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## Approximate positions of 68 known and 10 new minor planets on Johannesburg plates taken in 1940

Gent, H. van

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TABLE 2 (continued).

| B.D.                                   | $\alpha$ 1950°0                                           | $\delta$ 1950°0                                          | dependences                                                                     | B.D.                                    | $\alpha$ 1950°0                                               | $\delta$ 1950°0                                        | dependences                                                                   |
|----------------------------------------|-----------------------------------------------------------|----------------------------------------------------------|---------------------------------------------------------------------------------|-----------------------------------------|---------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------------------------|
| 73 + 15°1783<br>+ 14°1866<br>+ 15°1794 | <sup>h m s</sup><br>8 10 10.11<br>8 14 8.28<br>8 14 46.54 | <sup>° ' "</sup><br>14 44 55.9<br>14 5 19.1<br>15 28 6.0 | '3460 '3446<br>'3324 '3330<br>'3216 '3225                                       | 84 + 9°2977<br>+ 9°2985<br>+ 9°2990     | <sup>h m s</sup><br>14 56 30.71<br>14 58 20.34<br>14 59 36.26 | <sup>° ' "</sup><br>9 13 14.3<br>8 46 58.6<br>9 23 1.7 | '3749 '3750<br>'3117 '3112<br>'3134 '3137                                     |
| 74 - 16°3874<br>- 16°3884<br>- 17°4110 | 14 25 58.06<br>14 28 28.80<br>14 29 33.12                 | 17 21 26.2<br>16 42 21.8<br>17 39 40.2                   | '2282 '2289<br>'5484 '5487<br>'2234 '2224                                       | 85 + 10°2768<br>+ 9°2984<br>+ 10°2780   | 14 55 55.03<br>14 58 10.35<br>15 0 29.05                      | 10 13 50.7<br>9 14 8.5<br>9 41 57.4                    | '3760 '3762<br>'2532 '2528<br>'3709 '3710                                     |
| 75 - 16°3872<br>- 16°3873<br>- 16°3882 | 14 25 26.80<br>14 25 56.07<br>14 28 8.42                  | 17 4 6.7<br>16 44 28.0<br>16 35 21.0                     | '2219 '2199<br>'5146 '5182<br>'2635 '2619                                       | 86 + 12°2753<br>+ 11°2736<br>+ 13°2866  | 14 48 39.11<br>14 50 25.20<br>14 53 5.43                      | 12 22 9.9<br>11 27 18.9<br>12 38 1.6                   | '4175 '4180<br>'2310 '2308<br>'3515 '3513                                     |
| 76 - 14°3910<br>- 14°3918<br>- 15°3846 | 14 13 6.18<br>14 15 22.42<br>14 16 22.99                  | 14 52 38.6<br>14 40 51.1<br>15 31 3.3                    | '5001 '5015<br>'1963 '1959<br>'3036 '3026                                       | 87 + 13°2837<br>+ 14°2786<br>+ 12°2739  | 14 43 13.09<br>14 44 58.11<br>14 44 25.42                     | 12 41 35.6<br>13 51 46.7<br>12 34 59.7                 | '3879 '3899 '3957 '3973<br>'2647 '2647 '2646 '2646<br>'3475 '3454 '3397 '3382 |
| 77 - 11°3626<br>- 11°3641<br>- 11°3646 | 13 52 30.76<br>13 55 37.45<br>13 56 54.94                 | 12 12 14.7<br>12 22 53.1<br>11 48 0.4                    | '2821 '2834<br>'4866 '4848<br>'2313 '2318                                       | 88 + 13°2784<br>Lpz I 5100<br>+ 13°2794 | 14 19 8.20<br>14 20 53.27<br>14 22 21.93                      | 12 59 36.7<br>11 53 1.6<br>12 46 35.9                  | '3406 '3410<br>'1894 '1897<br>'4700 '4693                                     |
| 78 - 8°3618<br>- 9°3750<br>- 8°3621    | 13 39 17.95<br>13 39 57.44<br>13 40 20.66                 | 9 25 9.4<br>10 10 0.2<br>9 21 52.9                       | '4843 '4873<br>'2495 '2486<br>'2663 '2641                                       | 89 + 10°2649<br>+ 11°2651<br>+ 11°2660  | 14 10 25.58<br>14 10 35.61<br>14 14 52.30                     | 10 4 55.4<br>10 52 31.0<br>10 48 53.9                  | '3016 '3022<br>'3670 '3667<br>'3313 '3311                                     |
| 79 + 3°353<br>+ 3°359<br>+ 3°361       | 2 30 43.39<br>2 32 32.36<br>2 33 11.38                    | 4 12 25.7<br>3 54 33.8<br>4 12 18.1                      | '4450 '4427<br>'1497 '1451<br>'4053 '4122                                       | 90 + 10°2639<br>+ 10°2649<br>+ 9°2863   | 14 7 51.82<br>14 10 25.58<br>14 11 22.81                      | 9 40 31.6<br>10 4 55.4<br>9 12 50.5                    | '1404 '1407 '1417 '1419<br>'4174 '4169 '4148 '4142<br>'4422 '4424 '4435 '4439 |
| 80 + 4°2454<br>+ 5°2491<br>+ 4°2464    | 11 20 29.06<br>11 20 28.52<br>11 23 26.36                 | 4 24 41.9<br>5 6 23.2<br>4 13 29.2                       | '1215 '1198 '8105 '8126<br>'6243 '6245 '7447 '7450<br>'2542 '2557 '10658 '10676 | 91 + 8°2824<br>+ 8°2827<br>+ 7°2760     | 14 9 13.36<br>14 10 18.42<br>14 11 25.06                      | 7 34 39.9<br>8 14 34.1<br>7 21 20.9                    | '4002 '4004<br>'4042 '4036<br>'1956 '1960                                     |
| 81 + 15°1676<br>+ 14°1773<br>+ 15°1701 | 7 47 42.75<br>7 50 30.97<br>7 51 58.86                    | 14 58 12.3<br>14 38 42.5<br>15 11 0.9                    | '2004 '1985<br>'4131 '4150<br>'3865 '3866                                       | 92 + 0°3190<br>+ 0°3193<br>+ 0°3196     | 14 26 23.79<br>14 27 5.75<br>14 28 37.87                      | 0 6 44.4<br>0 29 39.2<br>0 0 57.3                      | '0646 '0643<br>'5048 '5027<br>'4306 '4330                                     |
| 82 + 10°1796<br>+ 11°1838<br>+ 10°1807 | 8 23 8.30<br>8 23 58.03<br>8 26 18.22                     | 10 0 16.0<br>10 49 33.1<br>10 27 3.2                     | '6256<br>'1346<br>'2398                                                         | 93 - 4°3779<br>- 5°3969<br>- 5°3987     | 14 54 6.33<br>14 54 16.85<br>14 58 30.66                      | 4 55 49.8<br>5 33 32.6<br>5 44 53.3                    | '2922 '2909<br>'3832 '3835<br>'3246 '3256                                     |
| 83 + 6°1947<br>+ 5°1964<br>+ 6°1957    | 8 21 23.99<br>8 22 14.66<br>8 24 16.50                    | 6 4 56.5<br>5 30 51.1<br>6 19 28.0                       | '3640 '3655<br>'3263 '3264<br>'3098 '3081                                       |                                         |                                                               |                                                        |                                                                               |

Approximate positions of 68 known and 10 new minor planets on Johannesburg plates taken in 1940, by *H. van Gent*.

On plates taken during 1940 with the 10-inch Franklin-Adams camera at Johannesburg a number of minor planets have been detected by comparing plate pairs in the Union Observatory's blink microscope. The results have been collected in the following list, the objects having been listed according to number. The positions have been obtained by superposing Franklin-Adams plates on the Bonner Durchmusterung, resp. Córdoba Durchmusterung map, which very nearly are on the same scale as the plates, and measuring the object's distance to the nearest right ascension and declination lines on the map by means of a millimetre scale read to a tenth

of a millimetre. The positions, which were reduced to 1950, are accurate to about  $m.1$  in right ascension and  $1'$  in declination respectively. The figure for the object's brightness was found by eye estimate on the plate by means of a  $10\times$  magnifying glass and does not claim high accuracy. The identifications have been made with the aid of the minor planet ephemerides for 1940, issued by the Copernicus Institute (Astronomisches Recheninstitut), Berlin-Dahlem. Professor Dr. G. STRACKE was kind enough to check the identifications, for which I want to convey my sincere thanks to him on this place. Position and date in the list refer to the mean of the two plates of a pair,

which as a rule were taken on the same field in the sky directly one after another with an exposure of 30 minutes each. The last two columns of the list contain the comparison between the object's position and the ephemeris from „Kleine Planeten 1940”; if this ephemeris had to be extrapolated the result of

the comparison has been placed between parentheses.

Astronomers engaged in work on a specified minor planet of this list, and desiring accurate positions instead of the approximate ones given here, are asked to communicate their wishes to the writer.

| Planet         | Date 1940    | $\alpha$<br>(1950)                | $\delta$<br>(1950)  | Estim.<br>magn. | O—C                | Planet          | Date 1940   | $\alpha$<br>(1950)                | $\delta$<br>(1950)  | Estim.<br>magn. | O—C                    |
|----------------|--------------|-----------------------------------|---------------------|-----------------|--------------------|-----------------|-------------|-----------------------------------|---------------------|-----------------|------------------------|
| 30 Urania      | Mar. 2'930   | 11 <sup>h</sup> 06 <sup>m</sup> 4 | +03 <sup>s</sup> 31 | 9               | -1'8 +11           | 648 Pippa       | Aug. 8'923  | 20 <sup>h</sup> 28 <sup>m</sup> 2 | -15 <sup>s</sup> 16 | 13'9            | +1 +1                  |
| 32 Pomona      | May 3'112    | 17 20'8                           | -19 29              | 10'0            |                    | 665 Sabine      | Mar. 2'973  | 9 57'2                            | -00 47              | 13'5            | -3'0 +23               |
| 42 Isis        | June 11'014  | 17 02'1                           | -20 53              | 9               | +8 -5              | 673 Edda        | June 11'014 | 17 15'6                           | -20 41              | 13'5            | +3'9 +4                |
|                | June 13'014  | 17 00'0                           | -21 03              | 9               | +8 -7              |                 | June 13'014 | 17 13'9                           | -20 39              | 13'5            | +4'0 +2                |
| 53 Kalypso     | Aug. 1'834   | 19 55'9                           | -17 54              | 13'5            | +2'8 +1            |                 | June 26'754 | 17 02'2                           | -20 12              | 13'8            | +4'0 +5                |
| 57 Mnemosyne   | Febr. 27'811 | 10 07'0                           | -04 37              | 11              | +1 -1              | 677 Aaltje      | Mar. 2'886  | 10 39'8                           | -04 41              | 13'5            | -1'1 +1                |
|                | Mar. 2'843   | 10 04'3                           | -04 08              | 11'5            | -1 -3              | 678 Fredegundis | Aug. 7'862  | 19 53'6                           | -16 56              | 12'7            | +6 +8                  |
| 59 Elpis       | Aug. 7'862   | 20 14'0                           | -10 12              | 11'5            | +1'0 +1            | 700 Auravictrix | June 11'014 | 17 02'7                           | -18 29              | 13'5            | +6 -1                  |
| 66 Maja        | Aug. 1'834   | 20 27'7                           | -23 36              | 13'5            | +1'8 +7            |                 | June 13'014 | 17 00'6                           | -18 37              | 13'2            | +6 -2                  |
|                | Aug. 1'877   | 20 27'7                           | -23 36              | 12'2            | +1'7 +7            | 701 Oriola      | Mar. 2'886  | 10 57'8                           | -04 42              | 13'0            | +1'9 -10               |
| 69 Hesperia    | Aug. 7'862   | 19 47'9                           | -10 13              | 12'7            | +5 +2              | 754 Malabar     | Mar. 2'886  | 11 08'5                           | -04 11              | 12'7            | +1 +4                  |
| 73 Klytia      | Febr. 14'884 | 10 05'2                           | +14 24              | 12'3            | +3 -2              | 764 Gedania     | June 26'754 | 17 26'7                           | -21 45              | 13'7            | -7 -2                  |
| 74 Galatea     | May 3'112    | 17 05'9                           | -18 35              | 12'8            | (-1 +2)            | 823 Sisigambis  | Aug. 7'862  | 20 01'6                           | -15 38              | 13'7            | -3'4 -11               |
| 77 Frigga      | Aug. 1'877   | 20 59'5                           | -20 15              | 12'5            | -1 -1              | 868 Lova        | June 11'014 | 17 19'7                           | -17 56              | 13'5            | +3 -4                  |
|                | Aug. 1'923   | 20 59'5                           | -20 15              | 12'8            | -1 -1              |                 | June 13'014 | 17 17'9                           | -17 58              | 13'5            | +3 -5                  |
| 84 Klio        | Mar. 2'930   | 10 44'2                           | +04 23              | 12'0            | 0 +3               |                 | June 26'754 | 17 05'6                           | -18 05              | 13'5            | +4 -4                  |
|                | Mar. 9'925   | 10 37'5                           | +04 49              | 13'5            | +1 +4              | 883 Matteriana  | June 7'930  | 16 19'0                           | -26 35              | 13'7            | -1'3 +9                |
| 104 Klymene    | Aug. 1'834   | 20 18'9                           | -23 46              | 13'4            | -1 -1              | 939 Isberga     | Aug. 8'967  | 21 22'4                           | -16 28              | 13'0            | -6 -24                 |
| 105 Artemis    | Febr. 27'811 | 10 20'5                           | -09 54              | 11              | 0 -2               | 976 Benjamina   | June 11'014 | 17 12'2                           | -20 23              | 13'2            | -3'3 -1                |
|                | Mar. 2'843   | 10 17'1                           | -08 57              | 11'0            | -1 -2              |                 | June 13'014 | 17 10'5                           | -20 14              | 13'2            | -3'4 +1                |
| 106 Dione      | May 3'070    | 16 26'0                           | -21 29              | 12'0            | -7 +5              |                 | June 26'754 | 17 00'0                           | -19 34              | 13'8            | -3'1 0                 |
|                | June 1'840   | 16 03'2                           | -21 03              | 11'5            | -6 +1              | 996 Hilaritas   | May 3'070   | 16 20'8                           | -22 22              | 14'0            | 0 +4                   |
| 124 Alkestes   | Aug. 7'862   | 20 18'5                           | -15 17              | 11'8            | -5 0               |                 | June 1'840  | 15 56'8                           | -21 24              | 14'5            | 0 0                    |
| 126 Velleda    | Aug. 1'834   | 19 58'8                           | -25 53              | 12'4            | -7 +4              | 1062 Larissa    | May 3'070   | 16 25'7                           | -22 35              | 13'8            | -2'4 +8                |
| 142 Polana     | Aug. 1'834   | 20 26'6                           | -18 11              | 13'3            | +1'8 +9            |                 | June 1'840  | 16 05'7                           | -22 03              | 13'9            | -2'5 +7                |
|                | Aug. 1'877   | 20 26'6                           | -18 11              | 12'8            | +1'9 +8            | 1180 Rita       | June 26'754 | 17 21'4                           | -22 34              | 13'5            | -1 -1 <sup>2)</sup>    |
| 175 Andromache | June 11'014  | 17 14'3                           | -27 02              | 12'0            | -3'5 +5            | 1232 Cortusa    | Mar. 2'886  | 11 03'4                           | -10 34              | 14'0            | -1'5 +10               |
|                | June 13'014  | 17 12'5                           | -27 02              | 12'0            | -3'5 +4            | 1248 Jugurtha   | May 3'112   | 17 14'8                           | -20 01              | 13'2            | (+2'7 -12)             |
|                | June 26'754  | 17 00'9                           | -26 49              | 12'8            | -3'4 +8            |                 | June 7'930  | 16 45'7                           | -20 57              | 12'0            | +2'7 -11               |
| 216 Kleopatra  | Mar. 2'800   | 9 38'4                            | -04 12              | 11'2            | -1'5 +3            | 1266 Tone       | Mar. 2'973  | 10 20'1                           | +03 20              | 14'0            | +2'5 -17               |
| 219 Thusnelda  | Mar. 2'886   | 10 54'9                           | -03 35              | 13'0            | -1 +1              | 1281 Jeanne?    | Mar. 9'925  | 10 18'4                           | +01 25              | 13'5            | -2'0 +26 <sup>3)</sup> |
|                | Mar. 2'930   | 10 55'1                           | -03 39              | 13'2            | +1 -1              | 1343 Nicole     | Aug. 1'923  | 21 23'6                           | -26 34              | 13'5            | -2'6 -14               |
| 226 Weringia   | Aug. 8'923   | 20 34'4                           | -16 21              | 12'8            | -3'9 +2            | 1378 Leonce     | May 3'070   | 16 24'8                           | -23 04              | 13'8            | +2'5 -6                |
| 235 Carolina   | May 3'070    | 16 38'2                           | -20 42              | 11'5            | +3'0 -22           |                 | June 1'840  | 15 57'6                           | -23 22              | 13'5            | +2'8 -11               |
|                | June 1'840   | 16 12'6                           | -21 23              | 11'2            | +3'1 -25           | 1458 Mineura    | Mar. 2'930  | 10 58'0                           | +00 07              | 14'2            | +1'0 -4                |
| 258 Tyche      | Mar. 2'800   | 9 31'9                            | -03 42              | 13'2            | -7 -4              | 1940 I P        | May 3'112   | 17 23'8                           | -23 00              | 14'0            |                        |
| 272 Antonia    | June 7'930   | 16 19'6                           | -25 13              | 13'0            | +3 0 <sup>1)</sup> | 1940 L I        | June 1'840  | 16 08'8                           | -21 54              | 14'5            |                        |
| 275 Sapiencia  | Aug. 8'967   | 21 33'0                           | -15 09              | 13'0            | -8 -9              | 1940 L K        | June 1'840  | 16 16'1                           | -18 24              | 13'8            |                        |
| 291 Alice      | June 26'754  | 17 17'1                           | -20 01              | 13'8            | -2 -2              | 1940 L L        | June 3'854  | 16 27'6                           | -21 56              | 13'9            |                        |
| 342 Endymion   | June 11'014  | 17 02'3                           | -18 04              | 13'5            | -5 -2              |                 | June 7'930  | 16 23'3                           | -21 56              | 14'0            |                        |
|                | June 13'014  | 17 00'3                           | -17 55              | 13'5            | -6 0               |                 | June 10'970 | 16 20'1                           | -21 56              | 14'0            |                        |
| 352 Gisela     | Aug. 8'923   | 20 52'5                           | -11 18              | 13'2            | -6 -9              |                 | June 12'971 | 16 18'2                           | -21 57              | 14'0            |                        |
| 354 Eleonora   | Febr. 14'884 | 9 58'9                            | +15 24              | 9'5             | -4 +1              | 1940 L M        | June 3'854  | 16 33'1                           | -22 36              | 13'7            |                        |
| 357 Ninina     | Aug. 8'923   | 20 34'4                           | -15 13              | 13'2            | -1'6 0             |                 | June 7'930  | 16 29'8                           | -22 32              | 13'8            |                        |
| 435 Ella       | Aug. 1'923   | 21 37'2                           | -17 38              | 12'8            | +2'8 +13           |                 | June 10'970 | 16 27'4                           | -22 31              | 13'8            |                        |
| 444 Gypsis     | Mar. 2'930   | 10 40'8                           | -00 37              | 11'7            | +3 -1              |                 | June 12'971 | 16 25'7                           | -22 27              | 14'0            |                        |
|                | Mar. 9'925   | 10 35'4                           | +00 14              | 12              | +2 +1              | 1940 L N        | June 3'854  | 16 34'6                           | -22 12              | 13'8            |                        |
| 498 Tokio      | June 26'754  | 17 24'2                           | -20 10              | 9'5             | +1'3 -5            |                 | June 7'930  | 16 30'3                           | -22 08              | 13'8            |                        |
| 503 Evelyn     | May 3'070    | 16 37'0                           | -21 04              | 12'5            | (-2 -1)            |                 | June 10'970 | 16 27'2                           | -22 08              | 13'8            |                        |
|                | June 1'840   | 16 10'6                           | -20 44              | 12'5            | +1 -2              |                 | June 12'971 | 16 25'3                           | -22 05              | 14'0            |                        |
| 514 Armida     | Aug. 8'967   | 21 37'2                           | -09 27              | 13'0            | +2 -2              |                 | June 14'047 | 16 24'3                           | -22 03              | 14'1            |                        |
| 523 Ada        | Mar. 2'973   | 10 09'9                           | +04 20              | 13'6            | -2 -2              | 1940 L O        | June 11'014 | 17 20'8                           | -25 05              | 13'5            |                        |
| 524 Fidelio    | Aug. 1'923   | 21 18'1                           | -19 06              | 13'0            | +9 +3              |                 | June 13'014 | 17 18'8                           | -25 14              | 13'5            |                        |
| 530 Turandot   | Aug. 1'834   | 20 17'9                           | -18 34              | 13'2            | -3'7 -6            | 1940 L P        | June 11'014 | 17 21'0                           | -20 12              | 13'9            |                        |
| 537 Pauly      | Febr. 14'884 | 10 10'6                           | +17 45              | 13'5            | -1'7 +8            |                 | June 13'014 | 17 19'2                           | -20 10              | 13'8            |                        |
| 544 Jetta      | Mar. 2'973   | 10 20'0                           | +01 25              | 14'0            | +1'0 -11           | 1940 Q I        | Aug. 8'967  | 21 25'3                           | -14 43              | 13'5            |                        |
| 586 Thekla     | Aug. 8'967   | 21 23'6                           | -12 52              | 13'5            | 0 -1               | Doubtful object | May 3'070   | 16 22'3                           | -22 47              | 14'1            |                        |
| 619 Triberga   | Mar. 2'930   | 10 46'9                           | -02 01              | 13'8            | -1 -1              |                 |             |                                   |                     |                 |                        |
| 644 Cosima     | Aug. 8'967   | 21 06'1                           | -17 22              | 13'6            | +1'6 +12           |                 |             |                                   |                     |                 |                        |

1) RI 2114. 2) RI 2130. 3) Variation does not fit.

### ERRATA B.A.N. No. 343, page 240, plate 5523, planet (27),

column 5, for  $13^h 5^m 32^s.294$ , read  $13^h 5^m 32^s.295$   
 $13^h 5^m 32^s.455$ , read  $13^h 5^m 32^s.456$

column 7, for  $-4^{\circ} 41' 46''.95$ , read  $-4^{\circ} 42' 15''.52$   
 $-4^{\circ} 41' 47''.67$ , read  $-4^{\circ} 42' 16''.14$