

BUREAU INTERNATIONAL DES POIDS ET MESURES

(BIPM)

Circular T 10 (1988 November 30)

1 - COORDINATED UNIVERSAL TIME UTC. Computed values of UTC-UTC(k)

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

Date 1988 (Oh UTC)		OCT 5	OCT 15	OCT 25
MJD		47439	47449	47459
Laboratory k		UTC-UTC(k)	(Unit = 1 microsecond)	
AOS (Borowiec)		0.96	1.55	1.69
APL (Laurel)		-0.22	-0.23	-0.25
ASMW (Berlin)		0.37	0.45	0.34
AUS (Canberra)		-16.50	-16.66	-16.83
BEV (Wien)		0.90	0.05	-0.74
CAO (Cagliari)		4.63	4.62	4.72
CH (Berne)		0.78	0.75	0.74
CRL (Tokyo)		-1.90	-1.87	-1.85
GSAO (Shaanxi)		1.57	1.60	1.54
FTZ (Darmstadt)		17.89	17.86	17.83
IEN (Torino)		1.58	1.70	1.66
IFAG (Wetzell)	(1)	-2.29	-1.89	-1.57
INPL (Jerusalem)		82.61	83.81	84.97
JATC (Xian)		3.27	3.47	3.57
KSRI (Daejeon)		-14.16	-14.77	-15.36
NAOM (Mizusawa)		-34.45	-34.40	-34.43
NIM (Beijing)		8.55	8.43	8.22
NIST (Boulder)	(2)	-0.37	-0.32	-0.25
NPL (Teddington)		3.91	3.94	3.87
NPLI (New-Delhi)		-11.14	-	-
NRC (Ottawa)		-10.61	-10.92	-11.21
NRLM (Tsukuba)		-28.93	-29.29	-29.72
OMH (Budapest)		-7.61	-8.17	-8.49
OP (Paris)		-1.74	-1.72	-1.70
ORB (Bruxelles)		-11.00	-11.12	-11.17
PKNM (Warsaw)		2.42	2.47	2.78
PTB (Braunschweig)		4.21	4.20	4.18
ROA (San Fernando)		6.21	6.38	6.56
SO (Shanghai)		1.87	1.93	1.88
STA (Stockholm)		-0.22	-0.38	-0.51
SU (Moscow)	(3)	18.12	17.98	-
TAO (Tokyo)		-2.44	-2.43	-2.44
TL (Taiwan)		-5.67	-5.71	-5.78
TP (Praha)		-3.18	-3.12	-2.98
TUG (Graz)		3.52	3.78	4.06
USNO (Washington) (USNO MC)		-2.15	-2.02	-1.90
VSL (Delft)		3.72	3.67	3.68
YUZM (Beograd)		7.63	7.95	8.26
ZIPE (Potsdam)		0.21	0.37	0.19

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

Computed values of TAI-TA(k)

Date 1988 (Oh UTC)	OCT 5	OCT 15	OCT 25
MJD	47439	47449	47459
Laboratory k	TAI-TA(k) (Unit = 1 microsecond)		
AOS (Borowiec)	-131.81	-133.32	-135.28
APL (Laurel) (4)	-0.40	-0.41	-0.43
CH (Berne)	-52.47	-52.69	-52.89
CRL (Tokyo)	-3.57	-3.54	-3.50
CSAO(Shaanxi)	40.55	40.59	40.52
DDR (Berlin)	-30.76	-30.69	-30.74
F (Paris)	61.30	61.71	62.12
JATC(Xian)	1.46	1.52	1.55
NIM (Beijing)	-9.27	-9.30	-9.55
NISA(Boulder) (5)	-45051.29	-45051.48	-45051.67
NIST(Boulder) (2)	-45116.06	-45116.45	-45116.81
NRC (Ottawa)	20.46	20.15	19.86
PTB (Braunschweig)	-359.19	-359.20	-359.22
SO (Shanghai)	-46.00	-45.93	-45.95
SU (Moscow) (3)	2827268.12	2827267.98	-
USNO(Washington) (6)	-34566.40	-34566.94	-34567.43

## 3 - NOTES ON SECTIONS 1 AND 2

- (1) IFAG. Time step of UTC(IFAG) of +2.0 us on MJD = 47438.27
- (2) NIST. National Institute of Standards and Technology (previously NBS)
- (3) SU . The data given in Sections 1 and 2, and in this note, have been obtained by linear interpolation of UTC-UTC(SU) obtained from the following clock transportations by SU :
- 1988 May 19, to ASMW (See Circular T 5)  
1988 Oct. 20, to TUG (See 4- below)

MJD	UTC-UTC(SU)	TAI-TA(SU)	MJD	UTC-UTC(SU)	TAI-TA(SU)
47379	18.99	2827268.99	47409	18.55	2827268.55
47389	18.84	2827268.84	47419	18.41	2827268.41
47399	18.70	2827268.70	47429	18.27	2827268.27

- (4) APL . Corrected values of TAI-TA(APL) :

MJD	TAI-TA(APL)	MJD	TAI-TA(APL)
47379	-0.20	47409	-0.29
47389	-0.21	47419	-0.33
47399	-0.25	47429	-0.36

- (5) TA(NISA) designates the scale AT1 of NIST.

- (6) TA(USNO) designates the scale A1(MEAN) of USNO.

## 4 - MEASUREMENT OF UTC(j)-UTC(k)

Date 1988	MJD	Time comparisons (Unit : 1 microsecond)	uncert.	source	meth. (1)
OCT 20	47454.50	UTC(SU ) - UTC(BEV ) = -17.60	0.05	SU telex	CT
OCT 20	47454.50	UTC(SU ) - UTC(TUG ) = -13.97	0.05	SU telex	CT

(1) method : CT      clock transportation

## 5 - DURATION OF THE TAI SCALE INTERVAL : 1 second + D

D and its standard deviation s are expressed in  $1 \cdot 10^{-14}$  second.

Note. Starting with Circular T 9, the following data are given

- for continuously operating primary standards (primary clocks), the average of D for the two previous months, with the last available estimate of the inaccuracy of the standard,
- for occasional measurements, the value of D for the measurement interval, as computed by BIPM (the BIPM uncertainty may be larger than the reported uncertainty on account of the time comparisons),
- the BIPM evaluation from all available measurements (from CRL, NIST, NRC, PTB, SU), with the uncertainty based on those of individual measurements, as reported.

Standards	Interval(MJD)	D	s
PTB-CS1	47399 - 47459	+1.8	3.0
PTB-CS2	47399 - 47459	+3.8	1.5
BIPM estimate	47399 - 47459	+3	2