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 Following IAU Conventions 2000, IERS provides new products dX, dY, celestial pole offsets with respect to the new IAU2000A Precession-Nutation theory.

The present Bulletin B version includes the celestial pole offsets dX, dY:

$$dX = X_{obs} - X_{IAU2000A} \text{ and } dY = Y_{obs} - Y_{IAU2000A}$$

where

X\_obs, Y\_obs are the observed coordinates of the Celestial Intermediate Pole (CIP) in the Geocentric Celestial Reference System, and

X\_IAU2000A, Y\_IAU2000A are the celestial pole coordinates provided by using the IAU2000A Precession-Nutation theory.

The current Bulletin B including (dpsi,deps)\_1980 will be maintained until December 2004.

For more details refer to IERS Messages 38, on IAU 2000 Resolution Compliancy Information.

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 Contents are described in the Explanatory Supplement available at  
<http://hpiers.obspm.fr/eop-pc/>

1 - EARTH ORIENTATION PARAMETERS (IERS evaluation).

The values in this section are samplings of section 2 given at five-day intervals.

Date 2004 (0h UTC)	MJD	x "	y "	UT1R-UTC s	UT1R-TAI s	dX 0.001"	dY 0.001"
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Final Bulletin B values.

MAR	5	53069	-.11724	.24881	-.418957	-32.418957	.12	-.19
MAR	10	53074	-.12291	.26000	-.420584	-32.420584	-.10	-.09
MAR	15	53079	-.12683	.27061	-.422366	-32.422366	.07	-.05
MAR	20	53084	-.13165	.28188	-.424484	-32.424484	-.07	-.13
MAR	25	53089	-.13283	.29833	-.428585	-32.428585	.05	.01
MAR	30	53094	-.13868	.31471	-.433487	-32.433487	-.05	-.04
APR	4	53099	-.14085	.32862	-.437859	-32.437859	.07	-.10

Preliminary extension, to be updated weekly in Bulletin A and monthly in Bulletin B.

APR	9	53104	-.13972	.34246	-.442466	-32.442466	.04	.05
APR	14	53109	-.13900	.35796	-.446354	-32.446354	.09	.00
APR	19	53114	-.13344	.37369	-.449746	-32.449746	.19	.29
APR	24	53119	-.13269	.38722	-.452243	-32.452243	.00	.00
APR	29	53124	-.12489	.39800	-.454049	-32.454049	.00	.00
MAY	4	53129	-.11734	.41236	-.456181	-32.456181	.00	.00
MAY	9	53134	-.10981	.42507	-.457684	-32.457684	.00	.00
MAY	14	53139	-.10145	.43733	-.459179	-32.459179	.00	.00
MAY	19	53144	-.09212	.44919	-.460560	-32.460560	.00	.00
MAY	24	53149	-.08190	.46039	-.461643	-32.461643	.00	.00
MAY	29	53154	-.07088	.47084	-.462376	-32.462376	.00	.00
JUN	3	53159	-.05909	.48048	-.462727	-32.462727	.00	.00
JUN	8	53164	-.04662	.48926	-.462681	-32.462681	.00	.00
JUN	13	53169	-.03354	.49712	-.462299	-32.462299	.00	.00
JUN	18	53174	-.01993	.50401	-.461575	-32.461575	.00	.00
JUN	23	53179	-.00587	.50990	-.460560	-32.460560	.00	.00

JUN 28 53184 .00855 .51475 -.459293 -32.459293 .00 .00

Note. In UT1R, the effects of zonal tides with periods shorter than 35 days are removed ; UT1-UT1R (smaller than 0.0025s in absolute value) should be added after quadratic interpolation of UT1R. Section 2 of this Bulletin gives the daily interpolation of x, y, UT1, duration of day, dX, and dY.

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2 - SMOOTHED VALUES OF x, y, UT1, D, dX, dY (IERS EVALUATION) at one-day intervals. For smoothing characteristics, see Table2 in the explanatory supplement. The reference system is described in the 2002 IERS Annual Report.

2004		MJD	x	y	UT1-UTC	UT1-UT1R	D	dX	dY
(0 h UTC)			"	"	s	ms	ms	0.001"	0.001"
MAR	5	53069	-.11724	.24881	-.417344	1.613	.258	.12	-.19
MAR	6	53070	-.11892	.25142	-.417725	1.542	.488	.15	-.29
MAR	7	53071	-.12026	.25403	-.418315	1.226	.727	.15	-.23
MAR	8	53072	-.12152	.25615	-.419152	.718	.921	.09	-.14
MAR	9	53073	-.12227	.25800	-.420117	.120	.958	.00	-.06
MAR	10	53074	-.12291	.26000	-.421024	-.440	.838	-.10	-.09
MAR	11	53075	-.12369	.26209	-.421756	-.838	.596	-.14	-.14
MAR	12	53076	-.12439	.26408	-.422200	-.996	.350	-.11	-.17
MAR	13	53077	-.12515	.26619	-.422463	-.896	.182	-.06	-.18
MAR	14	53078	-.12596	.26847	-.422591	-.588	.018	.00	-.13
MAR	15	53079	-.12683	.27061	-.422539	-.173	-.088	.07	-.05
MAR	16	53080	-.12802	.27274	-.422457	.227	.000	.11	.02
MAR	17	53081	-.12913	.27478	-.422572	.498	.220	.10	.02
MAR	18	53082	-.13003	.27703	-.422913	.567	.463	.05	-.02
MAR	19	53083	-.13101	.27947	-.423493	.418	.751	-.02	-.08
MAR	20	53084	-.13165	.28188	-.424393	.091	1.029	-.07	-.13
MAR	21	53085	-.13178	.28463	-.425520	-.332	1.134	-.11	-.16
MAR	22	53086	-.13185	.28780	-.426628	-.751	1.113	-.14	-.16
MAR	23	53087	-.13181	.29126	-.427718	-1.078	1.111	-.13	-.08
MAR	24	53088	-.13202	.29487	-.428833	-1.247	1.048	-.05	.00
MAR	25	53089	-.13283	.29833	-.429808	-1.223	.885	.05	.01
MAR	26	53090	-.13401	.30177	-.430606	-1.005	.719	.12	-.10
MAR	27	53091	-.13551	.30520	-.431259	-.618	.555	.12	-.23
MAR	28	53092	-.13688	.30833	-.431736	-.112	.416	.08	-.27
MAR	29	53093	-.13784	.31148	-.432114	.447	.370	.01	-.18
MAR	30	53094	-.13868	.31471	-.432502	.984	.424	-.05	-.04
MAR	31	53095	-.13944	.31774	-.432988	1.422	.550	-.07	.06
APR	1	53096	-.14015	.32059	-.433625	1.688	.738	-.01	.01
APR	2	53097	-.14065	.32329	-.434479	1.722	.961	.10	-.09
APR	3	53098	-.14073	.32597	-.435549	1.497	1.181	.16	-.10
APR	4	53099	-.14085	.32862	-.436824	1.035	1.423	.07	-.10
APR	5	53100	-.14110	.33094	-.438358	.417	1.595	-.11	-.16
APR	6	53101	-.14073	.33326	-.439965	-.226	1.555	-.20	-.20
APR	7	53102	-.14007	.33614	-.441422	-.750	1.345	-.14	-.17
APR	8	53103	-.13986	.33930	-.442626	-1.041	1.049	-.02	-.06
APR	9	53104	-.13972	.34246	-.443516	-1.050	.768	.04	.05
APR	10	53105	-.13916	.34573	-.444186	-.812	.563	.02	.08
APR	11	53106	-.13870	.34912	-.444683	-.424	.386	-.01	.03
APR	12	53107	-.13882	.35231	-.445001	-.015	.316	.01	-.02
APR	13	53108	-.13904	.35517	-.445350	.297	.452	.07	.00
APR	14	53109	-.13900	.35796	-.445924	.430	.701	.09	.00
APR	15	53110	-.13850	.36074	-.446752	.356	.891	.07	.04
APR	16	53111	-.13729	.36365	-.447690	.100	1.000	.05	.13
APR	17	53112	-.13589	.36700	-.448724	-.274	1.082	.08	.24
APR	18	53113	-.13465	.37038	-.449823	-.679	1.037	.14	.29
APR	19	53114	-.13344	.37369	-.450771	-1.025	.871	.19	.29
APR	20	53115	-.13272	.37718	-.451544	-1.239	.682	.21	.26
APR	21	53116	-.13284	.38029	-.452125	-1.273	.462	.00	.00
APR	22	53117	-.13310	.38274	-.452468	-1.111	.223	.00	.00
APR	23	53118	-.13283	.38514	-.452581	-.769	.022	.00	.00
APR	24	53119	-.13269	.38722	-.452530	-.287	-.123	.00	.00
APR	25	53120	-.13200	.38903	-.452358	.272	-.218	.00	.00
APR	26	53121	-.13050	.39085	-.452118	.836	-.211	.00	.00
APR	27	53122	-.12846	.39283	-.451961	1.329	-.081	.00	.00
APR	28	53123	-.12678	.39506	-.451981	1.682	.120	.00	.00

APR 29 53124 -.12489 .39800 -.452217 1.832 .331 .00 .00  
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3 - NORMAL VALUES OF THE EARTH ORIENTATION PARAMETERS AT FIVE-DAY INTERVALS  
 (IERS evaluation).

		Raw normal values					Uncertainties				
2004	MJD	x	y	UT1-UTC	dX	dY	x	y	UT1	dX	dY
(0 h UTC)		"	"	s	0.001"	0.001"	0.001"	0.0001s	0.001"	0.001"	0.001"
MAR 5	53069	-.11726	.24881	-.417347	.051	-.271	.01	.01	.03	.04	.04
MAR 10	53074	-.12290	.26001	-.421026	-.130	-.095	.02	.02	.02	.02	.02
MAR 15	53079	-.12684	.27061	-.422539	.133	-.034	.01	.01	.02	.02	.03
MAR 20	53084	-.13165	.28188	-.424390	-.135	-.205	.02	.02	.05	.06	.07
MAR 25	53089	-.13283	.29832	-.429810	.043	.014	.02	.02	.02	.02	.03
MAR 30	53094	-.13868	.31471	-.432500	-.062	-.035	.01	.01	.01	.02	.02
APR 4	53099	-.14086	.32862	-.436824	.032	-.094	.02	.02	.02	.03	.03
APR 9	53104	-.13972	.34246	-.443516	.044	.039	.01	.02	.02	.03	.03
APR 14	53109	-.13901	.35796	-.445924	.093	.040	.01	.02	.03	.02	.02
APR 19	53114	-.13343	.37369	-.450772	.186	.293	.02	.02	.04	.04	.05
APR 24	53119	-.13269	.38722	-.452531	-	-	.02	.02	.05	-	-
APR 29	53124	-.12489	.39800	-.452211	-	-	.01	.02	.07	-	-

4 - DURATION OF THE DAY AND ANGULAR VELOCITY OF THE EARTH (IERS evaluation).

The data of this section are smoothed, with the same characteristics as UT1R in section 1. They are corrected for the effects of zonal tides with periods up to 35 days. Section 2 gives the daily interpolation of D.

Date	(0h UTC)	DR	OmegaR
2004	MJD	s	(microrad/s)
MAR 5	53069	.00032	72.921 15120
MAR 10	53074	.00035	15118
MAR 15	53079	.00035	15118
MAR 20	53084	.00064	15092
MAR 25	53089	.00101	15061
MAR 30	53094	.00093	15068
APR 4	53099	.00087	15073

5 - INFORMATION ON TIME SCALES

No leap second was introduced in UTC on 31 December 2003.  
 No leap second will be introduced in UTC on 30 June 2004.  
 All information concerning time scales : announcements of the leap seconds (Bulletin C) and of the value of DUT1 (Bulletin D) can be found in our web/ftp site :

World Wide Web : <http://hpiers.obspm.fr>  
 Anonymous ftp : [hpiers.obspm.fr](ftp://hpiers.obspm.fr) or 145.238.100.28

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6 - SUMMARY OF CONTRIBUTED EARTH ORIENTATION PARAMETERS SERIES

This section gives the average precision of the individual series contributing to the combination and their average agreement with it. The periods covered start at the beginning of the first month in Section 1 and end with the last available value in the individual series considered.

Units : 0.001" for x,y , 0.0001s for UT1, 0.001" for dX, dY.

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EOP series	Mean formal uncertainty
Periods covered	Weighted RMS agreement with Bulletin B

VLBI	x	y	UT	D	dX	dY	Data Number
EOP(AUS) 1 R 01	.34	.38	.20	-	-	-	14
53069.27 to 53115.23	.12	.15	.12	-	-	-	
EOP(BKG) 3 R 04	.10	.09	.04	-	-	-	15
53069.27 to 53115.23	.28	.17	.08	-	-	-	
EOP(BKG) 3 R 02	-	-	.11	-	-	-	32
53069.81 to 53118.81	-	-	.16	-	-	-	
EOP(GSFC) 4 R 02	.23	.14	.12	-	-	-	16
53069.27 to 53115.23	.15	.13	.05	-	-	-	
EOP(GSFC) 4 R 01	-	-	.12	-	-	-	33
53069.81 to 53122.79	-	-	.19	-	-	-	
EOP(IAA) 3 R 04	.07	.07	.03	-	.12	.05	15
53069.27 to 53115.23	.20	.13	.08	-	.19	.04	
EOP(IAA) 3 R 03	-	-	.10	-	-	-	35
53069.81 to 53122.79	-	-	.11	-	-	-	
EOP(SPBU) 3 R 03	.33	.37	.20	-	-	-	6
53069.27 to 53090.27	.25	.26	.10	-	-	-	
EOP(SPBU) 2 R 01	-	-	.10	-	-	-	17
53069.81 to 53101.79	-	-	.12	-	-	-	
EOP(MAO) 3 R 01	.09	.09	.04	-	.15	.06	13
53069.26 to 53108.25	.35	.12	.08	-	.17	.07	
EOP(USNO) 3 R 04	.09	.08	.04	-	-	-	14
53069.27 to 53115.23	.16	.11	.07	-	-	-	
EOP(IVS) 0 R 01	.06	.06	.02	-	-	-	13
53069.00 to 53111.00	.26	.07	.04	-	-	-	
GPS							
EOP(CODE) 98 P 01	.01	.01	-	.28	-	-	55
53069.50 to 53123.50	.06	.06	-	.26	-	-	
EOP(EMR) 96 P 03	.03	.03	-	.04	-	-	55
53069.50 to 53123.50	.06	.10	-	.45	-	-	
EOP(ESOC) 96 P 01	.01	.02	-	.03	-	-	55
53069.50 to 53123.50	.23	.09	-	.38	-	-	
EOP(GFZ) 96 P 02	.01	.01	-	.01	-	-	55
53069.50 to 53123.50	.08	.06	-	.29	-	-	
EOP(IAA) 1 P 01	.03	.03	-	.06	-	-	55
53069.50 to 53123.50	.13	.17	-	.47	-	-	
EOP(JPL) 96 P 03	.02	.03	-	.15	-	-	55
53069.50 to 53123.50	.04	.07	-	.62	-	-	
EOP(NOAA) 96 P 01	.01	.01	-	.02	-	-	45
53069.50 to 53113.50	.20	.27	-	.65	-	-	
EOP(SIO) 96 P 01	.05	.05	-	.14	-	-	55
53069.50 to 53123.50	.08	.09	-	.37	-	-	
EOP(IGS F)95 P 02	.02	.03	.07	.05	-	-	37
53069.50 to 53105.50	.05	.06	.28	.27	-	-	
EOP(IGS R)96 P 02	.03	.03	.19	.06	-	-	55
53069.50 to 53123.50	.09	.05	.71	.25	-	-	
EOP(IERS) 97 P 01	.03	.04	.20	.13	-	-	55
53069.50 to 53123.50	.02	.02	.44	.20	-	-	
SLR							
EOP(ASI) 3 L 02	.08	.08	-	.22	-	-	54
53069.50 to 53122.50	.35	.27	-	1.12	-	-	
EOP(CSR) 95 L 01	.44	.48	.35	-	-	-	12
53070.07 to 53101.80	.59	.55	1.65	-	-	-	
EOP(IAA) 2 L 01	.04	.05	.03	.03	-	-	56

53069.00 to 53124.00	.17	.15	.35	.18	-	-	
EOP(MCC) 97 L 01	.06	.07	-	.10	-	-	42
53069.00 to 53117.00	.16	.18	-	.80	-	-	
Bulletin A							
EOP(NEOS) 97 C 01	.07	.06	.07	-	-	-	56
53069.00 to 53124.00	.09	.15	.28	-	-	-	