

**Supplementary Online Material for “Earth-based Stellar Occultation Predictions for Jupiter, Saturn,  
Uranus, Neptune, Titan, and Triton: 2023–2050”**

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1. JUPITER PREDICTION TABLES

**Table 1.** Geocentric Jupiter Occultation Predictions 2023 to 2050 for  $K \leq 10$  (part 1 of 11)

| Event ID   | C/A Epoch              | ICRS Star Coord at Epoch       | $\sigma(\alpha_*)$ (km) | C/A (")          | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|------------|------------------------|--------------------------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type | Source ID              | Geocentric Object Position     | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J230001    | 2023-06-14 01:11:45.72 | 02 15 25.69143 +12 24 11.12426 | 0.8                     | 14.630           | 341.18   | 33.79                   | 5.599            | -57.8       | 7.721      | 8.837  | 8.419  | 114.1             | 46.7  |
| Pg         | 73763215746127744      | 02 15 25.36933 +12 24 24.97221 | 0.7                     | 59.405           | -20.47   | 2.98                    |                  | -60.9       | 0.473      | 9.406  | 0      | 12.5              | 2.7   |
| J230002    | 2023-07-06 00:51:38.82 | 02 31 07.12260 +13 39 36.93068 | 0.6                     | 9.769            | 342.49   | 26.45                   | 5.326            | -33.3       | 8.916      | 11.267 | 10.544 | 101.4             | 63.6  |
| Pgt        | 74898461501797376      | 02 31 06.92091 +13 39 46.24731 | 0.6                     | 37.741           | -19.37   | 3.11                    |                  | -37.2       | 11.570     | 0      | 0      | 13.8              | 80.4  |
| J230003    | 2023-08-01 19:47:59.62 | 02 45 27.70841 +14 42 33.71279 | 0.5                     | 8.152            | 164.30   | 15.42                   | 4.936            | 29.8        | 9.004      | 11.667 | 10.872 | 154.5             | 85.6  |
| Pgt        | 32915736003365248      | 02 45 27.86047 +14 42 25.86507 | 0.4                     | 29.185           | -18.29   | 3.24                    |                  | 24.2        | 11.385     | 0      | 0      | 14.8              | 93.6  |
| J230004    | 2023-09-23 21:45:32.97 | 02 50 20.99020 +14 53 58.52962 | 0.4                     | 8.236            | 340.78   | -8.08                   | 4.201            | -21.7       | 8.762      | 10.987 | 10.295 | 74.0              | 135.6 |
| Pgt        | 33251778540402688      | 02 50 20.80313 +14 54 06.30679 | 0.3                     | 25.097           | -17.91   | 3.42                    |                  | -24.6       | 0.272      | 10.004 | 0      | 15.0              | 120.0 |
| J230005    | 2023-09-28 11:28:16.08 | 02 49 05.07478 +14 47 48.19359 | 0.5                     | 1.481            | 341.30   | -9.71                   | 4.155            | -3.3        | 9.493      | 11.321 | 10.714 | 223.5             | 140.4 |
| Pgt        | 33228894954662656      | 02 49 05.04204 +14 47 49.59645 | 0.5                     | 4.464            | -18.01   | 3.43                    |                  | -4.9        | 0.175      | 10.536 | 0      | 14.9              | 52.6  |
| J230006    | 2023-10-23 15:18:21.13 | 02 38 25.65862 +13 57 35.57062 | 0.5                     | 13.800           | 162.24   | -15.75                  | 3.995            | 36.4        | 9.907      | 11.314 | 10.817 | 138.6             | 168.0 |
| Pgt        | 26941234632001792      | 02 38 25.94782 +13 57 22.42804 | 0.5                     | 39.991           | -18.83   | 3.41                    |                  | 38.6        | 0.131      | 11.055 | 0      | 14.1              | 82.2  |
| J230007    | 2023-10-24 00:09:30.32 | 02 38 15.15239 +13 56 04.38700 | 0.5                     | 26.383           | 342.24   | -15.79                  | 3.994            |             | 9.408      | 10.968 | 10.431 | 5.4               | 168.4 |
| P          | 26941131552787840      | 02 38 14.59961 +13 56 29.51248 | 0.5                     | 76.433           | -18.85   | 3.41                    |                  |             | 0.167      | 10.711 | 0      | 14.0              | 76.9  |
| J230008    | 2023-11-07 11:09:12.70 | 02 30 36.30475 +13 21 07.99232 | 0.5                     | 5.819            | 162.43   | -16.27                  | 3.987            | 13.4        | 9.568      | 12.286 | 11.494 | 184.3             | 174.9 |
| Pgt        | 74512734783931264      | 02 30 36.42514 +13 21 02.44482 | 0.4                     | 16.828           | -19.41   | 3.36                    |                  | 17.5        | 0.200      | 12.062 | 0      | 13.5              | 117.8 |
| J230009    | 2023-12-27 01:59:08.83 | 02 13 34.93531 +12 08 00.49303 | 0.5                     | 9.988            | 0.73     | -1.98                   | 4.411            | -52.3       | 9.945      | 12.461 | 11.692 | 268.6             | 120.6 |
| Pgt        | 73387560726580224      | 02 13 34.94401 +12 08 10.48035 | 0.4                     | 31.957           | -20.59   | 3.08                    |                  | -6.9        | 9.949      | 0      | 0      | 12.2              | 60.4  |
| J240001    | 2024-03-14 05:50:23.98 | 02 44 50.32806 +15 01 44.08431 | 0.7                     | 8.408            | 161.66   | 32.56                   | 5.587            | 31.7        | 7.264      | 10.808 | 9.801  | 141.6             | 49.6  |
| Pgt        | 33121761290365312      | 02 44 50.51063 +15 01 36.10327 | 0.6                     | 34.070           | -18.33   | 2.89                    |                  | 31.7        | 0.941      | 11.337 | 0      | 15.1              | 5.3   |
| J240002    | 2024-07-26 21:45:47.07 | 04 47 13.12725 +21 41 13.55575 | 0.6                     | 4.705            | 172.87   | 31.60                   | 5.612            | 17.4        | 9.253      | 12.490 | 11.565 | 160.6             | 50.9  |
| Pgt        | 3412721880292086016    | 04 47 13.16915 +21 41 08.88741 | 0.4                     | 19.151           | -6.93    | 2.90                    |                  | 17.8        | 0.380      | 12.987 | 0      | 21.7              | 55.0  |
| J240003    | 2024-07-28 00:32:48.69 | 04 48 06.20329 +21 42 44.07148 | 0.6                     | 3.288            | 172.96   | 31.25                   | 5.599            | 12.0        | 8.924      | 11.797 | 10.952 | 118.0             | 51.8  |
| Pgt        | 3412720132241579648    | 04 48 06.23221 +21 42 40.80826 | 0.4                     | 13.353           | -6.84    | 2.90                    |                  | 12.5        | 1.056      | 12.282 | 0      | 21.8              | 39.6  |
| J240004    | 2024-07-29 20:20:21.24 | 04 49 31.88351 +21 45 19.86642 | 0.7                     | 13.107           | 173.10   | 30.66                   | 5.577            | 51.2        | 6.838      | 10.389 | 9.397  | 179.7             | 53.2  |
| Pgt        | 3412770847215323008    | 04 49 31.99649 +21 45 06.85401 | 0.5                     | 53.021           | -6.69    | 2.90                    |                  | 51.6        | 10.852     | 0      | 0      | 21.8              | 15.4  |
| J240005    | 2024-08-01 03:36:20.87 | 04 51 18.56067 +21 47 45.92430 | 1.4                     | 17.915           | 353.29   | 29.89                   | 5.549            |             | 7.417      | 11.572 | 10.435 | 68.9              | 55.0  |
| Pt         | 3412779535933155840    | 04 51 18.41037 +21 48 03.71675 | 0.9                     | 72.104           | -6.50    | 2.90                    |                  |             | 1.152      | 12.008 | 0      | 21.8              | 16.7  |
| J240006    | 2024-08-06 12:33:07.48 | 04 55 18.30490 +21 54 17.97612 | 0.8                     | 6.652            | 353.70   | 28.01                   | 5.481            | -24.7       | 8.134      | 11.428 | 10.494 | 290.4             | 59.2  |
| Pgt        | 3412354437249775872    | 04 55 18.25245 +21 54 24.58837 | 0.6                     | 26.445           | -6.08    | 2.89                    |                  | -24.2       | 0.650      | 11.793 | 0      | 21.9              | 82.4  |
| J240007    | 2024-08-06 22:59:38.98 | 04 55 37.20701 +21 54 43.74799 | 0.6                     | 9.831            | 353.73   | 27.86                   | 5.475            | -36.8       | 9.191      | 12.570 | 11.623 | 133.4             | 59.5  |
| Pgt        | 3412351688470705920    | 04 55 37.12990 +21 54 53.52053 | 0.4                     | 39.041           | -6.05    | 2.89                    |                  | -36.4       | 12.930     | 0      | 0      | 22.0              | 87.5  |
| J240008    | 2024-08-08 13:56:19.40 | 04 56 46.75507 +21 56 43.01025 | 0.8                     | 4.080            | 173.85   | 27.26                   | 5.454            | 14.6        | 9.804      | 12.919 | 12.027 | 267.9             | 60.8  |
| Pgt        | 3412363817458378112    | 04 56 46.78648 +21 56 38.95383 | 0.5                     | 16.139           | -5.93    | 2.89                    |                  | 15.1        | 0.307      | 13.256 | 0      | 22.0              | 106.5 |
| J240009    | 2024-08-10 05:47:09.64 | 04 57 56.92424 +21 58 07.23524 | 0.9                     | 15.689           | 353.98   | 26.65                   | 5.432            | -63.0       | 9.546      | 12.284 | 11.455 | 28.9              | 62.1  |
| Pgt        | 3412179821059378048    | 04 57 56.80590 +21 58 22.83715 | 0.5                     | 61.806           | -5.81    | 2.89                    |                  | -62.6       | 0.284      | 12.595 | 0      | 22.0              | 125.7 |
| J240010    | 2024-08-23 18:30:15.62 | 05 06 36.13687 +22 09 47.34528 | 0.6                     | 20.009           | 354.89   | 21.33                   | 5.242            |             | 9.567      | 12.529 | 11.665 | 186.9             | 73.1  |
| P          | 3415243541492165760    | 05 06 36.00861 +22 10 07.27469 | 0.4                     | 76.073           | -4.89    | 2.88                    |                  |             | 0.284      | 12.599 | 0      | 22.2              | 51.4  |
| J240011    | 2024-08-28 18:27:48.25 | 05 09 22.40558 +22 13 18.96623 | 0.5                     | 8.942            | 355.20   | 19.21                   | 5.169            | -31.4       | 9.468      | 12.543 | 11.643 | 183.3             | 77.3  |
| Pgt        | 3415283330068719104    | 05 09 22.35164 +22 13 27.87677 | 0.3                     | 33.520           | -4.60    | 2.88                    |                  | -30.9       | 0.298      | 12.500 | 0      | 22.3              | 17.6  |
| J240012*   | 2024-08-30 11:07:36.16 | 05 10 15.26787 +22 14 33.72021 | 0.8                     | 4.673            | 175.29   | 18.48                   | 5.143            | 15.8        | 9.297      | 12.368 | 11.472 | 291.9             | 78.7  |
| Pgt        | 3415285975768572544    | 05 10 15.29551 +22 14 29.06284 | 0.5                     | 17.432           | -4.50    | 2.88                    |                  | 16.2        | 0.326      | 12.282 | 0      | 22.3              | 38.4  |
| J240013    | 2024-08-31 00:00:48.32 | 05 10 31.62500 +22 15 00.03378 | 0.9                     | 12.322           | 175.32   | 18.24                   | 5.135            | 43.4        | 8.054      | 11.173 | 10.262 | 98.1              | 79.2  |
| Pgt        | 3415099887722039552    | 05 10 31.69743 +22 14 47.75284 | 0.5                     | 45.893           | -4.47    | 2.88                    |                  | 43.8        | 0.567      | 11.073 | 0      | 22.3              | 44.9  |
| J240014    | 2024-09-08 07:06:00.04 | 05 14 20.89201 +22 19 05.00395 | 0.5                     | 9.408            | 175.77   | 14.52                   | 5.010            | 31.6        | 8.735      | 12.294 | 11.316 | 344.6             | 86.3  |
| Pgt        | 3415437055538451200    | 05 14 20.94205 +22 18 55.62160 | 0.3                     | 34.184           | -4.07    | 2.88                    |                  | 32.0        | 0.462      | 11.946 | 0      | 22.3              | 142.8 |
| J240015    | 2024-09-08 18:39:10.90 | 05 14 32.70808 +22 19 25.49550 | 0.7                     | 17.791           | 175.79   | 14.30                   | 5.003            | 67.0        | 9.281      | 10.503 | 10.073 | 170.9             | 86.8  |
| Pgt        | 3415438296785992832    | 05 14 32.80227 +22 19 07.75291 | 0.4                     | 64.549           | -4.05    | 2.88                    |                  | 67.3        | 0.212      | 10.138 | 0      | 22.3              | 148.4 |

*Table 1 continued on next page*



Table 1 (continued)

| Event ID   | C/A Epoch              | ICRS Star Coord at Epoch |                 | $\sigma(\alpha_*)$ (km) | C/A ( $''$ )     | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|------------|------------------------|--------------------------|-----------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type | Source ID              | Geocentric               | Object Position | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J250014    | 2025-09-03 01:30:36.20 | 07 17 29.19416           | +22 12 51.45743 | 0.9                     | 6.196            | 187.04   | 30.47                   | 5.719            | 21.6        | 8.851      | 9.553  | 9.285  | 104.7             | 52.6  |
| Pgt        | 3367209799780559360    | 07 17 29.13950           | +22 12 45.30796 | 0.7                     | 25.699           | 9.01     | 1.73                    |                  | 25.9        | 0.264      | 10.010 | 0      | 22.2              | 172.4 |
| J250015*   | 2025-09-10 04:57:39.19 | 07 22 42.17890           | +22 03 13.62777 | 1.2                     | 17.625           | 7.48     | 28.00                   | 5.628            |             | 9.761      | 10.231 | 10.048 | 47.2              | 58.3  |
| Pt         | 866155269923632512     | 07 22 42.34390           | +22 03 31.10300 | 1.0                     | 71.949           | 9.54     | 1.68                    |                  |             | 0.162      | 10.596 | 0      | 22.0              | 88.7  |
| J250016    | 2025-09-21 03:35:45.85 | 07 29 55.94870           | +21 49 44.63272 | 0.8                     | 4.400            | 8.03     | 23.82                   | 5.479            | -18.6       | 9.035      | 11.197 | 10.528 | 58.7              | 67.3  |
| Pgt        | 865247309540101632     | 07 29 55.99286           | +21 49 48.98944 | 0.7                     | 17.484           | 10.26    | 1.62                    |                  | -13.6       | 0.310      | 11.387 | 0      | 21.8              | 59.5  |
| J250017    | 2025-09-22 10:55:40.49 | 07 30 43.78853           | +21 48 33.23934 | 0.6                     | 18.298           | 188.08   | 23.28                   | 5.461            |             | 9.436      | 11.670 | 10.980 | 307.6             | 68.4  |
| P          | 865235970826441088     | 07 30 43.60386           | +21 48 15.12252 | 0.5                     | 72.468           | 10.34    | 1.61                    |                  |             | 0.267      | 11.835 | 0      | 21.8              | 75.5  |
| J250018    | 2025-09-27 14:14:59.07 | 07 33 41.84468           | +21 42 30.80717 | 0.7                     | 12.542           | 188.27   | 21.13                   | 5.386            | 44.6        | 8.739      | 11.503 | 10.688 | 253.4             | 72.7  |
| Pgt        | 865548064627627008     | 07 33 41.71527           | +21 42 18.39531 | 0.6                     | 48.993           | 10.63    | 1.59                    |                  | 49.3        | 0.385      | 11.563 | 0      | 21.6              | 135.9 |
| J250019*   | 2025-09-28 09:11:10.37 | 07 34 07.91720           | +21 41 44.96260 | 28.1                    | 19.527           | 188.29   | 20.79                   | 5.374            |             | 9.675      | 11.039 | 10.556 | 328.7             | 73.4  |
| Pt         | 865547239993895936     | 07 34 07.71523           | +21 41 25.63943 | 26.4                    | 76.113           | 10.68    | 1.58                    |                  |             | 0.202      | 11.081 | 0      | 21.6              | 145.1 |
| J250020    | 2025-09-28 11:49:49.48 | 07 34 11.17546           | +21 41 04.85533 | 0.8                     | 13.607           | 8.30     | 20.74                   | 5.373            | -53.8       | 9.700      | 10.954 | 10.510 | 289.0             | 73.5  |
| Pgt        | 865359567101771392     | 07 34 11.31644           | +21 41 18.31971 | 0.7                     | 53.021           | 10.68    | 1.58                    |                  | -49.2       | 0.198      | 10.993 | 0      | 21.6              | 146.4 |
| J250021    | 2025-10-01 10:14:52.12 | 07 35 44.52135           | +21 38 05.68979 | 0.9                     | 2.148            | 8.38     | 19.47                   | 5.329            | -10.4       | 9.204      | 10.328 | 9.912  | 310.2             | 76.0  |
| Pgt        | 865367160604662272     | 07 35 44.54380           | +21 38 07.81473 | 0.7                     | 8.301            | 10.84    | 1.57                    |                  | -4.8        | 0.228      | 10.299 | 0      | 21.6              | 175.2 |
| J250022    | 2025-10-06 21:25:40.99 | 07 38 24.18481           | +21 32 53.96258 | 0.7                     | 15.974           | 188.47   | 17.04                   | 5.246            | 58.9        | 8.572      | 11.135 | 10.379 | 137.8             | 80.7  |
| Pgt        | 865399939794984320     | 07 38 24.01623           | +21 32 38.16307 | 0.6                     | 60.781           | 11.10    | 1.54                    |                  | 63.8        | 0.414      | 10.962 | 0      | 21.5              | 102.9 |
| J250023    | 2025-10-10 17:19:14.54 | 07 40 04.15888           | +21 29 01.35998 | 0.6                     | 8.145            | 8.50     | 15.30                   | 5.188            | -31.4       | 9.431      | 11.598 | 10.924 | 196.0             | 84.1  |
| Pgt        | 673245164555696768     | 07 40 04.24514           | +21 29 09.41572 | 0.5                     | 30.648           | 11.26    | 1.52                    |                  | -25.4       | 0.263      | 11.307 | 0      | 21.4              | 46.3  |
| J250024    | 2025-10-10 22:07:14.13 | 07 40 09.30730           | +21 29 08.03866 | 0.5                     | 9.077            | 188.49   | 15.21                   | 5.185            | 28.8        | 8.778      | 11.889 | 11.000 | 123.9             | 84.3  |
| Pgt        | 673246435866013952     | 07 40 09.21128           | +21 28 59.06151 | 0.5                     | 34.132           | 11.27    | 1.52                    |                  | 34.7        | 0.438      | 11.592 | 0      | 21.4              | 43.4  |
| J250025    | 2025-10-13 14:00:32.12 | 07 41 12.72000           | +21 26 47.82082 | 1.0                     | 1.093            | 188.48   | 13.98                   | 5.144            | 0.4         | 5.132      | 7.526  | 6.792  | 243.2             | 86.7  |
| Pgt        | 673253445252610816     | 07 41 12.70846           | +21 26 46.74017 | 0.7                     | 4.076            | 11.37    | 1.51                    |                  | 7.0         | 1.860      | 7.137  | 0      | 21.4              | 7.1   |
| J250026    | 2025-12-06 09:52:37.33 | 07 42 45.07455           | +21 31 13.69875 | 0.6                     | 23.320           | 191.82   | -10.56                  | 4.405            |             | 7.620      | 9.912  | 9.206  | 252.5             | 140.4 |
| P          | 673210869240306560     | 07 42 44.73219           | +21 30 50.87336 | 0.5                     | 74.511           | 11.52    | 1.37                    |                  |             | 0.485      | 9.219  | 0      | 21.5              | 19.6  |
| J250027*   | 2025-12-08 04:52:01.25 | 07 42 07.41060           | +21 32 17.66401 | 1.1                     | 20.847           | 11.63    | -11.18                  | 4.388            | -70.7       | 9.233      | 10.153 | 9.814  | 325.7             | 142.4 |
| Pgt        | 673214580092444672     | 07 42 07.71191           | +21 32 38.08234 | 0.8                     | 66.350           | 11.46    | 1.37                    |                  | -70.3       | 0.176      | 9.522  | 0      | 21.5              | 7.9   |
| J250028    | 2025-12-21 15:35:04.08 | 07 36 22.51539           | +21 48 18.82777 | 0.5                     | 1.252            | 10.61    | -15.05                  | 4.286            | -3.2        | 9.326      | 11.352 | 10.706 | 150.3             | 157.4 |
| Pgt        | 865376712611247360     | 07 36 22.53194           | +21 48 20.05795 | 0.4                     | 3.891            | 10.90    | 1.37                    |                  | -3.9        | 0.203      | 11.043 | 0      | 21.7              | 173.6 |
| J250029    | 2025-12-24 12:24:48.05 | 07 34 55.78064           | +21 51 51.85467 | 0.6                     | 12.161           | 10.41    | -15.64                  | 4.271            | -34.9       | 8.190      | 10.214 | 9.567  | 194.6             | 160.7 |
| Pgt        | 865391865255822464     | 07 34 55.93856           | +21 52 03.81556 | 0.5                     | 37.670           | 10.75    | 1.37                    |                  | -35.6       | 0.350      | 9.948  | 0      | 21.8              | 149.0 |
| J260001    | 2026-01-27 21:49:59.28 | 07 15 51.45909           | +22 35 15.49975 | 0.6                     | 14.720           | 8.32     | -15.44                  | 4.286            | -43.0       | 9.977      | 11.413 | 10.918 | 14.7              | 159.8 |
| Pgt        | 3367284218676700928    | 07 15 51.61296           | +22 35 30.06456 | 0.5                     | 45.758           | 8.84     | 1.41                    |                  | -44.0       | 0.139      | 11.132 | 0      | 22.5              | 47.5  |
| J260002    | 2026-02-23 18:29:18.68 | 07 05 43.13980           | +22 54 43.94617 | 0.6                     | 18.828           | 7.85     | -6.84                   | 4.536            | -63.1       | 9.096      | 12.141 | 11.158 | 35.8              | 130.3 |
| Pgt        | 3368420568239975424    | 07 05 43.32597           | +22 55 02.59744 | 0.5                     | 61.946           | 7.80     | 1.43                    |                  | -63.0       | 0.195      | 10.975 | 0      | 22.9              | 50.3  |
| J260003    | 2026-02-23 19:09:50.32 | 07 05 42.76145           | +22 54 43.00199 | 0.7                     | 20.476           | 7.85     | -6.83                   | 4.537            | -72.6       | 8.075      | 10.490 | 9.760  | 25.7              | 130.3 |
| Pgt        | 3368420563945646336    | 07 05 42.96397           | +22 55 03.28570 | 0.5                     | 67.374           | 7.80     | 1.43                    |                  | -72.5       | 0.436      | 9.323  | 0      | 22.9              | 49.9  |
| J260004    | 2026-04-01 22:02:29.78 | 07 07 20.52137           | +22 54 38.73599 | 0.7                     | 9.653            | 186.04   | 10.43                   | 5.085            | 31.2        | 8.901      | 10.980 | 10.325 | 306.3             | 93.7  |
| Pgt        | 3368243031473718272    | 07 07 20.44780           | +22 54 29.13637 | 0.6                     | 35.603           | 7.97     | 1.39                    |                  | 35.2        | 0.308      | 10.273 | 0      | 22.9              | 84.3  |
| J260005    | 2026-04-09 09:51:23.06 | 07 09 52.33585           | +22 50 26.26447 | 0.5                     | 13.011           | 6.43     | 13.94                   | 5.206            | -48.9       | 9.448      | 11.601 | 10.923 | 122.4             | 86.9  |
| Pgt        | 3368276051182784384    | 07 09 52.44118           | +22 50 39.19344 | 0.5                     | 49.124           | 8.23     | 1.37                    |                  | -45.3       | 0.195      | 11.209 | 0      | 22.8              | 173.1 |
| J260006    | 2026-05-10 10:13:29.18 | 07 26 34.68124           | +22 21 05.53583 | 0.6                     | 18.418           | 188.20   | 26.98                   | 5.681            |             | 8.894      | 11.753 | 10.910 | 90.4              | 60.5  |
| P          | 866084591942363648     | 07 26 34.49196           | +22 20 47.30646 | 0.5                     | 75.884           | 9.92     | 1.25                    |                  |             | 12.077     | 0      | 22.3   | 144.2             |       |
| J260007    | 2026-05-17 23:58:15.34 | 07 31 52.38591           | +22 10 06.91875 | 0.8                     | 14.598           | 188.70   | 29.67                   | 5.784            | 60.4        | 6.419      | 9.024  | 8.250  | 238.1             | 54.5  |
| Pgt        | 865635132204436480     | 07 31 52.22700           | +22 09 52.48849 | 0.7                     | 61.238           | 10.45    | 1.21                    |                  | 63.7        | 1.215      | 9.452  | 0      | 22.1              | 38.1  |
| J260008    | 2026-05-20 19:31:26.42 | 07 33 56.24528           | +22 05 39.08986 | 1.3                     | 12.952           | 188.89   | 30.60                   | 5.820            | 51.8        | 9.591      | 10.514 | 10.177 | 302.5             | 52.2  |
| Pgt        | 865598504723245056     | 07 33 56.10126           | +22 05 26.29338 | 1.3                     | 54.676           | 10.66    | 1.20                    |                  | 55.2        | 0.197      | 10.976 | 0      | 22.0              | 4.6   |
| J260009    | 2026-05-25 05:45:32.20 | 07 37 16.79403           | +21 58 19.40785 | 0.6                     | 16.994           | 189.20   | 32.00                   | 5.876            |             | 9.672      | 11.970 | 11.266 | 145.5             | 48.8  |
| P          | 865478657955367680     | 07 37 16.59874           | +21 58 02.63274 | 0.5                     | 72.417           | 10.98    | 1.17                    |                  |             | 0.237      | 12.480 | 0      | 21.9              | 62.6  |

Table 1 continued on next page



Table 1 (continued)

| Event ID              | C/A Epoch              | ICRS Star Coord at Epoch |                 | $\sigma(\alpha_*)$ (km) | C/A ( $''$ )     | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|-----------------------|------------------------|--------------------------|-----------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type            | Source ID              | Geocentric               | Object Position | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J300007               | 2030-05-11 15:12:23.21 | 15 21 56.18858           | -17 15 13.25485 | 0.8                     | 7.215            | 194.11   | -16.87                  | 4.387            | 22.4        | 9.599      | 12.140 | 11.376 | 133.4             | 177.7 |
| Pgt                   | 6258300823866877056    | 15 21 56.06575           | -17 15 20.25239 | 0.6                     | 22.956           | 15.25    | -3.33                   |                  | 19.9        |            | 11.955 | 0      | -17.4             | 81.1  |
| J300008*              | 2030-05-15 19:18:53.47 | 15 19 46.78102           | -17 07 25.75801 | 5.3                     | 8.141            | 194.13   | -16.86                  | 4.385            | 25.3        | 8.985      | 12.550 | 11.432 | 67.1              | 177.2 |
| Pgt                   | 6259048285615039104    | 15 19 46.64239           | -17 07 33.65272 | 4.9                     | 25.892           | 15.44    | -3.32                   |                  | 22.5        | 0.338      | 12.365 | 0      | -17.2             | 21.7  |
| J300009               | 2030-05-29 19:08:27.79 | 15 12 47.72311           | -16 41 58.13275 | 1.2                     | 22.795           | 194.06   | -15.54                  | 4.418            |             | 8.720      | 11.187 | 10.447 | 54.2              | 162.2 |
| Pt                    | 6259263446296689408    | 15 12 47.33766           | -16 42 20.24513 | 0.9                     | 73.037           | 16.05    | -3.27                   |                  |             | 0.313      | 10.913 | 0      | -16.8             | 170.1 |
| J300010*              | 2030-06-05 07:54:52.97 | 15 09 50.34630           | -16 31 51.13046 | 1.3                     | 5.112            | 13.92    | -14.25                  | 4.452            | -12.5       | 9.075      | 10.969 | 10.340 | 215.4             | 155.3 |
| Pgt                   | 6307363399224161024    | 15 09 50.43184           | -16 31 46.16864 | 1.1                     | 16.507           | 16.30    | -3.25                   |                  | -17.8       | 0.230      | 10.601 | 0      | -16.6             | 110.5 |
| J300011*              | 2030-06-09 15:52:32.45 | 15 08 03.60855           | -16 25 12.08552 | 2.4                     | 14.792           | 193.76   | -13.18                  | 4.481            | 48.6        | 9.309      | 11.456 | 10.774 | 91.2              | 150.7 |
| Pgt                   | 6305881669865833216    | 15 08 03.36399           | -16 25 26.45277 | 2.6                     | 48.076           | 16.45    | -3.23                   |                  | 43.2        | 0.244      | 11.004 | 0      | -16.5             | 54.6  |
| J300012               | 2030-06-13 13:46:40.79 | 15 06 34.63588           | -16 20 30.45554 | 0.9                     | 14.151           | 13.56    | -12.09                  | 4.512            | -41.0       | 6.818      | 9.128  | 8.413  | 118.5             | 146.6 |
| Pgt                   | 6306080857565694208    | 15 06 34.86643           | -16 20 16.69879 | 0.8                     | 46.306           | 16.57    | -3.21                   |                  | -47.0       | 0.736      | 8.581  | 0      | -16.5             | 4.0   |
| J300013               | 2030-08-27 09:52:51.77 | 15 11 11.69510           | -16 57 52.88046 | 1.7                     | 15.557           | 17.21    | -19.73                  | 5.519            |             | 7.642      | 8.003  | 7.866  | 104.3             | 76.3  |
| Pgt                   | 6305790071100008704    | 15 11 12.01597           | -16 57 38.02064 | 1.4                     | 62.274           | 16.18    | -2.92                   |                  | -64.4       | 0.418      | 7.988  | 1      | -17.1             | 95.2  |
| J300014               | 2030-09-27 09:20:55.63 | 15 29 51.82096           | -18 13 56.00899 | 1.4                     | 4.878            | 194.91   | 31.65                   | 5.939            | 19.8        | 8.953      | 11.371 | 10.631 | 86.5              | 50.7  |
| Pgt                   | 6255302455662991232    | 15 29 51.73287           | -18 14 00.72257 | 1.1                     | 21.011           | 14.53    | -2.87                   |                  | 18.9        | 0.357      | 11.869 | 0      | -18.3             | 51.3  |
| J310001               | 2031-01-27 05:40:31.73 | 17 17 43.43099           | -22 32 08.72797 | 1.8                     | 3.303            | 4.30     | -3.30                   | 5.957            | -12.4       | 9.703      | 14.022 | 12.892 | 48.5              | 46.4  |
| Pgt                   | 4114884716101797632    | 17 17 43.44886           | -22 32 05.43388 | 1.1                     | 14.272           | 3.71     | -2.71                   |                  | -13.8       | 0.352      | 14.589 | 0      | -22.6             | 100.1 |
| J310002               | 2031-01-28 04:32:54.42 | 17 18 29.45671           | -22 33 06.13008 | 1.5                     | 13.190           | 4.22     | 33.40                   | 5.946            | -55.5       | 8.930      | 13.598 | 12.372 | 64.6              | 47.2  |
| Pgt                   | 4114697730425030016    | 17 18 29.52681           | -22 32 52.97586 | 0.9                     | 56.877           | 3.62     | -2.71                   |                  | -56.7       | 0.614      | 14.155 | 0      | -22.6             | 112.5 |
| J310003 <sup>a</sup>  | 2031-01-30 03:18:35.31 | 17 20 02.73291           | -22 34 24.21262 | 1.9                     | 2.253            | 184.06   | 32.77                   | 5.922            | 9.6         | 8.280      | 10.473 | 9.482  | 81.7              | 48.8  |
| Pgt                   | 4114688006618424320    | 17 20 02.72138           | -22 34 26.46011 | 1.3                     | 9.677            | 3.46     | -2.70                   |                  | 8.2         | 0.465      | 11.009 | 0      | -22.6             | 136.7 |
| J310004* <sup>d</sup> | 2031-01-30 03:19:29.43 | 17 20 02.76734           | -22 34 23.32665 | 3.8                     | 3.171            | 184.06   | 32.77                   | 5.922            | 13.2        | 8.280      | 11.208 | 9.513  | 81.4              | 48.8  |
| Pgt                   | 4114688006587513856    | 17 20 02.75112           | -22 34 26.48937 | 3.0                     | 13.618           | 3.46     | -2.70                   |                  | 11.8        | 0.465      | 11.744 | 0      | -22.6             | 136.7 |
| J310005               | 2031-01-31 04:55:27.14 | 17 20 53.23875           | -22 35 04.26646 | 4.7                     | 11.344           | 183.98   | 32.42                   | 5.909            | 47.1        | 8.902      | 14.767 | 13.293 | 56.6              | 49.7  |
| Pgt                   | 4114707557311630976    | 17 20 53.18195           | -22 35 15.58334 | 3.0                     | 48.613           | 3.37     | -2.70                   |                  | 45.9        | 0.889      | 15.291 | 0      | -22.6             | 149.4 |
| J310006               | 2031-01-31 05:29:30.80 | 17 20 54.32512           | -22 35 10.75326 | 1.3                     | 5.917            | 183.98   | 32.41                   | 5.908            | 24.1        | 9.940      | 12.990 | 12.087 | 48.1              | 49.7  |
| Pgt                   | 4114707488592150400    | 17 20 54.29550           | -22 35 16.65553 | 0.9                     | 25.353           | 3.37     | -2.70                   |                  | 22.7        | 0.246      | 13.514 | 0      | -22.6             | 149.7 |
| J310007               | 2031-02-01 11:03:03.54 | 17 21 52.01468           | -22 36 05.01663 | 1.3                     | 6.498            | 183.88   | 32.00                   | 5.893            | 26.3        | 9.360      | 13.452 | 12.356 | 323.7             | 50.7  |
| Pgt                   | 4114663984800553856    | 17 21 51.98295           | -22 36 11.50014 | 0.9                     | 27.773           | 3.26     | -2.70                   |                  | 25.0        | 0.418      | 13.962 | 0      | -22.6             | 164.2 |
| J310008               | 2031-02-01 19:25:31.63 | 17 22 08.16262           | -22 36 38.67327 | 2.9                     | 12.010           | 3.85     | 31.88                   | 5.888            | -48.9       | 9.474      | 14.853 | 13.464 | 197.8             | 51.0  |
| Pgt                   | 4114663405044682624    | 17 22 08.22091           | -22 36 26.69068 | 2.0                     | 51.289           | 3.24     | -2.70                   |                  | -50.1       | 0.608      | 15.359 | 0      | -22.6             | 168.2 |
| J310009               | 2031-02-02 14:59:09.73 | 17 22 45.98265           | -22 36 58.10322 | 1.3                     | 3.484            | 183.79   | 31.60                   | 5.878            | 14.3        | 9.988      | 13.574 | 12.575 | 263.8             | 51.7  |
| Pgt                   | 4114652238127704960    | 17 22 45.96603           | -22 37 01.57971 | 0.9                     | 14.853           | 3.17     | -2.70                   |                  | 12.9        | 0.259      | 14.071 | 0      | -22.6             | 177.6 |
| J310010               | 2031-02-03 11:59:10.53 | 17 23 26.11836           | -22 37 55.17592 | 2.0                     | 17.092           | 3.72     | 31.30                   | 5.867            |             | 9.149      | 14.152 | 12.849 | 308.1             | 52.5  |
| Pt                    | 4114742054460545152    | 17 23 26.19850           | -22 37 38.11990 | 1.3                     | 72.724           | 3.10     | -2.70                   |                  |             | 0.595      | 14.639 | 0      | -22.7             | 172.0 |
| J310011               | 2031-02-05 02:10:54.55 | 17 24 38.66649           | -22 38 25.92602 | 1.5                     | 16.289           | 183.59   | 30.74                   | 5.846            | 77.1        | 7.090      | 9.938  | 9.089  | 93.9              | 53.8  |
| Pgt                   | 4111736951751948544    | 17 24 38.59277           | -22 38 42.18320 | 1.1                     | 69.062           | 2.97     | -2.69                   |                  | 76.0        | 0.964      | 10.405 | 0      | -22.7             | 153.4 |
| J310012               | 2031-02-06 07:32:29.59 | 17 25 33.57362           | -22 39 22.05852 | 1.5                     | 7.313            | 183.50   | 30.31                   | 5.829            | 29.3        | 9.052      | 13.515 | 12.350 | 12.5              | 54.8  |
| Pgt                   | 4111731484210559744    | 17 25 33.54136           | -22 39 29.35817 | 1.1                     | 30.920           | 2.87     | -2.69                   |                  | 28.0        | 0.514      | 13.967 | 0      | -22.7             | 138.8 |
| J310013               | 2031-02-07 11:47:03.03 | 17 26 25.83847           | -22 40 06.65035 | 3.7                     | 6.430            | 183.41   | 29.89                   | 5.814            | 25.7        | 8.731      | 14.645 | 13.192 | 307.9             | 55.8  |
| Pgt                   | 4111704206917102464    | 17 26 25.81082           | -22 40 13.06929 | 2.4                     | 27.114           | 2.78     | -2.69                   |                  | 24.4        | 0.955      | 15.081 | 0      | -22.7             | 124.6 |
| J310014               | 2031-02-07 21:07:46.77 | 17 26 43.03073           | -22 40 14.79154 | 4.9                     | 12.408           | 183.38   | 29.75                   | 5.808            | 51.2        | 8.127      | 14.623 | 13.085 | 167.4             | 56.1  |
| Pgt                   | 4111703760240481664    | 17 26 42.97787           | -22 40 27.17752 | 3.3                     | 52.269           | 2.74     | -2.69                   |                  | 50.0        | 1.637      | 15.054 | 0      | -22.7             | 119.8 |
| J310015               | 2031-02-08 05:57:01.82 | 17 26 59.05855           | -22 40 55.07189 | 1.9                     | 14.765           | 3.36     | 29.61                   | 5.803            | -62.7       | 9.760      | 14.575 | 13.366 | 34.8              | 56.4  |
| Pgt                   | 4111700663525206784    | 17 26 59.12106           | -22 40 40.33269 | 1.2                     | 62.145           | 2.72     | -2.69                   |                  | -63.9       | 0.414      | 15.001 | 0      | -22.7             | 115.3 |
| J310016               | 2031-02-08 10:16:52.23 | 17 27 07.04694           | -22 40 41.60454 | 2.0                     | 5.139            | 183.34   | 29.55                   | 5.801            | 20.6        | 8.984      | 14.310 | 12.998 | 329.7             | 56.6  |
| Pgt                   | 4111701904814986496    | 17 27 07.02530           | -22 40 46.73455 | 1.3                     | 21.620           | 2.70     | -2.69                   |                  | 19.2        | 0.701      | 14.734 | 0      | -22.7             | 113.1 |
| J310017               | 2031-02-08 22:03:02.54 | 17 27 28.50694           | -22 40 46.92661 | 3.3                     | 17.047           | 183.30   | 29.37                   | 5.794            |             | 8.103      | 13.825 | 12.428 | 152.8             | 57.0  |
| P                     | 4111701350717790720    | 17 27 28.43599           | -22 41 03.94564 | 2.2                     | 71.640           | 2.66     | -2.69                   |                  |             | 1.183      | 14.242 | 0      | -22.7             | 107.0 |

Table 1 continued on next page



Table 1 (continued)

| Event ID   | C/A Epoch              | ICRS Star Coord at Epoch   |                 | $\sigma(\alpha_*)$ (km) | C/A (")          | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|------------|------------------------|----------------------------|-----------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type | Source ID              | Geocentric Object Position |                 | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J310043    | 2031-02-19 10:56:33.22 | 17 34 41.68066             | -22 46 26.18654 | 1.7                     | 14.838           | 2.57     | 25.27                   | 5.644            | -60.6       | 9.123      | 14.200 | 12.879 | 310.8             | 66.0  |
| Pgt        | 4116710489579426688    | 17 34 41.72879             | -22 46 11.36396 | 1.1                     | 60.732           | 1.89     | -2.67                   |                  | -61.9       | 0.646      | 14.454 | 0      | -22.8             | 36.3  |
| J310044    | 2031-02-19 14:02:35.61 | 17 34 46.68150             | -22 46 20.97969 | 1.8                     | 6.543            | 2.56     | 25.22                   | 5.642            | -24.0       | 9.648      | 14.191 | 13.005 | 264.2             | 66.1  |
| Pgt        | 4116710313384406272    | 17 34 46.70263             | -22 46 14.44317 | 1.1                     | 26.772           | 1.88     | -2.67                   |                  | -25.5       | 0.392      | 14.442 | 0      | -22.8             | 38.1  |
| J310045    | 2031-02-19 18:23:44.33 | 17 34 53.68625             | -22 46 13.64662 | 2.4                     | 5.098            | 182.55   | 25.15                   | 5.639            | 19.9        | 9.946      | 14.994 | 13.690 | 198.8             | 66.3  |
| Pgt        | 4116710661378471808    | 17 34 53.66988             | -22 46 18.73935 | 1.4                     | 20.849           | 1.87     | -2.67                   |                  | 18.4        | 0.392      | 15.242 | 0      | -22.8             | 40.8  |
| J310046    | 2031-02-19 20:19:18.48 | 17 34 56.69016             | -22 46 38.53969 | 2.9                     | 17.927           | 2.55     | 25.11                   | 5.638            |             | 8.972      | 14.570 | 13.147 | 169.8             | 66.3  |
| Pt         | 4116707706440956288    | 17 34 56.74775             | -22 46 20.63088 | 1.8                     | 73.299           | 1.86     | -2.67                   |                  |             | 0.788      | 14.817 | 0      | -22.8             | 41.9  |
| J310047    | 2031-02-20 16:03:15.89 | 17 35 28.14105             | -22 46 21.25801 | 3.3                     | 18.426           | 182.48   | 24.77                   | 5.625            |             | 9.459      | 14.948 | 13.546 | 233.1             | 67.0  |
| P          | 4116800683835495808    | 17 35 28.08332             | -22 46 39.66702 | 1.9                     | 75.179           | 1.80     | -2.66                   |                  |             | 0.619      | 15.180 | 0      | -22.8             | 53.8  |
| J310048    | 2031-02-20 17:42:22.62 | 17 35 30.64592             | -22 46 55.31882 | 8.5                     | 14.100           | 2.49     | 24.74                   | 5.624            | -56.3       | 6.422      | 13.829 | 11.615 | 208.3             | 67.1  |
| Pgt        | 4116800477738530560    | 17 35 30.69018             | -22 46 41.23258 | 4.8                     | 57.515           | 1.80     | -2.66                   |                  | -57.6       |            | 14.060 | 0      | -22.8             | 54.8  |
| J310049    | 2031-02-21 02:08:36.93 | 17 35 43.91183             | -22 47 06.54624 | 3.8                     | 17.400           | 2.47     | 24.60                   | 5.619            | -82.6       | 9.298      | 14.830 | 13.413 | 81.4              | 67.4  |
| Pg         | 4116789104641093632    | 17 35 43.96598             | -22 46 49.16248 | 2.0                     | 70.911           | 1.78     | -2.66                   |                  | -83.8       | 0.664      | 15.055 | 0      | -22.8             | 59.8  |
| J310050    | 2031-02-21 15:38:06.92 | 17 36 05.07176             | -22 46 56.99064 | 1.4                     | 4.626            | 182.43   | 24.36                   | 5.611            | 18.1        | 5.910      | 10.153 | 9.019  | 238.6             | 67.9  |
| Pgt        | 4116789654396613888    | 17 36 05.05760             | -22 47 01.61267 | 0.7                     | 18.825           | 1.74     | -2.66                   |                  | 16.5        | 2.181      | 10.367 | 0      | -22.8             | 67.8  |
| J310051    | 2031-02-21 17:23:08.74 | 17 36 07.74408             | -22 47 15.49819 | 1.7                     | 12.302           | 2.43     | 24.33                   | 5.610            | -47.4       | 9.132      | 14.127 | 12.835 | 212.3             | 67.9  |
| Pgt        | 4116789448238138752    | 17 36 07.78172             | -22 47 03.20739 | 0.9                     | 50.050           | 1.73     | -2.66                   |                  | -48.8       | 0.603      | 14.340 | 0      | -22.8             | 68.9  |
| J310052    | 2031-02-22 06:47:20.51 | 17 36 28.50067             | -22 47 29.41482 | 2.1                     | 14.165           | 2.39     | 24.09                   | 5.601            | -56.3       | 9.422      | 11.295 | 10.667 | 10.8              | 68.4  |
| Pgt        | 4116786699458811904    | 17 36 28.54340             | -22 47 15.26178 | 1.1                     | 57.545           | 1.70     | -2.66                   |                  | -57.6       | 0.242      | 11.498 | 0      | -22.8             | 76.7  |
| J310053    | 2031-02-22 08:24:07.38 | 17 36 31.02563             | -22 47 18.28894 | 3.8                     | 1.596            | 2.38     | 24.07                   | 5.600            | -5.2        | 8.561      | 14.419 | 12.947 | 346.5             | 68.5  |
| Pgt        | 4116786699458796288    | 17 36 31.03043             | -22 47 16.69401 | 2.0                     | 6.484            | 1.69     | -2.66                   |                  | -6.7        |            | 14.620 | 0      | -22.8             | 77.7  |
| J310054    | 2031-02-22 09:41:05.88 | 17 36 33.00694             | -22 47 17.75783 | 3.9                     | 0.073            | 182.37   | 24.04                   | 5.599            | 1.1         | 7.288      | 13.308 | 11.813 | 327.2             | 68.5  |
| Pgt        | 4116786660718141824    | 17 36 33.00672             | -22 47 17.83032 | 2.1                     | 0.295            | 1.69     | -2.66                   |                  | -0.5        | 2.147      | 13.508 | 0      | -22.8             | 78.4  |
| J310055    | 2031-02-22 11:42:44.95 | 17 36 36.12377             | -22 47 20.64602 | 1.7                     | 1.026            | 2.38     | 24.01                   | 5.598            | -3.0        | 9.076      | 14.035 | 12.750 | 296.7             | 68.6  |
| Pgt        | 4116786660718119680    | 17 36 36.12685             | -22 47 19.62109 | 0.9                     | 4.165            | 1.68     | -2.66                   |                  | -4.6        | 0.539      | 14.234 | 0      | -22.8             | 79.6  |
| J310056    | 2031-02-22 14:27:47.60 | 17 36 40.36773             | -22 47 17.33521 | 1.8                     | 4.710            | 182.37   | 23.96                   | 5.596            | 18.3        | 9.120      | 14.326 | 13.013 | 255.4             | 68.7  |
| Pgt        | 4116791784660661376    | 17 36 40.35367             | -22 47 22.04075 | 1.1                     | 19.115           | 1.68     | -2.66                   |                  | 16.8        | 0.426      | 14.522 | 0      | -22.8             | 81.2  |
| J310057    | 2031-02-23 03:21:28.70 | 17 37 00.04411             | -22 47 42.79263 | 2.5                     | 9.568            | 2.34     | 23.73                   | 5.588            | -35.6       | 9.786      | 14.969 | 13.653 | 61.5              | 69.2  |
| Pgt        | 4116745051074898304    | 17 37 00.07231             | -22 47 33.23282 | 1.3                     | 38.777           | 1.64     | -2.66                   |                  | -37.0       | 0.491      | 15.155 | 0      | -22.8             | 88.6  |
| J310058    | 2031-02-23 04:54:41.96 | 17 37 02.44074             | -22 47 33.48539 | 2.1                     | 1.080            | 182.33   | 23.70                   | 5.587            | 4.8         | 9.954      | 14.406 | 13.246 | 38.2              | 69.2  |
| Pgt        | 4116745055445766912    | 17 37 02.43756             | -22 47 34.56466 | 1.0                     | 4.377            | 1.64     | -2.66                   |                  | 3.2         | 0.290      | 14.591 | 0      | -22.8             | 89.5  |
| J310059    | 2031-02-23 18:45:53.05 | 17 37 23.45316             | -22 47 36.36556 | 2.6                     | 9.924            | 182.29   | 23.46                   | 5.578            | 38.4        | 9.461      | 14.844 | 13.495 | 189.9             | 69.7  |
| Pgt        | 4116745605201342592    | 17 37 23.42447             | -22 47 46.28179 | 1.3                     | 40.151           | 1.60     | -2.66                   |                  | 37.0        |            | 15.018 | 0      | -22.8             | 97.3  |
| J310060    | 2031-02-23 21:53:31.38 | 17 37 28.09147             | -22 48 04.47001 | 4.8                     | 15.595           | 2.29     | 23.40                   | 5.576            | -64.1       | 8.155      | 14.874 | 13.311 | 142.9             | 69.8  |
| Pgt        | 4116745360312484608    | 17 37 28.13655             | -22 47 48.88785 | 2.5                     | 63.071           | 1.59     | -2.66                   |                  | -65.4       |            | 15.044 | 0      | -22.8             | 99.0  |
| J310061    | 2031-02-23 23:49:58.83 | 17 37 31.00524             | -22 48 08.18009 | 2.1                     | 17.696           | 2.29     | 23.37                   | 5.575            |             | 9.638      | 14.870 | 13.568 | 113.7             | 69.9  |
| Pt         | 4116745364683091584    | 17 37 31.05630             | -22 47 50.49811 | 1.2                     | 71.554           | 1.58     | -2.66                   |                  |             | 0.536      | 15.039 | 0      | -22.8             | 100.1 |
| J310062    | 2031-02-24 01:19:36.59 | 17 37 33.25569             | -22 48 07.43038 | 5.8                     | 15.709           | 2.28     | 23.34                   | 5.574            | -64.8       | 7.545      | 14.782 | 13.162 | 91.2              | 70.0  |
| Pgt        | 4116745399042813056    | 17 37 33.30094             | -22 47 51.73369 | 3.3                     | 63.509           | 1.58     | -2.66                   |                  | -66.1       |            | 14.950 | 0      | -22.8             | 100.9 |
| J310063    | 2031-02-24 09:34:21.65 | 17 37 45.68174             | -22 47 48.10230 | 4.9                     | 10.402           | 182.25   | 23.19                   | 5.569            | 40.3        | 8.400      | 14.798 | 13.263 | 327.2             | 70.3  |
| Pgt        | 4116742787702620800    | 17 37 45.65216             | -22 47 58.49595 | 2.7                     | 42.012           | 1.56     | -2.66                   |                  | 38.9        |            | 14.959 | 0      | -22.8             | 105.5 |
| J310064    | 2031-02-24 14:07:58.28 | 17 37 52.42261             | -22 48 13.37476 | 2.2                     | 11.190           | 2.25     | 23.11                   | 5.566            | -42.1       | 9.778      | 14.926 | 13.663 | 258.7             | 70.4  |
| Pgt        | 4116742615903871744    | 17 37 52.45436             | -22 48 02.19371 | 1.3                     | 45.171           | 1.55     | -2.66                   |                  | -43.5       | 0.455      | 15.083 | 0      | -22.8             | 108.0 |

<sup>a</sup> A nearby event has the same 2MASS ID as this event, resulting in a corresponding K magnitude ambiguity.

\* Superscript \* indicates RUWE > 1.4, \*\* indicates RUWE > 2, and \*\*\* indicates RUWE > 5. See machine-readable file for RUWE values.



**Table 2.** Geocentric Jupiter Occultation Predictions 2023 to 2050 for  $K \leq 10$  (part 2 of 11)

| Event ID   | C/A Epoch              | ICRS Star Coord at Epoch   |                 | $\sigma(\alpha_*)$ (km) | C/A ( $''$ )     | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|------------|------------------------|----------------------------|-----------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type | Source ID              | Geocentric Object Position |                 | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J310065    | 2031-02-24 22:37:08.88 | 17 38 05.10066             | -22 47 54.23621 | 4.1                     | 14.771           | 182.22   | 22.96                   | 5.561            | 60.3        | 8.284      | 14.733 | 13.240 | 131.1             | 70.7  |
| Pgt        | 4116765327696859392    | 17 38 05.05929             | -22 48 08.99605 | 2.3                     | 59.570           | 1.52     | -2.66                   |                  | 59.0        |            | 14.883 | 0      | -22.8             | 112.6 |
| J310066    | 2031-02-25 04:08:19.61 | 17 38 13.26442             | -22 47 57.47837 | 2.2                     | 15.899           | 182.21   | 22.86                   | 5.557            | 67.0        | 9.321      | 14.729 | 13.397 | 48.1              | 70.9  |
| Pgt        | 4116765155898081152    | 17 38 13.22017             | -22 48 13.36545 | 1.2                     | 64.078           | 1.51     | -2.66                   |                  | 65.7        | 0.581      | 14.874 | 0      | -22.8             | 115.6 |
| J310067    | 2031-02-25 04:54:41.30 | 17 38 14.37684             | -22 48 08.01108 | 2.6                     | 5.967            | 182.21   | 22.85                   | 5.557            | 22.9        | 9.411      | 14.874 | 13.523 | 36.5              | 71.0  |
| Pgt        | 4116765155898060800    | 17 38 14.36023             | -22 48 13.97367 | 1.5                     | 24.047           | 1.51     | -2.66                   |                  | 21.4        | 0.548      | 15.019 | 0      | -22.8             | 116.0 |
| J310068    | 2031-02-25 06:10:31.38 | 17 38 16.19969             | -22 48 23.60488 | 3.3                     | 8.645            | 2.21     | 22.83                   | 5.556            | -31.7       | 8.624      | 14.468 | 13.007 | 17.5              | 71.0  |
| Pgt        | 4116765087178554624    | 17 38 16.22378             | -22 48 14.96673 | 1.8                     | 34.833           | 1.50     | -2.66                   |                  | -33.2       | 0.847      | 14.611 | 0      | -22.8             | 116.7 |
| J310069    | 2031-02-25 15:52:40.34 | 17 38 30.43847             | -22 48 30.51225 | 1.5                     | 8.012            | 2.18     | 22.65                   | 5.550            | -29.2       | 8.533      | 13.392 | 12.162 | 231.8             | 71.4  |
| Pgt        | 4116753572289928320    | 17 38 30.46055             | -22 48 22.50642 | 0.8                     | 32.246           | 1.48     | -2.66                   |                  | -30.7       | 0.623      | 13.527 | 0      | -22.8             | 121.8 |
| J310070    | 2031-02-25 17:05:05.50 | 17 38 32.22163             | -22 48 31.33014 | 3.0                     | 7.891            | 2.18     | 22.63                   | 5.549            | -28.7       | 9.800      | 14.921 | 13.500 | 213.5             | 71.4  |
| Pgt        | 4116753576610603392    | 17 38 32.24335             | -22 48 23.44476 | 1.6                     | 31.757           | 1.47     | -2.66                   |                  | -30.2       |            | 15.055 | 0      | -22.8             | 122.5 |
| J310071    | 2031-02-25 19:45:48.83 | 17 38 36.15793             | -22 48 25.78025 | 1.6                     | 0.279            | 2.17     | 22.58                   | 5.547            | -0.2        | 8.917      | 13.837 | 12.578 | 173.2             | 71.5  |
| Pgt        | 4116753537965591424    | 17 38 36.15870             | -22 48 25.50097 | 1.0                     | 1.124            | 1.47     | -2.66                   |                  | -1.8        | 0.516      | 13.969 | 0      | -22.8             | 123.9 |
| J310072    | 2031-02-26 10:38:13.63 | 17 38 57.74589             | -22 48 45.37117 | 2.0                     | 8.639            | 2.14     | 22.31                   | 5.537            | -31.6       | 9.959      | 14.669 | 13.453 | 309.6             | 72.0  |
| Pgt        | 4116754087690589568    | 17 38 57.76921             | -22 48 36.73808 | 1.1                     | 34.696           | 1.43     | -2.66                   |                  | -33.1       | 0.344      | 14.787 | 0      | -22.8             | 131.6 |
| J310073    | 2031-02-26 23:37:49.34 | 17 39 16.42813             | -22 49 01.50141 | 3.4                     | 15.204           | 2.11     | 22.08                   | 5.529            | -60.9       | 8.597      | 14.571 | 13.123 | 114.2             | 72.5  |
| Pgt        | 4116751308919986560    | 17 39 16.46859             | -22 48 46.30744 | 1.9                     | 60.970           | 1.40     | -2.65                   |                  | -62.3       | 0.984      | 14.679 | 0      | -22.8             | 138.3 |
| J310074    | 2031-02-27 03:30:56.00 | 17 39 21.97816             | -22 49 07.64759 | 4.4                     | 18.536           | 2.10     | 22.01                   | 5.527            |             | 8.659      | 14.915 | 13.409 | 55.8              | 72.7  |
| Pt         | 4116750582997252992    | 17 39 22.02729             | -22 48 49.12434 | 2.4                     | 74.296           | 1.39     | -2.65                   |                  |             |            | 15.019 | 0      | -22.8             | 140.3 |
| J310075    | 2031-02-27 04:22:39.83 | 17 39 23.30288             | -22 48 33.01331 | 1.9                     | 16.744           | 182.09   | 21.99                   | 5.526            | 72.6        | 9.277      | 14.635 | 13.326 | 42.8              | 72.7  |
| Pgt        | 4116750690444683136    | 17 39 23.25879             | -22 48 49.74669 | 1.0                     | 67.110           | 1.38     | -2.65                   |                  | 71.3        | 0.543      | 14.738 | 0      | -22.8             | 140.7 |
| J310076    | 2031-02-28 00:15:22.52 | 17 39 51.40962             | -22 49 16.82611 | 2.8                     | 13.014           | 2.05     | 21.63                   | 5.513            | -49.6       | 9.001      | 14.595 | 13.221 | 104.0             | 73.4  |
| Pgt        | 4116568480827537536    | 17 39 51.44328             | -22 49 03.82025 | 1.5                     | 52.037           | 1.33     | -2.65                   |                  | -51.0       |            | 14.681 | 0      | -22.8             | 150.7 |
| J310077*   | 2031-02-28 03:24:11.32 | 17 39 55.87090             | -22 49 04.98626 | 24.5                    | 1.015            | 182.04   | 21.58                   | 5.511            | 4.5         | 9.788      | 11.590 | 10.955 | 56.6              | 73.5  |
| Pgt        | 4116568854344108160    | 17 39 55.86829             | -22 49 06.00036 | 14.2                    | 4.056            | 1.32     | -2.65                   |                  | 2.9         | 0.206      | 11.672 | 0      | -22.8             | 152.3 |
| J310078    | 2031-03-01 05:01:55.58 | 17 40 31.57165             | -22 49 06.76296 | 5.4                     | 16.523           | 181.97   | 21.11                   | 5.494            | 70.1        | 7.829      | 14.507 | 12.936 | 31.3              | 74.5  |
| Pgt        | 4116566487963003136    | 17 40 31.53056             | -22 49 23.27647 | 2.9                     | 65.844           | 1.26     | -2.65                   |                  | 68.8        |            | 14.565 | 0      | -22.8             | 164.9 |
| J310079    | 2031-03-01 06:57:42.50 | 17 40 34.23584             | -22 49 05.36579 | 2.5                     | 19.189           | 181.97   | 21.07                   | 5.493            |             | 9.024      | 14.567 | 13.202 | 2.3               | 74.5  |
| P          | 4116566277363365376    | 17 40 34.18824             | -22 49 24.54304 | 1.4                     | 76.448           | 1.26     | -2.65                   |                  |             | 0.701      | 14.623 | 0      | -22.8             | 165.8 |
| J310080    | 2031-03-01 08:40:18.37 | 17 40 36.51623             | -22 49 35.23163 | 1.8                     | 9.576            | 1.97     | 21.04                   | 5.492            | -34.9       | 9.867      | 14.179 | 13.042 | 336.6             | 74.6  |
| Pgt        | 4116566213085043456    | 17 40 36.54006             | -22 49 25.66144 | 1.1                     | 38.143           | 1.25     | -2.65                   |                  | -36.4       | 0.281      | 14.234 | 0      | -22.8             | 166.7 |
| J310081    | 2031-03-01 15:08:18.29 | 17 40 45.43098             | -22 49 19.92170 | 2.7                     | 9.942            | 181.95   | 20.92                   | 5.488            | 37.9        | 8.607      | 14.277 | 12.884 | 239.4             | 74.8  |
| Pgt        | 4116565869487611392    | 17 40 45.40651             | -22 49 29.85761 | 1.6                     | 39.569           | 1.24     | -2.65                   |                  | 36.4        | 0.908      | 14.326 | 0      | -22.8             | 169.8 |
| J310082    | 2031-03-01 15:19:20.29 | 17 40 45.62313             | -22 49 44.08522 | 1.8                     | 14.117           | 1.96     | 20.92                   | 5.488            | -54.6       | 8.951      | 13.922 | 12.688 | 236.6             | 74.8  |
| Pgt        | 4116565865046490624    | 17 40 45.65801             | -22 49 29.97617 | 1.1                     | 56.188           | 1.24     | -2.65                   |                  | -55.9       | 0.523      | 13.970 | 0      | -22.8             | 169.9 |
| J310083    | 2031-03-01 16:10:04.10 | 17 40 46.83839             | -22 49 20.56787 | 4.9                     | 9.959            | 181.95   | 20.90                   | 5.487            | 37.9        | 8.563      | 14.930 | 13.398 | 223.9             | 74.9  |
| Pgt        | 4116565869487601536    | 17 40 46.81392             | -22 49 30.52074 | 2.9                     | 39.632           | 1.23     | -2.65                   |                  | 36.4        |            | 14.978 | 0      | -22.8             | 170.3 |
| J310084    | 2031-03-02 05:57:38.83 | 17 41 05.59619             | -22 49 26.87471 | 4.5                     | 12.411           | 181.91   | 20.65                   | 5.478            | 48.0        | 8.260      | 14.652 | 13.119 | 16.5              | 75.4  |
| Pgt        | 4116929258033509760    | 17 41 05.56620             | -22 49 39.27916 | 2.6                     | 49.312           | 1.20     | -2.65                   |                  | 46.6        |            | 14.686 | 0      | -22.8             | 176.8 |
| J310085    | 2031-03-02 12:52:29.15 | 17 41 14.92345             | -22 49 30.44564 | 2.5                     | 13.143           | 181.90   | 20.52                   | 5.474            | 51.2        | 9.003      | 14.515 | 13.129 | 272.5             | 75.6  |
| Pgt        | 4116929081833866496    | 17 41 14.89196             | -22 49 43.58104 | 1.5                     | 52.174           | 1.18     | -2.65                   |                  | 49.8        |            | 14.543 | 0      | -22.8             | 178.4 |
| J310086    | 2031-03-02 13:51:56.98 | 17 41 16.26796             | -22 49 26.08511 | 1.6                     | 18.118           | 181.89   | 20.50                   | 5.473            |             | 8.593      | 13.676 | 12.393 | 257.6             | 75.7  |
| P          | 4116929120594026752    | 17 41 16.22464             | -22 49 44.19287 | 1.0                     | 71.916           | 1.18     | -2.65                   |                  |             | 0.647      | 13.703 | 0      | -22.8             | 178.2 |
| J310087    | 2031-03-02 18:49:17.87 | 17 41 22.88099             | -22 49 43.98875 | 1.4                     | 3.247            | 181.89   | 20.41                   | 5.470            | 12.6        | 9.863      | 13.240 | 12.260 | 183.1             | 75.8  |
| Pgt        | 4116928669516961536    | 17 41 22.87325             | -22 49 47.23426 | 0.7                     | 12.882           | 1.17     | -2.65                   |                  | 11.0        | 0.222      | 13.262 | 0      | -22.8             | 176.2 |
| J310088    | 2031-03-03 00:51:39.83 | 17 41 30.96821             | -22 49 39.21473 | 2.4                     | 11.692           | 181.87   | 20.30                   | 5.466            | 44.8        | 9.301      | 14.690 | 13.362 | 92.3              | 76.1  |
| Pgt        | 4116928639557442816    | 17 41 30.94060             | -22 49 50.90026 | 1.2                     | 46.348           | 1.15     | -2.65                   |                  | 43.4        | 0.614      | 14.706 | 0      | -22.8             | 173.4 |

Table 2 continued on next page

Table 2 (continued)

| Event ID   | C/A Epoch              | ICRS Star Coord at Epoch |                 | $\sigma(\alpha_*)$ (km) | C/A ( $''$ )     | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|------------|------------------------|--------------------------|-----------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type | Source ID              | Geocentric               | Object Position | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J310089    | 2031-03-03 04:38:09.82 | 17 41 35.97098           | -22 49 50.01696 | 4.2                     | 3.154            | 181.87   | 20.23                   | 5.463            | 12.3        | 7.720      | 14.358 | 12.812 | 35.6              | 76.2  |
| Pgt        | 4116928536478142208    | 17 41 35.96355           | -22 49 53.16938 | 2.3                     | 12.498           | 1.14     | -2.65                   |                  | 10.6        |            | 14.370 | 0      | -22.8             | 171.6 |
| J310090    | 2031-03-03 05:17:46.87 | 17 41 36.82643           | -22 49 59.56213 | 2.7                     | 6.001            | 1.87     | 20.21                   | 5.463            | -21.1       | 9.386      | 14.964 | 13.558 | 25.6              | 76.2  |
| Pgt        | 4116928536478117376    | 17 41 36.84058           | -22 49 53.56452 | 1.6                     | 23.775           | 1.14     | -2.65                   |                  | -22.7       |            | 14.976 | 0      | -22.8             | 171.3 |
| J310091    | 2031-03-03 08:33:38.28 | 17 41 41.20067           | -22 49 42.21667 | 2.4                     | 13.301           | 181.85   | 20.15                   | 5.461            | 51.8        | 9.777      | 14.948 | 13.626 | 336.6             | 76.4  |
| Pgt        | 4116928502118336256    | 17 41 41.16954           | -22 49 55.51032 | 1.3                     | 52.677           | 1.14     | -2.65                   |                  | 50.4        |            | 14.957 | 0      | -22.8             | 169.7 |
| J310092    | 2031-03-03 08:51:31.96 | 17 41 41.54776           | -22 50 02.81099 | 2.0                     | 7.127            | 1.86     | 20.15                   | 5.460            | -25.3       | 9.783      | 14.949 | 13.635 | 332.1             | 76.4  |
| Pgt        | 4116928502068029568    | 17 41 41.56450           | -22 49 55.68747 | 1.1                     | 28.226           | 1.13     | -2.65                   |                  | -26.9       | 0.425      | 14.957 | 0      | -22.8             | 169.6 |
| J310093    | 2031-03-03 09:33:22.48 | 17 41 42.50582           | -22 49 48.33512 | 1.6                     | 7.770            | 181.85   | 20.14                   | 5.460            | 29.3        | 9.822      | 13.938 | 12.829 | 321.6             | 76.4  |
| Pgt        | 4116928497718251008    | 17 41 42.48765           | -22 49 56.10127 | 0.9                     | 30.770           | 1.13     | -2.65                   |                  | 27.8        | 0.261      | 13.945 | 0      | -22.8             | 169.3 |
| J310094    | 2031-03-03 09:44:33.25 | 17 41 42.70259           | -22 50 09.66489 | 1.7                     | 13.460           | 1.86     | 20.13                   | 5.460            | -51.1       | 9.394      | 14.505 | 13.228 | 318.8             | 76.4  |
| Pgt        | 4116925547180785408    | 17 41 42.73421           | -22 49 56.21174 | 1.0                     | 53.301           | 1.13     | -2.65                   |                  | -52.5       | 0.476      | 14.512 | 0      | -22.8             | 169.2 |
| J310095*   | 2031-03-03 17:35:57.32 | 17 41 53.11348           | -22 49 53.97240 | 8.4                     | 6.863            | 181.84   | 19.99                   | 5.455            | 25.9        | 9.314      | 14.627 | 13.234 | 200.6             | 76.7  |
| Pgt        | 4116926985889757696    | 17 41 53.09757           | -22 50 00.83224 | 4.9                     | 27.153           | 1.11     | -2.65                   |                  | 24.3        | 0.668      | 14.626 | 0      | -22.8             | 165.4 |
| J310096*   | 2031-03-03 21:08:59.03 | 17 41 57.76161           | -22 50 01.98689 | 16.7                    | 0.910            | 181.83   | 19.92                   | 5.452            | 4.1         | 7.633      | 14.941 | 13.337 | 147.3             | 76.8  |
| Pgt        | 4116926882810563200    | 17 41 57.75951           | -22 50 02.89641 | 9.5                     | 3.599            | 1.11     | -2.65                   |                  | 2.5         |            | 14.936 | 0      | -22.8             | 163.6 |
| J310097    | 2031-03-03 22:18:46.13 | 17 41 59.25026           | -22 50 18.05413 | 2.0                     | 14.492           | 1.83     | 19.90                   | 5.452            | -56.0       | 9.761      | 14.772 | 13.495 | 129.8             | 76.9  |
| Pgt        | 4116926814090968448    | 17 41 59.28380           | -22 50 03.56939 | 1.1                     | 57.301           | 1.10     | -2.65                   |                  | -57.4       | 0.428      | 14.767 | 0      | -22.8             | 163.1 |
| J310098    | 2031-03-03 22:40:33.51 | 17 41 59.77324           | -22 49 57.79527 | 4.4                     | 5.987            | 181.82   | 19.89                   | 5.451            | 22.6        | 7.327      | 14.240 | 12.634 | 124.3             | 76.9  |
| Pgt        | 4116926852850639104    | 17 41 59.75945           | -22 50 03.77919 | 2.6                     | 23.671           | 1.10     | -2.65                   |                  | 21.0        | 2.372      | 14.234 | 0      | -22.8             | 162.9 |
| J310099    | 2031-03-04 03:46:49.59 | 17 42 06.43592           | -22 50 04.26389 | 3.8                     | 2.449            | 181.81   | 19.80                   | 5.448            | 9.7         | 8.034      | 14.275 | 12.737 | 47.6              | 77.1  |
| Pgt        | 4116926474893419520    | 17 42 06.43031           | -22 50 06.71178 | 2.2                     | 9.677            | 1.09     | -2.65                   |                  | 8.0         |            | 14.264 | 0      | -22.8             | 160.4 |
| J310100    | 2031-03-04 04:56:00.75 | 17 42 07.95167           | -22 49 59.39000 | 2.0                     | 7.984            | 181.81   | 19.78                   | 5.447            | 30.0        | 8.432      | 13.722 | 12.353 | 30.2              | 77.1  |
| Pgt        | 4116926474893406464    | 17 42 07.93343           | -22 50 07.37003 | 1.1                     | 31.543           | 1.09     | -2.65                   |                  | 28.5        | 0.839      | 13.710 | 0      | -22.8             | 159.8 |
| J310101    | 2031-03-04 06:15:07.48 | 17 42 09.68635           | -22 49 52.37338 | 1.7                     | 15.755           | 181.80   | 19.75                   | 5.446            | 64.1        | 9.979      | 14.389 | 13.245 | 10.4              | 77.1  |
| Pgt        | 4116926440533653376    | 17 42 09.65047           | -22 50 08.12082 | 1.0                     | 62.235           | 1.08     | -2.65                   |                  | 62.8        | 0.271      | 14.376 | 0      | -22.8             | 159.2 |
| J310102    | 2031-03-04 08:51:20.28 | 17 42 13.05449           | -22 50 01.23557 | 3.1                     | 8.366            | 181.80   | 19.70                   | 5.445            | 31.5        | 8.981      | 14.613 | 13.178 | 331.3             | 77.2  |
| Pgt        | 4116926436133890944    | 17 42 13.03547           | -22 50 09.59737 | 1.8                     | 33.036           | 1.08     | -2.65                   |                  | 29.9        | 0.738      | 14.596 | 0      | -22.8             | 157.9 |
| J310103*   | 2031-03-04 23:09:04.01 | 17 42 31.50496           | -22 50 11.72826 | 4.6                     | 5.840            | 181.77   | 19.44                   | 5.435            | 22.0        | 9.550      | 14.973 | 13.579 | 116.3             | 77.8  |
| Pgt        | 4116885170088088960    | 17 42 31.49191           | -22 50 17.56523 | 2.9                     | 23.020           | 1.05     | -2.64                   |                  | 20.4        | 0.474      | 14.942 | 0      | -22.8             | 150.8 |
| J310104    | 2031-03-04 23:35:12.49 | 17 42 32.05223           | -22 50 17.23195 | 1.7                     | 0.573            | 181.77   | 19.43                   | 5.435            | 2.9         | 9.834      | 14.295 | 13.139 | 109.8             | 77.8  |
| Pgt        | 4116885174478177792    | 17 42 32.05095           | -22 50 17.80440 | 1.2                     | 2.258            | 1.04     | -2.64                   |                  | 1.2         |            | 14.263 | 0      | -22.8             | 150.6 |
| J310105    | 2031-03-05 12:13:45.30 | 17 42 48.22313           | -22 50 06.86357 | 5.2                     | 17.796           | 181.74   | 19.19                   | 5.427            | 80.2        | 7.849      | 14.517 | 12.932 | 279.7             | 78.3  |
| Pg         | 4116884693368898432    | 17 42 48.18409           | -22 50 24.65157 | 3.1                     | 70.041           | 1.02     | -2.64                   |                  | 78.9        |            | 14.472 | 0      | -22.9             | 144.3 |
| J310106    | 2031-03-05 15:04:24.81 | 17 42 51.81105           | -22 50 16.63151 | 2.3                     | 9.540            | 181.73   | 19.14                   | 5.425            | 35.9        | 8.652      | 14.060 | 12.702 | 236.9             | 78.4  |
| Pgt        | 4116884624721991680    | 17 42 51.79016           | -22 50 26.16746 | 1.3                     | 37.535           | 1.01     | -2.64                   |                  | 34.3        |            | 14.012 | 0      | -22.9             | 142.9 |
| J310107    | 2031-03-05 21:33:45.32 | 17 43 00.02144           | -22 50 12.62038 | 1.9                     | 16.979           | 181.72   | 19.02                   | 5.420            | 71.9        | 9.804      | 14.080 | 12.954 | 139.3             | 78.6  |
| Pgt        | 4116884556002397312    | 17 42 59.98462           | -22 50 29.59221 | 1.1                     | 66.751           | 0.99     | -2.64                   |                  | 70.6        | 0.289      | 14.025 | 0      | -22.9             | 139.6 |
| J310108    | 2031-03-06 04:28:48.01 | 17 43 08.65416           | -22 50 40.54249 | 4.7                     | 7.354            | 1.71     | 18.89                   | 5.416            | -25.9       | 8.349      | 14.822 | 13.284 | 35.3              | 78.9  |
| Pgt        | 4116881566705001856    | 17 43 08.67006           | -22 50 33.19174 | 3.1                     | 28.886           | 0.98     | -2.64                   |                  | -27.5       |            | 14.760 | 0      | -22.9             | 136.1 |
| J310109    | 2031-03-06 10:32:12.71 | 17 43 16.19217           | -22 50 54.91694 | 5.4                     | 18.625           | 1.70     | 18.78                   | 5.412            |             | 8.083      | 14.783 | 13.216 | 304.3             | 79.1  |
| Pt         | 4116882769295726592    | 17 43 16.23224           | -22 50 36.30030 | 3.2                     | 73.103           | 0.97     | -2.64                   |                  |             |            | 14.715 | 0      | -22.9             | 133.1 |
| J310110    | 2031-03-06 11:19:45.81 | 17 43 17.21716           | -22 50 37.45386 | 2.9                     | 0.750            | 1.70     | 18.76                   | 5.411            | -1.9        | 9.355      | 14.826 | 13.455 | 292.3             | 79.1  |
| Pgt        | 4116882803655471104    | 17 43 17.21877           | -22 50 36.70408 | 1.7                     | 2.944            | 0.96     | -2.64                   |                  | -3.5        | 0.568      | 14.756 | 0      | -22.9             | 132.7 |
| J310111    | 2031-03-06 11:41:36.80 | 17 43 17.70690           | -22 50 20.44407 | 1.7                     | 16.452           | 181.69   | 18.75                   | 5.411            | 67.8        | 8.913      | 13.766 | 12.534 | 286.9             | 79.1  |
| Pgt        | 4116882803655482368    | 17 43 17.67184           | -22 50 36.88939 | 1.0                     | 64.567           | 0.96     | -2.64                   |                  | 66.5        | 0.508      | 13.696 | 0      | -22.9             | 132.5 |
| J310112    | 2031-03-06 14:20:13.23 | 17 43 20.95529           | -22 50 38.71632 | 4.6                     | 0.486            | 1.69     | 18.70                   | 5.409            | -0.9        | 8.194      | 14.429 | 12.916 | 247.1             | 79.2  |
| Pgt        | 4116882730553857792    | 17 43 20.95633           | -22 50 38.23024 | 2.6                     | 1.908            | 0.96     | -2.64                   |                  | -2.6        |            | 14.356 | 0      | -22.9             | 131.1 |
| J310113    | 2031-03-06 18:22:27.06 | 17 43 25.93070           | -22 50 52.95071 | 3.4                     | 12.693           | 1.69     | 18.63                   | 5.407            | -47.0       | 9.104      | 14.900 | 13.483 | 186.4             | 79.4  |
| Pgt        | 411688207718819712     | 17 43 25.95770           | -22 50 40.26348 | 1.9                     | 49.771           | 0.95     | -2.64                   |                  | -48.5       | 0.748      | 14.823 | 0      | -22.9             | 129.1 |

Table 2 continued on next page

Table 2 (continued)

| Event ID   | C/A Epoch              | ICRS Star Coord at Epoch |                 | $\sigma(\alpha_*)$ (km) | C/A ( $''$ )     | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|------------|------------------------|--------------------------|-----------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type | Source ID              | Geocentric               | Object Position | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J310114    | 2031-03-08 01:00:52.90 | 17 44 03.31546           | -22 51 03.81827 | 1.4                     | 8.689            | 1.62     | 18.05                   | 5.386            | -30.8       | 9.376      | 13.285 | 12.211 | 85.7              | 80.5  |
| Pgt        | 4116893730055313792    | 17 44 03.33323           | -22 50 55.13243 | 0.8                     | 33.944           | 0.88     | -2.64                   |                  | -32.4       | 0.305      | 13.173 | 0      | -22.9             | 113.1 |
| J310115    | 2031-03-08 05:11:58.12 | 17 44 08.34436           | -22 51 03.43287 | 1.9                     | 6.348            | 1.61     | 17.97                   | 5.383            | -22.1       | 7.796      | 12.991 | 11.730 | 22.8              | 80.7  |
| Pgt        | 4116893072827700352    | 17 44 08.35727           | -22 50 57.08713 | 1.2                     | 24.786           | 0.87     | -2.64                   |                  | -23.7       | 0.865      | 12.874 | 0      | -22.9             | 110.9 |
| J310116    | 2031-03-08 05:24:08.91 | 17 44 08.58429           | -22 51 05.13442 | 2.6                     | 7.956            | 1.61     | 17.97                   | 5.383            | -28.0       | 8.080      | 14.746 | 13.376 | 19.7              | 80.7  |
| Pgt        | 4116893077220241536    | 17 44 08.60047           | -22 50 57.18149 | 1.6                     | 31.063           | 0.87     | -2.64                   |                  | -29.6       |            | 14.629 | 0      | -22.9             | 110.8 |
| J310117    | 2031-03-08 15:33:13.83 | 17 44 20.66437           | -22 51 21.38298 | 4.6                     | 19.544           | 1.60     | 17.77                   | 5.377            |             | 8.594      | 14.998 | 13.454 | 227.1             | 81.0  |
| P          | 4116893145939603584    | 17 44 20.70373           | -22 51 01.84695 | 2.7                     | 76.209           | 0.85     | -2.64                   |                  |             |            | 14.870 | 0      | -22.9             | 105.4 |
| J310118    | 2031-03-08 20:45:16.54 | 17 44 26.89245           | -22 50 47.70871 | 4.5                     | 16.495           | 181.57   | 17.67                   | 5.373            | 67.4        | 8.578      | 14.912 | 13.400 | 148.9             | 81.2  |
| Pgt        | 4116893283378521088    | 17 44 26.85977           | -22 51 04.19710 | 2.8                     | 64.278           | 0.84     | -2.64                   |                  | 66.0        |            | 14.778 | 0      | -22.9             | 102.7 |
| J310119    | 2031-03-09 01:36:03.17 | 17 44 32.59943           | -22 50 50.95848 | 3.5                     | 15.410           | 181.56   | 17.58                   | 5.370            | 60.9        | 8.145      | 14.205 | 12.721 | 76.0              | 81.4  |
| Pgt        | 4116890358408396800    | 17 44 32.56907           | -22 51 06.36293 | 2.1                     | 60.016           | 0.83     | -2.64                   |                  | 59.6        | 1.219      | 14.065 | 0      | -22.9             | 100.1 |
| J310120    | 2031-03-09 12:51:31.97 | 17 44 45.72953           | -22 51 11.95068 | 1.2                     | 0.646            | 1.55     | 17.37                   | 5.362            | -1.5        | 8.412      | 13.094 | 11.865 | 266.8             | 81.8  |
| Pgt        | 4116891526646872320    | 17 44 45.73079           | -22 51 11.30492 | 0.7                     | 2.512            | 0.80     | -2.64                   |                  | -3.1        | 0.689      | 12.941 | 0      | -22.9             | 94.0  |
| J310121    | 2031-03-09 17:08:24.18 | 17 44 50.69986           | -22 51 12.49474 | 2.3                     | 0.657            | 181.53   | 17.29                   | 5.359            | 3.2         | 8.787      | 13.750 | 12.369 | 202.4             | 82.0  |
| Pgt        | 4116890878196552320    | 17 44 50.69859           | -22 51 13.15169 | 1.2                     | 2.554            | 0.80     | -2.64                   |                  | 1.5         | 0.742      | 13.592 | 0      | -22.9             | 91.7  |
| J310122    | 2031-03-09 17:23:03.69 | 17 44 50.96999           | -22 51 19.15933 | 5.4                     | 5.905            | 1.54     | 17.28                   | 5.359            | -20.3       | 8.054      | 14.858 | 13.280 | 198.7             | 82.0  |
| Pgt        | 4116890878196541696    | 17 44 50.98145           | -22 51 13.25654 | 2.9                     | 22.952           | 0.79     | -2.64                   |                  | -22.0       |            | 14.700 | 0      | -22.9             | 91.5  |
| J310123*   | 2031-03-10 00:24:42.43 | 17 44 59.06244           | -22 51 30.01733 | 3.8                     | 13.774           | 1.53     | 17.15                   | 5.355            | -51.3       | 8.809      | 14.389 | 12.980 | 93.0              | 82.3  |
| Pgt        | 4116890637678260480    | 17 44 59.08901           | -22 51 16.24781 | 2.2                     | 53.493           | 0.78     | -2.64                   |                  | -52.7       | 0.800      | 14.222 | 0      | -22.9             | 87.7  |
| J310124    | 2031-03-10 13:10:56.18 | 17 45 13.69981           | -22 51 10.20511 | 4.8                     | 11.362           | 181.49   | 16.90                   | 5.346            | 42.4        | 8.333      | 14.964 | 13.404 | 261.0             | 82.7  |
| Pgt        | 4068852665435325824    | 17 45 13.67840           | -22 51 21.56327 | 2.8                     | 44.054           | 0.75     | -2.64                   |                  | 40.9        |            | 14.782 | 0      | -22.9             | 80.7  |
| J310125    | 2031-03-10 22:59:10.44 | 17 45 24.75197           | -22 51 26.07570 | 1.2                     | 0.535            | 1.48     | 16.72                   | 5.339            | -1.0        | 8.440      | 12.630 | 11.506 | 113.6             | 83.1  |
| Pgt        | 4068858227318253184    | 17 45 24.75297           | -22 51 25.54068 | 0.7                     | 2.073            | 0.73     | -2.64                   |                  | -2.7        | 0.540      | 12.436 | 0      | -22.9             | 75.2  |
| J310126    | 2031-03-11 02:24:46.92 | 17 45 28.57311           | -22 51 40.32207 | 3.5                     | 13.417           | 1.48     | 16.65                   | 5.337            | -49.5       | 8.897      | 14.547 | 13.131 | 62.1              | 83.2  |
| Pgt        | 4068857510160866816    | 17 45 28.59816           | -22 51 26.91000 | 2.1                     | 51.933           | 0.73     | -2.64                   |                  | -50.9       | 0.837      | 14.348 | 0      | -22.9             | 73.3  |
| J310127    | 2031-03-11 09:11:09.92 | 17 45 36.19353           | -22 51 10.60801 | 1.2                     | 18.983           | 181.45   | 16.52                   | 5.333            |             | 9.234      | 12.659 | 11.677 | 320.2             | 83.5  |
| P          | 4068857578880265856    | 17 45 36.15876           | -22 51 29.58477 | 0.7                     | 73.417           | 0.71     | -2.64                   |                  |             | 0.331      | 12.451 | 0      | -22.9             | 69.5  |
| J310128    | 2031-03-11 10:26:49.18 | 17 45 37.55961           | -22 51 30.54262 | 1.9                     | 0.465            | 1.46     | 16.50                   | 5.332            | -0.8        | 9.447      | 14.585 | 13.283 | 301.3             | 83.5  |
| Pgt        | 4068857578880224896    | 17 45 37.56047           | -22 51 30.07809 | 1.1                     | 1.797            | 0.71     | -2.64                   |                  | -2.5        | 0.397      | 14.376 | 0      | -22.9             | 68.8  |
| J310129    | 2031-03-11 12:45:35.50 | 17 45 40.12715           | -22 51 30.81510 | 1.8                     | 0.164            | 181.45   | 16.45                   | 5.330            | 1.4         | 9.838      | 14.562 | 13.337 | 266.5             | 83.6  |
| Pgt        | 4068857372721761152    | 17 45 40.12685           | -22 51 30.97924 | 1.1                     | 0.635            | 0.71     | -2.64                   |                  | -0.3        | 0.355      | 14.351 | 0      | -22.9             | 67.5  |
| J310130    | 2031-03-11 20:09:23.57 | 17 45 48.26228           | -22 51 50.50635 | 2.0                     | 16.683           | 1.45     | 16.31                   | 5.325            | -66.3       | 9.556      | 14.834 | 13.509 | 155.3             | 83.9  |
| Pgt        | 4068854722625507840    | 17 45 48.29276           | -22 51 33.82878 | 1.2                     | 64.433           | 0.69     | -2.64                   |                  | -67.6       | 0.474      | 14.613 | 0      | -22.9             | 63.4  |
| J310131    | 2031-03-12 01:44:34.95 | 17 45 54.38709           | -22 51 53.05916 | 2.4                     | 17.116           | 1.44     | 16.20                   | 5.321            | -69.2       | 9.783      | 14.901 | 13.611 | 71.3              | 84.1  |
| Pgt        | 4068854791344384512    | 17 45 54.41816           | -22 51 35.94866 | 1.5                     | 66.059           | 0.68     | -2.63                   |                  | -70.5       |            | 14.672 | 0      | -22.9             | 60.2  |
| J310132*   | 2031-03-12 10:14:15.97 | 17 46 03.68936           | -22 51 24.29928 | 10.1                    | 14.825           | 181.41   | 16.04                   | 5.316            | 57.2        | 9.110      | 13.442 | 12.278 | 303.5             | 84.4  |
| Pgt        | 4068856097015055232    | 17 46 03.66303           | -22 51 39.11978 | 6.0                     | 57.155           | 0.66     | -2.63                   |                  | 55.8        | 0.376      | 13.203 | 0      | -22.9             | 55.4  |
| J310133    | 2031-03-12 10:16:36.92 | 17 46 03.68174           | -22 51 52.35059 | 1.8                     | 13.220           | 1.42     | 16.04                   | 5.316            | -48.4       | 9.770      | 14.495 | 13.292 | 303.0             | 84.4  |
| Pgt        | 4068854550826215808    | 17 46 03.70545           | -22 51 39.13425 | 1.1                     | 50.969           | 0.66     | -2.63                   |                  | -49.9       |            | 14.255 | 0      | -22.9             | 55.4  |
| J310134    | 2031-03-12 11:11:42.97 | 17 46 04.73092           | -22 51 21.95245 | 1.6                     | 17.526           | 181.40   | 16.02                   | 5.315            | 73.6        | 9.437      | 13.892 | 12.713 | 289.2             | 84.5  |
| Pg         | 4068856097040283648    | 17 46 04.69986           | -22 51 39.47329 | 0.9                     | 67.561           | 0.66     | -2.63                   |                  | 72.2        | 0.322      | 13.651 | 0      | -22.9             | 54.9  |
| J310135    | 2031-03-12 12:26:11.59 | 17 46 06.02617           | -22 51 49.01756 | 2.1                     | 9.090            | 1.41     | 16.00                   | 5.314            | -31.8       | 8.580      | 14.725 | 13.651 | 270.5             | 84.5  |
| Pgt        | 4068856032691547008    | 17 46 06.04240           | -22 51 39.93041 | 1.2                     | 35.035           | 0.66     | -2.63                   |                  | -33.4       | 0.639      | 14.482 | 0      | -22.9             | 54.1  |
| J310136    | 2031-03-12 12:35:53.71 | 17 46 06.19551           | -22 51 52.09982 | 4.8                     | 12.114           | 1.42     | 16.00                   | 5.314            | -43.7       | 8.031      | 14.315 | 12.769 | 268.1             | 84.5  |
| Pgt        | 4068856032691540352    | 17 46 06.21717           | -22 51 39.98986 | 2.7                     | 46.688           | 0.66     | -2.63                   |                  | -45.2       |            | 14.072 | 0      | -22.9             | 54.1  |
| J310137*   | 2031-03-13 05:42:45.33 | 17 46 24.51837           | -22 52 00.23125 | 8.7                     | 14.080           | 1.39     | 15.67                   | 5.303            | -52.0       | 9.655      | 14.809 | 13.040 | 10.7              | 85.1  |
| Pgt        | 4068855100653223552    | 17 46 24.54301           | -22 51 46.15542 | 4.9                     | 54.149           | 0.63     | -2.63                   |                  | -53.5       | 0.353      | 14.544 | 0      | -22.9             | 44.3  |
| J310138    | 2031-03-13 07:05:54.31 | 17 46 26.03471           | -22 51 33.53206 | 1.6                     | 13.115           | 181.37   | 15.64                   | 5.302            | 49.2        | 9.099      | 13.610 | 12.450 | 349.9             | 85.2  |
| Pgt        | 4068855482936628224    | 17 46 26.01202           | -22 51 46.64376 | 0.9                     | 50.431           | 0.62     | -2.63                   |                  | 47.8        | 0.396      | 13.343 | 0      | -22.9             | 43.5  |

Table 2 continued on next page

Table 2 (continued)

| Event ID             | C/A Epoch              | ICRS Star Coord at Epoch |                 | $\sigma(\alpha_*)$ (km) | C/A ( $''$ )     | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|----------------------|------------------------|--------------------------|-----------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type           | Source ID              | Geocentric               | Object Position | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J310139              | 2031-03-13 13:33:25.93 | 17 46 32.81573           | -22 51 56.40315 | 1.6                     | 7.507            | 1.37     | 15.52                   | 5.297            | -25.9       | 8.650      | 12.394 | 11.357 | 252.8             | 85.4  |
| Pgt                  | 4068843761867766784    | 17 46 32.82870           | -22 51 48.89843 | 0.9                     | 28.841           | 0.61     | -2.63                   |                  | -27.5       | 0.436      | 12.118 | 0      | -22.9             | 39.8  |
| J310140              | 2031-03-13 18:10:38.44 | 17 46 37.65970           | -22 51 59.17550 | 1.5                     | 8.688            | 1.36     | 15.43                   | 5.294            | -30.2       | 9.183      | 13.753 | 12.568 | 183.3             | 85.6  |
| Pgt                  | 4068843796228976896    | 17 46 37.67464           | -22 51 50.48996 | 0.9                     | 33.360           | 0.60     | -2.63                   |                  | -31.8       |            | 13.471 | 0      | -22.9             | 37.1  |
| J310141              | 2031-03-13 20:31:41.60 | 17 46 40.16032           | -22 51 33.85682 | 1.3                     | 17.441           | 181.34   | 15.38                   | 5.293            | 72.3        | 9.521      | 11.815 | 11.057 | 147.9             | 85.7  |
| Pgt                  | 4068843796228938624    | 17 46 40.13071           | -22 51 51.29304 | 0.7                     | 66.949           | 0.60     | -2.63                   |                  | 70.9        | 0.223      | 11.530 | 0      | -22.9             | 35.8  |
| J310142              | 2031-03-14 00:37:24.24 | 17 46 44.36575           | -22 52 08.91730 | 1.4                     | 16.241           | 1.35     | 15.30                   | 5.290            | -62.9       | 9.282      | 13.479 | 12.372 | 86.4              | 85.9  |
| Pgt                  | 4068843624430283392    | 17 46 44.39353           | -22 51 52.68124 | 0.8                     | 62.309           | 0.59     | -2.63                   |                  | -64.3       | 0.343      | 13.188 | 0      | -22.9             | 33.4  |
| J310143              | 2031-03-14 06:06:02.96 | 17 46 50.05375           | -22 52 00.69900 | 3.7                     | 6.184            | 1.34     | 15.20                   | 5.286            | -21.0       | 8.202      | 14.405 | 12.891 | 4.0               | 86.1  |
| Pgt                  | 4068937396516796032    | 17 46 50.06422           | -22 51 54.51682 | 2.2                     | 23.709           | 0.58     | -2.63                   |                  | -22.7       |            | 14.107 | 0      | -22.9             | 30.3  |
| J310144              | 2031-03-14 09:11:17.80 | 17 46 53.27158           | -22 51 39.65114 | 2.4                     | 15.894           | 181.32   | 15.14                   | 5.284            | 62.2        | 8.044      | 13.610 | 12.201 | 317.6             | 86.2  |
| Pgt                  | 4068936674962277632    | 17 46 53.24501           | -22 51 55.54086 | 1.4                     | 60.912           | 0.58     | -2.63                   |                  | 60.8        | 0.941      | 13.307 | 0      | -22.9             | 28.5  |
| J310145              | 2031-03-14 09:40:08.03 | 17 46 53.76986           | -22 51 37.30355 | 1.8                     | 18.401           | 181.32   | 15.13                   | 5.284            | 82.0        | 9.970      | 14.490 | 13.329 | 310.3             | 86.2  |
| Pgt                  | 4068936670600875776    | 17 46 53.73915           | -22 51 55.69958 | 1.1                     | 70.516           | 0.57     | -2.63                   |                  | 80.7        | 0.281      | 14.187 | 0      | -22.9             | 28.2  |
| J310146              | 2031-03-15 02:32:18.73 | 17 47 10.90759           | -22 52 02.36532 | 1.1                     | 1.211            | 1.30     | 14.80                   | 5.272            | -3.4        | 9.612      | 12.629 | 11.735 | 56.7              | 86.8  |
| Pgt                  | 4068936842398673920    | 17 47 10.90959           | -22 52 01.15464 | 0.6                     | 4.631            | 0.54     | -2.63                   |                  | -5.1        | 0.239      | 12.302 | 0      | -22.9             | 18.4  |
| J310147              | 2031-03-15 03:57:52.88 | 17 47 12.36309           | -22 51 50.88328 | 2.9                     | 10.725           | 181.29   | 14.77                   | 5.271            | 39.3        | 8.711      | 14.550 | 13.091 | 35.2              | 86.9  |
| Pgt                  | 4068933891823261184    | 17 47 12.34555           | -22 52 01.60555 | 1.8                     | 41.004           | 0.54     | -2.63                   |                  | 37.8        |            | 14.221 | 0      | -22.9             | 17.6  |
| J310148 <sup>a</sup> | 2031-03-15 04:27:55.61 | 17 47 12.84975           | -22 52 01.41802 | 5.3                     | 0.346            | 181.30   | 14.76                   | 5.271            | 2.1         | 9.081      | 14.922 |        | 27.7              | 86.9  |
| Pgt                  | 4068933887461176448    | 17 47 12.84918           | -22 52 01.76350 | 3.1                     | 1.321            | 0.54     | -2.63                   |                  | 0.3         | 0.427      | 14.592 | 0      | -22.9             | 17.3  |
| J310149 <sup>a</sup> | 2031-03-15 04:34:52.58 | 17 47 12.96466           | -22 52 02.38890 | 12.0                    | 0.589            | 1.30     | 14.76                   | 5.271            | -1.2        | 9.081      | 14.281 | 12.860 | 26.0              | 86.9  |
| Pgt                  | 4068933891823245440    | 17 47 12.96562           | -22 52 01.80000 | 7.6                     | 2.252            | 0.54     | -2.63                   |                  | -2.9        | 0.427      | 13.951 | 0      | -22.9             | 17.3  |
| J310150              | 2031-03-15 04:56:39.28 | 17 47 13.34878           | -22 51 50.68015 | 3.7                     | 11.237           | 181.29   | 14.75                   | 5.271            | 41.3        | 8.358      | 14.909 | 13.339 | 20.5              | 86.9  |
| Pgt                  | 4068933921821748096    | 17 47 13.33043           | -22 52 01.91434 | 2.3                     | 42.957           | 0.54     | -2.63                   |                  | 39.8        |            | 14.578 | 0      | -22.9             | 17.1  |
| J310151              | 2031-03-15 05:13:39.67 | 17 47 13.60896           | -22 52 05.80294 | 2.2                     | 3.800            | 1.30     | 14.75                   | 5.271            | -12.5       | 8.395      | 13.757 | 12.317 | 16.2              | 86.9  |
| Pgt                  | 4068933891823236864    | 17 47 13.61520           | -22 52 02.00355 | 1.3                     | 14.527           | 0.54     | -2.63                   |                  | -14.2       | 0.833      | 13.426 | 0      | -22.9             | 16.9  |
| J310152              | 2031-03-15 05:24:43.27 | 17 47 13.83224           | -22 51 42.44251 | 1.5                     | 19.624           | 181.29   | 14.74                   | 5.270            |             | 8.893      | 14.093 | 12.786 | 13.5              | 86.9  |
| P                    | 4068933921959265920    | 17 47 13.80034           | -22 52 02.06154 | 0.9                     | 75.013           | 0.54     | -2.63                   |                  |             | 0.549      | 13.762 | 0      | -22.9             | 16.8  |
| J310153              | 2031-03-15 06:26:48.17 | 17 47 14.81201           | -22 52 18.64886 | 4.6                     | 16.267           | 1.30     | 14.72                   | 5.270            | -62.6       | 7.702      | 14.904 | 13.282 | 357.9             | 87.0  |
| Pgt                  | 4068933891823210880    | 17 47 14.83881           | -22 52 02.38653 | 2.8                     | 62.171           | 0.54     | -2.63                   |                  | -64.1       |            | 14.572 | 0      | -22.9             | 16.2  |
| J310154              | 2031-03-15 09:01:36.90 | 17 47 17.40962           | -22 52 11.23413 | 4.0                     | 8.043            | 1.30     | 14.67                   | 5.268            | -27.7       | 8.049      | 14.919 | 13.325 | 319.1             | 87.1  |
| Pgt                  | 4068933857462151424    | 17 47 17.42278           | -22 52 03.19338 | 2.4                     | 30.730           | 0.53     | -2.63                   |                  | -29.3       |            | 14.583 | 0      | -22.9             | 14.7  |
| J310155              | 2031-03-15 09:11:48.70 | 17 47 17.56814           | -22 52 18.20346 | 1.6                     | 14.961           | 1.30     | 14.67                   | 5.268            | -55.7       | 9.556      | 14.574 | 13.299 | 316.6             | 87.1  |
| Pgt                  | 4068933857462138496    | 17 47 17.59269           | -22 52 03.24635 | 1.0                     | 57.161           | 0.53     | -2.63                   |                  | -57.2       | 0.439      | 14.237 | 0      | -22.9             | 14.6  |
| J310156              | 2031-03-15 14:38:06.73 | 17 47 22.98502           | -22 52 21.12854 | 2.8                     | 16.203           | 1.29     | 14.56                   | 5.264            | -62.2       | 8.308      | 14.334 | 12.850 | 234.8             | 87.3  |
| Pgt                  | 4068933754382820992    | 17 47 23.01145           | -22 52 04.92965 | 1.8                     | 61.863           | 0.52     | -2.63                   |                  | -63.6       |            | 13.989 | 0      | -22.9             | 11.4  |
| J310157              | 2031-03-15 16:33:35.42 | 17 47 24.89079           | -22 52 23.80507 | 4.2                     | 18.290           | 1.29     | 14.52                   | 5.263            | -78.1       | 7.783      | 14.622 | 13.015 | 205.8             | 87.4  |
| Pgt                  | 4068933754382781696    | 17 47 24.92058           | -22 52 05.52003 | 2.6                     | 69.813           | 0.52     | -2.63                   |                  | -79.5       |            | 14.274 | 0      | -22.9             | 10.3  |
| J310158 <sup>*</sup> | 2031-03-15 18:51:41.56 | 17 47 27.20443           | -22 52 02.14725 | 3.1                     | 4.076            | 181.27   | 14.48                   | 5.261            | 15.1        | 9.941      | 14.643 | 13.391 | 171.2             | 87.4  |
| Pgt                  | 4068933720023032832    | 17 47 27.19786           | -22 52 06.22244 | 1.9                     | 15.555           | 0.51     | -2.63                   |                  | 13.4        | 0.312      | 14.292 | 0      | -22.9             | 9.0   |
| J310159              | 2031-03-15 23:09:04.26 | 17 47 31.44417           | -22 51 55.45672 | 2.0                     | 12.067           | 181.26   | 14.39                   | 5.259            | 44.5        | 7.983      | 13.471 | 12.083 | 106.7             | 87.6  |
| Pgt                  | 4068935193131233408    | 17 47 31.42492           | -22 52 07.52102 | 1.2                     | 46.023           | 0.51     | -2.63                   |                  | 43.0        | 1.083      | 13.114 | 0      | -22.9             | 6.6   |
| J310160              | 2031-03-16 01:56:22.91 | 17 47 34.17876           | -22 51 57.10903 | 1.8                     | 11.252           | 181.26   | 14.34                   | 5.257            | 41.3        | 9.545      | 14.811 | 13.474 | 64.8              | 87.7  |
| Pgt                  | 4068934441577417728    | 17 47 34.16087           | -22 52 08.35789 | 1.1                     | 42.896           | 0.50     | -2.63                   |                  | 39.7        |            | 14.450 | 0      | -22.9             | 5.0   |
| J310161              | 2031-03-16 01:57:42.42 | 17 47 34.17935           | -22 52 10.33165 | 2.4                     | 1.968            | 1.27     | 14.34                   | 5.257            | -6.0        | 9.123      | 14.639 | 13.232 | 64.5              | 87.7  |
| Pgt                  | 4068934441577397504    | 17 47 34.18250           | -22 52 08.36449 | 1.5                     | 7.502            | 0.50     | -2.63                   |                  | -7.7        | 0.608      | 14.278 | 0      | -22.9             | 5.0   |
| J310162              | 2031-03-16 02:06:54.31 | 17 47 34.33928           | -22 52 04.24669 | 4.0                     | 4.165            | 181.26   | 14.34                   | 5.257            | 15.4        | 7.905      | 14.641 | 13.084 | 62.2              | 87.7  |
| Pgt                  | 4068934441527285760    | 17 47 34.33264           | -22 52 08.41033 | 2.4                     | 15.877           | 0.50     | -2.63                   |                  | 13.7        |            | 14.280 | 0      | -22.9             | 4.9   |
| J310163              | 2031-03-16 05:04:22.04 | 17 47 37.23709           | -22 52 00.87458 | 1.5                     | 8.419            | 181.26   | 14.28                   | 5.255            | 30.6        | 9.539      | 13.977 | 12.820 | 17.7              | 87.8  |
| Pgt                  | 4068934475937094272    | 17 47 37.22373           | -22 52 09.29135 | 0.8                     | 32.084           | 0.50     | -2.63                   |                  | 29.0        | 0.375      | 13.611 | 0      | -22.9             | 3.4   |

Table 2 continued on next page

Table 2 (continued)

| Event ID   | C/A Epoch              | ICRS Star Coord at Epoch |                 | $\sigma(\alpha_*)$ (km) | C/A ( $''$ )     | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|------------|------------------------|--------------------------|-----------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type | Source ID              | Geocentric               | Object Position | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J310164    | 2031-03-16 08:10:15.70 | 17 47 40.25118           | -22 52 03.71088 | 3.7                     | 6.498            | 181.25   | 14.22                   | 5.252            | 23.7        | 8.079      | 14.490 | 12.951 | 331.1             | 87.9  |
| Pgt        | 4068934402849220096    | 17 47 40.24090           | -22 52 10.20737 | 2.3                     | 24.754           | 0.49     | -2.63                   |                  | 22.0        |            | 14.119 | 0      | -22.9             | 2.1   |
| J310165    | 2031-03-16 15:22:39.89 | 17 47 47.21535           | -22 52 11.57407 | 4.3                     | 0.737            | 181.24   | 14.08                   | 5.248            | 3.4         | 8.119      | 14.964 | 13.376 | 222.7             | 88.2  |
| Pgt        | 4068934338497938816    | 17 47 47.21419           | -22 52 12.31101 | 2.6                     | 2.805            | 0.48     | -2.63                   |                  | 1.7         |            | 14.583 | 0      | -22.9             | 3.6   |
| J310166    | 2031-03-16 17:33:10.34 | 17 47 49.30313           | -22 52 15.06731 | 1.7                     | 2.129            | 1.24     | 14.03                   | 5.246            | -6.5        | 9.895      | 14.348 | 13.160 | 190.0             | 88.3  |
| Pgt        | 4068934265410244480    | 17 47 49.30647           | -22 52 12.93854 | 1.0                     | 8.102            | 0.47     | -2.63                   |                  | -8.3        | 0.306      | 13.964 | 0      | -22.9             | 4.8   |
| J310167    | 2031-03-17 01:46:15.20 | 17 47 57.14968           | -22 52 21.43334 | 2.0                     | 6.156            | 1.23     | 13.87                   | 5.241            | -20.7       | 7.351      | 12.661 | 11.325 | 66.4              | 88.6  |
| Pgt        | 4068887707964747776    | 17 47 57.15926           | -22 52 15.27881 | 1.2                     | 23.398           | 0.46     | -2.63                   |                  | -22.4       |            | 12.264 | 0      | -22.9             | 9.4   |
| J310168    | 2031-03-17 02:47:28.68 | 17 47 58.12923           | -22 52 15.11761 | 1.8                     | 0.449            | 181.23   | 13.85                   | 5.240            | 2.4         | 9.625      | 14.861 | 13.563 | 51.1              | 88.7  |
| Pgt        | 4068887677958338944    | 17 47 58.12854           | -22 52 15.56606 | 1.1                     | 1.705            | 0.46     | -2.63                   |                  | 0.7         | 0.454      | 14.462 | 0      | -22.9             | 10.0  |
| J310169    | 2031-03-17 07:30:06.74 | 17 48 02.58258           | -22 52 19.36276 | 1.7                     | 2.481            | 1.22     | 13.76                   | 5.237            | -7.8        | 9.438      | 14.595 | 13.280 | 340.3             | 88.8  |
| Pgt        | 4068887677958254720    | 17 48 02.58641           | -22 52 16.88261 | 1.0                     | 9.422            | 0.45     | -2.63                   |                  | -9.5        | 0.520      | 14.189 | 0      | -22.9             | 12.8  |
| J310170    | 2031-03-17 07:44:26.86 | 17 48 02.81850           | -22 52 12.58339 | 1.9                     | 4.367            | 181.22   | 13.75                   | 5.237            | 16.1        | 9.190      | 14.466 | 13.140 | 336.7             | 88.8  |
| Pgt        | 4068887781037474304    | 17 48 02.81178           | -22 52 16.94897 | 1.2                     | 16.584           | 0.45     | -2.63                   |                  | 14.4        | 0.536      | 14.059 | 0      | -22.9             | 12.9  |
| J310171    | 2031-03-17 09:18:12.22 | 17 48 04.30600           | -22 52 03.02399 | 3.3                     | 14.361           | 181.21   | 13.72                   | 5.235            | 54.0        | 7.579      | 13.773 | 12.249 | 313.2             | 88.9  |
| Pgt        | 4068887574879032320    | 17 48 04.28406           | -22 52 17.38204 | 2.1                     | 54.531           | 0.45     | -2.63                   |                  | 52.5        |            | 13.364 | 0      | -22.9             | 13.8  |
| J310172    | 2031-03-17 10:21:16.38 | 17 48 05.25459           | -22 52 29.43549 | 2.5                     | 11.766           | 1.22     | 13.70                   | 5.235            | -41.5       | 8.394      | 14.046 | 12.618 | 297.4             | 88.9  |
| Pgt        | 4068887574878978304    | 17 48 05.27276           | -22 52 17.67242 | 1.6                     | 44.670           | 0.45     | -2.63                   |                  | -43.1       |            | 13.636 | 0      | -22.9             | 14.4  |
| J310173    | 2031-03-17 20:33:05.28 | 17 48 14.77457           | -22 52 32.75272 | 3.2                     | 12.305           | 1.21     | 13.50                   | 5.228            | -43.6       | 8.624      | 14.803 | 13.303 | 144.0             | 89.3  |
| Pgt        | 4068892655933910656    | 17 48 14.79336           | -22 52 20.45012 | 1.9                     | 46.657           | 0.43     | -2.63                   |                  | -45.2       |            | 14.376 | 0      | -22.9             | 20.4  |
| J310174    | 2031-03-18 19:34:59.35 | 17 48 35.83213           | -22 52 22.47397 | 1.7                     | 3.994            | 181.17   | 13.05                   | 5.212            | 14.7        | 9.204      | 14.232 | 12.948 | 157.7             | 90.2  |
| Pgt        | 4068889906987970176    | 17 48 35.82624           | -22 52 26.46742 | 1.0                     | 15.100           | 0.39     | -2.63                   |                  | 13.0        | 0.506      | 13.768 | 0      | -22.9             | 33.9  |
| J310175    | 2031-03-19 08:23:53.98 | 17 48 47.22402           | -22 52 42.43231 | 1.8                     | 12.769           | 1.16     | 12.79                   | 5.204            | -45.3       | 9.192      | 13.699 | 12.520 | 325.0             | 90.7  |
| Pgt        | 4068889769548977024    | 17 48 47.24274           | -22 52 29.66598 | 1.1                     | 48.191           | 0.37     | -2.63                   |                  | -46.8       | 0.397      | 13.214 | 0      | -22.9             | 41.4  |
| J310176    | 2031-03-19 09:23:34.69 | 17 48 48.13099           | -22 52 22.47516 | 2.2                     | 7.436            | 181.15   | 12.77                   | 5.203            | 26.8        | 9.658      | 11.288 | 10.722 | 310.0             | 90.7  |
| Pgt        | 4068889769548792704    | 17 48 48.12022           | -22 52 29.90992 | 1.4                     | 28.061           | 0.37     | -2.63                   |                  | 25.1        | 0.192      | 10.801 | 0      | -22.9             | 42.0  |
| J310177    | 2031-03-19 13:57:31.28 | 17 48 52.13365           | -22 52 30.09759 | 3.1                     | 0.924            | 181.14   | 12.68                   | 5.200            | 4.1         | 7.955      | 13.853 | 12.413 | 241.4             | 90.9  |
| Pgt        | 4068889739544925056    | 17 48 52.13232           | -22 52 31.02183 | 1.8                     | 3.486            | 0.36     | -2.63                   |                  | 2.3         | 0.913      | 13.358 | 0      | -22.9             | 44.7  |
| J310178    | 2031-03-20 04:59:42.23 | 17 49 05.13872           | -22 52 50.53529 | 2.5                     | 15.945           | 1.14     | 12.39                   | 5.190            | -59.5       | 7.914      | 13.584 | 12.172 | 15.3              | 91.5  |
| Pgt        | 4068890220580971392    | 17 49 05.16160           | -22 52 34.59312 | 1.7                     | 60.017           | 0.34     | -2.63                   |                  | -61.0       | 1.088      | 13.064 | 0      | -22.9             | 53.5  |
| J310179    | 2031-03-20 12:59:15.67 | 17 49 11.96514           | -22 52 41.06367 | 1.8                     | 4.629            | 1.12     | 12.23                   | 5.184            | -15.1       | 8.888      | 13.873 | 12.613 | 255.1             | 91.8  |
| Pgt        | 4068890254940581504    | 17 49 11.97169           | -22 52 36.43551 | 1.1                     | 17.405           | 0.33     | -2.62                   |                  | -16.9       | 0.522      | 13.339 | 0      | -22.9             | 58.1  |
| J310180    | 2031-03-20 17:16:13.18 | 17 49 15.58471           | -22 52 39.25822 | 2.2                     | 1.852            | 1.11     | 12.14                   | 5.181            | -5.5        | 9.967      | 14.884 | 13.641 | 190.7             | 91.9  |
| Pgt        | 4068878533914171392    | 17 49 15.58731           | -22 52 37.40703 | 1.6                     | 6.958            | 0.32     | -2.62                   |                  | -7.3        | 0.351      | 14.342 | 0      | -22.9             | 60.6  |
| J310181    | 2031-03-20 23:49:04.55 | 17 49 21.04508           | -22 52 56.51932 | 3.3                     | 17.651           | 1.11     | 12.01                   | 5.177            | -69.5       | 9.045      | 14.796 | 13.368 | 92.2              | 92.2  |
| Pgt        | 4068878847502336128    | 17 49 21.06993           | -22 52 38.87163 | 2.0                     | 66.275           | 0.31     | -2.62                   |                  | -71.0       | 0.667      | 14.242 | 0      | -22.9             | 64.4  |
| J310182    | 2031-03-21 00:01:25.54 | 17 49 21.25624           | -22 52 28.19879 | 4.9                     | 10.720           | 181.10   | 12.01                   | 5.177            | 38.6        | 7.598      | 14.107 | 12.563 | 89.1              | 92.2  |
| Pgt        | 4068878847502378624    | 17 49 21.24140           | -22 52 38.91727 | 3.0                     | 40.251           | 0.31     | -2.62                   |                  | 37.0        |            | 13.553 | 0      | -22.9             | 64.5  |
| J310183    | 2031-03-21 09:28:37.34 | 17 49 29.04238           | -22 52 52.45590 | 2.3                     | 11.471           | 1.10     | 11.82                   | 5.170            | -39.8       | 9.881      | 14.654 | 13.436 | 307.0             | 92.6  |
| Pgt        | 4068878675703485440    | 17 49 29.05831           | -22 52 40.98739 | 1.3                     | 43.015           | 0.30     | -2.62                   |                  | -41.4       | 0.311      | 14.083 | 0      | -22.9             | 70.0  |
| J310184    | 2031-03-22 01:03:19.74 | 17 49 41.66970           | -22 53 00.50980 | 2.1                     | 16.224           | 1.09     | 11.51                   | 5.160            | -60.5       | 8.886      | 14.407 | 13.066 | 72.7              | 93.2  |
| Pgt        | 4068901387499961984    | 17 49 41.69193           | -22 52 44.28906 | 1.3                     | 60.715           | 0.27     | -2.62                   |                  | -62.0       |            | 13.807 | 0      | -22.9             | 79.0  |
| J310185    | 2031-03-22 09:30:25.16 | 17 49 48.42844           | -22 52 36.21458 | 1.8                     | 9.811            | 181.06   | 11.34                   | 5.154            | 35.1        | 9.646      | 14.234 | 13.062 | 305.6             | 93.5  |
| Pgt        | 4068901215701181568    | 17 49 48.41532           | -22 52 46.02406 | 1.0                     | 36.676           | 0.26     | -2.62                   |                  | 33.4        | 0.326      | 13.618 | 0      | -22.9             | 83.8  |
| J310186    | 2031-03-22 10:11:21.38 | 17 49 48.95876           | -22 52 42.66102 | 4.0                     | 3.502            | 181.06   | 11.33                   | 5.154            | 12.9        | 8.509      | 14.788 | 13.286 | 295.4             | 93.5  |
| Pgt        | 4068901215701163648    | 17 49 48.95406           | -22 52 46.16244 | 2.4                     | 13.090           | 0.26     | -2.62                   |                  | 11.1        |            | 14.171 | 0      | -22.9             | 84.2  |
| J310187    | 2031-03-22 14:37:02.50 | 17 49 52.43248           | -22 52 49.52230 | 1.9                     | 2.468            | 1.06     | 11.24                   | 5.151            | -7.5        | 9.410      | 14.657 | 13.361 | 228.8             | 93.7  |
| Pgt        | 4068901250060832896    | 17 49 52.43579           | -22 52 47.05452 | 1.1                     | 9.221            | 0.25     | -2.62                   |                  | -9.4        | 0.456      | 14.031 | 0      | -22.9             | 86.7  |
| J310188    | 2031-03-22 15:28:06.24 | 17 49 53.08347           | -22 53 00.97827 | 4.0                     | 13.756           | 1.07     | 11.22                   | 5.150            | -48.8       | 6.986      | 13.025 | 11.574 | 216.0             | 93.7  |
| Pgt        | 4068901245744106880    | 17 49 53.10203           | -22 52 47.22478 | 2.4                     | 51.383           | 0.25     | -2.62                   |                  | -50.4       |            | 12.398 | 0      | -22.9             | 87.2  |

Table 2 continued on next page

Table 2 (continued)

| Event ID   | C/A Epoch              | ICRS Star Coord at Epoch |                 | $\sigma(\alpha_*)$ (km) | C/A ( $''$ )     | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|------------|------------------------|--------------------------|-----------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type | Source ID              | Geocentric               | Object Position | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J310189    | 2031-03-22 16:02:41.16 | 17 49 53.53256           | -22 53 02.26879 | 2.0                     | 14.932           | 1.07     | 11.21                   | 5.150            | -54.0       | 9.832      | 14.641 | 13.523 | 207.3             | 93.7  |
| Pgt        | 4068901245863202560    | 17 49 53.55271           | -22 52 47.33988 | 1.2                     | 55.770           | 0.25     | -2.62                   |                  | -55.5       | 0.262      | 14.013 | 0      | -22.9             | 87.5  |
| J310190    | 2031-03-23 14:16:28.20 | 17 50 10.59073           | -22 53 03.99424 | 1.8                     | 12.348           | 1.05     | 10.76                   | 5.135            | -42.9       | 6.986      | 10.571 | 9.561  | 233.0             | 94.6  |
| Pgt        | 4068898466921764224    | 17 50 10.60703           | -22 52 51.64865 | 1.1                     | 45.985           | 0.22     | -2.62                   |                  | -44.5       | 1.072      | 9.898  | 0      | -22.9             | 100.0 |
| J310191    | 2031-03-23 19:15:51.67 | 17 50 14.36022           | -22 52 42.67615 | 1.5                     | 9.907            | 181.02   | 10.66                   | 5.132            | 35.3        | 9.219      | 13.848 | 12.664 | 158.0             | 94.8  |
| Pgt        | 4068898501282493696    | 17 50 14.34741           | -22 52 52.58138 | 0.8                     | 36.870           | 0.21     | -2.62                   |                  | 33.6        | 0.403      | 13.165 | 0      | -22.9             | 102.7 |
| J310192    | 2031-03-23 19:49:09.57 | 17 50 14.73714           | -22 53 11.08775 | 1.4                     | 18.406           | 1.04     | 10.65                   | 5.131            | -74.4       | 8.547      | 13.706 | 12.427 | 149.6             | 94.8  |
| Pgt        | 4068898501281458432    | 17 50 14.76141           | -22 52 52.68435 | 0.8                     | 68.499           | 0.21     | -2.62                   |                  | -75.8       | 0.637      | 13.022 | 0      | -22.9             | 103.0 |
| J310193    | 2031-03-23 20:31:15.21 | 17 50 15.30701           | -22 52 35.06212 | 2.6                     | 17.755           | 181.02   | 10.64                   | 5.131            | 70.6        | 8.950      | 14.750 | 13.363 | 139.1             | 94.8  |
| Pgt        | 4068898501281479040    | 17 50 15.28420           | -22 52 52.81429 | 1.4                     | 66.068           | 0.21     | -2.62                   |                  | 69.1        |            | 14.065 | 0      | -22.9             | 103.4 |
| J310194    | 2031-03-23 23:24:00.07 | 17 50 17.41872           | -22 52 56.56729 | 4.9                     | 3.223            | 1.03     | 10.58                   | 5.129            | -10.1       | 7.909      | 14.777 | 13.210 | 95.8              | 94.9  |
| Pgt        | 4068897779671299456    | 17 50 17.42291           | -22 52 53.34501 | 2.9                     | 11.988           | 0.21     | -2.62                   |                  | -11.9       | 1.462      | 14.086 | 0      | -22.9             | 105.0 |
| J310195    | 2031-03-24 02:20:00.08 | 17 50 19.60415           | -22 52 43.44050 | 2.3                     | 10.443           | 181.02   | 10.52                   | 5.127            | 37.2        | 9.270      | 14.942 | 13.588 | 51.7              | 95.0  |
| Pgt        | 4068897779726928256    | 17 50 19.59074           | -22 52 53.88151 | 1.3                     | 38.829           | 0.20     | -2.62                   |                  | 35.5        | 0.564      | 14.245 | 0      | -22.9             | 106.6 |
| J310196    | 2031-03-24 14:09:05.98 | 17 50 28.19527           | -22 53 07.75986 | 2.8                     | 11.761           | 1.02     | 10.29                   | 5.119            | -40.4       | 8.361      | 14.300 | 12.892 | 234.0             | 95.5  |
| Pgt        | 4068898982317689344    | 17 50 28.21046           | -22 52 56.00096 | 1.5                     | 43.662           | 0.19     | -2.62                   |                  | -42.1       | 0.948      | 13.578 | 0      | -22.9             | 113.1 |
| J310197    | 2031-03-25 04:33:25.40 | 17 50 38.49343           | -22 52 39.67750 | 2.0                     | 18.821           | 180.99   | 10.00                   | 5.109            | 79.3        | 9.211      | 14.554 | 13.246 | 17.3              | 96.1  |
| Pgt        | 4068899085396835072    | 17 50 38.46996           | -22 52 58.49583 | 1.1                     | 69.741           | 0.17     | -2.62                   |                  | 77.8        | 0.606      | 13.801 | 0      | -22.9             | 120.8 |
| J310198    | 2031-03-26 10:24:25.21 | 17 50 58.85293           | -22 53 10.27531 | 1.3                     | 6.910            | 0.98     | 9.40                    | 5.089            | -22.6       | 9.382      | 13.792 | 12.631 | 288.4             | 97.2  |
| Pgt        | 4068710828448334208    | 17 50 58.86152           | -22 53 03.36600 | 0.8                     | 25.506           | 0.13     | -2.62                   |                  | -24.5       | 0.339      | 12.972 | 0      | -22.9             | 136.6 |
| J310199    | 2031-03-27 06:01:21.98 | 17 51 11.62761           | -22 53 01.06117 | 1.3                     | 5.298            | 180.96   | 9.01                    | 5.076            | 18.9        | 8.795      | 13.418 | 12.227 | 353.4             | 98.0  |
| Pgt        | 4068716497806428672    | 17 51 11.62118           | -22 53 06.35877 | 0.8                     | 19.505           | 0.11     | -2.62                   |                  | 17.0        |            | 12.552 | 0      | -22.9             | 146.6 |
| J310200    | 2031-03-27 14:52:52.34 | 17 51 17.24016           | -22 52 48.02981 | 7.4                     | 19.631           | 180.94   | 8.83                    | 5.070            |             | 8.476      | 14.992 |        | 220.2             | 98.3  |
| Pt         | 4068716527774828032    | 17 51 17.21679           | -22 53 07.65811 | 4.8                     | 72.186           | 0.10     | -2.62                   |                  |             | 0.803      | 14.105 | 0      | -22.9             | 151.1 |
| J310201    | 2031-03-28 04:17:13.50 | 17 51 25.50792           | -22 52 50.62987 | 1.4                     | 18.938           | 180.94   | 8.57                    | 5.061            | 78.6        | 9.889      | 11.824 | 11.157 | 18.6              | 98.8  |
| Pgt        | 4068713607167214080    | 17 51 25.48556           | -22 53 09.56490 | 0.9                     | 69.513           | 0.09     | -2.62                   |                  | 77.1        | 0.180      | 10.903 | 0      | -22.9             | 157.9 |
| J310202*** | 2031-03-29 10:41:04.61 | 17 51 43.36474           | -22 52 57.47719 | 2.7                     | 16.160           | 180.92   | 7.96                    | 5.041            | 59.8        | 9.744      | 14.968 | 13.662 | 281.5             | 100.0 |
| Pgt        | 4068713061832895104    | 17 51 43.34592           | -22 53 13.63510 | 1.5                     | 59.080           | 0.05     | -2.62                   |                  | 58.2        | 0.389      | 13.967 | 0      | -22.9             | 172.8 |
| J310203    | 2031-03-29 21:35:40.21 | 17 51 49.46513           | -22 53 04.33213 | 3.0                     | 10.683           | 180.92   | 7.74                    | 5.034            | 37.5        | 8.961      | 14.888 | 13.436 | 117.4             | 100.4 |
| Pgt        | 4068714466168649472    | 17 51 49.45268           | -22 53 15.01352 | 1.9                     | 38.999           | 0.04     | -2.62                   |                  | 35.6        |            | 13.857 | 0      | -22.9             | 177.5 |
| J310204    | 2031-03-30 05:35:27.34 | 17 51 53.84851           | -22 52 56.95533 | 1.9                     | 19.045           | 180.91   | 7.58                    | 5.028            | 78.4        | 9.453      | 14.810 | 13.483 | 357.2             | 100.8 |
| Pgt        | 4068714298783362176    | 17 51 53.82656           | -22 53 15.99789 | 1.2                     | 69.454           | 0.04     | -2.62                   |                  | 76.9        |            | 13.757 | 0      | -22.9             | 176.9 |
| J310205    | 2031-03-31 11:36:31.15 | 17 52 09.46971           | -22 53 25.52072 | 2.5                     | 6.019            | 0.93     | 6.99                    | 5.008            | -19.1       | 8.807      | 14.503 | 13.102 | 265.7             | 101.9 |
| Pgt        | 4068702547749958784    | 17 52 09.47680           | -22 53 19.50280 | 1.5                     | 21.862           | 0.01     | -2.61                   |                  | -21.2       | 0.769      | 13.361 | 0      | -22.9             | 162.8 |
| J310206    | 2031-03-31 17:00:03.85 | 17 52 12.16835           | -22 53 11.63424 | 3.2                     | 8.469            | 180.92   | 6.88                    | 5.005            | 29.5        | 8.384      | 14.504 | 13.028 | 184.6             | 102.1 |
| Pgt        | 4068702719548635520    | 17 52 12.15855           | -22 53 20.10178 | 2.0                     | 30.740           | 0.00     | -2.61                   |                  | 27.5        |            | 13.345 | 0      | -22.9             | 160.1 |
| J310207    | 2031-04-01 04:34:36.80 | 17 52 17.75953           | -22 53 40.37290 | 2.8                     | 19.018           | 0.95     | 6.65                    | 4.997            | -75.3       | 9.096      | 14.875 | 13.488 | 10.5              | 102.6 |
| Pgt        | 4068702685188835584    | 17 52 17.78230           | -22 53 21.35784 | 1.6                     | 68.926           | -0.01    | -2.61                   |                  | -77.0       | 0.693      | 13.679 | 0      | -22.9             | 154.4 |
| J310208    | 2031-04-01 23:37:49.48 | 17 52 26.63013           | -22 53 34.15431 | 1.5                     | 10.818           | 0.94     | 6.27                    | 4.985            | -35.6       | 8.991      | 14.219 | 12.922 | 84.0              | 103.4 |
| Pgt        | 4068701963634270848    | 17 52 26.64298           | -22 53 23.33802 | 1.0                     | 39.108           | -0.02    | -2.61                   |                  | -37.7       |            | 12.960 | 0      | -22.9             | 145.0 |
| J310209    | 2031-04-02 00:18:36.31 | 17 52 26.97364           | -22 53 02.57921 | 2.0                     | 20.830           | 180.90   | 6.26                    | 4.984            |             | 3.977      | 8.392  | 7.166  | 73.8              | 103.4 |
| P          | 4068702062295135104    | 17 52 26.94989           | -22 53 23.40670 | 1.2                     | 75.298           | -0.02    | -2.61                   |                  |             | 5.256      | 7.131  | 0      | -22.9             | 144.6 |
| J310210    | 2031-04-02 08:06:06.12 | 17 52 30.44083           | -22 53 08.61299 | 6.4                     | 15.574           | 180.91   | 6.11                    | 4.979            | 56.2        | 8.787      | 14.860 | 13.370 | 316.6             | 103.7 |
| Pgt        | 4070203209299434496    | 17 52 30.42292           | -22 53 24.18477 | 4.1                     | 56.239           | -0.03    | -2.61                   |                  | 54.4        | 0.740      | 13.572 | 0      | -22.9             | 140.7 |
| J310211    | 2031-04-02 22:58:18.83 | 17 52 36.80721           | -22 53 37.08775 | 2.2                     | 11.465           | 0.95     | 5.81                    | 4.969            | -37.9       | 9.194      | 14.690 | 13.320 | 93.0              | 104.3 |
| Pgt        | 4070202998748362240    | 17 52 36.82097           | -22 53 25.62403 | 1.3                     | 41.322           | -0.04    | -2.61                   |                  | -39.9       | 0.507      | 13.348 | 0      | -22.9             | 133.2 |
| J310212    | 2031-04-04 02:54:20.33 | 17 52 48.00074           | -22 53 46.90404 | 3.5                     | 18.738           | 0.98     | 5.26                    | 4.951            | -71.4       | 9.114      | 14.990 | 13.561 | 32.8              | 105.4 |
| Pgt        | 4070200043810737024    | 17 52 48.02386           | -22 53 28.16914 | 2.1                     | 67.284           | -0.06    | -2.61                   |                  | -73.2       |            | 13.541 | 0      | -22.9             | 118.8 |
| J310213    | 2031-04-04 05:47:40.43 | 17 52 49.14061           | -22 53 11.87599 | 1.7                     | 16.547           | 180.93   | 5.21                    | 4.949            | 60.3        | 9.238      | 14.418 | 13.144 | 349.4             | 105.5 |
| Pgt        | 4070200082548880896    | 17 52 49.12120           | -22 53 28.42105 | 1.0                     | 59.396           | -0.06    | -2.61                   |                  | 58.5        | 0.446      | 12.957 | 0      | -22.9             | 117.3 |

Table 2 continued on next page

Table 2 (continued)

| Event ID   | C/A Epoch              | ICRS Star Coord at Epoch |                 | $\sigma(\alpha_*)$ (km) | C/A ( $''$ )     | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|------------|------------------------|--------------------------|-----------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type | Source ID              | Geocentric               | Object Position | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J310214    | 2031-04-04 16:34:24.83 | 17 52 53.13420           | -22 53 12.59224 | 1.9                     | 16.753           | 180.94   | 5.00                    | 4.942            | 61.2        | 7.470      | 12.762 | 11.459 | 187.3             | 105.9 |
| Pgt        | 4070200460505979008    | 17 52 53.11437           | -22 53 29.34325 | 1.2                     | 60.051           | -0.07    | -2.61                   |                  | 59.4        | 1.041      | 11.256 | 0      | -22.9             | 111.6 |
| J310215    | 2031-04-05 00:30:08.82 | 17 52 55.94041           | -22 53 37.68089 | 5.2                     | 7.678            | 0.98     | 4.84                    | 4.937            | -24.3       | 4.807      | 11.483 | 9.945  | 68.0              | 106.2 |
| Pgt        | 4070200249968817792    | 17 52 55.94993           | -22 53 30.00383 | 3.1                     | 27.493           | -0.08    | -2.61                   |                  | -26.6       | 6.508      | 9.943  | 1      | -22.9             | 107.3 |
| J310216    | 2031-04-15 16:54:33.74 | 17 53 40.37207           | -22 53 48.53391 | 4.4                     | 3.504            | 339.50   | -0.12                   | 4.776            | -5.6        | 7.572      | 14.979 | 13.364 | 171.6             | 116.6 |
| Pgt        | 4070154006130346112    | 17 53 40.28328           | -22 53 45.25167 | 2.9                     | 12.137           | -0.16    | -2.61                   |                  | -17.8       | 9.397      | 0      | 0      | -22.9             | 42.0  |
| J310217    | 2031-04-22 07:19:16.14 | 17 53 21.09948           | -22 54 00.31793 | 2.2                     | 9.663            | 359.52   | -3.05                   | 4.683            | -30.1       | 9.210      | 14.959 | 13.595 | 308.8             | 123.1 |
| Pgt        | 4070200731005144576    | 17 53 21.09364           | -22 53 50.65525 | 1.5                     | 32.818           | -0.12    | -2.61                   |                  | -30.9       | 0.561      | 12.916 | 0      | -22.9             | 130.0 |
| J310218    | 2031-04-25 20:54:48.13 | 17 52 55.94041           | -22 53 37.68078 | 4.9                     | 14.726           | 179.85   | -4.56                   | 4.635            | 47.6        | 4.807      | 11.483 | 9.945  | 101.3             | 126.7 |
| Pgt        | 4070200249968817792    | 17 52 55.94324           | -22 53 52.40699 | 2.9                     | 49.504           | -0.08    | -2.61                   |                  | 47.4        | 6.110      | 9.878  | 1      | -22.9             | 173.5 |
| J310219    | 2031-04-26 18:28:10.58 | 17 52 48.00071           | -22 53 46.90456 | 3.3                     | 5.783            | 179.88   | -4.93                   | 4.623            | 17.9        | 9.114      | 14.990 | 13.561 | 137.1             | 127.6 |
| Pgt        | 4070200043810737024    | 17 52 48.00156           | -22 53 52.68790 | 2.0                     | 19.393           | -0.06    | -2.61                   |                  | 17.8        |            | 13.470 | 0      | -22.9             | 174.9 |
| J310220    | 2031-04-27 22:16:31.05 | 17 52 36.80719           | -22 53 37.08843 | 2.0                     | 15.853           | 179.95   | -5.41                   | 4.608            | 51.4        | 9.194      | 14.690 | 13.320 | 78.8              | 128.7 |
| Pgt        | 4070202998748362240    | 17 52 36.80818           | -22 53 52.94191 | 1.2                     | 52.989           | -0.04    | -2.61                   |                  | 51.4        | 0.470      | 13.270 | 0      | -22.9             | 161.5 |
| J310221    | 2031-04-28 21:32:26.11 | 17 52 26.63015           | -22 53 34.15467 | 1.4                     | 18.899           | 179.99   | -5.80                   | 4.596            | 64.6        | 8.991      | 14.219 | 12.922 | 88.8              | 129.7 |
| Pgt        | 4068701963634270848    | 17 52 26.63028           | -22 53 53.05352 | 0.9                     | 63.000           | -0.02    | -2.61                   |                  | 64.6        |            | 12.875 | 0      | -22.9             | 150.0 |
| J310222    | 2031-04-28 21:57:12.65 | 17 52 26.44298           | -22 53 53.94949 | 3.7                     | 0.895            | 359.98   | -5.81                   | 4.596            | -2.7        | 7.556      | 13.968 | 12.442 | 82.6              | 129.7 |
| Pgt        | 4068701963634259072    | 17 52 26.44295           | -22 53 53.05463 | 2.3                     | 2.983            | -0.02    | -2.61                   |                  | -2.7        |            | 12.625 | 0      | -22.9             | 149.8 |
| J310223    | 2031-04-29 16:34:05.39 | 17 52 17.75952           | -22 53 40.37327 | 2.5                     | 12.699           | 180.02   | -6.12                   | 4.586            | 39.8        | 9.096      | 14.875 | 13.488 | 162.6             | 130.5 |
| Pgt        | 4068702685188835584    | 17 52 17.75921           | -22 53 53.07265 | 1.5                     | 42.242           | -0.01    | -2.61                   |                  | 39.8        | 0.636      | 13.588 | 0      | -22.9             | 140.6 |
| J310224    | 2031-04-30 20:08:25.58 | 17 52 04.03940           | -22 54 01.67298 | 7.0                     | 8.698            | 0.04     | -6.57                   | 4.572            | -26.7       | 7.510      | 14.873 | 13.134 | 107.8             | 131.7 |
| Pgt        | 4068702508974726528    | 17 52 04.03988           | -22 53 52.97468 | 4.5                     | 28.844           | 0.02     | -2.61                   |                  | -26.7       | 1.759      | 13.664 | 0      | -22.9             | 126.6 |
| J310225    | 2031-05-01 15:30:59.16 | 17 51 53.79170           | -22 53 58.95777 | 3.1                     | 6.145            | 0.08     | -6.88                   | 4.562            | -18.8       | 8.989      | 14.906 | 13.450 | 176.3             | 132.5 |
| Pgt        | 4068714195705048832    | 17 51 53.79229           | -22 53 52.81281 | 1.9                     | 20.334           | 0.04     | -2.61                   |                  | -18.7       |            | 13.748 | 0      | -22.9             | 116.6 |
| J310226    | 2031-05-01 17:09:16.30 | 17 51 52.90418           | -22 53 44.65440 | 1.3                     | 8.141            | 180.09   | -6.91                   | 4.562            | 24.8        | 8.711      | 13.954 | 12.657 | 151.7             | 132.6 |
| Pgt        | 4068714264424528768    | 17 51 52.90326           | -22 53 52.79534 | 0.8                     | 26.934           | 0.04     | -2.61                   |                  | 24.9        | 0.497      | 12.799 | 0      | -22.9             | 115.8 |
| J310227    | 2031-05-01 23:13:45.09 | 17 51 49.57580           | -22 53 50.13358 | 1.7                     | 2.592            | 180.09   | -7.00                   | 4.559            | 7.8         | 6.808      | 11.962 | 10.640 | 60.3              | 132.8 |
| Pgt        | 4068712782541394560    | 17 51 49.57549           | -22 53 52.72520 | 1.0                     | 8.568            | 0.04     | -2.61                   |                  | 7.9         | 1.324      | 10.823 | 0      | -22.9             | 112.6 |
| J310228    | 2031-05-02 03:20:32.76 | 17 51 47.29586           | -22 53 42.51204 | 1.2                     | 10.161           | 180.11   | -7.07                   | 4.557            | 31.2        | 8.869      | 13.407 | 12.230 | 358.4             | 133.0 |
| Pgt        | 4068712993079920512    | 17 51 47.29449           | -22 53 52.67289 | 0.8                     | 33.579           | 0.05     | -2.61                   |                  | 31.3        |            | 12.278 | 0      | -22.9             | 110.4 |
| J310229    | 2031-05-02 21:21:41.74 | 17 51 37.04214           | -22 53 37.27619 | 1.5                     | 15.122           | 180.14   | -7.35                   | 4.548            | 47.8        | 9.430      | 14.605 | 13.310 | 87.4              | 133.8 |
| Pgt        | 4068713675889698432    | 17 51 37.03955           | -22 53 52.39785 | 0.9                     | 49.875           | 0.07     | -2.61                   |                  | 48.0        | 0.392      | 13.519 | 0      | -22.9             | 100.8 |
| J310230    | 2031-05-03 09:59:26.94 | 17 51 29.60055           | -22 53 50.05704 | 1.3                     | 2.102            | 180.14   | -7.55                   | 4.541            | 6.3         | 9.014      | 13.589 | 12.404 | 257.4             | 134.3 |
| Pgt        | 4068713332297215616    | 17 51 29.60017           | -22 53 52.15875 | 0.7                     | 6.923            | 0.08     | -2.61                   |                  | 6.4         | 0.386      | 12.532 | 0      | -22.9             | 93.9  |
| J310231    | 2031-05-04 01:17:02.36 | 17 51 20.31024           | -22 54 09.51858 | 2.0                     | 17.704           | 0.15     | -7.79                   | 4.534            | -57.9       | 9.389      | 14.832 | 13.484 | 27.3              | 135.0 |
| Pgt        | 4068713474149412096    | 17 51 20.31363           | -22 53 51.81482 | 1.2                     | 58.217           | 0.10     | -2.61                   |                  | -57.8       | 0.464      | 13.809 | 0      | -22.9             | 85.5  |
| J310232    | 2031-05-04 21:11:20.41 | 17 51 07.77670           | -22 53 35.61888 | 1.0                     | 15.658           | 180.20   | -8.10                   | 4.524            | 49.5        | 9.283      | 12.630 | 11.659 | 87.9              | 135.8 |
| Pgt        | 4068716459025498880    | 17 51 07.77271           | -22 53 51.27709 | 0.6                     | 51.382           | 0.12     | -2.61                   |                  | 49.7        | 0.258      | 11.648 | 0      | -22.9             | 74.2  |
| J310233    | 2031-05-05 07:57:07.68 | 17 51 00.77996           | -22 53 54.61017 | 2.7                     | 3.668            | 0.20     | -8.26                   | 4.519            | -11.1       | 7.645      | 13.824 | 12.342 | 285.9             | 136.3 |
| Pgt        | 4068710755316861440    | 17 51 00.78090           | -22 53 50.94199 | 1.8                     | 12.024           | 0.13     | -2.61                   |                  | -10.9       | 1.202      | 12.863 | 0      | -22.9             | 67.9  |
| J310234    | 2031-05-05 12:22:23.53 | 17 50 57.86207           | -22 54 06.68638 | 3.1                     | 15.892           | 0.20     | -8.33                   | 4.517            | -50.4       | 8.543      | 14.676 | 13.206 | 219.4             | 136.5 |
| Pgt        | 4068710725369086976    | 17 50 57.86612           | -22 53 50.79491 | 2.0                     | 52.065           | 0.14     | -2.61                   |                  | -50.3       |            | 13.725 | 0      | -22.9             | 65.3  |
| J310235    | 2031-05-05 13:47:16.80 | 17 50 56.93046           | -22 53 42.15507 | 1.6                     | 8.592            | 180.22   | -8.35                   | 4.517            | 25.9        | 8.617      | 14.236 | 12.893 | 198.1             | 136.5 |
| Pgt        | 4068710725369113856    | 17 50 56.92808           | -22 53 50.74668 | 1.0                     | 28.145           | 0.14     | -2.61                   |                  | 26.1        | 0.674      | 13.287 | 0      | -22.9             | 64.5  |

<sup>a</sup> A nearby event has the same 2MASS ID as this event, resulting in a corresponding K magnitude ambiguity.

\* Superscript \* indicates RUWE > 1.4, \*\* indicates RUWE > 2, and \*\*\* indicates RUWE > 5. See machine-readable file for RUWE values.

Table 3. Geocentric Jupiter Occultation Predictions 2023 to 2050 for  $K \leq 10$  (part 3 of 11)

| Event ID   | C/A Epoch              | ICRS Star Coord at Epoch   |                 | $\sigma(\alpha_*)$ (km) | C/A (")          | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|------------|------------------------|----------------------------|-----------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type | Source ID              | Geocentric Object Position |                 | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J310236    | 2031-05-05 15:41:06.11 | 17 50 55.67289             | -22 53 28.08669 | 7.5                     | 22.595           | 180.23   | -8.38                   | 4.516            |             | 5.037      | 14.241 | 12.509 | 169.6             | 136.6 |
| P          | 4068711481245506432    | 17 50 55.66629             | -22 53 50.68111 | 4.6                     | 74.001           | 0.14     | -2.61                   |                  |             | 8.652      | 13.297 | 0      | -22.9             | 63.4  |
| J310237    | 2031-05-05 19:19:51.06 | 17 50 53.22427             | -22 54 05.99302 | 2.8                     | 15.441           | 0.21     | -8.43                   | 4.514            | -48.7       | 8.385      | 14.509 | 13.032 | 114.8             | 136.8 |
| Pgt        | 4068711446923639552    | 17 50 53.22840             | -22 53 50.55225 | 1.7                     | 50.552           | 0.14     | -2.61                   |                  | -48.6       | 1.086      | 13.571 | 0      | -22.9             | 61.3  |
| J310238    | 2031-05-06 05:52:57.78 | 17 50 46.08046             | -22 53 40.37383 | 3.0                     | 9.784            | 180.24   | -8.59                   | 4.509            | 29.6        | 8.945      | 14.993 | 13.529 | 316.0             | 137.2 |
| Pgt        | 4068711137686084224    | 17 50 46.07747             | -22 53 50.15816 | 1.8                     | 31.998           | 0.16     | -2.61                   |                  | 29.8        | 0.695      | 14.075 | 0      | -22.9             | 55.0  |
| J310239    | 2031-05-06 07:34:13.53 | 17 50 44.92085             | -22 53 49.61041 | 1.7                     | 0.482            | 180.24   | -8.62                   | 4.508            | 1.4         | 9.658      | 14.920 | 13.618 | 290.6             | 137.3 |
| Pgt        | 4068711339432437120    | 17 50 44.92071             | -22 53 50.09218 | 1.0                     | 1.575            | 0.16     | -2.61                   |                  | 1.5         | 0.373      | 14.005 | 0      | -22.9             | 54.0  |
| J310240    | 2031-05-07 13:31:58.90 | 17 50 23.79594             | -22 53 37.03675 | 1.8                     | 11.742           | 180.28   | -9.06                   | 4.495            | 35.7        | 9.026      | 14.594 | 13.263 | 199.9             | 138.6 |
| Pgt        | 4068897711007383552    | 17 50 23.79173             | -22 53 48.77861 | 1.1                     | 38.277           | 0.20     | -2.61                   |                  | 35.9        | 0.574      | 13.734 | 0      | -22.9             | 35.9  |
| J310241    | 2031-05-07 20:37:18.25 | 17 50 18.63271             | -22 53 37.79775 | 1.2                     | 10.630           | 180.29   | -9.16                   | 4.491            | 32.2        | 9.352      | 12.891 | 11.905 | 93.2              | 138.9 |
| Pgt        | 4068897741007808000    | 17 50 18.62879             | -22 53 48.42743 | 0.7                     | 34.627           | 0.21     | -2.61                   |                  | 32.3        | 0.254      | 12.043 | 0      | -22.9             | 31.5  |
| J310242    | 2031-05-09 04:19:28.73 | 17 49 54.78100             | -22 53 57.68399 | 2.4                     | 11.024           | 0.32     | -9.62                   | 4.477            | -33.5       | 8.301      | 14.149 | 12.753 | 336.3             | 140.3 |
| Pgt        | 4068898192043999232    | 17 49 54.78549             | -22 53 46.65992 | 1.4                     | 35.799           | 0.25     | -2.61                   |                  | -33.3       | 0.968      | 13.354 | 0      | -22.9             | 12.1  |
| J310243    | 2031-05-09 16:11:19.14 | 17 49 45.54068             | -22 54 02.43744 | 3.7                     | 16.526           | 0.34     | -9.78                   | 4.472            | -52.2       | 8.458      | 14.819 | 13.318 | 157.8             | 140.8 |
| Pgt        | 4068901181341378816    | 17 49 45.54767             | -22 53 45.91158 | 2.3                     | 53.604           | 0.27     | -2.61                   |                  | -52.1       | 0.815      | 14.043 | 0      | -22.9             | 5.0   |
| J310244    | 2031-05-09 20:49:05.62 | 17 49 41.89827             | -22 53 42.18169 | 2.5                     | 3.425            | 180.35   | -9.85                   | 4.470            | 10.1        | 6.479      | 11.975 | 10.604 | 88.2              | 141.0 |
| Pgt        | 4068877915467340672    | 17 49 41.89675             | -22 53 45.60649 | 1.6                     | 11.104           | 0.27     | -2.61                   |                  | 10.3        |            | 11.206 | 0      | -22.9             | 2.7   |
| J310245    | 2031-05-09 23:31:25.52 | 17 49 39.75759             | -22 53 31.51994 | 5.1                     | 13.905           | 180.36   | -9.89                   | 4.469            | 42.6        | 7.993      | 14.964 | 13.370 | 47.4              | 141.1 |
| Pgt        | 4068877915438787456    | 17 49 39.75127             | -22 53 45.42473 | 3.1                     | 45.070           | 0.28     | -2.61                   |                  | 42.8        |            | 14.199 | 0      | -22.9             | 2.1   |
| J310246    | 2031-05-10 01:29:34.32 | 17 49 38.19200             | -22 53 28.46497 | 1.5                     | 16.826           | 180.36   | -9.91                   | 4.468            | 53.2        | 8.036      | 13.478 | 12.151 | 17.8              | 141.2 |
| Pgt        | 4068877919789000192    | 17 49 38.18427             | -22 53 45.29083 | 0.9                     | 54.528           | 0.28     | -2.61                   |                  | 53.3        | 0.745      | 12.716 | 0      | -22.9             | 2.5   |
| J310247    | 2031-05-10 07:33:58.87 | 17 49 33.32539             | -22 53 37.39127 | 4.7                     | 7.478            | 180.37   | -10.00                  | 4.466            | 22.2        | 8.252      | 14.886 | 13.329 | 286.5             | 141.4 |
| Pgt        | 4068877954148818944    | 17 49 33.32192             | -22 53 44.86907 | 2.7                     | 24.219           | 0.29     | -2.61                   |                  | 22.4        |            | 14.133 | 0      | -22.9             | 5.4   |
| J310248    | 2031-05-10 19:59:23.32 | 17 49 23.24973             | -22 53 21.25358 | 2.2                     | 22.711           | 180.39   | -10.17                  | 4.460            |             | 9.634      | 14.790 | 13.516 | 99.5              | 142.0 |
| Pt         | 4068878641343818240    | 17 49 23.23850             | -22 53 43.96423 | 1.2                     | 73.470           | 0.31     | -2.61                   |                  |             |            | 14.056 | 0      | -22.9             | 12.8  |
| J310249    | 2031-05-11 03:05:04.55 | 17 49 17.39476             | -22 53 47.98254 | 4.3                     | 4.561            | 0.39     | -10.27                  | 4.457            | -13.6       | 8.570      | 14.932 | 13.391 | 352.8             | 142.3 |
| Pgt        | 4068878435185468928    | 17 49 17.39699             | -22 53 43.42180 | 2.7                     | 14.744           | 0.32     | -2.61                   |                  | -13.5       |            | 14.208 | 0      | -22.9             | 17.1  |
| J310250    | 2031-05-11 04:46:05.49 | 17 49 16.00232             | -22 53 42.55014 | 3.3                     | 0.740            | 180.39   | -10.29                  | 4.457            | 2.1         | 8.449      | 14.689 | 13.191 | 327.5             | 142.4 |
| Pgt        | 4068878430995951872    | 17 49 16.00195             | -22 53 43.29034 | 2.0                     | 2.393            | 0.32     | -2.61                   |                  | 2.3         | 0.886      | 13.968 | 0      | -22.9             | 18.1  |
| J310251    | 2031-05-11 07:46:31.10 | 17 49 13.49255             | -22 54 02.07099 | 1.6                     | 19.018           | 0.39     | -10.33                  | 4.455            | -62.4       | 9.315      | 14.361 | 13.107 | 282.2             | 142.5 |
| Pgt        | 4068878400825791104    | 17 49 13.50184             | -22 53 43.05293 | 1.0                     | 61.456           | 0.32     | -2.61                   |                  | -62.2       | 0.395      | 13.644 | 0      | -22.9             | 19.9  |
| J310252    | 2031-05-11 09:24:45.51 | 17 49 12.12710             | -22 54 01.11027 | 2.1                     | 18.188           | 0.39     | -10.36                  | 4.455            | -58.6       | 9.843      | 14.921 | 13.645 | 257.6             | 142.6 |
| Pgt        | 4068878400825820800    | 17 49 12.13605             | -22 53 42.92225 | 1.3                     | 58.765           | 0.33     | -2.61                   |                  | -58.5       | 0.304      | 14.206 | 0      | -22.9             | 20.9  |
| J310253    | 2031-05-11 11:33:35.96 | 17 49 10.33089             | -22 54 01.18620 | 3.1                     | 18.437           | 0.39     | -10.39                  | 4.454            | -59.7       | 8.712      | 14.431 | 12.999 | 225.3             | 142.7 |
| Pgt        | 4068878396475087872    | 17 49 10.34002             | -22 53 42.74936 | 2.2                     | 59.557           | 0.33     | -2.61                   |                  | -59.6       | 0.672      | 13.719 | 0      | -22.9             | 22.2  |
| J310254    | 2031-05-11 16:45:25.83 | 17 49 05.96681             | -22 53 49.97745 | 1.2                     | 7.654            | 0.40     | -10.46                  | 4.452            | -22.9       | 8.680      | 13.189 | 12.026 | 147.1             | 142.9 |
| Pgt        | 4068890117501641600    | 17 49 05.97072             | -22 53 42.32376 | 0.8                     | 24.712           | 0.34     | -2.61                   |                  | -22.7       | 0.423      | 12.485 | 0      | -22.9             | 25.3  |
| J310255    | 2031-05-11 20:59:30.24 | 17 49 02.39747             | -22 53 23.00191 | 4.1                     | 18.968           | 180.42   | -10.51                  | 4.450            | 61.9        | 7.998      | 14.646 | 13.102 | 83.4              | 143.1 |
| Pgt        | 4068890186221236224    | 17 49 02.38737             | -22 53 41.96942 | 2.6                     | 61.217           | 0.34     | -2.61                   |                  | 62.0        | 0.634      | 13.948 | 0      | -22.9             | 27.9  |
| J310256*   | 2031-05-11 21:42:16.97 | 17 49 01.78496             | -22 53 36.24988 | 4.3                     | 5.659            | 180.42   | -10.52                  | 4.450            | 16.7        | 9.375      | 14.677 | 13.353 | 72.7              | 143.1 |
| Pgt        | 4068890181865402496    | 17 49 01.78199             | -22 53 41.90909 | 2.8                     | 18.264           | 0.34     | -2.61                   |                  | 16.9        | 0.398      | 13.980 | 0      | -22.9             | 28.3  |
| J310257    | 2031-05-11 23:42:57.47 | 17 49 00.07049             | -22 53 42.82086 | 5.6                     | 1.083            | 0.42     | -10.55                  | 4.449            | -3.3        | 8.074      | 14.977 | 13.357 | 42.4              | 143.2 |
| Pgt        | 406888910555087616     | 17 49 00.07106             | -22 53 41.73781 | 3.3                     | 3.495            | 0.35     | -2.61                   |                  | -3.1        |            | 14.283 | 0      | -22.9             | 29.5  |
| J310258    | 2031-05-12 03:45:14.90 | 17 48 56.61520             | -22 53 53.74426 | 2.0                     | 12.355           | 0.42     | -10.60                  | 4.447            | -37.5       | 9.739      | 14.937 | 13.653 | 341.7             | 143.4 |
| Pgt        | 406888880551248256     | 17 48 56.62169             | -22 53 41.38915 | 1.2                     | 39.851           | 0.35     | -2.61                   |                  | -37.3       | 0.366      | 14.248 | 0      | -22.9             | 32.0  |
| J310259    | 2031-05-12 09:54:57.29 | 17 48 51.31954             | -22 53 45.04117 | 4.2                     | 4.197            | 0.43     | -10.69                  | 4.445            | -12.5       | 8.294      | 14.912 | 13.353 | 249.0             | 143.6 |
| Pgt        | 406888949270841600     | 17 48 51.32181             | -22 53 40.84467 | 2.5                     | 13.528           | 0.36     | -2.61                   |                  | -12.3       |            | 14.231 | 0      | -22.9             | 35.6  |

Table 3 continued on next page









Table 3 (continued)

| Event ID   | C/A Epoch              | ICRS Star Coord at Epoch   |                 | $\sigma(\alpha_*)$ (km) | C/A ( $''$ )     | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|------------|------------------------|----------------------------|-----------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type | Source ID              | Geocentric Object Position |                 | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J310335    | 2031-05-24 18:46:07.40 | 17 43 48.11567             | -22 52 36.56494 | 2.8                     | 16.533           | 180.88   | -14.05                  | 4.342            | 50.4        | 8.448      | 14.310 | 12.876 | 102.7             | 156.7 |
| Pgt        | 4116870365426278144    | 17 43 48.09739             | -22 52 53.09600 | 1.7                     | 52.070           | 0.91     | -2.61                   |                  | 50.3        | 0.851      | 13.926 | 0      | -22.9             | 164.7 |
| J310336    | 2031-05-24 18:57:58.69 | 17 43 47.86081             | -22 52 59.37204 | 1.7                     | 6.325            | 0.87     | -14.05                  | 4.342            | -18.3       | 8.551      | 14.070 | 12.691 | 99.7              | 156.7 |
| Pgt        | 4116870159267830656    | 17 43 47.86776             | -22 52 53.04769 | 1.1                     | 19.920           | 0.91     | -2.61                   |                  | -18.4       | 0.654      | 13.687 | 0      | -22.9             | 164.7 |
| J310337    | 2031-05-25 03:57:58.22 | 17 43 37.37574             | -22 52 49.21363 | 2.8                     | 1.607            | 180.89   | -14.14                  | 4.340            | 4.7         | 8.383      | 14.419 | 12.949 | 324.3             | 157.1 |
| Pgt        | 4116870017450574464    | 17 43 37.37394             | -22 52 50.82046 | 1.6                     | 5.058            | 0.93     | -2.61                   |                  | 4.6         | 0.897      | 14.042 | 0      | -22.9             | 160.2 |
| J310338    | 2031-05-25 06:35:59.38 | 17 43 34.29563             | -22 52 45.58941 | 1.9                     | 4.570            | 180.89   | -14.16                  | 4.339            | 13.2        | 9.365      | 14.833 | 13.487 | 284.7             | 157.2 |
| Pgt        | 4116881734113756928    | 17 43 34.29048             | -22 52 50.15879 | 1.1                     | 14.382           | 0.93     | -2.61                   |                  | 13.2        | 0.496      | 14.458 | 0      | -22.9             | 158.9 |
| J310339    | 2031-05-25 09:22:44.24 | 17 43 31.05162             | -22 52 30.95279 | 5.5                     | 18.505           | 180.90   | -14.18                  | 4.338            | 57.9        | 7.709      | 14.950 | 13.307 | 242.9             | 157.4 |
| Pgt        | 4116881807222791040    | 17 43 31.03058             | -22 52 49.45573 | 3.4                     | 58.228           | 0.94     | -2.61                   |                  | 57.8        | 14.577     | 0      | 0      | -22.9             | 157.5 |
| J310340    | 2031-05-25 20:46:27.02 | 17 43 17.61090             | -22 52 36.60498 | 3.5                     | 9.917            | 180.92   | -14.28                  | 4.335            | 29.0        | 8.611      | 14.631 | 13.163 | 71.4              | 157.9 |
| Pgt        | 4116880467193144704    | 17 43 17.59942             | -22 52 46.52098 | 2.0                     | 31.183           | 0.96     | -2.61                   |                  | 28.9        | 0.824      | 14.265 | 0      | -22.9             | 151.9 |
| J310341    | 2031-05-26 03:01:29.62 | 17 43 10.19558             | -22 52 39.04959 | 3.0                     | 5.827            | 180.93   | -14.34                  | 4.334            | 16.9        | 8.474      | 14.379 | 12.918 | 337.4             | 158.1 |
| Pgt        | 4116881253085024512    | 17 43 10.18876             | -22 52 44.87542 | 1.8                     | 18.314           | 0.98     | -2.61                   |                  | 16.8        | 0.863      | 14.017 | 0      | -22.9             | 148.8 |
| J310342    | 2031-05-26 11:58:02.29 | 17 42 59.53562             | -22 52 41.70036 | 1.7                     | 0.776            | 180.94   | -14.41                  | 4.331            | 2.3         | 9.385      | 14.613 | 13.277 | 202.8             | 158.5 |
| Pgt        | 4116881390516388992    | 17 42 59.53469             | -22 52 42.47650 | 1.1                     | 2.439            | 0.99     | -2.61                   |                  | 2.2         | 0.420      | 14.257 | 0      | -22.9             | 144.4 |
| J310343    | 2031-05-26 23:08:04.93 | 17 42 46.16547             | -22 52 21.57842 | 3.5                     | 17.830           | 180.96   | -14.50                  | 4.329            | 55.0        | 8.449      | 14.835 | 13.305 | 34.8              | 159.0 |
| Pgt        | 4116884109325851392    | 17 42 46.14377             | -22 52 39.40583 | 2.1                     | 55.975           | 1.02     | -2.61                   |                  | 54.9        |            | 14.486 | 0      | -22.9             | 138.8 |
| J310344    | 2031-05-27 05:56:30.36 | 17 42 37.91061             | -22 52 57.46238 | 2.2                     | 19.972           | 0.97     | -14.56                  | 4.327            | -64.1       | 9.423      | 14.954 | 13.561 | 292.4             | 159.3 |
| Pgt        | 4116878268168448128    | 17 42 37.93501             | -22 52 37.49330 | 1.4                     | 62.675           | 1.03     | -2.61                   |                  | -64.2       | 0.456      | 14.609 | 0      | -22.9             | 135.4 |
| J310345    | 2031-05-27 12:43:56.88 | 17 42 29.70311             | -22 52 42.62106 | 4.1                     | 7.067            | 0.98     | -14.61                  | 4.325            | -20.3       | 7.790      | 14.691 | 13.095 | 190.2             | 159.6 |
| Pgt        | 4116878989723282560    | 17 42 29.71187             | -22 52 35.55468 | 2.3                     | 22.170           | 1.05     | -2.61                   |                  | -20.5       |            | 14.350 | 0      | -22.9             | 132.0 |
| J310346    | 2031-05-27 14:14:15.77 | 17 42 27.86659             | -22 52 49.61211 | 1.2                     | 14.493           | 0.98     | -14.63                  | 4.325            | -43.1       | 8.778      | 13.723 | 12.474 | 167.6             | 159.7 |
| Pgt        | 4116879058442558848    | 17 42 27.88457             | -22 52 35.12080 | 0.7                     | 45.461           | 1.05     | -2.61                   |                  | -43.2       | 0.451      | 13.383 | 0      | -22.9             | 131.2 |
| J310347*   | 2031-05-27 15:08:31.67 | 17 42 26.79553             | -22 52 27.12922 | 2.2                     | 7.731            | 180.99   | -14.63                  | 4.325            | 22.4        | 9.657      | 14.558 | 13.245 | 154.0             | 159.8 |
| Pgt        | 4116879058442589824    | 17 42 26.78587             | -22 52 34.85937 | 1.3                     | 24.249           | 1.05     | -2.61                   |                  | 22.3        |            | 14.219 | 0      | -22.9             | 130.8 |
| J310348    | 2031-05-27 15:43:21.79 | 17 42 26.08667             | -22 52 29.55624 | 2.3                     | 5.136            | 180.99   | -14.64                  | 4.324            | 14.9        | 8.865      | 14.566 | 13.126 | 145.2             | 159.8 |
| Pgt        | 4116879058442599168    | 17 42 26.08026             | -22 52 34.69127 | 1.4                     | 16.108           | 1.05     | -2.61                   |                  | 14.7        | 0.623      | 14.227 | 0      | -22.9             | 130.5 |
| J310349    | 2031-05-27 23:30:51.12 | 17 42 16.56887             | -22 52 47.36251 | 2.2                     | 14.951           | 1.00     | -14.70                  | 4.323            | -44.6       | 9.858      | 14.981 | 13.678 | 28.0              | 160.1 |
| Pgt        | 4116878817924529792    | 17 42 16.58772             | -22 52 32.41330 | 1.2                     | 46.873           | 1.07     | -2.61                   |                  | -44.7       | 0.294      | 14.647 | 0      | -22.9             | 126.6 |
| J310350    | 2031-05-28 04:30:18.95 | 17 42 10.50268             | -22 52 16.67154 | 1.2                     | 14.263           | 181.01   | -14.74                  | 4.321            | 42.4        | 8.927      | 13.692 | 12.481 | 312.9             | 160.4 |
| Pgt        | 4116925753338733056    | 17 42 10.48444             | -22 52 30.93241 | 0.6                     | 44.703           | 1.08     | -2.61                   |                  | 42.3        | 0.375      | 13.360 | 0      | -22.9             | 124.0 |
| J310351    | 2031-05-28 05:40:07.34 | 17 42 09.04589             | -22 52 41.01899 | 1.3                     | 10.436           | 1.01     | -14.75                  | 4.321            | -30.3       | 8.982      | 14.089 | 12.771 | 295.4             | 160.4 |
| Pgt        | 4116925714578936832    | 17 42 09.05920             | -22 52 30.58476 | 0.7                     | 32.706           | 1.09     | -2.61                   |                  | -30.5       | 0.454      | 13.758 | 0      | -22.9             | 123.4 |
| J310352    | 2031-05-28 08:07:13.08 | 17 42 06.06433             | -22 52 20.90661 | 3.0                     | 8.944            | 181.02   | -14.76                  | 4.321            | 26.0        | 8.984      | 14.932 | 13.453 | 258.5             | 160.5 |
| Pgt        | 4116925787646728064    | 17 42 06.05284             | -22 52 29.84915 | 1.8                     | 28.026           | 1.09     | -2.61                   |                  | 25.8        | 0.635      | 14.603 | 0      | -22.9             | 122.2 |
| J310353    | 2031-05-28 08:39:09.93 | 17 42 05.37565             | -22 52 48.17825 | 3.6                     | 18.492           | 1.01     | -14.77                  | 4.320            | -57.4       | 7.525      | 14.518 | 12.941 | 250.5             | 160.5 |
| Pgt        | 4116925684619289088    | 17 42 05.39933             | -22 52 29.68884 | 2.1                     | 57.945           | 1.09     | -2.61                   |                  | -57.6       |            | 14.188 | 0      | -22.9             | 121.9 |
| J310354    | 2031-05-28 08:48:22.04 | 17 42 05.18408             | -22 52 50.71168 | 1.4                     | 21.072           | 1.01     | -14.77                  | 4.320            | -69.7       | 8.736      | 13.872 | 12.548 | 248.2             | 160.5 |
| Pgt        | 4116925684619292288    | 17 42 05.21106             | -22 52 29.64263 | 0.7                     | 66.029           | 1.09     | -2.61                   |                  | -69.9       | 0.478      | 13.543 | 0      | -22.9             | 121.9 |
| J310355    | 2031-05-28 08:56:59.68 | 17 42 05.02146             | -22 52 39.78283 | 2.3                     | 10.185           | 1.02     | -14.77                  | 4.320            | -29.5       | 9.325      | 14.865 | 13.444 | 246.0             | 160.6 |
| Pgt        | 4116925680219170432    | 17 42 05.03453             | -22 52 29.59929 | 1.3                     | 31.914           | 1.09     | -2.61                   |                  | -29.7       |            | 14.536 | 0      | -22.9             | 121.8 |
| J310356    | 2031-05-28 18:09:39.66 | 17 41 53.67844             | -22 52 40.17857 | 1.4                     | 13.387           | 1.03     | -14.84                  | 4.318            | -39.4       | 9.323      | 14.507 | 13.196 | 107.4             | 161.0 |
| Pgt        | 4116924447669961728    | 17 41 53.69588             | -22 52 26.79336 | 0.8                     | 41.927           | 1.11     | -2.61                   |                  | -39.6       | 0.441      | 14.184 | 0      | -22.9             | 117.1 |
| J310357    | 2031-05-28 20:19:13.33 | 17 41 51.03924             | -22 52 18.47774 | 2.9                     | 7.651            | 181.04   | -14.86                  | 4.318            | 22.2        | 7.937      | 14.174 | 12.654 | 75.0              | 161.1 |
| Pgt        | 4116925199182885248    | 17 41 51.02921             | -22 52 26.12716 | 1.7                     | 23.958           | 1.12     | -2.61                   |                  | 22.0        | 1.280      | 13.852 | 0      | -22.9             | 116.0 |
| J310358    | 2031-05-28 21:19:46.91 | 17 41 49.81018             | -22 52 04.15272 | 2.1                     | 21.666           | 181.04   | -14.86                  | 4.317            | 73.6        | 9.421      | 14.819 | 13.428 | 59.8              | 161.1 |
| Pgt        | 4116925199210105088    | 17 41 49.78165             | -22 52 25.81468 | 1.2                     | 67.841           | 1.12     | -2.61                   |                  | 73.5        | 0.423      | 14.497 | 0      | -22.9             | 115.5 |
| J310359    | 2031-05-28 21:20:01.33 | 17 41 49.76469             | -22 52 34.97183 | 2.1                     | 9.160            | 1.04     | -14.86                  | 4.317            | -26.5       | 8.861      | 14.448 | 13.034 | 59.7              | 161.1 |
| Pgt        | 4116925199182861696    | 17 41 49.77670             | -22 52 25.81344 | 1.2                     | 28.682           | 1.12     | -2.61                   |                  | -26.6       |            | 14.126 | 0      | -22.9             | 115.5 |

Table 3 continued on next page



Table 3 (continued)

| Event ID   | C/A Epoch              | ICRS Star Coord at Epoch       | $\sigma(\alpha_*)$ (km) | C/A (")          | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|------------|------------------------|--------------------------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type | Source ID              | Geocentric Object Position     | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J310385    | 2031-06-03 15:00:07.83 | 17 38 53.79103 -22 51 50.01048 | 2.1                     | 13.462           | 1.28     | -15.72                  | 4.290            | -39.3       | 8.823      | 14.354 | 12.956 | 148.3             | 167.3 |
| Pgt        | 4116749517840334848    | 17 38 53.81275 -22 51 36.55185 | 1.2                     | 41.889           | 1.44     | -2.60                   |                  | -39.6       | 0.637      | 14.093 | 0      | -22.9             | 38.6  |
| J310386    | 2031-06-03 15:13:01.35 | 17 38 53.52746 -22 51 38.10156 | 1.5                     | 1.637            | 1.28     | -15.72                  | 4.290            | -4.5        | 9.760      | 14.458 | 13.251 | 145.1             | 167.3 |
| Pgt        | 4116749517840334464    | 17 38 53.53011 -22 51 36.46457 | 0.8                     | 5.095            | 1.44     | -2.60                   |                  | -4.8        | 0.262      | 14.197 | 0      | -22.9             | 38.5  |
| J310387    | 2031-06-03 23:59:13.02 | 17 38 41.96877 -22 51 37.19110 | 2.1                     | 4.317            | 1.30     | -15.76                  | 4.289            | -12.1       | 9.651      | 14.908 | 13.580 | 13.1              | 167.7 |
| Pgt        | 4116752408431157120    | 17 38 41.97583 -22 51 32.87476 | 1.1                     | 13.430           | 1.46     | -2.60                   |                  | -12.5       | 0.390      | 14.650 | 0      | -22.9             | 33.1  |
| J310388    | 2031-06-04 11:38:53.01 | 17 38 26.58350 -22 51 13.08927 | 2.6                     | 14.933           | 181.32   | -15.82                  | 4.287            | 44.3        | 9.165      | 14.653 | 13.262 | 197.6             | 168.2 |
| Pgt        | 4116752992546863360    | 17 38 26.55866 -22 51 28.01797 | 1.4                     | 46.431           | 1.48     | -2.60                   |                  | 44.0        |            | 14.398 | 0      | -22.9             | 25.9  |
| J310389    | 2031-06-04 18:48:54.03 | 17 38 17.07722 -22 51 10.56581 | 2.0                     | 14.424           | 181.33   | -15.85                  | 4.286            | 42.7        | 9.588      | 11.535 | 10.873 | 89.8              | 168.5 |
| Pgt        | 4116729760988640512    | 17 38 17.05301 -22 51 24.98553 | 1.1                     | 44.837           | 1.50     | -2.60                   |                  | 42.3        | 0.172      | 11.283 | 0      | -22.9             | 21.5  |
| J310390    | 2031-06-05 17:55:00.23 | 17 37 46.24079 -22 51 28.82781 | 4.5                     | 13.862           | 1.37     | -15.95                  | 4.283            | -40.5       | 7.620      | 14.769 | 13.121 | 102.2             | 169.6 |
| Pgt        | 4116741241514281728    | 17 37 46.26471 -22 51 14.96930 | 2.6                     | 43.059           | 1.56     | -2.60                   |                  | -40.8       |            | 14.524 | 0      | -22.9             | 7.1   |
| J310391    | 2031-06-06 10:52:28.31 | 17 37 23.50949 -22 51 20.27648 | 2.0                     | 12.897           | 1.40     | -16.02                  | 4.281            | -37.4       | 9.911      | 14.908 | 13.648 | 207.0             | 170.3 |
| Pgt        | 4116743642325075328    | 17 37 23.53223 -22 51 07.38323 | 1.1                     | 40.039           | 1.60     | -2.60                   |                  | -37.8       | 0.319      | 14.667 | 0      | -22.9             | 4.4   |
| J310392    | 2031-06-07 03:29:16.87 | 17 37 01.18426 -22 50 45.23676 | 3.0                     | 14.527           | 181.43   | -16.09                  | 4.278            | 43.0        | 8.654      | 14.693 | 13.213 | 317.1             | 171.1 |
| Pgt        | 4116744196452141952    | 17 37 01.15808 -22 50 59.75959 | 1.6                     | 45.079           | 1.64     | -2.60                   |                  | 42.5        |            | 14.456 | 0      | -22.9             | 14.6  |
| J310393    | 2031-06-07 06:13:46.50 | 17 36 57.45275 -22 51 00.67444 | 1.4                     | 2.192            | 1.43     | -16.10                  | 4.278            | -6.0        | 9.519      | 14.189 | 12.992 | 275.8             | 171.2 |
| Pgt        | 4116744226440676736    | 17 36 57.45671 -22 50 58.48358 | 0.7                     | 6.800            | 1.64     | -2.60                   |                  | -6.5        | 0.330      | 13.953 | 0      | -22.9             | 16.4  |
| J310394    | 2031-06-07 09:43:25.07 | 17 36 52.76535 -22 50 40.60812 | 1.2                     | 16.247           | 181.44   | -16.11                  | 4.278            | 48.7        | 8.593      | 13.441 | 12.206 | 223.2             | 171.4 |
| Pgt        | 4116744432599154944    | 17 36 52.73585 -22 50 56.84996 | 0.6                     | 50.406           | 1.65     | -2.60                   |                  | 48.3        | 0.481      | 13.206 | 0      | -22.9             | 18.6  |
| J310395    | 2031-06-08 02:55:29.64 | 17 36 29.42951 -22 50 53.01954 | 1.4                     | 4.334            | 1.47     | -16.17                  | 4.276            | -12.1       | 9.699      | 14.335 | 13.128 | 324.4             | 172.1 |
| Pgt        | 4116785290709356544    | 17 36 29.43754 -22 50 48.68651 | 0.7                     | 13.442           | 1.69     | -2.60                   |                  | -12.6       | 0.302      | 14.104 | 0      | -22.9             | 29.4  |
| J310396    | 2031-06-08 03:44:46.62 | 17 36 28.30147 -22 50 59.71131 | 3.9                     | 11.423           | 1.47     | -16.17                  | 4.276            | -32.8       | 7.417      | 14.588 | 12.964 | 312.1             | 172.2 |
| Pgt        | 4116785290664312064    | 17 36 28.32263 -22 50 48.29165 | 2.1                     | 35.424           | 1.70     | -2.60                   |                  | -33.3       | 1.361      | 14.357 | 0      | -22.9             | 29.9  |
| J310397    | 2031-06-08 10:37:25.92 | 17 36 18.96550 -22 50 52.18921 | 1.9                     | 7.224            | 1.48     | -16.19                  | 4.275            | -20.4       | 9.859      | 14.935 | 13.644 | 208.6             | 172.5 |
| Pgt        | 4116785973522806528    | 17 36 18.97899 -22 50 44.96744 | 1.0                     | 22.399           | 1.71     | -2.60                   |                  | -20.9       | 0.335      | 14.705 | 0      | -22.9             | 34.2  |
| J310398    | 2031-06-08 11:28:26.48 | 17 36 17.83222 -22 50 39.61419 | 1.8                     | 4.942            | 181.48   | -16.20                  | 4.275            | 14.3        | 9.324      | 14.511 | 13.192 | 195.8             | 172.5 |
| Pgt        | 4116786046623734144    | 17 36 17.82298 -22 50 44.55432 | 1.0                     | 15.322           | 1.72     | -2.60                   |                  | 13.8        | 0.437      | 14.282 | 0      | -22.9             | 34.7  |
| J310399    | 2031-06-08 16:03:44.78 | 17 36 11.57566 -22 50 44.65198 | 1.2                     | 2.336            | 1.49     | -16.21                  | 4.274            | -6.4        | 8.528      | 13.541 | 12.247 | 126.7             | 172.7 |
| Pgt        | 4116786214040996224    | 17 36 11.58006 -22 50 42.31633 | 0.6                     | 7.243            | 1.73     | -2.60                   |                  | -6.9        | 0.529      | 13.313 | 0      | -22.9             | 37.5  |
| J310400    | 2031-06-08 16:21:51.82 | 17 36 11.17778 -22 50 37.50726 | 3.2                     | 4.663            | 181.49   | -16.21                  | 4.274            | 13.5        | 8.077      | 14.696 | 13.137 | 122.2             | 172.7 |
| Pgt        | 4116786218422503680    | 17 36 11.16901 -22 50 42.16856 | 1.8                     | 14.455           | 1.73     | -2.60                   |                  | 13.0        |            | 14.468 | 0      | -22.9             | 37.7  |
| J310401    | 2031-06-08 20:05:47.28 | 17 36 06.06146 -22 50 53.53132 | 1.4                     | 13.199           | 1.50     | -16.22                  | 4.274            | -38.2       | 9.509      | 14.258 | 13.043 | 66.0              | 172.9 |
| Pgt        | 4116784809673278080    | 17 36 06.08638 -22 50 40.33723 | 0.7                     | 40.913           | 1.74     | -2.60                   |                  | -38.7       | 0.304      | 14.031 | 0      | -22.9             | 40.0  |
| J310402    | 2031-06-09 02:34:41.90 | 17 35 57.25912 -22 50 32.22158 | 2.6                     | 4.915            | 181.51   | -16.24                  | 4.273            | 14.3        | 8.808      | 14.604 | 13.147 | 328.5             | 173.2 |
| Pgt        | 4116787695891422336    | 17 35 57.24977 -22 50 37.13481 | 1.5                     | 15.233           | 1.75     | -2.60                   |                  | 13.7        | 0.690      | 14.378 | 0      | -22.9             | 44.0  |
| J310403    | 2031-06-09 03:26:08.90 | 17 35 56.11262 -22 50 19.55273 | 1.5                     | 17.162           | 181.51   | -16.24                  | 4.273            | 51.9        | 8.938      | 14.125 | 12.802 | 315.6             | 173.2 |
| Pgt        | 4116787695891447424    | 17 35 56.07991 -22 50 36.70908 | 0.8                     | 53.191           | 1.75     | -2.60                   |                  | 51.4        | 0.539      | 13.899 | 0      | -22.9             | 44.6  |
| J310404    | 2031-06-09 04:09:55.77 | 17 35 55.07488 -22 50 41.27191 | 1.2                     | 4.927            | 1.51     | -16.24                  | 4.273            | -13.7       | 9.163      | 13.492 | 12.350 | 304.6             | 173.3 |
| Pgt        | 4116787691509752064    | 17 35 55.08427 -22 50 36.34643 | 0.6                     | 15.271           | 1.76     | -2.60                   |                  | -14.3       | 0.307      | 13.267 | 0      | -22.9             | 45.0  |
| J310405    | 2031-06-09 09:44:03.24 | 17 35 47.47654 -22 50 36.07154 | 1.7                     | 2.505            | 1.52     | -16.26                  | 4.273            | -6.8        | 9.592      | 14.521 | 13.279 | 220.8             | 173.5 |
| Pgt        | 4116787489733097472    | 17 35 47.48134 -22 50 33.56723 | 0.8                     | 7.763            | 1.77     | -2.60                   |                  | -7.4        | 0.330      | 14.296 | 0      | -22.9             | 48.4  |
| J310406    | 2031-06-09 11:09:27.15 | 17 35 45.57136 -22 50 14.90792 | 1.4                     | 17.952           | 181.52   | -16.26                  | 4.273            | 54.8        | 8.929      | 13.546 | 12.334 | 199.4             | 173.6 |
| Pgt        | 4116787558452620416    | 17 35 45.53684 -22 50 32.85361 | 0.7                     | 55.629           | 1.77     | -2.60                   |                  | 54.3        | 0.363      | 13.322 | 0      | -22.9             | 49.3  |

<sup>a</sup> A nearby event has the same 2MASS ID as this event, resulting in a corresponding K magnitude ambiguity.

\* Superscript \* indicates RUWE > 1.4, \*\* indicates RUWE > 2, and \*\*\* indicates RUWE > 5. See machine-readable file for RUWE values.

Table 4. Geocentric Jupiter Occultation Predictions 2023 to 2050 for  $K \leq 10$  (part 4 of 11)

| Event ID   | C/A Epoch              | ICRS Star Coord at Epoch       | $\sigma(\alpha_*)$ (km) | C/A (″)          | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|------------|------------------------|--------------------------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type | Source ID              | Geocentric Object Position     | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J310407    | 2031-06-09 11:16:11.04 | 17 35 45.34556 -22 50 52.57582 | 1.4                     | 19.785           | 1.52     | -16.26                  | 4.273            | -61.9       | 8.561      | 13.724 | 12.399 | 197.7             | 173.6 |
| Pgt        | 4116787554070788224    | 17 35 45.38354 -22 50 32.79731 | 0.7                     | 61.311           | 1.77     | -2.60                   |                  | -62.3       | 0.611      | 13.499 | 0      | -22.9             | 49.3  |
| J310408    | 2031-06-10 15:10:35.63 | 17 35 07.15105 -22 50 20.64704 | 2.6                     | 2.114            | 1.57     | -16.34                  | 4.270            | -5.7        | 8.419      | 14.080 | 12.640 | 137.8             | 174.8 |
| Pgt        | 4116706503816765568    | 17 35 07.15524 -22 50 18.53423 | 1.5                     | 6.546            | 1.84     | -2.60                   |                  | -6.3        | 0.812      | 13.860 | 0      | -22.9             | 66.1  |
| J310409    | 2031-06-10 16:59:10.26 | 17 35 04.63382 -22 50 35.89491 | 1.6                     | 18.310           | 1.57     | -16.34                  | 4.270            | -55.6       | 9.531      | 14.649 | 13.348 | 110.6             | 174.9 |
| Pgt        | 4116706125893088512    | 17 35 04.67015 -22 50 17.59197 | 1.0                     | 56.705           | 1.85     | -2.60                   |                  | -56.2       | 0.374      | 14.429 | 0      | -22.9             | 67.1  |
| J310410    | 2031-06-10 18:55:53.11 | 17 35 01.97094 -22 50 30.21670 | 1.5                     | 13.645           | 1.58     | -16.34                  | 4.270            | -39.5       | 9.984      | 14.380 | 13.208 | 81.3              | 175.0 |
| Pgt        | 4116706194612754816    | 17 35 01.99808 -22 50 16.57677 | 0.9                     | 42.257           | 1.85     | -2.60                   |                  | -40.1       | 0.247      | 14.161 | 0      | -22.9             | 68.3  |
| J310411    | 2031-06-10 20:57:57.56 | 17 34 59.24992 -22 49 51.75138 | 1.7                     | 23.770           | 181.58   | -16.35                  | 4.270            |             | 9.939      | 14.765 | 13.542 | 50.7              | 175.1 |
| Pt         | 4116706950526823808    | 17 34 59.20249 -22 50 15.51238 | 1.0                     | 73.610           | 1.86     | -2.60                   |                  |             | 0.292      | 14.546 | 0      | -22.9             | 69.5  |
| J310412    | 2031-06-10 23:24:45.60 | 17 34 55.85419 -22 50 06.92650 | 1.3                     | 7.305            | 181.58   | -16.35                  | 4.270            | 21.1        | 9.614      | 11.077 | 10.542 | 13.9              | 175.2 |
| Pgt        | 4116706984899064192    | 17 34 55.83959 -22 50 14.22891 | 0.8                     | 22.621           | 1.86     | -2.60                   |                  | 20.5        | 0.163      | 10.859 | 0      | -22.9             | 70.9  |
| J310413    | 2031-06-11 02:48:23.80 | 17 34 51.17198 -22 50 12.84940 | 3.7                     | 0.407            | 1.59     | -16.36                  | 4.269            | -0.8        | 9.306      | 14.598 | 13.233 | 322.8             | 175.4 |
| Pgt        | 4116706881819880064    | 17 34 51.17280 -22 50 12.44220 | 2.3                     | 1.261            | 1.87     | -2.60                   |                  | -1.5        |            | 14.380 | 0      | -22.9             | 72.9  |
| J310414    | 2031-06-11 03:14:46.46 | 17 34 50.60529 -22 49 53.71527 | 1.7                     | 18.502           | 181.59   | -16.36                  | 4.269            | 56.9        | 9.854      | 14.950 | 13.637 | 316.2             | 175.4 |
| Pgt        | 4116707087965145728    | 17 34 50.56813 -22 50 12.21023 | 1.1                     | 57.290           | 1.87     | -2.60                   |                  | 56.4        | 0.336      | 14.732 | 0      | -22.9             | 73.2  |
| J310415    | 2031-06-11 11:17:11.49 | 17 34 39.48936 -22 50 14.75734 | 1.1                     | 6.814            | 1.60     | -16.38                  | 4.269            | -19.1       | 8.968      | 13.531 | 12.346 | 195.2             | 175.7 |
| Pgt        | 4116708599793684352    | 17 34 39.50316 -22 50 07.94587 | 0.7                     | 21.097           | 1.89     | -2.60                   |                  | -19.7       | 0.344      | 13.314 | 0      | -22.9             | 77.8  |
| J310416    | 2031-06-11 14:24:51.91 | 17 34 35.22435 -22 49 51.99283 | 1.4                     | 14.289           | 181.61   | -16.38                  | 4.269            | 42.2        | 9.051      | 14.183 | 12.872 | 148.2             | 175.9 |
| Pgt        | 4116708629757042816    | 17 34 35.19532 -22 50 06.27574 | 0.9                     | 44.235           | 1.90     | -2.60                   |                  | 41.6        | 0.417      | 13.967 | 0      | -22.9             | 79.6  |
| J310417    | 2031-06-11 20:58:54.33 | 17 34 26.19033 -22 49 40.48428 | 1.2                     | 22.274           | 181.62   | -16.40                  | 4.268            | 76.5        | 9.335      | 13.704 | 12.560 | 49.3              | 176.2 |
| Pgt        | 4116708801555748736    | 17 34 26.14475 -22 50 02.74893 | 0.8                     | 68.949           | 1.92     | -2.60                   |                  | 76.0        | 0.258      | 13.488 | 0      | -22.9             | 83.4  |
| J310418    | 2031-06-11 21:27:30.35 | 17 34 25.51223 -22 49 50.43791 | 1.4                     | 12.059           | 181.62   | -16.40                  | 4.268            | 35.2        | 9.788      | 14.192 | 13.040 | 42.2              | 176.2 |
| Pgt        | 411670880595212864     | 17 34 25.48755 -22 50 02.49189 | 1.0                     | 37.328           | 1.92     | -2.60                   |                  | 34.6        | 0.236      | 13.976 | 0      | -22.9             | 83.6  |
| J310419    | 2031-06-11 23:28:19.99 | 17 34 22.73649 -22 49 48.79906 | 1.7                     | 12.610           | 181.62   | -16.40                  | 4.268            | 36.9        | 9.342      | 14.476 | 13.151 | 11.9              | 176.3 |
| Pgt        | 4116708771592493952    | 17 34 22.71062 -22 50 01.40441 | 1.1                     | 39.035           | 1.92     | -2.60                   |                  | 36.3        |            | 14.260 | 0      | -22.9             | 84.8  |
| J310420    | 2031-06-11 23:39:22.41 | 17 34 22.48578 -22 49 47.20855 | 1.2                     | 14.102           | 181.63   | -16.40                  | 4.268            | 41.6        | 8.581      | 13.584 | 12.287 | 9.1               | 176.3 |
| Pgt        | 4116708771592496768    | 17 34 22.45685 -22 50 01.30491 | 0.8                     | 43.652           | 1.92     | -2.60                   |                  | 41.0        | 0.510      | 13.369 | 0      | -22.9             | 84.9  |
| J310421    | 2031-06-12 07:09:17.82 | 17 34 12.13039 -22 49 47.61360 | 1.2                     | 9.623            | 181.64   | -16.41                  | 4.268            | 27.9        | 9.036      | 13.702 | 12.500 | 256.3             | 176.6 |
| Pgt        | 4116709183908789376    | 17 34 12.11050 -22 49 57.23255 | 0.7                     | 29.784           | 1.94     | -2.60                   |                  | 27.3        | 0.349      | 13.488 | 0      | -22.9             | 89.1  |
| J310422    | 2031-06-12 21:04:35.19 | 17 33 52.87867 -22 49 51.21827 | 5.5                     | 1.638            | 1.66     | -16.43                  | 4.267            | -4.3        | 7.262      | 14.485 | 12.841 | 46.8              | 177.3 |
| Pgt        | 4117454103005400960    | 17 33 52.88210 -22 49 49.58135 | 3.7                     | 5.068            | 1.98     | -2.60                   |                  | -5.0        |            | 14.271 | 0      | -22.8             | 96.9  |
| J310423    | 2031-06-13 05:15:21.78 | 17 33 41.57781 -22 49 43.23035 | 2.1                     | 1.801            | 181.67   | -16.44                  | 4.266            | 5.5         | 8.188      | 13.471 | 12.122 | 283.7             | 177.6 |
| Pgt        | 4117454236075193344    | 17 33 41.57401 -22 49 45.03099 | 1.3                     | 5.574            | 2.00     | -2.60                   |                  | 4.7         | 0.755      | 13.258 | 0      | -22.8             | 101.4 |
| J310424    | 2031-06-13 05:31:38.99 | 17 33 41.21518 -22 49 37.04704 | 4.1                     | 7.836            | 181.67   | -16.44                  | 4.266            | 22.7        | 8.322      | 14.892 | 13.336 | 279.6             | 177.6 |
| Pgt        | 4117454240444696960    | 17 33 41.19862 -22 49 44.87928 | 2.5                     | 24.246           | 2.00     | -2.60                   |                  | 22.0        |            | 14.679 | 0      | -22.8             | 101.6 |
| J310425    | 2031-06-13 11:32:08.53 | 17 33 32.85309 -22 49 57.76642 | 1.8                     | 16.263           | 1.68     | -16.45                  | 4.266            | -48.1       | 9.742      | 14.370 | 13.147 | 189.2             | 177.9 |
| Pgt        | 4117454579672553984    | 17 33 32.88767 -22 49 41.50996 | 1.0                     | 50.321           | 2.01     | -2.60                   |                  | -48.7       | 0.257      | 14.157 | 0      | -22.8             | 104.9 |
| J310426    | 2031-06-13 16:30:00.28 | 17 33 25.97735 -22 49 57.65037 | 1.5                     | 18.949           | 1.69     | -16.45                  | 4.266            | -58.1       | 9.316      | 14.472 | 13.195 | 114.5             | 178.1 |
| Pgt        | 4117454751471255552    | 17 33 26.01783 -22 49 38.70957 | 1.0                     | 58.628           | 2.02     | -2.60                   |                  | -58.7       | 0.409      | 14.260 | 0      | -22.8             | 107.6 |
| J310427    | 2031-06-14 01:09:43.39 | 17 33 14.04162 -22 49 26.49993 | 4.7                     | 7.292            | 181.71   | -16.46                  | 4.266            | 21.2        | 7.845      | 14.139 | 12.602 | 344.2             | 178.5 |
| Pgt        | 4117456267668805760    | 17 33 14.02591 -22 49 33.78838 | 3.2                     | 22.558           | 2.04     | -2.60                   |                  | 20.4        | 1.257      | 13.928 | 0      | -22.8             | 112.3 |
| J310428    | 2031-06-14 10:47:43.30 | 17 33 00.65794 -22 49 39.92783 | 1.7                     | 11.669           | 1.72     | -16.47                  | 4.265            | -33.3       | 7.710      | 12.979 | 11.675 | 199.3             | 178.9 |
| Pgt        | 4117456469458180992    | 17 33 00.68332 -22 49 28.26402 | 1.1                     | 36.098           | 2.07     | -2.60                   |                  | -34.0       | 0.926      | 12.768 | 0      | -22.8             | 117.4 |
| J310429    | 2031-06-14 15:15:25.25 | 17 32 54.49842 -22 49 27.40610 | 4.5                     | 1.720            | 1.73     | -16.47                  | 4.265            | -4.5        | 7.483      | 14.355 | 12.815 | 132.1             | 179.1 |
| Pgt        | 4117457195381784576    | 17 32 54.50217 -22 49 25.68723 | 2.8                     | 5.320            | 2.08     | -2.60                   |                  | -5.3        |            | 14.144 | 0      | -22.8             | 119.8 |
| J310430    | 2031-06-14 15:26:47.94 | 17 32 54.24011 -22 49 25.26571 | 5.5                     | 0.312            | 181.73   | -16.47                  | 4.265            | 1.3         | 7.638      | 14.772 | 13.206 | 129.3             | 179.1 |
| Pgt        | 4117457195381785600    | 17 32 54.23943 -22 49 25.57745 | 3.4                     | 0.965            | 2.08     | -2.60                   |                  | 0.5         |            | 14.561 | 0      | -22.8             | 119.9 |

Table 4 continued on next page





Table 4 (continued)

| Event ID   | C/A Epoch              | ICRS Star Coord at Epoch       | $\sigma(\alpha_*)$ (km) | C/A ( $''$ )     | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|------------|------------------------|--------------------------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type | Source ID              | Geocentric Object Position     | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J310456    | 2031-06-30 10:44:38.72 | 17 24 21.13106 -22 45 23.28230 | 1.4                     | 7.853            | 2.28     | -15.31                  | 4.292            | -21.8       | 9.908      | 14.627 | 13.419 | 182.1             | 163.7 |
| Pgt        | 4111734443490952320    | 17 24 21.15362 -22 45 15.43545 | 1.0                     | 24.444           | 3.00     | -2.58                   |                  | -23.3       | 0.277      | 14.337 | 0      | -22.8             | 43.6  |
| J310457    | 2031-06-30 16:44:56.79 | 17 24 13.43734 -22 45 26.94148 | 2.8                     | 15.742           | 2.28     | -15.27                  | 4.293            | -46.2       | 7.232      | 11.454 | 10.348 | 91.7              | 163.5 |
| Pgt        | 4111734512216101248    | 17 24 13.48271 -22 45 11.21167 | 2.0                     | 49.012           | 3.01     | -2.58                   |                  | -47.7       | 0.912      | 11.161 | 0      | -22.8             | 40.1  |
| J310458    | 2031-06-30 22:25:22.57 | 17 24 06.21373 -22 45 21.37663 | 1.7                     | 14.167           | 2.29     | -15.24                  | 4.294            | -41.0       | 8.603      | 14.036 | 12.659 | 6.4               | 163.2 |
| Pgt        | 4111734958887114368    | 17 24 06.25466 -22 45 07.22101 | 1.3                     | 44.117           | 3.02     | -2.58                   |                  | -42.5       | 0.624      | 13.741 | 0      | -22.8             | 36.8  |
| J310459    | 2031-07-01 01:21:04.67 | 17 24 02.58837 -22 44 45.54002 | 1.0                     | 19.637           | 182.29   | -15.22                  | 4.294            | 62.6        | 9.711      | 13.419 | 12.384 | 322.3             | 163.1 |
| Pgt        | 4111735023265753856    | 17 24 02.53167 -22 45 05.16149 | 0.7                     | 61.159           | 3.03     | -2.58                   |                  | 61.2        | 0.231      | 13.122 | 0      | -22.8             | 35.0  |
| J310460    | 2031-07-01 02:25:30.44 | 17 24 01.18315 -22 44 59.08045 | 2.8                     | 5.330            | 182.29   | -15.21                  | 4.294            | 16.1        | 7.735      | 13.725 | 12.254 | 306.1             | 163.0 |
| Pgt        | 4111734993246887936    | 17 24 01.16774 -22 45 04.40630 | 1.9                     | 16.601           | 3.03     | -2.58                   |                  | 14.4        | 13.428     | 0      | 0      | -22.8             | 34.4  |
| J310461    | 2031-07-01 06:53:42.48 | 17 23 55.44640 -22 45 18.88734 | 1.4                     | 17.639           | 2.30     | -15.18                  | 4.295            | -53.0       | 9.375      | 14.198 | 12.933 | 238.9             | 162.8 |
| Pgt        | 4111735091981620096    | 17 23 55.49756 -22 45 01.26296 | 0.9                     | 54.947           | 3.04     | -2.58                   |                  | -54.5       | 0.359      | 13.899 | 0      | -22.8             | 31.7  |
| J310462    | 2031-07-02 06:46:26.48 | 17 23 25.47745 -22 44 24.03710 | 1.1                     | 20.469           | 182.32   | -15.01                  | 4.299            | 66.7        | 9.755      | 13.106 | 12.156 | 239.6             | 161.8 |
| Pgt        | 4111645172552342656    | 17 23 25.41764 -22 44 44.48903 | 0.7                     | 63.827           | 3.10     | -2.58                   |                  | 65.2        | 12.795     | 0      | 0      | -22.8             | 17.2  |
| J310463    | 2031-07-02 11:36:22.82 | 17 23 19.34022 -22 44 52.99457 | 1.3                     | 11.904           | 2.33     | -14.98                  | 4.300            | -33.9       | 9.683      | 11.934 | 11.219 | 166.9             | 161.6 |
| Pgt        | 4111644833338057216    | 17 23 19.37514 -22 44 41.10003 | 0.8                     | 37.129           | 3.11     | -2.58                   |                  | -35.5       | 0.179      | 11.620 | 0      | -22.8             | 14.2  |
| J310464    | 2031-07-03 14:18:14.21 | 17 22 46.33479 -22 44 00.09223 | 1.2                     | 22.348           | 182.34   | -14.78                  | 4.306            | 79.4        | 8.342      | 12.848 | 11.684 | 125.2             | 160.4 |
| Pgt        | 4114646878008686080    | 17 22 46.26876 -22 44 22.42181 | 0.8                     | 69.787           | 3.17     | -2.58                   |                  | 78.0        | 0.509      | 12.520 | 0      | -22.8             | 3.2   |
| J310465    | 2031-07-04 00:03:54.47 | 17 22 34.30323 -22 44 09.73675 | 2.0                     | 5.887            | 182.35   | -14.71                  | 4.308            | 17.8        | 8.610      | 13.991 | 12.591 | 338.3             | 159.9 |
| Pgt        | 4114646706210028672    | 17 22 34.28576 -22 44 15.61884 | 1.3                     | 18.392           | 3.19     | -2.58                   |                  | 16.0        | 0.638      | 13.657 | 0      | -22.8             | 9.1   |
| J310466    | 2031-07-04 05:39:47.50 | 17 22 27.41438 -22 44 21.70043 | 1.2                     | 9.984            | 2.36     | -14.67                  | 4.309            | -28.0       | 9.336      | 14.004 | 12.787 | 254.1             | 159.7 |
| Pgt        | 4114646667493526016    | 17 22 27.44409 -22 44 11.72511 | 0.8                     | 31.199           | 3.20     | -2.58                   |                  | -29.8       | 0.297      | 13.667 | 0      | -22.8             | 12.6  |
| J310467    | 2031-07-04 06:00:11.21 | 17 22 27.05939 -22 44 01.39801 | 1.9                     | 10.099           | 182.36   | -14.66                  | 4.309            | 30.2        | 9.038      | 14.219 | 12.850 | 249.0             | 159.7 |
| Pgt        | 4114649622431036416    | 17 22 27.02938 -22 44 11.48886 | 1.3                     | 31.561           | 3.20     | -2.57                   |                  | 28.4        | 0.470      | 13.882 | 0      | -22.8             | 12.8  |
| J310468    | 2031-07-05 02:24:11.24 | 17 22 02.22149 -22 44 21.11866 | 1.1                     | 23.786           | 2.38     | -14.50                  | 4.313            |             | 9.097      | 13.853 | 12.603 | 302.0             | 158.8 |
| Pt         | 4114644644624632064    | 17 22 02.29278 -22 43 57.35280 | 0.8                     | 74.409           | 3.25     | -2.57                   |                  |             | 0.400      | 13.504 | 0      | -22.8             | 25.8  |
| J310469    | 2031-07-06 09:36:46.74 | 17 21 25.02687 -22 43 42.71839 | 2.9                     | 6.805            | 2.39     | -14.24                  | 4.320            | -18.6       | 8.183      | 13.254 | 11.823 | 192.5             | 157.4 |
| Pgt        | 411465577181745792     | 17 21 25.04740 -22 43 35.91981 | 2.0                     | 21.321           | 3.31     | -2.57                   |                  | -20.6       | 0.888      | 12.885 | 0      | -22.8             | 45.7  |
| J310470    | 2031-07-06 11:33:28.07 | 17 21 22.80230 -22 43 17.61573 | 2.4                     | 16.992           | 182.39   | -14.22                  | 4.321            | 52.6        | 8.767      | 14.146 | 12.746 | 163.2             | 157.3 |
| Pgt        | 4114655772822914304    | 17 21 22.75111 -22 43 34.59295 | 1.7                     | 53.248           | 3.32     | -2.57                   |                  | 50.8        | 0.584      | 13.776 | 0      | -22.8             | 47.0  |
| J310471    | 2031-07-07 09:10:38.96 | 17 20 57.47198 -22 43 03.61207 | 2.1                     | 16.324           | 182.40   | -14.03                  | 4.326            | 50.3        | 9.028      | 14.319 | 12.939 | 197.9             | 156.3 |
| Pgt        | 4114658491600967552    | 17 20 57.42260 -22 43 19.92182 | 1.4                     | 51.216           | 3.36     | -2.57                   |                  | 48.4        | 0.554      | 13.934 | 0      | -22.7             | 60.5  |
| J310472    | 2031-07-07 09:37:50.49 | 17 20 56.93738 -22 43 05.83755 | 1.1                     | 13.790           | 182.40   | -14.03                  | 4.326            | 41.8        | 9.111      | 13.750 | 12.539 | 191.1             | 156.3 |
| Pgt        | 4114658491600968064    | 17 20 56.89564 -22 43 19.61595 | 0.7                     | 43.268           | 3.36     | -2.57                   |                  | 39.9        | 0.413      | 13.365 | 0      | -22.7             | 60.8  |
| J310473    | 2031-07-08 00:13:36.24 | 17 20 39.94284 -22 43 33.14737 | 1.3                     | 23.364           | 2.41     | -13.90                  | 4.330            |             | 9.933      | 14.264 | 13.162 | 331.5             | 155.7 |
| Pt         | 4114635878537062528    | 17 20 40.01394 -22 43 09.80429 | 0.9                     | 73.366           | 3.39     | -2.57                   |                  |             | 0.222      | 13.869 | 0      | -22.7             | 69.7  |
| J310474    | 2031-07-10 08:38:25.54 | 17 19 36.51556 -22 42 10.33650 | 3.4                     | 22.373           | 182.42   | -13.36                  | 4.345            | 82.2        | 8.054      | 14.177 | 12.668 | 202.7             | 153.2 |
| Pgt        | 4114684982961374848    | 17 19 36.44739 -22 42 32.68975 | 2.5                     | 70.497           | 3.51     | -2.56                   |                  | 80.3        | 1.265      | 13.739 | 0      | -22.7             | 102.8 |
| J310475    | 2031-07-11 15:06:39.94 | 17 19 03.33276 -22 41 56.86916 | 1.1                     | 16.420           | 182.42   | -13.05                  | 4.353            | 51.2        | 8.573      | 11.878 | 10.923 | 104.2             | 151.9 |
| Pgt        | 4114691923628728832    | 17 19 03.28269 -22 42 13.27477 | 0.7                     | 51.843           | 3.56     | -2.56                   |                  | 49.0        | 0.405      | 11.415 | 0      | -22.7             | 119.7 |
| J310476    | 2031-07-11 19:09:25.27 | 17 18 58.91575 -22 42 19.86819 | 1.4                     | 9.142            | 2.42     | -13.01                  | 4.354            | -25.5       | 9.451      | 14.352 | 13.060 | 43.4              | 151.7 |
| Pgt        | 4114691545671620608    | 17 18 58.94370 -22 42 10.73460 | 0.9                     | 28.871           | 3.57     | -2.56                   |                  | -28.0       | 0.385      | 13.884 | 0      | -22.7             | 121.9 |
| J310477    | 2031-07-11 22:59:25.11 | 17 18 54.78433 -22 42 28.73721 | 1.0                     | 20.419           | 2.43     | -12.97                  | 4.355            | -66.0       | 7.984      | 9.019  | 8.628  | 345.7             | 151.5 |
| Pgt        | 4114691580031381376    | 17 18 54.84683 -22 42 08.33640 | 0.6                     | 64.502           | 3.58     | -2.56                   |                  | -68.1       | 0.323      | 8.548  | 0      | -22.7             | 124.0 |
| J310478    | 2031-07-12 03:30:35.60 | 17 18 50.09436 -22 41 45.78871 | 3.0                     | 19.748           | 182.42   | -12.92                  | 4.357            | 64.8        | 8.253      | 14.074 | 12.591 | 277.7             | 151.3 |
| Pgt        | 4114691854909340288    | 17 18 50.03419 -22 42 05.51964 | 2.0                     | 62.403           | 3.59     | -2.56                   |                  | 62.6        | 1.052      | 13.599 | 0      | -22.7             | 126.4 |
| J310479    | 2031-07-13 06:54:19.68 | 17 18 21.28733 -22 41 47.23942 | 2.0                     | 1.472            | 182.42   | -12.62                  | 4.365            | 5.7         | 8.746      | 14.002 | 12.609 | 225.5             | 150.1 |
| Pgt        | 4114694122652255104    | 17 18 21.28285 -22 41 48.71008 | 1.5                     | 4.660            | 3.64     | -2.56                   |                  | 2.9         | 0.603      | 13.502 | 0      | -22.7             | 140.8 |
| J310480    | 2031-07-15 03:07:44.24 | 17 17 36.43661 -22 41 20.69264 | 0.9                     | 1.910            | 182.40   | -12.12                  | 4.379            | 7.1         | 8.605      | 12.218 | 11.223 | 280.2             | 148.2 |
| Pgt        | 4114507270036368128    | 17 17 36.43084 -22 41 22.60092 | 0.6                     | 6.066            | 3.72     | -2.55                   |                  | 4.1         | 0.381      | 11.674 | 0      | -22.7             | 163.4 |

Table 4 continued on next page



Table 4 (continued)

| Event ID   | C/A Epoch              | ICRS Star Coord at Epoch       | $\sigma(\alpha_*)$ (km) | C/A (")          | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|------------|------------------------|--------------------------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type | Source ID              | Geocentric Object Position     | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J310506    | 2031-09-15 06:36:07.54 | 17 16 50.81977 -22 51 25.07530 | 1.5                     | 17.297           | 5.86     | 13.94                   | 5.182            | -66.1       | 8.059      | 11.694 | 10.685 | 166.6             | 88.3  |
| Pgt        | 4114498100320136832    | 17 16 50.94762 -22 51 07.86861 | 0.9                     | 65.006           | 3.80     | -2.38                   |                  | -69.8       | 0.679      | 11.302 | 0      | -22.9             | 105.6 |
| J310507    | 2031-09-15 20:27:24.03 | 17 17 04.32714 -22 51 33.65672 | 1.5                     | 6.819            | 5.81     | 14.21                   | 5.191            | -21.5       | 9.146      | 13.561 | 12.407 | 318.3             | 87.8  |
| Pgt        | 4114310874130741504    | 17 17 04.37711 -22 51 26.87311 | 0.9                     | 25.670           | 3.78     | -2.38                   |                  | -25.9       | 0.463      | 13.189 | 0      | -22.9             | 98.5  |
| J310508    | 2031-09-16 22:30:16.53 | 17 17 30.24540 -22 52 04.87682 | 1.4                     | 1.887            | 5.72     | 14.71                   | 5.207            | -4.3        | 9.315      | 13.899 | 12.732 | 286.6             | 86.8  |
| Pgt        | 4114315542696485632    | 17 17 30.25900 -22 52 02.99969 | 1.0                     | 7.125            | 3.73     | -2.38                   |                  | -8.8        | 0.441      | 13.566 | 0      | -22.9             | 85.0  |
| J310509    | 2031-09-17 12:27:21.95 | 17 17 44.52959 -22 52 12.58938 | 1.5                     | 10.011           | 185.67   | 14.98                   | 5.216            | 37.5        | 8.988      | 13.980 | 12.722 | 76.8              | 86.3  |
| Pgt        | 4114312901354775936    | 17 17 44.45805 -22 52 22.55104 | 1.0                     | 37.871           | 3.70     | -2.37                   |                  | 33.4        | 0.504      | 13.666 | 0      | -22.9             | 77.7  |
| J310510    | 2031-09-18 04:50:29.46 | 17 18 01.43282 -22 52 45.65632 | 1.5                     | 0.030            | 185.61   | 15.29                   | 5.227            | 2.3         | 9.913      | 14.254 | 13.117 | 190.4             | 85.7  |
| Pgt        | 4114313485470284672    | 17 18 01.43261 -22 52 45.68592 | 1.0                     | 0.113            | 3.67     | -2.37                   |                  | -2.1        | 0.307      | 13.963 | 0      | -22.9             | 69.0  |
| J310511    | 2031-09-18 18:49:13.27 | 17 18 16.06885 -22 53 19.63982 | 3.2                     | 14.142           | 5.54     | 15.56                   | 5.235            | -50.4       | 6.622      | 12.141 | 10.730 | 340.2             | 85.2  |
| Pgt        | 4114301528282065280    | 17 18 16.16770 -22 53 05.56364 | 2.1                     | 53.700           | 3.65     | -2.37                   |                  | -54.1       | 2.182      | 11.869 | 0      | -22.9             | 61.5  |
| J310512    | 2031-09-18 20:09:52.21 | 17 18 17.73341 -22 52 48.05604 | 5.4                     | 19.517           | 185.55   | 15.58                   | 5.236            |             | 7.224      | 14.456 | 12.835 | 320.0             | 85.1  |
| P          | 4114313313671558656    | 17 18 17.59672 -22 53 07.48154 | 3.6                     | 74.121           | 3.64     | -2.37                   |                  |             |            | 14.185 | 0      | -22.9             | 60.7  |
| J310513    | 2031-09-19 05:53:40.32 | 17 18 27.98599 -22 53 24.04136 | 1.0                     | 2.655            | 5.51     | 15.77                   | 5.242            | -7.1        | 8.992      | 12.344 | 11.387 | 173.7             | 84.8  |
| Pgt        | 4114301665720226816    | 17 18 28.00443 -22 53 21.39837 | 0.6                     | 10.096           | 3.63     | -2.37                   |                  | -11.4       | 0.398      | 12.086 | 0      | -22.9             | 55.5  |
| J310514    | 2031-09-19 16:57:07.60 | 17 18 40.08823 -22 53 19.90263 | 1.0                     | 17.462           | 185.48   | 15.98                   | 5.250            | 72.4        | 9.435      | 12.746 | 11.777 | 7.5               | 84.4  |
| Pgt        | 4114300978525430912    | 17 18 39.96761 -22 53 37.28497 | 0.6                     | 66.484           | 3.61     | -2.37                   |                  | 69.0        | 0.319      | 12.502 | 0      | -22.9             | 49.4  |
| J310515    | 2031-09-19 21:08:16.01 | 17 18 44.64065 -22 53 27.87533 | 1.3                     | 15.513           | 185.46   | 16.06                   | 5.252            | 60.8        | 9.850      | 13.770 | 12.695 | 304.5             | 84.2  |
| Pgt        | 4114300944165681408    | 17 18 44.53381 -22 53 43.31794 | 0.9                     | 59.093           | 3.60     | -2.37                   |                  | 57.3        | 0.300      | 13.532 | 0      | -22.9             | 47.1  |
| J310516    | 2031-09-20 23:01:14.61 | 17 19 13.14128 -22 54 33.28219 | 1.4                     | 12.490           | 5.36     | 16.55                   | 5.269            | -43.7       | 9.867      | 13.591 | 12.556 | 275.3             | 83.3  |
| Pgt        | 4114673231930646784    | 17 19 13.22566 -22 54 20.84665 | 0.9                     | 47.726           | 3.55     | -2.36                   |                  | -47.4       | 0.282      | 13.386 | 0      | -22.9             | 32.8  |
| J310517    | 2031-09-21 18:27:24.54 | 17 19 35.27047 -22 54 51.17635 | 1.2                     | 1.918            | 5.29     | 16.92                   | 5.281            | -4.7        | 9.312      | 12.884 | 11.877 | 343.1             | 82.6  |
| Pgt        | 4114626846278644608    | 17 19 35.28327 -22 54 49.26692 | 0.8                     | 7.345            | 3.51     | -2.36                   |                  | -8.8        | 0.344      | 12.702 | 0      | -22.9             | 22.0  |
| J310518    | 2031-09-22 05:48:02.33 | 17 19 48.27147 -22 55 19.14282 | 3.3                     | 13.256           | 5.25     | 17.13                   | 5.288            | -47.2       | 8.132      | 13.743 | 12.304 | 172.5             | 82.1  |
| Pgt        | 4114626640120155136    | 17 19 48.35924 -22 55 05.94248 | 2.1                     | 50.840           | 3.48     | -2.36                   |                  | -50.7       | 0.833      | 13.575 | 0      | -22.9             | 15.6  |
| J310519    | 2031-09-22 11:35:01.26 | 17 19 55.17036 -22 55 01.11902 | 4.0                     | 13.404           | 185.24   | 17.24                   | 5.292            | 51.4        | 7.646      | 13.511 | 12.012 | 85.6              | 81.9  |
| Pgt        | 4114625918565629184    | 17 19 55.08176 -22 55 14.46688 | 2.8                     | 51.443           | 3.47     | -2.36                   |                  | 47.9        | 1.503      | 13.350 | 0      | -22.9             | 12.4  |
| J310520    | 2031-09-23 08:51:11.10 | 17 20 20.07827 -22 55 54.32219 | 1.6                     | 8.407            | 5.16     | 17.64                   | 5.305            | -28.2       | 9.549      | 14.378 | 13.132 | 125.7             | 81.2  |
| Pgt        | 4114623101066955776    | 17 20 20.13298 -22 55 45.94878 | 1.1                     | 32.349           | 3.43     | -2.35                   |                  | -31.9       | 0.425      | 14.242 | 0      | -23.0             | 2.5   |
| J310521    | 2031-09-24 06:11:02.94 | 17 20 45.64869 -22 56 36.70839 | 1.8                     | 19.070           | 5.08     | 18.04                   | 5.319            |             | 9.689      | 14.489 | 13.200 | 165.0             | 80.4  |
| Pt         | 4114628147597782912    | 17 20 45.77096 -22 56 17.71327 | 1.2                     | 73.561           | 3.38     | -2.35                   |                  |             | 0.399      | 14.377 | 0      | -23.0             | 12.7  |
| J310522    | 2031-09-24 07:04:32.16 | 17 20 46.80994 -22 56 25.80126 | 5.3                     | 6.783            | 5.08     | 18.05                   | 5.319            | -22.3       | 7.370      | 14.045 | 12.464 | 151.6             | 80.4  |
| Pgt        | 4114628151949072384    | 17 20 46.85345 -22 56 19.04455 | 3.7                     | 26.169           | 3.38     | -2.35                   |                  | -26.0       | 2.470      | 13.933 | 0      | -23.0             | 13.2  |
| J310523    | 2031-09-24 22:32:55.66 | 17 21 05.81273 -22 56 37.61769 | 3.1                     | 4.599            | 185.04   | 18.34                   | 5.329            | 18.2        | 8.760      | 14.285 | 12.846 | 279.0             | 79.8  |
| Pgt        | 4114616297837874944    | 17 21 05.78351 -22 56 42.19859 | 2.2                     | 17.773           | 3.35     | -2.35                   |                  | 14.4        | 0.879      | 14.191 | 0      | -23.0             | 22.2  |
| J310524    | 2031-09-25 10:42:14.38 | 17 21 20.91993 -22 56 48.02336 | 3.6                     | 12.470           | 185.00   | 18.57                   | 5.336            | 47.8        | 7.870      | 13.584 | 12.125 | 96.2              | 79.4  |
| Pgt        | 4114617015037743872    | 17 21 20.84127 -22 57 00.44642 | 2.4                     | 48.266           | 3.32     | -2.35                   |                  | 44.5        | 1.317      | 13.503 | 0      | -23.0             | 29.3  |
| J310525    | 2031-09-25 15:53:04.47 | 17 21 27.42037 -22 56 50.51816 | 1.3                     | 17.787           | 184.98   | 18.66                   | 5.340            | 77.6        | 7.787      | 12.949 | 11.990 | 18.3              | 79.2  |
| Pg         | 4114616778874072960    | 17 21 27.30851 -22 57 08.23808 | 0.9                     | 68.885           | 3.31     | -2.35                   |                  | 74.6        |            | 12.873 | 0      | -23.0             | 32.3  |
| J310526    | 2031-09-26 21:38:10.11 | 17 22 04.99491 -22 57 56.37088 | 5.2                     | 3.249            | 4.88     | 19.21                   | 5.358            | -9.7        | 7.739      | 13.834 | 12.310 | 291.0             | 78.1  |
| Pgt        | 4114636428291079040    | 17 22 05.01491 -22 57 53.13403 | 3.4                     | 12.625           | 3.24     | -2.34                   |                  | -13.4       | 1.618      | 13.790 | 0      | -23.0             | 50.0  |
| J310527    | 2031-09-27 23:10:33.68 | 17 22 38.05943 -22 58 46.79993 | 1.8                     | 15.000           | 4.79     | 19.67                   | 5.374            | -56.7       | 9.707      | 14.399 | 13.168 | 267.0             | 77.2  |
| Pgt        | 4111633322824553728    | 17 22 38.15011 -22 58 31.85193 | 1.2                     | 58.468           | 3.18     | -2.34                   |                  | -59.7       | 0.380      | 14.381 | 0      | -23.0             | 65.2  |
| J310528    | 2031-09-28 17:42:25.08 | 17 23 02.73530 -22 58 42.49279 | 1.7                     | 17.593           | 184.74   | 20.01                   | 5.386            | 77.1        | 9.417      | 14.106 | 12.865 | 348.3             | 76.5  |
| Pgt        | 4111632047131659776    | 17 23 02.63002 -22 59 00.02595 | 1.0                     | 68.722           | 3.14     | -2.34                   |                  | 74.3        |            | 14.106 | 0      | -23.0             | 76.3  |
| J310529    | 2031-09-29 06:48:18.31 | 17 23 20.07618 -22 59 33.17093 | 4.8                     | 13.242           | 4.69     | 20.25                   | 5.394            | -48.5       | 7.537      | 14.174 | 12.609 | 151.4             | 76.1  |
| Pgt        | 4111631085076829568    | 17 23 20.15452 -22 59 19.97312 | 3.1                     | 51.803           | 3.11     | -2.33                   |                  | -51.6       | 2.264      | 14.187 | 0      | -23.0             | 84.0  |
| J310530    | 2031-09-30 15:48:04.70 | 17 24 05.06195 -23 00 16.77446 | 4.5                     | 6.491            | 4.58     | 20.84                   | 5.414            | -21.8       | 8.456      | 14.763 | 13.229 | 15.3              | 74.9  |
| Pgt        | 4111624423621587712    | 17 24 05.09950 -23 00 10.30453 | 3.0                     | 25.487           | 3.03     | -2.33                   |                  | -25.2       |            | 14.808 | 0      | -23.0             | 103.3 |

Table 4 continued on next page



Table 4 (continued)

| Event ID   | C/A Epoch              | ICRS Star Coord at Epoch |                 | $\sigma(\alpha_*)$ (km) | C/A ( $''$ )     | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|------------|------------------------|--------------------------|-----------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type | Source ID              | Geocentric               | Object Position | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J310556    | 2031-10-13 13:51:26.78 | 17 32 00.49070           | -23 08 13.15099 | 2.8                     | 17.743           | 3.55     | 26.20                   | 5.599            |             | 9.840      | 14.925 | 13.671 | 33.7              | 64.0  |
| Pt         | 4117419743252310656    | 17 32 00.57031           | -23 07 55.44164 | 1.7                     | 72.051           | 2.18     | -2.28                   |                  |             | 0.417      | 15.218 | 0      | -23.2             | 97.1  |
| J310557    | 2031-10-14 22:16:10.59 | 17 32 55.53670           | -23 08 36.72284 | 1.7                     | 5.052            | 183.44   | 26.73                   | 5.617            | 20.5        | 9.447      | 14.202 | 12.990 | 266.4             | 62.9  |
| Pgt        | 4116674338739143680    | 17 32 55.51470           | -23 08 41.76588 | 1.1                     | 20.583           | 2.08     | -2.28                   |                  | 17.4        | 0.462      | 14.517 | 0      | -23.2             | 80.1  |
| J310558    | 2031-10-16 04:22:31.80 | 17 33 47.38833           | -23 09 23.06040 | 4.4                     | 1.099            | 183.34   | 27.22                   | 5.634            | 5.7         | 7.645      | 14.264 | 12.691 | 173.8             | 61.8  |
| Pgt        | 4116671353819474560    | 17 33 47.38368           | -23 09 24.15799 | 3.0                     | 4.493            | 1.98     | -2.27                   |                  | 2.6         | 1.055      | 14.599 | 0      | -23.2             | 63.9  |
| J310559    | 2031-10-16 13:25:00.75 | 17 34 03.12043           | -23 09 35.68166 | 1.9                     | 1.082            | 183.31   | 27.37                   | 5.639            | 5.6         | 8.368      | 13.687 | 12.361 | 37.9              | 61.5  |
| Pgt        | 4116682933064287104    | 17 34 03.11590           | -23 09 36.76142 | 1.2                     | 4.424            | 1.96     | -2.27                   |                  | 2.5         | 0.811      | 14.027 | 0      | -23.2             | 58.9  |
| J310560    | 2031-10-16 14:16:55.47 | 17 34 04.63092           | -23 09 36.57811 | 3.5                     | 1.388            | 183.31   | 27.39                   | 5.640            | 6.7         | 7.517      | 13.405 | 11.951 | 24.9              | 61.5  |
| Pgt        | 4116682859951439360    | 17 34 04.62511           | -23 09 37.96427 | 2.3                     | 5.679            | 1.95     | -2.27                   |                  | 3.7         | 1.639      | 13.746 | 0      | -23.2             | 58.4  |
| J310561    | 2031-10-16 17:39:04.71 | 17 34 10.52035           | -23 09 39.77842 | 2.5                     | 2.869            | 183.30   | 27.44                   | 5.642            | 12.3        | 9.792      | 14.641 | 13.411 | 334.2             | 61.3  |
| Pgt        | 4116682688152736640    | 17 34 10.50839           | -23 09 42.64291 | 1.5                     | 11.740           | 1.94     | -2.27                   |                  | 9.2         | 0.389      | 14.984 | 0      | -23.2             | 56.6  |
| J310562    | 2031-10-17 03:23:02.79 | 17 34 27.48991           | -23 10 12.66954 | 3.7                     | 16.588           | 3.26     | 27.59                   | 5.647            | -72.6       | 9.147      | 14.912 | 13.469 | 187.9             | 61.0  |
| Pgt        | 4116682108430482304    | 17 34 27.55826           | -23 09 56.10881 | 2.4                     | 67.939           | 1.91     | -2.27                   |                  | -75.0       | 0.761      | 15.261 | 0      | -23.2             | 51.2  |
| J310563    | 2031-10-17 04:19:28.29 | 17 34 29.27959           | -23 09 40.55446 | 2.9                     | 16.879           | 183.26   | 27.61                   | 5.648            | 78.0        | 8.587      | 14.016 | 12.655 | 173.7             | 61.0  |
| Pg         | 4116682142790223616    | 17 34 29.20995           | -23 09 57.40599 | 1.9                     | 69.138           | 1.91     | -2.27                   |                  | 75.6        | 0.822      | 14.366 | 0      | -23.2             | 50.7  |
| J310564    | 2031-10-17 07:26:16.53 | 17 34 34.69386           | -23 09 59.17127 | 1.4                     | 2.528            | 183.25   | 27.66                   | 5.649            | 11.0        | 9.668      | 12.152 | 11.331 | 126.9             | 60.9  |
| Pgt        | 4116682172755761920    | 17 34 34.68348           | -23 10 01.69555 | 0.9                     | 10.360           | 1.90     | -2.27                   |                  | 8.0         | 0.228      | 12.504 | 0      | -23.2             | 48.9  |
| J310565    | 2031-10-17 08:52:17.28 | 17 34 37.24533           | -23 09 54.21747 | 3.0                     | 9.466            | 183.24   | 27.68                   | 5.650            | 37.7        | 8.668      | 14.307 | 12.900 | 105.4             | 60.8  |
| Pgt        | 4116682172756641152    | 17 34 37.20648           | -23 10 03.66806 | 1.9                     | 38.790           | 1.90     | -2.27                   |                  | 34.9        | 0.912      | 14.660 | 0      | -23.2             | 48.1  |
| J310566    | 2031-10-17 09:09:44.23 | 17 34 37.69758           | -23 10 09.17303 | 4.4                     | 5.113            | 3.24     | 27.69                   | 5.650            | -17.8       | 7.811      | 14.569 | 12.854 | 101.0             | 60.8  |
| Pgt        | 4116682172756605312    | 17 34 37.71853           | -23 10 04.06802 | 2.8                     | 20.954           | 1.89     | -2.27                   |                  | -20.8       |            | 14.922 | 0      | -23.2             | 48.0  |
| J310567    | 2031-10-18 00:19:30.66 | 17 35 04.49556           | -23 10 29.79697 | 2.1                     | 4.977            | 3.19     | 27.93                   | 5.659            | -17.3       | 9.565      | 14.742 | 13.462 | 233.1             | 60.3  |
| Pgt        | 4116679733215150080    | 17 35 04.51563           | -23 10 24.82736 | 1.3                     | 20.428           | 1.85     | -2.27                   |                  | -20.3       | 0.514      | 15.105 | 0      | -23.2             | 39.4  |
| J310568    | 2031-10-18 12:42:39.46 | 17 35 26.47794           | -23 10 59.75895 | 6.4                     | 18.142           | 3.14     | 28.13                   | 5.666            |             | 7.802      | 14.949 | 13.351 | 46.9              | 59.9  |
| Pt         | 4116633008342367488    | 17 35 26.55006           | -23 10 41.64467 | 3.7                     | 74.546           | 1.81     | -2.26                   |                  |             |            | 15.319 | 0      | -23.2             | 32.4  |
| J310569    | 2031-10-18 12:58:56.45 | 17 35 26.97439           | -23 10 57.06235 | 2.1                     | 15.073           | 3.14     | 28.13                   | 5.666            | -61.8       | 9.579      | 14.759 | 13.496 | 42.8              | 59.8  |
| Pgt        | 4116633008342365952    | 17 35 27.03431           | -23 10 42.01171 | 1.2                     | 61.940           | 1.81     | -2.26                   |                  | -64.3       | 0.520      | 15.129 | 0      | -23.2             | 32.3  |
| J310570    | 2031-10-18 19:50:51.06 | 17 35 39.32875           | -23 10 45.20987 | 3.3                     | 6.075            | 183.12   | 28.24                   | 5.670            | 24.5        | 9.039      | 14.680 | 13.276 | 299.6             | 59.6  |
| Pgt        | 4116637887426642176    | 17 35 39.30474           | -23 10 51.27554 | 1.8                     | 24.979           | 1.78     | -2.26                   |                  | 21.6        | 0.785      | 15.055 | 0      | -23.2             | 28.4  |
| J310571    | 2031-10-18 22:18:02.78 | 17 35 43.76588           | -23 10 37.66222 | 4.0                     | 16.939           | 183.12   | 28.28                   | 5.671            | 79.6        | 8.906      | 14.894 | 13.415 | 262.7             | 59.5  |
| Pgt        | 4116637986133023360    | 17 35 43.69908           | -23 10 54.57608 | 2.1                     | 69.669           | 1.78     | -2.26                   |                  | 77.2        | 0.798      | 15.270 | 0      | -23.2             | 27.0  |
| J310572    | 2031-10-19 06:25:28.22 | 17 35 58.23633           | -23 11 18.22341 | 6.1                     | 12.774           | 3.08     | 28.40                   | 5.675            | -49.7       | 8.496      | 14.907 | 13.376 | 140.6             | 59.2  |
| Pgt        | 4116635104287782912    | 17 35 58.28616           | -23 11 05.46803 | 3.1                     | 52.580           | 1.75     | -2.26                   |                  | -52.3       |            | 15.288 | 0      | -23.2             | 22.3  |
| J310573    | 2031-10-19 09:56:33.02 | 17 36 04.62867           | -23 11 07.97420 | 2.4                     | 2.196            | 183.07   | 28.46                   | 5.677            | 9.8         | 9.975      | 14.557 | 13.381 | 87.7              | 59.1  |
| Pgt        | 4116635168634433792    | 17 36 04.62013           | -23 11 10.16682 | 1.2                     | 9.041            | 1.74     | -2.26                   |                  | 6.8         | 0.277      | 14.940 | 0      | -23.2             | 20.3  |
| J310574    | 2031-10-19 11:18:57.43 | 17 36 07.12486           | -23 11 04.51328 | 1.7                     | 7.496            | 183.07   | 28.48                   | 5.678            | 30.1        | 8.758      | 12.207 | 11.215 | 67.0              | 59.1  |
| Pgt        | 4116635168633677312    | 17 36 07.09574           | -23 11 11.99828 | 0.9                     | 30.868           | 1.73     | -2.26                   |                  | 27.2        | 0.422      | 12.591 | 0      | -23.2             | 19.6  |
| J310575    | 2031-10-20 04:55:09.27 | 17 36 39.00094           | -23 11 25.76829 | 1.8                     | 9.566            | 183.01   | 28.76                   | 5.688            | 38.4        | 9.488      | 13.718 | 12.581 | 162.4             | 58.5  |
| Pgt        | 4116624109168188800    | 17 36 38.96451           | -23 11 35.32136 | 0.9                     | 39.462           | 1.68     | -2.26                   |                  | 35.6        | 0.415      | 14.112 | 0      | -23.2             | 9.6   |
| J310576    | 2031-10-21 12:52:41.39 | 17 37 37.48320           | -23 12 12.84317 | 5.5                     | 4.081            | 182.90   | 29.25                   | 5.705            | 17.0        | 7.687      | 14.574 | 13.005 | 41.9              | 57.4  |
| Pgt        | 4116714097316128512    | 17 37 37.46824           | -23 12 16.91935 | 2.7                     | 16.887           | 1.57     | -2.25                   |                  | 14.0        | 14.987     | 0      | 0      | -23.2             | 9.8   |
| J310577    | 2031-10-21 21:58:08.71 | 17 37 54.29252           | -23 12 19.64806 | 1.5                     | 8.933            | 182.87   | 29.39                   | 5.710            | 36.0        | 8.840      | 13.170 | 11.923 | 265.3             | 57.1  |
| Pgt        | 4116714612712081536    | 17 37 54.26011           | -23 12 28.56992 | 0.7                     | 36.992           | 1.54     | -2.25                   |                  | 33.2        | 0.442      | 13.588 | 0      | -23.2             | 15.0  |

<sup>a</sup> A nearby event has the same 2MASS ID as this event, resulting in a corresponding K magnitude ambiguity.

\* Superscript \* indicates RUWE > 1.4, \*\* indicates RUWE > 2, and \*\*\* indicates RUWE > 5. See machine-readable file for RUWE values.

Table 5. Geocentric Jupiter Occultation Predictions 2023 to 2050 for  $K \leq 10$  (part 5 of 11)

| Event ID              | C/A Epoch              | ICRS Star Coord at Epoch       | $\sigma(\alpha_*)$ (km) | C/A ( $''$ )     | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|-----------------------|------------------------|--------------------------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type            | Source ID              | Geocentric Object Position     | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J310578               | 2031-10-22 02:49:29.09 | 17 38 03.21090 -23 12 47.27454 | 3.7                     | 12.531           | 2.85     | 29.46                   | 5.712            | -48.9       | 9.167      | 14.811 | 13.387 | 192.3             | 56.9  |
| Pgt                   | 4116526901096525824    | 17 38 03.25603 -23 12 34.75855 | 2.4                     | 51.917           | 1.53     | -2.25                   |                  | -51.5       |            | 15.232 | 0      | -23.2             | 17.7  |
| J310579               | 2031-10-22 03:26:24.82 | 17 38 04.39897 -23 12 35.17278 | 1.4                     | 0.369            | 182.85   | 29.47                   | 5.713            | 2.9         | 9.573      | 12.669 | 11.760 | 183.0             | 56.9  |
| Pgt                   | 4116526901096562432    | 17 38 04.39764 -23 12 35.54127 | 0.7                     | 1.529            | 1.52     | -2.25                   |                  | -0.1        | 0.266      | 13.090 | 0      | -23.2             | 18.1  |
| J310580               | 2031-10-22 05:59:51.00 | 17 38 09.15369 -23 12 36.12998 | 4.4                     | 2.663            | 182.84   | 29.51                   | 5.714            | 11.6        | 8.775      | 14.860 | 13.385 | 144.6             | 56.8  |
| Pgt                   | 4116527072895252992    | 17 38 09.14413 -23 12 38.78924 | 2.4                     | 11.034           | 1.52     | -2.25                   |                  | 8.6         | 0.910      | 15.282 | 0      | -23.2             | 19.6  |
| J310581               | 2031-10-22 06:24:36.16 | 17 38 09.93127 -23 12 33.48553 | 1.7                     | 5.834            | 182.84   | 29.51                   | 5.714            | 23.8        | 9.391      | 13.569 | 12.445 | 138.4             | 56.8  |
| Pgt                   | 4116527072895252864    | 17 38 09.91032 -23 12 39.31258 | 0.9                     | 24.179           | 1.51     | -2.25                   |                  | 20.8        | 0.351      | 13.991 | 0      | -23.2             | 19.8  |
| J310582*              | 2031-10-22 07:08:55.66 | 17 38 11.24840 -23 12 49.80767 | 9.1                     | 9.570            | 2.83     | 29.52                   | 5.715            | -35.8       | 9.910      | 13.993 | 12.880 | 127.3             | 56.7  |
| Pgt                   | 4116527077318050944    | 17 38 11.28269 -23 12 40.24929 | 4.5                     | 39.664           | 1.51     | -2.25                   |                  | -38.6       | 0.268      | 14.415 | 0      | -23.2             | 20.2  |
| J310583* <sup>d</sup> | 2031-10-22 11:59:01.01 | 17 38 20.33680 -23 12 29.01476 | 37.2                    | 17.372           | 182.82   | 29.60                   | 5.717            |             | 7.992      | 10.293 | 8.813  | 54.6              | 56.6  |
| Pt                    | 4116526390075564160    | 17 38 20.27481 -23 12 46.36573 | 26.9                    | 72.033           | 1.50     | -2.25                   |                  |             | 0.454      | 10.719 | 0      | -23.2             | 23.0  |
| J310584* <sup>d</sup> | 2031-10-22 12:01:41.31 | 17 38 20.41920 -23 12 29.21134 | 11.8                    | 17.231           | 182.82   | 29.60                   | 5.717            | 88.0        | 7.992      | 9.739  | 8.816  | 53.9              | 56.6  |
| Pgt                   | 4116526385697128704    | 17 38 20.35771 -23 12 46.42195 | 6.7                     | 71.450           | 1.50     | -2.25                   |                  | 86.6        | 0.455      | 10.164 | 0      | -23.2             | 23.0  |
| J310585               | 2031-10-22 12:10:34.60 | 17 38 20.64875 -23 12 42.33869 | 3.9                     | 4.275            | 182.82   | 29.60                   | 5.717            | 17.8        | 8.103      | 14.177 | 12.702 | 51.7              | 56.6  |
| Pgt                   | 4116526385700517632    | 17 38 20.63351 -23 12 46.60896 | 2.1                     | 17.728           | 1.49     | -2.25                   |                  | 14.8        |            | 14.602 | 0      | -23.2             | 23.1  |
| J310586               | 2031-10-22 16:18:40.01 | 17 38 28.27342 -23 13 10.26709 | 2.9                     | 18.469           | 2.80     | 29.66                   | 5.719            |             | 8.928      | 14.491 | 13.133 | 349.5             | 56.4  |
| P                     | 4116526149605001472    | 17 38 28.33881 -23 12 51.81976 | 1.5                     | 76.614           | 1.48     | -2.25                   |                  |             |            | 14.918 | 0      | -23.2             | 25.5  |
| J310587               | 2031-10-22 17:34:29.55 | 17 38 30.71174 -23 12 49.10615 | 6.5                     | 4.308            | 182.80   | 29.68                   | 5.720            | 17.9        | 7.557      | 14.277 | 12.720 | 330.5             | 56.4  |
| Pgt                   | 4116532020717382784    | 17 38 30.69649 -23 12 53.40881 | 3.4                     | 17.871           | 1.48     | -2.25                   |                  | 14.9        |            | 14.705 | 0      | -23.2             | 26.3  |
| J310588               | 2031-10-23 01:04:17.53 | 17 38 44.66619 -23 13 14.69033 | 3.4                     | 11.904           | 2.77     | 29.79                   | 5.724            | -46.1       | 9.655      | 14.805 | 13.528 | 217.8             | 56.1  |
| Pgt                   | 4116529070133438464    | 17 38 44.70789 -23 13 02.80060 | 1.6                     | 49.418           | 1.45     | -2.25                   |                  | -48.7       | 0.463      | 15.237 | 0      | -23.2             | 30.6  |
| J310589               | 2031-10-23 01:05:02.63 | 17 38 44.76302 -23 12 53.79871 | 2.2                     | 9.028            | 182.77   | 29.79                   | 5.724            | 36.4        | 9.156      | 13.607 | 12.463 | 217.6             | 56.1  |
| Pgt                   | 4116529100119777280    | 17 38 44.73134 -23 13 02.81624 | 1.1                     | 37.480           | 1.45     | -2.25                   |                  | 33.7        | 0.410      | 14.040 | 0      | -23.2             | 30.6  |
| J310590               | 2031-10-23 02:29:46.67 | 17 38 47.38586 -23 13 01.69604 | 5.6                     | 2.886            | 182.77   | 29.81                   | 5.725            | 12.5        | 7.537      | 14.223 | 12.640 | 196.4             | 56.1  |
| Pgt                   | 4116529100119753600    | 17 38 47.37576 -23 13 04.57882 | 2.8                     | 11.983           | 1.45     | -2.25                   |                  | 9.5         | 1.832      | 14.656 | 0      | -23.2             | 31.4  |
| J310591               | 2031-10-23 06:23:29.46 | 17 38 54.69734 -23 13 03.78775 | 4.0                     | 5.648            | 182.75   | 29.87                   | 5.727            | 23.1        | 8.273      | 14.299 | 12.837 | 137.9             | 55.9  |
| Pgt                   | 4116529241982782720    | 17 38 54.67766 -23 13 09.42937 | 2.2                     | 23.460           | 1.43     | -2.25                   |                  | 20.2        |            | 14.735 | 0      | -23.2             | 33.7  |
| J310592               | 2031-10-23 10:35:17.12 | 17 39 02.55796 -23 13 14.57037 | 1.9                     | 0.067            | 182.76   | 29.94                   | 5.729            | 1.8         | 9.001      | 14.026 | 12.782 | 74.8              | 55.8  |
| Pgt                   | 4116528589148305920    | 17 39 02.55773 -23 13 14.63699 | 1.1                     | 0.277            | 1.42     | -2.25                   |                  | -1.3        | 0.537      | 14.464 | 0      | -23.2             | 36.1  |
| J310593               | 2031-10-23 11:09:26.81 | 17 39 03.68812 -23 12 57.98849 | 2.2                     | 17.373           | 182.74   | 29.94                   | 5.729            |             | 9.897      | 14.611 | 13.415 | 66.2              | 55.8  |
| Pt                    | 4116528584723711872    | 17 39 03.62790 -23 13 15.34206 | 1.2                     | 72.193           | 1.42     | -2.25                   |                  |             | 0.352      | 15.049 | 0      | -23.2             | 36.4  |
| J310594               | 2031-10-23 17:43:29.46 | 17 39 15.95467 -23 13 33.77998 | 2.1                     | 10.342           | 2.71     | 30.04                   | 5.733            | -39.3       | 7.865      | 13.174 | 11.835 | 327.5             | 55.6  |
| Pgt                   | 4116529752954726912    | 17 39 15.99014 -23 13 23.44930 | 1.2                     | 43.002           | 1.40     | -2.24                   |                  | -41.9       | 0.996      | 13.616 | 0      | -23.2             | 40.3  |
| J310595               | 2031-10-23 17:57:37.78 | 17 39 16.45137 -23 13 18.77930 | 2.1                     | 4.966            | 182.71   | 30.05                   | 5.733            | 20.5        | 8.740      | 14.136 | 12.783 | 323.9             | 55.6  |
| Pgt                   | 4116529752954755072    | 17 39 16.43433 -23 13 23.73932 | 1.2                     | 20.647           | 1.39     | -2.24                   |                  | 17.5        | 0.775      | 14.578 | 0      | -23.2             | 40.4  |
| J310596               | 2031-10-23 18:23:35.85 | 17 39 17.27137 -23 13 18.12591 | 2.9                     | 6.153            | 182.71   | 30.05                   | 5.733            | 25.1        | 8.153      | 13.699 | 12.287 | 317.4             | 55.5  |
| Pgt                   | 4116529791738362240    | 17 39 17.25026 -23 13 24.27182 | 1.7                     | 25.584           | 1.39     | -2.24                   |                  | 22.2        | 1.109      | 14.141 | 0      | -23.2             | 40.6  |
| J310597               | 2031-10-23 19:33:50.11 | 17 39 19.48999 -23 13 16.35717 | 2.4                     | 9.364            | 182.71   | 30.07                   | 5.734            | 37.9        | 9.781      | 14.617 | 13.383 | 299.8             | 55.5  |
| Pgt                   | 4116529791738344192    | 17 39 19.45790 -23 13 25.71110 | 1.4                     | 38.942           | 1.39     | -2.24                   |                  | 35.1        | 0.387      | 15.060 | 0      | -23.2             | 41.3  |
| J310598               | 2031-10-23 19:46:17.97 | 17 39 19.85079 -23 13 25.66970 | 2.5                     | 0.297            | 182.70   | 30.07                   | 5.734            | 2.6         | 9.403      | 14.520 | 13.216 | 296.7             | 55.5  |
| Pgt                   | 4116518040705300352    | 17 39 19.84978 -23 13 25.96635 | 1.4                     | 1.235            | 1.39     | -2.24                   |                  | -0.4        | 0.529      | 14.963 | 0      | -23.2             | 41.4  |
| J310599               | 2031-10-23 20:11:57.47 | 17 39 20.69313 -23 13 15.82854 | 1.8                     | 10.675           | 182.71   | 30.08                   | 5.734            | 43.4        | 8.333      | 13.499 | 12.196 | 290.3             | 55.5  |
| Pgt                   | 4116518040705299712    | 17 39 20.65657 -23 13 26.49165 | 1.0                     | 44.395           | 1.39     | -2.24                   |                  | 40.7        | 0.816      | 13.942 | 0      | -23.2             | 41.7  |
| J310600               | 2031-10-24 00:07:43.91 | 17 39 28.11937 -23 13 18.81043 | 1.8                     | 12.513           | 182.69   | 30.14                   | 5.736            | 51.6        | 9.993      | 13.828 | 12.768 | 231.2             | 55.3  |
| Pgt                   | 4116518105003447680    | 17 39 28.07673 -23 13 31.30916 | 1.1                     | 52.056           | 1.37     | -2.24                   |                  | 49.1        | 0.243      | 14.274 | 0      | -23.2             | 44.0  |
| J310601               | 2031-10-24 05:51:50.32 | 17 39 38.90867 -23 13 43.80581 | 3.7                     | 5.502            | 2.67     | 30.22                   | 5.739            | -19.7       | 8.256      | 14.164 | 12.686 | 145.0             | 55.1  |
| Pgt                   | 4116517456589889408    | 17 39 38.92726 -23 13 38.30930 | 2.1                     | 22.904           | 1.35     | -2.24                   |                  | -22.6       |            | 14.612 | 0      | -23.2             | 47.3  |

Table 5 continued on next page



Table 5 (continued)

| Event ID   | C/A Epoch              | ICRS Star Coord at Epoch |                 | $\sigma(\alpha_*)$ (km) | C/A ( $''$ )     | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|------------|------------------------|--------------------------|-----------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type | Source ID              | Geocentric               | Object Position | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J310627    | 2031-10-28 13:36:51.56 | 17 42 59.44343           | -23 15 38.04279 | 1.8                     | 0.193            | 182.29   | 31.71                   | 5.792            | 2.2         | 8.979      | 13.786 | 12.563 | 25.3              | 51.6  |
| Pgt        | 4116854147627304576    | 17 42 59.44287           | -23 15 38.23544 | 1.0                     | 0.810            | 0.99     | -2.22                   |                  | -0.8        | 0.514      | 14.286 | 0      | -23.3             | 106.7 |
| J310628    | 2031-10-28 20:34:40.68 | 17 43 13.18040           | -23 15 46.12304 | 1.8                     | 0.323            | 2.28     | 31.81                   | 5.795            | 0.2         | 9.290      | 14.158 | 12.934 | 280.6             | 51.4  |
| Pgt        | 4116853249888262272    | 17 43 13.18134           | -23 15 45.80051 | 1.0                     | 1.357            | 0.97     | -2.22                   |                  | -2.7        | 0.454      | 14.662 | 0      | -23.3             | 110.6 |
| J310629    | 2031-10-28 22:46:45.01 | 17 43 17.49631           | -23 16 00.34853 | 5.3                     | 12.180           | 2.27     | 31.84                   | 5.797            | -48.1       | 7.949      | 14.653 | 13.030 | 247.5             | 51.3  |
| Pgt        | 4116853559125902720    | 17 43 17.53125           | -23 15 48.17841 | 3.1                     | 51.204           | 0.96     | -2.22                   |                  | -50.7       | 1.682      | 15.158 | 0      | -23.3             | 111.8 |
| J310630    | 2031-10-29 02:37:37.78 | 17 43 25.16121           | -23 15 46.19506 | 5.6                     | 6.129            | 182.26   | 31.89                   | 5.798            | 25.2        | 7.570      | 14.872 | 13.238 | 189.7             | 51.2  |
| Pgt        | 4068815282028020224    | 17 43 25.14371           | -23 15 52.31969 | 3.1                     | 25.777           | 0.95     | -2.22                   |                  | 22.4        |            | 15.379 | 0      | -23.3             | 113.9 |
| J310631*   | 2031-10-29 03:27:02.67 | 17 43 26.78998           | -23 15 47.72644 | 2.7                     | 5.481            | 182.25   | 31.90                   | 5.799            | 22.7        | 9.152      | 13.920 | 12.697 | 177.3             | 51.1  |
| Pgt        | 4068815282028208640    | 17 43 26.77435           | -23 15 53.20346 | 1.6                     | 23.053           | 0.95     | -2.22                   |                  | 19.8        | 0.465      | 14.427 | 0      | -23.3             | 114.4 |
| J310632    | 2031-10-29 04:55:34.31 | 17 43 29.72445           | -23 15 45.09653 | 2.1                     | 9.695            | 182.25   | 31.92                   | 5.800            | 39.7        | 9.503      | 14.641 | 13.353 | 155.1             | 51.1  |
| Pgt        | 4068815208916048640    | 17 43 29.69686           | -23 15 54.78445 | 1.2                     | 40.781           | 0.94     | -2.22                   |                  | 37.0        | 0.516      | 15.148 | 0      | -23.3             | 115.2 |
| J310633    | 2031-10-29 08:24:10.11 | 17 43 36.63329           | -23 15 42.92687 | 5.8                     | 15.583           | 182.24   | 31.97                   | 5.801            | 70.2        | 8.060      | 14.938 | 13.336 | 102.9             | 51.0  |
| Pg         | 4068816518978455680    | 17 43 36.58917           | -23 15 58.49807 | 3.3                     | 65.566           | 0.93     | -2.22                   |                  | 67.8        |            | 15.448 | 0      | -23.3             | 117.1 |
| J310634    | 2031-10-29 10:02:43.00 | 17 43 39.82973           | -23 16 06.81715 | 1.7                     | 6.575            | 2.23     | 32.00                   | 5.802            | -24.2       | 9.061      | 13.972 | 12.719 | 78.2              | 50.9  |
| Pgt        | 4068816445866553472    | 17 43 39.84827           | -23 16 00.24681 | 1.0                     | 27.669           | 0.92     | -2.22                   |                  | -27.0       | 0.495      | 14.482 | 0      | -23.3             | 118.0 |
| J310635    | 2031-10-29 13:28:29.40 | 17 43 46.68447           | -23 15 54.97350 | 4.5                     | 8.920            | 182.22   | 32.04                   | 5.804            | 36.5        | 8.296      | 14.466 | 12.954 | 26.6              | 50.8  |
| Pgt        | 4068815831725033600    | 17 43 46.65944           | -23 16 03.88641 | 2.8                     | 37.545           | 0.91     | -2.22                   |                  | 33.7        | 1.168      | 14.978 | 0      | -23.3             | 119.9 |
| J310636    | 2031-10-29 14:50:07.58 | 17 43 49.36874           | -23 16 03.59176 | 2.9                     | 1.735            | 182.21   | 32.06                   | 5.804            | 8.2         | 9.208      | 14.747 | 13.350 | 6.2               | 50.7  |
| Pgt        | 4068815758671798656    | 17 43 49.36389           | -23 16 05.32590 | 1.7                     | 7.306            | 0.91     | -2.22                   |                  | 5.2         |            | 15.259 | 0      | -23.3             | 120.7 |
| J310637    | 2031-10-29 17:19:11.42 | 17 43 54.34154           | -23 15 54.99490 | 3.9                     | 12.962           | 182.20   | 32.10                   | 5.806            | 54.6        | 8.583      | 14.438 | 12.979 | 328.8             | 50.7  |
| Pgt        | 4068815591265313408    | 17 43 54.30538           | -23 16 07.94781 | 2.4                     | 54.581           | 0.90     | -2.22                   |                  | 52.1        |            | 14.952 | 0      | -23.3             | 122.0 |
| J310638    | 2031-10-29 17:50:24.62 | 17 43 55.39075           | -23 15 50.61503 | 2.1                     | 17.894           | 182.20   | 32.10                   | 5.806            |             | 9.693      | 14.622 | 13.371 | 321.0             | 50.6  |
| P          | 4068815586885305344    | 17 43 55.34087           | -23 16 08.49587 | 1.4                     | 75.349           | 0.89     | -2.22                   |                  |             | 0.418      | 15.136 | 0      | -23.3             | 122.3 |
| J310639    | 2031-10-29 18:28:22.01 | 17 43 56.56507           | -23 16 21.73801 | 2.8                     | 12.586           | 2.19     | 32.11                   | 5.806            | -50.2       | 9.475      | 14.817 | 13.461 | 311.5             | 50.6  |
| Pgt        | 4068815518153557760    | 17 43 56.60004           | -23 16 09.16169 | 1.5                     | 52.999           | 0.89     | -2.22                   |                  | -52.7       | 0.552      | 15.331 | 0      | -23.3             | 122.7 |
| J310640    | 2031-10-30 00:30:44.34 | 17 44 08.62509           | -23 16 19.22395 | 2.2                     | 3.736            | 2.17     | 32.19                   | 5.809            | -13.0       | 9.366      | 14.524 | 13.224 | 220.7             | 50.4  |
| Pgt        | 4068812911205528576    | 17 44 08.63537           | -23 16 15.49062 | 1.3                     | 15.741           | 0.87     | -2.22                   |                  | -15.9       |            | 15.041 | 0      | -23.3             | 126.0 |
| J310641    | 2031-10-30 01:58:21.98 | 17 44 11.52056           | -23 16 27.55633 | 1.8                     | 10.550           | 2.17     | 32.21                   | 5.810            | -40.8       | 8.038      | 13.393 | 12.061 | 198.7             | 50.4  |
| Pgt        | 4068813009892638208    | 17 44 11.54951           | -23 16 17.01350 | 1.1                     | 44.456           | 0.87     | -2.22                   |                  | -43.4       | 0.842      | 13.911 | 0      | -23.3             | 126.8 |
| J310642    | 2031-10-30 02:09:44.12 | 17 44 11.88476           | -23 16 32.85824 | 1.7                     | 15.659           | 2.17     | 32.22                   | 5.810            | -68.6       | 8.841      | 13.769 | 12.525 | 195.9             | 50.4  |
| Pgt        | 4068812803734208128    | 17 44 11.92771           | -23 16 17.21087 | 1.1                     | 65.982           | 0.86     | -2.22                   |                  | -70.9       | 0.519      | 14.287 | 0      | -23.3             | 126.9 |
| J310643*   | 2031-10-30 03:00:55.87 | 17 44 13.60318           | -23 16 28.27460 | 3.9                     | 10.183           | 2.16     | 32.23                   | 5.810            | -39.2       | 9.241      | 14.793 | 13.347 | 183.1             | 50.3  |
| Pgt        | 4068812808126238208    | 17 44 13.63108           | -23 16 18.09902 | 2.7                     | 42.912           | 0.86     | -2.22                   |                  | -41.8       | 0.664      | 15.311 | 0      | -23.3             | 127.3 |
| J310644    | 2031-10-30 05:13:18.00 | 17 44 18.08023           | -23 16 04.80201 | 6.5                     | 15.600           | 182.16   | 32.26                   | 5.811            | 70.5        | 8.173      | 14.415 | 12.904 | 149.9             | 50.3  |
| Pgt        | 4068812842485943424    | 17 44 18.03756           | -23 16 20.39068 | 3.7                     | 65.751           | 0.85     | -2.22                   |                  | 68.1        |            | 14.934 | 0      | -23.3             | 128.5 |
| J310645*   | 2031-10-30 06:08:22.80 | 17 44 19.87251           | -23 16 21.20490 | 14.4                    | 0.137            | 182.15   | 32.27                   | 5.812            | 2.0         | 9.097      | 14.571 | 13.179 | 136.1             | 50.2  |
| Pgt        | 4068812773766425472    | 17 44 19.87214           | -23 16 21.34228 | 9.0                     | 0.579            | 0.85     | -2.22                   |                  | -1.0        | 0.557      | 15.090 | 0      | -23.3             | 129.0 |
| J310646    | 2031-10-30 09:02:45.41 | 17 44 25.68836           | -23 16 22.77054 | 1.6                     | 1.578            | 182.14   | 32.31                   | 5.813            | 7.6         | 8.667      | 13.124 | 11.910 | 92.4              | 50.1  |
| Pgt        | 4068817923335259008    | 17 44 25.68407           | -23 16 24.34716 | 1.0                     | 6.652            | 0.84     | -2.22                   |                  | 4.6         | 0.540      | 13.644 | 0      | -23.3             | 130.6 |
| J310647    | 2031-10-30 10:24:33.63 | 17 44 28.38853           | -23 16 34.64110 | 2.2                     | 8.895            | 2.14     | 32.33                   | 5.814            | -33.7       | 9.444      | 14.459 | 13.150 | 71.9              | 50.1  |
| Pgt        | 4068817854615706880    | 17 44 28.41260           | -23 16 25.75275 | 1.6                     | 37.506           | 0.84     | -2.22                   |                  | -36.4       | 0.535      | 14.981 | 0      | -23.3             | 131.3 |
| J310648    | 2031-10-30 13:44:15.61 | 17 44 35.10678           | -23 16 18.84746 | 2.3                     | 10.333           | 182.13   | 32.38                   | 5.816            | 42.5        | 9.495      | 14.424 | 13.149 | 21.9              | 50.0  |
| Pgt        | 4068817751548866944    | 17 44 35.07893           | -23 16 29.17310 | 1.4                     | 43.582           | 0.82     | -2.22                   |                  | 39.9        |            | 14.947 | 0      | -23.3             | 133.1 |
| J310649    | 2031-10-30 14:20:38.93 | 17 44 36.26737           | -23 16 39.87724 | 1.8                     | 10.089           | 2.12     | 32.38                   | 5.816            | -38.8       | 7.942      | 12.461 | 11.268 | 12.8              | 49.9  |
| Pgt        | 4068817751536483456    | 17 44 36.29448           | -23 16 29.79467 | 1.1                     | 42.558           | 0.82     | -2.22                   |                  | -41.5       | 0.853      | 12.984 | 0      | -23.3             | 133.5 |
| J310650    | 2031-10-30 15:27:38.06 | 17 44 38.51808           | -23 16 36.40684 | 2.4                     | 5.473            | 2.12     | 32.40                   | 5.816            | -19.8       | 8.480      | 13.760 | 12.404 | 356.0             | 49.9  |
| Pgt        | 4068817717176760576    | 17 44 38.53277           | -23 16 30.93751 | 1.5                     | 23.088           | 0.82     | -2.22                   |                  | -22.7       | 0.760      | 14.284 | 0      | -23.3             | 134.1 |
| J310651    | 2031-10-30 15:58:10.51 | 17 44 39.58157           | -23 16 21.03299 | 2.6                     | 10.432           | 182.12   | 32.41                   | 5.817            | 43.0        | 9.933      | 14.407 | 13.227 | 348.3             | 49.9  |
| Pg         | 4068817717176811392    | 17 44 39.55356           | -23 16 31.45799 | 1.6                     | 44.010           | 0.82     | -2.22                   |                  | 40.3        |            | 14.931 | 0      | -23.3             | 134.3 |

Table 5 continued on next page









Table 5 (continued)

| Event ID   | C/A Epoch              | ICRS Star Coord at Epoch |                 | $\sigma(\alpha_*)$ (km) | C/A ( $''$ )     | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|------------|------------------------|--------------------------|-----------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type | Source ID              | Geocentric               | Object Position | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J320006    | 2032-03-13 05:05:34.45 | 19 48 59.68194           | -21 11 52.73959 | 1.9                     | 14.138           | 350.18   | 29.54                   | 5.650            | -55.3       | 8.053      | 12.341 | 11.113 | 49.9              | 57.5  |
| Pgt        | 6865473852214897792    | 19 48 59.50951           | -21 11 38.80857 | 1.5                     | 57.935           | -12.13   | -1.38                   |                  | -59.7       | 0.860      | 12.765 | 0      | -21.1             | 78.4  |
| J320007    | 2032-03-14 17:35:03.26 | 19 50 05.61953           | -21 08 51.56577 | 1.1                     | 6.337            | 170.09   | 28.98                   | 5.629            | 26.4        | 9.497      | 11.126 | 10.562 | 221.3             | 58.7  |
| Pgt        | 6865466400452276224    | 19 50 05.69747           | -21 08 57.80845 | 0.6                     | 25.873           | -12.23   | -1.37                   |                  | 21.3        | 0.229      | 11.529 | 0      | -21.1             | 99.5  |
| J320008    | 2032-03-18 09:01:52.75 | 19 52 40.04193           | -21 02 48.51203 | 1.1                     | 11.404           | 349.91   | 27.60                   | 5.578            | -41.5       | 7.360      | 9.716  | 8.990  | 346.7             | 61.7  |
| Pgt        | 6865294945358748672    | 19 52 39.89921           | -21 02 37.28417 | 0.7                     | 46.139           | -12.48   | -1.35                   |                  | -46.3       | 0.706      | 10.065 | 0      | -21.0             | 146.0 |
| J320009*   | 2032-03-18 13:00:20.05 | 19 52 46.99298           | -21 02 38.77518 | 4.3                     | 18.879           | 349.90   | 27.54                   | 5.576            |             | 8.828      | 11.296 | 10.549 | 286.9             | 61.9  |
| Pt         | 6865295151517159424    | 19 52 46.75657           | -21 02 20.18828 | 2.8                     | 76.349           | -12.49   | -1.35                   |                  |             | 0.388      | 11.643 | 0      | -21.0             | 148.0 |
| J320010    | 2032-03-23 15:21:41.31 | 19 56 11.39296           | -20 53 56.29128 | 1.2                     | 12.665           | 349.67   | 25.54                   | 5.502            | -46.2       | 9.155      | 12.095 | 11.246 | 247.4             | 66.1  |
| Pgt        | 6865356518008773120    | 19 56 11.23087           | -20 53 43.83204 | 0.7                     | 50.540           | -12.81   | -1.31                   |                  | -51.1       | 0.353      | 12.361 | 0      | -20.8             | 151.3 |
| J320011    | 2032-03-25 14:44:49.80 | 19 57 26.96762           | -20 50 37.72592 | 1.0                     | 8.130            | 349.59   | 24.75                   | 5.473            | -27.3       | 7.854      | 10.745 | 9.911  | 255.0             | 67.8  |
| Pgt        | 6865359850903907840    | 19 57 26.86278           | -20 50 29.72938 | 0.7                     | 32.274           | -12.93   | -1.30                   |                  | -32.7       | 0.628      | 10.976 | 0      | -20.8             | 128.1 |
| J320012    | 2032-03-28 08:37:38.17 | 19 59 08.78406           | -20 46 20.18117 | 0.9                     | 14.272           | 349.49   | 23.63                   | 5.432            | -52.9       | 9.672      | 12.041 | 11.305 | 344.5             | 70.1  |
| Pgt        | 6866109683472286848    | 19 59 08.59836           | -20 46 06.14875 | 0.6                     | 56.228           | -13.09   | -1.28                   |                  | -57.8       | 0.245      | 12.222 | 0      | -20.7             | 94.6  |
| J320013*   | 2032-03-28 20:34:12.88 | 19 59 26.52677           | -20 45 13.15496 | 6.8                     | 6.157            | 169.46   | 23.42                   | 5.425            | 25.2        | 9.509      | 11.001 | 10.480 | 165.0             | 70.5  |
| Pgt        | 6866109958350345088    | 19 59 26.60704           | -20 45 19.20776 | 4.3                     | 24.222           | -13.12   | -1.28                   |                  | 19.5        | 0.214      | 11.172 | 0      | -20.7             | 88.3  |
| J320014    | 2032-03-31 22:30:49.60 | 20 01 15.28859           | -20 40 51.55161 | 0.9                     | 17.016           | 349.37   | 22.13                   | 5.378            | -68.1       | 9.769      | 12.627 | 11.793 | 133.2             | 73.1  |
| Pgt        | 6866078416110498816    | 20 01 15.06498           | -20 40 34.82722 | 0.6                     | 66.367           | -13.29   | -1.26                   |                  | -72.9       | 0.257      | 12.738 | 0      | -20.6             | 48.6  |
| J320015    | 2032-04-06 01:26:14.48 | 20 04 03.42230           | -20 33 11.39144 | 1.7                     | 2.938            | 349.25   | 19.93                   | 5.298            | -7.2        | 9.088      | 12.306 | 11.382 | 85.0              | 77.5  |
| Pgt        | 6866163971859291776    | 20 04 03.38329           | -20 33 08.50535 | 1.1                     | 11.288           | -13.55   | -1.23                   |                  | -13.5       | 0.373      | 12.302 | 0      | -20.5             | 23.3  |
| J320016    | 2032-04-08 07:39:52.51 | 20 05 12.88854           | -20 30 20.02379 | 1.4                     | 16.902           | 349.22   | 18.94                   | 5.263            | -64.5       | 7.898      | 11.716 | 10.648 | 349.7             | 79.5  |
| Pgt        | 6865982616861550464    | 20 05 12.66360           | -20 30 03.41972 | 0.9                     | 64.514           | -13.66   | -1.21                   |                  | -69.8       | 0.754      | 11.657 | 0      | -20.4             | 55.5  |
| J320017    | 2032-04-12 19:29:23.91 | 20 07 21.12354           | -20 24 31.35510 | 1.5                     | 12.187           | 349.19   | 16.92                   | 5.192            | -40.5       | 8.718      | 11.272 | 10.492 | 168.4             | 83.4  |
| Pgt        | 6865996395116631936    | 20 07 20.96101           | -20 24 19.38430 | 1.1                     | 45.887           | -13.85   | -1.19                   |                  | -46.7       | 0.415      | 11.091 | 1      | -20.3             | 117.8 |
| J320018*   | 2032-04-23 14:58:06.36 | 20 11 35.30687           | -20 13 00.46270 | 3.6                     | 0.327            | 349.41   | 11.96                   | 5.019            | 3.1         | 4.506      | 7.896  | 6.941  | 226.6             | 92.9  |
| Pgt        | 6866344807161369856    | 20 11 35.30260           | -20 13 00.14155 | 2.5                     | 1.189            | -14.24   | -1.13                   |                  | -5.3        | 3.073      | 7.338  | 0      | -20.1             | 110.8 |
| J320019    | 2032-06-05 04:10:39.53 | 20 14 15.55144           | -20 12 07.86606 | 0.8                     | 0.827            | 163.89   | -6.87                   | 4.404            | 4.3         | 9.834      | 12.810 | 11.961 | 347.2             | 133.4 |
| Pgt        | 6854417545541845376    | 20 14 15.56774           | -20 12 08.66062 | 0.6                     | 2.641            | -14.48   | -0.99                   |                  | 0.5         | 0.201      | 11.650 | 0      | -20.1             | 98.4  |
| J320020    | 2032-06-06 15:27:32.56 | 20 13 55.83640           | -20 13 12.83263 | 0.9                     | 14.668           | 164.19   | -7.42                   | 4.387            | 45.8        | 7.921      | 10.326 | 9.590  | 176.5             | 134.8 |
| Pgt        | 6854412529020058368    | 20 13 56.12029           | -20 13 26.94638 | 0.7                     | 46.667           | -14.46   | -0.99                   |                  | 43.1        | 0.439      | 9.250  | 0      | -20.1             | 117.9 |
| J320021    | 2032-07-01 19:47:52.44 | 20 04 43.29712           | -20 46 03.11459 | 1.2                     | 10.479           | 166.72   | -14.50                  | 4.171            | 29.1        | 8.803      | 11.262 | 10.512 | 84.3              | 161.1 |
| Pgt        | 6865968911623564160    | 20 04 43.46877           | -20 46 13.31314 | 0.8                     | 31.702           | -13.61   | -0.98                   |                  | 29.8        | 10.913     | 0      | 0      | -20.7             | 93.0  |
| J320022    | 2032-07-06 22:22:53.37 | 20 02 11.73059           | -20 54 23.81102 | 0.7                     | 4.457            | 167.08   | -15.30                  | 4.148            | 11.8        | 9.757      | 12.366 | 11.585 | 39.8              | 166.6 |
| Pgt        | 6866059445235920384    | 20 02 11.80173           | -20 54 28.15550 | 0.5                     | 13.408           | -13.38   | -0.98                   |                  | 12.8        | 0.414      | 12.075 | 0      | -20.8             | 158.4 |
| J320023    | 2032-07-11 02:29:11.33 | 20 00 02.34288           | -21 01 42.96909 | 0.6                     | 22.877           | 347.36   | -15.74                  | 4.134            | -75.9       | 9.655      | 12.399 | 11.580 | 333.6             | 171.1 |
| Pgt        | 6866042166586260992    | 20 00 01.98527           | -21 01 20.64681 | 0.5                     | 68.586           | -13.17   | -0.99                   |                  | -75.0       | 0.202      | 12.139 | 0      | -20.9             | 149.9 |
| J320024*   | 2032-07-24 07:39:37.71 | 19 52 55.43530           | -21 23 12.93344 | 1.4                     | 20.845           | 348.20   | -15.96                  | 4.124            | -64.3       | 9.578      | 11.485 | 10.856 | 241.2             | 174.6 |
| Pgt        | 6865232685512575232    | 19 52 55.13007           | -21 22 52.52899 | 0.9                     | 62.341           | -12.50   | -1.01                   |                  | -63.0       | 0.165      | 11.240 | 0      | -21.3             | 27.7  |
| J320025    | 2032-07-26 11:10:20.59 | 19 51 46.35658           | -21 26 34.94722 | 0.9                     | 22.376           | 348.33   | -15.83                  | 4.127            | -72.4       | 7.924      | 10.750 | 9.908  | 186.1             | 172.3 |
| Pgt        | 6865255569098453248    | 19 51 46.03232           | -21 26 13.03420 | 0.4                     | 66.971           | -12.39   | -1.01                   |                  | -71.1       | 0.449      | 10.496 | 1      | -21.3             | 59.6  |
| J320026*   | 2032-07-28 22:49:39.68 | 19 50 26.78260           | -21 29 54.52447 | 1.5                     | 5.514            | 168.47   | -15.63                  | 4.132            | 14.4        | 9.562      | 11.498 | 10.861 | 8.5               | 169.6 |
| Pgt        | 6865262853362535552    | 19 50 26.86157           | -21 29 59.92750 | 0.9                     | 16.526           | -12.26   | -1.01                   |                  | 16.0        | 0.182      | 11.230 | 0      | -21.4             | 94.9  |
| J320027    | 2032-08-02 04:31:37.58 | 19 48 15.04846           | -21 36 18.42867 | 1.4                     | 7.289            | 348.71   | -15.13                  | 4.146            | -21.0       | 9.281      | 10.203 | 9.883  | 278.3             | 165.0 |
| Pgt        | 6865070846843604352    | 19 48 14.94617           | -21 36 11.28030 | 1.0                     | 21.916           | -12.05   | -1.02                   |                  | -19.3       | 0.163      | 9.900  | 0      | -21.5             | 149.8 |

<sup>a</sup> A nearby event has the same 2MASS ID as this event, resulting in a corresponding K magnitude ambiguity.

\* Superscript \* indicates RUWE > 1.4, \*\* indicates RUWE > 2, and \*\*\* indicates RUWE > 5. See machine-readable file for RUWE values.











Table 6 (continued)

| Event ID   | C/A Epoch              | ICRS Star Coord at Epoch |                 | $\sigma(\alpha_*)$ (km) | C/A ( $''$ )     | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|------------|------------------------|--------------------------|-----------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type | Source ID              | Geocentric               | Object Position | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J370018    | 2037-04-09 16:43:25.31 | 05 20 35.79440           | +22 55 14.45284 | 2.2                     | 15.970           | 355.29   | 26.98                   | 5.538            | -67.7       | 9.582      | 13.544 | 12.469 | 351.6             | 61.3  |
| Pgt        | 3414827483715597568    | 05 20 35.69946           | +22 55 30.36882 | 1.2                     | 64.144           | -3.40    | 2.36                    |                  | -65.3       | 0.342      | 13.869 | 0      | 23.0              | 126.8 |
| J370019    | 2037-04-09 20:59:34.35 | 05 20 43.10565           | +22 55 47.18448 | 2.6                     | 8.376            | 175.31   | 27.05                   | 5.541            | 29.9        | 8.885      | 12.904 | 11.818 | 287.4             | 61.1  |
| Pgt        | 3414826757865125632    | 05 20 43.15522           | +22 55 38.83634 | 1.4                     | 33.659           | -3.39    | 2.36                    |                  | 32.7        | 0.492      | 13.232 | 0      | 23.0              | 124.7 |
| J370020    | 2037-04-11 15:44:22.59 | 05 21 58.59041           | +22 57 13.24662 | 2.6                     | 10.207           | 175.46   | 27.71                   | 5.566            | 37.4        | 5.223      | 8.283  | 7.371  | 4.7               | 59.7  |
| Pgt        | 3414783812488249088    | 05 21 58.64892           | +22 57 03.07188 | 1.7                     | 41.201           | -3.25    | 2.35                    |                  | 40.1        | 2.262      | 8.637  | 0      | 23.0              | 104.0 |
| J370021    | 2037-04-15 14:50:46.36 | 05 24 52.00064           | +22 59 52.01360 | 2.3                     | 14.249           | 355.79   | 29.14                   | 5.620            | -58.9       | 8.011      | 10.523 | 9.694  | 15.0              | 56.5  |
| Pgt        | 3416109303818953216    | 05 24 51.92480           | +23 00 06.22430 | 1.5                     | 58.084           | -2.94    | 2.34                    |                  | -56.5       | 0.581      | 10.932 | 0      | 23.0              | 57.2  |
| J370022    | 2037-04-21 23:53:03.57 | 05 29 45.15904           | +23 04 30.24370 | 2.4                     | 14.475           | 356.33   | 31.30                   | 5.704            | -61.3       | 7.768      | 11.703 | 10.636 | 234.3             | 51.4  |
| Pgt        | 3416137723619044736    | 05 29 45.09195           | +23 04 44.68951 | 1.6                     | 59.886           | -2.42    | 2.31                    |                  | -58.9       | 0.882      | 12.189 | 0      | 23.1              | 24.2  |
| J370023    | 2037-04-23 11:49:15.80 | 05 30 56.34129           | +23 05 39.57231 | 1.8                     | 6.933            | 356.47   | 31.78                   | 5.723            | -28.0       | 9.799      | 13.343 | 12.365 | 54.1              | 50.2  |
| Pgt        | 3404148958067873024    | 05 30 56.31031           | +23 05 46.49209 | 1.2                     | 28.777           | -2.29    | 2.31                    |                  | -25.3       | 0.290      | 13.846 | 0      | 23.1              | 44.5  |
| J370024    | 2037-04-27 01:24:47.01 | 05 33 49.32668           | +23 08 00.79954 | 2.0                     | 6.436            | 356.78   | 32.87                   | 5.767            | -26.2       | 6.839      | 10.100 | 9.178  | 207.4             | 47.4  |
| Pgt        | 3404512999496164736    | 05 33 49.30049           | +23 08 07.22506 | 1.2                     | 26.917           | -1.98    | 2.29                    |                  | -23.5       | 1.162      | 10.640 | 0      | 23.2              | 95.2  |
| J370025    | 2037-04-28 19:45:13.58 | 05 35 16.53121           | +23 09 17.17368 | 2.8                     | 3.990            | 176.94   | 33.39                   | 5.788            | 14.0        | 9.576      | 14.351 | 13.130 | 290.9             | 46.0  |
| Pgt        | 3404469190829659008    | 05 35 16.54664           | +23 09 13.18887 | 1.9                     | 16.751           | -1.82    | 2.29                    |                  | 16.8        | 0.435      | 14.908 | 0      | 23.2              | 120.8 |
| J370026    | 2037-08-29 09:57:48.61 | 07 29 34.19318           | +21 53 35.67729 | 1.7                     | 14.648           | 188.17   | 33.38                   | 5.845            | 61.4        | 9.491      | 10.887 | 10.404 | 345.5             | 45.2  |
| Pgt        | 865251608804486656     | 07 29 34.04358           | +21 53 21.17850 | 1.4                     | 62.094           | 10.22    | 1.58                    |                  | 65.2        | 0.230      | 11.443 | 0      | 21.8              | 95.3  |
| J370027    | 2037-09-09 16:09:33.96 | 07 38 15.06202           | +21 34 58.93286 | 1.7                     | 12.378           | 8.89     | 29.83                   | 5.714            | -51.7       | 7.687      | 10.574 | 9.733  | 243.7             | 54.1  |
| Pgt        | 865401039307016448     | 07 38 15.19923           | +21 35 11.16234 | 1.4                     | 51.297           | 11.08    | 1.50                    |                  | -47.4       | 0.741      | 11.008 | 0      | 21.5              | 52.8  |
| J370028*   | 2037-09-22 13:12:56.13 | 07 47 04.71938           | +21 15 14.70350 | 2.6                     | 5.110            | 189.55   | 25.08                   | 5.544            | 16.2        | 8.639      | 11.378 | 10.576 | 277.3             | 64.5  |
| Pgt        | 674444246408799360     | 07 47 04.65875           | +21 15 09.66421 | 2.2                     | 20.546           | 11.94    | 1.42                    |                  | 21.6        | 0.455      | 11.624 | 0      | 21.2              | 136.4 |
| J370029*   | 2037-09-25 23:40:45.64 | 07 49 12.38440           | +21 10 20.30047 | 23.6                    | 13.153           | 189.68   | 23.71                   | 5.495            | 48.4        | 9.599      | 11.070 | 10.412 | 117.5             | 67.4  |
| Pgt        | 673706237883550976     | 07 49 12.22626           | +21 10 07.33481 | 17.0                    | 52.423           | 12.15    | 1.40                    |                  | 53.2        | 0.203      | 11.254 | 0      | 21.1              | 96.2  |
| J370030*   | 2037-09-28 21:44:12.35 | 07 50 55.80086           | +21 06 09.32109 | 2.5                     | 10.509           | 189.78   | 22.52                   | 5.453            | 36.5        | 8.794      | 11.310 | 10.549 | 144.2             | 69.9  |
| Pgt        | 673781073396089984     | 07 50 55.67326           | +21 05 58.96517 | 1.4                     | 41.564           | 12.31    | 1.38                    |                  | 41.7        | 0.386      | 11.439 | 0      | 21.0              | 61.5  |
| J370031    | 2037-10-20 13:09:51.76 | 08 01 02.86016           | +20 41 13.78583 | 1.6                     | 8.964            | 189.91   | 12.81                   | 5.126            | 27.4        | 6.141      | 9.469  | 8.500  | 254.0             | 88.8  |
| Pgt        | 670788889939194880     | 08 01 02.75027           | +20 41 04.95530 | 1.1                     | 33.327           | 13.27    | 1.26                    |                  | 34.6        | 1.455      | 8.985  | 0      | 20.6              | 130.9 |
| J370032    | 2037-11-06 21:59:36.79 | 08 05 13.66896           | +20 31 45.39256 | 1.5                     | 12.381           | 186.92   | 4.43                    | 4.860            | 34.2        | 8.172      | 11.006 | 10.180 | 105.5             | 105.2 |
| Pgt        | 670686291760410752     | 08 05 13.56284           | +20 31 33.10199 | 1.0                     | 43.640           | 13.66    | 1.19                    |                  | 48.0        | 0.470      | 9.369  | 0      | 20.4              | 97.0  |
| J380001*   | 2038-01-01 05:11:38.86 | 07 52 17.85599           | +21 17 30.01194 | 1.4                     | 11.618           | 191.96   | -16.24                  | 4.275            | 34.1        | 9.592      | 11.762 | 11.081 | 299.7             | 164.3 |
| Pgt        | 673744548992090368     | 07 52 17.68369           | +21 17 18.64590 | 0.9                     | 36.020           | 12.44    | 1.13                    |                  | 33.1        | 0.196      | 11.536 | 0      | 21.2              | 108.8 |
| J380002    | 2038-01-06 17:30:44.45 | 07 49 18.45464           | +21 26 10.44466 | 1.1                     | 9.952            | 191.58   | -16.94                  | 4.257            | 29.1        | 8.298      | 10.815 | 10.066 | 108.8             | 170.7 |
| Pgt        | 674462353991820928     | 07 49 18.31154           | +21 26 00.69578 | 0.7                     | 30.728           | 12.15    | 1.13                    |                  | 27.9        | 0.383      | 10.635 | 0      | 21.3              | 175.3 |
| J380003    | 2038-01-21 12:23:43.94 | 07 40 57.12856           | +21 49 04.06212 | 1.3                     | 11.636           | 190.64   | -17.02                  | 4.259            | 34.3        | 8.858      | 10.716 | 10.111 | 168.9             | 172.3 |
| Pgt        | 673283956700242176     | 07 40 56.97429           | +21 48 52.62634 | 0.9                     | 35.939           | 11.35    | 1.16                    |                  | 32.8        | 0.247      | 10.541 | 0      | 21.7              | 12.3  |
| J380004    | 2038-01-21 15:50:30.75 | 07 40 51.93060           | +21 48 48.94426 | 1.3                     | 16.582           | 10.63    | -17.01                  | 4.259            | -48.7       | 8.419      | 10.968 | 10.195 | 117.0             | 172.1 |
| Pgt        | 673283853621325184     | 07 40 52.15031           | +21 49 05.24171 | 0.9                     | 51.221           | 11.34    | 1.16                    |                  | -50.1       | 0.322      | 10.793 | 0      | 21.7              | 14.4  |
| J380005    | 2038-01-28 05:08:16.90 | 07 37 16.79094           | +21 58 19.37856 | 0.9                     | 1.972            | 190.24   | -16.24                  | 4.282            | 6.5         | 9.672      | 11.970 | 11.266 | 270.2             | 164.6 |
| Pgt        | 865478657955367680     | 07 37 16.76573           | +21 58 17.43827 | 0.8                     | 6.123            | 10.99    | 1.17                    |                  | 4.8         | 0.172      | 11.744 | 0      | 21.9              | 109.1 |
| J380006*   | 2038-01-30 07:29:07.41 | 07 36 10.30610           | +22 00 52.08808 | 2.2                     | 11.242           | 10.13    | -15.90                  | 4.292            | -31.8       | 9.080      | 9.986  | 9.660  | 232.7             | 162.2 |
| Pgt        | 865487832005346048     | 07 36 10.44827           | +22 01 03.15503 | 1.8                     | 34.995           | 10.88    | 1.17                    |                  | -33.4       | 0.183      | 9.736  | 0      | 21.9              | 138.3 |
| J380007    | 2038-04-09 06:35:43.97 | 07 27 25.41879           | +22 23 23.21176 | 1.7                     | 10.636           | 8.26     | 11.70                   | 5.147            | -39.1       | 9.233      | 10.086 | 9.764  | 175.9             | 91.1  |
| Pgt        | 866078510268796672     | 07 27 25.52900           | +22 23 33.73743 | 1.4                     | 39.702           | 10.01    | 1.17                    |                  | -35.5       | 0.205      | 9.504  | 0      | 22.3              | 41.2  |
| J380008    | 2038-04-24 05:08:11.52 | 07 33 29.22837           | +22 10 38.51965 | 11.0                    | 10.618           | 8.92     | 18.49                   | 5.385            | -40.8       | 9.192      | 12.861 | 11.399 | 184.5             | 77.9  |
| Pgt        | 865597095974649216     | 07 33 29.34692           | +22 10 49.00917 | 10.8                    | 41.472           | 10.61    | 1.13                    |                  | -37.3       | 0.394      | 12.775 | 0      | 22.1              | 167.2 |
| J380009    | 2038-05-25 17:52:56.85 | 07 53 01.64979           | +21 23 48.18440 | 2.6                     | 6.781            | 190.70   | 30.62                   | 5.841            | 24.6        | 9.770      | 11.424 | 10.871 | 327.1             | 52.1  |
| Pgt        | 673768497731753472     | 07 53 01.55965           | +21 23 41.52117 | 1.7                     | 28.726           | 12.51    | 0.99                    |                  | 28.6        | 0.226      | 11.886 | 0      | 21.3              | 143.3 |
| J390001    | 2039-02-22 07:57:38.78 | 09 50 45.24862           | +14 16 15.69866 | 1.4                     | 17.609           | 200.07   | -17.22                  | 4.382            | 56.7        | 9.486      | 10.856 | 10.371 | 236.7             | 171.9 |
| Pgt        | 616000225526042240     | 09 50 44.83304           | +14 15 59.15843 | 1.0                     | 55.958           | 21.81    | -0.66                   |                  | 53.4        | 0.171      | 10.693 | 0      | 14.1              | 176.5 |

Table 6 continued on next page



Table 6 (continued)

| Event ID   | C/A Epoch              | ICRS Star Coord at Epoch |                 | $\sigma(\alpha_*)$ (km) | C/A ( $''$ )     | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|------------|------------------------|--------------------------|-----------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type | Source ID              | Geocentric               | Object Position | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J420009    | 2042-06-28 00:07:38.41 | 15 20 38.13134           | -17 23 10.55352 | 1.9                     | 12.461           | 11.27    | -8.81                   | 4.593            | -34.8       | 9.230      | 10.397 | 9.967  | 312.6             | 136.4 |
| Pgt        | 625827704263220544     | 15 20 38.30141           | -17 22 58.33297 | 1.7                     | 41.511           | 15.36    | -3.13                   |                  | -43.2       | 0.200      | 9.506  | 0      | -17.5             | 19.0  |
| J420010    | 2042-07-02 19:53:56.12 | 15 19 30.80840           | -17 19 45.18456 | 2.0                     | 8.144            | 190.27   | -7.01                   | 4.646            | 31.0        | 9.841      | 11.145 | 10.681 | 11.0              | 131.5 |
| Pgt        | 6259026467181138176    | 15 19 30.70701           | -17 19 53.19779 | 1.7                     | 27.440           | 15.46    | -3.11                   |                  | 19.7        | 0.149      | 10.007 | 0      | -17.5             | 42.4  |
| J420011    | 2042-08-07 04:13:21.80 | 15 19 46.06399           | -17 29 47.56576 | 1.9                     | 1.297            | 198.93   | 8.57                    | 5.131            | 8.4         | 8.953      | 11.937 | 11.075 | 211.4             | 97.9  |
| Pgt        | 6259019251636050048    | 15 19 46.03456           | -17 29 48.79293 | 1.6                     | 4.828            | 15.43    | -2.96                   |                  | 0.4         |            | 11.018 | 0      | -17.7             | 155.4 |
| J420012    | 2042-09-20 18:06:13.19 | 15 39 50.07818           | -18 50 52.35637 | 2.5                     | 1.456            | 14.26    | 27.80                   | 5.788            | -4.9        | 9.440      | 10.833 | 10.344 | 324.2             | 59.8  |
| Pgt        | 6254291248561277312    | 15 39 50.10345           | -18 50 50.94487 | 2.0                     | 6.113            | 13.62    | -2.85                   |                  | -6.3        | 0.260      | 11.191 | 0      | -19.0             | 10.8  |
| J420013    | 2042-09-26 07:39:04.89 | 15 43 34.38237           | -19 04 06.38373 | 2.2                     | 0.559            | 193.83   | 29.81                   | 5.859            | 2.8         | 8.969      | 11.232 | 10.524 | 116.5             | 55.2  |
| Pg         | 6260075504351731200    | 15 43 34.37295           | -19 04 06.92649 | 1.6                     | 2.375            | 13.27    | -2.84                   |                  | 1.5         | 0.371      | 11.665 | 1      | -19.2             | 81.7  |
| J420014    | 2042-10-06 10:43:08.99 | 15 50 55.71358           | -19 28 42.53118 | 2.9                     | 17.361           | 193.06   | 33.16                   | 5.979            |             | 9.670      | 11.827 | 11.147 | 62.3              | 47.1  |
| P          | 6247852955145583744    | 15 50 55.43621           | -19 28 59.44307 | 1.8                     | 75.285           | 12.57    | -2.83                   |                  |             |            | 12.376 | 0      | -19.6             | 132.6 |
| J430001    | 2043-01-30 04:17:52.96 | 17 35 28.17333           | -22 51 10.75595 | 11.7                    | 12.458           | 2.62     | 34.20                   | 5.961            | -51.7       | 8.185      | 14.774 | 13.204 | 70.7              | 45.2  |
| Pg         | 4116694580969914752    | 17 35 28.21453           | -22 50 58.31086 | 6.7                     | 53.862           | 1.80     | -2.59                   |                  | -53.2       |            | 15.357 | 0      | -22.9             | 77.4  |
| J430002    | 2043-01-30 12:36:14.83 | 17 35 45.34179           | -22 50 52.65829 | 3.4                     | 16.402           | 182.59   | 34.09                   | 5.957            | 83.6        | 8.561      | 13.724 | 12.399 | 305.9             | 45.5  |
| Pg         | 4116787554070788224    | 17 35 45.28823           | -22 51 09.04398 | 1.7                     | 70.867           | 1.77     | -2.59                   |                  | 82.3        | 0.852      | 14.303 | 0      | -22.9             | 73.3  |
| J430003    | 2043-01-31 02:55:58.79 | 17 36 14.64036           | -22 51 29.30707 | 4.7                     | 2.087            | 2.54     | 33.91                   | 5.950            | -7.3        | 9.594      | 14.841 | 13.491 | 90.5              | 46.0  |
| Pgt        | 4116785939163006976    | 17 36 14.64705           | -22 51 27.22213 | 2.5                     | 9.006            | 1.72     | -2.59                   |                  | -9.2        | 0.548      | 15.414 | 0      | -22.9             | 66.3  |
| J430004    | 2043-02-01 00:01:23.99 | 17 36 57.64391           | -22 51 50.98684 | 7.6                     | 2.223            | 182.47   | 33.64                   | 5.940            | 9.7         | 8.513      | 14.562 | 13.072 | 133.4             | 46.7  |
| Pgt        | 4116744162092386304    | 17 36 57.63699           | -22 51 53.20818 | 4.1                     | 9.578            | 1.64     | -2.59                   |                  | 7.8         | 1.266      | 15.126 | 0      | -22.9             | 56.0  |
| J430005    | 2043-02-01 06:08:43.53 | 17 37 10.02577           | -22 52 13.75025 | 4.3                     | 13.181           | 2.45     | 33.56                   | 5.937            | -55.2       | 8.881      | 14.504 | 13.138 | 41.4              | 46.9  |
| Pgt        | 4116743268739060608    | 17 37 10.06653           | -22 52 00.58116 | 2.5                     | 56.754           | 1.62     | -2.59                   |                  | -56.8       | 0.832      | 15.066 | 0      | -22.9             | 53.1  |
| J430006    | 2043-02-01 11:12:07.48 | 17 37 20.31227           | -22 52 07.78850 | 8.5                     | 1.176            | 2.43     | 33.50                   | 5.934            | -3.7        | 7.945      | 14.436 | 12.919 | 325.4             | 47.1  |
| Pgt        | 4116740653027719808    | 17 37 20.31588           | -22 52 06.61339 | 4.9                     | 5.062            | 1.60     | -2.59                   |                  | -5.6        | 1.586      | 14.996 | 0      | -22.9             | 50.6  |
| J430007    | 2043-02-02 10:59:49.51 | 17 38 08.32528           | -22 52 37.19901 | 4.7                     | 2.898            | 2.35     | 33.18                   | 5.922            | -10.5       | 9.541      | 14.590 | 13.317 | 327.7             | 47.9  |
| Pgt        | 4116729623551632384    | 17 38 08.33388           | -22 52 34.30364 | 2.6                     | 12.447           | 1.52     | -2.58                   |                  | -12.4       | 0.458      | 15.140 | 0      | -22.9             | 39.2  |
| J430008*   | 2043-02-02 21:51:58.15 | 17 38 30.10329           | -22 53 02.63410 | 4.8                     | 16.073           | 2.31     | 33.04                   | 5.917            | -75.6       | 9.505      | 13.499 | 12.320 | 164.3             | 48.3  |
| Pgt        | 4116752129180238720    | 17 38 30.15026           | -22 52 46.57404 | 2.7                     | 68.972           | 1.48     | -2.58                   |                  | -77.1       | 0.305      | 14.043 | 0      | -22.9             | 34.0  |
| J430009    | 2043-02-03 00:13:27.62 | 17 38 34.85896           | -22 52 54.31332 | 3.5                     | 5.112            | 2.31     | 33.00                   | 5.915            | -19.3       | 8.522      | 11.771 | 10.822 | 128.8             | 48.4  |
| Pgt        | 4116751957379626368    | 17 38 34.87384           | -22 52 49.20516 | 1.9                     | 21.933           | 1.47     | -2.58                   |                  | -21.1       | 0.488      | 12.315 | 0      | -22.9             | 32.8  |
| J430010    | 2043-02-03 01:33:05.18 | 17 38 37.48310           | -22 53 06.99287 | 2.9                     | 16.325           | 2.30     | 32.99                   | 5.915            | -78.8       | 9.075      | 13.421 | 12.268 | 108.9             | 48.4  |
| Pg         | 4116751991741277696    | 17 38 37.53055           | -22 52 50.68099 | 1.5                     | 70.031           | 1.46     | -2.58                   |                  | -80.2       | 0.439      | 13.964 | 0      | -22.9             | 32.2  |
| J430011    | 2043-02-03 02:16:52.39 | 17 38 38.98074           | -22 52 55.03125 | 4.9                     | 3.543            | 2.30     | 32.98                   | 5.914            | -13.0       | 8.221      | 13.742 | 12.350 | 97.9              | 48.4  |
| Pgt        | 4116751991741277824    | 17 38 38.99102           | -22 52 51.49107 | 2.6                     | 15.198           | 1.46     | -2.58                   |                  | -14.9       | 0.984      | 14.285 | 0      | -22.9             | 31.8  |
| J430012    | 2043-02-03 03:09:31.50 | 17 38 40.75758           | -22 52 48.71657 | 8.8                     | 3.750            | 182.29   | 32.96                   | 5.914            | 15.7        | 8.209      | 14.618 | 13.068 | 84.7              | 48.5  |
| Pgt        | 4116752030421388160    | 17 38 40.74672           | -22 52 52.46374 | 4.7                     | 16.085           | 1.46     | -2.58                   |                  | 13.8        |            | 15.160 | 0      | -22.9             | 31.4  |
| J430013    | 2043-02-03 13:41:45.63 | 17 39 01.80291           | -22 52 59.58779 | 2.7                     | 4.440            | 182.26   | 32.82                   | 5.909            | 18.4        | 8.663      | 13.370 | 12.149 | 286.3             | 48.8  |
| Pgt        | 4116749247335039488    | 17 39 01.79025           | -22 53 04.02420 | 1.5                     | 19.026           | 1.42     | -2.58                   |                  | 16.6        | 0.575      | 13.908 | 0      | -22.9             | 26.4  |
| J430014    | 2043-02-03 14:38:30.69 | 17 39 03.67478           | -22 53 05.35689 | 10.5                    | 0.306            | 2.26     | 32.81                   | 5.908            | -0.2        | 7.578      | 14.767 | 13.082 | 272.1             | 48.9  |
| Pgt        | 4116748525780517376    | 17 39 03.67565           | -22 53 05.05115 | 6.1                     | 1.311            | 1.42     | -2.58                   |                  | -2.2        | 1.962      | 15.304 | 0      | -22.9             | 25.9  |
| J430015    | 2043-02-03 15:05:52.87 | 17 39 04.57209           | -22 53 09.98054 | 9.3                     | 4.438            | 2.25     | 32.80                   | 5.908            | -16.5       | 8.452      | 14.988 | 13.438 | 265.2             | 48.9  |
| Pgt        | 4116748525780507392    | 17 39 04.58473           | -22 53 05.54580 | 5.3                     | 19.017           | 1.42     | -2.58                   |                  | -18.4       |            | 15.525 | 0      | -22.9             | 25.7  |
| J430016    | 2043-02-03 15:27:21.95 | 17 39 05.27935           | -22 53 12.56794 | 7.1                     | 6.639            | 2.25     | 32.80                   | 5.908            | -25.4       | 8.169      | 14.301 | 12.797 | 259.9             | 48.9  |
| Pgt        | 4116748521407651712    | 17 39 05.29824           | -22 53 05.93380 | 4.2                     | 28.447           | 1.41     | -2.58                   |                  | -27.2       | 1.300      | 14.838 | 0      | -22.9             | 25.5  |

<sup>a</sup> A nearby event has the same 2MASS ID as this event, resulting in a corresponding K magnitude ambiguity.

\* Superscript \* indicates RUWE > 1.4, \*\* indicates RUWE > 2, and \*\*\* indicates RUWE > 5. See machine-readable file for RUWE values.



Table 7 (continued)

| Event ID   | C/A Epoch              | ICRS Star Coord at Epoch |                 | $\sigma(\alpha_*)$ (km) | C/A ( $''$ )     | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|------------|------------------------|--------------------------|-----------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type | Source ID              | Geocentric               | Object Position | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J430041    | 2043-02-07 18:35:23.84 | 17 42 19.60537           | -22 54 31.42065 | 8.9                     | 12.452           | 181.92   | 31.41                   | 5.855            | 52.1        | 7.765      | 14.555 | 12.985 | 209.6             | 52.3  |
| Pgt        | 4116878538657816448    | 17 42 19.57513           | -22 54 43.86515 | 5.3                     | 52.879           | 1.07     | -2.57                   |                  | 50.5        | 2.142      | 15.045 | 0      | -22.9             | 26.5  |
| J430042    | 2043-02-08 04:05:03.73 | 17 42 37.81453           | -22 54 58.86462 | 2.7                     | 6.591            | 1.90     | 31.27                   | 5.850            | -24.9       | 9.301      | 13.237 | 12.160 | 66.9              | 52.7  |
| Pgt        | 4116877958931124992    | 17 42 37.83031           | -22 54 52.27716 | 1.5                     | 27.966           | 1.03     | -2.57                   |                  | -26.8       | 0.355      | 13.722 | 0      | -22.9             | 31.5  |
| J430043    | 2043-02-08 04:57:45.36 | 17 42 39.53788           | -22 54 43.78095 | 5.1                     | 9.271            | 181.89   | 31.26                   | 5.850            | 37.8        | 9.550      | 14.952 | 13.599 | 53.7              | 52.7  |
| Pgt        | 4116877954553172480    | 17 42 39.51575           | -22 54 53.04695 | 3.1                     | 39.334           | 1.03     | -2.57                   |                  | 36.0        | 0.634      | 15.437 | 0      | -22.9             | 32.0  |
| J430044    | 2043-02-08 04:59:34.01 | 17 42 39.55070           | -22 55 02.66720 | 3.1                     | 9.599            | 1.89     | 31.26                   | 5.850            | -37.4       | 9.003      | 14.215 | 12.925 | 53.2              | 52.7  |
| Pgt        | 4116877958930680448    | 17 42 39.57366           | -22 54 53.07338 | 1.8                     | 40.726           | 1.03     | -2.57                   |                  | -39.2       | 0.649      | 14.700 | 0      | -22.9             | 32.0  |
| J430045    | 2043-02-08 05:14:47.33 | 17 42 40.08426           | -22 54 43.31562 | 5.7                     | 9.985            | 181.89   | 31.26                   | 5.850            | 40.8        | 9.429      | 14.905 | 13.526 | 49.4              | 52.7  |
| Pgt        | 4116877954553172864    | 17 42 40.06043           | -22 54 53.29548 | 3.3                     | 42.363           | 1.03     | -2.57                   |                  | 39.1        | 0.640      | 15.390 | 0      | -22.9             | 32.2  |
| J430046    | 2043-02-08 06:42:13.81 | 17 42 42.89688           | -22 54 37.30592 | 6.8                     | 17.272           | 181.88   | 31.24                   | 5.849            |             | 8.555      | 14.747 | 13.240 | 27.5              | 52.8  |
| Pt         | 4116877924570926080    | 17 42 42.85580           | -22 54 54.56903 | 4.3                     | 73.270           | 1.02     | -2.57                   |                  |             |            | 15.231 | 0      | -22.9             | 32.9  |
| J430047    | 2043-02-08 09:19:36.32 | 17 42 47.88989           | -22 54 53.98598 | 5.2                     | 2.867            | 181.88   | 31.20                   | 5.847            | 12.1        | 8.373      | 14.125 | 12.670 | 348.0             | 52.9  |
| Pgt        | 4116880845150507648    | 17 42 47.88310           | -22 54 56.85139 | 3.2                     | 12.159           | 1.02     | -2.57                   |                  | 10.2        |            | 14.608 | 0      | -22.9             | 34.4  |
| J430048    | 2043-02-08 12:17:25.44 | 17 42 53.58802           | -22 54 46.51700 | 6.0                     | 12.905           | 181.87   | 31.15                   | 5.846            | 54.3        | 9.201      | 14.963 | 13.532 | 303.5             | 53.0  |
| Pgt        | 4116880806400516224    | 17 42 53.55761           | -22 54 59.41518 | 3.6                     | 54.715           | 1.01     | -2.57                   |                  | 52.6        | 0.646      | 15.444 | 0      | -22.9             | 36.0  |
| J430049    | 2043-02-08 17:43:50.53 | 17 43 03.98632           | -22 54 51.91873 | 7.7                     | 12.168           | 181.85   | 31.07                   | 5.843            | 50.6        | 8.904      | 14.764 | 13.310 | 221.7             | 53.2  |
| Pgt        | 4116880668969378304    | 17 43 03.95792           | -22 55 04.07998 | 4.1                     | 51.562           | 0.99     | -2.57                   |                  | 48.9        | 0.831      | 15.242 | 0      | -22.9             | 38.9  |
| J430050    | 2043-02-08 18:02:08.64 | 17 43 04.54103           | -22 55 04.08127 | 14.1                    | 0.259            | 181.86   | 31.07                   | 5.843            | 2.0         | 8.128      | 14.755 | 13.146 | 217.1             | 53.2  |
| Pgt        | 4116880668993823616    | 17 43 04.54042           | -22 55 04.33994 | 9.1                     | 1.097            | 0.99     | -2.57                   |                  | 0.0         | 1.477      | 15.233 | 0      | -22.9             | 39.1  |
| J430051    | 2043-02-08 19:20:58.29 | 17 43 07.01886           | -22 55 18.16802 | 4.9                     | 12.717           | 1.85     | 31.05                   | 5.842            | -51.6       | 8.938      | 14.357 | 12.999 | 197.4             | 53.2  |
| Pgt        | 4116879917437304960    | 17 43 07.04855           | -22 55 05.45770 | 2.8                     | 53.882           | 0.98     | -2.57                   |                  | -53.3       | 0.780      | 14.835 | 0      | -22.9             | 39.8  |
| J430052    | 2043-02-08 23:44:27.53 | 17 43 15.46110           | -22 54 52.72980 | 4.5                     | 16.450           | 181.83   | 30.99                   | 5.840            | 79.1        | 9.926      | 14.875 | 13.610 | 131.4             | 53.4  |
| Pg         | 4116880261034612992    | 17 43 15.42312           | -22 55 09.17131 | 2.8                     | 69.670           | 0.97     | -2.57                   |                  | 77.6        | 0.371      | 15.350 | 0      | -22.9             | 42.3  |
| J430053    | 2043-02-09 06:35:02.43 | 17 43 28.45367           | -22 55 11.12514 | 9.4                     | 3.766            | 181.81   | 30.89                   | 5.836            | 15.6        | 8.501      | 14.956 | 13.429 | 28.5              | 53.6  |
| Pgt        | 4116868368186197504    | 17 43 28.44507           | -22 55 14.88913 | 5.8                     | 15.939           | 0.94     | -2.57                   |                  | 13.7        |            | 15.428 | 0      | -22.9             | 46.1  |
| J430054    | 2043-02-09 16:23:55.60 | 17 43 47.02428           | -22 55 40.14228 | 4.9                     | 17.206           | 1.78     | 30.74                   | 5.830            |             | 8.624      | 14.245 | 12.857 | 240.9             | 53.9  |
| Pt         | 4116868883571167360    | 17 43 47.06300           | -22 55 22.94451 | 2.7                     | 72.759           | 0.91     | -2.56                   |                  |             | 0.892      | 14.712 | 0      | -22.9             | 51.6  |
| J430055    | 2043-02-09 17:10:54.51 | 17 43 48.55013           | -22 55 21.45302 | 7.6                     | 2.128            | 181.78   | 30.73                   | 5.830            | 9.2         | 8.944      | 14.967 | 13.473 | 229.2             | 54.0  |
| Pgt        | 4116868917938842880    | 17 43 48.54536           | -22 55 23.57982 | 4.8                     | 8.997            | 0.91     | -2.56                   |                  | 7.3         |            | 15.433 | 0      | -22.9             | 52.0  |
| J430056    | 2043-02-09 23:37:49.48 | 17 44 00.76156           | -22 55 17.38370 | 9.5                     | 11.392           | 181.75   | 30.63                   | 5.826            | 46.9        | 7.350      | 14.327 | 12.691 | 132.2             | 54.2  |
| Pgt        | 4116869059755941888    | 17 44 00.73634           | -22 55 28.77073 | 5.7                     | 48.142           | 0.88     | -2.56                   |                  | 45.1        | 1.428      | 14.790 | 0      | -22.9             | 55.7  |
| J430057    | 2043-02-10 00:11:36.68 | 17 44 01.76786           | -22 55 43.45701 | 7.6                     | 14.243           | 1.76     | 30.63                   | 5.826            | -59.7       | 8.995      | 14.986 | 13.526 | 123.8             | 54.2  |
| Pgt        | 4116868991036423552    | 17 44 01.79946           | -22 55 29.22053 | 4.6                     | 60.185           | 0.88     | -2.56                   |                  | -61.3       |            | 15.449 | 0      | -22.9             | 56.0  |
| J430058    | 2043-02-10 02:56:49.95 | 17 44 07.01738           | -22 55 21.20615 | 2.3                     | 10.211           | 181.74   | 30.58                   | 5.825            | 41.6        | 9.049      | 12.453 | 11.487 | 82.4              | 54.3  |
| Pgt        | 4116869089729618048    | 17 44 06.99490           | -22 55 31.41209 | 1.4                     | 43.134           | 0.87     | -2.56                   |                  | 39.8        | 0.383      | 12.915 | 0      | -22.9             | 57.5  |
| J430059*   | 2043-02-10 03:25:20.81 | 17 44 07.87044           | -22 55 41.10470 | 5.4                     | 9.320            | 1.75     | 30.58                   | 5.824            | -36.0       | 8.683      | 10.427 | 9.838  | 75.2              | 54.3  |
| Pgt        | 4116866139178070528    | 17 44 07.89098           | -22 55 31.78897 | 3.3                     | 39.370           | 0.87     | -2.56                   |                  | -37.8       | 0.361      | 10.888 | 0      | -22.9             | 57.8  |
| J430060    | 2043-02-10 05:43:32.76 | 17 44 12.25414           | -22 55 23.32878 | 3.8                     | 10.286           | 181.73   | 30.54                   | 5.823            | 41.9        | 9.498      | 14.456 | 13.203 | 40.6              | 54.4  |
| Pgt        | 4116866173537769088    | 17 44 12.23162           | -22 55 33.60993 | 2.2                     | 43.441           | 0.86     | -2.56                   |                  | 40.2        | 0.458      | 14.916 | 0      | -22.9             | 59.1  |
| J430061    | 2043-02-10 06:43:12.21 | 17 44 14.13852           | -22 55 18.67157 | 6.8                     | 15.729           | 181.73   | 30.53                   | 5.823            | 71.3        | 8.881      | 14.887 | 13.412 | 25.6              | 54.4  |
| Pgt        | 4116889568169933184    | 17 44 14.10417           | -22 55 34.39313 | 4.1                     | 66.421           | 0.86     | -2.56                   |                  | 69.8        |            | 15.346 | 0      | -22.9             | 59.7  |
| J430062    | 2043-02-10 09:11:19.18 | 17 44 18.75182           | -22 55 35.54375 | 9.4                     | 0.787            | 181.72   | 30.49                   | 5.821            | 4.0         | 8.387      | 14.812 | 13.268 | 348.5             | 54.5  |
| Pgt        | 4116889361983163904    | 17 44 18.75011           | -22 55 36.33014 | 5.7                     | 3.322            | 0.85     | -2.56                   |                  | 2.0         |            | 15.270 | 0      | -22.9             | 61.1  |
| J430063    | 2043-02-10 18:00:07.32 | 17 44 35.32599           | -22 55 30.93592 | 6.8                     | 12.228           | 181.69   | 30.36                   | 5.816            | 50.7        | 7.995      | 14.085 | 12.560 | 216.0             | 54.8  |
| Pgt        | 4116889018377840128    | 17 44 35.29982           | -22 55 43.15894 | 3.9                     | 51.584           | 0.82     | -2.56                   |                  | 49.0        | 0.818      | 14.538 | 0      | -22.9             | 66.2  |
| J430064    | 2043-02-10 23:49:31.08 | 17 44 46.22421           | -22 55 37.45797 | 8.0                     | 10.144           | 181.68   | 30.27                   | 5.813            | 41.2        | 8.645      | 14.722 | 13.222 | 128.5             | 55.0  |
| Pgt        | 4116888885331525632    | 17 44 46.20273           | -22 55 47.59721 | 4.8                     | 42.766           | 0.80     | -2.56                   |                  | 39.5        |            | 15.172 | 0      | -22.9             | 69.5  |
| J430065    | 2043-02-11 01:49:37.73 | 17 44 49.93405           | -22 55 54.24729 | 6.5                     | 5.140            | 1.67     | 30.24                   | 5.812            | -19.0       | 9.032      | 14.837 | 13.379 | 98.4              | 55.1  |
| Pgt        | 4068850466412091520    | 17 44 49.94492           | -22 55 49.10949 | 3.8                     | 21.666           | 0.80     | -2.56                   |                  | -20.9       |            | 15.286 | 0      | -22.9             | 70.7  |

Table 7 continued on next page



Table 7 (continued)

| Event ID   | C/A Epoch              | ICRS Star Coord at Epoch       | $\sigma(\alpha_*)$ (km) | C/A ( $''$ )     | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|------------|------------------------|--------------------------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type | Source ID              | Geocentric Object Position     | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J430091    | 2043-02-14 09:09:08.69 | 17 47 15.81448 -22 56 25.68582 | 7.5                     | 17.959           | 181.42   | 29.02                   | 5.767            |             | 7.818      | 14.420 | 12.854 | 345.9             | 57.9  |
| P          | 4068932276915259648    | 17 47 15.78215 -22 56 43.63926 | 4.9                     | 75.116           | 0.53     | -2.55                   |                  |             |            | 14.824 | 0      | -23.0             | 117.2 |
| J430092    | 2043-02-14 10:47:30.00 | 17 47 18.71464 -22 57 01.12312 | 4.0                     | 16.470           | 1.43     | 28.99                   | 5.766            | -75.3       | 9.731      | 14.798 | 13.481 | 321.2             | 58.0  |
| Pgt        | 4068932203825004800    | 17 47 18.74435 -22 56 44.65809 | 2.3                     | 68.877           | 0.53     | -2.55                   |                  | -76.9       |            | 15.201 | 0      | -23.0             | 118.2 |
| J430093    | 2043-02-14 12:04:40.94 | 17 47 21.06195 -22 56 48.48123 | 3.6                     | 3.028            | 1.42     | 28.97                   | 5.765            | -10.6       | 9.934      | 14.841 | 13.568 | 301.9             | 58.0  |
| Pgt        | 4068932311274935040    | 17 47 21.06738 -22 56 45.45463 | 2.2                     | 12.659           | 0.53     | -2.55                   |                  | -12.6       | 0.371      | 15.244 | 0      | -23.0             | 118.9 |
| J430094    | 2043-02-14 12:19:48.34 | 17 47 21.51156 -22 56 51.65351 | 2.5                     | 6.045            | 1.42     | 28.97                   | 5.765            | -22.3       | 9.798      | 13.354 | 12.345 | 298.1             | 58.0  |
| Pgt        | 4068932306904290944    | 17 47 21.52241 -22 56 45.61040 | 1.5                     | 25.276           | 0.52     | -2.55                   |                  | -24.3       | 0.289      | 13.757 | 0      | -23.0             | 119.1 |
| J430095    | 2043-02-14 12:47:29.12 | 17 47 22.32531 -22 57 02.47645 | 4.0                     | 16.586           | 1.42     | 28.96                   | 5.765            | -76.6       | 9.299      | 14.480 | 13.118 | 291.2             | 58.0  |
| Pgt        | 4068932105116481152    | 17 47 22.35510 -22 56 45.89524 | 2.4                     | 69.349           | 0.52     | -2.55                   |                  | -78.2       | 0.548      | 14.882 | 0      | -23.0             | 119.3 |
| J430096    | 2043-02-14 15:24:42.78 | 17 47 27.11013 -22 56 31.57429 | 3.2                     | 15.937           | 181.41   | 28.92                   | 5.763            | 71.7        | 9.174      | 14.201 | 12.921 | 251.8             | 58.1  |
| Pgt        | 4068932135147012096    | 17 47 27.08181 -22 56 47.50688 | 1.9                     | 66.618           | 0.51     | -2.55                   |                  | 70.1        | 0.603      | 14.602 | 0      | -23.0             | 120.9 |
| J430097    | 2043-02-14 16:56:39.97 | 17 47 29.86052 -22 56 38.94375 | 3.2                     | 9.504            | 181.40   | 28.90                   | 5.762            | 38.2        | 9.622      | 14.478 | 13.216 | 228.7             | 58.2  |
| Pgt        | 4068932444343238400    | 17 47 29.84367 -22 56 48.44444 | 2.0                     | 39.719           | 0.51     | -2.55                   |                  | 36.3        | 0.462      | 14.877 | 0      | -23.0             | 121.8 |
| J430098    | 2043-02-14 17:16:13.99 | 17 47 30.40283 -22 57 04.55124 | 2.9                     | 15.913           | 1.41     | 28.89                   | 5.762            | -69.9       | 9.723      | 14.269 | 13.101 | 223.8             | 58.2  |
| Pgt        | 4068932070756673920    | 17 47 30.43114 -22 56 48.64347 | 1.8                     | 66.502           | 0.51     | -2.55                   |                  | -71.5       | 0.323      | 14.669 | 0      | -23.0             | 122.0 |
| J430099    | 2043-02-14 17:51:49.15 | 17 47 31.47148 -22 57 04.67665 | 9.6                     | 15.676           | 1.41     | 28.88                   | 5.762            | -68.0       | 7.878      | 14.446 | 12.893 | 214.9             | 58.2  |
| Pgt        | 4068932448713789056    | 17 47 31.49933 -22 56 49.00502 | 5.3                     | 65.511           | 0.51     | -2.55                   |                  | -69.7       |            | 14.845 | 0      | -23.0             | 122.3 |
| J430100    | 2043-02-14 19:16:53.00 | 17 47 34.07395 -22 56 37.19682 | 2.7                     | 12.674           | 181.40   | 28.86                   | 5.761            | 52.3        | 8.930      | 13.973 | 12.677 | 193.6             | 58.3  |
| Pgt        | 4068885508966980608    | 17 47 34.05160 -22 56 49.86703 | 1.7                     | 52.957           | 0.50     | -2.55                   |                  | 50.5        |            | 14.371 | 0      | -23.0             | 123.1 |
| J430101    | 2043-02-14 21:45:02.16 | 17 47 38.49379 -22 56 50.91918 | 2.6                     | 0.442            | 181.39   | 28.82                   | 5.760            | 2.7         | 8.211      | 12.188 | 10.993 | 156.5             | 58.3  |
| Pgt        | 4068885478935052288    | 17 47 38.49301 -22 56 51.36086 | 1.5                     | 1.846            | 0.49     | -2.55                   |                  | 0.7         | 0.687      | 12.585 | 0      | -23.0             | 124.6 |
| J430102    | 2043-02-14 22:18:14.53 | 17 47 39.47512 -22 56 58.92411 | 6.7                     | 7.232            | 1.39     | 28.81                   | 5.759            | -27.0       | 8.075      | 14.307 | 12.788 | 148.2             | 58.4  |
| Pgt        | 4068885474623185664    | 17 47 39.48782 -22 56 51.69438 | 4.3                     | 30.208           | 0.49     | -2.55                   |                  | -29.0       |            | 14.703 | 0      | -23.0             | 124.9 |
| J430103*   | 2043-02-14 22:38:30.78 | 17 47 40.06651 -22 57 08.08742 | 14.8                    | 16.194           | 1.39     | 28.81                   | 5.759            | -72.3       | 8.972      | 14.746 | 13.266 | 143.1             | 58.4  |
| Pgt        | 4068885474725035904    | 17 47 40.09500 -22 56 51.89774 | 9.7                     | 67.644           | 0.49     | -2.55                   |                  | -73.9       |            | 15.142 | 0      | -23.0             | 125.1 |
| J430104    | 2043-02-15 01:03:45.35 | 17 47 44.44454 -22 56 52.36307 | 6.0                     | 0.987            | 181.38   | 28.77                   | 5.758            | 4.8         | 8.933      | 14.766 | 13.300 | 106.7             | 58.5  |
| Pgt        | 4068885375855727744    | 17 47 44.44282 -22 56 53.34966 | 3.6                     | 4.121            | 0.48     | -2.55                   |                  | 2.7         |            | 15.161 | 0      | -23.0             | 126.5 |
| J430105    | 2043-02-15 02:28:43.28 | 17 47 46.97866 -22 56 57.32285 | 5.2                     | 3.129            | 1.38     | 28.75                   | 5.757            | -11.0       | 8.005      | 13.751 | 12.293 | 85.4              | 58.5  |
| Pgt        | 4068885405887869440    | 17 47 46.98411 -22 56 54.19479 | 3.3                     | 13.065           | 0.48     | -2.55                   |                  | -13.0       | 1.353      | 14.145 | 0      | -23.0             | 127.3 |
| J430106    | 2043-02-15 22:54:01.98 | 17 48 23.45098 -22 57 08.73636 | 9.1                     | 2.699            | 1.32     | 28.43                   | 5.745            | -9.3        | 7.089      | 14.154 | 12.545 | 138.4             | 59.2  |
| Pgt        | 4068883275557518208    | 17 48 23.45547 -22 57 06.03776 | 5.8                     | 11.247           | 0.41     | -2.55                   |                  | -11.3       |            | 14.536 | 0      | -23.0             | 139.2 |
| J430107    | 2043-02-16 07:00:22.09 | 17 48 37.83369 -22 57 13.07660 | 3.7                     | 2.516            | 1.29     | 28.30                   | 5.740            | -8.6        | 9.241      | 14.242 | 12.983 | 16.5              | 59.5  |
| Pgt        | 4068888257899375488    | 17 48 37.83780 -22 57 10.56146 | 2.2                     | 10.474           | 0.39     | -2.55                   |                  | -10.6       | 0.475      | 14.618 | 0      | -23.0             | 143.9 |
| J430108    | 2043-02-16 08:36:10.11 | 17 48 40.64652 -22 57 22.51296 | 9.4                     | 11.075           | 1.29     | 28.27                   | 5.739            | -42.9       | 7.791      | 14.236 | 12.705 | 352.5             | 59.6  |
| Pgt        | 4068888223359798784    | 17 48 40.66458 -22 57 11.44087 | 5.6                     | 46.101           | 0.38     | -2.55                   |                  | -44.7       |            | 14.612 | 0      | -23.0             | 144.8 |
| J430109*   | 2043-02-16 16:31:51.54 | 17 48 54.67041 -22 57 15.55029 | 5.2                     | 0.201            | 181.26   | 28.15                   | 5.735            | 1.8         | 9.572      | 14.581 | 13.321 | 233.3             | 59.8  |
| Pgt        | 4068888090276989568    | 17 48 54.67009 -22 57 15.75105 | 3.1                     | 0.835            | 0.36     | -2.55                   |                  | -0.3        | 0.461      | 14.952 | 0      | -23.0             | 149.3 |
| J430110    | 2043-02-16 17:31:17.22 | 17 48 56.43338 -22 57 05.49631 | 7.7                     | 10.789           | 181.26   | 28.13                   | 5.734            | 43.4        | 8.814      | 14.878 | 13.395 | 218.4             | 59.9  |
| Pgt        | 4068876717198670336    | 17 48 56.41621 -22 57 16.28293 | 4.8                     | 44.871           | 0.35     | -2.55                   |                  | 41.6        |            | 15.248 | 0      | -23.0             | 149.9 |
| J430111*** | 2043-02-17 00:44:03.85 | 17 49 09.10959 -22 57 19.16405 | 22.2                    | 0.949            | 181.24   | 28.02                   | 5.730            | 4.6         | 9.476      | 14.604 | 13.288 | 110.0             | 60.1  |
| Pgt        | 4068876575408509184    | 17 49 09.10810 -22 57 20.11238 | 14.4                    | 3.942            | 0.33     | -2.55                   |                  | 2.6         | 0.475      | 14.970 | 0      | -23.0             | 153.9 |
| J430112    | 2043-02-17 03:20:15.98 | 17 49 13.70390 -22 57 05.17022 | 3.9                     | 16.309           | 181.23   | 27.97                   | 5.728            | 74.2        | 9.342      | 14.606 | 13.309 | 70.9              | 60.2  |
| Pgt        | 4068876545399619968    | 17 49 13.67856 -22 57 21.47562 | 2.5                     | 67.759           | 0.32     | -2.54                   |                  | 72.5        | 0.471      | 14.970 | 0      | -23.0             | 155.4 |
| J430113    | 2043-02-17 05:21:18.48 | 17 49 17.20037 -22 57 32.84012 | 5.9                     | 10.317           | 1.23     | 27.94                   | 5.727            | -39.5       | 8.376      | 14.151 | 12.711 | 40.5              | 60.3  |
| Pgt        | 4068875785134495232    | 17 49 17.21640 -22 57 22.52512 | 3.7                     | 42.856           | 0.32     | -2.54                   |                  | -41.4       | 0.958      | 14.514 | 0      | -23.0             | 156.5 |
| J430114    | 2043-02-17 05:48:07.40 | 17 49 18.00344 -22 57 20.35550 | 6.3                     | 2.402            | 181.23   | 27.93                   | 5.727            | 10.2        | 7.611      | 13.516 | 12.067 | 33.8              | 60.3  |
| Pgt        | 4068877266954015104    | 17 49 17.99972 -22 57 22.75681 | 3.9                     | 9.976            | 0.32     | -2.54                   |                  | 8.1         | 1.808      | 13.879 | 0      | -23.0             | 156.8 |
| J430115    | 2043-02-17 05:55:42.19 | 17 49 18.20682 -22 57 32.02739 | 4.1                     | 9.207            | 1.23     | 27.93                   | 5.727            | -34.8       | 7.790      | 13.000 | 11.672 | 31.9              | 60.3  |
| Pgt        | 4068877262603244800    | 17 49 18.22110 -22 57 22.82225 | 2.6                     | 38.243           | 0.31     | -2.54                   |                  | -36.7       | 1.009      | 13.362 | 0      | -23.0             | 156.9 |

Table 7 continued on next page

Table 7 (continued)

| Event ID   | C/A Epoch              | ICRS Star Coord at Epoch |                 | $\sigma(\alpha_*)$ (km) | C/A ( $''$ )     | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|------------|------------------------|--------------------------|-----------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type | Source ID              | Geocentric               | Object Position | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J430116    | 2043-02-17 14:12:24.86 | 17 49 32.71504           | -22 57 17.09402 | 4.6                     | 9.968            | 181.20   | 27.80                   | 5.722            | 39.9        | 7.925      | 13.544 | 12.167 | 267.5             | 60.6  |
| Pgt        | 4068877060795299712    | 17 49 32.69993           | -22 57 27.05950 | 3.4                     | 41.366           | 0.29     | -2.54                   |                  | 38.0        | 1.055      | 13.901 | 0      | -23.0             | 161.4 |
| J430117    | 2043-02-17 16:30:59.49 | 17 49 36.75460           | -22 57 11.33265 | 2.7                     | 16.895           | 181.19   | 27.76                   | 5.721            | 80.5        | 9.329      | 13.099 | 12.047 | 232.7             | 60.7  |
| Pgt        | 4068877095154972928    | 17 49 36.72918           | -22 57 28.22381 | 1.7                     | 70.097           | 0.28     | -2.54                   |                  | 79.0        | 0.342      | 13.455 | 0      | -23.0             | 162.7 |
| J430118    | 2043-02-17 20:35:20.77 | 17 49 43.81453           | -22 57 35.97512 | 6.2                     | 5.718            | 1.18     | 27.69                   | 5.718            | -20.9       | 8.938      | 14.853 | 13.437 | 171.5             | 60.8  |
| Pgt        | 4068874449454928768    | 17 49 43.82309           | -22 57 30.25805 | 3.6                     | 23.715           | 0.27     | -2.54                   |                  | -22.9       |            | 15.206 | 0      | -23.0             | 164.9 |
| J430119    | 2043-02-18 17:05:25.61 | 17 50 19.30469           | -22 57 53.19946 | 2.4                     | 13.063           | 1.13     | 27.36                   | 5.706            | -51.8       | 8.156      | 9.671  | 9.142  | 223.3             | 61.6  |
| Pgt        | 4068709213540805120    | 17 50 19.32332           | -22 57 40.13893 | 1.4                     | 54.061           | 0.21     | -2.54                   |                  | -53.6       | 0.431      | 10.011 | 0      | -23.0             | 174.0 |
| J430120    | 2043-02-18 20:12:35.60 | 17 50 24.69600           | -22 57 40.37797 | 2.2                     | 1.213            | 181.12   | 27.31                   | 5.704            | 5.6         | 9.722      | 12.650 | 12.170 | 176.4             | 61.7  |
| Pgt        | 4068709518358349568    | 17 50 24.69429           | -22 57 41.59035 | 1.3                     | 5.017            | 0.20     | -2.54                   |                  | 3.5         | 0.249      | 12.988 | 0      | -23.0             | 174.4 |
| J430121    | 2043-02-19 04:37:57.51 | 17 50 39.15866           | -22 57 43.24874 | 8.9                     | 2.193            | 181.09   | 27.18                   | 5.699            | 9.4         | 8.021      | 14.809 | 13.227 | 49.8              | 62.0  |
| Pgt        | 4068708663746825088    | 17 50 39.15563           | -22 57 45.44123 | 5.2                     | 9.064            | 0.17     | -2.54                   |                  | 7.3         |            | 15.142 | 0      | -23.0             | 173.1 |
| J430122*   | 2043-02-19 10:30:27.19 | 17 50 49.20728           | -22 57 47.81692 | 5.4                     | 0.252            | 181.07   | 27.08                   | 5.696            | 2.0         | 7.141      | 10.173 | 9.275  | 321.4             | 62.2  |
| Pgt        | 4068709900735278592    | 17 50 49.20693           | -22 57 48.06883 | 3.4                     | 1.041            | 0.15     | -2.54                   |                  | -0.1        | 0.965      | 10.502 | 0      | -23.0             | 170.8 |
| J430123    | 2043-02-19 20:44:24.98 | 17 51 06.62519           | -22 58 06.34189 | 3.5                     | 13.812           | 1.05     | 26.91                   | 5.690            | -55.4       | 7.759      | 12.691 | 11.429 | 167.6             | 62.5  |
| Pgt        | 4068707319342612096    | 17 51 06.64354           | -22 57 52.53230 | 2.2                     | 56.994           | 0.12     | -2.54                   |                  | -57.2       | 0.961      | 13.013 | 0      | -23.0             | 165.7 |
| J430124    | 2043-02-20 00:22:53.94 | 17 51 12.84043           | -22 57 43.72186 | 6.7                     | 10.366           | 181.03   | 26.85                   | 5.687            | 41.3        | 8.863      | 14.848 | 13.388 | 112.9             | 62.7  |
| Pgt        | 4068707151955936000    | 17 51 12.82687           | -22 57 54.08632 | 4.4                     | 42.759           | 0.11     | -2.54                   |                  | 39.4        | 0.873      | 15.168 | 0      | -23.0             | 163.9 |
| J430125    | 2043-02-20 00:38:18.07 | 17 51 13.28394           | -22 57 37.64762 | 2.2                     | 16.550           | 181.03   | 26.85                   | 5.687            | 75.3        | 9.206      | 12.726 | 11.735 | 109.0             | 62.7  |
| Pgt        | 4068707147536402304    | 17 51 13.26234           | -22 57 54.19520 | 1.4                     | 68.265           | 0.11     | -2.54                   |                  | 73.7        | 0.340      | 13.046 | 0      | -23.0             | 163.7 |
| J430126    | 2043-02-20 05:00:29.05 | 17 51 20.68749           | -22 57 39.82726 | 3.6                     | 16.210           | 181.02   | 26.78                   | 5.685            | 72.2        | 9.639      | 14.823 | 13.537 | 43.3              | 62.8  |
| Pgt        | 4068707220675316736    | 17 51 20.66659           | -22 57 56.03496 | 2.3                     | 66.832           | 0.10     | -2.54                   |                  | 70.5        | 0.454      | 15.140 | 0      | -23.0             | 161.4 |
| J430127    | 2043-02-20 09:34:50.45 | 17 51 28.39695           | -22 57 58.15734 | 4.7                     | 0.225            | 1.02     | 26.70                   | 5.682            | 0.2         | 9.241      | 14.850 | 13.475 | 334.6             | 63.0  |
| Pgt        | 4068712271558830848    | 17 51 28.39723           | -22 57 57.93270 | 2.7                     | 0.926            | 0.08     | -2.54                   |                  | -1.9        | 0.644      | 15.164 | 0      | -23.0             | 159.0 |
| J430128    | 2043-02-20 10:59:52.15 | 17 51 30.77236           | -22 58 11.91949 | 3.2                     | 13.406           | 1.01     | 26.68                   | 5.681            | -53.2       | 9.684      | 14.468 | 13.250 | 313.3             | 63.1  |
| Pgt        | 4068712060981913984    | 17 51 30.78950           | -22 57 58.51516 | 2.0                     | 55.237           | 0.08     | -2.54                   |                  | -55.0       | 0.364      | 14.781 | 0      | -23.0             | 158.2 |
| J430129    | 2043-02-20 11:59:14.53 | 17 51 32.47769           | -22 57 44.10418 | 8.6                     | 14.818           | 181.00   | 26.66                   | 5.680            | 62.6        | 7.253      | 14.271 | 12.668 | 298.4             | 63.1  |
| Pgt        | 4068712099759795200    | 17 51 32.45894           | -22 57 58.92029 | 5.3                     | 61.048           | 0.07     | -2.54                   |                  | 60.9        | 2.358      | 14.583 | 0      | -23.0             | 157.7 |
| J430130    | 2043-02-20 14:46:47.73 | 17 51 37.18149           | -22 57 47.46135 | 2.7                     | 12.597           | 180.99   | 26.62                   | 5.679            | 51.1        | 8.161      | 12.763 | 11.571 | 256.4             | 63.2  |
| Pgt        | 4068712134119519872    | 17 51 37.16566           | -22 58 00.05654 | 1.6                     | 51.882           | 0.07     | -2.54                   |                  | 49.2        | 0.719      | 13.073 | 0      | -23.0             | 156.2 |
| J430131    | 2043-02-20 16:20:19.69 | 17 51 39.80005           | -22 57 52.80224 | 8.1                     | 7.885            | 180.99   | 26.59                   | 5.678            | 31.2        | 8.133      | 14.829 | 13.269 | 233.0             | 63.2  |
| Pgt        | 4068712134119511936    | 17 51 39.79017           | -22 58 00.68630 | 5.2                     | 32.470           | 0.06     | -2.54                   |                  | 29.2        |            | 15.139 | 0      | -23.0             | 155.4 |
| J430132    | 2043-02-21 00:20:08.76 | 17 51 53.19970           | -22 58 21.02987 | 2.1                     | 17.166           | 0.98     | 26.46                   | 5.673            | -81.0       | 8.316      | 12.463 | 11.346 | 112.7             | 63.5  |
| Pgt        | 4068700516114343168    | 17 51 53.22087           | -22 58 03.86628 | 1.3                     | 70.627           | 0.04     | -2.53                   |                  | -82.6       | 0.625      | 12.767 | 0      | -23.0             | 151.0 |
| J430133    | 2043-02-21 04:50:27.07 | 17 52 00.74787           | -22 58 17.71568 | 3.8                     | 12.097           | 0.96     | 26.38                   | 5.670            | -46.8       | 7.988      | 13.684 | 12.293 | 45.0              | 63.7  |
| Pgt        | 4068699828919570560    | 17 52 00.76258           | -22 58 05.62061 | 2.3                     | 49.746           | 0.02     | -2.53                   |                  | -48.7       | 1.182      | 13.985 | 0      | -23.0             | 148.6 |
| J430134    | 2043-02-21 05:52:31.81 | 17 52 02.47055           | -22 58 23.79563 | 3.0                     | 17.778           | 0.96     | 26.37                   | 5.669            |             | 9.994      | 14.331 | 13.166 | 29.5              | 63.7  |
| Pt         | 4068699828919558784    | 17 52 02.49213           | -22 58 06.01976 | 2.0                     | 73.103           | 0.02     | -2.53                   |                  |             | 0.307      | 14.631 | 0      | -23.0             | 148.1 |
| J430135    | 2043-02-21 11:55:45.87 | 17 52 12.57722           | -22 58 21.73173 | 2.7                     | 13.406           | 0.94     | 26.26                   | 5.666            | -53.0       | 9.815      | 13.659 | 12.597 | 298.4             | 63.9  |
| Pgt        | 4068701070281389568    | 17 52 12.59320           | -22 58 08.32743 | 1.7                     | 55.089           | 0.00     | -2.53                   |                  | -54.8       | 0.267      | 13.955 | 0      | -23.0             | 144.8 |
| J430136*   | 2043-02-22 00:28:19.15 | 17 52 33.41307           | -22 58 18.05420 | 5.8                     | 5.096            | 0.91     | 26.06                   | 5.658            | -18.2       | 9.064      | 14.587 | 13.243 | 109.9             | 64.4  |
| Pgt        | 4068698321501797888    | 17 52 33.41891           | -22 58 12.95861 | 3.4                     | 20.913           | -0.04    | -2.53                   |                  | -20.3       | 0.680      | 14.875 | 0      | -23.0             | 138.0 |
| J430137    | 2043-02-23 08:15:56.83 | 17 53 25.60097           | -22 58 15.45670 | 3.1                     | 8.352            | 180.82   | 25.53                   | 5.639            | 32.8        | 9.682      | 14.494 | 13.274 | 351.9             | 65.5  |
| Pgt        | 4070151188632165248    | 17 53 25.59234           | -22 58 23.80808 | 2.1                     | 34.157           | -0.13    | -2.53                   |                  | 30.8        | 0.397      | 14.759 | 0      | -23.0             | 121.1 |
| J430138**  | 2043-02-23 19:40:44.78 | 17 53 44.08905           | -22 58 40.05690 | 11.5                    | 12.659           | 0.79     | 25.33                   | 5.632            | -49.0       | 9.581      | 14.245 | 13.022 | 180.3             | 65.9  |
| Pgt        | 4070152391222572416    | 17 53 44.10174           | -22 58 27.39894 | 7.5                     | 51.706           | -0.16    | -2.53                   |                  | -50.9       | 0.370      | 14.501 | 0      | -23.0             | 115.1 |
| J430139    | 2043-02-24 00:41:39.67 | 17 53 52.18035           | -22 58 47.10197 | 2.3                     | 18.176           | 0.78     | 25.25                   | 5.628            |             | 9.670      | 13.664 | 12.569 | 104.9             | 66.1  |
| Pt         | 4070149466277033600    | 17 53 52.19831           | -22 58 28.92720 | 1.5                     | 74.200           | -0.18    | -2.53                   |                  |             | 0.308      | 13.917 | 0      | -23.0             | 112.5 |
| J430140    | 2043-02-25 16:25:29.64 | 17 54 55.54157           | -22 58 25.51576 | 2.6                     | 14.474           | 180.67   | 24.57                   | 5.604            | 59.6        | 8.578      | 13.047 | 11.882 | 227.6             | 67.5  |
| Pgt        | 4070142353808130560    | 17 54 55.52934           | -22 58 39.98899 | 1.8                     | 58.827           | -0.29    | -2.52                   |                  | 57.7        | 0.584      | 13.271 | 0      | -23.0             | 92.1  |

Table 7 continued on next page



Table 7 (continued)

| Event ID   | C/A Epoch              | ICRS Star Coord at Epoch |                 | $\sigma(\alpha_*)$ (km) | C/A ( $''$ )     | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|------------|------------------------|--------------------------|-----------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type | Source ID              | Geocentric               | Object Position | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J430141    | 2043-02-25 19:24:03.91 | 17 55 00.20525           | -22 58 52.39021 | 3.3                     | 11.646           | 0.67     | 24.52                   | 5.602            | -44.1       | 7.537      | 8.351  | 8.002  | 182.8             | 67.6  |
| Pgt        | 4070142147649607552    | 17 55 00.21509           | -22 58 40.74485 | 2.3                     | 47.317           | -0.30    | -2.52                   |                  | -46.1       | 0.491      | 8.572  | 0      | -23.0             | 90.6  |
| J430142    | 2043-02-25 19:25:15.31 | 17 55 00.25433           | -22 58 31.15282 | 4.1                     | 9.598            | 180.66   | 24.52                   | 5.602            | 37.5        | 9.247      | 14.594 | 13.289 | 182.5             | 67.6  |
| Pgt        | 4070143625118451328    | 17 55 00.24629           | -22 58 40.74985 | 2.8                     | 38.994           | -0.30    | -2.52                   |                  | 35.5        | 0.551      | 14.815 | 0      | -23.0             | 90.6  |
| J430143    | 2043-02-26 10:35:25.33 | 17 55 24.00657           | -22 58 38.62517 | 2.4                     | 5.823            | 180.62   | 24.26                   | 5.592            | 22.8        | 8.230      | 12.769 | 11.606 | 314.4             | 68.2  |
| Pgt        | 4070140876339375360    | 17 55 24.00198           | -22 58 44.44820 | 1.6                     | 23.620           | -0.34    | -2.52                   |                  | 20.7        | 0.703      | 12.979 | 0      | -23.0             | 83.0  |
| J430144    | 2043-02-27 04:31:41.81 | 17 55 51.81326           | -22 58 50.66546 | 3.2                     | 2.169            | 0.58     | 23.95                   | 5.581            | -6.9        | 9.863      | 14.394 | 13.199 | 44.8              | 68.8  |
| Pgt        | 4069412763465307136    | 17 55 51.81486           | -22 58 48.49612 | 2.3                     | 8.782            | -0.39    | -2.52                   |                  | -9.2        | 0.344      | 14.589 | 0      | -23.0             | 74.1  |
| J430145    | 2043-02-27 22:20:22.79 | 17 56 19.14059           | -22 58 39.76904 | 8.1                     | 12.408           | 180.53   | 23.64                   | 5.570            | 49.1        | 7.882      | 14.874 | 13.334 | 137.0             | 69.5  |
| Pgt        | 4069412243729726080    | 17 56 19.13224           | -22 58 52.17629 | 5.4                     | 50.123           | -0.44    | -2.52                   |                  | 47.2        | 15.055     | 0      | 0      | -23.0             | 65.3  |
| J430146    | 2043-02-28 15:23:25.63 | 17 56 45.01024           | -22 58 38.78878 | 3.4                     | 16.602           | 180.49   | 23.34                   | 5.559            | 72.5        | 9.837      | 14.408 | 13.239 | 240.6             | 70.1  |
| Pgt        | 4069410422666303968    | 17 56 44.99998           | -22 58 55.39022 | 2.3                     | 66.936           | -0.49    | -2.52                   |                  | 70.7        | 14.576     | 0      | 0      | -23.0             | 57.0  |
| J430147    | 2043-03-01 21:59:55.71 | 17 57 30.73375           | -22 59 00.54043 | 3.1                     | 0.110            | 0.42     | 22.80                   | 5.540            | 0.7         | 9.712      | 14.005 | 12.861 | 140.4             | 71.2  |
| Pgt        | 4069404139170626432    | 17 57 30.73381           | -22 59 00.43068 | 2.0                     | 0.441            | -0.57    | -2.51                   |                  | -1.5        | 0.326      | 14.148 | 0      | -23.0             | 42.2  |
| J430148    | 2043-03-02 00:02:52.34 | 17 57 33.77261           | -22 58 42.16980 | 3.8                     | 18.566           | 180.41   | 22.76                   | 5.538            |             | 7.954      | 13.585 | 12.229 | 109.6             | 71.3  |
| Pt         | 4069404173530356608    | 17 57 33.76301           | -22 59 00.73543 | 2.6                     | 74.574           | -0.57    | -2.51                   |                  |             | 1.074      | 13.726 | 0      | -23.0             | 41.2  |
| J430149    | 2043-03-02 13:46:25.41 | 17 57 53.95594           | -22 58 44.90615 | 2.8                     | 17.768           | 180.38   | 22.52                   | 5.529            | 86.1        | 9.022      | 14.104 | 12.851 | 263.3             | 71.8  |
| Pg         | 4069404688926917120    | 17 57 53.94749           | -22 59 02.67417 | 1.8                     | 71.257           | -0.61    | -2.51                   |                  | 84.6        | 0.474      | 14.233 | 0      | -23.0             | 34.6  |
| J430150    | 2043-03-03 06:02:22.54 | 17 58 17.63125           | -22 58 53.02956 | 2.6                     | 11.716           | 180.34   | 22.23                   | 5.519            | 45.7        | 9.575      | 14.207 | 13.002 | 18.7              | 72.3  |
| Pgt        | 4069401974507523072    | 17 58 17.62622           | -22 59 04.74523 | 1.8                     | 46.895           | -0.65    | -2.51                   |                  | 43.7        | 0.382      | 14.321 | 0      | -23.0             | 26.8  |
| J430151    | 2043-03-03 23:23:54.17 | 17 58 42.60177           | -22 59 14.48648 | 17.1                    | 7.795            | 0.31     | 21.91                   | 5.508            | -27.8       | 5.166      | 14.657 | 12.899 | 117.7             | 73.0  |
| Pgt        | 4069447879086908416    | 17 58 42.60478           | -22 59 06.69112 | 11.4                    | 31.140           | -0.70    | -2.51                   |                  | -30.0       | 14.756     | 0      | 0      | -23.0             | 18.5  |
| J430152    | 2043-03-04 07:50:42.28 | 17 58 54.64834           | -22 59 08.39556 | 2.3                     | 0.853            | 0.28     | 21.76                   | 5.502            | -2.0        | 9.713      | 13.787 | 12.696 | 350.7             | 73.3  |
| Pgt        | 406944773737714176     | 17 58 54.64864           | -22 59 07.54245 | 1.5                     | 3.405            | -0.72    | -2.51                   |                  | -4.3        | 0.305      | 13.879 | 0      | -23.0             | 14.6  |
| J430153    | 2043-03-05 18:18:50.24 | 17 59 43.04472           | -22 59 10.77601 | 2.6                     | 0.382            | 0.21     | 21.14                   | 5.480            | -0.2        | 9.894      | 13.839 | 12.760 | 192.5             | 74.5  |
| Pgt        | 4069445199028014080    | 17 59 43.04482           | -22 59 10.39442 | 1.8                     | 1.517            | -0.81    | -2.50                   |                  | -2.5        | 0.268      | 13.899 | 0      | -23.0             | 6.9   |
| J430154    | 2043-03-06 00:48:26.62 | 17 59 52.02703           | -22 59 02.21550 | 3.0                     | 8.608            | 180.19   | 21.02                   | 5.476            | 32.9        | 9.826      | 14.124 | 12.996 | 94.8              | 74.8  |
| Pgt        | 4069445027228866304    | 17 59 52.02499           | -22 59 10.82341 | 2.1                     | 34.185           | -0.82    | -2.50                   |                  | 30.7        | 0.296      | 14.178 | 0      | -23.0             | 9.2   |
| J430155    | 2043-03-06 20:07:44.00 | 18 00 18.48365           | -22 59 29.24318 | 2.2                     | 17.337           | 0.15     | 20.66                   | 5.463            | -74.7       | 6.114      | 9.587  | 8.614  | 164.3             | 75.5  |
| Pgt        | 4069438945555100928    | 18 00 18.48704           | -22 59 11.90636 | 1.6                     | 68.692           | -0.87    | -2.50                   |                  | -76.5       | 1.677      | 9.622  | 0      | -23.0             | 18.3  |
| J430156*   | 2043-03-07 03:40:03.59 | 18 00 28.70306           | -22 59 31.22020 | 4.3                     | 18.968           | 0.14     | 20.52                   | 5.458            |             | 9.638      | 14.368 | 13.298 | 51.0              | 75.7  |
| Pt         | 4069438533238215296    | 18 00 28.70639           | -22 59 12.25181 | 3.0                     | 75.089           | -0.89    | -2.50                   |                  | 0.314       | 14.396     | 0      | 0      | -23.0             | 22.1  |
| J430157    | 2043-03-07 08:17:34.33 | 18 00 34.94357           | -22 59 30.34468 | 7.0                     | 17.902           | 0.13     | 20.44                   | 5.455            | -81.9       | 4.879      | 10.823 | 9.399  | 341.4             | 75.9  |
| Pgt        | 4069438430158980864    | 18 00 34.94648           | -22 59 12.44286 | 5.0                     | 70.827           | -0.90    | -2.50                   |                  | -83.7       | 5.284      | 10.846 | 0      | -23.0             | 24.5  |
| J430158    | 2043-03-07 19:40:56.56 | 18 00 50.21390           | -22 59 26.00948 | 1.9                     | 13.162           | 0.10     | 20.23                   | 5.448            | -49.3       | 9.654      | 12.929 | 11.993 | 170.2             | 76.3  |
| Pgt        | 4069436883970712960    | 18 00 50.21561           | -22 59 12.84734 | 1.4                     | 52.003           | -0.93    | -2.50                   |                  | -51.3       | 0.248      | 12.941 | 0      | -23.0             | 30.5  |
| J430159    | 2043-03-09 02:36:43.07 | 18 01 30.98487           | -22 59 22.13760 | 3.1                     | 8.648            | 0.04     | 19.65                   | 5.427            | -30.6       | 9.312      | 14.581 | 13.324 | 65.1              | 77.5  |
| Pgt        | 4069271952916023424    | 18 01 30.98527           | -22 59 13.48985 | 2.2                     | 34.039           | -1.00    | -2.50                   |                  | -32.8       | 0.491      | 14.562 | 0      | -23.0             | 47.6  |
| J430160    | 2043-03-12 21:42:29.85 | 18 03 24.99068           | -22 59 20.14805 | 2.2                     | 8.195            | 359.86   | 17.93                   | 5.367            | -28.5       | 8.803      | 11.440 | 10.581 | 135.4             | 80.8  |
| Pgt        | 4069262538347389568    | 18 03 24.98923           | -22 59 11.95340 | 1.7                     | 31.897           | -1.21    | -2.49                   |                  | -30.8       | 0.400      | 11.321 | 0      | -23.0             | 101.6 |
| J430161    | 2043-03-13 03:40:58.90 | 18 03 32.13867           | -22 58 54.86555 | 1.9                     | 16.832           | 179.84   | 17.81                   | 5.363            | 69.7        | 7.983      | 13.045 | 11.814 | 45.6              | 81.0  |
| Pgt        | 4069263951414253312    | 18 03 32.14210           | -22 59 11.69746 | 1.3                     | 65.468           | -1.22    | -2.49                   |                  | 67.8        | 0.882      | 12.919 | 0      | -23.0             | 105.3 |
| J430162    | 2043-03-14 03:00:51.52 | 18 03 59.68601           | -22 59 09.29461 | 2.1                     | 1.247            | 179.80   | 17.36                   | 5.347            | 5.6         | 8.660      | 13.669 | 12.441 | 54.8              | 81.9  |
| Pgt        | 4069260412361552640    | 18 03 59.68632           | -22 59 10.54132 | 1.6                     | 4.835            | -1.27    | -2.49                   |                  | 3.2         | 0.625      | 13.516 | 0      | -23.0             | 119.5 |
| J430163    | 2043-03-14 17:31:27.44 | 18 04 16.50027           | -22 59 01.98359 | 2.4                     | 7.719            | 179.78   | 17.08                   | 5.338            | 28.8        | 9.910      | 14.271 | 13.139 | 196.6             | 82.4  |
| Pgt        | 4069588680984057728    | 18 04 16.50244           | -22 59 09.70302 | 1.8                     | 29.883           | -1.30    | -2.49                   |                  | 26.5        | 0.288      | 14.100 | 0      | -23.0             | 128.3 |
| J430164    | 2043-03-14 18:23:18.58 | 18 04 17.49876           | -22 59 18.58805 | 2.8                     | 8.938            | 359.78   | 17.07                   | 5.337            | -31.1       | 9.951      | 14.594 | 13.420 | 183.6             | 82.5  |
| Pgt        | 4069588685301227648    | 18 04 17.49632           | -22 59 09.65040 | 2.0                     | 34.596           | -1.30    | -2.49                   |                  | -33.4       | 0.324      | 14.422 | 0      | -23.0             | 128.8 |
| J430165    | 2043-03-16 11:27:15.38 | 18 05 03.73634           | -22 59 20.57693 | 2.4                     | 13.750           | 359.72   | 16.28                   | 5.309            | -50.3       | 8.686      | 13.476 | 12.282 | 286.1             | 84.0  |
| Pgt        | 4069586417559128704    | 18 05 03.73149           | -22 59 06.82745 | 1.5                     | 52.947           | -1.38    | -2.48                   |                  | -52.5       | 0.584      | 13.252 | 0      | -23.0             | 153.1 |

Table 7 continued on next page

Table 7 (continued)

| Event ID   | C/A Epoch              | ICRS Star Coord at Epoch |                 | $\sigma(\alpha_*)$ (km) | C/A ( $''$ )     | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|------------|------------------------|--------------------------|-----------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type | Source ID              | Geocentric               | Object Position | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J430166    | 2043-03-17 01:26:45.25 | 18 05 19.04211           | -22 59 22.31552 | 2.4                     | 16.582           | 359.70   | 16.01                   | 5.300            | -64.8       | 8.614      | 13.498 | 12.286 | 75.7              | 84.5  |
| Pgt        | 4069585897847190016    | 18 05 19.03584           | -22 59 05.73354 | 1.5                     | 63.741           | -1.41    | -2.48                   |                  | -66.8       | 0.541      | 13.257 | 0      | -23.0             | 161.0 |
| J430167    | 2043-03-17 12:04:54.67 | 18 05 30.51885           | -22 59 10.61935 | 2.5                     | 5.757            | 359.68   | 15.80                   | 5.293            | -19.1       | 9.816      | 13.655 | 12.632 | 275.8             | 84.9  |
| Pgt        | 4069585799084025344    | 18 05 30.51652           | -22 59 04.86195 | 1.6                     | 22.102           | -1.43    | -2.48                   |                  | -21.6       | 0.267      | 13.399 | 0      | -23.0             | 166.8 |
| J430168    | 2043-03-18 10:40:36.33 | 18 05 54.45396           | -22 58 46.39062 | 2.4                     | 16.515           | 179.64   | 15.36                   | 5.278            | 66.0        | 8.320      | 12.773 | 11.616 | 296.1             | 85.8  |
| Pgt        | 4069579751769445504    | 18 05 54.46154           | -22 59 02.90542 | 1.6                     | 63.216           | -1.47    | -2.48                   |                  | 64.0        | 0.665      | 12.487 | 0      | -23.0             | 174.2 |
| J430169    | 2043-03-19 00:18:09.98 | 18 06 08.60508           | -22 58 55.78167 | 2.8                     | 5.883            | 179.62   | 15.10                   | 5.268            | 21.9        | 9.735      | 14.230 | 13.074 | 91.2              | 86.3  |
| Pgt        | 4069579373812285312    | 18 06 08.60788           | -22 59 01.66467 | 2.0                     | 22.480           | -1.50    | -2.48                   |                  | 19.5        | 0.312      | 13.925 | 0      | -23.0             | 169.7 |
| J430170    | 2043-03-20 18:12:58.91 | 18 06 50.73813           | -22 59 12.82856 | 4.1                     | 15.224           | 359.58   | 14.28                   | 5.240            | -56.3       | 9.319      | 14.899 | 13.584 | 180.9             | 87.9  |
| Pgt        | 4069577174788910848    | 18 06 50.73009           | -22 58 57.60451 | 3.0                     | 57.862           | -1.57    | -2.47                   |                  | -58.5       | 0.568      | 14.534 | 0      | -23.0             | 147.9 |
| J430171    | 2043-03-20 20:49:57.14 | 18 06 53.29424           | -22 59 06.75772 | 4.0                     | 9.417            | 359.58   | 14.23                   | 5.238            | -32.1       | 9.562      | 14.982 | 13.686 | 141.6             | 88.0  |
| Pgt        | 4069577174788904576    | 18 06 53.28919           | -22 58 57.34075 | 2.8                     | 35.779           | -1.58    | -2.47                   |                  | -34.6       | 0.453      | 14.612 | 0      | -23.0             | 146.5 |
| J430172    | 2043-03-22 20:52:59.75 | 18 07 38.80320           | -22 58 40.77018 | 2.1                     | 11.566           | 179.51   | 13.30                   | 5.206            | 42.5        | 9.816      | 13.110 | 12.168 | 139.0             | 89.8  |
| Pgt        | 4066597326511066880    | 18 07 38.81035           | -22 58 52.33571 | 1.3                     | 43.671           | -1.66    | -2.47                   |                  | 40.1        | 0.207      | 12.666 | 0      | -23.0             | 121.2 |
| J430173    | 2043-03-22 22:15:53.67 | 18 07 40.06651           | -22 58 34.40175 | 2.0                     | 17.787           | 179.51   | 13.27                   | 5.205            | 73.1        | 9.907      | 12.727 | 11.900 | 118.3             | 89.8  |
| Pgt        | 4066598799630406912    | 18 07 40.07762           | -22 58 52.18814 | 1.2                     | 67.149           | -1.66    | -2.47                   |                  | 71.0        | 0.210      | 12.282 | 0      | -23.0             | 120.5 |
| J430174    | 2043-03-23 01:48:22.74 | 18 07 43.30286           | -22 58 32.31811 | 2.9                     | 19.492           | 179.50   | 13.20                   | 5.203            |             | 7.209      | 12.368 | 11.091 | 65.0              | 90.0  |
| P          | 4066598799631273216    | 18 07 43.31515           | -22 58 51.80911 | 2.0                     | 73.551           | -1.67    | -2.47                   |                  |             | 1.243      | 11.917 | 0      | -23.0             | 118.6 |
| J430175    | 2043-03-23 13:07:25.03 | 18 07 53.54935           | -22 58 38.01022 | 2.8                     | 12.582           | 179.49   | 12.98                   | 5.195            | 46.4        | 9.981      | 13.850 | 12.817 | 254.8             | 90.4  |
| Pgt        | 4066595917761688320    | 18 07 53.55741           | -22 58 50.59152 | 1.9                     | 47.407           | -1.69    | -2.47                   |                  | 44.0        | 0.233      | 13.380 | 0      | -23.0             | 112.8 |
| J430176    | 2043-03-23 13:51:08.12 | 18 07 54.20004           | -22 58 32.91380 | 4.6                     | 17.600           | 179.49   | 12.97                   | 5.195            | 71.4        | 6.951      | 12.340 | 11.009 | 243.9             | 90.4  |
| Pgt        | 4066595844693763200    | 18 07 54.21138           | -22 58 50.51285 | 3.3                     | 66.308           | -1.69    | -2.47                   |                  | 69.3        | 1.553      | 11.870 | 0      | -23.0             | 112.4 |
| J430177    | 2043-03-23 21:18:31.52 | 18 08 00.85394           | -22 58 31.25181 | 2.0                     | 18.455           | 179.48   | 12.82                   | 5.190            | 78.8        | 8.884      | 12.232 | 11.280 | 131.7             | 90.7  |
| Pg         | 4066596055200589440    | 18 08 00.86602           | -22 58 49.70611 | 1.3                     | 69.463           | -1.70    | -2.47                   |                  | 76.7        | 0.400      | 11.749 | 0      | -23.0             | 108.6 |
| J430178*   | 2043-03-24 03:03:53.82 | 18 08 05.95403           | -22 58 45.85509 | 5.9                     | 3.227            | 179.49   | 12.71                   | 5.186            | 12.5        | 8.771      | 9.819  | 9.424  | 45.2              | 90.9  |
| Pgt        | 4066595982131860992    | 18 08 05.95612           | -22 58 49.08147 | 4.2                     | 12.135           | -1.71    | -2.47                   |                  | 9.8         | 0.269      | 9.327  | 0      | -23.0             | 105.7 |
| J430179    | 2043-03-24 13:59:36.88 | 18 08 15.50852           | -22 58 49.75531 | 2.4                     | 1.864            | 359.48   | 12.49                   | 5.178            | -5.0        | 9.548      | 12.361 | 11.469 | 240.9             | 91.3  |
| Pgt        | 4066595299286227712    | 18 08 15.50730           | -22 58 47.89166 | 1.4                     | 7.000            | -1.73    | -2.47                   |                  | -7.8        | 0.226      | 11.850 | 0      | -23.0             | 100.1 |
| J430180    | 2043-03-24 14:52:01.66 | 18 08 16.25449           | -22 58 33.13832 | 3.2                     | 14.659           | 179.47   | 12.48                   | 5.178            | 55.0        | 8.694      | 12.427 | 11.414 | 227.7             | 91.4  |
| Pgt        | 4066595299286230656    | 18 08 16.26434           | -22 58 47.79637 | 1.8                     | 55.048           | -1.73    | -2.47                   |                  | 52.7        | 0.461      | 11.915 | 0      | -23.0             | 99.6  |
| J430181    | 2043-03-24 18:32:55.87 | 18 08 19.44973           | -22 58 55.29315 | 2.4                     | 7.899            | 359.48   | 12.40                   | 5.175            | -26.1       | 7.729      | 11.120 | 10.178 | 172.4             | 91.5  |
| Pgt        | 4066595123138402048    | 18 08 19.44453           | -22 58 47.39449 | 1.5                     | 29.649           | -1.73    | -2.47                   |                  | -28.8       | 0.725      | 10.601 | 0      | -23.0             | 97.8  |
| J430182    | 2043-03-24 21:48:31.51 | 18 08 22.23945           | -22 58 37.12909 | 2.3                     | 9.910            | 179.47   | 12.34                   | 5.173            | 36.0        | 8.523      | 12.900 | 11.760 | 123.3             | 91.6  |
| Pgt        | 4066600998654526976    | 18 08 22.24615           | -22 58 47.03840 | 1.4                     | 37.180           | -1.74    | -2.47                   |                  | 33.5        | 0.513      | 12.375 | 0      | -23.0             | 96.1  |
| J430183    | 2043-03-26 00:37:50.28 | 18 08 44.77812           | -22 58 29.71118 | 2.3                     | 14.398           | 179.44   | 11.81                   | 5.155            | 53.6        | 9.691      | 13.573 | 12.494 | 80.0              | 92.6  |
| Pgt        | 4066589458130475904    | 18 08 44.78829           | -22 58 44.10865 | 1.6                     | 53.832           | -1.78    | -2.46                   |                  | 51.2        | 0.286      | 13.001 | 0      | -23.0             | 82.7  |
| J430184    | 2043-03-26 05:41:06.59 | 18 08 48.94825           | -22 59 03.04797 | 2.9                     | 19.491           | 359.46   | 11.71                   | 5.152            |             | 8.244      | 13.704 | 12.385 | 4.0               | 92.8  |
| Pt         | 4066589389410939648    | 18 08 48.93494           | -22 58 43.55773 | 2.0                     | 72.825           | -1.79    | -2.46                   |                  |             | 0.859      | 13.123 | 0      | -23.0             | 80.1  |
| J430185    | 2043-03-26 10:14:01.85 | 18 08 52.64239           | -22 58 47.79993 | 3.6                     | 4.738            | 359.45   | 11.62                   | 5.149            | -14.9       | 9.428      | 14.787 | 13.493 | 295.6             | 93.0  |
| Pgt        | 4066588667856410112    | 18 08 52.63908           | -22 58 43.06246 | 2.4                     | 17.691           | -1.79    | -2.46                   |                  | -17.6       | 0.463      | 14.197 | 0      | -23.0             | 77.9  |
| J430186    | 2043-03-28 07:31:19.14 | 18 09 28.07623           | -22 58 33.32468 | 2.5                     | 4.867            | 179.41   | 10.73                   | 5.118            | 18.0        | 9.687      | 13.676 | 12.606 | 334.5             | 94.7  |
| Pgt        | 4066587254759184256    | 18 09 28.07983           | -22 58 38.19183 | 1.7                     | 18.068           | -1.86    | -2.46                   |                  | 15.2        | 0.277      | 13.000 | 0      | -23.0             | 55.6  |
| J430187    | 2043-03-28 15:25:57.05 | 18 09 33.99548           | -22 58 30.22982 | 2.4                     | 7.128            | 179.41   | 10.57                   | 5.113            | 25.8        | 5.959      | 10.470 | 9.321  | 215.6             | 95.0  |
| Pgt        | 4066587224746993792    | 18 09 34.00081           | -22 58 37.35731 | 1.8                     | 26.431           | -1.87    | -2.46                   |                  | 23.0        | 2.142      | 9.779  | 0      | -23.0             | 51.7  |

<sup>a</sup> A nearby event has the same 2MASS ID as this event, resulting in a corresponding K magnitude ambiguity.

\* Superscript \* indicates RUWE > 1.4, \*\* indicates RUWE > 2, and \*\*\* indicates RUWE > 5. See machine-readable file for RUWE values.

**Table 8.** Geocentric Jupiter Occultation Predictions 2023 to 2050 for  $K \leq 10$  (part 8 of 11)

| Event ID   | C/A Epoch              | ICRS Star Coord at Epoch   |                 | $\sigma(\alpha_*)$ (km) | C/A (")          | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|------------|------------------------|----------------------------|-----------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type | Source ID              | Geocentric Object Position |                 | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J430188    | 2043-03-30 03:59:01.81 | 18 10 00.31180             | -22 58 39.65383 | 4.1                     | 6.056            | 359.41   | 9.85                    | 5.088            | -19.1       | 9.834      | 14.825 | 13.503 | 25.9              | 96.5  |
| Pgt        | 4066633232449175552    | 18 10 00.30726             | -22 58 33.59817 | 3.2                     | 22.349           | -1.91    | -2.46                   |                  | -22.0       | 0.277      | 14.057 | 0      | -23.0             | 34.0  |
| J430189    | 2043-03-30 04:51:01.79 | 18 10 00.91247             | -22 58 36.78185 | 2.1                     | 3.271            | 359.40   | 9.84                    | 5.088            | -9.6        | 9.233      | 13.404 | 12.297 | 12.9              | 96.5  |
| Pgt        | 4066633228088837248    | 18 10 00.91000             | -22 58 33.51117 | 1.5                     | 12.069           | -1.91    | -2.46                   |                  | -12.6       | 0.365      | 12.634 | 0      | -23.0             | 33.6  |
| J430190    | 2043-03-31 10:01:03.02 | 18 10 20.63433             | -22 58 49.74070 | 2.0                     | 19.087           | 359.41   | 9.26                    | 5.068            | -78.8       | 8.757      | 13.236 | 12.084 | 294.3             | 97.6  |
| Pgt        | 4066632678333003136    | 18 10 20.62018             | -22 58 30.65492 | 1.4                     | 70.159           | -1.95    | -2.46                   |                  | -81.2       | 0.501      | 12.400 | 0      | -23.0             | 19.6  |
| J430191*   | 2043-03-31 12:15:01.04 | 18 10 22.09555             | -22 58 47.23805 | 4.1                     | 16.797           | 359.41   | 9.22                    | 5.067            | -61.4       | 8.382      | 13.298 | 12.061 | 260.7             | 97.7  |
| Pgt        | 4066632678341279232    | 18 10 22.08305             | -22 58 30.44237 | 3.1                     | 61.723           | -1.95    | -2.46                   |                  | -64.0       |            | 12.457 | 0      | -23.0             | 18.6  |
| J430192*   | 2043-03-31 12:47:58.46 | 18 10 22.45460             | -22 58 47.43415 | 3.3                     | 17.045           | 359.41   | 9.20                    | 5.066            | -62.8       | 9.483      | 13.123 | 12.124 | 252.4             | 97.7  |
| Pgt        | 4066632678332440576    | 18 10 22.44192             | -22 58 30.39022 | 2.4                     | 62.630           | -1.95    | -2.46                   |                  | -65.3       | 0.230      | 12.280 | 0      | -23.0             | 18.3  |
| J430193    | 2043-04-03 17:49:01.36 | 18 11 08.77056             | -22 58 13.41747 | 3.9                     | 10.321           | 179.41   | 7.67                    | 5.015            | 36.6        | 9.509      | 14.883 | 13.595 | 174.2             | 100.7 |
| Pgt        | 4066630513669529856    | 18 11 08.77823             | -22 58 23.73820 | 2.7                     | 37.541           | -2.04    | -2.45                   |                  | 33.6        | 0.462      | 13.843 | 0      | -23.0             | 22.5  |
| J430194    | 2043-04-03 20:14:20.92 | 18 11 10.11821             | -22 58 40.37564 | 10.8                    | 16.823           | 359.44   | 7.63                    | 5.013            | -60.5       | 7.373      | 14.826 | 13.231 | 137.8             | 100.8 |
| Pgt        | 4066630307511068160    | 18 11 10.10631             | -22 58 23.55334 | 7.6                     | 61.170           | -2.04    | -2.45                   |                  | -63.3       |            | 13.779 | 0      | -23.0             | 23.7  |
| J430195    | 2043-04-04 05:45:27.15 | 18 11 15.26287             | -22 58 42.96433 | 2.8                     | 20.122           | 359.45   | 7.44                    | 5.007            |             | 9.657      | 13.944 | 12.806 | 354.6             | 101.2 |
| Pt         | 4066636118668308352    | 18 11 15.24891             | -22 58 22.84284 | 2.0                     | 73.075           | -2.05    | -2.45                   |                  |             | 0.304      | 12.870 | 0      | -23.0             | 28.6  |
| J430196    | 2043-04-05 07:50:15.02 | 18 11 28.71800             | -22 58 36.28403 | 17.7                    | 15.250           | 359.47   | 6.92                    | 4.990            | -52.5       | 6.423      | 14.238 | 12.610 | 322.4             | 102.2 |
| Pgt        | 4066624466355551744    | 18 11 28.70787             | -22 58 21.03473 | 12.2                    | 55.190           | -2.07    | -2.45                   |                  | -55.5       |            | 13.085 | 0      | -23.0             | 42.7  |
| J430197    | 2043-04-06 03:02:45.18 | 18 11 38.03952             | -22 58 37.88390 | 3.4                     | 18.042           | 359.50   | 6.54                    | 4.977            | -66.7       | 9.963      | 14.915 | 13.672 | 33.5              | 102.9 |
| Pgt        | 4066624608155670272    | 18 11 38.02819             | -22 58 19.84237 | 2.4                     | 65.130           | -2.09    | -2.45                   |                  | -69.6       | 0.323      | 13.701 | 0      | -23.0             | 53.4  |
| J430198    | 2043-04-06 09:52:36.40 | 18 11 41.21644             | -22 58 12.06597 | 4.1                     | 7.382            | 179.48   | 6.40                    | 4.973            | 26.3        | 9.138      | 14.797 | 13.468 | 290.8             | 103.2 |
| Pgt        | 4066624711234210304    | 18 11 41.22126             | -22 58 19.44778 | 2.8                     | 26.624           | -2.09    | -2.45                   |                  | 22.9        | 0.586      | 13.561 | 0      | -23.0             | 57.3  |
| J430199    | 2043-04-06 17:43:58.63 | 18 11 44.80678             | -22 58 07.73523 | 3.8                     | 11.279           | 179.49   | 6.25                    | 4.968            | 39.8        | 9.564      | 14.966 | 13.675 | 172.7             | 103.5 |
| Pgt        | 4066623955319957888    | 18 11 44.81402             | -22 58 19.01409 | 2.8                     | 80.638           | -2.10    | -2.45                   |                  | 36.5        | 0.413      | 13.702 | 0      | -23.0             | 61.9  |
| J430200*   | 2043-04-06 19:33:01.48 | 18 11 45.62174             | -22 58 01.46633 | 3.7                     | 17.451           | 179.49   | 6.21                    | 4.966            | 65.9        | 9.217      | 10.770 | 10.231 | 145.3             | 103.6 |
| Pgt        | 4066623989679695488    | 18 11 45.63303             | -22 58 18.91690 | 2.7                     | 62.859           | -2.10    | -2.45                   |                  | 63.0        | 0.224      | 9.500  | 0      | -23.0             | 62.9  |
| J430201    | 2043-04-07 16:35:10.83 | 18 11 54.78288             | -22 58 20.18780 | 5.7                     | 2.308            | 359.55   | 5.79                    | 4.953            | -5.7        | 8.222      | 14.228 | 12.824 | 189.0             | 104.4 |
| Pgt        | 4066625192270517248    | 18 11 54.78158             | -22 58 17.87982 | 4.0                     | 8.291            | -2.12    | -2.45                   |                  | -9.5        | 0.978      | 12.882 | 0      | -23.0             | 75.4  |
| J430202    | 2043-04-08 03:01:40.64 | 18 11 59.09772             | -22 58 21.22068 | 4.2                     | 3.795            | 359.58   | 5.59                    | 4.946            | -10.6       | 7.822      | 14.092 | 12.700 | 31.9              | 104.8 |
| Pgt        | 4066625157910770816    | 18 11 59.09571             | -22 58 17.42613 | 3.1                     | 13.612           | -2.13    | -2.45                   |                  | -14.4       | 1.250      | 12.707 | 0      | -23.0             | 81.7  |
| J430203    | 2043-04-14 23:08:51.36 | 18 12 46.86443             | -22 57 58.43256 | 1.6                     | 18.149           | 180.76   | 2.37                    | 4.841            | 68.5        | 9.445      | 11.796 | 11.065 | 83.6              | 111.4 |
| Pgt        | 4066457379353660800    | 18 12 46.84711             | -22 58 16.58035 | 1.1                     | 63.717           | -2.21    | -2.44                   |                  | 63.1        | 0.213      | 9.478  | 0      | -23.0             | 173.7 |
| J430204    | 2043-04-15 07:42:28.80 | 18 12 48.28139             | -22 58 29.99196 | 1.8                     | 13.101           | 1.03     | 2.20                    | 4.835            | -40.3       | 8.630      | 11.568 | 10.715 | 314.8             | 111.7 |
| Pgt        | 4066457379353634688    | 18 12 48.29838             | -22 58 16.89300 | 1.3                     | 45.943           | -2.21    | -2.44                   |                  | -46.8       | 0.388      | 9.171  | 0      | -23.0             | 170.4 |
| J430205    | 2043-04-23 23:37:18.70 | 18 12 51.87522             | -22 58 56.23228 | 4.7                     | 19.800           | 355.14   | -1.71                   | 4.709            | -70.7       | 9.128      | 14.856 | 13.476 | 67.6              | 120.2 |
| Pgt        | 4066457310595760000    | 18 12 51.75378             | -22 58 36.50346 | 3.6                     | 67.622           | -2.22    | -2.43                   |                  | -75.5       |            | 12.185 | 0      | -23.0             | 63.4  |
| J430206    | 2043-04-24 22:57:36.53 | 18 12 48.28139             | -22 58 29.99208 | 1.8                     | 10.188           | 175.90   | -2.13                   | 4.695            | 34.2        | 8.630      | 11.568 | 10.715 | 76.6              | 121.1 |
| Pgt        | 4066457379353634688    | 18 12 48.33418             | -22 58 40.15429 | 1.3                     | 34.695           | -2.21    | -2.43                   |                  | 30.2        | 0.377      | 9.139  | 0      | -23.0             | 51.9  |
| J430207    | 2043-04-30 15:01:28.22 | 18 12 13.12965             | -22 58 48.66804 | 2.5                     | 18.371           | 177.31   | -4.54                   | 4.619            | 62.9        | 8.358      | 13.917 | 12.592 | 189.9             | 126.8 |
| Pgt        | 4066622065534288384    | 18 12 13.19200             | -22 59 07.01845 | 1.9                     | 61.541           | -2.15    | -2.43                   |                  | 61.9        | 0.638      | 12.308 | 0      | -23.0             | 17.2  |
| J430208*   | 2043-05-01 12:08:30.51 | 18 12 05.36959             | -22 58 55.87956 | 4.7                     | 16.139           | 177.41   | -4.91                   | 4.608            | 53.0        | 8.718      | 13.344 | 12.155 | 232.2             | 127.6 |
| Pgt        | 4066622306052469120    | 18 12 05.42242             | -22 59 12.00217 | 3.3                     | 53.932           | -2.14    | -2.43                   |                  | 52.1        |            | 11.819 | 0      | -23.0             | 27.8  |
| J430209    | 2043-05-01 12:30:45.65 | 18 12 05.27898             | -22 59 11.65700 | 4.4                     | 0.435            | 177.39   | -4.92                   | 4.607            | 1.9         | 8.970      | 14.956 | 13.584 | 226.6             | 127.7 |
| Pgt        | 4066622134253775360    | 18 12 05.28041             | -22 59 12.09157 | 3.2                     | 1.454            | -2.14    | -2.43                   |                  | 0.8         | 0.662      | 13.432 | 0      | -23.0             | 28.0  |
| J430210    | 2043-05-01 16:23:14.61 | 18 12 03.78452             | -22 59 12.76272 | 2.4                     | 0.267            | 177.41   | -4.98                   | 4.605            | 1.3         | 8.354      | 13.711 | 12.416 | 168.3             | 127.8 |
| Pgt        | 4066622202973255040    | 18 12 03.78540             | -22 59 13.02943 | 1.6                     | 0.892            | -2.13    | -2.43                   |                  | 0.3         | 0.683      | 12.202 | 0      | -23.0             | 30.0  |
| J430211    | 2043-05-01 22:46:43.82 | 18 12 01.27002             | -22 59 13.38215 | 3.1                     | 1.211            | 177.44   | -5.09                   | 4.602            | 4.2         | 9.378      | 14.799 | 13.485 | 72.2              | 128.1 |
| Pgt        | 4066622202973260544    | 18 12 01.27394             | -22 59 14.59174 | 2.2                     | 4.041            | -2.13    | -2.43                   |                  | 3.2         | 0.439      | 13.313 | 0      | -23.0             | 33.4  |

Table 8 continued on next page













Table 8 (continued)

| Event ID   | C/A Epoch              | ICRS Star Coord at Epoch       | $\sigma(\alpha_*)$ (km) | C/A (")          | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|------------|------------------------|--------------------------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type | Source ID              | Geocentric Object Position     | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J430337    | 2043-06-27 19:50:08.68 | 17 47 28.87249 -23 04 20.76792 | 2.5                     | 19.881           | 180.15   | -16.12                  | 4.256            | 62.5        | 9.759      | 14.502 | 13.248 | 54.2              | 171.6 |
| Pgt        | 4068789821453703296    | 17 47 28.86866 -23 04 40.64861 | 1.4                     | 61.368           | 0.51     | -2.42                   |                  | 61.9        | 0.295      | 14.268 | 0      | -23.1             | 69.6  |
| J430338    | 2043-06-27 21:23:20.54 | 17 47 26.75103 -23 04 49.34771 | 3.3                     | 8.778            | 0.16     | -16.12                  | 4.256            | -24.7       | 9.260      | 14.650 | 13.250 | 30.8              | 171.6 |
| Pgt        | 4068789782776086912    | 17 47 26.75277 -23 04 40.56983 | 2.0                     | 27.096           | 0.52     | -2.42                   |                  | -25.4       | 0.408      | 14.416 | 0      | -23.1             | 70.5  |
| J430339    | 2043-06-27 22:25:41.69 | 17 47 25.33650 -23 04 45.90459 | 2.9                     | 5.388            | 0.16     | -16.11                  | 4.256            | -14.9       | 4.005      | 8.936  | 7.611  | 15.1              | 171.5 |
| Pgt        | 4068789787093980672    | 17 47 25.33758 -23 04 40.51642 | 1.7                     | 16.633           | 0.52     | -2.42                   |                  | -15.7       | 5.263      | 8.701  | 0      | -23.1             | 71.1  |
| J430340    | 2043-06-28 03:07:45.70 | 17 47 18.93661 -23 04 54.84845 | 2.0                     | 14.581           | 0.17     | -16.10                  | 4.257            | -42.3       | 9.242      | 13.816 | 12.657 | 304.4             | 171.3 |
| Pgt        | 4068789477856396416    | 17 47 18.93967 -23 04 40.26766 | 1.2                     | 45.014           | 0.53     | -2.42                   |                  | -43.0       | 13.581     | 0      | 0      | -23.1             | 73.7  |
| J430341    | 2043-06-28 10:05:19.45 | 17 47 09.48559 -23 04 18.03997 | 2.3                     | 21.838           | 180.18   | -16.07                  | 4.257            | 73.0        | 8.948      | 13.986 | 12.677 | 199.7             | 171.0 |
| Pgt        | 4068790474287798144    | 17 47 09.48075 -23 04 39.87808 | 1.4                     | 67.429           | 0.55     | -2.42                   |                  | 72.3        | 0.450      | 13.749 | 0      | -23.1             | 77.6  |
| J430342    | 2043-06-28 12:57:52.45 | 17 47 05.57487 -23 04 46.07168 | 2.5                     | 6.362            | 0.18     | -16.06                  | 4.257            | -17.7       | 9.830      | 14.747 | 13.443 | 156.4             | 170.9 |
| Pgt        | 4068790336848885760    | 17 47 05.57633 -23 04 39.70974 | 1.5                     | 19.645           | 0.55     | -2.42                   |                  | -18.5       | 0.249      | 14.509 | 0      | -23.1             | 79.2  |
| J430343    | 2043-06-28 13:48:02.87 | 17 47 04.44497 -23 04 24.53232 | 1.8                     | 15.128           | 180.18   | -16.06                  | 4.258            | 44.8        | 9.155      | 13.231 | 12.146 | 143.8             | 170.8 |
| Pgt        | 4068790405568420864    | 17 47 04.44149 -23 04 39.66000 | 1.1                     | 46.713           | 0.56     | -2.42                   |                  | 44.1        | 12.993     | 0      | 0      | -23.1             | 79.7  |
| J430344    | 2043-06-28 15:50:22.75 | 17 47 01.67270 -23 04 51.33863 | 2.6                     | 11.801           | 0.19     | -16.05                  | 4.258            | -33.6       | 9.304      | 14.511 | 13.163 | 113.2             | 170.7 |
| Pgt        | 4068790405568436992    | 17 47 01.67548 -23 04 39.53720 | 1.6                     | 36.443           | 0.56     | -2.42                   |                  | -34.4       | 14.273     | 0      | 0      | -23.1             | 80.8  |
| J430345    | 2043-06-28 20:40:50.74 | 17 46 55.11885 -23 04 15.36524 | 2.2                     | 23.872           | 180.19   | -16.04                  | 4.258            |             | 9.250      | 14.360 | 13.000 | 40.3              | 170.5 |
| P          | 4068835927846581760    | 17 46 55.11305 -23 04 39.23722 | 1.3                     | 73.725           | 0.57     | -2.42                   |                  |             | 0.401      | 14.120 | 0      | -23.1             | 83.5  |
| J430346    | 2043-06-29 00:11:51.17 | 17 46 50.35530 -23 04 20.10381 | 2.2                     | 18.908           | 180.20   | -16.03                  | 4.258            | 58.5        | 9.997      | 14.256 | 13.130 | 347.4             | 170.4 |
| Pgt        | 4068835897878219904    | 17 46 50.35057 -23 04 39.01197 | 1.3                     | 58.399           | 0.58     | -2.42                   |                  | 57.7        | 0.214      | 14.015 | 0      | -23.1             | 85.5  |
| J430347    | 2043-06-29 01:13:40.97 | 17 46 48.95549 -23 04 40.30556 | 4.5                     | 1.361            | 0.20     | -16.02                  | 4.259            | -3.4        | 8.705      | 14.428 | 12.976 | 331.9             | 170.3 |
| Pgt        | 4068835794799000192    | 17 46 48.95583 -23 04 38.94481 | 2.7                     | 4.203            | 0.58     | -2.42                   |                  | -4.3        | 14.188     | 0      | 0      | -23.1             | 86.1  |
| J430348    | 2043-06-29 02:09:20.70 | 17 46 47.69794 -23 04 48.99273 | 3.0                     | 10.109           | 0.20     | -16.02                  | 4.259            | -28.6       | 7.112      | 12.222 | 10.884 | 317.9             | 170.3 |
| Pgt        | 4068835794799011712    | 17 46 47.70054 -23 04 38.88390 | 1.8                     | 31.223           | 0.59     | -2.42                   |                  | -29.4       | 1.078      | 11.981 | 0      | -23.1             | 86.6  |
| J430349    | 2043-06-29 02:47:32.44 | 17 46 46.83876 -23 04 40.99152 | 2.3                     | 2.150            | 0.20     | -16.02                  | 4.259            | -5.6        | 9.875      | 14.590 | 13.376 | 308.4             | 170.3 |
| Pgt        | 4068836000957470464    | 17 46 46.83932 -23 04 38.84186 | 1.4                     | 6.640            | 0.59     | -2.42                   |                  | -6.5        | 14.349     | 0      | 0      | -23.1             | 87.0  |
| J430350    | 2043-06-29 03:46:24.41 | 17 46 45.50880 -23 04 52.24098 | 1.8                     | 13.464           | 0.21     | -16.01                  | 4.259            | -38.8       | 8.567      | 13.498 | 12.232 | 293.6             | 170.2 |
| Pgt        | 4068835996560459392    | 17 46 45.51230 -23 04 38.77668 | 1.1                     | 41.589           | 0.59     | -2.42                   |                  | -39.5       | 0.481      | 13.256 | 0      | -23.1             | 87.5  |
| J430351    | 2043-06-29 04:38:06.05 | 17 46 44.35107 -23 04 23.95897 | 1.8                     | 14.760           | 180.21   | -16.01                  | 4.259            | 43.7        | 9.681      | 13.435 | 12.397 | 280.6             | 170.2 |
| Pgt        | 4068835996560483328    | 17 46 44.34724 -23 04 38.71906 | 1.1                     | 45.592           | 0.59     | -2.42                   |                  | 42.9        | 0.211      | 13.193 | 0      | -23.1             | 88.0  |
| J430352*   | 2043-06-29 06:54:13.86 | 17 46 41.28226 -23 04 31.64530 | 7.4                     | 6.920            | 180.21   | -16.00                  | 4.259            | 20.1        | 9.319      | 14.156 | 12.903 | 246.5             | 170.1 |
| Pgt        | 4068836035317332864    | 17 46 41.28044 -23 04 38.56558 | 4.7                     | 21.377           | 0.60     | -2.42                   |                  | 19.2        | 0.429      | 13.914 | 0      | -23.1             | 89.3  |
| J430353    | 2043-06-29 07:33:05.51 | 17 46 40.40252 -23 04 48.90611 | 2.4                     | 10.385           | 0.21     | -16.00                  | 4.259            | -29.4       | 9.893      | 14.613 | 13.401 | 236.7             | 170.0 |
| Pgt        | 4068836030919259904    | 17 46 40.40530 -23 04 38.52131 | 1.5                     | 32.079           | 0.60     | -2.42                   |                  | -30.2       | 0.275      | 14.370 | 0      | -23.1             | 89.7  |
| J430354    | 2043-06-29 08:30:32.53 | 17 46 39.11228 -23 04 36.66305 | 3.5                     | 1.792            | 180.21   | -15.99                  | 4.259            | 5.5         | 9.135      | 14.603 | 13.216 | 222.3             | 170.0 |
| Pgt        | 4068836030919278208    | 17 46 39.11180 -23 04 38.45549 | 2.1                     | 5.537            | 0.60     | -2.42                   |                  | 4.6         | 0.505      | 14.360 | 0      | -23.1             | 90.2  |
| J430355    | 2043-06-29 14:00:25.06 | 17 46 31.69782 -23 04 13.89045 | 4.8                     | 24.179           | 180.22   | -15.97                  | 4.260            |             | 8.775      | 14.767 | 13.259 | 139.6             | 169.7 |
| P          | 4068836447634384768    | 17 46 31.69113 -23 04 38.06896 | 3.0                     | 74.700           | 0.61     | -2.42                   |                  |             | 14.523     | 0      | 0      | -23.1             | 93.4  |
| J430356    | 2043-06-29 14:23:03.74 | 17 46 31.18360 -23 04 32.83781 | 2.1                     | 5.204            | 180.22   | -15.97                  | 4.260            | 15.2        | 9.839      | 14.137 | 12.902 | 133.9             | 169.7 |
| Pgt        | 4068836447634369152    | 17 46 31.18214 -23 04 38.04189 | 1.2                     | 16.078           | 0.61     | -2.42                   |                  | 14.3        | 0.228      | 13.893 | 0      | -23.1             | 93.6  |
| J430357    | 2043-06-29 20:09:29.40 | 17 46 23.40048 -23 04 43.05061 | 2.5                     | 5.431            | 0.23     | -15.95                  | 4.260            | -15.0       | 9.897      | 14.528 | 13.311 | 47.1              | 169.5 |
| Pgt        | 4068836516353974400    | 17 46 23.40206 -23 04 37.61920 | 1.5                     | 16.783           | 0.63     | -2.42                   |                  | -15.9       | 0.255      | 14.282 | 0      | -23.1             | 96.9  |
| J430358    | 2043-06-29 20:41:30.32 | 17 46 22.68100 -23 04 46.76168 | 2.2                     | 9.182            | 0.23     | -15.95                  | 4.260            | -25.8       | 9.561      | 13.112 | 12.100 | 39.0              | 169.4 |
| Pgt        | 4068836516353982848    | 17 46 22.68369 -23 04 37.57933 | 1.2                     | 28.374           | 0.63     | -2.42                   |                  | -26.7       | 0.234      | 12.866 | 0      | -23.1             | 97.2  |

<sup>a</sup> A nearby event has the same 2MASS ID as this event, resulting in a corresponding K magnitude ambiguity.

\* Superscript \* indicates RUWE > 1.4, \*\* indicates RUWE > 2, and \*\*\* indicates RUWE > 5. See machine-readable file for RUWE values.

Table 9. Geocentric Jupiter Occultation Predictions 2023 to 2050 for  $K \leq 10$  (part 9 of 11)

| Event ID   | C/A Epoch              | ICRS Star Coord at Epoch       | $\sigma(\alpha_*)$ (km) | C/A (")          | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|------------|------------------------|--------------------------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type | Source ID              | Geocentric Object Position     | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J430359    | 2043-06-29 22:00:02.75 | 17 46 20.92662 -23 04 21.15689 | 6.1                     | 16.324           | 180.23   | -15.94                  | 4.261            | 48.9        | 7.372      | 14.133 | 12.508 | 19.3              | 169.4 |
| Pgt        | 4068836580760289408    | 17 46 20.92184 -23 04 37.48093 | 3.6                     | 50.443           | 0.63     | -2.42                   |                  | 48.1        |            | 13.887 | 0      | -23.1             | 98.0  |
| J430360    | 2043-06-30 04:20:23.78 | 17 46 12.39771 -23 04 40.74284 | 2.8                     | 3.750            | 0.24     | -15.91                  | 4.261            | -10.2       | 9.671      | 14.772 | 13.465 | 283.9             | 169.1 |
| Pgt        | 4068833625738516608    | 17 46 12.39887 -23 04 36.99280 | 1.7                     | 11.590           | 0.65     | -2.42                   |                  | -11.1       | 0.384      | 14.524 | 0      | -23.1             | 101.7 |
| J430361    | 2043-06-30 13:05:39.09 | 17 46 00.64902 -23 04 51.91225 | 6.0                     | 15.625           | 0.26     | -15.88                  | 4.262            | -45.8       | 8.053      | 14.442 | 12.902 | 152.2             | 168.7 |
| Pgt        | 4068833763177452288    | 17 46 00.65411 -23 04 36.28754 | 3.6                     | 48.300           | 0.67     | -2.42                   |                  | -46.6       |            | 14.191 | 0      | -23.1             | 106.8 |
| J430362    | 2043-06-30 19:31:48.96 | 17 45 52.04312 -23 04 22.38554 | 3.4                     | 13.361           | 180.26   | -15.85                  | 4.263            | 39.3        | 9.596      | 14.682 | 13.368 | 55.4              | 168.4 |
| Pgt        | 4068834209937559424    | 17 45 52.03865 -23 04 35.74658 | 2.1                     | 41.310           | 0.69     | -2.42                   |                  | 38.4        | 0.354      | 14.430 | 0      | -23.1             | 110.5 |
| J430363    | 2043-06-30 22:31:12.04 | 17 45 48.04011 -23 04 41.83692 | 4.7                     | 6.348            | 0.27     | -15.84                  | 4.263            | -17.6       | 8.880      | 14.638 | 13.197 | 10.4              | 168.3 |
| Pgt        | 4068834244212893952    | 17 45 48.04228 -23 04 35.48896 | 2.9                     | 19.628           | 0.69     | -2.42                   |                  | -18.5       | 0.637      | 14.384 | 0      | -23.1             | 112.3 |
| J430364    | 2043-06-30 23:28:36.09 | 17 45 46.76735 -23 04 26.46652 | 2.2                     | 8.939            | 180.27   | -15.83                  | 4.263            | 26.0        | 8.895      | 13.349 | 12.182 | 356.0             | 168.2 |
| Pgt        | 4068834244213818368    | 17 45 46.76429 -23 04 35.40568 | 1.3                     | 27.641           | 0.69     | -2.42                   |                  | 25.1        | 0.334      | 13.095 | 0      | -23.1             | 112.9 |
| J430365    | 2043-07-01 02:32:57.46 | 17 45 42.66509 -23 04 27.21912 | 6.9                     | 7.916            | 180.28   | -15.82                  | 4.264            | 23.0        | 8.322      | 14.661 | 13.117 | 309.8             | 168.1 |
| Pgt        | 4068834351637954944    | 17 45 42.66234 -23 04 35.13549 | 4.4                     | 24.481           | 0.70     | -2.42                   |                  | 22.1        | 0.874      | 14.407 | 0      | -23.1             | 114.7 |
| J430366    | 2043-07-01 07:24:04.11 | 17 45 36.18861 -23 04 47.99012 | 5.5                     | 13.290           | 0.28     | -15.79                  | 4.264            | -38.2       | 9.048      | 14.952 | 13.470 | 236.8             | 167.9 |
| Pgt        | 4068832908579260672    | 17 45 36.19339 -23 04 34.70036 | 3.5                     | 41.103           | 0.71     | -2.42                   |                  | -39.1       | 0.539      | 14.695 | 0      | -23.1             | 117.6 |
| J430367    | 2043-07-01 07:26:16.44 | 17 45 36.14976 -23 04 19.68008 | 6.6                     | 15.017           | 180.28   | -15.79                  | 4.264            | 44.6        | 8.450      | 14.728 | 13.204 | 236.2             | 167.9 |
| Pgt        | 4068834381651929216    | 17 45 36.14442 -23 04 34.69702 | 4.1                     | 46.445           | 0.71     | -2.42                   |                  | 43.7        |            | 14.471 | 0      | -23.1             | 117.6 |
| J430368    | 2043-07-01 22:06:16.27 | 17 45 16.65314 -23 04 32.64598 | 3.3                     | 0.673            | 180.31   | -15.72                  | 4.266            | 2.4         | 9.955      | 14.893 | 13.633 | 15.5              | 167.2 |
| Pgt        | 4068844831413974912    | 17 45 16.65288 -23 04 33.31877 | 2.1                     | 2.082            | 0.75     | -2.42                   |                  | 1.4         |            | 14.631 | 0      | -23.1             | 126.3 |
| J430369    | 2043-07-01 22:27:50.13 | 17 45 16.16685 -23 04 57.96386 | 3.0                     | 24.680           | 0.31     | -15.72                  | 4.266            |             | 9.955      | 14.585 | 13.391 | 10.1              | 167.2 |
| Pt         | 4068844453456826112    | 17 45 16.17644 -23 04 33.28382 | 1.9                     | 76.364           | 0.75     | -2.42                   |                  |             | 0.248      | 14.323 | 0      | -23.1             | 126.5 |
| J430370    | 2043-07-02 05:32:33.07 | 17 45 06.79869 -23 04 47.13080 | 4.1                     | 14.547           | 0.32     | -15.69                  | 4.267            | -42.2       | 8.859      | 14.322 | 12.942 | 263.6             | 166.9 |
| Pgt        | 4068845243731008128    | 17 45 06.80451 -23 04 32.58446 | 2.4                     | 45.019           | 0.77     | -2.42                   |                  | -43.1       | 0.576      | 14.058 | 0      | -23.1             | 130.8 |
| J430371    | 2043-07-02 05:53:06.47 | 17 45 06.35241 -23 04 30.18883 | 6.5                     | 2.361            | 180.32   | -15.69                  | 4.267            | 7.2         | 8.050      | 14.500 | 12.957 | 258.5             | 166.9 |
| Pgt        | 4068845239329259264    | 17 45 06.35147 -23 04 32.55007 | 3.9                     | 7.308            | 0.77     | -2.42                   |                  | 6.2         |            | 14.236 | 0      | -23.1             | 131.0 |
| J430372    | 2043-07-02 08:18:26.44 | 17 45 03.14642 -23 04 41.29879 | 5.1                     | 8.993            | 0.32     | -15.67                  | 4.267            | -25.2       | 8.454      | 14.228 | 12.795 | 222.0             | 166.8 |
| Pgt        | 4068845140651868928    | 17 45 03.15006 -23 04 32.30564 | 3.0                     | 27.835           | 0.77     | -2.42                   |                  | -26.2       | 0.769      | 13.964 | 0      | -23.1             | 132.5 |
| J430373    | 2043-07-02 08:58:48.03 | 17 45 02.25403 -23 04 50.56714 | 3.5                     | 18.330           | 0.32     | -15.67                  | 4.268            | -55.5       | 7.263      | 12.483 | 11.134 | 211.9             | 166.7 |
| Pgt        | 4068845136250849408    | 17 45 02.26148 -23 04 32.23733 | 2.2                     | 56.734           | 0.77     | -2.42                   |                  | -56.4       | 0.955      | 12.219 | 0      | -23.1             | 132.9 |
| J430374    | 2043-07-02 10:33:12.48 | 17 45 00.18304 -23 04 33.90295 | 4.4                     | 1.826            | 0.32     | -15.66                  | 4.268            | -4.7        | 9.116      | 14.706 | 13.282 | 188.2             | 166.7 |
| Pgt        | 4068845346810361856    | 17 45 00.18379 -23 04 32.07684 | 2.7                     | 5.652            | 0.78     | -2.42                   |                  | -5.7        | 0.566      | 14.441 | 0      | -23.1             | 133.8 |
| J430375    | 2043-07-02 11:23:28.03 | 17 44 59.07003 -23 04 51.78645 | 3.3                     | 19.796           | 0.32     | -15.66                  | 4.268            | -61.6       | 9.506      | 14.710 | 13.374 | 175.6             | 166.6 |
| Pgt        | 4068845312450619392    | 17 44 59.07816 -23 04 31.99099 | 1.9                     | 61.275           | 0.78     | -2.42                   |                  | -62.5       | 0.443      | 14.444 | 0      | -23.1             | 134.3 |
| J430376    | 2043-07-02 14:54:14.22 | 17 44 54.43996 -23 04 44.10550 | 2.1                     | 12.478           | 0.33     | -15.64                  | 4.268            | -35.7       | 8.476      | 13.413 | 12.160 | 122.8             | 166.5 |
| Pgt        | 4068845376768146176    | 17 44 54.44516 -23 04 31.62795 | 1.2                     | 38.627           | 0.79     | -2.42                   |                  | -36.7       | 0.514      | 13.146 | 0      | -23.1             | 136.5 |
| J430377    | 2043-07-02 18:46:31.98 | 17 44 49.34725 -23 04 27.82831 | 8.4                     | 3.394            | 180.33   | -15.62                  | 4.269            | 10.2        | 7.043      | 14.170 | 12.443 | 64.5              | 166.3 |
| Pgt        | 4068824864004374784    | 17 44 49.34582 -23 04 31.22221 | 5.0                     | 10.508           | 0.80     | -2.42                   |                  | 9.1         |            | 13.901 | 0      | -23.1             | 138.8 |
| J430378*   | 2043-07-02 19:48:56.34 | 17 44 47.97085 -23 04 45.89574 | 6.4                     | 14.784           | 0.34     | -15.62                  | 4.269            | -43.0       | 9.015      | 14.806 | 13.273 | 48.9              | 166.3 |
| Pgt        | 4068824834036838400    | 17 44 47.97713 -23 04 31.11221 | 4.0                     | 45.773           | 0.80     | -2.42                   |                  | -43.9       | 0.543      | 14.537 | 0      | -23.1             | 139.4 |
| J430379    | 2043-07-02 21:36:52.20 | 17 44 45.61961 -23 04 11.18514 | 2.3                     | 19.736           | 180.33   | -15.61                  | 4.269            | 62.2        | 8.229      | 13.457 | 12.134 | 21.8              | 166.2 |
| Pgt        | 4068824898364150400    | 17 44 45.61125 -23 04 30.92099 | 1.5                     | 61.110           | 0.80     | -2.42                   |                  | 61.4        | 0.651      | 13.188 | 0      | -23.1             | 140.5 |
| J430380    | 2043-07-03 00:49:39.00 | 17 44 41.37893 -23 04 54.83004 | 2.0                     | 24.254           | 0.34     | -15.59                  | 4.270            |             | 9.810      | 13.494 | 12.455 | 333.4             | 166.0 |
| Pt         | 4068824795285727104    | 17 44 41.38947 -23 04 30.57635 | 1.2                     | 75.107           | 0.81     | -2.42                   |                  |             | 0.190      | 13.224 | 0      | -23.1             | 142.5 |
| J430381    | 2043-07-03 02:51:17.03 | 17 44 38.73183 -23 04 22.51642 | 9.1                     | 7.841            | 180.34   | -15.58                  | 4.270            | 22.9        | 7.127      | 14.487 | 12.853 | 302.9             | 165.9 |
| Pgt        | 4068825001472551552    | 17 44 38.72843 -23 04 30.35686 | 5.6                     | 24.281           | 0.82     | -2.42                   |                  | 21.9        |            | 14.216 | 0      | -23.1             | 143.7 |
| J430382    | 2043-07-03 06:09:20.68 | 17 44 34.40399 -23 04 20.53206 | 3.4                     | 9.464            | 180.35   | -15.56                  | 4.270            | 27.7        | 9.721      | 14.958 | 13.631 | 253.3             | 165.8 |
| Pgt        | 4068825035803082240    | 17 44 34.39983 -23 04 29.99610 | 2.1                     | 29.313           | 0.82     | -2.42                   |                  | 26.6        | 0.399      | 14.686 | 0      | -23.1             | 145.7 |

Table 9 continued on next page





Table 9 (continued)

| Event ID   | C/A Epoch              | ICRS Star Coord at Epoch |                 | $\sigma(\alpha_*)$ (km) | C/A ( $''$ )     | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|------------|------------------------|--------------------------|-----------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type | Source ID              | Geocentric               | Object Position | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J430433    | 2043-07-13 03:18:39.12 | 17 39 41.37292           | -23 03 52.48115 | 3.1                     | 3.900            | 180.58   | -13.77                  | 4.318            | 12.1        | 5.488      | 10.722 | 9.429  | 285.0             | 155.3 |
| Pgt        | 4116554874369464960    | 17 39 41.37006           | -23 03 56.38046 | 1.8                     | 12.212           | 1.35     | -2.40                   |                  | 10.3        | 2.499      | 10.317 | 0      | -23.1             | 75.7  |
| J430434    | 2043-07-13 06:06:53.57 | 17 39 38.14872           | -23 04 08.62647 | 3.1                     | 12.696           | 0.58     | -13.74                  | 4.319            | -36.5       | 8.199      | 13.627 | 12.262 | 242.8             | 155.1 |
| Pgt        | 4116554840009738112    | 17 39 38.15810           | -23 03 55.93088 | 1.9                     | 39.769           | 1.36     | -2.40                   |                  | -38.1       | 0.763      | 13.219 | 0      | -23.1             | 74.3  |
| J430435    | 2043-07-13 13:45:19.00 | 17 39 29.45324           | -23 03 37.87511 | 4.5                     | 16.831           | 180.58   | -13.67                  | 4.321            | 51.9        | 7.347      | 13.407 | 11.937 | 127.8             | 154.8 |
| Pgt        | 4116555488404257408    | 17 39 29.44085           | -23 03 54.70485 | 2.7                     | 52.743           | 1.37     | -2.40                   |                  | 50.4        | 1.714      | 12.994 | 0      | -23.1             | 70.4  |
| J430436    | 2043-07-13 20:37:37.45 | 17 39 21.63041           | -23 04 12.46065 | 5.5                     | 18.860           | 0.59     | -13.60                  | 4.323            | -58.3       | 9.300      | 14.979 | 13.565 | 24.4              | 154.5 |
| Pgt        | 4116555419684742016    | 17 39 21.64457           | -23 03 53.60124 | 3.2                     | 59.129           | 1.39     | -2.40                   |                  | -59.8       | 0.505      | 14.560 | 0      | -23.1             | 66.9  |
| J430437    | 2043-07-14 00:19:00.18 | 17 39 17.48074           | -23 03 46.54196 | 2.8                     | 6.467            | 180.59   | -13.56                  | 4.324            | 19.6        | 9.621      | 14.119 | 12.898 | 328.9             | 154.3 |
| Pgt        | 4116558344703175808    | 17 39 17.47592           | -23 03 53.00842 | 1.6                     | 20.278           | 1.39     | -2.40                   |                  | 17.8        | 0.275      | 13.698 | 0      | -23.1             | 65.0  |
| J430438    | 2043-07-14 01:37:56.11 | 17 39 15.99606           | -23 03 48.07993 | 3.2                     | 4.717            | 180.59   | -13.55                  | 4.324            | 14.5        | 9.413      | 14.469 | 13.217 | 309.1             | 154.3 |
| Pgt        | 4116558344703183232    | 17 39 15.99253           | -23 03 52.79702 | 1.8                     | 14.794           | 1.40     | -2.40                   |                  | 12.7        | 0.345      | 14.046 | 0      | -23.1             | 64.4  |
| J430439    | 2043-07-14 16:01:24.72 | 17 38 59.87006           | -23 03 45.20372 | 6.2                     | 5.281            | 180.60   | -13.41                  | 4.328            | 16.2        | 8.973      | 14.732 | 13.261 | 92.6              | 153.6 |
| Pgt        | 4116535078719662208    | 17 38 59.86607           | -23 03 50.48393 | 3.7                     | 16.575           | 1.42     | -2.40                   |                  | 14.3        | 0.650      | 14.298 | 0      | -23.1             | 57.2  |
| J430440    | 2043-07-15 00:19:27.61 | 17 38 50.63849           | -23 04 03.17158 | 5.9                     | 14.022           | 0.61     | -13.32                  | 4.330            | -40.8       | 8.323      | 14.651 | 13.129 | 327.7             | 153.3 |
| Pgt        | 4116535495455570048    | 17 38 50.64922           | -23 03 49.15085 | 3.2                     | 44.035           | 1.44     | -2.40                   |                  | -42.5       | 1.147      | 14.210 | 0      | -23.1             | 53.0  |
| J430441    | 2043-07-15 00:47:24.68 | 17 38 50.15116           | -23 03 26.10948 | 3.0                     | 22.968           | 180.60   | -13.32                  | 4.330            |             | 9.946      | 14.762 | 13.542 | 320.7             | 153.3 |
| Pt         | 4116535873412717824    | 17 38 50.13383           | -23 03 49.07609 | 1.6                     | 72.133           | 1.44     | -2.40                   |                  |             |            | 14.321 | 0      | -23.1             | 52.8  |
| J430442    | 2043-07-15 03:59:16.36 | 17 38 46.61335           | -23 03 32.91074 | 4.9                     | 15.653           | 180.60   | -13.29                  | 4.331            | 48.0        | 8.790      | 14.778 | 13.311 | 272.6             | 153.1 |
| Pgt        | 4116535697194964224    | 17 38 46.60149           | -23 03 48.56316 | 2.7                     | 49.171           | 1.45     | -2.40                   |                  | 46.3        | 0.697      | 14.334 | 0      | -23.1             | 51.2  |
| J430443    | 2043-07-15 15:15:07.26 | 17 38 34.22907           | -23 03 53.87368 | 5.1                     | 7.114            | 0.61     | -13.17                  | 4.334            | -19.6       | 8.499      | 14.499 | 13.017 | 103.1             | 152.6 |
| Pgt        | 4116723271367355776    | 17 38 34.23455           | -23 03 46.75968 | 2.9                     | 22.365           | 1.47     | -2.40                   |                  | -21.6       |            | 14.045 | 0      | -23.1             | 45.6  |
| J430444    | 2043-07-15 21:24:05.61 | 17 38 27.51917           | -23 04 03.93190 | 4.4                     | 18.155           | 0.61     | -13.10                  | 4.336            | -55.6       | 8.812      | 14.534 | 13.077 | 10.6              | 152.3 |
| Pgt        | 4116721858249318528    | 17 38 27.53327           | -23 03 45.77755 | 2.5                     | 57.096           | 1.48     | -2.40                   |                  | -57.2       | 0.670      | 14.075 | 0      | -23.1             | 42.6  |
| J430445    | 2043-07-15 23:16:00.57 | 17 38 25.50472           | -23 03 49.30902 | 2.5                     | 3.829            | 0.61     | -13.08                  | 4.337            | -10.1       | 8.627      | 13.822 | 12.504 | 342.5             | 152.3 |
| Pgt        | 4116722068777463296    | 17 38 25.50767           | -23 03 45.48002 | 1.3                     | 12.044           | 1.49     | -2.40                   |                  | -12.0       |            | 13.361 | 0      | -23.1             | 41.7  |
| J430446    | 2043-07-15 23:16:57.82 | 17 38 25.47482           | -23 04 05.52963 | 3.1                     | 20.053           | 0.62     | -13.08                  | 4.337            | -64.0       | 9.886      | 14.968 | 13.671 | 342.3             | 152.3 |
| Pgt        | 4116721823889542016    | 17 38 25.49042           | -23 03 45.47749 | 1.8                     | 63.072           | 1.49     | -2.40                   |                  | -65.6       |            | 14.507 | 0      | -23.1             | 41.7  |
| J430447    | 2043-07-16 03:04:09.37 | 17 38 21.39659           | -23 03 34.35137 | 3.9                     | 10.523           | 180.61   | -13.04                  | 4.338            | 31.7        | 7.035      | 12.499 | 11.121 | 285.3             | 152.1 |
| Pgt        | 4116722034343949824    | 17 38 21.38849           | -23 03 44.87410 | 2.2                     | 33.106           | 1.49     | -2.40                   |                  | 29.8        |            | 12.035 | 0      | -23.1             | 39.8  |
| J430448    | 2043-07-16 03:13:44.20 | 17 38 21.21972           | -23 03 39.78670 | 3.2                     | 5.062            | 180.61   | -13.04                  | 4.338            | 15.6        | 6.921      | 11.610 | 10.423 | 282.9             | 152.1 |
| Pgt        | 4116722034417731968    | 17 38 21.21581           | -23 03 44.84867 | 1.8                     | 15.926           | 1.49     | -2.40                   |                  | 13.6        | 0.926      | 11.146 | 0      | -23.1             | 39.7  |
| J430449    | 2043-07-16 10:45:31.58 | 17 38 13.09568           | -23 03 49.07595 | 2.6                     | 5.425            | 0.61     | -12.96                  | 4.340            | -14.7       | 9.797      | 14.127 | 12.997 | 169.6             | 151.8 |
| Pgt        | 4116722721611787392    | 17 38 13.09990           | -23 03 43.65154 | 1.4                     | 17.075           | 1.51     | -2.40                   |                  | -16.7       | 0.229      | 13.656 | 0      | -23.1             | 36.0  |
| J430450    | 2043-07-16 12:55:21.22 | 17 38 10.77802           | -23 03 42.71791 | 8.6                     | 0.590            | 180.61   | -12.94                  | 4.341            | 2.7         | 7.053      | 13.108 | 11.374 | 137.1             | 151.7 |
| Pgt        | 4116722717276925440    | 17 38 10.77757           | -23 03 43.30830 | 4.3                     | 1.859            | 1.51     | -2.40                   |                  | 0.7         |            | 12.635 | 0      | -23.1             | 35.0  |
| J430451    | 2043-07-16 12:59:48.16 | 17 38 10.71154           | -23 03 25.80591 | 2.3                     | 17.492           | 180.61   | -12.94                  | 4.341            | 54.8        | 7.992      | 12.368 | 11.225 | 136.0             | 151.7 |
| Pgt        | 4116722785962298496    | 17 38 10.69806           | -23 03 43.29654 | 1.0                     | 55.066           | 1.51     | -2.40                   |                  | 53.0        | 0.536      | 11.896 | 0      | -23.1             | 34.9  |
| J430452    | 2043-07-16 22:09:22.07 | 17 38 00.90617           | -23 03 56.48130 | 7.4                     | 14.634           | 0.62     | -12.84                  | 4.343            | -42.9       | 8.572      | 14.801 | 13.279 | 358.2             | 151.3 |
| Pgt        | 4116722579809153280    | 17 38 00.91764           | -23 03 41.84832 | 3.7                     | 46.098           | 1.53     | -2.40                   |                  | -44.7       |            | 14.320 | 0      | -23.1             | 30.4  |
| J430453    | 2043-07-16 23:41:18.02 | 17 37 59.30715           | -23 03 18.63627 | 10.1                    | 22.972           | 180.61   | -12.83                  | 4.344            |             | 8.910      | 14.816 | 13.350 | 335.1             | 151.2 |
| Pt         | 4116722648523345536    | 17 37 59.28945           | -23 03 41.60687 | 5.1                     | 72.371           | 1.53     | -2.40                   |                  |             |            | 14.334 | 0      | -23.1             | 29.7  |
| J430454    | 2043-07-17 01:55:45.58 | 17 37 56.91244           | -23 03 40.94501 | 4.5                     | 0.309            | 180.61   | -12.80                  | 4.344            | 1.9         | 9.257      | 14.766 | 13.374 | 301.4             | 151.1 |
| Pgt        | 4116722549813288704    | 17 37 56.91220           | -23 03 41.25418 | 2.1                     | 0.974            | 1.54     | -2.40                   |                  | -0.2        | 0.511      | 14.281 | 0      | -23.1             | 28.6  |
| J430455    | 2043-07-17 08:06:29.96 | 17 37 50.37529           | -23 03 50.12846 | 2.7                     | 9.844            | 0.62     | -12.73                  | 4.346            | -27.8       | 9.212      | 13.730 | 12.564 | 208.4             | 150.8 |
| Pgt        | 4116725470391618560    | 17 37 50.38300           | -23 03 40.28459 | 1.3                     | 31.032           | 1.55     | -2.40                   |                  | -29.8       | 0.303      | 13.240 | 0      | -23.1             | 25.6  |
| J430456    | 2043-07-17 09:45:00.29 | 17 37 48.66095           | -23 03 31.74418 | 6.2                     | 8.284            | 180.61   | -12.72                  | 4.347            | 25.1        | 8.402      | 14.546 | 13.048 | 183.7             | 150.8 |
| Pgt        | 4116725534741340928    | 17 37 48.65451           | -23 03 40.02770 | 3.3                     | 26.116           | 1.55     | -2.40                   |                  | 23.1        | 0.992      | 14.054 | 0      | -23.1             | 24.8  |
| J430457    | 2043-07-17 19:12:17.68 | 17 37 38.76712           | -23 03 18.88855 | 5.3                     | 19.667           | 180.61   | -12.61                  | 4.350            | 64.1        | 9.117      | 14.929 | 13.498 | 41.5              | 150.3 |
| Pgt        | 4116719904112099328    | 17 37 38.75188           | -23 03 38.55440 | 2.9                     | 62.043           | 1.57     | -2.40                   |                  | 62.3        | 0.632      | 14.429 | 0      | -23.1             | 20.2  |

Table 9 continued on next page



Table 9 (continued)

| Event ID   | C/A Epoch              | ICRS Star Coord at Epoch       | $\sigma(\alpha_*)$ (km) | C/A (")          | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|------------|------------------------|--------------------------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type | Source ID              | Geocentric Object Position     | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J430483    | 2043-07-25 03:37:38.23 | 17 34 51.08367 -23 03 03.04696 | 3.2                     | 11.612           | 180.52   | -10.47                  | 4.410            | 36.1        | 9.543      | 14.495 | 13.240 | 267.2             | 142.7 |
| Pgt        | 411668474973773952     | 17 34 51.07607 -23 03 14.65843 | 2.0                     | 37.143           | 1.87     | -2.38                   |                  | 33.3        | 0.355      | 13.792 | 0      | -23.1             | 73.7  |
| J430484    | 2043-07-25 04:58:25.47 | 17 34 49.92061 -23 03 25.82001 | 8.2                     | 11.306           | 0.53     | -10.45                  | 4.411            | -32.3       | 8.575      | 14.995 | 13.459 | 246.9             | 142.6 |
| Pgt        | 4116684719770968832    | 17 34 49.92813 -23 03 14.51416 | 4.9                     | 36.169           | 1.87     | -2.38                   |                  | -35.2       |            | 14.290 | 0      | -23.1             | 74.5  |
| J430485    | 2043-07-26 07:11:27.85 | 17 34 27.98418 -23 03 27.98108 | 3.2                     | 16.121           | 0.49     | -10.10                  | 4.421            | -48.5       | 9.957      | 14.746 | 13.507 | 212.5             | 141.5 |
| Pgt        | 4116685265133830400    | 17 34 27.99415 -23 03 11.86087 | 2.1                     | 51.689           | 1.91     | -2.38                   |                  | -51.3       |            | 14.003 | 0      | -23.1             | 89.3  |
| J430486    | 2043-07-26 13:56:28.10 | 17 34 22.48384 -23 03 00.19022 | 2.2                     | 11.038           | 180.47   | -10.00                  | 4.424            | 34.6        | 9.825      | 13.751 | 12.672 | 111.0             | 141.2 |
| Pgt        | 4116696917480719104    | 17 34 22.47733 -23 03 11.22762 | 1.5                     | 35.412           | 1.92     | -2.38                   |                  | 31.5        | 0.203      | 12.999 | 0      | -23.1             | 93.1  |
| J430487    | 2043-07-26 15:42:52.18 | 17 34 21.04252 -23 03 01.40368 | 4.3                     | 9.661            | 180.46   | -9.98                   | 4.424            | 30.3        | 8.553      | 14.249 | 12.814 | 84.3              | 141.1 |
| Pgt        | 4116696986200201344    | 17 34 21.03685 -23 03 11.06473 | 2.9                     | 31.001           | 1.92     | -2.38                   |                  | 27.2        | 0.845      | 13.495 | 0      | -23.1             | 94.1  |
| J430488    | 2043-07-27 11:10:44.72 | 17 34 05.46202 -23 03 21.85778 | 8.5                     | 12.483           | 0.44     | -9.71                   | 4.432            | -36.1       | 7.996      | 14.986 | 13.391 | 151.4             | 140.3 |
| Pgt        | 4116695714847415424    | 17 34 05.46893 -23 03 09.37540 | 5.8                     | 40.125           | 1.95     | -2.38                   |                  | -39.2       |            | 14.202 | 0      | -23.1             | 105.3 |
| J430489    | 2043-07-27 22:48:53.81 | 17 33 56.37023 -23 03 24.22224 | 2.4                     | 15.766           | 0.41     | -9.55                   | 4.437            | -47.3       | 9.419      | 14.267 | 12.990 | 336.4             | 139.8 |
| Pgt        | 4116696402084465792    | 17 33 56.37850 -23 03 08.45669 | 1.6                     | 50.732           | 1.97     | -2.38                   |                  | -50.4       | 0.380      | 13.465 | 0      | -23.1             | 112.0 |
| J430490    | 2043-07-28 00:17:52.95 | 17 33 55.23910 -23 02 53.47960 | 2.5                     | 14.865           | 180.40   | -9.53                   | 4.437            | 47.2        | 9.910      | 14.072 | 12.956 | 314.1             | 139.7 |
| Pgt        | 4116696608242909056    | 17 33 55.23164 -23 03 08.34468 | 1.6                     | 47.841           | 1.97     | -2.38                   |                  | 44.1        | 0.228      | 13.267 | 0      | -23.1             | 112.8 |
| J430491    | 2043-07-28 21:36:04.23 | 17 33 39.04455 -23 03 25.58066 | 4.4                     | 18.716           | 0.36     | -9.23                   | 4.446            | -59.2       | 8.315      | 14.159 | 12.716 | 353.6             | 138.8 |
| Pgt        | 4116699116503857280    | 17 33 39.05316 -23 03 06.86506 | 3.1                     | 60.351           | 2.00     | -2.38                   |                  | -62.3       | 0.966      | 13.319 | 0      | -23.1             | 125.2 |
| J430492    | 2043-07-30 19:25:35.09 | 17 33 06.14424 -23 03 13.92414 | 5.9                     | 9.366            | 0.23     | -8.56                   | 4.465            | -26.1       | 8.854      | 14.945 | 13.478 | 24.2              | 136.9 |
| Pgt        | 4116676473368782976    | 17 33 06.14691 -23 03 04.55867 | 4.3                     | 30.331           | 2.06     | -2.37                   |                  | -30.1       | 0.673      | 14.024 | 0      | -23.1             | 152.1 |
| J430493    | 2043-07-31 04:52:15.00 | 17 32 59.69465 -23 02 46.44368 | 6.2                     | 17.798           | 180.18   | -8.42                   | 4.469            | 59.0        | 8.449      | 14.702 | 13.204 | 242.1             | 136.5 |
| Pgt        | 4117427096235933696    | 17 32 59.69067 -23 03 04.24135 | 4.4                     | 57.692           | 2.07     | -2.37                   |                  | 55.4        | 1.041      | 13.762 | 0      | -23.1             | 157.7 |
| J430494    | 2043-07-31 08:25:51.27 | 17 32 57.28848 -23 02 54.24250 | 3.0                     | 9.894            | 180.17   | -8.37                   | 4.471            | 31.8        | 9.335      | 14.560 | 13.260 | 188.5             | 136.3 |
| Pgt        | 4117427057521620736    | 17 32 57.28638 -23 03 04.13660 | 2.1                     | 32.084           | 2.07     | -2.37                   |                  | 27.7        | 0.457      | 13.614 | 0      | -23.1             | 159.7 |
| J430495    | 2043-07-31 16:19:03.13 | 17 32 52.01744 -23 03 05.80874 | 4.0                     | 1.875            | 0.15     | -8.25                   | 4.474            | -3.4        | 8.324      | 14.096 | 12.689 | 69.9              | 136.0 |
| Pgt        | 4117427027516531584    | 17 32 52.01778 -23 03 03.93381 | 2.7                     | 6.085            | 2.08     | -2.37                   |                  | -7.8        | 0.878      | 13.134 | 0      | -23.1             | 164.2 |
| J430496    | 2043-08-02 15:57:23.75 | 17 32 21.88753 -23 02 52.90628 | 2.8                     | 10.690           | 179.93   | -7.52                   | 4.496            | 34.8        | 9.806      | 14.289 | 13.114 | 73.2              | 134.0 |
| Pgt        | 4117426335965448192    | 17 32 21.88852 -23 03 03.59588 | 1.7                     | 34.854           | 2.14     | -2.37                   |                  | 30.1        | 0.294      | 13.227 | 0      | -23.1             | 165.2 |
| J430497    | 2043-08-03 01:56:03.44 | 17 32 15.95167 -23 03 07.34281 | 8.5                     | 3.617            | 359.89   | -7.37                   | 4.500            | -8.3        | 7.724      | 13.930 | 12.431 | 283.1             | 133.6 |
| Pgt        | 4117429187823715328    | 17 32 15.95114 -23 03 03.72599 | 5.1                     | 11.805           | 2.15     | -2.37                   |                  | -13.4       | 1.473      | 12.845 | 0      | -23.1             | 159.5 |
| J430498    | 2043-08-03 15:55:45.38 | 17 32 07.83905 -23 02 51.64032 | 8.1                     | 12.390           | 179.79   | -7.15                   | 4.507            | 40.5        | 8.735      | 14.893 | 13.401 | 72.6              | 133.0 |
| Pgt        | 4117429428341898624    | 17 32 07.84227 -23 03 04.03069 | 5.2                     | 40.499           | 2.16     | -2.36                   |                  | 35.6        |            | 13.775 | 0      | -23.1             | 151.4 |
| J430499    | 2043-08-04 05:20:41.35 | 17 32 00.30826 -23 02 51.40325 | 12.9                    | 13.058           | 179.71   | -6.93                   | 4.513            | 42.8        | 6.348      | 14.311 | 12.655 | 230.8             | 132.4 |
| Pgt        | 4117423587186373248    | 17 32 00.31304 -23 03 04.46081 | 8.7                     | 42.739           | 2.18     | -2.36                   |                  | 37.8        |            | 13.161 | 0      | -23.1             | 143.6 |
| J430500    | 2043-08-04 21:45:23.14 | 17 31 51.42722 -23 03 01.74522 | 3.4                     | 3.428            | 179.61   | -6.67                   | 4.521            | 13.2        | 9.546      | 14.394 | 13.174 | 343.9             | 131.7 |
| Pgt        | 4117424278738112000    | 17 31 51.42892 -23 03 05.17288 | 2.1                     | 11.238           | 2.19     | -2.36                   |                  | 7.4         | 0.370      | 13.202 | 0      | -23.1             | 134.1 |
| J430501    | 2043-08-09 13:53:02.36 | 17 31 00.47188 -23 03 08.49865 | 3.7                     | 7.321            | 178.43   | -4.80                   | 4.575            | 26.6        | 7.609      | 13.095 | 11.730 | 97.2              | 127.0 |
| Pgt        | 4117435102056064384    | 17 31 00.48639 -23 03 15.81696 | 2.5                     | 24.295           | 2.28     | -2.35                   |                  | 18.2        | 0.945      | 11.546 | 0      | -23.1             | 72.6  |
| J430502*   | 2043-08-11 11:24:40.29 | 17 30 44.69763 -23 03 11.63440 | 13.1                    | 11.547           | 177.59   | -4.02                   | 4.599            | 41.0        | 9.590      | 13.527 | 12.412 | 132.3             | 125.2 |
| Pgt        | 4117438022633925248    | 17 30 44.73288 -23 03 23.17154 | 8.2                     | 38.515           | 2.31     | -2.35                   |                  | 31.1        | 0.283      | 11.785 | 0      | -23.1             | 49.6  |
| J430503    | 2043-08-11 22:05:25.02 | 17 30 41.41900 -23 03 14.27120 | 6.0                     | 10.902           | 177.34   | -3.84                   | 4.604            | 39.2        | 9.176      | 14.678 | 13.286 | 331.7             | 124.7 |
| Pgt        | 4111433417833677312    | 17 30 41.45572 -23 03 25.16142 | 3.4                     | 36.406           | 2.32     | -2.35                   |                  | 28.7        |            | 12.886 | 0      | -23.1             | 44.3  |
| J430504    | 2043-08-14 16:00:16.80 | 17 30 24.75773 -23 03 38.91972 | 3.3                     | 0.798            | 174.98   | -2.68                   | 4.639            | 11.1        | 8.537      | 13.885 | 12.536 | 60.2              | 122.0 |
| Pgt        | 4111434135036685056    | 17 30 24.76279 -23 03 39.71425 | 2.3                     | 2.684            | 2.35     | -2.34                   |                  | -5.7        | 0.744      | 11.703 | 0      | -23.1             | 12.6  |
| J430505    | 2043-08-22 22:57:35.71 | 17 30 11.84738 -23 04 34.55604 | 4.9                     | 14.602           | 203.53   | 1.05                    | 4.751            | 66.5        | 8.765      | 14.457 | 13.022 | 307.6             | 114.0 |
| Pgt        | 4111433795790755968    | 17 30 11.42486 -23 04 47.94377 | 3.4                     | 50.314           | 2.37     | -2.32                   |                  | 22.6        | 0.730      | 11.256 | 0      | -23.1             | 95.6  |
| J430506    | 2043-08-27 18:45:40.05 | 17 30 29.41318 -23 05 32.05037 | 8.8                     | 12.723           | 189.52   | 3.19                    | 4.819            | 49.2        | 7.957      | 14.452 | 12.910 | 5.9               | 109.4 |
| Pgt        | 4111432868077529600    | 17 30 29.26074 -23 05 44.59857 | 5.8                     | 44.472           | 2.34     | -2.30                   |                  | 34.6        |            | 12.460 | 0      | -23.1             | 162.9 |
| J430507    | 2043-08-28 05:49:02.10 | 17 30 32.14573 -23 05 33.43276 | 12.3                    | 17.436           | 189.11   | 3.40                    | 4.826            | 67.9        | 7.379      | 14.182 | 12.561 | 199.7             | 109.0 |
| Pgt        | 4111432868077522688    | 17 30 31.94562 -23 05 50.64881 | 7.9                     | 61.028           | 2.33     | -2.30                   |                  | 55.2        | 1.876      | 12.259 | 0      | -23.1             | 168.9 |

Table 9 continued on next page

Table 9 (continued)

| Event ID   | C/A Epoch              | ICRS Star Coord at Epoch   |                 | $\sigma(\alpha_*)$ (km) | C/A (")          | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|------------|------------------------|----------------------------|-----------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type | Source ID              | Geocentric Object Position |                 | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J430508    | 2043-08-31 12:04:13.55 | 17 30 55.89342             | -23 06 29.23023 | 9.7                     | 7.393            | 187.14   | 4.91                    | 4.874            | 29.4        | 8.029      | 14.484 | 12.935 | 102.7             | 105.9 |
| Pgt        | 4111429913139945856    | 17 30 55.82681             | -23 06 36.56564 | 6.6                     | 26.131           | 2.29     | -2.29                   |                  | 18.7        |            | 12.959 | 0      | -23.1             | 143.8 |
| J430509    | 2043-09-03 13:27:05.23 | 17 31 25.84661             | -23 07 37.78594 | 3.2                     | 13.524           | 6.09     | 6.34                    | 4.919            | -42.3       | 9.140      | 14.324 | 13.032 | 79.1              | 103.1 |
| Pgt        | 4117422281516021760    | 17 31 25.95059             | -23 07 24.33861 | 2.1                     | 48.245           | 2.24     | -2.29                   |                  | -49.9       | 0.526      | 13.077 | 0      | -23.2             | 103.0 |
| J430510    | 2043-09-05 10:48:21.22 | 17 31 48.21530             | -23 08 05.22799 | 4.1                     | 9.288            | 5.64     | 7.23                    | 4.947            | -27.3       | 9.969      | 14.914 | 13.617 | 117.1             | 101.3 |
| Pgt        | 4117422629470469120    | 17 31 48.28152             | -23 07 55.98504 | 2.6                     | 33.325           | 2.20     | -2.28                   |                  | -34.7       | 0.342      | 13.810 | 0      | -23.2             | 78.9  |
| J430511    | 2043-09-06 01:14:51.03 | 17 31 56.09317             | -23 07 50.43803 | 7.5                     | 16.017           | 185.54   | 7.51                    | 4.956            | 60.2        | 8.680      | 14.672 | 13.212 | 259.9             | 100.8 |
| Pgt        | 4117422595110657920    | 17 31 55.98097             | -23 08 06.37999 | 5.0                     | 57.574           | 2.18     | -2.28                   |                  | 53.8        | 0.906      | 13.609 | 0      | -23.2             | 71.4  |
| J430512    | 2043-09-06 04:21:53.23 | 17 31 57.59579             | -23 08 20.72565 | 3.1                     | 12.138           | 5.49     | 7.57                    | 4.958            | -37.9       | 8.764      | 13.706 | 12.466 | 213.0             | 100.7 |
| Pgt        | 4117419640173117696    | 17 31 57.68001             | -23 08 08.64334 | 1.8                     | 43.648           | 2.18     | -2.28                   |                  | -44.6       | 0.573      | 12.652 | 0      | -23.2             | 69.8  |
| J430513    | 2043-09-06 09:28:46.32 | 17 32 00.49065             | -23 08 13.19722 | 4.3                     | 0.829            | 5.46     | 7.67                    | 4.961            | 1.0         | 9.840      | 14.925 | 13.671 | 136.1             | 100.5 |
| Pgt        | 4117419743252310656    | 17 32 00.49637             | -23 08 12.37194 | 2.6                     | 2.983            | 2.18     | -2.28                   |                  | -6.5        | 0.370      | 13.885 | 0      | -23.2             | 67.2  |
| J430514    | 2043-09-06 11:46:20.00 | 17 32 01.62871             | -23 08 34.62926 | 6.6                     | 20.673           | 5.42     | 7.72                    | 4.963            |             | 8.410      | 14.485 | 13.007 | 101.6             | 100.4 |
| Pt         | 4117419670175859456    | 17 32 01.77037             | -23 08 14.04927 | 4.4                     | 74.408           | 2.17     | -2.28                   |                  |             | 1.077      | 13.452 | 0      | -23.2             | 66.0  |
| J430515    | 2043-09-08 03:19:03.04 | 17 32 24.74413             | -23 09 01.27219 | 3.8                     | 17.802           | 5.14     | 8.49                    | 4.988            | -64.2       | 8.769      | 14.251 | 12.903 | 226.9             | 98.9  |
| Pgt        | 4117419124776688896    | 17 32 24.85967             | -23 08 43.54159 | 2.7                     | 64.397           | 2.13     | -2.27                   |                  | -69.7       | 0.679      | 13.321 | 0      | -23.2             | 46.2  |
| J430516    | 2043-09-09 19:27:21.91 | 17 32 50.44453             | -23 09 13.21037 | 5.2                     | 1.305            | 184.89   | 9.28                    | 5.013            | 7.5         | 9.275      | 14.979 | 13.569 | 343.3             | 97.3  |
| Pgt        | 4116674029501489792    | 17 32 50.43645             | -23 09 14.51069 | 3.6                     | 4.745            | 2.09     | -2.27                   |                  | 1.1         | 0.642      | 14.145 | 0      | -23.2             | 26.6  |
| J430517    | 2043-09-12 09:22:12.06 | 17 33 34.15457             | -23 09 48.75923 | 16.8                    | 15.411           | 184.56   | 10.49                   | 5.052            | 58.1        | 7.089      | 14.806 | 12.984 | 132.2             | 95.0  |
| Pgt        | 4116671731776678912    | 17 33 34.06570             | -23 10 04.12122 | 12.0                    | 56.470           | 2.01     | -2.26                   |                  | 53.2        | 2.521      | 14.106 | 0      | -23.2             | 6.9   |
| J430518*   | 2043-09-12 19:57:11.97 | 17 33 41.93346             | -23 10 28.67646 | 9.5                     | 15.921           | 4.49     | 10.70                   | 5.059            | -55.8       | 9.065      | 14.638 | 13.224 | 333.0             | 94.6  |
| Pgt        | 4116670937125191040    | 17 33 42.02378             | -23 10 12.80403 | 6.8                     | 58.418           | 1.99     | -2.26                   |                  | -60.5       | 0.660      | 13.958 | 0      | -23.2             | 11.0  |
| J430519    | 2043-09-13 05:52:10.76 | 17 33 49.56607             | -23 10 28.96840 | 2.3                     | 8.003            | 4.44     | 10.89                   | 5.065            | -24.6       | 9.335      | 13.256 | 12.175 | 183.9             | 94.2  |
| Pgt        | 4116671074561080448    | 17 33 49.61103             | -23 10 20.98934 | 1.5                     | 29.402           | 1.98     | -2.26                   |                  | -29.9       | 0.374      | 12.596 | 0      | -23.2             | 15.6  |
| J430520    | 2043-09-13 06:24:51.74 | 17 33 50.11483             | -23 10 06.69313 | 5.7                     | 14.792           | 184.46   | 10.90                   | 5.066            | 55.4        | 8.667      | 14.494 | 13.040 | 175.7             | 94.2  |
| Pgt        | 4116671147660993792    | 17 33 50.03148             | -23 10 21.44035 | 3.8                     | 54.346           | 1.98     | -2.26                   |                  | 50.6        | 1.006      | 13.835 | 0      | -23.2             | 15.8  |
| J430521    | 2043-09-13 10:09:00.68 | 17 33 53.02797             | -23 10 06.31923 | 2.1                     | 18.273           | 184.44   | 10.97                   | 5.068            | 74.3        | 7.585      | 10.116 | 9.330  | 119.6             | 94.1  |
| Pgt        | 4116671182020706944    | 17 33 52.92537             | -23 10 24.53732 | 1.4                     | 67.167           | 1.97     | -2.26                   |                  | 69.9        | 0.631      | 9.465  | 0      | -23.2             | 17.6  |
| J430522    | 2043-09-14 05:53:11.34 | 17 34 08.47366             | -23 10 48.00842 | 5.8                     | 7.023            | 4.33     | 11.36                   | 5.081            | -21.3       | 9.221      | 14.693 | 13.298 | 182.8             | 93.3  |
| Pgt        | 4116682658186347136    | 17 34 08.51213             | -23 10 41.00570 | 3.9                     | 25.878           | 1.95     | -2.25                   |                  | -26.5       | 0.652      | 14.079 | 0      | -23.2             | 27.4  |
| J430523    | 2043-09-14 06:26:03.44 | 17 34 08.86557             | -23 10 57.20506 | 9.4                     | 15.785           | 4.32     | 11.37                   | 5.081            | -55.5       | 7.603      | 14.110 | 12.553 | 174.5             | 93.3  |
| Pgt        | 4116682585073363840    | 17 34 08.95186             | -23 10 41.46527 | 6.1                     | 58.168           | 1.95     | -2.25                   |                  | -60.0       | 1.882      | 13.497 | 0      | -23.2             | 27.7  |
| J430524    | 2043-09-14 11:44:46.32 | 17 34 13.24723             | -23 10 43.78518 | 6.2                     | 2.149            | 184.31   | 11.47                   | 5.084            | 10.0        | 6.658      | 11.809 | 10.498 | 94.6              | 93.1  |
| Pgt        | 4116682619433148800    | 17 34 13.23551             | -23 10 45.92833 | 3.8                     | 7.925            | 1.94     | -2.25                   |                  | 4.6         | 1.523      | 11.205 | 0      | -23.2             | 30.4  |
| J430525    | 2043-09-14 14:12:26.84 | 17 34 15.32290             | -23 10 31.43908 | 10.6                    | 16.608           | 184.31   | 11.52                   | 5.086            | 64.2        | 7.830      | 14.635 | 13.037 | 57.6              | 93.0  |
| Pgt        | 4116681970991563520    | 17 34 15.23242             | -23 10 48.00037 | 6.5                     | 61.263           | 1.93     | -2.25                   |                  | 59.8        |            | 14.036 | 0      | -23.2             | 31.6  |
| J430526    | 2043-09-14 17:02:17.51 | 17 34 17.49133             | -23 10 59.08920 | 3.9                     | 8.727            | 4.28     | 11.57                   | 5.088            | -27.4       | 9.700      | 14.648 | 13.384 | 15.1              | 92.9  |
| Pgt        | 4116681970991551232    | 17 34 17.53856             | -23 10 50.38667 | 2.4                     | 32.202           | 1.93     | -2.25                   |                  | -32.4       | 0.383      | 14.054 | 0      | -23.2             | 33.1  |
| J430527    | 2043-09-15 01:55:21.30 | 17 34 24.94285             | -23 10 39.28504 | 3.0                     |                  | 184.26   | 11.74                   | 5.093            | 78.4        | 8.845      | 13.917 | 12.651 | 241.5             | 92.6  |
| Pgt        | 4116681936631792000    | 17 34 24.84236             | -23 10 57.89823 | 1.8                     | 68.950           | 1.92     | -2.25                   |                  | 74.2        | 0.619      | 13.339 | 0      | -23.2             | 37.7  |
| J430528    | 2043-09-15 15:16:47.01 | 17 34 36.05315             | -23 11 01.51574 | 2.3                     | 7.758            | 184.19   | 12.00                   | 5.102            | 29.0        | 8.080      | 11.872 | 10.809 | 40.6              | 92.1  |
| Pgt        | 4116679114739047424    | 17 34 36.01202             | -23 11 09.25303 | 1.4                     | 28.707           | 1.90     | -2.25                   |                  | 24.1        | 0.578      | 11.317 | 0      | -23.2             | 44.7  |
| J430529    | 2043-09-16 16:48:51.15 | 17 34 57.88642             | -23 11 51.50183 | 8.9                     | 20.402           | 4.07     | 12.50                   | 5.118            |             | 6.214      | 13.113 | 11.532 | 16.6              | 91.1  |
| P          | 4116679600169744128    | 17 34 57.99140             | -23 11 31.15127 | 5.5                     | 75.734           | 1.86     | -2.25                   |                  |             | 4.615      | 12.602 | 0      | -23.2             | 58.6  |

<sup>a</sup> A nearby event has the same 2MASS ID as this event, resulting in a corresponding K magnitude ambiguity.

\* Superscript \* indicates RUWE > 1.4, \*\* indicates RUWE > 2, and \*\*\* indicates RUWE > 5. See machine-readable file for RUWE values.







Table 10 (continued)

| Event ID   | C/A Epoch              | ICRS Star Coord at Epoch       | $\sigma(\alpha_*)$ (km) | C/A ( $''$ )     | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|------------|------------------------|--------------------------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type | Source ID              | Geocentric Object Position     | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J430579    | 2043-10-04 01:08:52.58 | 17 42 46.45992 -23 17 37.36928 | 3.8                     | 4.286            | 182.65   | 20.36                   | 5.382            | 17.2        | 9.895      | 14.809 | 13.558 | 236.5             | 75.9  |
| Pgt        | 4116478733180318080    | 17 42 46.44555 -23 17 41.65051 | 2.1                     | 16.728           | 1.02     | -2.19                   |                  | 13.5        | 0.356      | 14.829 | 0      | -23.3             | 65.6  |
| J430580    | 2043-10-04 01:36:33.71 | 17 42 47.11717 -23 17 29.18167 | 8.4                     | 12.883           | 182.65   | 20.37                   | 5.382            | 50.0        | 6.877      | 13.741 | 12.161 | 229.5             | 75.9  |
| Pgt        | 4116478733180318720    | 17 42 47.07396 -23 17 42.05051 | 4.9                     | 50.285           | 1.02     | -2.19                   |                  | 46.7        |            | 13.761 | 0      | -23.3             | 65.4  |
| J430581    | 2043-10-04 11:01:15.74 | 17 42 59.94644 -23 17 48.56973 | 4.4                     | 1.624            | 182.61   | 20.54                   | 5.388            | 7.7         | 9.411      | 14.918 | 13.587 | 88.0              | 75.6  |
| Pgt        | 4116477977164990720    | 17 42 59.94107 -23 17 50.19155 | 2.4                     | 6.344            | 0.99     | -2.19                   |                  | 4.0         | 0.376      | 14.947 | 0      | -23.3             | 60.6  |
| J430582    | 2043-10-05 00:42:26.63 | 17 43 18.80858 -23 18 05.88009 | 2.6                     | 3.916            | 2.57     | 20.79                   | 5.396            | -12.3       | 9.804      | 13.772 | 12.688 | 242.3             | 75.1  |
| Pgt        | 4068814663552676224    | 17 43 18.82132 -23 18 01.96767 | 1.5                     | 15.327           | 0.96     | -2.18                   |                  | -15.9       | 0.266      | 13.814 | 0      | -23.3             | 53.8  |
| J430583    | 2043-10-05 00:58:53.67 | 17 43 19.22652 -23 17 54.55831 | 3.4                     | 7.652            | 182.57   | 20.80                   | 5.396            | 29.5        | 9.188      | 14.451 | 13.135 | 238.1             | 75.1  |
| Pgt        | 4068814697912421504    | 17 43 19.20160 -23 18 02.20278 | 1.9                     | 29.949           | 0.96     | -2.18                   |                  | 26.0        | 0.598      | 14.494 | 0      | -23.3             | 53.7  |
| J430584    | 2043-10-05 13:14:21.72 | 17 43 36.32484 -23 17 59.90022 | 6.5                     | 12.793           | 182.53   | 21.02                   | 5.404            | 49.8        | 8.781      | 14.738 | 13.263 | 53.8              | 74.6  |
| Pgt        | 4068814182457629696    | 17 43 36.28379 -23 18 12.68082 | 4.0                     | 50.140           | 0.93     | -2.18                   |                  | 46.6        |            | 14.792 | 0      | -23.3             | 47.6  |
| J430585    | 2043-10-05 15:31:17.40 | 17 43 39.53805 -23 17 56.98736 | 8.5                     | 17.654           | 182.53   | 21.06                   | 5.405            | 78.4        | 8.439      | 14.962 | 13.380 | 19.5              | 74.6  |
| Pg         | 4068814148156365184    | 17 43 39.48153 -23 18 14.62419 | 5.4                     | 69.209           | 0.92     | -2.18                   |                  | 75.6        |            | 15.018 | 0      | -23.3             | 46.5  |
| J430586    | 2043-10-06 00:39:35.15 | 17 43 52.37901 -23 18 10.18925 | 2.6                     | 12.204           | 182.50   | 21.22                   | 5.411            | 47.3        | 8.921      | 13.126 | 12.013 | 242.1             | 74.2  |
| Pgt        | 4068815380714275456    | 17 43 52.34041 -23 18 22.38206 | 1.5                     | 47.895           | 0.90     | -2.18                   |                  | 44.1        |            | 13.190 | 0      | -23.3             | 42.0  |
| J430587    | 2043-10-06 16:07:48.54 | 17 44 14.30297 -23 18 37.07668 | 3.2                     | 1.652            | 2.44     | 21.50                   | 5.420            | -4.1        | 8.143      | 12.921 | 11.676 | 9.5               | 73.7  |
| Pgt        | 4068811876020846720    | 17 44 14.30808 -23 18 35.42581 | 2.0                     | 6.496            | 0.86     | -2.18                   |                  | -7.8        | 0.663      | 12.999 | 0      | -23.3             | 34.5  |
| J430588    | 2043-10-06 19:18:14.90 | 17 44 18.80920 -23 18 50.05121 | 7.5                     | 11.975           | 2.43     | 21.56                   | 5.422            | -43.3       | 8.447      | 14.646 | 13.131 | 321.8             | 73.6  |
| Pgt        | 4068811811693604864    | 17 44 18.84604 -23 18 38.08745 | 4.9                     | 47.092           | 0.85     | -2.18                   |                  | -46.5       |            | 14.728 | 0      | -23.3             | 33.0  |
| J430589    | 2043-10-06 22:43:16.17 | 17 44 23.73132 -23 18 44.82151 | 8.5                     | 3.878            | 2.42     | 21.62                   | 5.424            | -12.2       | 7.454      | 13.897 | 12.354 | 270.4             | 73.5  |
| Pgt        | 4068811708553342464    | 17 44 23.74321 -23 18 40.94717 | 5.4                     | 15.256           | 0.84     | -2.18                   |                  | -15.8       | 1.837      | 13.982 | 0      | -23.3             | 31.3  |
| J430590    | 2043-10-07 11:26:04.49 | 17 44 42.02940 -23 19 04.90382 | 5.2                     | 13.382           | 2.38     | 21.85                   | 5.432            | -49.6       | 9.111      | 14.447 | 13.038 | 79.3              | 73.0  |
| Pgt        | 4068805759987295360    | 17 44 42.06968 -23 18 51.53350 | 3.1                     | 52.722           | 0.81     | -2.18                   |                  | -52.7       |            | 14.543 | 0      | -23.3             | 25.3  |
| J430591    | 2043-10-07 14:04:10.71 | 17 44 45.92113 -23 18 43.00800 | 2.8                     | 10.718           | 182.38   | 21.90                   | 5.434            | 41.4        | 9.558      | 13.230 | 12.202 | 39.7              | 72.9  |
| Pgt        | 4068805656908153984    | 17 44 45.88888 -23 18 53.71689 | 1.8                     | 42.240           | 0.80     | -2.18                   |                  | 38.2        | 0.291      | 13.328 | 0      | -23.3             | 24.0  |
| J430592    | 2043-10-07 18:13:35.31 | 17 44 51.87851 -23 19 13.78988 | 3.5                     | 16.650           | 2.35     | 21.97                   | 5.436            | -67.7       | 9.232      | 14.107 | 12.864 | 337.2             | 72.8  |
| Pgt        | 406880562693873664     | 17 44 51.92815 -23 18 57.15353 | 2.2                     | 65.650           | 0.79     | -2.18                   |                  | -70.5       |            | 14.209 | 0      | -23.3             | 22.0  |
| J430593    | 2043-10-07 22:17:27.64 | 17 44 57.82565 -23 19 08.84256 | 3.6                     | 8.345            | 2.34     | 22.04                   | 5.439            | -28.9       | 9.536      | 14.413 | 13.154 | 276.1             | 72.6  |
| Pgt        | 4068805244591185024    | 17 44 57.85042 -23 19 00.50468 | 2.1                     | 32.917           | 0.78     | -2.17                   |                  | -32.3       | 0.420      | 14.519 | 0      | -23.3             | 20.1  |
| J430594    | 2043-10-08 02:02:42.66 | 17 45 03.28072 -23 19 22.16951 | 7.8                     | 18.593           | 2.33     | 22.11                   | 5.441            |             | 8.341      | 14.413 | 12.899 | 219.6             | 72.5  |
| Pt         | 4068805008463237248    | 17 45 03.33554 -23 19 03.59179 | 4.2                     | 73.374           | 0.77     | -2.17                   |                  |             |            | 14.522 | 0      | -23.3             | 18.4  |
| J430595    | 2043-10-08 03:55:51.06 | 17 45 06.06154 -23 19 16.86981 | 4.8                     | 11.740           | 2.32     | 22.14                   | 5.442            | -42.5       | 8.755      | 14.307 | 12.885 | 191.3             | 72.4  |
| Pgt        | 4068805107152231040    | 17 45 06.09610 -23 19 05.13940 | 2.8                     | 46.339           | 0.77     | -2.17                   |                  | -45.6       | 0.868      | 14.418 | 0      | -23.3             | 17.5  |
| J430596    | 2043-10-08 06:21:53.92 | 17 45 09.63108 -23 19 18.68709 | 3.7                     | 11.562           | 2.32     | 22.19                   | 5.444            | -41.8       | 9.029      | 14.386 | 13.030 | 154.7             | 72.3  |
| Pgt        | 4068805038432738560    | 17 45 09.66500 -23 19 07.13416 | 2.1                     | 45.650           | 0.76     | -2.17                   |                  | -44.9       | 0.583      | 14.498 | 0      | -23.3             | 16.4  |
| J430597    | 2043-10-08 14:11:23.95 | 17 45 21.16151 -23 19 19.61158 | 4.3                     | 6.093            | 2.29     | 22.33                   | 5.449            | -20.5       | 9.819      | 14.948 | 13.630 | 37.0              | 72.0  |
| Pgt        | 4068803565353905920    | 17 45 21.17920 -23 19 13.52345 | 2.5                     | 24.077           | 0.74     | -2.17                   |                  | -23.9       |            | 15.067 | 0      | -23.3             | 12.8  |
| J430598    | 2043-10-08 20:21:11.69 | 17 45 30.33527 -23 19 03.62925 | 3.0                     | 14.913           | 182.28   | 22.44                   | 5.452            | 60.3        | 6.936      | 11.134 | 10.011 | 304.4             | 71.8  |
| Pgt        | 4068803423528918144    | 17 45 30.29223 -23 19 18.53026 | 1.8                     | 58.971           | 0.72     | -2.17                   |                  | 57.4        |            | 11.259 | 0      | -23.3             | 10.2  |
| J430599    | 2043-10-08 22:49:23.25 | 17 45 33.95808 -23 19 19.45603 | 2.5                     | 1.075            | 182.27   | 22.48                   | 5.454            | 5.7         | 9.981      | 13.440 | 12.438 | 267.2             | 71.7  |
| Pgt        | 4068803423524998912    | 17 45 33.95499 -23 19 20.53022 | 1.5                     | 4.252            | 0.72     | -2.17                   |                  | 2.1         | 0.231      | 13.567 | 0      | -23.3             | 9.2   |
| J430600    | 2043-10-09 02:07:58.01 | 17 45 38.86746 -23 19 25.05107 | 5.3                     | 1.848            | 2.25     | 22.54                   | 5.456            | -4.9        | 9.307      | 14.933 | 13.500 | 217.5             | 71.6  |
| Pgt        | 4068803045567850368    | 17 45 38.87274 -23 19 23.20429 | 3.3                     | 7.313            | 0.71     | -2.17                   |                  | -8.5        |            | 15.062 | 0      | -23.3             | 7.9   |
| J430601    | 2043-10-09 03:51:47.11 | 17 45 41.44032 -23 19 27.33606 | 2.9                     | 2.739            | 2.25     | 22.57                   | 5.457            | -8.2        | 9.462      | 14.148 | 12.917 | 191.4             | 71.6  |
| Pgt        | 4068802976961753728    | 17 45 41.44813 -23 19 24.59961 | 1.7                     | 10.838           | 0.70     | -2.17                   |                  | -11.7       |            | 14.279 | 0      | -23.3             | 7.3   |
| J430602    | 2043-10-09 11:07:16.70 | 17 45 52.28614 -23 19 29.59991 | 4.7                     | 0.833            | 182.23   | 22.70                   | 5.461            | 4.8         | 9.090      | 14.614 | 13.197 | 82.3              | 71.3  |
| Pgt        | 4068802843798599808    | 17 45 52.28379 -23 19 30.43219 | 2.9                     | 3.299            | 0.68     | -2.17                   |                  | 1.3         |            | 14.751 | 0      | -23.3             | 5.5   |
| J430603    | 2043-10-09 11:50:39.55 | 17 45 53.40265 -23 19 18.04859 | 2.7                     | 12.973           | 182.23   | 22.71                   | 5.462            | 51.1        | 9.934      | 13.887 | 12.816 | 71.5              | 71.3  |
| Pgt        | 4068802878158332032    | 17 45 53.36604 -23 19 31.01138 | 1.7                     | 51.386           | 0.68     | -2.17                   |                  | 48.1        | 0.238      | 14.025 | 0      | -23.3             | 5.4   |

Table 10 continued on next page







Table 10 (continued)

| Event ID   | C/A Epoch              | ICRS Star Coord at Epoch   |                 | $\sigma(\alpha_*)$ (km) | C/A ( $''$ )     | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|------------|------------------------|----------------------------|-----------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type | Source ID              | Geocentric Object Position |                 | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J430679*   | 2043-10-30 02:45:49.85 | 18 00 06.20072             | -23 24 22.70634 | 29.4                    | 10.490           | 0.56     | 30.72                   | 5.741            | -39.9       | 8.355      | 12.819 | 11.601 | 190.9             | 54.1  |
| Pgt        | 406914163074339136     | 18 00 06.20821             | -23 24 12.21675 | 20.4                    | 43.675           | -0.85    | -2.09                   |                  | -42.7       | 0.673      | 13.285 | 0      | -23.4             | 84.3  |
| J430680    | 2043-11-01 06:11:56.49 | 18 01 46.44648             | -23 24 21.04602 | 2.3                     | 2.565            | 180.38   | 31.47                   | 5.767            | 11.4        | 8.887      | 13.182 | 12.072 | 137.7             | 52.3  |
| Pgt        | 4069217737564936064    | 18 01 46.44524             | -23 24 23.61057 | 1.6                     | 10.726           | -1.03    | -2.08                   |                  | 8.2         | 0.508      | 13.674 | 0      | -23.4             | 58.7  |
| J430681    | 2043-11-01 17:47:39.56 | 18 02 09.31003             | -23 24 26.50036 | 4.9                     | 0.907            | 0.34     | 31.64                   | 5.773            | -1.9        | 7.536      | 13.895 | 12.489 | 323.4             | 51.9  |
| Pgt        | 4069223059009241856    | 18 02 09.31042             | -23 24 25.59306 | 3.4                     | 3.799            | -1.07    | -2.07                   |                  | -5.1        | 1.651      | 14.393 | 0      | -23.4             | 53.0  |
| J430682    | 2043-11-02 01:01:26.81 | 18 02 23.61094             | -23 24 40.20102 | 4.0                     | 13.484           | 0.31     | 31.74                   | 5.776            | -54.3       | 9.614      | 14.553 | 13.210 | 214.7             | 51.7  |
| Pgt        | 4069222857165892096    | 18 02 23.61627             | -23 24 26.71750 | 2.7                     | 56.487           | -1.09    | -2.07                   |                  | -57.0       | 0.482      | 15.054 | 0      | -23.4             | 49.4  |
| J430683    | 2043-11-02 06:02:45.35 | 18 02 33.57140             | -23 24 38.14622 | 3.8                     | 10.699           | 0.29     | 31.81                   | 5.779            | -41.1       | 9.745      | 14.982 | 13.698 | 139.2             | 51.5  |
| Pgt        | 4069177364869798912    | 18 02 33.57539             | -23 24 27.44754 | 2.6                     | 44.840           | -1.11    | -2.07                   |                  | -43.9       | 0.429      | 15.486 | 0      | -23.4             | 47.0  |
| J430684    | 2043-11-02 14:35:09.66 | 18 02 50.54965             | -23 24 40.17035 | 2.3                     | 11.578           | 0.26     | 31.93                   | 5.783            | -45.1       | 8.645      | 13.062 | 12.065 | 10.8              | 51.2  |
| Pgt        | 4069176501566727040    | 18 02 50.55351             | -23 24 28.59220 | 1.6                     | 48.561           | -1.14    | -2.07                   |                  | -47.9       | 0.559      | 13.570 | 0      | -23.4             | 42.8  |
| J430685    | 2043-11-02 16:16:50.37 | 18 02 53.92454             | -23 24 41.62785 | 3.8                     | 12.823           | 0.26     | 31.96                   | 5.784            | -51.0       | 8.537      | 14.267 | 12.927 | 345.3             | 51.1  |
| Pg         | 4069176815113951232    | 18 02 53.92872             | -23 24 28.80476 | 2.6                     | 53.791           | -1.15    | -2.07                   |                  | -53.7       | 0.888      | 14.776 | 0      | -23.4             | 42.0  |
| J430686    | 2043-11-02 17:02:29.13 | 18 02 55.44620             | -23 24 23.96695 | 2.9                     | 4.932            | 180.26   | 31.97                   | 5.784            | 20.6        | 9.783      | 13.990 | 12.983 | 333.9             | 51.1  |
| Pgt        | 4069176810804383232    | 18 02 55.44459             | -23 24 28.89860 | 2.1                     | 20.689           | -1.15    | -2.07                   |                  | 17.5        | 0.307      | 14.499 | 0      | -23.4             | 41.7  |
| J430687    | 2043-11-03 01:20:14.82 | 18 03 12.00108             | -23 24 30.30278 | 5.6                     | 0.444            | 0.23     | 32.08                   | 5.788            | -0.1        | 7.607      | 13.377 | 11.991 | 209.2             | 50.8  |
| Pgt        | 4069173757097214336    | 18 03 12.00121             | -23 24 29.85851 | 3.4                     | 1.865            | -1.18    | -2.07                   |                  | -3.3        | 1.411      | 13.890 | 0      | -23.4             | 37.6  |
| J430688    | 2043-11-03 06:39:06.24 | 18 03 22.63259             | -23 24 29.03406 | 3.4                     | 1.378            | 180.21   | 32.16                   | 5.791            | 6.9         | 9.122      | 13.888 | 12.705 | 129.3             | 50.7  |
| Pgt        | 4069196984281865600    | 18 03 22.63223             | -23 24 30.41214 | 1.8                     | 5.788            | -1.20    | -2.07                   |                  | 3.7         | 0.487      | 14.404 | 0      | -23.4             | 35.1  |
| J430689    | 2043-11-03 22:08:22.14 | 18 03 53.72503             | -23 24 41.97492 | 2.9                     | 10.224           | 0.15     | 32.37                   | 5.798            | -39.2       | 8.619      | 13.389 | 12.180 | 256.5             | 50.1  |
| Pgt        | 4069184752215370112    | 18 03 53.72696             | -23 24 31.75056 | 1.8                     | 42.998           | -1.26    | -2.06                   |                  | -42.0       | 0.654      | 13.912 | 0      | -23.4             | 27.7  |
| J430690    | 2043-11-04 00:22:41.37 | 18 03 58.23223             | -23 24 49.82784 | 2.5                     | 17.918           | 0.14     | 32.40                   | 5.799            |             | 9.446      | 13.353 | 12.309 | 222.8             | 50.0  |
| Pt         | 4069186156653196160    | 18 03 58.23540             | -23 24 31.90985 | 1.6                     | 75.367           | -1.26    | -2.06                   |                  |             | 13.877     | 0      | 0      | -23.4             | 26.6  |
| J430691    | 2043-11-04 05:39:36.92 | 18 04 08.88661             | -23 24 33.39641 | 2.7                     | 1.145            | 0.12     | 32.48                   | 5.802            | -2.8        | 8.099      | 12.731 | 11.556 | 143.4             | 49.9  |
| Pgt        | 4069186019214256640    | 18 04 08.88679             | -23 24 32.25115 | 1.8                     | 4.819            | -1.28    | -2.06                   |                  | -6.0        | 0.788      | 13.257 | 0      | -23.4             | 24.1  |
| J430692    | 2043-11-04 06:55:46.31 | 18 04 11.45031             | -23 24 24.82310 | 2.6                     | 7.503            | 180.12   | 32.49                   | 5.803            | 30.8        | 9.240      | 13.846 | 12.679 | 124.3             | 49.8  |
| Pgt        | 4069185301970598016    | 18 04 11.44917             | -23 24 32.32591 | 1.8                     | 31.576           | -1.29    | -2.06                   |                  | 27.8        | 0.460      | 14.373 | 0      | -23.4             | 23.5  |
| J430693    | 2043-11-04 14:40:20.55 | 18 04 27.10236             | -23 24 49.27415 | 2.3                     | 16.553           | 0.09     | 32.60                   | 5.806            | -77.3       | 9.926      | 13.366 | 12.412 | 7.9               | 49.6  |
| Pgt        | 4069185366379200256    | 18 04 27.10421             | -23 24 32.72091 | 1.6                     | 69.710           | -1.32    | -2.06                   |                  | -79.8       |            | 13.896 | 0      | -23.4             | 19.9  |
| J430694    | 2043-11-05 08:18:10.37 | 18 05 02.90296             | -23 24 22.73481 | 3.5                     | 10.492           | 180.03   | 32.84                   | 5.815            | 43.3        | 9.436      | 14.660 | 13.394 | 102.9             | 49.0  |
| Pg         | 4069187844590945536    | 18 05 02.90258             | -23 24 33.22653 | 2.5                     | 44.248           | -1.38    | -2.06                   |                  | 40.5        | 0.491      | 15.198 | 0      | -23.4             | 11.9  |
| J430695    | 2043-11-05 20:17:09.20 | 18 05 27.35415             | -23 24 27.51592 | 2.3                     | 5.738            | 179.98   | 33.00                   | 5.821            | 23.9        | 9.411      | 13.413 | 12.357 | 282.8             | 48.6  |
| Pgt        | 4066186521460675200    | 18 05 27.35427             | -23 24 33.25432 | 1.8                     | 24.225           | -1.42    | -2.06                   |                  | 20.8        |            | 13.957 | 0      | -23.4             | 7.1   |
| J430696    | 2043-11-06 07:26:06.93 | 18 05 50.19186             | -23 24 30.76023 | 3.9                     | 2.287            | 179.94   | 33.15                   | 5.826            | 10.5        | 7.843      | 12.838 | 11.583 | 115.2             | 48.2  |
| Pg         | 4066185971705166336    | 18 05 50.19203             | -23 24 33.04705 | 2.8                     | 9.663            | -1.47    | -2.05                   |                  | 7.3         |            | 13.387 | 0      | -23.4             | 5.2   |
| J430697    | 2043-11-06 08:50:19.84 | 18 05 53.07193             | -23 24 20.53419 | 4.0                     | 12.471           | 179.94   | 33.17                   | 5.827            | 52.5        | 9.942      | 14.669 | 13.471 | 94.1              | 48.1  |
| Pgt        | 4066186001737562624    | 18 05 53.07291             | -23 24 33.00492 | 2.8                     | 52.699           | -1.47    | -2.05                   |                  | 49.7        | 0.349      | 15.218 | 0      | -23.4             | 5.3   |
| J430698    | 2043-11-06 22:08:51.96 | 18 06 20.45208             | -23 24 21.50652 | 3.4                     | 10.920           | 179.89   | 33.35                   | 5.833            | 45.3        | 9.980      | 14.560 | 13.937 | 254.0             | 47.7  |
| Pgt        | 4066557469211142912    | 18 06 20.45361             | -23 24 32.42650 | 2.3                     | 46.196           | -1.52    | -2.05                   |                  | 42.5        | 0.277      | 15.115 | 0      | -23.4             | 9.2   |
| J430699    | 2043-11-06 23:05:01.37 | 18 06 22.38463             | -23 24 39.95684 | 2.6                     | 7.583            | 359.88   | 33.36                   | 5.833            | -28.3       | 9.088      | 11.059 | 10.395 | 239.9             | 47.6  |
| Pgt        | 4066557396150859520    | 18 06 22.38350             | -23 24 32.37360 | 1.7                     | 32.082           | -1.52    | -2.05                   |                  | -31.3       | 0.315      | 11.615 | 0      | -23.4             | 9.6   |
| J430700    | 2043-11-07 06:09:35.21 | 18 06 36.99531             | -23 24 47.00789 | 2.6                     | 15.087           | 359.86   | 33.46                   | 5.837            | -64.8       | 9.443      | 13.793 | 12.678 | 133.6             | 47.4  |
| Pgt        | 4066557641009807232    | 18 06 36.99255             | -23 24 31.92139 | 1.7                     | 63.863           | -1.55    | -2.05                   |                  | -67.3       | 0.393      | 14.351 | 0      | -23.4             | 12.7  |

<sup>a</sup> A nearby event has the same 2MASS ID as this event, resulting in a corresponding K magnitude ambiguity.

\* Superscript \* indicates RUWE > 1.4, \*\* indicates RUWE > 2, and \*\*\* indicates RUWE > 5. See machine-readable file for RUWE values.













Table 11 (continued)

| Event ID   | C/A Epoch              | ICRS Star Coord at Epoch       | $\sigma(\alpha_*)$ (km) | C/A ( $''$ )     | PA (deg) | $v_{\text{sky}}$ (km/s) | Dist (au)        | Lat I (deg) | K          | G      | RP     | E $\lambda$ (deg) | S-G-T |
|------------|------------------------|--------------------------------|-------------------------|------------------|----------|-------------------------|------------------|-------------|------------|--------|--------|-------------------|-------|
| Event type | Source ID              | Geocentric Object Position     | $\sigma(\delta_*)$ (km) | C/A ( $10^3$ km) | P (deg)  | B (deg)                 | $\dot{r}$ (km/s) | Lat E (deg) | $D_*$ (km) | $G_*$  | DUP    | $\phi$ (deg)      | M-G-T |
| J490022    | 2049-04-27 13:45:20.94 | 05 50 18.41982 +23 20 17.33789 | 3.4                     | 8.943            | 178.44   | 31.49                   | 5.730            | 33.3        | 9.378      | 14.286 | 13.068 | 26.0              | 50.7  |
| Pgt        | 3427465201647251456    | 05 50 18.43748 +23 20 08.39798 | 2.2                     | 37.164           | -0.21    | 2.17                    |                  | 36.2        | 0.509      | 14.779 | 0      | 23.3              | 105.6 |
| J490023    | 2049-04-28 01:12:42.61 | 05 50 41.18296 +23 20 08.65019 | 3.5                     | 8.162            | 358.48   | 31.65                   | 5.736            | -33.0       | 9.811      | 13.005 | 12.079 | 213.8             | 50.3  |
| Pgt        | 3427464578873699840    | 05 50 41.16724 +23 20 16.80979 | 2.3                     | 33.955           | -0.17    | 2.16                    |                  | -30.2       | 0.275      | 13.504 | 0      | 23.3              | 99.2  |
| J490024    | 2049-05-01 01:09:43.31 | 05 53 05.87785 +23 21 08.54254 | 4.6                     | 3.500            | 178.75   | 32.59                   | 5.773            | 11.9        | 9.800      | 14.586 | 13.398 | 212.2             | 48.0  |
| Pgt        | 3427441798368243712    | 05 53 05.88342 +23 21 05.04350 | 2.9                     | 14.653           | 0.09     | 2.15                    |                  | 15.0        | 0.402      | 15.116 | 0      | 23.4              | 59.5  |
| J490025    | 2049-05-01 15:33:48.62 | 05 53 35.22779 +23 21 24.29276 | 2.7                     | 10.580           | 178.80   | 32.77                   | 5.780            | 40.6        | 9.064      | 13.451 | 12.311 | 355.7             | 47.5  |
| Pgt        | 3427430910628136576    | 05 53 35.24388 +23 21 13.71481 | 1.7                     | 44.352           | 0.15     | 2.15                    |                  | 43.4        | 0.425      | 13.987 | 0      | 23.4              | 51.9  |
| J490026    | 2049-05-01 17:36:15.89 | 05 53 39.44111 +23 20 57.80202 | 2.1                     | 17.118           | 358.80   | 32.80                   | 5.781            |             | 9.241      | 12.484 | 11.551 | 325.0             | 47.5  |
| P          | 3427430738829442432    | 05 53 39.41513 +23 21 14.91635 | 1.2                     | 71.771           | 0.15     | 2.15                    |                  |             | 0.369      | 13.021 | 0      | 23.4              | 50.8  |
| J490027    | 2049-05-04 06:06:18.77 | 05 55 44.18689 +23 22 03.44389 | 3.4                     | 16.056           | 179.03   | 33.54                   | 5.811            | 72.0        | 8.530      | 12.460 | 11.391 | 135.5             | 45.5  |
| Pgt        | 3424803112197179392    | 05 55 44.20659 +23 21 47.39020 | 1.9                     | 67.665           | 0.38     | 2.14                    |                  | 74.4        | 0.592      | 13.022 | 0      | 23.4              | 19.5  |
| J490028*   | 2049-09-26 06:18:02.36 | 08 05 14.88471 +20 30 42.53994 | 22.2                    | 3.102            | 191.08   | 25.42                   | 5.571            | 8.6         | 7.796      | 8.532  | 8.259  | 22.0              | 63.8  |
| Pgt        | 670685432766953088     | 08 05 14.84227 +20 30 39.49613 | 15.6                    | 12.532           | 13.66    | 1.20                    |                  | 14.4        | 0.420      | 8.793  | 1      | 20.4              | 54.5  |
| J490029    | 2049-10-13 07:56:09.10 | 08 14 43.87406 +20 04 04.03719 | 2.1                     | 7.594            | 191.49   | 18.23                   | 5.322            | 23.9        | 7.599      | 9.816  | 9.119  | 343.0             | 78.3  |
| Pgt        | 675621548484222464     | 08 14 43.76669 +20 03 56.59506 | 1.4                     | 29.313           | 14.53    | 1.09                    |                  | 30.4        | 0.592      | 9.716  | 0      | 19.9              | 73.6  |
| J490030    | 2049-12-14 01:46:31.18 | 08 20 31.85405 +19 55 47.35053 | 2.0                     | 14.839           | 15.54    | -10.17                  | 4.452            | -46.3       | 9.132      | 11.490 | 10.766 | 16.0              | 139.0 |
| Pgt        | 663608735413666176     | 08 20 32.13599 +19 56 01.64709 | 1.3                     | 47.910           | 15.05    | 0.87                    |                  | -45.3       | 0.253      | 10.755 | 0      | 19.8              | 13.2  |
| J490031    | 2049-12-28 14:23:13.57 | 08 14 51.44007 +20 17 07.67809 | 2.9                     | 0.724            | 14.21    | -14.67                  | 4.331            | -1.7        | 7.748      | 10.035 | 9.294  | 171.1             | 155.2 |
| Pgt        | 675650891700777728     | 08 14 51.45270 +20 17 08.38003 | 2.0                     | 2.275            | 14.54    | 0.87                    |                  | -2.5        |            | 9.698  | 0      | 20.1              | 150.8 |

<sup>a</sup> A nearby event has the same 2MASS ID as this event, resulting in a corresponding K magnitude ambiguity.

\* Superscript \* indicates RUWE > 1.4, \*\* indicates RUWE > 2, and \*\*\* indicates RUWE > 5. See machine-readable file for RUWE values.