

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

| 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° | 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° | | | | | | | | | | |
|----------------------------------|-----------------|-----------------|----------|-------|---------|------|--------|-----|------|--|-----------------|-----------------|----------|-------|---------|------|--------|-----|------|-------|----------|----------|-------|-------|------|------|-------|-----|-----|
| 14211 1999 NT₁ | | | | | | | | | | 159571 2001 VM₄ (continuation) | | | | | | | | | | | | | | | | | | | |
| 12 23 | 16 53.59 | -31 13.5 | 3.461 | 2.537 | 6.6 | 19.1 | 17 W | — | 11* | 8 19 | 1 35.70 | +14 29.3 | 0.947 | 1.685 | 31.8 | 19.2 | 119 W | 59 | 50 | 8 29 | 1 41.85 | +15 13.6 | 0.888 | 1.697 | 28.5 | 18.9 | 127 W | 60 | 49 |
| 1 2 | 17 14.20 | -31 13.0 | 3.389 | 2.506 | 8.5 | 19.1 | 22 W | 1* | 16* | 9 8 | 1 44.13 | +15 32.5 | 0.838 | 1.710 | 24.3 | 18.7 | 136 W | 61 | 48 | 9 18 | 1 42.32 | +15 23.3 | 0.799 | 1.725 | 19.1 | 18.5 | 146 W | 60 | 49 |
| 1 12 | 17 34.89 | -31 3.0 | 3.304 | 2.473 | 10.5 | 19.1 | 27 W | 3* | 21* | 9 28 | 1 36.79 | +14 45.8 | 0.776 | 1.742 | 13.1 | 18.2 | 157 W | 60 | 49 | 10 3 | 1 32.96 | +14 17.7 | 0.771 | 1.752 | 9.8 | 18.1 | 163 W | 59 | 50 |
| 1 22 | 17 55.57 | -30 42.8 | 3.208 | 2.440 | 12.6 | 19.1 | 33 W | 4* | 27* | 10 8 | 1 28.68 | +13 44.5 | 0.771 | 1.761 | 6.5 | 18.0 | 169 W | 59 | 50 | 10 13 | 1 24.18 | +13 7.6 | 0.776 | 1.771 | 3.4 | 17.8 | 174 W | 58 | 51 |
| 2 1 | 18 16.12 | -30 11.9 | 3.100 | 2.406 | 14.7 | 19.1 | 38 W | 6* | 32* | 10 18 | 1 19.69 | +12 28.6 | 0.787 | 1.782 | 2.3 | 17.8 | 176 E | 57 | 52 | 10 23 | 1 15.47 | +11 49.4 | 0.803 | 1.793 | 4.8 | 18.0 | 171 E | 57 | 52 |
| 2 11 | 18 36.42 | -29 30.0 | 2.982 | 2.371 | 16.8 | 19.0 | 44 W | 7* | 38* | 10 28 | 1 11.74 | +11 11.6 | 0.824 | 1.804 | 7.8 | 18.2 | 166 E | 56 | 53 | 11 2 | 1 8.65 | +10 36.9 | 0.851 | 1.815 | 10.8 | 18.4 | 160 E | 56 | 53 |
| 2 21 | 18 56.38 | -28 36.8 | 2.856 | 2.336 | 18.7 | 19.0 | 49 W | 9* | 43* | 11 7 | 1 6.33 | +10 6.4 | 0.883 | 1.827 | 13.6 | 18.6 | 154 E | 55 | 54 | 11 12 | 1 4.84 | +9 41.0 | 0.919 | 1.839 | 16.2 | 18.8 | 149 E | 55 | 54 |
| 3 2 | 19 15.86 | -27 32.2 | 2.721 | 2.300 | 20.7 | 18.9 | 55 W | 10* | 49* | 11 17 | 1 4.23 | +9 21.3 | 0.960 | 1.851 | 18.5 | 19.0 | 144 E | 54 | 55 | 12 7 | 1 10.35 | +9 2.0 | 1.161 | 1.902 | 25.2 | 19.7 | 125 E | 54 | 55 |
| 3 12 | 19 34.75 | -26 16.0 | 2.581 | 2.263 | 22.5 | 18.8 | 61 W | 11* | 54* | 12 7 | 1 17.85 | +9 24.1 | 1.279 | 1.929 | 27.2 | 20.0 | 116 E | 54 | 55 | 12 17 | 1 17.85 | +9 24.1 | 1.279 | 1.929 | 27.2 | 20.0 | 116 E | 54 | 55 |
| 3 22 | 19 52.97 | -24 48.3 | 2.435 | 2.226 | 24.2 | 18.7 | 66 W | 13* | 60* | 12 27 | 1 27.73 | +10 2.9 | 1.406 | 1.956 | 28.5 | 20.3 | 109 E | 55 | 54* | 1 6 | 1 39.55 | +10 54.5 | 1.539 | 1.983 | 29.1 | 20.5 | 101 E | 56 | 52* |
| 4 1 | 20 10.39 | -23 9.0 | 2.286 | 2.189 | 25.7 | 18.6 | 72 W | 15* | 66* | 1 16 | 1 52.95 | +11 55.3 | 1.676 | 2.011 | 29.2 | 20.7 | 95 E | 57 | 48* | 10 23 | 16 54.85 | -39 53.9 | 2.911 | 2.031 | 10.4 | 20.6 | 22 W | — | 14* |
| 4 11 | 20 26.89 | -21 17.8 | 2.134 | 2.151 | 27.0 | 18.4 | 77 W | 17* | 71* | 1 2 | 17 23.47 | -40 1.0 | 2.816 | 1.964 | 12.0 | 20.5 | 24 W | — | 17* | 1 2 | 17 23.47 | -40 1.0 | 2.816 | 1.964 | 12.0 | 20.5 | 24 W | — | 17* |
| 4 21 | 20 42.37 | -19 14.5 | 1.982 | 2.113 | 28.2 | 18.3 | 83 W | 19* | 77* | 1 12 | 17 53.18 | -39 48.8 | 2.713 | 1.895 | 13.8 | 20.4 | 27 W | — | 20* | 1 12 | 17 53.18 | -39 48.8 | 2.713 | 1.895 | 13.8 | 20.4 | 27 W | — | 20* |
| 5 1 | 20 56.66 | -16 58.6 | 1.831 | 2.075 | 29.0 | 18.1 | 89 W | 22* | 80* | 1 22 | 18 23.85 | -39 13.9 | 2.602 | 1.823 | 15.9 | 20.3 | 30 W | — | 23* | 1 22 | 18 23.85 | -39 13.9 | 2.602 | 1.823 | 15.9 | 20.3 | 30 W | — | 23* |
| 5 11 | 21 9.59 | -14 29.3 | 1.683 | 2.037 | 29.6 | 17.9 | 95 W | 25* | 78* | 1 27 | 18 39.48 | -38 46.9 | 2.544 | 1.787 | 17.0 | 20.3 | 32 W | — | 25* | 1 27 | 18 39.48 | -38 46.9 | 2.544 | 1.787 | 17.0 | 20.3 | 32 W | — | 25* |
| 5 21 | 21 20.95 | -11 45.7 | 1.539 | 1.999 | 29.8 | 17.6 | 101 W | 29* | 76* | 2 1 | 18 55.27 | -38 12.9 | 2.485 | 1.750 | 18.1 | 20.2 | 33 W | — | 26* | 2 1 | 18 55.27 | -38 12.9 | 2.485 | 1.750 | 18.1 | 20.2 | 33 W | — | 26* |
| 5 31 | 21 30.45 | -8 46.8 | 1.401 | 1.961 | 29.5 | 17.4 | 108 W | 34* | 73* | 2 6 | 19 11.19 | -37 31.6 | 2.426 | 1.712 | 19.2 | 20.2 | 35 W | — | 28* | 2 6 | 19 11.19 | -37 31.6 | 2.426 | 1.712 | 19.2 | 20.2 | 35 W | — | 28* |
| 6 10 | 21 37.75 | -5 31.6 | 1.271 | 1.924 | 28.8 | 17.1 | 114 W | 38* | 70* | 2 11 | 19 27.22 | -36 42.3 | 2.365 | 1.674 | 20.4 | 20.1 | 36 W | — | 29* | 2 11 | 19 27.22 | -36 42.3 | 2.365 | 1.674 | 20.4 | 20.1 | 36 W | — | 29* |
| 6 20 | 21 42.45 | + 1 59.3 | 1.151 | 1.887 | 27.5 | 16.8 | 121 W | 43* | 66* | 2 16 | 19 43.33 | -35 44.8 | 2.304 | 1.635 | 21.6 | 20.0 | 38 W | — | 30* | 2 16 | 19 43.33 | -35 44.8 | 2.304 | 1.635 | 21.6 | 20.0 | 38 W | — | 30* |
| 6 30 | 21 44.06 | + 1 48.9 | 1.043 | 1.851 | 25.6 | 16.5 | 128 W | 47* | 62* | 2 21 | 19 59.51 | -34 38.5 | 2.242 | 1.596 | 22.8 | 20.0 | 39 W | — | 31* | 2 21 | 19 59.51 | -34 38.5 | 2.242 | 1.596 | 22.8 | 20.0 | 39 W | — | 31* |
| 7 5 | 21 43.57 | + 3 48.1 | 0.995 | 1.834 | 24.5 | 16.3 | 131 W | 49 | 60 | 2 26 | 20 15.73 | -33 23.1 | 2.181 | 1.556 | 24.1 | 19.9 | 40 W | — | 32* | 2 26 | 20 15.73 | -33 23.1 | 2.181 | 1.556 | 24.1 | 19.9 | 40 W | — | 32* |
| 7 10 | 21 42.16 | + 5 49.7 | 0.950 | 1.817 | 23.4 | 16.2 | 135 W | 51 | 58 | 3 2 | 20 31.96 | -31 58.0 | 2.119 | 1.516 | 25.3 | 19.8 | 41 W | — | 33* | 3 2 | 20 31.96 | -31 58.0 | 2.119 | 1.516 | 25.3 | 19.8 | 41 W | — | 33* |
| 7 15 | 21 39.78 | + 7 52.5 | 0.910 | 1.800 | 22.2 | 16.0 | 138 W | 53 | 56 | 3 7 | 20 48.21 | -30 22.8 | 2.058 | 1.476 | 26.0 | 19.7 | 42 W | — | 34* | 3 7 | 20 48.21 | -30 22.8 | 2.058 | 1.476 | 26.0 | 19.7 | 42 W | — | 34* |
| 7 20 | 21 36.43 | + 9 55.0 | 0.874 | 1.783 | 21.0 | 15.9 | 141 W | 55 | 54 | 3 12 | 21 4.46 | -28 37.1 | 1.999 | 1.436 | 26.8 | 19.6 | 43 W | — | 35* | 3 12 | 21 4.46 | -28 37.1 | 1.999 | 1.436 | 26.8 | 19.6 | 43 W | — | 35* |
| 7 25 | 21 32.13 | +11 55.1 | 0.844 | 1.767 | 20.0 | 15.8 | 144 W | 57 | 52 | 3 17 | 21 20.72 | -26 40.3 | 1.940 | 1.395 | 29.3 | 19.5 | 43 W | — | 36* | 3 17 | 21 20.72 | -26 40.3 | 1.940 | 1.395 | 29.3 | 19.5 | 43 W | — | 36* |
| 7 30 | 21 26.98 | +13 50.7 | 0.818 | 1.751 | 19.2 | 15.7 | 145 W | 59 | 50 | 3 22 | 21 37.01 | -24 32.1 | 1.882 | 1.354 | 30.7 | 19.5 | 44 W | 1* | 37* | 3 22 | 21 37.01 | -24 32.1 | 1.882 | 1.354 | 30.7 | 19.5 | 44 W | 1* | 37* |
| 8 4 | 21 21.08 | +15 39.5 | 0.796 | 1.736 | 18.8 | 15.6 | 147 W | 61 | 48 | 4 1 | 22 9.70 | -19 40.0 | 1.774 | 1.273 | 33.4 | 19.3 | 45 W | 2* | 38* | 4 1 | 22 9.70 | -19 40.0 | 1.774 | 1.273 | 33.4 | 19.3 | 45 W | 2* | 38* |
| 8 9 | 21 14.63 | +17 19.3 | 0.780 | 1.721 | 18.8 | 15.5 | 147 E | 62 | 47 | 4 11 | 22 42.79 | -13 58.9 | 1.676 | 1.193 | 36.2 | 19.1 | 45 W | 5* | 38* | 4 11 | 22 42.79 | -13 58.9 | 1.676 | 1.193 | 36.2 | 19.1 | 45 W | 5* | 38* |
| 8 14 | 21 7.83 | +18 47.7 | 0.769 | 1.706 | 19.3 | 15.5 | 146 E | 64 | 45 | 4 21 | 23 16.69 | -7 29.5 | 1.594 | 1.117 | 38.7 | 18.9 | 44 W | 8* | 38* | 4 21 | 23 16.69 | -7 29.5 | 1.594 | 1.117 | 38.7 | 18.9 | 44 W | 8* | 38* |
| 8 19 | 21 0.96 | +20 3.2 | 0.762 | 1.692 | 20.2 | 15.5 | 145 E | 65 | 44 | 4 26 | 23 34.12 | -3 58.2 | 1.559 | 1.080 | 39.9 | 18.8 | 43 W | 9* | 37* | 4 26 | 23 34.12 | -3 58.2 | 1.559 | 1.080 | 39.9 | 18.8 | 43 W | 9* | 37* |
| 8 24 | 20 54.32 | +21 4.9 | 0.760 | 1.679 | 21.5 | 15.5 | 143 E | 66 | 43 | 5 1 | 23 52.00 | -0 17.6 | 1.530 | 1.045 | 40.9 | 18.7 | 43 W | 11* | 36* | 5 1 | 23 52.00 | -0 17.6 | 1.530 | 1.045 | 40.9 | 18.7 | 43 W | 11* | 36* |
| 8 29 | 20 48.20 | +21 52.6 | 0.762 | 1.666 | 23.0 | 15.5 | 140 E | 67 | 42 | 5 6 | 0 10.41 | + 3 30.5 | 1.506 | 1.013 | 41.7 | 18.6 | 42 W | 12* | 35* | 5 6 | 0 10.41 | + 3 30.5 | 1.506 | 1.013 | 41.7 | 18.6 | 42 W | 12* | 35* |
| 9 3 | 20 42.86 | +22 27.1 | 0.767 | 1.654 | 24.6 | 15.6 | 137 E | 67 | 42 | 5 11 | 0 29.50 | + 7 23.4 | 1.489 | 0.982 | 42.4 | 18.6 | 41 W | 14* | 33* | 5 11 | 0 29.50 | + 7 23.4 | 1.489 | 0.982 | 42.4 | 18.6 | 41 W | 14* | 33* |
| 9 8 | 20 38.51 | +22 49.4 | 0.775 | 1.643 | 26.2 | 15.6 | 134 E | 68 | 41 | 5 16 | 0 49.37 | +11 18.0 | 1.477 | 0.955 | 42.8 | 18.5 | 40 W | 15* | 31* | 5 16 | 0 49.37 | +11 18.0 | 1.477 | 0.955 | 42.8 | 18.5 | 40 W | 15* | 31* |
| 9 13 | 20 35.30 | +23 1.0 | 0.787 | 1.633 | 27.8 | 15.7 | 131 E | 68 | 41 | 5 21 | 1 10.15 | +15 10.5 | 1.472 | 0.931 | 42.8 | 18.4 | 39 W | 17* | 29* | 5 21 | 1 10.15 | +15 10.5 | 1.472 | 0.931 | 42.8 | 18.4 | 39 W | 17* | 29* |
| 9 18 | 20 33.36 | +23 3.5 | 0.801 | 1.623 | 29.4 | 15.7 | 128 E | 68 | 41 | 5 26 | 1 31.95 | +18 56.8 | 1.474 | 0.912 | 42.6 | 18.4 | 38 W | 18* | 26* | 5 26 | 1 31.95 | +18 56.8 | 1.474 | 0.912 | 42.6 | 18.4 | 38 W | 18* | 26* |
| 9 23 | 20 32.74 | +22 58.9 | 0.816 | 1.614 | 30.8 | 15.8 | 125 E | 68 | 41 | 5 31 | 1 54.85 | +22 32.2 | 1.482 | 0.896 | 42.1 | 18.4 | 36 W | 19* | 24* | 5 31 | 1 54.85 | +22 32.2 | 1.482 | 0.896 | 42.1 | 18.4 | 36 W | 19* | 24* |
| 9 28 | 20 33.47 | +22 49.1 | 0.834 | 1.605 | 32.1 | 15.9 | 122 E | 68 | 41 | 6 5 | 2 18.89 | +25 52.3 | 1.496 | 0.886 | 41.2 | 18.3 | 35 W | 20* | 21* | 6 5 | 2 18.89 | +25 52.3 | 1.496 | 0.886 | 41. | | | | |

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

| 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° | 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° |
|--------------------------------------|-----------------|-----------------|----------|-------|---------|------|--------|-----|------|-------------------------------------|-----------------|-----------------|----------|-------|---------|------|--------|-----|------|
| 143992 2004 AF (continuation) | | | | | | | | | | 37314 2001 QP (continuation) | | | | | | | | | |
| 12 7 | 11 15.24 | + 1 51.6 | 1.881 | 2.062 | 28.5 | 20.3 | 86 W | 47 | 54* | 9 8 | 17 23.43 | + 4 16.5 | 3.432 | 3.639 | 16.0 | 21.1 | 94 E | 48* | 60 |
| 12 17 | 11 17.81 | - 0 9.8 | 1.803 | 2.126 | 27.5 | 20.2 | 95 W | 45 | 61* | 9 18 | 17 27.34 | + 3 7.8 | 3.555 | 3.628 | 16.0 | 21.1 | 86 E | 46* | 59* |
| 12 27 | 11 17.26 | - 2 0.4 | 1.725 | 2.187 | 25.8 | 20.2 | 104 W | 43 | 66* | 9 28 | 17 32.77 | + 2 2.8 | 3.677 | 3.615 | 15.8 | 21.2 | 79 E | 44* | 56* |
| 1 6 | 11 13.28 | - 3 37.9 | 1.650 | 2.246 | 23.5 | 20.1 | 115 W | 41 | 68 | 10 8 | 17 39.55 | + 1 3.0 | 3.794 | 3.602 | 15.2 | 21.2 | 71 E | 42* | 51* |
| 1 16 | 11 5.64 | - 4 58.9 | 1.585 | 2.302 | 20.3 | 19.9 | 126 W | 40 | 69 | 10 18 | 17 47.52 | + 0 9.3 | 3.905 | 3.588 | 14.5 | 21.2 | 64 E | 40* | 45* |
| 52800 1998 QT₆₀ | | | | | | | | | | 155002 2005 NN₁₀₂ | | | | | | | | | |
| 12 23 | 16 54.95 | -35 21.4 | 4.210 | 3.295 | 5.5 | 19.6 | 19 W | — | 13* | 12 23 | 16 56.29 | -20 44.6 | 3.112 | 2.180 | 6.9 | 20.9 | 16 W | 6* | 6* |
| 1 2 | 17 11.07 | -35 33.0 | 4.163 | 3.291 | 7.0 | 19.6 | 24 W | — | 18* | 1 2 | 17 19.10 | -21 13.7 | 3.034 | 2.139 | 9.2 | 20.9 | 20 W | 8* | 11* |
| 1 12 | 17 26.92 | -35 41.1 | 4.099 | 3.287 | 8.7 | 19.6 | 30 W | — | 24* | 1 12 | 17 42.52 | -21 30.5 | 2.947 | 2.098 | 11.5 | 20.9 | 25 W | 10* | 16* |
| 1 22 | 17 42.40 | -35 46.0 | 4.018 | 3.282 | 10.3 | 19.7 | 37 W | 1* | 31* | 1 22 | 18 6.48 | -21 34.0 | 2.854 | 2.057 | 13.7 | 20.8 | 30 W | 11* | 22* |
| 2 1 | 17 57.37 | -35 47.8 | 3.922 | 3.276 | 11.9 | 19.7 | 43 W | 3* | 37* | 2 1 | 18 30.89 | -21 23.5 | 2.755 | 2.017 | 15.9 | 20.8 | 34 W | 12* | 27* |
| 2 11 | 18 11.68 | -35 47.0 | 3.812 | 3.269 | 13.4 | 19.7 | 50 W | 4* | 44* | 2 11 | 18 55.66 | -20 58.4 | 2.651 | 1.976 | 18.1 | 20.7 | 38 W | 13* | 31* |
| 2 21 | 18 25.19 | -35 44.3 | 3.689 | 3.261 | 14.8 | 19.6 | 57 W | 5* | 51* | 2 21 | 19 20.72 | -20 18.3 | 2.544 | 1.936 | 20.3 | 20.7 | 43 W | 13* | 36* |
| 3 2 | 18 37.74 | -35 40.3 | 3.554 | 3.252 | 16.0 | 19.6 | 64 W | 6* | 57* | 3 2 | 19 45.97 | -19 23.1 | 2.434 | 1.897 | 22.4 | 20.6 | 47 W | 14* | 40* |
| 3 12 | 18 49.14 | -35 35.9 | 3.411 | 3.242 | 16.9 | 19.5 | 72 W | 6* | 64* | 3 12 | 20 11.32 | -18 13.1 | 2.324 | 1.859 | 24.4 | 20.5 | 51 W | 14* | 44* |
| 3 22 | 18 59.19 | -35 32.0 | 3.260 | 3.231 | 17.7 | 19.4 | 80 W | 7* | 71* | 3 22 | 20 36.72 | -16 48.8 | 2.213 | 1.822 | 26.4 | 20.4 | 54 W | 15* | 48* |
| 4 1 | 19 7.67 | -35 29.4 | 3.105 | 3.219 | 18.1 | 19.3 | 87 W | 8* | 77* | 4 1 | 21 2.11 | -15 11.0 | 2.104 | 1.787 | 28.3 | 20.3 | 58 W | 16* | 52* |
| 4 11 | 19 14.33 | -35 29.0 | 2.948 | 3.206 | 18.1 | 19.2 | 96 W | 8* | 80* | 4 11 | 21 27.43 | -13 21.0 | 1.997 | 1.753 | 30.1 | 20.2 | 61 W | 17* | 55* |
| 4 21 | 19 18.90 | -35 31.1 | 2.792 | 3.193 | 17.8 | 19.1 | 104 W | 9* | 80 | 4 21 | 21 52.67 | -11 20.0 | 1.893 | 1.721 | 31.8 | 20.1 | 65 W | 18* | 58* |
| 5 1 | 19 21.08 | -35 35.9 | 2.642 | 3.178 | 16.9 | 18.9 | 113 W | 9* | 80 | 5 1 | 22 17.80 | -9 10.0 | 1.792 | 1.692 | 33.5 | 20.0 | 68 W | 19* | 61* |
| 5 11 | 19 20.61 | -35 42.6 | 2.500 | 3.162 | 15.6 | 18.7 | 123 W | 9* | 80 | 5 11 | 22 42.79 | -6 53.2 | 1.695 | 1.665 | 35.0 | 19.9 | 71 W | 21* | 63* |
| 5 21 | 19 17.28 | -35 49.4 | 2.371 | 3.146 | 13.7 | 18.6 | 133 W | 9 | 80 | 5 21 | 23 7.65 | -4 31.7 | 1.602 | 1.641 | 36.3 | 19.8 | 74 W | 23* | 64* |
| 5 31 | 19 11.01 | -35 53.5 | 2.260 | 3.128 | 11.3 | 18.3 | 143 W | 9 | 80 | 5 31 | 23 32.31 | -2 8.5 | 1.514 | 1.620 | 37.6 | 19.7 | 77 W | 26* | 64* |
| 6 10 | 19 2.04 | -35 50.9 | 2.170 | 3.110 | 8.5 | 18.1 | 153 W | 9 | 80 | 6 10 | 23 56.73 | + 0 13.6 | 1.430 | 1.603 | 38.6 | 19.5 | 80 W | 29* | 63* |
| 6 15 | 18 56.68 | -35 45.7 | 2.134 | 3.100 | 7.0 | 18.0 | 158 W | 9 | 80 | 6 20 | 0 20.82 | + 2 31.5 | 1.351 | 1.590 | 39.4 | 19.4 | 83 W | 33* | 61* |
| 6 20 | 18 50.87 | -35 37.4 | 2.105 | 3.091 | 5.6 | 17.9 | 163 W | 9 | 80 | 6 30 | 0 44.42 | + 4 41.9 | 1.276 | 1.580 | 40.0 | 19.3 | 86 W | 38* | 59 |
| 6 25 | 18 44.74 | -35 25.6 | 2.083 | 3.081 | 4.4 | 17.8 | 166 W | 10 | 81 | 7 10 | 1 7.36 | + 6 41.8 | 1.205 | 1.574 | 40.2 | 19.2 | 90 W | 43* | 57 |
| 6 30 | 18 38.42 | -35 9.9 | 2.069 | 3.070 | 3.9 | 17.8 | 168 W | 10 | 81 | 7 20 | 1 29.36 | + 8 28.2 | 1.137 | 1.573 | 40.2 | 19.0 | 94 W | 47* | 56 |
| 7 5 | 18 32.09 | -34 50.5 | 2.061 | 3.060 | 4.4 | 17.8 | 167 E | 10 | 81 | 7 30 | 1 50.03 | + 9 58.5 | 1.073 | 1.575 | 39.7 | 18.9 | 98 W | 52* | 54 |
| 7 10 | 18 25.88 | -34 27.5 | 2.061 | 3.049 | 5.5 | 17.8 | 163 E | 11 | 82 | 8 9 | 2 8.96 | +11 10.7 | 1.012 | 1.582 | 38.7 | 18.8 | 103 W | 55* | 53 |
| 7 15 | 18 19.94 | -34 1.1 | 2.069 | 3.038 | 7.0 | 17.9 | 159 E | 11 | 82 | 8 19 | 2 25.61 | +12 3.0 | 0.954 | 1.593 | 37.1 | 18.6 | 108 W | 57* | 52 |
| 7 20 | 18 14.40 | -33 31.9 | 2.083 | 3.027 | 8.6 | 18.0 | 154 E | 11 | 82 | 8 29 | 2 39.34 | +12 34.5 | 0.901 | 1.607 | 34.9 | 18.4 | 114 W | 58 | 51 |
| 7 25 | 18 9.39 | -33 0.4 | 2.103 | 3.016 | 10.2 | 18.1 | 148 E | 12 | 83 | 9 8 | 2 49.53 | +12 44.9 | 0.852 | 1.626 | 31.8 | 18.3 | 122 W | 58 | 51 |
| 7 30 | 18 4.99 | -32 27.2 | 2.130 | 3.004 | 11.7 | 18.1 | 143 E | 13 | 84 | 9 18 | 2 55.57 | +12 34.6 | 0.811 | 1.647 | 27.9 | 18.1 | 130 W | 58 | 51 |
| 8 4 | 18 1.27 | -31 53.1 | 2.162 | 2.992 | 13.2 | 18.2 | 138 E | 13 | 84 | 9 28 | 2 57.08 | +12 5.3 | 0.778 | 1.672 | 22.9 | 17.9 | 139 W | 57 | 52 |
| 8 9 | 17 58.27 | -31 18.5 | 2.200 | 2.980 | 14.5 | 18.3 | 133 E | 14 | 85 | 10 8 | 2 54.20 | +11 20.9 | 0.759 | 1.700 | 17.1 | 17.7 | 150 W | 56 | 53 |
| 8 19 | 17 54.49 | -30 9.8 | 2.287 | 2.955 | 16.8 | 18.4 | 122 E | 15 | 86 | 10 13 | 2 51.30 | +10 54.8 | 0.755 | 1.714 | 13.9 | 17.6 | 156 W | 56 | 53 |
| 8 29 | 17 53.66 | -29 4.2 | 2.388 | 2.930 | 18.6 | 18.6 | 113 E | 16 | 87 | 10 18 | 2 47.63 | +10 27.3 | 0.756 | 1.730 | 10.6 | 17.5 | 161 W | 55 | 54 |
| 9 8 | 17 55.57 | -28 3.0 | 2.498 | 2.903 | 19.7 | 18.7 | 103 E | 17* | 88 | 10 23 | 2 43.42 | + 9 59.8 | 0.762 | 1.745 | 7.4 | 17.4 | 167 W | 55 | 54 |
| 9 18 | 17 59.96 | -27 6.3 | 2.613 | 2.875 | 20.4 | 18.8 | 95 E | 18* | 88* | 10 28 | 2 39.30 | + 9 33.4 | 0.773 | 1.762 | 4.5 | 17.3 | 172 W | 55 | 54 |
| 9 28 | 18 6.53 | -26 13.4 | 2.728 | 2.847 | 20.6 | 18.9 | 86 E | 18* | 80* | 11 2 | 2 34.34 | + 9 9.5 | 0.789 | 1.779 | 3.2 | 17.3 | 174 W | 54 | 55 |
| 10 8 | 18 14.98 | -25 23.1 | 2.841 | 2.818 | 20.3 | 18.9 | 79 E | 19* | 72* | 11 7 | 2 29.96 | + 8 49.0 | 0.810 | 1.796 | 4.8 | 17.4 | 171 E | 54 | 55 |
| 10 18 | 18 25.06 | -24 33.8 | 2.949 | 2.787 | 19.7 | 19.0 | 71 E | 19* | 64* | 11 12 | 2 25.97 | + 8 32.9 | 0.837 | 1.814 | 7.6 | 17.7 | 166 E | 54 | 55 |
| 10 28 | 18 36.53 | -23 43.9 | 3.050 | 2.756 | 18.8 | 19.0 | 64 E | 19* | 57* | 11 17 | 2 22.56 | + 8 21.7 | 0.870 | 1.832 | 10.4 | 17.9 | 161 E | 53 | 56 |
| 11 7 | 18 49.17 | -22 52.1 | 3.142 | 2.724 | 17.7 | 19.0 | 57 E | 19* | 49* | 11 27 | 2 17.96 | + 8 15.6 | 0.950 | 1.869 | 15.5 | 18.3 | 150 E | 53 | 56 |
| 11 17 | 19 2.81 | -21 57.0 | 3.223 | 2.692 | 16.3 | 19.0 | 50 E | 19* | 41* | 12 7 | 2 16.70 | + 8 30.7 | 1.048 | 1.908 | 19.6 | 18.7 | 140 E | 54 | 55 |
| 11 27 | 19 17.28 | -20 57.2 | 3.292 | 2.658 | 14.7 | 18.9 | 43 E | 18* | 34* | 12 17 | 2 18.73 | + 9 4.3 | 1.162 | 1.947 | 22.7 | 19.1 | 130 E | 54 | 55 |
| 12 7 | 19 32.42 | -19 51.8 | 3.347 | 2.624 | 13.0 | 18.9 | 37 E | 17* | 26* | 12 27 | 2 23.77 | + 9 52.7 | 1.288 | 1.987 | 25.0 | 19.4 | 121 E | 55 | 54 |
| 12 17 | 19 48.13 | -18 40.0 | 3.389 | 2.589 | 11.1 | 18.8 | 30 E | 16* | 19* | 1 6 | 2 31.39 | +10 51.8 | 1.426 | 2.027 | 26.4 | 19.7 | 113 E | 56 | 53 |
| 12 27 | 20 4.29 | -17 20.9 | 3.417 | 2.553 | 9.1 | 18.7 | 24 E | 13* | 12* | 1 16 | 2 41.16 | +11 57.9 | 1.571 | 2.068 | 27.2 | 20.0 | 106 E | 57 | 52* |
| 1 6 | 20 20.79 | -15 54.1 | 3.430 | 2.517 | 7.1 | 18.6 | 18 E | 10* | 6* | 275847 2001 SM₆₁ | | | | | | | | | |
| 1 16 | 20 37.58 | -14 19.1 | 3.429 | 2.480 | 5.1 | 18.5 | 13 E | 6* | 1* | 12 23 | 16 56.54 | - 8 17.0 | 3.683 | 2.795 | 7.5 | 21.4 | 22 W | 16* | 1* |
| 37314 2001 QP | | | | | | | | | | 1 2 | 17 12.23 | - 8 5.7 | 3.673 | 2.834 | 9.1 | 21.5 | 27 W | 20* | 7* |
| 12 23 | 16 55.35 | - 5 7.3 | 4.469 | 3.596 | 6.5 | 21.2 | 24 W | 18* | — | 1 12 | 17 27.35 | - 7 44.8 | 3.649 | 2.872 | 10.7 | 21.6 | 33 W | 23* | 14* |
| 1 2 | 17 7.28 | - 4 59.5 | 4.428 | 3.610 | 7.8 | 21.3 | 30 W | 23* | 7* | 1 22 | 17 41.83 | - 7 14.4 | 3.610 | 2.910 | 12.2 | 21.6 | 39 W | 26* | 21* |
| 1 12 | 17 18.86 | - 4 43.3 | 4.370 | 3.623 | 9.2 | 21.3 | 36 W | 27* | 15* | 2 1 | 17 55.53 | - 6 34.6 | 3.558 | 2.947 | 13.7 | 21.7 | 45 W | 29* | 29* |
| 1 22 | 17 29.99 | - 4 18.5 | 4.296 | 3.635 | 10.6 | 21.3 | 43 W | 31* | 23* | 284422 2006 YD | | | | | | | | | |
| 2 1 | 17 40.52 | - 3 45.2 | 4.207 | 3.645 | 11.9 | 21.3 | 50 W | 33* | 31* | 12 23 | 16 56.64 | -21 45.0 | 1.737 | 0.830 | 18.2 | 19.1 | 15 W | 5* | 7* |
| 2 11 | 17 50.33 | - 3 3.5 | 4.105 | 3.655 | 13.0 | 21.3 | 57 W | 36* | 39* | 12 28 | 17 23.65 | -21 46.9 | 1.771 | 0.852 | 16.4 | 19.2 | 14 W | 4* | 6* |
| 2 21 | 17 59.28 | - 2 13.6 | 3.992 | 3.664 | 14.0 | 21.3 | 64 W | 38* | 46* | 1 2 | 17 49.71 | -21 33.4 | 1.808 | 0.881 | 14.9 | 19.2 | 13 W | 4* | 5* |
| 3 2 | 18 7.22 | - 1 16.0 | 3.869 | 3.672 | 14.8 | 21.3 | 71 W | 40* | 53* | 1 7 | 18 14.65 | -21 6.4 | 1.848 | 0.914 | 13.6 | 19.3 | 13 W | 3* | 4* |
| 3 12 | 18 13.99 | - 0 11.2 | 3.741 | 3.679 | 15.4 | 21.2 | 79 W | 43* | 58* | 1 12 | 18 38.38 | -20 28.0 | 1.890 | 0.952 | 12.6 | 19.4 | 12 W | 3* | 4* |
| 3 22 | 18 19.43 | + 0 59.9 | 3.608 | 3.685 | 15.7 | 21.2 | 87 W | 45* | 61* | 1 17 | 19 0.86 | -19 40.1 | 1.934 | 0.994 | 12.0 | 19.5 | 12 W | 3* | 4 |

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

| 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° | 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° |
|------------------------------------|-----------------|-----------------|----------|-------|---------|------|--------|-----|------|------------------------------------|-----------------|-----------------|----------|-------|---------|------|--------|-----|------|
| 284422 2006 YD | | | | | | | | | | 133048 2003 CG₁₅ | | | | | | | | | |
| <i>(continuation)</i> | | | | | | | | | | <i>(continuation)</i> | | | | | | | | | |
| 2 16 | 20 51.30 | -13 6.2 | 2.207 | 1.283 | 11.9 | 20.4 | 15 W | 4* | 8* | 1 22 | 18 46.47 | -40 54.0 | 2.513 | 1.707 | 15.7 | 19.3 | 28 W | — | 20* |
| 2 21 | 21 6.22 | -11 53.6 | 2.250 | 1.334 | 12.3 | 20.5 | 17 W | 5* | 9* | 1 27 | 19 4.56 | -40 49.5 | 2.505 | 1.716 | 16.3 | 19.3 | 29 W | — | 21* |
| 2 26 | 21 20.32 | -10 41.0 | 2.292 | 1.385 | 12.8 | 20.7 | 18 W | 5* | 11* | 2 1 | 19 22.41 | -40 37.2 | 2.497 | 1.724 | 16.9 | 19.4 | 31 W | — | 22* |
| 3 2 | 21 33.69 | -9 28.8 | 2.331 | 1.436 | 13.3 | 20.8 | 20 W | 6* | 12* | 2 6 | 19 39.95 | -40 17.7 | 2.489 | 1.734 | 17.5 | 19.4 | 32 W | — | 23* |
| 3 7 | 21 46.36 | -8 17.5 | 2.368 | 1.486 | 13.9 | 20.9 | 21 W | 6* | 14* | 2 11 | 19 57.11 | -39 51.4 | 2.481 | 1.743 | 18.1 | 19.4 | 33 W | — | 24* |
| 3 12 | 21 58.40 | -7 7.2 | 2.403 | 1.537 | 14.6 | 21.1 | 23 W | 7* | 16* | 2 21 | 20 30.13 | -38 40.5 | 2.463 | 1.764 | 19.3 | 19.5 | 36 W | — | 26* |
| 3 17 | 22 9.85 | -5 58.1 | 2.435 | 1.587 | 15.2 | 21.2 | 25 W | 8* | 18* | 3 2 | 21 1.17 | -37 9.7 | 2.442 | 1.786 | 20.5 | 19.5 | 39 W | — | 29* |
| 3 22 | 22 20.76 | -4 50.5 | 2.464 | 1.637 | 15.9 | 21.3 | 27 W | 8* | 20* | 3 12 | 21 30.08 | -35 23.8 | 2.418 | 1.810 | 21.7 | 19.6 | 42 W | — | 31* |
| 3 27 | 22 31.15 | -3 44.4 | 2.490 | 1.686 | 16.6 | 21.4 | 29 W | 9* | 22* | 3 22 | 21 56.90 | -33 27.5 | 2.389 | 1.835 | 22.8 | 19.6 | 46 W | — | 35* |
| 75409 1999 XR₁₀₄ | | | | | | | | | | 133048 2003 CG₁₅ | | | | | | | | | |
| 12 23 | 16 57.36 | -18 45.6 | 3.800 | 2.866 | 5.4 | 20.7 | 16 W | 7* | 5* | 4 1 | 22 21.66 | -31 25.3 | 2.355 | 1.861 | 23.9 | 19.6 | 49 W | — | 38* |
| 1 2 | 17 12.97 | -19 37.8 | 3.735 | 2.848 | 7.5 | 20.8 | 22 W | 10* | 12* | 4 11 | 22 44.46 | -29 20.8 | 2.316 | 1.889 | 25.0 | 19.7 | 53 W | — | 42* |
| 1 12 | 17 28.64 | -20 24.6 | 3.655 | 2.829 | 9.5 | 20.8 | 28 W | 13* | 19* | 4 21 | 23 5.42 | -27 17.0 | 2.271 | 1.916 | 26.1 | 19.7 | 57 W | — | 47* |
| 1 22 | 17 44.29 | -21 6.4 | 3.560 | 2.809 | 11.5 | 20.8 | 35 W | 14* | 26* | 5 1 | 23 24.61 | -25 16.7 | 2.218 | 1.945 | 27.0 | 19.7 | 61 W | — | 52* |
| 2 1 | 17 59.83 | -21 43.7 | 3.451 | 2.789 | 13.5 | 20.8 | 41 W | 15* | 34* | 5 11 | 23 42.09 | -23 22.1 | 2.160 | 1.974 | 27.8 | 19.7 | 66 W | — | 58* |
| 2 11 | 18 15.15 | -22 17.4 | 3.329 | 2.767 | 15.4 | 20.8 | 48 W | 16* | 41* | 5 21 | 23 57.88 | -21 34.7 | 2.094 | 2.003 | 28.5 | 19.7 | 71 W | 2* | 64* |
| 2 21 | 18 30.14 | -22 48.5 | 3.197 | 2.745 | 17.1 | 20.7 | 55 W | 16* | 48* | 5 31 | 0 11.91 | -19 56.4 | 2.022 | 2.033 | 29.0 | 19.6 | 76 W | 6* | 70* |
| 3 2 | 18 44.70 | -23 18.3 | 3.054 | 2.721 | 18.6 | 20.7 | 61 W | 17* | 55* | 6 10 | 0 24.09 | -18 28.2 | 1.944 | 2.062 | 29.2 | 19.6 | 82 W | 10* | 76* |
| 3 12 | 18 58.68 | -23 48.3 | 2.903 | 2.697 | 20.0 | 20.6 | 68 W | 17* | 62* | 6 20 | 0 34.27 | -17 11.1 | 1.861 | 2.092 | 29.0 | 19.5 | 88 W | 15* | 80* |
| 3 22 | 19 11.95 | -24 20.5 | 2.747 | 2.672 | 21.1 | 20.5 | 75 W | 17* | 69* | 6 30 | 0 42.18 | -16 6.1 | 1.775 | 2.122 | 28.5 | 19.4 | 95 W | 20* | 80 |
| 4 1 | 19 24.34 | -24 57.2 | 2.586 | 2.646 | 22.0 | 20.3 | 82 W | 17* | 76* | 7 10 | 0 47.54 | -15 13.4 | 1.688 | 2.151 | 27.5 | 19.3 | 103 W | 25* | 79 |
| 4 11 | 19 35.66 | -25 40.8 | 2.424 | 2.620 | 22.5 | 20.2 | 90 W | 17* | 84* | 7 20 | 0 49.97 | -14 32.9 | 1.602 | 2.180 | 25.8 | 19.2 | 111 W | 29* | 79 |
| 4 21 | 19 45.68 | -26 34.3 | 2.262 | 2.592 | 22.6 | 20.0 | 97 W | 16* | 89 | 7 30 | 0 49.07 | -14 3.8 | 1.521 | 2.209 | 23.5 | 19.0 | 120 W | 31* | 78 |
| 5 1 | 19 54.10 | -27 41.0 | 2.104 | 2.564 | 22.3 | 19.8 | 105 W | 16* | 88 | 8 9 | 0 44.54 | -13 43.8 | 1.449 | 2.237 | 20.4 | 18.9 | 130 W | 31 | 78 |
| 5 11 | 20 0.61 | -29 3.9 | 1.952 | 2.535 | 21.4 | 19.6 | 114 W | 15* | 87 | 8 19 | 0 36.25 | -13 29.4 | 1.391 | 2.265 | 16.5 | 18.7 | 140 W | 32 | 77 |
| 5 21 | 20 4.79 | -30 45.8 | 1.810 | 2.505 | 19.9 | 19.4 | 123 W | 14* | 85 | 8 24 | 0 30.75 | -13 22.7 | 1.369 | 2.279 | 14.3 | 18.6 | 146 W | 32 | 77 |
| 5 31 | 20 6.16 | -32 48.3 | 1.681 | 2.475 | 17.8 | 19.1 | 132 W | 12 | 83 | 8 29 | 0 24.47 | -13 15.2 | 1.352 | 2.293 | 12.0 | 18.5 | 152 W | 32 | 77 |
| 6 10 | 20 4.27 | -35 10.3 | 1.569 | 2.444 | 15.1 | 18.9 | 141 W | 10 | 81 | 9 3 | 0 17.52 | -13 6.3 | 1.342 | 2.306 | 9.6 | 18.4 | 157 W | 32 | 77 |
| 6 15 | 20 1.97 | -36 27.3 | 1.521 | 2.428 | 13.7 | 18.7 | 146 W | 9 | 80 | 9 8 | 0 10.07 | -12 55.1 | 1.338 | 2.319 | 7.4 | 18.3 | 163 W | 32 | 77 |
| 6 20 | 19 58.73 | -37 46.9 | 1.478 | 2.412 | 12.2 | 18.6 | 150 W | 7 | 78 | 9 13 | 0 2.30 | -12 41.1 | 1.341 | 2.333 | 5.5 | 18.2 | 167 W | 32 | 77 |
| 6 25 | 19 54.53 | -39 7.9 | 1.442 | 2.396 | 10.8 | 18.5 | 154 W | 6 | 77 | 9 18 | 23 54.43 | -12 23.8 | 1.351 | 2.346 | 4.7 | 18.2 | 169 W | 33 | 76 |
| 6 30 | 19 49.43 | -40 28.4 | 1.411 | 2.380 | 9.7 | 18.4 | 157 W | 5 | 76 | 9 23 | 23 46.69 | -12 3.0 | 1.369 | 2.359 | 5.3 | 18.3 | 167 E | 33 | 76 |
| 7 5 | 19 43.50 | -41 46.7 | 1.388 | 2.364 | 9.0 | 18.3 | 159 W | 3 | 74 | 9 28 | 23 39.28 | -11 38.5 | 1.394 | 2.371 | 7.0 | 18.4 | 163 E | 33 | 76 |
| 7 10 | 19 36.88 | -43 0.8 | 1.370 | 2.347 | 9.0 | 18.2 | 159 W | 2 | 73 | 10 8 | 23 26.13 | -10 39.3 | 1.465 | 2.396 | 11.1 | 18.7 | 152 E | 34 | 75 |
| 7 15 | 19 29.72 | -44 9.1 | 1.360 | 2.331 | 9.7 | 18.2 | 157 E | 1 | 72 | 10 18 | 23 16.01 | -9 28.7 | 1.562 | 2.420 | 15.0 | 19.0 | 141 E | 36 | 73 |
| 7 20 | 19 22.27 | -45 10.0 | 1.356 | 2.314 | 10.9 | 18.3 | 154 E | — | 71 | 10 28 | 23 9.35 | -8 9.4 | 1.680 | 2.444 | 18.0 | 19.3 | 130 E | 37 | 72 |
| 7 25 | 19 14.78 | -46 2.3 | 1.358 | 2.297 | 12.5 | 18.3 | 151 E | — | 70 | 11 7 | 23 6.11 | -6 43.9 | 1.814 | 2.467 | 20.3 | 19.6 | 120 E | 38 | 71 |
| 7 30 | 19 7.56 | -46 45.6 | 1.366 | 2.281 | 14.3 | 18.4 | 146 E | — | 69 | 11 17 | 23 5.95 | -5 13.8 | 1.960 | 2.488 | 21.8 | 19.8 | 111 E | 40 | 69 |
| 8 4 | 19 0.86 | -47 19.8 | 1.379 | 2.264 | 16.2 | 18.4 | 142 E | — | 69 | 11 27 | 23 8.49 | -3 39.9 | 2.114 | 2.509 | 22.6 | 20.0 | 102 E | 41 | 67* |
| 8 9 | 18 54.92 | -47 45.4 | 1.397 | 2.247 | 18.0 | 18.5 | 137 E | — | 68 | 12 7 | 23 13.26 | -2 2.7 | 2.272 | 2.530 | 22.9 | 20.2 | 93 E | 43 | 62* |
| 8 14 | 18 49.94 | -48 2.9 | 1.419 | 2.229 | 19.7 | 18.6 | 132 E | — | 68 | 12 17 | 23 19.88 | -0 22.6 | 2.431 | 2.549 | 22.6 | 20.3 | 85 E | 45 | 55* |
| 8 19 | 18 46.07 | -48 13.4 | 1.445 | 2.212 | 21.3 | 18.7 | 128 E | — | 68 | 12 27 | 23 28.03 | + 1 20.6 | 2.588 | 2.568 | 22.0 | 20.5 | 78 E | 46 | 48* |
| 8 24 | 18 43.42 | -48 17.8 | 1.474 | 2.195 | 22.7 | 18.7 | 123 E | — | 68 | 1 6 | 23 37.41 | + 3 6.4 | 2.741 | 2.585 | 21.0 | 20.6 | 71 E | 48* | 40* |
| 8 29 | 18 42.04 | -48 17.1 | 1.506 | 2.178 | 24.0 | 18.8 | 119 E | — | 68 | 1 16 | 23 47.81 | + 4 54.7 | 2.887 | 2.602 | 19.8 | 20.7 | 64 E | 47* | 33* |
| 9 3 | 18 41.93 | -48 12.2 | 1.540 | 2.160 | 25.2 | 18.9 | 114 E | — | 68 | 476187 2007 UQ₁₃ | | | | | | | | | |
| 9 8 | 18 43.06 | -48 3.8 | 1.575 | 2.143 | 26.2 | 18.9 | 110 E | — | 68 | 12 23 | 16 57.76 | -19 9.1 | 1.567 | 0.674 | 23.2 | 21.2 | 16 W | 7* | 5* |
| 9 13 | 18 45.38 | -47 52.3 | 1.612 | 2.126 | 27.0 | 19.0 | 106 E | — | 68 | 12 28 | 17 28.12 | -17 43.0 | 1.576 | 0.670 | 21.4 | 21.2 | 14 W | 7* | 3* |
| 9 18 | 18 48.85 | -47 38.2 | 1.649 | 2.109 | 27.7 | 19.0 | 102 E | — | 68 | 1 2 | 17 58.12 | -16 4.8 | 1.589 | 0.672 | 19.8 | 21.1 | 13 W | 7* | 1* |
| 9 23 | 18 53.38 | -47 21.6 | 1.687 | 2.091 | 28.3 | 19.1 | 99 E | — | 69 | 1 7 | 17 58.25 | -14 17.4 | 1.604 | 0.681 | 18.6 | 21.1 | 13 W | 7* | — |
| 9 28 | 18 58.92 | -47 2.8 | 1.724 | 2.074 | 28.8 | 19.1 | 95 E | — | 69 | 1 12 | 18 56.24 | -12 23.9 | 1.623 | 0.696 | 17.8 | 21.2 | 12 W | 6* | — |
| 10 3 | 19 5.37 | -46 41.7 | 1.762 | 2.057 | 29.1 | 19.2 | 92 E | — | 69* | 1 17 | 19 24.07 | -10 27.3 | 1.646 | 0.718 | 17.2 | 21.3 | 12 W | 6* | — |
| 10 8 | 19 12.66 | -46 18.3 | 1.799 | 2.040 | 29.3 | 19.2 | 89 E | — | 69* | 1 22 | 19 50.96 | -8 30.0 | 1.672 | 0.743 | 16.8 | 21.4 | 13 W | 6* | — |
| 10 13 | 19 20.71 | -45 52.3 | 1.835 | 2.023 | 29.5 | 19.2 | 86 E | — | 69* | 1 27 | 20 16.84 | -6 33.9 | 1.701 | 0.773 | 16.5 | 21.5 | 13 W | 6* | — |
| 10 18 | 19 29.46 | -45 23.6 | 1.871 | 2.006 | 29.5 | 19.3 | 83 E | — | 68* | 106521 2000 WC₅₁ | | | | | | | | | |
| 10 23 | 19 38.83 | -44 52.0 | 1.905 | 1.989 | 29.5 | 19.3 | 80 E | — | 67* | 12 23 | 16 58.70 | -13 34.9 | 3.828 | 2.908 | 6.0 | 21.0 | 18 W | 11* | 3* |
| 10 28 | 19 48.77 | -44 17.3 | 1.939 | 1.972 | 29.4 | 19.3 | 77 E | 1* | 66* | 1 2 | 17 14.04 | -13 20.5 | 3.779 | 2.909 | 7.9 | 21.1 | 24 W | 15* | 9* |
| 11 2 | 19 59.19 | -43 39.4 | 1.971 | 1.956 | 29.3 | 19.3 | 74 E | 1* | 65* | 1 12 | 17 29.13 | -12 57.2 | 3.715 | 2.908 | 9.8 | 21.1 | 30 W | 19* | 16* |
| 11 7 | 20 10.03 | -42 57.9 | 2.003 | 1.939 | 29.1 | 19.3 | 72 E | 2* | 63* | 1 22 | 17 43.87 | -12 24.8 | 3.637 | 2.907 | 11.6 | 21.1 | 37 W | 22* | 23* |
| 11 12 | 20 21.24 | -42 12.7 | 2.033 | 1.923 | 28.8 | 19.3 | 69 E | 3* | 62* | 2 1 | 17 58.14 | -11 42.9 | 3.544 | 2.904 | 13.4 | 21.1 | 43 W | 24* | 30* |
| 11 17 | 20 32.78 | -41 23.7 | 2.061 | 1.907 | 28.5 | 19.3 | 67 E | 4* | 60* | 2 11 | 18 11.81 | -10 51.5 | 3.440 | 2.901 | 15.0 | 21.1 | 50 W | 27* | 38* |
| 11 22 | 20 44.57 | -40 30.6 | 2.089 | 1.892 | 28.2 | 19.3 | 65 E | 4* | 58* | 2 21 | 18 24.77 | -9 50.6 | 3.325 | 2.896 | 16.5 | 21.1 | 56 W | 29* | 45* |
| 11 27 | 20 56.58 | -39 33.4 | 2.115 | 1.876 | 27.8 | 19.3 | 63 E | 5* | 56* | 3 2 | 18 36.88 | -8 40.3 | 3.200 | 2.891 | 17.8 | 21.1 | 63 W | 31* | 51* |
| 12 2 | 21 8.76 | -38 32.1 | 2.140 | 1.861 | 27.4 | 19.3 | 60 E | 6* | 54* | 3 12 | 1 | | | | | | | | |

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

| 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° | 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° |
|------------------------------------|-----------------|-----------------|----------|-------|---------|------|--------|-----|------|------------------------------------|-----------------|-----------------|----------|-------|---------|------|--------|-----|------|
| 106521 2000 WC₅₁ | | | | | | | | | | 170908 2004 XK₆₁ | | | | | | | | | |
| <i>(continuation)</i> | | | | | | | | | | <i>(continuation)</i> | | | | | | | | | |
| 7 10 | 18 42.82 | +11 7.9 | 1.832 | 2.732 | 12.2 | 19.5 | 146 E | 56 | 53 | 5 1 | 22 45.89 | - 8 35.2 | 1.812 | 1.593 | 33.6 | 20.2 | 61 W | 15* | 55* |
| 7 20 | 18 32.89 | +11 5.8 | 1.839 | 2.713 | 13.3 | 19.6 | 142 E | 56 | 53 | 5 11 | 23 11.54 | - 5 26.1 | 1.730 | 1.571 | 35.2 | 20.1 | 64 W | 18* | 56* |
| 7 30 | 18 24.32 | +10 37.0 | 1.868 | 2.693 | 15.2 | 19.6 | 136 E | 56 | 53 | 5 21 | 23 36.95 | - 2 9.9 | 1.652 | 1.552 | 36.7 | 20.0 | 66 W | 20* | 57* |
| 8 4 | 18 20.79 | +10 14.1 | 1.890 | 2.683 | 16.2 | 19.7 | 133 E | 55 | 54 | 5 31 | 0 2.13 | + 1 10.5 | 1.578 | 1.536 | 38.0 | 19.9 | 69 W | 24* | 58* |
| 8 9 | 18 17.86 | + 9 46.4 | 1.916 | 2.673 | 17.2 | 19.8 | 129 E | 55 | 54 | 6 10 | 0 27.10 | + 4 32.0 | 1.508 | 1.524 | 39.1 | 19.9 | 71 W | 28* | 57* |
| 8 14 | 18 15.55 | + 9 14.9 | 1.946 | 2.662 | 18.1 | 19.8 | 125 E | 54 | 55 | 6 20 | 0 51.85 | + 7 51.6 | 1.442 | 1.516 | 40.1 | 19.8 | 74 W | 33* | 55* |
| 8 19 | 18 13.92 | + 8 40.2 | 1.980 | 2.651 | 19.0 | 19.9 | 121 E | 54 | 55 | 6 30 | 1 16.33 | +11 6.2 | 1.379 | 1.512 | 40.9 | 19.7 | 77 W | 38* | 53* |
| 8 24 | 18 12.98 | + 8 3.2 | 2.016 | 2.640 | 19.9 | 19.9 | 117 E | 53 | 56 | 7 10 | 1 40.45 | +14 12.8 | 1.319 | 1.512 | 41.4 | 19.6 | 80 W | 44* | 50* |
| 8 29 | 18 12.73 | + 7 24.6 | 2.055 | 2.628 | 20.6 | 20.0 | 114 E | 52 | 57 | 7 20 | 2 4.06 | +17 9.1 | 1.261 | 1.515 | 41.7 | 19.5 | 83 W | 50* | 47 |
| 9 8 | 18 14.25 | + 6 5.1 | 2.140 | 2.605 | 21.8 | 20.1 | 106 E | 51 | 58 | 7 30 | 2 26.91 | +19 52.7 | 1.205 | 1.523 | 41.7 | 19.4 | 86 W | 57* | 44 |
| 9 18 | 18 18.33 | + 4 46.3 | 2.229 | 2.581 | 22.6 | 20.2 | 99 E | 50* | 59 | 8 9 | 2 48.68 | +22 22.3 | 1.150 | 1.535 | 41.3 | 19.4 | 90 W | 63* | 42 |
| 9 28 | 18 24.77 | + 3 31.7 | 2.322 | 2.556 | 23.1 | 20.3 | 92 E | 48* | 60* | 8 14 | 2 59.03 | +23 31.6 | 1.122 | 1.542 | 41.0 | 19.3 | 92 W | 65* | 40 |
| 10 8 | 18 33.32 | + 2 23.9 | 2.415 | 2.530 | 23.2 | 20.3 | 85 E | 47* | 58* | 8 19 | 3 8.95 | +24 37.1 | 1.096 | 1.550 | 40.6 | 19.2 | 95 W | 68* | 39 |
| 10 18 | 18 43.74 | + 1 24.9 | 2.506 | 2.503 | 22.9 | 20.4 | 78 E | 45* | 54* | 8 24 | 3 18.34 | +25 38.7 | 1.069 | 1.559 | 40.1 | 19.2 | 97 W | 70* | 38 |
| 10 28 | 18 55.83 | + 0 36.0 | 2.593 | 2.476 | 22.5 | 20.4 | 72 E | 44* | 49* | 8 29 | 3 27.15 | +26 36.6 | 1.042 | 1.568 | 39.4 | 19.1 | 100 W | 72* | 37 |
| 11 7 | 19 9.35 | - 0 1.5 | 2.675 | 2.448 | 21.7 | 20.4 | 66 E | 43* | 43* | 9 3 | 3 35.28 | +27 30.8 | 1.016 | 1.579 | 38.6 | 19.1 | 102 W | 73 | 36 |
| 11 17 | 19 24.13 | + 0 27.2 | 2.751 | 2.419 | 20.8 | 20.4 | 60 E | 41* | 37* | 9 8 | 3 42.65 | +28 21.3 | 0.991 | 1.590 | 37.6 | 19.0 | 105 W | 73 | 36 |
| 11 27 | 19 40.00 | + 0 40.3 | 2.820 | 2.389 | 19.7 | 20.4 | 55 E | 39* | 30* | 9 13 | 3 49.17 | +29 8.1 | 0.965 | 1.602 | 36.5 | 18.9 | 109 W | 74 | 35 |
| 12 7 | 19 56.81 | + 0 40.8 | 2.881 | 2.359 | 18.5 | 20.4 | 49 E | 37* | 24* | 9 18 | 3 54.71 | +29 51.3 | 0.941 | 1.615 | 35.2 | 18.9 | 112 W | 75 | 34 |
| 12 17 | 20 14.43 | - 0 28.6 | 2.933 | 2.328 | 17.1 | 20.4 | 44 E | 35* | 17* | 9 23 | 3 59.17 | +30 30.6 | 0.917 | 1.628 | 33.7 | 18.8 | 116 W | 76 | 33 |
| 12 27 | 20 32.74 | - 0 3.9 | 2.975 | 2.297 | 15.6 | 20.3 | 39 E | 32* | 11* | 9 28 | 4 2.48 | +31 6.0 | 0.895 | 1.642 | 32.0 | 18.7 | 120 W | 76 | 33 |
| 1 6 | 20 51.62 | + 0 32.8 | 3.009 | 2.265 | 14.1 | 20.3 | 34 E | 28* | 6* | 10 3 | 4 4.55 | +31 37.1 | 0.874 | 1.657 | 30.0 | 18.6 | 124 W | 77 | 32 |
| 1 16 | 21 11.02 | + 1 21.1 | 3.033 | 2.233 | 12.6 | 20.2 | 30 E | 24* | 1* | 10 8 | 4 5.32 | +32 3.5 | 0.855 | 1.672 | 27.9 | 18.5 | 128 W | 77 | 32 |
| 10 13 | 4 4.73 | +32 24.6 | 0.839 | 1.687 | 25.5 | 18.4 | 133 W | 77 | 32 | 10 18 | 4 2.80 | +32 39.6 | 0.825 | 1.703 | 22.9 | 18.3 | 138 W | 78 | 31 |
| 10 23 | 3 59.60 | +32 47.8 | 0.814 | 1.719 | 20.1 | 18.2 | 144 W | 78 | 31 | 10 23 | 3 55.26 | +32 48.5 | 0.808 | 1.736 | 17.2 | 18.1 | 149 W | 78 | 31 |
| 11 2 | 3 50.01 | +32 41.2 | 0.805 | 1.753 | 14.2 | 18.1 | 154 W | 78 | 31 | 11 2 | 3 50.01 | +32 41.2 | 0.805 | 1.753 | 14.2 | 18.1 | 149 W | 78 | 31 |
| 11 7 | 3 44.09 | +32 25.7 | 0.808 | 1.771 | 11.3 | 18.0 | 160 W | 77 | 32 | 11 7 | 3 44.09 | +32 25.7 | 0.808 | 1.771 | 11.3 | 18.0 | 160 W | 77 | 32 |
| 11 12 | 3 37.80 | +32 2.5 | 0.815 | 1.788 | 8.6 | 17.9 | 164 W | 77 | 32 | 11 12 | 3 37.80 | +32 2.5 | 0.815 | 1.788 | 8.6 | 17.9 | 164 W | 77 | 32 |
| 11 17 | 3 31.48 | +31 32.2 | 0.828 | 1.806 | 6.8 | 17.9 | 167 W | 77 | 32 | 11 17 | 3 31.48 | +31 32.2 | 0.828 | 1.806 | 6.8 | 17.9 | 167 W | 77 | 32 |
| 11 22 | 3 25.46 | +30 56.4 | 0.847 | 1.824 | 6.6 | 17.9 | 168 E | 76 | 33 | 11 22 | 3 25.46 | +30 56.4 | 0.847 | 1.824 | 6.6 | 17.9 | 168 E | 76 | 33 |
| 12 2 | 3 20.02 | +30 16.9 | 0.871 | 1.843 | 7.9 | 18.1 | 165 E | 75 | 34 | 12 2 | 3 20.02 | +30 16.9 | 0.871 | 1.843 | 7.9 | 18.1 | 165 E | 75 | 34 |
| 12 7 | 3 15.38 | +29 35.4 | 0.901 | 1.861 | 10.0 | 18.3 | 161 E | 75 | 34 | 12 7 | 3 15.38 | +29 35.4 | 0.901 | 1.861 | 10.0 | 18.3 | 161 E | 75 | 34 |
| 12 12 | 3 11.67 | +28 53.9 | 0.937 | 1.880 | 12.3 | 18.5 | 156 E | 74 | 35 | 12 12 | 3 11.67 | +28 53.9 | 0.937 | 1.880 | 12.3 | 18.5 | 156 E | 74 | 35 |
| 12 17 | 3 7.37 | +27 36.3 | 1.023 | 1.917 | 16.8 | 18.9 | 146 E | 73 | 36 | 12 17 | 3 7.37 | +27 36.3 | 1.023 | 1.917 | 16.8 | 18.9 | 146 E | 73 | 36 |
| 12 22 | 3 6.82 | +27 2.5 | 1.073 | 1.936 | 18.8 | 19.0 | 141 E | 72 | 37 | 12 22 | 3 6.82 | +27 2.5 | 1.073 | 1.936 | 18.8 | 19.0 | 141 E | 72 | 37 |
| 12 27 | 3 7.28 | +26 32.9 | 1.127 | 1.955 | 20.6 | 19.2 | 136 E | 72 | 37 | 12 27 | 3 7.28 | +26 32.9 | 1.127 | 1.955 | 20.6 | 19.2 | 136 E | 72 | 37 |
| 1 1 | 3 8.69 | +26 7.7 | 1.185 | 1.974 | 22.1 | 19.4 | 131 E | 71 | 38 | 1 1 | 3 8.69 | +26 7.7 | 1.185 | 1.974 | 22.1 | 19.4 | 131 E | 71 | 38 |
| 1 6 | 3 10.97 | +25 47.0 | 1.246 | 1.993 | 23.4 | 19.6 | 126 E | 71 | 38 | 1 6 | 3 10.97 | +25 47.0 | 1.246 | 1.993 | 23.4 | 19.6 | 126 E | 71 | 38 |
| 1 11 | 3 14.05 | +25 30.5 | 1.310 | 2.012 | 24.5 | 19.7 | 122 E | 71 | 38 | 1 11 | 3 14.05 | +25 30.5 | 1.310 | 2.012 | 24.5 | 19.7 | 122 E | 71 | 38 |
| 1 16 | 3 17.86 | +25 17.9 | 1.377 | 2.031 | 25.4 | 19.9 | 118 E | 70 | 39 | 1 16 | 3 17.86 | +25 17.9 | 1.377 | 2.031 | 25.4 | 19.9 | 118 E | 70 | 39 |
| 317699 2003 PP₉ | | | | | | | | | | 317699 2003 PP₉ | | | | | | | | | |
| 12 23 | 16 59.41 | -12 59.1 | 2.448 | 1.545 | 11.5 | 21.4 | 18 W | 12* | 2* | 12 23 | 16 59.41 | -12 59.1 | 2.448 | 1.545 | 11.5 | 21.4 | 18 W | 12* | 2* |
| 1 2 | 17 29.94 | -13 23.6 | 2.406 | 1.526 | 13.1 | 21.4 | 21 W | 13* | 6* | 1 2 | 17 29.94 | -13 23.6 | 2.406 | 1.526 | 13.1 | 21.4 | 21 W | 13* | 6* |
| 1 12 | 18 0.92 | -13 28.9 | 2.365 | 1.508 | 14.7 | 21.4 | 23 W | 14* | 9* | 1 12 | 18 0.92 | -13 28.9 | 2.365 | 1.508 | 14.7 | 21.4 | 23 W | 14* | 9* |
| 1 22 | 18 32.19 | -13 14.6 | 2.324 | 1.493 | 16.3 | 21.4 | 25 W | 15* | 13* | 1 22 | 18 32.19 | -13 14.6 | 2.324 | 1.493 | 16.3 | 21.4 | 25 W | 15* | 13* |
| 2 1 | 19 3.57 | -12 40.7 | 2.284 | 1.479 | 17.8 | 21.4 | 27 W | 15* | 16* | 2 1 | 19 3.57 | -12 40.7 | 2.284 | 1.479 | 17.8 | 21.4 | 27 W | 15* | 16* |
| 2 11 | 19 34.86 | -11 48.2 | 2.245 | 1.468 | 19.3 | 21.4 | 29 W | 15* | 19* | 2 11 | 19 34.86 | -11 48.2 | 2.245 | 1.468 | 19.3 | 21.4 | 29 W | 15* | 19* |
| 2 21 | 20 5.92 | -10 38.6 | 2.208 | 1.459 | 20.7 | 21.4 | 31 W | 15* | 22* | 2 21 | 20 5.92 | -10 38.6 | 2.208 | 1.459 | 20.7 | 21.4 | 31 W | 15* | 22* |
| 3 2 | 20 36.62 | - 9 14.0 | 2.171 | 1.452 | 22.2 | 21.4 | 34 W | 15* | 25* | 3 2 | 20 36.62 | - 9 14.0 | 2.171 | 1.452 | 22.2 | 21.4 | 34 W | 15* | 25* |
| 3 12 | 21 6.84 | - 7 37.0 | 2.135 | 1.448 | 23.6 | 21.4 | 36 W | 15* | 28* | 3 12 | 21 6.84 | - 7 37.0 | 2.135 | 1.448 | 23.6 | 21.4 | 36 W | 15* | 28* |
| 3 22 | 21 36.57 | - 5 50.5 | 2.100 | 1.447 | 24.9 | 21.4 | 38 W | 15* | 30* | 3 22 | 21 36.57 | - 5 50.5 | 2.100 | 1.447 | 24.9 | 21.4 | 38 W | 15* | 30* |
| 4 1 | 22 5.75 | - 3 57.6 | 2.064 | 1.448 | 26.3 | 21.4 | 40 W | 15* | 33* | 4 1 | 22 5.75 | - 3 57.6 | 2.064 | 1.448 | 26.3 | 21.4 | 40 W | 15* | 33* |
| 4 11 | 22 34.39 | - 2 1.4 | 2.029 | 1.452 | 27.6 | 21.4 | 42 W | 15* | 35* | 4 11 | 22 34.39 | - 2 1.4 | 2.029 | 1.452 | 27.6 | 21.4 | 42 W | 15* | 35* |
| 4 21 | 23 2.53 | - 0 4.9 | 1.992 | 1.459 | 28.9 | 21.4 | 45 W | 15* | 37* | 4 21 | 23 2.53 | - 0 4.9 | 1.992 | 1.459 | 28.9 | 21.4 | 45 W | 15* | 37* |
| 5 1 | 23 30.17 | + 1 49.0 | 1.955 | 1.468 | 30.2 | 21.4 | 47 W | 16* | 40* | 5 1 | 23 30.17 | + 1 49.0 | 1.955 | 1.468 | 30.2 | 21.4 | 47 W | 16* | 40* |
| 5 11 | 23 57.34 | + 3 37.4 | 1.915 | 1.479 | 31.4 | 21.4 | 50 W | 17* | 42* | 5 11 | 23 57.34 | + 3 37.4 | 1.915 | 1.479 | 31.4 | 21.4 | 50 W | 17* | 42* |
| 5 21 | 0 24.06 | + 5 17.9 | 1.874 | 1.493 | 32.6 | 21.4 | 53 W | 18* | 44* | 5 21 | 0 24.06 | + 5 17.9 | 1.874 | 1.493 | 32.6 | 21.4 | 53 W | 18* | 44* |
| 5 31 | 0 50.32 | + 6 47.9 | 1.830 | 1.508 | 33.6 | 21.4 | 56 W | 20* | 46* | 5 31 | 0 50.32 | + 6 47.9 | 1.830 | 1.508 | 33.6 | 21.4 | 56 W | 20* | 46* |
| 6 10 | 1 16.07 | + 8 5.3 | 1.783 | 1.526 | 34.6 | 21.4 | 59 W | 22* | 48* | 6 10 | 1 16.07 | + 8 5.3 | 1.783 | 1.526 | 34.6 | 21.4 | 59 W | 22* | 48* |
| 6 20 | 1 41.29 | + 9 8.1 | 1.733 | 1.545 | 35.5 | 21.4 | 62 W | 25* | 49* | 6 20 | 1 41.29 | + 9 8.1 | 1.733 | 1.545 | 35.5 | 21.4 | 62 W | 25* | 49* |
| 6 30 | 2 5.83 | + 9 54.4 | 1.680 | 1.565 | 36.3 | 21.4 | 66 W | 29* | 50* | 6 30 | 2 5.83 | + 9 54.4 | 1.680 | 1.565 | 36.3 | 21.4 | 66 W | 29* | 50* |
| 7 10 | 2 29.59 | +10 22.8 | 1.624 | 1.587 | 36.9 | 21.4 | 70 W | 33* | 51* | 7 10 | 2 29.59 | +10 22.8 | | | | | | | |

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

| 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° | 19/20 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° |
|--|-----------------|-----------------|----------|-------|---------|------|--------|-----|------|--|-----------------|-----------------|----------|-------|---------|------|--------|-----|------|
| 317699 2003 PP₉ (continuation) | | | | | | | | | | 378124 2006 VT₂ (continuation) | | | | | | | | | |
| 11 12 | 4 21.77 | -8 36.1 | 0.968 | 1.883 | 16.1 | 20.0 | 148 W | 36 | 73 | 2 6 | 22 4.87 | -28 25.2 | 1.829 | 0.931 | 18.0 | 20.2 | 17 E | - | 10* |
| 11 17 | 4 15.59 | -9 16.2 | 0.974 | 1.894 | 15.3 | 20.0 | 150 W | 36 | 73 | 2 11 | 22 26.79 | -27 0.2 | 1.896 | 0.999 | 17.2 | 20.4 | 17 E | - | 10* |
| 11 22 | 4 9.20 | -9 44.6 | 0.985 | 1.905 | 15.1 | 20.0 | 150 W | 35 | 74 | 2 16 | 22 46.69 | -25 29.9 | 1.963 | 1.065 | 16.4 | 20.6 | 18 E | - | 11* |
| 11 27 | 4 2.88 | -10 0.5 | 1.002 | 1.915 | 15.5 | 20.1 | 149 E | 35 | 74 | 2 21 | 23 4.87 | -23 57.2 | 2.028 | 1.127 | 15.5 | 20.7 | 18 E | - | 11* |
| 12 7 | 3 51.29 | -9 55.9 | 1.050 | 1.936 | 17.4 | 20.3 | 144 E | 35 | 74 | 2 26 | 23 21.59 | -22 23.8 | 2.092 | 1.187 | 14.6 | 20.9 | 18 E | - | 10* |
| 12 17 | 3 42.31 | -9 7.5 | 1.118 | 1.955 | 20.2 | 20.5 | 137 E | 36 | 73 | 3 2 | 23 37.05 | -20 51.3 | 2.154 | 1.245 | 13.8 | 21.0 | 17 E | - | 10* |
| 12 27 | 3 36.82 | -7 45.2 | 1.202 | 1.973 | 22.9 | 20.8 | 129 E | 37 | 72 | 3 7 | 23 51.44 | -19 20.5 | 2.214 | 1.300 | 13.1 | 21.2 | 17 E | - | 9* |
| 1 6 | 3 35.02 | -6 0.1 | 1.300 | 1.991 | 25.1 | 21.0 | 121 E | 39 | 70 | 3 12 | 0 4.91 | -17 52.1 | 2.271 | 1.352 | 12.4 | 21.3 | 17 E | - | 8* |
| 1 16 | 3 36.72 | -4 1.6 | 1.408 | 2.007 | 26.8 | 21.3 | 113 E | 41 | 68 | 3 17 | 0 17.61 | -16 26.2 | 2.325 | 1.403 | 11.8 | 21.4 | 17 E | - | 7* |
| | | | | | | | | | | 3 22 | 0 29.64 | -15 3.3 | 2.376 | 1.451 | 11.4 | 21.5 | 17 E | - | 6* |
| 109346 2001 QK₁₅₀ | | | | | | | | | | 211078 2002 EG₃ | | | | | | | | | |
| 12 23 | 16 59.60 | -19 24.1 | 3.815 | 2.877 | 5.1 | 21.4 | 15 W | 7* | 5* | 12 23 | 17 0.24 | -8 17.8 | 2.565 | 1.687 | 12.2 | 20.7 | 21 W | 15* | - |
| 1 2 | 17 16.00 | -19 51.1 | 3.739 | 2.846 | 7.2 | 21.5 | 21 W | 10* | 11* | 1 2 | 17 28.99 | -8 23.5 | 2.528 | 1.675 | 13.6 | 20.7 | 24 W | 17* | 4* |
| 1 12 | 17 32.52 | -20 11.3 | 3.649 | 2.814 | 9.3 | 21.5 | 28 W | 12* | 13* | 1 12 | 17 57.89 | -8 12.6 | 2.491 | 1.665 | 15.1 | 20.7 | 26 W | 19* | 8* |
| 1 22 | 17 49.09 | -20 24.7 | 3.545 | 2.781 | 11.4 | 21.5 | 34 W | 14* | 25* | 1 22 | 18 26.76 | -7 45.3 | 2.455 | 1.659 | 16.5 | 20.7 | 29 W | 20* | 12* |
| 2 1 | 18 5.62 | -20 31.3 | 3.428 | 2.748 | 13.3 | 21.4 | 40 W | 16* | 32* | 2 1 | 18 55.42 | -7 2.1 | 2.421 | 1.655 | 17.8 | 20.7 | 31 W | 21* | 16* |
| 2 11 | 18 22.01 | -20 31.4 | 3.299 | 2.713 | 15.3 | 21.4 | 46 W | 17* | 39* | 2 11 | 19 23.68 | -6 4.5 | 2.387 | 1.655 | 19.1 | 20.8 | 33 W | 21* | 19* |
| 2 21 | 18 38.16 | -20 25.3 | 3.160 | 2.678 | 17.1 | 21.3 | 53 W | 18* | 46* | 2 21 | 19 51.39 | -4 54.2 | 2.354 | 1.657 | 20.5 | 20.8 | 36 W | 22* | 23* |
| 3 2 | 18 53.97 | -20 13.8 | 3.012 | 2.642 | 18.8 | 21.3 | 59 W | 19* | 52* | 3 2 | 20 18.44 | -3 33.4 | 2.321 | 1.662 | 21.7 | 20.8 | 38 W | 22* | 27* |
| 3 12 | 19 9.31 | -19 57.5 | 2.857 | 2.605 | 20.3 | 21.2 | 65 W | 19* | 59* | 3 12 | 20 44.73 | -2 4.5 | 2.287 | 1.671 | 23.0 | 20.8 | 41 W | 23* | 30* |
| 3 22 | 19 24.09 | -19 37.4 | 2.697 | 2.567 | 21.6 | 21.1 | 72 W | 20* | 65* | 3 22 | 21 10.20 | -0 30.2 | 2.251 | 1.682 | 24.3 | 20.8 | 44 W | 23* | 33* |
| 4 1 | 19 38.15 | -19 14.9 | 2.533 | 2.528 | 22.8 | 20.9 | 78 W | 21* | 72* | 4 1 | 21 34.81 | +1 7.1 | 2.213 | 1.695 | 25.5 | 20.8 | 47 W | 24* | 37* |
| 4 11 | 19 51.35 | -18 51.4 | 2.366 | 2.489 | 23.7 | 20.8 | 85 W | 22* | 78* | 4 11 | 21 58.52 | +2 44.6 | 2.172 | 1.712 | 26.7 | 20.9 | 50 W | 25* | 40* |
| 4 21 | 20 3.53 | -18 28.6 | 2.200 | 2.449 | 24.2 | 20.6 | 92 W | 23* | 82* | 4 21 | 22 21.34 | +4 20.0 | 2.127 | 1.730 | 27.8 | 20.9 | 54 W | 26* | 43* |
| 5 1 | 20 14.47 | -18 8.6 | 2.034 | 2.408 | 24.4 | 20.4 | 99 W | 24* | 82 | 5 1 | 22 43.23 | +5 51.1 | 2.078 | 1.751 | 28.9 | 20.9 | 57 W | 27* | 46* |
| 5 11 | 20 23.95 | -17 54.0 | 1.873 | 2.367 | 24.2 | 20.2 | 106 W | 25* | 82 | 5 11 | 23 4.16 | +7 15.4 | 2.024 | 1.774 | 29.9 | 20.9 | 61 W | 28* | 48* |
| 5 21 | 20 31.67 | -17 47.4 | 1.718 | 2.325 | 23.4 | 19.9 | 114 W | 26* | 82 | 5 21 | 23 24.09 | +8 30.8 | 1.964 | 1.798 | 30.8 | 20.9 | 65 W | 31* | 50* |
| 5 31 | 20 37.29 | -17 51.8 | 1.570 | 2.283 | 22.0 | 19.6 | 123 W | 27* | 82 | 5 31 | 23 42.95 | +9 35.2 | 1.900 | 1.824 | 31.5 | 20.8 | 70 W | 33* | 52* |
| 6 10 | 20 40.46 | -18 10.4 | 1.434 | 2.240 | 19.8 | 19.3 | 132 W | 27 | 82 | 6 10 | 20 0.62 | +10 26.1 | 1.830 | 1.852 | 32.0 | 20.8 | 75 W | 37* | 53* |
| 6 20 | 20 40.81 | -18 45.7 | 1.311 | 2.197 | 16.9 | 19.0 | 141 W | 26 | 83 | 6 20 | 0 16.96 | +11 1.4 | 1.756 | 1.881 | 32.2 | 20.8 | 81 W | 41* | 53* |
| 6 30 | 20 38.06 | -19 39.1 | 1.205 | 2.154 | 13.0 | 18.6 | 152 W | 25 | 84 | 6 30 | 0 31.76 | +11 18.3 | 1.678 | 1.910 | 32.1 | 20.7 | 87 W | 45* | 53 |
| 7 10 | 20 32.21 | -20 49.3 | 1.119 | 2.111 | 8.3 | 18.2 | 163 W | 24 | 85 | 7 10 | 0 44.78 | +11 13.9 | 1.597 | 1.941 | 31.5 | 20.6 | 93 W | 49* | 53 |
| 7 15 | 20 28.22 | -21 29.5 | 1.084 | 2.089 | 5.6 | 18.0 | 168 W | 24 | 85 | 7 20 | 0 55.72 | +10 45.2 | 1.516 | 1.972 | 30.4 | 20.5 | 100 W | 53* | 53 |
| 7 20 | 20 23.63 | -22 11.8 | 1.055 | 2.068 | 3.0 | 17.8 | 174 W | 23 | 86 | 7 30 | 1 4.21 | +9 48.7 | 1.436 | 2.004 | 28.7 | 20.4 | 108 W | 54* | 54 |
| 7 25 | 20 18.61 | -22 55.3 | 1.032 | 2.046 | 1.6 | 17.6 | 177 W | 22 | 87 | 8 9 | 1 9.92 | +8 21.4 | 1.361 | 2.036 | 26.3 | 20.2 | 117 W | 53 | 56 |
| 7 30 | 20 13.33 | -23 38.6 | 1.014 | 2.025 | 3.8 | 17.7 | 172 E | 21 | 88 | 8 19 | 1 12.52 | +6 21.6 | 1.295 | 2.069 | 23.0 | 20.0 | 127 W | 51 | 58 |
| 8 4 | 20 8.01 | -24 20.6 | 1.003 | 2.004 | 6.8 | 17.8 | 167 E | 21 | 88 | 8 29 | 1 11.84 | +3 49.5 | 1.242 | 2.101 | 18.9 | 19.8 | 138 W | 49 | 60 |
| 8 9 | 20 2.85 | -25 0.2 | 0.998 | 1.983 | 9.8 | 17.9 | 161 E | 20 | 89 | 9 3 | 1 10.30 | +2 23.0 | 1.221 | 2.118 | 16.5 | 19.8 | 143 W | 47 | 62 |
| 8 14 | 19 58.09 | -25 36.4 | 0.997 | 1.961 | 12.8 | 18.0 | 155 E | 19 | 90 | 9 8 | 1 8.02 | +0 50.8 | 1.206 | 2.134 | 14.1 | 19.7 | 149 W | 46 | 63 |
| 8 19 | 19 53.93 | -26 8.6 | 1.002 | 1.941 | 15.6 | 18.1 | 149 E | 19 | 90 | 9 13 | 1 5.06 | -0 45.3 | 1.197 | 2.150 | 11.5 | 19.6 | 155 W | 44 | 65 |
| 8 24 | 19 50.56 | -26 36.2 | 1.012 | 1.920 | 18.4 | 18.2 | 143 E | 18 | 89 | 9 18 | 1 1.52 | -2 23.5 | 1.194 | 2.167 | 9.0 | 19.5 | 160 W | 43 | 66 |
| 8 29 | 19 48.14 | -26 59.2 | 1.026 | 1.899 | 20.9 | 18.3 | 138 E | 18 | 89 | 9 23 | 0 57.55 | -4 1.5 | 1.198 | 2.183 | 6.8 | 19.4 | 165 W | 41 | 68 |
| 9 8 | 19 46.45 | -27 31.0 | 1.063 | 1.859 | 25.4 | 18.4 | 128 E | 17 | 88 | 9 28 | 0 53.31 | -5 36.9 | 1.208 | 2.199 | 5.2 | 19.4 | 168 W | 39 | 70 |
| 9 18 | 19 49.21 | -27 44.6 | 1.110 | 1.820 | 29.0 | 18.6 | 119 E | 17 | 88 | 10 3 | 0 48.96 | -7 7.5 | 1.226 | 2.215 | 5.2 | 19.4 | 169 W | 38 | 71 |
| 9 28 | 19 56.35 | -27 40.7 | 1.165 | 1.783 | 31.8 | 18.7 | 110 E | 17 | 88 | 10 8 | 0 44.66 | -8 31.4 | 1.250 | 2.231 | 6.5 | 19.5 | 165 E | 36 | 73 |
| 10 8 | 20 7.44 | -27 19.8 | 1.223 | 1.747 | 33.8 | 18.9 | 103 E | 18 | 89 | 10 13 | 0 40.56 | -9 47.1 | 1.281 | 2.247 | 8.5 | 19.7 | 161 E | 35 | 74 |
| 10 18 | 20 21.96 | -26 41.5 | 1.283 | 1.714 | 35.3 | 19.0 | 97 E | 18 | 89 | 10 18 | 0 36.82 | -10 53.3 | 1.319 | 2.263 | 10.6 | 19.8 | 155 E | 34 | 75 |
| 10 28 | 20 39.36 | -25 45.1 | 1.344 | 1.682 | 36.2 | 19.0 | 91 E | 19 | 85* | 10 28 | 0 30.86 | -12 35.5 | 1.412 | 2.295 | 14.6 | 20.2 | 144 E | 32 | 77 |
| 11 7 | 20 59.08 | -24 30.1 | 1.404 | 1.654 | 36.7 | 19.1 | 86 E | 20 | 78* | 11 7 | 0 27.39 | -13 37.9 | 1.526 | 2.326 | 17.9 | 20.5 | 134 E | 31 | 78 |
| 11 17 | 21 20.63 | -22 56.0 | 1.464 | 1.629 | 36.8 | 19.2 | 81 E | 22 | 72* | 11 17 | 0 26.60 | -14 4.8 | 1.655 | 2.356 | 20.3 | 20.8 | 124 E | 31 | 78 |
| 11 27 | 21 43.60 | -21 3.0 | 1.523 | 1.607 | 36.6 | 19.2 | 76 E | 24 | 66* | 11 27 | 0 28.44 | -14 2.1 | 1.797 | 2.386 | 22.0 | 21.0 | 115 E | 31 | 78 |
| 12 7 | 22 7.58 | -18 51.8 | 1.582 | 1.589 | 36.2 | 19.3 | 72 E | 26 | 60* | 12 7 | 0 32.62 | -13 36.0 | 1.947 | 2.415 | 23.0 | 21.3 | 106 E | 31 | 78 |
| 12 17 | 22 32.30 | -16 23.8 | 1.641 | 1.575 | 35.6 | 19.3 | 69 E | 29* | 55* | 12 17 | 0 38.85 | -12 51.9 | 2.102 | 2.444 | 23.5 | 21.5 | 98 E | 32 | 76* |
| 1 6 | 23 23.10 | -10 46.4 | 1.760 | 1.560 | 33.8 | 19.4 | 62 E | 33* | 45* | | | | | | | | | | |
| 1 16 | 23 48.90 | -7 42.8 | 1.822 | 1.558 | 32.7 | 19.4 | 59 E | 35* | 40* | | | | | | | | | | |
| 378124 2006 VT₂ | | | | | | | | | | 8567 1996 HW₁ | | | | | | | | | |
| 12 23 | 17 0.04 | -17 7.0 | 1.172 | 0.352 | 50.0 | 18.0 | 16 W | 8* | 4* | 12 23 | 17 1.09 | -17 23.6 | 2.792 | 1.864 | 8.2 | 19.5 | 16 W | 8* | 4* |
| 12 25 | 17 14.57 | -19 17.0 | 1.214 | 0.350 | 42.2 | 17.9 | 14 W | 6* | 3* | 1 2 | 17 26.84 | -17 46.3 | 2.703 | 1.805 | 10.4 | 19.4 | 19 W | 10* | 8* |
| 12 27 | 17 29.65 | -21 19.9 | 1.254 | 0.354 | 34.8 | | | | | | | | | | | | | | |

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

| 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° | 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° |
|------------------------------------|-----------------|-----------------|----------|-------|---------|------|--------|-----|------|------------------------------------|-----------------|-----------------|----------|-------|---------|------|--------|-----|------|
| 8567 1996 HW₁ | | | | | | | | | | 382492 2001 OQ₁₆ | | | | | | | | | |
| <i>(continuation)</i> | | | | | | | | | | | | | | | | | | | |
| 6 20 | 3 9.99 | +15 53.9 | 1.737 | 1.151 | 34.1 | 18.2 | 39 W | 14* | 30* | 12 23 | 17 3.35 | -21 15.8 | 2.928 | 1.987 | 6.8 | 21.3 | 14 W | 5* | 5* |
| 6 30 | 3 46.98 | +17 14.3 | 1.756 | 1.177 | 33.8 | 18.3 | 40 W | 16* | 30* | 1 2 | 17 28.24 | -22 22.1 | 2.855 | 1.944 | 9.0 | 21.3 | 18 W | 6* | 10* |
| 7 10 | 4 22.72 | +18 5.3 | 1.776 | 1.212 | 33.5 | 18.4 | 41 W | 19* | 30* | 1 12 | 17 54.12 | -23 15.8 | 2.776 | 1.903 | 11.3 | 21.3 | 22 W | 7* | 15* |
| 7 20 | 4 56.91 | +18 28.5 | 1.795 | 1.253 | 33.3 | 18.5 | 43 W | 22* | 30* | 1 22 | 18 20.97 | -23 55.4 | 2.692 | 1.862 | 13.6 | 21.3 | 26 W | 7* | 19* |
| 7 30 | 5 29.30 | +18 26.4 | 1.812 | 1.300 | 33.2 | 18.6 | 45 W | 25* | 31* | 2 1 | 18 48.72 | -24 19.9 | 2.605 | 1.822 | 15.8 | 21.2 | 30 W | 7* | 24* |
| 8 9 | 5 59.69 | +18 2.4 | 1.824 | 1.352 | 33.2 | 18.7 | 47 W | 29* | 31* | 2 11 | 19 17.25 | -24 28.2 | 2.515 | 1.784 | 18.0 | 21.2 | 34 W | 7* | 28* |
| 8 19 | 6 28.01 | +17 20.1 | 1.831 | 1.407 | 33.3 | 18.7 | 50 W | 33* | 32* | 2 21 | 19 46.46 | -24 19.5 | 2.425 | 1.748 | 20.2 | 21.1 | 38 W | 7* | 31* |
| 8 29 | 6 54.17 | +16 23.1 | 1.830 | 1.465 | 33.4 | 18.8 | 53 W | 37* | 34* | 3 2 | 20 16.23 | -23 53.4 | 2.335 | 1.713 | 22.2 | 21.1 | 41 W | 6* | 35* |
| 9 8 | 7 18.15 | +15 14.9 | 1.821 | 1.524 | 33.6 | 18.9 | 57 W | 40* | 35* | 3 12 | 20 46.39 | -23 10.1 | 2.246 | 1.681 | 24.3 | 21.0 | 44 W | 6* | 38* |
| 9 18 | 7 39.96 | +13 58.7 | 1.803 | 1.584 | 33.7 | 19.0 | 61 W | 44* | 37* | 3 22 | 21 16.81 | -22 9.8 | 2.160 | 1.651 | 26.2 | 21.0 | 47 W | 5* | 41* |
| 9 28 | 7 59.53 | +12 37.6 | 1.776 | 1.645 | 33.8 | 19.0 | 66 W | 48* | 40* | 4 1 | 21 47.32 | -20 53.7 | 2.078 | 1.624 | 28.0 | 20.9 | 50 W | 5* | 43* |
| 10 8 | 8 16.84 | +11 14.4 | 1.740 | 1.705 | 33.7 | 19.1 | 71 W | 51* | 43* | 4 11 | 22 17.77 | -19 23.3 | 2.000 | 1.601 | 29.8 | 20.8 | 52 W | 5* | 46* |
| 10 18 | 8 31.78 | +9 51.9 | 1.695 | 1.765 | 33.4 | 19.1 | 77 W | 53* | 46* | 4 21 | 22 48.02 | -17 40.8 | 1.927 | 1.581 | 31.4 | 20.8 | 55 W | 4* | 49* |
| 10 28 | 8 44.18 | +8 33.0 | 1.643 | 1.824 | 32.8 | 19.1 | 84 W | 53* | 49* | 5 1 | 23 17.93 | -15 48.8 | 1.859 | 1.565 | 32.8 | 20.7 | 57 W | 5* | 51* |
| 11 7 | 8 53.85 | +7 20.7 | 1.584 | 1.882 | 31.8 | 19.0 | 91 W | 52* | 53* | 5 11 | 23 47.37 | -13 50.2 | 1.796 | 1.553 | 34.1 | 20.6 | 60 W | 5* | 53* |
| 11 17 | 9 05.0 | +6 18.3 | 1.522 | 1.940 | 30.2 | 19.0 | 99 W | 51 | 56* | 5 21 | 0 16.22 | -11 48.2 | 1.738 | 1.546 | 35.3 | 20.6 | 62 W | 7* | 56* |
| 11 27 | 9 3.82 | +5 29.4 | 1.459 | 1.996 | 28.1 | 18.9 | 108 W | 50 | 58* | 5 31 | 0 44.36 | -9 46.3 | 1.684 | 1.543 | 36.3 | 20.6 | 64 W | 9* | 58* |
| 12 7 | 9 3.52 | +4 58.0 | 1.398 | 2.050 | 25.2 | 18.7 | 118 W | 50 | 59 | 6 10 | 1 11.65 | -7 47.6 | 1.634 | 1.544 | 37.1 | 20.5 | 67 W | 11* | 60* |
| 12 17 | 8 59.43 | +4 47.6 | 1.346 | 2.103 | 21.5 | 18.6 | 128 W | 50 | 59 | 6 20 | 1 37.99 | -5 54.8 | 1.586 | 1.550 | 37.8 | 20.5 | 69 W | 15* | 62* |
| 12 27 | 8 51.66 | +5 1.3 | 1.308 | 2.155 | 17.1 | 18.5 | 140 W | 50 | 59 | 6 30 | 2 3.20 | -4 10.7 | 1.540 | 1.560 | 38.3 | 20.4 | 72 W | 19* | 63* |
| 1 6 | 8 40.82 | +5 39.3 | 1.289 | 2.205 | 12.1 | 18.3 | 152 W | 51 | 58 | 7 10 | 2 27.12 | -2 37.0 | 1.494 | 1.575 | 38.6 | 20.4 | 75 W | 24* | 63* |
| 1 16 | 8 28.01 | +6 38.8 | 1.294 | 2.254 | 7.3 | 18.2 | 163 W | 52 | 57 | 7 20 | 2 49.59 | -1 15.0 | 1.448 | 1.593 | 38.7 | 20.4 | 78 W | 29* | 64* |
| 334947 2004 CB₂₇ | | | | | | | | | | 306522 1999 XZ₁₄ | | | | | | | | | |
| 12 23 | 17 1.31 | -27 19.5 | 3.026 | 2.088 | 6.7 | 21.2 | 14 W | — | 8* | 12 23 | 17 3.70 | -17 2.9 | 3.325 | 2.390 | 6.2 | 20.8 | 15 W | 8* | 3* |
| 1 2 | 17 26.44 | -27 46.5 | 2.953 | 2.047 | 8.9 | 21.2 | 19 W | 2* | 12* | 1 2 | 17 22.90 | -18 4.7 | 3.251 | 2.354 | 8.3 | 20.8 | 20 W | 10* | 9* |
| 1 12 | 17 52.28 | -27 58.7 | 2.873 | 2.006 | 11.1 | 21.2 | 23 W | 3* | 17* | 1 12 | 17 42.57 | -18 58.9 | 3.166 | 2.317 | 10.5 | 20.8 | 25 W | 12* | 15* |
| 1 22 | 18 18.74 | -27 54.9 | 2.787 | 1.965 | 13.3 | 21.2 | 27 W | 4* | 21* | 1 22 | 18 2.68 | -19 45.6 | 3.070 | 2.280 | 12.7 | 20.8 | 31 W | 13* | 22* |
| 2 1 | 18 45.68 | -27 33.8 | 2.695 | 1.925 | 15.5 | 21.1 | 31 W | 5* | 25* | 2 1 | 18 23.18 | -20 24.9 | 2.963 | 2.242 | 15.0 | 20.7 | 36 W | 14* | 28* |
| 2 11 | 19 12.96 | -26 54.5 | 2.600 | 1.885 | 17.7 | 21.1 | 35 W | 6* | 29* | 2 11 | 18 44.04 | -20 57.1 | 2.848 | 2.203 | 17.2 | 20.7 | 41 W | 14* | 34* |
| 2 21 | 19 40.45 | -25 56.5 | 2.502 | 1.846 | 19.8 | 21.0 | 39 W | 7* | 33* | 2 21 | 19 5.24 | -21 22.9 | 2.725 | 2.165 | 19.3 | 20.6 | 46 W | 14* | 40* |
| 3 2 | 20 7.98 | -24 39.4 | 2.403 | 1.808 | 21.9 | 20.9 | 43 W | 7* | 37* | 3 2 | 19 26.73 | -21 42.9 | 2.596 | 2.126 | 21.4 | 20.6 | 52 W | 14* | 45* |
| 3 12 | 20 35.44 | -23 3.6 | 2.304 | 1.771 | 24.0 | 20.9 | 46 W | 7* | 40* | 3 12 | 19 48.52 | -21 58.3 | 2.462 | 2.087 | 23.4 | 20.5 | 57 W | 14* | 51* |
| 3 22 | 21 2.72 | -21 9.6 | 2.205 | 1.735 | 26.0 | 20.8 | 50 W | 8* | 44* | 3 22 | 20 10.60 | -22 10.2 | 2.325 | 2.048 | 25.3 | 20.4 | 62 W | 13* | 56* |
| 4 1 | 21 29.75 | -18 58.2 | 2.107 | 1.702 | 27.9 | 20.7 | 53 W | 9* | 47* | 4 1 | 20 32.98 | -22 20.0 | 2.186 | 2.009 | 27.1 | 20.2 | 66 W | 13* | 60* |
| 4 11 | 21 56.45 | -16 30.8 | 2.013 | 1.670 | 29.8 | 20.6 | 56 W | 10* | 50* | 4 11 | 20 55.68 | -22 29.7 | 2.047 | 1.970 | 28.8 | 20.1 | 71 W | 13* | 65* |
| 4 21 | 22 22.83 | -13 49.1 | 1.921 | 1.641 | 31.5 | 20.5 | 59 W | 11* | 53* | 5 1 | 21 18.75 | -22 40.9 | 1.909 | 1.932 | 30.3 | 19.9 | 76 W | 12* | 70* |
| 5 1 | 22 48.84 | -10 54.8 | 1.833 | 1.615 | 33.2 | 20.4 | 61 W | 13* | 55* | 5 1 | 21 42.22 | -22 56.2 | 1.774 | 1.894 | 31.7 | 19.8 | 81 W | 12* | 75* |
| 5 11 | 23 14.51 | -7 50.5 | 1.749 | 1.592 | 34.8 | 20.4 | 64 W | 15* | 57* | 5 11 | 22 6.14 | -23 17.7 | 1.643 | 1.857 | 32.8 | 19.6 | 85 W | 12* | 79* |
| 5 21 | 23 39.84 | -4 38.3 | 1.669 | 1.572 | 36.2 | 20.3 | 67 W | 18* | 59* | 5 21 | 22 30.57 | -23 48.2 | 1.519 | 1.821 | 33.8 | 19.4 | 90 W | 12* | 84* |
| 5 31 | 0 4.84 | +1 21.2 | 1.594 | 1.555 | 37.5 | 20.2 | 69 W | 21* | 59* | 5 31 | 22 55.50 | -24 30.2 | 1.401 | 1.786 | 34.5 | 19.2 | 94 W | 12* | 88* |
| 6 10 | 0 29.50 | +1 57.9 | 1.522 | 1.543 | 38.7 | 20.1 | 72 W | 26* | 59* | 6 10 | 23 20.91 | -25 26.1 | 1.293 | 1.753 | 35.0 | 19.0 | 98 W | 12* | 89 |
| 6 20 | 0 53.81 | +5 16.5 | 1.455 | 1.535 | 39.6 | 20.0 | 74 W | 30* | 57* | 6 20 | 23 46.74 | -26 38.1 | 1.194 | 1.721 | 35.3 | 18.8 | 102 W | 12* | 89 |
| 6 30 | 1 17.69 | +8 31.3 | 1.390 | 1.531 | 40.4 | 19.9 | 77 W | 36* | 55* | 6 25 | 23 59.73 | -27 20.5 | 1.148 | 1.706 | 35.3 | 18.7 | 104 W | 12* | 89 |
| 7 10 | 1 41.05 | +11 39.9 | 1.329 | 1.531 | 40.9 | 19.8 | 80 W | 42* | 52* | 6 30 | 0 12.73 | -28 7.3 | 1.105 | 1.692 | 35.4 | 18.6 | 106 W | 12* | 88 |
| 7 20 | 2 3.73 | +14 40.1 | 1.270 | 1.535 | 41.1 | 19.8 | 84 W | 48* | 49 | 7 5 | 0 25.70 | -28 58.4 | 1.065 | 1.678 | 35.3 | 18.5 | 107 W | 12* | 87 |
| 7 30 | 2 25.47 | +17 29.8 | 1.212 | 1.544 | 41.1 | 19.7 | 87 W | 55* | 47 | 7 10 | 0 38.59 | -29 53.6 | 1.028 | 1.664 | 35.3 | 18.4 | 109 W | 12* | 86 |
| 8 9 | 2 45.96 | +20 7.9 | 1.157 | 1.557 | 40.6 | 19.6 | 91 W | 61* | 44 | 7 15 | 0 51.32 | -30 52.8 | 0.994 | 1.652 | 35.2 | 18.3 | 110 W | 12* | 85 |
| 8 19 | 3 4.77 | +22 33.8 | 1.102 | 1.574 | 39.8 | 19.5 | 96 W | 66* | 41 | 7 20 | 1 3.80 | -31 55.6 | 0.962 | 1.640 | 35.1 | 18.2 | 112 W | 11* | 84 |
| 8 29 | 3 21.34 | +24 47.2 | 1.049 | 1.594 | 38.4 | 19.4 | 101 W | 70* | 39 | 7 25 | 1 15.94 | -33 1.6 | 0.934 | 1.629 | 35.0 | 18.2 | 113 W | 11* | 83 |
| 9 3 | 3 28.60 | +25 49.2 | 1.023 | 1.605 | 37.5 | 19.3 | 104 W | 71 | 38 | 7 30 | 1 27.63 | -34 10.1 | 0.908 | 1.618 | 34.8 | 18.1 | 114 W | 10* | 82 |
| 9 8 | 3 35.06 | +26 48.2 | 0.998 | 1.617 | 36.4 | 19.2 | 108 W | 72 | 37 | 8 4 | 1 38.78 | -35 20.5 | 0.884 | 1.608 | 34.7 | 18.0 | 116 W | 9* | 81 |
| 9 13 | 3 40.63 | +27 44.1 | 0.973 | 1.630 | 35.2 | 19.2 | 111 W | 73 | 36 | 8 9 | 1 49.26 | -36 31.9 | 0.863 | 1.600 | 34.5 | 17.9 | 117 W | 8* | 79 |
| 9 18 | 3 45.18 | +28 36.9 | 0.950 | 1.644 | 33.8 | 19.1 | 114 W | 74 | 35 | 8 14 | 1 58.93 | -37 43.7 | 0.845 | 1.592 | 34.3 | 17.9 | 118 W | 7* | 78 |
| 9 23 | 3 48.64 | +29 26.2 | 0.927 | 1.658 | 32.2 | 19.0 | 118 W | 74 | 35 | 8 19 | 2 7.65 | -38 54.8 | 0.828 | 1.585 | 34.1 | 17.8 | 119 W | 6 | 77 |
| 9 28 | 3 50.91 | +30 11.8 | 0.907 | 1.673 | 30.4 | 18.9 | 122 W | 75 | 34 | 8 24 | 2 15.28 | -40 4.3 | 0.813 | 1.578 | 33.9 | 17.8 | 119 W | 5 | 76 |
| 10 3 | 3 51.95 | +30 53.3 | 0.888 | 1.689 | 28.3 | 18.8 | 127 W | 76 | 33 | 8 29 | 2 21.70 | -41 10.6 | 0.801 | 1.573 | 33.7 | 17.7 | 120 W | 4 | 75 |
| 10 8 | 3 51.69 | +31 30.1 | 0.871 | 1.705 | 26.1 | 18.7 | 131 W | 77 | 32 | 9 3 | 2 26.80 | -42 12.5 | 0.790 | 1.569 | 33.5 | 17.7 | 121 W | 3 | 74 |
| 10 13 | 3 50.12 | +32 1.4 | 0.857 | 1.722 | 23.6 | 18.7 | 136 W | 77 | 32 | 9 8 | 2 30.47 | -43 8.6 | 0.781 | 1.565 | 33.2 | 17.6 | 122 W | 2 | 73 |
| 10 18 | 3 47.27 | +32 26.4 | 0.846 | 1.739 | 21.0 | 18.6 | 141 W | 77 | 32 | 9 13 | 2 32.63 | -43 57.3 | 0.773 | 1.563 | 32.9 | 17.6 | 122 W | — | 72 |
| 10 23 | 3 43.26 | +32 44.1 | 0.839 | 1.757 | 18.2 | 18.5 | 147 W | 78 | 31 | 9 18 | 2 33.23 | -44 36.7 | 0.766 | 1.562 | 32.6 | 17.6 | 123 W | — | 71 |
| 10 28 | 3 38.27 | +32 53.8 | 0.836 | 1.775 | 15.4 | 18.4 | 152 W | 78 | 31 | 9 23 | 2 32.29 | -45 4.6 | 0.762 | 1.561 | 32.3 | 17.5 | 124 W | — | 71 |
| 11 2 | 3 32.52 | +32 55.1 | 0.838 | 1.793 | 12.6 | 18.3 | 157 W | 78 | 31 | 9 28 | 2 29.92 | -45 18.9 | 0.759 | 1.562 | 31.9 | 17.5 | 124 W | — | 71 |
| 11 | | | | | | | | | | | | | | | | | | | |

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

| 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° | 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° |
|------------------------------------|-----------------|-----------------|----------|-------|---------|------|--------|-----|------|----------------------------------|-----------------|-----------------|----------|-------|---------|------|--------|-----|------|
| 306522 1999 XZ₁₄ | | | | | | | | | | 85804 1998 WQ₅ | | | | | | | | | |
| <i>(continuation)</i> | | | | | | | | | | <i>(continuation)</i> | | | | | | | | | |
| 10 3 | 2 26.27 | -45 17.6 | 0.757 | 1.563 | 31.6 | 17.5 | 125 W | — | 71 | 1 6 | 22 55.94 | +21 32.5 | 2.454 | 2.327 | 23.5 | 20.2 | 71 E | 62* | 21* |
| 10 8 | 2 21.57 | -44 59.1 | 0.757 | 1.566 | 31.3 | 17.5 | 126 W | — | 71 | 1 16 | 23 11.90 | +21 52.2 | 2.558 | 2.322 | 22.6 | 20.2 | 65 E | 58* | 16* |
| 10 13 | 2 16.10 | -44 22.0 | 0.760 | 1.570 | 31.0 | 17.5 | 126 W | 1 | 72 | 6585 O'Keefe | | | | | | | | | |
| 10 18 | 2 10.19 | -43 25.1 | 0.764 | 1.574 | 30.7 | 17.5 | 126 W | 2 | 73 | 12 23 | 17 4.08 | -39 31.4 | 4.064 | 3.160 | 6.2 | 20.4 | 20 W | — | 13* |
| 10 23 | 2 4.22 | -42 8.2 | 0.771 | 1.579 | 30.5 | 17.5 | 126 W | 3 | 74 | 1 2 | 17 22.19 | -40 4.4 | 4.015 | 3.148 | 7.5 | 20.4 | 25 W | — | 18* |
| 10 28 | 1 58.52 | -40 32.0 | 0.781 | 1.586 | 30.3 | 17.6 | 126 E | 4 | 75 | 1 12 | 17 40.36 | -40 34.1 | 3.949 | 3.136 | 9.0 | 20.5 | 30 W | — | 23* |
| 11 2 | 1 53.37 | -38 37.9 | 0.793 | 1.593 | 30.3 | 17.6 | 126 E | 6 | 77 | 1 22 | 17 58.48 | -41 0.7 | 3.869 | 3.122 | 10.6 | 20.5 | 36 W | — | 29* |
| 11 7 | 1 48.97 | -36 27.8 | 0.809 | 1.601 | 30.3 | 17.7 | 125 E | 9 | 80 | 2 2 | 18 16.44 | -41 24.6 | 3.775 | 3.107 | 12.1 | 20.5 | 42 W | — | 34* |
| 11 12 | 1 45.46 | -34 4.2 | 0.827 | 1.610 | 30.4 | 17.7 | 125 E | 11 | 82 | 2 11 | 18 34.09 | -41 46.5 | 3.668 | 3.091 | 13.6 | 20.5 | 48 W | — | 40* |
| 11 17 | 1 42.93 | -31 29.5 | 0.850 | 1.620 | 30.6 | 17.8 | 125 E | 14 | 85 | 2 21 | 18 51.32 | -42 7.1 | 3.550 | 3.074 | 15.1 | 20.4 | 54 W | — | 45* |
| 11 22 | 1 41.42 | -28 46.8 | 0.876 | 1.631 | 30.9 | 17.9 | 122 E | 16 | 87 | 3 2 | 19 7.97 | -42 27.7 | 3.422 | 3.056 | 16.4 | 20.4 | 60 W | — | 50* |
| 11 27 | 1 40.92 | -25 58.6 | 0.905 | 1.642 | 31.2 | 18.0 | 120 E | 19 | 90 | 3 12 | 19 23.89 | -42 49.5 | 3.285 | 3.037 | 17.5 | 20.3 | 67 W | — | 56* |
| 12 2 | 1 41.37 | -23 7.7 | 0.939 | 1.654 | 31.6 | 18.1 | 119 E | 22 | 87 | 3 22 | 19 38.93 | -43 14.0 | 3.142 | 3.017 | 18.5 | 20.2 | 74 W | — | 60* |
| 12 7 | 1 42.72 | -20 16.3 | 0.976 | 1.667 | 31.9 | 18.2 | 116 E | 25 | 84 | 4 1 | 19 52.87 | -43 42.8 | 2.994 | 2.996 | 19.2 | 20.1 | 81 W | — | 65* |
| 12 12 | 1 44.89 | -17 26.1 | 1.016 | 1.680 | 32.3 | 18.3 | 114 E | 28 | 81 | 4 11 | 20 5.50 | -44 17.6 | 2.844 | 2.975 | 19.7 | 20.0 | 88 W | — | 68* |
| 12 17 | 1 47.84 | -14 38.7 | 1.060 | 1.694 | 32.6 | 18.4 | 112 E | 30 | 79 | 4 21 | 20 16.57 | -45 0.2 | 2.693 | 2.952 | 19.8 | 19.9 | 95 W | — | 70* |
| 12 22 | 1 51.48 | -11 55.2 | 1.108 | 1.709 | 32.9 | 18.6 | 109 E | 33 | 76 | 4 26 | 20 21.40 | -45 24.9 | 2.619 | 2.940 | 19.8 | 19.8 | 98 W | — | 71* |
| 12 27 | 1 55.77 | -9 16.7 | 1.158 | 1.724 | 33.1 | 18.7 | 107 E | 36 | 73 | 5 1 | 20 25.72 | -45 52.1 | 2.546 | 2.927 | 19.7 | 19.8 | 102 W | — | 70 |
| 1 1 | 2 0.63 | -6 43.6 | 1.212 | 1.740 | 33.2 | 18.8 | 104 E | 38 | 71* | 5 6 | 20 29.46 | -46 21.9 | 2.473 | 2.915 | 19.4 | 19.7 | 106 W | — | 70 |
| 1 6 | 2 6.00 | -4 16.5 | 1.268 | 1.756 | 33.3 | 18.9 | 102 E | 41 | 68* | 5 11 | 20 32.58 | -46 54.2 | 2.403 | 2.902 | 19.1 | 19.6 | 110 W | — | 69 |
| 1 11 | 2 11.85 | -1 55.5 | 1.327 | 1.772 | 33.2 | 19.0 | 99 E | 43 | 65* | 5 16 | 20 35.01 | -47 29.2 | 2.334 | 2.890 | 18.7 | 19.5 | 113 W | — | 69 |
| 1 16 | 2 18.14 | +0 19.4 | 1.388 | 1.789 | 33.1 | 19.2 | 96 E | 45 | 61* | 5 21 | 20 36.69 | -48 6.6 | 2.268 | 2.876 | 18.2 | 19.4 | 117 W | — | 68 |
| 12 23 | 17 3.95 | -33 0.6 | 2.134 | 1.220 | 12.9 | 18.1 | 16 W | — | 10* | 5 26 | 20 37.53 | -48 46.2 | 2.205 | 2.863 | 17.6 | 19.3 | 121 W | — | 67 |
| 12 28 | 17 24.31 | -32 35.4 | 2.152 | 1.239 | 12.8 | 18.2 | 16 W | — | 10* | 5 31 | 20 37.48 | -49 27.6 | 2.144 | 2.849 | 17.0 | 19.2 | 125 W | — | 67 |
| 1 2 | 17 44.00 | -31 59.7 | 2.170 | 1.259 | 12.9 | 18.2 | 17 W | — | 10* | 6 5 | 20 36.47 | -50 10.2 | 2.088 | 2.835 | 16.2 | 19.1 | 129 W | — | 66 |
| 1 7 | 18 2.96 | -31 14.6 | 2.187 | 1.280 | 13.0 | 18.3 | 17 W | — | 11* | 6 10 | 20 34.44 | -50 53.2 | 2.035 | 2.821 | 15.4 | 19.0 | 132 W | — | 65 |
| 1 12 | 18 21.17 | -30 21.0 | 2.204 | 1.302 | 13.3 | 18.4 | 18 W | — | 12* | 6 15 | 20 31.35 | -51 35.8 | 1.987 | 2.807 | 14.6 | 19.0 | 136 W | — | 64 |
| 1 17 | 18 38.64 | -29 20.1 | 2.219 | 1.325 | 13.7 | 18.4 | 19 W | — | 13* | 6 20 | 20 27.16 | -52 16.6 | 1.943 | 2.792 | 13.8 | 18.9 | 139 W | — | 64 |
| 1 22 | 18 55.36 | -28 12.7 | 2.233 | 1.348 | 14.2 | 18.5 | 20 W | — | 14* | 6 25 | 20 21.88 | -52 54.5 | 1.905 | 2.777 | 13.0 | 18.8 | 142 W | — | 63 |
| 1 27 | 19 11.35 | -26 59.7 | 2.246 | 1.371 | 14.8 | 18.6 | 21 W | — | 15* | 6 30 | 20 15.58 | -53 27.9 | 1.871 | 2.762 | 12.4 | 18.7 | 144 W | — | 63 |
| 2 1 | 19 26.64 | -25 41.9 | 2.258 | 1.395 | 15.4 | 18.6 | 22 W | 1* | 16* | 7 5 | 20 8.36 | -53 55.4 | 1.844 | 2.747 | 11.9 | 18.6 | 146 W | — | 62 |
| 2 11 | 19 55.21 | -22 54.6 | 2.275 | 1.444 | 16.9 | 18.8 | 25 W | 3* | 19* | 7 10 | 20 0.41 | -54 15.6 | 1.822 | 2.731 | 11.7 | 18.6 | 147 W | — | 62 |
| 2 21 | 20 21.37 | -19 55.4 | 2.285 | 1.494 | 18.5 | 18.9 | 29 W | 6* | 22* | 7 15 | 19 51.92 | -54 27.5 | 1.806 | 2.715 | 11.8 | 18.6 | 147 W | — | 62 |
| 3 2 | 20 45.37 | -16 47.6 | 2.286 | 1.544 | 20.1 | 19.0 | 32 W | 8* | 26* | 7 20 | 19 43.16 | -54 30.3 | 1.796 | 2.699 | 12.1 | 18.6 | 146 E | — | 61 |
| 3 12 | 21 7.44 | -13 33.8 | 2.279 | 1.593 | 21.7 | 19.2 | 36 W | 10* | 30* | 7 25 | 19 34.44 | -54 23.4 | 1.792 | 2.683 | 12.8 | 18.6 | 144 E | — | 62 |
| 3 22 | 21 27.80 | -10 15.7 | 2.262 | 1.642 | 23.3 | 19.3 | 41 W | 13* | 34* | 8 30 | 19 26.06 | -54 7.0 | 1.794 | 2.667 | 13.6 | 18.6 | 142 E | — | 62 |
| 4 1 | 21 46.59 | -6 54.6 | 2.236 | 1.689 | 24.8 | 19.3 | 45 W | 16* | 38* | 8 4 | 19 18.29 | -53 41.6 | 1.800 | 2.650 | 14.6 | 18.6 | 139 E | — | 62 |
| 4 11 | 22 3.93 | -3 31.5 | 2.202 | 1.736 | 26.2 | 19.4 | 50 W | 19* | 42* | 8 9 | 19 11.35 | -53 8.0 | 1.813 | 2.633 | 15.7 | 18.7 | 135 E | — | 63 |
| 4 21 | 22 19.90 | -0 6.9 | 2.159 | 1.781 | 27.5 | 19.5 | 55 W | 22* | 46* | 8 14 | 19 5.39 | -52 27.5 | 1.830 | 2.615 | 16.8 | 18.7 | 132 E | — | 64 |
| 5 1 | 22 34.50 | +3 18.8 | 2.108 | 1.825 | 28.5 | 19.5 | 60 W | 26* | 49* | 8 19 | 19 0.55 | -51 41.0 | 1.851 | 2.598 | 17.9 | 18.7 | 128 E | — | 64 |
| 5 11 | 22 47.70 | +6 45.3 | 2.050 | 1.868 | 29.4 | 19.5 | 65 W | 31* | 51* | 8 24 | 18 56.87 | -50 49.9 | 1.876 | 2.580 | 19.0 | 18.8 | 124 E | — | 65 |
| 5 21 | 22 59.44 | +10 12.3 | 1.986 | 1.908 | 30.0 | 19.5 | 71 W | 36* | 51* | 8 29 | 18 54.38 | -49 55.3 | 1.905 | 2.562 | 20.0 | 18.8 | 120 E | — | 66 |
| 5 31 | 23 9.55 | +13 39.5 | 1.917 | 1.947 | 30.4 | 19.5 | 76 W | 42* | 50* | 9 3 | 18 53.04 | -48 58.2 | 1.937 | 2.544 | 20.9 | 18.9 | 116 E | — | 67 |
| 6 10 | 23 17.83 | +17 6.1 | 1.844 | 1.985 | 30.5 | 19.4 | 82 W | 48* | 47 | 9 8 | 18 52.79 | -47 59.4 | 1.972 | 2.526 | 21.7 | 18.9 | 112 E | — | 68 |
| 6 20 | 23 23.98 | +20 31.2 | 1.770 | 2.020 | 30.2 | 19.4 | 89 W | 56* | 43 | 9 13 | 18 53.57 | -46 59.7 | 2.009 | 2.507 | 22.5 | 19.0 | 108 E | — | 69 |
| 6 30 | 23 27.61 | +23 52.6 | 1.695 | 2.054 | 29.5 | 19.3 | 95 W | 64* | 40 | 9 18 | 18 55.31 | -45 59.5 | 2.048 | 2.489 | 23.1 | 19.0 | 104 E | — | 70 |
| 7 5 | 23 28.34 | +25 30.9 | 1.659 | 2.070 | 29.1 | 19.3 | 98 W | 68* | 38 | 9 23 | 18 57.93 | -44 59.1 | 2.088 | 2.470 | 23.6 | 19.1 | 100 E | — | 71 |
| 7 10 | 23 28.28 | +27 6.9 | 1.623 | 2.085 | 28.5 | 19.2 | 102 W | 71* | 37 | 9 28 | 19 1.37 | -43 58.7 | 2.129 | 2.450 | 24.0 | 19.1 | 96 E | — | 72 |
| 7 15 | 23 27.36 | +28 40.0 | 1.589 | 2.101 | 27.8 | 19.2 | 105 W | 74* | 35 | 10 3 | 19 5.53 | -42 58.6 | 2.171 | 2.431 | 24.3 | 19.1 | 93 E | 2 | 73* |
| 7 20 | 23 25.53 | +30 9.1 | 1.556 | 2.115 | 27.0 | 19.1 | 109 W | 75 | 34 | 10 8 | 19 10.36 | -41 58.6 | 2.213 | 2.412 | 24.5 | 19.2 | 89 E | 3 | 73* |
| 7 25 | 23 22.73 | +31 33.1 | 1.525 | 2.129 | 26.2 | 19.0 | 112 W | 77 | 32 | 10 13 | 19 15.77 | -40 58.7 | 2.255 | 2.392 | 24.6 | 19.2 | 85 E | 4 | 73* |
| 7 30 | 23 18.94 | +32 51.0 | 1.497 | 2.143 | 25.2 | 19.0 | 116 W | 78 | 31 | 10 18 | 19 21.72 | -39 58.9 | 2.297 | 2.372 | 24.6 | 19.2 | 82 E | 5 | 72* |
| 8 4 | 23 14.17 | +34 1.2 | 1.471 | 2.156 | 24.2 | 18.9 | 119 W | 79 | 30 | 10 23 | 19 28.16 | -38 58.9 | 2.338 | 2.352 | 24.5 | 19.2 | 79 E | 6 | 70* |
| 8 9 | 23 8.44 | +35 2.6 | 1.448 | 2.169 | 23.2 | 18.9 | 123 W | 80 | 29 | 10 28 | 19 35.03 | -37 58.7 | 2.379 | 2.332 | 24.3 | 19.3 | 75 E | 7 | 68* |
| 8 14 | 23 1.83 | +35 53.5 | 1.429 | 2.181 | 22.2 | 18.8 | 126 W | 81 | 28 | 11 7 | 19 49.86 | -35 56.8 | 2.456 | 2.291 | 23.8 | 19.3 | 69 E | 9* | 62* |
| 8 19 | 22 54.45 | +36 32.6 | 1.414 | 2.193 | 21.1 | 18.8 | 129 W | 82 | 27 | 11 17 | 20 5.90 | -33 51.8 | 2.529 | 2.249 | 22.9 | 19.3 | 62 E | 11* | 56* |
| 8 24 | 22 46.49 | +36 58.7 | 1.403 | 2.204 | 20.2 | 18.8 | 131 W | 82 | 27 | 11 27 | 20 22.90 | -31 42.4 | 2.594 | 2.207 | 21.9 | 19.2 | 56 E | 12* | 50* |
| 8 29 | 22 38.17 | +37 11.2 | 1.396 | 2.215 | 19.3 | 18.7 | 133 W | 82 | 27 | 12 7 | 20 40.63 | -29 27.4 | 2.651 | 2.165 | 20.6 | 19.2 | 51 E | 14* | 44* |
| 9 3 | 22 29.74 | +37 9.8 | 1.394 | 2.226 | 18.7 | 18.7 | 135 E | 82 | 27 | 12 17 | 20 58.93 | -27 5.8 | 2.700 | 2.123 | 19.2 | 19.2 | 45 E | 15* | 37* |
| 9 8 | 22 21.46 | +36 55.0 | 1.398 | 2.235 | 18.2 | 18.7 | 136 E | 82 | 27 | 12 27 | 21 17.67 | -24 37.0 | 2.740 | 2.080 | 17.6 | 19.1 | 40 E | 15* | 31* |
| 9 13 | 22 13.57 | +36 27.4 | 1.406 | 2.245 | 18.0 | 18.7 | 136 E | 81 | 28 | 1 6 | 21 36.73 | -22 0.5 | 2.771 | 2.037 | 15.8 | 19.0 | 34 E | 15* | 25* |
| 9 18 | 22 6.32 | +35 48.4 | 1.419 | 2.254 | 18.0 | 18.8 | 136 E | | | | | | | | | | | | |

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

| 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° | 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° |
|-------------------------------------|-----------------|-----------------|----------|-------|---------|------|--------|-----|------|-----------------------------------|-----------------|-----------------|----------|-------|---------|------|--------|-----|------|
| 259490 2003 SW₂₂₈ | | | | | | | | | | 21001 Trogrlic | | | | | | | | | |
| <i>(continuation)</i> | | | | | | | | | | <i>(continuation)</i> | | | | | | | | | |
| 5 31 | 0 6.38 | -4 53.5 | 1.697 | 1.658 | 35.2 | 20.6 | 70 W | 18* | 62* | 3 22 | 19 5.10 | -1 37.9 | 3.051 | 2.957 | 19.0 | 20.8 | 75 W | 39* | 58* |
| 6 10 | 0 28.56 | -2 24.6 | 1.623 | 1.657 | 36.0 | 20.5 | 74 W | 22* | 63* | 4 1 | 19 13.15 | -0 24.1 | 2.936 | 2.972 | 19.5 | 20.8 | 82 W | 41* | 62* |
| 6 20 | 0 49.90 | +0 0.1 | 1.551 | 1.659 | 36.7 | 20.4 | 77 W | 27* | 63* | 4 11 | 19 19.58 | +0 53.1 | 2.818 | 2.986 | 19.6 | 20.7 | 90 W | 43* | 63* |
| 6 30 | 1 10.27 | +2 18.6 | 1.479 | 1.664 | 37.2 | 20.4 | 81 W | 32* | 61* | 4 21 | 19 24.20 | +2 11.8 | 2.701 | 2.998 | 19.4 | 20.6 | 97 W | 46* | 62 |
| 7 10 | 1 29.50 | +4 29.1 | 1.407 | 1.671 | 37.3 | 20.3 | 86 W | 38* | 60 | 5 1 | 19 26.82 | +3 29.6 | 2.586 | 3.010 | 18.9 | 20.5 | 105 W | 48* | 61 |
| 7 20 | 1 47.38 | +6 30.6 | 1.336 | 1.682 | 37.2 | 20.2 | 90 W | 44* | 57 | 5 11 | 19 27.28 | +4 43.7 | 2.477 | 3.021 | 17.9 | 20.4 | 113 W | 50* | 59 |
| 7 30 | 2 3.57 | +8 21.7 | 1.266 | 1.695 | 36.6 | 20.0 | 95 W | 49* | 56 | 5 21 | 19 25.48 | +5 50.6 | 2.377 | 3.031 | 16.6 | 20.3 | 121 W | 51 | 58 |
| 8 9 | 2 17.72 | +10 1.8 | 1.197 | 1.710 | 35.6 | 19.9 | 101 W | 54* | 54 | 5 31 | 19 21.42 | +6 46.2 | 2.291 | 3.040 | 14.9 | 20.1 | 130 W | 52 | 57 |
| 8 19 | 2 29.35 | +11 30.6 | 1.130 | 1.728 | 34.0 | 19.8 | 107 W | 56* | 52 | 6 10 | 19 15.27 | +7 26.1 | 2.222 | 3.048 | 13.0 | 20.0 | 137 W | 52 | 57 |
| 8 29 | 2 37.90 | +12 47.4 | 1.066 | 1.748 | 31.7 | 19.6 | 115 W | 58* | 51 | 6 20 | 19 7.39 | +7 46.4 | 2.172 | 3.054 | 11.2 | 19.9 | 144 W | 53 | 56 |
| 9 8 | 2 42.83 | +13 52.0 | 1.007 | 1.770 | 28.5 | 19.4 | 123 W | 59 | 50 | 6 30 | 18 58.38 | +7 44.2 | 2.146 | 3.060 | 10.0 | 19.8 | 149 W | 53 | 56 |
| 9 18 | 2 43.64 | +14 43.6 | 0.956 | 1.793 | 24.5 | 19.2 | 132 W | 60 | 49 | 7 10 | 18 49.01 | +7 18.6 | 2.145 | 3.065 | 9.7 | 19.8 | 150 E | 52 | 57 |
| 9 28 | 2 40.09 | +15 21.1 | 0.917 | 1.819 | 19.5 | 19.0 | 143 W | 60 | 49 | 7 20 | 18 40.09 | +6 31.1 | 2.168 | 3.069 | 10.5 | 19.9 | 147 E | 52 | 57 |
| 10 8 | 2 32.53 | +15 43.7 | 0.894 | 1.845 | 13.7 | 18.8 | 154 W | 61 | 48 | 7 30 | 18 32.40 | +5 25.3 | 2.216 | 3.072 | 12.0 | 20.0 | 141 E | 50 | 59 |
| 10 13 | 2 27.53 | +15 49.2 | 0.889 | 1.859 | 10.5 | 18.7 | 160 W | 61 | 48 | 8 4 | 18 29.20 | +4 47.1 | 2.249 | 3.073 | 12.9 | 20.1 | 137 E | 50 | 59 |
| 10 18 | 2 21.96 | +15 51.2 | 0.890 | 1.873 | 7.2 | 18.5 | 166 W | 61 | 48 | 8 9 | 18 26.50 | +4 6.4 | 2.286 | 3.074 | 13.8 | 20.1 | 134 E | 49 | 60 |
| 10 23 | 2 16.08 | +15 50.2 | 0.896 | 1.887 | 4.0 | 18.4 | 172 W | 61 | 48 | 8 14 | 18 24.34 | +3 23.7 | 2.329 | 3.074 | 14.7 | 20.2 | 130 E | 48 | 61 |
| 10 28 | 2 10.15 | +15 46.7 | 0.909 | 1.902 | 1.4 | 18.3 | 177 W | 61 | 48 | 8 19 | 18 22.74 | +2 39.6 | 2.375 | 3.075 | 15.6 | 20.3 | 125 E | 48 | 61 |
| 11 2 | 2 4.42 | +15 41.8 | 0.927 | 1.917 | 3.1 | 18.5 | 174 E | 61 | 48 | 8 29 | 18 21.28 | +1 10.1 | 2.480 | 3.074 | 17.0 | 20.4 | 117 E | 46 | 63 |
| 11 7 | 1 59.12 | +15 36.2 | 0.951 | 1.931 | 6.1 | 18.7 | 168 E | 61 | 48 | 9 8 | 18 22.11 | -0 18.2 | 2.597 | 3.073 | 18.1 | 20.5 | 109 E | 45 | 64 |
| 11 12 | 1 54.43 | +15 30.8 | 0.981 | 1.947 | 9.1 | 18.9 | 162 E | 61 | 48 | 9 18 | 18 25.08 | -1 42.1 | 2.722 | 3.071 | 18.8 | 20.7 | 101 E | 43 | 66 |
| 11 17 | 1 50.52 | +15 26.6 | 1.017 | 1.962 | 11.8 | 19.1 | 156 E | 60 | 49 | 9 28 | 18 30.03 | -2 59.4 | 2.852 | 3.068 | 19.0 | 20.8 | 93 E | 42* | 67* |
| 11 27 | 1 45.39 | +15 24.6 | 1.103 | 1.993 | 16.6 | 19.5 | 145 E | 60 | 49 | 10 8 | 18 36.73 | -4 8.5 | 2.983 | 3.064 | 19.0 | 20.9 | 85 E | 40* | 64* |
| 12 7 | 1 43.98 | +15 34.0 | 1.208 | 2.024 | 20.3 | 19.9 | 134 E | 61 | 48 | 10 18 | 18 44.97 | -5 8.6 | 3.113 | 3.059 | 18.6 | 20.9 | 78 E | 39* | 59* |
| 12 17 | 1 46.10 | +15 55.9 | 1.327 | 2.056 | 23.1 | 20.2 | 125 E | 61 | 48 | 10 28 | 18 54.57 | -5 59.0 | 3.240 | 3.053 | 17.8 | 21.0 | 70 E | 37* | 53* |
| 12 27 | 1 51.35 | +16 29.8 | 1.457 | 2.087 | 25.0 | 20.5 | 116 E | 61 | 48 | 11 7 | 19 5.30 | -6 39.3 | 3.360 | 3.046 | 16.9 | 21.0 | 63 E | 36* | 46* |
| 1 6 | 1 59.24 | +17 13.7 | 1.596 | 2.119 | 26.2 | 20.7 | 108 E | 62 | 46* | 11 17 | 19 17.01 | -7 9.4 | 3.472 | 3.037 | 15.7 | 21.1 | 56 E | 34* | 39* |
| 1 16 | 2 9.31 | +18 5.5 | 1.742 | 2.151 | 26.7 | 21.0 | 100 E | 63 | 44* | 11 27 | 19 29.54 | -7 29.3 | 3.574 | 3.028 | 14.4 | 21.1 | 50 E | 32* | 31* |
| 10416 Kottler | | | | | | | | | | 141776 2002 NY₈ | | | | | | | | | |
| 12 23 | 17 5.10 | -24 27.4 | 3.004 | 2.058 | 6.2 | 18.9 | 13 W | 2* | 6* | 12 23 | 17 5.56 | -19 34.3 | 3.300 | 2.356 | 5.7 | 21.2 | 14 W | 6* | 4* |
| 1 2 | 17 27.63 | -24 7.1 | 3.018 | 2.106 | 8.4 | 19.1 | 18 W | 5* | 11* | 1 2 | 17 26.20 | -20 4.0 | 3.232 | 2.324 | 7.9 | 21.2 | 19 W | 8* | 9* |
| 1 12 | 17 49.16 | -23 34.9 | 3.020 | 2.154 | 10.5 | 19.2 | 23 W | 7* | 16* | 1 12 | 17 47.21 | -20 23.6 | 3.153 | 2.291 | 10.1 | 21.2 | 24 W | 10* | 15* |
| 1 22 | 18 9.65 | -22 51.9 | 3.010 | 2.201 | 12.5 | 19.3 | 29 W | 10* | 21* | 1 22 | 18 8.53 | -20 32.6 | 3.065 | 2.258 | 12.3 | 21.2 | 29 W | 12* | 21* |
| 2 1 | 18 29.01 | -21 59.1 | 2.987 | 2.247 | 14.4 | 19.4 | 35 W | 12* | 27* | 2 1 | 18 30.08 | -20 30.9 | 2.968 | 2.225 | 14.5 | 21.2 | 34 W | 13* | 26* |
| 2 11 | 18 47.17 | -20 57.4 | 2.951 | 2.292 | 16.2 | 19.5 | 40 W | 14* | 33* | 2 11 | 18 51.76 | -20 18.2 | 2.863 | 2.192 | 16.6 | 21.2 | 39 W | 14* | 32* |
| 2 21 | 19 4.07 | -19 47.9 | 2.903 | 2.336 | 17.9 | 19.6 | 47 W | 16* | 40* | 2 21 | 19 13.52 | -19 54.9 | 2.752 | 2.158 | 18.7 | 21.1 | 44 W | 14* | 37* |
| 3 2 | 19 19.62 | -18 31.8 | 2.843 | 2.379 | 19.4 | 19.6 | 53 W | 18* | 46* | 3 2 | 19 35.27 | -19 21.3 | 2.635 | 2.124 | 20.7 | 21.1 | 49 W | 15* | 43* |
| 3 12 | 19 33.74 | -17 10.1 | 2.772 | 2.421 | 20.7 | 19.7 | 59 W | 20* | 52* | 3 12 | 19 56.94 | -18 37.9 | 2.513 | 2.091 | 22.6 | 21.0 | 54 W | 16* | 48* |
| 3 22 | 19 46.33 | -15 43.8 | 2.692 | 2.462 | 21.7 | 19.7 | 66 W | 22* | 59* | 3 22 | 20 18.48 | -17 45.6 | 2.389 | 2.057 | 24.5 | 20.9 | 59 W | 16* | 53* |
| 4 1 | 19 57.26 | -14 14.0 | 2.603 | 2.502 | 22.5 | 19.6 | 73 W | 24* | 65* | 4 1 | 20 39.82 | -16 45.3 | 2.262 | 2.024 | 26.2 | 20.8 | 63 W | 17* | 57* |
| 4 11 | 20 6.39 | -12 41.9 | 2.508 | 2.540 | 22.9 | 19.6 | 80 W | 27* | 71* | 4 11 | 21 0.93 | -15 38.3 | 2.134 | 1.991 | 27.8 | 20.7 | 68 W | 18* | 62* |
| 4 21 | 20 13.55 | -11 8.7 | 2.409 | 2.578 | 22.9 | 19.6 | 88 W | 29* | 74* | 4 21 | 21 21.77 | -14 25.9 | 2.005 | 1.959 | 29.3 | 20.6 | 73 W | 19* | 66* |
| 5 1 | 20 18.54 | -9 35.7 | 2.308 | 2.614 | 22.5 | 19.5 | 96 W | 32* | 74 | 5 1 | 21 42.28 | -13 9.9 | 1.878 | 1.928 | 30.7 | 20.4 | 77 W | 20* | 70* |
| 5 11 | 20 21.16 | -8 4.6 | 2.208 | 2.649 | 21.7 | 19.4 | 105 W | 35* | 72 | 5 11 | 22 2.43 | -11 51.9 | 1.753 | 1.897 | 31.8 | 20.3 | 82 W | 22* | 73* |
| 5 21 | 20 21.25 | -6 37.2 | 2.113 | 2.683 | 20.2 | 19.3 | 113 W | 38* | 71 | 5 21 | 22 22.18 | -10 34.2 | 1.630 | 1.867 | 32.8 | 20.1 | 87 W | 24* | 74* |
| 5 31 | 20 18.64 | -5 16.0 | 2.028 | 2.715 | 18.3 | 19.1 | 123 W | 40* | 69 | 5 31 | 22 41.42 | -9 19.2 | 1.510 | 1.839 | 33.4 | 19.9 | 91 W | 27* | 73 |
| 6 10 | 20 13.37 | -4 3.8 | 1.956 | 2.747 | 15.8 | 19.0 | 133 W | 41* | 68 | 6 10 | 23 0.06 | -8 9.5 | 1.395 | 1.812 | 33.8 | 19.7 | 96 W | 29* | 72 |
| 6 20 | 20 5.63 | -3 3.3 | 1.901 | 2.777 | 12.9 | 18.9 | 142 W | 42* | 67 | 6 20 | 23 17.97 | -7 8.1 | 1.284 | 1.787 | 33.9 | 19.5 | 101 W | 32* | 71 |
| 6 30 | 19 55.88 | -2 17.6 | 1.869 | 2.806 | 9.9 | 18.7 | 152 W | 43 | 66 | 6 30 | 23 34.90 | -6 18.4 | 1.179 | 1.764 | 33.5 | 19.3 | 107 W | 35* | 70 |
| 7 10 | 19 44.91 | -1 48.7 | 1.863 | 2.833 | 7.5 | 18.7 | 159 W | 43 | 66 | 7 10 | 23 50.62 | -5 44.0 | 1.081 | 1.742 | 32.7 | 19.1 | 112 W | 38* | 70 |
| 7 20 | 19 33.65 | -1 37.1 | 1.884 | 2.860 | 7.0 | 18.7 | 160 E | 43 | 66 | 7 20 | 0 4.74 | -5 28.6 | 0.990 | 1.723 | 31.2 | 18.8 | 118 W | 39* | 69 |
| 7 30 | 19 23.13 | -1 41.7 | 1.932 | 2.885 | 8.5 | 18.8 | 155 E | 43 | 66 | 7 30 | 0 16.79 | -5 35.8 | 0.907 | 1.706 | 29.1 | 18.5 | 125 W | 39 | 70 |
| 8 9 | 19 14.20 | -1 59.3 | 2.007 | 2.909 | 11.0 | 19.0 | 147 E | 43 | 66 | 8 9 | 0 26.29 | -6 7.8 | 0.834 | 1.692 | 26.2 | 18.2 | 132 W | 39 | 70 |
| 8 19 | 19 7.45 | -2 26.4 | 2.104 | 2.932 | 13.5 | 19.2 | 138 | 43 | 66 | 8 19 | 0 32.68 | -7 5.3 | 0.772 | 1.681 | 22.5 | 17.9 | 140 W | 38 | 71 |
| 8 29 | 19 3.21 | -2 59.0 | 2.221 | 2.954 | 15.6 | 19.4 | 128 E | 42 | 67 | 8 24 | 0 34.58 | -7 42.8 | 0.746 | 1.676 | 20.4 | 17.8 | 145 W | 37 | 72 |
| 9 8 | 19 1.52 | -3 33.3 | 2.353 | 2.974 | 17.3 | 19.6 | 119 E | 41 | 68 | 8 29 | 0 35.58 | -8 25.1 | 0.723 | 1.672 | 18.1 | 17.7 | 149 W | 37 | 72 |
| 9 18 | 19 2.25 | -4 6.5 | 2.497 | 2.993 | 18.4 | 19.8 | 110 E | 41 | 68 | 9 3 | 0 35.69 | -9 10.7 | 0.705 | 1.669 | 15. | | | | |

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

| 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° | 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° |
|-------------------------------------|-----------------|-----------------|----------|-------|---------|------|--------|-----|------|-----------------------------------|-----------------|-----------------|----------|-------|---------|------|--------|-----|------|
| 141776 2002 NY₈ | | | | | | | | | | 102528 1999 US₃ | | | | | | | | | |
| <i>(continuation)</i> | | | | | | | | | | <i>(continuation)</i> | | | | | | | | | |
| 12 17 | 0 53.40 | -3 47.0 | 1.234 | 1.771 | 32.4 | 19.4 | 105 E | 41 | 68* | 8 19 | 17 14.82 | -20 28.5 | 3.688 | 4.191 | 12.8 | 20.3 | 113 E | 25* | 84 |
| 12 27 | 1 7.57 | -1 23.2 | 1.347 | 1.795 | 32.7 | 19.6 | 100 E | 44 | 64* | 8 29 | 17 14.74 | -20 9.0 | 3.835 | 4.187 | 13.6 | 20.4 | 104 E | 25* | 84 |
| 1 6 | 1 23.05 | +1 2.0 | 1.466 | 1.821 | 32.6 | 19.8 | 94 E | 46 | 59* | 9 8 | 17 16.36 | -19 53.1 | 3.987 | 4.183 | 13.9 | 20.5 | 94 E | 24* | 84* |
| 1 16 | 1 39.63 | +3 26.1 | 1.589 | 1.848 | 32.2 | 20.0 | 89 E | 48 | 54* | 9 18 | 17 19.52 | -19 40.2 | 4.140 | 4.178 | 13.9 | 20.6 | 85 E | 24* | 78* |
| 292819 2006 UG₂₆₁ | | | | | | | | | | 205498 2001 RX₈ | | | | | | | | | |
| 12 23 | 17 6.02 | -17 12.1 | 2.880 | 1.944 | 7.3 | 21.5 | 15 W | 7* | 3* | 12 23 | 17 6.08 | -23 3.2 | 2.627 | 1.683 | 7.5 | 21.3 | 13 W | 3* | 5* |
| 1 2 | 17 31.29 | -17 45.2 | 2.817 | 1.910 | 9.4 | 21.5 | 18 W | 9* | 7* | 1 2 | 17 36.19 | -23 51.9 | 2.564 | 1.643 | 9.6 | 21.3 | 16 W | 4* | 9* |
| 1 12 | 17 57.20 | -18 3.6 | 2.750 | 1.877 | 11.4 | 21.5 | 22 W | 11* | 12* | 1 12 | 18 7.47 | -24 19.7 | 2.499 | 1.604 | 11.7 | 21.2 | 19 W | 4* | 12* |
| 1 22 | 18 23.65 | -18 6.5 | 2.678 | 1.844 | 13.5 | 21.4 | 26 W | 12* | 17* | 1 22 | 18 39.76 | -24 24.1 | 2.435 | 1.568 | 13.7 | 21.2 | 22 W | 5* | 15* |
| 2 1 | 18 50.53 | -17 53.2 | 2.603 | 1.813 | 15.6 | 21.4 | 30 W | 13* | 21* | 2 1 | 19 12.82 | -24 3.3 | 2.371 | 1.533 | 15.6 | 21.2 | 25 W | 5* | 18* |
| 2 11 | 19 17.71 | -17 23.5 | 2.526 | 1.783 | 17.6 | 21.4 | 33 W | 13* | 25* | 2 11 | 19 46.36 | -23 16.3 | 2.310 | 1.502 | 17.5 | 21.1 | 27 W | 4* | 21* |
| 2 21 | 19 45.09 | -16 37.7 | 2.447 | 1.755 | 19.6 | 21.4 | 37 W | 13* | 29* | 2 21 | 20 20.09 | -22 3.0 | 2.252 | 1.474 | 19.3 | 21.1 | 29 W | 4* | 23* |
| 3 2 | 20 12.53 | -15 36.4 | 2.368 | 1.729 | 21.6 | 21.3 | 40 W | 14* | 33* | 3 2 | 20 53.73 | -20 24.3 | 2.199 | 1.450 | 20.9 | 21.0 | 32 W | 4* | 26* |
| 3 12 | 20 39.93 | -14 20.8 | 2.289 | 1.705 | 23.5 | 21.3 | 43 W | 14* | 37* | 3 12 | 21 27.02 | -18 22.3 | 2.149 | 1.429 | 22.5 | 21.0 | 33 W | 4* | 27* |
| 3 22 | 21 7.22 | -12 52.4 | 2.211 | 1.683 | 25.3 | 21.2 | 46 W | 14* | 40* | 3 22 | 21 59.77 | -16 0.2 | 2.105 | 1.414 | 24.0 | 21.0 | 35 W | 4* | 29* |
| 4 1 | 21 34.32 | -11 13.1 | 2.134 | 1.664 | 27.1 | 21.2 | 49 W | 14* | 43* | 4 1 | 22 31.84 | -13 21.7 | 2.066 | 1.403 | 25.3 | 21.0 | 37 W | 4* | 31* |
| 4 11 | 22 1.16 | -9 25.1 | 2.058 | 1.648 | 28.7 | 21.1 | 52 W | 15* | 46* | 4 11 | 23 3.14 | -10 31.2 | 2.032 | 1.397 | 26.6 | 21.0 | 39 W | 4* | 33* |
| 4 21 | 22 27.73 | -7 30.9 | 1.984 | 1.635 | 30.3 | 21.1 | 55 W | 15* | 49* | 4 21 | 23 33.66 | -7 33.1 | 2.003 | 1.397 | 27.7 | 21.0 | 40 W | 5* | 34* |
| 5 1 | 22 53.98 | -5 33.3 | 1.912 | 1.625 | 31.8 | 21.0 | 58 W | 16* | 51* | 5 1 | 0 3.37 | -4 32.0 | 1.977 | 1.402 | 28.8 | 21.0 | 42 W | 6* | 36* |
| 5 11 | 23 19.87 | -3 35.2 | 1.843 | 1.618 | 33.1 | 21.0 | 61 W | 18* | 54* | 5 11 | 0 32.31 | -1 32.2 | 1.954 | 1.412 | 29.7 | 21.0 | 44 W | 7* | 38* |
| 5 21 | 23 45.38 | -1 39.3 | 1.774 | 1.614 | 34.3 | 20.9 | 64 W | 19* | 56* | 5 21 | 1 0.50 | +1 22.5 | 1.933 | 1.427 | 30.6 | 21.0 | 46 W | 9* | 39* |
| 5 31 | 0 10.42 | +0 11.4 | 1.708 | 1.614 | 35.4 | 20.9 | 67 W | 22* | 57* | 5 31 | 1 27.94 | +4 9.0 | 1.912 | 1.446 | 31.4 | 21.0 | 48 W | 11* | 41* |
| 6 10 | 0 34.93 | +1 53.9 | 1.642 | 1.618 | 36.3 | 20.8 | 71 W | 25* | 58* | 6 10 | 1 54.64 | +6 44.4 | 1.891 | 1.470 | 32.2 | 21.1 | 50 W | 15* | 42* |
| 6 20 | 0 58.80 | +3 25.8 | 1.578 | 1.625 | 37.0 | 20.7 | 74 W | 28* | 59* | 6 20 | 2 20.58 | +9 7.0 | 1.867 | 1.497 | 32.9 | 21.1 | 53 W | 19* | 43* |
| 6 30 | 1 21.85 | +4 44.4 | 1.514 | 1.635 | 37.4 | 20.7 | 78 W | 32* | 59* | 6 30 | 2 45.68 | +11 15.4 | 1.842 | 1.528 | 33.5 | 21.1 | 56 W | 23* | 44* |
| 7 10 | 1 43.91 | +5 47.7 | 1.451 | 1.648 | 37.6 | 20.6 | 82 W | 37* | 58* | 7 10 | 3 9.88 | +13 8.9 | 1.812 | 1.562 | 34.1 | 21.2 | 59 W | 28* | 45* |
| 7 20 | 2 4.71 | +6 33.9 | 1.387 | 1.664 | 37.5 | 20.5 | 86 W | 42* | 57 | 7 20 | 3 33.05 | +14 47.4 | 1.778 | 1.598 | 34.5 | 21.2 | 63 W | 34* | 45* |
| 7 30 | 2 23.92 | +7 1.3 | 1.325 | 1.683 | 37.1 | 20.4 | 91 W | 46* | 57 | 7 30 | 3 55.03 | +16 11.4 | 1.739 | 1.636 | 34.8 | 21.2 | 67 W | 40* | 45* |
| 8 9 | 2 41.19 | +7 9.1 | 1.262 | 1.705 | 36.2 | 20.3 | 96 W | 49* | 57 | 8 9 | 4 15.62 | +17 21.7 | 1.694 | 1.676 | 35.0 | 21.2 | 72 W | 46* | 45* |
| 8 19 | 2 56.09 | +6 56.8 | 1.201 | 1.729 | 34.9 | 20.2 | 102 W | 51* | 57 | 8 19 | 4 34.61 | +18 19.9 | 1.644 | 1.717 | 35.0 | 21.2 | 76 W | 52* | 44* |
| 8 29 | 3 8.11 | +6 24.2 | 1.142 | 1.755 | 33.0 | 20.1 | 109 W | 51 | 58 | 8 29 | 4 51.70 | +19 7.5 | 1.588 | 1.759 | 34.6 | 21.2 | 82 W | 58* | 44* |
| 9 8 | 3 16.79 | +5 32.7 | 1.088 | 1.783 | 30.4 | 19.9 | 117 W | 51 | 58 | 9 8 | 5 6.57 | +19 46.8 | 1.528 | 1.802 | 34.0 | 21.1 | 88 W | 62* | 44* |
| 9 18 | 3 21.65 | +4 24.4 | 1.039 | 1.812 | 27.0 | 19.8 | 125 W | 49 | 60 | 9 18 | 5 18.83 | +20 20.1 | 1.464 | 1.845 | 32.9 | 21.0 | 95 W | 65* | 44 |
| 9 28 | 3 22.36 | +3 3.6 | 1.000 | 1.843 | 23.0 | 19.6 | 134 W | 48 | 61 | 9 28 | 5 28.04 | +20 49.8 | 1.399 | 1.889 | 31.2 | 20.9 | 103 W | 66 | 43 |
| 10 3 | 3 21.15 | +2 20.6 | 0.985 | 1.860 | 20.7 | 19.5 | 139 W | 47 | 62 | 10 8 | 5 33.72 | +21 18.2 | 1.334 | 1.932 | 28.9 | 20.8 | 111 W | 66 | 43 |
| 10 8 | 3 18.96 | +1 37.3 | 0.974 | 1.876 | 18.3 | 19.5 | 144 W | 47 | 62 | 10 18 | 5 35.41 | +21 46.8 | 1.273 | 1.975 | 25.8 | 20.7 | 120 W | 67 | 42 |
| 10 13 | 3 15.86 | +0 54.9 | 0.967 | 1.892 | 15.9 | 19.4 | 149 W | 46 | 63 | 10 28 | 5 32.71 | +22 16.3 | 1.221 | 2.018 | 21.8 | 20.5 | 131 W | 67 | 42 |
| 10 18 | 3 11.95 | +0 14.9 | 0.965 | 1.909 | 13.5 | 19.3 | 153 W | 45 | 64 | 11 7 | 5 25.65 | +22 45.6 | 1.182 | 2.060 | 17.0 | 20.3 | 143 W | 68 | 41 |
| 10 23 | 3 7.43 | +0 21.5 | 0.969 | 1.926 | 11.3 | 19.3 | 158 W | 45 | 64 | 11 12 | 5 20.60 | +22 59.3 | 1.170 | 2.081 | 14.3 | 20.2 | 149 W | 68 | 41 |
| 10 28 | 3 2.47 | +0 52.7 | 0.977 | 1.943 | 9.6 | 19.2 | 161 W | 44 | 65 | 11 17 | 5 14.69 | +23 11.9 | 1.163 | 2.102 | 11.4 | 20.1 | 155 W | 68 | 41 |
| 11 2 | 2 57.30 | +1 17.7 | 0.991 | 1.961 | 8.7 | 19.2 | 163 W | 44 | 65 | 11 22 | 5 8.11 | +23 23.0 | 1.161 | 2.122 | 8.4 | 20.0 | 162 W | 68 | 41 |
| 11 7 | 2 52.14 | +1 35.7 | 1.011 | 1.978 | 8.8 | 19.3 | 162 W | 43 | 66 | 11 27 | 5 1.10 | +23 32.2 | 1.167 | 2.142 | 5.3 | 19.9 | 168 W | 69 | 40 |
| 11 17 | 2 42.59 | +1 49.2 | 1.069 | 2.013 | 11.4 | 19.6 | 156 E | 43 | 66 | 12 2 | 4 53.89 | +23 39.4 | 1.179 | 2.163 | 2.3 | 19.8 | 175 W | 69 | 40 |
| 11 27 | 2 35.23 | +1 32.5 | 1.148 | 2.049 | 15.1 | 19.9 | 147 E | 43 | 66 | 12 7 | 4 46.73 | +23 44.6 | 1.198 | 2.183 | 1.0 | 19.7 | 178 E | 69 | 40 |
| 12 7 | 2 30.82 | +0 49.8 | 1.247 | 2.085 | 18.5 | 20.2 | 138 E | 44 | 65 | 12 12 | 4 39.87 | +23 48.1 | 1.224 | 2.202 | 3.8 | 20.0 | 171 E | 69 | 40 |
| 12 12 | 2 29.80 | +0 20.4 | 1.303 | 2.103 | 20.0 | 20.4 | 133 E | 45 | 64 | 12 17 | 4 33.53 | +23 50.2 | 1.257 | 2.222 | 6.6 | 20.2 | 165 E | 69 | 40 |
| 12 17 | 2 29.58 | +0 13.3 | 1.363 | 2.121 | 21.3 | 20.5 | 129 E | 45 | 64 | 12 22 | 4 27.89 | +23 51.5 | 1.296 | 2.241 | 9.2 | 20.4 | 159 E | 69 | 40 |
| 12 22 | 2 30.12 | +0 50.7 | 1.426 | 2.138 | 22.4 | 20.7 | 124 E | 46 | 63 | 12 27 | 4 23.10 | +23 52.5 | 1.342 | 2.260 | 11.6 | 20.6 | 152 E | 69 | 40 |
| 12 27 | 2 31.40 | +1 31.0 | 1.492 | 2.156 | 23.3 | 20.8 | 120 E | 47 | 62 | 1 1 | 4 19.22 | +23 53.7 | 1.393 | 2.279 | 13.8 | 20.8 | 147 E | 69 | 40 |
| 1 1 | 2 33.35 | +2 13.6 | 1.561 | 2.174 | 24.1 | 21.0 | 116 E | 47 | 62 | 1 6 | 4 16.28 | +23 55.5 | 1.450 | 2.298 | 15.7 | 21.0 | 141 E | 69 | 40 |
| 1 6 | 2 35.94 | +2 58.1 | 1.632 | 2.192 | 24.7 | 21.1 | 112 E | 48 | 61 | 1 11 | 4 14.31 | +23 58.2 | 1.512 | 2.316 | 17.4 | 21.1 | 135 E | 69 | 40 |
| 1 11 | 2 39.11 | +3 43.9 | 1.704 | 2.210 | 25.1 | 21.2 | 108 E | 49 | 60* | 1 16 | 4 13.28 | +24 2.0 | 1.577 | 2.334 | 18.9 | 21.3 | 130 E | 69 | 40 |
| 1 16 | 2 42.83 | +4 30.6 | 1.779 | 2.227 | 25.4 | 21.4 | 104 E | 50 | 59* | 174756 2003 VN | | | | | | | | | |
| 12 23 | 17 6.04 | -28 41.9 | 4.959 | 4.010 | 3.3 | 20.4 | 14 W | - | 8* | 12 23 | 17 6.12 | -20 16.4 | 2.956 | 2.013 | 6.5 | 20.7 | 13 W | 5* | 4* |
| 1 2 | 17 17.69 | -28 38.1 | 4.932 | 4.027 | 5.0 | 20.5 | 21 W | 2* | 14* | 1 2 | 17 30.68 | -20 59.7 | 2.893 | 1.980 | 8.7 | 20.7 | 18 W | 7* | 9* |
| 1 12 | 17 28.95 | -28 32.0 | 4.884 | 4.044 | 6.6 | 20.6 | 28 W | 6* | 22* | 1 12 | 17 55.89 | -21 29.4 | 2.824 | 1.947 | 10.9 | 20.7 | 22 W | 8* | 13* |
| 1 22 | 17 39.68 | -28 23.6 | 4.816 | 4.060 | 8.2 | 20.6 | 36 W | 8* | 29* | 1 22 | 18 21.67 | -21 44.6 | 2.749 | 1.915 | 13.1 | 20.7 | 26 W | 9* | 18* |
| 2 1 | 17 49.77 | -28 13.0 | 4.729 | 4.075 | 9.6 | 20.7 | 44 W | 10* | 37* | 2 1 | 18 47.93 | -21 44.8 | 2.669 | 1.884 | 15.2 | 20.7 | 30 W | 10* | 23* |
| 2 11 | 17 59.06 | -28 0.4 | 4.626 | 4.090 | 10.9 | 20.7 | 52 W | 12* | 46* | 2 11 | 19 14.53 | -21 29.6 | 2.586 | 1.854 | 17.4 | 20.6 | 34 W | 10* | 27* |
| 2 21 | 18 7.44 | -27 46.1 | 4.507 | 4.103 | 12.0 | 20.7 | 60 W | 14* | 54* | 2 21 | 19 41.39 | -20 58.9 | 2.500 | 1.825 | 19.5 | 20.6 | 38 W | 10* | 32* |
| 3 2 | 18 14.72 | -27 30.4 | 4.376 | 4.115 | 12.9 | 20.6 | 68 W | 15* | 62* | 3 2 | 20 8.38 | -20 13.2 | 2.412 | 1.797 | 21.5 | 20.5 | 42 W | 10* | 36* |
| 3 12 | 18 20.77 | -27 13.6 | 4.235 | 4.127 | 13.6 | 20.6 | 77 W | 16* | 71* | 3 12 | 20 35.38 | -19 13.2 | 2.323 | 1.771 | 23.5 | 20.5 | 45 W | 10* | 39* |
| 3 22 | 18 25.40 | -26 56.2 | 4.088 | 4.137 | 13.9 | 20.5 | 86 W | | | | | | | | | | | | |

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

| 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° | 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° |
|------------------------------------|-----------------|-----------------|----------|-------|---------|------|--------|------------|-------------|------------------------------------|-----------------|-----------------|----------|-------|---------|------|--------|------------|-------------|
| 174756 2003 VN | | | | | | | | | | 173245 1999 LY₇ | | | | | | | | | |
| <i>(continuation)</i> | | | | | | | | | | <i>(continuation)</i> | | | | | | | | | |
| 5 11 | 23 13.81 | -9 36.5 | 1.809 | 1.656 | 33.5 | 20.1 | 65 W | 14* | 59* | 10 28 | 0 58.95 | -4 59.9 | 1.347 | 2.285 | 10.7 | 19.8 | 155 E | 40 | 69 |
| 5 21 | 23 39.10 | -7 43.9 | 1.730 | 1.646 | 34.8 | 20.0 | 68 W | 16* | 61* | 11 7 | 0 52.24 | -5 3.2 | 1.439 | 2.316 | 14.5 | 20.1 | 144 E | 40 | 69 |
| 5 31 | 0 3.93 | -5 53.5 | 1.654 | 1.639 | 35.9 | 19.9 | 71 W | 18* | 63* | 11 17 | 0 48.33 | -4 44.3 | 1.551 | 2.346 | 17.7 | 20.4 | 134 E | 40 | 69 |
| 6 10 | 0 28.21 | -4 7.8 | 1.580 | 1.635 | 36.8 | 19.9 | 75 W | 21* | 64* | 11 27 | 0 47.34 | -4 6.1 | 1.679 | 2.376 | 20.2 | 20.7 | 124 E | 41 | 68 |
| 6 20 | 0 51.84 | -2 29.3 | 1.508 | 1.634 | 37.5 | 19.8 | 78 W | 25* | 65* | 12 7 | 0 49.07 | -3 12.2 | 1.820 | 2.405 | 21.8 | 21.0 | 115 E | 42 | 67 |
| 6 30 | 1 14.65 | -1 0.8 | 1.438 | 1.636 | 37.9 | 19.7 | 82 W | 29* | 65* | 12 17 | 0 53.21 | -2 6.1 | 1.970 | 2.433 | 22.9 | 21.2 | 106 E | 43 | 66* |
| 7 10 | 1 36.43 | +0 15.7 | 1.369 | 1.641 | 38.1 | 19.6 | 86 W | 33* | 64* | 12 27 | 0 59.44 | -0 50.6 | 2.125 | 2.461 | 23.3 | 21.4 | 98 E | 44 | 63* |
| 7 20 | 1 56.95 | +1 18.4 | 1.302 | 1.649 | 38.0 | 19.5 | 90 W | 38* | 63 | 2212 Hephaistos | | | | | | | | | |
| 7 30 | 2 15.86 | +2 5.6 | 1.237 | 1.660 | 37.6 | 19.4 | 94 W | 42* | 62 | 12 23 | 17 6.57 | -23 36.5 | 1.242 | 0.357 | 37.6 | 13.6 | 13 W | 2* | 5* |
| 8 9 | 2 32.80 | +2 36.5 | 1.173 | 1.674 | 36.6 | 19.3 | 100 W | 46* | 61 | 12 25 | 17 26.71 | -24 35.1 | 1.272 | 0.351 | 29.9 | 13.4 | 10 W | — | 3* |
| 8 19 | 2 47.32 | +2 50.7 | 1.110 | 1.691 | 35.2 | 19.1 | 106 W | 48* | 61 | 12 27 | 17 47.09 | -25 20.2 | 1.301 | 0.352 | 22.2 | 13.2 | 8 W | — | 2* |
| 8 29 | 2 58.87 | +2 48.5 | 1.051 | 1.710 | 33.2 | 19.0 | 112 W | 48 | 61 | 12 29 | 18 7.46 | -25 51.1 | 1.328 | 0.362 | 15.2 | 13.1 | 6 W | — | — |
| 9 8 | 3 6.94 | +2 31.5 | 0.997 | 1.731 | 30.5 | 18.8 | 119 W | 48 | 61 | 12 31 | 18 27.54 | -26 8.0 | 1.354 | 0.378 | 9.9 | 13.1 | 4 W | — | — |
| 9 18 | 3 11.02 | +2 2.1 | 0.949 | 1.754 | 26.9 | 18.6 | 128 W | 47 | 62 | 1 2 | 18 47.10 | -26 11.7 | 1.379 | 0.401 | 7.9 | 13.1 | 3 E | — | — |
| 9 23 | 3 11.43 | +1 44.2 | 0.928 | 1.767 | 24.9 | 18.5 | 132 W | 47 | 62 | 1 4 | 19 5.97 | -26 3.6 | 1.403 | 0.427 | 9.3 | 13.4 | 4 E | — | — |
| 9 28 | 3 10.75 | +1 25.1 | 0.910 | 1.779 | 22.6 | 18.4 | 137 W | 46 | 63 | 1 6 | 19 24.04 | -25 45.2 | 1.427 | 0.457 | 11.8 | 13.7 | 5 E | — | — |
| 10 3 | 3 8.99 | +1 5.7 | 0.896 | 1.793 | 20.2 | 18.3 | 142 W | 46 | 63 | 1 8 | 19 41.25 | -25 18.2 | 1.451 | 0.490 | 14.3 | 13.9 | 7 E | — | 1* |
| 10 8 | 3 6.22 | +0 47.1 | 0.885 | 1.806 | 17.6 | 18.2 | 147 W | 46 | 63 | 1 10 | 19 57.60 | -24 44.1 | 1.475 | 0.524 | 16.3 | 14.2 | 9 E | — | 2* |
| 10 13 | 3 2.53 | +0 30.2 | 0.879 | 1.820 | 15.0 | 18.2 | 152 W | 46 | 63 | 1 12 | 20 13.08 | -24 4.2 | 1.500 | 0.559 | 17.9 | 14.4 | 10 E | — | 4* |
| 10 18 | 2 58.05 | +0 16.2 | 0.877 | 1.834 | 12.5 | 18.1 | 157 W | 45 | 64 | 1 14 | 20 27.72 | -23 19.9 | 1.526 | 0.594 | 19.0 | 14.6 | 11 E | — | 5* |
| 10 23 | 2 52.99 | +0 6.2 | 0.880 | 1.849 | 10.2 | 18.0 | 161 W | 45 | 64 | 1 16 | 20 41.58 | -22 32.1 | 1.553 | 0.630 | 19.8 | 14.8 | 13 E | 1* | 6* |
| 10 28 | 2 47.58 | +0 1.2 | 0.889 | 1.864 | 8.5 | 18.0 | 164 W | 45 | 64 | 1 18 | 20 54.68 | -21 41.7 | 1.581 | 0.666 | 20.3 | 15.0 | 14 E | 2* | 6* |
| 11 7 | 2 36.64 | +0 8.4 | 0.923 | 1.894 | 8.5 | 18.1 | 164 E | 45 | 64 | 1 20 | 21 7.07 | -20 49.4 | 1.609 | 0.702 | 20.6 | 15.2 | 15 E | 3* | 7* |
| 11 17 | 2 27.02 | +0 39.8 | 0.980 | 1.926 | 12.0 | 18.4 | 156 E | 46 | 63 | 1 22 | 21 18.81 | -19 55.9 | 1.639 | 0.737 | 20.7 | 15.3 | 15 E | 4* | 8* |
| 11 27 | 2 20.09 | +1 34.0 | 1.058 | 1.958 | 16.2 | 18.8 | 146 E | 47 | 62 | 1 27 | 21 45.58 | -17 39.7 | 1.716 | 0.825 | 20.3 | 15.6 | 17 E | 6* | 9* |
| 12 7 | 2 16.50 | +2 46.5 | 1.155 | 1.990 | 19.8 | 19.1 | 137 E | 48 | 61 | 2 1 | 22 9.17 | -15 24.4 | 1.796 | 0.911 | 19.4 | 15.9 | 18 E | 7* | 9* |
| 12 17 | 2 16.33 | +4 12.2 | 1.268 | 2.023 | 22.7 | 19.4 | 128 E | 49 | 60 | 2 6 | 22 30.16 | -13 13.1 | 1.880 | 0.993 | 18.2 | 16.2 | 18 E | 8* | 9* |
| 12 27 | 2 19.38 | +5 46.8 | 1.393 | 2.057 | 24.8 | 19.7 | 119 E | 51 | 58 | 2 11 | 22 49.01 | -11 7.6 | 1.965 | 1.074 | 16.7 | 16.4 | 18 E | 9* | 9* |
| 1 6 | 2 25.21 | +7 26.3 | 1.529 | 2.090 | 26.1 | 20.0 | 111 E | 52 | 57 | 2 16 | 23 6.11 | -9 8.5 | 2.051 | 1.151 | 15.2 | 16.6 | 18 E | 9* | 8* |
| 1 16 | 2 33.41 | +9 8.0 | 1.672 | 2.123 | 26.8 | 20.3 | 103 E | 54 | 54* | 2 21 | 23 21.75 | -7 16.1 | 2.137 | 1.226 | 13.7 | 16.7 | 17 E | 8* | 7* |
| 456651 2007 RT₁₉ | | | | | | | | | | 450649 2006 UY₆₄ | | | | | | | | | |
| 12 23 | 17 6.50 | -12 9.9 | 2.172 | 1.268 | 13.4 | 21.3 | 17 W | 11* | — | 3 2 | 23 49.59 | -3 50.2 | 2.305 | 1.370 | 10.6 | 17.0 | 15 E | 6* | 5* |
| 1 2 | 17 44.18 | -11 8.4 | 2.124 | 1.234 | 14.8 | 21.2 | 19 W | 12* | 2* | 3 12 | 0 13.94 | -0 47.4 | 2.465 | 1.505 | 7.6 | 17.3 | 11 E | 4* | 3* |
| 1 12 | 18 22.83 | -10 41.3 | 2.084 | 1.205 | 15.9 | 21.2 | 20 W | 13* | 3* | 3 22 | 0 35.73 | +1 55.4 | 2.615 | 1.632 | 4.6 | 17.4 | 8 E | — | — |
| 1 22 | 19 2.03 | -9 19.3 | 2.056 | 1.183 | 16.7 | 21.1 | 20 W | 13* | 4* | 4 1 | 0 55.57 | +4 21.2 | 2.750 | 1.753 | 1.9 | 17.5 | 3 E | — | — |
| 2 1 | 19 41.34 | -7 35.0 | 2.039 | 1.168 | 17.1 | 21.1 | 20 W | 13* | 6* | 4 11 | 1 13.87 | +6 32.2 | 2.869 | 1.868 | -1.1 | 17.7 | 2 W | — | — |
| 2 11 | 20 20.31 | -5 32.8 | 2.033 | 1.161 | 17.3 | 21.1 | 20 W | 13* | 7* | 4 21 | 1 30.90 | +8 30.4 | 2.971 | 1.977 | 3.5 | 18.1 | 7 W | — | 1* |
| 2 21 | 20 58.61 | -3 18.1 | 2.038 | 1.162 | 17.1 | 21.1 | 20 W | 12* | 7* | 5 1 | 1 46.86 | +10 17.2 | 3.054 | 2.081 | 5.9 | 18.4 | 12 W | — | 6* |
| 3 2 | 21 35.94 | -0 56.7 | 2.053 | 1.172 | 16.8 | 21.1 | 20 W | 12* | 8* | 5 11 | 2 1.83 | +11 53.7 | 3.118 | 2.180 | 8.2 | 18.6 | 18 W | 1* | 12* |
| 3 12 | 22 12.13 | +1 25.8 | 2.075 | 1.189 | 16.5 | 21.1 | 20 W | 11* | 9* | 5 21 | 2 15.90 | +13 21.1 | 3.163 | 2.275 | 10.4 | 18.8 | 24 W | 4* | 17* |
| 3 22 | 22 47.09 | +3 44.6 | 2.102 | 1.213 | 16.2 | 21.2 | 20 W | 10* | 10* | 5 31 | 2 29.07 | +14 39.9 | 3.188 | 2.366 | 12.4 | 19.0 | 30 W | 8* | 23* |
| 4 1 | 23 20.79 | +5 55.9 | 2.132 | 1.244 | 16.2 | 21.3 | 20 W | 9* | 11* | 6 10 | 2 41.32 | +15 50.8 | 3.194 | 2.453 | 14.2 | 19.1 | 36 W | 13* | 28* |
| 4 11 | 23 53.25 | +7 56.6 | 2.163 | 1.281 | 16.4 | 21.4 | 21 W | 9* | 13* | 6 20 | 2 52.60 | +16 54.4 | 3.181 | 2.537 | 15.9 | 19.3 | 43 W | 18* | 32* |
| 173245 1999 LY₇ | | | | | | | | | | 450649 2006 UY₆₄ | | | | | | | | | |
| 12 23 | 17 6.52 | -20 34.3 | 2.623 | 1.681 | 7.7 | 20.5 | 13 W | 5* | 4* | 6 30 | 3 2.82 | +17 51.1 | 3.150 | 2.617 | 17.3 | 19.4 | 50 W | 25* | 36* |
| 1 2 | 17 36.27 | -21 19.1 | 2.589 | 1.669 | 9.6 | 20.5 | 16 W | 6* | 8* | 7 10 | 3 11.85 | +18 41.3 | 3.103 | 2.693 | 18.5 | 19.4 | 57 W | 32* | 39* |
| 1 12 | 18 6.40 | -21 43.5 | 2.553 | 1.659 | 11.4 | 20.5 | 20 W | 7* | 11* | 7 20 | 3 19.54 | +19 25.2 | 3.040 | 2.767 | 19.4 | 19.5 | 65 W | 40* | 42* |
| 1 22 | 18 36.71 | -21 47.0 | 2.517 | 1.653 | 13.3 | 20.6 | 23 W | 7* | 15* | 8 30 | 3 25.68 | +20 3.1 | 2.965 | 2.837 | 20.0 | 19.5 | 73 W | 48* | 43* |
| 2 1 | 19 6.95 | -21 29.7 | 2.480 | 1.649 | 15.1 | 20.6 | 26 W | 7* | 19* | 8 9 | 3 30.07 | +20 34.9 | 2.880 | 2.905 | 20.2 | 19.5 | 81 W | 56* | 43* |
| 2 11 | 19 36.87 | -20 52.4 | 2.442 | 1.648 | 16.8 | 20.6 | 29 W | 8* | 22* | 8 19 | 3 32.44 | +21 0.5 | 2.787 | 2.970 | 19.9 | 19.5 | 90 W | 62* | 43 |
| 2 21 | 20 6.28 | -19 56.9 | 2.403 | 1.651 | 18.5 | 20.6 | 32 W | 8* | 26* | 8 29 | 3 32.53 | +21 19.4 | 2.692 | 3.033 | 19.2 | 19.4 | 100 W | 66* | 43 |
| 3 2 | 20 34.99 | -18 45.1 | 2.363 | 1.656 | 20.2 | 20.7 | 35 W | 8* | 29* | 9 8 | 3 30.10 | +21 30.7 | 2.599 | 3.093 | 17.8 | 19.3 | 110 W | 67* | 42 |
| 3 12 | 21 2.86 | -17 19.7 | 2.323 | 1.664 | 21.8 | 20.7 | 38 W | 8* | 32* | 9 18 | 3 25.01 | +21 33.1 | 2.514 | 3.150 | 15.9 | 19.2 | 121 W | 67 | 42 |
| 3 22 | 21 29.82 | -15 43.4 | 2.280 | 1.675 | 23.4 | 20.7 | 42 W | 8* | 36* | 9 28 | 3 17.23 | +21 25.2 | 2.443 | 3.205 | 13.3 | 19.1 | 132 W | 66 | 43 |
| 4 1 | 21 55.79 | -13 59.2 | 2.236 | 1.689 | 24.8 | 20.7 | 45 W | 9* | 39* | 10 8 | 3 7.02 | +21 5.8 | 2.392 | 3.258 | 10.2 | 19.0 | 145 W | 66 | 43 |
| 4 11 | 22 20.75 | -12 10.0 | 2.190 | 1.705 | 26.2 | 20.8 | 49 W | 10* | 43* | 10 18 | 2 54.94 | +20 34.4 | 2.367 | 3.308 | 6.7 | 18.8 | 157 W | 66 | 43 |
| 4 21 | 22 44.69 | -10 18.7 | 2.142 | 1.723 | 27.5 | 20.8 | 52 W | 11* | 46* | 10 23 | 2 48.45 | +20 14.5 | 2.367 | 3.333 | 4.8 | 18.8 | 164 W | 65 | 44 |
| 5 1 | 23 7.58 | -8 27.8 | 2.090 | 1.744 | 28.7 | 20.8 | 56 W | 12* | 50* | 10 28 | 2 41.82 | +19 52.3 | 2.374 | 3.357 | 3.0 | 18.7 | 170 W | 65 | 44 |
| 5 11 | 23 29.42 | -6 40.1 | 2.036 | 1.767 | 29.7 | 20.8 | 60 W | 14* | 54* | 11 2 | 2 35.20 | +19 28.2 | 2.390 | 3.380 | 1.4 | 18.6 | 175 W | 64 | 45 |
| 5 21 | 23 50.19 | -4 57.6 | 1.978 | 1.791 | 30.6 | 20.8 | 64 W | 16* | 57* | 11 7 | 2 28.70 | +19 2.7 | 2.415 | 3.403 | 1.6 | 18.7 | 174 E | 64 | 45 |
| 5 31 | 0 9.82 | -3 22.7 | 1.917 | 1.817 | 31.4 | 20.7 | 69 W | 19* | 60* | 11 12 | 2 22.45 | +18 36.6 | 2.449 | 3.425 | 3.2 | 18.8 | 169 E | 64 | 45 |
| 6 10 | 0 28.23 | -1 57.3 | 1.852 | 1.844 | 31.9 | 20.7 | 74 W | 23* | 62* | 11 17 | 2 16.56 | +18 10.4 | 2.491 | 3.447 | 4.9 | 19.0 | 163 E | 63 | 46 |
| 6 20 | 0 45.31 | -0 43.1 | 1.784 | 1.873 | 32.2 | 20.7 | 79 W | 27* | 64* | 11 22 | 2 11.11 | +17 44.9 | 2.541 | 3.468 | 6.6 | 19.1 | 156 E | 63 | 46 |
| 6 30 | 1 0.88 | +0 18.0 | 1.713 | 1.903 | 32.1 | 20.6 | 84 W | 32* | | | | | | | | | | | |

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

| 19/20 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° | 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° |
|------------------------------------|-----------------|-----------------|----------|-------|---------|------|--------|-----|------|------------------------------------|-----------------|-----------------|----------|-------|---------|------|--------|-----|------|
| 450649 2006 UY₆₄ | | | | | | | | | | 10150 1994 PN | | | | | | | | | |
| <i>(continuation)</i> | | | | | | | | | | <i>(continuation)</i> | | | | | | | | | |
| 2 6 | 21 20.78 | -28 10.0 | 1.795 | 0.858 | 14.2 | 21.2 | 12 E | — | 1* | 4 26 | 22 57.77 | -11 36.2 | 1.473 | 1.215 | 42.6 | 18.3 | 55 W | 9* | 49* |
| 2 11 | 21 44.86 | -26 6.1 | 1.812 | 0.871 | 13.6 | 21.3 | 12 E | — | 2* | 5 1 | 23 19.82 | -12 11.5 | 1.432 | 1.190 | 44.0 | 18.3 | 55 W | 7* | 49* |
| 2 16 | 22 7.60 | -23 49.2 | 1.830 | 0.885 | 12.9 | 21.3 | 12 E | — | 2* | 5 6 | 23 42.85 | -12 44.5 | 1.395 | 1.167 | 45.3 | 18.2 | 55 W | 5* | 49* |
| 2 21 | 22 29.07 | -21 22.3 | 1.849 | 0.899 | 12.1 | 21.3 | 11 E | — | 2* | 5 11 | 0 6.78 | -13 13.8 | 1.365 | 1.147 | 46.4 | 18.1 | 55 W | 3* | 49* |
| 2 26 | 22 49.36 | -18 48.0 | 1.869 | 0.913 | 11.3 | 21.4 | 10 E | — | 2* | 5 16 | 0 31.49 | -13 38.1 | 1.342 | 1.128 | 47.3 | 18.1 | 55 W | 1* | 49* |
| 3 2 | 23 8.61 | -16 8.6 | 1.889 | 0.927 | 10.5 | 21.4 | 10 E | — | 2* | 5 21 | 0 56.78 | -13 56.2 | 1.326 | 1.113 | 48.1 | 18.1 | 55 W | — | 48* |
| 3 7 | 23 26.94 | -13 25.9 | 1.908 | 0.941 | 9.6 | 21.4 | 9 E | — | 1* | 5 26 | 1 22.39 | -14 6.9 | 1.317 | 1.101 | 48.5 | 18.0 | 55 W | — | 47* |
| 3 12 | 23 44.47 | -10 41.5 | 1.928 | 0.955 | 8.6 | 21.4 | 8 E | — | 1* | 5 31 | 1 48.06 | -14 9.7 | 1.315 | 1.092 | 48.7 | 18.0 | 54 W | — | 46* |
| 3 17 | 0 1.35 | -7 56.6 | 1.946 | 0.968 | 7.6 | 21.4 | 7 E | — | — | 6 5 | 2 13.48 | -14 4.4 | 1.320 | 1.086 | 48.7 | 18.0 | 54 W | — | 46* |
| 3 22 | 0 17.69 | -5 12.1 | 1.964 | 0.981 | 6.6 | 21.4 | 7 E | — | — | 6 10 | 2 38.40 | -13 51.3 | 1.332 | 1.084 | 48.4 | 18.0 | 53 W | — | 45* |
| 3 27 | 0 33.60 | -2 29.0 | 1.982 | 0.993 | 5.6 | 21.4 | 6 E | — | — | 6 15 | 3 2.58 | -13 31.1 | 1.350 | 1.085 | 47.8 | 18.0 | 52 W | — | 44* |
| 4 1 | 0 49.18 | +0 12.1 | 1.998 | 1.005 | 4.6 | 21.4 | 5 E | — | — | 6 20 | 3 25.84 | -13 5.1 | 1.373 | 1.089 | 47.0 | 18.1 | 52 W | — | 43* |
| 4 6 | 1 4.53 | +2 50.6 | 2.012 | 1.016 | 3.7 | 21.4 | 4 E | — | — | 6 25 | 3 48.05 | -12 34.6 | 1.401 | 1.097 | 46.1 | 18.1 | 51 W | — | 43* |
| 4 11 | 1 19.73 | +5 26.2 | 2.026 | 1.026 | 2.8 | 21.4 | 3 E | — | — | 6 30 | 4 9.13 | -12 0.9 | 1.431 | 1.108 | 45.0 | 18.1 | 50 W | — | 42* |
| 4 16 | 1 34.87 | +7 58.4 | 2.037 | 1.035 | 2.1 | 21.4 | 2 W | — | — | 7 5 | 4 29.06 | -11 25.3 | 1.464 | 1.122 | 43.9 | 18.2 | 50 W | — | 42* |
| 4 21 | 1 50.04 | +10 26.9 | 2.048 | 1.044 | 1.9 | 21.4 | 2 W | — | — | 7 10 | 4 47.85 | -10 48.7 | 1.499 | 1.139 | 42.7 | 18.2 | 49 W | — | 42* |
| 4 26 | 2 5.30 | +12 51.4 | 2.056 | 1.051 | 2.2 | 21.4 | 2 W | — | — | 7 15 | 5 5.56 | -10 12.2 | 1.533 | 1.158 | 41.5 | 18.3 | 49 W | — | 42* |
| 5 1 | 2 20.74 | +15 11.4 | 2.063 | 1.058 | 2.9 | 21.5 | 3 W | — | — | 7 20 | 5 22.22 | -9 36.5 | 1.568 | 1.180 | 40.4 | 18.3 | 49 W | — | 42* |
| 477826 2011 EB₅₁ | | | | | | | | | | 360643 2004 HY₅₃ | | | | | | | | | |
| 12 23 | 17 7.12 | -5 4.2 | 2.493 | 1.630 | 13.5 | 20.6 | 23 W | 17* | — | 7 30 | 5 52.65 | -8 29.7 | 1.633 | 1.231 | 38.4 | 18.5 | 49 W | 2* | 43* |
| 1 2 | 17 36.54 | -5 59.1 | 2.480 | 1.631 | 14.2 | 20.6 | 24 W | 18* | — | 8 9 | 6 19.64 | -7 30.7 | 1.689 | 1.288 | 36.8 | 18.6 | 50 W | 7* | 44* |
| 1 12 | 18 5.70 | -6 38.7 | 2.469 | 1.637 | 15.0 | 20.7 | 25 W | 19* | 5* | 8 19 | 6 43.64 | -6 40.3 | 1.734 | 1.351 | 35.6 | 18.7 | 51 W | 13* | 45* |
| 1 22 | 18 34.42 | -7 3.4 | 2.458 | 1.646 | 15.9 | 20.7 | 27 W | 19* | 10* | 8 29 | 7 4.96 | -5 57.8 | 1.764 | 1.418 | 34.9 | 18.8 | 53 W | 18* | 46* |
| 2 1 | 19 2.53 | -7 14.0 | 2.448 | 1.660 | 16.9 | 20.7 | 29 W | 20* | 14* | 9 8 | 7 23.84 | -5 21.7 | 1.779 | 1.487 | 34.5 | 18.9 | 57 W | 24* | 48* |
| 2 11 | 19 29.87 | -7 11.9 | 2.436 | 1.677 | 17.9 | 20.8 | 32 W | 20* | 19* | 9 18 | 7 40.43 | -4 49.7 | 1.777 | 1.558 | 34.3 | 19.0 | 61 W | 29* | 50* |
| 2 21 | 19 56.35 | -6 59.0 | 2.421 | 1.697 | 19.1 | 20.8 | 34 W | 20* | 23* | 9 28 | 7 54.72 | -4 19.2 | 1.759 | 1.630 | 34.1 | 19.1 | 66 W | 34* | 53* |
| 3 2 | 20 21.86 | -6 37.4 | 2.402 | 1.721 | 20.4 | 20.9 | 37 W | 20* | 27* | 10 8 | 8 6.68 | -3 46.5 | 1.726 | 1.703 | 33.9 | 19.2 | 72 W | 38* | 55* |
| 3 12 | 20 46.36 | -6 9.6 | 2.378 | 1.748 | 21.7 | 20.9 | 41 W | 19* | 32* | 10 18 | 8 16.15 | -3 8.0 | 1.680 | 1.775 | 33.4 | 19.2 | 79 W | 41* | 58* |
| 3 22 | 21 9.82 | -5 37.9 | 2.348 | 1.778 | 23.1 | 21.0 | 44 W | 19* | 36* | 10 23 | 8 19.86 | -2 44.9 | 1.652 | 1.811 | 33.0 | 19.2 | 82 W | 42* | 60* |
| 4 1 | 21 32.19 | -5 4.8 | 2.312 | 1.810 | 24.4 | 21.0 | 48 W | 20* | 41* | 10 28 | 8 22.85 | -2 18.5 | 1.621 | 1.847 | 32.5 | 19.2 | 86 W | 43 | 61* |
| 4 11 | 21 53.47 | -4 32.9 | 2.269 | 1.844 | 25.6 | 21.1 | 53 W | 20* | 45* | 11 2 | 8 25.07 | -1 47.9 | 1.589 | 1.882 | 31.8 | 19.1 | 91 W | 43 | 63* |
| 4 21 | 22 13.64 | -4 4.8 | 2.219 | 1.880 | 26.8 | 21.1 | 57 W | 20* | 50* | 11 7 | 8 26.48 | -1 12.4 | 1.556 | 1.917 | 31.0 | 19.1 | 95 W | 44 | 64* |
| 5 1 | 22 32.65 | -3 43.1 | 2.162 | 1.918 | 27.8 | 21.1 | 63 W | 21* | 54* | 11 12 | 8 27.01 | -0 31.2 | 1.521 | 1.952 | 30.0 | 19.1 | 100 W | 44 | 64* |
| 5 11 | 22 50.45 | -3 30.5 | 2.099 | 1.957 | 28.6 | 21.1 | 68 W | 22* | 59* | 11 17 | 8 26.62 | +0 16.5 | 1.486 | 1.987 | 28.7 | 19.0 | 105 W | 45 | 64* |
| 5 21 | 23 6.97 | -3 29.8 | 2.029 | 1.998 | 29.1 | 21.1 | 74 W | 24* | 63* | 11 22 | 8 25.25 | +1 11.6 | 1.452 | 2.022 | 27.2 | 19.0 | 110 W | 46 | 63* |
| 5 31 | 23 22.09 | -3 44.0 | 1.955 | 2.039 | 29.3 | 21.1 | 80 W | 26* | 66* | 11 27 | 8 22.87 | +2 14.8 | 1.420 | 2.056 | 25.5 | 18.9 | 116 W | 47 | 62 |
| 6 10 | 23 35.65 | -4 16.3 | 1.877 | 2.081 | 29.2 | 21.0 | 87 W | 28* | 68* | 12 7 | 8 15.02 | +4 46.9 | 1.364 | 2.123 | 21.3 | 18.7 | 129 W | 50 | 59 |
| 6 20 | 23 47.46 | -5 9.7 | 1.798 | 2.123 | 28.5 | 21.0 | 94 W | 31* | 69 | 12 17 | 8 3.15 | +7 52.8 | 1.327 | 2.189 | 16.0 | 18.6 | 142 W | 53 | 56 |
| 6 30 | 23 57.25 | -6 27.3 | 1.719 | 2.166 | 27.4 | 20.9 | 102 W | 33* | 70 | 12 27 | 7 48.00 | +11 24.8 | 1.317 | 2.253 | 10.0 | 18.4 | 157 W | 56 | 53 |
| 7 10 | 0 4.77 | -8 11.5 | 1.645 | 2.209 | 25.6 | 20.8 | 110 W | 35* | 72 | 1 1 | 7 39.61 | +13 15.9 | 1.324 | 2.285 | 6.8 | 18.3 | 164 W | 58 | 51 |
| 7 20 | 0 9.70 | -10 23.4 | 1.577 | 2.252 | 23.3 | 20.7 | 119 W | 34* | 74 | 1 6 | 7 20.98 | +15 7.1 | 1.340 | 2.316 | 3.9 | 18.2 | 171 W | 60 | 49 |
| 7 30 | 0 11.76 | -13 1.8 | 1.522 | 2.295 | 20.3 | 20.5 | 128 W | 32 | 77 | 1 11 | 7 22.34 | +16 56.0 | 1.366 | 2.347 | 2.2 | 18.2 | 175 E | 62 | 47 |
| 8 9 | 0 10.81 | -16 1.2 | 1.483 | 2.337 | 16.8 | 20.4 | 138 W | 29 | 80 | 1 16 | 7 13.95 | +18 40.4 | 1.401 | 2.378 | 3.7 | 18.4 | 171 E | 64 | 45 |
| 8 14 | 0 9.21 | -17 35.9 | 1.470 | 2.359 | 15.0 | 20.3 | 143 W | 27 | 82 | 360643 2004 HY₅₃ | | | | | | | | | |
| 8 19 | 0 6.88 | -19 12.0 | 1.464 | 2.380 | 13.2 | 20.3 | 147 W | 26 | 83 | 12 23 | 17 7.86 | -27 1.5 | 2.824 | 1.878 | 6.7 | 21.0 | 13 W | — | 7* |
| 8 24 | 0 3.90 | -20 47.4 | 1.464 | 2.401 | 11.6 | 20.2 | 152 W | 24 | 85 | 1 2 | 17 35.65 | -27 30.2 | 2.769 | 1.849 | 8.8 | 21.0 | 17 W | 1* | 10* |
| 8 29 | 0 0.36 | -22 20.1 | 1.470 | 2.422 | 10.2 | 20.2 | 155 W | 23 | 86 | 1 12 | 18 4.09 | -27 40.3 | 2.709 | 1.821 | 10.9 | 21.0 | 20 W | 2* | 14* |
| 9 3 | 23 56.36 | -23 48.3 | 1.483 | 2.443 | 9.3 | 20.2 | 157 W | 21 | 88 | 1 22 | 18 33.01 | -27 30.7 | 2.645 | 1.793 | 13.0 | 21.0 | 24 W | 3* | 18* |
| 9 8 | 23 52.04 | -25 10.1 | 1.502 | 2.464 | 8.9 | 20.2 | 158 W | 20 | 89 | 2 1 | 19 2.20 | -27 0.5 | 2.578 | 1.767 | 15.0 | 21.0 | 28 W | 3* | 22* |
| 9 13 | 23 47.53 | -26 24.0 | 1.529 | 2.485 | 9.2 | 20.3 | 157 W | 19 | 90 | 2 11 | 19 31.45 | -26 9.4 | 2.509 | 1.742 | 17.1 | 21.0 | 31 W | 4* | 25* |
| 9 18 | 23 42.98 | -27 28.9 | 1.562 | 2.506 | 10.0 | 20.4 | 154 W | 18 | 89 | 2 21 | 20 0.58 | -24 57.7 | 2.437 | 1.718 | 19.1 | 21.0 | 35 W | 4* | 29* |
| 9 23 | 23 38.56 | -28 23.9 | 1.601 | 2.527 | 11.1 | 20.5 | 151 E | 17 | 88 | 3 2 | 20 29.40 | -23 26.2 | 2.365 | 1.696 | 21.0 | 20.9 | 38 W | 5* | 32* |
| 9 28 | 23 34.42 | -29 8.8 | 1.647 | 2.547 | 12.3 | 20.7 | 147 E | 16 | 87 | 3 12 | 20 57.77 | -21 36.1 | 2.293 | 1.675 | 22.9 | 20.9 | 41 W | 5* | 35* |
| 10 3 | 23 30.67 | -29 43.5 | 1.698 | 2.567 | 13.6 | 20.8 | 143 E | 15 | 86 | 3 22 | 21 25.60 | -19 29.3 | 2.221 | 1.657 | 24.7 | 20.9 | 44 W | 6* | 38* |
| 10 8 | 23 27.40 | -30 8.6 | 1.754 | 2.587 | 14.9 | 20.9 | 138 E | 15 | 86 | 4 1 | 21 52.80 | -17 7.7 | 2.149 | 1.641 | 26.5 | 20.8 | 47 W | 7* | 41* |
| 10 13 | 23 24.70 | -30 24.5 | 1.815 | 2.607 | 16.0 | 21.0 | 134 E | 15 | 86 | 4 11 | 22 19.35 | -14 33.9 | 2.078 | 1.627 | 28.2 | 20.8 | 50 W | 8* | 44* |
| 10 18 | 23 22.62 | -30 32.0 | 1.881 | 2.627 | 17.1 | 21.2 | 129 E | 14 | 85 | 4 21 | 22 45.25 | -11 50.1 | 2.009 | 1.615 | 29.7 | 20.7 | 53 W | 9* | 47* |
| 10 23 | 23 21.19 | -30 31.8 | 1.950 | 2.647 | 18.0 | 21.3 | 125 E | 14 | 85 | 5 1 | 23 10.50 | -8 59.0 | 1 | | | | | | |

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

| 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° | 19/20 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° |
|-------------------------------------|-----------------|-----------------|----------|-------|---------|------|--------|-----|------|------------------------------------|-----------------|-----------------|----------|-------|---------|------|--------|-----|------|
| 360643 2004 HY₅₃ | | | | | | | | | | 5201 Ferraz-Mello | | | | | | | | | |
| <i>(continuation)</i> | | | | | | | | | | <i>(continuation)</i> | | | | | | | | | |
| 11 7 | 2 51.82 | +27 25.1 | 0.916 | 1.898 | 5.8 | 18.6 | 169 W | 72 | 37 | 6 10 | 18 37.27 | -27 19.9 | 3.178 | 4.149 | 4.7 | 20.7 | 161 W | 18 | 89 |
| 11 12 | 2 45.37 | +27 8.4 | 0.931 | 1.912 | 5.6 | 18.6 | 169 E | 72 | 37 | 6 20 | 18 29.28 | -27 29.3 | 3.172 | 4.179 | 2.1 | 20.6 | 171 W | 18 | 89 |
| 11 17 | 2 39.38 | +26 47.5 | 0.953 | 1.927 | 7.1 | 18.7 | 166 E | 72 | 37 | 6 30 | 18 21.00 | -27 34.9 | 3.195 | 4.208 | 1.4 | 20.5 | 174 E | 17 | 88 |
| 11 22 | 2 34.08 | +26 23.9 | 0.981 | 1.942 | 9.4 | 18.9 | 161 E | 71 | 38 | 7 10 | 18 13.06 | -27 36.3 | 3.249 | 4.237 | 3.7 | 20.7 | 164 E | 17 | 88 |
| 11 27 | 2 29.66 | +25 59.3 | 1.014 | 1.957 | 11.8 | 19.1 | 156 E | 71 | 38 | 7 20 | 18 6.00 | -27 33.9 | 3.331 | 4.265 | 6.1 | 20.9 | 154 E | 17 | 88 |
| 12 2 | 2 26.20 | +25 35.0 | 1.052 | 1.972 | 14.1 | 19.3 | 151 E | 71 | 38 | 7 30 | 18 0.27 | -27 28.7 | 3.439 | 4.292 | 8.2 | 21.1 | 143 E | 18 | 89 |
| 12 7 | 2 23.78 | +25 12.2 | 1.096 | 1.987 | 16.3 | 19.5 | 145 E | 70 | 39 | 8 9 | 17 56.17 | -27 21.6 | 3.570 | 4.319 | 10.0 | 21.3 | 132 E | 18 | 89 |
| 12 12 | 2 22.39 | +24 51.9 | 1.144 | 2.002 | 18.3 | 19.6 | 140 E | 70 | 39 | 8 19 | 17 53.83 | -27 13.7 | 3.719 | 4.346 | 11.3 | 21.4 | 122 E | 18 | 89 |
| 12 17 | 2 22.02 | +24 34.6 | 1.196 | 2.017 | 20.1 | 19.8 | 135 E | 70 | 39 | 348461 2005 SH₁₉ | | | | | | | | | |
| 12 22 | 2 22.64 | +24 21.0 | 1.252 | 2.032 | 21.7 | 20.0 | 130 E | 69 | 40 | 12 23 | 17 9.56 | -32 24.3 | 1.316 | 0.442 | 34.4 | 17.3 | 15 W | — | 9* |
| 12 27 | 2 24.17 | +24 11.1 | 1.311 | 2.047 | 23.0 | 20.1 | 126 E | 69 | 40 | 12 25 | 17 23.32 | -34 30.1 | 1.349 | 0.476 | 32.9 | 17.5 | 15 W | — | 9* |
| 1 1 | 2 26.55 | +24 4.9 | 1.373 | 2.062 | 24.1 | 20.3 | 121 E | 69 | 40 | 12 27 | 17 37.44 | -36 19.9 | 1.381 | 0.512 | 31.8 | 17.7 | 16 W | — | 8* |
| 1 6 | 2 29.71 | +24 2.3 | 1.438 | 2.077 | 25.0 | 20.4 | 117 E | 69 | 40 | 12 29 | 17 51.78 | -37 54.6 | 1.413 | 0.549 | 30.9 | 17.9 | 17 W | — | 8* |
| 1 11 | 2 33.57 | +24 3.0 | 1.505 | 2.091 | 25.7 | 20.6 | 113 E | 69 | 40* | 12 31 | 18 6.22 | -39 15.3 | 1.445 | 0.586 | 30.2 | 18.0 | 17 W | — | 8* |
| 1 16 | 2 38.08 | +24 6.7 | 1.574 | 2.106 | 26.3 | 20.7 | 109 E | 69 | 40* | 1 2 | 18 20.65 | -40 23.0 | 1.477 | 0.624 | 29.5 | 18.2 | 18 W | — | 8* |
| 119866 2002 CL₁₄₂ | | | | | | | | | | 1 4 | 18 34.98 | -41 19.0 | 1.509 | 0.661 | 28.9 | 18.4 | 19 W | — | 7* |
| 12 23 | 17 8.09 | -20 41.0 | 3.739 | 2.789 | 4.5 | 21.1 | 13 W | 4* | 4* | 1 6 | 18 49.11 | -42 4.2 | 1.541 | 0.699 | 28.3 | 18.5 | 20 W | — | 7* |
| 1 2 | 17 24.89 | -20 49.4 | 3.736 | 2.826 | 6.5 | 21.2 | 19 W | 8* | 10* | 1 8 | 19 2.99 | -42 39.8 | 1.573 | 0.736 | 27.8 | 18.7 | 20 W | — | 6* |
| 1 12 | 17 41.17 | -20 50.3 | 3.718 | 2.862 | 8.5 | 21.3 | 25 W | 11* | 16* | 1 10 | 19 16.55 | -43 6.6 | 1.605 | 0.772 | 27.2 | 18.8 | 21 W | — | 6* |
| 1 22 | 17 56.84 | -20 44.2 | 3.685 | 2.897 | 10.4 | 21.4 | 32 W | 13* | 23* | 1 12 | 19 29.74 | -43 25.7 | 1.637 | 0.809 | 26.6 | 18.9 | 22 W | — | 5* |
| 2 1 | 18 11.79 | -20 31.6 | 3.636 | 2.932 | 12.1 | 21.5 | 39 W | 15* | 31* | 1 14 | 19 42.53 | -43 37.9 | 1.669 | 0.844 | 26.1 | 19.0 | 22 E | — | 6* |
| 316922 2000 WB₁₆₅ | | | | | | | | | | 1 16 | 19 54.90 | -43 44.0 | 1.702 | 0.880 | 25.5 | 19.1 | 23 E | — | 7* |
| 12 23 | 17 8.44 | -17 19.4 | 3.454 | 2.511 | 5.5 | 19.9 | 14 W | 7* | 2* | 1 18 | 20 6.83 | -43 44.7 | 1.734 | 0.915 | 25.0 | 19.3 | 23 E | — | 8* |
| 1 2 | 17 26.30 | -17 56.6 | 3.466 | 2.561 | 7.4 | 20.1 | 19 W | 10* | 8* | 1 20 | 20 18.30 | -43 40.8 | 1.766 | 0.949 | 24.4 | 19.4 | 24 E | — | 8* |
| 1 12 | 17 43.56 | -18 24.8 | 3.465 | 2.610 | 9.3 | 20.2 | 25 W | 12* | 15* | 1 22 | 20 29.33 | -43 32.9 | 1.799 | 0.983 | 23.9 | 19.5 | 24 E | — | 9* |
| 1 22 | 18 0.16 | -18 44.9 | 3.448 | 2.658 | 11.1 | 20.3 | 31 W | 14* | 22* | 1 27 | 20 54.99 | -42 58.9 | 1.878 | 1.066 | 22.7 | 19.7 | 25 E | — | 10* |
| 2 1 | 18 15.98 | -18 58.0 | 3.417 | 2.706 | 12.9 | 20.4 | 38 W | 16* | 29* | 2 1 | 21 18.06 | -42 10.3 | 1.957 | 1.146 | 21.5 | 19.9 | 25 E | — | 10* |
| 2 11 | 18 30.92 | -19 5.2 | 3.372 | 2.753 | 14.5 | 20.5 | 44 W | 17* | 36* | 2 6 | 21 38.82 | -41 12.3 | 2.034 | 1.224 | 20.5 | 20.1 | 26 E | — | 10* |
| 2 21 | 18 44.87 | -19 7.9 | 3.313 | 2.798 | 15.9 | 20.5 | 51 W | 18* | 44* | 2 11 | 21 57.54 | -40 8.8 | 2.108 | 1.299 | 19.6 | 20.3 | 26 E | — | 10* |
| 3 2 | 18 57.70 | -19 7.6 | 3.241 | 2.844 | 17.2 | 20.5 | 58 W | 19* | 51* | 2 16 | 22 14.51 | -39 2.6 | 2.180 | 1.371 | 18.9 | 20.4 | 27 E | — | 10* |
| 3 12 | 19 9.27 | -19 5.7 | 3.159 | 2.888 | 18.2 | 20.5 | 65 W | 20* | 59* | 2 21 | 22 29.99 | -37 55.4 | 2.248 | 1.442 | 18.3 | 20.6 | 27 E | — | 10* |
| 3 22 | 19 19.46 | -19 3.9 | 3.067 | 2.931 | 19.0 | 20.5 | 73 W | 21* | 66* | 2 26 | 22 44.18 | -36 48.9 | 2.313 | 1.510 | 17.8 | 20.7 | 28 E | — | 9* |
| 4 1 | 19 28.08 | -19 3.9 | 2.967 | 2.974 | 19.4 | 20.5 | 81 W | 22* | 74* | 3 2 | 22 57.26 | -35 43.9 | 2.375 | 1.577 | 17.5 | 20.9 | 29 E | — | 8* |
| 4 11 | 19 34.96 | -19 7.4 | 2.863 | 3.015 | 19.4 | 20.5 | 89 W | 23* | 81* | 3 7 | 23 9.39 | -34 41.1 | 2.432 | 1.642 | 17.3 | 21.0 | 29 W | — | 8* |
| 4 21 | 19 39.92 | -19 15.9 | 2.757 | 3.056 | 19.0 | 20.4 | 98 W | 24* | 83 | 3 12 | 23 20.68 | -33 40.9 | 2.486 | 1.705 | 17.2 | 21.1 | 30 W | — | 9* |
| 5 1 | 19 42.76 | -19 31.1 | 2.652 | 3.096 | 18.2 | 20.3 | 107 W | 25* | 84 | 3 17 | 23 31.25 | -32 43.7 | 2.535 | 1.766 | 17.2 | 21.3 | 32 W | — | 11* |
| 5 11 | 19 43.31 | -19 54.0 | 2.554 | 3.135 | 16.8 | 20.2 | 116 W | 25* | 84 | 3 22 | 23 41.19 | -31 49.8 | 2.579 | 1.826 | 17.3 | 21.4 | 33 W | — | 13* |
| 5 21 | 19 41.47 | -20 25.1 | 2.465 | 3.173 | 14.9 | 20.1 | 126 W | 25 | 84 | 3 27 | 23 50.55 | -30 59.3 | 2.620 | 1.884 | 17.5 | 21.5 | 35 W | — | 15* |
| 5 31 | 19 37.21 | -21 3.9 | 2.392 | 3.210 | 12.4 | 20.0 | 137 W | 24 | 85 | 4179 Toutatis | | | | | | | | | |
| 6 10 | 19 30.72 | -21 49.0 | 2.338 | 3.246 | 9.5 | 19.8 | 148 W | 23 | 86 | 12 23 | 17 9.97 | -22 40.3 | 4.268 | 3.313 | 3.6 | 21.4 | 12 W | 2* | 4* |
| 6 20 | 19 22.37 | -22 37.7 | 2.308 | 3.281 | 6.1 | 19.7 | 160 W | 22 | 87 | 1 2 | 17 23.87 | -22 54.8 | 4.180 | 3.267 | 5.6 | 21.5 | 19 W | 6* | 11* |
| 6 25 | 19 17.67 | -23 2.4 | 2.303 | 3.298 | 4.3 | 19.6 | 166 W | 22 | 87 | 1 12 | 17 37.88 | -23 4.7 | 4.074 | 3.219 | 7.7 | 21.5 | 26 W | 9* | 18* |
| 6 30 | 19 12.77 | -23 26.9 | 2.306 | 3.315 | 2.5 | 19.5 | 172 W | 22 | 87 | 1 22 | 17 51.92 | -23 9.8 | 3.950 | 3.170 | 9.7 | 21.5 | 33 W | 11* | 25* |
| 7 5 | 19 7.75 | -23 50.5 | 2.316 | 3.332 | 0.8 | 19.4 | 177 W | 21 | 88 | 2 1 | 18 5.88 | -23 10.2 | 3.810 | 3.120 | 11.7 | 21.4 | 40 W | 13* | 33* |
| 7 10 | 19 2.73 | -24 13.2 | 2.334 | 3.349 | 1.2 | 19.4 | 176 E | 21 | 88 | 2 11 | 18 19.67 | -23 6.0 | 3.656 | 3.068 | 13.6 | 21.4 | 47 W | 15* | 40* |
| 7 15 | 18 57.82 | -24 34.4 | 2.359 | 3.365 | 2.9 | 19.6 | 170 E | 20 | 89 | 2 21 | 18 33.18 | -22 57.4 | 3.489 | 3.014 | 15.4 | 21.3 | 54 W | 16* | 47* |
| 7 20 | 18 53.12 | -24 54.1 | 2.391 | 3.381 | 4.6 | 19.7 | 164 E | 20 | 89 | 3 2 | 18 46.30 | -22 44.8 | 3.311 | 2.959 | 17.0 | 21.2 | 61 W | 17* | 55* |
| 7 30 | 18 44.72 | -25 28.5 | 2.477 | 3.413 | 7.8 | 20.0 | 153 E | 20 | 89 | 3 12 | 18 58.88 | -22 28.8 | 3.124 | 2.903 | 18.5 | 21.1 | 68 W | 18* | 62* |
| 8 9 | 18 38.12 | -25 56.2 | 2.588 | 3.443 | 10.5 | 20.2 | 142 E | 19 | 90 | 3 22 | 19 10.82 | -22 10.1 | 2.931 | 2.844 | 19.8 | 21.0 | 75 W | 19* | 69* |
| 8 19 | 18 33.68 | -26 17.9 | 2.721 | 3.473 | 12.6 | 20.4 | 131 E | 19 | 90 | 4 1 | 19 21.93 | -21 49.6 | 2.732 | 2.784 | 20.8 | 20.8 | 82 W | 20* | 76* |
| 8 29 | 18 31.54 | -26 34.5 | 2.871 | 3.502 | 14.3 | 20.6 | 121 E | 18 | 89 | 4 11 | 19 32.03 | -21 28.4 | 2.532 | 2.723 | 21.6 | 20.6 | 90 W | 21* | 83* |
| 9 8 | 18 31.65 | -26 46.8 | 3.033 | 3.530 | 15.4 | 20.8 | 112 E | 18 | 89 | 4 21 | 19 40.91 | -21 7.7 | 2.332 | 2.659 | 22.0 | 20.4 | 98 W | 22* | 85 |
| 9 18 | 18 33.85 | -26 55.6 | 3.205 | 3.556 | 16.0 | 21.0 | 102 E | 18 | 89 | 5 1 | 19 48.28 | -20 49.0 | 2.134 | 2.594 | 22.0 | 20.1 | 106 W | 23* | 85 |
| 9 28 | 18 37.96 | -27 1.1 | 3.380 | 3.583 | 16.2 | 21.1 | 93 E | 18* | 87* | 5 11 | 19 53.84 | -20 34.1 | 1.942 | 2.527 | 21.4 | 19.9 | 114 W | 24* | 85 |
| 10 8 | 18 43.74 | -27 3.5 | 3.557 | 3.608 | 16.0 | 21.2 | 85 E | 18* | 79* | 5 21 | 19 57.20 | -20 24.7 | 1.758 | 2.458 | 20.2 | 19.6 | 123 W | 25* | 84 |
| 10 18 | 18 50.95 | -27 2.7 | 3.731 | 3.632 | 15.5 | 21.3 | 77 E | 17* | 71* | 5 31 | 19 57.88 | -20 22.7 | 1.585 | 2.388 | 18.3 | 19.2 | 132 W | 25 | 84 |
| 10 28 | 18 59.40 | -26 58.6 | 3.900 | 3.655 | 14.7 | 21.4 | 69 E | 17* | 62* | 6 10 | 19 55.45 | -20 29.7 | 1.427 | 2.316 | 15.5 | 18.8 | 142 W | 25 | 84 |
| 11 7 | 19 8.87 | -26 51.2 | 4.060 | 3.678 | 13.6 | 21.5 | 61 E | 16* | 54* | 6 20 | 19 49.44 | -20 46.3 | 1.286 | 2.241 | 11.7 | 18.4 | 153 W | 24 | 85 |
| 11 17 | 19 19.18 | -26 40.1 | 4.209 | 3.699 | 12.3 | 21.5 | 53 E | 16* | 46* | 6 30 | 19 39.65 | -21 11.6 | 1.167 | 2.165 | 6.9 | 17.9 | 165 W | 24 | 85 |
| 5201 Ferraz-Mello | | | | | | | | | | 7 10 | 19 26.37 | -21 42.7 | 1.071 | 2.088 | 1.0 | 17.2 | 178 W | 23 | 86 |
| 12 23 | 17 9.40 | -25 7.5 | 4.503 | 3.548 | 3.4 | 21.0 | 12 W | 1* | 5* | 7 15 | 19 18.68 | -21 58.9 | 1.033 | 2.048 | 2.2 | 17.2 | 175 E | 23 | 86 |
| 1 2 | 17 23.06 | -25 24.9 | 4.502 | 3.588 | 5.2 | 21.2 | 19 W | 4* | 12* | 7 20 | 19 10.55 | -22 14.6 | 1.002 | 2.008 | 5.6 | 17.3 | 169 E | 23 | 86 |
| 1 12 | 17 36.28 | -25 38.2 | 4.482 | 3.628 | 6.9 | 21.3 | 26 W | 7* | 19* | 7 25 | 19 2.21 | -22 29.2 | 0.976 | 1.968 | 9.1 | 17.4 | 162 E | 2 | |

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

| 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° | 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° |
|----------------------------------|-----------------|-----------------|----------|-------|---------|------|--------|-----|------|------------------------------------|-----------------|-----------------|----------|-------|---------|------|--------|-----|------|
| 4179 Toutatis | | | | | | | | | | 259517 2003 TM₁₃ | | | | | | | | | |
| <i>(continuation)</i> | | | | | | | | | | <i>(continuation)</i> | | | | | | | | | |
| 11 22 | 20 37.98 | -19 0.1 | 0.845 | 1.020 | 63.1 | 17.3 | 67 E | 26* | 56* | 2 1 | 19 6.60 | -27 18.2 | 2.595 | 1.773 | 14.6 | 21.1 | 27 W | 3* | 21* |
| 11 27 | 20 55.50 | -17 53.3 | 0.820 | 0.999 | 64.9 | 17.3 | 66 E | 27* | 55* | 2 11 | 19 36.33 | -26 45.9 | 2.529 | 1.750 | 16.6 | 21.1 | 30 W | 3* | 24* |
| 12 2 | 21 13.98 | -16 35.6 | 0.793 | 0.981 | 66.5 | 17.2 | 66 E | 28* | 53* | 2 21 | 20 6.05 | -25 53.3 | 2.461 | 1.729 | 18.5 | 21.1 | 34 W | 3* | 28* |
| 12 7 | 21 33.44 | -15 5.8 | 0.766 | 0.968 | 68.1 | 17.2 | 66 E | 30* | 52* | 3 2 | 20 35.56 | -24 41.4 | 2.393 | 1.709 | 20.4 | 21.1 | 37 W | 3* | 31* |
| 12 12 | 21 53.92 | -13 23.1 | 0.739 | 0.960 | 69.5 | 17.1 | 66 E | 31* | 50* | 3 12 | 21 4.67 | -23 11.6 | 2.326 | 1.692 | 22.3 | 21.0 | 40 W | 3* | 34* |
| 12 17 | 22 15.47 | -11 26.8 | 0.712 | 0.957 | 70.5 | 17.1 | 66 E | 33* | 49* | 3 22 | 21 33.25 | -21 25.7 | 2.259 | 1.678 | 24.0 | 21.0 | 43 W | 3* | 37* |
| 12 22 | 22 38.12 | -9 16.3 | 0.687 | 0.958 | 71.3 | 17.0 | 67 E | 36* | 48* | 4 1 | 22 1.18 | -19 26.0 | 2.192 | 1.666 | 25.7 | 21.0 | 46 W | 4* | 40* |
| 12 27 | 23 1.91 | -6 51.7 | 0.664 | 0.965 | 71.6 | 17.0 | 69 E | 38* | 47* | 4 11 | 22 28.38 | -17 15.1 | 2.127 | 1.657 | 27.3 | 21.0 | 49 W | 5* | 43* |
| 1 1 | 23 26.85 | -4 13.8 | 0.645 | 0.977 | 71.3 | 16.9 | 70 E | 41* | 47* | 4 21 | 22 54.84 | -14 55.8 | 2.063 | 1.651 | 28.7 | 20.9 | 52 W | 6* | 46* |
| 1 6 | 23 52.91 | + 1 24.4 | 0.630 | 0.993 | 70.6 | 16.9 | 72 E | 43* | 46* | 5 1 | 23 20.50 | -12 30.8 | 2.000 | 1.647 | 30.1 | 20.9 | 55 W | 7* | 49* |
| 1 11 | 0 20.02 | + 1 33.2 | 0.621 | 1.013 | 69.3 | 16.9 | 75 E | 46* | 46* | 5 11 | 23 45.37 | -10 3.0 | 1.938 | 1.647 | 31.4 | 20.9 | 58 W | 9* | 52* |
| 1 16 | 0 48.02 | + 4 34.8 | 0.617 | 1.037 | 67.5 | 16.8 | 77 E | 50* | 45* | 5 21 | 0 9.43 | -7 35.0 | 1.876 | 1.650 | 32.6 | 20.8 | 61 W | 11* | 55* |
| 29566 1998 FK₅ | | | | | | | | | | 285331 1999 FN₅₃ | | | | | | | | | |
| 12 23 | 17 11.75 | -35 33.6 | 2.667 | 1.745 | 9.1 | 19.1 | 16 W | - | 9* | 12 23 | 17 11.98 | -26 0.7 | 1.888 | 0.946 | 12.2 | 20.3 | 12 W | - | 5* |
| 1 2 | 17 43.66 | -36 40.2 | 2.627 | 1.730 | 10.8 | 19.1 | 19 W | - | 12* | 12 28 | 17 36.62 | -27 24.1 | 1.894 | 0.952 | 12.0 | 20.3 | 12 W | - | 5* |
| 1 12 | 18 16.68 | -37 22.5 | 2.583 | 1.714 | 12.6 | 19.1 | 22 W | - | 15* | 1 2 | 18 1.64 | -28 30.3 | 1.904 | 0.961 | 11.8 | 20.3 | 12 W | - | 6* |
| 1 22 | 18 50.51 | -37 38.3 | 2.536 | 1.699 | 14.3 | 19.1 | 25 W | - | 18* | 1 7 | 18 26.83 | -29 18.4 | 1.916 | 0.973 | 11.7 | 20.4 | 12 W | - | 6* |
| 1 27 | 19 7.60 | -37 35.9 | 2.511 | 1.691 | 15.2 | 19.1 | 27 W | - | 19* | 1 12 | 18 51.99 | -29 48.3 | 1.931 | 0.989 | 11.7 | 20.4 | 12 W | - | 5* |
| 2 1 | 19 24.74 | -37 26.5 | 2.486 | 1.684 | 16.0 | 19.1 | 28 W | - | 20* | 1 17 | 19 16.90 | -30 0.1 | 1.948 | 1.007 | 11.8 | 20.5 | 12 W | - | 5* |
| 2 6 | 19 41.86 | -37 10.1 | 2.461 | 1.676 | 16.9 | 19.1 | 30 W | - | 22* | 1 22 | 19 41.35 | -29 54.7 | 1.968 | 1.029 | 11.8 | 20.5 | 12 W | - | 5* |
| 2 11 | 19 58.91 | -36 46.7 | 2.435 | 1.669 | 17.7 | 19.1 | 31 W | - | 23* | 1 27 | 20 5.17 | -29 33.4 | 1.990 | 1.052 | 11.9 | 20.6 | 13 W | - | 5* |
| 2 21 | 20 32.64 | -35 39.6 | 2.383 | 1.655 | 19.4 | 19.1 | 34 W | - | 25* | 2 1 | 20 28.20 | -28 57.8 | 2.014 | 1.078 | 12.0 | 20.7 | 13 W | - | 5* |
| 3 2 | 21 5.54 | -34 6.9 | 2.330 | 1.642 | 21.0 | 19.0 | 36 W | - | 27* | 2 6 | 20 50.34 | -28 9.7 | 2.040 | 1.106 | 12.0 | 20.8 | 14 W | - | 5* |
| 3 12 | 21 37.35 | -32 11.3 | 2.276 | 1.629 | 22.6 | 19.0 | 39 W | - | 29* | 2 11 | 21 11.53 | -27 11.0 | 2.067 | 1.134 | 12.1 | 20.9 | 14 W | - | 5* |
| 3 22 | 22 7.92 | -29 55.7 | 2.223 | 1.617 | 24.1 | 19.0 | 41 W | - | 32* | 2 16 | 21 31.75 | -26 3.5 | 2.095 | 1.165 | 12.2 | 21.0 | 14 W | - | 5* |
| 4 1 | 22 37.16 | -27 23.5 | 2.169 | 1.606 | 25.6 | 19.0 | 44 W | - | 34* | 2 21 | 21 51.00 | -24 49.0 | 2.124 | 1.196 | 12.3 | 21.1 | 15 W | - | 5* |
| 4 11 | 23 5.07 | -24 38.0 | 2.114 | 1.596 | 27.0 | 19.0 | 46 W | - | 37* | 2 26 | 22 9.31 | -23 29.0 | 2.153 | 1.228 | 12.4 | 21.2 | 15 W | - | 6* |
| 4 21 | 23 31.72 | -21 42.2 | 2.059 | 1.587 | 28.4 | 18.9 | 49 W | - | 40* | 3 2 | 22 26.72 | -22 5.1 | 2.182 | 1.260 | 12.6 | 21.2 | 16 W | - | 6* |
| 5 1 | 23 57.19 | -18 39.0 | 2.002 | 1.579 | 29.8 | 18.9 | 51 W | - | 43* | 3 7 | 22 43.27 | -20 38.5 | 2.211 | 1.293 | 12.8 | 21.3 | 17 W | - | 7* |
| 5 11 | 0 21.58 | -15 30.9 | 1.944 | 1.573 | 31.2 | 18.9 | 54 W | - | 47* | 3 12 | 22 59.04 | -19 10.2 | 2.240 | 1.326 | 13.0 | 21.4 | 17 W | - | 8* |
| 5 21 | 0 45.01 | -12 19.8 | 1.885 | 1.568 | 32.5 | 18.8 | 56 W | 2* | 50* | 12 23 | 17 12.39 | -39 29.5 | 3.869 | 2.958 | 6.3 | 21.0 | 19 W | - | 11* |
| 5 31 | 1 7.55 | -9 7.5 | 1.823 | 1.564 | 33.8 | 18.8 | 59 W | 5* | 53* | 1 2 | 17 31.88 | -40 2.3 | 3.839 | 2.961 | 7.5 | 21.0 | 23 W | - | 16* |
| 6 10 | 1 29.30 | -5 54.9 | 1.758 | 1.562 | 35.0 | 18.7 | 62 W | 10* | 56* | 1 12 | 17 51.35 | -40 30.3 | 3.793 | 2.962 | 9.0 | 21.1 | 28 W | - | 21* |
| 6 20 | 1 50.33 | -2 42.7 | 1.691 | 1.561 | 36.1 | 18.7 | 65 W | 15* | 57* | 1 22 | 18 10.71 | -40 53.9 | 3.733 | 2.962 | 10.6 | 21.1 | 33 W | - | 26* |
| 6 30 | 2 10.65 | + 0 28.8 | 1.620 | 1.562 | 37.2 | 18.6 | 68 W | 21* | 58* | 2 1 | 18 29.82 | -41 13.7 | 3.660 | 2.962 | 12.1 | 21.1 | 39 W | - | 32* |
| 7 10 | 2 30.29 | + 3 39.9 | 1.547 | 1.564 | 38.1 | 18.5 | 72 W | 28* | 57* | 2 11 | 18 48.55 | -41 30.4 | 3.574 | 2.960 | 13.7 | 21.1 | 45 W | - | 37* |
| 7 20 | 2 49.22 | + 6 51.4 | 1.471 | 1.568 | 38.9 | 18.5 | 76 W | 35* | 56* | 2 21 | 19 6.76 | -41 45.1 | 3.476 | 2.958 | 15.1 | 21.1 | 51 W | - | 42* |
| 7 30 | 3 7.35 | +10 4.5 | 1.393 | 1.573 | 39.5 | 18.4 | 80 W | 43* | 54* | 3 2 | 19 24.33 | -41 59.0 | 3.368 | 2.954 | 16.4 | 21.1 | 57 W | - | 47* |
| 8 9 | 3 24.54 | +13 21.2 | 1.313 | 1.579 | 39.7 | 18.3 | 84 W | 50* | 51* | 3 12 | 19 41.09 | -42 13.6 | 3.251 | 2.950 | 17.6 | 21.0 | 64 W | - | 53* |
| 8 19 | 3 40.60 | +16 44.1 | 1.232 | 1.586 | 39.6 | 18.1 | 89 W | 58* | 47 | 3 22 | 19 56.91 | -42 30.5 | 3.126 | 2.945 | 18.6 | 21.0 | 70 W | - | 58* |
| 8 29 | 3 55.15 | +20 16.3 | 1.151 | 1.595 | 39.1 | 18.0 | 95 W | 64* | 44 | 4 1 | 20 11.60 | -42 51.5 | 2.996 | 2.938 | 19.4 | 20.9 | 77 W | - | 62* |
| 9 8 | 4 7.77 | +24 1.7 | 1.072 | 1.605 | 38.0 | 17.8 | 101 W | 69 | 40 | 4 11 | 20 24.97 | -43 18.5 | 2.863 | 2.931 | 19.9 | 20.8 | 84 W | - | 67* |
| 9 18 | 4 17.78 | +28 4.0 | 0.997 | 1.616 | 36.3 | 17.6 | 108 W | 73 | 36 | 4 21 | 20 36.79 | -43 53.2 | 2.728 | 2.923 | 20.1 | 20.7 | 91 W | - | 70* |
| 9 23 | 4 21.52 | +30 12.2 | 0.961 | 1.622 | 35.2 | 17.5 | 111 W | 75 | 34 | 5 1 | 20 46.77 | -44 37.4 | 2.593 | 2.913 | 20.0 | 20.6 | 98 W | - | 71* |
| 9 28 | 4 24.22 | +32 25.3 | 0.928 | 1.628 | 33.9 | 17.4 | 115 W | 77 | 32 | 5 11 | 20 54.57 | -45 32.2 | 2.462 | 2.903 | 19.6 | 20.5 | 106 W | - | 70 |
| 10 3 | 4 25.74 | +34 43.0 | 0.897 | 1.634 | 32.4 | 17.3 | 119 W | 80 | 29 | 5 16 | 20 57.54 | -46 3.8 | 2.399 | 2.898 | 19.2 | 20.4 | 109 W | - | 70 |
| 10 8 | 4 25.88 | +37 4.6 | 0.868 | 1.641 | 30.8 | 17.2 | 123 W | 82 | 27 | 5 21 | 20 59.80 | -46 38.2 | 2.338 | 2.892 | 18.7 | 20.3 | 113 W | - | 69 |
| 10 13 | 4 24.44 | +39 28.6 | 0.843 | 1.647 | 29.0 | 17.1 | 127 W | 84 | 25 | 5 26 | 21 1.29 | -47 15.1 | 2.279 | 2.886 | 18.2 | 20.2 | 117 W | - | 69 |
| 10 18 | 4 21.21 | +41 52.9 | 0.821 | 1.654 | 27.1 | 17.0 | 131 W | 87 | 22 | 5 31 | 21 1.94 | -47 54.2 | 2.223 | 2.880 | 17.6 | 20.2 | 121 W | - | 68 |
| 10 23 | 4 16.00 | +44 14.7 | 0.803 | 1.661 | 25.2 | 16.9 | 135 W | 89 | 20 | | | | | | | | | | |
| 10 28 | 4 8.73 | +46 30.2 | 0.790 | 1.668 | 23.3 | 16.8 | 138 W | 88 | 17 | | | | | | | | | | |
| 11 2 | 3 59.38 | +48 35.4 | 0.781 | 1.675 | 21.7 | 16.7 | 141 W | 86 | 15 | | | | | | | | | | |
| 11 7 | 3 48.10 | +50 25.9 | 0.778 | 1.683 | 20.3 | 16.7 | 144 W | 85 | 14 | | | | | | | | | | |
| 11 12 | 3 35.25 | +51 57.7 | 0.780 | 1.690 | 19.5 | 16.7 | 145 W | 83 | 12 | | | | | | | | | | |
| 11 17 | 3 21.43 | +53 8.1 | 0.786 | 1.698 | 19.1 | 16.7 | 146 E | 82 | 11 | | | | | | | | | | |
| 11 19 | 3 15.80 | +53 30.0 | 0.791 | 1.701 | 19.1 | 16.7 | 146 E | 81 | 10 | | | | | | | | | | |
| 11 21 | 3 10.20 | +53 48.2 | 0.796 | 1.704 | 19.2 | 16.7 | 145 E | 81 | 10 | | | | | | | | | | |
| 11 23 | 3 4.67 | +54 3.0 | 0.802 | 1.707 | 19.4 | 16.8 | 145 E | 81 | 10 | | | | | | | | | | |
| 11 25 | 2 59.27 | +54 14.4 | 0.808 | 1.710 | 19.7 | 16.8 | 144 E | 81 | 10 | | | | | | | | | | |
| 11 27 | 2 54.04 | +54 22.6 | 0.816 | 1.713 | 20.0 | 16.8 | 144 E | 81 | 10 | | | | | | | | | | |
| 11 29 | 2 49.03 | +54 27.8 | 0.824 | 1.716 | 20.3 | 16.9 | 143 E | 81 | 10 | | | | | | | | | | |
| 12 1 | 2 44.27 | +54 30.2 | 0.832 | 1.719 | 20.8 | 16.9 | 142 E | 80 | 9 | | | | | | | | | | |
| 12 3 | 2 39.81 | +54 30.0 | 0.842 | 1.722 | 21.2 | 16.9 | 141 E | 80 | 9 | | | | | | | | | | |
| 12 5 | 2 35.65 | +54 27.5 | 0.852 | 1.725 | 21.7 | 17.0 | 140 E | 81 | 10 | | | | | | | | | | |
| 12 7 | 2 31.84 | +54 22.9 | 0.863 | 1.729 | 22.2 | 17.0 | 138 E | 81 | 10 | | | | | | | | | | |
| 12 12 | 2 23.86 | +54 4.2 | 0.893 | 1.736 | 23.5 | 17.2 | 135 E | 81 | 10 | | | | | | | | | | |
| 12 17 | 2 18.20 | +53 38.0 | 0.926 | 1.744 | 24.8 | 17.3 | 132 E | 81 | 10 | | | | | | | | | | |
| 12 22 | 2 14.84 | +53 7.7 | 0.962 | 1.7 | | | | | | | | | | | | | | | |

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

| 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° | 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° |
|------------------------------------|-----------------|-----------------|----------|-------|---------|------|--------|-----|------|------------------------------------|-----------------|-----------------|----------|-------|---------|------|--------|-----|------|
| 173549 2000 XF₄₇ | | | | | | | | | | 74823 1999 TD₁₅ | | | | | | | | | |
| <i>(continuation)</i> | | | | | | | | | | <i>(continuation)</i> | | | | | | | | | |
| 6 5 | 21 1.72 | -48 35.1 | 2.170 | 2.873 | 16.8 | 20.1 | 125 W | — | 67 | 1 6 | 20 40.48 | -1 27.5 | 3.370 | 2.576 | 11.3 | 20.3 | 31 E | 25* | 4* |
| 6 10 | 21 0.55 | -49 17.2 | 2.120 | 2.867 | 16.0 | 20.0 | 129 W | — | 67 | 1 16 | 20 57.50 | -0 46.6 | 3.395 | 2.547 | 9.7 | 20.2 | 26 E | 20* | — |
| 6 15 | 20 58.39 | -49 59.7 | 2.075 | 2.860 | 15.2 | 19.9 | 132 W | — | 66 | 11836 Eileen | | | | | | | | | |
| 6 20 | 20 55.19 | -50 41.6 | 2.034 | 2.853 | 14.3 | 19.8 | 136 W | — | 65 | 12 23 | 17 12.79 | -8 4.7 | 4.055 | 3.144 | 6.0 | 19.7 | 19 W | 13* | — |
| 6 25 | 20 50.95 | -51 21.8 | 1.997 | 2.845 | 13.5 | 19.8 | 139 W | — | 65 | 1 2 | 17 26.78 | -8 24.9 | 4.008 | 3.136 | 7.4 | 19.7 | 24 W | 18* | 4* |
| 6 30 | 20 45.70 | -51 58.8 | 1.966 | 2.838 | 12.7 | 19.7 | 142 W | — | 64 | 1 12 | 17 40.63 | -8 37.2 | 3.945 | 3.127 | 8.9 | 19.8 | 30 W | 21* | 12* |
| 7 5 | 20 39.51 | -52 31.4 | 1.941 | 2.830 | 12.1 | 19.6 | 144 W | — | 63 | 1 22 | 17 54.24 | -8 41.7 | 3.866 | 3.117 | 10.5 | 19.8 | 35 W | 24* | 19* |
| 7 10 | 20 32.49 | -52 58.1 | 1.920 | 2.822 | 11.6 | 19.6 | 146 W | — | 63 | 2 1 | 18 7.50 | -8 38.6 | 3.773 | 3.106 | 12.2 | 19.8 | 42 W | 26* | 27* |
| 7 15 | 20 24.80 | -53 17.9 | 1.906 | 2.814 | 11.3 | 19.5 | 147 W | — | 63 | 2 11 | 18 20.29 | -8 28.5 | 3.665 | 3.094 | 13.7 | 19.8 | 48 W | 28* | 35* |
| 7 20 | 20 16.66 | -53 29.6 | 1.898 | 2.805 | 11.4 | 19.5 | 147 W | — | 63 | 2 21 | 18 32.49 | -8 11.9 | 3.545 | 3.081 | 15.2 | 19.7 | 55 W | 29* | 42* |
| 7 25 | 20 8.32 | -53 32.6 | 1.895 | 2.796 | 11.7 | 19.5 | 146 E | — | 62 | 3 2 | 18 43.97 | -7 49.5 | 3.414 | 3.067 | 16.5 | 19.7 | 61 W | 31* | 49* |
| 7 30 | 20 0.06 | -53 26.5 | 1.899 | 2.787 | 12.3 | 19.6 | 144 E | — | 63 | 3 12 | 18 54.57 | -7 22.3 | 3.274 | 3.051 | 17.6 | 19.6 | 68 W | 32* | 56* |
| 8 4 | 19 52.13 | -53 11.4 | 1.908 | 2.778 | 13.0 | 19.6 | 142 E | — | 63 | 3 22 | 19 4.16 | -6 51.4 | 3.126 | 3.035 | 18.5 | 19.5 | 76 W | 34* | 62* |
| 8 9 | 19 44.78 | -52 48.0 | 1.923 | 2.769 | 13.9 | 19.6 | 139 E | — | 63 | 4 1 | 19 12.53 | -6 18.0 | 2.972 | 3.018 | 19.2 | 19.4 | 83 W | 35* | 67* |
| 8 14 | 19 38.20 | -52 17.0 | 1.943 | 2.759 | 14.9 | 19.7 | 136 E | — | 64 | 4 11 | 19 19.50 | -5 43.7 | 2.816 | 2.999 | 19.5 | 19.3 | 91 W | 37* | 70* |
| 8 19 | 19 32.54 | -51 39.2 | 1.968 | 2.749 | 15.9 | 19.7 | 132 E | — | 64 | 4 21 | 19 24.85 | -5 10.4 | 2.659 | 2.980 | 19.5 | 19.2 | 99 W | 38* | 69 |
| 8 24 | 19 27.90 | -50 55.9 | 1.998 | 2.739 | 16.9 | 19.8 | 128 E | — | 66 | 5 1 | 19 28.36 | -4 40.2 | 2.505 | 2.959 | 19.0 | 19.0 | 107 W | 40* | 69 |
| 8 29 | 19 24.34 | -50 8.2 | 2.032 | 2.729 | 17.9 | 19.8 | 124 E | — | 66 | 5 11 | 19 29.78 | -4 15.8 | 2.356 | 2.938 | 18.1 | 18.8 | 116 W | 41* | 68 |
| 9 3 | 19 21.85 | -49 17.0 | 2.069 | 2.718 | 18.7 | 19.9 | 120 E | — | 67 | 5 21 | 19 28.93 | -4 0.0 | 2.217 | 2.916 | 16.6 | 18.6 | 125 W | 41* | 68 |
| 9 8 | 19 20.41 | -48 23.4 | 2.110 | 2.707 | 19.5 | 20.0 | 116 E | — | 68 | 5 31 | 19 25.64 | -3 56.1 | 2.091 | 2.892 | 14.5 | 18.4 | 134 W | 41* | 68 |
| 9 13 | 19 19.97 | -47 28.0 | 2.153 | 2.696 | 20.2 | 20.0 | 112 E | — | 69 | 6 10 | 19 19.95 | -4 7.2 | 1.983 | 2.868 | 12.0 | 18.2 | 144 W | 41* | 68 |
| 9 18 | 19 20.49 | -46 31.5 | 2.199 | 2.685 | 20.9 | 20.1 | 108 E | — | 69 | 6 20 | 19 12.06 | -4 35.7 | 1.896 | 2.842 | 9.2 | 18.0 | 154 W | 40 | 69 |
| 9 23 | 19 21.89 | -45 34.3 | 2.246 | 2.673 | 21.4 | 20.1 | 104 E | — | 70 | 6 30 | 19 2.47 | -5 22.9 | 1.834 | 2.816 | 6.7 | 17.8 | 161 W | 40 | 69 |
| 9 28 | 19 24.10 | -44 36.9 | 2.296 | 2.662 | 21.8 | 20.2 | 100 E | — | 71 | 7 10 | 18 51.98 | -6 27.9 | 1.800 | 2.788 | 6.1 | 17.7 | 163 E | 39 | 70 |
| 10 3 | 19 27.05 | -43 39.4 | 2.346 | 2.650 | 22.0 | 20.2 | 96 E | — | 72 | 7 20 | 18 41.56 | -7 47.7 | 1.793 | 2.760 | 8.1 | 17.7 | 157 E | 37 | 72 |
| 10 8 | 19 30.67 | -42 42.0 | 2.397 | 2.638 | 22.2 | 20.3 | 93 E | — | 73 | 7 25 | 18 36.69 | -8 31.8 | 1.800 | 2.745 | 9.6 | 17.8 | 153 E | 36 | 73 |
| 10 13 | 19 34.90 | -41 44.7 | 2.449 | 2.625 | 22.3 | 20.3 | 89 E | — | 74 | 7 30 | 18 32.22 | -9 17.9 | 1.814 | 2.730 | 11.3 | 17.9 | 148 E | 36 | 73 |
| 10 18 | 19 39.67 | -40 47.5 | 2.500 | 2.613 | 22.3 | 20.3 | 85 E | — | 74 | 8 4 | 18 28.24 | -10 5.3 | 1.834 | 2.715 | 12.9 | 17.9 | 143 E | 35 | 74 |
| 10 23 | 19 44.93 | -39 50.4 | 2.551 | 2.600 | 22.2 | 20.4 | 82 E | — | 75 | 8 9 | 18 24.82 | -10 53.4 | 1.859 | 2.700 | 14.5 | 18.0 | 138 E | 34 | 75 |
| 10 28 | 19 50.64 | -38 53.4 | 2.602 | 2.587 | 22.1 | 20.4 | 78 E | — | 76 | 8 19 | 18 19.93 | -12 29.5 | 1.924 | 2.668 | 17.4 | 18.2 | 128 E | 33 | 76 |
| 11 7 | 20 3.16 | -36 59.0 | 2.701 | 2.561 | 21.5 | 20.4 | 71 E | 8* | 65* | 8 29 | 18 17.86 | -14 2.7 | 2.005 | 2.636 | 19.7 | 18.3 | 118 E | 31 | 78 |
| 11 17 | 20 16.92 | -35 3.4 | 2.795 | 2.533 | 20.6 | 20.5 | 65 E | 10* | 59* | 9 8 | 18 18.67 | -15 30.4 | 2.096 | 2.602 | 21.5 | 18.4 | 109 E | 29 | 80 |
| 11 27 | 20 31.64 | -33 5.7 | 2.882 | 2.505 | 19.5 | 20.5 | 58 E | 11* | 52* | 9 18 | 18 22.23 | -16 51.0 | 2.195 | 2.568 | 22.7 | 18.5 | 100 E | 28* | 81 |
| 12 7 | 20 47.10 | -31 5.2 | 2.960 | 2.477 | 18.2 | 20.5 | 52 E | 12* | 45* | 9 28 | 18 28.38 | -18 3.3 | 2.297 | 2.533 | 23.3 | 18.6 | 92 E | 27* | 81* |
| 12 17 | 21 3.12 | -29 1.0 | 3.030 | 2.447 | 16.7 | 20.4 | 46 E | 13* | 38* | 10 8 | 18 36.87 | -19 6.6 | 2.398 | 2.497 | 23.4 | 18.7 | 84 E | 26* | 75* |
| 12 27 | 21 19.55 | -26 52.7 | 3.089 | 2.417 | 15.1 | 20.4 | 40 E | 13* | 32* | 10 18 | 18 47.44 | -20 0.4 | 2.497 | 2.460 | 23.2 | 18.7 | 76 E | 24* | 68* |
| 1 6 | 21 36.28 | -24 40.0 | 3.137 | 2.386 | 13.3 | 20.3 | 34 E | 12* | 26* | 10 28 | 18 59.89 | -20 44.1 | 2.589 | 2.423 | 22.6 | 18.8 | 69 | 23* | 61* |
| 1 16 | 21 53.23 | -22 22.6 | 3.173 | 2.355 | 11.5 | 20.3 | 28 E | 10* | 20* | 11 7 | 19 13.98 | -21 17.2 | 2.675 | 2.385 | 21.6 | 18.8 | 62 E | 22* | 54* |
| 74823 1999 TD₁₅ | | | | | | | | | | 174050 2002 CC₁₉ | | | | | | | | | |
| 12 23 | 17 12.47 | -11 20.8 | 3.966 | 3.039 | 5.4 | 20.7 | 17 W | 11* | — | 12 23 | 17 13.25 | + 5 30.8 | 1.973 | 1.243 | 24.3 | 20.6 | 31 W | 24* | — |
| 1 2 | 17 27.21 | -11 7.7 | 3.930 | 3.044 | 7.1 | 20.8 | 22 W | 15* | 5* | 1 2 | 17 47.76 | + 4 5.6 | 2.002 | 1.260 | 23.5 | 20.6 | 31 W | 24* | — |
| 1 12 | 17 41.69 | -10 45.9 | 3.878 | 3.048 | 8.8 | 20.9 | 28 W | 19* | 12* | 1 12 | 18 20.73 | + 2 49.8 | 2.031 | 1.278 | 22.6 | 20.7 | 30 W | 24* | — |
| 1 22 | 17 55.82 | -10 15.4 | 3.810 | 3.051 | 10.5 | 20.9 | 35 W | 22* | 20* | 1 22 | 18 52.20 | + 1 44.2 | 2.059 | 1.295 | 21.9 | 20.7 | 29 W | 23* | 2* |
| 2 1 | 18 9.49 | -9 36.1 | 3.729 | 3.053 | 12.2 | 20.9 | 41 W | 25* | 27* | 2 1 | 19 22.28 | + 0 48.8 | 2.081 | 1.312 | 21.5 | 20.7 | 29 W | 23* | 6* |
| 2 11 | 18 22.58 | -8 47.9 | 3.634 | 3.054 | 13.8 | 20.9 | 47 W | 27* | 34* | 2 11 | 19 51.09 | + 0 2.4 | 2.095 | 1.328 | 21.5 | 20.8 | 30 W | 22* | 11* |
| 2 21 | 18 34.96 | -7 51.3 | 3.527 | 3.054 | 15.2 | 20.9 | 54 W | 30* | 41* | 2 21 | 20 18.82 | + 0 36.4 | 2.099 | 1.344 | 21.9 | 20.8 | 30 W | 21* | 15* |
| 3 2 | 18 46.50 | -6 46.3 | 3.410 | 3.054 | 16.5 | 20.9 | 61 W | 32* | 48* | 3 2 | 20 45.65 | + 1 9.3 | 2.092 | 1.358 | 22.8 | 20.9 | 32 W | 20* | 20* |
| 3 12 | 18 57.06 | -5 33.5 | 3.285 | 3.052 | 17.5 | 20.8 | 68 W | 34* | 55* | 3 12 | 21 11.77 | -1 38.5 | 2.072 | 1.372 | 24.1 | 20.9 | 34 W | 19* | 24* |
| 3 22 | 19 6.50 | -4 13.4 | 3.153 | 3.049 | 18.4 | 20.8 | 75 W | 36* | 60* | 3 22 | 21 37.39 | -2 6.0 | 2.040 | 1.384 | 25.8 | 20.9 | 37 W | 18* | 28* |
| 4 1 | 19 14.62 | -2 46.7 | 3.017 | 3.046 | 19.0 | 20.7 | 82 W | 39* | 64* | 4 1 | 22 2.72 | -2 34.3 | 1.996 | 1.395 | 27.7 | 21.0 | 40 W | 17* | 33* |
| 4 11 | 19 21.25 | -1 14.6 | 2.879 | 3.041 | 19.2 | 20.6 | 90 W | 41* | 65* | 4 11 | 22 27.95 | -3 5.9 | 1.939 | 1.405 | 29.7 | 21.0 | 44 W | 15* | 37* |
| 4 21 | 19 26.20 | + 0 21.7 | 2.742 | 3.036 | 19.2 | 20.5 | 97 W | 44* | 64 | 4 21 | 22 53.35 | -3 43.5 | 1.873 | 1.413 | 31.9 | 21.0 | 48 W | 14* | 41* |
| 5 1 | 19 29.25 | + 2 0.3 | 2.609 | 3.029 | 18.7 | 20.3 | 105 W | 46* | 62 | 5 1 | 23 19.11 | -4 30.1 | 1.798 | 1.420 | 34.0 | 20.9 | 52 W | 13* | 45* |
| 5 11 | 19 30.23 | + 3 38.7 | 2.482 | 3.022 | 17.9 | 20.2 | 113 W | 49* | 60 | 5 11 | 23 45.48 | -5 29.0 | 1.716 | 1.425 | 36.0 | 20.9 | 56 W | 12* | 50* |
| 5 21 | 19 28.99 | + 5 13.9 | 2.366 | 3.014 | 16.7 | 20.1 | 121 W | 50 | 59 | 5 21 | 0 12.73 | -6 43.3 | 1.630 | 1.428 | 37.9 | 20.9 | 60 W | 11* | 54* |
| 5 31 | 19 25.45 | + 6 41.6 | 2.263 | 3.005 | 15.2 | 19.9 | 129 W | 52 | 57 | 5 31 | 0 41.08 | -8 16.7 | 1.542 | 1.430 | 39.7 | 20.8 | 64 W | 10* | 58* |
| 6 10 | 19 19.74 | + 7 57.1 | 2.178 | 2.995 | 13.6 | 19.8 | 136 W | 53 | 56 | 6 10 | 1 10.76 | -10 12.1 | 1.457 | 1.430 | 41.2 | 20.7 | 68 W | 10* | 62* |
| 6 20 | 19 12.12 | + 8 55.4 | 2.112 | 2.984 | 12.0 | 19.6 | 143 W | 54 | 55 | 6 20 | 1 41.96 | -12 31.5 | 1.377 | 1.429 | 42.4 | 20.6 | 72 W | 9* | 65* |
| 6 30 | 19 3.12 | + 9 32.0 | 2.070 | 2.972 | 10.8 | 19.5 | 147 W | 55 | 54 | 6 30 | 2 14.76 | -15 15.3 | 1.305 | 1.426 | 43.4 | 20.5 | 75 W | 9* | 69* |
| 7 10 | 18 53.52 | + 9 43.9 | 2.051 | 2.959 | 10.6 | 19.5 | 147 E | 55 | 54 | 7 10 | 2 49.13 | -18 21.0 | 1.244 | 1.421 | 44.2 | 20.4 | 77 W | 8* | 71* |
| 7 20 | 18 44.15 | + 9 30.8 | 2.056 | 2.945 | 11.5 | 19.5 | 145 E | 55 | 54 | 7 15 | 3 6.85 | -20 0.4 | 1.219 | 1.418 | 44.5 | 20.4 | 78 W | 8* | 72* |
| 7 30 | 18 35.86 | + 8 54.6 | 2.085 | 2.931 | 13.0 | 19.6 | 139 E | 54 | 55 | 7 20 | 3 24.86 | -21 42.9 | 1.197 | 1.415 | 44.8 | 20.4 | 79 W | 7* | 73* |
| 8 9 | 18 29.35 | + 7 59.7 | | | | | | | | | | | | | | | | | |

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

| 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° | 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° |
|------------------------------------|-----------------|-----------------|----------|-------|---------|------|--------|-----|------|----------------------------------|-----------------|-----------------|----------|-------|---------|------|--------|-----|------|
| 174050 2002 CC₁₉ | | | | | | | | | | 512 Taurinensis | | | | | | | | | |
| <i>(continuation)</i> | | | | | | | | | | | | | | | | | | | |
| 9 8 | 6 23.98 | -37 36.1 | 1.141 | 1.363 | 46.4 | 20.2 | 78 W | 2* | 67* | 12 23 | 17 13.64 | -19 39.6 | 3.122 | 2.169 | 5.4 | 15.3 | 12 W | 4* | 2* |
| 9 13 | 6 39.99 | -38 48.3 | 1.143 | 1.356 | 46.5 | 20.2 | 78 W | 2* | 66* | 1 2 | 17 36.04 | -20 14.3 | 3.063 | 2.139 | 7.6 | 15.3 | 17 W | 7* | 7* |
| 9 18 | 6 55.41 | -39 55.7 | 1.145 | 1.348 | 46.7 | 20.2 | 77 W | 1* | 66* | 1 12 | 17 58.90 | -20 37.3 | 2.994 | 2.109 | 9.8 | 15.3 | 21 W | 9* | 13* |
| 9 23 | 7 10.21 | -40 58.5 | 1.145 | 1.341 | 46.8 | 20.2 | 77 W | 1* | 65* | 1 22 | 18 22.16 | -20 48.3 | 2.917 | 2.079 | 12.0 | 15.3 | 26 W | 10* | 18* |
| 9 28 | 7 24.36 | -41 56.9 | 1.144 | 1.333 | 47.0 | 20.2 | 76 W | 1* | 65* | 2 1 | 18 45.73 | -20 46.9 | 2.833 | 2.048 | 14.2 | 15.3 | 31 W | 11* | 23* |
| 10 3 | 7 37.89 | -42 51.3 | 1.142 | 1.325 | 47.1 | 20.2 | 76 W | — | 64* | 2 11 | 19 9.54 | -20 33.0 | 2.742 | 2.018 | 16.4 | 15.3 | 35 W | 11* | 28* |
| 10 8 | 7 50.77 | -43 42.0 | 1.136 | 1.317 | 47.4 | 20.2 | 76 W | — | 64* | 2 21 | 19 33.50 | -20 6.9 | 2.645 | 1.987 | 18.5 | 15.2 | 40 W | 12* | 33* |
| 10 13 | 8 3.03 | -44 29.4 | 1.128 | 1.309 | 47.6 | 20.1 | 76 W | — | 64* | 3 2 | 19 57.55 | -19 29.0 | 2.544 | 1.957 | 20.6 | 15.2 | 44 W | 12* | 38* |
| 10 18 | 8 14.64 | -45 13.6 | 1.118 | 1.300 | 47.9 | 20.1 | 76 W | — | 64* | 3 12 | 20 21.61 | -18 40.0 | 2.439 | 1.927 | 22.6 | 15.1 | 48 W | 13* | 42* |
| 10 23 | 8 25.63 | -45 54.7 | 1.103 | 1.292 | 48.3 | 20.1 | 76 W | — | 64* | 3 22 | 20 45.65 | -17 40.7 | 2.332 | 1.898 | 24.6 | 15.1 | 52 W | 13* | 46* |
| 10 28 | 8 36.00 | -46 32.7 | 1.086 | 1.283 | 48.7 | 20.0 | 76 W | — | 64* | 4 1 | 21 9.62 | -16 32.3 | 2.223 | 1.869 | 26.5 | 15.0 | 57 W | 14* | 50* |
| 11 2 | 8 45.76 | -47 7.6 | 1.065 | 1.275 | 49.2 | 20.0 | 76 W | — | 64* | 4 11 | 21 33.47 | -15 16.1 | 2.114 | 1.841 | 28.3 | 14.9 | 61 W | 14* | 54* |
| 11 7 | 8 54.94 | -47 39.6 | 1.040 | 1.266 | 49.7 | 19.9 | 77 W | — | 65* | 4 21 | 21 57.22 | -13 53.6 | 2.005 | 1.814 | 30.0 | 14.8 | 64 W | 15* | 58* |
| 11 12 | 9 3.52 | -48 8.4 | 1.011 | 1.257 | 50.3 | 19.9 | 78 W | — | 65* | 5 1 | 22 20.83 | -12 26.7 | 1.896 | 1.789 | 31.6 | 14.7 | 68 W | 16* | 62* |
| 11 17 | 9 11.49 | -48 33.9 | 0.978 | 1.249 | 51.0 | 19.8 | 79 W | — | 65* | 5 11 | 22 44.28 | -10 57.2 | 1.790 | 1.764 | 33.0 | 14.6 | 72 W | 17* | 65* |
| 11 22 | 9 18.84 | -48 55.3 | 0.941 | 1.240 | 51.7 | 19.7 | 80 W | — | 66* | 5 21 | 23 7.56 | -9 27.2 | 1.685 | 1.742 | 34.3 | 14.4 | 76 W | 19* | 68* |
| 11 27 | 9 25.57 | -49 12.2 | 0.900 | 1.232 | 52.4 | 19.7 | 81 W | — | 66* | 5 31 | 23 30.63 | -7 59.2 | 1.584 | 1.720 | 35.4 | 14.3 | 80 W | 21* | 69* |
| 12 2 | 9 31.66 | -49 23.7 | 0.856 | 1.223 | 53.1 | 19.5 | 83 W | — | 66* | 6 10 | 23 53.43 | -6 35.4 | 1.485 | 1.701 | 36.4 | 14.2 | 83 W | 24* | 70* |
| 12 7 | 9 37.09 | -49 28.9 | 0.808 | 1.215 | 53.8 | 19.4 | 85 W | — | 67 | 6 20 | 0 15.87 | -5 18.6 | 1.391 | 1.684 | 37.1 | 14.0 | 87 W | 27* | 69* |
| 12 12 | 9 41.78 | -49 26.1 | 0.756 | 1.207 | 54.5 | 19.3 | 87 W | — | 67 | 6 30 | 0 37.79 | -4 11.5 | 1.300 | 1.669 | 37.5 | 13.9 | 91 W | 31* | 68 |
| 12 17 | 9 45.68 | -49 13.1 | 0.701 | 1.200 | 55.1 | 19.1 | 89 W | — | 67 | 7 10 | 0 59.00 | -3 16.8 | 1.213 | 1.657 | 37.6 | 13.7 | 96 W | 35* | 67 |
| 12 22 | 9 48.69 | -48 46.5 | 0.644 | 1.192 | 55.5 | 18.9 | 92 W | — | 67 | 7 20 | 1 19.22 | -2 37.1 | 1.131 | 1.647 | 37.4 | 13.5 | 100 W | 38* | 67 |
| 12 27 | 9 50.73 | -48 1.4 | 0.583 | 1.185 | 55.7 | 18.7 | 95 W | — | 68 | 7 30 | 1 38.07 | -2 14.9 | 1.054 | 1.640 | 36.8 | 13.4 | 105 W | 41* | 66 |
| 1 1 | 9 51.65 | -46 50.9 | 0.521 | 1.179 | 55.6 | 18.5 | 99 W | — | 69 | 8 9 | 1 55.13 | -2 11.8 | 0.981 | 1.635 | 35.6 | 13.2 | 110 W | 43* | 66 |
| 1 6 | 9 51.25 | -45 3.3 | 0.457 | 1.173 | 54.8 | 18.1 | 103 W | — | 71 | 8 19 | 2 9.83 | -2 29.0 | 0.914 | 1.633 | 33.9 | 13.0 | 116 W | 43 | 66 |
| 1 8 | 9 50.66 | -44 6.0 | 0.431 | 1.170 | 54.3 | 18.0 | 105 W | 1 | 72 | 8 29 | 2 21.52 | -3 6.2 | 0.854 | 1.635 | 31.5 | 12.7 | 122 W | 42 | 67 |
| 1 10 | 9 49.79 | -42 58.1 | 0.405 | 1.168 | 53.6 | 17.8 | 107 W | 2 | 73 | 9 8 | 2 29.61 | -4 0.7 | 0.802 | 1.638 | 28.4 | 12.5 | 129 W | 41 | 68 |
| 1 12 | 9 48.62 | -41 37.3 | 0.379 | 1.166 | 52.7 | 17.7 | 109 W | 3 | 74 | 9 13 | 2 32.12 | -4 33.1 | 0.779 | 1.641 | 26.5 | 12.4 | 133 W | 40 | 69 |
| 1 14 | 9 47.12 | -40 0.8 | 0.353 | 1.164 | 51.6 | 17.5 | 112 W | 5 | 76 | 9 18 | 2 33.52 | -5 7.6 | 0.759 | 1.645 | 24.5 | 12.3 | 137 W | 40 | 69 |
| 1 16 | 9 45.26 | -38 5.1 | 0.328 | 1.161 | 50.1 | 17.3 | 115 W | 7 | 78 | 9 23 | 2 33.80 | -5 43.0 | 0.742 | 1.649 | 22.4 | 12.2 | 141 W | 39 | 70 |
| 5828 1991 AM | | | | | | | | | | | | | | | | | | | |
| 12 23 | 17 13.47 | -11 47.8 | 1.464 | 0.591 | 28.1 | 16.9 | 16 W | 10* | — | 9 28 | 2 32.99 | -6 17.6 | 0.729 | 1.654 | 20.1 | 12.1 | 145 W | 39 | 70 |
| 12 28 | 17 48.71 | -14 8.0 | 1.468 | 0.551 | 22.7 | 16.6 | 13 W | 7* | — | 10 3 | 2 31.13 | -6 49.9 | 0.719 | 1.660 | 17.8 | 12.0 | 149 W | 38 | 71 |
| 1 2 | 18 25.13 | -16 20.4 | 1.478 | 0.525 | 15.8 | 16.3 | 8 W | 2* | — | 10 8 | 2 28.34 | -7 18.1 | 0.712 | 1.666 | 15.7 | 11.9 | 153 W | 38 | 71 |
| 1 7 | 19 2.30 | -18 18.2 | 1.492 | 0.518 | 8.5 | 16.0 | 4 W | — | — | 10 13 | 2 24.76 | -7 40.5 | 0.710 | 1.673 | 13.8 | 11.8 | 156 W | 37 | 72 |
| 1 12 | 19 39.66 | -19 54.2 | 1.509 | 0.529 | 5.3 | 15.9 | 3 E | — | — | 10 18 | 2 20.58 | -7 55.5 | 0.713 | 1.681 | 12.4 | 11.8 | 159 W | 37 | 72 |
| 1 17 | 20 16.58 | -21 2.6 | 1.527 | 0.557 | 10.1 | 16.3 | 6 E | — | — | 10 23 | 2 16.07 | -8 1.6 | 0.720 | 1.689 | 11.9 | 11.8 | 160 W | 37 | 72 |
| 1 22 | 20 52.44 | -21 40.8 | 1.549 | 0.599 | 15.4 | 16.7 | 9 E | — | 3* | 10 28 | 2 11.48 | -7 58.1 | 0.732 | 1.697 | 12.1 | 11.9 | 159 W | 37 | 72 |
| 1 27 | 21 26.77 | -21 49.1 | 1.575 | 0.651 | 19.4 | 17.0 | 13 E | — | 6* | 11 7 | 2 3.04 | -7 21.5 | 0.770 | 1.716 | 14.8 | 12.1 | 154 E | 38 | 71 |
| 2 1 | 21 59.24 | -21 30.7 | 1.605 | 0.709 | 22.1 | 17.3 | 16 E | — | 9* | 11 17 | 1 56.87 | -6 8.6 | 0.827 | 1.737 | 16.8 | 12.4 | 146 E | 39 | 70 |
| 2 6 | 22 29.68 | -20 49.9 | 1.641 | 0.770 | 23.7 | 17.6 | 18 E | — | 12* | 11 27 | 1 53.98 | -4 26.7 | 0.900 | 1.759 | 22.2 | 12.7 | 138 E | 41 | 68 |
| 2 11 | 22 58.02 | -19 51.4 | 1.682 | 0.833 | 24.5 | 17.9 | 21 E | — | 14* | 12 2 | 1 53.87 | -3 27.8 | 0.942 | 1.771 | 23.8 | 12.9 | 133 E | 42 | 67 |
| 2 16 | 23 24.33 | -18 40.0 | 1.728 | 0.897 | 24.7 | 18.1 | 22 E | — | 16* | 12 7 | 1 54.64 | -2 25.1 | 0.987 | 1.783 | 25.3 | 13.1 | 129 E | 43 | 66 |
| 2 21 | 23 48.71 | -17 19.6 | 1.779 | 0.961 | 24.5 | 18.3 | 24 E | — | 17* | 12 12 | 1 56.24 | -1 19.4 | 1.036 | 1.796 | 26.5 | 13.2 | 125 E | 44 | 65 |
| 2 26 | 0 11.31 | -15 53.7 | 1.833 | 1.023 | 24.0 | 18.5 | 25 E | — | 19* | 12 17 | 1 58.65 | -0 11.6 | 1.087 | 1.809 | 27.6 | 13.4 | 122 E | 45 | 64 |
| 3 2 | 0 32.31 | -14 25.2 | 1.891 | 1.085 | 23.3 | 18.7 | 26 E | — | 20* | 12 22 | 2 1.81 | +0 57.7 | 1.141 | 1.822 | 28.5 | 13.5 | 118 E | 46 | 63 |
| 3 7 | 0 51.86 | -12 56.0 | 1.951 | 1.146 | 22.4 | 18.8 | 26 E | — | 20* | 12 27 | 2 5.66 | +2 7.8 | 1.198 | 1.835 | 29.3 | 13.7 | 114 E | 47 | 62 |
| 3 12 | 1 10.14 | -11 27.8 | 2.013 | 1.206 | 21.4 | 19.0 | 26 E | — | 20* | 1 1 | 2 10.14 | +3 18.1 | 1.256 | 1.849 | 29.8 | 13.8 | 111 E | 48 | 61 |
| 3 17 | 1 27.29 | -10 1.7 | 2.077 | 1.264 | 20.4 | 19.1 | 26 E | — | 20* | 1 6 | 2 15.19 | +4 28.3 | 1.317 | 1.863 | 30.3 | 13.9 | 107 E | 49 | 59* |
| 3 22 | 1 43.45 | -8 38.5 | 2.141 | 1.320 | 19.4 | 19.2 | 26 E | — | 20* | 1 11 | 2 20.77 | +5 38.0 | 1.379 | 1.877 | 30.6 | 14.1 | 104 E | 51 | 58* |
| 4 1 | 2 13.28 | -6 3.0 | 2.270 | 1.429 | 17.2 | 19.5 | 25 E | — | 19* | 1 16 | 2 26.84 | +6 46.9 | 1.442 | 1.891 | 30.7 | 14.2 | 101 E | 52 | 56* |
| 4 11 | 2 40.37 | -3 43.9 | 2.397 | 1.533 | 15.2 | 19.7 | 24 E | — | 18* | 9891 2001 BK₄₁ | | | | | | | | | |
| 4 21 | 3 5.32 | -1 41.6 | 2.519 | 1.631 | 13.3 | 19.8 | 22 E | — | 16* | 12 23 | 17 13.91 | -21 54.2 | 2.422 | 1.470 | 7.5 | 18.9 | 11 W | 2* | 3* |
| 5 1 | 3 28.56 | +0 4.0 | 2.633 | 1.723 | 11.7 | 20.0 | 20 E | — | 13* | 1 2 | 17 47.29 | -21 47.7 | 2.431 | 1.495 | 9.0 | 19.0 | 14 W | 4* | 5* |
| 5 11 | 3 50.37 | +1 33.5 | 2.738 | 1.811 | 10.4 | 20.1 | 19 E | — | 10* | 1 12 | 18 19.73 | -21 15.8 | 2.441 | 1.524 | 10.5 | 19.1 | 16 W | 5* | 8* |
| 5 21 | 4 10.99 | +2 47.9 | 2.831 | 1.895 | 9.5 | 20.3 | 18 E | — | 6* | 1 22 | 18 50.96 | -20 21.1 | 2.451 | 1.557 | 12.1 | 19.2 | 19 W | 6* | 11* |
| 5 31 | 4 30.56 | +3 47.9 | 2.912 | 1.974 | 9.2 | 20.4 | 18 W | — | 2* | 2 1 | 19 20.80 | -19 6.5 | 2.458 | 1.593 | 13.6 | 19.3 | 22 W | 7* | 15* |
| 6 10 | 4 49.18 | +4 34.6 | 2.979 | 2.048 | 9.4 | 20.6 | 19 W | — | 8* | 2 11 | 19 49.11 | -17 35.4 | 2.464 | 1.6 | | | | | |

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

| 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° - 26° | 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° - 26° | |
|--|-----------------|-----------------|----------|-------|---------|------|--------|-------------------------|--|-----------------|-----------------|----------|-------|---------|------|--------|-------------------------|-----|
| 98891 2001 BK₄₁ (continuation) | | | | | | | | | 160895 2001 SN₁₀₇ (continuation) | | | | | | | | | |
| 9 3 | 23 22.34 | + 8 30.0 | 1.568 | 2.547 | 7.1 | 19.1 | 162 W | 54 55 | 5 1 | 22 56.11 | - 9 37.0 | 1.954 | 1.679 | 31.0 | 20.5 | 59 W | 13* | 53* |
| 9 8 | 23 17.26 | + 7 53.5 | 1.576 | 2.566 | 5.4 | 19.1 | 166 W | 53 56 | 5 11 | 23 19.58 | - 6 45.8 | 1.872 | 1.666 | 32.5 | 20.4 | 62 W | 15* | 56* |
| 9 13 | 23 12.20 | + 7 13.7 | 1.591 | 2.585 | 4.4 | 19.1 | 169 E | 52 57 | 5 21 | 23 42.55 | - 3 50.4 | 1.792 | 1.655 | 33.9 | 20.4 | 66 W | 18* | 58* |
| 9 18 | 23 7.33 | + 6 31.8 | 1.613 | 2.603 | 4.7 | 19.1 | 168 E | 52 57 | 5 31 | 0 5.01 | - 0 53.0 | 1.712 | 1.647 | 35.1 | 20.3 | 69 W | 22* | 59* |
| 9 23 | 23 2.77 | + 5 49.0 | 1.641 | 2.622 | 5.9 | 19.2 | 164 E | 51 58 | 6 10 | 0 26.95 | + 2 4.5 | 1.634 | 1.641 | 36.1 | 20.2 | 72 W | 26* | 59* |
| 9 28 | 22 58.64 | + 5 6.3 | 1.677 | 2.640 | 7.5 | 19.4 | 160 E | 50 59 | 6 20 | 0 48.33 | + 5 0.1 | 1.558 | 1.638 | 37.0 | 20.1 | 76 W | 31* | 58* |
| 10 3 | 22 55.02 | + 4 24.8 | 1.719 | 2.658 | 9.3 | 19.5 | 155 E | 49 60 | 6 30 | 1 9.07 | + 7 51.9 | 1.482 | 1.637 | 37.6 | 20.0 | 79 W | 37* | 56* |
| 10 8 | 22 51.99 | + 3 45.3 | 1.767 | 2.676 | 11.0 | 19.7 | 149 E | 49 60 | 7 10 | 1 29.04 | +10 38.4 | 1.408 | 1.639 | 38.0 | 19.9 | 83 W | 43* | 53 |
| 10 18 | 22 47.80 | + 2 35.3 | 1.881 | 2.710 | 14.1 | 19.9 | 139 E | 48 61 | 7 20 | 1 48.08 | +13 18.2 | 1.335 | 1.644 | 38.1 | 19.8 | 88 W | 49* | 51 |
| 10 28 | 22 46.22 | + 1 40.3 | 2.014 | 2.744 | 16.5 | 20.2 | 128 E | 47 62 | 7 30 | 2 5.88 | +15 49.9 | 1.263 | 1.652 | 37.9 | 19.7 | 92 W | 56* | 48 |
| 11 7 | 22 47.13 | + 1 2.0 | 2.162 | 2.776 | 18.3 | 20.4 | 119 E | 46 63 | 8 9 | 2 22.13 | +18 12.9 | 1.193 | 1.661 | 37.2 | 19.6 | 97 W | 61* | 46 |
| 11 17 | 22 50.27 | + 0 40.2 | 2.322 | 2.807 | 19.4 | 20.7 | 109 E | 46 63 | 8 19 | 2 36.36 | +20 26.3 | 1.124 | 1.674 | 36.1 | 19.4 | 103 W | 65* | 44 |
| 11 27 | 22 55.38 | + 0 34.1 | 2.489 | 2.837 | 20.0 | 20.8 | 100 E | 46 62* | 8 29 | 2 47.98 | +22 29.3 | 1.058 | 1.688 | 34.3 | 19.3 | 109 W | 67 | 42 |
| 12 7 | 23 2.13 | + 0 42.1 | 2.659 | 2.866 | 20.1 | 21.0 | 92 E | 46 58* | 9 3 | 2 52.62 | +23 26.7 | 1.027 | 1.696 | 33.2 | 19.2 | 113 W | 68 | 41 |
| 12 17 | 23 10.24 | + 1 2.8 | 2.830 | 2.894 | 19.8 | 21.2 | 84 E | 46 52* | 9 8 | 2 56.37 | +24 21.0 | 0.997 | 1.705 | 31.9 | 19.1 | 117 W | 69 | 40 |
| 12 27 | 23 19.48 | + 1 34.4 | 2.998 | 2.920 | 19.1 | 21.3 | 76 E | 47* 46* | 9 13 | 2 59.13 | +25 11.9 | 0.968 | 1.714 | 30.4 | 19.0 | 120 W | 70 | 39 |
| 1 6 | 23 29.63 | + 2 15.4 | 3.162 | 2.946 | 18.1 | 21.4 | 68 E | 46* 39* | 9 18 | 3 0.83 | +25 59.1 | 0.941 | 1.724 | 28.7 | 18.9 | 125 W | 71 | 38 |
| 1 16 | 23 40.52 | + 3 4.3 | 3.318 | 2.970 | 16.9 | 21.5 | 61 E | 45* 33* | 9 23 | 3 1.38 | +26 41.9 | 0.916 | 1.734 | 26.7 | 18.8 | 129 W | 72 | 37 |
| 306478 1999 SP₃ | | | | | | | | | 417949 2007 TB₂₃ | | | | | | | | | |
| 12 23 | 17 14.28 | -36 18.6 | 4.172 | 3.241 | 5.0 | 20.9 | 17 W | - 9* | 12 23 | 17 16.31 | -34 44.7 | 1.979 | 1.061 | 14.0 | 21.1 | 15 W | - | 8* |
| 1 2 | 17 31.18 | -36 13.5 | 4.110 | 3.212 | 6.3 | 20.9 | 21 W | - 15* | 12 28 | 17 39.01 | -36 23.7 | 1.979 | 1.072 | 15.0 | 21.2 | 16 W | - | 9* |
| 1 12 | 17 47.99 | -36 4.3 | 4.031 | 3.181 | 7.9 | 20.9 | 26 W | - 20* | 1 2 | 18 2.54 | -37 46.6 | 1.980 | 1.084 | 15.9 | 21.2 | 18 W | - | 9* |
| 1 22 | 18 4.61 | -35 50.7 | 3.936 | 3.150 | 9.6 | 20.9 | 32 W | - 26* | 1 7 | 18 26.78 | -38 52.1 | 1.982 | 1.097 | 16.7 | 21.3 | 19 W | - | 10* |
| 2 1 | 18 20.92 | -35 32.8 | 3.826 | 3.118 | 11.4 | 20.9 | 39 W | 1* 32* | 1 12 | 18 51.55 | -39 39.2 | 1.985 | 1.110 | 17.4 | 21.3 | 20 W | - | 10* |
| 2 11 | 18 36.78 | -35 10.7 | 3.701 | 3.084 | 13.1 | 20.9 | 45 W | 2* 39* | 1 17 | 19 16.62 | -40 7.3 | 1.990 | 1.124 | 18.0 | 21.4 | 21 W | - | 10* |
| 2 21 | 18 52.08 | -34 44.8 | 3.564 | 3.050 | 14.7 | 20.8 | 52 W | 3* 45* | 1 22 | 19 41.73 | -40 16.4 | 1.996 | 1.138 | 18.4 | 21.4 | 21 W | - | 10* |
| 3 2 | 19 6.69 | -34 15.3 | 3.415 | 3.015 | 16.2 | 20.7 | 58 W | 5* 51* | 1 27 | 20 6.63 | -40 6.9 | 2.003 | 1.153 | 18.8 | 21.5 | 22 W | - | 10* |
| 3 12 | 19 20.44 | -33 43.0 | 3.257 | 2.980 | 17.6 | 20.7 | 65 W | 6* 58* | 12 23 | 17 16.54 | -16 11.7 | 3.237 | 2.290 | 5.5 | 20.3 | 13 W | 7* | - |
| 3 22 | 19 33.20 | -33 8.3 | 3.091 | 2.943 | 18.8 | 20.6 | 72 W | 7* 65* | 1 2 | 17 36.81 | -17 7.8 | 3.178 | 2.260 | 7.5 | 20.3 | 17 W | 9* | 6* |
| 4 1 | 19 44.77 | -32 32.1 | 2.919 | 2.906 | 19.8 | 20.4 | 79 W | 8* 71* | 1 12 | 17 57.50 | -17 54.8 | 3.108 | 2.229 | 9.6 | 20.3 | 22 W | 11* | 12* |
| 4 11 | 19 54.95 | -31 55.0 | 2.743 | 2.867 | 20.4 | 20.3 | 87 W | 9* 78* | 1 22 | 18 18.59 | -18 32.7 | 3.028 | 2.198 | 11.8 | 20.3 | 27 W | 12* | 18* |
| 4 21 | 20 3.50 | -31 17.8 | 2.566 | 2.828 | 20.7 | 20.1 | 94 W | 11* 84* | 2 1 | 18 40.01 | -19 1.7 | 2.938 | 2.167 | 14.0 | 20.3 | 32 W | 13* | 24* |
| 5 1 | 20 10.14 | -30 41.0 | 2.390 | 2.788 | 20.7 | 19.9 | 103 W | 12* 85 | 2 11 | 19 1.71 | -19 22.1 | 2.839 | 2.135 | 16.1 | 20.3 | 37 W | 13* | 30* |
| 5 11 | 20 14.54 | -30 4.7 | 2.218 | 2.748 | 20.1 | 19.7 | 111 W | 14* 86 | 2 21 | 19 23.66 | -19 34.6 | 2.733 | 2.104 | 18.3 | 20.2 | 42 W | 14* | 35* |
| 5 21 | 20 16.36 | -29 29.0 | 2.054 | 2.706 | 18.9 | 19.5 | 120 W | 15* 87 | 3 2 | 19 45.80 | -19 39.9 | 2.621 | 2.072 | 20.0 | 20.2 | 47 W | 14* | 40* |
| 5 31 | 20 15.22 | -28 52.8 | 1.900 | 2.664 | 17.0 | 19.2 | 130 W | 16 87 | 3 12 | 20 8.11 | -19 39.1 | 2.503 | 2.041 | 22.4 | 20.1 | 52 W | 14* | 45* |
| 6 10 | 20 10.84 | -28 14.3 | 1.762 | 2.621 | 14.4 | 18.9 | 140 W | 17 88 | 3 22 | 20 30.58 | -19 33.3 | 2.382 | 2.010 | 24.4 | 20.0 | 56 W | 13* | 50* |
| 6 20 | 20 3.10 | -27 30.4 | 1.642 | 2.578 | 11.1 | 18.6 | 151 W | 17 88 | 4 1 | 20 53.18 | -19 24.2 | 2.257 | 1.979 | 26.2 | 19.9 | 61 W | 13* | 55* |
| 6 30 | 19 52.23 | -26 37.5 | 1.545 | 2.533 | 6.9 | 18.3 | 163 W | 18 89 | 4 11 | 21 15.91 | -19 13.4 | 2.132 | 1.949 | 28.0 | 19.8 | 66 W | 13* | 60* |
| 7 5 | 19 45.84 | -26 6.6 | 1.507 | 2.511 | 4.7 | 18.1 | 168 W | 19 90 | 4 21 | 21 38.79 | -19 2.9 | 2.006 | 1.919 | 29.6 | 19.7 | 70 W | 13* | 64* |
| 7 10 | 19 38.98 | -25 32.2 | 1.475 | 2.489 | 2.4 | 17.9 | 174 W | 19 90 | 5 1 | 22 1.82 | -18 54.9 | 1.881 | 1.890 | 31.0 | 19.6 | 75 W | 13* | 69* |
| 7 15 | 19 31.83 | -24 54.4 | 1.451 | 2.466 | 1.5 | 17.8 | 176 E | 20 89 | 5 11 | 22 25.01 | -18 51.8 | 1.759 | 1.862 | 32.2 | 19.4 | 80 W | 13* | 73* |
| 7 20 | 19 24.57 | -24 13.2 | 1.434 | 2.443 | 3.5 | 17.9 | 171 E | 21 88 | 5 21 | 22 48.35 | -18 56.3 | 1.641 | 1.835 | 33.3 | 19.3 | 84 W | 14* | 78* |
| 7 25 | 19 17.42 | -23 29.1 | 1.424 | 2.421 | 6.1 | 18.0 | 165 E | 22 87 | 5 31 | 23 11.81 | -19 11.3 | 1.527 | 1.810 | 34.1 | 19.1 | 88 W | 14* | 81* |
| 7 30 | 19 10.57 | -22 42.5 | 1.421 | 2.398 | 8.6 | 18.1 | 159 E | 22 87 | 6 10 | 23 35.32 | -19 39.8 | 1.420 | 1.786 | 34.6 | 19.0 | 93 W | 15* | 84* |
| 8 4 | 19 4.22 | -21 54.2 | 1.425 | 2.375 | 11.2 | 18.1 | 153 E | 23 86 | 6 20 | 23 58.77 | -20 24.6 | 1.320 | 1.763 | 34.9 | 18.8 | 97 W | 16* | 84 |
| 8 9 | 18 58.52 | -21 5.0 | 1.436 | 2.352 | 13.6 | 18.2 | 147 E | 24 85 | 6 30 | 0 21.94 | -21 28.5 | 1.228 | 1.743 | 34.9 | 18.6 | 101 W | 17* | 85 |
| 8 14 | 18 53.58 | -20 15.5 | 1.452 | 2.329 | 15.9 | 18.3 | 141 E | 25 84 | 7 10 | 0 44.55 | -22 53.2 | 1.145 | 1.724 | 34.6 | 18.4 | 106 W | 18* | 87 |
| 8 19 | 18 49.49 | -19 26.5 | 1.473 | 2.305 | 18.0 | 18.4 | 135 E | 26 83 | 7 15 | 0 55.53 | -23 43.6 | 1.107 | 1.716 | 34.4 | 18.3 | 108 W | 18* | 88 |
| 8 29 | 18 44.11 | -17 51.9 | 1.528 | 2.259 | 21.6 | 18.5 | 125 E | 27 82 | 7 20 | 1 6.20 | -24 39.5 | 1.071 | 1.708 | 34.1 | 18.2 | 110 W | 18* | 89 |
| 9 8 | 18 42.47 | -16 23.6 | 1.595 | 2.212 | 24.5 | 18.7 | 115 E | 29 80 | 7 25 | 1 16.49 | -25 40.7 | 1.038 | 1.700 | 33.7 | 18.1 | 112 W | 18* | 90 |
| 9 18 | 18 44.39 | -15 1.8 | 1.670 | 2.165 | 26.6 | 18.8 | 105 E | 30 79 | 7 30 | 1 26.31 | -26 46.8 | 1.007 | 1.694 | 33.3 | 18.1 | 114 W | 17* | 89 |
| 9 28 | 18 49.56 | -13 45.0 | 1.748 | 2.119 | 28.0 | 18.9 | 97 E | 31 78 | 8 4 | 1 35.59 | -27 57.3 | 0.979 | 1.688 | 32.8 | 18.0 | 116 W | 17* | 88 |
| 10 8 | 18 57.57 | -12 30.8 | 1.826 | 2.073 | 28.8 | 19.0 | 89 E | 32* 74* | 8 9 | 1 44.24 | -29 11.7 | 0.954 | 1.682 | 32.3 | 17.9 | 117 W | 16* | 87 |
| 10 18 | 19 8.06 | -11 16.7 | 1.902 | 2.027 | 29.2 | 19.0 | 82 E | 34* 68* | 8 14 | 1 52.15 | -30 29.2 | 0.931 | 1.677 | 31.8 | 17.8 | 119 W | 15 | 86 |
| 10 28 | 19 20.73 | -9 59.8 | 1.974 | 1.982 | 29.1 | 19.0 | 76 E | 35* 61* | 165383 2000 WA₁₇₃ | | | | | | | | | |
| 11 7 | 19 35.28 | -8 37.8 | 2.039 | 1.938 | 28.7 | 19.0 | 70 E | 36* 54* | 12 23 | 17 16.54 | -16 11.7 | 3.237 | 2.290 | 5.5 | 20.3 | 13 W | 7* | - |
| 11 17 | 19 51.48 | -7 8.7 | 2.097 | 1.895 | 28.1 | 19.0 | 64 E | 36* 46* | 1 2 | 17 36.81 | -17 7.8 | 3.178 | 2.260 | 7.5 | 20.3 | 17 W | 9* | 6* |
| 11 27 | 20 9.15 | -5 30.3 | 2.148 | 1.853 | 27.3 | 19.0 | 59 E | 37* 39* | 1 12 | 17 57.50 | -17 54.8 | 3.108 | 2.229 | 9.6 | 20.3 | 22 W | 11* | 12* |
| 12 7 | 20 28.12 | -3 41.6 | 2.192 | 1.813 | 26.4 | 19.0 | 55 E | 38* 32* | 1 22 | 18 18.59 | -18 32.7 | 3.028 | 2.198 | 11.8 | 20.3 | 27 W | 12* | 18* |
| 12 17 | 20 48.28 | -1 41.5 | 2.228 | 1.775 | 25.4 | 19.0 | 51 E | 38* 25* | 2 1 | 18 40.01 | -19 1.7 | 2.938 | 2.167 | 14.0 | 20.3 | 32 W | 13* | 24* |
| 12 27 | 21 9.56 | + 0 30.5 | 2.257 | 1.739 | 24.4 | 18.9 | 47 E | 37* 19* | 2 11 | 19 1.71 | -19 22.1 | 2.839 | 2.135 | 16.1 | 20.3 | 37 W | 13* | 30* |
| 1 6 | 21 31.88 | + 2 54.2 | 2.281 | 1.707 | 23.3 | 18.9 | 43 E | 36* 14* | 2 21 | 19 23.66 | -19 34.6 | 2.733 | 2.104 | 18.3 | 20.2 | 42 W | 14* | 35* |
| 1 16 | 21 55.25 | + 5 29.1 | 2.301 | 1.677 | 22.3 | | | | | | | | | | | | | |

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

| 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° | 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° | | |
|-------------------------------------|-----------------|-----------------|----------|-------|---------|------|--------|-------|------|----------------------------------|-----------------------|-----------------|----------|----------|---------|-------|--------|------|-------|-----|-----|
| 165383 2000 WA₁₇₃ | | | | | | | | | | 88263 2001 KQ₁ | | | | | | | | | | | |
| <i>(continuation)</i> | | | | | | | | | | | | | | | | | | | | | |
| 8 | 19 | 1 59.20 | -31 48.8 | 0.910 | 1.673 | 31.3 | 17.7 | 121 W | 13 | 84 | 12 | 23 | 17 17.08 | -10 43.6 | 3.581 | 2.654 | 6.1 | 21.0 | 17 W | 11* | — |
| 8 | 24 | 2 5.28 | -33 9.3 | 0.892 | 1.670 | 30.7 | 17.7 | 123 W | 12 | 83 | 1 | 2 | 17 32.66 | -10 0.8 | 3.572 | 2.685 | 7.9 | 21.1 | 22 W | 15* | 4* |
| 8 | 29 | 2 10.30 | -34 29.2 | 0.877 | 1.667 | 30.1 | 17.6 | 124 W | 11 | 82 | 1 | 12 | 17 47.76 | -9 8.5 | 3.546 | 2.715 | 9.7 | 21.2 | 28 W | 19* | 10* |
| 9 | 3 | 2 14.18 | -35 46.8 | 0.864 | 1.665 | 29.6 | 17.6 | 125 W | 9 | 80 | 1 | 22 | 18 2.29 | -8 6.2 | 3.505 | 2.743 | 11.5 | 21.2 | 34 W | 23* | 17* |
| 9 | 8 | 2 16.83 | -37 0.5 | 0.853 | 1.664 | 29.1 | 17.5 | 127 W | 8 | 79 | 2 | 1 | 18 16.15 | -6 53.7 | 3.450 | 2.770 | 13.3 | 21.3 | 40 W | 26* | 24* |
| 9 | 13 | 2 18.18 | -38 8.2 | 0.845 | 1.663 | 28.6 | 17.5 | 128 W | 7 | 78 | 2 | 11 | 18 29.24 | -5 31.0 | 3.380 | 2.795 | 14.9 | 21.3 | 47 W | 29* | 31* |
| 9 | 18 | 2 18.22 | -39 8.0 | 0.839 | 1.663 | 28.2 | 17.5 | 129 W | 6 | 77 | 2 | 21 | 18 41.45 | -3 58.0 | 3.299 | 2.819 | 16.3 | 21.3 | 53 W | 32* | 38* |
| 9 | 23 | 2 16.96 | -39 57.3 | 0.835 | 1.664 | 27.8 | 17.5 | 129 W | 5 | 76 | 3 | 2 | 18 52.64 | -2 14.7 | 3.207 | 2.841 | 17.6 | 21.3 | 60 W | 35* | 44* |
| 9 | 28 | 2 14.53 | -40 34.1 | 0.835 | 1.665 | 27.5 | 17.4 | 130 W | 4 | 75 | 3 | 12 | 19 2.66 | -0 21.3 | 3.107 | 2.862 | 18.6 | 21.3 | 67 W | 38* | 50* |
| 10 | 3 | 2 11.05 | -40 56.5 | 0.836 | 1.667 | 27.3 | 17.4 | 130 W | 4 | 75 | 3 | 22 | 19 11.38 | +1 41.8 | 3.000 | 2.882 | 19.4 | 21.3 | 74 W | 41* | 55* |
| 10 | 8 | 2 6.74 | -41 2.9 | 0.840 | 1.670 | 27.2 | 17.5 | 130 W | 4 | 75 | 4 | 1 | 19 18.59 | +3 53.9 | 2.890 | 2.899 | 19.9 | 21.2 | 81 W | 45* | 57* |
| 10 | 13 | 2 1.84 | -40 52.1 | 0.847 | 1.674 | 27.1 | 17.5 | 130 W | 4 | 75 | 4 | 11 | 19 24.11 | +6 14.0 | 2.778 | 2.916 | 20.1 | 21.1 | 88 W | 48* | 58* |
| 10 | 18 | 1 56.64 | -40 23.4 | 0.856 | 1.678 | 27.2 | 17.5 | 130 W | 5 | 76 | 4 | 21 | 19 27.72 | +8 40.5 | 2.667 | 2.931 | 20.0 | 21.1 | 95 W | 52* | 55* |
| 10 | 23 | 1 51.45 | -39 36.7 | 0.869 | 1.683 | 27.3 | 17.5 | 129 W | 5 | 76 | 5 | 1 | 19 29.20 | +11 11.1 | 2.561 | 2.945 | 19.5 | 21.0 | 102 W | 55* | 53 |
| 10 | 28 | 1 46.56 | -38 32.7 | 0.884 | 1.689 | 27.6 | 17.6 | 128 E | 6 | 77 | 5 | 11 | 19 28.35 | +13 42.0 | 2.464 | 2.957 | 18.8 | 20.9 | 109 W | 59* | 50 |
| 11 | 2 | 1 42.20 | -37 12.6 | 0.902 | 1.695 | 27.9 | 17.7 | 127 E | 8 | 79 | 5 | 21 | 19 25.04 | +16 8.6 | 2.377 | 2.967 | 17.8 | 20.8 | 116 W | 61 | 48 |
| 11 | 7 | 1 38.54 | -35 38.2 | 0.923 | 1.702 | 28.3 | 17.7 | 125 E | 9 | 80 | 5 | 31 | 19 19.21 | +18 24.8 | 2.305 | 2.977 | 16.7 | 20.7 | 123 W | 63 | 46 |
| 11 | 12 | 1 35.70 | -33 51.3 | 0.947 | 1.709 | 28.8 | 17.8 | 124 E | 11 | 82 | 6 | 10 | 19 11.07 | +20 23.5 | 2.251 | 2.985 | 15.6 | 20.6 | 128 W | 65 | 44 |
| 11 | 17 | 1 33.75 | -31 53.9 | 0.974 | 1.717 | 29.2 | 17.9 | 122 E | 13 | 84 | 6 | 20 | 19 1.01 | +21 57.6 | 2.216 | 2.991 | 14.7 | 20.5 | 132 W | 67 | 42 |
| 11 | 22 | 1 32.75 | -29 48.2 | 1.004 | 1.726 | 29.7 | 18.0 | 120 E | 15 | 86 | 6 | 30 | 18 49.73 | +23 1.2 | 2.202 | 2.996 | 14.2 | 20.5 | 134 W | 68 | 41 |
| 11 | 27 | 1 32.66 | -27 36.2 | 1.038 | 1.735 | 30.2 | 18.1 | 118 E | 17 | 88 | 7 | 10 | 18 38.13 | +23 31.0 | 2.210 | 3.000 | 14.3 | 20.5 | 133 E | 69 | 40 |
| 12 | 2 | 1 33.46 | -25 19.9 | 1.074 | 1.744 | 30.6 | 18.2 | 116 E | 20 | 89 | 7 | 20 | 18 27.17 | +23 27.5 | 2.240 | 3.002 | 14.9 | 20.6 | 131 E | 68 | 41 |
| 12 | 7 | 1 35.08 | -23 0.9 | 1.113 | 1.754 | 31.0 | 18.3 | 113 E | 22 | 87 | 7 | 30 | 18 17.71 | +22 53.9 | 2.288 | 3.003 | 15.8 | 20.6 | 126 E | 68 | 41 |
| 12 | 12 | 1 37.48 | -20 40.7 | 1.155 | 1.765 | 31.4 | 18.4 | 111 E | 24 | 85 | 8 | 9 | 18 10.39 | +21 56.5 | 2.353 | 3.002 | 16.9 | 20.7 | 121 E | 67 | 42 |
| 12 | 17 | 1 40.59 | -18 20.5 | 1.200 | 1.776 | 31.7 | 18.5 | 108 E | 27 | 82 | 8 | 19 | 18 5.55 | +20 42.1 | 2.433 | 3.000 | 17.8 | 20.8 | 115 E | 66 | 43 |
| 12 | 22 | 1 44.35 | -16 1.2 | 1.248 | 1.788 | 32.0 | 18.6 | 106 E | 29 | 80 | 8 | 29 | 18 3.29 | +19 17.5 | 2.523 | 2.997 | 18.7 | 20.9 | 108 E | 64 | 45 |
| 12 | 27 | 1 48.72 | -13 43.9 | 1.298 | 1.800 | 32.1 | 18.7 | 103 E | 31 | 78 | 9 | 8 | 18 3.55 | +17 48.6 | 2.621 | 2.992 | 19.3 | 21.0 | 102 E | 63* | 46 |
| 1 | 1 | 1 53.62 | -11 29.2 | 1.350 | 1.812 | 32.2 | 18.8 | 101 E | 34 | 75* | 9 | 18 | 18 6.15 | +16 20.2 | 2.723 | 2.985 | 19.6 | 21.1 | 95 E | 61* | 48 |
| 1 | 6 | 1 59.00 | -9 17.5 | 1.405 | 1.825 | 32.2 | 18.9 | 98 E | 36 | 72* | 9 | 28 | 18 10.88 | +14 55.9 | 2.827 | 2.978 | 19.7 | 21.2 | 89 E | 59* | 48* |
| 1 | 11 | 2 4.83 | -7 9.4 | 1.461 | 1.838 | 32.2 | 19.0 | 95 E | 38 | 69* | 10 | 8 | 18 17.49 | +13 38.6 | 2.931 | 2.968 | 19.5 | 21.3 | 82 E | 57* | 46* |
| 1 | 16 | 2 11.07 | -5 4.9 | 1.520 | 1.851 | 32.1 | 19.1 | 93 E | 40 | 66* | 10 | 18 | 18 25.74 | +12 30.0 | 3.032 | 2.958 | 19.1 | 21.3 | 76 E | 55* | 43* |
| 12 | 23 | 17 16.62 | -25 10.8 | 2.554 | 1.598 | 6.5 | 20.7 | 11 W | — | 4* | 11 | 17 | 18 58.39 | +10 9.6 | 3.300 | 2.918 | 16.9 | 21.4 | 59 E | 48* | 26* |
| 1 | 2 | 17 48.97 | -24 43.2 | 2.512 | 1.571 | 8.3 | 20.8 | 13 W | 1* | 6* | 11 | 27 | 19 11.32 | +9 46.8 | 3.372 | 2.901 | 15.9 | 21.4 | 54 E | 45* | 19* |
| 1 | 12 | 18 21.52 | -23 48.5 | 2.469 | 1.548 | 10.1 | 20.8 | 16 W | 3* | 9* | 12 | 7 | 19 25.00 | +9 36.7 | 3.435 | 2.883 | 14.9 | 21.4 | 49 E | 42* | 12* |
| 1 | 22 | 18 53.97 | -22 26.6 | 2.428 | 1.529 | 11.9 | 20.8 | 19 W | 4* | 12* | 12 | 17 | 19 39.33 | +9 39.2 | 3.486 | 2.864 | 13.9 | 21.4 | 44 E | 38* | 5* |
| 2 | 1 | 19 26.03 | -20 38.2 | 2.389 | 1.513 | 13.7 | 20.8 | 21 W | 5* | 14* | 12 | 27 | 19 54.20 | +9 54.4 | 3.526 | 2.843 | 12.8 | 21.4 | 40 E | 34* | — |
| 2 | 11 | 19 57.46 | -18 25.2 | 2.351 | 1.502 | 15.4 | 20.8 | 24 W | 7* | 17* | 1 | 6 | 20 9.48 | +10 21.9 | 3.554 | 2.821 | 11.9 | 21.3 | 36 E | 29* | — |
| 2 | 21 | 20 28.08 | -15 50.3 | 2.317 | 1.495 | 17.0 | 20.8 | 26 W | 8* | 19* | 1 | 16 | 20 25.11 | +11 1.4 | 3.570 | 2.798 | 11.1 | 21.3 | 33 E | 23* | — |
| 3 | 2 | 20 57.79 | -12 56.8 | 2.284 | 1.493 | 18.6 | 20.8 | 29 W | 9* | 22* | 504181 2006 TC | | | | | | | | | | |
| 3 | 12 | 21 26.53 | -9 48.6 | 2.255 | 1.495 | 20.1 | 20.8 | 31 W | 10* | 24* | 12 | 23 | 17 17.18 | -23 45.4 | 0.879 | 0.198 | 116.5 | 19.5 | 10 W | 1* | 3* |
| 3 | 22 | 21 54.33 | -6 29.7 | 2.228 | 1.502 | 21.5 | 20.9 | 34 W | 12* | 27* | 12 | 24 | 17 24.87 | -22 49.9 | 0.927 | 0.171 | 104.2 | 18.5 | 10 W | 1* | 2* |
| 4 | 1 | 22 21.21 | -3 3.9 | 2.203 | 1.513 | 22.8 | 20.9 | 36 W | 13* | 29* | 12 | 25 | 17 34.15 | -22 2.1 | 0.979 | 0.149 | 87.2 | 17.6 | 9 W | 1* | 1* |
| 4 | 11 | 22 47.23 | +0 24.9 | 2.179 | 1.529 | 24.1 | 20.9 | 39 W | 15* | 31* | 12 | 26 | 17 45.46 | -21 25.3 | 1.032 | 0.137 | 65.6 | 16.8 | 7 W | — | — |
| 4 | 21 | 23 12.48 | +3 53.2 | 2.156 | 1.548 | 25.3 | 21.0 | 41 W | 17* | 33* | 12 | 27 | 17 58.67 | -21 1.8 | 1.080 | 0.138 | 42.9 | 16.2 | 5 W | — | — |
| 5 | 1 | 23 37.01 | +7 18.0 | 2.133 | 1.571 | 26.4 | 21.0 | 44 W | 19* | 35* | 12 | 28 | 18 12.82 | -20 49.8 | 1.121 | 0.153 | 24.4 | 16.0 | 4 W | — | — |
| 5 | 11 | 0 0.86 | +10 36.6 | 2.109 | 1.598 | 27.4 | 21.1 | 47 W | 21* | 36* | 12 | 28 | 18 26.91 | -20 44.9 | 1.154 | 0.177 | 14.4 | 16.1 | 3 W | — | — |
| 5 | 21 | 0 24.08 | +13 46.7 | 2.083 | 1.627 | 28.4 | 21.1 | 50 W | 24* | 38* | 12 | 30 | 18 40.41 | -20 43.0 | 1.181 | 0.205 | 14.4 | 16.4 | 3 E | — | — |
| 5 | 31 | 0 46.66 | +16 46.7 | 2.054 | 1.659 | 29.3 | 21.1 | 53 W | 27* | 38* | 12 | 31 | 18 53.17 | -20 41.8 | 1.204 | 0.235 | 18.3 | 16.9 | 4 E | — | — |
| 6 | 10 | 1 8.58 | +19 35.0 | 2.022 | 1.693 | 30.1 | 21.2 | 57 W | 32* | 39* | 1 | 1 | 19 5.21 | -20 40.1 | 1.225 | 0.266 | 22.0 | 17.3 | 6 E | — | — |
| 6 | 20 | 1 29.77 | +22 11.0 | 1.985 | 1.729 | 30.8 | 21.2 | 61 W | 36* | 38* | 1 | 2 | 19 16.58 | -20 37.4 | 1.244 | 0.297 | 25.0 | 17.7 | 7 E | — | — |
| 6 | 30 | 1 50.11 | +24 33.9 | 1.944 | 1.767 | 31.3 | 21.2 | 65 W | 42* | 38* | 1 | 4 | 19 37.58 | -20 28.4 | 1.281 | 0.357 | 28.7 | 18.3 | 10 E | 2* | 1* |
| 7 | 10 | 2 9.45 | +26 43.4 | 1.897 | 1.806 | 31.7 | 21.2 | 69 W | 48* | 37* | 1 | 6 | 19 56.61 | -20 14.5 | 1.317 | 0.414 | 30.6 | 18.7 | 12 E | 4* | 4* |
| 7 | 20 | 2 27.56 | +28 39.7 | 1.845 | 1.846 | 32.0 | 21.2 | 74 W | 55* | 35* | 1 | 8 | 20 13.99 | -19 56.5 | 1.353 | 0.469 | 31.4 | 19.1 | 14 E | 5* | 5* |
| 7 | 30 | 2 44.16 | +30 22.9 | 1.788 | 1.887 | 31.9 | 21.2 | 79 W | 62* | 34 | 1 | 10 | 20 29.97 | -19 35.1 | 1.389 | 0.521 | 31.5 | 19.3 | 16 E | 6* | 7* |
| 8 | 9 | 2 58.91 | +31 53.2 | 1.727 | 1.929 | 31.6 | 21.2 | 85 W | 69* | 32 | 1 | 12 | 20 44.73 | -19 11.1 | 1.427 | 0.572 | 31.2 | 19.6 | 18 E | 7* | 8* |
| 8 | 19 | 3 11.40 | +33 11.1 | 1.662 | 1.970 | 30.9 | 21.1 | 92 W | 75* | 31 | 1 | 14 | 20 58.42 | -18 45.0 | 1.465 | 0.620 | 30.7 | 19.8 | 19 E | 8* | 9* |
| 8 | 29 | 3 21.12 | +34 16.2 | 1.594 | 2.012 | 29.7 | 21.0 | 99 W | 79* | 30 | 1 | 16 | 21 11.15 | -18 17.4 | 1.503 | 0.667 | 30.0 | 20.0 | 20 E | 9* | 10* |
| 9 | 8 | 3 27.60 | +35 7.7 | 1.527 | 2.054 | 28.1 | 20.9 | 106 W | 80 | 29 | 1 | 18 | 21 23.04 | -17 48.7 | 1.542 | 0.712 | 29.1 | 20.2 | 21 E | 9* | 11* |
| 9 | 18 | 3 30.31 | +35 43.7 | 1.462 | 2.096 | 25.7 | 20.8 | 115 W | 81 | 28 | 1 | 20 | 21 34.16 | -17 19.3 | 1.582 | 0.755 | 28.3 | 20.3 | 21 E | 10* | 11* |
| 9 | 28 | 3 28.88 | +36 0.7 | 1.404 | 2.137 | 22.7 | 20.7 | 124 W | 81 | 28 | 1 | 22 | 21 4 | | | | | | | | |

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

| 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° | 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° |
|-----------------------|-----------------|-----------------|----------|-------|---------|------|--------|-----|------|------------------------------------|-----------------|-----------------|----------|-------|---------|------|--------|-----|------|
| 4775 Hansen | | | | | | | | | | 86039 1999 NC₄₃ | | | | | | | | | |
| <i>(continuation)</i> | | | | | | | | | | <i>(continuation)</i> | | | | | | | | | |
| 4 26 | 23 47.89 | -2 25.6 | 1.937 | 1.329 | 28.9 | 17.1 | 40 W | 8* | 34* | 6 20 | 20 14.51 | -25 9.0 | 1.321 | 2.250 | 13.7 | 19.1 | 148 W | 20 | 89 |
| 5 1 | 0 3.24 | +0 18.2 | 1.920 | 1.322 | 29.5 | 17.1 | 40 W | 9* | 34* | 6 30 | 20 2.46 | -25 37.5 | 1.213 | 2.197 | 9.0 | 18.6 | 160 W | 19 | 90 |
| 5 6 | 0 18.56 | +1 49.5 | 1.905 | 1.316 | 30.0 | 17.1 | 41 W | 10* | 34* | 7 5 | 19 54.85 | -25 51.6 | 1.168 | 2.170 | 6.3 | 18.4 | 167 W | 19 | 90 |
| 5 11 | 0 33.85 | +3 56.7 | 1.892 | 1.312 | 30.4 | 17.1 | 41 W | 11* | 34* | 7 10 | 19 46.31 | -26 4.1 | 1.129 | 2.141 | 3.6 | 18.2 | 172 W | 19 | 90 |
| 5 16 | 0 49.13 | +6 2.7 | 1.881 | 1.311 | 30.9 | 17.1 | 42 W | 12* | 35* | 7 15 | 19 37.02 | -26 14.1 | 1.098 | 2.113 | 2.3 | 18.0 | 175 E | 19 | 90 |
| 5 21 | 1 4.41 | +8 6.7 | 1.871 | 1.311 | 31.2 | 17.1 | 42 W | 13* | 35* | 7 20 | 19 27.22 | -26 20.5 | 1.073 | 2.083 | 4.4 | 18.0 | 171 E | 19 | 90 |
| 5 26 | 1 19.68 | +10 8.0 | 1.863 | 1.313 | 31.6 | 17.1 | 43 W | 14* | 35* | 7 25 | 19 17.20 | -26 22.6 | 1.056 | 2.052 | 7.6 | 18.1 | 164 E | 19 | 90 |
| 5 31 | 1 34.96 | +12 6.0 | 1.856 | 1.317 | 31.9 | 17.1 | 43 W | 16* | 34* | 7 30 | 19 7.30 | -26 20.0 | 1.045 | 2.021 | 11.0 | 18.2 | 158 E | 19 | 90 |
| 6 5 | 1 50.23 | +14 0.0 | 1.850 | 1.324 | 32.2 | 17.1 | 44 W | 17* | 34* | 8 4 | 18 57.84 | -26 12.7 | 1.040 | 1.989 | 14.3 | 18.3 | 151 E | 19 | 90 |
| 6 10 | 2 5.51 | +15 49.4 | 1.845 | 1.331 | 32.4 | 17.1 | 45 W | 19* | 34* | 8 9 | 18 49.09 | -26 1.2 | 1.041 | 1.956 | 17.6 | 18.4 | 144 E | 19 | 90 |
| 6 20 | 2 36.06 | +19 12.9 | 1.838 | 1.353 | 32.9 | 17.2 | 46 W | 23* | 33* | 8 14 | 18 41.30 | -25 46.2 | 1.048 | 1.923 | 20.7 | 18.4 | 138 E | 19 | 90 |
| 6 30 | 3 6.47 | +22 13.3 | 1.831 | 1.380 | 33.3 | 17.2 | 48 W | 27* | 32* | 8 19 | 18 34.65 | -25 28.4 | 1.059 | 1.889 | 23.6 | 18.5 | 132 E | 20 | 89 |
| 7 10 | 3 36.59 | +24 49.0 | 1.825 | 1.414 | 33.6 | 17.3 | 50 W | 32* | 31* | 8 24 | 18 29.27 | -25 8.8 | 1.073 | 1.854 | 26.3 | 18.6 | 126 E | 20 | 89 |
| 7 20 | 4 6.20 | +26 59.4 | 1.817 | 1.453 | 34.0 | 17.3 | 53 W | 36* | 30* | 8 29 | 18 25.22 | -24 48.0 | 1.090 | 1.818 | 28.8 | 18.6 | 120 E | 20 | 89 |
| 7 30 | 4 35.02 | +28 45.4 | 1.805 | 1.496 | 34.2 | 17.4 | 56 W | 41* | 29* | 9 8 | 18 21.09 | -24 5.1 | 1.129 | 1.744 | 33.1 | 18.8 | 109 E | 21 | 88 |
| 8 9 | 5 2.75 | +30 8.5 | 1.790 | 1.542 | 34.4 | 17.4 | 59 W | 47* | 29* | 9 18 | 18 21.98 | -23 22.2 | 1.169 | 1.666 | 36.5 | 18.8 | 100 E | 22* | 87 |
| 8 19 | 5 29.09 | +31 11.7 | 1.768 | 1.592 | 34.6 | 17.5 | 63 W | 52* | 28* | 9 28 | 18 27.45 | -22 39.4 | 1.207 | 1.586 | 39.2 | 18.9 | 91 E | 22* | 84* |
| 8 29 | 5 53.70 | +31 58.0 | 1.741 | 1.644 | 34.6 | 17.5 | 67 W | 57* | 28* | 10 8 | 18 36.92 | -21 54.6 | 1.237 | 1.502 | 41.4 | 18.9 | 84 E | 23* | 76* |
| 9 8 | 6 16.30 | +32 31.4 | 1.707 | 1.698 | 34.4 | 17.5 | 72 W | 62* | 28* | 10 18 | 18 49.95 | -21 5.0 | 1.258 | 1.416 | 43.3 | 18.8 | 77 E | 23* | 69* |
| 9 18 | 6 36.58 | +32 55.9 | 1.666 | 1.752 | 34.1 | 17.5 | 78 W | 68* | 28* | 10 28 | 19 6.17 | -20 7.0 | 1.265 | 1.327 | 45.0 | 18.7 | 71 E | 24* | 62* |
| 9 28 | 6 54.21 | +33 15.5 | 1.620 | 1.808 | 33.4 | 17.5 | 84 W | 73* | 29* | 11 7 | 19 25.28 | -18 56.7 | 1.258 | 1.236 | 46.8 | 18.6 | 65 E | 25* | 56* |
| 10 8 | 7 8.85 | +33 34.3 | 1.568 | 1.864 | 32.4 | 17.5 | 90 W | 78* | 29* | 11 17 | 19 47.08 | -17 30.0 | 1.235 | 1.144 | 48.9 | 18.5 | 61 E | 26* | 50* |
| 10 18 | 7 20.12 | +33 55.8 | 1.513 | 1.921 | 30.9 | 17.4 | 98 W | 79* | 30* | 11 27 | 20 11.45 | -15 42.7 | 1.194 | 1.053 | 51.6 | 18.3 | 57 E | 27* | 44* |
| 10 28 | 7 27.54 | +34 22.7 | 1.457 | 1.977 | 28.9 | 17.4 | 106 W | 79 | 30* | 12 7 | 20 38.29 | -13 31.2 | 1.136 | 0.965 | 55.2 | 18.1 | 54 E | 29* | 39* |
| 11 7 | 7 30.68 | +34 56.0 | 1.404 | 2.033 | 26.2 | 17.3 | 115 W | 80 | 29 | 12 17 | 21 7.60 | -10 52.4 | 1.060 | 0.883 | 60.1 | 17.9 | 51 E | 31* | 34* |
| 11 17 | 7 29.12 | +35 34.7 | 1.357 | 2.089 | 22.8 | 17.1 | 125 W | 81 | 28 | 12 27 | 21 39.39 | -7 45.4 | 0.966 | 0.815 | 66.4 | 17.7 | 49 E | 33* | 30* |
| 11 27 | 7 22.67 | +36 14.2 | 1.321 | 2.144 | 18.6 | 17.0 | 136 W | 81 | 28 | 1 6 | 22 13.74 | -4 12.8 | 0.858 | 0.765 | 74.3 | 17.6 | 49 E | 35* | 26* |
| 12 2 | 7 17.71 | +36 32.0 | 1.310 | 2.171 | 16.4 | 17.0 | 142 W | 82 | 27 | 1 16 | 22 51.18 | -0 21.0 | 0.740 | 0.743 | 83.1 | 17.5 | 49 E | 37* | 24* |
| 12 7 | 7 11.73 | +36 47.0 | 1.303 | 2.198 | 14.0 | 16.9 | 147 W | 82 | 27 | 154631 2003 WO₂₅ | | | | | | | | | |
| 12 12 | 7 4.88 | +36 58.1 | 1.302 | 2.225 | 11.6 | 16.8 | 153 W | 82 | 27 | 12 23 | 17 18.77 | -31 14.8 | 2.018 | 1.079 | 11.3 | 20.5 | 12 W | - | 6* |
| 12 17 | 6 57.38 | +37 4.2 | 1.308 | 2.252 | 9.3 | 16.8 | 158 W | 82 | 27 | 12 28 | 17 40.40 | -31 47.3 | 2.054 | 1.117 | 11.4 | 20.6 | 13 W | - | 7* |
| 12 22 | 6 49.51 | +37 4.6 | 1.319 | 2.278 | 7.3 | 16.7 | 163 W | 82 | 27 | 1 2 | 18 1.43 | -32 6.1 | 2.089 | 1.156 | 11.5 | 20.7 | 14 W | - | 7* |
| 12 27 | 6 41.53 | +36 59.0 | 1.338 | 2.304 | 6.0 | 16.7 | 166 W | 82 | 27 | 1 7 | 18 21.80 | -32 12.6 | 2.123 | 1.195 | 11.7 | 20.8 | 14 W | - | 8* |
| 1 1 | 6 33.75 | +36 47.5 | 1.364 | 2.330 | 5.9 | 16.8 | 166 E | 82 | 27 | 1 12 | 18 41.45 | -32 8.0 | 2.157 | 1.234 | 11.9 | 20.9 | 15 W | - | 9* |
| 1 6 | 6 26.40 | +36 30.6 | 1.397 | 2.356 | 6.8 | 16.9 | 163 E | 82 | 27 | 1 17 | 19 0.35 | -31 53.8 | 2.189 | 1.272 | 12.2 | 21.1 | 16 W | - | 9* |
| 1 11 | 6 19.71 | +36 9.1 | 1.436 | 2.381 | 8.5 | 17.1 | 159 E | 81 | 28 | 1 22 | 19 18.49 | -31 31.3 | 2.220 | 1.311 | 12.6 | 21.2 | 17 W | - | 10* |
| 1 16 | 6 13.84 | +35 44.0 | 1.483 | 2.406 | 10.3 | 17.2 | 154 E | 81 | 28 | 1 27 | 19 35.86 | -31 1.5 | 2.250 | 1.349 | 13.1 | 21.3 | 18 W | - | 11* |
| 12 23 | 17 18.40 | -19 15.9 | 1.733 | 0.791 | 13.8 | 18.8 | 11 W | 4* | 1* | 2 1 | 19 52.48 | -30 25.6 | 2.277 | 1.386 | 13.6 | 21.4 | 19 W | - | 13* |
| 12 28 | 17 43.97 | -18 56.8 | 1.787 | 0.839 | 12.3 | 18.9 | 10 W | 4* | — | 2 6 | 20 8.35 | -29 44.6 | 2.302 | 1.423 | 14.2 | 21.5 | 21 W | - | 14* |
| 1 2 | 18 8.02 | -18 27.5 | 1.841 | 0.890 | 11.2 | 19.1 | 10 W | 3* | — | 185731 1998 VO₅ | | | | | | | | | |
| 1 7 | 18 30.59 | -17 50.0 | 1.896 | 0.944 | 10.5 | 19.2 | 10 W | 3* | — | 12 23 | 17 19.00 | -25 45.0 | 3.042 | 2.081 | 4.8 | 20.5 | 10 W | - | 4* |
| 1 12 | 18 51.74 | -17 5.9 | 1.951 | 0.999 | 10.1 | 19.4 | 10 W | 4* | — | 1 2 | 17 43.89 | -26 20.4 | 2.979 | 2.043 | 7.0 | 20.5 | 15 W | 1* | 8* |
| 1 17 | 19 11.56 | -16 16.7 | 2.006 | 1.055 | 9.9 | 19.6 | 11 W | 4* | — | 1 12 | 18 9.54 | -26 41.8 | 2.908 | 2.005 | 9.2 | 20.5 | 19 W | 2* | 13* |
| 1 22 | 19 30.13 | -15 23.5 | 2.061 | 1.112 | 9.9 | 19.7 | 11 W | 4* | 1* | 1 22 | 18 35.85 | -26 48.1 | 2.831 | 1.967 | 11.5 | 20.5 | 23 W | 3* | 17* |
| 1 27 | 19 47.57 | -14 27.5 | 2.114 | 1.169 | 10.1 | 19.9 | 12 W | 5* | 2* | 2 1 | 19 2.70 | -26 38.4 | 2.749 | 1.931 | 13.7 | 20.5 | 28 W | 4* | 21* |
| 2 1 | 20 3.95 | -13 29.4 | 2.166 | 1.225 | 10.3 | 20.1 | 13 W | 5* | 3* | 2 11 | 19 29.94 | -26 12.0 | 2.663 | 1.895 | 15.8 | 20.5 | 32 W | 4* | 26* |
| 2 11 | 20 33.89 | -11 29.5 | 2.263 | 1.337 | 11.2 | 20.4 | 15 W | 6* | 6* | 2 21 | 19 57.47 | -25 28.7 | 2.575 | 1.860 | 18.0 | 20.4 | 35 W | 4* | 29* |
| 2 21 | 21 0.61 | -9 27.7 | 2.352 | 1.445 | 12.3 | 20.7 | 18 W | 8* | 10* | 3 2 | 20 25.12 | -24 28.5 | 2.484 | 1.826 | 20.0 | 20.4 | 39 W | 5* | 33* |
| 3 2 | 21 24.63 | -7 26.6 | 2.428 | 1.551 | 13.7 | 21.0 | 22 W | 9* | 14* | 3 12 | 20 52.77 | -23 12.0 | 2.393 | 1.794 | 22.1 | 20.3 | 43 W | 5* | 37* |
| 3 12 | 21 46.32 | -5 27.9 | 2.491 | 1.653 | 15.1 | 21.2 | 26 W | 10* | 18* | 3 22 | 21 20.33 | -21 40.0 | 2.302 | 1.763 | 24.0 | 20.3 | 46 W | 5* | 40* |
| 3 22 | 22 6.00 | -3 32.6 | 2.540 | 1.752 | 16.6 | 21.4 | 30 W | 12* | 23* | 4 1 | 21 47.37 | -19 53.7 | 2.212 | 1.735 | 25.9 | 20.2 | 49 W | 6* | 43* |
| 12 23 | 17 18.62 | -21 57.8 | 2.585 | 1.627 | 6.2 | 21.4 | 10 W | 2* | 2* | 4 11 | 22 14.78 | -17 54.8 | 2.124 | 1.709 | 27.7 | 20.1 | 52 W | 6* | 46* |
| 1 2 | 17 49.77 | -22 20.6 | 2.564 | 1.622 | 7.9 | 21.5 | 13 W | 3* | 5* | 4 21 | 22 41.56 | -15 45.0 | 2.038 | 1.685 | 29.4 | 20.1 | 55 W | 7* | 49* |
| 1 12 | 18 21.00 | -22 20.5 | 2.542 | 1.621 | 9.7 | 21.5 | 16 W | 4* | 9* | 5 1 | 23 7.96 | -13 26.6 | 1.955 | 1.664 | 31.0 | 20.0 | 58 W | 8* | 52* |
| 1 22 | 18 52.04 | -21 57.7 | 2.520 | 1.623 | 11.4 | 21.6 | 19 W | 5* | 12* | 5 11 | 23 33.97 | -11 1.9 | 1.875 | 1.646 | 32.5 | 19.9 | 61 W | 10* | 55* |
| 2 1 | 19 22.62 | -21 13.2 | 2.498 | 1.628 | 13.2 | 21.6 | 22 W | 5* | 15* | 5 21 | 23 59.55 | -8 33.3 | 1.799 | 1.631 | 33.9 | 19.8 | 64 W | 12* | 58* |
| 12 23 | 17 18.70 | -27 24.7 | 3.727 | 2.766 | 3.8 | 21.3 | 11 W | — | 5* | 5 31 | 0 24.66 | -6 3.5 | 1.725 | 1.619 | 35.1 | 19.8 | 67 W | 15* | 60* |
| 1 2 | 17 35.26 | -27 35.0 | 3.684 | 2.758 | 5.9 | 21.4 | 17 W | 1* | 10* | 6 10 | 0 49.25 | -3 34.9 | 1.654 | 1.611 | 36.2 | 19.7 | 70 W | 18* | 61* |
| 1 12 | 17 51.74 | -27 39.7 | 3.623 | 2.747 | 8.1 | 21.5 | 23 W | 4* | 17* | 6 20 | 1 13.25 | -1 9.9 | 1.585 | 1.607 | 37.1 | 19.6 | 73 W | 22* | 61* |
| 1 22 | 18 8.06 | -27 38.9 | 3.545 | 2.733 | 10.2 | 21.5 | 30 W | 6* | 23* | 6 30 | 1 36.53 | +1 9.2 | 1.518 | 1.606 | 37.8 | 19.6 | 76 W | 27* | 61* |
| 2 1 | 18 24.12 | -27 33.0 | 3.451 | 2.718 | 12.3 | 21.5 | 36 W | 7* | 30* | 7 10 | 1 58.98 | +3 20.6 | 1.453 | 1.610 | 38.3 | 19.5 | 79 W | 33* | 60* |
| 2 11 | 18 39.80 | -27 22.2 | 3.340 | 2.700 | 14.4 | 21.5 | 43 W | 9* | 37* | 7 20 | 2 20.41 | +5 23.0 | 1.389 | 1.616 | 38.6 | 19.4 | 83 W | 38* | 59* |
| 2 21 | 18 55.02 | -27 7.1 | 3.216 | 2.680 | | | | | | | | | | | | | | | |

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

| 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° | 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° |
|-----------------------------------|-----------------|-----------------|----------|-------|---------|------|--------|-----|------|-----------------------|-----------------|-----------------|----------|-------|---------|------|--------|-----|------|
| 185731 1998 VO₅ | | | | | | | | | | 5645 1990 SP | | | | | | | | | |
| <i>(continuation)</i> | | | | | | | | | | <i>(continuation)</i> | | | | | | | | | |
| 12 2 | 2 56.37 | +19 25.6 | 1.028 | 1.974 | 11.2 | 18.3 | 157 E | 64 | 45 | 12 12 | 13 59.96 | + 9 41.4 | 0.498 | 0.838 | 91.3 | 18.4 | 58 W | 48* | 21* |
| 12 7 | 2 52.90 | +19 37.3 | 1.071 | 1.993 | 13.7 | 18.5 | 151 E | 65 | 44 | 12 17 | 14 13.43 | + 8 17.8 | 0.536 | 0.848 | 87.7 | 18.5 | 59 W | 48* | 24* |
| 12 17 | 2 48.84 | +20 3.5 | 1.173 | 2.030 | 18.0 | 18.9 | 140 E | 65 | 44 | 12 22 | 14 26.34 | + 6 50.9 | 0.570 | 0.861 | 84.2 | 18.5 | 61 W | 48* | 27* |
| 12 27 | 2 48.65 | +20 35.3 | 1.291 | 2.068 | 21.2 | 19.3 | 130 E | 66 | 43 | 12 27 | 14 38.79 | + 5 22.8 | 0.603 | 0.878 | 80.9 | 18.5 | 62 W | 47* | 29* |
| 1 6 | 2 51.97 | +21 13.2 | 1.423 | 2.107 | 23.5 | 19.6 | 121 E | 66 | 43 | 1 1 | 14 50.83 | + 3 54.9 | 0.632 | 0.898 | 77.8 | 18.6 | 63 W | 47* | 32* |
| 1 16 | 2 58.32 | +21 56.5 | 1.565 | 2.145 | 25.0 | 19.9 | 113 E | 67 | 42* | 1 6 | 15 2.49 | + 2 28.5 | 0.658 | 0.921 | 75.0 | 18.6 | 65 W | 46* | 36* |
| 5645 1990 SP | | | | | | | | | | 301844 1990 UA | | | | | | | | | |
| 12 23 | 17 19.47 | -27 37.1 | 2.785 | 1.827 | 5.7 | 21.1 | 11 W | — | 4* | 12 23 | 17 19.67 | -22 51.5 | 1.875 | 0.921 | 10.5 | 21.5 | 10 W | 1* | 2* |
| 1 2 | 17 44.29 | -28 21.4 | 2.776 | 1.844 | 8.0 | 21.2 | 15 W | — | 9* | 12 28 | 17 45.64 | -23 11.4 | 1.846 | 0.888 | 9.9 | 21.3 | 9 W | — | 2* |
| 1 12 | 18 9.07 | -28 51.8 | 2.754 | 1.858 | 10.3 | 21.3 | 20 W | — | 14* | 1 2 | 18 12.51 | -23 15.2 | 1.821 | 0.857 | 9.0 | 21.2 | 8 W | — | 1* |
| 1 22 | 18 33.75 | -29 8.8 | 2.719 | 1.868 | 12.6 | 21.4 | 24 W | 1* | 18* | 1 7 | 18 40.10 | -23 1.3 | 1.800 | 0.831 | 7.8 | 21.0 | 7 W | — | — |
| 2 1 | 18 58.25 | -29 13.2 | 2.673 | 1.875 | 14.8 | 21.4 | 29 W | 2* | 23* | 1 12 | 19 8.18 | -22 28.6 | 1.784 | 0.809 | 6.4 | 20.9 | 5 W | — | — |
| 2 11 | 19 22.50 | -29 5.9 | 2.614 | 1.879 | 17.1 | 21.5 | 34 W | 3* | 28* | 1 17 | 19 36.49 | -21 36.7 | 1.772 | 0.793 | 4.6 | 20.7 | 4 W | — | — |
| 2 21 | 19 46.46 | -28 47.8 | 2.545 | 1.880 | 19.3 | 21.5 | 39 W | 3* | 33* | 1 22 | 20 4.77 | -20 26.1 | 1.765 | 0.782 | 2.6 | 20.6 | 2 W | — | — |
| 3 2 | 20 10.06 | -28 20.2 | 2.465 | 1.877 | 21.4 | 21.5 | 44 W | 3* | 37* | 1 27 | 20 32.76 | -18 58.0 | 1.763 | 0.778 | 0.6 | 20.4 | 0 W | — | — |
| 3 12 | 20 33.29 | -27 44.2 | 2.376 | 1.872 | 23.4 | 21.4 | 48 W | 4* | 42* | 2 1 | 21 0.22 | -17 14.4 | 1.765 | 0.780 | 1.6 | 20.5 | 1 E | — | — |
| 3 22 | 20 56.13 | -27 1.2 | 2.279 | 1.863 | 25.4 | 21.4 | 53 W | 4* | 46* | 2 6 | 21 26.98 | -15 17.8 | 1.772 | 0.788 | 3.6 | 20.7 | 3 E | — | — |
| 4 1 | 21 18.59 | -26 12.7 | 2.173 | 1.850 | 27.3 | 21.3 | 58 W | 4* | 51* | 2 11 | 21 52.91 | -13 11.0 | 1.783 | 0.803 | 5.5 | 20.8 | 4 E | — | — |
| 4 11 | 21 40.66 | -25 20.0 | 2.062 | 1.835 | 29.1 | 21.3 | 63 W | 5* | 56* | 2 16 | 22 17.94 | -10 57.1 | 1.799 | 0.823 | 7.1 | 21.0 | 6 E | — | — |
| 4 21 | 22 2.41 | -24 24.5 | 1.945 | 1.816 | 30.7 | 21.2 | 67 W | 6* | 61* | 2 21 | 22 42.03 | - 8 38.8 | 1.819 | 0.847 | 8.4 | 21.1 | 7 E | — | — |
| 5 1 | 22 23.84 | -23 27.9 | 1.824 | 1.794 | 32.3 | 21.0 | 72 W | 6* | 65* | 2 26 | 23 5.18 | - 6 18.8 | 1.844 | 0.876 | 9.5 | 21.3 | 8 E | 2* | — |
| 5 11 | 22 45.01 | -22 31.7 | 1.701 | 1.768 | 33.8 | 20.9 | 77 W | 8* | 70* | 3 2 | 23 27.42 | - 3 59.5 | 1.872 | 0.908 | 10.2 | 21.4 | 9 E | 2* | — |
| 5 21 | 23 6.00 | -21 37.4 | 1.575 | 1.740 | 35.1 | 20.7 | 81 W | 9* | 75* | 321356 2009 MF | | | | | | | | | |
| 5 31 | 23 26.84 | -20 46.7 | 1.449 | 1.708 | 36.3 | 20.5 | 86 W | 11* | 80* | 12 23 | 17 19.81 | -19 11.6 | 2.485 | 1.530 | 6.9 | 20.3 | 11 W | 4* | 1* |
| 6 10 | 23 47.60 | -20 1.2 | 1.323 | 1.672 | 37.4 | 20.3 | 90 W | 13* | 83* | 1 2 | 17 51.73 | -19 7.5 | 2.487 | 1.548 | 8.5 | 20.4 | 13 W | 5* | 3* |
| 6 20 | 0 8.39 | -19 22.5 | 1.199 | 1.634 | 38.3 | 20.1 | 95 W | 16* | 83 | 1 12 | 18 23.00 | -18 40.8 | 2.490 | 1.569 | 10.0 | 20.5 | 16 W | 7* | 7* |
| 6 30 | 0 29.24 | -18 52.4 | 1.077 | 1.592 | 39.1 | 19.8 | 99 W | 19* | 83 | 1 22 | 18 53.39 | -17 53.1 | 2.492 | 1.594 | 11.6 | 20.6 | 19 W | 8* | 10* |
| 7 10 | 0 50.29 | -18 32.3 | 0.959 | 1.547 | 39.8 | 19.5 | 103 W | 22* | 83 | 2 1 | 19 22.69 | -16 46.8 | 2.493 | 1.623 | 13.2 | 20.7 | 22 W | 9* | 14* |
| 7 20 | 1 11.68 | -18 23.6 | 0.845 | 1.498 | 40.5 | 19.2 | 107 W | 24* | 82 | 2 11 | 19 50.76 | -15 24.5 | 2.492 | 1.654 | 14.7 | 20.8 | 25 W | 10* | 17* |
| 7 30 | 1 33.59 | -18 27.2 | 0.736 | 1.447 | 41.1 | 18.9 | 110 W | 25* | 82 | 2 21 | 20 17.53 | -13 49.2 | 2.487 | 1.687 | 16.3 | 20.9 | 29 W | 11* | 21* |
| 8 4 | 1 44.84 | -18 33.4 | 0.684 | 1.420 | 41.5 | 18.7 | 112 W | 26* | 83 | 3 2 | 20 42.96 | -12 3.7 | 2.479 | 1.723 | 17.8 | 21.0 | 32 W | 12* | 25* |
| 8 9 | 1 56.38 | -18 42.5 | 0.633 | 1.393 | 41.9 | 18.5 | 113 W | 26* | 83 | 3 12 | 21 7.03 | -10 10.9 | 2.466 | 1.760 | 19.3 | 21.1 | 36 W | 13* | 29* |
| 8 14 | 2 8.27 | -18 54.3 | 0.584 | 1.365 | 42.4 | 18.3 | 115 W | 26* | 83 | 3 22 | 21 29.78 | - 8 13.2 | 2.447 | 1.799 | 20.8 | 21.1 | 40 W | 14* | 33* |
| 8 19 | 2 20.60 | -19 8.4 | 0.536 | 1.336 | 43.0 | 18.0 | 116 W | 26 | 83 | 4 1 | 21 51.23 | - 6 13.1 | 2.422 | 1.839 | 22.2 | 21.2 | 44 W | 16* | 37* |
| 8 24 | 2 33.53 | -19 24.1 | 0.489 | 1.307 | 43.7 | 17.8 | 117 W | 26 | 83 | 4 11 | 22 11.40 | - 4 12.8 | 2.391 | 1.880 | 23.5 | 21.3 | 48 W | 17* | 41* |
| 8 29 | 2 47.24 | -19 40.3 | 0.445 | 1.277 | 44.6 | 17.6 | 117 W | 25 | 84 | 4 21 | 22 30.31 | - 2 14.1 | 2.352 | 1.922 | 24.7 | 21.3 | 53 W | 19* | 45* |
| 9 3 | 3 2.06 | -19 55.4 | 0.402 | 1.247 | 45.8 | 17.3 | 118 W | 25 | 84 | 5 1 | 22 47.95 | - 0 18.6 | 2.306 | 1.964 | 25.7 | 21.4 | 58 W | 21* | 49* |
| 9 8 | 3 18.35 | -20 7.6 | 0.361 | 1.216 | 47.4 | 17.1 | 117 W | 25 | 84 | 5 11 | 23 4.29 | + 1 31.8 | 2.253 | 2.006 | 26.6 | 21.4 | 63 W | 24* | 53* |
| 9 13 | 3 36.69 | -20 14.0 | 0.321 | 1.185 | 49.4 | 16.8 | 115 W | 25 | 84 | 5 21 | 23 19.28 | + 3 15.9 | 2.193 | 2.049 | 27.3 | 21.4 | 68 W | 27* | 56* |
| 9 18 | 3 57.84 | -20 9.8 | 0.283 | 1.154 | 52.0 | 16.6 | 117 W | 25 | 84 | 5 31 | 23 32.83 | + 4 52.2 | 2.126 | 2.091 | 27.8 | 21.4 | 74 W | 31* | 57* |
| 9 20 | 4 7.33 | -20 3.6 | 0.269 | 1.142 | 53.3 | 16.5 | 114 W | 25 | 84 | 6 10 | 23 44.79 | + 6 19.0 | 2.054 | 2.133 | 28.0 | 21.4 | 80 W | 36* | 58* |
| 9 22 | 4 17.53 | -19 53.8 | 0.255 | 1.129 | 54.7 | 16.4 | 113 W | 25 | 84 | 6 20 | 23 55.01 | + 7 34.8 | 1.977 | 2.175 | 27.8 | 21.3 | 87 W | 41* | 56 |
| 9 24 | 4 28.57 | -19 39.7 | 0.241 | 1.117 | 56.2 | 16.3 | 112 W | 25 | 84 | 6 30 | 0 3.24 | + 8 37.8 | 1.897 | 2.217 | 27.2 | 21.2 | 94 W | 46* | 55 |
| 9 26 | 4 40.55 | -19 20.2 | 0.228 | 1.105 | 58.0 | 16.2 | 111 W | 26 | 83 | 7 10 | 0 9.25 | + 9 25.8 | 1.817 | 2.258 | 26.1 | 21.2 | 102 W | 51* | 55 |
| 9 28 | 4 53.61 | -18 54.3 | 0.215 | 1.092 | 60.0 | 16.1 | 109 W | 26 | 83 | 7 20 | 0 12.76 | + 9 56.6 | 1.737 | 2.298 | 24.5 | 21.0 | 110 W | 55* | 54 |
| 9 30 | 5 7.89 | -18 20.5 | 0.203 | 1.080 | 62.2 | 16.0 | 107 W | 27 | 82 | 7 30 | 0 13.53 | +10 7.4 | 1.663 | 2.338 | 22.2 | 20.9 | 120 W | 55 | 54 |
| 10 2 | 5 23.52 | -17 37.3 | 0.192 | 1.068 | 64.7 | 15.9 | 105 W | 27 | 82 | 8 9 | 0 11.44 | + 9 56.0 | 1.599 | 2.377 | 19.2 | 20.8 | 130 W | 55 | 54 |
| 10 4 | 5 40.65 | -16 42.8 | 0.181 | 1.056 | 67.5 | 15.9 | 103 W | 28 | 81 | 8 19 | 0 6.55 | + 9 20.7 | 1.548 | 2.415 | 15.5 | 20.6 | 140 W | 54 | 55 |
| 10 6 | 5 59.38 | -15 35.4 | 0.171 | 1.044 | 70.6 | 15.8 | 100 W | 29 | 80 | 8 29 | 23 59.23 | + 8 21.7 | 1.516 | 2.452 | 11.3 | 20.4 | 152 W | 53 | 56 |
| 10 8 | 6 19.77 | -14 13.1 | 0.163 | 1.032 | 74.0 | 15.8 | 97 W | 31 | 78* | 9 3 | 23 54.88 | + 7 44.3 | 1.508 | 2.470 | 9.0 | 20.4 | 157 W | 53 | 56 |
| 10 10 | 6 41.81 | -12 34.8 | 0.155 | 1.020 | 77.8 | 15.8 | 93 W | 32 | 76* | 9 8 | 23 50.23 | + 7 2.5 | 1.507 | 2.489 | 6.7 | 20.3 | 163 W | 52 | 57 |
| 10 12 | 7 5.36 | -10 40.2 | 0.149 | 1.008 | 81.8 | 15.9 | 90 W | 34* | 72* | 9 13 | 23 45.41 | + 6 17.3 | 1.512 | 2.507 | 4.5 | 20.2 | 169 W | 51 | 58 |
| 10 14 | 7 30.18 | - 8 30.2 | 0.145 | 0.997 | 86.1 | 15.9 | 86 W | 36* | 68* | 9 18 | 23 40.56 | + 5 29.7 | 1.524 | 2.524 | 2.9 | 20.1 | 173 E | 50 | 59 |
| 10 16 | 7 55.87 | - 6 7.9 | 0.143 | 0.986 | 90.5 | 16.0 | 81 W | 38* | 63* | 9 23 | 23 35.83 | + 4 40.9 | 1.544 | 2.542 | 3.0 | 20.2 | 172 E | 50 | 59 |
| 10 18 | 8 21.94 | - 3 38.0 | 0.142 | 0.974 | 94.8 | 16.2 | 77 W | 40* | 58* | 9 28 | 23 31.36 | + 3 52.3 | 1.570 | 2.559 | 4.6 | 20.3 | 168 E | 49 | 60 |
| 10 19 | 8 34.95 | - 2 22.0 | 0.143 | 0.969 | 96.9 | 16.3 | 75 W | 41* | 55* | 10 3 | 23 27.27 | + 3 5.0 | 1.603 | 2.576 | 6.6 | 20.5 | 163 E | 48 | 61 |
| 10 20 | 8 47.85 | - 1 6.3 | 0.143 | 0.964 | 98.9 | 16.4 | 73 W | 42* | 53* | 10 8 | 23 23.66 | + 2 20.0 | 1.643 | 2.593 | 8.7 | 20.6 | 157 E | 47 | 62 |
| 10 21 | 9 0.57 | + 0 8.3 | 0.145 | 0.958 | 100.8 | 16.5 | 71 W | 43* | 50* | 10 13 | 23 20.59 | + 1 38.1 | 1.690 | 2.609 | 10.6 | 20.8 | 151 E | 47 | 62 |
| 10 22 | 9 13.07 | + 1 21.0 | 0.147 | 0.953 | 102.6 | 16.6 | 69 W | 43* | 47* | 10 18 | 23 18.13 | + 1 0.1 | 1.742 | 2.626 | 12.4 | 20.9 | 146 E | 46 | 63 |
| 10 23 | 9 25.28 | + 2 31.3 | 0.149 | 0.948 | 104.2 | 16.7 | 67 W | 44* | 45* | 10 23 | 23 16.31 | + 0 26.5 | 1.800 | 2.642 | 14.0 | 21.1 | 140 E | 45 | 64 |
| 10 24 | 9 37.17 | + 3 38.6 | 0.152 | 0.943 | 105.8 | 16.8 | 66 W | 44* | 42* | 10 28 | 23 15.15 | + 0 2.4 | 1.862 | 2.657 | 15.4 | 21.2 | 135 E | 45 | 64 |
| 10 25 | 9 48.70 | + 4 42.5 | 0.155 | 0.938 | 107.2 | 16.9 | 64 W | 45* | 40* | 11 2 | 23 14.63 | + 0 26.5 | 1.929 | 2.673 | 16.6 | 21.4 | 130 E | 45 | 64 |
| 10 26 | 9 59.84 | + 5 42.8 | 0.158 | 0.933 | 108.4 | 17.0 | | | | | | | | | | | | | |

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

| 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° | 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° |
|------------------------------------|-----------------|-----------------|----------|-------|---------|------|--------|-----|------|-------------------------------------|-----------------|-----------------|----------|-------|---------|------|--------|-----|------|
| 230979 2005 AT₄₂ | | | | | | | | | | 385875 2006 RJ₁₀₁ | | | | | | | | | |
| <i>(continuation)</i> | | | | | | | | | | | | | | | | | | | |
| 4 21 | 22 30.17 | -5 32.2 | 2.546 | 2.118 | 22.6 | 21.2 | 54 W | 17* | 47* | 12 23 | 17 20.68 | -26 36.4 | 3.269 | 2.306 | 4.2 | 21.5 | 10 W | — | 4* |
| 5 1 | 22 44.26 | -4 25.4 | 2.516 | 2.193 | 23.4 | 21.3 | 60 W | 19* | 52* | 1 2 | 17 42.22 | -27 39.3 | 3.208 | 2.275 | 6.6 | 21.5 | 15 W | — | 9* |
| 5 11 | 22 56.74 | -3 26.7 | 2.474 | 2.268 | 24.1 | 21.4 | 66 W | 21* | 58* | 1 12 | 18 4.46 | -28 33.7 | 3.137 | 2.243 | 8.9 | 21.5 | 21 W | 1* | 14* |
| 5 21 | 23 7.55 | -2 37.6 | 2.423 | 2.341 | 24.5 | 21.4 | 73 W | 25* | 62* | 1 22 | 18 27.38 | -29 19.2 | 3.055 | 2.211 | 11.2 | 21.5 | 26 W | 2* | 20* |
| 5 31 | 23 16.56 | -1 59.7 | 2.363 | 2.413 | 24.5 | 21.4 | 81 W | 28* | 65* | 2 1 | 18 50.93 | -29 55.5 | 2.964 | 2.178 | 13.4 | 21.5 | 31 W | 2* | 25* |
| 6 10 | 23 23.64 | -1 34.6 | 2.297 | 2.483 | 24.1 | 21.4 | 88 W | 32* | 66 | 2 11 | 19 15.04 | -30 22.6 | 2.865 | 2.146 | 15.7 | 21.5 | 36 W | 2* | 30* |
| 6 20 | 23 28.63 | -1 24.1 | 2.227 | 2.552 | 23.3 | 21.4 | 97 W | 37* | 65 | 2 21 | 19 39.67 | -30 40.5 | 2.759 | 2.113 | 17.8 | 21.5 | 41 W | 2* | 35* |
| 6 30 | 23 31.33 | -1 29.7 | 2.158 | 2.620 | 21.9 | 21.3 | 106 W | 40* | 65 | 3 2 | 20 4.76 | -30 49.4 | 2.649 | 2.080 | 19.9 | 21.4 | 46 W | 2* | 39* |
| 7 10 | 23 31.62 | -1 52.8 | 2.092 | 2.687 | 20.0 | 21.2 | 115 W | 43* | 66 | 3 12 | 20 30.24 | -30 49.8 | 2.534 | 2.048 | 21.9 | 21.3 | 50 W | 1* | 43* |
| 7 20 | 23 29.41 | -2 33.9 | 2.035 | 2.752 | 17.5 | 21.2 | 126 W | 42* | 67 | 3 22 | 20 56.08 | -30 42.1 | 2.418 | 2.015 | 23.8 | 21.3 | 55 W | 1* | 47* |
| 7 30 | 23 24.73 | -3 32.4 | 1.991 | 2.816 | 14.4 | 21.1 | 137 W | 41* | 68 | 4 1 | 21 22.20 | -30 27.2 | 2.300 | 1.984 | 25.6 | 21.2 | 59 W | — | 51* |
| 8 9 | 23 17.88 | -4 45.8 | 1.967 | 2.878 | 10.7 | 20.9 | 148 W | 40* | 69 | 4 11 | 21 48.55 | -30 5.8 | 2.184 | 1.952 | 27.3 | 21.1 | 63 W | — | 55* |
| 8 19 | 23 9.34 | -6 9.5 | 1.967 | 2.939 | 6.7 | 20.8 | 160 W | 39* | 70 | 4 21 | 22 15.08 | -29 39.2 | 2.069 | 1.921 | 28.9 | 21.0 | 67 W | — | 58* |
| 8 29 | 22 59.87 | -7 37.3 | 1.995 | 2.999 | 2.5 | 20.7 | 173 W | 37* | 72 | 5 1 | 22 41.70 | -29 8.5 | 1.956 | 1.892 | 30.3 | 20.8 | 71 W | — | 62* |
| 9 8 | 22 50.34 | -9 2.0 | 2.053 | 3.058 | 1.7 | 20.7 | 175 E | 36* | 73 | 5 11 | 23 8.33 | -28 35.1 | 1.848 | 1.863 | 31.6 | 20.7 | 75 W | — | 66* |
| 9 18 | 22 41.60 | -10 17.6 | 2.141 | 3.115 | 5.5 | 21.1 | 163 E | 35* | 74 | 5 21 | 23 34.87 | -28 0.5 | 1.744 | 1.835 | 32.7 | 20.6 | 79 W | — | 70* |
| 9 28 | 22 34.38 | -11 19.7 | 2.258 | 3.171 | 8.8 | 21.4 | 151 E | 34* | 75 | 5 31 | 0 1.16 | -27 26.6 | 1.646 | 1.809 | 33.7 | 20.5 | 82 W | 1* | 74* |
| 162483 2000 PJ₅ | | | | | | | | | | | | | | | | | | | |
| 12 23 | 17 20.56 | -0 47.0 | 1.565 | 0.789 | 31.5 | 19.2 | 25 W | 18* | — | 6 10 | 0 27.03 | -26 54.8 | 1.552 | 1.784 | 34.6 | 20.3 | 85 W | 3* | 78* |
| 12 28 | 17 41.95 | -1 43.6 | 1.622 | 0.826 | 28.9 | 19.3 | 24 W | 17* | — | 6 20 | 0 52.28 | -26 27.1 | 1.465 | 1.761 | 35.2 | 20.2 | 89 W | 5* | 82* |
| 1 2 | 18 2.08 | -2 39.5 | 1.675 | 0.861 | 26.5 | 19.4 | 23 W | 16* | — | 6 30 | 1 16.62 | -26 5.4 | 1.382 | 1.740 | 35.7 | 20.1 | 92 W | 7* | 85* |
| 1 7 | 18 21.11 | -3 33.7 | 1.725 | 0.895 | 24.5 | 19.5 | 22 W | 16* | — | 7 10 | 1 39.76 | -25 50.8 | 1.305 | 1.721 | 36.1 | 19.9 | 95 W | 10* | 89* |
| 1 12 | 18 39.20 | -4 25.1 | 1.771 | 0.928 | 22.7 | 19.6 | 21 W | 15* | — | 7 20 | 2 1.33 | -25 44.9 | 1.232 | 1.704 | 36.2 | 19.8 | 98 W | 13* | 90 |
| 1 22 | 19 13.09 | -5 58.2 | 1.851 | 0.988 | 20.1 | 19.7 | 20 W | 14* | — | 7 25 | 2 11.39 | -25 45.5 | 1.197 | 1.697 | 36.1 | 19.7 | 100 W | 14* | 90 |
| 2 1 | 19 44.64 | -7 17.4 | 1.912 | 1.041 | 18.8 | 19.9 | 20 W | 13* | 5* | 7 30 | 2 20.89 | -25 48.3 | 1.163 | 1.690 | 36.0 | 19.6 | 102 W | 16* | 90 |
| 2 11 | 20 14.53 | -8 23.6 | 1.953 | 1.087 | 18.7 | 20.0 | 21 W | 12* | 9* | 8 4 | 2 29.77 | -25 53.4 | 1.129 | 1.684 | 35.9 | 19.6 | 103 W | 17* | 90 |
| 2 21 | 20 43.36 | -9 18.4 | 1.974 | 1.125 | 19.6 | 20.1 | 22 W | 10* | 13* | 8 9 | 2 37.96 | -26 0.7 | 1.097 | 1.679 | 35.6 | 19.5 | 105 W | 17* | 90 |
| 3 2 | 21 11.58 | -10 3.4 | 1.974 | 1.155 | 21.3 | 20.2 | 25 W | 9* | 18* | 8 14 | 2 45.40 | -26 10.0 | 1.066 | 1.674 | 35.3 | 19.4 | 107 W | 18* | 90 |
| 3 12 | 21 39.61 | -10 40.6 | 1.956 | 1.177 | 23.5 | 20.3 | 28 W | 8* | 22* | 8 19 | 2 51.99 | -26 21.1 | 1.035 | 1.670 | 34.9 | 19.3 | 109 W | 18* | 90 |
| 3 22 | 22 7.90 | -11 11.6 | 1.920 | 1.191 | 26.0 | 20.4 | 32 W | 6* | 26* | 8 24 | 2 57.64 | -26 33.4 | 1.005 | 1.666 | 34.4 | 19.2 | 112 W | 18* | 89 |
| 4 1 | 22 36.84 | -11 37.7 | 1.869 | 1.198 | 28.7 | 20.4 | 35 W | 4* | 29* | 8 29 | 3 2.29 | -26 46.3 | 0.976 | 1.664 | 33.7 | 19.2 | 114 W | 18 | 89 |
| 4 11 | 23 6.87 | -11 59.7 | 1.805 | 1.197 | 31.4 | 20.4 | 39 W | 2* | 32* | 9 3 | 3 5.84 | -26 59.0 | 0.948 | 1.662 | 33.0 | 19.1 | 116 W | 18 | 89 |
| 4 21 | 23 38.49 | -12 17.9 | 1.732 | 1.189 | 34.3 | 20.4 | 42 W | — | 35* | 9 8 | 3 8.22 | -27 10.5 | 0.921 | 1.661 | 32.1 | 19.0 | 119 W | 18 | 89 |
| 5 1 | 0 12.20 | -12 31.5 | 1.653 | 1.172 | 37.1 | 20.3 | 45 W | — | 38* | 9 13 | 3 9.34 | -27 19.8 | 0.895 | 1.661 | 31.1 | 18.9 | 122 W | 18 | 89 |
| 5 11 | 0 48.48 | -12 38.5 | 1.573 | 1.148 | 39.9 | 20.3 | 47 W | — | 39* | 9 18 | 3 9.11 | -27 25.3 | 0.871 | 1.661 | 29.9 | 18.8 | 124 W | 18 | 89 |
| 5 16 | 1 7.75 | -12 38.5 | 1.534 | 1.133 | 41.2 | 20.2 | 48 W | — | 40* | 9 23 | 3 7.51 | -27 25.0 | 0.849 | 1.662 | 28.6 | 18.7 | 127 W | 18 | 89 |
| 5 21 | 1 27.81 | -12 35.2 | 1.497 | 1.117 | 42.6 | 20.2 | 48 W | — | 41* | 9 28 | 3 4.54 | -27 17.0 | 0.829 | 1.664 | 27.3 | 18.6 | 130 W | 18 | 89 |
| 5 26 | 1 48.70 | -12 28.0 | 1.461 | 1.098 | 43.8 | 20.1 | 49 W | — | 41* | 10 3 | 3 0.24 | -26 59.1 | 0.811 | 1.666 | 25.8 | 18.5 | 134 W | 18 | 89 |
| 5 31 | 2 10.42 | -12 16.0 | 1.429 | 1.077 | 45.1 | 20.1 | 49 W | — | 41* | 10 8 | 2 54.72 | -26 29.1 | 0.797 | 1.670 | 24.3 | 18.3 | 137 W | 19 | 90 |
| 6 5 | 2 32.93 | -11 58.2 | 1.400 | 1.054 | 46.2 | 20.0 | 49 W | — | 40* | 10 13 | 2 48.13 | -25 45.2 | 0.786 | 1.674 | 22.9 | 18.4 | 139 W | 19 | 90 |
| 6 10 | 2 56.21 | -11 33.5 | 1.375 | 1.030 | 47.3 | 19.9 | 48 W | — | 40* | 10 18 | 2 40.72 | -24 45.8 | 0.779 | 1.678 | 21.6 | 18.3 | 142 W | 20 | 89 |
| 6 15 | 3 20.16 | -11 1.2 | 1.354 | 1.003 | 48.3 | 19.9 | 47 W | — | 39* | 10 23 | 2 32.80 | -23 29.7 | 0.776 | 1.684 | 20.5 | 18.3 | 144 W | 22 | 87 |
| 6 20 | 3 44.67 | -10 20.3 | 1.339 | 0.975 | 49.1 | 19.8 | 46 W | — | 38* | 10 28 | 2 24.72 | -21 57.2 | 0.778 | 1.690 | 19.8 | 18.3 | 145 W | 23 | 86 |
| 6 30 | 4 34.85 | -8 30.6 | 1.324 | 0.913 | 50.0 | 19.7 | 43 W | — | 35* | 11 2 | 2 16.81 | -20 9.5 | 0.786 | 1.697 | 19.6 | 18.3 | 145 E | 25 | 84 |
| 7 10 | 5 25.65 | -6 1.4 | 1.331 | 0.845 | 49.8 | 19.5 | 39 W | — | 32* | 11 7 | 2 9.38 | -18 8.5 | 0.799 | 1.704 | 19.9 | 18.4 | 144 E | 27 | 82 |
| 7 20 | 6 16.32 | -2 53.6 | 1.357 | 0.772 | 47.9 | 19.3 | 34 W | — | 27* | 11 12 | 2 2.69 | -15 57.0 | 0.817 | 1.712 | 20.6 | 18.4 | 143 E | 29 | 80 |
| 7 25 | 6 41.54 | -1 6.4 | 1.375 | 0.735 | 46.2 | 19.2 | 31 W | — | 25* | 11 17 | 1 56.93 | -13 37.9 | 0.841 | 1.721 | 21.6 | 18.6 | 140 E | 31 | 78 |
| 7 30 | 7 6.77 | +0 48.8 | 1.396 | 0.698 | 43.9 | 19.0 | 28 W | — | 22* | 11 22 | 1 52.25 | -11 14.1 | 0.870 | 1.730 | 22.8 | 18.7 | 137 E | 34 | 75 |
| 8 4 | 7 32.14 | +2 50.9 | 1.418 | 0.663 | 40.9 | 18.9 | 25 W | — | 19* | 11 27 | 1 48.72 | -8 48.6 | 0.904 | 1.740 | 24.1 | 18.8 | 134 E | 36 | 73 |
| 8 9 | 7 57.85 | +4 58.3 | 1.440 | 0.629 | 37.3 | 18.7 | 22 W | — | 16* | 12 2 | 1 46.32 | -6 23.6 | 0.943 | 1.750 | 25.5 | 19.0 | 130 E | 39 | 70 |
| 8 14 | 8 24.12 | +7 8.4 | 1.461 | 0.600 | 33.1 | 18.5 | 19 W | 1* | 13* | 12 7 | 1 45.05 | -4 1.0 | 0.986 | 1.761 | 26.7 | 19.1 | 127 E | 41 | 68 |
| 8 19 | 8 51.20 | +9 17.6 | 1.479 | 0.575 | 28.5 | 18.3 | 16 W | 2* | 9* | 12 12 | 1 44.83 | +1 42.0 | 1.034 | 1.772 | 27.9 | 19.3 | 123 E | 43 | 66 |
| 8 24 | 9 19.31 | +11 20.8 | 1.494 | 0.557 | 24.0 | 18.1 | 13 W | 3* | 5* | 12 17 | 1 45.61 | +0 32.5 | 1.085 | 1.784 | 28.8 | 19.4 | 119 E | 46 | 63 |
| 8 29 | 9 48.57 | +13 11.7 | 1.505 | 0.548 | 20.5 | 18.0 | 11 W | 4* | 2* | 12 22 | 1 47.34 | +2 42.1 | 1.140 | 1.796 | 29.7 | 19.5 | 115 E | 48 | 61 |
| 9 3 | 10 18.99 | +14 43.2 | 1.510 | 0.548 | 19.0 | 18.0 | 10 W | 4* | — | 12 27 | 1 49.91 | +4 46.5 | 1.197 | 1.808 | 30.3 | 19.7 | 112 E | 50 | 59 |
| 9 8 | 10 50.39 | +15 48.3 | 1.512 | 0.556 | 20.0 | 18.0 | 11 W | 4* | — | 1 1 | 1 53.26 | +6 45.7 | 1.257 | 1.821 | 30.9 | 19.8 | 108 E | 52 | 57* |
| 9 13 | 11 22.42 | +16 21.9 | 1.512 | 0.573 | 22.5 | 18.2 | 13 W | 3* | — | 1 6 | 1 57.32 | +8 39.6 | 1.319 | 1.835 | 31.2 | 20.0 | 105 E | 54 | 55* |
| 9 18 | 11 54.64 | +16 21.5 | 1.511 | 0.597 | 25.4 | 18.3 | 15 E | 6* | — | 1 11 | 2 2.02 | +10 28.6 | 1.384 | 1.848 | 31.4 | 20.1 | 101 E | 55 | 52* |
| 9 23 | 12 26.56 | +15 47.4 | 1.512 | 0.626 | 28.1 | 18.5 | 17 E | 10* | — | 1 16 | 2 7.32 | +12 12.7 | 1.449 | 1.862 | 31.5 | 20.2 | 98 E | 57 | 49* |
| 9 28 | 12 57.72 | +14 42.4 | 1.516 | 0.660 | 30.2 | 18.7 | 19 E | 13* | — | 23621 1996 PA | | | | | | | | | |
| 10 3 | 13 27.78 | +13 11.2 | 1.524 | 0.695 | 31.6 | 18.9 | 21 E | 15* | — | 12 23 | 17 21.27 | -12 6.3 | 2.359 | 1.432 | 10.2 | 18.9 | 15 W | 9* | — |
| 10 8 | 13 56.52 | +11 19.2 | 1.538 | 0.732 | 32.3 | 19.0 | 23 E | 17* | — | 1 2 | 17 54.35 | -12 56.5 | 2.324 | 1.406 | 11.1 | 18.9 | 16 W | 10* | — |
| 10 13 | 14 23.82 | +9 12.5 | 1.557 | 0.769 | 32.5 | 19.2 | 24 E | 18* | 2* | 1 12 | 18 28.12 | -13 26.5 | 2.293 | | | | | | |

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

| 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45°-26° | 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45°-26° |
|------------------------------------|-----------------|-----------------|----------|-------|---------|------|--------|---------|------------------------------------|-----------------|-----------------|----------|-------|---------|------|--------|---------|
| 23621 1996 PA | | | | | | | | | 137230 1999 RG₂₂ | | | | | | | | |
| <i>(continuation)</i> | | | | | | | | | <i>(continuation)</i> | | | | | | | | |
| 7 20 | 3 50.05 | + 4 49.1 | 1.935 | 1.714 | 31.6 | 19.5 | 62 W | 24* 51* | 12 17 | 21 13.93 | -23 31.5 | 2.758 | 2.239 | 19.4 | 20.3 | 49 E | 19* 39* |
| 7 30 | 4 10.69 | + 4 32.2 | 1.890 | 1.754 | 32.1 | 19.6 | 67 W | 29* 53* | 12 27 | 21 30.56 | -21 9.2 | 2.816 | 2.204 | 17.8 | 20.3 | 43 E | 19* 33* |
| 8 9 | 4 29.84 | + 3 59.9 | 1.841 | 1.792 | 32.4 | 19.6 | 71 W | 34* 56* | 1 6 | 21 47.63 | -18 41.2 | 2.865 | 2.169 | 16.0 | 20.2 | 38 E | 19* 26* |
| 8 19 | 4 47.33 | + 3 12.9 | 1.786 | 1.831 | 32.5 | 19.5 | 76 W | 38* 58* | 1 16 | 22 5.06 | -16 7.4 | 2.903 | 2.134 | 14.2 | 20.2 | 32 E | 17* 20* |
| 8 29 | 5 2.91 | + 2 11.7 | 1.726 | 1.869 | 32.3 | 19.5 | 82 W | 41* 60* | 66391 1999 KW₄ | | | | | | | | |
| 9 8 | 5 16.33 | + 0 57.6 | 1.663 | 1.907 | 31.9 | 19.5 | 88 W | 44* 62* | 12 23 | 17 21.83 | -20 0.0 | 2.036 | 1.081 | 9.1 | 18.8 | 10 W | 3* 1* |
| 9 18 | 5 27.29 | + 0 27.9 | 1.598 | 1.944 | 31.1 | 19.4 | 94 W | 44* 64* | 1 2 | 17 51.30 | -18 37.3 | 2.014 | 1.083 | 12.4 | 18.9 | 14 W | 6* 3* |
| 9 28 | 5 35.42 | + 2 2.5 | 1.532 | 1.980 | 29.8 | 19.3 | 101 W | 43 66 | 1 12 | 18 21.02 | -16 53.1 | 1.969 | 1.069 | 15.7 | 19.0 | 17 W | 8* 6* |
| 10 8 | 5 40.37 | + 3 42.9 | 1.467 | 2.015 | 28.1 | 19.2 | 108 W | 41 68 | 1 22 | 18 51.61 | -14 44.7 | 1.903 | 1.036 | 19.1 | 18.9 | 20 W | 11* 9* |
| 10 13 | 5 41.54 | + 4 33.9 | 1.436 | 2.032 | 27.1 | 19.1 | 112 W | 40 69 | 1 27 | 19 7.48 | -13 30.3 | 1.863 | 1.013 | 20.9 | 18.9 | 21 W | 12* 10* |
| 10 18 | 5 41.78 | + 5 24.5 | 1.406 | 2.049 | 25.9 | 19.1 | 116 W | 40 69 | 2 1 | 19 23.87 | -12 8.3 | 1.818 | 0.985 | 22.6 | 18.8 | 23 W | 13* 11* |
| 10 23 | 5 41.06 | + 6 13.8 | 1.379 | 2.065 | 24.6 | 19.0 | 120 W | 39 70 | 2 6 | 19 40.92 | -10 38.3 | 1.770 | 0.952 | 24.4 | 18.8 | 24 W | 13* 12* |
| 10 28 | 5 39.38 | + 7 0.6 | 1.354 | 2.082 | 23.2 | 19.0 | 124 W | 38 71 | 2 11 | 19 58.82 | -8 59.5 | 1.719 | 0.914 | 26.3 | 18.7 | 24 W | 14* 13* |
| 11 2 | 5 36.75 | + 7 43.8 | 1.332 | 2.098 | 21.8 | 18.9 | 128 W | 37 72 | 2 16 | 20 17.78 | -7 11.5 | 1.666 | 0.870 | 28.1 | 18.6 | 25 W | 14* 13* |
| 11 7 | 5 33.19 | + 8 22.4 | 1.314 | 2.114 | 20.2 | 18.8 | 133 W | 37 72 | 2 21 | 20 38.06 | -5 13.7 | 1.611 | 0.820 | 30.0 | 18.4 | 24 W | 14* 13* |
| 11 12 | 5 28.77 | + 8 55.0 | 1.299 | 2.129 | 18.7 | 18.8 | 136 W | 36 73 | 3 2 | 21 24.03 | -0 49.3 | 1.498 | 0.700 | 33.4 | 18.0 | 23 W | 14* 11* |
| 11 17 | 5 23.59 | + 9 20.3 | 1.289 | 2.144 | 17.2 | 18.7 | 140 W | 36 73 | 3 12 | 22 20.78 | + 4 1.9 | 1.390 | 0.549 | 35.2 | 17.4 | 19 W | 11* 6* |
| 11 22 | 5 17.77 | + 9 37.3 | 1.285 | 2.159 | 15.8 | 18.7 | 143 W | 35 74 | 3 22 | 23 35.48 | + 8 19.2 | 1.289 | 0.362 | 31.0 | 16.2 | 11 W | 5* - |
| 11 27 | 5 11.51 | + 9 45.0 | 1.285 | 2.174 | 14.8 | 18.7 | 146 W | 35 74 | 3 24 | 23 53.56 | + 8 50.7 | 1.267 | 0.321 | 28.6 | 15.8 | 9 W | 3* - |
| 12 7 | 4 58.40 | + 9 30.9 | 1.304 | 2.202 | 13.8 | 18.7 | 148 W | 35 74 | 3 26 | 0 12.90 | + 9 7.4 | 1.242 | 0.281 | 26.3 | 15.4 | 7 W | - - |
| 12 17 | 4 45.85 | + 8 38.3 | 1.347 | 2.229 | 14.5 | 18.8 | 145 E | 36 73 | 3 28 | 0 33.41 | + 9 2.8 | 1.211 | 0.244 | 26.4 | 15.0 | 6 E | - - |
| 12 27 | 4 35.31 | + 7 12.7 | 1.413 | 2.254 | 16.4 | 19.0 | 140 E | 38 71 | 4 1 | 1 15.34 | + 7 19.2 | 1.120 | 0.201 | 49.0 | 15.1 | 9 E | 2* - |
| 1 1 | 4 31.11 | + 6 20.4 | 1.454 | 2.266 | 17.6 | 19.1 | 136 E | 39 70 | 4 2 | 1 24.92 | + 6 31.6 | 1.089 | 0.201 | 58.7 | 15.3 | 10 E | 2* 2* |
| 1 6 | 4 27.72 | + 5 23.5 | 1.500 | 2.278 | 18.7 | 19.2 | 132 E | 40 69 | 4 3 | 1 33.72 | + 5 37.4 | 1.057 | 0.206 | 68.5 | 15.6 | 11 E | 2* 4* |
| 1 11 | 4 25.15 | + 4 23.1 | 1.551 | 2.290 | 19.8 | 19.3 | 128 E | 41 68 | 4 4 | 1 41.61 | + 4 38.8 | 1.023 | 0.215 | 77.8 | 15.9 | 12 E | 2* 5* |
| 1 16 | 4 23.44 | + 3 20.3 | 1.605 | 2.301 | 20.8 | 19.5 | 124 E | 42 67 | 4 5 | 1 48.60 | + 3 37.8 | 0.989 | 0.228 | 86.2 | 16.3 | 13 E | 1* 7* |
| 137230 1999 RG₂₂ | | | | | | | | | | | | | | | | | |
| 12 23 | 17 21.69 | -40 5.6 | 3.935 | 3.020 | 6.0 | 21.2 | 19 W | - 10* | 4 6 | 1 54.74 | + 2 36.1 | 0.956 | 0.244 | 93.5 | 16.7 | 14 E | 1* 8* |
| 1 2 | 17 41.16 | -40 26.6 | 3.901 | 3.014 | 7.1 | 21.3 | 22 W | - 14* | 4 7 | 2 0.14 | + 1 35.0 | 0.923 | 0.262 | 99.7 | 17.0 | 15 E | - 9* |
| 1 12 | 18 0.62 | -40 42.9 | 3.851 | 3.007 | 8.5 | 21.3 | 27 W | - 19* | 4 8 | 2 4.92 | + 0 35.2 | 0.892 | 0.281 | 104.8 | 17.4 | 16 E | - 10* |
| 1 22 | 18 19.97 | -40 54.7 | 3.788 | 2.999 | 10.0 | 21.3 | 32 W | - 25* | 4 9 | 2 9.17 | + 0 22.8 | 0.862 | 0.300 | 109.2 | 17.7 | 16 E | - 10* |
| 2 1 | 18 39.09 | -41 2.5 | 3.710 | 2.990 | 11.6 | 21.3 | 38 W | - 30* | 4 10 | 2 13.01 | + 0 18.9 | 0.833 | 0.321 | 112.8 | 18.0 | 17 E | - 11* |
| 2 11 | 18 57.82 | -41 7.0 | 3.620 | 2.980 | 13.1 | 21.3 | 43 W | - 35* | 4 11 | 2 16.49 | -2 12.9 | 0.806 | 0.341 | 115.8 | 18.2 | 18 E | - 12* |
| 2 21 | 19 16.08 | -41 9.1 | 3.517 | 2.969 | 14.6 | 21.3 | 49 W | - 41* | 4 16 | 2 30.72 | -6 13.6 | 0.684 | 0.440 | 124.9 | 19.1 | 21 E | - 13* |
| 3 2 | 19 33.71 | -41 9.9 | 3.404 | 2.957 | 16.0 | 21.3 | 55 W | - 46* | 4 21 | 2 42.90 | -9 31.6 | 0.583 | 0.532 | 128.7 | 19.5 | 24 E | - 14* |
| 3 12 | 19 50.57 | -41 10.6 | 3.281 | 2.944 | 17.3 | 21.2 | 62 W | - 51* | 4 26 | 2 55.82 | -12 16.2 | 0.494 | 0.613 | 130.2 | 19.6 | 28 E | - 14* |
| 3 22 | 20 6.55 | -41 12.8 | 3.151 | 2.931 | 18.4 | 21.2 | 68 W | - 56* | 5 1 | 3 11.70 | -14 33.6 | 0.415 | 0.686 | 130.7 | 19.6 | 31 E | - 15* |
| 4 1 | 20 21.47 | -41 18.2 | 3.014 | 2.916 | 19.3 | 21.1 | 75 W | - 61* | 5 3 | 3 19.43 | -15 21.8 | 0.386 | 0.713 | 130.7 | 19.5 | 32 E | - 16* |
| 4 11 | 20 35.16 | -41 28.5 | 2.873 | 2.901 | 20.0 | 21.0 | 82 W | - 66* | 5 5 | 3 28.26 | -16 6.1 | 0.357 | 0.739 | 130.6 | 19.4 | 34 E | - 17* |
| 4 21 | 20 47.42 | -41 45.6 | 2.730 | 2.884 | 20.4 | 20.9 | 88 W | - 71* | 5 7 | 3 38.45 | -16 46.3 | 0.330 | 0.763 | 130.5 | 19.3 | 35 E | - 18* |
| 5 1 | 20 57.99 | -42 11.1 | 2.586 | 2.867 | 20.5 | 20.8 | 96 W | - 73* | 5 9 | 3 50.32 | -17 21.8 | 0.303 | 0.787 | 130.2 | 19.1 | 37 E | - 19* |
| 5 11 | 21 6.58 | -42 46.6 | 2.445 | 2.848 | 20.2 | 20.6 | 103 W | - 73 | 5 11 | 4 2.26 | -17 51.4 | 0.278 | 0.809 | 129.9 | 19.0 | 38 E | - 21* |
| 5 21 | 21 12.81 | -43 32.9 | 2.309 | 2.829 | 19.6 | 20.5 | 111 W | - 72 | 5 13 | 4 20.75 | -18 13.2 | 0.254 | 0.830 | 129.3 | 18.8 | 40 E | - 23* |
| 5 26 | 21 14.90 | -44 0.3 | 2.243 | 2.819 | 19.1 | 20.4 | 115 W | - 72 | 5 15 | 4 40.34 | -18 24.3 | 0.232 | 0.850 | 128.3 | 18.5 | 41 E | - 26* |
| 5 31 | 21 16.24 | -44 30.2 | 2.180 | 2.809 | 18.5 | 20.3 | 119 W | - 71 | 5 17 | 5 3.63 | -18 20.3 | 0.212 | 0.870 | 127.0 | 18.3 | 43 E | - 30* |
| 6 5 | 21 16.76 | -45 2.4 | 2.120 | 2.799 | 17.8 | 20.2 | 122 W | - 71 | 5 19 | 5 31.13 | -17 54.7 | 0.194 | 0.888 | 125.0 | 17.9 | 46 E | - 34* |
| 6 10 | 21 16.41 | -45 36.4 | 2.063 | 2.788 | 17.0 | 20.1 | 126 W | - 70 | 5 21 | 6 3.09 | -17 0.1 | 0.179 | 0.905 | 122.2 | 17.6 | 49 E | - 39* |
| 6 15 | 21 15.14 | -46 11.8 | 2.009 | 2.777 | 16.2 | 20.0 | 130 W | - 70 | 5 22 | 6 20.67 | -16 19.5 | 0.173 | 0.914 | 120.4 | 17.4 | 51 E | - 42* |
| 6 20 | 21 12.88 | -46 47.7 | 1.959 | 2.766 | 15.3 | 19.9 | 134 W | - 69 | 5 23 | 6 39.18 | -15 29.1 | 0.168 | 0.922 | 118.4 | 17.2 | 53 E | - 45* |
| 6 25 | 21 9.61 | -47 23.1 | 1.914 | 2.755 | 14.3 | 19.8 | 138 W | - 69 | 5 24 | 6 58.44 | -14 28.9 | 0.164 | 0.930 | 116.1 | 17.0 | 55 E | - 48* |
| 6 30 | 21 5.34 | -47 56.9 | 1.874 | 2.743 | 13.3 | 19.7 | 142 W | - 68 | 5 25 | 7 18.21 | -13 19.1 | 0.162 | 0.937 | 113.7 | 16.8 | 58 E | 1* 51* |
| 7 5 | 21 0.09 | -48 27.8 | 1.838 | 2.732 | 12.4 | 19.6 | 145 W | - 68 | 5 26 | 7 38.23 | -12 0.8 | 0.160 | 0.945 | 111.0 | 16.6 | 61 E | 4* 54* |
| 7 10 | 20 53.94 | -48 54.3 | 1.809 | 2.720 | 11.7 | 19.6 | 147 W | - 67 | 5 27 | 7 58.20 | -10 35.6 | 0.160 | 0.952 | 108.2 | 16.5 | 63 E | 8* 57* |
| 7 15 | 20 46.99 | -49 15.2 | 1.785 | 2.707 | 11.1 | 19.5 | 149 W | - 67 | 5 28 | 8 17.83 | -9 5.6 | 0.161 | 0.959 | 105.4 | 16.3 | 66 E | 11* 60* |
| 7 20 | 20 39.42 | -49 29.2 | 1.766 | 2.695 | 10.9 | 19.5 | 150 W | - 67 | 5 29 | 8 36.86 | -7 33.0 | 0.163 | 0.966 | 102.5 | 16.2 | 68 E | 15* 61* |
| 7 25 | 20 31.43 | -49 35.1 | 1.755 | 2.682 | 10.9 | 19.4 | 150 W | - 66 | 5 30 | 8 55.09 | -6 0.2 | 0.166 | 0.972 | 99.7 | 16.2 | 71 E | 18* 63* |
| 7 30 | 20 23.28 | -49 32.3 | 1.749 | 2.670 | 11.3 | 19.4 | 149 E | - 66 | 5 31 | 9 12.35 | + 4 29.2 | 0.171 | 0.979 | 97.1 | 16.1 | 73 E | 21* 64* |
| 8 4 | 20 15.24 | -49 20.6 | 1.749 | 2.657 | 12.1 | 19.5 | 147 E | - 67 | 6 1 | 9 28.55 | + 3 1.6 | 0.176 | 0.985 | 94.5 | 16.1 | 76 E | 24* 64* |
| 8 9 | 20 7.54 | -49 0.0 | 1.755 | 2.643 | 13.0 | 19.5 | 144 E | - 67 | 6 2 | 9 43.66 | + 1 38.5 | 0.182 | 0.991 | 92.2 | 16.1 | 77 E | 26* 64* |
| 8 14 | 20 0.42 | -48 31.1 | 1.767 | 2.630 | 14.1 | 19.5 | 141 E | - 67 | 6 3 | 9 57.66 | + 0 20.7 | 0.189 | 0.997 | 90.0 | 16.1 | 79 E | 29* 63* |
| 8 19 | 19 54.06 | -47 54.6 | 1.784 | 2.616 | 15.3 | 19 | | | | | | | | | | | |

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

| 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° | 19/21 | α_{2000} | δ_{2000} | Δ | r | β | V | ψ | 45° | -26° |
|------------------------------------|-----------------|-----------------|----------|-------|---------|------|--------|-----|------|------------------------------------|-----------------|-----------------|----------|-------|---------|------|--------|-----|------|
| 66391 1999 KW₄ | | | | | | | | | | 222753 2002 CY₂₅ | | | | | | | | | |
| <i>(continuation)</i> | | | | | | | | | | <i>(continuation)</i> | | | | | | | | | |
| 6 28 | 12 29.51 | +12 14.2 | 0.456 | 1.081 | 69.7 | 17.4 | 85 E | 45* | 52 | 5 21 | 19 34.76 | -33 55.9 | 2.750 | 3.478 | 13.0 | 20.6 | 129 W | 11 | 82 |
| 6 30 | 12 34.65 | +12 30.4 | 0.479 | 1.083 | 69.2 | 17.5 | 85 E | 45* | 51 | 5 31 | 19 30.60 | -34 48.7 | 2.640 | 3.470 | 11.0 | 20.4 | 139 W | 10 | 81 |
| 7 5 | 12 46.00 | +13 1.6 | 0.534 | 1.085 | 68.3 | 17.7 | 82 E | 44* | 51 | 6 10 | 19 24.01 | -35 42.0 | 2.551 | 3.461 | 8.7 | 20.2 | 149 W | 9 | 80 |
| 7 10 | 12 55.73 | +13 23.0 | 0.587 | 1.082 | 67.7 | 17.9 | 80 E | 44* | 51* | 6 15 | 19 19.88 | -36 7.5 | 2.515 | 3.456 | 7.4 | 20.1 | 154 W | 9 | 80 |
| 7 15 | 13 4.32 | +13 37.5 | 0.637 | 1.075 | 67.3 | 18.0 | 77 E | 43* | 50* | 6 20 | 19 15.27 | -36 31.4 | 2.486 | 3.451 | 6.2 | 20.1 | 158 W | 8 | 79 |
| 7 20 | 13 12.04 | +13 47.2 | 0.684 | 1.064 | 67.1 | 18.2 | 75 E | 42* | 49* | 6 25 | 19 10.26 | -36 53.2 | 2.464 | 3.446 | 5.2 | 20.0 | 162 W | 8 | 79 |
| 7 25 | 13 19.10 | +13 53.6 | 0.728 | 1.048 | 67.0 | 18.3 | 72 E | 40* | 48* | 6 30 | 19 4.95 | -37 12.4 | 2.449 | 3.440 | 4.5 | 19.9 | 165 W | 8 | 79 |
| 7 30 | 13 25.58 | +13 57.8 | 0.767 | 1.028 | 67.1 | 18.3 | 69 E | 39* | 47* | 7 5 | 18 59.46 | -37 28.5 | 2.441 | 3.435 | 4.3 | 19.9 | 165 W | 8 | 79 |
| 8 4 | 13 31.54 | +14 0.9 | 0.801 | 1.003 | 67.4 | 18.4 | 66 E | 38* | 46* | 7 10 | 18 53.91 | -37 41.2 | 2.441 | 3.429 | 4.8 | 19.9 | 164 E | 7 | 78 |
| 8 9 | 13 36.96 | +14 3.6 | 0.830 | 0.973 | 67.9 | 18.4 | 63 E | 37* | 44* | 7 15 | 18 48.42 | -37 50.3 | 2.447 | 3.422 | 5.7 | 20.0 | 160 E | 7 | 78 |
| 8 19 | 13 46.02 | +14 9.4 | 0.870 | 0.897 | 69.9 | 18.4 | 56 E | 35* | 39* | 7 20 | 18 43.12 | -37 55.9 | 2.461 | 3.416 | 6.9 | 20.0 | 156 E | 7 | 78 |
| 8 29 | 13 51.68 | +14 17.8 | 0.882 | 0.799 | 73.7 | 18.3 | 49 E | 32* | 33* | 7 25 | 18 38.13 | -37 57.9 | 2.481 | 3.409 | 8.1 | 20.1 | 152 E | 7 | 78 |
| 9 8 | 13 50.99 | +14 24.9 | 0.862 | 0.673 | 81.0 | 18.1 | 41 E | 29* | 25* | 7 30 | 18 33.56 | -37 56.7 | 2.508 | 3.403 | 9.4 | 20.2 | 147 E | 7 | 78 |
| 9 13 | 13 46.30 | +14 20.6 | 0.841 | 0.599 | 87.0 | 18.1 | 36 E | 26* | 20* | 8 4 | 18 29.49 | -37 52.6 | 2.540 | 3.395 | 10.7 | 20.3 | 142 E | 7 | 78 |
| 9 18 | 13 36.70 | +13 58.4 | 0.813 | 0.515 | 95.7 | 18.0 | 31 E | 23* | 13* | 8 9 | 18 25.99 | -37 45.9 | 2.578 | 3.388 | 11.8 | 20.3 | 137 E | 7 | 78 |
| 9 23 | 13 19.69 | +12 52.6 | 0.785 | 0.422 | 108.7 | 18.2 | 23 E | 17* | 6* | 8 19 | 18 20.89 | -37 26.7 | 2.669 | 3.373 | 13.9 | 20.5 | 127 E | 8 | 79 |
| 9 28 | 12 52.73 | +10 5.0 | 0.774 | 0.322 | 127.4 | 18.9 | 15 E | 9* | — | 8 29 | 18 18.47 | -37 2.1 | 2.774 | 3.357 | 15.5 | 20.6 | 117 E | 8 | 79 |
| 9 29 | 12 46.20 | +9 10.7 | 0.776 | 0.302 | 131.5 | 19.2 | 13 E | 6* | — | 9 8 | 18 17.70 | -36 34.7 | 2.891 | 3.340 | 16.7 | 20.7 | 108 E | 8 | 79 |
| 9 30 | 12 39.44 | +8 7.2 | 0.781 | 0.282 | 135.3 | 19.5 | 11 E | 4* | — | 9 18 | 18 21.42 | -36 5.9 | 3.014 | 3.322 | 17.4 | 20.8 | 99 E | 9* | 80 |
| 10 1 | 12 32.62 | +6 53.7 | 0.790 | 0.263 | 138.1 | 19.7 | 10 E | 2* | — | 9 28 | 18 26.42 | -35 36.7 | 3.140 | 3.303 | 17.7 | 20.9 | 90 E | 9* | 79* |
| 10 2 | 12 25.96 | +5 29.9 | 0.803 | 0.245 | 139.1 | 19.7 | 9 W | 2* | — | 10 8 | 18 33.43 | -35 7.1 | 3.265 | 3.283 | 17.6 | 21.0 | 82 | 10* | 74* |
| 10 3 | 12 19.76 | +3 55.8 | 0.820 | 0.229 | 137.3 | 19.4 | 9 W | 3* | — | 10 18 | 18 42.19 | -34 37.0 | 3.387 | 3.263 | 17.1 | 21.0 | 74 | 10* | 68* |
| 10 4 | 12 14.36 | +2 12.5 | 0.843 | 0.216 | 132.1 | 18.7 | 9 W | 3* | — | 10 28 | 18 52.46 | -34 5.7 | 3.502 | 3.241 | 16.4 | 21.1 | 67 | 10* | 61* |
| 10 5 | 12 10.15 | +0 22.0 | 0.870 | 0.206 | 124.0 | 17.9 | 10 W | 4* | — | 11 7 | 19 4.00 | -33 32.6 | 3.608 | 3.219 | 15.4 | 21.1 | 59 | 10* | 53* |
| 10 6 | 12 7.46 | +1 32.3 | 0.902 | 0.201 | 113.5 | 17.2 | 11 W | 4* | 1* | 11 17 | 19 16.63 | -32 57.0 | 3.704 | 3.196 | 14.2 | 21.1 | 52 | 9* | 46* |
| 10 7 | 12 6.48 | +3 26.6 | 0.938 | 0.201 | 102.0 | 16.6 | 11 W | 3* | 3* | 11 27 | 19 30.15 | -32 18.4 | 3.788 | 3.172 | 12.8 | 21.1 | 45 | 9* | 39* |
| 10 8 | 12 7.21 | +5 16.8 | 0.976 | 0.205 | 90.4 | 16.2 | 12 W | 3* | 4* | 12 7 | 19 44.40 | -31 36.2 | 3.857 | 3.147 | 11.2 | 21.0 | 38 | 8* | 32* |
| 10 9 | 12 9.46 | +7 0.1 | 1.015 | 0.215 | 79.6 | 16.0 | 12 W | 2* | 5* | 12 17 | 20 14.52 | -29 59.6 | 3.952 | 3.094 | 7.9 | 20.9 | 26 | 4* | 25* |
| 10 10 | 12 12.92 | +8 34.8 | 1.053 | 0.228 | 69.9 | 15.9 | 12 W | 1* | 6* | 1 6 | 20 30.13 | -29 5.0 | 3.975 | 3.066 | 6.2 | 20.8 | 20 | 1* | 13* |
| 10 11 | 12 17.28 | +10 0.5 | 1.091 | 0.243 | 61.6 | 15.8 | 12 W | — | 6* | 1 16 | 20 45.97 | -28 6.0 | 3.981 | 3.038 | 4.6 | 20.7 | 14 | — | 8* |
| 10 12 | 12 22.28 | +11 17.4 | 1.126 | 0.261 | 54.5 | 15.8 | 12 W | — | 6* | 252087 2000 UK₃ | | | | | | | | | |
| 10 13 | 12 27.69 | +12 26.2 | 1.160 | 0.280 | 48.6 | 15.9 | 12 W | — | 6* | 12 23 | 17 22.27 | -25 17.6 | 2.809 | 1.845 | 5.0 | 20.6 | 9 W | — | 3* |
| 10 14 | 12 33.35 | +13 27.9 | 1.193 | 0.300 | 43.6 | 15.9 | 12 W | — | 6* | 1 2 | 17 50.23 | -25 58.6 | 2.757 | 1.814 | 7.1 | 20.6 | 13 W | — | 7* |
| 10 15 | 12 39.15 | +14 23.3 | 1.223 | 0.320 | 39.4 | 16.0 | 12 W | — | 6* | 1 12 | 18 19.01 | -26 21.4 | 2.701 | 1.783 | 9.2 | 20.6 | 17 W | 1* | 11* |
| 10 16 | 12 45.02 | +15 13.2 | 1.252 | 0.340 | 35.8 | 16.1 | 12 W | — | 5* | 1 22 | 18 48.47 | -26 24.6 | 2.642 | 1.754 | 11.4 | 20.6 | 21 W | 2* | 14* |
| 10 17 | 12 50.90 | +15 58.2 | 1.280 | 0.360 | 32.8 | 16.2 | 11 W | — | 5* | 2 1 | 19 18.41 | -26 7.3 | 2.580 | 1.727 | 13.4 | 20.6 | 24 W | 2* | 18* |
| 10 18 | 12 56.75 | +16 39.0 | 1.307 | 0.381 | 30.2 | 16.3 | 11 W | — | 5* | 2 11 | 19 48.61 | -25 29.0 | 2.516 | 1.701 | 15.5 | 20.6 | 27 W | 2* | 21* |
| 10 20 | 13 8.27 | +17 49.8 | 1.357 | 0.420 | 25.9 | 16.5 | 11 W | — | 4* | 2 21 | 20 18.86 | -24 30.0 | 2.453 | 1.678 | 17.4 | 20.6 | 31 W | 2* | 25* |
| 10 22 | 13 19.48 | +18 48.7 | 1.403 | 0.459 | 22.6 | 16.6 | 10 W | — | 3* | 3 2 | 20 48.97 | -23 11.1 | 2.389 | 1.657 | 19.3 | 20.6 | 34 W | 2* | 27* |
| 10 24 | 13 30.33 | +19 38.1 | 1.446 | 0.496 | 20.0 | 16.8 | 10 W | — | 3* | 3 12 | 21 18.74 | -21 33.8 | 2.326 | 1.638 | 21.2 | 20.5 | 37 W | 2* | 30* |
| 10 26 | 13 40.82 | +20 19.8 | 1.486 | 0.531 | 17.8 | 16.9 | 9 W | — | 2* | 3 22 | 21 48.07 | -19 40.1 | 2.265 | 1.622 | 22.9 | 20.5 | 39 W | 3* | 33* |
| 10 28 | 13 50.95 | +20 55.0 | 1.524 | 0.565 | 16.0 | 17.0 | 9 W | — | 2* | 4 1 | 22 16.83 | -17 32.4 | 2.205 | 1.609 | 24.6 | 20.5 | 42 W | 3* | 36* |
| 10 30 | 14 0.74 | +21 24.9 | 1.560 | 0.597 | 14.5 | 17.2 | 9 W | — | 1* | 4 11 | 22 44.96 | -15 13.5 | 2.147 | 1.599 | 26.2 | 20.5 | 45 W | 4* | 38* |
| 11 1 | 14 10.20 | +21 50.3 | 1.594 | 0.628 | 13.1 | 17.3 | 8 W | — | 1* | 4 21 | 23 12.43 | -12 46.4 | 2.090 | 1.593 | 27.7 | 20.4 | 47 W | 4* | 41* |
| 11 3 | 14 19.37 | +22 11.7 | 1.626 | 0.658 | 11.9 | 17.4 | 8 W | — | — | 5 1 | 23 39.22 | -10 14.0 | 2.036 | 1.589 | 29.1 | 20.4 | 50 W | 6* | 44* |
| 11 5 | 14 28.26 | +22 29.7 | 1.656 | 0.686 | 10.9 | 17.5 | 7 W | — | — | 5 11 | 0 5.32 | -7 39.5 | 1.983 | 1.589 | 30.4 | 20.4 | 53 W | 7* | 47* |
| 11 7 | 14 36.88 | +22 44.7 | 1.685 | 0.713 | 9.9 | 17.5 | 7 W | — | — | 5 21 | 0 30.74 | -5 5.5 | 1.931 | 1.593 | 31.6 | 20.4 | 55 W | 9* | 49* |
| 11 12 | 14 57.44 | +23 11.6 | 1.751 | 0.775 | 7.9 | 17.7 | 6 W | — | — | 5 31 | 0 55.46 | -2 35.0 | 1.879 | 1.599 | 32.7 | 20.4 | 58 W | 12* | 52* |
| 11 17 | 15 16.76 | +23 26.0 | 1.809 | 0.830 | 6.4 | 17.9 | 5 W | — | — | 6 10 | 1 19.45 | -0 10.0 | 1.827 | 1.609 | 33.6 | 20.3 | 61 W | 16* | 53* |
| 11 22 | 15 35.05 | +23 30.6 | 1.858 | 0.878 | 5.6 | 18.0 | 5 W | — | — | 6 20 | 1 42.67 | +2 7.3 | 1.774 | 1.622 | 34.5 | 20.3 | 65 W | 20* | 55* |
| 11 27 | 15 52.48 | +23 27.1 | 1.900 | 0.921 | 5.4 | 18.2 | 5 W | — | — | 6 30 | 2 5.03 | +4 15.4 | 1.720 | 1.638 | 35.1 | 20.3 | 68 W | 25* | 55* |
| 12 2 | 16 9.22 | +23 16.8 | 1.934 | 0.958 | 5.9 | 18.3 | 6 W | — | — | 7 10 | 2 26.43 | +6 13.1 | 1.664 | 1.656 | 35.7 | 20.3 | 72 W | 31* | 55* |
| 12 7 | 16 25.38 | +23 0.5 | 1.962 | 0.991 | 6.8 | 18.5 | 7 W | — | — | 7 20 | 2 46.72 | +7 59.8 | 1.606 | 1.678 | 36.0 | 20.2 | 76 W | 37* | 55* |
| 12 12 | 16 41.09 | +22 38.7 | 1.982 | 1.018 | 8.0 | 18.6 | 8 W | — | 1* | 7 30 | 3 5.68 | +9 35.1 | 1.545 | 1.701 | 36.0 | 20.2 | 80 W | 43* | 54* |
| 12 17 | 16 56.43 | +22 11.7 | 1.995 | 1.040 | 9.4 | 18.7 | 10 W | 1* | 2* | 8 9 | 3 23.06 | +10 59.3 | 1.481 | 1.727 | 35.8 | 20.1 | 85 W | 49* | 53* |
| 12 22 | 17 11.48 | +21 39.6 | 2.002 | 1.058 | 10.8 | 18.8 | 12 W | 3* | 3* | 8 19 | 3 38.55 | +12 13.1 | 1.416 | 1.754 | 35.2 | 20.0 | 91 W | 54* | 52 |
| 12 27 | 17 26.32 | +21 2.5 | 2.003 | 1.071 | 12.3 | 18.9 | 13 W | 4* | 5* | 8 29 | 3 51.73 | +13 17.5 | 1.349 | 1.783 | 34.2 | 19.9 | 97 W | 57* | 51 |
| 1 1 | 17 41.01 | +20 20.4 | 1.997 | 1.080 | 13.9 | 19.0 | 15 W | 6* | 6* | 9 8 | 4 2.18 | +14 14.0 | 1.282 | 1.813 | 32.6 | 19.8 | 104 W | 59 | 50 |
| 1 6 | 17 55.65 | +19 33.2 | 1.985 | 1.084 | 15.4 | 19.0 | 17 W | 7* | 7* | 9 18 | 4 9.36 | +15 4.1 | 1.216 | 1.845 | 30.4 | 19.7 | 112 W | 60 | 49 |
| 1 11 | 18 10.28 | +18 40.5 | 1.967 | 1.084 | 17.0 | 19.0 | 19 W | 8* | 9* | 9 28 | 4 12.73 | +15 49.3 | 1.155 | 1.877 | 27.3 | 19.5 | 121 W | 61 | 48 |
| 1 16 | 18 24.99 | +17 42.2 | 1.944 | 1.080 | 18.7 | 19.1 | 21 W | 10* | 11* | 10 8 | 4 11.89 | +16 30.8 | 1.102 | 1.910 | 23.4 | 19.3 | 131 W | 62 | 47 |
| 222753 2002 CY₂₅ | | | | | | | | | | 10 18 | 4 6.65 | +17 8.5 | 1.061 | 1.944 | 18.5 | 19.1 | 142 W | 62 | 47 |
| 12 23 | 17 22.09 | +28 8.4 | 4.458 | 3.495 | 2.9 | | | | | | | | | | | | | | |