

BUREAU INTERNATIONAL DES POIDS ET MESURES
(BIPM)

Circular T 8 (1988 September 30)

1 - COORDINATED UNIVERSAL TIME UTC (TAI-UTC = 24s)

A - Computed values of UTC-UTC(k)

Date 1988 (Oh UTC)		AUG 6	AUG 16	AUG 26
MJD		47379	47389	47399
Laboratory k		UTC-UTC(k) (Unit = 1 microsecond)		
AOS (Borowiec)	(1)	0.18	-0.07	0.17
APL (Laurel)	(2)	-0.37	-0.39	-0.42
ASMW (Berlin)	(3)	-0.29	-0.05	0.06
AUS (Canberra)		-15.17	-15.37	-15.62
BEV (Wien)		5.05	4.37	3.68
CAO (Cagliari)		4.38	4.44	4.46
CH (Berne)		1.02	1.02	0.97
CRL (Tokyo)	(4)	-1.97	-1.94	-1.93
CSAO (Shaanxi)		1.02	1.17	1.23
FTZ (Darmstadt)		17.89	17.89	17.88
IEN (Torino)		0.43	0.53	0.65
IFAG (Wetzell)		-2.11	-1.63	-1.39
INPL (Jerusalem)		74.55	75.92	77.26
JATC (Xian)		1.67	2.06	2.30
KSRI (Daejeon)		-11.20	-11.59	-11.99
NAOM (Mizusawa)		-35.17	-35.09	-34.92
NBS (Boulder)		-0.78	-0.71	-0.65
NIM (Beijing)		8.61	8.69	8.55
NPL (Teddington)		4.01	4.01	3.99
NPLI (New-Delhi)		-12.08	-12.09	-12.08
NRC (Ottawa)		-9.38	-9.40	-9.51
NRLM (Tsukuba)		-26.71	-27.06	-27.39
OMH (Budapest)		-	-5.18	-6.09
OP (Paris)		-1.30	-1.38	-1.47
ORB (Bruxelles)	(5)	-10.41	-10.43	-10.49
PKNM (Warsaw)		2.61	2.89	2.85
PTB (Braunschweig)		4.20	4.23	4.25
ROA (San Fernando)		5.30	5.46	5.60
SO (Shanghai)		1.87	1.83	1.77
STA (Stockholm)		0.34	0.27	0.22
SU (Moscow)		-	-	-
TAO (Tokyo)	(4)	-2.30	-2.32	-2.31
TL (Taiwan)		-5.65	-5.59	-5.51
TP (Praha)		-0.93	-1.82	-2.53
TUG (Graz)		1.92	2.21	2.47
USNO (Washington) (USNO MC)		-2.90	-2.78	-2.66
VSL (Delft)		3.72	3.76	3.74
YUZM (Beograd)		4.38	4.63	5.34
ZIPE (Potsdam)	(3)	0.32	0.21	0.06

B - Measurement of UTC(j)-UTC(k) by clock transportation

Date	MJD	Time comparisons	source
1988		(Unit : 1 microsecond)	
SEP 7	47411.54	UTC(PKMN) - UTC(ASMW) = -3.603	PKNM telex

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

A - Computed values of TAI-TA(k)

Date 1988 (Oh UTC)		AUG 6	AUG 16	AUG 26
MJD		47379	47389	47399
Laboratory k		TAI-TA(k)	(Unit = 1 microsecond)	
AOS (Borowiec)	(1)	-119.99	-122.34	-124.20
APL (Laurel)	(2)	-0.37	-0.39	-0.42
CH (Berne)		-51.15	-51.33	-51.56
CRL (Tokyo)	(4)	-3.66	-3.63	-3.62
CSAO (Shaanxi)		40.00	40.15	40.21
DDR (Berlin)	(3)	-31.12	-31.29	-30.56
F (Paris)		58.67	59.14	59.59
JATC (Xian)		0.79	0.95	0.97
NBS (Boulder)		-45113.80	-45114.17	-45114.53
NIM (Beijing)		-8.49	-8.49	-8.66
NRC (Ottawa)		21.68	21.67	21.55
PTB (Braunschweig)		-359.20	-359.17	-359.15
SO (Shanghai)		-45.88	-45.95	-46.05
SU (Moscow)		-	-	-
USNO (Washington) (A1 (MEAN))		-34563.41	-34563.91	-34564.42

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

For JUL.1988-AUG.1988 $1+0.2*10^{**}-13$ +OR- $1.0*10^{**}-13$

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

3 - NOTES ON SECTIONS 1 and 2

- (1) AOS . UTC(AOS) being linked to UTC(ZIPE) by TV, the values of UTC-UTC(AOS) and TAI-TA(AOS) show an apparent time step of 0.610 μ s between MJD=47389 and MJD=47399, due to the change of delay correction of the link PTB-ZIPE (see note 3).
- (2) APL . Time steps of UTC(APL) and TA(APL) of 0.180 μ s on MJD=47369
- (3) ASMW, ZIPE. Recalibration of the TV links ASMW-PTB and ZIPE-PTB and change of the delay corrections on MJD=47399. In order to keep the continuity of the published values of UTC - UTC(ASMW) and UTC - UTC(ZIPE), the UTC(ASMW) and UTC(ZIPE) have been shifted at MJD=47399 according to

$$\text{UTC(ASMW)}_{\text{new}} - \text{UTC(ASMW)}_{\text{old}} = 0.770 \mu\text{s},$$

$$\text{UTC(ZIPE)}_{\text{new}} - \text{UTC(ZIPE)}_{\text{old}} = 0.610 \mu\text{s}.$$
 The consequent apparent time step on TAI-TA(DDR) between MJD=47389 and MJD=47399 is 0.770 μ s.
- (4) CRL, TAO . As a result of NBS campaign of GPS receivers comparison from 2 June to 11 June 1988, readjustements of delays have been made. The consequent apparent time steps between MJD=47369 and MJD=47379 are for UTC-UTC(CRL) : -0.090 μ s
 for UTC-UTC(TAO) : -0.100 μ s
 for TAI-TAI(CRL) : -0.090 μ s
- (5) ORB . Interpolated value on MJD = 47379