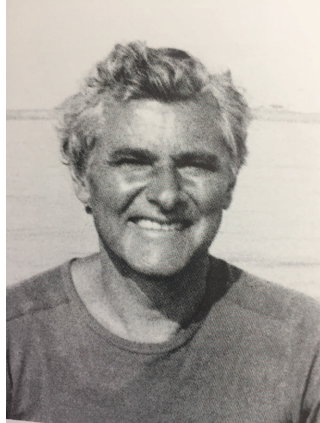


## TRIBUTE TO BERNARD GUINOT (1925-2017)

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Bernard Guinot, honorary astronomer of the Observatoire de Paris, died on March 6, 2017, aged 91. He was Correspondent of the French Académie des sciences, Honorary Member of the Bureau des longitudes and Member of the Academia Europaea. He has been a faithful and active participant in the Journées in Paris since their beginning.

Being at first an officer in the shipping department, he became an astronomer at Paris Observatory in 1952, where André Danjon, then Director, associated him with his research on the astrolabe, named after him. B. Guinot was actively involved in the further development of this instrument and of its scientific applications, especially for polar motion and Earth rotation determination. In 1958, he obtained his doctoral thesis on this subject.

In 1965, he became Director of the Bureau International de l'Heure (BIH), a position he held until 1985 at Paris Observatory, in the Department of Fundamental Astronomy (now SYRTE). In this context, he was one of the most active authors of the transition from the astronomical measurement of time to its quantum measurement and one of the major players in the organization of world time metrology. In parallel, he devised new algorithms for the calculation of Universal Time UT1 and pole coordinates; he developed methods for the transition from optical measurements to space geodesy techniques and created a rapid service for the needs of space research. In 1979, he proposed the use of a new equatorial origin, the "non-rotating origin" (NRO), which was adopted at the international level in 2000 for defining the Earth rotation angle (ERA) as a basis for the modern definition of UT1.

In 1980, Bernard Guinot proposed, within the framework of a co-operation with the IGN, the use of space geodesy observatories contributing to the measurement of the Earth's rotation for the maintenance of the global geodetic reference system. He is thus the instigator of the geodetic reference system used worldwide, which gave birth to the current International Terrestrial Reference System (ITRS), which plays a major role for geodesy, geodynamics, oceanography, climate and relativity. The first realization of this system was in 1985, and later in 1988 with the creation of the International Earth Rotation and Reference System Service (IERS).

In 1985, he joined the International Bureau of Weights and Measures (BIPM) as a principal physicist. He officially transferred the BIH activity on TAI to the BIPM in 1988 at the creation

of the IERS, which replaced the IPMS and the Earth rotation section of the BIH. In addition to his activities on time scales, Bernard Guinot devoted himself to the problem of the relativistic definitions of space-time references of which he assured the recognition by the IAU in 2000.

During his career, B. Guinot has been given many responsibilities in which his competence, rigor and scientific authority have always been unanimously recognized.

At the national level, he was :

in charge of the Astrolabe Service and then the Service de l'Heure at Paris Observatory, director of the Primary Time and Frequency Laboratory (LPTF), a member of the board of directors of the Bureau national de métrologie (BNM), the Executive director of the Groupe de recherche de géodésie spatiale (GRGS) and President of the Bureau des longitudes.

At the international level, he was President of :

IAU Commission 19 (Rotation of the Earth; 1961-1967), the Scientific Council of the International Polar Motion Service (IPMS), the Federation of the Astronomical and Geophysical data analysis Services (FAGS), the CIPM Consultative Committee for the Definition of the Second (CCDS) and he was a Member of the International Committee of Weights and Measures (CIPM).

B. Guinot wrote a large number of authoritative publications on space and time references and had an extraordinary clarity for presenting his ideas. He co-authored two reference books (see below) and strongly emphasized the book "Les références de temps et d'espace", edited by the Bureau des longitudes (May 2017), which has been dedicated to his memory.

During his sixty years of scientific activity B. Guinot made outstanding contributions to space and time metrology. His great scientific rigor and innovative concepts have allowed him to make astronomy and time measurements best benefit from the gain of precision brought by space geodesy and atomic clocks.

We have lost with him a very prominent personality, a great scientist and a very good friend. He is sorely missed.

## REFERENCES

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