MARINER 9 CONTROL NET OF MARS: APRIL 1973

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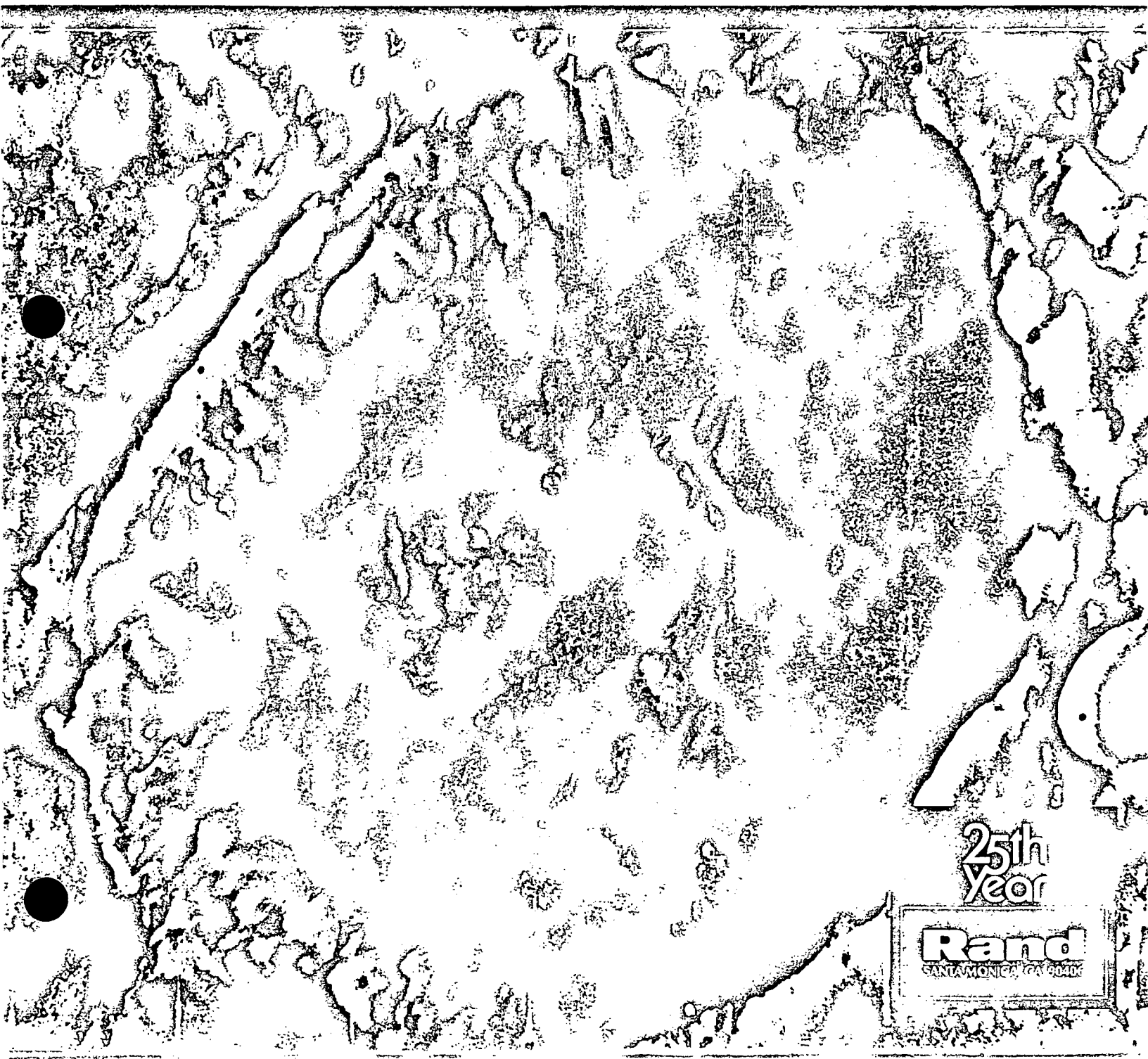
MERTON E. DAVIES

R-1266-JPL APRIL 1973



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PREFACE

The computation of a control net of Mars by analytical triangulation using television pictures taken by Mariner 9 was started in January 1972 and has been expanded by incorporating additional frames and points. Since the production of new maps of Mars must proceed in parallel with the control computations, interim control is useful. Results as of August 1972, *Mariner 9 Control Net of Mars: August 1972*,[1] and November 1972, *Martian Surface Coordinates*,[2] have been reported. This report contains the results current in April 1973.

SUMMARY

A planet-wide geodetic control net of Mars that is based on the Mariner 9 television pictures has been in the process of being computed since January 1972. This report presents the results of the computations as of April 1973. Areocentric and areographic coordinates of 1340 control points have been computed using 613 frames and are presented in tables. These coordinates will be revised as additional points and frames are added to the computation in the future.

CONTENTS

I. INTRODUCTION

The purpose of the present report is to make available results from the most recent computer computations for the use of cartographers preparing maps of Mars. The conventions, methodology, and details regarding the Mariner 9 mapping program are described elsewhere[2-4] and are not reviewed here. A brief resume of the photogrammetric parameters is given in the next section; Section III contains the coordinates of the control points.

II. PHOTOGRAMMETRIC PARAMETERS

The derivation of the photogrammetric equations and the method of their solutions used in the analytical triangulation are presented in Ref. 2, and are essentially the same as those used in the reduction of the Mariner 6 and 7 pictures.[5] The main improvement in the current net is that all of the variables are determined by a single large-block solution, in contrast to the use of four blocks in the August 1972 net[1] and five blocks in the November 1972 net.[2]

The areocentric latitude and longitude of the control points and the three orientation angles of the camera are permitted to vary in the least-squares adjustment. Thus each point contributes two unknowns and each picture three unknowns in the solution for the differential corrections to the initial values. The coordinates of the camera stations are held constant and come from the Supplementary Experimenter Data Record (SEDR), which is published by the Mariner 9 Science Data Team at the Jet Propulsion Laboratory. The radii at the control points are derived from the radii measurements made by the radio occultation experiment.[6,7]

The control points are usually the centers of small craters; these positions are measured in pixels (picture elements) on high-pass filtered versions of the television frames. The measurements are then corrected for optical and electronic distortions and scaled to millimeters using a program developed by John Kreznar of the Image Processing Laboratory at JPL.[8] The focal length of the lens is 52.267 mm.[9]

The Mariner 9 Geodesy/Cartography Group recommended that all Mariner 9 cartographic products use areographic coordinates referred to a spheroid with 3393.4 km equatorial radius and 3375.8 km polar radius.[3] The areographic latitude, ϕ', of a point is defined as the angle between the normal to the reference spheroid through the point and the equatorial plane. By contrast, the areocentric latitude, ϕ, of a point is defined as the angle between the radius vector to the point and the equatorial plane. If the point lies on the reference spheroid of equatorial radius,

a, and polar radius, c, the latitudes of the point are related by

$$\tan \phi = \left(\frac{c}{a}\right)^2 \tan \phi' \ .$$

The Mariner 9 coordinate system[3] incorporates a new direction for the spin axis of Mars and defines the prime meridian as the meridian that passes through the center of a small crater called Airy-0. The direction of the pole referenced to the mean equator and equinox of 1950.0 is

$$\alpha_0 = 317^\circ.32, \qquad \delta_0 = 52^\circ.68 \qquad (1950.0).$$

The angle between the Mars vernal equinox and the prime meridian, V, must now come from the control net computations; the current results give

$$V = 148^\circ.67 + 350^\circ.891962 \quad (JD - 2433282.5),$$

where JD is the Julian date.

III. COORDINATES OF FEATURES

The latitude and longitude of the 1340 control points and the orientation angles of the 613 pictures have been determined by a single-block simultaneous least-squares adjustment. The point measurements formed 8002 observation equations, which yielded 4519 normal equations. These normal equations were solved by a very efficient program developed by Richard Clasen of The Rand Corporation that uses the method of conjugate gradients to iterate for the solution of the linear equations. The standard error of the recomputed residuals is 0.0163 mm. The disadvantage of any iterative solution is that without the computation of the inverse there is no practical method of obtaining the standard errors of the parameters.

Most of the radii at the control points are derived from the occultation radii[6,7] by interpolation; however, a few radii in the region of Nix Olympica came from auxiliary photogrammetric computations. Table 1 gives the areocentric coordinates and radii of the control points as well as the number of frames that contributed measurements of the point. Table 2 gives the areographic coordinates of the control points and their elevations above the reference spheroid. Since these elevations are measured relative to an arbitrary reference surface and not relative to a geoid or constant potential surface, they cannot be used for contouring to determine, for instance, the direction of water flow.

This report does not contain illustrations identifying the control points because the required number of figures would be very large. Points numbered from 1 to 139 were used in the reduction of Mariner 6 and 7 pictures and are identified in Refs. 5 and 10. Previous Mariner 9 reports[1,2] contain pictures of many of the points. The best source for identification of the points is the U.S. Geological Survey's set of 1:5,000,000 photo-mosaics, on which the points are clearly marked.

Table 1

AREOCENTRIC COORDINATES OF THE CONTROL POINTS

Point	Latitude, ϕ°	W.Longitude, λ°	Radius, km	No. of Frames
0	-5.11	0.0	3394.7	1
26	-15.65	3.80	3394.4	2
27	-14.39	2.52	3394.5	2
28	-20.23	4.41	3393.9	2
31	-5.88	359.05	3394.8	4
33	-4.06	356.36	3395.1	2
34	-8.62	0.54	3394.7	3
35	-4.71	2.63	3394.7	3
37	0.66	358.49	3394.5	2
38	-3.83	0.97	3394.7	4
49	-77.00	0.98	3380.7	6
66	-80.21	353.74	3382.2	9
70	-75.63	324.23	3380.2	8
71	-75.32	307.66	3379.9	8
138	-79.69	330.16	3379.6	8
147	-69.49	42.72	3382.1	4
148	-66.80	56.90	3382.1	3
149	-71.04	26.52	3381.8	3
150	-41.58	7.32	3389.0	6
153	-37.50	2.99	3390.3	4
160	-81.02	341.01	3382.7	9
161	-78.01	359.09	3380.8	3
162	-73.94	324.15	3380.5	8
163	-78.62	143.46	3380.8	4
164	-74.07	160.95	3381.8	2
166	-72.03	176.29	3383.2	7
167	-72.01	163.92	3382.6	8
168	-58.80	7.58	3384.2	6
171	-72.58	257.95	3381.0	8
172	-72.71	264.51	3380.9	8
176	-83.26	353.59	3381.4	6
177	-81.18	19.51	3380.3	7
180	-48.72	10.53	3387.0	4
181	-39.48	16.35	3389.4	5
182	-53.51	32.41	3385.6	5
183	-47.81	20.08	3387.1	5
184	-31.91	101.11	3397.3	3
186	-26.13	94.01	3398.8	3
187	-33.19	75.57	3394.9	3
189	-25.89	66.32	3397.2	4
190	-42.10	68.02	3390.3	5
191	-43.59	60.25	3389.0	5
192	-51.74	56.88	3386.3	4
193	-50.06	72.71	3387.1	6

AREOCENTRIC

Table 1--continued

Point	Latitude, ϕ°	W.Longitude, λ°	Radius, km	No. of Frames
194	-45.13	74.17	3389.4	5
195	-51.65	96.74	3387.9	2
196	-80.88	48.66	3380.0	3
197	-82.25	73.51	3380.0	3
198	-66.85	17.30	3382.5	6
199	-69.42	146.25	3382.2	8
200	-41.80	195.97	3390.0	4
201	-49.77	190.99	3387.8	4
202	-55.37	185.17	3386.3	3
203	-50.13	175.62	3387.9	4
204	-40.07	177.90	3390.3	3
205	-26.28	188.37	3393.6	5
206	-32.23	186.21	3392.4	4
207	-33.43	202.72	3392.5	2
208	-33.80	210.08	3392.0	5
209	-26.89	217.14	3393.1	5
210	-27.61	207.97	3393.3	4
211	-32.90	227.46	3392.0	4
212	-38.51	212.39	3391.0	5
213	-43.00	225.60	3389.3	6
214	-39.61	229.58	3390.0	5
215	-23.04	237.49	3394.5	2
216	-67.28	343.07	3384.2	3
221	-76.49	283.78	3380.0	2
222	-75.89	289.52	3380.0	6
223	-80.67	289.79	3379.8	13
224	-78.47	253.88	3379.8	2
229	-70.50	349.86	3384.6	10
232	-69.05	359.56	3382.0	11
233	-74.18	344.72	3383.6	9
234	-68.79	298.06	3379.9	2
236	-80.53	321.00	3379.5	7
237	-74.27	235.07	3380.8	4
238	-85.60	263.48	3379.7	2
239	-78.04	230.35	3380.0	3
240	-75.81	210.71	3381.7	4
242	-63.84	317.61	3382.0	14
243	-66.87	322.91	3381.9	13
244	-70.73	311.66	3380.5	12
245	-64.71	312.43	3381.1	14
246	-70.29	285.00	3380.6	6
248	-61.92	148.69	3383.4	5
249	-55.10	152.35	3386.1	4
250	-60.35	142.31	3384.3	4

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Table 1--continued

Point	Latitude, ϕ°	W.Longitude, λ°	Radius, km	No. of Frames
251	-65.33	131.36	3383.3	8
252	-64.90	122.14	3383.5	6
253	-69.63	115.04	3382.3	6
254	-68.32	97.59	3382.4	3
255	-70.12	92.32	3382.1	5
256	-72.83	105.74	3381.6	5
257	-71.92	82.10	3381.4	5
258	-72.00	132.01	3381.7	11
259	-77.09	128.64	3380.8	6
261	-58.51	111.59	3385.4	3
262	-53.05	125.20	3387.3	5
263	-46.62	121.02	3389.8	7
264	-42.42	119.88	3391.6	5
265	-30.23	122.41	3395.6	5
266	-36.46	128.49	3393.0	5
267	-28.65	114.85	3396.8	3
268	-55.41	78.11	3385.5	2
269	-62.55	70.91	3383.0	2
270	-62.27	44.08	3383.5	5
271	-30.61	65.52	3395.4	3
272	-37.91	52.97	3391.0	4
273	-32.11	51.76	3393.2	4
274	-20.26	45.75	3394.2	4
275	-33.11	39.69	3391.2	3
276	-42.57	34.45	3388.5	3
277	-52.49	41.38	3386.1	6
278	-30.25	25.93	3391.5	5
279	-32.16	18.61	3391.3	5
280	-38.78	25.69	3389.4	3
281	-53.56	20.97	3385.6	5
282	-59.83	23.49	3384.1	5
283	-45.84	9.59	3387.7	5
284	-63.74	259.30	3383.1	5
285	-62.80	231.27	3383.4	7
286	-48.70	260.04	3385.9	6
287	-20.84	269.48	3394.1	3
288	-23.01	278.77	3392.8	2
289	-61.13	252.61	3383.5	7
290	-44.30	248.24	3388.4	5
291	-32.66	245.40	3391.9	4
292	-32.50	256.72	3391.1	4
293	-49.05	237.75	3387.1	6
294	-39.87	243.35	3389.5	4
295	-48.96	218.99	3388.0	6

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Table 1--continued

Point	Latitude, ϕ°	W.Longitude, λ°	Radius, km	No. of Frames
296	-63.86	209.88	3384.3	11
297	-27.62	233.19	3393.5	4
298	-33.49	219.35	3391.8	6
299	-43.50	215.16	3389.7	5
300	-48.04	205.98	3388.8	3
301	-44.17	203.44	3389.6	5
303	-43.36	189.81	3389.6	4
304	-63.80	196.99	3384.0	9
305	-69.84	71.89	3381.4	5
306	-76.93	71.46	3380.5	6
307	-52.99	197.09	3387.2	3
308	-40.02	185.66	3390.4	2
309	-47.24	183.19	3388.5	4
310	-32.38	195.71	3392.8	4
312	-60.77	177.18	3385.6	6
313	-68.93	198.56	3382.7	7
314	-32.21	175.95	3392.1	3
315	-47.56	172.70	3388.6	5
316	-32.99	165.91	3392.0	4
317	-60.38	165.32	3385.7	4
318	-46.48	162.18	3388.8	6
319	-36.92	161.36	3391.3	4
320	-42.07	132.19	3390.6	4
321	-61.69	133.21	3384.3	6
322	-33.90	151.69	3392.3	3
323	-49.19	152.67	3388.3	5
324	-55.00	156.10	3386.4	5
325	-34.60	144.65	3392.3	2
326	-31.15	160.05	3392.6	4
327	-42.76	145.20	3390.2	6
328	-55.38	136.63	3386.1	4
329	-46.92	137.81	3388.8	5
330	-33.23	129.04	3394.3	3
331	-33.76	11.71	3390.8	5
332	-32.03	116.53	3395.3	2
333	-36.79	115.42	3393.9	6
334	-45.78	126.70	3389.7	7
335	-33.83	0.25	3391.4	6
336	-45.78	1.41	3387.8	6
337	-55.96	8.59	3385.0	4
338	-60.18	11.97	3383.9	6
339	-27.99	2.15	3392.5	3
340	-32.95	352.83	3392.5	4
341	-47.71	345.83	3389.3	6

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Table 1--continued

Point	Latitude, ϕ^{o}	W.Longitude, λ^{o}	Radius, km	No. of Frames
342	-57.57	354.18	3386.0	5
343	-34.88	339.15	3392.4	4
344	-25.40	344.15	3394.5	3
345	-23.24	352.65	3394.4	2
346	-49.36	335.61	3388.3	6
347	-61.34	339.07	3384.9	9
348	-35.18	331.72	3392.3	4
349	-24.61	333.07	3394.9	3
350	-41.85	337.97	3390.6	5
351	-46.48	325.19	3388.3	6
352	-56.53	339.73	3386.4	4
353	-59.07	322.74	3384.0	6
354	-27.16	324.14	3394.1	3
355	-35.59	322.92	3391.6	3
356	-67.63	245.24	3381.8	3
357	-70.63	327.99	3381.3	9
358	-65.37	335.54	3383.6	5
359	-72.92	57.51	3380.9	4
361	-71.97	294.52	3380.0	8
362	-72.29	276.23	3380.6	8
363	-68.70	216.81	3383.0	3
364	-54.16	329.12	3386.1	4
365	-69.11	45.55	3382.1	7
366	-70.23	57.05	3381.3	2
367	-73.45	317.21	3380.3	7
368	-80.24	82.28	3379.9	7
369	-67.60	18.98	3382.4	2
375	-57.26	312.96	3382.4	6
376	-43.60	323.81	3389.2	4
377	-43.37	315.45	3387.0	4
378	-30.98	316.39	3391.4	2
379	-34.00	314.70	3389.7	3
380	-53.07	316.94	3384.9	4
381	-45.60	304.97	3383.0	3
382	-77.38	54.63	3380.4	5
383	-75.12	82.97	3380.8	6
384	-72.95	100.18	3381.5	3
385	-52.72	153.89	3387.1	5
386	-61.43	305.14	3380.7	3
387	-61.34	289.99	3381.1	2
388	-54.19	309.16	3382.1	3
389	-59.01	269.98	3383.6	3
390	-50.14	247.83	3386.6	3
391	-48.06	271.05	3385.8	3

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Table 1--continued

Point	Latitude, ϕ^{o}	W.Longitude, λ^{o}	Radius, km	No. of Frames
392	-43.53	255.88	3387.9	4
393	-35.85	263.83	3389.3	5
394	-24.80	265.23	3393.0	3
397	-24.34	275.56	3392.3	2
400	9.83	136.90	3395.9	3
401	10.76	135.33	3405.6	3
403	19.03	140.81	3392.1	2
404	20.47	137.17	3397.5	3
405	18.39	131.80	3416.1	3
406	21.85	131.49	3396.0	2
407	22.93	136.61	3397.1	3
408	11.66	124.86	3398.4	2
409	11.17	121.75	3398.8	2
410	10.67	119.33	3399.2	2
411	16.00	127.45	3396.6	2
413	19.42	119.81	3396.6	3
414	24.33	128.03	3393.3	2
415	8.24	119.58	3400.1	3
416	6.88	120.75	3400.5	2
417	3.54	121.49	3401.5	2
418	16.68	119.18	3397.6	3
419	15.15	117.45	3398.3	2
420	23.19	119.42	3395.4	2
421	23.49	117.44	3395.4	2
422	2.92	111.26	3402.6	2
423	7.82	112.84	3401.1	2
424	24.53	109.90	3395.2	2
425	18.77	111.10	3397.8	2
426	17.41	114.18	3398.0	2
427	9.45	102.39	3399.2	4
428	8.47	107.82	3400.8	2
429	16.64	103.36	3397.3	2
430	8.47	112.19	3401.0	2
433	11.26	97.62	3398.1	2
434	16.82	101.02	3396.8	2
435	18.04	95.18	3396.1	2
436	21.83	103.30	3395.8	2
437	25.02	102.56	3394.3	2
438	25.28	98.90	3393.8	3
439	24.28	91.63	3394.0	2
440	26.47	92.18	3393.3	3
441	27.50	89.54	3392.8	2
442	28.25	87.84	3392.5	4
443	24.30	89.83	3394.0	2

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Table 1--continued

Point	Latitude, ϕ°	W.Longitude, λ°	Radius, km	No. of Frames
444	21.89	89.36	3394.8	2
445	21.37	81.01	3394.4	4
446	13.03	83.32	3396.8	3
447	13.60	79.87	3396.3	3
449	4.38	82.62	3398.4	2
450	16.61	82.30	3395.8	2
451	20.08	77.24	3394.5	2
452	28.22	79.56	3392.4	3
453	25.20	81.12	3393.4	3
454	11.44	76.95	3396.6	2
455	1.19	72.03	3397.9	2
456	7.66	72.97	3397.1	2
457	11.67	72.47	3396.3	4
458	11.29	69.09	3396.2	2
459	19.91	71.95	3394.3	5
460	17.95	72.63	3394.8	2
461	19.35	68.48	3394.2	3
462	26.73	71.23	3391.7	4
463	23.10	72.27	3393.2	3
464	20.57	64.23	3393.5	4
465	25.07	63.70	3391.7	3
466	16.61	64.33	3394.6	3
467	11.26	64.46	3395.8	3
468	6.75	64.24	3396.5	2
470	12.70	60.74	3395.1	2
471	20.59	58.58	3392.9	2
472	13.14	54.08	3394.3	3
473	10.07	55.44	3395.0	2
475	11.41	50.78	3394.2	2
476	16.37	54.43	3393.5	2
477	19.94	56.27	3392.8	2
478	22.87	55.98	3391.8	2
479	20.20	47.80	3391.7	3
480	24.62	47.12	3390.5	2
481	19.22	45.32	3391.9	3
482	12.84	45.91	3393.6	2
483	19.40	42.09	3391.7	2
484	10.54	40.12	3393.8	2
485	7.49	46.06	3394.7	2
486	2.54	46.35	3395.5	2
487	19.43	29.83	3390.8	2
488	10.73	34.90	3393.3	4
489	11.90	25.42	3392.6	4
490	8.33	25.36	3393.3	2

AREOCENTRIC

Table 1--continued

Point	Latitude, ϕ^{o}	W.Longitude, λ^{o}	Radius, km	No. of Frames
491	17.17	24.94	3391.5	2
492	19.69	24.03	3390.9	2
493	23.49	26.83	3389.8	2
494	26.70	25.77	3388.8	3
495	19.36	15.75	3391.1	4
496	25.07	17.48	3389.6	2
497	19.58	12.09	3391.1	2
498	19.00	20.00	3391.2	2
500	11.16	17.28	3392.8	3
501	4.82	16.35	3393.8	2
502	11.04	12.12	3392.9	2
503	10.16	16.11	3393.0	2
504	10.86	6.66	3393.0	4
505	0.38	6.86	3394.4	3
506	15.75	7.21	3392.0	2
507	18.90	7.46	3391.3	4
508	25.76	7.65	3389.4	3
509	18.27	2.64	3391.5	2
510	10.07	2.71	3393.1	2
511	8.34	1.52	3393.4	2
512	11.00	358.80	3393.0	4
513	5.01	358.06	3394.1	3
514	15.32	357.82	3392.3	3
515	18.56	358.18	3391.6	3
516	13.31	355.29	3393.0	2
517	8.80	355.09	3393.8	3
518	5.80	354.39	3394.4	2
519	11.37	354.69	3393.4	3
520	18.17	353.23	3392.1	2
521	14.87	355.10	3392.7	3
522	15.28	350.84	3392.9	2
523	0.30	2.72	3394.4	3
524	2.20	2.53	3394.2	3
525	6.69	358.22	3393.8	3
526	1.95	38.57	3395.0	3
527	4.94	38.93	3394.7	3
528	4.03	33.71	3394.3	3
529	6.09	35.04	3394.1	2
530	8.97	37.29	3393.8	3
531	10.41	31.39	3393.0	4
532	15.29	34.72	3392.3	3
533	18.08	29.05	3391.2	3
534	12.47	30.99	3392.6	3
535	9.62	346.32	3394.5	2

AREOCENTRIC

Table 1--continued

Point	Latitude, ϕ°	W.Longitude, λ°	Radius, km	No. of Frames
536	9.21	345.62	3394.6	2
537	14.17	344.96	3393.7	2
538	12.68	338.92	3394.6	3
539	14.40	346.11	3393.5	2
540	10.42	348.12	3394.2	2
542	18.46	347.04	3392.5	2
543	20.48	345.53	3392.1	2
544	21.90	338.17	3392.4	2
545	11.20	336.88	3395.3	2
546	5.23	338.80	3395.9	2
547	10.80	331.89	3396.3	2
548	11.12	329.72	3396.6	3
549	15.81	337.29	3394.2	2
550	19.39	336.50	3393.3	3
551	18.93	332.97	3394.0	2
552	19.26	329.13	3394.5	2
553	24.26	336.78	3392.0	3
554	27.08	337.39	3391.0	4
555	6.83	328.05	3397.6	2
556	9.29	328.79	3397.1	2
557	10.35	321.56	3397.9	3
558	12.04	323.51	3397.3	2
560	15.92	329.62	3395.4	2
561	19.05	324.66	3395.3	2
562	19.62	320.52	3395.9	4
563	23.40	328.42	3393.4	2
564	26.17	327.60	3392.7	4
567	7.80	319.69	3398.6	2
568	10.21	317.42	3398.0	2
569	10.39	311.70	3397.6	2
570	13.87	320.98	3397.3	2
571	15.59	319.80	3397.0	2
572	18.60	318.21	3396.1	2
573	17.54	312.12	3396.1	3
574	22.11	321.06	3395.0	2
575	23.68	318.70	3394.7	2
577	7.85	312.28	3398.1	2
578	5.27	311.34	3398.4	2
579	12.38	309.66	3397.1	2
580	12.35	305.71	3396.7	2
581	11.50	302.59	3396.6	3
582	12.34	311.95	3397.2	2
583	15.06	312.31	3396.7	2
584	21.72	312.40	3394.9	2

AREOCENTRIC

Table 1--continued

Point	Latitude, ϕ°	W.Longitude, λ°	Radius, km	No. of Frames
585	26.02	310.83	3393.6	3
586	20.01	305.95	3394.9	2
587	21.21	307.06	3394.7	2
588	19.53	301.32	3394.5	3
589	6.53	303.89	3397.6	2
590	9.25	303.24	3397.1	3
591	10.08	301.41	3396.8	3
592	10.04	295.73	3396.5	4
593	9.10	294.31	3396.6	3
594	15.03	303.46	3395.9	2
595	18.59	303.14	3395.0	3
596	18.14	298.04	3394.7	3
597	18.00	294.82	3394.6	4
598	23.39	304.06	3393.8	2
599	26.66	300.62	3392.5	3
600	23.75	293.40	3393.0	3
601	25.63	294.52	3392.5	4
602	18.97	296.40	3394.4	3
603	19.18	286.14	3394.0	4
604	18.47	289.18	3394.3	3
605	13.87	293.91	3395.6	2
606	10.01	287.58	3396.2	2
607	10.72	290.66	3396.2	2
608	4.78	294.17	3397.2	2
609	1.59	296.43	3397.7	2
610	7.00	285.49	3396.7	2
611	3.16	285.70	3397.2	2
612	11.34	285.35	3395.9	2
613	11.14	280.71	3395.8	2
614	11.26	277.21	3395.9	2
615	17.20	286.38	3394.6	2
616	13.76	285.64	3395.4	2
617	19.96	283.43	3393.8	2
618	19.68	278.64	3393.8	3
619	23.35	287.55	3393.0	2
620	25.56	284.91	3392.2	2
621	22.55	277.87	3393.0	3
622	24.80	275.43	3392.4	3
623	17.27	275.12	3394.6	3
624	16.92	280.08	3394.5	2
625	15.37	278.87	3394.9	2
626	13.57	277.19	3395.4	2
628	8.28	275.13	3396.5	2
629	6.53	276.76	3396.8	2

AREOCENTRIC

Table 1--continued

Point	Latitude, ϕ^{o}	W.Longitude, λ^{o}	Radius, km	No. of Frames
631	6.28	279.56	3396.7	2
632	18.16	350.85	3392.3	2
633	19.07	350.12	3392.1	2
634	3.95	270.47	3397.3	2
635	2.93	269.87	3397.5	2
636	6.06	269.07	3397.0	2
637	6.49	270.70	3397.0	2
638	8.19	268.53	3396.7	2
639	3.53	266.64	3397.3	2
640	4.82	264.90	3397.0	2
641	8.23	266.63	3396.7	3
642	7.96	264.79	3396.7	3
643	17.02	268.42	3394.9	2
644	14.34	268.77	3395.5	2
645	13.31	268.71	3395.8	2
646	12.39	263.37	3395.9	4
647	12.64	266.05	3395.9	2
648	11.22	267.91	3396.2	2
649	10.52	261.62	3396.3	2
650	13.19	256.37	3395.3	3
651	14.70	264.34	3395.5	2
652	15.17	260.59	3395.4	2
653	16.92	266.51	3395.0	2
654	20.26	258.90	3394.1	2
655	21.22	258.10	3393.7	3
656	28.54	256.11	3390.9	2
657	26.58	256.63	3391.7	3
658	23.82	258.40	3392.8	2
659	19.39	250.70	3393.1	2
660	20.95	254.45	3393.2	2
661	18.84	257.46	3394.3	2
662	16.67	257.05	3394.7	2
663	12.69	249.21	3394.5	3
664	11.79	253.26	3395.2	2
665	7.92	257.06	3396.2	2
666	6.20	258.20	3396.5	2
667	2.89	257.40	3396.7	2
668	12.77	247.64	3394.5	3
669	10.08	248.75	3395.0	2
670	6.75	249.54	3395.6	2
671	4.74	248.10	3395.9	2
672	2.17	248.30	3396.2	2
673	11.66	239.14	3394.5	3
674	11.43	244.68	3394.7	2

AREOCENTRIC

Table 1--continued

Point	Latitude, ϕ°	W.Longitude, λ°	Radius, km	No. of Frames
675	15.89	248.94	3393.8	2
676	17.26	249.63	3393.5	2
677	20.51	241.21	3392.6	3
678	20.21	243.75	3392.7	2
679	20.11	246.39	3392.7	2
680	21.83	248.82	3392.4	2
681	23.60	250.11	3392.0	2
682	26.10	249.43	3391.3	3
683	27.68	247.59	3390.8	2
684	22.74	238.96	3391.9	2
685	23.31	242.11	3391.8	2
686	25.66	239.79	3391.0	3
687	18.12	242.04	3393.2	2
688	17.22	238.16	3393.3	2
689	17.14	231.90	3392.7	3
690	13.30	241.80	3394.3	2
691	15.44	240.30	3393.8	2
692	10.18	239.00	3394.8	3
693	9.27	241.08	3395.1	3
694	8.74	236.99	3394.8	2
695	8.68	231.61	3394.1	3
696	6.51	239.78	3395.4	2
697	2.46	242.74	3396.0	2
698	2.10	240.82	3396.0	2
699	9.97	231.07	3393.9	2
700	6.03	231.39	3394.3	2
701	12.36	229.80	3393.4	2
702	12.32	221.20	3392.7	4
703	21.71	227.48	3391.4	2
704	21.14	224.83	3391.3	2
705	21.50	222.02	3390.9	3
706	29.76	229.42	3390.0	3
707	28.15	221.83	3389.4	3
708	29.00	228.27	3390.0	3
709	27.10	221.10	3389.6	4
710	9.71	221.51	3393.1	2
711	7.96	220.67	3393.1	2
712	5.87	220.67	3393.3	2
713	3.83	221.72	3393.4	2
714	2.28	221.50	3393.5	2
715	11.80	215.52	3392.6	2
716	11.96	213.43	3392.6	2
717	14.72	222.49	3392.4	2
718	20.25	220.64	3391.0	3

AREOCENTRIC

Table 1--continued

Point	Latitude, ϕ^{o}	W.Longitude, λ^{o}	Radius, km	No. of Frames
719	20.43	217.74	3391.1	2
720	19.87	213.12	3391.8	2
721	24.60	221.67	3390.2	2
722	23.49	211.57	3391.2	2
723	26.57	211.79	3390.4	2
724	27.28	208.29	3390.6	3
725	25.30	209.08	3391.0	3
726	26.30	202.34	3391.3	3
727	21.51	206.42	3391.5	3
728	20.54	200.84	3391.0	5
729	18.93	206.55	3391.8	2
730	17.16	200.25	3391.6	3
731	13.64	208.21	3392.5	2
732	12.98	205.39	3392.5	2
733	13.81	202.43	3392.4	2
734	12.99	201.41	3392.5	3
735	4.35	199.84	3393.4	2
736	8.86	200.37	3393.1	2
737	10.97	199.60	3392.9	2
738	13.43	198.71	3392.3	2
739	13.25	193.16	3392.1	2
740	12.01	190.94	3392.1	3
741	23.64	201.72	3391.3	3
742	27.24	200.51	3391.6	4
743	20.46	197.19	3391.0	2
744	20.51	195.07	3391.0	2
745	20.32	190.57	3391.1	4
746	17.14	191.06	3391.5	2
747	15.14	190.39	3391.8	2
748	13.09	189.37	3391.9	2
749	12.64	184.83	3391.7	2
750	11.52	181.46	3391.6	4
751	20.58	185.51	3391.0	2
752	20.62	181.09	3390.8	4
753	3.28	178.29	3393.1	3
754	1.91	178.07	3393.3	3
755	2.71	172.29	3393.5	3
756	13.37	177.98	3391.5	2
757	13.14	175.84	3391.6	3
758	17.57	182.84	3391.3	2
759	14.82	181.57	3391.4	2
760	20.35	178.60	3390.8	2
761	20.46	177.06	3390.8	2
762	19.72	174.82	3390.9	2

AREOCENTRIC

Table 1--continued

Point	Latitude, ϕ^{o}	W.Longitude, λ^{o}	Radius, km	No. of Frames
763	22.20	181.21	3390.3	2
764	24.45	181.28	3389.7	2
765	26.36	182.58	3389.3	2
766	27.69	180.49	3388.5	3
768	13.80	170.05	3391.7	3
769	12.72	169.42	3391.9	2
770	12.71	168.40	3391.9	3
771	5.53	163.35	3393.6	2
772	6.73	163.03	3393.4	3
773	10.05	152.53	3393.0	3
774	5.00	152.80	3393.9	3
775	7.63	145.44	3394.7	2
780	11.45	188.79	3392.0	2
781	6.18	188.16	3392.6	2
782	2.88	188.29	3392.9	2
783	6.82	185.78	3392.4	2
785	7.52	174.82	3392.4	3
786	6.38	173.14	3392.8	3
787	6.38	177.04	3392.5	2
788	10.88	175.30	3391.8	3
789	9.78	172.31	3392.0	3
790	16.01	173.20	3391.4	2
791	9.41	169.26	3392.3	3
792	7.50	171.73	3392.6	3
793	15.87	170.57	3391.4	2
794	15.46	167.96	3391.5	2
795	10.83	164.97	3392.4	2
796	6.86	168.38	3393.0	2
797	8.93	157.56	3393.2	2
798	11.79	170.25	3391.9	3
799	26.36	345.78	3390.4	4
800	-26.15	9.25	3392.6	4
801	-26.72	7.66	3392.5	4
802	-24.20	6.05	3393.1	2
803	-26.86	14.79	3392.3	5
804	-23.81	15.06	3392.8	4
805	-22.98	9.11	3393.3	2
806	-18.39	4.66	3394.1	3
807	-16.95	8.42	3394.3	2
808	-23.80	7.79	3393.2	2
809	-22.91	7.53	3393.4	3
810	-22.31	4.40	3393.4	2
811	-21.11	5.63	3393.7	2
812	-22.51	6.25	3393.5	2

AREOCENTRIC

Table 1--continued

Point	Latitude, ϕ°	W.Longitude, λ°	Radius, km	No. of Frames
813	-18.98	1.33	3394.0	3
814	-17.53	3.61	3394.2	2
815	-13.89	3.25	3394.5	3
817	-12.39	1.23	3394.6	2
818	-14.90	358.86	3394.5	3
819	-8.61	2.62	3394.7	3
820	-9.58	0.74	3394.7	3
822	-10.59	356.21	3395.1	3
823	-7.58	358.49	3394.9	3
824	-14.18	6.85	3394.5	2
825	-4.62	0.51	3394.7	3
826	-4.21	2.40	3394.7	3
827	-5.35	358.71	3394.8	3
828	-3.74	358.46	3394.8	4
829	-8.56	5.15	3394.7	3
830	-10.63	11.76	3394.5	2
831	-10.36	10.38	3394.6	2
832	-8.90	10.66	3394.6	3
833	-6.89	14.16	3394.4	2
834	-5.10	9.61	3394.7	2
835	-4.19	9.49	3394.6	3
836	-3.07	12.21	3394.5	2
837	1.33	8.19	3394.3	3
838	2.53	10.41	3394.1	2
839	-12.40	14.97	3394.2	2
840	-16.66	13.47	3393.9	2
841	-16.17	12.55	3394.1	2
842	-14.04	11.90	3394.3	2
843	-15.22	13.50	3394.1	2
844	-18.79	9.34	3394.1	2
845	-13.08	10.11	3394.5	2
846	-8.81	7.48	3394.7	2
847	-22.27	10.62	3393.4	2
848	-18.55	12.19	3393.8	2
849	-18.18	14.55	3393.6	2
850	-22.97	14.00	3393.0	2
851	-17.66	16.20	3393.5	2
852	-22.49	16.51	3392.9	2
853	-22.23	15.38	3393.0	3
854	-20.23	14.62	3393.4	2
856	-21.60	10.37	3393.6	3
857	-23.41	16.21	3392.8	2
858	-22.50	17.54	3392.8	2
859	-21.29	19.71	3392.8	2

AREOCENTRIC

Table 1--continued

Point	Latitude, ϕ^{o}	W.Longitude, λ^{o}	Radius, km	No. of Frames
861	-25.33	16.91	3392.5	4
862	-24.01	2.80	3393.3	2
863	-21.92	0.31	3393.6	2
864	-21.37	355.87	3394.3	3
865	-20.19	-0.07	3393.9	2
866	-17.49	358.97	3394.3	2
867	-14.83	358.09	3394.7	3
868	-16.59	353.93	3395.0	3
869	-12.53	356.17	3395.0	2
870	-11.84	351.85	3395.6	3
871	-11.08	353.95	3395.4	2
872	-9.66	356.54	3395.1	3
873	-5.13	355.50	3395.2	2
874	-8.97	354.79	3395.3	2
875	-5.83	353.25	3395.5	2
876	-6.37	352.30	3395.6	2
877	-2.06	350.14	3395.6	2
878	-2.41	352.20	3395.4	2
879	-0.64	353.53	3395.2	2
880	3.22	348.52	3395.3	2
881	3.97	354.67	3394.6	2
882	-25.82	358.15	3393.3	2
883	-23.93	358.98	3393.5	2
884	-23.04	356.52	3393.9	2
885	-24.78	358.11	3393.4	3
886	-27.07	354.30	3393.5	3
887	-20.13	353.18	3394.8	3
888	-24.30	354.39	3394.0	2
889	-22.49	355.26	3394.2	2
890	-18.42	355.36	3394.7	2
891	-17.73	353.24	3395.0	2
892	-19.12	351.98	3395.1	3
893	-13.89	352.84	3395.4	2
894	-12.97	350.53	3395.7	2
895	-15.05	349.16	3395.7	2
896	-8.70	351.10	3395.7	2
897	-9.94	352.71	3395.5	2
898	-10.34	347.07	3396.0	3
899	-9.17	348.73	3395.9	2
900	-5.87	350.09	3395.8	2
901	-8.46	347.61	3396.0	2
902	-9.14	345.06	3396.1	2
903	-8.30	343.97	3396.2	3
904	-7.51	345.60	3396.1	3

AREOCENTRIC

Table 1--continued

Point	Latitude, ϕ°	W.Longitude, λ°	Radius, km	No. of Frames
905	-4.51	341.03	3396.4	2
906	-3.80	342.55	3396.3	2
907	-2.68	343.83	3396.1	2
908	-17.09	351.34	3395.3	2
909	-17.62	348.55	3395.5	2
910	-21.79	351.17	3394.8	2
911	-23.69	12.00	3393.0	2
912	-4.15	349.00	3395.8	2
913	2.56	345.22	3395.6	2
914	1.50	344.42	3395.8	2
915	2.10	340.59	3396.1	2
916	0.75	340.17	3396.3	2
917	6.21	342.60	3395.4	2
918	5.10	339.89	3395.8	2
919	5.08	337.64	3396.2	2
920	-24.26	195.77	3394.1	3
921	-24.98	188.73	3393.8	3
922	-28.29	190.72	3393.3	4
923	-22.35	194.13	3394.3	4
924	-2.56	178.89	3393.8	2
925	-2.20	178.02	3393.8	2
926	-3.60	175.52	3394.1	2
927	-7.02	175.26	3394.3	2
928	-5.20	175.76	3394.2	2
929	-9.38	178.49	3394.1	2
930	-10.11	178.51	3394.1	2
931	-10.66	176.43	3394.3	3
932	-9.29	176.12	3394.3	2
933	-10.64	174.42	3394.5	2
934	-9.27	173.63	3394.5	2
935	-11.12	172.94	3394.6	2
936	-14.34	174.04	3394.5	2
937	-15.13	174.49	3394.5	2
938	-11.65	180.23	3394.1	2
939	-12.47	178.34	3394.2	2
940	-13.60	177.40	3394.3	2
941	-14.18	178.13	3394.2	2
942	-15.19	178.39	3394.2	2
946	-15.60	183.71	3394.3	2
947	-16.58	180.94	3394.1	2
948	-17.42	178.91	3394.1	3
949	-16.16	184.98	3394.4	2
950	-17.23	185.77	3394.4	2
951	-18.54	184.25	3394.3	2

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Table 1--continued

Point	Latitude, ϕ°	W.Longitude, λ°	Radius, km	No. of Frames
952	-18.92	186.36	3394.4	3
954	-20.03	185.85	3394.3	3
955	-21.25	183.39	3394.0	2
956	-17.02	188.39	3394.6	2
957	-21.72	184.36	3394.0	2
958	-22.58	186.16	3394.0	2
959	-22.00	187.81	3394.2	2
960	-23.86	187.54	3393.9	2
961	-23.82	188.75	3394.0	3
962	-21.58	190.49	3394.3	3
963	-17.84	180.27	3394.0	2
964	-19.55	180.58	3394.0	2
965	-19.21	181.82	3394.1	2
966	-20.93	180.40	3393.8	2
969	-22.27	190.63	3394.2	2
970	-24.16	191.03	3394.0	2
971	-23.56	194.17	3394.1	2
972	-25.59	193.26	3393.9	2
973	-17.57	189.15	3394.6	2
974	-18.14	188.45	3394.6	2
975	-19.40	189.31	3394.5	2
976	-19.13	191.47	3394.6	2
977	-12.54	187.06	3394.6	3
978	-13.86	186.80	3394.6	2
979	-14.00	188.60	3394.7	2
980	-14.95	187.71	3394.6	2
981	-15.63	189.52	3394.8	2
982	-16.55	188.48	3394.6	2
988	-19.48	194.65	3394.5	2
989	-21.11	191.90	3394.4	2
991	-15.71	191.44	3394.8	2
992	-16.53	189.57	3394.7	2
993	-11.65	188.61	3394.8	2
994	-7.49	185.30	3394.3	2
995	-2.60	186.71	3393.7	2
996	-2.69	185.74	3393.7	2
997	-7.14	184.66	3394.2	2
999	-3.62	183.94	3393.8	2
1000	-4.96	185.72	3394.0	2
1001	-4.48	183.62	3393.9	2
1002	-6.12	183.68	3394.1	2
1003	-5.19	179.93	3393.9	2
1004	-23.90	139.60	3394.9	3
1005	-25.03	146.03	3394.4	3

AREOCENTRIC

Table 1--continued

Point	Latitude, ϕ°	W.Longitude, λ°	Radius, km	No. of Frames
1006	-24.94	143.40	3394.5	4
1007	-23.43	143.25	3394.9	3
1008	-20.99	140.47	3395.6	2
1009	-20.77	138.59	3395.9	2
1010	-23.06	140.97	3395.1	3
1011	-25.58	140.69	3394.4	2
1012	-18.57	138.79	3396.2	3
1013	-19.70	140.52	3395.9	2
1014	-16.85	141.39	3396.0	2
1015	-16.72	137.98	3396.6	2
1016	-15.64	136.93	3396.9	2
1017	-13.61	136.57	3397.2	2
1018	-13.20	137.83	3396.9	2
1019	-14.74	133.12	3397.9	2
1020	-14.33	131.92	3398.2	2
1021	-13.56	130.05	3398.8	2
1022	-11.02	131.79	3398.6	2
1023	-10.45	132.25	3398.5	2
1024	-12.37	130.68	3398.7	2
1025	-30.50	143.27	3393.1	4
1026	-31.76	147.71	3392.9	4
1027	-27.65	150.59	3393.8	3
1028	-14.61	129.37	3398.9	2
1029	-15.48	129.48	3398.7	2
1030	-13.64	127.60	3400.0	2
1031	-14.46	125.50	3400.8	2
1032	-13.37	126.65	3400.6	2
1033	-11.01	128.24	3400.1	2
1034	-10.79	126.90	3401.1	2
1035	-10.25	123.01	3400.6	3
1036	-8.77	126.03	3400.2	3
1037	-7.66	123.90	3400.8	3
1038	-8.33	123.87	3400.7	3
1039	-17.44	178.04	3394.1	2
1040	-19.08	177.37	3394.1	2
1041	-10.09	121.40	3400.9	2
1042	-7.03	121.54	3401.5	2
1043	-7.23	120.05	3401.8	2
1044	-5.24	121.77	3401.8	2
1045	-4.56	123.48	3401.4	2
1046	-3.26	126.32	3400.8	2
1047	0.73	120.95	3402.6	2
1048	-2.63	120.43	3402.6	2
1049	1.83	122.72	3401.8	2

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Table 1--continued

Point	Latitude, ϕ^{o}	W.Longitude, λ^{o}	Radius, km	No. of Frames
1050	5.39	123.45	3400.5	2
1051	3.58	119.16	3401.9	3
1052	4.06	116.60	3401.9	2
1053	1.03	124.72	3401.4	3
1054	-15.52	133.11	3397.8	2
1056	-14.83	131.94	3398.2	2
1060	-24.34	43.69	3393.5	3
1061	-22.24	47.56	3394.2	6
1062	-24.75	45.95	3393.7	2
1063	-25.67	47.26	3393.8	2
1064	-22.43	48.93	3394.3	3
1065	-22.79	50.52	3394.5	2
1067	-17.71	50.83	3395.3	2
1069	-21.00	49.25	3394.4	3
1070	-18.69	46.55	3394.5	2
1071	-18.73	48.33	3394.7	2
1072	-19.88	48.66	3394.5	2
1074	-19.04	43.08	3394.2	2
1075	-13.42	47.66	3395.5	2
1076	-15.23	47.19	3395.2	3
1079	-17.43	45.62	3394.7	2
1080	-11.99	44.69	3395.4	3
1081	-13.71	44.52	3395.2	2
1082	-10.81	45.62	3395.6	3
1083	-14.24	40.95	3394.7	2
1084	-7.25	45.67	3395.8	2
1085	-9.95	44.59	3395.6	3
1086	-7.69	43.50	3395.6	2
1087	-9.09	41.87	3395.4	2
1088	-7.68	42.15	3395.5	3
1089	-5.09	43.20	3395.6	2
1090	-6.20	43.64	3395.7	2
1091	-9.60	38.73	3395.0	2
1092	-3.79	41.40	3395.5	2
1093	-3.82	38.64	3395.3	2
1094	-2.18	43.97	3395.7	2
1095	-3.51	43.47	3395.7	2
1096	1.27	41.19	3395.3	3
1097	-0.24	43.55	3395.6	2
1098	0.06	37.18	3395.1	3
1099	-2.49	40.60	3395.4	2
1200	32.65	89.23	3390.8	3
1201	31.85	96.23	3391.3	3
1202	32.22	87.01	3391.0	3

AREOCENTRIC

Table 1--continued

Point	Latitude, ϕ^{o}	W.Longitude, λ^{o}	Radius, km	No. of Frames
1203	33.82	81.84	3390.4	3
1204	38.65	83.92	3388.4	3
1205	39.43	80.31	3388.1	5
1206	40.11	75.71	3387.2	4
1207	41.91	89.59	3386.9	5
1208	41.93	82.70	3387.0	2
1209	43.85	78.84	3386.1	4
1210	43.45	74.93	3385.8	3
1211	40.62	69.66	3386.2	5
1212	48.85	68.88	3382.9	4
1213	47.26	73.60	3384.0	4
1215	27.02	76.72	3392.4	3
1216	33.09	76.33	3390.1	4
1217	32.56	72.68	3389.7	3
1218	37.24	70.73	3387.6	2
1219	39.26	66.25	3386.5	3
1220	41.26	64.72	3385.6	4
1221	44.34	64.13	3384.4	3
1222	45.34	69.96	3384.4	3
1223	44.02	53.19	3384.0	2
1224	40.33	56.91	3385.6	2
1225	37.44	56.38	3386.6	2
1226	39.07	42.00	3385.1	4
1227	41.32	50.94	3384.9	2
1228	38.95	46.52	3385.5	3
1229	33.79	66.41	3388.5	2
1230	31.97	67.12	3389.3	2
1231	25.83	67.88	3391.8	3
1232	26.84	55.96	3390.5	3
1233	27.83	57.65	3390.2	2
1234	28.63	59.47	3389.9	2
1235	25.13	53.95	3390.9	2
1236	32.14	56.60	3388.6	2
1237	34.32	56.59	3387.8	2
1238	34.07	52.16	3387.8	2
1239	33.20	50.48	3388.1	2
1240	32.14	48.58	3388.3	3
1241	27.21	50.27	3390.1	3
1242	26.14	43.26	3389.7	2
1243	26.87	40.16	3389.2	3
1244	29.88	51.17	3389.3	2
1245	33.70	46.32	3387.5	3
1246	33.00	43.64	3387.4	3
1247	34.07	42.97	3387.0	3

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Table 1--continued

Point	Latitude, ϕ^{o}	W.Longitude, λ^{o}	Radius, km	No. of Frames
1248	32.24	41.05	3387.4	3
1249	31.79	38.93	3387.4	2
1250	36.10	43.89	3386.4	2
1251	41.71	42.17	3384.1	3
1252	38.27	35.03	3385.0	3
1253	40.65	34.53	3384.2	4
1254	37.16	39.59	3385.6	3
1255	25.74	37.78	3389.4	2
1256	25.91	35.28	3389.2	2
1257	29.18	39.83	3388.3	2
1258	33.51	30.37	3386.5	4
1259	33.76	34.25	3386.5	3
1260	40.85	24.54	3384.1	3
1261	38.95	25.22	3384.8	3
1262	25.81	31.87	3389.0	3
1263	28.62	31.27	3388.1	2
1264	32.94	21.20	3387.1	4
1265	34.09	25.68	3386.5	2
1266	37.57	30.38	3385.1	2
1267	26.45	24.11	3389.0	4
1268	29.95	21.90	3388.0	2
1269	32.79	17.15	3387.2	3
1270	33.88	11.79	3386.8	3
1271	37.88	21.23	3385.3	2
1272	38.56	18.47	3385.2	2
1273	43.28	9.09	3383.6	2
1274	42.29	15.09	3383.8	2
1275	41.33	10.55	3384.3	4
1276	38.94	11.75	3385.1	3
1277	26.23	12.98	3389.2	3
1278	30.00	14.87	3388.0	2
1279	28.72	13.19	3388.4	2
1280	33.79	6.91	3386.9	3
1281	32.32	2.64	3387.5	4
1282	36.43	8.66	3386.0	2
1283	39.64	3.18	3385.0	3
1284	38.14	356.73	3385.7	3
1285	42.27	0.45	3384.1	4
1286	42.87	356.80	3384.1	3
1287	41.43	355.24	3384.7	4
1288	26.50	2.85	3389.3	3
1289	25.88	357.97	3389.6	2
1290	30.81	5.95	3387.8	2
1291	33.86	0.20	3387.0	3

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Table 1--continued

Point	Latitude, ϕ^{o}	W.Longitude, λ^{o}	Radius, km	No. of Frames
1292	32.54	357.66	3387.6	3
1293	33.86	353.88	3387.3	3
1294	41.27	350.46	3385.0	4
1295	40.58	348.45	3385.3	6
1296	26.67	355.41	3389.6	4
1297	26.29	349.87	3390.0	3
1298	31.62	354.95	3388.0	3
1299	32.82	350.09	3387.9	5
1300	29.83	355.35	3388.6	3
1301	31.65	345.23	3388.7	4
1302	35.85	352.62	3386.7	3
1303	40.08	343.74	3385.9	6
1304	38.50	338.66	3387.0	6
1305	38.58	346.68	3386.2	3
1306	44.70	347.47	3384.2	3
1307	45.23	341.73	3384.0	3
1308	28.97	346.89	3389.5	3
1309	32.60	340.78	3388.8	4
1310	36.23	343.40	3387.3	3
1311	40.53	334.46	3386.8	4
1312	45.69	334.72	3384.3	3
1313	25.12	332.07	3392.4	2
1314	31.03	337.61	3389.7	2
1315	33.76	337.94	3388.8	3
1316	32.24	333.36	3389.9	3
1317	33.48	329.38	3390.0	2
1318	34.95	332.62	3389.1	3
1319	38.15	331.43	3388.1	4
1320	41.24	327.69	3387.2	3
1321	39.38	321.18	3388.7	4
1322	48.52	330.68	3383.4	2
1323	40.32	324.52	3388.0	3
1324	26.44	324.02	3393.2	2
1325	29.24	328.37	3391.6	2
1326	30.72	325.48	3391.5	2
1327	32.15	324.85	3391.1	4
1328	32.87	317.41	3391.4	2
1329	33.98	322.94	3390.6	3
1330	37.74	323.57	3389.1	2
1331	39.56	315.86	3388.7	4
1332	39.99	310.10	3388.5	5
1333	47.17	319.29	3385.0	4
1334	44.69	320.37	3386.2	3
1335	26.37	315.07	3393.6	2

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Table 1--continued

Point	Latitude, ϕ^{o}	W.Longitude, λ^{o}	Radius, km	No. of Frames
1338	34.12	312.94	3390.8	3
1339	33.67	308.21	3390.8	3
1340	37.16	311.28	3389.6	2
1341	39.44	306.54	3388.6	4
1342	43.81	306.77	3386.7	3
1343	48.05	306.37	3384.8	4
1344	27.88	305.74	3392.6	2
1345	27.44	309.65	3393.0	2
1346	30.50	309.23	3392.0	2
1347	32.79	303.61	3390.8	3
1348	33.14	298.95	3390.3	4
1349	35.51	301.90	3389.7	2
1350	35.59	305.73	3389.9	2
1351	41.68	299.07	3387.4	3
1352	39.76	297.74	3388.1	3
1353	38.85	292.85	3388.1	3
1354	44.43	295.96	3386.3	3
1355	45.11	302.57	3386.2	4
1356	28.85	300.75	3391.8	2
1357	30.52	298.49	3391.1	3
1358	33.75	292.81	3389.9	4
1359	32.93	288.44	3390.0	3
1360	37.88	295.84	3388.6	2
1361	35.23	292.45	3389.4	3
1362	41.20	294.69	3387.4	3
1363	26.88	292.35	3392.1	2
1364	41.33	237.33	3387.0	3
1365	39.31	289.32	3387.8	2
1366	45.09	290.23	3385.7	2
1367	36.36	288.45	3388.8	2
1368	34.40	284.49	3389.4	2
1369	38.06	284.37	3388.1	2
1370	41.79	283.18	3386.8	3
1371	40.19	273.07	3387.2	4
1372	27.95	276.52	3391.4	2
1375	33.69	275.95	3389.5	3
1376	33.29	278.96	3389.6	2
1377	32.41	273.38	3390.0	2
1378	41.69	272.34	3386.7	3
1379	36.81	278.41	3388.4	2
1380	28.74	266.82	3391.2	2
1381	25.84	267.01	3392.3	2
1382	28.62	262.31	3391.1	3
1383	29.62	271.06	3391.0	2

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Table 1--continued

Point	Latitude, ϕ°	W.Longitude, λ°	Radius, km	No. of Frames
1384	33.22	266.61	3389.6	3
1385	33.92	262.06	3389.1	3
1386	37.06	268.07	3388.2	2
1387	36.79	264.30	3388.1	2
1388	40.50	261.44	3386.6	3
1389	39.61	254.62	3387.0	4
1390	38.67	260.83	3387.3	3
1391	38.44	256.11	3387.4	3
1392	29.96	263.79	3390.6	2
1393	32.59	257.36	3389.5	3
1394	32.93	252.69	3389.4	3
1395	36.19	260.45	3388.2	2
1396	35.05	257.49	3388.6	2
1397	28.49	253.55	3390.9	3
1398	31.23	255.17	3390.0	2
1399	32.52	248.81	3389.4	3
1400	32.76	243.71	3389.0	3
1401	34.34	250.48	3388.9	3
1402	36.49	252.27	3388.2	2
1403	36.60	249.38	3388.1	2
1404	39.13	243.77	3386.7	3
1405	42.66	245.99	3385.4	2
1406	40.20	233.27	3386.1	4
1407	28.10	243.40	3390.5	3
1408	29.76	243.55	3390.0	2
1409	34.26	238.78	3388.2	3
1410	33.08	233.16	3388.9	3
1411	36.40	238.36	3387.5	2
1412	38.36	236.75	3386.8	2
1413	41.47	233.16	3385.6	3
1414	39.83	227.77	3386.3	3
1415	24.67	235.60	3391.3	2
1416	30.86	234.87	3389.6	2
1418	34.08	230.67	3388.6	4
1419	34.16	226.29	3388.2	4
1420	32.30	223.78	3388.5	4
1421	37.37	226.71	3386.9	3
1422	41.18	223.80	3385.4	4
1423	40.44	218.46	3385.5	3
1424	30.10	226.67	3389.6	4
1425	26.22	226.50	3390.4	3
1426	33.32	221.05	3387.8	4
1427	31.89	216.39	3388.5	3
1428	36.44	221.90	3387.0	3

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Table 1--continued

Point	Latitude, ϕ^{o}	W.Longitude, λ^{o}	Radius, km	No. of Frames
1429	41.02	209.16	3385.7	5
1430	42.67	215.18	3384.7	2
1431	28.56	215.30	3389.5	3
1432	25.09	218.31	3390.1	2
1433	29.64	217.03	3389.1	2
1434	33.38	210.03	3388.5	3
1435	32.49	205.24	3389.7	4
1436	34.25	215.70	3387.8	2
1437	36.01	210.19	3387.6	2
1438	38.64	204.69	3387.1	4
1439	40.82	199.83	3386.3	3
1440	44.06	206.91	3384.4	3
1441	28.83	210.45	3389.9	3
1442	32.17	208.56	3389.2	3
1443	29.60	205.88	3390.6	2
1444	31.69	202.13	3390.6	2
1445	33.48	196.43	3389.6	3
1446	33.41	202.67	3389.7	3
1447	36.51	204.62	3388.0	2
1448	37.38	201.03	3388.0	2
1449	40.78	196.41	3386.2	5
1450	39.12	193.98	3386.9	4
1451	25.26	197.26	3391.2	3
1452	26.87	194.95	3391.0	2
1453	31.51	199.30	3391.0	2
1454	33.99	193.02	3388.9	3
1455	34.26	188.14	3388.0	3
1456	35.89	193.79	3388.3	3
1457	40.28	190.63	3386.2	5
1458	38.04	187.49	3386.6	4
1459	38.31	182.25	3385.5	5
1460	46.81	190.73	3382.9	5
1461	48.96	193.54	3381.8	2
1462	50.94	189.51	3380.9	2
1463	27.54	184.96	3389.4	2
1464	30.73	189.94	3389.7	2
1465	34.46	184.49	3387.2	3
1466	33.80	179.11	3386.5	3
1467	37.10	179.53	3385.5	3
1468	40.20	172.77	3384.3	4
1469	46.98	180.64	3382.4	4
1470	44.69	180.29	3383.1	5
1471	26.80	176.82	3388.8	2
1472	26.46	174.42	3388.9	2

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Table 1--continued

Point	Latitude, ϕ°	W.Longitude, λ°	Radius, km	No. of Frames
1473	27.54	178.64	3388.5	3
1474	29.85	180.09	3387.6	2
1475	31.38	179.01	3387.2	2
1476	33.23	174.06	3386.7	3
1477	32.33	170.51	3387.0	2
1478	34.58	176.52	3386.3	3
1479	36.30	173.84	3385.7	2
1480	38.38	170.98	3384.9	3
1481	43.85	172.67	3383.1	2
1482	39.20	165.43	3384.6	3
1486	42.38	163.97	3383.6	3
1487	44.41	157.10	3383.2	3
1489	39.25	158.58	3384.7	4
1490	49.19	151.68	3381.7	2
1491	43.67	147.82	3384.0	3
1492	44.59	149.71	3383.6	3
1493	40.30	145.45	3385.4	4
1494	43.39	138.79	3384.7	2
1495	43.11	142.41	3384.5	2
1496	50.31	140.45	3382.0	2
1497	47.33	139.02	3383.3	2
1498	48.39	129.69	3384.0	4
1499	43.22	134.29	3385.5	2
1500	39.02	133.04	3387.3	4
1501	38.23	130.89	3387.9	4
1502	38.61	136.44	3386.8	4
1503	37.78	127.11	3388.7	3
1504	40.52	128.43	3387.3	3
1505	34.20	131.30	3389.0	2
1506	31.72	129.53	3390.2	2
1507	33.30	126.73	3391.3	3
1508	28.24	125.87	3394.6	2
1509	26.52	122.75	3398.1	3
1510	26.58	126.26	3395.1	2
1511	26.05	124.39	3396.9	2
1512	32.79	123.05	3393.7	4
1513	39.10	121.43	3388.5	6
1514	42.23	120.10	3386.7	7
1515	44.95	123.80	3385.5	5
1516	46.57	121.14	3384.9	5
1517	45.78	115.31	3385.9	6
1518	38.01	146.38	3386.1	2
1519	26.64	118.84	3394.1	2
1520	25.37	117.02	3399.5	2

AREOCENTRIC

Table 1--continued

Point	Latitude, ϕ°	W.Longitude, λ°	Radius, km	No. of Frames
1521	40.77	110.47	3389.2	6
1522	39.67	114.06	3389.0	4
1523	44.09	110.08	3387.5	5
1524	40.99	117.88	3387.6	5
1525	35.46	117.91	3392.3	2
1526	32.94	116.62	3394.2	3
1527	32.22	112.97	3393.1	4
1528	49.68	125.05	3383.6	2
1529	49.00	116.38	3384.3	6
1530	47.74	112.28	3385.3	8
1531	54.61	114.94	3381.7	5
1532	28.16	116.07	3397.3	2
1533	29.58	113.81	3395.0	2
1534	26.11	109.29	3394.8	2
1535	25.25	104.84	3394.6	2
1536	32.52	107.94	3391.5	2
1537	32.22	104.51	3391.4	3
1538	37.13	111.21	3390.5	2
1539	34.80	108.78	3391.0	2
1540	39.60	105.55	3389.0	4
1541	39.05	101.77	3388.5	4
1542	42.44	107.04	3387.9	3
1543	44.69	101.00	3385.8	5
1544	48.05	96.30	3384.2	5
1545	27.33	106.16	3393.7	2
1546	31.08	99.84	3391.7	3
1547	33.52	99.89	3390.6	4
1548	36.08	99.07	3389.5	2
1549	37.21	102.97	3389.5	2
1550	42.09	97.90	3386.8	5
1551	39.84	94.26	3387.8	4
1552	37.92	95.96	3388.7	2
1553	44.19	91.15	3385.9	5
1554	53.96	97.46	3381.6	5
1555	51.63	91.11	3382.7	5
1556	58.36	103.26	3379.9	4
1557	58.50	95.01	3379.8	2
1558	35.31	93.68	3389.8	2
1559	38.59	89.22	3388.3	3
1560	27.54	97.65	3393.0	2
1561	28.73	95.04	3392.5	2
1562	43.00	85.24	3386.5	4
1563	47.52	83.93	3384.6	4
1564	51.40	125.74	3382.8	3

AREOCENTRIC

Table 1--continued

Point	Latitude, ϕ^{o}	W.Longitude, λ^{o}	Radius, km	No. of Frames
1565	66.27	278.18	3378.4	2
1566	54.89	93.46	3381.3	3
1568	64.19	109.70	3378.4	2
1569	54.58	88.37	3381.4	2
1570	58.71	115.64	3379.7	2
1571	52.12	297.29	3383.1	3
1572	55.90	311.02	3381.1	2
1573	58.60	289.53	3380.8	2
1574	61.88	289.24	3379.9	2
1575	54.71	276.58	3381.9	2
1576	58.87	277.56	3380.0	2
1577	44.85	278.62	3385.8	2
1578	43.01	244.32	3385.1	3
1579	48.99	241.10	3382.1	3
1580	41.22	235.89	3385.7	4
1581	54.97	226.74	3380.0	3
1582	50.32	225.46	3381.4	3
1583	59.32	221.79	3378.6	2
1584	66.33	215.94	3376.9	3
1585	49.53	214.93	3381.8	2
1586	58.37	213.71	3378.3	3
1587	53.34	195.75	3380.1	3
1588	48.50	199.44	3382.1	3
1589	1.55	330.83	3397.8	2
1590	66.28	196.64	3376.8	2
1591	59.93	206.95	3377.6	2
1592	79.68	214.21	3374.2	3
1593	71.97	213.95	3375.8	3
1594	60.32	230.59	3378.6	3
1595	54.83	255.97	3381.0	3
1596	48.56	270.83	3384.8	2
1597	51.69	267.17	3383.3	2
1598	69.11	270.31	3377.8	2
1599	50.10	77.18	3383.3	2
1600	11.45	133.74	3404.5	2
1601	14.08	129.47	3401.9	2
1602	15.03	130.84	3404.8	2
1603	17.27	133.50	3418.9	3
1604	17.19	129.30	3403.7	4
1605	14.17	131.48	3403.8	2
1606	18.86	133.02	3416.6	4
1607	22.96	133.43	3395.0	3
1608	20.41	135.37	3397.3	3
1609	18.53	135.74	3400.7	5

AREOCENTRIC

Table 1--continued

Point	Latitude, ϕ^{o}	W.Longitude, λ^{o}	Radius, km	No. of Frames
1610	53.72	81.38	3381.9	2
1611	49.85	61.38	3382.2	3
1612	51.73	64.65	3381.6	3
1613	53.37	71.11	3381.4	2
1614	49.18	43.87	3381.4	2
1615	60.50	58.13	3377.9	2
1616	54.22	39.07	3379.3	3
1617	49.51	34.82	3381.0	3
1618	53.67	31.72	3379.4	4
1619	47.14	28.12	3381.7	2
1620	50.61	18.49	3380.4	3
1621	47.74	13.76	3381.8	3
1622	43.35	24.01	3383.2	2
1623	62.33	23.86	3377.2	2
1624	49.86	8.41	3381.3	3
1625	65.57	21.52	3377.1	4
1626	68.07	25.77	3377.1	2
1627	76.73	54.95	3375.6	2
1628	84.93	7.77	3375.8	4
1629	74.53	13.58	3376.3	3
1630	71.81	15.61	3376.8	3
1631	73.53	358.37	3376.6	4
1632	76.86	334.47	3378.0	4
1633	73.07	333.53	3378.0	3
1634	68.53	347.73	3378.1	4
1635	42.89	5.47	3383.8	2
1636	49.67	357.01	3381.9	2
1637	51.06	345.66	3382.0	2
1638	61.98	353.73	3378.7	3
1639	65.00	329.11	3379.0	3
1640	61.11	336.16	3378.6	3
1641	56.25	337.67	3379.9	2
1642	54.10	333.75	3381.0	3
1643	49.17	339.23	3382.3	3
1644	49.27	335.00	3382.6	2
1645	53.73	188.69	3380.0	3
1646	54.08	183.00	3379.9	3
1647	46.82	190.67	3382.9	2
1648	54.50	169.43	3379.5	3
1649	52.32	160.89	3380.5	2
1650	56.62	159.08	3379.3	2
1651	60.59	170.47	3377.6	2
1652	72.00	306.67	3378.9	2
1653	60.24	303.57	3379.0	2

AREOCENTRIC

Table 1--continued

Point	Latitude, ϕ^{o}	W.Longitude, λ^{o}	Radius, km	No. of Frames
1654	69.98	295.42	3378.8	2
1655	61.91	318.90	3379.0	2
1656	68.09	160.84	3376.1	3
1657	78.62	153.15	3375.8	2
1658	64.22	139.33	3378.2	2
1659	60.28	138.46	3378.8	3
1660	64.46	126.65	3378.5	2
1661	57.40	134.52	3380.0	2
1662	53.47	244.34	3380.7	3
1663	67.05	246.30	3377.5	2
1666	24.92	191.61	3390.8	3
1667	26.51	192.27	3390.7	3
1668	28.29	190.13	3390.2	4
1669	21.87	190.29	3391.0	2
1670	3.40	180.21	3393.0	2
1678	78.15	308.58	3377.8	2
1800	-26.97	119.91	3397.1	4
1801	-33.19	106.48	3395.9	3
1802	-36.90	94.17	3394.1	3
1803	-38.25	78.50	3392.8	3

Table 2

AREOGRAPHIC COORDINATES OF THE CONTROL POINTS

Point	Latitude, $\phi'°$	W.Longitude, $\lambda°$	Elevation, km
0	-5.16	0.0	1.44
26	-15.81	3.80	2.29
27	-14.53	2.52	2.20
28	-20.42	4.41	2.62
31	-5.94	359.05	1.59
33	-4.10	356.36	1.79
34	-8.71	0.54	1.70
35	-4.76	2.63	1.42
37	0.67	358.49	1.10
38	-3.87	0.97	1.38
49	-77.13	0.98	4.02
66	-80.31	353.74	5.90
70	-75.77	324.23	3.32
71	-75.47	307.66	2.98
138	-79.79	330.16	3.24
147	-69.68	42.72	4.15
148	-67.01	56.90	3.59
149	-71.22	26.52	4.16
150	-41.88	7.32	3.39
153	-37.79	2.99	3.45
160	-81.11	341.01	6.47
161	-78.13	359.09	4.25
162	-74.10	324.15	3.36
163	-78.73	143.46	4.32
164	-74.23	160.95	4.68
166	-72.20	176.29	5.74
167	-72.18	163.92	5.13
168	-59.06	7.58	3.70
171	-72.75	257.95	3.63
172	-72.88	264.51	3.56
176	-83.33	353.59	5.36
177	-81.27	19.51	4.09
180	-49.02	10.53	3.57
181	-39.77	16.35	3.15
182	-53.79	32.41	3.61
183	-48.11	20.08	3.40
184	-32.18	101.11	8.84
186	-26.37	94.01	8.83
187	-33.46	75.57	6.80
189	-26.12	66.32	7.18
190	-42.40	68.02	4.84
191	-43.89	60.25	4.00
192	-52.03	56.88	3.78
193	-50.35	72.71	4.08

AREOGRAPHIC

Table 2--continued

Point	Latitude, ϕ'°	W.Longitude, λ°	Elevation, km
194	-45.43	74.17	4.87
195	-51.94	96.74	5.36
196	-80.97	48.66	3.76
197	-82.33	73.51	3.88
198	-67.06	17.30	4.00
199	-69.62	146.25	4.24
200	-42.10	195.97	4.45
201	-50.06	190.99	4.69
202	-55.65	185.17	4.85
203	-50.42	175.62	4.90
204	-40.36	177.90	4.23
205	-26.52	188.37	3.67
206	-32.50	186.21	4.03
207	-33.70	202.72	4.47
208	-34.08	210.08	4.08
209	-27.13	217.14	3.32
210	-27.86	207.97	3.70
211	-33.17	227.46	3.82
212	-38.80	212.39	4.46
213	-43.30	225.60	4.12
214	-39.90	229.58	3.79
215	-23.26	237.49	3.81
216	-67.49	343.07	5.79
221	-76.62	283.78	3.25
222	-76.03	289.52	3.16
223	-80.76	289.79	3.54
224	-78.59	253.88	3.30
229	-70.69	349.86	6.85
232	-69.25	359.56	3.97
233	-74.34	344.72	6.50
234	-68.99	298.06	1.81
236	-80.63	321.00	3.23
237	-74.42	235.07	3.72
238	-85.65	263.48	3.80
239	-78.16	230.35	3.45
240	-75.95	210.71	4.85
242	-64.07	317.61	2.80
243	-67.08	322.91	3.40
244	-70.91	311.66	2.80
245	-64.94	312.43	2.11
246	-70.48	285.00	2.81
248	-62.17	148.69	3.72
249	-55.38	152.35	4.57
250	-60.61	142.31	4.22

AREOGRAPHIC

Table 2--continued

Point	Latitude, ϕ'°	W.Longitude, λ°	Elevation, km
251	-65.56	131.36	4.45
252	-65.13	122.14	4.55
253	-69.82	115.04	4.38
254	-68.52	97.59	4.21
255	-70.31	92.32	4.28
256	-73.00	105.74	4.28
257	-72.09	82.10	3.92
258	-72.17	132.01	4.23
259	-77.22	128.64	4.13
261	-58.77	111.59	4.83
262	-53.34	125.20	5.17
263	-46.92	121.02	5.73
264	-42.72	119.88	6.24
265	-30.49	122.41	6.69
266	-36.75	128.49	5.85
267	-23.90	114.85	7.47
268	-55.69	78.11	4.06
269	-62.79	70.91	3.48
270	-62.51	44.08	3.91
271	-30.87	65.52	6.59
272	-38.20	52.97	4.28
273	-32.38	51.76	4.80
274	-20.45	45.75	2.93
275	-33.38	39.69	3.08
276	-42.87	34.45	3.19
277	-52.78	41.38	3.81
278	-30.51	25.93	2.59
279	-32.43	18.61	2.91
280	-39.07	25.69	2.94
281	-53.84	20.97	3.62
282	-60.09	23.49	3.88
283	-46.14	9.59	3.39
284	-63.98	259.30	3.88
285	-63.04	231.27	3.95
286	-49.00	260.04	2.47
287	-21.04	269.48	2.94
288	-23.23	278.77	2.11
289	-61.38	252.61	3.62
290	-44.60	248.24	3.62
291	-32.93	245.40	3.65
292	-32.77	256.72	2.81
293	-49.34	237.75	3.77
294	-40.16	243.35	3.37
295	-49.25	218.99	4.65

AREOGRAPHIC

Table 2--continued

Point	Latitude, ϕ'°	W.Longitude, λ°	Elevation, km
296	-64.09	209.88	5.11
297	-27.87	233.19	3.91
298	-33.76	219.35	3.79
299	-43.80	215.16	4.67
300	-48.34	205.98	5.17
301	-44.47	203.44	4.78
303	-43.66	189.81	4.53
304	-64.04	196.99	4.79
305	-70.03	71.89	3.52
306	-77.06	71.46	3.81
307	-53.28	197.09	5.05
308	-40.31	185.66	4.31
309	-47.54	183.19	4.62
310	-32.65	195.71	4.48
312	-61.02	177.18	5.63
313	-69.13	198.56	4.64
314	-32.48	175.95	3.73
315	-47.36	172.70	4.82
316	-33.26	165.91	3.85
317	-60.64	165.32	5.63
318	-46.78	162.18	4.69
319	-37.21	161.36	4.28
320	-42.37	132.19	5.14
321	-61.94	133.21	4.57
322	-34.18	151.69	4.40
323	-49.48	152.67	5.02
324	-55.28	156.10	4.84
325	-34.88	144.65	4.60
326	-31.41	160.05	3.94
327	-43.06	145.20	4.95
328	-55.66	136.63	4.65
329	-47.22	137.81	4.82
330	-33.50	129.04	6.21
331	-34.04	11.71	2.86
332	-32.30	116.53	6.88
333	-37.08	115.42	6.84
334	-46.08	126.70	5.37
335	-34.11	0.25	3.48
336	-46.08	1.41	3.47
337	-56.24	8.59	3.71
338	-60.44	11.97	3.77
339	-28.24	2.15	3.00
340	-33.22	352.83	4.34
341	-48.01	345.83	5.57

AREOGRAPHIC

Table 2--continued

Point	Latitude, ϕ'°	W.Longitude, λ°	Elevation, km
342	-57.84	354.18	5.17
343	-35.16	339.15	4.79
344	-25.63	344.15	4.36
345	-23.46	352.65	3.76
346	-49.65	335.61	5.07
347	-61.59	339.07	5.08
348	-35.46	331.72	4.77
349	-24.84	333.07	4.57
350	-42.15	337.97	5.07
351	-46.78	325.19	4.19
352	-56.80	339.73	5.28
353	-59.33	322.74	3.58
354	-27.40	324.14	4.39
355	-35.87	322.92	4.19
356	-67.84	245.24	3.47
357	-70.82	327.99	3.58
358	-65.59	335.54	4.76
359	-73.09	57.51	3.59
361	-72.14	294.52	2.53
362	-72.46	276.23	3.18
363	-68.90	216.81	4.89
364	-54.44	329.12	4.30
365	-69.31	45.55	4.08
366	-70.42	57.05	3.50
367	-73.61	317.21	3.08
368	-80.34	82.28	3.60
369	-67.81	18.98	4.06
375	-57.53	312.96	1.48
376	-43.90	323.81	4.20
377	-43.67	315.45	1.93
378	-31.24	316.39	2.69
379	-34.28	314.70	1.83
380	-53.36	316.94	2.78
381	-45.90	304.97	-1.38
382	-77.51	54.63	3.77
383	-75.27	82.97	3.85
384	-73.12	100.18	4.20
385	-53.01	153.89	4.87
386	-61.68	305.14	0.90
387	-61.59	289.99	1.28
388	-54.47	309.16	0.31
389	-59.27	269.98	3.16
390	-50.43	247.83	3.60
391	-48.36	271.05	2.17

AREOGRAPHIC

Table 2--continued

Point	Latitude, ϕ'°	W.Longitude, λ°	Elevation, km
392	-43.83	255.98	2.88
393	-36.13	263.93	1.97
394	-25.03	265.23	2.72
397	-24.56	275.56	1.91
400	9.93	136.90	3.02
401	10.87	135.33	12.82
403	19.21	140.81	0.58
404	20.67	137.17	6.27
405	18.57	131.80	24.46
406	22.06	131.49	5.05
407	23.14	136.61	6.39
408	11.78	124.86	5.72
409	11.28	121.75	6.07
410	10.78	119.33	6.41
411	16.16	127.45	4.55
413	19.61	119.81	5.16
414	24.55	128.03	2.91
415	8.32	119.58	7.06
416	6.95	120.75	7.35
417	3.58	121.49	8.17
418	16.84	119.18	5.66
419	15.30	117.45	6.11
420	23.41	119.42	4.75
421	23.71	117.44	4.81
422	2.95	111.26	9.25
423	7.90	112.84	8.03
424	24.76	109.90	4.85
425	18.95	111.10	6.23
426	17.58	114.18	6.19
427	9.55	102.39	6.28
428	8.56	107.82	7.78
429	16.80	103.36	5.35
430	8.56	112.19	7.98
433	11.37	97.62	5.38
434	16.99	101.02	4.88
435	18.22	95.18	4.40
436	22.04	103.30	4.85
437	25.25	102.56	4.07
438	25.51	98.90	3.63
439	24.50	91.63	3.59
440	26.71	92.18	3.42
441	27.74	89.54	3.18
442	28.50	87.84	3.07
443	24.52	89.83	3.60

AREOGRAPHIC

Table 2--continued

Point	Latitude, ϕ'°	W.Longitude, λ°	Elevation, km
444	22.10	89.36	3.86
445	21.57	81.01	3.35
446	13.16	83.32	4.30
447	13.74	79.87	3.88
449	4.43	82.62	5.10
450	16.77	82.30	3.85
451	20.27	77.24	3.19
452	28.47	79.56	2.96
453	25.43	81.12	3.21
454	11.56	76.95	3.90
455	1.20	72.03	4.51
456	7.74	72.97	4.02
457	11.79	72.47	3.63
458	11.40	69.09	3.48
459	20.10	71.95	2.96
460	18.13	72.63	3.08
461	19.54	68.48	2.75
462	26.97	71.23	1.88
463	23.32	72.27	2.53
464	20.77	64.23	2.29
465	25.30	63.70	1.48
466	16.77	64.33	2.65
467	11.37	64.46	3.08
468	6.82	64.24	3.35
470	12.83	60.74	2.56
471	20.79	58.58	1.69
472	13.27	54.08	1.82
473	10.17	55.44	2.14
475	11.53	50.78	1.49
476	16.53	54.43	1.51
477	20.13	56.27	1.46
478	23.08	55.98	1.08
479	20.39	47.80	0.41
480	24.85	47.12	0.17
481	19.41	45.32	0.42
482	12.97	45.91	1.08
483	19.59	42.09	0.26
484	10.65	40.12	0.99
485	7.57	46.06	1.60
486	2.57	46.35	2.14
487	19.62	29.83	-0.64
488	10.84	34.90	0.51
489	12.02	25.42	-0.05
490	8.42	25.36	0.27

AREOGRAPHIC

Table 2--continued

Point	Latitude, ϕ'°	W.Longitude, λ°	Elevation, km
491	17.34	24.94	-0.36
492	19.88	24.03	-0.49
493	23.71	26.83	-0.79
494	26.94	25.77	-1.02
495	19.55	15.75	-0.35
496	25.30	17.48	-0.62
497	19.77	12.09	-0.31
498	19.18	20.00	-0.32
500	11.27	17.28	0.06
501	4.87	16.35	0.53
502	11.15	12.12	0.15
503	10.26	16.11	0.15
504	10.97	6.66	0.23
505	0.38	6.86	1.00
506	15.91	7.21	-0.09
507	19.08	7.46	-0.24
508	25.99	7.65	-0.65
509	18.45	2.64	-0.16
510	10.17	2.71	0.24
511	8.43	1.52	0.37
512	11.11	358.80	0.25
513	5.06	358.06	0.84
514	15.47	357.82	0.14
515	18.74	358.18	-0.00
516	13.44	355.29	0.54
517	8.89	355.09	0.82
518	5.86	354.39	1.18
519	11.49	354.69	0.69
520	18.35	353.23	0.42
521	15.02	355.10	0.47
522	15.43	350.84	0.73
523	0.30	2.72	1.00
524	2.22	2.53	0.83
525	6.76	358.22	0.64
526	1.97	38.57	1.62
527	4.99	38.93	1.43
528	4.07	33.71	0.99
529	6.15	35.04	0.90
530	9.06	37.29	0.83
531	10.52	31.39	0.18
532	15.44	34.72	0.13
533	18.26	29.05	-0.49
534	12.60	30.99	0.03
535	9.72	346.32	1.60

AREOGRAPHIC

Table 2--continued

Point	Latitude, ϕ'°	W.Longitude, λ°	Elevation, km
536	9.30	345.62	1.65
537	14.31	344.96	1.36
538	12.81	338.92	2.05
539	14.54	346.11	1.20
540	10.53	348.12	1.38
542	18.64	347.04	0.88
543	20.68	345.53	0.87
544	22.11	338.17	1.47
545	11.31	336.88	2.57
546	5.28	338.80	2.65
547	10.91	331.89	3.52
548	11.23	329.72	3.86
549	15.97	337.29	2.12
550	19.58	336.50	1.85
551	19.01	332.97	2.45
552	19.45	329.13	3.03
553	24.48	336.78	1.59
554	27.32	337.39	1.27
555	6.90	328.05	4.45
556	9.39	328.79	4.16
557	10.46	321.56	5.07
558	12.16	323.51	4.67
560	16.08	329.62	3.33
561	19.23	324.66	3.79
562	19.81	320.52	4.50
563	23.62	328.42	2.79
564	26.41	327.60	2.74
567	7.88	319.69	5.53
568	10.31	317.42	5.16
569	10.50	311.70	4.78
570	14.01	320.98	4.92
571	15.74	319.80	4.88
572	18.78	318.21	4.50
573	17.71	312.12	4.31
574	22.32	321.06	4.11
575	23.90	318.70	4.16
577	7.93	312.28	5.03
578	5.32	311.34	5.15
579	12.51	309.66	4.52
580	12.48	305.71	4.11
581	11.62	302.59	3.91
582	12.46	311.95	4.61
583	15.21	312.31	4.50
584	21.93	312.40	3.93

AREOGRAPHIC

Table 2--continued

Point	Latitude, ϕ'°	W.Longitude, λ°	Elevation, km
585	26.26	310.83	3.61
586	20.20	305.95	3.58
587	21.41	307.06	3.62
588	19.72	301.32	3.08
589	6.60	303.89	4.43
590	9.34	303.24	4.16
591	10.18	301.41	3.94
592	10.14	295.73	3.64
593	9.19	294.31	3.64
594	15.18	303.46	3.69
595	18.77	303.14	3.40
596	18.32	298.04	3.02
597	18.18	294.82	2.89
598	23.61	304.06	3.19
599	26.90	300.62	2.67
600	23.97	293.40	2.47
601	25.86	294.52	2.41
602	19.15	296.40	2.87
603	19.37	286.14	2.51
604	18.65	289.18	2.68
605	14.01	293.91	3.22
606	10.11	287.58	3.34
607	10.83	290.66	3.41
608	4.83	294.17	3.92
609	1.61	296.43	4.31
610	7.07	285.49	3.56
611	3.19	285.70	3.85
612	11.46	285.35	3.19
613	11.25	280.71	3.06
614	11.37	277.21	3.18
615	17.37	286.38	2.75
616	13.90	285.64	3.00
617	20.15	283.43	2.47
618	19.87	278.64	2.41
619	23.57	287.55	2.38
620	25.79	284.91	2.10
621	22.76	277.87	2.21
622	25.03	275.43	2.12
623	17.44	275.12	2.76
624	17.09	280.08	2.60
625	15.52	278.87	2.75
626	13.71	277.19	2.98
628	8.37	275.13	3.47
629	6.60	276.76	3.63

AREOGRAPHIC

Table 2--continued

Point	Latitude, ϕ'°	W.Longitude, λ°	Elevation, km
631	6.35	279.56	3.51
632	18.34	350.85	0.62
633	19.25	350.12	0.59
634	3.99	270.47	3.98
635	2.96	269.87	4.15
636	6.12	269.07	3.80
637	6.56	270.70	3.83
638	8.27	268.53	3.66
639	3.57	266.64	3.97
640	4.87	264.90	3.73
641	8.31	266.63	3.66
642	8.04	264.79	3.64
643	17.19	268.42	3.02
644	14.48	268.77	3.19
645	13.44	268.71	3.34
646	12.52	263.37	3.32
647	12.77	266.05	3.35
648	11.33	267.91	3.47
649	10.63	261.62	3.49
650	13.32	256.37	2.82
651	14.85	264.34	3.24
652	15.32	260.59	3.21
653	17.09	266.51	3.10
654	20.45	258.90	2.82
655	21.42	258.10	2.62
656	28.79	256.11	1.54
657	26.82	256.63	1.85
658	24.04	258.40	2.29
659	19.58	250.70	1.65
660	21.15	254.45	2.07
661	19.02	257.46	2.75
662	16.83	257.05	2.76
663	12.82	249.21	1.96
664	11.91	253.26	2.54
665	8.00	257.06	3.14
666	6.26	258.20	3.31
667	2.92	257.40	3.35
668	12.90	247.64	1.97
669	10.18	248.75	2.14
670	6.82	249.54	2.45
671	4.79	248.10	2.62
672	2.19	248.30	2.83
673	11.78	239.14	1.82
674	11.55	244.68	2.00

AREOGRAPHIC

Table 2--continued

Point	Latitude, ϕ'°	W.Longitude, λ°	Elevation, km
675	16.05	248.94	1.73
676	17.43	249.63	1.66
677	20.71	241.21	1.38
678	20.40	243.75	1.42
679	20.30	246.39	1.40
680	22.04	248.82	1.45
681	23.82	250.11	1.44
682	26.34	249.43	1.33
683	27.93	247.59	1.22
684	22.95	238.96	1.15
685	23.53	242.11	1.17
686	25.89	239.79	0.92
687	18.30	242.04	1.51
688	17.39	238.16	1.45
689	17.31	231.90	0.84
690	13.43	241.80	1.84
691	15.59	240.30	1.66
692	10.28	239.00	1.95
693	9.37	241.08	2.16
694	8.83	236.99	1.81
695	8.77	231.61	1.10
696	6.58	239.78	2.23
697	2.49	242.74	2.63
698	2.12	240.82	2.62
699	10.07	231.07	1.03
700	6.09	231.39	1.10
701	12.49	229.80	0.81
702	12.44	221.20	0.11
703	21.92	227.48	0.42
704	21.34	224.83	0.20
705	21.70	222.02	-0.12
706	30.02	229.42	0.96
707	28.40	221.83	-0.06
708	29.25	228.27	0.76
709	27.34	221.10	-0.13
710	9.81	221.51	0.20
711	8.04	220.67	0.04
712	5.93	220.67	0.09
713	3.87	221.72	0.08
714	2.30	221.50	0.13
715	11.92	215.52	-0.06
716	12.08	213.43	-0.04
717	14.37	222.49	0.14
718	20.44	220.64	-0.28

AREOGRAPHIC

Table 2--continued

Point	Latitude, ϕ'°	W.Longitude, λ°	Elevation, km
719	20.63	217.74	-0.14
720	20.06	213.12	0.45
721	24.83	221.67	-0.13
722	23.71	211.57	0.61
723	26.81	211.79	0.54
724	27.52	208.29	0.92
725	25.53	209.08	0.84
726	26.54	202.34	1.38
727	21.71	206.42	0.48
728	20.74	200.84	-0.22
729	19.11	206.55	0.27
730	17.33	200.25	-0.26
731	13.78	208.21	0.09
732	13.11	205.39	-0.01
733	13.95	202.43	0.01
734	13.12	201.41	-0.00
735	4.40	199.84	0.10
736	8.95	200.37	0.12
737	11.08	199.60	0.14
738	13.57	198.71	-0.14
739	13.38	193.16	-0.37
740	12.13	190.94	-0.53
741	23.86	201.72	0.75
742	27.48	200.51	1.91
743	20.66	197.19	-0.23
744	20.71	195.07	-0.22
745	20.51	190.57	-0.16
746	17.31	191.06	-0.36
747	15.29	190.39	-0.39
748	13.22	189.37	-0.59
749	12.77	184.83	-0.85
750	11.64	181.46	-1.09
751	20.78	185.51	-0.21
752	20.82	181.09	-0.40
753	3.31	178.29	-0.24
754	1.93	178.07	-0.08
755	2.74	172.29	0.14
756	13.50	177.98	-0.95
757	13.27	175.84	-0.88
758	17.74	182.84	-0.48
759	14.97	181.57	-0.84
760	20.54	178.60	-0.46
761	20.66	177.06	-0.43
762	19.91	174.82	-0.48

AREOGRAPHIC

Table 2--continued

Point	Latitude, ϕ'°	W.Longitude, λ°	Elevation, km
763	22.41	181.21	-0.57
764	24.68	181.28	-0.67
765	26.60	182.58	-0.61
766	27.94	180.49	-1.08
768	13.94	170.05	-0.69
769	12.85	169.42	-0.64
770	12.84	168.40	-0.64
771	5.59	163.35	0.36
772	6.80	163.03	0.24
773	10.15	152.53	0.14
774	5.05	152.80	0.63
775	7.71	145.44	1.61
780	11.57	188.79	-0.70
781	6.24	188.16	-0.59
782	2.91	188.29	-0.46
783	6.89	185.78	-0.75
785	7.60	174.82	-0.70
786	6.45	173.14	-0.38
787	6.45	177.04	-0.68
788	10.99	175.30	-0.97
789	9.88	172.31	-0.89
790	16.17	173.20	-0.65
791	9.51	169.26	-0.63
792	7.58	171.73	-0.50
793	16.03	170.57	-0.67
794	15.61	167.96	-0.64
795	10.94	164.97	-0.37
796	6.93	168.38	-0.15
797	9.02	157.56	0.23
798	11.91	170.25	-0.76
799	26.60	345.78	0.49
800	-26.39	9.25	2.64
801	-26.96	7.66	2.68
802	-24.42	6.05	2.68
803	-27.10	14.79	2.51
804	-24.03	15.06	2.29
805	-23.19	9.11	2.60
806	-18.57	4.66	2.46
807	-17.12	8.42	2.41
808	-24.02	7.79	2.69
809	-23.12	7.53	2.69
810	-23.02	4.40	2.66
811	-21.31	5.63	2.60
812	-22.72	6.25	2.70

AREOGRAPHIC

Table 2--continued

Point	Latitude, ϕ'°	W.Longitude, λ°	Elevation, km
813	-19.16	1.33	2.47
814	-17.70	3.61	2.41
815	-14.03	3.25	2.12
817	-12.52	1.23	2.02
818	-15.05	358.86	2.27
819	-8.70	2.62	1.70
820	-9.68	0.74	1.79
822	-10.70	356.21	2.30
823	-7.66	358.49	1.81
824	-14.32	6.85	2.16
825	-4.67	0.51	1.42
826	-4.25	2.40	1.40
827	-5.41	358.71	1.55
828	-3.78	358.46	1.48
829	-8.65	5.15	1.69
830	-10.74	11.76	1.70
831	-10.47	10.38	1.77
832	-8.99	10.66	1.62
833	-6.96	14.16	1.26
834	-5.15	9.61	1.44
835	-4.23	9.49	1.29
836	-3.10	12.21	1.15
837	1.34	8.19	0.91
838	2.56	10.41	0.73
839	-12.53	14.97	1.62
840	-16.82	13.47	1.96
841	-16.33	12.55	2.07
842	-14.18	11.90	1.94
843	-15.37	13.50	1.92
844	-18.97	9.34	2.54
845	-13.21	10.11	2.01
846	-8.90	7.48	1.72
847	-22.48	10.62	2.54
848	-18.73	12.19	2.19
849	-18.36	14.55	1.93
850	-23.18	14.00	2.30
851	-17.83	16.20	1.73
852	-22.70	16.51	2.09
853	-22.44	15.38	2.14
854	-20.42	14.62	2.12
856	-21.80	10.37	2.60
857	-23.63	16.21	2.20
858	-22.71	17.54	1.99
859	-21.49	19.71	1.74

AREOGRAPHIC

Table 2--continued

Point	Latitutde, $\phi'°$	W.Longitude, $\lambda°$	Elevation, km
861	-25.56	16.91	2.34
862	-24.23	2.80	2.83
863	-22.13	0.31	2.67
864	-21.57	355.87	3.25
865	-20.38	-0.07	2.61
866	-17.66	358.97	2.50
867	-14.98	358.09	2.46
868	-16.75	353.93	3.05
869	-12.66	356.17	2.44
870	-11.96	351.85	2.95
871	-11.19	353.95	2.66
872	-9.76	356.54	2.20
873	-5.18	355.50	1.94
874	-9.06	354.79	2.33
875	-5.89	353.25	2.28
876	-6.44	352.30	2.42
877	-2.08	350.14	2.22
878	-2.44	352.20	2.03
879	-0.65	353.53	1.80
880	3.25	348.52	1.96
881	4.01	354.67	1.29
882	-26.05	358.15	3.26
883	-24.15	358.98	3.01
884	-23.26	356.52	3.21
885	-25.01	358.11	3.11
886	-27.31	354.30	3.77
887	-20.32	353.18	3.50
888	-24.52	354.39	3.60
889	-22.70	355.26	3.39
890	-18.60	355.36	3.07
891	-17.90	353.24	3.24
892	-19.31	351.98	3.60
893	-14.03	352.84	3.02
894	-13.10	350.53	3.19
895	-15.20	349.16	3.50
896	-8.79	351.10	2.71
897	-10.04	352.71	2.63
898	-10.45	347.07	3.17
899	-9.26	348.73	2.95
900	-5.93	350.09	2.59
901	-8.55	347.61	2.98
902	-9.23	345.06	3.15
903	-8.39	343.97	3.17
904	-7.59	345.60	3.00

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AREOGRAPHIC

Table 2--continued

Point	Latitude, ϕ'°	W.Longitude, λ°	Elevation, km
905	-4.56	341.03	3.11
906	-3.84	342.55	2.98
907	-2.71	343.83	2.74
908	-17.26	351.34	3.43
909	-17.79	348.55	3.72
910	-22.00	351.17	3.84
911	-23.91	12.00	2.46
912	-4.19	349.00	2.49
913	2.59	345.22	2.24
914	1.52	344.42	2.41
915	2.12	340.59	2.72
916	0.76	340.17	2.90
917	6.27	342.60	2.21
918	5.15	339.89	2.54
919	5.13	337.64	2.94
920	-24.48	195.77	3.69
921	-25.21	188.73	3.56
922	-28.54	190.72	3.88
923	-22.56	194.13	3.46
924	-2.59	178.89	0.44
925	-2.22	178.02	0.43
926	-3.64	175.52	0.77
927	-7.09	175.26	1.17
928	-5.25	175.76	0.95
929	-9.48	178.49	1.17
930	-10.21	178.51	1.25
931	-10.77	176.43	1.51
932	-9.39	176.12	1.36
933	-10.75	174.42	1.70
934	-9.37	173.63	1.56
935	-11.23	172.94	1.86
936	-14.48	174.04	2.19
937	-15.28	174.49	2.31
938	-11.77	180.23	1.42
939	-12.60	178.34	1.63
940	-13.74	177.40	1.88
941	-14.32	178.13	1.86
942	-15.34	178.39	2.02
946	-15.75	183.71	2.18
947	-16.74	180.94	2.14
948	-17.59	178.91	2.29
949	-16.32	184.98	2.37
950	-17.40	185.77	2.56
951	-18.72	184.25	2.69

AREOGRAPHIC

Table2--continued

Point	Latitude, ϕ'°	W.Longitude, λ°	Elevation, km
952	-19.10	186.36	2.86
954	-20.22	185.85	2.98
955	-21.45	183.39	2.93
956	-17.19	188.39	2.72
957	-21.93	184.36	3.03
958	-22.79	186.16	3.21
959	-22.21	187.81	3.29
960	-24.08	187.54	3.40
961	-24.04	188.75	3.49
962	-21.78	190.49	3.30
963	-18.01	180.27	2.26
964	-19.74	180.58	2.58
965	-19.40	181.82	2.62
966	-21.13	180.40	2.66
969	-22.48	190.63	3.34
970	-24.38	191.03	3.57
971	-23.78	194.17	3.53
972	-25.82	193.26	3.80
973	-17.74	189.15	2.82
974	-18.32	188.45	2.92
975	-19.59	189.31	3.06
976	-19.32	191.47	3.10
977	-12.67	187.06	2.04
978	-14.00	186.80	2.22
979	-14.14	188.60	2.34
980	-15.10	187.71	2.38
981	-15.79	189.52	2.69
982	-16.71	188.48	2.64
988	-19.67	194.65	3.07
989	-21.31	191.90	3.30
991	-15.87	191.44	2.70
992	-16.69	189.57	2.73
993	-11.77	188.61	2.12
994	-7.57	185.30	1.20
995	-2.63	186.71	0.34
996	-2.72	185.74	0.34
997	-7.21	184.66	1.07
999	-3.66	183.94	0.47
1000	-5.01	185.72	0.73
1001	-4.53	183.62	0.61
1002	-6.18	183.68	0.90
1003	-5.24	179.93	0.65
1004	-24.12	139.60	4.41
1005	-25.26	146.03	4.17

AREOGRAPHIC

Table 2--continued

Point	Latitude, ϕ'°	W.Longitude, λ°	Elevation, km
1006	-25.17	143.40	4.25
1007	-23.65	143.25	4.30
1008	-21.19	140.47	4.47
1009	-20.97	138.59	4.73
1010	-23.28	140.97	4.42
1011	-25.81	140.69	4.30
1012	-18.75	138.79	4.60
1013	-19.89	140.52	4.51
1014	-17.02	141.39	4.09
1015	-16.88	137.98	4.67
1016	-15.80	136.93	4.79
1017	-13.75	136.57	4.78
1018	-13.33	137.83	4.42
1019	-14.89	133.12	5.65
1020	-14.47	131.92	5.89
1021	-13.70	130.05	6.37
1022	-11.13	131.79	5.85
1023	-10.56	132.25	5.68
1024	-12.50	130.68	6.11
1025	-30.76	143.27	4.26
1026	-32.03	147.71	4.40
1027	-27.90	150.59	4.21
1028	-14.76	129.37	6.63
1029	-15.63	129.48	6.56
1030	-13.78	127.60	7.59
1031	-14.60	125.50	8.51
1032	-13.50	126.65	8.15
1033	-11.12	128.24	7.35
1034	-10.90	126.90	8.32
1035	-10.35	123.01	7.76
1036	-8.86	126.03	7.21
1037	-7.74	123.90	7.72
1038	-8.42	123.87	7.67
1039	-17.61	178.04	2.29
1040	-19.26	177.37	2.59
1041	-10.19	121.40	8.04
1042	-7.10	121.54	8.37
1043	-7.30	120.05	8.68
1044	-5.29	121.77	8.55
1045	-4.61	123.48	8.11
1046	-3.29	126.32	7.46
1047	0.74	120.95	9.20
1048	-2.66	120.43	9.24
1049	1.85	122.72	8.42

AREOGRAPHIC

Table 2--continued

Point	Latitude, ϕ'°	W.Longitude, λ°	Elevation, km
1050	5.45	123.45	7.26
1051	3.62	119.16	8.57
1052	4.10	116.60	8.59
1053	1.04	124.72	8.01
1054	-15.67	133.11	5.67
1056	-14.98	131.94	5.96
1060	-24.56	43.69	3.11
1061	-22.45	47.56	3.34
1062	-24.98	45.95	3.40
1063	-25.90	47.26	3.72
1064	-22.64	48.93	3.48
1065	-23.00	50.52	3.76
1067	-17.88	50.83	3.54
1069	-21.20	49.25	3.28
1070	-18.87	46.55	2.92
1071	-18.91	48.33	3.13
1072	-20.07	48.66	3.15
1074	-19.22	43.08	2.69
1075	-13.56	47.66	3.06
1076	-15.38	47.19	3.02
1079	-17.60	45.62	2.89
1080	-12.11	44.69	2.77
1081	-13.85	44.52	2.80
1082	-10.92	45.62	2.82
1083	-14.38	40.95	2.37
1084	-7.32	45.67	2.68
1085	-10.05	44.59	2.73
1086	-7.77	43.50	2.52
1087	-9.18	41.87	2.44
1088	-7.76	42.15	2.42
1089	-5.14	43.20	2.34
1090	-6.26	43.64	2.51
1091	-9.70	38.73	2.09
1092	-3.83	41.40	2.18
1093	-3.86	38.64	1.98
1094	-2.20	43.97	2.33
1095	-3.55	43.47	2.37
1096	1.28	41.19	1.91
1097	-0.24	43.55	2.20
1098	0.06	37.18	1.70
1099	-2.52	40.60	2.03
1200	32.92	89.23	2.55
1201	32.12	96.23	2.83
1202	32.49	87.01	2.63

AREOGRAPHIC

Table 2--continued

Point	Latitude, ϕ'°	W.Longitude, λ°	Elevation, km
1203	34.10	81.84	2.48
1204	38.94	83.92	1.90
1205	39.72	80.31	1.83
1206	40.40	75.71	1.14
1207	42.21	89.59	1.39
1208	42.23	82.70	1.49
1209	44.15	78.84	1.18
1210	43.75	74.93	0.76
1211	40.91	69.66	0.29
1212	49.14	68.88	-0.49
1213	47.56	73.60	0.13
1215	27.26	76.72	2.66
1216	33.36	76.33	1.97
1217	32.83	72.68	1.43
1218	37.53	70.73	0.68
1219	39.55	66.25	0.18
1220	41.56	64.72	-0.11
1221	44.64	64.13	-0.37
1222	45.64	69.96	-0.06
1223	44.32	53.19	-0.87
1224	40.62	56.91	-0.39
1225	37.73	56.38	-0.26
1226	39.36	42.00	-1.28
1227	41.62	50.94	-0.79
1228	39.24	46.52	-0.91
1229	34.07	66.41	0.57
1230	32.24	67.12	0.86
1231	26.06	67.88	1.76
1232	27.08	55.96	0.71
1233	28.08	57.65	0.66
1234	28.88	59.47	0.56
1235	25.36	53.95	0.69
1236	32.41	56.60	0.21
1237	34.60	56.59	0.02
1238	34.35	52.16	-0.05
1239	33.47	50.48	0.01
1240	32.41	48.58	-0.09
1241	27.45	50.27	0.40
1242	26.38	43.26	-0.26
1243	27.11	40.16	-0.58
1244	30.14	51.17	0.29
1245	33.98	46.32	-0.45
1246	33.27	43.64	-0.75
1247	34.35	42.97	-0.85

AREOGRAPHIC

Table 2--continued

Point	Latitude, ϕ'°	W.Longitude, λ°	Elevation, km
1248	32.51	41.05	-0.96
1249	32.06	38.93	-1.09
1250	36.38	43.89	-0.86
1251	42.01	42.17	-1.47
1252	38.56	35.03	-1.62
1253	40.94	34.53	-1.70
1254	37.45	39.59	-1.35
1255	25.97	37.78	-0.66
1256	26.14	35.28	-0.82
1257	29.43	39.83	-0.89
1258	33.78	30.37	-1.51
1259	34.04	34.25	-1.44
1260	41.14	24.54	-1.74
1261	39.24	25.22	-1.61
1262	26.04	31.87	-1.04
1263	28.87	31.27	-1.24
1264	33.21	21.20	-1.07
1265	34.37	25.68	-1.34
1266	37.86	30.38	-1.72
1267	26.69	24.11	-0.89
1268	30.21	21.90	-0.99
1269	33.06	17.15	-1.01
1270	34.16	11.79	-1.10
1271	38.17	21.23	-1.43
1272	38.85	18.47	-1.33
1273	43.58	9.09	-1.49
1274	42.59	15.09	-1.60
1275	41.63	10.55	-1.39
1276	39.23	11.75	-1.31
1277	26.47	12.98	-0.74
1278	30.26	14.87	-0.97
1279	28.97	13.19	-0.91
1280	34.07	6.91	-1.03
1281	32.59	2.64	-0.84
1282	36.72	8.66	-1.16
1283	39.93	3.18	-1.20
1284	38.43	356.73	-0.95
1285	42.57	0.45	-1.30
1286	43.17	356.80	-1.12
1287	41.73	355.24	-0.96
1288	26.74	2.85	-0.57
1289	26.11	357.97	-0.43
1290	31.07	5.95	-0.96
1291	34.14	0.20	-0.91

AREOGRAPHIC

Table 2--continued

Point	Latitude, ϕ'°	W.Longitude, λ°	Elevation, km
1292	32.81	357.66	-0.68
1293	34.14	353.88	-0.61
1294	41.57	350.46	-0.71
1295	40.87	348.45	-0.62
1296	26.91	355.41	-0.23
1297	26.53	349.87	0.07
1298	31.89	354.95	-0.53
1299	33.09	350.09	-0.30
1300	30.09	355.35	-0.42
1301	31.92	345.23	0.17
1302	36.13	352.62	-0.63
1303	40.37	343.74	-0.17
1304	38.79	338.66	0.45
1305	38.87	346.68	-0.32
1306	45.00	347.47	-0.46
1307	45.53	341.73	-0.49
1308	29.22	346.89	0.25
1309	32.87	340.78	0.54
1310	36.51	343.40	0.08
1311	40.82	334.46	0.87
1312	45.99	334.72	-0.05
1313	25.35	332.07	2.19
1314	31.29	337.61	1.00
1315	34.04	337.94	0.86
1316	32.51	333.36	1.54
1317	33.75	329.38	1.98
1318	35.23	332.62	1.51
1319	38.44	331.43	1.45
1320	41.54	327.69	1.48
1321	39.67	321.18	2.42
1322	48.82	330.68	-0.09
1323	40.61	324.52	2.00
1324	26.68	324.02	3.31
1325	29.49	328.37	2.42
1326	30.98	325.48	2.72
1327	32.42	324.85	2.71
1328	33.14	317.41	3.21
1329	34.26	322.94	2.73
1330	38.03	323.57	2.33
1331	39.85	315.86	2.47
1332	40.28	310.10	2.40
1333	47.47	319.29	1.10
1334	44.99	320.37	1.54
1335	26.61	315.07	3.69

AREOGRAPHIC

Table 2--continued

Point	Latitude, ϕ'°	W.Longitude, λ°	Elevation, km
1338	34.40	312.94	2.97
1339	33.95	308.21	2.84
1340	37.45	311.28	2.65
1341	39.73	306.54	2.34
1342	44.11	306.77	1.77
1343	48.35	306.37	1.17
1344	28.13	305.74	3.07
1345	27.68	309.65	3.36
1346	30.76	309.23	3.16
1347	33.06	303.61	2.59
1348	33.41	298.95	2.19
1349	35.79	301.90	2.27
1350	35.87	305.73	2.49
1351	41.98	299.07	1.82
1352	40.05	297.74	1.93
1353	39.14	292.85	1.66
1354	44.73	295.96	1.56
1355	45.41	302.57	1.67
1356	29.10	300.75	2.52
1357	30.78	298.49	2.27
1358	34.03	292.81	1.96
1359	33.20	288.44	1.83
1360	38.17	295.84	1.87
1361	35.51	292.45	1.89
1362	41.50	294.69	1.67
1363	27.12	292.35	2.32
1364	41.63	287.33	1.31
1365	39.60	289.32	1.50
1366	45.39	290.23	1.16
1367	36.64	288.45	1.62
1368	34.68	284.49	1.65
1369	38.35	284.37	1.42
1370	42.09	283.18	1.25
1371	40.48	273.07	1.16
1372	28.20	276.52	1.89
1375	33.97	275.95	1.54
1376	33.56	278.96	1.53
1377	32.68	273.38	1.68
1378	41.99	272.34	1.12
1379	37.10	278.41	1.35
1380	28.99	266.82	1.89
1381	26.07	267.01	2.26
1382	28.37	262.31	1.76
1383	29.88	271.06	1.92

AREOGRAPHIC

Table 2--continued

Point	Latitude, ϕ'°	W.Longitude, λ°	Elevation, km
1384	33.49	266.61	1.51
1385	34.20	262.06	1.21
1386	37.35	268.07	1.22
1387	37.08	264.30	1.04
1388	40.79	261.44	0.66
1389	39.90	254.62	0.79
1390	38.96	260.83	0.80
1391	38.73	256.11	0.83
1392	30.22	263.79	1.61
1393	32.86	257.36	1.23
1394	33.20	252.69	1.23
1395	36.47	260.45	0.97
1396	35.33	257.49	1.03
1397	28.74	253.55	1.53
1398	31.49	255.17	1.36
1399	32.79	248.81	1.11
1400	33.03	243.71	0.78
1401	34.62	250.48	1.13
1402	36.78	252.27	1.06
1403	36.89	249.38	0.99
1404	39.42	243.77	0.34
1405	42.96	245.99	0.12
1406	40.49	238.27	0.07
1407	28.35	243.40	1.03
1408	30.02	243.55	0.96
1409	34.54	238.78	0.41
1410	33.35	233.16	0.77
1411	36.68	238.36	0.33
1412	38.65	236.75	0.21
1413	41.77	233.16	-0.05
1414	40.12	227.77	0.15
1415	24.90	235.60	0.99
1416	31.12	234.87	0.86
1418	34.36	230.67	0.76
1419	34.44	226.29	0.38
1420	32.57	223.78	0.15
1421	38.16	226.71	0.16
1422	41.48	223.80	-0.34
1423	40.73	218.46	-0.46
1424	30.36	226.67	0.65
1425	26.46	226.50	0.46
1426	33.59	221.05	-0.26
1427	32.16	216.39	0.04
1428	36.73	221.90	-0.16

AREOGRAPHIC

Table 2--continued

Point	Latitude, ϕ'°	W.Longitude, λ°	Elevation, km
1429	41.32	209.16	-0.08
1430	42.97	215.18	-0.58
1431	28.81	215.30	0.15
1432	25.32	218.31	-0.11
1433	29.90	217.03	0.03
1434	33.65	210.03	0.46
1435	32.76	205.24	1.41
1436	34.53	215.70	0.00
1437	36.29	210.19	0.31
1438	38.93	204.69	0.60
1439	41.11	199.83	0.45
1440	44.36	206.91	-0.45
1441	29.08	210.45	0.62
1442	32.44	208.56	0.82
1443	29.86	205.88	1.52
1444	31.96	202.13	2.08
1445	33.75	196.43	1.58
1446	33.68	202.67	1.67
1447	36.80	204.62	0.86
1448	37.67	201.03	1.12
1449	41.07	196.41	0.34
1450	39.41	193.98	0.54
1451	25.49	197.26	1.03
1452	27.11	194.95	1.22
1453	31.78	199.30	2.44
1454	34.27	193.02	1.03
1455	34.54	188.14	0.21
1456	36.17	193.79	0.98
1457	40.57	190.63	0.19
1458	38.33	187.49	-0.08
1459	38.60	182.25	-1.10
1460	47.11	190.73	-1.11
1461	49.25	193.54	-1.55
1462	51.23	189.51	-1.86
1463	27.78	184.96	-0.21
1464	30.99	189.94	0.92
1465	34.74	184.49	-0.54
1466	34.08	179.11	-1.42
1467	37.39	179.53	-1.46
1468	40.49	172.77	-1.73
1469	47.28	180.64	-1.56
1470	44.99	180.29	-1.56
1471	27.04	176.82	-1.00
1472	26.70	174.42	-0.98

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Table 2--continued

Point	Latitude, ϕ'°	W.Longitude, λ°	Elevation, km
1473	27.78	178.64	-1.11
1474	30.11	180.09	-1.41
1475	31.65	179.01	-1.40
1476	33.50	174.06	-1.39
1477	32.60	170.51	-1.34
1478	34.86	176.52	-1.40
1479	36.58	173.84	-1.50
1480	38.67	170.98	-1.68
1481	44.15	172.67	-1.82
1482	39.49	165.43	-1.74
1486	42.68	163.97	-1.77
1487	44.71	157.10	-1.55
1489	39.54	158.58	-1.62
1490	49.46	151.68	-1.58
1491	43.97	147.82	-0.97
1492	44.89	149.71	-1.09
1493	40.59	145.45	-0.60
1494	43.69	138.79	-0.36
1495	43.41	142.41	-0.65
1496	50.60	140.45	-0.95
1497	47.63	139.02	-0.55
1498	48.69	129.69	0.47
1499	43.52	134.29	0.39
1500	39.31	133.04	0.91
1501	38.52	130.99	1.27
1502	38.90	136.44	0.29
1503	38.07	127.11	1.94
1504	40.81	128.43	1.36
1505	34.48	131.30	1.19
1506	31.99	129.53	1.69
1507	33.57	126.73	3.23
1508	28.49	125.87	5.16
1509	26.76	122.75	8.23
1510	26.82	126.26	5.25
1511	26.29	124.39	6.92
1512	33.06	123.05	5.49
1513	39.39	121.43	2.13
1514	42.53	120.10	1.28
1515	45.25	123.80	0.92
1516	46.87	121.14	0.82
1517	46.08	115.31	1.57
1518	38.30	146.38	-0.59
1519	26.88	118.84	4.26
1520	25.60	117.02	9.35

AREOGRAPHIC

Table 2--continued

Point	Latitude, ϕ'°	W.Longitude, λ°	Elevation, km
1521	41.06	110.47	3.34
1522	39.96	114.06	2.81
1523	44.39	110.08	2.65
1524	41.29	117.88	1.81
1525	35.74	117.91	4.85
1526	33.21	116.62	6.03
1527	32.49	112.97	4.73
1528	49.97	125.05	0.46
1529	49.29	116.33	0.96
1530	48.04	112.28	1.57
1531	54.89	114.94	0.03
1532	28.41	116.07	7.84
1533	29.84	113.31	5.91
1534	26.35	109.29	4.83
1535	25.48	104.84	4.42
1536	32.79	107.94	3.21
1537	32.49	104.51	3.03
1538	37.42	111.21	3.54
1539	35.08	108.78	3.36
1540	39.39	105.55	2.78
1541	39.34	101.77	2.12
1542	42.74	107.04	2.55
1543	44.99	101.00	1.14
1544	48.35	96.30	0.57
1545	27.57	106.16	4.03
1546	31.34	99.84	3.02
1547	33.79	99.89	2.60
1548	36.36	99.07	2.24
1549	37.50	102.97	2.57
1550	42.39	97.90	1.34
1551	40.13	94.26	1.66
1552	38.21	95.96	1.98
1553	44.49	91.15	1.09
1554	54.24	97.46	-0.26
1555	51.92	91.11	0.15
1556	58.63	103.26	-0.72
1557	58.76	95.01	-0.78
1558	35.59	93.63	2.31
1559	33.88	89.22	1.78
1560	27.78	97.65	3.39
1561	28.98	95.04	3.19
1562	43.30	85.24	1.32
1563	47.82	83.93	0.81
1564	51.69	125.74	0.18

AREOGRAPHIC

Table 2--continued

Point	Latitude, ϕ'°	W.Longitude, λ°	Elevation, km
1565	66.49	278.18	-0.23
1566	55.17	93.46	-0.29
1568	64.42	109.70	-0.72
1569	54.86	88.37	-0.28
1570	58.97	115.64	-0.82
1571	52.41	297.29	0.70
1572	56.18	311.02	-0.20
1573	58.86	289.53	0.25
1574	62.13	289.24	0.21
1575	54.99	276.58	0.26
1576	59.13	277.56	-0.48
1577	45.15	278.62	1.19
1578	43.31	244.32	-0.08
1579	49.28	241.10	-1.24
1580	41.52	235.89	-0.02
1581	55.25	226.74	-1.57
1582	50.61	225.46	-1.54
1583	59.58	221.79	-1.76
1584	66.55	215.94	-1.72
1585	49.82	214.93	-1.38
1586	58.64	213.71	-2.31
1587	53.62	195.75	-1.94
1588	48.80	199.44	-1.39
1589	1.57	330.83	4.41
1590	66.50	196.64	-1.83
1591	60.19	206.95	-2.59
1592	79.78	214.21	-2.16
1593	72.14	213.95	-1.67
1594	60.58	230.59	-1.49
1595	55.11	255.97	-0.61
1596	48.86	270.83	1.32
1597	51.98	267.17	0.77
1598	69.31	270.31	-0.22
1599	50.39	77.18	0.29
1600	11.57	133.74	11.80
1601	14.22	129.47	9.55
1602	15.18	130.84	12.59
1603	17.44	133.50	27.06
1604	17.36	129.30	11.85
1605	14.31	131.48	11.46
1606	19.04	133.02	25.05
1607	23.17	133.43	4.30
1608	20.61	135.37	6.06
1609	18.71	135.74	9.09

AREOGRAPHIC

Table 2--continued

Point	Latitude, ϕ'°	W.Longitude, λ°	Elevation, km
1610	54.00	81.38	-0.03
1611	50.14	61.38	-0.88
1612	52.02	64.65	-0.92
1613	53.65	71.11	-0.63
1614	49.47	43.87	-1.89
1615	60.75	58.13	-2.14
1616	54.50	39.07	-2.49
1617	49.80	34.82	-2.19
1618	53.95	31.72	-2.55
1619	47.44	28.12	-2.21
1620	50.90	18.49	-2.45
1621	48.04	13.76	-1.93
1622	43.65	24.01	-1.87
1623	62.57	23.86	-2.37
1624	50.15	8.41	-1.78
1625	65.79	21.52	-1.69
1626	68.28	25.77	-1.14
1627	76.86	54.95	-1.12
1628	84.98	7.77	-0.14
1629	74.68	13.58	-0.74
1630	71.99	15.61	-0.70
1631	73.69	358.37	-0.60
1632	76.99	334.47	1.30
1633	73.24	333.53	0.72
1634	68.73	347.73	-0.04
1635	43.19	5.47	-1.41
1636	49.96	357.01	-1.24
1637	51.35	345.66	-0.72
1638	62.23	353.73	-0.96
1639	65.23	329.11	0.08
1640	61.36	336.16	-1.28
1641	56.52	337.67	-1.30
1642	54.38	333.75	-0.82
1643	49.46	339.23	-0.99
1644	49.56	335.00	-0.66
1645	54.01	188.69	-1.93
1646	54.36	183.00	-1.93
1647	47.12	190.67	-1.11
1648	54.78	169.43	-2.20
1649	52.61	160.89	-1.84
1650	56.89	159.08	-1.80
1651	60.84	170.47	-2.42
1652	72.17	306.67	1.43
1653	60.50	303.57	-1.11

AREOGRAPHIC

Table 2--continued

Point	Latitude, ϕ'°	W.Longitude, λ°	Elevation, km
1654	70.17	295.42	0.95
1655	62.16	318.90	-0.68
1656	68.30	160.84	-2.13
1657	78.73	153.15	-0.68
1658	64.45	139.33	-0.91
1659	60.54	138.46	-1.30
1660	64.69	126.65	-0.55
1661	57.67	134.52	-0.88
1662	53.75	244.34	-1.30
1663	67.26	246.30	-0.96
1666	25.15	191.61	0.54
1667	26.75	192.27	0.83
1668	28.54	190.13	0.78
1669	22.08	190.29	0.06
1670	3.44	180.21	-0.34
1678	78.27	308.58	1.26
1800	-27.21	119.91	7.34
1801	-33.46	106.48	7.80
1802	-37.19	94.17	7.08
1803	-38.54	78.50	6.18

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