

## No. 129 SELENODETIC MEASURES ON 25 STAR-TRAILED PHOTOGRAPHS

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### ABSTRACT

Details are given of coordinate measures on 25 Yerkes lunar star-trailed photographs. The tables give the ephemeris data interpolated for the time and place of the photographs, the raw coordinates and the final refraction-free photographic coordinates. The origin and orientation of the coordinate system of these coordinates are determined from the measures of the limb and star trail.

### 1. Introduction

**I**N *Comm. LPL* No. 72 the writer gives the computational details for processing measures on star-trailed lunar photographs. The present paper details an application of the method to 25 Yerkes star-trailed photographs. A following paper deals with the use of the reduced measurements for the determination of secondary selenodetic positions. Here we are concerned only with the derivation of the corrected or final photographic coordinates.

Some 48 positions on the disk were measured, in two orientations as in previous work. The star trail itself was also measured in both orientations, but naturally the measures in the two orientations do not generally refer to the same points on the trail. The limb profile was measured at approximately uniform intervals, but only in the first, or direct, orientation.

In many photographs the trail is neither well defined nor obvious, and generally it has the appearance of a badly frayed rope. Evidently some sections of the trails are appreciably raised or lowered by short periods of abnormal refraction. At present I suspect that this fluctuation of the refraction may be the principal limitation in the derivation of orientation from star-trailed lunar photographs. The measures of the profile of the bright limb are fitted by a circle whose center is made the origin of the final photographic coordinates. The star-trail measures are used to determine the true east-west direction at the moment of the lunar exposure. Thus, the final results of this paper are the coordinates  $(x, y)$  of equation (33) of *Comm. LPL* No. 72; that is, they are refraction-free photographic coordinates with the origin at the apparent center of face, and with

the  $y$ -axis directed northwards along the hour-circle through this center.

### 2. Description of Table 1

Table 1 presents the raw measures in millimeters of the photographic coordinates of the points on the disk. The first column gives the reference derived from the standard direction-cosines  $\xi$  and  $\eta$ . The second and third columns give the measured coordinates as means of the direct and reverse readings. These are corrected for instrumental errors but are still affected by differential refraction and are in a system which is only approximately oriented. The next two columns give the deviations of the direct and reverse readings from the means. The weights, in the next two columns, are computed from the dispersions in the four repeated pointings in each orientation. Since all measures were made by the same observer, Mr. H. Connors, these weights are little more than objective indications of the definitions of the observed points. The last column gives the serial number of the measure. This is a unique number that is never repeated in the LPL selenodetic measures.

### 3. Description of Table 2

Table 2 presents the raw measures for points on the trail. As already noted in this case, the direct and reverse measures generally refer to different points on the trail. The first two columns give the direct  $x$  and  $y$ , while the third and fourth columns give the values in the reverse orientation. Inspection of the Tables show that about 80 observations are used to fix the star trail. The precision is less than might be inferred from this figure. I attribute this to periods of abnormal refraction that cause entire sections of the trail to be displaced from their normal positions.

The trail measures are reduced, as in *Comm. LPL* No. 72, to determine the rotation from the  $x$ -axis to the corrected direction of the star trail. However, once these rotations are established the star-trail measures have no special meaning and are not taken through to final coordinates.

### 4. Description of Table 3

This Table presents the raw and final coordinates of points on the profiles of the bright limb. These points were measured in the direct orientation only. The first two columns give the raw measures; the next two columns give the final coordinates in the system defined in Table 5. Serial numbers are given in the last column.

### 5. Description of Table 4

This Table gives the results for the 48 points on the disk. It should be remembered that these are refraction-free rectangular coordinates in the plane of the photograph, with the origin at the center of the circle of the bright limb, and the  $y$ -axis tangent to the moon's hour circle. The identifying reference of the point is given in the first column, and the final coordinates in millimeters are given in the second and third columns.

### 6. Description of Table 5

Table 5 is concerned mainly with ephemeris data interpolated for the time and place of the photograph. Given are the topocentric librations ( $l'$ ,  $b'$ ), the topocentric semidiameter  $s'$ , and position-angle  $C'$ .

The last column  $C' - C^*$  requires a more detailed description, and may be regarded as a discrepancy between the ephemeris value and observed value of  $C'$ . If  $(X', Y')$  represent the projected picture computed from the scheme set out in *LPL Comm.* No. 60, as applied to a number of points of the Breslau triangulation (Schrutka-Rechtens-tamm 1958), then we should have for our final coordinates

$$\begin{aligned}x' &= X' \cos C' - Y' \sin C' + H, \\y' &= Y' \cos C' + X' \sin C' + K.\end{aligned}$$

Assume these to be applied to all the Breslau points measured on the plate and let the value of  $C'$  so derived be denoted by  $C^*$ . Table 5 gives the difference  $C' - C^*$  for all 25 plates. In two cases the difference amounts to three minutes of arc. These excessively large values appear to be due more to distortions of the star trail than to errors in the measures of the Breslau points.

### 7. Description of Table 6

The limb data were analyzed twice. In the initial answer only a selection of profile points was used and the least squares analysis was not quite rigorous. Indeed, the entire answer was intended only to determine the approximate location of the center of the disk. The table gives the coordinates  $h$  and  $k$  of this center in the measuring system. The approximate mean radius  $r$  of the disk is also given.

### 8. Description of Table 7

All profile points are used in the final determination of the center and radius of the circle of the bright

limb. Note that the coordinate system is now that of the final coordinates, as defined in the Introduction.

### 9. *Description of Table 8*

Table 8 gives the refraction angle  $\epsilon$  in radians. This represents the rotation that must be applied to the star-trail direction to eliminate the errors due to differential refraction.

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by Harry Connors and the FORTRAN reduction programs were written by Patricia Bates. This selenodetic work was supported by the Cambridge Research Laboratories, U.S. Air Force, under Contract F 19628-67-C-0240.

### REFERENCE

Schrutka-Rechtenstamm, G. 1958, "Neureduktion der 150 Mondpunkte der Breslauer Messungen von J. Franz," *Sitz. Osterr. Akad. Wiss. Math.-Naturw. Kl.*, Abt. II, 167 Bd.

TABLE 1  
COORDINATES FOR CRATERS

REF.	x	y	$\delta x$	$\delta y$	WEIGHTS	SER.
YERKES PHOTOGRAPH NO. 57						
1000271	147.3653	128.1238	-0.0052	0.0013	2.1 1.8	7372
1002262	147.3653	128.6537	-0.0010	-0.0005	2.2 2.2	7373
1004537	147.3653	122.2134	-0.0025	-0.0009	2.0 1.9	7374
1095066	147.3653	126.4521	-0.0006	0.0009	2.4 1.7	7375
1285759	147.3653	128.5337	-0.0014	0.0005	2.5 2.0	7376
1305650	147.3653	129.4165	-0.0007	-0.0004	2.0 2.1	7377
1342158	147.3653	120.7529	-0.0019	0.0027	2.2 1.6	7378
1455881	147.3653	127.6453	-0.0007	0.0015	2.0 3.0	7379
1631517	147.3653	121.0960	0.0007	0.0048	2.4 1.9	7380
2049780	147.3653	125.7748	-0.0018	-0.0001	2.0 2.0	7381
2200384	147.3653	124.3041	-0.0008	-0.0011	2.0 2.6	7382
2362961	147.3653	129.3570	0.0001	0.0004	2.2 1.6	7383
2419754	147.3653	129.7006	-0.0003	-0.0008	2.1 1.5	7384
2446896	147.3653	128.0025	0.0004	0.0006	1.1 2.3	7385
2467172	147.3653	128.7118	-0.0002	-0.0020	1.9 2.0	7386
2476985	147.3653	124.1718	0.0011	-0.0031	1.9 2.4	7387
2501063	147.3653	123.7603	-0.0002	-0.0011	1.9 1.7	7388
2652088	147.3653	125.5373	-0.0064	-0.0010	1.8 1.3	7389
2706304	147.3653	129.8577	0.0006	-0.0005	2.3 1.5	7390
2707980	147.3653	124.3765	-0.0011	-0.0011	1.9 1.6	7391
2827023	147.3653	121.5942	0.0007	0.0009	1.9 1.9	7392
3009506	147.3653	128.9458	0.0086	-0.0006	1.8 1.2	7393
3195531	147.3653	122.9744	0.0025	-0.0029	1.7 1.5	7394
3204238	147.3653	127.8146	-0.0004	-0.0002	2.1 1.4	7395
3230703	147.3653	127.1839	0.0001	-0.0006	2.4 2.3	7396
3306780	147.3653	120.9051	-0.0004	-0.0004	1.9 1.7	7397
3471353	147.3653	127.9335	-0.0008	-0.0004	1.4 2.0	7398
3535698	147.3653	128.5957	-0.0014	0.0002	2.1 1.9	7399
3549174	147.3653	123.2347	-0.0021	0.0001	1.9 1.5	7400
3627817	147.3653	122.9932	-0.0005	0.0023	2.2 1.9	7401
3700535	147.3653	123.4148	0.0033	0.0023	1.9 1.9	7402
3726975	147.3653	129.4933	-0.0004	0.0033	1.9 1.9	7403
3804971	147.3653	125.9875	0.0005	-0.0001	1.6 2.1	7404
4005338	147.3653	123.8195	-0.0019	0.0005	1.6 1.8	7405
4097891	147.3653	125.2231	0.0001	-0.0024	2.2 2.2	7406
4269764	147.3653	120.2053	-0.0013	-0.0003	1.9 2.2	7407
4310096	147.3653	123.3152	0.0000	-0.0006	2.3 1.8	7408
4346822	147.3653	129.7544	-0.0024	-0.0011	2.0 2.4	7409
4400190	147.3653	124.2099	-0.0005	-0.0005	2.1 1.6	7410
4621955	147.3653	122.2145	0.0001	0.0028	1.5 1.7	7411

TABLE 4  
\*RESULTS FOR CRATERS

REF.	x	y	SER.
YERKES PHOTOGRAPH NO. 57			
1000271	-6.05729	6.97171	7372
1002262	-4.33120	7.51305	7373
1004537	-3.59908	11.08128	7374
1095066	-18.69723	85.30771	7375
1285759	0.10487	87.50963	7376
1305650	24.98626	18.47180	7377
1342158	14.46623	49.77698	7378
1455881	23.71995	66.74623	7379
1631517	42.58227	50.25694	7380
2049780	-25.28145	44.54389	7381
2200384	-25.67500	3.02465	7382
2362961	-49.60562	57.98852	7383
2419754	-54.15625	8.24838	7384
2446896	-58.31825	36.55561	7385
2467172	-61.33887	47.25784	7386
2476985	-63.27351	62.72289	7387
2501063	-52.13294	-7.69693	7388
2652088	-72.30511	33.99987	7389
2706304	-73.59462	11.73857	7390
2707980	-76.36495	-7.23212	7391
2827023	-86.24626	-0.06844	7392
3009506	-12.93941	-2.25966	7393
3195531	6.64839	88.20362	7394
3204238	-27.37080	-3.48270	7395
3230703	-15.01412	34.06986	7396
3306780	-37.42576	10.46299	7397
3471353	-23.71092	73.41845	7398
3535698	-46.66614	42.86626	7399
3549174	-48.67928	48.24585	7400
3627817	-58.30649	38.53693	7401
3700535	-66.78102	18.14585	7402
3726975	-66.05258	42.08934	7403
3804971	-77.72112	25.65006	7404
4005338	-0.50183	2.69751	7405
4097891	28.89671	85.81278	7406
4269764	38.35922	50.73233	7407
4310096	24.67995	2.35069	7408
4346822	35.11879	31.15676	7409
4400190	31.73012	13.30174	7410
4621955	58.08796	-8.55265	7411

YERKES PHOTOGRAPH NO. 100

1000271	136.1635	129.5625	-0.0008	-0.0013	2.1 2.1	7487	1000271	8.57974	2.53279	7487
1002262	136.1635	120.3568	0.0001	-0.0024	2.4 1.9	7488	1002262	10.12976	3.32801	7488
1004537	136.1635	124.0884	-0.0007	0.0000	2.4 1.8	7489	1004537	10.14885	7.06159	7489
1095066	136.1635	126.4978	0.0011	-0.0022	1.9 1.9	7490	1095066	-27.43282	79.49690	7490
1285759	136.1635	122.1023	0.0012	-0.0038	2.6 2.9	7491	1285759	-9.60889	85.11015	7491
1305650	136.1635	126.6823	-0.0020	-0.0009	1.9 2.0	7492	1305650	35.89769	19.67050	7492
1342158	136.1635	126.0225	-0.0028	0.0003	1.9 1.6	7493	1342158	18.44109	49.02048	7493
1455881	136.1635	125.0113	-0.0024	-0.0005	1.9 2.6	7494	1455881	21.72882	68.02035	7494
1631517	136.1635	122.0469	-0.0017	-0.0003	2.3 1.9	7495	1631517	43.85886	55.05633	7495
1648588	136.1635	123.5565	-0.0012	0.0012	2.1 1.9	7496	1648588	45.09492	66.57240	7496
2049780	136.1635	123.5916	-0.0003	-0.0026	2.1 1.8	7497	2049780	-19.29578	36.57073	7497
2200384	136.1635	122.1261	-0.0022	-0.0004	2.1 2.3	7498	2200384	-10.49997	-4.91375	7498
2362961	136.1635	123.1465	-0.0020	-0.0030	2.5 1.9	7499	2362961	-49.37678	46.12088	7499
2419754	136.1635	122.5449	0.0008	-0.0012	2.0 2.1	7500	2419754	-41.47668	-4.50480	7500
2446896	136.1635	120.0943	0.0003	0.0013	2.2 1.6	7501	2446896	-52.57087	23.05551	7501
2467172	136.1635	120.5051	-0.0017	-0.0012	2.0 2.1	7502	2467172	-59.16659	33.46963	7502
2476985	136.1635	126.2567	-0.0017	-0.0031	2.1 2.8	7503	2476985	-67.79235	49.22672	7503
2501063	136.1635	127.1706	-0.0002	-0.0006	2.2 2.0	7504	2501063	-36.47331	19.88559	7504
2652088	136.1635	125.6696	-0.0011	-0.0002	2.4 2.3	7505	2652088	-68.17592	18.62339	7505
2665254	136.1635	124.3023	-0.0003	0.0002	2.4 1.6	7506	2665254	-76.37864	27.25796	7506
2706304	136.1635	120.0095	0.0016	-0.0001	2.4 2.1	7507	2706304	-60.08692	27.05813	7507
2707980	136.1635	124.0451	0.0007	-0.0010	1.9 2.9	7508	2707980	-64.08030	23.02172	7508
2827023	136.1635	129.9070	0.0003	-0.0014	2.2 2.3	7509	2827023	-77.94654	17.16125	7509
3009506	136.1635	129.1346	-0.0003	-0.0001	2.1 2.1	7510	3009506	3.25532	-7.90234	7510
3195531	136.1635	120.2913	0.0026	0.0017	2.1 1.8	7511	3195531	27.03382	86.77941	7511
3204238	136.1635	125.4026	-0.0005	0.0009	1.6 1.9	7512	3204238	-11.07314	11.64099	7512
3230703	136.1635	127.7270	0.0035	0.0078	2.0 2.4	7513	3230703	5.77650	39.32564	7513
3306780	136.1635	126.8928	-0.0006	-0.0001	1.9 2.0	7514	3306780	-20.34358	20.15828	7514
3471353	136.1635	128.4681	-0.0008	-0.0004	1.8 2.1	7515	3471353	-1.36598	78.60756	7515
3535698	136.1635	123.8184	-0.0012	0.0064	2.1 2.1	7516	3535698	-26.36397	53.25204	7516
3549174	136.1635	128.3181	-0.0011	0.0010	2.1 1.9	7517	3549174	-28.27777	58.75586	7517
3627817	136.1635	126.1561	-0.0008	0.0023	2.3 1.4	7518	3627817	-39.59766	50.91742	7518
3664828	136.1635	123.1778	-0.0011	0.0014	2.2 2.2	7519	3664828	-24.06119	83.90803	7519
3700535	136.1635	124.7094	0.0014	0.0016	2.2 2.6	7520	3700535	-51.30912	32.35816	7520
3726975	136.1635	121.6574	0.0011	0.0019	2.5 1.9	7521	3726975	-48.34358	55.42134	7521
3804971	136.1635	125.5110	0.0007	0.0018	2.9 2.1	7522	3804971	-63.62006	41.16520	7522
4005338	136.1635	126.3181	0.0005	0.0003	1.7 2.1	7523	4005338	14.73302	-0.71132	7523

\*Final coordinates of craters (out-put of Star-Trail program) not reduced to Mösting A.

(CONTINUED)

TABLE 1  
COORDINATES FOR CRATERS

TABLE 4  
\*RESULTS FOR CRATERS

REF.	x	y	δx	δy	WEIGHTS	SER.	REF.	x	y	SER.
YERKES PHOTOGRAPH No. 100 (CONTINUED)										
4269764	136.1635	121.6283	.0C04	-0.0019	1.9 1.7	7524	4269764	57.75411	45.41063	7524
4310096	136.1635	120.6941	-.0C11	0.0006	2.1 2.1	7525	4310096	38.74721	3.67482	7525
4346822	136.1635	120.6260	.0C01	0.0023	2.1 1.6	7526	4346822	56.8C982	26.4C324	7526
44C019C	136.1635	122.8633	-.0C08	0.0006	1.7 2.3	7527	44C019C	43.12585	15.85184	7527
4621955	136.1635	126.6134	.0C09	0.0023	1.8 1.8	7528	4621955	70.22776	-0.39779	7528
4716458	136.1635	124.8821	.0C04	0.0017	1.6 2.6	7529	4716458	76.94107	17.88272	7529
48C6928	136.1635	123.1561	.0C15	0.0033	2.1 1.9	7530	48C6928	81.38081	26.16253	7530

YERKES PHOTOGRAPH No. 158

1000271	125.4631	114.5C97	.0CC2	-0.0009	2.4 2.4	7590	1000271	13.20175	0.71158	7590
10C2262	125.4631	115.2544	.CCC2	-0.0C08	2.3 2.3	7591	10C2262	14.7319C	1.46694	7591
1004537	125.4631	118.8374	.0005	0.0010	2.9 3.6	7592	1004537	14.80210	5.05233	7592
1C95066	125.4631	110.4831	.0011	-0.0006	2.6 2.6	7593	1C95066	-22.54988	76.48629	7593
1285759	125.4631	115.4410	-.0C59	-0.0026	2.4 2.6	7594	1285759	-5.39522	81.56181	7594
1305650	125.4631	110.4103	.0C04	-0.0C09	2.6 1.9	7595	1305650	39.44894	16.79663	7595
1342158	125.4631	119.2394	.0008	-0.0011	1.9 2.8	7596	1342541	22.96021	45.53074	7596
1455881	125.4631	117.7351	.0006	-0.0013	2.6 2.6	7597	1455881	25.55068	64.05377	7597
1631517	125.4631	114.6033	.0C01	0.0018	2.4 2.5	7598	1631517	46.6661C	51.05639	7598
1648588	125.4631	115.9080	.CC49	0.0073	3.2 2.4	7599	1648588	47.2813C	62.37130	7599
2049780	125.4631	118.2435	.0015	-0.0001	2.4 2.6	7600	2049780	-13.33541	34.28572	7600
2200384	125.4631	117.8994	.0005	-0.0007	2.4 2.8	7601	2200384	-5.29304	-6.02621	7601
3009506	125.4631	114.6527	-.0025	0.0016	2.1 2.1	7602	30C9506	7.9126C	-9.18617	7602
3204238	125.4631	111.4545	.0C01	-0.0003	2.6 2.5	7603	3204238	-6.058C9	12.47971	7603
3230703	125.4631	114.4291	-.0005	0.0002	1.9 1.9	7604	3230703	9.11311	39.41799	7604
40C5338	125.4631	111.2647	.0002	-0.0013	2.4 2.1	7605	40C5338	19.03228	-2.49609	7605
4269764	125.4631	117.5629	.0013	0.0057	2.1 2.3	7606	4269764	57.55384	45.96328	7606
431C096	125.4631	114.9204	-.CC67	-0.0010	2.2 2.0	7607	431C096	41.89724	1.31478	7607
4346822	125.4631	115.7152	.0011	-0.0016	1.9 2.4	7608	4346822	57.77129	27.79976	7608
4400190	125.4631	116.5981	.001C	0.0059	2.1 1.8	7609	4400190	46.189C2	13.02754	7609
4621955	125.4631	110.5575	.0007	0.0020	2.3 2.6	7610	4621955	7C.87568	-2.85627	7610
48C6928	125.4631	116.1252	.0C13	-0.0006	2.4 2.3	7611	48C6928	8C.79386	22.79165	7611

YERKES PHOTOGRAPH No. 268

10C0271	138.6536	141.1126	-.0011	-0.0C09	2.6 2.0	7682	10C0271	-7.11681	11.45921	7682
1002262	138.6536	140.6388	-.0016	C.0C09	1.9 2.5	7683	1002262	-5.44431	10.988C6	7683
1004537	138.6536	143.1515	-.0022	0.00C2	1.6 1.5	7684	1004537	-2.92394	13.5C739	7684
1095066	138.6536	149.2248	-.CC12	0.0023	2.4 1.9	7685	1095066	27.82842	79.69084	7685
1285759	138.6536	141.C951	.0C08	0.0032	1.5 1.6	7686	1285759	44.171C3	71.584C4	7686
1305650	138.6536	143.8472	-.0015	0.0020	2.1 2.0	7687	1305650	24.3C965	4.24476	7687
1342158	138.6536	144.3455	-.0008	0.0017	2.1 1.1	7688	1342541	33.CC887	34.78395	7688
1455881	138.6536	142.6543	-.CC05	0.0031	1.5 0.8	7689	1455881	5C.48235	43.13124	7689
1631517	138.6536	149.5642	-.0C12	0.00C6	2.4 2.2	7690	1631517	56.66557	20.03331	7690
22C0384	138.6536	148.1679	.CC01	0.0003	2.6 1.4	7691	2200384	-24.79552	18.48830	7691
2362961	138.6536	144.C985	-.0CC5	0.0016	2.0 1.6	7692	2362961	-12.76494	74.48678	7692
2446896	138.6536	141.6744	-.0C01	-0.0014	2.5 2.3	7693	2446896	-31.7C039	62.C1816	7693
2476985	138.6536	144.4175	.0017	-0.0006	2.8 1.6	7694	2476985	-19.65959	84.8C180	7694
25C1063	138.6536	143.1723	-.0CC2	0.0002	2.8 1.5	7695	2501063	-5C.95481	23.44944	7695
2652088	138.6536	146.6708	.0C16	-0.0019	1.5 1.7	7696	2652088	-43.33661	66.95760	7696
27C6304	138.6536	14C.6343	-.0011	0.0C15	1.9 1.6	7697	27C6304	-68.96134	3C.88498	7697
2827023	138.6536	146.1583	-.0C14	-0.0001	2.5 1.8	7698	2827023	-71.77372	46.41668	7698
30C9506	138.6536	147.3C54	-.CC08	-0.0C01	1.6 1.5	7699	30C9506	-17.48789	7.63008	7699
3195531	138.6536	145.8889	-.0C15	C.0011	1.6 2.1	7700	3195531	-43.C5076	73.89978	7700
3204238	138.6536	143.8195	-.0C04	C.0023	1.8 1.9	7701	3204238	-29.57953	14.12765	7701
330678C	138.6536	143.4273	.0C0C	0.0018	2.2 2.2	7702	330678C	-41.C5550	13.71435	7702
3471353	138.6536	144.5251	-.0C07	0.0031	2.1 1.9	7703	3471353	-61.16140	45.27279	7703
3549174	138.6536	148.3031	-.CC08	0.0013	2.2 1.5	7704	3549174	-68.68282	11.48060	7704
3700535	138.6536	142.1334	-.0021	0.0045	1.3 1.9	7705	3700535	-67.35148	22.37999	7705
3726975	138.6536	142.C769	-.0CC6	0.0015	1.9 2.2	7706	3726975	-78.59849	2.28658	7706
38C4971	138.6536	141.2904	-.0CC6	0.0014	1.1 1.6	77C7	38C4971	-78.93C17	21.51533	77C7
40C5338	138.6536	144.7505	-.0C08	-0.0009	1.8 1.5	7708	40C5338	-4.9C576	5.09588	77C8
4097891	138.6536	145.8777	-.0027	-0.0002	2.5 1.6	7709	4097891	-23.45876	83.88374	7709
431C096	138.6536	141.C905	-.0C11	-0.0005	1.8 1.8	7710	4310096	15.43161	-8.53855	7710
4346822	138.6536	146.1133	-.0C48	-0.0C02	2.4 1.6	7711	4346822	1C.C5352	43.55430	7711
4392051	138.6536	146.6308	-.0C37	-0.0005	1.9 0.0	7712	4392051	-1.17715	83.08967	7712
4400190	138.6536	146.1C80	-.0011	0.0033	2.0 1.5	7713	44C0190	27.C8625	-3.49580	7713
4621955	138.6536	144.1371	-.0023	0.0015	1.7 1.7	7714	4621955	37.69011	35.47383	7714

\*Final coordinates of craters (out-put of Star-Trail program) not reduced to Mösting A.

TABLE 1  
COORDINATES FOR CRATERS

TABLE 4  
\*RESULTS FOR CRATERS

REF.	x	y	$\delta x$	$\delta y$	WEIGHTS	SER.	REF.	x	y	SER.
YERKES PHOTOGRAPH No. 526										
1000271	134.2305	118.8034	- .0038	-0.0017	2.3 1.8	7798	1000271	-2.50891	-6.21942	7798
1002262	134.2305	118.4272	- .0027	-0.0022	2.0 1.4	7799	1002262	-0.91673	-6.59089	7799
1004537	134.2305	110.9377	- .0025	-0.0033	2.1 2.1	7800	1004537	1.22116	-4.07295	7800
1095066	134.2305	114.0751	- .0049	0.0015	2.4 2.1	7801	1095066	22.66813	69.15650	7801
1285759	134.2305	117.5755	- .0040	0.0019	2.4 1.9	7802	1285759	38.47822	62.70283	7802
1305650	134.2305	114.8306	- .0010	-0.0006	2.2 1.7	7803	1305650	27.04768	10.10339	7803
1342158	134.2305	115.2588	- .0030	-0.0007	1.8 1.8	7804	1342541	32.72943	20.35320	7804
1455881	134.2305	116.8642	- .0056	0.0011	1.8 1.6	7805	1455881	47.61188	32.00826	7805
1631517	134.2305	115.0363	- .0035	-0.0003	2.0 2.6	7806	1631517	55.14290	10.19543	7806
1648588	134.2305	112.6442	- .0006	-0.0005	1.9 2.0	7807	1648588	64.04345	17.83283	7807
2200384	134.2305	114.8477	- .0033	-0.0031	1.8 2.2	7808	2200384	-19.66311	-0.22532	7808
2362961	134.2305	113.3547	- .0038	-0.0004	1.9 1.5	7809	2362961	-13.96830	58.32032	7809
2446896	134.2305	119.1755	- .0028	-0.0017	1.6 1.4	7810	2446896	-30.34696	44.08596	7810
2476985	134.2305	116.9577	- .0016	-0.0026	1.9 1.5	7811	2476985	-22.39997	71.90251	7811
2501063	134.2305	110.0712	- .0052	-0.0027	2.1 2.1	7812	2501063	-45.08979	4.98243	7812
2652088	134.2305	115.6584	- .0051	-0.0017	1.0 1.4	7813	2652088	-42.35544	50.53454	7813
2665254	134.2305	116.8536	- .0034	-0.0028	1.6 1.7	7814	2665254	-41.43238	61.73662	7814
2706304	134.2305	119.5315	- .0049	-0.0014	2.3 1.6	7815	2706304	-63.61901	14.32957	7815
2827023	134.2305	117.3552	- .0057	-0.0030	1.8 1.5	7816	2827023	-68.28866	32.14549	7816
3009506	134.2305	114.7654	- .0019	-0.0018	2.3 2.0	7817	3009506	-11.99788	10.82786	7817
3195531	134.2305	119.4265	- .0044	-0.0008	1.8 1.9	7818	3195531	-33.89161	75.71734	7818
3204238	134.2305	110.6475	- .0050	-0.0023	1.9 1.9	7819	3204238	-23.88743	-4.43994	7819
3306780	134.2305	110.3230	- .0035	-0.0036	2.9 1.5	7820	3306780	-34.82843	-4.75797	7820
3471353	134.2305	110.6053	- .0020	-0.0012	1.7 4.4	7821	3471353	-51.53114	54.58471	7821
3549174	134.2305	119.3486	- .0036	-0.0029	2.1 1.3	7822	3549174	-60.16258	25.85734	7822
3664828	134.2305	110.8329	- .0014	0.0004	1.9 1.6	7823	3664828	-68.36228	44.40480	7823
3700535	134.2305	110.6278	- .0033	-0.0021	1.9 2.0	7824	3700535	-61.12456	5.43027	7824
3726975	134.2305	113.6194	- .0029	-0.0035	1.7 1.4	7825	3726975	-71.02125	11.61454	7825
3804971	134.2305	112.3286	- .0056	-0.0028	1.1 1.4	7826	3804971	-72.89326	7.09574	7826
3903541	134.2305	118.8681	- .0060	-0.0012	1.9 2.1	7827	3903541	-78.50721	13.62047	7827
4005338	134.2305	112.9894	- .0021	-0.0012	1.8 2.1	7828	4005338	-0.04831	12.02802	7828
4310096	134.2305	112.1735	- .0010	-0.0016	1.9 1.5	7829	4310096	15.64818	22.78769	7829
4346822	134.2305	111.7026	- .0040	-0.0035	2.1 2.1	7830	4346822	16.32272	53.27981	7830
4392051	134.2305	112.6965	- .0000	-0.0044	2.4 3.0	7831	4392051	5.98102	82.32801	7831
4400190	134.2305	118.0655	- .0016	-0.0014	1.8 2.1	7832	4400190	30.06598	14.86175	7832
4621955	134.2305	111.8293	- .0077	-0.0012	2.1 1.8	7833	4621955	41.24703	43.07331	7833
4751552	134.2305	111.1836	- .0024	-0.0034	2.1 1.5	7834	4751552	44.86733	63.71545	7834

YERKES PHOTOGRAPH No. 556

1000271	95.6011	144.3651	- .0007	-0.0008	3.6 4.7	7916	1000271	-6.89857	9.13707	7916
1002262	95.6011	143.7897	- .0014	0.0001	3.2 2.9	7917	1002262	-5.32300	8.56682	7917
1004537	95.6011	146.0851	- .0010	-0.0003	7.1 4.8	7918	1004537	-2.72945	10.87381	7918
1095066	95.6011	140.1154	- .0012	0.0043	1.3 3.3	7919	1095066	31.78503	75.09050	7919
1285759	95.6011	141.1109	- .0015	0.0007	3.1 4.7	7920	1285759	47.19051	66.13306	7920
1305650	95.6011	145.4182	- .0005	0.0008	2.3 2.4	7921	1305650	23.26059	0.29068	7921
1342158	95.6011	144.8693	- .0013	-0.0003	3.9 3.7	7922	1342541	33.69329	29.80782	7922
1455881	95.6011	142.3248	- .0015	0.0005	3.7 2.6	7923	1455881	51.35435	37.33437	7923
1631517	95.6011	149.2443	- .0021	0.0005	2.1 2.0	7924	1631517	55.92343	14.24823	7924
1648588	95.6011	143.7647	- .0016	0.0005	2.2 3.1	7925	1648588	66.72870	18.81206	7925
2049780	95.6011	143.4860	- .0015	-0.0022	2.2 2.3	7926	2049780	0.79712	48.32340	7926
3009506	95.6011	141.3445	- .0014	0.0005	2.4 2.9	7927	3009506	-17.31184	6.07589	7927
4005338	95.6011	148.0399	- .0003	-0.0008	3.2 3.1	7928	4005338	-5.18076	2.81201	7928
4097891	95.6011	144.4094	- .0007	0.0039	2.6 1.9	7929	4097891	-28.08736	80.98172	7929
4269764	95.6011	145.6650	- .0020	0.0001	2.5 2.9	7930	4269764	-4.30304	59.61966	7930
4310096	95.6011	143.4906	- .0002	0.0035	2.4 1.9	7931	4310096	13.79769	11.68261	7931
4346822	95.6011	140.0054	- .0012	-0.0010	2.9 2.9	7932	4346822	6.55626	45.22619	7932
4392051	95.6011	143.3740	- .0005	0.0063	2.6 3.3	7933	4392051	-6.40814	81.93969	7933
4400190	95.6011	147.7138	- .0002	0.0002	3.5 2.5	7934	4400190	25.51374	-7.41298	7934
4577577	95.6011	146.8397	- .0024	0.0031	2.4 2.6	7935	4577577	18.82582	78.37938	7935
4621955	95.6011	146.2391	- .0003	-0.0002	2.7 3.7	7936	4621955	34.03577	38.88709	7936
4716458	95.6011	141.6999	- .0007	0.0002	2.5 3.5	7937	4716458	52.44950	33.35443	7937
4751552	95.6011	149.7437	- .0004	0.0003	2.2 2.1	7938	4751552	35.84290	65.40141	7938
4806928	95.6011	142.2527	- .0008	0.0026	2.6 0.9	7939	4806928	62.76597	32.76378	7939
4907405	95.6011	140.9457	- .0000	0.0000	2.6 2.2	7940	4907405	75.30651	34.02667	7940

\*Final coordinates of craters (out-put of Star-Trail program) not reduced to Mösting A.

TABLE 1  
COORDINATES FOR CRATERS

REF.	x	y	δx	δy	WEIGHTS	SER.
YERKES PHOTOGRAPH No. 616						
1000271	98.9189	130.6792	- .0C08	-0.0013	3.2 3.2	7989
1002262	98.9189	130.0591	- .CCC2	-0.0012	2.5 2.5	7990
1095066	98.9189	136.5603	- .0C20	-0.0006	2.0 2.7	7991
1285759	98.9189	137.1663	- .CC05	0.0020	2.4 3.0	7992
1305650	98.9189	130.9242	- .CC08	-0.0006	2.6 2.5	7993
1342158	98.9189	139.7339	- .CC18	-0.0010	2.9 3.7	7994
1455881	98.9189	137.2588	- .0C13	0.0002	1.9 2.4	7995
1631517	98.9189	134.3042	- .CC07	-0.0003	2.7 2.6	7996
1648588	98.9189	138.9889	- .0C12	-0.0005	2.6 2.3	7997
2049780	98.9189	139.3152	- .0C04	-0.0019	2.1 2.4	7998
3009506	98.9189	138.2427	- .CC10	0.0013	2.6 2.6	7999
4005338	98.9189	134.4176	- .0002	0.0013	1.9 2.6	8000
4097891	98.9189	138.1728	- .0023	0.0052	2.4 2.8	8001
4269764	98.9189	135.1391	- .CC16	0.0006	2.0 2.2	8002
4310096	98.9189	139.5897	- .CC03	-0.0011	4.3 2.4	8003
4346822	98.9189	137.9993	- .CC03	-0.0005	2.4 3.0	8004
4392051	98.9189	135.5891	- .CC01	0.0016	2.3 2.8	8005
4400190	98.9189	133.3700	- .0C10	-0.0009	2.3 2.7	8006
4577577	98.9189	137.6885	- .0C10	-0.0012	2.5 2.6	8007
4621955	98.9189	133.2490	- .CC01	-0.0007	2.1 2.4	8008
4751552	98.9189	138.8182	- .0012	-0.0015	2.3 2.2	8009
4806928	98.9189	139.1287	- .CC13	-0.0002	2.3 3.7	8010
4907405	98.9189	138.7382	- .0076	-0.0003	2.2 3.8	8011

TABLE 4  
\*RESULTS FOR CRATERS

REF.	x	y	SER.
YERKES PHOTOGRAPH No. 616			
1000271	-8.77972	3.54691	7989
1002262	-7.26622	2.93439	7990
1095066	32.£7529	69.68480	7991
1285759	47.56859	60.36240	7992
1305650	20.32924	-6.06108	7993
1342541	31.85827	22.82584	7994
1455881	49.72922	30.44886	7995
1631517	53.27258	7.49949	7996
1648588	64.28863	12.24469	7997
2049780	0.50417	42.25407	7998
3009506	-19.04730	1.05514	7999
4005338	-7.38834	-2.71103	8000
4097891	-31.06598	79.12434	8001
4269764	-8.16472	62.02866	8002
4310096	10.66176	17.45287	8003
4346822	2.63178	49.10377	8004
4392051	-10.04508	81.59929	8005
4400190	22.29212	13.60938	8006
4577577	14.52410	79.36980	8007
4621955	29.80235	43.70849	8008
4751552	31.24668	68.14592	8009
4806928	58.49994	37.67485	8010
4907405	71.43908	37.99770	8011

YERKES PHOTOGRAPH No. 624

1000271	108.3484	117.2933	- .CC07	0.0009	2.3 1.2	8059	1000271	-8.68471	1.02148	8059
1002262	108.3484	116.6856	- .0005	-0.0001	4.7 3.7	8060	1002262	-7.19407	0.42149	8060
1095066	108.3484	114.8298	- .CC07	-0.0010	3.4 2.3	8061	1095066	30.76336	68.80588	8061
1285759	108.3484	115.8115	- .CC83	-0.0011	3.2 3.8	8062	1285759	45.53117	59.86227	8062
1305650	108.3484	118.3354	- .CC04	-0.0002	2.6 2.9	8063	1305650	20.38211	-7.78476	8063
1342158	108.3484	117.3678	- .0C07	-0.0016	2.8 2.5	8064	1342541	31.04654	21.32035	8064
1455881	108.3484	115.5272	- .0C03	-0.0018	2.0 2.3	8065	1455881	48.55934	29.57827	8065
1631517	108.3484	112.7478	- .CC03	-0.0078	3.1 2.6	8066	1631517	52.54702	6.80829	8066
1648588	108.3484	117.9707	- .0C92	-0.0099	2.9 3.6	8067	1648588	63.29949	12.09180	8067
2200384	108.3484	115.8036	- .0C12	0.0001	2.2 1.8	8068	2200384	-24.78984	9.44965	8068
3009506	108.3484	114.6401	- .0017	0.0001	1.0 1.6	8069	3009506	-18.78252	-1.68743	8069
3204238	108.3484	112.1771	- .CC13	0.0013	2.3 2.2	8070	3204238	-29.53850	5.79569	8070
4005338	108.3484	111.0656	- .0051	0.0002	2.5 3.0	8071	4005338	-7.12563	-5.20110	8071
4310096	108.3484	116.8457	- .0046	-0.0004	3.6 1.9	8072	4310096	11.07258	19.33061	8072
4346822	108.3484	115.7751	- .0C16	0.0009	2.6 3.0	8073	4346822	3.82033	50.45663	8073
4392051	108.3484	114.7183	- .CC71	0.0014	3.4 2.6	8074	4392051	-8.24531	81.55474	8074
4400190	108.3484	110.9773	- .0C02	-0.0004	3.4 1.8	8075	4400190	22.47361	15.13549	8075
4577577	108.3484	117.2179	- .CC10	-0.0013	1.1 2.9	8076	4577577	16.03206	78.96321	8076
4621955	108.3484	111.6223	- .CC09	0.0002	1.9 1.5	8077	4621955	30.55411	44.46252	8077
4716458	108.3484	117.9202	- .CC16	-0.0015	1.4 3.0	8078	4716458	48.18695	38.06643	8078
4751552	108.3484	118.2656	- .0015	0.0013	2.1 2.4	8079	4751552	32.43201	67.82145	8079
4806928	108.3484	118.6320	- .0077	-0.0072	2.5 4.1	8080	4806928	58.72514	37.29756	8080

YERKES PHOTOGRAPH No. 720

1000271	143.8540	131.2832	- .0002	0.0016	2.0 2.0	8178	1000271	8.50265	-1.95688	8178
1002262	143.8540	131.9546	- .CCC5	-0.0006	2.6 1.9	8179	1002262	10.06312	-1.28492	8179
1004537	143.8540	135.3156	- .0002	-0.0013	2.4 1.8	8180	1004537	10.43189	2.07755	8180
1095066	143.8540	136.7047	- .0036	-0.0009	2.4 2.3	8181	1095066	-18.15332	73.49103	8181
1285759	143.8540	130.4702	- .0C12	0.0043	2.3 2.2	8182	1285759	-1.36325	77.26114	8182
1305650	143.8540	134.9982	- .0C14	0.0009	1.6 2.3	8183	1305650	35.02202	11.76862	8183
1342158	143.8540	133.5490	- .CC01	0.0018	2.6 2.0	8184	1342541	21.49314	40.32880	8184
1455881	143.8540	131.2606	- .0009	0.0012	2.0 2.1	8185	1455881	25.95938	58.04855	8185
1631517	143.8540	137.4997	- .0C12	0.0015	2.1 2.2	8186	1631517	45.18654	44.28545	8186
1648588	143.8540	138.4351	- .0C05	0.0029	2.3 2.4	8187	1648588	47.22620	55.22576	8187
2049780	143.8540	135.1697	- .0001	-0.0010	2.6 2.2	8188	2049780	-14.12172	31.93956	8188
2200384	143.8540	136.1650	- .0008	-0.0011	1.8 1.6	8189	2200384	-9.43753	-7.08046	8189
2362961	143.8540	137.1987	- .0012	0.0043	3.3 2.4	8190	2362961	-40.95715	43.96866	8190
2419754	143.8540	139.5640	- .CC01	0.0005	1.6 1.9	8191	2419754	-37.87249	-3.68524	8191
2446896	143.8540	136.0483	- .0G07	0.0013	2.3 2.2	8192	2446896	-45.76175	22.80861	8192
2467172	143.8540	136.5246	- .CC01	-0.0006	1.9 1.8	8193	2467172	-51.02904	33.28830	8193
2476985	143.8540	132.4628	- .CC04	0.0000	2.0 2.1	8194	2476985	-57.70292	49.23190	8194
2501063	143.8540	135.0593	- .CC17	-0.0004	2.1 1.5	8195	2501063	-34.60448	18.19535	8195
2652088	143.8540	133.7543	- .CC08	0.0005	2.6 2.3	8196	2652088	-60.52773	20.51098	8196
2665254	143.8540	132.9481	- .0016	0.0013	2.1 2.3	8197	2665254	-67.35386	29.70736	8197

(CONTINUED)

\*Final coordinates of craters (out-put of Star-Trail program) not reduced to Mösting A.

TABLE 1  
COORDINATES FOR CRATERS

REF.	x	y	δx	δy	WEIGHTS	SER.
2706304	143.8540	131.1195	.0011	0.0000	1.8 2.3	8198
2707980	143.8540	135.2895	.0009	0.0007	2.3 1.9	8199
2827023	143.8540	132.3444	-.0011	0.0006	2.2 1.3	8200
3009506	143.8540	132.2695	-.0008	-0.0006	1.6 2.1	8201
3195531	143.8540	130.7121	.0015	-0.0006	2.5 2.0	8202
3204238	143.8540	130.0948	.0005	-0.0009	2.4 2.0	8203
3230703	143.8540	133.6047	.0003	0.0006	1.6 1.9	8204
3306780	143.8540	133.1986	-.0008	0.0004	1.9 1.9	8205
3471353	143.8540	139.5682	-.0019	0.0013	2.1 2.0	8206
3535698	143.8540	134.1080	-.0022	0.0027	1.9 2.3	8207
3549174	143.8540	139.4047	-.0026	0.0010	2.1 2.3	8208
3627817	143.8540	137.5124	-.0018	0.0016	1.6 1.4	8209
3664828	143.8540	137.2737	-.0030	0.0007	2.3 2.0	8210
3700535	143.8540	135.3593	-.0006	-0.0009	1.3 1.7	8211
3726975	143.8540	134.5002	.0001	0.0017	1.8 2.1	8212
3804971	143.8540	138.9696	-.0001	0.0020	2.3 2.1	8213
3903541	143.8540	130.4008	.0018	0.0008	2.4 2.0	8214
4005338	143.8540	137.7989	.0009	0.0060	2.3 1.6	8215
4269764	143.8540	134.6497	-.0011	-0.0003	1.8 2.3	8216
4310096	143.8540	130.1001	-.0002	-0.0003	2.0 2.3	8217
4346822	143.8540	131.6708	-.0011	0.0000	2.3 2.4	8218
4392051	143.8540	138.7163	-.0011	-0.0013	1.6 2.6	8219
4400190	143.8540	131.0146	-.0015	0.0000	1.9 1.9	8220
4621955	143.8540	134.5733	-.0007	0.0015	2.0 1.2	8221

TABLE 4  
\*RESULTS FOR CRATERS

REF.	x	y	SER.
2706304	-56.91852	22.14082	8198
2707980	-60.29461	17.96972	8199
2827023	-72.58912	10.91414	8200
3009506	-2.84742	10.97494	8201
3195531	17.47732	82.55974	8202
3204238	-10.60893	13.15339	8203
3230703	2.38278	39.65211	8204
3306780	-19.85021	20.05413	8205
3471353	-7.67553	73.70454	8206
3535698	-28.27051	49.15831	8207
3549174	-30.54044	53.86398	8208
3627817	-40.21073	45.75467	8209
3664828	-28.97773	76.00387	8210
3700535	-49.34041	27.90204	8211
3726975	-48.63783	48.76966	8212
3804971	-61.43234	34.29659	8213
3903541	-70.91777	32.86653	8214
4005338	13.90917	-5.44163	8215
4269764	49.30569	48.60229	8216
4310096	36.25670	-3.13542	8217
4346822	50.14979	31.57398	8218
4392051	54.91823	64.54126	8219
4400190	41.29424	7.78453	8220
4621955	64.62813	-8.65936	8221

YERKES PHOTOGRAPH No. 720 (CONTINUED)

YERKES PHOTOGRAPH No. 753

REF.	x	y	δx	δy	WEIGHTS	SER.	REF.	x	y	SER.
1000271	118.2885	127.8282	-.0003	0.0004	2.9 2.1	8273	1000271	2.38445	-8.47776	8273
1002262	118.2885	128.0185	-.0005	-0.0001	2.3 2.1	8274	1002262	4.00522	-8.28899	8274
1095066	118.2885	128.1349	.0025	-0.0005	2.1 2.5	8275	1095066	0.81342	71.86466	8275
1285759	118.2885	127.1804	-.0002	0.0000	2.2 2.3	8276	1285759	17.79986	70.88359	8276
1305650	118.2885	123.7054	-.0001	-0.0016	2.4 2.6	8277	1305650	31.43278	-2.64290	8277
1342158	118.2885	124.4804	-.0032	-0.0005	2.4 2.3	8278	1342541	26.86844	28.15189	8278
1455881	118.2885	120.5907	-.0009	0.0002	2.1 2.4	8279	1455881	36.95058	44.25333	8279
1631517	118.2885	122.3382	-.0006	0.0014	1.9 2.1	8280	1631517	51.03455	25.97155	8280
1648588	118.2885	122.6052	-.0018	0.0016	2.1 2.0	8281	1648588	56.73643	36.23403	8281
2049780	118.2885	126.1694	-.0007	-0.0010	2.3 2.1	8282	2049780	-9.08009	29.85700	8282
2200384	118.2885	128.0027	.0003	0.0015	2.2 2.3	8283	2200384	-15.95383	-8.27493	8283
2362961	118.2885	125.8049	-.0025	-0.0008	2.7 1.8	8284	2362961	-29.90457	49.57275	8284
2419754	118.2885	129.4336	-.0010	0.0017	2.2 2.1	8285	2419754	-41.11384	3.19950	8285
2446896	118.2885	126.8597	-.0020	-0.0004	2.4 2.2	8286	2446896	-40.70778	30.63633	8286
2467172	118.2885	128.5286	-.0021	0.0001	1.7 2.1	8287	2467172	-42.23802	42.31244	8287
2501063	118.2885	124.9915	-.0006	0.0031	1.9 2.6	8288	2501063	-42.02083	11.24719	8288
3009506	118.2885	120.9545	-.0019	-0.0006	2.6 3.4	8289	3009506	-5.43636	15.34227	8289
3204238	118.2885	122.7197	-.0014	-0.0003	2.6 2.5	8290	3204238	-18.58360	13.55607	8290
3230703	118.2885	124.7391	-.0013	0.0013	1.9 2.3	8291	3230703	-13.25875	41.55647	8291
3306780	118.2885	128.8889	-.0014	0.0012	2.0 2.2	8292	3306780	-28.95940	17.37240	8292
3471353	118.2885	127.2873	-.0010	0.0028	1.9 1.8	8293	3471353	-30.04919	68.99378	8293
3535698	118.2885	124.9133	.0006	0.0033	2.6 2.1	8294	3535698	-43.92197	41.33494	8294
4005338	118.2885	123.1641	-.0018	-0.0007	1.8 2.2	8295	4005338	6.55884	13.15023	8295
4269764	118.2885	124.5076	-.0005	0.0003	2.2 3.2	8296	4269764	29.80084	61.86273	8296
4310096	118.2885	129.3852	-.0022	-0.0010	2.6 2.6	8297	4310096	28.43699	16.96443	8297
4346822	118.2885	129.6892	.0002	-0.0008	3.4 3.4	8298	4346822	34.62083	46.68227	8298
4400190	118.2885	128.3267	-.0007	-0.0028	1.8 1.8	8299	4400190	36.35567	-8.03142	8299
4621955	118.2885	127.4653	-.0007	0.0001	2.3 2.2	8300	4621955	54.82704	28.92994	8300
4806928	118.2885	127.7001	.0000	-0.0002	2.6 2.3	8301	4806928	74.12171	-8.71648	8301

YERKES PHOTOGRAPH No. 898

REF.	x	y	δx	δy	WEIGHTS	SER.	REF.	x	y	SER.
1000271	131.3391	126.5537	-.0002	0.0024	1.9 2.3	8358	1000271	9.08472	3.25687	8358
1002262	131.3391	127.3022	.0001	-0.0017	1.9 1.8	8359	1002262	10.54870	4.02905	8359
1004537	131.3391	120.8192	-.0010	0.0000	2.1 1.7	8360	1004537	10.65481	7.54675	8360
1095066	131.3391	128.5739	.0015	-0.0031	1.9 1.8	8361	1095066	-24.49993	76.14101	8361
1285759	131.3391	124.2319	-.0020	-0.0031	1.6 1.6	8362	1285759	-7.59057	81.20846	8362
1305650	131.3391	122.6474	-.0015	0.0028	1.3 2.0	8363	1305650	35.09299	19.10189	8363
1342158	131.3391	120.3935	-.0005	0.0053	2.7 1.6	8364	1342541	18.88897	47.04857	8364
1455881	131.3391	128.1953	-.0010	0.0015	2.1 1.8	8365	1455881	22.06692	64.82379	8365
1631517	131.3391	125.8669	.0027	0.0008	1.1 2.5	8366	1631517	42.90376	52.25026	8366
1648588	131.3391	126.6829	-.0028	0.0016	1.9 2.1	8367	1648588	44.09949	63.05852	8367
2049780	131.3391	128.7602	-.0006	-0.0013	2.3 2.3	8368	2049780	-16.95357	35.81891	8368
2200384	131.3391	129.5399	-.0017	-0.0002	1.5 2.1	8369	2200384	-5.05307	-3.51327	8369
2362961	131.3391	127.6875	.0000	-0.0009	1.4 1.6	8370	2362961	-45.46831	45.07731	8370
2419754	131.3391	129.9181	.0051	0.0014	2.0 2.1	8371	2419754	-38.47582	-2.75829	8371

(CONTINUED)

\*Final coordinates of craters (out-put of Star-Trail program) not reduced to Mösting A.

TABLE 1  
COORDINATES FOR CRATERS

TABLE 4  
\*RESULTS FOR CRATERS

REF.	x	y	δx	δy	WEIGHTS	SER.	REF.	x	y	SER.
YERKES PHOTOGRAPH No. 898 (CONTINUED)										
2446896	131.3391	125.9288	-.0003	0.0023	2.1 1.4	8372	2446896	-48.72478	23.34393	8372
2467172	131.3391	125.6975	-.0015	-0.0003	2.1 1.1	8373	2467172	-54.95862	33.18969	8373
2476985	131.3391	126.4196	-.0008	-0.0006	1.4 2.1	8374	2476985	-63.09657	48.01257	8374
2501063	131.3391	125.3253	-.0005	-0.0011	1.7 1.5	8375	2501063	-33.94119	17.45097	8375
2652088	131.3391	121.6195	-.0019	0.0027	2.1 1.9	8376	2652088	-63.71693	19.20377	8376
2707980	131.3391	122.2046	-.0009	0.0015	2.3 1.6	8377	2707980	-60.34995	20.27128	8377
3009506	131.3391	126.6994	-.0005	-0.0059	2.3 2.1	8378	3009506	3.95895	-6.50420	8378
3195531	131.3391	121.2101	-.0036	-0.0021	1.9 1.9	8379	3195531	24.83997	82.27376	8379
3204238	131.3391	123.1646	-.0001	-0.0006	1.9 1.9	8380	3204238	-9.67124	-9.88501	8380
3230703	131.3391	126.8283	-.0008	-0.0009	2.1 1.8	8381	3230703	5.84439	36.41324	8381
3306780	131.3391	125.0645	-.0003	-0.0021	3.2 2.1	8382	3306780	-18.59909	17.88742	8382
3471353	131.3391	129.3182	-.0014	-0.0001	2.0 1.4	8383	3471353	-1.70088	73.85760	8383
3535698	131.3391	123.6087	-.0010	0.0015	2.1 2.0	8384	3535698	-24.85196	49.28894	8384
3549174	131.3391	128.3533	-.0011	0.0003	2.1 1.2	8385	3549174	-26.78444	54.52512	8385
3627817	131.3391	125.7811	-.0002	0.0013	1.9 2.3	8386	3627817	-37.45624	46.97116	8386
3700535	131.3391	123.3822	-.0008	0.0010	2.2 1.8	8387	3700535	-48.27431	29.23665	8387
4005338	131.3391	123.4840	-.0007	0.0002	2.5 1.5	8388	4005338	14.89583	0.15901	8388
4097891	131.3391	127.4216	-.0033	0.0007	1.7 1.1	8389	4097891	43.95568	76.27754	8389
4269764	131.3391	120.7126	-.0003	0.0006	1.9 2.1	8390	4269764	54.75144	43.09177	8390
4310096	131.3391	127.4909	-.0004	-0.0008	2.1 1.6	8391	4310096	37.62814	3.90807	8391
4346822	131.3391	128.8483	-.0014	0.0001	2.6 1.9	8392	4346822	54.22754	24.94013	8392
4392051	131.3391	122.9688	-.0010	-0.0028	1.7 2.1	8393	4392051	61.69156	60.92471	8393
4400190	131.3391	129.0008	-.0000	0.0016	1.6 2.2	8394	4400190	41.92054	15.37517	8394
4577577	131.3391	124.1429	-.0004	-0.0017	1.5 1.9	8395	4577577	76.97373	39.91381	8395
4621955	131.3391	123.3792	-.0005	0.0004	2.1 1.7	8396	4621955	67.19833	-0.54417	8396
4716458	131.3391	120.5581	-.0006	-0.0011	1.9 2.0	8397	4716458	73.56906	16.57129	8397
4751552	131.3391	125.9194	-.0006	0.0025	2.2 1.8	8398	4751552	81.86374	18.18130	8398
4806928	131.3391	128.2136	-.0016	0.0003	1.2 1.8	8399	4806928	77.78655	24.18275	8399

YERKES PHOTOGRAPH No. 910

1000271	140.7225	127.8413	-.0010	-0.0070	3.2 1.6	8442	1000271	8.17353	5.66889	8442
1002262	140.7225	128.6370	-.0020	0.0013	2.4 2.5	8443	1002262	9.67264	6.46562	8443
1004537	140.7225	122.1867	-.0010	-0.0079	2.3 1.8	8444	1004537	9.68807	10.01719	8444
1095066	140.7225	120.0002	-.0092	9.9899	2.8 2.0	8445	1095066	-26.42110	77.85145	8445
1285759	140.7225	125.2999	-.0023	0.0090	2.2 2.5	8446	1285759	-9.24805	83.16100	8446
1305650	140.7225	124.0281	-.0058	-0.0104	2.6 2.1	8447	1305650	34.47033	21.87502	8447
1342158	140.7225	121.9816	-.0006	-0.0121	3.2 3.1	8448	1342158	17.69359	49.83629	8448
1455881	140.7225	129.6448	-.0017	-0.0107	2.5 3.0	8449	1455881	20.87397	67.51007	8449
1631517	140.7225	127.2324	-.0090	-0.0113	2.6 1.9	8450	1631517	42.18185	55.09993	8450
1648588	140.7225	127.8262	-.0053	-0.0108	3.3 2.1	8451	1648588	43.39826	65.65978	8451
2200384	140.7225	120.6693	-.0073	-0.0112	2.3 3.5	8452	2200384	-10.11987	-1.51441	8452
2362961	140.7225	128.7706	-.0068	0.0027	1.9 2.6	8453	2362961	-47.48322	46.59677	8453
2446896	140.7225	126.9033	-.0022	-0.0014	1.5 2.1	8454	2446896	-50.58716	24.71671	8454
2476985	140.7225	120.9059	-.0022	-0.0114	2.6 2.1	8455	2476985	-65.20477	48.72589	8455
2501063	140.7225	125.5835	-.0030	-0.0141	2.2 2.0	8456	2501063	-35.07108	16.21820	8456
2652088	140.7225	122.1734	-.0009	-0.0117	1.6 2.4	8457	2652088	-65.61602	19.97813	8457
2665254	140.7225	129.9975	-.0053	0.0015	1.8 2.8	8458	2665254	-73.46337	27.80311	8458
2706304	140.7225	128.4678	-.0083	-0.0061	2.9 2.5	8459	2706304	-57.76419	23.74717	8459
2827023	140.7225	127.3739	-.0075	-0.0080	2.3 1.8	8460	2827023	-74.52345	14.84348	8460
3009506	140.7225	127.8443	-.0020	-0.0106	2.3 2.3	8461	3009506	3.11497	-4.33545	8461
3195531	140.7225	129.5645	-.0038	-0.0038	2.4 1.6	8462	3195531	26.16620	82.64666	8462
3204238	140.7225	124.2045	-.0012	-0.0070	1.8 3.1	8463	3204238	-10.67588	-7.98283	8463
3306780	140.7225	125.8741	-.0007	-0.0090	2.4 1.9	8464	3306780	-19.59862	16.32129	8464
3471353	140.7225	128.4347	-.0023	-0.0125	1.9 1.6	8465	3471353	-1.20856	73.78327	8465
3549174	140.7225	128.0557	-.0013	0.0020	1.8 1.8	8466	3549174	-27.14780	54.16264	8466
3664828	140.7225	122.7618	-.0063	-0.0084	2.4 2.8	8467	3664828	-23.00948	79.46812	8467
3700535	140.7225	123.5320	-.0078	-0.0021	1.6 2.0	8468	3700535	-49.32196	28.68209	8468
3726975	140.7225	120.9209	-.0001	-0.0066	2.8 1.8	8469	3726975	-46.43798	51.30388	8469
3804971	140.7225	124.5289	-.0035	-0.0096	2.4 1.7	8470	3804971	-61.13405	37.69478	8470
3903541	140.7225	123.9543	-.0035	-0.0063	2.8 2.2	8471	3903541	-70.94563	38.27372	8471
4005338	140.7225	124.7157	-.0010	-0.0104	2.6 1.4	8472	4005338	14.13033	2.54410	8472
4097891	140.7225	125.5924	-.0087	-0.0111	2.2 2.7	8473	4097891	45.53428	76.60782	8473
4310096	140.7225	128.6894	-.0014	-0.0107	2.1 2.0	8474	4310096	37.25712	6.52941	8474
4346822	140.7225	129.3154	-.0050	-0.0102	2.6 3.2	8475	4346822	54.70973	22.85283	8475
4392051	140.7225	121.7732	-.0010	-0.0130	2.6 1.9	8476	4392051	63.38017	60.41117	8476
4400190	140.7225	120.2814	-.0067	-0.0130	2.4 1.6	8477	4400190	41.47717	18.12923	8477
4577577	140.7225	123.2715	-.0137	-0.0100	2.4 1.9	8478	4577577	78.55031	38.89533	8478
4621955	140.7225	124.0343	-.0064	-0.0144	2.6 3.1	8479	4621955	67.58110	1.88434	8479
4806928	140.7225	128.7185	-.0082	-0.0108	3.2 2.9	8480	4806928	78.21532	26.58588	8480

\*Final coordinates of craters (out-put of Star-Trail program) not reduced to Mösting A.

TABLE 1  
COORDINATES FOR CRATERS

REF.	x	y	δx	δy	WEIGHTS	SER.	REF.	x	y	SER.
YERKES PHOTOGRAPH No. 958										
1000271	135.4646	142.8881	- .0014	0.0009	2.1 2.4	8577	1000271	6.65054	11.34599	8577
1004537	135.4646	146.8605	- .0019	-0.0014	2.4 2.2	8578	1004537	3.37184	15.29300	8578
1305650	135.4646	141.9473	- .0003	0.0016	2.5 2.5	8579	1305650	32.30824	20.06575	8579
1342158	135.4646	143.7456	- .0014	0.0007	2.4 2.9	8580	1342541	23.64327	51.99775	8580
1455881	135.4646	149.3542	- .0025	0.0025	3.9 3.5	8581	1455881	33.10242	67.51939	8581
1631517	135.4646	141.7062	- .0009	0.0015	2.6 2.3	8582	1631517	51.06961	49.65251	8582
1648588	135.4646	141.0044	.0013	0.0049	2.1 2.3	8583	1648588	56.43391	58.90243	8583
2049780	135.4646	141.3845	- .0006	-0.0012	2.5 2.4	8584	2049780	-16.63126	50.07938	8584
2200384	135.4646	140.1543	- .0004	-0.0009	2.1 2.4	8585	2200384	-19.65574	8.83357	8585
2362961	135.4646	145.5460	.0013	-0.0029	1.8 2.9	8586	2362961	-41.53462	64.53324	8586
2419754	135.4646	146.9347	- .0012	0.0005	1.8 1.9	8587	2419754	-48.70592	15.94343	8587
2446896	135.4646	145.0398	- .0011	-0.0022	2.2 2.5	8588	2446896	-51.52596	44.11316	8588
2467172	135.4646	145.5319	.0001	-0.0034	2.1 2.2	8589	2467172	-54.28555	54.64828	8589
2501063	135.4646	140.8039	- .0002	0.0006	2.3 2.1	8590	2501063	-47.80340	-0.21567	8590
2652088	135.4646	142.9342	- .0020	-0.0009	2.4 2.1	8591	2652088	-66.51820	42.17092	8591
2665254	135.4646	141.5490	- .0004	-0.0001	2.8 3.2	8592	2665254	-71.02953	50.84588	8592
2706304	135.4646	147.3547	.0003	0.0008	2.1 2.0	8593	2706304	-71.09778	-3.37211	8593
2707980	135.4646	142.0194	.0003	0.0015	1.9 2.7	8594	2707980	-73.66525	1.28649	8594
2827023	135.4646	149.2152	.0000	0.0010	2.2 2.4	8595	2827023	-84.19225	8.60732	8595
3009506	135.4646	144.0632	- .0005	-0.0003	2.3 2.4	8596	3009506	-7.09164	2.59624	8596
3195531	135.4646	143.7855	.0005	0.0006	2.1 2.7	8597	3195531	1.41159	87.88296	8597
3204238	135.4646	143.8049	- .0004	-0.0010	2.3 2.1	8598	3204238	-21.80299	2.50126	8598
3230703	135.4646	142.0291	- .0012	0.0049	2.1 3.3	8599	3230703	-12.19257	29.41955	8599
3306780	135.4646	147.3123	- .0001	0.0007	2.1 2.5	8600	3306780	-32.81923	-3.87808	8600
3471353	135.4646	141.7345	- .0025	0.0004	2.9 1.9	8601	3471353	-26.37685	69.60518	8601
3535698	135.4646	144.7445	- .0007	0.0002	1.4 2.1	8602	3535698	-45.81986	36.34081	8602
3549174	135.4646	149.2603	- .0003	0.0012	1.9 3.1	8603	3549174	-48.64450	41.80027	8603
3627817	135.4646	149.6307	.0009	-0.0003	2.7 2.1	8604	3627817	-57.57637	31.31873	8604
3664828	135.4646	140.1794	.0002	0.0029	1.8 2.0	8605	3664828	-48.24261	70.92023	8605
3700535	135.4646	140.7634	.0012	0.0015	2.6 2.8	8606	3700535	-64.35628	10.08589	8606
3726975	135.4646	146.2344	.0014	0.0021	2.1 2.0	8607	3726975	-66.32163	34.62233	8607
3804971	135.4646	143.2747	.0001	-0.0003	2.6 2.2	8608	3804971	-77.11126	17.44239	8608
3903541	135.4646	143.9456	- .0004	-0.0006	2.6 2.9	8609	3903541	-85.80647	16.67449	8609
4005338	135.4646	148.1706	- .0012	-0.0015	2.1 2.1	8610	4005338	5.85778	6.56526	8610
4097891	135.4646	144.3406	.0026	-0.0014	2.4 2.2	8611	4097891	23.51797	87.57176	8611
4269764	135.4646	140.7647	.0002	-0.0008	2.9 2.2	8612	4269764	38.81206	51.27352	8612
4310096	135.4646	145.8938	- .0011	0.0012	2.1 3.3	8613	4310096	30.85859	4.00917	8613
4346822	135.4646	140.7250	.0005	0.0007	1.6 2.2	8614	4346822	41.87579	31.32336	8614
4392051	135.4646	146.8320	.0011	-0.0022	2.6 3.1	8615	4392051	45.05661	75.30377	8615
4400190	135.4646	146.2156	- .0015	-0.0008	2.1 2.3	8616	4400190	38.53775	14.25831	8616
4577577	135.4646	144.7195	- .0012	-0.0022	2.6 2.1	8617	4577577	66.08375	57.62760	8617
4621955	135.4646	141.7979	.0000	0.0027	1.9 2.5	8618	4621955	62.26149	10.45091	8618
4751552	135.4646	147.1041	- .0044	0.0007	2.0 2.2	8619	4751552	75.61775	35.32185	8619
4806928	135.4646	142.1638	- .0007	0.0009	2.6 2.0	8620	4806928	81.78740	9.72321	8620

TABLE 4  
\*RESULTS FOR CRATERS

REF.	x	y	SER.	REF.	x	y	SER.			
YERKES PHOTOGRAPH No. 1158										
1000271	135.7311	135.2350	.0044	0.0002	1.4 4.6	8677	1000271	4.67773	11.48674	8677
1002262	135.7311	135.3897	.0052	-0.0007	2.8 2.3	8678	1002262	6.43877	11.65213	8678
1004537	135.7311	138.7845	.0056	-0.0007	2.1 4.7	8679	1004537	7.90009	15.06131	8679
1095066	135.7311	132.9533	.0062	0.0007	2.9 3.2	8680	1095066	2.54384	89.32403	8680
1285759	135.7311	131.0541	.0050	0.0028	3.2 5.4	8681	1285759	21.48913	87.53359	8681
1305650	135.7311	139.6825	.0040	0.0002	2.4 2.5	8682	1305650	37.03300	16.13338	8682
1342158	135.7311	132.4425	.0034	0.0021	2.9 4.0	8683	1342541	32.19658	48.91991	8683
1455881	135.7311	136.6137	.0047	0.0028	2.4 2.9	8684	1455881	43.23355	63.18035	8684
1631517	135.7311	136.4733	.0051	0.0024	2.6 4.1	8685	1631517	58.90996	43.09851	8685
1648588	135.7311	134.8440	.0063	0.0032	2.3 2.3	8686	1648588	65.07716	51.51982	8686
2049780	135.7311	135.9636	.0046	-0.0001	2.6 2.1	8687	2049780	-8.04709	52.20909	8687
2200384	135.7311	135.4575	.0055	0.0000	2.3 3.6	8688	2200384	-15.89886	11.58800	8688
2362961	135.7311	133.4140	.0077	-0.0010	2.6 2.1	8689	2362961	-31.55156	69.55010	8689
2419754	135.7311	136.2416	.0037	0.0023	2.4 2.6	8690	2419754	-44.17069	22.22324	8690
2446896	135.7311	134.5527	.0060	0.0005	2.1 3.0	8691	2446896	-43.74704	50.58477	8691
2467172	135.7311	135.3284	.0050	-0.0004	2.3 2.6	8692	2467172	-45.46585	61.36856	8692
2476985	135.7311	130.1648	.0066	-0.0014	2.1 3.1	8693	2476985	-46.53448	76.22377	8693
2501063	135.7311	130.1653	.0057	0.0004	2.4 2.9	8694	2501063	-45.36685	6.11265	8694
2652088	135.7311	134.5778	.0040	0.0007	2.9 1.9	8695	2652088	-59.35451	50.51766	8695
2707980	135.7311	134.9603	.0057	0.0039	2.4 2.3	8696	2707980	-71.41650	10.76179	8696
3009506	135.7311	137.5983	.0057	-0.0008	2.4 3.0	8697	3009506	-4.17013	3.78481	8697
3195531	135.7311	136.3271	- .0018	-0.0003	1.7 2.6	8698	3195531	-8.65533	87.66743	8698
3204238	135.7311	139.3484	.0030	0.0006	2.2 2.9	8699	3204238	-18.90856	5.45077	8699
3230703	135.7311	136.5035	.0033	0.0004	2.6 3.0	8700	3230703	-13.37350	27.41703	8700
3306780	135.7311	134.5628	.0053	0.0015	2.6 2.8	8701	3306780	-30.69768	0.58737	8701
3471353	135.7311	138.3269	.0033	0.0034	1.5 3.4	8702	3471353	-33.32814	65.77622	8702
3535698	135.7311	134.0069	.0046	0.0022	2.1 2.6	8703	3535698	-48.05586	30.12286	8703
3549174	135.7311	138.9723	.0045	0.0035	2.8 2.6	8704	3549174	-51.70515	35.18755	8704
3627817	135.7311	130.5274	.0055	0.0027	2.0 2.4	8705	3627817	-59.28417	23.65770	8705
3664828	135.7311	139.7616	.0070	0.0054	1.8 2.5	8706	3664828	-55.77749	64.47179	8706
3700535	135.7311	132.5017	.0055	0.0025	2.2 3.2	8707	3700535	-63.36650	-1.67032	8707

(CONTINUED)

\*Final coordinates of craters (out-put of Star-Trail program) not reduced to Mösting A.

TABLE 1  
COORDINATES FOR CRATERS

REF.	x	y	δx	δy	WEIGHTS	SER.
3726975	135.7311	138.3113	.0051	0.0036	2.6 3.0	8708
3804971	135.7311	136.7835	.0054	0.0014	2.2 1.9	8709
4005338	135.7311	139.8218	.0051	C.0014	2.0 2.6	8710
4097891	135.7311	133.6548	.0065	-0.0005	2.3 2.6	8711
4269764	135.7311	137.8227	.0073	0.0008	2.3 3.4	8712
4310096	135.7311	133.9678	.0058	0.0006	2.9 2.8	8713
4346822	135.7311	137.3429	.0052	0.0001	2.4 2.5	8714
4392051	135.7311	132.9401	.0073	-0.0024	2.6 2.5	8715
4400190	135.7311	133.2090	.0061	0.0007	2.1 3.1	8716
4621955	135.7311	135.3742	.0052	0.0018	1.9 2.1	8717
4806928	135.7311	132.6722	.0061	0.0029	2.1 2.5	8718

TABLE 4  
\*RESULTS FOR CRATERS

REF.	x	y	SER.
3726975	-68.70341	25.93321	8708
3804971	-77.41801	-7.48126	8709
4005338	9.29156	6.09165	8710
4097891	13.15630	90.21533	8711
4269764	34.05345	55.86605	8712
4310096	33.65723	0.37177	8713
4346822	39.54715	36.27797	8714
4392051	36.30085	80.77750	8715
4400190	42.53535	9.68109	8716
4621955	62.67363	18.08180	8717
4806928	84.10480	-0.62784	8718

YERKES PHOTOGRAPH No. 1158 (CONTINUED)

1000271	132.4344	135.9781	- .0007	0.0001	2.3 2.6	8801
1002262	132.4344	135.3437	- .0014	0.0007	2.4 2.5	8802
1004537	132.4344	137.8736	- .0011	0.0001	3.1 4.5	8803
1095066	132.4344	137.5544	- .0004	0.0070	3.6 3.7	8804
1285759	132.4344	138.3546	.0020	0.0033	2.3 2.5	8805
1305650	132.4344	137.0994	- .0003	0.0004	2.1 2.9	8806
1342158	132.4344	138.7390	- .0007	0.0060	3.2 3.1	8807
1455881	132.4344	137.2943	.0014	0.0024	2.2 2.6	8808
1631517	132.4344	132.8442	- .0002	0.0000	2.9 2.8	8809
1648588	132.4344	138.1138	.0006	0.0012	2.3 2.3	8810
2049780	132.4344	137.8540	- .0008	0.0008	2.5 2.4	8811
2200384	132.4344	134.3279	.0003	0.0016	2.6 2.3	8812
2362961	132.4344	133.3600	.0007	-0.0001	2.6 2.3	8813
2419754	132.4344	135.4852	.0006	-0.0011	2.4 2.3	8814
2446896	132.4344	131.0264	.0022	-0.0027	2.5 2.6	8815
2467172	132.4344	131.5500	.0025	-0.0008	2.5 2.4	8816
2476985	132.4344	135.9905	.0000	-0.0008	2.3 2.9	8817
2501063	132.4344	131.4503	.0053	-0.0002	2.8 2.8	8818
2706304	132.4344	131.1400	- .0010	-0.0006	2.2 2.2	8819
2707980	132.4344	136.3909	- .0009	-0.0012	2.1 1.9	8820
2827023	132.4344	138.3459	- .0014	-0.0021	2.9 2.4	8821
3009506	132.4344	132.6084	- .0006	0.0009	1.8 2.5	8822
3195531	132.4344	132.8851	.0003	0.0017	3.2 2.6	8823
3204238	132.4344	130.1027	.0002	0.0011	2.1 2.6	8824
3230703	132.4344	138.2853	- .0015	0.0035	2.2 2.3	8825
3306780	132.4344	130.4797	.0005	-0.0002	2.0 2.1	8826
3471353	132.4344	132.2600	.0030	0.0025	2.5 2.1	8827
3535698	132.4344	130.0004	- .0002	-0.0002	2.6 1.9	8828
3549174	132.4344	136.9507	.0000	0.0000	2.6 2.7	8829
3627817	132.4344	130.4501	- .0007	0.0004	2.0 2.6	8830
3664828	132.4344	132.6558	- .0023	0.0022	2.6 2.2	8831
3700535	132.4344	131.8607	- .0007	0.0001	2.1 2.1	8832
3726975	132.4344	132.3200	.0002	0.0012	2.6 2.6	8833
3804971	132.4344	132.5499	- .0003	0.0007	2.1 2.1	8834
4005338	132.4344	139.2632	- .0011	0.0007	2.9 2.6	8835
4097891	132.4344	131.8922	- .0003	0.0022	2.3 2.4	8836
4269764	132.4344	133.8236	.0009	0.0006	2.5 1.6	8837
4310096	132.4344	134.3196	- .0012	0.0010	3.7 2.4	8838
4346822	132.4344	138.9638	.0019	0.0002	3.1 2.5	8839
4392051	132.4344	130.9769	.0020	-0.0001	1.9 2.3	8840
4400190	132.4344	139.0640	- .0005	0.0008	2.8 2.6	8841
4621955	132.4344	136.1846	.0021	0.0002	2.1 2.3	8842
4751552	132.4344	138.7534	.0011	-0.0022	2.7 2.1	8843

YERKES PHOTOGRAPH No. 1190

1000271	-5.85475	7.49284	8801
1002262	-4.15875	6.88760	8802
1004537	-1.45149	9.46782	8803
1095066	31.80356	79.80759	8804
1285759	48.44904	70.89113	8805
1305650	26.30956	-0.82962	8806
1342158	36.22418	31.01817	8807
1455881	54.35758	39.90157	8808
1631517	60.06777	15.52777	8809
1648588	71.08020	20.95469	8810
2049780	0.72842	49.56933	8811
2200384	-23.96274	15.53307	8812
2362961	-10.19051	74.87049	8813
2419754	-43.48870	36.36955	8814
2446896	-30.10336	62.17347	8815
2467172	-25.89804	72.78228	8816
2476985	-17.24385	86.99001	8817
2501063	-51.03535	22.18692	8818
2706304	-65.80947	31.55676	8819
2707980	-69.26014	36.82294	8820
2827023	-72.33042	48.73671	8821
3009506	-16.77951	3.92740	8822
3195531	-46.44213	76.40280	8823
3204238	-29.02573	11.21431	8824
3230703	-36.20764	20.76341	8825
3306780	-40.98061	11.38145	8826
3471353	-64.14490	47.30789	8827
3535698	-66.18983	-9.56313	8828
3549174	-70.65409	12.69461	8829
3627817	-72.93017	0.77918	8830
3664828	-80.92345	37.19609	8831
3700535	-68.18051	22.29620	8832
3726975	-80.64875	2.51532	8833
3804971	-80.45489	22.77026	8834
4005338	-3.78990	0.80710	8835
4097891	-26.61004	87.05863	8836
4269764	-1.25059	64.65776	8837
4310096	16.80144	13.79031	8838
4346822	9.99276	49.30364	8839
4392051	-3.39899	87.56666	8840
4400190	28.94307	-8.82729	8841
4621955	38.78632	41.56868	8842
4751552	41.13592	68.98786	8843

YERKES PHOTOGRAPH No. 1288

1000271	128.5876	137.5499	- .0018	0.0033	2.6 2.5	8918
1002262	128.5876	137.8022	- .0016	0.0005	2.1 2.1	8919
1095066	128.5876	133.5317	- .0008	0.0025	2.8 2.2	8920
1285759	128.5876	132.6875	- .0023	0.0030	2.7 3.6	8921
1305650	128.5876	133.7737	- .0008	-0.0010	2.1 2.1	8922
1342158	128.5876	135.6447	- .0021	0.0004	2.6 2.4	8923
1455881	128.5876	130.0501	- .0016	0.0014	2.5 1.9	8924
1631517	128.5876	131.1980	- .0008	0.0031	1.4 2.4	8925
1648588	128.5876	139.7845	.0002	0.0019	2.6 2.4	8926
2049780	128.5876	136.7595	- .0001	-0.0013	2.2 2.5	8927
2200384	128.5876	136.6033	- .0012	-0.0008	2.8 2.6	8928
2419754	128.5876	135.4774	- .0005	0.0025	2.0 2.9	8929
2501063	128.5876	139.6575	- .0025	0.0022	2.6 2.3	8930
3009506	128.5876	139.5889	- .0020	-0.0020	2.6 2.4	8931
3204238	128.5876	130.4454	.0008	0.0079	2.6 1.8	8932

1000271	5.81167	12.08931	8918
1002262	7.54648	12.35362	8919
1095066	-2.24989	88.05942	8920
1285759	16.35049	87.38009	8921
1305650	37.16324	18.53195	8922
1342158	30.21805	50.39071	8923
1455881	39.69805	64.87593	8924
1631517	56.40608	46.11627	8925
1648588	61.63788	54.74752	8926
2049780	-9.32550	51.23929	8927
2200384	-14.34109	11.00540	8928
2419754	-43.00406	19.69531	8929
2501063	-43.21144	3.85676	8930
3009506	-2.36571	4.06434	8931
3204238	-17.00323	4.82278	8932

(CONTINUED)

\*Final coordinates of craters (out-put of Star-Trail program) not reduced to Mösting A.

TABLE 1  
COORDINATES FOR CRATERS

REF.	x	y	$\delta x$	$\delta y$	WEIGHTS	SER.
3230703	128.5876	138.3733	-0.0024	0.0040	2.6 2.8	8933
330678C	128.5876	135.0229	-0.0021	0.0005	2.1 2.8	8934
4005338	128.5876	132.5425	-0.0017	0.0005	2.3 2.3	8935
4097891	128.5876	137.7498	-0.0007	-0.0018	2.2 2.3	8936
4269764	128.5876	132.8631	-0.0015	-0.0022	2.3 1.8	8937
4310096	128.5876	138.0942	-0.0017	-0.0010	2.4 2.5	8938
4346822	128.5876	132.4343	-0.0001	-0.0020	1.9 2.1	8939
4392051	128.5876	138.3660	-0.0015	-0.0041	2.3 2.1	8940
4400190	128.5876	137.5845	-0.0016	-0.0017	2.1 2.2	8941
4577577	128.5876	134.2009	-0.0004	-0.0021	2.6 2.1	8942
4621955	128.5876	131.3778	-0.0000	0.0011	2.1 2.1	8943
4806928	128.5876	139.5540	-0.0005	0.0000	2.0 2.1	8944

TABLE 4  
\*RESULTS FOR CRATERS

REF.	x	y	SER.	REF.	x	y	SER.
3230703	-9.63421	27.23443	8933	3230703	-9.63421	27.23443	8933
330678C	-28.30220	-0.68205	8934	330678C	-28.30220	-0.68205	8934
4005338	10.61716	7.10896	8935	4005338	10.61716	7.10896	8935
4097891	18.51122	67.73364	8936	4097891	18.51122	67.73364	8936
4269764	38.01380	52.45017	8937	4269764	38.01380	52.45017	8937
4310096	34.86353	2.81979	8938	4310096	34.86353	2.81979	8938
4346822	42.82959	32.82509	8939	4346822	42.82959	32.82509	8939
4392051	40.91495	76.95435	8940	4392051	40.91495	76.95435	8940
4400190	42.93656	12.37504	8941	4400190	42.93656	12.37504	8941
4577577	62.76366	60.95443	8942	4577577	62.76366	60.95443	8942
4621955	63.87173	13.71863	8943	4621955	63.87173	13.71863	8943
4806928	83.35635	4.60916	8944	4806928	83.35635	4.60916	8944

## YERKES PHOTOGRAPH No. 1288 (CONTINUED)

REF.	x	y	$\delta x$	$\delta y$	WEIGHTS	SER.	REF.	x	y	SER.
1000271	146.0397	118.2435	-0.0015	0.0005	2.3 2.9	8993	1000271	-11.62054	-1.70551	8993
1002262	146.0397	117.6896	-0.0008	0.0005	3.2 2.4	8994	1002262	-10.02712	-2.27837	8994
1095066	146.0397	110.9181	-0.0011	0.0039	3.7 3.2	8995	1095066	28.91631	70.53441	8995
1305650	146.0397	110.3497	-0.0005	0.0003	2.5 1.9	8996	1305650	18.68770	-9.95850	8996
1342158	146.0397	110.8623	-0.0005	0.0013	2.8 2.3	8997	1342158	29.14150	20.44848	8997
204978C	146.0397	118.8427	-0.0006	0.0013	2.4 3.6	8998	204978C	-3.80754	38.82453	8998
2200384	146.0397	116.4090	-0.0004	-0.0004	2.8 2.1	8999	2200384	-28.23396	6.65898	8999
2362961	146.0397	115.0446	-0.0027	0.0048	2.6 2.9	9000	2362961	-11.53971	65.13603	9000
2419754	146.0397	117.6382	-0.0004	0.0005	2.3 1.9	9001	2419754	-45.20488	28.09853	9001
2446896	146.0397	112.6970	-0.0011	0.0006	3.2 2.9	9002	2446896	-31.37581	53.00919	9002
2467172	146.0397	113.6345	-0.0010	-0.0007	2.6 2.4	9003	2467172	-26.39144	63.89435	9003
2476985	146.0397	119.0486	-0.0016	0.0006	3.5 2.8	9004	2476985	-16.51871	79.20132	9004
3009506	146.0397	115.1683	-0.0008	0.0008	2.3 2.3	9005	3009506	-21.89132	-4.66215	9005
3204238	146.0397	112.5340	-0.0005	-0.0007	2.6 2.7	9006	3204238	-33.03759	2.83810	9006
3230703	146.0397	113.1176	-0.0003	0.0013	2.9 2.5	9007	3230703	-39.97182	26.51328	9007
3306780	146.0397	113.3284	-0.0005	-0.0002	2.7 1.7	9008	3306780	-43.88653	3.75994	9008
3471353	146.0397	111.9831	-0.0016	0.0009	2.0 2.1	9009	3471353	-64.11104	47.37676	9009
3535698	146.0397	115.8339	-0.0005	0.0003	2.3 1.3	9010	3535698	-66.61808	13.47803	9010
3627817	146.0397	116.2179	-0.0004	0.0016	2.0 2.5	9011	3627817	-72.26930	-3.02215	9011
3700535	146.0397	116.1820	-0.0003	0.0023	3.2 3.0	9012	3700535	-67.61815	16.89846	9012
3804971	146.0397	118.5090	-0.0013	0.0007	2.6 3.0	9013	3804971	-77.92302	19.34739	9013
4005338	146.0397	111.9343	-0.0001	0.0002	2.3 2.9	9014	4005338	-9.82642	-8.03918	9014
4269764	146.0397	113.1322	-0.0008	-0.0005	2.9 2.4	9015	4269764	-6.77435	66.90932	9015
4310096	146.0397	118.1538	-0.0004	0.0016	2.4 2.3	9016	4310096	9.35889	22.05188	9016
4400190	146.0397	112.8793	-0.0019	0.0007	2.6 2.1	9017	4400190	21.09506	17.46118	9017

## YERKES PHOTOGRAPH No. 1502

REF.	x	y	$\delta x$	$\delta y$	WEIGHTS	SER.	REF.	x	y	SER.
1000271	131.3557	134.1801	-0.0056	-0.0003	3.1 3.7	9089	1000271	3.44957	4.69671	9089
1002262	131.3557	134.9094	-0.0052	0.0122	2.6 2.7	9090	1002262	4.89955	5.43261	9090
1004537	131.3557	138.2282	-0.0139	0.0059	2.9 2.5	9091	1004537	4.95573	8.75325	9091
1095066	131.3557	133.3327	-0.0065	-0.0001	4.1 3.2	9092	1095066	-26.10697	73.75498	9092
1285759	131.3557	138.1247	-0.0078	0.0075	3.7 2.5	9093	1285759	-9.63731	78.62026	9093
1305650	131.3557	139.1545	-0.0113	0.0091	3.4 3.8	9094	1305650	28.92814	19.78807	9094
1342158	131.3557	135.9057	-0.0032	0.0067	2.9 2.5	9095	1342158	13.71427	46.48648	9095
1455881	131.3557	132.6957	-0.0056	-0.0050	2.9 2.5	9096	1455881	17.63175	63.30138	9096
1631517	131.3557	130.6246	-0.0011	-0.0061	1.5 1.5	9097	1631517	37.55733	51.31040	9097
1648588	131.3557	130.7342	-0.0025	-0.0068	2.5 2.3	9098	1648588	35.45950	61.43302	9098
2200384	131.3557	137.6707	-0.0094	0.0062	2.8 3.3	9099	2200384	-13.93003	-1.89070	9099
2362961	131.3557	133.8799	-0.0045	-0.0070	4.5 2.9	9100	2362961	-47.45359	44.19610	9100
2446896	131.3557	133.1925	-0.0127	0.0098	3.5 2.7	9101	2446896	-51.02505	23.48343	9101
2476985	131.3557	136.3552	-0.0035	-0.0076	3.7 2.4	9102	2476985	-63.15006	46.60495	9102
2501063	131.3557	134.1785	-0.0049	-0.0062	1.9 3.9	9103	2501063	-37.35190	15.49029	9103
2652088	131.3557	139.0456	-0.010	0.0111	3.3 9.9	9104	2652088	-64.74717	19.27542	9104
2706304	131.3557	137.5011	-0.0109	0.0038	4.1 3.5	9105	2706304	-58.13662	22.26045	9105
2827023	131.3557	136.3068	-0.0066	0.0027	3.9 3.4	9106	2827023	-73.42538	13.51643	9106
3009506	131.3557	134.8113	-0.0094	-0.0070	1.7 1.8	9107	3009506	-1.43532	-4.69762	9107
3195531	131.3557	130.7594	-0.0044	-0.0044	3.3 1.8	9108	3195531	22.44971	78.68197	9108
3204238	131.3557	131.5557	-0.0018	0.0037	4.4 1.8	9109	3204238	-14.49899	-8.01108	9109
3306780	131.3557	133.8522	-0.0049	0.0089	2.7 3.1	9110	3306780	-22.88746	15.75440	9110
3471353	131.3557	139.4065	-0.0028	-0.0105	4.7 1.8	9111	3471353	-4.58281	70.14722	9111
3549174	131.3557	138.3203	-0.0061	0.0087	5.0 5.7	9112	3549174	-25.55004	51.33199	9112
3664828	131.3557	134.4490	-0.0000	-0.0072	3.6 2.1	9113	3664828	-24.54262	75.19311	9113
3700535	131.3557	132.7038	-0.0063	0.0058	2.1 6.2	9114	3700535	-50.39439	27.02667	9114
3726975	131.3557	131.3322	-0.0068	0.0095	3.6 4.0	9115	3726975	-47.36280	48.39541	9115
3804971	131.3557	134.4568	-0.0052	-0.0034	3.1 2.6	9116	3804971	-60.93414	35.32304	9116
4005338	131.3557	131.1162	-0.0019	-0.0068	2.7 2.4	9117	4005338	9.09380	1.65568	9117
4097891	131.3557	136.2588	-0.0077	0.0080	3.3 2.2	9118	4097891	41.27582	73.09880	9118
4310096	131.3557	134.6046	-0.0018	-0.0136	2.6 1.7	9119	4310096	31.31409	5.24151	9119
4346822	131.3557	136.6204	-0.0061	0.0054	3.2 2.7	9120	4346822	48.11683	22.68366	9120
4392051	131.3557	131.2726	-0.0115	-0.0114	4.5 1.3	9121	4392051	58.01337	58.00569	9121
4400190	131.3557	135.5379	-0.0000	-0.0106	2.6 1.3	9122	4400190	35.60006	16.19853	9122
4621955	131.3557	139.8918	-0.0070	-0.0058	1.8 2.2	9123	4621955	61.04372	0.65458	9123

\*Final coordinates of craters (out-put of Star-Trail program) not reduced to Mösting A.

TABLE 1  
COORDINATES FOR CRATERS

REF.	x	y	$\delta x$	$\delta y$	WEIGHTS	SER.
YERKES PHOTOGRAPH No. 1579						
1000271	139.1995	145.2638	- .0013	0.0003	2.1 1.9	9220
1002262	139.1995	145.8635	- .0016	0.0001	2.1 2.2	9221
1004537	139.1995	149.2736	- .0015	0.0003	2.9 2.6	9222
1095066	139.1995	144.1815	- .0016	-0.0025	2.9 3.2	9223
1285759	139.1995	147.4006	- .0011	-0.0011	2.6 3.1	9224
1305650	139.1995	147.6745	- .0015	0.0020	2.4 1.7	9225
1342158	139.1995	145.7644	- .0020	0.0010	2.3 2.3	9226
1455881	139.1995	141.1797	- .0028	0.0021	2.5 2.5	9227
1631517	139.1995	147.2540	- .0002	0.0030	1.9 2.9	9228
1648588	139.1995	146.3196	- .0000	0.0044	2.6 1.8	9229
2049780	139.1995	148.4337	- .0007	-0.0007	2.3 2.5	9230
2200384	139.1995	140.1336	- .0008	0.0002	2.1 2.4	9231
2362961	139.1995	147.9650	- .0002	-0.0020	2.3 2.9	9232
2419754	139.1995	142.3884	- .0009	0.0008	2.3 2.3	9233
2446896	139.1995	147.8386	- .0008	-0.0003	1.9 2.4	9234
2467172	139.1995	147.0142	- .0012	-0.0017	2.9 2.3	9235
2501063	139.1995	147.6290	- .0011	0.0004	2.3 3.3	9236
2706304	139.1995	141.1133	- .0005	0.0010	1.8 2.3	9237
2707980	139.1995	145.0040	- .0007	0.0009	2.4 2.3	9238
2827023	139.1995	149.9738	- .0072	0.0016	2.3 2.0	9239
3009506	139.1995	146.1342	- .0062	-0.0050	2.3 2.8	9240
3195531	139.1995	142.5927	- .0019	-0.0008	1.6 2.9	9241
3204238	139.1995	143.8586	- .0013	0.0003	2.8 2.3	9242
3230703	139.1995	145.6992	- .0012	-0.0001	2.8 2.3	9243
3306780	139.1995	146.4385	- .0006	-0.0001	2.7 2.6	9244
3471353	139.1995	146.0429	- .0016	0.0003	2.1 2.3	9245
3535698	139.1995	144.3636	- .0014	0.0008	2.1 2.5	9246
3549174	139.1995	148.8233	- .0015	0.0016	2.1 2.5	9247
3627817	139.1995	147.2637	- .0003	0.0015	2.3 2.1	9248
3664828	139.1995	141.3182	- .0017	0.0013	2.3 2.0	9249
3700535	139.1995	145.9734	- .0004	0.0007	3.4 2.5	9250
3726975	139.1995	142.7285	- .0007	0.0024	2.1 2.8	9251
3804971	139.1995	147.0543	- .0003	0.0007	2.1 2.3	9252
3903541	139.1995	146.2644	- .0002	0.0013	2.5 1.7	9253
4005338	139.1995	141.6287	- .0020	0.0003	2.4 3.0	9254
4097891	139.1995	145.8221	- .0009	-0.0019	2.3 1.9	9255
4269764	139.1995	142.2740	- .0004	-0.0002	2.6 2.4	9256
4310096	139.1995	142.6691	- .0013	0.0011	2.6 2.1	9257
4346822	139.1995	141.3892	- .0003	0.0022	1.9 2.3	9258
4392051	139.1995	140.3291	- .0116	-0.0091	2.9 2.5	9259
4400190	139.1995	143.1492	- .0011	0.0011	1.9 2.1	9260
4621955	139.1995	143.3688	- .0077	0.0014	2.1 2.8	9261
4751552	139.1995	141.7738	- .0009	0.0031	2.8 2.0	9262

TABLE 4  
\*RESULTS FOR CRATERS

REF.	x	y	SER.
YERKES PHOTOGRAPH No. 1579			
1000271	4.08412	12.21966	9220
1002262	5.63694	12.82688	9221
1004537	6.00912	16.24184	9222
1095066	-20.20563	81.05339	9223
1285759	-2.84145	84.39311	9224
1305650	31.69219	24.76540	9225
1342158	18.39690	52.82218	9226
1455881	23.87508	68.27641	9227
1631517	43.33666	54.42464	9228
1648588	46.14779	63.51130	9229
2049780	-18.37085	45.32029	9230
2200384	-14.37952	7.00213	9231
2362961	-44.85912	54.74213	9232
2419754	-42.90522	9.13155	9233
2446896	-50.33750	34.57238	9234
2467172	-55.15523	43.73505	9235
2501063	-35.68637	-5.62728	9236
2706304	-61.80526	12.24795	9237
2707980	-65.04202	-8.36807	9238
2827023	-76.85347	-3.44641	9239
3009506	-1.79331	3.05524	9240
3195531	15.93445	80.48530	9241
3204238	-15.50543	0.71622	9242
3230703	-2.05481	27.40943	9243
3306780	-24.84018	-6.75254	9244
3471353	-11.05927	67.14314	9245
3535698	-32.92947	38.89365	9246
3549174	-35.04852	44.44861	9247
3627817	-44.91018	36.04437	9248
3664828	-32.12034	71.96638	9249
3700535	-54.25720	17.35893	9250
3726975	-53.15133	40.62066	9251
3804971	-65.95163	26.33865	9252
3903541	-74.88364	27.16921	9253
4005338	9.56992	8.60567	9254
4097891	35.85974	77.16382	9255
4269764	47.12820	40.62739	9256
4310096	32.80612	9.75091	9257
4346822	47.55882	21.49237	9258
4392051	54.38678	62.56041	9259
4400190	38.17303	20.26481	9260
4621955	62.87797	0.57630	9261
4751552	77.33484	20.97433	9262

YERKES PHOTOGRAPH No. 1638

1000271	127.7995	133.0555	- .0014	-0.0014	1.4 1.4	9330	1000271	-8.12850	-7.00517	9330
1002262	127.7995	133.1531	- .0015	-0.0022	2.1 1.6	9331	1002262	-6.32719	-6.96521	9331
1004537	127.7995	136.2910	- .0012	-0.0021	2.3 1.1	9332	1004537	-4.82667	-3.84081	9332
1095066	127.7995	135.8957	- .0021	-0.0046	2.8 1.1	9333	1095066	3.13027	75.71660	9333
1285759	127.7995	133.2995	- .0025	-0.0011	1.7 1.0	9334	1285759	20.77785	72.94639	9334
1305650	127.7995	136.5221	- .0015	-0.0017	1.2 1.7	9335	1305650	23.18462	-3.88424	9335
1342158	127.7995	138.7478	- .0027	-0.0019	1.6 1.2	9336	1342158	22.05172	28.36501	9336
1455881	127.7995	134.3370	- .0017	0.0003	2.8 2.3	9337	1455881	35.55236	43.82786	9337
1631517	127.7995	134.0352	- .0007	0.0000	2.2 1.8	9338	1631517	48.30431	23.35320	9338
1648588	127.7995	133.9503	- .0020	-0.0026	2.7 1.6	9339	1648588	56.45820	33.23219	9339
2200384	127.7995	134.9740	- .0008	0.0019	2.5 1.3	9340	2200384	-26.81041	-4.94279	9340
2362961	127.7995	135.8607	- .0011	-0.0039	1.9 2.3	9341	2362961	-32.90232	56.02714	9341
2446896	127.7995	137.3126	- .0000	-0.0040	1.8 1.8	9342	2446896	-46.71133	37.60725	9342
2501063	127.7995	133.9801	- .0005	-0.0011	2.1 1.8	9343	2501063	-52.90586	-5.68123	9343
2652088	127.7995	130.9921	- .0063	0.0007	2.1 1.9	9344	2652088	-59.26429	41.41124	9344
2665254	127.7995	132.5908	- .0010	-0.0029	1.5 3.5	9345	2665254	-59.85022	53.02017	9345
2706304	127.7995	138.9817	- .0005	-0.0005	1.2 2.1	9346	2706304	-72.34986	-0.48739	9346
2827023	127.7995	135.8318	- .0022	-0.0016	2.2 1.9	9347	2827023	-79.57911	16.44431	9347
3009506	127.7995	136.6083	- .0015	-0.0021	1.8 1.8	9348	3009506	-16.75319	13.41033	9348
3204238	127.7995	139.6215	- .0004	-0.0016	2.0 2.1	9349	3204238	-29.99338	10.26615	9349
3306780	127.7995	136.6206	- .0010	-0.0012	2.6 2.4	9350	3306780	-40.62046	13.16462	9350
3471353	127.7995	132.0363	- .0014	-0.0010	1.9 1.5	9351	3471353	-42.60816	67.74989	9351
3549174	127.7995	139.0222	- .0025	-0.0012	0.8 2.6	9352	3549174	-59.41436	40.58881	9352
3664828	127.7995	138.2948	- .0006	0.0010	1.6 3.0	9353	3664828	-60.65391	61.31205	9353
3700535	127.7995	130.5708	- .0002	-0.0006	1.9 1.9	9354	3700535	-68.13880	-8.94251	9354
3726975	127.7995	130.8255	- .0034	-0.0019	1.2 2.8	9355	3726975	-73.01805	28.64760	9355
3804971	127.7995	139.3774	- .0064	-0.0009	2.3 1.5	9356	3804971	-79.16175	10.02830	9356
4005338	127.7995	137.8523	- .0008	-0.0027	1.3 1.8	9357	4005338	-4.23607	12.28856	9357
4310096	127.7995	131.7865	- .0002	-0.0020	1.5 1.6	9358	4310096	18.67718	18.58133	9358
4346822	127.7995	139.9385	- .0004	-0.0035	1.5 1.7	9359	4346822	23.79717	50.49182	9359
4392051	127.7995	137.9648	- .0006	-0.0030	2.2 2.2	9360	4392051	24.20168	82.48183	9360
4400190	127.7995	130.3812	- .0015	-0.0015	1.7 1.1	9361	4400190	27.99231	10.07464	9361
4577577	127.7995	139.9289	- .0041	-0.0015	2.1 2.3	9362	4577577	46.42780	70.73101	9362
4621955	127.7995	136.5006	- .0060	-0.0004	2.2 2.1	9363	4621955	47.07240	34.15153	9363
4806928	127.7995	135.4604	- .0024	-0.0013	1.8 2.5	9364	4806928	71.22198	15.42116	9364

\*Final coordinates of craters (out-put of Star-Trail program) not reduced to Mösting A.

TABLE 1  
COORDINATES FOR CRATERS

REF.	x	y	δx	δy	WEIGHTS	SER.
YERKES PHOTOGRAPH No. 1694						
1000271	142.8359	128.4808	- .0020	-0.0014	1.9 2.7	9446
1002262	142.8359	128.2154	- .0029	-0.0013	2.8 2.3	9447
1004537	142.8359	121.0708	- .0024	-0.0009	2.4 2.6	9448
1095066	142.8359	127.7431	- .0027	0.0025	2.6 2.6	9449
1285759	142.8359	121.3163	- .0021	0.0018	2.3 2.0	9450
1305650	142.8359	125.1126	- .0018	0.0016	2.2 2.4	9451
1342158	142.8359	128.0234	- .0012	0.0024	2.5 2.5	9452
1455881	142.8359	120.1826	- .0004	0.0039	2.2 1.8	9453
1631517	142.8359	126.9179	- .0008	0.0019	2.3 2.2	9454
1648588	142.8359	124.6428	- .0007	0.0034	1.9 2.3	9455
2049780	142.8359	121.1704	- .0027	-0.0014	2.1 2.6	9456
2200384	142.8359	124.0746	- .0020	-0.0013	1.8 2.9	9457
2362961	142.8359	125.7708	- .0009	-0.0018	2.6 2.5	9458
2419754	142.8359	122.5491	- .0006	-0.0006	2.4 2.9	9459
2446896	142.8359	120.1997	- .0002	-0.0008	2.4 1.9	9460
2467172	142.8359	121.8305	- .0003	-0.0024	2.6 2.9	9461
2476985	142.8359	128.3374	- .0009	-0.0026	2.5 2.2	9462
2501063	142.8359	127.6341	- .0015	0.0002	2.1 2.1	9463
2652088	142.8359	125.5609	- .0002	-0.0023	2.4 2.4	9464
2665254	142.8359	126.6067	- .0002	-0.0030	2.9 3.4	9465
2707980	142.8359	120.9246	- .0018	0.0010	2.1 3.2	9466
2827023	142.8359	123.1952	- .0021	-0.0014	2.1 2.3	9467
3009506	142.8359	123.5403	- .0024	-0.0013	2.3 2.3	9468
3195531	142.8359	125.4490	- .0010	0.0008	2.0 2.3	9469
3204238	142.8359	125.1746	- .0019	-0.0009	2.0 2.1	9470
3230703	142.8359	127.3004	- .0028	0.0091	1.9 2.6	9471
3306780	142.8359	127.9293	- .0015	-0.0009	2.0 2.5	9472
3471353	142.8359	129.7834	- .0006	0.0062	2.1 2.2	9473
3535698	142.8359	125.2550	- .0014	-0.0004	2.4 2.8	9474
3549174	142.8359	121.9148	- .0014	0.0007	2.1 2.4	9475
3627817	142.8359	124.7644	- .0017	0.0055	2.3 2.5	9476
3664828	142.8359	128.5996	- .0025	0.0029	1.9 2.4	9477
3700535	142.8359	126.3692	- .0016	0.0000	2.3 2.1	9478
3726975	142.8359	126.1094	- .0012	0.0002	2.1 2.6	9479
3804971	142.8359	126.1596	- .0024	0.0013	1.1 2.3	9480
3903541	142.8359	121.7137	- .0010	0.0022	2.0 2.2	9481
4005338	142.8359	122.2361	- .0025	-0.0009	2.7 2.9	9482
4097891	142.8359	128.0733	- .0016	-0.0005	2.3 3.5	9483
4269764	142.8359	120.5641	- .0022	-0.0023	1.9 3.1	9484
4310096	142.8359	121.0708	- .0013	-0.0004	2.4 2.8	9485
4346822	142.8359	126.3320	- .0018	0.0005	2.1 2.6	9486
4392051	142.8359	120.1430	- .0024	-0.0025	2.1 1.9	9487
4400190	142.8359	127.7581	- .0008	0.0020	2.1 1.7	9488
4621955	142.8359	128.1328	- .0003	0.0006	2.0 2.8	9489
4806928	142.8359	121.3131	- .0019	0.0030	2.1 2.5	9490

TABLE 4  
\*RESULTS FOR CRATERS

REF.	x	y	SER.
YERKES PHOTOGRAPH No. 1694			
1000271	9.61624	0.47877	9446
1002262	11.33536	0.20409	9447
1004537	13.55694	3.05197	9448
1095066	27.29913	79.76008	9449
1285759	44.44264	73.23544	9450
1305650	40.97711	-3.05671	9451
1342158	45.08406	29.87877	9452
1455881	58.73624	41.98416	9453
1631517	68.12926	18.63827	9454
1648588	75.80535	26.33419	9455
2049780	8.41613	43.23421	9456
2200384	-9.59360	6.17996	9457
2362961	-9.42125	67.96142	9458
2419754	-33.44709	24.80392	9459
2446896	-25.70901	52.45302	9460
2467172	-24.64304	64.09454	9461
2476985	-22.23907	80.61203	9462
2501063	-38.88294	9.89627	9463
2652088	60.67379	57.89927	9464
2665254	-41.97726	68.96726	9465
2707980	-62.49051	23.32770	9466
2827023	2827023	35.65427	9467
3009506	-0.67493	-4.41528	9468
3195531	-30.87797	82.45904	9469
3204238	-14.10209	1.29649	9470
3230703	-17.88786	30.60259	9471
3306780	26.50362	0.11374	9472
3471353	-47.49088	58.00454	9473
3535698	-51.29939	22.46369	9474
3549174	-56.20964	25.78308	9475
3627817	-60.15847	12.89486	9476
3664828	-68.60781	49.06656	9477
3700535	-58.10054	8.72923	9478
3726975	-69.90428	11.49768	9479
3804971	-73.13118	8.59725	9480
3903541	-81.36843	14.20182	9481
4005338	12.52176	-5.78970	9482
4097891	-11.31764	89.94644	9483
4269764	18.39359	67.57825	9484
4310096	33.65024	17.08013	9485
4346822	29.30515	51.84492	9486
4392051	12.98147	87.99982	9487
4400190	44.31335	10.43877	9488
4621955	55.27022	40.16224	9489
4806928	79.47001	27.08898	9490

YERKES PHOTOGRAPH No. 1771

1000271	129.0869	121.9759	- .0011	0.0024	2.6 2.2	9552
1002262	129.0869	121.3804	- .0008	0.0004	2.9 2.0	9553
1004537	129.0869	123.8876	- .0009	-0.0006	1.6 4.6	9554
1095066	129.0869	122.9265	- .0015	0.0030	2.9 2.9	9555
1285759	129.0869	123.5814	- .0001	0.0044	2.5 2.3	9556
1305650	129.0869	123.5837	- .0000	0.0008	1.9 2.0	9557
1342158	129.0869	126.8107	- .0052	0.0007	2.6 2.1	9558
1455881	129.0869	127.8670	- .0004	0.0024	1.8 2.5	9559
1631517	129.0869	122.4724	- .0002	0.0015	2.5 1.9	9560
1648588	129.0869	129.8418	- .0007	0.0017	2.4 2.2	9561
2200384	129.0869	121.0747	- .0008	0.0005	2.1 2.4	9562
2362961	129.0869	125.7769	- .0003	-0.0003	2.1 2.6	9563
2446896	129.0869	122.1112	- .0014	0.0012	2.4 2.4	9564
2476985	129.0869	122.3267	- .0011	-0.0017	1.9 1.9	9565
2501063	129.0869	120.4881	- .0007	0.0013	1.9 1.8	9566
2652088	129.0869	121.0546	- .0003	-0.0018	2.0 1.9	9567
2665254	129.0869	123.5260	- .0005	-0.0028	2.4 1.8	9568
2706304	129.0869	123.7083	- .0009	0.0009	2.6 2.3	9569
2827023	129.0869	124.2397	- .0016	-0.0012	2.1 1.5	9570
3009506	129.0869	128.7817	- .0015	-0.0008	2.0 2.1	9571
3204238	129.0869	126.9450	- .0001	0.0003	3.1 2.1	9572
3306780	129.0869	128.1576	- .0006	0.0005	1.9 1.7	9573
3471353	129.0869	125.2588	- .0012	0.0035	2.2 2.0	9574
3549174	129.0869	128.3239	- .0002	0.0006	2.1 2.1	9575
3664828	129.0869	129.1135	- .0008	0.0034	2.6 1.9	9576
3700535	129.0869	123.4105	- .0008	0.0016	2.1 1.9	9577
3726975	129.0869	125.9131	- .0003	0.0016	2.3 2.1	9578
3804971	129.0869	126.9948	- .0004	0.0021	1.9 2.9	9579
3903541	129.0869	125.2263	- .0008	0.0006	2.5 1.8	9580
4005338	129.0869	125.1706	- .0017	0.0004	2.1 2.7	9581
4310096	129.0869	120.4895	- .0004	0.0008	1.9 1.9	9582
1000271	-8.13669	-7.32352	9552			
1002262	-6.41139	-7.92542	9553			
1004537	-3.65302	-5.42674	9554			
1095066	32.82150	73.52163	9555			
1285759	49.55096	64.11282	9556			
1305650	24.48790	15.83517	9557			
1342158	35.32220	17.36969	9558			
1455881	54.34318	28.38410	9559			
1631517	59.54565	2.93877	9560			
1648588	71.13150	10.27077	9561			
2200384	-26.28401	1.84387	9562			
2362961	-10.41120	66.52142	9563			
2446896	-31.08358	52.92217	9564			
2476985	-16.77040	83.10175	9565			
2501063	-53.36204	11.35760	9566			
2652088	-42.77758	61.91127	9567			
2665254	-39.52209	74.37721	9568			
2706304	-71.65805	24.64892	9569			
2827023	-73.50622	45.19886	9570			
3009506	-19.25313	10.47996	9571			
3204238	-31.51624	-2.26934	9572			
3306780	-43.56503	-1.01354	9573			
3471353	-67.26632	53.85424	9574			
3549174	-73.58468	20.75074	9575			
3664828	-83.62336	39.93497	9576			
3700535	-70.41439	14.34172	9577			
3726975	-83.17049	-3.11909	9578			
3804971	-82.44429	17.97031	9579			
3903541	-86.99714	26.22190	9580			
4005338	-6.16230	14.13911	9581			
4310096	14.53489	28.90053	9582			

\*Final coordinates of craters (out-put of Star-Trail program) not reduced to Mösting A.

(CONTINUED)

TABLE 1  
COORDINATES FOR CRATERS

REF.	x	y	δx	δy	WEIGHTS	SER.
4346822	129.0869	126.9880	.0006	-0.0002	1.8 1.9	9583
4392051	129.0869	126.4335	- .0002	-0.0004	2.1 2.2	9584
4400190	129.0869	125.6614	- .0009	0.0035	1.9 2.3	9585
4621955	129.0869	124.9399	.0002	-0.0009	2.0 2.1	9586
4751552	129.0869	121.6749	.0017	-0.0023	1.9 2.1	9587

TABLE 4  
\*RESULTS FOR CRATERS

REF.	x	y	SER.
4346822	7.21225	62.39243	9583
4392051	-5.98806	92.91511	9584
4400190	27.01307	23.727023	9585
4621955	36.70844	54.54096	9586
4751552	35.20137	77.82609	9587

YERKES PHOTOGRAPH NO. 1771 (CONTINUED)

1000271	127.1632	117.0058	- .0005	-0.0001	2.0 1.5	9683
1002262	127.1632	116.4395	- .0005	-0.0002	2.1 1.9	9684
1004537	127.1632	118.9961	- .0003	-0.0001	2.1 1.8	9685
1095066	127.1632	119.7625	- .0020	0.0025	2.3 1.8	9686
1285759	127.1632	110.7576	- .0022	0.0037	2.3 2.1	9687
1305650	127.1632	119.3806	.0003	0.0022	1.9 2.9	9688
1342158	127.1632	112.8609	- .0002	0.0005	2.1 2.2	9689
1455881	127.1632	114.6199	- .0002	0.0018	2.1 1.5	9690
1631517	127.1632	119.2575	- .0002	0.0015	2.6 2.0	9691
1648588	127.1632	117.1585	- .0002	C.0016	1.8 2.6	9692
2200384	127.1632	115.8512	- .0004	C.0000	1.8 1.8	9693
2362961	127.1632	111.3895	.0008	-0.0006	2.6 1.8	9694
2446896	127.1632	117.1724	- .0012	-0.0017	2.8 2.1	9695
2476985	127.1632	118.3265	.0011	-0.0016	2.0 2.3	9696
2501063	127.1632	115.0144	.0001	C.0008	3.1 1.9	9697
2652088	127.1632	116.2798	.0004	-C.0018	2.6 1.4	9698
2706304	127.1632	118.3089	- .0009	0.0011	3.3 2.6	9699
3009506	127.1632	113.6137	- .0007	-0.0002	2.1 2.0	9700
3195531	127.1632	115.5358	.0016	C.0040	2.2 2.0	9701
3204238	127.1632	111.6891	- .0002	0.0002	2.2 2.1	9702
3306780	127.1632	112.7039	- .0005	0.0001	2.1 2.3	9703
3471353	127.1632	110.3887	.0023	0.0017	1.4 2.1	9704
3549174	127.1632	112.9708	.0008	0.0007	1.7 1.9	9705
3700535	127.1632	117.9255	- .0006	0.0012	1.6 1.9	9706
3726975	127.1632	110.4666	.0000	0.0008	2.0 1.4	9707
3804971	127.1632	111.7146	- .0007	C.0024	1.7 2.0	9708
4005338	127.1632	110.2521	- .0008	C.0001	2.1 2.3	9709
4310096	127.1632	116.0910	.0010	C.0002	1.7 1.5	9710
4346822	127.1632	112.8322	.0009	-0.0003	2.1 2.5	9711
4400190	127.1632	111.5430	.0000	0.0011	2.6 2.6	9712
4621955	127.1632	111.4825	.0010	0.0020	1.9 3.0	9713
4716458	127.1632	119.9747	- .0003	0.0001	1.8 1.8	9714
4806928	127.1632	113.0882	- .0006	-0.0002	1.6 2.0	9715
4907405	127.1632	116.9858	.0003	0.0002	2.1 1.5	9716

1000271	-2.30486	-9.63761	9683
1002262	-0.53815	10.22949	9684
1004537	2.20732	-7.71067	9685
1095066	35.23502	72.62954	9686
1285759	51.98713	63.38016	9687
1305650	30.04935	17.72946	9688
1342158	40.41392	15.62170	9689
1455881	58.41414	27.13015	9690
1631517	63.91216	1.67483	9691
1648588	74.69695	9.42620	9692
2200384	-20.67931	-0.52465	9693
2362961	-6.83801	64.85299	9694
2446896	-26.96287	50.91541	9695
2476985	-14.75714	81.91274	9696
2501063	-48.61415	9.04291	9697
2652088	-39.66688	60.20950	9698
2706304	-68.26553	22.62575	9699
3009506	-13.49919	12.87168	9700
3195531	-47.97212	80.49553	9701
3204238	-26.05708	-4.61226	9702
3306780	-38.30871	-3.42181	9703
3471353	-64.32840	55.35483	9704
3549174	-65.90716	22.71457	9705
3700535	-66.64081	12.21325	9706
3726975	-80.19520	-5.06185	9707
3804971	-75.80930	16.19266	9708
4005338	-0.29687	16.42385	9709
4310096	20.16893	30.88540	9710
4346822	12.00124	64.04631	9711
4400190	32.51995	25.60679	9712
4621955	41.27807	55.80946	9713
4716458	60.33830	47.58482	9714
4806928	70.77063	44.61863	9715
4907405	82.96443	40.89306	9716

YERKES PHOTOGRAPH NO. 1784

1000271	126.3745	117.7025	- .0010	-0.0011	1.9 1.9	9755
1002262	126.3745	117.0923	- .0007	0.0047	1.8 1.1	9756
1004537	126.3745	119.6047	- .0003	-0.0008	2.1 2.5	9757
1095066	126.3745	119.9196	- .0022	0.0023	2.1 2.2	9758
1285759	126.3745	110.7287	- .0004	0.0035	2.0 1.7	9759
1305650	126.3745	119.5965	.0009	0.0020	1.9 2.6	9760
1342158	126.3745	113.0192	- .0006	0.0051	2.1 2.2	9761
1455881	126.3745	114.5289	- .0003	0.0014	2.4 1.6	9762
1631517	126.3745	119.0815	- .0004	0.0016	2.1 1.6	9763
1648588	126.3745	116.8028	.0001	0.0012	2.2 1.3	9764
2200384	126.3745	116.7584	- .0005	0.0020	2.1 2.1	9765
2362961	126.3745	112.0903	.0001	-0.0004	2.6 0.9	9766
2446896	126.3745	118.1852	.0010	0.0016	2.1 2.1	9767
2476985	126.3745	119.1894	- .0011	0.0045	2.1 2.4	9768
2501063	126.3745	116.2400	- .0002	-0.0003	1.9 2.9	9769
2652088	126.3745	117.4504	- .0007	-0.0019	1.8 1.9	9770
2665254	126.3745	110.2631	- .0056	-0.0021	2.1 2.0	9771
2706304	126.3745	119.8232	- .0014	0.0003	2.1 2.6	9772
2827023	126.3745	110.8758	- .0012	-0.0019	2.6 1.7	9773
3009506	126.3745	114.4853	- .0019	0.0004	2.3 1.6	9774
3195531	126.3745	116.7539	.0013	0.0035	1.9 2.8	9775
3204238	126.3745	112.6710	- .0011	-0.0004	1.8 1.9	9776
3306780	126.3745	113.8643	.0006	0.0000	2.6 2.6	9777
3471353	126.3745	111.7833	.0016	0.0019	2.4 1.8	9778
3549174	126.3745	114.4818	.0002	0.0017	1.6 1.8	9779
3700535	126.3745	119.3843	.0006	0.0013	2.1 1.6	9780
3726975	126.3745	112.2122	.0005	0.0005	2.3 1.9	9781
3804971	126.3745	113.3752	- .0001	0.0008	2.2 1.9	9782
4005338	126.3745	110.8799	- .0008	-0.0008	2.6 1.9	9783
4310096	126.3745	116.4579	.0012	-0.0001	2.1 2.3	9784
4346822	126.3745	113.2956	.0000	0.0000	2.4 2.1	9785
4400190	126.3745	111.7322	- .0014	0.0006	2.1 1.9	9786
4621955	126.3745	111.4952	- .0004	0.0007	1.9 1.9	9787
4716458	126.3745	119.7972	- .0029	0.0011	1.9 2.0	9788
4806928	126.3745	112.7187	- .0017	-0.0006	1.9 1.9	9789

1000271	-2.11825	-9.54960	9755
1002262	-0.38490	10.16044	9756
1004537	2.38563	-7.64746	9757
1095066	35.38393	72.69754	9758
1285759	52.06981	63.49899	9759
1305650	30.25252	17.66598	9760
1342158	40.57172	15.76995	9761
1455881	58.54106	27.28123	9762
1631517	64.03542	1.82100	9763
1648588	74.82755	9.54364	9764
2200384	-20.58476	-0.48575	9765
2362961	-6.71739	64.87330	9766
2446896	-26.84244	50.96596	9767
2476985	-14.70920	81.98190	9768
2501063	-48.47916	9.00595	9769
2652088	-39.55470	60.23802	9770
2665254	-37.27811	73.05615	9771
2706304	-68.14529	22.59944	9772
2827023	-71.18676	43.66231	9773
3009506	-13.33847	12.76597	9774
3195531	-47.85779	80.52135	9775
3204238	-25.90342	-4.57393	9776
3306780	-38.19956	-3.37756	9777
3471353	-64.15254	55.47711	9778
3549174	-69.70771	22.76246	9779
3700535	-66.49186	12.15539	9780
3726975	-80.03263	-5.02180	9781
3804971	-75.67963	16.15084	9782
4005338	-0.15942	16.37574	9783
4310096	20.33826	30.80856	9784
4346822	12.20082	63.98441	9785
4400190	32.67024	25.53438	9786
4621955	41.42154	55.78706	9787
4716458	60.56290	47.48518	9788
4806928	70.94993	44.56448	9789

\*Final coordinates of craters (out-put of Star-Trail program) not reduced to Mösting A.

TABLE 1  
COORDINATES FOR CRATERS

TABLE 4  
\*RESULTS FOR CRATERS

REF.	x	y	$\delta x$	$\delta y$	WEIGHTS	SER.	REF.	x	y	SER.
YERKES PHOTOGRAPH No. 1799										
1000271	127.4421	119.2482	- .0088	0.0000	2.7 2.3	9835	1000271	-4.94424	-8.68581	9835
1002262	127.4421	118.7671	- .0075	-0.0012	2.4 1.5	9836	1002262	-3.18430	-9.17266	9836
1004537	127.4421	111.4366	- .0088	-0.0020	2.0 2.2	9837	1004537	-0.60137	-6.51024	9837
1095066	127.4421	113.1397	- .0081	0.0010	2.4 1.8	9838	1095066	29.41245	75.13164	9838
1285759	127.4421	114.9346	- .0124	0.0034	1.9 1.7	9839	1285759	46.75306	66.86834	9839
1305650	127.4421	113.0464	- .0068	0.0010	2.0 1.6	9840	1305650	28.00618	14.99429	9840
1342158	127.4421	116.9346	- .0085	0.0005	2.4 2.1	9841	1342541	36.56840	18.88078	9841
1455881	127.4421	119.3478	- .0072	0.0020	2.0 2.1	9842	1455881	54.44435	31.24259	9842
1631517	127.4421	114.3135	- .0082	0.0016	1.8 1.9	9843	1631517	61.35893	6.17615	9843
1646588	127.4421	112.5005	- .0060	-0.0006	2.9 2.1	9844	1646588	72.14167	14.33244	9844
2049780	127.4421	114.0062	- .0075	-0.0013	1.0 1.4	9845	2049780	-0.27358	36.07585	9845
2200384	127.4421	117.2167	- .0081	-0.0025	2.3 2.1	9846	2200384	-23.79443	-0.65446	9846
2362961	127.4421	113.0130	- .0058	-0.0020	2.6 2.3	9847	2362961	-12.80913	65.13418	9847
2419754	127.4421	119.6329	- .0056	-0.0023	1.8 2.1	9848	2419754	-44.74530	21.83717	9848
2446896	127.4421	118.0038	- .0059	-0.0026	2.1 1.5	9849	2446896	-32.34892	50.18057	9849
2467172	127.4421	110.6605	- .0054	-0.0014	2.3 1.6	9850	2467172	-28.63116	62.83074	9850
2476985	127.4421	119.2692	- .0045	-0.0029	2.3 1.9	9851	2476985	-20.85366	81.42250	9851
2501063	127.4421	114.9160	- .0067	0.0007	2.6 1.7	9852	2501063	-51.77013	7.13641	9852
2652088	127.4421	116.2961	- .0076	-0.0020	1.7 1.8	9853	2652088	-45.08084	58.51651	9853
2665254	127.4421	119.0475	- .0056	-0.0039	1.4 2.1	9854	2665254	-43.00923	71.26662	9854
2706304	127.4421	117.0614	- .0068	-0.0003	2.1 2.2	9855	2706304	-71.45138	19.34901	9855
2707980	127.4421	112.9270	- .0077	0.0012	2.7 3.3	9856	2707980	-71.25181	25.21640	9856
2827023	127.4421	117.6319	- .0079	-0.0030	1.9 1.5	9857	2827023	-75.14497	39.93965	9857
3009506	127.4421	115.3719	- .0082	-0.0012	1.9 1.9	9858	3009506	-15.91482	12.52903	9858
3195531	127.4421	114.8406	- .0082	0.0025	2.2 1.8	9859	3195531	-43.64846	83.00168	9859
3204238	127.4421	112.7634	- .0084	-0.0003	2.6 2.1	9860	3204238	-28.80060	-5.09377	9860
3230703	127.4421	111.1175	- .0082	-0.0013	1.4 1.5	9861	3230703	-34.71621	36.73359	9861
3306780	127.4421	113.1489	- .0074	-0.0019	2.0 2.9	9862	3306780	-41.00106	-4.66955	9862
3471353	127.4421	119.1862	- .0054	0.0016	1.5 1.3	9863	3471353	-62.37450	58.58689	9863
3535698	127.4421	114.1120	- .0070	-0.0009	2.1 1.7	9864	3535698	-65.91655	23.63555	9864
3549174	127.4421	111.7069	- .0068	-0.0008	1.8 2.2	9865	3549174	-70.39536	26.02747	9865
3627817	127.4421	115.3263	- .0074	-0.0009	1.9 2.0	9866	3627817	-73.28225	12.39335	9866
3664828	127.4421	112.2121	- .0058	0.0015	1.8 2.1	9867	3664828	-80.29321	45.49900	9867
3700535	127.4421	116.8168	- .0062	0.0012	1.9 2.1	9868	3700535	-69.43405	9.09383	9868
3726975	127.4421	118.6427	- .0062	0.0002	1.7 2.1	9869	3726975	-81.37782	-9.05000	9869
3804971	127.4421	119.8179	- .0064	0.0006	2.1 1.5	9870	3804971	-82.15774	12.13638	9870
3903541	127.4421	117.6721	- .0068	0.0002	2.0 1.5	9871	3903541	-87.60914	20.01103	9871
4005338	127.4421	112.5959	- .0082	-0.0026	1.8 2.3	9872	4005338	-2.55512	15.34839	9872
4269764	127.4421	111.6213	- .9955	-0.0009	1.9 1.8	9873	4269764	2.39929	76.36372	9873
4310096	127.4421	119.3104	- .0063	-0.0013	2.3 2.2	9874	4310096	18.90773	28.70719	9874
4346822	127.4421	115.5662	- .0062	-0.0009	2.5 1.5	9875	4346822	13.32054	62.44760	9875
4392051	127.4421	114.5859	- .0042	-0.0014	2.1 1.3	9876	4392051	0.69317	53.40073	9876
4400190	127.4421	115.3001	- .0056	0.0001	2.2 1.9	9877	4400190	31.02215	22.75331	9877
4577577	127.4421	119.8028	- .0031	-0.0030	1.7 2.1	9878	4577577	27.58184	88.26667	9878
4621955	127.4421	115.4391	- .0053	-0.0003	2.2 1.7	9879	4621955	42.16826	52.66182	9879
4716458	127.4421	114.6854	- .0083	-0.0023	1.8 2.1	9880	4716458	61.13651	43.47166	9880
4751552	127.4421	112.5818	- .0061	-0.0026	1.9 1.9	9881	4751552	45.36815	75.53862	9881
4806928	127.4421	118.1710	- .0069	0.0001	2.0 2.2	9882	4806928	71.71662	40.01806	9882
4907405	127.4421	112.3807	- .9926	0.0007	2.1 2.3	9883	4907405	84.55870	35.84721	9883

END OF TABLES 1 AND 4

\*Final coordinates of craters (out-put of Star-Trail program) not reduced to Mösting A.

TABLE 2  
STAR-TRAIL MEASURES

DIRECT		REVERSE	
x	y	x	y
39.97186	128.46111	224.94164	127.30730
44.97174	128.34996	219.94076	127.30780
49.97176	128.3569C	214.94175	127.39520
54.97186	128.24075	209.93959	127.39570
59.97197	128.1846C	204.94144	127.39620
64.97106	128.25245	199.94225	127.39669
69.97113	128.15930	194.94218	127.48619
74.97125	128.19904	189.94112	127.55180
79.97226	128.19869	184.94111	127.55249
84.97331	128.19844	179.94212	127.63309
89.97428	128.07519	174.94219	127.66269
94.97240	128.07504	169.94013	127.68518
99.97144	128.07478	164.94214	127.66779
104.97244	127.99163	159.94115	127.68329
109.97255	127.99138	154.94199	127.73888
114.97256	127.98033	149.94098	127.72828
119.97158	127.98028	144.93996	127.76468
124.97263	127.86332	139.94187	127.83000
129.97267	127.87337	134.94077	127.89529
134.97272	127.87342	129.93967	127.89559
139.97281	127.82057	124.93959	127.89579
144.97291	127.74272	119.94145	127.96098
149.97303	127.68776	114.94028	127.96129
154.97341	127.69601	109.93995	128.03639
159.97355	127.69806	104.93981	128.03668
164.97270	127.62611	99.93967	128.09998
169.97281	127.65516	94.93861	128.10028
174.97453	127.65520	89.93944	128.09758
179.97463	127.60525	84.93849	128.19488
184.975C5	127.52520	79.93948	128.28628
189.97414	127.52525	74.93743	128.20258
194.97335	127.44730	69.93837	128.20087
199.97456	127.38424	64.93918	128.29828
204.97478	127.39629	59.93794	128.20058
209.97408	127.35734	54.93770	128.26387
214.97629	127.37149	49.93850	128.39207
219.97541	127.28863	44.93832	128.35128
224.97549	127.28878	39.93815	128.41492

YERKES PHOTOGRAPH No. 100

49.97208	138.21661	224.94061	138.14003
54.97206	138.21645	219.94175	138.14099
59.97203	138.21628	214.94176	138.11383
64.97088	138.21612	209.94151	138.11478
69.97093	138.21595	204.94126	138.11574
74.97213	138.23768	199.94188	138.11668
79.97211	138.23732	194.94083	138.11762
84.97324	138.21206	189.94090	138.11868
89.97230	138.21178	184.94192	138.11983
94.97249	138.14862	179.94107	138.16788
99.97262	138.14836	174.94127	138.14492
104.97257	138.17619	169.94135	138.16587
109.97255	138.17592	164.94149	138.14692
114.97354	138.19586	159.94253	138.14788
119.97253	138.19579	154.94128	138.14892
124.97145	138.19583	149.94129	138.14976
129.97337	138.19586	144.94230	138.15062
134.97228	138.19589	139.94212	138.15137
139.97233	138.19603	134.94094	138.15311
144.97231	138.19616	129.93976	138.15387
149.97230	138.19619	124.94171	138.15451
154.97276	138.19643	119.94046	138.15515
159.97287	138.19647	114.93920	138.15591
164.97300	138.19649	109.94101	138.15646
169.97319	138.19653	104.93890	138.15721
174.97217	138.19657	99.93977	138.15795
179.97358	138.19660	94.93785	138.13670
184.97357	138.19653	89.94061	138.18745
189.97374	138.19657	84.94000	138.18821
194.97294	138.19660	79.93901	138.18905
199.97513	138.14454	74.93811	138.25479
204.97432	138.16357	69.94117	138.20355
209.97471	138.16360	64.93997	138.17340
214.97490	138.16374	59.93878	138.17414
219.97588	138.16388	54.93866	138.17490
224.97493	138.16400	49.94047	138.17554

TABLE 2  
STAR-TRAIL MEASURES

DIRECT		REVERSE	
x	y	x	y
44.97191	163.06161	199.95513	161.98942
49.97090	162.98873	194.95508	161.98956
54.97061	162.93475	189.95540	161.98980
59.97133	162.93478	184.95442	161.99015
64.97066	162.93480	179.95581	162.16739
69.97071	162.87582	174.95627	162.16763
74.97116	162.83674	169.95660	162.16777
79.97115	162.83657	164.95700	162.16801
84.97253	162.83648	159.95704	162.16816
89.97185	162.75441	154.95655	162.16840
94.97430	162.62443	149.95756	162.31844
99.97268	162.62435	144.95758	162.31848
104.97265	162.64737	139.95313	162.31842
109.97436	162.64830	134.95568	162.46737
114.97235	162.64842	129.95625	162.46731
119.97243	162.48657	124.95519	162.46715
124.97310	162.48676	119.95470	162.46699
129.97376	162.48696	114.95418	162.46694
134.97141	162.48715	109.95525	162.62168
139.97147	162.48745	104.95413	162.62162
144.97119	162.34275	99.95400	162.62156
149.97192	162.34295	94.95335	162.62150
154.97063	162.34334	89.95482	162.74845
159.97275	162.34354	84.95500	162.85639
164.97188	162.34374	79.95501	162.83843
169.97231	162.34393	74.95535	162.83837
174.97205	162.15812	69.95469	162.83831
179.97321	162.15832	64.95450	162.83836
184.97320	162.15841	59.95532	162.91530
189.97464	162.15861	54.95545	162.91524
194.97407	162.04781	49.95528	162.99408
199.97426	161.97392	44.95477	163.05792

YERKES PHOTOGRAPH No. 268

34.97230	127.58329	224.95309	127.34773
39.97103	127.58329	219.95323	127.34722
44.97189	127.58319	214.95324	127.29760
49.97188	127.58319	209.95309	127.37108
54.97198	127.64009	204.95396	127.37057
59.97107	127.63999	199.95279	127.37005
64.97215	127.63989	194.95274	127.36954
69.97220	127.63975	189.95370	127.34712
74.97229	127.63995	184.95671	127.34681
79.97228	127.63929	179.95373	127.34639
84.97230	127.57709	174.95282	127.39597
89.97225	127.57689	169.95377	127.39546
94.97234	127.57679	164.95377	127.43046
99.97236	127.57659	164.95279	127.43004
104.97233	127.57649	159.95183	127.42953
109.97242	127.57629	154.95069	127.42911
114.97241	127.57629	149.95270	127.42850
119.97241	127.57629	144.95270	127.42788
124.97345	127.57635	139.95362	127.42716
129.97158	127.48349	134.95355	127.42645
134.97260	127.48359	129.95347	127.52573
139.97167	127.48379	124.95341	127.45992
144.97277	127.48399	119.95328	127.45910
149.97287	127.48409	114.95212	127.52838
154.97322	127.48439	109.95181	127.52747
159.97434	127.48449	104.95269	127.52675
164.97348	127.39359	99.95155	127.52604
169.97455	127.44169	94.95152	127.52632
174.97366	127.44179	89.95237	127.52561
179.97373	127.44189	84.95043	127.52489
184.97372	127.35090	79.94944	127.52427
189.97380	127.35100	74.95239	127.56856
194.97388	127.37310	69.95035	127.56784
199.97308	127.38410	64.95016	127.56723
204.97427	127.38420	59.95097	127.56651
209.97456	127.38430	54.95071	127.64879
214.97475	127.31950	49.95053	127.58098
219.97484	127.31970	44.95039	127.58016
224.97490	127.31990	39.94933	127.57935

TABLE 2  
STAR-TRAIL MEASURES

DIRECT		REVERSE	
x	y	x	y
YERKES PHOTOGRAPH No. 526			
34.97322	120.25870	224.94230	119.69020
39.97294	120.25874	219.94147	119.60599
44.97280	120.24767	214.93845	119.70968
49.97278	120.16371	209.94240	119.69247
54.97295	120.20965	204.94135	119.69126
59.97212	120.11658	199.94235	119.72504
64.97435	120.11753	194.94132	119.67383
69.97340	120.11747	189.94017	119.75371
74.97240	120.08030	184.93918	119.75270
79.97339	120.08004	179.94213	119.75159
84.97332	120.07987	174.94114	119.77648
89.97319	120.07971	169.94102	119.75727
94.97519	119.95765	164.94195	119.84115
99.97213	119.95649	159.94100	119.83994
104.97310	119.91843	154.94095	119.81883
109.97326	120.01827	149.94096	119.81752
114.97325	119.84030	144.94195	119.88821
119.97424	119.96534	139.94096	119.88580
124.97235	119.87447	134.94098	119.85238
129.97246	119.92362	129.94197	119.93197
134.97356	119.84376	124.94094	119.87746
139.97361	119.86299	119.94086	119.95195
144.97379	119.91423	114.94081	119.90854
149.97357	119.80837	109.93938	120.07993
154.97423	119.80870	104.93930	119.92151
159.97535	119.83785	99.94117	119.92010
164.97448	119.83799	94.94106	119.98069
169.97347	119.76412	89.94096	120.07128
174.97765	119.76426	84.93978	120.06986
179.97348	119.69839	79.93981	120.03255
184.97446	119.74943	74.93869	120.09214
189.97445	119.74957	69.93957	120.09072
194.97445	119.66971	64.93938	120.08941
199.97664	119.73475	59.93918	120.14400
204.97482	119.65889	54.93986	120.20159
209.97503	119.65902	49.93767	120.19108
214.97622	119.69026	44.93761	120.24157
219.97538	119.60849	39.93755	120.20405
224.97544	119.68174	34.93848	120.24944

TABLE 2  
STAR-TRAIL MEASURES

DIRECT		REVERSE	
x	y	x	y
YERKES PHOTOGRAPH No. 616			
49.97332	129.74361	194.95065	128.97275
54.97240	129.74352	189.95061	128.97309
59.97148	129.60844	184.95062	128.98950
64.97252	129.60836	179.95165	128.98984
69.97257	129.60827	174.95176	129.09217
74.97269	129.60808	169.95073	129.09238
79.97269	129.48780	164.95076	129.09272
84.97274	129.48761	159.95079	129.09295
89.97271	129.48742	154.95163	129.09326
94.97282	129.48734	149.95064	129.19240
99.97287	129.43215	144.95164	129.19253
104.97185	129.36606	139.95153	129.19256
109.97293	129.36588	134.95045	129.28758
114.97292	129.36589	129.95135	129.28761
119.97192	129.36590	124.95028	129.28754
124.97195	129.28802	119.95012	129.36046
129.97156	129.28813	114.94995	129.36049
134.97397	129.28824	109.94966	129.36032
139.97505	129.21746	104.95053	129.36034
144.97313	129.21767	99.94638	129.44137
149.97322	129.21778	94.94938	129.52840
154.97259	129.12610	89.94920	129.52842
159.97372	129.12621	84.95031	129.52846
164.97486	129.12632	79.94931	129.52859
169.97356	129.12644	74.94930	129.59760
174.97406	129.03555	69.94827	129.59764
179.97319	128.94766	64.94907	129.59777
184.97419	128.95467	59.94888	129.59779
189.97428	128.95479	54.94866	129.72582
194.97439	128.95490	49.94846	129.72575

YERKES PHOTOGRAPH No. 556

89.97263	132.11184	189.93245	131.75508
94.97278	132.11176	184.93145	131.75509
99.97185	132.14557	179.93151	131.75499
104.97284	132.14549	174.93264	131.75490
109.97289	132.14530	169.93164	131.75469
114.97489	132.14532	164.93370	131.75461
119.97389	132.04533	159.93272	131.84141
124.97189	131.97345	154.93253	131.84131
129.97188	131.97456	149.93252	131.93202
134.97387	131.97468	144.93252	131.93173
139.97294	131.97490	139.93338	131.93133
144.97299	131.97511	134.93126	131.90654
149.97306	131.97523	129.93313	132.02053
154.97347	131.88254	124.93206	132.02004
159.97360	131.88266	119.93186	132.01955
164.97374	131.88277	114.93166	132.01914
169.97387	131.88289	109.93039	132.01856
174.97294	131.83500	104.93125	132.12515
179.97716	131.83512	99.93111	132.12476
184.97416	131.83513	94.93111	132.12437
189.97529	131.76725	89.93091	132.12397

YERKES PHOTOGRAPH No. 624

39.95663	118.78398	39.97452	118.76728
44.94948	118.78389	44.98856	118.78500
49.98246	118.70491	49.98761	118.71772
54.95164	118.71682	54.99779	118.71844
59.95982	118.68973	59.98314	118.64306
64.96207	118.68965	64.98133	118.64468
69.94812	118.62856	69.98452	118.61520
74.95110	118.62837	74.98665	118.61682
79.95608	118.55608	79.97977	118.55944
84.95100	118.56589	84.98175	118.56096
89.95684	118.56571	89.98198	118.56258
94.95483	118.49462	94.97804	118.50319
99.95974	118.49443	99.98516	118.50482
104.94271	118.43535	104.98431	118.42544
109.95489	118.43416	109.98142	118.42706
114.96087	118.36617	114.98294	118.35688
119.95885	118.36618	119.99098	118.35850
124.96297	118.36629	124.98601	118.36022
129.95110	118.29341	129.97807	118.31294
134.96521	118.23752	134.98607	118.23356
139.96026	118.23773	139.99504	118.23519
144.95944	118.23795	144.99101	118.23681
149.96863	118.25406	149.99298	118.28132
154.95688	118.22637	154.98097	118.23385
159.95399	118.14848	159.98403	118.14716
164.95611	118.08860	164.97700	118.11458
169.95508	118.08871	170.00006	118.11591
174.96127	118.08882	174.98220	118.11732
179.96805	118.02393	179.98321	118.06665
184.96203	118.02394	184.98428	118.04197
189.95699	118.02406	189.98529	117.97719
194.96197	117.91617	194.97843	117.95551
199.95715	117.91618	199.98448	117.93693
204.97134	117.94030	204.98342	117.96035
209.95551	117.85041	209.98148	117.86178
214.95769	117.88062	214.98850	117.90220
219.96287	117.82783	219.98551	117.81172
224.97392	117.80504	224.98636	117.81315

TABLE 2  
STAR-TRAIL MEASURES

DIRECT		REVERSE	
x	y	x	y
YERKES PHOTOGRAPH No. 720			
44.97230	122.C5734	224.94803	122.09818
49.97230	122.07637	219.94818	122.C1103
54.97246	122.C7630	214.94818	121.99978
59.97562	122.08722	209.94809	121.99863
64.97283	122.C0615	204.94899	122.04448
69.97189	122.CC608	199.94794	122.C0633
74.97193	122.CC590	194.94787	122.03818
79.97293	122.00563	189.94777	122.00313
84.97190	122.00545	184.94877	122.00118
89.97280	122.CC528	179.94871	122.C5413
94.97284	122.C8721	174.94775	122.C2608
99.97281	121.97503	169.94864	122.02493
104.97280	122.C5596	164.94760	122.00388
109.97296	122.C5579	159.94661	122.C0273
114.97296	122.C2581	154.94752	122.00168
119.97396	122.03584	149.94752	122.00043
124.97307	122.03596	144.94552	121.99918
129.97317	122.05709	139.94748	122.05183
134.97426	122.C0122	134.94746	122.02748
139.97433	122.03644	129.94842	122.08913
144.97349	122.03667	124.94736	122.05668
149.97366	122.03680	119.94828	122.04223
154.97597	121.98712	114.94818	122.04088
159.97410	122.C0825	109.94680	122.03933
164.97324	121.97238	104.94667	122.03798
169.97327	122.C3950	99.94554	121.98963
174.97444	122.03963	94.94539	122.12528
179.97435	122.03975	89.94633	122.01093
184.97435	121.99078	84.94620	122.00958
189.97437	121.99091	79.94620	122.00833
194.97441	122.02703	74.94711	121.99198
199.97461	121.97506	69.94698	122.03763
204.97482	122.C0719	64.94679	122.02238
209.97506	122.CC731	59.94558	122.06403
214.97526	122.CC754	54.94527	122.C6268
219.97442	121.98076	49.94507	122.06123
224.97649	122.04199	44.94498	122.05978

TABLE 2  
STAR-TRAIL MEASURES

DIRECT		REVERSE	
x	y	x	y
YERKES PHOTOGRAPH No. 898			
54.97207	129.76048	219.93062	131.66479
59.97313	129.85840	214.93164	131.59311
64.97215	129.85832	209.93246	131.53954
69.97218	129.92324	204.93229	131.45398
74.97228	129.97706	199.93105	131.42741
79.97326	130.03378	194.93101	131.37184
84.97129	130.09460	189.93102	131.29839
89.97125	130.13442	184.93004	131.29902
94.97436	130.20935	179.93011	131.19756
99.97239	130.28717	174.93125	131.14209
104.97236	130.32709	169.93125	131.08351
109.97241	130.35591	164.93232	131.06505
114.97139	130.41393	159.93135	130.98249
119.97136	130.46795	154.93119	130.90203
124.97136	130.51507	149.93220	130.85737
129.97135	130.56619	144.93123	130.78070
134.97233	130.64331	139.93111	130.70894
139.97137	130.71654	134.93202	130.64917
144.97242	130.79476	129.93092	130.57640
149.97448	130.83988	124.93087	130.52253
154.97185	130.88720	119.92971	130.47167
159.97296	130.95432	114.93054	130.42890
164.97307	131.04744	109.92927	130.35194
169.97218	131.C7056	104.93116	130.32017
174.97423	131.13568	99.93004	130.27940
179.97440	131.20280	94.93103	130.20664
184.97238	131.25983	89.92987	130.14888
189.97348	131.29295	84.93104	130.10012
194.97360	131.37407	79.93005	130.03244
199.97378	131.40809	74.93006	129.99267
204.97356	131.44321	69.93004	129.92791
209.97328	131.54333	64.92986	129.86124
214.97346	131.60455	59.92968	129.86147
219.97551	131.67677	54.92846	129.78372

YERKES PHOTOGRAPH No. 753

39.97241	125.42200	229.96543	125.79989
44.97127	125.46691	224.96574	125.70431
49.97127	125.46693	219.96586	125.74683
54.97439	125.42284	214.96689	125.68024
59.97151	125.39375	209.96675	125.72976
64.97163	125.46766	204.96563	125.72029
69.97369	125.42358	199.96550	125.71881
74.97176	125.37839	194.96546	125.66732
79.97275	125.52610	189.96539	125.67554
84.97175	125.47092	184.96638	125.71066
89.97268	125.47073	179.96640	125.66027
94.97275	125.53664	174.96549	125.61190
99.97275	125.45546	169.96540	125.66642
104.97273	125.50237	164.96544	125.55703
109.97485	125.46618	159.96647	125.55355
114.97284	125.46615	154.96534	125.55217
119.97384	125.52921	149.96434	125.58159
124.97290	125.58632	144.96534	125.58001
129.97296	125.53843	139.96526	125.65433
134.97300	125.53855	134.96524	125.52565
139.97307	125.64876	129.96618	125.54896
144.97319	125.56497	124.96610	125.58218
149.97432	125.60609	119.96500	125.54841
154.97465	125.55440	114.96488	125.48972
159.97378	125.55651	109.96457	125.45584
164.97391	125.55662	104.96442	125.50416
169.97356	125.68774	99.96230	125.47248
174.97710	125.54885	94.96523	125.52080
179.97511	125.63696	89.96411	125.46112
184.97411	125.70898	84.96410	125.47844
189.97416	125.65809	79.96409	125.50695
194.97424	125.65820	74.96408	125.36417
199.97443	125.69822	69.96400	125.40449
204.97463	125.69833	64.96279	125.46591
209.97490	125.73344	59.96262	125.37223
214.97410	125.66766	54.96334	125.38755
219.97521	125.74587	49.96312	125.44976
224.97528	125.70208	44.96401	125.44798
229.97539	125.73439	39.96295	125.42220

YERKES PHOTOGRAPH No. 910

39.97425	129.08391	224.90049	129.03594
44.97406	129.09284	219.90169	129.10849
49.97401	129.09287	214.90074	129.04894
54.97503	129.C9280	209.90264	129.04948
59.97406	129.04272	204.90253	129.05004
64.97506	129.06465	199.90139	129.05058
69.97406	129.07058	194.90039	129.09912
74.97511	129.C7041	189.90977	129.09977
79.97405	129.07013	184.90147	129.10052
84.97404	129.06996	179.90056	129.08117
89.97495	129.C9079	174.90172	129.C3482
94.97401	129.C9072	169.90175	129.08436
99.97399	129.08954	164.90183	129.04802
104.97392	129.08947	159.90192	129.04856
109.97495	129.C8930	154.90082	129.11420
114.97589	129.C7033	149.90088	129.04665
119.97383	129.C7035	144.90293	129.08910
124.97679	129.09648	139.90188	129.08945
129.97375	129.09735	134.90084	129.08980
134.97371	129.C9674	129.90181	129.10814
139.97372	129.C9696	129.C90081	129.13640
144.97376	129.04619	119.90269	129.11364
149.97381	128.97732	114.90157	129.09858
154.97512	129.C6565	109.90033	129.09913
159.97419	129.C6577	104.90126	129.09948
164.97427	128.98790	99.90118	129.09982
169.97531	129.01003	94.90023	129.12918
174.97435	129.C1016	89.90111	129.12952
179.97442	129.C1628	84.90126	129.10888
184.97536	129.03731	79.90133	129.08132
189.97540	129.04744	74.90137	129.15066
194.97345	129.06357	69.89738	129.10201
199.97660	129.CC259	64.90123	129.10246
204.97474	129.02272	59.89909	129.09481
209.97499	129.03085	54.90193	129.14716
214.97413	128.58208	49.90078	129.11640
219.97516	129.C3630	44.90067	129.11666
224.97517	129.CC653	39.89967	129.13490

TABLE 2  
STAR-TRAIL MEASURES

DIRECT		REVERSE	
x	y	x	y
YERKES PHOTOGRAPH No. 958			
44.97149	133.07405	224.98250	135.12648
49.97151	133.18202	215.98360	135.03440
54.97258	133.30490	214.98260	135.16821
59.97164	133.39677	209.98234	135.05312
64.97162	133.39664	204.98209	134.94304
69.97169	133.47952	199.98174	134.85996
74.97187	133.56229	194.98166	134.86186
79.97088	133.58396	189.98165	134.79788
84.97159	133.65474	184.98163	134.78600
89.97303	133.70451	179.98170	134.75401
94.97121	133.76839	174.98183	134.69802
99.97332	133.80116	169.98180	134.54993
104.97232	133.83203	164.98186	134.51595
109.97238	133.95881	159.98186	134.45387
114.97240	133.95878	154.98163	134.45487
119.97241	134.01875	149.98159	134.36669
124.97141	134.07883	144.98158	134.36751
129.97140	134.14690	139.98139	134.30421
134.97238	134.19198	134.98120	134.18392
139.97246	134.27915	129.98104	134.18463
144.97251	134.40733	124.98095	134.06525
149.97357	134.46741	119.98171	134.02185
154.97402	134.44168	114.98056	133.97086
159.97316	134.46875	109.98029	133.97141
164.97331	134.50483	104.98013	133.83015
169.97349	134.53290	99.98097	133.81488
174.97255	134.60798	94.97996	133.79463
179.97387	134.72305	89.97972	133.69536
184.97389	134.75802	84.97792	133.65711
189.97507	134.78410	79.97889	133.58695
194.97326	134.83617	74.97909	133.57568
199.97547	134.85514	69.97586	133.51243
204.97669	134.92922	64.97961	133.36827
209.97509	134.99029	59.97939	133.36900
214.97631	135.11647	54.97916	133.31775
219.97535	135.02864	49.97893	133.21438
224.97544	135.10781	44.97868	133.06903

TABLE 2  
STAR-TRAIL MEASURES

DIRECT		REVERSE	
x	y	x	y
YERKES PHOTOGRAPH No. 1190			
49.97226	140.78148	209.93610	138.00397
54.97223	140.66831	204.93584	138.07292
59.97220	140.57913	199.93543	138.13487
64.97202	140.49395	194.93636	138.21379
69.97209	140.45877	189.93641	138.33784
74.97233	140.37349	184.93640	138.38599
79.97233	140.27111	179.93532	138.52093
84.97250	140.18284	174.93652	138.54797
89.97259	140.08655	169.93558	138.65092
94.97283	139.97637	164.93571	138.73897
99.97399	139.90709	159.93673	138.80891
104.97297	139.82492	154.93545	138.94295
109.97155	139.75663	149.93545	139.02280
114.97355	139.64855	144.93644	139.11564
119.97296	139.59048	139.93523	139.20039
124.97288	139.46550	134.93500	139.26013
129.97180	139.39521	129.93480	139.37986
134.97271	139.25854	124.93472	139.45751
139.97180	139.22866	119.93544	139.59015
144.97278	139.12577	114.93415	139.63190
149.97278	139.04679	109.93494	139.73844
154.97227	138.97302	104.93381	139.79919
159.97341	138.88704	99.93466	139.90993
164.97655	138.74805	94.93375	139.95567
169.97476	138.64508	89.93344	140.07542
174.97377	138.56610	84.93388	140.16617
179.97420	138.52712	79.93387	140.29600
184.97621	138.37404	74.93497	140.36775
189.97441	138.37506	69.93403	140.44050
194.97462	138.24708	64.93483	140.46934
199.97482	138.15300	59.93462	140.57507
204.97603	138.06902	54.93350	140.64682
209.97544	137.96504	49.93330	140.77447

YERKES PHOTOGRAPH No. 1158

39.97170	162.84063	225.00101	161.77460
44.97157	162.84064	220.00214	161.82348
49.97157	162.75975	215.00114	161.79025
54.97130	162.78875	210.00163	161.79913
59.97003	162.71576	205.00113	161.84601
64.97038	162.71676	199.99924	161.91188
69.97044	162.71677	195.00017	161.97276
74.97091	162.64267	190.00047	162.01074
79.97091	162.62248	184.99947	162.07081
84.97130	162.60238	179.99784	162.03979
89.97163	162.60229	175.00128	162.08976
94.97210	162.55829	170.00058	162.15964
99.97249	162.55820	165.00096	162.15962
104.97258	162.48331	160.00098	162.19349
109.97232	162.48319	155.00046	162.22847
114.97132	162.43127	150.00046	162.21925
119.97232	162.38835	145.00046	162.24002
124.97300	162.41352	140.00101	162.30170
129.97167	162.42570	135.00056	162.35638
134.97134	162.35688	130.00012	162.42005
139.97141	162.30016	124.99805	162.41663
144.97115	162.26744	119.99854	162.38921
149.97090	162.23162	114.99902	162.42288
154.97162	162.23200	109.99807	162.47136
159.97275	162.20418	104.99794	162.47003
164.97189	162.20336	99.99779	162.52971
169.97234	162.16854	94.99711	162.55439
174.97109	162.09771	89.99858	162.58406
179.97327	162.04989	84.99872	162.58374
184.97327	162.06697	79.99872	162.50352
189.97371	162.01915	74.99904	162.64519
194.97317	161.99233	70.00035	162.70887
199.97337	161.91641	64.99815	162.70865
204.97357	161.86459	59.99895	162.70832
209.97423	161.81977	54.99905	162.79100
214.97543	161.79505	49.99885	162.76858
219.97517	161.75832	44.99834	162.84115
224.97524	161.75860	39.99827	162.82873

YERKES PHOTOGRAPH No. 1288

54.96970	130.75777	209.94442	129.73678
59.96995	130.78166	204.94517	129.72432
64.96895	130.78155	199.94286	129.79584
69.97008	130.70844	194.94471	129.93537
74.97029	130.71524	189.94261	129.88500
79.96537	130.62353	184.94352	129.99472
84.97051	130.62372	179.94448	129.99436
89.97057	130.62351	174.94352	129.99299
94.96978	130.62340	169.94341	129.99251
99.96991	130.45120	164.94438	129.99214
104.97097	130.45809	159.94431	130.13767
109.97212	130.45788	154.94306	130.13729
114.97220	130.45787	149.94397	130.22373
119.97027	130.45787	144.94190	130.22315
124.97137	130.45796	139.94270	130.22248
129.97046	130.33105	134.94251	130.22181
134.97054	130.28213	129.94230	130.38115
139.97268	130.28232	124.94216	130.38038
144.97184	130.28252	119.94189	130.49760
149.97200	130.28261	114.94162	130.45993
154.97247	130.22590	109.94126	130.45906
159.97267	130.13299	104.94206	130.45839
164.97190	130.04308	99.94084	130.45772
169.97309	130.04318	94.94075	130.45704
174.97226	129.96227	89.94048	130.45637
179.97349	129.98336	84.94055	130.45571
184.97557	129.83335	79.93945	130.65013
189.97376	129.83444	74.94036	130.70446
194.97456	129.83454	69.93926	130.70379
199.97422	129.74553	64.93999	130.70321
204.97650	129.67761	59.93970	130.82054
209.97490	129.67770	54.93940	130.80888

TABLE 2

STAR-TRAIL MEASURES

DIRECT REVERSE  
 x y x y

YERKES PHOTOGRAPH NO. 1348

79.97327	122.90472	189.93247	124.18214
84.97324	122.95853	184.93148	124.16858
89.97313	123.02733	179.93246	124.10772
94.97316	123.05524	174.93249	124.00147
99.97413	123.09305	169.93241	123.95711
104.97310	123.14595	164.93140	123.92285
109.97323	123.23076	159.93340	123.84250
114.97522	123.28877	154.93228	123.77324
119.97320	123.30877	149.93228	123.73479
124.97428	123.41488	144.93227	123.64734
129.97234	123.46499	139.93322	123.59578
134.97340	123.51709	134.93218	123.53422
139.97345	123.59330	129.93215	123.47067
144.97458	123.63451	124.93217	123.39901
149.97372	123.71661	119.93206	123.32035
154.97401	123.75392	114.93295	123.29580
159.97413	123.83903	109.93159	123.23805
164.97425	123.90513	104.93146	123.18549
169.97428	123.92124	99.93132	123.14094
174.97442	123.97735	94.93123	123.05038
179.97437	124.02145	89.93212	123.02082
184.97736	124.10346	84.93103	122.98227
189.97439	124.15757	79.93103	122.94381
194.97544	124.15767	74.93195	122.90525

TABLE 2

STAR-TRAIL MEASURES

DIRECT REVERSE  
 x y x y

YERKES PHOTOGRAPH NO. 1579

34.97280	137.74020	225.00378	136.95684
39.97254	137.75617	220.00590	136.95691
44.97241	137.79704	215.00490	136.99686
49.97142	137.69600	210.00565	137.01891
54.97242	137.69588	205.00540	136.96497
59.97142	137.65575	200.00404	137.08903
64.97130	137.64262	195.00497	137.02509
69.97337	137.64248	190.00501	137.11525
74.97357	137.59025	185.00400	137.11551
79.97258	137.56292	180.00511	137.11567
84.97172	137.59869	175.00428	137.19983
89.97179	137.54445	170.00432	137.19989
94.97199	137.52832	165.00443	137.21405
99.97213	137.50509	160.00445	137.21411
104.97222	137.46568	155.00521	137.22926
109.97322	137.46551	150.00520	137.24422
114.97223	137.37553	145.00420	137.30218
119.97223	137.40755	140.00500	137.31004
124.97318	137.40767	135.00482	137.30989
129.97211	137.37379	130.00364	137.37276
134.97206	137.32191	125.00457	137.40552
139.97213	137.32213	120.00331	137.40527
144.97314	137.32235	115.00306	137.37013
149.97315	137.26747	110.00283	137.43580
154.97262	137.26779	105.00270	137.43566
159.97275	137.23491	100.00255	137.50450
164.97390	137.23504	95.00260	137.50436
169.97409	137.23516	90.00334	137.52523
174.97411	137.23528	85.00368	137.59409
179.97450	137.13340	80.00367	137.57304
184.97351	137.11742	75.00373	137.57290
189.97669	137.12954	70.00277	137.64176
194.97350	137.03066	65.00257	137.64173
199.97410	137.05168	60.00236	137.69358
204.97631	136.96980	55.00221	137.69344
209.97570	137.02792	50.00100	137.69319
214.97591	137.00215	45.00175	137.78496
219.97592	137.00237	40.00167	137.78471
224.97600	136.95959	35.00042	137.75137

YERKES PHOTOGRAPH NO. 1502

39.93754	129.23288	39.89641	129.23693
44.95840	129.23377	44.89847	129.23827
49.96640	129.18677	49.80764	129.17959
54.95747	129.16866	54.88283	129.16793
59.94755	129.17655	59.92206	129.16916
64.96160	129.09444	64.94827	129.09040
69.93865	129.10634	69.90446	129.09152
74.95475	129.09713	74.92349	129.08575
79.93375	129.03882	79.92852	129.03699
84.94078	129.03861	84.93351	129.03813
89.96775	129.03840	89.90041	129.03934
94.93785	128.97330	94.90458	128.98158
99.93589	128.98509	99.91060	128.98280
104.94186	128.93398	104.91475	128.96304
109.93454	128.93477	109.92587	128.94528
114.96693	128.89876	114.90717	128.90770
119.96093	128.89876	119.90834	128.87793
124.94795	128.85485	124.90549	128.86726
129.95696	128.85494	129.92057	128.83960
134.95668	128.78103	134.91665	128.81783
139.95205	128.78723	139.90574	128.81906
144.94013	128.75342	144.91585	128.77329
149.95622	128.75451	149.92285	128.77443
154.93858	128.75480	154.91593	128.76895
159.95470	128.65789	159.88600	128.68848
164.98084	128.72799	164.90596	128.73052
169.93593	128.66508	169.91093	128.71244
174.96302	128.66517	174.91497	128.67149
179.94713	128.60526	179.90688	128.61242
184.95912	128.61825	184.90684	128.61334
189.95821	128.57535	189.89884	128.60617
194.96031	128.59344	194.91087	128.60710
199.96450	128.54643	199.90392	128.60814
204.95569	128.49552	204.89014	128.50017
209.94800	128.49562	209.91329	128.48119
214.95518	128.41481	214.90255	128.41586
219.96227	128.45700	219.90743	128.48137
224.97133	128.49819	224.90429	128.48239

YERKES PHOTOGRAPH NO. 1638

39.97379	128.74592	224.89911	130.59118
44.97460	128.83386	219.89930	130.57330
49.97354	128.84290	214.89837	130.47032
54.97358	128.88984	209.89926	130.43243
59.97561	128.93478	204.89815	130.38055
64.97460	128.97972	199.89899	130.31665
69.97461	128.98766	194.89899	130.30176
74.97366	129.10750	189.89904	130.21898
79.97360	129.10724	184.89911	130.16529
84.97358	129.17207	179.89822	130.12951
89.97350	129.22091	174.89940	130.07971
94.97456	129.27285	169.89945	129.98482
99.97354	129.30365	164.89956	129.94404
104.97347	129.39263	159.89865	129.89015
109.97350	129.42348	154.89955	129.82335
114.97344	129.43352	149.89762	129.76936
119.97338	129.49256	144.89569	129.75037
124.97435	129.51274	139.90064	129.69829
129.97332	129.56880	134.89960	129.63720
134.97327	129.59398	129.89856	129.62211
139.97328	129.68522	124.89957	129.53493
144.97530	129.71746	119.89946	129.53374
149.97433	129.72760	114.89836	129.44565
154.97464	129.80494	109.89811	129.44437
159.97371	129.83808	104.89806	129.38428
164.97379	129.90822	99.89799	129.32118
169.97384	129.93736	94.89903	129.31010
174.97388	130.04749	89.89892	129.24001
179.97498	130.05463	84.89909	129.18993
184.97452	130.12967	79.89916	129.12554
189.97397	130.21181	74.89820	129.12484
194.97505	130.26895	69.89923	129.01576
199.97519	130.27495	64.89809	129.01377
204.97633	130.33913	59.89796	128.94268
209.97560	130.35027	54.89779	128.89360
214.97474	130.43951	49.89766	128.86740
219.97576	130.53276	44.89755	128.83221
224.97577	130.55900	39.89856	128.74802

TABLE 2

## STAR-TRAIL MEASURES

DIRECT		REVERSE	
x	y	x	y
YERKES PHOTOGRAPH No. 1694			
44.97189	136.37700	225.00394	137.27501
49.97089	136.44700	220.00408	137.25195
54.97189	136.44691	215.00408	137.25179
59.97089	136.44682	210.00408	137.24072
64.97178	136.53873	205.00460	137.24066
69.97284	136.53864	200.00325	137.19860
74.97202	136.57944	195.00319	137.15853
79.97102	136.60515	190.00324	137.15858
84.97213	136.60496	185.00225	137.10271
89.97118	136.60477	180.00137	137.09575
94.97237	136.66368	175.00355	137.07778
99.97249	136.68848	170.00460	137.13372
104.97146	136.74939	165.00372	137.01877
109.97247	136.77520	160.00376	137.01870
114.97246	136.77521	155.00352	137.01873
119.97246	136.82822	150.00453	136.95857
124.97240	136.82832	145.00453	136.95841
129.97233	136.84343	140.00435	136.85716
134.97226	136.89854	135.00319	136.85868
139.97132	136.89875	130.00302	136.82662
144.97233	136.96296	125.00296	136.78726
149.97133	136.96306	120.00172	136.78689
154.97279	137.03137	115.00149	136.76164
159.97190	137.04148	110.00227	136.73317
164.97204	137.04159	105.00115	136.71391
169.97322	137.11870	100.00201	136.66264
174.97423	137.11880	95.00207	136.66238
179.97361	137.11891	90.00183	136.56913
184.97361	137.13092	85.00215	136.56886
189.97478	137.16903	80.00115	136.56869
194.97397	137.16914	75.00221	136.55437
199.97417	137.20214	70.00126	136.52417
204.97436	137.22525	65.00066	136.52402
209.97476	137.23736	59.99987	136.43974
214.97495	137.27857	55.00170	136.43348
219.97495	137.27878	50.00051	136.41912
224.97601	137.27898	45.00127	136.32676
YERKES PHOTOGRAPH No. 1771			
39.97225	133.48888	224.93367	134.11328
44.97212	133.48878	219.93381	134.11151
49.97211	133.51678	214.93381	134.07662
54.97315	133.51668	209.93360	134.07685
59.97218	133.51657	204.93339	134.05408
64.97214	133.51647	199.93308	134.01630
69.97319	133.57637	194.93103	134.01552
74.97234	133.57617	189.93005	133.97184
79.97234	133.57586	184.93405	133.97228
84.97242	133.57566	179.93314	133.97260
89.97244	133.62546	174.93230	133.88881
94.97159	133.64636	169.93332	133.88814
99.97268	133.64615	164.93341	133.88847
104.97465	133.64605	159.93345	133.88869
109.97268	133.65585	154.93325	133.88901
114.97268	133.70385	149.93225	133.88913
119.97267	133.71584	144.93325	133.81827
124.97265	133.74494	139.93309	133.79829
129.97361	133.74504	134.93195	133.75830
134.97258	133.80914	129.93281	133.75533
139.97264	133.80933	124.93175	133.75526
144.97268	133.80933	119.93254	133.72518
149.97271	133.85063	114.93133	133.70820
154.97312	133.85293	109.93208	133.66802
159.97325	133.89302	104.93195	133.64606
164.97338	133.90212	99.93182	133.64607
169.97454	133.90222	94.93184	133.64609
174.97357	133.90232	89.93063	133.64612
179.97386	133.94841	84.93187	133.59815
184.97485	133.94841	79.93288	133.56727
189.97300	133.94851	74.93191	133.56729
194.97515	133.98161	69.93193	133.56731
199.97535	133.98160	64.93072	133.50745
204.97554	134.01870	59.93052	133.50046
209.97490	134.05480	54.93034	133.50049
214.97510	134.05599	49.93014	133.50042
219.97513	134.07419	44.93094	133.50034
224.97620	134.10839	39.93087	133.48626
YERKES PHOTOGRAPH No. 1778			
39.97227	132.72836	224.96038	118.11401
44.97214	132.77620	219.96052	118.05106
49.97314	132.85314	214.96054	117.95026
54.97218	132.90899	209.96033	117.73144
59.97222	132.97783	204.96011	117.08563
64.97219	133.06067	199.95880	117.78881
69.97124	133.13951	194.95975	117.70300
74.97239	133.24525	189.95979	117.59498
79.97238	133.27089	184.95980	117.56095
84.97247	133.38563	179.95791	117.47683
89.97148	133.38537	174.96010	117.45160
94.97163	133.52621	169.96113	117.27577
99.97472	133.63395	164.96024	117.23674
104.97270	133.69279	159.95928	117.15987
109.97174	133.76254	154.96007	117.09398
114.97274	133.82548	149.96108	117.02321
119.97273	133.84342	144.96010	117.00242
124.97271	133.94946	139.95894	116.93263
129.97267	134.01750	134.95980	116.85667
134.97263	134.08754	129.96067	116.77580

(CONTINUED)

TABLE 2

## STAR-TRAIL MEASURES

DIRECT		REVERSE	
x	y	x	y
YERKES PHOTOGRAPH No. 1778 (CONTINUED)			
139.97269	134.17468	124.95963	116.68894
144.97272	134.19582	119.95942	116.63510
149.97275	134.30086	114.95821	116.57208
154.97318	134.37810	109.95898	116.48507
159.97430	134.42514	104.95887	116.43228
164.97344	134.46519	99.95774	116.38124
169.97359	134.57723	94.95877	116.28213
174.97362	134.60727	89.95760	116.24110
179.97393	134.70431	84.95783	116.11791
184.97392	134.78625	79.95895	116.01280
189.97408	134.89129	74.95798	115.98579
194.97424	134.93433	69.95800	115.93575
199.97465	134.97827	64.95881	115.86380
204.97464	135.06831	59.95863	115.76211
209.97501	135.13235	54.95844	115.76233
214.97521	135.21749	49.95826	115.66354
219.97423	135.32164	44.95806	115.55552
224.97729	135.39478	39.95801	115.46838
YERKES PHOTOGRAPH No. 1784			
39.97178	134.72816	224.95551	134.77678
44.97168	134.72808	219.95562	134.77770
49.97270	134.72810	214.95560	134.77850
54.97174	134.72802	209.95535	134.77941
59.97179	134.72793	204.95511	134.78034
64.97175	134.66285	199.95576	134.78025
69.97183	134.73777	194.95468	134.76515
74.97202	134.73759	189.95468	134.76616
79.97204	134.78631	184.95366	134.76028
84.97316	134.74012	179.95473	134.76130
89.97322	134.76394	174.95487	134.73430
94.97241	134.76386	169.95487	134.73522
99.97253	134.65868	164.95494	134.71523
104.97254	134.74460	159.95496	134.79614
109.97559	134.74442	154.95472	134.79715
114.97261	134.74443	149.95469	134.79097
119.97263	134.70445	144.95467	134.75978
124.97262	134.74557	139.95448	134.76049
129.97260	134.74569	134.95430	134.74020
134.97358	134.74581	129.95412	134.69491
139.97267	134.74603	124.95504	134.79352
144.97272	134.74624	119.95520	134.74014
149.97277	134.76536	114.95353	134.74085
154.97323	134.76568	109.95328	134.71636
159.97338	134.76580	104.95313	134.76308
164.97354	134.73792	99.95296	134.68178
169.97572	134.74903	94.95199	134.74550
174.97278	134.74915	89.95074	134.80321
179.97411	134.76627	84.95299	134.75193
184.97413	134.76629	79.95298	134.80473
189.97431	134.76641	74.95298	134.73544
194.97450	134.76653	69.95198	134.73516
199.97472	134.76654	64.95076	134.70158
204.97455	134.76666	59.95254	134.76468
209.97524	134.76678	54.95235	134.76540
214.97656	134.76700	49.95211	134.73601
219.97561	134.76722	44.95087	134.73662
224.97670	134.76744	39.95178	134.73722
YERKES PHOTOGRAPH No. 1799			
34.97277	133.90214	224.95210	134.50131
39.97249	133.87715	219.95224	134.50176
44.97136	133.91005	214.95224	134.43210
49.97235	133.94906	209.95002	134.46856
54.97238	133.94896	204.95281	134.43300
59.97341	133.96387	199.95149	134.43346
64.97126	133.97977	194.95244	134.43390
69.97241	133.97968	189.95146	134.37746
74.97357	133.97948	184.95146	134.33911
79.97357	134.02419	179.95156	134.33967
84.97566	134.02399	174.94972	134.34021
89.97268	134.06480	169.95274	134.31466
94.97284	134.06470	164.95284	134.31421
99.97293	134.08551	159.95287	134.26767
104.97291	134.10241	154.95265	134.24920
109.97293	134.10222	149.95065	134.23456
114.97393	134.13522	144.95266	134.19791
119.97292	134.13523	139.95150	134.18116
124.97290	134.15733	134.95036	134.18140
129.97286	134.15744	129.95021	134.15566
134.97462	134.20354	124.95215	134.15580
139.97388	134.14675	119.95193	134.13395
144.97291	134.18995	114.95072	134.13420
149.97295	134.22606	109.95047	134.09825
154.97237	134.25136	104.95035	134.09950
159.97449	134.25147	99.95121	134.09875
164.97363	134.28757	94.95124	134.05600
169.97378	134.28768	89.95003	134.05624
174.97381	134.32779	84.94928	134.01150
179.97411	134.33789	79.94929	134.05584
184.97310	134.37390	74.95131	133.95709
189.97325	134.37000	69.95033	133.95734
194.97441	134.40211	64.95014	133.95770
199.97561	134.42511	59.94995	133.98193
204.97480	134.42522	54.94976	133.98219
209.97517	134.45832	49.94957	133.95434
214.97636	134.45853	44.94935	133.92249
219.97539	134.48073	39.94828	133.88863
224.97645	134.49794	34.94907	133.88769

TABLE 3  
LIMB MEASURES AND RESULTS

OBSERVED		REDUCED		SER.
x	y	x	y	
YERKES PHOTOGRAPH No. 57				
135.4064	29.4661	-17.4163	-91.8729	7412
134.1614	29.6623	-18.6569	-91.6782	7413
133.0264	29.8754	-19.7935	-91.4720	7414
130.5153	30.5067	-22.3092	-90.8558	7415
128.8653	30.8489	-23.9617	-90.5236	7416
127.4862	31.3850	-25.3445	-89.9956	7417
126.3942	31.7942	-26.4393	-89.5928	7418
124.7712	32.2474	-28.0656	-89.1493	7419
123.1889	32.8998	-29.6523	-88.5061	7420
121.2045	33.4599	-31.3133	-87.9558	7421
119.8498	34.0812	-32.9996	-87.3444	7422
118.6428	34.5983	-34.2101	-86.8344	7423
116.1189	35.7067	-36.7416	-85.7406	7424
112.6929	37.2582	-40.1781	-84.2090	7425
111.2045	37.9504	-41.6711	-83.5254	7426
109.2545	38.9707	-43.6280	-82.5162	7427
107.0065	40.1682	-45.8439	-81.3313	7428
105.4136	41.0484	-47.4827	-80.4604	7429
103.7316	42.0887	-49.1716	-79.4295	7430
101.6793	43.4110	-51.2326	-78.1187	7431
99.6064	44.8332	-53.3148	-76.7080	7432
97.8484	45.9865	-55.0804	-75.5645	7433
95.9193	47.3389	-57.0184	-74.2228	7434
93.6500	49.1690	-59.2996	-72.4049	7435
92.4538	50.2242	-60.5026	-71.3561	7436
91.2438	51.2873	-61.7195	-70.2995	7437
90.1378	52.4475	-62.8330	-69.1459	7438
89.3425	53.1600	-63.6329	-68.4367	7439
87.2533	55.1574	-65.7350	-66.4503	7440
85.9863	56.3885	-67.0099	-65.2258	7441
83.4731	59.1255	-69.5407	-62.5017	7442
82.5121	60.1876	-70.5085	-61.4445	7443
81.4957	61.4569	-71.5330	-60.1802	7444
80.9287	62.2580	-72.1051	-59.3818	7445
79.7135	63.7409	-73.3298	-57.5049	7446
78.8935	64.8549	-74.1569	-56.7949	7447
78.2025	65.6400	-74.8529	-56.0133	7448
77.3915	67.0473	-75.6728	-54.6095	7449
76.1653	68.5448	-76.9086	-53.1181	7450
75.4343	69.6538	-77.6467	-52.0125	7451
74.8183	70.6599	-78.2693	-50.9692	7452
74.3573	71.4359	-78.7350	-50.2353	7453
73.7722	72.4269	-79.3263	-49.2469	7454
71.2025	76.7906	-81.9237	-44.8947	7455
69.6422	79.7246	-83.5025	-41.9673	7456
68.9942	80.9507	-84.1582	-40.7440	7457
68.2511	82.5744	-84.9116	-39.1232	7458
66.0708	87.8705	-87.1252	-33.8351	7459
65.2648	89.8065	-87.9433	-31.9021	7460
63.8485	94.1246	-89.3867	-27.5882	7461
63.2615	96.4387	-89.9881	-25.2754	7462
62.0425	101.3161	-91.2375	-20.4004	7463
61.5555	103.5987	-91.7388	-18.1184	7464
61.3195	105.1277	-91.9843	-16.5892	7465
60.8184	108.4003	-92.5057	-13.3163	7466
60.4424	111.0853	-92.8984	-10.6308	7467
60.1562	115.3112	-93.2108	-6.4021	7468
59.9331	119.2354	-93.4581	-2.4751	7469
59.8891	122.4094	-93.5218	0.7020	7470
60.1181	126.9657	-93.3208	5.2646	7471
60.2590	128.9457	-93.1921	7.2476	7472
60.8599	133.7077	-92.6204	12.0185	7473
61.7698	139.2915	-91.7448	17.6140	7474
62.9805	144.5644	-90.5663	22.9002	7475
65.3523	152.0690	-88.2402	30.4277	7476
66.6751	155.6754	-86.9393	34.0463	7477
69.7618	162.6944	-83.8951	41.0922	7478
73.4291	169.2610	-80.2674	47.6889	7479
78.0990	176.3796	-75.6401	54.8444	7481
83.5414	183.1466	-70.2381	61.6528	7482
89.6869	189.4105	-64.1296	67.9620	7483
96.4889	195.1607	-57.3612	73.7611	7484
104.4528	200.7499	-49.4297	79.4063	7485
112.2612	205.0220	-41.6456	83.7320	7486

TABLE 3  
LIMB MEASURES AND RESULTS

OBSERVED		REDUCED		SER.
x	y	x	y	
YERKES PHOTOGRAPH No. 100				
190.8671	57.6822	63.3233	-69.3675	7531
193.1745	59.9471	65.6305	-67.1007	7532
194.2135	60.9530	66.6694	-66.0939	7533
194.9025	61.6880	67.3583	-65.3583	7534
196.3864	63.2809	68.8420	-63.7641	7535
196.9934	63.6408	69.4490	-63.1036	7536
198.4386	65.5467	70.8940	-61.4964	7537
198.9877	66.1257	71.4430	-60.5169	7538
201.3185	69.0662	73.7734	-57.9741	7539
202.7238	70.9003	75.1784	-56.1386	7540
203.8328	72.4343	76.2871	-54.6034	7541
205.8417	75.3371	78.2955	-51.6985	7542
207.7363	78.3368	80.1896	-48.6966	7543
209.1224	80.8237	81.5752	-46.2079	7544
210.6044	83.2931	83.0567	-43.7367	7545
212.2385	86.7251	84.6900	-40.3024	7546
213.7588	89.9758	86.2096	-37.0495	7547
215.3687	94.1372	87.8184	-32.8853	7548
216.0378	95.9212	88.4871	-31.1002	7549
216.7726	98.0791	89.2213	-28.9409	7550
218.1142	102.4973	90.5617	-24.5200	7551
218.7761	105.0977	91.2228	-21.9180	7552
219.8772	109.9721	92.3225	-17.0407	7553
220.3050	112.7150	92.7454	-14.2962	7554
220.5211	114.6740	92.9649	-12.3361	7555
220.9561	117.2590	93.3991	-9.7496	7556
221.2781	120.8174	93.7199	-6.1892	7557
221.3601	122.8868	93.8012	-4.1187	7558
221.3962	125.4908	93.8364	-1.5133	7559
221.3521	127.5308	93.7916	0.5278	7560
221.4221	128.4738	93.8613	1.4713	7561
221.3432	131.4348	93.7813	4.4338	7562
221.0692	135.3368	93.5058	8.3378	7563
220.8232	138.2939	93.2587	11.2964	7564
220.6982	139.6579	93.1332	12.6610	7565
220.1403	142.4199	92.5742	15.4243	7566
219.7402	144.6499	92.1732	17.6554	7567
218.9902	148.3094	91.4217	21.3165	7568
218.0683	152.2915	90.4981	25.3005	7569
217.2395	154.7682	89.6682	27.7782	7570
216.9005	155.6802	89.3288	28.6906	7571
216.3456	156.9292	88.7733	29.9430	7572
214.4735	161.9682	86.8989	34.9811	7573
211.6714	168.3269	84.0939	41.3422	7574
208.6855	174.3354	81.1050	47.3529	7575
207.8635	175.7403	80.2823	48.7853	7576
204.8727	180.1862	77.2052	53.2055	7577
203.5328	182.0722	75.9482	55.0921	7578
200.0106	186.9156	72.4235	59.5367	7579
198.3405	188.5260	70.7523	61.5476	7580
195.0434	192.1889	67.4530	65.2114	7581
190.3737	196.7798	62.7805	69.8032	7582
186.0749	200.4454	58.4792	73.4693	7583
182.2288	203.3083	54.6311	76.3324	7584
175.7633	207.4980	48.1624	80.5222	7585
170.7849	210.2876	43.1817	83.3117	7586
166.0758	212.6261	38.4705	85.6499	7587
161.4166	214.5019	33.8094	87.5252	7588
156.6674	216.1987	29.0584	89.2213	7589
YERKES PHOTOGRAPH No. 158				
181.6543	56.0000	69.8224	-57.3701	7612
182.3943	57.0000	70.5557	-56.3607	7613
183.2370	58.1237	71.3914	-55.3148	7614
183.7750	58.8117	71.9247	-54.6229	7615
184.5410	59.8316	72.6838	-53.5974	7616
185.8831	61.6525	74.0136	-51.7666	7617
186.8829	63.1804	75.0030	-50.2312	7618
187.5853	64.2044	75.6985	-49.2020	7619
189.1043	66.6933	77.2005	-46.7017	7620
190.0492	68.2563	78.1348	-45.1316	7621
190.5232	68.9063	78.6044	-44.4781	7622
191.1562	70.1123	79.2692	-43.2670	7623
192.2172	72.0453	80.2770	-41.3262	7624
192.8786	73.2727	80.9300	-40.0938	7625
193.9026	75.2617	81.9404	-38.0969	7626
194.7447	77.2456	82.7689	-36.1064	7627
195.7055	79.5412	83.7139	-33.8032	7628
196.7536	82.2352	84.7434	-31.1009	7629
197.3725	83.8446	85.3513	-29.4865	7630
198.5078	87.2016	86.4634	-26.1203	7631
199.2018	89.6781	87.1403	-23.6379	7632

(CONTINUED)

TABLE 3

LIMB MEASURES AND RESULTS

OBSERVED REDUCED

x	y	x	y	SER.
YERKES PHOTOGRAPH No. 158 (CONTINUED)				
200.0787	93.0902	87.9935	-20.2183	7633
200.6737	95.6132	88.5710	-17.6900	7634
201.2116	98.2610	89.0905	-15.0373	7635
201.4456	99.4760	89.3161	-13.8202	7636
201.6167	100.7170	89.4786	-12.5774	7637
201.7597	101.9890	89.6127	-11.3038	7638
201.9616	103.2393	89.8659	-10.0516	7639
201.9947	104.2473	89.8319	-8.8428	7640
202.1037	105.3533	89.9332	-7.9356	7641
202.2276	107.6487	90.0410	-5.6382	7642
202.3017	108.4107	90.1098	-4.8753	7643
202.3477	109.3497	90.1492	-3.9536	7644
202.4547	110.3207	90.2494	-2.9634	7645
202.5229	111.3238	90.3106	-1.9953	7646
202.5660	112.4388	90.3459	-0.8435	7647
202.5738	113.7207	90.3447	0.4391	7648
202.5039	116.0547	90.2584	2.7738	7649
202.4556	117.6780	90.1987	4.3976	7650
202.3896	119.2700	90.1215	5.5859	7651
202.3287	120.9070	90.0491	7.6273	7652
202.1336	122.8766	89.8401	9.5965	7653
202.0097	124.5596	89.7016	11.6797	7654
201.5627	127.3886	89.2374	14.1069	7655
201.0427	130.5886	88.6947	17.3050	7656
200.3367	133.8926	87.9653	20.6059	7657
199.9817	135.6346	87.5980	22.3464	7658
199.5938	137.0366	87.2001	23.7465	7659
198.9887	139.1019	86.5803	25.8087	7660
198.5647	140.3689	86.1473	27.0735	7661
198.1388	141.6000	85.7126	28.3024	7662
197.7877	142.8000	85.3529	29.5006	7663
197.2835	143.9150	84.8407	30.6128	7664
196.7356	145.5750	84.2810	32.2739	7665
196.4106	146.3410	83.9505	33.0341	7666
195.1226	149.5234	82.6397	36.2094	7667
193.8786	152.4854	81.3745	35.1646	7668
192.9736	154.4582	80.4554	41.1323	7669
190.8531	158.3538	78.3068	45.0156	7670
187.6550	163.5251	75.0713	50.1680	7671
183.7125	168.9213	71.0896	55.5404	7672
182.8215	170.0963	70.1900	56.7100	7673
179.5404	173.9736	66.8806	60.5672	7674
177.2477	176.5164	64.5692	63.0959	7675
174.3206	179.4504	61.6205	66.0117	7676
168.6948	184.3266	55.9586	70.8526	7677
161.6247	189.4595	48.8500	75.9406	7678
155.3545	193.2883	42.5508	79.7293	7679
150.2803	195.8139	37.4571	82.2221	7680
143.1148	198.7985	30.2682	85.1601	7681

YERKES PHOTOGRAPH No. 268

84.7973	63.3335	-60.8659	-66.4813	7715
84.4203	63.6646	-61.2435	-66.1506	7716
83.3633	64.5496	-62.3022	-65.2668	7717
82.8603	65.0656	-62.8062	-64.7513	7718
81.9589	65.8339	-63.6691	-63.9839	7719
81.4339	66.3869	-64.2351	-63.4315	7720
80.3437	67.5266	-65.3274	-62.2928	7721
80.0116	67.8556	-65.6602	-61.9241	7722
78.6776	69.2546	-66.9968	-60.5264	7723
77.0646	71.2719	-68.6133	-58.5504	7724
75.8013	72.8701	-69.8755	-56.9532	7725
75.4733	73.2401	-70.2082	-56.5835	7726
74.5933	74.4752	-71.0904	-55.3490	7727
72.8852	76.8002	-72.8027	-53.0251	7728
71.3704	79.0564	-74.3215	-50.7698	7729
70.8343	79.6855	-74.8587	-50.1412	7730
69.8603	81.2145	-75.8354	-48.6127	7731
68.1591	83.9903	-77.5015	-45.8376	7732
67.7720	84.6772	-77.9298	-45.1508	7733
66.7769	86.3904	-78.9278	-43.4381	7734
65.5877	88.4762	-80.1207	-41.3528	7735
64.7517	90.0973	-80.9195	-39.7318	7736
64.3296	91.1053	-81.3833	-38.7238	7737
64.0046	91.6713	-81.6673	-38.1579	7738
63.5344	92.8343	-82.1814	-36.9948	7739
62.8743	94.3103	-82.8441	-35.5188	7740
61.9965	96.1294	-83.7250	-33.6998	7741
61.0013	98.6237	-84.7244	-31.2053	7742
60.1512	101.2957	-85.5750	-28.5326	7743
59.7531	102.7723	-85.9395	-27.0555	7744

(CONTINUED)

TABLE 3

LIMB MEASURES AND RESULTS

OBSERVED REDUCED

x	y	x	y	SER.
YERKES PHOTOGRAPH No. 268 (CONTINUED)				
59.0911	104.5062	-86.6444	-25.3214	7745
58.9181	105.2412	-86.8186	-24.5861	7746
58.5800	106.4672	-87.1588	-23.3597	7747
58.0299	108.7048	-87.7126	-21.1213	7748
57.8949	109.7708	-87.8493	-20.0547	7749
56.9954	114.2648	-88.7561	-15.5566	7750
56.5253	116.5577	-89.2300	-13.2647	7751
56.3282	117.5549	-89.4287	-12.2670	7752
56.2292	118.8619	-89.5298	-10.9591	7753
56.1932	119.8239	-89.5673	-9.9964	7754
55.8662	122.2549	-89.8982	-7.5640	7755
55.7641	123.7642	-90.0028	-6.0536	7756
55.7641	124.9032	-90.0045	-4.9137	7757
55.6891	125.8402	-90.0810	-3.9760	7758
55.6131	127.2402	-90.1593	-2.5750	7759
55.5750	128.1352	-90.1988	-1.6794	7760
55.5640	129.9502	-90.2127	0.1371	7761
55.5499	132.0752	-90.2301	2.2638	7762
55.7318	134.3162	-90.0517	4.5070	7763
55.6698	135.5202	-90.1756	5.7118	7764
55.8248	137.1472	-89.9631	7.3405	7765
55.9377	137.9700	-89.8515	8.1662	7766
56.1187	139.6510	-89.6731	9.8469	7767
56.2607	140.6370	-89.5326	10.8339	7768
56.3547	141.5470	-89.4400	11.7449	7769
56.9636	145.3220	-88.8369	15.5241	7770
57.2325	147.1840	-88.5709	17.3881	7771
58.4901	152.5349	-87.3213	22.7457	7772
59.5791	156.3769	-86.2381	26.5928	7773
60.2468	158.2352	-85.5731	28.4538	7774
62.0307	163.0449	-83.7963	33.2707	7775
64.3147	168.2256	-81.5198	38.4598	7776
66.7714	172.9684	-79.0699	43.2109	7777
69.9192	178.3426	-75.9297	48.5953	7778
72.5707	182.3164	-73.2837	52.5771	7779
74.0285	184.3154	-71.8286	54.5804	7780
77.5683	188.4751	-68.2943	58.7499	7781
80.6572	191.9553	-65.2100	62.2386	7782
83.2278	194.4654	-62.6427	64.7554	7783
89.0265	199.5628	-56.8503	69.8675	7784
93.2912	202.8249	-52.5896	73.1400	7785
97.7971	205.8789	-48.0872	76.2047	7786
102.5151	208.6242	-43.3722	78.5608	7787
109.2073	212.0022	-36.6834	82.3537	7788
115.3583	214.5075	-30.5346	84.8722	7789
118.5283	215.5536	-27.3653	85.9249	7790
122.5604	216.7158	-23.3339	87.0954	7791
130.3573	218.4442	-15.5375	88.8393	7792
132.4703	218.8053	-13.4244	89.2045	7793
137.7904	219.4297	-8.1038	89.8391	7794
144.0035	219.8051	-1.8895	90.2260	7795
147.0125	219.7922	1.1204	90.2186	7796
148.9237	219.7743	3.0322	90.2041	7797

YERKES PHOTOGRAPH No. 526

86.7887	57.2600	-49.7798	-67.5295	7835
84.4284	58.9589	-52.1459	-66.2372	7836
82.5914	60.4000	-53.9877	-64.7952	7837
81.2720	61.4883	-55.3107	-63.7166	7838
80.0108	62.6122	-56.5756	-62.5961	7839
78.3378	64.1653	-58.2538	-61.0476	7840
76.5467	66.0097	-60.0509	-59.2080	7841
74.2695	68.3661	-62.3358	-56.8777	7842
71.2549	71.9673	-65.3620	-53.2645	7843
70.1547	73.3300	-66.6466	-51.0038	7844
67.1505	77.3500	-69.4437	-47.8923	7845
66.2623	78.7749	-70.3764	-46.4697	7846
63.4490	83.2717	-73.0039	-41.9759	7847
62.1200	85.6949	-74.5406	-39.5599	7848
60.9759	87.6957	-75.6910	-37.5619	7849
59.8718	90.0877	-76.8025	-35.1724	7850
58.9430	92.3317	-77.7375	-32.9305	7851
57.9696	94.9057	-78.7197	-30.3585	7852
57.0891	97.0788	-79.6070	-28.1874	7853
56.8409	97.9391	-79.8578	-27.3275	7854
55.9529	101.0810	-80.7555	-24.1872	7855
55.0598	104.2356	-81.6583	-21.0342	7856
54.4188	106.7415	-82.3069	-18.5294	7857
54.0817	107.9151	-82.6476	-17.3564	7858
53.9677	108.8421	-82.7645	-16.4294	7859
53.8877	109.5371	-82.8466	-15.7344	7860

(CONTINUED)

TABLE 3  
LIMB MEASURES AND RESULTS

OBSERVED		REDUCED		SER.
x	y	x	y	
YERKES PHOTOGRAPH No. 526 (CONTINUED)				
53.7507	110.5641	-82.9867	-14.7075	7861
53.6107	111.3420	-83.1290	-13.9298	7862
53.4707	112.3900	-83.2722	-12.8818	7863
53.3105	113.2689	-83.4351	-12.0031	7864
53.2115	113.9419	-83.5361	-11.3301	7865
53.0815	114.7359	-83.6685	-10.5363	7866
53.0115	115.9299	-83.7421	-9.3421	7867
52.7935	117.3979	-83.9646	-7.8742	7868
52.6934	118.3491	-84.0676	-6.9230	7869
52.6534	119.8271	-84.1120	-5.4446	7870
52.5324	121.1211	-84.2369	-4.1505	7871
52.5163	123.3495	-84.2597	-1.9213	7872
52.4622	124.5795	-84.3175	-0.6911	7873
52.4582	125.6385	-84.3247	0.3683	7874
52.4742	126.2675	-84.3105	0.5976	7875
52.5103	126.9454	-84.2764	1.6758	7876
52.5313	127.4484	-84.2570	2.1791	7877
52.5472	129.5934	-84.2475	4.3249	7878
52.5732	130.0774	-84.2229	4.8091	7879
52.6112	131.4614	-84.1890	6.1937	7880
52.7382	132.2974	-84.0645	7.0304	7881
53.1091	135.3264	-83.7026	10.0616	7882
53.3111	137.0674	-83.5057	11.8039	7883
53.5330	139.0212	-83.2896	13.7590	7884
53.7270	139.9372	-83.0983	14.6759	7885
54.0470	141.3022	-82.7823	16.0424	7886
54.5049	143.8182	-82.3318	18.5607	7887
55.1129	146.0382	-81.7303	20.7833	7888
55.8208	148.7918	-81.0304	23.5401	7889
56.0798	149.7288	-80.7741	24.4782	7890
56.9508	152.2708	-79.9105	27.0237	7891
57.8405	154.9290	-79.0285	29.6856	7892
58.5295	156.3760	-78.3437	31.1352	7893
59.4262	158.6463	-77.4535	33.4091	7894
59.6402	159.2183	-77.2411	33.9819	7895
61.0792	162.2163	-75.8107	36.9854	7896
62.5334	165.0329	-74.3645	39.8074	7897
63.6783	167.0269	-73.2253	41.8056	7898
64.4301	168.3477	-72.4772	43.1292	7899
65.7881	170.5877	-71.1256	45.3741	7900
66.9959	172.5245	-69.9232	47.3153	7901
69.6948	176.1574	-67.2344	50.9578	7902
71.2557	178.0356	-65.6787	52.8414	7903
73.2442	180.4794	-63.6970	55.2921	7904
75.8561	183.2654	-61.0927	58.0871	7905
79.2690	186.6322	-57.6889	61.4655	7906
82.6325	189.6701	-54.3335	64.5148	7907
85.5454	192.0092	-51.4268	66.8636	7908
89.0740	194.6053	-47.9050	69.4714	7909
91.0260	195.8424	-45.9562	70.7149	7910
94.1979	197.7937	-42.7892	72.6766	7911
97.8927	199.8706	-38.0596	74.7655	7912
102.0017	201.8258	-34.9953	76.7339	7913
106.7836	203.8579	-30.2181	78.7813	7914
119.9609	207.6513	-17.0485	82.6163	7915

TABLE 3  
LIMB MEASURES AND RESULTS

OBSERVED		REDUCED		SER.
x	y	x	y	
YERKES PHOTOGRAPH No. 556 (CONTINUED)				
182.6616	98.6590	80.3845	-36.2972	7965
183.3736	100.2779	81.0901	-34.6742	7966
184.3135	102.7851	82.0159	-32.1612	7967
184.8805	104.1491	82.5814	-30.7939	7968
185.8205	106.6281	83.5115	-28.3091	7969
187.0944	110.9193	84.7680	-24.0093	7970
187.6332	112.7203	85.2996	-22.2046	7971
188.2722	115.5553	85.9270	-19.3646	7972
188.6582	117.3623	86.3457	-17.5544	7973
189.1812	119.8868	86.8184	-15.0257	7974
189.6621	122.7244	87.2877	-12.1837	7975
189.8731	124.2464	87.4924	-10.6595	7976
190.2351	127.8504	87.8396	-7.0508	7977
190.5221	132.8564	88.1059	-2.0390	7978
190.6071	135.2023	88.1812	0.3094	7979
190.5690	137.7157	88.1326	2.8251	7980
190.4611	140.6267	88.0126	5.7384	7981
189.8471	146.7947	87.3727	11.9101	7982
188.6110	154.1187	86.1657	19.2365	7983
187.0735	159.8323	84.5439	24.5500	7984
185.3764	165.2655	82.8236	30.3822	7985
182.7604	171.7688	80.1796	36.8821	7986
181.9443	173.5662	79.3557	38.6783	7987
179.9953	176.5861	77.3918	42.0944	7988

YERKES PHOTOGRAPH No. 616

170.6727	68.3311	63.3048	-58.4593	8012
172.0257	69.7861	64.6512	-56.5964	8013
172.6184	70.3882	65.2412	-56.3909	8014
173.4054	71.2492	66.0244	-55.5253	8015
174.6011	72.6333	67.2138	-54.1341	8016
175.5371	73.7993	68.1445	-52.5626	8017
176.6011	75.2332	69.2019	-51.5223	8018
178.0405	77.1882	70.6323	-49.5586	8019
178.7713	78.3888	71.3576	-48.3536	8020
180.3233	80.6887	72.8990	-46.0442	8021
181.3183	82.3157	73.8865	-44.4111	8022
182.8902	85.0699	75.4456	-41.6471	8023
183.8452	86.7459	76.3928	-38.9652	8024
184.1891	87.5193	76.7330	-35.1895	8025
185.0991	89.3273	77.6346	-37.3758	8026
186.2491	91.9083	78.7725	-34.7873	8027
187.0549	93.6772	79.5700	-33.0132	8028
187.7327	95.2473	80.2404	-31.4387	8029
189.1645	99.0870	81.6541	-27.5893	8030
190.0926	101.8190	82.5693	-24.8509	8031
190.7745	103.9682	83.2410	-22.6970	8032
191.1935	105.6782	83.6518	-20.9838	8033
191.4595	106.5582	83.9136	-20.1019	8034
191.9105	108.8685	84.3536	-17.7880	8035
192.1855	110.2605	84.6219	-16.3938	8036
192.5915	112.2736	85.0182	-14.3774	8037
192.8663	114.1505	85.2840	-12.4980	8038
193.1964	116.6275	85.6022	-10.0179	8039
193.5333	119.4840	85.9253	-7.1581	8040
193.7793	123.2766	86.1530	-3.3621	8041
193.8724	126.5646	86.2301	-0.0718	8042
193.8584	130.4676	86.1971	3.8334	8043
193.5294	134.8016	85.8469	8.1680	8044
193.1074	138.7159	85.4057	12.0823	8045
192.9624	140.1519	85.2537	13.5183	8046
192.5695	142.4460	84.8495	15.8117	8047
192.0421	144.5849	84.3115	17.9490	8048
191.3081	147.5303	83.5629	20.8922	8049
190.8001	149.5573	83.0429	23.3178	8050
190.1421	151.9063	82.3751	25.2645	8051
188.8291	156.1859	81.0408	29.5396	8052
187.6109	159.1896	79.8076	32.5386	8053
186.6755	161.5575	78.8603	34.9029	8054
185.4524	164.2488	77.6236	37.5892	8055
184.1894	166.6758	76.3483	40.0110	8056
183.6393	167.7271	75.7929	41.0600	8057
182.1504	170.3631	74.2906	43.6896	8058

YERKES PHOTOGRAPH No. 556

156.3781	65.6431	54.2283	-69.4394	7941
158.1482	67.0151	55.9934	-68.0597	7942
159.5670	68.2172	57.4077	-66.8514	7943
160.6950	69.2342	58.5319	-65.8293	7944
162.2719	70.6372	60.1036	-64.4193	7945
163.8350	72.0803	61.6613	-62.9692	7946
164.5638	72.7878	62.3874	-62.2584	7947
165.5188	73.7107	63.3390	-61.3311	7948
166.5577	74.8217	64.3736	-60.2153	7949
167.3177	75.5826	65.1307	-59.4509	7950
167.9742	76.2957	65.7845	-58.7348	7951
168.8892	77.3316	66.6956	-57.6946	7952
170.1760	78.8231	67.9767	-56.1970	7953
171.1960	79.5790	68.9922	-55.0404	7954
171.8869	80.8160	69.6799	-54.1961	7955
172.7845	81.9250	70.5733	-53.0828	7956
173.5934	83.0603	71.3777	-51.9435	7957
175.0643	85.0812	72.8408	-49.9153	7958
176.1643	86.6992	73.9345	-48.2918	7959
176.5063	87.2812	74.2742	-47.7080	7960
178.4130	90.3726	76.1688	-44.6068	7961
178.9680	91.4146	76.7156	-43.5618	7962
180.2678	93.7944	78.0100	-41.1751	7963
182.1036	97.5200	79.8310	-37.4393	7964

(CONTINUED)

TABLE 3  
LIMB MEASURES AND RESULTS

OBSERVED		REDUCED		SER.
x	y	x	y	
YERKES PHOTOGRAPH No. 624				
140.5779	34.5648	23.9755	-81.5750	8081
149.5144	37.7342	32.8994	-78.3559	8082
161.4922	43.8625	44.8507	-72.1601	8083
169.7000	49.4893	53.0332	-66.4863	8084
176.9382	55.8818	60.2418	-60.0516	8085
182.5627	61.8741	65.8381	-54.0260	8086
187.1382	67.9874	70.3844	-47.8851	8087
192.5850	77.1267	75.7870	-38.7119	8088
196.2288	85.3945	75.3904	-30.4203	8089
201.4698	107.0057	84.5241	-8.7701	8090
202.0057	117.2537	85.0083	1.4859	8091
201.5366	125.4175	84.4978	9.6513	8092
200.6997	131.4444	83.6301	15.6767	8093
199.4007	136.9553	82.3027	21.1834	8094
195.8306	148.1638	78.6745	32.3783	8095
192.0443	156.3342	74.8455	40.5324	8096
188.3503	162.3658	71.1196	46.5471	8097
178.0667	175.4002	60.7661	59.5327	8098
136.3470	33.4072	19.7488	-82.7559	8099
141.0589	34.7228	24.4559	-81.4143	8100
151.5413	38.5529	34.9229	-77.5259	8101
162.1052	44.2504	45.4620	-71.7687	8102
170.9959	50.5011	54.3244	-65.4670	8103
177.1282	56.0317	60.4311	-59.9006	8104
182.7127	62.1141	65.9869	-53.7851	8105
187.9736	69.3155	71.2134	-46.5518	8106
193.3208	78.6003	76.5157	-37.2336	8107
201.5287	107.6270	84.5758	-8.1482	8108
201.9936	117.6671	84.9941	1.8995	8109
201.4727	125.8485	84.4317	10.0822	8110
200.6047	131.7374	83.5335	15.9694	8111
198.9627	138.5105	81.8567	22.7370	8112
195.7196	148.6328	78.5611	32.8469	8113
191.8673	156.5582	74.6673	40.7556	8114
186.7347	164.7359	69.4913	48.9097	8115
177.8367	175.6222	60.5349	59.7536	8116
131.6095	32.4346	15.0145	-83.7545	8117
136.8090	33.5251	20.2104	-82.6355	8118
141.3649	34.7917	24.7616	-81.3437	8119
151.8733	38.7439	35.2540	-77.3330	8120
162.7653	44.6775	46.1202	-71.3378	8121
172.1219	51.4680	55.4459	-64.4935	8122
177.8550	56.8238	61.1541	-59.1042	8123
182.9437	62.3191	66.2170	-53.5788	8124
188.3446	69.7365	71.5824	-46.1286	8125
197.4277	88.6999	80.5730	-27.1068	8126
200.0707	97.9486	83.1703	-17.8393	8127
201.6237	108.1660	84.6722	-7.6084	8128
201.9936	117.8481	84.9932	2.0806	8129
201.4727	126.1705	84.4300	10.4043	8130
200.3736	133.0964	83.2955	17.3278	8131
198.9617	138.8135	81.8541	23.0401	8132
195.4116	149.2447	78.2499	33.4575	8133
191.4903	157.2582	74.2866	41.4539	8134
186.2518	165.4529	69.0047	49.6245	8135
175.7840	177.6051	58.4714	61.7264	8136
169.2453	183.3461	51.9012	67.4351	8137
132.8441	32.7017	16.2482	-83.4806	8138
137.5530	33.7372	20.9536	-82.4193	8139
142.5890	35.0928	25.9847	-81.0359	8140
155.5446	40.5427	38.9176	-75.5135	8141
164.2552	45.6503	47.6057	-70.3565	8142
173.7574	52.8121	57.0753	-63.1400	8143
179.5757	58.5514	62.8668	-57.3665	8144
188.8496	70.5605	72.0834	-45.3014	8145
194.4158	80.9822	77.5990	-34.8446	8146
198.0210	90.5338	81.1573	-25.2688	8147
200.4587	100.1285	83.5474	-15.6562	8148
201.7697	110.4569	84.8066	-5.3155	8149
201.9776	118.8051	84.9724	3.0380	8150
201.2956	127.7795	84.2447	12.0132	8151
200.2617	133.7343	83.1803	17.9654	8152
198.5167	140.4425	81.4007	24.6676	8153
194.8246	150.5347	77.9562	34.7450	8154
191.0501	158.0789	73.8421	42.2726	8155
185.9418	165.8639	68.6924	50.0340	8156
175.1770	178.2760	57.8608	62.3944	8157
134.5630	33.0314	17.9661	-83.1415	8158
139.3290	34.1240	22.7283	-82.0227	8159
143.9369	35.5406	27.3308	-80.5806	8160
158.1476	41.8634	41.5149	-74.1782	8161

(CONTINUED)

TABLE 3  
LIMB MEASURES AND RESULTS

OBSERVED		REDUCED		SER.
x	y	x	y	
YERKES PHOTOGRAPH No. 624 (CONTINUED)				
165.7742	46.6521	49.1202	-69.3460	8162
175.4653	54.4219	58.7757	-61.5202	8163
185.6224	65.8607	68.8788	-50.0210	8164
190.4904	73.3708	73.7106	-42.4809	8165
195.3718	83.3585	78.5434	-32.4619	8166
198.7738	93.2019	81.8969	-22.5953	8167
200.7327	101.6355	83.8138	-14.1470	8168
201.8688	112.2119	84.8969	-3.5591	8169
201.9266	120.9000	84.9108	5.1336	8170
200.9636	129.7304	83.9027	13.9633	8171
199.8127	135.5023	82.7222	19.7319	8172
197.3315	144.0574	80.1968	28.2779	8173
193.2516	153.9604	76.0652	38.1639	8174
189.9092	159.9379	72.6913	44.1264	8175
181.1568	171.8930	63.8751	56.0404	8176
172.9800	180.2659	55.6529	64.3735	8177
YERKES PHOTOGRAPH No. 720				
108.6219	51.3690	-26.7372	-81.5106	8222
104.4877	52.8073	-30.8728	-80.4725	8223
101.1077	54.2157	-34.2540	-79.0641	8224
98.8018	55.1939	-36.5607	-78.0859	8225
96.1715	56.4853	-39.1919	-76.7944	8226
93.2582	58.0984	-42.1062	-75.1812	8227
90.1098	59.7298	-45.2557	-73.5497	8228
86.6256	62.0282	-48.7411	-71.2510	8229
83.4754	64.4373	-51.8925	-68.8415	8230
80.5539	66.6907	-54.8150	-66.5877	8231
78.3017	68.6053	-57.0680	-64.6727	8232
76.9967	69.8486	-58.3735	-63.4291	8233
75.8847	70.9476	-59.4859	-62.3298	8234
74.7836	72.0106	-60.5874	-61.2666	8235
71.8548	75.3423	-63.5173	-57.9341	8236
66.9344	81.2465	-68.4396	-52.0283	8237
63.4962	85.8564	-71.8791	-47.4171	8238
61.9851	87.9443	-73.3908	-45.3286	8239
61.2421	89.4164	-74.1341	-43.8560	8240
60.3240	90.8864	-75.0526	-42.3856	8241
59.2338	92.7924	-76.1432	-40.4790	8242
56.8602	97.5668	-78.5178	-35.7031	8243
55.7332	100.1518	-79.6453	-33.1172	8244
54.9032	102.2598	-80.4757	-31.0085	8245
53.2801	106.9264	-82.0995	-26.3403	8246
51.5885	112.7299	-83.7919	-20.5347	8247
50.8856	115.9069	-84.4952	-17.5565	8248
50.5736	117.4399	-84.8074	-15.8229	8249
49.9166	122.1171	-85.4648	-11.1439	8250
49.4115	126.3605	-85.9702	-6.8988	8251
49.2365	130.3395	-86.1455	-2.9182	8252
49.2554	135.6135	-86.1268	2.3580	8253
49.4804	139.9404	-85.9019	6.6867	8254
49.7503	144.0244	-85.5921	10.7725	8255
50.3474	147.0554	-85.0350	13.8049	8256
51.2764	151.9300	-84.1059	18.6816	8257
51.9293	154.7972	-83.4529	21.5501	8258
52.8569	157.9174	-82.5252	24.6718	8259
54.4158	163.0151	-80.9660	29.7719	8260
56.2798	167.5418	-79.1016	34.3008	8261
59.2373	173.6125	-76.1434	40.3746	8262
62.3512	179.0687	-73.0287	45.8336	8263
66.4889	184.9446	-68.8900	51.7127	8264
68.7658	187.9384	-66.6125	54.7081	8265
69.6397	189.0134	-65.7383	55.7838	8266
72.0607	191.6675	-63.3167	58.4394	8267
74.6594	194.4146	-60.7172	61.1881	8268
76.7864	196.4937	-58.5896	63.2685	8269
81.8463	200.7540	-53.5283	67.5314	8270
87.7667	205.1148	-47.6062	71.8951	8271
95.3717	209.5872	-39.9989	76.3708	8272

TABLE 3  
LIMB MEASURES AND RESULTS

OBSERVED		REDUCED		SER.
x	y	x	y	
YERKES PHOTOGRAPH No. 753				
144.4186	56.8086	28.3543	-79.5669	8302
147.0333	57.8188	31.0120	-78.5603	8303
148.8201	58.5328	32.8009	-77.8488	8304
151.2351	59.6126	35.2190	-76.7723	8305
152.5937	60.3468	36.5796	-76.0358	8306
154.5267	61.3047	38.5152	-75.0845	8307
156.8675	62.5901	40.8594	-73.8022	8308
158.3786	63.3702	42.3726	-73.0241	8309
161.7545	65.4630	45.7539	-70.9357	8310
166.4623	68.7134	50.4698	-67.6912	8311
168.0768	69.9835	52.0874	-66.4231	8312
170.2448	71.8575	54.2598	-64.5516	8313
173.8322	74.9187	57.8545	-61.4947	8314
175.9391	76.9866	59.9662	-59.4292	8315
177.9964	79.1962	62.0285	-57.2219	8316
179.3144	80.6301	63.3457	-55.7894	8317
180.4314	81.9251	64.4696	-54.4956	8318
182.8683	84.9954	66.9133	-51.4278	8319
185.4722	88.4937	69.5248	-47.9321	8320
187.7180	92.0258	71.7782	-44.4020	8321
189.6078	95.1737	73.6747	-41.2557	8322
190.6458	96.9317	74.7164	-39.4986	8323
192.3697	100.3864	76.4475	-36.0451	8324
193.6195	103.2768	77.7032	-33.1554	8325
195.2275	107.2388	79.3192	-29.1943	8326
197.4094	114.0400	81.5147	-22.3936	8327
198.7526	120.3594	82.8703	-16.0737	8328
199.1976	122.9330	83.3202	-13.4997	8329
199.6826	125.3680	83.8100	-11.0645	8330
199.8737	127.1050	84.0044	-9.3271	8331
199.9836	128.4840	84.1169	-7.9477	8332
200.0007	130.7780	84.1382	-5.6528	8333
200.0636	133.5471	84.2063	-2.8826	8334
200.0337	139.1993	84.1869	2.7720	8335
199.3608	147.4284	83.5290	11.0055	8336
199.1517	149.3868	83.3234	12.9650	8337
199.0037	150.5888	83.1776	14.1677	8338
198.7038	152.2778	82.8807	15.8579	8339
198.5587	153.0966	82.7370	16.6773	8340
196.6404	160.5544	80.8317	24.1411	8341
195.4064	164.5967	79.6047	28.1870	8342
192.2609	172.2610	76.4720	35.8593	8343
186.7912	182.1282	71.0182	45.7390	8344
181.5230	189.4500	65.7613	53.0719	8345
177.4888	194.1089	61.7339	57.7390	8346
172.7827	198.8236	57.0345	62.4628	8347
167.9311	202.8504	52.1882	66.4988	8348
163.2031	206.2701	47.4645	69.9272	8349
162.5091	206.6201	46.7708	70.2784	8350
158.3449	209.2348	42.6096	72.9006	8351
153.2387	211.8775	37.5061	75.5523	8352
148.1822	214.1649	32.4516	77.8484	8353
143.3180	216.0477	27.5887	79.7395	8354
139.0278	217.3924	23.2991	81.0913	8355
136.8036	218.0471	21.0752	81.7497	8356
131.5455	219.1789	15.8168	82.8901	8357

(CONTINUED)

TABLE 3  
LIMB MEASURES AND RESULTS

OBSERVED		REDUCED		SER.
x	y	x	y	
YERKES PHOTOGRAPH No. 898 (CONTINUED)				
206.9015	150.6359	84.9465	26.5245	8424
205.9864	152.8948	84.0575	28.7948	8425
204.6575	156.3038	82.7679	32.2204	8426
202.5134	161.2966	80.6813	37.2398	8427
200.7942	164.9089	75.0036	40.8733	8428
198.9402	168.3982	77.1897	44.3853	8429
195.6860	173.3516	73.9923	49.3779	8430
193.9331	175.7915	72.2673	51.8389	8431
190.3874	180.3184	68.7733	56.4083	8432
188.8324	181.9674	67.2371	58.0758	8433
188.6425	182.2593	67.0506	58.3699	8434
183.7267	187.4926	62.1944	63.6617	8435
179.9966	190.8828	58.5027	67.0960	8436
176.3455	193.7597	54.5081	70.0158	8437
170.4190	197.9393	49.0047	74.2650	8438
160.6378	203.4218	39.2848	79.8617	8439
151.5124	207.2391	30.2014	83.7850	8440
147.9773	208.2799	26.6775	84.8667	8441
YERKES PHOTOGRAPH No. 910				
183.5994	47.7131	51.0955	-74.4837	8481
188.4667	51.1788	55.9628	-71.0142	8482
192.4543	54.5460	59.9501	-67.6436	8483
196.8384	58.8208	64.3338	-63.3647	8484
200.2017	62.4005	67.6965	-59.7818	8485
205.2725	68.6313	72.7662	-53.5456	8486
209.7121	75.2341	77.2044	-46.9375	8487
212.3441	79.8157	79.8353	-42.3524	8488
216.0522	87.6889	83.5412	-34.4736	8489
219.1507	96.5455	86.6370	-25.6110	8490
221.7494	108.1243	89.2317	-14.0251	8491
222.3454	112.4003	89.8261	-9.7466	8492
222.8733	120.6918	90.3508	-1.4505	8493
222.6642	128.2312	90.1385	6.0927	8494
221.7101	137.3780	89.1804	15.2440	8495
218.9100	148.9075	86.3748	26.7783	8496
216.2521	155.8033	83.7133	33.6767	8497
209.9068	168.9328	77.3608	46.8105	8498
201.2519	180.7559	68.6986	58.6362	8499
192.9236	189.4325	60.3644	67.3139	8500
174.7576	202.0383	42.1880	79.9189	8501
184.5364	48.2270	52.0326	-73.9692	8502
189.3747	52.0907	56.8707	-70.1014	8503
192.9747	54.9351	60.4705	-67.2541	8504
197.3334	59.2197	64.8287	-62.9654	8505
201.2925	63.6476	68.7872	-58.5336	8506
205.6265	69.1073	73.1202	-53.0692	8507
210.3282	76.1010	77.8203	-46.0699	8508
213.0363	81.2409	80.5271	-40.9262	8509
216.3162	88.4099	83.8050	-33.7521	8510
219.8675	99.1325	87.3529	-23.0224	8511
221.8644	109.1773	89.3463	-12.5715	8512
222.6043	114.1184	90.0844	-8.0275	8513
222.8292	122.6352	90.3059	0.4939	8514
222.5262	130.8202	89.9994	8.6830	8515
221.3141	138.9090	88.7837	16.7756	8516
218.6240	149.6975	86.0884	27.5687	8517
215.0570	158.6282	82.5167	36.5026	8518
208.0779	171.7988	75.5302	49.6772	8519
198.9448	183.3073	66.3898	61.1880	8520
189.9408	191.9643	57.3797	69.8458	8521
169.6641	204.6011	37.0920	82.4809	8522
222.2881	133.4320	89.7602	11.2961	8523
220.8521	141.3600	88.3205	19.2277	8524
185.3614	48.8410	52.8576	-73.3545	8525
190.2464	52.7472	57.7424	-69.4442	8526
194.2347	56.1430	61.7304	-66.0450	8527
197.5626	59.4927	65.0579	-62.6922	8528
202.8807	65.6046	70.3750	-56.5749	8529
207.1866	71.3703	74.6798	-50.8044	8530
213.8362	82.9804	81.3265	-39.1854	8531
217.1213	90.3859	84.6095	-31.7747	8532
220.6365	102.3095	88.1208	-19.8434	8533
221.9984	110.0713	89.4800	-12.0770	8534
222.7894	116.3014	90.2686	-5.8433	8535
222.8842	123.1562	90.3607	1.0152	8536
218.2360	150.6385	85.6999	28.5100	8537
213.8701	161.2862	81.3284	39.1615	8538
210.7042	176.7850	78.1962	-45.3854	8539
206.1621	174.4841	73.6128	52.3631	8540
197.9838	184.3753	65.4281	62.2562	8541
186.5111	194.5362	53.9479	72.4177	8542

(CONTINUED)

TABLE 3  
LIMB MEASURES AND RESULTS

OBSERVED		REDUCED		SER.
x	y	x	y	
YERKES PHOTOGRAPH No. 910 (CONTINUED)				
163.0701	207.2297	30.4950	85.1082	8543
186.4084	49.4969	53.9046	-72.6978	8544
191.0874	53.3841	58.5833	-68.8067	8545
195.3447	57.2949	62.8402	-64.8920	8546
197.8606	59.7427	65.3559	-62.4419	8547
204.4555	67.5143	71.9495	-54.6635	8548
207.6263	72.0205	75.1193	-50.1537	8549
211.1930	77.8077	78.6847	-44.3619	8550
215.1743	85.5773	82.6640	-36.5866	8551
217.4223	91.2349	84.9103	-30.9251	8552
221.3655	105.5799	88.8487	-16.5710	8553
222.1854	110.7733	89.6668	-11.3745	8554
222.8654	117.2714	90.3443	-4.8727	8555
222.9232	124.5012	90.3991	2.3609	8556
222.2291	134.2550	89.7008	12.1195	8557
220.3010	143.9030	87.7602	21.7718	8558
217.9220	151.5125	85.3854	29.3843	8559
212.6190	163.9406	80.0758	41.8167	8560
205.5381	175.4431	72.9802	53.3224	8561
197.5208	184.9223	64.9647	62.8033	8562
183.0941	197.0070	50.5250	74.8883	8563
160.8399	208.0493	28.2039	85.9273	8564
221.4655	106.2999	88.9485	-15.8506	8565
222.2904	112.0303	89.7712	-10.1168	8566
222.8043	119.6608	90.2822	-2.4821	8567
222.7853	126.2602	90.2605	4.1207	8568
221.9801	135.9020	89.4511	13.7673	8569
219.6860	146.5780	87.1520	24.4479	8570
217.2581	153.2043	84.7207	31.0767	8571
211.3419	166.4134	78.7974	44.2903	8572
203.4010	178.0901	70.8494	55.9699	8573
195.6817	186.8042	63.1243	64.6854	8574
179.0660	199.5646	46.4987	77.4456	8575
159.2579	208.3983	26.6813	86.2758	8576

YERKES PHOTOGRAPH No. 958

80.9552	54.4782	-54.8677	-76.5549	8621
77.9322	56.5834	-57.8676	-74.4140	8622
75.6989	58.3176	-60.0819	-72.6533	8623
73.3288	60.1888	-62.4314	-70.7538	8624
70.8644	62.4881	-64.8705	-68.4248	8625
69.0362	64.3389	-66.6782	-66.5518	8626
68.3032	65.1280	-67.4025	-65.7538	8627
65.9591	67.4692	-69.7207	-63.3841	8628
64.3648	69.1040	-71.2970	-61.7300	8629
62.8388	71.0300	-72.8016	-59.7850	8630
60.8873	73.5310	-74.7254	-57.2598	8631
57.9961	77.5290	-77.5722	-53.2255	8632
55.3805	81.7192	-80.1411	-49.0019	8633
51.6059	88.1938	-83.8436	-42.4786	8634
49.0188	93.2826	-86.3739	-37.3558	8635
47.6028	96.2856	-87.7564	-34.3339	8636
46.9926	97.9388	-88.3481	-32.6722	8637
46.2837	99.3588	-89.0412	-31.2429	8638
45.2576	102.7982	-90.0287	-27.7885	8639
43.6516	107.9067	-91.5775	-22.6568	8640
42.9567	110.5617	-92.2424	-19.9712	8641
42.5485	113.0515	-92.6229	-17.4943	8642
42.2427	114.8146	-92.9089	-15.7259	8643
41.5526	118.7779	-93.5545	-11.7507	8644
41.0236	124.2642	-94.0218	-6.2527	8645
40.7756	127.9812	-94.2279	-2.5290	8646
40.7326	133.3092	-94.2109	2.8051	8647
40.8346	136.3292	-94.0748	5.8272	8648
40.9995	138.0181	-93.8908	7.5161	8649
41.1176	139.8591	-93.7520	9.3577	8650
41.3406	142.0691	-93.5040	11.5676	8651
41.9326	146.8500	-92.8580	16.3471	8652
42.5424	150.1525	-92.2108	19.6463	8653
43.1003	152.6216	-91.6250	22.1119	8654
43.4783	154.1486	-91.2257	23.6363	8655
44.2644	157.0396	-90.4108	26.5217	8656
45.0922	159.6667	-89.5532	29.1425	8657
46.2562	163.3073	-88.3479	32.7741	8658
47.3882	166.2393	-87.1815	35.7968	8659
50.3101	172.7626	-84.1865	42.1946	8660
51.9521	175.9337	-82.5084	45.3509	8661
53.5016	178.8377	-80.9258	48.2408	8662
56.9705	184.3585	-77.3939	53.7291	8663
58.8390	186.9155	-75.4962	56.2682	8664

(CONTINUED)

TABLE 3  
LIMB MEASURES AND RESULTS

OBSERVED		REDUCED		SER.
x	y	x	y	
YERKES PHOTOGRAPH No. 958 (CONTINUED)				
61.3689	190.2263	-72.9284	59.5545	8665
65.8835	195.5765	-68.3525	64.8605	8666
69.0554	198.7660	-65.1439	68.0183	8667
74.5381	203.7060	-59.6043	72.9029	8668
81.2609	208.8191	-52.8223	77.5470	8669
83.6768	210.4780	-50.3872	75.5810	8670
89.2345	213.8701	-44.7900	82.9152	8671
95.9785	217.2851	-38.0060	86.2592	8672
101.3884	219.5302	-32.5695	88.4468	8673
110.9235	222.5470	-22.9983	91.3613	8674
119.9265	224.4891	-13.9713	93.2059	8675
121.9285	224.8061	-11.9653	93.5010	8676

YERKES PHOTOGRAPH No. 1158

198.4913	57.7325	68.0311	-65.7725	8719
199.5034	58.8425	69.0357	-64.6547	8720
200.3764	59.8624	69.9018	-63.6279	8721
201.0924	60.6944	70.6122	-62.7903	8722
202.0304	61.7603	71.5431	-61.7171	8723
202.8934	62.6644	72.4000	-60.8064	8724
203.4534	63.3604	72.9553	-60.1060	8725
204.1024	64.1784	73.5988	-59.2828	8726
204.6504	64.7863	74.1427	-58.6706	8727
205.4965	65.8313	74.9817	-57.6189	8728
206.7833	67.5662	76.2567	-55.8735	8729
207.9950	69.2103	77.4572	-54.2195	8730
209.0930	70.7673	78.5445	-52.6535	8731
210.3399	72.6559	79.7785	-50.7544	8732
211.1539	73.9698	80.5835	-49.4335	8733
211.7849	74.9708	81.2076	-48.4271	8734
212.3640	76.0218	81.7794	-47.3710	8735
212.9562	76.5569	82.3652	-46.4308	8736
213.4800	77.0756	82.8827	-45.5075	8737
213.9920	78.7056	83.3889	-44.6731	8738
214.6041	79.8436	83.9932	-43.5296	8739
215.3541	81.3096	84.7330	-42.0567	8740
215.7901	82.0916	85.1636	-41.2709	8741
216.2260	83.1041	85.5924	-40.2541	8742
217.0371	84.9470	86.3907	-38.4034	8743
217.7847	86.3832	87.1283	-36.5604	8744
218.7656	88.6598	88.0934	-34.6742	8745
219.5556	90.8588	88.8679	-32.4669	8746
220.3365	92.8463	89.6349	-30.4715	8747
220.8745	94.5343	90.1610	-28.7776	8748
221.2245	95.6202	90.5034	-27.6878	8749
221.4925	96.3682	90.7661	-26.9370	8750
221.8714	97.6793	91.1358	-25.6215	8751
222.3654	99.2003	91.6191	-24.0951	8752
223.0115	102.1314	92.2444	-21.1553	8753
223.8495	106.3129	93.0527	-16.9620	8754
224.1084	107.6313	93.3022	-15.6398	8755
224.3224	108.5753	93.5095	-14.6890	8756
224.6054	110.2553	93.7806	-13.0086	8757
224.7004	111.1793	93.8650	-12.0825	8758
224.9913	113.6702	94.1421	-9.5858	8759
225.0053	114.7332	94.1484	-8.5209	8760
225.0073	115.7022	94.1434	-7.5503	8761
225.0523	117.8195	94.1732	-5.4292	8762
225.2803	121.5404	94.3744	-1.7009	8763
225.3003	124.2719	94.3748	1.0353	8764
225.2383	127.0919	94.2924	3.8596	8765
225.0573	130.5629	94.0863	7.3352	8766
224.9242	132.8699	93.9364	9.6452	8767
224.6912	134.9569	93.6883	11.7343	8768
224.7163	135.7399	93.7077	12.5188	8769
224.6143	136.3589	93.6012	13.1382	8770
224.5142	137.6179	93.4920	14.3987	8771
224.3822	138.2859	93.3551	15.0670	8772
224.2512	139.4799	93.2154	16.2622	8773
223.8303	141.6069	92.7789	18.3902	8774
223.0412	145.1859	91.9636	21.5704	8775
222.7733	146.3849	91.6869	23.1698	8776
222.0031	149.0982	90.8967	25.8831	8777
220.8571	152.9282	89.7225	29.7126	8778
220.2721	154.6432	89.1248	31.4270	8779
219.0650	158.1752	87.8916	34.5577	8780
218.7560	158.9482	87.5768	35.7301	8781
218.2300	160.3252	87.0456	37.1063	8782
217.6201	161.6611	86.4207	38.4408	8783
217.4823	162.0839	86.2798	38.8635	8784
217.0762	163.0134	85.8668	39.7921	8785
215.6613	165.8844	84.4304	42.6595	8786

(CONTINUED)

TABLE 3

LIMB MEASURES AND RESULTS

OBSERVED		REDUCED		SER.
x	y	x	y	
YERKES PHOTOGRAPH No. 1158 (CONTINUED)				
214.3613	168.5339	83.1106	45.3056	8787
212.6304	171.4788	81.3575	48.2452	8788
210.5032	174.5710	79.2039	51.7306	8789
208.0362	178.5320	76.7099	55.2828	8790
205.2134	182.4528	73.8573	59.1934	8791
203.1914	184.8893	71.8166	61.6220	8792
201.4232	186.8831	70.0331	63.6086	8793
198.9082	189.5675	67.4974	66.2826	8794
198.4202	190.0445	67.0057	66.7575	8795
197.0280	191.4275	65.6027	68.1345	8796
196.1060	192.3104	64.6738	69.0134	8797
193.4521	194.7795	62.0007	71.4709	8798
189.8673	197.5970	58.3936	74.2719	8799
188.0453	198.9499	56.5609	75.6162	8800

TABLE 3

LIMB MEASURES AND RESULTS

OBSERVED		REDUCED		SER.
x	y	x	y	
YERKES PHOTOGRAPH No. 1190 (CONTINUED)				
45.7302	140.3338	-92.6518	10.3266	8908
45.8342	140.9628	-92.5585	10.9579	8909
45.9712	141.7088	-92.4342	11.7069	8910
46.2652	143.7728	-92.1754	13.7776	8911
46.4642	144.8288	-91.9945	14.8379	8912
46.6442	145.7118	-91.8295	15.7248	8913
47.1811	148.0014	-91.3316	18.0256	8914
47.3651	149.0384	-91.1653	19.0666	8915
47.9871	152.0784	-90.5951	22.1199	8916
48.8101	154.8626	-89.8195	24.9207	8917

YERKES PHOTOGRAPH No. 1190

69.2365	65.6915	-67.8652	-63.9595	8844
67.4922	67.5916	-69.6423	-62.0886	8845
66.1531	69.2466	-71.0100	-60.4559	8846
64.9921	70.6916	-72.1959	-59.0302	8847
64.0600	71.8766	-73.1484	-57.8607	8848
63.4858	72.6754	-73.7364	-57.0714	8849
62.7878	73.0804	-74.4539	-55.9498	8850
62.0626	75.0095	-75.1998	-54.7606	8851
61.4656	75.7416	-75.8094	-54.0384	8852
60.9325	76.5886	-76.3571	-53.2001	8853
59.5903	78.5816	-77.7336	-51.2292	8854
59.0033	79.4276	-78.3352	-50.3929	8855
58.5343	80.1126	-78.8160	-49.7156	8856
57.6663	81.7956	-79.7130	-48.0466	8857
56.5206	83.7514	-80.8923	-46.1094	8858
54.8036	87.0585	-82.6662	-42.8300	8859
53.6365	89.4233	-83.8740	-40.4839	8860
53.0445	90.5823	-84.4859	-39.3345	8861
52.7805	91.2723	-84.7617	-38.6486	8862
52.1918	92.5443	-85.3723	-37.3860	8863
51.7888	93.6023	-85.7935	-36.3342	8864
51.3059	94.8463	-86.2977	-35.0978	8865
50.8599	95.7783	-86.7597	-34.1729	8866
50.5049	96.7183	-87.1309	-33.2384	8867
50.2369	97.4113	-87.4108	-32.5496	8868
49.6427	98.9705	-88.0317	-30.9997	8869
48.8197	101.4795	-88.8978	-28.5032	8870
48.6337	102.2035	-89.0962	-27.7819	8871
48.4537	103.4549	-89.2976	-26.5327	8872
48.1737	104.3699	-89.5933	-25.6220	8873
47.9977	105.0259	-89.7805	-24.9686	8874
47.7137	106.0769	-90.0826	-23.9218	8875
47.5097	106.6879	-90.2970	-23.3139	8876
47.4007	107.4779	-90.4196	-22.5252	8877
47.1436	108.3394	-90.6914	-21.6676	8878
47.0016	109.1874	-90.8480	-20.8214	8879
46.5866	111.4104	-91.3010	-18.6040	8880
46.3415	113.3103	-91.5786	-16.7069	8881
45.7925	117.1483	-92.1933	-12.8757	8882
45.6694	117.7465	-92.3267	-12.2792	8883
45.5484	118.6415	-92.4630	-11.3856	8884
45.3764	119.4115	-92.6482	-10.6180	8885
45.2934	120.1485	-92.7438	-9.8819	8886
45.3404	121.1545	-92.7140	-8.8743	8887
45.2944	121.8025	-92.7711	-8.2266	8888
45.1634	123.8819	-92.9376	-6.1479	8889
45.0614	124.7639	-92.9054	-5.2670	8890
45.0934	125.8589	-93.0414	-4.1707	8891
45.0994	126.6609	-93.0491	-3.3679	8892
44.9714	127.2979	-93.1880	-2.7327	8893
45.0723	128.1379	-93.1015	-1.8903	8894
45.0563	128.5899	-93.1252	-1.4382	8895
45.0373	129.2679	-93.1558	-0.7600	8896
45.0843	129.7199	-93.1165	-0.3069	8897
45.0453	130.2569	-93.1647	0.2299	8898
45.0443	130.9789	-93.1780	0.9524	8899
45.1383	132.2839	-93.1063	2.2601	8900
45.1883	133.5199	-93.0774	3.4979	8901
45.2003	134.5499	-93.0830	4.5289	8902
45.2603	135.6729	-93.0422	5.6538	8903
45.4023	136.8069	-92.9155	6.7912	8904
45.4082	138.2758	-92.9387	8.2613	8905
45.5352	139.2278	-92.8279	9.2163	8906
45.6542	139.8698	-92.7199	9.8609	8907

(CONTINUED)

YERKES PHOTOGRAPH No. 1288

202.1366	77.8115	79.7772	-47.2139	8945
203.6389	80.3636	81.2628	-44.6490	8946
204.1969	81.4936	81.8134	-43.5140	8947
205.1318	83.1690	82.7373	-41.8306	8948
205.8039	84.4460	83.4010	-40.5477	8949
206.6099	85.9640	84.1971	-39.0226	8950
207.4969	87.9866	85.0707	-36.9919	8951
208.4648	90.1107	86.0246	-34.8591	8952
209.3499	92.4637	86.8942	-32.4976	8953
210.2298	94.8081	87.7586	-30.1448	8954
211.1149	97.2611	88.6276	-27.6833	8955
212.0918	100.6981	89.5817	-24.2361	8956
212.7990	103.3687	90.2712	-21.5579	8957
213.3871	105.4167	90.8457	-19.5038	8958
213.9830	108.2891	91.4226	-16.6244	8959
214.2821	110.4992	91.7070	-14.4100	8960
214.7000	113.7791	92.1030	-11.1238	8961
215.0001	115.9382	92.3888	-8.5604	8962
215.1981	117.4942	92.5764	-7.4014	8963
215.3501	119.6786	92.7539	-5.2135	8964
215.4052	122.3747	92.7509	-2.5144	8965
215.3061	124.4102	92.6382	-0.4775	8966
215.2612	127.4502	92.5729	2.5654	8967
214.9232	133.2783	92.1959	8.3973	8968
214.1692	139.5596	91.3997	14.6801	8969
213.9093	141.6776	91.1256	16.7985	8970
213.5953	143.7476	90.7977	18.8686	8971
213.3053	145.2767	90.4974	20.3973	8972
212.4571	148.6120	89.6267	23.7303	8973
211.5512	151.7511	88.6996	26.8666	8974
210.7341	154.2740	87.8654	29.3866	8975
208.1821	161.1810	85.2666	36.2835	8976
205.0963	168.0109	82.1344	43.0997	8977
203.0483	171.9099	80.0599	46.9889	8978
202.1921	173.2512	79.1945	48.3258	8979
200.4811	176.0222	77.4646	51.0882	8980
196.0738	182.2413	73.0147	57.2839	8981
192.9627	186.1248	69.8769	61.1505	8982
190.8179	188.5811	67.7152	63.5948	8983
189.3619	190.1580	66.2483	65.1635	8984
184.4291	194.7910	61.2834	69.7680	8985
182.4950	196.4749	59.3376	71.4406	8986
177.5109	200.3726	54.3262	75.3086	8987
173.7523	202.7565	50.5508	77.6696	8988
168.8548	205.8122	45.6318	80.6953	8989
167.7488	206.4612	44.5212	81.3375	8990
166.2798	207.1981	43.0469	82.0653	8991
163.6717	208.5419	40.4292	83.3928	8992

TABLE 3  
LIMB MEASURES AND RESULTS

OBSERVED		REDUCED		SER.
x	y	x	y	
YERKES PHOTOGRAPH No. 1348				
101.1069	53.3192	-57.3475	-66.13C1	9018
98.5960	55.6505	-59.8311	-63.7684	9019
96.1795	57.9517	-62.22C7	-61.4380	9020
94.2416	59.8689	-64.1361	-59.4973	9021
92.9396	61.0910	-65.4238	-58.2595	9022
91.2230	62.8941	-67.1193	-56.4355	9023
90.3101	63.9082	-68.02C3	-55.41C3	9024
89.8671	64.42C2	-68.4573	-54.8929	9025
89.6051	64.8032	-68.7147	-54.5067	9026
88.3221	66.6083	-69.9764	-52.6858	9027
86.3876	65.30C6	-71.8791	-49.9698	9028
85.2626	70.9456	-72.9847	-48.31C9	9029
83.6704	73.2515	-74.5497	-45.9854	9030
83.1034	74.0375	-75.1074	-45.1925	9031
82.0280	75.8607	-76.1612	-43.3559	9032
81.0440	77.4668	-77.1262	-41.7377	9033
79.8348	79.7898	-78.3078	-39.3996	9034
78.8307	81.9749	-79.2860	-37.2018	9035
77.9946	83.9227	-80.0989	-35.2434	9036
77.4956	84.8930	-80.5864	-34.2669	9037
75.7805	88.9689	-82.2530	-30.1692	9038
75.3145	90.5879	-82.6997	-28.5441	9039
74.5523	92.6751	-83.4370	-26.4471	9040
73.6123	95.6261	-84.3418	-23.4839	9041
73.1030	97.6495	-84.8270	-21.4537	9042
72.4492	99.9877	-85.4529	-19.1069	9043
71.6071	103.7523	-86.25C0	-15.33C9	9044
71.4320	104.5203	-86.4159	-14.56C6	9045
71.0400	107.1193	-86.7768	-11.9559	9046
70.8519	108.3579	-86.95C0	-10.7146	9047
70.5588	110.1139	-87.2221	-8.9544	9048
70.4908	111.6869	-87.2712	-7.38C0	9049
70.3165	114.4657	-87.4122	-4.5980	9050
70.1815	115.6177	-87.5333	-3.4440	9051
70.0955	116.7617	-87.6056	-2.2985	9052
70.0594	117.8768	-87.6283	-1.1825	9053
70.1404	119.1338	-87.5322	C.0741	9054
70.1233	119.8658	-87.5405	C.8065	9055
70.1033	121.5078	-87.54C8	2.4495	9056
70.1372	122.83C0	-87.4910	3.7718	9057
70.1582	123.6760	-87.4598	4.6179	9058
70.1481	124.791C	-87.4565	5.7335	9059
70.3031	126.0370	-87.2865	6.9782	9060
70.3151	127.2970	-87.2593	8.2385	9061
70.5580	128.8140	-86.9981	9.7533	9062
70.6599	129.6700	-86.8859	1C.6085	9063
70.7759	131.0879	-86.7528	12.0256	9064
70.8609	131.9449	-86.6575	12.8819	9065
71.2007	134.2409	-86.29C0	15.1749	9066
71.4397	135.8679	-86.0313	16.7998	9067
71.6597	136.8369	-85.7996	17.7666	9068
72.0405	138.4885	-85.3988	19.4144	9069
72.5207	140.4793	-84.8946	21.40C4	9070
72.8117	141.9232	-84.5861	22.8415	9071
73.3216	143.7492	-84.0541	24.6623	9072
73.6326	144.7172	-83.7314	25.6270	9073
74.8314	148.3239	-82.4889	29.2211	9074
75.0494	149.2839	-82.2592	30.1790	9075
75.6764	150.7879	-81.6140	31.6762	9076
76.1214	152.0278	-81.1539	32.9114	9077
77.2052	154.5553	-80.0394	35.4273	9078
78.7400	157.9945	-78.4628	38.8499	9079
80.3409	161.0845	-76.8243	41.9224	9080
82.6032	165.1150	-74.5128	45.9281	9081
84.8191	168.7628	-72.2524	49.5514	9082
85.8491	170.2168	-71.2046	50.9939	9083
87.5324	172.7035	-69.4909	53.4619	9084
89.1794	174.7655	-67.8186	55.5055	9085
91.3114	177.3785	-65.6546	58.0946	9086
94.0150	180.2846	-62.9152	60.9702	9087
94.8180	181.0336	-62.1029	61.7101	9088

TABLE 3  
LIMB MEASURES AND RESULTS

OBSERVED		REDUCED		SER.
x	y	x	y	
YERKES PHOTOGRAPH No. 1502				
175.5736	58.6300	47.9924	-70.6975	9124
177.4266	59.8609	49.84C9	-69.4581	9125
177.9476	60.27C9	50.36C4	-69.0456	9126
180.6394	62.5106	53.0439	-66.7933	9127
182.9465	64.5205	55.3434	-64.7725	9128
186.0995	67.1403	58.4867	-62.1379	9129
188.9218	69.87C2	61.2987	-59.3946	9130
192.8113	74.37C7	65.1710	-54.8753	9131
199.7C15	83.4306	72.0262	-45.7815	9132
206.3118	95.9605	78.5871	-33.2173	9133
211.0949	110.8103	83.31C8	-18.3104	9134
211.7228	114.0702	83.9255	-15.0760	9135
212.2589	117.0203	84.4896	-12.1220	9136
212.9354	136.79C6	85.0451	7.66C1	9137
211.3154	147.49C7	83.38C6	18.3581	9138
197.6085	178.55C4	69.5166	49.3731	9139
193.6052	183.8509	65.5152	54.6587	9140
180.9766	196.38C1	52.8310	67.1393	9141
152.7110	211.06C6	24.4958	81.7047	9142
152.0488	211.32C3	23.8323	81.9616	9143
149.3787	212.03C2	21.1585	82.66C3	9144
135.9C39	214.3603	7.6697	84.9334	9145
127.8887	214.86C0	-0.3502	85.3988	9146
182.8275	64.3835	55.225C	-64.51C1	9147
183.7635	65.0135	56.1587	-64.2758	9148
189.3898	70.3232	61.7650	-58.9394	9149
191.6607	72.9636	64.0258	-56.2880	9150
192.2447	73.7136	64.6C69	-55.5351	9151
193.5923	75.2837	65.9485	-53.5585	9152
194.8214	76.7336	67.1720	-52.5C26	9153
195.7862	77.9C32	68.1323	-51.3283	9154
200.6525	84.8836	72.9715	-44.3237	9155
202.9247	88.8932	75.2280	-40.3025	9156
203.9738	90.9032	76.2692	-38.2870	9157
204.7559	92.4632	77.0451	-36.7229	9158
206.0627	95.2535	78.34C9	-33.9257	9159
206.8C48	96.9735	79.0761	-32.2017	9160
207.1626	97.9333	79.43C1	-31.24C0	9161
212.9232	122.2339	85.0927	-6.9034	9162
212.2793	142.2636	84.3663	13.1328	9163
201.7026	172.2239	73.6630	43.0613	9164
199.7555	175.5234	71.7C17	46.3539	9165
174.4146	57.5761	46.8357	-71.3567	9166
189.7608	70.7663	62.1343	-58.4945	9167
190.2889	71.3363	62.66C2	-57.9219	9168
198.9825	82.3162	71.3115	-46.8995	9169
206.7358	96.6865	79.0083	-32.4892	9170
211.1629	111.1863	83.3772	-17.9636	9171
212.6852	120.6869	84.8610	-8.4521	9172
213.1283	126.0C65	85.2824	-3.1281	9173
213.1933	127.0165	85.3432	-2.1174	9174
213.0724	135.0266	85.1894	5.8959	9175
211.1593	148.3362	83.22C9	19.2034	9176
210.9763	149.0962	83.0348	19.5629	9177
210.1214	152.3463	82.1662	23.2108	9178
207.7963	158.9962	79.8130	29.8538	9179
206.5218	162.1961	78.5250	33.0497	9180
173.1691	201.8466	44.9985	72.5746	9181
145.8763	212.9469	17.6512	83.5624	9182
132.8C78	214.6963	4.5712	85.2562	9183
123.9475	214.8169	-4.2925	85.3387	9184
179.6306	61.5288	52.0388	-67.7759	9185
181.0804	62.9586	53.4832	-66.3432	9186
195.5512	77.6683	67.8982	-51.5643	9187
199.3445	82.9486	71.671C	-46.2653	9188
200.0375	84.0186	72.3599	-45.1918	9189
200.4505	84.5486	72.77C8	-44.6558	9190
205.7227	94.5685	78.0036	-34.6125	9191
208.7118	102.2585	80.9620	-26.5C61	9192
210.8C19	109.6483	83.0224	-19.5C39	9193
211.9449	115.1983	84.1430	-13.9464	9194
211.9949	115.6783	84.1910	-13.4660	9195
212.6541	119.8389	84.8333	-9.30C6	9196
213.1512	127.8185	85.2978	-1.3152	9197
213.1533	132.6386	85.28C1	3.5071	9198
212.8534	138.2288	84.9571	9.0986	9199
212.5805	140.8188	84.6735	11.6886	9200
211.9273	144.1087	84.0066	14.9772	9201
210.9194	149.6482	82.9756	20.5149	9202
210.0013	152.6782	82.0447	23.5424	9203
209.6654	153.5782	81.7C50	24.4413	9204
203.6967	168.2880	75.6739	39.1322	9205
203.1207	169.3580	75.0932	40.24C2	9206

(CONTINUED)

TABLE 3

LIMB MEASURES AND RESULTS

OBSERVED		REDUCED		SER.
x	y	x	y	
YERKES PHOTOGRAPH No. 1502 (CONTINUED)				
202.6877	170.2680	74.6565	41.1087	9207
195.6043	181.2584	67.5256	52.0737	9208
150.3637	211.7783	22.1448	82.4126	9209
149.8607	211.8682	21.6413	82.5003	9210
148.8277	212.1882	20.6066	82.8160	9211
148.3447	212.2982	20.1230	82.9240	9212
144.7563	213.0889	16.5302	83.6996	9213
143.3533	213.2489	15.1261	83.8536	9214
140.3730	213.7886	12.1426	84.3807	9215
134.0969	214.5283	5.8614	85.0937	9216
133.7219	214.5283	5.4863	85.0921	9217
174.7926	58.2300	47.2128	-71.1011	9218
148.2247	212.3782	20.0027	83.0035	9219
YERKES PHOTOGRAPH No. 1579				
51.3585	104.3679	-83.5948	-29.1064	9263
50.7955	106.2959	-84.2055	-27.1794	9264
50.4855	107.2499	-84.5153	-26.2259	9265
50.1724	108.1414	-84.8360	-25.3349	9266
49.8604	109.4234	-85.1531	-24.0532	9267
49.5014	110.7904	-85.5175	-22.6865	9268
49.2844	111.9594	-85.7376	-21.9178	9269
49.0022	112.7293	-86.0244	-20.7481	9270
48.8762	113.4103	-86.1531	-20.0670	9271
48.6123	114.3783	-86.4208	-19.0993	9272
48.4413	115.2544	-86.5953	-18.2232	9273
48.2343	116.2274	-86.8061	-17.2502	9274
48.1083	117.0184	-86.9352	-16.4590	9275
47.8872	118.4316	-87.1619	-15.0455	9276
47.7102	119.2206	-87.3420	-14.2566	9277
47.4752	121.2556	-87.5850	-12.2207	9278
47.2922	122.2086	-87.7717	-11.2677	9279
47.2341	123.0620	-87.8332	-10.4138	9280
47.1791	124.0870	-87.8921	-9.3881	9281
47.0712	125.1440	-88.0042	-8.3306	9282
46.9972	125.6280	-88.0801	-7.8465	9283
46.8072	127.1200	-88.2759	-6.3539	9284
46.8071	127.7180	-88.2783	-5.7554	9285
46.7431	128.8110	-88.3466	-4.6617	9286
46.6941	130.3091	-88.4014	-3.1624	9287
46.6511	131.4081	-88.4487	-2.0626	9288
46.6351	132.2101	-88.4678	-1.2599	9289
46.6000	132.8991	-88.5055	-0.5074	9290
46.6510	133.7401	-88.4578	C.2716	9291
46.6671	135.2021	-88.4473	1.7350	9292
46.6561	135.6361	-88.4600	2.1693	9293
46.7561	137.4261	-88.3669	3.9614	9294
46.9440	139.6140	-88.1874	6.1522	9295
47.1600	142.0340	-87.9806	8.5754	9296
47.2759	142.9810	-87.8603	9.5238	9297
47.3510	143.8300	-87.7965	10.3739	9298
47.5280	145.3130	-87.6251	11.8590	9299
47.7970	147.0180	-87.3626	13.5668	9300
48.1999	149.2087	-86.9680	15.7613	9301
48.6189	151.6027	-86.5581	18.1594	9302
49.2079	154.0589	-85.9784	20.6205	9303
50.0289	157.2899	-85.1695	23.8581	9304
50.8797	160.0802	-84.3292	26.6548	9305
51.7007	162.6768	-83.5179	29.2575	9306
52.6094	165.1498	-82.6183	31.7368	9307
53.4334	166.9958	-81.8011	33.5882	9308
54.0303	168.3635	-81.2093	34.9598	9309
54.3933	169.2935	-80.8497	35.8923	9310
55.5273	171.8246	-79.7250	38.4308	9311
56.0012	172.7883	-79.2547	39.3975	9312
57.0552	174.8263	-78.2081	41.4421	9313
58.4048	177.3353	-76.8677	43.9594	9314
59.1887	178.6274	-76.0884	45.2562	9315
60.1177	180.2494	-75.1653	46.8839	9316
61.2087	181.8135	-74.0759	48.4543	9317
63.9004	185.6093	-71.4018	52.2656	9318
66.7722	189.2173	-68.5428	55.8857	9319
69.0612	191.9893	-66.2635	58.6745	9320
72.1701	195.2646	-63.1660	61.9668	9321
75.8829	198.7320	-59.4651	65.4540	9322
79.5829	201.9579	-55.7761	68.6993	9323
80.6858	202.8300	-54.6761	69.5772	9324
82.8006	204.5039	-52.5669	71.2621	9325
86.8566	207.2580	-48.5199	74.0368	9326
92.2434	210.3703	-43.1429	77.1761	9327
98.8073	213.6354	-36.5889	80.4735	9328
107.1814	216.8665	-28.2239	83.7451	9329

TABLE 3

LIMB MEASURES AND RESULTS

OBSERVED		REDUCED		SER.
x	y	x	y	
YERKES PHOTOGRAPH No. 1638				
128.4560	52.2753	-8.2692	-87.8552	9365
127.6230	52.4504	-9.1007	-87.6719	9366
126.9709	52.6546	-9.7509	-87.4612	9367
126.2819	52.7436	-10.4392	-87.3654	9368
125.3299	52.8647	-11.3903	-87.2349	9369
122.9809	53.1869	-13.7367	-86.8896	9370
122.1151	53.1608	-14.6029	-86.9072	9371
120.8591	53.3069	-15.8578	-86.7488	9372
119.9301	53.4650	-16.7855	-86.5815	9373
118.4691	53.8461	-18.2431	-86.1860	9374
117.1411	54.1732	-19.5682	-85.8458	9375
115.6081	54.3953	-21.0993	-85.6086	9376
113.9642	54.8205	-22.7394	-85.1671	9377
112.0622	55.2416	-24.6378	-84.7272	9378
110.3542	55.8057	-26.3406	-84.1462	9379
109.1822	56.1918	-27.5091	-83.7485	9380
107.3963	56.8421	-29.2890	-83.0805	9381
104.8021	57.9053	-31.8733	-81.9916	9382
102.0371	58.9866	-34.6283	-80.8829	9383
96.8028	61.3581	-39.8405	-78.4593	9384
93.7217	62.7493	-42.9086	-77.0375	9385
92.5247	63.3523	-44.1000	-76.4226	9386
91.9013	63.6735	-44.7204	-76.0952	9387
89.1893	65.4686	-47.4153	-74.2730	9388
87.6293	66.4957	-48.9656	-73.2303	9389
86.3599	67.3800	-50.2265	-72.3333	9390
83.9717	69.0530	-52.5988	-70.6364	9391
82.5667	70.0539	-53.9943	-69.6214	9392
79.3413	72.4781	-57.1965	-67.1649	9393
77.7470	73.9853	-58.7764	-65.6416	9394
74.3750	77.1397	-62.1181	-62.4532	9395
71.2331	80.2480	-65.2301	-59.3132	9396
65.7777	86.8960	-70.6212	-52.6098	9397
60.7364	94.1780	-75.5919	-45.2763	9398
60.2944	94.7740	-76.0281	-44.6758	9399
58.7124	97.4290	-77.5843	-42.0045	9400
57.4088	99.8274	-78.8646	-39.5926	9401
57.0048	100.6614	-79.2604	-38.7544	9402
54.4236	106.6488	-81.7832	-32.7400	9403
52.8425	110.5373	-83.3263	-28.8349	9404
52.1963	112.4364	-83.9539	-26.5289	9405
51.7171	113.9653	-84.4181	-25.3948	9406
51.3521	115.3733	-84.7694	-23.9828	9407
51.1491	116.0123	-84.9661	-23.3417	9408
50.5940	117.6745	-85.5049	-21.6735	9409
50.5080	118.0145	-85.5876	-21.3326	9410
50.2410	119.3895	-85.8411	-19.9546	9411
50.0830	120.0465	-85.9926	-19.2958	9412
49.3610	123.3838	-86.6819	-15.9505	9413
49.0700	125.1268	-86.9558	-14.2041	9414
48.5279	128.9658	-87.4601	-10.3587	9415
48.2369	131.3658	-87.7275	-7.9552	9416
47.9929	133.7648	-87.9479	-5.5531	9417
47.8779	137.4728	-88.0264	-1.8429	9418
47.8528	138.8077	-88.0383	-0.5073	9419
47.8578	140.0487	-88.0210	0.7340	9420
47.8368	141.1887	-88.0308	1.8745	9421
47.7708	142.1336	-88.0875	2.8203	9422
47.8427	143.2556	-88.0045	3.9419	9423
47.9307	144.8546	-87.9007	5.5406	9424
48.0298	146.2596	-87.7877	6.9450	9425
48.2597	149.6953	-87.5239	10.3794	9426
48.7306	152.9864	-87.0204	13.6669	9427
48.9396	154.2394	-86.7990	14.9182	9428
49.4196	156.8024	-86.2936	17.4772	9429
50.2505	160.9356	-85.4217	21.6035	9430
50.8104	163.3863	-84.8375	24.0494	9431
52.1503	167.6479	-83.4552	28.2991	9432
54.7169	174.2586	-80.8228	34.8865	9433
57.8683	181.0167	-77.6039	41.6157	9434
60.6121	185.0506	-74.8114	46.4641	9435
62.3760	188.7044	-73.0193	49.2614	9436
70.8904	199.5492	-64.3958	60.0258	9437
72.1994	201.0382	-63.0718	61.5024	9438
74.1481	203.0451	-61.1028	63.9408	9439
79.0699	207.5303	-56.1356	67.9290	9440
82.2079	210.1164	-52.9713	70.4851	9441
91.0094	216.0625	-44.1090	76.3466	9442
92.0094	216.6895	-43.1026	76.9640	9443
105.9594	223.1146	-29.0858	83.2541	9444
121.6605	227.1447	-13.3411	87.1314	9445

TABLE 3

LIMB MEASURES AND RESULTS

OBSERVED REDUCED

x	y	x	y	SER.
YERKES PHOTOGRAPH No. 1694				
196.2287	61.6654	62.6422	-67.3056	9491
197.7009	62.4853	64.1229	-65.8915	9492
198.7897	63.3263	65.2168	-65.0549	9493
199.5597	64.1902	65.9920	-64.1938	9494
200.3417	65.0022	66.7788	-63.3848	9495
201.2932	65.9831	67.5768	-62.4075	9496
202.3788	67.1510	68.8288	-61.2436	9497
203.4478	68.3989	69.9052	-59.9996	9498
204.2918	69.4869	70.7556	-58.9145	9499
205.1208	70.4489	71.5903	-57.9554	9500
206.0438	71.7579	72.5211	-56.6494	9501
207.3237	73.3236	73.8102	-55.0882	9502
208.0474	74.4156	74.5404	-53.9985	9503
209.3495	76.3066	75.8536	-52.1117	9504
210.8413	78.5722	77.3587	-49.8507	9505
212.3844	80.8862	78.9154	-47.5415	9506
213.3785	82.5449	79.9192	-45.8857	9507
214.4016	84.6888	80.9548	-43.7442	9508
215.0526	86.0508	81.6538	-42.3839	9509
215.9756	87.8534	82.5473	-40.5834	9510
216.9106	89.6154	83.4926	-38.8239	9511
218.1021	92.0965	84.6985	-36.3456	9512
219.2520	95.0320	85.8655	-33.4120	9513
219.8210	96.8770	86.4451	-31.5674	9514
220.5099	99.3290	87.1482	-29.1157	9515
221.3829	102.2190	88.0378	-26.2263	9516
222.4799	106.2604	89.1581	-22.1850	9517
223.3729	110.1780	90.0737	-18.2667	9518
223.7429	112.0790	90.4546	-16.3650	9519
224.2128	114.4209	90.9379	-14.0223	9520
224.6408	116.7349	91.3792	-11.7074	9521
224.9207	120.2092	91.6789	-8.2298	9522
225.1747	124.8086	91.9591	-3.6254	9523
225.1527	127.9326	91.9949	-0.4973	9524
225.1147	133.1876	91.9467	4.7653	9525
224.9247	134.7296	91.7654	6.3104	9526
224.7666	137.5706	91.6234	9.1561	9527
224.5667	138.9866	91.4315	10.5751	9528
224.3167	141.0506	91.1931	12.6432	9529
223.5627	145.7976	90.4659	17.4006	9530
222.6276	149.8711	89.5536	21.4846	9531
221.6685	153.3869	88.6142	25.0101	9532
220.3604	157.6149	87.3297	29.2507	9533
217.8014	164.5003	84.8091	36.1588	9534
214.9108	170.3706	81.9509	42.0521	9535
213.4497	173.1110	80.5050	44.8038	9536
209.4896	179.5858	76.5805	51.3080	9537
208.2427	181.2557	75.3427	52.9866	9538
205.3538	184.8871	72.4735	56.6380	9539
202.5067	188.3755	69.6474	60.1459	9540
198.1416	192.7054	65.3035	64.5044	9541
193.3505	197.3631	60.5375	69.1933	9542
191.1117	199.3207	58.3691	71.1652	9543
186.7848	202.7685	54.0005	74.6401	9544
183.3778	205.1163	50.6058	77.0088	9545
180.2788	206.9952	47.5165	78.9063	9546
178.7888	207.8069	46.0307	79.7269	9547
177.6208	208.4389	44.8659	80.3658	9548
174.6831	209.9987	41.9362	81.9430	9549
168.8157	212.6631	36.0822	84.6414	9550
155.8353	216.9764	23.1223	89.0279	9551

YERKES PHOTOGRAPH No. 1771

84.2650	50.6112	-53.2403	-78.5634	9588
83.4380	51.1873	-54.0654	-77.5841	9589
80.7434	53.0520	-56.7538	-76.1090	9590
77.8464	55.3382	-59.6432	-73.8115	9591
74.6810	58.2035	-62.7988	-70.9336	9592
71.6916	61.0509	-65.7785	-68.0743	9593
69.7093	62.9667	-67.7542	-66.1506	9594
67.7642	65.0118	-69.6922	-64.0976	9595
67.0551	65.6439	-70.3992	-63.4627	9596
66.2811	66.4130	-71.1705	-62.6905	9597
64.3248	68.5288	-73.1195	-60.5668	9598
63.7338	69.1168	-73.7085	-59.9764	9599
62.7878	70.5498	-74.6494	-58.5394	9600
61.9655	71.6469	-75.4678	-57.4389	9601

(CONTINUED)

TABLE 3

LIMB MEASURES AND RESULTS

OBSERVED REDUCED

x	y	x	y	SER.
YERKES PHOTOGRAPH No. 1771 (CONTINUED)				
60.8403	73.0778	-76.5880	-56.0033	9602
60.1432	74.0178	-77.2818	-55.0604	9603
58.1552	76.9309	-79.2595	-52.1389	9604
57.0914	78.5900	-80.3174	-50.4753	9605
56.8304	78.9650	-80.5771	-50.0592	9606
55.1504	81.5050	-82.2081	-47.5522	9607
53.4913	84.6178	-83.8960	-44.4319	9608
52.7993	85.9008	-84.5834	-43.1458	9609
51.7416	88.0507	-85.6334	-40.9912	9610
50.5567	90.5397	-86.8093	-38.4968	9611
49.7997	92.2607	-87.5661	-36.7723	9612
48.6005	95.3276	-88.7461	-33.6957	9613
47.6083	97.9758	-89.7307	-31.0468	9614
46.9174	100.2058	-90.4135	-28.8093	9615
46.1423	102.6032	-91.1758	-26.4120	9616
45.4973	105.0192	-91.8160	-23.9926	9617
44.6482	108.2537	-92.6532	-20.7535	9618
44.1113	111.0877	-93.1756	-17.9163	9619
43.9413	112.0967	-93.3459	-16.9062	9620
43.7711	113.4976	-93.5109	-15.5041	9621
43.4491	114.7816	-93.8282	-14.2183	9622
43.2691	116.0666	-94.0034	-12.9321	9623
42.9690	118.2779	-94.2953	-10.7187	9624
42.7960	119.4949	-94.4638	-9.5005	9625
42.7570	120.2669	-94.4999	-8.7280	9626
42.6621	122.1559	-94.5877	-6.8377	9627
42.5140	124.4483	-94.7273	-4.5437	9628
42.3931	126.1194	-94.8400	-2.8714	9629
42.4071	127.0884	-94.8243	-1.9020	9630
42.3960	128.1084	-94.8316	-0.8815	9631
42.4001	128.8584	-94.8247	-0.1311	9632
42.3761	129.3634	-94.8468	0.3742	9633
42.4411	130.3284	-94.7782	1.3394	9634
42.3821	131.8234	-94.8316	2.8353	9635
42.5499	134.3683	-94.6542	5.3808	9636
42.7419	136.9143	-94.4525	7.9274	9637
42.8098	139.2612	-94.3758	10.2751	9638
43.1028	141.7672	-94.0733	12.7813	9639
43.2569	142.4812	-93.9165	13.4951	9640
43.6008	144.4582	-93.5651	15.4718	9641
43.7768	145.5032	-93.3851	16.5167	9642
43.8568	146.2152	-93.3024	17.2287	9643
44.1408	147.2892	-93.0143	18.3022	9644
44.8147	150.4439	-92.3283	21.4560	9645
45.0607	151.6749	-92.0776	22.6867	9646
45.8657	155.1290	-91.2594	26.1396	9647
46.8815	158.2282	-90.2317	29.2367	9648
47.1595	159.0202	-89.9506	30.0281	9649
47.3705	159.6872	-89.7371	30.6947	9650
48.2476	162.3003	-88.8499	33.3059	9651
48.5565	163.0469	-88.5381	34.0518	9652
48.8785	164.0159	-88.2124	35.0021	9653
50.2955	167.3259	-86.7825	38.3266	9654
51.0704	169.1056	-86.0007	40.1044	9655
51.6254	170.2516	-85.4412	41.2490	9656
52.4405	171.8316	-84.6159	42.8269	9657
53.3490	173.6892	-83.7042	44.6821	9658
53.5610	174.0702	-83.4907	45.0626	9659
54.5150	175.9573	-82.5293	46.9472	9660
57.6444	180.8534	-79.3805	51.8345	9661
60.8133	185.5583	-76.1930	56.5305	9662
62.9450	188.2851	-74.0504	59.2550	9663
65.0109	190.8782	-71.9741	61.8380	9664
67.7369	193.9164	-69.2359	64.8620	9665
70.2458	196.4765	-66.7166	67.4205	9666
71.0538	197.2315	-65.9055	68.1730	9667
72.6466	198.7638	-64.3065	69.7004	9668
73.9065	199.9319	-63.0418	70.8645	9669
77.4224	202.8901	-59.5137	73.8117	9670
80.0523	205.0479	-56.8749	75.9612	9671
84.1071	207.8801	-52.8082	78.7804	9672
89.6480	211.3421	-47.2526	82.2245	9673
93.0689	213.3493	-43.8231	84.2205	9674
97.2699	215.3294	-39.6133	86.1867	9675
100.8229	216.9343	-36.0532	87.7798	9676
104.8658	218.5355	-32.0031	89.3674	9677
107.7230	219.4763	-29.1414	90.2986	9678
111.7900	220.7614	-25.0683	91.5699	9679
117.2380	222.0445	-19.6138	92.8343	9680
123.2331	223.1467	-13.6127	93.9159	9681
130.2781	223.8760	-6.5628	94.6206	9682

TABLE 3

LIMB MEASURES AND RESULTS

OBSERVED		REDUCED		SER.
x	y	x	y	
YERKES PHOTOGRAPH No. 1778				
161.5583	37.5186	30.9559	-89.6451	9717
162.2403	37.8405	31.6426	-89.3328	9718
164.0584	38.5564	33.4713	-88.6427	9719
165.2164	39.0102	34.6360	-88.2052	9720
166.7644	39.6230	36.1931	-87.6143	9721
167.2124	39.8420	36.6443	-87.4017	9722
168.1116	40.2699	37.5498	-86.9865	9723
169.4836	40.8618	38.9305	-86.4140	9724
170.4836	41.2776	39.9367	-86.0123	9725
172.5966	42.4044	42.0662	-84.9153	9726
174.2572	43.2839	43.7398	-84.0592	9727
175.1962	43.7918	44.6862	-83.5645	9728
176.9032	44.7806	46.4077	-82.5998	9729
178.7437	45.8244	48.2635	-81.5819	9730
180.1507	46.6593	49.6828	-80.7668	9731
181.4524	47.5998	50.9982	-79.8446	9732
183.1624	48.6816	52.7240	-78.7868	9733
185.0475	50.1174	54.6301	-77.3775	9734
186.4655	51.1092	56.0625	-76.4056	9735
187.6538	51.8712	57.2620	-75.6603	9736
189.3425	53.2105	58.9702	-74.3446	9737
190.3325	54.0854	59.9729	-73.4836	9738
191.4156	54.9693	61.0689	-72.6148	9739
192.2926	55.8562	61.9588	-71.7401	9740
193.2629	56.6722	62.9410	-70.9377	9741
194.5257	57.9131	64.2218	-69.7144	9742
196.3908	59.6939	66.1128	-67.9596	9743
198.0070	61.4408	67.7543	-66.2352	9744
199.8719	63.3807	69.6474	-64.3212	9745
202.4320	66.2485	72.2491	-61.4890	9746
204.0841	68.2243	73.9299	-59.5361	9747
204.9391	69.5733	74.8044	-58.1988	9748
206.2292	71.3643	76.1204	-56.4256	9749
207.0940	72.5900	77.0029	-55.2118	9750
207.7308	73.4620	77.6524	-54.3486	9751
208.7688	74.9350	78.7117	-52.8899	9752
209.7409	76.3949	79.7049	-51.4434	9753
210.1759	77.0519	80.1494	-50.7924	9754
210.7778	78.0756	80.7661	-49.7167	9755
211.8919	80.1085	81.9096	-47.7592	9756
212.8892	81.9477	82.9335	-45.9336	9757
213.5371	83.4191	83.6026	-44.4709	9758
215.1573	86.7551	85.2709	-41.1569	9759
216.4953	89.9456	86.6550	-37.9843	9760
217.9248	93.5762	88.1368	-34.3728	9761
219.0749	96.8152	89.3336	-31.1491	9762
220.2858	100.4932	90.5975	-27.4871	9763
220.8139	102.3182	91.1519	-25.6690	9764
221.2888	104.1815	91.6536	-23.8118	9765
221.6009	105.2275	91.9807	-22.7699	9766
221.8969	106.6495	92.2972	-21.3516	9767
222.3699	109.4639	92.8107	-18.5429	9768
223.1690	113.7780	93.6718	-14.2387	9769
223.6101	117.1180	94.1609	-10.9038	9770
223.7160	118.0173	94.2798	-10.0057	9771
223.9031	120.6474	94.5046	-7.3773	9772
224.0511	124.4848	94.7077	-3.5406	9773
224.0962	128.3138	94.8078	0.2891	9774
224.0323	131.1058	94.7839	3.0830	9775
223.9142	133.3128	94.6975	5.2925	9776
223.7133	135.5268	94.5283	7.5102	9777
223.4933	137.6599	94.3389	9.6472	9778
223.0164	141.3909	93.9154	13.3864	9779
222.1244	146.1737	93.0919	18.1836	9780
221.4604	149.0572	92.4691	21.0777	9781
221.2495	149.8672	92.2698	21.8910	9782
220.1235	154.0243	91.2033	26.0657	9783
219.5436	155.6033	90.6459	27.6535	9784
219.1246	157.0373	90.2474	29.0940	9785
217.9185	160.3893	89.0892	32.4645	9786
216.4059	164.3146	87.6327	36.4128	9787
214.9130	167.3786	86.1835	39.4993	9788
213.3641	170.6131	84.6807	42.7571	9789
211.7389	173.6614	83.0989	45.8297	9790
210.1340	176.1253	81.5291	48.3174	9791
209.4650	177.2003	80.8754	49.4024	9792
209.0350	177.8954	80.4553	50.1039	9793
207.6641	180.0084	79.1145	52.2372	9794
203.6573	185.2918	75.1828	57.5798	9795
197.5493	192.3011	69.1743	64.6790	9796
193.6862	196.1982	65.3664	68.6327	9797
190.6924	198.8008	62.4094	71.2790	9798
189.0305	200.2517	60.7680	72.7542	9799
185.2446	203.1496	57.0230	75.7072	9800
181.3476	205.7665	53.1629	78.3808	9801

TABLE 3

LIMB MEASURES AND RESULTS

OBSERVED		REDUCED		SER.
x	y	x	y	
YERKES PHOTOGRAPH No. 1784				
168.4937	41.2928	39.9956	-86.0030	9790
173.6134	43.8109	45.1173	-83.4848	9791
176.1903	45.2587	47.6953	-82.C369	9792
179.6048	47.4174	51.1112	-79.8779	9793
181.9876	48.9888	53.4950	-78.3063	9794
184.7706	50.9196	56.2792	-76.3752	9795
188.9706	54.0938	60.4811	-73.2004	9796
191.5797	56.3706	63.0914	-70.9231	9797
194.7568	59.2724	66.2700	-68.0206	9798
198.5839	63.3182	70.C991	-63.9737	9799
201.8530	66.9340	73.3699	-60.3569	9800
203.5731	69.2228	75.0910	-58.6674	9801
205.4782	71.9078	76.9972	-55.3816	9802
206.7040	73.5835	78.2237	-53.7054	9803
207.9058	75.2406	79.4262	-52.C478	9804
208.9449	76.8625	80.4660	-50.4253	9805
210.8948	80.3992	82.4172	-46.8874	9806
212.1638	82.8447	83.6871	-44.4410	9807
214.5781	87.9384	86.1032	-39.3455	9808
216.9031	93.5648	88.4301	-33.7170	9809
218.6805	98.4680	90.2091	-28.8119	9810
219.5446	101.2060	91.0740	-26.C728	9811
220.2335	103.5755	91.7637	-23.7024	9812
220.8506	105.9865	92.3815	-21.2904	9813
222.3055	113.5488	93.8384	-13.7249	9814
222.7747	116.9011	94.3085	-10.3712	9815
223.2177	122.2294	94.7528	-5.C406	9816
223.4126	128.6679	94.9492	1.4009	9817
223.2686	132.7059	94.8061	5.4408	9818
222.9257	137.C800	94.4640	9.8169	9819
221.8826	144.2659	93.4223	17.C064	9820
220.0747	152.3265	91.6156	25.C710	9821
218.3785	157.6365	89.9202	30.3838	9822
215.6569	164.9738	87.1954	37.7250	9823
211.7167	172.8986	83.2599	45.6543	9824
209.7548	176.0906	81.2982	48.8482	9825
208.9679	177.4886	80.5114	50.2470	9826
205.9760	181.9055	77.5196	54.6665	9827
201.2397	187.9454	72.7833	60.7102	9828
195.6397	194.1924	67.1832	66.5612	9829
193.9447	195.8963	65.4881	68.6662	9830
191.6239	197.9919	63.1671	70.7632	9831
188.5799	200.6309	60.1229	73.4041	9832
183.4699	204.4257	55.0123	77.2017	9833
181.1519	206.0206	52.6940	78.7978	9834
YERKES PHOTOGRAPH No. 1799				
171.6910	41.6394	39.0667	-86.4656	9884
173.6567	42.5210	41.0358	-85.5899	9885
174.2687	42.8519	41.6490	-85.2608	9886
175.6577	43.5267	43.0406	-84.5901	9887
177.2197	44.3926	44.6058	-83.7288	9888
178.5751	45.C705	45.9638	-83.0549	9889
180.2721	46.C873	47.6646	-82.C430	9890
181.6952	46.9222	49.0907	-81.2123	9891
182.5752	47.4211	49.9726	-80.7160	9892
183.9809	48.3877	51.3818	-79.7535	9893
185.0939	49.0855	52.4974	-79.C589	9894
186.6599	50.1504	54.0673	-77.9985	9895
188.3022	51.4103	55.7141	-76.7433	9896
189.7562	52.4692	57.1719	-75.6886	9897
191.0139	53.4496	58.4331	-74.7118	9898
193.0503	55.0326	60.4752	-73.1346	9899
194.5093	56.2125	61.9384	-71.9588	9900
196.5980	58.C383	64.0336	-70.1389	9901
198.1423	59.5491	65.5832	-68.6324	9902
199.5743	60.9041	67.0200	-67.2813	9903
200.7703	62.2090	68.2205	-65.9797	9904
203.1234	64.6850	70.5823	-63.5101	9905
205.5285	67.4899	72.9971	-60.7117	9906
207.3403	69.7098	74.8166	-58.4967	9907
208.7971	71.5169	76.2796	-56.6934	9908
210.0710	73.4225	77.5600	-54.7911	9909
211.5880	75.6534	79.0846	-52.5641	9910
213.5601	78.7853	81.0674	-49.4372	9911
214.4642	80.2923	81.9766	-47.9324	9912
216.0412	82.9127	83.5625	-45.3160	9913
217.9119	86.8139	85.4463	-41.4191	9914
219.0058	89.5755	86.5454	-38.6599	9915
220.2909	92.2305	87.8434	-36.C079	9916

(CONTINUED)

TABLE 3  
LIMB MEASURES AND RESULTS

OBSERVED		REDUCED		SER.
x	y	x	y	
YERKES PHOTOGRAPH No. 1799 (CONTINUED)				
220.8507	93.9230	88.4089	-34.3164	9917
221.3328	95.3790	88.8958	-32.8614	9918
222.4016	98.3870	89.9746	-29.8556	9919
223.3618	101.3232	90.9445	-26.9212	9920
223.6758	102.4592	91.2623	-25.7858	9921
224.0757	104.0696	91.6675	-24.1760	9922
224.7308	106.7926	92.3316	-21.4540	9923
225.5008	110.0601	93.1123	-18.1876	9924
225.9846	112.7590	93.6051	-15.4491	9925
226.5897	117.4570	94.2254	-10.7912	9926
227.0847	123.2428	94.7392	-5.0046	9927
227.2337	128.9388	94.9066	0.6932	9928
227.1938	132.4068	94.8779	4.1627	9929
226.9588	136.1148	94.6548	7.8730	9930
225.2818	147.3579	93.0136	19.1259	9931
222.0526	158.9624	89.8209	30.7452	9932
221.0046	161.5024	88.7848	33.2896	9933
219.4356	165.5689	87.2245	37.3627	9934
217.4159	170.3412	85.2196	42.1433	9935
215.7869	173.3127	83.5998	45.1211	9936
214.2450	175.9747	82.0660	47.7891	9937
212.9400	178.1697	80.7677	49.9891	9938
210.9449	181.1465	78.7817	52.5734	9939
206.6030	186.9419	74.4572	58.7848	9940
203.2330	190.8713	71.0990	62.7264	9941
199.2279	195.1002	67.1064	66.9697	9942

TABLE 6  
INITIAL DETERMINATION OF LIMB CIRCLE

PLATE No.	h	k	r	m
Y- 57	152.6713	122.2146	93.4533	75
Y- 100	127.5738	127.1423	93.8433	59
Y- 158	111.4903	114.7061	90.3078	70
Y- 268	145.5877	130.0205	90.1781	83
Y- 526	136.4215	125.4749	84.3490	56
Y- 556	101.9357	135.7106	88.1796	48
Y- 616	107.1008	127.7240	86.2209	47
Y- 624	116.4809	116.9137	85.0481	97
Y- 720	135.3920	133.3206	86.1999	51
Y- 753	116.1936	136.1762	84.4247	56
Y- 898	123.7596	121.8066	88.9733	42
Y- 910	132.5369	122.2975	90.3652	96
Y- 958	136.4552	130.1954	94.2191	56
Y-1158	130.1519	124.7742	94.5661	56
Y-1190	135.9940	130.9195	93.1855	74
Y-1288	121.8860	126.4741	92.7648	48
Y-1348	159.1261	118.2870	87.5878	71
Y-1502	127.3973	130.1114	85.3302	96
Y-1579	134.6109	133.8001	88.4677	67
Y-1638	137.2722	138.8859	88.1164	81
Y-1694	133.9928	127.4370	92.0473	61
Y-1771	137.7214	128.9005	94.8706	95
Y-1778	131.1697	124.8683	94.7865	85
Y-1784	128.5540	127.2801	94.8704	45
Y-1799	132.8068	127.5790	94.9063	59

TABLE 7  
FINAL DETERMINATION OF LIMB CIRCLE

PLATE No.	h	k	r	m
Y- 57	+0.0223	-0.0523	93.4464	225
Y- 100	-0.1388	+0.0604	93.8579	176
Y- 158	+0.5949	-0.0051	89.8355	210
Y- 268	+0.0432	-0.0777	90.1748	229
Y- 526	+0.0632	-0.0319	84.3451	186
Y- 556	-0.1100	-0.0263	88.1645	143
Y- 616	-0.3122	-0.0612	86.2782	141
Y- 624	+0.2005	-0.0238	85.0314	213
Y- 720	-0.0398	+0.0242	86.1942	202
Y- 753	-0.0956	-0.0153	84.4195	164
Y- 898	-0.2534	+0.0347	88.9791	137
Y- 910	-0.2408	+0.0532	90.3425	210
Y- 958	+0.0987	-0.0896	94.2305	168
Y-1158	-0.1483	+0.0951	94.5611	163
Y-1190	-0.1247	-0.1310	93.0968	149
Y-1288	+0.1388	+0.0366	92.7837	142
Y-1348	-0.2438	-0.1112	87.6353	142
Y-1502	-0.0286	-0.0508	85.3388	244
Y-1579	+0.1360	-0.1598	88.4532	134
Y-1638	-0.0050	-0.0136	88.1324	244
Y-1694	-0.0109	+0.0275	91.9182	181
Y-1771	+0.0971	+0.0021	94.8595	207
Y-1778	+0.0737	+0.0981	94.7532	173
Y-1784	-0.0221	+0.0075	94.8729	211
Y-1799	-0.0917	+0.0389	94.9175	233

TABLE 8  
THE REFRACTION ANGLE  $\epsilon$   
IN RADIAN  $\times 10^{-5}$

PLATE No.	$\epsilon$	PLATE No.	$\epsilon$	PLATE No.	$\epsilon$
Y- 57	- 0.19	Y- 720	+ 0.46	Y-1502	-0.06
Y-100	+ 0.04	Y- 753	+ 0.87	Y-1579	-1.96
Y-158	- 0.29	Y- 898	- 0.70	Y-1638	-0.23
Y-268	+ 1.82	Y- 910	- 0.07	Y-1694	-4.53
Y-526	+ 0.34	Y- 958	- 0.67	Y-1771	-0.94
Y-556	+18.01	Y-1158	-13.73	Y-1778	-0.26
Y-616	+11.17	Y-1190	+ 2.44	Y-1784	-0.10
Y-624	- 0.12	Y-1288	- 0.68	Y-1799	-0.22
		Y-1348	- 1.43		

TABLE 5  
EPHEMERIS DATA USED IN REDUCTIONS

PLATE No.	$l^{\circ}$	$b^{\circ}$	$s''$	$C^{\circ}$	$C'-C''$
Y- 57	+2.88	-3.83	994.853	14.43	+122.22
Y- 100	-4.87	+1.98	998.211	24.94	+ 15.88
Y- 158	-7.50	+4.13	962.596	23.55	-195.86
Y- 268	+6.94	-4.18	959.868	341.01	+ 20.12
Y- 526	+0.87	+5.73	898.117	345.09	- 80.24
Y- 556	+6.88	-2.54	937.865	337.43	+ 34.46
Y- 616	+6.88	+1.55	910.965	335.26	- 56.85
Y- 624	+5.90	+2.92	907.083	336.57	- 0.05
Y- 720	-4.47	+4.29	918.380	19.64	+ 46.90
Y- 753	-0.76	+7.03	898.378	3.51	+ 73.74
Y- 898	-5.60	+1.66	946.075	24.15	+ 4.60
Y- 910	-5.63	+0.09	960.662	24.97	+ 41.27
Y- 958	-1.23	-5.45	1003.010	10.09	+159.19
Y-1158	-2.67	-5.66	1006.589	2.96	+193.50
Y-1190	+5.38	-1.77	993.152	339.34	+ 50.72
Y-1288	-4.10	-5.83	989.496	6.54	- 72.83
Y-1348	+7.16	+5.21	998.518	338.08	- 11.16
Y-1502	-2.96	-0.67	909.694	24.29	+ 79.28
Y-1579	-4.83	-5.31	939.935	19.36	+ 25.79
Y-1638	+5.58	+5.89	938.673	358.67	-105.16
Y-1694	-5.27	-0.44	979.548	347.07	- 12.75
Y-1771	+3.20	+7.13	1009.506	338.07	+ 11.88
Y-1778	-0.51	+7.03	1009.506	338.06	+ 19.23
Y-1784	-0.55	+7.01	1009.626	338.09	+145.08
Y-1799	+1.62	+7.07	1010.413	341.61	+ 17.78