SURVEY OF ASTEROIDS*

G. P. Kuiper, Y. Fujita, T. Gehrels, I. Groeneveld, J. Kent, G. Van Biesbroeck, and C. J. Van Houten

Yerkes and McDonald Observatories

Received December 31, 1957

ABSTRACT

A systematic survey of asteroids down to photographic magnitude 16.5 is described. The ecliptic belt was photographed nearly twice around in 1950–1952, to a width of 40°. The 10-inch $f/7$ Ross-Fecker telescope on loan from the Cook Observatory was used, and 1094 pairs of plates were taken, each 8×10 inches in size and covering $6^\circ 5 \times 8^\circ 1$. In addition, 149 plates were taken on Selected Areas for magnitude calibration, as were special sequences for the determination of field corrections, etc. The plate pairs were blinked independently of previous knowledge and only afterward were re-examined for known objects missed. The asteroids found were measured for position, daily motion, and magnitude; and the subsequent identification work with the Ephemeris asteroids and objects having provisional designations was done with great care.

The statistics of the Survey are summarized in Table 1. Previously announced objects, not found in the Survey and either below the plate limit or, in some cases, probably spurious, are listed in Table 2. Asteroids missed because they were outside the 40° belt are given in Table 3. Ephemeris asteroids not found, presumably because they were too faint, are listed in Table 4; in addition, 182 objects were not observed because they were definitely too faint. Six new objects are probably Trojans. For 2 of them and for 2 other new asteroids, circular orbits are given in Table 5. For 33 additional new objects our data suffice to compute circular orbits; they are listed in Table 6*A*.

The measures resulting from the Survey are contained in Table A. The positions have a probable error of about $\pm 3''$. The Survey magnitudes of Table A are combined with other magnitude data in Table 7. This table is on the International Photographic System and represents the final compilation of this paper; both the mean photographic opposition magnitude, p_0, and the absolute magnitude, g, are given. The resulting magnitude system was calibrated photoelectrically afterward, and the scale was found to be precise over the entire range, 7–16 mag. Table 7 is recommended for future use, with one reservation: for some three hundred fainter asteroids, present data are still inadequate; for these objects new measures will be published as Paper VIII.

It was found that magnitudes derived during a single opposition are not representative, no matter how accurate, because of fluctuations due to the aspect of the asteroid amounting to about ± 0.11 mag. (p.e.). This comparatively large effect indicates that a good fraction of the asteroids have large obliquities. The importance of good magnitudes in future identification work is stressed. Numerous controls and revisions were made which are described in Section IX.

The results of the Survey are not limited to an inventory for the years 1950–1952 of asteroid positions, identifications, and magnitudes on the photometric system. Since the blinking was carried out independently of previous knowledge, the *completeness* of the Survey could be determined in two independent ways: from overlapping Survey regions and from comparison with the Ephemeris asteroids. The degree of completeness of different Survey fields is found in Table 11; the asteroid numbers corrected for incompleteness are given in Table 12; and a quadratic interpolation formula representing these numbers as a function of apparent photographic magnitude is given in equation (5). The representation of the data by equation (5) is shown in Table 13. The counted numbers in the 1957 Ephemeris, arranged by mean opposition magnitude, p_0, are found in Table 14. The figures are essentially complete for $p_0 < 14.5$. The representation by two interpolation formulae, equations (6) and (7), is also given in Table 14. These formulae are estimated to give approximate minimum and maximum numbers of asteroids for $14 < p_0 < 18$, and lead to estimates of the completeness factors of the Ephemeris asteroids for this interval (Tables 16 and 17 and Fig. 4). These factors, in turn, are used in Tables 15 and 19 to derive the distributions in absolute magnitude, g, for six distance groups of asteroids 1.85–2.00–2.60–3.00–3.50–4.30 astronomical units and the Trojans.

The results for the three main zones, between 2.0 and 3.5 a.u., are plotted in Figure 5. Remarkable population differences are found, and the frequency-curves appear to consist of two parts, separated by a flat portion near $g = 11$, which corresponds to asteroid sizes near $d = 30$ km. One could surmise that this flat portion separates two modes of asteroid formation (condensation by accretion and collisional breakup), but it is considered premature to conclude this. Because of the population differences between the zones (Fig. 5), the center of gravity of the asteroid zone shifts toward the larger a-values for increasing

* *Contributions of the McDonald Observatory*, No. 284.

g (smaller sizes). The ring $3.0 < a < 3.5$ contributes 23 per cent of the $2.0 < a < 3.5$ ring for $4.0 < g < 8.0$; 39 per cent for $8.0 < g < 10.0$; 70 per cent for $10.0 < g < 11.0$; 89 per cent for $11.0 < g < 12.0$; and 95 per cent for $12.0 < g < 13.0$; the geometric-mean diameters of these five subgroups are about 300, 80, 40, 25, and 15 km. This result has important implications for the collisional production of meteorites.

The results for the fringe zones are as follows. The $3.5 < a < 4.3$ group, of which 27 members are known, allows a fair analysis, which shows this group to have the same composition with g or diameter as the main asteroid zone (range $8\frac{1}{2} < g < 12$), with an abundance of 3 per cent of the main zone. The $1.85 < a < 2.00$ group, with 11 known members, is inadequate for statistical treatment. Around $g = 14$ the abundance appears to be about $\frac{1}{2}$–1 per cent of either the $2.0 < a < 2.6$ or the $2.6 < a < 3.0$ zone, but at $g = 15$ the fraction seems smaller. The Trojans ($a \cong 5.2$) are represented by 13 members, but their degree of completeness is uncertain because of special searches that have been made for them.

Because of the rapid increase of faint asteroids, it is not possible at this time to estimate the total mass of the asteroid ring.

I. PURPOSE AND PLAN OF SURVEY

A very large amount of observational and computational work has been done on asteroids, particularly during the last half-century; but this great effort has not included a systematic photographic survey, coupled with a determination of the asteroid magnitudes on a photometric system, as is required for statistical studies of the asteroids. The present Survey was organized by Mr. Kuiper with the aim of supplying such information.

The photographic survey became feasible through the co-operation of Dr. Charles Olivier and the University of Pennsylvania, who agreed to make the 10-inch ($f/7$) Ross-Fecker telescope of the Cook Observatory available on a loan basis. A 5- and a 4-inch telescope of the same design are placed on the same mounting. The instrument was transported by our staff to the McDonald Observatory in the summer of 1949. After complete overhaul, largely by Mr. A. Shatzel, and the installation of a new crystal-controlled drive, the telescope was put into operation in June, 1950. The cost of shipment and repairs, as well as that of a new fireproof housing equipped with a sliding roof, was covered by a grant made by the Research Corporation of America.

Two brief preliminary reports on the Survey have been published. The first is incorporated in the 1952 Report of Commission 20 of the International Astronomical Union (1954), which had appointed a subcommittee under Professor A. Kopff concerned with the improvement of the magnitude system of the asteroids. Professor Kopff recommended that no changes in the Ephemeris magnitudes be introduced prior to the completion of the present Survey (*op. cit.*, p. 291). The other report was issued by Groeneveld and Kuiper (1954, pp. 200–201).

II. OBSERVATIONS

Tests of the remounted telescope in June, 1950, showed that the four components of the objective were not aligned. Later it was found that this had been caused by shrinkage of the hard-rubber separators between the lenses. Mr. Kuiper spent about a week at the McDonald Observatory in efforts to realign the components, after which the performance was considered adequate for a program using plates no larger than 8×10 inches. Since the full 20×24-inch plates for which the telescope was designed could not be used in the blink comparators at the two observatories in any case, it was decided to proceed with the program, using 8×10-inch plates. This plate size, covering $6\overset{\circ}{.}5 \times 8\overset{\circ}{.}1$ of the sky, plus the requirements of overlap between consecutive monthly oppositions, led to the following observing program.

During each dark of the moon, a field $40^\circ \times 40^\circ$, centered on the opposition point computed for new moon, was to be taken, covered by approximately 48 plate pairs. The number was not quite constant because of the eccentricity of the moon's orbit and the resulting non-linear motion of the above-mentioned opposition point. The long dimension of the plates was always placed north-south, and 8×6 adjacent plate fields sufficed to cover the $40^\circ \times 40^\circ$ field. This provided an overlap of about 10° in R.A. between consecutive months and some overlap between adjacent plates. Twelve $40^\circ \times 40^\circ$ fields covered the entire ecliptic belt to a width of 40°; thereafter, the opposition fields would essentially repeat themselves. The oppositions were called *A*, *B*, . . . , *X*, and the plate fields were designated by two digits, the first for right ascension and the second for declination. The plate field *B*26 meant the southernmost field in the second strip of R.A. of opposition field *B*. It was found that 10-minute exposures caused very little trailing of the asteroid images and that an interval of 1 hour was adequate for the discovery of asteroids in the blink comparator. Accordingly, 10-minute exposure times on 103-*a*O plates were used, which led to a limiting magnitude of 16.5–17.5 pg for the faintest visible stars and 16.0–17.0 for discoverable asteroids. This limit did not include the faintest known asteroids, but this was regarded as inevitable. The plates were taken in the order, e.g., *B*11, *B*12, *B*13; *B*11, *B*12, *B*13; *B*14, etc. This allowed 10 minutes for changing between fields. Later, as the observer became more experienced, four or even five plates would be taken consecutively before the second set was started. The plate centers were selected on suitable guiding stars, preferably not fainter than the eighth magnitude. This made the plate centers depart slightly from the desired geometric pattern, but this caused no serious problem. The roughly 430 plate centers were selected by Mr. Kuiper, and the observing charts were prepared under his supervision. The plates of each pair were designated by the field number, followed by *a* and *b*. The displacement of consecutive monthly opposition fields being about 30°, two of the eight plate strips in R.A. were repeated as part of the next month's program. Plate fields may thus have two designations: e.g., *E*83 = *F*23. After the ecliptic had been covered once, the plate fields were repeated with their new designations; thus field *B* became field *N* during the second cycle. In all, 23 consecutive monthly oppositions were covered, called *B–X;* the surveys on field *A* were too incomplete to be useful, and even the *B* and *C* fields were only about two-thirds complete. Since the synodic period of an asteroid at 2.8 a.u. is 15 months, nearly half the asteroids in the 40° zone were covered twice by the present Survey. The selected belt width of 40° was, of course, a compromise. Some objects of high inclination were thus not included; but increasing the width for complete coverage would have meant a disproportionate increase in the amount of work.

The observations were made almost entirely by two night assistants—first, Mr. W. C. Braun and, after February, 1951, Mr. H. Rubingh. The observing program for each opposition field had to be carried out within 2 or 3 hours from midnight, during an interval of about 2 weeks (the dark of the moon). Since about 96 asteroid plates and at least 10 calibration plates on Selected Areas had to be taken, this meant that, depending on the declination, 7–9 perfect nights were needed for each monthly quota. Periods of bad weather, of course, caused difficulties, and it was only just possible to maintain a record of unbroken observations for the entire period of 23 months. With a climate less satisfactory than that at the McDonald Observatory, this assignment would have been impossible. However, the record is by no means perfect. The observers had often to compromise and use nights which were not of standard quality. This has resulted in some loss of uniformity in the Survey. This trouble would have been reduced if larger plates could have been used.

Another source of lack of uniformity is the variability of the photographic emulsion. Five opposition fields were taken on plates that showed chemical fog (*M–Q*). While the image quality and the guiding were, on the whole, satisfactory, the images near the corners of the plates were not good, and this will have led to some loss of limiting magnitude.

The total number of plates taken between August 10, 1950, and May 26, 1952, is 2404. This includes 1094 pairs of plates taken with time intervals varying between 50 and 90 minutes and 149 plates centered on Selected Areas. The latter were taken for magnitude calibrations of the asteroids; at least one was taken each night. The remainder consists of rejected plates and incompleted pairs, usually caused by intervening clouds. The statistics of the entire material are found in Table 1.

It will be clear that the unbroken series of observations extending over about 2 years required unusual energy on the part of the observers. We are much indebted to Messrs. Braun and Rubingh for their devotion to this project.

III. THE BLINKING OF THE SURVEY PLATES

The asteroids were found by blinking the plates in the blink-comparator. The blink observers are listed in Table 1. The number of asteroids found on one plate varied between 0 and 18, and the average was 3. In these numbers the results of reblinking are included. The efficiency of the blinking depended on the scanning speed; high speed resulted in the missing of faint asteroids. Plates taken in regions with a dense star background took 3–5 hours to blink; far from the Milky Way the time approached 2 hours. As expected, the probability of finding the asteroids showed a magnitude dependence, but

TABLE 1

STATISTICS ON THE ASTEROID PROGRAM

Field	Opposition	Plate Pairs	Objects Found*		Asteroids Found†			Av. per Plate‡	Faintest Mag. Measured	Blinked by§	Remarks‖
			Total	By Re-exam.	Ident.	Un-ident.	Per Cent Un-ident.				
B	1950 Aug.	32	83	10	53	8	15	2.6	16.1	Fu	
C	Sept.	30	88	13	55	17	24	2.9	16.3	Fu	
D	Oct.	52	143	29	95	25	21	2.7	16.4	Fu	
E	Nov.	50	128	21	74	21	22	2.5	16.5	Fu	
F	Dec.	45	119	15	75	12	14	2.6	16.3	Fu	
G	Dec.–1951 Jan.	51	153	31	82	29	26	3.0	16.5	Ke	
H	Feb.	59	131	21	78	22	22	2.2	16.6	Th, Ge	
I	Mar.	37	123	07	67	31	32	3.3	16.9	Gr	
J	Mar.–Apr.	62	191	18	114	31	21	3.1	16.8	Gr, Th	
K	Apr.–May	46	159	16	90	18	17	3.5	16.8	Gr	
L	May–June	49	130	14	74	30	29	2.7	16.6	VH	
M	June–July	50	108	31	78	09	10	2.2	16.2	Th	1
N	July–Aug.	48	95	25	69	03	06	2.0	16.4	Th	1
O	Aug.–Sept.	48	105	15	65	10	13	2.2	15.8	VH	1
P	Sept.–Oct.	45	65	22	47	06	12	1.4	15.9	Th	1
Q	Oct.–Nov.	50	90	#	61	04	06	1.8	15.4	VH	1
R	Nov.–Dec.	32	160	60	59	69	54	5.0	17.0	Th	2
S	Dec.	41	238	20	103	81	44	5.8	17.4	VH	2
T	1952 Jan.–Feb.	73	207	64	112	46	29	2.8	17.6	Th	2
U	Feb.	55	254	54	138	69	34	4.6	16.7	Th	
V	Mar.	36	128	27	72	21	23	3.5	16.6	Th	3
W	Apr.	53	223	26	110	65	37	4.2	17.2	Th, VH, Gr	3
X	May	50	126	#	71	26	27	2.5	16.6	Gr, VH	3
Total program	....	1094	3247	......	.....	......	26	3.0	......	....	......

* All objects numbered on the plates.

† Asteroids found, excluding recurrences within an opposition field.

‡ Refers to number of *Objects*.

§ Fu = Fujita; Ge = Gehrels; Gr = Groeneveld; Ke = Kent; Th = Thorson; VH = Van Houten.

‖ 1 = poor plates; 2 = excellent plates; 3 = some poor nights.

See text.

personal effects played a role also. A dense sky background was a disturbing element, and especially in the southernmost fields (near 18^h R.A.) this posed a problem. Also the quality of the images (fuzziness, trail), the proximity of stars, and local plate fogging had their influence. Under favorable conditions and with proper care it was possible to get an almost complete inventory down to about 1 mag. above the plate limit. This was accomplished only rarely, however. Further, there was some difference in appearance between the left and the right fields of the blink microscope, which could not be readily corrected. Besides, for plates taken at low altitude, differential refraction caused some scale variation.

In a program of this size it is not possible to avoid all spurious objects. The working lists of suspected asteroids were made to include, obviously, only such image pairs as seemed real by careful inspection at the blink microscope and as showed retrograde, asteroidal-type motions. About two-thirds of the image pairs recorded could be checked afterward because of overlapping plate fields, either within the same opposition field or between consecutive monthly oppositions. These checks were always made when possible and resulted in the rejection as spurious of about *2 per cent* of the image pairs. In some cases the check was inconclusive because of differences in the limiting magnitudes of the plates; these objects were retained if they looked real, in spite of their absence on the companion plates. Any remaining spurious image pairs will appear as unidentified objects in our tables; on the basis of the overlapping fields, their total number may be of the order of 20.

The counterpart of inclusion of spurious image pairs is the omission of real asteroids. The completeness of the Survey may be checked from the overlapping areas and by comparison with the lists of previously known asteroids. Table 1 shows that 74 per cent of the retained image pairs can be identified with asteroids that are either numbered or had previously assigned provisional designations. However, a number of objects with provisional designations could not be detected on our plates in spite of the fact that the published magnitudes indicated that they should have been present. This matter is discussed in Section V.

The total task of blinking the nearly 1100 pairs of plates was very large and arduous, and more than one-third of it was carried out by Mrs. Helen E. Thorson. We are much indebted to her for her great contribution to this program.

IV. THE TEN-DAILY MOTIONS

The ten-daily motions were determined with an eyepiece micrometer attached to the blink comparator, from measurements of the displacements in polar co-ordinates. The screw value was calibrated three times independently, with accordant results. However, the measures show small systematic plate errors in R.A. The angles were measured with respect to one edge of the plate; this assumes that the non-parallelism of the meridians may be neglected up to $\pm 40°$, which is a rough approximation, although not too serious if the motions are used for identification only. The *B*, *C*, *D*, *E*, and *F* fields were measured by Mr. Kent; and the remaining 18 fields by Mr. Van Houten and Miss Groeneveld. The measures are recorded in Table A, below, the main table of observations. Survey numbers followed by *X* were found by reblinking; the column "VAR" gives O−C in declination computed from O−C in R.A. by using the variation. In a few fields (e.g., *G*, *H*, *I*, *R*, and *S*) some Survey numbers were inadvertently used twice, in separate observing runs; e.g., *G*76.3 = 1136; *G*76.3 = 667.

V. THE IDENTIFICATION PROBLEM

Approximate positions (to about $\pm 1'$) were determined for nearly all asteroids found, by comparing the plates with the *BD* or *CD* charts or by measuring the plates with a scale, starting from a known *BD* star. These positions, together with the measured daily motions and rough magnitudes, were compared with the Ephemeris positions of the "numbered" asteroids (i.e., those in the Ephemeris); for 1950 and 1951 the Cincinnati edition was used, and for 1952 the Russian edition. Uncertain identifications are given in Table 6*B*. In some cases improved ephemerides were available and used; these are contained in Table 6*C*. The positions for the Survey dates were computed from the Ephemeris graphically or by using second differences in the interpolation. Account was taken of the variation line. Additional criteria for identification were the daily motion and the magnitude, though the latter was not very reliable. The largest O − C found was 29 minutes, and several were in excess of 20 minutes. The ten-daily motions for the fields *B–F* are of low accuracy; they were in part remeasured, when special identification problems arose. In addition, comparisons were made with published positions of "unnumbered" asteroids (i.e., asteroids having provisional designations). When these objects had not been found during the blinking of the plates and should have been above the plate limit according to the published magnitudes, the plates were re-examined, provided that the time interval was less than 5 days, unless these objects had published motions as well, in which case the allowed interval was increased. These positions were taken from the *Minor Planet Circulars* (*MPC*) issued by the Minor Planet Center at Cincinnati. Furthermore, ephemerides for unnumbered asteroids were occasionally available, also taken from the *MPC*'s. Finally, Dr. Herget generously made available his "Index" of asteroid positions, arranged in order of asteroid number. This Index has proved most helpful in both the identification work and the study of the magnitudes.

Within the list of Survey asteroids itself, there were many cases of the same object, known or unknown, having been observed more than once. Identities of objects found on different plates of the same opposition field were established by superposing the overlapping regions and correcting for motion where necessary. For identities of new objects in successive opposition fields, the ten-daily motion was extrapolated.

Miss Groeneveld and Mr. Van Houten shared equally in the identification work and are responsible for the identifications assigned; preliminary work on the first five opposition fields had been done by Messrs. Fujita and Kent. Table A contains the results.

After the plates had been blinked and all identifications made, the plates were re-examined for the following groups of missing objects: (*a*) "numbered" asteroids that were not found on the plates and (*b*) "unnumbered" asteroids, found at other observatories but missed on our plates, although taken within 5 days from the published positions (cf. three paragraphs above). For group *a* the plates were reblinked around the Ephemeris position and, if necessary, along the variation line up to a distance of roughly 3° in each direction. If the asteroid was still not found, it may have been too faint or covered by star images or have an ephemeris that was grossly in error (say, more than 8^m in R.A.). For the good fields, objects looked for in the re-examination included all asteroids, numbered and unnumbered, which were expected to be 16.5 photographic or brighter on the International scale. For the *Q* field, which had strong chemical fog, the limit 15.5 was used, and for the *M–P* fields, which were less fogged, 16.0 mag. A similar limit was used on some inferior plates of other fields. For objects in group *b* the searches were confined to about 1° from the expected position. Several of these objects could not be found, in spite of the fact that the time difference was small enough and the magnitudes probably bright enough; a list of such objects (not claimed to be complete) is given in Table 2. Some of these published objects may not have been real.

The measurements are collected in Table A, which was printed at the Cincinnati Observatory under the direction of Dr. Herget from the data sheets prepared at Yerkes. The statistics of the Survey are shown in Table 1. The number of "objects found" includes recurrences within the same opposition field, while the number of "asteroids found" counts each object only once. The column "Ident." gives the number of asteroids that could be identified within a given opposition field (either "numbered" or "unnumbered"); recurrences between different opposition fields may occur, so that the total of the column "Ident." is larger than the total number of identified asteroids. Also, the numbers listed under "Unident." refer to *different* objects of the same opposition field, because adjacent plates were always sufficiently close in time to identify new objects common to both plates. The percentages of unidentified objects are therefore correct, except for the occasional inclusion of a spurious image pair, already referred to.

The *Q* and *X* fields were only partly blinked; most of the *Q* plates were badly fogged, while 12 pairs of the *X* field appeared to have been tilted during the exposures, causing them to be partly out of focus. These defective plates were not blinked independently but were used only to locate the known asteroids. For these reasons, only the total numbers of asteroids found are given for these fields; and the percentage of unidentified asteroids is not representative, particularly for the *Q* field.

TABLE 2

UNNUMBERED ASTEROIDS ANNOUNCED BY OTHER OBSERVATORIES BUT NOT FOUND IN SURVEY

Preliminary Designation	Mag.*	Institution	Preliminary Designation	Mag.*	Institution
1950 OE	15.5 pg	Indiana	1951 WF	14.0 astr.	Nice
OO	15.7 pg	Indiana	XF	12.5 astr.	Nice
OP	15.5 pg	Indiana	1952 BE	15.6 pg	Indiana
PD	15.5 pg	Indiana	CA	14.3 astr.	Heidelberg
TT_1	14.2 astr.	Heidelberg	DE	14.5 astr.	Nice
TM_2	15.5 pg	Indiana	DH	14.4 astr.	Nice
TQ_2	15.2 pg	Indiana	DM	14.2 astr.	Nice
TU_2	14.9 pg	Indiana	FC	14.0 astr.	Nice
TV_2	14.8 pg	Indiana	HC	14.4 astr.	Heidelberg
TW_2	14.2 pg	Indiana	HD	14.0 astr.	Heidelberg
TX_2	15.1 pg	Indiana	HE	14.6 astr.	Heidelberg
XB	13.5 astr.	Uccle	HF	14.1 astr.	Heidelberg
XC	13.6 astr.	Uccle	HG	14.0 astr.	Heidelberg
1951 ES_1	14.0 astr.	Nice	HX	16.3 pg	Indiana
GE	14.0 astr.	Nice	HV_1	14.5 astr.	La Plata
KB	13.0 astr.	Johannesburg			

* pg is approximately on the International scale; astr. on the Ephemeris scale (needs correction of about +2 mag.).

If the recurrences in Table 1 are allowed for, a total number of asteroids, numbered, unnumbered, and new, is estimated to be 1550. Of this total, 1167 are numbered asteroids. The 1952 Ephemeris contains 1568 numbered asteroids; the 1956 Ephemeris, 1605. By February, 1956, the count had reached 1615. These additions to the numbered objects could be included as such, because of the current information supplied by the *MPC*'s, including observations and ephemerides of unnumbered objects.

It should be pointed out that not all 1615 numbered asteroids have published ephemerides. In the 1956 edition there are 15 objects without ephemerides (155, 330, 452, 473, 525, 531, 612, 682, 719, 724, 831, 843, 864, 879, and 903), most of which have not been observed for decades and may in fact be identical with unnumbered or even numbered asteroids. As stated before, 23 monthly oppositions were taken, although the synodic period of an asteroid at 2.8 a.u. is 15 months. As a result, some asteroids were covered twice by the Survey, while others were covered once; further, they must have been either inside or outside the Survey fields and, if inside, either above the plate limit or below it (*o*utside, *b*right, or *f*aint). For asteroids at longitudes covered twice, all six combinations between *o*, *b*, and *f* occur; the three *oo*, *bb*, *ff* are classified as *o*, *b*, *f*, occurring singly; while *ob* and *bf* were counted in Table 1 as *b* and *of* as *f*.

Of the 1615−15 = 1600 asteroids, 111, or *7 per cent*, were *outside* the regions photographed in the Survey, according to the ephemerides; they are listed in Table 3. Further, 182, or *12 per cent* of the 1489 objects within the boundaries of the Survey, are found to have been *too faint* for our plates at the time of observation by the magnitude criteria stated before. It is noted, in this connection, that asteroids marked 15.0 mag. in the Ephemeris are, in reality, about 17.0 pg. Two asteroids (561, 920) appear to have been lost between adjacent plate fields. There remain 137 numbered asteroids within the boundaries of the Survey (9 per cent of the 1489) that were at least once above the supposed plate limit but were not found. They are listed in Table 4. It appears that most of these objects are close to the plate limits; none of them were expected to be brighter than 14.0 and only 11 were expected to be brighter than 15.0 mag. Intrinsic variability plus the large accidental error of the magnitudes in the Ephemeris, coupled with the rapid increase of asteroid numbers with increasing magnitude, will have caused some objects actually below the plate limit to have come out above it according to the reduced magnitudes. The five fields *M–Q* account for 38 per cent of the cases; the limiting magnitude

TABLE 3

ASTEROIDS OUTSIDE REGIONS PHOTOGRAPHED

2	323	605	768	978	1166	1362
25	329	617	771	998	1170	1373
36	372	626	779	1019	1191	1437
85	386	634	785	1025	1208	1474
89	391	663	787	1031	1215	1477
99	413	679	806	1035	1222	1508
130	433	692	849	1036	1241	1509
132	434	697	860	1049	1252	1521
157	471	704	862	1050	1263	1547
164	475	706	880	1093	1264	1548
170	483	714	881	1101	1276	1566
176	493	729	911	1103	1303	1568
181	536	733	926	1108	1310	1584
225	564	747	930	1139	1317	1585
290	594	751	950	1140	1318	1612
292	596	754	977	1146	1341	

on these fogged plates may have been slightly overestimated. Other objects may have large O − C compared to the Ephemeris and may instead be listed among the unnumbered asteroids. A few objects may have been missed even in the reblinking.

From the daily motion, *6 new objects were suspected to be Trojans:* *N*73.1, *R*36.5, *R*46.3, *R*54.15, *S*13.11, *S*26.2. Mr. Van Houten has derived circular orbits for two of them, Nos. 3 and 4, based on two observations each, separated by 18 days, made in December, 1951. The circular elements are given in Table 5. He has also computed circular orbits for two non-Trojans given in Table 5. Finally, he computed ephemerides for 1606, identical with *B*41.2; 1614, identical with *G*36.1; and 1605, probably identical with *H*64.1. Miss Groeneveld computed an ephemeris for 1586, identical with *L*13.4. Table 6*A* lists additional new objects for which circular orbits could be computed on the basis of our observations. Table 6*B* lists asteroids in Table A with uncertain identifications; and Table 6*C* lists asteroids identified from special ephemerides.

VI. THE MEASUREMENTS OF POSITION

The original Survey plan did not include the determination of accurate positions for the more than 3000 asteroids on the plates. The task of such a determination was considered beyond the available resources in time and manpower. This situation changed when Mr. Van Biesbroeck (1955) developed the simple method of measurement with a

TABLE 4

Numbered Asteroids Not Found

No.	Field, Year	Mag.	No.	Field, Year	Mag.	No.	Field, Year	Mag.
343	*M* 51	16.1	1081	*H* 51	14.9	1406	*G* 51	16.0
603	*J* 51	14.7	1082	*G* 51, *U* 52	16.4, 16.5	1408	*N* 51	16.0
616	*Q* 51	14.3	1095	*M* 51	14.2	1414	*I* 51	16.2
630	*N* 51	15.7	1127	*K* 51	16.3	1420	*G* 51, *U* 52	16.4, 16.4
641	*DC* 51, *V* 52	15.9, 16.5	1138	*P* 51	15.5	1425	*O* 51	16.0
698	*PO* 51	16.0	1151	*M* 51	16.3	1430	*EF* 50	16.4
699	*W* 52	16.5	1152	*Q* 51	15.3	1431	*T* 52	16.4
725	*K* 51	16.4	1156	*D* 50, *VU* 52	16.0, 15.8	1433	*Q* 51	15.2
730	*T* 52	16.2	1168	*S* 51	16.2	1442	*R* 51	15.7
745	*P* 51	15.1	1181	*N* 51	15.7	1444	*M* 51	15.5
765	*G* 51	15.9	1190	*IJ* 51	16.4	1446	*W* 52	15.4
802	*KJ* 51	15.5	1192	*P* 51	16.0	1449	*H* 51	15.7
810	*S* 51	15.8	1209	*O* 51	15.8	1451	*I* 51	15.3
812	*E* 50, *U* 52	14.9, 16.4	1224	*M* 51	15.5	1456	*G* 51	16.5
821	*S* 51	16.5	1225	*O* 51	15.9	1462	*N* 51	15.9
822	*N* 51	15.7	1226	*KL* 51	16.0	1463	*L* 51	16.0
833	*K* 51	16.4	1228	*F* 50, *U* 52	16.3, 15.9	1466	*T* 52	16.4
837	*PQ* 51	14.9	1231	*I* 51	15.8	1471	*N* 51	15.3
840	*F* 50, *T* 52	15.2, 16.1	1233	*O* 51	15.1	1475	*H* 51	16.2
842	*QR* 51	14.8	1234	*N* 51	16 0	1481	*P* 51	15.7
855	*E* 50	16.3	1260	*L* 51	16 0	1488	*L* 51	16.0
857	*H* 51	15.4	1262	*Q* 51	15.1	1495	*P* 51	15.9
867	*NM* 51	15.9	1265	*K* 51	15.3	1497	*J* 51	16.2
869	*U* 52	15.8	1285	*H* 51, *W* 52	14 7, 15.0	1514	*F* 50	16.4
870	*H* 51, *V* 52	16.4, 16.1	1290	*N* 51	15.3	1517	*H* 51, *X* 52	15.8, 15.1
890	*N* 51	15 0	1301	*B* 50	16.3	1526	*I* 51	16.4
897	*P* 51	15.5	1311	*V* 52	16.3	1529	*O* 51	15.3
942	*J* 51, *X* 52	16.4, 16.3	1313	*T* 52	15.5	1531	*Q* 51	15.2
954	*F* 50, *T* 52	16.3, 16.5	1314	*T* 52	16.2	1533	*M* 51	15.4
959	*G* 50	15.4	1328	*P* 51	15.0	1535	*C* 50	15.6
963	*O* 51	15.8	1330	*B* 50	16.2	1540	*N* 51	15.5
968	*D* 50	15.3	1332	*J* 51, *X* 52	15.8, 15.1	1549	*M* 51	15.7
970	*H* 51	16.1	1335	*R* 51	16.1	1552	*P* 51	15.2
983	*P* 51	15.3	1337	*H* 51	16.5	1556	*M* 51	15.5
988	*F* 50	15.4	1342	*T* 51	15.6	1559	*P* 51	16.0
993	*D* 50	14.0	1355	*R* 51	15.1	1561	*T* 52	16.5
1000	*N* 51	14.5	1357	*K* 51	15.7	1573	*I* 51	....
1017	*P* 51	15.7	1358	*P* 51	15.3	1576	*J* 51	....
1020	*F* 50, *V* 52	16.0, 15.7	1359	*LM* 51	15.1	1579	*H* 51, *X* 52	16.3
1022	*H* 51	15.2	1360	*H* 51	16.2	1588	*L* 51	....
1026	*DC* 50	15.5	1361	*N* 51	15.2	1594	*I* 51	16.3
1037	*G* 51	16.3	1371	*K* 51	16.3	1595	*K* 51	....
1052	*M* 51	14.9	1391	*ST* 51	15.7	1598	*N* 51	16.1
1064	*R* 51	15.6	1392	*S* 51	15.0	1610	*Q* 51	....
1068	*P* 51	16.2	1401	*J* 51	16.0	1611	*J* 51	15.9
1069	*M* 51	15.2	1405	*H* 51	15.9			

TABLE 5

New Elements, Circular Orbits (Van Houten)

Object	a	i	Ω	u_0	t_0
$D75.4=E16.3$ $=1950$ TH_2	3.066	14°21	175°56	209°61	1950 Oct. 13.2299
$B63.2=C14.6$ $=1950$ QC1	4.220	4.09	346.22	345.63	1950 Aug. 18.3389
$R54.15=S54.3$ $=1951$ XK	5.076	18.55	85.6	346.8	1951 Dec. 5.2535
$R46.3=S46.2$ $=1951$ XJ	4.912	21.38	106.6	317.9	1951 Dec. 4.2104

precision theodolite which gave equatorial co-ordinates with an accuracy of about 2″–3″, satisfactory to the computers of asteroid orbits. It was then decided that systematic position measurement, which would greatly enhance the value of the Survey, was feasible, and Mr. Van Biesbroeck was interested to undertake this task himself. Much of the uncertainty in the positions was found to be due to the lack of reliable proper motions for the comparison stars. For declinations from −30° to +30° these were usually taken from the Yale Zone catalogues; for declinations north of +30° from the AGK2 catalogue or Prager's catalogue; and for zones south of −30° from the Cordoba AG catalogue. Occasionally, near plate edges or corners, these brighter stars were not suitably located, and fainter stars had to be used, taken from the *Astrographic Catalogue*. The asteroid positions, for the equinox of 1950.0, are given in Table A to $0^s.1$ in R.A.

TABLE 6*A*

ASTEROIDS FOR WHICH CIRCULAR ELEMENTS CAN BE COMPUTED

(Found in Overlaps of Opposition Fields)

1950 QB 1	1950 ST	1950 WD	1951 WL	1951 XD 1	1952 HW 3
QD 1	TV 3	WE	XR	XE 1	HY 3
QE 1	TZ 3	WF	XW	XF 1	HZ 3
QF 1	TB 4	XS	XX	YR 2	
QG 1	WB	1951 EY	XY	1952 CB	
SS	WC	EX 2	XB 1	HU 3	

TABLE 6*B*

ASTEROIDS WITH UNCERTAIN IDENTIFICATIONS

285, *U*24.2	1053, *T*32.2	1505, *W*66.1
428, *X*34.2	1113, *R*41.1	1505, *W*76.1
428, *X*35.2	1183, *U*73.4	1532, *X*16.1
580, *C*34.1	1218, *R*33.11	1605, *H*64.1
603, *I*44.10	1218, *R*34.5	1605, *H*65.1
1053, *T*31.2	1321, *S*12.3	

TABLE 6*C*

ASTEROIDS IDENTIFIED FROM SPECIAL EPHEMERIDES

350, *M*75.2 Russ. Eph. 1951	1590, *T*45.5 *MPC* 660
396, *J*54.3 Russ. Eph. 1951	1599, *E*34.4 *MPC* 704
919, *D*12.4 *MPC* 460	*T*82.3
1099, *S*41.3 *MPC* 602	1601, *X*14.6 *MPC* 736
1349, *B*13.5 *MPC* 595	*X*23.2
*B*14.1a	1603, *X*42.2 *MPC* 736
1523, *R*32.1 *MPC* 727	*X*52.1
1560, *S*53.8 *MPC* 528	1604, *U*95.5 *MPC* 659
1569, *W*21.1 *La Plata Circ.* 9	*V*16.3
1570, *K*34.3 *MPC* 659	*V*25.2
1572, *U*73.8 *Astr. Circ. U.S.S.R.*, **120**,	1605, *X*21.4 *MPC* 736
1578, *U*63.9 *MPC* 692	1607, *T*93.5 *MPC* 697
1589, *T*92.1 *MPC* 731	*U*13.12 *MPC* 697
*U*12.2	1951QA, *P*43.1 *MPC* 671
*U*13.7	*P*53.1

and 1″ in declination; they have probable errors of 2″–3″. The measurements and reductions were made by Mr. Van Biesbroeck; the preparatory selection of most of the comparison stars was made by Miss Groeneveld and Mr. Van Houten.

VII. THE MEASUREMENTS OF MAGNITUDE

During the Survey a calibration plate on a Selected Area was usually taken each night. In addition, of course, all opposition fields north of $-19°$ declination contained Mount Wilson Selected Areas among the Survey plates themselves; and on nights on which fields south of $-19°$ were taken, plates north of this limit were usually taken also. The Selected Areas on the Survey plates themselves were, on the whole, more satisfactory than the special plates (always taken at $+15°$ declination) because they were closer to the asteroids and the sequences occurred at random positions on the plates, so that field corrections were reduced.

For the first three opposition fields, August 10–November 7, 1950, the asteroid magnitudes were derived as follows. Fifteen stars were selected on each of the overlapping edges, five each near the fifteenth, thirteenth, and twelfth magnitudes, and the system was transferred outward, starting with the Selected Area field, until all plate fields were covered. The overlapping edges are about 2 cm wide. Obviously, the differences in the quality between the different plates, as well as changes in the over-all absorption due to haze, are thus eliminated; differential extinction corrections were applied separately.

A less laborious method was followed for the remaining opposition fields, in which the asteroids were compared directly with the nearest available Selected Area sequence. Actually, two sequences could be used for most nights, and they were both measured. This transfer method relies, of course, on the approximate constancy of the atmospheric transparency, developing, etc., for the plates to be compared. In case no Selected Area sequence was available, a special sequence was set up afterward. Such sequences were established photographically with the Yerkes 24-inch reflector by Mr. Gehrels and with the 10-inch Survey telescope at McDonald by Mr. Van Houten. The latter were taken at $-28°$ during the summer of 1955, by matching 10-minute exposures in this zone with similar plates of Selected Areas at $-15°$, but taken at the same zenith distance. From these plates seven special sequences near $-28°$ were set up by Mr. Gehrels.

For purposes of identification, charts had to be prepared for 68 Selected Areas, each showing about four stars per magnitude interval between magnitudes 10 and 17. When bright stars were lacking in the *Mount Wilson Catalogue of Photographic Magnitudes*, such stars were taken from the *Bergedorfer Spektral-Durchmusterung*, with a magnitude correction of $+0.04$ mag. applied. The measures were all made by Mr. Gehrels with the Ross (1936) photometer of the Yerkes Observatory, after it was found that intercomparisons with a fixed scale of images (a "flyspanker") were unsatisfactory, apparently because such a fixed scale does not reproduce the effects of different image qualities. Since the thermopile of the Ross photometer gave only small deflections for the darker plates, it was replaced by a gas-filled cell; its output was fed through an M.I.T. amplifier to the galvanometer. The quotient, galvanometer reading of star-plus-sky to sky-only, was plotted for the Selected Area stars against their magnitudes; similar quotients for the asteroids could then be converted to *observed* magnitudes. The diaphragms employed in the Ross photometer were 0.15 and 0.25 or 0.28 mm (projected diameters). Stars fainter than photographic magnitude roughly 13 were measured with the 0.15-mm diaphragm, those brighter than 13 with one of the two larger diaphragms.

The observed magnitudes require four corrections to become *apparent* magnitudes: (1) differential extinction; (2) field effects; (3) asteroid trailing; and (4) a small correction to the system of the Selected Area magnitudes. For 1 a mean extinction coefficient of 0.30 mag. per unit air mass was used. The field correction of the 10-inch Survey telescope, 2, was determined from the existing calibration plates taken of Selected Area 68, supplemented by a new series of 24 exposures of 20 minutes each, taken with the 5-inch Cook Observatory telescope at McDonald during the summer of 1953. The 10-inch plates had the Selected Area in the center; and sequences were selected elsewhere on the plates and calibrated by means of 5-inch plates, taken with different centers. In the reductions it was assumed that all field corrections are radially symmetrical and linear with distance from the center. On this basis the plot of Figure 1 was obtained, which gives the field correction for a standard distance interval of 10 cm and its dependence on the photographic magnitude. The interpretation of Figure 1 is probably approximately as follows: images near the edges of the plate will differ from those near the center in being slightly elongated; furthermore, there is a vignetting effect which becomes appreciable only near the corners of the plate. For faint objects the field effect will be small; it will increase, beginning about 2 mag. above the plate limit, as is true for the trail correction; but for bright objects, having large images, the effect will decrease, and for very bright objects vignetting in the extra-focal disk becomes effective.

The trail correction, 3, could not be determined from plates taken with the 10-inch Survey telescope because its optics were being overhauled after completion of the Survey;

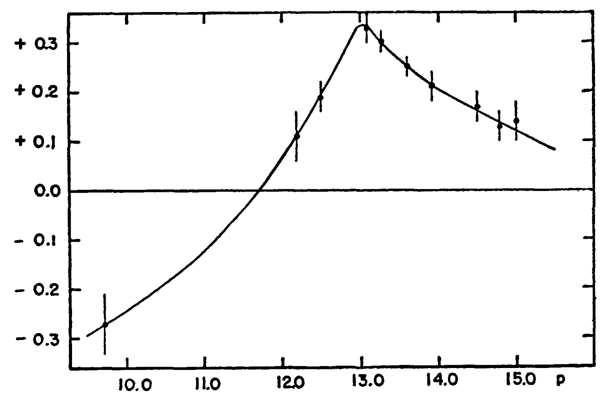

FIG. 1.—Field correction, 10-inch Survey telescope. *Abscissae*, photographic magnitudes; *ordinates*, field correction for difference of 10 cm distance to plate center. Vertical lines are probable errors.

instead, the similar 5-inch telescope was used; and it was assumed that the trail corrections were the same for a given length measured in millimeters on the plate. Fourteen plates were taken with the 5-inch, each bearing three exposures which were, respectively, trailed, non-trailed, and trailed. The separate exposure times were either 10 or 20 minutes. The trail lengths used were 0.22, 0.043, and 0.086 mm, made by using a Zeiss micrometer on the guiding telescope. In the reductions it was assumed that the corrections depended on trail length and photographic magnitude only and that they were linear with trail length. The average trail length of the asteroids on the Survey plates was 0.054 mm. For this value the trail effect was found to be a brightening of the image by 0.09 mag., except within 2 mag. from the plate limit, where the effect was negligible (less than 0.04 mag.). This correction was applied to the measured asteroid magnitudes except when the asteroid trail was appreciably above the 0.054-mm value, in which case it was increased proportionally. Correction 4 was applied to the system of the Mount Wilson catalogue of Selected Areas as found by Baum (1956), namely, +0.1(SA-14.0) for SA > 14.0 mag.

Both the special sequences and the determinations of field and trail corrections were made on 103*a*-O plates. Stars of exceptional color, such as No. 72 in Selected Area 68, showed on the Survey plates no systematic deviation from the characteristic curve of the sequence based on the system of Stebbins, Whitford, and Johnson (1950). It was concluded that the color correction to our magnitude system is negligible.

The *apparent* magnitudes, p, are listed under *MAG* in Table A. They are reduced to *absolute* magnitudes, g, in column G, except where no orbital elements were available. The quantity $g = p - 5 \log r\rho - F(\alpha)$, where r and ρ are the heliocentric and geocentric distances in astronomical units, respectively, and $F(\alpha)$ is the phase function. The method used for the reduction of p to g is described in Asteroid Paper VI (Gehrels 1957), and the phase correction applied was taken from Table 4 of that paper. The reductions to g were mostly made by Mr. W. D. Caldwell, to whom we are indebted for his careful work.

The best 2 per cent of the magnitudes in Table A are marked with A. These are objects which occurred on the same plate as, and within about 2° from, a Selected Area; further, the difference between the determinations on the two plates was less than 0.20 mag. and p was at least 0.5 mag. above the plate limit. The worse 21 per cent of the magnitudes are marked with C; for these the difference between the two determinations was greater than 0.5 mag., or the quality of the night was unsatisfactory, or else the object was close to the edge of the plates. If the reduction to "zero phase" by means of Table 4 of Paper VI was uncertain (phase angles $\leq 1\overset{\circ}{.}0$) the class of g was lowered from A to B or B to C. No magnitude determinations were made on plates taken on the poorest nights used in the Survey or for the brightest dozen or so asteroids; photoelectric observations are available for the latter.

The precision of the magnitudes was derived from internal evidence. In the first place, a determination could be made from the two Survey plates taken at each epoch. Other determinations could be made from asteroids in overlapping areas or those observed at consecutive oppositions. The latter, however, involved differences in aspect and also uncertainties due to the reduction to absolute magnitude; they were not used here but are considered in Section VIII. The determination from overlapping areas is somewhat uncertain and not entirely typical, since the images are of lesser quality; nevertheless, the result so obtained was consistent with the determination from the plate pairs. The plate pairs give an internal probable error of ± 0.09 mag. for the weighted mean; most of this amount is attributed to variable atmospheric effects. However, part of it must be due to rotational variation of the asteroids and to accidental errors in the zero points of the different Selected Areas, since often two different Areas were used during one night and an effort was made to make the two reductions for the image pair as nearly independent as possible. The probable error of the zero point of a Selected Area, after removal of the systematic effect mentioned before, is estimated to be ± 0.06 mag. (probable error) on the basis of Baum's measures for nine Selected Areas. Other sources of uncertainty, which must be added to the probable error of ± 0.09 mag. mentioned above, are differential extinction and the uncertainties in the field and trail corrections. It is estimated that these have contributed the following respective probable errors: ± 0.04, 0.03, and 0.02 mag. Not all image pairs were reduced with separate Selected Areas; we therefore add the full uncertainty of the Selected Area zero points in computing the total uncertainty of the average Survey magnitudes; this value is found to be 0.12 ± 0.02 mag. In the comparison of the Survey magnitudes with other data it seems advisable to increase this value further for two reasons: (1) There have been some gradual changes in the quality of the Survey plates, and these changes somewhat affect the visibility of the asteroid trailing; the empirical trail corrections were found from a more homogeneous set of plates. (2) The pairs of Survey plates were taken at 1-hour intervals, and the rotational magnitude variations (cf. Papers I–V and VII) will have been less than between random epochs on the light-curves; it is the latter quantity which is needed in comparing Survey magnitudes with other values. The two effects are roughly allowed for by increasing the average probable error of the Survey magnitudes from ± 0.12 to ± 0.15 mag. For the three categories in Table A the probable errors are then estimated to be ± 0.10, ± 0.14, and ± 0.20 mag. These values still do not include variations due to the asteroid aspect or uncertainties due to the reductions to absolute magnitude. The measurements and the discussion of the magnitudes were carried out by Mr. Gehrels.

VIII. THE COMBINATION OF MAGNITUDES

One of the main objectives of the Survey was to derive a table of accurate asteroid magnitudes on the International Photographic Scale. Since not all numbered asteroids were observed in the Survey, it was necessary to consider other available magnitude sources and reduce them to the International scale. Furthermore, since the asteroid magnitudes are variable, not merely because of rotation and phase variations, but because of aspect, data obtained during a single opposition are not necessarily representative. The reductions involved three steps:

a) From intercomparisons of Survey magnitudes at the same opposition, a probable error of ± 0.15 mag. is derived for a Survey magnitude of unit weight, while intercomparisons at different oppositions give ± 0.22 mag. These values are obtained in the discussion accompanying Table 8. The increased probable error determined from different oppositions, amounting to an additional variation of ± 0.16 (p.e.), is found to be due to *aspect variation.*

b) In Paper VI, comparisons were made between Survey and Ephemeris magnitudes, from which the probable error of the latter was found to be ± 0.29 mag. This value includes variations due to aspect. The systematic error is about 2.0 mag. at 15th mag.

c) Also in Paper VI, the systematic and accidental errors of magnitude series made at several other observatories were derived with the aid of Survey magnitudes. Intercomparisons were made from observations made within one month, so that aspect variations were not appreciable.

For 22 of the brightest asteroids (Nos. 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 14, 15, 16, 17, 20, 25, 39, 44, 321, 354, 511, 532), photoelectric light-curves and colors had been derived previously, mostly at the McDonald Observatory, and accurate magnitudes, averaged over a rotational cycle, were available for them (Papers I–V and VII). Usually more than one opposition was covered. These values were reduced to photographic magnitudes with the relation

$$p = V - 0.176 + 1.090\,(B - V)\,, \tag{1}$$

and to zero phase angle by means of the phase coefficients listed in the papers referred to. The resulting p_0- and g-values are included in Table 7, weight 2.0 having been assigned to the mean magnitude derived at one opposition (see below).

For all other asteroids, data from the various sources referred to were combined with the proper weights, including photoelectric data for 38 additional asteroids, given in Tables 9 and 10. Unit weight corresponds to a probable error of $\pm$ 0.22 mag.; this definition is appropriate, as is seen from the discussion under *a* above. From the discussion referred to under *b* above, the weight of the reduced Ephemeris magnitudes is then found to be 0.6. This comparatively large weight results from the systematic effects due to aspect, present in even the best measures made during a single opposition. It was therefore decided to include the reduced Ephemeris magnitudes for all asteroids not having photoelectric light-curves, which is essentially those fainter than 10 mag. However, the aspect variation of ± 0.16 mag. found above was derived from magnitudes at consecutive oppositions. These are, on the average, 5/4 years apart and will, on the average, show the largest aspect effects. If the aspect variation is assumed to be sinusoidal, the average aspect variation will be $1/\sqrt{2}$ times ± 0.16 or ± 0.11 mag. (p.e.). Unit weight will now correspond to a probable error of ± 0.19 mag. instead of ± 0.22 mag., while the weight of the Ephemeris magnitudes will be 0.5 and of the italics magnitudes 0.4, slightly less than adopted in Table 7. Additional magnitude determinations for many asteroids will be needed before an accurate value of the aspect variation can be found. The systematic correction applied to the Ephemeris magnitudes is

$$p_0 = 1.136\,m_0 - 0.16\ . \tag{2}$$

TABLE 7

MEAN PHOTOGRAPHIC MAGNITUDES OF THE ASTEROIDS AND THEIR WEIGHTS

No.	p_o	g	wt	No.	p_o	g	wt
1	7.45	4.00	4.0	56	12.58	9.49	3.4
2	8.45	4.99	4.0	57	12.42	8.25	2.4
3	9.60	6.36	4.0	58	13.03	9.72	3.1
4	6.74	4.20	4.0	59	11.97	8.63	2.6
5	10.98	7.94	1.9	60	12.57	9.95	2.1
6	9.29	6.60	3.5	61	12.45	8.59	3.2
7	9.35	6.76	6.0	62	13.77	9.66	4.0
8	9.56	7.45	4.0	63	10.96	8.34	2.3
9	9.77	7.17	5.5	64	12.03	8.75	1.8
10	10.61	6.45	4.0	65	12.44	7.87	2.5
11	10.43	7.67	4.3	66	13.64	10.44	3.9
12	11.17	8.71	2.2	67	12.40	9.72	1.2
13	10.94	7.90	1.0	68	11.67	8.19	2.2
14	10.37	7.31	2.0	69	12.04	8.18	1.8
15	9.25	6.08	4.0	70	12.18	9.05	1.8
16	10.48	6.74	4.1	71	11.80	8.38	3.5
17	11.39	8.59	4.0	72	12.52	10.23	2.5
18	10.11	7.74	4.1	73	13.43	10.19	1.7
19	11.23	8.50	1.9	74	13.49	10.02	3.6
20	10.03	7.38	2.0	75	13.15	9.90	2.2
21	11.30	8.58	2.3	76	13.43	8.88	1.9
22	11.08	7.35	2.1	77	12.75	9.51	2.6
23	11.40	8.24	3.9	78	12.14	9.00	2.6
24	12.20	8.08	2.5	79	11.92	9.18	2.1
25	11.60	8.98	4.0	80	11.56	9.19	2.6
26	11.80	8.58	2.6	81	13.26	9.65	2.2
27	10.96	8.46	2.2	82	12.79	9.35	1.9
28	11.56	8.09	2.2	83	12.43	9.72	2.1
29	10.15	7.16	4.4	84	12.73	10.19	2.3
30	11.23	8.68	4.8	85	12.23	9.02	1.6
31	11.91	7.73	1.8	86	13.84	9.75	2.5
32	11.72	8.65	2.4	87	13.03	8.34	2.8
33	13.35	9.70	1.6	88	11.57	8.12	2.6
34	12.83	9.55	3.4	89	11.35	8.37	1.3
35	13.52	9.64	1.9	90	13.40	9.25	3.1
36	13.33	9.92	1.0	91	12.71	9.64	2.1
37	11.55	8.36	5.1	92	12.19	7.95	2.2
38	12.83	9.44	2.1	93	12.12	8.70	2.9
39	10.75	7.30	8.6	94	12.88	8.72	1.8
40	10.64	8.35	2.4	95	12.80	8.79	1.8
41	11.76	8.33	2.1	96	12.97	8.98	2.2
42	11.43	8.70	2.2	97	11.81	8.57	2.1
43	11.20	9.08	2.1	98	13.81	10.53	1.6
44	10.59	7.91	3.9	99	14.81	11.58	1.0:
45	11.79	8.44	2.5	100	13.14	9.08	2.2
46	12.21	9.28	2.4	101	12.30	9.24	1.8
47	12.75	9.08	2.4	102	13.63	10.40	3.2
48	12.16	8.08	2.4	103	11.76	8.45	2.3
49	12.55	8.51	3.6	104	13.62	9.48	3.2
50	13.50	10.30	3.0	105	12.23	9.66	1.4
51	11.12	8.57	4.1	106	12.91	8.73	2.6
52	11.50	7.44	4.2	107	12.79	8.10	2.0
53	12.81	9.67	2.6	108	13.47	9.21	2.2
54	12.05	8.72	2.2	109	13.33	10.03	2.0
55	12.38	8.95	3.3	110	11.74	8.36	1.7

TABLE 7—Continued

No.	p_o	g	wt	No.	p_o	g	wt
111	12.04	8.96	3.6	171	13.78	9.66	1.7
112	13.33	10.62	2.6	172	12.11	9.53	2.6
113	12.15	9.58	2.6	173	12.29	8.89	1.9
114	12.67	9.41	3.6	174	13.10	9.47	3.6
115	11.60	9.02	1.5	175	13.78	9.50	2.8
116	12.13	8.68	2.6	176	13.61	9.42	1.3
117	12.94	9.07	2.4	177	13.96	10.50	2.2
118	12.57	9.85	2.6	178	13.33	10.55	2.6
119	12.35	9.30	2.3	179	13.79	9.95	2.6:
120	12.93	8.83	3.2	180	14.80	11.44	2.0
121	12.87	8.23	1.7	181	13.05	8.95	2.0
122	13.08	8.81	2.0	182	12.48	9.13	2.6:
123	13.40	10.10	2.7	183	14.37	10.87	2.5
124	12.18	9.02	2.6	184	13.76	9.56	2.1
125	12.91	9.51	2.1	185	11.82	8.43	3.1
126	13.04	10.31	3.3	186	12.82	10.28	2.4
127	12.90	9.48	4.0	187	12.80	9.42	1.8
128	12.06	8.65	4.6	188	13.80	10.36	2.0
129	11.35	7.70	2.2	189	13.09	10.34	2.3
130	11.96	7.85	1.8	190	13.81	8.48	2.6
131	13.65	10.94	2.6	191	13.59	9.90	3.2
132	13.33	10.21	1.8	192	10.94	8.30	1.9
133	12.97	8.97	2.6	193	14.26	11.16	2.1
134	12.39	9.37	2.2	194	11.85	8.72	4.0
135	11.68	8.98	2.3	195	13.83	10.16	2.3
136	12.94	10.60	1.9	196	11.67	7.58	2.1
137	13.00	8.89	1.1	197	14.24	10.85	2.0
138	13.35	10.60	2.0	198	12.33	9.56	1.8
139	12.59	9.11	1.5	199	14.03	9.86	2.6
140	12.74	9.36	3.8	200	12.73	9.34	1.6
141	12.79	9.55	2.0	201	12.64	9.38	2.6:
142	14.02	11.34	2.2	202	12.87	8.85	3.4
143	13.89	10.45	2.4	203	13.50	10.11	2.8
144	12.10	8.88	2.6	204	13.47	10.23	2.3
145	12.62	9.37	1.8	205	13.83	10.36	2.1
146	12.49	9.14	3.2	206	13.37	9.98	2.7
147	13.97	9.84	2.6	207	13.24	10.90	2.4
148	12.12	8.66	2.2:	208	14.05	10.36	2.1
149	14.22	12.18	2.0	209	12.98	8.83	2.2
150	13.01	9.15	2.0	210	13.82	10.46	2.2
151	13.48	10.40	2.4	211	12.87	8.91	2.1:
152	13.70	9.58	2.0	212	13.47	9.37	3.5
153	14.16	8.80	2.3	213	13.34	9.92	2.2
154	12.57	8.37	2.3	214	13.46	10.34	2.5
155	15.18	11.45	0.6	215	14.22	10.78	3.1
156	12.86	9.49	2.4	216	11.49	7.99	1.4
157	15.39	12.34	1.2	217	14.61	10.97	2.6
158	14.20	10.56	3.3	218	13.04	9.80	2.6
159	13.36	9.29	1.6	219	12.89	10.37	3.1
160	13.38	10.01	3.4	220	14.84	12.34	2.6
161	12.74	10.16	2.1	221	12.89	8.97	2.6
162	13.89	9.97	3.2	222	14.47	10.33	1.8
163	12.92	10.37	4.1	223	15.10	11.04	2.6
164	12.82	9.65	1.0	224	13.07	9.88	3.1
165	12.74	8.62	3.1	225	14.08	9.59	2.0
166	13.94	10.66	1.8	226	14.31	10.97	2.8
167	14.27	10.65	2.6	227	14.21	10.05	3.4
168	13.61	9.09	2.6	228	15.99	13.88	2.6
169	13.05	10.52	1.8	229	15.01	10.43	2.2
170	13.61	10.62	1.2:	230	11.09	8.51	1.9:

TABLE 7—Continued

No.	p_o	g	wt	No.	p_o	g	wt
231	14.22	10.48	2.0	291	14.87	12.70	2.0
232	14.55	11.55	2.6	292	13.89	10.95	1.1
233	12.68	9.45	2.6	293	14.60	10.97	2.0
234	12.92	10.32	3.6	294	15.16	10.99	1.8
235	13.51	9.84	2.0	295	14.96	11.45	1.6
236	12.97	9.46	1.8	296	15.65	13.46	2.8
237	14.15	10.71	2.3	297	14.82	10.61	1.8
238	12.96	9.24	2.6	298	14.83	12.55	1.7
239	15.52	11.69	1.9	299	15.76	13.04	1.8
240	12.93	9.69	2.6:	300	14.69	10.44	1.8
241	12.66	8.68	2.5	301	14.48	11.12	2.2
242	14.12	10.48	3.6	302	14.97	12.32	2.3:
243	14.72	11.09	1.7	303	13.93	9.81	2.6
244	15.44	13.40	2.2	304	13.77	11.13	2.2
245	13.74	9.68	1.6	305	14.27	10.22	2.6
246	13.14	9.84	2.1	306	12.66	10.13	2.4
247	12.49	9.10	2.0	307	14.60	10.88	2.3
248	14.22	11.42	3.2	308	12.25	8.84	3.0
249	15.02	12.44	2.2	309	14.63	11.39	2.6
250	12.80	8.66	2.0	310	15.04	11.60	2.5
251	15.27	11.21	2.1	311	14.93	11.23	2.0
252	14.71	10.54	2.0	312	13.65	10.17	1.9
253	14.69	11.49	2.6	313	12.09	9.52	3.6
254	15.24	13.15	1.8	314	15.27	11.10	2.0
255	14.76	11.36	2.1	315	15.97	13.75	1.3
256	14.85	10.96	2.6	316	14.89	10.69	2.3
257	14.23	10.13	2.1	317	13.64	11.30	2.1
258	12.56	9.43	2.1	318	14.53	10.28	2.5
259	13.12	8.99	2.6	319	15.80	11.25	1.2
260	15.07	10.43	2.7	320	15.55	11.63	2.4
261	12.97	10.51	2.6	321	14.93	11.26	5.1
262	15.72	12.73	1.0	322	13.81	10.33	2.3
263	15.19	11.51	2.6	323	13.89	11.30	1.3
264	13.43	9.92	2.2:	324	11.30	8.02	2.0
265	15.37	12.69	1.3	325	14.23	10.00	2.0
266	12.99	9.47	2.6	326	12.46	10.04	0.9
267	15.47	12.01	2.0	327	14.73	11.27	3.1
268	13.59	9.53	4.1	328	13.99	9.91	1.7
269	14.35	11.22	2.1	329	13.45	10.64	1.5
270	12.22	10.12	3.0	330	15.18	13.40	0.6
271	14.59	10.69	2.4	331	14.25	10.31	2.0
272	15.15	11.68	1.7	332	13.93	10.47	2.6
273	13.70	11.08	1.8:	333	14.48	10.37	2.3
274	15.14	11.18	2.1	334	13.58	8.33	2.1
275	13.40	9.95	2.6	335	12.82	10.01	3.0
276	13.41	9.31	2.1	336	13.14	10.89	2.6
277	14.72	11.04	2.1	337	12.53	9.95	1.8
278	13.89	10.47	3.1	338	13.28	9.55	2.0
279	15.42	9.68	4.6	339	14.29	10.37	3.6
280	15.58	11.79	1.6:	340	14.45	11.04	1.7
281	14.88	12.81	1.8	341	14.68	12.58	4.3
282	14.67	12.19	1.6	342	14.17	11.14	2.6
283	13.39	9.43	2.4	343	15.08	12.42	0.8
284	14.09	11.56	2.5	344	12.41	9.32	2.6
285	16.17	12.14	1.6	345	12.57	10.13	2.1
286	14.49	10.26	3.3	346	12.57	9.06	2.0
287	11.90	9.38	1.8	347	13.25	10.13	2.1
288	14.28	10.86	2.4	348	14.49	10.65	2.2
289	14.38	10.72	2.0	349	10.95	7.20	4.7
290	15.63	13.15	1.2	350	14.01	9.92	2.2

TABLE 7—Continued

No.	p_o	g	wt	No.	p_o	g	wt
351	13.67	10.23	2.3	411	13.55	9.78	2.6
352	13.57	11.48	2.6	412	13.65	10.21	2.6
353	15.66	12.28	2.2	413	13.70	10.64	0.6
354	10.98	7.47	3.8	414	15.17	10.45	1.8
355	14.60	11.64	2.0	415	13.77	10.28	3.6
356	12.47	9.04	2.0	416	12.74	9.26	2.5
357	13.56	9.42	1.7	417	14.14	10.63	2.5
358	13.86	10.20	2.6	418	13.78	10.70	2.6
359	13.82	10.45	2.6	419	12.44	9.36	3.0
360	13.38	9.49	2.3	420	13.87	9.28	2.5
361	14.81	9.50	1.5	421	15.89	12.93	1.0
362	12.77	9.72	1.8	422	14.18	12.00	2.6
363	13.28	9.87	2.6	423	12.43	8.42	2.6
364	13.19	11.02	3.4	424	14.15	10.69	2.3
365	13.83	10.32	2.2	425	14.58	10.90	2.6
366	13.87	9.73	2.2	426	13.18	9.49	1.8
367	14.13	11.96	2.6	427	14.33	10.49	2.6
368	15.04	11.03	3.4	428	15.30	12.91	1.4
369	12.72	9.52	1.8	429	13.93	10.82	2.2
370	14.09	11.65	3.1	430	15.26	11.66	2.4
371	13.23	9.86	3.1	431	14.17	10.05	2.3
372	12.20	8.03	1.2:	432	12.65	10.09	1.6
373	14.35	10.25	1.8	433	11.43	12.31	2.1
374	13.52	10.05	3.9	434	13.24	11.92	0.6
375	12.40	8.28	3.6	435	13.90	11.15	2.5
376	12.80	10.45	2.8	436	15.21	10.97	2.1
377	13.01	9.72	4.1	437	14.12	11.52	3.6
378	14.35	10.89	2.2	438	13.52	10.53	1.6
379	14.26	10.11	2.5	439	14.72	10.60	1.5
380	13.74	10.48	4.1	440	14.94	12.80	1.7
381	13.71	9.48	2.3	441	13.15	9.62	2.4:
382	13.74	9.62	1.2	442	13.56	11.06	2.1
383	14.87	10.75	1.3	443	13.63	11.48	2.4
384	13.94	10.73	2.0	444	12.76	9.31	2.9
385	12.32	8.72	2.1	445	14.28	10.08	2.4
386	12.00	8.30	0.8	446	13.39	9.90	2.4
387	12.29	8.90	1.9	447	14.15	10.29	3.1
388	13.13	9.23	2.6	448	15.09	10.95	3.1
389	12.29	9.18	1.3	449	13.63	10.64	2.5:
390	14.59	11.38	2.0	450	15.15	11.24	1.6
391	14.67	12.24	1.7	451	12.16	8.16	1.9
392	14.20	10.52	1.6	452	16.99	13.35	0.6
393	12.59	9.12	2.1	453	13.92	11.86	3.1
394	14.42	10.98	2.6	454	12.89	9.73	1.4
395	14.73	11.25	2.1	455	13.18	9.96	2.6
396	14.56	11.16	2.4	456	14.36	10.87	3.5
397	13.34	10.17	2.2	457	16.99	12.94	0.6
398	15.25	11.86	0.8	458	14.36	10.49	2.6
399	14.45	10.47	2.0	459	14.95	11.81	2.5
400	15.34	11.22	1.9	460	15.26	11.91	3.6
401	14.64	10.18	2.1	461	15.62	11.52	2.0
402	12.89	9.89	2.1	462	14.48	10.83	2.3
403	13.72	10.19	2.5	463	15.47	12.84	1.4
404	12.88	9.81	1.1	464	13.80	10.28	2.1
405	12.56	9.50	2.4	465	14.92	10.87	1.8
406	15.06	11.32	2.6	466	13.60	9.09	2.3
407	13.35	10.20	2.6	467	15.80	12.02	3.6
408	14.90	10.74	2.2	468	14.66	10.53	2.2
409	11.59	8.55	2.3	469	14.05	9.89	2.6
410	12.98	9.62	1.8	470	13.94	11.30	3.0

TABLE 7—Continued

No.	p_o	g	wt	No.	p_o	g	wt
471	11.44	7.76	2.2	531	15.74	12.22	0.6
472	13.46	10.49	2.6	532	11.33	7.88	3.4:
473	14.95	11.10	0.6	533	14.92	11.06	1.1
474	14.62	11.86	2.0	534	14.54	10.87	2.6
475	15.40	12.32	1.2	535	13.46	10.43	2.3
476	12.86	9.66	2.4	536	14.02	9.31	1.5:
477	14.04	11.37	3.6	537	14.08	10.07	2.1
478	12.59	8.67	2.0	538	14.66	10.48	3.1
479	14.26	10.91	2.1	539	14.41	11.02	2.6
480	13.05	9.86	2.1	540	14.07	11.91	4.1
481	13.13	9.74	3.6	541	14.63	11.09	2.3
482	13.83	9.94	2.3	542	13.91	10.20	2.6
483	14.17	9.57	1.7	543	14.51	10.51	3.5
484	14.61	11.37	2.3	544	14.30	11.22	2.6
485	12.90	9.49	1.9	545	13.72	9.53	2.2
486	14.69	12.18	3.6	546	13.87	10.78	2.3
487	12.77	9.52	3.4	547	14.33	10.88	2.6
488	13.10	8.94	2.6	548	14.80	12.47	2.3
489	13.79	9.63	2.5	549	15.18	11.90	0.6
490	13.64	9.44	4.4	550	13.36	10.29	2.9
491	14.13	9.89	1.5	551	14.27	10.44	2.6
492	14.94	10.85	3.5:	552	14.33	10.18	1.6:
493	16.00	11.90	1.5	553	15.56	13.37	2.0
494	13.85	9.99	3.2	554	12.06	9.50	2.5
495	14.29	11.45	1.8	555	15.81	11.63	2.0
496	15.03	12.92	3.8	556	13.24	10.46	2.6:
497	14.73	11.12	2.1	557	15.65	12.92	2.2
498	13.09	9.88	4.6	558	13.68	9.96	3.5
499	15.47	10.12	2.6	559	13.91	10.58	1.3
500	13.54	10.42	2.0	560	15.12	11.70	1.8
501	14.39	10.22	2.2	561	16.06	11.87	0.8
502	14.81	12.22	2.3:	562	14.74	10.82	2.6
503	13.46	10.10	2.6	563	12.79	9.45	2.5
504	14.36	11.01	2.1	564	15.36	11.95	0.8
505	13.35	10.08	1.3	565	14.75	12.01	1.4
506	13.84	9.87	2.0	566	13.59	9.05	3.0
507	14.54	10.39	3.0	567	14.54	10.41	2.7
508	13.59	9.42	2.4	568	14.00	10.33	2.1
509	13.35	9.35	2.4	569	14.04	10.82	3.3
510	14.06	10.94	6.4	570	14.54	9.94	2.6
511	11.26	7.02	6.5:	571	15.50	12.84	2.6
512	14.13	12.05	2.5	572	14.46	11.83	4.5
513	14.33	10.42	3.6	573	14.54	10.62	2.2
514	14.10	10.13	1.7	574	16.08	13.83	0.6
515	16.65	12.63	0.5	575	15.26	12.26	2.6
516	12.68	9.42	1.6	576	14.51	10.63	2.3
517	14.56	10.42	3.0	577	14.89	10.81	2.6
518	15.14	12.19	2.5:	578	13.85	10.43	1.7
519	13.68	10.18	2.1	579	13.17	9.25	3.1
520	15.85	11.94	2.6	580	15.22	10.95	2.6
521	13.26	9.86	2.1	581	15.14	10.88	2.5
522	14.81	9.90	3.6	582	13.49	10.38	3.1:
523	14.44	10.61	2.1	583	14.46	10.25	2.6
524	13.85	10.68	2.9	584	12.52	9.95	3.1
525	15.52	11.06	0.6	585	14.09	11.38	2.1
526	14.83	10.70	2.1	586	14.35	10.35	2.2
527	14.57	11.21	3.1	587	15.95	13.48	0.8
528	14.32	9.77	2.3	588	16.04	9.33	8.1
529	14.83	10.90	2.1	589	14.11	9.98	2.2
530	14.17	9.91	2.4	590	14.95	11.07	2.0

TABLE 7—Continued

No.	p_o	g	wt	No.	p_o	g	wt
591	15.09	11.83	2.2	651	15.09	11.15	2.6
592	14.44	10.52	2.3	652	15.29	12.29	2.0
593	13.71	10.40	3.2	653	14.46	10.55	2.3
594	16.63	13.47	1.0	654	12.15	9.78	2.0
595	13.41	9.16	2.0	655	14.37	10.50	1.8
596	13.43	9.67	1.5	656	15.37	11.19	3.0
597	13.94	10.69	1.6	657	15.04	11.93	1.8
598	13.25	9.80	2.6	658	15.26	11.64	4.6
599	13.44	9.98	2.0:	659	16.31	9.59	6.6
600	14.60	11.37	2.6	660	12.82	9.87	2.4:
601	14.48	10.35	2.4	661	14.46	10.54	2.4
602	13.63	9.59	1.8	662	14.69	11.70	3.0
603	16.45	13.46	1.3	663	14.51	10.51	0.8
604	14.40	10.23	1.9	664	15.69	11.51	2.0
605	14.41	10.52	2.3	665	13.85	9.70	2.0
606	14.50	11.43	2.0	666	15.03	11.95	2.6
607	14.38	10.77	4.1	667	14.80	10.57	2.2
608	15.72	11.78	2.6	668	16.78	13.28	1.6
609	14.95	10.90	3.1	669	15.24	11.33	3.6
610	17.24	13.21	0.8	670	14.68	11.16	2.0
611	14.35	10.50	2.1	671	15.10	11.04	2.0
612	16.43	12.29	0.6	672	15.19	12.19	1.4
613	14.64	10.90	2.3	673	14.76	11.22	2.6
614	15.28	11.99	2.6	674	12.14	8.39	1.3
615	14.18	11.02	2.8	675	12.53	9.08	3.6
616	14.21	11.22	0.8	676	14.47	10.48	2.6
617	15.79	9.09	8.2:	677	14.62	10.81	2.0
618	13.78	9.55	2.8	678	13.56	10.52	2.2:
619	14.04	11.12	2.6	679	12.20	9.13	1.0
620	15.11	12.40	1.8	680	14.93	10.81	2.6
621	15.66	11.54	2.4	681	15.94	11.86	1.6
622	14.36	11.69	1.8	682	16.65	13.47	0.6
623	14.21	11.44	1.5	683	13.80	9.71	2.3
624	15.17	8.55	8.8	684	14.76	12.05	3.3
625	14.18	10.98	2.3	685	15.07	12.86	2.2
626	13.03	9.99	1.2	686	14.50	11.43	2.1:
627	14.70	11.00	2.6	687	16.30	12.95	1.6
628	13.42	10.36	2.1	688	14.94	11.63	2.6
629	14.91	10.80	2.6	689	15.70	13.28	2.6
630	15.57	12.42	1.5	690	12.96	8.79	1.6
631	13.55	10.06	2.1	691	14.34	10.43	2.6
632	16.41	13.18	1.8	692	14.83	10.34	0.8
633	14.93	11.01	2.6	693	14.16	10.37	3.2
634	15.01	11.04	1.3	694	13.32	10.07	3.6
635	14.22	10.08	2.5	695	12.68	9.72	2.3
636	14.33	10.61	2.6	696	14.52	10.28	4.1
637	16.04	11.87	2.0	697	13.96	10.29	1.0
638	14.54	11.17	2.6:	698	15.43	11.77	1.0
639	13.21	9.30	3.1	699	16.16	13.03	0.8
640	14.48	10.30	1.7	700	14.62	12.43	1.7
641	16.28	14.12	0.8	701	14.41	10.50	3.2
642	14.82	10.64	1.8	702	12.84	8.62	2.2:
643	14.86	10.40	2.6:	703	15.63	13.60	0.6
644	14.78	11.69	2.6	704	11.50	7.50	1.1
645	15.22	11.01	2.0	705	13.46	9.72	2.0
646	16.64	14.20	1.0	706	15.37	12.00	1.3
647	15.31	12.58	1.8	707	15.41	13.36	1.7
648	14.89	10.71	2.6	708	14.99	11.74	2.0
649	17.08	14.10	1.0	709	13.51	9.77	2.0
650	16.18	13.41	1.9	710	16.28	12.15	3.2

TABLE 7—Continued

No.	p_o	g	wt	No.	p_o	g	wt
711	14.75	12.54	1.7	771	15.06	11.85	0.6
712	12.51	9.47	2.3	772	13.54	9.65	1.0
713	14.44	9.85	2.2	773	14.16	10.53	2.3
714	12.85	9.90	1.6	774	13.86	9.89	2.1
715	14.53	11.08	2.6	775	15.19	11.28	2.6
716	15.29	11.76	2.6	776	12.63	8.86	1.7
717	16.04	11.91	3.6	777	15.53	11.28	2.2
718	14.71	10.73	2.6	778	15.68	11.50	1.8
719	19.83	16.77	0.6	779	12.89	9.65	0.8
720	14.54	10.86	2.1	780	14.23	10.14	2.6
721	15.23	10.42	2.2	781	14.75	10.45	2.0
722	15.08	13.05	2.0	782	14.59	12.54	2.3
723	15.32	11.44	1.3	783	14.64	12.16	2.3
724	17.45	14.74	0.6	784	14.36	10.30	3.4
725	15.30	12.27	1.5	785	13.50	10.46	1.4:
726	15.14	12.12	2.1	786	14.21	10.02	3.1
727	14.20	11.18	3.0	787	14.28	11.32	1.3
728	16.08	13.78	0.6	788	13.56	9.46	2.1:
729	14.38	10.95	0.8	789	15.55	12.27	2.4
730	16.89	14.66	1.4	790	13.81	9.27	1.8
731	14.37	10.51	2.6	791	14.73	10.62	2.1
732	14.65	11.88	1.1	792	14.21	11.07	1.3
733	14.64	10.09	0.8	793	14.26	10.76	1.7
734	15.07	10.91	3.1	794	16.42	12.29	2.4
735	14.23	10.86	2.0	795	14.10	10.69	2.7
736	14.19	12.08	2.0	796	13.46	10.29	2.2
737	12.75	9.67	2.3	797	14.50	11.55	2.6
738	14.95	11.00	2.2	798	14.50	10.58	2.6
739	13.38	10.00	1.9	799	14.39	11.42	3.6
740	14.28	10.30	2.2	800	14.70	12.61	2.4
741	14.60	11.25	2.0	801	15.51	12.40	2.0
742	14.38	10.46	2.4	802	15.42	13.32	0.8
743	14.70	11.20	3.4	803	14.79	10.54	1.8
744	15.35	11.14	2.4	804	12.76	9.17	2.2
745	15.35	11.05	0.8	805	14.78	10.50	2.4
746	14.60	10.51	2.6	806	15.32	11.09	1.0
747	12.66	8.78	1.8	807	15.65	11.72	3.1
748	15.13	9.82	3.4	808	14.36	10.96	1.8
749	15.08	12.85	1.0	809	15.41	13.08	2.6
750	15.71	12.98	2.0	810	16.20	14.15	0.6
751	12.95	9.96	1.6	811	15.35	11.65	2.6
752	14.19	11.41	2.0	812	15.63	12.41	0.6
753	14.26	11.81	2.6	813	15.28	13.11	2.0:
754	14.30	10.43	1.4	814	14.05	9.85	2.4
755	14.77	10.59	1.9	815	15.15	11.93	3.0
756	15.46	11.16	0.8	816	15.20	11.30	2.6
757	14.05	11.48	1.8	817	15.00	11.93	2.0
758	13.48	9.23	2.4	818	14.52	10.32	2.3
759	15.10	11.96	2.0	819	15.18	13.08	2.6
760	13.62	9.47	2.9	820	15.26	11.14	1.8
761	15.49	11.85	2.0	821	15.69	12.22	1.0
762	13.34	9.18	2.0	822	15.06	12.80	0.6
763	15.95	13.73	1.6	823	14.85	12.68	2.6
764	14.86	10.66	2.0	824	14.87	11.37	3.1
765	16.99	14.01	0.6	825	15.21	13.03	4.6
766	14.72	10.79	2.6	826	15.72	12.38	1.8:
767	15.35	11.26	1.7	827	16.20	13.89	1.6
768	15.38	11.26	1.0	828	15.36	11.14	2.6
769	14.24	10.02	2.0	829	14.94	11.89	2.6
770	14.26	12.09	2.0	830	14.74	10.50	2.0

1958ApJS....3..289K

TABLE 7—Continued

No.	p_o	g	wt	No.	p_o	g	wt
831	15.63	13.48	0.6	891	14.95	11.32	2.1
832	15.67	12.04	2.6	892	14.81	10.51	2.1
833	16.14	12.23	1.2	893	14.72	10.74	3.4
834	14.56	10.39	3.1	894	14.99	10.89	2.5
835	16.13	11.89	2.3	895	14.08	9.83	2.0
836	16.35	14.27	0.8	896	15.32	12.99	2.0
837	15.18	12.81	0.6	897	15.13	12.16	1.0
838	14.90	11.20	3.0	898	16.76	13.39	0.8
839	14.79	11.66	2.0	899	15.10	11.38	1.7
840	14.61	10.50	0.6	900	15.96	13.15	1.2
841	15.60	13.34	1.6:	901	15.34	12.59	2.2
842	15.43	11.17	0.8	902	16.31	13.56	0.6
843	16.54	14.22	0.6	903	15.06	10.75	0.6
844	14.86	10.64	3.1	904	15.22	11.34	1.3
845	14.89	11.11	1.8	905	14.39	12.24	1.8
846	15.54	11.42	2.4	906	14.32	10.62	2.7:
847	14.81	11.33	2.2	907	14.15	10.64	2.9
848	15.92	11.84	2.0	908	14.83	12.02	3.0
849	13.05	8.90	1.5	909	14.31	9.54	2.0
850	14.51	10.62	2.6	910	15.02	11.25	3.0
851	15.04	12.86	2.6	911	15.44	8.81	2.7
852	13.85	11.31	1.8	912	13.40	9.27	2.4
853	14.93	12.53	2.6	913	15.79	13.69	1.0
854	15.90	13.35	4.3	914	13.14	10.39	1.6
855	15.39	12.68	2.4	915	15.30	13.12	2.3
856	14.73	12.02	2.0	916	15.11	12.57	1.3
857	14.68	12.60	1.2	917	15.16	12.57	3.0
858	15.01	11.48	2.2	918	15.53	11.89	2.1
859	15.11	10.86	3.6:	919	15.76	12.30	2.4
860	14.34	10.83	1.0	920	15.07	11.93	1.7
861	14.95	10.81	2.4	921	15.35	11.15	2.3
862	14.74	11.23	1.4	922	16.30	13.01	2.6
863	14.45	10.22	1.8	923	15.77	12.65	1.0
864	15.86	13.09	0.6	924	14.15	10.37	3.6
865	15.72	13.05	2.9	925	11.95	8.64	2.4
866	14.39	10.28	2.2	926	15.60	11.75	1.0
867	15.70	11.71	0.8	927	12.15	7.90	1.6
868	14.37	11.05	3.6	928	14.90	10.75	1.8
869	16.34	13.05	1.0	929	15.54	13.32	1.6
870	15.15	12.72	0.8	930	15.08	12.37	0.8
871	15.95	13.78	0.8	931	14.62	10.45	2.2
872	14.55	11.18	2.1	932	13.36	10.68	2.3
873	15.44	12.28	1.8	933	16.02	13.47	2.2
874	15.03	10.87	1.6	934	15.51	12.10	0.8:
875	15.72	12.73	1.6	935	16.43	14.27	2.0
876	15.77	11.86	2.0	936	15.23	11.09	4.1
877	14.59	11.75	2.3	937	15.27	13.07	2.6
878	19.04	16.50	0.6	938	16.47	12.29	0.8
879	15.63	12.67	0.6	939	15.52	13.29	2.0
880	16.85	12.96	0.8	940	14.96	10.40	2.0
881	16.65	13.53	0.6	941	16.20	12.72	0.6
882	15.66	11.55	2.1	942	15.63	11.44	0.6
883	15.78	13.57	1.5	943	14.97	10.88	2.5
884	16.48	9.77	4.3:	944	19.16	11.95	0.9
885	15.80	11.75	2.2	945	14.50	11.32	2.5
886	14.32	10.17	1.8:	946	15.40	11.30	2.0
887	19.27	16.35	0.6	947	14.27	10.85	1.8
888	14.18	10.85	2.2	948	16.22	12.27	2.6
889	14.93	12.19	2.2	949	14.76	10.88	2.6
890	15.21	11.27	1.5	950	14.96	12.41	1.0

TABLE 7—Continued

No.	p_o	g	wt	No.	p_o	g	wt
951	15.14	13.01	2.3	1011	17.70	15.09	0.8
952	14.18	10.30	2.3	1012	15.95	13.13	2.0
953	14.98	11.49	2.6	1013	13.70	10.43	1.4
954	15.82	11.70	1.0	1014	16.65	13.12	1.1
955	15.71	12.63	1.0	1015	14.47	10.23	2.6
956	15.90	13.53	1.8	1016	15.34	13.18	1.8
957	14.71	10.97	2.5	1017	15.34	12.24	0.8
958	16.10	10.79	1.1	1018	14.55	11.59	3.0
959	15.99	11.80	0.8	1019	15.06	13.85	0.6
960	16.28	14.04	2.8	1020	15.55	12.07	0.8
961	15.59	12.30	1.3	1021	13.27	9.89	3.1
962	16.30	12.59	4.0	1022	14.77	11.24	0.8
963	15.96	13.73	0.9	1023	15.24	11.05	2.8
964	15.92	11.94	1.4	1024	15.51	11.87	1.4
965	16.04	11.87	1.7:	1025	15.48	14.04	0.8
966	14.43	11.08	1.4	1026	16.75	14.52	0.8
967	15.42	13.24	2.0	1027	16.65	12.47	0.6
968	14.96	11.32	0.8	1028	14.90	10.33	2.6
969	16.11	13.33	1.3	1029	15.56	11.88	3.1
970	16.50	13.49	1.1	1030	15.64	11.54	1.8
971	14.23	11.05	2.1	1031	14.66	10.69	1.2
972	14.65	10.64	2.0	1032	15.13	11.01	1.5:
973	15.13	10.84	3.6	1033	16.02	12.13	3.6
974	14.61	11.66	2.2	1034	16.21	13.85	1.0
975	14.57	10.99	2.0	1035	15.78	11.64	1.0
976	14.66	10.46	4.1	1036	13.98	10.76	1.8
977	14.77	10.67	1.5	1037	17.12	15.05	0.8
978	15.15	10.90	1.4	1038	16.88	11.59	0.6
979	15.20	11.05	1.3	1039	15.74	10.45	3.3
980	12.59	9.19	1.6	1040	15.62	11.53	1.5
981	16.03	11.96	1.8	1041	14.94	10.93	1.8
982	15.28	11.27	2.6	1042	15.20	10.95	2.3
983	14.71	10.52	0.8	1043	15.03	10.98	4.6
984	14.15	10.63	3.6	1044	15.16	12.12	2.6
985	16.53	14.15	1.9	1045	17.12	14.60	1.3
986	14.82	10.70	3.4	1046	15.40	11.54	2.6
987	14.83	10.70	3.4	1047	15.61	13.39	1.8
988	16.52	12.39	0.8	1048	13.98	10.60	2.6
989	16.54	13.32	0.6	1049	15.81	11.75	0.8
990	16.10	12.85	1.6	1050	16.99	13.84	0.6
991	15.95	11.83	1.0	1051	15.45	11.19	2.2
992	16.09	12.15	1.6	1052	14.49	12.28	0.6
993	16.65	13.02	0.6	1053	16.56	13.43	1.8
994	14.44	11.50	1.4	1054	15.38	11.63	3.6
995	14.53	11.40	3.1	1055	14.73	12.63	2.4
996	15.68	11.63	1.8	1056	14.98	12.79	1.8
997	16.60	13.35	0.8	1057	15.57	11.88	2.6
998	16.20	12.11	0.6	1058	15.22	13.12	2.8
999	15.48	12.36	2.0	1059	15.45	12.27	2.4:
1000	15.52	11.29	0.6	1060	16.46	14.25	0.8
1001	14.73	10.51	2.6	1061	16.14	12.03	1.6
1002	15.53	12.04	1.2	1062	15.18	11.27	2.6
1003	15.31	11.17	1.1	1063	14.70	12.28	1.6
1004	15.23	10.70	2.6	1064	15.23	12.25	2.0
1005	15.03	10.86	2.2	1065	16.96	14.42	0.8
1006	16.91	12.79	2.6	1066	16.74	14.10	1.2
1007	15.91	12.58	1.6	1067	15.69	12.03	2.4
1008	15.91	11.79	1.6	1068	14.83	11.10	1.0
1009	19.95	16.62	0.6	1069	14.84	10.73	0.6
1010	15.42	11.66	1.8	1070	16.34	12.08	1.6

TABLE 7—Continued

No.	p_o	g	wt	No.	p_o	g	wt
1071	14.78	11.27	2.6	1131	17.50	15.32	1.0
1072	15.89	11.68	1.3	1132	15.10	11.82	1.7
1073	16.66	12.47	2.0	1133	15.17	13.10	2.5
1074	15.33	11.17	1.1	1134	18.56	15.29	1.6:
1075	15.40	11.48	1.8	1135	14.89	11.65	2.0
1076	15.97	13.16	2.8	1136	15.18	12.16	2.6
1077	16.54	13.93	0.6	1137	14.69	12.00	2.1
1078	15.09	12.79	3.3	1138	16.41	12.26	1.2
1079	15.69	12.03	3.0	1139	15.58	14.25	1.1
1080	16.22	13.55	1.6	1140	14.82	11.37	0.8
1081	16.43	12.37	0.6	1141	16.81	14.51	0.8
1082	15.67	11.55	1.0	1142	15.59	11.39	2.0
1083	16.36	13.91	1.0	1143	16.00	9.32	4.5
1084	15.01	11.72	2.6	1144	15.97	10.90	2.1
1085	15.03	10.83	3.1	1145	14.91	12.22	2.6
1086	14.81	10.62	2.6	1146	14.92	10.93	0.8
1087	14.81	10.89	2.3	1147	15.75	13.45	2.0
1088	14.79	12.68	2.6	1148	15.25	11.34	1.2
1089	14.96	12.82	2.6	1149	15.12	11.42	3.6
1090	16.43	13.90	0.6	1150	16.99	14.91	0.6
1091	16.65	12.07	0.6	1151	17.45	14.81	0.6
1092	15.34	11.63	2.2	1152	15.06	12.37	1.0
1093	13.77	9.63	0.8	1153	15.42	13.32	2.6
1094	15.91	12.93	1.8	1154	15.91	11.35	2.4
1095	14.53	12.56	1.1	1155	15.78	13.00	2.5
1096	14.39	11.30	2.1	1156	16.08	13.81	0.6
1097	16.26	13.08	1.8	1157	15.38	11.13	2.3
1098	15.16	11.88	1.6	1158	15.18	12.17	1.8
1099	15.83	11.67	1.3	1159	15.54	12.96	2.4
1100	16.06	12.36	2.0	1160	15.78	12.77	1.5
1101	16.44	12.10	0.8	1161	16.88	12.70	0.6
1102	14.86	10.85	3.2	1162	15.53	10.16	1.5
1103	14.79	13.51	1.2	1163	15.83	11.58	3.1
1104	16.53	13.37	1.0:	1164	16.42	14.03	1.3
1105	15.07	11.16	2.0	1165	15.62	11.49	1.8
1106	15.96	12.87	1.0	1166	15.53	12.58	1.5
1107	14.27	10.04	2.6	1167	15.53	10.93	2.6
1108	15.04	12.34	1.6:	1168	16.31	13.32	0.6
1109	15.17	10.94	3.6	1169	16.88	14.45	0.6
1110	15.42	13.27	2.3	1170	15.66	13.22	1.0
1111	15.35	11.47	2.6	1171	14.91	10.75	2.2
1112	14.86	10.93	2.1	1172	16.01	9.32	2.7
1113	14.75	10.65	3.6	1173	16.61	10.01	3.6
1114	14.72	10.67	2.6	1174	16.77	12.84	0.6
1115	14.61	10.54	2.6	1175	15.86	11.59	1.6
1116	14.56	10.81	2.0	1176	15.40	12.10	1.0
1117	15.35	13.11	2.5	1177	14.92	10.44	2.4
1118	15.22	10.98	2.0	1178	16.15	12.89	0.7
1119	15.50	12.38	2.0	1179	18.13	15.00	0.6
1120	15.48	13.33	1.2	1180	15.53	10.15	2.1
1121	15.50	12.52	0.8	1181	15.86	12.63	0.6
1122	15.69	12.58	1.0:	1182	14.85	12.58	2.3
1123	15.05	12.87	2.0	1183	15.68	13.09	2.1
1124	15.81	12.05	1.6	1184	15.64	12.40	2.8
1125	18.50	14.20	0.8	1185	15.40	13.19	2.4
1126	16.15	13.84	1.0	1186	14.72	10.80	1.2
1127	14.74	11.65	0.8	1187	15.98	12.80	2.1:
1128	15.22	11.74	3.1	1188	15.10	13.02	2.4
1129	14.96	11.03	2.6	1189	14.87	11.11	3.1
1130	15.79	13.60	1.5	1190	15.88	13.17	1.1

TABLE 7—Continued

No.	p_o	g	wt	No.	p_o	g	wt
1191	15.40	11.71	0.6	1251	15.12	11.77	2.6
1192	16.12	13.58	1.0	1252	14.91	11.61	1.3
1193	16.08	12.88	0.6	1253	17.40	13.22	0.8
1194	15.16	11.43	1.8	1254	15.68	11.55	1.5
1195	16.77	14.51	0.6	1255	15.76	11.62	2.6:
1196	14.68	11.47	4.0	1256	16.07	10.80	1.8
1197	14.79	11.12	1.8	1257	15.69	12.85	2.2
1198	18.92	16.69	0.6	1258	15.94	11.73	4.1
1199	15.31	11.39	2.0	1259	15.81	11.74	2.3
1200	15.70	11.71	3.4	1260	16.02	12.90	1.0
1201	15.89	12.58	2.6	1261	15.96	11.83	1.0
1202	16.77	11.46	0.6	1262	14.96	11.07	1.0
1203	16.80	13.12	3.6	1263	13.61	10.42	0.8:
1204	16.10	13.82	2.0	1264	14.47	10.84	1.3
1205	18.13	15.19	0.6	1265	14.95	11.03	0.6
1206	15.03	11.38	1.6:	1266	14.83	10.32	2.3
1207	16.77	12.85	0.6	1267	16.18	13.39	2.0
1208	16.34	9.69	2.4	1268	15.24	9.94	2.1
1209	16.02	11.81	0.8	1269	14.92	9.59	2.3
1210	15.17	11.26	1.8	1270	16.25	14.05	2.0
1211	15.91	12.15	2.8	1271	15.85	11.71	1.8
1212	16.23	10.88	1.4	1272	16.99	13.51	0.6
1213	16.34	12.21	1.2	1273	16.76	14.14	2.1
1214	15.33	12.00	2.3:	1274	15.24	13.05	1.8
1215	14.86	11.81	1.9	1275	15.11	11.84	2.6
1216	15.49	13.29	1.6	1276	16.01	11.83	1.0
1217	16.99	14.48	0.6	1277	15.82	12.52	2.2
1218	16.62	14.34	1.6	1278	15.19	12.54	2.0:
1219	15.40	13.26	2.6	1279	16.31	13.75	2.2
1220	16.37	12.47	0.8	1280	15.75	11.18	3.0
1221	20.3	19.06	0.6	1281	15.46	12.46	2.3
1222	16.65	13.16	0.6	1282	15.50	11.39	1.5
1223	15.28	11.63	2.1	1283	16.20	11.92	0.6
1224	15.22	12.83	0.8	1284	14.59	11.40	3.6
1225	15.46	13.27	0.8	1285	15.10	11.23	1.7
1226	16.08	13.03	0.6	1286	15.46	11.53	2.1
1227	15.67	11.45	2.8	1287	15.94	12.03	3.6
1228	16.16	12.71	1.0	1288	16.65	12.98	0.6
1229	17.13	12.91	0.8	1289	15.12	11.49	1.7
1230	17.68	14.64	0.6	1290	16.20	13.65	0.8
1231	15.88	12.64	1.2	1291	15.28	11.37	4.4
1232	15.47	11.28	2.6	1292	15.37	12.40	2.0
1233	15.32	12.32	1.2	1293	17.07	14.89	0.8
1234	16.22	12.31	0.8	1294	15.20	11.92	2.8
1235	16.67	15.47	0.8	1295	16.54	12.04	1.2
1236	15.52	12.81	2.6	1296	15.50	12.82	1.2
1237	15.08	11.96	2.4	1297	16.30	12.38	1.6
1238	16.25	13.01	1.0	1298	15.68	11.56	2.3
1239	16.43	13.20	0.6	1299	16.41	12.89	2.4
1240	14.65	11.01	3.6	1300	15.73	12.25	2.6
1241	14.63	10.41	1.3	1301	15.22	11.78	1.4
1242	14.45	11.06	2.2:	1302	16.08	11.98	0.6
1243	15.29	11.23	3.6:	1303	14.68	10.43	1.5
1244	14.88	12.39	1.3	1304	14.64	10.41	2.9
1245	14.67	10.98	2.3	1305	15.38	11.47	2.1
1246	16.54	13.40	0.6	1306	14.90	10.75	1.6
1247	15.89	11.77	1.8	1307	15.41	13.17	1.1
1248	14.31	10.96	2.4	1308	15.65	11.93	2.1
1249	15.06	12.88	1.6	1309	15.49	11.23	2.1
1250	17.04	14.05	0.8	1310	15.29	12.68	0.6

TABLE 7—Continued

No.	p_o	g	wt	No.	p_o	g	wt
1311	16.45	13.75	1.1	1371	16.77	12.52	0.6
1312	16.79	12.74	1.6:	1372	16.07	12.63	1.2
1313	16.20	12.99	0.6	1373	18.81	14.23	0.6
1314	16.54	14.18	0.6	1374	16.95	14.70	0.8
1315	15.26	10.99	2.3	1375	15.59	12.84	2.1
1316	17.45	14.79	0.6	1376	15.92	13.73	2.2
1317	13.85	9.65	0.8	1377	16.45	14.18	2.0
1318	15.52	13.13	0.6	1378	15.72	13.16	2.0
1319	15.57	11.71	1.1	1379	15.04	12.10	2.6
1320	15.57	11.71	1.1	1380	17.22	13.08	0.6
1321	14.89	11.10	2.5	1381	15.77	12.93	2.6
1322	16.76	14.08	1.0	1382	15.62	13.46	2.0
1323	15.45	11.23	3.0	1383	16.86	12.84	1.6
1324	15.63	13.56	0.6	1384	16.08	12.82	0.6
1325	16.17	13.21	1.2	1385	15.29	11.90	2.1
1326	15.14	11.90	0.7	1386	17.22	14.68	0.6
1327	16.37	12.89	2.0	1387	16.88	14.60	0.6
1328	15.99	11.26	1.0	1388	15.75	11.82	1.4
1329	14.51	11.37	2.2	1389	16.16	12.52	2.6
1330	15.74	11.55	0.6	1390	14.64	10.03	2.1
1331	15.80	11.73	1.6	1391	17.79	14.81	0.6
1332	15.01	11.00	1.4	1392	16.01	12.89	0.9
1333	16.00	12.83	2.8	1393	15.82	13.10	3.0:
1334	15.09	11.36	2.6	1394	15.57	12.84	2.3
1335	17.11	14.89	0.6	1395	16.91	12.67	0.8
1336	15.63	12.02	2.0	1396	15.24	13.00	3.6
1337	15.94	12.22	1.8	1397	16.00	12.72	2.6
1338	16.30	14.02	2.0	1398	15.55	11.37	1.7
1339	15.43	11.50	2.4	1399	17.33	15.17	0.6
1340	16.66	12.47	1.6	1400	16.99	12.88	0.6
1341	15.40	12.00	0.6	1401	14.72	12.41	0.6
1342	15.70	13.35	0.8	1402	17.79	14.52	0.6
1343	15.52	12.49	2.4	1403	16.88	13.56	0.6
1344	16.26	14.03	2.0	1404	16.83	10.17	0.9
1345	16.21	10.86	0.8	1405	16.55	14.31	0.5
1346	15.52	12.36	0.6	1406	16.05	12.75	0.5
1347	15.20	12.17	1.6	1407	15.72	12.28	1.9
1348	15.58	12.09	2.6	1408	16.18	12.09	1.7
1349	15.47	11.54	1.8	1409	14.98	11.72	1.8
1350	15.83	12.20	2.0:	1410	16.28	12.36	3.1
1351	15.19	10.98	1.8	1411	15.82	11.93	2.6
1352	15.74	12.27	1.8	1412	15.91	13.76	1.6
1353	14.99	11.08	2.4	1413	16.37	12.44	3.2
1354	16.23	12.11	1.3	1414	17.22	13.74	0.6
1355	14.80	13.80	1.2	1415	15.63	13.46	2.4
1356	15.30	11.26	2.0	1416	15.65	11.73	1.9
1357	14.84	10.61	0.6	1417	16.18	12.34	2.0
1358	15.64	12.83	1.5	1418	15.22	13.04	3.6
1359	14.96	10.86	1.0	1419	15.10	12.74	1.6
1360	15.63	12.46	0.8	1420	16.08	12.67	0.6
1361	15.98	11.93	0.8	1421	15.49	11.44	1.9
1362	16.20	11.82	0.6	1422	17.34	15.10	0.8
1363	16.26	12.55	2.6	1423	16.17	12.54	2.1
1364	15.89	11.98	2.2	1424	14.93	10.72	1.9
1365	15.46	13.22	2.8	1425	15.75	12.64	0.5
1366	14.84	11.18	2.5	1426	15.18	12.13	1.0
1367	16.69	14.20	1.0	1427	15.29	11.88	1.8
1368	14.80	11.88	1.5	1428	15.05	11.52	2.2
1369	15.48	11.38	1.7	1429	16.63	13.64	1.0
1370	17.11	14.86	0.6	1430	16.16	13.16	1.2

TABLE 7— Continued

No.	p_o	g	wt	No.	p_o	g	wt
1431	15.64	12.51	1.0	1491	16.74	12.51	1.0
1432	15.87	13.28	1.5	1492	16.36	14.33	2.7:
1433	16.26	12.76	1.2	1493	15.29	12.58	2.3:
1434	15.34	11.42	2.4	1494	16.06	13.98	1.4
1435	17.90	14.70	0.6	1495	16.60	13.42	0.9
1436	15.52	11.37	2.0	1496	15.94	13.82	1.8
1437	15.76	9.12	5.6	1497	16.42	12.72	0.9
1438	16.88	12.70	1.0	1498	17.06	13.00	0.7
1439	16.31	10.93	0.6	1499	16.52	13.27	1.5
1440	17.22	13.04	0.8	1500	16.85	14.63	0.5
1441	17.33	14.16	0.6	1501	16.61	13.64	2.5
1442	16.21	12.55	1.5	1502	16.54	13.16	0.6
1443	16.06	12.28	1.0	1503	14.99	11.84	2.5
1444	16.31	12.14	0.6	1504	15.75	13.12	0.9
1445	16.03	11.93	1.3	1505	15.58	12.36	1.8
1446	16.35	14.12	0.5	1506	16.26	13.24	1.8
1447	15.78	12.83	1.6	1507	17.25	14.79	0.5
1448	16.85	14.29	0.5	1508	16.85	13.40	0.5
1449	15.89	13.72	0.9	1509	15.04	14.00	1.8
1450	15.67	12.55	1.5	1510	15.77	12.52	2.4
1451	15.85	13.72	0.5	1511	16.60	14.07	1.0
1452	17.09	13.00	1.0	1512	15.84	10.50	2.0
1453	14.85	13.70	1.0	1513	16.69	14.60	0.8
1454	17.03	14.49	0.8	1514	15.76	13.54	1.0
1455	16.65	14.41	0.6	1515	16.88	13.85	0.6
1456	15.98	11.78	1.0	1516	16.06	12.91	2.0
1457	15.66	12.36	0.8	1517	15.52	12.17	0.6
1458	15.72	12.57	2.0	1518	15.84	13.66	1.9
1459	16.14	11.97	2.6	1519	16.95	12.84	0.5
1460	16.79	13.83	0.7	1520	15.84	11.76	1.9
1461	14.66	10.55	1.2	1521	16.75	13.14	0.5
1462	16.25	12.09	0.5	1522	16.23	13.69	0.9
1463	16.13	12.00	0.9:	1523	15.56	13.34	1.6
1464	16.12	12.23	2.5	1524	15.97	11.89	2.5
1465	16.08	12.14	0.6	1525	17.57	14.27	0.9
1466	16.60	14.02	0.8	1526	17.15	14.73	0.5
1467	14.33	9.79	1.8	1527	15.79	13.61	1.1
1468	16.75	14.54	3.0	1528	16.19	13.52	1.6
1469	14.98	10.87	4.6	1529	16.58	11.19	1.1
1470	17.33	13.16	0.6	1530	16.95	14.71	0.5
1471	17.33	13.99	0.6	1531	16.18	13.02	0.8
1472	16.08	13.88	1.7	1532	15.78	11.88	2.5
1473	16.55	13.51	0.5	1533	15.80	11.89	0.7
1474	16.30	12.92	0.8	1534	16.32	12.95	1.5
1475	16.59	14.09	0.8	1535	16.96	12.80	0.9
1476	17.12	14.79	0.8	1536	16.61	14.49	0.7
1477	16.47	12.27	0.7	1537	17.79	13.82	0.6
1478	16.35	13.56	0.5	1538	18.02	15.48	0.6
1479	15.68	12.42	2.0	1539	16.14	12.01	2.7
1480	16.40	14.29	1.2	1540	15.55	11.94	0.5
1481	15.90	11.98	0.8	1541	15.91	12.46	2.0
1482	15.71	12.06	3.1	1542	15.63	11.57	1.8
1483	15.89	12.55	2.5	1543	16.99	13.83	0.6
1484	15.61	12.22	0.8	1544	15.43	12.86	1.8
1485	16.31	12.37	0.6	1545	16.26	12.80	2.1
1486	16.76	14.66	1.6	1546	15.83	11.65	1.2
1487	15.86	11.73	2.9	1547	15.92	12.73	1.0:
1488	15.95	11.99	0.5	1548	15.15	11.67	0.5
1489	17.22	13.02	0.6	1549	15.55	13.36	0.5
1490	15.17	12.66	1.7	1550	16.74	13.76	0.8

TABLE 7—Continued

No.	p_o	g	wt	No.	p_o	g	wt
1551	16.20	13.58	2.9	1586	15.74	13.04	0.6
1552	16.53	12.63	1.1	1587	15.78	12.81	1.4
1553	16.44	12.72	1.0	1588	16.04	12.10	0.4
1554	15.85	12.71	2.0	1589	15.90	13.22	3.6
1555	15.82	12.53	1.3	1590	15.23	13.04	2.6
1556	15.95	11.35	1.2	1591	15.79	13.18	0.9
1557	16.13	12.22	2.1	1592	16.32	12.86	1.4
1558	15.78	11.52	2.2	1593	16.76	14.58	1.3
1559	15.88	13.27	0.9	1594	15.68	13.38	1.2
1560	16.07	12.79	2.1	1595	15.76	12.57	0.9
1561	16.17	11.98	0.8	1596	15.86	12.17	1.4
1562	15.69	13.51	1.0	1597	16.89	13.27	1.6:
1563	15.84	13.76	1.0	1598	16.78	14.32	2.0
1564	16.21	12.05	0.8	1599	16.33	12.19	2.6
1565	16.29	13.68	1.3	1600	16.99	16.01	0.6
1566	12.35	17.74	0.5	1601	16.01	13.81	1.9
1567	15.17	10.90	1.4	1602	15.91	13.68	1.4
1568	15.63	13.12	1.7	1603	15.46	12.04	2.4
1569	16.59	12.43	2.2:	1604	15.64	11.70	3.6
1570	16.13	12.53	2.2	1605	15.27	11.36	1.6
1571	17.26	13.13	1.2	1606	15.95	12.66	1.5
1572	15.40	11.31	2.2	1607	15.97	13.00	4.4
1573	16.43	13.87	0.6	1608	15.74	13.60	0.6
1574	16.30	11.54	1.6	1609	14.99	11.93	2.6
1575	16.47	13.90	0.8	1610	16.88	14.77	0.6
1576	15.78	11.65	1.5	1611	15.97	11.73	0.6
1577	17.43	15.24	1.8	1612	16.08	12.01	0.6
1578	17.05	11.71	2.0	1613	16.31	12.92	2.6
1579	15.63	11.02	1.1	1614	15.52	11.64	2.6
1580	17.65	15.56	0.5	1615	16.43	12.33	0.6
1581	15.34	11.14	0.2	1616	16.65	12.92	0.6
1582	17.20	13.02	0.8				
1583	16.48	9.71	3.4				
1584	14.82	12.25	1.3				
1585	15.51	11.75	1.0				

The weight of magnitudes printed in italics in the Ephemeris was determined from the plot of differences, italics *minus* combined magnitudes, against combined magnitudes, shown in Figure 2. The average of the differences is found to be -0.35 mag. The average deviation of the dots in Figure 2 from -0.35 is ± 0.43 mag. The combined values that were used have an average weight of 1.2, or ± 0.20 mag. probable error. The probable error of the italic values is then ± 0.30 mag., and their weight is 0.5. Italic magnitudes from the Ephemeris were therefore used in the combination, with weight 0.5 after correction of $+0.35$ mag.

The accidental errors of magnitude determinations at other observatories were derived in Paper VI by avoiding aspect variations; thus unit weight in Paper VI corresponds to ± 0.14 mag. not ± 0.22 mag. Partly for convenience, the relative weights so established were retained in the present compilation, although it includes the scatter from aspect variations. The relative weights of the more uncertain series will thus have been slightly reduced.

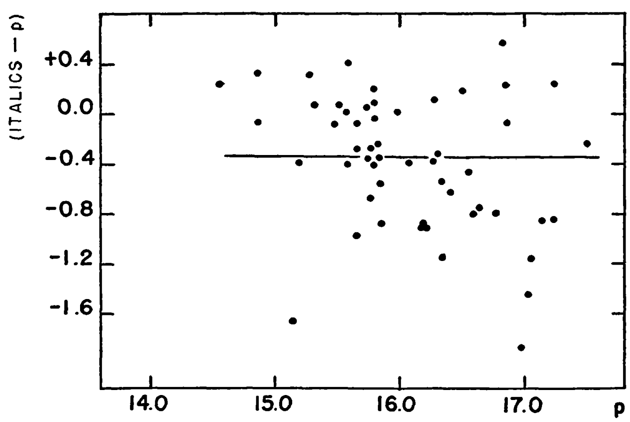

FIG. 2.—Plot of differences (italics minus p) versus p

For about 300 asteroids, magnitudes were obtained in the Survey at two oppositions. Some 800 asteroids were observed in the Survey during one opposition only; the precision of the final magnitude for these objects was increased by inclusion of *two* magnitude observations made at other observatories in addition to the reduced Ephemeris magnitudes mentioned before. For some 500 asteroids no magnitudes could be determined in the Survey; for each of these, *four* magnitude determinations made elsewhere were added to the reduced Ephemeris magnitudes, if such additional values were available. The magnitude values determined at other observatories were taken as much as possible from oppositions different from the Survey and from each other. They were collected from the Cincinnati Index, which was kindly loaned to us by Dr. Herget. The Index magnitudes were reduced to absolute magnitude by the same method and the same phase corrections as those of the Survey magnitudes. Usually only observations of the years 1948–1954 were included, but in a few cases 1947 observations were used also. The series used are discussed in Paper VI, with an example of the combination procedure given in Table 5 of that paper.

The result of the compilation is found in Table 7, with the weighted mean absolute magnitude, g, given in column 3. The total weights of the combinations are shown in column 4; they are the sum of the weights of the separate determinations if only one Survey magnitude was available. If more than one Survey magnitude was derived within a period of 10 days, the average rather than the sum of the weights of the Survey magnitudes is given. This was done to allow for common uncertainties, such as in aspect variation and in the reductions to absolute magnitude; furthermore, these asteroids occurred on the overlapping edges of the plates where the images were somewhat inferior. Because the aspect variations correspond to a p.e. roughly of ±0.16 mag., it is obvious that an absolute magnitude derived during a single opposition cannot have a weight in excess of roughly 2.0 (unit weight corresponding to ±0.22 mag.).

For some 38 asteroids, photoelectric data other than complete light-curves had been obtained at the time of this discussion; some of these are based on observations made on two nights. They are collected in Tables 9 and 10 and have been added to the data in Table 7 with weight 2.0, after reduction to the International Photographic Scale by means of equation (1). In about 150 cases neither Survey magnitudes nor Index magnitudes were available; they can be recognized from the assigned weight, 0.6, in column 4 of Table 7. For the Trojans the magnitudes were taken from Paper VI, after inclusion of the corrected Ephemeris magnitudes.

Column 2 of Table 7, giving the mean opposition magnitudes, was derived from column 3 by means of the relation

$$p_0 = g + 5 \log a (a - 1) . \quad (3)$$

The differences between columns 2 and 3 were computed twice independently, based on the 1955 and 1957 Ephemeris, respectively. To preserve the computational result, they are given in two decimals even in cases of low weight.

TABLE 8

COMPARISON OF INDIVIDUAL *g*-VALUES OF UNIT WEIGHT

Interval of Comparison	Average Difference of Two Values	p.e. of One Value	No. of Comparisons	Interval of Comparison	Average Difference of Two Values	p.e. of One Value	No. of Comparisons
0^d.........	0.232	0.14	90	14^d–25^d......	0.254	0.15	62
1^d–10^d.........	0.276	0.17	58	1 –2 years...	0.362	0.22	295

The precision of the Survey magnitudes referred to above will now be determined. All asteroids were used for which two determinations were made. They were subdivided into groups according to the interval elapsed between the two measures, as given in Table 8. It is noted that the probable error of one value is essentially constant, at ±0.15 mag., for comparisons between values obtained during the same opposition, while the probable error is ±0.22 mag. for comparisons between different oppositions. The former result is consistent with the discussion in Section VII in which a probable error of ±0.14 mag. was found for one determination of unit weight (which consists of two measures made on pairs of plates taken approximately 1 hour apart). This value depends on internal evidence between the measures on one pair of plates, while ±0.15 mag. was found from intercomparisons between different plate pairs. The latter value includes certain additional effects, such as differential corrections for phase. The extra dispersion between magnitudes obtained at different oppositions and derived above on the basis of Survey magnitudes alone, was qualitatively confirmed by comparisons of Survey magnitudes with observations made at Heidelberg and Simeis. In both instances the dispersion of the differences, Observatory minus Survey, was substantially larger if the magnitudes had been obtained at different oppositions.

As remarked before, the difference in the two probable errors, ±0.22 and ±0.15 mag., corresponding to a probable error of ±0.16 mag., may be attributed to aspect variations. This may be shown as follows: Intercomparisons between different oppositions involve a comparison between the zero point of the 1950–1951 opposition with that of 1951–1952. A variety of checks made in connection with the preparation of Paper VI as well as

Figures 1 and 2 of that paper show that the difference in the zero points of the two oppositions is not in excess of 0.05 mag.; actually, since the same Selected Areas were used in the two oppositions, no systematic differences would be expected. The next possibility was that the larger difference between consecutive oppositions might be due to occasional errors in identification. The identifications were examined with care whenever the g-values of the two oppositions differed more than 0.35 mag. The criteria used were O−C in both position and motion, with allowance for the variation, as well as the similarity of the O−C values between the two oppositions. No identifications were found to be erroneous. Parenthetically, for future identifications the importance is stressed of accurate magnitude determinations, especially for fainter objects, for which the numbers increase so rapidly that the probability for similar orbits is greatly increased. A third possibility is that phase effects are responsible for the increased scatter between oppositions. Examination showed, however, that this was not the case. The mean phase angle of asteroid magnitudes for the Survey is 5°; the mean difference between pairs of observations was 4°, for pairs made both during the same opposition and at different oppositions. The only remaining possibility appears that variations in *aspect* are responsible.

The rather surprisingly large scatter due to aspect can be understood if certain conditions are satisfied. One expects theoretically that the asteroids will rotate around the shortest figure axis, i.e., around that axis about which the moment of inertia is largest. If, for simplicity, the asteroid is assumed to have the shape of an ellipsoid, with semiaxes $a > b > c$, one expects it to rotate around the c-axis. As the asteroid moves in its orbit, the aspect can change at most from pole-on (area πab) to equatorial (area varying between πac and πbc). The rotational variation will be zero pole-on and by the ratio b/a equatorially. Maximum rotational variation will be observed in the plane of the asteroid equator, being $2.5 \log b/a$ magnitudes; while maximum aspect variation, $2.5 \log \frac{1}{2}(c/b + c/a)$, will occur only if the obliquity is so high that the earth can pass near the asteroid pole. Now for the brightest of the asteroids the *average* rotational semiamplitude may be found from Papers I–V and VII, ±0.09 mag.; while the average aspect variation, based on Table 8 (which gives p.e.) is about ±0.19 mag. The latter value may actually approach the *maximum* time-average, since the interval between consecutive oppositions is nearly 5/4 years, making the two aspects nearly 90° apart. In any case, the comparatively large variation attributed to aspect appears to require that the asteroids as a group have large obliquities unless the c values should be much smaller than the a and b values. Since flat disks are improbable, it is concluded that *the asteroids have large (possibly random) obliquities*. This subject, including such corollaries as the relation between the phase of the aspect variation and the amplitude of the rotational variation, will not be pursued here; when the maximum aspect is presented, the rotational variation should be at minimum, as seems to be true for asteroid 511, described in Paper I.

Asteroids showing large differences between the magnitudes determined at different oppositions are of special interest; they are designated by a colon following the weight in column 4 of Table 7. Included are the objects whose average deviation per unit weight of the individual g-values from their mean was greater than about 0.35 mag. This value may be compared with that expected on the basis of the probable error of ±0.22 mag. per individual observation at different oppositions. If the average is based on four observations, typical for Table 7, the computed mean deviation is 0.32 mag., and the fraction for which the mean deviation is larger than 0.35 mag. is about 23 per cent, which is roughly the percentage of such deviations actually found. The aspect deviations may therefore roughly follow a Gaussian distribution. The reason for marking with a colon the large differences between oppositions is that these objects as a class will have appreciable obliquities and departures from spherical shape and are therefore of special interest. It is noted that the objects in question are by no means a complete inventory of asteroids with large aspect variations, since their selection was based on two adjacent oppositions for the Survey, to which a few observations made at other observatories and at different oppositions were added. In addition, a few cases are uncertain for other reasons, as is shown by internal inconsistencies between the measures. If the asteroids in Table 7 marked with a colon in column 4 are omitted, a rediscussion of the material used in Table 8 gives the probable errors ± 0.13, 0.16, 0.14, and 0.17 mag., respectively.

Some cases were found where the magnitudes in the Ephemeris should perhaps have been printed in italics, while they were not; then the Ephemeris magnitudes were not used, or else a colon was added in column 4 of Table 7. Furthermore, there are cases where the Ephemeris magnitudes were exceptionally discrepant, so that they were not used for combination; examples are 127, 369, 830, 1178, 1186, 1192, 1206, 1220, 1235, 1243, 1263, 1312, 1345, 1552, 1555, 1581, 1588, 1591, 1592, 1593, 1602, and 1606. It is therefore likely that, for some cases for which we did not have recent observations and for which, therefore, the Ephemeris value transformed to the p system was taken, the magnitudes are actually too faint by about $1\frac{1}{2}$ mag. because the Ephemeris value should have been printed in italics but was not. The opposite may have occurred also; an example may be 1463, where two observations are available, although of low weight and only in one opposition, that give an absolute magnitude of 12.9, while the Ephemeris g is 11.0.

The asteroids marked with colons in column 4 of Table 7 were investigated for possible orbital peculiarities. No appreciable difference was found between the average orbital eccentricities of these bodies and those of asteroids in general, for the semimajor axis a, or in the average absolute magnitude. The average orbital inclination, however, was 8°.3 versus 10°.5 for the other asteroids, a difference that may just be significant. If this effect is real, it may mean that these bodies have experienced more collisions. The scatter of the g-values for each asteroid, within one opposition or in different oppositions, appears not correlated with p, unless the scatter be slightly less for fainter asteroids.

The magnitude scale of Table 7 was checked by a special photoelectric program which supplemented the photoelectric checks already available from asteroids whose light-curves had been observed. Since the latter group consisted mostly of bright asteroids, the supplementary observations were extended down to about 16.0 mag. The useful comparisons between the photoelectric and photographic scales are listed in Table 9. In this table are included all asteroids observed photoelectrically for which photographic observations existed for more than one opposition and whose total weight exceeded 1.8. The table is arranged by increasing P_0. Column 2 gives the year, month, date, and decimal in such cases where the results have not been published before. If the decimal of the day is omitted, it signifies that a mean magnitude has been used, taken from light-curves published in Papers I–V and VII. The observers and telescopes are listed in column 3. Column 4, giving $\bar{V}$, gives the mean magnitude determined from light-curves or the mean derived from different observations during the same night. Column 7 has been derived from columns 4 and 5 by means of equation (1). Column 8 gives the quantity p_0 taken from Table 7 after the photoelectric data used in the compilation had been removed.

The identification of moving objects near the limit of visibility, as required here, poses a special problem in photoelectric photometry. Finding charts were prepared from Survey plates, and the Ephemeris positions were corrected with the residuals derived from 10-inch McDonald or 24-inch Yerkes plates taken for the purpose. The 24-inch objects were identified on search plates taken just prior to the photoelectric observations. The 24-inch photoelectric records were made with the aid of an integrator designed and built by Mr. R. H. Weitbrecht. The estimated probable errors of the photoelectric magnitudes are small compared to those of the photographic magnitudes in Table 9. The photoelectric data listed in Table 10 could not be matched with accurate photographic observations; but they were, of course, used in Table 7.

TABLE 9

PHOTOELECTRIC CHECK OF THE MAGNITUDES OF TABLE 7

Aster-oid (1)	Date U.T. (2)	Observ-er* (3)	$\bar{V}$ (4)	$B-V$ (5)	$U-B$ (6)	P_0 Photoel. (7)	p_0 Table 7 (8)	p_0-P_0 (9)	$\langle p_0-P_0\rangle$ (10)
29..	56.3.4.3	K	9.83	+0.88	....	10.01	10.27	+0.26	
18..	56.8.22.1	K	11.39	+ .83	+0.30	10.10	10.12	+ .02	
9..	54.1.3	Gr	8.67	+ .84	+ .50	10.19	9.91	− .30	
	54.1.16	Gr	9.08	+ .85	+ .48	10.22			
16..	55.12.26	Gr	9.78	+ .71	+ .25	10.32	10.65	+ .33	
	56.1.2	Gr	9.92						
11..	56.1.3	Gr	10.59	+ .81	+ .39	10.44	10.43	− .01	+0.05
	52.1.29	K	10.28	+ .89	+ .52	10.60			
	53.4.10	Gr	10.65	+ .88	+ .49	10.67			
39..	55.12.18	Gr	10.65				10.76	− .09	
	55.12.19	Gr		+ .92	+ .50	10.99			
	55.12.28	Gr	10.82						
349..	56.8.23.2	K	9.74:	+ .91:	+ .50	10.78:	11.01	+ .14	
	56.8.24.2	K	9.80	+ .98	+ .59	10.92			
30..	56.8.23.3	K	9.73:	+ .84:	+ .45	11.04:	11.29	+ .16	
	56.8.24.3	K	9.83	+ .88	+ .46	11.18			
51..	56.3.4.3	K	10.62	+ .83	....	11.15	11.11	− .04	
23..	56.3.4.3	K	10.27	+ .91	....	11.29	11.53	+ .24	
511..	52.1.26	K	9.98	+ .71	+ .34	11.32	11.01	− .42	− .09
	53.4.8	Gr	11.44	+ .72	....	11.54			
52..	56.3.4.3	K	10.67	+ .70	....	11.59	11.43	− .16	
37..	56.3.4.3	K	11.32	+ .89	....	11.68	11.47	− .21	
128..	56.3.13.4	Ge	11.92	+ .84	+ .64	12.01	12.11	+ .10	
194..	56.8.22.2	K	11.02	+ .70	+ .24	12.04	11.66	− .38	
122..	56.2.16.2	Ge	12.61	+ .68	+ .41	13.11	13.08	− .03	
498..	56.3.13.3	Ge	13.77	+ .77	+ .36	13.14	13.06	− .08	
268..	56.1.4.2	Gr	13.32	+ .70	+ .30	13.32	13.85	+ .53	
490..	56.3.13.2	Ge	13.29	+ .78	+ .69	13.61	13.68	+ .07	+ .11
380..	56.3.3.2	K	13.62	+ .72	....	13.70	13.78	+ .08	
62..	52.2.16.2	Ge	13.08	+ .76	+ .40	13.76	13.77	+ .01	
510..	56.1.4.2	Gr	14.50	+ .74	+ .19	14.01	14.12	+ .17	
	56.1.6.1	Gr	14.40	+ .73:	+ .41:	13.91			
540..	56.3.13.3	Ge	12.96	+ .95	+ .06	14.26	13.89	− .37	
976..	56.3.13.2	Ge	13.41	+ .74	+ .25	14.46	14.86	+ .40	
321..	55.12.19	Gr	14.17	+ .82	+ .45	14.73	15.07	+ .34	
	55.12.20	Gr							
341..	56.3.4.2	K	15.27	+ .92	....	14.77	14.61	− .16	
1043..	56.1.4.2	Gr	14.52	+ .87	+ .48	15.02	15.03	− .01	0.00
	56.1.6.2	Gr	14.57	+ .93	+ .43	15.05			
658..	56.1.6.2	Gr	14.31	+ .87	+ .36	15.25	15.26	+ .01	
1291..	56.1.4.2	Gr	14.74	+ .86	+ .41	15.06	15.30	+ .04	
	56.1.6.2	Gr	15.17	+ .81	+ .38	15.46			
1287..	56.1.6.3	Gr	15.26:	+0.85	+0.36:	16.15:	15.87	−0.28	

* Ge = Gehrels, 24-inch; Gr = Groeneveld, 82-inch; K = Kuiper, 82-inch.

Group averages per 1½-mag. interval of the magnitude differences in column 9 of Table 9 are found in column 10. It is noted that there is no dependence on apparent magnitude. The over-all average of $(p_0 - P_0)$ is $+0.01 \pm 0.03$ mag. (p.e.). *Both the zero point and the scale of Table 7 are thus found to be satisfactory.* The average deviation of single values from the mean difference is ± 0.18 mag. This quantity is estimated to have a probable error itself of ± 0.03 mag. The probable error thus found cannot be compared

TABLE 10

ADDITIONAL PHOTOELECTRIC DATA

Asteroid (1)	Date U.T. (2)	Observer (3)	$\bar{V}$ (4)	$B-V$ (5)	$U-B$ (6)	P_0 Photoelectric (7)
7......	55.12.28	Gr	9.81	0.86	0.47	9.29
	55.12.29	Gr				
	56.1.2	Gr	9.74			
	56.1.5	Gr				
	56.3.8	Gr	8.99			
8......	55.12.20	Gr	8.94	.88	.48	9.53
	55.12.27	Gr	8.82			
	55.12.28	Gr				
	55.12.29	Gr	8.73			
	56.1.1	Gr				
15......	55.12.21	Gr	8.65	.84	.44	9.15
	55.12.24	Gr	8.74			
	55.12.27	Gr	8.83			
17......	55.12.23	Gr	11.47	.84	.40	11.22
	55.12.24	Gr				
	55.12.25	Gr				
25......	56.1.3	Gr	12.54	.93	.51	11.59
	56.1.4	Gr				
	56.1.5	Gr				
	56.1.6	Gr				
3......	56.8.22.2	K	9.95	.77	.35	9.45
	56.8.23.2	K	10.07:	.83:	.38	9.64:
10......	56.8.23.2	K	10.39:	.78:	.47	10.90:
	56.8.24.2	K	10.39	.71	.40	10.82
2......	56.8.23.2	K	9.36:	.62:	.27	8.59:
	56.8.24.2	K	9.32	0.65	0.27	8.58

directly with the values listed in Table 8 because, in comparisons with observations taken at different oppositions, the photoelectric data have a scatter due to aspect, while the asteroids to be observed photoelectrically were somewhat selected to favor objects having consistent photographic determinations. Nevertheless, the quantity is of the order of magnitude to be expected on the basis of previous discussions.

Mr. Gehrels is largely responsible for this section. Part of the reductions were carried out by him at Indiana University, after his appointment there in August, 1956.

IX. CONTROLS AND REVISIONS

The measured positions, motions, and magnitudes were entered on sheets similar to Table A, except that the latter is arranged in order of asteroid number, while the original

Survey records were kept separate for each opposition field and were arranged by the plate-field number. For each plate pair, the asteroids were assigned numbers added to the plate-field number, e.g., *B*24.3. The Survey records were checked carefully against the original measures and computations. The positions were measured once, but the reductions were all checked independently; furthermore, the previously derived approximate positions were used as a check on the theodolite positions, and the latter were remeasured in a number of doubtful cases. The identifications of the first eight opposition fields were checked by Dr. E. K. Rabe, as consultant to the project, during a month's stay at the Yerkes Observatory in August, 1954; later he made additional checks at Cincinnati and found that none of the identifications checked needed revision. In the early stages of the project, advice was given by Dr. W. Strobel, of the Rechen Institute at Heidelberg. The O−C's for the positions were computed in duplicate. The daily motions were measured and computed only once, and only in cases where the O−C's with the Ephemeris motions were large were control measures and reductions made.

The magnitude measures and reductions for the *a* and *b* plates of each pair were made independently; in case of serious discrepancy they were repeated. Similarly, the *g*-values were derived independently for each plate pair and controlled if necessary. This latter check led to the discovery of a few misidentifications or clerical errors. As has been stated, the differences between columns 2 and 3 of Table 7 were computed in duplicate.

X. COMPLETENESS OF SURVEY; FREQUENCY-CURVE OF ASTEROIDS

One of the principal aims of the Survey was the determination of the frequency-curve of asteroid magnitudes to the limit of the plates. Such a determination requires a fairly homogeneous collection of plates. All factors that influence the apparent brightness of an asteroid, other than its size, such as the distances from the sun and the earth and the phase correction, will, to a first approximation, be the same for faint and bright asteroids, so that the rate of increase with apparent magnitude is a significant quantity. Because the discovery of asteroids by blinking is never entirely complete, particularly for fainter asteroids, the completeness factors must be determined. In the present Survey this has been done in two ways: (*a*) from overlapping Survey regions and (*b*) from comparison with the Ephemeris asteroids.

Method *a* can be used because the blinking was done without previous knowledge of asteroids present. A fraction of the objects will have been recorded twice, another fraction once, and a third fraction not at all. The ratio of the first two fractions is readily found to be

$$\frac{\text{Found twice}}{\text{Found once}} = \frac{k^2}{2k(1-k)}, \qquad (4)$$

in which k is the completeness factor for single blinking. The method depends, however, on the outer areas of the plates, which, because of the somewhat inferior image quality, will tend to make k slightly too small for the plate average.

The completeness of the entire Survey will be larger than k because of the areas blinked twice. If μ is the fraction of the 40° belt blinked twice, the average probability of finding an asteroid is clearly

$$K = (1-\mu)\,k + \mu\,[k^2 + 2k(1-k)]\,.$$

Method *b* also depends on the fact that the blinking was done independently of previous knowledge, so that the fraction of Ephemeris asteroids recorded gives a true measure of the degree of completeness of each magnitude group. Objects found by reblinking must, of course, be excluded. On the other hand, if an object is not found by reblinking, its position might be grossly in error; then the object should not be counted at all. If it were missed for any other reason, it should be counted. Half the objects not found by reblinking were regarded here as "lost" and were not counted.

Method *a* was used as follows: All objects were counted that were found in the Survey, irrespective of recurrences; the completeness, K, as defined will apply to these counts. This approach has the advantage that the largest possible numbers are used. The quantity μ was found to be 0.25. The material was divided into groups of fields blinked by the same person and of about the same quality. For these groups the degree of completeness was computed; the results are found in Table 11. The figures in parentheses are found by method *b*. It is seen that the two methods give generally accordant results.

The numbers of asteroids, counted per half-magnitude intervals and corrected for incompleteness, are given in Table 12. The last column of that table shows the number of declination strips, each one plate (6°.5) wide, which contributed to the statistics. The totals are found at the bottom, with the values in parentheses adjusted to the full number, 154, of strips. The logarithms of the adjusted numbers are found in Table 13, together with the residuals with respect to the equation

TABLE 11

DEGREE OF COMPLETENESS OF SURVEY

Fields	Blinked by	14.0–14.5	14.5–15.0	15.0–15.5	15.5–16.0	16.0–16.5	Effective Plate Limit
B, C, D, E, F...	F	0.85(0.94)	0.80(0.85)	0.45(0.67)	0.53(0.42)	....	16.3
G.............	K	....	0.67(0.56)	0.73(0.91)	0.50(0.41)	....	16.5
H, J...........	T	....	0.80(1.00)	0.80(0.79)	0.73(0.69)	....	16.7
I, K...........	Gr	....	0.90(0.89)	0.91(0.87)	0.80(0.79)	....	16.8
L.............	VH	....	1.00	0.67	....	....	16.6
M, N..........	T	0.77	0.50	....	....	....	16.3
O.............	VH	1.00	0.50	....	....	....	15.8
R, T, U, V.....	T	....	0.86	0.87	0.55	....	17.0
S, (*W*).........	VH	....	1.00	1.00	1.00	0.86	17.4
X.............	Gr	....	0.86	0.88	....	....	16.6

$$\log n = 1.983 + 0.344\,(p - p_1) - 0.014\,(p - p_1)^2 ,$$
$$\pm 0.023 \pm 0.007 \qquad \pm 0.005 \text{ (mean errors)} \tag{5}$$

which was obtained by least squares; $p_1 = 12.75$. The numbers and equation (5) are shown in Figure 3. The deviation from linearity is small and hardly significant.

The constant term in equation (5) must now be reduced to the proper unit. Subtraction by log 154 = 2.188 leads to values applicable per one strip; subtraction of log 1.10 = 0.046 allows for overlaps between strips. Addition of log 360°/6°.5 = 1.744 reduces the count to the entire ecliptic belt. A correction by the factor 1.10 (logarithm + 0.046) is required, to allow for objects missed because they were outside the 40° belt (the correction is somewhat larger than the 7 per cent noted above for the entire Survey because recurrences are now excluded and the Survey covered the asteroids, on the average, nearly 1.5 times). The four reductions combine to make the constant term in equation (5) equal to +1.539. Reduction to the interval of 1 mag. requires multiplication by a factor slightly in excess of 2. More precisely, the factor is $(10^{s/2} - 10^{-s/2})/10^{s/4} - 10^{-s/4}) = 2.04$ (logarithm 0.309), where s is the coefficient 0.344 in equation (5). The constant term thus becomes 1.848.

Equation (5), thus modified, still does not allow for the fact that one year (360°) does not bring all asteroids into opposition; the fraction will be the mean of the reciprocal synodic periods. The average mean motion of asteroids 1–250 and 1001–1250 is 798″.4/

TABLE 12

NUMBERS OF ASTEROIDS IN MAGNITUDE INTERVALS (CORRECTED FOR INCOMPLETENESS)

Field	9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	15.5	16.0	No. of Vertical Strips
B–F.......	2	1	3	3	2	5	14	23	27	41	53	66	147	.....	......	36½
G.........	0	1	1	0	1	4	6	5	10	15	12	16	42	.....	......	8½
H–J.......	1	1	2	2	3	3	8	7	16	14	11	31	39	45	......	12
I–K.......	0	0	1	0	4	6	6	13	20	28	28	45	60	70	......	17
L.........	0	0	1	0	1	5	2	3	11	8	15	21	30	.....	......	8
M–N......	0	1	0	1	2	5	6	8	7	22	31	60	.....	.....	......	16
O.........	0	0	2	4	0	2	4	9	5	9	10	36	.....	.....	......	8
R–V......	0	1	3	5	6	10	15	18	30	45	50	90	102	147	......	31½
S.........	1	0	0	1	4	6	4	8	16	22	19	29	41	51	82	10½
X.........	0	1	0	0	2	2	2	6	5	8	6	13	22	.....	......	6
Total..	4	6	13	16	25	48	67	100	147	212	235	407	483 (571)	313 (690)	82 (1204)	154

TABLE 13

REPRESENTATION OF EQUATION (5)

p	log n Obs.	log n Comp.	O−C	p	log n Obs.	log n Comp.	O−C
9.25........	0.60	0.60	0.00	13.25.......	2.17	2.15	+0.02
9.75........	0.78	0.82	− .04	13.75.......	2.33	2.31	+ .02
10.25........	1.11	1.04	+ .07	14.25.......	2.37	2.47	− .10
10.75........	1.20	1.24	− .04	14.75.......	2.61	2.61	.00
11.25........	1.40	1.43	− .03	15.25.......	2.76	2.76	.00
11.75........	1.68	1.63	+ .05	15.75.......	2.84	2.89	− .05
12.25........	1.83	1.81	+ .02	16.25.......	3.08	3.01	+0.07
12.75........	2.00	1.98	+0.02				

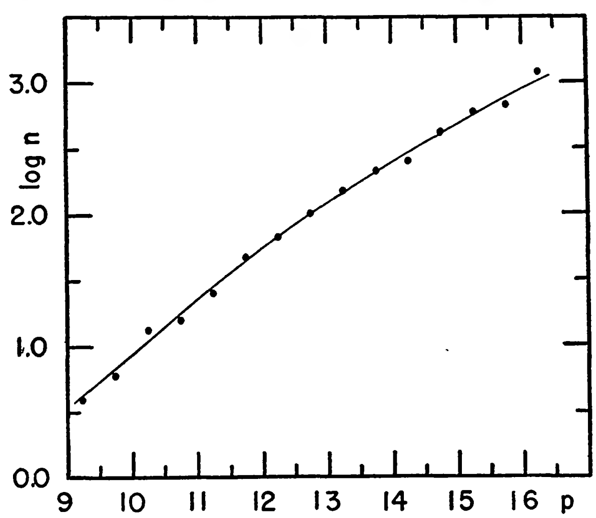

FIG. 3.—Observed numbers of asteroids, corrected for incompleteness, and representation by equation (5).

day compared to 3548″.2/day for the earth; the average differential motion is therefore 2749″.8/day, and the annual fraction 2749.8/3548.2 = 1/1.290 (add log 1.29 or 0.111); Further, the observed magnitudes are not quite so bright as the opposition magnitudes; if the mean correction is $\frac{1}{4}$ mag., the correction to the constant in equation (5) is 0.344/4 = 0.086. The two effects together will make the constant term in equation (5) about +2.045.

Yet another effect results from the finite orbital eccentricities. They cause asteroids of a given p_0 to be observed at opposition magnitudes that scatter by amounts Δp of roughly ±1 mag., because, for $a = 2.8$ and $e = 0.2$, the perihelion opposition magnitude is 1.29 mag. brighter and the aphelion magnitude 0.98 mag. fainter than p_0. Now the law of areas will make the number of asteroids near perihelion less than that near aphelion. It is readily shown that the ratio of the probabilities of occurrence of $r < a$ and of $r > a$ is $(1 - 2e/\pi)/(1 + 2e/\pi)$, which, for $e = 0.2$, equals 0.773. Since the ratio 0.98/1.29 = 0.760, almost the same value, the mean of Δp will actually be nearly zero;

TABLE 14

FREQUENCY OF ASTEROIDS IN THE 1957 EPHEMERIS, BY MEAN PHOTOGRAPHIC OPPOSITION MAGNITUDE

p_0	$N(p_0)$	Eq. (6)	Eq. (7)	O−C, Eq. (7)
7	2	$\frac{1}{2}$	1	+ 1± 1
8	1	$1\frac{1}{2}$	3	− 2± 2
9	3	4	6	− 3± 2
10	9	11	13	− 4± 4
11	30	28	30	0± 5
12	83	67	66	+17± 8
13	185	150	148	+37±12
14	269	315	332	−57±18
15	478	620	740	....
16	401	1150	1660	....
17	133	1990	3700	....
18	12	3240	8300	....
19	7	4940	18600	....
20	3	7050	42000	....

but, because the asteroid numbers increase exponentially with p_0, the scatter in Δp will indirectly cause a small increase in the observed numbers in p. A 10 per cent increase will make the coefficient 2.09.

The statistics of the Survey thus lead to the following equation, giving the total numbers of asteroids N_p between limits $p_0 - \frac{1}{2}$ and $p_0 + \frac{1}{2}$ for the mean photographic opposition magnitude, p_0:

$$\log N(p_0) = 2.09 + 0.344(p_0 - p_1) - 0.014(p_0 - p_1)^2 , \qquad (6)$$

in which $p_1 = 12.75$, as in equation (5). Equation (6) may now be checked by direct comparison with the known numbers of the brighter asteroids where completeness is expected. These numbers are found from counts in Table 7 and are shown in Table 14, second column. The completeness limit may be found as follows: The brightest *new* asteroid found in the Survey was 13.7 mag., and only a few objects were as bright as 14.0. Between 14.0 and 15.0 there were 42 new asteroids in the Survey among a total of 642, or $6\frac{1}{2}$ per cent. There will be a strong statistical preference for these brighter new objects to be asteroids with eccentric orbits observed near perihelion. Accordingly, the Ephemeris and Table 7 are probably complete down to $p_0 = 14.0$, while between 14.0 and 15.0 the incompleteness will probably not exceed half of the $6\frac{1}{2}$ per cent, and 2 per cent for $13.5 < p_0 < 14.5$. The entry in Table 14 for $p_0 = 14$ may therefore be corrected to about 275, while the entry for $p_0 = 15$ will be the first to be distinctly incomplete.

The third column of Table 14 shows the numbers of asteroids computed according to equation (6). The sums of the bright, the middle, and the faint magnitude groups, $7 + 8 + 9$, $10 + 11$, $12 + 13 + 14$, are almost perfectly represented, while the fluctuations within each group are probably merely random. Equation (6), derived statistically, is thus in full accord with the individually observed asteroids brighter than $p_0 = 14$, while on the basis of Tables 12 and 13 it is established to $p_0 = 16$.

The question remains whether the limited information on asteroids fainter than 16 is compatible with equation (6). Baade (1934) derived the number of 44000 asteroids brighter than 19.0 photographic for 360° of longitude. Since the synodic period of the asteroids is about 15 months, this number must be multiplied by $\frac{5}{4}$, to 55000, to represent the *total* number of asteroids. The uncertainty in this figure is probably between 15 and 20 per cent. Recent work on the photographic magnitude scale leads to a corrected limiting magnitude of 19.5 (Baade 1957). Now it is seen from Table 14 that the number of asteroids computed by equation (6) would give 12500 objects brighter than 19.5, much smaller than observed. Also, the quadratic term in equation (6) will cause the computed numbers to pass through a maximum, at $p_0 = 25$ mag., after which the numbers will decrease. At the fortieth magnitude, which is the apparent magnitude of moderate-sized meteorites moving in the asteroid ring, the computed number would be a mere 10 over the entire sky, while the actual number must be enormous. These considerations suggest that the quadratic term (whose reality was in doubt in any case) be dropped and an appropriate linear relation be used instead:

$$\log N(p_0) = -2.38 + 0.35 p_0 . \tag{7}$$

The numbers thus computed are shown in the fourth column of Table 14 and the residuals in the fifth; the assigned uncertainties are mean errors (square roots of the computed numbers). While the representation of equation (7) is not quite so good as that of equation (6) (which had an extra parameter), it is fair. The computed number brighter than 19.5 is now 33600, which is of the right order of magnitude. Equation (7) therefore appears to represent the entire range $7 < p < 19$.

If the *space density* of asteroids increases everywhere with absolute magnitude g as

$$\log N_g = c + bg , \tag{8}$$

then, regardless of the dependence of c on the semimajor axis, a, the mean-opposition magnitudes, p, will increase as

$$\log N(p_0) = c' + b p_0 . \tag{9}$$

The proof is readily found. It is therefore not possible to derive from equation (7) anything on the space distribution in the asteroid ring. If in equation (8) a term fluctuating in g is added, this will be smoothed out in equation (9) because, for different a, the fluctuations will appear at different p_0-values. The possible presence of such deviations from equation (8) must therefore be studied directly from the g distributions for different groups of a.

The material of Table 7 was subdivided into three distance groups:

$$2.0 < a_1 < 2.6 < a_2 < 3.0 < a_3 < 3.5 \text{ a.u.}$$

The comparatively few objects with $a < 2.0$ and $a > 3.5$ are discussed separately. The counted numbers for half-magnitude intervals in the absolute magnitude g are shown in Table 15. The mean values of a for the three groups were found to be approximately 2.43, 2.75, and 3.17 a.u., corresponding to absolute-magnitude corrections, $p_0 - g$, of 2.71, 3.41, and 4.19 mag. Now the counts in Table 15 are essentially complete to g-values corresponding to $p_0 \leqslant 14.0$, as shown above. For fainter objects we rely on the discussion accompanying Table 14, from which it is inferred that equations (6) and (7) yield rough lower and upper limits, respectively, to the numbers of asteroids between $14 < p_0 < 18$ mag. The second, third, and fourth columns of Table 14 then give the completeness factors; they are listed in Table 16. These quantities are plotted in Figure 4.

Because of the steep decline in f with magnitude, there is some danger that the completeness-curve so derived may be distorted. Accordingly, the counts and computations were repeated for half-magnitude intervals. Table 17 gives the results. The counts in

TABLE 15

OBSERVED AND RECTIFIED NUMBERS OF ASTEROIDS IN THREE ZONES OF a

g	$2.0<a<2.6$			$2.6<a<3.0$			$3.0<a<3.5$			$2.0<a<3.5$		
	N (Obs.)	N* (Min.)	N* (Max.)	N (Obs.)	N (Min.)	N (Max.)	N (Obs.)	N (Min.)	N (Max.)	N (Obs.)	N (Min.)	N (Max.)
4.25	1	......	......	1	......	......	0	......	......	2	......	......
4.75	0	......	......	1	......	......	0	......	......	1	......	......
5.25	0	......	......	0	......	......	0	......	......	0	......	......
5.75	0	......	......	0	......	......	0	......	......	0	......	......
6.25	0	......	......	2	......	......	1	......	......	3	......	......
6.75	2	......	......	1	......	......	0	......	......	3	......	......
7.25	5	......	......	4	......	......	2	......	......	11	......	......
7.75	5	......	......	4	......	......	5	......	......	14	......	......
8.25	5	......	......	15	......	......	11	......	......	31	......	......
8.75	13	......	......	20	......	......	24	......	......	57	......	......
9.25	15	......	......	39	......	......	30	30	32	84	84	86
9.75	24	......	......	51	......	......	39	47	54	114	122	129
10.25	24	......	......	62	......	......	64	107	133	150	193	219
10.75	19	......	......	68	68	69	93	246	350	180	333	438
11.25	28	......	......	78	81	91	78	420	680	184	530	800
11.75	27	27	29	64	87	104	77	1100	2050	168	1210	2180
12.25	54	66	77	51	102	134	45	2700	5700	150	2870	5900
12.75	66	113	141	55	200	300	17	4400	11000	138	4700	11400
13.25	82	223	314	28	210	360	10	......	......	120	......	......
13.75	54	300	485	7	(180)	(360)	1	......	......	62	......	......
14.25	38	580	1060	2	(230)	(550)	2	......	......	42	......	......
14.75	26	1600	3500	3	(1400)	(3800)	0	......	......	29	......	......
15.25	8	(2150)	(5500)	2	......	......	0	......	......	10	......	......
15.75	1	......	......	0	......	......	0	......	......	1	......	......

* Observed numbers are not repeated in adjacent columns if complete.

Table 7 for the intervals 14.00–14.49, 14.50–14.99, etc., are found in the second column. The computed numbers per half-magnitude interval based on equations (6) and (7) are found in the third and fifth columns; the constant terms in equations (6) and (7) were diminished by 0.31 in accordance with the discussion following equation (5). The curves in Figure 4 are based primarily on the half-magnitude intervals. They may now be used to correct the statistics of the three distance groups in Table 15. This was done by dividing the column N(Obs.) by f(max.) and f(min.), leading to the columns N(Min.) and N(Max.) of Table 15, respectively. The f's were found graphically from Figure 4 for values larger than 0.2 and by logarithmic interpolation in Table 17 for smaller values. If N(obs.) was less than 10 and therefore statistically very uncertain, the rectified number was put in parentheses.

The results are plotted in Figure 5. The maximum and minimum values are shown separately, connected with vertical lines; the statistically uncertain values are connected with broken lines. The numbers below $g = 7$ are very small, and their statistical uncertainties cause difficulties on a logarithmic plot. For this reason, two minor changes were made over Table 15 for $g = 6.25$ and 6.75: the numbers 2 and 1 in the second distance group were interchanged, and the numbers 1 and 0 in the next group were replaced by $\frac{1}{2}$ and $\frac{1}{2}$. This, of course, is statistically quite legitimate.

So far it has been assumed that the completeness of the numbered asteroids (i.e., Table 7) depends on apparent photographic magnitude only. Actually, there is probably

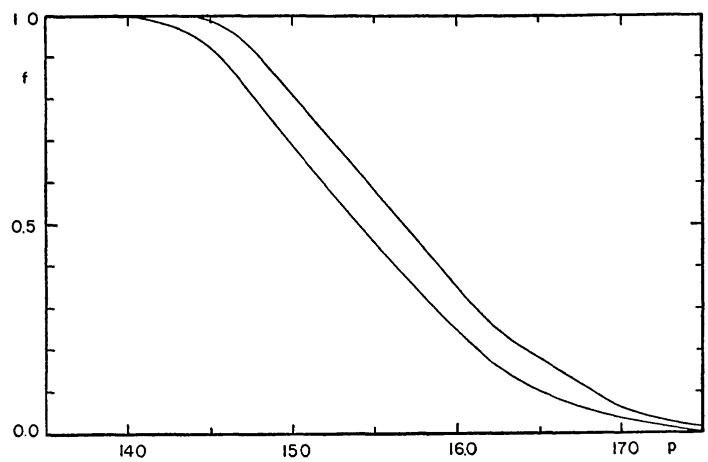

FIG. 4.—Estimated upper and lower limits of completeness factors for Table 7, the Ephemeris asteroids

TABLE 16

COMPLETENESS FACTORS FOR TABLE 7 (THE NUMBERED ASTEROIDS)

p_0	f (Max.)	f (Min.)	p_0	f (Max.)	f (Max.)
14.	0.98	0.98	17.	0.067	0.036
15.	.77	.65	18.	0.004	0.0016
16.	0.35	0.24			

TABLE 17

DERIVATION OF MINIMUM AND MAXIMUM VALUES OF COMPLETENESS FACTORS OF TABLE 7 (NUMBERED ASTEROIDS) FOR HALF-MAGNITUDE INTERVALS

p_0	$N(p_0)$	Eq. (6)*	f (Max.)	Eq. (7)*	f (Min.)
14.25	156	183	(0.853)	198	(0.79)
14.75	234	258	.907	297	.79
15.25	244	357	.683	444	.550
15.75	242	520	.465	665	.364
16.25	159	650	.245	995	.160
16.75	100	855	.117	1490	.067
17.25	33	1110	.030	2230	.015
17.75	9	1410	.0064	3330	.0027
18.25	3	1770	0.0017	4980	0.0006

* For half-magnitude intervals; hence 0.31 was subtracted from the constant term (see text).

a slight dependence on a as well. If the asteroids were all discovered on plates guided at the sidereal rate (which is not the case), then the ratio of the trail lengths for different a could be readily computed. The trail length for an asteroid in a circular orbit observed at opposition is proportional to $(1 - a^{-1/2})/(a - 1)$. For $a = 2.43$ and $a = 3.17$, the mean values of the inner and outer groups, respectively, the ratio is then 1.24, so that the limiting magnitude of the outer group might be about 0.2 mag. fainter than for the inner group. This must be an upper limit, since for short trails the correction is found to be less; the guiding was usually done at the average rate of asteroid motion. From the graphs in Figure 4 and Table 17 it is then found that the differential distortion in the right-hand portions of the graphs for the inner and outer asteroid zones will be less than about 0.2 in log N_g, in the sense that log N_g in the outer zone will be slightly less, and in the inner zone slightly more, than is shown in Figure 5. The middle zone should be very nearly correct.

It is concluded that *there are marked differences in the absolute-magnitude distributions*

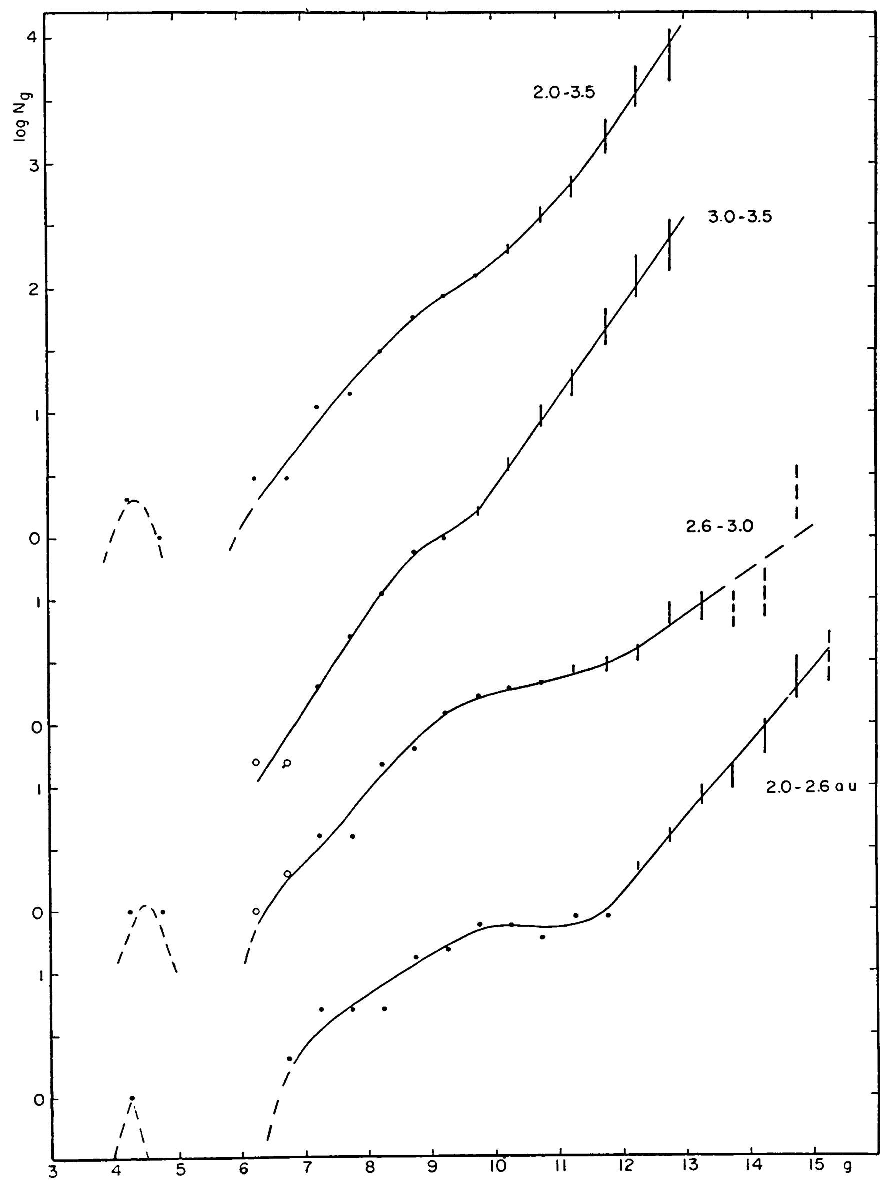

FIG. 5.—Frequency distribution of absolute magnitudes, g, for three distance zones and their sum

in the three zones and, consequently, in the distribution of asteroid dimensions. The halt in the 2.0–2.6 group between $10 < g < 12$ is of special interest. In the 2.6–3.0 group there is no halt but a greatly diminished rate of increase, while in the outer group there is a discontinuity near $g = 9$. The asteroid dimensions corresponding to these g-values may be found on the plausible assumption that the mean albedo of the fainter asteroids is the same as that of the brightest asteroids (except for Vesta, whose albedo is known to be higher). From the values for Ceres ($g = 4.00$; $d = 770$ km) one finds 50 and 20 km, respectively, for $g = 10$ and 12.

The logarithmic increase in numbers for the three distance groups on the *bright* side of the discontinuities occurs with the coefficients 0.33, 0.56, and 0.75, approximately; and on the *faint* side with 0.60, 0.35, and 0.73. For the entire zone, 2.0–3.5 a.u., the average coefficient between $7 < g < 13$ is found to be about 0.56, but this high value is largely due to the large numbers of faint asteroids derived for the 3.0–3.5 zone. For the 2.0–2.6 zone the average coefficient between $7 < g < 15$ is 0.37. The significance of these coefficients becomes clear when it is remembered that the coefficient 0.60 would cause each magnitude interval to contribute the same total mass.

It is now clear that the curvature found in relation (6) may actually be real within a limited range of p and due to the blending of the discontinuities in log N_g of the three zones, all of which are centered on apparent magnitude 13.5–14.0. It is further clear that the simple relation (7) cannot be safely extrapolated beyond the region where it has been tested. Finally, the occurrence of the three bright asteroids (Ceres, Pallas, Vesta) seems to be a *separate* phenomenon, somewhat outside the smooth frequency-curve representing the normal asteroids. Whether the discontinuities in the frequency-curves of Figure 5 represent a division of the asteroids into two classes (possibly original condensations and collisional fragments) remains to be determined.

The question naturally arises whether the differences in the three frequency-curves are due to population differences between the Hirayama families. The distance group 2.0–2.6 comprises the families 6, 7, 8, 9 ($2.15 < a < 2.316$) and 5, 27, 25, 26, 24, 4, 23, 29, and 22 ($2.316 < a < 2.6$), according to the important investigation of Brouwer (1951); besides, a number of non-family asteroids are included. The percentage of non-family asteroids becomes much larger in the middle and outer zones; this fact, together with the large number of families present within each zone, introduces many complexities not properly belonging to this investigation.

Some comments must now be made on the asteroids of Table 7 outside the zone 2.0–3.5 a.u. They number 54, of which 51 fall into three groups: 27 from 3.5 to 4.3 a.u., 11 from 1.85 to 2.00 a.u., while 13 are Trojans. The remaining objects are Hidalgo ($a = 5.79$), Eros ($a = 1.48$), and Icarus ($a = 1.08$).

In Table 18 the frequency distributions of p_0 are given for $p_0 > 14.5$, the range where incompleteness increases rapidly. Table 18 may be examined from two points of view: if the distribution in g is exponential, with the same coefficient as for the asteroids at large, then Table 18 gives information on the incompleteness as a function of p_0, simply from comparisons with the corresponding numbers for all asteroids combined. So interpreted, Table 18 gives no strong evidence that the three special groups were either favored or disfavored in the detection and orbit work, because, apart from statistical fluctuations, the distribution with magnitude is not dissimilar to that for asteroids at large. This is not true for Hidalgo ($p_0 = 19.16$), which obviously would not have been followed except for its exceptionally slow motion; and for Icarus, also discovered by Baade, which is very rarely bright enough for observation, although $p_0 = 12.35$. Alternatively, one may take for granted that the discovery probability of the three groups in Table 18 is essentially the same as for asteroids at large, and then look upon the table, or its equivalent in g, as defining, in conjunction with the f-values of Table 17, the true distribution of absolute magnitude. We shall take the second point of view (although this may not be quite correct for the Trojans) and thus derive the distributions of g found in Table 19.

Parenthetically, if this second point of view were grossly in error, the 54 objects under review should have been omitted in the derivation of f from Tables 14 and 17 and equations (6) and (7). A single object, like Icarus, does not, of course, affect the f-values noticeably; but one cannot apply the derived values of f to asteroids near the earth because of the long trails on the plates and the short periods of visibility.

Of the three groups shown in Tables 18 and 19, the $3.5 < a < 4.3$ group is large enough to give fair results. The mean value of a is 3.867 a.u., corresponding to $p_0 - g = 5.22$ mag. Adopting the averages of f(min.) and f(max.), we find from the smoothed numbers in the third column of Table 19*A* the rectified numbers in the fourth column.

TABLE 18

DISTRIBUTION OF p_0 FOR SPECIAL GROUPS

p_0	N (Table 7)	$N(3.9)$	$N(1.9)$	$N(5.2)$	N(Sum)
14.75	234	3	3	0	6
15.25	244	5	3	2	10
15.75	242	5	1	3	9
16.25	159	6	0	6	12
16.75	100	3	2	2	7
17.25	33	1	0	0	1
17.75	9	0	0	0	0
18.25	3	0	0	0	0

TABLE 19*A*

OBSERVED AND RECTIFIED NUMBERS FOR $a = 3.9$ GROUP AND TROJANS

g	$N(3.9)$ (Obs.)	Smoothed	$N(3.9)$ (Corr.)	$N(5.2)$	$N(5.2)$ (Corr.)
8.25	2	1	1	0	0
8.75	1	2	2	2	4
9.25	0	2	2	5	15
9.75	6	4	5	4	(25)
10.25	5	5	10	2	(36)
10.75	7	6	19	0	(0)
11.25	3	4	(27)	0	(0)
11.75	3	3	(64)	0	(0)

TABLE 19*B*

OBSERVED AND RECTIFIED NUMBERS FOR $a = 1.9$ GROUP

g	$N(1.9)$ (Obs.)	Smoothed	$N(1.9)$ (Corr.)	g	$N(1.9)$ (Obs.)	Smoothed	$N(1.9)$ (Corr.)
11.75	1	1	1	14.25	3	2	4
12.25	0	0	0	14.75	0	1	3
12.75	0	0	0	15.25	1	1	(6)
13.25	0	1	1	15.75	0	½	((10))
13.75	4	3	4	16.25	1	½	((40))

The log N_g-curve defined by these numbers is found to be nearly linear, with the coefficient 0.51, the same as for the asteroids of $2.0 < a < 3.5$ in the same interval of g ($8\frac{1}{2}$–12). *The 3.5–4.3 group is thus average in composition; the abundance equals 3 per cent of the total asteroid ring.*

If the reduction method applies to the Trojans, these may be fairly numerous, say, between 50 and 100 and centered on $g \cong 10$; but they have probably been looked for preferentially and will be less numerous than is estimated in Table 19*A*. The mean value of a is 5.180, and $p_0 - g = 6.67$ mag.

The $1.85 < a < 2.00$ group is inadequate for statistical treatment. The results depend on the smoothing process adopted and are therefore largely arbitrary. The numbers around $g = 14$ are roughly $\frac{1}{2}$ or 1 per cent of those in each of the distance groups $2.0 < a < 2.6$ and $2.6 < a < 3.0$, but at $g = 15$ the fraction seems to be smaller. The mean value of a is 1.910 a.u., corresponding to $p_0 - g = 1.20$ mag.

The limiting g-value for the statistics in Table 15 is 13.0 mag. for $3.0 < a < 3.5$, corresponding to $d \cong 12$ km; for $2.6 < a < 3.0$ it is $g = 15$ mag. of $d \cong 5$ km; for $2.0 < a < 2.6$ it is $g = 15.5$ mag. or $d \cong 4$ km. Bodies of $d \cong 1$ km, as have been observed occasionally near the earth, are as yet unknown statistically in the asteroid ring proper. It is further seen from Table 15 how the *center of gravity of the asteroid ring shifts to the larger a-values for the fainter objects*. The ring $3.0 < a < 3.5$ contributes 23 per cent of the total ($2.0 < a < 3.5$) for $4.0 < g < 8.0$; the percentage is 39 for $8.0 < g < 10.0$; 70 for $10.0 < g < 11.0$; 89 for $11.0 < g < 12.0$; and 95 for $12.0 < g < 13.0$.

It may not be amiss at this point to emphasize that the statistical analysis in this section was possible only because of the 1600 orbits computed and that an extension to smaller asteroids will require orbit computation for representative samples of still fainter asteroids. This aspect appears to be overlooked in current proposals to discontinue orbit computation of new asteroids.

This analysis of this section was carried out jointly by Mr. Van Houten and Mr. Kuiper.

XI. FUTURE SURVEYS

It may be necessary at some future time to carry out another systematic asteroid survey and obtain another general check and inventory of asteroid positions. In that case it is recommended that larger plates be used, so that the observing can be done in a shorter interval and hence under better sky conditions. If time permits, a third plate on each field should be taken, perhaps immediately following the second, which would remove all doubt about the reality of image pairs found in the blinking. A more rapid reduction, after the taking of the plates, would allow following up objects of special interest, like the Trojans, although one would not wish to endanger the continuity of the main program.

The Survey was made possible through the financial support by the Office of Naval Research for the years 1950–1953, under Contracts N9onr-87100 and NR-010-031, and by the National Science Foundation for the years 1953–1956, under Grants NSF-G434 and G1993. We are indebted to Dr. Charles Olivier for arranging for the loan of the telescope; to the Research Corporation of America for two grants, for the transportation and housing of the telescope and for its subsequent optical reconditioning; to Dr. Hans Kienle for granting two periods of leave of absence from the Heidelberg Observatory to Miss Groeneveld; to Drs. Herget and Rabe, of the Cincinnati Observatory, for frequent advice on the organization of the program and for machine-printing the copy of Table A here reproduced; and to Miss Lucille Schott for her careful typographic work.

REFERENCES

Ahmad, I. I. 1954, *Ap. J.*, **120**, 551 (Paper IV).
Baade, W. 1934, *Pub. A.S.P.*, **46**, 54.
———. 1957, private communication.
Baum, W. A. 1956, unpublished.
Gehrels, T. 1956, *Ap. J.*, **123**, 331 (Paper V).
———. 1957, *ibid.*, **125**, 550 (Paper VI).
Groeneveld I., and Kuiper, G. P. 1954, *Ap. J.*, **120**, 200 (Paper I).
———. 1954, *ibid.*, p. 529 (Paper II).
I.A.U. Transactions. 1954, **8**, 280.
Ross, F. E. 1936, *Ap. J.*, **84**, 241.
Shatzel, A. V. 1954, *Ap. J.*, **120**, 547 (Paper III).
Stebbins, J., Whitford, A. E., and Johnson, H. L. 1950, *Ap. J.*, **112**, 469.
Van Biesbroeck, G. 1955, *Vistas in Astronomy* (London: Pergamon Press), p. 447.
Van Houten-Groeneveld, I., and Van Houten, C. J. 1958, *Ap. J.*, **127**, 253 (Paper VII).

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O – C R A	O – C DEC	VAR	MAG	G	10 – DAY MOTION		O – C MOTION	
1	O-56.1	51 SEP 3.2083	23 09 45.8	-22 24 30	0.1	-1	1			-9.3	-35	-1.0	21
1	O-66.1	51 SEP 3.2479	23 09 42.9	-22 23 41	0.0	0	0			-8.7	-47	-0.4	9
3	L-31.1	51 MAY 29.2000	16 08 34.1	- 3 02 03	0.0	2	0	11.08C	5.57C	-9.4	29	-1.1	2
4	E-55.1	50 NOV 12.1722	2 52 48.8	6 09 53	0.0	-1	0			-11.0	0	-1.0	24
4	U-61.1	52 FEB 20.3222	10 58 54.3	16 55 16	0.0	0	0			-9.4	81	-0.7	-6
4	U-62.3	52 FEB 24.2403	10 55 23.3	17 29 02	0.1	1	0			-9.4	89	-0.3	5
5	M-73.2	51 JUL 4.3583	19 42 48.9	-17 04 38	1.7	1	2	12.02C	8.12C	-9.6	-32	-0.8	-2
6	G-16.2	51 JAN 5.3007	6 06 29.4	6 05 20	0.0	-1	0	9.66C	7.22C	-10.1	87	-0.6	0
6	V-61.2	52 MAR 22.3472	13 25 41.7	9 55 52	0.2	0	-1	10.52	6.56	-8.1	88		
6	W-11.1	52 APR 22.1597	13 00 16.5	13 37 43	0.0	2	0			-7.9	44	-0.2	3
7	T-45.3	52 JAN 28.1903	7 54 20.7	13 56 28	-1.5	2	6			-10.7	19	-0.5	4
8	N-44.3	51 AUG 3.2132	20 37 34.7	-21 58 27	0.7	4	2			-10.1	-75	0.3	0
9	J-63.1	51 APR 8.3785	13 24 40.1	- 1 18 38	-0.8	0	1	10.08A	7.17A	-9.5	42	0.1	-2
9	J-53.10	51 APR 9.2160	13 23 51.3	- 1 14 57	-0.7	0	5	9.96	7.04	-9.7	42	0.0	-2
10	O-52.2	51 SEP 2.3319	22 59 38.0	- 1 20 31	0.0	-1	0	10.18C	5.99C	-7.5	-30	-0.2	9
11	Q-75.3	51 NOV 4.3139	3 18 39.5	10 21 44	0.1	-1	0	10.47	7.70	-10.2	-33	-0.6	5
11	Q-74.3	51 NOV 4.3229	3 18 38.9	10 21 40	0.0	-1	0	10.33	7.56	-9.6	-43	0.0	-5
12	D-63.1	50 OCT 12.1972	1 37 27.1	18 52 00	-0.2	3	-1			-10.5	-94	-1.2	1
12	T-66.1	52 JAN 28.2986	8 31 40.6	6 18 15	-1.4	5	6	12.66	9.02	-10.5	31	-0.3	1
12	T-65.1	52 JAN 28.3076	8 31 40.1	6 18 15	-1.4	5	6	12.71	9.07	-10.6	31	-0.4	1
13	X-75.1	52 MAY 26.2333	16 54 56.4	-35 28 22	-1.9	8	7			-11.4	-50	-0.1	-3
13	X-76.1	52 MAY 26.2424	16 54 55.9	-35 28 26	-1.9	8	7			-11.4	-44	-0.1	3
14	L-53.2	51 JUN 6.2160	16 56 06.2	-19 22 25	-0.5	-4	2			-10.3	-35	0.0	-6
15	S-53.5	51 DEC 28.3000	6 22 29.9	29 45 15	-1.1	2	4			-12.2	-55	-0.6	-4
15	S-43.1	52 JAN 21.1250	5 59 26.0	27 20 28						7.0	-63		
16	F-44.2	50 DEC 12.1903	4 34 01.7	17 11 18	-0.3	-2	-1	10.43C	7.17C	-8.6	-5	0.1	6
16	U-54.3	52 FEB 20.2410	10 46 56.7	8 17 51	0.4	-3	-2	10.77	6.56	-8.0	57	-0.5	4
16	U-53.4	52 FEB 24.2312	10 43 52.3	8 39 54	0.5	-3	-3	10.93	6.86	-8.3	60	-0.5	6
17	B-54.4	50 AUG 18.2229	22 01 12.0	-15 54 55	0.2	0	1	12.23	10.05	-10.6	-73	-1.9	3
17	R-54.6	51 DEC 23.1438	4 47 58.1	16 13 42	-0.1	1	0	12.55	8.88	-9.7	7	-0.4	3
17	R-55.4	51 DEC 23.1528	4 47 57.5	16 13 41	-0.1	1	0	12.25	8.58	-9.2	3	0.1	-1
18	F-16.4	50 DEC 10.1597	3 40 09.0	- 0 36 11	-3.4	-14	-12	9.37C	7.75C	-8.0	36	-1.4	-8
18	V-42.3	52 MAR 22.3021	12 47 03.5	5 00 14	-1.3	6	5	11.01	7.50	-9.6	92	-1.0	3
18	V-52.1	52 MAR 22.3201	12 47 01.9	5 00 28	-1.4	6	6	11.05	7.54	-8.8	90	-0.2	1
19	N-23.1	51 JUL 30.2083	19 59 01.7	-17 53 03	-0.1	1	0	11.53C	8.91C	-10.8	-33	-1.2	-4

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
20	H-54.4	51 FEB 10.3035	9 36 11.9	13 02 18	-5.8	28	30	9.31C	7.68C	-10.2	51	-0.6	0
21	R-54.4	51 DEC 5.2535	4 33 43.9	21 04 20	-0.5	-1	-1	10.42	7.89C	-11.6	-9	-0.5	0
21	R-44.7	51 DEC 22.1431	4 17 00.6	20 50 09	-0.1	0	0	11.62	8.60	-8.5	-10	0.1	-2
22	Q-65.2	51 NOV 3.2986	2 58 01.0	7 34 14	0.1	0	1	10.35	7.18	-9.3	5	0.3	-1
23	E-74.3	50 NOV 13.2861	3 41 50.2	15 23 58	0.9	12	6	10.63C	8.27C	-11.2	13	-0.9	0
23	X-14.8	52 MAY 20.2458	15 13 18.5	-13 46 17	-0.2	-7	1	11.31C	8.09C	-9.9	1	-0.1	3
23	X-23.4	52 MAY 22.2729	15 11 20.5	-13 46 53	-0.3	-6	2	11.64	8.38	-9.5	-3	0.1	1
24	C-64.1	50 SEP 17.2312	23 45 12.9	- 2 23 00	-1.1	-6	-7	12.56	8.20C	-7.1	-51	0.0	-6
24	C-53.3	50 OCT 6.1958	23 32 03.7	- 3 44 25	-1.0	-5	-7	12.87	8.10	-7.7	-43	-1.4	-4
24	C-54.1	50 OCT 6.2535	23 32 01.7	- 3 44 41	-1.0	-6	-7	13.01C	8.24C	-6.7	-63	-0.4	-24
24	R-44.3	51 NOV 29.2854	4 17 35.0	21 56 32	-0.7	-1	-2	11.64	8.03C	-8.8	-29	-0.4	-11
24	R-43.2	51 NOV 29.3396	4 17 31.7	21 56 27	-0.9	-2	-2	11.63	8.02C	-9.6	-19	-1.2	-1
26	E-63.2	50 NOV 12.2583	3 24 01.3	19 13 57	-0.8	0	-4	12.00	8.47	-10.1	-21	-0.5	3
26	U-32.2	52 FEB 19.2118	9 56 04.3	18 32 27	-1.4	5	8	11.71	8.54	-10.0	55	-0.5	-10
26	U-33.3	52 FEB 19.2208	9 56 03.7	18 32 31	-1.4	5	8	12.00	8.83	-9.6	47	-0.1	2
27	E-24.3	50 NOV 5.1687	1 59 06.1	9 25 54	-2.2	-11	-11	10.31	8.48	-10.2	-42	-0.5	0
27	W-53.9	52 APR 26.1965	14 15 15.1	-11 10 48	-1.0	6	5	11.55C	8.85C	-10.4	48	-0.3	2
27	W-54.10	52 APR 26.2056	14 15 14.7	-11 10 42	-1.1	6	6	10.91	8.21C	-10.5	47	-0.4	1
28	H-54.5	51 FEB 10.3035	9 45 31.5	12 59 23	-3.5	10	10	10.59	8.15	-9.1	101	-1.2	9
28	X-82.1	52 MAY 26.2556	17 12 46.9	- 9 40 42	1.6	-5	-4			-8.9	17	-1.4	11
29	F-42.1	50 DEC 12.1687	4 53 43.9	32 53 44	0.0	0	0	9.27C	6.63C	-11.1	-19	0.2	-3
29	F-52.1	50 DEC 12.2993	4 53 34.7	32 53 33	-0.1	0	0	9.70	7.06	-12.3	-10	-1.0	6
29	V-64.3	52 MAR 23.3444	13 11 00.8	-10 39 38	0.2	-18	-2	11.16	7.74	-8.7	19	-0.3	-6
29	W-14.1	52 APR 22.1868	12 43 55.1	- 8 57 42	0.3	-16	-2			-8.9	33	-0.4	-1
30	I-54.1	51 MAR 14.3576	11 36 57.6	- 0 10 45	-1.0	5	7	11.41	8.51	-10.0	54	-0.5	-2
30	I-44.1	51 APR 1.1993	11 20 51.5	1 26 29	-1.0	6	7	12.40	9.13	-8.0	47	-0.2	-2
31	W-34.6	52 APR 24.2042	13 46 46.3	-10 25 23	-1.0	7	16	11.78C	7.49C	-10.1	-8	-0.4	-1
31	W-43.3	52 APR 24.2854	13 46 41.1	-10 25 28	-1.0	7	16	11.30	7.02	-10.1	-7	-0.4	0
32	F-24.2	50 DEC 11.1312	4 06 27.5	16 49 24	0.4	3	1	11.87	8.41	-9.2	-36	-0.2	1
32	F-34.3	50 DEC 11.3174	4 06 16.7	16 48 47	0.2	3	0	12.07	8.61	-9.4	-29	-0.4	8
32	V-34.4	52 MAR 23.2354	12 20 41.1	- 8 08 52	0.4	-2	-2	11.54	8.99	-8.0	71	0.0	-2
32	V-35.2	52 MAR 24.2236	12 19 53.9	- 8 01 37	0.4	-3	-2	10.82C	8.29C	-8.2	67	-0.1	-7
33	P-44.2	51 SEP 30.2215	0 33 42.9	3 33 21	-3.3	-24	-23	10.78C	9.70C	-8.1	-27	-0.7	1
34	F-64.4	50 DEC 13.2819	5 31 51.9	14 37 25	-0.6	-3	0	12.05	9.04	-9.9	-27	-0.5	-11
34	F-65.1	50 DEC 13.2924	5 31 51.4	14 37 18	-0.6	-3	0	12.35	9.34	-10.3	-13	-0.9	3

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O – C R A	O – C DEC	VAR	MAG	G	10 – DAY MOTION		O – C MOTION	
34	F-64.2	50 DEC 30.1326	5 16 01.3	14 24 18	-0.8	-3	-1	12.71	9.45	-9.2	6	-0.6	7
34	F-65.1	50 DEC 30.1444	5 16 00.7	14 24 16	-0.8	-3	-1	12.72C	9.46C	-8.5	-2	0.1	-1
34	W-53.13	52 APR 26.1965	14 20 58.6	- 9 03 33	-0.4	3	1	12.93	10.13	-8.7	67	-0.4	3
34	W-63.1	52 APR 26.3049	14 20 53.0	- 9 02 52	-0.4	3	1	12.57	9.77	-8.7	60	-0.4	-4
35	C-53.6X	50 SEP 14.2910	23 31 35.7	- 3 40 44	27.1	246	236	13.76	9.45C	-8.4	-31	-0.6	-1
35	Q-52.3	51 NOV 1.2910	2 43 55.7	24 42 06	0.2	2	1	14.48	9.62	-8.3	-29	0.3	-6
37	F-83.1	50 DEC 14.3111	6 05 11.1	28 54 05	0.2	-1	0	10.82C	8.63C	-10.0	9	0.1	1
37	F-72.1	50 DEC 31.1451	5 47 36.7	28 54 28	0.2	-1	1	10.18	7.93	-10.2	-6	-0.5	1
37	W-34.3	52 APR 24.2042	13 38 57.2	-12 09 20	0.2	-1	-1	12.09	8.36	-9.3	37	-0.6	-5
38	F-53.1	50 DEC 12.3104	5 03 19.5	30 10 22	-0.4	2	0	11.92	9.45	-11.2	-41	-1.0	1
38	W-36.1	52 APR 23.2806	13 33 57.8	-21 25 19	-0.1	-3	0	13.00C	9.49C	-9.1	54	-0.4	0
39	C-23.2	50 SEP 11.1944	22 34 13.5	-10 14 42	0.1	-1	0	10.23	7.36	-8.0	-84	-1.2	6
39	S-55.4	52 JAN 23.1347	6 29 59.5	11 07 53	-0.1	0	0	11.09	7.35	-7.4	45	-0.5	-4
40	G-63.3	51 FEB 4.2333	7 41 05.7	24 49 47	-2.1	7	5	11.28	8.62	-9.2	36	0.0	2
40	X-73.1	52 MAY 26.3389	16 52 46.5	-19 27 38	-2.1	1	5			-11.3	4	-1.1	4
41	E-46.1	50 NOV 8.2569	2 30 33.5	- 0 08 10	0.6	-2	1	13.02	8.23	-7.5	-48	0.1	5
42	J-62.1	51 APR 8.3889	13 20 34.4	5 07 44	2.9	-22	-20	11.74	8.45	-9.5	46	0.0	-5
42	J-52.2	51 APR 9.2062	13 19 47.9	5 11 48	2.9	-23	-21	11.87	8.56	-9.6	49	0.0	-1
43	G-24.4	51 JAN 6.2139	6 31 23.9	21 45 39	-1.8	1	3	12.21	9.18	-11.9	-7	-0.1	-5
43	X-44.4	52 MAY 24.1937	15 50 59.1	-23 07 54	-9.4	21	13	9.91C	8.91C	-10.5	53	-0.8	-2
44	J-53.8	51 APR 9.2160	13 16 15.3	- 1 37 08	5.8	-30	-34	10.22	7.79	-9.7	65	-0.7	4
45	K-42.3	51 MAY 3.2021	14 33 05.4	- 4 04 06	-1.7	11	7	11.26	8.32	-8.8	44	-0.7	-4
46	F-34.2	50 DEC 11.3174	4 31 01.5	18 05 52	-0.5	-3	-1	11.72	9.14	-10.4	-29	-0.5	-10
46	F-44.1	50 DEC 12.1903	4 30 10.9	18 04 07	-0.3	-3	-1	12.68C	10.08C	-9.5	-23	0.2	-4
46	U-74.4	52 FEB 24.3590	11 28 25.9	2 26 23	-2.1	11	12	13.19	9.29	-7.9	53	-0.3	-2
47	D-43.3	50 OCT 9.2875	0 47 23.0	6 41 59	2.6	22	21	12.15	9.20C	-8.3	-51	0.2	-18
47	S-52.2	52 JAN 22.1521	6 39 03.3	30 03 17	1.6	-2	-3	13.61C	9.20C	-9.4	-10	-1.2	-4
47	S-53.4	52 JAN 22.1611	6 39 03.0	30 03 16	1.5	-2	-2	13.60	9.19	-8.6	-14	-0.4	-8
47	S-62.1	52 JAN 23.1618	6 38 13.7	30 02 46	1.4	-2	-2	13.47	9.03	-8.6	-2	-0.6	4
48	B-23.1	50 AUG 11.2375	20 56 08.7	- 9 47 24	0.7	3	2	12.39	8.19	-8.1	-42	-0.8	2
48	Q-45.5	51 NOV 1.2007	2 26 57.7	8 49 50	-3.4	-15	-8	11.49C	7.87C	-7.7	-64	-0.1	-8
48	Q-54.2	51 NOV 3.2083	2 25 26.2	8 38 47	-3.7	-15	-9	11.51	7.85	-7.8	-52	-0.2	3
48	Q-55.3	51 NOV 3.2174	2 25 26.1	8 38 42	-3.7	-15	-9	11.65	7.99	-7.8	-51	-0.2	4
49	F-73.1	50 DEC 14.1937	5 49 34.3	25 24 30	-0.8	0	0	11.92	8.92	-10.3	-12	-0.7	3
49	F-73.1	50 DEC 31.1562	5 33 51.3	24 54 32	-0.8	1	0	11.37	8.17	-9.0	-17	-0.5	2

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O – C R A	O – C DEC	VAR	MAG	G	10 – DAY MOTION		O – C MOTION	
49	U-74.3	52 FEB 24.3590	11 26 16.0	- 0 26 00	0.3	-3	-2	13.41	8.57	-7.1	34	-0.6	0
50	K-73.8X	51 MAY 5.3757	15 51 02.0	-16 27 11	2.5	-6	-7	14.66	10.52	-8.1	31	0.1	-4
50	L-13.1	51 MAY 27.2514	15 31 20.1	-15 10 03	2.3	-5	-7	14.22	10.17	-9.4	38	-0.4	4
51	B-42.2	50 AUG 14.2194	21 31 34.4	- 4 51 03	-0.1	1	0	11.57C	8.72C	-10.5	-80	-1.8	1
51	S-26.3	51 DEC 27.2007	5 16 08.7	6 21 14	-0.3	-1	0	11.44	8.57	-9.8	7	-0.4	-3
52	I-72.4	51 APR 2.3375	12 23 06.1	7 37 14	1.2	-5	-6	11.15	7.25	-7.6	53	-0.5	0
52	X-82.3	52 MAY 26.2556	17 28 35.0	-14 56 00	0.2	-1	-1			-7.2	9	0.2	3
53	H-54.6	51 FEB 10.3035	9 49 04.5	13 04 53	2.6	-11	-10	11.39	9.36	-9.3	86	-0.7	10
53	H-63.1	51 FEB 11.2181	9 48 17.3	13 12 10	2.6	-10	-10	11.46	9.50	-9.3	84	-0.7	8
53	X-63.5	52 MAY 25.3049	16 43 57.1	-14 51 22	2.2	-4	-5	13.87	9.84	-8.9	9	0.3	-9
53	X-62.3	52 MAY 25.3132	16 43 56.4	-14 51 18	2.1	-4	-5	13.95	9.92	-9.2	9	0.0	-9
54	J-67.1	51 APR 8.3028	13 20 21.9	-27 39 29	-0.3	-3	2	12.15	8.76	-9.9	11	-0.2	-3
55	E-62.4	50 NOV 12.2479	3 13 42.8	26 12 44	-0.4	-3	-2	11.29	8.57	-11.0	1	-0.7	10
55	U-52.1	52 FEB 24.2222	10 34 27.5	15 48 29	-0.1	-5	1	13.54	9.68	-9.2	41	0.0	6
56	F-75.1	50 DEC 14.2681	5 42 10.1	12 13 09	0.1	-3	0	13.43	9.39	-9.8	-12	0.0	1
56	F-65.2	50 DEC 30.1444	5 27 11.2	12 03 44	0.0	-2	0	13.97	9.78	-9.0	-5	-0.3	-5
56	U-35.3X	52 FEB 19.2389	10 06 41.3	3 04 08	0.8	-1	-3	13.13C	9.19C	-9.3	61	-0.7	0
56	U-45.6X	52 FEB 19.3111	10 06 37.9	3 04 31	0.8	0	-3	13.07	9.13	-8.7	65	-0.1	4
57	H-36.1	51 FEB 8.2875	8 52 56.6	- 2 53 59	0.1	-3	0	12.88	8.68	-7.5	58	-0.1	2
57	W-33.3	52 APR 24.1951	13 37 58.3	- 6 48 30	0.0	0	0	12.55C	7.98C	-6.6	74	0.1	4
57	W-34.2	52 APR 24.2042	13 37 57.8	- 6 48 22	0.0	1	0	12.62	8.05	-6.3	63	0.4	-7
58	B-33.1	50 AUG 13.2556	21 24 35.0	-12 08 02	1.7	6	6	12.66	9.42	-8.9	-58	-0.7	-2
58	Q-85.3	51 NOV 5.2674	3 46 51.4	12 26 58	1.8	4	5	12.88C	9.28C	-9.0	-46	-0.9	-4
58	R-25.2	51 NOV 29.1590	3 25 45.2	10 59 43	1.4	7	4	13.87	10.28	-8.5	-21	-0.7	7
59	F-75.2	50 DEC 14.2681	5 54 23.1	9 34 52	-0.4	-3	0	11.78C	8.61C	-9.8	3	-0.3	5
59	F-75.1	50 DEC 31.1778	5 38 45.6	9 48 49	-0.5	-5	-3	11.73	8.50	-9.1	20	-0.6	1
59	V-23.6	52 MAR 23.2083	12 04 01.7	2 07 51	-1.2	2	5	12.35	8.67C	-7.8	74	-0.1	-1
60	J-43.1	51 APR 7.2611	12 49 54.3	- 4 59 39	-1.6	10	8	12.29	10.01	-9.6	79	-0.8	3
60	J-44.3	51 APR 7.2715	12 49 53.9	- 4 59 35	-1.6	10	8	12.12C	9.84C	-9.2	77	-0.4	1
61	I-55.1	51 MAR 14.3458	11 33 05.9	- 7 41 22	-1.1	9	12	13.39	8.78	-8.9	13	-0.2	-3
61	I-45.1	51 MAR 31.3188	11 18 38.7	- 7 04 40	-1.2	9	14	13.20	8.41	-7.8	17	0.1	-9
62	I-43.5	51 MAR 13.2653	11 23 04.1	6 21 47	0.0	0	0	13.78	9.42C	-7.6	49	-0.2	-2
62	W-74.8	52 APR 27.3799	15 05 42.2	-14 19 07	0.4	-2	-2			-7.7	32	-0.5	0
63	O-33.1	51 SEP 1.3465	22 25 55.1	-10 11 46	-1.9	-7	-15	10.48C	8.43C	-10.8	-22	-0.8	-2
63	O-43.1	51 SEP 2.3035	22 25 00.7	-10 13 56	-1.8	-7	-15	10.54	8.46	-10.4	-27	-0.5	-7

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O − C R A	O − C DEC	VAR	MAG	G	10 − DAY MOTION		O − C MOTION	
64	P-63.1	51 OCT 1.3701	1 06 37.9	9 04 37	0.9	6	6	12.20	8.74	-8.5	-42	-0.2	5
65	M-53.1	51 JUN 30.3271	18 51 17.1	-18 29 11	1.0	1	1	11.64	7.89	-7.8	-17	0.0	-2
66	H-63.5	51 FEB 11.2181	10 08 23.9	14 57 55	0.7	-6	-4	13.32C	10.22	-9.6	48	-0.1	5
66	H-73.1	51 FEB 12.2229	10 07 26.9	15 02 19	0.7	-7	-4	13.34	10.28	-9.8	40	-0.2	-3
66	H-63.2	51 MAR 1.2479	9 51 27.5	16 07 38	1.0	-7	-6	13.84C	10.60C	-9.4	34	-0.8	3
66	W-84.7	52 APR 28.2778	15 19 55.1	-21 22 42	1.0	-6	-4	14.43	10.26	-9.7	21	-1.1	-2
66	X-15.3	52 MAY 20.1764	14 59 57.2	-20 19 04	1.0	-5	-4	14.78	10.68	-9.8	37	-1.0	5
67	I-54.5	51 APR 1.2097	11 52 18.0	- 2 36 46	1.3	-3	-5	13.12C	9.80C	-8.9	83	-0.5	4
67	I-55.5	51 APR 1.2194	11 52 17.5	- 2 36 43	1.3	-3	-5	12.72C	9.50C	-9.2	81	-0.8	2
67	I-64.3	51 APR 2.2424	11 51 24.9	- 2 28 35	1.2	-3	-6	12.68C	9.42C	-8.5	80	-0.2	0
68	S-22.6	51 DEC 27.1646	5 36 37.4	31 51 50	0.7	1	1	11.48C	7.93C	-11.2	0	-0.8	-5
68	S-32.2	51 DEC 27.2729	5 36 30.3	31 51 53	0.7	1	1	11.43	7.88	-10.9	7	-0.5	2
69	O-63.1	51 SEP 3.2187	23 07 32.1	- 0 45 45	0.2	0	1	12.47C	8.26C	-7.6	-56	-0.5	7
70	Q-73.3	51 NOV 4.2958	3 25 30.7	19 06 03	-0.4	5	-3	12.36	9.06	-10.5	6	0.1	1
70	Q-83.1	51 NOV 5.2493	3 24 29.7	19 06 39	-0.3	5	-2	11.98C	8.69C	-11.7	1	-1.0	-4
70	Q-84.1	51 NOV 5.2583	3 24 29.2	19 06 32	-0.3	5	-2	11.78C	8.49C	-11.6	9	-0.9	4
71	H-44.4	51 FEB 9.3076	9 15 51.9	14 40 39	0.7	-20	-8	11.17A	8.15A	-12.8	-31	-0.7	5
72	Q-84.5	51 NOV 5.2583	3 47 40.3	16 09 46	3.2	1	6	12.08C	9.55C	-10.0	-64	-0.3	-2
72	R-14.2	51 NOV 27.1826	3 25 00.0	13 57 16	2.9	0	6	12.58	10.10	-10.5	-51	-0.9	3
72	R-24.1	51 NOV 27.2653	3 24 55.1	13 56 49	2.9	0	6	13.14	10.66	-9.9	-44	-0.3	10
73	Q-24.1	51 OCT 30.1819	1 25 26.5	10 27 52	0.5	5	3	13.19C	10.07C	-9.3	-32	-0.9	9
74	C-43.1	50 SEP 12.2069	23 04 15.9	- 1 50 42	-1.5	-7	-8	11.65	9.82	-7.5	-66	-0.4	3
74	T-65.2	52 JAN 28.3076	8 43 43.4	12 20 14	-0.1	-2	0	13.76	10.05	-8.9	31	0.2	-10
74	T-64.2	52 JAN 28.3167	8 43 43.1	12 20 17	-0.1	-2	0	13.55	9.84	-9.6	42	-0.5	1
75	G-32.4X	51 JAN 8.1687	7 00 30.2	29 58 09	1.2	-3	-1	13.74C	9.99C				
75	G-42.2	51 JAN 12.2313	6 56 02.4	30 00 25	1.1	-5	-1	13.54C	9.68C	-10.8	7	0.0	2
75	U-63.2	52 FEB 24.2493	11 06 08.9	8 06 31	-0.9	4	7	14.69	10.05	-8.1	43	0.1	-1
76	D-64.3	50 OCT 12.2562	1 37 57.0	10 34 17	0.0	-1	0	13.09C	9.26C	-7.4	-41	-0.3	6
76	T-74.3	52 JAN 29.2465	9 11 12.1	12 58 33	0.0	0	0	12.32C	8.88C	-8.2	34	-0.5	-1
76	T-84.1	52 JAN 29.3458	9 11 07.3	12 59 01	0.0	0	0	11.95	8.51	-7.6	38	0.1	3
77	G-73.1	51 FEB 5.1556	8 15 31.0	23 09 28	-1.7	3	7			-9.3	21	0.0	2
77	H-13.1	51 FEB 7.1604	8 13 42.6	23 12 47	-1.7	4	7	12.48	9.49	-9.3	16	-0.4	1
77	W-64.7	52 APR 27.2167	14 36 46.6	-17 45 30	-0.8	3	4	13.43	9.70	-8.4	35	0.5	1
78	D-12.2	50 OCT 7.1604	23 53 59.4	7 10 34	-0.8	-4	-7	12.92	9.32	-9.9	-32	-1.0	7
78	U-54.5	52 FEB 20.2410	10 46 22.9	7 09 02	-3.5	27	31	10.82	8.85	-10.7	-1	-0.9	2

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
79	Q-34.2	51 NOV 1.1736	2 03 03.4	11 05 04	6.5	21	25	10.97C	9.56C	-8.2	-81	-0.6	0
79	Q-44.1	51 NOV 1.2639	2 02 58.4	11 04 24	6.6	21	25	10.66C	9.25C	-8.4	-83	-0.8	-2
80	L-23.2	51 MAY 28.2090	16 12 10.3	-14 23 57	0.2	0	0	11.73A	9.16A	-10.5	67	-0.3	1
80	L-33.1	51 MAY 29.3201	16 11 00.9	-14 16 38	0.4	0	0	11.66	9.05	-10.9	66	-0.7	-3
81	Q-43.1	51 NOV 1.2729	2 06 50.0	21 29 25	-2.3	-16	-14	11.81	9.58	-10.8	-2	-1.2	8
82	B-44.1	50 AUG 14.2479	21 46 39.7	-17 15 59	0.0	0	0	13.70C	9.36C	-8.5	-27	-0.1	13
82	Q-33.5	51 NOV 1.1646	2 09 17.5	13 52 17	0.3	1	2	12.75C	9.58C	-9.2	-33	0.2	5
82	Q-44.2	51 NOV 1.2639	2 09 12.1	13 51 50	0.1	1	1	12.71	9.54	-9.7	-42	-0.3	-4
83	E-34.1	50 NOV 7.2632	2 21 00.7	15 55 55	-0.5	-4	-3	12.87C	9.80C	-10.6	-40	-0.6	-9
83	U-83.2	52 FEB 24.3681	11 34 07.9	9 27 29	-2.1	17	16	12.33	9.92	-8.5	46	-0.4	3
83	U-73.9	52 FEB 26.2618	11 32 31.6	9 35 45	-2.3	17	17	11.53	9.18	-8.9	42	-0.5	-1
84	I-34.4	51 MAR 11.3701	11 11 13.5	- 0 29 43	0.1	1	1	13.68A	10.07A	-10.7	35	-0.2	-2
84	I-44.1	51 MAR 13.3722	11 09 13.4	- 0 21 54	0.1	2	-1	13.64C	9.98C				
86	K-73.6	51 MAY 5.3757	15 32 34.1	-15 13 32	-0.2	0	1	14.66	9.70	-7.9	17	-0.5	-5
87	L-85.3	51 JUN 9.2986	17 59 19.8	-26 35 32	0.1	-1	0	12.96	8.47	-8.2	-32	-0.5	-5
87	L-84.2	51 JUN 9.3576	17 59 16.9	-26 35 41	0.1	-1	0	12.33C	7.48C	-7.7	-30	0.0	-3
87	M-15.1	51 JUN 26.2229	17 45 26.3	-27 18 41	0.0	-2	0	11.74C	7.35C	-8.2	-18	0.1	5
87	M-24.1	51 JUN 27.2187	17 44 37.5	-27 20 49	0.0	-2	0	12.85C	8.43C	-8.6	-22	-0.3	0
87	M-25.1	51 JUN 28.2417	17 43 46.9	-27 22 58	0.0	-1	0	12.46	8.01	-8.7	-23	-0.5	1
88	F-43.2	50 DEC 12.2347	4 43 25.0	25 16 21	0.4	-1	0	11.86	8.14	-10.3	-25	-0.6	7
88	U-24.1	52 FEB 18.2215	9 37 37.1	8 12 46	0.4	1	-3	11.94	7.79	-8.9	38	-0.4	3
90	D-64.6	50 OCT 12.2562	1 35 40.4	7 14 48	0.0	0	0	13.09	9.44	-8.1	-45	-0.3	-5
90	S-53.2	51 DEC 28.3000	6 18 56.7	24 38 07	-0.7	0	0	13.89	9.35C	-9.4	16	-0.8	8
90	S-43.2	52 JAN 21.1250	6 00 03.5	24 48 22				14.40	9.28	-6.3	3		
91	H-13.2	51 FEB 7.1604	8 20 06.3	22 48 03	0.4	-1	-2	12.43	9.73	-9.6	21	-0.5	-1
91	X-34.1	52 MAY 22.2368	15 28 12.7	-21 20 27	-0.7	3	2	13.72C	10.22C	-9.6	28	-0.2	-2
92	J-32.2	51 APR 4.3694	12 45 53.3	10 16 58	-0.4	2	2	12.42	7.84	-7.1	43	0.0	0
93	E-72.2	50 NOV 13.2236	3 47 22.7	30 20 58	0.0	-1	0	12.10C	8.05C	-10.4	-6	-0.1	3
93	E-82.3	50 NOV 16.2222	3 44 17.1	30 17 40	0.0	-1	0	12.74	8.77	-10.7	-15	-0.2	-3
93	F-12.1	50 DEC 3.1569	3 27 06.2	29 38 45	0.0	-4	0	12.92C	8.83C	-8.9	-33	0.3	-4
93	T-82.4	52 JAN 31.3306	9 18 13.7	26 09 03	1.4	-25	-8	12.78	8.80	-10.5	35	-0.7	4
94	O-74.3	51 SEP 5.2826	23 36 05.5	- 6 02 05	0.0	0	0	12.93C	9.10C	-8.4	-17	-0.7	8
95	K-74.3	51 MAY 5.3660	15 34 55.1	-22 41 49	1.2	0	0	13.45C	8.73C	-7.4	47	0.2	-3
96	B-53.2	50 AUG 15.2708	21 50 14.4	-12 13 15	-0.4	-2	-4	13.78C	9.36C	-8.9	-11	-0.3	-2
96	B-54.1	50 AUG 18.2229	21 47 41.1	-12 15 28	-0.4	-2	-4	13.81C	9.51C	-9.0	-9	-0.4	0

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O − C R A	O − C DEC	VAR	MAG	G	10 − DAY MOTION		O − C MOTION	
96	P-71.1	51 OCT 1.3514	1 19 56.7	29 25 29	-0.2	-1	-1	13.63	8.86	-8.4	2	-0.1	3
97	I-72.8	51 APR 2.3375	12 29 46.5	5 46 57	0.0	11	0	12.20	8.53	-7.6	82	0.2	3
97	X-71.1	52 MAY 25.3389	17 02 23.7	- 6 02 33	-1.3	3	2	13.19C	8.58C	-8.7	12	-0.7	-12
98	W-67.1	52 APR 27.2896	14 22 57.8	-34 46 11	2.7	-31	-16	13.16	10.20C	-12.2	-19	-0.3	9
100	C-54.5	50 OCT 6.2535	23 33 49.3	-11 05 27	11.4	54	60	12.62	9.11	-6.6	-19	-1.4	14
100	S-15.4	51 DEC 23.1708	5 06 33.3	16 18 09	6.0	17	14	13.43C	8.91C	-8.3	4	-0.4	-1
100	S-14.8	51 DEC 23.2431	5 06 29.9	16 18 13	5.9	17	14	13.35C	8.83C	-8.0	4	-0.1	-1
101	O-63.2	51 SEP 3.2187	23 07 40.7	- 5 49 41	0.7	13	7	11.62C	9.49C	-10.8	9	-0.7	8
102	S-55.8	51 DEC 28.2819	6 27 48.9	15 48 14	-1.6	-1	2	12.87	9.76	-10.6	0	-0.2	-1
102	S-44.1	52 JAN 21.1340	6 06 22.4	16 06 47				14.18	10.68	-6.5	4		
103	J-53.5	51 APR 9.2160	13 11 07.9	0 22 01	0.1	0	-1	12.26	8.78	-7.5	58	-0.5	-1
104	M-84.2	51 JUL 6.2757	19 58 23.5	-24 30 26	-0.2	0	0	14.44	9.81	-8.2	-25	-0.6	1
104	N-14.6	51 JUL 29.2104	19 39 35.3	-25 19 15	-0.3	4	-1	13.88	9.23	-8.3	-13	-0.3	5
105	H-86.2	51 MAR 6.2764	10 41 34.9	- 8 43 20	-0.4	3	4	11.72C	9.33C	-8.2	153	-0.3	-1
106	K-63.7	51 MAY 5.2208	15 05 52.6	-15 43 20	1.2	-7	-6	13.73A	8.92A	-8.0	18	-0.5	-6
106	K-54.3	51 MAY 8.2507	15 03 32.0	-15 35 57	1.1	-7	-6	12.96	8.25C	-7.8	28	-0.1	4
107	N-22.1	51 JUL 30.1986	19 54 53.1	- 9 37 06	0.1	0	0	13.41C	8.39C	-7.2	-28	-0.6	7
108	N-34.1	51 JUL 31.2417	20 28 14.9	-23 49 55	-0.1	-1	0	14.10C	9.60C	-8.9	-19	-0.7	1
108	N-44.1	51 AUG 3.2132	20 25 51.0	-23 55 25	0.0	0	0	14.16	9.59	-8.6	-32	-0.6	-14
109	J-65.3	51 APR 8.2729	13 30 09.3	-13 35 03	0.4	-9	-3	14.31	10.03	-9.0	39	0.0	8
109	X-85.3	52 MAY 26.2597	17 26 18.4	-33 52 53	0.3	5	0			-9.4	-8	-0.2	2
109	X-86.1	52 MAY 26.2688	17 26 17.7	-33 52 53	0.3	5	0			-9.4	-7	-0.2	3
110	H-82.2	51 MAR 5.3569	10 37 32.3	18 10 49	-0.6	2	4			-8.0	30	0.7	-11
110	X-54.3	52 MAY 24.2292	16 20 05.8	-22 52 39	-0.6	4	2	11.89C	8.72C	-10.7	6	-1.1	7
111	D-52.2	50 OCT 10.2257	1 18 32.7	16 40 01	-0.8	0	-5	12.02	8.99	-8.5	-45	0.6	-4
111	U-64.2	52 FEB 24.2583	10 51 57.2	2 12 51	-1.7	7	13	11.45A	8.78A	-9.5	32	-0.4	1
112	E-73.4	50 NOV 13.2757	3 34 35.1	23 54 28	-3.8	-15	-11	13.16	10.78	-11.6	-36	-0.9	-3
112	U-63.1	52 FEB 24.2493	11 03 36.3	4 42 42	-1.9	10	13	14.12	10.73	-9.6	46	-0.6	0
113	F-74.2	50 DEC 31.1667	5 55 23.1	19 09 46	0.2	-1	0	11.67	8.91	-11.1	19	-0.3	-3
113	X-63.4	52 MAY 25.3049	16 38 44.0	-14 24 13	0.3	0	-1	12.53	10.31	-10.2	1	-0.5	-6
113	X-62.1	52 MAY 25.3132	16 38 43.3	-14 24 11	0.3	0	-1	12.19	9.97	-10.1	14	-0.4	7
114	B-73.2	50 AUG 19.3264	22 29 51.3	- 7 51 00	-2.2	-8	-8	13.22	9.25	-7.9	-56	-0.3	1
114	C-13.2	50 SEP 9.2514	22 13 18.9	- 9 55 44	-2.3	-8	-10	13.72	9.67	-8.6	-48	-1.0	9
114	R-35.2	51 NOV 29.1951	3 49 54.3	12 18 32	-5.2	-15	-12	12.69	9.44	-9.8	-25	-0.4	4
115	K-66.3	51 MAY 5.2521	15 28 39.2	-36 35 33	0.4	-2	-1	12.08C	8.27C	-10.3	24	0.5	2

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.			R.A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
115	K-76.2	51	MAY	8.2722	15 25 17.9	-36 28 06	0.5	-3	-1	12.94C	9.17C	-11.6	22	-0.4	-7
116	E-74.1	50	NOV	13.2861	3 42 48.4	18 49 10	-7.4	-27	-29	11.90	8.49	-9.8	-5	-0.6	12
116	V-33.5	52	MAR	23.2264	12 31 40.6	2 16 32	-6.6	44	47	11.60	8.97	-9.3	44	-1.2	-1
116	V-43.2	52	MAR	23.3174	12 31 36.1	2 16 56	-6.6	45	47	11.59	8.96	-9.3	45	-1.2	0
117	H-11.1	51	FEB	7.1375	8 26 02.3	34 49 21	0.0	-1	0	13.08	9.06	-10.5	-19	-0.4	0
117	W-16.2	52	APR	23.1993	13 05 14.6	-21 40 50	-0.1	-2	1	13.40	9.27	-9.3	28	-0.5	3
117	W-26.1	52	APR	23.2535	13 05 11.6	-21 40 43	-0.1	-2	1	13.31C	9.18C	-9.2	20	-0.4	-5
118	D-45.2	50	OCT	12.1868	0 53 40.1	- 2 38 59	-4.4	-30	-36	12.15	9.92	-10.8	-19	-0.6	2
118	V-42.1	52	MAR	22.3021	12 40 26.7	5 13 41	-7.2	57	62	12.97	10.06	-10.1	46	-0.5	6
119	K-44.1	51	MAY	3.2229	14 33 22.5	-12 18 26	-0.2	2	1	13.02	9.77	-7.8	55	0.8	-5
120	O-73.4	51	SEP	3.3319	23 28 41.7	- 2 12 38	0.9	14	8	12.93A	8.64A	-8.4	-28	-0.9	0
121	B-45.5	50	AUG	14.2625	21 46 23.1	-24 13 59	0.0	3	0	12.38C	8.27C	-8.4	-55	-1.1	-9
121	B-55.2	50	AUG	18.2375	21 43 25.4	-24 31 30	-0.1	1	0	13.03C	8.89C	-8.7	-59	-1.4	-18
121	Q-74.4	51	NOV	4.3229	3 20 02.5	13 10 23	0.1	-1	1	12.35C	8.20C	-8.1	-16	-0.3	-3
122	I-74.4	51	APR	2.2736	12 30 40.9	- 2 50 38	0.1	0	-1	11.55C	7.78C	-7.6	49	-0.5	-2
122	J-34.1	51	APR	4.3174	12 29 12.9	- 2 40 11	-0.0	0	0	13.09	9.24	-7.0	53	0.0	3
123	L-85.4	51	JUN	9.2986	18 05 14.0	-29 49 17	0.4	-1	-1	14.04	10.07	-10.3	4	-1.1	-2
123	M-15.2	51	JUN	26.2229	17 48 27.7	-29 28 13	0.2	0	0	13.29C	9.41C	-9.9	21	-0.1	3
123	M-16.3	51	JUN	27.2278	17 47 27.9	-29 26 19	0.1	0	0	14.17	10.26	-10.9	23	-1.1	4
123	M-25.2	51	JUN	28.2417	17 46 28.6	-29 24 16	0.1	0	0	13.52C	9.73C	-10.6	14	-0.9	-6
124	G-14.1	51	JAN	5.1674	6 00 10.5	18 58 46	10.4	-4	2	13.06	9.21	-9.8	1	-0.7	0
124	V-64.8	52	MAR	23.3444	13 22 46.5	- 8 09 14	-1.8	11	9	12.31	9.24	-6.9	58		
124	W-13.7	52	APR	22.1778	12 59 19.4	- 5 04 11	-2.2	13	11			-7.8	55	-0.4	-3
124	W-14.4	52	APR	22.1868	12 59 18.9	- 5 04 08	-2.2	13	11			-7.2	58	0.2	0
125	F-35.1	50	DEC	11.2722	4 22 36.2	14 36 55	-0.2	-2	-4	13.64	9.80	-9.2	-13	-0.4	5
125	U-44.6	52	FEB	19.3210	10 22 25.1	7 59 19	1.5	-5	-7	12.92C	9.42C	-8.4	62	-0.1	1
126	K-84.2	51	MAY	8.3583	16 01 20.9	-23 21 15	0.5	-4	-2	13.39	10.33	-8.9	8	0.3	-4
126	L-14.3	51	MAY	27.2410	15 42 10.3	-22 47 11	0.4	-3	-1	13.35	10.51	-10.2	21	0.0	-2
127	E-73.2	50	NOV	13.2757	3 43 42.9	25 20 56	19.2	103	119	12.71	9.40	-11.2	-6	-1.0	-1
127	F-13.2	50	DEC	3.1681	3 23 26.5	25 06 53	18.6	111	114	12.88	9.47	-9.8	-8	-1.2	6
127	U-92.3	52	FEB	26.3882	12 05 42.1	8 44 39	0.1	0	-1	13.07	9.65	-7.7	35	-0.6	-2
127	V-13.4	52	MAR	23.1903	11 43 20.7	10 09 48	-0.2	2	2	12.63	9.38	-9.6	22	-0.7	0
128	G-63.1	51	FEB	4.2333	7 48 59.7	27 50 33	0.2	0	0	12.24	8.57	-8.7	25	-0.3	0
128	W-23.1	52	APR	23.1813	13 13 46.7	0 13 55	0.6	-9	-4	13.21	9.00	-8.4	31	-0.5	1
129	H-82.1	51	MAR	5.3569	10 37 28.0	16 17 13	1.0	-2	-3			-8.3	82	-0.5	-5

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O − C R A	O − C DEC	VAR	MAG	G	10 − DAY MOTION		O − C MOTION	
131	E-24.5	50 NOV 5.1687	2 05 09.5	8 29 26	5.9	44	38	13.81	10.71	-9.8	-29	-0.2	1
131	U-42.4	52 FEB 20.2229	10 17 28.7	19 41 24	4.5	-20	-24	13.76	11.14	-10.1	60	-0.1	4
133	G-53.5	51 JAN 12.2764	7 36 09.4	26 38 10	1.5	-6	-6	13.28	8.98	-8.5	5	0.9	-2
133	G-63.2	51 JAN 13.2375	7 35 15.7	26 38 48	1.5	-6	-6	14.03	9.71	-9.9	12	-0.5	6
133	V-45.2	52 MAR 26.2215	12 38 09.7	-13 34 11	3.8	-43	-33	12.30	8.78	-8.4	25	-0.2	-2
134	P-33.2	51 SEP 27.3521	0 07 34.7	7 31 46	-0.6	4	-6	12.13	9.49	-11.3	-9	-0.9	-1
135	P-53.5	51 SEP 30.3118	0 55 53.8	8 13 35	-0.6	-3	-4	10.82	9.02	-9.7	-32	-0.6	8
136	O-32.1	51 SEP 1.3069	22 15 49.4	- 0 59 14	-0.3	-2	-1	12.58	10.74	-8.3	-114	-0.5	-6
137	J-44.5	51 APR 7.2715	12 52 05.2	- 8 29 01	-2.6	8	7	12.68	8.58C	-7.4	76	-0.4	-2
138	N-75.1	51 AUG 6.2576	21 33 25.7	-21 07 47	-0.8	-2	-4	12.60C	10.95C	-9.2	-42	-0.7	4
139	K-35.5	51 MAY 2.2729	14 07 56.3	-24 59 33	-2.6	13	17	11.95C	9.15C	-10.2	5	0.0	-7
140	Q-84.2	51 NOV 5.2583	3 29 32.1	14 40 41	1.3	7	6	12.08C	8.51C	-9.5	-30	-0.3	1
140	R-14.3X	51 NOV 27.1826	3 09 10.3	13 39 17	1.3	6	6	13.26A	9.62A	-8.3	-16	0.2	6
141	N-64.5	51 AUG 5.3007	21 20 06.9	-17 13 31	-0.7	0	-5	11.69	9.48	-10.7	21	-0.2	1
142	L-64.3	51 JUN 7.2278	17 10 50.9	-25 23 04	-3.6	6	0	13.34	11.57	-10.8	28	-0.6	6
143	B-54.3	50 AUG 18.2229	22 01 26.7	-14 30 39	0.4	2	3	13.93	10.62	-10.9	-24	-1.4	-14
143	Q-71.1	51 NOV 4.2236	3 21 46.7	35 38 46	0.7	2	3	14.06C	10.05C	-11.3	-9	-1.2	-1
143	Q-81.1	51 NOV 4.3410	3 21 39.4	35 38 44	0.7	2	4	14.35	10.35	-10.7	-8	-0.6	0
144	H-13.3	51 FEB 7.1604	8 23 57.7	25 08 53	-2.0	6	5	12.76	9.11	-9.4	32	-0.2	-1
144	V-63.5	52 MAR 23.3535	13 15 14.0	- 1 20 50	-1.9	11	13	13.13	8.69	-7.7	45	-0.3	-3
144	W-12.1	52 APR 22.1688	12 51 06.5	0 52 16	-2.1	12	15			-8.0	34	-0.5	-1
144	W-13.1	52 APR 22.1778	12 51 06.0	0 52 19	-2.1	12	15			-8.4	27	-0.9	-8
145	Q-75.5	51 NOV 4.3139	3 24 02.7	7 36 55	-1.0	-8	-7	12.19	9.17	-8.8	-4	0.7	-4
145	Q-85.1	51 NOV 5.2674	3 23 07.9	7 36 50	-1.0	-8	-7	11.38C	8.38C	-10.7	1	-1.1	1
146	K-82.1	51 MAY 8.3792	15 46 33.3	- 8 10 40	1.2	-5	-8	11.75	8.66	-9.4	-13	-0.3	-6
146	L-12.2	51 MAY 27.2611	15 28 36.4	- 8 42 38	1.0	-5	-7	12.76	9.62	-9.6	-27	-0.5	0
147	I-33.1	51 MAR 11.3590	10 54 18.4	3 59 28	-1.1	4	6	14.32	10.19	-7.4	48	-0.1	1
147	I-34.1	51 MAR 11.3701	10 54 18.1	3 59 32	-1.1	5	6	13.96	9.83	-8.2	41	-0.9	-6
147	X-44.3	52 MAY 24.1937	15 49 59.9	-20 33 16	-1.3	5	3	13.62	9.61	-8.6	27	-0.6	-3
148	H-54.2	51 FEB 10.3035	9 30 58.1	11 35 35	-3.3	-7	-6	11.72	8.37	-8.8	127	-0.5	-1
149	J-64.3	51 APR 8.3681	13 39 44.2	- 9 08 54	0.0	2	0	14.53	12.15	-10.1	55	-0.3	-5
150	L-33.2	51 MAY 29.3201	16 13 38.9	-19 08 27	-0.2	0	0	13.40	9.57C	-9.2	23	-0.7	6
151	E-23.3	50 NOV 5.1569	2 07 07.1	12 29 45	-2.3	-8	-16	13.66C	10.49C	-9.4	-31	0.2	-8
151	E-24.1	50 NOV 5.1687	2 07 06.6	12 29 41	-2.3	-8	-16	13.47	10.30	-10.6	-43	-1.0	-20
151	E-34.5	50 NOV 7.2632	2 05 07.4	12 24 35	-2.1	-8	-14	13.77	10.53	-10.1	-30	-0.5	-7

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
151	U-42.6	52 FEB 20.2229	10 24 39.1	20 34 16	-1.0	2	6	13.40	10.48	-10.2	43	-0.6	-1
152	L-65.3	51 JUN 7.2389	17 18 56.3	-34 05 17	-3.2	-1	8	14.13C	9.54C	-9.1	-16	0.1	1
152	L-66.1	51 JUN 7.2493	17 18 55.6	-34 05 31	-3.2	-2	8	14.17	9.58	-9.9	-22	-0.7	-5
153	K-44.5	51 MAY 3.2229	14 28 22.8	-16 13 44	0.0	0	0	13.35	8.77	-6.6	44	-0.2	-5
154	W-43.5	52 APR 24.2854	13 49 53.1	- 6 54 37	-0.6	7	8	11.72	8.14	-10.6	-23	-0.7	-2
154	W-42.3	52 APR 24.2944	13 49 52.5	- 6 54 41	-0.6	7	8	12.20	8.62	-10.0	-20	-0.1	1
156	P-21.1	51 SEP 26.2958	0 05 18.1	13 28 29	1.6	-20	8	13.48C	9.22C	-7.1	-67	0.8	-3
156	P-32.1	51 SEP 27.3146	0 04 29.9	13 21 53	1.6	-20	8	13.94A	9.69A	-8.1	-66	-0.2	-1
158	M-73.3	51 JUL 4.3583	19 43 43.9	-21 02 14	-1.3	-4	-3	14.51	10.64	-8.7	-9	-0.6	8
158	N-14.2	51 JUL 29.2104	19 22 12.7	-21 42 44	-1.4	-3	-3	15.04	11.11	-8.1	-11	0.0	3
158	N-13.1	51 JUL 29.2701	19 22 09.6	-21 42 50	-1.4	-3	-3	14.84	10.91	-8.8	-20	-0.8	-7
159	P-35.2X	51 SEP 27.2875	0 20 58.5	- 5 00 42	-9.6	-52	-51	12.78C	8.74C	-7.7	-53	-0.6	5
160	B-64.3	50 AUG 18.3389	22 18 16.7	-14 47 06	0.2	4	1	13.36A	10.07A	-7.0	-37	1.6	1
160	S-22.5	51 DEC 27.1646	5 34 28.1	29 23 37	-0.5	0	0	13.14C	10.06C	-10.5	-13	-0.5	-8
160	S-32.1	51 DEC 27.2729	5 34 21.0	29 23 33	-0.5	0	0	12.99	9.91	-10.2	-4	-0.2	4
161	S-52.3	51 DEC 28.3090	6 35 47.2	37 17 27	0.4	0	0	13.57	10.28	-13.8	11	-0.8	-5
161	S-51.2	51 DEC 28.3181	6 35 46.5	37 17 29	0.4	0	0	13.63	10.34	-12.9	9	0.1	-7
161	S-41.2	52 JAN 22.1160	6 07 07.3	37 00 31	0.2	1	0	13.94C	10.36C	-8.2	-24	0.3	4
162	N-85.3	51 AUG 7.2917	21 53 50.1	-21 34 00	0.4	0	2	15.10	10.30	-7.5	-39	0.1	2
162	O-15.2	51 AUG 31.1826	21 35 00.3	-22 52 13	0.3	1	2	14.54	9.61	-7.6	-20	-0.3	2
163	B-43.2	50 AUG 14.2333	21 35 32.6	-11 43 43	0.9	4	3	13.51C	10.52C	-9.6	-66	-0.4	-3
163	T-94.1	52 FEB 1.2674	9 30 21.3	10 40 37	1.9	-16	-7	11.48	9.98	-9.8	73	-1.1	-2
163	U-14.2	52 FEB 17.2160	9 16 08.4	12 51 05	1.9	-12	-7	12.05A	10.54A	-9.4	78	-1.3	0
165	G-63.6	51 JAN 13.2375	7 43 25.5	24 14 54	-0.1	0	1	13.29	9.01C	-9.3	-5	-0.1	-1
165	U-96.1	52 FEB 26.3521	12 06 14.9	-14 37 09	0.3	2	-2	13.30	8.78	-6.0	-5	0.2	1
165	V-16.1	52 MAR 24.1965	11 45 57.4	-13 54 23	0.5	-4	-4	12.72	8.48	-8.4	35	-0.2	-1
166	O-75.4	51 SEP 5.2437	23 29 47.3	-16 55 56	-0.4	-8	-1	13.11C	10.81C	-6.8	-116	-0.2	-1
167	G-74.4	51 FEB 7.1215	8 08 37.0	18 00 18	0.3	-3	-1	13.99	10.06	-8.0	36	0.0	4
167	W-53.2	52 APR 26.1965	14 07 11.7	-10 11 38	0.3	0	-1	14.48	11.08	-8.5	45	-0.3	-3
168	B-53.1	50 AUG 15.2708	22 01 10.0	- 6 04 13	0.1	0	0	13.90	9.48	-7.4	-36	-0.7	4
168	Q-64.2	51 NOV 3.3076	2 51 39.5	14 33 55	0.0	0	0	13.14	9.04	-7.5	-43	-0.2	2
169	J-34.9	51 APR 4.3174	12 46 25.9	- 8 12 12	1.5	-19	-11	13.72	10.90	-10.0	41	0.0	1
169	J-44.1	51 APR 7.2715	12 43 25.9	- 8 00 08	1.5	-19	-12	13.40	10.52	-9.9	40	0.1	-1
171	M-63.1	51 JUL 4.2243	19 21 57.9	-22 27 47	-6.8	-10	-10	14.09	9.65	-8.6	-22	-0.7	0
171	M-64.5	51 JUL 4.2354	19 21 57.6	-22 27 50	-6.8	-10	-10	14.52C	10.08C	-8.0	-17	-0.1	5

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
171	M-74.1	51 JUL 4.3486	19 21 52.1	-22 28 04	-6.9	-10	-10	14.69C	10.25C	-8.7	-25	-0.8	-3
172	J-76.2	51 APR 9.3368	14 02 23.1	-27 17 03	-0.7	-3	4	12.44	9.31	-9.1	-4	0.8	-1
172	J-86.2	51 APR 10.3222	14 01 24.4	-27 17 12	-0.9	-1	6	13.20	10.08	-11.3	-6	-1.3	-5
172	K-26.3	51 MAY 2.2118	13 37 45.0	-26 24 48	-0.9	2	5	12.58C	9.57C				
173	U-33.4	52 FEB 19.2208	9 57 25.0	12 13 49	-0.6	2	1	12.77	9.04C	-8.4	84	-0.2	0
174	D-51.1	50 OCT 10.2146	1 19 32.0	24 22 18	0.4	5	3	13.81	9.65	-9.6	-4	-0.4	19
174	S-52.2	51 DEC 28.3090	6 28 03.1	37 05 24	0.7	-3	-2	13.70	9.36	-11.6	-13	-0.6	-3
174	S-51.1	51 DEC 28.3181	6 28 02.3	37 05 17	0.6	-3	-2	13.81	9.47	-11.1	-12	-0.1	-2
174	S-42.1	52 JAN 21.1431	6 04 14.1	36 03 10				14.28	9.63	-8.1	-37		
174	S-41.1	52 JAN 22.1160	6 03 27.5	35 59 17				13.83	9.18	-7.6	-39		
175	J-84.1	51 APR 10.3438	14 14 11.6	-14 10 11	-1.2	2	7	14.22	9.43	-7.0	18	-0.2	-9
175	K-24.2	51 APR 28.2139	14 00 57.4	-13 13 48	-1.3	2	8	14.17	9.61	-7.8	30	-0.2	-3
177	S-23.2	51 DEC 27.1736	5 15 53.6	25 27 29	-1.4	-4	-1	13.22	10.65	-9.2	-11	-0.3	2
178	D-24.3	50 OCT 8.1667	0 18 51.8	- 0 18 44	-0.3	-3	-2	13.90	11.06	-9.9	-59	-1.3	-12
178	T-43.1	52 JAN 26.2229	8 03 34.3	23 22 57	62.3	-106	-112	13.61	9.97	-11.4	27	-1.9	13
179	H-85.3	51 MAR 6.2653	10 36 47.1	- 3 15 47	0.9	-5	-6	13.77	9.39	-7.1	49	0.5	1
179	X-24.1	52 MAY 22.2639	15 09 17.5	-21 30 50	3.2	7	-6	15.19	11.05	-8.0	48	-0.2	-6
180	L-74.3X	51 JUN 8.2375	17 39 10.4	-24 23 17	-0.2	2	0	15.31C	11.48C	-9.1	2	0.2	-4
180	L-75.2	51 JUN 8.2472	17 39 09.6	-24 23 16	-0.2	1	0	15.37	11.52	-9.3	5	0.0	-1
182	N-44.2	51 AUG 3.2132	20 32 22.3	-20 03 46	0.1	1	0	12.97	10.28	-10.2	-52	-0.1	-6
183	O-76.2	51 SEP 5.2535	23 27 32.0	-23 25 53	-7.1	-4	-2	12.92	10.99	-6.6	-234	-1.5	0
184	F-63.2	50 DEC 13.2701	5 23 05.3	24 45 04	-0.8	-1	-1	13.37	9.30C	-9.2	-12	-0.2	-3
184	U-63.3	52 FEB 24.2493	11 07 44.1	5 17 59	2.5	-18	-17	13.40	9.61	-7.7	41	-0.5	0
185	J-51.2	51 APR 9.1958	13 23 47.7	15 59 53	0.0	2	0	12.91A	8.65A	-8.0	91	-0.5	4
186	K-86.1	51 MAY 8.2931	16 05 47.7	-36 49 25	-2.7	3	10	12.84	10.16	-11.5	-50	-0.8	10
186	L-16.1	51 MAY 28.1896	15 40 33.9	-37 55 44	-3.2	5	12	13.16C	10.58C	-13.3	-12	0.0	-1
186	L-26.1	51 MAY 29.2312	15 39 11.1	-37 56 27	-3.2	7	12	13.12C	10.52C				
187	O-26.3	51 SEP 1.2111	21 55 08.0	-26 55 10	14.9	95	106	12.98	9.39	-10.1	-8	-1.2	-12
188	J-36.1	51 APR 4.2514	12 42 00.9	-18 33 32	0.7	-1	-3	13.70	9.94	-7.9	71	0.1	1
189	Q-34.1	51 NOV 1.1736	1 54 50.6	10 09 39	1.6	8	6	13.54C	11.00C	-9.1	-74	-0.4	-1
190	H-25.2	51 FEB 8.2667	8 49 50.4	11 35 29	0.9	-4	-3	13.03	8.57	-6.8	45	-0.1	4
190	H-34.1	51 FEB 9.2208	8 49 12.3	11 39 29	1.0	-4	-3	13.30	8.81	-6.6	42	0.0	1
190	V-63.2	52 MAR 23.3535	13 08 41.5	- 4 39 52	0.6	-3	-3	13.80	8.50	-5.8	50	-0.3	2
190	W-13.2	52 APR 22.1778	12 51 25.7	- 2 20 53	0.5	-2	-2			-5.5	36	-0.3	-5
191	L-82.1	51 JUN 8.3340	17 52 11.3	- 6 50 57	-2.8	0	3	14.01	9.97	-7.7	-2	0.0	11

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
191	M 12.2	51 JUN 26.1924	17 37 35.3	- 6 56 23	-3.0	-2	-3	13.88	9.85	-8.3	-17	-0.2	-3
192	L-76.5	51 JUN 8.2569	17 49 45.4	-34 47 11	-4.1	1	1			-11.0	-10	0.1	2
192	L-86.1	51 JUN 9.2889	17 48 36.4	-34 48 16	-4.2	2	-1	11.62C	8.78C	-12.2	-17	-0.9	-7
192	M-16.2	51 JUN 27.2278	17 26 51.1	-34 34 15	-4.4	5	1	11.39C	8.51C	-12.8	16	-0.7	-5
193	K-36.3X	51 MAY 3.2847	14 26 02.5	-29 11 00	-0.9	4	6	15.42C	11.01C				
193	K-46.3	51 MAY 3.3062	14 26 02.0	-29 10 51	-0.9	4	6	15.31	10.98	-10.5	26	-0.2	-3
194	I-72.5	51 APR 2.3375	12 24 56.4	10 35 46	0.9	-3	-1	12.27	8.28	-7.8	95	0.0	3
195	F-42.2	50 DEC 12.1687	4 50 51.6	32 36 57	0.4	2	1	13.88C	10.36C	-11.3	-16	-0.9	-6
195	F-52.2	50 DEC 12.2993	4 50 43.3	32 36 46	0.4	2	1	13.72	10.19	-10.4	-25	0.0	-15
195	U-93.3	52 FEB 26.3792	12 10 21.1	1 43 05	0.5	-2	-4	13.87	10.05	-7.2	24	-0.9	1
195	V-13.5	52 MAR 23.1903	11 49 24.1	2 58 43	0.3	-1	-3	13.25	9.80	-8.8	31	-0.3	3
195	V-14.2	52 MAR 23.1993	11 49 23.5	2 58 42	0.3	-1	-3	13.51	10.06	-8.9	28	-0.4	-1
196	K-63.4	51 MAY 5.2208	15 29 42.1	-14 43 23	0.1	-2	-1	11.54	7.49	-9.0	8	-1.1	-5
196	K-73.4	51 MAY 5.3757	15 29 34.3	-14 43 06	0.0	-2	-1	12.01C	7.96C	-8.2	5	-0.3	-8
197	J-32.3	51 APR 4.3694	12 49 36.2	8 13 52	0.2	-3	-1	14.71	10.73	-8.3	45	0.1	2
197	J-41.1	51 APR 4.3896	12 49 35.3	8 14 00	0.2	-3	-1	14.65	10.66	-8.4	41	-0.1	-2
198	H-66.1	51 FEB 11.3007	9 58 59.8	- 0 30 52	-0.8	4	5	13.31	9.44	-9.6	31	0.2	3
198	W-76.3	52 APR 27.3167	14 58 33.2	-27 17 56	0.7	4	-2			-10.1	45	-0.6	-1
199	H-61.1	51 FEB 11.1958	9 53 48.5	30 51 44	-6.1	16	15	13.91	9.38	-8.0	75	0.2	8
199	X-32.1	52 MAY 22.2910	15 39 45.5	- 5 18 56	0.4	-3	-3	13.65	10.40	-8.9	-27	0.1	1
200	M-35.1	51 JUN 29.2618	18 20 58.1	-31 23 38	-0.7	2	-1	12.41C	8.61C	-10.5	7	-0.3	-3
200	M-46.1	51 JUN 30.2347	18 19 58.9	-31 22 47	-0.7	2	-1	13.64C	9.80C	-10.1	5	0.0	-6
201	F-74.1	50 DEC 31.1667	5 47 30.9	15 24 11	-0.5	-5	-3	12.42	8.81	-9.2	16	0.1	1
201	U-63.5	52 FEB 24.2493	11 11 32.3	6 05 46	-0.7	3	3	13.70	9.52	-7.9	63	-0.3	0
202	F-45.1	50 DEC 12.2014	4 35 03.2	9 52 02	-0.6	0	-3	12.88C	9.03C	-8.7	14	-0.4	5
202	F-46.1	50 DEC 12.2771	4 34 59.3	9 52 03	-0.6	0	-3	12.89	9.04	-8.0	9	0.3	0
202	U-83.9	52 FEB 24.3681	11 53 11.8	8 12 43	-0.6	5	3	12.74	8.96	-6.0	72	-0.6	-3
202	U-92.1	52 FEB 26.3882	11 52 02.3	8 28 09	-0.7	5	3	12.73	8.97	-6.4	81	-0.7	6
202	V-12.1	52 MAR 22.1924	11 35 10.8	11 31 40	-0.7	8	3	13.02	9.36	-7.1	66	0.0	3
203	N-74.3	51 AUG 6.2479	21 49 17.6	-15 44 19	0.3	5	2	13.76	10.43	-7.8	-35	0.5	-1
203	N-84.1	51 AUG 7.2819	21 48 25.9	-15 48 00	0.3	5	2	13.64C	10.31C	-8.9	-36	-0.5	-2
203	O-14.1	51 AUG 31.2215	21 27 44.9	-17 01 23	0.1	5	1	13.77	10.29	-8.5	-23	-0.5	1
204	G-65.1	51 JAN 13.3146	7 38 32.9	9 08 04	0.8	-2	-2	14.19	10.24	-9.2	18	-0.1	-1
204	W-74.3	52 APR 27.3799	14 55 53.7	-12 28 33	-2.8	7	6			-8.3	81	-1.0	-3
205	I-65.3	51 APR 2.2521	12 12 13.2	- 8 40 13	-0.5	3	2	13.73C	10.08C	-7.2	87	0.2	4

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
205	I-75.1	51 APR 4.2201	12 10 47.7	- 8 23 38	-0.4	2	2	13.41	9.75	-7.8	81	-0.6	-2
206	N-64.4	51 AUG 5.3007	21 11 57.0	-15 01 26	-0.1	-1	0	13.33	9.97	-8.3	-53	0.0	-3
206	N-63.1	51 AUG 5.3104	21 11 56.5	-15 01 27	-0.2	-1	-1	13.13A	9.77A	-8.9	-54	-0.6	-4
207	O-24.2	51 AUG 31.2604	21 55 13.3	-18 47 20	-0.1	4	-1	13.52	11.02	-10.3	-39	-0.7	-8
207	O-25.1	51 SEP 1.2014	21 54 18.7	-18 50 04	-0.1	4	-1	13.54	11.04	-10.0	-26	-0.6	4
208	K-74.1	51 MAY 5.3660	15 29 22.1	-20 57 28	0.6	-3	-2	14.44	10.69	-7.9	16	0.4	-8
209	O-54.1	51 SEP 2.2215	22 52 24.7	-11 28 34	-8.1	-57	-69	12.89	8.90	-8.6	-28	-0.8	0
210	R-23.1	51 NOV 27.2743	3 40 08.9	23 52 19	0.1	-1	0	12.96	10.35	-10.5	-5	-0.6	6
211	L-24.3	51 MAY 28.1993	16 00 22.6	-22 35 13	1.8	0	-3	13.03	8.50	-8.3	29	-0.1	-2
212	G-63.8	51 JAN 13.2375	7 58 53.1	22 45 20	0.6	-3	-2	13.22	9.60	-9.9	3	-0.8	-10
212	G-63.6	51 FEB 4.2333	7 39 40.9	23 03 09	0.5	-1	-2	13.35	9.39	-8.0	3	-0.5	1
212	V-54.4	52 MAR 23.3264	12 52 45.3	-11 14 09	0.1	-1	-1	13.78	9.28	-7.8	37	-0.6	3
212	V-45.5	52 MAR 26.2215	12 50 37.3	-11 03 56	0.1	-1	-1	13.37	8.93	-7.3	35	0.1	-2
212	V-55.2	52 MAR 26.2396	12 50 36.4	-11 03 51	0.1	-1	-1	13.15	8.71	-7.7	34	-0.3	-3
213	C-44.3	50 SEP 12.2632	23 07 07.2	-13 58 02	-0.7	-7	-3	13.45	10.52	-7.8	-82	-0.2	-17
213	S-15.2	51 DEC 23.1708	4 57 24.4	15 58 48	-0.7	-1	-2	14.06C	9.85C	-9.0	2	-0.4	-5
213	S-14.4	51 DEC 23.2431	4 57 20.9	15 58 54	-0.8	-1	-2	13.73C	9.52C	-8.7	15	-0.1	8
214	F-53.2	50 DEC 12.3104	5 13 39.3	28 36 32	-6.5	-8	-2	13.42	10.54	-11.1	-28	-0.3	-16
214	F-62.4X	50 DEC 13.2597	5 12 37.4	28 35 13	-6.6	-9	-2	13.00C	10.10C	-11.1	-7	-0.3	5
214	F-63.1	50 DEC 13.2701	5 12 37.1	28 35 10	-6.6	-9	-2	13.08	10.18	-11.0	-16	-0.2	-4
214	V-64.6	52 MAR 23.3444	13 14 45.0	-11 03 06	0.5	-8	-3	13.62	10.33	-8.3	35	-0.5	6
214	W-14.2	52 APR 22.1868	12 48 59.4	- 9 01 52	0.4	-8	-3			-8.6	43	-0.8	1
215	B-14.2	50 AUG 10.2799	20 28 14.9	-21 48 20	-3.4	-9	-12	14.28	10.93	-7.9	-21	0.5	5
215	Q-83.3X	51 NOV 5.2493	3 38 28.3	20 41 10	-1.3	-4	-4	14.08C	10.64C	-8.7	-21	0.0	0
215	R-13.1	51 NOV 27.1736	3 18 07.9	19 40 56	-1.6	-5	-6	13.89	10.50	-9.2	-25	-0.4	5
216	L-42.1	51 JUN 2.2958	16 40 39.0	-11 10 40	-0.3	0	0	12.34C	8.00C	-9.3	39	-0.8	-4
217	H-45.3	51 FEB 9.2972	9 26 45.7	9 16 31	-0.1	2	0	15.98	11.06	-8.0	55	-0.2	2
217	V-63.6	52 MAR 23.3535	13 15 59.7	0 00 54	1.9	-5	-7	15.00	10.81	-7.1	71	-0.4	-5
217	W-12.3	52 APR 22.1688	12 53 28.3	3 38 12	1.8	-3	-6			-6.9	57	0.3	-3
218	D-45.4	50 OCT 12.1868	0 54 35.6	- 4 01 25	0.8	-5	2	13.68	9.96	-8.8	-78	-1.4	9
218	S-46.2	52 JAN 22.1340	6 04 40.9	2 43 35				13.88	9.80	-6.3	53		
219	I-55.2	51 MAR 14.3458	11 48 50.5	- 6 01 46	0.4	0	-1	14.09	10.47	-8.7	77	-0.1	-5
219	I-55.1	51 APR 1.2194	11 33 33.5	- 3 23 59	0.5	0	-2	14.42	10.68	-7.7	91	0.3	1
220	D-62.3	50 OCT 12.1750	1 37 55.9	23 59 49	-12.5	-45	-37	13.42	12.09	-9.9	-76	-1.4	-2
220	U-25.1	52 FEB 18.2306	9 32 30.4	3 24 45	-2.9	13	17	16.11	12.32	-9.8	44	-0.1	-1

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
221	K-52.1	51 MAY 4.3000	14 40 05.1	0 43 58	0.0	0	0	13.22A	8.98A	-7.7	39	-0.1	-2
221	K-51.2	51 MAY 4.3097	14 40 04.7	0 44 01	0.0	0	0	13.32	9.08	-7.9	35	-0.4	-6
222	P-64.1	51 OCT 1.3611	1 10 20.0	4 23 58	2.3	15	15	14.58	10.30	-7.8	-39	-0.5	5
223	D-24.4	50 OCT 8.1667	0 03 51.2	- 1 43 16	0.7	5	5	14.92C	10.70C	-7.1	-39	0.0	3
223	S-53.7	51 DEC 28.3000	6 28 53.5	25 33 08	1.2	-3	-1	14.32	11.19C	-9.9	7	-0.5	-3
223	S-43.4	52 JAN 21.1250	6 08 45.3	25 47 13				14.93	11.22	-6.8	1		
224	J-85.1	51 APR 10.3319	14 06 21.7	-18 44 04	-1.0	4	7	13.22	9.99	-8.3	4	0.3	-11
224	K-24.5	51 APR 28.2139	13 49 46.1	-17 58 47	-1.2	8	8	12.96	9.90	-9.5	34	-0.1	2
226	T-84.4	52 JAN 29.3458	9 17 42.3	15 22 56	-3.2	4	2	15.03A	10.89A	-8.4	77	-0.2	0
227	D-51.4X	50 OCT 10.2146	1 22 53.3	19 54 37	1.6	14	12	15.32	10.34	-7.7	-28	0.1	2
227	D-52.1	50 OCT 10.2257	1 22 53.1	19 54 09	1.6	13	12	15.28C	10.31C	-7.5	-26	0.3	4
227	R-52.2	51 DEC 5.2715	4 54 01.0	34 31 09	2.1	3	1	14.88	9.88	-9.5	-19	-0.1	-3
227	R-62.1	51 DEC 5.2896	4 54 00.5	34 31 12	2.2	3	1	14.75	9.74	-9.5	-16	-0.1	0
227	R-52.3	51 DEC 22.2424	4 38 27.3	33 50 43	2.1	4	1	15.06	9.94	-9.0	-32	-0.6	-1
228	R-53.5	51 DEC 5.2625	4 51 52.1	26 33 08	0.2	1	0	15.53	13.55	-13.6	-40	-0.7	-11
228	R-43.9	51 DEC 22.1340	4 31 58.8	25 34 30	0.4	0	0	16.36	13.98	-10.4	-41	-0.5	-5
228	R-53.1	51 DEC 22.2333	4 31 53.1	25 34 05	0.3	0	0	16.45	14.07	-10.5	-36	-0.6	0
229	M-64.3	51 JUL 4.2354	19 14 22.8	-25 28 36	0.8	0	1	14.16	10.33	-8.5	-22	-0.6	-4
230	K-45.5	51 MAY 3.3167	14 49 55.9	-20 42 07	-1.3	11	2	10.43	7.59	-9.5	75	-0.1	-3
230	K-55.3	51 MAY 4.2090	14 49 05.7	-20 35 10	-1.3	11	1	11.46	8.66	-9.0	69	0.4	-9
231	L-45.3	51 JUN 2.2264	16 39 30.3	-30 46 53	0.2	-1	0	13.25	10.47	-9.5	9	0.0	-1
232	D-35.4	50 OCT 9.1889	0 29 01.5	- 2 44 48	-2.0	-17	-10	15.32	11.48	-7.8	-65	0.1	-3
232	S-45.3	51 DEC 28.2549	6 05 18.1	14 59 54	-3.0	-2	0	14.48	11.30	-10.2	10	0.0	-4
233	G-15.4	51 JAN 5.1785	6 08 40.5	13 49 35	-2.5	1	4	12.95	9.52	-9.5	-10	-0.3	-7
233	V-25.1	52 MAR 24.2056	11 58 53.3	- 7 55 55	-2.2	13	10	13.08	9.38	-8.7	69	-0.7	-1
234	G-16.1	51 JAN 5.3007	6 04 35.9	4 58 28	-1.1	-2	-3	13.54	10.30	-10.3	62	-0.4	-2
234	U-92.2	52 FEB 26.3882	12 05 45.4	10 21 27	0.7	1	-2	14.24	10.28	-7.5	100	-0.8	-1
234	V-12.2	52 MAR 22.1924	11 45 37.5	14 25 41	0.7	3	-2	14.08	10.24	-9.2	87	-0.5	0
235	P-55.3	51 OCT 1.2250	1 02 07.0	- 5 47 08	-3.2	-15	-26	13.42	9.70	-9.0	-30	-0.8	8
236	O-53.1	51 SEP 2.3222	22 45 29.2	- 1 28 24	0.9	5	3			-8.7	-76	-1.5	6
236	O-52.1	51 SEP 2.3319	22 45 29.0	- 1 28 26	0.9	5	3	11.61C	9.36C	-8.1	-88	-0.9	-6
237	F-44.3	50 DEC 12.1903	4 49 22.9	20 06 12	13.3	61	62	14.32	10.64	-10.5	6	-0.9	-5
238	H-46.1	51 FEB 9.2868	9 15 21.9	2 20 39	-1.6	3	4	13.06	9.21	-8.4	62	-0.5	-4
238	H-45.1	51 FEB 9.2972	9 15 21.5	2 20 43	-1.6	3	4	12.74	8.89	-8.1	66	-0.2	0
238	W-62.3	52 APR 26.3139	14 28 56.1	- 4 28 01	3.2	-8	-7	13.48	9.32	-8.2	71	-0.7	4

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O − C R A	O − C DEC	VAR	MAG	G	10 − DAY MOTION		O − C MOTION	
239	Q-45.3	51 NOV 1.2007	2 23 04.7	7 30 49	-8.4	-33	-29	13.97	11.75	-7.4	-69	0.1	-2
239	Q-55.1	51 NOV 3.2174	2 21 35.7	7 17 37	-8.4	-33	-29	13.88C	11.63C	-7.5	-73	0.0	-9
240	G-54.1	51 JAN 12.2868	7 11 52.3	21 59 57	-0.4	-1	0	12.37	8.85	-9.7	28	0.2	-2
240	W-34.5	52 APR 24.2042	13 43 17.1	- 7 23 57	0.5	-2	-3	14.16	10.09	-8.1	42	0.1	-3
240	W-43.1	52 APR 24.2854	13 43 12.8	- 7 23 36	0.5	-2	-3	13.79	9.72	-8.5	37	-0.3	-8
241	I-34.3	51 MAR 11.3701	11 09 49.1	- 2 57 00	-0.3	1	2	13.42	9.04	-7.8	45	-0.2	0
241	I-35.1	51 MAR 11.3812	11 09 48.3	- 2 56 59	-0.3	1	2	13.24	8.86	-8.0	45	-0.4	0
241	I-45.1	51 MAR 13.3604	11 08 18.5	- 2 47 58	-0.2	2	1	12.70	8.31	-7.2	32	0.4	-14
241	X-44.2	52 MAY 24.1937	15 49 03.0	-24 17 05	-0.3	1	0	12.62	8.72	-9.0	37	-0.5	-2
242	N-71.2X	51 AUG 6.3389	21 47 49.0	2 13 41	-1.0	-3	-4	15.26	10.89	-7.5	-30	-0.5	6
242	N-81.1X	51 AUG 6.3583	21 47 48.2	2 13 38	-1.0	-3	-4	15.33	10.94	-6.9	-32	0.1	4
242	O-11.2	51 AUG 31.2896	21 29 23.5	0 05 14	-0.9	-6	-3	14.61A	10.28A	-6.8	-63	0.1	0
243	N-64.2X	51 AUG 5.3007	21 25 45.4	-15 24 32	1.1	7	5	14.47C	10.82C	-8.2	-30	0.0	6
243	N-63.2X	51 AUG 5.3104	21 25 45.1	-15 24 32	1.1	7	5	14.91	11.26	-8.7	-30	-0.5	6
243	N-74.1	51 AUG 6.2479	21 24 58.3	-15 27 53	1.1	7	5	14.92C	11.31C	-8.5	-46	-0.2	-10
244	N-53.1	51 AUG 3.3410	20 52 12.7	-11 46 30	0.2	1	1	14.90	13.39	-10.2	-41	-0.4	1
245	I-32.1	51 MAR 11.2875	10 52 22.3	14 53 44	0.7	-4	-5	14.16C	9.53C	-7.7	35	-0.2	-4
245	W-53.11	52 APR 26.1965	14 16 22.9	-10 18 16	0.3	-3	-2	14.20	9.45C	-7.5	32	0.0	3
246	H-25.1	51 FEB 8.2667	8 39 14.9	6 12 51	-0.8	1	1	13.73	10.04	-8.7	81	-0.4	-1
246	H-26.1	51 FEB 8.2771	8 39 14.1	6 12 57	-0.8	1	1	13.51	9.83	-8.0	76	0.3	-6
247	P-42.1	51 SEP 30.2035	0 39 38.8	13 53 03	8.9	147	143	11.38	9.19	-14.6	94	-0.2	15
248	K-84.1	51 MAY 8.3583	16 07 50.3	-22 12 02	-0.8	2	1	13.74	11.11	-8.8	39	-0.7	-1
248	L-24.1	51 MAY 28.1993	15 49 29.9	-20 38 33	-0.8	2	1	13.62	11.26	-10.0	50	-0.5	0
249	O-24.1	51 AUG 31.2604	21 50 13.7	-14 28 18	-1.7	1	-15	13.69	12.18	-11.8	27	-1.1	6
250	M-56.1	51 JUL 4.2556	18 56 47.9	-40 18 38	-0.1	-1	0	13.57	8.68	-9.6	-12		
251	B-63.3	50 AUG 18.3243	22 21 26.5	- 8 35 55	6.1	13	15	15.48	11.32	-7.4	-66	-0.6	1
251	R-46.1	51 DEC 4.2104	4 05 48.2	4 34 47	1.6	6	4	14.60C	10.96C	-8.1	-10	-0.2	2
252	L-62.2	51 JUN 7.3333	17 09 25.3	-11 00 09	1.2	2	0	14.89	10.61	-8.8	21	-1.0	-5
253	G-15.7	51 JAN 5.1785	6 10 00.1	13 24 10	-0.4	-5	0	14.95	11.26	-9.7	17	-0.4	0
253	U-54.7	52 FEB 20.2410	10 51 18.4	3 40 54	-0.9	3	4	15.99	11.51	-8.0	59	-0.4	1
254	J-64.1	51 APR 8.3681	13 24 18.3	- 7 28 19	0.4	-8	-3	14.75C	13.22C	-10.2	29	0.1	0
254	J-54.5X	51 APR 9.2757	13 23 21.3	- 7 25 34	0.4	-8	-3	14.54	13.09	-10.9	27	-0.5	-2
255	O-44.3	51 SEP 2.1924	22 47 09.1	-17 01 21	1.4	8	11	15.25	11.48	-9.4	-32	-0.2	-5
255	O-45.2X	51 SEP 2.2021	22 47 08.4	-17 01 24	1.3	8	11	14.85C	11.08C	-9.4	-27	-0.2	0
255	O-55.1	51 SEP 2.2340	22 47 06.9	-17 01 32	1.3	7	11	15.01	11.24	-9.4	-23	-0.2	4

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O − C R A	O − C DEC	VAR	MAG	G	10 − DAY MOTION		O − C MOTION	
256	C-22.1	50 SEP 10.2076	22 44 51.9	− 0 44 09	2.4	6	6	14.79	10.84				
256	C-32.4	50 SEP 11.2861	22 44 08.6	− 0 53 02	2.3	7	6	14.91	10.96	-6.0	-115	0.6	-33
256	R-26.4	51 NOV 29.1681	3 47 59.9	3 46 22	2.4	1	3	15.48	11.13	-7.7	-33	0.0	0
256	R-36.2	51 NOV 29.2042	3 47 58.2	3 46 12	2.4	1	3	15.30	10.95	-8.2	-32	-0.5	1
257	H-43.3	51 FEB 9.3187	9 20 22.3	21 08 51	-0.4	1	2	13.92	10.20	-8.8	32	-0.2	-3
257	W-43.9	52 APR 24.2854	13 52 53.8	-11 14 12	-0.2	1	1	14.22C	9.85C	-7.9	32	-0.3	-2
258	S-26.5	51 DEC 27.2007	5 19 03.0	3 21 28	-3.1	-1	2	12.45	9.40	-8.8	-7	-0.1	2
259	G-43.3	51 JAN 12.1750	7 13 15.5	27 35 28	1.3	1	1	13.67	9.17	-9.2	31	-0.2	-6
259	G-53.1	51 JAN 12.2764	7 13 10.3	27 35 41	1.1	1	0	12.83	8.33	-10.1	35	-1.1	-2
259	V-41.1	52 MAR 22.3111	12 41 10.7	13 14 19	1.5	-8.	-10	12.81	8.98	-8.0	53	-0.6	2
260	C-54.1	50 SEP 14.2576	23 24 45.7	− 4 25 08	2.3	9	10	14.26	10.54C	-6.1	-75	0.3	-15
260	C-53.5X	50 SEP 14.2910	23 24 43.9	− 4 25 07	2.2	8	10	13.81	10.07C	-7.1	-55	-0.7	5
260	R-45.4	51 DEC 4.2014	4 27 55.5	12 50 21	1.9	3	4	14.92C	10.38C	-8.0	-18	-0.4	-1
260	R-45.4	51 DEC 22.1521	4 15 14.8	12 31 05	2.0	4	4	15.08	10.25	-6.6	-9	-0.5	-5
261	D-54.4	50 OCT 10.2917	1 17 14.4	1 44 41	-0.7	-4	-4	13.42	10.63	-9.9	-41	-0.5	14
261	U-83.3	52 FEB 24.3681	11 35 24.1	9 21 08	-1.9	13	12	12.85	10.75	-8.0	72	-0.6	2
261	U-73.11	52 FEB 26.2618	11 33 55.6	9 34 40	-2.1	14	13	12.21	10.17	-8.5	75	-0.7	4
262	O-65.4X	51 SEP 3.2382	23 21 51.4	-16 17 18	1.3	10	10			-9.7	-46	-0.4	-2
263	F-24.1	50 DEC 11.1312	3 53 01.3	19 14 34	0.0	1	0	15.31	11.78	-8.3	-22	-0.5	4
263	U-44.7	52 FEB 19.3210	10 25 35.3	8 00 28	0.3	-1	-2	15.25	11.38	-8.3	47	-0.3	-1
264	N-66.1	51 AUG 5.2431	21 24 38.6	-32 46 24	0.0	-1	0	12.56	9.19	-9.8	-48	-0.4	2
264	N-76.1	51 AUG 6.2681	21 23 40.5	-32 51 22	0.2	-2	1	13.83	10.45	-10.0	-51	-0.5	-3
265	H-63.4	51 MAR 1.2479	10 07 31.3	12 56 21	2.2	-45	-35	14.35C	12.41C	-17.5	-90	-1.1	-1
266	G-56.1	51 JAN 12.3097	7 26 13.7	4 27 40	0.0	2	0	13.12	9.64	-8.5	-9	0.7	-5
266	V-46.1	52 MAR 26.2125	12 37 29.5	-18 33 58	0.1	-1	0	13.50	9.12	-8.2	67	-0.4	5
267	I-52.2	51 MAR 15.3375	11 50 00.2	11 11 12	0.8	-5	-5			-9.3	43	-1.0	-10
267	I-52.2	51 MAR 31.3410	11 36 41.2	12 20 25	0.8	-5	-5	15.32	11.68	-8.3	37	-0.6	5
268	G-54.2	51 JAN 12.2868	7 18 12.3	21 27 07	14.7	-17	-19	13.08	9.46C	-8.6	29	0.5	9
268	W-53.14	52 APR 26.1965	14 22 47.5	-10 07 53	5.4	-27	-27	13.23	10.10	-8.7	36	-0.9	-3
268	W-63.2	52 APR 26.3049	14 22 42.4	-10 07 27	5.4	-26	-27	12.77	9.64	-8.5	41	-0.7	2
269	Q-75.1	51 NOV 4.3139	3 13 53.2	10 00 03	2.0	7	8	14.63C	10.88C	-8.5	-48	0.7	-2
269	Q-74.2	51 NOV 4.3229	3 13 52.5	10 00 00	2.0	7	8	14.68C	10.94C	-9.3	-46	-0.1	0
270	I-34.2	51 MAR 11.3701	11 01 17.2	2 03 07	0.0	0	0	12.83A	9.98A	-10.2	54	-0.2	-10
271	F-33.1	50 DEC 11.3056	4 29 13.1	27 19 41	-10.4	-19	-3	14.19C	10.75C	-9.6	-25	-0.3	-3
271	F-43.1	50 DEC 12.2347	4 28 22.4	27 15 18	-10.3	-22	-3	14.14	10.69	-9.0	-26	0.2	-3

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
271	U-54.4	52 FEB 20.2410	10 46 44.7	7 40 50	1.3	-10	-9	15.12	10.92	-7.9	39	-0.1	2
271	U-53.3	52 FEB 24.2312	10 43 33.5	7 56 16	1.5	-11	-11	14.80	10.74	-8.4	38	-0.3	0
272	B-45.2	50 AUG 14.2625	21 28 31.0	-22 03 32	-0.3	1	-2	15.40C	11.85C	-8.7	-31	0.0	4
273	H-74.6	51 MAR 5.2542	10 29 49.1	9 20 18	-0.1	8	1	14.48C	11.49C	-9.2	136	-0.6	1
273	H-83.1	51 MAR 6.1937	10 29 00.9	9 33 08	0.0	7	0	15.11C	12.12C				
274	G-63.4	51 FEB 4.2333	7 58 19.6	23 20 40	0.1	-3	0	15.06	11.02	-8.9	26	-0.7	-3
274	W-74.5	52 APR 27.3799	15 02 02.4	-12 29 02	0.0	0	0			-8.4	31	-0.6	4
274	X-13.1	52 MAY 20.2549	14 43 55.9	-11 34 30	-0.1	0	0	14.70C	11.33C	-7.5	16	-0.4	-1
275	D-44.4	50 OCT 9.2951	0 52 16.4	- 0 49 34	-5.3	-37	-29	14.03A	9.90A	-8.0	-56	-0.2	-1
275	D-45.1	50 OCT 12.1868	0 50 00.1	- 1 05 09	-5.3	-36	-29	14.35	10.20	-8.1	-55	-0.4	-2
275	S-54.2	52 JAN 23.1257	6 21 24.1	19 41 09	-8.7	2	4	13.18C	9.83C	-7.7	25	0.0	-5
276	Q-45.1	51 NOV 1.2007	2 15 08.5	10 40 54	0.9	1	-7	13.55	9.72	-7.2	-105	0.1	-4
276	Q-44.3	51 NOV 1.2639	2 15 05.6	10 40 16	0.9	0	-7	13.40	9.56	-6.7	-102	0.6	-1
277	H-74.4	51 MAR 5.2542	10 22 44.6	8 23 10	-2.4	14	13	15.00C	10.92C	-8.0	53	-0.2	-5
277	X-14.7	52 MAY 20.2458	15 12 36.2	-17 52 46	-1.4	6	4	14.95	10.99	-8.5	35	-0.2	0
277	X-23.3	52 MAY 22.2729	15 10 56.5	-17 45 31	-1.5	6	5	15.19	11.20	-7.9	32	0.2	-3
278	G-52.3	51 JAN 12.1972	7 32 34.3	31 00 01	-0.4	0	0	13.69A	10.38A	-10.8	37	-0.5	-4
278	X-44.6	52 MAY 24.1937	16 01 56.6	-20 45 58	-1.1	4	5	12.92	10.51C	-9.9	-9	-0.2	3
279	D-64.5	50 OCT 12.2562	1 35 34.2	7 24 53	0.0	0	0	15.31	9.70	-6.3	-34	-0.5	-2
279	R-44.6	51 NOV 29.2854	4 25 51.0	21 18 37	0.8	0	2	15.33A	9.80A	-6.7	-18	0.0	-7
279	R-44.16X	51 DEC 22.1431	4 11 23.9	20 51 53	0.0	-1	0	15.42	9.44	-7.1	-10	-1.6	1
280	I-74.2	51 APR 2.2736	12 21 31.0	- 1 40 33	-5.4	39	48	15.17	11.54	-9.1	25	-0.6	-4
280	I-73.3	51 APR 2.3271	12 21 28.3	- 1 40 21	-5.4	40	48	15.78C	12.15C	-6.2	31	0.3	2
281	H-52.3	51 FEB 10.2292	9 53 28.1	22 28 37	0.0	0	0	15.32C	13.28C	-12.0	44	-0.3	-4
281	H-62.1	51 FEB 11.2069	9 52 19.4	22 33 02	0.0	0	0	14.96	12.88	-12.8	52	1.0	4
282	M-72.2X	51 JUL 1.2764	19 23 31.9	-12 27 14	2.5	-5	0	14.90C	11.86C	-9.6	-39	-0.3	-1
283	B-62.2	50 AUG 18.3111	0 0 .	0 0				13.15C					
283	B-72.3	50 AUG 19.2722	22 25 29.3	- 3 24 28	-1.4	-10	-8	12.95	9.74	-8.0	-11	0.0	-1
283	C-12.3X	50 SEP 9.2396	22 08 20.5	- 3 59 02	-1.4	-10	-11	13.28	10.04	-8.2	-21	-0.6	0
283	C-13.6X	50 SEP 9.2514	22 08 20.1	- 3 59 01	-1.4	-10	-11	13.36C	10.12C				
283	S-32.3	51 DEC 27.2729	5 42 15.5	30 25 53	-0.7	0	0	12.86	9.00	-10.0	-28	-0.4	-2
284	O-21.1	51 AUG 31.2993	21 53 17.1	4 36 08	-3.7	-18	-18	12.58	11.12	-9.1	-79	-1.3	-3
285	U-24.2	52 FEB 18.2215	9 38 29.3	7 58 41	-11.8	124	131	16.74	11.83	-8.6	17	-0.2	4
286	L-71.1	51 JUN 7.3528	17 41 27.7	0 19 30	-2.3	7	6	14.67	10.08	-7.7	8	-0.5	5
286	M-11.1	51 JUN 26.1819	17 27 26.9	- 0 05 29	-2.3	6	6	14.79	10.18	-7.1	-24	0.1	5

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
287	R-36.3	51 NOV 29.2042	3 49 21.6	3 03 35	0.3	2	-1	12.44C	9.54C	-10.3	-9	-0.6	2
288	O-54.2	51 SEP 2.2215	22 55 33.3	-11 14 06	0.1	0	1	14.97	11.00	-8.5	-52	-0.4	6
289	P-23.1	51 SEP 26.2778	23 54 44.9	- 0 06 06	-0.7	-3	-3	12.64C	10.49C	-7.5	-86	-0.8	0
291	Q-54.4X	51 NOV 3.2083	2 44 56.8	12 54 03	0.1	-1	0	15.00	13.04	-10.6	-54	-0.2	0
291	Q-64.1	51 NOV 3.3076	2 44 50.6	12 53 38	-0.1	0	0	14.39	12.43	-10.8	-56	-0.4	-2
293	E-36.1	50 NOV 7.2840	2 20 33.4	3 40 01	0.1	4	1	14.87	11.05	-10.3	16	-1.0	12
294	L-42.2	51 JUN 2.2958	16 44 21.7	-13 16 51	-2.4	4	5	14.59	11.17	-8.4	8	0.0	-1
295	P-33.1	51 SEP 27.3521	0 07 13.4	5 39 59	0.2	3	1	14.04	11.33	-9.2	-54	-1.0	-2
296	C-64.3X	50 SEP 17.2312	23 56 33.6	- 3 41 15	-0.7	-5	-4	14.56	13.53	-9.6	-52	-1.2	12
296	C-54.3	50 OCT 6.2535	23 41 10.5	- 5 32 26	-0.6	-5	-4	15.34	13.94	-6.6	-59	0.2	-13
297	K-46.1	51 MAY 3.3062	14 27 54.6	-25 21 30	-0.1	1	0	14.23C	9.94C	-8.1	29	0.2	0
297	K-45.7	51 MAY 3.3167	14 27 54.3	-25 21 31	-0.1	1	0	14.81	10.52	-8.9	31	-0.6	2
298	O-24.4	51 AUG 31.2604	22 02 43.0	-18 51 46	-0.2	-1	-1	15.32	12.43	-10.9	-29	-0.6	-3
298	O-25.2	51 SEP 1.2014	22 01 44.8	-18 54 12	-0.2	0	-1	15.01	12.08	-10.8	-28	-0.6	-3
298	O-35.3X	51 SEP 1.2687	22 01 40.3	-18 54 27	-0.2	0	-1	15.29	12.36	-10.9	-26	-0.7	-1
299	R-44.8	51 NOV 29.2854	4 27 06.3	21 26 33	0.4	-1	1	14.98A	12.80C	-10.6	-36	0.0	-4
299	R-44.1	51 DEC 22.1431	4 05 25.9	20 15 22	0.4	-1	1	15.50C	12.76C	-7.0	-23	0.1	4
300	J-34.4	51 APR 4.3174	12 32 12.9	- 2 50 07	0.2	-1	-1	15.25	11.05	-7.4	45	0.0	-1
300	J-33.1	51 APR 4.3590	12 31 59.6	- 2 49 51	0.1	-2	-1	14.90C	10.70C	-7.5	46	-0.1	0
301	J-33.4	51 APR 4.3590	12 39 09.7	2 03 08	-2.8	17	15	14.29	11.09	-8.9	63	-1.0	0
302	E-73.3	50 NOV 13.2757	3 40 09.7	24 18 30	-5.6	-19	-19	14.10	12.09	-11.5	-6	-1.1	6
303	F-72.1	50 DEC 14.1833	5 47 45.6	33 31 28	-1.2	0	0	14.02	10.17	-10.4	0	-0.4	-2
303	U-74.2	52 FEB 24.3590	11 27 26.4	3 12 29	-0.6	5	5	14.08	9.75	-7.5	23	-0.3	-4
304	I-72.6	51 APR 2.3375	12 27 12.7	9 21 05	3.6	1	-9	13.89C	10.33C	-7.8	92	0.6	-4
305	H-84.1	51 MAR 6.2542	10 37 05.7	3 07 35	2.2	-8	-12	13.74	10.53	-7.9	56	-0.6	-2
305	X-43.3	52 MAY 24.2889	16 01 56.5	-17 12 59	1.1	-2	-1	14.50	10.08	-7.7	30	0.0	0
306	B-54.2	50 AUG 18.2229	22 10 06.5	-12 48 22	-1.9	-13	-7	12.20C	10.70C	-8.5	-102	-1.0	-2
306	B-64.2	50 AUG 18.3389	22 10 01.2	-12 49 32	-1.9	-14	-7	12.17	10.66	-8.2	-81	-0.7	19
306	T-14.1	52 JAN 25.1625	6 57 05.8	17 01 34	-1.8	5	1	13.58	10.10	-9.1	39	-0.1	-4
307	J-32.1	51 APR 4.3694	12 43 43.1	5 04 26	1.1	-9	-7	14.82	10.74	-8.3	45	-0.4	-2
308	L-73.3	51 JUN 8.2278	17 40 53.7	-16 29 13	2.5	0	3	11.98C	8.72C				
308	M-13.1	51 JUN 26.2021	17 25 00.9	-16 15 15	2.3	-1	2	12.22	8.88	-9.4	5	-1.1	2
309	G-63.2	51 FEB 4.2333	7 39 25.4	26 07 31	1.1	-8	-3	15.31	11.28	-9.0	11	-0.5	4
309	W-24.1	52 APR 23.1903	13 12 09.9	-10 41 25	1.7	-13	-12	15.07	11.71	-9.2	37	-0.7	-3
310	M 54.1	51 JUN 30.3174	18 54 24.9	-18 56 36	-0.6	0	-1	14.82	11.55	-8.9	-5	0.1	-2

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
310	M-53.6X	51 JUN 30.3271	18 54 24.3	-18 56 38	-0.6	0	-1	14.78	11.51	-9.4	-1	-0.4	2
311	O-44.1	51 SEP 2.1924	22 27 39.1	-14 44 54	2.4	13	14	15.07	11.38	-8.5	-52	-0.5	-6
312	O-25.3	51 SEP 1.2014	22 03 17.3	-21 28 42	-0.7	-1	-5	13.27	10.20	-9.3	-2	-0.3	0
312	O-35.1	51 SEP 1.2687	22 03 14.1	-21 28 46	-0.8	-1	-6	12.90C	9.83C	-9.6	-2	-0.6	0
313	D-75.2	50 OCT 13.2299	2 02 06.2	2 21 51	0.5	-2	1	12.24	9.50	-8.1	-102	-0.1	2
313	E-15.3	50 NOV 4.1757	1 43 03.5	- 1 09 28	0.4	-2	1	12.36	9.51	-9.0	-90	-0.9	-10
313	E-16.2	50 NOV 4.1868	1 43 03.1	- 1 09 31	0.4	-3	1	12.95	10.10	-9.5	-85	-1.4	-5
313	W-72.1	52 APR 27.3528	14 37 02.1	- 1 04 36	0.7	2	-2	11.90	9.50	-9.1	87	-0.3	-3
314	K-42.1	51 MAY 3.2021	14 27 00.9	- 1 15 38	0.1	0	0	15.69	10.84	-7.5	53	-0.6	4
315	L-43.2	51 JUN 2.2056	16 47 54.3	-17 45 17	1.1	0	-2	16.18C	14.38C	-10.9	11	-0.3	-12
316	J-53.4	51 APR 9.2160	13 11 39.9	- 4 06 03	0.9	-4	-7	14.81	12.56	-7.4	47	0.0	1
317	D-34.3	50 OCT 9.1785	0 30 18.5	0 57 29	0.0	0	0	13.22	11.35	-9.0	-68	-0.3	-6
317	U-34.5	52 FEB 19.2299	10 04 18.1	11 44 17	0.0	0	0	13.54C	11.07C	-11.1	67	-0.9	5
318	F-75.2	50 DEC 31.1778	5 44 48.5	8 36 41	0.2	-2	0	14.33	10.22	-7.9	22	-0.2	3
318	U-83.8	52 FEB 24.3681	11 51 07.2	3 19 23	1.6	-1	-6	14.76	10.46	-5.6	71	-0.2	2
318	U-84.10	52 FEB 26.2708	11 50 03.5	3 32 51	1.6	0	-6	14.32	10.02	-5.7	71	-0.1	0
318	V-13.2	52 MAR 23.1903	11 33 12.9	6 44 59	1.5	2	-5	14.27	10.12	-6.9	75	-0.5	6
320	H+65.1	51 MAR 1.2736	9 47 14.5	0 14 11	-0.7	4	4	16.06C	11.66C	-7.4	54	-0.3	-2
320	H-66.1	51 MAR 1.3486	9 47 10.5	0 14 34	-0.7	5	4	16.11A	11.71A	-7.6	53	-0.5	-3
320	W-54.14	52 APR 26.2056	14 19 37.4	-14 50 45	-0.8	3	3	15.76	11.67C	-7.9	56	-0.4	-4
321	E-63.3	50 NOV 12.2583	3 17 27.6	18 59 05	2.9	16	13	14.60	11.37C	-9.3	-33	-0.2	-7
321	U-43.2	52 FEB 20.2319	10 19 59.2	14 23 00	-0.5	1	3	14.92A	11.49A	-8.8	45	-0.3	0
322	O-71.1	51 SEP 3.3500	23 29 39.2	12 50 33	0.1	1	1	12.28	10.17	-6.7	-20	-0.3	1
324	L-86.2	51 JUN 9.2889	17 54 15.7	-39 36 27	1.1	7	1	11.52C	8.21C	-11.6	-3	-0.2	0
324	M-17.1	51 JUN 27.2375	17 32 15.0	-39 10 36	1.0	5	1	11.35C	8.05C	-13.4	31	-1.2	-2
325	L-76.6X	51 JUN 8.2569	17 40 18.0	-35 00 03	-0.7	0	0	15.23C	10.23C	-8.9	2	-0.2	3
325	M-16.4X	51 JUN 27.2278	17 23 19.3	-34 45 13	-1.0	0	0	14.98C	9.95C				
326	W-12.2	52 APR 22.1688	12 52 40.8	4 32 37	-0.2	-3	3			-14.0	-92	-0.2	-5
327	G-12.1	51 JAN 5.1451	5 59 28.7	33 55 52	-0.2	-1	0	15.04	11.15	-10.4	-13	-0.3	1
327	U-94.6	52 FEB 26.3701	12 11 01.9	- 1 00 19	-1.1	9	10	15.32	11.40	-6.2	17		
327	V-14.3	52 MAR 23.1993	11 49 48.3	0 13 54	-1.3	9	12	14.88	11.38	-9.2	37	-0.4	3
327	V-24.1	52 MAR 23.2174	11 49 47.2	0 13 59	-1.3	9	12	14.77A	11.28A	-9.2	39	-0.4	5
328	U-52.7	52 FEB 24.2222	10 44 00.5	15 53 21	0.7	-8	-8	13.88C	10.24C	-9.9	8	-0.1	2
331	N-45.2	51 AUG 3.2229	20 46 00.3	-27 29 04	1.4	5	6	14.16	10.61	-9.6	-23	-0.7	2
332	F-83.3	50 DEC 14.3111	6 01 56.1	27 00 40	-1.6	-1	-1	13.98C	10.31C	-10.2	11	0.1	3

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
332	F-73.4	50 DEC 31.1562	5 44 54.1	27 04 40	-1.7	-2	-1	13.68C	9.94C	-10.2	-1	-1.0	1
332	U-83.6	52 FEB 24.3681	11 42 26.1	5 04 58	-0.9	7	6	14.78	10.72	-7.0	45	0.0	1
333	J-64.2	51 APR 8.3681	13 30 25.9	-12 10 16	0.6	-5	-4	15.33	10.55	-7.4	34	0.0	-1
334	I-73.2	51 APR 2.3271	12 21 12.3	3 09 26	0.0	0	0	13.73C	8.45C	-6.7	45	-0.8	4
334	X-43.1	52 MAY 24.2889	15 54 24.7	-14 11 50	-0.1	0	0	13.27	8.33	-7.3	19	-0.7	2
335	R-55.4	51 DEC 4.2194	4 50 31.0	14 50 26	-1.5	-4	-3	13.11C	9.63C	-11.1	-19	-0.7	-6
335	R-54.13	51 DEC 5.2535	4 49 26.9	14 49 05	-1.5	-3	-3	13.48C	10.00C	-10.3	-14	0.1	-1
335	R-55.1	51 DEC 23.1528	4 32 06.9	14 35 40	-1.5	-2	-3	13.67	9.89	-9.2	1	-0.8	3
336	F-54.3	50 DEC 13.1542	5 10 03.0	19 05 28	0.0	-1	0	13.09	10.41	-11.8	-43	-0.4	-9
336	W-54.7	52 APR 26.2056	14 12 31.7	-17 02 40	0.0	0	0	13.00	11.31	-10.1	85	-0.8	2
337	Q-32.1	51 OCT 30.2729	1 51 27.7	21 11 14	6.4	53	43	11.60C	9.47C	-11.9	-19	-0.9	2
338	N-53.2	51 AUG 3.3410	20 53 55.3	-13 40 04	0.0	0	0	12.98	9.42	-9.6	-17	-0.8	-1
339	E-85.3	50 NOV 16.2562	3 56 36.8	6 55 33	0.0	-2	0	14.34	10.44	-8.4	-45	-0.4	-2
339	E-86.1	50 NOV 16.2660	3 56 36.5	6 55 27	0.0	-3	0	14.20	10.30	-8.2	-36	-0.2	7
339	F-16.1	50 DEC 10.1597	3 38 00.5	5 48 06	-0.1	-3	0	14.43	10.30	-6.9	-15	-0.3	-4
339	T-75.1	52 JAN 29.3188	8 59 01.9	7 23 51	-0.2	1	0	14.80	10.44	-8.0	48	0.6	-2
340	O-74.2	51 SEP 5.2826	23 28 17.8	- 8 48 05	0.7	10	5	14.63C	11.43C	-9.0	-37	-0.6	5
341	R-33.1	51 NOV 29.1771	3 49 40.5	25 58 05	-0.4	-2	-2	14.63	12.57	-13.0	-8	-0.8	8
341	R-32.2	51 NOV 29.2764	3 49 32.8	25 58 01	-0.5	-2	-2	14.48	12.42	-12.8	-9	-0.6	7
342	G-15.2	51 JAN 5.1785	6 06 37.4	14 25 21	-3.4	9	5	13.42	11.05	-10.0	-19	-0.7	3
342	W-75.6	52 APR 27.3708	15 04 13.3	-19 06 46	-1.4	0	3			-9.2	63	-0.5	4
342	W-84.2	52 APR 28.2778	15 03 26.0	-19 01 16	-1.4	0	3	14.51	11.11	-9.5	60	-0.8	0
344	R-62.2	51 DEC 5.2896	4 55 46.9	34 56 16	-3.1	-8	-14	13.39	9.08	-12.7	18	-0.6	-3
344	R-52.2	51 DEC 22.2424	4 35 54.5	35 09 39	-3.1	-11	-14	13.57	9.12	-11.0	2	-0.2	4
345	K-73.3	51 MAY 5.3757	15 43 43.8	-14 13 47	0.0	0	0	12.99	10.12	-9.0	71	-0.3	-3
346	K-53.4	51 MAY 4.1882	15 08 07.4	- 7 41 34	0.2	-6	-1	12.72C	8.75C	-8.7	17	-0.3	-6
346	K-62.1	51 MAY 5.2104	15 07 15.2	- 7 39 18	0.2	-6	-1	12.73	8.75	-8.5	18	0.0	-5
347	Q-75.2	51 NOV 4.3139	3 17 57.9	6 15 34	-1.6	-11	-10	13.55	9.97	-9.1	-20	0.5	-3
348	K-53.2	51 MAY 4.1882	14 58 31.3	- 5 51 53	2.4	-14	-16	14.74	10.72	-8.6	17	-0.3	-1
348	K-52.5	51 MAY 4.3000	0 0 .	0 0				14.45	10.42		24		
349	N-85.5	51 AUG 7.2917	22 07 31.7	-24 41 57	-0.3	-2	-2			-8.7	-35	-0.8	8
349	O-15.3	51 AUG 31.1826	21 46 46.7	-25 54 16	-0.4	0	-3	10.80C	7.18C	-8.7	-18	-0.4	-5
349	O-16.3	51 AUG 31.2403	21 46 43.5	-25 54 20	-0.5	0	-3	10.79C	7.17C				
349	O-26.1	51 SEP 1.2111	21 45 55.5	-25 55 32	-0.4	-1	-3	10.76	7.11	-8.9	-21	-0.7	-9
350	M-75.2	51 JUL 4.3382	19 38 53.3	-32 58 29	0.9	-8	-2	14.32	9.78	-9.6	-81	-0.9	-5

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
351	P-47.1	51 SEP 30.2938	0 25 21.7	-12 12 57	-0.2	1	-1	14.29	10.39	-9.0	-40	-0.8	12
352	D-23.2	50 OCT 8.1556	0 18 36.7	8 29 55	-0.5	-8	-3	12.89	11.67	-10.0	-85	-1.8	-8
352	V-34.3	52 MAR 23.2354	12 20 33.7	- 7 37 14	-0.4	7	2	14.08	11.31	-10.3	68	-0.5	0
353	B-44.2	50 AUG 14.2479	21 45 44.8	-19 38 43	0.4	3	1	15.39C	12.41C	-8.2	-51	0.8	15
353	B-45.1	50 AUG 14.2625	21 45 44.1	-19 38 52	0.4	3	1	15.34C	12.36C	-10.0	-63	-1.0	3
353	U-62.7	52 FEB 24.2403	11 05 08.1	14 11 33	-2.9	16	17	15.09	12.07	-9.3	72	-0.2	0
354	N-53.3	51 AUG 3.3410	21 02 49.9	-12 53 07	0.5	0	0	10.84C	6.86C	-8.4	-72	-0.6	10
355	M-45.3	51 JUN 30.2139	18 28 13.5	-29 49 30	-4.9	-4	-5	14.96	11.56	-11.5	-3	-0.8	2
355	M-46.2	51 JUN 30.2347	18 28 11.9	-29 49 35	-4.9	-4	-5	14.93	11.53	-10.7	-9	0.0	-4
356	Q-32.3	51 OCT 30.2729	2 06 27.9	23 27 29	-0.4	-3	-2	10.99C	8.88C	-11.2	-12	-1.0	-7
356	Q-42.2	51 NOV 1.2819	2 04 24.8	23 25 44	-0.5	-3	-3	11.19	9.10	-10.5	-9	-0.3	0
357	N-12.4	51 JUL 29.1910	19 36 14.0	-13 21 17	-2.7	3	2	13.93C	9.69C	-8.1	-62	-0.8	0
358	G-24.3	51 JAN 6.2139	6 29 31.9	17 45 28	1.1	-2	-1	13.42	10.51	-9.1	20	0.2	4
358	V-64.5	52 MAR 23.3444	13 14 31.5	- 5 51 13	0.2	3	-1	14.02	9.78	-7.3	53	-0.3	0
358	W-13.3	52 APR 22.1778	12 52 19.1	- 3 07 29	0.1	5	-1			-7.1	47	-0.4	-2
359	H-22.2	51 FEB 8.1812	8 50 53.3	26 07 54	-0.3	-2	2	14.65	10.61	-10.1	16	-0.4	-4
359	W-24.2X	52 APR 23.1903	13 08 26.1	-10 35 44	-0.9	7	7	14.33	10.31	-8.9	34	-0.4	-1
360	K-51.3	51 MAY 4.3097	14 50 55.9	0 41 27	-0.4	1	2	14.39	9.51	-7.6	38	-0.1	3
360	K-52.2	51 MAY 4.3000	14 50 56.3	0 41 19	-0.4	1	2	13.98	9.10	-7.6	35	0.0	0
361	N-26.3X	51 JUL 30.2382	20 02 22.0	-36 45 52	0.6	1	2	15.59C	9.39C	-7.4	-4	-0.1	5
362	I-63.2	51 APR 2.2326	12 10 33.6	4 17 47	0.2	-2	-2	13.08C	9.81C	-9.5	26	-0.3	2
362	I-73.1	51 APR 2.3271	12 10 28.0	4 17 58	0.2	-2	-2	13.39C	10.13C	-9.6	28	-0.4	4
363	E-54.2	50 NOV 12.2042	2 48 03.6	12 51 17	0.0	-1	0	13.01	9.96	-9.8	-23	-0.5	-7
363	U-22.2	52 FEB 18.2035	9 51 21.7	22 23 13	1.4	-5	-7	13.67	9.97	-9.8	44	-0.7	0
363	U-32.1	52 FEB 19.2118	9 50 26.9	22 27 46	1.3	-4	-7	13.63	9.91	-9.3	52	-0.2	9
364	R-55.3	51 DEC 4.2194	4 44 10.0	15 14 57	0.5	1	2	11.90	10.75	-11.5	21	-0.5	-3
364	R-54.9	51 DEC 5.2535	4 43 01.1	15 17 35	0.5	1	2	12.28	11.14	-11.8	20	-0.8	-5
364	R-44.13	51 DEC 22.1431	4 26 05.2	16 13 38	0.3	2	1	12.67	11.15	-9.4	40	-1.4	-1
365	N-41.1	51 JUL 31.3125	20 46 56.3	- 0 47 05	-0.4	8	-1	13.71	10.22	-8.8	-58	-1.0	-7
365	N-51.1	51 AUG 3.3201	20 44 33.4	- 1 02 43	-0.4	8	-1	14.05	10.58	-7.9	-52	-0.1	4
366	P-62.3	51 OCT 1.3333	1 15 35.9	16 46 05	-0.1	-2	-1	13.66	9.56	-8.6	-6	-0.4	5
367	C-34.2	50 SEP 11.3076	22 58 31.0	-11 57 26	-0.3	-2	-2	14.58	11.94	-9.9	-60	-0.2	-2
367	U-33.6	52 FEB 19.2208	10 00 34.8	17 44 53	-0.6	3	3	13.58	12.06	-10.3	56	-0.1	-6
368	H-84.2	51 MAR 6.2653	10 34 48.6	- 1 38 26	-0.9	1	5	15.91	11.07	-7.6	53	-0.4	2
368	W-84.6	52 APR 28.2778	15 15 26.2	-18 28 59	12.2	-17	-24	14.93C	11.06C	-7.7	46	-0.2	-8

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
368	W-83.5	52 APR 28.2868	15 15 25.7	-18 28 54	12.2	-17	-24	15.01	11.14	-7.9	51	-0.4	-3
368	X-14.4	52 MAY 20.2458	14 58 15.8	-16 23 43	12.2	-20	-24	14.71	10.83	-7.5	51	-0.2	-8
369	E-37.1	50 NOV 7.2944	2 12 46.4	- 5 54 36	0.4	0	3	12.35	9.45	-8.1	14	0.9	3
369	U-21.2	52 FEB 18.1944	9 47 05.6	28 44 02	-0.1	0	0	13.34	9.63	-10.1	57	-0.7	-4
369	U-31.1	52 FEB 19.2028	9 46 08.5	28 50 10	-0.2	0	1	13.26C	9.51C	-9.2	67	0.1	7
370	C-61.1X	50 SEP 17.1958	23 41 22.2	12 51 18	0.1	1	1	13.93C	11.92C	-9.5	-33	0.1	0
370	C-51.1	50 OCT 6.1729	23 24 11.4	11 18 22	0.1	1	1	13.78	11.65	-7.8	-72	-0.2	-12
370	U-25.3	52 FEB 18.2306	9 45 20.9	5 18 31	0.1	-1	-1	14.17	11.32	-10.4	30	0.2	1
371	K-65.2	51 MAY 5.2417	15 26 18.5	-28 35 22	0.3	0	-1	13.03	9.83	-9.3	40	-0.5	3
371	K-75.1	51 MAY 8.2083	15 23 46.7	-28 23 35	0.5	-3	-1	13.06	9.92	-9.8	40	-0.7	-2
373	I-32.2	51 MAR 11.2875	10 59 15.8	15 04 13	0.7	-3	-7	15.03C	10.25C	-8.4	20	-0.1	4
373	W-56.1	52 APR 26.2236	14 16 09.0	-27 09 28	1.2	-9	-9			-10.0	7	-0.9	0
374	G-76.2	51 JAN 13.3812	8 09 55.6	6 30 51	-2.6	7	10	14.05C	10.21C	-8.5	8	0.1	-4
374	G-65.2	51 FEB 4.2118	7 50 50.9	7 25 01	-2.6	8	10	14.25C	10.35C	-8.3	39	-0.4	6
374	G-76.1	51 FEB 7.2354	7 48 29.3	7 35 52	-2.7	7	10	13.61	9.67	-7.7	39	-0.1	1
374	W-74.9	52 APR 27.3799	15 09 01.4	-16 20 02	-4.2	16	7			-8.5	72	-1.2	2
374	W-83.1	52 APR 28.2868	15 08 21.3	-16 13 32	-4.1	15	7	13.28	10.21	-8.1	71	-0.7	1
374	X-14.1	52 MAY 20.2458	14 51 05.2	-13 33 47	-4.1	18	7	13.35	10.20	-7.3	70	0.0	1
375	H-43.6	51 FEB 9.3187	9 29 00.9	22 43 38	-0.8	-2	8	12.79	8.23	-8.4	4	0.8	-5
375	V-66.1	52 MAR 26.2486	13 09 41.9	-23 58 16	-0.3	-4	3	12.37	7.87	-8.7	-8	-0.5	-2
375	W-16.1	52 APR 23.1993	12 45 14.3	-23 12 53	-0.5	-3	5	13.25	8.81	-8.3	35	-0.3	3
376	I-75.2	51 APR 4.2201	12 31 46.4	-14 12 58	-0.4	2	3	11.99	10.21	-10.3	47	-0.5	3
376	J-35.1	51 APR 4.2306	12 31 46.2	-14 12 54	-0.4	2	3	12.03	10.25	-11.0	42	-1.2	-2
377	B-62.1	50 AUG 18.3111	22 17 25.5	- 0 45 45	-2.6	-19	-12	12.92	9.68	-8.0	-43	-0.4	7
377	S-55.10	51 DEC 28.2819	6 33 32.1	13 15 24	-1.8	-2	-3	12.33	9.29	-9.9	-8	-0.2	-5
377	S-45.3	52 JAN 22.1250	6 12 06.4	13 33 37	-1.6	-1	3	13.66	10.27	-6.2	17	0.5	1
377	S-55.1	52 JAN 23.1347	6 11 27.7	13 35 22	-1.6	-2	3	13.41A	10.01A	-6.4	16	0.0	-1
378	J-55.2	51 APR 8.2625	13 25 49.1	-14 34 44	-0.2	3	1	15.37	11.28	-7.6	53	0.3	-7
378	J-65.2	51 APR 8.2729	13 25 48.8	-14 34 42	-0.3	4	1	15.09	10.98	-8.8	53	-1.0	-6
379	J-34.8	51 APR 4.3174	12 38 52.3	- 3 24 20	-0.1	2	0	14.89	10.16	-7.0	43	0.0	-5
379	X-73.2	52 MAY 26.3389	16 56 27.7	-20 16 15	-0.8	2	1			-8.0	16	-0.4	1
380	G-63.5	51 JAN 13.2375	7 40 47.9	24 15 32	-0.4	-2	0	14.16	10.68C	-10.1	37	-0.2	-4
380	V-63.8	52 MAR 23.3535	13 20 11.3	1 28 00	-1.4	12	9	14.09	10.24	-7.5	53		
380	W-12.4	52 APR 22.1688	12 55 55.7	3 48 27	-1.6	13	10			-7.7	31	0.0	0
381	G-54.3	51 JAN 12.2868	7 26 09.9	17 25 06	0.2	2	0	13.82	9.20	-7.6	38	0.5	-5

1958ApJS....3..289K

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
381	V-21.3	52 MAR 22.2014	12 11 41.1	14 52 30	4.0	-8	-17	14.09	9.89	-7.7	65	-0.8	1
381	V-22.2	52 MAR 22.2104	12 11 40.3	14 52 36	4.0	-8	-17	13.94C	9.74C	-7.3	65	-0.4	1
381	V-31.1	52 MAR 22.2194	12 11 39.9	14 52 41	4.0	-8	-17	13.77C	9.57C	-7.1	66	-0.2	2
382	O-23.1	51 AUG 31.3194	22 01 30.3	- 8 56 06	-0.5	-2	-4			-8.4	-32	-0.7	-6
383	K-44.2	51 MAY 3.2229	14 43 03.1	-12 49 42	-0.8	4	4	15.59	10.88C	-7.6	34	-0.2	2
384	K-63.10	51 MAY 5.2208	15 12 28.2	-17 55 06	-2.1	12	11	14.47	10.74	-9.3	22	0.0	3
384	K-54.6	51 MAY 8.2507	15 09 36.1	-17 48 52	-2.2	12	12	14.40	10.80C	-9.5	19	-0.1	-1
385	G-11.1	51 JAN 5.1333	6 09 55.7	43 01 55	1.6	2	-2	12.82	9.27	-11.9	-38	0.1	-8
385	W-46.2	52 APR 24.2132	13 53 40.1	-30 05 18	2.2	-17	-12	11.73C	8.55C	-10.6	11	-0.2	0
387	S-35.5	51 DEC 28.1826	5 53 15.1	7 28 55	-1.3	-19	-5	13.43C	8.87C	-9.4	31	-0.5	-4
387	S-36.1	51 DEC 28.1917	5 53 14.6	7 28 56	-1.4	-19	-5	13.32C	8.76C	-9.4	31	-0.7	-4
387	S-46.1	51 DEC 28.2097	5 53 13.7	7 29 00	-1.4	-19	-5	13.12	8.56	-9.6	39	-0.7	4
388	H-43.2	51 FEB 9.3187	9 18 47.5	21 46 27	0.2	-1	-1	13.42	9.26	-9.2	23	-0.3	-2
388	W-44.2	52 APR 24.2764	13 50 02.3	-17 36 35	1.2	-12	-8	13.07	9.19	-8.7	32	-0.3	2
389	Q-42.3	51 NOV 1.2819	2 16 31.9	25 38 38	0.0	-4	0	12.36C	8.95C	-9.5	-62	0.0	-5
390	L-46.4	51 JUN 2.2368	16 55 30.5	-37 29 07	0.3	3	0	14.95	11.35	-11.4	43	-0.4	7
390	L-56.1	51 JUN 6.2500	16 51 05.9	-37 13 32	0.3	1	0	14.76	11.17	-12.0	42	-1.0	0
392	K-53.7	51 MAY 4.1882	14 57 42.2	-11 23 32	-7.2	5	4	15.01	10.83	-7.4	71	0.3	3
393	F-66.2	50 DEC 13.3035	5 19 50.9	7 39 26	0.0	-4	0	13.56	9.05	-9.4	-21	-0.2	7
394	H-22.1	51 FEB 8.1812	8 40 59.2	26 22 14	-0.1	2	0	15.58	11.16	-9.3	33	-0.2	0
394	V-52.2	52 MAR 22.3201	12 52 06.1	2 49 41	-0.3	2	2	15.06	10.77	-7.9	47	-0.1	-1
394	V-43.3	52 MAR 23.3174	12 51 19.2	2 54 30	-0.3	2	2	15.24	10.97	-7.8	47	0.1	-1
395	F-63.3	50 DEC 13.2701	5 29 18.0	23 05 12	-1.0	-1	0	14.88	11.20C	-15.0	-13	-5.3	2
395	U-64.6	52 FEB 24.2583	11 12 06.5	- 0 20 51	-1.6	9	10	15.00	11.33	-7.8	41	-0.2	2
395	U-74.1	52 FEB 24.3590	11 12 02.3	- 0 20 23	-1.6	10	10	15.02	11.35	-7.8	44	-0.2	5
396	J-54.3	51 APR 9.2757	13 12 40.5	-11 12 52	-3.6	19	19	13.56	10.81	-8.8	52	-0.6	-3
397	V-45.4	52 MAR 26.2215	12 45 49.1	-16 24 52	-7.0	25	22	14.19	9.77	-8.1	68	-0.1	8
397	V-55.1	52 MAR 26.2396	12 45 48.2	-16 24 46	-7.0	25	22	14.20	9.78	-8.1	62	-0.1	2
399	P-52.1X	51 SEP 30.3701	1 03 41.8	16 56 51	-2.6	-26	-24	14.63C	10.21C	-8.5	-15	-0.3	6
399	P-62.1	51 OCT 1.3333	1 02 53.5	16 55 47	-2.5	-26	-23	14.63	10.23	-8.7	-4	-0.4	6
400	K-66.1	51 MAY 5.2521	15 16 02.5	-34 50 40	6.0	-19	-18	14.78C	11.05C	-9.4	2	-0.4	-11
401	L-75.1	51 JUN 8.2472	17 38 50.7	-29 32 59	0.5	-1	-1	14.51C	10.39C	-8.5	-15	-0.1	-4
401	L-76.3	51 JUN 8.2569	17 38 50.1	-29 32 59	0.5	-1	-1	14.55C	10.41C	-8.3	-20	0.1	-9
401	M-16.1	51 JUN 27.2278	17 22 20.0	-29 42 54	0.0	-1	0	14.69C	10.47C	-7.9	-6	0.2	-6
402	D-37.1	50 OCT 9.2111	0 31 56.3	-13 25 19	0.9	2	4	13.94	10.31	-8.4	-70	-0.4	-12

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
402	T-64.3	52 JAN 28.3167	8 47 09.5	17 29 25	2.2	-3	-2	12.15	10.11C	-9.0	100	-0.1	-3
403	I-66.1	51 APR 1.2403	12 02 29.3	-13 49 58	1.6	-8	-7	13.76	10.55	-7.6	79	0.9	4
403	I-65.1	51 APR 2.2521	12 01 43.9	-13 42 14	1.8	-8	-8	13.68	10.44	-7.6	79	-0.2	3
404	R-35.7	51 NOV 29.1951	4 04 53.1	10 00 30	1.2	2	7	14.07C	10.13C	-10.1	14	0.0	9
405	D-51.2	50 OCT 10.2146	1 11 11.4	22 28 28	2.6	11	10	13.72	9.38	-8.7	-62	-0.1	-2
405	S-45.4	52 JAN 22.1250	6 15 28.5	14 28 56	6.0	-22	-23	13.47	10.07	-10.4	-26	-2.1	-4
405	S-55.2	52 JAN 23.1347	6 14 37.5	14 26 47	5.8	-22	-22	12.95C	9.53C	-8.8	-26	-0.7	-4
406	D-23.1	50 OCT 8.1556	0 22 52.7	8 51 33	0.1	0	1	14.31	11.69	-5.0	-34	2.9	8
406	D-33.2	50 OCT 8.3042	0 22 45.6	8 50 54	0.1	0	1	14.11	11.49	-7.7	-51	0.2	-9
406	T-33.3	52 JAN 26.1868	7 44 30.7	23 19 27	0.0	-2	0	15.13	10.99	-9.4	6	-0.4	-4
407	C-42.1	50 SEP 12.1958	23 17 18.7	6 55 52	1.0	11	8	13.11	10.30	-9.2	-29	-0.4	5
407	T-34.2	52 JAN 26.1958	7 45 05.6	20 31 19	-0.5	4	3	13.35	10.11	-9.6	-8	0.4	-5
408	P-41.2	51 SEP 27.3243	0 31 54.2	18 09 57	0.4	4	3	14.16	10.71	-8.6	-12	-0.7	12
409	J-75.1	51 APR 9.3465	13 53 13.8	-23 10 59	-0.4	0	1	10.95	8.11	-8.3	65	-0.5	-5
410	J-31.1	51 APR 4.3792	12 44 54.4	14 56 25	1.2	-3	-7	12.39	9.35	-8.5	46	0.2	-5
411	FG-74.4	50 DEC 31.1667	5 43 03.0	16 30 56	-1.6	-4	-6	14.54	10.19	-9.0	38	-0.2	2
411	U-60.1X	52 FEB 20.3312	11 00 52.3	24 11 22	-0.2	2	1	14.34	10.09	-7.6	79	-0.2	-4
412	G-14.2	51 JAN 5.1674	6 02 27.7	19 11 42	1.3	16	4	13.81	10.16	-9.4	51	0.0	1
412	W-31.1	52 APR 24.1771	13 27 48.9	13 57 19	2.0	-9	-13	13.96	10.44	-8.3	17	-0.5	5
414	M-33.2	51 JUN 28.2222	18 21 52.3	-19 32 35	-0.7	2	1	15.43	10.60C	-7.7	-21	-0.2	0
415	B-74.3	50 AUG 19.3403	22 37 06.9	-14 37 55	-1.7	-8	-6	13.04	10.12	-7.7	-78	-0.5	6
415	C-14.2	50 SEP 9.2965	22 19 58.3	-17 28 02	-1.7	-6	-6	13.79	10.76	-6.0	-77	2.2	-3
415	U-62.4	52 FEB 24.2403	10 56 09.2	13 58 35	-11.3	52	52	13.58	10.44	-9.0	81	-0.6	-3
416	G-61.2	51 FEB 5.1208	7 48 09.7	37 27 24	1.4	0	-1			-9.4	17	0.2	3
416	W-82.1	52 APR 28.2507	15 15 06.5	-11 59 09	4.8	-43	-38	11.36	9.11	-9.2	-34	0.1	-2
416	W-83.4	52 APR 28.2868	15 15 04.5	-11 59 13	4.8	-43	-38	11.49	9.24	-9.9	-36	-0.6	-4
416	X-14.3	52 MAY 20.2458	14 53 05.3	-13 24 45	4.9	-46	-38	11.29C	8.99C	-9.7	-40	-0.3	6
417	V-64.7	52 MAR 23.3444	13 18 18.0	- 9 29 05	-23.2	94	91	13.19	10.27	-6.7	70	-1.5	8
417	W-13.6	52 APR 22.1778	12 57 22.5	- 5 38 38	-23.8	103	93			-7.0	74	0.0	0
417	W-14.3	52 APR 22.1868	12 57 22.1	- 5 38 34	-23.8	103	93			-7.1	66	-0.1	-8
418	S-44.5	51 DEC 28.3271	6 02 13.1	18 58 09	-1.3	3	2	13.22	10.44	-10.5	-25	-0.2	-3
419	Q-83.2	51 NOV 5.2493	3 46 49.0	19 32 38	0.8	0	2	13.38C	9.30C	-9.2	-34	-0.1	5
419	Q-84.4	51 NOV 5.2583	3 46 48.3	19 32 30	0.8	-1	2	12.78C	8.70C	-9.5	-46	-0.4	-7
419	R-13.2	51 NOV 27.1736	3 26 00.3	17 59 21	0.8	0	2	13.27	9.31	-9.2	-40	-0.2	3
419	R-24.3X	51 NOV 27.2653	3 25 55.5	17 58 55	0.7	0	2	13.63	9.65	-8.9	-37	0.1	6

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
420	K-44.7	51 MAY 3.2229	14 40 24.6	-19 16 52	8.4	-25	-24	13.94	9.42	-7.3	39	-0.2	-8
420	K-45.2	51 MAY 3.3167	14 40 20.6	-19 16 29	8.3	-25	-23	13.58	9.06	-7.1	50	0.0	3
422	H-52.1	51 FEB 10.2292	9 36 28.2	20 37 32	0.1	0	1	14.74	11.60	-11.6	36	-0.2	-7
422	H-53.2	51 FEB 10.2931	9 36 23.5	20 37 48	0.0	0	0	14.91	11.79	-11.4	41	0.0	-2
422	X-45.3	52 MAY 24.2028	15 55 45.0	-27 58 37	0.0	0	0	13.94	11.77	-12.9	13	-0.8	1
423	F-33.2	50 DEC 11.3056	4 31 10.0	22 35 24	0.2	1	1	12.94	8.76	-8.9	10	0.2	1
423	F-43.4	50 DEC 12.2347	4 30 18.4	22 36 14	0.2	2	1	13.06	8.87	-9.1	4	-0.1	-5
423	U-41.1	52 FEB 20.2139	10 14 08.9	28 00 30	0.2	1	-1	12.20	7.95	-8.5	46	0.0	8
424	R-35.3	51 NOV 29.1951	3 50 15.8	11 28 37	-1.3	2	-6	13.61	10.71	-9.6	10	-0.3	4
425	G-53.3	51 JAN 12.2764	7 27 41.7	26 39 21	-0.1	-2	0	13.92	10.46	-10.1	23	-0.5	-5
425	W-53.8	52 APR 26.1965	14 12 20.0	-10 16 17	26.8	-182	-187	14.44	11.29	-8.6	29	-0.5	-1
426	O-41.1	51 SEP 1.3271	22 36 39.4	6 55 37	0.9	15	11	14.02	9.71	-9.1	-6	0.1	0
427	G-74.2	51 FEB 7.1215	8 00 24.9	19 52 01	0.7	-6	-3	15.23	10.66	-7.8	14	0.1	3
427	V-45.1	52 MAR 26.2215	12 34 01.3	-11 28 35	0.2	-2	-1	14.34	10.31	-8.0	41	0.0	1
428	X-35.2	52 MAY 22.2007	15 35 38.4	-26 09 25	-4.9	27	20	16.13	13.09	-11.4	21	0.7	1
428	X-34.2X	52 MAY 22.2368	15 35 35.8	-26 09 22	-4.9	27	20	15.90C	12.86C				
429	N-31.1	51 JUL 31.2910	20 09 35.6	- 3 59 00	1.1	7	4	13.85	10.74	-8.5	-32	0.2	-5
430	W-55.2	52 APR 26.2146	14 17 44.2	-25 02 14	11.4	-12	-16	16.01	11.46	-8.0	70	0.2	3
431	M-24.2	51 JUN 27.2187	18 02 24.0	-22 13 51	0.6	2	0	13.52	10.16	-8.8	-6	-0.3	2
431	M-34.1	51 JUN 28.2319	18 01 32.0	-22 14 23	0.5	3	0	13.15	9.74	-8.8	-12	-0.3	-4
432	P-47.2	51 SEP 30.2938	0 38 32.0	-18 14 36	0.9	4	6	13.16C	10.30C	-10.6	-36	-0.7	6
435	L-24.4	51 MAY 28.1993	16 02 51.8	-22 46 43	3.3	-12	-10	13.82	11.01	-11.1	16	-0.7	-7
436	T-81.3X	52 JAN 31.3403	9 29 40.1	32 37 33	-3.2	23	27	15.64	11.11	-10.4	6	-0.6	-8
436	T-91.2X	52 JAN 31.3583	9 29 38.7	32 37 36	-3.3	23	28	15.42C	10.89C	-10.0	20	-0.2	6
436	U-11.2	52 FEB 17.1889	9 12 44.8	32 37 31	-3.4	20	29	15.64C	11.01C	-10.1	-13	-0.5	-1
437	E-52.1	50 NOV 8.2785	2 54 20.7	25 05 00	-13.3	-36	-24	13.79	11.72	-10.8	-100	0.2	-21
437	T-95.2	52 FEB 1.2764	9 39 42.7	4 16 04	-4.7	24	29	15.14	11.19	-9.9	26	-0.7	-1
437	U-15.3	52 FEB 17.2250	9 24 14.7	5 12 03	-4.7	25	29	15.48	11.60	-10.0	35	-0.4	-5
438	Q-45.2	51 NOV 1.2007	2 19 27.1	11 18 54	-0.4	-1	-3	14.02C	10.96C	-10.4	-25	-0.3	-3
438	Q-44.4	51 NOV 1.2639	2 19 23.1	11 18 48	-0.4	-1	-3	13.93	10.87	-10.2	-25	-0.1	-3
439	J-54.4	51 APR 9.2757	13 22 22.3	- 9 08 41	3.8	-4	-3	14.75C	10.69C	-7.5	88	-0.8	-4
440	S-43.5X	52 JAN 21.1250	6 15 36.6	23 42 29	-0.3	-1	0	14.79	12.94	-7.9	-7	-0.1	2
440	S-53.1	52 JAN 22.1611	6 14 50.6	23 41 20	-0.5	-1	1	14.69	12.83	-8.4	-8	-1.0	2
440	S-54.1	52 JAN 23.1257	6 14 09.7	23 40 24	-0.5	-1	1	14.92	13.02	-7.1	-7	-0.1	3
441	G-34.3	51 JAN 8.1917	6 53 52.9	16 10 03	0.7	-4	-2	12.22	9.16	-9.9	-14	-0.2	0

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O − C R A	O − C DEC	VAR	MAG	G	10 − DAY MOTION		O − C MOTION	
441	G-35.5	51 JAN 8.2028	6 53 52.6	16 10 02	0.7	-4	-2	11.71	8.66	-9.2	-18	0.5	-4
441	G-45.2	51 JAN 8.2833	6 53 47.4	16 09 55	0.8	-4	-3	12.22	9.16	-8.8	-14	0.9	-1
441	G-44.2	51 JAN 8.2951	6 53 46.8	16 09 54	0.6	-4	-2	11.89	8.83	-9.6	-21	0.1	-8
441	W-36.2	52 APR 23.2806	13 38 35.0	-19 23 36	0.5	-2	-2	13.62C	9.96C	-8.0	68	0.1	0
441	W-35.2	52 APR 23.2896	13 38 34.5	-19 23 31	0.5	-2	-2	13.55	9.89	-9.0	71	-0.9	3
442	Q-45.4	51 NOV 1.2007	2 26 44.9	4 05 07	-0.3	0	-1	13.92C	11.00C	-9.8	-53	-0.1	-4
442	Q-46.3	51 NOV 3.1812	2 24 49.8	3 55 23	-0.3	-1	-1	13.85C	10.90C	-9.3	-56	0.4	-9
442	Q-55.2	51 NOV 3.2174	2 24 47.3	3 55 11	-0.3	-1	-1	13.74	10.79	-10.1	-47	-0.4	0
443	E-24.7	50 NOV 5.1687	1 49 14.4	6 18 47	-0.2	-1	-1	14.07	11.59	-9.7	-57	-0.5	6
443	E-25.1	50 NOV 5.1792	1 49 13.5	6 18 39	-0.2	-1	-1	13.69	11.21	-9.6	-52	-0.4	11
443	V-53.1	52 MAR 23.3354	13 05 24.4	- 4 46 30	0.3	-1	-1	13.25	11.20	-8.6	81	-0.5	1
443	V-64.1	52 MAR 23.3444	13 05 23.4	- 4 46 24	0.3	-1	-1	13.49C	11.45C	-8.7	81	-0.6	1
443	V-63.1	52 MAR 23.3535	13 05 23.3	- 4 46 20	0.2	-1	-1	13.34	11.29	-8.7	89	-0.6	9
444	N-71.1	51 AUG 6.3389	21 44 53.5	1 44 58	-7.3	-22	-26	12.31C	9.65C	-7.6	-50	-1.3	-5
444	N-82.1	51 AUG 6.3486	21 44 53.0	1 44 54	-7.3	-22	-26	12.74C	10.05C	-7.0	-45	-0.7	0
444	O-12.1	51 AUG 31.2021	21 27 31.3	- 1 13 01	-7.5	-27	-26	12.32C	9.70C	-6.6	-93	-0.2	-5
444	O-11.1	51 AUG 31.2896	21 27 27.5	- 1 13 50	-7.5	-27	-26	12.06	9.44	-6.7	-78	-0.3	10
445	T-44.2	52 JAN 28.1812	8 05 03.8	15 32 17	0.2	-3	-2	14.44	10.08	-9.5	-22	0.2	-8
445	T-45.7	52 JAN 28.1903	8 05 03.1	15 32 17	0.2	-3	-2	14.63	10.25	-9.4	-14	0.3	0
446	D-26.1	50 OCT 8.1917	0 13 30.5	-10 04 14	-4.7	-32	-44	13.17	10.12	-9.7	11	-1.0	12
446	S-51.1	52 JAN 22.1431	6 28 34.7	36 40 18	-4.8	0	1	14.47	10.22	-8.7	-1	0.3	2
446	S-52.1	52 JAN 22.1521	6 28 33.9	36 40 08	-4.8	0	1	14.11C	9.86C	-8.3	-9	0.7	-6
447	B-64.5	50 AUG 18.3389	22 22 17.3	-17 50 00	3.0	14	16	14.12	10.39	-6.9	-35	0.9	15
447	C-15.1	50 SEP 10.1819	22 04 38.0	-19 23 58	3.0	13	16	14.47	10.50	-8.0	-33	-1.1	-6
447	R-44.1	51 NOV 29.2854	4 13 01.9	20 17 57	2.9	18	10	13.73C	10.36C	-9.3	-7	-0.1	1
448	G-41.1	51 JAN 12.1528	6 59 25.0	38 49 11	0.5	1	0	15.36	10.54	-10.2	15	-0.3	1
448	U-61.2	52 FEB 20.3222	11 10 58.3	21 41 51	0.6	-3	-5	16.56	11.50	-7.4	37	0.1	-8
449	N-24.2	51 JUL 30.2181	19 47 09.8	-23 44 02	0.6	1	1	14.89	11.05	-9.5	-29	-0.3	-1
450	O-84.1	51 SEP 5.3292	23 58 47.4	- 7 11 19	0.0	2	0	15.14	11.68	-7.8	-17	0.0	3
450	P-14.1	51 SEP 26.2292	23 40 53.4	- 7 47 17	-0.3	0	-3	14.52	11.19	-8.9	-3	-0.3	8
451	M-75.1	51 JUL 4.3382	19 31 10.1	-28 43 56	-0.1	0	0	12.65	8.38	-8.3	-60	0.1	-2
451	M 74.2	51 JUL 4.3486	19 31 09.7	-28 44 03	-0.1	0	0	12.81C	8.54C	-9.2	-58	-0.8	0
453	E-72.4	50 NOV 13.2236	3 45 33.7	26 34 39	0.5	3	2	14.43C	11.67C	-12.5	-28	-0.5	-14
453	F-12.6	50 DEC 3.1569	3 21 36.0	25 44 21	0.3	2	1	14.48	11.61	-10.6	-46	0.3	-14
453	W-55.1	52 APR 26.2146	14 13 22.2	-18 33 29	-0.1	1	1	13.57	12.30	-11.7	11	-0.7	2

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
454	I-53.5	51 MAR 15.3243	11 53 04.6	8 02 17	-1.8	17	15			-9.3	28	-0.1	-7
454	I-53.2	51 MAR 31.3300	11 38 28.1	8 45 32	-1.8	17	15	12.45C	9.62C	-8.3	13	0.4	-5
455	I-51.5	51 MAR 15.3833	11 55 56.1	18 47 54	-0.9	9	7			-8.5	45	0.0	-8
455	I-51.3	51 MAR 31.3514	11 42 25.2	19 51 17	-0.9	6	6	15.44	10.65	-7.9	28	0.2	0
455	X-43.2	52 MAY 24.2889	15 54 49.5	-14 46 35	-1.7	9	10	12.60	9.40	-11.2	-4	-0.7	5
456	K-83.2	51 MAY 8.3687	15 51 52.3	-18 02 54	8.1	1	4	13.58	11.15	-6.5	84	0.8	-26
456	L-13.3	51 MAY 27.2514	15 37 22.1	-14 34 31	7.8	1	4	13.17	10.81	-7.4	109	-0.2	4
458	M-62.1X	51 JUL 1.3167	19 12 08.9	-12 56 53	0.5	1	0	14.69A	10.27A	-8.2	-32	-0.2	-1
459	Q-63.1	51 NOV 3.3167	3 01 19.3	22 35 08	3.6	42	23	13.38	11.56	-11.1	31	-0.4	-4
460	G-55.1	51 JAN 12.2979	7 21 35.9	14 55 41	1.0	-4	-2	15.21A	11.84A	-9.5	20	0.0	1
460	V-54.5	52 MAR 23.3264	13 04 08.2	- 8 26 54	0.0	0	0	15.88	11.92	-7.7	57	-0.3	1
460	V-64.9X	52 MAR 23.3444	13 04 07.3	- 8 26 48	0.0	0	0	15.69	11.76	-7.1	53	0.3	-3
461	F-64.1	50 DEC 13.2819	5 16 29.3	20 51 09	-10.8	-10	-6	14.36	11.29C	-9.7	-6	-0.8	2
461	V-33.4	52 MAR 23.2264	12 30 33.4	- 2 10 12	-2.0	13	12	15.11	11.37	-7.6	54	-0.2	1
461	V-34.7X	52 MAR 23.2354	12 30 33.1	- 2 10 09	-2.0	13	12	15.13	11.39	-7.3	55	0.1	2
461	V-44.4X	52 MAR 23.3083	12 30 29.7	- 2 09 46	-2.0	12	12	15.22	11.48	-7.5	55	-0.1	2
461	V-43.1	52 MAR 23.3174	12 30 29.5	- 2 09 42	-2.0	12	12	14.87C	11.13C	-7.9	49	-0.5	-4
462	H-63.2	51 FEB 11.2181	10 00 14.1	15 24 30	-3.8	17	18	14.01	10.07	-8.3	51	-0.1	-2
462	W-74.2	52 APR 27.3799	14 54 00.5	-12 10 18	-2.7	13	13			-7.8	37	0.2	2
462	W-73.3X	52 APR 27.3889	14 54 00.0	-12 10 12	-2.7	13	13			-7.9	28	0.1	-7
463	K-34.5	51 MAY 2.2833	14 26 04.6	-15 51 04	-0.5	-3	4	16.07	12.78	-11.1	13	-0.1	4
463	K-44.4X	51 MAY 3.2229	14 25 02.3	-15 50 10	-0.5	-2	4	15.72C	12.43C				
464	Q-86.1	51 NOV 5.2764	3 46 41.1	5 50 20	0.4	1	2	12.98C	10.19C	-8.5	-13	0.3	-2
464	R-15.2X	51 NOV 27.1917	3 26 16.2	5 59 00	0.5	3	3	13.32C	10.50C	-9.1	27	-0.2	7
464	R-25.1	51 NOV 29.1590	3 24 33.9	6 03 16	0.6	3	3	13.58C	10.72C	-8.8	31	-0.1	9
465	L-54.1	51 JUN 6.2257	16 54 19.9	-28 25 41	0.8	-2	0	13.51	10.70	-9.5	31	-0.7	3
465	L-55.1	51 JUN 6.2396	16 54 19.7	-28 25 41	0.8	-2	0	13.76C	10.95C	-9.3	21	-0.5	-7
466	X-56.1	52 MAY 25.2187	16 14 00.7	-40 55 43	3.2	1	4	13.88	9.43	-10.1	44	-0.9	-5
467	E-72.1	50 NOV 13.2236	3 46 19.0	30 23 32	-0.7	4	-3	15.17	11.89	-9.9	-21	-0.6	-3
467	E-82.4X	50 NOV 16.2222	3 43 27.6	30 16 34	-0.7	3	-3	15.18	11.93	-10.2	-16	-0.7	8
467	F-12.4	50 DEC 3.1569	3 27 36.2	29 14 38	-0.9	4	-3	15.07	11.74	-8.1	-49	0.5	-5
467	U-54.8	52 FEB 20.2410	10 52 38.1	4 21 44	1.2	-16	-10	16.16	12.23	-8.4	26	-0.3	-2
468	H-14.3X	51 FEB 7.2465	8 30 11.7	19 37 45	9.5	-31	-33	15.06	10.36	-8.0	24	-0.3	0
468	H-23.1	51 FEB 8.1924	8 29 27.7	19 40 10	9.4	-31	-33	15.52	10.79	-8.3	28	-0.7	4
468	V-23.5	52 MAR 23.2083	12 00 56.8	0 08 38	-3.9	26	25	15.17	10.42C	-7.2	46	-0.1	1

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O − C R A	O − C DEC	VAR	MAG	G	10 − DAY MOTION		O − C MOTION	
468	V-24.3	52 MAR 23.2174	12 00 56.0	0 08 42	-3.9	26	25	15.12	10.37C	-6.9	42	0.2	-3
469	F-21.1	50 DEC 10.1701	3 51 52.5	37 01 11	-0.3	1	-1	14.27	9.66	-9.6	-43	-0.3	-4
469	U-54.1	52 FEB 20.2410	10 41 27.2	7 49 48	7.6	-78	-75	13.11	9.91	-9.1	5	0.0	7
469	U-53.1	52 FEB 24.2312	10 37 48.9	7 50 35	7.6	-79	-75	13.16	10.12	-9.6	4	-0.4	1
470	Q-85.2	51 NOV 5.2674	3 26 36.3	9 03 59	0.0	-2	0	14.48C	11.24C	-9.6	-57	-0.4	1
470	R-15.1	51 NOV 27.1917	3 05 58.3	7 16 37	-0.1	-2	0	14.57	11.19	-9.2	-34	-0.6	2
472	C-25.2	50 SEP 11.2181	22 35 49.5	-23 33 00	0.3	7	5	13.70	10.61	-8.3	-86	-0.5	2
472	T-44.1	52 JAN 28.1812	7 54 52.5	17 54 10	-0.4	-11	0	13.40	10.74	-9.9	107	-0.7	3
474	H-74.1X	51 MAR 5.2542	10 19 34.9	9 10 12	1.3	-6	-4	15.33C	11.57C	-9.3	78	-0.6	-5
476	H-25.3	51 FEB 8.2667	8 50 41.7	9 23 56	0.0	-13	0	12.93	9.38	-9.9	17	-0.2	6
476	H-35.1	51 FEB 8.2979	8 50 40.1	9 23 59	0.0	-13	0	13.48	9.93	-9.6	15	0.1	4
476	X-36.3	52 MAY 22.2097	15 47 22.4	-33 17 26	0.4	-2	0	13.14C	10.17C	-10.0	59	-0.1	-2
476	X-46.1	52 MAY 24.2118	15 45 23.5	-33 04 58	0.4	-2	0	12.59	9.63	-10.3	57	-0.5	-6
477	D-64.1	50 OCT 12.2562	1 34 17.1	12 02 14	-4.0	-23	-22	13.65	11.88	-10.9	-20	-0.8	0
477	T-93.2	52 FEB 1.2583	9 47 09.5	20 07 09	-2.6	7	16	14.89	11.22	-9.8	35	-0.1	-10
477	U-13.6	52 FEB 17.2069	9 30 44.5	21 11 00	-1.8	6	11	14.97	11.32	-10.6	27	-0.4	-7
478	I-66.2	51 APR 1.2403	12 13 10.5	-16 45 48	1.3	-4	-4	13.06C	9.23C				
478	I-76.1	51 APR 4.2410	12 11 02.7	-16 21 34	1.3	-4	-5	12.58	8.77	-6.7	82	0.3	1
479	C-34.3	50 SEP 11.3076	22 54 42.2	-14 18 31	-0.8	-5	-3	13.77	11.19	-8.9	-84	-1.3	1
479	T-93.3	52 FEB 1.2583	9 49 21.9	13 59 59	-0.6	2	2	13.75C	10.42C	-9.3	79	-1.1	1
479	U-23.1	52 FEB 18.2125	9 34 35.3	16 10 43	-0.6	2	2	13.74	10.53	-9.1	75	-0.6	2
480	F-65.4	50 DEC 13.2924	5 15 30.7	9 22 32	0.0	5	0	12.95	9.91	-10.7	-90	-0.6	1
481	D-26.2	50 OCT 8.1917	0 10 25.5	-14 46 41	0.1	1	1	12.76A	9.75A	-8.8	-10	-0.6	1
481	U-21.1	52 FEB 18.1944	9 42 13.3	29 38 25	0.1	-4	0	13.15	9.78	-10.2	40	-0.8	0
482	Q-46.1	51 NOV 3.1812	2 05 46.0	0 25 44	0.5	-2	1	14.64	10.39	-7.6	-61	-0.5	1
484	O-75.1	51 SEP 5.2437	23 24 27.0	-17 15 18	-1.8	-10	-6	14.42C	11.37C	-8.6	-96	-1.2	0
485	W-42.6	52 APR 24.2944	14 02 53.3	- 5 21 00	0.3	19	-1	12.84	9.37	-8.6	84	-0.8	-2
485	W-53.1	52 APR 26.1965	14 01 24.0	- 5 04 53	0.3	18	-1	13.64C	10.14C	-8.5	86	-0.8	3
486	E-26.1	50 NOV 7.1771	1 58 07.3	- 3 55 23	0.5	5	3	15.52	11.90	-9.5	0	-0.4	11
486	T-91.1	52 JAN 31.3583	9 37 27.6	27 39 40	-8.2	36	23	14.68	12.41	-10.0	105	-1.2	-4
486	U-11.3	52 FEB 17.1889	9 20 05.9	30 19 07	-8.6	29	24	14.37	11.96	-11.2	80	-0.8	-1
487	R-55.2	51 DEC 4.2194	4 36 23.1	9 51 03	1.8	8	7	12.06	9.18	-10.3	12	-0.6	-3
487	R-56.2	51 DEC 4.2285	4 36 22.5	9 51 05	1.8	8	7	12.18	9.30	-9.8	12	-0.1	-3
487	R-45.5	51 DEC 22.1521	4 20 11.0	10 39 15	1.7	10	7	12.66	9.51	-8.6	41	-1.0	3
488	F-24.3	50 DEC 11.1312	4 09 00.1	16 01 44	1.1	8	6	12.43	8.27	-8.9	22	-0.3	9

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
488	F-34.4	50 DEC 11.3174	4 08 50.8	16 02 03	0.9	8	5	12.94	8.79	-9.2	16	-0.6	3
488	V-21.2	52 MAR 22.2014	12 01 44.6	19 51 43	2.6	-14	-16	12.85	9.47	-8.5	35	-1.1	3
489	L-21.1	51 MAY 28.2285	15 54 20.1	- 1 49 22	-4.5	10	9	13.67	9.40	-7.2	19	0.2	-7
490	J-63.4	51 APR 8.3785	13 31 10.2	- 4 07 23	-0.6	7	2	13.83	9.32	-7.2	60	-0.5	-2
491	I-63.1	51 APR 2.2326	12 09 43.7	3 23 41	1.8	-1	-2	14.28C	9.88C	-6.7	81	-0.5	-3
492	M-74.3	51 JUL 4.3486	19 42 47.7	-23 41 46	1.3	3	3	14.66	11.32	-7.8	-20	0.0	4
492	N-14.4	51 JUL 29.2104	19 22 04.5	-24 33 14	1.4	2	3	14.73	11.30	-8.3	-14	-0.5	0
494	H-72.2	51 FEB 12.2125	10 26 19.7	20 28 09	-0.2	1	1	13.91	9.98	-8.9	48	-0.7	1
494	H-62.1	51 MAR 1.2354	10 11 42.9	21 34 00	-0.4	-2	2	14.33C	10.34C	-8.7	30	-0.3	0
494	H-72.1	51 MAR 1.3729	10 11 35.5	21 34 30	-0.3	-1	2	13.85	9.86	-7.7	29	0.7	-1
494	X-44.7	52 MAY 24.1937	16 03 02.1	-25 28 05	-2.0	9	8	13.34	10.00	-9.6	6	-0.4	5
494	X-45.4	52 MAY 24.2028	16 03 01.7	-25 28 05	-2.0	9	8	13.26C	9.92C	-9.4	8	-0.2	7
495	I-44.5	51 MAR 13.3722	11 22 58.3	2 55 34	-0.8	6	5	14.70	11.63C	-8.5	69	0.2	4
496	R-54.1	51 DEC 5.2535	4 30 39.1	16 51 20	8.6	9	10	15.06	13.42	-11.5	-44	-0.6	0
496	R-44.6	51 DEC 22.1431	4 14 06.7	15 53 50	7.5	12	9	14.89A	12.83A	-8.4	-28	-1.2	-4
497	D-64.2	50 OCT 12.2562	1 28 01.1	11 52 14	18.6	142	136	13.06C	11.61C	-8.0	-11	0.2	-5
497	U-23.6	52 FEB 18.2125	9 47 25.7	18 20 19	4.0	-27	-25	15.02	10.73	-9.3	31	-0.4	-2
497	U-33.1	52 FEB 19.2208	9 46 31.8	18 23 51	4.0	-26	-25	14.81	10.50	-8.8	34	0.1	1
498	G-53.2	51 JAN 12.2764	7 26 26.8	25 03 13	0.3	-1	1	13.54	9.87	-10.3	45	-0.1	0
498	V-22.1	52 MAR 22.2104	12 06 59.8	14 06 20	-1.9	9	12	14.39	10.12	-8.6	51	-0.2	-5
499	I-54.4	51 APR 1.2097	11 49 54.3	- 1 49 28	-1.9	11	12	16.02	10.73	-5.7	37	0.1	-4
499	I-64.1	51 APR 2.2424	11 49 18.0	- 1 45 17	-1.9	11	12	15.54	10.23	-5.9	39	-0.2	-1
499	W-64.8	52 APR 27.2167	14 42 00.5	-17 20 02	-2.7	4	11	16.21	10.30	-6.0	25	0.2	-4
500	K-75.2	51 MAY 8.2083	15 32 59.5	-32 01 25	0.0	0	0	14.12C	10.41C	-10.7	36	-1.1	1
500	K-76.1	51 MAY 8.2722	15 32 56.1	-32 01 26	0.0	0	0	14.23	10.52	-9.8	28	-0.2	-7
501	O-55.3	51 SEP 2.2340	23 03 16.4	-17 49 03	11.3	154	142	13.44	10.09	-11.3	31	-0.5	8
501	O-65.3	51 SEP 3.2382	23 02 18.8	-17 46 55	11.4	153	144			-11.0	20	-0.3	-5
502	G-74.5	51 FEB 7.1215	8 04 20.4	16 20 24	0.6	2	2	13.38	11.62	-8.3	225	0.0	0
503	B-45.3	50 AUG 14.2625	21 24 15.1	-22 31 46	1.3	6	5	14.25C	10.17C	-7.1	-45	1.6	-4
503	Q-84.3	51 NOV 5.2583	3 44 26.7	17 09 45	1.3	12	5	12.18C	9.37C	-8.2	-9	0.4	0
503	R-14.1	51 NOV 27.1826	3 23 24.1	16 47 57	1.1	12	5	12.97	10.24	-9.5	-8	-0.1	1
504	L-32.2	51 MAY 29.2111	16 20 01.3	- 8 14 52	-6.5	26	31	14.66	11.16	-10.4	-1	-0.9	0
505	P-37.1	51 SEP 27.2243	0 13 45.9	-17 14 46	3.8	20	23			-9.4	-50	-0.6	2
506	I-56.1	51 MAR 14.3347	11 28 43.1	-16 16 11	-0.6	5	6	13.94C	10.06C	-9.4	14	-0.2	4
506	I-46.2	51 MAR 31.3083	11 13 46.5	-15 34 20	-0.7	-1	7	13.48C	9.50C	-7.9	35	-0.1	13

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
507	P-72.1X	51 OCT 2.2417	1 22 50.5	24 13 11	-0.4	-7	-2	14.42	10.63	-7.8	-12	-0.4	7
507	Q-11.1	51 OCT 24.1660	1 05 24.3	22 48 21	-0.3	-6	-2	14.16	10.53	-8.1	-48	-0.4	6
508	D-45.5	50 OCT 12.1868	0 53 04.8	- 5 38 42	0.4	1	4	13.70	9.48	-9.1	-19	-0.9	-6
508	S-21.2	51 DEC 23.3243	5 24 44.2	35 44 10	0.4	2	1	13.22C	8.83C	-10.1	10	-0.2	0
508	S-22.2	51 DEC 27.1646	5 20 56.4	35 47 24	0.5	2	1	13.82	9.39	-10.0	9	-0.5	3
509	J-55.1	51 APR 8.2625	13 19 08.1	-15 04 41	-0.2	-1	0	14.21	9.79	-7.5	74	-0.5	0
510	C-62.1	50 SEP 17.2076	23 44 03.5	6 28 46	1.6	0	6	13.25	10.85	-6.8	-101	0.6	-2
510	C-52.1	50 OCT 6.1847	23 30 54.8	3 15 41	1.4	1	5	13.91	11.31	-5.9	-98	-0.3	0
510	S-45.6	51 DEC 28.2549	6 15 48.6	10 09 45	-0.7	-1	1	14.55C	10.46C	-9.9	5	-0.4	7
510	S-55.2	51 DEC 28.2819	6 15 47.3	10 09 42	-0.6	-1	1	14.60	10.50	-9.9	-3	-0.4	-1
510	S-45.1	52 JAN 22.1250	5 55 04.5	10 35 26				15.44	11.02	-6.2	16		
511	T-23.2	52 JAN 25.2889	7 35 48.5	24 58 56	-1.5	3	1	10.46	7.04	-8.9	63	-0.6	-11
511	T-33.1	52 JAN 26.1868	7 35 03.5	25 05 25	-1.4	3	-1	10.36	6.93	-8.6	72	-0.4	-1
512	J-52.1	51 APR 9.2062	13 14 00.9	7 10 38	-0.1	3	1	15.25	11.85	-10.8	72	-0.9	10
513	B-72.2	50 AUG 19.2722	22 32 17.0	- 1 06 02	0.8	-2	3	13.96	10.12	-7.5	-55	-0.9	4
513	C-12.2	50 SEP 9.2396	22 17 45.5	- 3 31 59	0.9	-6	3	14.29	10.49	-7.4	-75	-0.8	-1
513	S-16.4	51 DEC 23.2340	5 02 38.5	8 27 32	-1.3	0	-1	14.67	10.96	-7.8	-6	0.0	-3
514	O-83.1	51 SEP 5.3382	23 43 37.1	4 31 03	-0.7	-2	-4			-6.8	-37	0.1	-1
514	O-82.1	51 SEP 5.3931	23 43 34.9	4 30 51	-0.7	-2	-4	14.48C	10.58C	-7.9	-38	-1.0	-2
514	P-12.2	51 SEP 26.2576	23 28 10.9	2 56 22	-0.8	-4	-5			-7.9	-47	-0.7	3
516	O-82.2	51 SEP 5.3931	23 43 35.9	6 38 52	-1.9	-12	-20	13.90C	9.81C	-9.5	-11	-0.3	6
516	P-12.1	51 SEP 26.2576	23 23 58.2	5 42 13	-2.0	-14	-22			-10.0	-36	-1.1	-3
517	J-74.4X	51 APR 9.3562	13 55 00.1	-16 04 33	-0.5	3	3	15.08	10.14	-6.6	35	0.5	-3
517	K-24.4	51 APR 28.2139	13 41 12.2	-14 45 01	-0.7	3	4	15.34	10.47	-7.0	39	-0.1	-5
518	M-71.1	51 JUL 1.2556	19 31 47.1	- 8 38 05	4.7	9	11	14.28	12.41	-7.9	15	-0.6	1
518	M-72.1	51 JUL 1.2764	19 31 46.3	- 8 38 03	4.7	9	11	14.60	12.73	-7.4	12	-0.1	-2
519	F-62.1	50 DEC 13.2597	5 31 46.0	33 44 39	9.2	22	21	13.54	10.10	-12.7	21	-1.2	1
519	U-61.5X	52 FEB 20.3222	11 11 50.8	20 50 50	2.9	-28	-21	15.13C	10.63C	-8.3	47	0.0	-4
520	E-72.6	50 NOV 13.2236	3 35 58.8	25 33 51	-5.9	-28	-33	15.56	12.31	-10.6	31	-0.6	17
520	E-73.1	50 NOV 13.2757	3 35 56.7	25 34 05	-6.0	-28	-34	15.72	12.47	-10.5	20	-0.5	6
520	U-61.4X	52 FEB 20.3222	10 55 45.5	22 05 32	-7.4	55	59	15.69	11.60	-9.0	42	-0.6	1
521	K-53.1	51 MAY 4.1882	14 53 58.1	- 5 12 56	0.2	0	-1	14.50	9.79	-8.3	20	-0.1	-5
521	K-52.4	51 MAY 4.3000	14 53 52.3	- 5 12 39	0.2	-1	-1	14.33	9.62	-8.9	24	-0.7	-1
522	D-65.1	50 OCT 12.2667	1 41 06.7	3 49 08	-1.2	-6	-7	14.64	10.18	-7.0	-32	-0.6	11
522	E-15.1	50 NOV 4.1757	1 26 04.5	2 26 21	-1.2	-6	-7	15.01	10.33	-6.0	-38	-0.1	-12

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O − C R A	O − C DEC	VAR	MAG	G	10 − DAY MOTION		O − C MOTION	
522	S-44.2	51 DEC 28.3271	5 58 59.1	20 40 39	-1.5	1	-1	14.25	9.52	-7.7	10	0.0	1
523	K-44.6	51 MAY 3.2229	14 29 46.1	-19 02 04	1.2	-4	-5	14.78	10.62	-8.2	41	-0.2	-5
523	K-45.1	51 MAY 3.3167	14 29 41.4	-19 01 34	1.2	-5	-4	14.87	10.71	-7.7	43	0.3	-3
524	H-74.1	51 FEB 11.3319	10 16 51.3	10 19 09	-2.4	21	19	13.58	10.28	-9.5	11	0.0	-10
524	H-64.1	51 MAR 1.2611	9 59 17.7	10 59 31	-2.5	22	20	13.82C	10.50C	-9.3	16	0.1	-4
524	X-35.1	52 MAY 22.2007	15 21 54.8	-31 21 48	-0.7	6	2	15.15	11.28	-10.3	35	-0.5	-2
524	X-25.1X	52 MAY 22.2187	15 21 53.6	-31 21 43	-0.7	6	2	15.06C	11.19C	-10.4	50	-0.6	13
526	B-43.4	50 AUG 14.2333	21 46 27.9	-13 43 15	6.9	30	30	15.83C	11.29C	-8.2	-35	-0.9	6
526	B-44.1X	50 AUG 14.2479	21 46 27.4	-13 43 23	6.9	30	30	15.54C	11.29C	-7.1	-50	0.2	-9
527	C-35.2X	50 SEP 12.1701	23 00 16.9	-18 46 08	-7.1	-39	-31	14.31	11.70	-7.5	-76	-0.1	0
527	C-45.2	50 SEP 12.2757	23 00 12.1	-18 46 52	-7.2	-39	-32	13.95	11.35	-7.3	-89	0.1	-13
527	S-54.1	51 DEC 28.3451	6 22 47.7	17 08 14	-1.7	4	-2	14.82	11.09	-10.0	33	-0.3	2
527	S-44.4X	52 JAN 21.1340	6 02 07.5	18 28 37				15.64C	11.47C	-6.8	43		
528	Q-54.3	51 NOV 3.2083	2 38 42.6	12 10 40	0.0	1	0	14.49	10.14	-7.9	-8	0.3	0
529	I-61.1	51 APR 2.2132	11 56 28.5	16 11 47	0.0	-1	0	15.32	10.86	-7.4	26	0.1	4
529	X-54.2	52 MAY 24.2292	16 14 46.7	-20 59 24	0.1	11	-1	15.31	11.27C	-9.4	-11	-0.7	-5
530	L-32.1	51 MAY 29.2111	16 13 44.9	- 9 35 15	0.1	3	0	14.37	10.20	-8.3	13	-0.5	1
532	N-35.2	51 JUL 31.2118	20 20 44.6	-26 21 22	-0.8	-1	0	11.72	7.95	-9.0	-78	0.0	-7
533	M-43.1	51 JUN 29.2326	18 33 36.4	-13 17 54	0.7	2	0	14.51C	10.76C	-8.5	-9	-0.1	0
534	D-44.5X	50 OCT 9.2951	1 05 09.2	1 30 33	-1.2	-4	-7	14.05A	10.90	-7.9	-46	0.1	1
534	D-54.5	50 OCT 10.2917	1 04 21.6	1 25 54	-1.2	-4	-7	14.52	11.21	-8.1	-57	-0.1	-10
534	T-43.2	52 JAN 26.2229	8 03 51.9	22 42 30	0.5	0	-1	14.16	10.79	-9.4	37	-0.3	1
535	R-24.2	51 NOV 27.2653	3 32 50.6	14 05 50	0.3	11	1	13.58	10.53	-10.0	2	-0.2	7
537	I-32.4	51 MAR 11.2875	11 02 25.9	16 10 40	-0.7	5	3	14.90C	10.15C	-8.3	52	-1.0	-5
537	X-52.3	52 MAY 24.3146	16 20 03.2	- 7 41 10	-3.1	12	12	12.80	9.64	-8.4	7	-0.1	2
538	F-64.5X	50 DEC 13.2819	5 13 45.1	14 20 13	-9.3	-17	-15	14.18	10.33	-9.3	10	-0.5	8
538	F-65.2	50 DEC 13.2924	5 13 44.7	14 20 13	-9.3	-17	-15	14.52	10.72	-8.9	1	-0.1	-1
538	U-33.5	52 FEB 19.2208	9 58 28.5	13 17 00	0.7	-1	-3	14.86C	10.28C	-7.8	61	-0.4	9
539	F-53.3	50 DEC 12.3104	4 58 35.7	26 12 27	10.6	-2	-4	13.58	11.07	-10.3	-44	-0.3	7
539	U-65.2	52 FEB 24.3403	11 01 50.3	- 3 35 17	2.6	-19	-18	15.12	10.76	-8.3	37	-0.2	0
540	Q-74.1	51 NOV 4.3229	3 12 23.9	13 50 33	0.1	0	0	14.26	11.79	-10.7	-78	-0.7	-8
541	N-23.3	51 JUL 30.2083	20 03 26.0	-14 58 42	1.5	13	7	14.55	11.27	-9.3	-10	-0.7	-1
541	N-33.1	51 JUL 31.1903	20 02 35.6	-14 59 45	1.6	13	7	14.61	11.31	-9.8	-6	-1.3	4
542	H-54.3	51 FEB 10.3035	9 35 50.4	10 39 35	0.1	-1	0	14.36	10.34	-8.5	78	-0.6	8
542	W-41.2	52 APR 24.3035	14 02 49.7	2 56 05	-0.2	7	1	14.19	9.76	-7.7	53	-0.2	-1

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
543	L-85.2	51 JUN 9.2986	17 53 42.5	-29 34 49	0.5	1	1	14.97	10.44	-9.2	4	-0.7	-8
543	M-16.5X	51 JUN 27.2278	17 37 39.1	-29 01 56	0.5	1	1	15.33	10.84	-9.1	25	-0.3	1
544	D-62.2	50 OCT 12.1750	1 40 05.6	24 32 48	0.8	8	5	14.72	11.32	-10.2	-40	-0.8	-1
544	T-24.6X	52 JAN 25.2799	7 32 23.7	22 26 40	1.2	-1	-6	15.09	11.22	-9.8	-6	0.2	-3
545	F-41.1	50 DEC 12.1583	4 45 12.5	37 32 50	-3.7	-7	-2	14.52C	9.69C	-9.5	-29	0.1	-5
545	F-51.1	50 DEC 12.2882	4 45 03.9	37 32 30	-3.8	-8	-2	14.32C	9.51C	-10.4	-25	-0.8	-1
545	T-63.5	52 JAN 28.3257	8 45 57.3	25 18 11	0.9	-3	-6	14.53	9.56	-8.8	12	0.1	-5
545	T-62.2	52 JAN 28.3347	8 45 57.0	25 18 16	0.8	-3	-6	14.47	9.50	-8.5	13	0.4	-4
546	D-35.1	50 OCT 9.1889	0 35 04.7	- 1 23 49	-0.9	-6	-10	14.47	11.14	-11.0	4	-0.9	12
547	D-13.1	50 OCT 7.1708	23 55 26.9	3 44 31	3.3	7	6	13.14	11.01	-7.4	-149	-2.5	7
547	U-26.1	52 FEB 18.2396	9 32 31.7	- 4 44 11	1.0	7	-2	14.73	10.79	-7.8	81	0.1	-1
548	K-73.2	51 MAY 5.3757	15 37 56.8	-14 08 01	0.3	-1	-1	16.00C	12.68C	-10.0	26	-0.2	-6
550	F-83.4	50 DEC 14.3111	6 04 17.1	24 19 32	-2.3	9	5	14.03C	10.31C	-11.2	-21	-0.5	7
550	F-73.5	50 DEC 31.1562	5 46 18.0	23 28 53	-2.4	8	5	13.85	10.10	-10.7	-34	-0.6	-4
550	U-46.1	52 FEB 19.3021	10 28 50.5	- 4 59 07	-1.7	11	12	14.54	10.34	-9.0	27	-0.3	-2
550	U-55.1	52 FEB 20.2500	10 27 59.3	- 4 56 20	-1.6	11	11	14.50C	10.30C	-9.5	32	-0.6	1
550	U-56.1	52 FEB 20.3132	10 27 56.3	- 4 56 12	-1.7	11	12	15.10	10.90	-9.1	32	-0.2	1
551	F-53.5	50 DEC 12.3104	4 55 28.5	23 15 13	2.7	4	4	13.57	10.58	-10.8	-15	-1.4	0
551	F-54.1	50 DEC 13.1542	4 54 41.4	23 14 00	2.7	3	3	13.40	10.37	-9.8	-17	-0.5	-2
551	V-23.3	52 MAR 23.2083	11 54 51.3	0 34 15	-2.1	8	14	14.13	10.34	-7.8	51	-0.1	2
552	H-85.6	51 MAR 6.2653	10 45 12.9	- 3 56 13	-2.1	9	14	14.82	10.81	-8.1	40	-0.3	-1
552	H-86.3	51 MAR 6.2764	10 45 12.2	- 3 56 12	-2.1	9	14	14.87C	10.86C	-8.0	44	-0.2	3
552	X-84.1	52 MAY 26.2514	17 15 21.4	-25 49 58	-8.3	-8	-8			-8.2	19	-0.7	-10
553	U-32.5	52 FEB 19.2118	10 03 31.3	22 05 15	-4.3	21	23	15.52	13.46	-10.7	64	0.0	4
554	P-33.4	51 SEP 27.3521	0 21 36.9	8 00 11	0.9	8	6	11.42	9.50	-9.8	-47	-0.6	1
555	K-43.5	51 MAY 3.2125	14 24 52.4	-10 14 46	10.7	-56	-54	15.51	11.58	-7.6	35	-0.3	-2
556	E-42.2	50 NOV 8.1729	2 34 38.7	23 35 06	0.8	-1	3	12.92	10.52	-10.4	-70	-0.6	-12
556	V-55.3	52 MAR 26.2396	12 52 00.8	-15 00 40	-0.6	4	4	12.81	9.91	-9.0	42	0.0	-3
557	H-84.3	51 MAR 6.2542	10 45 57.6	4 09 39	-2.9	19	19	15.32	13.25	-9.8	52	-0.6	5
558	L-82.2	51 JUN 8.3340	17 53 20.3	-12 40 32	0.0	-1	0	13.99	9.91	-8.2	-3	-0.2	-2
558	M-13.2	51 JUN 26.2021	17 38 25.2	-12 55 28	-0.2	-2	0	14.04	10.00	-8.2	-11	-0.1	3
559	O-75.3	51 SEP 5.2437	23 28 14.7	-16 03 54	0.2	-1	1	14.22C	10.75C	-8.4	-72	-0.6	1
560	J-71.2	51 APR 10.2417	13 55 55.7	2 12 41	-1.6	9	10	15.43	11.68	-9.2	48	-1.0	0
562	G-62.1	51 FEB 4.2458	7 57 02.8	32 51 54	0.9	-1	-1	15.52	10.99	-9.0	28	-0.6	5
562	G-72.1	51 FEB 5.1437	7 56 17.6	32 54 06	0.9	-1	-1			-8.6	21	-0.3	0

TABLE - A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
										RA	Dec	RA	Dec
562	V-51.2X	52 MAR 22.3292	12 54 14.7	9 57 10	0.5	-6	-4	15.21	10.81	-7.5	41	-0.1	-5
563	N-35.4	51 JUL 31.2118	20 28 53.8	-29 16 50	0.9	4	1	13.44	9.84	-9.8	-54	-0.1	1
563	N-45.1	51 AUG 3.2229	20 25 57.7	-29 33 12	0.9	4	1	13.55	9.90	-10.8	-60	-1.0	-8
565	L-82.3	51 JUN 8.3340	18 07 51.9	-11 51 36	-0.1	0	0	15.43C	12.26C	-9.0	42	0.1	-3
565	M-22.1	51 JUN 27.1993	17 49 29.0	-10 45 35	-0.4	1	-1	15.28	12.19	-9.9	19	-0.3	-4
566	C-64.6	50 SEP 17.2312	23 48 37.8	- 9 07 10	-0.9	-04	-06	13.17C	9.15C	-7.3	-43	-0.3	2
566	C-54.4	50 OCT 6.2535	23 35 44.2	-10 16 24	-0.8	-4	-6	13.31C	9.00C	-5.9	-51	0.1	-26
566	S-14.5	51 DEC 23.2431	5 00 43.5	22 44 20	-0.8	-6	-2	13.24C	8.98C	-7.9	6	0.0	4
566	S-13.4	51 DEC 23.2521	5 00 42.7	22 44 23	-0.8	-6	-2	13.37C	9.11C	-8.1	8	-0.2	6
567	P-45.1X	51 SEP 30.2306	0 43 17.3	- 6 34 56	0.8	7	7	14.87	10.34	-8.0	-31	-0.4	3
567	P-46.1	51 SEP 30.3028	0 43 13.9	- 6 35 11	0.8	8	7	14.91	10.38	-8.0	-31	-0.4	3
567	P-55.5X	51 OCT 1.2250	0 42 32.0	- 6 38 35	0.8	7	7	14.72C	10.20C	-8.1	-28	-0.6	6
568	G-15.5	51 JAN 5.1785	6 12 27.1	9 13 12	-8.2	39	40	13.44	10.47	-9.3	-57	0.2	-2
568	G-16.3	51 JAN 5.3007	6 12 19.7	9 12 33	-8.3	40	41	13.43C	10.44C	-8.8	-33	-0.7	22
568	G-26.1	51 JAN 6.2347	6 11 28.7	9 07 37	-8.3	39	4	13.57	10.57	-9.8	-57	-0.2	-6
569	J-74.3	51 APR 9.3562	14 00 47.8	-14 23 31	-2.0	9	10	14.45	10.68	-0.8	47	0.3	6
569	K-23.4X	51 APR 28.2042	13 44 19.8	-12 54 32	-2.1	11	11	14.78C	11.14C	-8.8	44	-0.4	-4
569	K-24.1	51 APR 28.2139	13 44 19.0	-12 54 29	-2.1	12	11	14.71	11.07	-8.6	45	-0.2	-3
570	D-43.2	50 OCT 9.2875	0 53 21.9	7 09 35	-1.8	-10	-10	14.07	10.30C	-7.5	-48	-0.7	0
570	S-54.3	51 DEC 28.3451	6 29 42.7	21 21 47	-1.3	2	2	13.74	9.61C	-8.1	1	0.2	-2
570	S-44.2	52 JAN 21.1340	6 11 37.8	21 28 46				14.77	10.11	-6.2	0		
571	D-63.3	50 OCT 12.1972	1 36 20.4	14 05 14	-4.6	-34	-35	14.32	13.32	-10.2	-11	-1.2	-19
571	V-23.7X	52 MAR 23.2083	11 57 46.1	0 42 11	-0.2	2	2	15.83	12.35	-10.1	46	-0.5	1
572	F-66.3	50 DEC 13.3035	5 26 24.0	5 30 09	-0.4	-3	-1	13.96	11.74	-11.1	-17	-1.0	13
572	F-66.1	50 DEC 30.1549	5 10 46.6	5 16 10	-0.7	-5	-1	14.46	12.09	-8.2	1	-0.6	-11
572	V-64.10X	52 MAR 23.3444	13 18 22.0	- 8 15 14	-0.2	0	1	15.06	11.44	-7.9	75	-0.4	-5
572	W-13.5	52 APR 22.1778	12 53 44.2	- 3 57 36	-0.6	2	2			-7.5	84	0.0	4
573	L-46.1	51 JUN 2.2368	16 31 26.5	-36 28 20	-7.1	15	12	14.73	10.47	-10.1	7	-0.2	-4
575	D-32.1	50 OCT 8.2931	0 27 26.7	14 39 56	-0.7	-1	-7	14.77	12.29	-11.1	-5	0.0	-7
575	T-61.1X	52 JAN 29.2104	8 39 53.9	35 11 56	-0.2	2	1	16.03	12.26	-12.7	3	-0.5	-1
576	M-45.4	51 JUN 30.2139	18 35 21.3	-29 50 53	-1.1	-1	-3	13.95	11.03	-10.3	30	-0.3	-1
576	M 46.3	51 JUN 30.2347	18 35 20.1	-29 50 51	-1.1	-1	-4	13.85	10.93	-9.4	35	0.6	4
577	F-72.2	50 DEC 14.1833	5 46 04.2	30 03 07	1.4	1	0	15.39	10.75	-9.8	0	-0.5	2
577	U-23.3	52 FEB 18.2125	9 38 41.8	14 54 13	13.0	-86	-85	15.64	11.03	-8.3	35	-0.3	9
578	C-55.1	50 SEP 14.2687	23 23 29.1	-11 33 36	-13.2	-100	-106	13.58C	10.91C	-9.1	-19	-0.2	10

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O − C R A	O − C DEC	VAR	MAG	G	10 − DAY MOTION		O − C MOTION	
578	S-13.6	51 DEC 23.2521	5 10 51.7	30 03 30	-5.0	-6	-7	14.69C	10.43C	-9.7	-12	0.3	-5
578	S-12.4	51 DEC 23.2611	5 10 52.0	30 03 34	-5.0	-5	-7	14.66C	10.40C	-9.8	-14	0.2	-7
579	N-86.2	51 AUG 7.3014	21 56 41.5	-27 41 58	0.0	-2	0	12.44	8.83	-8.3	-65	-0.8	4
579	O-16.1	51 AUG 31.2403	21 37 37.0	-29 45 33	+0.2	-1	-1	12.75	8.99	-8.3	-35	-1.0	-6
580	C-34.1	50 SEP 11.3076	22 59 24.5	-11 51 08	-11.1	-65	-67	14.40	10.54	-7.0	-70	0.4	-20
580	S-14.7	51 DEC 23.2431	5 06 21.5	21 13 11	-0.1	0	0	15.00	11.26	-8.8	-2	-0.2	-8
581	S-24.6	51 DEC 27.1826	5 34 11.6	14 25 10	-8.7	-44	-50	14.99A	10.79A	-9.4	56	-0.5	-1
581	S-34.1	51 DEC 28.1736	5 33 19.5	14 30 38	-8.7	-44	-50	14.77	10.53	-9.1	58	-0.2	1
581	S-35.1	51 DEC 28.1826	5 33 19.1	14 30 40	-8.7	-44	-50	14.89	10.65	-8.8	58	0.1	1
582	B-11.1	50 AUG 10.2368	20 42 10.7	- 0 06 07	0.9	-8	-3	14.24A	9.98A	-8.3	-111	-0.2	-4
583	D-12.1	50 OCT 7.1604	23 53 11.3	11 03 18	3.6	13	22	15.18	10.33	-7.3	-47	-0.8	7
583	R-53.3	51 DEC 5.2625	4 45 45.5	23 27 58	6.0	-7	-2	13.69	9.96C	-8.7	-44	-0.5	-4
583	R-43.8	51 DEC 22.1340	4 31 28.4	22 19 41	4.9	-6	-1	14.33C	10.13C	-8.4	-47	-1.5	-6
584	J-76.1	51 APR 9.3368	14 01 21.1	-28 38 25	-0.1	-1	0	13.20	9.34	-9.0	26	0.3	-4
584	J-86.1	51 APR 10.3222	14 00 25.9	-28 35 18	-0.1	1	0	13.74	9.88	-10.5	31	-1.0	-1
584	K-26.2	51 MAY 2.2118	13 38 31.2	-26 36 04	-0.1	2	4	13.67	9.95	-9.9	62	-0.3	-11
585	F-55.1	50 DEC 13.1729	4 59 59.1	9 48 44	-1.4	-8	-1	13.93	11.42	-10.5	-30	-0.4	-9
585	F-56.1X	50 DEC 13.1833	4 59 58.5	9 48 42	-1.4	-8	-1	13.60	11.09	-11.8	-17	-1.7	4
585	X-52.2	52 MAY 24.3146	16 17 13.8	- 9 32 20	-1.3	9	2	14.17C	11.45C	-10.2	44	-0.8	4
586	O-63.3	51 SEP 3.2187	23 20 36.2	- 1 58 10	0.0	0	0	14.21	10.03	-7.4	-45	-0.3	0
586	O-73.1	51 SEP 3.3319	23 20 31.1	- 1 58 42	0.0	-1	0	14.52	10.35	-7.6	-46	-0.5	1
588	D-42.1	50 OCT 9.2764	0 58 50.7	18 58 01	-0.1	0	-1	15.73	9.50	-6.3	-34	-0.7	-10
588	R-31.1X	51 NOV 27.3014	3 56 36.8	33 17 16	0.0	0	0	15.57	9.69	-6.3	-26	0.3	-3
588	R-32.6X	51 NOV 29.2764	3 55 18.5	33 12 25	0.0	-1	0	15.22	9.31	-6.7	-25	-0.2	-1
589	K-42.2	51 MAY 3.2021	14 25 36.5	- 4 02 06	2.0	4	-5	14.24	9.90	-7.1	57	-0.1	3
590	D-37.2	50 OCT 9.2111	0 36 07.1	-14 02 51	0.4	-1	2	15.14	11.18	-8.6	-43	-1.2	-5
591	N-84.4X	51 AUG 7.2819	22 02 29.5	-16 22 38	-1.3	-13	-12	15.77	11.85	-10.0	-14	-0.6	3
592	Q-55.4	51 NOV 3.2174	2 40 20.6	2 26 47	4.4	10	13	13.93	10.68	-7.5	-63	0.0	0
593	K-83.1	51 MAY 8.3687	16 14 12.4	-13 09 29	0.3	-7	-2	14.35	10.24	-9.5	-1	-0.5	9
593	L-23.1	51 MAY 28.2090	15 54 48.1	-13 36 23	0.2	-6	-2	14.10	10.16	-10.0	-25	-0.1	-7
595	W-65.4	52 APR 27.2257	14 51 16.5	-25 50 27	-0.4	3	3	13.21C	9.17C	-10.4	-13	-0.9	7
595	W-76.2	52 APR 27.3167	14 51 11.5	-25 50 36	-0.4	3	3			-10.1	-21	-0.6	-1
597	Q-44.5	51 NOV 1.2639	2 21 18.1	14 33 44	1.2	25	11	12.75	10.38	-11.0	5	-0.1	-5
598	G-62.2	51 FEB 4.2458	7 40 12.7	30 19 25	2.6	-1	1	14.34	10.88	-8.4	38	-0.2	0
598	V-61.1	52 MAR 22.3472	13 08 26.9	11 06 46	0.8	-5	-6	15.39	10.66	-8.0	56	-0.6	-1

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
599	W-42.4	52 APR 24.2944	13 51 08.2	- 4 09 37	0.1	-2	-1	13.43	9.37	-9.7	7	0.0	-4
600	C-24.2	50 SEP 11.2062	22 36 07.9	-14 58 20	-2.0	-8	-6	14.79	11.49	-8.1	-78	-0.7	-3
600	S-15.1	51 DEC 23.1708	4 56 37.7	9 11 36	-1.8	-6	-4	14.71	11.00	-9.1	17	-0.4	-2
600	S-16.3	51 DEC 23.2340	4 56 33.9	9 11 42	-1.8	-6	-4	15.23	11.52	-9.4	17	-0.7	-2
601	O-42.1	51 SEP 2.3132	22 35 20.6	- 3 35 11	2.5	4	4	13.91	10.56	-6.5	-98	-0.1	2
602	K-47.2	51 MAY 3.2958	14 41 25.7	-36 49 38	0.3	-4	-1	15.07C	9.99C	-8.6	22	0.5	-1
602	K-57.2	51 MAY 4.2306	14 40 34.1	-36 47 48	0.3	-3	-2	14.67	9.59	-9.8	14	-0.6	-10
603	I-44.10	51 MAR 13.3722	11 27 33.0	1 05 14	-8.7	74	78	15.80	14.00C	-10.6	83	-0.5	73
604	H-73.7	51 MAR 5.2424	10 30 39.3	13 15 38	1.3	-8	-8	14.57C	10.20C	-7.6	37	0.1	4
604	H-83.2	51 MAR 6.1937	10 29 55.7	13 18 54	1.3	-8	-9	15.17	10.80	-7.4	33	0.2	1
604	W-44.3	52 APR 24.2764	14 01 38.5	-14 42 55	0.5	-6	-3	15.02	10.26C	-7.9	29	-0.4	-3
606	L-46.3	51 JUN 2.2368	16 40 28.5	-34 40 06	1.6	6	-2	15.04	11.49	-11.6	15	-0.6	-8
607	E-82.1	50 NOV 16.2222	3 48 01.3	31 06 24	-3.0	-10	-3	14.93	10.88	-10.3	-35	-0.8	4
607	F-12.2	50 DEC 3.1569	3 32 01.5	29 39 45	-3.2	-13	-3	14.85A	10.73A	-8.8	-64	1.1	-7
607	U-25.2	52 FEB 18.2306	9 42 31.7	2 33 19	-0.6	5	5	14.44C	10.99C	-9.2	22	0.0	3
608	I-45.3	51 MAR 13.3604	11 16 17.1	- 7 35 23	-2.2	18	16	16.06	11.56	-9.0	42	-1.2	6
608	X-45.1	52 MAY 24.2028	15 40 53.4	-30 58 55	-2.2	4	3	16.14	11.91	-9.3	41	-0.5	0
609	E-84.5	50 NOV 16.2444	3 47 44.3	14 08 25	2.6	6	8	15.18C	11.11C	-8.8	-32	-0.7	-1
609	F-14.3	50 DEC 3.1785	3 34 05.4	13 20 34	2.5	7	7	15.53	11.25	-7.7	-24	-0.2	1
609	F-15.2	50 DEC 10.1493	3 29 08.9	13 06 07	2.3	6	7	15.70	11.30	-5.6	-25	1.0	-8
609	T-74.1	52 JAN 29.2465	8 53 23.3	13 53 41	0.8	-2	-3	14.85	10.79	-8.7	43	-0.7	2
611	M-41.1	51 JUN 29.2132	18 31 34.5	- 4 01 59	2.4	6	3	15.30	10.71	-7.9	-4	0.0	-2
613	Q-43.3	51 NOV 1.2729	2 20 24.1	22 53 10	-0.1	0	-1	14.55	11.16	-9.0	-32	0.5	-9
613	Q-42.4	51 NOV 1.2819	2 20 23.5	22 53 07	-0.1	0	-1	14.30	10.91	-9.0	-22	0.5	1
614	D-12.3	50 OCT 7.1604	23 50 45.7	5 40 18	0.3	-5	2	15.22	12.13	-9.7	-70	-2.7	10
614	D-13.2X	50 OCT 7.1708	23 50 45.2	5 40 11	0.3	-5	2	15.21	12.12	*.*	*		
614	T-75.2	52 JAN 29.3188	9 03 17.4	5 04 29	-1.2	4	5	14.92	11.79	-9.5	33	-0.7	-3
615	H-63.4	51 FEB 11.2181	10 04 10.1	15 20 12	0.3	-1	-2	14.14	10.87	-9.9	55	-0.7	9
615	H-63.1	51 MAR 1.2479	9 47 21.3	16 34 03	0.2	-1	-1	14.93C	11.45C	-9.4	37	-0.7	4
618	N-86.3	51 AUG 7.3014	22 01 49.5	-25 36 43	2.5	0	4	13.75C	9.83C	-6.8	-91	0.0	1
618	O-16.2	51 AUG 31.2403	21 44 28.1	-28 46 34	2.5	-3	4	13.22	9.19	-7.9	-58	-1.1	1
619	E-66.1	50 NOV 13.2021	3 05 53.1	1 52 44	-0.5	-3	-1	14.09	11.34	-8.4	-89	0.1	-9
619	U-64.1	52 FEB 24.2583	10 51 24.5	- 3 03 50	-0.2	-2	1	14.49	11.10	-8.4	89	-0.5	3
619	U-65.1	52 FEB 24.3403	10 51 20.3	- 3 03 13	-0.3	-1	1	14.67	11.28	-8.5	88	-0.6	2
620	N-26.1	51 JUL 30.2382	19 54 58.9	-33 33 54	2.7	13	11	14.52	12.29	-11.2	14	-0.5	5

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R.A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
621	U-53.7X	52 FEB 24.2312	10 53 07.1	10 57 50	-3.3	19	21	15.18	11.59	-7.9	45	-0.2	-4
621	U-63.6X	52 FEB 24.2493	10 53 06.3	10 57 49	-3.3	19	21	15.12	11.53	-7.9	49	-0.2	0
621	U-62.2	52 FEB 24.2403	10 53 07.1	10 57 46	-3.3	19	21	15.24	11.65	-8.2	55	-0.5	6
622	Q-76.1	51 NOV 4.3049	3 17 26.9	- 0 49 23	2.1	1	8	12.64C	11.41C	-7.8	-56	-0.1	-4
623	N-34.2X	51 JUL 31.2417	20 17 29.3	-21 37 41	-1.6	-7	-12	14.40C	11.33C				
624	D-71.1	50 OCT 13.1868	1 53 29.3	30 39 15	-0.2	-2	-2	15.47	8.67	-6.3	19	-0.3	25
624	E-11.2	50 NOV 2.1528	1 41 19.7	30 09 22	-0.4	-2	-3	15.39A	8.66A	-6.2	-26	-0.3	-4
624	E-21.3	50 NOV 4.2111	1 40 07.3	30 04 30	-0.4	-3	-3	15.54	8.75	-5.7	-29	0.1	-5
625	K-51.1	51 MAY 4.3097	14 56 35.2	3 10 42	-0.5	-1	2	14.95	11.57	-9.2	43	-0.5	-0
625	K-60.1	51 MAY 4.3319	14 56 33.4	3 10 50	-0.5	-1	2	14.87	11.43	-8.8	35	0.0	-7
627	G-34.2	51 JAN 8.1917	6 50 49.9	16 53 42	-3.5	2	1	15.24	11.33	-9.2	31	-0.3	2
627	G-44.1	51 JAN 8.2951	6 50 43.9	16 53 59	-3.6	2	1	15.07	11.17	-8.9	28	0.0	-1
627	V-33.2	52 MAR 23.2264	12 17 28.9	4 48 15	-4.0	24	21	14.56	10.74	-7.8	58	-0.3	-7
628	B-45.4	50 AUG 14.2625	21 42 55.0	-23 33 17	-1.2	3	-3	12.81C	10.01C	-8.2	-71	0.2	18
628	S-15.6	51 DEC 23.1708	5 12 42.3	13 59 47	-1.0	-5	-3	13.68	10.37	-9.9	27	-0.2	-8
629	G-13.3	51 JAN 5.1562	6 17 29.5	26 00 09	-22.9	-34	-31	14.24	11.00	-9.3	32	0.1	-13
629	G-23.1	51 JAN 5.2889	6 17 22.3	26 00 36	-22.9	-33	-31	14.23	10.98	-9.4	41	0.0	-4
629	W-41.1	52 APR 24.3035	13 52 36.2	1 13 09	-5.8	44	41	14.28	10.26	-8.0	23	-0.1	0
631	Q-33.3	51 NOV 1.1646	2 01 23.1	17 32 32	1.3	-8	0	13.59	10.05	-9.0	-104	-1.0	2
632	N-74.6X	51 AUG 6.2479	21 28 59.6	-17 40 08	-9.9	-58	-55	16.00	13.35	-8.0	-31	1.1	5
633	C-44.1	50 SEP 12.2632	23 19 28.3	-10 41 44	10.7	30	35	14.58	11.26	-7.1	-80	-0.2	-1
633	S-25.1	51 DEC 27.1917	5 19 14.3	8 56 56	7.6	19	16	15.10	10.93	-7.9	18	-0.3	-2
633	S-26.4	51 DEC 27.2007	5 19 13.9	8 56 55	7.6	19	16	15.28	11.11	-8.3	23	-0.7	3
635	K-53.3	51 MAY 4.1882	14 59 49.7	- 6 29 01	8.7	-20	-20	14.75	10.24	-7.2	52	-0.1	-1
636	G-22.3	51 JAN 5.2785	6 25 09.7	33 31 28	2.4	0	0	15.03	10.87	-10.6	8	-0.5	1
636	U-62.10	52 FEB 24.2403	11 10 11.9	15 16 03	0.4	-4	-3	15.15	10.59	-8.4	40	-0.5	-5
637	U-44.10X	52 FEB 19.3210	10 14 37.9	11 06 23	-7.6	41	45	15.24	12.04C	-8.1	46	-0.3	3
638	F-73.6	50 DEC 31.1562	5 56 37.1	21 12 26	-1.6	-5	-3	14.60	10.63	-10.0	16	-0.3	-6
638	F-74.3	50 DEC 31.1667	5 56 36.5	21 12 28	-1.6	-5	-3	14.43	10.46	-9.5	20	0.2	-2
638	W-22.2	52 APR 23.1722	13 13 38.9	6 17 17	-2.5	15	15	14.20	11.42	-8.2	19	-0.6	-4
639	F-22.2	50 DEC 10.1812	4 02 22.7	27 41 45	-0.8	0	0	13.07	9.22	-8.7	-45	-0.5	7
639	T-95.1	52 FEB 1.2764	9 33 38.9	6 23 14	-0.3	1	2	13.60C	9.13C	-8.1	14	-0.1	-4
639	U-15.2	52 FEB 17.2250	9 20 29.7	7 00 46	-0.3	3	2	13.70	9.27	-8.2	24	-0.2	-3
640	L-53.1	51 JUN 6.2160	16 54 06.5	-15 58 58	0.7	3	1	13.59C	9.96C	-8.7	55	-0.7	1
643	D-21.1	50 OCT 7.2576	0 04 00.7	19 41 28	1.6	7	8	15.23	9.58	-6.4	-57	0.3	8

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
643	S-34.5	51 DEC 28.1736	5 39 33.9	18 24 09	2.7	-6	-9	14.72	10.75	-8.8	-41	-0.6	-1
644	I-43.2	51 MAR 13.2653	11 16 00.1	6 12 07	0.8	-6	-5	15.64	11.99	-8.2	60	0.3	4
644	X-64.5	52 MAY 25.2278	16 36 15.6	-20 58 23	1.0	0	-2	14.69	11.24	-10.0	18	-0.6	1
644	X-63.3	52 MAY 25.3049	16 36 11.0	-20 58 14	1.0	0	-2	15.04	11.59	-9.4	19	0.0	2
645	L-65.1	51 JUN 7.2389	17 09 23.6	-32 25 13	0.0	0	0	15.86	10.88	-9.1	10	-0.3	5
647	I-56.2	51 APR 1.2299	11 42 47.3	-10 17 41	-0.9	5	5	15.69	12.59	-8.9	74	-0.7	-2
648	M-84.4X	51 JUL 6.2757	19 50 17.3	-21 08 59	0.0	-1	0	16.18	10.97	-8.1	-5	-0.4	-1
648	N-14.1	51 JUL 29.2104	19 31 57.1	-21 15 31	0.0	-1	0	15.88C	10.64C	-7.6	-2	0.1	-1
648	N-13.5X	51 JUL 29.2701	19 31 53.9	-21 15 33	-0.1	-1	-1	15.75C	10.51C	-7.7	2	0.0	3
651	H-41.3	51 FEB 10.1965	9 26 19.1	31 30 32	0.4	-3	-2	15.44	11.24	-9.7	27	-0.3	-5
651	W-34.4	52 APR 24.2042	13 39 43.0	- 7 21 37	0.0	-2	0	15.41	11.03	-8.3	18	-0.3	-1
652	M-35.2X	51 JUN 29.2618	18 16 54.5	-27 34 59	2.1	-10	-7			-11.3	-77	-0.5	-7
652	M-45.1	51 JUN 30.2139	18 15 51.8	-27 41 37	2.0	-11	-7	15.31	12.51	-11.5	-69	-0.5	1
653	I-32.5	51 MAR 11.2875	11 04 30.2	15 31 52	-3.4	17	12	14.38C	10.65C	-7.9	67	-0.6	-6
654	N-32.1	51 JUL 31.2806	20 09 07.0	- 7 07 10	0.7	4	6	13.02	9.41	-11.1	-1	-0.4	-9
655	J-42.1	51 APR 7.2507	12 54 42.8	3 14 43	-0.8	6	5	14.88	10.69	-7.8	58	-0.5	6
656	B-73.3	50 AUG 19.3264	22 28 49.4	- 9 09 19	0.5	10	3	15.09	10.38	-6.7	-28	0.2	12
656	C-13.3X	50 SEP 9.2514	22 14 02.8	-10 36 10	0.7	9	4	15.77	10.99	-7.9	-35	-1.1	4
657	K-66.2	51 MAY 5.2521	15 28 25.7	-35 09 27	-0.4	-3	1	14.68C	11.75C	-9.6	33	-0.1	2
657	K-76.3	51 MAY 8.2722	15 25 29.1	-34 58 29	-0.3	-5	1	14.62C	11.75C	-10.5	28	-0.7	-11
658	F-43.3	50 DEC 12.2347	4 42 53.1	24 39 46	-0.3	1	-1	14.82	11.58	-9.8	-18	-0.4	1
658	U-84.7	52 FEB 26.2708	11 41 05.9	2 10 27	-3.7	23	26	15.62	11.69	-7.5	40	-0.4	-1
659	F-22.3	50 DEC 10.1812	4 00 01.3	26 01 57	0.1	3	0	16.17C	9.43C	-5.8	-12	-0.3	4
659	F-23.1X	50 DEC 11.1201	3 59 31.1	26 00 10	0.1	1	0	16.36	9.56	-7.0	-22	-1.6	-6
659	S-53.4	51 DEC 28.3000	6 21 39.3	28 40 05	0.1	-1	0	16.65	9.84C	-6.0	2	-0.1	0
659	S-43.7X	52 JAN 21.1250	6 08 33.0	28 35 52				17.20C	10.03C	-5.3	-9		
660	C-23.4	50 SEP 11.1944	22 34 40.3	-10 56 29	0.4	-3	0	13.58	10.76	-8.7	-118	-1.6	-5
660	C-24.1	50 SEP 11.2062	22 34 40.1	-10 56 41	0.4	-3	0	13.76	10.94	-8.3	-111	-1.2	2
661	L-46.2	51 JUN 2.2368	16 32 51.5	-35 53 14	0.4	2	-1	14.70	10.68	-9.2	11	0.4	-7
662	E-84.3	50 NOV 16.2444	3 52 18.5	13 44 21	0.5	-1	2	14.82	11.48	-10.7	-24	-0.8	5
662	E-85.1	50 NOV 16.2562	3 52 17.9	13 44 17	0.5	-1	2	14.81	11.47	-10.2	-26	-0.3	3
662	F-14.4	50 DEC 3.1785	3 35 44.6	13 03 00	0.4	-1	1	15.12	11.64	-9.4	-24	-0.3	-5
662	F-15.4X	50 DEC 10.1493	3 29 55.8	12 52 45	0.3	-2	1	15.25	11.60	-7.8	-11	0.0	1
664	U-54.6	52 FEB 20.2410	10 48 26.2	3 33 21	0.1	1	0	15.33	11.15	-7.2	61	-0.3	1
665	H-45.2	51 FEB 9.2972	9 30 18.5	6 20 26	0.2	-3	-2	13.73C	9.50C	-9.6	8	-0.8	2

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O − C R A	O − C DEC	VAR	MAG	G	10 − DAY MOTION		O − C MOTION	
665	H-55.1	51 FEB 10.3139	9 29 24.4	6 21 02	0.2	-3	-2	13.89	9.66	-9.2	3	-0.3	-3
666	D-33.1	50 OCT 8.3042	0 35 14.3	10 05 07	-3.2	-13	-14	13.32	11.88	-8.0	-105	-1.8	-2
666	U-55.3	52 FEB 20.2500	10 48 45.6	- 2 33 58	-1.2	6	6	15.74	11.87	-8.3	62	0.0	6
667	G-76.3	51 FEB 7.2354	8 10 22.7	2 40 34	-2.2	3	-5	13.66	10.21	-7.1	127	-0.3	-6
667	H-16.1	51 FEB 7.2687	8 10 21.8	2 41 02	-2.2	3	-5	13.65C	10.22C	-6.7	135	0.1	2
668	S-15.5	51 DEC 23.1708	5 11 40.5	15 28 09	3.5	-8	-1	17.06	13.22	-8.6	-19	0.2	-3
669	C-53.3	50 SEP 14.2910	23 40 41.1	- 2 44 26	0.3	1	1	14.55	11.02	-7.5	-71	-0.8	11
669	C-54.2	50 OCT 6.2535	23 26 31.5	- 5 34 58	0.2	1	1	15.26	11.37	-4.3	-101	1.0	-35
669	R-56.3	51 DEC 23.1618	4 48 59.3	7 09 27	0.5	0	1	15.95	11.48	-7.2	4	0.2	1
670	S-45.2	51 DEC 28.2549	6 02 48.3	11 36 10	1.9	-1	1	13.69C	10.42C	-9.4	11	-0.2	-1
671	N-75.2	51 AUG 6.2576	21 46 02.1	-21 54 28	-2.2	-14	-15	15.79	11.50	-8.2	-33	-0.2	-4
671	N-85.2	51 AUG 7.2917	21 45 12.1	-21 57 22	-2.2	-13	-15	15.62	11.34	-8.3	-26	-0.2	3
672	W-36.3	52 APR 23.2806	13 40 52.5	-25 47 52	-1.5	4	10	15.56C	12.70C	-11.2	18	-0.3	1
672	W-46.1	52 APR 24.2132	13 39 44.9	-25 46 10	-1.7	5	12	15.08C	12.23C	-11.6	19	-0.8	0
672	W-45.1	52 APR 24.2674	13 39 48.6	-25 45 59	-1.6	5	11	15.40C	12.55C	-11.5	19	-0.7	0
673	B-13.1X	50 AUG 10.2639	20 47 29.6	-13 19 19	-0.6	0	-3	14.92	11.31	-8.2	-33	0.0	2
673	B-23.2	50 AUG 11.2375	20 46 41.8	-13 22 40	-0.6	0	-2	15.06	11.50	-9.6	-42	-1.4	-7
673	Q-73.4X	51 NOV 4.2958	3 09 06.7	17 43 38	-1.8	-7	-6	14.57	11.13	-8.9	-38	-0.3	7
674	L-34.2	51 MAY 29.3104	16 21 52.7	-24 36 45	-2.1	11	12	12.74	8.44C	-8.7	-13	0.8	-5
675	F-53.4	50 DEC 12.3104	4 58 03.6	24 32 43	1.6	-4	-1	11.63	9.56	-10.7	-76	-1.3	-2
675	V-36.1	52 MAR 24.2326	12 14 50.3	-16 44 14	1.4	-8	-7	12.96A	8.83A	-8.8	48	-0.5	-7
676	G-45.3	51 JAN 8.2833	7 05 17.7	9 43 00	-0.5	-4	0	15.21	10.82				
676	U-83.1	52 FEB 24.3681	11 33 27.6	8 05 09	-2.3	10	7	15.11	10.42	-6.5	77	-0.5	4
676	U-73.10	52 FEB 26.2618	11 32 16.5	8 19 09	-2.4	11	7	15.02	10.38	-6.9	83	-0.6	9
677	L-35.2	51 MAY 29.3007	16 15 56.4	-27 17 10	0.1	-3	0	14.33	10.79	-9.6	50	-0.7	3
678	I-75.3	51 APR 4.2201	12 32 36.7	-13 23 55	-0.5	-1	3	13.70	9.77	-9.6	65	-0.9	9
678	J-35.2	51 APR 4.2306	12 32 36.1	-13 23 52	-0.5	0	3	13.66	9.74	-9.1	60	-0.4	5
680	E-62.5X	50 NOV 12.2479	3 19 24.3	23 58 10	12.4	116	108	15.06	10.47	-10.0	3	-0.6	6
680	E-63.1	50 NOV 12.2583	3 19 23.5	23 58 05	12.4	116	108	15.01	10.42	-9.2	-12	0.2	-9
680	S-51.3	51 DEC 28.3181	6 41 07.3	43 03 04	11.7	17	12	16.76	11.22	-10.4	23	-0.1	3
681	U-64.7X	52 FEB 24.2583	11 08 28.2	0 31 25	0.6	-1	-2	16.18	11.78	-7.0	62	-0.5	-5
683	W-67.3	52 APR 27.2896	14 39 00.1	-33 05 35	-0.1	0	0	13.55	9.55	-8.2	68	0.1	1
684	O-73.6	51 SEP 3.3319	23 37 13.3	- 0 19 02	-1.4	-12	-11	14.61A	11.81A	-9.4	-23	-0.4	7
685	W-64.1	52 APR 27.2167	14 29 17.0	-16 46 06	0.6	1	-2	14.76	12.81	-9.7	72	0.3	4
686	Q-52.2	51 NOV 1.2910	2 29 50.1	26 31 24	1.3	1	1	12.99	10.80	-9.2	-139	-0.1	-5

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
687	G-31.2	51 JAN 8.1583	7 02 01.6	42 24 59	-0.8	-4	2	15.81	13.02	-13.1	-52	0.3	-7
687	G-41.3	51 JAN 12.1528	6 56 44.4	42 04 39	-0.7	-3	2	15.26	12.45	-13.7	-44	-0.3	1
688	G-36.3X	51 JAN 6.2028	6 47 26.2	8 56 43	-0.2	-5	0	15.68	11.63	-9.6	25	-0.6	0
688	V-23.4	52 MAR 23.2083	11 58 47.0	2 44 56	-1.4	-4	5	15.09	11.50	-8.0	82	-0.3	-1
689	M-52.1	51 JUN 30.3375	18 58 09.3	-12 23 49	-1.5	-4	-2	15.07	13.25	-10.2	-22	-0.8	-8
690	I-36.1	51 MAR 13.3354	11 04 16.6	-10 38 07	0.9	-6	-5	13.44C	8.45C	-7.5	43	-0.4	-5
690	W-75.4	52 APR 27.3708	14 53 55.9	-24 35 58	1.3	-2	-2			-8.1	41	-0.6	-4
691	D-37.4	50 OCT 9.2111	0 39 09.5	-17 47 21	-1.4	5	-9	14.23	10.75	-8.6	-24	-0.7	-3
691	T-22.2	52 JAN 25.1986	7 25 20.1	30 20 21	0.0	-4	0	14.00	10.10	-9.2	40	-0.4	-2
693	U-32.9	52 FEB 19.2118	10 08 49.2	21 00 11	-4.4	26	42	14.14	10.25	-10.6	9	-0.8	-4
693	U-42.2	52 FEB 20.2229	10 07 49.8	21 01 16	-4.4	25	42	13.90	10.00	-10.1	11	-0.3	-1
694	I-56.2	51 MAR 14.3347	11 30 08.6	-16 10 39	0.0	-1	0	14.67	9.87	-8.4	60	-0.5	-1
694	I-46.3	51 MAR 31.3083	11 16 59.7	-14 09 20	-0.1	0	0	14.84A	9.99A	-7.4	80	-0.2	1
694	X-82.2	52 MAY 26.2556	17 12 53.7	-12 42 22	0.0	0	0			-8.2	100	0.2	-2
695	G-75.1	51 FEB 7.2243	7 55 58.5	9 54 49	-0.6	9	4	13.46	9.81	-9.3	-1	-0.1	-8
696	I-46.1	51 MAR 13.3465	11 26 05.2	-12 37 53	4.9	-57	-41	14.89A	10.04A	-8.3	28	-0.5	7
696	I-46.1	51 MAR 31.3083	11 12 46.1	-11 27 13	4.6	-54	-39	15.28	10.31	-6.5	46	-0.1	1
696	W-77.1	52 APR 27.2535	14 42 04.7	-33 19 17	2.5	-8	-8			-7.9	31	0.1	2
696	W-67.4	52 APR 27.2896	14 42 03.1	-33 19 10	2.5	-8	-8	16.25C	10.87C	-8.1	32	-0.1	3
701	J-85.4	51 APR 10.3319	14 26 10.9	-20 16 10	4.5	-18	-14	14.26	10.32	-6.4	38	0.4	-6
701	K-35.1	51 MAY 2.2729	14 09 45.5	-18 17 07	4.5	-19	-14	13.99	10.34	-7.2	66	0.2	-3
702	B-21.1	50 AUG 11.2083	21 03 21.3	- 1 30 25	0.2	2	2	12.24	8.10	-7.8	0	0.9	-11
705	D-61.1	50 OCT 12.1618	1 29 05.4	26 20 09	-4.8	-51	-61	13.44	9.63	-12.1	16	-0.6	-14
705	D-62.1	50 OCT 12.1750	1 29 04.5	26 20 06	-4.8	-51	-61	13.30	9.49	-10.8	16	0.7	-14
707	M-45.5X	51 JUN 30.2139	18 31 48.7	-23 53 13	-2.7	-2	-6	15.67	13.94C	-12.3	20	-0.7	4
708	K-55.5	51 MAY 4.2090	14 50 58.9	-21 05 38	-1.6	9	7	14.53	11.78	-9.1	26	0.2	0
709	H-64.2	51 FEB 11.2285	9 57 02.5	12 10 47	-3.6	34	39	14.03C	9.88C	-9.0	4	0.2	-5
710	M-84.6X	51 JUL 6.2757	19 47 29.9	-19 49 05	-0.1	-1	0	16.19	12.46	-8.4	-24	-0.9	2
710	N-13.4X	51 JUL 29.2701	19 29 04.3	-20 44 49	-0.3	3	-1	15.74	11.98	-7.9	-26	-0.3	-2
711	H-63.3X	51 MAR 1.2479	9 55 22.7	17 18 55	0.0	1	0	16.28C	13.08C	-11.7	36	-0.9	6
712	P-41.3	51 SEP 27.3243	0 36 37.7	20 29 04	1.9	1	6	11.50	9.20	-8.2	-78	-1.0	7
713	P-32.2	51 SEP 27.3146	0 10 23.5	10 46 19	1.8	8	7	13.53	9.76	-6.9	-71	-0.4	0
713	P-33.3	51 SEP 27.3521	0 10 21.7	10 46 02	1.7	8	6	13.60	9.83	-7.3	-71	-0.8	0
715	G-21.1X	51 JAN 5.2674	6 42 49.7	40 08 53	-1.1	5	0	14.76	11.00	-11.9	18	-0.2	-8
715	G-31.1	51 JAN 8.1583	6 39 28.8	40 15 39	-1.3	8	0	15.15	11.37	-12.3	24	-0.9	4

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
715	V-42.2	52 MAR 22.3021	12 44 12.8	10 24 39	1.5	-17	-15	14.78	10.81	-9.7	30	-0.9	-2
716	F-35.2	50 DEC 11.2722	4 17 30.8	8 52 16	-6.9	-22	-17	15.86	11.86	-8.8	-3	-0.7	2
716	F-36.1	50 DEC 11.2847	4 17 30.5	8 52 18	-6.9	-22	-17	16.05	12.05	-8.2	-7	-0.1	-2
716	U-73.7	52 FEB 26.2618	11 23 15.2	8 23 08	-6.0	32	30	14.87	11.72	-7.3	85	-0.6	1
717	C-53.2	50 SEP 14.2910	23 39 39.3	- 1 49 04	-0.7	-5	-5	14.07A	11.84A	-7.9	-30	-0.7	6
717	C-53.2	50 OCT 6.1958	23 24 45.1	- 3 02 40	-0.6	-5	-4	14.73	12.04	-5.7	-30	-0.3	-5
717	T-23.3X	52 JAN 25.2889	7 33 20.9	23 40 57	-0.9	1	3	16.36	12.08	-9.0	10	-0.5	-4
718	G-22.2X	51 JAN 5.2785	6 30 18.4	31 58 51	1.4	1	1	14.91	10.67	-9.6	11	0.3	-1
718	W-34.1	52 APR 24.2042	13 36 14.7	- 7 43 33	1.6	-15	-12	13.71	10.99	-8.8	8	-0.5	-2
720	C-54.4	50 SEP 14.2576	23 27 58.5	- 6 16 13	-3.6	-23	-25	14.40	10.92C	-8.7	-50	-0.8	-5
720	S-13.8	51 DEC 23.2521	5 11 01.1	25 36 17	-0.2	-1	0	14.47	10.79	-9.4	-9	-0.2	-3
721	P-35.1	51 SEP 27.2875	0 10 35.2	- 7 16 59	0.1	1	1	14.62	10.42	-7.5	-23	-0.2	3
722	X-64.7	52 MAY 25.2278	16 45 24.7	-26 54 07	-0.9	-1	2	14.39	12.98	-11.6	-29	-0.8	2
722	X-65.1	52 MAY 25.2361	16 45 24.1	-26 54 10	-0.9	-1	2	14.45	13.04	-11.1	-37	-0.3	-6
723	M-23.4X	51 JUN 27.2090	17 59 32.0	-16 26 17	-1.4	1	0	15.12C	11.05C	-8.5	0	-0.1	6
726	K-35.3	51 MAY 2.2729	14 20 54.6	-23 25 02	-2.9	10	3	15.77	12.06	-9.9	91	-0.6	9
727	N-84.2	51 AUG 7.2819	21 49 24.4	-16 20 38	-3.5	-9	-4	14.10	11.18	-7.7	-113	-0.3	-3
727	O-15.1	51 AUG 31.1826	21 30 10.2	-20 32 15	-3.6	-4	-4	13.89	10.79	-7.6	-80	0.0	14
727	O-14.3	51 AUG 31.2215	21 30 08.2	-20 32 31	-3.7	-5	-4	14.20C	11.10C	-8.2	-99	-0.6	-5
731	D-45.3	50 OCT 12.1868	1 00 04.2	- 3 35 07	0.8	11	7	13.98	10.78	-9.4	2	-0.6	13
731	S-51.2X	52 JAN 22.1431	6 40 36.8	35 54 27	-0.3	2	0	14.86	10.35	-8.7	-3	-0.1	-4
731	S-52.3X	52 JAN 22.1521	6 40 37.6	35 54 30	-0.3	3	0	15.00	10.49	-9.3	-3	-0.7	-4
731	S-61.1	52 JAN 23.1528	6 39 45.8	35 55 01	-0.3	3	0	14.75	10.21	-8.4	-1	0.0	-1
731	S-62.2	52 JAN 23.1618	6 39 45.3	35 55 06	-0.3	3	0	14.90	10.36	-8.0	-5	0.4	-5
732	M-41.2	51 JUN 29.2132	18 38 54.5	- 4 49 13	0.8	-2	1	14.44C	11.64C	-9.5	-23	-0.3	-5
732	M-42.1X	51 JUN 29.2229	18 38 53.9	- 4 49 21	0.8	-2	1	14.78C	11.98C	-9.9	-20	-0.7	-2
734	P-73.1	51 OCT 2.2507	1 39 59.9	13 06 10	1.7	15	12	14.97C	11.14C	-7.6	-18	-0.4	-1
734	P-74.1X	51 OCT 2.2597	1 39 59.4	13 06 11	1.7	15	12	15.00	11.17	-7.6	-13	-0.4	4
734	Q-12.1	51 OCT 24.1750	1 22 29.8	12 11 00	1.7	15	12	14.55	10.96	-8.6	-23	-0.5	7
734	Q-13.1	51 OCT 24.1847	1 22 29.0	12 10 55	1.7	15	12	14.60	11.01	-7.9	-31	0.2	-1
735	J-62.2	51 APR 8.3889	13 20 42.9	2 52 22	5.5	-73	-60	15.75	11.10	-8.7	26	0.2	-1
735	J-52.3	51 APR 9.2062	13 19 59.4	2 54 38	5.6	-73	-60	15.24C	10.59C	-8.8	31	0.2	5
736	P-55.2	51 OCT 1.2250	0 57 41.2	- 1 59 07	-0.8	-5	-5	13.73	12.59	-9.4	-79	-1.0	0
737	U-84.5	52 FEB 26.2708	11 34 06.9	- 2 33 37	1.6	-2	-5	14.00	9.83	-7.3	68	-0.4	-2
738	J-43.3	51 APR 7.2611	13 04 59.6	- 1 40 20	1.4	-8	-8	14.18	10.68	-7.9	58	-0.5	6

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O − C R A	O − C DEC	VAR	MAG	G	10 − DAY MOTION		O − C MOTION	
738	J-53.2	51 APR 9.2160	13 03 31.7	− 1 30 09	1.0	-8	-6	14.61	11.08	-7.8	53	-0.4	2
739	O-75.2	51 SEP 5.2437	23 26 18.2	-19 08 13	-2.9	-6	-5	14.37C	10.21C	-7.8	-95	-0.4	5
739	O-76.1	51 SEP 5.2535	23 26 18.1	-19 08 21	-2.9	-6	-5	14.06	9.90	-7.3	-103	0.1	-3
740	K-52.3	51 MAY 4.3000	14 57 58.0	− 0 04 13	-0.8	4	4	13.82	10.17	-8.7	27	-0.8	1
740	K-61.1	51 MAY 4.3215	14 57 57.1	− 0 04 10	-0.8	4	4	13.77	10.08	-8.7	32	-0.9	7
741	P-46.2	51 SEP 30.3028	0 41 03.1	− 9 29 35	4.2	25	26	15.21	11.47	-8.2	-49	0.1	4
742	K-63.5	51 MAY 5.2208	15 29 25.8	-14 45 50	-0.6	-6	3	14.73	10.60	-8.8	10	-0.5	6
742	K-73.5	51 MAY 5.3757	15 29 18.4	-14 45 44	-0.6	-6	3	14.85	10.72	-8.1	0	0.2	-4
743	J-84.2	51 APR 10.3438	14 15 50.5	-16 01 46	-1.1	6	4	15.14	11.22	-8.5	45	-1.2	-3
743	K-24.3	51 APR 28.2139	14 01 38.5	-14 24 18	-1.2	7	5	14.99	11.34	-8.1	59	-0.1	1
744	S-25.2	51 DEC 27.1917	5 23 32.3	13 49 32	3.2	7	5	15.46	11.13	-8.2	9	-0.2	-2
746	H-51.3X	51 FEB 10.2187	9 48 01.7	30 42 19	0.2	-4	-2	15.84	10.60	-9.3	25	-0.1	1
746	V-44.2	52 MAR 23.3083	12 45 50.8	− 8 30 07	0.1	-3	-1	15.04	10.74	-8.6	13	0.0	5
746	V-54.2	52 MAR 23.3264	12 45 49.9	− 8 30 06	0.1	-3	-1	15.08	10.78	-8.7	11	-0.1	3
748	F-73.2	50 DEC 14.1937	5 54 46.8	23 24 30	17.6	-6	-2	14.24	10.01	-7.8	-7	0.1	2
748	F-83.5	50 DEC 14.3111	5 54 41.5	23 24 32	17.5	-6	-2	14.08C	9.85C	-8.3	-5	-0.4	4
748	F-73.2	50 DEC 31.1562	5 41 39.4	23 10 26	17.2	-2	-2	14.03	9.65	-7.5	-10	-0.6	2
748	U-64.4	52 FEB 24.2583	10 59 09.7	3 13 40	0.1	0	-1	14.67	9.87	-6.4	40	0.0	3
750	I-73.5	51 APR 2.3271	12 28 25.4	3 50 33	-1.3	8	9	15.10	13.01	-9.1	38	0.0	-3
752	H-13.5	51 FEB 7.1604	8 26 45.7	26 32 24	0.2	-3	-1	13.82	11.27	-9.6	38	-0.1	-7
752	X-73.3X	52 MAY 26.3389	17 07 18.2	-20 51 04	2.2	-5	-6			-10.1	1	-0.3	9
752	X-83.1	52 MAY 26.3472	17 07 18.4	-20 51 04	2.2	-5	-6			-9.9	-14	-0.1	-6
753	F-72.3	50 DEC 14.1833	5 40 49.7	29 27 47	0.4	7	1	15.18	11.64	-12.6	21	-0.4	-1
753	W-22.1	52 APR 23.1722	13 11 20.1	5 36 18	3.1	-30	-25	13.53	11.57	-11.2	-17	-1.0	-2
755	E-24.2X	50 NOV 5.1687	2 06 27.8	9 53 01	0.8	1	3	15.46	10.60	-7.1	-45	0.0	-4
755	E-34.8	50 NOV 7.2632	2 05 04.6	9 45 51	1.0	3	4	15.69C	10.82C	-6.9	-32	0.1	8
755	E-35.2	50 NOV 7.2736	2 05 03.5	9 45 31	1.0	3	4	15.89	10.97	-6.8	-33	0.2	7
755	S-44.3	51 DEC 28.3271	5 59 15.4	18 57 00	0.8	-1	0	14.64C	10.07C	-8.7	8	-0.3	6
757	L-65.4	51 JUN 7.2389	17 32 53.3	-34 37 34	-0.2	-1	0	14.48C	11.23C	-11.0	-7	0.5	12
757	L-66.2	51 JUN 7.2493	17 32 52.8	-34 37 41	-0.2	-1	0	14.46	11.21	-11.7	-16	-0.2	3
757	L-76.1	51 JUN 8.2569	17 31 41.5	-34 39 39	-0.2	-2	0	14.82C	11.58C	-10.7	-23	0.9	-8
758	I-53.3	51 MAR 15.3243	11 45 39.8	9 37 29	0.4	-4	-2			-8.6	41	-1.4	-11
758	I-43.4	51 MAR 31.2236	11 34 28.5	10 49 15	0.3	-2	-2	13.77	9.26	-7.1	36	-0.6	0
758	I-52.1X	51 MAR 31.3410	11 34 23.8	10 49 37	0.2	-2	-1	14.14C	9.63C	-6.7	31	-0.3	-5
758	X-33.1	52 MAY 22.2819	15 34 33.0	-13 07 05	0.1	0	0	14.37	9.59	-7.0	22	0.5	5

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O – C R A	O – C DEC	VAR	MAG	G	10 – DAY MOTION		O – C MOTION	
759	N-35.1	51 JUL 31.2118	20 16 43.5	-30 29 52	1.7	21	14	13.57	11.64	-13.1	94	0.0	-11
760	M-75.3	51 JUL 4.3382	19 47 14.2	-34 08 13	-3.6	-14	-17	14.29	9.59	-10.0	-2	-0.8	8
760	M-76.1	51 JUL 5.2931	19 46 20.5	-34 09 06	-3.6	-14	-17	14.34	9.67	-9.3	-5	0.0	4
760	M-86.1X	51 JUL 5.3028	19 46 20.1	-34 09 06	-3.6	-14	-17	13.89C	9.22C	-9.9	-9	-0.6	0
760	N-15.1	51 JUL 29.2201	19 23 48.9	-33 57 14	-3.6	-11	-17	14.48	9.72	-9.0	15	-0.3	-3
761	M-35.3X	51 JUN 29.2618	18 23 19.9	-26 37 40	0.9	0	1	15.40	12.19	-9.4	-6	-0.1	2
761	M-45.2	51 JUN 30.2139	18 22 28.7	-26 38 28	1.0	1	1	14.89	11.69	-8.8	-5	0.6	3
762	M-55.1	51 JUN 30.2250	18 41 10.9	-32 03 58	0.1	0	0	14.06	9.46	-9.7	13	-0.4	-3
762	M-46.4	51 JUN 30.2347	18 41 10.2	-32 04 00	0.1	0	0	14.25	9.65	-9.5	18	-0.2	2
763	E-22.4	50 NOV 5.1451	1 47 16.7	19 46 37	5.6	27	26	14.72	13.45	-9.3	-66	-1.2	2
764	L-24.2	51 MAY 28.1993	15 57 28.0	-24 32 08	-0.4	-2	0	15.04	10.45	-8.0	43	-0.1	-1
766	E-42.1	50 NOV 8.1729	2 31 17.9	24 33 25	-0.5	-1	-4	14.15	10.69	-10.7	-11	-1.1	3
766	U-32.8	52 FEB 19.2118	10 07 41.1	22 21 38	-4.5	34	36	14.85	11.12	-9.3	14	0.0	-8
766	U-42.1	52 FEB 20.2229	10 06 44.1	22 23 46	-4.5	34	35	14.69	10.95	-9.7	21	-0.4	0
767	M-64.2	51 JUL 4.2354	19 05 00.8	-24 09 08	-7.1	-5	-9	14.75C	11.45C	-8.6	-26	-0.1	-5
769	J-53.7	51 APR 9.2160	13 16 15.9	- 3 27 46	-1.6	13	13	13.69	9.88	-8.0	35	0.0	7
770	I-43.3	51 MAR 13.2653	11 17 31.5	11 36 32	0.0	0	0	14.14	11.87	-11.2	51	-0.7	4
772	X-85.2	52 MAY 26.2597	17 23 49.9	-33 17 18	0.2	1	-2			-11.8	-88	-1.1	9
773	P-41.1	51 SEP 27.3243	0 22 37.8	23 30 31	0.4	4	4	14.09	10.38	-9.9	2	-0.1	8
773	P-31.1X	51 SEP 30.1944	0 19 47.7	23 27 30	0.4	4	4	14.44C	10.76C	-11.2	8	-1.4	20
774	E-53.1	50 NOV 12.1500	3 03 59.4	20 23 38	0.3	1	1	14.45	10.24C	-8.9	-49	-0.7	-3
774	T-14.4X	52 JAN 25.1625	7 00 45.4	17 55 56	0.1	-1	0	14.52	9.62				
775	H-75.1	51 MAR 5.2667	10 30 01.1	- 0 57 16	2.9	-26	-24	15.10	11.41	-8.8	32	-0.5	3
775	H-85.1	51 MAR 6.2653	10 29 11.8	- 0 54 12	2.9	-26	-24	15.43	11.76	-8.9	26	-0.7	-3
775	X-55.3X	52 MAY 25.2097	16 09 59.3	-32 06 38	3.4	-4	-3	15.02	10.87	-9.5	38	-0.4	3
776	L-54.2	51 JUN 6.2257	17 07 34.3	-21 17 49	0.4	-3	-2	13.06	9.06C	-10.7	-28	-1.6	5
776	L-63.1	51 JUN 7.2174	17 06 37.3	-21 20 59	0.5	-3	-3	13.02	9.07C	-8.7	-35	0.9	-2
776	L-64.1	51 JUN 7.2278	17 06 36.9	-21 21 06	0.5	-3	-3	13.27C	9.32C	-9.4	-35	0.2	-2
777	N-72.3X	51 AUG 6.3708	21 29 01.3	- 4 11 54	-0.5	-2	-4	15.94	11.09	-8.1	-1	-0.6	9
778	N-74.2	51 AUG 6.2479	21 29 27.6	-17 24 03	0.3	2	3	15.57	11.45	-8.6	-16	-0.3	-2
780	D-27.1	50 OCT 8.2028	0 10 08.9	-18 02 06	0.3	-1	1	14.05	10.22	-6.6	-59	-0.4	10
780	S-46.1	52 JAN 22.1340	5 54 00.4	3 56 02				14.59	10.03	-5.7	71		
781	M-61.1X	51 JUL 1.2347	19 08 34.1	- 5 36 15	1.1	-2	-2	14.56	10.53	-7.7	-53	-0.5	-4
782	S-14.3	51 DEC 23.2431	4 56 43.4	22 59 02	-1.0	1	-2	14.73	12.55	-11.1	14	0.0	0
782	S-13.3	51 DEC 23.2521	4 56 42.4	22 59 05	-1.0	2	-2	14.79	12.61	-11.9	17	-0.8	3

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O − C R A	O − C DEC	VAR	MAG	G	10 − DAY MOTION		O − C MOTION	
783	R-26.3	51 NOV 29.1681	3 47 27.4	4 43 08	2.5	9	9	15.07C	11.95C	-10.3	-11	-0.3	0
783	R-36.1	51 NOV 29.2042	3 47 25.2	4 43 06	2.4	9	9	15.25	12.12	-9.6	-13	0.4	-2
784	F-81.1	50 DEC 14.2896	6 16 17.1	39 27 04	-1.1	1	-1	15.33C	10.14C	-10.2	18	-0.5	-2
784	F-71.1	50 DEC 30.1660	6 00 12.5	39 42 00	-1.1	1	-1	15.45	10.29	-9.7	-4	0.3	-3
784	G-11.3X	51 JAN 5.1333	5 54 17.3	39 38 54	-1.1	-1	-1	15.37	10.10	-9.1	-5	0.5	3
784	U-52.4	52 FEB 24.2222	10 41 19.4	21 56 49	-1.3	10	12	14.29	10.32	-9.6	32	-0.3	3
786	D-56.2	50 OCT 10.3132	1 18 10.7	-12 48 57	-0.1	-2	-1	15.03	10.10	-7.9	-26	-0.4	8
786	R-45.3	51 DEC 4.2014	4 26 16.5	14 10 23	-0.4	-4	-2	14.60C	9.75C	-8.5	3	-0.1	-4
786	R-44.5	51 DEC 22.1431	4 12 02.3	14 30 28	-0.4	-3	-2	14.75	9.61	-7.0	13	0.0	-3
786	R-45.1	51 DEC 22.1521	4 12 01.9	14 30 29	-0.4	-3	-2	14.99	9.85	-7.1	16	-0.1	0
788	F-66.4	50 DEC 13.3035	5 16 00.1	3 14 53	-1.7	-6	-1	14.31C	9.58C	-8.3	-10	-0.5	3
788	U-45.2	52 FEB 19.3111	10 19 35.7	0 35 36	-0.7	-6	2	12.81	9.05	-7.7	78	-0.8	8
789	D-42.2	50 OCT 9.2764	0 53 00.1	16 28 51	3.6	12	13	15.40	12.09	-8.2	-89	-0.1	-4
789	S-45.5X	52 JAN 22.1250	6 15 14.1	11 44 21	2.1	-10	-6	16.69	12.34	-7.8	2	-0.8	-3
789	S-55.6X	52 JAN 23.1347	6 14 31.3	11 45 08	2.0	-9	-6	16.53C	12.17C	-7.3	3	-0.4	-3
790	K-26.4	51 MAY 2.2118	14 05 48.9	-30 36 58	4.6	-4	-3	13.54C	9.24C				
790	K-36.4	51 MAY 3.2847	14 05 01.4	-30 27 45	4.6	-4	-3	13.24	8.94	-8.5	88	-1.2	2
791	I-31.1	51 MAR 11.2750	10 55 37.1	19 21 17	0.3	1	-1	15.45C	10.40C	-7.4	60	-0.4	-2
791	W-80.3	52 APR 28.3049	15 03 20.1	7 16 03	0.1	-1	0	14.75	10.34	-7.5	45	-0.3	0
792	O-31.1	51 SEP 1.3167	22 14 10.4	2 22 25	-0.6	-8	-4	14.65C	11.11C	-8.4	-40	0.0	3
793	R-42.3	51 NOV 29.3035	4 15 03.8	34 28 36	-0.4	-3	-2	14.57	11.18C	-12.5	19	-0.6	0
794	W-82.4	52 APR 28.2507	15 22 30.9	-10 47 34	8.5	-32	-28	15.26	12.30	-7.2	48	-0.3	-4
794	X-13.3	52 MAY 20.2549	15 05 54.5	- 9 07 07	8.5	-34	-28	15.24C	12.25C	-7.8	35	-0.5	-2
794	X-22.1	52 MAY 20.2729	15 05 53.7	- 9 07 05	8.5	-34	-28	15.31	12.32	-7.5	35	-0.2	-2
795	Q-32.2	51 OCT 30.2729	2 04 45.7	22 53 17	-0.7	-8	-7	14.55C	10.64C	-10.9	-4	0.0	-2
795	Q-43.4X	51 NOV 1.2729	2 02 36.7	22 52 09	-0.7	-8	-7	14.90	10.99	-10.9	-9	-0.1	-5
795	Q-42.1	51 NOV 1.2819	2 02 35.7	22 52 16	-0.7	-8	-7	14.90	10.99	-11.0	-5	-0.2	-1
796	J-53.3	51 APR 9.2160	13 10 28.7	1 11 14	-2.9	38	36	14.46	9.94	-10.0	24	-0.7	2
797	C-62.2	50 SEP 17.2076	23 42 15.1	5 04 21	-0.4	-4	-2	14.74C	11.66C	-9.0	-77	-0.7	-16
797	C-52.2	50 OCT 6.1847	23 27 07.9	2 59 04	-0.4	-5	-2	15.15	11.83	-7.1	-69	-0.2	-5
797	S-54.3	52 JAN 23.1257	6 27 51.9	18 13 04	-1.7	0	4	14.91C	11.45C	-8.1	1	0.0	-3
798	D-53.1	50 OCT 10.2806	1 23 06.7	12 11 16	4.3	5	14	14.91	10.93	-8.2	-50	-1.0	18
798	S-55.3	52 JAN 23.1347	6 20 30.3	11 16 33	-1.8	5	4	14.65	10.24	-6.7	18	-0.2	3
799	G-65.3	51 JAN 13.3146	7 46 11.9	14 29 24	-2.0	6	3	14.48	11.58	-9.3	35	0.5	-2
799	W-82.3	52 APR 28.2507	15 20 32.1	-10 45 22	-3.1	13	10	14.67	11.45	-8.6	54	-0.4	3

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
799	X-13.2	52 MAY 20.2549	15 01 19.7	- 9 04 00	-3.1	13	10	14.51	11.26	-8.4	42	0.0	5
800	J-65.5	51 APR 8.2729	13 38 57.3	-17 18 15	0.3	-4	-2	15.03	12.73	-11.6	46	-1.3	14
801	B-41.1	50 AUG 13.2819	21 42 14.3	1 33 57	-0.4	-1	-1	15.80	12.15	-8.5	-73	-0.7	-1
803	M-33.3	51 JUN 28.2222	18 24 31.9	-18 08 09	-1.2	-2	-3	14.76C	10.74C	-8.6	18	-0.4	1
803	M-44.1	51 JUN 29.2424	18 23 44.4	-18 06 30	-1.2	-2	-3	14.75	10.73	-8.4	12	-0.2	-5
804	B-65.1	50 AUG 19.2451	22 11 28.1	-21 40 19	3.7	40	33	12.20	9.45	-12.6	4	-1.9	-12
805	N-31.2	51 JUL 31.2910	20 16 22.6	- 2 46 07	-4.1	-4	-2	14.10	10.62	-7.3	-69	-0.3	4
807	G-75.2	51 JAN 13.3486	8 12 28.3	15 37 21	-0.9	-2	1	15.20C	11.63C	-7.5	53	0.4	-8
807	G-64.2	51 FEB 4.2229	7 54 27.7	17 57 03	-1.0	-2	1	15.53	11.79	-7.6	59	0.1	-4
807	G-74.3	51 FEB 7.1215	7 52 20.9	18 15 02	-1.0	-2	1	15.04	11.24	-7.3	65	0.0	3
807	W-51.2	52 APR 26.2958	14 19 47.2	3 35 13	0.0	4	0	16.43	12.35	-7.8	39	-0.2	-2
807	W-61.1	52 APR 26.3229	14 19 45.9	3 35 15	0.0	4	0	16.31	12.23	-8.1	41	-0.5	0
808	P-23.2X	51 SEP 26.2778	23 53 55.6	- 0 26 16	0.0	0	0	13.86	10.66	-8.2	-76	-0.4	-6
809	F-65.3	50 DEC 13.2924	5 23 27.7	10 50 21	0.2	-1	0	15.41	13.18	-11.6	-1	-0.4	-7
809	V-43.4X	52 MAR 23.3174	12 31 52.1	2 48 26	-0.2	-7	1	16.28	13.06	-9.4	88	-0.4	4
811	E-24.6	50 NOV 5.1687	2 00 02.0	7 12 43	-0.9	-6	-5	15.61	11.91	-8.5	-36	-0.6	4
811	T-34.5X	52 JAN 26.1958	7 40 30.7	20 19 25	-1.9	0	4	15.52	11.42	-8.5	31	0.1	4
813	N-85.4	51 AUG 7.2917	21 54 26.3	-25 06 26	-7.3	-38	-39	15.53	13.34	-10.6	-64	-1.1	-1
813	N-86.1	51 AUG 7.3014	21 54 25.5	-25 06 31	-7.3	-39	-39	15.50	13.31	-10.1	-54	-0.6	9
814	W-71.2	52 APR 28.2236	14 56 30.5	6 41 05	0.1	-1	-1	15.53	9.91	-7.4	16	0.1	-4
814	W-80.2	52 APR 28.3049	14 56 27.1	6 41 18	0.0	-1	0	15.43	9.81	-7.7	21	-0.2	1
814	X-11.2	52 MAY 20.1576	14 40 22.1	6 54 00	0.2	-1	-2	15.85	10.09	-7.2	-8	-0.4	1
815	I-51.3	51 MAR 15.3833	11 48 57.5	24 00 10	0.5	-3	-4			-10.2	23	-0.5	-6
815	I-41.2	51 MAR 31.2014	11 33 59.7	24 09 42	0.5	-2	-4	15.14	11.78	-8.7	-15	-0.1	0
815	I-51.2	51 MAR 31.3514	11 33 52.4	24 09 26	0.4	-3	-3	15.57C	12.21C	-9.3	-12	-0.7	4
816	D-56.3	50 OCT 10.3132	1 05 46.1	-13 08 20	-2.1	-11	-9	16.18C	11.81C	-7.2	-65	0.2	-10
816	S-55.9	51 DEC 28.2819	6 31 12.3	11 38 51	-7.9	-18	-16	14.86C	11.35C	-9.1	48	-0.3	1
816	S-45.7X	52 JAN 22.1250	6 10 44.6	14 00 37	-7.9	-19	-16	14.77	10.91	-6.8	60	0.0	-5
817	L-72.2	51 JUN 7.3431	17 36 26.6	-11 15 46	0.2	-2	-1	15.80	11.88	-9.3	-9	-0.3	-2
818	J-61.2	51 APR 8.3556	13 33 45.5	9 26 14	2.2	-16	-20	15.13	10.43	-7.8	26	-0.1	-1
819	E-62.1	50 NOV 12.2479	3 25 57.7	27 11 25	2.2	8	8	15.86	13.20	-13.3	-21	-1.4	14
819	E-72.7X	50 NOV 13.2236	3 24 46.7	27 08 07	2.8	9	10	15.81	13.15	-12.5	-31	-0.6	4
819	U-84.8	52 FEB 26.2708	11 41 40.9	- 0 18 54	4.7	-40	-38	15.55	13.08	-9.4	26	-0.1	-2
820	O-34.1X	51 SEP 1.2882	22 17 37.7	-15 59 47	-3.1	-17	-14	15.24	11.45	-7.2	-53	0.1	0
823	B-13.1	50 AUG 10.2639	20 41 31.5	-12 49 05	1.3	8	6	15.11	12.43	-11.6	-40	-1.6	-7

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
823	T-24.2	52 JAN 25.2799	7 13 36.3	17 48 40	1.3	-9	-4	14.44	12.61	-10.5	10	0.7	7
824	C-44.2	50 SEP 12.2632	23 06 15.1	-11 08 36	-6.3	-12	-27	15.40	12.34	-7.7	-68	-0.2	7
824	R-55.3	51 DEC 23.1528	4 42 45.7	11 40 27	0.9	1	2	15.13	10.81	-8.2	4	-0.2	-3
825	B-64.4	50 AUG 18.3389	22 23 44.7	-14 51 02	0.5	4	3	15.36A	13.00A	-9.0	-63	0.5	5
825	C-14.1	50 SEP 9.2965	22 02 55.2	-17 02 18	0.4	3	2	16.08	13.47	-9.4	-78	-1.1	-33
825	S-53.5X	52 JAN 22.1611	6 33 31.6	23 52 30	2.9	0	-2	15.66	13.08	-10.1	23	-0.7	0
826	W-75.7	52 APR 27.3708	15 04 48.9	-19 00 52	12.4	-28	-28			-7.6	71	-0.1	-1
826	W-74.7	52 APR 27.3799	15 04 48.5	-19 00 44	12.4	-28	-28			-8.2	69	-0.7	-3
826	W-84.4	52 APR 28.2778	15 04 09.2	-18 54 23	12.5	-28	-29	15.06	12.72	-8.3	68	-0.7	-5
827	T-54.4X	52 JAN 28.2083	8 24 02.7	14 58 22	2.1	-6	-6	16.14	13.62	-11.3	53	-0.6	3
828	C-33.2	50 SEP 11.2965	22 55 38.2	- 7 26 55	0.3	1	2	15.15	11.35	-7.7	-25	-0.4	16
828	R-33.10X	51 NOV 29.1771	4 02 04.5	22 09 58	3.9	12	11	15.04	10.92	-9.1	-25	-0.6	-2
829	G-32.2	51 JAN 8.1687	6 43 58.9	35 59 28	-1.6	-1	2	15.04	12.11	-11.6	-18	0.0	-7
829	W-25.1	52 APR 23.2625	13 06 40.8	-14 35 35	-1.0	2	8	15.47	11.81	-9.0	36	0.0	0
830	B-14.1	50 AUG 10.2799	20 46 05.0	-21 00 56	0.5	4	3	14.64	10.43	-7.6	-9	0.2	11
830	B-24.4	50 AUG 11.2507	20 45 19.1	-21 02 53	0.4	4	2	14.80	10.56	-7.9	-31	-0.1	-11
830	Q-33.4	51 NOV 1.1646	2 08 30.4	17 57 42	-2.3	-18	-12	14.14	10.57	-8.1	-34	0.1	0
830	Q-43.2	51 NOV 1.2729	2 08 25.2	17 57 19	-2.3	-19	-12	14.00	10.43	-8.4	-32	-0.2	2
832	D-24.1	50 OCT 8.1667	0 24 20.4	4 12 59	0.3	3	2	15.53	12.39	-7.7	-47	-0.1	6
832	D-34.4X	50 OCT 9.1785	0 23 34.0	4 07 39	0.4	4	3	15.18	12.02	-7.3	-49	0.3	3
832	T-24.5X	52 JAN 25.2799	7 31 28.5	20 48 49	0.2	0	-1	15.83	12.11	-8.6	8	0.3	-10
832	T-34.3	52 JAN 26.1958	7 30 40.7	20 50 24	0.2	0	-1	16.14	12.39	-9.2	27	-0.4	9
834	D-24.2	50 OCT 8.1667	0 21 54.1	1 48 14	3.3	17	17	14.61	10.73	-7.3	-49	-0.4	8
834	R-54.3	51 DEC 5.2535	4 32 45.1	16 58 17	1.6	0	3	15.30C	10.32C				
834	R-44.10	51 DEC 22.1431	4 20 00.2	16 31 20	1.6	1	3	15.51	10.27	-6.4	-16	0.2	-4
835	R-33.8X	51 NOV 29.1771	3 57 12.5	25 40 06	4.4	9	11	15.83	12.18	-8.6	-31	0.0	1
838	R-54.2	51 DEC 5.2535	4 31 20.0	19 06 45	11.8	-9	-5	14.34	11.18	-9.2	-56	-0.3	2
838	R-44.8	51 DEC 22.1431	4 17 27.5	17 40 26	11.2	-5	-4	14.92	11.31	-7.0	-44	-0.7	5
839	E-21.2	50 NOV 4.2111	2 01 59.7	31 52 42	-0.3	3	-2	14.89	11.82	-11.8	-29	-1.0	7
841	D-63.7	50 OCT 12.1972	1 38 01.1	13 42 35	1.7	15	11	16.09	13.81	-10.6	-34	-0.5	1
844	D-43.1	50 OCT 9.2875	0 47 56.3	11 35 24	1.2	13	11	14.39	10.73	-8.7	-43	-0.5	-18
844	S-52.1	51 DEC 28.3090	6 26 15.1	35 23 27	2.3	-2	-2	15.30	10.84	-10.2	-3	-0.4	-2
844	S-42.2	52 JAN 21.1431	6 05 03.3	34 49 08				15.44C	10.69C	-6.0	-25		
845	Q-34.3X	51 NOV 1.1736	1 50 53.5	7 04 37	1.2	13	12	15.08C	11.54C	-9.3	1	-0.1	3
846	H-33.1	51 FEB 9.2097	8 58 15.5	16 54 20	-1.0	4	4	15.50C	11.38C	-8.5	29	-0.3	-4

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
846	H-34.3	51 FEB 9.2208	8 58 15.1	16 54 21	-1.0	4	4	15.65	11.53	-8.6	34	-0.4	1
846	V-54.6X	52 MAR 23.3264	13 05 25.9	- 7 19 41	-0.5	2	3	16.42	11.44	-6.9	40	-0.4	-1
846	V-64.2	52 MAR 23.3444	13 05 25.2	- 7 19 32	-0.5	2	3	16.20	11.25	-7.1	42	-0.6	1
847	K-64.1X	51 MAY 5.2312	15 10 56.1	-20 24 43	-0.4	2	1	15.30	11.42	-8.6	35	0.0	-1
848	W-54.8	52 APR 26.2056	14 13 50.7	-13 17 35	-1.9	8	9	16.36	12.26C	-7.8	43	-0.1	1
850	F-65.5	50 DEC 13.2924	5 16 09.2	8 09 08	0.9	3	4	15.34	10.75	-9.0	20	-0.4	4
850	F-66.1	50 DEC 13.3035	5 16 08.5	8 09 07	0.8	3	3	15.08	10.49	-8.9	19	-0.3	3
850	U-32.6	52 FEB 19.2118	10 04 04.1	22 19 37	0.7	-1	-1	14.55	10.57	-8.3	90	-0.2	8
851	B-13.4	50 AUG 10.2639	20 47 18.0	-17 18 05	0.4	0	1	15.68	13.03	-10.5	-37	-0.5	13
851	B-24.3	50 AUG 11.2507	20 46 18.8	-17 23 06	0.3	0	1	15.65	13.00	-9.8	-40	0.2	10
851	S-34.6	51 DEC 28.1736	5 49 14.9	20 01 16	0.8	1	0	14.49	12.63	-11.9	5	-0.7	-4
852	V-21.4X	52 MAR 22.2014	11 59 16.9	22 03 25	-0.8	5	11	14.73	11.15	-12.7	2	-0.1	-3
853	I-54.2	51 MAR 14.3576	11 47 01.3	- 1 00 30	6.6	-16	-25	14.48	12.47	-9.2	112	-1.1	3
853	I-44.2X	51 APR 1.1993	11 32 41.2	2 19 07	6.5	-16	-25	14.80	12.48	-7.6	104	-0.7	-1
853	I-54.1	51 APR 1.2097	11 32 41.1	2 19 14	6.5	-16	-25	14.72	12.40	-7.5	110	-0.6	5
854	T-85.2X	52 JAN 29.3368	9 29 16.3	6 40 07	-2.7	10	11	16.67	13.40	-8.9	45	0.0	-1
854	T-95.4X	52 FEB 1.2764	9 26 34.1	6 54 29	-2.7	10	11	16.74	13.54	-10.1	54	-0.9	4
854	U-15.1	52 FEB 17.2250	9 11 03.3	8 28 31	-2.7	12	11	16.63	13.43	-9.6	62	-0.1	-2
855	U-42.9X	52 FEB 20.2229	10 26 46.5	24 40 24	-1.6	15	13	15.79	13.10	-12.5	33	-0.8	-1
856	N-64.1X	51 AUG 5.3007	21 08 54.1	-19 43 46	-5.7	-12	-6	14.40	11.65	-9.4	-90	-0.3	11
858	S-23.5	51 DEC 27.1736	5 20 38.6	27 13 21	-0.8	6	-2	15.32	11.22	-10.0	10	-0.3	-1
859	C-56.1	50 SEP 14.2799	23 35 36.1	-19 56 40	0.0	-2	0	14.67	10.85	-9.6	-32	-1.1	-15
859	C-45.1	50 OCT 6.1604	23 17 54.4	-19 53 34	0.1	0	1	15.36	11.26	-6.9	29	-0.2	7
859	S-31.2	51 DEC 27.2819	5 35 42.2	39 33 14	-0.1	2	0	14.84	10.94	-10.5	8	-0.1	-2
861	I-32.6	51 MAR 11.2875	11 12 01.1	14 36 28	-0.5	2	3	15.52C	11.06C	-8.1	56	-0.8	0
861	I-42.1	51 MAR 13.2542	11 10 35.6	14 47 22	-0.4	0	1	15.13	10.64	-8.0	53	-0.8	9
861	X-42.1	52 MAY 24.2979	16 05 03.7	-10 51 18	-3.1	8	12	14.39	10.74	-8.5	13	-0.4	4
861	X-52.4X	52 MAY 24.3146	16 05 03.0	-10 51 22	-3.1	8	12	15.15	11.50	-8.0	10	0.1	1
863	G-15.1	51 JAN 5.1785	6 01 16.6	8 51 01	-0.1	1	-1	14.69	10.10	-8.6	68	-0.3	3
863	G-16.4X	51 JAN 5.3007	6 01 10.2	8 51 38	-0.2	2	-1	14.91	10.31	-8.0	65	0.3	0
865	I-53.3	51 MAR 31.3300	11 42 32.3	4 00 29	0.6	6	-2	14.88	12.87	-6.5	132	-0.1	4
865	I-54.3	51 APR 1.2097	11 41 59.9	4 11 23	0.8	5	-2	15.43C	13.42	-6.7	121	-0.5	-5
866	J-62.4X	51 APR 8.3889	13 21 17.4	4 21 46	2.8	-23	-20	15.15	10.77	-7.1	34	0.4	-7
866	J-52.4	51 APR 9.2062	13 20 40.5	4 25 04	2.8	-23	-21	14.58C	10.23C	-7.6	42	-0.1	2
868	D-75.3	50 OCT 13.2299	2 01 34.1	1 34 24	2.0	10	11	13.26	10.74	-8.1	-49	-0.3	5

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O − C R A	O − C DEC	VAR	MAG	G	10 − DAY MOTION		O − C MOTION	
868	E-15.2	50 NOV 4.1757	1 43 36.5	0 03 58	1.9	12	11	13.97	11.32	-8.2	-29	-0.8	-5
868	E-16.1	50 NOV 4.1868	1 43 36.3	0 03 53	1.9	12	11	14.14	11.49	-8.1	-34		
868	U-53.2	52 FEB 24.2312	10 39 20.1	14 38 59	1.3	-1	-8	14.50	11.08	-8.8	66	-0.2	0
872	D-43.4X	50 OCT 9.2875	0 55 48.2	5 55 19	0.5	2	2	14.85	11.43C	-8.3	-73	-0.5	-1
872	D-44.1	50 OCT 9.2951	0 55 47.3	5 55 09	0.5	2	2	14.57	11.15C	-8.4	-60	-0.6	8
872	S-55.5	52 JAN 23.1347	6 31 28.6	12 11 47	-2.0	2	1	14.74	10.93	-7.4	25	0.2	0
872	S-65.1	52 JAN 23.2431	6 31 24.4	12 11 59	-2.0	1	1	14.61	10.80	-7.9	29	-0.3	4
873	K-43.2	51 MAY 3.2125	14 38 28.7	- 6 14 16	2.8	-8	-11	14.47	12.04	-8.3	44	0.0	-7
874	M-52.2X	51 JUN 30.3375	18 57 04.3	- 6 27 49	0.4	1	1	15.17	10.86	-7.7	1	0.0	7
875	R-56.4X	51 DEC 4.2285	4 36 00.4	3 23 21	-1.4	-12	0	16.14C	12.70C	-9.4	-46	0.0	-3
875	R-46.4	51 DEC 22.1611	4 20 33.5	2 39 25	-1.3	-11	0	16.51	12.93	-8.0	-15	-0.6	-9
876	U-53.6X	52 FEB 24.2312	10 51 42.3	9 30 24	0.5	-5	-2	16.36	12.04	-7.4	73	-0.2	2
876	U-63.7X	52 FEB 24.2493	10 51 41.7	9 30 34	0.5	-4	-2	16.25	11.93	-7.3	69	-0.1	-2
877	T-33.2	52 JAN 26.1868	7 36 33.9	21 46 03	-2.7	-3	5	14.35	11.70	-10.0	47	-0.2	4
877	T-34.1	52 JAN 26.1958	7 36 33.0	21 46 03	-2.8	-3	6	14.50	11.85	-10.2	39	-0.4	-4
882	S-33.9	51 DEC 27.2639	5 56 56.8	21 28 22	1.2	-3	-1	14.93C	11.77C	-9.4	-29	-0.2	-8
882	S-44.1	51 DEC 28.3271	5 55 57.7	21 26 00	1.2	-3	-1	14.74	11.56	-9.5	-25	-0.3	-4
883	S-53.3	51 DEC 28.3000	6 19 26.3	24 50 23	0.3	-5	-1	16.68	14.14C	-12.7	-17	-0.3	-1
884	M-84.5X	51 JUL 6.2757	19 56 13.9	-22 14 11	-0.1	-1	0	16.14	10.06	-6.0	-2	-0.4	2
884	N-14.3	51 JUL 29.2104	19 42 43.9	-22 20 12	-0.1	0	0	15.90	9.83	-6.0	2	-0.3	3
885	E-64.2	50 NOV 16.2444	4 02 49.9	15 33 26	-3.1	-10	-9	15.42	11.95	-9.3	-24	-0.8	2
885	F-14.2	50 DEC 3.1785	3 48 20.7	14 53 34	-3.2	-8	-9	15.40	11.86	-7.6	8	0.4	28
886	S-41.1	51 DEC 27.3090	6 02 24.4	36 26 08	-8.5	-20	-25	13.41	9.43	-11.0	36	0.1	-1
886	S-42.1	51 DEC 27.3000	6 02 24.8	36 26 06	-8.5	-20	-25	13.75	9.77	-11.7	33	-0.6	-4
888	L-72.1	51 JUN 7.3431	17 30 20.9	- 9 07 29	-2.5	4	8	14.80	10.50	-9.1	-4	-0.5	5
889	S-35.2	51 DEC 28.1826	5 38 20.1	12 46 44	7.0	19	13	14.31	12.63	-10.0	56	-1.0	1
891	I-30.1	51 MAR 11.2632	11 05 01.3	24 15 46	0.9	-2	-4	15.44C	11.57C	-8.7	52	-1.6	-7
891	I-31.2	51 MAR 11.2750	11 05 00.6	24 15 48	0.9	-2	-4	14.89C	11.01C	-9.0	54	-1.9	-5
891	X-62.4	52 MAY 25.3132	16 49 04.0	- 9 52 22	1.5	-12	-7	15.25	11.39	-9.0	-17	-0.4	-9
891	X-72.1	52 MAY 25.3306	16 49 03.4	- 9 52 21	1.5	-12	-7	15.18	11.32	-9.1	-11	-0.5	-3
892	U-74.5	52 FEB 24.3590	11 28 14.2	- 1 47 47	0.4	-4	0	14.88	10.54	-5.8	91	-0.2	-1
893	N-73.2	51 AUG 6.2382	21 45 34.1	-10 56 13	0.0	0	0	14.23	10.89	-6.5	-105	-0.1	-7
893	N-83.1X	51 AUG 7.2722	21 44 52.8	-11 06 32	0.0	0	0	14.20	10.74	-6.7	-99	-0.2	0
893	O-14.2	51 AUG 31.2215	21 28 30.7	-15 13 01	-0.1	-1	-1	14.23	10.77	-6.5	-90	-0.4	7
894	L-41.1	51 JUN 2.3056	16 24 06.7	- 5 19 23	2.2	1	-1	14.75	10.89	-7.8	40	-0.3	0

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O – C R A	O – C DEC	VAR	MAG	G	10 – DAY MOTION		O – C MOTION	
895	X-85.4	52 MAY 26.2597	17 15 45.4	-28 45 23	0.1	2	0			-8.4	52	0.1	2
896	V-26.2	52 MAR 24.2146	12 08 27.3	-16 35 13	1.9	-10	-10	14.82	12.84	-10.0	63	-0.6	-1
899	I-76.2	51 APR 4.2410	12 16 59.9	-18 29 37	-0.2	0	-2	16.02C	11.29C	-8.1	58	-0.7	-3
899	X-74.2	52 MAY 26.3299	16 51 59.8	-23 05 23	-6.1	1	-9			-8.9	40	-0.4	-4
900	U-84.1	52 FEB 26.2708	11 29 45.1	- 1 57 17	-1.1	5	4	16.50C	13.04C	-8.1	81	-0.6	1
901	M-63.2X	51 JUL 4.2243	19 22 53.1	-19 28 41	0.1	1	0	13.78	12.81	-10.3	21	-1.3	0
901	M-73.1	51 JUL 4.3583	19 22 44.8	-19 28 24	-0.1	2	0	14.40	13.43	-10.3	21	-1.3	0
904	W-73.2	52 APR 27.3889	14 52 02.9	- 7 25 03	-0.7	1	1			-6.9	80	0.3	6
905	Q-53.1	51 NOV 3.1993	2 40 25.0	16 28 51	3.1	23	18	13.90C	12.94C	-12.0	-5	-0.8	-3
906	K-85.1	51 MAY 8.2826	16 01 25.7	-26 04 49	2.5	-21	-14	14.48	10.66	-8.7	-17	0.2	1
906	K-84.5	51 MAY 8.3153	16 01 21.6	-26 05 06	2.6	-21	-14	15.19C	11.37C	-9.9	-28	-1.0	-10
906	L-15.2	51 MAY 27.2312	15 43 03.2	-26 26 18	2.4	-23	-13	14.48	10.82	-10.1	1	-0.3	5
906	L-14.4	51 MAY 27.2410	15 43 02.3	-26 26 17	2.3	-23	-13	15.36C	11.70C	-10.4	-5	-0.6	-1
906	L-25.1	51 MAY 29.2208	15 41 05.9	-26 27 02	2.3	-22	-13	14.44	10.73	-9.9	-1	-0.2	2
907	R-61.1	51 DEC 5.2986	5 13 29.5	41 31 32	1.4	7	6	13.60	10.57	-13.5	70	-0.7	-3
907	R-51.2	51 DEC 22.2514	4 50 43.3	43 01 27	0.9	6	4	13.99C	10.87C	-13.5	15	-0.7	-17
907	S-11.1	51 DEC 23.2701	4 49 24.3	43 04 14	0.9	6	4	13.61	10.46	-12.7	30	0.0	0
908	J-81.1	51 APR 10.3021	14 14 48.9	7 04 18	-0.3	3	2	15.04	12.00	-8.9	29	0.3	-6
908	K-20.1	51 APR 28.1743	13 57 14.8	7 36 42	-0.7	3	5	15.07	12.03	-9.9	2	-0.3	3
909	T-45.6	52 JAN 28.1903	7 59 23.5	9 01 30	1.9	1	3	14.42	9.63	-7.6	62	-0.6	0
910	O-85.3	51 SEP 5.3201	23 57 49.1	-13 38 41	-1.4	-22	-12	15.32	11.42	-8.3	-39	-0.9	5
910	P-15.2X	51 SEP 26.1917	23 40 20.7	-14 50 30	-1.8	-16	-15	15.01	11.11	-8.8	-6	-0.4	21
912	F-21.2	50 DEC 10.1701	3 51 48.7	36 48 22	-6.3	-16	-35	13.96	10.35	-11.9	3	-0.8	-12
912	V-52.3	52 MAR 22.3201	13 04 29.1	7 00 37	3.6	-70	-49	14.00	10.31	-9.2	1	0.0	-7
912	V-62.1	52 MAR 22.3382	13 04 28.5	7 00 38	3.6	-70	-49	13.65C	9.96C	-9.2	3	0.0	-5
914	S-66.1	52 JAN 23.2340	6 36 17.4	3 02 59	-1.6	4	12	14.18	10.05	-9.4	-16	-0.4	-4
915	Q-33.2	51 NOV 1.1646	1 53 41.3	17 01 43	-0.1	4	-1	14.27	13.02	-10.6	-12	0.1	4
916	L-77.1X	51 JUN 8.3146	17 34 06.7	-40 59 03	2.6	1	3	15.45C	12.60C	-12.9	-4	-0.2	-7
917	J-85.3	51 APR 10.3319	14 21 33.7	-20 34 08	0.4	-3	-3	15.94	12.64	-8.3	9	0.6	-9
917	K-25.1	51 MAY 2.2007	13 59 31.4	-19 24 46	0.3	-3	-2	15.54	12.48	-10.3	43	0.0	1
918	H-84.2X	51 MAR 6.2542	10 44 16.7	4 23 59	-3.4	40	34	16.25	11.87	-9.1	28	-0.7	2
918	W-77.2	52 APR 27.2535	14 51 50.5	-34 31 54	-8.8	38	37	16.08C	11.96C	-9.8	3	-0.4	-1
919	D-12.4	50 OCT 7.1604	23 55 44.9	9 29 59	-29.4	-147	-138	15.43	12.33	-7.3	-88	0.2	-9
919	T-35.1X	52 JAN 26.2049	7 49 55.6	9 03 41	0.1	-1	0	15.98	12.47	-8.5	22	0.3	-1
919	T-45.1	52 JAN 28.1903	7 48 10.8	9 08 28	0.2	-1	-1	15.90C	12.46C	-8.9	28	-0.3	3

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
921	H-86.1	51 MAR 6.2764	10 32 39.8	- 8 33 32	0.0	1	0	15.48	11.11	-7.6	72	-0.6	-1
922	D-43.5X	50 OCT 9.2875	1 04 50.8	8 59 25	0.6	-4	2	15.02	12.89	-8.2	-89	-0.6	2
922	D-53.3	50 OCT 10.2806	1 04 05.3	8 50 19	0.7	-4	3	15.18	13.08	-7.5	-91	0.1	0
924	G-35.3	51 JAN 8.2028	6 45 36.5	12 58 23	-0.4	-1	0	14.12	10.39	-8.8	33	-0.1	-2
924	U-93.1	52 FEB 26.3792	11 57 39.7	5 05 24	0.0	-3	0	15.10	10.42	-6.1	66	-0.4	3
924	V-13.3	52 MAR 23.1903	11 39 39.4	7 57 15	-0.5	1	2	14.70	10.18	-7.5	61	-0.4	0
925	G-53.4	51 JAN 12.2764	7 31 20.8	27 36 14	-4.1	19	34	12.34	9.54	-12.6	-61	0.0	2
927	O-26.4	51 SEP 1.2111	21 56 06.3	-27 17 18	0.5	5	4	14.90	9.98	-7.9	-1	0.1	3
928	B-54.6X	50 AUG 18.2229	21 46 56.9	-19 18 40	-0.4	-2	0	16.19C	11.52C				
928	B-55.1	50 AUG 18.2375	21 46 56.4	-19 18 49	-0.4	-2	0	15.44	10.77	-9.8	-77	-2.6	-6
929	N-72.1	51 AUG 6.3708	21 36 54.1	- 6 23 35	-3.3	-15	-17	15.48	13.47	-10.6	-40	-1.4	0
931	O-45.1	51 SEP 2.2021	22 25 51.1	-21 46 04	-0.1	0	0	13.82	9.99	-7.5	-74	0.1	-8
932	M-56.2X	51 JUL 4.2556	18 45 03.6	-36 20 58	1.1	0	1	14.33	11.15	-11.4	-18	0.5	-6
933	R-25.4X	51 NOV 29.1590	3 31 23.1	9 25 16	-1.2	-4	-4	15.92	13.23	-10.4	-17	-0.4	8
935	E-43.1	50 NOV 8.1840	2 35 31.5	22 45 02	2.5	15	11	15.51	14.32	-11.8	-43	-1.3	-12
936	H-73.2	51 FEB 12.2229	10 31 14.7	12 49 31	1.0	-5	-6	16.07	11.20	-6.4	38	0.5	-5
936	H-73.1	51 MAR 5.2424	10 15 35.1	14 19 13	1.0	-6	-6	15.80A	10.85A	-7.1	41	0.3	3
936	W-54.15	52 APR 26.2056	14 24 32.7	-12 42 34	1.2	-7	-6	15.11	11.33C	-8.8	28	-0.7	-5
937	C-42.3	50 SEP 12.1958	23 16 28.8	4 00 36	7.8	48	47	13.86	13.03	-8.9	-53	-0.9	14
937	T-65.4X	52 JAN 28.3076	8 43 42.5	12 41 24	4.1	-21	-19	15.86	12.64	-12.0	32	-1.1	-4
937	T-64.5X	52 JAN 28.3167	8 43 42.1	12 41 35	4.1	-20	-19	16.00	12.78	-10.4	29	0.5	-7
939	T-33.4X	52 JAN 26.1868	7 51 48.8	22 57 39	3.0	-10	-12	16.11	13.12	-11.3	20	0.0	3
940	P-55.1	51 OCT 1.2250	0 50 59.3	- 3 29 26	2.4	16	18	14.00	10.22	-7.0	-34	0.3	3
943	L-83.3	51 JUN 8.3243	18 00 49.2	-15 29 49	-1.0	3	3	15.59C	10.63C	-7.2	-16	0.5	-3
943	M-13.4X	51 JUN 26.2021	17 46 36.9	-16 00 02	-1.1	2	3	15.67	10.79	-8.0	-21	-0.2	-3
943	M-23.1	51 JUN 27.2090	17 45 49.5	-16 02 08	-1.1	2	3	15.67	10.77	-8.1	-21	-0.3	-1
945	H-44.2	51 FEB 9.3076	9 13 40.1	16 50 01	-0.2	1	4	13.06A	11.03A	-17.2	-125	-0.6	-3
945	H-43.1	51 FEB 9.3187	9 13 38.9	16 49 55	-0.3	1	5	13.20	11.18	-17.0	-117	-0.4	5
946	N-84.3X	51 AUG 7.2819	21 51 57.1	-15 01 19	0.0	0	0	15.97	11.38	-7.3	-48	-0.2	-8
947	P-55.4	51 OCT 1.2250	1 03 48.2	- 1 48 16	12.3	97	98			-9.1	-8	-0.6	10
947	P-65.1	51 OCT 1.2431	1 03 46.9	- 1 48 20	12.3	97	98	13.11	11.26	-9.3	-11	-0.8	7
948	R-62.4X	51 DEC 5.2896	5 08 03.9	35 46 53	1.6	10	2	16.14	12.40	-10.3	-2	-0.1	-8
948	R-52.9	51 DEC 22.2424	4 50 24.0	35 28 16	1.4	1	2	16.56	12.71	-10.1	-31	-0.2	-11
948	S-12.1	51 DEC 23.2611	4 49 23.5	35 25 39	1.5	2	2	16.28	12.43	-10.0	-20	0.1	1
949	E-61.1	50 NOV 12.2368	3 18 02.7	33 39 18	-1.0	-2	-3	15.54	10.76	-9.7	-30	-0.3	-5

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
949	T-63.4	52 JAN 28.3257	8 43 24.7	22 42 33	0.1	0	-1	13.93	10.55	-10.7	-3	-0.5	-5
951	I-55.2	51 APR 1.2194	11 43 28.3	- 5 00 44	-0.2	2	1	16.03	12.91	-9.6	71	-0.6	0
952	L-25.4	51 MAY 29.2208	15 57 57.0	-31 08 38	3.2	-19	-14	14.58	10.19	-9.7	17	0.0	6
953	D-54.3	50 OCT 10.2917	1 15 59.1	3 04 10	0.2	6	2	14.37	11.30	-9.9	-11	-0.5	10
953	S-42.3X	52 JAN 21.1431	6 18 44.3	34 16 33	0.7	1	0	16.24	11.61	-8.2	-12	-0.2	-5
953	S-52.4X	52 JAN 22.1521	6 17 54.4	34 15 32	0.7	1	0	16.21	11.56	-9.1	-5	-1.1	2
956	X-52.6X	52 MAY 24.3146	16 22 02.9	-12 19 20	-2.2	6	2	15.28	13.40	-10.2	60	-0.8	2
957	P-41.4	51 SEP 27.3243	0 38 47.3	20 19 57	0.0	-8	0	14.78	10.95	-7.6	-74	-0.3	-6
960	M-83.2X	51 JUL 5.2632	20 02 06.4	-16 21 23	-0.7	-2	-3	15.87	14.34	-9.0	7	-0.9	4
960	N-13.2	51 JUL 29.2701	19 39 24.9	-16 32 54	-0.7	-2	-3	15.48	14.01	-10.3	-11	-0.9	0
961	M-26.1	51 JUN 28.2514	18 06 17.6	-40 19 46	-3.5	-3	13	15.56C	12.49C	-12.2	-12	-1.0	5
961	M-36.1X	51 JUN 29.2521	18 05 14.3	-40 21 20	-3.5	-2	13			-11.6	-14	-0.5	1
962	B-24.2	50 AUG 11.2507	20 54 18.4	-16 33 10	-1.8	6	-7	15.89	12.53	-10.0	-37	-1.9	6
962	R-44.7	51 NOV 29.2854	4 25 04.7	17 37 39	-0.9	-7	-2	15.87	12.73	-9.5	-20	-0.3	-1
962	R-44.3	51 DEC 22.1431	4 06 07.5	17 04 31	-0.7	-9	-3	16.41	12.81	-7.3	-1	-0.7	5
964	K-44.8X	51 MAY 3.2229	14 48 03.9	-19 16 00	-0.5	3	4	16.54	12.18	-8.2	17	0.1	1
964	K-45.3	51 MAY 3.3167	14 47 59.1	-19 15 55	-0.6	3	4	16.34	11.98	-9.1	13	-0.7	-3
964	K-55.2	51 MAY 4.2090	14 47 13.8	-19 14 26	-0.6	4	4	16.12	11.78C	-8.0	7	0.4	-9
965	W-53.5	52 APR 26.1965	14 09 07.0	- 8 42 23	-17.1	146	212	15.89	11.27	-9.1	3	0.0	2
966	N-16.1	51 JUL 29.2299	19 50 35.3	-39 29 08	1.2	-1	1	14.28C	11.24C	-10.4	-47	-0.7	-2
966	N-26.2X	51 JUL 30.2382	19 49 36.5	-38 33 30	1.3	0	1	14.80C	11.76C	-9.5	-45	0.0	-2
967	S-14.9	51 DEC 23.2431	5 12 59.9	23 14 43	-0.2	1	0	16.36	13.63	-11.6	12	-0.1	2
967	S-13.10	51 DEC 23.2521	5 12 59.3	23 14 46	-0.2	1	0	16.32C	13.59C	-11.6	4	-0.1	-6
971	Q-66.1	51 NOV 3.2896	2 57 13.1	- 0 10 38	0.3	15	2	13.59	11.00	-10.5	1	-0.5	-2
972	K-56.1	51 MAY 4.2194	15 06 49.7	-27 13 33	1.9	-3	-3	15.37	10.56	-8.8	31	-0.7	-4
972	K-65.1	51 MAY 5.2417	15 05 59.1	-27 10 13	1.9	-2	-4	15.37	10.57	-8.0	34	0.1	-3
973	H-73.4	51 MAR 5.2424	10 21 29.7	16 02 00	0.8	-16	-9	14.87A	10.66A	-8.9	1	-0.2	1
973	W-67.2	52 APR 27.2896	14 24 00.5	-33 23 38	2.9	-21	-19	15.94	11.22	-9.4	13	-0.2	0
974	K-62.2	51 MAY 5.2104	15 09 32.1	-12 02 00	0.6	-1	-3	14.98	11.54	-9.4	29	-0.2	3
974	K-63.1	51 MAY 5.2208	15 09 31.5	-12 01 44	0.6	-1	-3	15.04	11.60	-9.3	21	-0.1	-5
974	K-54.1	51 MAY 8.2507	15 06 40.0	-11 53 48	0.6	0	-3	14.62	11.23	-9.3	25	0.0	0
975	K-44.3	51 MAY 3.2229	14 31 21.2	-15 02 01	-0.4	1	3	14.78	11.33C	-8.9	27	-0.2	-5
976	K-55.4	51 MAY 4.2090	14 55 24.4	-20 56 42	0.0	1	0	14.01	10.47	-7.5	55	0.1	-2
979	Q-23.2	51 OCT 30.1729	1 45 23.4	16 30 18	14.1	40	38	14.46C	11.09C	-7.5	-82	-0.8	-2
980	X-36.2	52 MAY 22.2097	15 36 03.3	-37 26 17	-3.0	2	2	13.49C	9.67C	-9.9	63	0.5	2

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
981	T-73.4X	52 JAN 29.2375	9 05 24.3	19 37 07	3.2	-16	-14	16.50	11.98	-8.8	31	-0.5	-5
982	D-31.1	50 OCT 8.2819	0 27 47.5	24 53 47	5.9	43	41	15.34	11.56	-7.8	-66	0.6	-18
982	S-22.3	51 DEC 27.1646	5 20 58.3	33 45 07	0.0	1	0	16.18	11.17	-9.3	-37	-0.3	-1
984	B-33.2	50 AUG 13.2556	21 18 08.2	-14 44 09	-0.4	-4	-3	13.00A	10.47A	-9.9	5	-0.3	1
984	B-34.1	50 AUG 13.2694	21 18 07.5	-14 44 11	-0.4	-4	-3	13.03A	10.50A	-10.7	0	-1.1	-4
984	S-62.6	52 JAN 23.1618	6 48 39.3	29 17 59	6.8	-24	-25	14.34	10.76	-9.2	-27	-0.7	4
985	E-72.5	50 NOV 13.2236	3 30 52.1	26 22 29	0.9	9	2	15.11	14.11	-12.3	-56	-1.4	5
985	E-73.5X	50 NOV 13.2757	3 30 47.9	26 21 57	0.8	9	2	15.14C	14.14C	-10.9	-56	0.0	5
986	F-25.1	50 DEC 11.1424	3 54 09.3	9 13 05	-8.4	-49	-54	14.67	10.95	-8.8	43	-0.7	6
986	T-82.5	52 JAN 31.3306	9 24 26.1	29 01 10	-0.9	2	2	15.11C	10.31C	-8.4	55	-0.6	-6
986	T-81.1	52 JAN 31.3403	9 24 25.8	29 01 12	-0.9	2	2	15.22	10.41	-8.2	69	-0.4	8
986	U-11.1	52 FEB 17.1889	9 10 27.1	30 29 09	-1.0	0	2	15.35	10.40	-8.3	45	-0.3	4
987	E-81.1	50 NOV 16.2111	4 08 24.6	34 26 14	-5.8	-10	-10	14.54	10.58	-10.4	-13	-0.7	2
987	F-21.3	50 DEC 10.1701	3 45 24.7	33 01 48	-5.8	-15	-10	14.60	10.59	-7.3	-38	1.1	9
987	F-22.1	50 DEC 10.1812	3 45 23.7	33 01 38	-5.8	-15	-10	14.64C	10.63C	-7.9	-60	0.5	-13
987	T-63.3	52 JAN 28.3257	8 42 02.5	21 57 42	0.0	0	0	15.24	10.37	-9.1	18	-0.7	1
990	K-25.2	51 MAY 2.2007	14 00 55.1	-21 51 04	1.1	-6	-7	16.76	12.68	-9.8	30	-0.4	-3
991	E-64.1	50 NOV 12.2687	3 14 29.9	17 16 30	-11.5	-50	-48	15.47A	11.85	-8.8	-32	-0.3	-7
992	I-45.4	51 MAR 13.3604	11 25 29.7	- 7 55 09	15.2	-62	-61	15.42	11.96	-8.0	70	-1.0	-6
994	I-32.7	51 MAR 11.2875	11 13 27.9	12 22 27	0.2	0	-2	15.20C	11.68C	-11.6	17	-1.1	3
994	I-43.1	51 MAR 13.2653	11 11 22.4	12 24 56	0.2	-1	-2	14.50C	10.95C				
995	H-16.2	51 FEB 7.2687	8 13 18.7	0 12 09	-0.6	5	3	15.77C	11.76C	-8.2	51	0.2	5
995	W-25.2	52 APR 23.2625	13 18 41.5	-14 04 20	-1.2	-2	3	14.91A	11.16A	-7.9	91	0.0	2
999	X-33.2X	52 MAY 22.2819	15 39 48.1	-13 18 56	1.8	1	-1	15.06	11.86	-9.7	62	-0.6	-4
1001	M 82.1	51 JUL 1.2958	20 02 23.6	-12 56 18	0.8	5	4	15.00C	10.47C	-7.5	11	-0.7	2
1001	M-83.1X	51 JUL 5.2632	19 59 34.9	-12 53 19	0.8	3	4	15.57C	11.09C	-7.9	6	-0.7	0
1001	N-12.5	51 JUL 29.1910	19 40 35.3	-12 54 54	0.7	4	4	14.89	10.51	-8.4	-1	-0.6	4
1002	O-53.2	51 SEP 2.3222	22 53 30.6	- 8 26 19	-0.4	-6	-4			-10.8	12	-1.0	11
1003	P-54.1X	51 OCT 1.2160	0 47 14.5	2 48 20	-5.2	-31	-30	15.33C	11.61C	-7.4	-50	-0.2	0
1004	H-74.2X	51 FEB 11.3319	10 13 33.0	10 32 16	0.1	-1	0	15.39	10.52	-7.1	46	-0.3	2
1004	H-64.2	51 MAR 1.2611	10 00 59.7	11 52 24	0.1	-1	-1	15.85C	10.94C	-7.4	40	-0.7	-2
1004	W-33.7X	52 APR 24.1951	13 26 31.6	- 5 45 27	0.1	0	-1	15.95C	10.87C	-6.4	37	0.0	-2
1005	O-73.5	51 SEP 3.3319	23 35 05.2	- 3 38 54	-0.4	-6	-6	14.57	10.81	-9.5	20	-0.5	12
1006	R-51.2	51 DEC 5.2806	4 37 23.7	36 34 58	0.3	2	0	14.95	12.60	-11.0	-72	-0.7	-1
1006	R-42.1	51 DEC 22.2153	4 22 29.1	34 15 08	0.4	-2	0	15.43	12.92	-7.0	-91	-0.2	-2

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
1007	E-83.1	50 NOV 16.2326	4 08 04.3	24 56 19	4.7	10	14	15.46	12.61	-9.6	-20	-0.6	6
1008	C-55.4	50 SEP 14.2687	23 24 27.8	-11 53 52	4.2	41	34	15.39	11.69	-9.2	-14	-1.0	0
1008	S-22.1	51 DEC 27.1646	5 17 11.5	35 09 35,	-2.1	-6	-3	15.43	11.58	-9.9	-9	-0.4	-1
1010	J-63.2	51 APR 8.3785	13 26 19.3	- 3 04 43	-11.2	70	69	15.72	11.54	-7.5	52	0.1	6
1010	J-53.12X	51 APR 9.2160	13 25 40.3	- 3 00 48	-11.1	70	69	16.24C	12.08C	-8.1	48	-0.4	2
1012	W-33.6X	52 APR 24.1951	13 35 06.8	- 4 51 16	-8.4	57	55	16.12	13.05	-9.2	33	0.0	-3
1013	J-73.2	51 APR 9.3174	13 54 46.9	-10 56 46	-4.6	41	42	13.41	10.31	-10.4	-7	-0.2	-6
1014	S-44.4	51 DEC 28.3271	6 01 12.6	22 05 48	-1.2	1	1	15.28C	12.98C	-10.1	-14	-0.4	-4
1015	D-46.1	50 OCT 10.2021	0 54 22.4	- 8 45 10	-5.5	-28	-30	14.51	10.78	-7.7	-39	-0.6	11
1015	S-64.1	52 JAN 23.2521	6 39 22.7	19 33 35	0.2	0	0	13.90	9.61	-7.3	42	-0.5	5
1016	K-35.2	51 MAY 2.2729	14 21 55.5	-19 45 27	4.2	-30	-25	16.01	13.26	-11.3	34	-0.2	0
1018	C-64.2	50 SEP 17.2312	23 44 22.3	- 3 16 40	-0.1	-8	-1	13.14	12.12C	-10.2	4	-0.7	-10
1018	C-53.1	50 OCT 6.1958	23 27 47.9	- 2 40 23	-0.1	-1	-1	14.04	12.49	-7.5	14	0.1	-9
1021	H-81.1	51 MAR 5.3437	10 41 03.1	25 11 45	0.4	-1	-1			-9.4	61	-0.7	-9
1021	W-71.1	52 APR 28.2236	14 55 40.6	5 40 03	-2.1	14	12	14.90	10.03	-8.0	30	0.0	-6
1021	W-80.1	52 APR 28.3049	14 55 36.8	5 40 23	-2.2	14	13	14.67	9.80	-8.5	39	-0.5	3
1021	X-11.1	52 MAY 20.1576	14 38 14.5	6 22 07	-2.2	13	13	15.34	10.30	-7.5	7	-0.1	2
1023	J-83.1X	51 APR 10.3958	14 08 57.5	- 9 17 06	0.4	-2	-1	15.44	10.74	-7.2	58	-0.7	-1
1023	K-23.2	51 APR 28.2042	13 56 46.7	- 7 31 09	0.3	-1	-1	15.28	10.68	-6.9	52	-0.1	-5
1023	K-22.3X	51 MAY 2.1791	13 54 05.5	- 7 08 34	0.3	-2	-1	16.10C	11.41C	-6.6	55	0.0	0
1024	L-14.5	51 MAY 27.2410	15 43 20.6	-20 18 34	-0.4	1	3	15.72	11.64	-10.1	-5	-0.2	4
1028	J-62.3X	51 APR 8.3889	13 20 49.2	1 53 37	0.3	-2	-2	15.32	10.52	-6.4	12	0.7	-18
1028	J-53.9	51 APR 9.2160	13 20 15.3	1 55 55	0.4	-3	-3	15.15	10.35	-6.8	26	0.4	-4
1028	X-64.8X	52 MAY 25.2278	16 48 10.9	-23 46 56	0.9	-4	-4	15.21	10.16	-7.7	-8	0.0	-3
1029	C-64.4X	50 SEP 17.2312	23 43 55.2	- 4 06 33	-1.4	-8	-10	15.78	12.20C	-8.1	-50	-0.2	-6
1029	C-54.6X	50 OCT 6.2535	23 29 31.6	- 5 23 07	-1.5	-7	-11	15.86	11.87	-6.2	-41	0.5	-8
1029	S-23.3	51 DEC 27.1736	5 16 15.7	26 04 46	-2.1	-2	-1	15.57	11.81	-9.8	-11	-0.7	4
1030	J-34.6	51 APR 4.3174	12 36 28.1	- 2 52 20	1.4	0	.-3	14.78	11.58	-6.6	102	-0.3	1
1030	J-33.2	51 APR 4.3590	12 36 26.5	- 2 51 54	1.3	-1	-2	14.54C	11.34C	-6.5	103	-0.2	2
1032	I-72.7	51 APR 2.3375	12 29 09.3	11 32 48	-0.1	-1	1	14.95C	10.99C	-8.1	34	-0.3	-2
1033	C-52.1	50 SEP 12.2986	23 41 48.4	2 56 43	4.0	9	14	15.61	12.19	-5.3	-79	1.4	2
1033	C-53.5X	50 OCT 6.1958	23 26 17.7	- 0 26 57	3.9	7	14	15.77A	12.14A	-6.3	-81	-0.9	0
1039	D-53.4X	50 OCT 10.2806	1 14 28.6	10 46 04	2.1	7	10	15.62	12.12	-9.0	-58	-0.8	6
1039	T-45.4	52 JAN 28.1903	7 56 03.5	13 29 46	1.1	-4	-4	15.62	12.45	-8.7	28	0.5	0
1040	B-31.1	50 AUG 13.2097	21 10 22.8	- 0 14 10	-0.5	-7	-5	15.48	11.09	-8.4	-10	0.1	-3

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O – C R A	O – C DEC	VAR	MAG	G	10 – DAY MOTION		O – C MOTION	
1041	W-32.2X	52 APR 24.1861	13 34 36.0	2 30 35	-6.3	61	59	15.87	11.10	-7.9	15	0.1	0
1042	D-67.1	50 OCT 12.2875	1 46 16.4	- 7 39 05	0.9	14	11	15.00C	11.27C	-8.6	19	0.8	14
1042	E-16.4	50 NOV 4.1868	1 25 08.2	- 6 46 33	0.9	12	11	15.03	11.10	-8.4	41	-0.3	-4
1042	E-17.1	50 NOV 4.1979	1 25 07.5	- 6 46 35	0.9	12	11	15.53C	11.60C	-8.5	41	-0.4	-4
1043	G-75.2	51 FEB 7.2243	7 58 21.5	13 11 36	0.1	-2	0	15.41	11.01	-8.1	48	-1.1	2
1043	V-63.7	52 MAR 23.3535	13 18 41.4	- 0 35 31	0.9	-1	-4	15.14	10.87	-6.3	81		
1043	W-12.5	52 APR 22.1688	12 58 32.3	2 30 26	0.7	0	-3			-6.4	44	-0.1	-5
1044	E-24.4	50 NOV 5.1687	2 01 35.3	9 23 05	-7.1	-43	-47	15.27	12.05	-9.2	-26	0.2	-5
1044	T-43.3	52 JAN 26.2229	8 12 48.3	25 43 29	-4.8	9	14	15.47	11.76	-10.3	30	-0.1	2
1044	T-53.1	52 JAN 26.3042	8 12 43.3	25 43 51	-4.8	10	14	15.73	12.02	-10.4	33	-0.2	5
1045	I-44.11	51 MAR 13.3722	11 29 19.6	2 49 53	-30.2	198	194	16.39	14.15C	-10.7	57	-1.5	-2
1046	G-32.3	51 JAN 8.1687	6 58 46.7	34 51 39	-0.9	5	3	15.22	11.57	-10.9	0	-0.6	-7
1046	G-42.1	51 JAN 12.2313	6 54 36.4	34 53 10	-1.0	3	3	15.01	11.29	-10.2	1	0.0	-1
1046	V-44.6X	52 MAR 23.3083	12 45 51.7	- 4 28 40	0.7	-11	-6	15.67	11.61	-8.4	25	-0.4	-2
1046	V-53.2X	52 MAR 23.3354	12 45 50.3	- 4 28 32	0.6	-11	-5	15.53	11.47	-8.5	27	-0.5	0
1047	S-13.9	51 DEC 23.2521	5 12 36.6	24 15 50	-7.5	-14	-12	14.79	13.21	-11.4	23	-0.2	-5
1048	D-16.1	50 OCT 7.2472	23 48 52.5	-22 23 49	0.2	4	2	14.67	10.65	-8.3	6	0.0	-9
1048	R-33.9X	51 NOV 29.1771	3 58 48.3	25 01 16	-0.4	0	-3	14.60	10.46	-10.3	10	-1.0	4
1051	W-22.3	52 APR 23.1722	13 17 46.9	4 30 33	1.3	1	0	15.52	10.96	-6.8	88	-0.4	7
1053	T-31.2X	52 JAN 25.2979	7 48 12.6	34 52 58	2.7	-7	-9	16.75	13.81	-11.4	3	-0.4	-1
1053	T-32.2	52 JAN 26.1778	7 47 14.8	34 52 41	2.8	-8	-10	16.44	13.50	-11.1	-8	-0.3	9
1054	E-85.2	50 NOV 16.2562	4 05 51.9	12 30 32	4.9	36	28	14.64	11.48	-9.8	11	-0.6	3
1054	F-15.1	50 DEC 10.1493	3 43 50.5	13 11 32	4.4	34	26	14.94	11.61	-8.6	25	0.3	2
1054	U-51.1	52 FEB 24.2132	10 35 27.1	24 22 45	6.7	-29	-32	15.88	11.65	-8.7	60	-0.3	6
1055	Q-75.4	51 NOV 4.3139	3 20 16.8	8 08 59	0.5	-1	2	14.53	12.67	-10.3	-53	0.3	-2
1056	I-72.2	51 APR 2.3375	12 16 38.9	8 00 38	0.3	-1	-2	15.76	12.67	-9.9	69	-0.1	7
1057	E-33.1	50 NOV 7.2090	2 18 48.9	18 03 29	1.2	1	5	14.15	11.98	-8.2	-54	-0.5	5
1057	U-24.5X	52 FEB 18.2215	9 36 19.5	9 31 21	-0.2	0	1	16.65	12.36	-8.4	42	-0.2	2
1058	L-83.4	51 JUN 8.3243	18 04 09.1	-18 17 06	-0.8	1	1	14.23	12.87	-8.9	32	-0.8	-3
1058	M-13.3	51 JUN 26.2021	17 47 03.5	-17 22 15	-1.2	2	-1	13.89	12.67	-10.4	33	-0.5	8
1058	M-23.2	51 JUN 27.2090	17 46 03.9	-17 19 51	-1.2	2	-1	14.20	12.97	-10.4	19	-0.5	-5
1059	O-62.1	51 SEP 3.3132	23 05 32.4	5 21 48	0.2	4	1	14.26	11.65	-7.9	-80	-0.4	10
1062	B-14.3	50 AUG 10.2799	20 27 09.7	-23 59 22	-3.8	-14	-19	15.22	11.02	-8.4	-7	-0.2	11
1062	Q-33.1	51 NOV 1.1646	1 46 21.7	18 09 15	0.1	-2	1	15.25	11.66	-8.5	-40	-0.1	-3
1063	G-43.2	51 JAN 12.1750	6 57 08.6	24 49 02	-0.8	2	0	14.78C	12.34C	-11.4	44	-0.1	0

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
1063	X-83.2	52 MAY 26.3472	17 29 42.8	-19 34 12	1.9	-6	-4			-9.2	-13	-0.1	4
1067	B-42.1	50 AUG 14.2194	21 46 29.9	- 3 10 03	0.5	2	4	15.18C	11.95C	-7.2	-30	1.7	-26
1067	B-52.4X	50 AUG 15.2368	21 45 35.0	- 3 10 27	0.4	3	3	15.21	11.98	-9.8	-2	-0.8	2
1067	T-14.3X	52 JAN 25.1625	7 10 47.0	21 44 02	-0.8	1	4	15.15	11.80	-9.1	-27	1.1	-3
1067	T-24.1	52 JAN 25.2799	7 10 40.6	21 43 47	-0.8	1	4	15.13	11.78	-9.3	-25	0.9	-1
1070	U-25.5X	52 FEB 18.2306	9 39 06.9	5 20 06	-1.8	3	2	16.67	11.96	-7.6	70	-0.6	-2
1071	E-44.1	50 NOV 8.1944	2 30 49.1	13 04 38	-6.2	-34	-37	14.17	11.27	-8.7	-23	0.5	-5
1071	U-62.11	52 FEB 24.2403	11 12 57.9	13 45 52	-8.2	54	59	14.72	11.33	-8.7	55	-0.8	4
1071	U-72.1	52 FEB 26.2528	11 11 16.7	13 56 05	-8.3	54	60	14.26	10.91	-8.7	58	-0.6	7
1072	W-64.13X	52 APR 27.2167	14 26 57.1	-14 50 06	-0.9	7	6	16.74	11.91C	-7.9	25	0.0	1
1073	N-54.1X	51 AUG 3.2910	20 48 51.4	-20 35 27	-6.9	-31	-28	15.45	12.50	-8.2	-34	-0.2	-4
1074	Q-24.2	51 OCT 30.1819	1 46 46.1	10 49 53	3.4	17	19	14.28C	11.22C	-8.8	-30	-1.1	9
1075	L-53.3	51 JUN 6.2160	17 07 36.0	-15 31 13	-5.6	16	21	15.04	11.18	-8.5	-19	0.1	-2
1075	L-63.2	51 JUN 7.2174	17 06 43.4	-15 33 00	-5.6	17	21	15.06C	11.23C	-9.0	-23	-0.4	-5
1075	L-62.1	51 JUN 7.3333	17 06 37.5	-15 33 13	-5.7	17	21	15.19	11.36	-8.6	-8	0.0	10
1076	H-44.5	51 FEB 9.3076	9 17 25.0	15 09 35	-2.1	7	8	15.19A	13.20A	-10.4	62	-1.2	0
1078	F-64.2	50 DEC 13.2819	5 33 50.3	20 29 59	-8.6	-17	-17	14.10	12.55	-12.1	29	-0.8	-14
1078	F-74.1	50 DEC 14.2042	5 32 45.7	20 33 45	-8.6	-17	-17	14.02	12.52	-11.9	35	-0.3	-7
1078	F-64.1	50 DEC 30.1326	5 14 32.9	21 40 27	-8.6	-22	-17	14.64	12.73	-10.8	36	-0.2	-9
1079	U-94.11X	52 FEB 26.3701	12 03 21.9	- 1 06 10	-3.1	21	21	16.17	12.21	-6.7	32	-0.6	-3
1079	V-14.1	52 MAR 23.1993	11 43 43.1	0 50 36	-3.4	22	23	15.40	11.78	-8.4	48	-0.5	-1
1080	G-32.1	51 JAN 8.1687	6 40 47.1	32 22 54	-3.8	1	9	14.76	13.50	-11.7	-14	-0.9	-2
1084	D-34.2	50 OCT 9.1785	0 29 31.4	2 49 10	-1.6	-10	-08	15.01	12.03	-7.2	-85	0.4	-19
1084	S-54.4	52 JAN 23.1257	6 28 39.2	17 45 21	0.0	-2	0	15.66	11.46	-8.2	12	-0.8	-4
1085	E-25.2	50 NOV 5.1792	1 57 20.9	2 24 31	-1.3	-5	-6	15.28	10.86	-7.2	-47	-0.2	-11
1085	S-54.7	51 DEC 28.3451	6 37 40.1	16 51 38	0.8	1	0	15.07	10.63	-8.9	17	-0.7	-1
1085	S-54.6X	52 JAN 23.1257	6 17 39.5	17 45 58	0.8	0	0	15.70C	10.90C	-6.2	30	0.2	7
1086	D-62.4	50 OCT 12.1750	1 27 13.1	21 27 37	-0.7	-6	-3	15.07	10.78	-7.8	-37	0.1	-6
1086	T-13.2	52 JAN 25.1535	7 06 01.1	27 22 19	-6.5	19	26	14.68C	10.51C	-8.3	-14	0.1	0
1087	J-33.3	51 APR 4.3590	12 37 51.5	1 42 43	0.3	-4	-3	14.76	10.63	-8.5	21	-0.3	-5
1088	F-62.2	50 DEC 13.2597	5 18 32.5	29 56 06	-3.7	-8	-6	13.96	12.54	-14.0	33	-0.8	-6
1088	W-33.5X	52 APR 24.1951	13 26 25.7	- 2 44 18	-2.7	20	21	15.92	12.66	-10.2	32	0.1	2
1089	E-34.7	50 NOV 7.2632	2 20 40.3	9 54 48	-1.5	-8	-8	14.31	12.91	-11.0	-15	-1.0	6
1089	E-35.1	50 NOV 7.2736	2 20 39.9	9 54 44	-1.5	-8	-8	14.21	12.86	-10.5	-4	-0.5	17
1089	W-53.4	52 APR 26.1965	14 08 31.0	- 8 55 37	-2.2	13	13	15.32	12.70	-11.2	37	-0.6	-6

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
1092	O-62.2X	51 SEP 3.3132	23 12 07.7	0 18 29	0.7	5	5	15.09	11.44	-9.0	-35	-1.0	-3
1094	K-31.1	51 MAY 2.1889	14 17 19.1	7 23 30	1.4	-12	-5	16.87	13.39	-8.5	46	-0.3	-1
1094	K-41.1	51 MAY 3.1910	14 16 29.6	7 28 10	1.4	-12	-5	16.72	13.24	-7.6	48	0.4	5
1096	G-13.5X	51 JAN 5.1562	6 06 53.1	26 58 24	-0.5	1	-1	14.89C	11.23C	-10.6	18	-1.3	-8
1096	U-91.1	52 FEB 24.3771	11 52 12.7	15 49 03	-0.6	3	4	15.53	11.34	-8.0	67	-0.8	-3
1097	E-84.6	50 NOV 16.2444	3 47 18.1	17 31 53	0.0	0	0	15.90	12.76	-10.7	-29	-0.3	3
1098	C-22.2	50 SEP 10.2076	22 36 12.5	- 3 19 25	-5.8	-60	-63	14.59	11.67	-11.6	-23	-1.7	-21
1099	S-41.3	51 DEC 27.3090	6 09 32.7	40 09 05	5.8	2	-2	15.25C	11.41C	-11.2	5	0.0	1
1100	J-65.6X	51 APR 8.2729	13 43 20.4	-12 20 24	-0.8	5	4	16.39C	12.46C	-9.0	42	-1.6	3
1100	J-64.4	51 APR 8.3681	13 43 16.2	-12 20 00	-0.9	5	5	16.19	12.27	-8.5	40	-1.1	1
1100	J-73.1X	51 APR 9.3174	13 42 32.1	-12 16 10	-0.9	5	5	16.20C	12.35C	-8.1	37	-0.6	-3
1100	J-74.1	51 APR 9.3562	13 42 30.1	-12 16 01	-0.9	5	5	16.24	12.56	-8.0	41	-0.5	1
1102	G-36.2	51 JAN 6.2028	6 48 29.1	2 23 34	-10.7	34	32	15.65	11.13	-8.1	-4	0.1	-7
1102	U-76.1X	52 FEB 20.3410	11 08 17.1	-12 46 53	-8.5	31	27	15.94	11.09	-6.7	37	-0.5	1
1102	U-66.1	52 FEB 24.3312	11 05 39.1	-12 30 03	-8.5	31	27	14.97	10.18	-7.0	44	-0.4	1
1105	X-21.2	52 MAY 20.2819	15 06 29.3	- 1 58 02	-6.4	36	32	15.06	10.81	-7.6	10	0.2	0
1107	G-63.5	51 FEB 4.2333	7 45 55.9	23 08 01	0.4	-1	0	14.12	10.38	-7.8	39	-0.7	0
1107	W-42.5	52 APR 24.2944	13 55 39.9	- 1 00 08	6.9	-38	-41	13.95	9.71	-8.1	32	-0.7	-2
1109	G-54.4	51 JAN 12.2868	7 26 47.7	19 50 15	-0.6	1	2	15.51	11.00	-8.7	4	-0.1	-4
1109	U-95.2	52 FEB 26.3611	12 00 57.1	- 6 33 48	-1.0	7	6	15.37	11.05	-5.9	25	-0.2	1
1109	U-94.2	52 FEB 26.3701	12 00 56.8	- 6 33 45	-1.1	7	7	15.19	10.87	-5.9	27	-0.2	3
1109	V-15.4	52 MAR 24.1875	11 42 12.3	- 4 48 55	-1.2	9	8	14.75	10.76	-7.5	54	-0.1	5
1110	M-53.3	51 JUN 30.3271	18 53 29.9	-14 20 34	-5.0	-9	-15	13.90	13.21	-8.0	55	0.5	3
1111	D-35.2	50 OCT 9.1889	0 39 59.6	- 1 23 09	2.6	14	15	15.35	12.10	-7.7	-34	-0.4	18
1111	T-14.2	52 JAN 25.1625	7 03 09.8	20 32 08	-0.1	-1	0	15.19	11.07	-8.2	25	0.7	-2
1112	F-32.1	50 DEC 11.2951	4 26 24.9	32 34 15	-12.8	-9	0	14.85C	11.30C	-10.0	-37	-0.4	7
1112	J-45.4	52 FEB 19.3111	10 27 40.7	2 19 42	-0.1	2	1	14.80	10.57	-8.8	29	-0.5	3
1113	B-73.1	50 AUG 19.3264	22 28 21.5	- 6 48 32	-1.7	-14	-18	14.67	10.45	-8.5	-16	-0.5	-7
1113	C-13.1	50 SEP 9.2514	22 10 47.1	- 7 15 12	-1.5	-13	-15	14.93	10.67	-8.6	-13	-0.4	0
1113	R-41.1	51 NOV 29.3125	4 20 55.9	41 51 24	-19.4	-29	-10	14.14	10.71	-11.1	-32	-0.5	-14
1114	F-75.3X	50 DEC 31.1778	5 42 16.1	8 08 21	0.1	-3	0	14.92	10.98	-7.7	2	0.1	0
1114	U-75.1	52 FEB 24.3500	11 21 12.1	- 3 53 01	0.5	-4	-2	15.04	10.64	-6.7	56	-0.6	1
1115	G-41.2	51 JAN 12.1528	7 22 42.3	36 55 28	0.3	2	0	13.76	10.56	-11.7	67	-1.7	-1
1115	G-51.1	51 JAN 12.1868	7 22 40.7	36 55 35	0.3	1	0	13.57	10.37	-11.6	67	-1.5	-1
1115	W-72.2	52 APR 27.3528	14 53 59.9	- 3 40 31	5.3	-54	-48	14.28	10.27	-9.0	4	-0.3	-2

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
1116	O-35.2	51 SEP 1.2687	22 14 25.2	-23 02 39	1.3	15	13	14.76	10.74	-10.3	-5	-0.3	1
1117	O-84.3	51 SEP 5.3292	0 03 14.7	- 3 28 03	2.6	11	14	14.81	13.25	-7.9	-86	-0.5	2
1117	P-24.1X	51 SEP 27.1882	23 45 04.3	- 6 36 32	2.5	8	14	14.58C	13.13C	-8.5	-71	-0.5	3
1118	S-21.4	51 DEC 23.3243	5 38 42.6	39 01 18	1.1	-5	-2	15.44	10.93	-10.0	-34	0.2	-4
1118	S-31.1	51 DEC 27.2819	5 34 44.1	38 48 28	1.2	-6	-2	15.39	10.83	-10.3	-31	-0.3	4
1119	J-63.3	51 APR 8.3785	13 27 19.4	- 0 25 23	2.5	-19	-20	15.55	12.58	-9.3	29	-0.1	-3
1120	O-53.3	51 SEP 2.3222	22 58 07.8	- 6 59 22	-2.5	-13	-13			-8.4	-98	-0.5	-10
1123	O-15.4X	51 AUG 31.1826	21 51 24.0	-25 19 23	-0.3	0	-1	14.67	12.70	-9.9	-62	-0.4	-13
1123	O-26.2	51 SEP 1.2111	21 50 25.4	-25 24 25	-0.3	0	-1	14.64	12.64	-9.7	-55	-0.4	-9
1124	I-53.4	51 MAR 15.3243	11 50 48.6	7 03 28	0.7	-5	-6			-9.1	36	-0.6	3
1124	I-53.1	51 MAR 31.3300	11 37 27.3	7 48 39	0.8	-4	-7	15.83	11.90	-8.1	24	-0.4	4
1128	E-83.3	50 NOV 16.2326	4 03 18.0	20 45 28	0.3	1	1	15.47	11.87	-9.4	-16	-0.2	6
1128	E-84.1	50 NOV 16.2444	4 03 17.3	20 45 24	0.3	1	1	15.34	11.73	-9.1	-27	0.1	-5
1128	F-13.3	50 DEC 3.1681	3 47 27.5	20 04 19	0.3	1	1	15.54	11.88	-8.0	-11	0.8	14
1128	F-14.5X	50 DEC 3.1785	3 47 26.9	20 04 12	0.2	1	1	15.59	11.93	-9.4	-31	-0.6	-6
1128	U-33.9X	52 FEB 19.2208	10 09 27.7	13 02 33	-0.8	4	5	15.29	11.87C	-8.7	52	-0.1	4
1128	U-43.1	52 FEB 20.2319	10 08 35.5	13 07 30	-0.8	4	5	15.59	12.16C	-9.2	52	-0.6	5
1129	B-61.1	50 AUG 18.2535	22 17 52.9	1 49 36	0.4	3	3	14.93	10.85	-6.5	-19	1.0	1
1129	B-62.1X	50 AUG 18.3111	22 17 52.6	1 49 22	0.4	2	3	14.89	10.81	-7.3	-27	0.2	-7
1129	R-53.4	51 DEC 22.2333	4 51 08.1	24 53 51	0.4	-2	0	15.19	11.17	-8.3	-47	0.0	-1
1129	S-13.1	51 DEC 23.2521	4 50 17.0	24 49 16	0.3	-2	0						
1132	O-55.2	51 SEP 2.2340	23 02 24.3	-18 11 32	6.2	51	49	13.97C	12.16C	-10.0	-13	-0.8	-3
1132	O-65.2	51 SEP 3.2382	23 01 28.2	-18 12 45	6.1	50	48			-8.8	-8	0.3	1
1133	K-63.8X	51 MAY 5.2208	15 10 59.3	-16 00 43	-0.3	-1	1	16.00A	13.35A	-11.4	9	-0.4	-14
1133	K-54.4	51 MAY 8.2507	15 07 35.1	-15 53 34	-0.3	-1	2	15.45	12.91	-12.3	20	-1.0	-3
1134	P-53.3X	51 SEP 30.3118	0 50 38.9	7 31 27	-84.0	-827	-612	14.92	14.74	-14.0	236		
1135	Q-72.1	51 NOV 4.2326	3 15 32.1	24 40 16	2.0	9	8	14.36C	11.43C	-10.1	-8	-0.4	11
1135	Q-73.2	51 NOV 4.2958	3 15 28.4	24 40 09	2.0	9	8	14.41	11.48	-9.5	-18	0.2	1
1136	G-76.3	51 JAN 13.3812	7 57 39.1	6 46 44	-0.2	3	1	15.72C	12.16C	-9.7	17	0.1	-6
1136	G-65.1	51 FEB 4.2118	7 37 20.3	8 04 16	-0.2	2	1	15.72C	12.02C	-8.6	43	-0.7	-1
1136	V-44.5X	52 MAR 23.3083	12 27 08.6	- 8 20 10	-2.4	14	11	16.27	12.08	-8.6	69	-0.6	1
1136	V-35.3X	52 MAR 24.2236	12 26 23.3	- 8 13 56	-2.3	13	10	16.22	12.05	-8.4	66	-0.3	-3
1137	M 64.4	51 JUL 4.2354	19 21 50.5	-25 37 30	-0.9	0	-1	14.53	12.15	-11.0	-43	-0.8	-1
1137	M-74.4X	51 JUL 4.3486	19 21 43.4	-25 37 06	-0.9	0	-1	14.66C	12.28C	-10.5	-53	-0.3	-11
1142	E-34.6X	50 NOV 7.2632	2 26 17.5	11 26 06	-0.7	-5	-3	16.23	11.69	-7.9	-30	-0.5	6

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O – C R A	O – C DEC	VAR	MAG	G	10 – DAY MOTION		O – C MOTION	
1142	E-44.2	50 NOV 8.1944	2 25 35.7	11 22 42	-0.7	-5	-3	15.95	11.40	-8.6	-36	-1.2	0
1142	S-54.5	52 JAN 23.1257	6 29 23.8	21 36 31	-1.3	1	-.1	16.05	11.25	-7.1	14	-0.1	2
1143	E-54.1	50 NOV 12.2042	2 47 18.4	15 47 58	1.9	7	7	15.72	9.58C	-5.7	-27	-0.4	1
1143	S-24.4	51 DEC 27.1826	5 30 49.5	20 28 37	2.2	0	0	15.61	9.44	-5.7	-5	0.0	1
1144	G-35.7	51 JAN 8.2028	6 53 36.6	11 59 20	-0.4	0	0	16.24C	11.31C	-7.2	19	-0.1	-5
1144	G-45.6	51 JAN 8.2833	6 53 33.6	11 59 30	-0.4	0	0						
1144	U-54.11X	52 FEB 20.2410	10 40 17.1	7 48 34	-0.2	1	1	16.39	11.12	-5.7	49	0.3	-4
1145	F-52.3	50 DEC 12.2993	4 56 38.6	32 27 51	-3.5	-4	-4	15.62	12.29	-12.5	-10	-0.7	7
1145	V-54.3	52 MAR 23.3264	12 47 56.9	- 9 41 55	-0.8	3	6	14.79	12.43	-9.7	14	-0.3	-3
1145	V-45.3	52 MAR 26.2215	12 45 09.5	- 9 36 15	-0.8	4	6	14.01	11.73	-10.2	17	-0.4	-4
1147	D-63.2	50 OCT 12.1972	1 27 22.5	15 45 22	1.4	9	8	15.42	13.09	-11.0	-74	-0.6	-3
1149	G-34.4X	51 JAN 8.1917	6 56 14.4	15 50 20	-5.2	16	24	15.42	11.81				
1149	G-45.4X	51 JAN 8.2833	6 56 09.3	15 50 11	-5.1	16	23	14.79	11.19	-9.6	-25	-0.1	-8
1149	G-44.3	51 JAN 8.2951	6 56 08.8	15 50 05	-5.2	16	24	15.00	11.40	-9.4	-22	0.1	-5
1149	U-96.3X	52 FEB 26.3521	12 12 06.5	-18 45 55	1.6	-9	-9	16.02	11.41	-6.3	11		
1149	V-16.2X	52 MAR 24.1965	11 52 24.6	-17 20 34	1.4	-11	-8	15.58	11.26	-8.3	54	-0.4	-1
1149	V-26.1	52 MAR 24.2146	11 52 23.9	-17 20 30	1.4	-10	-8	15.78	11.46	-8.0	58	-0.1	3
1153	C-32.2X	50 SEP 11.2861	22 58 50.2	0 30 05	-5.0	-30	-33	14.49	13.34	-9.5	-58	0.0	-7
1153	T-64.4X	52 JAN 28.3167	8 46 13.1	15 18 17	-1.3	3	6	16.07	13.26	-11.5	24	-0.2	-8
1154	T-83.3X	52 JAN 29.3549	9 15 03.5	20 57 09	0.2	-1	-1	16.05	11.42	-8.5	43	-1.1	1
1155	H-12.2	51 FEB 7.1436	8 34 07.1	30 00 51	1.4	-4	-5	15.74A	12.75A	-11.2	27	-0.2	1
1155	H-22.3X	51 FEB 8.1812	8 32 59.1	30 03 35	1.3	-2	-5	15.98	12.98	-11.0	20	-0.1	-5
1157	L-86.3	51 JUN 9.2889	18 10 36.9	-37 11 21	22.1	18	24	14.95	11.15	-9.3	-1	-0.8	8
1157	M-17.2	51 JUN 27.2375	17 53 48.0	-36 59 23	21.7	22	24	15.22C	11.50C	-8.8	22	0.3	6
1157	M-26.2X	51 JUN 28.2514	17 52 50.5	-36 57 21	21.9	22	24	14.63C	10.89C	-9.5	25	0.0	8
1158	U-84.9	52 FEB 26.2708	11 45 49.5	- 0 42 48	-1.9	29	22	15.68	12.08	-9.5	7	-0.7	4
1159	O-73.7	51 SEP 3.3319	23 40 06.1	- 1 58 53	0.1	9	1	15.09	12.64	-10.9	18	-0.3	9
1160	V-34.1X	52 MAR 23.2354	12 18 27.1	- 2 15 32	-1.7	9	20	15.55	12.17C	-10.4	14	-0.2	-3
1162	D-44.3	50 OCT 9.2951	0 51 08.5	4 15 25	-1.3	-8	-9	15.97	10.75C	-5˙8	-39	0.3	-3
1163	B-64.4X	50 AUG 18.3389	22 24 26.7	-15 21 04	1.4	4	5	15.59C	11.77C	-6.1	-71	0.6	-3
1163	B-74.4	50 AUG 19.3403	22 23 47.1	-15 28 08	1.3	4	5	15.17C	11.40C	-7.7	-65	-1.0	3
1163	C-14.3X	50 SEP 9.2965	22 09 24.5	-17 39 14	1.4	4	5	15.98	11.97	-8.4	-70	-2.1	-18
1163	R-35.5	51 NOV 29.1951	3 52 13.8	7 51 56	0.7	3	3	15.89	11.68	-8.2	-2	-0.3	6
1163	R-36.6X	51 NOV 29.2042	3 52 13.4	7 51 56	0.7	3	3	15.84	11.64	-7.4	-8	0.5	0
1164	I-52.1	51 MAR 15.3375	11 43 24.5	17 17 43	-7.6	12	3			6.7	260	-0.4	13

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
1164	I-51.1	51 MAR 15.3833	11 43 22.5	17 18 58	-7.6	12	3			-7.2	256	-0.9	9
1164	I-41.3X	51 MAR 31.2014	11 34 09.5	22 49 51	-7.3	11	3	16.02	14.27C	-5.4	160	-0.6	-1
1165	W-63.5	52 APR 26.3049	14 33 44.9	-10 29 32	2.7	-2	-3	15.26	11.69	-8.3	82	-1.1	1
1167	E-23.2	50 NOV 5.1569	2 09 09.7	14 24 28	-0.3	-3	-1	15.53	10.91	-6.9	-33	0.1	16
1167	E-34.3X	50 NOV 7.2632	2 07 42.9	14 14 01	-0.3	-2	-1	15.62	10.97	-7.6	-45	-0.8	4
1167	S-54.4	51 DEC 28.3451	6 30 16.3	17 12 05	-0.2	1	0	15.59	10.89	-8.3	-6	-0.4	-4
1167	S-44.6X	52 JAN 21.1340	6 12 44.1	17 15 35				16.08	11.00	-6.4	2		
1171	L-63.6	51 JUN 7.2174	17 23 21.5	-20 18 29	0.0	0	0	15.37	10.54	-7.8	4	0.0	0
1172	M-71.2X	51 JUL 1.2556	19 34 13.4	- 6 35 09	-0.2	-2	-1	15.26C	9.03C	-5.8	10	-0.6	-4
1173	N-53.4X	51 AUG 3.3410	20 57 21.5	-12 44 52	2.8	16	17	15.68	10.04	-5.9	-13	-0.3	0
1175	K-55.7	51 MAY 4.2090	15 04 07.5	-21 49 09	-1.0	9	0	15.83	11.60	-7.4	75	0.0	7
1175	K-64.2	51 MAY 5.2312	15 03 22.4	-21 41 57	-1.0	9	0	15.53C	11.33C	-7.8	78	-0.5	9
1177	X-64.6	52 MAY 25.2278	16 44 50.4	-23 19 46	-0.1	0	0	14.52	10.09	-8.1	47	-0.4	-2
1177	X-74.1	52 MAY 26.3299	16 43 58.8	-23 14 19	-0.1	0	0			-8.1	46	-0.3	-3
1180	E-64.3	50 NOV 12.2687	3 15 01.0	11 50 03	0.4	0	2	15.44	10.17	-6.6	-3	0.2	14
1180	S-43.7X	51 DEC 27.2910	6 06 52.8	24 04 11	0.5	1	1	15.35	9.62C	-7.3	3	-0.2	-8
1182	I-44.4	51 MAR 13.3722	11 20 23.9	- 0 16 06	-3.7	30	34	15.04	12.48	-11.3	23	-0.4	-4
1183	E-43.2X	50 NOV 8.1840	2 47 55.8	18 46 16	-0.1	16	0	15.98	12.90C	-11.5	-46	-1.1	-10
1183	E-53.2	50 NOV 12.1500	2 43 30.9	18 29 48	-0.3	15	-1	16.41C	13.24C	-10.4	-82	-0.1	-34
1183	U-73.4	52 FEB 26.2618	11 16 43.5	7 40 13	-9.7	68	72	15.06	12.87	-9.4	42	-0.9	-4
1184	J-86.3X	51 APR 10.3222	14 22 48.0	-25 37 23	0.6	-5	-4	16.43C	12.98C	-8.2	-17	0.5	-1
1184	K-25.3	51 MAY 2.2007	14 00 56.1	-25 30 41	0.5	-3	-3	15.61	12.34	-11.0	26	-0.8	7
1184	K-26.1	51 MAY 2.2118	14 00 55.5	-25 30 42	0.5	-3	-3	15.61	12.34	-10.6	21	-0.4	2
1184	K-36.1	51 MAY 3.2847	13 59 50.1	-25 29 22	0.5	-3	-3	15.54C	12.27C	-9.2	21	0.9	1
1185	C-15.2	50 SEP 10.1819	22 25 29.7	-20 45 58	-0.2	-1	-1	15.68	13.25	-8.8	-35	0.7	5
1185	C-25.3X	50 SEP 11.2181	22 24 31.1	-20 50 01	-0.3	-2	-2	15.97C	13.51C	-10.1	-41	-0.6	-1
1185	U-62.9	52 FEB 24.2403	11 09 14.6	16 37 35	2.2	-13	-15	15.29	13.08	-10.1	66	-0.2	-4
1186	Q-63.2X	51 NOV 3.3167	3 06 45.8	18 19 28	0.3	2	2	14.51	10.90	-9.2	-8	0.1	-7
1186	Q-73.1	51 NOV 4.2958	3 05 51.1	18 19 25	0.3	3	2	14.07C	10.47C	-9.8	-3	-0.4	-1
1187	C-32.3	50 SEP 11.2861	22 53 17.3	- 0 22 40	0.1	1	1	15.00	12.84	-9.1	-11	1.0	-14
1187	U-44.2	52 FEB 19.3210	10 11 10.9	10 20 46	-0.6	-2	6	15.00	11.96C	-10.7	23	-0.3	4
1188	H-32.1X	51 FEB 9.1979	9 00 21.9	23 43 17	-0.6	2	3	16.10C	13.57C	-12.8	23	-1.0	-2
1188	H-33.2X	51 FEB 9.2097	9 00 21.2	23 43 14	-0.6	2	3	15.86	13.33	-12.4	19	-0.6	-6
1188	X-35.3X	52 MAY 22.2007	15 47 04.6	-26 58 45	0.8	-5	-2	15.68	13.08	-11.9	22	0.0	0
1188	X-45.6X	52 MAY 24.2028	15 44 39.9	-26 54 14	0.9	-5	-2	15.29	12.67	-12.7	19	-0.8	-5

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
1189	C-21.1	50 SEP 10.1951	22 41 55.8	7 55 38	5.9	46	44	14.56	11.29	-8.1	-24	-0.1	14
1189	S-54.5	51 DEC 28.3451	6 33 42.9	22 54 26	0.3	-2	-1	14.20	10.79C	-10.2	-26	-0.2	-3
1189	S-44.3	52 JAN 21.1340	6 12 30.4	21 55 57				15.10	11.13	-7.0	-27		
1194	L-26.2X	51 MAY 29.2312	16 06 54.0	-33 17 56	11.0	-9	-7	15.39	11.85	-9.0	45	0.2	-10
1194	L-35.1	51 MAY 29.3007	16 06 49.5	-33 17 36	11.0	-9	-7	15.11	11.55	-9.8	53	-0.6	-2
1196	G-63.7	51 JAN 13.2375	7 52 04.5	27 19 19	-3.4	0	-4	14.80	11.46	-10.1	80	0.2	-6
1196	G-52.1	51 FEB 4.1056	7 30 21.8	29 53 52	-3.4	-2	-4	15.25A	11.53A	-8.8	61	-0.3	6
1197	N-12.1	51 JUL 29.1910	19 25 16.3	- 9 58 32	2.6	18	14	15.50	11.27	-8.3	-5	-0.5	0
1199	M-23.3	51 JUN 27.2090	18 03 03.9	-15 47 51	-1.9	-1	-4	15.39	11.43	-8.7	16	-0.3	0
1199	M-33.1	51 JUN 28.2222	18 02 13.3	-15 46 07	-2.0	0	-4	15.61	11.65	-8.3	14	0.0	-2
1200	K-63.6	51 MAY 5.2208	15 14 16.4	-15 13 05	2.1	-5	-5	15.03A	11.73A	-7.9	43	-0.3	-5
1200	K-54.2	51 MAY 8.2507	15 11 56.0	-14 58 23	2.0	-4	-5	14.90A	11.74A	-7.8	48	-0.1	0
1201	H-55.3X	51 FEB 10.3139	9 36 16.3	4 22 36	0.4	-3	-2	15.85	12.41	-8.0	51	0.5	-2
1201	X-43.4X	52 MAY 24.2889	15 52 55.6	-13 26 14	-2.1	3	3	16.09	12.72	-8.8	43	-0.3	-2
1203	S-55.7	51 DEC 28.2819	6 26 51.4	15 26 30	9.4	-18	-15	15.81	13.36	-9.9	-9	-0.4	2
1203	S-44.5X	52 JAN 21.1340	6 07 28.7	15 25 17				16.19	13.34	-5.7	8		
1203	S-45.6X	52 JAN 22.1250	6 06 55.9	15 26 10				15.63	12.75	-5.5	12		
1204	K-55.1	51 MAY 4.2090	14 50 45.9	-18 37 39	-1.1	4	5	15.02	13.30	-11.7	35	-0.7	0
1206	C-42.2	50 SEP 12.1958	23 14 26.0	4 06 55	-7.3	-104	-74	14.21	10.54	-9.2	-11	-0.2	6
1210	I-51.6	51 MAR 15.3833	0 0 .	0 0									
1210	I-52.3	51 MAR 31.3410	11 46 13.3	18 17 08	3.0	-10	-16	15.33	11.12	-7.2	31	-0.2	-6
1210	I-51.4	51 MAR 31.3514	11 46 12.4	18 17 10	3.0	-10	-16	15.51	11.30	-7.7	39	-0.7	2
1211	R-56.1	51 DEC 4.2285	4 35 02.5	4 44 59	0.6	2	3	15.58	11.87	-8.8	7	0.0	-2
1211	R-46.3	51 DEC 22.1611	4 20 17.9	5 23 26	0.0	0	0	16.14	12.24	-7.5	32	-1.1	-4
1214	J-36.2	51 APR 4.2514	12 42 52.0	-21 01 52	0.3	0	-2	15.48C	11.73C	-9.5	45	-0.8	0
1216	U-33.10X	52 FEB 19.2208	9 59 21.3	18 21 08	2.3	-5	-8	15.62	13.07	-11.0	88	-0.6	0
1218	R-33.11X	51 NOV 29.1771	4 02 33.4	20 46 00	12.2	47	40	15.94	14.10	-12.2	-8	-0.8	7
1218	R-34.5X	51 NOV 29.1861	4 02 32.7	20 45 58	12.1	47	40	15.97	14.13	-12.1	-13	-0.7	2
1219	D-35.3	50 OCT 9.1889	0 31 09.0	- 1 34 36	-0.8	-5	-6	15.14	13.42	-10.9	-27	-1.0	4
1219	V-63.3X	52 MAR 23.3535	13 19 14.3	- 4 20 10	-1.1	7	8	15.65	12.90	-10.1	45	-0.9	2
1219	W-13.8X	52 APR 22.1778	12 49 17.9	- 2 15 09	-1.4	9	10			-9.4	27	-0.6	-4
1223	B-34.2	50 AUG 13.2694	21 24 09.1	-19 22 48	-1.7	-8	-8	15.24C	11.73C	-7.7	-36	0.7	1
1223	R-33.2	51 NOV 29.1771	3 50 19.7	21 36 15	1.3	5	4	14.49	11.25	-9.5	-16	-0.3	4
1227	U-93.5X	52 FEB 26.3792	12 01 26.6	4 23 06	-1.7	16	21	16.39	11.63	-7.3	18	-0.3	2
1227	V-13.7X	52 MAR 23.1903	11 40 16.7	5 10 16	-1.8	16	22	15.63	11.08	-8.6	19	0.0	3

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O – C R A	O – C DEC	VAR	MAG	G	10 – DAY MOTION		O – C MOTION	
1232	H-55.2	51 FEB 10.3139	9 31 19.5	0 49 20	0.7	-5	-5	15.40	11.35	-8.5	22	-0.3	3
1232	H-56.1X	51 FEB 10.3250	9 31 19.0	0 49 24	0.7	-5	-5	15.30	11.25	-8.4	20	-0.2	1
1232	X-54.4	52 MAY 24.2292	16 34 15.3	-26 18 38	-9.3	2	-7	14.74	11.46	-9.3	59	-1.1	9
1232	X-64.3	52 MAY 25.2278	16 33 25.5	-26 13 18	-9.4	3	-7	14.31	11.05	-8.6	49	-0.4	-1
1236	E-83.2	50 NOV 16.2326	3 53 41.4	24 18 25	3.5	34	21	14.75	12.94	-13.3	54	-0.3	0
1236	F-12.7	50 DEC 3.1569	3 32 09.9	25 30 29	3.4	33	20	14.64	12.67	-11.7	26	-0.5	-7
1236	F-13.5X	50 DEC 3.1681	3 32 09.5	25 30 31	3.4	33	20	14.84	12.87	-12.0	26	-0.8	-7
1237	M-65.1X	51 JUL 4.2451	19 00 25.3	-34 03 05	-1.2	-4	0	15.08	12.04	-10.7	-48	-0.1	-2
1237	M-56.3X	51 JUL 4.2556	19 00 24.4	-34 03 08	-1.2	-4	0	14.99	11.95	-10.8	-43	-0.2	3
1240	G-52.1	51 JAN 12.1972	7 25 53.0	30 42 43	2.9	-14	-13	14.79A	10.84A	-10.2	-6	0.5	0
1240	U-85.3	52 FEB 26.2799	11 40 30.9	- 4 59 23	0.6	-9	-6	15.57	10.92	-7.6	12	-0.2	-6
1242	N-35.3	51 JUL 31.2118	20 20 07.6	-31 56 04	0.5	1	2	14.86	11.39	-10.3	-3	0.6	-1
1243	D-41.3	50 OCT 9.2660	0 49 37.3	21 13 41	0.5	1	2	15.50	11.42	-7.7	-79	-0.4	-9
1243	S-45.5	51 DEC 28.2549	6 15 44.1	14 16 54	-3.1	6	11	14.72	10.52	-9.2	-23	-0.5	1
1243	S-55.3	51 DEC 28.2819	6 15 42.5	14 16 50	-3.0	6	11	15.10	10.90	-8.5	-23	0.2	1
1243	S-45.2	52 JAN 22.1250	5 56 39.3	13 37 09				15.30	10.70	-5.5	-6		
1244	P-51.2X	51 SEP 30.3340	0 46 46.5	20 13 49	0.3	2	2	15.68C	12.46C	-9.7	-47	-0.1	0
1245	J-43.2	51 APR 7.2611	13 04 39.3	- 3 40 20	0.0	1	0	14.59	10.72C	-7.9	53	-0.3	-1
1245	J-53.1	51 APR 9.2160	13 03 09.4	- 3 29 44	0.1	1	-1	15.00	11.10	-7.7	52	-0.1	-2
1247	U-24.4X	52 FEB 18.2215	9 42 09.2	13 00 06	-1.6	7	8	16.46	11.79	-7.8	41	-0.2	-1
1248	D-15.1	50 OCT 7.2361	0 00 56.8	-15 01 59	-0.7	-4	-4	14.73	11.17	-8.8	-18	-0.9	2
1248	D-26.4	50 OCT 8.1917	0 00 12.0	-15 03 47	-0.7	-4	-4	14.59C	11.02C	-7.8	-26	-0.1	-7
1248	S-62.3	52 JAN 23.1618	6 40 49.0	29 39 38	-0.3	4	0	14.22	10.66	-8.7	32	-0.2	7
1249	N-12.3X	51 JUL 29.1910	19 44 53.6	-15 43 18	-0.7	0	-3	15.51	12.82	-10.6	-16	-0.4	-1
1249	N-13.3	51 JUL 29.2701	19 44 48.1	-15 43 29	-0.8	0	-3	15.68	12.99	-11.4	-17	-1.2	-2
1249	N-23.2X	51 JUL 30.2083	19 43 51.0	-15 44 50	-0.7	0	-3	15.79	13.09	-10.8	-14	-0.7	1
1251	G-64.1	51 FEB 4.2229	7 37 02.4	18 21 55	1.7	0	-3	15.72	11.86	-8.1	45	-0.5	5
1251	V-53.3X	52 MAR 23.3354	13 00 32.7	0 47 19	0.8	-2	-4	15.54	11.38	-7.8	61	-0.4	-2
1254	B-43.1	50 AUG 14.2333	21 33 09.7	- 8 30 19	-1.5	-2	-1	15.97C	11.83C	-9.9	-26	-2.1	-4
1255	F-64.3	50 DEC 13.2819	5 27 55.9	18 20 55	-14.0	18	20	14.88	11.19	-9.0	-41	-0.1	-11
1255	FG-64.3	50 DEC 30.1326	5 13 53.5	17 35 03	-13.4	14	19	15.70	11.76	-7.8	-24	0.1	-3
1256	U-85.6X	52 FEB 26.2799	11 39 56.6	- 3 12 34	0.4	-4	-2	16.47	10.82	-5.6	33	-0.2	1
1257	L-63.3	51 JUN 7.2174	17 10 53.8	-18 08 47	6.3	-5	-3	15.09	12.80	-9.9	25	-0.4	-4
1258	E-82.5	50 NOV 16.2222	4 00 35.7	30 29 56	3.2	4	5	15.88	11.65	-9.3	-31	-0.5	-4
1258	F-12.3	50 DEC 3.1569	3 45 33.5	29 28 16	3.2	6	5	15.74	11.51	-8.4	-43	-0.2	2

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O − C R A	O − C DEC	VAR	MAG	G	10 − DAY MOTION		O − C MOTION	
1258	T-74.4X	52 JAN 29.2465	9 11 26.3	13 35 34	1.0	-7	-7	16.00	11.65	-8.3	10	-0.3	-6
1258	T-84.5X	52 JAN 29.3458	9 11 21.3	13 35 46	1.1	-8	-8	16.35A	12.00A	-8.3	15	-0.3	-1
1259	N-24.3X	51 JUL 30.2181	19 49 21.9	-23 36 01	-5.0	-11	-13	15.72	11.88	-8.2	-28	0.0	0
1266	T-73.1	52 JAN 29.2375	9 12 06.5	20 26 45	3.2	-30	-31	14.86	10.38	-9.6	-2	-0.7	-2
1266	T-83.1	52 JAN 29.3549	9 12 00.4	20 26 42	3.2	-30	-31	14.73	10.25	-9.2	2	-0.3	2
1267	C-24.3	50 SEP 11.2062	22 28 48.7	-16 19 56	0.4	1	3	15.58	13.56	-7.7	-19	0.8	-7
1268	F-62.3	50 DEC 13.2597	5 22 29.4	29 13 48	1.7	2	1	14.78	10.01	-8.0	1	0.0	8
1268	U-33.8	52 FEB 19.2208	10 05 08.2	14 25 39	1.1	-11	-7	14.76C	10.28C	-7.8	30	-0.8	2
1269	K-63.3	51 MAY 5.2208	15 21 24.0	-14 37 47	1.7	-7	-7	14.75	9.67	-6.9	23	-0.5	-2
1270	G-23.5X	51 JAN 5.2889	6 30 35.1	23 41 27	1.5	3	0	15.73	13.59	-12.4	31	-0.4	-9
1270	G-24.7	51 JAN 6.2139	6 29 29.3	23 44 56	1.5	4	0	16.12	13.97	-11.1	36	0.7	-3
1271	K-32.2	51 MAY 2.3042	14 07 54.7	- 3 07 55	4.2	-23	-20	16.33	11.59	-7.0	41	0.0	7
1273	R-53.6X	51 DEC 5.2625	4 37 11.3	28 47 07	8.9	10	4	16.27	13.96	-11.4	-44	0.0	3
1273	R-43.3	51 DEC 22.1340	4 19 42.0	27 21 42	8.3	13	4	16.93C	14.26C	-8.9	-60	-1.0	-5
1274	N-54.2X	51 AUG 3.2910	20 50 54.9	-20 10 45	-0.1	-1	-1	15.40	13.14C	-11.5	-26	-0.3	-7
1275	G-76.2	51 FEB 7.2354	7 59 09.7	2 50 42	-0.3	2	1	15.24	11.72	-8.2	70	-0.7	-4
1275	W-33.1	52 APR 24.1951	13 29 20.5	- 3 18 50	0.7	7	-2	15.97	11.80	-7.6	74	-0.2	1
1277	L-44.1	51 JUN 2.2160	16 47 47.1	-21 24 29	-6.7	1	-3	13.93	12.16	-8.5	57	0.1	-5
1278	I-71.1	51 APR 2.3479	12 26 50.3	15 08 44	-0.3	1	2	15.90	12.10	-10.1	48	-0.6	0
1279	J-65.4	51 APR 8.2729	13 33 12.2	-18 17 26	-7.3	45	46	15.56	13.67	-9.6	15	0.0	7
1280	L-85.5X	51 JUN 9.2986	17 59 29.7	-27 51 08	-1.9	-2	-3	15.61	11.00	-8.3	6	-0.6	-3
1280	M-25.3X	51 JUN 28.2417	17 44 05.9	-27 24 23	-2.0	-1	-3	15.99	11.46	-8.3	15	-0.3	-3
1281	T-75.3X	52 JAN 29.3188	9 07 54.5	5 19 57	0.0	1	0	16.63	12.74	-9.5	31	-0.5	-6
1281	T-85.1X	52 JAN 29.3368	9 07 53.7	5 20 02	0.0	1	0	16.34	12.45	-9.7	41	-0.7	4
1282	T-21.1	52 JAN 25.1896	7 39 36.4	35 14 45	0.6	-2	-4	15.04	11.09	-10.5	-46	0.1	-7
1282	T-22.3	52 JAN 25.1986	7 39 35.9	35 14 36	0.6	-2	-4	15.37	11.42	-10.5	-49	0.1	-10
1282	T-31.1	52 JAN 25.2979	7 39 29.3	35 14 14	0.6	-2	-4	15.01	11.08	-10.6	-33	0.0	6
1282	T-32.1	52 JAN 26.1778	7 38 34.5	35 10 47	0.6	-2	-4	15.01	11.08	-10.5	-33	0.0	7
1284	B-13.2	50 AUG 10.2639	20 34 11.9	-16 27 02	-0.2	0	-1	14.79	11.45	-9.2	1	0.6	-1
1284	S-53.2	52 JAN 22.1611	6 18 53.3	29 02 09	-0.2	1	1	13.89A	11.20A	-7.6	-66	0.4	-1
1286	G-15.6	51 JAN 5.1785	6 12 03.3	10 06 33	-2.2	2	3	15.84	11.42	-7.8	5	0.2	-2
1286	U-64.8X	52 FEB 24.2583	10 55 57.8	- 2 37 53	-0.9	4	4	15.79C	11.46C	-7.8	57	-0.8	2
1286	U-65.3X	52 FEB 24.3403	10 55 53.4	- 2 37 41	-1.0	4	4	16.46C	12.13C	-7.3	55	-0.3	0
1287	G-66.2X	51 JAN 13.3257	7 34 21.6	6 31 44	-0.5	1	1	15.85	12.18	-8.4	19	-0.1	0
1287	W-34.7X	52 APR 24.2042	13 39 45.0	- 8 45 32	-0.2	0	1	15.84	11.93	-7.6	66	-0.6	-4

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
1289	J-54.1	51 APR 9.2757	13 05 55.2	- 6 48 59	-2.2	11	12	14.84	11.46C	-8.1	50	-0.3	-4
1291	G-35.4	51 JAN 8.2028	6 52 41.5	10 43 11	-0.2	0	2	15.70	11.44	-8.2	1	0.3	-6
1291	G-45.1	51 JAN 8.2833	6 52 41.0	10 43 10	-0.2	0	0	15.46C	11.20C	-8.6	0	-0.1	-7
1291	U-85.1	52 FEB 26.2799	11 35 03.9	- 7 12 43	-2.1	11	9	16.10	11.57	-6.3	41	0.1	-3
1292	G-13.2	51 JAN 5.1562	6 03 36.7	23 11 22	-2.4	1	3	15.37	12.49	-10.0	-11	0.1	-3
1292	W-75.5	52 APR 27.3708	14 56 38.6	-19 40 58	-0.3	-2	1			-9.3	40	-0.2	-2
1294	T-22.1	52 JAN 25.1986	7 20 54.9	29 56 16	2.9	2	-2	14.53A	11.63A	-9.4	39	-0.2	4
1294	T-23.1	52 JAN 25.2889	7 20 49.1	29 56 39	2.9	3	-2	14.50	11.59	-10.2	35	-1.0	0
1298	H-64.3X	51 FEB 11.2285	9 59 03.3	8 44 41	0.9	-5	-6	16.58	11.96	-7.5	26	0.3	-3
1298	W-25.3X	52 APR 23.2625	13 19 16.7	-16 40 32	1.3	-8	-7			-7.6	45	-0.3	0
1299	P-24.2X	51 SEP 27.1882	23 44 38.1	- 4 37 18	0.4	2	2	15.92	12.99	-8.1	-87	-0.7	-4
1300	C-56.2	50 SEP 14.2799	23 20 36.4	-20 15 44	-0.8	-4	-5	15.56	11.97	-8.3	-45	0.0	1
1300	S-23.7	51 DEC 27.1736	5 25 04.1	24 06 17	-3.5	-7	-9	15.90	12.42	-10.5	23	-0.8	-2
1304	L-84.1	51 JUN 9.3576	17 49 19.9	-21 20 16	-0.5	0	3	14.17	10.43	-9.3	-64	-0.5	-7
1304	M-14.2	51 JUN 26.2118	17 33 56.9	-22 55 29	-0.5	1	3	13.84C	10.10C	-9.3	-54	-0.5	-1
1305	D-54.1	50 OCT 10.2917	1 10 25.9	4 52 04	-0.7	-4	-5	15.69	11.64C	-7.4	-61	0.4	-19
1305	S-33.11	51 DEC 27.2639	5 58 26.5	25 02 54	-1.3	0	0	15.45	11.43	-10.2	-2	-0.8	-7
1305	S-43.1	51 DEC 27.2910	5 58 24.8	25 02 58	-1.3	0	0	15.50	11.48	-9.7	1	-0.3	-4
1306	K-47.1X	51 MAY 3.2958	14 48 38.5	-32 32 27	13.4	-17	-20	15.39	10.67	-8.1	47	0.0	-5
1306	K-46.4	51 MAY 3.3062	14 48 38.7	-32 32 22	13.4	-17	-20	15.50C	10.78C	-8.2	49	0.0	-3
1306	K-57.1	51 MAY 4.2306	14 47 52.9	-32 28 03	13.5	-18	-19	15.21	10.50	-8.5	41	-0.3	-11
1307	U-64.3	52 FEB 24.2583	10 55 31.8	- 0 30 43	1.4	-9	-8	15.66C	13.45C	-9.4	64	0.1	5
1308	J-34.10	51 APR 4.3174	12 46 34.5	- 8 03 02	0.9	-11	-07	15.61	12.09C	-8.3	38	0.0	3
1308	J-44.2	51 APR 7.2715	12 44 04.9	- 7 52 48	0.8	-12	-7	15.07	11.51	-8.7	31	-0.5	-5
1309	I-74.5	51 APR 2.2736	12 31 16.7	- 7 46 48	3.1	-16	-11	15.14	10.95	-7.5	69	-0.5	-1
1309	J-34.2	51 APR 4.3174	12 29 53.3	- 7 32 01	3.1	-15	-11	15.75	11.61	-6.6	78	0.2	8
1312	U-22.1	52 FEB 18.2035	9 43 06.0	21 38 53	-9.1	1	-1	16.36	12.08	-8.7	93	-0.8	5
1315	B-52.3X	50 AUG 15.2368	21 57 43.5	- 1 14 56	19.9	113	104	15.11	11.03	-7.0	-36	0.2	-1
1321	C-42.4	50 SEP 12.1958	23 12 23.8	3 33 46	7.0	62	62	14.54	11.49	-6.6	20	2.1	40
1321	S-12.3	51 DEC 23.2611	5 07 55.7	34 08 51	11.1	1	-2	15.65	11.24	-10.0	-32	-0.7	4
1323	K-85.2X	51 MAY 8.2826	16 05 18.1	-27 10 15	3.9	-34	-29	15.08	11.29	-10.6	-44	-1.0	0
1323	L-15.3	51 MAY 27.2312	15 45 51.7	-28 17 56	3.8	-33	-29	14.85	11.23	-10.1	-29	0.1	-2
1323	L-25.2	51 MAY 29.2208	15 43 49.2	-28 23 00	3.7	-34	-28	15.14	11.48	-10.8	-16	-0.7	9
1327	X-54.5X	52 MAY 24.2292	16 31 38.9	-23 22 15	-2.8	9	10	16.29	13.23	-10.7	-5	-1.4	1
1329	O-35.4X	51 SEP 1.2687	22 15 13.4	-20 45 30	0.3	-3	1	13.87	11.57				

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
1331	E-44.3	50 NOV 8.1944	2 37 42.3	10 42 07	-9.9	-51	-47	15.29	11.36	-9.8	-28	-1.5	6
1333	H-72.1	51 FEB 12.2125	10 20 28.5	24 04 41	5.4	-3	-13	15.44	12.66	-8.6	105	-0.2	-7
1333	H-61.3	51 MAR 1.2236	10 05 57.8	26 51 08	5.5	2	-12	15.99C	13.05C	-8.4	84	-0.5	7
1333	H-71.1X	51 MAR 1.3611	10 05 50.8	26 52 25	5.3	3	-13	15.67	12.73	-8.8	78	-1.1	1
1334	E-56.1	50 NOV 12.1826	2 54 40.9	- 0 41 24	-0.5	-3	-2	15.42	11.18	-8.8	-24	-0.8	3
1334	T-34.4X	52 JAN 26.1958	7 39 55.9	16 43 17	-2.1	0	0	15.17	11.01	-9.2	56	-0.8	4
1336	H-33.3	51 FEB 9.2097	9 11 52.3	19 17 39	-2.1	9	8	16.11	12.27	-8.6	39	-0.2	-6
1336	H-43.7X	51 FEB 9.3187	9 11 46.6	19 17 59	-2.2	9	9	15.79	11.95	-9.1	44	-0.3	-1
1336	W-73.1	52 APR 27.3889	14 44 11.7	-11 32 53	-1.8	8	9			-7.7	37	0.7	3
1337	V-62.2X	52 MAR 22.3382	13 16 27.5	6 22 55	-1.7	10	3	16.38	12.03	-6.1	89		
1338	R-42.5X	51 NOV 29.3035	4 21 22.3	30 51 27	0.6	-1	1	15.59	13.96	-11.7	-39	-0.1	-10
1340	S-53.6	51 DEC 28.3000	6 27 49.5	23 51 40	2.9	-2	-3	16.65	12.48C	-9.1	2	-0.2	-3
1340	S-54.8X	51 DEC 28.3451	6 27 46.9	23 51 45	2.9	-2	-3	16.55	12.38C	-9.0	8	-0.1	3
1340	S-43.6X	52 JAN 21.1250	6 08 08.3	23 58 24				17.64C	12.86C	-6.4	-11		
1343	H-32.2X	51 FEB 9.1979	9 17 29.1	25 31 41	-4.4	17	22	16.13	12.65	-10.1	33	0.1	-7
1343	H-42.1	51 FEB 10.2069	9 16 27.7	25 35 29	-4.3	16	21	15.80	12.34	-9.8	46	0.4	6
1343	X-84.2X	52 MAY 26.2514	17 14 51.3	-28 42 11	-12.5	24	21			-10.2	-23	-1.8	9
1343	X-85.1	52 MAY 26.2597	17 14 50.8	-28 42 13	-12.6	24	21			-9.2	-33	-0.8	-1
1344	X-44.1	52 MAY 24.1937	15 47 51.8	-20 11 51	-3.0	11	12	15.58	14.04	-11.3	-13	-0.4	-6
1347	N-81.2X	51 AUG 6.3583	22 03 23.9	7 57 18	-3.5	-23	-17	16.39C	12.88C	-7.5	-15	-0.2	-4
1348	F-73.3	50 DEC 14.1937	5 48 04.4	22 50 03	-6.3	4	-9	14.67	12.08	-10.0	33	0.0	4
1348	W-33.9X	52 APR 24.1951	13 43 32.1	- 1 16 32	-13.3	75	88	15.91	12.27	-8.6	29	-0.3	-1
1348	W-42.1	52 APR 24.2944	13 43 27.3	- 1 16 18	-13.3	76	88	16.11	12.47	-8.9	27	-0.6	-3
1349	B-13.5	50 AUG 10.2639	20 28 15.6	-18 46 13	-20.8	-126	-152	15.37C	11.93C	-9.3	1	-0.5	0
1349	B-14.1X	50 AUG 10.2799	20 28 14.9	-18 46 01	-20.8	-126	-152	15.00	11.56	-8.8	7	0.0	6
1350	I-53.1	51 MAR 15.3243	11 42 53.6	4 31 13	1.6	-8	-9			-7.8	68	-0.1	11
1350	I-43.3	51 MAR 31.2236	11 30 54.9	5 56 55	1.6	-8	-9	15.74	11.56	-7.1	50	-0.1	1
1351	P-44.1	51 SEP 30.2215	0 32 26.9	2 37 38	-2.8	-27	-27	14.69C	11.09C	-9.2	-13	-0.9	7
1352	O-33.2X	51 SEP 1.3465	22 11 26.5	- 7 47 00	-1.0	-5	-5	15.54	12.31	-7.8	-59	0.0	-2
1353	I-55.3	51 APR 1.2194	11 44 08.1	- 5 39 04	0.4	-2	-2	15.28	11.05	-6.7	71	-0.1	0
1356	K-62.3	51 MAY 5.2104	15 04 00.9	-12 20 19	1.3	-7	-7	15.40	11.31	-8.5	8	-0.4	-9
1363	C-63.2X	50 SEP 17.2187	0 00 16.9	1 09 53	1.1	6	6	15.92A	12.64A	-7.1	-41	0.5	12
1364	D-56.1	50 OCT 10.3132	1 13 36.9	- 6 23 24	0.7	8	6	15.91	12.02	-9.0	-26	-0.6	-1
1365	K-84.3	51 MAY 8.3583	15 53 02.7	-24 35 47	1.1	1	-1	14.82	13.21	-9.6	46	-0.7	-6
1365	L-14.1	51 MAY 27.2410	15 35 19.7	-22 30 17	0.7	2	-1	14.78	13.35	-9.5	72	-0.7	0

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O − C R A	O − C DEC	VAR	MAG	G	10 − DAY MOTION	10 − DAY MOTION	O − C MOTION	O − C MOTION
1366	P-64.2X	51 OCT 1.3611	1 22 50.6	6 21 52	1.6	14	14	14.91	11.51	-9.0	-10	-0.4	5
1368	K-46.2	51 MAY 3.3062	14 42 42.2	-27 51 11	-9.4	75	67	14.40	11.65C	-12.0	-25	-0.2	2
1368	K-56.2	51 MAY 4.2194	14 41 36.9	-27 53 06	-9.4	72	67	15.15C	12.41C	-11.8	-19	0.1	7
1369	M-31.1	51 JUN 28.2028	18 15 31.6	0 05 55	-1.1	2	-1	15.02C	11.81C	-7.8	-5	-0.3	0
1375	D-25.1	50 OCT 8.1806	0 21 21.3	- 5 20 47	0.1	7	8	15.62	12.90	-9.5	-14	-0.3	17
1375	U-42.7	52 FEB 20.2229	10 26 27.9	20 24 21	-2.7	15	17	15.56C	12.96C	-10.6	50	-0.7	-2
1376	K-73.1	51 MAY 5.3757	15 43 29.5	-13 24 27	-3.4	12	9	15.43	13.53	-9.5	50	-0.8	-2
1378	L-34.1	51 MAY 29.3104	16 20 09.1	-24 24 59	-4.3	12	11	14.70	13.28	-10.2	2	-0.1	6
1379	U-94.8X	52 FEB 26.3701	12 07 33.0	0 03 00	1.4	-4	-3	14.75	11.92	-4.8	110	0.0	-6
1379	U-93.2	52 FEB 26.3792	12 07 32.9	0 03 09	1.4	-4	-3	14.75	11.92	-5.1	110	-0.3	-6
1379	V-13.6	52 MAR 23.1903	11 50 37.6	5 39 39	1.6	-3	-4	14.66	12.18	-8.0	133	-0.9	3
1379	V-23.1	52 MAR 23.2083	11 50 37.1	5 39 57	1.6	-3	-4	14.59	12.12	-7.8	129	-0.7	-1
1381	E-62.3	50 NOV 12.2479	3 28 16.1	26 51 12	-3.8	-11	-12	15.13	13.28	-11.5	-5	-0.8	11
1381	E-72.3	50 NOV 13.2236	3 27 13.9	26 49 30	-3.9	-13	-12	15.02	13.17	-11.3	-27	-0.5	-9
1381	U-94.10X	52 FEB 26.3701	12 02 52.3	- 0 24 04	-2.4	18	19	16.65	12.75	-8.4	40	-0.8	6
1381	V-14.8X	52 MAR 23.1993	11 39 53.3	1 26 19	-2.6	19	21	16.16	12.56	-9.3	48	-0.2	4
1382	W-64.11	52 APR 27.2167	14 48 41.7	-18 45 07	-1.6	7	7	14.71	13.38	-10.0	35	-0.6	6
1382	W-65.3	52 APR 27.2257	14 48 41.1	-18 45 05	-1.6	7	7	14.57C	13.24C	-10.1	28	-0.7	-1
1382	W-75.2	52 APR 27.3708	14 48 32.5	-18 44 38	-1.7	7	7			-10.0	30	-0.6	1
1382	W-74.10X	52 APR 27.3799	14 48 31.9	-18 44 36	-1.7	7	7						
1383	S-33.5	51 DEC 27.2639	5 41 28.3	23 21 33	-13.8	-4	-11	16.53	12.83	-9.1	-4	0.1	-3
1385	E-75.1	50 NOV 13.2965	3 47 38.0	9 46 19	4.4	22	20	14.90C	11.94C	-9.3	-2	-0.3	18
1385	U-52.6	52 FEB 24.2222	10 42 41.9	15 28 23				15.74	12.03	-8.6	69	-0.3	3
1389	E-84.4	50 NOV 16.2444	4 01 23.9	17 49 03	-0.4	0	-1	16.22	12.63	-8.9	-36	-0.3	-7
1389	U-54.10X	52 FEB 20.2410	10 33 29.5	7 56 42	-3.6	23	19	16.11	12.67	-7.9	54	-0.1	1
1390	I-51.2	51 MAR 15.3833	11 46 19.6	21 19 40	0.8	-9	-9			-9.1	13	-0.7	-2
1390	I-41.1	51 MAR 31.2014	11 33 24.4	21 23 37	0.8	-8	-9	14.74	9.67	-7.8	-10	-0.2	0
1390	I-51.1	51 MAR 31.3514	11 33 18.4	21 23 26	0.7	-9	-8	15.32C	10.24C	-7.6	-6	0.0	4
1393	J-83.2	51 APR 10.3958	14 18 49.2	- 8 33 02	-0.6	-3	4	15.75	13.64	-9.2	19	-1.0	0
1393	K-23.3	51 APR 28.2042	14 01 59.4	- 7 57 24	-0.9	-1	6	15.06	13.02	-9.9	18	-0.3	4
1394	K-73.7	51 MAY 5.3757	15 33 54.6	-15 28 45	1.4	-4	-4	15.47	12.94	-9.8	38	-1.1	-6
1396	E-23.1	50 NOV 5.1569	1 57 10.7	16 48 59	1.2	9	7	15.84	13.07	-10.2	-54	0.3	-12
1396	T-93.4X	52 FEB 1.2583	9 46 01.2	18 46 19	0.3	-3	-2	15.52	12.77	-10.8	39	-0.3	-5
1396	U-13.10X	52 FEB 17.2069	9 28 06.1	19 50 58	0.3	-3	-2	15.89		-11.5	36	-0.1	2
1397	E-74.2	50 NOV 13.2861	3 30 25.5	16 45 35	-1.0	-4	-5	16.36	12.63	-9.0	-22	0.7	4

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.			R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
1397	T-33.5X	52	JAN	26.1868	7 47 04.7	24 23 49	-1.7	2	4	17.30	12.88	-10.2	29	-0.8	1
1398	J-56.1X	51	APR	8.2833	13 21 58.9	-26 23 50	-0.4	0	2	16.39	11.61	-7.9	42	0.0	11
1398	J-67.2	51	APR	8.3028	13 21 58.1	-26 23 41	-0.5	0	2	15.89	11.11	-8.7	24	-0.8	-7
1407	G-24.1	51	JAN	6.2139	6 21 48.7	21 51 33	9.4	-17	-22	14.91	12.29	-10.7	-15	-1.2	7
1409	K-43.3	51	MAY	3.2125	14 33 56.3	- 7 46 07	-0.1	1	0	15.13	11.63	-8.0	52	0.3	-5
1410	B-42.3	50	AUG	14.2194	21 36 42.8	- 6 11 37	5.5	13	15	16.07C	12.35C	-8.7	-62	-1.4	2
1410	R-56.3	51	DEC	4.2285	4 39 13.1	6 14 22	2.1	3	3	15.77	12.33	-8.3	-31	0.0	-10
1410	R-46.5X	51	DEC	22.1611	4 25 15.3	6 01 44	1.9	4	3	16.08	12.43	-6.9	8	-0.5	0
1411	C-41.1	50	SEP	12.1840	23 16 17.6	7 39 16	0.2	5	1	15.45	11.81	-9.3	-29	-1.4	6
1411	S-33.7	51	DEC	27.2639	5 47 10.6	26 41 46	-3.5	2	7	15.81	12.09	-9.7	-21	-0.3	6
1413	R-46.4X	51	DEC	4.2104	4 26 43.1	7 11 02	2.1	2	2	16.19	12.44	-8.5	-24	-0.3	3
1413	R-46.4	51	DEC	4.2104	4 26 43.1	7 11 02	2.1	2	2	16.19	12.41	-8.5	-24	-0.3	3
1413	R-46.1	51	DEC	22.1611	4 13 07.9	6 45 40	2.3	4	3	16.49	12.51	-6.4	0	0.1	1
1415	M-84.3	51	JUL	6.2757	19 58 54.7	-24 41 32	5.6	19	20	16.01	13.80	-10.8	-17	-0.2	-1
1416	B-45.6	50	AUG	14.2625	21 29 51.9	-24 02 47	3.3	22	23	15.47C	11.53C	-8.9	-7	0.3	7
1417	V-22.3X	52	MAR	22.2104	12 14 18.7	12 01 54	-1.4	10	9	15.97	12.20	-7.9	57	-0.2	5
1417	V-32.2	52	MAR	22.2285	12 14 18.0	12 02 02	-1.4	10	9	16.11	12.34	-8.2	48	-0.5	-4
1418	D-23.3	50	OCT	8.1556	0 22 48.7	7 01 41	2.2	22	19	14.67	13.45	-11.9	-10	-1.5	-2
1418	D-33.3	50	OCT	8.3042	0 22 39.5	7 01 29	2.3	21	20	14.47	13.26	-11.1	-4	-0.7	4
1418	T-92.2X	52	JAN	31.3493	9 38 57.8	21 31 20	0.9	-7	-6	16.30	12.97	-11.7	38	-0.7	-1
1418	U-13.8X	52	FEB	17.2069	9 19 45.6	22 26 59	0.9	-6	-6	16.25	12.86	-11.9	30	-0.8	7
1419	E-24.2	50	NOV	5.1687	2 10 06.9	12 09 58	0.0	-4	0	14.31C	12.65C	-10.1	-99	-1.1	-10
1419	E-34.6	50	NOV	7.2632	2 08 15.9	11 51 21	0.2	-3	1	14.30C	12.59C	-9.3	-75	-0.6	13
1419	W-54.9	52	APR	26.2056	14 14 51.8	-13 07 08	-0.7	6	2	14.88	12.34C	-9.8	71	-0.2	-5
1421	U-41.2	52	FEB	20.2139	10 22 00.1	25 29 09	1.5	-9	-9	15.35C	11.47C	-9.7	38	-0.9	-1
1421	U-42.5	52	FEB	20.2229	10 21 59.7	25 29 11	1.5	-9	-9	15.29	11.41	-9.0	34	-0.2	-5
1423	B-24.5	50	AUG	11.2507	20 53 30.8	-22 06 28	-1.2	-5	-4	15.94	12.52	-8.6	-41	-0.1	-8
1423	R-33.3	51	NOV	29.1771	4 05 07.9	21 17 36	2.4	10	8	15.11	12.03C	-10.3	-14	-1.0	1
1424	N-56.1	51	AUG	5.2236	20 49 39.4	-31 57 24	-3.1	-11	-11	14.64	10.57	-8.6	-29	0.1	1
1427	N-46.1	51	AUG	3.2326	20 33 38.3	-31 58 12	-18.5	-33	-48	14.00	11.82	-9.2	-64	-0.9	4
1428	M-53.5	51	JUN	30.3271	18 58 04.9	-15 43 15	2.1	-14	-6	14.75	11.42	-8.6	-71	0.3	-2
1432	K-21.1	51	APR	28.1847	13 41 50.7	3 24 49	-0.5	3	3	16.76C	13.31C	-9.0	47	0.2	2
1434	H-24.1	51	FEB	8.2035	8 51 40.9	12 16 34	-0.3	8	0	15.59	11.39	-8.4	65	-0.4	5
1434	H-25.4X	51	FEB	8.2667	8 51 37.6	12 16 56	-0.4	8	1	15.61	11.41	-7.6	58	0.4	-2
1434	H-34.2	51	FEB	9.2208	8 50 53.5	12 22 39	-0.3	9	0	15.74C	11.52C	-8.2	64	-0.2	4

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O – C R A	O – C DEC	VAR	MAG	G	10 – DAY MOTION		O – C MOTION	
1434	W-52.3	52 APR 26.2868	14 12 19.1	1 32 03	3.8	-18	-9	15.39	11.45	-7.5	48	-0.3	-7
1436	N-51.2	51 AUG 3.3201	20 44 54.9	- 1 04 35	-13.1	-86	-88	15.74	11.79	-8.1	2	-0.1	5
1447	K-74.2X	51 MAY 5.3660	15 44 09.4	-22 09 59	-0.3	1	1	15.44C	12.20C	-10.5	0	-1.2	-8
1450	J-53.2X	51 APR 9.2160	13 09 28.7	- 0 15 28	-0.6	5	3	15.80	12.55	-8.3	45	0.7	1
1453	I-52.3	51 MAR 15.3375	11 53 21.5	13 55 35	-2.1	28	32			-19.0	-71	-0.6	3
1453	I-43.1	51 MAR 31.2236	11 24 33.3	11 21 37	-2.1	27	30	14.90C	13.40C	-16.7	-105	-0.2	7
1458	D-65.2	50 OCT 12.2667	1 36 44.5	2 44 20	-8.3	-29	-22	15.61	12.44	-8.3	-101	-0.3	-6
1461	M-33.4X	51 JUN 28.2222	18 09 22.9	-18 42 47	-1.5	2	5			-9.0	-38	-0.6	2
1464	G-62.1	51 JAN 13.2271	7 45 13.9	28 59 37	-2.6	1	1	15.92	12.34	-9.5	53	-0.1	-6
1464	G-52.2	51 FEB 4.1056	7 25 41.7	30 38 15	-2.6	-2	1	15.81C	11.95C	-7.9	34	-0.3	2
1464	W-52.1	52 APR 26.2868	14 04 40.1	2 56 17	-1.5	13	11	16.02	12.14	-8.4	15	-0.2	-2
1464	W-51.1	52 APR 26.2958	14 04 39.8	2 56 15	-1.5	13	11	16.22	12.34	-9.4	16	-1.2	-1
1467	O-61.1	51 SEP 3.3222	23 16 03.3	8 20 51	-1.4	-20	-19	13.63	9.49	-9.5	13	-0.5	-3
1468	M-85.1	51 JUL 5.2833	20 10 13.2	-28 38 39	-11.5	-62	-74	15.35	14.84	-8.9	69	-1.5	-2
1468	N-14.5	51 JUL 29.2104	19 45 24.6	-24 55 51	-12.4	-61	-79	14.77	14.42	-11.1	124	-0.5	12
1468	N-24.1	51 JUL 30.2181	19 44 21.9	-24 44 02	-12.4	-60	-79	14.77	14.39	-11.4	113	-0.9	0
1469	E-86.2	50 NOV 16.2660	3 53 13.5	5 15 05	-5.9	-5	-5	14.82	10.95	-7.6	-52	0.1	6
1469	F-16.2	50 DEC 10.1597	3 35 36.7	3 38 18	-5.9	-6	-5	15.03	10.93	-6.1	-25	0.3	-3
1469	T-86.1X	52 JAN 29.3278	9 30 54.1	- 0 41 48	-5.4	18	13	15.13	10.75	-7.0	40	-0.2	-1
1469	T-96.1	52 FEB 1.2854	9 28 48.4	- 0 28 44	-5.4	17	13	14.61	10.26	-7.7	45	-0.6	-1
1469	U-16.1	52 FEB 17.2340	9 17 08.6	1 03 25	-5.4	18	13	15.11	10.83	-7.6	63	-0.5	-3
1472	N-55.1X	51 AUG 5.2139	20 58 50.6	-27 12 15	-3.5	-13	-15	14.95	13.68	-11.0	-53	-1.0	-7
1479	G-51.3	51 JAN 12.1868	7 26 27.1	35 26 14	-8.1	16	23	14.31	12.18	-11.9	24	-1.2	5
1479	G-52.2	51 JAN 12.1972	7 26 26.5	35 26 17	-8.1	16	23	14.53A	12.40A	-11.4	14	-0.7	-5
1480	H-62.2	51 FEB 11.2069	10 04 09.3	22 04 38	-5.7	31	32	15.90C	14.43C	-9.8	72	0.3	5
1482	D-64.4	50 OCT 12.2562	1 47 38.9	7 34 15	-1.4	-8	-9	15.86C	12.19C	-9.4	-41	-1.4	-1
1482	D-74.2X	50 OCT 13.2194	1 46 52.5	7 30 09	-1.3	-8	-8	15.67	11.99	-8.7	-37	-0.6	3
1482	E-14.2X	50 NOV 2.1882	1 30 35.9	6 13 22	-1.3	-9	-8	15.67	11.87	-7.9	-37	-0.3	-5
1482	E-15.5X	50 NOV 4.1757	1 29 07.5	6 07 11	-1.3	-8	-8	15.69	11.84	-7.1	-36	-0.7	-10
1483	G-23.2	51 JAN 5.2889	6 31 13.0	26 45 43	0.3	1	0	15.26	12.62	-10.9	18	-0.7	-8
1483	X-64.4	52 MAY 25.2278	16 35 55.0	-21 27 36	-5.8	16	17	15.33	12.29	-10.4	5	-0.7	5
1484	G-61.1	51 FEB 5.1208	7 43 03.5	41 45 02	1.3	3	0			-10.2	37	-0.1	2
1486	N-74.5X	51 AUG 6.2479	21 41 35.3	-13 53 59	0.5	3	3	15.86	14.52	-9.3	-40	-0.6	4
1487	H-63.6X	51 FEB 11.2181	10 08 51.2	14 27 09	1.1	-4	-5	14.48C	10.89C	-8.3	37	-0.6	-13
1487	H-73.3X	51 FEB 12.2229	10 08 05.5	14 32 04	1.1	-4	-5	15.54	11.98	-7.3	53	0.5	3

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
1487	H-63.3	51 MAR 1.2479	9 54 40.4	15 52 35	1.1	-2	-5	15.66C	11.93C	-8.3	47	-0.9	6
1490	P-51.1	51 SEP 30.3340	1 01 00.4	24 28 36	-4.5	-18	-15	15.22C	13.23C	-9.2	-64	-1.2	-6
1492	K-72.1	51 MAY 5.3861	15 47 34.0	- 7 10 08	5.5	-21	-20	15.47	13.97	-9.0	35	-0.5	-9
1492	L-12.1	51 MAY 27.2611	15 27 14.1	- 6 11 34	5.3	-20	-20	16.08	14.56	-9.3	-3	-0.8	-5
1493	U-94.9X	52 FEB 26.3701	11 57 39.2	- 1 15 17	1.4	-10	-10	16.40A	12.52A	-7.7	41	-0.1	3
1493	V-14.4X	52 MAR 23.1993	11 34 46.7	0 50 23	1.3	-10	-10	15.59	11.96	-9.3	50	-0.2	-1
1494	P-44.3	51 SEP 30.2215	0 40 32.3	4 58 28	-2.9	-17	-16	15.33C	14.20C	-9.2	-77	-0.7	-1
1496	O-62.4X	51 SEP 3.3132	23 26 45.3	0 46 08	-9.2	-61	-62	14.90C	13.33C	-9.6	-31	-0.6	9
1496	O-73.3	51 SEP 3.3319	23 26 44.7	0 45 59	-9.3	-61	-62	15.25C	13.70C	-9.7	-32	-0.7	8
1499	P-51.3X	51 SEP 30.3340	0 55 21.7	21 55 39	-10.6	-36	-29	15.42C	12.56C	-8.4	-71	-0.7	3
1501	C-34.4	50 SEP 11.3076	22 53 47.7	-15 34 17	-2.4	-18	-19	15.40	13.56	-11.0	-12	-1.3	-5
1501	C-35.1X	50 SEP 12.1701	22 52 57.1	-15 34 53	-2.3	-18	-18	15.33	13.48	-11.1	-4	-1.4	1
1503	D-41.5	50 OCT 9.2660	0 49 31.0	24 00 47	-0.9	-4	-7	15.53	12.01	-10.0	-29	0.1	0
1503	U-34.2	52 FEB 19.2299	9 55 56.9	7 55 37	-1.7	12	16	13.85	11.41	-11.3	-5	-0.5	2
1505	W-66.1	52 APR 27.2347	14 42 54.7	-27 42 53	-25.3	20	10	14.98	12.49	-9.1	94	-1.4	6
1505	W-76.1	52 APR 27.3167	14 42 50.9	-27 42 06	-25.3	21	10			-8.6	101	-0.9	13
1506	I-56.1	51 APR 1.2299	11 32 45.7	-15 03 49	6.2	-33	-26	16.24	13.14	-8.5	101	-0.5	2
1510	D-41.6	50 OCT 9.2660	0 55 49.2	20 42 39	2.5	25	21	16.10	12.51	-9.9	-26	0.0	0
1510	U-44.9	52 FEB 19.3210	10 30 36.1	8 44 00	-11.3	106	114	14.62	12.33	-11.2	-13	-1.0	-3
1510	U-54.9X	52 FEB 20.2410	10 29 37.3	8 43 04	-11.3	106	114	14.78C	12.56C	-11.9	-6	-1.6	3
1512	R-62.6X	51 DEC 5.2896	4 58 16.4	30 19 02	8.1	24	17	16.40	10.40	-7.4	1	-0.1	8
1512	R-52.8	51 DEC 22.2424	4 45 55.5	30 02 03	7.8	25	16	16.82C	10.68C	-7.5	-27	-0.9	-12
1516	J-61.1	51 APR 8.3556	13 27 19.1	7 23 48	-7.6	43	40	15.62	13.44	-8.2	72	-0.8	-1
1516	J-62.7	51 APR 8.3889	13 27 17.7	7 24 01	-7.6	44	40	15.32C	13.18C	-8.0	67	-0.6	-5
1516	J-52.7X	51 APR 9.2062	13 26 40.6	7 29 43	-7.5	42	39	14.93C	12.79C	-9.2	72	-1.7	1
1518	O-55.4X	51 SEP 2.2340	22 52 30.5	-17 33 43	-0.7	-3	-5	15.50	13.47	-11.5	-36	-0.7	1
1520	W-26.3X	52 APR 23.2535	13 27 00.5	-25 18 29	0.1	-4	0	15.99	11.40	-7.3	73	0.0	5
1520	W-36.5X	52 APR 23.2806	13 26 59.6	-25 18 18	0.1	-4	0	16.08C	11.49C	-7.7	65	-0.4	-3
1523	R-32.1	51 NOV 29.2764	3 48 43.1	29 24 09	-4.1	-8	-11	15.76	13.31	-12.3	-39	-0.3	-1
1524	D-51.6X	50 OCT 10.2146	1 26 25.5	21 24 34	-1.2	-10	-11	15.64	11.94	-9.8	0	-0.8	3
1524	D-62.5	50 OCT 12.1750	1 24 37.8	21 23 24	-1.2	-11	-11	15.59	11.96	-9.1	-12	0.0	-5
1524	T-21.2X	52 JAN 25.1896	7 32 44.6	36 36 38	6.2	-23	-25	16.09	11.59	-10.2	-11	-0.6	4
1532	H-53.5	51 FEB 10.2931	9 43 05.6	16 00 04	1.4	-15	-11	15.44	11.99	-9.1	15	0.1	-3
1532	X-16.1	52 MAY 20.1854	14 56 53.9	-30 14 59	16.3	-76	-69	15.91	11.75	-7.9	58	0.0	19
1534	Q-54.5X	51 NOV 3.2083	2 42 32.3	8 50 13	1.9	22	14	15.45	13.20	-10.1	0	0.1	-2

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O − C R A	O − C DEC	VAR	MAG	G	10 − DAY MOTION		O − C MOTION	
1534	Q-55.5X	51 NOV 3.2174	2 42 32.0	8 50 08	1.9	22	14	15.06	12.81	-10.9	4	-0.7	2
1534	Q-65.1	51 NOV 3.2986	2 42 27.3	8 50 09	2.0	22	14	15.07	12.82	-10.8	-13	-0.6	-15
1539	P-74.2X	51 OCT 2.2597	1 41 52.1	8 05 57	11.7	65	66	15.33	12.20	-6.9	-46	-0.3	0
1539	Q-14.1X	51 OCT 24.1937	1 26 05.8	6 22 02	11.7	66	66	15.12C	12.21C	-7.6	-40	-0.6	5
1541	C-54.2X	50 SEP 14.2576	23 25 57.3	- 5 24 17	3.8	25	17	15.50	11.99C	-9.6	-27	-1.2	11
1541	R-53.3	51 DEC 22.2333	4 41 38.4	29 29 46	-1.9	-1	-2	16.29	12.56	-9.5	-22	-0.2	0
1541	R-52.5	51 DEC 22.2424	4 41 38.4	29 29 46	-1.9	-2	-2	16.33	12.60	-10.1	-22	-0.8	0
1542	L-83.2	51 JUN 8.3243	17 59 29.0	-20 15 33	0.7	1	0	15.72C	11.51C	-7.3	10	0.4	2
1542	L-84.3	51 JUN 9.3576	17 58 40.4	-20 15 12	0.5	1	0	15.76	11.56	-8.4	6	-0.6	-2
1542	M-14.3	51 JUN 26.2118	17 44 40.7	-20 03 23	0.5	1	0	15.44C	11.33C	-8.4	4	-0.1	-2
1544	L-64.5	51 JUN 7.2278	17 29 31.9	-25 09 58	0.9	-1	-1	15.73	12.68	-11.2	-11	-0.7	-5
1544	L-74.1	51 JUN 8.2375	17 28 27.1	-25 10 36	1.0	-2	-1	15.81C	12.80C	-11.2	-7	-0.6	-2
1544	L-75.3X	51 JUN 8.2472	17 28 26.5	-25 10 37	1.0	-2	-1	16.01C	13.00C	-10.6	-4	0.0	1
1545	U-53.5	52 FEB 24.2312	10 50 54.9	13 09 20	-8.7	56	57	14.53	12.65	-8.6	44	-0.5	-3
1545	U-62.1	52 FEB 24.2403	10 50 54.4	13 09 24	-8.7	56	57	14.56	12.68	-8.7	53	-0.6	6
1551	R-44.9	51 NOV 29.2854	4 28 25.2	17 36 55	4.4	14	13	16.05	13.56	-11.1	-11	-0.3	0
1551	R-44.2	51 DEC 22.1431	4 06 02.2	17 24 47	4.0	15	12	16.60	13.65	-8.3	6	-0.8	7
1554	X-52.5X	52 MAY 24.3146	16 17 11.7	-12 20 13	2.2	2	1	15.85	12.63	-9.8	71	-0.8	2
1555	E-22.1	50 NOV 5.1451	2 06 05.7	25 12 02	-7.5	-36	-31	14.24	12.48	-8.1	-59	0.7	-13
1555	E-32.1	50 NOV 7.1986	2 04 20.9	25 01 50	-7.5	-35	-31	14.55	12.80	-8.3	-71	0.3	-22
1557	C-54.3	50 SEP 14.2576	23 23 17.3	- 5 38 28	1.5	28	15	15.65	12.17C	-8.9	-38	-0.1	-26
1557	S-41.2	51 DEC 27.3090	6 03 43.8	38 35 26	-1.4	0	1	16.41	12.42	-11.7	-8	-1.1	0
1558	O-85.2	51 SEP 5.3201	23 55 07.3	-14 53 51	2.0	8	10	15.67C	11.49C	-7.2	-65	-0.8	3
1558	P-15.3X	51 SEP 26.1917	23 40 40.9	-16 57 39	1.9	6	9	15.90	11.70	-7.9	-47	-1.0	-1
1558	P-26.1X	51 SEP 27.2604	23 39 57.0	-17 02 33	1.9	6	9	15.17	10.95	-6.9	-45	-0.1	-1
1560	S-53.8	51 DEC 28.3000	6 29 00.9	25 48 56	-0.1	1	0	15.31	12.82C	-11.3	-19	-0.4	3
1560	S-43.3	52 JAN 21.1250	6 06 38.7	24 45 10				15.78	12.72	-7.4	-33		
1567	F-42.3	50 DEC 12.1687	4 43 05.4	32 35 25	-1.8	-7	-10	15.00C	10.65C	-10.2	19	-0.2	1
1569	W-21.1X	52 APR 23.1632	13 11 04.3	10 39 21	-0.5	4	3	16.89	13.22	-6.2	14	0.7	-6
1570	K-34.3	51 MAY 2.2833	14 18 12.6	-12 25 39	-1.7	19	8	16.32	12.50	-8.8	31	-0.8	-13
1572	U-73.8	52 FEB 26.2618	11 28 33.3	10 35 47	-0.1	2	1	16.14	11.13	-7.6	25	0.0	5
1578	F-63.5	50 DEC 13.2701	5 31 52.2	23 28 50				15.14	11.35C	-7.9	-9		
1578	U-63.9X	52 FEB 24.2493	10 59 04.0	7 43 06	-6.2	39	40	16.34	11.55	-6.9	42	-0.5	2
1583	D-41.4	50 OCT 9.2660	0 57 04.7	20 50 13				16.29	9.80	-5.5	-62		
1589	C-55.3	50 SEP 14.2687	23 26 51.9	-13 48 57				15.28	13.11	-9.1	-55		

1958ApJS....3..289K

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
1589	T-92.1	52 JAN 31.3493	9 33 04.2	21 01 04	-1.1	6	4	16.24	13.33	-10.1	71	-0.5	5
1589	U-12.2	52 FEB 17.1979	9 16 10.2	22 40 54	-1.2	4	5	16.22	13.19	-10.3	51	-0.6	1
1589	U-13.7X	52 FEB 17.2069	9 16 09.8	22 41 08	-1.2	4	5	16.13	13.10	-9.9	47	-0.2	-3
1590	D-12.5	50 OCT 7.1604	0 00 10.7	5 32 00	2.3	11	12	15.36	13.22	-8.4	-75	-0.2	8
1590	T-45.5	52 JAN 28.1903	8 00 07.7	13 34 51	-2.0	7	7	15.62	12.62	-11.4	33	-0.6	1
1591	L-41.3	51 JUN 2.3056	16 37 06.8	- 2 56 24				14.68C	12.98C	-13.9	-162		
1592	L-41.4	51 JUN 2.3056	16 38 58.2	- 5 44 42				14.47	12.72	-9.2	-61		
1593	L-41.2	51 JUN 2.3056	16 32 03.2	- 3 48 31				15.53	14.57	-10.2	-35		
1599	E-34.4	50 NOV 7.2632	2 15 52.5	12 44 52				15.45	12.13	-8.4	-19		
1599	T-82.3	52 JAN 31.3306	9 17 56.1	25 03 13	-0.2	1	1	16.16	12.02	-8.8	47	-0.2	7
1601	X-14.6	52 MAY 20.2458	15 11 32.1	-14 14 21	0.0	1	0	15.23	13.67	-10.3	6	0.0	5
1601	X-23.2	52 MAY 22.2729	15 09 28.9	-14 14 19	0.0	1	0	15.46A	13.84A	-10.1	0	-0.1	0
1603	H-83.5	51 MAR 6.1937	10 50 50.9	14 27 05				15.76	12.10	-8.4	66		
1603	X-42.2X	52 MAY 24.2979	16 10 02.5	- 8 49 18	-1.8	9	6	15.83C	11.99C	-9.1	24	-0.5	8
1603	X-52.1	52 MAY 24.3146	16 10 02.1	- 8 49 17	-1.8	9	6	15.78	11.94	-8.8	18	-0.2	2
1604	G-63.11	51 JAN 13.2375	7 53 15.5	24 34 32				15.76	11.67				
1604	U-95.5X	52 FEB 26.3611	12 10 39.4	-11 42 51	-2.4	12	20	16.41	11.80	-6.3	10		
1604	V-16.3X	52 MAR 24.1965	11 50 34.5	-10 42 29	-2.5	15	21	16.05	11.77	-8.3	31	-0.3	-6
1604	V-25.2X	52 MAR 24.2056	11 50 34.1	-10 42 28	-2.5	15	21	15.70	11.42	-7.8	33	0.2	-4
1605	H-64.1	51 FEB 11.2285	9 53 26.5	4 47 44				15.29C	11.61C	-7.0	65		
1605	H-65.1	51 FEB 11.2903	9 53 23.7	4 48 09				14.70	11.02	-8.5	67		
1605	X-21.4X	52 MAY 20.2819	15 20 15.1	- 4 53 29	-0.5	12	1	15.42	11.14	-7.0	35	0.4	-1
1606	B-41.2	50 AUG 13.2819	21 47 46.5	- 0 12 29				13.82A	12.70A	-5.6	-63		
1606	B-52.1	50 AUG 15.2368	21 46 46.9	- 0 26 44				13.97	12.90	-5.2	-75		
1607	B-74.5	50 AUG 19.3403	22 41 11.2	-17 48 54				14.26C	13.47C	-5.0	-116		
1607	B-75.1	50 AUG 19.3514	22 41 10.8	-17 49 05				13.70	12.91	-7.9	-129		
1607	C-25.1	50 SEP 11.2181	22 30 12.9	-22 08 52				13.81	12.82	-5.6	-82		
1607	T-93.5X	52 FEB 1.2583	9 37 52.0	17 32 42	0.3	0	-1	16.63	12.63	-9.7	70	-0.5	1
1607	U-13.12X	52 FEB 17.2069	9 22 54.1	19 16 59	0.2	0	-1	16.49	12.47	-9.3	63	-0.3	4
1608	O-64.1	51 SEP 3.2285	23 04 41.5	- 8 20 39				14.63	13.66	-10.6	-22		
1609	M-84.1	51 JUL 6.2757	19 52 45.1	-23 45 07				13.90	12.06	-8.5	-166		
1609	N-15.2	51 JUL 29.2201	19 32 25.3	-29 56 39				13.56	11.62	-9.4	-151		
1613	C-62.3	50 SEP 17.2076	23 56 39.5	8 22 09				15.73	12.94	-9.0	-21		
1613	C-52.3	50 OCT 6.1847	23 38 52.5	7 23 28				15.59	12.74	-9.2	-31		
1614	G-36.1	51 JAN 6.2028	6 44 30.3	4 23 48				14.99	11.33	-8.6	40		

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O – C R A	O – C DEC	VAR	MAG	G	10 – DAY MOTION	O – C MOTION
1614	W-32.3X	52 APR 24.1861	13 32 12.3	5 46 38				15.57	11.76	-6.8	61
1950PZ	B-33.3	50 AUG 13.2556	21 15 37.5	-14 54 35				15.65A		-7.7	-39
1950PZ	B-34.1X	50 AUG 13.2694	21 15 36.9	-14 54 42				15.50A		-7.8	-42
1950QA1	B-54.5	50 AUG 18.2229	21 52 57.8	-16 42 00				15.36		-10.0	-29
1950QB1	B-63.1	50 AUG 18.3243	22 20 29.3	- 7 59 16				15.52		-8.2	-97
1950QB1	C-13.4	50 SEP 9.2514	22 06 21.8	-11 05 32				15.46		-7.1	-83
1950QB1	C-14.4X	50 SEP 9.2965	22 06 20.3	-11 05 56				16.06		-6.9	-73
1950QC1	B-63.2	50 AUG 18.3243	22 26 00.9	-11 14 10				15.59C		-5.4	-15
1950QC1	B-64.1	50 AUG 18.3389	22 26 00.3	-11 14 19				15.50C		-5.4	-18
1950QC1	B-73.4	50 AUG 19.3264	22 25 25.9	-11 16 51				14.82C		-4.6	-37
1950QC1	B-74.1	50 AUG 19.3403	22 25 25.5	-11 17 00				15.18C		-7.9	-30
1950QC1	C-14.6	50 SEP 9.2965	22 12 57.5	-12 13 12				15.19		-5.7	-24
1950QD1	B-72.1	50 AUG 19.2722	22 39 20.7	- 0 30 31				15.29A		-9.9	35
1950QD1	C-12.5	50 SEP 9.2396	22 17 44.1	0 25 27				15.42		-10.0	18
1950QE1	B-74.2	50 AUG 19.3403	22 31 56.6	-14 25 46				15.50C		-10.1	-22
1950QE1	C-14.5	50 SEP 9.2965	22 11 49.8	-14 44 21				15.75		-10.0	11
1950QF1	B-62.3	50 AUG 18.3111	22 19 31.5	- 1 14 59				15.84		-6.2	-67
1950QF1	C-12.4	50 SEP 9.2396	22 08 19.9	- 4 16 03				15.48		-4.8	-79
1950QF1	C-13.5X	50 SEP 9.2514	22 08 19.6	- 4 16 12				15.64		-4.7	-89
1950QG1	B-72.4	50 AUG 19.2722	22 32 01.5	- 0 25 39				14.91		-10.5	25
1950QG1	C-12.1	50 SEP 9.2396	22 10 37.7	0 11 53				15.64		-9.4	7
1950RF	C-32.1	50 SEP 11.2861	22 56 27.7	1 40 42				15.94C		-8.2	-62
1950RJ	C-55.2X	50 SEP 14.2687	23 27 06.2	-12 19 23				15.69	14.02	-9.5	-71
1950RZ	C-23.1	50 SEP 11.1944	22 35 40.1	- 6 10 39				15.23		-7.7	-63
1950RA1	C-23.3	50 SEP 11.1944	22 38 57.5	-10 50 47				15.26		-7.1	-73
1950RA1	C-24.4X	50 SEP 11.2062	22 38 57.3	-10 50 52				15.37		-6.5	-64
1950RB1	C-33.1X	50 SEP 11.2965	22 49 10.3	- 4 01 12				15.29		-8.1	-7
1950RC1	C-42.5X	50 SEP 12.1958	23 23 34.1	2 01 18				15.83		-7.0	-100
1950RC1	C-52.2	50 SEP 12.2986	23 23 29.9	2 00 23				15.70		-7.4	-98
1950RC1	C-53.4	50 SEP 14.2910	23 22 10.7	1 41 34				15.47A		-6.9	-95
1950RD1	C-45.1	50 SEP 12.2757	23 12 33.1	-18 01 14				15.29		-7.4	-66
1950RE1	C-53.1	50 SEP 14.2910	23 39 19.0	- 0 54 14				15.53A		-8.1	-58
1950SL	D-31.2	50 OCT 8.2819	0 46 04.6	22 31 44				15.66C	12.72C	-10.3	-18
1950SL	D-41.2	50 OCT 9.2660	0 45 04.7	22 29 26				15.91		-10.0	-44
1950SS	C-63.1	50 SEP 17.2187	23 47 20.3	2 48 07				14.55		-7.3	-81

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O – C R A	O – C DEC	VAR	MAG	G	10 – DAY MOTION		O – C MOTION
1950SS	C-53.4X	50 OCT 6.1958	23 34 29.5	- 0 00 16				15.35A		-6.2	-74	
1950ST	C-63.3	50 SEP 17.2187	23 39 27.7	0 34 09				15.19A		-9.0	-29	
1950ST	C-53.6	50 OCT 6.1958	23 23 53.3	- 0 00 13				15.43		-8.5	-10	
1950SU	C-63.4	50 SEP 17.2187	23 55 57.7	0 12 26				16.29A		-8.9	-5	
1950SV	C-64.5	50 SEP 17.2312	23 44 57.8	- 8 22 43				15.97		-9.3	-57	
1950TC	D-42.3	50 OCT 9.2764	0 46 59.8	14 41 19				15.09		-9.1	-16	
1950TD	D-42.4	50 OCT 9.2764	0 55 52.1	13 51 22				15.26		-9.8	-27	
1950TE	D-32.2	50 OCT 8.2931	0 42 44.9	13 21 56				15.34		-10.5	-27	
1950TF2	D-65.3	50 OCT 12.2667	1 36 59.8	1 36 48				15.33		-7.0	-89	
1950TH2	D-75.4X	50 OCT 13.2299	1 54 44.3	0 47 17				14.19A		-7.7	-94	
1950TH2	E-16.3	50 NOV 4.1868	1 39 32.0	- 1 48 48				15.07		-7.2	-53	
1950TP2	D-37.3	50 OCT 9.2111	0 25 24.1	-14 43 19				14.68		-7.3	-26	
1950TS3	E-12.1	50 NOV 2.1660	1 35 56.2	19 19 12				15.52		-10.0	-24	
1950TS3	E-13.1	50 NOV 2.1764	1 35 55.5	19 19 11				15.75		-10.8	-20	
1950TT3	D-72.1	50 OCT 13.1972	1 59 05.7	26 11 43				16.05		-7.8	-83	
1950TV3	D-74.1X	50 OCT 13.2194	1 57 49.2	6 42 47				15.69		-8.1	-45	
1950TV3	D-75.1	50 OCT 13.2299	1 57 48.5	6 42 37				15.47		-7.8	-44	
1950TV3	E-15.4X	50 NOV 4.1757	1 40 20.1	5 08 04				15.64		-7.9	-42	
1950TY3	D-63.4	50 OCT 12.1972	1 40 14.3	16 29 40				16.40		-9.3	-33	
1950TZ3	D-63.5	50 OCT 12.1972	1 43 20.1	16 55 09				15.66		-7.4	-78	
1950TZ3	E-13.2	50 NOV 2.1764	1 27 53.1	14 01 40				15.76		-7.5	-89	
1950TA4	D-63.6	50 OCT 12.1972	1 44 29.5	18 00 32				16.03		-10.6	-6	
1950TB4	D-74.3	50 OCT 13.2194	2 00 05.3	9 11 52				15.52		-9.3	-81	
1950TB4	E-14.1	50 NOV 2.1882	1 40 48.7	6 33 05				15.99		-8.8	-68	
1950TC4	D-16.2X	50 OCT 7.2472	0 02 03.1	-18 17 30				15.53		-5.8	-50	
1950TC4	D-27.2	50 OCT 8.2028	0 01 22.7	-18 23 55				15.72		-6.8	-67	
1950TD4	D-26.3	50 OCT 8.1917	0 15 14.6	-14 50 12				14.80A		-7.5	-11	
1950TE4	D-33.4	50 OCT 8.3042	0 41 56.7	6 50 12				15.34		-8.5	-97	
1950TE4	D-34.1	50 OCT 9.1785	0 41 21.5	6 38 54				15.45		-8.5	-124	
1950TF4	D-33.5	50 OCT 8.3042	0 40 22.0	6 30 39				14.23		-9.7	-65	
1950TF4	D-34.5X	50 OCT 9.1785	0 39 41.5	6 22 56				14.62		-8.2	-89	
1950TG4	D-41.1	50 OCT 9.2660	1 07 17.3	24 55 51				15.88		-8.6	-64	
1950TG4	D-51.5X	50 OCT 10.2146	1 06 31.4	24 48 01				15.54		-8.3	-80	
1950TH4	D-44.2	50 OCT 9.2951	1 07 11.7	4 35 00				15.94		-7.3	-33	
1950TH4	D-54.2	50 OCT 10.2917	1 06 27.4	4 30 05				16.10		-7.1	-58	

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O − C R A	O − C DEC	VAR	MAG	G	10 − DAY MOTION		O − C MOTION	
1950TJ4	D-51.3	50 OCT 10.2146	1 21 05.7	20 55 38				15.86		-8.0	-69		
1950TK4	D-53.2	50 OCT 10.2806	1 21 22.2	11 09 46				15.50		-9.8	-2		
1950TL4	D-55.1	50 OCT 10.3028	1 14 03.7	− 1 31 59				15.92		-7.3	-58		
1950VF	E-11.1	50 NOV 2.1528	1 43 06.1	32 32 12				15.46		-9.4	-99		
1950VF	E-21.1	50 NOV 4.2111	1 41 22.0	32 14 21				15.48		-9.5	-81		
1950VG	E-22.2	50 NOV 5.1451	1 48 57.3	22 17 22				16.05		-8.8	-23		
1950VH	E-22.3	50 NOV 5.1451	1 42 44.1	21 52 29				15.95		-9.4	-95		
1950VJ	E-34.2	50 NOV 7.2632	2 13 21.4	15 48 16				15.83		-11.1	-39		
1950VK	E-34.3	50 NOV 7.2632	2 05 29.2	15 24 12				16.08		-12.3	62		
1950VL	E-35.3	50 NOV 7.2736	2 12 41.3	6 44 45				16.16		-8.0	-84		
1950VM	E-55.3X	50 NOV 12.1722	3 04 37.1	9 44 25				15.29		-10.7	-8		
1950VM	E-65.1	50 NOV 13.1917	3 03 35.1	9 44 25				15.53		-10.2	-12		
1950VN	E-64.2	50 NOV 12.2687	3 20 33.1	15 36 41				15.74		-9.9	5		
1950VO	E-74.4	50 NOV 13.2861	3 30 07.9	13 03 39				16.21		-9.6	-76		
1950VO	E-75.2X	50 NOV 13.2965	3 30 07.2	13 03 34				16.19		-9.7	-114		
1950VP*	E-55.2X	50 NOV 12.1722	3 05 17.4	11 17 10	0.8	2	3	16.54C	13.47C	-10.8	-50	-0.9	7
1950VP*	E-54.3	50 NOV 12.2042	3 05 15.7	11 17 01	0.8	2	3	16.27C	13.20C	-10.1	-60	-0.2	-3
1950VP*	E-64.4X	50 NOV 12.2687	3 05 11.4	11 16 40	0.7	2	3	16.05	12.98	-9.8	-40	0.1	17
1950WB	E 82.6	50 NOV 16.2222	3 52 08.5	26 36 18				15.69		-9.2	5		
1950WB	F-12.5	50 DEC 3.1569	3 36 20.7	26 28 39				15.55		-9.7	-10		
1950WC	E-82.7	50 NOV 16.2222	4 00 37.9	27 02 52				15.31		-10.7	-43		
1950WC	F-12.8X	50 DEC 3.1569	3 42 43.6	25 31 28				15.36		-10.5	-60		
1950WC	F-13.1	50 DEC 3.1681	3 42 42.7	25 31 18				15.50C		-10.0	-66		
1950WD	E-82.2	50 NOV 16.2222	3 47 39.9	31 00 57				15.42		-12.2	28		
1950WD	F-12.9	50 DEC 3.1569	3 28 29.9	30 58 33				15.75A		-10.8	-12		
1950WE	E-81.2X	50 NOV 16.2111	3 56 34.2	33 22 08				15.29		-10.3	22		
1950WE	F-11.1	50 DEC 3.1458	3 38 49.7	33 32 19				15.14C		-10.7	7		
1950WF	E-86.3X	50 NOV 16.2660	3 51 40.5	4 24 34				14.96		-8.4	-50		
1950WF	F-16.3	50 DEC 10.1597	3 33 47.1	3 17 24				15.55		-6.3	-10		
1950XD	F-73.4	50 DEC 14.1937	5 55 13.3	23 51 33				14.97		-12.0	33		
1950XM	F-13.4	50 DEC 3.1681	3 26 36.1	19 23 24				16.26		-10.2	24		
1950XM	F-14.1	50 DEC 3.1785	3 26 35.0	19 23 29				16.25C		-10.7	28		
1950XN	F-15.3	50 DEC 10.1493	3 32 01.1	8 09 07				16.22		-7.3	-54		
1950XO	F-33.3	50 DEC 11.3056	4 23 30.9	22 05 28				15.07C		-10.6	44		
1950XO	F-34.1	50 DEC 11.3174	4 23 29.9	22 05 26				15.11		-10.4	51		

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O − C R A	O − C DEC	VAR	MAG	G	10 − DAY MOTION		O − C MOTION	
1950XP	F-53.6	50 DEC 12.3104	5 08 17.5	23 02 55				15.17		-9.8	-5		
1950XP	F-54.4X	50 DEC 13.1542	5 07 29.9	23 02 40				15.58		-9.0	5		
1950XQ	F-53.7X	50 DEC 12.3104	5 01 49.9	23 11 35				14.92		-14.4	-204		
1950XQ	F-54.2	50 DEC 13.1542	5 00 38.9	22 55 25				15.18		-14.8	-184		
1950XR	F-63.4	50 DEC 13.2701	5 12 20.1	21 33 42				15.58C		-9.4	11		
1950XR	F-64.6X	50 DEC 13.2819	5 12 19.4	21 33 46				15.32C		-9.1	5		
1950XS	F-83.2	50 DEC 14.3111	6 16 11.5	28 17 40				14.08C		-10.6	-22		
1950XS	F-73.7	50 DEC 31.1562	5 57 38.9	27 32 06				14.26C		-11.2	-40		
1950XS	G-13.1	51 JAN 5.1562	5 52 54.5	27 14 37				14.91		-9.0	-28		
1950YA	F-73.3	50 DEC 31.1562	5 42 42.9	23 45 00				15.85		-8.2	-11		
1950YB	F-76.1	50 DEC 31.1889	5 53 20.9	5 36 17				15.07		-9.0	7		
1951AE	G-34.5X	51 JAN 8.1917	6 51 19.9	20 35 29				16.05		-12.3	4		
1951AE	G-44.5	51 JAN 8.2951	6 51 13.3	20 35 38				15.65		-11.2	14		
1951AF	G-43.1	51 JAN 12.1750	6 56 53.1	24 10 15	-14.1	46	61	15.26		-9.6	-17	0.0	-5
1951AG	G-44.4	51 JAN 8.2951	7 07 50.7	19 26 31				15.74		-8.2	7		
1951AJ	G-63.10X	51 JAN 13.2375	7 40 15.3	23 27 53				15.81		-10.4	22		
1951AK*	G-63.9	51 JAN 13.2375	7 44 55.4	22 09 18				16.07		-9.4	33		
1951AK*	G-64.1	51 JAN 13.2486	7 44 55.0	22 09 18				16.03		-10.0	26		
1951AL	G-64.3X	51 JAN 13.2486	7 44 21.8	20 55 51				15.81		-12.5	40		
1951AM	G-63.7	51 FEB 4.2333	7 59 20.0	21 13 42				15.15C		-8.5	33		
1951AM	G-74.6	51 FEB 7.1215	7 57 03.9	21 22 18				14.75C					
1951AP	G-63.4	51 JAN 13.2375	7 40 50.9	25 58 41				15.68		-10.2	-10		
1951AB1	G-35.6	51 JAN 8.2028	6 51 14.7	12 00 27				15.91		-7.8	12		
1951AB1	G-45.5	51 JAN 8.2833	6 51 10.4	12 00 41				16.25		-8.1	28		
1951AC1	G-11.2	51 JAN 5.1333	6 00 42.9	38 45 38				16.16		-10.1	-48		
1951AD1	G-13.4	51 JAN 5.1562	6 11 48.3	23 33 00				15.47		-8.7	13		
1951AE1	G-14.3	51 JAN 5.1674	6 05 07.9	20 35 13				15.14		-9.9	-22		
1951AF1	G-14.4X	51 JAN 5.1674	6 07 00.1	15 29 44				15.66		-8.7	77		
1951AF1	G-15.3	51 JAN 5.1785	6 06 59.2	15 29 46				15.76		-9.0	84		
1951AG1	G-22.1	51 JAN 5.2785	6 35 27.3	30 43 00				15.23		-12.8	16		
1951AG1	G-23.3	51 JAN 5.2889	6 35 25.6	30 43 09				15.12		-12.6	24		
1951AH1	G-23.4X	51 JAN 5.2889	6 29 42.8	23 33 32				14.98C		-7.9	-2		
1951AH1	G-24.2	51 JAN 6.2139	6 29 00.6	23 33 34				15.48		-7.5	4		
1951AJ1	G-25.2X	51 JAN 6.1806	6 34 31.9	16 36 52				15.55		-11.4	35		
1951AJ1	G-24.5	51 JAN 6.2139	6 34 29.7	16 37 07				15.40C		-9.6	47		

* Identical with 1618.

1958ApJS....3..289K

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O − C R A	O − C DEC	VAR	MAG	G	10 − DAY MOTION		O − C MOTION
1951AJ1	G-34.1	51 JAN 8.1917	6 32 29.7	16 46 25				15.68		-10.3	54	
1951AJ1	G-35.2	51 JAN 8.2028	6 32 29.1	16 46 30				15.33C		-10.6	44	
1951AK1	G-24.6	51 JAN 6.2139	6 26 43.0	20 16 45				16.27		-11.0	-45	
1951AL1	G-25.1	51 JAN 6.1806	6 32 13.8	16 14 48				15.07		-10.9	13	
1951AL1	G-35.1	51 JAN 8.2028	6 30 06.5	16 19 08				15.17C		-10.9	21	
1951AM1	G-33.1X	51 JAN 8.1806	6 43 31.7	21 54 54				16.17C		-11.2	13	
1951AM1	G-34.6	51 JAN 8.1917	6 43 30.9	21 54 55				16.21		-11.3	12	
1951AN1	G-51.2	51 JAN 12.1868	7 24 30.5	38 50 26				15.48C		-15.1	127	
1951AO1	G-51.4	51 JAN 12.1868	7 26 43.9	40 46 19				15.02C		-11.6	-1	
1951AP1	G-53.6X	51 JAN 12.2764	7 38 12.9	27 51 13				16.54		-10.0	11	
1951AP1	G-63.3	51 JAN 13.2375	7 37 20.5	27 52 01				16.64		-8.5	14	
1951AQ1	G-54.5X	51 JAN 12.2868	7 34 55.1	22 13 47				16.33		-10.0	14	
1951AQ1	G-63.1	51 JAN 13.2375	7 34 00.8	22 15 27				16.07		-9.9	17	
1951AQ1	G-64.2X	51 JAN 13.2486	7 34 00.1	22 15 28				16.46		-9.7	27	
1951AR1	G-65.2	51 JAN 13.3146	7 39 09.5	8 39 20				15.29		-8.9	36	
1951AS1	G-66.1X	51 JAN 13.3257	7 53 10.0	5 21 44				16.00C				
1951AS1	G-76.1	51 JAN 13.3812	7 53 07.3	5 21 49				15.99		-10.0	-13	
1951AT1	G-75.1	51 JAN 13.3486	8 09 25.5	9 33 52				15.97		-9.3	-15	
1951CE	H-34.4	51 FEB 9.2208	9 09 59.1	13 02 36				15.88C		-9.5	77	
1951CE	H-44.1	51 FEB 9.3076	9 09 54.2	13 03 08				15.65A		-10.5	75	
1951CH	H-54.1X	51 FEB 10.3035	9 35 01.1	9 41 52				15.69C		-10.9	38	
1951CT	H-43.4	51 FEB 9.3187	9 20 17.3	17 34 06				15.77		-8.9	15	
1951CW	H-53.4	51 FEB 10.2931	9 38 15.9	17 23 24				15.70		-10.4	69	
1951CJ1	H-61.5	51 FEB 11.1958	10 03 52.8	32 34 18				14.79		-9.6	50	
1951CL1	G-72.2	51 FEB 5.1437	8 20 47.3	32 41 33						11.5	-2	
1951CL1	H-12.1	51 FEB 7.1436	8 18 38.2	32 41 26				15.01		-10.6	-4	
1951CM1	G-74.1	51 FEB 7.1215	8 10 55.0	21 58 16				15.64		-9.0	22	
1951CM1	H-13.6X	51 FEB 7.1604	8 10 52.7	21 58 26				15.40C		-9.3	9	
1951CN1	H-13.4	51 FEB 7.1604	8 25 04.7	20 37 56				15.09		-11.7	-42	
1951CN1	H-14.1	51 FEB 7.2465	8 24 58.9	20 37 29				15.10		-11.6	-45	
1951CO1	H-14.2	51 FEB 7.2465	8 24 39.4	17 42 41				15.70		-9.7	18	
1951CP1	H-26.2	51 FEB 8.2771	8 46 28.3	3 28 49				14.84		-8.9	54	
1951CQ1	H-41.2	51 FEB 10.1965	9 20 31.9	36 03 27				15.18		-9.7	26	
1951CR1	H-41.4	51 FEB 10.1965	9 36 38.5	31 11 45				15.70		-10.0	40	
1951CR1	H-51.1X	51 FEB 10.2187	9 36 37.1	31 11 53				15.80		-9.1	40	

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O – C R A	O – C DEC	VAR	MAG	G	10 – DAY MOTION		O – C MOTION
1951CS1	H-42.2	51 FEB 10.2069	9 21 58.0	29 09 06				16.49		-8.2	96	
1951CT1	H-43.5	51 FEB 9.3187	9 23 40.6	20 00 09				15.76		-13.1	-34	
1951CU1	H-51.2X	51 FEB 10.2187	9 40 49.7	27 29 49				16.05		-10.8	14	
1951CU1	H-52.2	51 FEB 10.2292	9 40 48.9	27 29 52				15.90		-9.8	13	
1951CV1	H-53.1	51 FEB 10.2931	9 53 48.7	15 07 59				15.72		-8.8	100	
1951CW1	H-53.3	51 FEB 10.2931	9 37 03.3	19 40 42				16.12		-12.0	39	
1951CX1	H-63.3	51 FEB 11.2181	10 01 24.1	15 10 15				16.08		-7.9	70	
1951CY1	H-72.3	51 FEB 12.2125	10 20 12.6	25 21 58				16.29		-9.9	62	
1951EG	H-84.4	51 MAR 6.2542	10 46 10.6	6 24 12				15.62		-8.9	14	
1951EH	H-84.5	51 MAR 6.2542	10 46 27.9	7 29 02				16.65C		-8.0	24	
1951EY	H-61.4	51 FEB 11.1958	10 03 12.8	29 33 50				15.36		-9.4	28	
1951EY	H-61.1	51 MAR 1.2236	9 53 46.1	30 52 04				15.99C		-5.8	44	
1951EG1	H-73.5	51 MAR 5.2424	10 21 41.4	12 58 27				15.78C		-7.5	105	
1951EG1	H-74.3	51 MAR 5.2542	10 21 41.2	12 58 28				15.99C		-8.5	105	
1951EH1	H-73.3	51 MAR 5.2424	10 20 44.6	12 17 41				15.50		-8.5	39	
1951EH1	H-74.2	51 MAR 5.2542	10 20 44.1	12 17 43				15.55C		-8.2	46	
1951EK1	H-74.1	51 MAR 5.2542	10 18 52.3	8 04 06				15.36		-9.4	63	
1951EL1	H-74.7	51 MAR 5.2542	10 16 30.1	8 35 03				16.07		-8.9	38	
1951ET1	J-34.7	51 APR 4.3174	12 36 42.1	- 3 41 56				15.92		-7.2	104	
1951EX1	H-61.2	51 MAR 1.2236	10 01 20.3	30 39 25				16.35C		-8.6	39	
1951EY1	H-73.6	51 MAR 5.2424	10 23 58.4	13 02 32				15.12C		-7.2	95	
1951EY1	H-74.5	51 MAR 5.2542	10 23 57.9	13 02 35				15.22C		-7.7	99	
1951EZ1	H-83.3	51 MAR 6.1937	10 46 46.1	12 15 09				16.21		-11.0	47	
1951EA2	H-83.4	51 MAR 6.1937	10 47 40.1	15 11 39				16.43		-8.7	71	
1951EB2	H-84.2	51 MAR 6.2542	10 38 11.7	4 06 01				16.13		-7.3	128	
1951EC2	H-85.4	51 MAR 6.2653	10 38 57.3	- 0 39 37				15.80		-9.1	39	
1951ED2	H-85.5	51 MAR 6.2653	10 39 51.4	- 2 50 25				15.88		-8.5	36	
1951EE2	I-32.3	51 MAR 11.2875	10 59 36.5	11 00 40				15.97C		-8.0	74	
1951EE2	I-33.2X	51 MAR 11.3590	10 59 33.5	11 01 01				15.89		-7.6	73	
1951EF2	I-33.3	51 MAR 11.3590	11 04 13.8	8 41 35				15.37		-8.7	56	
1951EG2	I-33.4	51 MAR 11.3590	11 08 06.7	8 39 21				15.96		-8.2	53	
1951EH2	I-34.5	51 MAR 11.3701	11 13 17.3	- 1 05 54				16.18				
1951EH2	I-44.2	51 MAR 13.3722	11 11 24.9	- 0 48 30				16.28		-9.9	74	
1951EJ2	I-35.2	51 MAR 11.3812	11 11 21.1	- 7 41 12				15.47		-9.2	36	
1951EJ2	I-45.2	51 MAR 13.3604	11 09 39.5	- 7 33 09				15.86		-9.2	41	

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION	O - C MOTION
1951EK2	I-42.2	51 MAR 13.2542	11 24 58.0	18 53 29				16.40		-8.1 59	
1951EL2	I-42.3	51 MAR 13.2542	11 26 59.0	15 21 28				16.87C		-12.1 -2	
1951EM2	I-43.4	51 MAR 13.2653	11 23 02.1	9 21 09				16.83		-10.5 67	
1951EN2	I-43.6	51 MAR 13.2653	11 27 03.4	7 57 24				16.46		-11.3 37	
1951EO2	I-43.7	51 MAR 13.2653	11 34 57.2	5 54 22				16.35C		-8.4 62	
1951EO2	I-53.1	51 MAR 15.3243	11 33 34.1	6 07 04						8.7 68	
1951EP2	I-44.3	51 MAR 13.3722	11 18 39.3	2 48 52				16.28		-8.0 36	
1951EQ2	I-44.6	51 MAR 13.3722	11 23 24.0	3 27 22				16.05		-8.3 58	
1951ER2	I-44.7	51 MAR 13.3722	11 24 02.4	4 52 47				15.68		-9.9 97	
1951ES2	I-44.8	51 MAR 13.3722	11 24 35.7	4 35 50				16.40		-7.4 62	
1951ET2	I-44.9	51 MAR 13.3722	11 24 58.4	4 18 41				16.18		-8.3 50	
1951EU2	I-44.12	51 MAR 13.3722	11 31 45.2	5 06 29				16.12		-9.9 46	
1951EV2	I-45.5	51 MAR 13.3604	11 25 58.8	- 6 26 56				16.31		-9.8 58	
1951EW2	I-51.4	51 MAR 15.3833	11 53 05.1	21 41 06						9.4 48	
1951EX2	I-53.2	51 MAR 15.3243	11 44 54.3	7 59 17						9.8 84	
1951EX2	I-43.2	51 MAR 31.2236	11 29 46.9	10 06 40				15.06C		-9.8 66	
1951FC	I-46.4	51 MAR 31.3083	11 11 37.0	-14 30 23				15.80A		-6.8 76	
1951GA	J-66.1	51 APR 8.2417	13 38 40.0	-20 17 38				15.69		-8.4 8	
1951GC	J-62.5X	51 APR 8.3889	13 24 17.1	4 48 59				16.42		-9.2 -8	
1951GC	J-52.5	51 APR 9.2062	13 23 26.0	4 49 04				16.13C		-10.8 2	
1951GO	I-44.3	51 APR 1.1993	11 13 35.1	- 0 43 13				16.78		-6.2 88	
1951GP	I-54.2	51 APR 1.2097	11 37 34.9	3 23 40				16.31		-7.8 33	
1951GQ	I-55.4	51 APR 1.2194	11 52 06.1	- 4 19 04				15.73		-11.5 35	
1951GQ	I-64.2	51 APR 2.2424	11 51 04.7	- 4 15 17				15.64		-9.9 35	
1951GR	I-62.2	51 APR 2.2229	12 14 46.0	11 52 15				16.43C		-9.7 30	
1951GR	I-72.1	51 APR 2.3375	12 14 36.8	11 52 37				16.21		-9.7 23	
1951GS	I-64.4	51 APR 2.2424	11 55 54.0	- 3 43 44				15.88C		-9.1 88	
1951GT	I-72.3	51 APR 2.3375	12 21 40.1	5 58 59				16.00C		-8.0 56	
1951GU	I-73.4	51 APR 2.3271	12 26 21.3	1 31 39				16.10C		-10.4 3	
1951GV	I-74.1	51 APR 2.2736	12 16 56.1	- 3 12 37				15.37		-8.7 48	
1951GW	I-74.3	51 APR 2.2736	12 24 46.3	- 5 13 43				15.91		-7.9 74	
1951GX	I-74.6	51 APR 2.2736	12 31 52.9	- 4 20 01				14.04		-9.3 71	
1951GX	J-34.3	51 APR 4.3174	12 30 05.0	- 4 05 08				14.70		-8.8 69	
1951GY	I-76.3	51 APR 4.2410	12 31 51.3	-18 37 37				16.48		-8.7 36	
1951GZ	J-34.5	51 APR 4.3174	12 35 28.0	- 3 04 17				16.12		-6.0 66	

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE	U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION	O - C MOTION
1951GA1	J-41.2	51 APR	4.3896	12 55 53.9	11 37 10				15.35		-7.6	56
1951GB1	J-41.3X	51 APR	4.3896	13 10 51.3	11 52 47				16.42		-9.0	2
1951GB1	J-51.1	51 APR	9.1958	13 06 08.2	11 52 17				15.78		-9.4	-5
1951GC1	J-44.4	51 APR	7.2715	12 49 45.5	- 8 51 01				15.11		-9.7	80
1951GD1	J-44.6	51 APR	7.2715	12 54 26.9	-10 43 42				15.39		-9.8	52
1951GE1	J-62.6	51 APR	8.3889	13 25 51.0	2 20 51				15.43		-6.8	62
1951GE1	J-52.6	51 APR	9.2062	13 25 18.3	2 26 14				15.04C		-8.0	53
1951GE1	J-53.11	51 APR	9.2160	13 25 17.8	2 26 13				15.47C		-7.1	69
1951GF1	J-53.6	51 APR	9.2160	13 13 21.7	0 17 50				16.60		-10.0	74
1951GG1	J-54.2	51 APR	9.2757	13 11 48.1	-10 25 51				15.70		-9.8	40
1951GH1	J-62.8	51 APR	8.3889	13 42 06.9	1 39 09				16.32C		-6.4	86
1951GH1	J-71.1X	51 APR	10.2417	13 40 57.9	1 56 22				16.29C		-6.9	89
1951GJ1	J-75.2	51 APR	9.3465	13 54 47.4	-18 57 00				15.89		-9.8	44
1951GJ1	J-74.2	51 APR	9.3562	13 54 46.7	-18 56 53				15.79		-10.2	41
1951GK1	J-85.2	51 APR	10.3319	14 13 05.7	-19 55 15				15.84		-7.9	31
1951JK	K-23.1	51 APR	28.2042	14 04 44.7	- 5 35 29				15.90C		-9.0	40
1951JK	K-22.1	51 MAY	2.1791	14 01 18.7	- 5 19 15				16.00		-8.4	42
1951JK	K-33.1	51 MAY	2.2937	14 01 12.3	- 5 18 57				16.43		-9.0	33
1951JL	K-22.2	51 MAY	2.1791	14 01 12.4	- 6 56 56				16.32C		-8.4	52
1951JL	K-33.2X	51 MAY	2.2937	14 01 07.3	- 6 56 16				16.76C		-8.7	55
1951JM	K-31.2	51 MAY	2.1889	14 19 45.5	3 05 40				16.54		-7.7	39
1951JM	K-32.1	51 MAY	2.3042	14 19 40.5	3 05 52				16.38		-7.3	39
1951JM	K-41.3	51 MAY	3.1910	14 19 00.9	3 09 17				16.41		-7.4	35
1951JN	K-34.1	51 MAY	2.2833	14 21 50.2	-11 00 13				16.41		-8.9	42
1951JN	K-33.3	51 MAY	2.2937	0 0 .	0 0				16.76			
1951JN	K-43.6X	51 MAY	3.2125	14 20 56.2	-10 56 12				16.49		-9.9	38
1951JO	K-34.2	51 MAY	2.2833	14 21 25.1	-11 20 05				16.30		-10.6	32
1951JP	K-34.4	51 MAY	2.2833	14 22 54.5	-15 27 06				15.52A		-9.6	63
1951JQ	K-35.4X	51 MAY	2.2729	14 27 34.6	-23 29 38				16.65		-9.3	61
1951JQ	K-45.6	51 MAY	3.3167	14 26 41.0	-23 23 07				16.45		-9.5	69
1951JR	K-36.2	51 MAY	3.2847	14 04 20.3	-27 15 00				16.65		-8.5	52
1951JS	K-41.2	51 MAY	3.1910	14 25 29.2	4 28 46				16.21		-8.2	66
1951JT	K-42.4	51 MAY	3.2021	14 26 25.7	- 5 00 05				15.67		-9.0	2
1951JT	K-43.1	51 MAY	3.2125	14 26 25.2	- 5 00 11				15.63		-8.7	-1
1951JU	K-43.4X	51 MAY	3.2125	14 45 50.5	- 9 18 03				15.57C			

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E	U.T.	R. A. 1950.0	DEC 1950.0	O – C R A	O – C DEC	VAR	MAG	G	10 – DAY MOTION		O – C MOTION
1951JU	K-53.6	51 MAY	4.1882	14 45 01.3	- 9 10 46				15.61		-9.0	78	
1951JV	K-45.4	51 MAY	3.3167	14 44 47.3	-21 21 51				15.68		-10.3	65	
1951JV	K-55.6X	51 MAY	4.2090	14 43 55.2	-21 15 46				15.90		-10.4	70	
1951JW	K-53.5	51 MAY	4.1882	14 57 09.7	- 7 56 50				15.59		-8.3	67	
1951JX	K-53.8	51 MAY	4.1882	14 59 41.1	-12 11 54				15.92		-6.6	98	
1951JY	K-54.5	51 MAY	8.2507	15 01 03.7	-16 20 24				15.47		-8.3	15	
1951JZ	K-63.2	51 MAY	5.2208	15 22 16.2	-13 48 13				15.80		-9.6	53	
1951JA1	K-63.9	51 MAY	5.2208	15 15 01.9	-17 54 41				15.85C		-10.3	14	
1951JB1	K-84.4	51 MAY	8.3583	16 07 41.4	-23 36 14				16.00		-11.1	-8	
1951KC	L-45.1	51 JUN	2.2264	16 32 54.4	-29 12 17				14.92		-9.6	42	
1951KR	L-11.1	51 MAY	27.2708	15 24 00.7	- 4 23 14				15.97		-6.4	-80	
1951KS	L-13.2	51 MAY	27.2514	15 33 33.8	-13 33 12				15.92		-8.3	70	
1951KT*	L-13.4	51 MAY	27.2514	15 47 21.5	-13 26 21				15.75		-10.3	15	
1951KU	L-14.2	51 MAY	27.2410	15 36 48.4	-19 58 16				15.89		-8.6	-17	
1951KV	L-14.6	51 MAY	27.2410	15 44 50.1	-25 06 46				15.95		-11.8	-14	
1951KW	L-15.1	51 MAY	27.2312	15 28 40.4	-27 56 20				16.65C		-10.5	3	
1951KX	L-21.2	51 MAY	28.2285	16 01 20.6	0 38 27				15.98		-9.8	37	
1951KY	L-22.1	51 MAY	28.2187	15 53 37.7	- 7 57 12				16.07C		-8.5	-20	
1951KZ	L-22.2	51 MAY	28.2187	15 54 58.4	- 6 10 57				15.81		-7.8	5	
1951KA1	L-25.3	51 MAY	29.2208	15 53 41.5	-26 44 16				15.59		-8.8	62	
1951KB1	L-32.3X	51 MAY	29.2111	16 29 00.7	-13 16 08				16.45C		-11.6	-2	
1951KB1	L-33.3	51 MAY	29.3201	16 28 53.7	-13 16 04				16.39		-10.0	-2	
1951KC1	L-34.3	51 MAY	29.3104	16 27 03.4	-21 32 31				15.66		-10.9	0	
1951LC	L-63.4	51 JUN	7.2174	17 10 59.4	-19 33 46				15.45		-8.2	3	
1951LK	L-43.3	51 JUN	2.2056	16 49 11.8	-14 14 23				15.78C		-9.6	-16	
1951LK	L-42.3X	51 JUN	2.2958	16 49 05.1	-14 14 29				15.83C		-11.0	-25	
1951LL	L-45.2	51 JUN	2.2264	16 35 39.0	-28 09 05				15.23C		-12.1	21	
1951LM	L-62.3	51 JUN	7.3333	17 26 46.0	-12 15 58				15.81		-10.6	6	
1951LM	L-73.5X	51 JUN	8.2278	17 25 52.8	-12 15 52				16.32C		-10.5	7	
1951LN	L-63.5	51 JUN	7.2174	17 13 14.5	-20 39 13				15.64C		-8.7	-4	
1951LO	L-63.7X	51 JUN	7.2174	17 30 12.3	-18 11 50				15.65C		-9.4	148	
1951LO	L-73.1	51 JUN	8.2278	17 29 18.8	-17 57 29				15.33		-8.7	135	
1951LP	L-64.2	51 JUN	7.2278	17 09 23.3	-28 11 47				15.63		-10.2	25	
1951LP	L-65.5X	51 JUN	7.2389	17 09 19.5	-28 11 46				16.07C		-9.1	26	
1951LQ	L-64.4	51 JUN	7.2278	17 17 02.3	-27 07 48				15.65		-9.0	7	

* Identical with 1586

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
1951LR	L-65.2	51 JUN 7.2389	17 17 50.5	-31 35 52				15.99		-11.6	-10		
1951LS	L-73.2	51 JUN 8.2278	17 35 49.1	-14 26 15				15.48		-10.5	-31		
1951LT	L-73.4X	51 JUN 8.2278	17 33 57.7	-19 02 38				15.85C		-9.0	24		
1951LT	L 74.2	51 JUN 8.2375	17 33 57.4	-19 02 33				15.65C		-8.7	22		
1951LU	L-75.4X	51 JUN 8.2472	17 36 26.7	-31 33 11				15.81C		-11.0	-49		
1951LU	L-76.2	51 JUN 8.2569	17 36 26.4	-31 33 18				15.58C		-10.6	-51		
1951LV	L-75.5X	51 JUN 8.2472	17 43 42.7	-28 26 50				15.48		-11.7	-13		
1951LV	L-76.4	51 JUN 8.2569	17 43 41.9	-28 26 55				15.54C		-11.4	-13		
1951LV	L-85.1	51 JUN 9.2986	17 42 35.4	-28 27 47				15.48		-11.1	-17		
1951LW	L 83.1	51 JUN 8.3243	17 52 42.3	-19 47 36				15.43		-10.4	26		
1951LX	L-84.4	51 JUN 9.3576	18 01 23.5	-21 25 44				15.89		-9.2	-9		
1951LY	L-43.1	51 JUN 2.2056	16 36 32.9	-16 27 55						10.8	-42		
1951MG	M-54.2	51 JUN 30.3174	18 58 28.9	-20 53 18				15.13	12.02	-10.6	-53		
1951MK	M-14.1	51 JUN 26.2118	17 24 52.5	-20 47 40				15.07C		-6.7	-27		
1951ML	M-47.1	51 JUN 30.2451	18 20 25.7	-41 20 27				15.57C		-12.9	50		
1951MM	M-53.2	51 JUN 30.3271	18 52 41.1	-14 03 34				16.24		-7.9	-69		
1951MN	M-53.4	51 JUN 30.3271	18 58 13.3	-12 55 50				15.44		-9.2	-15		
1951ND	M-75.4X	51 JUL 4.3382	19 37 09.3	-29 54 42				15.34		-8.5	-107		
1951NG	M-24.3X	51 JUN 27.2187	18 06 26.2	-24 27 07				15.47		-8.5	2		
1951NG	M-34.2	51 JUN 28.2319	18 05 34.3	-24 27 14				15.19C		-9.2	-5		
1951NM	M-64.1	51 JUL 4.2354	19 01 42.9	-27 27 45				15.51		-11.2	37		
1951PK	N-73.1	51 AUG 6.2382	21 44 36.3	-14 02 37				15.75		-6.1	-9		
1951PK	N-74.4X	51 AUG 6.2479	21 44 35.8	-14 02 36				15.88		-6.1	-4		
1951PL	N-64.3	51 AUG 5.3007	21 09 44.3	-16 02 48				15.18		-9.2	-3		
1951PM	N-72.2	51 AUG 6.3708	21 37 12.6	- 3 23 47				15.80		-7.0	-49		
1951QA	P-43.1	51 SEP 30.2125	0 42 40.8	9 45 55	-0.1	0		14.16C	14.53C	-9.6	90	-0.9	10
1951QA	P-53.1	51 SEP 30.3118	0 42 35.4	9 46 39	-0.1	0		14.43C	14.80C	-9.8	85	-1.1	5
1951QJ	O-13.1	51 AUG 31.1625	21 47 17.5	- 7 08 52				15.56		-8.5	-28		
1951QJ	O-12.2X	51 AUG 31.2021	21 47 15.4	- 7 08 57				15.47		-8.9	-24		
1951QJ	O-23.2X	51 AUG 31.3194	21 47 09.5	- 7 09 21						9.5	-36		
1951QK	O-22.1	51 AUG 31.2799	22 02 36.3	- 4 12 08				14.97		-9.7	-56		
1951RB	P-52.2X	51 SEP 30.3701	1 05 25.8	19 13 19				15.11C		-9.1	-2		
1951RB	P-62.2	51 OCT 1.3333	1 04 32.8	19 12 47				14.78		-9.3	-1		
1951RQ	O-62.3X	51 SEP 3.3132	23 25 55.7	2 39 45				15.28C	13.52C	-8.4	-20		
1951RQ	O-72.1	51 SEP 3.3410	23 25 54.5	2 39 42				15.50	13.71	-8.1	-19		

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION
1951RF1	O-43.2	51 SEP 2.3035	22 38 40.5	- 8 19 41				14.92		-9.0	-24	
1951RJ1	O-53.4	51 SEP 2.3222	22 59 38.1	- 3 31 10						8.5	-12	
1951RM1	P-34.1	51 SEP 27.2965	0 15 09.9	1 15 25				14.45		-6.8	-97	
1951RQ1	O-55.5X	51 SEP 2.2340	22 59 46.7	-17 54 24				15.10		-10.9	-3	
1951RQ1	O-65.1	51 SEP 3.2382	22 58 46.9	-17 54 20						11.1	-9	
1951RW1	O-44.2	51 SEP 2.1924	22 42 12.7	-11 50 13				15.23C		-7.4	-119	
1951RW1	O-54.3X	51 SEP 2.2215	22 42 11.5	-11 50 34				14.97		-7.7	-113	
1951RX1	O-63.4	51 SEP 3.2187	23 23 42.6	- 5 05 39				14.80		-6.7	-121	
1951RX1	O-73.2	51 SEP 3.3319	23 23 38.3	- 5 07 03				14.99C		-7.0	-121	
1951RX1	O-74.1	51 SEP 5.2826	23 22 31.5	- 5 31 34				15.34C		-6.6	-128	
1951RY1	O-84.2	51 SEP 5.3292	0 01 05.0	- 6 11 11				15.08		-12.8	117	
1951RZ1	O-85.1	51 SEP 5.3201	23 45 12.5	-14 09 28				15.83		-8.3	-22	
1951SB	P-53.4	51 SEP 30.3118	0 55 22.1	8 29 07				14.66		-9.8	-3	
1951SD	P-53.2	51 SEP 30.3118	0 51 29.9	11 52 19				15.66		-9.7	13	
1951SW	P-15.1	51 SEP 26.1917	23 32 30.3	-12 20 31				15.19		-7.1	-84	
1951VA	Q-55.6X	51 NOV 3.2174	2 27 10.3	6 01 21				15.29		-10.9	-30	
1951VE	Q-46.2	51 NOV 3.1812	2 18 14.3	3 19 29				15.13		-10.5	-35	
1951VF	Q-52.1	51 NOV 1.2910	2 28 43.3	24 29 16				15.45		-10.3	-77	
1951VG	Q-66.2	51 NOV 3.2896	3 01 58.1	- 1 03 58				15.14A		-7.8	-30	
1951WL	R-45.2	51 DEC 4.2014	4 24 31.1	13 39 17				15.55C		-10.4	67	
1951WL	R-44.4	51 DEC 22.1431	4 10 24.3	15 53 03				15.78		-6.1	87	
1951WM	R-21.1X	51 NOV 27.2924	3 39 25.9	34 43 16				14.62		-10.8	-78	
1951WQ	R-45.1	51 DEC 4.2014	4 09 51.3	11 50 26				14.52C		-11.4	60	
1951WT	R-25.3	51 NOV 29.1590	3 38 52.2	8 56 08				15.98		-9.3	1	
1951WU	R-25.5X	51 NOV 29.1590	3 42 30.4	12 56 58				16.20		-9.1	14	
1951WV	R-26.1	51 NOV 29.1681	3 38 02.5	1 32 14				14.80		-8.2	88	
1951WW	R-26.2	51 NOV 29.1681	3 38 56.0	2 45 01				15.58		-8.0	-12	
1951WX	R-33.4	51 NOV 29.1771	4 06 52.7	26 41 47				15.44		-10.3	-61	
1951WX	R-32.3	51 NOV 29.2764	4 06 46.3	26 41 11				15.32		-9.7	-67	
1951WX	R-43.1	51 NOV 29.3396	4 06 42.7	26 40 45				15.73		-9.8	-62	
1951WY	R-32.4X	51 NOV 29.2764	3 46 19.3	27 49 21				16.08		-11.7	-22	
1951WZ	R-32.5X	51 NOV 29.2764	3 47 29.5	30 40 54				16.77		-10.7	3	
1951WA1	R-32.7X	51 NOV 29.2764	4 08 33.1	29 53 25				15.80		-11.4	7	
1951WA1	R-42.2	51 NOV 29.3035	4 08 30.5	29 53 31				16.10		-11.2	7	
1951WB1	R-32.8X	51 NOV 29.2764	4 07 23.5	33 03 07				16.54C		-10.9	-23	

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION
1951WB1	R-42.1	51 NOV 29.3035	4 07 21.7	33 03 05				16.36		-11.0	-15	
1951WC1	R-33.5X	51 NOV 29.1771	3 47 10.1	20 20 16				16.02		-11.2	-67	
1951WC1	R-34.1	51 NOV 29.1861	3 47 09.5	20 20 07				15.98C		-10.7	-70	
1951WD1	R-33.6X	51 NOV 29.1771	3 51 50.7	24 17 40				16.27C		-10.4	-41	
1951WE1	R-33.7X	51 NOV 29.1771	3 54 34.3	20 14 14				16.78C		-8.9	-17	
1951WE1	R-34.4X	51 NOV 29.1861	3 54 33.6	20 14 04				16.50		-8.5	-25	
1951WF1	R-33.12X	51 NOV 29.1771	4 00 40.0	20 22 39				16.29		-11.9	-52	
1951WF1	R-34.11X	51 NOV 29.1861	4 00 38.8	20 22 33				15.83		-11.2	-52	
1951WG1	R-34.2	51 NOV 29.1861	3 48 19.5	14 32 57				16.31		-11.1	-12	
1951WH1	R-34.3	51 NOV 29.1861	4 00 38.9	18 55 45				16.01		-10.6	-49	
1951WJ1	R-34.6X	51 NOV 29.1861	4 04 21.9	13 38 28				15.79		-11.2	-40	
1951WJ1	R-35.6	51 NOV 29.1951	4 04 21.1	13 38 20				15.91		-10.8	-46	
1951WK1	R-34.7X	51 NOV 29.1861	3 46 37.3	16 29 25				16.55		-10.3	-21	
1951WL1	R-34.8X	51 NOV 29.1861	3 48 11.3	17 21 14				16.89		-9.8	-50	
1951WM1	R-34.9X	51 NOV 29.1861	3 54 30.1	18 04 05				16.29		-9.3	-16	
1951WN1	R-34.10X	51 NOV 29.1861	3 55 30.3	18 54 36				16.11		-9.2	-21	
1951WO1	R-34.12X	51 NOV 29.1861	4 01 38.5	19 12 29				15.50		-9.5	20	
1951WP1	R-34.13X	51 NOV 29.1861	4 03 56.5	17 40 54				16.29		-11.2	-11	
1951WQ1	R-34.14X	51 NOV 29.1861	4 07 56.6	18 44 48				15.97		-11.7	-37	
1951WQ1	R-44.18X	51 NOV 29.2854	4 07 49.8	18 44 26				16.10		-11.5	-31	
1951WR1	R-35.1	51 NOV 29.1951	3 49 54.4	7 06 50				15.92		-9.0	20	
1951WR1	R-36.4	51 NOV 29.2042	3 49 53.6	7 06 49				15.88		-9.5	13	
1951WS1	R-35.4	51 NOV 29.1951	3 51 33.5	8 47 45				16.53		-8.0	4	
1951WT1	R-36.5	51 NOV 29.2042	3 50 00.7	3 00 43				15.91		-5.4	-33	
1951WU1	R-42.4	51 NOV 29.3035	4 20 26.3	34 44 17				15.42		-10.6	-5	
1951WU1	R-41.2	51 NOV 29.3125	4 20 25.4	34 44 21				15.72		-11.5	1	
1951WV1	R-41.3	51 NOV 29.3125	4 24 16.5	35 18 30				16.22		-11.8	26	
1951WW1	R-44.11X	51 NOV 29.2854	4 20 28.2	21 54 32				15.91		-11.7	-17	
1951WW1	R-43.3	51 NOV 29.3396	4 20 23.9	21 54 34				16.17		-12.5	-10	
1951WX1	R-44.14X	51 NOV 29.2854	4 24 21.8	21 48 38				16.30A		-11.8	-5	
1951WX1	R-43.4	51 NOV 29.3396	4 24 18.1	21 48 39				16.53		-11.4	-13	
1951WY1	R-43.5	51 NOV 29.3396	4 27 25.5	24 21 17				15.45		-8.2	4	
1951WZ1	R-44.16X	51 NOV 29.2854	4 27 18.1	21 59 15				16.95		-10.1	-68	
1951WZ1	R-43.6X	51 NOV 29.3396	4 27 13.2	21 58 48				17.11C		-9.4	-66	
1951WA2	R-43.7X	51 NOV 29.3396	4 19 29.7	26 41 11				15.87		-12.3	26	

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O – C R A	O – C DEC	VAR	MAG	G	10 – DAY MOTION		O – C MOTION
1951WB2	R-43.8X	51 NOV 29.3396	4 19 14.3	22 24 40				15.50		-11.9	36	
1951WC2	R-43.9X	51 NOV 29.3396	4 25 17.7	26 28 22				16.65		-9.3	3	
1951WD2	R-43.10X	51 NOV 29.3396	4 27 59.3	23 38 52				16.43		-9.3	-6	
1951WE2	R-44.2	51 NOV 29.2854	4 13 53.1	20 10 49				15.98		-9.7	-12	
1951WF2	R-44.4	51 NOV 29.2854	4 24 14.5	18 06 56				14.22		-11.1	35	
1951WG2	R-44.5	51 NOV 29.2854	4 24 32.8	17 09 40				15.84C		-11.8	29	
1951WH2	R-44.10X	51 NOV 29.2854	4 16 04.6	17 35 49				16.79		-11.6	9	
1951WJ2	R-44.12X	51 NOV 29.2854	4 21 18.2	20 23 02				16.27		-9.3	-17	
1951WK2	R-44.13X	51 NOV 29.2854	4 22 51.5	16 58 52				16.23		-12.0	-28	
1951WL2	R-44.15X	51 NOV 29.2854	4 26 39.4	19 48 42				17.05		-9.1	-17	
1951WM2	R-44.17X	51 NOV 29.2854	4 28 01.5	15 37 51				16.53A		-8.6	-75	
1951XJ	R-46.3	51 DEC 4.2104	4 26 13.3	3 50 24				15.88		-6.0	15	
1951XJ	R-46.2	51 DEC 22.1611	4 16 20.4	4 19 22				16.28		-4.7	31	
1951XK	R-54.15X	51 DEC 5.2535	4 49 24.0	17 15 23				16.98		-6.0	13	
1951XK	R-54.3	51 DEC 23.1438	4 38 53.5	17 34 59				16.99		-5.5	11	
1951XL	R-45.5	51 DEC 4.2014	4 28 00.5	12 12 55				16.42C		-7.8	-45	
1951XM	R-45.6	51 DEC 4.2014	4 27 54.0	11 55 04				16.30C		-8.5	-24	
1951XN	R-45.7X	51 DEC 4.2014	4 20 11.3	8 10 57				15.88C		-9.6	27	
1951XN	R-46.2	51 DEC 4.2104	4 20 10.7	8 10 56				15.63		-9.6	20	
1951XO	R-45.8X	51 DEC 4.2014	4 30 33.2	12 37 28				16.68C		-9.9	-9	
1951XO	R-55.1	51 DEC 4.2194	4 30 32.5	12 37 30				16.64		-9.6	2	
1951XP	R-51.1	51 DEC 5.2806	4 28 50.9	38 04 41				16.60C		-12.7	-34	
1951XQ	R-52.1	51 DEC 5.2715	4 43 52.0	32 42 57				16.80		-9.4	-10	
1951XR	R-53.1	51 DEC 5.2625	4 32 06.9	25 09 44				15.55		-10.4	-115	
1951XR	R-43.2	51 DEC 22.1340	4 17 33.3	21 52 25				16.66		-7.0	-109	
1951XR	R-44.9	51 DEC 22.1431	4 17 32.3	21 52 17				16.46		-7.2	-118	
1951XS	R-53.2	51 DEC 5.2625	4 35 16.2	25 34 33				16.40		-10.6	-27	
1951XT	R-53.4	51 DEC 5.2625	4 50 25.7	27 01 59				16.14		-11.1	54	
1951XU	R-54.5	51 DEC 5.2535	4 35 12.7	19 51 43				16.86C		-9.8	11	
1951XV	R-55.6X	51 DEC 4.2194	4 38 26.5	15 24 56				16.55C		-9.1	12	
1951XV	R-54.6	51 DEC 5.2535	4 37 29.4	15 26 07				17.01		-9.2	12	
1951XW	R-54.7	51 DEC 5.2535	4 40 01.0	20 32 52				14.53		-8.7	-22	
1951XW	R-44.12	51 DEC 22.1431	4 26 15.4	20 05 36				15.29		-7.5	-15	
1951XX	R-54.8	51 DEC 5.2535	4 40 18.1	18 41 13				15.47		-8.5	-57	
1951XX	R-44.14	51 DEC 22.1431	4 26 47.4	17 20 14				15.97		-7.2	-50	

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION
1951XY	R-54.10	51 DEC 5.2535	4 46 45.3	20 13 20				15.91		-11.6	-52	
1951XY	R-44.11	51 DEC 22.1431	4 26 10.2	18 47 59				16.60		-7.2	-47	
1951XZ	R-54.11	51 DEC 5.2535	4 47 51.7	18 40 04				16.72		-9.5	-22	
1951XA1	R-54.12	51 DEC 5.2535	4 48 15.1	19 12 03				17.09		-9.2	-17	
1951XB1	R-54.14X	51 DEC 5.2535	4 38 16.1	22 19 29				14.64		-10.3	28	
1951XB1	R-43.4	51 DEC 22.1340	4 22 10.1	23 10 05				15.21		-8.9	34	
1951XC1	R-55.5	51 DEC 4.2194	4 51 13.0	12 26 13				16.64		-8.3	-56	
1951XD1	R-62.3X	51 DEC 5.2896	5 06 37.7	35 26 18				15.58		-13.0	40	
1951XD1	R-52.7	51 DEC 22.2424	4 45 42.1	36 13 42				16.28		-12.1	4	
1951XD1	R-51.1	51 DEC 22.2514	4 45 42.7	36 13 44				16.19		-11.7	9	
1951XE1	R-62.5X	51 DEC 5.2896	5 11 56.4	34 48 45				16.72		-7.4	14	
1951XE1	S-12.2	51 DEC 23.2611	4 58 31.5	35 18 23				16.43		-7.1	5	
1951XF1	R-62.7X	51 DEC 5.2896	5 01 18.1	33 42 27				15.59		-11.7	48	
1951XF1	R-52.6	51 DEC 22.2424	4 41 50.7	34 39 28				15.85		-11.2	13	
1951YB	R-43.6	51 DEC 22.1340	4 26 40.8	29 12 26				16.53		-9.2	-86	
1951YB	R-42.2	51 DEC 22.2153	4 26 36.5	29 11 41				16.56		-8.3	-74	
1951YB	R-53.5X	51 DEC 22.2333	4 26 36.1	29 11 39				16.76		-8.9	-72	
1951YC	R-42.3X	51 DEC 22.2153	4 26 22.0	33 52 57				16.75		-9.6	-79	
1951YC	R-52.1	51 DEC 22.2424	4 26 20.3	33 52 36				16.69		-9.6	-57	
1951YD	R-43.1	51 DEC 22.1340	4 10 27.5	24 25 37				16.10C		-6.8	6	
1951YE	R-43.5	51 DEC 22.1340	4 23 45.5	24 28 20				16.88		-8.0	-83	
1951YF	R-43.7	51 DEC 22.1340	4 28 19.3	24 16 45				16.79		-10.4	59	
1951YF	R-53.6X	51 DEC 22.2333	4 28 13.3	24 17 28				17.09		-10.4	67	
1951YG	R-44.15X	51 DEC 22.1431	4 30 06.1	19 08 52				17.00		-8.1	-29	
1951YG	R-54.1	51 DEC 23.1438	4 29 19.1	19 05 39				16.90		-9.0	-27	
1951YH	R-45.2	51 DEC 22.1521	4 13 16.5	11 35 09				16.64C		-6.5	2	
1951YJ	R-45.3	51 DEC 22.1521	4 14 22.1	11 03 59				16.74C		-6.6	-25	
1951YK	R-52.4	51 DEC 22.2424	4 38 49.2	31 04 38				16.93C		-12.3	-26	
1951YL	R-53.2	51 DEC 22.2333	4 33 42.7	28 23 30				16.60		-8.5	35	
1951YM	R-54.2	51 DEC 23.1438	4 32 37.3	21 29 36				16.63		-7.2	-22	
1951YN	R-54.4	51 DEC 23.1438	4 42 01.5	16 37 13				16.53		-9.6	-51	
1951YN	R-55.2	51 DEC 23.1528	4 42 01.1	16 37 10				16.54C		-9.2	-42	
1951YO	R-54.5	51 DEC 23.1438	4 43 52.7	20 46 00				15.39C		-9.3	-87	
1951YP	R-54.7	51 DEC 23.1438	4 49 21.7	18 47 19				16.43		-9.8	-9	
1951YQ	R-54.8X	51 DEC 23.1438	4 51 51.7	21 55 56				17.54		-10.3	-16	

1958ApJS....3..289K

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION	O - C MOTION
1951YQ	S-14.1	51 DEC 23.2431	4 51 45.1	21 55 49				16.95		-10.1 -10	
1951YR	R-55.5X	51 DEC 23.1528	4 36 12.6	9 57 51				16.65		-7.6 23	
1951YR	R-56.1	51 DEC 23.1618	4 36 12.0	9 57 48				16.89		-7.4 14	
1951YS	R-56.2	51 DEC 23.1618	4 39 06.4	8 33 41				17.01		-8.2 0	
1951YT	S-13.2	51 DEC 23.2521	4 50 41.9	26 18 57				15.62		-9.3 -15	
1951YU	S-13.5	51 DEC 23.2521	5 07 29.7	24 11 42				16.21		-11.2 25	
1951YV	S-14.10X	51 DEC 23.2431	5 10 33.6	22 33 39				16.68		-9.1 -11	
1951YV	S-13.7	51 DEC 23.2521	5 10 33.1	22 33 41				16.71C		-9.3 -10	
1951YW	S-14.2	51 DEC 23.2431	4 54 10.6	22 40 14				17.29		-5.4 -3	
1951YW	S-13.11X	51 DEC 23.2521	4 54 10.3	22 40 18				17.60		-6.2 -6	
1951YX	S-14.6	51 DEC 23.2431	5 02 08.0	20 05 59				15.88		-9.9 21	
1951YY	S-15.3	51 DEC 23.1708	5 01 18.5	14 54 34				16.56		-9.3 4	
1951YZ	S-16.1	51 DEC 23.2340	4 52 04.3	7 29 04				17.13		-7.7 2	
1951YA1	S-16.2	51 DEC 23.2340	4 52 07.6	7 38 05				17.05C		-7.5 14	
1951YB1	S-16.5	51 DEC 23.2340	5 11 09.5	5 29 33				15.11C		-9.0 9	
1951YC1	S-21.1	51 DEC 23.3243	5 16 07.3	42 08 12				16.21		-7.7 26	
1951YD1	S-21.3	51 DEC 23.3243	5 30 45.6	38 32 42				16.14C		-11.1 -19	
1951YE1	S-22.4	51 DEC 27.1646	5 33 59.0	33 47 41				17.00		-12.3 -28	
1951YE1	S-32.6X	51 DEC 27.2729	5 33 51.8	33 47 25				16.62		-11.5 -25	
1951YF1	S-23.1	51 DEC 27.1736	5 15 59.0	24 19 13				17.09		-8.3 1	
1951YG1	S-23.4	51 DEC 27.1736	5 19 14.5	22 45 07				16.75		-8.9 -12	
1951YH1	S-23.6	51 DEC 27.1736	5 24 06.5	27 34 40				16.21		-9.1 25	
1951YJ1	S-23.8X	51 DEC 27.1736	5 33 05.3	25 20 20				16.53		-9.9 -11	
1951YJ1	S-33.1	51 DEC 27.2639	5 33 00.1	25 20 22				16.64		-9.6 5	
1951YK1	S-24.1	51 DEC 27.1826	5 14 29.3	20 40 07				16.67		-10.6 -17	
1951YL1	S-24.2	51 DEC 27.1826	5 24 09.3	15 23 42				16.16A		-9.6 3	
1951YM1	S-24.3	51 DEC 27.1826	5 28 02.2	19 59 26				16.08		-9.2 -6	
1951YN1	S-24.5	51 DEC 27.1826	5 32 04.2	15 27 47				17.01A		-11.1 1	
1951YO1	S-26.1	51 DEC 27.2007	5 10 26.7	6 23 25				15.99		-8.8 -44	
1951YP1	S-26.2	51 DEC 27.2007	5 12 11.9	2 28 25				16.14C		-5.2 8	
1951YQ1	S-31.3	51 DEC 27.2819	5 39 22.3	36 43 38				16.69		-13.7 8	
1951YR1	S-32.4	51 DEC 27.2729	5 45 30.3	32 20 06				16.11		-7.1 31	
1951YS1	S-32.5	51 DEC 27.2729	5 49 40.0	28 46 55				16.53		-10.3 18	
1951YT1	S-33.2	51 DEC 27.2639	5 37 40.1	21 15 21				16.79		-8.9 6	
1951YT1	S-34.2	51 DEC 28.1736	5 36 53.9	21 15 16				17.06		-8.7 11	

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION
1951YU1	S-33.3	51 DEC 27.2639	5 38 14.9	20 46 02				16.20C				
1951YU1	S-34.3	51 DEC 28.1736	5 37 17.5	20 45 13				16.49		-10.9	-7	
1951YV1	S-33.4	51 DEC 27.2639	5 41 02.5	22 53 36				15.35		-11.5	51	
1951YW1	S-33.6	51 DEC 27.2639	5 47 11.8	27 12 49				16.00		-10.7	-25	
1951YX1	S-33.8	51 DEC 27.2639	5 52 04.3	21 58 57				15.72		-10.7	22	
1951YY1	S-33.10	51 DEC 27.2639	5 57 33.1	23 48 26				16.93		-9.3	-1	
1951YY1	S-43.6X	51 DEC 27.2910	5 57 31.9	23 48 29				16.80		-9.2	7	
1951YZ1	S-33.12X	51 DEC 27.2639	5 55 53.8	21 12 24				16.10		-15.0	-133	
1951YZ1	S-34.8	51 DEC 28.1736	5 54 32.9	21 01 11				16.43		-15.0	-129	
1951YZ1	S-44.8X	51 DEC 28.3271	5 54 18.7	20 59 21				16.66				
1951YA2	S-34.4	51 DEC 28.1736	5 39 29.8	19 11 10				15.91		-11.0	-27	
1951YB2	S-34.7	51 DEC 28.1736	5 53 49.4	16 47 00				16.86		-10.7	32	
1951YB2	S-44.7X	51 DEC 28.3271	5 53 39.5	16 47 21				17.05		-10.8	30	
1951YC2	S-35.3	51 DEC 28.1826	5 39 57.2	11 33 01				16.72		-9.6	25	
1951YD2	S-35.4	51 DEC 28.1826	5 41 48.9	11 36 07				15.41		-7.8	-13	
1951YE2	S-35.6X	51 DEC 28.1826	5 51 43.3	13 29 53				16.02		-10.7	62	
1951YE2	S-45.1	51 DEC 28.2549	5 51 38.3	13 30 17				16.49C		-11.6	71	
1951YF2	S-42.2	51 DEC 27.3000	6 13 45.1	34 44 34				16.13		-10.7	-20	
1951YG2	S-42.3	51 DEC 27.3000	6 18 40.5	32 12 11				16.19		-10.4	-20	
1951YG2	S-52.4X	51 DEC 28.3090	6 17 38.1	32 10 09				16.77		-10.4	-20	
1951YH2	S-43.2	51 DEC 27.2910	6 08 15.9	24 09 02				16.39		-9.6	-1	
1951YJ2	S-43.3	51 DEC 27.2910	6 10 32.7	23 37 12				16.98		-11.4	18	
1951YK2	S-43.4	51 DEC 27.2910	6 11 06.7	26 09 34				16.14		-11.8	15	
1951YL2	S-43.5	51 DEC 27.2910	6 17 24.5	28 48 43				15.81		-11.0	63	
1951YL2	S-53.1	51 DEC 28.3000	6 16 20.9	28 55 37				15.99A		-10.5	73	
1951YM2	S-44.6	51 DEC 28.3271	6 08 22.7	22 04 34				16.21C		-9.5	-24	
1951YN2	S-45.4	51 DEC 28.2549	6 14 16.3	14 00 07				16.68		-9.0	-18	
1951YN2	S-55.1	51 DEC 28.2819	6 14 15.0	14 00 05				16.57		-8.8	-18	
1951YO2	S-53.9	51 DEC 28.3000	6 35 42.9	24 20 25				16.69		-12.2	-13	
1951YP2	S-54.2	51 DEC 28.3451	6 29 34.3	22 37 47				16.25		-11.7	84	
1951YQ2	S-54.6	51 DEC 28.3451	6 33 42.5	19 19 15				16.82C		-9.9	68	
1951YR2	S-55.4	51 DEC 28.2819	6 21 10.3	5 27 16				16.46		-9.1	-12	
1951YR2	S-45.8X	52 JAN 22.1250	6 02 01.9	12 33 37				16.90		-6.5	16	
1951YS2	S-55.5	51 DEC 28.2819	6 24 28.3	12 15 22				17.15		-10.2	-30	
1951YT2	S-55.6	51 DEC 28.2819	6 26 27.9	12 47 18				17.01		-10.6	22	

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION
1952BG	T-72.4X	52 JAN 29.2285	9 10 04.5	24 14 15				15.61		-8.7	70	
1952BH	T-63.6X	52 JAN 28.3257	8 45 02.7	20 52 38				16.53		-9.1	21	
1952BJ	T-73.3X	52 JAN 29.2375	8 59 48.8	18 10 13				17.13		-10.8	60	
1952BK	T-63.7X	52 JAN 28.3257	8 48 25.3	20 21 06				16.34		-11.9	37	
1952BR	S-36.1	52 JAN 21.1160	5 53 45.1	1 59 26				16.20		-5.6	-31	
1952BR	S-46.3X	52 JAN 22.1340	5 53 15.9	1 56 37				16.05C		-5.9	-25	
1952BS	S-53.3	52 JAN 22.1611	6 38 25.2	26 04 21				13.72		-10.7	203	
1952BS	S-63.1	52 JAN 23.1708	6 37 28.2	26 24 44				13.73		-9.7	199	
1952BT	S-54.7X	52 JAN 23.1257	6 30 31.3	23 13 20				16.88C		-7.1	32	
1952BU	S-62.4	52 JAN 23.1618	6 41 49.9	31 16 27				15.77C		-8.7	31	
1952BV	S-62.5	52 JAN 23.1618	6 46 13.7	35 39 28				15.97		-9.3	5	
1952BW	S-62.7X	52 JAN 23.1618	6 46 25.9	29 08 06				16.10C		-9.3	-7	
1952BW	S-63.2	52 JAN 23.1708	6 46 25.5	29 08 10				16.28		-9.6	-26	
1952BX	S-65.2	52 JAN 23.2431	6 47 23.5	16 13 20				15.07		-6.6	30	
1952BX	S-64.2	52 JAN 23.2521	6 47 23.2	16 13 27				14.87		-7.1	33	
1952BY	T-13.1	52 JAN 25.1535	6 59 47.4	23 15 34				16.75C		-7.9	52	
1952BZ	T-24.3	52 JAN 25.2799	7 14 28.6	19 26 04				16.47		-8.5	30	
1952BA1	T-24.4	52 JAN 25.2799	7 14 49.9	18 11 56				15.35		-10.1	-45	
1952BB1	T-35.2X	52 JAN 26.2049	7 52 39.5	8 45 42				16.19C		-10.6	43	
1952BB1	T-45.2	52 JAN 28.1903	7 50 38.1	8 54 59				16.01		-10.9	55	
1952BC1	T-41.1	52 JAN 26.2951	8 19 59.9	42 24 11				15.56C		-27.8	-216	
1952BD1	T-42.1	52 JAN 26.2861	8 03 56.9	34 22 46				16.23		-10.5	9	
1952BE1	T-42.2	52 JAN 26.2861	8 03 45.1	31 25 35				14.44		-12.1	-36	
1952BF1	T-42.3	52 JAN 26.2861	8 08 09.0	31 14 30				16.19		-10.9	2	
1952BG1	T-46.1	52 JAN 28.1993	7 57 46.8	4 34 01				15.52		-8.3	8	
1952BH1	T-54.1	52 JAN 28.2083	8 13 10.9	14 51 43				16.52		-8.7	16	
1952BJ1	T-54.2	52 JAN 28.2083	8 14 50.9	15 13 29				15.98A		-8.8	99	
1952BK1	T-54.3	52 JAN 28.2083	8 22 46.0	19 00 35				16.25		-9.1	23	
1952BL1	T-55.1	52 JAN 28.2174	8 18 00.5	12 21 19				15.57		-8.9	5	
1952BM1	T-55.2	52 JAN 28.2174	8 22 52.5	11 42 09				15.67		-8.2	5	
1952BN1	T-55.3	52 JAN 28.2174	8 27 26.9	8 57 13				16.58		-8.3	55	
1952BO1	T-55.4	52 JAN 28.2174	8 28 55.3	8 19 44				16.25		-9.8	48	
1952BO1	T-65.3X	52 JAN 28.3076	8 28 49.7	8 20 10				16.14		-9.1	52	
1952BP1	T-56.1	52 JAN 28.2264	8 21 15.9	1 23 38				15.42		-8.7	56	
1952BQ1	T-62.1	52 JAN 28.3347	8 43 30.9	28 25 45				15.39		-9.8	25	

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION	
1952BR1	T-63.1	52 JAN 28.3257	8 38 24.2	20 22 41				16.12		-9.0	25		
1952BS1	T-63.2	52 JAN 28.3257	8 39 26.4	22 30 26				15.92		-11.2	10		
1952BT1	T-64.1	52 JAN 28.3167	8 37 03.7	17 14 27				15.59		-10.7	8		
1952BU1	T-66.2	52 JAN 28.2986	8 37 59.7	2 03 37				15.89		-8.6	76		
1952BV1	T-72.1	52 JAN 29.2285	8 56 12.5	26 30 29				16.30		-11.2	35		
1952BW1	T-72.2	52 JAN 29.2285	9 10 43.1	25 20 57				15.48C		-11.0	11		
1952BX1	T-72.3	52 JAN 29.2285	9 15 11.3	23 33 46				16.63		-8.5	42		
1952BX1	T-83.2X	52 JAN 29.3549	9 15 04.7	23 34 24				16.36		-8.4	56		
1952BX1	T-82.6X	52 JAN 31.3306	9 13 25.3	23 45 00				16.40		-8.8	53		
1952BY1	T-72.5X	52 JAN 29.2285	9 12 13.5	26 04 06				16.36		-10.0	80		
1952BY1	T-82.1	52 JAN 31.3306	9 10 13.3	26 21 06				16.32		-10.0	82		
1952BZ1	T-73.2X	52 JAN 29.2375	8 57 22.1	17 33 12				16.44		-8.5	50		
1952BZ1	T-74.2	52 JAN 29.2465	8 57 21.3	17 33 12				16.79C		-8.3	43		
1952BA2	T-81.2	52 JAN 31.3403	9 33 32.3	32 04 04				16.79		-10.2	72		
1952BA2	T-91.3X	52 JAN 31.3583	9 33 31.1	32 04 08				16.61		-10.3	76		
1952BB2	T-82.2	52 JAN 31.3306	9 16 55.1	24 27 07				16.43		-10.8	44		
1952BC2	T-84.2	52 JAN 29.3458	9 14 55.9	9 51 42				16.66		-9.2	-3		
1952BD2	T-84.3	52 JAN 29.3458	9 16 17.8	10 51 51				14.41		-12.7	-77		
1952BE2	T-84.6X	52 JAN 29.3458	9 16 07.0	15 04 56				16.01A		-7.9	37	-0.2	-3
1952CB	T-93.1	52 FEB 1.2583	9 28 55.9	13 53 55				15.64C		-9.1	112		
1952CB	U-13.1	52 FEB 17.2069	9 14 58.2	16 45 54				16.07		-9.3	108		
1952CB	U-14.3X	52 FEB 17.2160	9 14 57.5	16 45 58				15.69		-8.8	99		
1952CC	T-95.3X	52 FEB 1.2764	9 31 22.1	6 29 57				16.63C		-10.2	18		
1952CD	T-96.2	52 FEB 1.2854	9 33 22.9	- 5 31 22				14.42		-13.8	-155		
1952DA	T-83.4X	52 JAN 29.3549	9 30 44.4	22 22 03				15.51	12.47	-8.0	48		
1952DA	U-12.1	52 FEB 17.1979	9 14 35.4	23 40 02				15.65	12.57	-8.6	31		
1952DA	U-13.9X	52 FEB 17.2069	9 14 34.7	23 40 02				15.85C	12.77C	-8.6	33		
1952DF	U-54.2	52 FEB 20.2410	10 43 35.7	7 35 39				16.13		-10.3	-6		
1952DJ	U-32.7	52 FEB 19.2118	10 06 29.3	20 31 38				15.65		-8.2	13		
1952DJ	U-42.8X	52 FEB 20.2229	10 05 40.7	20 32 46				15.78		-8.6	8		
1952DR	U-73.1	52 FEB 26.2618	11 12 52.9	9 04 29				16.71		-7.3	55		
1952DS	U-63.4	52 FEB 24.2493	11 10 15.1	6 01 41				16.01		-7.2	45		
1952DT	U-53.8X	52 FEB 24.2312	10 52 37.3	10 21 40				16.64		-7.9	51		
1952DT	U-63.8X	52 FEB 24.2493	10 52 36.8	10 21 43				15.84		-8.3	49		
1952DW	U-62.8	52 FEB 24.2403	11 05 05.7	12 13 16				16.10C		-10.8	32		

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION
1952DX	U-23.5	52 FEB 18.2125	9 41 25.7	17 08 24				16.39		-11.5	40	
1952DZ	U-14.5X	52 FEB 17.2160	9 28 40.6	13 51 42				16.14		-7.6	94	
1952DZ	U-23.7X	52 FEB 18.2125	9 27 55.8	14 01 13				16.54		-8.2	99	
1952DA1	U-13.2	52 FEB 17.2069	9 15 54.6	19 54 49				16.34		-9.1	39	
1952DB1	U-13.3	52 FEB 17.2069	9 18 00.9	20 51 45				16.66		-11.6	-31	
1952DC1	U-13.4	52 FEB 17.2069	9 21 58.7	16 51 47				16.18		-8.5	32	
1952DC1	U-14.4X	52 FEB 17.2160	9 21 57.7	16 51 49				16.40		-8.2	31	
1952DD1	U-13.5	52 FEB 17.2069	9 25 48.5	17 15 50				16.64		-8.1	48	
1952DE1	U-13.11X	52 FEB 17.2069	9 20 09.1	18 22 15				15.94		-10.4	100	
1952DF1	U-14.1	52 FEB 17.2160	9 10 20.8	10 33 18				15.21		-6.9	78	
1952DG1	U-23.2	52 FEB 18.2125	9 39 37.0	19 45 21				16.69C		-11.3	24	
1952DH1	U-23.4	52 FEB 18.2125	9 41 28.9	17 56 27				16.68		-9.5	21	
1952DJ1	U-24.3X	52 FEB 18.2215	9 48 12.1	9 24 52				16.84		-9.5	68	
1952DJ1	U-34.1	52 FEB 19.2299	9 47 17.0	9 31 24				16.64C		-9.8	69	
1952DK1	U-25.4	52 FEB 18.2306	9 47 01.9	4 54 36				16.76		-8.3	98	
1952DK1	U-34.7X	52 FEB 19.2299	9 46 14.0	5 05 00				16.51		-8.7	110	
1952DK1	U-35.2X	52 FEB 19.2389	9 46 13.3	5 04 59				16.19C		-8.9	109	
1952DL1	U-32.4	52 FEB 19.2118	9 58 48.5	23 51 20				16.07		-10.1	80	
1952DM1	U-33.2	52 FEB 19.2208	9 53 17.1	15 55 13				16.36		-7.7	33	
1952DN1	U-33.7	52 FEB 19.2208	10 03 09.5	16 54 19				16.33		-8.8	37	
1952DO1	U-34.3	52 FEB 19.2299	9 57 46.1	10 45 13				15.29		-11.0	78	
1952DP1	U-34.4	52 FEB 19.2299	10 00 49.1	5 22 21				15.98		-10.2	14	
1952DP1	U-35.1	52 FEB 19.2389	10 00 48.7	5 22 17				15.86		-9.8	9	
1952DQ1	U-34.6	52 FEB 19.2299	10 08 09.2	8 02 29				15.65C		-12.0	-19	
1952DQ1	U-44.1	52 FEB 19.3210	10 08 02.3	8 02 30				15.61		-11.9	-11	
1952DR1	U-42.3	52 FEB 20.2229	10 12 41.1	23 28 29				16.64		-8.3	54	
1952DS1	U-44.3	52 FEB 19.3210	10 17 54.8	11 16 49				16.14		-11.0	40	
1952DT1	U-44.4	52 FEB 19.3210	10 18 25.5	11 07 24				16.06		-8.0	48	
1952DU1	U-45.3	52 FEB 19.3111	10 21 15.3	5 41 12				16.18		-6.8	27	
1952DU1	U-44.5	52 FEB 19.3210	10 21 14.8	5 41 10				16.29		-6.7	37	
1952DV1	U-45.5X	52 FEB 19.3111	10 28 46.2	5 47 26				15.85		-7.2	72	
1952DV1	U-44.8	52 FEB 19.3210	10 28 45.5	5 47 30				15.84		-7.9	77	
1952DW1	U-45.1	52 FEB 19.3111	10 15 50.8	- 0 16 41				16.20C		-8.7	22	
1952DX1	U-52.2	52 FEB 24.2222	10 36 35.2	15 21 53				16.10		-9.1	64	
1952DY1	U-52.3	52 FEB 24.2222	10 39 20.9	18 18 07				15.84		-7.3	85	

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O – C R A	O – C DEC	VAR	MAG	G	10 – DAY MOTION		O – C MOTION
1952DZ1	U-52.5	52 FEB 24.2222	10 42 38.2	19 04 00				15.69C		-9.6	71	
1952DA2	U-55.2	52 FEB 20.2500	10 46 53.9	- 5 12 35				16.34		-10.8	-10	
1952DA2	U-56.2X	52 FEB 20.3132	10 46 49.2	- 5 12 45				16.57		-10.6	-11	
1952DB2	U-61.3	52 FEB 20.3222	11 12 11.6	19 14 00				16.43		-6.8	112	
1952DC2	U-62.5	52 FEB 24.2403	10 56 25.9	12 26 04				16.41		-10.3	79	
1952DD2	U-62.6	52 FEB 24.2403	11 02 20.0	12 42 16				16.49		-7.6	47	
1952DE2	U-64.5	52 FEB 24.2583	11 05 32.6	- 0 59 26				15.47		-7.8	53	
1952DF2	U-71.1	52 FEB 26.2417	11 17 00.5	21 40 12				16.29		-8.9	75	
1952DG2	U-72.2	52 FEB 26.2528	11 31 53.5	14 29 47				16.44C		-9.9	66	
1952DH2	U-73.2	52 FEB 26.2618	11 14 08.0	10 02 04				15.54		-8.9	73	
1952DJ2	U-73.3	52 FEB 26.2618	11 15 33.6	8 21 43				15.68		-7.8	109	
1952DK2	U-73.5	52 FEB 26.2618	11 20 21.7	7 45 01				15.07C		-6.4	96	
1952DL2	U-73.6	52 FEB 26.2618	11 22 11.2	6 07 23				15.94		-7.9	83	
1952DM2	U-81.1	52 FEB 20.3590	11 46 09.5	18 20 13				15.13C		-7.6	28	
1952DN2	U-83.4	52 FEB 24.3681	11 35 05.1	4 40 21				16.71		-8.5	83	
1952DO2	U-83.5	52 FEB 24.3681	11 38 50.6	4 09 04				16.03		-8.6	45	
1952DP2*	U-83.7	52 FEB 24.3681	11 48 38.7	5 09 11				15.54		-8.7	48	
1952DQ2	U-84.2	52 FEB 26.2708	11 32 01.3	0 35 58				16.41C		-6.1	64	
1952DR2	U-84.3	52 FEB 26.2708	11 33 40.6	1 50 35				16.66		-7.2	68	
1952DS2	U-84.4	52 FEB 26.2708	11 34 43.5	0 31 01				15.95		-6.4	34	
1952DT2	U-84.6	52 FEB 26.2708	11 37 38.5	2 48 20				16.55		-7.4	41	
1952DU2	U-85.2	52 FEB 26.2799	11 37 11.8	- 7 27 08				16.58		-7.3	9	
1952DV2	U-85.4	52 FEB 26.2799	11 45 07.5	- 4 16 00				15.17		-4.5	91	
1952DW2	U-85.5	52 FEB 26.2799	11 46 08.1	- 4 26 41				16.40		-7.9	34	
1952DX2	U-91.2	52 FEB 24.3771	12 11 35.8	16 32 25				15.28		-4.6	132	
1952DY2	U-93.4X	52 FEB 26.3792	12 05 37.8	0 06 26				16.64		-7.8	59	
1952DY2	U-94.3	52 FEB 26.3701	12 05 38.2	0 06 22				16.45		-7.3	61	
1952DZ2	U-94.1	52 FEB 26.3701	11 56 22.0	- 3 04 05				16.46		-7.1	9	
1952DA3	U-94.4	52 FEB 26.3701	12 07 02.2	- 2 40 31				16.83		-6.6	47	
1952DB3	U-94.5	52 FEB 26.3701	12 07 14.9	- 2 43 20				16.00		-5.0	75	
1952DB3	V-14.5	52 MAR 23.1993	11 51 25.5	1 19 49				15.28		-7.3	106	
1952DB3	V-23.2	52 MAR 23.2083	11 51 25.2	1 19 51				15.32		-7.1	99	
1952DC3	U-95.1	52 FEB 26.3611	11 54 55.2	- 6 25 08				15.94		-9.2	9	
1952DC3	U-94.7X	52 FEB 26.3701	11 54 55.1	- 6 25 05				15.85		-8.2	14	
1952DD3	U-94.12X	52 FEB 26.3701	12 06 05.5	- 1 26 19				16.95		-3.7	77	

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O − C R A	O − C DEC	VAR	MAG	G	10 − DAY MOTION		O − C MOTION
1952DE3	U-96.2X	52 FEB 26.3521	12 02 06.7	-12 43 38				16.29		-5.8	38	
1952DE3	U-95.3	52 FEB 26.3611	12 02 06.1	-12 43 27				16.52		-6.5	35	
1952DF3	U-95.4	52 FEB 26.3611	12 02 18.6	- 6 57 31				16.49		-7.2	-1	
1952FU	V-11.1	52 MAR 22.1833	11 38 15.1	19 18 11				15.95		-7.1	36	
1952FV	V-11.2	52 MAR 22.1833	11 53 43.5	21 30 22				15.39C		-7.9	98	
1952FV	V-21.1	52 MAR 22.2014	11 53 42.9	21 30 28				15.46C		-7.9	94	
1952FW	V-13.1	52 MAR 23.1903	11 31 50.3	3 10 41				15.45C		-8.1	105	
1952FW	V-14.7X	52 MAR 23.1993	11 31 50.2	3 10 45				15.46		-8.2	93	
1952FX	V-14.6	52 MAR 23.1993	11 51 23.2	- 1 45 35				15.63		-9.8	51	
1952FX	V-24.2	52 MAR 23.2174	11 51 22.9	- 1 45 30				15.56		-9.5	46	
1952FY	V-15.1	52 MAR 24.1875	11 29 59.3	- 5 09 55				15.85		-9.1	42	
1952FZ	V-15.2	52 MAR 24.1875	11 31 26.9	- 5 35 07				15.75		-9.6	62	
1952FA1	V-15.3	52 MAR 24.1875	11 34 44.0	- 7 11 02				16.62		-7.1	104	
1952FB1	V-24.4X	52 MAR 23.2174	11 51 14.8	- 4 39 56				15.32		-8.3	31	
1952FB1	V-15.5	52 MAR 24.1875	11 50 28.4	- 4 36 57				15.55		-8.1	33	
1952FC1	V-32.1	52 MAR 22.2285	12 23 04.1	6 39 52				15.08		-11.0	65	
1952FD1	V-33.1	52 MAR 23.2264	12 15 19.7	0 19 57				15.34		-10.9	55	
1952FE1	V-33.3	52 MAR 23.2264	12 27 20.9	- 1 08 43				14.84		-7.5	74	
1952FE1	V-34.6	52 MAR 23.2354	12 27 20.7	- 1 08 39				15.07		-6.6	81	
1952FF1	V-34.2	52 MAR 23.2354	12 17 12.4	- 5 48 44				15.51		-9.4	23	
1952FG1	V-34.5	52 MAR 23.2354	12 25 24.1	- 3 15 45				15.59		-11.9	-10	
1952FG1	V-44.3X	52 MAR 23.3083	12 25 19.8	- 3 15 52				16.40		-12.1	-9	
1952FH1	V-35.1	52 MAR 24.2236	12 16 56.1	- 9 35 50				16.56C		-10.1	17	
1952FJ1	V-44.1	52 MAR 23.3083	12 45 00.7	- 7 44 37				16.35C		-10.9	36	
1952FJ1	V-54.1	52 MAR 23.3264	12 44 59.7	- 7 44 33				16.36C		-10.4	34	
1952FK1	V-64.4	52 MAR 23.3444	13 13 14.6	- 4 52 07				15.91		-6.4	52	
1952FK1	V-63.4	52 MAR 23.3535	13 13 14.3	- 4 52 00				15.62		-7.2	50	
1952HB	W-24.3X	52 APR 23.1903	13 23 33.1	- 5 15 31				15.47		-8.4	73	
1952HH	W-33.8X	52 APR 24.1951	13 39 15.1	- 3 13 52				16.49		-6.9	57	
1952HJ	W-33.4	52 APR 24.1951	13 39 40.5	- 2 31 20				15.84C		-8.2	17	
1952HL	W-55.3	52 APR 26.2146	14 18 08.7	-19 07 44				14.86		-7.6	81	
1952HO	W-43.13X	52 APR 24.2854	13 48 13.3	- 9 51 27				16.40		-10.2	65	
1952HS	W-43.11	52 APR 24.2854	14 01 14.8	- 7 52 15				15.59C		-9.4	91	
1952HT	W-43.8	52 APR 24.2854	13 51 11.3	- 8 30 54				15.99		-8.0	36	
1952HV	W-34.8X	52 APR 24.2042	13 44 15.9	- 8 33 28				15.97		-11.7	42	

TABLE A

MINOR PLANET	SURVEY NUMBER	DATE U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION
1952HV	W-43.2	52 APR 24.2854	13 44 10.5	- 8 33 11				15.86		-11.5	39	
1952HW	W-44.5X	52 APR 24.2764	13 54 58.7	-12 41 01				15.84C				
1952HW	W-43.10	52 APR 24.2854	13 54 58.1	-12 40 58				15.79		-8.5	36	
1952HG1	W-62.2	52 APR 26.3139	14 28 58.0	1 42 32				17.06C		-6.9	42	
1952HG1	W-61.2	52 APR 26.3229	14 28 57.5	1 42 41				16.67		-7.0	49	
1952HY1	W-13.4	52 APR 22.1778	12 54 06.3	- 2 06 04						-8.1	-10	
1952HZ1	W-22.4	52 APR 23.1722	13 19 10.8	5 14 35				16.24		-7.0	51	
1952HA2	W-32.1	52 APR 24.1861	13 28 59.7	5 12 51				16.52		-6.6	46	
1952HB2	W-33.2	52 APR 24.1951	13 28 42.1	- 4 52 08				15.69		-7.5	105	
1952HD2	W-36.6X	52 APR 23.2806	13 44 11.2	-19 04 40				16.39C		-10.7	24	
1952HD2	W-35.3X	52 APR 23.2896	13 44 10.4	-19 04 36				16.57		-10.5	23	
1952HD2	W-45.2	52 APR 24.2674	13 43 12.3	-19 02 31				15.92		-10.4	16	
1952HD2	W-44.1	52 APR 24.2764	13 43 11.7	-19 02 21				16.08		-10.5	18	
1952HE2	W-26.2	52 APR 23.2535	13 21 21.4	-19 56 44				16.03		-9.3	65	
1952HE2	W-36.4X	52 APR 23.2806	13 21 19.6	-19 56 27				16.54C		-9.2	71	
1952HF2	W-40.1	52 APR 26.1868	13 53 11.3	14 04 49				16.88		-9.9	-3	
1952HG2	W-35.1	52 APR 23.2896	13 34 39.5	-14 57 26				16.11		-11.4	2	
1952HG2	W-42.2	52 APR 24.2944	13 48 29.4	- 3 38 25				17.02		-8.7	12	
1952HH2	W-43.4	52 APR 24.2854	13 48 59.1	-11 45 09				16.34		-9.2	88	
1952HJ2	W-43.6	52 APR 24.2854	13 50 49.5	-10 37 07				16.38		-8.3	37	
1952HK2	W-43.7	52 APR 24.2854	13 50 47.8	- 9 04 46				16.53		-10.8	10	
1952HL2	W-43.12	52 APR 24.2854	14 05 16.5	-12 52 27				15.64C		-7.7	67	
1952HL2	W-54.1	52 APR 26.2056	14 03 51.1	-12 40 04				15.80		-7.3	66	
1952HM2	W-44.4	52 APR 24.2764	14 03 43.9	-16 21 03				15.20C		-10.5	58	
1952HN2	W-45.3	52 APR 24.2674	14 01 17.4	-23 15 51				14.19C		-9.9	1	
1952HO2	W-45.4	52 APR 24.2674	14 04 34.6	-24 55 09				16.17C		-8.1	75	
1952HP2	W-52.2	52 APR 26.2868	14 06 24.7	- 2 28 09				16.56		-9.5	18	
1952HQ2	W-53.3	52 APR 26.1965	14 08 17.9	- 7 31 04				15.65		-8.8	28	
1952HR2	W-53.6	52 APR 26.1965	14 09 45.7	- 9 24 11				16.19		-8.3	44	
1952HS2	W-53.7	52 APR 26.1965	14 09 42.0	- 4 53 51				17.16C		-9.8	55	
1952HT2	W-53.10	52 APR 26.1965	14 15 38.4	- 9 58 00				16.87C		-7.8	39	
1952HU2	W-53.12	52 APR 26.1965	14 20 01.9	- 4 57 05				15.73		-11.2	-24	
1952HU2	W-62.1	52 APR 26.3139	14 19 54.4	- 4 57 19				15.97		-11.9	-20	
1952HV2	W-54.2	52 APR 26.2056	14 04 08.3	-17 01 24				16.24C		-12.3	19	
1952HW2	W-54.3	52 APR 26.2056	14 05 22.1	-11 37 46				16.22		-10.5	24	

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION
1952HX2	W-54.4	52 APR 26.2056	14 07 38.0	-14 07 07				16.50A		-7.5	65	
1952HY2	W-54.5	52 APR 26.2056	14 07 59.6	-11 16 22				16.62		-9.2	93	
1952HZ2	W-54.6	52 APR 26.2056	14 09 47.7	-15 01 13				16.21		-9.3	88	
1952HA3	W-54.11	52 APR 26.2056	14 16 34.7	-17 44 04				16.88		-9.6	12	
1952HA3	W-55.4X	52 APR 26.2146	14 16 33.8	-17 44 09				16.68C		-9.6	13	
1952HB3	W-54.12	52 APR 26.2056	14 17 23.5	-15 00 50				17.04		-12.3	6	
1952HC3	W-54.13	52 APR 26.2056	14 17 39.7	-11 55 17				16.11		-8.0	76	
1952HD3	W-61.3	52 APR 26.3229	14 32 52.1	7 00 20				16.62C		-7.5	67	
1952HE3	W-63.3	52 APR 26.3049	14 30 53.5	-11 19 11				16.21		-8.5	164	
1952HF3	W-63.4	52 APR 26.3049	14 31 12.9	- 8 43 45				15.91C		-9.5	62	
1952HG3	W-64.2	52 APR 27.2167	14 29 45.6	-13 08 28				16.54		-9.0	51	
1952HH3	W-64.3	52 APR 27.2167	14 32 34.5	-17 36 40				16.07		-9.5	74	
1952HJ3	W-64.4	52 APR 27.2167	14 33 54.1	-13 00 30				16.83C		-9.9	57	
1952HK3	W-64.5	52 APR 27.2167	14 35 31.1	-15 25 28				16.71		-9.0	78	
1952HL3	W-64.6	52 APR 27.2167	14 35 59.1	-17 41 12				17.28		-11.4	-19	
1952HM3	W-64.9	52 APR 27.2167	14 43 18.9	-17 38 12				16.27		-8.3	89	
1952HM3	W-75.1	52 APR 27.3708	14 43 10.3	-17 37 04						8.1	92	
1952HN3	W-64.10	52 APR 27.2167	14 47 59.5	-14 10 30				15.74		-9.0	66	
1952HO3	W-64.12	52 APR 27.2167	14 49 55.5	-14 28 08				15.31		-8.7	64	
1952HO3	W-74.1	52 APR 27.3799	14 49 46.5	-14 27 03						9.0	59	
1952HP3	W-65.1	52 APR 27.2257	14 34 08.3	-21 16 52				16.33		-9.6	71	
1952HQ3	W-65.2	52 APR 27.2257	14 46 02.6	-20 25 57				15.63		-11.4	6	
1952HQ3	W-75.9	52 APR 27.3708	14 45 53.1	-20 25 55						-11.7	6	
1952HR3	W-74.4	52 APR 27.3799	14 56 42.5	-15 46 09						14.0	34	
1952HS3	W-74.6	52 APR 27.3799	15 02 09.2	-18 29 18						11.6	-3	
1952HS3	W-75.10X	52 APR 27.3708	15 02 09.6	-18 29 16						-10.9	-11	
1952HS3	W-84.1	52 APR 28.2778	15 01 14.7	-18 29 59				16.14C		-11.0	-12	
1952HT3	W-75.3	52 APR 27.3708	14 51 13.3	-19 47 10						-11.0	37	
1952HU3	W-75.8	52 APR 27.3708	15 04 31.9	-23 51 01						-9.4	13	
1952HU3	W-84.3	52 APR 28.2778	15 03 43.4	-23 50 16				15.74C		-9.6	7	
1952HU3	X-15.1	52 MAY 20.1764	14 43 14.3	-23 01 32				15.61		-8.6	36	
1952HV3	W-82.2	52 APR 28.2507	15 17 24.4	- 7 01 19				11.76C		-8.8	70	
1952HW3	W-83.2	52 APR 28.2868	15 08 22.1	-16 15 33				16.07		-7.7	46	
1952HW3	X-14.2	52 MAY 20.2458	14 51 40.3	-14 36 51				16.06		-7.1	39	
1952HX3	W-83.3	52 APR 28.2868	15 11 14.6	-16 44 39				16.52		-11.0	-18	

TABLE A

MINOR PLANET	SURVEY NUMBER	D A T E U.T.	R. A. 1950.0	DEC 1950.0	O - C R A	O - C DEC	VAR	MAG	G	10 - DAY MOTION		O - C MOTION
1952HY3	W-83.6	52 APR 28.2868	15 28 46.5	-15 01 08				15.23		-7.6	27	
1952HY3	X-14.11X	52 MAY 20.2458	15 11 34.7	-14 02 51				15.22		-7.3	19	
1952HY3	X-23.6X	52 MAY 22.2729	15 10 02.8	-13 58 17				15.25A		-7.2	20	
1952HZ3	W-84.5	52 APR 28.2778	15 15 17.7	-21 46 34				15.91		-7.8	52	
1952HZ3	X-15.2	52 MAY 20.1764	14 58 12.5	-19 32 06				15.73		-7.8	62	
1952HA4	W-86.1	52 APR 28.2597	15 16 43.3	-35 05 27				16.90		-8.8	-10	
1952KA	X-53.5	52 MAY 24.2208	16 29 18.2	-18 30 20				16.00		-8.2	17	
1952KA	X-63.2	52 MAY 25.3049	16 28 25.1	-18 28 45				15.33		-9.1	15	
1952KB	X-53.4	52 MAY 24.2208	16 27 47.9	-17 58 39				15.77		-10.0	65	
1952KB	X-63.1	52 MAY 25.3049	16 26 48.4	-17 51 53				15.45C		-9.9	60	
1952KJ	X-22.4	52 MAY 20.2729	15 12 01.3	- 7 39 03				15.28C		-8.8	-35	
1952KM	X-14.5	52 MAY 20.2458	14 58 50.5	-16 47 11				16.19		-10.0	26	
1952KN	X-14.9X	52 MAY 20.2458	15 10 59.5	-11 54 52				16.28		-8.8	69	
1952KN	X-22.3	52 MAY 20.2729	15 10 58.2	-11 54 49				16.39C		-8.6	64	
1952KN	X-23.5X	52 MAY 22.2729	15 09 18.2	-11 41 19				16.65C		-8.5	56	
1952KO	X-14.10X	52 MAY 20.2458	15 10 07.3	-17 19 44				15.32		-10.9	-28	
1952KO	X-23.1	52 MAY 22.2729	15 08 00.0	-17 25 48				15.66		-10.4	-33	
1952KP	X-21.1	52 MAY 20.2819	15 01 21.1	- 2 52 27				16.20		-8.0	-8	
1952KQ	X-21.3	52 MAY 20.2819	15 16 45.9	- 3 17 56				15.44		-9.2	-37	
1952KR	X-22.2	52 MAY 20.2729	15 09 42.1	- 6 17 02				16.12		-7.7	78	
1952KS	X-36.1	52 MAY 22.2097	15 32 19.0	-35 47 55				16.57		-10.1	42	
1952KT	X-44.5	52 MAY 24.1937	15 58 09.0	-24 46 38				16.45		-10.2	-24	
1952KU	X-45.2	52 MAY 24.2028	15 51 21.9	-29 30 19				16.31		-8.7	44	
1952KV	X-45.5	52 MAY 24.2028	16 05 12.8	-26 51 03				16.13		-10.0	67	
1952KW	X-54.1	52 MAY 24.2292	16 12 53.2	-19 43 05				15.97C		-11.8	1	
1952KW	X-53.1X	52 MAY 24.2208	16 12 53.8	-19 43 02				15.90		-12.3	10	
1952KX	X-53.2	52 MAY 24.2208	16 23 48.2	-13 30 24				16.29		-9.8	52	
1952KY	X-53.3	52 MAY 24.2208	16 24 48.8	-14 07 32				16.56C		-8.7	53	
1952KZ	X-55.1	52 MAY 25.2097	16 23 00.6	-29 27 42				15.13		-12.5	1	
1952KA1	X-55.2	52 MAY 25.2097	16 25 45.8	-27 19 23				14.88		-9.1	51	
1952KA1	X-64.1	52 MAY 25.2278	16 25 44.8	-27 19 14				14.84		-9.5	52	
1952KB1	X-61.1	52 MAY 25.3215	16 24 39.0	- 4 39 09				15.38		-6.7	18	
1952KC1	X-62.2	52 MAY 25.3132	16 41 48.6	- 9 36 46				15.95C				
1952KC1	X-61.2	52 MAY 25.3215	16 41 48.6	- 9 36 33				16.54C				
1952KD1	X-64.2	52 MAY 25.2278	16 28 11.1	-24 37 59				15.56C		-11.9	-40	