

INTERNATIONAL ASTRONOMICAL UNION

SYMPOSIUM NO. 11

Held in Moscow, August 1958

**THE ROTATION OF THE EARTH
AND
ATOMIC TIME STANDARDS**

Edited by

DIRK BROUWER

Yale University Observatory

Printed with financial assistance from U. N. E. S. C. O.

Reprinted from the ASTRONOMICAL JOURNAL, Vol. 64, No. 1268, Pp. 81-124, April, 1959

Contents

PROCEEDINGS OF THE SYMPOSIUM ON THE ROTATION OF THE EARTH AND ATOMIC TIME STANDARDS held during the Tenth General Assembly of the International Astronomical Union in Moscow, August 1958.

Part I. The Motion of the Pole

Nutation as derived from latitude observations, by E. P. Fedorov	1
Nutation and the variation of latitude, by Harold Jeffreys	4
Les relations entre les mouvements du pôle et les fluctuations de la vitesse de rotation de la Terre, par Paul Melchior	6
Discussion	14

Part II. The Rotation of the Earth

The irregular rotation of the earth, by B. L. van der Waerden	16
Fluctuations and secular changes in the earth's rotation, by Dirk Brouwer	17
Variations périodiques et aléatoires de la rotation de la Terre, par Nicolas Stoyko	19
Variation progressive et variation saisonnière de la rotation de la Terre, par A. Danjon	22
The influence of systematic errors of star catalogues on the determination of the irregularities of the earth's rotation, by A. A. Nemiro and N. N. Pavlov	23
Variations in rotation of the earth, results obtained with the dual-rate moon camera and photographic zenith tubes, by Wm. Markowitz	26
Ephemeris time, by G. M. Clemence	33
Discussion	35

Part III. Atomic Standards of Frequency

Etalons de fréquence, par B. Decaux	36
Report on the precision of atomic standards of frequency, by L. Essen	40
Discussion	43