

M A R E E S T E R R E S T R E S

B U L L E T I N d' I N F O R M A T I O N S

N° 7

1 août 1957

C S A G I

GROUPE XIII (GRAVIMETRIE)

COMMISSION POUR L'ETUDE DES MAREES TERRESTRES.

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U C C L E

Belgique.

can, no doubt, be made more accurate if we take into account some other waves with nearly equal speeds ($R_2, \pi, \psi, \phi, \phi_0, \dots$). They are, doubtless present with big coefficients in the found combinations but have not been taken into account in Lecolazet's schedule.

It seems, that the slightly better results in the Doodson and Pertzev schedules can be explained by the exclusion of these waves.

Lennon's method differs but very little from the 1st approximation of Doodson's method and in order to make it more accurate a second approximation should be worked out.

The labour needed for the use of all these methods is nearly the same if we limit ourselves with a determination of only the 5 main waves.

References

- /1/ Doodson A.T. The Analysis of tidal observations for 29 days. International Hydrogr. Review May 1954.
- /2/ Lennon G.W. The Liverpool Tidal Institute Method of Harmonic Analysis for 29 days observations of Earth Tides.
- /3/ Lecolazet^R, Application, a l'analyse des observations de la marée gravimétrique, de la méthode de H. et Y Labrouste, dite par combinaisons linéaires d'ordonnées Annales de géophysique t. 12 1956.
- /4/ Pertzev B.P. Comptes Rendues de la Conférence sur les marées terrestres Uccle 3-5IV- 57.

TABLE.

	M_2	S_2	N_2	K_1	O_1
I Doodson					
1 st approximation					
$R\%$	1,3	0,9	4,1	0,6	5,7
$\Delta\delta$	-0,6	+0,1	+2,1	+1,1	-0,2
2 nd approximation					
$R\%$	0,2	0,5	0,7	0,2	2,3
$\Delta\delta$	-0,3	+0,4	+2,5	+0,2	-0,3
II Lennon					
$R\%$	1,4	1,6	2,6	1,1	5,7
$\Delta\delta$	-0,5	+0,2	-0,6	+1,2	-0,5
III Lecolazet					
$R\%$	0,2	0,9	0,3	1,5	2,3
$\Delta\delta$	0,0	-0,9	+1,2	+0,9	+0,3
1 st approximation					
$R\%$	1,2	1,5	5,5	2,0	5,5
$\Delta\delta$	+0,7	-2,6	+1,1	-1,4	+0,6
2 nd approximation					
$R\%$	0,2	1,2	0,7	1,5	2,3
$\Delta\delta$	+0,1	-2,0	-1,4	-0,9	+0,4
IV Pertzev					
1 st approximation					
$R\%$	0,3	0,6	2,5	0,0	7,7
$\Delta\delta$	+0,2	-1,3	+1,2	+0,2	-0,2
2 nd approximation					
$R\%$	0,5	0,3	0,3	0,1	0,9
$\Delta\delta$	-0,2	-0,7	+1,2	+0,2	+0,2

Dominion
Observatory

DEPARTMENT
of
MINES AND TECHNICAL SURVEYS

Ottawa

June 3, 1957.

Dr. Paul J. Melchior,
Astronome à l'Observatoire Royal de Belgique.
3, Avenue Circulaire.
UCCLE,
Belgique.

Dear Sir,

The Dominion Observatory plans to operate two gravimeters for Earth-Tide studies during the I.G.Y. One gravimeter has been converted from normal operation to recording, and the other will be converted as rapidly as possible. Until comparative measurements have been made, and the instruments proved adequate, we shall not publish details of the conversion; however, a handbook will be produced for the instruments and forwarded to you in due course.

It is intended that one instrument will be stationed permanently in Ottawa, at the Dominion Observatory, during the I.G.Y. The other will be operated for a few months at a time at three other locations-Meanook Observatory, Baker Lake, and Resolute.

There is some hope that a third recording gravimeter may be operated by the Canadian Society of Exploration Geophysicists at Peace River during the whole of the I.G.Y. If this happens, then the second Observatory Gravimeter will not be stationed at Meanook.

The records will be made with pen-type instruments, and a copy of the original will be sent to the designated data centre; there may be a delay of a month or two before records from the Northern stations are available, owing to transport difficulties. Records should be accurate to at least 1 mgal.

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Yours sincerely,

R.L.G.Gilbert,
(for) M.J.S.Innes, Chief,
Division of Gravity.

Canadian Stations for Earth-Tide Studies during I.G.Y.

Station	Latitude	Longitude	Geological Division	Operated by	Remarks
Ottawa, Ont.	45°23.6'	75°42.9'	St. Lawrence Lowlands	Dom. Obs.	Continuous recording during IGY
Peace River, Alta	56°10.0'	117°05.0'	Interior Plains	C.S.E.G.	" "
Baker Lake, N.W.T.	64°19.4'	96°02.0'	Canadian Shield	Dom. Obs.	6 month interval
Resolute, N.W.T.	74°41.2'	94°49.9'	Arctic Plains	Dom. Obs.	6 month interval
Meanook	54°37.0'	113°20.0'	Interior Plains	Dom. Obs.	6 month interval

Colloque International sur les Marées Terrestres.

Les Comptes Rendus de ce Colloque tenu à Uccle du 24 au 26 avril 1957 ont été envoyés en même temps que le B.I.M. n° 6.

Bien que cela apparaisse clairement d'après les textes, on a omis de mentionner explicitement que les séances ont été présidées par le Prof. R.Tomaschek. D'autre part les comptes rendus ont été établis par le Dr. Melchior.

Sur la carte représentant la distribution des stations, il convient de reporter les positions des stations gravimétriques de Tamanrasset, Lyon, Toulouse, Bordeaux, Manille ainsi que des stations canadiennes mentionnées dans le présent B.I.M. (p.104).

Centres mondiaux de données.

Le modèle exact du feuillet n° 1 mentionné à la p. 73 des Comptes Rendus du Colloque d'Uccle a été joint au B.I.M. n° 6.