TT(BIPM) on ftp

Updated 24 January 2013 (see major changes in red)
Updated 3 February 2015 for the list of standards
Updated 18 February 2016 to add one file for each standard (changes in green)
Updated 1 February 2018 for the list of standards
Updated 29 January 2019 for the list of standards
Updated 23 January 2020 for the list of standards
Updated 9 February 2021 for the list of standards
Updated 19 February 2022 for the list of standards
Updated 3 March 2023 for the list of standards
Updated 15 March 2024 for the list of standards and deposit link
Updated 30 January 2025 for the list of standards
Updated 10 February 2026 for the list of standards
Contact: tai@bipm.org

This is the Read Me file of the ftp site on the TT results calculated by the BIPM Time Section. The results since 1992 are published on https://webtai.bipm.org/ftp/pub/tai/ttbipm/

TT(BIPM) is a realization of Terrestrial Time as defined by Recommendation IV of Resolution A4 of the International Astronomical Union, adopted at its XXIst General Assembly (1991), and updated by Resolution B1.9 at its XXIVth General Assembly (2000). The scale unit of TT(BIPM) thus agrees with the SI second on the rotating geoid and its origin is defined by the following relation to TAI:

TT(BIPM) = TAI + 32.184 s on 1977 January 1st, 0 h TAI.

Each computation is identified by the string YY where 19YY or 20YY is the last year of data included. The file TTBIPM.YY contains the result of the computation.
Starting with TT(BIPM08), information on each evaluation of each standard is reported in the file TT_PFS.YY (see a description of this file further below). **Starting with TT(BIPM13), this file is named TT_PSFS.YY.** Starting with TT(BIPM15), the same information is provided in one file for each standard, under the name TT_ccccccc where ccccccc is the 7-character code of the standard (see list below). This file relates to the most recent version of TT(BIPM). These files, as well as some associated plots, are placed in the subdirectory newTT.

From TT(BIPM09) until TT(BIPM12), an extrapolation for the current year of the latest realization TT(BIPMYY) is provided in the file TTBIPMYY.ext. It has the same format as the file TTBIPM.YY and is updated each month after the TAI computation.

Starting with TT(BIPM13), the extrapolation of TT(BIPMYY) to the current year with a specific file is discontinued. A formula to extend TT(BIPMYY) until the next realization is provided in the header of the file TTBIPM.YY.

The format for these files follows:

- The differences TT(BIPMYY)-EAL and TT(BIPMYY)-TAI are reported in TTBIPM.YY.

  1st column : MJD at 0 h UTC
  2nd " : TT(BIPMYY) - EAL - 32.184 s, unit is one microsecond
  3rd " : TT(BIPMYY) - TAI - 32.184 s, unit is one microsecond

- The rate differences y(EAL – PFS/SFS) and y(PFS/SFS - TT) are reported in TT_PSFS.YY for all evaluations of primary and secondary frequency standards.
  In addition the data for each standard with code ccccccc are reported in TT_ccccccc.
  The first line of these file is a comment line. It also indicates the year of the CIPM resolution providing the values of the transition frequencies used for the TT computation.
  Next lines are data lines with the following format:

  1st column : MJD in the middle of the evaluation interval
  2nd column : PFS/SFS codes:
  1880201: NIST-Yb1
  1881101: IT-Yb1
  1885001: NMIJ-Yb1

1885601: KRISS-Yb1
1890801: SYRTE-SrB
1890802: SYRTE-Sr2
1892001: NICT-Sr1
1920001: PTB-CS1
1920002: PTB-CS2
1920003: PTB-CS3
1920201: NIST-F1
1920202: NIST-F2
1920299: NIST7
1920301: NRC-FCs2
1920501: PTB-CSF1
1920502: PTB-CSF2
1920801: SYRTE-JPO
1920802: SYRTE-FO1
1920803: SYRTE-FO2
1920804: SYRTE-FOM
1920899: LPTF-FO
1921101: IT-CSF1
1921102: IT-CSF2
1921701: NPL-CsF1
1921702: NPL-CsF2
1922001: NICT-CsF1
1922099: NICTO1
1923802: SU-FO2
1923899: SUCS102
1924801: NIM5
1924902: NTSC-CSF2
1925001: NMIJ-F1
1925099: NRLM4
1925201: NPLI-CsF1
1925601: KRISS-1
1925701: METAS-FOC2
1930803: SYRTE-FO2(Rb)
1925002: NMIJ-F2
1924800: NIM6
1894801: NIM-Sr1
1891701: NPL-Sr1
1761703: NPL-E3Yb+3
1920204: NIST-F4

3rd column : y(EAL – PFS/SFS), in 10^-14
4th column : y(PFS/SFS - TT), in 10^-14
5th column : Type A uncertainty of y(EAL-PFS/SFS), in 10^-14, including the uncertainty in the link to EAL
6th column : Type B uncertainty of the PFS/SFS evaluation, in 10^-14
7th column : For SFS, the year of the CIPM resolution which value of the transition frequency was used to report the SFS evaluation
8th column : For SFS, the frequency difference between the transition frequency used to report the evaluation and the transition frequency used in the TT computation, in 10^-14
9th column : For SFS, the uncertainty of the transition frequency used in the TT computation, in 10^-14

Note:

In the file TT_PFS.08, only the global uncertainty of the PFS evaluation is reported in column 5.