APOLLO 12 PHOTOGRAPHY 70-mm, 16-mm, AND 35-mm FRAME INDEX



NATIONAL SPACE SCIENCE DATA CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
GREENBELT, MARYLAND 20771

APOLLO 12 PHOTOGRAPHY 70-mm, 16-mm, and 35-mm Frame Index

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Published by
National Space Science Data Center
Goddard Space Flight Center
National Aeronautics and Space Administration
Greenbelt, Maryland 20771

July 1970

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INTRODUCTION

This index contains supporting information about the 70-mm, 16-mm, and 35-mm photography taken during the Apollo 12 mission.

For each 70-mm frame, the index presents information on: (1) the focal length of the camera, (2) the photo scale at the principal point of the frame, (3) the selenographic coordinates at the principal point of the frame, (4) the percentage of forward overlap of the frame, (5) the sun angle (medium, low, high), (6) the quality of the photography, (7) the approximate tilt (minimum and maximum) of the camera, and (8) the direction of tilt. A brief description of each frame is also included.

The index to the 16-mm sequence photography includes information concerning the approximate surface coverage of the photographic sequence and a brief description of the principal features shown. A "remarks" column is included to indicate: (1) if the sequence is plotted on the photographic index map and (2) the quality of the photography. The pictures taken using the lunar surface closeup stereoscopic camera (35 mm) are also described in this same index format.

The National Space Science Data Center (NSSDC) wishes to thank members of the staff of the Mapping Sciences Laboratory, Manned Spacecraft Center, and the personnel of the Lockheed Electronics Company/Mapping Sciences Laboratory for providing their original index pages to NSSDC. The document preparation effort at NSSDC was under the direction of Mr. Arthur T. Anderson.

APOLLO 12 HASSELBLAD PHOTOGRAPHY (70 mm)

MAGAZINE Q

Frames AS12-50-7325 through 7459

This color (SO-368) magazine includes pictures taken just after translunar injection (TLI) and during lunar orbit 3. Three lenses -- 80, 250, and 500 mm -- were used. Earth, moon, spacecraft parts, and spacecraft interior are included. Targets of opportunity (TO) covered (or partially covered) are: 3, 4, 5, 10a, 11, 12, 18, 23, 26, 27, 30, 32, 34, and 35.

In general, the quality of the images is good, although camera movement and positioning of the camera axis near the sun caused nine frames to be nearly useless. Most lunar topography and all earth frames are oblique (or contain the whole sphere); five frames of Petavius-B are near vertical; 12 frames (not numbered) were skipped.

Five usable frames document the smear and liquid droplet movement on the circular hatch window and the left (square) window of the command service module (CSM) and were taken shortly after TLI. Apparently, this liquid was largely outside the innermost glass pane.

High-angle obliques (such as the Eratosthenes and Humbolt frames) tend toward a more reddish brown color, especially when the illumination is from a low to a medium angle.

Frame # AS-12-50	Camera # f Length	Approx. Photo Scale		cipal oint Long	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
7325	80	1,15,000,000		88W		Med	Good		SE	Yucatan, Lake Mich. Gulf of Mex. clouds
7326	80		spa	ce		Med	good	70°	NW	Earth, SLA near horizon So. Amer., Mexico
7327	250·						fair			LM,SIVB,Prob H ₂ O drops
7328	γ f *						fair			11
7329	.11						fair			11
7330										blank
7331	11			·			good			Earth, illuminated, N&S America
.7332	11						good			11
7333	J!						good			11
7334	PT						good			11
7335	i!						good			8- IV - B
7336	1,		,				good			"
7337	1.						good			"
7338	11						good			½Earth,S.Am
7339	u				181 F. Communication		good	A Designation of the last of t		ੈEarth,S.Am

Frame	Camera # f Length	Approx. Photo Scale		cipal int	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
AS-12-5	D mm	Filoto Scale	Lat	Long	U/ L.	Angio	Quantity.	Min — Max	Tilt	
7340	250						good			S-IV-B
7341	11						good			2-TA-B
7342	11						11			½Earth,S.Am
7343	91						11			S-IV-B
7344	11						11			S-IV-B
7345	9						11			S-IV-B,LMedge
7346	11						11			11
7347	ft				1		11			"½Earth,S.Am
7348	11						11			11
7349	**						11			S-IV-B LM edge
7350	11						11			11
7351	91						11			½Earth,S.Am
7352	11						11			"
7353	11						11			11
7354	80						11			ocean 1/3 earth illuminated.

APOLLO 12 PHOTOGRAPHY
Magazine \bigcirc Film \bigcirc 368

Time Reference \bigcirc GET \bigcirc = GMT \bigcirc

Frame #	Camera # f Length	Approx. Photo Scale		cipal oint	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
	mm	Thoro Scare	Lat	Long	0, 5	Aligie	Quality	Min — Max	Tilt	
7355	80						good			1/3 Earth illuminated, ocean
7356	80		••••		•		11			11
7357	80						11			11
7358	500						11			1/3 Earth,Australia on horizon
7359	500					***************************************	11			II
7360	500						11			11
7361	500						11			11
7362	250						11			11
7363	250						11			11
7364	2 <i>5</i> 0						11			11
7365	250						poor			1/3 Earth,Australia, brownish cast
7366	250						fair			1/4 Earth illuminated
7367	250						fair			l/4 Earth illuminated sunglint
7368	80						poor.			sunglint fouled hatch window, streaks go away from CMS cone apex
7369	80						fair			fouled hatch window, streaks go away from CMS cone apex

	Frame #	Camera #	Approx. Photo Scale		cipal int	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
ı	11*	f Length	Photo Scale	Lat	Long	0/ L	Aligie	Quality	Min — Max	Tilt	
	7370	80				·		fair			sq.left window fouled max.liquid is along edge away from cone apex
	7371	80						fair			11
	7372	80						good			left window; max liquid edge is away from cone apex
	7373	` 8 0						poor			LM thrusters
	7374	80						fair			Edge of LM
	7375	80						poor	·		Window, Camera Movement
	7376	80	·					poor			11
	.7377	80						fair			1/5 Earth, terminator
	7378	80						fair	·		11
	7379	80						11			II
	7380	80						11			" 3 under-exposed frames
	no number	250						very poor			of no use; probably earth
	7381	11						good			1/5 Earth terminator probably W.Australia
	7382	11						11			11
	7383	,,						11			11

Frame #	Camera # f Length	Approx. Photo Scale	Po	cipal pint	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
"	mm	, 11010 004.0	Lat	Long				Min — Max	Tilt	7 / 17
7384	0.40						good			1/5 Earth terminator probably W. Australia
1,704	250						good			
7385	11						11			1/5 Earth, terminator
7386	11						11			11
7387	. 11						11			11
7388	11						11			11
7389	ŧŧ						poor			pre-Rev. 1, moon darkside
7390	11						11			11
7391	11	·					fair			1/4 Earth illuminated
7392	11						11			11
7393	11						11			11
7394	11						11			11
739 5	11						11			l1
7396	80						poor		**************************************	window edge,1/4 Earth
7397	250						poor			window streak; shutter pentagon
7398	11						11			smear; shutter image

Frame	Camera # f Length	Approx. Photo Scale		cipal int	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
***	mm	Filoto Scale	Lat	Long	0,	,,		Min — Max	Tilt	
7399	250						Poor			Smear; shutter image
7400	11						11			11
7401	11						11			11
7402	500		9N	7E		Low	Fair	50-65°	N	Triesnecker-Hyginus Area TO-21, 22; Rev. 1
7403	11		4N	llE		11	11	11	11	Triesnecker-Agrippe l Center Crater, TO-21,22
7404	11					Med.	11	60-75 ⁰	SE	Between long 140E & 160E: Rev. 2
7405	250		IN	SPACE	80	11	Good	60-70°	N	Mare IX, about 140°E Rev. 2
7406	11		IN	SPACE	80	11	11	11	11	11
7407	11		IN	SPACE	11	11	11	11	11	Mare IX, about 140°E Rev.2. red window edge
7408	17	1:4.000.000	4N	120E	60	1.	11	50-60°	1.	Crater 211 near horizon Rev.2; Partial TO+4
7409	11	11	5 N	120.5E	11	11	11	11	11	11
7410	500	1:5,000,000	32S	108E		High	Good	65-75°	S	West of Mare III; Rev. 2
7411	31.	,,	32S	103E		11	11	11	11	11
7412	11	11	28S	84E	25	11	11	50-60°	SE	East edge of Humbolt; TO-10a; Rev. 2
7413	. 11	1'	28.5S	81E		11	Fair	11	11	Humbolt, S Mare on Horizon Rev 2:TO-10a

Frame #	Camera # f Length	Approx. Photo Scale		ncipal pint	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
77-	mm	Filoto Scale	Lat	Long	0/ -	Angle	Quality	Min — Max	Tilt	
7414	500	1:5.000.000	29S	78E	25	High	Good	50-60°	S	West edge of Humbolt TO-10a; Rev. 2
7415	11	11	28S	80.5E	11	11	. 11	11	SE	Humbolt: Mare Australe on horizon; TO-10a Rev. 2
7416	11	11	11	11	11	11	11	11	11	11
7417	11	11	11	11	11	11	11		11	11
7418	11	11	11	11	11	11	11	11	11 ⁻	
7419	11	11	27 <i>5</i> S	76.5E	11	11	11	11	11	West edge of Humbolt; TO-10a; Rev. 2
7420	. 11	11	27 . 58	11	11	11	11	11	11	11
7421	11	11	11	11	11	11	11	11	11	ti .
7422	11	1:4,600,000	16.5 S	41E	90	Med	1'	7-15 ⁰	S	Bohenberger area; TO-12; Rev. 2
7423	17	9.	11	1'	11	11	11	1.	11	P (
7424	*	11	11	t'	1:	11	1!	†;	1*	17
74.25	250	11	14S	35E	30	11	11	1015 ⁰	SW	Mare Nectaris; <u>≃</u> GET 36:17, Rev. 2
7426	11	1,	14.5S	33E	1.	11	<u>.</u> .	11	۱۰	11
7427	ţ.	1:1,380,000	10.5S	18E	90	11	Fair	15-24°	SE	Descartes-Kant Area; TO-18,Alt. 158N. Mi.
7428	11	11	8S	11	11		t;	Ţ÷	SE	GET≌ 86:22 "

Frame #	Camera # f Length	Approx. Photo Scale		cipa! int	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
77	mm	Filoto Scale	Lat	Long	0/ [Aligic	aud,,,,,	Min — Max	Tilt	
7429	250	1:1,380,00	88	7.5E	90	med	good	5 - 10°	SE	Hipparchus, Albategnius TO-23; GET ≅ 86:23
7430	11	11	88	7.5E	90	11	11	5 - 10°	SE	" Herschel in center: Rev 2
7431	11	1:1,350,000	4S	6.5E	95	11	11	20 – 25°	SE	GET ≥ 86:24; TO 26, 27
7432	. 11	11	4S	6.5E	95	11	11	11	11	II
7433	500	1:2,000,000	15N	11.5W		low	fair	65 - 75°	N	Eratosthenes; Rev. 2 GET ≅ 84:30
7434	11	11	16N	4.5W		11	11	70 – 80°	NE	Apenninus Mts.,Rev. 2 Bode Rill II;GET ≅86:26
7435	250	1:4,900,000	4S	7W		low	good	50 - 40°	NE	Lalande, Herschel & Ptolemaéus; TO-30,32; Rev. 2
7436	11	1:4,000,000	2.5S	14W	90	3 - 5°	fair	8-14°	E	Gambart in North TO-34,35 Rev. 2
7437	11	11	11	11	11	11	11	11	11	11
7438	11	11	Ħ	11	11	11	11	11	11	Gambart in North:TO-34, 35, term.@west edge Rev. 2
7439	11	11	11	11	11	11	11	11	11	п
7440	11		in	space		med	good	86°	N	Mare IX; limb Rev. 3
7441	11		11	11		ft	11	îī	††	11
7442	11	1:2,400,000	1 <i>5</i> S	130E	30	11	11	65 – 75°	SE	N.of Tsiolkovsky;partial coverage TO-3
7443	11	Ħ	11	II	11	ff	11	11	ff	,,

Frame #	Camera # f Length	Approx. Photo Scale	Po	cipal int	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
	mm		Lat	Long				Min - Max	1111	about 90 N.M. NW of
7444	250	1:2,400,000	17S	122.5E	80	med	good	55 - 60°	SE	Tsiolkovsky TO-5
7445	11	11	ŤŤ	123E	11	11	11	11	11	about 60 N.M. NW of Tsiolkovsky TO-5
7446	11 -	11				11	11		SW	long. 80E to 125E (?)
7447	. 11	11				11	11		11	11
7448	11	1:10,000,000	25S	84E		high	good	50 – 60°	S	Humbolt area
7449	11	11	24.5S	83E		11	11	11	S	11
7450	11	11	11	80.5E		11	11	11	TT .	11
7451	11	11	25S	80E		11	11	11	11	11
7452	1:	11	11	77E		11	11	11	11	. 11
7453	1.	11	11	73 . 5E		11	11	11	11	II .
7454	††	11	11	11		11	11	11	11	11
7455	80	1:1,376,00	18S	61E	0	high	good	5-5°	S	Fast of Petavius B TO-11
7456	PT .	11	18,5S	59E	0	11	11	3-5°	S	Near Petavius B TO-11
7457	11	11	19S	58.5E	10	11	11	11	11	II .
7458	,,	11	19.5S	57E	10	11	11	11	11	,,

Frame #	Camera # f Length		Po	cipal int	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of.	Description
.,	mm		Lat	Long		, , ,		Min — Max	Tilt	
7459	80	1:1,376,000	19.5S	56E	5	high	good	3-50	S	Petavius B T 0-11
no numbe	r									about 1/5 of a frame at end of roll.
							The numb	er of blank	frames, i	n groups of l, & 2, is:
	·									twelve (12)
						•				
			·							
			***************************************		***************************************					
			**************************************		pr-2-00000000000000000000000000000000000					
					W-80770000000000000000000000000000000000					

			***************************************	a.	**************************************					
							.ax			

MAGAZINE R

Frames AS12-51-7460 through 7588

Magazine R is 70-mm color photography of the lunar surface, plus some views of the earth. The photographs were taken from the command module (CM) at approximately 60 nautical miles orbital altitude. The majority of the photographs are oblique with a view on track or in a northerly direction.

An 80-mm lens was used for all but 20 frames, which were recorded with a 250-mm lens. Photographic quality was good for 90 percent of the magazine.

Eighty percent of the frames cover areas of the lunar surface on the near side, with 90 percent of these covering from 35° east longitude to 40° west longitude.

The following targets of opportunity are fully or partially covered: 7, 8, 9, 15, 23, 25, 26, 27, 29, 31, 32, 33, 34, 35, 36, 37, 39, 40, 42, 43, 44, 45, and 47.

 Magazine
 R
 Film
 SO-368

 Time Reference
 GET
 = GMT

Frame	Camera #	Approx.		cipal int	Fwd O/L	Sun	Photo Quality	Approx. Tilt	Direction of	Description
#	f Length	Photo Scale	Lat	Long	0/L	Angle	Quality	Min — Max	Tilt	
7460	80	1,678,600	12°s	33 ⁰ Е	Q	High	Good	30-40	N	Sea of Nectar, Crater Daguerre
7461	11	11	11	11	90%	11	11	11	11	11
7462	11	11	11. <i>5</i> %	32.5°E	70%	11	11	11	11	11
7463	11	11	ll ^o s	31°E	50%	11	11	11	11	Crater Madler
7464	11	11	11	30 ⁰ E	70%	11	11	11	11.	11
7465	11	11	10.58	29 ⁰ E	60%	11	11	11	11	11
7466	11	11	11	28 ⁰ E	80%	11	11	11	11	Craters Theophilus and Madler
7467	11	11	10°s	27 ⁰ E	70%	11	11	11	11	Craters Theophilus & Theophilus B
7468	11	11	11	26.5°E	70%	11	11	11	11	Craters Theophilus & Theophilus B
7469	11	11	10.5°S	25.5 ⁰ E	60%	11	11	11	11	n .
7470	11	11	11	25 ⁰ E	90%	1!	11	11	11	11 _
7471	11	1,880,100	14°S	3 ⁰ E	0	Med	11	40-45	SW	Craters Albategnius and Parrot
7472	250	622,200	9.5 ⁰ S	0	0	11	11	40-50	S	Crater Ptolemaeus
7473	į i	583,000	8.5°S	l ^o W	!!	11	11	35–45	S	Crater Ptolemaeus A
7474	11	11	ŢŦ	3 ⁰ W	††	11		35-45	S	West side of Crater Ptolemaeus

Magazine R Film S0-368
Time Reference — GET ____ = GMT ____

Frame #	Camera # f Length	Approx. Photo Scale		cip al int	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
	mm	Photo Scale	Lat	Long	0/ L	Aligie	Quality	Min — Max	Tilt	
7475	250	1,622,200	8.5°S	4°W	50%	Med	Good	40–50	S	West Side of Crater Ptolemaeus
7476	11	969 , 200	L4.5°s	7 [°] W		11	11	60–70	S	Craters Lassell and Alpetragius B
7477	11	1,041,100	1 <i>5</i> °S	8.5°W		11	11	11	11	Craters Davy, Lassell,
7478	11	1,126,100	L4.5 [°] S	9 ⁰ W		11	11	65-70	S	Craters Davy, Lassell and Lassell C
7479	11	!*	l⊿°s	9.5°W		† †	11	60–70	11	Sea of Clouds, Crater Lassell C
7480	11	503 , 100	2.5 ⁰ S	14 [°] W	0	Low	Poor	25 – 35	W	Area North of Fra Mauro, very dark
7481	11	767,100	9 ^o s	15 ⁰ W		11	Fair	50-60	S	Craters Parry and Parry A
7482	11	11	8.5 ⁰ S	15 ⁰ W		11	11	11	S	11
7483	11	11	8 ^o s	16 ⁰ W		11	11	11	11	Craters Parry. Fra Maur
7484	11	11	7.5°S	17 ⁰ W		11	11	11	11	Very dark- SE Rim of Fra Mauro
7485	11	1,041,100	10.5°S	7 ⁰ W	0	Med	Good	60-70	SW	, Crater Davv. Davv
7486	t i					Low	Poor			Very Dark-Terminator Shot Not Plotted
7487	11					11	11			11
7488	11					11	11			11
7489	11						Good			Earth View

APOLLO 12 PHOTOGRAPHY

Magazine R Film S0=368
Time Reference — GET ____ = GMT ____

Frame #	Camera # f Length	Approx. Photo Scale		icipal pint	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
77	mm	1 11010 Scale	Lat	Long	0, 2	Aligic	duamy	Min — Max	Tilt	
7490	80				С	High	Poor			Sea of Fertility Not Plotted
7491	11				70%	**	11			Sea of Fertility Not Plotted
7492	11				0	11	11			11
7493	71				70%	11	11			ıı .
7494	. 11	1,411,200	15 ⁰ S	4.9°E	0	11	Good	10-15	W	Sea of Fertility, Crater Colombo M
7495	11	1,454,200	11	11	95%	11	11	15-25	W	11
7496	11	1,517,100	11	48.5 ⁰ E	90%	11	11	20-30	W	Craters Columbo M and McClure A
7497	11	1,572,100	11	48 ⁰ E	90%	11	11	25–35	11	Craters Columbo M & East Rim of Colombo
7498	11	1,678,600	12°S	19.5°E	0	11	11	30-40	11	Craters Kant, Cyrillus, B and Kant D
7499	11	11	11	11	95%	11	11	11	11	Craters Kant, Kant D, and Cyrillus B
7500	11	11	11	11	11	11	11	11	11	11
7501	11	2 , 184 , 900	9 ^o s	5.5°E	0	Med	11	50-55	11	Craters Hind, Halley Albategnius and Muller
7502	11	11	11	5 ⁰ E	90%	† 1	11	17	. ††	Craters Hind, Halley Muller, & Ptolemaeus
7503	17	2 . 524 ,6 00	క [ం] క	0.5 ⁰ E	50%	11	11	55-60	1'	Craters Ptolemaeus Herschel & Müller
7504	ŗ,	11	7.5°S	0.5 ⁰ W	90%	11	11	11	11	Craters Müller, Herschel and Ptolemaeus

Frame #	Camera # f Length	Approx. Photo Scale		icipal pint	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
<i>++</i>	mm	Photo Scale	Lat	Long	0/ L	Angle	Quality	Min — Max	Tilt	
7505	8 0	.2,669,700	7.5 ⁰ S	l.O°W	80%	Med	Good	55-60	W	Craters Muller, Herschel and Ptolemaeus
7506	11	11	11	3.5°W	50%	11	11	55-65	W	Craters Ptolemaeus, Herschel & LaLande C
7507	11	2,836,200	7 ⁰ S	4.5°W	S0 %	11	11	11	11	. 11
7508	11	4 , 702 , 900	HOR	IZON	30%	11	T1	70-75	11	LM Tracking Crater LaLande
7509	11	11	11	11	30%	11	11	11	11	LM Tracking, Craters LaLande & LaLande A
7510	ff	11	11	11	30%	17	11	11	11	11
7511	11	11	11	11	11	11	11	11	11	11
7512	11			~~~~	00000000000000000000000000000000000000	a	11	11	11	Earth View
7513	ŦŦ						11			11
7514	††	3, 228,700	11.5°S	9.5°W	0	7:	Fair_	60-65	SW	Craters Davy and Davy Y Sea of Clouds
7515	††	3,519,000	11.58	11.5°W	70%	"	11	65-70	11	
7516	11	5,312,600	HOR	[ZON	0	"	11	70-80	N	Oblique View of Copernicus Crater
7517	11	11	11	11	30%	11	11	11	11	11
7518	11	5,000,000	HOR	IZON	0	Low	11	70-75	SW	Area Between Craters 293 & 297
7519	,•	11	HOR	IZON	0	11	11	11	11	11

Frame #	Camera # f Length	Approx. Photo Scale		icipal pint	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
##	mm Length	Photo Scale	Lat	Long	U/ L	Aligie	Quality	Min — Max	Tilt	
7520	80.	5.312.600	HOR	NCZI	Q) ow	Fair	70-80	SW	Area Between Craters 293 and 297
7521	11	11	HOR	IZON	0	11	Good	70–80	NW	Crater IX
7522	11						11			Farth View
7523	11						!!		٨.	!!
7524	11		HOR	IZON			Poor		W	Area Just West of Crater II. Earth Rise
7525	11		11	11			11		11	Area Just West of Crater II, Earth Rise
7526	11		11	11			11		11	Area Just West of Crate II, Earth Rise
7527	11	·	11	11 .			!!		11	Area Just West of Crate II, Earth Rise
7528	11		11	11			11		11	Area Just West of Crate II, Earth Rise
7529	11		11	11			11		11	Earth Rise
7530	11	4,223,400	11	11	0	Low	11	65-75	S	Crater 286 at Terminato
7531	11	1,678,600	1°s	25 ⁰ W	0	Med	Fair	30-40	NE	Crater Lansberg
7532	11	11	11	26 ⁰ W	80%	11	11	11	11	11
7533	11	1,944,520	2.5°N	13.5°W	0	11	Poor	40-50	N	Crater Gambart, Gambart B, and GambartC
7534	!'	2,284,700	3°N	15 [°] W	0	11	11	50-60	? *	Crater Gambart

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Frame #	Camera # f Length	Approx. Photo Scale		cipal int	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
77	mm	Thoro Scare	Lat	Long	0, 5			Min — Max	Tilt	
7535	8C.	3, 519,000	HOR	IZON	30%	Med	Poor	65–70	N	Oblique View of Crater Copernicus
7536	11	3,836,800	HOR	IZON	11	11	- 11	11	11	Craters Copernicus and Reinhold B
7537	11	1,721,700	0.5 ⁰ S	26.5°W	0	11	11	35–40	W	Crater Lansberg
7538	11	11	0.5°S	: 11	95%	11	Fair	11	11	11
7539	11	11	1°N	29 ⁰ W	0	Low	Good	35–40	NW	Craters Lansberg A and Kunowsky D
7540	. 11	1,821 ,9 00	2 ⁰ N	31.5°W	40%	11	11	35-45	W	Crater Lansberg A
7541	11	3,253,500	7°N	19.5°W	0	Međ	11	60-70	N	Craters Copernicus Rheinhold A & Gambart A
7 5 42	11	11	11	20 ⁰ W	80%	11	Fair	60-70	11	Craters Copernicus & Rheinhold A
7543	11	2,669,700	2.5°N		0	11	11	55-60	NW	Craters Rheinhold & Rheinhold B
7544	11	3,519,000	10°N	26.5°W	0	ŤĨ	Good	65–70	N	Craters Hortensius & Hortensius E
7545	11	11	9.5°N	28 ⁰ W	80%	11	11	11	11	n n
7546	11	3,836,200	11	31°W	50%	11	11	11	11 .	Craters Hortensius A & Hortensius B
7547	11	4,702,900	HOR	ZON	0	Low	11	70-75	NW	Craters Kunowsky, Encke and Kepler
7548	11	2,016,100	3.5°N	32.5°W	0	11	11	45-50	NW	Craters Kunowsky and Hortensius A
7549	11	3 , 028 , 700	8.5°N	34 ⁰ W	30%	f f	11	60-65	N	Craters Kepler A, Kepler B and Hortensius A

Frame #	Camera # f Length	Approx. Photo Scale		cipal int	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
#	mm Length	Photo Scale	Lat	Long	0/ L	Aligie	Quality	Min — Max	Tilt	
7550	80.	3,253,500	7 5 ⁰ N	36 5 ⁰ W	3∩%	Low	Good	60-70	NI.J	Craters Encke and Kepler
7551	11	2,397,200		36.5°W	30%	11	††	50-60	W	Craters Encke & Kepler
7552	11	3,253,500	ll ^o N	32.5 ⁰ W	Q	11	11	60-70	Ŋ	Craters Kepler B & Milichius A
7553	11	3,519,000	12 ⁰ N	34 ⁰ W	70%	11	11	65-70	N	11
7554	. 11	2,836,200	2.5 ⁰ N	116.5°E	0	Med	† †	60–65	ŃW	Area Between Craters 206-211
755 5	11	3,519,000	6 ⁰ и	121 ⁰ E	40%	11	11	65–70	N	Oblique View looking North into Crater 211
7556	11	1,721,700	5 ⁰ S	119 ⁰ E	0	Med	Good	30–40	N	Area Just West of Crater 277
7557	ŶŶ	2,836,200	o ^{'3}	114.5°E	O	1:	11	60-65	NW	Craters 206, 277, 275, and 277
7558	11	1,572,100	5.5°S	114.5 ⁰ E	30%	11	11	25-35	NW	Southern Half of Crater 277
7559	11	3,519,000		110 ⁰ E	0	īī	11	65-70	NW	Craters 202, 204, 207 and 275
7560	11	3 , 253 , 500	o ^o	108.5 ⁰ E	60%	11	11	11	11	Craters 202, 204 and 273
7561	11	1,880,100	6 ^o s	109 .5[°]E		11	††	40-45	'nW	Crater 273
7562	11	3,028,700	1 ⁰ S	116.5°E	0	11	11	60-65	NE	Crater 277
7563	11	11	2°s	103.5°E	0	High	!! <u>.</u>	11	NW	Crater 270
7564	11	2.669.700	9.5°s	113.5°E	0	?!	Fair	55-65	E	Crater 276

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Frame #	Camera # f Length	Approx. Photo Scale		cipal int	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
#	mm	Filoto Scale	Lat	Long	0, 5	Migic		Min — Max	Tilt	
7565	8C.	3 028,700	5 [°] S	84 ⁰ E	0	High	Good	60-65	NW	Craters 263, Smyths Sea
7566	11	11	7 ⁰ S	79 ⁰ E	30%	11	11	11	11	Crater Kastner
7567	11	2 ,524,600	10°s	75.5°E	0	11	11	55– 60	ŊW	Craters LaPerouse & LaPerouse E
7568	11	11	9 ^o s	66.5°E	0	11	11	11	NW	Crater Langrenus A
7569	11	3·028 , 700	8 ⁰ S	61.5°E	50%	tī	11	60-65	ŃW	Crater Langrenus
7570	11	3.519,000		29.5°E	0	† 1	11	65–70	W	Craters Daguerre & Madler, Sea of Nectar
7571	11	2.669,700	22.5§	37.°E	0	11	11	55-69	S	Craters Fracastorius B, Central peaks of Piccolomia
7572	25C	969,200		31.5°W		Low	Poor	60-65	N	Craters Milichius and Milichius A
7573	11	907 ,60 0	9.5°N	32.5°W		11	11	55-65	N	Crater Milichius A
7574	11	854 , 300	9°N	34 ⁰ W		11	11	55-60	N	Ocean of Storms
7575	11	11	11	o 35 W		11	11	11	11	Crater Kepler B
7576	11	807,900	7.5°N	35 ⁰ W		11	11	ıt.	- u	11
7577	11	11	11	36°W		11	11	11	ff	Craters A & Kepler B
7578	1'	1,126,100	9.5 ⁰ N	34. ⁰ W		11	11	60-70	Л	Just North of Kepler B
7579	80	3, 836,200		ZON	0	Hi ch	Good	65-75	C	Craters Alphonsus & Arzachel

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Frame #	Camera # f Length	Approx. Photo Scale	Prin Po	ncipal pint	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
"	mm	1 more scare	Lat	Long	0/ L	Angle	Quality	Min — Max	Tilt	
7580 7581	80.	3,836,200	НО	TZON	90%	High	Good "	65–75	S	Craters Alphonsus, Arzachel & Alpetragius Almost total eclipse of Earth
7582	11						11			Earth View
7583	""						11			11
7584	19						11			Solar Eclipse
7585	11						11			IT.
7586	11					***************************************	11			11
7587	11						11			11
7588	11						11			Star Shot
										·
_										entronomental devent de la commencia de Server-Consessaciones (E.C. des deventagar en con descon se el compos especial es por

MAGAZINE S

Frames AS12-52-7589 through 7762

Magazine S contains black and white orbital coverage of the lunar surface taken from an average altitude of 60 nautical miles. It consists of 173 frames, numbered from 7589 through 7762, photographed with 80-, 250-, and 500-mm lenses.

The coverage ranges from 130° east longitude to 45° west longitude and 15° north latitude to about 50° south latitude. Photographic quality ranges from poor to good.

Frames 7589 through 7600 are 80-mm low-oblique stereo coverage of Fra Mauro and target of opportunity 35. All frames are of good quality.

Frames 7669 through 7709 include 500-mm low-oblique to near-vertical stereo coverage of Fra Mauro and are of poor to good quality. The frames are partially exposed due to a camera shutter malfunction. Frames 7631 through 7668 are 500-mm low-oblique stereo coverage of Descartes and are of poor to good quality. Frames 7645 through 7668 are partially exposed due to a camera shutter malfunction.

Frames 7601 through 7630 and 7710 through 7762 were taken with a 250-mm lens. Frames 7605 through 7630 are 250-mm low-oblique to near-vertical stereo coverage of the southern edge of Herschel. The photographic quality is fair to good. Frames 7735 and 7738 through 7740 are 250-mm high-oblique exposures of Copernicus. The photographic quality is good. Frames 7761 and 7762 are blurred and not plottable.

Frame #	Camera # f Length	Approx. Photo Scale		cipal int	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
""	mm	1 11010 00010	Lat	Long				Min — Max	Tilt	
7589	80	1:1,678,690	5.6°s	13.4°W	959	Low	Good	30 –3 5 ⁰	SW	Fra Mauro TO-35
7590	11	11	5.5°S	14.2°W	95%	11	11	11	11	11
7591	11	1:1,604,100	4.4°S	14.4°W	95%	"	11	11	S	
7592	11	11	4.7°s	15.8°W	90%	11	11	11	11	11
7593	11	11	4.9 ⁰ S	16.0°W	90%	11	11	"	11	11
7594	11	1:1,517,100	4.9°S	16.0°W	90%	11	11	20 – 25 ⁰	E	11
7595	11	1:1,821,900	11	17.4°W	පි5%	11	11	35–40°	W	
7596	11	1:1,769,300	4.7°s	17.8°W	11	11	11	35-40°	W	11
7597	11	1:1,769,300	4.9°s	18.2°W	11	11	11	. 11	SW	11
7598	11	1:1,821,900	4.7°s	19.2°W	95%	11	11	11	11	11
7599	11	1:1,678,600	4.8°S	19.3°W	90%	11	11	11	11	11
7600	. 11	1:1,517,100	4.1°S	18.4°W	95%	11	11	25 –3 0°	11	11
7601	250	1:767,100	12.6°S	65.7 ⁰ Е	95%	11	11	55-60°	SSW	Directly East of Langrenus G
7602	11	11	ه 12.7 S	55.3°E	95%	11	11	11	11	Between Lame, Langrenus P and Langrenus G
7603	11	11		.65.0°E		11	1!	11	11	11

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Frame #	Camera # f Length	Approx. Photo Scale	Po	cipal int	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
7604	mm 250	1:699,200	Lat 6.69	Long		High	Good	45-51°	W	Between Müller and Herschel TO-26
7605	500	1:622,200	6.4 ⁰ s	2.6°W	95%	11	11	45 - 60 [©]	W	T0-27 Southern edge of Hersche
7606	11	1:699,200	6.3 ⁰ s	2.7 ⁰ W	95%	11	11	11	***	11
76 0 7	11	11	11	2.4 ⁰ W	11	11	:1	11	11	11
7608	11	11	11	11	11	11	11	30 - 45 ⁰	11	-
7609	11	11	11	11	11	11	11	11	11	11
7610	11	11	11	11	11	11	11	11	11	"
.7611	11	11	11	. 11	11	11	11	15-30 ⁰	11	11
7612	11	11	11	. 11	11	11	11	11	11	11
7613	11	11	11	11	90%	11	Fair	0-15°	11	11
7614	11	11	6.4°s	2.6°W	11	11	11	11	17	11
7615	11	11	6.3°s	11	95%	11	11	- 11	11	11
7616	11	!!	6.4°s	2.4°W	90%	11	Good	11	11	11
7617	11	11	11	2.1°W	80%	11	11	Vertical	11	11
7618	11	11	!!	11	11	Med	11	11	1!	п

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Frame #	Camera # f Length	Approx. Photo Scale	Po	cipal int	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
mm	mm		Lat	Long		3.0		Min — Max	Tilt	
7619	500	1:622,200	6.4°s	2.1°W	90%	Med	Good	45-51°	W	Southern Edge of Herschel
7620	11	1:699,200	11	11	11	TT.	11	11	11	11
7621	11	11	11	11	80%	11	11	11	11	11
7622		11	11	11	11	11		11		1
7623	11	11	11	11	90%	11	††	11	11	. 11
7624	11	PT .	11	11	11	11	11	11	11	11
7625	11	11	11	11	95%	11	11	11	11	11
7626	11	11	11	11	11	11	11	11	11	11
7627	11	11	f*	11	90%	11	11	11	11	11
7628	11	1.	11	11	80%	11	11	11	1.	, ,
7629	11	11	11	11	"	11	11	11	11	11
7630	11	11	11	11	11	11	11	11	11	11
7631	11	11	3.7°s	15.0°E	0%	11	11	30-60°	11	Descartes Looking West into Dolland B. TO-18
7632	11	11	₿.7°s	15.0°E	100%	11	11	11	11	11
7633	11	1:1,222,000	3.8°S	15.3 ⁰ Е	95%	11	11	15 - 20 ⁰	11	Area of Descartes center hetween Taylor, Dolland TO-18nd B, and Kant D.

Frame #	Camera # f Length	Approx. Photo Scale	Po	cipal pint	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
	mm		Lat	Long				Min — Max	Tilt	Amon of Dogoonton conto
7634	500	1:1,222,000	8.8°s	15.3°E	95%	Med	Good	15-20°	W	Area of Descartes centered between Taylor, Dolland TO-18nd B, and Kant D.
7635	11	11	11	11	11	11	11	11	11	11
7636	71	11	11	11	11	††	11	11	††	. 11
7 637	T1	11	11	11	ţî	11	11	11	11	"
7638	ř ř	11	11	11	11	11	11	11	. 11	11
7639	71	11	11	f1	11	11	11	11	11	11
7640	11	11 ·	11	11	11	11	Fair	11	11	n
7641	11	11	11	11	11	11	11	11	11	"
7642	11	11	1!	11	11	11	11	11	11	
7643	††	11	11	11	11	11	11	11	11	11
7644	11	11	11	11	11	11	11	11	11	. 11
7645	ţ;	††	11	11	11	11	11		- 11	" Partial Frame
7646	11	11	11	11	11	11	Poor	11	11	"
7647	17	11	11	11	11	11	11	11	11	11
7648	11	11	11	11	11	ŧ1	11	11	11	"

Frame #	Camera # f Length	Approx. Photo Scale		cipal bint Long	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
7649	mm 500	1:1,222,000		15.3°E	95%	Med.	Poor	15-20°	W	rea of Descartes centered between Taylor, Doctland, cliand B, and Kant D. D-18 Partial Frame
7650	11	11	17	19	11	11	11	11	11	11
7651	11	11	11	11	11	11	11	11	11	11
7652	11	11	11	11	11	11	11	11	11	11
7653	11	11	11	11	11	11	11	11	11	11
7654	11	11	11	11	1.	11	11	11	11	11
7655	11	11	11	11	11	1'	1:	11	11	1'
7656	11	1:	1.	11	11	1'	1:	ţ;	11	11
7657	11	11	1.	11	1:	11	11	11	1.	11
7658	,,	11	t:	11		1.	1'	11	11	11
7659	11	11	11	11		11	11	11	11	11
7660	11	11	11	11		11	11	11	11	11
76 6 1	11	11	11	11		11	11	11	11	11
7662	11	11	11	11		11	11	11	11	11
7663	11	11	11	17.		11	11	11	11	11

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Frame #	Camera # f Length	Approx. Photo Scale		cipal oint	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
Tr.	mm	Filoto Scale	Lat	Long	0/ L	Aligie	Quality	Min — Max	Tilt	
7664	500	1:1,222,000	8.8 ⁰ S	15.3°E		Med.	Fair	15-20°	W	Area of Descartes centered by a land, and by and kant D. Fartial Frame
7665	11	11	11	!!		††	11	††	11	11
7666	11	1:	t ·	f f		Å.	11	11	Į.	11
7667	1,	11	"	11		1:	11	11	1.	. 11
7668	1:	11	11	11		11	11	11	1"	11
7669	11	. 11	3.8 ⁰ S	17.4°W	0%	High	Poor	10-15°	WSW	Southwest of Fra MauroG . and Southeast of Fra Mauro J. (Partial Frame)
7670	11	ff	11	11	97%	11	11	11	11	11
7671	11	11	11	11	11	11	11	11	11	11
7672	11	11	11	11	99%	11	11	11	11	"
7673	11	11	11	11	94%	11	11	11	11	11
7674	11	11	!'	11	95%	t'	11	1'	11	11
7675	†*	1*	! !'	11	100%	11	t.	11	11	11
7676	77	††	11	11	95%	11	11	11	11	11
7677	11	11	11	11	11	11	† †	11	11	ti .
7678	11	11	11	11	80%	11	11	1,	11	.,

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Frame #	Camera # f Length	Approx. Photo Scale		cipal oint	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
77	f Length	riioto Scale	Lat	Long	0/ 2	Aligie	Gadiny	Min — Max	Tilt	
7679	500	1:1,222,000	3.8°S	17.4°W	75%	High	Poor	10 – 15 ⁰	WSW	Southwest of Fra Mauro G and (Southeast of Fra Mauro J. (Partial Frame)
7680	11	11	"	11	80%	11	11	. 11	11	!!
7681	11	11	11	11	11	!1	11	"	11	Э
7682	11	11	11	11	11	11	11	11	97	11
7683	11	11	11	11	75%	11	11	11	11	11
7684	11	11	11	11	80%	11	11	11	11	
7685	11	11 .	11	11	11	11	11	11	11	
7686	11	11	11	11	75%	11	11	11	11	11
7687	1"	11	11	11	75%	11	11	11	11	11
7688	11	11	1'	11	11	"	11	1.	11	11
7689	11	11	11	11	80%	11	11	. 11	11	, ,
7690	!'	11	11	11 .	75%	Med	Fair	11	. 11	H , ·
7691	11	11	11	11	80%	"	11	11	11	11
7692	11	!'	11	11	75%	11	Good	11	11	11
7693	11	11	1!	11	80%	11	11	11	11	"

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Frame #	Camera # f Length	Approx. Photo Scale		cipal pint Long	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
7694		1:1,222,000		17.4°W	85%	Med.	Good	5-10 ⁰	WSW	Southwest of Fra Mauro Land Southeast of Fra Mauro J (Partial Frame)
7695	Ħ	11	11	11	11	11	11	11	11	11
7696	ŧŧ	11	11	11	80%	11	11	11	11	
7697	11	11	11	11	85%	11	f	11	11	11
7698	11	l,	11	11	90%	1.	11	11	11	11
7699	11	11	11	**	80%	11	1,	11	11	11
7700	11	11	11	11	85%	11	1.	11	11	II .
7701	1.	. 11	1.	II	t'	11	1'	11	11	1*
7702	11	11	1.	11	1.	11	11	1.	11	lt.
7703	11	11	11	11	11	11	11	11	11	11
7704	11	11	11	11	90%	11	11	11	77	11
7705	11	11	11	11	80%	11	11	11	1.	11
7706	11	11	11	11	95%	Low	Good	17	SSW	11
7707	11	11	!1	11	11	11	11	11	11	יו
7708	11	11	μ	11	,,	t'	1.	1,	ţ•	17

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Frame #	Camera # f Length	Approx. Photo Scale		cipal int	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
777	mm	Filoto Scale	Lat	Long] 0, _	Aligie	Quality	Min — Max	Tilt	
7709	500	1:1,222,000	3.8 ⁰ s	17.4°W	95%	Low	Good	5-10°	WSW	Southwest of Fra Mauro G and Southeast of Fra Mauro J. (Partial Frame
7710	250	1:1,041,100	2.0°N	126 ⁰ E	95%	11	Poor	60-70°	NE	Craters 283, 282 looking Northeast. TO-4
7711	11	11	1.6°N	125.9°E	11	11	11	11	11	11
7712	11	11			11	11	Fair	11	ll.	Unplottable due to photography
7713	11				11	11	17		11	11
7714	11	1:767,100	4.7°s	38.3 ⁰ E	11	Med	Good	50 – 55 ⁰	NW	Censorinus F looking Northwest TO-14
7715	11	11	4.2 ⁰ 5	11	11	11	11	11	11	11
7716	11	1:767,100 1:907,600	3.7°s	22.2°E	11	11	††	55-61°	N	Hypatia looking North TO-16
7717	11	11	3.1°s	21.2°E	11	11	11	11	NW	Alfraganus D.F.G. & Hypatia & Hypatiac, lookin North TO-16
7718	11	l:907,600 l:1,041,100	2.5 [°] S	20.0°E	80%	11	"	61-65 ⁰	WNN	Alfraganus F Looking NW to Schmidt & Dionysfus TO-16
7719	11	l:907,600	††	21.5°E	80%	11	11	60-65 ⁰	N	Alfraganus E looking N to Hypatia C. & Sabine TO-15
7720	11	1:513,300 1:537.100	4.1°s	20.9 ⁰ E		11	11	31-35 ⁰	N	Alfraganus D, F, & G looking W. TO-16
7721	11	1:1,041,100 1:1,351,500	3.0°N	14.3°E		High	Good	65-71°	11	d'Arrest looking N to Rima Ariadaeus
7722	11	1:907,600 1:041,100	3.3°N	14.5°E	90%	High	Good.	61–65 ⁰	**	d'Arrest looking N to Rima Ariadaeus
7723	ŶŶ	1:907,600	0°	6.1°E		Med	11	60-65°	11	Lade looking N to Agrippa TO-22

Frame #	Camera # f Length	Approx. Photo Scale		cipal oint	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
77	mm	Piloto Scale	L.a t	Long	0/ [Angle	Quality	Min — Max	Tilt	
7724	250	1:907,600	.08	18.2°E	80%	Med	Good	60-65 ⁰	NNE	Western Edge of Lade looking N to Dembowski TO-22
7725	11	11	.02N	7.2°E	11	11	11	11	NW	TO-22 Directly W of Lade Godin Agripba looking N acros Dambowski TO-22
7726	"	1:1,041,100	.7°N	3.5°E	60%	High	11	11	NW	Rhaeticus looking NW across Triesnecker
7727	ff .	††	.7°N	4.5 ⁰ E	65%	11	11	11	11	
7728	11	11	6.8°N	3.1°W	95%	Med	11	11 .	N .	Pallas, Bode looking N to Rima Bode I TO-28
7729	11	11	6.8°N	1	90%	11	11	11	11	Rima Bode IV looking N to Rima Bode 128 Bode N & Bode B. TO-28
7730	11	11	8.9°n	5.1 ⁰ W	85%	11	11	11	NW	Rima Bode IV looking NE to Sinus Aestuum TO-28
7731	11	1:1,041,100 1:1,351,500	5.7°N	7.7°W	90%	11	11	65-71 ⁰	NW	Schroter Looking North to Schroter C & Sinus Aestuum.
7732	"		5.0°N		85%	11	11	11	17	Schroter G looking N to Schroter C & Sinus Aestuu
7733	11	1:1,041,100	5.0°N	8.6°W	90%	11	††	11	N	11
7734	"	11	5.4°N	9.9°W	85%	11	11	11	N	11
7735	11	1:1,041,100 1:1,351,500	9.7°N	19.7°W		11	11	65-71 ⁰	NNW	Copernicus & Copernicus H looking NW
7736	!'	1:767,100 1:907,600	1.4°N	15.3°W		11	11	55-61°	N	Gambart looking N & including Gambart EA TO-3.
7737	11	1:622,200 1:699,200	1.0°N	ls.8°W		11	11	45-51 ⁰	NW	Gambart A looking NW
7738	11	1:1,041,100 1:1,351,500	9.6°n	19.3°W	80%	11	11	65 - 71 ⁰	N	Copernicus TO-37

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Time Reference — GET ____ = GMT ____

Frame #	Camera #	Approx. Photo Scale		cipal int	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
#	f Length	Photo Scale	Lat	Long	07 L	Angle	Quality	Min — Max	Tilt	
7'739	250	1,041,100	10°N	20 ⁰ W	80%	Med	Good	60-65°	N.	Copernicus TO-37
7740	11	1 ² ,351,500	U Y O M	21.7 ⁰ W	<u>\$0</u> %	11	11	70-75°	M	
7741	11	907,600 1,041,100	6.5°N	29. 4 0 W	85%	11	11	61-65 ⁰	11	Hortensius B looking N to Milichius
7742	11	1,041,100	6.8°N	20.0 W	11	11	11	11	NW	11
7743	11	907,600	11.4°N	31.3°W	80%	11	11	11	N	Milichius & Milichius A
7744	11	1,041,100	7.2°N	31.8 ⁰ W	80%	11	11	11	11	Milichius A
7745	11	1,041,100 1,351,500	8.3°N	38.3°W		ff	11	65-71°	NW	Kəpler, Kepler A. Kepler F TO-43
7746	dž	622,200 699,200	2.1 ⁰ N	32.5°W		11	11	45-51°	11	Kunowsky TO-42
7747	11	907,600	8.1°N	38.3°W		11	!1	60-65°	11	Kepler, Kepler F TO-43
7748	11 .	440,600 448,200	.07°N	36.5°W	80%	Low	11	3-11°	SSW	Encke C TO-47 '
7749	11	699,200	4.5 ⁰ S	44.0°W	11	11	11	50-55°	SE	TO-50 Flamsteed, Flamsteed B
7750	11	583,000	1.0°N	45.1°W	11	11	11	11	ИМ	Suess F TO-48
7751	11	1,351,500	6.4°N	53.1°W	"	11	11	70-75°	WNW	Reiner, Reiner A TO-53
7752	11	699,200	4.4°N	47.3°W	80%	11	11	50-55°	NW	Suess, Suess D
7753	1,	11		43.2W		r	10	ţ.	1.	Siess

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Frame #	Camera # f Length	Approx. Photo Scale	Po	icipal pint	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
"	mm	. ,,,,,,,	Lat	Long		3		Min — Max	Tilt	
7754	250	1,041,100 1,227,800				Low	Fair	65-70°	NW	West Central Ocean of Storms near Terminator (not plottable)
7755	71					11	Lood but		<u>U</u>	11
7756	11	907,600	7.0°N	54.2°W		11	Good but partiall blurred	y 60-65°	WSW	Reiner Looking North TO-53
7757	11	11	12 . 8%	50.3°W	80%	Med	11	**	N	Marius TO-52
7758	11	907,600 1,041,100	7.9°N	54.9°W	80%	Low	11	61-65 ⁰	NW	Reiner Looking NE TO-53
7759	11	11	13 . 9n	51.5°W	80%	11	11	11	N	Marius TO-52
7760	11	11								Photography Blurred Not Plottable
7761	11	1 8								Not Plottable. Blurred
7762	11	71						-		Not Plottable, Blurred
										,
							000-10277.770000831/00100000000000000000000000000000			

2			

MAGAZINE T

Frames AS12-54-7948 through 8120

Magazine T is 70-mm black and white photography of the lunar surface, taken from the CM. The entire magazine is a near-vertical stereo strip photographed with an 80-mm lens. The approximate coverage is from 125° east longitude, 3° south latitude to 55° west longitude, 3° north latitude. Sun angles are from low to high, and the photographic quality ranges from poor to good.

Frames 8083 through 8091 cover an area from the north tip of Fra Mauro to landing site 7. Landing site 5 is shown on frames 8108 and 8109. The target of opportunity coverage is as follows: 8 on frames 7954 through 7957; 13 on 8028 and 8029; 15 on 8033 through 8035; 18 on 8048 through 8051; 23 on 8056 through 8059; 26 on 8065 and 8066; 27 on 8068 through 8070; 32 on 8075 through 8077; 35 partially imaged on 8083 and 8084; 39 on 8087 through 8098; and 48 on 8108 through 8111.

Time Reference — GET ____ = GMT ____

Frame #	Camera # f Length	Approx. Photo Scale	Po	cipal int	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
7948	80mm	1:1,376,900	Lat 30S	Long 123 ⁰ E	60	Low	Poor	Near Vert	Near Vert	Not Usable (Too dark)
7949	11	71	4 ^o s	121 . \$E	60	Low	Poor	Near Vert	Near Vert	Stereo Strip Usable (Dark)
7950	11	ŤŤ	4 ^o s	121 ⁰ E	65	17	11	11	11	Stereo Strip Usable (Dark)
7951	11,	19	45°S	120° E	65	††	11	11	11	Stereo (SE of 277) Strip Usable (Dark)
7952	77	11	4.5 S	119 ⁰ E	60	11	"	†1	11	Stereo Strip,SE of 277
7953	11	11	45° S	117.5°E	65	11	Ħ	11	11	Stereo Strip,SE of 277
7954	11	11	5° S		770	11	11	۴Ŷ	11	Stereo SSE of Strip TO-8 277
7955	11	Ħ	5° S	116 ⁰ E	70	11	ff	11	11	Stereo So. Par Strip TO-8 of 277
7956	11	11	5.5°S	115 ⁰ E	65	11	Ħ	11	11	Stereo So. P ar Strip TO-8 of 277
7957	"	11	5.5°S	114° E	65	11	11	79	11	Stereo So. Par Strip TO-8 of 277
7958	11	11	6°s	113° E	65	11	Fair	11	11	Stereo Strip S.E. Part of 273
7959	11	11	6 ^o s	11 1. 5 ⁰ E	65	11	ff	11	!1	Stereo S Part of 273 Strip
7960	11	**	6°s	1105°E		11	11	11	11	Stereo S Part of 273 Strip
7961	11	î!	6ºs	109.5 [©] E	60	11	11	11	11	Stereo S Part of 273
7962	11	11	6.5 ⁰ S	1085 E	65	11	P1	11	11	Stereo Strip SW of Crater 273

Time Reference — GET ____ = GMT ____

Frame #	Camera # f Length	Approx. Photo Scale	Po	cipal int	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
~0/0	do.	4 4 27/ 000	Lat	Long	15	т.	77			Stereo SW of Crater 273
7963	80mm	1:1,376,900	6.5 S	108 ⁰ E	65	Low	Fair	Near Vert	Near Vert	*
7964	11	11	7º S	107°E	65	Low	Fair	Near Vert	Near Vert	Stereo Strip SW of Crater 273
7965	71	fī	7 ⁰ 0'S	106 ⁰ E	65	11	11	11	11	11 11
7966	11	11	7° S	105°E	70	11	11	11	11	11 11
7967	11	11	7° s	104 ⁰ Е	65	††	11	11	tt	Stereo Strip SE of Crater 270
7968	11	11	7.5 ⁶ S	103°E	62	11	PF	11	11	Stereo S of Crater 270
7969	11	. 11	7.5g	102º0'E	65	11	11	11	11	11 11
7970	71	11	8° S	101°E	65	11	11	11	11 -	11 11
7971	11	11	8 ⁰ S	100°E	62	11	11	11	11	" SW of Crater 270
7972	Ħ	11	8º 01S	99 ° E	65	Ħ	11	11 -	11	11 11
7973	ff	11	8°S	98 ⁰ E	68	11	11	11	11	11 11
7974	11	11	8°0'S	97°E	65	11	11	11	11	" SE of Crater 266
7975	11	11	8°S	96°0'E	65	Med.	Good	11	Ħ	11 . 11
7976	11	11	8.5°S	95 ⁰ E	62	Med.	Good	11	11	SE Part of Crater " 266
7977	ff	11	8,5 ⁰ S	94 ⁰ E	62	11	11	f1	11	11 11

APOLLO 12 PHOTOGRAPHY

Maggaine T 70mm Film R&W S0-164.

	Magazine			/Omm	FII	m.	DOC N	30-104
Time	Reference	*******	GET.			G	МΤ	

Frame #	Camera # f Length	Approx. Photo Scale	Po	cipal pint	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of Tilt	Description
			Lat	Long				Min — Max	! ! ! !	
7978	80mm	1:1,376,900	8.5°s	93 ⁰ E	67	Med.	Good	Near Vert	Near Vert	Stereo S Part of Strip Crater 266
7979	11	11	9°s	92 ⁰ E	65	11	11	0 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	11	11 11
7980	11	11	9°S	90.5°E	65	11	11	?1	11	Stereo SW of Crater Strip 266
7981	11	11	9 ^o s	89.5 E	65	11	11	11	Ħ	" SE of Crater 263
7982	99	11	9 ⁰ 0'S		65	11	11	11	ŧŧ	11 11
7983	11	11	.9 ⁰ S	87.5 E	65	ff	11	11	11	11 11
7984	11	11	o 9 , 5 S	o 86.5 E	65	ff	11	11	11	າ S of Crater 263
7985	11	11		o 85.5 E	65	11	11	11	11	11 11
7986	91	11	9.5°S	o 84.5 E	65	††	YI	11	11	11 1:
7987	11	11	10 ⁰ S	83.5°E	65	11	11	11	11	11 11
7988	11	11	10 ⁰ S	82 ⁰ E	63	11	11	11	FF	" SW of Crater " 263
7989	11	11	10 ⁰ S	81 ⁰ E	65	11	Ħ	PP	11	11 11
7990	11	11	10 ⁰ 0 'S	80°E	65	11	11	11	11	La Perouse E Ansgarius M Shown
7991	17	11	10 ⁰ S	79°E	65	11	11	11	11	11
7992	11	Ħ	10°s	78°E	65	11	11	††	11	11

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Magazine T 70mm Film B&W 50-164 Time Reference — GET ____ = GMT ____

Frame #	Camera # f Length	Approx. Photo Scale	Po	cipal int	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of Tilt	Description
			Lat	Long		· ·		Min — Max		
7993	80mm	1:1,376,900	10 ⁰ S	77 ⁰ 0'E	65	Med.	Good	Near Vert	Near Vert	La Perouse
7994	11	11	10 ⁰ S	76°0'E	65	11	11	11	11	11
7995	11	11	10°s	75 ⁰ E	65	11	19	11	?1	11
										Stereo Frames 7996- Strip 8011
7996	80mm	1:1,376,900	10 ⁰ S	74 [°] E	6 5	Med.	Good	Near Vert	Near Vert	West Part of LaPerouse Crater
7997	11	11		73°0'E	65	11	11	11	11	West of La Perouse
7998	11	11	0 105 S	72 ⁰ 0'E	65	11	19	11	Ħ	Crater Kapteyn Shown
7999	11	11	јо 105 S	71°E	65	11	11	11	PT .	11
8000	11	11	10.5S	70 ⁰ Ε	65	۴۴	11	l t	Ħ	11
8001	11	11	10.5S	69 °E	65	ŧŧ	11	11	11	Crater Langrenus A
8002	11	11	11 ⁰ S	68°∪'E	65	ff	11	11	11	11
8003	11	11	. ೧₀. 10.5S	. 67 ⁰ E	5 7	11	11	"	11	Craters Langrenus A and G Shown
8004	11	11	11°S	66 ⁰ E	65	ff	11	11	ŶĨ	11
8005	11	íi	11 ^o s	రర్ద్రం	65	11	11	11	11	Craters Langrenus A, G, and P Shown
8006	11	11	11°s	64°E	63	11	11	11	11	Also S. "tip of Langrenus

Time Reference — GET ____ = GMT ____

Frame #	Camera # f Length	Approx. Photo Scale		cipal bint Long	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
8007	80mm	1:1,376,900	11°S	625 E	65	Med.	Good	Near Vert		Craters Langrenus A.G.& P Shown - Also south tip of Langrenus
8008	11	ľ	12 ^o S	61.5E	65	11	11	11	11	11
8009	11	11	11 ⁰ S	61 ⁰ E	65	11	Fair	11	11	. 11
8010	11	11	11 ^o s	59.5 ⁰ E	65	††	11	11	11	SW Section of Langrenus
8011	11	II	11 ⁰ S	58.5°E	65	ΤΙ	11	ři	11	11
8012	11	11	11°s	57.5°E	68	11	11	11	11	Langrenus D Stereo Strip
8013	11	11	11 ⁰ S	56.5°E	65	Ħ	11	11	11	11 11
8014	11	11	11 ⁰ S	55 ⁰ E	65	11	11	11	11	11 11
8015	11	!1 .	11°S	54 ⁰ E	65	Ħ	11	11	11	Southwest of " Langrenus
8016	11 .	11	11 ^o s	53 ⁰ E	65	11	11	11	11	11 11
8017	11	11	11 ^o S	52 ⁰ E	65	11	11	11	ft	11 11 ′
8018	11	11	11 ⁰ 0' S	51 ⁰ E	65	11	11	11	11	North of "Crozier
8019	11	11	11 ⁰ S	50°E	63	11	11	tt	ř ř	11 11
8020	11	††	11ºS	49 ⁰ E	65	11	††	?1	11	11 11
8021	11	11	11 ⁰ S	48 ⁰ E	63	?†	19	11	11	Sea of " Fertility

Frame #	Camera # f Length	Approx. Photo Scale	Po	cipal int	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Desc	ription
			Lat	Long	· ·			Min — Max	Tilt		
8022	80mm	1:1,376,900	11 ⁰ S	o 57.5 E	6 5	Med.	Fair	Near Vert	Near Vert	Sea of Fertility	Stereo Strip
8023	11	11	11 ⁰ s	o 45.5 E	65	11	11	11	11	11	11
8024	?1	11	11 ^o s	o 44.5 E	65	11	Ħ	77	11	Gutenberg D	11
8025	11	11	10.5°S	43,5 E	65	High	"	11	11	11	11
8026	11	PT .	11 ⁰ 8	43 ⁰ E	65	71	††	11	11	11	11
8027		11	1180'S	42 ⁰ E	ΰΰ	11	11	11	11	11	11
8028	11	11	11 ^o s	40.5 ⁰ E	65	11	11	f f	11	Stereo Strip	·TO-13
8029	11	11	11 ⁰ S	39.5°E	65	11	11	. 11	11	11	TO-13
8030	11	11	o 10.58	38.5 E	65	11	11	11	11	" Gav	dibert Crater
80,31	11	11	10 5 S	37.5 E	65	11	11	11	11	11	11
8032	79	11	10 . 5 s	o 36.5 E	65	17	11	?†	11	††	11
8033	11	11	o 10.5 S	o 35.5 E	65	11	11	11	11	11	ТО-15
8034	11	11	o 10.5 S	o 34.5- E	ა ე	11	11	11	11	" No	TO-15 orth Portion Paguerre
8035	FF	11	10°S'	33.5E	o5	11	11	11	11	11	TO-15
8036	99	11	10°s	o 32 .5 E	65	11	11	11 -	11		orth Portion Paguerre

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Frame #	Camera # f Length	Approx. Photo Scale	Po	cipal int	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	De	escription
"			Lat	Long				Min — Max	Tilt		
8037	80mm	1:1,376,900	10°s	31°0'E	ნ 5	Iligh	Fair	Near Vert	Near Vert	Stereo Strip	Crater Madler
8038	11	11	10 ⁰ S	30 ⁰ Е	6 5	11	11	? ?	91	ŧŧ	11
8039	11	71	10 ⁰ S	29 ⁰ E	65	11	11	11	11	**	11
8040	11	11	10 ⁰ S	28 ⁰ 0'E	63	††	11	11	11	11	Crater Madler (North half of Theophilus)
8041	11	11	10 ^C S	27 ⁰ E	65	11	11	11	71	11	North Half of Theophilus
8042	11	. 11	10°s	o 26.5 E	65	. 11	Poor	11	11	11	11
8043	71	11	9°s	25 ⁰ E	6 5	11	11	11	11	11	11
8044	11	11	o 8.5S	24 ⁰ E	56	11	11	. 17	11	17	NW of Theophilus
B045	11	11	o 8.5 S	23 ⁰ 0'E	6 3	71	11	11	11	11	Kant C Crater
80,46	11 .	11	0 8.5 S	22 ⁰ E	65	t f	11	11	11	11	11 ,
8047	11	11	9°s	21 [°] E	65	11	†1	11	11	11	Kant Ćrater
8048	11	11	9°s	195 ⁰ E	65	. !!	11	11	11	11	Kant G Crater
8049	77	11	9°s	19 ⁰ E	ú 5	11	71	11	11	11	TO-18 (4)
8050	11	11	9°s	18 ⁰ E	65	11	11	Ħ	11	11	11
8051	11	11	9 ^o s	17 ⁰ 0 E	65	11	11	11	11	11	Ħ

Time Reference — GET ____ = GMT ____

Frame #	Camera # f Length	Approx. Photo Scale		cipal oint Long	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	D	escription
8052	80mm	1:1,376,900	9°s	16 ⁰ E	65	High	Poor	Near Vert	Near Vert	Stereo Strip	S 3/4 of Dolland B
8053	11	99	9 ^o s	15° E	65	11	11	17	TT .	n I	Oolland Crater
8054	11	11	8 ⁰ s	13.5 E	65	11	· 11	11	11	n I	Oolland B Crater
8055	11	11	8°S	13.5E	65	11	11	11	11	ft j	andel F Crater
8056	11	11	8 ^o s	11.5°E	65	11	11	11	"	11	II
8057	11	11	8°0'5	0 10.5 E	65	Ħ	11	11	11	P	E. of Hind TO-23
8058	11	!! .	8 ⁰ S	9°E	65	11	11	11	11	11	11
8059	19	11	8.5 S	8°E	65	Ħ	f1	T!	11	11	Crater Hind TO-23
8060	11	Ħ	7.5 _S	7.5°Z	65	ff	11	11	11	11	Crater Hind Shown
8061	. 11	11	7.5°S	o 6.5 E	65	!1	?1	11	11	ît	Craters Hind & Halley
8062	11	ff	7 ^o s	5.5 E	65	11	11	!!	11	11	Crater Hálley
8063	11	11	7 ⁰ S	4 ^o E	65	f f	Fair	11	11	11	Hipparchus
8064	11	1:	7 ⁰ 0'S	3.5 E	65	11	11	† †	71	11	11
8065	11	17	7 ⁰ S	o 2.5 E	65	11	11	î î î	11	f1	Crater Muller TO-26
8066	11	11	6.5°S	1.5°E	65	řī .	11	11	19	11	TO-26

APOLLO 12 PHOTOGRAPHY
Magazine __T 70mm Film8&W S0-164

Time Reference — GET ____ = GMT ____

Frame #	Camera # f Length	Approx. Photo Scale		cipal int Long	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	De	scription
8067	80mm	1:1,376,900	6°s	o°E	65	High	Fair	Near Vert	Near Vert	Stereo, Strip	East of Herschel
8068	11	11	6 ^o s	1 ⁰ W	'65	11	11	11	Ħ	11	Crater Herschel TO-27
8069	11	11	6°s	2 ⁰ W	68	11	Good	. 11	Ħ	11	11
8070	11	11	6 ^o s	3 ⁰ W	65	11	11	11	- 11	11	11
8071	11	11	6 ^o s	4 ⁰ W	65	11	11	11	11	11	i ·
8072	11	11	6 ^o s	5 ⁰ W	65	Med.∙	11	11	11	11	Herschel D
8073	11	11	5.5°S	6 ⁰ W	65	ŶŤ	11	11	11	11	La La nde C
8074	11	11	5.5 ⁰ S	7 ⁰ W	65	11	11	11	19	11	11
807 <i>5</i>	11	11	5°S	8 ⁰ W	65	11	11	11	11		Crater La Lande TO-32- ,
										Stereo Strip	8076 - Frames 8091
8076	11	11	5 ^o s	9 ⁰ W	65	Med.	11	Near Vert	Near Vert	Crater La Lande	
8077	11	11	5 ^o s	10 ⁰ W	65	11	11	***	11	West Hal of La Lan	
8078	11	11	4.5°S	11 ⁰ W	65	11	11	11	11	West of NE of F	La Lande and ra Mauro
8079	11	11	4.5 ⁰ S	12 ⁰ W	65	11	11	77	11	11	
8080	11	11	4 ⁰ S	13 [°] W	65	Low	11	11	11	NE of F	ra Mauro

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	Frame #	Camera # f Length	Approx. Photo Scale	Po	cipal int	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
-	8081	80mm	1:1,376,900	Lat 4 ^o s	Long 14 ⁰ W	65	Low	Good	Near Vert	Near Vert	NE of Fra Mauro
	8082	11	11	4 ^o s	15 ⁰ W	65	11	11	11	11	Northern Section of Fra Mauro
	8083	11	11	4 ^o s	16 ⁰ W	65	11	11	11	11	Northern Tip TO-35 of Fra Mauro Partial
	8084	11	29	o 3.5 S	17 [°] W	65	11	11	11	11	11
	8085	11	11	0 3 S	18 ⁰ W	65	11	11	11	11	Fra Mauro J
ĺ	8086	11.	11	2 . 5 S	19 ⁰ W	65	11	11	11	11	Crater Fra Mauro J
ĵ	8087	11	11	o 3.5 S	20°W	65	11	Fair	11	11	TO-39
	8088	11	11	3 ^o s	21 ⁰ W	65	11	11	11	11	tt .
Î	8089	11	11	2 ^o s	22 ⁰ W	65	11	11	11	11	11
İ	8090	11	11	2 ^o s	23 ⁰ W	65	11	ř†	11	11	Site "
	8091	11	11	3 ^o s	24°W	65	11	11	11	11	11
											Stereo Stri p Frames 8092 - 8107
	8092	80mm	1:1,376,900	2 ⁰ S	25 ⁰ W	65	Low	Fair	Near Vert	Near Vert	Т О-3 9
	8093	11	11	1.5 ⁰ S	26°W	65	11	11	11	11	11
	8094	11	11	2°s	27 ⁰ W	70	11	11	11	11	South Half " of Lansberg

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Frame #	Camera # f Length	Approx. Photo Scale		cipal pint Long	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
			2.3	U. g						Stereo Strip Frames 8092-8107 Cont'd.
8095	80mm `	1:1,376,900	1.5°s	28 ⁰ W	70	Low	Fair	Near Vert	Near Vert	South Half TO-39 of Lansberg
8096	11	11	1.5⁰ \$	25 ⁰ W	70	11	Ħ	11	11	II
8097	11	11	1.5°S	30°W	65	11	11	11	11	. 11
8098	11	11	1 ^o s	31 ⁰ W	65	11	11	11	77	71
8099	11	11	1 ^o s	32 ⁰ W	60	11	11	11	11	Lansberg A & Kunowsky C
8 1 00	11.	79	0.5\$	33 ⁰ W	65	11	11	f†	11	Kunowsky C
8101	11	Ħ	00	34 [°] W	65	11	11	11	. 11	Lansberg F, C, & E of Encke C
8102	11	. "	0°	35 [°] W	65	11	11	11	11	11
8103	11	11	0.5°N	36°W	65	11	11	11	Ħ	Encke C
8104	11	11	00	36.5 W	65	11	11	11	11	11
8105	11	11	0°5N	37. 5 W	65	11	11	ff	77	West of Encke C
8106	11	11	1°N	38.5 W	70	19	II.	11	11	East of Encke E
8107	11	11	1°N	40°w	65	11	11	11	ff	Encke E & Maestlin G
8108	11	11	1°N	41 ⁰ W	70	11	11	11	11	Stereo Strip TO-48

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Frame #	Camera # f Length	Approx. Photo Scale		cipal int Long	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt		Description
8109	80mm	1:1,376,900	1.5°N	42 ⁰ W	70	Low	Fair	Near Vert	Near Vert	Stered Strip	TO-48
8110	ff	11	1, 5 N	43 [°] W	65	11	11	11	11	11	11
8111	11	11	S _o N	43.5°W	70	11	Ħ	11	11	11	11
8112	11	11	2° N	o 45.5 W	65	11	ř1 .	††	11	ff	Suess F Crater
8113	11	11	2 ⁰ N	46 ⁰ W	70	11	11	11	11	11	West of Suess F Crater
8114	11	11	^o 2.5 N	47°W	70	ff	Γf	11	11	îī	East of Reiner E Crater
8115	11	11	o 2.5 N	48 ⁰ W	70	††	Poor	71	11	11	Reiner E Crater
8116	11	11	3 ⁰ N	49°W	70	††	11	. 11	ff	11	PT .
8117	11	11	3 ^o n	50°W	70	11	ff	11	11	ff	Southwest of Suess Crater
8118	11	11	o 3.5 N	51 [°] W	70	î î	11	11	11	11	South of Reiner A,Crater
8119	11	P†	3.5 N	52 ⁰ W	70	11	11	Ħ	11	Too Da	rk (Unusable)
8120	11	11						11	1!	ÎŢ	11
											n virtual (170,000 mentions on the control of the c
			navagas, gar gonggara Paddi 2000. di Visare	POCUME & & C. (1000) POCUME (1000) (1000) (1000) (1000) (1000) (1000) (1000) (1000) (1000) (1000) (1000) (1000)	***************************************						

MAGAZINE U

Frames AS12-53-7763 through 7947

Magazine U consists of overlapping stereoscopic 70-mm black and white imagery of Fra Mauro (41 frames), Descartes (41 frames), and Lalande (42 frames), photographed with a 500-mm lens. The remaining frames of the magazine are: four frames of the moon, probably taken during transearth coast, and 57 frames of the solar eclipse, 10 of which were exposed during a camera malfunction. The quality of the 500-mm Fra Mauro, Descartes, and Lalande imagery ranges from fair to poor on this magazine. Targets of opportunity 18 and 32 were also photographed on this magazine.

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Frame # AS-12-5	Camera # f Length	Approx. Photo Scale		cipal int Long	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
7763	500 mm	1: 450,000		16.0°E	95%	High	Fair	30-60°	West	Descartes
7764	11	11	11	11	PT .	11	**	11	17	17
7765	11	11	Ħ	11	11	17	11	11	11	11
7766	11	11	11	11	11	11	11	11	11	. 11
7767	11	11	9.0°s	16.0°E	11	11	. 11	11	†† ·	. 11
7768		11	77	11	11	11	11	11	11	11
7769	11	11	11	11	11	11	11	11	. 11	11
7770	11	1:350,000	9.0°s	16.0°E	11	11	11	11	11	11
7771	11	T?	11	11	11	**	11	71	11	11
7772	11	11	77	11	11	11	11	11	11	11
7773	11	11	11	19	11	11	11	11 -	11	17
7774	11	11	11	11	11	11	11	11	11	11
7775	77	11	††	1:	!!	!!	11	11	11	11
7776	11	11	1!	11	. !!	11	11	0-300	11	11
7777	11	11	11	11	11	11	. !!	11	ff	11

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Frame # 6 –12–53	Camera # f Length	Approx. Photo Scale		cipal int Long	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
7778	500 mm	1:350,000	9.0 ⁰ S		95%	High	Fair	0-30°	West.	Descartes
77 7 9	11	1:300,000	11	11	11	10	11	***	11	11
7780	11	11	11	; 11	11	11	11	11	n	11
7781	11	11	11	? †	11	11	11	11	11	
7782	11	11	11	77	11	11	11	11	11	11 m
7783	11	11	99	11	11	11	11	11	11	11
7784 <u>.</u>	11	. 11	11	11	ff	11	11	11	11	
7785	11		11	11	11	11	11	11	11	11
7786	11	1!	- 11	11	11	11	T?	11	11	11
7787	ŧſ	11	11	**	11	11	17	11	11	
7788	11	11	11	11	**	11	**************************************	11	11	
7789	***	11	11	ff	11	?1	17	11	11	
7790	11	11	11	11	11	11	11	11	11	11
7791	* ***********************************	11	17	11	11	11	??	F1	11	11
7792	11	11	11	Ħ	11	11	11	.11	11	11

APOLLO 12 PHOTOGRAPHY

Frame			Po	cipal oint	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
# AS12-53	Lengin	1 11010 00410	Lat	Long				Min — Max	Tilt	
7793	500 m.m	1:300,000	9.0°s	16.0°E	95%	High	Fair	0-30°	West.	Descartes
7794	" ,	1:222,000	11	11	11	. 11	11	0-20°	11	11
7795	11	11	11	11	11	11	11	11	11	11
7796	11	11	 11	11	11	11	11	11	19	11
7797	11	**************************************	11	11	11	11	11	11	11	. 11
7798	11	11	11	11	11	11	**	11	11	11
7799	11	11	11	11	11	11	11	11	. 11	11
7800	11	11	11	11	11	11	11	11	11	11
7801	11	11	11	11	11	11	11	- 11	11	11
7802	11	11	11	11	11	11	11	11	11	11
7803	11	i	11	11	11	11	11	11	11	11
7804	11	1:450,000	3.5°S	13.0°W	11	11	11	55-65°	West	Fra Mauro
7805	11	11	11	!!	11	11	11	55 - 60°	11	"
7806	11	tt	11	11	11	11	11	***	11	11
7807	11	11	"	11	11	11	11	50 - 55 ⁰	11	"

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Frame # AS12-53	Camera # f Length	Approx. Photo Scale	Po	cipal int	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
AS12-53			Lat	Long				Min — Max	Tilt	
7808	500 mm	1:450,000	3.5°S	18.0°W	95%	High	Fair	52°	West	Fra Mauro
7809	11	1:349,600	11	11	11	11	11	50°	11	11
7810	11	1:325,000	11	11	11	11	11	48 ⁰	. 11	. · · · · · · · · · · · · · · · · · · ·
7811	11) 1	11	11	11	11	11	. ≵ 6°	11	"
7812	11	11	11	11	11	11	11	44°	98	11
7813	11	11	11	11	11	11	11	42 ⁰		11
7814	11	1:283,000	11	11	11	11	11	40°	- 11	11
7815	11	11	11	11	11	11	11	38°	11	11
7816	11	††	11	11	11	11	11	36 ⁰	- 11	11
7817	11	11	95	11	11	11	11	34 ⁰	71	11
7818	11	11	11	11	11	11	ff	32 ⁰	11	. 11
7819	11	1:250,000	17	11	11	11	**	30 ⁰	11	11
7820	11	11	11	11	11	11	11	. 28 ⁰	11	11
7821	11	11	11	11	11	11	11	26 ⁰	11	11
7822	11	11	97	91	11	17	11	24 ⁰	11	11

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	Frame # AS12-53	Camera # f Length			cipal int Long	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
	7823	500 mm	1:250,000		18.0°W	95%	High	Fair	22 ⁰	West	Fra Mauro
	7824	11	1:232,000	ŧŧ	11	11	11	11	20°	11	
	7825	11	11	11	11	11	. 11	11	18°	77	11
	7826	11	1:227,000	11	11	11	11	11	16°	***************************************	11
	7827	´ 11	11	11	11	11	11	Ħ	14°	11-	
	782 8	11	19	11	FF	11	**	11	12°	11	
56	7829	11	11	11	11	11	11	11	10°	11	
	7830	11	11	11	11	11	f f	. 11	80	11	
	7831	71	* * * * * * * * * * * * * * * * * * *	11	11	11	11	11	6°	11	11
	7832	11	11	17	11	11	11	11	14°	11	11
	7833	11	11	11	11	11	11	11	2°	11	
	7834	11	11	11	11	11	11	11	o°	Vert.	
	7835	11	1:222,000	11	11	11	11	11	o°	11	11
	7836	77	11	11	11	11	11		o°	11	11
	7837	11	11	ff	11	. 11	11	11	0	11	. 11

 $\begin{array}{c|cccc} \textbf{APOLLO} & \textbf{12} & \textbf{PHOTOGRAPHY} \\ \textbf{Magazine} & \underline{\textbf{U}} & & \textbf{Film} & \underline{\textbf{B\&W}} \\ \end{array}$ Time Reference — GET ____ = GMT ____

Frame # AS12-53	Camera # f Length	Approx. Photo Scale	Po	cipal bint Long	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
7838	500 mm	1:222,000		18.0°W	95%	High	Fair	2 ⁰	West	Fra Mauro
7839	11	FF	11	11	11	11	11	.4°	11	11
7840	11	11	11	·, 11	t1		11	6°	11	11
7841	11	11	11	11	11 .	17	71	8 ⁰	11	11
7842	11	11	11	91	11	11	ff ·	g°	. 11	Fra Mauro Area
7843	11	11	11	11	11	11	11	10°		11
7844	17	11	11	11	11	11	11	10°	. 11	11
7845	11	1:450,000	5.0°s	9.5°W	11	77	11	30-60°	West	Lalande Crater
7846	11	11	11	11	11	11	11	11	11	11
7847	77	11	11	11	11	11	11	11	11	ff
7848	11	11	11	11	11	11	11	11	11	11
7849	11	11	† †	11	11	11	17	11	11	11
7850	††	11	11	11	11	11	71	11	11	11
7851	77	11	11	17	11	11	11	ŤŤ	11	11
7852	11	11	11	11	11	11	^ 11	11	11	††

Frame #5.12-53	Camera # f Length	Approx. Photo Scale		cipal int Long	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
7853	500 mm	1:450,000		18.0°W	95%	High	Fair	3 0- 60°	West	Lalande Crater
7854	99	1:300,000	11	11	11	11	11	71	. 11	11
7855	11	11	† 1	11	11	11	11	11	11	11
7856	11	. 11	11	· 11	11	11	11	11	11	11
7857	11	11	17	11	11	11	11	11	11 .	11
785 8	11	11	5.0°S	9.5°W	11	High	Fair	20-30	11	11
7859	79	11	11	11	11	11	11	11	***	11
7860	77	11	11	11	11	11	11	11	11	11
7861	11	11	11	11	11	11	11	17	11	11
78.62	11	11	11	11	11	11	. 11	"	11	•••
7863	11	11	11	11	11	11	11	11	11	11
7864	11	ř1	11	11	11 ·	11	11	11	11	11
7865	11	19	11	11	11	11	11	11	11	11
7866	11	11	11	11	11	11	11	11	11	11
7867	11	11	11	11	11	11	11	11	11	11

Frame # AS12-53	Camera # f Length		Prin Po Lat	cipal int Long	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
	500 mm	1:300,000	5.0°£		95%	High	Fair	20 - 30°	West	Lai ande
7869	11	11	**	11	11	11	ŧŧ	11	11	11
7870	11	1:250,000	17	11	11	. 11	11	9-20°	11	11
7 871	11	.11	11	11	11	11	11	11	11	"
7872	11	11	11	11	11	11	11	11	. 11	11
7873	. 11	11	11	11	11	11	11	11	11	11
7874	11	1:222,000	11	11	11	11	11	0 15°	. 11	11
7875	11	11	††	11	11	ff	11	11	11	11
7876	11	11	? †	11	11	††	11	11	11	11
7877	11	. 11	tt	11	11	11	11	11	11	11
7878	11	11	Ħ	11	Ħ	11	11	11	11	11
7879	11	11	11	11	11	11	11	. 1 1	11	11
7880	11	11	11	11	1!	11	11	ft	ff	терите на при
7881	11	11	11	FT	11	11	11	11	97	
7882	11	11	11	11	11	11	71	ţţ	11	11

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Frame # AS12-53	Camera # f Length	Approx. Photo Scale		cipal int Long	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
7883	500 mm	1:222,000			95%	Hi gh	Fair	0-15°	West	Lalande Crater
7884	11	11	11	1!	15	11	11	11	11	11
7885	11	11	11	11	ff.	11	11	11	Ħ	11
7886	11	11	5.0°s	9.0°W	11	11	71	11	Fast.	11
7887	.80 mm					11	Good			Full Moon during Trans Farth
7888	11					11	Good			Full Moon during Trans Earth
7889	'ii					11	Fair			Quarter Moon during Trans Earth
7890	11						Fair			Quarter Moon during Trans Earth
7891	89						Good			Solar Eclipse
7892	*1						11			11 11
7893	11						11			11 11
7894	11						11			
7895	††						11			11 11
7896	11						11			11 11
7897	11		***************************************				11			11 11

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	Frame #	Camera # f Length	Approx. Photo Scale	Prin Po	cipal oint	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
L	# AS12-53	Longin	1 Holo Oddie	Lat	Long	0, 5	Augic	dadiii	Min — Max	Tilt	
	7898	80 mm	****	***************************************				Good			Solar Eclipse
	7899	11						11			11 11
	7900	11						99			11 11
	7901	il		,-				11			11 11
	7902	11		***************************************				11			11 11
	7903	11						FF .			11 11
	790ፊ	11			·			11			11 11
	7905	79						11			11 11
	7906	11						11			11 11
	7907	11						Poor			Camera Malfunction during Solar Eclipse
	7908	11						11			11 11
	7909	11						11			11 11
	7910	11						11			11 11
	7911	81						11			11 11
	7912	11						- 11			11 .11

Frame	Camera # f Length	Approx. Photo Scale	Prin Po Lat	cipal int	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
ASI2=53 7913	['] 80 mm		Lai	Long			Poor			Camera Malfunction during Solar Eclipse
7914	18						11			11 11
7915	tt						11			11 11 .
7916	87						11			11 11
7917	**						11			11 11
7918	* 11						Good			Solar Eclipse
7919				000000000000000000000000000000000000000			. 11			11 11
7920	t f						11			11 11
7921	11	,					11			11 11
7922	11						††			11 11
7923	11.						? †			11 11
7924	11						11			1! 11
7925	11						11			11 11
7926	11						11			11 11
7927	91						11			11 11

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Frame	Camera #	Approx.	Prin Po	cipal oint	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
# S12 - 53	f Length	Photo Scale	Lat	Long	U/L	Angle	Quality	Min — Max	Tilt	
7928	80 mm		***************************************				Good			Solar Eclipse
7929'	11						11			17 11
7930	11		******************				11			. 11
7931	11						11	·		11 11
7932	11						71			11 11
7933	11						11	·	-	11 11
7934	11						11			11 11
7935	11						11		-	11 11
7936	11					·	11			11 11
7937	11						11			11. 11
7938	. 11						11			11 11
7939	11 .						11		·	11 11
7940	11		**************************************				††			11 11
7941	81						TT.			11 11
7942	11						11			11 11

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Frame # AS12-53	Camera # f Length	Approx. Photo Scale	Prin Po Lat	cipal int Long	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
7943	80 mm						Good			Solar Eclipse
7944'	11						11			11 11 .
7945	11						ŧŧ			11 11
7946	11						11			11 11
7947	f f						۴۱			11 11
										makalama valuena 60° alim valik 272 mili. Miningalikon dibeneratina encya pereja, plendere (en Azi aneko susuaga per akki d
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MAGAZINE V

Frames AS12-47-6869 through 7021

The first 16 frames of this color magazine are high obliques of the lunar surface taken from the LM while in lunar orbit. Target of opportunity 9 is included.

The remainder of this magazine illustrates the LM, deployed equipment, and the lunar surface around the landing area. Surface photography was exposed with the 60-mm lens. Included are the following four panoramas taken near the landing area:

1. 6941 through 6960

A 20-frame panorama from northwest at the ALSEP to north at the flag, then to east with the LM (sunglint) and Surveyor Crater; then to south and southwest including Bench Crater.

2. 6961 through 6981

A 21-frame panorama northwest from the LM, east to Surveyor Crater, and a 360° panorama back to the LM.

3. 6982 through 7006

A 25-frame panorama, 360° , taken from northeast of the LM looking west at the panel and flag; then to southwest at the LM and counterclockwise to south and west looking into Surveyor Crater; then looking northwest at the TV and back to the panel to complete the 360° circuit.

4. 7011 through 7015

A five-frame panorama from northwest to north showing (from left to right) a blocky mound, the ALSEP, the flag, and the antenna.

Frame #	Camera # f Length mm	Approx. Photo Scale	Po	cipal int Long	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
6869	80				90	М	Fair	60-70	S	Craters 285, 28 7, Tsiolkovski
6870	80				90	М	Fair	60 –7 0	S	n
6871	80				90	М	Fair	60 7 0	W	Crater II
6872	80				90	М	Fair	60 70	W	11
6873	80				90	М	Fair	60-70	W	î î
6874	80				90	М	Fair	60-70	W	11
6875	80				100	L	Good	60-70	NE	Copernicus-Rheinhold
6876	80				100	L	Good	60-70	ŤŤ	11
6877	80				100		Fair			CSM
6878	80				100	***************************************	Fair			11
6879	80				90	М	Fair	70-80	W	TO-9 Crater II, Craters 276, 273
6880	80				90	М	Fair	70-80	W	11
6881	80			-	90	М	Fair	70-80	W	11
6882	80				90	M	Fair	70-80	W	11
6883	80				90	М	Fair	70-80	W	11

Time Reference — GET ____ = GMT ____

Frame #	Camera # f Length	Approx. Photo Scale	cipal int Long	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
6884	80		7	90	М	Fair	70-80	W	TO-9, Crater II, Craters 276, 273
6885	80			90	М	Fair	70-80	W	11
6886	80			90	М	Fair	70-80	W	11
6887	80			90	М	Fair	70-80	W	11
6888	80			90	М	Fair	70-80	W	19
6889	80			90	М	Fair	70-80	W	11
6890	·80		Annance and a second and a second annual and a second annual and a second annual annual annual annual annual a	90	М	Fair	70-80	W	11
6891	80			90	М	Fair	70-80	W	11
6892	80			90	М	Fair	70-80	W	11
6893	80			90	М	Fair	70-80	W	11
6894	80			90	М	Fair	70-80	W	11
6895	80			90	М	Fair	70-80	W	11
6896	60				Low	Good	Med. Obl.	W	Flag on Lunar Surface
6897	60				Low	Fair	Med. Obl.	W	11 11 11 11
6898	60				Low	Fair	Med. Obl.	W	Solar Wind Panel

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Frame #	Camera # f Length	Approx. Photo Scale	Po	cipal int Long	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
6899	mm 60		LUI	Long		Low	Fair	Med. Obl.	W	LM
6900	60					Low	Fair	Low Obl.	E	LM Footpad
6901	60		o			Low	Fair	Low Obl.	E	· 11 11
6902	60					Low	Poor	Low Obl.	E	11 11
6903	60		·			Low	Poor	Low Obl.	E .	11 11
6904	60					Low	Fair	Low Obl.	W	11 11
6905	60					Low	Fair	Low Obl.	W	11 11
6906	60					Low	Fair	Low Obl.	W	11 11
6907	60					Low	Fair	Low Obl.	W	Engine Skirt
6908	60					Low	Fair	Low Obl.	W	LM Footpad
6909	60					Low	Fair	Low Obl.	W	11 11
6910	60					Low	Fair	Low Obl.	W	Lower LM Structure
6911	60					Low	Good	Low Obl.	W	Lower LM Structure
6912	60					Low	Poor	Med. Obl.	W	Astronaut & LM
6913	60					Low	Poor	Med. Obl.	W	11 11

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Frame #	Camera # f Length	Approx. Photo Scale	cipal bint Long	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
6914	60		Long		Low	Poor	Med. Obl.	W	Astronaut & LM
6915	60 .				Low	Poor	Low Obl.	E	LM Footpad
6916	60			·	Low	Fair	Low Obl.	W	ALSEP Deployment
6917	60				Low	Fair	Low Obl.	W	11 11
6918	60				Low	Fair	Med. Obl.	W	11 11
6919	60				Low	Fair	Med. Obl.	W	11 11
6920	60				Low	Fair	Low Obl.	. W	11 11
6921	60				Low	Fair	Med. Obl.	W	11 11
6922	60				Low	Fair	Low Obl.	W	11 11
6923	60				Low	Fair	Low Obl.	W	II II
6924	60				Low	Fair	Low Obl.	W	11 19
6925	60				Low	Fair	Low Obl.	W	11 11
6926	60				Low	Fair	Low Obl.	W	11 11
. 6927	60				Low	Fair	Low Obl.	W	19 19
6928	60				Low	Fair	Med. Obl.	E	11 11

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Frame #	Camera # f Length	Approx. Photo Scale		cipal int Long	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
6929	60					Low	Good	Med. Obl.	W	ALSEP Deployment
6930	60		wee, a common de la	**************************************	**************************************	Low	Fair	Med. Obl.	W	11 11
6931	60		***************************************			Low	Fair	Med. Obl.	W	11 11
6932	60 .					Low	Fair	Low Obl.	W	Lunar Surface
6933	60					Low	Fair	Low Obl.	W	11 11
6934	60					Low	Fair	Low Obl.	W	11 11
6935	60			,		Low	Fair	Low Obl.	, W	11 11
6936	60					Low	Fair	Low Obl.	W	11 11
6937	60					Low	Fair	Low Obl.	W	11 11
6938	60					Low	Fair	Low Obl.	W	11 17
6939	60					Low	Fair	Low Obl.	W	11 11
6940	60		***************************************			Low	Fair	Low Obl.	W	11 11
6941	60				o	Low	Fair	Med. Obl.	W	Start 20 -Frame Pan Near LM
6942	60					Low	Fair	Med. Obl.	W	Start 20-Frame Pan Near LM
6943	60					Low	Fair	Med. Obl.		20-Frame Pan Near LM

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Frame #	Camera # f Length	Approx. Photo Scale		cip al int Long	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
6944	mm 60		Lui	Long		Low	Fair	Med. Obl.		20-Frame Pan Near LM
6945	60					Low	Fair	Med. Obl.		11
6946	60			;		Low	Fair	Med. Obl.		II
6947	60					Low	Fair	Med. Obl.		17
6948	. 60					Low	Fair	Med. Obl.		11
6949	60		,			Low	Poor	Med. Obl.		11
6950	60					Low	Poor	Med. Obl.		11
6951	60					Low	Poor	Med. Obl.		11
6952	60					Low	Poor	Med. Obl.		II .
6953	60					Low	Poor	Med. Obl.		11
6954	60					Low	Fair	Med. Obl.		11
6955	60					Low	Fair	Med. Obl.		11
6956	60					Low	Fair	Med. Obl.		11
6957	60					Low	Fair	Med. Obl.		11
6958	60					Low	Fair	Med. Obl.		11

Frame #	Camera # f Length mm	Approx. Photo Scale	Po	cipal oint Long	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
6959	60		7			Low	Fair	Med. Obl.		20-Frame Pan Near LM
6960	60				••••••••••••••••••••••••••••••	Low	Fair	Med. Obl.		End of 20-Frame Pan Near LM
6961	60					Low	Fair	Med. Obl.		21-Frame Pan Near LM
6962	60					Low	Fair	Med. Obl.		11
6963	60					Low	Fair	Med. Obl.		
6964	60					Low	Fair	Med. Obl.		11
6965	60					Low	Fair	Med. Obl.		II.
6966	60					Low	Fair	Med. Obl.		11 .
6967	60					Low	Fair	Med. Obl.		!!
6968	60					Low	Fair	Med. Obl.		11
6969	60		•			Low	Poor	Med. Obl.		11
6970	60		··· au rigorgeografica (1900 - 1900 - 1900 - 1900 - 1900 - 1900 - 1900 - 1900 - 1900 - 1900 - 1900 - 1900 - 19			Low	Poor	Med. Obl.		f†
6971	60					Low	Poor	Med. Obl.		11
6972	60			***************************************		Low	Poor	Med. Obl.	den en e	11
6973	60					Low	Poor	Med. Obl.		11

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Frame #	Camera # f Length mm	. ,		cipal oint Long	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
6974	60					Low	Poor	Med. Obl		21-Frame Pan Near LM
6975	60 ·					Low	Poor	Med. Obl		21-Frame Pan Near LM
6976	60	·				Low	Fair	Med. Obl		11
6977	60					Low	Fair	Med. Obl		11
6978	60		***************************************			Low	Fair	Med, Obl		††
6979	60					Low	Fair	Med. Obl		11
698 0	60					Low	Fair	Med. Obl		11
6981	60					Low	Fair	Med. Obl		End of 21-Frame Pan Near LM
6982	60					Low	Fair	Med. Obl		Start of 25-Frame Pan Near LM
6983	60					Low	Fair	Med. Obl		25-Frame Pan Near LM
6984	60					Low	Fair	Med. Obl		P1
6985	60					Low	Fair	Med. Obl		11 .
6986	60					Low	Fair	Med. Obl		11
6987	60					Low	Fair	Med. Obl		†1
6988	60					Low	Fair	Med. Obl		** ***********************************

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Frame #	Camera # f Length	• • •	Po	cipal int Long	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
6989	60		L G I	Long		Low	Fair	Med. Obl		25-Frame Pan Near LM
6990	60					Low	Fair	Med. Obl		n .
6991	60		**************************************	***************************************	•••••	Low	Fair	Med. Obl.		. tt
6992	60					Low	Fair	Med. Obl.		11
6993	60					Low	Fair	Med. Obl.		11
6994	60		·			Low	Poor	Med. Obl.		††
6995	60		***************************************			Low	Poor	Med. Obl		Ħ
6996	60					Low	Poor	Med. Obl.		? 1
6997	60					Low	Poor	Med. Obl.		11
6998	60					Low	Poor	Med. Obl.		11
6999	60					Low	Poor	Med. Obl.		11
7000	60					Low	Fair	Med. Obl.		11
7001	60					Low	Fair	Med. Obl.		11 .
7002	60 .					Low	Fair	Med. Obl.		11
7003	60					Low	Fair	Med. Obl.		11

Frame #	Camera # f Length mm	Approx. Photo Scale	cipal int Long	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
7004	60				Low	Fair	Med. Obl.		25-Frame Pan Near LM
7005	60				Low	Fair	Med. Obl.		11
7006	60				Low	Fair	Med. Obl.		End of 25-Frame Pan Near LM
7007	60				Low	Good	Low Obl.	E	Core Tool
7008	60	_			Low	Good	Low Obl.		11
7009	60				Low	Poor	Low Obl.		Astronaut
7010	60				Low	Poor	Low Obl.		11
7011	60				Low	Fair	Med. Obl.		Start 5-Frame Pan Near LM
7012	60				Low	Fair	Med. Obl.		5-Frame Pan Near LM
7013	60				Low	Fair	Med. Obl.		11
7014	60				Low	Fair	Med. Obl.		11
7015	60				Low	Poor	Med. Obl.		End of 5-Frame Pan Near LM
7016	60				Low	Poor	Med. Obl.		LM Thruster & Antenna
7017	60				Low	Poor	Med. Obl.		11
7018	60				Low	Fair	Med. Obl.		11

Frame #	Camera # f Length	Prin Po Lat	cipal int Long	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
7019	mm 60	Lui	Long		Low	Fair	Med. Obl.		Antenna & Flag
70,20	60				Low	Fair	Med. Obl.	W	Lunar Surface
	-								

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			Proportion of the Control of the Con						

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MAGAZINE X

Frames AS12-48-7022 through 7171

Magazine X is 70-mm black and white photography taken before, during, and after the second extravehicular activity (EVA) on the lunar surface. Each of the images has a reseau grid superimposed on the 60-mm lens.

Included in this magazine are panoramic views of the lunar surface taken from the LM window showing the flag, the ALSEP equipment, and the solar wind panel. Surveyor 3, the Surveyor Crater, Block Crater, and the color chart are also included.

Panoramas of areas on the lunar surface near the LM and Surveyor 3 are identified below:

1. 7031 through 7032

A two-frame view from the LM looking northwest at terrain near the LM.

2. 7088 through 7090

A three-frame panorama of the Surveyor Crater and a view to the northwest from the southeastern rim showing Surveyor 3, the LM, and the blocky rim of a small crater on the north slopes of the Surveyor Crater.

3. 7101 through 7105

A five-frame panorama to the northeast, inside Surveyor Crater, and a closeup view of Surveyor 3 with arm extended.

4. 7141 through 7143

A three-frame panorama of Block Crater, with a view to the west from the east rim showing the LM and the Surveyor Crater. Part of Surveyor 3 is visible at the extreme upper left of the panorama.

5. 7144 through 7147

A four-frame panorama of Block Crater with a view to the south from the north rim showing a view into Surveyor Crater. Surveyor 3 is visible in the upper left of the panorama.

6. 7153, 7156, and 7157

These three frames comprise a short panorama of the near terrain to the west of the LM.

7. 7167 through 7169

A three-frame panorama from the LM looking north at the ALSEP and flag.

APOLLO 12 PHOTOGRAPHY
Magazine X Film \$0-267

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Frame #	Camera # f Length	Po	cipal pint	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of Tilt	Description
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		Lat	Long				Min — Max OBLIQUE	1111	
7022					Low	Fair	Med.	SW	Surface View from LM
7023					11	11	11	W	11
7024			,		11	Good	11	W	11
7025					79	11	11	11	11
7026			-		11	II	11	11	11
7027					11	11	*1	11	11
7028					11	11	11	NW	11
7029					11	11	††	11	11
7030					11	11	11	11	11
7031					11	î î	11	11	11
7032					11	11	11	11	11
7033					11	11 .	Low	٦,	11
7034					11	11	11	NE	View of MESA and Fuel Cask
7035					11	11	11	11	View Under IM
7036					1!	11	11	W	Photograph of Color Chart

APOLLO 12 PHOTOGRAPHY

Magazine X Film S0-267

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Frame	Camera # f Length	Approx. Photo Scale		cipal int	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
"	Lengin	1 11010 00010	Lat	Long	0, 5			Min — Max	Tilt	
7037						Low	Good	OBLIQUE Med	W	Color Chart, Solar Wind Panel
7038						11	Fair	Low	E	Color Chart
7039						11	11	11	E	11 11
7040						11	11	Med	E	11 11
7041						11	Good	11	NW	Solar Wind Experiment
7042						11	11	11	SW	11
7043						11	11	Low	WSW	Small Crater on Lunar Surface
7044						11	îi	11	W	11
7045						11	11	Med	11	11
7046						ŧŧ	11	"	SW	View of Lunar Terrain
7047						11	11	11	11	11
7048						11	. 11	Lou	SSW	Tri-Pod Holder of Core Tube Sampler
7049						11	11	11	11	11
7050						11	††	Med	W	11
7051						11	11	Low	SW	11

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Frame #	Camera # f Length	Approx. Photo Scale	Po	cipal oint	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
			Lat	Long					1111	
7052						Low	Good	OBLIQUE Low	SW	Area of Core Sample
						HOW	uoou	±10W	54	
7053						11	11	11	11	
7054						11	11	11	W	View of Lunar Terrain
7055						11	††	11	11	<u>II</u>
7056						11	11	Med	W	Crater on Lunar Surface
7057						11	11	11	11	11
7058						11	11	11	11	11
7059						11	11	Low	SW	Tri-Pod Holder for Core Tube, Lunar Terrain
7060						11	11	Med	W	Tri-Pod Holder for Core Tube, Large rock
7061						11	11	11	W	Tri-Pod Holder for Core Tube, Large Rock '
7062						11	11	Low	SE	Core Sample
7063						11	11	Med	W	Tri-Pod Holder for Core Tube, Lunar Terrain
7064						11	11	11	!!	"
7065						11	11	11	11	" Bench Crater
7066						11	11	11	11	11 11 11

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Frame #	Camera # f Length			icipal pint	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
W	Lengin	Piloto Scale	Lat	Long	U/ L	Aligie	Quality	Min — Max	Tilt	
70 6 7						Low	Good	OBLIQUE Med	W	Tri-Pod Holder for Core Tube. Bench Crater
7068						11	ff	11	11	Tri-Pod Holder for Core Tube, Core Sample
7069						11	11	11	11	11
7070						11	11	Low	SW	Tri-Pod Holder for Core Tube, Lunar Terrain
7071						11	11	Med	NW	Astronaut Holding Core Tube, LM in Background
7072						11	11	11	SW	Tri-Pod Holder for Core Tube, Lunar Terrain
7073						11	11	11	î	11
7074						11	11	11	11	Tri-Pod Holder for Core Tube. Astronaut
7.075			***************************************			11	11	. 11	S	Lunar Terrain
7076						11	11	11	11	11 :
7077						11	11	11	SW	Lwnar Terrain, Core Tube
7078						ŢĬ	Poor	11	SW	Core Tube
7079						11	11			Washed Out
7080						11	11 .	-		11
7081						11	11			11

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Frame #	Camera #	Approx. Photo Scale	Prin Po	cipal pint	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
#	f Length	Photo Scale	Lat	Long	U/L	Angle	Quality	Min — Max	Tilt	
7082						Low	Good	OBLIQUE Low	W	Tri-Pod Holder for Core Tube, Hand Tool Ki
7083		•••••				11	ÎĪ	11	SW	11
7084						ŶŤ	11	High	NE	Surveyor Crater Surveyor III
7085				·········		11	11	11	11	
7086						11	11	II.	П	Н
7087				······································		11	11	11	11	
7088						11	11	1	N	
7089						11	11	11	11	11
7090						11	11	11	11	Surveyor Crater Surveyor III, LM
7091						11	11	11	NW	
7092				•		11	11	11	NW	11
7093						11	11	. 11	MM	11
7094						11	11	Med	11	11
7095						11	11	11	11	Surveyor III
7096						11	11	11	11	11

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Frame #	Camera # f Length	Approx. Photo Scale	Po	cipal int	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
Tr	Lengin	i noto ocute	Lat	Long				Min — Max	Tilt	
7097						Low	Good	OBLIQUE - Med	NW	Surveyor Crater
7098						11	11	Low	E	Lunar Soil Near Surveyor Scoop
7099						11	71	High	NW	Surveyor III, LM
7100						11	11	11	11	11
7101						11	11	11	NE	Surveyor Crater
7102			20000000000000000000000000000000000000			Low	11	71	NE	Surveyor III Scoop Shovel
7103			***			Ħ	11	11	11	11
71.04						11	11	Med	NE	Surveyor III
7105			`			11	11	11	11	11
7106						11	11	PT .	. 11	Surveyor III Scoop Shovel
7107						11	11	11	11	11
7108						11	!!	11	11	11
7109			***************************************		***************************************	11	11	11	11	11
7110				Connection of the Connection o		71	11	Low	V _i	Surveyor III, Foot Pad, with Pad Imprint
7111						11	††	11	11	11

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Frame #	Camera # f Length	Approx. Photo Scale	Рc	cipal oint	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
7112			Lat	Long		Low	Good	OBLIQUE Low	N	Surveyor III Foot Pad, Pad Imprint
7113						11	11	11	11	Surveyor III Foot Pad
7114						11	11	11	11	Surveyor III
7115						11	11	Med	NM	11
7116						11	99 -	11	11	- 11
7117						11	11	11	11	11
7118				,		11	11	Low	NE	Surveyor III Equipment
7119						11	11	£1.	NW	Surveyor III Foot Pad
7120						11	PT .	11	11	11
7121						11	11	Med	NE	Surveyor III
7122						11	11	High	N	11
7123						11	11	11	NE	11
7124						11	11	Low	E	Surveyor III Foot Pad
7125						11	11	Med	SE	Surveyor III Equipment
7126						11	11	Low	SE	Surveyor III Foot Pad

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Frame #	Camera # f Length	Approx. Photo Scale	Po	cipal int	Fwd O/L	Sun Angle	Photo Quality	Approx.	Direction of	Description
· '	2.01.9		Lat.	Long		,		Min — Max	Tilt	
7127						Low	Good	OBLIQUE Low	S	Surveyor III Foot Pad
7128						1 f	11	11	S	Surveyor III Scoop Shovel
7129						ŶŶ	11	11	SW	11
7130						11	11	H i gh	W	Surveyor III Equipment
7131						11	11	11	11	11
7132						11	11	11	SW	11
7133						11	11	11	NW	View of Astronaut, Surveyor III and LM
7134						11	11	High	NW	11
7135						11	11	11	11	11
7136						11	11	11	11	11
7137					**************************************	11	11	Med	SW	Surveyor III Equipment
7138						11	11	11	S	"
7139						11	11	"	NW	Surveyor Crater Terrain
7140	·					11	11	11	S	11
7141						11	. 11	11	SW	View of Block Crater, Surveyor Crater

APOLLO 12 PHOTOGRAPHY

Magazine X Film S0-267

Time Reference — GET ____ = GMT _____

Frame #	Camera # f Length	Approx. Photo Scale	Po	cipal pint	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of Tilt	Description
			Lat	Long				Min — Max	1117	
7142						Low	Good	OBLIQUE Med	SW	View of Block Crater, Survevor Crater
7143						11	17	11	W	View of Block Crater, Surveyor Crater, LM
7144						11	11	11	S	Block Crater, Surveyor III
7145						11	11	11	11	11
7146						11	11	11	SW	Block Crater, Surveyor Crater
7147						11	Ħ	11	11	Surveyor Crater
7148						11	11	Low	N	Astronaut using tongs to pick up rock
7149						11	11	11	· ·	11
7150						11	11	1?	1*	11
7151						11	11	High	W	View of LM
7152						11	tt	11	11	11
7153						11	11	11		View of Lunar Terrain from IM
7154						11	11	71	SW	11
7155						11	! !	. 11	W	"
7156						11 .	11	11	11	11

APOLLO 12 PHOTOGRAPHY

Magazine X Film S0-267

Time Reference — GET ____ = GMT ____

Frame #	Camera # f Length	Approx. Photo Scale		cipal int	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
***	Lengin	Filoto Scale	Lat	Long	0/ 5	Angre	400,	Min — Max	Tilt	
7157						Low	Good	OBLIQUE High	W	View of Lunar Terrain from LM
7158			·			11	11	Med	11	11
7159						11	11	H i gh	NW	View from LM of ALSEP, Lunar Terrain
7160						ŦŦ	11	Med	11	Flag, Footprints on Lunar Surface from LM
7161						11	11	11	11	Footprints on Lunar Surface from LM
7162						11	11	11	N	Flag, Footprints, Lunar Terrain from LM
7163		·				11	11	11	N	11
7164						11	11	H i gh	NW	11
7165						11	11	11	11	View of Lunar Terrain from LM
7166						11	"	11	N	11
7167						11	11	11	11	Flag, ALSEP, Lunar Terrain from LM
7168	·					11	11	*	·WW	ALSEP, Lunar Terrain from LM
7169						11	11	11	11	11
7170						11	11	11	11	11
7171						11	Fair	11	11	11

MAGAZINE Y

Frames AS12-46-6715 through 6868

Magazine Y contains color photographs taken before, during, and after the first EVA. Each of the images has a reseau grid superimposed on the 60-mm lens. Included are the following seven panoramas of the area around the ALSEP deployment:

1. 6730 through 6745

A 16-frame panorama from west to northwest showing an astronaut before ALSEP deployment, to northeast at the flag, antenna, and LM (sunglint), to west with Surveyor Crater.

2. 6746 through 6763

An 18-frame panorama, 360°, taken from north of the LM, including Surveyor Crater, Surveyor, LM, flag, panel, and TV camera, and returning to Surveyor Crater.

3. 6764 through 6782

A complete 360° panorama from southeast of the LM on the rim of Surveyor Crater. This panorama includes Surveyor 3, Surveyor Crater, and the LM.

4. 6807 through 6811

A five-frame panorama from south to southwest showing an astronaut deploying the ALSEP. The LM, flag, and antenna are in the background to the south. A mound to the southwest is in the central portion of the panorama.

5. 6836 through 6844

A nine-frame panorama of "1000 Crater," northwest of Head Crater, showing the entire rim with numerous rocks.

6. 6845 through 6852

An eight-frame panorama of "1000 Crater," northwest of Head Crater, showing the entire rim with numerous rocks.

7. 6853 through 6855

A three-frame panorama to the west, containing Bench Crater to the extreme southwest, Head Crater to the west, and a blocky mound to the northwest.

Magazine Y Film HCEX

Time Reference — GET ____ = GMT ____

Frame #	Camera # f Length	Approx. Photo Scale		cipal int	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
77	mm	riioto Scale	Lat.	Long	V / L	9.0		Min — Max	Tilt	
6715	60					Low	Poor	Med. Obl.	W	Astronaut on Ladder
6716	11					††	11	11	11	11 11 11
6717	11					11	11	11	11	11 11 11
6718	11					11	11	"1	11	11 11 11
6719	11					11	Fair	Low Obl.	11	Footprints
6720	11					11	11	11	11	Lunar Surface
6721	11					11	11	11	11	11 11 .
6722	11					11	11	11	11	11 11
6723	11					11	11	11	11	11 11
6724						11	Foor	Med. Obl.	11	Egress from LM
6725	11					11	Fair	11	11	11 11 11
6726	11					11	11	11	11	11 11 11
6727	11					"	11	11	11	11 11 11
6728	77					11	11	11	11	11 11 11
6729	11					1,	11	11	11	11 11 11

Magazine Y Film HCEX
Time Reference — GET ____ = GMT ____

Frame #	Camera # f Length	Approx. Photo Scale	Po	cipal oint	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
	mm		Lat	Long				MIN MOX	1111	Charle 16 Evans Day
6730	60					·Low	Fair	Med Obl.	W	Start 16-Frame Pan near LM
6731	11					11	11	11,	,,	
6732	11					11	11	11	″	ll .
6733	11					11	11	11	,,	11
6734	11					1 1	ff.	11	,,	11
6735	11					11	11	11	,.	11
6736	11					11	11	11	,	11
6737	11					11	11	11	•	tt
6738	11					11	Poor	- 11	•	11
6739	. 11					11	11	11		11
6740	11					11	11	11	,,	11
6741	11					11	Fair	11	,,	. 11
6742	11		***************************************			11	11	11	14	11
6743	11					11	11	11		11
6744	11					11	ft.	79		

Magazine Y Film HCEX

Time Reference — GET ___ = GMT ____

Frame #	Camera # f Length	Approx. Photo Scale	Prin Po Lat	cipal int	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
	mm		Lat	Long				WIIII - WICK	1111	End 16-Frame Pan
6745	60					Low	Fair	Med. Obl.		near LM
							1 4 2 1	inda: obi:		Start 18-Frame Pan
6746	11		***************************************			11	11	11		near LM
6747	11					11	11	11		"
6748	11		**************************************			11	11	11		II .
6749	11					11	11	11		11
6750	11		***************************************			11	11	11		11
6751	11					11	11	11		11
6752	11		***************************************		**************************************	11	11	11		11
6753	11					11	T f	11		11
6754	11				~~~a~2000000000000000000000000000000000	11	11	11		T1
6755	11					11	11	11		!!
6756	11		······································		····	11	11	11		11
6757	††					11	11	11		11
6758	11					† †	11	11		!!
6759	11					11	11			11

 APOLLO 12
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Frame #	Camera # f Length	Approx. Photo Scale		cipal int	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
	mm	Thoro Oddio	Lat	Long	0, 5	910		Min — Max	Tilt	
6760	60					Low	Fair	Med Obl		18-Frame Pan near LM
6761	11					11	Poor	11		11
6762	11					11	11	11		11
6763	11					11	11	11		End 18-Frame Pan near LM
6764	11					11	11	11		Start 19-Frame Pan near LM
6765	11					11	11	11	_	11
6766	11					11	11	11		11
6767	11					11	11	11		11
6768	11					11	11	11		11
6769	11					!1	Fair	11		11
6770	11					11	11	11		11
6771	11					11	11	T T		11
6772	11					11	11	11		11
6773	11					11	11	11		11
6774	11				00000000000000000000000000000000000000	11	11	TT.		11

APOLLO 12 PHOTOGRAPHY

Magazine Y Film HCEX

Time Reference — GET — = GMT —

Frame #	Camera # f Length	Approx. Photo Scale	Prin Po Lat	cipal bint Long	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
6775	mm - 60		Lui	Long		Low	Fair	Med Ohl		19-Frame Pan near LM
6776	11					11	11	11		11
6777	11					11	11	11		11
6778	11					T†	. 11	11		11
6779	11			•		11	11	11		11
6780	??					11	11	11		11
6781	11			•	•		II.			" End 19-Frame Pan
6782	11					11	Poor	11		near LM
6783	11		••••			11	Fair	11	- U	AISEP removal from LM
6784	11					11	TT .	11	11	11
6785	11		·····			11	11	11	11	
6786	"					11	f1	11	11	II.
6787	!!					11	11	11	11	11
6788	11		···			11	11	11	11	11
6789	11					11	ll ll	11	11	11

	Magazine	Y		F	-11	m]	HCEX	
Time	Reference	evenus.	GET		e10 810	G	M	T	***************************************	

Frame #	Camera # f Length	Approx. Photo Scale		cipal int	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
w	mm	1 11010 00410	Lat	Long		, , , ,		Min — Max	Tilt	
6790	60					Low	Fair	Med. Obl.	W	ALSEP Removal from LM
6791	11					11	11	11	11	11
6792	11					11	11	11	N	11
6793	11	MA I Jacob				11	Poor	11	W	Lunar Surface Mound
6794	11					ŢŢ	Fair	11	11	
6795	11					11	11	11	11	11
6796	. 11					11	11	11		(Start) 8-Frame Pan West of LM
6797	11					11	11	11		11
6798	11					11	11	11		11
6799	11					11	11	11		11
6800	11					11	11	11		11
F08A	,,					11	11			11
6802	11					11	11	11		11
K\$03	11					17	11	11		" (End)
6804	11					11	Poor	11		(Start) 8-Frame Pan ALSEP Packag

Film <u>HCEX</u>

Time Reference — GET ____ = GMT ____

Frame #	Camera # f Length	Approx. Photo Scale	Prin Po	ncipal pint	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
77	mm	Photo Scale	Lat	Long		Aligie	Quality	Min — Max	Tilt	
6805	60					Low	Poor	Med. Obl.		8-Frame Pan ALSEP Package
6806	11					11	11	11		11,
6807	"					11	Fair	11		11
6808	77					11	11	11		11
6809	71					11	11	11		11
6810	11					11	11	11		11
6811	11					11	11	11		" (End)
6812	11					11	11	Low Obl.	W	Solar Wind Exp.
6813	11					11	11	Med. Obl.	11	ALSEP Cable
6814	· 11					11	11	11	11	Central Station
6815	11					11	11	11	11	11
6816	11					11	11	11	ŤŤ	11
6817.	11					11	11	11	11	11
6818	11					11	11	11	11	ALSEP Deployment
6819	11					11	Poor	,,	E	11

	-	-	•	_	-	*****	
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Film HCEX

Magazine Y Film HCEX

Time Reference — GET ____ = GMT ____

Frame #	Camera # f Length	Approx. Photo Scale		Principal Fw Point O/		Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
TT .	mm	Thoro oddie	Lat	Long	Ŭ/ <u>-</u>	g.	466,,,,	Min — Max	Tilt	
6820	60					Low	Fair	Med Obl	W	Ion Detector
6821	"					11	11	11	11	ALSEP Deployment
6822	11					11	11	11	11	Mound
6823	11					11	11	11	11	n
6824	11					11	11	Low Obl.	11	11
6825	11					11	11	11	11	
6826	11					11	11	11	11	ALSEP Deployment
6827	11					11	11	11		Mound
6 8 28	11					11	11	11		
6829	11					11	11	11		
6830	11					11	11	11		11
6831	11					11	11	11		11
6832	11					11	11	11		11
6833	11					11	11	11		Lunar Surface
6834	11					11	11	11		11

Magazine Y Film HCEX
Time Reference — GET ____ = GMT ____

Frame #	Camera #	Approx. Photo Scale		icipal pint	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
	f Length	, more oddie	Lat	Long		Angle	Quality	Min — Max	Tilt	
6835	60					Low	Fair	Low Ohl		Lunar Surface (Start)
6836	11					PT	11	Med. Obl.	W	9-Frame Pan NW of ALSEP
6837	11					††	11	11	11	11
6838	11					11	!!	11	Ш	
6839	19		***************************************	***************************************		17	11	11	11	- 11
6840	řt .					11	11	11	11	11
68 <u>4</u> 1	11 .					17	11	17	11	11
6842	11		***************************************			11	11	ħ?	11	11
6843	11					††	11	11	71	11
6844	11			***************************************		††	ff	11	11	" (End)
6845	11				***************************************	††	11	11		(Start) 8—Frame Pan NW of ALSEP
6846	11					11	11	11		11
6847	11					11	11	11		11
6848	11					11	11	11	71	
6849	11					91	91	11		11

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Frame #	Camera # f Length	Approx. Photo Scale		icipal oint	Fwd O/L	Sun Angle	Photo Quality	Approx.	Direction of	Description
***	mm	Piloto Scale	Lat	Long	V/ L	Aligie	Guanty	Min — Max	Tilt	
6850	60					Low	Fair	Med. Obl.	***************************************	8-Frame Pan NW of ALSE
6851	11					11	11	11 ,		11
6852	11					11	11	PI		
6853	11					11	11	Low Obl.		(Start) 3-Frame Pan From LM
6854	11					11	11	11	71 -	11
6855	"					?1	11	11	11	" (End)
6856	11 .					11	11	71	11	4-Frame Pan From LM
6857	11					f†	11	ī1	11	11
68 58	11					11	11	11	11	11
6859	11					11	11	11	11	" (End)
6860	11					11	11	Med. Obl.	11	ALSEP From LM
6861	· •					11	11	11	""	Solar Wind Panel Flag/Antenna
6862	11					11	97	11	11	3-Frame Pan ALSEP From LM (Start)
6863	11					11	11	11	11	11
6864	11					11	98	**	11	" (End)

Direction Principal Approx. Camera # Fwd Sun Photo Frame Approx. Point Description Tilt of f Length Photo Scale O/L Angle Quality Min — Max Tilt Lat Long 6865 60 Low Fair W Flag/Antenna/Solar Wind Med. Obl. 6866 ** 11 ALSEP From LM 6867 11 11 6868 ** 11 11 11

MAGAZINE Z

Frames AS12-49-7172 through 7324

Magazine Z is 70-mm black and white photography taken on the lunar surface during the second EVA. A 60-mm lens with a reseau grid was used. Photographic content includes the core samples, tool kit, and views of Head, Bench, Halo, and Sharp Craters. The following are included in the magazine Z panorama:

1. 7209 through 7212

A four-frame panorama looking west to north showing the lunar surface. The lunar surface hand tool kit is in the center of the panorama.

2. 7213 through 7215

A three-frame panorama to the east over Head Crater, showing the LM.

3. 7223 through 7228

A six-frame clockwise panorama of Bench Crater, rim to rim, looking south from the north rim, showing the east, south, and west inner walls and large rocks on the floor.

4. 7229 through 7233

A five-frame counterclockwise panorama of Bench Crater from the north rim, showing the south and west walls and floor.

5. 7244 through 7256

A 13-frame counterclockwise panorama looking east into the sun, showing an astronaut, the LM, and numerous rocks. The panorama continues to the north and then to due west.

6. 7263 through 7269

A seven-frame counterclockwise panorama of Sharp Crater looking west from outside the eastern rim. Very blocky.

7. 7271 through 7275

A five-frame clockwise panorama of Sharp Crater looking from the east rim to the west.

8. 7308 through 7311

A four-frame panorama looking west showing the lunar surface, the lunar surface hand tool kit, and Astronaut Bean with hand tools.

9. 7321 through 7324

Originally a six-frame panorama of Surveyor Crater; frame 7325 is 90% washout and 7326 will not tie end of panorama. This panorama, which contains four frames, begins on the southwestern rim of Surveyor Crater looking east at Surveyor and the eastern inner slope of the crater, and pans counterclockwise to the LM on the northwestern rim.

APOLLO 12 PHOTOGRAPHY₀₋₂₆₇

Magazine _____ Film ____ = GMT _____

Frame #	Camera # f Length	Approx. Photo Scale	Prin Po	cipal pint	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
71	Lengin	riioto Scute	Lat	Long		Angle	Quality	Oblique	Tilt	
7172				2000-0000-0000-0000-000-000-000-000-000		Low	Poor	**************************************	S	Lunar Terrain
7173						**************************************	Good	High	11	View into Head Crater
7174.						11	"	11	11	n· n
7175						ff	11	11	11	11 11
7176						11	11 .	11	11	11 11
7177						f1	11	T1	11	11 11
7178				•		11	11	11	11	11 11
7179				P-007		11	11	Med.	11	11
71.80						11	11	11	11	11 11
7181		**************************************	em en trouvellaten abeto v. asi v. den n			11	11	11	11	11 11
7182						11	11	11	11	11 11
7183						11	11	11	11	11 21
7184						11	11	11	SE	11 11
71.8 5						11	Ħ	11	11	11 11
7186						11	ff	11	11	11 11

Magazine _Z____

Film ___S0-267

Time Reference — GET ____ = GMT ____

Frame #	Camera # f Length	Approx. Photo Scale	Po	ncipal pint Long	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of Tilt	Description
7187			Lui	Long		Low	Good	Med.	SE	View into Head Crater
7188			•			11	11	11	71	11 11
7189						11	11	Low	N	Tri-Pod Holder for Core Sampler
7190					***************************************	11	11	11	NW	Core Sampler Lunar Surface
7191						TT .	,11	- 11	11	.11 11
7192						11	11	ŧī	- 11	11 11
7193						11	11	11	N	11 11
7194						11	11	11	NW	11 11
7195				***		11	11	ŤŤ	N	11
7196						11	11	11	N	11 11
7197						11	11	îl	SE	11 19
7198						11	11	11	E	11 11
7199						l1	11	11	SE	n Ų
7200				3		11	11	Med.	SE	View of Lumar Surface
7201						11	11	High	SE	11 11

APOLLO 12 PHOTOGRAPHY

Magazine Z Film S0=267

Time Reference — GET ____ = GMT _____

Frame #	Camera # f Length		Po	icipal pint	Fwd O/L	Sun Angle	Photo Quality	Approx.	Direction of Tilt	Description
			Lat	Long	<u> </u>			Oblique		
7202						Low	Good	High	SE	View of Lunar Surface
7203						11	11	11	S	11 by
7204						11	11	11	SW	ti ti
7205						11 .	11	tt	sw	11 11
7206						11	11	11	W	11 11
7207					***************************************	11	11	11	11	11 11
7208		<u> </u>				11	11	11	NW	11 11
7209						11	11	11	11	TT TT
7210						11	11	Med.	NW	V iew of Lunar Surface Hand Tool Kit
7211						11	11	11	N	11 11
7212						11	11	11	N	View of Lunar Surface
7213						11	11	11	NE	Astronaut, LM , Head Crater
7214						11	Fair	Med.	E	LM, Head Crater
7215						11	11	11	E	11 11
7216						11	11	11	E	Head Crater

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Frame #	Camera # f Length	Po	cipal int Long	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Oblique	Direction of Tilt	Description
7217			. M. College C		Low	Good	Low	NW	Core Sampler
7218		,		- Amerikaan da araa aa	11	11	11	11	11 11
7219					11	††	**	N	Core Sampler, Large Rock
7220		- ettiviä vapriggus,-uativitia-			11	11	11	N	11 11
7221					††	11	Med.	NNE	Core Sampler, Hand Tool Kit
7222					11	11	11	11 -	11 11
7223					11	11	11	SE	Bench Crater
7224					11	ff	11	S	11 11
7225					11	11	11	11	11 11
7226					11	††	11	SW	11 11
7227					11	11	11	11	11 11
7228					††	11	ff	W	11 11
7229					11	11	11	W	11 11
7230					11	11	11	SW	11 11
7231			***************************************		11	11	11	S	11 11

Frame #	Camera # f Length	Approx. Photo Scale	Рэ	cipal int Long	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Oblique	Direction of Tilt	Description
7232				5.0.0		Low	Good	Med.	S	Bench Crater
7233						11	11	***	SE	Bench Crater
7234						11	11	Low	11	Core Sampler, Bench Crater
7235						11	11	11	11	11 11
7236						Low	Good	Low	S	Core Sampler
7237						11	91	11	SE	Core Sampler, Bench Crater
7238						11	11	11	11	11 11
7239						11	11	11	E	11 11
7240						11	11	Med.	S	11 11
7241						11	11	11	11	11 11
7242						11	11	Low	W	Core Sampler, Hand Tool Kit
7243						11	11	11	31	11 11
7244						11	11	High	E	View of Lunar Terrain
7245						††	Fair	**	11	View of Lunar Terrain, Astronaut
7246						īī	11	11	11	Astronaut Carrying Han Tool Kit, LM, Lunar

Frame #	Camera #	Approx. Photo Scale	Po	ncipal pin t	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of Tilt	Description
			LGt	Long		<u> </u>		Oblique	1111	
7247						Low	Fair	High	NE	Lunar Terrain, LM
7248						11	Good	11	11	11 11
7249						11	11	11	N	11 11
7250						11	11	11	NE	Lunar Terrain
7251				***************************************	·	11	11	11	N	11 11
7252					~~~***********************************	11	ft .	††	NW	View of Lunar Terrain
7253					and state to grow or the state of the state	11	11	ÎI.	11	Large Boulder
7254						11	11	11		Lunar Terrain
7255						11	11	11	11	11 11
7256						? 1	11	11	11	" "
7257						11	11	11	11	11 11
7258						îî	11	11	SW	11 11
7259						11	11	11	S	11 11
7260						11	11	Med.	S	Lunar Terrain, Large Rock
7261						11	f f	11	SE	Lunar Terrain

APOLLO 12 PHOTOGRAPHY

Magazine $\frac{Z}{}$ Film $\frac{SO-267}{}$ Time Reference - GET = GMT =

Frame #	Camera # f Length	Approx. Photo Scale	Prin Po	cipal oint	Fwd O/L	Sun Angle	Photo Quality	Approx. Oblique	Direction of	Description
TT	1 Lengin	riioio Scule	Lat	Long		Aligic	Quanty		Tilt	
7262						Low	Good	Med.	SE	Lunar Terrain
7263						11	11	11	NW	Sharp Crater
7264						11	11	71	W	11 11
7265						11	11	TT.	11	11 11
7266						11	11	11	11	11 11
7267						11	11	11	11	11 11
7268						11	11	11	SW	11 11
7269	•					11	11	††	11	11 11
7270						11	? † :	11	99	11 11
7 271						89	11	t i	W	11 11
7272						11	11	11	11	11 11
7273						11	I I	!!	11	11 11
7274			and the second s			11	11	11	NW	11 11
7275						11	11	P1	11	11 11
7276						11	11	Low	S	Core Sampler Near Halo Crater

Frame #	Camera # f Length			cipal int Long	Fwd O/L	Sun Angle	Photo Quality	Approx. Oblique	Direction of Tilt	Description
7277	Ş	naciones, sul circi de desemblembratica de la companya de desembra de la companya				Low	Good	Low	S	Core Sampler near Halo Crater
7278						11	††	Med.	SE	Astronaut holding Core Sample
7279						11	††	Low	S	Core Sampler near Halo Crater
7280	C. Library of the state of the					11	? 9	4 11	11	1H H
7281						11	11	Med.	11	Astronaut, Hand Tool Kit
7282						11	!!	11	SIF	Core Sampler
7283			-990cc/800cc0000			11	11	Low	SE	11 11
7284	,					11	71	11	11	11 11
7285						11	11	11	11	11 11
7286						11	11	Med.	SW	Astronaut and Core Sampler
7287				A STATE OF THE STA	en-richterstein der	11	11	Low	S	Core Sampler
7288		en control de l'accompany de l'accom	e-v-etivoridadiscotto conditiono.co-			11	11	11	SE	11 11
7289						11	11	High	V	View of Lunar Terrain
7290	present content of the content of th			- ACC STREET	D.C COLLEGE DE LA COLLEGE	11	11	11	W	11 11
7291						11	11	11	SW	11 11

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 Time Reference
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Frame #	Camera # f Length	Po	cipal oint Long	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Oblique	Direction of Tilt	Description
7292		120/06/2011-06/2018-2	The second secon		Low	Good	High	S	View of Lunar Terrain
7293					11	11	· • • • • • • • • • • • • • • • • • • •	11	11 11
7294					11	11	11	SE	11 11
7295					11	**	11	E	11 11
7296					11	Fair	11	11	11 11
7297					11	11	11	11	н : п
7298					11	11	11	ff	11 11
7299	-				11	11	11	†1	11 11
7300					11	Good	High	NE	View of Lunar Terrain
7301					11	11	11	11	ff II
7302					11	11	11	N	11 . 11
7303					11	11	11	TT .	11 11
7304				· en national reconstitution of a section of the se	11	11	Ť1	11	11 11
7305					f1	11	11	11	11
7306					11	11	11	11	11

Magazine Z Film S0-267
Time Reference — GET ____ = GMT ____

Frame #	Camera # f Length	Approx. Photo Scale	Po	ncipal pint	Fwd O/L	Sun Angle	Photo Quality	Approx. Oblīdue	Direction of	Description
		1 11010 00010	Lat	Long					Tilt	
7307						Low	Good	Med.	NW	Astronaut and Hand Tool Kit
7308						11	.11	11	11	11 11
7309						11	11	High	W	11 11
7310						11	Fair	TT .	W	View of Lunar Terrain
7311						11	11	11	W	11 11
7312						11	Good	Low	SW	Astronaut Collecting Rock
7313						11	11	11	NW	. н
7314						11	11	. 11	S	Core Sampler, Hand Tool Kit
7315						11	11	"	S	11 11
7316						11	11	High	NW	View of LM
7317						11	11	11		н
7318						11	11	Med.	SE	Astronaut and Hand Tool Kit
7319						11	11	11		11 11
7320						TT .	11	Low	11	11 11
7321						11	Poor	High	E	View of Lunar Terrain, Surveyor III

 APOLLO 12
 PHOTOGRAPHY

 Magazine __Z _____ Film _SO_267_

 Time Reference ___ GET _____ = GMT _______

Frame #	Camera # f Length	Approx. Photo Scale	Prin Po	icipal pint	Fwd O/L	Sun Angle	Photo Quality	Approx. Oblique	Direction of	Description
			Lat	Long					Tilt	
7322						Low	Fair	High	NE	Surveyor Crater, Surveyor III
7323						PT .	Poor .			Photo Underexposed
7324						11	Fair	Med.	E	Surveyor Crater
						·				
										от постоя на принципання на при

						er aansterinatiooninaatinaatinaatinaatinaatinaatin	Security of the security of th			
*************************************	**************************************		maderiorendamentalendacendacen	gennosutronredicultategy i gongoveno virizo d	earthur agreegly considerably produced and an extensive section of the section of	ALOUESISSISSE ANGELIOLOUSISSISSA (ATGALA-OSA		<u> </u>	Production and Education of Programmer and Association of States	
				and the second s		***************************************				

MAGAZINE EE

Frames AS12-55-8121 through 8297

Photographic coverage of magazine EE is imaged on 70-mm black and white (SO-164) film. Exposures were made from the CM with camera focal lengths of 80 mm and 250 mm at approximately 60 nautical miles altitude. The 177 exposures are of poor to good quality. The 75-frame 80-mm stereo sequence of near-vertical exposures of the back side of the lunar surface are of good quality. Coverage is from approximately 113° east longitude, 5° south latitude to 34° east longitude, 11° south latitude. Target of opportunity 13 is covered on frames 8197 and 8198. Complete coverage of craters Kapteyn, Langrenus A, and Magelhaens was obtained. La Perouse Crater, excepting the very northern section, and the northern part of Langrenus Crater were also photographed in this near-vertical stereo sequence. Other coverage includes 80-mm high obliques of Reiner Crater in frames 8121 through 8123 and 250-mm high-altitude small-scale transearth injection (TEI) photographs of the eastern part of the lunar surface in frames 8201 through 8297. In this series, frames 8216 through 8225 show good detail. Six exposures of magazine EE are blank.

Magazine EE Film B&W SO-164
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Frame #	Camera # f Length	Approx. Photo Scale		ncipal pint	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description	
17	mm	1 11010 30416	Lat	Long	0, 1	Aligie	Quality	Min — Max	Tilt		
8121	80	1:3,519,000	3.5°N	54.5°W	95%	Low	Poor	65-70 ⁰	WNW	High Obliques of Reiner Crater	
8122	11	1:3.677.900	3.5°N	11	††	ŢŢ		11	11	Reiner Craters A & C	
8123	11	1:3.836.899	11	11	11	11		* * *	11	and other small craters in the area	
8124										TO-53 Imaged. Stereo Strip 8125 to 8136	
8125	11	1:1,376,900	4.0 ⁰ s	120.5 ⁰ E	65%	11	11	Near Vertical	W	NNE of Crater 279 & SSE of Crater 211	
8126	FF	1:1,376,900	11	119.2°E	11	11	77	11	11	N of Crater 279 & SSW of Crater 211	
8127	11	1:1,376,900	5.5 ⁰ S	112.5°E	60%	Med	Fair	11	FF	S of Crater 275, N of Crater 276, SW of Crater 2	277
<u>8128</u>	11	11	11	nı o°e	11	11	11	11	"	E of Crater 273 & NNW of Crater 276	
8129	11	15	11	11	11	11	11	11	11	S 3/4 of Crater 273	
8130	11 .	11	11	1 09.5°E	65%	11	11	11	11	11	
8131	11	11	6.0 ⁰ s	108.5°E	11	11	11	11	11	SW of Crater 273 & SSW of Crater 202	
8132	11	11	6.0°s	107.0°F	11	11	11	11	11	WSW of Crater 273 & SE of Crater 270	
8133	11	11	6.5°s	1 0 6.0°E	11	11	11	11	11	WSW of Crater 273 & SE of Crater 270	
8134	ff	11	11	105.0 ⁰ គ	11	11	11	,,	Ш		
8135	11	, 11	11	104.5°E	11	11	11	*1	91	SSE of Crater 270 & WSW of Crater 273	

Magazine EE Film B&W SO-164
Time Reference — GET ___ = GMT ____

Frame #	Camera # f Length	Approx. Photo Scale	Po	cipal pint	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
"	mm	1 11010 000.0	Lat	Long	Ŭ / L.			Min — Max	Tilt	
8136	80	1:1,376,900	7.0°s	103.5°E	65%	Med	Fair	Near Vertical	W	S of Crater 270 & WSW of Crater 273
8137	**	11	11	102.0°E	11	11	11	11	11	Steres Strip 8137 th & SE of Crater 269
8138	***	11	11	101 5 ⁰ F	11	11	11	11		SE of Crater 269 & SSW of Crater 270
8139	` ††	††	11	100.5°E	11	11	11 .	11	11	SE of Crater 269 & SW of Crater 270
8140	11	11	11	99.5°E	11	11	. 11	11	11	SSE of Crater-269 & SW of Crater 270
8171	11	11	11	98.5 ⁰ E	11	11	11	. 11		S of Crater 269 & SW of Crater 270
8142	11	11 .	8.0°s	97.5°	E "	. 11	11	11	11	SSW of Crater 269 & SE of Crater 267
8143	11	11	11	96.5°E	11	11	11	11	11	SSE of Crater 267 & SE of Crater 266
8144	19	11	11	95.0°E		11	11	11	11	SE of Crater 266 & S of Crater 267 & SE Sec.of 26
8145	11	11	11	94.0°E	11	11	11	11	11	SE Section of Crater 266
8146	11	11	11	93.0°E	11	11	11	11	11	S. Part of Crater 266
8147	11	11	8.5 ⁰ \$	92.0°E	1,	11	Good	π-	71	SW Part of Crater 266
8178	11	!!	11	91.0 ⁰ E	11	11	11	11	17	Small SW Part of Crater 266
8149	11	†1	11	90.0°E		1'	11 .	11	11	SW of Crater 266 & SE of Crater 263
8150	11	11	0.00	89.0° _F	11		11	11	rî	SW of Crater 266 & SE of Crater 263

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Frame #	Camera # f Length	Approx. Photo Scale	Po	cipal oint	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
	mm		Lat	Long				Min — Max	Tilt	
8151	80	1:1,376,900	9.0°s	89.0°E	65%	Med	Good	Near Vertical	W	SE of Crater 263 & SW of Crater 266
8152	11	11	8.0°s	87.0°E	11	11	11	T1	11	SE of Crater 263 & SW of Crater 266
8153	11	11	9.0°s	86.0°E	11	Med	11	11	11	Stereo Strip 8153 to 816 of Crater 264
8154	11	11	9.5°s	85.0°E	11	TT .	11	11	11	S of Crater 263 & N of Gibbs Crater
8155	11	11	11	84.0 ⁰ E	11	11	- 11	11	11	SSW of Crater 263 & N
8156	11	11	11	83.0°E	11	11	11	11.	11	SW of Crater 263 & NE of Ansgarius
8157	11	11	10.0°s	82.0 ⁰ E	11	11	11	11	11	SE of Kastner & SW of Crater 263
8158	11	11	11	80.5 ⁰ E	11	11	11	11	11	LaPerouse E & NNE of Ansgarius
8159	11	19	11	79.5 ⁰ E	11	11	11	11	11	N of Ansgarius & E of LaPerouse
8160	11	11	11	78.5°E	11	11	11	11	11	E of LaPerouse & NNW of Ansgarius
8161	11	11	11	77.5°E	1'	11	† 1	11	11	E Half of LaPerouse
8162	11	11	11	76.5°E	11	11	11	11	11	E 3/4 of LaPerouse
8163	11	11	11	75.5 ⁰ E	11	11	11	11	11	W 3/4 of LaPerouse
8164	11	11	11	74 5 ⁰ F	11	11	11 ,	11	11	W 1/4 of LaPorouso
8165	11	11	11	73 0 ⁰ F	,,,	11	11	11	11	W of LaPerouse & E of Kapteyn C

Magazine <u>EE</u> Film <u>R&W S0-164</u>
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Frame #	Camera # f Length	Approx. Photo Scale		cipal oint	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
11	mm	Photo Scale	Lat	Long	0/ L	Aligie	Quality	Min — Max	Tilt	
8166	80	1:1,376,900	9.0°s	86.0°E	65%	Med	Good	Near Vertical	<u>U</u>	Small Section of E Kapteyn & Area E of Kapte
8167	11	†1	11	71.5°E	11	11	11	11	11	E Half of Kapteyn
8168	. 11	11	11	70.5°E	11	P 1	11	11	11	Kapteyn & Bordering Area Stereo Strip 8169 to 8184 E of Langrenus A & S of
8169	11	11	10.5°S	69.0°E	65%	11	11	11	11	Kapteyn E
8170	11	11	11	68.5°E	11	11	11	11	.11	E Half of Langrenus A & W of Kapteyn
8171	. 19	11	n.o°s	67.0°E	11	11	11	11	11	Langrenus A
8172	99	11	11	66.5°E	11	T THE THE THE THE THE THE THE THE THE TH	11	11	11	W Half of Langrenus A & ESE of Langrenus
8 173	11	11	11	65.5°E	11	11	11	11	ř1	W of Langrenus A & ESE of Langrenus
8174	11	11	10.5°s	64.0°E	11	11	11	11	11	SE of Langrenus
8175	11	11	11.0°s	63.0°E	11	11	71	11	11	SE Section of Langrenus & NE of Lohse '
8176	11	11	11	62.0°E	11	High	11	11.	11	S Part of Langrepus & NE of Lohse
8177	11	11	î î	61.0°E	11	11	††	11	11	S 1/4 of Langrenus & N of Lohse
8178	11	11	11	60.0°E	11	† 1	11	1'	ŗ1	SW Part of Langrenus & NWW of Lohse
8179	tt	1!	11	59.0 ⁰ Е	11	11	11	ţ*	11	SW Section of Langrenus & NW of Lohse
8180	11	11	11	58.0° _E	11	11	11	11	11	SW of Langrenus & NW of Lohse

Frame #	Camera # f Length	Approx. Photo Scale	Po	ncipal pint	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
·	mm		Lat	Long				Min — Max	Tilt	
8181	80	1:1,376,900	.o°s	57.0°E	65%	High	Good	Near Vertical	W	SW of Langrenus & Langrenus D
8182	11	11	11	56.0°E	11	11	11	11	11	SE Section of Mare Fecunditatis
8183	11	11	11	54.5°E	11	11	11	11	11	SE Section of Mare Fecunditatis
8184	` 11	11	11	54.5°E	11	ŧŧ	17	11	. 11	S Section of Mare Fecunditatis
8185	11	11	11	52.5°E	11	11	Fair	11	11	Stered Strip _s 8185 to 8200 Section of Mare to 8200 Fecunditatis & NE of Crozie
8186	11	11	11	51.5°E	11	11	11	11	11	NNE of Crozier & SSE of Goclenius U
8187	- 11	11	11	50.5 ⁰ E	11	11	11	?1	11	N of Crozier & ENE of Bellot
8188	11	11	11	49.0°E	17	11	11	11	11	E Part of Bellot & N of Crozier H
8189	11	11	11	48.0°E	11	11	11	11	11	Most of Bellot & Area N of Bellot
8190	11	11	11	47.0°E	11	†1	11	11	ŤŤ	Most of Bellot & Area NW of Bellot
8191	11	11	11	46.0°E	11	11	11	11	11	SE Quadrant of Gocleniu. & NE Sec. of Magelhaens
8192	11	11	11	45.0°E	11	11	11	11	ţţ	S Half of Goclenius & E Half of Magelhaens
8193	11	11	11	44.0°E	11	11	11	11	11	SW Quadrant of Goclenius & all of Magelhaens
8194	11	11	11	Д3.0 [°] Е	11	11	11	11	11	W Half of Magelhaens & all of Gutenberg D
8195	11	11	11	42.0°E	1"	11	11	11	ŤŤ	Gutenberg D & SE of Gutenberg

Frame #	Camera # f Length	Approx. Photo Scale		cipal int Long	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
8196	mm 80	1:1,376,900		41.0°E	65%	High	Fair	Near Vertical	W	S Edge of Gutenberg & N of Pyrenaeus
8197	11	"	11	40.0°E	11	11	11	11	11	SW of Gutenberg & Gaudibert J: TO-13
8198	11	11	11	39.0°E	11	91	11	11	11	E 3/4 of Gaudibert & SW of Gutenberg; TO-13
8199	. 11	11	11	38.0°E	11	11	11	11	11	Gaudibert & surrounding Area
8200	11	11	11	36.0°E	11	11	11	11	· 11	W 1/4 of Gaudibert & SE of Capella
8201	250					~~~	11			TEI East Half of Moon
8202	11		***************************************				11		••••	11
8203	11						11			11
8204	11		***************************************				11			
820 5	11				······································		11			
8206							11			11
8207	11		······································		***************************************		11	***************************************		11
8208	11						11			71
			***************************************		***************************************					

Time Reference — GET ____ = GMT ____

Frame #	Camera # f Length	Approx. Photo Scale	Po	cipal int	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
	mm		Lat	Long				Min — Max	Tilt	
8209	250		***************************************				Fair			TET East Half of Moon
8210	11						11			11
8211	11			•			11			
8212	11						11			11
8213	11						11			TEI E 3/4 of Moon
8214	11						11			11
8215	11						11			11
8216	11						11			11
8217	11						11			Nadir Near Mare Crisium
8218	11			•••			11			11
3219	11						11			11
3220	ţ!		p	***************************************			11	÷		11
3221	1:						11			11
3222	11						11			1'
3223	11						11			11

APOLLO 12 PHOTOGRAPHY
Magazine EE Film B&W SO-164

Time Reference — GET ____ = GMT ____

Principal Approx. Direction Photo Camera # Approx. Fwd Sun Frame Description Point Tilt of. # f Length Photo Scale 0/L Angle Quality Min — Max Tilt Lat Long 250 Fair Nadir Near Mare Crisium 8224 8225 ** 11 8226 ** 11 8227 11 ** 8228 11 Poor Poor Detail 8229 ** 8230 17 11 8231 99 Dark 8232 11 11 TEI E 3/4 of Moon 8233 11 77 8234 11 11 11 8235 11 8236 11 8237 11 11 8238 11

Frame #	Camera # f Length	Approx. Photo Scale	Po	cipal int	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
	mm		Lat	Long				Min — Max	Tilt	
8239	250		9000-LESSESSESSESSESSESSESSESSESSESSESSES		***************************************		Poor			Dark TEI E 3/4 of Moon
8240	TT						11			11
8241	† †					·	11			11
8242	` 11						!!			11
8243	11		00-10-10-10-10-10-10-10-10-10-10-10-10-1				11			11
8244	11						77			11
8245	11						11			
8246	11						†1			
8247	11						99			11
8248	11						11			11
8249	11				÷		11			11
8250	tt						††			11
8251	11						11			11
8252	11						11			11
8253	t1						11			11

APOLLO 12 PHOTOGRAPHY gazine EE Film B&W \$0.164

Magazine <u>EE</u>

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Frame #	Camera # f Length	 Po	cipal oint	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
	mm	Lat	Long				IVIII IVIUX	1111	Dark
8254	250					Poor			TEI E 3/4 of Moon
8255	11					11			11
8256	11					11			11
8257	11					11			. 11
8258	11			***************************************		11			11
8259	11					11			11
8260	11					11			11
8261	11					11			11
8262	. 11					11			11
8263	11			•		11			11 t
8264	11		•			11			TEI - Very Distant' Photos of Moon
8265	11			***************************************		11			11
8266	11					11			11
8267	11		•••			11			11
8268	11					1,			1.

APOLLO 12 PHOTOGRAPHY
Magazine EE Film B&W SO-164
Time Reference — GET ____ = GMT ____

Frame #	Camera # f Length	Approx. Photo Scale	Po	cipal int	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
	mm		Lat	Long				Min — Max	Tilt	
8269	250						Poor			TEI- Very distant photos of Moon
0209	230			and the second second second second second second		AND ALCOHOMOLY TO THE WEST SCHOOL STATE OF THE STATE OF T	1 001			DIO GOS OI FIOOII
8270	11						11		da. Bost Siranowa, 200 Vongo yangan magang anggana pertumb	manus, menganakan sasasas sa
8271	11									
8272	11						11			TEI - Very distant photos of Moon
8273	71									
8274	ìI						11	Mark at 18 Mark (18 Mark 18 Ma		TEI - Very distant photos of Moon
8275	11				ATTO AND ELANGES AND ALL SECTION	annamic out cannada al laterativa a test and	11			
8276	11					0~000.450°C, 2018.5.450000000000000000000000000000000000	TT			
8277	11		o deconocidade das befolgos por como como	CONTROL OF THE STREET, STATE OF THE STA	Service and Common of State Service and State and	000 Pro-000000 Procedure 100000 Drigosom	11 			
8278	11					o assess promoned our LPT 2 40 day	11			11
8279	11		o. 4550			una construir de designation (Maria) de deservicion (Maria) de deservicion (Maria) de deservicion (Maria) de de				
8280	11				MCSENSON C. RESCRIPTION		11			11
8281	ŶĬ						PF			11
8282	11						11			11 -
8283	11	and the second s	ALME DOLLET	and the second of the	CAT DATES TO SELECT MANAGEMENT	ALL RESPONDED OF EXCHANGE	11			11

Magazine <u>FF</u> Film <u>B&W SO-164</u>
Time Reference — GET ___ = GMT ____

Frame #	Camera # f Length	Approx. Photo Scale	Po	cipal int	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
"	mm	1 noto ocute	Lat	Long	07 L.	Aligie	Quality	Min — Max	Tilt	
8284	250		outon as invite the production of	berrate interventationers i gestalstaget heteroore		***************************************	Paar	Control of the Contro		TEI - Very Distant Photos of Moon
8285	11						11			11
8286	11		7880485 JULIO 2015 2014 34 Ave				11			11
8287	11		ermano consistente de la consistencia		001-9-CE-9-SCE-9-CE-SCE-00000-0	news 1.5 - 1887 Metric Wilder, 12th 12th 18th 18th 18th 18th 1	11 m. 1440 d. 155 / 2000 000000000000000000000000000000			11
8288	11			00000000000000000000000000000000000000			† †			11
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8295	11				on a story and the story of the	777024000000 00478 45040000000000000000000000000000000000	11			Window Rings
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APOLLO 12

LUNAR MULTISPECTRAL CAMERA (LMC) S-158 Experiment Assembly Photography (70 mm)

For this experiment, four EL Hasselblad cameras with 80-mm lenses were mounted together in such a manner that they could be aimed and operated simultaneously.

- Magazine AA 80-mm lens infrared black and white SO-246, 87C filter (black), 114 frames
- Magazine BB 80-mm lens medium speed black and white 3401, 47B filter (blue), 150 frames
- Magazine CC 80-mm lens medium speed black and white 3401, 29+ filter (red), 150 frames
- Magazine DD 80-mm lens black and white 3401, 58 filter (green), 150 frames

Camera mounts were perpendicular to the hatch window. Alignment was 57.5° pitched up from the X axis. The camera that used the black and white infrared film did not give as complete a coverage as the other cameras, since it was not turned on until midway into the sequence.

APOLLO 12 PHOTOGRAPHY Magazine AA Film SO-246 Filter Blk 87C Time Reference -- GET

Frame #	Camera # f Length	Approx. Photo Scale	Po	cipal int	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt Min — Max	Direction of Tilt	Description
8314	80mm	1:1,470,000	Lat 10.58	Long 101.5 ⁰ E	60%	Medium	Fair	Vertical	CSD 8000 6400 GGD.	Begin IR Stereo Strip
Thru	l1	periorina di antico di mangana di antico							eractivativate Autoropovia republicativo propri vero reconstituta e reconstituta e reconstituta e reconstituta	en e
8326	11	11	12.5 ⁰ 8	89.0°E	11	11	11	11		End IR Stereo Strip
8349	11	11	13.0°s	33.0°E	11	High	71	11		Begin IR Stereo Strip
Thru	11	11			11	11	11	11 		Theophilus, Descartes, Fra Mauro
8393	11	11	04.0°s	15.0°W	11	Low	Good	11	enver-paragoninghiya adalah kili padalah erdazak elinin vezor	End IR Stereo Strip
8394	11	11	.2.0°s	93.0°E	99	High	Fair	11	7 8 7 7 7 1000	Begin IR Stereo Strip
Thru	11	11		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						Ansgarius, Kapteyn C, Lame, McClure
8433	11	. 11	14.0°s	51.0°E	11	ff	Poor	11		End IR Stereo Strip
8434	11	11	12.0°s	27.0°E	ff	11	ff	10°-20 ⁰	North	Theophilus
8435	11	11	11	11	11	11	11	11		
8436	11	11	11.0°s	15.0°E	11	11	11	Vertical	ALGOS PATRO HILAS PATRO HILAS SANCHITAS TRANSPORTENCIAN PROPRIEDUS TOPO TOPO TOPO TOPO TOPO TOPO TOPO TOP	Descartes
8437	11	11	11	11	11	11	<u>!!</u>	11		TT westerner than all the state of the state
8438	11	(1	04.0°s	15.0°W	11	Medium	Fair	11	water species of the	Fra Mauro
8439	11	11	11	11	11	11	11	!!		Fra Mauro End Experiment

APOLLO 12 PHOTOGRAPHY Magazine BB, CC, DD Film 3401 MBW

Time Reference GET GMT GMT

Frame #	Camera # f Length	Approx. Photo Scale		cipal int	Fwd O/L	Sun Angle	Photo Quality	Approx. Tilt	Direction of	Description
77	Longin	Piloto Scale	Lat	Long	U/ L.	Aligie	Quulliy	Min Max	Tilt	
8298	80mm	1:1,500,000	04.0S	133.0°E	None	Low	Good	Vertical	NAMES WITH WAYS CITIES	Crater #286
8299	11	11	06.0°S	120.0°E	60%	79	11	11		Begin Stereo Strip Crater II
Thru	11	11			anni alangini (Tingrat A. di anna a sam		11	11		
8326	11	11	12.58	89,0°E	11	11	**************************************		and a state of the	End Stereo Strip
8327	11	11	14.08	54.0 ⁰ E	11	High	Fair	TT	ence ware was guine with	Begin Stereo Strip
Thru	11	11			11	11	11	P	mentioning includes placing all and participations of the section	McClure, Theophilus
8393	11	11	04.0°S	15.0°W	11	Medium	Fair to Good	11	nurge error error error error error	Descartes, Lalande
8394	11	11	13.0%	93.0°E	11	11	Good		geran kapita dirita ekaba antak geran kapita dirita ekaba antak	Begin Stereo Strip Ansgarius
Thru	11	11				**		11	earn eine dals vine enzy	Kapteyn A and C
8433	11	11	14.0°S	51.0°E	11	†1	Fair	P of the contraction of the cont	AND THE STATE OF T	End Stereo Strip McClure
8434	11	11	12.0°S	27.0°E	11	High	Good	10°-20°	North	Theophilus
8435	11	11	11	11	II	11	11		1 1	
8436.	11	11	11.0°S	15.0°E	<u> </u>	11	11	Vertical	entition entition deptide version.	
8437	11	11	11	11	11	11	10	11		11
8438 & 8439	"	11	04.0°s	15.0°W	11	11	11	11	ens cus sus cut nu	Fra Mauro End Experiment



MAGAZINES A through P

Magazines A through P are 16-mm color and black and white sequence photography of the lunar surface taken from the CSM and the LM. There are a total of 15 magazines lettered A through P, with the letter J excluded. All magazines are color with the exception of magazine I. The quality of the photography ranges from poor to good.

Magazines A through D portray (in order): transposition and docking, the LM in formation prior to landing, LM ascent from the CSM, and the LM being jettisoned. Magazine C also contains views of the landing site and the Surveyor 3 site as seen through the sextant. Significant surface features covered on these four magazines are the Pyrenees Mountains, the Mare Nectaris, and the craters of Theophilus, Descartes, and Lalande A.

Magazine E is a sextant photography stereo strip running from east to west covering such features as Theophilus Peaks, Lalande A, and Fra Mauro. Also included are Landmark Tracking Sites (CP-1, CP-2, DE-1, and FM-1). The last section of magazine E was taken after TEI and shows the eastern limb of the moon where Basin II, the farside terminator, and the Mare Smythii and Mare Crisium can be seen.

Magazines F through I include (in order) a sextant photography stereo strip, reentry, the CSM interior, and black and white oblique sequences of Herschel, Fra Mauro, and Lalande.

Magazine K contains exposures of the CSM, Fra Mauro, Lalande, Ptolemaeus, and the LM descent and landing.

Magazines L, M, N, and O were recorded from the LM after landing and include views of the deployed ALSEP, the American flag, the S Band Antenna, and some of the astronauts' activities during the first EVA.

Magazine P shows the earthrise, Basin II, and the nearside terminator.

MAG: _A____ FILM: _15mm

FRAME NUMBER	LOCATION	DESCRIPTION	REMARKS
1-1600		Transposition and Docking	Good quality
1780-4180	14°S,75°E to 14°S,40°E	Craters Cocombo, Lane, Kapteyn B, Pyrenees Mountains	Good quality
	однования для однования пономожения почення для непоздейно на дого с дере дого для для дого на под него дого н	personneng genterhand gibb indepension of the ord frames for por personnend and between the non-security and the security and	очения на повория напудата починиция отвещения на содо, чения в ст. у Минетоння ИСМУ ТО починиция на починиция
	ментов выполнять на принце на при	ampaninan ulaundan u strong di organia, mundan yang dan umpangan unan usana dan amerikanan terberahan unan manan manahan dah EDV eriti eriti tahun 2.17 mingkannan	generale seine demokration vor demokration vir der ist zeutschen der der Alle Fell (1966 in William) wir demokration von der Alle Fell (1966 in William) wir demokration von demokration von demokration von demokration vir demokration von d
			mengraphine sentententen en medien oder eine kullet. Ett ich misselt graft die 1960 gebrier in 1962 in 1962 in 1962 in 1965 in
	menten de	на населения выполнять двеновам населения <u>проведения двенова</u> об в частвення двенова по под проведения двенова по под под под под под под под под под	herroring PEELECON white period community of the efficiency and acceptance and ac
	man final status particular and throughout the state of the order of t		meneralismen selection in the selection of the selection
			menter S. Lemino Vancio Practica de Control de Participa quant (1,500 il 20 actividad (1,500 il 20 actividad a
			menuncerus vallas Circiti menunda chronis molt moltan da senseppenda e dalla esta come etermino di libraria et
		manus na manus esta companion de la companion	er en en result en
		en consumeration de consumerat de la completa del la completa de la completa de la completa de la completa del la completa	ow de n'harman et en met mesenestet generalestatione dan het als ned tred the state (de d'entre en 14 d'entre e
			а. Б. го положно положно положно то по то положно
		mentakan makadan sala menjakan adam menjakan menjakan menjada menjada Tabi Babahan sebungah Pirakan dengan kebungah Artifakan dengan menjada Pirakan dengan kebungah Artifakan dengan menjada Pirakan dengan kebungah Artifakan dengan menjada Pirakan dengan kebungah dengan menjada Pirakan dengan kebungah dengan menjada Pirakan dengan kebungah dengan dengan menjada Pirakan dengan dengan menjada Pirakan dengan menjada Pirakan dengan menjada Pirakan dengan dengan menjada Pirakan dengan denga	менунын менин атамич электе компония и том оргоном академатерия (пред дектор) (пред дектор) (пред дектор) (пре
· .	эргэ айхнигээх гэх хэвгээ харгаан хайн хан хэргэг хэргэг харгаан харгаан харгаан харгаан харгаан харгаан харгаа	Mini variantenia, manusuumanamanan en "Tall arintis" Saranet malala ta disputamatana 2012 Errati variat eude valen variade en et spanjarias son-valen valenda disputa de Alla	мент постав не нет на везохумен сто и съв начинава авт завежнова в чино в нение част в Мото не начина на
			pananouvasta punky sutra nestsaan akonada daha opanista kasakunada arahapis. (ESE CLI (18 Turanun kasa tasti Afrika

MAG: B FIL M: Color

FRAME NUMBER	LOCATION	DESCRIPTION	REMARKS
1-3415	15 [°] S,30 [°] E to 8 [°] S,14 [°] W	LM in formation prior to landing	Good Quality
		Theophilus, Cyrillus, Cyrillus "B',	
		Kant, Descartes, Dollond, Andel,	merchannen alle Schollen ander en deur mensen der den eine verste mensel der delle stille eine en des mensen d
		Ritchey, Hind, Halley, Albategnius,	
		Klein, Muller, Ptolemaeus, Herschel	
		Lalande ''A''	
3416-5316		LM in formation prior to landing	Good Quality
		(No Surface)	
			рительного мынист и являет жизотом судовать даже дарьным и изгласт подавления являет да пот так я л подавления
			annon var Johnson and primera brancera over and a state deadle code. Total bottomer (FE) and reflect of the co
			allower allations where the end of the end o
			galantarum tronostratornostratornostratorios, esta gara casacta que la sistema de cabicado entre de cabicado e
			Management and the charters are consistent of the state o
			LEC 12565

APOLLO 12 SEQUENCE PHOTOGRAPHY (16mm) MAG: __C FILM: _Color

FRAME NUMBER	LOCATION	DESCRIPTION	REMARKS
1-2258	6°5,120°E to 11°5,98°E	Basin II Area	Poor to Fair quality
2259=2373		Landing Site (Surveyor 3 Crator) Through Sextant	Fair Quality
2374-2554 2555-5459	00°, 31° 88 то 12°s,80° е	Sextant Photography of Lansberg "A" LM ascent from CSM. Sequence ends over Crater Ansgarius	Fair Quality ** Beginning of sequence unplottable.
		·	

MAG: __D FILM: _Color_

FRAME NUMBER	LOCATION	DESCRIPTION	REMARKS
1–3630	13°S,77°E to 15°S,35°E	LM Docking with CSM. Craters	Good Quality
		Ansgarius, Kapteyn "B", Lame, Lohse	
		Crozier, Colombo, Magelhaens,	
		Madler, Theophilus, Sea of Nectar,	
		Fyrenees Mountains	
4726		LM Jettison	Good Quality
			·

MAG: E FILM: Color

FRAME NUMBER	LOCATION	DESCRIPTION	REMARKS
1-616	and the state of the	Bright yellow dot against black background of space	Poor film quality
617-1677	12S,41E to 4S,22W	Sextant photography stereo strip	Fair to Good quality
			(From east to west,
	равинавания выполня в польше выполнения то се т _е место польшения выполнения польшения не шерене част в ставиче		photos partially cover Daguerre, Theophilus, Kant, Dollond, Andel,
generalis es de desemble. Person president, consideration unaturalismo con la "Tras, C.			Ptolemaeus, Lalande "A" & Fra Mauro)
(720)	11.7°S, 33.3°E	Small bright crater in Daguerre	
(823)	11.5°S•26.3°E	Theophilus Peaks	
(917)	11.2°s,20.2°E	South rim of Kant	
(1015)	10.6°S,14.4°E	Dollond	
(1250)	8.9°S,1°E	Small wedge-shaped crater on east rim of Ptolemaeus	
(1452)	6.5°S,10.3°W	West of Lalande "A"	
1678-1859	6°s, 112°E	Sextant photography; landmark tracking site CP-1	Fair Quality
1860-2054	10°s, 56°E	Sextant photography; landmark tracking site CP-2	Poor Quality Over-exposed
2055–2222	09 ⁰ S,15.5 ⁰ E	Sextant photography; landmark tracking site DE-1	Poor
	03°S,17°W	Sextant photography; landmark tracking site FM-1	Fair Quality

MAG: E FILM: Color

FRAME NUMBER	LOCATION	DESCRIPTION	REMARKS
2398-2669 2670-2924	06 [°] S, 112 [°] E 10 [°] S, 56 [°] E	Sextant photography; landmark tracking site CP-1 Sextant photography; landmark tracking site CP-2	Fair Quality Fair Quality
2925_3115	09°S, 15.5°E	Sextant photography; landmark tracking site DF-1 Sextant photography; landmark	Poorover-exposed
3116-3272	03 [°] S,17 [°] W	tracking site FM-1	Fair
3273	Centered near 0° Lat. and 100°E Long.	TEI; eastern Limb of Moon; including Basin II, Smyth's Sea Craters 201, 197, 198, 199, 195	Good Quality
		192, 191, 189, 202, 204, 206, 207 275, 277, 273, 270, 276.	от выполняем и постоя для выполняем постоя постоя выполняем постоя выполняем выполнем
3478-3643	Centered near O ^O Lat.	TEI, eastern limb of Moon	Good Quality
	and 90°E Long.	including farside terminator. Direction of view is south and	· ·
	nde talle eriter klassenser ". 19 20020 S. St. of new Language Language Angeles and English at Language Chapter	southwestward. Includes Sea of Crises, Smyth's Sea, Basin II	
	дан а такжа асайлган негазинан казан автонон автонон автонон автонон автонон автонон автонон автоно зака созманием		MATERIA SI SI SILAT ANI ET SE SILATE SI SILATE
	WY DESCRIPTION OF A JUNE SERVICE WAS ARRESTED AND ARREST OF A SERVICE OF A SERVICE AND	THE APPEAR FOR MANUAL SHEET AND ADDRESS OF THE CHECKNESS AND ADDRESS AND ADDRE	ant time TO (Strong construction and Claim Security about Engine Special appropriate applications of the Construction of the C
		** The first the second control of the secon	
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MAG: __F FILM: Color

FRAME NUMBER	LOCATION	DESCRIPTION	REMARKS
1-3386	3°S,123°E to 3°N,52°W	Sextant Photography Stereo Strip	Good Quality—High Sun Angle—Views are washed out
(84)	4.5°S,120°E	Double Crater on Ridge East on Crater 277	Located on Frame AS12- 54-7953 (Mag. T)
(203)	6°S,112°E	Small Sharp Rim Crater East of Crater 273	Located on Frame AS12- 54-7958 (Mag. T)
(237)	6°S,110.5°E	Small Crater on Southeast Rim of Crater 273	Located on Frame AS12- 54-7960 (Mag. T)
(323)	7°S,106.5°E	Rim of Sharp Crater North of Basin II	Located on Frame AS12- 54-2964 (Mag. T)
(395)	7.5°S,104°E	Rim of Crater Complex North of Basin II	Located or Frame AS12- 54-7967 (Mag T)
(920)	10.5°S.76°E	Bright Crater in La Perouse	Located on Frame AS12- 54-7994 (Mag T)
(2308)	7 ⁰ S. 4. 0 ⁰ Е	Small Bright Crater South of Hipparchus	Located on Frame AS12- 54-8063 (Mag T)
(2336)	7°S,2.5°E	Old Crater and Small Bright Crater North of Müller	Located on Frame AS12- 54-8065 (Mag T)
(2433)	6°s,3° _W	West Rim of Herschel	Located on Frame AS12- 54-8070 (Mag T)
(2494)	5.5°S,6°W	Double Crater East of Lalande	Located on Frame AS12- 54-8073 (Mag T)
(2588)	5°S.91°W	Small Crater West of Lalande	Located on Frame AS12- 54-8078 (Mag T)
(2645)	4.5°S,13.5°W	Small Crater Northeast of Fra Mauro	Located on Frame AS12- 54-8081 (Mag T)
(2663)	4°S.•14.5°W	Small Crater Northeast of Fra Mauro	Located on Frame AS12- 54-8081 (Mag T)
(2703)	4°S,16.5°W	Small Sharp Crater North	Located on Frame AS12- 54-8083 (Mag T)

MAG: __F FILM: Color

FRAME NUMBER	LOCATION	DESCRIPTION	REMARKS	
(2746)	3.5°E,18.5°W	Juncture of Mare and Highlands North of Fra Mauro	Located on Frame AS12- 54-8083 (Mag T)	
(2758)	3°s,20.5°W	Mare Northwest of Fra Mauro	Located on Frame AS12- 54-8086 (Mag T)	
(2917)	1.5°S _. ,27°W	Small Double Crater South of Lansburg	Located on Frame AS12- 54-8093 (Mag T)	
(2968)	1.5°s,29.5°W	Small Crater and Rille Northwest of Lansberg "G"	Located on Frame AS12- 54-8096 (Mag T)	
(3096)	.5°N,336°W	Small Crater and Rille Southeast of Encke "C"	Located on Frame AS12- 54-8103 (Mag T)	
(3144)	1°N,38.5°W	Small Triple Crater South Encke "T"	Located on Frame AS12- 54-8105 (Mag T)	
(3169)	1 [°] №,•40.5 [°] W	Double Crater North of Encke "E"	Located on Frame AS12- 58-8106 (Mag T)	
3387-3856		Solar Eclipse by Earth	Good Quality	

MAG: G FILM: Color

FRAME NUMBER	LOCATION	DESCRIPTION	REMARKS
1-5519		Re-entry, drag and main parachute	Good Quality
		deployment	

LEC 12569

MAG: H FILM: Color

FRAME	NUMBER	LOCATION	DESCRIPTION	REMARKS	
1-1103		CSM Interior	Crew shaving, astronaut using	Fair to Good Quality	
			Hasselblad 70-mm Camera, Astronaut		
			exercising, drinking.		

MAG: <u>IK</u> FILM: <u>B&W</u>, <u>Color</u>

FRAME NUMBER	LOCATION	DESCRIPTION	REMARKS	
1-2000	7°s,8°E to 6°s,3°W	Oblique Sequence to Herschel,	Poor to Fair Quality	
		includes craters Hind, Halley,		
		Muller, North Portion of		
		Ptolemaeus		
2001–3431		Too poor Quality to Plot	Poor Quality	
3432-4911	5°S,11°W to 35°S,17°W	Oblique Sequence to Fra Mauro	Poor to Fair Quality	
4912-6000	6°s,4°W to 4°s,9°W	Oblique Sequence to Lalande	Poor to Fair Quality	
1-1164	7 ^o S,0 ^o to 5 ^o S, 20 ^o W	CSM from LM, Fra Mauro, Perry "L"	Poor Quality	
		& "C", Lalande, Lalande "A", "C",		
		Herschel, Ptolemaeus		
1165-5494	2°5,26°W to 3°5,23°W	LM Descent and Landing	Good Quality	

MAG: ___ FILM: Color

FRAME NUMBER	LOCATION	DESCRIPTION	REMARKS	
1–1557	Landing Site (3°S,23°W)	View out of LM window looking	Good Quality	
		northwest. Astronaut during EVA.		
1558_ 4116	Landing Site (3°S, 23°W)	Astronaut collecting lunar surface	Good Quality	
		sample.		
. 4117-4814	Landing Site (3°S,23°W)	ALSEP Deployment Site.	Fair Quality	
per la contraction come en un accion de trada describato contracto de cinco esco e constant cinco describato de la constant de				

MAG: M FILM: Color

FRAME NUMBER	LOCATION	DESCRIPTION	REMARKS	
1-3808	Landing Site (3°S,23°W)	View from landed LM (window) look-	Good Quality	
		ing Northwest. Astronaut during		
		EVA.		
3809-5466	Landing Site (3°S,23°W)	View from landed LM (window)	Good Quality	
		looking northwest. Shows American		
		Flag, deployed ALSEP, S Band		
		Antenna.		
5467-5576	Landing Site (3°S,23°W)	View from landed LM looking west.	Good Quality	
		Shows IM Shadow.		

MAG: N FILM: Color

FRAME NUMBER	LOCATION	DESCRIPTION	REMARKS
1-88	Landing Site(3°S,23°W)	View from landed LM (window).	Good Quality
		Astronaut during EVA.	
89-5539	Landing Site(3°S,23°W)	Panerama, Flag, ALSEP, LM shadow,	Poor-out of focus
		S Band Antenna	

MAG: 0 FILM: Color

FRAME NUMBER	LOCATION	DESCRIPTION	REMARKS	
1-5518	LM Landing Site(3°S;23W	Taken from LM window after landing,	Good Quality	
		Shows American Flag. S Band		
		Antenna: Direction of View North,		
		Astronaut during EVA.		
			paramente de la compresión de compresión de compresión de designación de de designación de desig	
	·			

MAG: P FILM: Color

FRAME NUMBER	LOCATION	DESCRIPTION	REMARKS
1-332		Overexposed & Unusable	
333-781	2°S,25°W to 2°S,27°N	Lansberg "N"	Good Quality
782-1181	10°S,105°E to 11°S,	Earthrise, Basin II	Poor Quality
	100°E		Dirty Window Out-of-Focus
1182-2694	3°N,40°W to 3°N,43°W	Terminator, Maestlin "R"	Fair Quality
2695–3157		Blurry CSM from LM	Poor Quality
3158-3456		Too poor quality to plot	

APOLLO 12 LUNAR CLOSEUP STEREOSCOPIC PHOTOGRAPHY (35 mm)

MAGAZINE FF Frames AS12-57-8441 through 8455

Magazine FF consists of 15 stereoscopic frames of 35-mm film. The photography shows the lunar surface and footprint impressions.