.0185	-.0399	-.0140	96: 1
M001 DAV1 P GFZ	-.0289	.0044	-.0007	.0	1.0	.3	.0292	-.0019	.0000	94:365
M001 DAV1 P CODE	.0093	.0073	-.0046	.0	1.0	-.3	-.0076	.0068	.0076	95: 76
M001 DAV1 P MIT	.0017	.0049	.0037	-.1	.3	.6	-.0006	.0062	-.0016	97:151
M001 DAV1 P NCL	.0033	-.0033	.0039	.3	-.3	.1	-.0039	-.0009	-.0046	96: 1
M001 DAV1 P JPL	.0004	-.0006	.0089	.4	-.3	.6	-.0005	.0028	-.0085	96: 1

Velocities

M001 DAV1 P EMR	.0042	-.0052	.0031	.2	1.1	.1	-.0052	-.0028	-.0044	
M001 DAV1 P GFZ	.0002	-.0137	.0037	-.8	-.4	-.1	-.0030	-.0111	-.0083	
M001 DAV1 P CODE	-.0104	.0027	-.0013	-.3	.3	-.9	.0107	.0000	.0014	
M001 DAV1 P MIT	-.0044	.0002	.0066	-.5	-.8	.4	.0044	.0018	-.0064	
M001 DAV1 P NCL	-.0003	.0028	-.0014	.3	-.4	.5	.0009	.0020	.0023	
M001 DAV1 P JPL	.0024	-.0021	.0053	.1	-.7	.1	-.0028	.0004	-.0055	

66011 CASEY

Positions

M001 CAS1 P EMR	.0065	-.0434	.0007	.2	-.9	-1.0	.0091	-.0390	-.0179	96: 1
M001 CAS1 P GFZ	-.0268	-.0077	.0248	-.3	-.3	.3	.0278	.0120	-.0218	94:365
M001 CAS1 P CODE	.0097	.0062	-.0020	.5	.0	.4	-.0113	.0014	.0028	95: 76
M001 CAS1 P MIT	.0009	.0038	.0108	-.1	.0	1.7	-.0022	.0073	-.0086	97:151
M001 CAS1 P NCL	.0028	-.0031	.0027	.4	-.6	-.2	-.0015	-.0025	-.0040	96: 1
M001 CAS1 P JPL	.0009	.0027	.0021	.5	.7	.8	-.0018	.0029	-.0010	96: 1

Velocities

M001 CAS1 P EMR	-.0055	-.0027	-.0024	.2	-2.4	-1.3	.0061	-.0015	.0020
M001 CAS1 P GFZ	-.0008	-.0110	-.0081	-.5	-1.0	.4	.0046	-.0124	.0033
M001 CAS1 P CODE	-.0126	.0028	-.0015	-.5	.3	-.5	.0108	.0058	.0042
M001 CAS1 P MIT	-.0018	-.0022	.0135	.2	-.7	.9	.0025	.0041	-.0129
M001 CAS1 P NCL	-.0003	.0082	-.0138	.5	1.1	-.8	-.0026	.0016	.0158
M001 CAS1 P JPL	.0000	.0046	-.0084	.0	.4	-.2	-.0016	.0006	.0094

91201 KERGUELEN

Positions

M002 KERG TIE91201	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M002 KERG P EMR	.0100	-.0431	-.0024	.7	-2.5	-.6	-.0239	-.0298	-.0224	96: 1
M002 KERG P GFZ	-.0296	.0069	.0053	.6	.6	.2	.0301	.0008	-.0063	94:365
M002 KERG P CODE	.0043	.0123	-.0044	-.3	.6	.3	.0001	.0070	.0118	95: 76
M002 KERG P MIT	.0040	-.0024	.0060	.1	-.7	.5	-.0046	.0033	-.0051	97:151
M002 KERG P NCL	.0022	-.0025	.0004	.0	-.4	-.6	-.0029	-.0010	-.0013	96: 1
M002 KERG P JPL	-.0028	-.0070	.0119	-.3	-1.4	1.0	.0002	.0020	-.0140	96: 1
S002 KERA TIE91201	-.0038	.0003	.0046	-1.2	.1	1.5	.0037	.0023	-.0041	93: 1
S002 KERA D GRGS	.0663	-.0267	-.0017	.9	-.3	.2	-.0715	-.0031	-.0005	93: 1
S002 KERA D CSR	.0084	-.0303	-.0088	.1	-.7	-.3	-.0182	-.0253	-.0100	93: 1
S002 KERA D IGN	.1007	-.0183	-.0523	1.9	.1	-1.4	-.1009	-.0213	.0506	95:100
S003 KERB TIE91201	.0015	.0028	-.0006	.5	.9	-.2	-.0004	.0020	.0025	93: 1
S003 KERB D GRGS	.0294	-.0407	.0412	-2.9	-2.0	2.6	-.0414	.0053	-.0498	93: 1
S003 KERB D CSR	-.0294	.0245	-.0027	-.8	1.1	-.1	.0360	.0082	.0106	93: 1
S003 KERB D IGN	.1139	-.0625	-.0356	3.2	-1.4	-1.7	-.1283	-.0387	.0138	95:100

Velocities

M002 KERG P EMR	.0078	-.0030	-.0041	.7	.4	-1.0	-.0084	-.0028	.0030
M002 KERG P GFZ	.0000	-.0086	-.0034	-1.0	.8	.0	-.0030	-.0084	-.0027
M002 KERG P CODE	-.0039	.0035	.0005	.4	1.5	-.6	.0049	.0018	.0010
M002 KERG P MIT	-.0032	.0008	.0050	.4	.1	-.3	.0033	.0031	-.0040
M002 KERG P NCL	.0019	.0031	-.0006	.3	.1	.4	-.0008	.0023	.0027
M002 KERG P JPL	.0036	-.0009	.0006	.0	-.6	.2	-.0037	.0007	-.0002
S002 KERA D GRGS	.0050	.0052	-.0272	2.3	-.1	-2.9	-.0030	-.0127	.0249
S002 KERA D CSR	.0141	-.0074	-.0156	.6	-.9	-.9	-.0158	-.0118	.0104
S002 KERA D IGN	.0339	.0119	-.0042	-1.3	1.5	1.4	-.0279	.0145	.0179
S003 KERB D GRGS	.0050	.0052	-.0272	.0	.0	.0	-.0030	-.0127	.0249
S003 KERB D CSR	.0141	-.0074	-.0156	-2.6	3.2	-3.0	-.0158	-.0118	.0104
S003 KERB D IGN	-.0291	.0096	-.0011	1.9	-1.1	-2.1	.0306	-.0013	.0004

91401 AMSTERDAM

Positions

S001 AMSA D GRGS	.0515	-.0214	.0158	.6	-.2	.6	-.0549	.0065	-.0174	93: 1
S001 AMSA D CSR	-.0389	.0178	.0096	-.6	.4	.1	.0418	.0131	.0013	93: 1
S001 AMSA D IGN	.0161	-.0203	-.0057	1.0	-.1	-.8	-.0201	-.0145	-.0094	95:100

Velocities

S001 AMSA D GRGS	-.0128	.0083	-.0061	.1	.0	.5	.0143	-.0015	.0079
S001 AMSA D CSR	-.0109	-.0016	-.0036	-1.3	.4	.0	.0103	-.0052	-.0009
S001 AMSA D IGN	.0012	-.0029	.0133	-.2	-.1	.1	-.0018	.0089	-.0102

91501 ILE DES PETRELS

Positions

M001	TIE91501	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
S001	ADEA TIE91501	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
S001	ADEA D GRGS	.0087	-.0061	-.0114	.6	-.3	-.3	-.0009	-.0143	.0063	93: 1
S001	ADEA D CSR	.0163	.0118	.0051	.8	.4	.3	-.0195	-.0025	-.0067	93: 1
S001	ADEA D IGN	-.0106	-.0028	.0113	-1.0	-.2	.6	.0089	.0103	-.0079	95:100

Velocities

S001	ADEA D GRGS	.0043	.0034	-.0017	1.1	-.6	-.4	-.0054	-.0017	.0011
S001	ADEA D CSR	.0058	.0003	-.0026	1.0	.7	.6	-.0040	-.0049	.0007
S001	ADEA D IGN	.0043	-.0006	.0130	.7	.2	.2	-.0023	.0018	-.0134

92201 PAPEETE

Positions

M003	PAMA P EMR	-.0189	-.0310	-.0002	-1.0	.1	.2	.0171	.0095	.0305	96: 1
M003	PAMA P GFZ	-.0116	.0054	.0203	-1.1	.3	.3	-.0105	.0215	.0008	94:365
M003	PAMA P CODE	.0276	-.0090	-.0003	1.0	.0	.1	.0217	-.0061	-.0182	95: 76
M003	PAMA P MIT	.0073	.0103	.0000	1.1	.2	.3	-.0052	-.0035	-.0110	97:151
M003	PAMA P NCL	-.0052	-.0033	-.0007	-1.0	-.1	.6	.0002	.0012	.0060	96: 1
M003	PAMA P JPL	-.0045	-.0025	-.0019	-.4	-.2	.0	-.0001	-.0003	.0055	96: 1
M006	TAHI TIE92201	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M006	TAHI P MIT	.0147	.0302	.0075	.5	1.5	.5	-.0186	-.0013	-.0289	97:151
S007	PAPB TIE92201	-.0002	-.0002	.0000	-.1	-.1	.0	.0001	.0001	.0002	93: 1
S007	PAPB D IGN	.0220	.0232	-.0138	.1	.3	-.2	-.0089	-.0225	-.0251	95:100

Velocities

M003	PAMA P EMR	-.0165	.0120	-.0021	-2.2	1.0	.7	-.0187	.0005	.0084
M003	PAMA P GFZ	.0084	-.0080	-.0022	.7	-.4	.3	.0111	-.0030	-.0024
M003	PAMA P CODE	-.0138	.0066	.0026	.0	.0	.2	-.0127	.0051	.0073
M003	PAMA P MIT	.0083	.0056	.0003	.0	-.4	-.2	-.0006	-.0028	-.0097
M003	PAMA P NCL	.0123	.0058	-.0012	.2	.2	-.3	.0012	-.0052	-.0126
M003	PAMA P JPL	.0016	.0000	.0028	.0	.1	.1	.0008	.0022	-.0021
M006	TAHI P MIT	.3680	.5210	.1822	.5	1.6	.4	-.2633	-.0017	-.6089
S007	PAPB D IGN	.0030	.0015	.0172	.4	.6	.0	.0003	.0153	-.0084

92202 HUAHINE

Positions

M002	7121 TIE92202	.0001	-.0001	-.0001	.0	.0	.0	.0001	-.0001	.0000	93: 1
M002	7121 L CSR	-.0629	-.0195	-.0267	.1	.6	.4	-.0134	-.0070	.0694	93: 1
M004	7123 TIE92202	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M004	7123 L CSR	-.0166	-.0139	-.0115	-.4	-.1	.2	.0041	-.0049	.0236	93: 1
M004	7123 L GSFC	-.0077	.0235	-.0081	.6	-.1	-.8	-.0243	-.0090	-.0021	86:182
S009	HUAA TIE92202	.0000	-.0001	.0002	.0	.0	.1	.0001	.0002	.0000	93: 1
S009	HUAA D CSR	.0010	.0143	.0159	.0	.2	.3	-.0120	.0129	-.0120	93: 1
S009	HUAA D IGN	.0103	.0158	-.0155	.0	.5	-.7	-.0088	-.0197	-.0115	95:100

Velocities

M002	7121 L CSR	-.0064	-.0073	-.0046	.0	.0	.0	.0032	-.0018	.0101
M004	7123 L CSR	-.0064	-.0073	-.0046	-.4	.4	-.1	.0032	-.0018	.0101
M004	7123 L GSFC	.0029	-.0014	.0023	-.2	.2	.1	.0026	.0017	-.0024
S009	HUAA D CSR	-.0100	.0139	.0003	-.2	.3	.4	-.0170	.0008	.0018
S009	HUAA D IGN	.0078	-.0016	.0118	.2	-.6	1.1	.0052	.0096	-.0091

92701 NOUMEA

Positions

S001	NOUA D GRGS	.0004	.0520	-.0047	.0	.2	-.2	-.0506	.0002	.0127	93: 1
S001	NOUA D CSR	.0270	-.0417	-.0250	.3	-.5	-.3	.0342	-.0368	-.0239	93: 1
S001	NOUA D IGN	.0054	-.0012	.0033	.1	.0	.0	-.0001	.0010	-.0064	95:100

Velocities

S001 NOUA D GRGS	.0038	-.0033	-.0009	.5	.1	-.2	.0023	-.0025	-.0038
S001 NOUA D CSR	-.0013	-.0021	-.0030	.4	-.8	-.7	.0023	-.0025	.0018
S001 NOUA D IGN	.0036	.0003	.0079	-.1	.1	.3	-.0012	.0060	-.0061

92901 WALLIS

Positions

S001 WALA D GRGS	-.0111	-.0029	.0197	.0	-.5	.1	.0022	.0218	.0065	93: 1
S001 WALA D CSR	.0127	.0110	.0021	.2	.1	.0	-.0101	-.0010	-.0135	93: 1
S001 WALA D IGN	.0123	-.0044	-.0091	.2	.0	-.9	.0052	-.0116	-.0096	95:100

Velocities

S001 WALA D GRGS	.0004	.0056	-.0059	.3	-.1	-.2	-.0056	-.0059	.0006
S001 WALA D CSR	.0007	.0113	.0005	.2	.7	.2	-.0112	.0001	-.0015
S001 WALA D IGN	.0051	.0023	.0091	.0	.0	.2	-.0019	.0076	-.0072

97301 KOUROU

Positions

M210 KOUR TIE97301	.0000	.0000	.0000	.0	.0	.0	.0000	.0000	.0000	93: 1
M210 KOUR P GFZ	-.0148	-.0042	.0072	.5	1.7	-.6	-.0144	.0077	-.0049	94:365
M210 KOUR P CODE	.0017	-.0015	-.0034	.1	-.1	-2.0	.0005	-.0036	.0019	95: 76
M210 KOUR P MIT	-.0130	.0091	-.0050	-1.1	.7	.0	-.0049	-.0036	-.0155	97:151
M210 KOUR P JPL	-.0007	-.0069	.0012	.0	-.8	.4	-.0047	.0008	.0052	96: 1
S004 KRUB TIE97301	.0107	-.0152	-.0216	.4	-.6	-.9	-.0007	-.0231	.0166	93: 1
S004 KRUB D GRGS	-.0309	-.0016	.0122	-.2	.2	.0	-.0255	.0137	-.0163	93: 1
S004 KRUB D CSR	.0179	-.0256	-.0252	.3	-.3	-.4	-.0013	-.0279	.0288	93: 1
S004 KRUB D IGN	-.0018	.0097	-.0015	.1	.2	.2	.0044	-.0008	-.0089	95:100
S005 KRUA TIE97301	.0046	-.0011	-.0019	.2	.0	-.1	.0030	-.0022	.0035	93: 1
S005 KRUA D IGN	-.2305	.0157	-.4277	-.4	.2	-1.6	-.1737	-.4124	-.1898	95:100

Velocities

M210 KOUR P GFZ	.0110	-.0078	.0059	1.2	-.2	-.3	.0041	.0047	.0134
M210 KOUR P CODE	-.0030	.0082	-.0056	-.6	.8	-1.7	.0026	-.0049	-.0088
M210 KOUR P MIT	-.0099	.0131	-.0042	-.8	1.0	.2	.0001	-.0027	-.0168
M210 KOUR P JPL	.0002	.0033	.0000	.3	.9	.4	.0022	.0002	-.0025
S004 KRUB D GRGS	.0026	.0049	-.0043	.0	.1	.0	.0051	-.0041	-.0027
S004 KRUB D CSR	-.0059	.0066	.0149	.1	-.2	.8	-.0006	.0156	-.0075
S004 KRUB D IGN	.0072	.0179	.0055	.4	.5	-.2	.0166	.0063	-.0094
S005 KRUA D IGN	-.0422	.0015	-.0948	.7	-.4	-.2	-.0327	-.0920	-.0351

97401 LA REUNION

Positions

S001 REUA D GRGS	.0075	.0039	.0020	.0	.1	.0	-.0040	.0046	.0063	93: 1
S001 REUA D CSR	-.0116	-.0177	-.0192	-.2	-.3	-.4	-.0004	-.0256	-.0128	93: 1
S001 REUA D IGN	.0113	-.0182	.0050	1.2	.3	.7	-.0196	.0015	-.0098	95:100

Velocities

S001 REUA D GRGS	-.0056	.0012	-.0036	.0	.0	.0	.0053	-.0041	-.0008
S001 REUA D CSR	-.0028	.0076	-.0052	-.3	-.3	-1.1	.0066	-.0032	.0062
S001 REUA D IGN	.0002	-.0046	.0111	-.3	-.2	-.4	-.0027	.0090	-.0074

Table 10: Transformation parameters and their rates from ITRF96 to individual frames not included in the ITRF96 combination

Values derived from comparisons between ITRF96 and individual frames using diagonal termes only

Solution	T1	T2	T3	D	R1	R2	R3	Epoch
	cm	cm	cm	10-8	.001"	.001"	.001"	y
Rate	T1	T2	T3	D	R1	R2	R3	
	-----cm/y-----			10-8/y	-----.001"/y-----			

VERY LONG BASELINE INTERFEROMETRY

SSC(IAA)	97 R 01	-.20	-2.97	-.55	-.169	-2.356	1.906	-.273	93:	1
		1.02	1.08	1.16	.156	.479	.355	.320		

Rate -

SSC(GAOUA)	97 R 01	-1.77	-.34	.34	-.028	.451	-.436	2.243	93:	1
		.30	.31	.31	.034	.133	.128	.097		

Rate		-.17	.60	-.24	.028	.053	.043	-.120		
		.05	.06	.06	.007	.023	.021	.015		

LUNAR LASER RANGING

SSC(FSG)	97 M 01	-.24	-1.53	-2.86	-1.245	.751	1.001	25.307	93:	1
		3.53	4.07	4.27	.344	2.194	1.603	.782		

Rate -

SSC(JPL)	97 M 01	-5.07	.17	.70	-2.491	2.171	1.284	2.497	91:	1
		1.98	2.21	2.10	.255	1.036	.755	.555		

Rate -

SSC(SHA)	97 M 01	12.88-13.60	-28.24	-3.578	-4.685	-6.035	-20.808	93:	1	
		10.55	12.11	10.66	1.191	5.849	4.424	2.989		

Rate -

SATELLITE LASER RANGING

SSC(SHA)	97 L 01	-.05	.02	.07	-.044	.214	.145	.132	93:	1
		.20	.19	.21	.028	.079	.083	.063		

Rate		-								
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SSC(CGS)	97 L 01	-.76	-1.60	.39	-.047	.075	.165	.529	93:	1
		.15	.16	.17	.025	.068	.066	.052		

Rate		-								
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SSC(GAOUA)	97 L 01	-.95	-1.34	.03	.141	-.168	.316	.431	93:	1
		.22	.23	.23	.035	.093	.083	.086		

Rate		-.17	.09	-.06	-.029	-.050	.074	-.009		
		.06	.06	.06	.009	.024	.026	.023		

SSC(GZ)	97 L 01	-1.14	-.65	1.23	-.039	.260	.550	.252	93:	1
		.24	.22	.22	.032	.083	.097	.081		

Rate		.30	.02	-.25	-.013	-.012	-.127	.094		
		.09	.09	.09	.013	.033	.039	.031		

SSC(GZ)	97 L 02	-1.10	-.53	1.24	-.009	.243	.714	.072	93:	1
		.24	.24	.29	.036	.100	.112	.084		

Rate		.30	-.04	-.09	-.023	.019	-.089	.076		
		.10	.10	.12	.014	.041	.046	.033		

SSC(IFAG)	97 L 01	-.36	-.69	1.05	-.170	-.067	-.652	.520	93:	1
		.15	.15	.40	.020	.225	.173	.175		

Rate		-								
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SSC(DUT)	97 L 02	-1.52	-1.99	-.43	-.236	-.090	.816	.114	93:	1
		.35	.33	.35	.051	.139	.141	.124		

Rate		-.02	-.05	.13	-.004	.030	.031	.042		
		.07	.06	.07	.009	.027	.028	.022		

Table T11: Global residuals of the individual solutions
not included the ITRF96 combination

Values derived from comparisons between ITRF96 and
individual frames using diagonal termes only

Solution	N	Positions mm	Epoch y:doy	Velocities mm/y
VERY LONG BASELINE INTERFEROMETRY				
SSC(IAA) 97 R 01	8	23.3	93:001	
SSC(GAOUA) 97 R 01	37	7.4	93:001	2.1
LUNAR LASER RANGING				
SSC(FSG) 97 M 01	5	57.1	93:001	
SSC(JPL) 97 M 01	5	40.6	91:001	
SSC(SHA) 97 M 01	5	266.9	93:001	
SATELLITE LASER RANGING				
SSC(SHA) 97 L 01	26	3.6	93:001	
SSC(CGS) 97 L 01	78	16.5	93:001	
SSC(GAOUA) 97 L 01	88	9.5	93:001	4.9
SSC(GZ) 97 L 01	44	7.6	93:001	2.4
SSC(GZ) 97 L 02	44	8.0	93:001	2.5
SSC(IFAG) 97 L 01	30	16.0	93:001	
SSC(DUT) 97 L 02	76	27.1	93:001	2.9

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