

FIGURE 78.—Orthogonal views of sample 14321, shown in approximate lunar orientation. NASA photograph numbers are shown in the schematic diagram.

lunar gravity vector (assumed to be vertical) and X_n is the distance along an unrectified picture corresponding to nG on the map.

The topographic elevation h was determined from a contour map made with Apollo 12 Hasselblad pictures taken from lunar orbit (unpublished map by Mapping Sciences Laboratory, Johnson Space Center, 1970). Since this value is not precisely known, error is introduced into the computation. Assuming that h is the sole source of error and differentiating X_n with respect

to h_n in (1):

$$dX_n = dh_n \sin t. \tag{2}$$

Since $\sin t \sim 0.5$, the error in X_n is equal to roughly half the error in the assumed elevation. For example, if the assumed h_n is in error by 10 m (probably a reasonable worst case), the horizontal error dX_n will be about 5 m. This is well within required tolerances for the geologic base map and is smaller than errors introduced by the visual interpolation method of plotting map details.

TABLE 7.—Sequential listing within each magazine of 60mm Apollo 14 lunar surface pictures

Photo	Seq	EVA	Sta	Az	Remarks
Magazine LL—black and white					
64-9046	165	2	A		Core spls 210, 211 XSD
64-9047	166	2	A		Core spls 210, 211 XSD
64-9048	167	2	A		Core spls 210, 211 LOC, LM
64-9049	188	2	B	269	Pan 7
64-9050	189	2	B	286	Pan 7
64-9051	190	2	B	297	Pan 7
64-9052	191	2	B	317	Pan 7
64-9053	192	2	B	337	Pan 7
64-9054	193	2	B	355	Pan 7
64-9055	194	2	B	8	Pan 7
64-9056	195	2	B	25	Pan 7
64-9057	196	2	B	36	Pan 7
64-9058	197	2	B	41	Pan 7
64-9059	198	2	B	53	Pan 7
64-9060	199	2	B	53	Pan 7
64-9061	200	2	B	70	Pan 7
64-9062	201	2	B	86	Pan 7
64-9063	202	2	B	96	Pan 7
64-9064	203	2	B	108	Pan 7
64-9065	204	2	B	136	Pan 7
64-9066	205	2	B	153	Pan 7
64-9067	206	2	B	171	Pan 7
64-9068	207	2	B	189	Pan 7
64-9069	208	2	B	202	Pan 7
64-9070	209	2	B	222	Pan 7
64-9071	210	2	B	240	Pan 7
64-9072	211	2	B	251	Pan 7
64-9073	212	2	B		Spls 047, 048 XSB
64-9074	213	2	B		Spls 047, 048 XSB
64-9075	214	2	B1	274	Pan 8
64-9076	215	2	B1	276	Pan 8
64-9077	216	2	B1	294	Pan 8
64-9078	217	2	B1	314	Pan 8
64-9079	218	2	B1	327	Pan 8
64-9080	219	2	B1	344	Pan 8
64-9081	220	2	B1	358	Pan 8
64-9082	221	2	B1	11	Pan 8
64-9083	222	2	B1	28	Pan 8
64-9084	223	2	B1	40	Pan 8
64-9085	224	2	B1	66	Pan 8
64-9086	225	2	B1	90	Pan 8
64-9087	226	2	B1	104	Pan 8
64-9088	227	2	B1	121	Pan 8
64-9089	228	2	B1	137	Pan 8
64-9090	229	2	B1	153	Pan 8
64-9091	230	2	B1	167	Pan 8
64-9092	231	2	B1	184	Pan 8
64-9093	232	2	B1	199	Pan 8
64-9094	233	2	B1	224	Pan 8
64-9095	234	2	B1	231	Pan 8
64-9096	235	2	B1	258	Pan 8
64-9097	236	2	B1	261	Pan 8
64-9098	266	2	C	274	Pan 11
64-9099	267	2	C	286	Pan 11
64-9100	268	2	C	302	Pan 11
64-9101	269	2	C	314	Pan 11
64-9102	270	2	C	323	Pan 11
64-9103	271	2	C	337	Pan 11
64-9104	272	2	C	354	Pan 11
64-9105	273	2	C	6	Pan 11
64-9106	274	2	C	20	Pan 11
64-9107	275	2	C	36	Pan 11
64-9108	276	2	C	44	Pan 11
64-9109	277	2	C	63	Pan 11
64-9110	278	2	C	80	Pan 11
64-9111	279	2	C	90	Pan 11
64-9112	280	2	C	104	Pan 11
64-9113	281	2	C	119	Pan 11
64-9114	282	2	C	139	Pan 11
64-9115	283	2	C	157	Pan 11
64-9116	284	2	C	172	Pan 11
64-9117	285	2	C	184	Pan 11
64-9118	286	2	C	206	Pan 11
64-9119	287	2	C	223	Pan 11
64-9120	288	2	C	247	Pan 11
64-9121	289	2	C	243	Pan 11
64-9122	290	2	C	265	Pan 11
64-9123	291	2	C		CT 1XS, no recovery; used at Sta G
64-9124	292	2	C		CT 1XS, no recovery; used at Sta G
64-9125	298	2	C		Spls 140-144, 068-072 XSB
64-9126	299	2	C		Spls 140-144, 068-072 XSB
64-9127	300	2	C		Spls 140-144, 068-072 XSA
64-9128	307	2	C1		Spl 321 XSB, 'Big Bertha'
64-9129	308	2	C1		Spl 321 XSB, 'Big Bertha'
64-9130	309	2	C2		Spl 053 XSB, Fillet
64-9131	310	2	C2		Spl 053 XSB, Fillet
64-9132	311	2	C2		Spl 053 XSB, Fillet
64-9133	312	2	C2		Spl 053 XSB, Fillet
64-9134	313	2	C2-F		Rock E of Weird
64-9135	314	2	C2-F		Rock E of Weird
64-9136	315	2	C2-F		Rock E of Weird
64-9137	316	2	F	274	Pan 12, may include SPL 066
64-9138	317	2	F	293	Pan 12
64-9139	318	2	F	273	Pan 12
64-9140	319	2	F	291	Pan 12
64-9141	320	2	F	313	Pan 12
64-9142	321	2	F	334	Pan 12
64-9143	322	2	F	350	Pan 12
64-9144	323	2	F	6	Pan 12

TABLE 7.—Sequential listing within each magazine of 60 mm Apollo 14 lunar surface pictures—Continued

Photo	Seq.	EVA	Sta.	Az.	Remarks
Magazine LL'—black and white—Continued					
64-9145	324	2	F	24	Pan 12
64-9146	325	2	F	41	Pan 12
64-9147	326	2	F	57	Pan 12
64-9148	327	2	F	81	Pan 12
64-9149	328	2	F	99	Pan 12
64-9150	329	2	F	118	Pan 12
64-9151	330	2	F	141	Pan 12
64-9152	331	2	F	154	Pan 12
64-9153	332	2	F	171	Pan 12
64-9154	333	2	F	188	Pan 12
64-9155	334	2	F	210	Pan 12
64-9156	335	2	F	231	Pan 12
64-9157	336	2	F	251	Pan 12
64-9158	342	2	G		Trench XSB Spls 145-148 (top)
64-9159	343	2	G		Trench XSB Spls 080, 081, 153-156 (middle)
64-9160	344	2	G		Trench XSA Spls 073-089, 149-152 (bottom)
64-9161	345	2	G		Trench XSA Spl 240, SESC (bottom)
64-9162	346	2	G		Trench XSA
64-9163	347	2	G		Trench XSA
64-9164	348	2	G		Trench XSA
64-9165	349	2	G		Trench XSA
64-9166	350	2	G		Trench DSA
64-9167	351	2	G	272	Pan 13
64-9168	352	2	G	294	Pan 13
64-9169	353	2	G	312	Pan 13
64-9170	354	2	G	331	Pan 13
64-9171	355	2	G	354	Pan 13
64-9172	356	2	G	11	Pan 13
64-9173	357	2	G	34	Pan 13
64-9174	358	2	G	52	Pan 13
64-9175	359	2	G	66	Pan 13
64-9176	360	2	G	83	Pan 13, core spl 230 loc
64-9177	361	2	G	98	Pan 13, core spl 230 loc
64-9178	362	2	G	115	Pan 13
64-9179	363	2	G	122	Pan 13
64-9180	364	2	G	135	Pan 13
64-9181	365	2	G	150	Pan 13
64-9182	366	2	G	168	Pan 13
64-9183	367	2	G	185	Pan 13
64-9184	368	2	G	208	Pan 13
64-9185	369	2	G	229	Pan 13
64-9186	370	2	G	251	Pan 13
64-9187	371	2	G1	265	Pan 13
64-9188	378	2	LM		Spls 313, 301 DS, loc
64-9189	407	2	LM		LM, Earth
64-9190	408	2	LM		LM, Earth
64-9191	409	2	LM		LM, Earth
64-9192	410	2	LM		LM, Earth
64-9193	411	2	LM		LM, Earth
64-9194	412	2	LM		LM, Earth
64-9195	413	2	LM		LM, Earth
64-9196	414	2	LM		LM, Earth
64-9197	415	2	LM		LM, Earth
64-9198	416	2	LM		SWC
64-9199	417	2	LM		SWC
64-9200	418	2	LM		SWC
64-9201	419	2	LM		SWC

Magazine KK—black and white

65-9202	014	Pre	LM	321	LM Window Pan 1
65-9203	015	Pre	LM	346	LM Window Pan 1
65-9204	016	Pre	LM	306	LM Window Pan 1
65-9205	017	Pre	LM	335	LM Window Pan 1
65-9206	018	Pre	LM	311	LM Window Pan 1
65-9207	019	Pre	LM	291	LM Window Pan 1
65-9208	020	Pre	LM	346	LM Window Pan 1
65-9209	021	Pre	LM	236	LM Window Pan 1
65-9210	022	Pre	LM	226	LM Window Pan 1
65-9211	023	Pre	LM	249	LM Window Pan 1
65-9212	024	Pre	LM	283	LM Window Pan 1
65-9213	025	Pre	LM	279	LM Window Pan 1
65-9214	026	Pre	LM	247	LM Window Pan 1
65-9215	027	Pre	LM	270	LM Window Pan 1

Magazine II—color

66-9216	001				Orbit
66-9217	002				Orbit
66-9218	003				Orbit
66-9219	004				Orbit
66-9220	005				Orbit
66-9221	006				Orbit
66-9222	007				Orbit
66-9223	008				Orbit
66-9224	009				Orbit
66-9225	010				Orbit
66-9226	011				Orbit
66-9227	012				Orbit
66-9228	013				Orbit
66-9229	028	1	LM		Cdr
66-9230	029	1	LM		Cdr
66-9231	030	1	LM		Flag
66-9232	031	1	LM		Flag
66-9233	032	1	LM		Flag
66-9234	033	1	LM		Footpad

TABLE 7.—Sequential listing within each magazine of 60 mm Apollo 14 lunar surface pictures—Continued

TABLE 7.—Sequential listing within each magazine of 60 mm Apollo 14 lunar surface pictures—Continued

Photo	Seq.	EVA	Sta.	Az.	Remarks
Magazine II—color—Continued					
66-9235	034	1	LM		Footpad
66-9236	035	1	LM	272	Pan 2, NE of LM
66-9237	036	1	LM	284	Pan 2, NE of LM
66-9238	037	1	LM	292	Pan 2, NE of LM
66-9239	038	1	LM	308	Pan 2, NE of LM
66-9240	039	1	LM	325	Pan 2, NE of LM
66-9241	040	1	LM	339	Pan 2, NE of LM
66-9242	041	1	LM	353	Pan 2, NE of LM
66-9243	042	1	LM	13	Pan 2, NE of LM
66-9244	043	1	LM	30	Pan 2, NE of LM
66-9245	044	1	LM	40	Pan 2, NE of LM
66-9246	045	1	LM	58	Pan 2, NE of LM
66-9247	046	1	LM	82	Pan 2, NE of LM
66-9248	047	1	LM	106	Pan 2, NE of LM
66-9249	048	1	LM	130	Pan 2, NE of LM
66-9250	049	1	LM	146	Pan 2, NE of LM
66-9251	050	1	LM	159	Pan 2, NE of LM
66-9252	051	1	LM	174	Pan 2, NE of LM
66-9253	052	1	LM	192	Pan 2, NE of LM
66-9254	053	1	LM	207	Pan 2, NE of LM
66-9255	054	1	LM	229	Pan 2, NE of LM
66-9256	055	1	LM	242	Pan 2, NE of LM
66-9257	056	1	LM	260	Pan 2, NE of LM
66-9258	057	1	LM		LM Misc
66-9259	058	1	LM		LM Misc
66-9260	059	1	LM		LM Misc
66-9261	060	1	LM		DPS
66-9262	061	1	LM		DPS
66-9263	062	1	LM		DPS
66-9264	063	1	LM		Footpad
66-9265	064	1	LM		Footpad
66-9266	065	1	LM		DPS
66-9267	066	1	LM		DPS
66-9268	067	1	LM		DPS
66-9269	068	1	LM		Footpad
66-9270	069	1	LM		Footpad
66-9271	070	1	LM	270	Pan 3, S of LM
66-9272	071	1	LM	283	Pan 3, S of LM
66-9273	072	1	LM	294	Pan 3, S of LM
66-9274	073	1	LM	308	Pan 3, S of LM
66-9275	074	1	LM	320	Pan 3, S of LM
66-9276	075	1	LM	338	Pan 3, S of LM
66-9277	076	1	LM	358	Pan 3, S of LM
66-9278	077	1	LM	15	Pan 3, S of LM
66-9279	078	1	LM	33	Pan 3, S of LM
66-9280	079	1	LM	49	Pan 3, S of LM
66-9281	080	1	LM	67	Pan 3, S of LM
66-9282	081	1	LM	85	Pan 3, S of LM
66-9283	082	1	LM	101	Pan 3, S of LM
66-9284	083	1	LM	115	Pan 3, S of LM
66-9285	084	1	LM	133	Pan 3, S of LM
66-9286	085	1	LM	148	Pan 3, S of LM
66-9287	086	1	LM	165	Pan 3, S of LM
66-9288	087	1	LM	181	Pan 3, S of LM
66-9289	088	1	LM	196	Pan 3, S of LM
66-9290	089	1	LM	210	Pan 3, S of LM
66-9291	090	1	LM	223	Pan 3, S of LM
66-9292	091	1	LM	237	Pan 3, S of LM
66-9293	092	1	LM	260	Pan 3, S of LM
66-9294	093	1	LM	286	Pan 4, W of LM
66-9295	094	1	LM	297	Pan 4, W of LM
66-9296	095	1	LM	311	Pan 4, W of LM
66-9297	096	1	LM	327	Pan 4, W of LM
66-9298	097	1	LM	341	Pan 4, W of LM
66-9299	098	1	LM	0	Pan 4, W of LM
66-9300	099	1	LM	15	Pan 4, W of LM
66-9301	100	1	LM	32	Pan 4, W of LM
66-9302	101	1	LM	45	Pan 4, W of LM
66-9303	102	1	LM	60	Pan 4, W of LM
66-9304	103	1	LM	77	Pan 4, W of LM
66-9305	104	1	LM	90	Pan 4, W of LM
66-9306	105	1	LM	105	Pan 4, W of LM
66-9307	106	1	LM	120	Pan 4, W of LM
66-9308	107	1	LM	136	Pan 4, W of LM
66-9309	108	1	LM	151	Pan 4, W of LM
66-9310	109	1	LM	169	Pan 4, W of LM
66-9311	110	1	LM	181	Pan 4, W of LM
66-9312	111	1	LM	199	Pan 4, W of LM
66-9313	112	1	LM	215	Pan 4, W of LM
66-9314	113	1	LM	232	Pan 4, W of LM
66-9315	114	1	LM	254	Pan 4, W of LM
66-9316	115	1	LM	272	Pan 4, W of LM
66-9317	149	1-2	LM	287	LM Window Pan 5
66-9318	150	1-2	LM	285	LM Window Pan 5
66-9319	151	1-2	LM	275	LM Window Pan 5
66-9320	152	1-2	LM	254	LM Window Pan 5
66-9321	153	1-2	LM	261	LM Window Pan 5
66-9322	154	1-2	LM	222	LM Window Pan 5
66-9323	155	1-2	LM	6	LM Window Pan 5
66-9324	156	1-2	LM	308	LM Window Pan 5
66-9325	157	1-2	LM	310	LM Window Pan 5
66-9326	158	1-2	LM	354	LM Window Pan 5
66-9327	159	1-2	LM		Earth
66-9328	160	1-2	LM		Earth
66-9329	161	1-2	LM		Earth
66-9330	162	1-2	LM		Earth
66-9331	163	1-2	LM		Earth
66-9332	164	1-2	LM		Earth
66-9333	420	Post	LM	282	LM Window Pan 15

Photo	Seq.	EVA	Sta.	Az.	Remarks
Magazine II—color—Continued					
66-9334	421	Post	LM	289	LM Window Pan 15
66-9335	422	Post	LM	285	LM Window Pan 15
66-9336	423	Post	LM	288	LM Window Pan 15
66-9337	424	Post	LM	328	LM Window Pan 15
66-9338	425	Post	LM	298	LM Window Pan 15
66-9339	426	Post	LM	309	LM Window Pan 15
66-9340	427	Post	LM	332	LM Window Pan 15
66-9341	428	Post	LM	353	LM Window Pan 15
66-9342	429	Post	LM	330	LM Window Pan 15
66-9343	430	Post	LM	322	LM Window Pan 15
66-9344	431				Command Module
66-9345	432				Command Module
66-9346	433				Command Module
66-9347	434				Command Module
66-9348	435				Command Module
66-9349	436				Command Module
66-9350	437				Command Module
66-9351	438				Command Module
66-9352	439				Command Module
66-9353	440				Command Module
66-9354	441				Command Module
66-9355	442				Command Module
66-9356	443				Command Module
66-9357	444				Command Module
66-9358	445				Command Module
66-9359	446				Command Module
66-9360	447				Command Module

Magazine JJ—color					
67-9361	116	1	ALSEP		C/S, MET
67-9362	117	1	ALSEP		PSE
67-9363	118	1	ALSEP		C/S, PSE
67-9364	119	1	ALSEP		C/PLEE
67-9365	120	1	ALSEP		C/S, C/PLEE
67-9366	121	1	ALSEP		C/S, RTG
67-9367	122	1	ALSEP		ALSEP LOC, MET tracks, LM
67-9368	123	1	ALSEP		ALSEP LOC, MET tracks, LM
67-9369	124	1	ALSEP		Side
67-9370	125	1	ALSEP		Side
67-9371	126	1	ALSEP		Side
67-9372	127	1	ALSEP		C/S, Side
67-9373	128	1	ALSEP		Side
67-9374	129	1	ALSEP		Geophone Line, LMP
67-9375	130	1	ALSEP		C/S, RTG
67-9376	131	1	ALSEP		C/S
67-9377	132	1	ALSEP		C/S
67-9378	133	1	ALSEP		C/S
67-9379	134	1	ALSEP		C/S
67-9380	135	1	ALSEP		C/S
67-9381	136	1	ALSEP		C/S
67-9382	137	1	ALSEP		C/S
67-9383	138	1	ALSEP		C/S
67-9384	139	1	ALSEP		C/S, PSE
67-9385	140	1	ALSEP		LRRR
67-9386	141	1	ALSEP		LRRR
67-9387	142	1	ALSEP		LRRR, LOC, LM
67-9388	143	1	ALSEP		LOC to LM for comprehensive SPL
67-9389	144	1	ALSEP		LOC to ALSEP for comprehensive SPL
67-9390	145	1	ALSEP		SPL 304 XSB, FSR
67-9391	146	1	ALSEP		SPL 304 XSB, FSR
67-9392	147	1	ALSEP		SPL 305 XSB, FSR
67-9393	148	1	ALSEP		SPL 305 XSB, FSR

Magazine MM—black and white					
68-9394	168	2	A	271	Pan 6
68-9395	169	2	A	269	Pan 6
68-9396	170	2	A	285	Pan 6
68-9397	171	2	A	312	Pan 6
68-9398	172	2	A	335	Pan 6
68-9399	173	2	A	359	Pan 6
68-9400	174	2	A	23	Pan 6
68-9401	175	2	A	58	Pan 6
68-9402	176	2	A	82	Pan 6
68-9403	177	2	A	116	Pan 6
68-9404	178	2	A	141	Pan 6
68-9405	179	2	A	160	Pan 6
68-9406	180	2	A	193	Pan 6
68-9407	181	2	A	210	Pan 6
68-9408	182	2	A	232	Pan 6
68-9409	183	2	A		Spls 041-046 DSB
68-9410	184	2	A		Spls 041-046 XSB
68-9411	185	2	A		Spls 041-046 XSA
68-9412	186	2	A		Spls 041-046 XSA
68-9413	187	2	A		Spls 041-046 LOC
68-9414	237	2	B2		Large rock above flank
68-9415	238	2	B2	263	Pan 9
68-9416	239	2	B2	284	Pan 9
68-9417	240	2	B2	316	Pan 9
68-9418	241	2	B2	345	Pan 9
68-9419	242	2	B2	9	Pan 9
68-9420	243	2	B2	33	Pan 9
68-9421	244	2	B2	57	Pan 9
68-9422	245	2	B2	92	Pan 9
68-9423	246	2	B2	120	Pan 9
68-9424	247	2	B2	148	Pan 9

TABLE 7.—Sequential listing within each magazine of 60 mm Apollo 14 lunar surface pictures—Continued

Photo	Seq.	EVA	Sta.	Az.	Remarks
Magazine MM—black and white—Continued					
68-9425	248	2	B2	165	Pan 9
68-9426	249	2	B2	184	Pan 9
68-9427	250	2	B2	200	Pan 9
68-9428	251	2	B2	223	Pan 9
68-9429	252	2	B2	241	Pan 9
68-9430	253	2	B3	267	Pan 10
68-9431	254	2	B3	304	Pan 10
68-9432	255	2	B3	323	Pan 10
68-9433	256	2	B3	350	Pan 10
68-9434	257	2	B3	7	Pan 10
68-9435	258	2	B3	33	Pan 10
68-9436	259	2	B3	72	Pan 10
68-9437	260	2	B3	99	Pan 10
68-9438	261	2	B3	123	Pan 10
68-9439	262	2	B3	149	Pan 10
68-9440	263	2	B3	176	Pan 10
68-9441	264	2	B3	200	Pan 10
68-9442	265	2	B3	238	Pan 10
68-9443	293	2	C'		Spls 051, 052 XSB
68-9444	294	2	C'		Spls 051, 052 XSB
68-9445	295	2	C'		Spls 051, 052 DSB, includes rocks in 9448-9453
68-9446	296	2	C'		Spls 051, 052 XSA
68-9447	297	2	C'		Spls 051, 052 LOC
68-9448	301	2	C1		White rocks
68-9449	302	2	C1		White rocks
68-9450	303	2	C1		White rocks
68-9451	304	2	C1		White rocks
68-9452	305	2	C1		White rocks, spl 082 XSA
68-9453	306	2	C1		White rocks, spl 082 XSA
68-9454	337	2	G		Core spl 230
68-9455	338	2	G		Core spl 230
68-9456	339	2	G		Core spl 230
68-9457	340	2	G		Core spl 230
68-9458	341	2	G		Core spl 230
68-9459	372	2	G		Spl 306 DSB
68-9460	373	2	G		Spl 306 XSB
68-9461	374	2	G		Spl 306 XSB
68-9462	375	2	G		Spl 306 XSA
68-9463	376	2	G		Spl 306 XSA
68-9464	377	2	G		Spl 306 LOC
68-9465	379	2	G1		Spls 313, 301 XSB, may include some loose rock
68-9466	380	2	G1		Spls 313, 301 XSB
68-9467	381	2	G1		Spls 313, 301 XSA
68-9468	382	2	H		Grab spl. 4 rocks, XSB
68-9469	383	2	H		Grab spl. 4 rocks, XSB
68-9470	384	2	H		Grab spl. 4 rocks, XSA
68-9471	385	2	H		Grab spl. 4 rocks, XSA
68-9472	386	2	H		2 spl rocks off turtle rock, 2 rocks on fillet, XSB
68-9473	387	2	H		2 spl rocks off turtle rock, 2 rocks on fillet, XSB
68-9474	388	2	H		2 spl rocks off turtle rock, 2 rocks on fillet, XSB
68-9475	389	2	H		2 spl rocks off turtle rock, 2 rocks on fillet, XSB
68-9476	390	2	H		2 spl rocks off turtle rock, 2 rocks on fillet, XSA
68-9477	391	2	H	264	Pan 14
68-9478	392	2	H	297	Pan 14
68-9479	393	2	H	319	Pan 14
68-9480	394	2	H	345	Pan 14
68-9481	395	2	H	8	Pan 14
68-9482	396	2	H	27	Pan 14
68-9483	397	2	H	57	Pan 14
68-9484	398	2	H	83	Pan 14
68-9485	399	2	H	113	Pan 14
68-9486	400	2	H	136	Pan 14
68-9487	401	2	H	147	Pan 14
68-9488	402	2	H	177	Pan 14
68-9489	403	2	H	203	Pan 14
68-9490	404	2	H	225	Pan 14
68-9491	405	2	H	242	Pan 14
68-9492	406	2	LM		S-band antenna, accidental

TABLE 8.—Chronologic listing of 60 mm Apollo 14 lunar surface pictures—Continued

Photo	Seq.	EVA	Sta.	Az.	Remarks
66-9216	001				Orbit
66-9217	002				Orbit
66-9218	003				Orbit
66-9219	004				Orbit
66-9220	005				Orbit
66-9221	006				Orbit
66-9222	007				Orbit
66-9223	008				Orbit
66-9224	009				Orbit
66-9225	010				Orbit
66-9226	011				Orbit
66-9227	012				Orbit
66-9228	013				Orbit
65-9202	014	Pre	LM	321	LM Window Pan 1
65-9203	015	Pre	LM	346	LM Window Pan 1
65-9204	016	Pre	LM	306	LM Window Pan 1
65-9205	017	Pre	LM	335	LM Window Pan 1

TABLE 8.—Chronologic listing of 60 mm Apollo 14 lunar surface pictures—Continued

Photo	Seq.	EVA	Sta.	Az.	Remarks
65-9206	018	Pre	LM	311	LM Window Pan 1
65-9207	019	Pre	LM	291	LM Window Pan 1
65-9208	020	Pre	LM	346	LM Window Pan 1
65-9209	021	Pre	LM	236	LM Window Pan 1
65-9210	022	Pre	LM	226	LM Window Pan 1
65-9211	023	Pre	LM	249	LM Window Pan 1
65-9212	024	Pre	LM	283	LM Window Pan 1
65-9213	025	Pre	LM	279	LM Window Pan 1
65-9214	026	Pre	LM	247	LM Window Pan 1
65-9215	027	Pre	LM	270	LM Window Pan 1
66-9229	028	1	LM		Cdr
66-9230	029	1	LM		Cdr
66-9231	030	1	LM		Flag
66-9232	031	1	LM		Flag
66-9233	032	1	LM		Flag
66-9234	033	1	LM		Footpad
66-9235	034	1	LM		Footpad
66-9236	035	1	LM	272	Pan 2, NE of LM
66-9237	036	1	LM	284	Pan 2, NE of LM
66-9238	037	1	LM	292	Pan 2, NE of LM
66-9239	038	1	LM	308	Pan 2, NE of LM
66-9240	039	1	LM	325	Pan 2, NE of LM
66-9241	040	1	LM	339	Pan 2, NE of LM
66-9242	041	1	LM	353	Pan 2, NE of LM
66-9243	042	1	LM	13	Pan 2, NE of LM
66-9244	043	1	LM	30	Pan 2, NE of LM
66-9245	044	1	LM	40	Pan 2, NE of LM
66-9246	045	1	LM	58	Pan 2, NE of LM
66-9247	046	1	LM	82	Pan 2, NE of LM
66-9248	047	1	LM	106	Pan 2, NE of LM
66-9249	048	1	LM	130	Pan 2, NE of LM
66-9250	049	1	LM	146	Pan 2, NE of LM
66-9251	050	1	LM	159	Pan 2, NE of LM
66-9252	051	1	LM	174	Pan 2, NE of LM
66-9253	052	1	LM	192	Pan 2, NE of LM
66-9254	053	1	LM	207	Pan 2, NE of LM
66-9255	054	1	LM	229	Pan 2, NE of LM
66-9256	055	1	LM	242	Pan 2, NE of LM
66-9257	056	1	LM	260	Pan 2, NE of LM
66-9258	057	1	LM		LM misc
66-9259	058	1	LM		LM misc
66-9260	059	1	LM		LM misc
66-9261	060	1	LM		
66-9262	061	1	LM		DPS
66-9263	062	1	LM		DPS
66-9264	063	1	LM		Footpad
66-9265	064	1	LM		Footpad
66-9266	065	1	LM		DPS
66-9267	066	1	LM		DPS
66-9268	067	1	LM		DPS
66-9269	068	1	LM		Footpad
66-9270	069	1	LM		Footpad
66-9271	070	1	LM	270	Pan 3, S of LM
66-9272	071	1	LM	283	Pan 3, S of LM
66-9273	072	1	LM	294	Pan 3, S of LM
66-9274	073	1	LM	308	Pan 3, S of LM
66-9275	074	1	LM	320	Pan 3, S of LM
66-9276	075	1	LM	338	Pan 3, S of LM
66-9277	076	1	LM	358	Pan 3, S of LM
66-9278	077	1	LM	15	Pan 3, S of LM
66-9279	078	1	LM	33	Pan 3, S of LM
66-9280	079	1	LM	49	Pan 3, S of LM
66-9281	080	1	LM	67	Pan 3, S of LM
66-9282	081	1	LM	85	Pan 3, S of LM
66-9283	082	1	LM	101	Pan 3, S of LM
66-9284	083	1	LM	115	Pan 3, S of LM
66-9285	084	1	LM	133	Pan 3, S of LM
66-9286	085	1	LM	148	Pan 3, S of LM
66-9287	086	1	LM	165	Pan 3, S of LM
66-9288	087	1	LM	181	Pan 3, S of LM
66-9289	088	1	LM	196	Pan 3, S of LM
66-9290	089	1	LM	210	Pan 3, S of LM
66-9291	090	1	LM	223	Pan 3, S of LM
66-9292	091	1	LM	237	Pan 3, S of LM
66-9293	092	1	LM	260	Pan 3, S of LM
66-9294	093	1	LM	286	Pan 4, W of LM
66-9295	094	1	LM	297	Pan 4, W of LM
66-9296	095	1	LM	311	Pan 4, W of LM
66-9297	096	1	LM	327	Pan 4, W of LM
66-9298	097	1	LM	341	Pan 4, W of LM
66-9299	098	1	LM	0	Pan 4, W of LM
66-9300	099	1	LM	15	Pan 4, W of LM
66-9301	100	1	LM	32	Pan 4, W of LM
66-9302	101	1	LM	45	Pan 4, W of LM
66-9303	102	1	LM	60	Pan 4, W of LM
66-9304	103	1	LM	77	Pan 4, W of LM
66-9305	104	1	LM	90	Pan 4, W of LM
66-9306	105	1	LM	105	Pan 4, W of LM
66-9307	106	1	LM	120	Pan 4, W of LM
66-9308	107	1	LM	136	Pan 4, W of LM
66-9309	108	1	LM	151	Pan 4, W of LM
66-9310	109	1	LM	169	Pan 4, W of LM
66-9311	110	1	LM	181	Pan 4, W of LM
66-9312	111	1	LM	199	Pan 4, W of LM
66-9313	112	1	LM	215	Pan 4, W of LM
66-9314	113	1	LM	232	Pan 4, W of LM
66-9315	114	1	LM	254	Pan 4, W of LM
66-9316	115	1	LM	272	Pan 4, W of LM
67-9361	116	1	ALSEP		C/S, MET
67-9362	117	1	ALSEP		PSE
67-9363	118	1	ALSEP		C/S, PSE
67-9364	119	1	ALSEP		C/PLEF

TABLE 8.—Chronologic listing of 60 mm Apollo 14 lunar surface pictures—Continued

Photo	Seq.	EVA	Sta.	Az.	Remarks
67-9365	120	1	ALSEP		C/S, CPLEE
67-9366	121	1	ALSEP		C/S, RTG
67-9367	122	1	ALSEP		ALSEP LOC, MET tracks, LM
67-9368	123	1	ALSEP		ALSEP LOC, MET tracks, LM
67-9369	124	1	ALSEP		Side
67-9370	125	1	ALSEP		Side
67-9371	126	1	ALSEP		Side
67-9372	127	1	ALSEP		C/S, Side
67-9373	128	1	ALSEP		Side
67-9374	129	1	ALSEP		Geophone line, LMP
67-9375	130	1	ALSEP		C/S, RTG
67-9376	131	1	ALSEP		C/S
67-9377	132	1	ALSEP		C/S
67-9378	133	1	ALSEP		C/S
67-9379	134	1	ALSEP		C/S
67-9380	135	1	ALSEP		C/S
67-9381	136	1	ALSEP		C/S
67-9382	137	1	ALSEP		C/S
67-9383	138	1	ALSEP		C/S
67-9384	139	1	ALSEP		C/S, PSE
67-9385	140	1	ALSEP		LRRR
67-9386	141	1	ALSEP		LRRR
67-9387	142	1	ALSEP		LRRR, LOC, LM
67-9388	143	1	ALSEP		LOC to LM for comprehensive spl
67-9389	144	1	ALSEP		LOC to ALSEP for comprehensive spl
67-9390	145	1	ALSEP		Spl 304 XSB, FSR
67-9391	146	1	ALSEP		Spl 304 XSB, FSR
67-9392	147	1	ALSEP		Spl 305 XSB, FSR
67-9393	148	1	ALSEP		Spl 305 XSB, FSR
66-9317	149	1-2	LM	287	LM Window Pan 5
66-9318	150	1-2	LM	285	LM Window Pan 5
66-9319	151	1-2	LM	275	LM Window Pan 5
66-9320	152	1-2	LM	254	LM Window Pan 5
66-9321	153	1-2	LM	261	LM Window Pan 5
66-9322	154	1-2	LM	222	LM Window Pan 5
66-9323	155	1-2	LM	6	LM Window Pan 5
66-9324	156	1-2	LM	308	LM Window Pan 5
66-9325	157	1-2	LM	310	LM Window Pan 5
66-9326	158	1-2	LM	354	LM Window Pan 5
66-9327	159	1-2	LM		Earth
66-9328	160	1-2	LM		Earth
66-9329	161	1-2	LM		Earth
66-9330	162	1-2	LM		Earth
66-9331	163	1-2	LM		Earth
66-9332	164	1-2	LM		Earth
64-9046	165	2	A		Core spls 210, 211 XSD
64-9047	166	2	A		Core spls 210, 211 XSD
64-9048	167	2	A		Core spls 210, 211 LOC, LM
68-9394	168	2	A	271	Pan 6
68-9395	169	2	A	269	Pan 6
68-9396	170	2	A	285	Pan 6
68-9397	171	2	A	312	Pan 6
68-9398	172	2	A	335	Pan 6
68-9399	173	2	A	359	Pan 6
68-9400	174	2	A	23	Pan 6
68-9401	175	2	A	58	Pan 6
68-9402	176	2	A	82	Pan 6
68-9403	177	2	A	116	Pan 6
68-9404	178	2	A	141	Pan 6
68-9405	179	2	A	160	Pan 6
68-9406	180	2	A	193	Pan 6
68-9407	181	2	A	210	Pan 6
68-9408	182	2	A	232	Pan 6
68-9409	183	2	A		Spls 041-046 DSB
68-9410	184	2	A		Spls 041-046 XSB
68-9411	185	2	A		Spls 041-046 XSB
68-9412	186	2	A		Spls 041-046 XSA
68-9413	187	2	A		Spls 041-046 LOC
64-9049	188	2	B	269	Pan 7
64-9050	189	2	B	286	Pan 7
64-9051	190	2	B	297	Pan 7
64-9052	191	2	B	317	Pan 7
64-9053	192	2	B	337	Pan 7
64-9054	193	2	B	355	Pan 7
64-9055	194	2	B	8	Pan 7
64-9056	195	2	B	25	Pan 7
64-9057	196	2	B	36	Pan 7
64-9058	197	2	B	41	Pan 7
64-9059	198	2	B	53	Pan 7
64-9060	199	2	B	53	Pan 7
64-9061	200	2	B	70	Pan 7
64-9062	201	2	B	86	Pan 7
64-9063	202	2	B	96	Pan 7
64-9064	203	2	B	108	Pan 7
64-9065	204	2	B	136	Pan 7
64-9066	205	2	B	153	Pan 7
64-9067	206	2	B	171	Pan 7
64-9068	207	2	B	189	Pan 7
64-9069	208	2	B	202	Pan 7
64-9070	209	2	B	222	Pan 7
64-9071	210	2	B	240	Pan 7
64-9072	211	2	B	251	Pan 7
64-9073	212	2	B		Spls 047, 048 XSB
64-9074	213	2	B		Spls 047, 048 XSB
64-9075	214	2	B1	274	Pan 8
64-9076	215	2	B1	276	Pan 8
64-9077	216	2	B1	294	Pan 8
64-9078	217	2	B1	314	Pan 8
64-9079	218	2	B1	327	Pan 8
64-9080	219	2	B1	344	Pan 8
64-9081	220	2	B1	358	Pan 8
64-9082	221	2	B1	11	Pan 8

TABLE 8.—Chronologic listing of 60 mm Apollo 14 lunar surface pictures—Continued

Photo	Seq.	Eva	Sta.	Az.	Remarks
64-9083	222	2	B1	28	Pan 8
64-9084	223	2	B1	40	Pan 8
64-9085	224	2	B1	66	Pan 8
64-9086	225	2	B1	90	Pan 8
64-9087	226	2	B1	104	Pan 8
64-9088	227	2	B1	121	Pan 8
64-9089	228	2	B1	137	Pan 8
64-9090	229	2	B1	153	Pan 8
64-9091	230	2	B1	167	Pan 8
64-9092	231	2	B1	184	Pan 8
64-9093	232	2	B1	199	Pan 8
64-9094	233	2	B1	224	Pan 8
64-9095	234	2	B1	231	Pan 8
64-9096	235	2	B1	258	Pan 8
64-9097	236	2	B1	261	Pan 8
68-9414	237	2	B2		Large rock above Flank
68-9415	238	2	B2	263	Pan 9
68-9416	239	2	B2	284	Pan 9
68-9417	240	2	B2	316	Pan 9
68-9418	241	2	B2	345	Pan 9
68-9419	242	2	B2	9	Pan 9
68-9420	243	2	B2	33	Pan 9
68-9421	244	2	B2	57	Pan 9
68-9422	245	2	B2	92	Pan 9
68-9423	246	2	B2	120	Pan 9
68-9424	247	2	B2	148	Pan 9
68-9425	248	2	B2	165	Pan 9
68-9426	249	2	B2	184	Pan 9
68-9427	250	2	B2	200	Pan 9
68-9428	251	2	B2	223	Pan 9
68-9429	252	2	B2	241	Pan 9
68-9430	253	2	B3	267	Pan 10
68-9431	254	2	B3	304	Pan 10
68-9432	255	2	B3	323	Pan 10
68-9433	256	2	B3	350	Pan 10
68-9434	257	2	B3	7	Pan 10
68-9435	258	2	B3	33	Pan 10
68-9436	259	2	B3	72	Pan 10
68-9437	260	2	B3	99	Pan 10
68-9438	261	2	B3	123	Pan 10
68-9439	262	2	B3	149	Pan 10
68-9440	263	2	B3	176	Pan 10
68-9441	264	2	B3	200	Pan 10
68-9442	265	2	B3	238	Pan 10
64-9098	266	2	C	274	Pan 11
64-9099	267	2	C	286	Pan 11
64-9100	268	2	C	302	Pan 11
64-9101	269	2	C	314	Pan 11
64-9102	270	2	C	323	Pan 11
64-9103	271	2	C	337	Pan 11
64-9104	272	2	C	354	Pan 11
64-9105	273	2	C	6	Pan 11
64-9106	274	2	C	20	Pan 11
64-9107	275	2	C	36	Pan 11
64-9108	276	2	C	44	Pan 11
64-9109	277	2	C	63	Pan 11
64-9110	278	2	C	80	Pan 11
64-9111	279	2	C	90	Pan 11
64-9112	280	2	C	104	Pan 11
64-9113	281	2	C	119	Pan 11
64-9114	282	2	C	139	Pan 11
64-9115	283	2	C	157	Pan 11
64-9116	284	2	C	172	Pan 11
64-9117	285	2	C	184	Pan 11
64-9118	286	2	C	206	Pan 11
64-9119	287	2	C	223	Pan 11
64-9120	288	2	C	247	Pan 11
64-9121	289	2	C	243	Pan 11
64-9122	290	2	C	265	Pan 11
64-9123	291	2	C		CT 1 XS, no recovery; used at Sta G
64-9124	292	2	C		CT 1 XS, no recovery; used at Sta G
68-9443	293	2	C		Spls 051, 052 XSB
68-9444	294	2	C		Spls 051, 052 XSB
68-9445	295	2	C		Spls 051, 052 DSB, includes rocks in 9448, 9453
68-9446	296	2	C		Spls 051, 052 XSA
68-9447	297	2	C		Spls 051, 052 LOC
64-9125	298	2	C		Spls 140-144, 068-072 XSB
64-9126	299	2	C		Spls 140-144, 068-072 XSB
64-9127	300	2	C		Spls 140-144, 068-072 XSA
68-9448	301	2	C1		White rocks
68-9449	302	2	C1		White rocks
68-9450	303	2	C1		White rocks
68-9451	304	2	C1		White rocks
68-9452	305	2	C1		White rocks, Spl 082 XSA
68-9453	306	2	C1		White rocks, Spl 082 XSA
64-9128	307	2	C1		Spl 321 XSB, 'Big Bertha'
64-9129	308	2	C1		Spl 321 XSB, 'Big Bertha'
64-9130	309	2	C2		Spl 053 XSB, fillet
64-9131	310	2	C2		Spl 053 XSB, fillet
64-9132	311	2	C2		Spl 053 XSB, fillet
64-9133	312	2	C2		Spl 053 XSB, fillet
64-9134	313	2	C2, F		Rock E of Weird
64-9135	314	2	C2, F		Rock E of Weird
64-9136	315	2	C2, F		Rock E of Weird
64-9137	316	2	F	274	Pan 12, may include spl 066
64-9138	317	2	F	293	Pan 12
64-9139	318	2	F	273	Pan 12
64-9140	319	2	F	291	Pan 12
64-9141	320	2	F	313	Pan 12
64-9142	321	2	F	334	Pan 12
64-9143	322	2	F	350	Pan 12

TABLE 8.—Chronologic listing of 60 mm Apollo 14 lunar surface pictures—Continued

Photo	Seq.	EVA	Sta.	Az.	Remarks
64-9144	323	2	F	6	Pan 12
64-9145	324	2	F	24	Pan 12
64-9146	325	2	F	41	Pan 12
64-9147	326	2	F	57	Pan 12
64-9148	327	2	F	81	Pan 12
64-9149	328	2	F	99	Pan 12
64-9150	329	2	F	118	Pan 12
64-9151	330	2	F	141	Pan 12
64-9152	331	2	F	154	Pan 12
64-9153	332	2	F	171	Pan 12
64-9154	333	2	F	188	Pan 12
64-9155	334	2	F	210	Pan 12
64-9156	335	2	F	231	Pan 12
64-9157	336	2	F	251	Pan 12
68-9454	337	2	G		Core spl 220
68-9455	338	2	G		Core spl 230
68-9456	339	2	G		Core spl 230
68-9457	340	2	G		Core spl 230
68-9458	341	2	G		Core spl 230
64-9158	342	2	G		Trench XSB spls 145-148 (top)
64-9159	343	2	G		Trench XSB spls 080-081, 153-156 (middle)
64-9160	344	2	G		Trench XSA spls 073-089, 149-152 (bottom)
64-9161	345	2	G		Trench XSA spl 240, SESC (bottom)
64-9162	346	2	G		Trench XSA
64-9163	347	2	G		Trench XSA
64-9164	348	2	G		Trench XSA
64-9165	349	2	G		Trench XSA
64-9166	350	2	G		Trench DSA
64-9167	351	2	G	272	Pan 13
64-9168	352	2	G	294	Pan 13
64-9169	353	2	G	312	Pan 13
64-9170	354	2	G	331	Pan 13
64-9171	355	2	G	354	Pan 13
64-9172	356	2	G	11	Pan 13
64-9173	357	2	G	34	Pan 13
64-9174	358	2	G	52	Pan 13
64-9175	359	2	G	66	Pan 13
64-9176	360	2	G	83	Pan 13, core spl 230 LOC
64-9177	361	2	G	98	Pan 13, core spl 230 LOC
64-9178	362	2	G	115	Pan 13
64-9179	363	2	G	122	Pan 13
64-9180	364	2	G	135	Pan 13
64-9181	365	2	G	150	Pan 13
64-9182	366	2	G	168	Pan 13
64-9183	367	2	G	185	Pan 13
64-9184	368	2	G	208	Pan 13
64-9185	369	2	G	229	Pan 13
64-9186	370	2	G	251	Pan 13
64-9187	371	2	G	265	Pan 13
68-9459	372	2	G		Spl 306 DSB
68-9460	373	2	G		Spl 306 XSB
68-9461	374	2	G		Spl 306 XSB
68-9462	375	2	G		Spl 306 XSA
68-9463	376	2	G		Spl 306 XSA
68-9464	377	2	G		Spl 306 LOC
64-9188	378	2	G1		Spls 313, 301 DS, LOC
68-9465	379	2	G1		Spls 313, 301 XSB, may include loose rock
68-9466	380	2	G1		Spls 313, 301 XSB
68-9467	381	2	G1		Spls 313, 301 XSA
68-9468	382	2	H		Grab spl, 4 rocks, XSB
68-9469	383	2	H		Grab spl, 4 rocks, XSB
68-9470	384	2	H		Grab spl, 4 rocks, XSA
68-9471	385	2	H		Grab spl, 4 rocks, XSA
68-9472	386	2	H		2 spl rocks off Turtle Rock, 2 rocks on fillet, XSB
68-9473	387	2	H		2 spl rocks off Turtle Rock, 2 rocks on fillet, XSB
68-9474	388	2	H		2 spl rocks off Turtle Rock, 2 rocks on fillet, XSB
68-9475	389	2	H		2 spl rocks off Turtle Rock, 2 rocks on fillet, XSB
68-9476	390	2	H		2 spl rocks off Turtle Rock, 2 rocks on fillet, XSA
68-9477	391	2	H	264	Pan 14
68-9478	392	2	H	297	Pan 14
68-9479	393	2	H	319	Pan 14
68-9480	394	2	H	345	Pan 14
68-9481	395	2	H	8	Pan 14
68-9482	396	2	H	27	Pan 14
68-9483	397	2	H	57	Pan 14
68-9484	398	2	H	83	Pan 14
68-9485	399	2	H	113	Pan 14
68-9486	400	2	H	136	Pan 14
68-9487	401	2	H	147	Pan 14
68-9488	402	2	H	177	Pan 14
68-9489	403	2	H	203	Pan 14
68-9490	404	2	H	225	Pan 14
68-9491	405	2	H	242	Pan 14
68-9492	406	2	LM		S-band antenna, accidental
64-9189	407	2	LM		LM, Earth
64-9190	408	2	LM		LM, Earth
64-9191	409	2	LM		LM, Earth
64-9192	410	2	LM		LM, Earth
64-9193	411	2	LM		LM, Earth
64-9194	412	2	LM		LM, Earth
64-9195	413	2	LM		LM, Earth
64-9196	414	2	LM		LM, Earth
64-9197	415	2	LM		LM, Earth
64-9198	416	2	LM		SWC
64-9199	417	2	LM		SWC
64-9200	418	2	LM		SWC

TABLE 8.—Chronologic listing of 60 mm Apollo 14 lunar surface pictures—Continued

Photo	Seq.	EVA	Sta.	Az.	Remarks
64-9201	419	2	LM		SWC
66-9333	420	Post	LM	282	LM Window Pan 15
66-9334	421	Post	LM	289	LM Window Pan 15
66-9335	422	Post	LM	285	LM Window Pan 15
66-9336	423	Post	LM	288	LM Window Pan 15
66-9337	424	Post	LM	328	LM Window Pan 15
66-9338	425	Post	LM	298	LM Window Pan 15
66-9339	426	Post	LM	309	LM Window Pan 15
66-9340	427	Post	LM	332	LM Window Pan 15
66-9341	428	Post	LM	353	LM Window Pan 15
66-9342	429	Post	LM	330	LM Window Pan 15
66-9343	430	Post	LM	322	LM Window Pan 15
66-9344	431				Command Module
66-9345	432				Command Module
66-9346	433				Command Module
66-9347	434				Command Module
66-9348	435				Command Module
66-9349	436				Command Module
66-9350	437				Command Module
66-9351	438				Command Module
66-9352	439				Command Module
66-9353	440				Command Module
66-9354	441				Command Module
66-9355	442				Command Module
66-9356	443				Command Module
66-9357	444				Command Module
66-9358	445				Command Module
66-9359	446				Command Module
66-9360	447				Command Module

Furthermore, dX_n is independent of nG and is therefore a local random error rather than one that becomes systematically larger with distance between points.

After the shaded-relief map was made, spot elevations were computed by a method called "photographic trigonometry," or, more colloquially, "phototrig" (Batson, 1969). Briefly this method consists of the following steps:

1. The point on the surface from which each photographic panorama was taken is located by resection. As many points as possible are used in the resection to reduce errors caused by local map distortions. Where nearby features are identifiable on the map and on surface panoramas, the station is located with respect to those features rather than with respect to distant ones. In general, the resection data on the Apollo 14 map resulted in panorama station locations that are consistent within approximately 5 m horizontally.
2. Vertical angles from an assumed horizon to features visible on panoramas and on the map are measured on the pictures in the panoramic mosaic.
3. Horizontal distances between the camera station and the features are measured on the map.

TABLE 9.—Apollo 14 lunar surface 70 mm film usage by camera number

Camera serial number 1027 (Shepard)
65-9202 through 9215 (Magazine KK)
67-9361 through 9393 (Magazine JJ)
64-9046 through 9201 (Magazine LL)
Camera serial number 1020 (Mitchell)
66-9216 through 9360* (Magazine II)
68-9394 through 9492 (Magazine MM)

*Includes 30 pictures taken from lunar orbit.

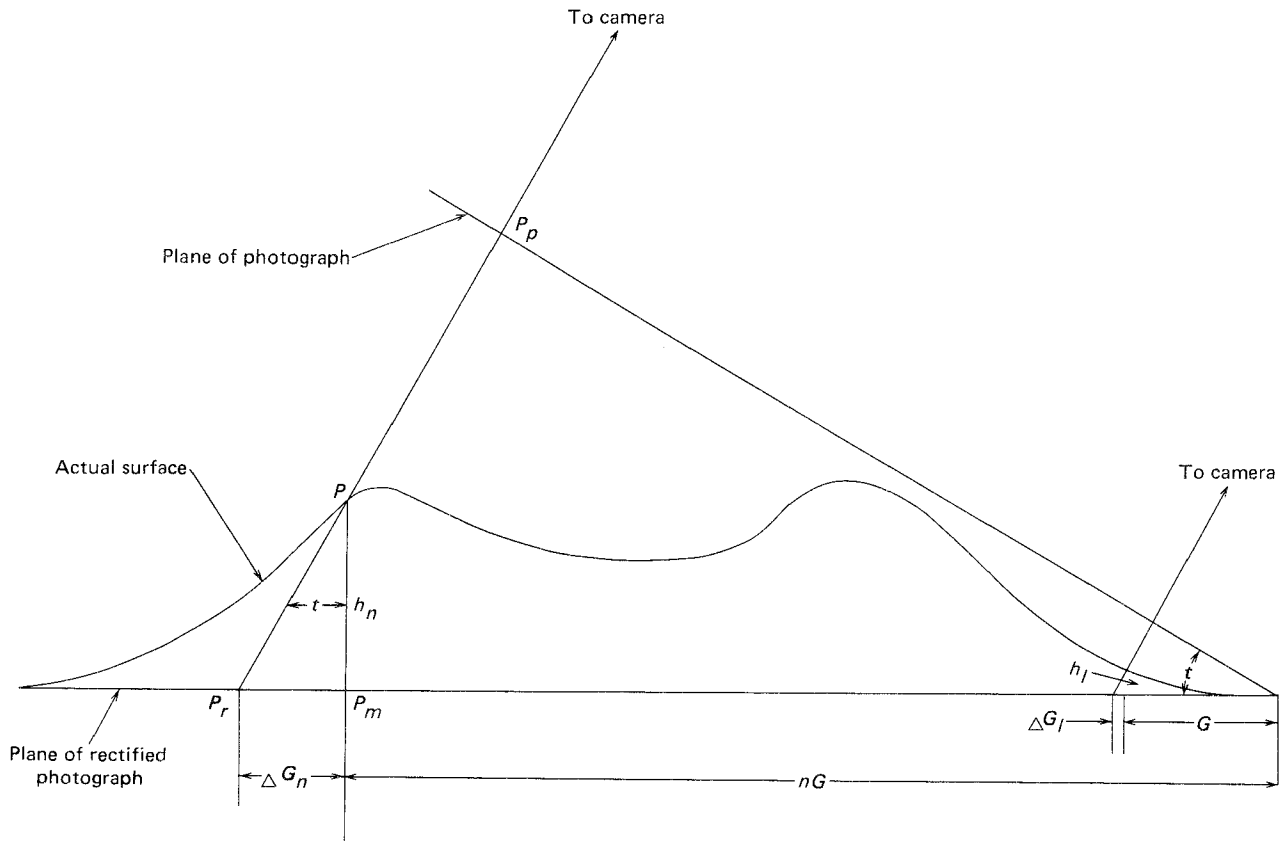


FIGURE 79.—Geometry of a tilted Lunar Orbiter photograph.

4. Relative topographic elevations are computed from the measurements made in 2 and 3 above.
5. Each set of elevations computed at each of the panorama stations is adjusted as a block for best agreement with other elevation sets when intervisible points are measured from different stations. After the adjustment, these spot elevations on the Apollo 14 map were consistent within about 1 metre (table 10).
6. Contour lines are compiled, controlled by the set of spot elevations and by interpretation of images on the base map.

The contour lines on the map of the Apollo 14 landing site are generalized and do not reflect the intricate surface structure visible on the shaded-relief base map. To draw fine details in the contour lines would be misleading because of wide variation in their accuracy. Where control points were not available, the lines were simply transferred from the NASA map, and are accurate to within 10 m. In the immediate vicinity of traverse stations, however, relative accuracies are of the order of tenths of a metre.

The identity of features on the map and on the surface panoramas is not intuitively obvious. As an aid in understanding the geology of the site as it appears in

map view and from the surface, plate 2 identifies features that are identified on the surface panoramas on plates 3 through 6. Table 10 shows the computed elevations of the features, including standard deviations where more than one measurement was made. Table 11 shows the derived camera heights at each panorama station.

GLOSSARY

Active Seismic Experiment (ASE): Consisted of three geophones in a line, along which 15 explosive squibs were fired to supply seismic energy. The impacts on the Moon of the Saturn S IV-B rocket stage and the Lunar Module after it was abandoned in lunar orbit were also used as seismic energy sources.

Apollo Lunar-Surface Closeup Camera (ALSCC): A 35-mm stereo camera for taking detailed photographs of the textures of materials at the lunar surface.

Apollo Lunar Surface Experiments Package (ALSEP): A group of instruments attached to a central transmitting station, all of which were left behind for long-term monitoring of lunar events and processes. The ALSEP flown on Apollo 14 included a charged-particle detector, a passive and an active seismometer, a suprathermal ion detector, and a cold cathode gauge. (Other in-

TABLE 10.—Elevations of points identified on plates 3 through 6 which are correlated with points on plate 2

Point	Identified on panorama no.	Elevation	Mean elevation	δ
C/S	1	570.6		
	14	569.3	570.0	.92
111	1	570.4		
201	1	568.3		
401	1	569.0		
402	1	568.4		
403	1	568.5		
404	1	568.5		
405	1	569.8		
	14	569.8	569.8	.00
406	1	569.4		
410	4	569.7		
605	6	563.2		
606	6	564.2		
607	6	567.1		
608	6	566.5		
609	6	569.3		
610	6	570.7		
612	6	569.0		
613	6	566.6		
614	6	558.4		
616	6	554.2		
618	6	568.6		
619	6	566.3		
620	6	570.2		
623	6	570.1		
624	6	568.6		
625	6	568.0		
626	6	566.7		
630	6	564.6		
	6	573.4		
701	7	574.1	573.7	.38
	13	573.5		
	6	575.0		
702	7	576.6	576.3	1.88
	8	578.8		
	13	574.7		
	6	597.1		
703	7	596.4	596.5	1.17
	13	597.6		
	14	594.9		
	6	616.9		
704	7	615.1	616.1	0.92
	12	616.3		
	13	572.4		
705	7	573.9	573.6	1.12
	8	574.6		
	6	578.8		
706	7	579.6	579.3	.42
	13	579.4		
	6	583.4		
707	7	582.8	582.9	.42
	13	582.6		
	6	571.6		
708	7	572.3	572.3	.70
	13	573.0		
	6	600.6		
709	7	602.1	602.3	1.81
	13	604.2		
710	9	601.0		
	6	633.6		
711	7	633.1	634.3	1.24
	12	634.6		
	13	635.9		
	6	610.1		
712	7	606.9	609.4	2.23
	13	611.2		
	6	611.6		
713	7	613.3	612.4	1.20
	6	567.8		
720	7	566.4	567.1	0.99
740	7	568.0		
750	13	570.3		
	7	572.0	571.1	1.20

TABLE 10.—Elevations of points identified on plates 3 through 6 which are correlated with points on plate 2—Continued

Point	Identified on panorama no.	Elevation	Mean elevation	δ
760	7	571.9		
	13	570.3	571.1	1.13
	6	593.0		
803	7	590.		
	8	591.4	591.6	.86
	9	591.1		
	12	591.9		
	6	594.8		
804	7	593.3		
	8	592.3	593.9	1.13
	12	595.0		
	13	594.3		
806	8	589.6		
807	8	589.5		
809	8	589.1		
	13	582.2		
812	12	582.2	582.6	.40
	6	582.9		
	7	582.9		
905	9	602.9		
908	9	603.2		
911	9	600.4		
914	9	604.4		
915	9	597.2		
918	9	601.9		
919	9	606.8		
920	9	598.6		
924	9	596.5		
927	9	577.5		
1001	10	642.6		
	11	640.2	641.4	1.70
1002	10	641.7		
1003	10	642.4		
1004	10	642.6		
1005	10	642.8		
1006	10	644.6		
1007	10	644.4		
1008	10	647.0		
1009	10	644.3		
1010	10	653.7		
	11	654.7	654.2	.71
1011	10	647.3		
1012	10	647.3		
1013	10	643.4		
1014	10	629.7		
1015	10	642.3		
1016	10	639.2		
1017	10	640.4		
1021	10	608.9		
1022	10	581.0		
1023	10	647.2		
1031	10	634.4		
1033	10	638.7		
1102	11	665.2		
1103	11	663.0		
1104	11	662.8		
1106	11	657.3		
	10	655.8	656.6	1.06
1107	11	657.0		
1108	11	665.0		
1109	11	665.5		
1110	11	664.0		
1111	11	665.4		
1112	11	665.3		
1115	11	661.5		
	10	656.1	658.8	3.82
1117	11	665.2		
1118	11	664.0		
1119	11	663.8		
1202	12	577.6		
1203	12	579.6		
	7	575.7		
1204	8	576.0	575.6	1.62
	9	573.4		

TABLE 10.—Elevations of points identified on plates 3 through 6 which are correlated with points on plate 2—Continued

Point	Identified on panorama no.	Elevation	Mean elevation	δ
	12	577.3		
1205	12	579.9		
1206	12	579.8		
1207	12	578.3		
1208	12	579.2		
1209	12	579.2		
1210	12	575.7		
1211	12	578.3		
1212	12	579.0		
1213	12	581.9		
1214	12	577.1		
1215	12	578.4		
1308	13	575.5		
1401	1	571.4	571.8	.64
1402	14	572.3		
	1	572.2		
	14	572.8	572.5	.42
1403	1	573.2		
	14	573.3	573.2	.07
1404	14	573.3		
1405	1	573.2		
	14	573.2	573.2	.00
1407	1	570.3		
	14	571.7	571.0	.99
1408	14	572.0		
1412	14	567.8		
1413	14	568.2		
1414	14	568.3		
1415	1	570.0		
	14	569.6	569.8	0.28
1417	14	570.1		
1418	14	570.8		
1419	14	571.1		
1420	14	569.9		
1421	14	571.0		
1501	1	570.0		
1502	1	569.6		
1503	1	568.8		
		Mean standard deviation		1.01

struments, not a part of ALSEP, included a lunar portable magnetometer, a laser ranging retroreflector, and a solar wind composition experiment.)

Apollo orbital photographs: The Command Module, which remains in lunar orbit while the LM is on the moon, is equipped to take photographs of the lunar surface with different resolutions using several types of cameras.

Bulk sample: A large amount of material scooped at random into a container for the sake of filling the sample containers when there is not sufficient time to take selected and well-documented samples. Commonly referred to as the "desperation sample."

Capsule communicator (Capcom): An astronaut assigned to the Mission Control Center, who relays all information to the astronaut crew during a mission. The Capcom is normally the only person who talks directly to the crew. (CC in table 5.)

Command Module (CM): That part of the spacecraft system that remains in lunar orbit with one astronaut aboard while the LM is on the lunar surface. After the LM returns into lunar orbit, the astronauts transfer to the CM along with items to be returned to Earth.

TABLE 11.—Elevation of camera at panorama stations

Panorama	Station	Camera elevation (m)
1	LM window	573.2
6	A	571.6
7	B	572.3
8	B1	590.3
9	B2	603.6
10	B3	645.7
11	C'	666.7
12	F	581.1
13	G	575.5
14	NBF	573.8

Comprehensive sample: A random collection of many fragments a centimetre or two across plus about a kilogram of soil, taken from a small area. The purpose is to get a representative sample of the many lunar rock types present at the landing site.

Documented sample bags: Prenumbered Teflon sample bags, approximately 10×12 cm, which can be identified by correlation with the astronauts' voice transcript.

Drive tube: An aluminum cylinder approximately 2.5 cm in diameter and 38 cm long, driven into the ground to take cores of regolith. The tubes can be attached end-to-end and are then generally referred to as "double cores." Six single-core tubes were carried by Apollo 14.

Extravehicular activity (EVA): Tasks performed by the crew outside the spacecraft, whether orbiting the Earth or Moon, between the Earth and the Moon, or on the lunar surface.

Football-size rock: Rocks that are too large to put into the prenumbered sample bags. (Many of the football-size rocks collected by Apollo missions are much smaller than an NFL-approved football.)

Gardening: Repeated turnover of the lunar regolith by meteorite bombardment.

Gnomon: Generally, a shadow-casting device such as the style on a sundial, or a shaft erected perpendicular to the horizon with its shadow length indicating time of day. The gnomon used on the Apollo missions is a weighted staff on a two-axis gimbal supported by a tripod. From the staff and its shadow, local vertical, camera-pointing azimuth, and scale can be determined for photogrammetric control.

Hasselblad Electric Data Camera (HEDC; referred to as the Hasselblad camera in this report): A 60-mm focal length, 70-mm format camera, with an automatic film advance. The camera is attached to the front of the astronaut's pressure suit. These cameras are calibrated both photogrammetrically and photometrically before each mission.

Lunar Module (LM): That part of the spacecraft system that lands on the Moon. The LM consists of two parts: the descent stage, which is left on the lunar surface,

and the ascent stage, which returns to lunar orbit.

Lunar Orbiter: An unmanned probe designed primarily to photograph the lunar surface by means of electronic scanning of photographic film exposed, advanced, and developed aboard the spacecraft. Five Lunar Orbiter missions were flown, all successfully, during the period 1966 to 1967, and nearly all of the lunar surface was photographed.

Lunar Receiving Laboratory (LRL): The facility at the Johnson Space Center, Houston, Tex., where the lunar rocks from Apollo missions 11–17 were processed. On the basis of an initial examination in the LRL, parts of lunar rocks were selected for distribution to various investigators.

Modularized Equipment Transporter (MET): A small two-wheeled cart designed to carry equipment and samples during the lunar surface EVA's. The MET represented an intermediate stage between a hand-held equipment carrier that was flown on Apollos 12 and 13, and the lunar rover, which was used on the later missions.

Phase angle: The angle between the incident ray from a light source (the sun) and the reflected ray to a light sensor (a camera).

Photometric angles:

1. Phase angle: defined above
2. Azimuth angle: the angle between the sun's azimuth and the azimuth of the reflected ray measured in the horizontal plane.
3. Elevation angle: The angle between the sun and the projection of the reflected ray to the vertical plane through the sun, measured vertically.
4. Alpha: the angle between the reflected ray and projection of the surface normal, measured in the plane of the phase angle.

Photometric chart: An aluminum plate approximately 15×15 cm that is attached to a leg of the gnomon. It is painted with the three primary colors and a gray scale. The color chart is placed in the field of view of some of the Hasselblad photographs for calibration purposes.

Pre-mission mapping: The earliest lunar geologic maps were compiled from telescopic observation and photography, and these maps formed much of the general rationale for lunar exploration. Later maps of specific landing sites were compiled from Lunar Orbiter and Apollo orbital photographs; in the case of Apollo 14, the site maps were compiled at scales up to 1:5,000 from Lunar Orbiter and Apollo 12 photographs. The large-scale detailed maps were used to pick the landing spot, to preplan the traverses for each EVA, and to brief the astronaut crew.

Raindrop pattern or depressions: The Apollo 12 crew applied this term to the pattern produced by craterlets

a fraction of a centimetre to a few centimetres in diameter formed by the impact of micrometeorites. (This is the same process that causes zap pits on the rock surfaces.)

Ranger: Unmanned space and lunar probes, launched during the period 1961–65. Rangers 3 through 9 were lunar probes, but only 7 through 9 were successful. These probes transmitted pictures back to Earth during the last minutes before crashing on the Moon, thereby providing the first closeup views of the lunar surface.

Science Operations Room (SOR): A room in the Mission Control Center at Johnson Space Center, Houston, Texas, where an advisory team of scientists re-establishes mission science priorities in light of contingencies and scientific findings that arise during the mission. This team was responsible for changing pre-planned traverse routes, sampling priorities and procedures, and instrument deployments as the need arose; these changes had to be made within strict constraints called "mission rules" that deal with such things as the maximum distance the crew can be from the LM at any given time.

Soil breccia: Soft, incoherent clods to highly annealed rocks that are formed by induration of the lunar regolith by meteorite impact.

Soil mechanics experiment: The determination of the mechanical properties of lunar regolith materials by studying the action of such things as boots and pieces of equipment on the regolith, the walls of dug trenches and the angle of repose of excavated materials, and soil samples.

Surveyor: An unmanned lunar probe that soft-landed on the lunar surface. It carried a high-resolution vidicon imaging system and other equipment for scientific experiments. Apollo 12 landed near Surveyor 3 in Oceanus Procellarum. Seven Surveyor spacecraft were flown from 1966 to 1968, and five landed successfully.

Target materials: The materials excavated or strongly shocked by a meteorite impact; the term refers to these materials as they existed before the impact.

Targets of opportunity: Commonly applies to photographic targets, but sometimes used in reference to features described or sampled, that are not specifically included in the mission, but that are recognized by the astronauts as being of special interest or significance. The importance of recognizing targets of opportunity was a primary reason for training the astronauts in the geosciences.

Weigh bag: A bag approximately 20×30×45 cm used to hold samples for weighing prior to return to Earth, to insure that the limit on sample weight is not exceeded. Rocks too large to place in the documented sample bags are commonly returned to Earth in the weigh bags,

along with samples left over after filling the metal Sample Return Containers.

Zap pits: This term was coined during the preliminary examination of Apollo 11 samples in the Lunar Receiving Laboratory. The pits are caused by micrometeorite bombardment. They are commonly glass-lined, show concentric and radial fracture patterns, and in some cases have raised rims.

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