

BUREAU INTERNATIONAL DES POIDS ET MESURES

(BIPM)

Circular T 5 (1988 July 1)

1 - COORDINATED UNIVERSAL TIME UTC

(Since 1988 January 1, Oh UTC, TAI-UTC = 24s)

A - Computed values of UTC-UTC(k)

Date 1988 (Oh UTC)	MAY 8	MAY 18	MAY 28
MJD	47289	47299	47309
Laboratory k	UTC-UTC(k)	(Unit = 1 microsecond)	
AOS (Borowiec)	0.28	0.50	0.58
APL (Laurel)	0.02	0.02	0.02
ASMW (Berlin)	-0.35	-0.33	-0.38
AUS (Canberra)	-13.66	-13.79	-13.99
BEV (Wien)	-8.70	-9.30	-9.94
CAO (Cagliari)	2.89	3.14	3.53
CH (Berne)	1.29	1.25	1.22
CRL (Tokyo)	-1.85	-1.90	-1.92
CSAO (Shaanxi)	0.59	0.63	0.66
FTZ (Darmstadt)	17.03	17.19	17.35
IEN (Torino)	-0.05	0.18	0.32
IFAG (Wetzell)	-3.72	-3.87	-3.56
ILOM (Mizusawa)	-35.63	-35.61	-35.61
INPL (Jerusalem)	63.68	64.92	66.10
JATC (Xian)	0.38	0.29	0.21
KSRI (Daejeon)	-7.10	-7.63	-7.97
NBS (Boulder)	-0.91	-0.92	-0.93
NIM (Beijing)	8.88	8.83	8.78
NPL (Teddington)	4.33	4.29	4.31
NPLI (New-Delhi) (2)	-12.06	-12.14	-12.19
NRC (Ottawa)	-9.21	-9.18	-9.17
NRLM (Tsukuba)	-24.16	-24.31	-24.55
OMH (Budapest)	-	-	-
OMSF (San Fernando)	4.05	4.16	4.30
OP (Paris)	-0.61	-0.67	-0.73
ORB (Bruxelles) (1)	-9.57	-9.69	-9.80
PKNM (Warsaw)	1.22	1.39	1.56
PTB (Braunschweig)	4.32	4.34	4.36
SO (Shanghai)	1.92	1.95	1.92
STA (Stockholm)	0.33	0.37	0.36
SU (Moscow)	19.64	19.53	19.20
TAO (Tokyo)	-2.01	-2.02	-2.04
TL (Taiwan)	277.34	278.58	280.01
TP (Praha)	1.58	1.76	1.94
TUG (Graz)	-0.43	-0.15	0.11
USNO (Washington) (USNO MC)	-3.84	-3.76	-3.67
VSL (Delft) (1)	3.78	3.80	3.83
YUZM (Beograd)	-1.34	-1.17	-0.72
ZIPE (Potsdam)	0.39	0.36	0.24

- (1) ORB, VSL. As a result of BIPM campaign of GPS receivers comparison from 20 May 1988 to 6 June 1988, readjustments of UTC(k)-GPS have been made. The consequent time steps on the UTC-UTC(k) values applied on MJD = 47280.0 are :

Lab.	step (unit = 1 microsecond)
ORB	+0.040
VSL	-0.017

where $\text{step} = \frac{(\text{UTC}-\text{UTC}(k))_{\text{new}} - (\text{UTC}-\text{UTC}(k))_{\text{old}}}{\text{old}}$

- (2) NPLI . MJD = 47269 UTC - UTC(NPLI) = -12.03 μs
 47279 " " = -12.17 μs

B - Direct measurement of UTC(j)-UTC(k)

Date 1988	MJD	Time comparisons (Unit : 1 microsecond)	uncert.	source
- by clock transportation				
MAY 18	47299.08	UTC(TAO) - UTC(NRLM) = -22.212	0.008	TAO message
MAY 19	47300.94	UTC(SU) - UTC(ASMW) = -20.460	0.040	SU telex
MAY 24	47305.02	UTC(TAO) - UTC(ILOM) = -33.747	0.010	TAO message
MAY 26	47307.05	UTC(TAO) - UTC(CRL) = 0.143	0.005	TAO message
- by GPS receivers comparison				
MAY 8	47289.00	UTC(OP) - UTC(TUG) = 0.178	0.004	NBS
MAY 25	47306.38	UTC(OP) - UTC(ORB) = -9.036	0.004	BIPM
MAY 27	47308.74	UTC(OP) - UTC(VSL) = 4.567	0.004	BIPM
JUN 1	47313.36	UTC(OP) - UTC(PTB) = 5.087	0.004	BIPM

2 - INTERNATIONAL ATOMIC TIME TAI AND LOCAL ATOMIC TIME SCALES TA(k)

A - Computed values of TAI-TA(k)

Date 1988 (Oh UTC)	MAY 8	MAY 18	MAY 28
MJD	47289	47299	47309
Laboratory k	TAI-TA(k) (Unit = 1 microsecond)		
AOS (Borowiec)	-99.85	-99.84	-99.96
APL (Laurel)	0.02	0.02	0.02
CH (Berne)	-49.24	-49.46	-49.67
CRL (Tokyo)	-3.58	-3.62	-3.64
CSAO (Shaanxi)	39.58	39.61	39.64
DDR (Berlin)	-27.76	-28.10	-28.50
F (Paris)	54.56	55.00	55.45
JATC (Xian)	-0.07	0.02	0.10
NBS (Boulder)	-45110.36	-45110.75	-45111.15
NIM (Beijing)	-8.35	-8.44	-8.47
NRC (Ottawa)	21.86	21.89	21.90
PTB (Braunschweig)	-359.08	-359.06	-359.04
SO (Shanghai)	-45.77	-45.67	-45.69
SU (Moscow)	2827269.64	2827269.53	2827269.20
USNO (Washington) (1)	-34558.55	-34559.12	-34559.69

(1) TA(USNO) is designated by A1(MEAN) by USNO.

B - Duration of the TAI scale interval (BIPM evaluation)

For APR.1988-MAY.1988 $1+0.1 \cdot 10^{-13}$ +OR- $1.0 \cdot 10^{-13}$

in SI second at sea level, based on CRL, NBS, NRC, PTB and SU data.