

INSTITUT POUR LA RECHERCHE SCIENTIFIQUE  
EN AFRIQUE CENTRALE

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Bulletin des Stations Séismographiques

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Volume 12 - No 1

LWIRO - UVIRA - ASTRIDA.

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Par

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R E M A R Q U E S



Coordonnées des Stations

|         |         |    |        |    |             |
|---------|---------|----|--------|----|-------------|
| Lwiro   | 2°14,3' | S. | 28°48' | E. | 1748 ± 20 m |
| Astrida | 2°37'   | S. | 29°44' | E. | 1648 ± 20 m |
| Uvira   | 3°24'   | S. | 29°07' | E. | 950 ± 20 m  |

Equipement de chaque station:

Un séismographe Benioff vertical à réluctance variable  
avec un galvanomètre de 0,25 sec. de période: Z  
un galvanomètre de 25 sec. de période: X  
deux séismographes de torsion Wood-Anderson: NS (Nord Sud)  
EW (Est Ouest)

Lwiro possède en plus:

Deux séismographes Benioff horizontaux à réluctance variable  
avec galvanomètre Ruhstrat de 1,8 sec. de période: NC (Nord Sud)  
EC (Est Ouest)  
avec galvanomètre de 25 sec. de période: NL (Nord Sud)  
EL (Est Ouest)  
et les trois composantes de la Columbia University (reçu en prêt)  
avec  $T_0 = 15$  sec. et  $T_g = 90$  sec: CZ (Vertical)  
CN (Nord Sud)  
CE (Est Ouest)

Enregistrement: sur film de 35 mm. (les Columbia sur papier)  
Temps: horloge I.B.M. 25, contrôlée par les signaux de Greenwich.

On désigne par: L.----Lwiro  
A.----Astrida  
U.----Uvira

e ou i avant une phase désigne un début lent ou rapide du mouvement.

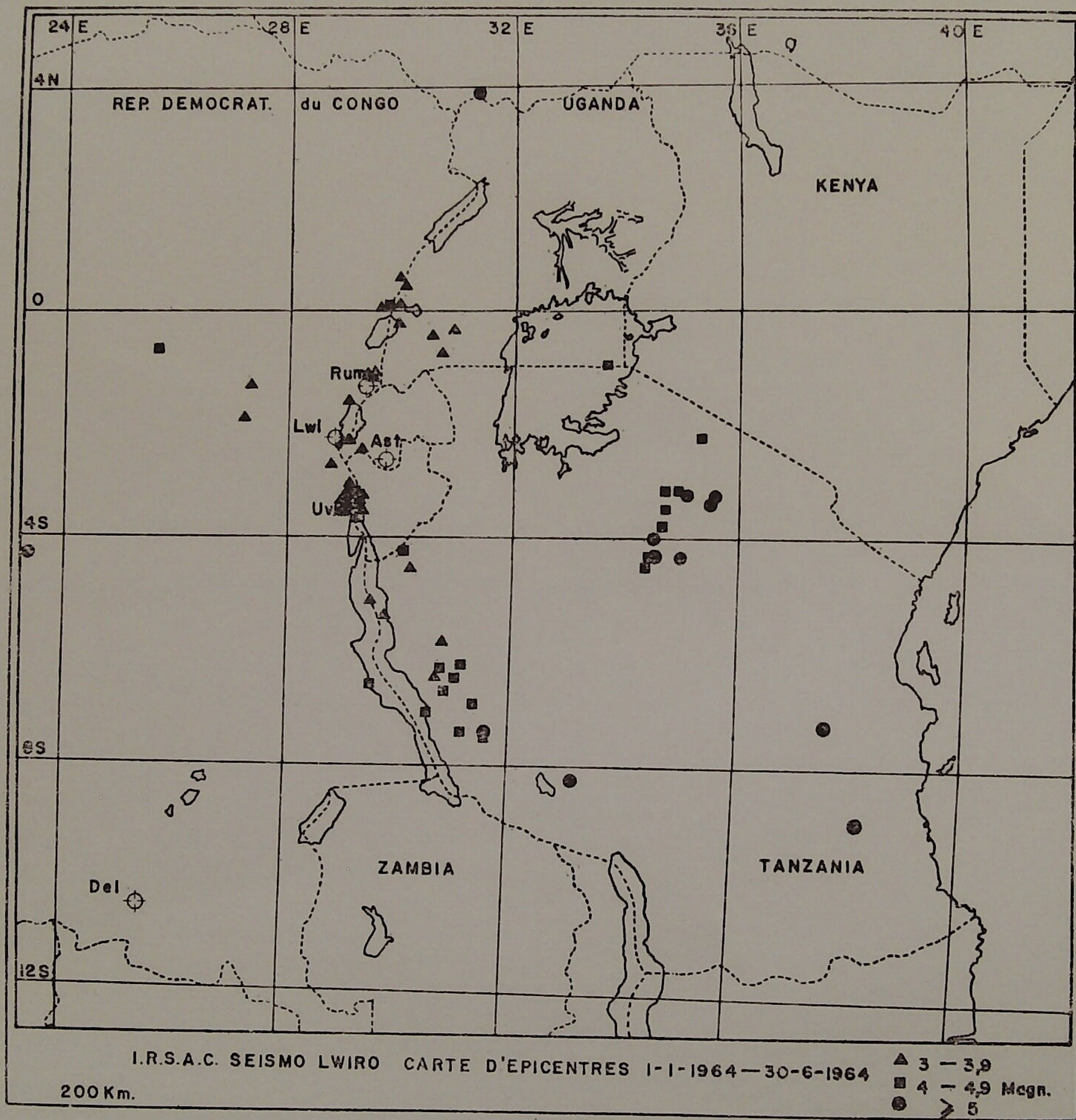
C ou D après une phase indique une compression ou une dilatation d'après l'instrument à composante verticale.

Un c minuscule suivi d'un D majuscule (cD) indiquent une faible compression et une forte dilatation et inversement (dC).

L'amplitude de la trace sur le séismogramme (B en mm) ainsi que la période (en secondes) sont données dans les cas intéressants.

Les magnitudes des séismes proches ont été déterminées autant que possible au moyen des Wood-Anderson en employant le nomogramme donné par Nordquist dans le "Bulletin of the Seismological Society of America" vol. 32 p.164. Dans les autres cas elles ont été obtenues en employant l'amplitude maximum de X et en retranchant 1,0 de la magnitude ainsi obtenue.

Les lectures ci-après mentionnent tous les séismes enregistrés dont l'épicentre est à plus de 500 Km. et tous les séismes locaux de magnitudes supérieures à 3. Sauf remarque contraire les épicentres, les temps d'origine, les magnitudes, les profondeurs et les distances sont ceux donnés par le "United States Coast and Geodetic Survey".





| Date Station       | Phase  | Temps   | Pér. sec | B. mm | Mo. du sol                                 | Remarques.   |
|--------------------|--|---|----------|-------|--|--|
| 1964<br>01 JANVIER |  |   |          |       |  |  |
| L.                 | e P Z  | 15-48-11  |          |       |  | O= 15-40,7 BCIS.<br>Région du Barrage<br>de Kariba   |
| 01 JAN.            | e PP Z<br>i PP CZ<br>e (SKKS) CN<br>i PS CZ<br>e (SSS) CN<br>i CZ<br>M CZ                                  | 17-45-53<br>46-19<br>53-22<br>56-05<br>18-07-20<br>35-20<br>40-20                                 |          |       | d  | O= 17-26-43,5<br>45°4 N. 151°9 E.<br>Iles Kouriles<br>Magn. 5.6<br>h=ca 45 Km.<br>D=ca 12.700 Km.  |
| 02 JAN.            | L. i! P Z<br>U. i! P Z<br>ei S X<br>A. i P Z<br>i P Z<br>i S X   | 12-49-55,3<br>12-50-10,3<br>39,5<br>12-49-59,8<br>50-00,7<br>20,7                                 |          |       | X:9 DSE<br>WA:0,8                          | O=ca 12-49-30,8 Lwi.<br>1°1 S. 29°4 E.<br>Ca 25 Km. au Nord<br>de Rumangabo<br>(Rép. dém. du Congo)<br>Magn. Lwi. ca 3 à 3 1/4<br>D=ca 141 Km. |
| 03 JAN.            | L. i P ZX<br>i (S) NC<br>U. i P Z<br>ei S EW<br>i! S Z(X)<br>M X<br>A. i P Z<br>i S Z<br>M X               | 03-52-06,8<br>53-23,3<br>03-52-01,6<br>53-12,1<br>12,9<br>54-02<br>03-51-53,9<br>52-57,3<br>53-44 |          |       | X:20<br>WA/1,2<br>X:11,5<br>X:20<br>WA1,25 | O=ca 03-50-30 Lwi.<br>3°1 S. 35°1 E.<br>Ca 325 Km. NE. de<br>Tabora (Tanzanie)<br>Magn. Lwi. ca 5.2<br>D=ca 703 Km.                            |
| 03 JAN.            | L. i P Z<br>i (S) X<br>i (S) NCNL<br>U. i! P Z<br>i (S) X(NS)<br>i! S NSEW<br>A. i P Z<br>i (S) Z<br>i S X | 20-03-08,8<br>25,6<br>28,1<br>20-02-47,5<br>49,5<br>50,6<br>20-03-04,9<br>19,3<br>20,5            |          |       | X6,5<br>X:19<br>WA: 2                      | O=ca 20-02-42,4 Lwi.<br>3°6 S. 29°1 E.<br>Ca 20 Km. au Sud<br>d'Uvira (Rép. dém.<br>du Congo)<br>Magn. Lwi. ca 3.0<br>D=ca 153 Km.             |



| Date Station       | Phase | Temps  | Pér. sec   | B. mm | Mo. du sol | Remarques.   |
|--------------------|-------|--|--|-------|------------|--|
| 1964<br>03 JANVIER | L.    | i P' Z<br>i! P' Z<br>e pP' Z<br>i PSKS Z<br>ei SS CN<br>e CZ<br>M CZ | 21-43-37,1<br>37,8<br>45-48<br>57-05<br>22-04-36<br>11-51<br>16-21 | 22    | 2,2        | D<br>CIN<br>c<br>O= 21-24-56,3<br>20°4 S. 178°1 W.<br>Région des Iles<br>Fidji<br>Magn. 5.3<br>h=ca 520 Km.<br>D=ca 16.140 Km.                                   |
| 04 JAN.            | L.    | i P NC<br>i P ZEC<br>i P NC<br>i S ECEL<br>i! S Z                    | 10-18-49,3<br>49,4<br>53,1<br>19-06,9<br>07,9                      |       |            | N<br>DE<br>X:10,5<br>O=ca 10-18-25,5 Lwi.<br>Ca 1°15 S. ca 29°5 E.<br>Ca 30 Km. NE. de<br>Rumangabo (Rép. dém.<br>du Congo)<br>Magn. Lwi. ca 3.3<br>D=ca 146 Km. |
|                    | U.    | i P Z<br>i P Z<br>i (S) X<br>M X                                     | 10-19-04,2<br>10,1<br>37,1<br>49                                   |       | 2 à 2,5    |  |
|                    | A.    | i P Z<br>i! P Z<br>i S X(NS)   | 10-18-54,1<br>54,3<br>19-14,3                                      |       |            | d<br>C<br>X:21   |
| 04 JAN.            | L.    | e P Z  | 13-42-33   |       |            | c<br>O= 13-33-33,5 (ISC)<br>53°12 S. 22°10 E.<br>A 2.000 Km. au large<br>de la côte Sud de<br>l'Afrique<br>D=ca 5.660 Km.  |
| 04 JAN.            | L.    | e (P) Z<br>i! P Z<br>e PP CN<br>e Lr CZ<br>M CZ                      | 21-21-08<br>10,5<br>22-48<br>35-21<br>40-21                        | 21    | 2,5        | D!<br>O= 21-12-09,3<br>52°9 S. 20°9 E.<br>A 2.000 Km. au large<br>de la côte Sud de<br>l'Afrique<br>h=ca 33 Km.<br>D=ca 5.650 Km.                                |
| 05 JAN.            | L.    | e P' Z   | 03-24-11   |       |            | d<br>O= 03-05-44,1<br>20°6 S. 179°0 W.<br>Région des Iles<br>Fidji<br>Magn. 4.6<br>h=ca 650 Km.<br>D=ca 16.060 Km.   |



| Date Station       | Phase   | Temps  | Pér. sec | B. mm | Mo. du sol | Remarques.   |
|--------------------|---|--|----------|-------|------------|--|
| 1964<br>05 JANVIER |   |  |          |       |            |  |
| L.                 | e P' Z<br>e Z   | 10-31-19,5<br>36,5   |          |       |            | O= 10-11-53,0<br>26°6 S. 175°7 W.<br>Sud des Iles Tonga<br>Magn. 5.1<br>h=ca 31 Km.<br>D=ca 15.870 Km.   |
| 05 JAN.            | L. i (P) Z<br>e S NC  | 13-57-51,9<br>58-29,9  |          |       | d          | O=ca 13-56-56 Lwi.<br>Ca 5° S. 30°5 E.<br>Prob. 55 Km. au Sud<br>d'Oudjidji (Tanzanie)<br>Magn. Lwi. ca 3.0<br>D=ca 365 Km.  |
|                    | U. i P Z  | 13-57-32,8   |          |       |            |  |
|                    | A. i P Z<br>ei (S) X<br>i S Z   | 13-57-42,5<br>58-17,0<br>18,5  |          |       |            |  |
| 05 JAN.            | L. e P CZ<br>e CZ<br>i CNCE<br>M CZ   | 16-54-41<br>17-09-21<br>21<br>31-51  |          | 18    | 3,5        | O= 16-44-00 ISC<br>60°0 N. 0°0<br>Données discordantes   |
| 05 JAN.            | L. i P Z<br>e L CZ<br>M CZ  | 22-49-54,8<br>23-05-01<br>09-51  |          | ca 19 | 2,5        | C! O= 22-40,8 (BCIS)<br>53° S. 21° E.<br>Au large de la côte<br>Sud de l'Afrique   |
| 05 JAN.            | L. i P X<br>i! P CZ<br>i P Z<br>i!! CZCN<br>i PP CZCN<br>i S CN<br>i! S CE<br>i ScS CE<br>i SS CN<br>i L CE<br>i Lr CZ<br>i Lq CZ<br>M CZ | 23-55-02<br>03<br>03,1<br>09<br>57-01<br>00-02-06<br>16<br>05-05<br>50<br>07-(21)<br>09-(21)<br>14-(21)<br>16-(21) |          |       |            | D<br>DIS<br>C<br>C!!N!<br>O= 23-46-10,7<br>52°3 S. 28°6 E.<br>Zone sismique<br>médiante indo-atlantique<br>au voisinage des<br>Iles Edwards<br>h=ca 33 Km.<br>D=ca 5.540 Km. |
| 06 JAN.            | L. ei Z<br>ei Z   | 18-25-40,0<br>49,0   |          | ca 18 | 86         | Kariba (Rhodésie)?   |



| Date Station       | Phase      | Temps    | Pér. sec   | B. mm | Mo. du sol    | Remarques.   |
|--------------------|------------|----------|------------|-------|---------------|--|
| 1964<br>07 JANVIER |            |          |            |       |               |  |
| L.                 | e P Z      | 12-43-58 |            |       | C             | O= 12-32-54,5<br>56°8 S. 26°1 W.<br>Région des Iles<br>Sandwich du Sud<br>Magn. 5.6<br>h=ca 33 Km.<br>D=ca 7.740 Km. |
|                    | i P CZ     | 44-02    |            |       |               |  |
|                    | e S CE     | 53-04    |            |       |               |  |
|                    | e SS CZ    | 57-49    |            |       |               |  |
|                    | e Lr CZ    | 13-05-00 |            |       |               |  |
|                    | i CZ       | 10-20    |            |       |               |  |
|                    | M CZ       | 11-20    | 18         | 3,5   |               |  |
|                    | M CZ       | 17-00    | 16/17      | 4,5   |               |  |
| 07 JAN.            | L.         | e P' Z   | 00-04-03   |       |               | O= 23-45-23,4<br>50°9 N. 157°3 E.<br>Iles Kouriles<br>Magn. 5.6<br>h=ca 33 Km.<br>D=ca 12.790 Km.                    |
|                    | i Z        | 39,9     |            |       |               |  |
|                    | e PP CZ    | 05-00    |            |       |               |  |
|                    | e PS CN    | 14-36    |            |       |               |  |
|                    | i PS CN    | 56       |            |       |               |  |
|                    | i (PPS) CZ | 16-(20)  |            |       |               |  |
|                    | e SS CZ    | 20-(20)  |            |       |               |  |
|                    | i CZ       | 53-20    |            |       |               |  |
|                    | M CZ       | 54-50    | 28         | 6     |               |  |
|                    | M CZ       | 01-00-20 | 18         | 6     |               |  |
| 08 JAN.            | L.         | i P Z    | 20-55-52,6 |       |               | O=ca 20-54-25 Lwi.<br>7°4 S. 31°2 E.<br>Tanzanie<br>Magn.Lwi.ca 4.2<br>D=ca 632 Km.                                  |
|                    | M Z        | 57-49    |            |       | Z:14<br>X:2,5 |  |
|                    | U.         | i P Z    | 20-55-36,7 |       |               |  |
|                    | M X        | 57-02    |            |       | X:3           |  |
|                    | A.         | i P Z    | 20-55-43,8 |       | C             |  |
|                    | i P Z      | 45,0     |            |       | D             |  |
|                    | i! S Z     | 56-43,8  |            |       | Z:39          |  |
|                    | M Z        | 57-25    |            |       | X: 5          |  |
| 08 JAN.            | L.         | e P Z    | 22-43-46   |       | c             | O= 22-30-49,7<br>3°7 S. 119°4 E.<br>Iles Célèbes<br>Magn. 5.2<br>h=ca 90 Km.<br>D=ca 10.050 Km.                      |
|                    | i P CZ     | 48       |            |       | C!            |  |
|                    | e S CZCE   | 54-(19)  |            |       |               |  |
|                    | e SSS CE   | 23-04-19 |            |       |               |  |
|                    | e CZ       | 13-19    |            |       |               |  |
|                    | M CZ       | 19-19    | ca 20      | 2     |               |  |



| Date Station       | Phase  | Temps  | Pér. sec | B. mm    | Mo. du sol | Remarques.   |
|--------------------|--|--|----------|----------|------------|--|
| 1964<br>09 JANVIER |  |  |          |          |            |  |
| L.                 | i (P) Z<br>i S EC  | 02-26-56,2<br>28-11,9  |          |          | C          | O=ca 02-25-16,7 Lwi.<br>O= 02-25-18 BCIS.<br>4°3 S. 35° E. Lwi.<br>4° S. 34° E. BCIS.<br>Tanzanie<br>Magn.Lwi.ca 5.6<br>D=ca 720 Km. |
| U.                 | i P Z<br>i P Z<br>i! X<br>M X  | 02-26-48,0<br>49,0<br>27-14,5<br>28-48   |          |          |            | X:17<br>WA:2,C   |
| A.                 | i P Z<br>i! P X<br>i! S X<br>M NSEW  | 02-26-41,3<br>52,3<br>27-46,2<br>28-31   |          |          | C<br>cD    | X:55<br>WA:4,7   |
| 09 JAN.            | L. i P Z<br>e S CNCE<br>e CZ<br>M CZ   | 10-07-29,5<br>15-19<br>25-49<br>30-00  | 16       | 3        | c          | O= 09-57-56,9 ISC<br>43°2 S. 14°7 W.<br>Atlantique Sud<br>D=ca 6.240 Km.   |
| 09 JAN.            | L. e P Z<br>i PP Z<br>i PS CNCECZ<br>i SSS CZ<br>i CZ<br>e CZ<br>i CZ<br>M CZ<br>M CZ      | 18-46-41<br>51-21<br>19-01-05<br>12-19<br>17-07<br>27-19<br>38-09<br>41-49<br>45-19                  | 22<br>17 | 13<br>13 | D          | O= 18-31-52,4<br>45°5 N. 150°9 E.<br>Iles Kouriles<br>Magn.Berk.5 3/4 - 6<br>h=ca 40 Km.<br>D=ca 12.630 Km.                          |
| 09 JAN.            | L. i Z   | 21-33-46,4   |          |          | C!         |  |
| 10 JAN.            | L. ei P Z<br>i! P Z<br>M Z<br>U. i P Z<br>i Z<br>M X<br>A. i P Z<br>i ZX<br>ei S EW<br>M X | 02-27-08,6<br>09,1<br>29-10<br>02-27-00,9<br>07,4<br>29-00<br>02-26-54,9<br>27-03,7<br>54,6<br>28-40 |          |          | d<br>C!    | O=ca 02-25-36,3 Lwi.<br>4°3 S. 34°5 E.<br>Tanzanie<br>Magn.Lwi.ca 4.3<br>D=ca 667 Km.  |
|                    |  |  |          |          |            | Z:20<br>X:2,5<br>X: 2<br>X:5,5   |





| Date Station       | Phase         | Temps    | Pér. sec   | B. mm | Mo. du sol | Remarques.  |
|--------------------|---------------|----------|------------|-------|------------|---|
| 1964<br>10 JANVIER |               |          |            |       |            |   |
| L.                 | e PP Z        | 05-09-42 |            |       | D          | O= 04-50-53,4<br>42°0 N. 142°6 E.<br>Près de la côte Sud<br>de Hokkaïdo, Japon<br>Magn. 5.5<br>h=ca 33 Km.<br>D=ca 12.120 Km.         |
|                    | i PP CZ       | 50       |            |       | C          |   |
|                    | i PP Z        | 52,4     |            |       |            |   |
|                    | e SKS CE      | 15-56    |            |       |            |   |
|                    | e SKKS CE     | 16-30    |            |       |            |   |
|                    | ei (PS) CN/CB | 19-30    |            |       |            |   |
|                    | i SS CN       | 25-42    |            |       |            |   |
|                    | i CE          | 52       |            |       |            |   |
|                    | e CZ          | 45-18    |            |       |            |   |
|                    | M CZ          | 59-18    | 24         | 5,5   |            |   |
|                    | M CZ          | 48       | 20         | 5     |            |   |
| 10 JAN.            | L.            | i P Z    | 17-12-00,9 |       |            | O= 16-57-26,5<br>45°4 N. 150°0 W.<br>Iles Koruiles<br>Magn. 5.4<br>h=ca 50 Km.<br>D=ca 16.560 Km.                                     |
|                    |               | i Z      | 31,0       |       | c          |   |
|                    |               | e PP CZ  | 16-48      |       |            |   |
|                    |               | e PS CZ  | 26-33      |       |            |   |
|                    |               | e L CZ   | 42-18      |       |            |   |
|                    |               | e CZ     | 54-18      |       |            |   |
|                    |               | M CZ     | 18-06-18   | 24    | 1,5        |   |
|                    |               | M CZ     | 10-58      | 18/20 | 1,5        |   |
| 11 JAN.            | L.            | i P Z    | 10-04-22,7 |       |            | O=ca 10-03-37,5 Lwi.<br>0°1 N. 30° E.<br>Région du Ruwenzori.<br>A l'Est du lac<br>George (Uganda)<br>Magn.Lwi.ca 3.4<br>D=ca 294 Km. |
|                    |               | i S NC   | 55,9       |       |            |   |
|                    |               | M X      | 05-19      | X4,5  |            |   |
|                    | U.            | ei P Z   | 10-04-37,2 |       | d          |   |
|                    |               | ei (P) Z | 40,4       |       |            |   |
|                    |               | i P Z    | 43,0       |       |            |   |
|                    |               | M X      | 05-42      | X:2,5 |            |   |
|                    | A.            | i P Z    | 10-04-24,0 |       |            |   |
|                    |               | i S Z    | 58,8       |       |            |   |
|                    |               | i S X    | 59,2       |       |            |   |
|                    |               | M X      | 05-17      | X:8   |            |   |
| 12 JAN.            | L.            | e P' Z   | 06-19-14   |       |            | O= 06-00-13,2<br>53°2 N. 166°3 W.<br>Iles aux Renards,<br>Aléoutiennes<br>Magn. 5.5<br>h=ca 33 Km.<br>D=ca 14.190 Km.                 |
|                    |               | i P' Z   | 18         |       | D          |   |
|                    |               | ei CZ    | 07-15-57   |       |            |   |
|                    |               | M CZ     | 26-47      | ca 20 | 2          |   |

| Date Station       | Phase                             | Temps                                  | Pér. sec | B. mm              | Mo. du sol | Remarques.   |
|--------------------|-----------------------------------|--|----------|--------------------|------------|--|
| 1964<br>12 JANVIER | L. i P Z<br>e L CZ<br>M CZ        | 12-47-30,7<br>13-04-34<br>09-16        | 16       | 2                  | C          | O= 12-36-18,7<br>56°0 S. 27°6 W.<br>Région Sud des Iles<br>Sandwich<br>Magn. 5.5<br>h=ca 33 Km.<br>D=ca 7.780 Km.  |
| 12 JAN. L.         | e P Z                             | 12-53-11                               |          |                    |            | O= 12-45-51,1<br>31°5 N. 49°4 E.<br>Région Ouest de<br>l'Iran<br>Magn. 5.2<br>h=ca 67 Km.<br>D=ca 4.310 Km.  |
| 12 JAN. L.         | i! P Z<br>i S NL                  | 16-40-44,2<br>41-00,3                  |          | X:8,5              | DISW       | O=ca 16-40-21,1 Lwi.<br>Ca 3°4 S. ca 29°15 E.<br>Ca 4 Km.ENE. d'Uvira<br>(Rép. dém. du Congo)<br>Magn.Lwi.ca 3.1<br>D=ca 132 Km.                         |
| U.                 | i P Z<br>i S NS                   | 16-40-22,8<br>23,8                     |          |                    | C          |  |
| A.                 | i P Z<br>i S X                    | 16-40-40,0<br>52,2                     |          | X:13,5             | C          |  |
| 12 JAN. L.         | ei P Z<br>i P Z<br>i Sn NL<br>M Z | 18-28-20,8<br>22,2<br>29-30,2<br>30-23 |          | Z:90<br>X:13,5     | d<br>D     | O=ca 18-26-50 Lwi.<br>4°3 S. 23°4 E.<br>Ca 60 Km. au Nord<br>de Lusambo<br>Magn.Lwi.ca 5.0<br>D=ca 654 Km.<br>O= 18-26-54 BCIS<br>vers 5° S. 24° E. BCIS |
| U.                 | i P Z<br>i! P Z<br>M X            | 18-28-17,4<br>18,6<br>30-13            |          | X:8,5              | C          |  |
| A.                 | i P Z<br>M Z                      | 18-28-29,4<br>30-42                    |          | X:5,5              |            |  |
| 13 JAN. L.         | i P Z<br>e (S) NC<br>i S Z<br>M Z | 19-57-50,2<br>59-09<br>10,7<br>57      |          | X;2                | d          | Probablement<br>Graben Est Africain<br>Magn.Lwi.ca 4.3<br>D=ca 770 Km.   |
| U.                 | M Z                               | 19-59-52                               |          |                    |            |  |
| A.                 | i P Z<br>i (S) Z<br>M Z<br>M ZX   | 19-57-33,2<br>58-47,6<br>59-24<br>35   |          | 19<br>X: 2<br>Z:19 |            |  |



| Date Station       | Phase  | Temps   | Pér. sec | B. mm          | Mo. du sol | Remarques  |
|--------------------|--|---|----------|----------------|------------|--|
| 1964<br>13 JANVIER |  |   |          |                |            |  |
| L.                 | i P Z<br>M Z   | 21-30-22,8<br>32-35   |          |                | C          | O=ca 21-28-39,2<br>3°1 S. 35°6 E.<br>Tanzanie  |
| U.                 | i P Z<br>M Z   | 21-30-18,4<br>32-17   |          | X:2,5          | C          | Magn.Lwi.ca 5.0<br>D=ca 756 Km.  |
| A.                 | i P Z<br>i! S Z<br>M X   | 21-30-09,4<br>31-18,3<br>32-00  |          | X:6            |            |  |
| 14 JAN.            | L. ei P' Z<br>i Z  | 15-56-51,7<br>16-00-12,4  |          |                | cD<br>C    | O= 15-38-13,8<br>5°2 S. 150°8 E.<br>Région de la Nouvelle<br>Bretagne<br>Magn. 5.6<br>h=ca 169 Km.<br>D=ca 13.510 Km.                  |
| 15 JAN.            | L. i! P ZNC<br>i! S Z<br>i! S EC(NC)   | 03-50-25,5<br>41,7<br>42,2  |          | X:15<br>WA:2,4 |            | O=ca 03-50-01,4 Lwi.<br>Ca 4°45 S. ca 29°2 E.<br>Ca 10 Km.à l'ESE<br>d'Uvira (Rép. dém. du<br>Congo<br>Magn.Lwi.ca 3.5<br>D=ca 138 Km. |
|                    | U. i! P Z<br>i NSEW  | 03-50-03,0<br>05,2  |          |                | D!         |  |
|                    | A. i! P Z<br>M X   | 03-50-20,4  |          | X:18<br>X:21   |            |  |
| 15 JAN.            | L. e P Z<br>i P Z  | 21-38-31<br>31,7  |          |                | D<br>C     | O= 21-26-43,2<br>23°7 N. 45°0 W.<br>Crête médiane de<br>l'Atlantique<br>Magn. 4.7<br>h=ca 33 Km.<br>D=ca 8.450 Km.                     |
| 15 JAN.            | L. e P CZ<br>e PP CZ<br>e SKS CNCE<br>e PS CECZ<br>i SS CNCE<br>e CN<br>e CZ<br>M CZ | 21-50-38<br>55-06<br>22-01-14<br>04-14<br>10-45<br>22-14<br>28-14<br>48 |          | 20             | 4          | O= 21-36-05,0<br>29°1 N. 140°8 E.<br>Au large Sud de<br>Hondo, Japon<br>Magn.Berk. 6 - 6 1/4<br>h=ca 70 Km.<br>D=ca 12.250 Km.         |



| Date Station            | Phase  | Temps  | Pér. sec | B. mm | Mo. du sol | Remarques.  |
|-------------------------|--|--|----------|-------|------------|---|
| 1964<br>16 JANVIER<br>L | i P' Z   | 12-03-12,0   |          |       | D          | O= 11-44-41,8<br>21°5 S. 179°1 W.<br>Région des Iles<br>Fidji<br>Magn. 4.4<br>h=ca 609 Km.<br>D=ca 16.000 Km. |
| 17 JAN. L.              | e P' Z<br>i CZ<br>e CZ<br>e SS CN<br>e CZ<br>M CZ  | 03-13-45<br>17-18<br>28-12<br>34-52<br>04-01-12<br>11-42   | 18       | 4,5   | C          | O= 02-54-26,8<br>21°6 S. 169°9 E.<br>Iles Kouriles<br>Magn. 5.1<br>h=ca 33 Km.<br>D=ca 15.020 Km.             |
| 17 JAN. L.              | ei P Z<br>ei S Z<br>M Z  | 05-02-08,6<br>03-19<br>04-12   |          |       | c          | O=ca 05-00-36,5 Lwi.<br>Ca 3°5 S. ca 34°7 E.<br>Tanzanie<br>Magn.Lwi.ca 4.0<br>D=ca 665 Km.                   |
|                         | U. i P Z<br>M Z  | 05-02-03,4<br>03-46  |          |       |            |   |
|                         | A. i P Z<br>M Z  | 05-01-54,4<br>03-32  |          |       | C          |   |
| 17 JAN. L.              | e Z  | 09-17-45   |          |       |            | Région de Kariba<br>Rhodésie<br>(Johannesburg)  |
| 18 JAN. L.              | i P Z<br>i PP CZ<br>e CE<br>i CE<br>i! CZ<br>i SS CZ<br>i CNCE<br>i CZ<br>i CN<br>i CZ<br>i CZCN<br>M CZ | 12-17-50,1<br>21-34<br>27-52<br>28-40<br>30-22<br>34-34<br>39-10<br>25<br>44-10<br>48-44<br>51-10<br>59-10 |          |       | C          | O= 12-04-40,0<br>23°1 N. 120°5 E.<br>Formose<br>Magn. 5.9<br>h=ca 33 Km.<br>D=ca 10.270 Km.                   |
|                         |  |  | 20       | 19    |            |   |
| 19 JAN. L.              | e P Z<br>i P CZ<br>e S CN<br>e SS CN<br>e Lq CE(CZ)<br>e CZ<br>M CZ                                      | 07-01-10<br>18<br>10-22<br>14-54<br>18-10<br>23-10<br>29-40  |          |       | d<br>D     | O= 06-49-55,9<br>58°6 S. 25°1 W.<br>Région des Iles<br>Sandwich du Sud<br>h=ca 33 Km.<br>D=ca 7.780 Km.       |
|                         |  |  | 18       | 3     |            |   |



| Date Station       | Phase | Temps  | Pér. sec  | B. mm       | Mo. du sol | Remarques.   |
|--------------------|-------|--|---|-------------|------------|--|
| 1964<br>19 JANVIER | L.    | e P Z<br>e P CZ<br>e S CZCNCE<br>i! L CZ<br>e CZCE<br>M CZ<br>M CZ   | 09-21-10<br>12<br>27-10<br>30-14<br>32-10<br>36-10<br>38-10   | 20<br>17    | 8<br>8,5   | d<br>D<br>C!<br>D=ca 4.205 Km.   |
| 19 JAN.            | L.    | i P' Z<br>e pP' Z  | 23-41-50,6<br>44-05   |             |            | D<br>O= 23-23-05,4<br>18°6 S. 177°8 W.<br>Région des Iles<br>Fidji<br>Magn. 4.5<br>h=ca 521 Km.<br>D=ca 16.290 Km.               |
| 20 JAN.            | L.    | ei Z<br>i P' Z<br>i P' CZ<br>i pP' CZ<br>i PP CZ<br>e pPP X<br>i Z<br>i SKP CZ<br>e SS CN<br>i sSS CN<br>ei SSS CE<br>e CE<br>e CZ<br>M CZ<br>M CZ | 17-27-30<br>44,5<br>44,5<br>28-18<br>30-19<br>53<br>31-04,0<br>10<br>48-10<br>49-12<br>53-10<br>57-10<br>18-12-10<br>22-10<br>32-10 | 22/24<br>16 | 5<br>5     | c<br>C<br>D!<br>O= 17-08-37,4<br>20°7 S. 169°9 E.<br>Nouvelles Hébrides<br>Magn. 6.1<br>h=ca 141 Km.<br>D=ca 15.060 Km.          |
| 22 JAN.            | L.    | i P XCZ<br>i P EC<br>e S CZ<br>e CZ<br>M CZ  | 16-09-37,1<br>38<br>18-44<br>31-10<br>37-08   | 24          | 4,5        | D<br>E!<br>O= 15-58-46,5<br>22°4 N. 93°6 E.<br>Région frontière<br>Birmanie - Inde<br>Magn. 5.1<br>h=ca 88 Km.<br>D=ca 7.520 Km. |
| 23 JAN.            | L.    | e P' Z<br>ei P' CZ<br>i PP CZ<br>i! PKS CZ<br>ei SS CNCE<br>i SSS CE<br>e CZCE<br>i CZ<br>M CZ<br>M CZ   | 00-18-58<br>19-03<br>21-34<br>22-35<br>40-(10)<br>44-44<br>01-02-(10)<br>10-10<br>12-38<br>19-38                                    | 21<br>16    | 10<br>10,5 | D<br>O= 23-59-43,6<br>13°7 S. 165°9 E.<br>Nouvelles Hébrides<br>Magn. 6.0<br>h=ca 33 Km.<br>D=ca 14.950 Km.                      |

| Date Station       | Phase     | Temps      | Pér. sec | B. mm | Mo. du sol | Remarques.   |
|--------------------|-----------|------------|----------|-------|------------|--|
| 1964<br>24 JANVIER | L. i pP Z | 17-32-38,0 |          |       | C          | O= 17-17-45,5<br>38°7 N. 129°4 E.<br>Mer du Japon<br>Magn. 5.3<br>h=ca 542 Km.<br>D=ca 11.070 Km.                |
| 24 JAN. L.         | i P' Z    | 21-32-01,0 |          |       | C          | O= 21-22-23,2<br>21°7 S. 176°2 W.<br>Région des Iles Fidji<br>Magn. 4.8<br>h=ca 32 Km.<br>D=ca 16.210 Km.        |
| 25 JAN. L.         | e Z       | 01-30-01   |          |       |            |  |
| 25 JAN. L.         | i M Z     | 01-45-55,8 |          |       | C          | Sud du lac Nyasa(BCIS)   |
|                    | i Z       | 47-20      | ca 1     | 4,5   | C          |  |
|                    | i Z       | 49-31,3    |          |       |            |  |
| 25 JAN. L.         | e Z       | 02-36-35   |          |       |            | O= 02-30,5 BCIS.<br>Région du barrage de<br>Kariba, Rhodésie<br>(Johannesbourg)                                  |
|                    | ei Z      | 41,0       |          |       | c          |  |
| 25 JAN. L.         | i P' Z    | 07-22-59,8 |          |       | D          | O= 07-04-32,8<br>22°6 S. 179°7 W.<br>Sud des Iles Fidji<br>h=ca 600 Km.<br>D=ca 15.860 Km.                       |
|                    | i! P' Z   | 23-00,2    |          |       | C!         |  |
| 25 JAN. L.         | i P' Z    | 23-26-01,9 |          |       | c          | O= 23-07-29,3<br>20°8 S. 178°8 W.<br>Région des Iles Fidji<br>Magn. 4.5<br>h=ca 580 Km.<br>D=ca 16.060 Km.       |
|                    | i P' Z    | 02,6       |          |       | d          |  |
| 26 JAN. L.         | e P Z     | 09-23-07   |          |       |            | O= 09-09-33,9<br>16°3 S. 71°7 W.<br>Sud du Pérou<br>Magn. Berk. 6 1/4 - 6 1/2<br>h=ca 116 Km.<br>D=ca 11.050 Km. |
|                    | e P CZ    | 12         |          |       | d          |  |
|                    | i PP CZ   | 27-10      |          |       | C          |  |
|                    | i SKS CE  | 33-40      |          |       | E!         |  |
|                    | i S CN    | 34-38      |          |       | N!         |  |
|                    | i CN      | 35-30      |          |       |            |  |
|                    | i SP CZ   | 51         |          |       |            |  |
|                    | i! SS CE  | 41-24      |          |       |            |  |
|                    | e CECZ    | 56-10      |          |       |            |  |
|                    | M CZ      | 10-06-28   | 22       | 4,0   |            |  |
|                    | M CZ      | 08-28      | 20       | 4,0   |            |  |



| Date Station       | Phase   | Temps   | Pér. sec | B. mm   | Mo. du sol | Remarques.   |
|--------------------|---|---|----------|---------|------------|--|
| 1964<br>26 JANVIER | L. i Z  | 10-54-12  |          |         | C          | Douteux  |
| 26 JAN.            | L. Lwiro sans marques de minutes  |   |          |         |            |  |
|                    | U. i P Z<br>i S XNS   | 22-28-29,6<br>32,7  |          |         |            | O=ca 22-28-23,3<br>3°05 S. 29°1 E.<br>Ca 36 Km.au N.d'Uvira<br>(Rép. dém. du Congo)<br>Magn.Lwi.ca 3.3<br>D=ca 95 Km.    |
|                    | A. i! P Z<br>i! S X   | 22-28-38,4<br>48,4  |          | X:54    |            |  |
| 26 JAN.            | L. Lwiro sans marques de minutes  |   |          |         |            |  |
|                    | U. i! P X   | 22-30-18,5  |          |         |            | O=ca 22-30-12,5<br>3°05 S. 29°1 E.<br>Ca 36 Km.au N.d'Uvira<br>(Rép. dém. du Congo)<br>Magn.Lwi.ca 3.6<br>D=ca 95 Km.    |
|                    | A. i P XZ<br>i S NSEW   | 22-30-27,3<br>37,4  |          | X ≥ 110 | C          |  |
| 27 JAN.            | L. Lwiro sans marques de minutes  |   |          |         |            |  |
|                    | ei P Z  | 01-20....   |          |         |            | O= 01-12-23,5<br>0°0 S. 17°9 W.<br>Au large Nord de l'Île<br>Ascension<br>Magn; 5.3<br>h=ca 33 Km.<br>D=ca 5.190 Km.     |
| 27 JAN.            | L. Lwiro sans marques de minutes  |   |          |         |            |  |
|                    | U. i P Z<br>i S EW  | 01-41-42,3<br>46,0  |          |         | D          | O=ca 01-41-36,8<br>3°7 S. 29°2 E.<br>Ca 32 Km.SSE.d'Uvira<br>(Rép. dém. du Congo)<br>Magn.Lwi.ca 3.6<br>D=ca 164 Km.     |
|                    | A. i P Z<br>i S X   | 01-41-59,3<br>42-14,6   |          | X17,5   |            |  |
| 28 JAN.            | L. i! P ZCZ<br>i PcP CZ<br>i ScP CZ<br>i S CN<br>i sS CE<br>i SS CN<br>i CE<br>i P'P' Z | 14-18-28,7<br>19-33<br>22-53<br>25-57<br>27-17<br>28-23<br>32-23<br>48-52,6 |          |         |            | CS!W!! O= 14-09-17,1<br>36°5 N. 70°9 E.<br>D! Région de<br>l'Hindou-Kouch<br>Magn. 6.1<br>h=ca 207 Km.<br>D=ca 6.100 Km. |



| Date Station             | Phase                      | Temps                      | Pér. sec | B. mm | Mo. du sol | Remarques.  |
|--------------------------|----------------------------|----------------------------|----------|-------|------------|---|
| 1964<br>30 JANIVER<br>L. | ei P Z                     | 17-53-24,5                 |          |       |            | O= 17-45-54,6<br>37°3 N. 29°9 E.<br>Turquie<br>h=ca 41 Km.<br>D=ca 4.380 Km.  |
| 01 FEVRIER<br>L.         | ei P' Z                    | 02-07-02,8                 |          |       | d          | O= 01-47-52,1<br>51°8 N. 170°8 W.<br>Iles aux Renards,<br>Aléoutiennes<br>Magn. 5.2<br>h=ca 34 Km.<br>D=ca 14.220 Km. |
| 01 FEV. L.               | i M Z                      | 02-44-25,2<br>45-19        |          | Z:5   |            | O=ca 02-41-26 BPI.<br>9°0 S. 29°0 E.<br>Frontière Rép. dém.<br>du Congo - Zambie                                      |
|                          | A. e M Z                   | 02-43-11<br>45-05          |          | Z:6   |            |   |
| 02 FEV. L.               | M CZ                       | 09-51-47                   | 20       | 1,6   |            | O= 08-54-48,3<br>24°2 N. 122°6 E.<br>Est de Taiwan<br>Magn. 5.0<br>h=ca 28 Km.<br>D=ca 10.490 Km.                     |
| 03 FEV. L.               | e P Z<br>e S NC(Z)         | 16-52-07,2<br>44,2         |          | Z:2,2 | d          | O=ca 16-51-17,6 Lwi.<br>0°5 N. 30°05 E.<br>Frontière Rép.dém. du<br>Congo - Uganda<br>Magn.Lwi.ca 3.5<br>D=ca 332 Km. |
|                          | U. i P Z                   | 16-52-21,3                 |          | X: 1  |            |   |
|                          | A. i P Z<br>i! Z<br>ei S X | 16-52-09,0<br>18,6<br>47,6 |          | X: 4  |            |   |
| 03 FEV. L.               | i P' Z                     | 20-24-20,0                 |          |       | C          | O= 20-05-47,6<br>23°2 S. 179°8 W.<br>Sud des Iles Fidji<br>Magn. 4.4<br>h=ca 509 Km.<br>D=ca 15.820 Km.               |



| Date<br>Station    | Phase | Temps  | Pér.<br>sec  | B.<br>mm | Mo.<br>du<br>sol | Remarques.  |
|--------------------|-------|--|--|----------|------------------|---|
| 1964<br>05 FEVRIER | L.    | i PP EC<br>i! EC<br>M CZ   | 11-49-12,0<br>54-19,4<br>12-39-37  | 18       | 8,5              | W<br>E!<br>O= 11-30-15,7<br>36°5 N. 141°0 E.<br>Honshu, Japon<br>h=ca 46 Km.<br>D=ca 12.120 Km.                                     |
| 06 FEV.            | L.    | ei P CZ<br>i P' Z<br>i P' CZ<br>i PP CZ<br>i PP X<br>i SS CE<br>e CE<br>e CZ<br>i CZCNCE<br>M CZ | 13-23-12<br>26-28,1<br>31<br>28-15<br>24,8<br>45-34<br>14-13-30<br>17-10<br>22-07<br>29-07 | 20       | 79               | c<br>c<br>c<br>C<br>CSW<br>O= 13-07-25,2<br>55°7 N. 155°8 W.<br>Ile Kodiak, Alaska<br>Magn. 6 3/4<br>h=ca 33 Km.<br>D=ca 14.070 Km. |
| 06 FEV.            | L.    | i P' Z   | 13-32-48,3   |          |                  | D!<br>O= 13-13-45,2<br>55°8 N. 155°9 W.<br>Ile Kodiak, Alaska<br>Magn. 5.4<br>h=ca 33 Km.<br>D=ca 14.050 Km.                        |
| 06 FEV.            | L.    | i P Z<br>i S NCEL<br>M X   | 19-28-14,2<br>47,5<br>29-00  |          | X:9,5            | C<br>O=ca 19-27-29 Lwi.<br>Probablement région<br>du Ruwenzori<br>Données insuffisantes<br>Magn.Lwi.ca 3.8<br>D=ca 295 Km.          |
|                    | U.    | i (P) Z  | 19-28-33,3   |          |                  |   |
|                    | A.    | i P Z<br>i S X<br>M X  | 19-28-15,3<br>50,0<br>29-00  |          | X:19             | C   |
| 07 FEV.            | L.    | i P Z<br>e L CZ<br>M CZ  | 11-03-55,8<br>27-00<br>29-30   | ca 28    | 1à1,5            | D   |
| 07 FEV.            | L.    | e Z/X  | 11-33-57   |          |                  | C   |
| 08 FEV.            | L.    | e P X  | 19-02-41   |          |                  | C<br>O= 18-54-51,2<br>28°4 S. 62°6 E.<br>Océan Indien<br>h=ca 33 Km.<br>D=ca 4.600 Km.  |

| Date Station       | Phase   | Temps  | Pér. sec | B. mm | Mo. du sol             | Remarques.  |
|--------------------|---|--|----------|-------|------------------------|---|
| 1964<br>09 FEVRIER | L. i! P' Z<br>e pP' Z                         | 02-18-57,5<br>20-55                            |          |       | C!                     | O= 02-00-07,3<br>16°5 S. 179°2 W.<br>Région des Iles Fidji<br>Magn. 5.3<br>h=ca 480 Km.<br>D=ca 16.300 Km.                  |
| 09 FEV.            | L. i P NC<br>i!! P Z<br>i NC<br>i S NLEL      | 12-06-04,3<br>04,4<br>06,4<br>08,2             |          |       | N!W<br>C!!<br>WA:6,5   | O=ca 12-05-59 Lwi.<br>Ca 2°3 S. ca 29°1 E.<br>32 Km.NE. de Bukavu<br>(Rép. dém. du Congo)<br>Magn.Lwi.ca 3.0<br>D=ca 34 Km. |
|                    | U. i! P Z<br>i S Z                            | 12-06-21,0<br>35,6                             |          |       | D!                     |   |
|                    | A. i P X<br>i S X<br>e S EW                   | 12-06-14,0<br>23,8<br>24                       |          |       | C!<br>X:16             |   |
| 10 FEV.            | L. i Z<br>M Z                                 | 11-55-21,6<br>52                               |          |       | Z:3,5                  |   |
| 10 FEV.            | L. e L CZ<br>M CZ                             | 18-03-10<br>07-10                              | ca 20    | 2     |                        | 6°1 S. 104°1 E.<br>Sud de Sumatra<br>D=ca 8.350 Km.   |
| 11 FEV.            | L. i P' Z                                     | 02-54-14,3                                     |          |       | C                      | O= 02-34-26,8<br>19°5 S. 174°0 W.<br>Région des Iles Tonga<br>Magn. 4.9<br>h=ca 33 Km.<br>D=ca 16.540 Km.                   |
| 11 FEV.            | L. i (P) Z<br>e (S) NC<br>M Z                 | 16-06-25,3<br>08-31,8<br>09-50                 |          |       | (d)<br>Z:11,5<br>X:3,2 | O= 16-03-26 B.P.I.<br>13°0 S. 34°0 E.<br>Lac Nyassa<br>Magn.Lwi.ca 4,5  |
|                    | A. ei P X<br>i P X<br>ei S X<br>ei S X<br>M X | 16-06-19,6<br>30,6<br>08-24,1<br>36,8<br>09-47 |          |       | Z:6,5                  |   |
| 11 FEV.            | L. i P' Z<br>i Z                              | 18-40-46,8<br>41-00,8                          |          |       |                        | O=18-21-05,5<br>15°9 S. 173°1 W.<br>Région des Iles Samoa<br>Magn. 5.2<br>h=ca 33km.<br>D=ca 16.870 Km.                     |



| Date Station | Phase    | Temps      | Pér. sec | B. mm | Mo. du sol | Remarques  |
|--------------|----------|------------|----------|-------|------------|--|
| 1964         |          |            |          |       |            |  |
| 12 FEV. L.   | i P Z    | 13-10-17,1 |          |       | Z: 13,5 D  | O=ca 13-09-04,4 Lwi.<br>6°5 S. 30°7 E.<br>Tanzanie<br>Magn.Lwi.ca 3.9<br>D=ca 513 Km.          |
| U.           | i P Z    | 13-10-01,5 |          |       |            |  |
| A.           | i P Z    | 13-10-07,8 |          |       |            |  |
|              | ei S X   | 55,8       |          |       | X:3        |  |
|              | i S Z    | 58,3       |          |       |            |  |
|              | M X      | 11-18      |          |       |            |  |
| 12 FEV. L.   | e P' Z   | 22-53-52   |          |       | c          | O= 22-33-59,2  |
|              | e NC     | 56         |          |       | N          | 15°3 S. 174°4 W.   |
|              | e L CZ   | 23-46-07   |          |       |            | Région des Iles Samoa<br>Magn. 5.0<br>h=ca 33 Km.<br>D=ca 16.800 Km.                           |
| 13 FEV. L.   | e P Z    | 10-15-30   |          |       |            | O= 10-03-50,6  |
|              | M CZ     | 48-37      | ca 20    | 1,5   |            | 26°1 N. 100°9 E.<br>Province de Yunnan,<br>Chine<br>Magn. 4.7<br>D=ca 8.330 Km.                |
| 13 FEV. L.   | i P Z    | 11-34-23,5 |          |       | D          | O= 11-21-46,7  |
|              | i! P Z   | 25,2       |          |       | C!         | 18°1 S. 56°8 W.<br>Frontière<br>Bolivie - Brésil<br>Magn. 5.3<br>h=ca 33 Km.<br>D=ca 9.460 Km. |
| 13 FEV. L.   | e L CZ   | 11-22-07   |          |       |            |  |
|              | M CZ     | 33-07      | 20       | 2,5   |            |  |
| 14 FEV. L.   | ei P' Z  | 16-48-37,1 |          |       | D          | O= 16-29-45,0  |
|              | i P' Z   | 37,8       |          |       | C          | 5°1 S. 151°7 E.  |
|              | i! P' Z  | 39,3       |          |       | C!         | Nouvelle Bretagne  |
|              | i Z      | 49-28,9    |          |       |            | h=ca 55 Km.  |
|              | ei PP CZ | 50-15      |          |       |            | D=ca 13.610 Km.  |
|              | M CZ     | 17-31-07   | ca 26    | 3     |            |  |
|              | M CZ     | 34-37      | 24       | 3,5   |            |  |

| Date<br>Station    | Phase                              | Temps                 | Pér.<br>sec                                 | B..<br>mm | Mo.<br>du<br>sol | Remarques.  |
|--------------------|------------------------------------|-----------------------|---|-----------|------------------|---|
| 1964<br>14 FEVRIER | L. ei (P)<br>ei (S)<br>M           | Z<br>EC<br>Z          | 19-20-52,4<br>21-38,6<br>22-09              |           | Z 11             | O=ca 19-19-35<br>Probablement région<br>Sud du lac Victoria<br>Magn.Lwi.ca 3,3<br>D=ca Lwi 490 Km.                                  |
|                    | U. i (P)<br>i S<br>M               | Z<br>Z<br>Z           | 19-20-54,9<br>21-28,7<br>22-07              |           |                  |   |
|                    | A. ei P<br>i P<br>ei S<br>i S<br>M | Z<br>Z<br>X<br>X<br>Z | 19-20-29,1<br>33,4<br>21-09,4<br>18,8<br>41 |           | X 2,5            |   |
| 14 FEV.            | L. i P<br>i! P<br>i! S             | Z<br>Z<br>NC          | 21-07-35,9<br>36,2<br>52,5                  |           | X 9              | D! O=ca 21-07-11,5 Lwi.<br>C!!NE Ca 3°4 S. 29°1 E.<br>Ca 5 Km.au S.d'Uvira<br>(Rép.dém.du Congo)<br>Magn.Lwi.ca 3.0<br>D=ca 137 Km. |
|                    | U. i P<br>i S                      | Z<br>XNS              | 21-07-13,9<br>15,4                          |           |                  |   |
|                    | A. i P<br>i S                      | Z<br>X                | 21-07-30,4<br>43,5                          |           | X:12,5           | D   |
| 16 FEV.            | L. e P                             | Z                     | 00-24-37                                    |           |                  | O=00-17-15,7<br>30°1 N. 51°2 E.<br>S.W. de l'Iran<br>Magn. 5;3<br>h=ca 37 Km.<br>D=ca 4.270 Km.                                     |
| 17 FEV.            | L. i<br>i P<br>i S<br>M            | Z<br>Z<br>NCEC<br>X   | 15-21-01,0<br>05,3<br>29,0<br>40            |           | X 12             | C<br>O=ca 15-20-32 Lwi.<br>Probablement région<br>à ca 200 Km.N.W.<br>de Lwiro.<br>Magn.Lwi. ca 3.5<br>D=ca.Lwi. 200 KM.            |
|                    | U. ei S<br>M<br>M                  | X<br>X<br>X           | 15-21-47,8<br>22-12<br>18                   |           | X 3<br>X 2,5     |   |
|                    | A. i P<br>i S<br>M                 | Z<br>Z<br>ZX          | 15-21-15,3<br>47,9<br>22-11                 |           | X 4,5            |   |

| Date<br>Station | Phase   | Temps  | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.  |
|-----------------|---|--|-------------|----------|------------------|---|
| 1964<br>18 FEV. | L. i S Z<br>M Z                                     | 02-13-42,1<br>14-35                            |             |          |                  | O=ca 02-11-00 B.P.I.<br>Probablement<br>Afrique Centrale.                                       |
|                 | U. i P Z<br>i (S) Z<br>i S Z<br>M ZX                | 02-12-39<br>13-20,7<br>28,7<br>14-06           |             |          |                  |   |
|                 | A. ei (P) Z<br>ei S ZX<br>i S Z<br>M Z              | 02-12-41,8<br>13-47,3<br>49,3<br>14-29         |             |          |                  |   |
| 18 FEV.         | L. ei P Z<br>i! P Z                                 | 03-59-27,3<br>29,9                             |             |          | c<br>C           | O= 03-48-35,6<br>27°5 N. 91°1 E.<br>Bhuton<br>Magn. 5.6<br>h=ca 30 Km.<br>D=ca 7.410 Km.        |
| 18 FEV.         | L. i P' Z<br>i! P' Z<br>i PP' Z<br>i PP Z           | 05-02-09,0<br>09,5<br>03-29,9<br>05-46,8       |             |          | D<br>C!          | O= 04-42-47,7<br>15°5 S. 175°0 W.<br>Iles Tonga<br>Magn. 4.8<br>h=ca 289 Km.<br>D=ca 16.730 Km. |
| 18 FEV.         | L. i P Z<br>ei PP CZ<br>ei S CZ<br>ei Lr CZ<br>M CZ | 12-33-49,0<br>35-19<br>39-59<br>44-23<br>47-45 |             |          | D                | O= 12-26-26,8 I.S.C.<br>8°98 S. 67°31 E.<br>Océan Indien<br>D=ca 4.320 Km.                      |
| 18 FEV.         | L. M Z  | 14-01-05                                       |             |          |                  | Kariba  |
|                 | U. M Z  | 14-00-34                                       |             |          |                  |   |
|                 | A. i P Z<br>i S Z<br>M Z<br>M Z                     | 13-56-43<br>59-14<br>14-00-54<br>01-04         |             |          |                  |   |

| Date<br>Station | Phase   | Temps  | Pér.<br>sec | B.<br>mm      | Mo.<br>du<br>sol | Remarques.   |
|-----------------|---|--|-------------|---------------|------------------|--|
| 1964            |   |  |             |               |                  |  |
| 22 FEV.         | L. ei P Z<br>M Z  | 14-37-55(7)<br>39-31                                     |             | ca 30         |                  | O=ca 14-36-35 Lwi.<br>Ca 7°1 S. ca 30°6 E.<br>Ca 90 Km. à l'Est de<br>Baudouinville<br>(Tanzanie)<br>Magn.Lwi.ca 4.1<br>D=ca 575 Km. |
|                 | U. ei (P) X<br>M X  | 14-37-38,4<br>38-54                                      |             | X:2           |                  |  |
|                 | A. i P Z<br>e S X<br>i S Z<br>M ZX                              | 14-37-46,8<br>38-41<br>41,7<br>39-17                     |             | X:4           |                  |  |
| 23 FEV.         | L. e P NC<br>e S CNCE<br>e L CZ<br>e CZ<br>M CZ                 | 22-48-53,6<br>55-00<br>58-14<br>23-03-00<br>10-22        |             | ca 17 3       |                  | O= 22-41-06,3<br>39°2 N. 23°7 E.<br>Mer d'Egée<br>Magn. 4.5<br>h=ca 33 Km.<br>D=ca 4.610 Km.   |
| 24 FEV.         | L. ei (P) NC<br>i (S) ECEL<br>i! S NCNL<br>i! ECEL<br>M NLEL    | 05-30-20,8<br>31-32<br>36<br>59,8<br>32-26               |             |               |                  | O=ca 05-28-42 Lwi.<br>Probablement<br>Afrique Centrale.<br>Magn.Lwi.ca 5 à 5½<br>D=ca 700 Km.  |
|                 | A. i P Z<br>i! Z<br>i S X<br>M X                                | 05-30-06,9<br>31-07,4<br>11,4<br>32-04                   |             | X:40<br>WA3,2 |                  |  |
| 24 FEV.         | L. i P NC<br>i! S NCNL!   | 16-24-58,4<br>25-09,1                                    |             |               | CnE<br>WA:2,2    | O= 16-24-4(3)<br>Magn.Lwi.ca 3.3<br>D=ca 90 Km.  |
|                 | A. i P Z<br>i! S XZ   | 16-25-07,8<br>23,8                                       |             | X:19,5        |                  |  |
| 25 FEV.         | L. e P NC<br>i PP CZ<br>i S CN<br>i ScS CE<br>e : Lr CZ<br>M CZ | 00-42-29<br>44-16<br>49-03<br>52-21<br>54-51<br>01-00-00 |             |               | n<br>18 10       | O= 00-34-32,0<br>44°7 S. 37°5 E.<br>Région de l'Île du<br>Prince Edouard<br>Magn. 6.7<br>h=ca 33 Km.<br>D=ca 4.780 Km.               |



| Date Station       | Phase  | Temps   | Pér. sec | B. mm          | Mo. du sol | Remarques  |
|--------------------|--|---|----------|----------------|------------|--|
| 1964<br>25 FEVRIER |  |   |          |                |            |  |
| L.                 | i S NC<br>M NC   | 22-35-12,4<br>37-00                                       |          |                |            | O=ca 22-33-11 Lwi.<br>Graben Est Africain<br>D=ca 750 Km.  |
| A.                 | i P Z<br>i S Z(X)<br>i S Z<br>M X<br>M Z                     | 22-34-40,0<br>35-47,9<br>57,9<br>36-30<br>35              |          | X2,5<br>Z:25   | c          |  |
| 26 FEV.            | L. ei (P) Z<br>i P Z<br>ei S NC<br>i S ZEC<br>i S ZEL<br>M Z | 09-41-03,4<br>04,4<br>42-13,0<br>14,4<br>27,4<br>43-19    |          | Z:54<br>X:5,5  |            | O=ca 09-39-31,3<br>7°5 S. 31°6 E.<br>Tanzanie<br>Magn.Lwi.ca 4.6<br>D=ca 662 Km.   |
| A.                 | ei P Z<br>i P Z<br>i XZ<br>i S X<br>M! X                     | 09-40-52,7<br>53,4<br>41-08,1<br>54,6<br>42-30            |          | 12             |            |  |
| 26 FEV.            | L. ei P' XZ<br>i P' Z  | 21-36-53,5<br>53,8  |          |                | c<br>D     | O= 21-17-08,1<br>20°7 S. 174°4 W.<br>Région des Iles Tonga<br>Magn. 5.0<br>h=ca 33 Km.<br>D=ca 16.420 Km.                            |
| 27 FEV.            | L. i P Z<br>i P Z<br>i! P ZX<br>i S NC                       | 02-35-14,5<br>15,1<br>17,5<br>37-24,0                     |          | X:52<br>WA:1,8 | D<br>C     | O=ca 02-32-26,0 Lwi.<br>O= 02-32-23,7 USCGS.<br>9° S. 38°2 E. Lwi.<br>7°6 S. 39°6 E. USCGS.<br><br>Magn.Lwi.ca 6.0<br>D=ca 1.280 Km. |
| U.                 | i P Z<br>i! P Z<br>ei S NSEW                                 | 02-35-03,9<br>04,9<br>37-05,4                             |          |                | D<br>C     |  |
| A.                 | ei P Z<br>i P Z<br>i X<br>i Z<br>i S XNSEW<br>M X            | 02-34-59,3<br>35-00,3<br>36-04,8<br>38,8<br>59,8<br>38-47 |          | X:37<br>WA:1,0 | d<br>C     |  |

| Date<br>Station    | Phase   | Temps  | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.  |
|--------------------|---|--|-------------|----------|------------------|---|
| 1964<br>27 FEVRIER |   |  |             |          |                  |   |
| L.                 | i! P Z<br>i CZ<br>e PP CZ<br>i S CNCE<br>i S CZ<br>e L CZ<br>e CZ<br>M CZ | 15-21-41,7<br>22-05<br>24-32<br>30-36<br>41<br>38-00<br>43-00<br>46-00 |             |          |                  | D!<br>O= 15-10-48,8<br>21°7 N. 94°4 E.<br>Birmanie<br>Magn. 6.4<br>h=ca 102 Km.<br>D=ca 7.590 Km.                                 |
| 28 FEV. L.         | ei Z<br>i Z   | 17-58-02,7<br>11,5   |             |          |                  | cD<br>D<br>O= 17-47-05,9<br>18°2 N. 94°3 E.<br>Près de la côte W.<br>de la Birmanie<br>Magn. 5.3<br>h=ca 43 Km.<br>D=ca 7.510 Km. |
| 29 FEV. L.         | e P' Z  | 20-33-31   |             |          |                  | O= 20-13-41,6<br>18°2 S. 172°8 W.<br>Région des Iles Tonga<br>Magn. 5.1<br>h=ca 33 Km.<br>D=ca 16.730 Km.                         |
| 01 MARS L.         | i! P Z<br>i S CN<br>e L CZ  | 00-02-04,0<br>12-17,2<br>24-00   |             |          |                  | D<br>N<br>O= 23-49-40,8<br>8°5 S. 112°7 E.<br>Près de la côte Sud<br>de Java<br>Magn. 5.8<br>h=ca 73 Km.<br>D=ca 9.290 Km.        |
| 02 MARS L.         | i P' Z<br>e SS CNCE<br>e L CZ   | 19-52-18,4<br>20-14-50<br>43-00  |             |          |                  | C<br>O= 19-32-41,7<br>18°9 S. 174°8 W.<br>Région des Iles Tonga<br>Magn. 5.3<br>h=ca 105 Km.<br>D=ca 16.520 Km.                   |





| Date Station    | Phase                                 | Temps                            | Pér. sec | B. mm           | Mo. du sol | Remarques.  |
|-----------------|---------------------------------------|----------------------------------|----------|-----------------|------------|---|
| 1964<br>03 MARS | L. i P Z<br>i! P ZX<br>i S Z(NS)      | 19-25-49,6<br>51,1<br>26-13,3    |          |                 | C<br>D     | O=ca 19-25-17,5 Lwi.<br>1°3 S. 27°3 E.<br>Ca 105 Km. SE. de<br>Lubutu (Rép. dém.<br>du Congo)<br>Magn.Lwi.ca 3.1<br>D=ca 198 Km.    |
|                 | U. i P Z<br>i! P Z<br>ei (S) X<br>M X | 19-26-03,0<br>03,2<br>33,2<br>50 |          | X:5<br>Z:60     | d<br>C!    |   |
|                 | A. ei P Z<br>i P Z<br>M               | 19-26-03,0<br>03,2<br>50         |          | X:2,5<br>Z:50,5 | d<br>C!    |   |
| 04 MARS         | L. i P Z                              | 21-38-58,3                       |          |                 | C          | O= 21-31-49,1<br>34°8 N. 23°9 E.<br>SW. de la côte de<br>Crête<br>Magn. 4.2<br>h=ca 40 Km.<br>D=ca 4.120 Km.                        |
| 05 MARS         | L. e P' Z<br>i Z<br>e Z               | 10-24-50<br>52,8<br>28-16        |          |                 | d          | O= 10-05-37,2<br>11°2 S. 162°2 E.<br>Région des Iles<br>Salomon<br>Magn. 5.1<br>h=ca 38 Km.<br>D=ca 14.640 Km.                      |
| 05 MARS         | L. i P Z<br>i S X                     | 15-51-37,1<br>52-07,6            |          | X:4<br>Z:45     | D          | O=ca 15-50-56 Lwi.<br>0°1 N. 29°6 E.<br>Ca 30 Km. à l'ESE. de<br>Butembo (Rép. dém.<br>du Congo)<br>Magn.Lwi.ca 3.3<br>D=ca 267 Km. |
|                 | U. i P Z<br>i P Z                     | 15-51-51,8<br>52-00,3            |          |                 | D          |   |
|                 | A. i! P Z<br>i! P ZX                  | 15-51-41,4<br>48,6               |          |                 |            |   |
| 05 MARS         | L. i P' Z                             | 20-51-52,4                       |          |                 | C          | O= 20-31-57,4<br>16°4 S. 173°0 W.<br>Sud des Iles Tonga<br>Magn. 4.7<br>h=ca 33 Km.<br>D=ca 16.850 Km.                              |



| Date<br>Station    | Phase  | Temps   | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.   |
|--------------------|--|---|-------------|----------|------------------|--|
| 1964<br>06 MARS L. | e PP CZ  | 19-18-01  |             |          |                  | O= 18-57-16,1<br>06°1 S. 154°4 E.<br>Région de la Nouvelle<br>Bretagne<br>Magn. 5.8<br>h=ca 74 Km.<br>D=ca 13.900 Km.    |
| 06 MARS L.         | e P Z  | 21-19-26  |             |          |                  | O= 21-05-50,2<br>19°7 S. 70°5 W.<br>Près de la côte<br>du Chili<br>Magn. 5.3<br>h=ca 50 Km.<br>D=ca 10.890 Km.           |
| 07 MARS L.         | ei P' Z  | 03-53-12  |             |          | dC               | O= 03-34-25,2<br>20°2 S. 177°8 W.<br>Région des Iles Fidji<br>Magn. 4.2<br>h=ca 481 Km.<br>D=ca 16.190 Km.               |
| 07 MARS L.         | i Z<br>e CE<br>ei CN<br>e CNCE<br>i CN<br>M CZ | 10-39-50,0<br>47-18<br>51-01<br>53-01<br>54-01<br>58-00 |             | ca 20    | 2,5              | D  |
| 07 MARS L.         | e P' Z<br>i P' Z                               | 23-32-07<br>07,4  |             |          | D<br>C           | O= 23-13-25,4<br>19°9 S. 177°9 W.<br>Région des Iles Fidji<br>Magn. 4.5<br>h=ca 534 Km.<br>D=ca 16.200 Km.               |
| 08 MARS L.         | e P' Z<br>e PS CZ<br>e L CZ                    | 01-54-40<br>02-06-00<br>32-40                           |             |          |                  | O= 01-35-48,1<br>44°0 S. 168°4 E.<br>Ile du Sud de la<br>Nouvelle Zélande<br>Magn. 5.6<br>h=ca 33 Km.<br>D=ca 13.500 Km. |

| Date<br>Station | Phase   | Temps                                       | Pér.<br>sec | B.<br>mm        | Mo.<br>du<br>sol | Remarques.  |
|-----------------|---|---|-------------|-----------------|------------------|---|
| 1964<br>08 MARS | L. i P Z<br>i S NC(NL)                        | 11-00-14,7<br>29,0                          |             | X:8             |                  | O=ca 10-59-53,5 Lwi.<br>3°3 S. 29° E.<br>Ca 18 Km. à l'W.<br>d'Uvira (Rép. dém.<br>du Congo)<br>Magn.Lwi.ca 3.0<br>D=ca 119 Km. |
|                 | U. Sans marques de minutes                    |   |             |                 |                  |   |
|                 | A. i P Z                                      | 11-00-13,4                                  |             |                 |                  |   |
| 08 MARS         | L. i! P ZNC<br>i! S ELNS                      | 22-26-13,2<br>19,9                          |             | WA:9            | C!NW!            | O=ca 22-26-02,9 Lwi.<br>2°4 S. 29°3 E.<br>Ca 55 Km. WNW.<br>d'Astrida (Rwanda)<br>Magn.Lwi.ca 3.6<br>D=ca 58 Km.                |
|                 | A. i Z<br>i P Z<br>i S X(NS)                  | 22-26-10<br>12,3<br>18,5                    |             |                 | C!               |   |
| 08 MARS         | L. i! P Z<br>i S NS                           | 22-47-38,8<br>45,3                          |             | X:29<br>WA:3,3  | C!NW             | O=ca 22-47-28,7 Lwi.<br>2°4 S. 29°3 E.<br>Ca 55 Km. WNW.<br>d'Astrida (Rwanda)<br>Magn.Lwi.ca 3.1<br>D=ca 58 Km.                |
|                 | A. i! P ZX<br>ei S EW                         | 22-47-38,0<br>43,9                          |             |                 | C!               |   |
| 09 MARS         | L. i P Z<br>i P Z<br>M Z                      | 10-04-42,6<br>56,2<br>05-59                 |             | Z:20,5<br>X:2,5 |                  | O=ca 10-03-37,4 Lwi.<br>5°8 S. 30°8 E.<br>Ca 115 Km. SE.<br>d'Oudjidji (Tanzanie)<br>Magn.Lwi.ca 3.6<br>D=ca 455 Km.            |
|                 | U. i P Z<br>M Z                               | 10-04-26,7<br>05-25                         |             | X:2,5           |                  |   |
|                 | A. i! P Z<br>i! P Z<br>i S ZX<br>i! Z<br>M ZX | 10-04-32,8<br>43,2<br>05-14,4<br>27,4<br>38 |             | X:5             | C!               |   |
| 10 MARS         | L. i Z  | 08-30-06,7                                  |             |                 | C                |   |
| 10 MARS         | L. e (PP) Z                                   | 14-17-21                                    |             |                 |                  | O= 13-59-54,8<br>1°9 N. 127°5 E.<br>Déroit des Moluques<br>Magn. 5.6<br>h=ca 117 Km.<br>D=ca 11.090 Km.                         |
| 10 MARS         | L. e Z<br>i Z                                 | 17-08-16<br>35,4                            |             |                 |                  | Kariba, Rhodésie  |
| 10 MARS         | L. i Z  | 20-38-32,4                                  |             |                 | C                | Kariba, Rhodésie  |

| Date Station       | Phase                               | Temps                                  | Pér. sec | B. mm        | Mo. du sol  | Remarques.   |
|--------------------|-------------------------------------|--|----------|--------------|-------------|--|
| 1964<br>11 MARS L. | e Z                                 | 01-20-00                               |          |              |             | O= 01-06-00,4<br>1°8 N. 127°1 E.<br>Déroit des Moluques<br>Magn. 5.6<br>h=ca 58 Km.<br>D=ca 10.930 Km.     |
| 11 MARS L.         | e Z<br>ei Z<br>ei Z                 | 13-02-19<br>41,7<br>03-07,0            |          |              |             |  |
| 11 MARS L.         | i P Z<br>i S ZNC<br>M X             | 14-08-55,5<br>09-52,2<br>10-37         |          |              | c           | O=ca 14-07-40,7 Lwi.<br>6°5 S. 31°1 E.<br>Tanzanie<br>Magn.Lwi.ca 4.7<br>D=ca 530 Km;                      |
| U.                 | i P Z<br>i P Z<br>i! P ZX<br>M X    | 14-08-38,8<br>39,4<br>48,6<br>09-50    |          | X:10<br>Z:94 | C<br>D<br>C |  |
| A.                 | i P Z<br>i! P ZX<br>M X             | 14-08-45,4<br>56,4<br>10-00            |          | X:12         | C<br>D      |  |
| 11 MARS L.         | e P Z<br>e ScS CZ<br>e L CZ<br>M CZ | 23-42-12<br>51-45<br>55-57<br>00-00-57 | 17       | 3,5          |             | O= 23-34-21,2<br>27°7 N. 57°5 E.<br>Iran<br>Magn. 4.6<br>h=ca 42 Km.<br>D=ca 4.510 Km.                     |
| 12 MARS L.         | e P' Z<br>i P' Z                    | 04-49-09<br>10,5                       |          |              | D           | O= 04-30-21,1<br>22°9 S. 179°2 W.<br>Région des Iles Fidji<br>Magn. 4.6<br>h=ca 378 Km.<br>D=ca 15.890 Km. |
| 12 MARS L.         | ei S X<br>M Z                       | 16-08-01,6<br>45                       |          | Z:21<br>X: 4 |             | O=ca 16-05-37 Lwi.<br>6°9 S. 31°4 E.<br>Tanzanie<br>Magn.Lwi.ca 4.0<br>D=ca 590 Km.                        |
| U.                 | i P Z<br>i S Z<br>M X               | 16-06-44,2<br>07-35,2<br>55            |          | X:2,5        |             | O=ca 16-05-30 BPI.<br>7°0 S. 29°0 E. BPI.  |
| A.                 | ei P Z<br>M X                       | 16-06-49,6<br>08-13                    |          | X:6,5        |             |  |

| Date<br>Station | Phase |                   |                         | Temps                     | Pér.<br>sec                                  | B.<br>mm | Mo.<br>du<br>sol | Remarques.  |
|-----------------|-------|-------------------|-------------------------|---------------------------|--|----------|------------------|---|
| 1964<br>12 MARS | L.    | e<br>i            | Z<br>Z<br>M             | 09-24-26<br>25-23,0<br>47 |  |          |                  | Kariba, Rhodésie  |
| 13 MARS         | L.    | i                 | P                       | Z                         | 15-19-49,5                                   | X:10,5   | c                | O=ca 15-19-20 Lwi.<br>Ca 1°9 S. 27°2 E.<br>Ca 180 Km.NE.de Kindu<br>(Rép. dém. du Congo)<br>Magn.Lwi.ca 3.2<br>D=ca 178 Km. |
|                 | U.    | i                 | S<br>M                  | X<br>X                    | 15-20-31,1<br>51                             |          |                  |   |
|                 | A.    | i<br>i            | P<br>S<br>M             | Z<br>Z(X)<br>X            | 15-20-03,2<br>35,4<br>52                     | X:4      |                  |   |
| 14 MARS         | L.    | i                 | P                       | Z                         | 02-46-33,1                                   |          | d                | O= 02-37-24,6<br>47°1 N. 08°3 E.<br>Suisse<br>Magn. 4.7<br>h=ca 33 Km.<br>D=ca 5.810 Km.                                    |
| 14 MARS         | L.    | i!                | P'                      | Z                         | 12-03-30,0                                   |          | D                | O= 11-44-53,8<br>20°6 S. 178°5 W.<br>Iles Fidji<br>Magn. 4.7<br>h=ca 561 Km.<br>D=ca 16.100 Km.                             |
| 14 MARS         | L.    | e                 | P'                      | Z                         | 15-24-11                                     |          |                  | O= 15-05-54,4<br>13°7 S. 172°3 E.<br>Nouvelles Hébrides<br>Magn. 5.1<br>h=ca 611 Km.<br>D=ca 15.610 Km.                     |
| 14 MARS         | L.    | i!                | P                       | Z                         | 15-25-24,0                                   |          | C!               | O= 15-12-22,4<br>15°9 N. 60°5 W.<br>Iles Leeward<br>Magn. 5.4<br>h=ca 31 Km.<br>D=ca 9.990 Km.                              |
| 14 MARS         | L.    | e<br>i<br>ei<br>e | P<br>PP<br>S<br>Lr<br>M | Z<br>CZ<br>CE<br>CZ<br>CZ | 16-44-40<br>46-17<br>50-55<br>55-55<br>59-25 |          | C                | O= 16-36-52,1<br>1°9 S. 12°9 W.<br>Atlantique<br>Magn. 5.4<br>h=ca 33 Km.<br>D=ca 4.630 Km.                                 |



| Date Station    | Phase   | Temps  | Pér. sec | B. mm                    | Mo. du sol | Remarques.  |
|-----------------|---|--|----------|--------------------------|------------|---|
| 1964<br>14 MARS | L. i Z  | 18-20-37,7   |          |                          | c          |   |
| 14 MARS         | L. i P Z<br>e S CE<br>i CE<br>e CZ<br>M CZ  | 18-51-15,0<br>57-29<br>49<br>19-03-23<br>06-25   | ca 20    | 7                        | D          | O= 18-43-27,4<br>1°8 S. 13°2 W.<br>Atlantique<br>Magn. 4.7<br>h=ca 33 Km.<br>D=ca 4.660 Km.                   |
| 15 MARS         | L. i P Z  | 08-10-54,0   |          |                          | D          | O= 07-59-58,0<br>49°7 N. 78°0 E.<br>Karaquie, URSS.<br>Magn. 5.6<br>h=ca 0 Km.<br>D=ca 7.420 Km.              |
| 15 MARS         | L. i (P) Z<br>i! P ZCZ<br>i PP CN<br>i! S CE<br>i Lq CZ<br>i CE<br>i CN<br>M CZ   | 22-39-29,0<br>29,5<br>41-29<br>46-47<br>50-54<br>52-54<br>58-34<br>23-04-54                | ca 18    | 90                       | d<br>D!NW  | O= 22-30-26,0<br>36°2 N. 7°6 W.<br>W. de Gibraltar<br>Magn. 6.2<br>h=ca 27 Km.<br>D=ca 5.670 Km.              |
| 16 MARS         | L. i P Z  | 01-16-47,2   |          |                          | C          | O= 01-05-17,6<br>36°9 N. 95°5 E.<br>Province Tsinghai,<br>Chine<br>Magn. 5.9<br>h=ca 33 Km.<br>D=ca 8.100 Km. |
| 16 MARS         | L. i P Z<br>i P Z<br>i (S) Z<br>M ZX<br>U. M X<br>M X<br>A. i P Z<br>i S Z<br>M X | 03-02-51,8<br>03-07,9<br>39,9<br>04-26<br>03-03-39<br>48<br>03-02-42,2<br>03-33,2<br>04-03 |          | X:3<br>X:3<br>X:3<br>X:5 | C          | O=ca 03-01-35 Lwi.<br>Ca 6°7 S. ca 30°9 E.<br>Tanzanie<br>Magn.Lwi.ca 4.1<br>D=ca 545 Km.                     |



| Date<br>Station | Phase  | Temps   | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.   |
|-----------------|--|---|-------------|----------|------------------|--|
| 1964<br>16 MARS | L. e P' Z<br>i P' Z  | 21-58-17<br>18,1  |             |          | D<br>C!          | O= 21-39-42,5<br>20°6 S. 178°7 W.<br>Région des Iles Fidji<br>Magn. 4.9<br>h=ca 578 Km.<br>D=ca 16.080 Km.                   |
| 18 MARS         | L. e P' Z<br>i (PP) CZ<br>i pPP CZ<br>i pPPP CZ<br>i SPP Z<br>i CZ<br>M CZ   | 04-55-15<br>59<br>57-37<br>59-56<br>05-06-09<br>07-14<br>32   | 22          | 2,5      |                  | O= 04-37-26,9<br>52°5 N. 153°6 E.<br>Mer d'Okhotsk<br>Magn. 5.6<br>h=ca 440 Km.<br>D=ca 12.480 Km.                           |
| 19 MARS         | L. i P' Z<br>i! P' Z<br>e Z  | 05-04-15,3<br>15,6<br>06-58   |             |          | D<br>C!          | O= 04-45-50,9<br>21°9 S. 179°5 E.<br>Région des Iles Fidji<br>Magn. 4.7<br>h=ca 613 Km.<br>D=ca 15.850 Km.                   |
| 19 MARS         | L. e P Z<br>i P CZ<br>i PP CZ<br>i S CE<br>i! S CE<br>i! Lr CN<br>i CZ<br>M CZ   | 09-49-02<br>03<br>50-13<br>54-19<br>26<br>57-03<br>58-01<br>10-03-29                                  | 15          | 9        | d<br>C           | O= 09-42-34,9<br>14°7 N. 56°3 E.<br>Mer d'Arabie<br>h=ca 33 Km.<br>D=ca 3.550 Km.  |
| 19 MARS         | L. e P' CZ<br>ei P' Z<br>i P' Z<br>i PP CZ<br>i SKSP CZ(CNCE)<br>e SS CN<br>e (SSS) CN<br>e CN<br>e CN<br>e CNCZ<br>M CZ | 22-03-54<br>56,7<br>04-02,5<br>07-44<br>18-10<br>27-10<br>32-10<br>46-10<br>49-10<br>57-(10)<br>23-11 | 18          | 5 ca     | d<br>C<br>D      | O= 21-44-03,8<br>15°1 S. 172°6 W.<br>Iles Samoa<br>Magn. 5.6<br>h=ca 33 Km.<br>D=ca 16.970 Km.                               |
| 20 MARS         | L. i! P Z<br>i! S NLEW<br>A. i! P Z<br>i S EW  | 05-58-46,1<br>59-01,8<br>05-58-41,6<br>53,3   |             |          | DIS!W!<br>C!NE   | O=ca 05-58-23,2 Lwi.<br>3°35 S. 29°2 E.<br>Ca 8 Km. NE. d'Uvira<br>(Rép. dém. du Congo)<br>Magn. Lwi. ca 5.2<br>D=ca 129 Km. |



| Date Station       | Phase   | Temps   | Pér. sec | B. mm     | Mo. sol     | Remarques.   |
|--------------------|---|---|----------|-----------|-------------|--|
| 1964<br>20 MARS L. | i P Z   | 19-11-50,4  |          |           | D           | O= 19-00-52,7<br>23°6 N. 94°4 E.<br>Birmanie<br>Magn. 5.7<br>h=ca 86 Km.<br>D=ca 7.630 Km.                             |
| 20 MARS L.         | e P' Z  | 19-35-04  |          |           |             | O= 19-15-16,3<br>19°8 S. 173°6 W.<br>Iles Tonga<br>Magn. 4.7<br>h=ca 33 Km.<br>D=ca 16.550 Km.                         |
| 21 MARS L.         | ei P Z  | 00-15-35,2  |          |           | dC          | O= 00-04-07,3 I.S.C.<br>3°4 S. 44°2 W.<br>Brésil<br>Magn. 5.0<br>D=ca 8.110 Km.  |
| 21 MARS L.         | e P Z<br>i PP CZ<br>i CZ<br>i! SKS CE<br>i! S CN<br>i SP CE<br>i PS CN<br>i SS CN<br>i! sSS CN<br>i! G CN<br>M CZ | 03-55-21<br>59-29<br>04-01-18<br>05-28<br>06-18<br>07-58<br>08-42<br>13-18<br>15-26<br>22-30<br>30-08 |          | 23à24 7,5 | C<br>S<br>W | O= 03-42-19,6<br>6°4 S. 127°9 E.<br>Mer de Banda<br>Magn. 5.4<br>h=ca 367 Km.<br>D=ca 10.980 Km.                       |
| 21 MARS L.         | i P' Z  | 16-46-36,1  |          |           | C           | O= 16-27-11,7<br>27°6 S. 177°2 W.<br>Iles Kermadec<br>Magn. 5.6<br>h=ca 33 Km.<br>D=ca 15.680 Km.                      |
| 22 MARS L.         | ei P Z<br>e PP CZ<br>e CZ<br>M CZ   | 08-48-46<br>52-37<br>09-21-07<br>30-07  |          | ca 20     | 3           | O= 08-35-06,4<br>35°7 S. 72°9 W.<br>Près de la côte du<br>Chili Central<br>Magn. 5.1<br>h=ca 33 Km.<br>D=ca 10.910 Km. |





| Date Station    | Phase  | Temps  | Pér. sec       | B. mm            | Mo. du sol | Remarques   |
|-----------------|--|--|----------------|------------------|------------|---|
| 1964<br>24 MARS | L. i (PP) Z  | 17-55-37,9   |                |                  | C          | O= 17-38-08,2<br>27°7 S. 68°7 W.<br>Frontière<br>Chili - Argentine<br>Magn. 4.5<br>h=ca 76 Km.<br>D=ca 10.620 Km.                       |
| 26 MARS         | L. ei PP CZ<br>ei PS CZ<br>● SS CN<br>M CZ<br>M CZ | 02-24-18<br>33-20<br>39-36<br>vers 03-04-36<br>08-06 | ca 24<br>ca 22 | ca 1,5<br>ca 1,5 | c<br>c     | O= 02-04-20,2<br>11°3 N. 142°0 E.<br>Cap York, Australie<br>Magn. 4.9<br>h=ca 33 Km.<br>D=ca 12.580 Km.                                 |
| 26 MARS         | L. i CZ<br>e CZ<br>i CZ<br>M CZ                    | 13-52-46<br>14-35-07<br>42-37<br>46-07               | 20             | 2,5              | C          | Probablement<br>O= 13-29-56,2<br>4°4 S. 104°7 W.<br>Pacifique, SW. des<br>Iles Galapagos<br>Magn. 4.9<br>h=ca 33 Km.<br>D=ca 14.790 Km. |
| 27 MARS         | L. e P Z<br>i Z                                    | 04-41-40<br>42-09,7                                  |                |                  | c<br>C     | O= 04-30-33,0<br>25°9 N. 95°8 E.<br>Birmanie<br>Magn. 5.4<br>h=ca 93 Km.<br>D=ca 7.820 Km.  |
| 27 MARS         | L. i P Z<br>i P Z<br>i S Z<br>i S NCEC<br>M ZX     | 05-05-52,3<br>06-02,1<br>07-45,3<br>57,1<br>09-11    |                |                  |            | O=ca 05-03-26 Lwi.<br>Ca 7°3 S. ca 37°6 E.<br>Tanzanie<br>Magn. Lwi. ca 5.0<br>D=ca 1.100 Km.   |
|                 | U. i P Z<br>i! P Z<br>M X                          | 05-05-44,0<br>52,5<br>08-46                          |                |                  |            | Z: 30<br>X: 8<br>X: 3,5   |
|                 | A. i P Z<br>i P Z<br>M X<br>M X                    | 05-05-40,4<br>46,9<br>08-34<br>48                    |                |                  |            | X: 5<br>X: 6  |



| Date Station    | Phase  | Temps   | Pér. sec | B. mm | Mo. du sol                 | Remarques.   |
|-----------------|--|---|----------|-------|----------------------------|--|
| 1964<br>27 MARS | L. e (P) Z<br>i P Z<br>i P Z<br>i S NC<br>M Z      | 08-26-32,9<br>37,4<br>40,2<br>27-48,7<br>28-37                    |          |       | (c)d<br>D                  | O=ca 08-24-54 Lwi.<br>Graben Est Africain<br>Magn.Lwi.ca 4.8<br>D=ca 750 Km.                                   |
|                 | U. i P Z<br>M Z                                    | 08-26-29,8<br>28-31   |          |       |                            |  |
|                 | A. i P Z<br>ei S X<br>i S Z<br>M X                 | 08-26-19,6<br>27-26,1<br>26,9<br>28-04                            |          |       | X:5                        |  |
| 27 MARS         | L. e P' Z<br>i! P' Z<br>i Z                        | 20-40-41<br>42,4<br>43-36   |          |       | c<br>(c)D!N                | O= 20-22-10,6<br>23°7 S. 179°9 E.<br>Iles Fidji<br>Magn. 5.0<br>h=ca 520 Km.<br>D=ca 15.760 Km.                |
| 27 MARS         | L. e P Z   | 23-14-27  |          |       |                            | O= 23-03-41,7<br>27°2 N. 89°3 E.<br>Bhutan<br>Magn. 6.3<br>h=ca 32 Km.<br>D=ca 7.230 Km.                       |
| 28 MARS         | L. i! P CZ<br>i P' Z<br>i P' EC<br>i! CZ<br>i PP X | 03-51-35<br>55-14,0<br>19<br>56-(10)<br>47                        |          |       | C!S!<br>WA:2,2<br>X:180    | O= 03-36-14,2<br>61°0 N. 147°8 W.<br>E. de Anchorage,<br>Alaska<br>Magn. 8.5<br>h=ca 33 Km.<br>D=ca 13.480 Km. |
| 28 MARS         | L. i Z<br>i Z<br>i Z<br>i Z<br>i Z<br>i Z          | 04-23-20,0<br>30-09,1<br>31-46,0<br>36-43,0<br>41-29,2<br>43-13,4 |          |       | D<br>C<br>C<br>C<br>C<br>D |  |
| 28 MARS         | L. i P' Z  | 05-54-41  |          |       | C!                         | O= 05-35-38,4<br>57°2 N. 153°0 W.<br>Alaska (Réplique)<br>Magn. 5.7<br>h=ca 33 Km.<br>D=ca 13.910 Km.          |

| Date<br>Station    | Phase                          | Temps                                 | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.  |
|--------------------|--------------------------------|---------------------------------------|-------------|----------|------------------|---|
| 1964<br>28 MARS L. | i P' Z<br>e PP Z               | 06-27-40,0<br>29-19                   |             |          | D                | O= 06-08-44,2<br>60°1 N. 148°6 W.<br>Alaska (Réplique)<br>Magn. 5.6<br>h=ca 20 Km.<br>D=ca 13.590 Km. |
| 28 MARS L.         | i P' Z<br>i! P' Z              | 06-51-32,2<br>32,7                    |             |          | D<br>C!          | O= 06-32-38,6<br>60°1 N. 147°6 W.<br>Alaska (Réplique)<br>Magn. 5.5<br>h=ca 33 Km.<br>D=ca 13.570 Km. |
| 28 MARS L.         | i! P' Z                        | 07-00-24,5                            |             |          | C!               | O= 06-41-28,0<br>59°9 N. 147°8 W.<br>Alaska (Réplique)<br>Magn. 5.5<br>h=ca 15 Km.<br>D=ca 13.600 Km. |
| 28 MARS L.         | i! P' Z<br>i! PP Z             | 07-02-52,6<br>04-38,2                 |             |          |                  | O= 06-43-57,0<br>58°3 N. 151°3 W.<br>Alaska (Réplique)<br>Magn. 6.1<br>h=ca 25 Km.<br>D=ca 13.790 Km. |
| 28 MARS L.         | i P' Z<br>i Z<br>i PP Z<br>i Z | 07-29-19,5<br>27,2<br>31-01,2<br>02,9 |             |          | C<br>C<br>cD!    | O= 07-10-21,4<br>58°8 N. 149°5 W.<br>Alaska (Réplique)<br>Magn. 6.1<br>h=ca 20 Km.<br>D=ca 13.730 Km. |
| 28 MARS L.         | i P' Z<br>i PP Z               | 07-49-31,7<br>51-20,2                 |             |          | C<br>C           | O= 07-30-29,6<br>57°4 N. 151°7 W.<br>Alaska (Réplique)<br>Magn. 5.7<br>h=ca 15 Km.<br>D=ca 13.890 Km. |
| 28 MARS L.         | e P' Z<br>i PP Z               | 08-52-46<br>54-36,6                   |             |          | c<br>D           | O= 08-33-47,0<br>58°1 N. 151°1 W.<br>Alaska (Réplique)<br>Magn. 5.6<br>h=ca 25 Km.<br>D=ca 13.810 Km. |

| Date<br>Station    | Phase                       | Temps                          | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.  |
|--------------------|-----------------------------|--------------------------------|-------------|----------|------------------|---|
| 1964<br>28 MARS L. | e P' Z<br>i Z<br>ei PP Z    | 08-58-56<br>56,1<br>09-00-42,6 |             |          | d<br>C           | O= 08-39-54,9<br>57°5 N. 151°6 W.<br>Alaska (Réplique)<br>Magn. 5.4<br>h= 20 Km.<br>D=ca 13.880 Km.   |
| 28 MARS L.         | e P' Z<br>i P' Z<br>i PP Z  | 09-20-03<br>03,3<br>21-53,6    |             |          | c<br>D           | O= 09-01-00,5<br>56°5 N. 152°0 W.<br>Alaska (Réplique)<br>Magn. 6.0<br>h=ca 20 Km.<br>D=ca 13.990 Km. |
| 28 MARS L.         | e P' X<br>i Z<br>i PP ZX    | 10-54-38<br>38,4<br>56-28,1    |             |          | D<br>C<br>D      | O= 10-35-38,9<br>57°2 N. 152°4 W.<br>Alaska (Réplique)<br>Magn. 6.0<br>h=ca 33 Km.<br>D=ca 13.910 Km. |
| 28 MARS L.         | e P' Z<br>i P' Z<br>i PP Z  | 11-27-22<br>23,0<br>28-55,1    |             |          | c<br>D<br>C      | O= 11-08-26,0<br>60°1 N. 148°4 W.<br>Alaska (Réplique)<br>Magn. 5.7<br>h=ca 15 Km.<br>D=ca 13.570 Km. |
| 28 MARS L.         | i P Z                       | 11-43-09,6                     |             |          | C                | O= 11-30-09,8<br>0°5 N. 122°3 E.<br>Célèbes<br>h=ca 140 Km.<br>D=ca 10.390 Km.                        |
| 28 MARS L.         | i P' Z                      | 12-09-00,9                     |             |          | D                | O= 11-50-01,9<br>58°2 N. 149°8 W.<br>Alaska (Réplique)<br>Magn. 5.3<br>h=ca 25 Km.<br>D=ca 13.800 Km. |
| 28 MARS L.         | i P' Z<br>i! P' Z<br>i PP Z | 12-39-51,5<br>52,0<br>41-45,0  |             |          | D<br>C!<br>D     | O= 12-20-49,8<br>56°5 N. 154°0 W.<br>Alaska (Réplique)<br>Magn. 6.1<br>h=ca 25 Km.<br>D=ca 13.990 Km. |

| Date<br>Station    | Phase                       | Temps                       | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.  |
|--------------------|-----------------------------|-----------------------------|-------------|----------|------------------|---|
| 1964<br>28 MARS L. | i P' Z<br>i PP Z            | 15-06-34,5<br>08-11,5       |             |          | C                | O= 14-47-37,1<br>60°4 N. 146°5 W.<br>Alaska (Réplique)<br>Magn. 5.7<br>h=ca 10 Km.<br>D=ca 13.540 Km. |
| 28 MARS L.         | i! P' Z                     | 17-03-32,5                  |             |          | D!               | O= 16-44-35,9<br>59°3 N. 147°8 W.<br>Alaska (Réplique)<br>Magn. 5.3<br>h=ca 25 Km.<br>D=ca 13.660 Km. |
| 28 MARS L.         | e P' Z<br>i Z<br>i! PP ZXCZ | 20-48-02<br>02,6<br>49-41,0 |             |          | c<br>d<br>C!     | O= 20-29-08,6<br>59°8 N. 148°7 W.<br>Alaska (Réplique)<br>Magn. 5.8<br>h=ca 40 Km.<br>D=ca 13.620 Km. |
| 28 MARS L.         | i P' Z<br>ei PP Z           | 22-47-46,3<br>49-28,8       |             |          | C<br>C           | O= 22-28-47,0<br>58°2 N. 150°4 W.<br>Alaska (Réplique)<br>Magn. 5.2<br>h=ca 20 Km.<br>D=ca 13.800 Km. |
| 29 MARS L.         | i P' Z<br>e PP Z            | 01-28-32,7<br>30-08         |             |          | C                | O= 01-09-36,4<br>59°8 N. 149°2 W.<br>Alaska (Réplique)<br>Magn. 5.5<br>h=ca 20 Km.<br>D=ca 13.620 Km. |
| 29 MARS L.         | i P' Z<br>i PP Z            | 01-48-34,7<br>50-21,2       |             |          | C<br>D           | O= 01-29-33,7<br>57°5 N. 151°3 W.<br>Alaska (Réplique)<br>Magn. 5.6<br>h=ca 20 Km.<br>D=ca 13.880 Km. |
| 29 MARS L.         | i P' Z<br>e PP Z            | 02-07-22,2<br>09-14         |             |          | C                | O= 01-48-18,5<br>56°3 N. 153°7 W.<br>Alaska (Réplique)<br>Magn. 4.8<br>h=ca 20 Km.<br>D=ca 14.010 Km. |

| Date<br>Station    | Phase  | Temps   | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.  |
|--------------------|--|---|-------------|----------|------------------|---|
| 1964<br>29 MARS L. | e P' Z<br>i Z<br>e PP Z  | 03-26-14<br>21,2<br>27-51   |             |          | C                | O= 03-07-19,5<br>59°7 N. 148°8 W.<br>Alaska (Réplique)<br>Magn. 5.0<br>h=ca 30 Km.<br>D=ca 13.630 Km. |
| 29 MARS L.         | e P' Z<br>e PP Z   | 04-31-12<br>32-43   |             |          |                  | O= 04-12-15,7<br>60°2 N. 145°5 W.<br>Alaska (Réplique)<br>Magn. 5.3<br>h=ca 15 Km.<br>D=ca 13.560 Km. |
| 29 MARS L.         | e P' Z<br>i Z  | 05-10-59<br>59,8  |             |          | D<br>C           | O= 04-51-53,3<br>56°8 N. 152°4 W.<br>Alaska (Réplique)<br>Magn. 4.8<br>h=ca 40 Km.<br>D=ca 13.960 Km. |
| 29 MARS L.         | ei P' Z<br>i P' Z<br>e PP X<br>i! PP Z<br>e L CZ<br>M CZ<br>M CZ | 06-23-46,1<br>47,1<br>25-35<br>43,6<br>07-17-06<br>31-06<br>33-36 | 18<br>17    | 7,5<br>8 | c<br>D-          | O= 06-04-44,5<br>56°1 N. 154°3 W.<br>Alaska (Réplique)<br>Magn. 5.6<br>h=ca 30 Km.<br>D=ca 14.020 Km. |
| 29 MARS L.         | ei P' Z<br>e PP Z<br>i PP Z                                      | 08-11-49,1<br>13-40<br>49,6                                       |             |          | d<br>D           | O= 07-52-46,4<br>56°1 N. 154°2 W.<br>Alaska (Réplique)<br>Magn. 4.8<br>h=ca 25 Km.<br>D=ca 14.020 Km. |
| 29 MARS L.         | i PP Z   | 09-36-39  |             |          |                  | O= 19-15-55,4<br>58°4 N. 150°5 W.<br>Alaska (Réplique)<br>Magn. 4.6<br>h=ca 15 Km.<br>D=ca 13.780 Km. |

| Date<br>Station    | Phase                    | Temps                           | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.  |
|--------------------|--------------------------|---------------------------------|-------------|----------|------------------|---|
| 1964<br>29 MARS L. | i P' Z<br>ei PP Z        | 10-27-00,5<br>28-30,0           |             |          | C                | O= 10-08-02,4<br>60°0 N. 148°6 W.<br>Alaska (Réplique)<br>Magn. 5.3<br>h=ca 20 Km.<br>D=ca 13.600 Km.   |
| 29 MARS L.         | i P' Z<br>i PP Z         | 11-08-39,0<br>10-23,5           |             |          | C<br>C           | O= 10-49-40,3<br>58°2 N. 150°4 W.<br>Alaska (Réplique)<br>Magn. 5.2<br>h=ca 25 Km.<br>D=ca 13.800 Km.   |
| 29 MARS L.         | e Z<br>e PP Z            | 12-14-13<br>15-33               |             |          | C                | O= 11-54-41,0<br>58°8 N. 151°1 W.<br>Alaska (Réplique)<br>Magn. 4.5<br>h=ca 25 Km.<br>D=ca 13.730 Km.   |
| 29 MARS L.         | ei P' Z                  | 15-26-19,4                      |             |          |                  | O= 15-07-13,1<br>54°3 N. 157°0 W.<br>SW. de l'Ile Kodiak<br>Magn. 4.9<br>h=ca 20 Km.<br>D=ca 14.210 Km. |
| 29 MARS L.         | i P' Z<br>i PP Z<br>M CZ | 16-59-55,7<br>17-01-35<br>57-06 | 19          | 6        | C<br>D           | O= 16-40-57,9<br>59°7 N. 147°0 W.<br>Alaska (Réplique)<br>Magn. 5.6<br>h=ca 15 Km.<br>D=ca 13.620 Km.   |
| 29 MARS L.         | i P' Z                   | 17-04-30,0                      |             |          |                  | O= 16-45-33,6<br>59°8 N. 146°9 W.<br>Alaska (Réplique)<br>Magn. 5.3<br>h=ca 20 Km.<br>D=ca 13.620 Km.   |
| 29 MARS L.         | i P' Z<br>ei PP Z        | 17-12-22,8<br>13-49,8           |             |          | C                | O= 16-53-26,6<br>60°3 N. 146°1 W.<br>Alaska (Réplique)<br>Magn. 5.2<br>h=ca 15 Km.<br>D=ca 13.550 Km.   |

| Date<br>Station    | Phase   | Temps   | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.  |
|--------------------|---|---|-------------|----------|------------------|---|
| 1964<br>29 MARS L. | i P Z<br>i S CNCE<br>i SS CN<br>i ScS CN<br>e L CZ<br>M CZ  | 18-55-20,4<br>19-01-36<br>04-19<br>05-(06)<br>07-(06)<br>10-22'                                 | 18          | 10       | D<br>S           | D=ca 4.500 à 5.000 Km.<br>(Lwi)   |
| 29 MARS L.         | e P X<br>i Z<br>i ZX  | 21-59-30<br>30,5<br>41,6  |             |          | C<br>D!<br>C!    | O= 21-40-32,7<br>6°7 S. 155°1 E.<br>Iles Salomon<br>Magn. 5.3<br>h=ca 68 Km.<br>D=ca 13.970 Km.       |
| 29 MARS L.         | i P' Z<br>e PP Z<br>i PP Z  | 00-05-21,2<br>07-13<br>13,9   |             |          | C<br>c<br>D      | O= 23-46-22,0<br>57°5 N. 151°1 W.<br>Alaska (Réplique)<br>Magn. 5.2<br>h=ca 33 Km.<br>D=ca 13.880 Km. |
| 30 MARS L.         | i P' Z<br>e PP X<br>i PP CZ<br>i CN<br>i (SKS) CECN<br>i PPS CN<br>i! SS CE<br>e L CE<br>e CZ<br>i CZ<br>M CZ | 02-37-08,2<br>38-57<br>39-11<br>40-36<br>44-30<br>50-40<br>56-06<br>03-21-06.<br>26<br>37<br>39 | ca 19       | 31       | C<br>DS<br>S     | O= 02-18-06,3<br>56°6 N. 152°9 W.<br>Alaska (Réplique)<br>Magn. 5.8<br>h=ca 25 Km.<br>D=ca 13.980 Km. |
| 30 MARS L.         | i P Z   | 03-34-20,3  |             |          | C                | O= 03-27-20 BCIS.<br>35°3 N. 23°9 E.<br>Ile de Crète<br>h=ca 100 Km.<br>D=ca 4.000 Km.                |
| 30 MARS L.         | ei P' Z<br>i Z<br>e PP ZCZ<br>i SKS CN<br>i SS CE<br>e L CZCN<br>i CZ<br>M CZ                                 | 07-28-33,0<br>34,0<br>30-06<br>35-42<br>46-50<br>08-08-06<br>22-06<br>28-26                     | 20          | 10       | d<br>c           | O= 07-09-34,0<br>59°9 N. 145°7 W.<br>Alaska (Réplique)<br>Magn. 5.6<br>h=ca 15 Km.<br>D=ca 13.580 Km. |



| Date Station    | Phase  | Temps   | Pér. sec | B. mm          | Mo. du sol | Remarques.  |
|-----------------|--|---|----------|----------------|------------|---|
| 1964<br>30 MARS | L.<br>i P' Z<br>i PP Z<br>e SS CE<br>e L CZ<br>M CZ      | 16-28-30,8<br>30-20,3<br>47-21<br>17-20-(05)<br>32-05 | 18       | 4              | D<br>C     | O= 16-09-28,4<br>56°6 N. 152°1 W.<br>Alaska (Réplique)<br>Magn. 5.5<br>h=ca 25 Km.<br>D=ca 13.980 Km.   |
| 30 MARS         | L.<br>i P Z<br>i! P Z<br>i (S) NCEC                      | 16-22-15,9<br>17,1<br>35,5                            |          | X:10,5         | c<br>C!n   | O=ca 16-21-50 Lwi.<br>Ca 3°5 S. ca 3°3 E.<br>Ca 25 Km.ESE.d'Uvira<br>(Rép. dém. du Congo)<br>Magn.Lwi.ca 3.4<br>D=ca 148 Km.                          |
|                 | U.<br>i! P Z<br>i (S) XNS                                | 16-21-55,9<br>58,9                                    |          |                | C!         |   |
|                 | A.<br>i P Z<br>i S X<br>i S XNSEW                        | 16-22-08,7<br>20,7<br>21,7                            |          | X:33<br>WA:4,7 |            |   |
| 30 MARS         | L.<br>i P' Z<br>i P' Z                                   | 19-01-37,3<br>49;2                                    |          |                | D          | O= 18-42-03,4<br>24°2 S. 176°4 W.<br>Région des Iles Tonga<br>Magn. 4.6<br>h=ca 33 Km.<br>D=ca 15.010 Km.   |
| 31 MARS         | L.<br>e PP CZ<br>i! PS CZ<br>i (PSPS) CN<br>M CZ<br>M CZ | 00-33-41<br>43-40<br>50-23<br>01-24-05<br>27-35       | 24<br>18 | 4,5<br>4       | C!         | O= 00-14-11,7<br>45°3 N. 151°0 E.<br>Iles Kouriles<br>Magn. 5.3<br>h=ca 60 Km.<br>D=ca 12.640 Km.   |
| 31 MARS         | L.<br>i P NC<br>i! P Z<br>i S NS                         | 00-27-29,5<br>29,9<br>28-00,9                         |          | WA:2,8<br>X:50 | N<br>D!E   | O=ca 00-26-44,4 Lwi.<br>Ca 0°1 N. ca 29°7 E.<br>Ca 20 Km. au Nord<br>du lac Edouard<br>Région du Ruwenzori<br>Magn.Lwi.ca 4 1/4-4 1/2<br>D=ca 275 Km. |
|                 | U.<br>i! P Z<br>M X                                      | 00-27-43,9<br>28-41                                   |          | X:16           |            |   |
|                 | A.<br>i P Z<br>i! P ZX<br>i! P X<br>ei S EW<br>M EW      | 00-27-32,4<br>37,4<br>40,6<br>28-C6,4<br>12           |          | X:40           | D          |   |



| Date<br>Station    | Phase   | Temps  | Pér.<br>sec | B.<br>mm       | Mo.<br>du<br>sol | Remarques.  |
|--------------------|---|--|-------------|----------------|------------------|---|
| 1964<br>31 MARS L. | e P' Z<br>e PP CZ<br>e CZ<br>e CZ<br>e L CZ<br>M CZ | 09-20-42<br>22-39<br>34-05<br>35-35<br>10-03-05<br>14-35 | 23          | 4,5            |                  | O= 09-01-30,2<br>50°8 N. 130°2 W.<br>Ile Vancouver<br>Magn. 5.6<br>h=ca 15 Km.<br>D=ca 14.270 Km.     |
| 31 MARS L.         | i P Z   | 09-40-33,6   |             |                | C                | O= 09-33-11,5<br>36°3 N. 28°8 E.<br>Côte de la Turquie<br>Magn. 4.7<br>h=ca 57 Km.<br>D=ca 4.250 Km.  |
| 31 MARS L.         | e P' Z<br>e PP Z                                    | 12-12-19<br>14-09  |             |                |                  | O= 11-53-14,4<br>56°5 N. 152°3 W.<br>Alaska (Réplique)<br>Magn. 4.8<br>h=ca 25 Km.<br>D=ca 13.990 Km. |
| 31 MARS L.         | i P Z<br>i! Z<br>i! XZ<br>ei S EL<br>i S Z<br>M X   | 15-23-53,2<br>56,8<br>24-07,0<br>48,4<br>49,4<br>25-22   |             | X:14<br>WA:1,2 | C<br>C!          | O=ca 15-22-40,5 Lwi.<br>Ca 6°2 S. ca 31°1 E.<br>Tanzanie<br>Magn.Lwi.ca 4.8<br>D=ca 513 Km.           |
| U.                 | i P Z<br>i!! P XZ<br>ei (S) EW<br>M X               | 15-23-36,6<br>46,1<br>24-19,4<br>38                      |             | X:10,5         | C                |   |
| A.                 | ei P Z<br>i P Z<br>i!! P ZX<br>M XEW<br>M EW        | 15-23-42,0<br>42,4<br>53,2<br>24-53<br>57                |             | X:42<br>WA:2,8 | d<br>C<br>D      |   |
| 31 MARS L.         | i! P' Z   | 17-23-22,4   |             |                | D!               | O= 17-04-39,0<br>17°7 S. 178°8 W.<br>Iles Fidji<br>Magn. 4.4<br>h=ca 540 Km.<br>D=ca 16.250 Km.       |

| Date Station       | Phase  | Temps  | Pér. sec | B. mm       | Mo. du sol | Remarques.  |
|--------------------|--|--|----------|-------------|------------|---|
| 1964<br>31 MARS L. | i P' Z   | 21-23-00,8   |          |             | D          | O= 21-04-01,1<br>58°2 N. 150°3 W.<br>Alaska (Réplique)<br>Magn. 5.2<br>h=ca 20 Km.<br>D=ca 13.800 Km. |
| 31 MARS L.         | e Z  | 21-57-35   |          |             |            |   |
| 01 AVRIL L.        | ei P' Z<br>i P' Z<br>i PP Z  | 04-51-50,0<br>50,8<br>52-10,5                                  |          |             | D<br>C!    | O= 04-32-40,7<br>58°7 N. 150°1 W.<br>Alaska (Réplique)<br>Magn. 4.8<br>h=ca 20 Km.<br>D=ca 13.740 Km. |
| 01 AVR. L.         | i P Z<br>i! Z<br>i! S EC   | 07-00-04,4<br>14,2<br>39,9                                     |          |             | CD!        | O= 06-59-17 Lwi.<br>Ca 0°3 S. ca 30°9 E.<br>Uganda<br>Magn. Lwi.ca 3.2<br>D=ca 315 Km.                |
|                    | U. i P Z<br>i P Z  | 07-00-15,4<br>25,9   |          |             |            |   |
|                    | A. ei P Z<br>i P Z   | 07-00-00,9<br>06,9   |          |             |            |   |
| 01 AVR. L.         | i P Z<br>i ((S)) NC(X)<br>i! S Z                                   | 22-13-17,8<br>47,5<br>52,0                                     |          | X:4         | cCn        | Incompatible<br>Probablement région<br>NE, d'Oudjidji<br>Tanzanie                                     |
|                    | U. i P Z<br>i S Z  | 22-12-57,8<br>13-18,8  |          |             | C          |   |
|                    | A. i P Z<br>i! P ZX<br>i S Z                                       | 22-13-03,2<br>03,8<br>27,8                                     |          | X:11        | C!         |   |
| 02 AVR. L.         | i P CZ<br>i S CE(CNCZ)<br>i CZ<br>i SSS CN<br>i CZ<br>M CZ<br>M CZ | 01-22-38<br>31-37<br>35-09<br>39-00<br>42-00<br>45-03<br>50-43 |          | 26/28<br>18 | 65<br>74   | C!S<br>O= 01-11-54,7<br>5°9 N. 95°7 E.<br>Sumatra<br>Magn. 5.2<br>h=ca 132 Km.<br>D=ca 7.470 Km.      |



| Date Station        | Phase                                     | Temps                                       | Pér. sec | B. mm          | Mo. du sol | Remarques.   |
|---------------------|---|---|----------|----------------|------------|--|
| 1964<br>02 AVRIL L. | e Z                                       | 01-51-07                                    |          |                |            |  |
| 02 AVR. L.          | e P Z                                     | 03-20-27                                    |          |                |            | 5°5 N. 95°7 E.<br>O= 03-09-45,4<br>Près de la côte Nord de Sumatra<br>h=ca 108 Km.<br>D=ca 7.470 Km.       |
| 02 AVR. L.          | i P Z                                     | 04-51-49,2                                  |          |                | D          | O= 04-43-17,2<br>25°8 S. 13°8 W.<br>Océan Atlantique Sud<br>Magn. 5.0<br>h=ca 33 Km.<br>D=ca 5.240 Km.     |
| 02 AVR. L.          | i PP Z                                    | 16-14-07,6                                  |          |                |            | O= 15-56-52,6<br>5°8 N. 125°8 E.<br>Iles Philippines<br>Magn. 5.7<br>h=ca 179 Km.<br>D=ca 10.800 Km.       |
| 02 AVR. L.          | e P Z<br>e CZ<br>M CZ<br>M CZ             | 23-38-56<br>49-03<br>00-08-03<br>13-03      | 16<br>16 | ca 1,5<br>ca 2 | c          | O= 23-27-52,4<br>56°4 S. 25°1 W.<br>Région des Iles Sandwich<br>Magn. 6.0<br>h=ca 33 Km.<br>D=ca 7.650 Km. |
| 03 AVR. L.          | e P Z/CZ<br>i P Z<br>e CZ<br>e CZ<br>M CZ | 04-23-36<br>37,0<br>40-00<br>44-27<br>49-33 |          | ca 20          | 2          | D<br>C!<br>O= 04-12-41,9<br>04°0 N. 96°6 E.<br>Sumatra<br>Magn. 5.8<br>h=ca 70 Km.<br>D=ca 7.550 Km.       |
| 03 AVR. L.          | e Z<br>ei Z                               | 04-51-58<br>52-16                           |          |                |            | C  |
| 03 AVR. L.          | ei P' Z                                   | 08-57-40,7                                  |          |                |            | c<br>O= 08-38-42,8<br>59°6 N. 144°7 W.<br>Alaska (Réplique)<br>Magn. 5.5<br>h=ca 10 Km.<br>D=ca 13.620 Km. |



| Date<br>Station     | Phase  | Temps  | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol      | Remarques.   |
|---------------------|--|--|-------------|----------|-----------------------|--|
| 1964<br>03 AVRIL L. | i P' Z<br>i Z<br>i P' Z<br>i PP Z<br>i PP Z<br>e SS CE<br>e L CE<br>M CZ | 22-52-31,9<br>33,7<br>50,4<br>53-59,4<br>54-21,9<br>23-10-22<br>24-02<br>42-30 | 26          | 3        | c<br>D<br>D<br>C<br>C | O= 22-23-42,2<br>61°6 N. 147°6 W.<br>Alaska (Réplique)<br>Magn. 5.7<br>h=ca 40 Km.<br>D=ca 13.410 Km.                  |
| 04 AVR. L.          | e P' Z<br>e PP CZ/Z<br>i Z   | 05-12-54<br>14-27<br>28,4  |             |          | d<br>c<br>D           | O= 04-54-01,7<br>60°1 N. 146°7 W.<br>Alaska (Réplique)<br>Magn. 5.6<br>h=ca 40 Km.<br>D=ca 13.570 Km.                  |
| 04 AVR. L.          | i P' Z<br>i P' Z<br>e PP Z<br>i PP CZ<br>ei CN<br>ei CZ<br>M CZ          | 08-59-35,8<br>40,0<br>09-01-23<br>27<br>02-55<br>50-02<br>10-01-32             | 20          | 3,5      | c<br>D<br>C<br>S      | O= 08-40-29,8<br>56°5 N. 152°6 W.<br>Alaska (Réplique)<br>Magn. 5.3<br>h=ca 15 Km.<br>D=ca 13.990 Km.                  |
| 04 AVR. L.          | ei P' Z<br>i! P' Z<br>e PP Z   | 09-29-57,8<br>58,2<br>31-48  |             |          | c<br>D!               | O= 09-10-55,1<br>56°9 N. 152°7 W.<br>Alaska (Réplique)<br>Magn. 5.9<br>h=ca 15 Km.<br>D=ca 14.940 Km.                  |
| 04 AVR. L.          | ei (P) Z<br>i P Z<br>i S EC<br>i S NC<br>M Z                             | 13-14-24,3<br>26,3<br>15-45,3<br>46,0<br>16-32                                 |             |          |                       | O=ca 13-12-45 Lwi.<br>Probablement région<br>frontalière<br>Tanzanie - Zambie<br>Magn.Lwi.ca 3.9<br>D=ca 720 à 750 Km. |
| U.                  | i P Z<br>i S Z<br>M X  | 13-14-10,4<br>15-18,0<br>52  |             |          | C                     | Z: 10<br>X: 1,5  |
| A.                  | i P Z<br>i P Z<br>ei S X<br>i S Z<br>i! S Z<br>M X                       | 13-14-16,1<br>24,4<br>15-25,5<br>25,7<br>27,1<br>16-05                         |             |          | C                     | X: 2,5   |

| Date<br>Station     | Phase   | Temps   | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol               | Remarques.  |
|---------------------|---|---|-------------|----------|--------------------------------|---|
| 1964<br>04 AVRIL L. | e P CZ<br>ei P' Z<br>i! PP CZ<br>i (PKS) 6N<br>i SKS CN<br>i PPS CZ(CN)<br>i! SS CECN<br>i CE<br>i CN<br>i CE<br>i CN<br>M CZ<br>M CZ | 18-01-58<br>05-10,9<br>07-02<br>08-34<br>12-21<br>18-36<br>24-10<br>37-56<br>38-36<br>42-48<br>59-48<br>19-12-42<br>15-02 |             |          | d<br>cD<br>D!N<br>S<br>S<br>W! | O= 17-46-08,6<br>56°3 N. 154°4 W.<br>Alaska (Réplique)<br>Magn. 5.7<br>h=ca 25 Km.<br>D=ca 14.000 Km. |
| 04 AVR. L.          | i P' Z  | 18-37-42,7  |             |          | C                              | O= 18-18-01,7<br>19°7 S. 175°3 W.<br>Iles Tonga<br>Magn. 4,3<br>h=ca 57 Km.<br>D=ca 16.420 Km.        |
| 05 AVR. L.          | e P' Z<br>i P' Z<br>e PP Z<br>i (PKS) CZ<br>i SKS CN<br>ei SKKKS CZ<br>e PPS CZ<br>i SS CE<br>e CE<br>i Lr CN<br>e CZ<br>i CZ<br>M CZ | 01-41-16<br>19,6<br>43-04<br>44-44<br>48-43<br>50-20<br>54-48<br>02-00-16<br>03-14<br>19-54<br>30-02<br>43-(02)<br>50-32  |             |          | c<br>C<br>D                    | O= 01-22-13,3<br>56°2 N. 153°5 W.<br>Alaska (Réplique)<br>Magn. 5.4<br>h=ca 25 Km.<br>D=ca 14.020 Km. |
| 05 AVR. L.          | e P' Z<br>e PP Z  | 02-00-46<br>02-40   |             |          |                                | O= 01-41-45,9<br>56°2 N. 153°3 W.<br>Alaska (Réplique)<br>Magn. 5.2<br>h=ca 35 Km.<br>D=ca 14.020 Km. |
| 05 AVR. L.          | i Z   | 14-57-35,8  |             |          | d                              | Probablement<br>Kariba, (Rhodésie)  |

| Date<br>Station     | Phase   | Temps   | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.  |
|---------------------|---|---|-------------|----------|------------------|---|
| 1964<br>05 AVRIL L. | e P' Z<br>e PP CZ   | 19-47-14<br>48-45                                     |             |          | d<br>c           | O= 19-28-18,1<br>60°2 N. 146°7 W.<br>Alaska (Réplique)<br>Magn. 5.8<br>h=ca 15 Km.<br>D=ca 13.560 Km.         |
| 06 AVR. L.          | i P Z<br>i P Z<br>e L CZ<br>M CZ                          | 07-14-02,0<br>02,3<br>29-03<br>36-23                  | 16          | 3,5      | c<br>D           |   |
| 07 AVR. L.          | ei P Z<br>i P Z   | 13-31-23,6<br>24,1                                    |             |          | c<br>D           | O= 13-18-18,9<br>0°1 N. 123°2 E.<br>Célèbes<br>Magn. 5.9<br>h=ca 150 Km.<br>D=ca 10.490 Km.                   |
| 08 AVR. L.          | i P Z<br>i P Z<br>i S EC<br>M X                           | 00-25-31,2<br>35,9<br>26-00,7<br>19                   |             |          | C<br>DC!         | O=ca 00-24-50,6 Lwi.<br>0°2 S. 29°9 E.<br>Ca 8 Km.SSE de<br>Katwe (Uganda)<br>Magn.Lwi.ca 3.4<br>D=ca 257 Km. |
|                     | U. i P Z<br>i P Z<br>i P Z<br>i! P Z<br>M X               | 00-25-44,3<br>52,3<br>53,5<br>54,2<br>26-43           |             |          | d<br>C<br>C!     |   |
|                     | A. i P Z<br>i P Z<br>i! P Z<br>i S X<br>M X<br>M X        | 00-25-31,8<br>36,7<br>38,4<br>26-02,7<br>13<br>20     |             |          |                  |   |
| 08 AVR. L.          | e Z   | 05-25-09  |             |          |                  |   |
| 08 AVR. L.          | e PP CZ<br>i PP CZ<br>i PS CZCE<br>i L CZ<br>e CZ<br>M CZ | 11-17-31<br>41<br>27-23<br>43-23<br>12-02-43<br>11-23 |             |          | 18 9             | O= 10-58-09,1<br>45°8 N. 150°8 E.<br>Iles Kouriles<br>Magn. 5.5<br>h=ca 40 Km.<br>D=ca 12.610 Km.             |



| Date Station        | Phase                                     | Temps                                 | Pér. sec | B. mm | Mo. du sol | Remarques  |
|---------------------|---|---------------------------------------|----------|-------|------------|--|
| 1964<br>08 AVRIL L. | i P Z<br>i! P Z                           | 14-19-33,0<br>33,7                    |          |       | c<br>C!    | O= 14-12-29,5<br>35°1 N. 24°3 E.<br>Crête<br>Magn. 5.0<br>h=ca 71 Km.<br>D=ca 4.150 Km.  |
| 08 AVR. L.          | i P' Z                                    | 19-52-16,9                            |          |       | D          | O= 19-33-19,0<br>59°6 N. 147°0 W.<br>Alaska (Réplique)<br>Magn. 5.1<br>h=ca 15 Km.<br>D=ca 13.630 Km.                          |
| 10 AVR. L.          | i P' Z<br>i PP Z                          | 01-27-00,7<br>28-42,5                 |          |       | D<br>D     | O= 01-08-00,2<br>58°4 N. 150°6 W.<br>Alaska (Réplique)<br>Magn. 5.5<br>h=ca 15 Km.<br>D=ca 13.780 Km.                          |
| 10 AVR. L.          | i! P Z<br>i S Z<br>i S NCEC<br>M X        | 21-01-19,0<br>36,5<br>37,5<br>45      |          |       | D!NE       | O=ca 21-00-54,0 Lwi.<br>Ca 1°1 S. 29°5 E.<br>30 Km. NE.de Rumangabo<br>(Rép. dém. du Congo)<br>Magn.Lwi.ca 3.4<br>D=ca 145 Km. |
|                     | U. i P Z<br>i X<br>M X                    | 21-01-33,1<br>02-02,4<br>09           |          | X:2,5 | D          |  |
|                     | A. i P Z<br>i P Z<br>i! P X<br>i S X      | 21-01-23,1<br>23,5<br>24,3<br>02-43,6 |          | X:13  | D<br>C     |  |
| 10 AVR. L.          | i P Z<br>i P Z<br>i S NC<br>i! S Z        | 23-13-21,9<br>25,9<br>55,5<br>59,5    |          |       | CN         | O=ca 23-12-36,3 Lwi.<br>Ca 4°5 S. 30°2 E.<br>Ca 70 Km. ENE<br>d'Oudjidji (Tanzanie)<br>Magn.Lwi.ca 3.1<br>D=ca 298 Km.         |
|                     | U. i P Z<br>i S Z                         | 23-13-04,9<br>25,9                    |          |       |            |  |
|                     | A. i P Z<br>i P Z<br>i (S) Z(X)<br>i S ZX | 23-13-10,5<br>11,0<br>33,7<br>36,1    |          | X:5   | c<br>C     |  |





| Date Station        | Phase   | Temps  | Pér. sec | B. mm | Mo. du sol | Remarques.  |
|---------------------|---|--|----------|-------|------------|---|
| 1964<br>11 AVRIL L. | i! P Z<br>i P NC<br>i! ZX<br>i (S) EL<br>i S EW     | 06-20-38,1<br>38,7<br>42,8<br>21-04,6<br>08,1          |          |       |            | D!SE O=ca 06-19-57,5 Lwi.<br>4°2 S. 30°1 E.<br>Ca 90 Km. NNE.<br>d'Oudjidji Tanzanie<br>Magn.Lwi.ca 4.8<br>D=ca 262 Km. |
|                     | U. i! P ZX<br>i!! P X<br>ei S NS<br>i S EW          | 06-20-22,5<br>23,0<br>39,8<br>40,8                     |          |       |            | D!<br>D!!<br>WA:12  |
|                     | A. i! P Z<br>i S EW                                 | 06-20-28,2<br>50,0                                     |          |       |            | D!  |
| 11 AVR. L.          | i P Z   | 12-31-04,9   |          |       |            | D   |
| 11 AVR. L.          | ei S X<br>M Z                                       | 12-34-38,2<br>35-07                                    |          |       |            | O=ca 12-32-33,4 Lwi.<br>Ca 6°3 S. ca 30°8 E.<br>Tanzanie<br>Magn.Lwi.ca 4.0<br>D=ca 500 Km.                             |
|                     | U. i P Z<br>i P Z<br>M X<br>M X                     | 12-33-28,8<br>34,1<br>34-23<br>31                      |          |       |            | C   |
|                     | A. i P Z<br>i P Z<br>i! P Z<br>i S Z<br>M X         | 12-33-35,2<br>41,7<br>46,0<br>34-22,0<br>43            |          |       |            | X:5,5   |
| 11 AVR. L           | M Z   | 12-37-28   |          |       |            | 37  |
|                     | U. M X<br>M X                                       | 12-36-49<br>57   |          |       |            | 3,5<br>4  |
|                     | A. i (P) X<br>i S X<br>M X                          | 12-36-02,2<br>46,7<br>37-07                            |          |       |            | X:8,5   |
| 11 AVR. L.          | i! P Z<br>i P Z<br>e S CN<br>e CZ<br>e L CZ<br>M CZ | 16-08-37,7<br>47,5<br>15-05<br>18-05<br>24-05<br>29-35 |          |       |            | DNW<br>C  |
|                     |   |  |          | 12    | 3,5        | O= 16-00-42,8<br>40°5 N. 25°0 E.<br>Mer Egée<br>Magn. 5.1<br>h=ca 33 Km.<br>D=ca 4.750 Km.                              |

| Date<br>Station     | Phase  | Temps  | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.   |
|---------------------|--|--|-------------|----------|------------------|--|
| 1964<br>12 AVRIL L. | i P' Z<br>i PP Z<br>i PP XZ<br>i PKS CN<br>i PPS CZCN<br>i SS CZCE<br>M CZ | 01-43-33,9<br>45-16,0<br>25,4<br>46-57<br>57-01<br>02-02-29<br>48-05     | 18          | 11       | C<br>C           | O= 01-24-31,2<br>56°6 N. 152°2 W.<br>Alaska (Réplique)<br>Magn. 5.6<br>h=ca 22 Km.<br>D=ca 13.980 Km.      |
| 12 AVR. L.          | e P' Z<br>i P' Z<br>i PP CZ  | 11-30-03<br>09,7<br>32-51  |             |          | C                | O= 11-10-54,8<br>33°9 S. 179°8 W.<br>Iles Kemadec<br>Magn. 5.4<br>h=ca 89 Km.<br>D=ca 15.010 Km.           |
| 12 AVR. L.          | i! P Z   | 11-33-22,1   |             |          | D!               |  |
| 13 AVR. L.          | i P' Z<br>i P' Z   | 06-42-13,0<br>30,5   |             |          | D!<br>C          | O= 06-23-34,1<br>19°5 S. 177°7 W.<br>Région des Iles Tonga<br>Magn. 4.4<br>h=ca 574 Km.<br>D=ca 16.240 Km. |
| 13 AVR. L.          | i P ZCZ<br>i PP XCZ<br>i S CN<br>e CE<br>i CN<br>e Lr CN<br>e CZ<br>M CZ   | 08-38-44,3<br>40-38,8<br>46-01<br>49-21<br>40<br>52-05<br>53-45<br>59-35 | 24          | 3à3,5    | C!SW!!<br>C      | O= 08-30-03,6<br>45°3 N. 18°1 E.<br>Yougoslavie<br>h=ca 33 Km.<br>D=ca 5.370 Km.                           |
| 13 AVR. L.          | e PP CZ<br>e L CZ<br>M CZ  | 12-46-34<br>13-24-05<br>41-05  | 20          | 2        | D                | O= 12-25-36,0<br>59°4 N. 143°9 W.<br>Alaska (Réplique)<br>Magn. 4.9<br>h=ca 40 Km.<br>D=ca 13.630 Km.      |
| 13 AVR. L.          | ei P' Z<br>i PP Z  | 14-24-00,1<br>25-47,0  |             |          | C<br>C           | O= 14-05-00,0<br>57°6 N. 151°2 W.<br>Alaska (Réplique)<br>Magn. 5.5<br>h=ca 25 Km.<br>D=ca 13.870 Km.      |

| Date<br>Station     | Phase                                 | Temps                             | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques  |
|---------------------|---------------------------------------|-----------------------------------|-------------|----------|------------------|--|
| 1964<br>13 AVRIL L. | i P Z<br>i S Z                        | 18-38-53,3<br>39-24,0             |             |          | cD               | O=ca 18-38-12 Lwi.<br>Prob.ca 0°7 S. 30°7 E.<br>Probablement région<br>de Mbarara (Uganda)<br>Magn. Lwi.ca 3.2<br>D=ca 270 Km. |
| U.                  | ei (P) Z<br>i P Z                     | 18-39-04,5<br>08,0                |             |          |                  |  |
| A.                  | i P Z                                 | 18-38-49,0                        |             |          |                  |  |
| 13 AVR. L.          | i P' Z                                | 21-44-32,5                        |             |          |                  | O= 21-25-33,0<br>57°5 N. 153°9 W.<br>Alaska (Réplique)<br>Magn. 5.5<br>h=ca 30 Km.<br>D=ca 13.880 Km.                          |
| 14 AVR. L.          | e P Z<br>e S CN<br>M CZ               | 05-12-11<br>20-43<br>36-05        | 16/18       | 2,5      | d                | O= 05-01-59,1<br>41°0 S. 80°8 E.<br>SE. de l'Ile<br>Amsterdam, Océan<br>Indien<br>h=ca 33 Km.<br>D=ca 6.730 Km.                |
| 14 AVR. L.          | e CZ<br>M CZ                          | 09-21-48<br>10-10-05              | 24          | 2        |                  | O=Prob. 08-58-41,9<br>17°5 S. 167°9 E.<br>Nouvelles Hébrides<br>Magn. 4.6<br>h=ca 33 Km.<br>D=ca 15.020 Km.                    |
| 14 AVR. L.          | e P' X<br>i P' Z<br>i P' Z<br>e PP CZ | 23-14-34<br>34,6<br>41,1<br>16-21 |             |          | c<br>d<br>C!     | O= 22-55-31,3<br>58°0 N. 152°6 W.<br>Alaska (Réplique)<br>Magn. 5.4<br>h=ca 30 Km.<br>D=ca 13.820 Km.                          |
| 15 AVR. L.          | M CZ                                  | 01-02-05                          | 20          | 2        |                  |  |
| 15 AVR. L.          | i Z<br>i! Z                           | 11-57-44,2<br>49,0                |             |          | C<br>D!          |  |

| Date Station | Phase   | Temps  | Pér. sec | B. mm | Mo. du sol | Remarques.  |
|--------------|---|--|----------|-------|------------|---|
| 15 AVRIL L.  | e P' Z<br>i PP CZ<br>(i PP Z<br>i PPS CZ<br>i SS CE<br>M CZ | 15-49-47<br>51-40<br>40,9)<br>16-03-27<br>07-55<br>52-25 | 20       | 5     | C!<br>D    | O= 15-30-47,1<br>56°5 N. 154°4 W.<br>Alaska (Réplique)<br>Magn. 5.5<br>h=ca 35 Km.<br>D=ca 13.980 Km.                 |
| 15 AVR. L.   | e P Z<br>i P Z<br>M CZ                                      | 16-46-22<br>30,0<br>17-37-35                             | 20       | 4     | C          | O= 16-35-57,5<br>21°7 N. 88°0 E.<br>Inde - Pakistan<br>Magn. 5.5<br>h=ca 36 Km.<br>D=ca 6.950 Km.                     |
| 15 AVR. L.   | i P Z<br>i S NC   | 19-12-08,9<br>40,0                                       |          |       | C          | O=ca 19-11-26 Lwi.<br>Prob.ca 0°4 S. ca 30°5E.<br>Uganda<br>Magn.Lwi.ca 3.2<br>D=ca 270 Km.                           |
|              | U. i (P) Z  | 19-12-30   |          |       |            |   |
|              | A. i P Z<br>ei S X  | 19-12-06,0<br>35,8                                       |          |       |            |   |
| 15 AVR. L.   | e P' Z  | 21-54-44   |          |       | C          | O= 21-35-18,2<br>19°7 S. 175°6 W.<br>Iles Tonga<br>Magn. 4.2<br>h=ca 172 Km.<br>D=ca 16.400 Km.                       |
| 16 AVR. L.   | i! P Z<br>i! S NCNL   | 02-52-54,8<br>53-03,6                                    |          |       | CSE        | O=ca 02-52-41,3 Lwi.<br>1°6 S. ca 29° E.<br>Sake (lac Kivu)<br>(Rép. dém. du Congo)<br>Magn.Lwi.ca 3.1<br>D=ca 75 Km. |
|              | U. i P Z<br>M X   | 02-53-14,2<br>46   |          |       | C          |   |
|              | A. i P Z<br>M X   | 02-53-05,2<br>28   |          |       |            |   |
| 16 AVR. L.   | ei P' Z   | 14-02-15   |          |       |            | O= 13-43-08,9<br>52°1 N. 169°4 W.<br>Iles Aléoutiennes<br>Magn. 4.9<br>h=ca 33 Km.<br>D=ca 14.220 Km.                 |



| Date Station        | Phase |    |    | Temps      | Pér. sec | B. mm | Mo. du sol | Remarques.  |
|---------------------|-------|----|----|------------|----------|-------|------------|---|
| 1964<br>16 AVRIL L. | i     | P  | Z  | 19-45-59,6 | 19       | 15    | C<br>D     | O= 19-26-57,4<br>56°4 N. 152°9 W.<br>Alaska (Réplique)<br>Magn. 5.5<br>h=ca 30 Km.<br>D=ca 14.000 Km.   |
|                     | i     | PP | Z  | 47-52,1    |          |       |            |   |
|                     | i     | SS | CE | 20-04-58   |          |       |            |   |
|                     | e     |    | CE | 29-06      |          |       |            |   |
|                     |       | M  | CZ | 48-06      |          |       |            |   |
| 17 AVR. L.          | i     | P  | Z  | 04-13-55,6 | Z:15     |       | C<br>C     | O=ca 04-13-06,3 Lwi.<br>Ca 5°1 S. ca 29°5 E.<br>Ca 35 Km. SW.d'Oudjidji<br>(Frontière Congo -<br>Tanzanie)<br>Magn.Lwi.ca 3.2<br>D=ca 330 Km. |
|                     | i     | P  | Z  | 14-00,6    |          |       |            |   |
| U.                  | i     | P  | Z  | 04-13-38,1 |          |       |            |   |
|                     | i     | P  | Z  | 42,1       |          |       |            |   |
|                     | i     | S  | Z  | 14-01,6    |          |       |            |   |
| A.                  | i     | P  | Z  | 04-13-50,5 | X:2,5    |       | cD         |   |
|                     | i     | S  | Z  | 14-22,2    |          |       |            |   |
|                     | i     | S  | Z  | 23,3       |          |       |            |   |
|                     | i!    | S  | Z  | 25,2       |          |       |            |   |
| 17 AVR. L.          | i     | P  | Z  | 04-52-38,2 |          |       | D<br>C!    | O= 04-44-37,3<br>22°5 S. 10°8 W.<br>Océan Atlantique<br>Magn. 5.3<br>h=ca 33 Km.<br>D=ca 4.870 Km.  |
|                     | i!    | P  | Z  | 38,8       |          |       |            |   |
| 17 AVR. L.          | e     | P  | Z  | 05-08-34   |          |       | C          | O= 04-49-37,3<br>56°4 N. 152°9 W.<br>Alaska (Réplique)<br>Magn. 5.3<br>h=ca 25 Km.<br>D=ca 14.000 Km.   |
|                     | e     | PP | Z  | 10-24      |          |       |            |   |
| 17 AVR. L.          | i     | P' | Z  | 06-18-55,5 |          |       | D          | O= 06-00-00,2<br>6°6 S. 154°9 E.<br>Iles Salomon<br>Magn. 5.4<br>h=ca 85 Km.<br>D=ca 13.950 Km.   |
| 17 AVR. L.          | i     | P  | Z  | 09-28-08,3 |          |       | C          | O= 09-09-07,8<br>57°7 N. 151°4 W.<br>Alaska (Réplique)<br>Magn. 5.4<br>h=ca 20 Km.<br>D=ca 13.860 Km.   |

| Date Station        | Phase   | Temps   | Pér. sec | B. mm | Mo. du sol | Remarques.   |
|---------------------|---|---|----------|-------|------------|--|
| 1964<br>18 AVRIL L. | i Z   | 21-53-02  |          |       | C          |  |
| 19 AVR. L.          | e PS CZ<br>e SS CN<br>e SSS CN<br>e CZ<br>i CZ<br>M CZ                    | 04-15-02<br>21-26<br>26-06<br>41-06<br>46-06<br>51-26               | 19       | 5,5   |            | O= Prob. 03-44-55,2<br>55°1 S. 128°5 W.<br>Océan Pacifique Sud<br>Magn. 4,5<br>h=ca 33 Km.<br>D=ca 13.320 Km.          |
| 19 AVR. L.          | i P' Z  | 04-16-05,6  |          |       | (c)D       | O= 03-56-13,7<br>15°4 S. 173°7 W.<br>Iles Tonga<br>Magn. 4.2<br>h=ca 51 Km.<br>D=ca 16.860 Km.                         |
| 19 AVR. L.          | e P Z<br>e Z<br>e PPS CZ<br>e L CZ<br>e CZ<br>M CZ                        | 05-27-18<br>31-28<br>41-42<br>54-48<br>06-02-36<br>05-30            | 26       | 3,5   |            | O= 05-13-01,6<br>41°7 S. 83°9 W.<br>Au large de la côte<br>du Sud Chili<br>Magn. 5.5<br>h=ca 33 Km.<br>D=ca 11.700 Km. |
| 19 AVR. L.          | i P Z<br>i S CNCE<br>i PS CZCN<br>i SS CZCNCE<br>i SSS CZ<br>i CN<br>M CZ | 14-25-00,4<br>35-30<br>36-33<br>41-06<br>45-00<br>51-06<br>15-02-46 | 17/18    | 8     | (c)D       | O= 14-12-21,9<br>60°5 S. 58°3 W.<br>Près des Iles<br>Shetlands du Sud<br>Magn. 5.2<br>h=ca 33 Km.<br>D=ca 9.620 Km.    |
| 19 AVR. L.          | ei Z  | 23-03-36,9  |          |       |            |  |
| 20 AVR. L.          | i P' Z<br>i! PP Z<br>M CZ   | 12-15-33,4<br>17-01,4<br>25-36                                      | 18       | 3     | (c)D<br>C  | O= 11-56-41,6<br>61°4 N. 147°3 W.<br>Alaska (Réplique)<br>Magn. 5.7<br>h=ca 30 Km.<br>D=ca 13.430 Km.                  |
| 20 AVR. L.          | i P Z   | 18-44-39,3  |          |       | C          | O= 18-37-34,2<br>35°2 N. 24°5 E.<br>Crète<br>Magn. 4.5<br>h=ca 78 Km.<br>D=ca 4.160 Km.                                |



| Date Station        | Phase  | Temps   | Pér. sec | B. mm          | Mo. du sol | Remarques.  |
|---------------------|--|---|----------|----------------|------------|---|
| 1964<br>21 AVRIL L. | i P' Z   | 05-20-23,8  |          |                | (c)D       | O= 05-01-35,7<br>61°5 N. 147°4 W.<br>Alaska (Réplique)<br>Magn. 5.4<br>h=ca 40 Km.<br>D=ca 13.420 Km.   |
| 21 AVR. A.          | i P Z<br>ei S Z<br>i S Z<br>M X<br>M Z   | 19-33-04,7<br>34-25,7<br>35,2<br>35-14<br>25  |          | X2à2,5<br>Z:16 | C          | O=ca 19-31-18,7 (Lwi)<br>Prob.ca 9° S. 33° E.<br>Tanzanie<br>Magn.Ast.ca 4.3<br>D=ca Ast. 775 Km.       |
| 22 AVR. L.          | e P Z  | 09-58-49  |          |                |            | O= 09-46-54,2<br>56°1 N. 34°9 W.<br>Océan Atlantique<br>Magn. 4.8<br>h=ca 33 Km.<br>D=ca 8.390 Km.      |
| 22 AVR. L.          | i P' Z   | 19-57-47,4  |          |                | C          | O= 19-37-53,2<br>16°1 S. 173°4 W.<br>Iles Tonga<br>Magn. 5.0<br>h=ca 33 Km.<br>D=ca 16.830 Km.          |
| 22 AVR. L.          | e P Z<br>i! P Z<br>i Z   | 20-19-33<br>33,4<br>22-54,7   |          |                | D<br>C!    | O= 20-00-22,8<br>15°5 S. 167°5 E.<br>Nouvelles Hébrides<br>Magn. 5.0<br>h=ca 123 Km.<br>D=ca 15.060 Km. |
| 23 AVR. L.          | e P CZ<br>e CZ<br>i PP CZ<br>i SKS CZ<br>i! PS CZ<br>e SS CE<br>ei L CN<br>e Lr CZ<br>M CZ | 03-46-57<br>50-45<br>51-19<br>57-41<br>04-00-30<br>06-17<br>16-35<br>21-35<br>32-05 |          |                | d          | O= 03-32-50,3<br>5°3 S. 134°0 E.<br>Iles Arou<br>Magn. 6.4<br>h=ca 33 Km.<br>D=ca 11.650 Km.            |
|                     |  |   |          | 21             | 21         |   |

| Date<br>Station     | Phase  | Temps   | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.   |
|---------------------|--|---|-------------|----------|------------------|--|
| 1964<br>23 AVRIL L. | i P Z  | 04-38-22,4  |             | X > 122  | DISW             | O=ca 04-38-01,0 Lwi.<br>Ca 3°3 S. ca 29°1 E.<br>Ca 13 Km.au Nord<br>d'Uvira (Rép. dém.<br>du Congo)<br>Magn.Lwi.ca 4.2<br>D=ca 121 Km. |
|                     | U. i!!! P Z<br>i S EW<br>i S NS  | 04-38-04,5<br>39-06,6<br>06,7   |             |          | C!!              |  |
|                     | A. i P Z<br>i S EW   | 04-38-18,6<br>30,1  |             |          | C                |  |
| 24 AVR. L.          | e X<br>e pPP X<br>i SKS CZCE<br>i SP CE<br>i SS CECN<br>e SSS CN<br>e CECZ<br>M CZ | 06-14-17<br>15-13<br>21-31,7<br>25-19,7<br>31-44<br>36-20<br>50-00<br>54-00 |             | 32       | 20               | W<br>O= 05-56-10,1<br>5°1 S. 144°2 E.<br>Nouvelle Guinée<br>Magn. 6.3<br>h=ca 106 Km.<br>D=ca 12.790 Km.                               |
| 25 AVR. L.          | i P Z  | 12-51-24,5  |             |          | C                | O= 12-44-09,6<br>35°2 N. 27°6 E.<br>Sporades<br>Magn. 4.5<br>h=ca 27 Km.<br>D=ca 4.140 Km.   |
| 25 AVR. A.          | ei Z<br>e Z  | 13-13-22,8<br>17-48   |             |          | c                |  |
| 26 AVR. A.          | i! P' Z<br>i!!! P' Z<br>i pP' Z<br>i sP' Z   | 15-10-49,3<br>49,8<br>12-56,8<br>13-42,3                                    |             |          | D!<br>C!!        | O= 14-52-07,6<br>20°6 S. 178°0 W.<br>Iles Fidji<br>Magn. 5.1<br>h=ca 490 Km.<br>D=ca Ast. 16.030 Km.                                   |
| 26 AVR. A.          | i P Z  | 22-46-06,4  |             |          | D                | O= 22-34-48,6<br>60°4 S. 24°6 W.<br>S.des Iles Sandwich<br>Magn. 4.8<br>h=ca 33 Km.<br>D=ca Ast. 7.870 Km.                             |



| Date<br>Station     | Phase   | Temps  | Pér.<br>sec | B.<br>mm       | Mo.<br>du<br>sol | Remarques.   |
|---------------------|---|--|-------------|----------------|------------------|--|
| 1964<br>27 AVRIL A. | ei P Z<br>ei P Z  | 01-48-14,2<br>21,0                                 |             |                | c<br>d           | O= 01-37-12,1<br>0°3 N. 98°1 E.<br>Sumatra<br>Magn. 5.3<br>D=ca Ast. 7.600 Km.                         |
| 27 AVR. L.          | e PP CZ<br>e S CE<br>e SS CN<br>ei SS CE<br>ei Lq CE<br>i Lr CZ | 07-03-20<br>10-24<br>17-24<br>34<br>26-20<br>32-40 | 60<br>48    | 10<br>12       |                  | O= 06-44-25,1<br>60°1 S. 151°0 E.<br>Iles Balleny<br>Magn. 5.0<br>h=ca 33 Km.<br>D=ca 11.500 Km.       |
| 27 AVR. L.          | ei Z  | 07-45-32,7   |             |                | d                | Probablement<br>Kariba, Rhodésie   |
| 27 AVR. A.          | i P Z<br>i! P Z   | 12-18-10,4<br>19,4                                 |             |                | C<br>D           | O= 12-07-52,7<br>4°0 N. 31°1 W.<br>Océan Atlantique<br>Magn. 4.7<br>h=ca 33 Km.<br>D=ca Ast. 6.790 Km. |
| 28 AVR. A.          | ei Z<br>M Z   | 13-35-29,4<br>42-39                                |             | Z:4            | C                | O= 19-25-16,7 (Lwi)<br>Magn.Lwi.ca 4.8   |
| 28 AVR. L.          | Lwiro sans marques de minutes                                   |  |             | WA:1,3<br>X:20 |                  | O= 19-25-16,7 (Lwi)<br>Magn.Lwi.ca 4.8<br>D=ca 500 Km.   |
| U.                  | i P Z<br>M X  | 19-26-23,0<br>27-47                                |             | X:11           | C!               |  |
| A.                  | i P Z<br>i S Z  | 19-26-22,2<br>27-11,8                              |             |                |                  |  |





| Date Station        | Phase   | Temps  | Pér. sec | B. mm | Mo. du sol | Remarques.  |
|---------------------|---|--|----------|-------|------------|---|
| 1964<br>29 AVRIL L. | i P Z   | 17-07-49,4   |          |       | D          | O= 17-00-02,9<br>39°2 N. 23°7 E.<br>Mer Egée<br>Magn. 4,6<br>h=ca 32 Km.<br>D=ca 4.610 Km.                    |
| 29 AVR. L.          | e P Z   | 17-48-35   |          |       |            | O= 17-37-43,1<br>58°2 S. 15°7 W.<br>Est des Iles Sandwich<br>Magn.Lwi.ca 5.6<br>h=ca 33 Km.<br>D=ca 7.310 Km. |
| 30 AVR. L.          | i P' Z  | 04-01-12,3   |          |       | C          | O= 03-41-42,3<br>15°5 S. 174°7 W.<br>Iles Tonga<br>Magn. 4.2<br>h=ca 224 Km.<br>D=ca 16.770 Km.               |
| 30 AVR. L.          | e PP CZ<br>e SS CN<br>M CZ  | 16-24-09,2<br>40-53<br>17-09-35  | ca 24    | 2,5   | C          | O= 16-03-31,4<br>4°6 S. 153°2 E.<br>Nouvelle Irlande<br>Magn. 5.2<br>h=ca 78 Km.<br>D=ca 13.780 Km.           |
| 02 MAI L.           | e Z<br>i Z  | 05-54-30<br>32,3   |          |       | C          |   |
| 02 MAI L.           | i P Z<br>e S CN<br>e S CE<br>e Lr CZ<br>M CZ  | 11-29-13,8<br>35-27<br>33<br>41-09<br>44-19  | 20       | 1,5   | C          | O= 11-21-30,2<br>29°7 S. 61°4 E.<br>Océan Indien<br>h=ca 33 Km.<br>D=ca 4.590 Km.                             |
| 02 MAI L.           | e P CZ<br>e P' Z<br>i! PP CZ<br>i CNCE<br>i CNCE<br>ei PS CNCECZ<br>i CNCE<br>i (SSS) CNCE<br>i CN<br>ei CECN<br>i CZ<br>M CZ | 16-25-46<br>29-09<br>30-33<br>36-46<br>37-51<br>40-13<br>47-09<br>51-29<br>55-41<br>59-09<br>17-19-09<br>23-39 | 18       | 29    | c          | O= 16-11-00,2<br>45°5 N. 150°3 E.<br>Iles Kouriles<br>Magn. 5.7<br>h=ca 35 Km.<br>D=ca 12.580 Km.             |

| Date Station   | Phase  | Temps  | Pér. sec | B. mm | Mo. du sol | Remarques   |
|----------------|--|--|----------|-------|------------|---|
| 1964<br>02 MAI | L. i P Z<br>e (S) EL<br>i (S) X<br>i! ZEC<br>M ZX                    | 17-04-04,2<br>45,5<br>46,8<br>05-00,0<br>06                      |          |       |            | O=ca 17-03-09,1 Lwi.<br>Ca 0°7 S. ca 25°7 E.<br>Ca 10 Km. NNE. de<br>Kirundu (Rép. dém. du<br>Congo)<br>Magn.Lwi.ca 4.0<br>D=ca 375 Km. |
|                | U. i P Z<br>ei S X<br>M X  | 17-04-17,1<br>05-08,8<br>41                                      |          |       | C          |   |
|                | A. i P Z<br>ei (S) X<br>i S Z<br>M ZX                                | 17-04-19,6<br>05-14,4<br>14,8<br>40                              |          |       | C          |   |
| 03 MAI         | L. i Z   | 16-36-05,1   |          |       | C          |   |
| 04 MAI         | L. i P Z<br>i NC<br>M Z  | 12-32-41,4<br>47,9<br>33-39                                      |          |       |            | O=ca 12-31-50,4 Lwi.<br>Ca 0°65 S. ca 29°95 E.<br>Région N. du Ruwenzori<br>(Rép. dém. du Congo)<br>Magn.Lwi.ca 3.5<br>D=ca 343 Km.     |
|                | U. i P Z<br>i P Z<br>i P Z<br>M Z<br>M X                             | 12-32-55,4<br>59,9<br>33-07,2<br>34-03<br>05                     |          |       |            |   |
|                | A. i P Z<br>i S X<br>i S Z<br>M X                                    | 12-32-44,1<br>33-24,1<br>24,8<br>42                              |          |       |            |   |
| 04 MAI         | L. i P Z<br>e CN<br>e S CN<br>ei SS CN<br>e L CZCN<br>i L CZ<br>M CZ | 17-15-23,9<br>21-28<br>23-37<br>27-23<br>30-33<br>34-03<br>39-03 |          |       | C          | O= 17-05-19,8<br>55°8 S. 04°4 W.<br>Région de l'Ile<br>Bouvetøya<br>Magn. 5.4<br>h=ca 33 Km.<br>D=ca 6.630 Km.                          |
| 05 MAI         | L. e Z<br>e CZ   | 07-24-48<br>09-(38)  |          |       | c          |   |
| 05 MAI         | L. i P Z<br>e S CZ<br>e Lr CZ<br>M CZ                                | 11-22-56,8<br>31-14<br>41<br>46-21                               |          |       | C          | O= 11-12-52,4<br>55°8 S. 04°3 W.<br>Région de l'Ile<br>Bouvetøya<br>Magn.Lwi.ca 4.7<br>h=ca 33 Km.<br>D=ca 6.630 Km.                    |



| Date Station   | Phase                            | Temps  | Pér. sec  | B. mm | Mo. du sol    | Remarques.  |
|----------------|----------------------------------|--|---|-------|---------------|---|
| 1964<br>06 MAI | L.<br>e<br>e<br>e                | S CZ<br>SS CZ<br>Lr CZ<br>M CZ                     | 04-47-48<br>52-37<br>05-00-(32)<br>06-32                            | 17    | 3,5           | O= 04-27-02,4<br>60°7 S. 25°2 W.<br>Iles Sandwich<br>h=ca.33<br>D=ca 7.910 Km.                        |
| 06 MAI         | L.<br>i<br>e<br>e<br>e<br>i<br>e | P' Z<br>PP CZ<br>ZCZ<br>CE<br>PPS CZ<br>CZ<br>M CZ | 08-29-44,7<br>32-02<br>33-07<br>38-58<br>43-53<br>09-14-58<br>30-28 | 18    | 2             | C<br>O= 08-10-47,5<br>11°1 S. 162°2 E.<br>Iles Salomon<br>Magn. 5.1<br>h=ca 40 Km.<br>D=ca 14.645 Km. |
| 06 MAI         | L.                               | ei((S)) Z<br>M Z                                   | 10-04-09,0<br>05-00,0   |       | Z:7,5         |   |
| 06 MAI         | L.                               | e PP ZCZ<br>M CZ                                   | 15-47-10<br>16-48-57  | 18    | 3             | c<br>O= 15-26-35,5<br>56°7 N. 152°1 W.<br>Alaska (Réplique)<br>Magn. 5.4<br>h=ca 15 Km.               |
| 06 MAI         | L.                               | e M Z<br>Z   | 18-10-04<br>52,0  |       | Z:6,5         |   |
| 06 MAI         | L.                               | i (P) Z<br>i P Z<br>i (S) Z                        | 21-56-38,1<br>39,6<br>57-07,1                                       |       | Z:25<br>X:2,5 |   |
| 06 MAI         | L.                               | i (P) Z<br>i S NC                                  | 22-26-15,5<br>49,8  |       | Z:17          | (c)D  |



| Date<br>Station | Phase |             |             | Temps                       | Pér.<br>sec | B.<br>mm       | Mo.<br>du<br>sol | Remarques  |
|-----------------|-------|-------------|-------------|-----------------------------|-------------|----------------|------------------|--|
| 1964<br>07 MAI  | L.    | e<br>i<br>i | Z<br>Z<br>Z | 00-53-47<br>47,7<br>55-07,4 |             |                | d<br>C!          | Probablement<br>O= 00-34-57,2<br>18°2 S. 176°6 W.<br>Iles Fidji<br>Magn. 5.4<br>h=ca 300 Km.<br>D=ca 16.420 Km.  |
| 07 MAI          | L.    | i P         | Z           | 05-47-04,0                  |             | WA:74          | c                | O=ca 05-45-31,2 Lwi.<br>4°3 S. 34°5 E.<br>Ca 240 Km. NNE. de<br>Dodoma (Tanzanie)<br>Magn.Lwi.ca 7.0<br>D=ca 672 Km.<br>O=05-45-29,5 USCGS<br>4° S. 34°9 E. USCGS. |
|                 | U.    | i P<br>i S  | Z<br>E      | 05-46-56,3<br>48-01,2       |             |                | cd               |  |
|                 | A.    | i P<br>i S  | Z<br>E      | 05-46-50,4<br>47-50,5       |             |                | c                |  |
| 07 MAI          | L.    |             |             |                             |             |                |                  |  |
| 07 MAI          | L.    | i P<br>i S  | Z<br>EC     | 07-49-31,9<br>50-41,9       |             | Z13,5<br>X 2,5 | C                | O=ca 07-48-00,2 Lwi.<br>4°5 S. 34°4 E.<br>Réplique du précédent<br>Magn.Lwi.ca 4.0<br>D=ca 663 Km.   |
|                 | U.    | ei P<br>i S | Z<br>Z      | 07-49-24,7<br>50-28,3       |             |                | C                |  |
|                 | A.    | i P<br>i S  | Z<br>Z      | 07-49-18,0<br>50-17,3       |             | 3à3,5          |                  |  |

| Date<br>Station | Phase  | Temps   | Pér.<br>sec | B.<br>mm       | Mo.<br>du<br>sol | Remarques.  |
|-----------------|--|---|-------------|----------------|------------------|---|
| 1964<br>07 MAI  | L. i P Z<br>i S NC   | 12-53-16,1<br>54-26,4   |             | Z:40<br>X6,5   | D                | O=ca 12-51-43,9 Lwi.<br>3°8 S. 34°7 E.<br>Réplique<br>Magn.Lwi.ca 4.4<br>D=ca 666 Km.             |
|                 | U. ei P Z  | 12-53-09,8  |             | X:3,0          |                  |   |
|                 | A. i P Z<br>i S ZX   | 12-53-02,8<br>54-03,0   |             | X7,5           |                  |   |
| 07 MAI          | L. ei P Z<br>i P CZ<br>i PP CZ<br>i PPP CNCE<br>i SKS CNCE<br>i PS CZCE<br>i SS CNCE<br>i SSS CN<br>i L CZ<br>M CZ | 08-12-25,5<br>26<br>16-50<br>19-12<br>23-16<br>26-12<br>32-04<br>36-36<br>50-12<br>09-05-12 |             | 70 32<br>21 51 | C<br>D           | O= 07-58-14,3<br>40°4 N. 139°0 E.<br>Honshu, Japon<br>Magn. 6.2<br>h=ca 33 Km.<br>D=ca 11.870 Km. |
| 07 MAI          | L. i P Z<br>i! P Z<br>i S NC   | 12-59-06,7<br>07,7<br>13-00-16,2  |             | X46<br>WA1,8   | D<br>C!          | O=ca 12-57-35,6 Lwi.<br>4° S. 34°5 E.<br>Réplique<br>Magn.Lwi.ca 5.4<br>D=ca 657 Km.              |
|                 | U. i P Z   | 12-58-59,8  |             | X:13           |                  |   |
|                 | A. i P Z<br>i S Z  | 12-58-53,3<br>59-52,6   |             | X:45           | D                |   |
| 07 MAI          | L. i M Z<br>Z  | 17-16-20,7<br>17-57   |             | Z:28<br>X: 6   |                  |   |



| Date Station   | Phase | Temps  | Pér. sec   | B. mm | Mo. du sol | Remarques   |
|----------------|-------|--|--|-------|------------|---|
| 1964<br>07 MAI | L.    | e P Z<br>i P CZ<br>ei PP CZ<br>i PP CZ<br>i SKS CNCE<br>i! PS CZ<br>i PPS CZ<br>e SS CN<br>ei SSS CE<br>e L CZCE<br>M CZ<br>M CZ | 20-27-03<br>05<br>31-25<br>29<br>37-47<br>40-51<br>42-01<br>46-39<br>51-11<br>21-05-11<br>15-40<br>19-40 |       |            | O= 20-12-49,3<br>40°5 N. 139°0 E.<br>Honshu, Japon<br>Magn. 5.9<br>h=ca 33 Km.<br>D=ca 11.870 Km.     |
| 07 MAI         | L.    | i P Z<br>i S EC  | 21-50-47,9<br>51-57,4  |       |            | O=ca 21-49-16,9 Lwi.<br>3°1 S. 34°7 E.<br>Réplique<br>Magn.Lwi.ca 4.7<br>D=ca 657 Km.                 |
|                | U.    | i P Z  | 21-50-43,4   |       |            |   |
|                | A.    | i P Z  | 21-50-34,0   |       |            |   |
| 07 MAI         | L.    | i P Z<br>i P Z<br>i S NCECNL   | 22-17-41,3<br>42,1<br>18-53,5  |       |            | O=ca 22-16-06,8 Lwi.<br>3°1 S. 34°9 E.<br>Réplique<br>Magn.Lwi.ca 4.4<br>D=ca 685 Km.                 |
|                | U.    | i P Z  | 22-17-36,4   |       |            |   |
|                | A.    | i P Z  | 22-17-28,4   |       |            |   |
| 08 MAI         | L.    | i PP CZ  | 16-42-43   |       |            | O= 16-21-49,8<br>56°7 N. 154°0 W.<br>Alaska (Réplique)<br>Magn. 5.3<br>h=ca 25 Km.<br>D=ca 13.970 Km. |





| Date<br>Station | Phase                | Temps                 | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.   |
|-----------------|----------------------|-----------------------|-------------|----------|------------------|--|
| 1964<br>08 MAI  | L. e PP Z            | 21-55-04              |             |          |                  | O= 21-34-40,6<br>60°8 N. 143°6 W.<br>Alaska (Réplique)<br>Magn. 5.3<br>h=ca 35 Km.<br>D=ca 13.480 Km.  |
| 08 MAI          | L. i P' Z            | 23-59-54,9            |             |          | (c)D             | O= 23-40-44,1<br>52°2 N. 169°5 W.<br>Iles Aléoutiennes<br>Magn. 5.2<br>h=ca 20 Km.<br>D=ca 14.210 Km.  |
| 09 MAI          | L. i P' Z<br>i P' Z  | 02-21-36,7<br>55,5    |             |          | C<br>D           | O= 02-02-28,8<br>52°2 N. 169°6 W.<br>Iles Aléoutiennes<br>Magn. 5.1<br>h=ca 25 Km.<br>D=ca 14.210 Km.  |
| 09 MAI          | L. i P' Z            | 18-35-35,0            |             |          | D                | O= 18-16-17,5<br>13°7 S. 166°6 E.<br>Nouvelles Hébrides<br>Magn. 5.0<br>h=ca 41 Km.<br>D=ca 15.030 Km. |
| 11 MAI          | L. ei (P) Z          | 06-15-29,8            |             |          |                  | O= 06-07-41,5<br>28°3 N. 57°4 E.<br>Iran<br>Magn. 4.9<br>h=ca 62 Km.<br>D=ca 4.545 Km.                 |
| 11 MAI          | L. i P Z<br>i S NCNL | 12-35-56,3<br>37-06,6 |             |          | X12,5<br>WA:0,8  | O=ca 12-34-24,1 Lwi.<br>7°4 S. 31°6 E.<br>Tanzanie<br>Magn.Lwi.ca 5.0<br>D=ca 666 Km.                  |
|                 | U. i P Z             | 12-35-39,1            |             |          |                  | C!   |
|                 | A. i P Z<br>i S XEW  | 12-35-44,8<br>36-46,2 |             |          |                  | C!   |



| Date<br>Station | Phase  | Temps                               | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.  |
|-----------------|--|-------------------------------------|-------------|----------|------------------|---|
| 1964<br>11 MAI  | L. i P' Z                                      | 14-58-33,7                          |             |          | D                | O= 14-39-04,4<br>22°5 S. 175°8 W.<br>Iles Tonga<br>Magn. 5.3<br>h=ca 50 Km.<br>D=ca 16.180 Km.  |
| 11 MAI          | L. i (P) Z<br>ei P Z<br>i S NCNL<br>M Z        | 18-56-10,3<br>14,3<br>57-05,8<br>47 |             |          | Z:55<br>X:10     | O=ca 18-54-55,0 Lwi.<br>Ca 1° S. ca 33°6 E.<br>Dans lac Victoria<br>Frontière Uganda -<br>Tanzanie<br>Magn.Lwi.ca 4.5<br>D=ca 556 Km. |
|                 | U. i S Z<br>M X<br>M X                         | 18-57-13,0<br>47<br>58-00           |             |          | X:2,5<br>X:2,5   |   |
|                 | A. i P Z<br>i! Z<br>i S Z<br>M X               | 18-56-03,0<br>25,0<br>54,5<br>57-17 |             |          | X:9,5            | c   |
| 12 MAI          | L. e P' Z                                      | 10-22-13                            |             |          | C                | O= 10-02-27,1<br>19°9 S. 173°9 W.<br>Iles Tonga<br>Magn. 5.1<br>h=ca 33 Km.<br>D=ca 16.520 Km.  |
| 12 MAI          | L. ei P Z<br>i P Z                             | 16-50-15,0<br>15,8                  |             |          | X:3,5            | cD  |
|                 | A. i P Z<br>i S Z                              | 16-50-16,2<br>39,5                  |             |          | X:8              |   |
| 12 MAI          | L. e P' Z<br>i PP CZ<br>e PPS CZCN<br>ei SS CE | 18-35-51<br>37-41<br>49-09<br>54-41 |             |          | d<br>C           | O= 18-16-41,9<br>56°6 N. 152°4 W.<br>Alaska (Réplique)<br>Magn. 5.3<br>h=ca 10 Km.<br>D=ca 13.980 Km.                                 |
| 12 MAI          | L. i P' Z                                      | 18-36-54,7                          |             |          |                  | O= 18-17-07,7<br>19°9 S. 173°9 W.<br>Iles Tonga<br>Magn. 5.5<br>h=ca 33 Km.<br>D=ca 16.520 Km.  |

| Date<br>Station | Phase                         | Temps                                  | Pér.<br>sec   | B.<br>mm             | Mo.<br>du<br>sol       | Remarques  |
|-----------------|-------------------------------|--|---|----------------------|------------------------|--|
| 1964<br>12 MAI  | L. i<br>i<br>M<br>M<br>M<br>M | CZ<br>CZ<br>CZ<br>CZ<br>CZ<br>CZ       | 18-52-56,2<br>19-27-09<br>37-49<br>41-10<br>48-10<br>20-24-00 | 19<br>21<br>19<br>18 | 6,5<br>6<br>6,5<br>5,5 |  |
| 12 MAI          | L. (ei)<br>i<br>M             | P Z<br>S NC<br>M Z                     | 19-13-28,6<br>14-22,3<br>55                                   |                      | Z:24,5                 | O=ca 19-12-17,8 Lwi.<br>Prob.6°6 S. Prob.20°5E.<br>Ca 75 Km.SSE.<br>d'Albertville<br>(Rép. dém. du Congo)<br>Magn.Lwi.ca 4.4<br>D=ca 500 Km. |
|                 | A. i<br>i!<br>M               | P Z<br>P Z<br>M ZX                     | 19-13-22,7<br>24,2<br>14-35                                   |                      | X:6,5                  |  |
| 13 MAI          | L. ei                         | P' Z                                   | 00-26-52,5  |                      |                        | Probablement<br>O= 00-07-01,8<br>14°8 S. 176°7 W.<br>Iles Samoa<br>Magn. 4.7<br>h=ca 33 Km.<br>D=ca 16.620 Km.                               |
| 13 MAI          | L. e<br>e<br>ei<br>ei<br>M    | P' Z<br>P' Z<br>PP CZ<br>SS CE<br>M CZ | 05-44-39<br>47<br>47-48<br>06-05-40<br>41                     | 18                   | 7                      | c. O= 05-25-26,1<br>32°8 S. 178°3 W.<br>C Iles Kermadec<br>Magn. 5.3<br>h=ca 33 Km.<br>D=ca 15.190 Km.                                       |
| 13 MAI          | L. i!<br>e                    | P' Z<br>pP' Z                          | 11-24-46,3<br>27-18   |                      |                        | O= 11-06-16,4<br>21°8 S. 179°6 W.<br>Iles Fidji<br>Magn. 4.6<br>h=ca 578 Km.<br>D=ca 15.930 Km.  |
| 13 MAI          | L. i<br>i                     | P' Z<br>Z                              | 20-57-14,6<br>21-00-46,9                                      |                      |                        | C O= 20-37-53,8<br>32°4 S. 178°3 W.<br>Iles Kermadec<br>Magn. 4.9<br>h=ca 70 Km.<br>D=ca 15.220 Km.  |

| Date<br>Station | Phase  | Temps  | Pér.<br>sec | B.<br>mm       | Mo.<br>du<br>sol | Remarques.   |
|-----------------|--|--|-------------|----------------|------------------|--|
| 1964<br>14 MAI  | L. e P' Z<br>i P' Z  | 20-19-30<br>31,3   |             |                | cD<br>C          | O= 20-01-01,0<br>21°3 S. 179°3 W.<br>Iles Fidji<br>Magn. 4.7<br>h=ca 606 Km.<br>D=ca 15.990 Km.                          |
| 16 MAI          | L. i P Z   | 06-11-53,5   |             |                | D                | O= 06-00-58,1<br>49°9 N. 78°3 E.<br>Karaquie, URSS<br>Explosion souterraine<br>Magn. 5.6<br>h=ca 0 Km.<br>D=ca 7.440 Km. |
| 16 MAI          | L. i P Z<br>i PcP Z  | 08-48-16,1<br>49-17  |             |                | C<br>C           | O= 08-38-54,0<br>36°3 N. 71°5 E.<br>Hindou-Kouch<br>Magn. 5.3<br>h=ca 122 Km.<br>D=ca 6.130 Km.                          |
| 16 MAI          | L. e P' Z<br>e PP Z<br>i PKS CZ<br>e SS CE<br>e SSS CE<br>e CZ<br>M CZ<br>M CZ | 16-27-12<br>29-51<br>30-49<br>47-55<br>53-00<br>17-16-12<br>24-12<br>33-12 |             | 16à18<br>ca 16 | 5<br>5,5         | O= 16-07-46,2<br>32°8 S. 178°3 W.<br>Iles Kermadec<br>Magn. 5.4<br>h=ca 33 Km.<br>D=ca 15.190 Km.                        |
| 16 MAI          | L. e Z   | 19-04-23   |             |                |                  | Probablement<br>Kariba, Rhodésie   |
| 17 MAI          | L. e PP CZ<br>e SKS CN<br>M CZ   | 01-10-49<br>16-26<br>02-08-11  |             | ca 20          | (c)D<br>N<br>3,5 | O= 00-50-17,9<br>59°4 N. 142°7 W.<br>Alaska (Réplique)<br>Magn. 5.1<br>h=ca 35 Km.<br>D=ca 13.620 Km.                    |
| 17 Mai          | L. i P' Z<br>i! P' Z   | 05-00-50,5<br>51,2   |             |                | C<br>D!          | O= 04-41-43,9<br>53°9 N. 159°7 W.<br>Alaska<br>Magn. 5.5<br>h=ca 33 Km.<br>D=ca 14.220 Km.                               |

| Date<br>Station | Phase   | Temps  | Pér.<br>sec   | B.<br>mm    | Mo.<br>du<br>sol | Remarques.  |
|-----------------|---|--|---------------|-------------|------------------|---|
| 1964<br>17 MAI  | L. e P Z<br>i S CNCE<br>i SS CN<br>i Lq CNCE<br>M CZ  | 19-37-37<br>46-57<br>51-13<br>54-41<br>20-05-54                                  | 16            | 17          |                  | O= 19-26-20,6<br>35°2 N. 35°9 W.<br>Océan Atlantique Nord<br>Magn. 5.6<br>h=ca 33 Km.<br>D=ca 7.880 Km.         |
| 18 MAI          | L. i P' Z<br>e SS CE  | 14-31-43,8<br>54-29  |               |             | C!               | O= 14-12-10,1<br>21°2 S. 174°5 W.<br>Iles Tonga<br>Magn. 5.6<br>h=ca 33 Km.<br>D=ca 16.380 Km.                  |
| 19 MAI          | L. i P Z  | 06-21-04,2   |               |             | C                | O= 06-09-04,1<br>77°7 N. 18°3 E.<br>Spitzberg<br>Magn. 4.9<br>h=ca 33 Km.<br>D=ca 8.900 Km.                     |
| 19 MAI          | L. e P CZ<br>i PP CZ<br>e SKS CE<br>i PS CE<br>e SS CZ<br>i PSPS CE<br>e SSS CZ<br>e CZCE<br>M CZ | 23-18-05<br>22-34<br>28-47<br>32-11<br>38-21<br>33<br>42-05<br>55-00<br>00-04-05 | X:21<br>21/22 | X:3<br>38,5 | c<br>C           | O= 23-03-41,8<br>0°7 S. 80°2 W.<br>Equateur<br>Magn. 5.4<br>h=ca 54 Km.<br>D=ca 12.110 Km.                      |
| 20 MAI          | L. ei P' Z<br>i P' Z<br>e Z   | 05-12-54,9<br>13-06,1<br>16-43   |               |             | C                | O= 04-53-30,3<br>31°4 S. 178°2 W.<br>Région des Iles<br>Kermadec<br>Magn. 4.8<br>h=ca 33 Km.<br>D=ca 15.310 Km. |
| 20 MAI          | L. e P' Z   | 06-19-38   |               |             |                  | O= 06-01-14,8<br>2°7 S. 139°3 E.<br>Nouvelle Guinée<br>Magn. 5.8<br>h=ca 61 Km.<br>D=ca 12.250 Km.              |

| Date Station   | Phase   | Temps   | Pér. sec | B. mm | Mo. du sol   | Remarques   |
|----------------|---|---|----------|-------|--------------|---|
| 1964<br>21 MAI | L. e P' Z<br>i Z  | 15-55-01<br>06,3  |          |       | (c)<br>C!    | O= 15-36-01,5<br>59°0 N. 153°5 W.<br>Alaska (Réplique)<br>Magn. 5.3<br>h=ca 15 Km.<br>D=ca 13.710 Km.                             |
| 22 MAI         | L. i Z  | 02-50-41,1  |          |       |              |   |
| 23 MAI         | L. e (P) Z<br>i P Z<br>ei S CE<br>ei CE<br>M CZ vers          | 00-23-40<br>40,5<br>28-54<br>32-20<br>38                  | 16       | 2     | c<br>D       | O= 00-17-07,5<br>14°6 N. 56°3 E.<br>Mer d'Arabie<br>h=ca 33 Km.<br>D=ca 3.550 Km.   |
| 24 MAI         | L. ei P Z<br>i S EC<br>M Z                                    | 15-21-15,3<br>22-41,0<br>23-32                            |          |       | Z:65<br>X: 7 | O=ca 15-19-23,0 Lwi.<br>Prob.ca 8°2 S.<br>Prob.ca 33°2 E.<br>Tanzanie<br>Magn.Lwi.ca 5.0<br>D=ca 822 Km.                          |
|                | A. ei P Z<br>i P Z<br>i P Z<br>i S Z<br>M X                   | 15-21-02,0<br>04,8<br>08,2<br>22-18,0<br>56               |          |       | X:9à10       |   |
| 24 MAI         | L. i Z  | 22-44-37,0  |          |       | D            | O= 22-22-27,6<br>37°0 S. 177°8 E.<br>Nouvelle Zélande,<br>Près de l'Ile du Nord<br>Magn.ca 4.8<br>h=ca 149 Km.<br>D=ca 14.610 Km. |
| 25 MAI         | L. i P X<br>i! P Z<br>i S CN<br>ei SS CN<br>e Lq CNCE<br>M CZ | 19-54-14,0<br>14,6<br>20-02-30<br>06-38<br>08-14<br>13-44 | 20       | 6     | D<br>C!      | O= 19-44-07,0<br>9°1 S. 88°9 E.<br>Océan Indien<br>Magn. 5.5<br>h=ca ! 33 Km.<br>D=ca 6.670 Km.                                   |



| Date Station   | Phase   | Temps   | Pér. sec | B. mm                    | Mo. du sol     | Remarques  |
|----------------|---|---|----------|--------------------------|----------------|--|
| 1964<br>25 MAI | L.<br>i P Z<br>i P Z<br>i NC<br>i! S ZNL  | 23-02-38,7<br>39,2<br>40,5<br>56,5  |          | X5,0<br>Z50              | c<br>C<br>N    | O=ca 23-02-13,0 Lwi.<br>Données insuffisantes<br>Magn.Lwi.ca 3.0<br>D=ca 148 Km.                           |
|                | A.<br>i P Z<br>i S Z  | 23-02-34,6<br>49,6  |          | X8,5                     | C              |  |
| 26 MAI         | L.<br>i P X<br>i P CZ<br>i!! S CZ<br>i!! S EL<br>i! PS ECEL!!<br>i! SS EL<br>M EL<br>M X                            | 11-10-13,1<br>16<br>19-14<br>24,1<br>20-14<br>23-54<br>32-44<br>39-29                       | ca 17    | 20 100<br>X:62<br>WA:0,7 | C<br>C         | O= 10-59-12,3<br>56°2 S. 27°8 W.<br>Iles Sandwich<br>Magn.Pas.7½ - 7 3/4<br>h=ca 120 Km.<br>D=ca 7.790 Km. |
| 26 MAI         | L. i S NC   | 23-47-15,0  |          | X:9                      |                | O=ca 23-45-59 (Lwi)<br>Données insuffisantes<br>D=ca 290 Km.   |
|                | A.<br>i P Z<br>i P Z<br>i S X<br>i! S X   | 23-46-31,7<br>33,2<br>55,5<br>58,0  |          | X22,5                    | C              |  |
| 27 MAI         | L.<br>i! P XCZ<br>i sP CZ<br>(i) sPP CZ<br>i! S CE<br>i ScS CN<br>e SS CNCZCE<br>i SSS CN<br>i CNCE<br>M CZ<br>M CZ | 01-07-45,2<br>08-24<br>10-55<br>16-46<br>17-14<br>21-14<br>24-50<br>29-09<br>36-44<br>39-34 |          | 17 9,5<br>16 9,5         | C!nE<br>D<br>D | O= 00-56-42,5<br>56°1 S. 27°6 W.<br>Iles Sandwich<br>Magn. 5,0<br>h=ca 105 Km.<br>D=ca 7.780 Km.           |
| 27 MAI         | L.<br>i P Z<br>i! P Z<br>i PcP Z<br>i S CE<br>e ScS CN<br>e SS CZ<br>e SSS CZ<br>e CNCZ<br>M CZ                     | 06-41-57,7<br>58,2<br>42-25,0<br>51-06<br>48<br>55-34<br>59-14<br>07-03-14<br>10-44         |          | 16à17 2,5                | C<br>D!        | O= 06-30-57,7<br>56°2 S. 27°4 W.<br>Iles Sandwich<br>Magn. 5,8<br>h=ca 116 Km.<br>D=oa 7.780 Km.           |

| Date<br>Station | Phase   | Temps  | Pér.<br>sec | B.<br>mm  | Mo.<br>du<br>sol | Remarques   |
|-----------------|---|--|-------------|-----------|------------------|---|
| 1964<br>27 MAI  | L. e P' Z   | 11-40-19   |             |           | d                | O= 11-20-26,8<br>18°4 S. 173°1 W.<br>Iles Tonga<br>Magn. 4.6<br>h=ca 33 Km.<br>D=ca 16.680 Km.    |
| 27 MAI          | L. i P Z  | 19-13-10,0   |             |           | d                | O= 19-02-02,4<br>56°4 S. 28°4 W.<br>Iles Sandwich<br>h=ca 61 Km.<br>D=ca 7.840 Km.                |
| 28 MAI          | L. i P Z<br>i S CEEL<br>e SS CZ<br>e Lq CN<br>e Lr CZCE<br>M CZ | 12-42-29,6<br>49-04<br>53-52<br>55-(15)<br>58-15<br>13-01-34 |             | 20à22 9,5 | C                | O= 12-33-10,2<br>0°8 S. 24°7 W.<br>Océan Atlantique<br>Magn. 5.2<br>h=ca 33 Km.<br>D=ca 5.950 Km. |
| 29 MAI          | L. i P Z<br>i S EC  | 04-46-39,3<br>47-06,5  |             | X:6       | DE               | O=ca 04-46-02,3 Lwi.<br>Données insuffisantes<br>Magn.Lwi.ca 3.3                                  |
| 29 MAI          | L. i P Z<br>i! P Z  | 09-15-38,2<br>38,5   |             |           | D<br>C!          | O= 09-04-27,1<br>56°2 S. 27°7 W.<br>Iles Sandwich<br>Magn. 5.8<br>h=ca 33 Km.<br>D=ca 7.790 Km.   |
| 29 MAI          | L. i P' Z   | 12-44-17,3   |             |           | DC!              | O= 12-25-16,9<br>18°6 S. 177°8 W.<br>Iles Fidji<br>h=ca 462 Km.<br>D=ca 16.290 Km.                |
| 29 MAI          | L. ei P Z<br>ei Z   | 15-44-05,1<br>35,8   |             |           | (c)d             | O= 15-33-05,5<br>56°3 S. 28°0 W.<br>Iles Sandwich<br>Magn. 5.7<br>h=ca 120 Km.<br>D=ca 7.810 Km.  |





| Date Station   | Phase | Temps  | Pér. sec  | B. mm       | Mo. du sol | Remarques.   |
|----------------|-------|--|---|-------------|------------|--|
| 1964<br>30 MAI | L.    | i PP CZ<br>i PP Z<br>i PPP CZ<br>e SKS CN(CE)<br>e PS CZ<br>i PPS CZ<br>i SS CN(CE)<br>e L CZ<br>M CZ<br>M CZ                      | 14-49-41<br>42,4<br>52-09<br>55-49<br>59-13<br>15-00-33<br>05-39<br>20<br>37-13<br>40-13                                    | 26<br>18    | 9<br>8,5   | D<br>C<br>O= 14-30-45,3<br>36°2 N. 141°1 E.<br>Honshu, Japon<br>Magn. 5.4<br>h=ca 49 Km.<br>D=ca 12.130 Km.      |
| 31 MAI         | L.    | i P CZ<br>i P' Z<br>i P' Z<br>i PP CZ<br>i! PP CZ<br>i SKS CN<br>i CN<br>i PS CZ<br>i SS CE<br>i CE<br>i CZ<br>i CZ<br>M CZ<br>M X | 00-55-11<br>58-53,2<br>59-09,7<br>49<br>55<br>01-05-53<br>06-23<br>09-21<br>15-15<br>32-15<br>36-43<br>43-13<br>51-33<br>33 | 20/22<br>20 | 64<br>5    | C<br>C<br>D<br>O= 00-40-36,4<br>43°5 N. 146°8 E.<br>Iles Kouriles<br>Magn. 6.3<br>h=ca 48 Km.<br>D=ca 12.400 Km. |
| 31 MAI         | L.    | ei P Z<br>i S EC<br>M Z  | 06-09-46,5<br>10-52,5<br>11-30  |             | Z:12       | O=ca 06-08-20 Lwi.<br>Probablement Graben<br>Est Africain<br>Magn. Lwi. ca 4.3<br>D=ca 620 Km.                   |
|                | A.    | ei P Z<br>i P Z<br>i P Z<br>i S Z<br>i S Z<br>M X  | 06-09-32,8<br>34,8<br>39,3<br>10-27,8<br>29,8<br>11-03  |             | X3,5       |  |
| 31 MAI         | L.    | i Z  | 16-47-36,3  |             |            | C  |
| 31 MAI         | L.    | i Z<br>i Z   | 17-09-07,3<br>16,3  |             |            | D<br>C   |
| 31 MAI         | L.    | i Z  | 22-13-17,0  |             |            | C  |
| 01 JUIN        | L.    | i P Z  | 02-24-35,1  |             |            | D  |

| Date<br>Station | Phase   | Temps                                    | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol        | Remarques.  |
|-----------------|---|--|-------------|----------|-------------------------|---|
| 1964<br>01 JUIN | L. i P Z<br>i! P Z<br>i (S) NC                | 06-14-13,9<br>14,1<br>35,3               |             |          |                         | O=ca 06-13-45 Lwi.<br>Données insuffisantes<br>D=ca 170 Km.<br>Magn.Lwi.ca 3.0                    |
|                 | A. i P Z<br>i P Z<br>i! P ZX<br>i S ZX<br>M X | 06-14-18,1<br>20,3<br>25,0<br>42,2<br>53 |             |          | Z:40<br><br><br><br>X:3 |   |
| 01 JUIN         | L. ei P' Z                                    | 13-37-01,0                               |             |          |                         | O= 13-17-20,7<br>21°0 S. 175°7 W.<br>Iles Tonga<br>Magn. 5.2<br>h=ca 35 Km.<br>D=ca 16.300 Km.    |
| 01 JUIN         | L. i P Z<br>i S EC                            | 13-55-21,5<br>56-36,8                    |             |          |                         | O=ca 15-53-43 Lwi.<br>Probablement Graben<br>Est Africain<br>Magn.Lwi.ca 5.0<br>D=ca 716 Km.      |
|                 | A. i P Z<br>i S Z<br>M X                      | 13-55-07,5<br>56-14,0<br>58              |             |          | X:12<br><br><br>X:13    |   |
| 01 JUIN         | L. e Z  | 16-58-56                                 |             |          |                         |   |
| 02 JUIN         | L. M Z  | 04-12-53                                 |             |          |                         | O=ca 04-06-10 Lwi.<br>Données insuffisantes<br>Magn.Ast.ca 5.0<br>D=ca 1.800 Km.                  |
|                 | A. e P Z<br>ei P Z<br>i S Z<br>M Z            | 04-10-10<br>16,9<br>11-39,5<br>12-40     |             |          | Z:12,5                  |   |
| 03 JUIN         | L. i Z  | 00-55-20,1                               |             |          |                         | D O= 00-44-02,8<br>55°4 S. 24°8 W.<br>Iles Sandwich<br>Magn. 5.5<br>h=ca 33 Km.<br>D=ca 7.590 Km. |
| 03 JUIN         | L. i P Z<br>i Z                               | 03-00-22,1<br>51,0                       |             |          |                         | D O= 02-49-14,9<br>C 25°9 N. 95°8 E.<br>Birmanie<br>Magn. 5.5<br>h=ca 100 Km.<br>D=ca 7.820 Km.   |



| Date Station    | Phase   | Temps  | Pér. sec | B. mm                  | Mo. du sol            | Remarques  |
|-----------------|---|--|----------|------------------------|-----------------------|--|
| 1964<br>03 JUIN | L. e P' Z   | 18-14-05   |          |                        |                       | O= 17-54-14,7<br>18°8 S. 173°7 W.<br>Iles Tonga<br>Magn. 4.8<br>h=ca 33 Km.<br>D=ca 16.620 Km.                   |
| 03 JUIN         | L. i P Z<br>i S Z   | 23-33-54,0<br>35-05,6  |          | Z3,5                   |                       | O=ca 23-32-15 (Lwi)<br>Données insuffisantes<br>Magn.Lwi.ca 4½<br>D=Ast.ca 612 Km.                               |
|                 | A. i P Z<br>i P Z<br>i S Z<br>i S Z<br>M Z                                | 23-33-40,5<br>44,0<br>34-45,5<br>47,5<br>35-34                             |          | Z:12                   | dC                    |  |
| 05 JUIN         | L. e Z<br>i Z   | 00-19-51<br>20-17  |          |                        |                       | O= 00-11-51,9<br>39°3 N. 43°1 E.<br>Turquie<br>Magn. 4.6<br>h=ca 33 Km.<br>D=ca 4.830 Km.                        |
| 05 JUIN         | L. e P' Z<br>e PP Z<br>i PP Z   | 22-25-53<br>27-38<br>38,4  |          |                        | c<br>C<br>D           | O= 22-06-53,0<br>58°1 N. 152°1 W.<br>Alaska (Réplique)<br>Magn. 5.0<br>h=ca 15 Km.<br>D=ca 13.810 Km.            |
| 06 JUIN         | L. e PP CZ<br>i CZ<br>e <del>CZ</del><br>M CZ<br>M CZ                     | 19-29-51<br>30-35<br>20-05-13<br>20-33<br>22-13                            |          | ca 20 2,5<br>ca 20 2,5 |                       | O= 19-07-51,4<br>26°6 S. 114°4 W.<br>Ile de Pâques<br>Magn. 5.8<br>h=ca 33 Km.<br>D=ca 14.930 Km.                |
| 07 JUIN         | L. i P Z<br>i S EC<br>i S NC<br>i S NC<br>M X<br>A. i P Z<br>i S Z<br>M X | 04-48-43,3<br>50-01,5<br>03,2<br>18,0<br>57<br>04-48-43,8<br>50-03,1<br>55 |          |                        | (c)D<br>X:11<br>X:6,5 | O=ca 04-47-00 Lwi.<br>Ca 4° N. ca 31°3 E.<br>Frontière S.du Soudan-<br>Uganda<br>Magn.Lwi.ca 5.2<br>D=ca 750 Km. |



| Date<br>Station    | Phase |         |    | Temps      | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.  |
|--------------------|-------|---------|----|------------|-------------|----------|------------------|---|
| 1964<br>07 JUIN L. | i     |         | Z  | 08-52-56,2 |             |          | C                |   |
| 07 JUIN L.         | ei    | P       | Z  | 15-37-24,8 |             |          | d                | O=ca 15-36-06,2 Lwi.<br>Données insuffisantes<br>Magn.Lwi.ca 4.0<br>D=ca 550 Km.  |
|                    | i     | P       | Z  | 27,6       |             |          |                  |   |
|                    | e     | S       | EC | 38-24      |             |          |                  |   |
|                    | i     | S       | Z  | 28,3       |             |          |                  |   |
|                    |       | M       | Z  | 39-12      |             |          | Z:16             |   |
|                    | A.    | ei      | P  | Z          | 15-37-12,9  |          |                  |   |
|                    |       | ei      |    | Z          | 17,6        |          |                  |   |
|                    |       | i       | P  | Z          | 25,0        |          |                  |   |
|                    |       | i ((S)) |    | Z          | 38-01,4     |          |                  |   |
|                    |       | i       | S  | Z          | 07,2        |          |                  |   |
|                    |       |         | M  | X          | 31          |          | X:2,5            |   |
| 07 JUIN L.         | e     | P       | Z  | 20-24-00   |             |          |                  | O= 20-10-15,9<br>30°4 S. 67°6 W.<br>Argentine<br>h=ca 29 Km.<br>D=ca 10.490 Km.   |
|                    | e     | S       | CN | 35-00      |             |          |                  |   |
| 08 JUIN L.         | i     | P'      | Z  | 02-45-14,5 |             |          | D!               | O= 02-26-42,3<br>22°1 S. 179°5 W.<br>Région des Iles Tonga<br>Magn. 4.7<br>h=ca 554 Km.<br>D=ca 15.920 Km.                            |
| 08 JUIN L.         | i     | P       | Z  | 18-12-56,5 |             |          | C                |   |
| 08 JUIN L.         | i     | P       | Z  | 23-38-20,0 |             |          | DSE              | O=ca 23-37-58,0 Lwi.<br>Ca 3°2 S. ca 29°2 E.<br>Région 15 Km.NE<br>d'Uvira (Rép. dém.<br>du Congo)<br>Magn.Lwi.ca 3.2<br>D=ca 128 Km; |
|                    | i!    | P       | X  | 20,7       |             |          |                  |   |
|                    | i!    |         | Z  | 32,4       |             | Z:120    |                  |   |
|                    | i     | S       | EC | 35,6       |             | X:8,5    |                  |   |
|                    | A.    | i!!     | P  | Z          | 23-38-16,0  |          | C!               |   |
|                    |       | ei      |    | EW         | 26,0        |          |                  |   |
|                    |       | i       | S  | X          | 27,2        |          |                  |   |
| 09 JUIN L.         | i     | (P)     | Z  | 02-23-55,7 |             |          |                  | O=ca 02-21-33,4 Lwi.<br>Données insuffisantes<br>Magn.Lwi.ca 4.3<br>D=ca 1.060 Km.  |
|                    | i     | S       | Z  | 25-43,4    |             |          |                  |   |
|                    | e     | S       | NC | 45         |             | Z:8      |                  |   |
|                    |       | M       | Z  | 27-00      |             | X:2      |                  |   |
|                    | A.    | ei      | P  | Z          | 02-23-41,4  |          |                  |   |
|                    |       | i       | P  | Z          | 51,1        |          |                  |   |
|                    |       | i       | S  | Z          | 25-19,9     |          |                  |   |
|                    |       |         | M  | ZX         | 26-23       |          | Z:13<br>X:2      |   |

| Date Station       | Phase |     |      | Temps      | Pér. sec   | B. mm | Mo. du sol | Remarques.  |
|--------------------|-------|-----|------|------------|------------|-------|------------|---|
| 1964<br>09 JUIN L. | e     | P   | Z    | 02-42-25   |            |       |            | O= 02-33-39,4<br>38°2 N. 02°5 W.<br>Espagne<br>Magn. 4.8<br>h=ca 33 Km.<br>D=ca 5.500 Km.       |
| 09 JUIN L.         | i!    | P'  | Z    | 15-21-02,9 |            |       | C!         | O= 15-02-21,6<br>19°2 S. 177°6 W.<br>Iles Fidji<br>Magn. 4.6<br>h=ca 556 Km.<br>D=ca 16.260 Km. |
| 09 JUIN L.         | i     | P'  | Z    | 19-24-10,6 |            |       | C          |   |
| 09 JUIN L.         | ei    | S   | Z    | 19-27-37,9 |            |       |            | O=ca 19-25-23,0 Lwi.<br>Données insuffisantes<br>Magn.Lwi.ca 3.4<br>D=ca 544 Km.                |
|                    | A.    | i   | P    | Z          | 19-26-26,1 |       |            |   |
|                    |       | i   | S    | Z          | 27-13,9    |       |            |   |
|                    |       | i   |      | Z          | 14,9       |       |            |   |
|                    |       | M   | Z    | 59         |            |       | Z:17       |   |
| 10 JUIN L.         | e     | P   | Z    | 22-30-11   |            |       | d          | O= 22-16-44,8   |
|                    | i     | SKS | CE   | 40-44      |            |       | E          | 5°0 N. 127°4 E.<br>Iles Talaud<br>Magn. 5.5<br>h=ca 146 Km.<br>D=ca 10.980 Km.                  |
|                    | i     | PS  | CZCE | 42-52      |            |       |            |   |
|                    | e     | SS  | CZ   | 48-32      |            |       |            |   |
|                    | e     | L   | CE   | 23-03-12   |            |       |            |   |
|                    |       | M   | CZ   | 09-40      | 24         | 3     |            |   |
| 11 JUIN L.         | e     | P'  | Z    | 01-24-39   |            |       | d          | O= 01-05-20,2   |
|                    | i     | P'  | Z    | 39,4       |            |       | C!         | 19°5 S. 175°4 W.<br>Iles Tonga<br>Magn. 4.5<br>h=ca 272 Km.<br>D=ca 16.430 Km.                  |
| 11 JUIN L.         | e     | PP  | Z    | 17-21-10   |            |       |            | O= 17-01-48,5   |
|                    | e     | PS  | CZ   | 30-48      |            |       |            | 2°0 S. 140°8 E.<br>Nouvelle Guinée<br>Magn. 5.3<br>h=ca 18 Km.<br>D=ca 12.430 Km.               |
|                    | e     | SS  | CE   | 37-12      |            |       |            |   |
|                    | e     |     | CZ   | 56-12      |            |       |            |   |

| Date<br>Station    | Phase  | Temps  | Pér.<br>sec    | B.<br>mm      | Mo.<br>du<br>sol | Remarques.   |
|--------------------|--|--|----------------|---------------|------------------|--|
| 1964<br>11 JUIN L. | i P Z  | 18-01-55,7   |                |               | C                | O= 17-51-51,5<br>9°2 S. 89°5 E.<br>Océan Indien<br>h=ca 33 Km.<br>D=ca 6.750 Km.                 |
| 11 JUIN L.         | i P Z<br>i Z<br>e S CNCE<br>i CZ<br>e SS CE<br>i SSS CECN<br>M CZ  | 21-39-09,8<br>45,7<br>48-12<br>49-02<br>52-32<br>56-20<br>22-10-12 | 20             | 1,5           | CnE!             | O= 21-28-08,2<br>55°9 S. 27°7 W.<br>Iles Sandwich<br>Magn. 6.1<br>h=ca 135 Km.<br>D=ca 7.780 Km. |
| 12 JUIN L.         | e Z<br>e Z   | 03-41-26<br>42   |                |               |                  | Kariba, Rhodésie   |
| 13 JUIN L.         | i P Z<br>i P Z<br>M X<br>M Z                                       | 17-09-29,7<br>30,1<br>11-36<br>38                                  |                | X4,5<br>Z29,5 | C<br>D           | O=ca 17-07-40 Lwi.<br>Données insuffisantes<br>Magn.Lwi.ca 4.7<br>D=ca 804 Km.                   |
|                    | A. i P Z<br>i Z<br>i S ZX<br>M Z                                   | 17-09-15,9<br>27,1<br>10-29,1<br>11-08                             |                | X:3           | DC!              |  |
| 14 JUIN L.         | i P CZ<br>i PP CZ<br>ei S CNCE<br>e Lq CE<br>e L CZ<br>M CZ<br>M X | 12-23-19<br>24-59<br>29-36<br>32-51<br>36-11<br>41-41<br>41        | ca 13<br>ca 12 | 20<br>4       | D                | O= 12-15-31,3<br>38°0 N. 38°5 E.<br>Turquie Centrale<br>h=ca 8 Km.<br>D=ca 4.550 Km.             |
| 14 JUIN A.         | i P Z<br>i P Z<br>i! S Z<br>i! Z<br>M Z                            | 23-12-28,5<br>32,0<br>13-09,0<br>20,5<br>23                        |                | X:1,5         |                  | O=ca 23-11-24,5 Ast.<br>Données insuffisantes<br>Magn.Ast.ca 3.4<br>D=ca 370 Km. Ast.            |



| Date<br>Station    | Phase  | Temps  | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.  |
|--------------------|--|--|-------------|----------|------------------|---|
| 1964<br>15 JUIN L. | i P ZCZX<br>i! P Z<br>i S CN<br>i ScS CN<br>e CN<br>i CN<br>M CZ                                   | 00-16-34,0<br>34,5<br>25-47<br>26-41<br>33-11<br>34-11<br>43-41                    | 18          | 11       | C!<br>D!         | O= 00-05-31,1<br>5°4 N. 97°0 E.<br>Sumatra<br>Magn. 5.5<br>h=ca 33 Km.<br>D=ca 7.610 Km.                          |
| 16 JUIN L.         | i Z  | 02-19-42,3   |             |          |                  | Kariba, Rhodésie  |
| 16 JUIN L.         | i P CZ<br>i PP X<br>i! PP CZ<br>i! SKS CNCE<br>i!! PS CZ<br>i SS CN<br>i!! SS CZEL<br>i! CZ<br>M X | 04-16-05<br>20-31,2<br>36<br>26-54<br>29-54<br>35-40<br>36-10<br>54-10<br>05-09-10 | CZ: 22      | CZ: 23   | C<br>C!          | O= 04-01-44,3<br>38°3 N. 139°1 E.<br>Honshu, Japon<br>Magn. 6.1<br>h=ca 57 Km.<br>D=ca 11.920 Km.                 |
| 18 JUIN L.         | ei P Z<br>i! P Z<br>i S ZEC<br>i! S Z  | 01-40-23,5<br>26,2<br>59,5<br>41-01,7  |             | Z: 12    | cd!              | O=ca 01-39-33,8 Lwi.<br>Données insuffisantes<br>Magn.Lwi.ca 3.0<br>D=ca 332 Km.                                  |
| A.                 | i P Z<br>i! P Z<br>i S X<br>i S Z  | 01-40-09,5<br>11,1<br>35,8<br>36,0   |             | X: 2,5   |                  |   |
| 18 JUIN L.         | i P Z<br>i! P Z<br>i S X<br>i S Z  | 09-55-28,9<br>30,3<br>53,5<br>54,5   |             | X: 48    | D                | O=ca 09-54-55,5 Lwi.<br>Prob.ca 0°5 S.<br>ca 28°5 E.<br>Région W. du lac<br>Edouard (Rép. dém.<br>du Congo)       |
| A.                 | i! P Z<br>i! P Z<br>M X  | 09-55-41,9<br>48,7<br>56-28  |             | X: 14    | dD!              | Magn.Lwi.ca 4.0<br>D=ca 207 Km.   |
| 18 JUIN L.         | e CZ<br>M CZ   | 19-09-09<br>14-49  | 16          | 2        |                  | Probablement<br>O= 18-01-47,6<br>47°5 N. 154°9 E.<br>Iles Kouriles<br>Magn. 5.3<br>h=ca 33 Km.<br>D=ca 12.810 Km. |

| Date<br>Station    | Phase   | Temps   | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques  |
|--------------------|---|---|-------------|----------|------------------|--|
| 1964<br>18 JUIN L. | e SKS CNCE<br>i PS CZ<br>e Lr CZ<br>M CZ              | 20-58-21<br>21-00-44<br>20-30<br>25-39            | 24          | 3,5      |                  | 0= 20-33-53,3<br>39°3 S. 74°7 W.<br>Chili<br>Magn. 5.3<br>h=ca 26 Km.<br>D=ca 11.000 Km.   |
| 20 JUIN L.         | M Z   | 02-51-00  |             |          |                  | 0=ca 02-47-29 Lwi.<br>Données insuffisantes<br>Magn. Ast. ca 3.6<br>D=ca 580 Km. Ast.  |
| A.                 | i P Z<br>i S Z<br>i S Z<br>M Z                        | 02-48-50,4<br>49-52,4<br>50-07,9<br>37            |             | Z:10     |                  |  |
| 21 JUIN L.         | i P X<br>i X  | 19-03-07,7<br>12,2                                |             | X:21     | CNE              | 0=ca 19-02-58,0 Lwi.<br>Ca 2°7 S. ca 28°7 E.<br>Ca 53 Km. au S. de Lwiro<br>(Rép. dém. du Congo)<br>Magn. Lwi. ca 3.0<br>D=ca 53 Km. |
| A.                 | i P Z<br>i S ZX                                       | 19-03-18,0<br>31,1                                |             | WA: 2    |                  |  |
| 21 JUIN L.         | ei Z  | 23-16-06,8  |             |          | D                |  |
| 22 JUIN L.         | e P Z<br>i SKSP CZ<br>e SS CN/CE<br>M CZ              | 00-36-21<br>50-36<br>59-08<br>01-54-07            | 17          | 2,5      |                  | 0= 00-16-27,4<br>15°7 S. 172°8 W.<br>Iles Samoa<br>Magn. ca 5.1<br>h=ca 33 Km.<br>D=ca 16.910 Km.                                    |
| 22 JUIN L.         | i P' Z<br>e PP Z<br>ei pPP CZ<br>e SS CN<br>M CZ vers | 03-22-44,9<br>24-59<br>25-32<br>42-26<br>04-13-10 |             |          | C                | 0= 03-03-37,9<br>10°4 S. 161°1 E.<br>Iles Salomon<br>Magn. 5.4<br>h=ca 70 Km.<br>D=ca 14.540 Km.                                     |
| 22 JUIN L.         | i P' Z  | 08-01-29,4  |             |          | cD               | 0= 07-42-02,5<br>24°3 S. 176°8 W.<br>Iles Fidji<br>Magn. 5.7<br>h=ca 75 Km.<br>D=ca 15.970 Km.                                       |





| Date<br>Station | Phase  | Temps  | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.  |
|-----------------|--|--|-------------|----------|------------------|---|
| 1964<br>22 JUIN | L. e P' Z  | 13-59-20   |             |          |                  | O= 13-40-02,8<br>25°1 S. 177°4 W.<br>Iles Fidji<br>Magn. 5.1<br>h=ca 121 Km.<br>D=ca 15.870 Km.     |
| 22 JUIN         | L. ei P Z<br>i P ZXNCEC<br>i! EC<br>i S NCEN<br>M X                    | 16-36-41,0<br>41,5<br>46,5<br>56,8<br>37-02                    |             |          | X: 7             | CD! O=ca 16-36-18,5 Lwi.<br>Données insuffisantes<br>Magn.Lwi.ca 3.0<br>D=ca 130 Km.                |
|                 | A. i! P Z<br>i S X<br>M X  | 16-36-34,3<br>44,5<br>50                                       |             |          | X:14             |   |
| 23 JUIN         | L. e P CZ<br>i PP CZ<br>i SP CZ<br>i SS CN<br>i sSS CE<br>i CZ<br>M CZ | 01-41-07<br>45-45<br>55-07<br>02-01-11<br>51<br>22-27<br>26-07 |             | 40       | 29               | C O= 01-26-37,0<br>43°3 N. 146°1 E.<br>Iles Kouriles<br>Magn. 6.2<br>h=ca 77 Km.<br>D=ca 12.350 Km. |
| 25 JUIN         | L. e M Z<br>M Z  | 17-56-52<br>58-25  |             |          | 7                |   |
| 25 JUIN         | L. i P Z<br>i S Z<br>M Z   | 20-17-35,4<br>18-02,0<br>09                                    |             |          | 86               | d O=ca 20-16-59,4 Lwi.<br>Données insuffisantes<br>Magn.Lwi.ca 3.3<br>D=ca 228 Km.                  |
|                 | A. ei P Z<br>i P Z<br>i! S ZX<br>M X                                   | 20-17-46,4<br>49,9<br>18-21,2<br>38                            |             |          | X:3              |   |
| 26 JUIN         | L. i P Z<br>e Z  | 01-44-00,3<br>39   |             |          |                  | d O= 01-32-51,5<br>55°9 S. 27°6 W.<br>Iles Sandwich<br>Magn. 5.5<br>h=ca 25 Km.<br>D=ca 7.770 Km.   |

| Date<br>Station | Phase  | Temps   | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques  |
|-----------------|--|---|-------------|----------|------------------|--|
| 1964<br>26 JUIN | L. i P Z<br>i! P Z<br>i S NCECX<br>M Z           | 14-16-09,7<br>09,9<br>27,9<br>34                |             |          | d                | O=ca 14-15-43,7 Lwi.<br>Ca 3°6 S. ca 29° E.<br>Ca 25 Km. SW.d'Uvira<br>(Rép. dém. du Congo)<br>Magn.Lwi.ca 3.3<br>D=ca 151 Km. |
|                 | A. i! P Z<br>i! Z<br>i S X<br>M X                | 14-16-07,6<br>19,4<br>24,1<br>29                |             |          | C                |  |
| 26 JUIN         | L. i P Z<br>ei S NC<br>M Z                       | 19-05-22,7<br>06-41,8<br>07-21                  |             |          | c                | O=ca 19-03-38 Lwi.<br>Données insuffisantes<br>Magn.Lwi.ca 4.0<br>D=ca 757 Km.   |
|                 | A. ei P Z<br>i Z<br>i S Z<br>M ZX                | 19-05-08,8<br>11,5<br>06-18,5<br>07-00          |             |          |                  |  |
| 27 JUIN         | L. ei P Z<br>i P Z<br>ei S X<br>M ZX             | 01-02-31,8<br>32,4<br>03-00,6<br>24             |             |          |                  | O=ca 01-01-53 Lwi.<br>Données insuffisantes<br>Magn.Lwi.ca 3.2<br>D=ca 250 Km.   |
|                 | A. ei P Z<br>i P Z<br>i S Z<br>M X               | 01-02-36,8<br>38,5<br>03-09,0<br>27             |             |          |                  |  |
| 27 JUIN         | L. e P Z   | 02-39-12  |             |          | d                | O= 02-28-57,1<br>40°4 N. 77°5 E.<br>Province de Sin Kiang,<br><b>Chine</b><br>Magn. 5.0<br>h=ca 33 Km.<br>D=ca 6.820 Km.       |
| 27 JUIN         | L. i P Z<br>e S CN/CE<br>e Lq CE<br>e CZ<br>M CZ | 16-51-50<br>58-15<br>17-01-17<br>04-55<br>07-04 | 20          | 4        | C                | O= 16-43-47,0<br>11°5 S. 13°8 W.<br>Région de l'Île<br>Ascension<br>Magn. 4.7<br>h=ca 33 Km.<br>D=ca 4.800 Km.                 |



| Date Station       | Phase  | Temps   | Pér. sec | B. mm | Mo. du sol | Remarques.  |
|--------------------|--|---|----------|-------|------------|---|
| 1964<br>28 JUIN L. | ei CZ -  | 09-12-14  |          |       |            |   |
| 28 JUIN L.         | i P' Z<br>i PP CZ<br>i PS CE/CZ<br>i SS CE<br>i CZ<br>i CN<br>i CZ<br>M CZ | 13-10-36,8<br>12-03<br>21-53<br>28-58<br>41-08<br>42-27<br>49-23<br>54-33 | 22       | 4,5   | d<br>C     | O= 12-51-34,6<br>1°7 S. 149°6 E.<br>Région de Nouvelle<br>Irlande <sup>1a</sup><br>Magn. 6.4<br>h=ca 7 Km.<br>D=ca 13.410 Km. |
| 28 JUIN L.         | i P' Z<br>i! P' Z  | 15-11-05,2<br>08,7  |          |       | C!         | O= 14-52-08,4<br>13°2 167°1 E.<br>Nouvelles Hébrides<br>Magn. 5.4<br>h=ca 215 Km.<br>D=ca 15.100 Km.                          |
| 28 JUIN L.         | ei P Z<br>i! S CZCE<br>i SS CZ<br>e Lr CZ<br>M CZ                          | 17-38-20,1<br>46-55<br>50-59<br>56-33<br>18-01-03                         | 19       | 12    | C          | O= 17-27-59,8<br>4°0 N. 32°4 W.<br>Océan Atlantique Nord<br>Magn. 5.3<br>h=ca 33 Km.<br>D=ca 6.840 Km.                        |
| 28 JUIN L.         | i P' Z   | 19-28-04,0  |          |       | C          | O= 19-09-05,4<br>58°3 N. 150°2 W.<br>Alaska (Réplique)<br>Magn. 5.5<br>h=ca 23 Km.<br>D=ca 13.790 Km.                         |
| 29 JUIN L.         | i P' Z   | 07-40-21  |          |       |            | O= 07-21-32,8<br>62°7 N. 152°0 W.<br>Alaska<br>Magn. 5.6<br>h=ca 33 Km.<br>D=ca 13.300 Km.                                    |
| 30 JUIN L.         | e P' Z   | 10-34-32  |          |       |            | O= 10-14-45,8<br>19°8 S. 173°9 W.<br>Iles Tonga<br>Magn. 4.8<br>h=ca 33 Km.<br>D=ca 16.530 Km.                                |



| Date Station       | Phase   | Temps   | Pér. sec   | B. mm        | Mo. du sol  | Remarques.  |
|--------------------|---|---|------------|--------------|-------------|---|
| 1964<br>30 JUIN L. | i P Z<br>i P CZ<br>i PP CE/CZ<br>i SKS CE/CZ<br>i S CN<br>i PS CZ<br>i SS CE<br>i Lq CN<br>i Lr CZ<br>i CN<br>M CZ<br>M X | 13-59-37,0<br>41<br>14-03-33<br>10-17<br>41<br>11-49<br>17-15<br>23-53<br>29-37<br>31-13<br>36-31<br>51 | 23<br>21,5 | 85<br>7      | D<br>D<br>D | O= 13-46-21,6<br>0°8 S. 122°5 E.<br>Célèbes Nord<br>Magn. 6.3<br>h=ca 36 Km.<br>D=ca 10.410 Km.   |
| 30 JUIN L.         | e P' Z<br>i PP Z  | 16-07-32<br>08-26,4   |            |              | D           | O= 15-48-43,3<br>45°9 N. 150°4 E.<br>Iles Kouriles<br>Magn. 6.0<br>h=ca 33 Km.<br>D=ca 12.570 Km. |
| <u>CORRECTION</u>  |   |   |            |              |             |   |
| 05 MARS L.         | i P Z<br>i S Z<br>M X   | 10-58-34,9<br>59-53,5<br>11-00-41   |            | X:13<br>Z:80 | C           | O=ca 10-56-52,0 Lwi.<br>3°4 S. 35°5 E.<br>Tanzanie<br>Magn. Lwi. qa 5.2<br>D=ca 751 Km.           |
| U.                 | i P Z<br>i P Z<br>M X   | 10-58-29,8<br>31,0<br>11-00-33  |            |              |             |   |
| A.                 | i P Z<br>i! P Z<br>i S X<br>i S Z<br>M X  | 10-58-21,2<br>21,8<br>28,4<br>30,7<br>11-00-12  |            |              | D<br>D!     |   |

Institut pour la Recherche Scientifique

en Afrique Centrale

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( I.R.S.A.C. )

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BULLETIN DES STATIONS SEISMOGRAPHIQUES

Lwiro - République Démocratique du Congo

Butare (Astrida) - République Rwandaise

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Par

E. Schmedes

Th. Janssen

DECEMBRE 1968



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| Date<br>Station    | Phase |     | Temps      | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.  |
|--------------------|-------|-----|------------|-------------|----------|------------------|---|
| 1964<br>02 JUILLET |       |     |            |             |          |                  |   |
| LWI.               | M     | Z   | 15-50-39   |             | 14       |                  | O=ca 15-47-00,4 Ast.<br>(Probablement Graben<br>Est Africain)   |
| BTR.               | i     | P   | 15-48-24,5 |             |          |                  | Données insuffisantes<br>Magn.Ast.ca 4<br>D=ca 715 Km.  |
|                    | i     | S   | 49-28,5    |             |          |                  |   |
|                    |       | M   | 50-02      |             | 3        |                  |   |
| 02 JUIL. LWI.      | i     | S   | 18-24-48,2 |             |          |                  | O=ca 18-21-57,5 Lwi.<br>Graben Est Africain<br>Magn.Lwi.ca 4 à 4.5<br>D=ca 710 Km.                    |
|                    | i     | S   | 57,2       |             |          |                  |   |
|                    |       | M   | 25-37      |             | 3        |                  |   |
|                    |       | M   | CZ         |             | 12,5     |                  |   |
| BTR.               | i     | P   | 18-23-21,5 |             |          |                  |   |
|                    | e     | S   | 24-16,7    |             |          |                  |   |
|                    | i     | S   | 19,7       |             |          |                  |   |
|                    |       | M   | 25-00      |             | 2à2,5    |                  |   |
| 02 JUIL. LWI.      | ei    | P   | 20-24-32,7 |             |          |                  | O=ca 20-22-58 Lwi.<br>Graben Est Africain<br>Données insuffisantes<br>Magn.Lwi.ca 4,2<br>D=ca 700 Km. |
|                    | i     | (S) | 25-48,2    |             | 11,5     |                  |   |
|                    |       | M   | 26-33      |             | 3        |                  |   |
| BTR.               | i     | P   | 20-24-19,2 |             |          | C                |   |
|                    | ei    | S   | 25-10,7    |             |          |                  |   |
|                    | i     | S   | 26,7       |             |          |                  |   |
|                    |       | M   | 57         |             | 2,5      |                  |   |
| 03 JUIL. LWI.      | i     | P   | 07-23-42   |             |          |                  | D=ca 2.000 Km.<br>Données insuffisantes   |
|                    | i     |     | 47         |             |          |                  |   |
|                    | i     | S   | 26-58      |             |          |                  |   |
|                    |       | M   | 29-37      |             | 4        |                  |   |
|                    |       | M   | Z          |             | 8,5      |                  |   |
| BTR.               | i     |     | 07-27-39   |             |          |                  |   |
|                    |       | M   | 29-57      |             | 2        |                  |   |
| 03 JUIL. LWI.      | e     | (P) | 19-22-35   |             |          | d                | O= 19-18-34,0<br>11°0 N. 39°3 E.<br>Ethiopie Centrale<br>Magn. 5.0<br>h=ca 60 Km.<br>D=ca 1.870 Km.   |
|                    | i     | (S) | 25-56,9    |             |          |                  |   |
|                    | i     |     | EC         |             |          |                  |   |
|                    | i     |     | 26-06,4    |             |          |                  |   |
|                    |       | Z   | 27-14,9    |             |          |                  |   |
|                    |       | M   | X          |             | 5        |                  |   |
|                    |       | M   | Z          | 50          | 8        |                  |   |
|                    |       | M   | CZ         | 29-12       | 10       | 4                |   |

| Date<br>Station    | Phase  | Temps  | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.  |
|--------------------|--|--|-------------|----------|------------------|---|
| 1964<br>03 JUILLET |  |  |             |          |                  |   |
| LWI.               | i P Z<br>i S EC(X)<br>M X  | 23-46-33,7<br>47-15,2<br>37  |             | 20       |                  |   |
| BTR.               | i P Z<br>i! P Z<br>i S X<br>i S Z<br>M Z   | 23-46-48,6<br>47-00,4<br>40,9<br>42,9<br>48-10   |             |          |                  |   |
| 04 JUIL. LWI.      | i P Z<br>e PP Z  | 11-08-12,5<br>09-12  |             |          | C                | O= 10-49-28,8<br>11°7 N. 144°5 E.<br>Iles Carolines<br>Magn. 6.0<br>h=ca 33 Km.<br>D=ca 12.850 Km.      |
| 04 JUIL. LWI.      | e P Z  | 11-19-24,8   |             |          |                  | O= 11-11-20,0<br>42°2 N. 23°6 E.<br>Bulgarie<br>Magn. 4.7<br>h=ca 10 Km.<br>D=ca 4.950 Km.              |
| 05 JUIL. BTR.      | i (P) Z<br>i P Z<br>ei (S) Z<br>M Z<br>M X   | 11-19-29,1<br>42,1<br>21-03,1<br>22-10   |             | 18<br>3  |                  | Probablement Afrique<br>Centrale<br>Magn Btr .ca 4.5<br>D= Btr: ca 900 Km.                              |
| 05 JUIL. LWI.      | e P' Z<br>i SKSP CZ<br>ei PPS CNCE<br>i SS CZ<br>i SSS CZ<br>e CZ<br>i CZ<br>M CZ            | 19-27-18<br>39-50<br>41-50<br>48-02<br>53-06<br>20-11-10<br>17-10<br>29-10                   |             | 18       | 22               | O= 19-07-57,8<br>26°2 N. 110°2 W.<br>Golfe de Californie<br>Magn. 6.0<br>h=ca 29 Km.<br>D=ca 14.890 Km. |
| 05 JUIL. LWI.      | e P Z/CZ<br>i PP CZ<br>i CZ<br>i PS CZ<br>e CE<br>e SS CE<br>e CN/CE<br>e CZ<br>e CZ<br>M CZ | 23-50-48<br>55-25<br>57-43<br>00-04-50<br>05-10<br>11-20<br>16-10<br>20-10<br>32-10<br>47-00 |             | 21       | 19,5             | O= 23-36-01,5<br>44°8 N. 149°6 E.<br>Iles Kouriles<br>Magn. 6.4<br>h=ca 54 Km.<br>D=ca 12.555 Km.       |

| Date<br>Station    | Phase | Temps   | Pér.<br>sec   | B.<br>mm | Mo.<br>du<br>sol | Remarques.   |
|--------------------|-------|---|---|----------|------------------|--|
| 1964<br>06 JUILLET | LWI.  | e P' Z<br>i PKS CE<br>i CN<br>i PPS CN<br>ei SS CNCE<br>i CN<br>M CZ          | 02-33-51<br>37-36<br>43-20<br>48-34<br>54-10<br>03-09-27<br>35-40     | 19       | 43               | O= 02-14-36,0<br>26°2 N. 110°4 W.<br>Golfe de Californie<br>Magn. 5.4<br>h=ca 33 Km.<br>D=ca 14.910 Km.      |
| 06 JUIL.           | LWI.  | i P CZ<br>i P' Z/CZ<br>i (PP) CE/CZ<br>i sSS CE<br>i SSS CZ<br>i G CN<br>M CZ | 07-37-58<br>41-10,3<br>43-11,5<br>08-01-10<br>04-50<br>15-10<br>25-10 | 37       | 60               | d O= 07-22-11,7<br>18°3 N. 100°4 W.<br>D Mexique<br>Magn. 6.3<br>h=ca 100 Km.<br>D=ca 14.180 Km.             |
| 06 JUIL.           | LWI.  | i P Z   | 10-23-13,2  |          |                  | C O= 10-13-45,2<br>37°1 N. 71°4 E.<br>Hondou Kouch<br>Magn. 5.9<br>h=ca 100 Km.<br>D=ca 6.170 Km.            |
| 06 JUIL.           | LWI.  | i P Z/X/NC<br>i S NC<br>M Z<br>M X  | 18-24-26,3<br>42,8<br>52  |          | 100<br>18        | O=ca 18-24-02,5 Lwi.<br>Données insuffisantes<br>Magn.Lwi.ca 3.5<br>D=ca 136 Km.                             |
|                    | BTR.  | i! P Z<br>i!! Z<br>i! S Z<br>M X  | 18-24-31,4<br>42,8<br>52,2  |          | 18               | D  |
| 07 JUIL.           | LWI.  | i P' Z  | 07-57-40,4  |          |                  | D O= 07-39-04,2<br>23°6 S. 179°9 W.<br>Région des Iles Fidji<br>Magn. 5.5<br>h=ca 462 Km.<br>D=ca 15.790 Km. |
| 07 JUIL.           | LWI.  | i (P) Z<br>i P Z<br>i S Z<br>M Z  | 12-08-47,6<br>48,1<br>09-29,6<br>42                                   |          | 29               | O=ca 12-07-52 Lwi.<br>Graben Est Africain<br>Données insuffisantes<br>Magn.Lwi.ca 3.5<br>D=ca 382 Km.        |
|                    | Btr.  | i P Z<br>i! P Z<br>M Z  | 12-08-33,4<br>35,9<br>09-23   |          | 50               |  |

| Date<br>Station            | Phase  | Temps   | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques   |
|----------------------------|--|---|-------------|----------|------------------|---|
| 1964<br>08 JUILLET<br>LWI. | i P' Z   | 12-08-32,2  |             |          | C                | O= 11-49-23,7<br>6°4 S. 154°8 E.<br>Iles Salomon<br>Magn. 5.1<br>h=ca 73 Km.<br>D=ca 13.930 Km.                       |
| 08 JUIL. LWI.              | i P Z<br>e pP CZ<br>i sP CZ<br>i PP CZ<br>i pPP CZ<br>i SKS CE<br>i S CN<br>i PS CE<br>i CE<br>i SS CN<br>e G CN<br>M CZ | 12-09-12,5<br>58<br>10-30<br>13-19<br>56<br>19-32<br>20-26<br>21-56<br>26-18<br>27-32<br>37-10<br>45-16 |             |          | C                | O= 11-55-39,1<br>5°5 S. 129°8 E.<br>Mer de Banda<br>Magn. 6.5<br>h=ca 165 Km.<br>D=ca 11.190 Km.                      |
| 09 JUIL. LWI.              | ei P Z   | 06-00-16,8  |             |          |                  | O= 05-47-09,2<br>15°4 N. 119°8 E.<br>Près de la côte Ouest<br>de Lüçon<br>Magn. 5.5<br>h=ca 53 Km.<br>D=ca 10.160 Km. |
| 09 JUIL. LWI.              | i P' Z<br>i P' CZ<br>i CZ<br>i PPS CZ<br>i SS CN<br>e CZ<br>e CZ<br>e CZ<br>M CZ   | 11-41-41,1<br>43<br>45-05<br>57-49<br>12-04-31<br>12-03<br>24-51<br>31-05<br>36-30                      |             |          | D<br>C<br>d      | O= 11-22-05,4<br>23°3 S. 175°7 W.<br>Iles Tonga<br>Magn. 5.7<br>h=ca 43 Km.<br>D=ca 16.130 Km.                        |
| 09 JUIL. LWI.              | i Z  | 12-31-15,9  |             |          | d                |   |

24 10

24 7,5



| Date<br>Station            | Phase  | Temps  | Pér.<br>sec | B.<br>mm                   | Mo.<br>du<br>sol | Remarques   |
|----------------------------|--|--|-------------|----------------------------|------------------|---|
| 1964<br>09 JUILLET<br>LWI. | e P CZ<br>e CZ<br>i P' X/CZ<br>i PP CZ<br>i CN/CE<br>i CZ/CE<br>i Z<br>i CE<br>i CE<br>i SS CE<br>i CN<br>i SSS CN<br>i CE<br>M CZ | 16-56-04<br>58-30<br>59-00<br>17-01-32<br>36<br>02-04<br>21,7<br>08-21<br>11-34<br>19-21<br>24-14<br>28-24<br>32-30<br>44-30 | ca 50       | 60                         | c<br>C<br>C!     | O= 16-39-49,3<br>15°5 S. 167°6 E.<br>Nouvelles Hébrides<br>Magn. 6.6<br>h=ca 121 Km.<br>D=ca 15.070 Km. |
| 10 JUIL. LWI.              | i (P) Z<br>e S NC<br>i S Z<br>M Z  | 21-28-03,2<br>49,7<br>51,2   |             | 9                          |                  | O=ca 21-27-00 Lwi.<br>Graben Est Africain<br>Données insuffisantes<br>Magn.Lwi.ca 3.2<br>D=ca 425 Km.   |
| 12 JUIL. LWI.              | BTR. i P Z<br>i! P Z<br>M ZX   | 21-27-51,9<br>55,7<br>36   |             |                            |                  |   |
| 12 JUIL. LWI.              | i P Z<br>i Z<br>ei EC<br>i EC/EL<br>i Z<br>i Z<br>i EL<br>M X<br>M Z<br>M CZ   | 00-52-10,5<br>54-36<br>44<br>55-02<br>10<br>31,9<br>56-07,9<br>19<br>40<br>57-17   | 9           | 23<br>57<br>3,5<br>WA:0,75 |                  | O=ca 00-48-50<br>Kariba, Rhodésie<br>Magn.Lwi.ca 5 3/4 à 6<br>D=ca 1.600 Km.                            |
| 12 JUIL. LWI.              | i Z<br>M Z   | 01-44-04<br>33   |             | 3,5                        |                  | Kariba, Rhodésie.   |
| 12 JUIL. LWI.              | i P Z<br>i! P Z<br>i S Z(NC)<br>M Z<br>M X<br>BTR. M Z   | 09-11-52,8<br>53,8<br>12-26<br>39<br>09-13-12  |             | 21<br>3,5<br>12            | c<br>CE          | République Dém. du Congo<br>Données insuffisantes<br>Magn.Lwi.ca 3.2<br>D=ca 290 Km.                    |

| Date<br>Station    | Phase |     |     | Temps      | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques   |
|--------------------|-------|-----|-----|------------|-------------|----------|------------------|---|
| 1964<br>12 JUILLET |       |     |     |            |             |          |                  |   |
| LWI.               | e     | P   | Z/X | 20-26-55   |             |          | c                | O= 20-15-59,0   |
|                    | i     | P   | Z   | 56,0       |             |          | D                | 24°9 N. 95°3 E.   |
|                    | i     | pP  | Z   | 27-33,3    |             |          | C                | Birmanie<br>Magn. 6.7<br>h=ca 155 Km.<br>D=ca 7.760 Km.   |
| 12 JUIL. LWI.      | i     | P   | Z   | 21-19-53,0 |             |          | CnE              | O= 21-08-52,6<br>55°9 S. 27°6 W.<br>Iles Sandwich<br>Magn. 5.2<br>h=ca 135 Km.<br>D=ca 7.770 Km.          |
| 13 JUIL. LWI.      | i     | P   | Z   | 11-09-43,1 |             |          | cD               | O= 10-58-47,7<br>23°7 N. 94°7 E.<br>Birmanie<br>Magn. 6.5<br>h=ca 117 Km.<br>D=ca 7.665 Km.               |
| 13 JUIL. LWI.      | i     | (P) | Z   | 11-35-28,6 |             |          |                  | O=ca 11-34-22 Lwi.  |
|                    | i     | P   | Z   | 41,1       |             |          |                  | Graben Est Africain   |
|                    | i     | S   | Z   | 36-22,1    |             |          |                  | Données insuffisantes   |
|                    |       | M   | Z   | 52         |             | 6,5      |                  | Magn.Lwi.ca 3.2<br>D=ca 500 Km.   |
| BTR.               | i     | P   | Z   | 11-35-18,7 |             |          |                  |   |
|                    | i     | P   | Z   | 19,2       |             |          |                  |   |
|                    | i     | (S) | Z   | 36-01,5    |             |          |                  |   |
|                    |       | M   | Z   | 28         |             |          |                  |   |
| 13 JUIL. LWI.      | i     |     | Z   | 14-13-59,2 |             |          | D                |   |
| 13 JUIL. LWI.      | i     | P   | Z   | 21-13-07,5 |             |          | d                | O= 21-02-33,3<br>07°7 N. 34°7 W.<br>Océan Atlantique<br>Magn. 5.2<br>h=ca 33 Km.<br>D=ca 7.120 Km.        |
| 13 JUIL. LWI.      | ei    | P   | Z   | 23-52-09,5 |             |          | d                | O= 23-43-48,1<br>48°3 S. 32°0 E.<br>Région de l'Ile du<br>Prince Edouard<br>h=ca 33 Km.<br>D=ca 5.110 Km. |

| Date<br>Station    | Phase |     |     | Temps      | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.   |
|--------------------|-------|-----|-----|------------|-------------|----------|------------------|--|
| 1964<br>14 JUILLET |       |     |     |            |             |          |                  |  |
| LWI.               | i     | P   | Z   | 00-34-13,5 |             |          | C                | O=ca 00-33-49 Lwi.<br>Probablement région<br>d'Uvira, Rép.dém. du<br>Congo.<br>Magn.Lwi.ca 3.0<br>D=ca 145 Km. |
|                    | i     | P   | NC  | 15,0       |             |          |                  |  |
|                    | i     | S   | NC  | 31,0       |             |          |                  |  |
|                    |       | M   | Z   |            |             | 60       |                  |  |
|                    |       | M   | X   |            |             | 5        |                  |  |
| BTR.               | i!    | P   | Z   | 00-34-07,1 |             |          | C                |  |
|                    | i!    | S   | Z   | 18,6       |             |          |                  |  |
|                    | i     | S   | X   | 19,6       |             |          |                  |  |
|                    |       | M   | X   |            |             | 15       |                  |  |
| 15 JUIL. LWI.      | i     | P'  | Z   | 07-45-07   |             |          | cD               | O= 07-26-01,4<br>52°1 N. 170°6 W.<br>Iles Aléoutiennes<br>Magn. 5.6<br>h=ca 30 Km.<br>D=ca 14.190 Km.          |
| 15 JUIL. LWI.      | i     | P   | Z   | 09-57-17,5 |             |          | C                | O= 09-49-05,8<br>35°2 N. 4°5 E.<br>Algérie<br>Magn. 4.3<br>h=ca 39 Km.<br>D=ca 4.850 Km.                       |
|                    | i     |     | Z   | 58-08,5    |             |          |                  |  |
|                    | e     | Lq  | Z   | 10-12-46   |             |          |                  |  |
|                    |       | M   | Z   | 13-42      | 1,7         | 2,5      |                  |  |
|                    |       | M   | CZ  | 17-07      | 12          | 3,5      |                  |  |
| 15 JUIL. LWI.      | i     | (P) | Z   | 09-52-18,0 |             |          |                  | O=ca 09-51-06 Lwi.<br>Données insuffisantes<br>Magn.Lwi.ca 3.4<br>D=ca 500 Km.                                 |
|                    | i     | P   | Z   | 25,7       |             |          |                  |  |
|                    | i     | S   | NC  | 53-20      |             |          |                  |  |
|                    |       | M   | Z   | 52         |             | 8,5      |                  |  |
| 15 JUIL. LWI.      | i     |     | Z   | 14-39-25,5 |             |          |                  |  |
| 15 JUIL. LWI.      | i!    | P   | ZX  | 17-20-14,8 |             |          | DS               | O=ca 17-19-53 Lwi.<br>Probablement NE.d'Uvira,<br>Rép. dém. du Congo.<br>Magn.Lwi.ca 3.7<br>D=ca 127 Km.       |
|                    | i!    | P   | X   | 15,6       |             |          |                  |  |
|                    | i!    | S   | X   | 30,1       |             |          |                  |  |
|                    |       | M   | X   |            |             | 27,5     |                  |  |
| BTR.               | i!    | P   | Z   | 17-20-10,4 |             |          | C!               |  |
|                    | i     |     | XEW | 20,7       |             |          |                  |  |
|                    | i     | S   | X   | 21,5       |             |          |                  |  |
|                    |       | M   | X   |            |             | 53       |                  |  |
|                    |       | M   | NS  |            |             | 10,5     |                  |  |
|                    |       | M   | EW  |            |             | 6        |                  |  |
| 15 JUIL. LWI.      | e     |     | Z   | 23-01-13   |             |          |                  |  |





| Date<br>Station    | Phase   | Temps  | Pér.<br>sec | B.<br>mm         | Mo.<br>du<br>sol | Remarques.  |
|--------------------|---|--|-------------|------------------|------------------|---|
| 1964<br>23 JUILLET |   |  |             |                  |                  |   |
| LWI.               | i P Z<br>e Z<br>M CZ  | 09-48-37,9<br>42<br>10-04-50   | 20          | 8                | d<br>C           | O= 09-40-29,2<br>0°7 S. 16°3 W.<br>Ile de l'Ascension<br>Magn. 4.8<br>h=ca 33 Km.<br>D=ca 5.010 Km.       |
| 23 JUIL. LWI.      | i P Z<br>i! P Z<br>i S NC<br>i S Z<br>M X<br>M X<br>M Z   | 23-16-44,0<br>48,1<br>17-11,6<br>12,6<br>23<br>34  |             | 4<br>4,5<br>32   | C                | O=ca 23-16-03 Lwi.<br>Probablement région N.E.<br>d'Oudjidji, Tanzanie<br>Magn.Lwi.ca 3.7<br>D=ca 275 Km. |
| BTR.               | i! P Z<br>i! S ZX<br>M X<br>M NS<br>M EW  | 23-16-34<br>56,9<br>17-01  |             | 18<br>1,5<br>2,0 | D!               |   |
| 24 JUIL. LWI.      | e P CZ<br>i P' Z<br>i PP CZ<br>ei SKS CE<br>i PS CNCE<br>i PPS CZ<br>ei SS CNCE<br>i SSS CN<br>M CZ<br>M CZ | 07-05-52<br>09-33,7<br>10-34,5<br>15-30<br>20-18,0<br>21-32<br>26-52<br>31-02<br>08-02-20<br>04-50 | 20<br>15    | 13<br>16         | d<br>C           | O= 06-50-52,8<br>46°9 N. 153°9 E.<br>Iles Kouriles<br>Magn. 5.9<br>h=ca 33 Km.<br>D=ca 12.780 Km.         |
| 24 JUIL. LWI.      | e P' Z<br>i PP CZ<br>i SKS CE<br>i! PS CZ<br>i PPS CZ<br>i SS CN<br>i SSS CN<br>M CZ                        | 08-31-21<br>32-20<br>38-18<br>42-06<br>43-13<br>48-26<br>53-04<br>09-26-50                         | 17          | 73               |                  | O= 08-12-40,0<br>47°2 N. 153°8 E.<br>Iles Kouriles<br>Magn. 5.9<br>h=ca 33 Km.<br>D=ca 12.760 Km.         |
| 24 JUIL. LWI.      | i P' Z<br>M CZ  | 14-06-47,5<br>39-20  | 16          | 5                | D                | O= 13-47-48,6<br>06°6 S. 154°8 E.<br>Iles Salomon<br>Magn. 5.6<br>h=ca 62 Km.<br>D=ca 13.930 Km.          |



| Date<br>Station    | Phase       | Temps      | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques  |
|--------------------|-------------|------------|-------------|----------|------------------|--|
| 1964<br>24 JUILLET | LWI.        |            |             |          |                  |  |
|                    | e P CZ      | 17-17-39   |             |          |                  | O= 17-02-49,2  |
|                    | i PP CZ     | 22-18      |             |          |                  | 47°1 N. 153°6 E.   |
|                    | ei SKS CN   | 28-28      |             |          |                  | Iles Kouriles  |
|                    | i PS CZ     | 32-15      |             |          |                  | Magn. 5.8  |
|                    | i PPS CZ/CN | 33-25      |             |          |                  | h=ca 33 Km.  |
|                    | e SS CZ/CE  | 38-39      |             |          |                  | D=ca 12.750 Km.  |
|                    | ei SSS CNCE | 42-(50)    |             |          |                  |  |
|                    | i CZ        | 18-07-05   |             |          |                  |  |
|                    | M CZ        | 16-50      | 19          | 22       |                  |  |
| 25 JUIL. LWI.      | i P' Z      | 12-39-43,9 |             |          | D                | O= 12-20-22,2<br>19°9 S. 176°2 W.<br>Iles Tonga<br>Magn. 5.3<br>h=ca 205 Km.<br>D=ca 16.335 Km.            |
| 25 JUIL. LWI.      | e P' Z      | 18-38-04   |             |          |                  | O= 18-18-08,9<br>17°1 S. 172°9 W.<br>Iles Tonga<br>Magn. 4.6<br>h=ca 33 Km.<br>D=ca 16.800 Km.             |
| 25 JUIL. LWI.      | i P CZ      | 19-44-45   |             |          | C                | O= 19-31-07,0  |
|                    | i P Z       | 45-06,5    |             |          | D                | 27°9 S. 70°9 W.  |
|                    | i PP CZ     | 48-43      |             |          |                  | Nord du Chili  |
|                    | i SKS CE    | 55-41      |             |          |                  | Magn. 6.1  |
|                    | i PS CZ     | 57-44      |             |          |                  | h=ca 26 Km.  |
|                    | i SS CE     | 20-03-15   |             |          |                  | D=ca 10.840 Km.  |
|                    | i CZ        | 19-50      |             |          |                  |  |
|                    | i M CZ      | 24-20      | 24          | 15       |                  |  |
| 26 JUIL. LWI.      | i P' Z      | 06-47-00,6 |             |          |                  | O= 06-28-32,7<br>23°4 S. 180°0 E.<br>Région des Iles Fidji<br>Magn. 4.9<br>h=ca 555 Km.<br>D=ca 15.790 Km. |

| Date<br>Station    | Phase  | Temps   | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques   |
|--------------------|--|---|-------------|----------|------------------|---|
| 1964<br>26 JUILLET |  |   |             |          |                  |   |
| LWI                | i P Z<br>ei (P) Z<br>i P Z<br>i P ZX<br>i S NC<br>i S Z/X<br>M X | 10-19-01,5<br>03,5<br>08,3<br>15<br>49<br>20-00,0<br>13           |             |          | 20               | O=ca 10-18-00 Lwi.<br>Données insuffisantes<br>Magn.Lwi.ca 4.5<br>D=ca 435 Km.  |
| BTR.               | i P Z<br>i Z<br>M X  | 10-18-53,8<br>19-02,8<br>51                                       |             |          | 22               |   |
| 26 JUIL. LWI.      | e P CNECX<br>i (S) NL(NC)<br>ei (S) EL<br>M X                    | 10-49-19,1<br>50-06,4<br>10,1<br>44                               |             |          | 7                | d Données discordantes<br>Magn.Lwi.ca 4.0<br>D=ca 430 Km.   |
| BTR.               | i P Z<br>i!! P ZX<br>i S Z<br>M X                                | 10-49-19,4<br>20,2<br>59,5<br>50-31                               |             |          | 7,5              | C!  |
| 27 JUIL. LWI.      | i P Z<br>i Z<br>i S Z<br>e S NCEC<br>M Z<br>M X                  | 14-25-40,0<br>47,4<br>26-53,6<br>54,4<br>27-51                    |             |          | 23<br>4          | C O=ca 14-24-04<br>Graben Est Africain<br>(Données insuffisantes)<br>Magn.ca 4.5<br>D=ca 700 Km.                              |
| BTR.               | i P Z<br>i Z<br>i S ZX<br>M Z<br>M X                             | 14-25-27,2<br>26-27,9<br>31,2<br>27-13                            |             |          | 4                |   |
| 27 JUIL. LWI.      | i Z  | 15-24-46,6  |             |          |                  | c   |
| 28 JUIL. LWI.      | e PP Z<br>i PP CZ<br>e S CE<br>i SS CE<br>e CN<br>i CZ<br>M CZ   | 18-57-58<br>58-01<br>19-05-46<br>12-36<br>22-56<br>27-40<br>31-30 |             |          | 25               | 8,5<br>O= 18-40-04,3<br>51°2 S. 139°0 E.<br>A ca 1.000 Km. S.W. de<br>Tasmanie<br>Magn. 5.3<br>h=ca 33 Km.<br>D=ca 11.200 Km. |

| Date<br>Station    | Phase   | Temps      | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.              |
|--------------------|---------|------------|-------------|----------|------------------|-------------------------|
| 1964<br>28 JUILLET |         |            |             |          |                  |                         |
| LWI.               | e P Z   | 21-49-44   |             |          |                  | O= 21-38-43,5           |
|                    | i P XCZ | 47         |             |          | D                | 14°3 N. 96°2 E.         |
|                    | i S CE  | 58-56      |             |          |                  | Région des Iles         |
|                    | e SS CE | 22-03-46   |             |          |                  | Andaman                 |
|                    | i CN    | 06-50      |             |          |                  | Magn. 5.5               |
|                    | i CECZ  | 07-14      |             |          |                  | h=ca 33 Km.             |
|                    | i CZ    | 11-36      |             |          |                  | D=ca 7.630 Km.          |
|                    | i CZ    | 15-56      |             |          |                  |                         |
|                    | e X     | 18-04      |             |          |                  |                         |
|                    | M CZ    | 23-00      | 18          | 11       |                  |                         |
|                    | M X     | 23-00      | 16          | 2        |                  |                         |
| 28 JUIL. LWI.      | e P Z   | 22-57-39   |             |          |                  | O= 22-46-34,0           |
|                    |         |            |             |          |                  | 14°1 N. 96°1 E.         |
|                    |         |            |             |          |                  | Région des Iles         |
|                    |         |            |             |          |                  | Andaman                 |
|                    |         |            |             |          |                  | Magn. 5.6               |
|                    |         |            |             |          |                  | h=ca 14 Km.             |
|                    |         |            |             |          |                  | D=ca 7.620 Km.          |
| 30 JUIL. LWI       | i P' Z  | 01-40-44,5 |             |          | dC               | O= 01-22-10,1           |
|                    |         |            |             |          |                  | 17°7 S. 178°2 W.        |
|                    |         |            |             |          |                  | Région des Iles Fidji   |
|                    |         |            |             |          |                  | Magn. 4.3               |
|                    |         |            |             |          |                  | h=ca 643 Km.            |
|                    |         |            |             |          |                  | D=ca 16.310 Km.         |
| 01 AOUT            | LWI.    | i P Z/X    | 04-37-47,6  |          |                  | CSE                     |
|                    |         | i S NC     | 59,8        |          |                  | O= ca 04-37-29 Lwi.     |
|                    |         | M X        | 38-04       |          | 11,5             | Ca 1°30 S. ca 30° E.    |
|                    |         |            |             |          |                  | Probablement ca 105 Km. |
|                    | BTR.    | i P Z      | 04-37-57,9  |          |                  | au N.de Lwiro, région   |
|                    |         | i P Z      | 59,1        |          |                  | Masisi (Rép. dém. du    |
|                    |         | ei S X     | 38-18,2     |          |                  | Congo)                  |
|                    |         | i S Z      | 18,7        |          |                  | Magn.Lwi.ca 3.0         |
|                    |         | M X        |             |          | 5,5              | D=ca 105 Km.            |



| Date<br>Station      | Phase                           | Temps                          | Pér.<br>sec | B.<br>mm  | Mo.<br>du<br>sol | Remarques  |
|----------------------|---------------------------------|--------------------------------|-------------|-----------|------------------|--|
| 1964<br>01 AOUT LWI. | ei P Z<br>M CZ                  | 21-41-11<br>54-57              |             | 1,5       | d                | O= 21-33-27,7<br>19°9 S. 66°4 E.<br>Région des Iles<br>Mascareignes<br>h=ca 33 Km.<br>D=ca 4.520 Km.                 |
| 01 AOUT LWI.         | i P Z/X<br>i S EC<br>M Z<br>M X | 22-57-48,2<br>59-03,7<br>55    |             | 27        | d                | O=ca 22-56-10 Lwi.<br>Graben Est Africain<br>Données insuffisantes<br>Magn.Lwi.ca 5.3<br>D=ca 720 Km.                |
| BTR.                 | i P Z<br>i! P Z<br>i S X<br>M X | 22-57-38,9<br>39,9<br>58-41,6  |             | 20        | c<br>D           |  |
| 02 AOUT LWI.         | i P Z                           | 02-31-25                       |             |           | cD               | O= 02-20-19,2<br>55°9 S. 27°7 W.<br>Région des Iles<br>Sandwich du Sud<br>Magn. 4.9<br>h=ca 86 Km.<br>D=ca 7.780 Km. |
| 02 AOUT LWI.         | i P' Z                          | 03-23-19,9                     |             |           |                  | O= 03-04-16,9<br>56°1 N. 156°1 W.<br>Péninsule de l'Alaska<br>Magn. 5.6<br>h=ca 33 Km.<br>D=ca 14.020 Km.            |
| 03 AOUT LWI.         | i Z<br>e Z<br>M CZ              | 10-50-55,8<br>57-59,7<br>59-30 | 14          | 3         | d<br>d           | O= 10-45-09 B.C.I.S.<br>17°5 N. 39°1 E.<br>Mer Rouge<br>D=ca 2.450 Km.   |
| 03 AOUT LWI.         | i P Z<br>i (S) Z<br>M Z<br>M X  | 13-38-06,0<br>39-24,2<br>40-29 |             | 17<br>4,5 |                  | O=ca 13-36-23 Lwi.<br>Graben Est Africain<br>Données insuffisantes<br>Magn.Lwi.ca 4.2<br>D=ca 750 Km.                |
| BTR.                 | ei (P) Z<br>i S Z<br>M Z        | 13-37-57,7<br>39-03,2<br>52    |             |           |                  |  |



| Date            | Station | Phase   | Temps  | Pér.<br>sec | B.<br>mm    | Mo.<br>du<br>sol            | Remarques   |
|-----------------|---------|---|--|-------------|-------------|-----------------------------|---|
| 1964<br>04 AOUT | LWI.    | i P' Z<br>e CZ<br>i PS CZ<br>i CZ   | 17-43-01,8<br>44-15<br>53-29<br>18-20-29   |             |             |                             | O= 17-24-29,2<br>46°5 N. 151°1 E.<br>Iles Kouriles<br>Magn. 5.9<br>h=ca 101 Km.<br>D=ca 12.600 Km.                        |
| 05 AOUT         | LWI.    | e Z<br>i P' CZ<br>e PP CZ<br>i X<br>i Z<br>i CN<br>i CZ<br>e SS CE<br>e sSS CE                            | 11-24-46<br>58<br>27-35<br>40,5<br>28-07,0<br>38<br>29-55<br>45-32<br>47-02        |             |             | C<br>D<br>D<br>D            | O= 11-06-02,6<br>32°1 S. 179°8 E.<br>Sud des Iles Kermadec<br>Magn. 5.8<br>h=ca 235 Km.<br>D=ca 15.130 Km.                |
| 05 AOUT         | LWI.    | i Z   | 11-28-07,0   |             |             | D                           | Télé?   |
| 05 AOUT         | LWI.    | i P Z<br>i P CZ<br>i PP CZ/CN<br>i SKS CN/CE<br>i PS CN/CE<br>i SS CN/CE<br>i (SSS)CN/CE<br>i! CZ<br>M CZ | 22-36-53,9<br>55<br>40-57<br>47-43<br>49-56<br>55-19<br>59-16<br>23-09-31<br>17-30 | 20          | 54          | D<br>D<br>C<br><br>d<br>DC! | O= 22-23-13,0<br>41°1 S. 74°9 W.<br>Au large de la côte du<br>Sud du Chili<br>Magn. 6.1<br>h=ca 33 Km.<br>D=ca 10.980 Km. |
| 06 AOUT         | LWI.    | e P Z<br>ei S Z<br>e S EC<br>M Z<br>M X   | 02-49-25,6<br>51-09,1<br>16<br>52-20   |             | 31,5<br>6,5 | C                           | O=ca 02-47-20 B.C.I.S.<br>O=ca 02-47-10 LWI.<br>Vers 8° S. 36° E. BCIS.<br>D.Lwi.=ca 1.000 Km.<br>Magn.Lwi.ca 5.3         |
|                 | BTR.    | i P Z<br>i P Z<br>i S Z<br>i S Z<br>M X<br>M Z/X  | 02-49-13,8<br>17,0<br>50-51,5<br>51-07,8<br>46<br>52-09                            |             | 4<br>X:4    |                             |   |
| 06 AOUT         | LWI.    | i P' Z<br>i sP' Z   | 17-22-05,2<br>24-50,8  |             |             | c<br>D                      | O= 17-03-28,9<br>22°5 S. 179°5 W.<br>Sud des Iles Fidji<br>Magn. 5.3<br>h=ca 504 Km.<br>D=ca 15.890 Km.                   |



| Date<br>Station      | Phase   | Temps  | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.  |
|----------------------|---|--|-------------|----------|------------------|---|
| 1964<br>08 AOUT LWI. | i P' Z  | 16-03-52,9                                     |             |          | d                | O= 15-45-10,9<br>12°5 N. 87°8 W.<br>Près de la côte du<br>Nicaragua.<br>Magn. 5.8<br>h=ca 63 Km.<br>D=ca 12.940 Km. |
| 08 AOUT LWI.         | i P' Z  | 21-19-13,9                                     |             |          | C                | O= 20-59-43,6<br>17°5 S. 175°0 W.<br>Iles Tonga<br>Magn. 4.8<br>h=ca 193 Km.<br>D=ca 16.600 Km.                     |
| 10 AOUT LWI.         | ei (P) Z  | 01-24-00                                       |             |          |                  | O= 01-10-12,4<br>19°1 N. 67°3 W.<br>Détroit de Mona<br>Magn. 5.5<br>h=ca 33 Km.<br>D=ca 10.720 Km.                  |
| 10 AOUT LWI.         | e Z   | 09-51-11                                       |             |          |                  |   |
| 10 AOUT LWI.         | i P Z   | 17-11-45,6                                     |             |          | D                | O= 16-58-44,0<br>9°2 N. 62°0 W.<br>Près de la côte du<br>Venezuela<br>Magn. 5.5<br>h=ca 51 Km.<br>D=ca 10.120 Km.   |
| 11 AOUT LWI.         | e P Z<br>i P Z<br>e S NC<br>e S Z<br>M Z<br>M X | 23-41-50,6<br>51,5<br>43-19,6<br>24,8<br>44-23 |             |          | 8<br>2           | O=ca 23-40-01,5 Lwi.<br>Données insuffisantes<br>Graben Est Africain<br>Magn. 4.0<br>D=ca 800 Km.                   |
| BTR.                 | ei P Z<br>i S Z<br>i S Z<br>M Z<br>M X          | 23-41-36,5<br>42-49,0<br>51,0<br>43-34         |             |          | 16<br>1,5        |   |

| Date<br>Station      | Phase   | Temps   | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques  |
|----------------------|---|---|-------------|----------|------------------|--|
| 1964<br>12 AOUT LWI. | e P Z<br>e CZ<br>M CZ   | 19-33-46<br>42-54<br>20-00-30   | 12          | 4,5      |                  | O= 19-26-26,1<br>31°0 N. 49°8 E.<br>Région Ouest de l'Iran<br>Magn. 5.1<br>h=ca 33 Km.<br>D=ca 4.290 Km.       |
| 13 AOUT LWI.         | e P CZ<br>i P' Z<br>i PP CZ<br>i CZ<br>i PS CZ<br>i CE<br>i SS CN<br>i CZ<br>M CZ | 00-46-11<br>49-32,8<br>51-20<br>53-24<br>01-01-42<br>03-06<br>07-54<br>26-54<br>39-54 | 18          | 10       | d<br>D           | O= 00-31-14,1<br>05°4 S. 154°3 E.<br>Iles Salomon<br>Magn. 6.0<br>h=ca 383 Km.<br>D=ca 13.890 Km.              |
| 13 AOUT LWI.         | i P Z   | 10-45-07,9  |             |          | C                | O= 10-38-05,0<br>34°2 N. 25°7 E.<br>Crête<br>Magn. 4.4<br>h=ca 33 Km.<br>D=ca 4.040 Km.                        |
| 13 AOUT LWI.         | i P' Z  | 11-07-16,1  |             |          | dC               | O= 10-38-05,0<br>19°3 S. 177°6 E.<br>Région des Iles Fidji<br>Magn. 4.3<br>h=ca 551 Km.<br>D=ca 16.260 Km.     |
| 13 AOUT LWI.         | e (P) Z<br>i S CE<br>e CE<br>M CZ   | 18-34-26<br>40-52<br>46-28<br>52-30   | 16          | 3        |                  | O= 18-26-30,7<br>10°5 S. 13°3 W.<br>Région de l'Ile<br>Ascension<br>Magn. 5.1<br>h=ca 33 Km.<br>D=ca 4.730 Km. |
| 14 AOUT LWI.         | i P Z   | 16-50-01,5  |             |          | C                | O= 16-39-21 B.C.I.S.<br>58° S. 11° W.<br>Atlantique Sud, à l'Est<br>des Iles Sandwich<br>D=ca 7.095 Km.        |





| Date<br>Station     | Phase  | Temps   | Pér.<br>sec | B.<br>mm    | Mo.<br>du<br>sol | Remarques.  |
|---------------------|--|---|-------------|-------------|------------------|---|
| 1964<br>14 AOUT LWI | ei P Z<br>i S CN<br>i Lq CN<br>M CZ                        | 21-38-34,4<br>47-25<br>54-53<br>22-05-40          |             | 3           |                  | O= 21-27-41,6<br>Crête médiane de<br>l'Atlantique<br>Magn. 4.8<br>h=ca 33 Km.<br>D=ca 7.350 Km.                               |
| 15 AOUT BTR.        | ei P Z<br>i P Z<br>i S Z<br>M Z                            | 14-58-11,3<br>21,1<br>58,6<br>59-26               |             |             |                  | O=ca 14-57-09 Btr.<br>Magn.Ast.ca 3.4<br>D=ast.ca 435 Km.<br>Données insuffisantes  |
| 17 AOUT LWI.        | i P Z  | 00-24-56,9  |             |             |                  | O= 00-17-40,9<br>35°0 N. 26°0 E.<br>Crête<br>Magn. 4.8<br>h=ca 18 Km.<br>D=ca 4.120 Km.                                       |
| 17 AOUT LWI.        | i P' Z   | 12-03-33  |             |             |                  | O= 11-45-01,2<br>18°0 S. 178°3 W.<br>Région des Iles Fidji<br>Magn. 5.1<br>h=ca 648 Km.<br>D=ca 16.285 Km.                    |
| 17 AOUT LWI.        | M CZ   | 18-24-30  | 22          | 2           |                  |   |
| 17 AOUT LWI.        | i P Z<br>i NL<br>i S NC<br>M Z<br>M X                      | 23-00-07,7<br>25<br>47,0<br>01-20                 |             | > 100<br>19 | dC               | O=ca 22-59-15 Lwi.<br>Région Nord du Ruwenzori<br>Magn.Lwi.ca 4.5<br>D=ca 355 Km.   |
| BTR.                | i P Z<br>ei S EW(NS)<br>M X                                | 23-00-10,8<br>51,8<br>01-04                       |             |             | DC!              |   |
| 18 AOUT LWI.        | i P Z<br>i SKS CZ/CE/CN<br>i PS CZ/CE/CN<br>i SS CN<br>M Z | 04-58-40,3<br>05-09-22<br>11-30<br>15-56<br>40-30 |             | 22          | 12,5             | O= 04-44-58,0<br>26°4 S. 71°5 W.<br>Au large de la côte<br>région Nord du Chili<br>Magn. 6.4<br>h=ca 8 Km.<br>D=ca 10.915 Km. |

| Date<br>Station      | Phase   | Temps   | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques   |
|----------------------|---|---|-------------|----------|------------------|---|
| 1964<br>18 AOUT LWI. | i (P) Z<br>e S CZ/CE<br>e Lr CZ<br>M CZ                           | 15-32-22,1<br>37-29<br>40-37<br>42-50                   | 24          | 1,5      | d                | O= 15-26-11,4<br>5°7 N. 58°0 E.<br>Crête de Carlsberg<br>Magn. 5.4<br>h=ca 33 Km.<br>D=ca 3.355 Km.     |
| 19 AOUT LWI.         | e P Z   | 01-42-16  |             |          |                  | O= 01-30-57,4<br>61°2 S. 27°8 W.<br>Région des Iles<br>Sandwich du Sud<br>h=ca 33 Km.<br>D=ca 8.055 Km. |
| 19 AOUT LWI.         | i P Z/CZ<br>i PP CZ<br>i S CN/CE<br>i CZ/CN/CE<br>i CZ/CN<br>M CZ | 09-40-25,7<br>42-02<br>46-18<br>49-24<br>52-16<br>56-40 | 14          | 17       | C                | O= 09-33-10,0<br>28°2 N. 52°6 E.<br>Région Sud de l'Iran<br>Magn. 5.6<br>h=ca 50 Km.<br>D=ca 4.215 Km.  |
| 19 AOUT LWI.         | i P Z<br>i P Z<br>ei S Z<br>M X                                   | 13-29-03,8<br>07,8<br>30-52<br>31-57                    |             | 5        | C<br>D           | O=ca 13-26-44 Lwi.<br>Graben Est Africain<br>Magn. Lwi. ca 5.0<br>D=ca 1.050 Km.                        |
| BTR.                 | e P Z<br>i S Z<br>M X   | 13-28-(51)<br>30-(25)<br>31-(23)                        |             | 3,5      |                  |   |
| 19 AOUT LWI.         | i! P Z/CZ<br>i PP CZ<br>i S CE<br>i CZ/CN/CE<br>i CZ<br>M CZ      | 15-27-31,7<br>29-08<br>33-26<br>36-28<br>39-20<br>42-30 |             |          | D                | O= 15-20-13,9<br>28°2 N. 52°7 E.<br>Région Sud de l'Iran<br>Magn. 5.6<br>h=ca 52 Km.<br>D=ca 4.220 Km.  |
| 20 AOUT LWI.         | i P Z<br>i CZ<br>i CN<br>M CZ                                     | 05-16-05,8<br>25-08<br>28-20<br>32-10                   | 17          | 2        | C                | O= 05-08-50,3<br>28°1 N. 52°6 E.<br>Région Sud de l'Iran<br>Magn. 5.1<br>h=ca 47 Km.<br>D=ca 4.210 Km.  |



| Date Station         | Phase   | Temps                                    | Pér. sec | B. mm | Mo. du sol | Remarques.  |
|----------------------|---|--|----------|-------|------------|---|
| 1964<br>20 AOUT LWI. | e P Z<br>i S CZ<br>i CZ<br>M CZ               | 05-47-02<br>53-02<br>56-06<br>06-03-20   | 17       | 6,5   |            | O= 05-39-47,7<br>28°2 N. 52°6 E.<br>Région Sud de l'Iran<br>Magn. 5.5<br>h=ca 52 Km.<br>D=ca 4.210 Km.                    |
| 20 AOUT LWI.         | e P Z   | 08-50-46                                 |          |       |            | O= 08-37-47,1<br>14°9 N. 60°4 W.<br>Iles sous le vent<br>(Petites Antilles)<br>Magn. 5.5<br>h=ca 65 Km.<br>D=ca 9.980 Km. |
| 20 AOUT LWI.         | i P Z<br>e (S) CN<br>i CZ<br>M CZ             | 12-58-33,8<br>13-06-48<br>13-00<br>19-50 | 18       | 4     |            | O= 12-48-47,7<br>37°4 S. 78°3 E.<br>Crête médiane de<br>l'Océan Indien<br>h=ca 33 Km.<br>D=ca 6.370 Km.                   |
| 21 AOUT LWI.         | e Z<br>i S CE<br>i CZ                         | 08-06-20<br>12-29<br>15-27               |          |       |            | O= 07-59-17,0<br>28°3 N. 52°5 E.<br>Région Sud de l'Iran<br>h=ca 54 Km.<br>D=ca 4.220 Km.                                 |
| 21 AOUT LWI.         | i P Z<br>i P Z<br>e S NC/EC<br>M X            | 16-22-04,6<br>05,8<br>24-36,3<br>26-33   |          | 36    |            | O=ca 16-18-43,3 B.C.I.S.<br>O=ca 16-18-49 Lwi.<br>Kariba<br>Magn.Lwi.ca 6<br>D=ca 1.500 Km.                               |
| BTR.                 | i P Z<br>e S X<br>M X                         | 16-21-58,6<br>24-26,6<br>26-15           |          | 11    | C          |   |
| 22 AOUT LWI.         | i P Z<br>i Z<br>i (S) Z<br>i (S) NC/EC<br>M X | 03-46-32,6<br>47-24,6<br>42,1<br>52      |          |       | 2          | O=ca 03-45-12 Lwi.<br>Données insuffisantes<br>Magn.Lwi.ca 3.9<br>D=ca 580 Km.  |
| BTR.                 | ei P Z<br>i P Z<br>i S Z                      | 03-46-25,2<br>26,6<br>47-20,9            |          |       |            |   |

| Date<br>Station      | Phase   | Temps   | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.   |
|----------------------|---|---|-------------|----------|------------------|--|
| 1964<br>22 AOUT LWI. | i P Z   | 05-51-52,5  |             |          |                  | O= 05-42-38,7<br>34°9 S. 15°1 W.<br>Région de l'île<br>Tristan da Cunha<br>h=ca 33 Km.<br>D=ca 5.790 Km.             |
| 23 AOUT LWI.         | e P' Z<br>i! PP CZ<br>i PS CZ/CE<br>i PPS CZ/CE<br>i SS CN<br>e Lr CZ<br>M CZ | 15-42-51<br>44-18<br>54-12<br>55-26<br>16-01-08<br>19-26<br>27-40 | 23          | 3,5      | C                | O= 15-24-05,3<br>6°1 S. 149°4 E.<br>Région de la Nouvelle<br>Bretagne<br>Magn. 4.9<br>h=ca 63 Km.<br>D=ca 13.350 Km. |
| 24 AOUT LWI.         | i P Z   | 17-39-24,9  |             |          |                  | O= 17-26-15,1<br>0°2 N. 123°8 E.<br>Nord des Célèbes<br>Magn. 5.4<br>h=ca 127 Km.<br>D=ca 10.555 Km.                 |
| 24 AOUT LWI.         | e P' Z  | 22-15-52  |             |          |                  | O= 21-56-54,2<br>58°4 N. 150°3 W.<br>Golfe de l'Alaska<br>Magn. 5.8<br>h=ca 22 Km.<br>D=ca 13.780 Km.                |
| 25 AOUT LWI.         | i P Z   | 07-15-29,5  |             |          | c                | O= 07-08-11,1<br>35°4 N. 28°6 E.<br>Au S.E. de l'île de<br>Rhodes<br>Magn. 4.6<br>h=ca 11 Km.<br>D=ca 4.150 Km.      |
| 25 AOUT LWI.         | i P Z   | 08-12-16,1  |             |          | c                | O= 08-05-01,6<br>35°6 N. 29°1 E.<br>Au S.E. de l'île de<br>Rhodes<br>Magn. 4.6<br>h=ca 45 Km.<br>D=ca 4.180 Km.      |

| Date<br>Station | Phase | Temps   | Pér.<br>sec  | B.<br>mm | Mo.<br>du<br>sol | Remarques   |
|-----------------|-------|---|--|----------|------------------|---|
| 1964<br>25 AOUT | LWI   | i! P Z<br>i CN<br>i CZ<br>i CE<br>M CZ  | 11-19-03,3<br>24-52<br>30-24<br>32-04<br>36-20                               | 16       | 5                | cD<br>O= 11-11-53,6<br>36°1 N. 28°7 E.<br>Au S.E. de l'Ile de<br>Rhodes<br>Magn. 6.1<br>h=ca 50 Km.<br>D=ca 4.230 Km.           |
| 25 AOUT         | LWI.  | ei P Z  | 11-50-11,4   |          |                  | O= 11-42-59,9<br>35°4 N. 28°9 E.<br>Au S.E. de l'Ile de<br>Rhodes<br>Magn. 4.5<br>h=ca 43 Km.<br>D=ca 4.150 Km.                 |
| 25 AOUT         | LWI.  | i P Z<br>i CZ<br>i PP CZ<br>i (SKS) CN<br>i! PS CN<br>i SS CN<br>e CE<br>e Lr CZ/CN<br>M CZ | 14-00-34,4<br>36<br>04-32<br>11-16<br>13-04<br>17-53<br>27-20<br>32-28<br>40 | 48       | 33               | cD<br>D<br>C<br>S<br>O= 13-47-20,6<br>78°2 N. 126°6 E.<br>Océan glacial Arctique<br>Magn. 6.1<br>h=ca 50 Km.<br>D=ca 10.420 Km. |
| 25 AOUT         | LWI.  | i P Z   | 14-44-47,4   |          |                  | C<br>O= 14-37-32,5<br>35°7 N. 29°1 E.<br>Au S.E. de l'Ile de<br>Rhodes<br>Magn. 4.8<br>h=ca 24 Km.<br>D=ca 4.190 Km.            |
| 25 AOUT         | LWI.  | i P Z<br>i Z/NC<br>i S NC/Z<br>i EC/X<br>M Z<br>M X   | 21-00-24<br>29<br>57<br>58<br>01-00<br>07                                    |          | 23<br>3          | O=ca 20-59-38 Lwi.<br>Données insuffisantes<br>Magn.Lwi.ca 3.2<br>D=ca 290 Km.  |
|                 | BTR.  | e P Z<br>i P Z<br>i P Z   | 21-00-29,2<br>33,0<br>35,9   |          |                  |   |

| Date<br>Station | Phase  | Temps                            | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques   |
|-----------------|--|----------------------------------|-------------|----------|------------------|---|
| 1964<br>26 AOUT | LWI. i! P Z  | 03-30-14,0                       |             |          | D                | O= 03-18-44,1<br>52°1 N. 30°1 W.<br>Crête médiane de<br>l'Atlantique Nord<br>Magn. 5.4<br>h=ca 33 Km.<br>D=ca 8.150 Km. |
| 26 AOUT         | LWI. i P Z/X<br>i S X<br>M X                       | 11-39-43<br>58,0<br>40-02        |             | 13       |                  | O=ca 11-39-21 Lwi.<br>Données insuffisantes<br>Magn.Lwi.ca 3.4<br>D=ca 125 Km.  |
|                 | BTR. i P Z<br>ei S EW<br>i S X(NS)<br>M X          | 11-39-43,1<br>58,4<br>59,4       |             | 21       | C!               |   |
| 26 AOUT         | LWI. i P Z<br>i (P) Z/X<br>i (S) Z/NC/EC/X<br>M X  | 18-59-06<br>08,5<br>28,7<br>34   |             | 33       |                  | O=ca 18-58-41,4 Lwi.<br>Données insuffisantes<br>Magn.Lwi.ca 3.8<br>D=ca 142 Km.  |
|                 | BTR. i P Z<br>i! P Z<br>i S X<br>M X               | 18-59-15,9<br>20,4<br>41,2<br>54 |             | 12,5     |                  |   |
| 26 AOUT         | LWI. i Z   | 21-35-46,1                       |             |          | C                | O= 21-28,1 B.C.I.S.<br>16°34 S. 28°½ E.<br>Gorges de Kariba   |
| 27 AOUT         | LWI. i P Z<br>i! P Z/X<br>i (S) NC/X<br>M Z<br>M X | 00-24-21<br>22<br>25-08<br>38    |             | 72<br>10 |                  | O=ca 00-23-17,0 Lwi.<br>Données insuffisantes<br>Magn.Lwi.ca 4.3<br>D=ca 450 Km.  |
|                 | BTR. i P Z<br>i S X<br>M X                         | 00-24-21,5<br>25-10,3<br>37      |             | 10       | cD               |   |
| 27 AOUT         | LWI. i P Z   | 06-22-20,5                       |             |          | D                | O= 06-14-14 B.C.I.S.<br>17°7 S. 13°1 W.<br>Crête médiane de<br>l'Atlantique<br>D=ca 4.880 Km.                           |

| Date<br>Station      | Phase                                       | Temps                                       | Pér.<br>sec | B.<br>mm  | Mo.<br>du<br>sol | Remarques   |
|----------------------|---|---|-------------|-----------|------------------|---|
| 1964<br>27 AOUT LWI. | e P' Z                                      | 08-13-48                                    |             |           |                  | O= 07-53-54,8<br>17°5 S. 173°0 W.<br>Iles Tonga<br>Magn. 5.3<br>h=ca 33 Km.<br>D=ca 16.770 Km.                  |
| 27 AOUT LWI.         | i P Z                                       | 12-06-10,4                                  |             |           | d                | O= 11-58-41,3<br>28°2 N. 55°7 E.<br>Sud de l'Iran<br>Magn. 5.1<br>h=ca 69 Km.<br>D=ca 4.420 Km.                 |
| 27 AOUT LWI.         | e P Z<br>i CN<br>e CZ<br>M CZ               | 13-04-23<br>13-58<br>19-20<br>20-30         | 20          | 5,5       |                  | O= 12-56-46,1<br>27°5 N. 55°9 E.<br>Sud de l'Iran<br>Magn. 5.3<br>h=ca 33 Km.<br>D=ca 4.380 Km.                 |
| 27 AOUT LWI.         | i P Z<br>e S CN<br>M CZ                     | 19-39-13,1<br>45-08<br>59-20                | 14          | 3,5       | D                | O= 19-31-56,9<br>35°5 N. 28°7 E.<br>A l'Est de l'Ile de<br>Rhodes<br>Magn. 4.7<br>h=ca 33 Km.<br>D=ca 4.150 Km. |
| 28 AOUT LWI.         | i P Z<br>i (S) NC/EC<br>M Z<br>M X          | 02-10-47,0<br>22,0<br>24                    |             | 77<br>6,5 |                  | O=ca 02-10-02 Lwi.<br>Données insuffisantes<br>Magn.Lwi. 3.8<br>D=ca 300 Km.                                    |
| BTR.                 | e P Z<br>ei P Z<br>i!! P Z<br>ei S X<br>M X | 02-10-51,4<br>54,2<br>11-00,9<br>28,4<br>49 |             | 3,5       |                  |   |
| 28 AOUT LWI.         | i P' Z                                      | 04-54-06,7                                  |             |           | c                | O= 04-35-29,3<br>19°8 S. 178°2 W.<br>Région des Iles Fidji<br>Magn. 5.4<br>h=ca 580 Km.<br>D=ca 16.180 Km.      |
| 28 AOUT LWI.         | i Z   | 04-41-07,0                                  |             |           | C                |   |

| Date<br>Station      | Phase |   |     | Temps      | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques  |
|----------------------|-------|---|-----|------------|-------------|----------|------------------|--|
| 1964<br>28 AOUT LWI. | i     |   | Z   | 07-20-47,2 |             |          |                  | O= 07-11,5 B.C.I.S.<br>16°3/4 S. 28°½ E.<br>Gorges de Kariba   |
| 28 AOUT LWI.         | e     | P | Z   | 12-13-57   |             |          |                  | O= 12-06-18,3<br>37°9 N. 19°8 E.<br>Mer Ionienne<br>Magn. 4.5<br>h=ca 61 Km.<br>D=ca 4.550 Km.                 |
| 28 AOUT LWI.         | i     | P | Z   | 00-08-08,6 |             |          | D                | O= 23-48-26,3<br>21°6 S. 175°3 W.<br>Iles Tonga<br>Magn. 5.2<br>h=ca 60 Km.<br>D=ca 16.290 Km.                 |
| 29 AOUT LWI.         | i     | P | Z/X | 15-00-56   |             |          |                  | O=ca 15-00-20 Lwi.<br>Données insuffisantes<br>Magn.Lwi.ca 3.0<br>D=ca 225 Km.                                 |
|                      | i     | S | Z/X | 01-22,2    |             |          |                  |  |
|                      |       | M | Z   | 29         |             | 33       |                  |  |
|                      |       | M | X   |            |             | 4        |                  |  |
| 29 AOUT LWI.         | i     |   | Z   | 18-42-33,0 |             | 7        | C                |  |
| 29 AOUT LWI.         | e     | P | Z   | 19-45-09   |             |          |                  | O= 19-37-56,0<br>35°2 N. 28°6 E.<br>Au S.E.de l'Ile de<br>Rhodes<br>Magn. 4.7<br>h=ca 63 Km.<br>D=ca 4.130 Km. |
| 29 AOUT LWI.         | i     |   | Z   | 21-28-27,2 |             |          | D                |  |
| 30 AOUT LWI.         | i     | P | Z   | 02-45-43,4 |             |          | C                | O= 02-35-08,1<br>27°6 N. 88°3 E.<br>Sikkin<br>Magn. 5.2<br>h=ca 21 Km.<br>D=ca 7.160 Km.                       |



| Date<br>Station      | Phase  | Temps                  | Pér.<br>sec | B.<br>mm          | Mo.<br>du<br>sol | Remarques.  |
|----------------------|--|------------------------|-------------|-------------------|------------------|---|
| 1964<br>30 AOUT LWI. | i P Z  | 08-31-03,2             |             |                   | C                | O= 08-11-42,5<br>15°8 S. 174°9 W.<br>Iles Tonga<br>Magn. 4.0<br>h=ca 286 Km.<br>D=ca 16.720 Km.                       |
| 30 AOUT LWI.         | i P Z/X<br>i! S NC/X/NS<br>M X<br>M NS<br>M EW | 13-34-26,6<br>31<br>34 |             | 89<br>7,5<br>14,5 | DSE              | O= 13-34-19,0 Lwi.<br>Ca 35 Km.ENE. de Bukavu<br>Rép. dém. du Congo<br>Magn.Lwi.ca 3.5                                |
|                      | PTR. i! P Z<br>i S X                           | 13-34-30,9<br>36,7     |             |                   | C                |   |
| 30 AOUT LWI.         | i P' Z   | 22-04-13,4             |             |                   | D                | O= 21-44-56,9<br>19°9 S. 176°0 W.<br>Région des Iles Fidji<br>Magn. 5.6<br>h=ca 253 Km.<br>D=ca 16.360 Km.            |
| 30 AOUT LWI          | e Z<br>M Z                                     | 23-57-24<br>55         | 1           | 2                 |                  | O= 23-50,1 B.C.I.S.<br>16°3/4 S. 28°1/2 E.<br>Gorges de Kariba  |
| 31 AOUT LWI.         | i P Z  | 02-33-20,6             |             |                   |                  | O= 02-14-20,3<br>35°2 S. 106°0 W.<br>Au S. de l'Ile de<br>Pâques<br>Magn. 5.2<br>h=ca 33 Km.<br>D=ca 13.740 Km.       |
| 31 AOUT LWI.         | i P' Z   | 23-39-23,9             |             |                   | D                | O= 23-20-19,4<br>52°4 N. 170°7 W.<br>Iles aux Renards,<br>Aléoutiennes<br>Magn. 5.2<br>h=ca 33 Km.<br>D=ca 14.160 Km. |



| Date Station         | Phase        | Temps      | Pér. sec | B. mm | Mo. du sol | Remarques.             |
|----------------------|--------------|------------|----------|-------|------------|------------------------|
| 1964<br>01 SEPTEMBRE |              |            |          |       |            |                        |
| LWI.                 | i P Z        | 13-33-33,6 |          |       |            | O= 13-22-36,6          |
|                      | i PP Z       | 36-05,1    |          |       |            | 27°2 N. 92°3 E.        |
|                      | e S CN       | 42-30      |          |       |            | Région de la frontière |
|                      | e ScS CN     | 43-36      |          |       |            | Inde - Chine           |
|                      | M CZ         | 14-02-30   | 20       | 1,5   |            | Magn. 5.7              |
|                      |              |            |          |       |            | h=ca 33 Km.            |
|                      |              |            |          |       |            | D=ca 7.520 Km.         |
| 01 SEPT. LWI.        | i P' Z       | 17-35-47,8 |          |       | C          | O= 17-16-40,4          |
|                      |              |            |          |       |            | 51°2 N. 170°6 W.       |
|                      |              |            |          |       |            | Iles Aléoutiennes      |
|                      |              |            |          |       |            | Magn. 5.5              |
|                      |              |            |          |       |            | h=ca 25 Km.            |
|                      |              |            |          |       |            | D=ca 14.200 Km.        |
| 01 SEPT. LWI.        | i P Z        | 22-17-43,2 |          |       |            | O=ca 22-17-02 Lwi.     |
|                      | i EC         | 48,4       |          |       |            | Données insuffisantes  |
|                      | i S NL       | 18-18,9    |          |       |            | Magn.Lwi.ca 3.5        |
|                      | i S NC/EC/EL | 19,4       |          |       |            | D=ca 270 Km.           |
|                      | M Z          | 29         |          | 56    |            |                        |
|                      | M X          |            |          | 6     |            |                        |
| BTR.                 | i P Z        | 22-17-37,9 |          |       | c          |                        |
|                      | i P Z        | 40,9       |          |       | D          |                        |
|                      | i! Z         | 47,4       |          |       |            |                        |
|                      | i S X        | 18-04,4    |          |       |            |                        |
|                      | M X          | 09         |          | 14    |            |                        |
| 02 SEPT. LWI.        | i Z          | 16-14-44,7 |          |       |            |                        |
| 02 SEPT. LWI.        | i Z          | 22-19-41,7 |          |       |            |                        |
| 03 SEPT. LWI.        | e P Z        | 20-13-31,3 |          |       |            | O=ca 20-12-41 Lwi.     |
|                      | i (S) Z      | 14-05,6    |          |       |            | Données insuffisantes  |
|                      | M Z          | 30         |          | 21    |            | Magn.Lwi.ca 3.0        |
|                      |              |            |          |       |            | D=ca 340 Km.           |
| BTR.                 | ei P Z       | 20-13-33,0 |          |       |            |                        |
|                      | i P Z        | 34,5       |          |       |            |                        |
|                      | i! P Z       | 41,8       |          |       |            |                        |
|                      | i S Z        | 14-12,0    |          |       |            |                        |
|                      | M Z          | 38         |          |       |            |                        |

| Date<br>Station              | Phase   | Temps   | Pér.<br>sec | B.<br>mm  | Mo.<br>du<br>sol | Remarques  |
|------------------------------|---|---|-------------|-----------|------------------|--|
| 1964<br>04 SEPTEMBRE<br>LWI. | i P Z<br>i PP CZ<br>i S CZ/CE<br>i SS CE<br>e Lq CZ/CN<br>M CZ                  | 03-39-24,1<br>42-07,2<br>48-21<br>52-29<br>55-45<br>04-06-10              | 13          | 2,5       | D                | O= 03-28-33,1<br>07°6 N. 36°9 W.<br>Crête médiane de<br>l'Atlantique<br>Magn. 5.4<br>h=ca 22 Km.<br>D=ca 7.360 Km. |
| 04 SEPT. LWI.                | e P CZ<br>i! PP Z<br>i CZ<br>e SKS CE<br>e PS CZ/CE<br>i SS CE<br>M CZ          | 10-48-08<br>52-13,9<br>54-47<br>58-49<br>11-01-37<br>07-27<br>32-50       | 20          | 13        | C                | O= 10-34-13,1<br>4°0 S. 131°4 E.<br>Nouvelle Guinée<br>Magn. 5.9<br>D=ca 11.380 Km.                                |
| 04 SEPT. LWI.                | i P Z<br>i! (P) Z<br>i S NC<br>i S NC<br>M Z<br>M X                             | 21-39-05,5<br>11,0<br>34,5<br>38<br>52                                    |             | 25<br>3   |                  | O=ca 21-38-26 Lwi.<br>Données insuffisantes<br>Magn.Lwi.ca 3.0<br>D=ca 250 Km.                                     |
| ETR.                         | e P Z<br>i Z<br>i! Z<br>i S X<br>M X  | 21-39-07,5<br>09,0<br>13,0<br>41<br>52                                    |             |           |                  |  |
| 05 SEPT. LWI.                | ei P' Z<br>e PP CZ/CE<br>i CE<br>i PS CE<br>i SS CE<br>e SSS CN<br>e CZ<br>M CZ | 03-12-46,1<br>14-44<br>21-32<br>24-27<br>31-54<br>36-28<br>52-42<br>58-30 | 28          | 9         | D                | O= 02-53-50,6<br>5°8 S. 154°0 E.<br>Iles Salomon<br>Magn. 6.4<br>h=ca 69 Km.<br>D=ca 13.860 Km.                    |
| 05 SEPT. LWI.                | ei P Z<br>i (S) Z<br>i S Z<br>M Z<br>M X  | 07-13-45,1<br>14-44,3<br>50,7<br>15-43                                    |             | 18<br>3,5 |                  | O=ca 07-12-18 Lwi.<br>Données insuffisantes<br>Magn.Lwi.ca 4.3<br>D=ca 625 Km.                                     |
| BTR.                         | ei (P) Z<br>i P Z<br>i S Z<br>M Z   | 07-13-45,3<br>46,8<br>14-51,8<br>15-40                                    |             |           |                  |  |



| Date<br>Station      | Phase      | Temps      | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques                      |
|----------------------|------------|------------|-------------|----------|------------------|--------------------------------|
| 1964<br>05 SEPTEMBRE |            |            |             |          |                  |                                |
| LWI.                 | e P Z      | 12-36-51   |             |          |                  | O= 12-27-22,2                  |
|                      | i! S CN/CE | 44-31      |             |          |                  | 0°6 N. 25°9 W.                 |
|                      | i ScS CN   | 46-48      |             |          |                  | Crête médiane de               |
|                      | i SS CE    | 48-11      |             |          |                  | l'Atlantique                   |
|                      | e Lr CZ/CE | 53-31      |             |          |                  | Magn. 4.7                      |
|                      | M CZ       | 57-00      | 20          | 9        |                  | h=ca 33 Km.<br>D=ca 6.090 Km.  |
| 06 SEPT. LWI.        | i P Z      | 03-48-35,6 |             |          |                  | O= 03-38-48,8                  |
|                      | i S CN     | 56-33      |             |          |                  | 46°7 S. 13°5 W.                |
|                      | M CZ       | 04-10-00   |             |          |                  | Crête médiane de               |
|                      |            |            |             |          |                  | l'Atlantique du Sud            |
|                      |            |            |             |          |                  | Magn. 4.8                      |
|                      |            |            |             |          |                  | h=ca 33 Km.<br>D=ca 6.390 Km.  |
| 06 SEPT. LWI.        | e Z        | 16-12-27   |             |          |                  |                                |
| 06 SEPT. LWI.        | e P Z      | 17-51-40   |             |          |                  | O= 17-36-44,3                  |
|                      |            |            |             |          |                  | 63°1 N. 147°7 W.               |
|                      |            |            |             |          |                  | Alaska Central                 |
|                      |            |            |             |          |                  | Magn. 4.8                      |
|                      |            |            |             |          |                  | h=ca 33 Km.<br>D=ca 13.240 Km. |
| 07 SEPT. LWI.        | e P Z      | 11-33-24   |             |          |                  | O= 11-27-14,7                  |
|                      | i S CN     | 38-23      |             |          |                  | 15°7 N. 53°3 E.                |
|                      | M CZ       | 47-00      |             | 11       |                  | Mer d'Arabie                   |
|                      |            |            |             |          |                  | Magn. 4.6                      |
|                      |            |            |             |          |                  | h=ca 33 Km.<br>D=ca 3.330 Km.  |
| 07 SEPT. LWI.        | ei P Z     | 11-45-28,8 |             |          |                  | O=ca 11-43-48,5 Lwi.           |
|                      | M Z        | 47-40      |             |          |                  | Graben Est Africain            |
| BTR.                 | i P Z      | 11-45-15,7 |             |          |                  | Magn.Lwi.ca 4.2                |
|                      | ei S Z     | 46-22,2    |             |          |                  | D=ca 750 Km.                   |
|                      | i Z        | 24,2       |             |          |                  |                                |
|                      | i S Z      | 26,7       |             |          |                  |                                |
|                      | M Z        | 47-15      |             | 38       |                  |                                |

| Date<br>Station      | Phase     | Temps      | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.  |
|----------------------|-----------|------------|-------------|----------|------------------|---|
| 1964<br>08 SEPTEMBRE |           |            |             |          |                  |   |
| LWI.                 | i P X/Z   | 09-32-21,7 |             |          |                  | DNW O=ca 09-31-31 Lwi.  |
|                      | i P Z     | 22,8       |             |          |                  | D!NE Région entre Lubutu et   |
|                      | i! X      | 32,4       |             |          |                  | Kisangani (Rép. dém.  |
|                      | i (S) EL  | 33-07,2    |             |          |                  | du Congo)   |
|                      | M NS      | 23         |             | 5        |                  | Magn.Lwi.ca 5.0   |
|                      | M EW      |            |             | 2,6      |                  | D=ca 340 Km.  |
| BTR.                 | i P Z     | 09-32-35,9 |             |          |                  | D   |
|                      | i P X     | 36,9       |             |          |                  | C!  |
|                      | i (S) XEW | 33-21,4    |             |          |                  |   |
|                      | e S NSEW  | 25,1       |             |          |                  |   |
|                      | M X       | 34-00      |             | 18       |                  |   |
| 08 SEPT. LWI.        | ei Z      | 09-55-48   |             |          |                  |   |
| 08 SEPT. LWI.        | ei P' Z   | 14-28-31,3 |             |          |                  | O= 14-09-19,2<br>23°8 S. 177°5 W.<br>Sud des Iles Fidji<br>Magn. 4.7<br>h=ca 213 Km.<br>D=ca 15.960 Km.       |
| 08 SEPT. LWI.        | ei P' Z   | 14-31-55   |             |          |                  | O= 14-12-39,8<br>23°9 S. 177°2 W.<br>Sud des Iles Fidji<br>Magn. 4.5<br>h=ca 175 Km.<br>D=ca 15.970 Km.       |
| 08 SEPT. LWI.        | ei P' Z   | 17-24-02   |             |          |                  | dC O= 17-05-23,4<br>20°4 S. 178°3 W.<br>Région des Iles Fidji<br>Magn. 5.4<br>h=ca 539 Km.<br>D=ca 16.130 Km. |
| 09 SEPT. LWI.        | i P Z     | 17-24-34,0 |             |          |                  | DW O=ca 17-24-12 Lwi.   |
|                      | i P NC    | 34,3       |             |          |                  | CSE Données insuffisantes   |
|                      | i (S) NC  | 51,3       |             |          |                  | Magn.Lwi.ca 3.3   |
|                      | M Z       | 56         |             |          |                  | D=ca 123 Km.  |
|                      | M X       |            |             | 11       |                  |   |
| BTR.                 | i P Z     | 17-24-41,9 |             |          |                  |   |
|                      | i! P Z    | 52,2       |             |          |                  |   |
|                      | i S X     | 25-03,4    |             |          |                  |   |
|                      | i S Z     | 04,3       |             |          |                  |   |
|                      | M X       | 07         |             | 45       |                  |   |



| Date Station         | Phase  | Temps  | Pér. sec | B. mm | Mo. du sol | Remarques   |
|----------------------|--|--|----------|-------|------------|---|
| 1964<br>09 SEPTEMBRE |  |  |          |       |            |   |
| LWI.                 | e (P) Z<br>e P Z<br>i P Z<br>i (S) Z(X)<br>ei NC/NL<br>i S Z<br>M Z<br>M X | 18-48-19,6<br>22,1<br>31,3<br>51-42,6<br>53,6<br>52-01,6<br>51 |          |       |            | O= 18-45-57 B.C.I.S.<br>16°7 S. 28°3 E.<br>Gorges de Kariba   |
| BTR.                 | ei P Z<br>i P Z<br>i Z<br>i Z<br>M X<br>M Z                                | 18-49-13,6<br>14,1<br>51-29,1<br>38,1<br>53-40<br>50           |          |       |            | D<br>C!   |
| 10 SEPT. LWI.        | i Z<br>M Z   | 16-42-05<br>55   |          |       |            | Kariba  |
| 11 SEPT. LWI.        | i P Z  | 04-36-55,1   |          |       |            | cD O= 04-23-56,0<br>23°9 S. 66°6 W.<br>Province Jujuy,<br>Argentina<br>Magn. 5.3<br>h=ca 195 Km.<br>D=ca 10.450 Km. |
| 11 SEPT. LWI.        | i P Z/X<br>i! (S) Z/NC<br>i S NC<br>M X                                    | 18-28-41,0<br>43,7<br>44,7<br>48                               |          |       |            | C!N!W O=ca 18-28-35 Lwi.<br>Ca 35 Km. S.E. de Lwiro<br>(Rwanda)<br>Magn. Lwi. ca 3.1<br>D=ca 35 Km.                 |
| BTR.                 | i! P Z<br>i S Z  | 18-28-46,6<br>54,3   |          |       |            |   |
| 12 SEPT. LWI.        | i (P) Z<br>i SP CZ<br>i SS CN<br>i sSS CN                                  | 13-01-50,3<br>12-17<br>18-43<br>19-23                          |          |       |            | O= 12-43-19,0<br>04°4 S. 144°0 E.<br>Nouvelle Guinée<br>Magn. 6.3<br>h=ca 120 Km.<br>D=ca 12.770 Km.                |
| 12 SEPT. LWI.        | i! P' Z/CZ   | 15-38-00,3   |          |       |            | D O= 15-19-22,3<br>17°4 S. 179°9 W.<br>Iles Fidji<br>Magn. 5.8<br>D=ca 16.180 Km.                                   |

| Date<br>Station  | Phase   | Temps   | Pér.<br>sec | B.<br>mm  | Mo.<br>du<br>sol | Remarques  |
|--|---|---|-------------|-----------|------------------|--|
| 1964<br>12 SEPTEMBRE<br>LWI.   | M Z   | 19-24-32  |             | 5         |                  | O=ca 19-20-50 Btr.<br>Données insuffisantes  |
| BTR.   | i P Z<br>i Z<br>i S Z<br>M X<br>M Z   | 19-22-20,7<br>29,9<br>23-30,2<br>24-10<br>19  |             | 1,5<br>12 |                  |  |
| 12 SEPT. LWI.  | i P CZ<br>e P' Z<br>i! PP CZ/CN/CE<br>i SKS CN<br>i CN<br>i S CE<br>i! PS CZ/CN<br>i SS CN/CE<br>i SSS CN<br>i! CN/CE<br>M CZ | 22-22-02<br>25-44<br>26-50<br>32-42<br>33-58<br>34-42<br>36-34<br>43-06<br>46-50<br>55-58<br>23-03-40 |             |           | C                | O= 22-07-03,2<br>49°1 S. 164°2 E.<br>Région des Iles<br>Auckland<br>Magn. 6.9<br>h=ca 33 Km.<br>D=ca 12.890 Km.                    |
| 13 SEPT. LWI.  | i (P') Z  | 11-22-49,7  |             |           | C                | O= 11-03-50,0<br>19°8 S. 177°7 W.<br>Région des Iles Fidji<br>Magn. 5.2<br>h=ca 357 Km.<br>D=ca 16.220 Km.                         |
| Du 14 SEPT. à 6 H 00' au 17 SEPT. à 06 H 00': Lwiro, sans enregistrements. |   |   |             |           |                  |  |
| 14 SEPT. BTR.  | ei P Z  | 14-34-45,3  |             |           |                  | O= 14-21-14 B.C.I.S.<br>59°1 N. 31°1 W.<br>Océan Atlantique<br>D=ca 8.500 Km.  |
| 14 SEPT. BTR.  | i P Z   | 15-28-42,7  |             |           |                  | O= 15-21-12,4 I.S.C.<br>15-21-10 B.C.I.S.<br>28° N 55°9 E. B.C.I.S.<br>28°18 N. 55°86 E. I.S.C.<br>Sud de l'Iran<br>D=ca 4.445 Km. |
| 15 SEPT. BTR.  | i P Z<br>i! P Z<br>i Z<br>i S Z<br>i Z<br>M X   | 00-39-08,8<br>09,6<br>50,1<br>40-05,1<br>19,9<br>34   |             |           | 4                | O=ca 00-37-52 Btr.<br>Données insuffisantes  |

| Date<br>Station              | Phase   | Temps   | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques  |
|------------------------------|---|---|-------------|----------|------------------|--|
| 1964<br>15 SEPTEMBRE<br>BTR. | i P' Z  | 13-04-05,5  |             |          | C                | O= 12-44-09,6 I.S.C.<br>15°96 S. 172°85 W.<br>Région des Iles Samoa<br>D=ca 16.830 Km.   |
| 15 SEPT. BTR.                | i P Z<br>i! XZ<br>e X<br>e X<br>e L X<br>i! ZX! | 15-40-07,4<br>26,4<br>43-55<br>48-34<br>59-54<br>16-09-04,4 |             |          | D<br>C!          | O= 15-29-32<br>8°8 N. 93° E.<br>Région des Iles<br>Nicobar<br>Magn.Pas. 6 3/4<br>Berk. 7 1/2<br>D=ca 7.220 Km.                         |
| 15 SEPT. BTR.                | i P Z<br>i P Z                                  | 20-36-04,1<br>07,6  |             |          |                  | O= 20-23-35,2 USCGS.<br>54°5 S. 53°4 W.<br>Océan Atlantique Sud.<br>h=ca 33 Km.<br>D=ca 9.450 Km.                                      |
| 15 SEPT. BTR.                | i P Z<br>i P Z                                  | 21-13-35,0<br>41,5  |             |          | C                | O= 21-00-31,7 USCGS.<br>58°7 S. 66°5 W.<br>Déroit de Drake<br>h=ca 33 Km.<br>D=ca 10.160 Km.   |
| 16 SEPT. BTR.                | i P Z<br>i P Z                                  | 01-37-00,5<br>09,5  |             |          |                  | O= 01-26-26,9 USCGS.<br>10°9 N. 93°1 E.<br>Région des Iles Andaman<br>h=ca 47 Km.<br>D=ca 7.230 Km.                                    |
| 16 SEPT. BTR.                | e P Z<br>ei P' Z<br>ei PP Z                     | 02-06-09<br>09-30,0<br>11-05,0                              |             |          | c                | O= 01-50-33,9 USCGS.<br>60° N. 147°1 W.<br>Sud de l'Alaska<br>Magn.Pas. 5 3/4<br>Berk. 5 1/2 - 5 3/4<br>h=ca 29 Km.<br>D=ca 13.610 Km. |
| 16 SEPT. BTR.                | i! P Z<br>i! P X<br>i S X<br>i! S X             | 16-54-16,3<br>19,2<br>37,0<br>39,0                          |             |          | D!               | O=ca 16-53-47,7 Btr.   |
| 16 SEPT. BTR.                | i P' Z  | 21-06-15,9  |             |          | C                | O= 20-47-16 USCGS.<br>16°1 S. 176°5 W.<br>Région des Iles Fidji<br>h=ca 352 Km.<br>D=ca 16.550 Km.                                     |



| Date<br>Station              | Phase  | Temps  | Pér.<br>sec | B.<br>mm       | Mo.<br>du<br>sol | Remarques.   |
|------------------------------|--|--|-------------|----------------|------------------|--|
| 1964<br>16 SEPTEMBRE<br>BTR. | i! P Z<br>i! P X<br>i S X/EW<br>i! S X<br>M NS<br>M EW     | 16-54-16,3<br>19,2<br>37,0<br>39,0<br>43             |             | 130<br>7<br>11 |                  | O=ca 16-53-47,7 Btr.<br>Données insuffisantes<br>Magn.Btr.ca 4.3<br>D=ca 170 Km.   |
| 16 SEPT. BTR.                | i! P Z   | 22-35-28,0   |             |                |                  | D! O= 22-23-36,3 USCGS.<br>22°9 N. 45°1 W.<br>Crête médiane de<br>l'Atlantique du Nord<br>h=ca 33 Km.<br>D=ca 8.335 Km.      |
| 17 SEPT. LWI.                | i P Z/CZ<br>i S CE<br>i S CZ<br>e SS CZ<br>e Lr CZ<br>M CZ | 15-13-18,0<br>22-36<br>46<br>27-38<br>35-45<br>40-30 | 27          | 2              |                  | C O= 15-02-00,9<br>44°5 N. 31°3 W.<br>Crête médiane de<br>l'Atlantique du Nord<br>Magn. 5.6<br>h=ca 24 Km.<br>D=ca 7.870 Km. |
| 18 SEPT. LWI.                | e P Z<br>i S CN/CE<br>e CZ<br>M CZ                         | 00-16-00<br>21-51<br>29-43<br>36-00                  | 13          | 5,5            |                  | O= 00-08-42,6<br>35°4 N. 28°8 E.<br>Mer Méditerranée de<br>l'Est<br>Magn. 4.7<br>h=ca 18 Km.<br>D=ca 4.150 Km.               |
| 18 SEPT. LWI.                | i (P) Z<br>i P Z<br>i! EC/X!<br>i NC<br>i S NC/X<br>M X    | 06-52-14<br>18,9<br>38,9<br>51,9<br>58,9<br>53-08    |             |                |                  | O=ca 06-51-15 Lwi.<br>Données insuffisantes<br>Lwi. incompatible<br>Magn.Btr.ca 4.5<br>D=ca 420 Km.                          |
| BTR.                         | i Z<br>i P Z<br>i S Z<br>M X                               | 06-52-16,2<br>21<br>53-07<br>19                      |             | 6              |                  |  |

| Date<br>Station      | Phase |   |       | Temps      | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.  |
|----------------------|-------|---|-------|------------|-------------|----------|------------------|---|
| 1964<br>18 SEPTEMBRE |       |   |       |            |             |          |                  |   |
| LWI.                 | ei    | P | Z     | 09-55-50,3 |             |          |                  | O=ca 09-54-58,2 Lwi.<br>Données insuffisantes<br>Magn.Lwi.ca 3.8<br>D=ca 350 Km.  |
|                      | ei    | S | X     | 56-29,3    |             |          |                  |   |
|                      |       | M | Z     | 52         |             | 24       |                  |   |
|                      |       | M | X     | 57-07      |             | 4        |                  |   |
| BTR.                 | ei    | P | Z     | 09-56-03,2 |             |          |                  |   |
|                      | i     | S | Z     | 53,3       |             |          |                  |   |
|                      | i     | S | Z     | 57,8       |             |          |                  |   |
|                      |       | M | Z     | 57-32      |             |          |                  |   |
| 18 SEPT. LWI.        | e     | P | Z     | 13-23-43   |             |          |                  | O= 13-12-42,3<br>38°8 N. 29°7 W.<br>Iles des Açores<br>Magn. 5.5<br>h=ca 20 Km.<br>D=ca 7.530 Km.   |
|                      | i     |   | Z     | 44,2       |             |          | D                |   |
|                      | e     | S | CN    | 32-48      |             |          |                  |   |
|                      |       | M | CZ    | 52-30      | 20          | 3,5      |                  |   |
| 18 SEPT. LWI.        | ei    | P | Z     | 15-09-23,2 |             |          |                  | O=ca 15-08-07 Lwi.<br>O=ca 15-07-57 B.P.I.<br>Rép. dém. du Congo.<br>(Probablement région de<br>Baudouinville)<br>Magn.Lwi.ca 3.8<br>D=ca 540 Km. |
|                      | ei    | P | Z     | 26,7       |             |          |                  |   |
|                      | i     | S | Z     | 10-21,2    |             |          |                  |   |
|                      | ei    |   | NC    | 33,2       |             |          |                  |   |
|                      |       | M | Z     | 58         |             | 16       |                  |   |
|                      |       | M | X     |            |             | 3        |                  |   |
| BTR.                 | ei    | P | Z     | 15-09-14,7 |             |          |                  | C   |
|                      | i     | P | Z     | 15,2       |             |          |                  |   |
|                      | i     | S | ZX    | 10-06,2    |             |          |                  |   |
|                      |       | M | Z     | 34         |             |          |                  |   |
| 19 SEPT. LWI.        | i     | P | Z     | 09-06-11,3 |             |          |                  | O=ca 09-05-59,5 Lwi.<br>Données insuffisantes<br>Magn.Lwi.ca 3.0<br>D=ca 67 Km.   |
|                      | i     | S | NC    | 19,1       |             |          |                  |   |
|                      |       | M | X     | 24         |             | 19,5     |                  |   |
| BTR.                 | i     | P | Z     | 09-06-21,9 |             |          |                  | D   |
|                      | i     |   | Z     | 36,5       |             |          |                  |   |
| 19 SEPT. LWI.        | i     | P | Z     | 21-40-45,5 |             |          |                  | O= 21-37-08 Btr.<br>Ca 17° S. ca 13° W.<br>Angola<br>Magn.Lwi.ca 5.7<br>D=ca 1.715 Km.  |
|                      | i     |   | Z(EL) | 43-25,1    |             |          |                  |   |
|                      | e     | S | NC    | 36         |             |          |                  |   |
|                      | i     | S | EC    | 38,6       |             |          |                  |   |
|                      |       | M | X     | 45-37      |             | 13       |                  |   |
|                      |       | M | Z     | 44         |             | 34       |                  |   |
|                      | i     |   | Z     | 53-18,6    |             |          |                  |   |
| BTR.                 | i     | P | Z     | 21-40-56,3 |             |          |                  | C   |
|                      | i     | S | ZX    | 43-55,3    |             |          |                  |   |
|                      | i     |   | Z     | 44-48,1    |             |          |                  |   |
|                      |       | M | Z     | 45-52      |             | 13       |                  |   |
|                      |       | M | X     |            |             | 4,5      |                  |   |

| Date<br>Station      | Phase   | Temps  | Pér.<br>sec | B.<br>mm  | Mo.<br>du<br>sol | Remarques.  |
|----------------------|---|--|-------------|-----------|------------------|---|
| 1964<br>19 SEPTEMBRE |   |  |             |           |                  |   |
| LWI.                 | i (S) NC/X<br>i (S) EC/X<br>M Z                         | 23-58-24<br>26<br>29                                       |             | 42        |                  | O=ca 23-57-23 Lwi.<br>Données insuffisantes<br>Magn.Lwi.ca 3.1<br>D=ca 220 Km.                                |
| BTR.                 | i! P Z<br>i S Z<br>i S Z                                | 23-58-00,1<br>25,4<br>27,4                                 |             |           | D!               |   |
| 20 SEPT. LWI.        | i P Z<br>e S X<br>i S Z<br>i NC<br>i! Z/X<br>M Z<br>M X | 01-36-09,0<br>37-24,4<br>24,9<br>38-00,9<br>08,4<br>11     |             | 33<br>5,5 |                  | O=ca 01-34-30 Lwi.<br>Graben Est Africain<br>Données insuffisantes<br>Magn.Lwi.ca 4.7<br>D=ca 720 Km.         |
| BTR.                 | i P Z<br>e X<br>i S Z/X<br>M Z                          | 01-35-56,2<br>36-58,2<br>37-01,7<br>43                     |             |           |                  |   |
| 21 SEPT. LWI.        | i! P' Z   | 04-41-47,0   |             |           | D                | O= 04-23-19,7<br>21°8 S. 179°6 W.<br>Région des Iles Fidji<br>Magn. 5.4<br>h=ca 609 Km.<br>D=ca 15.930 Km.    |
| 21 SEPT. LWI.        | i Z   | 04-52-43,1   |             |           | C                |   |
| 21 SEPT. LWI.        | i P Z<br>i S Z<br>i! S Z                                | 05-00-44<br>01-21<br>27                                    |             |           |                  | O= 04-59-54,4 Lwi.<br>Données insuffisantes<br>Magn.Lwi.ca 3.6<br>D=ca 330 Km.                                |
| BTR.                 | i P Z<br>i P Z<br>i P Z<br>i S Z<br>i S ZX<br>M X       | 05-00-37,5<br>38,0<br>39,0<br>01-07,6<br>11,6<br>14        |             | 4         | C<br>C           |   |
| 23 SEPT. LWI.        | ei P' Z<br>e CN<br>i PS CZ<br>i CN<br>i SS CN<br>M CZ   | 05-18-52,8<br>22-16<br>31-10<br>33-52<br>38-42<br>06-26-40 | 16          | 3         |                  | O= 04-59-47,4<br>53°6 N. 163°9 W.<br>Iles Unimak, Aléoutiennes<br>Magn. 5.5<br>h=ca 29 Km.<br>D=ca 14.190 Km. |

| Date<br>Station              | Phase   | Temps                                 | Pér.<br>sec | B.<br>mm             | Mo.<br>du<br>sol | Remarques   |
|------------------------------|---|---------------------------------------|-------------|----------------------|------------------|---|
| 1964<br>25 SEPTEMBRE<br>LWI. | i (P') Z  | 17-43-49,7                            |             |                      |                  | O= 17-24-44,9<br>53°6 N. 163°9 W.<br>Iles Unimak, Aléoutiennes<br>Magn. 5.1<br>h=ca 33 Km.<br>D=ca 14.290 Km. |
| 25 SEPT. LWI.                | i! P Z<br>i S X<br>M X<br>M NS<br>M EW            | 18-56-38,7<br>42,3<br>53              |             | >100<br>11,5<br>13,5 | C!S              | O=ca 18-56-33 Lwi.<br>2°1 S. 29°0 E.<br>Lac Kivu<br>Magn. Lwi. ca 3.3<br>D=ca 30 Km.                          |
| BTR.                         | i P Z<br>i ZX<br>ei S EW<br>i S X<br>M NS<br>M EW | 18-56-50,1<br>58,3<br>57-00,1<br>01,6 |             | 2<br>2,6             | C                |   |
| 25 SEPT. LWI.                | i P' Z<br>i PP Z                                  | 23-46-28,8<br>49-20,1                 |             |                      | D                | O= 23-27-49,7<br>30°7 S. 179°9 W.<br>Iles Kermadec<br>Magn. 5.3<br>h=ca 424 Km.<br>D=ca 15.250 Km.            |
| 26 SEPT. LWI.                | i P Z<br>i S CZ<br>M CZ                           | 00-56-00,0<br>01-03-56<br>21-40       | 19          | 2                    |                  | O= 00-46-02,8<br>30°1 N. 80°7 E.<br>Frontière Thibet - Inde<br>Magn. 6.2<br>h=ca 50 Km.<br>D=ca 6.555 Km.     |
| 26 SEPT. LWI.                | e P' Z  | 03-58-26                              |             |                      |                  | O= 03-38-32,7<br>17°7 S. 173°3<br>Iles Tonga<br>Magn. 5.1<br>h=ca 33 Km.<br>D=ca 16.730 Km.                   |
| 26 SEPT. LWI.                | i P' Z  | 23-14-14,3                            |             |                      | C                | O= 22-55-14,8<br>04°9 S. 153°3 E.<br>Nouvelle Irlande<br>Magn. 5.5<br>h=ca 34 Km.<br>D=ca 13.810 Km.          |

| Date<br>Station              | Phase                                       | Temps                                       | Pér.<br>sec | B.<br>mm  | Mo.<br>du<br>sol | Remarques.   |
|------------------------------|---|---|-------------|-----------|------------------|--|
| 1964<br>27 SEPTEMBRE<br>LWI. | e PP CZ<br>M CZ                             | 16-11-51<br>17-13-30                        | 18          | 1,5       |                  | O= 15-50-54,7<br>56°6 N. 152°0 W.<br>Iles Kodiak<br>Magn. 5.4<br>h=ca 27 Km.<br>D=ca 13.980 Km.                    |
| 28 SEPT. LWI.                | i P Z/CZ<br>e S CN<br>e Lr CZ<br>M CZ       | 05-14-09,8<br>21-39<br>29-52<br>33-00       | 22          | 6         | D                | O= 05-04-55,5<br>01°2 S. 24°1 W.<br>Crête médiane de<br>l'Atlantique<br>Magn. 5.5<br>h=ca 37 Km.<br>D=ca 5.880 Km. |
| 28 SEPT. LWI.                | i P Z<br>i (S) EC<br>M Z<br>M X             | 12-24-48,3<br>25-33,8<br>42                 |             | 19<br>3   |                  | O=ca 12-23-51 Lwi.<br>Données insuffisantes<br>Magn.Lwi.ca 3.7<br>D=ca 400 Km.                                     |
| BTR.                         | i P Z<br>i P Z<br>i! P Z<br>i S Z           | 12-24-37,4<br>38,3<br>44,4<br>25-11,9       |             |           |                  |  |
| 28 SEPT. LWI.                | i P' Z                                      | 13-12-28,6                                  |             |           | dC               | O= 12-53-55,1<br>22°0 S. 179°4 W.<br>Région des Iles Fidji<br>Magn. 4.1<br>h=ca 548 Km.<br>D=ca 15.930 Km.         |
| 29 SEPT. LWI.                | e (P) Z<br>i S Z<br>M X<br>M Z              | 01-17-57,6<br>19-15,0<br>20-04<br>13        |             | 4<br>13,5 |                  | O=ca 01-16-17 Lwi.<br>Graben Est Africain<br>(Données insuffisantes)<br>Magn.Lwi.ca 4.5<br>D=ca 740 Km.            |
| BTR.                         | e P Z<br>i P Z<br>i S Z(X)<br>i S ZX<br>M X | 01-17-43,8<br>50,8<br>18-48,6<br>53,6<br>40 |             | 2,5       |                  |  |
| 29 SEPT. LWI.                | i Z   | 04-19-37,8                                  |             |           |                  |  |

| Date<br>Station              | Phase   | Temps   | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques  |
|------------------------------|---|---|-------------|----------|------------------|--|
| 1964<br>29 SEPTEMBRE<br>LWI. | i P' CZ<br>ei PP CZ<br>e SKSP CN<br>e SS CN<br>M CZ | 14-19-56<br>23-31<br>33-59<br>42-52<br>15-24-50 | 21          | 2,5      | C                | O= 14-00-14,9<br>20°4 S. 174°4 W.<br>Iles Tonga<br>Magn. 5.7<br>h=ca 29 Km.<br>D=ca 16.450 Km.               |
| 29 SEPT. LWI.                | i P Z   | 15-15-39,2                                      |             |          | C                |  |
| 30 SEPT. LWI.                | ei P Z<br>M CZ                                      | 04-46-51,4<br>05-03-40                          |             | 1        |                  | O= 04-39-44,0<br>34°5 N. 23°4 E.<br>Crète<br>Magn. 4.6<br>h=ca 43 Km.<br>D=ca 4.100 Km.                      |
| 01 OCTOBRE<br>LWI.           | e P Z<br>i S CE<br>e Lr CZ<br>M CZ                  | 02-40-58<br>47-27<br>53-11<br>55-45             | 22          | 1,5      |                  | O= 02-33-03<br>10°5 S. 13°3 W.<br>Région de l'Ile<br>Ascension<br>Magn. 5.1<br>h=ca 33 Km.<br>D=ca 4.800 Km. |
| 01 OCT. LWI.                 | i Z   | 04-59-31,5                                      |             |          |                  | Kariba, Rhodésie   |
| 01 OCT. LWI.                 | i P Z<br>i (S) EC/X<br>i S ZX<br>M X                | 09-05-13,5<br>06-30,7<br>32,7<br>07-23          |             | 16       | D                | O=ca 09-03-33,5 Lwi.<br>Graben Est Africain<br>(Données insuffisantes)<br>Magn.Lwi.ca 5.0<br>D=ca 735 Km.    |
| BTR.                         | i P Z<br>i P Z<br>i S Z<br>M Z                      | 09-05-00,2<br>00,6<br>06-05,2                   |             | ca 15    | c<br>D           |  |
| 02 OCT. LWI.                 | e P' Z<br>e PP CZ<br>e PPS CZ<br>ei SS CN<br>M CZ   | 13-19-53<br>22-12<br>34-21<br>39-50<br>14-18-10 | 18          | 5        |                  | O= 13-00-39,7<br>10°5 S. 162°4 E.<br>Iles Salomon<br>Magn. 6.0<br>h=ca 68 Km.<br>D=ca 14.680 Km.             |

| Date<br>Station    | Phase                           | Temps                            | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.   |
|--------------------|---------------------------------|----------------------------------|-------------|----------|------------------|--|
| 1964<br>03 OCTOBRE |                                 |                                  |             |          |                  |  |
| LWI.               | i P Z<br>i S Z<br>M Z           | 04-55-02,8<br>33,1<br>49         |             | 30       |                  | O=ca 04-54-22 Lwi.<br>Données insuffisantes<br>Magn.Lwi.ca 3.1<br>D=ca 265 Km.                             |
| BTR.               | ei P Z<br>i P Z<br>i S Z<br>M X | 04-55-03,9<br>04,2<br>34,3<br>44 |             | 5        | c<br>C!          |  |
| 03 OCT. LWI.       | i P' Z                          | 17-21-20,4                       |             |          | C                | O= 17-02-48,0<br>18°1 S. 178°8 W.<br>Région des Iles Fidji<br>Magn. 4.4<br>h=ca 673 Km.<br>D=ca 16.230 Km. |
| 03 OCT. LWI.       | i P' Z                          | 23-00-28,1                       |             |          | D                | O= 22-41-09,0<br>20°2 S. 176°3 W.<br>Région des Iles Fidji<br>Magn. 4.4<br>h=ca 219 Km.<br>D=ca 16.310 Km. |
| 05 OCT. LWI.       | i P' Z                          | 08-50-09,2                       |             |          | D                | O= 08-30-15,7<br>16°7 S. 173°7 W.<br>Iles Tonga<br>Magn. 5.1<br>h=ca 33 Km.<br>D=ca 16.770 Km.             |
| 05 OCT. LWI.       | i P' Z                          | 12-43-51,2                       |             |          | D                | O= 12-24-06,4<br>16°6 S. 174°2 W.<br>Iles Tonga<br>h=ca 84 Km.<br>D=ca 16.730 Km.                          |
| 05 OCT. LWI.       | e P' Z                          | 14-18-35                         |             |          |                  | O= 13-58-56,9<br>22°2 S. 175°8 W.<br>Iles Tonga<br>Magn. 5.1<br>h=ca 33 Km.<br>D=ca 16.200 Km.             |

| Date<br>Station            | Phase   | Temps   | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques  |
|----------------------------|---|---|-------------|----------|------------------|--|
| 1964<br>06 OCTOBRE<br>LWI. | e PP Z<br>e Z<br>e PS CZ<br>e PPS CZ<br>e SS CN<br>e SSS CZ/CN<br>e Lr CZ<br>M CZ | 07-38-12<br>49<br>47-42<br>49-20<br>54-42<br>58-42<br>08-13-36<br>18-40 | 25          | 6        |                  | O= 07-17-57,1<br>36°2 S. 100°9 W.<br>Océan Pacifique du Sud<br>Magn. 5.5<br>h=ca 33 Km.<br>D=ca 13.290 Km.               |
| 06 OCT. LWI.               | i P Z   | 14-37-50,8  |             |          | D                | O= 14-29-55,6<br>40°2 N. 28°1 E.<br>Turquie<br>Magn. 5.1<br>h=ca 10 Km.<br>D=ca 4.690 Km.                                |
| 06 OCT. LWI.               | i! P Z<br>i Z<br>i! PP CZ/CN<br>i PPP CE<br>i S CE<br>i Lq CE<br>M CZ             | 14-39-13,6<br>22,4<br>41-02<br>28<br>45-32<br>48-42<br>15-00-20         | 16          | 92       | DC!<br>C         | O= 14-31-19,2<br>40°3 N. 28°2 E.<br>Anatolie / Turquie<br>Magn. 6.0<br>h=ca 10 Km.<br>D=ca 4.700 Km.                     |
| 06 OCT. LWI.               | i P Z   | 20-29-33,1  |             |          | cD               | O= 20-19-34,1<br>29°3 N. 80°9 E.<br>Région de la frontière<br>Népal - Inde<br>Magn. 5.1<br>h=ca 27 Km.<br>D=ca 6.540 Km. |
| 07 OCT. LWI.               | e P Z   | 01-06-01  |             |          |                  | O= 00-54-18,0<br>53°0 N. 36°2 W.<br>Atlantique du Nord<br>Magn. 4.5<br>h=ca 33 Km.<br>D=ca 8.560 Km.                     |
| 07 OCT. LWI.               | i P Z<br>i P Z<br>i S NC/EC<br>M X  | 07-09-36,2<br>36,4<br>52,4<br>57  |             | 6,5      | d<br>CN          | O=ca 07-09-13 Lwi.<br>Probablement région<br>d'Uvira (Rép. dém. du<br>Congo)<br>Magn. Lwi. ca 3.1<br>D=ca 133 Km.        |
| BTR.                       | i P Z<br>i S Z<br>M X   | 07-09-32,3<br>35,0  |             | 10       |                  |  |



| Date Station               | Phase  | Temps  | Pér. sec | B. mm     | Mo. du sol | Remarques.  |
|----------------------------|--|--|----------|-----------|------------|---|
| 1964<br>07 OCTOBRE<br>LWI. | e P Z  | 23-15-44   |          |           |            | O= 23-07-52,0<br>40°1 N. 28°2 E.<br>Turquie<br>Magn. 4.4<br>h=ca 32 Km.<br>D=ca 4.680 Km.                 |
| 08 OCT. LWI.               | i P Z<br>M Z<br>M X  | 15-07-37<br>08-20  |          | 23<br>3,5 |            | O=ca 15-07-00 Lwi.<br>Données insuffisantes<br>Magn.Lwi.ca 3.4<br>D=ca 236 Km.                            |
| BTR.                       | i P Z<br>i P Z<br>i S Z<br>M Z<br>M X  | 15-07-41,9<br>45,7<br>08-13,2<br>23  |          | 2,5       |            |   |
| 09 OCT. LWI.               | i P' Z   | 21-54-06,5   |          |           | C          | O= 21-34-09,2<br>16°2 S. 171°9 W.<br>Région des Iles Samoa<br>Magn. 5.8<br>h=ca 33 Km.<br>D=ca 16.950 Km. |
| 11 OCT. LWI.               | e P' Z   | 11-29-45   |          |           |            | O= 11-10-33,6<br>13°6 S. 166°6 E.<br>Nouvelles Hébrides<br>Magn. 5.0<br>h=ca 68 Km.<br>D=ca 15.030 Km.    |
| 11 OCT. LWI.               | i P Z<br>i P CZ<br>e PP Z<br>i S CZ/CN/CE<br>i PS CZ<br>i SS CE<br>i SSS CN<br>i CZ/CN<br>i Lq CE<br>i Lr CE<br>M CZ | 21-28-15,0<br>16<br>31-58<br>39-24<br>40-30<br>46-00<br>49-12<br>52-40<br>58-30<br>59-30<br>22-05-20 |          |           | C<br>D     | O= 21-15-03,9<br>0°6 S. 121°7 E.<br>Célèbes<br>Magn. 6.3<br>h=ca 33 Km.<br>D=ca 10.320 Km.                |
|                            |  |  | 22       | 40        |            |   |

| Date<br>Station    | Phase | Temps  | Pér.<br>sec   | B.<br>mm | Mo.<br>du<br>sol | Remarques.  |
|--------------------|-------|--|---|----------|------------------|---|
| 1964<br>12 OCTOBRE | LWI.  | e P Z<br>i S CN<br>e Lr CZ<br>M CZ   | 08-38-06<br>45-30<br>52-30<br>57-30                                     | 22       | 5                | O=ca 08-28-46 Lwi.<br>D=ca 5.900 Km.  |
| 12 OCT.            | LWI.  | i P CZ<br>i PP CZ<br>e (SKS) CE<br>e PS CZ<br>e CE<br>e SS CE<br>e Lr CZ<br>M CZ | 15-56-28<br>16-00-25<br>07-15<br>09-25<br>53<br>14-43<br>28-38<br>40-00 | 20       | 3                | O= 15-42-54,7<br>3°0 N. 126°7 E.<br>Iles Taland<br>Magn. 5.9<br>h=ca 59 Km.<br>D=ca 10.890 Km.              |
| 12 OCT.            | LWI.  | e P' Z<br>i PP CZ<br>e SS CN/CE<br>i CZ<br>e Lr CZ<br>M CZ                       | 22-14-45<br>16-52<br>34-48<br>46-26<br>56-26<br>23-01-30                | 22       | 7,5              | O= 21-55-33,2<br>31°3 S. 110°8 W.<br>S.E. de l'île de Pâques<br>Magn. 6.0<br>h=ca 25 Km.<br>D=ca 14.350 Km. |
| 13 OCT.            | LWI.  | e Z  | 10-58-06  |          |                  | O= 10-38-59,3<br>03°3 S. 149°9 E.<br>Mer de Bismark<br>Magn. 5.1<br>h=ca 59 Km.<br>D=ca 13.430 Km.          |
| 14 OCT.            | LWI.  | e PP CZ<br>e PS CZ<br>e PPS CZ<br>e SS CZ  | 03-24-06<br>33-35<br>34-44<br>39-57                                     |          | c                | O= 03-04-59,6<br>33°4 N. 141°8 E.<br>S.de Honshu, Japon<br>Magn. 5.6<br>h=ca 33 Km.<br>D=ca 12.260 Km.      |
| 14 OCT.            | LWI.  | e P Z<br>e PP CZ<br>e S CN<br>e Lr CZ<br>M CZ                                    | 09-45-26<br>47-02<br>51-42<br>56-38<br>10-00---                         | 22       | 1,5              | O=ca 09-26-29 Lwi.<br>D=ca 4.700 Km.  |
| 14 OCT.            | LWI.  | e P CZ<br>e CZ<br>i CZ<br>e S CZ/CN/CE<br>e Lr CZ                                | 17-32-10<br>33-28<br>40<br>37-14<br>40-40                               |          | c                | O=ca 17-25-42 Lwi.<br>D=ca 3.500 Km.  |

| Date<br>Station            | Phase  | Temps   | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.   |
|----------------------------|--|---|-------------|----------|------------------|--|
| 1964<br>14 OCTOBRE<br>LWI. | i Z  | 20-17-32,9  |             |          |                  |  |
| 15 OCT. LWI.               | i PP CZ<br>e SKS CN/CE<br>ei PS CZ/CN/CE<br>M CZ   | 20-46-23<br>52-23<br>56-05<br>21-38-40  | 20          | 11       | C                | O= 20-26-53,5<br>44°7 N. 149°8 E.<br>Iles Kouriles<br>Magn. 5.2<br>h=ca 49 Km.<br>D=ca 12.580 Km.            |
| 16 OCT. LWI.               | i P' Z   | 06-34-44,6  |             |          |                  | O= 06-15-31,5<br>23°6 S. 177°6 W.<br>Sud des Iles Fidji<br>Magn. 5.5<br>h=ca 178 Km.<br>D=ca 15.970 Km.      |
| 16 OCT. LWI.               | e P CZ<br>i PP CZ<br>i PPP CZ/CN<br>i SKS CN<br>i! PS CZ/CN<br>e SS CN/CE<br>i SSS CE<br>e CN/CE<br>i CN<br>e CZ<br>i CZ<br>M CZ | 07-14-27<br>19-07<br>21-30<br>25-03<br>28-53<br>35-01<br>39-06<br>59<br>44-07<br>55-45<br>08-08-45<br>11-40 | 20          | 24       |                  | O= 06-59-38,6<br>44°3 N. 149°5 E.<br>Iles Kouriles<br>Magn. 5.5<br>h=ca 33 Km.<br>D=ca 12.570 Km.            |
| 17 OCT. LWI.               | e P' Z   | 01-57-36  |             |          |                  | O= 01-38-36,0<br>7°0 S. 155°8 E.<br>Iles Salomon<br>Magn. 4.7<br>h=ca 58 Km.<br>D=ca 14.030 Km.              |
| 17 OCT. LWI.               | i P Z  | 03-30-26,0  |             |          | cD               | O= 03-17-28,1<br>0°7 N. 119°3 E.<br>Célèbes<br>Magn. 5.4<br>h=ca 62 Km.<br>D=ca 10.050 Km.                   |
| 17 OCT. LWI.               | e Z  | 06-18-31  |             |          |                  | O= 05-55-54,4<br>22°3 S. 171°5 E.<br>Région des Iles Loyauté<br>Magn. 5.3<br>h=ca 116 Km.<br>D=ca 15.130 Km. |

| Date<br>Station            | Phase   | Temps  | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.   |
|----------------------------|---|--|-------------|----------|------------------|--|
| 1964<br>17 OCTOBRE<br>LWI. | i P Z<br>e S CE<br>M CZ   | 09-57-38,4<br>10-03-27<br>15-00  |             | 1,5      | C                | O= 09-50-29,5<br>35°0 N. 25°4 E.<br>Crête<br>Magn. 4.8<br>h=ca 33 Km.<br>D=ca 4.130 Km.                            |
| 17 OCT. LWI.               | i P Z   | 14-59-59,4   |             |          | C                | O= 14-48-10,9<br>26°7 N. 44°6 W.<br>Crête médiane de<br>l'Atlantique<br>Magn. 4.9<br>h=ca 33 Km.<br>D=ca 8.470 Km. |
| 17 OCT. LWI.               | i (P) Z<br>i Z<br>i NC/EC<br>M Z  | 17-21-59,5<br>23-36<br>51<br>24-06   |             | 7        |                  | O=ca 17-20-19 Lwi.<br>Données insuffisantes<br>Magn.Lwi.ca 3.8<br>D=ca 730 Km.                                     |
| BTR.                       | i P Z<br>i S Z  | 17-21-50,3<br>22-58,7  |             |          |                  |  |
| 18 OCT. LWI.               | i P Z/CZ<br>i PP CZ<br>i S CE<br>i (Lq) CN<br>ei Lr CZ<br>M Z   | 09-13-41,8<br>15-08<br>19-37<br>22-28<br>24-00<br>25-30  |             | 5        | C                | O= 09-06-26,0<br>02°9 N. 65°7 E.<br>Dorsale de Carlsberg,<br>Océan Indien<br>h=ca 33 Km.<br>D=ca 4.130 Km.         |
| 18 OCT. LWI.               | i P Z<br>i P CZ<br>i pP CZ<br>i PP CZ<br>i pPP CZ<br>e sPP CZ<br>i SKS CE<br>i S CE<br>i SP CE/CZ<br>i sS CN<br>ei SS CE<br>ei sSS CN<br>e P'P' Z<br>i G CN<br>i SKPP' CE<br>M CZ | 12-44-46,7<br>47<br>46-48<br>48-48<br>50-32<br>51-36<br>54-30<br>55-10<br>56-28<br>59-06<br>13-02-10<br>05-08<br>09-57<br>12-08<br>42<br>25-30 |             | 20       | d<br>D<br>C      | O= 12-32-24,1<br>7°0 S. 124°0 E.<br>Mer de Banda<br>Magn. 5.8<br>h=ca 574 Km.<br>D=ca 10.540 Km.                   |
| 19 OCT. LWI.               | e (P) Z   | 04-57-28   |             | 7,5      |                  |  |
| 20 OCT. LWI.               | i Z   | 01-08-16,7   |             |          | c                |  |

| Date<br>Station    | Phase   | Temps   | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.  |
|--------------------|---|---|-------------|----------|------------------|---|
| 1964<br>21 OCTOBRE |   |   |             |          |                  |   |
| LWI.               | i P Z/X<br>i NC<br>i S NC/X<br>M X  | 07-10-29,2<br>33,5<br>33,8<br>36                              |             | 36,5     | C!NW             | O=ca 07-10-21,7 Lwi.<br>Ca 2°4 S. ca 29°1 E.<br>Région 15 Km. E.N.E.<br>de Dendezi (Rwanda)<br>Magn.Lwi.ca 3.0<br>D=ca 41 Km. |
| BTR.               | i P Z<br>i! S X<br>M X  | 07-10-34,3<br>42,5  |             | 12       | C!               |   |
| 21 OCT. LWI.       | i P Z<br>i P CZ/Z<br>i! S CN/CE<br>e SS CN<br>e Lq CN<br>M CZ<br>e (P'P') Z | 23-20-26,0<br>30<br>29-32<br>33-58<br>37-22<br>43-04<br>48-41 | 24          | 15       | d<br>D           | O= 23-09-18,8<br>28°1 N. 93°8 E.<br>Frontière Inde - Chine<br>Magn. 5.9<br>h=ca 37 Km.<br>D=ca 7.690 Km.                      |
| 23 OCT. LWI.       | i P Z<br>i PP CZ<br>i! S CE<br>i ScS CN<br>i SS CE<br>i Lq CN<br>M CZ       | 02-08-42,4<br>12-07<br>19-07<br>29<br>24-39<br>31-15<br>43-00 | 20          | 33       | C                | O= 01-56-03,2<br>19°8 N. 56°0 W.<br>Océan Atlantique Nord<br>Magn. 6.4<br>h=ca 31 Km.<br>D=ca 9.540 Km.                       |
| 23 OCT. LWI.       | e PP CZ<br>M CZ   | 21-25-47<br>22-17-30  |             | 1,5      |                  | O= 21-06-24,2<br>44°0 N. 147°5 E.<br>Iles Kouriles<br>Magn. 5.9<br>h=ca 45 Km.<br>D=ca 12.440 Km.                             |
| 25 OCT. LWI.       | i P' Z  | 12-27-21,6  |             |          | D                | O= 12-08-46,9<br>21°7 S. 179°2 W.<br>Région des Iles Fidji<br>Magn. 5.3<br>h=ca 534 Km.<br>D=ca 15.970 Km.                    |
| 27 OCT. LWI.       | i P Z<br>i S Z(EC)<br>M X   | 00-36-31,0<br>37-12,5<br>40                                   |             | 9        |                  | O=ca 00-35-35,5<br>Rép. dém. du Congo<br>(Données insuffisantes)<br>Magn.Lwi.ca 4.3<br>D=ca 380 Km.                           |
| BTR.               | i P Z<br>i P Z<br>ei S X<br>i S Z<br>M Z                                    | 00-36-42,0<br>52,8<br>37-32,8<br>35,8                         |             | 40       | c<br>c           |   |

| Date<br>Station    | Phase   | Temps  | Pér.<br>sec | B.<br>mm         | Mo.<br>du<br>sol | Remarques  |
|--------------------|---|--|-------------|------------------|------------------|--|
| 1964<br>27 OCTOBRE |   |  |             |                  |                  |  |
| LWI.               | e P Z/CZ<br>i S CN<br>i ScS CE<br>e SS CN<br>e Lq CN<br>e CN/CE<br>e Lr CZ/CE<br>M CZ | 21-35-59<br>45-32<br>46-22<br>50-10<br>53-44<br>55-28<br>58-28<br>22-04-00 | 18          | 19,5             |                  | O= 21-24-31,2<br>45°6 S. 96°1 E.<br>Océan Indien<br>h=ca 33 Km.<br>D=ca 8.060 Km.  |
| 27 OCT. LWI.       | e P Z   | 22-49-21   |             |                  |                  | O= 22-36-17,9<br>58°5 S. 66°2 W.<br>Détroit de Drake<br>Magn. 5.4<br>h=ca 33 Km.<br>D=ca 10.080 Km.                                      |
| 28 OCT. LWI.       | i P Z<br>i (S) NC<br>i (S) NC/EC<br>M X   | 03-11-35,4<br>42,4<br>43,4<br>45   |             | 12               | Csw              | O=ca 03-11-24 Lwi.<br>Ca 2° S. ca 29°3 E.<br>Probablement région de<br>Kibuye (Rwanda)<br>Magn.Lwi.ca 3.0<br>D=ca 63 Km.                 |
| BTR.               | i! P Z<br>i S X<br>M X  | 03-11-37,8<br>46,9   |             | 10,5             | C!               |  |
| 28 OCT. LWI.       | i Z   | 21-55-10,3   |             |                  | d                |  |
| 29 OCT. LWI.       | i P Z<br>i! Z<br>i S NC<br>M X<br>M NS<br>M EW  | 07-35-33,1<br>34,4<br>37,3<br>41   |             | 48<br>3,5<br>5,3 | C!SW!            | O=ca 07-35-26,5 Lwi.<br>2° S. 29° E.<br>Pointe Nord de l'Ile<br>Idjwi lac Kivu (Rép.<br>dém. du Congo)<br>Magn.Lwi.ca 3.0<br>D=ca 37 Km. |
| BTR.               | i! P Z<br>i S X<br>i S EW<br>M X  | 07-35-45,3<br>57,6<br>58,1   |             | 12               | C!               |  |
| 30 OCT. LWI.       | e P Z<br>i S CE<br>M CZ   | 03-00-58<br>06-56<br>15-20   | 20          | 4                | d                | O= 02-53-40,8<br>12°1 S. 65°7 E.<br>Océan Indien<br>Magn. 5.0<br>h=ca 28 Km.<br>D=ca 4.200 Km.   |
| 30 OCT. LWI.       | e Z   | 04-43-59   |             |                  | d                |  |
| 30 OCT. LWI.       | e Z   | 06-19-44   |             |                  |                  |  |

| Date<br>Station             | Phase   | Temps  | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.  |
|-----------------------------|---|--|-------------|----------|------------------|---|
| 1964<br>01 NOVEMBRE<br>LWI. | e P Z<br>i SKS CE<br>e SKKS CE<br>ei PS CZ<br>M CZ              | 12-39-43<br>50-18<br>50<br>52-32<br>13-24-00       | 20          | 1        |                  | O= 12-26-06,2<br>03°1 N. 128°1 E.<br>Nord de Halmahera<br>Magn. 6.3<br>h=ca 65 Km.<br>D=ca 11.040 Km. |
| 01 NOV. LWI.                | i P Z<br>M Z<br>M X   | 21-38-35,4<br>39-59                                |             | 11,5     |                  | O=ca 21-37-25 Lwi.<br>Graben Est Africain<br>Données insuffisantes<br>Magn.Lwi.ca 3.5                 |
| BTR.                        | i P Z<br>i! P Z<br>i S Z<br>i! S Z<br>M Z                       | 21-38-25,9<br>35,3<br>39-12,1<br>14,6<br>37        |             |          | C                | D=ca 500 Km.  |
| 02 NOV. LWI.                | e PP CZ<br>e S CE<br>e SP CZ<br>e SPP CZ<br>e SS CE<br>e sSS CE | 07-09-21<br>16-34<br>18-25<br>19-16<br>24-08<br>54 |             |          |                  | O= 06-50-58,2<br>4°1 S. 76°9 W.<br>Au Nord du Pérou<br>Magn. 6.0<br>h=ca 91 Km.<br>D=ca 11.720 Km.    |
| 02 NOV. LWI.                | e Z   | 10-48-42   |             |          |                  |   |
| 03 NOV. LWI.                | i P Z<br>i S NC<br>i S Z  | 07-23-23,2<br>39<br>39,5                           |             |          |                  | O=ca 07-23-01 Lwi.<br>Rép. dém. du Congo.<br>(Données insuffisantes)<br>Magn.Lwi.ca 3.0               |
| BTR.                        | i P Z<br>ei (S) X<br>i S Z<br>M X                               | 07-23-36,5<br>24-02,2<br>03,0                      |             | ca 4     |                  | D=ca 130 Km.  |
| 04 NOV. LWI.                | e Z<br>e Z  | 01-11-01<br>13-06                                  |             |          |                  |   |
| 06 NOV. LWI.                | e PP CZ<br>e PS CZ<br>M CZ                                      | 10-12-40<br>22-20<br>11-05-00                      | 20          | 3        |                  | O= 09-53-22,4<br>44°4 N. 149°0 E.<br>Iles Kouriles<br>Magn. 5.7<br>h=ca 60 Km.<br>D=ca 12.530 Km.     |

| Date<br>Station             | Phase  | Temps   | Pér.<br>sec | B.<br>mm  | Mo.<br>du<br>sol | Remarques.   |
|-----------------------------|--|---|-------------|-----------|------------------|--|
| 1964<br>06 NOVEMBRE<br>LWI. | i P Z/CZ<br>e S CE<br>e Lq CE<br>e Lr CZ<br>M CZ                             | 14-03-26<br>09-34<br>12-40<br>14-28<br>19-30                            | 16          | 3         | C                | O= 13-55-53,7<br>31°7 S. 57°4 E.<br>Océan Indien<br>h=ca 33 Km.<br>D=ca 4.430 Km.                    |
| 06 NOV. LWI.                | i P Z<br>ei (S) Z<br>i S Z<br>M Z<br>M X                                     | 19-42-15,5<br>43-05,0<br>06,0<br>44-50                                  |             | 22<br>6   |                  | O=ca 19-41-08 Lwi.<br>Données discordantes<br>Magn.Lwi.ca 4.0<br>D=ca 475 Km.                        |
| BTR.                        | i (P) Z<br>ei (S) Z<br>M Z<br>M X  | 19-42-24,7<br>43-19,2<br>55   |             | 3         |                  |  |
| 07 NOV. LWI.                | i P Z<br>i S NC/EC<br>M X  | 09-58-37,9<br>55  |             | 16        | D!Sw             | O=ca 09-58-13,5 Lwi.<br>Ca 3°5 S. ca 29°1 E.<br>Ca 10 Km. au Sud d'<br>Uvira (Rép. dém. du<br>Congo) |
| BTR.                        | i! P Z<br>i S X<br>M X   | 09-58-33,9<br>47,5  |             | 12        | D                | Magn.Lwi.ca 3.5<br>D=ca 141 Km.  |
| 07 NOV. LWI.                | i P Z<br>i (S) NC/EC<br>i S Z<br>M Z<br>M X                                  | 17-25-29,6<br>26-23,1<br>25,1<br>27-00                                  |             | 26<br>4,5 |                  | O=ca 17-24-16,5 Lwi.<br>Données insuffisantes<br>Magn.Lwi.ca 4.1<br>D=ca 515 Km.                     |
| BTR.                        | i P Z<br>i P Z<br>ei S X<br>i S Z<br>M X                                     | 17-25-20,3<br>29,6<br>26-08,6<br>11,6<br>37                             |             | 4         |                  |  |
| 07 NOV. LWI.                | e P Z<br>e PP CZ<br>e S CN<br>e PS CN<br>e SS CN<br>e SSS CE<br>e CZ<br>M CZ | 18-48-54<br>51-41<br>58-03<br>54<br>19-02-38<br>06-22<br>10-37<br>13-00 | 28          | 4,5       | c                | O= 18-37-43,7<br>0°4 N. 100°1 E.<br>Sumatra<br>Magn. 5.1<br>h=ca 107 Km.<br>D=ca 7.910 Km.           |





| Date Station   | Phase   | Temps   | Pér. sec | B. mm    | Mo. du sol | Remarques.   |
|--|---|---|----------|----------|------------|--|
| 1964<br>07 NOVEMBRE<br>LWI.  | e P' Z  | 00-01-03  |          |          |            | O= 23-41-55,1<br>19°9 S. 177°4 W.<br>Région des Iles Fidji<br>Magn. 4.5<br>h=ca 281 Km.<br>D=ca 16.240 Km.               |
| 08 NOV. LWI.   | e PP CZ<br>e CZ<br>e SKS CN<br>e CN<br>i PPS CZ<br>e SS CN<br>e Lq CE<br>M CZ<br>M CZ | 03-03-47<br>05-41<br>09-35<br>10-48<br>14-43<br>20-01<br>30-53<br>40-29<br>04-01-41 |          | 36<br>18 | 4<br>3     | O= 02-43-57,2<br>49°0 S. 163°7 E.<br>Région des Iles Auckland<br>Magn.Pas. 6½<br>h=ca 33 Km.<br>D=ca 12.870 Km.          |
| 08 NOV. LWI.   | i P Z<br>e (S) CE<br>i CZ<br>e CZ<br>M CZ   | 10-40-46,0<br>46-58<br>50-02<br>52-40<br>57-00                                      |          | 16       | 3          | c O= 10-33-27,5<br>29°7 N. 51°0 E.<br>Iran<br>Magn. 4.8<br>h=ca 40 Km.<br>D=ca 4.240 Km.                                 |
| 08 NOV. LWI.   | i Z<br>M Z  | 16-15-19,2<br>40  |          |          | 3          | O= 16-06-06 B.P.I.<br>Canal de Mozambique  |
| 09 NOV. LWI.   | e Z<br>i Z<br>i PP Z<br>M CZ  | 08-14-22<br>15-01,8<br>16-00,0<br>34-00   |          | 17       | 1          | O= 08-05-48,8<br>39°8 N. 48°4 E.<br>Région de la frontière<br>Iran - URSS.<br>Magn. 5.1<br>h=ca 65 Km.<br>D=ca 5.050 Km. |
| Du 09 NOVEMBRE AU 30 NOVEMBRE 1964: BUTARE: SANS CORRECTION D'HORLOGE. |   |   |          |          |            |  |
| 09 NOV. LWI.   | i P Z<br>i Z<br>i S NC/EC<br>M Z<br>M X   | 12-58-58<br>13-00-01<br>14<br>01-01   |          |          | 53<br>13   | O=ca 12-57-18 Lwi.<br>Graben Est Africain<br>Données insuffisantes<br>Magn.Lwi.ca 4.8<br>D=ca 725 Km.                    |

| Date<br>Station             | Phase  | Temps  | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.   |
|-----------------------------|--|--|-------------|----------|------------------|--|
| 1964<br>09 NOVEMBRE<br>LWI. | i (P) Z<br>i (S) Z/NC<br>e NC<br>i NC<br>i X<br>M Z<br>M X | 15-56-25,3<br>57-42,6<br>55<br>58-16,6<br>20<br>34 |             |          |                  | O=ca 15-55-4(4) Lwi.<br>Graben Est Africain<br>Données insuffisantes<br>Magn.Lwi.ca 4.0<br>D=ca 735 Km.                    |
| 10 NOV. LWI.                | M CZ   | 16-12-40   | 16          | 1,5      |                  | O= 15-47-49,3<br>32°6 N. 49°1 E.<br>Iran<br>Magn. 5.3<br>h=ca 28 Km.<br>D=ca 4.400 Km.                                     |
| 11 NOV. LWI.                | i P Z<br>i S NC!NL!<br>M NS<br>M EW<br>M X                 | 11-44-37,7<br>46,5<br>53<br>58<br>59               |             |          | CSE              | O=ca 11-44-24,2 Lwi.<br>1°6 S. 28°6 E.<br>Ca 75 Km. NNW.de Lwiro<br>(Rép. dém. du Congo)<br>Magn.Lwi.ca 3.7<br>D=ca 75 Km. |
| 12 NOV. LWI.                | e (P') Z<br>M CZ   | 05-53-11<br>06-53-30                               | 22          | 2,5      |                  | O= 05-33-28,7<br>18°2 S. 176°4 W.<br>Région des Iles Fidji<br>Magn. 5.2<br>h=ca 107 Km.<br>D=ca 16.440 Km.                 |
| 12 NOV. LWI.                | i P' Z   | 09-45-26,1   |             |          | C                | O= 09-25-54,1<br>16°7 S. 174°6 W.<br>Iles Tonga<br>Magn. 4.8<br>h=ca 190 Km.<br>D=ca 16.690 Km.                            |
| 12 NOV. LWI.                | i P Z<br>i S NC/EC<br>M Z<br>M X                           | 18-51-33,6<br>59,1<br>52-04<br>10                  |             |          | 29<br>4          |  |
| 16 NOV. LWI.                | M CZ   | 05-54-00   | 11          | 2,5      |                  | O= 05-27-33,8<br>39°8 N. 39°9 E.<br>Turquie<br>Magn. 5.1<br>h=ca 39 Km.<br>D=ca 4.790 Km.                                  |



| Date Station                | Phase  | Temps  | Pér. sec | B. mm      | Mo. du sol | Remarques.   |
|-----------------------------|--|--|----------|------------|------------|--|
| 1964<br>16 NOVEMBRE<br>LWI. | i P Z  | 06-10-53,8   |          |            | C          | O= 05-59-57,4<br>49°7 N. 78°0 E.<br>Kazaquie, URSS.<br>Magn. 6.0<br>h=ca 0 Km.<br>D=ca 7.420 Km.           |
| 16 NOV. LWI.                | i P Z<br>i (S) EC<br>i S NC<br>M Z<br>M X                          | 17-51-52,3<br>52-18<br>21<br>41                                      |          | 32,5<br>3  |            | Données insuffisantes<br>Magn. Lwi. ca 3.1<br>D=ca 250 Km.   |
| 16 NOV. LWI.                | i P Z  | 22-53-43,7   |          |            | cD         | O= 22-40-44,0<br>01°0 N. 118°8 E.<br>Borneo<br>Magn. 6.7<br>h=ca 33 Km.<br>D=ca 10.000 Km.                 |
| 17 NOV. LWI.                | i P' Z   | 00-21-24,0   |          |            | C          | O= 00-01-17,1<br>16°3 S. 173°7 W.<br>Iles Tonga<br>Magn. 5.4<br>D=ca 16.790 Km.                            |
| 17 NOV. LWI.                | e P' Z   | 08-28-05   |          |            |            | O= 08-08-56,7<br>23°5 S. 175°7 W.<br>Région des Iles Tonga<br>Magn. 4.4<br>h=ca 320 Km.<br>D=ca 16.110 Km. |
| 17 NOV. LWI.                | e P CZ<br>i P' CZ<br>i PP CZ<br>e PS CE<br>e SS CN<br>M CZ<br>M CZ | 08-31-01<br>34-31<br>36-02<br>45-53<br>52-45<br>09-22-30<br>10-21-30 | 22<br>22 | 24<br>28,5 | C          | O= 08-15-39,3<br>5°7 S. 150°7 E.<br>Nouvelle Bretagne<br>Magn. 6.7<br>h=ca 45 Km.<br>D=ca 13.490 Km.       |
| 17 NOV. LWI.                | ei P Z   | 11-21-37   |          |            |            | O= 11-03-06,8<br>23°4 S. 179°9 W.<br>S. des Iles Fidji<br>Magn. 5.5<br>h=ca 549 Km.<br>D=ca 15.800 Km.     |

| Date<br>Station             | Phase   | Temps  | Pér.<br>sec | B.<br>mm  | Mo.<br>du<br>sol | Remarques.   |
|-----------------------------|---|--|-------------|-----------|------------------|--|
| 1964<br>18 NOVEMBRE<br>LWI. | i P' Z<br>i PP CZ<br>e SS CN<br>M CZ                              | 14-53-56,6<br>55-01<br>15-11-23<br>35-30                       | 32          | 4         | d                | O= 14-34-54,5<br>06° S. 148°2 E.<br>Nouvelle Bretagne<br>Magn. 6.1<br>h=ca 49 Km.<br>D=ca 13.210 Km.                 |
| 18 NOV. LWI.                | e P' Z<br>i P' Z<br>e SS CN/CE<br>e SSS CE<br>M CZ                | 22-40-45<br>48,8<br>23-03-35<br>09-03<br>52-30                 | 18          | 2,5       | c<br>C           | O= 22-21-01,9<br>20°2 S. 174°1 W.<br>Iles Tonga<br>Magn. 5.8<br>h=ca 33 Km.<br>D=ca 16.480 Km.                       |
| 18 NOV. LWI.                | e P' Z  | 23-54-54   |             |           |                  | O= 23-35-03,9<br>20°1 S. 174°3 W.<br>Iles Tonga<br>Magn. 5.1<br>h=ca 33 Km.<br>D=ca 16.480 Km.                       |
| 19 NOV. LWI.                | i P Z<br>i Z<br>i EC/X<br>i Z<br>i S NL<br>i S Z/NC<br>M Z<br>M X | 16-35-47,5<br>36-02,0<br>14,8<br>39,3<br>43,8<br>44,3<br>37-28 |             | 51<br>9,5 | c!               | O=ca 16-34-33 Lwi.<br>Ca 6°7 S. 30°7 E.<br>Tanzanie<br>Magn.Lwi.ca 4.3<br>D=ca 550 Km.                               |
| 19 NOV. LWI.                | i P Z<br>i (S) Z<br>M Z<br>M X                                    | 22-46-29,3<br>47-28<br>53<br>55                                |             | 18<br>2   |                  | O=ca 22-45-13 Lwi.<br>Données insuffisantes<br>Magn.Lwi.ca 4.0<br>D=ca 540 Km.                                       |
| 19 NOV. LWI.                | e P' Z<br>i P' Z<br>i Z   | 23-54-05<br>55-06,4<br>00-08-04,0                              |             |           | d<br>C           | O= 23-35-06,0<br>06°0 S. 150°8 E?<br>Région de la Nouvelle<br>Bretagne<br>Magn. 6.0<br>h=ca 3 Km.<br>D=ca 13.500 Km. |

| Date<br>Station             | Phase   | Temps   | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.  |
|-----------------------------|---|---|-------------|----------|------------------|---|
| 1964<br>20 NOVEMBRE<br>LWI. | e P Z<br>i S CE<br>e (SS) CZ<br>M CZ                                | 09-58-51<br>10-05-55<br>09-16<br>15-40                      | 18          | 2,5      |                  | O= 09-50-13,5<br>0°2 S. 18°2 W.<br>Crête médiane de<br>l'Atlantique<br>Magn. 5.1<br>h=ca 33 Km.<br>D=ca 5.220 Km. |
| 20 NOV. LWI.                | i P Z<br>i! S Z/NC<br>M X   | 10-36-56,3<br>37-15<br>18                                   |             | 6,5      |                  | O=ca 10-36-30 Lwi.<br>Données insuffisantes<br>Magn.Lwi.ca 3.1<br>D=ca 153 Km.                                    |
| 20 NOV. LWI.                | i (P) Z<br>i (S) Z<br>i (S) EC<br>i NC<br>i EC<br>M Z               | 23-05-51,4<br>07-04<br>05<br>09<br>15<br>30                 |             | 8,5      |                  | O=ca 23-04-16 Lwi.<br>Données insuffisantes<br>Magn.Lwi.ca 4.0<br>D=ca 690 Km.                                    |
| 20 NOV. LWI.                | e PP CZ<br>e PS CZ<br>i (Lq) CZ<br>M CZ                             | 23-52-40<br>00-02-18<br>17-44<br>45-00                      | 20          | 4        |                  | O= 23-33-08,9<br>44°6 N. 149°7 E.<br>Iles Kouriles<br>Magn. 5.6<br>h=ca 33 Km.<br>D=ca 12.570 Km.                 |
| 21 NOV. LWI.                | i P Z   | 02-29-41,9  |             |          | c                | O= 02-16-44,5<br>01°0 N. 124°0 E.<br>Célèbes du Nord<br>Magn. 5.8<br>h=ca 248 Km.<br>D=ca 10.580 Km.              |
| 21 NOV. LWI.                | i P Z<br>i! (P) Z<br>i! Z<br>i S NCX<br>i S Z<br>i NC<br>M Z<br>M X | 02-46-31,2<br>46,1<br>56,6<br>47-22,6<br>24,1<br>45,1<br>48 |             | 34<br>4  |                  | O=ca 02-45-13,5 Lwi.<br>Données insuffisantes<br>Magn.Lwi.ca 3.9<br>D=ca 475 Km.                                  |
| 21 NOV. LWI.                | e P Z   | 04-12-11  |             |          |                  | O= 04-01-02,0<br>01°9 N. 96°8 E.<br>W. de Sumatra<br>Magn. 5.2<br>h=ca 33 Km.<br>D=ca 7.570 Km.                   |

| Date<br>Station             | Phase  | Temps  | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques  |
|-----------------------------|--|--|-------------|----------|------------------|--|
| 1964<br>22 NOVEMBRE<br>LWI. | i P Z  | 00-14-24   |             |          |                  | O= 00-02-33,3<br>24°0 N. 45°4 W.<br>Océan Atlantique Nord<br>Magn. 4.7<br>h=ca 33 Km.<br>D=ca 8.500 Km.              |
| 22 NOV. LWI.                | i P' Z   | 02-57-09,8   |             |          | D                | O= 02-38-29,0<br>17°9 S. 178°5 W.<br>Région des Iles Fidji<br>Magn. 5.0<br>h=ca 563 Km.<br>D=ca 16.280 Km.           |
| 22 NOV. LWI.                | i P Z<br>e S NC/NL<br>e S EL<br>i! Z<br>i! EC<br>M NS<br>M EW<br>M X | 18-47-10,6<br>49-01,8<br>02,8<br>18,8<br>59,8<br>50-12<br>18 |             |          | C!N              | Données insuffisantes<br>Magn. Lwi. ca 5.8<br>D=ca 1.100 Km.   |
| 23 NOV. LWI.                | e Z  | 10-36-24   |             |          |                  |  |
| 23 NOV. LWI.                | i P Z  | 19-56-19,3   |             |          | c                | O= 19-45-09,0<br>56°0 S. 27°6 W.<br>Région des Iles<br>Sandwich du Sud<br>Magn. 5.5<br>h=ca 33 Km.<br>D=ca 7.780 Km. |
| 23 NOV. LWI.                | i P Z  | 22-29-07,2   |             |          | cD               | O= 22-15-47,0<br>0°1 S. 124°5 E.<br>Mer de Moluques<br>Magn. 5.7<br>h=ca 66 Km.<br>D=ca 10.630 Km.                   |
| 24 NOV. LWI.                | i P' Z   | 06-53-41,3   |             |          | D                | O= 06-35-14,5<br>20°2 S. 179°2 W.<br>Région des Iles Fidji<br>Magn. 4.8<br>h=ca 660 Km.<br>D=ca 16.060 Km.           |

| Date<br>Station             | Phase  | Temps   | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.  |
|-----------------------------|--|---|-------------|----------|------------------|---|
| 1964<br>24 NOVEMBRE<br>LWI. | i P Z  | 10-53-22,5  |             |          | C                | O= 10-41-33,5<br>06°8 S. 107°4 E.<br>Java<br>Magn. 6.0<br>h=ca 125 Km.<br>D=ca 8.710 Km.              |
| 24 NOV. LWI.                | i P CZ<br>i PP CZ/CE<br>i SKS CE<br>i PS CZ<br>e SS CE<br>i Lq CZ<br>i CN<br>i CZ/CN<br>M CZ | 12-54-25<br>58-23<br>13-05-04<br>07-13<br>12-21<br>20-00<br>21-55<br>27-03<br>32-40 |             |          | C<br>cD          | O= 12-40-51,4<br>13°1 N. 124°7 E.<br>Luzon, Philippines<br>Magn. 6.1<br>h=ca 5 Km.<br>D=ca 10.690 Km. |
| 24/25 NOV. LWI              | i P' Z   | 00-10-55,4  |             |          | cD               | O= 23-51-20,2<br>23°2 S. 176°0 W.<br>S. des Iles Fidji<br>Magn. 4.7<br>h=ca 33 Km.<br>D=ca 16.450 Km. |
| 25 NOV. LWI.                | ei P Z   | 09-36-21  |             |          | dC               | O= 09-24-08,9<br>04°3 S. 122°2 E.<br>Célèbes<br>Magn. 6.2<br>h=ca 610 Km.<br>D=ca 10.340 Km.          |
| 26 NOV. LWI.                | e Z  | 03-07-18  |             |          |                  |   |
| 26 NOV. LWI.                | e P Z<br>e S CZ<br>M CZ  | 10-34-24<br>45-40<br>11-16-00   |             |          | 23 4,5           | O= 10-21-07,2<br>24°9 N. 122°0 E.<br>Formose<br>Magn. 5.4<br>D=ca 10.430 Km.                          |
| 27 NOV. LWI.                | e PP CZ<br>M CZ  | 14-06-24<br>56-05   |             |          | 16 1             | O= 13-47-42,7<br>37°9 N. 138°3 E.<br>Honshu, Japon<br>Magn. 5.5<br>h=ca 36 Km.<br>D=ca 11.860 Km.     |

| Date<br>Station             | Phase   | Temps   | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.   |
|-----------------------------|---|---|-------------|----------|------------------|--|
| 1964<br>28 NOVEMBRE<br>LWI. | e PP CZ<br>i CN<br>e CE<br>e CE<br>e CN<br>e CN<br>e (SS) CZ          | 17-06-17<br>09-07<br>10-31<br>12-05<br>15-33<br>17-01<br>19-55    |             |          |                  | O= 16-49-30,3<br>08°0 S. 71°4 W.<br>Brésil<br>Magn. 5.6<br>h=ca 655 Km.<br>D=ca 11.090 Km.                           |
| 29 NOV. LWI.                | i P Z<br>M CZ   | 17-05-27,9<br>33-----   | 17          | 1        | D                | O= 16-54-25,8<br>55°5 S. 26°0 W.<br>Région des Iles<br>Sandwich du Sud<br>Magn. 5.6<br>h=ca 33 Km.<br>D=ca 7.660 Km. |
| 30 NOV. LWI.                | i P Z/CZ<br>i PPP CZ<br>i S CE<br>i SS CE<br>i Lq CN<br>i! CZ<br>M CZ | 12-38-29<br>42-43<br>47-23<br>51-47<br>54-49<br>58-57<br>13-04-40 |             |          |                  | O= 12-27-38,6<br>06°8 N. 94°8 E.<br>Iles Nicobar<br>Magn. 5.7<br>h=ca 33 Km.<br>D!<br>D=ca 7.390 Km.                 |
| 30 NOV. LWI.                | e Z   | 13-07-12  |             |          |                  |  |
| 30 NOV. LWI.                | i P Z<br>i (S) NC<br>M Z  | 16-37-39,5<br>38-18<br>21   |             |          |                  | Données insuffisantes<br>Magn.Lwi.ca 3.4   |



| Date<br>Station             | Phase                 | Temps                          | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.   |
|-----------------------------|-----------------------|--------------------------------|-------------|----------|------------------|--|
| 1964<br>01 DECEMBRE<br>LWI. | i P' Z                | 05-12-45,7                     |             |          |                  | O= 04-53-23,9<br>18°9 S. 175°8 W.<br>Iles Tonga<br>Magn. 5.5<br>h=ca 232 Km.<br>D=ca 16.440 Km.                            |
| 01 DEC. LWI.                | i P Z                 | 07-52-13,4                     |             |          |                  | O= 07-39-50,2<br>79°5 N. 03°9 E.<br>Mer de Norvège<br>Magn. 4.7<br>h=ca 33 Km.<br>D=ca 9.180 Km.                           |
| 01 DEC. LWI.                | i P Z<br>i S Z<br>M Z | 17-05-45,1<br>08-40,7<br>11-23 |             | ca 8,5   |                  | O=ca 17-01-54,5 Lwi.<br>0°3/4 N. 13° E.<br>Makokou (Gabon)<br>Magn. Lwi. ca 5.0<br>D=ca 1.800 Km.                          |
| 01 DEC. LWI.                | i P Z<br>M Z<br>M X   | 23-43-30,3<br>50-11            |             | 10<br>5  |                  | O=ca 23-38-30,7 Lwi.<br>19° S. 14° E.<br>Région N.O. du Sud-Ouest<br>Africain<br>Magn. Lwi. ca 5.6<br>D=ca 2.480 Km.       |
| BTR.                        | i P Z<br>e S Z<br>M Z | 23-43-33,7<br>47-30,7<br>50-16 |             |          |                  |  |
| 02 DEC. LWI.                | i P Z                 | 08-32-24,8                     |             |          | c                | O= 08-20-45,6<br>30°6 N. 42°0 W.<br>Crête médiane de<br>l'Atlantique du Nord<br>Magn. 5.2<br>h=ca 33 Km.<br>D=ca 8.300 Km. |
| 02 DEC. LWI.                | i P Z                 | 08-31-45,3                     |             |          | D                | O= 08-21-43,3<br>29°5 N. 81°3 E.<br>Népal<br>Magn. 5.1<br>h=ca 23 Km.<br>D=ca 6.580 Km.                                    |

| Date<br>Station     | Phase     | Temps      | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.               |
|---------------------|-----------|------------|-------------|----------|------------------|--------------------------|
| 1964<br>02 DECEMBRE |           |            |             |          |                  |                          |
| LWI.                | i P Z     | 15-49-13,6 |             |          | dE               | O=ca 15-48-47 Lwi.       |
|                     | i P Z     | 14,0       |             |          | C!n              | Probablement région      |
|                     | i S NL/NC | 32,5       |             |          |                  | d'Uvira.                 |
|                     | M X       | 38         |             | 16,5     |                  | Données insuffisantes    |
| BTR.                | i P Z     | 15-49-10,5 |             |          | dc               | Magn.Lwi.ca 3.4          |
|                     | i! P X    | 10,7       |             |          | D                |                          |
|                     | i S X     | 25,2       |             | 34       |                  |                          |
|                     | M X       |            |             |          |                  |                          |
| 03 DEC. LWI.        | e Z       | 02-53-30   |             |          |                  |                          |
| 03 DEC. LWI.        | i P Z     | 03-57-31,6 |             |          | C                | O= 03-50-01,2            |
|                     | e PP CN   | 59-04      |             |          |                  | 15°0 S. 66°8 E.          |
|                     | e PcP CN  | 26         |             |          |                  | Crête médiane de         |
|                     | i PPP Z   | 38,7       |             |          |                  | l'Océan Indien           |
|                     | i S CN/CE | 04-03-38   |             |          |                  | Magn. 6.1                |
|                     | i Lq CN   | 06-40      |             |          |                  | h=ca 46 Km.              |
|                     | e Lr CZ   | 08-17      |             |          |                  | D=ca 4.400 Km.           |
|                     | M CZ      | 11-50      | 18          | 12       |                  |                          |
| 04 DEC. LWI.        | e P Z     | 07-56-08   |             |          |                  | O= 07-43-47,2            |
|                     |           |            |             |          |                  | 77°3 N. 06°4 E.          |
|                     |           |            |             |          |                  | Région Svalbard          |
|                     |           |            |             |          |                  | Magn. 4.9                |
|                     |           |            |             |          |                  | h=ca 33 Km.              |
|                     |           |            |             |          |                  | D=ca 8.930 Km.           |
| 04 DEC. LWI.        | i P Z     | 14-34-02,7 |             |          | C!N!E            | O=ca 14-33-50,5 Lwi.     |
|                     | i S NC/EC | 10,5       |             |          |                  | Ca 2°8 S. ca 29° E.      |
|                     | M X       | 14         |             | 15       |                  | Plaine de la Ruzizi,     |
|                     |           |            |             |          |                  | (Frontière Congo-Rwanda) |
| BTR.                | i! P Z    | 14-34-04,8 |             |          | C!               | Magn.Lwi.ca 3.0          |
|                     | i! X      | 09,5       |             |          |                  | D=ca 67 Km.              |
|                     | i S X     | 14,1       |             |          |                  |                          |
|                     | M X       |            |             | 10,5     |                  |                          |
| 04 DEC. LWI.        | i PP CZ   | 16-09-09   |             |          | c                | O= 15-48-43,4            |
|                     | i SS CN   | 25-50      |             |          |                  | 6°4 S. 150°7 E.          |
|                     |           |            |             |          |                  | Région de la Nouvelle    |
|                     |           |            |             |          |                  | Bretagne                 |
|                     |           |            |             |          |                  | Magn. 5.2                |
|                     |           |            |             |          |                  | h=ca 19 Km.              |
|                     |           |            |             |          |                  | D=ca 13.490 Km.          |

| Date<br>Station             | Phase  | Temps  | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.  |
|-----------------------------|--|--|-------------|----------|------------------|---|
| 1964<br>05 DECEMBRE<br>LWI. | i P' Z   | 05-33-18,0   |             |          |                  | O= 05-14-39,6<br>20°9 S. 178°5 W.<br>Région des Iles Fidji<br>Magn. 5.2<br>h=ca 529 Km.<br>D=ca 16.080 Km.            |
| 06 DEC. LWI.                | i P Z<br>i (S) Z<br>M Z  | 04-12-18,7<br>13-37,8<br>14-35   |             |          | d                | O=ca 04-10-32 Lwi.<br>Graben Est Africain<br>(Données insuffisantes)<br>Magn. Lwi. ca 4.2                             |
| BTR.                        | i P Z<br>i S Z<br>i S Z<br>M X   | 04-12-06,8<br>19,8<br>21,8<br>14-04  |             |          | C                | D=ca 777 Km.  |
| 06 DEC. LWI.                | i P' Z   | 05-59-48,5   |             |          | d                | O= 05-41-06,9<br>18°0 S. 178°5 W.<br>Région des Iles Fidji<br>Magn. 5.6<br>h=ca 551 Km.<br>D=ca 16.200 Km.            |
| 06 DEC. LWI.                | i P Z  | 08-32-06,4   |             |          | d                |   |
| 07 DEC. LWI.                | i P' Z<br>i PS CE<br>M CZ  | 09-17-34,6<br>29-04<br>10-01-20  | 28          | 2        | cD               | O= 08-58-43,8<br>5°4 S. 151°3 E.<br>Région de la Nouvelle<br>Bretagne<br>Magn. 5.8<br>h=ca 54 Km.<br>D=ca 13.560 Km.  |
| 09 DEC. LWI.                | i P Z<br>i P CZ<br>i pP CZ<br>e sP CZ<br>i PP Z<br>e pPP CZ<br>e sPP CZ<br>i S CN<br>i sS CZ/CN<br>e SS CZ<br>i sSS CN | 13-47-46,6<br>47<br>49-52<br>50-50<br>51-32,9<br>53-27<br>54-26<br>58-03<br>14-01-46<br>04-16<br>07-28 |             |          | d<br>D           | O= 13-35-42,4<br>27°5 S. 63°8 W.<br>Santiago del Estero,<br>Argentine<br>Magn. 5.9<br>h=ca 586 Km.<br>D=ca 10.080 Km. |

| Date<br>Station             | Phase  | Temps   | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol. | Remarques.  |
|-----------------------------|--|---|-------------|----------|-------------------|---|
| 1964<br>09 DECEMBRE<br>LWI. | e P Z<br>i PP Z  | 18-36-47<br>38-38,4   |             |          |                   | O= 18-28-38,2<br>41°1 N. 21°0 E.<br>Région de la frontière<br>Albanie - Yougoslavie<br>Magn. 4.8<br>h=ca 30 Km.<br>D=ca 4.860 Km. |
| 10 DEC. LWI.                | e P CZ<br>i PP CZ<br>i SKS CN<br>i PS CE/CZ<br>i SS CN<br>i SSS CN<br>M CZ | 15-25-20<br>29-47<br>36-04<br>39-02<br>44-54<br>48-40<br>16-21-40 | 18          | 6        | C                 | O= 15-11-05,5<br>40°4 N. 138°9 E.<br>Mer du Japon<br>Magn. 6.0<br>h=ca 33 Km.<br>D=ca 11.860 Km.                                  |
| 11 DEC. LWI.                | i P' Z   | 05-47-51,9  |             |          |                   | O= 05-29-14,7<br>18°7 S. 178°4 W.<br>Région des Iles Fidji<br>Magn. 4.1<br>h=ca 635 Km.<br>D=ca 16.230 Km.                        |
| 12 DEC. LWI.                | i P Z<br>i! P X<br>i S Z/NS<br>M X   | 06-46-04,3<br>06,9<br>17,2<br>37                                  |             |          | D!SW              | O=ca 06-45-44 Lwi.<br>Région de Mwenga<br>(Rép. dém. du Congo)<br>Magn. Lwi. ca 3.6<br>D=ca 110 Km.                               |
| BTR.                        | i P Z<br>i S X   | 06-46-15,5<br>48,4  |             |          | C                 |   |
| 12 DEC. LWI.                | e P' Z   | 07-38-58  |             |          |                   | O= 07-20-00,0<br>06°9 S. 150°6 E.<br>Région de la Nouvelle<br>Bretagne<br>Magn. 5.9<br>h=ca 33 Km.<br>D=ca 13.470 Km.             |
| 12 DEC. LWI.                | e Z  | 10-34-13  |             |          |                   |   |
| 12 DEC. LWI.                | e P' Z   | 20-04-21  |             |          |                   | O= 19-44-55,7<br>26°1 S. 175°9 W.<br>Sud des Iles Tonga<br>Magn. 4.9<br>h=ca 85 Km.<br>D=ca 15.900 Km.                            |



| Date Station                | Phase   | Temps   | Pér. sec | B. mm | Mo. du sol | Remarques.   |
|-----------------------------|---|---|----------|-------|------------|--|
| 1964<br>12 DECEMBRE<br>LWI. | e (P') Z  | 22-35-41  |          |       |            | O= 22-15-50,9<br>20°2 S. 174°0 W.<br>Iles Tonga<br>Magn. 5.0<br>h=ca 33 Km.<br>D=ca 14.490 Km.     |
| 13 DEC. LWI.                | e P' Z<br>i PP Z  | 00-52-09<br>53-17,0   |          |       |            | O= 00-33-24,7<br>64°9 N. 165°7 W.<br>Alaska<br>h=ca 15 Km.<br>D=ca 12.960 Km.                      |
| 13 DEC. LWI.                | e (P) Z<br>i Z<br>e S CN<br>e SS CN<br>e CZ<br>e Lr CZ<br>M CZ                          | 22-09-07<br>12-30,4<br>17-23<br>20-47<br>23-37<br>26-17<br>31-30                |          |       | 20 11      |  |
| 13 DEC. LWI.                | e (P) Z<br>e (S) CN<br>e Lr CZ<br>M CZ  | 23-07-40<br>15-59<br>24-57<br>30-10   |          |       | 19 5       |  |
| 14 DEC. LWI.                | i P Z/CZ<br>i P CZ<br>i S CZ<br>i CN/CE<br>i SS CN<br>i Lq CZ<br>i Lr CZ<br>M X<br>M CZ | 02-08-50,5<br>51<br>16-53<br>17-05<br>20-27<br>23-19<br>26-07<br>23-30<br>31-40 |          |       | ca 19 110  | C<br>O= 01-59-05,6<br>54°3 S. 02°4 W.<br>Océan Atlantique Sud<br>h=ca 33 Km.<br>D=ca 6.450 Km.     |
| 14 DEC. LWI.                | M CZ  | 09-58-13  |          |       | 19 2       |  |
| 15 DEC. LWI.                | i P' Z  | 12-32-07,3  |          |       |            | d<br>O= 12-13-25,8<br>14°7 N. 91°7 W.<br>Guatemala<br>Magn. 5.4<br>h=ca 118 Km.<br>D=ca 13.340 Km. |

| Date<br>Station             | Phase |    |       | Temps      | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.   |
|-----------------------------|-------|----|-------|------------|-------------|----------|------------------|--|
| 1964<br>15 DECEMBRE<br>LWI. | i     |    | Z     | 21-07-23,6 |             |          |                  |  |
| 15 DEC. LWI.                | i     | P  | Z     | 21-11-06,9 |             |          |                  | O= 21-03-15,9<br>40°0 N. 28°9 E.<br>Turquie<br>Magn. 4.9<br>h=ca 33 Km.<br>D=ca 4.670 Km.                  |
| 17/18 DEC.<br>LWI.          | i     | P' | Z     | 24-03-45,1 |             |          | D                | O= 23-44-46,2<br>51°4 N. 177°9 W.<br>Iles Aléoutiennes<br>Magn. 5.5<br>h=ca 57 Km.<br>D=ca 14.010 Km.      |
|                             | i     |    | CZ    | 17-24      |             |          |                  |  |
|                             | e     |    | CZ    | 23-22      |             |          |                  |  |
| 20 DEC. LWI.                | i     | P  | Z     | 05-01-54,6 |             |          | C                |  |
| 20 DEC. LWI.                | i     | P' | Z     | 11-45-20,8 |             |          | d                | O= 11-26-32,6<br>20°1 S. 177°7 W.<br>Région des Iles Fidji<br>Magn. 4.8<br>h=ca 463 Km.<br>D=ca 16.200 Km. |
| 21 DEC. LWI.                | i     | P  | Z     | 14-04-13,9 |             |          | DSE              | O=ca 14-03-46 Lwi.<br>Probablement région de<br>Kitega (Burundi)<br>Magn.Lwi.ca 5.1<br>D=ca 175 Km.        |
|                             | i     |    | NC/EC | 14,0       |             |          |                  |  |
|                             | i     | S  | NC    | 34,7       |             |          |                  |  |
|                             | i     | S  | EW    | 35,4       |             |          |                  |  |
|                             |       | M  | EW    | 40         |             | 40       |                  |  |
|                             |       | M  | NS    | 42         |             | 46       |                  |  |
| BTR.                        | i     | P  | Z     | 14-04-00,9 |             |          | D!SW             |  |
| 21 DEC. LWI.                | i     |    | Z     | 18-34-37   |             |          |                  |  |
| 21 DEC. LWI.                | i     | P  | Z     | 23-38-14,0 |             |          |                  | O=ca 23-37-45 Lwi.<br>Probablement région de<br>Kitega (Burundi)<br>Magn.Lwi.ca 3.2<br>D=ca 178 Km.        |
|                             | i     | P  | NC    | 18,9       |             |          |                  |  |
|                             | i!    |    | Z     | 27,0       |             |          |                  |  |
|                             | i     | S  | NC    | 35,0       |             |          |                  |  |
|                             |       | M  | Z     | 46         |             |          |                  |  |
|                             |       | M  | X     |            |             |          | 9                |  |
| BTR.                        | ei    | P  | Z     | 23-38-00,1 |             |          |                  |  |
|                             | i     | S  | X     | 10,4       |             |          |                  |  |
|                             |       | M  | X     | 17         |             |          |                  |  |

| Date<br>Station             | Phase  | Temps   | Pér.<br>sec | B.<br>mm  | Mo.<br>du<br>sol | Remarques.   |
|-----------------------------|--|---|-------------|-----------|------------------|--|
| 1964<br>22 DECEMBRE<br>LWI. | e P Z<br>i P CZ<br>e PP CZ<br>i S CE<br>i Lq CN<br>M CZ<br>M X | 04-44-14<br>18<br>45-51<br>50-25<br>53-42<br>05-03-19<br>29 | ca 14<br>15 | 115<br>21 | c<br>D           | O= 04-36-34,7<br>28°2 N. 57°0 E.<br>Iran<br>Magn. 5.5<br>h=ca 42 Km.<br>D=ca 4.510 Km.                               |
| 22 DEC. LWI.                | i P Z  | 08-14-38,8  |             |           | d                | O= 01-01-12,6<br>18°4 N. 68°8 W.<br>Canal de Mona<br>Magn. 5.6<br>h=ca 115 Km.<br>D=ca 10.880 Km.                    |
| 22 DEC. LWI.                | i P' Z   | 12-16-38,8  |             |           | D                | O= 11-58-10,1<br>22°2 S. 179°7 W.<br>Sud des Iles Fidji<br>Magn. 5.0<br>h=ca 600 Km.<br>D=ca 15.900 Km.              |
| 23 DEC. LWI.                | i P Z  | 05-58-06,2  |             |           | D                | O= 05-46-44,8<br>59°4 S. 26°9 W.<br>Région des Iles<br>Sandwich du Sud<br>Magn. 6.0<br>h=ca 33 Km.<br>D=ca 7.920 Km. |
| 24 DEC. LWI.                | e P Z  | 01-17-55  |             |           |                  | O= 01-08-37,7<br>36°2 N. 70°9 E.<br>Hindou-Kouch<br>Magn. 5.6<br>h=ca 158 Km.<br>D=ca 6.090 Km.                      |
| 24 DEC. LWI.                | i P' Z   | 19-04-37,0  |             |           | D                | O= 18-45-45,5<br>04°4 S. 153°1 E.<br>Nouvelle Irlande<br>Magn. 6.1<br>h=ca 93 Km.<br>D=ca 13.780 Km.                 |
| 24 DEC. LWI.                | M Z  | 23-53-40  | 1           | 4         |                  | O= 23-45-30 B.P.I.<br>Mozambique Channel   |

| Date<br>Station             | Phase  | Temps  | Pér.<br>sec | B.<br>mm  | Mo.<br>du<br>sol | Remarques.   |
|-----------------------------|--|--|-------------|-----------|------------------|--|
| 1964<br>26 DECEMBRE<br>LWI. | e P' Z<br>i PP CZ<br>e SKS CN<br>i SP CZ<br>i SPP CN<br>e SS CN  | 14-48-56<br>49-50<br>55-34<br>59-21<br>15-00-21<br>05-49   |             |           |                  | O= 14-30-29,1<br>51°8 N. 156°8 E.<br>Kamchatka<br>Magn. 5.7<br>h=ca 136 Km.<br>D=ca 12.710 Km.             |
| 27 DEC. LWI.                | e P Z<br>e PP CZ<br>i SKS CE<br>i S CE<br>e PS CZ<br>e PPS CZ<br>e SS CE<br>e SSS CE<br>e Lq CZ<br>M CZ  | 17-56-48<br>18-00-48<br>07-32<br>08-16<br>09-28<br>10-28<br>15-38<br>19-22<br>23-02<br>42-00                                 | 19          | 1         |                  | O= 17-43-21,4<br>12°9 N. 125°4 E.<br>Samar, Philippines<br>Magn. 5.9<br>h=ca 33 Km.<br>D=ca 11.100 Km.     |
| 28 DEC. LWI.                | i P' Z<br>i P' CZ<br>i pP CZ<br>i PKS CN<br>i pPKS CN<br>i CE/CN<br>e SKKP CN<br>i SKP CZ<br>i (SP) CZ<br>i SS CE/CN<br>i sSS CN/CE<br>i CE<br>i CN<br>e CN/CE | 16-34-37,4<br>40<br>36-55<br>38-29<br>40-42<br>43-54<br>45-50<br>47-10<br>38<br>55-56<br>59-42<br>17-00-17<br>05-02<br>11-32 |             |           | D<br>C           | O= 16-16-11,0<br>22°1 S. 179°6 W.<br>Sud des Iles Fidji<br>Magn. 6.2<br>h=ca 611 Km.<br>D=ca 15.910 Km.    |
| 29 DEC. LWI.                | i P' Z   | 23-18-10,0   |             |           | D                | O= 22-59-22,0<br>17°2 S. 178°7 W.<br>Région des Iles Fidji<br>Magn. 4.9<br>h=ca 493 Km.<br>D=ca 16.300 Km. |
| 30 DEC. LWI.                | i P Z<br>i S NC<br>M X<br>M Z  | 06-00-14<br>45,3<br>01-01<br>06  |             | 3,5<br>35 |                  | O=ca 04-59-32 Lwi.<br>Données insuffisantes<br>Magn.Lwi.ca 3.5<br>D=ca 275 Km.                             |



| Date<br>Station             | Phase  | Temps      | Pér.<br>sec | B.<br>mm | Mo.<br>du<br>sol | Remarques.  |
|-----------------------------|--------|------------|-------------|----------|------------------|---|
| 1964<br>30 DECEMBRE<br>LWI. | i P' Z | 21-49-28,4 |             |          | C                | O= 21-30-58,8<br>23°3 S. 179°9 W.<br>Sud des Iles Fidji<br>Magn. 5.2<br>h=ca 547 Km.<br>D=ca 15.800 Km. |
| 30 DEC. LWI.                | i Z    | 21-52-19,9 |             |          | C                |   |
| 31 DEC. LWI.                | i P Z  | 16-25-14,1 |             |          | D                | O= 16-18-01,7<br>35°8 N. 25°6 E.<br>Crête<br>Magn. 5.1<br>h=ca 86 Km.<br>D=ca 4.220 Km.                 |