

SPUDS

NSSDC

71-13

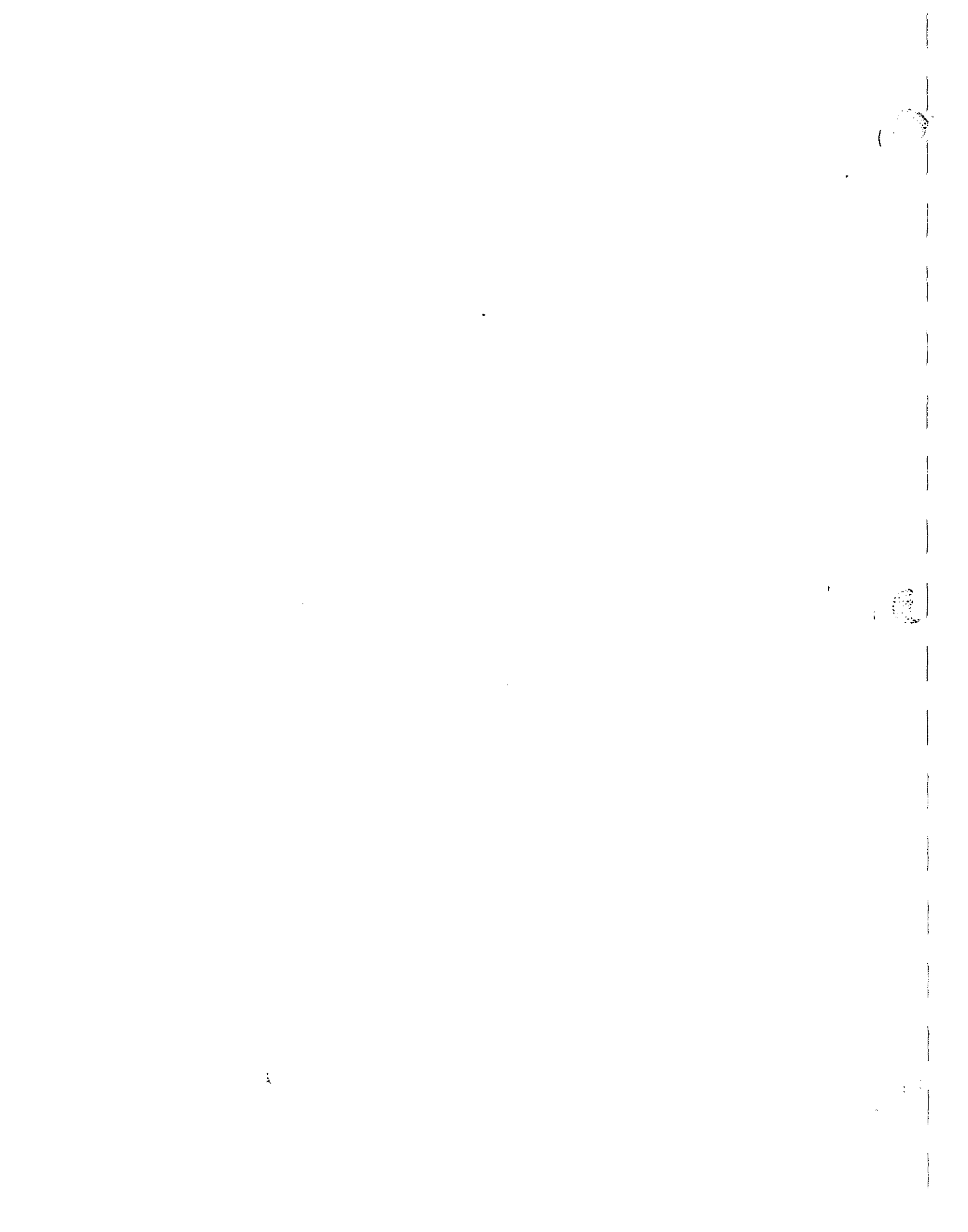
LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

MAY 1971



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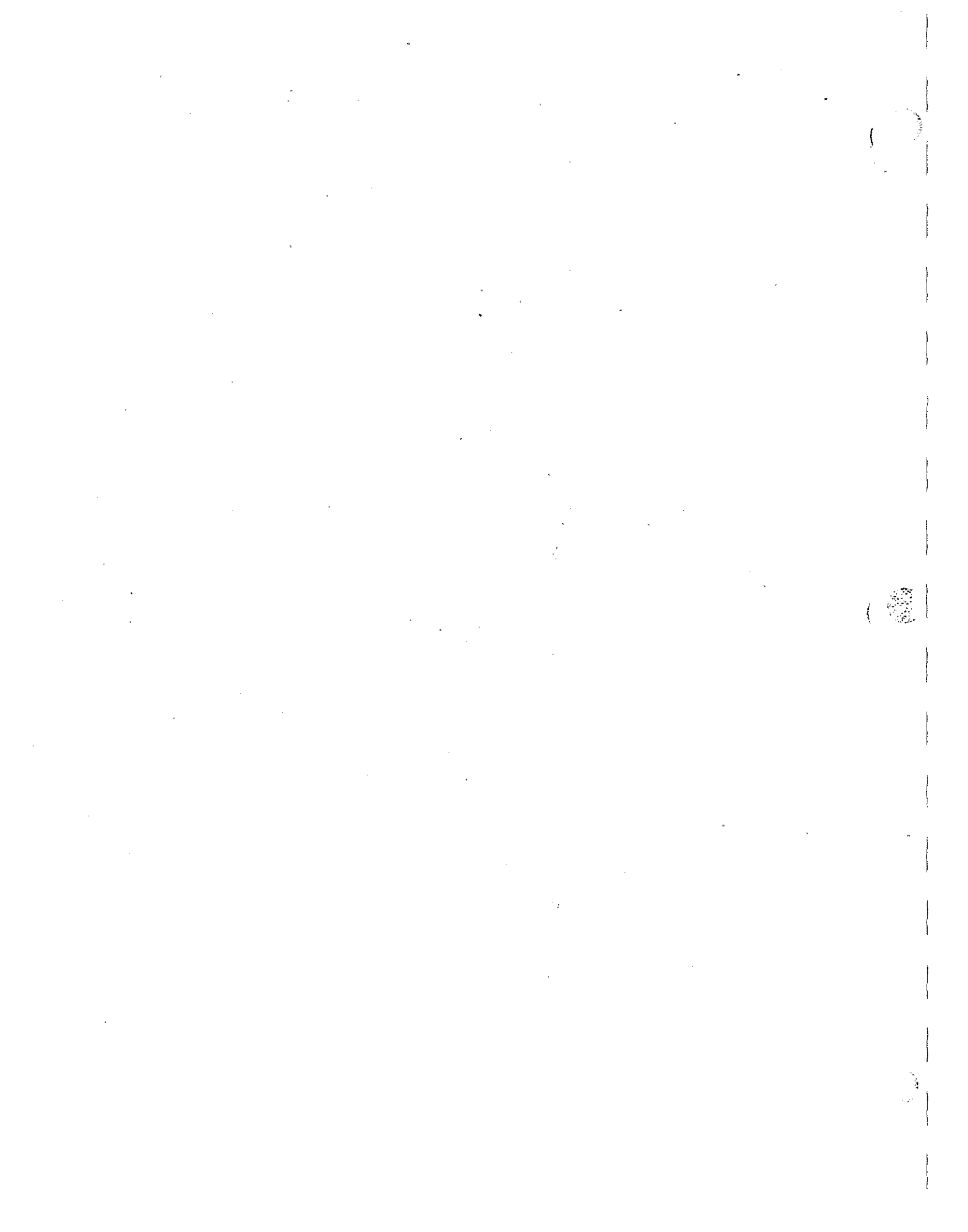
NSSDC 71-13

LUNAR ORBITER
PHOTOGRAPHIC SUPPORTING DATA

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May 1971

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Goddard Space Flight Center
Greenbelt, Maryland 20771



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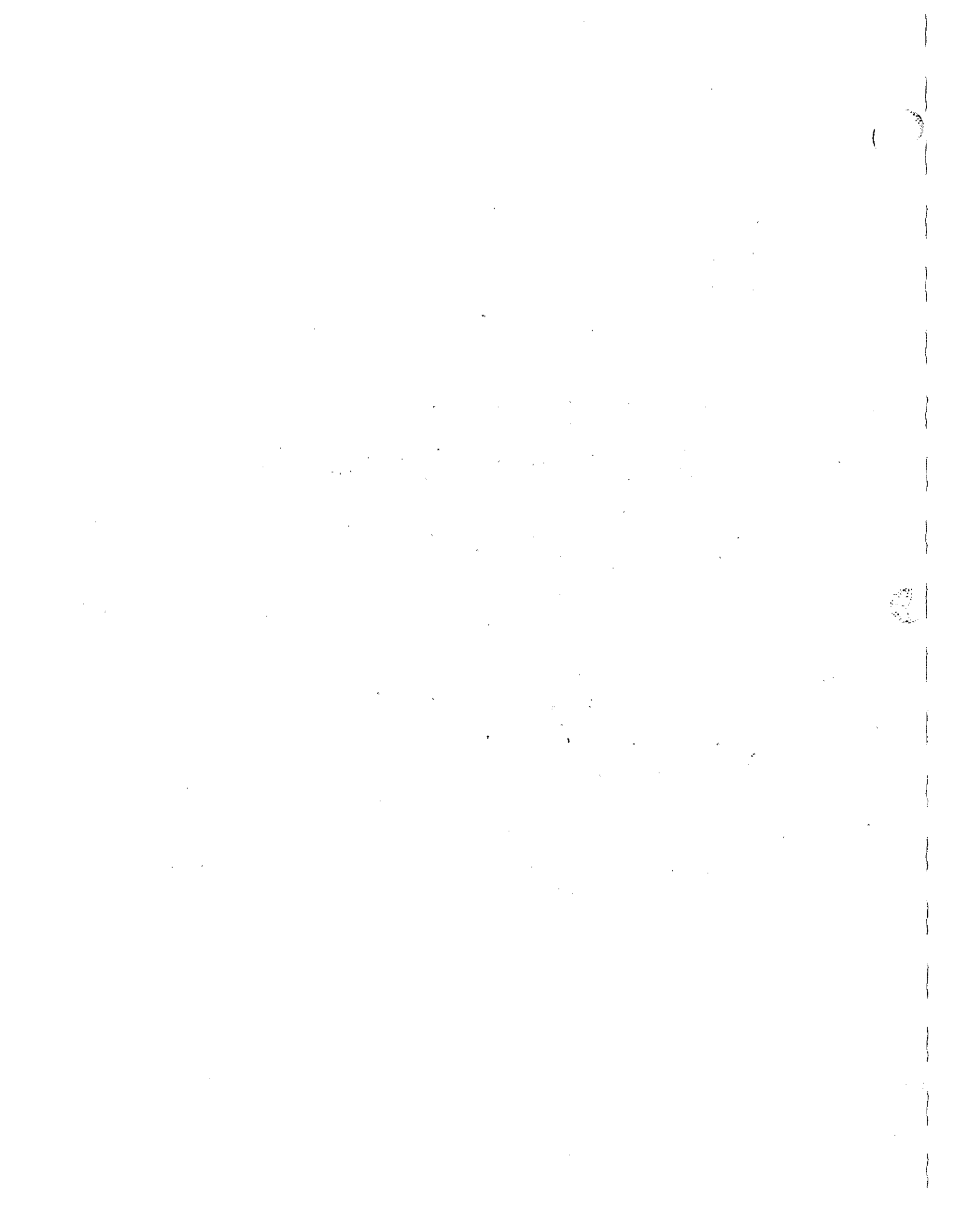
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LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

INTRODUCTION

This document contains photographic supporting data for Lunar Orbiters 1 through 5. These data, which were compiled by the National Space Science Data Center (NSSDC), are necessary for the interpretation and analysis of high- and medium-resolution Lunar Orbiter photographs. This document describes and presents the NSSDC Lunar Orbiter Photographic Supporting Data printouts. Definitions of the elements of the data base and the search capabilities of the NSSDC system used to produce these and other printouts are also included.

PHOTOGRAPHIC SUPPORTING DATA

The NSSDC data file for Lunar Orbiter photographic supporting data was compiled from the latest revised and corrected version of photographic support data provided by The Boeing Company under contract to NASA/Manned Spacecraft Center. This version contains revisions to the Lunar Orbiter supporting data prepared by The Boeing Company in 1969 (References 1 to 5).

The photographic supporting data are accurate only to the extent that the input data are error free and that assumptions made in the computations are valid; the Boeing data are the latest version of Lunar Orbiter photographic parameters. Revisions to the original data were based on the most recent error analysis and definitions of the lunar model and planetary ephemerides. Descriptions of the recognized sources of error can be found in "Lunar Orbiter Photographic Data" (Reference 6).

The items selected from the Boeing data for inclusion in the NSSDC data output are those thought to have the broadest application to most users of the Lunar Orbiter photographic data. Information included by Boeing but not extracted by NSSDC is shown in Table 1.

The NSSDC Full List Ordered by Mission and Frame Numbers (Appendix A) contains photographic supporting data for a related pair of high- and medium-resolution frames. A sample of the data, as they appear in this printout, is shown in Figure 1. Definitions of the items (column headings) contained in each entry are given in Table 2. Figures 2 and 3 show the geometry of the items listed as they relate to photograph exposure and camera film.

Two alternate output listings from the data base of the NSSDC supporting data are included as Appendix B and Appendix C. The list of position parameters ordered by mission and frame number (Appendix B) shows the corner coordinates of high- and medium-resolution frames. The list of illumination parameters ordered by mission and frame number (Appendix C) includes selected illumination data.

LOGICAL SEARCH CAPABILITY

A logical search capability of the data base created for the NSSDC supporting data has been developed for filling specific requests. The allowable search terms are given in Table 3. Each term can be combined in any logical relationship with any other term. For numeric fields, the relationships of 'greater than,' 'less than,' or 'between' are valid in the search terms.

U.S. scientists should address inquiries or requests concerning the logical search to:

National Space Science Data Center
Goddard Space Flight Center
Code 601.4
Greenbelt, Maryland 20771

Telephone: (301) 982-6695

All requests from scientists outside the United States are handled by the World Data Center A for Rockets and Satellites. Inquiries should be addressed to:

World Data Center A for Rockets and Satellites
Goddard Space Flight Center
Code 601
Greenbelt, Maryland 20771 U.S.A.

Additional information concerning the projected capabilities of the NSSDC photographic supporting data file can be found in "An Information Retrieval System for Photographic Data" (Reference 7).

Table 1

Boeing Items Not Included in NSSDC Data File

Actual Photo Length, millimeters	Image Motion Compensation (V/H), radians/second
Actual Photo Width, millimeters	Longitude and Latitude of Mission Design Point Target
Arc Length to Target, Longitude and Latitude	Magnitude of Camera Axis (Spacecraft to Surface)
Camera Axis Clock Angle	Maneuver Angles
Camera Axis Cone Angle	Maneuver Axes Indicators
Canopus Declination	Moon's Local Radius
Canopus Right Ascension	Orbit
Canopus Sensor Clock Angle	Resolution Constant, meters
Canopus Sensor Cone Angle	Resolution Constant, meters/kilometers
Data Distance Between Point of Origin (Principal Point of Autocollimation) of Input Coordinate System and Center Point of Picture, millimeters	Scale Factor, meters/kilometers
Direction Cosines of Camera Axis	Side Angular Field of View
Direction Cosines to Target	Spacecraft Radius
Distance to Target, Longitude and Latitude	Spacecraft State (x,y,z,t,ψ,λ), Selenocentric (1950.0) and Selenographic
Ephemeris Time, Universal Time Conversion	Sun Angle at Nadir
Film Platen Clock Angle	Sun Arc at Nadir
Film Platen Cone Angle	Sun Elevation at Principal Ground Point
Focal Length, millimeters	Sun Sensor Clock Angle
Forward Angular Field of View	Sun Sensor Cone Angle
Forward Overlap Ratio, percent	Time Between Photos
High- and Low-Resolution Notch Points	Time from Periapsis
Horizontal Velocity	True Anomaly

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/10/71

PAGE 1

MISSION/
FRAME NO.

1005
YR.MO.DY 660618
PR.MI.SEC 144249.82

S/C POSITION ALT 218.30 KM
S/C ORIENTATION TILT ANG 5.36 DEG
TILT AZIM 292.07 DEG
INCID ANG 68.41 DEG
EMISS ANG 6.03 DEG
PHASE ANG 62.88 DEG
N.DEV. 347.33 DEG
ALPHA 5.51 DEG

PHOTO ILLUMINATION
SUN AZIM 89.15 DEG
INCID ANG 68.41 DEG
EMISS ANG 6.03 DEG
PHASE ANG 62.88 DEG
ALPHA 5.51 DEG

PRINCIPAL POINT
LATITUDE 1.88 DEG
LONGITUDE 84.00 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 4.17 DEG AB 175.0 KM
A LONG 67.05 DEG BC 153.7 KM
B LAT -1.45 DEG CD 188.6 KM
B LONG 85.74 DEG DA 156.0 KM
C LAT -0.55 DEG TILT DISTANCE 7.4
D LAT 5.54 DEG
D LONG 82.07 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 3.08 DEG AB 78.8 KM
A LONG 84.61 DEG BC 19.9 KM
B LAT 0.54 DEG CD 79.5 KM
B LONG 84.03 DEG DA 20.1 KM
C LAT 0.68 DEG TILT DISTANCE 57.0
D LAT 3.24 DEG
D LONG 83.96 DEG

MISSION/
FRAME NO.

1006
YR.MO.DY 660618
PR.MI.SEC 144259.7C

S/C POSITION ALT 217.53 KM
S/C ORIENTATION TILT ANG 4.84 DEG
TILT AZIM 293.16 DEG
INCID ANG 67.84 DEG
EMISS ANG 5.45 DEG
PHASE ANG 62.88 DEG
N.DEV. 347.30 DEG
ALPHA 4.94 DEG

PHOTO ILLUMINATION
SUN AZIM 89.11 DEG
INCID ANG 67.84 DEG
EMISS ANG 5.45 DEG
PHASE ANG 62.88 DEG
ALPHA 4.94 DEG

PRINCIPAL POINT
LATITUDE 1.76 DEG
LONGITUDE 84.57 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 4.04 DEG AB 174.9 KM
A LONG 67.63 DEG BC 152.8 KM
B LAT -1.58 DEG CD 187.0 KM
B LONG 86.31 DEG DA 155.0 KM
C LAT -0.65 DEG TILT DISTANCE 6.7
D LAT 5.38 DEG
D LONG 82.67 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 2.95 DEG AB 78.5 KM
A LONG 85.18 DEG BC 19.8 KM
B LAT 0.42 DEG CD 79.1 KM
B LONG 84.60 DEG DA 19.9 KM
C LAT 0.56 DEG TILT DISTANCE 51.5
D LAT 3.11 DEG
D LONG 84.54 DEG

Figure 1 - Sample of Full List Ordered by Mission and Frame Number

Table 2

Definition of Items in Lunar Orbiter Supporting Data

<u>Frame Identification</u>		<u>Photo Illumination</u>	
MISSION/ FRAME NO.	A four-digit number given in upper left-hand corner, e.g., 1005. First digit (1) is Lunar Orbiter mission number. The next three digits (005) give frame number. Thus, 1005 is frame number 5 from the Lunar Orbiter 1 mission.	SUN AZIM	Sun Azimuth at Principal Ground Point - Azimuth of sun's rays at camera axis intersection, measured clockwise from north.
		INCID ANG	Incidence Angle - Angle between surface normal and sun's rays.
		EMISS ANG	Emission Angle - Angle between surface normal and camera axis. Also, angle between photo image plane and subject plane.
<u>Time</u>		PHASE ANG	Phase Angle - Angle between camera axis and sun's rays.
YR,MO,DY	Year, Month, and Day of exposure given as a six-digit number in universal time (UT).	ALPHA	Alpha - Angle that is the projection of surface normal into phase angle plane. This angle represents tilt of surface toward or away from sun.
HR,MI,SEC	Hour, Minute, and Second of exposure given as an eight-digit number in UT. Hundredths of a second follow the decimal point.		
<u>S/C (Spacecraft) Position</u>		<u>Principal Point</u>	
ALT	Spacecraft Altitude - Altitude of spacecraft above lunar surface.	LATITUDE LONGITUDE	Latitude and Longitude of Principal Ground Point - Intersection of camera axis with lunar surface.
ALT RT	Mean Altitude Rate - Rate of change of altitude with respect to time.		
LAT, LONG	Latitude and Longitude of Nadir Point - Selenographic latitude (longitude) of point on lunar surface directly below spacecraft.	<u>Medium and High Resolution</u>	
		CORNER CO- ORDINATES	Corner Coordinates - Frame corners identified as A, B, C, and D. Read clockwise starting at A, the upper right corner.
<u>S/C (Spacecraft) Orientation</u>		SIDE LENGTH	Side Length - The distance between corner points.
TILT ANG	Tilt Angle - Angle between camera axis and spacecraft nadir line.	TILT DISTANCE	Tilt Distance - Distance from image of the camera axis intersect to image of nadir point measured on spacecraft film. Given for both high- and medium-resolution frames. Computed at the scale of the spacecraft film.
TILT AZIM	Tilt Azimuth - Azimuth of principal ground point from spacecraft nadir.		
SWING ANG	Swing Angle - Angle between cross-axis of film frame (the Y-axis) and line from center of frame to image of nadir point. Measured positive clockwise from positive Y-axis.		
N. DEV.	North Deviation Angle - Deviation of north from cross-frame (cross) film axis (Y-axis) measured clockwise.		

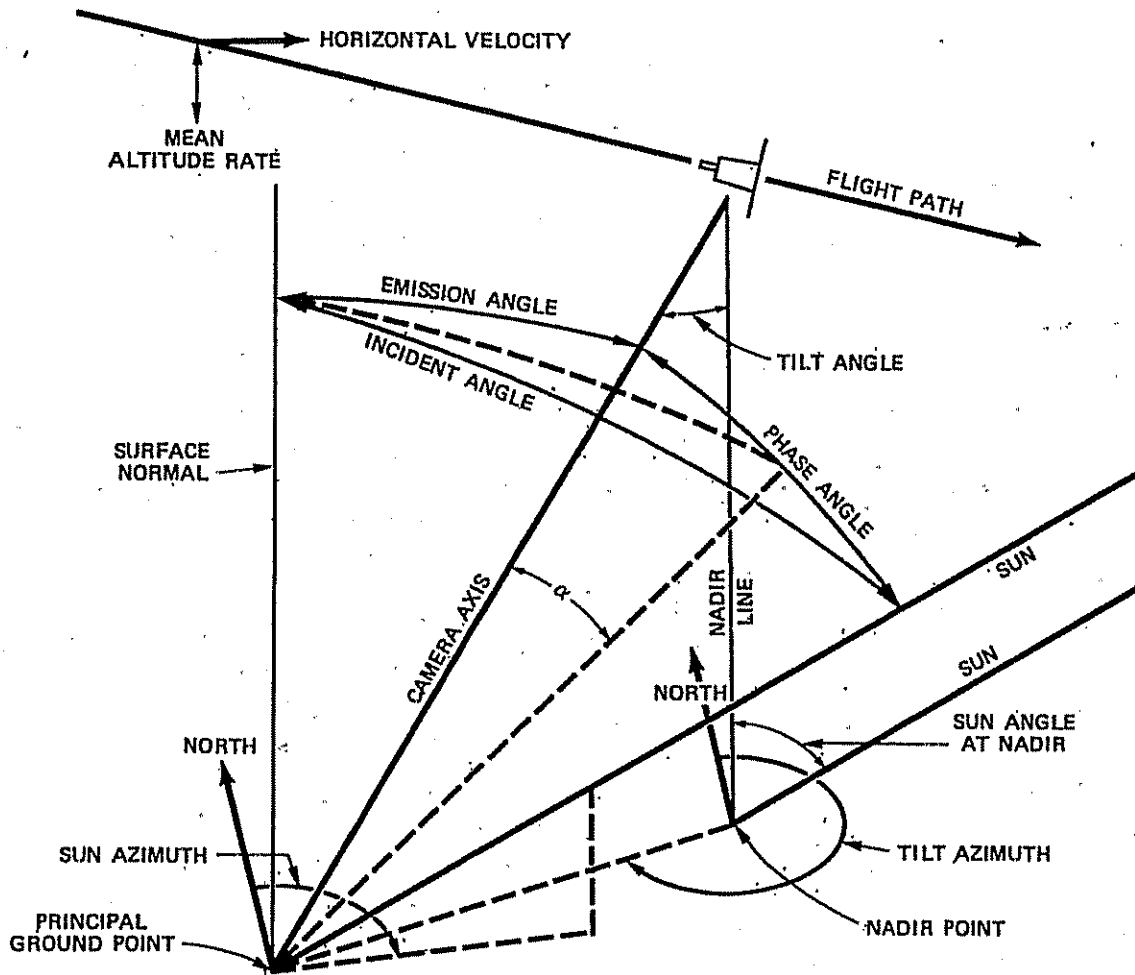
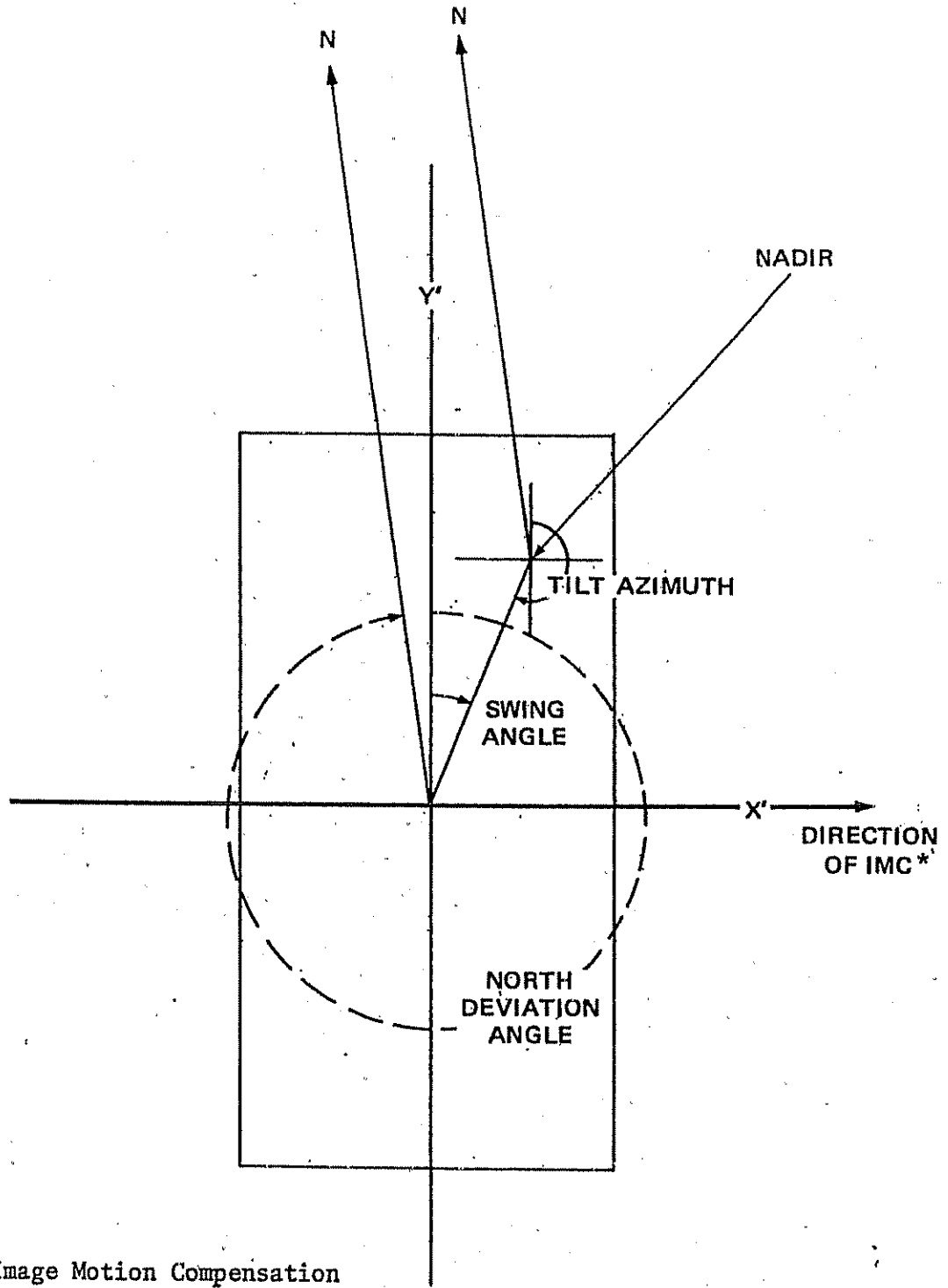


Figure 2 - Geometry of Photographic Parameters



*Image Motion Compensation

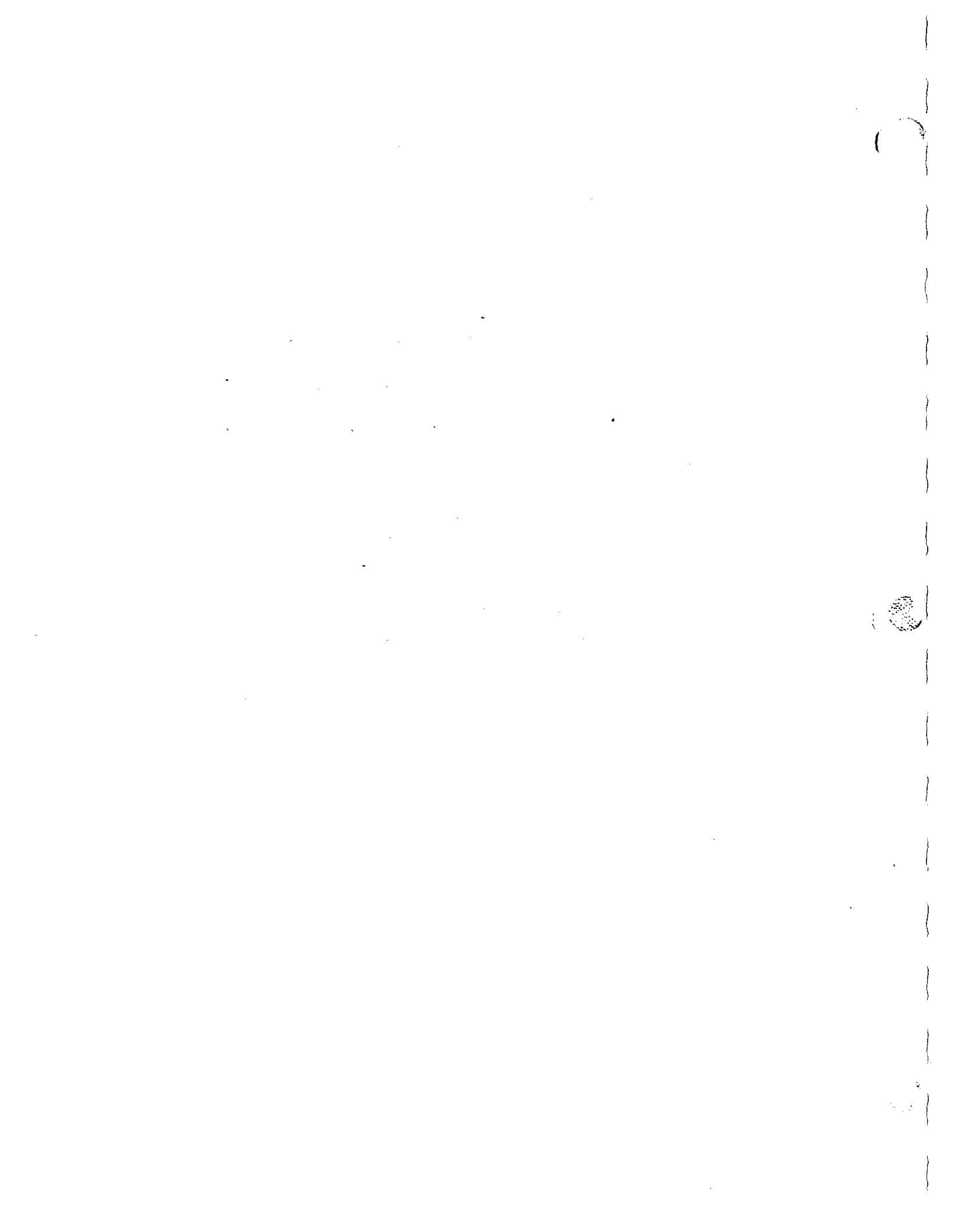
Figure 3 - Camera Film Geometry

Table 3
Data Base Search Terms

<u>Mnemonic</u>	<u>Definition</u>
ALT	Spacecraft Altitude
BOUND	Latitude and Longitude of Corner Points Describing a Quadrangular Boundary
EMISAN	Emission Angle
INC DAN	Incident Angle
PHASAN	Phase Angle
POINT	Latitude and Longitude of a Point Which Must Be Included in a Photograph
PPLAT	Principal Point Latitude
PPLONG	Principal Point Longitude
RES	Resolution (High and/or Medium)
SCLAT	Spacecraft Latitude
SCLONG	Spacecraft Longitude
SUNAZ	Sun Azimuth
TILTAN	Spacecraft Tilt Angle
TILTAZ	Spacecraft Tilt Azimuth

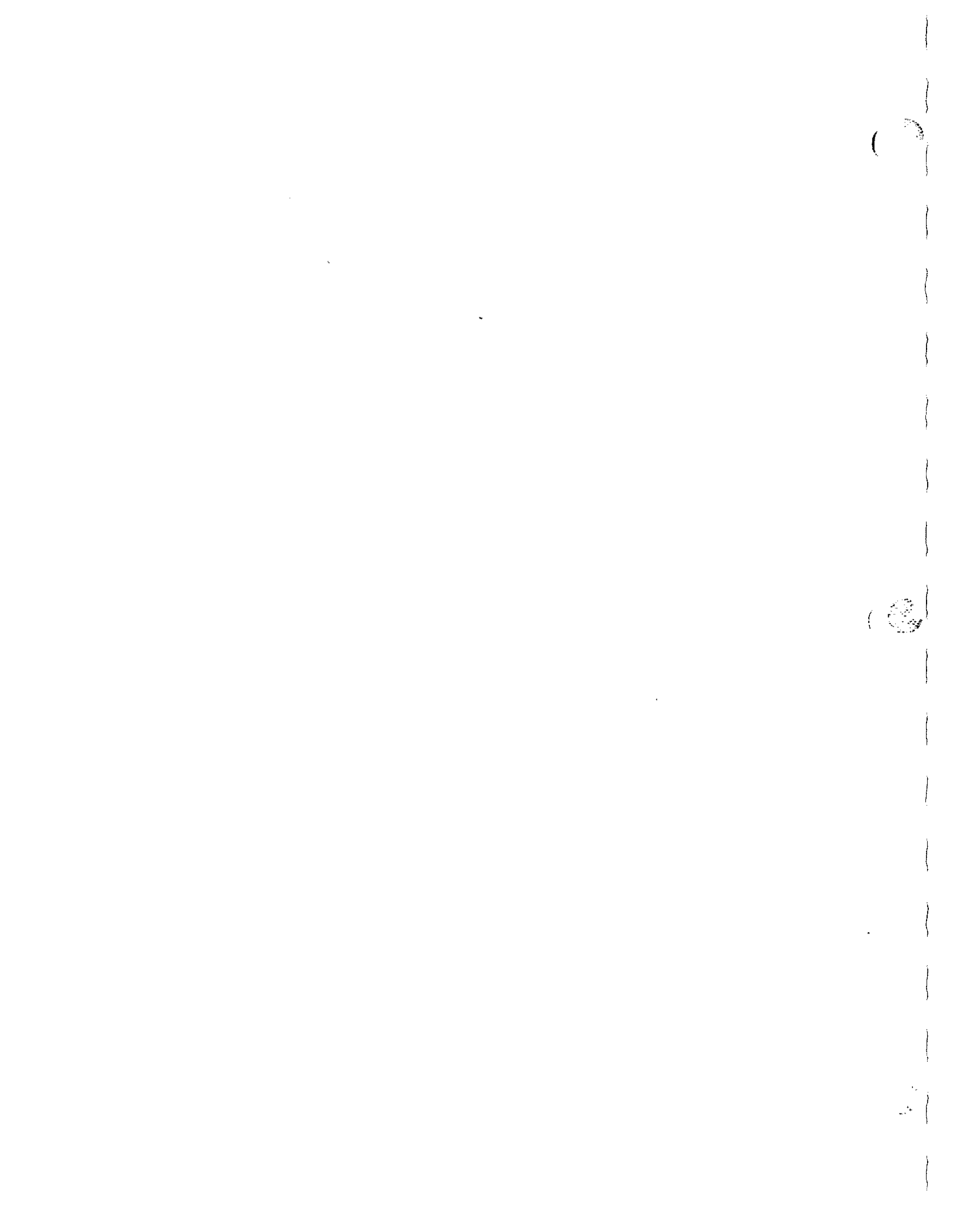
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1. Moyers, W. G., "Lunar Orbiter Improved Photo Support Data Lunar Orbiter I," The Boeing Company, D2-100815-1, NASA CR-66735-1.
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3. Moyers, W. G., "Lunar Orbiter Improved Photo Support Data Lunar Orbiter III," The Boeing Company, D2-100815-3, NASA CR-66735-3.
4. Moyers, W. G., "Lunar Orbiter Improved Photo Support Data Lunar Orbiter IV," The Boeing Company, D2-100815-4, NASA CR-66735-4.
5. Moyers, W. G., "Lunar Orbiter Improved Photo Support Data Lunar Orbiter V," The Boeing Company, D2-100815-5, NASA CR-66735-5.
6. Beeler, M., and K. Michlovitz, "Lunar Orbiter Photographic Data," NASA-GSFC, NSSDC 69-05, June 1969.
7. Blum, B. I., "An Information Retrieval System for Photographic Data," NASA-GSFC, NSSDC 69-09, September 1969.



APPENDIX A

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA
FULL LIST ORDERED BY MISSION AND FRAME NUMBER



LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

PAGE 1

04/10/71

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.

1005
YR,MO,DY
HR,MI,SEC

S/C POSITION
ALT 218.30 KM
ALT RT -0.0804 KM/SEC
LAT 1.63 DEG
LONG 84.62 DEG

S/C ORIENTATION
TILT ANG 5.36 DEG
TILT AZIM 292.07 DEG
SWING ANG 99.27 DEG
N.DEV. 347.33 DEG

PHOTO ILLUMINATION
SUN AZIM 89.15 DEG
INCLD ANG 68.41 DEG
EMISS ANG 6.03 DEG
PHASE ANG 62.88 DEG
ALPHA 5.51 DEG

PRINCIPAL POINT
LATITUDE 1.88 DEG
LONGITUDE 84.00 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 4.17 DEG AB 175.0 KM
A LONG 87.05 DEG BC 153.7 KM
B LAT -1.46 DEG CD 188.6 KM
B LONG 85.74 DEG DA 156.0 KM
C LAT -0.55 DEG TILT DISTANCE 7.4
D LAT 5.54 DEG
D LONG 82.67 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 3.08 DEG AB 78.8 KM
A LONG 84.61 DEG BC 19.9 KM
B LAT 0.54 DEG CD 79.5 KM
B LONG 84.03 DEG DA 20.1 KM
C LAT 0.68 DEG TILT DISTANCE 57.0
D LAT 3.24 DEG
D LONG 83.96 DEG

MISSION/
FRAME NO.

1006
YR,MO,DY
HR,MI,SEC

S/C POSITION
ALT 217.53 KM
ALT RT -0.0767 KM/SEC
LAT 1.52 DEG
LONG 85.13 DEG

S/C ORIENTATION
TILT ANG 4.84 DEG
TILT AZIM 293.18 DEG
SWING ANG 100.35 DEG
N.DEV. 347.30 DEG

PHOTO ILLUMINATION
SUN AZIM 89.11 DEG
INCLD ANG 67.84 DEG
EMISS ANG 5.45 DEG
PHASE ANG 62.88 DEG
ALPHA 4.94 DEG

PRINCIPAL POINT
LATITUDE 1.76 DEG
LONGITUDE 84.57 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 4.04 DEG AB 174.9 KM
A LONG 87.63 DEG BC 152.8 KM
B LAT -1.58 DEG CD 187.0 KM
B LONG 86.31 DEG DA 155.0 KM
C LAT -0.65 DEG TILT DISTANCE 6.7
D LAT 5.38 DEG
D LONG 82.67 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.95 DEG AB 78.5 KM
A LONG 85.18 DEG BC 19.8 KM
B LAT 0.42 DEG CD 79.1 KM
B LONG 84.60 DEG DA 19.9 KM
C LAT 0.56 DEG TILT DISTANCE 51.5
D LAT 3.11 DEG
D LONG 84.54 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

MISSION/
FRAME NO.

1007
YR. MO. DY
HR. MI. SEC

S/C POSITION
ALT 216.79 KM
ALT RT -0.0730 KM/SEC
LAT 1.41 DEG
LONG 85.64 DEG

S/C ORIENTATION
TILT ANG 4.33 DEG
TILT AZIM 294.50 DEG
SWING ANG 101.68 DEG
N.DEV. 347.27 DEG

PHOTO ILLUMINATION
SUN AZIM 89.07 DEG
INCID ANG 67.27 DEG
EMISS ANG 4.87 DEG
PHASE ANG 62.88 DEG
ALPHA 4.37 DEG

PRINCIPAL POINT
LATITUDE 1.63 DEG
LONGITUDE 85.15 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 3.92 DEG AB 174.8 KM
A LONG 88.20 DEG BC 151.9 KM
B LAT -1.70 DEG CD 185.5 KM
B LONG 86.89 DEG DA 154.2 KM
C LAT -0.76 DEG TILT DISTANCE 6.0
C LONG 81.96 DEG
D LAT 5.23 DEG
D LONG 83.27 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 2.82 DEG AB 78.2 KM
A LONG 85.75 DEG BC 19.7 KM
B LAT 0.31 DEG CD 78.8 KM
B LONG 85.18 DEG DA 19.8 KM
C LAT 0.44 DEG TILT DISTANCE 46.0
C LONG 84.54 DEG
D LAT 2.98 DEG
D LONG 85.11 DEG

MISSION/
FRAME NO.

1008
YR. MO. DY
HR. MI. SEC

S/C POSITION
ALT 216.08 KM
ALT RT -0.0593 KM/SEC
LAT 1.30 DEG
LONG 86.15 DEG

S/C ORIENTATION
TILT ANG 3.83 DEG
TILT AZIM 296.19 DEG
SWING ANG 103.37 DEG
N.DEV. 347.25 DEG

PHOTO ILLUMINATION
SUN AZIM 89.03 DEG
INCID ANG 66.69 DEG
EMISS ANG 4.30 DEG
PHASE ANG 62.88 DEG
ALPHA 3.80 DEG

PRINCIPAL POINT
LATITUDE 1.51 DEG
LONGITUDE 85.72 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 3.79 DEG AB 174.7 KM
A LONG 88.78 DEG BC 151.1 KM
B LAT -1.82 DEG CD 184.0 KM
B LONG 87.46 DEG DA 153.3 KM
C LAT -0.86 DEG TILT DISTANCE 5.3
C LONG 82.56 DEG
D LAT 5.07 DEG
D LONG 83.86 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 2.69 DEG AB 77.9 KM
A LONG 86.32 DEG BC 19.6 KM
B LAT 0.19 DEG CD 78.4 KM
B LONG 85.75 DEG DA 19.8 KM
C LAT 0.32 DEG TILT DISTANCE 40.6
C LONG 85.12 DEG
D LAT 2.85 DEG
D LONG 85.69 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

PAGE 3

04/10/71

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.
1009

YR. NO. DY 660E18
HR. MI. SEC 144329.30

TIME 660E18

S/C POSITION ALT 215.42 KM
SUN AZIM 88.99 DEG
INCID ANG 66.12 DEG
LAT 1.19 DEG
LONG 86.66 DEG

S/C ORIENTATION TILT ANG 3.32 DEG
TILT AZIM 298.39 DEG
SWING ANG 105.56 DEG
N.DEV. 347.23 DEG

PHOTO ILLUMINATION SUN AZIM 88.99 DEG
INCID ANG 66.12 DEG
EMISS ANG 3.74 DEG
PHASE ANG 62.88 DEG
ALPHA 3.23 DEG

PRINCIPAL POINT LATITUDE 1.38 DEG
LONGITUDE 86.29 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 2.57 DEG AB 77.6 KM
A LONG 89.35 DEG BC 19.5 KM
B LAT -1.94 DEG CD 78.1 KM
B LONG 88.03 DEG DA 19.7 KM
C LAT -0.97 DEG TILT DISTANCE 35.3
D LAT 4.92 DEG
D LONG 84.46 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 2.57 DEG AB 174.6 KM
A LONG 89.35 DEG BC 150.4 KM
B LAT -1.94 DEG CD 182.6 KM
B LONG 88.03 DEG DA 152.6 KM
C LAT -0.97 DEG TILT DISTANCE 4.6
D LAT 4.92 DEG
D LONG 84.46 DEG

MISSION/
FRAME NO.
1010

YR. NO. DY 660E18
HR. MI. SEC 144339.15

TIME 660E18

S/C POSITION ALT 214.79 KM
SUN AZIM 88.94 DEG
INCID ANG 65.55 DEG
LAT 1.08 DEG
LONG 87.17 DEG

S/C ORIENTATION TILT ANG 2.83 DEG
TILT AZIM 301.57 DEG
SWING ANG 108.53 DEG
N.DEV. 347.21 DEG

PHOTO ILLUMINATION SUN AZIM 88.94 DEG
INCID ANG 65.55 DEG
EMISS ANG 3.18 DEG
PHASE ANG 62.88 DEG
ALPHA 2.66 DEG

PRINCIPAL POINT LATITUDE 1.26 DEG
LONGITUDE 86.87 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 2.44 DEG AB 77.4 KM
A LONG 87.47 DEG BC 19.5 KM
B LAT -0.05 DEG CD 77.8 KM
B LONG 86.90 DEG DA 19.6 KM
C LAT 0.09 DEG TILT DISTANCE 30.0
D LAT 2.59 DEG
D LONG 86.84 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 3.55 DEG AB 174.7 KM
A LONG 89.52 DEG BC 149.7 KM
B LAT -2.07 DEG CD 181.3 KM
B LONG 88.61 DEG DA 151.9 KM
C LAT -1.07 DEG TILT DISTANCE 3.9
D LAT 4.77 DEG
D LONG 85.05 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA.

MISSION/
FRAME NO.
1015

YR. MO. DY
660618
HR. MI. SEC
144428.24

S/C POSITION
ALT 212.21 KM
ALT RT -0.0433 KM/SEC
LAT 0.53 DEG
LONG 89.70 DEG

S/C ORIENTATION
TILT ANG 0.93 DEG
TILT AZIM 8.11 DEG
SWING ANG 175.25 DEG
N.DEV. 347.15 DEG

PHOTO ILLUMINATION.
SUN AZIM 88.64 DEG
INCID ANG 62.70 DEG
EMISS ANG 1.05 DEG
PHASE ANG 62.88 DEG
ALPHA -0.18 DEG

PRINCIPAL POINT
LATITUDE 0.65 DEG
LONGITUDE 89.72 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.94 DEG AB 175.4 KM
A LONG 52.79 DEG BC 147.3 KM
B LAT -2.70 DEG CD 175.6 KM
B LONG 91.47 DEG DA 149.6 KM
C LAT -1.62 DEG TILT DISTANCE 1.3
C LONG 86.72 DEG
D LAT 4.04 DEG
D LONG 87.57 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 1.81 DEG AB 76.6 KM
A LONG 90.31 DEG BC 19.2 KM
B LAT -0.65 DEG CD 76.6 KM
B LONG 89.75 DEG DA 19.3 KM
C LAT -0.51 DEG TILT DISTANCE 9.9
C LONG 89.13 DEG
D LAT 1.95 DEG
D LONG 89.69 DEG

MISSION/
FRAME NO.
1016

YR. MO. DY
660818
HR. MI. SEC
144438.03

S/C POSITION
ALT 211.80 KM
ALT RT -0.0396 KM/SEC
LAT 0.42 DEG
LONG 90.21 DEG

S/C ORIENTATION
TILT ANG 1.04 DEG
TILT AZIM 38.14 DEG
SWING ANG 205.29 DEG
N.DEV. 347.14 DEG

PHOTO ILLUMINATION
SUN AZIM 88.60 DEG
INCID ANG 62.14 DEG
EMISS ANG 1.16 DEG
PHASE ANG 62.88 DEG
ALPHA -0.75 DEG

PRINCIPAL POINT
LATITUDE 0.52 DEG
LONGITUDE 90.29 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.82 DEG AB 175.8 KM
A LONG 93.37 DEG BC 147.0 KM
B LAT -2.83 DEG CD 174.6 KM
B LONG 92.04 DEG DA 149.3 KM
C LAT -1.73 DEG TILT DISTANCE 1.4
C LONG 87.31 DEG
D LAT 3.90 DEG
D LONG 88.55 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 1.69 DEG AB 76.5 KM
A LONG 90.88 DEG BC 19.1 KM
B LAT -0.67 DEG CD 76.4 KM
B LONG 90.32 DEG DA 19.3 KM
C LAT -0.63 DEG TILT DISTANCE 11.0
C LONG 89.70 DEG
D LAT 1.83 DEG
D LONG 90.26 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

04/10/71

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.

1017
YR.MO.DY 660818
HR.MI.SEC 144.447.81

PHOTO ILLUMINATION
SUN AZIM 88.53 DEG
INCID ANG 61.57 DEG
EMISS ANG 1.51 DEG
PHASE ANG 62.88 DEG
ALPHA -1.31 DEG

PRINCIPAL POINT
LATITUDE 0.40 DEG
LONGITUDE 90.86 DEG

S/C ORIENTATION
TILT ANG 1.35 DEG
TILT AZIM 58.48 DEG
SWING ANG 225.63 DEG
N.DEV. 347.14 DEG

S/C POSITION
ALT 211.43 KM
ALT RT -0.0359 KM/SEC
LAT 0.31 DEG
LONG -90.72 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 2.70 DEG AB 176.1 KM
A LONG 53.94 DEG BC 146.8 KM
B LAT -2.96 DEG CD 173.7 KM
B LONG 92.60 DEG DA 149.1 KM
C LAT -1.84 DEG TILT DISTANCE 1.8
C LONG 87.88 DEG
D LAT 3.76 DEG
D LONG 89.12 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 1.56 DEG AB 76.4 KM
A LONG 91.45 DEG BC 19.1 KM
B LAT -0.90 DEG CD 76.2 KM
B LONG 90.99 DEG DA 19.2 KM
C LAT -0.75 DEG TILT DISTANCE 14.2
C LONG 90.27 DEG
D LAT 1.70 DEG
D LONG 90.83 DEG

MISSION/
FRAME NO.

1018
YR.MO.DY 660818
HR.MI.SEC 144.457.58

PHOTO ILLUMINATION
SUN AZIM 88.45 DEG
INCID ANG 61.00 DEG
EMISS ANG 1.97 DEG
PHASE ANG 62.88 DEG
ALPHA -1.88 DEG

PRINCIPAL POINT
LATITUDE 0.28 DEG
LONGITUDE 91.42 DEG

S/C ORIENTATION
TILT ANG 1.76 DEG
TILT AZIM 70.23 DEG
SWING ANG 237.38 DEG
N.DEV. 347.14 DEG

S/C POSITION
ALT 211.10 KM
ALT RT -0.0321 KM/SEC
LAT 0.20 DEG
LONG 91.22 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 2.59 DEG AB 176.5 KM
A LONG 94.52 DEG BC 146.7 KM
B LAT -3.09 DEG CD 172.9 KM
B LONG 92.18 DEG DA 149.3 KM
C LAT -1.95 DEG TILT DISTANCE 2.4
C LONG 88.47 DEG
D LAT 3.62 DEG
D LONG 89.70 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 1.44 DEG AB 76.3 KM
A LONG 92.02 DEG BC 19.1 KM
B LAT -1.02 DEG CD 76.1 KM
B LONG 91.45 DEG DA 19.2 KM
C LAT -0.87 DEG TILT DISTANCE 18.6
C LONG 90.84 DEG
D LAT 1.58 DEG
D LONG 91.40 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/10/71 PAGE 8

MISSION/
FRAME NO.
1019

TIME
660818
144517.10

S/C POSITION
ALT 210.80 KM
ALT RT -0.0284 KM/SEC
LAT 0.09 DEG
LONG 91.73 DEG

S/C ORIENTATION
TILT ANG 2.22 DEG
TILT AZIM 77.34 DEG
SWING ANG 244.50 DEG
N.DEV. 347.14 DEG

PHOTO ILLUMINATION
SUN AZIM 88.38 DEG
INCID ANG 60.44 DEG
EMISS ANG 2.49 DEG
PHASE ANG 62.88 DEG
ALPHA -2.44 DEG

PRINCIPAL POINT
LATITUDE 0.15 DEG
LONGITUDE 91.99 DEG

MEDIUM RESOLUTION

CORNER COORDINATE
A LAT 2.47 DEG
A LONG 95.10 DEG
B LAT -3.22 DEG
B LONG 93.76 DEG
C LAT -2.06 DEG
C LONG 89.05 DEG
D LAT -3.48 DEG
D LONG 90.28 DEG

SIDE LENGTH
AB 177.0 KM
BC 146.6 KM
CD 172.1 KM
DA 148.9 KM
TILT DISTANCE
3.1

HIGH RESOLUTION

CORNER COORDINATE
A LAT 1.31 DEG
A LONG 92.58 DEG
B LAT -1.14 DEG
B LONG 92.02 DEG
C LAT -1.00 DEG
C LONG 91.41 DEG
D LAT 1.45 DEG
D LONG 91.96 DEG

SIDE LENGTH
AB 76.3 KM
BC 19.1 KM
CD 76.0 KM
DA 19.2 KM
TILT DISTANCE
23.5

MISSION/
FRAME NO.
1020

TIME
660818
144517.10

S/C POSITION
ALT 210.55 KM
ALT RT -0.0247 KM/SEC
LAT -0.01 DEG
LONG 92.23 DEG

S/C ORIENTATION
TILT ANG 2.70 DEG
TILT AZIM 81.96 DEG
SWING ANG 249.12 DEG
N.DEV. 347.15 DEG

PHOTO ILLUMINATION
SUN AZIM 88.30 DEG
INCID ANG 59.88 DEG
EMISS ANG 3.02 DEG
PHASE ANG 62.88 DEG
ALPHA -3.01 DEG

PRINCIPAL POINT
LATITUDE 0.03 DEG
LONGITUDE 92.56 DEG

MEDIUM RESOLUTION

CORNER COORDINATE
A LAT 2.35 DEG
A LONG 95.08 DEG
B LAT -3.35 DEG
B LONG 94.33 DEG
C LAT -2.18 DEG
C LONG 89.83 DEG
D LAT 3.34 DEG
D LONG 90.85 DEG

SIDE LENGTH
AB 177.5 KM
BC 146.6 KM
CD 171.3 KM
DA 148.9 KM
TILT DISTANCE
3.7

HIGH RESOLUTION

CORNER COORDINATE
A LAT 1.19 DEG
A LONG 93.15 DEG
B LAT -1.25 DEG
B LONG 92.59 DEG
C LAT -1.12 DEG
C LONG 91.98 DEG
D LAT 1.33 DEG
D LONG 92.53 DEG

SIDE LENGTH
AB 76.2 KM
BC 19.1 KM
CD 75.9 KM
DA 19.2 KM
TILT DISTANCE
28.6

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/10/71

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MISSION/
FRAME NO.
1021

TIME
660818
144642.61

S/C POSITION
ALT 209.84 KM
ALT RT 0.0081 KM/SEC
LAT -0.97 DEG
LONG 96.67 DEG

S/C ORIENTATION
TILT ANG 7.14 DEG
TILT AZIM 94.63 DEG
SWING ANG 261.86 DEG
N.DEV. 347.29 DEG

PHOTO ILLUMINATION
SUN AZIM 87.45 DEG
INCID ANG 54.93 DEG
EMISS ANG 8.01 DEG
PHASE ANG 62.88 DEG
ALPHA -7.96 DEG

PRINCIPAL POINT
LATITUDE -1.04 DEG
LONGITUDE 97.54 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 1.37 DEG AB 184.3 KM
A LONG 100.80 DEG BC 149.0 KM
B LAT -4.55 DEG CD 166.8 KM
B LONG 99.41 DEG DA 151.6 KM
C LAT -3.20 DEG TILT DISTANCE
C LONG 94.67 DEG 10.0
D LAT 2.18 DEG
D LONG 95.86 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.13 DEG AB 76.9 KM
A LONG 98.14 DEG BC 19.3 KM
B LAT -2.35 DEG CD 75.9 KM
B LONG 97.57 DEG DA 19.4 KM
C LAT -2.19 DEG TILT DISTANCE
C LONG 96.95 DEG 76.1
D LAT 0.25 DEG
D LONG 97.51 DEG

MISSION/
FRAME NO.
1022

TIME
660818
144652.71

S/C POSITION
ALT 209.94 KM
ALT RT 0.0120 KM/SEC
LAT -1.09 DEG
LONG 97.19 DEG

S/C ORIENTATION
TILT ANG 7.67 DEG
TILT AZIM 95.14 DEG
SWING ANG 262.38 DEG
N.DEV. 347.32 DEG

PHOTO ILLUMINATION
SUN AZIM 87.33 DEG
INCID ANG 54.34 DEG
EMISS ANG 8.61 DEG
PHASE ANG 62.88 DEG
ALPHA -8.54 DEG

PRINCIPAL POINT
LATITUDE -1.17 DEG
LONGITUDE 98.12 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 1.26 DEG AB 185.4 KM
A LONG 101.42 DEG BC 149.6 KM
B LAT -4.70 DEG CD 166.5 KM
B LONG 100.02 DEG DA 152.3 KM
C LAT -3.32 DEG TILT DISTANCE
C LONG 95.25 DEG 10.7
D LAT 2.05 DEG
D LONG 96.45 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.00 DEG AB 77.0 KM
A LONG 98.73 DEG BC 19.4 KM
B LAT -2.47 DEG CD 76.0 KM
B LONG 98.16 DEG DA 19.5 KM
C LAT -2.32 DEG TILT DISTANCE
C LONG 97.54 DEG 81.9
D LAT 0.13 DEG
D LONG 98.09 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

MISSION/
FRAME NO.
1023

YR.MO.DY 660818
HR.MI.SEC 1447 2.91

S/C POSITION ALT 210.08 KM
ALT RT 0.0159 KM/SEC
LAT -1.20 DEG
LONG 97.72 DEG

S/C ORIENTATION TILT ANG 8.21 DEG
TILT AZIM 95.58 DEG
SWING ANG 262.84 DEG
N.DEV. 347.35 DEG

PHOTO ILLUMINATION SUN AZIM 87.21 DEG
INCID ANG 53.75 DEG
EMISS ANG 9.21 DEG
PHASE ANG 62.88 DEG
ALPHA -9.13 DEG

PRINCIPAL POINT LATITUDE -1.30 DEG
LONGITUDE 98.72 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 1.15 DEG AB 186.6 KM
A LONG 102.04 DEG BC 150.3 KM
B LAT -4.85 DEG CD 166.3 KM
B LONG 100.63 DEG DA 153.0 KM
C LAT -3.44 DEG TILT DISTANCE 11.5
C LONG 95.86 DEG
D LAT 1.92 DEG
D LONG 97.05 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -0.12 DEG AB 77.2 KM
A LONG 99.32 DEG BC 19.4 KM
B LAT -2.61 DEG CD 76.1 KM
B LONG 98.76 DEG DA 19.6 KM
C LAT -2.45 DEG TILT DISTANCE 87.7
C LONG 98.13 DEG
D LAT 0.00 DEG
D LONG 98.69 DEG

MISSION/
FRAME NO.
1024

YR.MO.DY 660818
HR.MI.SEC 144713.01

S/C POSITION ALT 210.26 KM
ALT RT 0.0198 KM/SEC
LAT -1.31 DEG
LONG 98.25 DEG

S/C ORIENTATION TILT ANG 8.75 DEG
TILT AZIM 95.97 DEG
SWING ANG 263.24 DEG
N.DEV. 347.39 DEG

PHOTO ILLUMINATION SUN AZIM 87.08 DEG
INCID ANG 53.17 DEG
EMISS ANG 9.81 DEG
PHASE ANG 62.88 DEG
ALPHA -9.72 DEG

PRINCIPAL POINT LATITUDE -1.42 DEG
LONGITUDE 99.31 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 1.04 DEG AB 187.9 KM
A LONG 102.66 DEG BC 151.1 KM
B LAT -5.00 DEG CD 166.1 KM
B LONG 101.25 DEG DA 153.9 KM
C LAT -3.57 DEG TILT DISTANCE 12.3
C LONG 96.45 DEG
D LAT 1.79 DEG
D LONG 97.64 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -0.24 DEG AB 77.5 KM
A LONG 99.92 DEG BC 19.5 KM
B LAT -2.74 DEG CD 76.3 KM
B LONG 99.35 DEG DA 19.7 KM
C LAT -2.58 DEG TILT DISTANCE 93.5
C LONG 98.72 DEG
D LAT -0.12 DEG
D LONG 99.28 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.
1025

YR.MO.DY 650818
PR.MI.SEC 215224.91

S/C POSITION
ALT 226.81 KM
ALT RT -0.1109 KM/SEC
LAT 2.49 DEG
LONG 76.42 DEG

S/C ORIENTATION
TILT ANG 9.78 DEG
TILT AZIM 191.89 DEG
SWING ANG 9.02 DEG
N.DEV. 356.92 DEG

PHOTO ILLUMINATION
SUN AZIM 88.83 DEG
INCID ANG 72.58 DEG
EMISS ANG 11.08 DEG
PHASE ANG 70.41 DEG
ALPHA 1.83 DEG

PRINCIPAL POINT
LATITUDE 1.23 DEG
LONGITUDE 76.16 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 4.02 DEG AB 194.5 KM
A LONG 78.76 DEG BC 176.3 KM
B LAT -2.40 DEG CD 199.1 KM
B LONG 78.85 DEG DA 149.5 KM
C LAT -2.22 DEG TILT DISTANCE 13.8
C LONG 73.02 DEG
D LAT 4.31 DEG
D LONG 73.82 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.56 DEG AB 84.8 KM
A LONG 76.56 DEG BC 21.7 KM
B LAT -0.24 DEG CD 85.0 KM
B LONG 76.44 DEG DA 20.2 KM
C LAT -0.21 DEG TILT DISTANCE 04.8
C LONG 75.72 DEG
D LAT 2.59 DEG
D LONG 75.89 DEG

MISSION/
FRAME NO.
1026

YR.MO.DY 650819
PR.MI.SEC 051116.11

S/C POSITION
ALT 227.93 KM
ALT RT -0.1133 KM/SEC
LAT 2.51 DEG
LONG 72.13 DEG

S/C ORIENTATION
TILT ANG 7.22 DEG
TILT AZIM 201.64 DEG
SWING ANG 19.88 DEG
N.DEV. 358.05 DEG

PHOTO ILLUMINATION
SUN AZIM 88.94 DEG
INCID ANG 73.26 DEG
EMISS ANG 8.17 DEG
PHASE ANG 70.26 DEG
ALPHA 2.84 DEG

PRINCIPAL POINT
LATITUDE 1.62 DEG
LONGITUDE 71.77 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 4.49 DEG AB 189.9 KM
A LONG 74.36 DEG BC 171.4 KM
B LAT -1.78 DEG CD 196.8 KM
B LONG 74.44 DEG DA 152.7 KM
C LAT -1.76 DEG TILT DISTANCE 10.1
C LONG 68.77 DEG
D LAT 4.72 DEG
D LONG 69.31 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.96 DEG AB 83.6 KM
A LONG 72.15 DEG BC 21.4 KM
B LAT 0.20 DEG CD 84.0 KM
B LONG 72.08 DEG DA 20.4 KM
C LAT 0.21 DEG TILT DISTANCE 77.0
C LONG 71.37 DEG
D LAT 2.98 DEG
D LONG 71.48 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

MISSION/
FRAME NO.

1027
YR,MO,DY 660819
HR,MI,SEC 084844.51
TIME 660819
S/C POSITION
ALT 228.11 KM
ALT RT -0.1135 KM/SEC
LAT 2.50 DEG
LONG 70.12 DEG
S/C ORIENTATION
TILT ANG 5.69 DEG
TILT AZIM 207.64 DEG
SWING ANG 26.38 DEG
N.DEV. 358.61 DEG
PHOTO ILLUMINATION
SUN AZIM 69.00 DEG
INCID ANG 73.41 DEG
EMISS ANG 6.44 DEG
PHASE ANG 70.41 DEG
ALPHA 2.91 DEG
PRINCIPAL POINT
LATITUDE 1.84 DEG
LONGITUDE 69.77 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 4.74 DEG AB 188.1 KM
A LONG 72.35 DEG BC 168.3 KM
B LAT -1.47 DEG CD 195.1 KM
B LONG 72.41 DEG DA 154.4 KM
C LAT -1.49 DEG TILT DISTANCE 7.9
C LONG 66.85 DEG
D LAT 4.54 DEG
D LONG 67.24 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 3.17 DEG AB 83.0 KM
A LONG 70.14 DEG BC 21.2 KM
B LAT 0.43 DEG CD 83.4 KM
B LONG 70.08 DEG DA 20.4 KM
C LAT 0.44 DEG TILT DISTANCE 60.5
C LONG 69.38 DEG
D LAT 3.19 DEG
D LONG 69.46 DEG

MISSION/
FRAME NO.

1028
YR,MO,DY 660819
HR,MI,SEC 170820.91
TIME 660819
S/C POSITION
ALT 1304.34 KM
ALT RT 0.3376 KM/SEC
LAT -9.39 DEG
LONG -152.92 DEG
S/C ORIENTATION
TILT ANG 1.60 DEG
TILT AZIM 225.50 DEG
SWING ANG 220.67 DEG
N.DEV. 174.99 DEG
PHOTO ILLUMINATION
SUN AZIM 275.84 DEG
INCID ANG 67.89 DEG
EMISS ANG 2.80 DEG
PHASE ANG 69.70 DEG
ALPHA -1.82 DEG
PRINCIPAL POINT
LATITUDE -10.23 DEG
LONGITUDE -153.79 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -29.50 DEG AB 243.5 KM
A LONG -177.15 DEG BC 009.2 KM
B LAT 11.84 DEG CD 201.2 KM
B LONG -169.64 DEG DA 058.2 KM
C LAT 8.27 DEG TILT DISTANCE 2.2
C LONG -135.48 DEG
D LAT -32.21 DEG
D LONG -135.68 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -17.99 DEG AB 477.2 KM
A LONG -156.63 DEG BC 118.9 KM
B LAT -2.27 DEG CD 475.8 KM
B LONG -155.08 DEG DA 120.5 KM
C LAT -2.62 DEG TILT DISTANCE 16.9
C LONG -151.17 DEG
D LAT -18.32 DEG
D LONG -152.45 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

MISSION/
FRAME NO.
1029

YR.NO.DY	660819	TIME	230.81 KM	S/C POSITION	ALT RT	-0.1158 KM/SEC	TILT ANG	7.82 DEG	SUN AZIM	88.90 DEG	PRINCIPAL POINT	1.58 DEG	
HR.MI.SEC	231834.91	ALT RT	2.52 DEG	LONG	61.88 DEG	SWING ANG	25.09 DEG	N.DEV.	358.12 DEG	INCID.ANG	74.38 DEG	LATITUDE	51.41 DEG
		LAT								EMISS ANG	8.86 DEG	LONGITUDE	
		LONG								PHASE ANG	70.41 DEG		
										ALPHA	3.81 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 4.48 DEG	AB 191.7 KM
A LONG 64.01 DEG	BC 174.7 KM
B LAT -1.86 DEG	CD 201.3 KM
B LONG 64.11 DEG	DA 154.8 KM
C LAT -1.90 DEG	TILT DISTANCE
C LONG 58.33 DEG	10.9
D LAT 4.73 DEG	
D LONG 58.89 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 2.93 DEG	AB 84.8 KM
A LONG 61.79 DEG	BC 21.8 KM
B LAT 0.13 DEG	CD 85.3 KM
B LONG 61.72 DEG	DA 20.7 KM
C LAT 0.14 DEG	TILT DISTANCE
C LONG 61.00 DEG	83.4
D LAT 2.96 DEG	
D LONG 61.11 DEG	

MISSION/
FRAME NO.
1030

YR.NO.DY	660820	TIME	1298.72 KM	S/C POSITION	ALT RT	0.3393 KM/SEC	TILT ANG	2.31 DEG	SUN AZIM	276.20 DEG	PRINCIPAL POINT	-10.27 DEG	
HR.MI.SEC	073E 0.71	ALT RT	-9.41 DEG	LONG	-161.18 DEG	SWING ANG	235.09 DEG	N.DEV.	174.72 DEG	INCID.ANG	65.40 DEG	LATITUDE	-162.71 DEG
		LAT								EMISS ANG	4.05 DEG	LONGITUDE	
		LONG								PHASE ANG	69.70 DEG		
										ALPHA	-3.32 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -29.72 DEG	AB 258.3 KM
A LONG 173.10 DEG	BC 007.1 KM
B LAT 12.05 DEG	CD 181.1 KM
B LONG -178.79 DEG	DA 062.0 KM
C LAT 7.81 DEG	TILT DISTANCE
C LONG -144.81 DEG	3.2
D LAT -31.96 DEG	
D LONG -145.24 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -18.01 DEG	AB 476.2 KM
A LONG -165.60 DEG	BC 118.5 KM
B LAT -2.32 DEG	CD 473.6 KM
B LONG -163.98 DEG	DA 120.3 KM
C LAT -2.71 DEG	TILT DISTANCE
C LONG -160.08 DEG	24.5
D LAT -18.33 DEG	
D LONG -161.43 DEG	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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04/10/71

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.
1031

YR.NO.DY
HR.MI.SEC

TIME
660E20
134659.21

S/C POSITION
ALT 242.57 KM
ALT RT -0.1491 KM/SEC
LAT 3.44 DEG
LONG 49.23 DEG

S/C ORIENTATION
TILT ANG 10.99 DEG
TILT AZIM 234.55 DEG
SWING ANG 53.56 DEG
N.DEV. 358.22 DEG

PHOTO ILLUMINATION
SUN AZIM 88.92 DEG
INCID ANG 80.43 DEG
EMISS ANG 12.55 DEG
PHASE ANG 70.18 DEG
ALPHA 10.17 DEG

PRINCIPAL POINT
LATITUDE 2.54 DEG
LONGITUDE 47.96 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 5.55 DEG AB 195.6 KM
A LONG 50.66 DEG BC 189.7 KM
B LAT -0.91 DEG CD 223.5 KM
B LONG 50.72 DEG DA 168.2 KM
C LAT -1.38 DEG TILT DISTANCE 15.5
C LONG 44.47 DEG
D LAT 5.99 DEG
D LONG 45.08 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 3.97 DEG AB 89.5 KM
A LONG 48.37 DEG BC 23.4 KM
B LAT 1.02 DEG CD 91.0 KM
B LONG 48.29 DEG DA 22.3 KM
C LAT 1.00 DEG TILT DISTANCE 18.1
C LONG 47.52 DEG
D LAT 4.00 DEG
D LONG 47.63 DEG

MISSION/
FRAME NO.
1032

YR.NO.DY
HR.MI.SEC

TIME
660E20
134733.11

S/C POSITION
ALT 237.71 KM
ALT RT -0.1373 KM/SEC
LAT 3.09 DEG
LONG 50.94 DEG

S/C ORIENTATION
TILT ANG 9.88 DEG
TILT AZIM 227.27 DEG
SWING ANG 45.85 DEG
N.DEV. 358.08 DEG

PHOTO ILLUMINATION
SUN AZIM 88.92 DEG
INCID ANG 78.46 DEG
EMISS ANG 11.25 DEG
PHASE ANG 70.18 DEG
ALPHA 8.17 DEG

PRINCIPAL POINT
LATITUDE 2.15 DEG
LONGITUDE 49.94 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 5.11 DEG AB 193.4 KM
A LONG 52.59 DEG BC 183.6 KM
B LAT -1.28 DEG CD 215.1 KM
B LONG 52.67 DEG DA 162.5 KM
C LAT -1.60 DEG TILT DISTANCE 13.9
C LONG 46.60 DEG
D LAT 5.49 DEG
D LONG 47.21 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 3.56 DEG AB 87.6 KM
A LONG 50.34 DEG BC 22.7 KM
B LAT 0.66 DEG CD 88.7 KM
B LONG 50.26 DEG DA 21.6 KM
C LAT 0.65 DEG TILT DISTANCE 05.9
C LONG 49.51 DEG
D LAT 3.59 DEG
D LONG 49.62 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/10/71

MISSION/
FRAME NO.
1033

TIME 660820
YR. MO. DY 134531.71
HR. MI. SEC

S/C POSITION
ALT 223.95 KM
ALT RT -0.0945 KM/SEC
LAT 1.80 DEG
LONG 56.99 DEG

S/C ORIENTATION
TILT ANG 8.05 DEG
TILT AZIM 189.09 DEG
SWING ANG 6.98 DEG
N.DEV. 357.78 DEG

PHOTO ILLUMINATION
SUN AZIM 88.69 DEG
INCID ANG 71.59 DEG
EMISS ANG 9.10 DEG
PHASE ANG 70.18 DEG
ALPHA 1.16 DEG

PRINCIPAL POINT
LATITUDE 0.77 DEG
LONGITUDE 56.83 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 3.58 DEG AB 189.9 KM
A LONG 55.39 DEG BC 170.2 KM
B LAT -2.70 DEG CD 192.7 KM
B LONG 55.49 DEG DA 148.7 KM
C LAT -2.55 DEG TILT DISTANCE
C LONG 53.26 DEG 11.3
D LAT 3.79 DEG
D LONG 54.46 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.08 DEG AB 82.7 KM
A LONG 57.20 DEG BC 21.1 KM
B LAT -0.65 DEG CD 82.9 KM
B LONG 57.12 DEG DA 20.0 KM
C LAT -0.63 DEG TILT DISTANCE
C LONG 56.42 DEG 86.0
D LAT 2.11 DEG
D LONG 56.55 DEG

MISSION/
FRAME NO.
1034

TIME 660820
YR. MO. DY 134556.91
HR. MI. SEC

S/C POSITION
ALT 221.68 KM
ALT RT -0.0852 KM/SEC
LAT 1.53 DEG
LONG 58.28 DEG

S/C ORIENTATION
TILT ANG 8.22 DEG
TILT AZIM 179.93 DEG
SWING ANG 357.69 DEG
N.DEV. 357.76 DEG

PHOTO ILLUMINATION
SUN AZIM 88.58 DEG
INCID ANG 70.13 DEG
EMISS ANG 9.28 DEG
PHASE ANG 70.18 DEG
ALPHA -0.33 DEG

PRINCIPAL POINT
LATITUDE 0.47 DEG
LONGITUDE 58.29 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 3.26 DEG AB 190.1 KM
A LONG 60.85 DEG BC 168.8 KM
B LAT -3.02 DEG CD 189.2 KM
B LONG 60.97 DEG DA 147.0 KM
C LAT -2.78 DEG TILT DISTANCE
C LONG 55.38 DEG 11.5
D LAT 3.44 DEG
D LONG 55.98 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 1.77 DEG AB 82.1 KM
A LONG 58.66 DEG BC 20.9 KM
B LAT -0.95 DEG CD 82.1 KM
B LONG 58.58 DEG DA 19.7 KM
C LAT -0.92 DEG TILT DISTANCE
C LONG 57.89 DEG 87.9
D LAT 1.79 DEG
D LONG 56.01 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/19/71

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MISSION/
FRAME NO.
1035

YR.NO.DY 660820
HR.MI.SEC 1452 9.91

S/C POSITION
ALT 1339.41 KM
ALT RT 0.3283 KM/SEC
LAT -9.03 DEG
LONG -162.51 DEG

S/C ORIENTATION
TILT ANG 0.41 DEG
TILT AZIM 343.14 DEG
SWING ANG 337.85 DEG
N.DEV. 174.70 DEG

PHOTO ILLUMINATION
SUN AZIM 274.81 DEG
INCID ANG 70.00 DEG
EMISS ANG 0.74 DEG
PHASE ANG 70.27 DEG
ALPHA -0.27 DEG

PRINCIPAL POINT
LATITUDE -8.72 DEG
LONGITUDE -152.69 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -27.32 DEG AB 260.2 KM
A LONG 175.11 DEG BC 071.4 KM
B LAT 14.88 DEG CD 253.6 KM
B LONG -179.12 DEG DA 055.0 KM
C LAT 11.43 DEG TILT DISTANCE 0.5
C LONG -142.33 DEG
D LAT -30.85 DEG
D LONG -144.39 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -10.56 DEG AB 488.9 KM
A LONG -165.48 DEG BC 123.1 KM
B LAT -0.44 DEG CD 488.7 KM
B LONG -163.88 DEG DA 122.5 KM
C LAT -0.82 DEG TILT DISTANCE 4.4
C LONG -159.84 DEG
D LAT -10.94 DEG
D LONG -161.28 DEG

MISSION/
FRAME NO.
1036

YR.NO.DY 660820
HR.MI.SEC 145214.11

S/C POSITION
ALT 1343.73 KM
ALT RT 0.3271 KM/SEC
LAT -8.99 DEG
LONG -162.23 DEG

S/C ORIENTATION
TILT ANG 0.45 DEG
TILT AZIM 19.76 DEG
SWING ANG 14.52 DEG
N.DEV. 174.78 DEG

PHOTO ILLUMINATION
SUN AZIM 274.69 DEG
INCID ANG 70.48 DEG
EMISS ANG 0.82 DEG
PHASE ANG 70.27 DEG
ALPHA 0.21 DEG

PRINCIPAL POINT
LATITUDE -8.65 DEG
LONGITUDE -162.11 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -27.24 DEG AB 259.4 KM
A LONG 175.77 DEG BC 077.1 KM
B LAT 14.94 DEG CD 264.6 KM
B LONG -178.60 DEG DA 057.8 KM
C LAT 11.76 DEG TILT DISTANCE 0.6
C LONG -141.55 DEG
D LAT -30.51 DEG
D LONG -143.63 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -14.51 DEG AB 490.4 KM
A LONG -164.98 DEG BC 123.5 KM
B LAT -0.34 DEG CD 490.5 KM
B LONG -163.39 DEG DA 122.9 KM
C LAT -0.71 DEG TILT DISTANCE 4.9
C LONG -159.33 DEG
D LAT -16.89 DEG
D LONG -160.76 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.
1037

TIME 660820
YR,MO,DY 1454 9,61
HR,MI,SEC 1454 9,61

S/C POSITION
ALT 1380.94 KM
LAT RT 0.3161 KM/SEC
LAT -8.63 DEG
LONG -159.82 DEG

S/C ORIENTATION
TILT ANG 2.68 DEG
TILT AZIM 72.49 DEG
SWING ANG 67.63 DEG
N.DEV. 175.38 DEG

PHOTO ILLUMINATION
SUN AZIM 273.75 DEG
INCID ANG 74.74 DEG
EMISS ANG 4.81 DEG
PHASE ANG 70.27 DEG
ALPHA 4.46 DEG

PRINCIPAL POINT
LATITUDE -7.98 DEG
LONGITUDE -157.75 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -26.59 DEG AB 257.4 KM
A LONG -178.72 DEG BC 150.0 KM
B LAT 15.64 DEG CD 377.0 KM
B LONG -174.18 DEG DA 097.1 KM
C LAT 15.17 DEG TILT DISTANCE 3.7
C LONG -133.59 DEG
D LAT -31.49 DEG
D LONG -136.70 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -16.05 DEG AB 503.6 KM
A LONG -160.56 DEG BC 128.1 KM
B LAT 0.57 DEG CD 537.3 KM
B LONG -159.13 DEG DA 126.6 KM
C LAT 0.30 DEG TILT DISTANCE 28.4
C LONG -154.91 DEG
D LAT -16.45 DEG
D LONG -156.23 DEG

MISSION/
FRAME NO.
1038

TIME 660820
YR,MO,DY 1454 23,01
HR,MI,SEC 1454 23,01

S/C POSITION
ALT 1385.10 KM
LAT RT 0.3148 KM/SEC
LAT -8.59 DEG
LONG -159.54 DEG

S/C ORIENTATION
TILT ANG 2.95 DEG
TILT AZIM 73.27 DEG
SWING ANG 68.45 DEG
N.DEV. 175.44 DEG

PHOTO ILLUMINATION
SUN AZIM 273.65 DEG
INCID ANG 75.23 DEG
EMISS ANG 5.31 DEG
PHASE ANG 70.27 DEG
ALPHA 4.94 DEG

PRINCIPAL POINT
LATITUDE -7.90 DEG
LONGITUDE -157.27 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -26.52 DEG AB 257.6 KM
A LONG -178.11 DEG BC 162.0 KM
B LAT 15.73 DEG CD 392.5 KM
B LONG -173.68 DEG DA 103.5 KM
C LAT 15.64 DEG TILT DISTANCE 4.1
C LONG -133.00 DEG
D LAT -31.57 DEG
D LONG -135.85 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -16.00 DEG AB 505.2 KM
A LONG -160.06 DEG BC 128.7 KM
B LAT 0.68 DEG CD 509.4 KM
B LONG -158.65 DEG DA 127.1 KM
C LAT 0.43 DEG TILT DISTANCE 31.3
C LONG -154.40 DEG
D LAT -16.40 DEG
D LONG -155.71 DEG

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MISSION/
FRAME NO.
1039

YR.NO.DY 660820
FR.MI.SEC 1458 1.01

S/C POSITION
ALT 1451.41 KM
ALT RT 0.2933 KM/SEC
LAT -7.89 DEG
LONG -155.17 DEG

S/C ORIENTATION
TILT ANG 7.34 DEG
TILT AZIM 77.42 DEG
SWING ANG 73.25 DEG
N.DEV. 176.24 DEG

PHOTO-ILLUMINATION
SUN AZIM 272.27 DEG
INCID ANG 83.32 DEG
EMISS ANG 13.57 DEG
PHASE ANG 70.27 DEG
ALPHA 13.03 DEG

PRINCIPAL POINT
LATITUDE -6.49 DEG
LONGITUDE -149.05 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -23.38 DEG AB 271.8 KM
A LONG -165.67 DEG BC 830.5 KM
B LAT 17.50 DEG CD 601.3 KM
B LONG -165.67 DEG DA 302.5 KM
C LAT 23.98 DEG TILT DISTANCE 10.3
D LAT -33.76 DEG
D LONG -118.42 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -15.05 DEG AB 534.5 KM
A LONG -151.81 DEG BC 141.5 KM
B LAT 2.62 DEG CD 546.4 KM
B LONG -150.57 DEG DA 137.4 KM
C LAT 2.59 DEG TILT DISTANCE 78.3
D LAT -15.48 DEG
D LONG -147.12 DEG

MISSION/
FRAME NO.
1040

YR.NO.DY 660820
FR.MI.SEC 1458 9.41

S/C POSITION
ALT 1453.87 KM
ALT RT 0.2925 KM/SEC
LAT -7.86 DEG
LONG -155.01 DEG

S/C ORIENTATION
TILT ANG 7.51 DEG
TILT AZIM 77.47 DEG
SWING ANG 73.33 DEG
N.DEV. 176.26 DEG

PHOTO-ILLUMINATION
SUN AZIM 272.23 DEG
INCID ANG 83.64 DEG
EMISS ANG 13.89 DEG
PHASE ANG 70.27 DEG
ALPHA 13.35 DEG

PRINCIPAL POINT
LATITUDE -6.44 DEG
LONGITUDE -148.74 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -25.34 DEG AB 272.7 KM
A LONG -168.32 DEG BC 832.5 KM
B LAT 17.58 DEG CD 522.7 KM
B LONG -165.36 DEG DA 316.7 KM
C LAT 22.17 DEG TILT DISTANCE 10.5
D LAT -33.92 DEG
D LONG -117.47 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -15.01 DEG AB 535.7 KM
A LONG -151.49 DEG BC 142.1 KM
B LAT 2.70 DEG CD 548.0 KM
B LONG -150.26 DEG DA 137.9 KM
C LAT 2.68 DEG TILT DISTANCE 80.1
D LAT -15.44 DEG
D LONG -146.79 DEG

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.

1041
YR,MO,DY
HR,MI,SEC

S/C POSITION
ALT 256.43 KM
ALT RT -0.1771 KM/SEC
LAT 4.29 DEG
LONG 41.17 DEG

S/C ORIENTATION
TILT ANG 14.71 DEG
TILT AZIM 244.08 DEG
SWING ANG 63.37 DEG
N.DEV. 358.43 DEG

PHOTO ILLUMINATION
SUN AZIM 88.76 DEG
INCID ANG 85.53 DEG
EMISS ANG 16.95 DEG
PHASE ANG 70.22 DEG
ALPHA 15.27 DEG

PRINCIPAL POINT
LATITUDE 3.30 DEG
LONGITUDE 39.15 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 6.50 DEG AB 204.4 KM
A LONG 42.00 DEG BC 212.8 KM
B LAT -0.26 DEG CD 251.1 KM
B LONG 42.10 DEG DA 186.2 KM
C LAT -1.18 DEG TILT DISTANCE 21.0
C LONG 35.12 DEG
D LAT 7.10 DEG
D LONG 35.23 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 4.85 DEG AB 95.9 KM
A LONG 39.59 DEG BC 25.8 KM
B LAT 1.68 DEG CD 98.4 KM
B LONG 39.52 DEG DA 24.4 KM
C LAT 1.63 DEG TILT DISTANCE 59.7
C LONG 38.67 DEG
D LAT 4.88 DEG
D LONG 38.78 DEG

MISSION/
FRAME NO.

1042
YR,MO,DY
HR,MI,SEC

S/C POSITION
ALT 265.27 KM
ALT RT -0.1956 KM/SEC
LAT 4.82 DEG
LONG 34.44 DEG

S/C ORIENTATION
TILT ANG 16.46 DEG
TILT AZIM 259.92 DEG
SWING ANG 80.34 DEG
N.DEV. 0.07 DEG

PHOTO ILLUMINATION
SUN AZIM 88.57 DEG
INCID ANG 89.10 DEG
EMISS ANG 19.07 DEG
PHASE ANG 70.27 DEG
ALPHA 18.83 DEG

PRINCIPAL POINT
LATITUDE 4.36 DEG
LONGITUDE 31.86 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 7.75 DEG AB 207.1 KM
A LONG 34.82 DEG BC 221.0 KM
B LAT 0.90 DEG CD 266.3 KM
B LONG 34.53 DEG DA 208.0 KM
C LAT -0.29 DEG TILT DISTANCE 23.6
C LONG 27.72 DEG
D LAT 8.52 DEG
D LONG 27.92 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 5.59 DEG AB 99.2 KM
A LONG 32.28 DEG BC 27.1 KM
B LAT 2.71 DEG CD 102.3 KM
B LONG 32.30 DEG DA 26.4 KM
C LAT 2.64 DEG TILT DISTANCE 79.6
C LONG 31.40 DEG
D LAT 6.02 DEG
D LONG 31.41 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

MISSION/
FRAME NO.
1044

YR.MO.DY 660E21
HR.MI.SEC 112E 0.21

S/C POSITION
ALT 67.25 KM
ALT RT -0.0710 KM/SEC
LAT 1.46 DEG
LONG 46.15 DEG

S/C ORIENTATION
TILT ANG 7.21 DEG
TILT AZIM 187.66 DEG
SWING ANG 5.99 DEG
N.DEV. 358.27 DEG

PHOTO ILLUMINATION
SUN AZIM 88.82 DEG
INCID ANG 71.26 DEG
EMISS ANG 7.50 DEG
PHASE ANG 70.27 DEG
ALPHA 0.82 DEG

PRINCIPAL POINT
LATITUDE 1.18 DEG
LONGITUDE 46.12 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.03 DEG AB 55.8 KM
A LONG 46.88 DEG BC 49.5 KM
B LAT 0.18 DEG CD 56.4 KM
B LONG 46.91 DEG DA 44.5 KM
C LAT 0.22 DEG TILT DISTANCE 10.1
C LONG 45.27 DEG
D LAT 2.08 DEG
D LONG 45.41 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 1.57 DEG AB 24.6 KM
A LONG 46.23 DEG BC 6.3 KM
B LAT 0.76 DEG CD 24.7 KM
B LONG 46.21 DEG DA 6.0 KM
C LAT 0.76 DEG TILT DISTANCE 76.9
C LONG 45.00 DEG
D LAT 1.58 DEG
D LONG 46.03 DEG

MISSION/
FRAME NO.
1046

YR.MO.DY 660E21
HR.MI.SEC 1023 2.81

S/C POSITION
ALT 85.87 KM
ALT RT -0.1586 KM/SEC
LAT 3.65 DEG
LONG 31.80 DEG

S/C ORIENTATION
TILT ANG 14.80 DEG
TILT AZIM 232.65 DEG
SWING ANG 51.21 DEG
N.DEV. 357.57 DEG

PHOTO ILLUMINATION
SUN AZIM 88.91 DEG
INCID ANG 82.60 DEG
EMISS ANG 15.55 DEG
PHASE ANG 70.22 DEG
ALPHA 12.27 DEG

PRINCIPAL POINT
LATITUDE 3.19 DEG
LONGITUDE 31.20 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 4.24 DEG AB 89.0 KM
A LONG 32.16 DEG BC 69.0 KM
B LAT 1.97 DEG CD 80.9 KM
B LONG 32.19 DEG DA 59.2 KM
C LAT 1.76 DEG TILT DISTANCE 21.1
C LONG 29.92 DEG
D LAT 4.42 DEG
D LONG 30.21 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 3.71 DEG AB 32.2 KM
A LONG 31.36 DEG BC 8.5 KM
B LAT 2.64 DEG CD 32.9 KM
B LONG 31.32 DEG DA 8.0 KM
C LAT 2.43 DEG TILT DISTANCE 60.6
C LONG 31.04 DEG
D LAT 3.72 DEG
D LONG 31.09 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.
1047

TIME 660E21
YR.MO.DY 1823 9.51
HR.MI.SEC 1823 9.51

S/C POSITION
ALT 84.82 KM
ALT.RT -0.1555 KM/SEC
LAT 3.57 DEG
LONG 32.19 DEG

S/C ORIENTATION
TILT ANG 14.54 DEG
TILT AZIM 231.53 DEG
SWING.ANG 50.02 DEG
N.DEV. 357.53 DEG

PHOTO ILLUMINATION
SUN AZIM 88.92 DEG
INCID ANG 82.19 DEG
EMISS.ANG 15.27 DEG
PHASE ANG 70.22 DEG
.ALPHA .11.85 DEG

PRINCIPAL POINT
LATITUDE 3.12 DEG
LONGITUDE 31.62 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 4.15 DEG AB 68.3 KM
A LONG 32.57 DEG BC 67.9 KM
B LAT 1.90 DEG CD 79.6 KM
B LONG 32.60 DEG DA 58.2 KM
C LAT 1.71 DEG TILT DISTANCE 20.7
C LONG 30.36 DEG
D LAT 4.32 DEG
D LONG 30.65 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 3.62 DEG AB 31.8 KM
A LONG 31.77 DEG BC 8.4 KM
B LAT 2.57 DEG CD 32.5 KM
B LONG 31.73 DEG DA 7.9 KM
C LAT 2.56 DEG TILT DISTANCE 57.7
C LONG 31.45 DEG
D LAT 3.63 DEG
D LONG 31.51 DEG

MISSION/
FRAME NO.
1048

TIME 660E22
YR.MO.DY 012250.81
HR.MI.SEC 012250.81

S/C POSITION
ALT 71.65 KM
ALT.RT -0.1089 KM/SEC
LAT 2.35 DEG
LONG 34.14 DEG

S/C ORIENTATION
TILT ANG 9.41 DEG
TILT AZIM 218.44 DEG
SWING.ANG 36.93 DEG
N.DEV. 358.09 DEG

PHOTO ILLUMINATION
SUN AZIM 88.96 DEG
INCID ANG 76.37 DEG
EMISS.ANG 9.81 DEG
PHASE ANG 70.28 DEG
ALPHA 5.96 DEG

PRINCIPAL POINT
LATITUDE 2.04 DEG
LONGITUDE 33.90 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 2.93 DEG AB 58.1 KM
A LONG 34.70 DEG BC 53.7 KM
B LAT 1.01 DEG CD 62.6 KM
B LONG 34.72 DEG DA 47.9 KM
C LAT 0.97 DEG TILT DISTANCE .13.2
C LONG 32.54 DEG
D LAT 3.03 DEG
D LONG 33.11 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 2.47 DEG AB 26.3 KM
A LONG 34.02 DEG BC 6.8 KM
B LAT 1.60 DEG CD 26.6 KM
B LONG 33.99 DEG DA 6.5 KM
C LAT 1.60 DEG TILT DISTANCE 00.8
C LONG 33.77 DEG
D LAT 2.47 DEG
D LONG 33.80 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

MISSION/
FRAME NO.
1049

YR.NO.DY 660E22
HR.MI.SEC 0123 3.91

S/C POSITION
ALT 70.28 KM
ALT RT -0.1025 KM/SEC
LAT 2.19 DEG
LONG 34.91 DEG

S/C ORIENTATION
TILT ANG 9.09 DEG
TILT AZIM 214.05 DEG
SWING ANG 32.46 DEG
N.DEV. 358.04 DEG

PHOTO ILLUMINATION
SUN AZIM 88.94 DEG
INCID ANG 75.57 DEG
EMISS ANG 9.46 DEG
PHASE ANG 70.28 DEG
ALPHA 5.14 DEG

PRINCIPAL POINT
LATITUDE 1.88 DEG
LONGITUDE 34.70 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 2.75 DEG AB 57.2 KM
A LONG 35.49 DEG BC 52.6 KM
B LAT 0.86 DEG CD 61.0 KM
B LONG 35.51 DEG DA 46.8 KM
C LAT 0.83 DEG TILT DISTANCE 12.7
C LONG 33.78 DEG
D LAT 2.24 DEG
D LONG 33.95 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 2.29 DEG AB 25.8 KM
A LONG 34.82 DEG BC 6.6 KM
B LAT 1.44 DEG CD 26.0 KM
B LONG 34.80 DEG DA 6.3 KM
C LAT 1.44 DEG TILT DISTANCE 97.2
C LONG 34.58 DEG
D LAT 2.30 DEG
D LONG 34.61 DEG

MISSION/
FRAME NO.
1050

YR.NO.DY 660E22
HR.MI.SEC 082413.01

S/C POSITION
ALT 60.10 KM
ALT RT -0.0095 KM/SEC
LAT -0.19 DEG
LONG 42.14 DEG

S/C ORIENTATION
TILT ANG 13.06 DEG
TILT AZIM 155.03 DEG
SWING ANG 331.59 DEG
N.DEV. 357.18 DEG

PHOTO ILLUMINATION
SUN AZIM 88.05 DEG
INCID ANG 84.43 DEG
EMISS ANG 13.52 DEG
PHASE ANG 70.29 DEG
ALPHA -6.47 DEG

PRINCIPAL POINT
LATITUDE -0.61 DEG
LONGITUDE 42.34 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.15 DEG AB 54.4 KM
A LONG 43.06 DEG BC 47.3 KM
B LAT -1.65 DEG CD 50.0 KM
B LONG 43.11 DEG DA 39.6 KM
C LAT -1.45 DEG TILT DISTANCE 18.5
C LONG 41.56 DEG
D LAT 0.19 DEG
D LONG 41.75 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -0.25 DEG AB 22.9 KM
A LONG 42.44 DEG BC 5.9 KM
B LAT -1.01 DEG CD 22.6 KM
B LONG 42.41 DEG DA 5.4 KM
C LAT -0.99 DEG TILT DISTANCE 41.1
C LONG 42.22 DEG
D LAT -0.24 DEG
D LONG 42.26 DEG

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/10/71

MISSION/
FRAME NO.

1051
YR.NO.DY 660E22
HR.MI.SEC 082416.71

S/C POSITION
ALT 50.05 KM
ALT RT -0.0061 KM/SEC
LAT -0.28 DEG
LONG .42.54 DEG

S/C ORIENTATION
TILT ANG 13.31 DEG
TILT AZIM 153.65 DEG
SWING ANG 330.17 DEG
N.DEV. 357.20 DEG

PHOTO ILLUMINATION
SUN AZIM 87.99 DEG
INCID ANG 64.02 DEG
EMISS ANG 13.78 DEG
PHASE ANG 70.29 DEG
ALPHA -6.90 DEG

PRINCIPAL POINT
LATITUDE -0.70 DEG
LONGITUDE 42.75 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.06 DEG AB 54.6 KM
A LONG 43.48 DEG BC 47.4 KM
B LAT -1.74 DEG CD 49.9 KM
B LONG 43.53 DEG DA 39.5 KM
C LAT -1.54 DEG TILT DISTANCE 18.9
C LONG 41.97 DEG
D LAT 0.10 DEG
D LONG 42.17 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -0.34 DEG AB 22.9 KM
A LONG 42.86 DEG BC 5.9 KM
B LAT -1.10 DEG CD 22.7 KM
B LONG 42.83 DEG DA 5.4 KM
C LAT -1.08 DEG TILT DISTANCE 43.9
C LONG 42.63 DEG
D LAT -0.33 DEG
D LONG 42.68 DEG

MISSION/
FRAME NO.

1052
YR.NO.DY 660822
HR.MI.SEC 152258.50

S/C POSITION
ALT 59.45 KM
ALT RT 0.0111 KM/SEC
LAT -0.72 DEG
LONG 40.85 DEG

S/C ORIENTATION
TILT ANG 1.04 DEG
TILT AZIM 314.04 DEG
SWING ANG 121.70 DEG
N.DEV. 367.67 DEG

PHOTO ILLUMINATION
SUN AZIM 87.95 DEG
INCID ANG 62.39 DEG
EMISS ANG 1.07 DEG
PHASE ANG 61.64 DEG
ALPHA 0.74 DEG

PRINCIPAL POINT
LATITUDE -0.69 DEG
LONGITUDE 40.83 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -0.06 DEG AB 48.3 KM
A LONG 41.67 DEG BC 40.9 KM
B LAT -1.61 DEG CD 48.8 KM
B LONG 41.32 DEG DA 41.2 KM
C LAT -1.33 DEG TILT DISTANCE 1.4
C LONG 40.00 DEG
D LAT 0.24 DEG
D LONG 40.34 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -0.37 DEG AB 21.4 KM
A LONG 40.99 DEG BC 5.4 KM
B LAT -1.06 DEG CD 21.4 KM
B LONG 40.84 DEG DA 5.4 KM
C LAT -1.02 DEG TILT DISTANCE 11.0
C LONG 40.67 DEG
D LAT -0.33 DEG
D LONG 40.82 DEG

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MISSION/
FRAME NO.
1053

TIME
660522
1523 0.90

S/C POSITION
ALT 59.47 KM
ALT RT 0.0123 KM/SEC
LAT -0.75 DEG
LONG 41.00 DEG

S/C ORIENTATION
TILT ANG 0.92 DEG
TILT AZIM 318.90 DEG
SWING ANG 126.56 DEG
N.DEV. 347.67 DEG

PHOTO ILLUMINATION
SUN AZIM 87.92 DEG
INCID ANG 82.24 DEG
EMISS ANG 0.95 DEG
PHASE ANG 61.64 DEG
ALPHA 0.59 DEG

PRINCIPAL POINT
LATITUDE -0.73 DEG
LONGITUDE 40.98 DEG

CORNER COORDINATE SIDE LENGTH
A LAT -0.09 DEG AB 48.3 KM
A LONG 41.82 DEG BC 40.9 KM
B LAT -1.65 DEG CD 48.8 KM
B LONG 41.47 DEG DA 41.2 KM
C LAT -1.37 DEG TILT DISTANCE 1.2
C LONG 40.15 DEG
D LAT 0.21 DEG
D LONG 40.49 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -0.40 DEG AB 21.4 KM
A LONG 41.14 DEG BC 5.4 KM
B LAT -1.09 DEG CD 21.4 KM
B LONG 40.99 DEG DA 5.4 KM
C LAT -1.05 DEG TILT DISTANCE 9.7
C LONG 40.81 DEG
D LAT -0.36 DEG
D LONG 40.97 DEG

MISSION/
FRAME NO.
1054

TIME
660522
1523 3.31

S/C POSITION
ALT 59.51 KM
ALT RT 0.0135 KM/SEC
LAT -0.78 DEG
LONG 41.14 DEG

S/C ORIENTATION
TILT ANG 0.80 DEG
TILT AZIM 325.19 DEG
SWING ANG 132.86 DEG
N.DEV. 347.67 DEG

PHOTO ILLUMINATION
SUN AZIM 87.90 DEG
INCID ANG 82.09 DEG
EMISS ANG 0.83 DEG
PHASE ANG 61.64 DEG
ALPHA 0.44 DEG

PRINCIPAL POINT
LATITUDE -0.76 DEG
LONGITUDE 41.13 DEG

CORNER COORDINATE SIDE LENGTH
A LAT -0.12 DEG AB 48.4 KM
A LONG 41.97 DEG BC 40.9 KM
B LAT -1.68 DEG CD 48.8 KM
B LONG 41.62 DEG DA 41.3 KM
C LAT -1.40 DEG TILT DISTANCE 1.1
C LONG 40.30 DEG
D LAT 0.18 DEG
D LONG 40.64 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -0.43 DEG AB 21.4 KM
A LONG 41.29 DEG BC 5.4 KM
B LAT -1.12 DEG CD 21.4 KM
B LONG 41.14 DEG DA 5.4 KM
C LAT -1.08 DEG TILT DISTANCE 8.5
C LONG 40.96 DEG
D LAT -0.39 DEG
D LONG 41.11 DEG

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MISSION/
FRAME NO.
1055

YR.NO.DY 660E22.
HR.MI.SEC 1523 5.73

S/C POSITION
ALT 59.54 KM
ALT RT 0.0148 KM/SEC
LAT -0.81 DEG
LONG 41.29 DEG

S/C ORIENTATION
TILT ANG 0.70 DEG
TILT AZIM 333.45 DEG
SWING ANG 141.12 DEG
N.DEV. 347.67 DEG

PHOTO ILLUMINATION
SUN AZIM 87.88 DEG
INCID ANG 61.94 DEG
EMISS ANG. 0.73 DEG
PHASE ANG 61.64 DEG
ALPHA 0.30 DEG.

PRINCIPAL POINT
LATITUDE -0.79 DEG
LONGITUDE 41.27 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -0.15 DEG AB 48.5 KM
A LONG 42.12 DEG BC 41.0 KM
B LAT -1.71 DEG CD 48.7 KM
B LONG 41.77 DEG DA 41.3 KM
C LAT -1.43 DEG TILT DISTANCE
C LONG 40.45 DEG 0.9
D LAT 0.15 DEG
D LONG 40.79 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -0.46 DEG AB 21.4 KM
A LONG 41.44 DEG BC 5.4 KM
B LAT -1.15 DEG CD 21.9 KM
B LONG 41.29 DEG DA 5.4 KM
C LAT -1.12 DEG TILT DISTANCE
C LONG 41.11 DEG 7.4
D LAT -0.42 DEG
D LONG 41.26 DEG

MISSION/
FRAME NO.
1056

YR.NO.DY 660E22
HR.MI.SEC 1523 8.15

S/C POSITION
ALT 59.58 KM
ALT RT 0.0160 KM/SEC
LAT -0.84 DEG
LONG 41.43 DEG

S/C ORIENTATION
TILT ANG 0.62 DEG
TILT AZIM 344.15 DEG
SWING ANG 151.82 DEG
N.DEV. 347.67 DEG

PHOTO ILLUMINATION
SUN AZIM 87.86 DEG
INCID ANG 61.79 DEG
EMISS ANG 0.64 DEG
PHASE ANG 61.64 DEG
ALPHA 0.15 DEG

PRINCIPAL POINT
LATITUDE -0.82 DEG
LONGITUDE 41.42 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -0.18 DEG AB 48.5 KM
A LONG 42.27 DEG BC 41.0 KM
B LAT -1.75 DEG CD 48.7 KM
B LONG 41.52 DEG DA 41.3 KM
C LAT -1.46 DEG TILT DISTANCE
C LONG 40.60 DEG 0.8
D LAT 0.11 DEG
D LONG 40.94 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -0.49 DEG AB 21.5 KM
A LONG 41.59 DEG BC 5.4 KM
B LAT -1.19 DEG CD 21.5 KM
B LONG 41.43 DEG DA 5.4 KM
C LAT -1.15 DEG TILT DISTANCE
C LONG 41.26 DEG 6.6
D LAT -0.45 DEG
D LONG 41.41 DEG

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.
1057

YR.MO.DY 660822
HR.MI.SEC 152310.57
TIME 660822

S/C POSITION ALT 59.62 KM
ALT RT 0.0172 KM/SEC
LAT -0.87 DEG
LONG 41.57 DEG

S/C ORIENTATION TILT ANG 0.57 DEG
TILT AZIM 357.44 DEG
SWING ANG 165.12 DEG
N.DEV. 347.67 DEG

PHOTO ILLUMINATION SUN AZIM 87.84 DEG
INCID ANG 61.65 DEG
EMISS ANG 0.59 DEG
PHASE ANG 61.64 DEG
ALPHA 0.00 DEG

PRINCIPAL POINT LATITUDE -0.85 DEG
LONGITUDE 41.57 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -0.21 DEG AB 48.6 KM
A LONG 42.42 DEG BC 41.0 KM
B LAT -1.78 DEG CD 48.7 KM
B LONG 42.87 DEG DA 41.3 KM
C LAT -1.49 DEG TILT DISTANCE 0.7
C LONG 40.75 DEG
D LAT 0.08 DEG
D LONG 41.09 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -0.52 DEG AB 21.5 KM
A LONG 41.74 DEG BC 5.4 KM
B LAT -1.22 DEG CD 21.5 KM
B LONG 41.58 DEG DA 5.4 KM
C LAT -1.18 DEG TILT DISTANCE 6.0
C LONG 41.41 DEG
D LAT -0.49 DEG
D LONG 41.56 DEG

MISSION/
FRAME NO.
1058

YR.MO.DY 660822
HR.MI.SEC 152313.00
TIME 660822

S/C POSITION ALT 59.66 KM
ALT RT 0.0185 KM/SEC
LAT -0.90 DEG
LONG 41.72 DEG

S/C ORIENTATION TILT ANG 0.55 DEG
TILT AZIM 12.58 DEG
SWING ANG 180.26 DEG
N.DEV. 347.68 DEG

PHOTO ILLUMINATION SUN AZIM 87.81 DEG
INCID ANG 61.50 DEG
EMISS ANG 0.57 DEG
PHASE ANG 61.64 DEG
ALPHA -0.15 DEG

PRINCIPAL POINT LATITUDE -0.89 DEG
LONGITUDE 41.72 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -0.24 DEG AB 48.7 KM
A LONG 42.57 DEG BC 41.0 KM
B LAT -1.81 DEG CD 48.7 KM
B LONG 42.22 DEG DA 41.4 KM
C LAT -1.53 DEG TILT DISTANCE 0.7
C LONG 40.50 DEG
D LAT 0.05 DEG
D LONG 41.24 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -0.56 DEG AB 21.5 KM
A LONG 41.89 DEG BC 5.4 KM
B LAT -1.25 DEG CD 21.5 KM
B LONG 41.73 DEG DA 5.4 KM
C LAT -1.21 DEG TILT DISTANCE 5.8
C LONG 41.56 DEG
D LAT -0.52 DEG
D LONG 41.71 DEG

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.
1059

YR. MO. DY 660222
HR. MI. SEC 152315.44

S/C POSITION ALT 59.71 KM
ALT RT 0.0197 KM/SEC
LAT -0.93 DEG
LONG 41.86 DEG

S/C ORIENTATION TILT ANG 0.57 DEG
TILT AZIM 27.71 DEG
SWING ANG 195.40 DEG
N.DEV. 347.68 DEG

PHOTO ILLUMINATION SUN AZIM 87.79 DEG
INCID ANG 61.35 DEG
EMISS ANG 0.59 DEG
PHASE ANG 61.64 DEG
ALPHA -0.30 DEG

PRINCIPAL POINT LATITUDE -0.92 DEG
LONGITUDE 41.87 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -0.59 DEG AB 21.5 KM
A LONG 42.04 DEG BC 5.4 KM
B LAT -1.28 DEG CD 21.5 KM
B LONG 41.88 DEG DA 5.4 KM
C LAT -1.24 DEG TILT DISTANCE 6.0
C LONG 41.71 DEG
D LAT -0.55 DEG
D LONG 41.85 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -0.27 DEG AB 48.8 KM
A LONG 42.72 DEG BC 41.1 KM
B LAT -1.85 DEG CD 48.7 KM
B LONG 42.37 DEG DA 41.4 KM
C LAT -1.56 DEG TILT DISTANCE 0.8
C LONG 41.05 DEG
D LAT 0.32 DEG
D LONG 41.39 DEG

MISSION/
FRAME NO.
1060

YR. MO. DY 660222
HR. MI. SEC 152317.88

S/C POSITION ALT 59.76 KM
ALT RT 0.0209 KM/SEC
LAT -0.97 DEG
LONG 42.01 DEG

S/C ORIENTATION TILT ANG 0.63 DEG
TILT AZIM 40.92 DEG
SWING ANG 208.61 DEG
N.DEV. 347.68 DEG

PHOTO ILLUMINATION SUN AZIM 87.77 DEG
INCID ANG 61.20 DEG
EMISS ANG 0.65 DEG
PHASE ANG 61.64 DEG
ALPHA -0.45 DEG

PRINCIPAL POINT LATITUDE -0.95 DEG
LONGITUDE 42.02 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -0.62 DEG AB 21.5 KM
A LONG 42.19 DEG BC 5.4 KM
B LAT -1.32 DEG CD 21.5 KM
B LONG 42.03 DEG DA 5.4 KM
C LAT -1.28 DEG TILT DISTANCE 6.6
C LONG 41.85 DEG
D LAT -0.58 DEG
D LONG 42.01 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -0.30 DEG AB 48.9 KM
A LONG 42.88 DEG BC 41.1 KM
B LAT -1.88 DEG CD 48.7 KM
B LONG 42.53 DEG DA 41.4 KM
C LAT -1.59 DEG TILT DISTANCE 0.8
C LONG 41.20 DEG
D LAT -0.02 DEG
D LONG 41.54 DEG

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.

1061
660E22
152320.32

S/C POSITION
ALT 59.81 KM
ALT RT 0.0222 KM/SEC
LAT -1.00 DEG
LONG 42.15 DEG

S/C ORIENTATION
TILT ANG 0.71 DEG
TILT AZIM 51.49 DEG
SWING ANG 219.17 DEG
N.DEV. 347.69 DEG

PHOTO ILLUMINATION
SUN AZIM 87.74 DEG
INCID ANG 61.05 DEG
EMISS ANG 0.74 DEG
PHASE ANG 61.54 DEG
ALPHA -0.60 DEG

PRINCIPAL POINT
LATITUDE -0.98 DEG
LONGITUDE 42.17 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -0.34 DEG AB 49.0 KM
A LONG 43.03 DEG BC 41.1 KM
B LAT -1.92 DEG CD 48.7 KM
B LONG 42.68 DEG DA 41.5 KM
C LAT -1.62 DEG TILT DISTANCE
C LONG 41.35 DEG 1.0
D LAT -0.05 DEG
D LONG 41.69 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -0.65 DEG AB 21.6 KM
A LONG 42.34 DEG BC 5.4 KM
B LAT -1.35 DEG CD 21.5 KM
B LONG 42.18 DEG DA 5.4 KM
C LAT -1.31 DEG TILT DISTANCE
C LONG 42.01 DEG 7.5
D LAT -0.61 DEG
D LONG 42.16 DEG

MISSION/
FRAME NO.

1062
660E22
152322.77

S/C POSITION
ALT 59.87 KM
ALT RT 0.0234 KM/SEC
LAT -1.03 DEG
LONG 42.30 DEG

S/C ORIENTATION
TILT ANG 0.81 DEG
TILT AZIM 59.63 DEG
SWING ANG 227.32 DEG
N.DEV. 347.59 DEG

PHOTO ILLUMINATION
SUN AZIM 87.72 DEG
INCID ANG 60.90 DEG
EMISS ANG 0.84 DEG
PHASE ANG 61.64 DEG
ALPHA -0.74 DEG

PRINCIPAL POINT
LATITUDE -1.01 DEG
LONGITUDE 42.32 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -0.37 DEG AB 49.1 KM
A LONG 43.18 DEG BC 41.2 KM
B LAT -1.95 DEG CD 48.7 KM
B LONG 42.23 DEG DA 41.5 KM
C LAT -1.65 DEG TILT DISTANCE
C LONG 41.50 DEG 1.1
D LAT -0.08 DEG
D LONG 41.84 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -0.68 DEG AB 21.6 KM
A LONG 42.49 DEG BC 5.4 KM
B LAT -1.38 DEG CD 21.5 KM
B LONG 42.34 DEG DA 5.4 KM
C LAT -1.34 DEG TILT DISTANCE
C LONG 42.16 DEG 8.6
D LAT -0.65 DEG
D LONG 42.31 DEG

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MISSION/
FRAME NO.
1063

YR.MO.DY 660E22
HR.MI.SEC 152325.23

S/C POSITION
ALT 59.92 KM
ALT RT 0.0247 KM/SEC
LAT -1.06 DEG
LONG 42.45 DEG

S/C ORIENTATION
TILT ANG 0.93 DEG
TILT-AZIM 65.88 DEG
SWING ANG 233.57 DEG
N-DEV. 347.69 DEG

PHOTO ILLUMINATION
SUN AZIM 87.70 DEG
INCID ANG 60.75 DEG
EMISS ANG 0.96 DEG
PHASE ANG 61.64 DEG
ALPHA -0.90 DEG

PRINCIPAL POINT
LATITUDE -1.05 DEG
LONGITUDE 42.48 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -0.40 DEG AB 49.2 KM
A LONG 43.34 DEG BC 41.2 KM
B LAT -1.98 DEG CD 48.7 KM
B LONG 42.98 DEG DA 41.6 KM
C LAT -1.69 DEG TILT DISTANCE
C LONG 41.65 DEG 1.3
D LAT -0.11 DEG
D LONG 41.99 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -0.72 DEG AB 21.6 KM
A LONG 42.64 DEG BC 5.4 KM
B LAT -1.41 DEG CD 21.6 KM
B LONG 42.49 DEG DA 5.4 KM
C LAT -1.38 DEG TILT DISTANCE
C LONG 42.31 DEG 9.8
D LAT -0.68 DEG
D LONG 42.46 DEG

MISSION/
FRAME NO.
1064

YR.MO.DY 660E22
HR.MI.SEC 152327.69

S/C POSITION
ALT 59.99 KM
ALT RT 0.0259 KM/SEC
LAT -1.09 DEG
LONG 42.59 DEG

S/C ORIENTATION
TILT ANG 1.06 DEG
TILT-AZIM 70.69 DEG
SWING ANG 238.38 DEG
N-DEV. 347.69 DEG

PHOTO ILLUMINATION
SUN AZIM 87.67 DEG
INCID ANG 60.60 DEG
EMISS ANG 1.09 DEG
PHASE ANG 61.64 DEG
ALPHA -1.05 DEG

PRINCIPAL POINT
LATITUDE -1.08 DEG
LONGITUDE 42.63 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -0.43 DEG AB 49.3 KM
A LONG 43.49 DEG BC 41.3 KM
B LAT -2.02 DEG CD 48.7 KM
B LONG 43.14 DEG DA 41.6 KM
C LAT -1.72 DEG TILT DISTANCE
C LONG 41.80 DEG 1.4
D LAT -0.14 DEG
D LONG 42.14 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -0.75 DEG AB 21.6 KM
A LONG 42.79 DEG BC 5.4 KM
B LAT -1.45 DEG CD 21.6 KM
B LONG 42.64 DEG DA 5.4 KM
C LAT -1.41 DEG TILT DISTANCE
C LONG 42.46 DEG 11.2
D LAT -0.71 DEG
D LONG 42.62 DEG

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.

1065

YR.NO.DY 660822
FR.MI.SEC 152332.15

S/C POSITION
ALT 60.05 KM
ALT RT 0.0272 KM/SEC
LAT -1.12 DEG
LONG 42.74 DEG

S/C ORIENTATION
TILT ANG 1.19 DEG
TILT AZIM 74.45 DEG
SWING ANG 242.16 DEG
N.DEV. 347.70 DEG

PHOTO ILLUMINATION
SUN AZIM 87.65 DEG
INCID ANG 60.45 DEG
EMISS ANG 1.23 DEG
PHASE ANG 61.64 DEG
ALPHA -1.20 DEG

PRINCIPAL POINT
LATITUDE -1.11 DEG
LONGITUDE 42.78 DEG

MEDIUM RESOLUTION

CORNER COORDINATE
A LAT -0.46 DEG
A LONG 43.64 DEG
B LAT -2.05 DEG
B LONG 43.29 DEG
C LAT -1.75 DEG
C LONG 41.56 DEG
D LAT -0.18 DEG
D LONG 42.29 DEG

SIDE LENGTH
AB 49.4 KM
BC 41.3 KM
CD 48.7 KM
DA 41.7 KM
TILT DISTANCE 1.6

HIGH RESOLUTION

CORNER COORDINATE
A LAT -0.78 DEG
A LONG 42.94 DEG
B LAT -1.48 DEG
B LONG 42.79 DEG
C LAT -1.44 DEG
C LONG 42.62 DEG
D LAT -0.74 DEG
D LONG 42.77 DEG

SIDE LENGTH
AB 21.7 KM
BC 5.4 KM
CD 21.6 KM
DA 5.4 KM
TILT DISTANCE 12.6

MISSION/
FRAME NO.

1066

YR.NO.DY 660822
FR.MI.SEC 152332.62

S/C POSITION
ALT 60.12 KM
ALT RT 0.0285 KM/SEC
LAT -1.15 DEG
LONG 42.89 DEG

S/C ORIENTATION
TILT ANG 1.32 DEG
TILT AZIM 77.48 DEG
SWING ANG 245.18 DEG
N.DEV. 347.70 DEG

PHOTO ILLUMINATION
SUN AZIM 87.62 DEG
INCID ANG 60.30 DEG
EMISS ANG 1.37 DEG
PHASE ANG 61.64 DEG
ALPHA -1.35 DEG

PRINCIPAL POINT
LATITUDE -1.14 DEG
LONGITUDE 42.93 DEG

MEDIUM RESOLUTION

CORNER COORDINATE
A LAT -0.49 DEG
A LONG 43.80 DEG
B LAT -2.09 DEG
B LONG 43.44 DEG
C LAT -1.78 DEG
C LONG 42.11 DEG
D LAT -0.21 DEG
D LONG 42.45 DEG

SIDE LENGTH
AB 49.5 KM
BC 41.4 KM
CD 48.7 KM
DA 41.7 KM
TILT DISTANCE 1.8

HIGH RESOLUTION

CORNER COORDINATE
A LAT -0.81 DEG
A LONG 43.10 DEG
B LAT -1.51 DEG
B LONG 42.94 DEG
C LAT -1.47 DEG
C LONG 42.77 DEG
D LAT -0.77 DEG
D LONG 42.92 DEG

SIDE LENGTH
AB 21.7 KM
BC 5.4 KM
CD 21.6 KM
DA 5.5 KM
TILT DISTANCE 14.0

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/19/71

MISSION/
FRAME NO.
1067

YR. MO. DY 66CE22
HR. MI. SEC 152335.09
TIME 66CE22

S/C POSITION
ALT 60.19 KM
LAT -1.19 DEG
LONG 43.03 DEG

S/C ORIENTATION
TILT ANG 1.46 DEG
TILT AZIM 79.93 DEG
SWING ANG 247.64 DEG
N.DEV. 347.71 DEG

PHOTO ILLUMINATION
SUN AZIM 87.50 DEG
INCID ANG 60.15 DEG
EMISS ANG 1.51 DEG
PHASE ANG 61.54 DEG
ALPHA -1.50 DEG

PRINCIPAL POINT
LATITUDE -1.18 DEG
LONGITUDE 43.08 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -0.52 DEG AB 49.6 KM
A LONG 43.55 DEG BC 41.4 KM
B LAT -2.12 DEG CD 48.7 KM
B LONG 43.60 DEG DA 41.8 KM
C LAT -1.82 DEG TILT DISTANCE 2.0
C LONG 42.26 DEG
D LAT -0.24 DEG
D LONG 42.60 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -0.84 DEG AB 21.7 KM
A LONG 43.25 DEG BC 5.4 KM
E LAT -1.55 DEG CD 21.7 KM
B LONG 43.10 DEG DA 5.5 KM
C LAT -1.51 DEG TILT DISTANCE 15.5
C LONG 42.92 DEG
D LAT -0.81 DEG
D LONG 43.07 DEG

MISSION/
FRAME NO.
1068

YR. MO. DY 66CE22
HR. MI. SEC 185045.11
TIME 66CE22

S/C POSITION
ALT 58.69 KM
LAT -0.24 DEG
LONG 34.49 DEG

S/C ORIENTATION
TILT ANG 1.46 DEG
TILT AZIM 289.06 DEG
SWING ANG 96.44 DEG
N.DEV. 347.39 DEG

PHOTO ILLUMINATION
SUN AZIM 88.48 DEG
INCID ANG 66.98 DEG
EMISS ANG 1.50 DEG
PHASE ANG 65.57 DEG
ALPHA 1.41 DEG

PRINCIPAL POINT
LATITUDE 0.25 DEG
LONGITUDE 34.44 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.87 DEG AB 47.5 KM
A LONG 35.27 DEG BC 40.5 KM
B LAT -0.66 DEG CD 48.4 KM
B LONG 34.52 DEG DA 40.6 KM
C LAT -0.38 DEG TILT DISTANCE 2.0
C LONG 33.61 DEG
D LAT 1.18 DEG
D LONG 33.56 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.58 DEG AB 21.1 KM
A LONG 34.60 DEG BC 5.3 KM
B LAT -0.11 DEG CD. 21.2 KM
B LONG 34.45 DEG DA 5.3 KM
C LAT -0.07 DEG TILT DISTANCE 15.4
C LONG 34.28 DEG
D LAT 0.62 DEG
D LONG 34.43 DEG

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MISSION/
FRAME NO.
1069

YR.NO.DY
HR.MI.SEC

TIME
660E22
185047.51

S/C POSITION
ALT 58.63 KM
ALT RT -0.0264 KM/SEC
LAT 0.21 DEG
LONG 34.63 DEG

S/C ORIENTATION
TILT ANG 1.31 DEG
TILT AZIM 289.83 DEG
SWING ANG 97.21 DEG
N.DEV. 347.39 DEG

PHOTO ILLUMINATION
SUN AZIM 88.46 DEG
INCID ANG 66.83 DEG
EMISS ANG 1.35 DEG
PHASE ANG 65.57 DEG
ALPHA 1.26 DEG

PRINCIPAL POINT
LATITUDE 0.22 DEG
LONGITUDE 34.59 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.84 DEG AB 47.5 KM
A LONG 35.42 DEG BC 40.5 KM
B LAT -0.69 DEG CD 48.3 KM
B LONG 35.07 DEG DA 40.6 KM
C LAT -0.41 DEG TILT DISTANCE
C LONG 33.76 DEG 1.8
D LAT 1.15 DEG
D LONG 34.11 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.54 DEG AB 21.1 KM
A LONG 34.75 DEG BC 5.3 KM
B LAT -0.14 DEG CD 21.1 KM
B LONG 34.60 DEG DA 5.3 KM
C LAT -0.10 DEG TILT DISTANCE
C LONG 34.43 DEG 13.9
D LAT 0.58 DEG
D LONG 34.58 DEG

MISSION/
FRAME NO.
1070

YR.NO.DY
HR.MI.SEC

TIME
660E22
185049.91

S/C POSITION
ALT 58.57 KM
ALT RT -0.0251 KM/SEC
LAT 0.18 DEG
LONG 34.77 DEG

S/C ORIENTATION
TILT ANG 1.17 DEG
TILT AZIM 290.80 DEG
SWING ANG 98.18 DEG
N.DEV. 347.39 DEG

PHOTO ILLUMINATION
SUN AZIM 88.45 DEG
INCID ANG 66.59 DEG
EMISS ANG 1.20 DEG
PHASE ANG 65.57 DEG
ALPHA 1.11 DEG

PRINCIPAL POINT
LATITUDE 0.19 DEG
LONGITUDE 34.74 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.81 DEG AB 47.5 KM
A LONG 35.56 DEG BC 40.4 KM
B LAT -0.72 DEG CD 48.2 KM
B LONG 35.22 DEG DA 40.5 KM
C LAT -0.44 DEG TILT DISTANCE
C LONG 33.91 DEG 1.6
D LAT 1.11 DEG
D-LONG 34.26 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.51 DEG AB 21.1 KM
A LONG 34.90 DEG BC 5.3 KM
B LAT -0.17 DEG CD 21.1 KM
B LONG 34.75 DEG DA 5.3 KM
C LAT -0.13 DEG TILT DISTANCE
C LONG 34.57 DEG 12.3
D LAT 0.55 DEG
D LONG 34.73 DEG

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.
1071

TIME 660622
YR.NO.DY 185052.31
HR.NO.DY 660622
HR.MI.SEC 185052.31

S/C POSITION
ALT 58.51 KM
ALT RT -0.0239 KM/SEC
LAT 0.15 DEG
LONG 34.92 DEG

S/C ORIENTATION
TILT ANG 1.02 DEG
TILT AZIM 292.05 DEG
SWING ANG 99.43 DEG
N.DEV. 347.39 DEG

PHOTO ILLUMINATION
SUN AZIM 88.43 DEG
INCID ANG 66.54 DEG
EMISS ANG 1.06 DEG
PHASE ANG 65.57 DEG
ALPHA 0.97 DEG

PRINCIPAL POINT
LATITUDE 0.16 DEG
LONGITUDE 34.88 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.78 DEG AB 47.5 KM
A LONG 35.71 DEG BC 40.4 KM
B LAT -0.75 DEG CD 48.1 KM
B LONG 35.37 DEG DA 40.5 KM
C LAT -0.47 DEG TILT DISTANCE 1.4
C LONG 34.06 DEG
D LAT 1.08 DEG
D LONG 34.41 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.48 DEG AB 21.1 KM
A LONG 35.05 DEG BC 5.3 KM
B LAT -0.20 DEG CD 21.1 KM
B LONG 34.89 DEG DA 5.3 KM
C LAT -0.16 DEG TILT DISTANCE 10.8
C LONG 34.72 DEG
D LAT 0.52 DEG
D LONG 34.87 DEG

MISSION/
FRAME NO.
1072

TIME 660622
YR.NO.DY 185054.71
HR.NO.DY 660622
HR.MI.SEC 185054.71

S/C POSITION
ALT 58.45 KM
ALT RT -0.0227 KM/SEC
LAT 0.12 DEG
LONG 35.06 DEG

S/C ORIENTATION
TILT ANG 0.88 DEG
TILT AZIM 293.70 DEG
SWING ANG 101.08 DEG
N.DEV. 347.39 DEG

PHOTO ILLUMINATION
SUN AZIM 88.42 DEG
INCID ANG 66.39 DEG
EMISS ANG 0.91 DEG
PHASE ANG 65.57 DEG
ALPHA 0.82 DEG

PRINCIPAL POINT
LATITUDE 0.13 DEG
LONGITUDE 35.03 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.75 DEG AB 47.5 KM
A LONG 35.86 DEG BC 40.3 KM
B LAT -0.78 DEG CD 48.0 KM
B LONG 35.52 DEG DA 40.4 KM
C LAT -0.50 DEG TILT DISTANCE 1.2
C LONG 34.21 DEG
D LAT 1.05 DEG
D LONG 34.56 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.45 DEG AB 21.0 KM
A LONG 35.19 DEG BC 5.3 KM
B LAT -0.23 DEG CD 21.1 KM
B LONG 35.04 DEG DA 5.3 KM
C LAT -0.19 DEG TILT DISTANCE 9.3
C LONG 34.87 DEG
D LAT 0.49 DEG
D LONG 35.02 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/10/71

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MISSION/
FRAME NO.
1073

YR.MO.DY 66CE22
HR.MI.SEC 185CE7.11

S/C POSITION
ALT 58.49 KM
ALT RT -0.0215 KM/SEC
LAT 0.08 DEG
LONG 35.29 DEG

S/C ORIENTATION
TILT ANG 0.73 DEG
TILT AZIM 295.00 DEG
SWING ANG 123.38 DEG
N.DEV. 347.38 DEG

PHOTO ILLUMINATION
SUN AZIM 88.40 DEG
INCID ANG 66.24 DEG
EMISS ANG 0.75 DEG
PHASE ANG 65.57 DEG
ALPHA 0.67 DEG

PRINCIPAL POINT
LATITUDE 0.10 DEG
LONGITUDE 35.18 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.71 DEG AB 47.5 KM
A LONG 36.01 DEG BC 40.3 KM
B LAT -0.82 DEG CD 47.9 KM
B LONG 35.66 DEG DA 40.4 KM
C LAT -0.53 DEG TILT DISTANCE
C LONG 34.36 DEG TILT DISTANCE
D LAT 1.01 DEG 1.0
D LONG 34.71 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.42 DEG AB 21.0 KM
A LONG 35.34 DEG BC 5.3 KM
B LAT -0.26 DEG CD 21.0 KM
B LONG 35.19 DEG DA 5.3 KM
C LAT -0.22 DEG TILT DISTANCE
C LONG 35.02 DEG TILT DISTANCE
D LAT 0.45 DEG 7.7
D LONG 35.17 DEG

MISSION/
FRAME NO.
1074

YR.MO.DY 66CE22
HR.MI.SEC 185059.51

S/C POSITION
ALT 58.35 KM
ALT RT -0.0202 KM/SEC
LAT 0.05 DEG
LONG 35.34 DEG

S/C ORIENTATION
TILT ANG 0.59 DEG
TILT AZIM 299.80 DEG
SWING ANG 106.79 DEG
N.DEV. 347.38 DEG

PHOTO ILLUMINATION
SUN AZIM 88.39 DEG
INCID ANG 66.10 DEG
EMISS ANG 0.61 DEG
PHASE ANG 65.57 DEG
ALPHA 0.52 DEG

PRINCIPAL POINT
LATITUDE 0.06 DEG
LONGITUDE 35.31 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.68 DEG AB 47.5 KM
A LONG 36.16 DEG BC 40.2 KM
B LAT -0.85 DEG CD 47.8 KM
B LONG 35.81 DEG DA 40.3 KM
C LAT -0.56 DEG TILT DISTANCE
C LONG 34.51 DEG TILT DISTANCE
D LAT 0.98 DEG 0.8
D LONG 34.86 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.38 DEG AB 21.0 KM
A LONG 35.49 DEG BC 5.3 KM
B LAT -0.29 DEG CD 21.0 KM
B LONG 35.34 DEG DA 5.3 KM
C LAT -0.26 DEG TILT DISTANCE
C LONG 35.17 DEG TILT DISTANCE
D LAT 0.42 DEG 6.2
D LONG 35.32 DEG

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/ FRAME NO. 1075	TIME 66CE22	S/C POSITION ALT 58.30 KM LAT -0.0190 KM/SEC LONG 35.49 DEG	S/C ORIENTATION TILT ANG 0.45 DEG TILT AZIM 304.90 DEG SWING ANG 112.29 DEG N.DEV. 347.78 DEG	PHOTO ILLUMINATION SUN AZIM 88.37 DEG INCID ANG 65.95 DEG EMISS ANG 0.47 DEG PHASE ANG 65.57 DEG ALPHA 0.38 DEG	PRINCIPAL POINT LATITUDE 0.93 DEG LONGITUDE 35.47 DEG
<p>MEDIUM RESOLUTION</p> <p>CORNER COORDINATE SIDE LENGTH</p> <p>A LAT 0.65 DEG AB 47.5 KM</p> <p>A LONG 36.30 DEG BC 40.2 KM</p> <p>B LAT -0.88 DEG CD 47.7 KM</p> <p>B LONG 35.56 DEG DA 40.3 KM</p> <p>C LAT -0.59 DEG TILT DISTANCE 0.6</p> <p>C LONG 34.66 DEG</p> <p>D LAT 0.55 DEG</p> <p>D LONG 35.01 DEG</p>					
<p>HIGH RESOLUTION</p> <p>CORNER COORDINATE SIDE LENGTH</p> <p>A LAT 0.35 DEG AB 21.0 KM</p> <p>A LONG 35.64 DEG BC 5.3 KM</p> <p>B LAT -0.33 DEG CD 21.0 KM</p> <p>B LONG 35.48 DEG DA 5.3 KM</p> <p>C LAT -0.29 DEG TILT DISTANCE 4.8</p> <p>C LONG 35.31 DEG</p> <p>D LAT 0.39 DEG</p> <p>D LONG 35.47 DEG</p>					

MISSION/ FRAME NO. 1076	TIME 66CE22	S/C POSITION ALT 58.26 KM LAT -0.0178 KM/SEC LONG 35.63 DEG	S/C ORIENTATION TILT ANG 0.32 DEG TILT AZIM 314.98 DEG SWING ANG 122.36 DEG N.DEV. 347.38 DEG	PHOTO ILLUMINATION SUN AZIM 89.36 DEG INCID ANG 65.80 DEG EMISS ANG 0.34 DEG PHASE ANG 65.57 DEG ALPHA 0.23 DEG	PRINCIPAL POINT LATITUDE -0.00 DEG LONGITUDE 35.62 DEG
<p>MEDIUM RESOLUTION</p> <p>CORNER COORDINATE SIDE LENGTH</p> <p>A LAT 0.62 DEG AB 47.5 KM</p> <p>A LONG 36.45 DEG BC 40.2 KM</p> <p>B LAT -0.91 DEG CD 47.6 KM</p> <p>B LONG 36.11 DEG DA 40.3 KM</p> <p>C LAT -0.62 DEG TILT DISTANCE 0.4</p> <p>C LONG 34.81 DEG</p> <p>D LAT 0.51 DEG</p> <p>D LONG 35.15 DEG</p>					
<p>HIGH RESOLUTION</p> <p>CORNER COORDINATE SIDE LENGTH</p> <p>A LAT 0.32 DEG AB 21.0 KM</p> <p>A LONG 35.78 DEG BC 5.3 KM</p> <p>B LAT -0.36 DEG CD 21.0 KM</p> <p>B LONG 35.63 DEG DA 5.3 KM</p> <p>C LAT -0.32 DEG TILT DISTANCE 3.4</p> <p>C LONG 35.46 DEG</p> <p>D LAT 0.36 DEG</p> <p>D LONG 35.61 DEG</p>					

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.
1077

YR.NO.DY 660E22
HR.MI.SEC 1651 9.11

S/C POSITION
ALT 58.22 KM
ALT RT -0.0166 KM/SEC
LAT -0.04 DEG
LONG 35.77 DEG

S/C ORIENTATION
TILT ANG 0.22 DEG
TILT AZIM 336.52 DEG
SWING ANG 143.90 DEG
N.DEV. 347.38 DEG

PHOTO ILLUMINATION
SUN AZIM 88.34 DEG
INCID ANG 65.65 DEG
EMISS ANG 0.22 DEG
PHASE ANG 65.57 DEG
ALPHA 0.08 DEG

PRINCIPAL POINT
LATITUDE -0.03 DEG
LONGITUDE 35.77 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.59 DEG AB 47.5 KM
A LONG 36.60 DEG BC 40.1 KM
B LAT -0.94 DEG CD 47.5 KM
B LONG 36.26 DEG DA 40.2 KM
C LAT -0.66 DEG TILT DISTANCE 0.3
C LONG 34.56 DEG
D LAT 0.88 DEG
D LONG 35.30 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.29 DEG AB 21.0 KM
A LONG 35.93 DEG BC 5.3 KM
B LAT -0.39 DEG CD 21.0 KM
B LONG 35.78 DEG DA 5.3 KM
C LAT -0.35 DEG TILT DISTANCE 2.3
C LONG 35.61 DEG
D LAT 0.23 DEG
D LONG 35.76 DEG

MISSION/
FRAME NO.
1078

YR.NO.DY 660E22
HR.MI.SEC 1651 9.11

S/C POSITION
ALT 58.18 KM
ALT RT -0.0153 KM/SEC
LAT -0.07 DEG
LONG 35.92 DEG

S/C ORIENTATION
TILT ANG 0.18 DEG
TILT AZIM 18.72 DEG
SWING ANG 186.10 DEG
N.DEV. 347.38 DEG

PHOTO ILLUMINATION
SUN AZIM 88.32 DEG
INCID ANG 65.51 DEG
EMISS ANG 0.18 DEG
PHASE ANG 65.67 DEG
ALPHA -0.05 DEG

PRINCIPAL POINT
LATITUDE -0.06 DEG
LONGITUDE 35.92 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.56 DEG AB 47.5 KM
A LONG 36.75 DEG BC 40.1 KM
B LAT -0.97 DEG CD 47.5 KM
B LONG 36.40 DEG DA 40.2 KM
C LAT -0.69 DEG TILT DISTANCE 0.2
C LONG 35.11 DEG
D LAT 0.85 DEG
D-LONG 35.45 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.26 DEG AB 21.0 KM
A LONG 36.08 DEG BC 5.3 KM
B LAT -0.42 DEG CD 21.0 KM
B LONG 35.93 DEG DA 5.3 KM
C LAT -0.38 DEG TILT DISTANCE 1.8
C LONG 36.76 DEG
D LAT 0.29 DEG
D LONG 35.91 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/10/71

MISSION/
FRAME NO.
1079

TIME
660822

YR.,MO.,DY
185111.51

HR.,MI.,SEC

S/C POSITION
ALT 58.14 KM
LAT RT -0.0141 KM/SEC
LONG -0.10 DEG

S/C ORIENTATION
TILT ANG 0.24 DEG
TILT AZIM 55.56 DEG
SWING ANG 222.94 DEG
N.DEV. 347.38 DEG

PHOTO ILLUMINATION
SUN AZIM 88.31 DEG
INCID ANG 65.36 DEG
EMISS ANG 0.25 DEG
PHASE ANG 65.57 DEG
ALPHA -0.21 DEG

PRINCIPAL POINT
LATITUDE -0.10 DEG
LONGITUDE 36.07 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 0.82 DEG AB 47.5 KM
A LONG 36.90 DEG BC 40.1 KM
B LAT -1.01 DEG CD 47.4 KM
B LONG 36.55 DEG DA 40.2 KM
C LAT -0.72 DEG TILT DISTANCE 0.3
C LONG 35.26 DEG
D LAT 0.81 DEG
D LONG 35.60 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 0.22 DEG AB 20.9 KM
A LONG 36.23 DEG BC 5.3 KM
B LAT -0.45 DEG CD 20.9 KM
B LONG 36.08 DEG DA 5.3 KM
C LAT -0.41 DEG TILT DISTANCE 2.5
C LONG 35.91 DEG
D LAT 0.26 DEG
D LONG 36.06 DEG

MISSION/
FRAME NO.
1080

TIME
660822

YR.,MO.,DY
185113.91

HR.,MI.,SEC

S/C POSITION
ALT 58.11 KM
LAT RT -0.0129 KM/SEC
LONG -0.13 DEG

S/C ORIENTATION
TILT ANG 0.36 DEG
TILT AZIM 72.77 DEG
SWING ANG 240.15 DEG
N.DEV. 347.38 DEG

PHOTO ILLUMINATION
SUN AZIM 88.29 DEG
INCID ANG 65.21 DEG
EMISS ANG 0.37 DEG
PHASE ANG 65.57 DEG
ALPHA -0.36 DEG

PRINCIPAL POINT
LATITUDE -0.13 DEG
LONGITUDE 36.21 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 0.49 DEG AB 47.5 KM
A LONG 37.05 DEG BC 40.1 KM
B LAT -1.04 DEG CD 47.3 KM
B LONG 36.70 DEG DA 40.2 KM
C LAT -0.75 DEG TILT DISTANCE 0.5
C LONG 35.41 DEG
D LAT 0.78 DEG
D LONG 35.75 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 0.19 DEG AB 20.9 KM
A LONG 36.37 DEG BC 5.3 KM
B LAT -0.48 DEG CD 20.9 KM
B LONG 36.22 DEG DA 5.3 KM
C LAT -0.45 DEG TILT DISTANCE 3.8
C LONG 36.05 DEG
D LAT 0.23 DEG
D LONG 36.20 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER. 04/10/71 PAGE 38

MISSION/
FRAME NO.
1081

YR.MO.DY	660E22	TIME	185116.31	S/C POSITION	ALT	58.08 KM	S/C ORIENTATION	TILT ANG	0.49 DEG	PHOTO ILLUMINATION	SUN AZIM	88.27 DEG	PRINCIPAL POINT	LATITUDE	-0.16 DEG
HR.MI.SEC	185116.31	ALT RT	-0.0117 KM/SEC	TILT AZIM	81.14 DEG	INCID ANG	65.07 DEG	EMISS ANG	0.51 DEG	PHASE ANG	65.57 DEG	ALPHA	-0.51 DEG	LONGITUDE	36.36 DEG
		LONG	36.35 DEG	N.DEV.	347.39 DEG										

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT	0.46 DEG
A LONG	37.19 DEG
B LAT	-1.07 DEG
B LONG	36.85 DEG
C LAT	-0.78 DEG
C LONG	35.56 DEG
D LAT	0.75 DEG
D LONG	35.90 DEG

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT	0.16 DEG
A LONG	36.52 DEG
B LAT	-0.52 DEG
B LONG	36.37 DEG
C LAT	-0.48 DEG
C LONG	36.20 DEG
D LAT	0.20 DEG
D LONG	36.35 DEG

MISSION/
FRAME NO.
1082

YR.MO.DY	660E22	TIME	185118.71	S/C POSITION	ALT	58.05 KM	S/C ORIENTATION	TILT ANG	0.63 DEG	PHOTO ILLUMINATION	SUN AZIM	88.26 DEG	PRINCIPAL POINT	LATITUDE	-0.19 DEG
HR.MI.SEC	185118.71	ALT RT	-0.0104 KM/SEC	TILT AZIM	85.90 DEG	INCID ANG	64.92 DEG	EMISS ANG	0.65 DEG	PHASE ANG	65.57 DEG	ALPHA	-0.65 DEG	LONGITUDE	36.51 DEG
		LONG	36.49 DEG	N.DEV.	347.39 DEG										

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT	0.43 DEG
A LONG	37.34 DEG
B LAT	-1.10 DEG
B LONG	37.00 DEG
C LAT	-0.81 DEG
C LONG	35.71 DEG
D LAT	0.71 DEG
D LONG	36.05 DEG

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT	0.13 DEG
A LONG	36.67 DEG
B LAT	-0.55 DEG
B LONG	36.52 DEG
C LAT	-0.51 DEG
C LONG	36.35 DEG
D LAT	0.16 DEG
D LONG	36.50 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/10/71

MISSION/
 FRAME NO. 1083
 YR.NO.DY 66CE22
 PR.MI.SEC 1ES1Z1.11

TIME 66CE22 1ES1Z1.11

S/C POSITION
 ALT 58.03 KM
 ALT RT -0.0092 KM/SEC
 LAT -0.22 DEG
 LONG 36.63 DEG

S/C ORIENTATION
 TILT ANG 0.77 DEG
 TILT AZIM 88.93 DEG
 SWING ANG 256.22 DEG
 N.DEV. 347.39 DEG

PHOTO ILLUMINATION
 SUN AZIM 88.24 DEG
 INCID ANG 64.77 DEG
 EMISS ANG 0.80 DEG
 PHASE ANG 65.57 DEG
 ALPHA -0.80 DEG

PRINCIPAL POINT
 LATITUDE -3.22 DEG
 LONGITUDE 36.66 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 0.10 DEG AB 20.9 KM
 A LONG 36.82 DEG BC 5.2 KM
 B LAT -0.58 DEG CD 23.9 KM
 B LONG 36.87 DEG DA 5.3 KM
 C LAT -0.54 DEG TILT DISTANCE 8.2
 C LONG 36.50 DEG
 D LAT 0.13 DEG
 D LONG 26.65 DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 0.40 DEG AB 47.5 KM
 A LONG 37.49 DEG BC 40.0 KM
 B LAT -1.14 DEG CD 47.1 KM
 B LONG 37.15 DEG DA 40.1 KM
 C LAT -0.84 DEG TILT DISTANCE 1.1
 C LONG 35.86 DEG
 D LAT 0.68 DEG
 D LONG 36.20 DEG

MISSION/
 FRAME NO. 1084
 YR.NO.DY 66CE23
 PR.MI.SEC 0149Z1.21

TIME 66CE23 0149Z1.21

S/C POSITION
 ALT 80.05 KM
 ALT RT -0.1579 KM/SEC
 LAT 3.45 DEG
 LONG 15.21 DEG

S/C ORIENTATION
 TILT ANG 15.43 DEG
 TILT AZIM 232.64 DEG
 SWING ANG 51.23 DEG
 N.DEV. 357.51 DEG

PHOTO ILLUMINATION
 SUN AZIM 88.84 DEG
 INCID ANG 83.22 DEG
 EMISS ANG 16.16 DEG
 PHASE ANG 70.34 DEG
 ALPHA 12.77 DEG

PRINCIPAL POINT
 LATITUDE 3.00 DEG
 LONGITUDE 14.62 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 3.49 DEG AB 30.2 KM
 A LONG 14.77 DEG BC 8.0 KM
 B LAT 2.49 DEG CD 30.8 KM
 B LONG 14.73 DEG DA 7.5 KM
 C LAT 2.48 DEG TILT DISTANCE 67.8
 C LONG 14.47 DEG
 D LAT 3.50 DEG
 D LONG 14.52 DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 3.99 DEG AB 64.4 KM
 A LONG 15.52 DEG BC 64.9 KM
 B LAT 1.86 DEG CD 76.1 KM
 B LONG 15.55 DEG DA 55.3 KM
 C LAT 1.65 DEG TILT DISTANCE 22.0
 C LONG 13.41 DEG
 D LAT 4.15 DEG
 D LONG 13.70 DEG

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.

1085
YR.NO.DY 660623
HR.MI.SEC 084621.22

S/C POSITION
ALT 56.90 KM
ALT RT -0.0448 KM/SEC
LAT 0.53 DEG
LONG 25.06 DEG

S/C ORIENTATION
TILT ANG 0.41 DEG
TILT AZIM 11.18 DEG
SWING ANG 178.80 DEG
N.DEV. 347.51 DEG

PHOTO ILLUMINATION
SUN AZIM 88.60 DEG
INCID ANG 69.26 DEG
EMISS ANG 0.43 DEG
PHASE ANG 69.36 DEG
ALPHA -0.09 DEG

PRINCIPAL POINT
LATITUDE 7.54 DEG
LONGITUDE 25.06 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 1.15 DEG AB 45.4 KM
A LONG 25.87 DEG BC 39.2 KM
B LAT -0.35 DEG CD 46.4 KM
B LONG 25.54 DEG DA 39.4 KM
C LAT -0.07 DEG TILT DISTANCE
C LONG 24.27 DEG 0.5
D LAT 1.43 DEG
D LONG 24.60 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.85 DEG AB 20.5 KM
A LONG 25.22 DEG BC 5.1 KM
B LAT 0.19 DEG CD 20.5 KM
B LONG 25.07 DEG DA 5.2 KM
C LAT 0.23 DEG TILT DISTANCE
C LONG 24.91 DEG 4.3
D LAT 0.89 DEG
D LONG 25.35 DEG

MISSION/
FRAME NO.

1086
YR.NO.DY 660623
HR.MI.SEC 084623.68

S/C POSITION
ALT 56.79 KM
ALT RT -0.0435 KM/SEC
LAT 0.49 DEG
LONG 25.21 DEG

S/C ORIENTATION
TILT ANG 0.44 DEG
TILT AZIM 31.25 DEG
SWING ANG 198.87 DEG
N.DEV. 347.61 DEG

PHOTO ILLUMINATION
SUN AZIM 88.58 DEG
INCID ANG 69.11 DEG
EMISS ANG 0.45 DEG
PHASE ANG 69.36 DEG
ALPHA -0.24 DEG

PRINCIPAL POINT
LATITUDE 0.51 DEG
LONGITUDE 25.21 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 1.11 DEG AB 46.4 KM
A LONG 26.02 DEG BC 39.1 KM
B LAT -0.38 DEG CD 46.3 KM
B LONG 25.69 DEG DA 39.3 KM
C LAT -0.10 DEG TILT DISTANCE
C LONG 24.43 DEG 0.6
D LAT 1.39 DEG
D LONG 24.75 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.82 DEG AB 20.5 KM
A LONG 25.37 DEG BC 5.1 KM
B LAT 0.16 DEG CD 20.5 KM
B LONG 25.22 DEG DA 5.1 KM
C LAT 0.19 DEG TILT DISTANCE
C LONG 25.06 DEG 4.6
D LAT 0.85 DEG
D LONG 25.20 DEG

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.
1087

YR.NO.DY 660E23
HR.HI,SEC 084E26.14

TIME 660E23 084E26.14

S/C POSITION
ALT 56.69 KM
ALT RT -0.0423 KM/SEC
LAT 0.46 DEG
LONG 25.35 DEG

S/C ORIENTATION
TILT ANG 0.51 DEG
TILT AZIM 47.52 DEG
SWING ANG 215.13 DEG
N.DEV. 347.61 DEG

PHOTO ILLUMINATION
SUN AZIM 88.57 DEG
INCID ANG 68.96 DEG
EMISS ANG 0.52 DEG
PHASE ANG 69.36 DEG
-ALPHA -0.40 DEG

PRINCIPAL POINT
LATITUDE 0.47 DEG
LONGITUDE 25.37 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.78 DEG AB 20.4 KM
A LONG 25.52 DEG BC 5.1 KM
B LAT 0.13 DEG CD 20.4 KM
B LONG 25.38 DEG DA 5.1 KM
C LAT 0.16 DEG TILT DISTANCE
C LONG 25.21 DEG TILT DISTANCE
D LAT 0.82 DEG
D LONG 25.35 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 1.08 DEG AB 46.3 KM
A LONG 26.17 DEG BC 39.0 KM
B LAT -0.41 DEG CD 46.2 KM
B LONG 25.84 DEG DA 39.3 KM
C LAT -0.13 DEG TILT DISTANCE
C LONG 24.58 DEG TILT DISTANCE
D LAT 1.36 DEG
D LONG 24.91 DEG

MISSION/
FRAME NO.
1088

YR.NO.DY 660E23
HR.HI,SEC 084E28.59

TIME 660E23 084E28.59

S/C POSITION
ALT 56.58 KM
ALT RT -0.0410 KM/SEC
LAT 0.43 DEG
LONG 25.50 DEG

S/C ORIENTATION
TILT ANG 0.61 DEG
TILT AZIM 59.15 DEG
SWING ANG 226.76 DEG
N.DEV. 347.61 DEG

PHOTO ILLUMINATION
SUN AZIM 88.56 DEG
INCID ANG 68.81 DEG
EMISS ANG 0.63 DEG
PHASE ANG 69.36 DEG
ALPHA -0.55 DEG

PRINCIPAL POINT
LATITUDE 0.44 DEG
LONGITUDE 25.52 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.75 DEG AB 20.4 KM
A LONG 25.67 DEG BC 5.1 KM
B LAT 0.09 DEG CD 20.4 KM
B LONG 25.53 DEG DA 5.1 KM
C LAT 0.13 DEG TILT DISTANCE
C LONG 25.36 DEG TILT DISTANCE
D LAT 0.79 DEG
D LONG 25.51 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 1.05 DEG AB 46.3 KM
A LONG 26.32 DEG BC 38.9 KM
B LAT -0.44 DEG CD 46.0 KM
B LONG 25.99 DEG DA 39.2 KM
C LAT -0.16 DEG TILT DISTANCE
C LONG 24.74 DEG TILT DISTANCE
D LAT 1.32 DEG
D LONG 25.06 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

MISSION/
FRAME NO.
1089

YR.MO.DY 660623
HR.MI.SEC 084631.04

S/C POSITION
ALT 56.49 KM
ALT RT -0.0398 KM/SEC
LAT 0.40 DEG
LONG 25.64 DEG

S/C ORIENTATION
TILT ANG 0.72 DEG
TILT AZIM 67.29 DEG
SWING-ANG 234.90 DEG
N.DEV. 347.61 DEG

PHOTO ILLUMINATION
SUN AZIM 88.55 DEG
INCID ANG 68.66 DEG
EMISS ANG 0.75 DEG
PHASE ANG 69.36 DEG
ALPHA -0.70 DEG

PRINCIPAL POINT
LATITUDE 0.41 DEG
LONGITUDE 25.67 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 1.01 DEG AB 46.3 KM
A LONG 26.47 DEG BC 38.9 KM
B LAT -0.46 DEG CD 45.9 KM
B LONG 26.14 DEG DA 39.1 KM
C LAT -0.20 DEG TILT DISTANCE 1.0
D LAT 1.29 DEG
D LONG 25.21 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.72 DEG AB 20.4 KM
A LONG 25.82 DEG BC 5.1 KM
B LAT 0.06 DEG CD 20.3 KM
B LONG 25.68 DEG DA 5.1 KM
C LAT 0.10 DEG TILT DISTANCE 7.6
D LAT 0.75 DEG
D LONG 25.66 DEG

MISSION/
FRAME NO.
1090

YR.MO.DY 660623
HR.MI.SEC 084633.49

S/C POSITION
ALT 56.39 KM
ALT RT -0.0385 KM/SEC
LAT 0.37 DEG
LONG 25.79 DEG

S/C ORIENTATION
TILT ANG 0.86 DEG
TILT AZIM 73.08 DEG
SWING-ANG 240.69 DEG
N.DEV. 347.61 DEG

PHOTO ILLUMINATION
SUN AZIM 88.53 DEG
INCID ANG 68.51 DEG
EMISS ANG 0.88 DEG
PHASE ANG 69.36 DEG
ALPHA -0.85 DEG

PRINCIPAL POINT
LATITUDE 0.37 DEG
LONGITUDE 25.62 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.98 DEG AB 46.2 KM
A LONG 26.62 DEG BC 36.8 KM
B LAT -0.51 DEG CD 45.8 KM
B LONG 26.29 DEG DA 39.1 KM
C LAT -0.23 DEG TILT DISTANCE 1.2
D LAT 1.25 DEG
D LONG 25.36 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.68 DEG AB 20.3 KM
A LONG 25.97 DEG BC 5.1 KM
B LAT 0.03 DEG CD 20.3 KM
B LONG 25.83 DEG DA 5.1 KM
C LAT 0.07 DEG TILT DISTANCE 9.0
D LAT 0.72 DEG
D LONG 25.81 DEG

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.
1091

TIME 660E23
YR,MO,DY 064E35.94
HR,MI,SEC 064E35.94

S/C POSITION
ALT 56.30 KM
ALT RT -0.0373 KM/SEC
LAT 0.33 DEG
LONG 25.94 DEG

S/C ORIENTATION
TILT ANG 9.98 DEG
TILT AZIM 77.33 DEG
SWING ANG 244.94 DEG
N.DEV. 347.61 DEG

PHOTO ILLUMINATION
SUN AZIM 88.52 DEG
INCID ANG 68.36 DEG
EMISS ANG 1.01 DEG
PHASE ANG 69.36 DEG
ALPHA -1.00 DEG

PRINCIPAL POINT
LATITUDE 0.34 DEG
LONGITUDE 25.97 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.55 DEG AB 46.2 KM
A LONG 26.77 DEG BC 38.8 KM
B LAT -0.54 DEG CD 45.7 KM
B LONG 26.44 DEG DA 39.0 KM
C LAT -0.26 DEG TILT DISTANCE 1.3
C LONG 25.19 DEG
D LAT 1.22 DEG
D LONG 25.51 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.65 DEG AB 20.3 KM
A LONG 26.12 DEG BC 5.1 KM
B LAT -0.00 DEG CD 20.3 KM
B LONG 25.98 DEG DA 5.1 KM
C LAT 0.03 DEG TILT DISTANCE 10.4
C LONG 25.81 DEG
D LAT 0.69 DEG
D LONG 25.96 DEG

MISSION/
FRAME NO.
1092

TIME 660E23
YR,MO,DY 084E36.38
HR,MI,SEC 084E36.38

S/C POSITION
ALT 56.21 KM
ALT RT -0.0360 KM/SEC
LAT 0.30 DEG
LONG 26.08 DEG

S/C ORIENTATION
TILT ANG 1.12 DEG
TILT AZIM 80.55 DEG
SWING ANG 248.16 DEG
N.DEV. 347.61 DEG

PHOTO ILLUMINATION
SUN AZIM 88.51 DEG
INCID ANG 68.21 DEG
EMISS ANG 1.16 DEG
PHASE ANG 69.36 DEG
ALPHA -1.14 DEG

PRINCIPAL POINT
LATITUDE 0.31 DEG
LONGITUDE 25.12 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.92 DEG AB 46.2 KM
A LONG 26.92 DEG BC 38.7 KM
B LAT -0.57 DEG CD 45.6 KM
B LONG 26.59 DEG DA 38.9 KM
C LAT -0.29 DEG TILT DISTANCE 1.5
C LONG 25.35 DEG
D LAT 1.18 DEG
D LONG 25.67 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.62 DEG AB 20.3 KM
A LONG 26.27 DEG BC 5.1 KM
B LAT -0.04 DEG CD 20.2 KM
B LONG 26.13 DEG DA 5.1 KM
C LAT 0.00 DEG TILT DISTANCE 11.8
C LONG 25.96 DEG
D LAT 0.65 DEG
D LONG 26.11 DEG

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MISSION/
FRAME NO.
1093

YR. MO. DY 660823
HR. MI. SEC 084443.83

S/C POSITION
ALT 56.12 KM
ALT RT -0.0348 KM/SEC
LAT 0.27 DEG
LONG 26.23 DEG

S/C ORIENTATION
TILT ANG 1.26 DEG
TILT AZIM 83.06 DEG
SWING ANG 250.67 DEG
N.DEV. 347.61 DEG

PHOTO ILLUMINATION
SUN AZIM 88.49 DEG
INCID ANG 68.06 DEG
EMISS ANG 1.30 DEG
PHASE ANG 69.36 DEG
ALPHA -1.29 DEG

PRINCIPAL POINT
LATITUDE 5.28 DEG
LONGITUDE 26.27 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.88 DEG AB 46.1 KM
A LONG 27.07 DEG BC 38.6 KM
B LAT -0.61 DEG CD 45.5 KM
B LONG 26.74 DEG DA 38.9 KM
C LAT -0.32 DEG TILT DISTANCE 1.7
C LONG 25.50 DEG
D LAT 1.15 DEG
D LONG 25.82 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.58 DEG AB 20.2 KM
A LONG 26.42 DEG BC 5.1 KM
B LAT -0.07 DEG CD 20.2 KM
B LONG 26.28 DEG DA 5.1 KM
C LAT -0.03 DEG TILT DISTANCE 13.3
C LONG 26.12 DEG
D LAT 0.62 DEG
D LONG 25.26 DEG

MISSION/
FRAME NO.
1094

YR. MO. DY 660823
HR. MI. SEC 084443.27

S/C POSITION
ALT 56.04 KM
ALT RT -0.0335 KM/SEC
LAT 0.24 DEG
LONG 26.37 DEG

S/C ORIENTATION
TILT ANG 1.40 DEG
TILT AZIM 85.06 DEG
SWING ANG 252.67 DEG
N.DEV. 347.61 DEG

PHOTO ILLUMINATION
SUN AZIM 88.48 DEG
INCID ANG 67.91 DEG
EMISS ANG 1.45 DEG
PHASE ANG 69.36 DEG
ALPHA -1.44 DEG

PRINCIPAL POINT
LATITUDE 0.24 DEG
LONGITUDE 26.42 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.85 DEG AB 46.1 KM
A LONG 27.22 DEG BC 38.6 KM
B LAT -0.64 DEG CD 45.4 KM
B LONG 26.89 DEG DA 38.8 KM
C LAT -0.35 DEG TILT DISTANCE 1.9
C LONG 25.65 DEG
D LAT 1.11 DEG
D LONG 25.57 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.55 DEG AB 20.2 KM
A LONG 26.57 DEG BC 5.1 KM
B LAT -0.10 DEG CD 20.2 KM
B LONG 26.43 DEG DA 5.1 KM
C LAT -0.06 DEG TILT DISTANCE 14.8
C LONG 26.27 DEG
D LAT 0.59 DEG
D LONG 26.41 DEG

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.
1095

YR.MO.DY
HR.MI.SEC
084648.71

TIME
660E23

S/C POSITION
ALT 55.95 KM
ALT RT -0.0323 KM/SEC
LAT 3.21 DEG
LONG 25.52 DEG

S/C ORIENTATION
TILT ANG 1.54 DEG
TILT AZIM 86.70 DEG
SWING ANG 254.31 DEG
N.DEV. 347.61 DEG

PHOTO ILLUMINATION
SUN AZIM 88.46 DEG
INCID ANG 67.76 DEG
EMISS ANG 1.59 DEG
PHASE ANG 69.36 DEG
ALPHA -1.59 DEG

PRINCIPAL POINT
LATITUDE 0.21 DEG
LONGITUDE 26.57 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.52 DEG AB 20.2 KM
A LONG 26.72 DEG BC 5.1 KM
B LAT -0.13 DEG CD 20.1 KM
B LONG 26.58 DEG DA 5.1 KM
C LAT -0.10 DEG TILT DISTANCE 16.4
C LONG 26.42 DEG
D LAT 0.55 DEG
D LONG 26.56 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.82 DEG AB 46.1 KM
A LONG 27.37 DEG BC 38.5 KM
B LAT -0.67 DEG CD 45.3 KM
B LONG 27.04 DEG DA 38.8 KM
C LAT -0.38 DEG TILT DISTANCE 2.1
C LONG 25.80 DEG
D LAT 1.08 DEG
D LONG 26.12 DEG

MISSION/
FRAME NO.
1096

YR.MO.DY
HR.MI.SEC
084648.15

TIME
660E23

S/C POSITION
ALT 55.88 KM
ALT RT -0.0310 KM/SEC
LAT 0.18 DEG
LONG 26.66 DEG

S/C ORIENTATION
TILT ANG 1.69 DEG
TILT AZIM 88.05 DEG
SWING ANG 255.66 DEG
N.DEV. 347.61 DEG

PHOTO ILLUMINATION
SUN AZIM 88.45 DEG
INCID ANG 67.01 DEG
EMISS ANG 1.74 DEG
PHASE ANG 69.36 DEG
ALPHA -1.74 DEG

PRINCIPAL POINT
LATITUDE 0.18 DEG
LONGITUDE 26.72 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.49 DEG AB 20.2 KM
A LONG 26.87 DEG BC 5.1 KM
B LAT -0.16 DEG CD 20.1 KM
B LONG 26.73 DEG DA 5.1 KM
C LAT -0.13 DEG TILT DISTANCE 17.9
C LONG 26.57 DEG
D LAT 0.52 DEG
D LONG 26.71 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.78 DEG AB 46.1 KM
A LONG 27.52 DEG BC 38.5 KM
B LAT -0.70 DEG CD 45.2 KM
B LONG 27.19 DEG DA 38.7 KM
C LAT -0.41 DEG TILT DISTANCE 2.3
C LONG 25.96 DEG
D LAT 1.04 DEG
D LONG 26.27 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

MISSION/
FRAME NO.
1097

YR.MO.DY 660623
HR.MI.SEC 084653.02

S/C POSITION
ALT 55.81 KM
ALT RT -0.0298 KM/SEC
LAT 0.14 DEG
LONG 26.81 DEG

S/C ORIENTATION
TILT ANG 1.83 DEG
TILT AZIM 89.19 DEG
SWING ANG 256.80 DEG
N.DEV. 347.61 DEG

PHOTO ILLUMINATION
SUN AZIM 88.43 DEG
INCID ANG 57.46 DEG
EMISS ANG 1.89 DEG
PHASE ANG 69.36 DEG
ALPHA -1.89 DEG

PRINCIPAL POINT
LATITUDE 0.15 DEG
LONGITUDE 26.87 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT C.75 DEG AB 46.1 KM
A LONG 27.67 DEG BC 38.5 KM
B LAT -0.73 DEG CD 45.1 KM
B LONG 27.34 DEG DA 38.7 KM
C LAT -0.45 DEG TILT DISTANCE 2.5
C LONG 26.11 DEG
D LAT 1.01 DEG
D LONG 26.42 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.45 DEG AB 20.1 KM
A LONG 27.02 DEG BC 5.0 KM
B LAT -0.20 DEG CD 20.1 KM
B LONG 26.88 DEG DA 5.1 KM
C LAT -0.16 DEG TILT DISTANCE 19.4
C LONG 26.72 DEG
D LAT 0.49 DEG
D LONG 26.86 DEG

MISSION/
FRAME NO.
1098

YR.MO.DY 660623
HR.MI.SEC 084653.02

S/C POSITION
ALT 55.73 KM
ALT RT -0.0285 KM/SEC
LAT 0.11 DEG
LONG 26.95 DEG

S/C ORIENTATION
TILT ANG 1.98 DEG
TILT AZIM 90.16 DEG
SWING ANG 257.77 DEG
N.DEV. 347.61 DEG

PHOTO ILLUMINATION
SUN AZIM 88.42 DEG
INCID ANG 57.31 DEG
EMISS ANG 2.04 DEG
PHASE ANG 69.36 DEG
ALPHA -2.04 DEG

PRINCIPAL POINT
LATITUDE 0.11 DEG
LONGITUDE 27.02 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT C.72 DEG AB 46.1 KM
A LONG 27.82 DEG BC 38.4 KM
B LAT -0.77 DEG CD 45.0 KM
B LONG 27.49 DEG DA 38.7 KM
C LAT -0.48 DEG TILT DISTANCE 2.7
C LONG 26.26 DEG
D LAT 0.57 DEG
D LONG 26.57 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.42 DEG AB 20.1 KM
A LONG 27.17 DEG BC 5.0 KM
B LAT -0.23 DEG CD 20.1 KM
B LONG 27.03 DEG DA 5.1 KM
C LAT -0.19 DEG TILT DISTANCE 21.0
C LONG 26.87 DEG
D LAT 0.45 DEG
D LONG 27.01 DEG

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.
1099

YR.MD.DY 66GE23
HR.MI.SEC 084658.45

TIME 66GE23 084658.45

S/C POSITION
ALT 55.67 KM
LAT -3.0273 KM/SEC
LONG 27.10 DEG

S/C ORIENTATION
TILT ANG 2.12 DEG
TILT AZIM 91.00 DEG
SWING ANG 258.61 DEG
N.DEV. 347.61 DEG

PHOTO ILLUMINATION
SUN AZIM 88.40 DEG
INCID ANG 67.17 DEG
EMISS ANG 2.19 DEG
PHASE ANG 69.36 DEG
ALPHA -2.19 DEG

PRINCIPAL POINT
LATITUDE 9.08 DEG
LONGITUDE 27.17 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.39 DEG AB 20.1 KM
A LONG 27.32 DEG BC 5.0 KM
B LAT -0.26 DEG CD 20.0 KM
B LONG 27.18 DEG DA 5.1 KM
C LAT -0.22 DEG TILT DISTANCE 22.5
C LONG 27.02 DEG
D LAT 0.42 DEG
D LONG 27.16 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.69 DEG AB 46.1 KM
A LONG 27.97 DEG BC 38.4 KM
B LAT -0.80 DEG CD 44.9 KM
B LONG 27.64 DEG DA 38.5 KM
C LAT -0.51 DEG TILT DISTANCE 2.9
C LONG 26.41 DEG
D LAT 0.54 DEG
D LONG 26.72 DEG

MISSION/
FRAME NO.
1100

YR.MD.DY 66GE23
HR.MI.SEC 084657.88

TIME 66GE23 084657.88

S/C POSITION
ALT 55.60 KM
LAT -0.0261 KM/SEC
LONG 27.24 DEG

S/C ORIENTATION
TILT ANG 2.27 DEG
TILT AZIM 91.73 DEG
SWING ANG 259.34 DEG
N.DEV. 347.61 DEG

PHOTO ILLUMINATION
SUN AZIM 88.39 DEG
INCID ANG 67.02 DEG
EMISS ANG 2.34 DEG
PHASE ANG 69.36 DEG
ALPHA -2.34 DEG

PRINCIPAL POINT
LATITUDE 0.05 DEG
LONGITUDE 27.32 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.35 DEG AB 20.1 KM
A LONG 27.47 DEG BC 5.0 KM
B LAT -0.29 DEG CD 20.0 KM
B LONG 27.33 DEG DA 5.0 KM
C LAT -0.26 DEG TILT DISTANCE 24.1
C LONG 27.16 DEG
D LAT 0.39 DEG
D LONG 27.31 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.65 DEG AB 46.1 KM
A LONG 28.12 DEG BC 36.3 KM
B LAT -0.83 DEG CD 44.8 KM
B LONG 27.79 DEG DA 38.6 KM
C LAT -0.54 DEG TILT DISTANCE 3.1
C LONG 26.56 DEG
D LAT 0.50 DEG
D LONG 26.88 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.
1102

TIME
660823
163023+51

S/C POSITION
ALT 1198.22 KM
LAT RT 0.4002 KM/SEC
LAT -9.76 DEG
LONG 150.37 DEG

S/C ORIENTATION
TILT ANG 35.75 DEG
TILT AZIM 258.94 DEG
SWING ANG 253.73 DEG
N.DEV. 163.86 DEG

PHOTO ILLUMINATION
SUN AZIM 318.30 DEG
INCID ANG 21.30 DEG
EMISS ANG 80.94 DEG
PHASE ANG 95.07 DEG
ALPHA -80.58 DEG

PRINCIPAL POINT
LATITUDE -14.68 DEG
LONGITUDE 194.34 DEG

MEDIUM RESOLUTION

CORNER COORDINATE
A LAT -46.57 DEG
A LONG 113.57 DEG
B LAT 0.
B LONG 0.
C LAT -6.07 DEG
C LONG 139.64 DEG
D LAT -41.08 DEG
D LONG 127.43 DEG

SIDE LENGTH
AB 200.8 KM
BC 0. KM
CD 257.8 KM
DA 876.2 KM
TILT DISTANCE
57.6

HIGH RESOLUTION

CORNER COORDINATE
A LAT -16.04 DEG
A LONG 114.41 DEG
B LAT -0.78 DEG
B LONG 98.80 DEG
C LAT -5.12 DEG
C LONG 119.75 DEG
D LAT -25.29 DEG
D LONG 99.41 DEG

SIDE LENGTH
AB 826.5 KM
BC 615.9 KM
CD 692.4 KM
DA 273.3 KM
TILT DISTANCE
37.8

MISSION/
FRAME NO.
1103

TIME
660823
223556+71

S/C POSITION
ALT 66.77 KM
LAT RT -0.1224 KM/SEC
LAT 2.43 DEG
LONG 8.47 DEG

S/C ORIENTATION
TILT ANG 12.52 DEG
TILT AZIM 223.02 DEG
SWING ANG 41.22 DEG
N.DEV. 357.47 DEG

PHOTO ILLUMINATION
SUN AZIM 88.87 DEG
INCID ANG 79.09 DEG
EMISS ANG 13.00 DEG
PHASE ANG 70.22 DEG
ALPHA 8.70 DEG

PRINCIPAL POINT
LATITUDE 2.07 DEG
LONGITUDE 8.13 DEG

MEDIUM RESOLUTION

CORNER COORDINATE
A LAT 2.89 DEG
A LONG 8.88 DEG
B LAT 1.10 DEG
B LONG 8.90 DEG
C LAT 1.02 DEG
C LONG 7.19 DEG
D LAT 3.00 DEG
D LONG 7.60 DEG

SIDE LENGTH
AB 54.2 KM
BC 51.9 KM
CD 60.5 KM
DA 44.8 KM
TILT DISTANCE
17.7

HIGH RESOLUTION

CORNER COORDINATE
A LAT 2.47 DEG
A LONG 5.25 DEG
B LAT 1.65 DEG
B LONG 8.22 DEG
C LAT 1.65 DEG
C LONG 8.01 DEG
D LAT 2.48 DEG
D LONG 8.05 DEG

SIDE LENGTH
AB 24.9 KM
BC 6.5 KM
CD 25.2 KM
DA 6.1 KM
TILT DISTANCE
35.0

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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04/10/71

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.

1105

YR.MO.DY 660824
HR.MI.SEC 090931.56

S/C POSITION
ALT 54.52 KM
ALT RT -0.0492 KM/SEC
LAT 0.51 DEG
LONG 11.61 DEG

S/C ORIENTATION
TILT ANG 1.87 DEG
TILT AZIM 284.06 DEG
SWING ANG 91.65 DEG
N.DEV. 347.60 DEG

PHOTO ILLUMINATION
SUN AZIM 88.59 DEG
INCID ANG 70.37 DEG
EMISS ANG 1.93 DEG
PHASE ANG 68.51 DEG
ALPHA 1.86 DEG

PRINCIPAL POINT
LATITUDE 2.53 DEG
LONGITUDE 11.55 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 1.10 DEG AB 44.9 KM
A LONG 12.32 DEG BC 37.7 KM
B LAT -0.31 DEG CD 45.0 KM
B LONG 12.00 DEG DA 37.7 KM
C LAT -0.06 DEG TILT DISTANCE 2.6
C LONG 10.79 DEG
D LAT 1.39 DEG
D LONG 11.11 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.83 DEG AB 19.6 KM
A LONG 11.79 DEG BC 4.9 KM
B LAT 0.20 DEG CD 19.7 KM
B LONG 11.56 DEG DA 4.9 KM
C LAT 0.23 DEG TILT DISTANCE 19.8
C LONG 11.40 DEG
D LAT 0.86 DEG
D LONG 11.54 DEG

MISSION/
FRAME NO.

1106

YR.MO.DY 660824
HR.MI.SEC 090940.78

S/C POSITION
ALT 54.09 KM
ALT RT -0.0445 KM/SEC
LAT 0.40 DEG
LONG 12.16 DEG

S/C ORIENTATION
TILT ANG 1.31 DEG
TILT AZIM 284.90 DEG
SWING ANG 92.49 DEG
N.DEV. 347.60 DEG

PHOTO ILLUMINATION
SUN AZIM 88.54 DEG
INCID ANG 69.80 DEG
EMISS ANG 1.35 DEG
PHASE ANG 68.51 DEG
ALPHA 1.29 DEG

PRINCIPAL POINT
LATITUDE 0.41 DEG
LONGITUDE 12.12 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.58 DEG AB 43.8 KM
A LONG 12.28 DEG BC 37.3 KM
B LAT -0.43 DEG CD 44.5 KM
B LONG 12.57 DEG DA 37.4 KM
C LAT -0.18 DEG TILT DISTANCE 1.8
C LONG 11.37 DEG
D LAT 1.26 DEG
D LONG 11.68 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.70 DEG AB 19.5 KM
A LONG 12.27 DEG BC 4.9 KM
B LAT 0.08 DEG CD 19.5 KM
B LONG 12.13 DEG DA 4.9 KM
C LAT 0.11 DEG TILT DISTANCE 13.8
C LONG 11.97 DEG
D LAT 0.74 DEG
D LONG 12.11 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

MISSION/
FRAME NO.

1107
YR.NO.DY 66CE24
HR.MI.SEC 090549.96

S/C POSITION
ALT 53.71 KM
ALT RT -0.0398 KM/SEC
LAT 0.28 DEG
LONG 12.71 DEG

S/C ORIENTATION
TILT ANG 0.75 DEG
TILT AZIM 287.00 DEG
SWING ANG 94.59 DEG
N.DEV. 347.59 DEG

PHOTO ILLUMINATION
SUN AZIM 88.49 DEG
INCID ANG 69.24 DEG
EMISS ANG 0.77 DEG
PHASE ANG 68.51 DEG
ALPHA 0.73 DEG

PRINCIPAL POINT
LATITUDE 0.28 DEG
LONGITUDE 12.69 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.66 DEG AB 43.6 KM
A LONG 13.45 DEG BC 37.1 KM
B LAT -0.55 DEG CD 44.0 KM
B LONG 13.14 DEG DA 37.1 KM
C LAT -0.29 DEG TILT DISTANCE
C LONG 11.54 DEG 1.0
D LAT 1.12 DEG
D LONG 12.25 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.58 DEG AB 19.3 KM
A LONG 12.83 DEG BC 4.9 KM
B LAT -0.04 DEG CD 19.4 KM
B LONG 12.70 DEG DA 4.9 KM
C LAT -0.01 DEG TILT DISTANCE
C LONG 12.54 DEG 7.9
D LAT 0.61 DEG
D LONG 12.68 DEG

MISSION/
FRAME NO.

1108
YR.NO.DY 66CE24
HR.MI.SEC 050535.10

S/C POSITION
ALT 53.36 KM
ALT RT -0.0351 KM/SEC
LAT 0.16 DEG
LONG 13.25 DEG

S/C ORIENTATION
TILT ANG 0.19 DEG
TILT AZIM 301.12 DEG
SWING ANG 108.70 DEG
N.DEV. 347.59 DEG

PHOTO ILLUMINATION
SUN AZIM 88.44 DEG
INCID ANG 68.68 DEG
EMISS ANG 0.20 DEG
PHASE ANG 68.51 DEG
ALPHA 0.17 DEG

PRINCIPAL POINT
LATITUDE 0.16 DEG
LONGITUDE 13.25 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.73 DEG AB 43.5 KM
A LONG 14.01 DEG BC 36.8 KM
B LAT -0.67 DEG CD 43.6 KM
B LONG 13.70 DEG DA 36.8 KM
C LAT -0.41 DEG TILT DISTANCE
C LONG 12.51 DEG 0.2
D LAT 1.00 DEG
D LONG 12.82 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.46 DEG AB 19.2 KM
A LONG 13.40 DEG BC 4.8 KM
B LAT -0.16 DEG CD 19.2 KM
B LONG 13.26 DEG DA 4.8 KM
C LAT -0.13 DEG TILT DISTANCE
C LONG 13.10 DEG 2.0
D LAT 0.49 DEG
D LONG 13.24 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.
1109

YR.MO.DY 660E24
HR.MI.SEC 091017.26

TIME 091017.26

S/C POSITION
ALT 53.07 KM
ALT RT -0.0304 KM/SEC
LAT 0.04 DEG
LONG 13.80 DEG

S/C ORIENTATION
TILT ANG 0.38 DEG
TILT AZIM 92.45 DEG
SWING ANG 260.04 DEG
N.DEV. 347.59 DEG

PHOTO ILLUMINATION
SUN AZIM 88.39 DEG
INCID ANG 68.12 DEG
EMISS ANG 0.39 DEG
PHASE ANG 68.51 DEG
ALPHA -0.39 DEG

PRINCIPAL POINT
LATITUDE 0.04 DEG
LONGITUDE 13.81 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.33 DEG AB 19.1 KM
A LONG 13.95 DEG BC 4.8 KM
B LAT -0.28 DEG CD 19.1 KM
B LONG 13.82 DEG DA 4.8 KM
C LAT -0.25 DEG TILT DISTANCE
C LONG 13.66 DEG TILT DISTANCE
D LAT 0.37 DEG 4.0
D LONG 13.80 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.41 DEG AB 43.4 KM
A LONG 14.57 DEG BC 36.6 KM
B LAT -0.79 DEG CD 43.2 KM
B LONG 14.26 DEG DA 36.6 KM
C LAT -0.82 DEG TILT DISTANCE
C LONG 13.88 DEG TILT DISTANCE
D LAT 0.87 DEG 0.9
D LONG 13.39 DEG

MISSION/
FRAME NO.
1110

YR.MO.DY 660E24
HR.MI.SEC 091017.26

TIME 091017.26

S/C POSITION
ALT 52.81 KM
ALT RT -0.0258 KM/SEC
LAT -0.07 DEG
LONG 14.34 DEG

S/C ORIENTATION
TILT ANG 0.93 DEG
TILT AZIM 98.21 DEG
SWING ANG 265.79 DEG
N.DEV. 347.59 DEG

PHOTO ILLUMINATION
SUN AZIM 88.34 DEG
INCID ANG 67.56 DEG
EMISS ANG 0.96 DEG
PHASE ANG 68.51 DEG
ALPHA -0.94 DEG

PRINCIPAL POINT
LATITUDE -0.28 DEG
LONGITUDE 14.37 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.21 DEG AB 19.0 KM
A LONG 14.51 DEG BC 4.8 KM
B LAT -0.40 DEG CD 19.0 KM
B LONG 14.38 DEG DA 4.8 KM
C LAT -0.37 DEG TILT DISTANCE
C LONG 14.22 DEG TILT DISTANCE
D LAT 0.25 DEG 9.8
D LONG 14.36 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.49 DEG AB 43.3 KM
A LONG 15.13 DEG BC 36.4 KM
B LAT -0.91 DEG CD 42.8 KM
B LONG 14.82 DEG DA 36.5 KM
C LAT -0.64 DEG TILT DISTANCE
C LONG 13.65 DEG TILT DISTANCE
D LAT 0.74 DEG 1.3
D LONG 13.55 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/10/71 PAGE 52

MISSION/
FRAME NO.
1111

TIME 660E24
YR,MO, DY 091026.27
HR,MI,SEC
S/C POSITION ALT 52.6C KM
TILT ANG 1.48 DEG
TILT AZIM 99.66 DEG
SWING ANG 257.25 DEG
N.DEV. 347.59 DEG
LONG 14.88 DEG
CORNER COORDINATE
A LAT 0.37 DEG
A LONG 15.68 DEG
B LAT -1.03 DEG
B LONG 15.37 DEG
C LAT -0.76 DEG
C LONG 14.21 DEG
D LAT 0.61 DEG
D LONG 14.51 DEG
SIDE LENGTH
AB 43.3 KM
BC 36.3 KM
CD 42.5 KM
DA 36.4 KM
TILT DISTANCE 2.0
HIGH RESOLUTION
CORNER COORDINATE
A LAT 0.09 DEG
A LONG 15.07 DEG
B LAT -0.52 DEG
B LONG 14.93 DEG
C LAT -0.49 DEG
C LONG 14.78 DEG
D LAT 0.12 DEG
D LONG 14.91 DEG
SIDE LENGTH
AB 19.0 KM
BC 4.8 KM
CD 18.9 KM
DA 4.8 KM
TILT DISTANCE 15.7
PHOTO ILLUMINATION
SUN AZIM 88.28 DEG
INCID ANG 67.01 DEG
EMISS ANG 1.53 DEG
PHASE ANG 68.51 DEG
ALPHA -1.50 DEG
PRINCIPAL POINT
LATITUDE -0.20 DEG
LONGITUDE 14.92 DEG

MISSION/
FRAME NO.
1112

TIME 660E24
YR,MO, DY 091035.29
HR,MI,SEC
S/C POSITION ALT 52.63 KM
TILT ANG 2.03 DEG
TILT AZIM 100.38 DEG
SWING ANG 267.97 DEG
N.DEV. 347.50 DEG
LONG 15.41 DEG
CORNER COORDINATE
A LAT 0.25 DEG
A LONG 16.23 DEG
B LAT -1.15 DEG
B LONG 15.52 DEG
C LAT -0.87 DEG
C LONG 14.75 DEG
D LAT 0.49 DEG
D LONG 15.05 DEG
SIDE LENGTH
AB 43.3 KM
BC 36.2 KM
CD 42.3 KM
DA 36.3 KM
TILT DISTANCE 2.8
HIGH RESOLUTION
CORNER COORDINATE
A LAT -0.03 DEG
A LONG 15.62 DEG
B LAT -0.64 DEG
B LONG 15.48 DEG
C LAT -0.60 DEG
C LONG 15.33 DEG
D LAT 0.00 DEG
D LONG 15.46 DEG
SIDE LENGTH
AB 18.9 KM
BC 4.7 KM
CD 18.9 KM
DA 4.8 KM
TILT DISTANCE 21.5
PHOTO ILLUMINATION
SUN AZIM 88.22 DEG
INCID ANG 66.46 DEG
EMISS ANG 2.09 DEG
PHASE ANG 68.51 DEG
ALPHA -2.05 DEG
PRINCIPAL POINT
LATITUDE -0.22 DEG
LONGITUDE 15.47 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

MISSION/
FRAME NO.

1113 YR.MO.DY 660E24
HR.MI.SEC 1604 3.01

S/C POSITION
ALT 74.69 KM
ALT RT -0.1553 KM/SEC
LAT 3.19 DEG
LONG -4.73 DEG

S/C ORIENTATION
TILT ANG 14.85 DEG
TILT AZIM 239.26 DEG
SWING ANG 58.31 DEG
N.DEV. 358.15 DEG

PHOTO ILLUMINATION
SUN AZIM 88.80 DEG
INCID ANG 83.64 DEG
EMISS ANG 15.52 DEG
PHASE ANG 70.24 DEG
ALPHA 13.33 DEG

PRINCIPAL POINT
LATITUDE 2.85 DEG
LONGITUDE -5.29 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 3.77 DEG AB 59.3 KM
A LONG -4.46 DEG BC 59.6 KM
B LAT 1.82 DEG CD 70.3 KM
B LONG -4.43 DEG DA 52.3 KM
C LAT 1.62 DEG TILT DISTANCE 21.2
C LONG -6.39 DEG
D LAT 3.52 DEG
D LONG -6.18 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 3.30 DEG AB 27.9 KM
A LONG -5.16 DEG BC 7.4 KM
B LAT 2.38 DEG CD 28.5 KM
B LONG -5.19 DEG DA 7.0 KM
C LAT 2.37 DEG TILT DISTANCE 61.4
C LONG -5.43 DEG
D LAT 3.31 DEG
D LONG -5.39 DEG

MISSION/
FRAME NO.

1114 YR.MO.DY 660E24
HR.MI.SEC 1604 9.71

S/C POSITION
ALT 73.66 KM
ALT RT -0.1521 KM/SEC
LAT 3.10 DEG
LONG -4.34 DEG

S/C ORIENTATION
TILT ANG 14.57 DEG
TILT AZIM 238.24 DEG
SWING ANG 57.23 DEG
N.DEV. 358.11 DEG

PHOTO ILLUMINATION
SUN AZIM 88.81 DEG
INCID ANG 83.22 DEG
EMISS ANG 15.20 DEG
PHASE ANG 70.24 DEG
ALPHA 12.91 DEG

PRINCIPAL POINT
LATITUDE 2.77 DEG
LONGITUDE -4.87 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 3.68 DEG AB 58.5 KM
A LONG -4.06 DEG BC 58.5 KM
B LAT 1.75 DEG CD 69.0 KM
B LONG -4.03 DEG DA 51.3 KM
C LAT 1.56 DEG TILT DISTANCE 20.7
C LONG -5.95 DEG
D LAT 3.83 DEG
D LONG -5.75 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 3.21 DEG AB 27.5 KM
A LONG -4.75 DEG BC 7.3 KM
B LAT 2.31 DEG CD 28.1 KM
B LONG -4.77 DEG DA 5.9 KM
C LAT 2.30 DEG TILT DISTANCE 58.0
C LONG -5.01 DEG
D LAT 3.22 DEG
D LONG -4.98 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/10/71

MISSION/
FRAME NO.
1115

YR.HO.DY 66CE25
PR.MI.SEC 000540.81

S/C POSITION
ALT 1381.10 KM
ALT RT 0.3459 KM/SEC
LAT -8.27 DEG
LONG 144.22 DEG

S/C ORIENTATION
TILT ANG 6.77 DEG
TILT AZIM 10.87 DEG
SWING ANG 3.91 DEG
N.DEV. 172.89 DEG

PHOTO ILLUMINATION
SUN AZIM 272.60 DEG
INCID ANG 71.04 DEG
EMISS ANG 12.23 DEG
PHASE ANG 69.75 DEG
ALPHA 0.83 DEG

PRINCIPAL POINT
LATITUDE -2.92 DEG
LONGITUDE 145.25 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -19.44 DEG AB 532.9 KM
A LONG 125.39 DEG BC 440.8 KM
B LAT 32.87 DEG CD 640.6 KM
B LONG 122.27 DEG DA 994.6 KM
C LAT 29.47 DEG TILT DISTANCE 9.5
C LONG -179.83 DEG
D LAT -23.83 DEG
D LONG 169.99 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -10.79 DEG AB 524.7 KM
A LONG 142.20 DEG BC 133.9 KM
B LAT 6.48 DEG CD 525.5 KM
B LONG 144.17 DEG DA 123.4 KM
C LAT 5.97 DEG TILT DISTANCE 72.2
C LONG 148.59 DEG
D LAT -11.29 DEG
D LONG 146.32 DEG

MISSION/
FRAME NO.
1116

YR.HO.DY 66CE25
PR.MI.SEC 000540.81

S/C POSITION
ALT 1456.20 KM
ALT RT 0.3189 KM/SEC
LAT -7.54 DEG
LONG 148.62 DEG

S/C ORIENTATION
TILT ANG 9.29 DEG
TILT AZIM 36.85 DEG
SWING ANG 30.74 DEG
N.DEV. 172.98 DEG

PHOTO ILLUMINATION
SUN AZIM 271.76 DEG
INCID ANG 79.13 DEG
EMISS ANG 17.26 DEG
PHASE ANG 69.75 DEG
ALPHA 9.00 DEG

PRINCIPAL POINT
LATITUDE -1.14 DEG
LONGITUDE 153.40 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -18.40 DEG AB 575.3 KM
A LONG 134.30 DEG BC 346.7 KM
B LAT 35.49 DEG CD 393.4 KM
B LONG 131.32 DEG DA 079.8 KM
C LAT 25.36 DEG TILT DISTANCE 13.0
C LONG -166.40 DEG
D LAT -23.51 DEG
D LONG 172.82 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -9.58 DEG AB 564.4 KM
A LONG 150.26 DEG BC 147.2 KM
B LAT 9.02 DEG CD 574.4 KM
B LONG 152.33 DEG DA 132.3 KM
C LAT 8.81 DEG TILT DISTANCE 99.4
C LONG 157.25 DEG
D LAT -13.06 DEG
D LONG 154.66 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

MISSION/
FRAME NO.
1117

YR.MO.DY 660825
HR.MI.SEC 0715.0.81

TIME
S/C POSITION
ALT 1581.24 KM
ALT RT 0.2655 KM/SEC
LAT -6.07 DEG
LONG 152.84 DEG

S/C ORIENTATION
TILT ANG 32.77 DEG
TILT AZIM 267.59 DEG
SWING ANG 264.84 DEG
N.DEV. 174.84 DEG

PHOTO ILLUMINATION
SUN AZIM 284.86 DEG
INCID ANG 25.49 DEG
EMISS ANG 90.00 DEG
PHASE ANG 115.01 DEG
ALPHA -90.00 DEG

PRINCIPAL POINT
LATITUDE -5.22 DEG
LONGITUDE 95.31 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -43.38 DEG AB 747.6 KM
A LONG 105.49 DEG BC 381.1 KM
B LAT 23.09 DEG CD 448.5 KM
B LONG 115.80 DEG DA 112.7 KM
C LAT 14.50 DEG TILT DISTANCE 51.5
C LONG 135.25 DEG
D LAT -24.35 DEG
D LONG 132.57 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -7.55 DEG AB 400.1 KM
A LONG 108.37 DEG BC 790.3 KM
B LAT 10.83 DEG CD 480.0 KM
B LONG 97.95 DEG DA 798.5 KM
C LAT 8.30 DEG TILT DISTANCE 91.5
C LONG 108.10 DEG
D LAT -16.85 DEG
D LONG 95.04 DEG

MISSION/
FRAME NO.
1118

YR.MO.DY 660825
HR.MI.SEC 1302.4.86

TIME
S/C POSITION
ALT 51.80 KM
ALT RT -0.0437 KM/SEC
LAT 0.27 DEG
LONG -2.48 DEG

S/C ORIENTATION
TILT ANG 2.54 DEG
TILT AZIM 284.98 DEG
SWING ANG 93.06 DEG
N.DEV. 348.10 DEG

PHOTO ILLUMINATION
SUN AZIM 88.49 DEG
INCID ANG 70.31 DEG
EMISS ANG 2.61 DEG
PHASE ANG 67.80 DEG
ALPHA 2.50 DEG

PRINCIPAL POINT
LATITUDE 0.29 DEG
LONGITUDE -2.55 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.84 DEG AB 41.6 KM
A LONG -1.84 DEG BC 35.8 KM
B LAT -0.51 DEG CD 43.0 KM
B LONG -2.12 DEG DA 35.9 KM
C LAT -0.28 DEG TILT DISTANCE 3.5
C LONG -3.28 DEG
D LAT 1.10 DEG
D LONG -2.59 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.57 DEG AB 18.6 KM
A LONG -2.41 DEG BC 4.7 KM
B LAT -0.03 DEG CD 18.7 KM
B LONG -2.54 DEG DA 4.7 KM
C LAT -0.00 DEG TILT DISTANCE 26.9
C LONG -2.69 DEG
D LAT 0.60 DEG
D LONG -2.57 DEG

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MISSION/
FRAME NO.
1119

TIME.
660825
1302 7.15

S/C POSITION
ALT 51.70 KM
ALT RT -0.6425 KM/SEC
LAT 0.24 DEG
LONG -2.34 DEG

S/C ORIENTATION
TILT ANG 2.40 DEG
TILT AZIM 285.15 DEG
SWING ANG 93.23 DEG
N.DEV. 348.09 DEG

PHOTO ILLUMINATION
SUN AZIM 88.48 DEG
INCID ANG 73.17 DEG
EMISS ANG 2.47 DEG
PHASE ANG 67.80 DEG
ALPHA 2.36 DEG

PRINCIPAL POINT
LATITUDE 0.25 DEG
LONGITUDE -2.41 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.80 DEG AB 41.6 KM
A LONG -1.70 DEG BC 35.7 KM
B LAT -0.54 DEG CD 42.3 KM
B LONG -1.58 DEG DA 35.8 KM
C LAT -0.31 DEG TILT DISTANCE 3.3
C LONG -3.14 DEG
D LAT 1.07 DEG
D LONG -2.85 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.54 DEG AB 18.6 KM
A LONG -2.27 DEG BC 4.7 KM
B LAT -2.06 DEG CD 18.7 KM
B LONG -2.40 DEG DA 4.7 KM
C LAT -0.03 DEG TILT DISTANCE 25.4
C LONG -2.55 DEG
D LAT 0.57 DEG
D LONG -2.43 DEG

MISSION/
FRAME NO.
1120

TIME
660825
1302 9.43

S/C POSITION
ALT 51.61 KM
ALT RT -0.0414 KM/SEC
LAT 0.21 DEG
LONG -2.21 DEG

S/C ORIENTATION
TILT ANG 2.26 DEG
TILT AZIM 285.33 DEG
SWING ANG 93.41 DEG
N.DEV. 348.09 DEG

PHOTO ILLUMINATION
SUN AZIM 88.47 DEG
INCID ANG 70.03 DEG
EMISS ANG 2.33 DEG
PHASE ANG 67.80 DEG
ALPHA 2.22 DEG

PRINCIPAL POINT
LATITUDE 0.22 DEG
LONGITUDE -2.27 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.77 DEG AB 41.5 KM
A LONG -1.56 DEG BC 35.5 KM
B LAT -0.57 DEG CD 42.7 KM
B LONG -1.84 DEG DA 35.7 KM
C LAT -0.34 DEG TILT DISTANCE 3.1
C LONG -2.59 DEG
D LAT 1.04 DEG
D LONG -2.70 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.51 DEG AB 18.6 KM
A LONG -2.13 DEG BC 4.7 KM
B LAT -2.09 DEG CD 18.6 KM
B LONG -2.26 DEG DA 4.7 KM
C LAT -0.06 DEG TILT DISTANCE 23.9
C LONG -2.41 DEG
D LAT 0.54 DEG
D LONG -2.28 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

MISSION/
FRAME NO.
1121

YR.MO.DY	660E25	TIME	130211.70	S/C POSITION	ALT	51.52 KM	S/C ORIENTATION	TILT ANG	2.12 DEG	PHOTO ILLUMINATION	SUN AZIM	88.46 DEG	PRINCIPAL POINT	LATITUDE	0.19 DEG
HR.MI.SEC	130211.70	ALT RT	-0.0402 KM/SEC	TILT ANG	285.54 DEG	SWING ANG	93.62 DEG	EMISS ANG	2.18 DEG	INCID ANG	69.89 DEG	PHASE ANG	67.80 DEG	LONGITUDE	-2.13 DEG
		LAT	0.18 DEG	N.DEV.	348.09 DEG			ALPHA	2.08 DEG						
		LONG	-2.07 DEG												

MEDIUM RESOLUTION		HIGH RESOLUTION	
CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT 0.74 DEG	AB 41.5 KM	A LAT 7.48 DEG	AB 18.5 KM
A LONG -1.42 DEG	BC 35.6 KM	A LONG -1.99 DEG	BC 4.7 KM
B LAT -0.60 DEG	CD 42.5 KM	B LAT -0.12 DEG	CD 18.6 KM
B LONG -1.70 DEG	DA 35.5 KM	C LAT -0.09 DEG	DA 4.7 KM
C LAT -0.37 DEG	TILT DISTANCE 2.9	C LONG -2.27 DEG	TILT DISTANCE 22.5
C LONG -2.85 DEG		D LAT 0.51 DEG	
D LAT 1.00 DEG		D LONG -2.15 DEG	
D LONG -2.56 DEG			

MISSION/
FRAME NO.
1122

YR.MO.DY	660E25	TIME	130213.98	S/C POSITION	ALT	51.43 KM	S/C ORIENTATION	TILT ANG	1.98 DEG	PHOTO ILLUMINATION	SUN AZIM	88.45 DEG	PRINCIPAL POINT	LATITUDE	0.16 DEG
HR.MI.SEC	130213.98	ALT RT	-0.0390 KM/SEC	TILT ANG	285.78 DEG	SWING ANG	93.86 DEG	EMISS ANG	2.04 DEG	INCID ANG	69.75 DEG	PHASE ANG	67.80 DEG	LONGITUDE	-1.99 DEG
		LAT	0.15 DEG	N.DEV.	348.09 DEG			ALPHA	1.94 DEG						
		LONG	-1.94 DEG												

MEDIUM RESOLUTION		HIGH RESOLUTION	
CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT 0.71 DEG	AB 41.5 KM	A LAT 7.45 DEG	AB 18.5 KM
A LONG -1.28 DEG	BC 35.5 KM	A LONG -1.85 DEG	BC 4.7 KM
B LAT -0.63 DEG	CD 42.5 KM	B LAT -0.15 DEG	CD 18.6 KM
B LONG -1.56 DEG	DA 35.6 KM	B LONG -1.98 DEG	DA 4.7 KM
C LAT -0.40 DEG	TILT DISTANCE 2.7	C LAT -0.12 DEG	TILT DISTANCE 21.0
C LONG -2.71 DEG		C LONG -2.13 DEG	
D LAT 0.97 DEG		D LAT 0.48 DEG	
D LONG -2.42 DEG		D LONG -2.00 DEG	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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04/10/71

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.
1123

YR.MO.DY 660825
HR.MI.SEC 130216.25

S/C POSITION
ALT 51.34 KM
ALT RT -0.0379 KM/SEC
LAT 0.12 DEG
LONG -1.80 DEG

S/C ORIENTATION
TILT ANG 1.84 DEG
TILT AZIM 286.05 DEG
SWING ANG 94.13 DEG
N.DEV. 348.09 DEG

PHOTO ILLUMINATION
SUN AZIM 88.43 DEG
INCID ANG 69.61 DEG
EMISS ANG 1.90 DEG
PHASE ANG 67.80 DEG
ALPHA 1.81 DEG

PRINCIPAL POINT
LATITUDE 0.13 DEG
LONGITUDE -1.85 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.68 DEG AB 41.4 KM
A LONG -1.14 DEG BC 35.4 KM
B LAT -0.65 DEG CD 42.4 KM
B LONG -1.42 DEG DA 35.5 KM
C LAT -0.43 DEG TILT DISTANCE 2.5
C LONG -2.57 DEG
D LAT 0.54 DEG
D LONG -2.28 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.42 DEG AB 18.5 KM
A LONG -1.72 DEG BC 4.6 KM
B LAT -0.18 DEG CD 18.5 KM
B LONG -1.84 DEG DA 4.7 KM
C LAT -0.15 DEG TILT DISTANCE 19.5
C LONG -1.99 DEG
D LAT 0.45 DEG
D LONG -1.87 DEG

MISSION/
FRAME NO.
1124

YR.MO.DY 660825
HR.MI.SEC 130218.51

S/C POSITION
ALT 51.25 KM
ALT RT -0.0367 KM/SEC
LAT 0.09 DEG
LONG -1.67 DEG

S/C ORIENTATION
TILT ANG 1.70 DEG
TILT AZIM 286.37 DEG
SWING ANG 94.45 DEG
N.DEV. 348.09 DEG

PHOTO ILLUMINATION
SUN AZIM 88.42 DEG
INCID ANG 69.47 DEG
EMISS ANG 1.75 DEG
PHASE ANG 67.80 DEG
ALPHA 1.67 DEG

PRINCIPAL POINT
LATITUDE 0.10 DEG
LONGITUDE -1.71 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.65 DEG AB 41.4 KM
A LONG -1.00 DEG BC 35.4 KM
B LAT -0.68 DEG CD 42.3 KM
B LONG -1.28 DEG DA 35.4 KM
C LAT -0.46 DEG TILT DISTANCE 2.3
C LONG -2.43 DEG
D LAT 0.51 DEG
D LONG -2.14 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.39 DEG AB 18.4 KM
A LONG -1.58 DEG BC 4.6 KM
B LAT -0.21 DEG CD 18.5 KM
B LONG -1.70 DEG DA 4.6 KM
C LAT -0.18 DEG TILT DISTANCE 18.1
C LONG -1.85 DEG
D LAT 0.42 DEG
D LONG -1.73 DEG

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.

1125
YR.MO.DY
HR.MI.SEC

S/C POSITION
ALT 51.17 KM
ALT RT -0.0356 KM/SEC
LAT 0.06 DEG
LONG -1.53 DEG

S/C ORIENTATION
TILT ANG 1.57 DEG
TILT AZIM 286.75 DEG
SWING ANG 94.82 DEG
N.DEV. 348.09 DEG

PHOTO ILLUMINATION
SUN AZIM 88.41 DEG
INCID ANG 69.23 DEG
EMISS ANG 1.61 DEG
PHASE ANG 67.80 DEG
ALPHA 1.53 DEG

PRINCIPAL POINT
LATITUDE 0.07 DEG
LONGITUDE -1.57 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.62 DEG AB 41.3 KM
A LONG -0.65 DEG BC 35.3 KM
B LAT -0.71 DEG CD 42.2 KM
B LONG -1.14 DEG DA 35.4 KM
C LAT -0.49 DEG TILT DISTANCE 2.1
C LONG -2.28 DEG
D LAT 0.87 DEG
D LONG -2.00 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 3.35 DEG AB 18.4 KM
A LONG -1.44 DEG BC 4.6 KM
B LAT -0.24 DEG CD 19.5 KM
B LONG -1.56 DEG DA 4.6 KM
C LAT -3.21 DEG TILT DISTANCE 16.6
C LONG -1.71 DEG
D LAT 0.39 DEG
D LONG -1.59 DEG

MISSION/
FRAME NO.

1126
YR.MO.DY
HR.MI.SEC

S/C POSITION
ALT 51.09 KM
ALT RT -0.0344 KM/SEC
LAT 0.03 DEG
LONG -1.40 DEG

S/C ORIENTATION
TILT ANG 1.43 DEG
TILT AZIM 287.19 DEG
SWING ANG 95.27 DEG
N.DEV. 348.08 DEG

PHOTO ILLUMINATION
SUN AZIM 88.40 DEG
INCID ANG 69.19 DEG
EMISS ANG 1.47 DEG
PHASE ANG 67.80 DEG
ALPHA 1.39 DEG

PRINCIPAL POINT
LATITUDE 0.04 DEG
LONGITUDE -1.44 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.59 DEG AB 41.3 KM
A LONG -0.72 DEG BC 35.2 KM
B LAT -0.74 DEG CD 42.1 KM
B LONG -1.00 DEG DA 35.3 KM
C LAT -0.51 DEG TILT DISTANCE 1.9
C LONG -2.14 DEG
D LAT 0.84 DEG
D LONG -1.86 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.32 DEG AB 18.4 KM
A LONG -1.30 DEG BC 4.6 KM
B LAT -0.27 DEG CD 18.4 KM
B LONG -1.42 DEG DA 4.6 KM
C LAT -0.24 DEG TILT DISTANCE 15.1
C LONG -1.57 DEG
D LAT 0.36 DEG
D LONG -1.45 DEG

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MISSION/
FRAME NO.
1127

YR. MO. DY 660825
HR. MI. SEC 130225.27

S/C POSITION
ALT 51.02 KM
ALT RT -0.0332 KM/SEC
LAT 0.00 DEG
LONG -1.24 DEG

S/C ORIENTATION
TILT ANG 1.39 DEG
TILT AZIM 287.73 DEG
SWING ANG 95.81 DEG
N.DEV. 348.08 DEG

PHOTO ILLUMINATION
SUN AZIM 88.38 DEG
INCID ANG 69.36 DEG
EMISS ANG 1.33 DEG
PHASE ANG 57.80 DEG
ALPHA 1.25 DEG

PRINCIPAL POINT
LATITUDE 1.01 DEG
LONGITUDE -1.30 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.56 DEG AB 41.3 KM
A LONG -0.58 DEG BC 35.2 KM
B LAT -0.77 DEG CD 42.0 KM
B LONG -0.87 DEG DA 35.3 KM
C LAT -0.54 DEG TILT DISTANCE 1.7
C LONG -2.00 DEG
D LAT 0.81 DEG
D LONG -1.72 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.79 DEG AB 18.4 KM
A LONG -1.16 DEG BC 4.6 KM
B LAT -0.20 DEG CD 18.4 KM
B LONG -1.29 DEG DA 4.6 KM
C LAT -0.27 DEG TILT DISTANCE 13.7
C LONG -1.44 DEG
D LAT 0.33 DEG
D LONG -1.31 DEG

MISSION/
FRAME NO.
1128

YR. MO. DY 660825
HR. MI. SEC 130227.52

S/C POSITION
ALT 50.94 KM
ALT RT -0.0321 KM/SEC
LAT -0.03 DEG
LONG -1.13 DEG

S/C ORIENTATION
TILT ANG 1.15 DEG
TILT AZIM 286.39 DEG
SWING ANG 96.47 DEG
N.DEV. 348.08 DEG

PHOTO ILLUMINATION
SUN AZIM 88.37 DEG
INCID ANG 68.92 DEG
EMISS ANG 1.19 DEG
PHASE ANG 67.80 DEG
ALPHA 1.12 DEG

PRINCIPAL POINT
LATITUDE -0.02 DEG
LONGITUDE -1.16 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.53 DEG AB 41.3 KM
A LONG -0.45 DEG BC 35.1 KM
B LAT -0.80 DEG CD 41.9 KM
B LONG -0.73 DEG DA 35.2 KM
C LAT -0.57 DEG TILT DISTANCE 1.6
C LONG -1.86 DEG
D LAT 0.78 DEG
D LONG -1.58 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.26 DEG AB 18.3 KM
A LONG -1.02 DEG BC 4.6 KM
B LAT -0.33 DEG CD 18.4 KM
B LONG -1.15 DEG DA 4.6 KM
C LAT -0.30 DEG TILT DISTANCE 12.2
C LONG -1.30 DEG
D LAT 0.30 DEG
D LONG -1.17 DEG

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MISSION/
FRAME NO.
1129

YR. MO. DY 660225
HR. MI. SEC 130229.76

S/C POSITION
ALT 50.87 KM
ALT RT -0.0309 KM/SEC
LAT -0.06 DEG
LONG -0.99 DEG

S/C ORIENTATION
TILT ANG 1.02 DEG
TILT AZIM 289.23 DEG
SWING ANG 97.31 DEG
N.DEV. 348.08 DEG

PHOTO ILLUMINATION
SUN AZIM 88.36 DEG
INCID ANG 68.78 DEG
EMISS ANG 1.05 DEG
PHASE ANG. 67.80 DEG
ALPHA 0.98 DEG

PRINCIPAL POINT
LATITUDE -0.05 DEG
LONGITUDE -1.02 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.50 DEG AB 41.2 KM
A LONG -0.31 DEG BC 35.1 KM
B LAT -0.83 DEG CD 41.8 KM
B LONG -0.59 DEG DA 35.1 KM
C LAT -0.60 DEG TILT DISTANCE 1.4
C LONG -1.72 DEG
D LAT 0.75 DEG
D LONG -1.44 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.23 DEG AB 18.3 KM
A LONG -0.89 DEG BC 4.6 KM
B LAT -0.36 DEG CD 18.3 KM
B LONG -1.01 DEG DA 4.6 KM
C LAT -0.33 DEG TILT DISTANCE 10.8
C LONG -1.16 DEG
D LAT 0.27 DEG
D LONG -1.03 DEG

MISSION/
FRAME NO.
1130

YR. MO. DY 660225
HR. MI. SEC 130231.99

S/C POSITION
ALT 50.81 KM
ALT RT -0.0298 KM/SEC
LAT -0.08 DEG
LONG -0.86 DEG

S/C ORIENTATION
TILT ANG 0.88 DEG
TILT AZIM 290.33 DEG
SWING ANG 98.41 DEG
N.DEV. 348.08 DEG

PHOTO ILLUMINATION
SUN AZIM 88.34 DEG
INCID ANG 68.64 DEG
EMISS ANG 0.51 DEG
PHASE ANG 67.80 DEG
ALPHA 0.84 DEG

PRINCIPAL POINT
LATITUDE -0.08 DEG
LONGITUDE -0.88 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.47 DEG AB 41.2 KM
A LONG -0.17 DEG BC 35.0 KM
B LAT -0.86 DEG CD 41.7 KM
B LONG -0.45 DEG DA 35.1 KM
C LAT -0.63 DEG TILT DISTANCE 1.2
C LONG -1.58 DEG
D LAT 0.72 DEG
D LONG -1.30 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.20 DEG AB 18.3 KM
A LONG -0.75 DEG BC 4.6 KM
B LAT -0.39 DEG CD 18.3 KM
B LONG -0.87 DEG DA 4.6 KM
C LAT -0.34 DEG TILT DISTANCE 9.3
C LONG -1.02 DEG
D LAT 0.24 DEG
D LONG -0.90 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.
1131

YR. MO. DY 66CE2E
HR. MI. SEC 130230.23

S/C POSITION
ALT 50.74 KM
ALT RT -0.0286 KM/SEC
LAT -0.11 DEG
LONG -0.73 DEG

S/C ORIENTATION
TILT ANG 0.75 DEG
TILT AZIM 291.82 DEG
SWING ANG 99.90 DEG
N.DEV. 348.08 DEG

PHOTO ILLUMINATION
SUN AZIM 88.33 DEG
INCID ANG 88.51 DEG
EMISS ANG 0.77 DEG
PHASE ANG 67.80 DEG
ALPHA 0.70 DEG

PRINCIPAL POINT
LATITUDE -0.11 DEG
LONGITUDE -0.75 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.44 DEG AB 41.2 KM
A LONG -0.03 DEG BC 35.0 KM
B LAT -0.89 DEG CD 41.6 KM
B LONG -0.31 DEG DA 35.1 KM
C LAT -0.86 DEG TILT DISTANCE 1.0
C LONG -1.44 DEG
D LAT 0.88 DEG
D LONG -1.16 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.17 DEG AB 18.3 KM
A LONG -0.61 DEG BC 4.6 KM
B LAT -0.42 DEG CD 18.3 KM
B LONG -0.73 DEG DA 4.6 KM
C LAT -0.38 DEG TILT DISTANCE 7.9
C LONG -0.88 DEG
D LAT 0.21 DEG
D LONG -0.76 DEG

MISSION/
FRAME NO.
1132

YR. MO. DY 66CE2F
HR. MI. SEC 130236.45

S/C POSITION
ALT 50.68 KM
ALT RT -0.0275 KM/SEC
LAT -0.14 DEG
LONG -0.59 DEG

S/C ORIENTATION
TILT ANG 0.61 DEG
TILT AZIM 293.96 DEG
SWING ANG 102.04 DEG
N.DEV. 348.08 DEG

PHOTO ILLUMINATION
SUN AZIM 88.32 DEG
INCID ANG 88.37 DEG
EMISS ANG 0.63 DEG
PHASE ANG 67.80 DEG
ALPHA 0.57 DEG

PRINCIPAL POINT
LATITUDE -0.13 DEG
LONGITUDE -0.61 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.41 DEG AB 41.2 KM
A LONG 0.10 DEG BC 34.9 KM
B LAT -0.92 DEG CD 41.5 KM
B LONG -0.18 DEG DA 35.0 KM
C LAT -0.69 DEG TILT DISTANCE 0.8
C LONG -1.31 DEG
D LAT 0.65 DEG
D LONG -1.02 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.14 DEG AB 18.2 KM
A LONG -0.47 DEG BC 4.6 KM
B LAT -0.44 DEG CD 18.3 KM
B LONG -0.60 DEG DA 4.6 KM
C LAT -0.41 DEG TILT DISTANCE 8.5
C LONG -0.75 DEG
D LAT 0.18 DEG
D LONG -0.62 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

MISSION/
FRAME NO.

1133

YR.MO.DY
HR.MI.SEC

TIME
650525
130238.68

S/C POSITION
ALT 50.62 KM
ALT RT -0.0264 KM/SEC
LAT -0.17 DEG
LONG -0.46 DEG

S/C ORIENTATION
TILT ANG 0.48 DEG
TILT AZIM 297.29 DEG
SWING ANG 195.37 DEG
N.DEV. 348.08 DEG

PHOTO ILLUMINATION
SUN AZIM 89.30 DEG
INCID ANG 68.24 DEG
EMISS ANG 7.50 DEG
PHASE ANG 57.80 DEG
ALPHA 0.43 DEG

PRINCIPAL POINT
LATITUDE -0.16 DEG
LONGITUDE -0.47 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT C.38 DEG AB 41.2 KM
A LONG 0.24 DEG BC 34.9 KM
B LAT -0.55 DEG CD 41.4 KM
B LONG -C.14 DEG DA 35.7 KM
C LAT -0.71 DEG TILT DISTANCE 9.5
C LONG -1.17 DEG
D LAT 0.62 DEG
D LONG -0.89 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.11 DEG AB 18.2 KM
A LONG -0.34 DEG BC 4.6 KM
R LAT -0.47 DEG CD 18.2 KM
R LONG -0.46 DEG DA 4.6 KM
C LAT -0.44 DEG TILT DISTANCE 5.1
C LONG -0.61 DEG
D LAT 0.15 DEG
D LONG -0.48 DEG

MISSION/
FRAME NO.

1134

YR.MO.DY
HR.MI.SEC

TIME
650525
1952 0.71

S/C POSITION
ALT 56.51 KM
ALT RT -0.1269 KM/SEC
LAT 2.13 DEG
LONG -14.85 DEG

S/C ORIENTATION
TILT ANG 11.04 DEG
TILT AZIM 232.46 DEG
SWING ANG 51.51 DEG
N.DEV. 358.51 DEG

PHOTO ILLUMINATION
SUN AZIM 88.82 DEG
INCID ANG 79.35 DEG
EMISS ANG 11.40 DEG
PHASE ANG 70.27 DEG
ALPHA 9.00 DEG

PRINCIPAL POINT
LATITUDE 1.91 DEG
LONGITUDE -15.14 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.61 DEG AB 45.0 KM
A LONG -14.51 DEG BC 42.9 KM
B LAT 1.12 DEG CD 50.4 KM
B LONG -14.49 DEG DA 38.4 KM
C LAT 1.04 DEG TILT DISTANCE 15.6
C LONG -15.50 DEG
D LAT 2.70 DEG
D LONG -15.78 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.24 DEG AB 20.8 KM
A LONG -15.05 DEG BC 6.4 KM
B LAT 1.56 DEG CD 21.1 KM
B LONG -15.05 DEG DA 5.2 KM
C LAT 1.56 DEG TILT DISTANCE 18.6
C LONG -15.24 DEG
D LAT 2.25 DEG
D LONG -15.22 DEG

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.
1135

YR.NO.DY 660826
HR.MI.SEC 232135.71

S/C POSITION
ALT 54.17 KM
ALT RT -0.1171 KM/SEC
LAT 1.86 DEG
LONG -15.48 DEG

S/C ORIENTATION
TILT ANG 13.37 DEG
TILT AZIM 215.32 DEG
SWING ANG 33.38 DEG
N.DEV. 356.97 DEG

PHOTO ILLUMINATION
SUN AZIM 88.77 DEG
INCID ANG 78.20 DEG
EMISS ANG 13.79 DEG
PHASE ANG 70.27 DEG
ALPHA 7.58 DEG

PRINCIPAL POINT
LATITUDE 1.52 DEG
LONGITUDE -15.73 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 2.17 DEG AB 44.7 KM
A LONG -15.12 DEG BC 42.7 KM
B LAT 0.70 DEG CD 49.3 KM
B LONG -15.10 DEG DA 35.9 KM
C LAT 0.65 DEG TILT DISTANCE 19.0
C LONG -16.51 DEG
D LAT -2.26 DEG
D LONG -16.30 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 1.84 DEG AB 23.4 KM
A LONG -15.63 DEG BC 5.3 KM
B LAT 1.16 DEG CD 23.7 KM
B LONG -15.55 DEG DA 4.9 KM
C LAT 1.16 DEG TILT DISTANCE 44.5
C LONG -15.84 DEG
D LAT 1.84 DEG
D LONG -15.79 DEG

MISSION/
FRAME NO.
1136

YR.NO.DY 660826
HR.MI.SEC 034835.71

S/C POSITION
ALT 1327.75 KM
ALT RT 0.3532 KM/SEC
LAT -8.11 DEG
LONG 129.35 DEG

S/C ORIENTATION
TILT ANG 3.52 DEG
TILT AZIM 359.65 DEG
SWING ANG 353.72 DEG
N.DEV. 174.06 DEG

PHOTO ILLUMINATION
SUN AZIM 273.67 DEG
INCID ANG 59.34 DEG
EMISS ANG 6.23 DEG
PHASE ANG 69.91 DEG
ALPHA -3.69 DEG

PRINCIPAL POINT
LATITUDE -5.49 DEG
LONGITUDE 129.33 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -22.45 DEG AB 293.9 KM
A LONG 109.02 DEG BC 144.7 KM
B LAT 21.25 DEG CD 274.1 KM
B LONG 111.20 DEG DA 991.7 KM
C LAT 16.63 DEG TILT DISTANCE 4.9
C LONG 151.72 DEG
D LAT -25.58 DEG
D LONG 145.33 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -13.02 DEG AB 489.8 KM
A LONG 126.48 DEG BC 124.7 KM
B LAT 3.11 DEG CD 489.2 KM
B LONG 128.13 DEG DA 119.7 KM
C LAT 2.68 DEG TILT DISTANCE 37.4
C LONG 132.23 DEG
D LAT -13.43 DEG
D LONG 130.51 DEG

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/ FRAME NO. 1137	TIME 660426	S/C POSITION ALT 52.59 KM ALT RT -0.1090 KM/SEC LAT 1.60 DEG LONG -18.16 DEG	S/C ORIENTATION TILT ANG 44.18 DEG TILT AZIM 258.22 DEG SWING ANG 69.89 DEG N.DEV. 348.17 DEG	PHOTO ILLUMINATION SUN AZIM 88.70 DEG INCID ANG 78.82 DEG EMISS ANG 45.89 DEG PHASE ANG 34.16 DEG ALPHA 44.35 DEG	PRINCIPAL POINT LATITUDE 1.25 DEG LONGITUDE -19.84 DEG
		MEDIUM RESOLUTION CORNER COORDINATE SIDE LENGTH A LAT 1.90 DEG AB 48.5 KM A LONG -18.84 DEG BC 121.3 KM B LAT 0.34 DEG CD 117.5 KM B LONG -18.09 DEG DA 67.3 KM C LAT -0.76 DEG TILT DISTANCE 77.7 C LONG -22.54 DEG D LAT 2.57 DEG D LONG -20.96 DEG		HIGH RESOLUTION CORNER COORDINATE SIDE LENGTH A LAT 1.65 DEG AB 27.2 KM A LONG -19.58 DEG BC 10.5 KM B LAT 0.78 DEG CD 30.1 KM B LONG -19.81 DEG DA 8.6 KM C LAT 0.75 DEG TILT DISTANCE 90.9 C LONG -20.15 DEG D LAT 1.89 DEG D LONG -19.86 DEG	

MISSION/ FRAME NO. 1138	TIME 660426	S/C POSITION ALT 48.15 KM ALT RT -0.0854 KM/SEC LAT 0.97 DEG LONG -17.17 DEG	S/C ORIENTATION TILT ANG 8.87 DEG TILT AZIM 208.05 DEG SWING ANG 26.57 DEG N.DEV. 358.22 DEG	PHOTO ILLUMINATION SUN AZIM 88.63 DEG INCID ANG 74.53 DEG EMISS ANG 9.12 DEG PHASE ANG 70.22 DEG ALPHA 4.15 DEG	PRINCIPAL POINT LATITUDE 0.75 DEG LONGITUDE -17.29 DEG
		MEDIUM RESOLUTION CORNER COORDINATE SIDE LENGTH A LAT 1.35 DEG AB 39.3 KM A LONG -16.75 DEG BC 35.9 KM B LAT 0.96 DEG CD 41.4 KM B LONG -16.73 DEG DA 31.9 KM C LAT 0.04 DEG TILT DISTANCE 12.4 C LONG -17.91 DEG D LAT 1.40 DEG D LONG -17.80 DEG		HIGH RESOLUTION CORNER COORDINATE SIDE LENGTH A LAT 1.04 DEG AB 17.7 KM A LONG -17.21 DEG BC 4.5 KM B LAT 0.45 DEG CD 17.8 KM B LONG -17.23 DEG DA 4.3 KM C LAT 0.46 DEG TILT DISTANCE 94.9 C LONG -17.58 DEG D LAT 1.04 DEG D LONG -17.35 DEG	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

MISSION/
FRAME NO.
1139

YR.MO.DY 660826
HR.MI.SEC 163428.91

S/C POSITION
ALT 46.39 KM
ALT RT -0.0720 KM/SEC
LAT 0.59 DEG
LONG -19.20 DEG

S/C ORIENTATION
TILT ANG 12.13 DEG
TILT AZIM 193.40 DEG
SWING ANG 10.63 DEG
N.DEV. 356.92 DEG

PHOTO ILLUMINATION
SUN AZIM 88.49 DEG
INCID ANG 73.03 DEG
EMISS ANG 12.46 DEG
PHASE ANG 70.24 DEG
ALPHA 2.38 DEG

PRINCIPAL POINT
LATITUDE 0.27 DEG
LONGITUDE -19.28 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.83 DEG AB 39.5 KM
A LONG -18.75 DEG BC 36.0 KM
B LAT -0.47 DEG CD 40.7 KM
B LONG -18.72 DEG DA 30.1 KM
C LAT -0.44 DEG TILT DISTANCE 17.2
C LONG -19.91 DEG
D LAT 0.89 DEG
D LONG -19.74 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.54 DEG AB 17.5 KM
A LONG -19.19 DEG BC 4.5 KM
B LAT -0.04 DEG CD 17.6 KM
B LONG -19.22 DEG DA 4.1 KM
C LAT -0.03 DEG TILT DISTANCE 30.7
C LONG -19.37 DEG
D LAT 0.55 DEG
D LONG -19.33 DEG

MISSION/
FRAME NO.
1140

YR.MO.DY 660826
HR.MI.SEC 200111.41

S/C POSITION
ALT 45.58 KM
ALT RT -0.0644 KM/SEC
LAT 0.38 DEG
LONG -20.15 DEG

S/C ORIENTATION
TILT ANG 10.72 DEG
TILT AZIM 190.67 DEG
SWING ANG 8.30 DEG
N.DEV. 357.44 DEG

PHOTO ILLUMINATION
SUN AZIM 88.44 DEG
INCID ANG 72.21 DEG
EMISS ANG 11.91 DEG
PHASE ANG 70.22 DEG
ALPHA 1.65 DEG

PRINCIPAL POINT
LATITUDE 0.10 DEG
LONGITUDE -20.20 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.67 DEG AB 38.5 KM
A LONG -15.68 DEG BC 34.8 KM
B LAT -0.60 DEG CD 39.3 KM
B LONG -19.66 DEG DA 29.7 KM
C LAT -0.57 DEG TILT DISTANCE 15.1
C LONG -20.80 DEG
D LAT 0.71 DEG
D LONG -20.66 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.37 DEG AB 17.0 KM
A LONG -20.12 DEG BC 4.4 KM
B LAT -0.19 DEG CD 17.1 KM
B LONG -20.14 DEG DA 4.1 KM
C LAT -0.18 DEG TILT DISTANCE 15.1
C LONG -20.29 DEG
D LAT 0.38 DEG
D LONG -20.26 DEG

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.

1141
66CE26
233224.61

S/C POSITION
ALT 49.13 KM
ALT RT 0.0869 KM/SEC
LAT -3.40 DEG
LONG -4.22 DEG

S/C ORIENTATION
TILT ANG 0.53 DEG
TILT AZIM 24.76 DEG
SWING ANG 192.87 DEG
N.DEV. 348.11 DEG

PHOTO ILLUMINATION
SUN AZIM 85.72 DEG
INCID ANG 54.63 DEG
EMISS ANG 0.54 DEG
PHASE ANG 54.90 DEG
ALPHA -0.27 DEG

PRINCIPAL POINT
LATITUDE -3.39 DEG
LONGITUDE -4.21 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.86 DEG AB 40.1 KM
A LONG -3.52 DEG BC 33.3 KM
B LAT -4.15 DEG CD 43.1 KM
B LONG -3.79 DEG DA 34.0 KM
C LAT -3.82 DEG TILT DISTANCE
C LONG -4.89 DEG 0.7
D LAT -2.63 DEG
D LONG -4.62 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -3.12 DEG AB 17.7 KM
A LONG -4.08 DEG BC 4.4 KM
B LAT -3.69 DEG CD 17.7 KM
B LONG -4.20 DEG DA 4.5 KM
C LAT -3.66 DEG TILT DISTANCE
C LONG -4.34 DEG 5.6
D LAT -3.09 DEG
D LONG -4.22 DEG

MISSION/
FRAME NO.

1142
66CE26
233233.31

S/C POSITION
ALT 49.91 KM
ALT RT 0.0913 KM/SEC
LAT -3.51 DEG
LONG -3.70 DEG

S/C ORIENTATION
TILT ANG 0.83 DEG
TILT AZIM 63.30 DEG
SWING ANG 231.44 DEG
N.DEV. 348.14 DEG

PHOTO ILLUMINATION
SUN AZIM 85.58 DEG
INCID ANG 54.10 DEG
EMISS ANG 0.85 DEG
PHASE ANG 54.90 DEG
ALPHA -0.79 DEG

PRINCIPAL POINT
LATITUDE -3.53 DEG
LONGITUDE -3.68 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.56 DEG AB 40.9 KM
A LONG -2.57 DEG BC 34.3 KM
B LAT -4.27 DEG CD 40.6 KM
B LONG -3.25 DEG DA 34.6 KM
C LAT -4.04 DEG TILT DISTANCE
C LONG -4.36 DEG 1.1
D LAT -2.73 DEG
D LONG -4.09 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -3.22 DEG AB 18.0 KM
A LONG -3.54 DEG BC 4.5 KM
B LAT -3.80 DEG CD 18.0 KM
B LONG -3.66 DEG DA 4.5 KM
C LAT -3.77 DEG TILT DISTANCE
C LONG -3.81 DEG 8.8
D LAT -3.19 DEG
D LONG -3.69 DEG

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/10/71 .PAGE 68

MISSION/
FRAME NO.

1143
66CE26
233242.11

S/C POSITION
ALT 50.73 KM
ALT RT 0.0957 KM/SEC
LAT -3.62 DEG
LONG -3.17 DEG

S/C ORIENTATION
TILT ANG 1.30 DEG
TILT AZIM 78.15 DEG
SWING ANG 246.33 DEG
N.DEV. 348.18 DEG

PHOTO ILLUMINATION
SUN AZIM 85.43 DEG
INCID ANG 53.57 DEG
EMISS ANG 1.33 DEG
PHASE ANG 54.90 DEG
ALPHA -1.32 DEG

PRINCIPAL POINT
LATITUDE -3.61 DEG
LONGITUDE -3.13 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -3.06 DEG AB 41.7 KM
A LONG -2.41 DEG BC 34.9 KM
B LAT -4.40 DEG CD 41.1 KM
B LONG -2.70 DEG DA 35.2 KM
C LAT -4.15 DEG TILT DISTANCE 1.8
C LONG -3.82 DEG
D LAT -2.83 DEG
D LONG -3.55 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -3.33 DEG AB 18.3 KM
A LONG -3.00 DEG BC 4.6 KM
B LAT -3.92 DEG CD 18.3 KM
B LONG -3.12 DEG DA 4.6 KM
C LAT -3.89 DEG TILT DISTANCE 13.7
C LONG -3.27 DEG
D LAT -3.30 DEG
D LONG -3.15 DEG

MISSION/
FRAME NO.

1144
66CE26
233251.01

S/C POSITION
ALT 51.60 KM
ALT RT 0.1001 KM/SEC
LAT -3.73 DEG
LONG -2.64 DEG

S/C ORIENTATION
TILT ANG 1.81 DEG
TILT AZIM 84.97 DEG
SWING ANG 253.18 DEG
N.DEV. 348.22 DEG

PHOTO ILLUMINATION
SUN AZIM 85.28 DEG
INCID ANG 53.03 DEG
EMISS ANG 1.86 DEG
PHASE ANG 54.90 DEG
ALPHA -1.66 DEG

PRINCIPAL POINT
LATITUDE -3.73 DEG
LONGITUDE -2.58 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -3.15 DEG AB 42.6 KM
A LONG -1.84 DEG BC 35.5 KM
B LAT -4.53 DEG CD 41.7 KM
B LONG -2.14 DEG DA 35.8 KM
C LAT -4.27 DEG TILT DISTANCE 2.5
C LONG -3.28 DEG
D LAT -2.53 DEG
D LONG -3.00 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -3.44 DEG AB 18.6 KM
A LONG -2.45 DEG BC 4.7 KM
B LAT -4.04 DEG CD 18.6 KM
B LONG -2.57 DEG DA 4.7 KM
C LAT -4.01 DEG TILT DISTANCE 19.2
C LONG -2.72 DEG
D LAT -3.41 DEG
D LONG -2.60 DEG

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MISSION/
FRAME NO.
1145

YR.NO.DY 660226
FR.MI.SEC 2333 0.11

S/C POSITION
ALT 52.53 KM
ALT RT 0.1047 KM/SEC
LAT -3.84 DEG
LONG -2.09 DEG

S/C ORIENTATION
TILT ANG 2.35 DEG
TILT AZIM 88.79 DEG
SWING ANG 257.05 DEG
N.DEV. 348.26 DEG

PHOTO ILLUMINATION
SUN AZIM 85.12 DEG
INCID ANG 52.48 DEG
EMISS ANG 2.42 DEG
PHASE ANG 54.90 DEG
ALPHA -2.41 DEG

PRINCIPAL POINT
LATITUDE -3.84 DEG
LONGITUDE -2.02 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -2.26 DEG AB 43.5 KM
A LONG -1.27 DEG BC 36.2 KM
B LAT -4.66 DEG CD 42.3 KM
B LONG -1.56 DEG DA 36.5 KM
C LAT -4.40 DEG TILT DISTANCE 3.2
C LONG -2.73 DEG
D LAT -3.03 DEG
D LONG -2.45 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -3.55 DEG AB 19.0 KM
A LONG -1.88 DEG BC 4.8 KM
B LAT -4.16 DEG CD 18.9 KM
B LONG -2.01 DEG DA 4.8 KM
C LAT -4.12 DEG TILT DISTANCE 24.9
C LONG -2.16 DEG
D LAT -3.51 DEG
D LONG -2.04 DEG

MISSION/
FRAME NO.
1146

YR.NO.DY 660226
FR.MI.SEC 2333 9.41

S/C POSITION
ALT 53.53 KM
ALT RT 0.1093 KM/SEC
LAT -3.95 DEG
LONG -1.54 DEG

S/C ORIENTATION
TILT ANG 2.90 DEG
TILT AZIM 91.21 DEG
SWING ANG 259.50 DEG
N.DEV. 348.30 DEG

PHOTO ILLUMINATION
SUN AZIM 84.95 DEG
INCID ANG 51.92 DEG
EMISS ANG 2.99 DEG
PHASE ANG 54.90 DEG
ALPHA -2.97 DEG

PRINCIPAL POINT
LATITUDE -3.95 DEG
LONGITUDE -1.45 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -3.36 DEG AB 44.5 KM
A LONG -0.57 DEG BC 36.9 KM
B LAT -4.79 DEG CD 43.0 KM
B LONG -0.58 DEG DA 37.2 KM
C LAT -4.52 DEG TILT DISTANCE 4.0
C LONG -2.17 DEG
D LAT -3.13 DEG
D LONG -1.88 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -3.66 DEG AB 19.3 KM
A LONG -1.31 DEG BC 4.8 KM
B LAT -4.28 DEG CD 19.3 KM
B LONG -1.44 DEG DA 4.9 KM
C LAT -4.25 DEG TILT DISTANCE 30.8
C LONG -1.59 DEG
D LAT -3.62 DEG
D LONG -1.46 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

MISSION/
FRAME NO.

1147
YR. MO. DY 660826
HR. MI. SEC 233218.91

S/C POSITION
ALT 54.59 KM
ALT RT 0.1140 KM/SEC
LAT -4.06 DEG
LONG -0.97 DEG

S/C ORIENTATION
TILT ANG 3.47 DEG
TILT AZIM 92.86 DEG
SWING ANG 261.20 DEG
N.DEV. 348.35 DEG

PHOTO ILLUMINATION
SUN AZIM 84.78 DEG
INCID ANG 51.35 DEG
EMISS ANG 3.58 DEG
PHASE ANG 54.90 DEG
ALPHA -3.55 DEG

PRINCIPAL POINT
LATITUDE -4.07 DEG
LONGITUDE -0.86 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -3.46 DEG AB 45.6 KM
A LONG -0.07 DEG BC 37.7 KM
B LAT -4.93 DEG CD 43.7 KM
B LONG -0.38 DEG DA 38.0 KM
C LAT -4.65 DEG TILT DISTANCE
C LONG -1.59 DEG 4.8
D LAT -3.24 DEG
D LONG -1.50 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -3.77 DEG AB 19.8 KM
A LONG -0.72 DEG BC 4.9 KM
B LAT -4.40 DEG CD 19.6 KM
B LONG -0.85 DEG DA 5.0 KM
C LAT -4.37 DEG TILT DISTANCE
C LONG -1.01 DEG 36.8
D LAT -3.74 DEG
D LONG -0.88 DEG

MISSION/
FRAME NO.

1148
YR. MO. DY 660826
HR. MI. SEC 233228.61

S/C POSITION
ALT 55.72 KM
ALT RT 0.1188 KM/SEC
LAT -4.18 DEG
LONG -0.39 DEG

S/C ORIENTATION
TILT ANG 4.06 DEG
TILT AZIM 94.08 DEG
SWING ANG 262.46 DEG
N.DEV. 348.40 DEG

PHOTO ILLUMINATION
SUN AZIM 84.59 DEG
INCID ANG 50.76 DEG
EMISS ANG 4.19 DEG
PHASE ANG 54.90 DEG
ALPHA -4.13 DEG

PRINCIPAL POINT
LATITUDE -4.19 DEG
LONGITUDE -0.26 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -3.56 DEG AB 46.8 KM
A LONG 0.54 DEG BC 38.6 KM
B LAT -5.07 DEG CD 44.5 KM
B LONG 0.23 DEG DA 38.9 KM
C LAT -4.78 DEG TILT DISTANCE
C LONG -1.01 DEG 5.6
D LAT -3.35 DEG
D LONG -0.72 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -3.88 DEG AB 20.2 KM
A LONG -0.11 DEG BC 5.1 KM
B LAT -4.53 DEG CD 20.1 KM
B LONG -0.25 DEG DA 5.1 KM
C LAT -4.50 DEG TILT DISTANCE
C LONG -0.41 DEG 43.1
D LAT -3.85 DEG
D LONG -0.28 DEG

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/ FRAME NO. 1149
 YR. MO. DY 660627
 HR. MI. SEC 025340.21
 TIME 660627
 S/C POSITION ALT 45.92 KM
 ALT RT -0.0577 KM/SEC
 LAT 0.44 DEG
 LONG -24.21 DEG
 S/C ORIENTATION TILT ANG 9.47 DEG
 TILT AZIM 195.99 DEG
 SWING ANG 13.64 DEG
 N.DEV. 357.44 DEG
 PHOTO ILLUMINATION SUN AZIM 88.47 DEG
 INCID ANG 72.80 DEG
 EMISS ANG 9.72 DEG
 PHASE ANG 70.12 DEG
 ALPHA 2.44 DEG
 PRINCIPAL POINT LATITUDE 0.19 DEG
 LONGITUDE -24.28 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 0.47 DEG AB 17.4 KM
 A LONG -24.20 DEG BC 4.4 KM
 B LAT -0.11 DEG CD 17.4 KM
 B LONG -24.22 DEG DA 4.2 KM
 C LAT -0.10 DEG TILT DISTANCE 01.4
 C LONG -24.36 DEG
 D LAT 0.47 DEG
 D LONG -24.32 DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 0.77 DEG AB 39.0 KM
 A LONG -23.74 DEG BC 35.3 KM
 B LAT -0.52 DEG CD 40.2 KM
 B LONG -23.73 DEG DA 30.8 KM
 C LAT -0.50 DEG TILT DISTANCE 13.3
 C LONG -24.89 DEG
 D LAT 0.82 DEG
 D LONG -24.76 DEG

MISSION/ FRAME NO. 1150
 YR. MO. DY 660627
 HR. MI. SEC 061638.21
 TIME 660627
 S/C POSITION ALT 54.54 KM
 ALT RT -0.1071 KM/SEC
 LAT 1.44 DEG
 LONG -30.75 DEG
 S/C ORIENTATION TILT ANG 14.63 DEG
 TILT AZIM 183.18 DEG
 SWING ANG 320.93 DEG
 N.DEV. 358.71 DEG
 PHOTO ILLUMINATION SUN AZIM 88.58 DEG
 INCID ANG 77.23 DEG
 EMISS ANG 15.10 DEG
 PHASE ANG 86.22 DEG
 ALPHA -9.28 DEG
 PRINCIPAL POINT LATITUDE 1.07 DEG
 LONGITUDE -30.47 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 1.40 DEG AB 21.0 KM
 A LONG -30.38 DEG BC 5.4 KM
 B LAT 0.70 DEG CD 20.6 KM
 B LONG -30.38 DEG DA 5.0 KM
 C LAT 0.72 DEG TILT DISTANCE 58.7
 C LONG -30.56 DEG
 D LAT 1.40 DEG
 D LONG -30.54 DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 1.78 DEG AB 50.7 KM
 A LONG -25.81 DEG BC 43.7 KM
 B LAT 0.11 DEG CD 44.7 KM
 B LONG -29.72 DEG DA 36.5 KM
 C LAT 0.31 DEG TILT DISTANCE 20.9
 C LONG -31.14 DEG
 D LAT 1.78 DEG
 D LONG -31.01 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.
1151

YR.NO.DY 660827
FR.MI.SEC 054724.81

S/C POSITION
ALT 43.93 KM
ALT RT -0.0315 KM/SEC
LAT -0.49 DEG
LONG -23.66 DEG

S/C ORIENTATION
TILT ANG 14.92 DEG
TILT AZIM 1.41 DEG
SWING ANG 188.54 DEG
N.DEV. 7.08 DEG

PHOTO ILLUMINATION
SUN AZIM 88.33 DEG
INCID ANG 68.58 DEG
EMISS ANG 15.30 DEG
PHASE ANG 70.27 DEG
ALPHA -2.40 DEG

PRINCIPAL POINT
LATITUDE -0.17 DEG
LONGITUDE -23.65 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.70 DEG AB 39.7 KM
A LONG -23.14 DEG BC 28.3 KM
B LAT -0.61 DEG CD 38.5 KM
B LONG -23.10 DEG DA 35.4 KM
C LAT -0.72 DEG TILT DISTANCE 21.3
C LONG -24.03 DEG
D LAT 0.52 DEG
D LONG -24.29 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.20 DEG AB 17.1 KM
A LONG -23.61 DEG BC 3.9 KM
B LAT -0.36 DEG CD 17.0 KM
B LONG -23.55 DEG DA 4.3 KM
C LAT -0.37 DEG TILT DISTANCE 62.0
C LONG -23.68 DEG
D LAT 0.18 DEG
D LONG -23.75 DEG

MISSION/
FRAME NO.
1153

YR.NO.DY 660827
FR.MI.SEC 233054.61

S/C POSITION
ALT 52.10 KM
ALT RT -0.0818 KM/SEC
LAT 0.70 DEG
LONG -36.95 DEG

S/C ORIENTATION
TILT ANG 4.73 DEG
TILT AZIM 275.23 DEG
SWING ANG 96.54 DEG
N.DEV. 1.33 DEG

PHOTO ILLUMINATION
SUN AZIM 88.61 DEG
INCID ANG 75.13 DEG
EMISS ANG 4.87 DEG
PHASE ANG 70.29 DEG
ALPHA 4.84 DEG

PRINCIPAL POINT
LATITUDE 0.72 DEG
LONGITUDE -37.09 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 1.41 DEG AB 41.4 KM
A LONG -36.52 DEG BC 36.1 KM
B LAT 0.05 DEG CD 43.9 KM
B LONG -36.49 DEG DA 36.4 KM
C LAT -0.02 DEG TILT DISTANCE 6.6
C LONG -37.58 DEG
D LAT 1.43 DEG
D LONG -37.72 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 1.03 DEG AB 18.8 KM
A LONG -37.02 DEG BC 4.7 KM
B LAT 0.41 DEG CD 18.9 KM
B LONG -37.01 DEG DA 4.8 KM
C LAT 0.40 DEG TILT DISTANCE 50.3
C LONG -37.16 DEG
D LAT 1.03 DEG
D LONG -37.18 DEG

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MISSION/
 FRAME NO. 1154
 YR.MO.DY 660E27
 HR.MI.SEC 2331 4.61

TIME 660E27 2331 4.61

S/C POSITION
 ALT 51.31 KM
 ALT RT -0.0767 KM/SEC
 LAT 0.58 DEG
 LONG -36.36 DEG

S/C ORIENTATION
 TILT ANG 4.12 DEG
 TILT AZIM 274.24 DEG
 SWING ANG 95.53 DEG
 N.DEV. 1.31 DEG

PHOTO ILLUMINATION
 SUN AZIM 88.58 DEG
 INCID ANG 74.51 DEG
 EMISS ANG 4.25 DEG
 PHASE ANG 70.29 DEG
 ALPHA 4.22 DEG

PRINCIPAL POINT
 LATITUDE 0.58 DEG
 LONGITUDE -36.48 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 1.27 DEG AB 40.9 KM
 A LONG -35.51 DEG BC 35.5 KM
 B LAT -0.08 DEG CD 43.1 KM
 B LONG -35.88 DEG DA 35.7 KM
 C LAT -0.14 DEG TILT DISTANCE 5.7
 C LONG -37.05 DEG
 D LAT 1.28 DEG
 D LONG -37.09 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 0.89 DEG AB 18.5 KM
 A LONG -36.41 DEG BC 4.7 KM
 B LAT 0.28 DEG CD 18.6 KM
 B LONG -36.39 DEG DA 4.7 KM
 C LAT 0.28 DEG TILT DISTANCE 43.8
 C LONG -36.55 DEG
 D LAT 0.89 DEG
 D LONG -36.56 DEG

MISSION/
 FRAME NO. 1155
 YR.MO.DY 660E27
 HR.MI.SEC 233114.51

TIME 660E27 233114.51

S/C POSITION
 ALT 50.57 KM
 ALT RT -0.0717 KM/SEC
 LAT 0.45 DEG
 LONG -35.76 DEG

S/C ORIENTATION
 TILT ANG 3.52 DEG
 TILT AZIM 272.91 DEG
 SWING ANG 94.20 DEG
 N.DEV. 1.30 DEG

PHOTO ILLUMINATION
 SUN AZIM 88.54 DEG
 INCID ANG 73.90 DEG
 EMISS ANG 3.63 DEG
 PHASE ANG 70.29 DEG
 ALPHA 3.62 DEG

PRINCIPAL POINT
 LATITUDE 0.45 DEG
 LONGITUDE -35.87 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 1.13 DEG AB 40.4 KM
 A LONG -35.31 DEG BC 35.0 KM
 B LAT -0.20 DEG CD 42.2 KM
 B LONG -25.28 DEG DA 35.1 KM
 C LAT -0.26 DEG TILT DISTANCE 4.9
 C LONG -36.43 DEG
 D LAT 1.14 DEG
 D LONG -36.46 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 0.76 DEG AB 18.2 KM
 A LONG -35.80 DEG BC 4.6 KM
 B LAT 0.16 DEG CD 18.3 KM
 B LONG -35.78 DEG DA 4.6 KM
 C LAT 0.15 DEG TILT DISTANCE 37.4
 C LONG -35.94 DEG
 D LAT 0.75 DEG
 D LONG -35.95 DEG

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/10/71 PAGE 74

MISSION/
FRAME NO.

1156
YR.MO.DY 660627
HR.MI.SEC 233124.51

S/C POSITION
ALT 49.88 KM
ALT RT -0.0667 KM/SEC
LAT 0.32 DEG
LONG -35.17 DEG

S/C ORIENTATION
TILT ANG 2.92 DEG
TILT AZIM 271.02 DEG
SWING ANG 92.30 DEG
N.DEV. 1.28 DEG

PHOTO ILLUMINATION
SUN AZIM 88.50 DEG
INCID ANG 73.29 DEG
EMISS ANG 3.00 DEG
PHASE ANG 70.29 DEG
ALPHA 3.00 DEG

PRINCIPAL POINT
LATITUDE 0.32 DEG
LONGITUDE -35.25 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.99 DEG AB 40.0 KM
A LONG -34.69 DEG BC 34.5 KM
B LAT -0.33 DEG CD 41.5 KM
B LONG -34.67 DEG DA 34.6 KM
C LAT -0.38 DEG TILT DISTANCE 4.0
C LONG -35.80 DEG
D LAT 0.99 DEG
D LONG -35.83 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.62 DEG AB 17.9 KM
A LONG -35.18 DEG BC 4.5 KM
B LAT 0.03 DEG CD 18.0 KM
B LONG -35.17 DEG DA 4.5 KM
C LAT 0.02 DEG TILT DISTANCE 31.0
C LONG -35.32 DEG
D LAT 0.62 DEG
D LONG -35.33 DEG

MISSION/
FRAME NO.

1157
YR.MO.DY 660828
HR.MI.SEC 062818.23

S/C POSITION
ALT 50.69 KM
ALT RT 0.0661 KM/SEC
LAT -3.01 DEG
LONG -23.25 DEG

S/C ORIENTATION
TILT ANG 1.69 DEG
TILT AZIM 155.78 DEG
SWING ANG 322.98 DEG
N.DEV. 347.21 DEG

PHOTO ILLUMINATION
SUN AZIM 86.27 DEG
INCID ANG 57.90 DEG
EMISS ANG 1.74 DEG
PHASE ANG 58.53 DEG
ALPHA -0.64 DEG

PRINCIPAL POINT
LATITUDE -3.06 DEG
LONGITUDE -23.23 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -2.53 DEG AB 41.7 KM
A LONG -22.51 DEG BC 35.4 KM
B LAT -3.87 DEG CD 41.1 KM
B LONG -22.80 DEG DA 34.7 KM
C LAT -3.60 DEG TILT DISTANCE 2.3
C LONG -23.94 DEG
D LAT -2.28 DEG
D LONG -23.83 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -2.78 DEG AB 18.3 KM
A LONG -23.09 DEG BC 4.6 KM
B LAT -3.37 DEG CD 18.3 KM
B LONG -23.22 DEG DA 4.6 KM
C LAT -3.34 DEG TILT DISTANCE 17.9
C LONG -23.37 DEG
D LAT -2.75 DEG
D LONG -23.24 DEG

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MISSION/
FRAME NO. 1158
YR.NO.DY 660628
PR.MI,SEC 062520.39

S/C POSITION
ALT 50.83 KM
LAT RT 0.0672 KM/SEC
LONG -23.12 DEG

S/C ORIENTATION
TILT ANG 1.77 DEG
TILT AZIM 152.30 DEG
SWING ANG 319.51 DEG
N.DEV. 347.22 DEG

PHOTO ILLUMINATION
SUN AZIM 85.24 DEG
INCID ANG 57.77 DEG
EMISS ANG 1.82 DEG
PHASE ANG 58.53 DEG
ALPHA -0.77 DEG

PRINCIPAL POINT
LATITUDE -3.09 DEG
LONGITUDE -23.10 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.55 DEG AB 41.8 KM
A LONG -22.37 DEG BC 35.5 KM
B LAT -3.50 DEG CD 41.2 KM
B LONG -22.67 DEG DA 34.8 KM
C LAT -3.63 DEG TILT DISTANCE 2.4
C LONG -23.81 DEG
D LAT -2.31 DEG
D LONG -23.50 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.81 DEG AB 18.3 KM
A LONG -22.96 DEG BC 4.6 KM
B LAT -3.40 DEG CD 18.3 KM
B LONG -23.09 DEG DA 4.6 KM
C LAT -3.37 DEG TILT DISTANCE 18.8
C LONG -23.24 DEG
D LAT -2.78 DEG
D LONG -23.10 DEG

MISSION/
FRAME NO. 1159
YR.NO.DY 660628
PR.MI,SEC 062522.57

S/C POSITION
ALT 50.98 KM
LAT RT 0.0683 KM/SEC
LONG -22.99 DEG

S/C ORIENTATION
TILT ANG 1.86 DEG
TILT AZIM 149.11 DEG
SWING ANG 316.32 DEG
N.DEV. 347.23 DEG

PHOTO ILLUMINATION
SUN AZIM 86.21 DEG
INCID ANG 57.64 DEG
EMISS ANG 1.91 DEG
PHASE ANG 58.53 DEG
ALPHA -0.90 DEG

PRINCIPAL POINT
LATITUDE -3.12 DEG
LONGITUDE -22.96 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.58 DEG AB 42.0 KM
A LONG -22.24 DEG BC 35.6 KM
B LAT -3.53 DEG CD 41.3 KM
B LONG -22.53 DEG DA 34.9 KM
C LAT -3.66 DEG TILT DISTANCE 2.6
C LONG -23.68 DEG
D LAT -2.33 DEG
D LONG -23.36 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.84 DEG AB 18.4 KM
A LONG -22.82 DEG BC 4.6 KM
B LAT -3.43 DEG CD 18.4 KM
B LONG -22.95 DEG DA 4.6 KM
C LAT -3.39 DEG TILT DISTANCE 19.7
C LONG -23.10 DEG
D LAT -2.80 DEG
D LONG -22.97 DEG

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MISSION/
FRAME NO.
1160

TIME
66CE28
062E24.75

S/C POSITION
ALT 51.13 KM
ALT RT 0.0694 KM/SEC
LAT -3.10 DEG
LONG -22.86 DEG

S/C ORIENTATION
TILT ANG 1.95 DEG
TILT AZIM 146.21 DEG
SWING ANG 313.43 DEG
N.DEV. 347.24 DEG

PHOTO ILLUMINATION
SUN AZIM 86.18 DEG
INCID ANG 57.51 DEG
EMISS ANG 2.01 DEG
PHASE ANG 58.53 DEG
ALPHA -1.04 DEG

PRINCIPAL POINT
LATITUDE -3.14 DEG
LONGITUDE -22.83 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.60 DEG AB 42.1 KM
A LONG -22.10 DEG BC 35.7 KM
B LAT -3.96 DEG CD 41.4 KM
B LONG -22.39 DEG DA 35.0 KM
C LAT -3.59 DEG TILT DISTANCE 2.7
D LAT -2.36 DEG
D LONG -23.23 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.86 DEG AB 18.5 KM
A LONG -22.69 DEG BC 4.7 KM
B LAT -3.46 DEG CD 18.4 KM
B LONG -22.82 DEG DA 4.6 KM
C LAT -3.42 DEG TILT DISTANCE 20.7
D LAT -2.97 DEG
D LONG -22.83 DEG

MISSION/
FRAME NO.
1161

TIME
460E28
062E26.94

S/C POSITION
ALT 51.28 KM
ALT RT 0.0705 KM/SEC
LAT -3.12 DEG
LONG -22.73 DEG

S/C ORIENTATION
TILT ANG 2.05 DEG
TILT AZIM 143.57 DEG
SWING ANG 310.79 DEG
N.DEV. 347.25 DEG

PHOTO ILLUMINATION
SUN AZIM 86.15 DEG
INCID ANG 57.37 DEG
EMISS ANG 2.11 DEG
PHASE ANG 58.53 DEG
ALPHA -1.17 DEG

PRINCIPAL POINT
LATITUDE -3.17 DEG
LONGITUDE -22.69 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.63 DEG AB 42.3 KM
A LONG -21.56 DEG BC 35.8 KM
B LAT -3.99 DEG CD 41.5 KM
B LONG -22.26 DEG DA 35.1 KM
C LAT -3.72 DEG TILT DISTANCE 2.8
D LAT -2.38 DEG
D LONG -23.09 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.89 DEG AB 18.5 KM
A LONG -22.55 DEG BC 4.7 KM
B LAT -3.49 DEG CD 18.5 KM
B LONG -22.68 DEG DA 4.6 KM
C LAT -3.45 DEG TILT DISTANCE 21.7
D LAT -2.86 DEG
D LONG -22.70 DEG

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MISSION/
FRAME NO.

1162
YR. MO. DY 660E28
HR. MI. SEC 062E29.14

S/C POSITION
ALT 51.44 KM
ALT RT 0.0716 KM/SEC
LAT -3.15 DEG
LONG -22.60 DEG

S/C ORIENTATION
TILT ANG 2.15 DEG
TILT AZIM 141.16 DEG
SWING ANG 308.39 DEG
N.DEV. 347.25 DEG

PHOTO ILLUMINATION
SUN AZIM 86.12 DEG
INCID ANG 57.24 DEG
EMISS ANG 2.21 DEG
PHASE ANG 58.53 DEG
ALPHA -1.30 DEG

PRINCIPAL POINT
LATITUDE -3.20 DEG
LONGITUDE -22.56 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.65 DEG AB 42.5 KM
A LONG -21.82 DEG BC 35.9 KM
B LAT -4.02 DEG CD 41.6 KM
B LONG -22.12 DEG DA 35.2 KM
C LAT -3.75 DEG TILT DISTANCE 3.0
C LONG -23.27 DEG
D LAT -2.41 DEG
D LONG -22.56 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.92 DEG AB 18.6 KM
A LONG -22.41 DEG BC 4.7 KM
B LAT -3.52 DEG CD 18.5 KM
B LONG -22.55 DEG DA 4.6 KM
C LAT -3.48 DEG TILT DISTANCE 22.8
C LONG -22.70 DEG
D LAT -2.89 DEG
D LONG -22.56 DEG

MISSION/
FRAME NO.

1163
YR. MO. DY 660E28
HR. MI. SEC 062E31.35

S/C POSITION
ALT 51.60 KM
ALT RT 0.0727 KM/SEC
LAT -3.18 DEG
LONG -22.46 DEG

S/C ORIENTATION
TILT ANG 2.26 DEG
TILT AZIM 138.97 DEG
SWING ANG 306.20 DEG
N.DEV. 347.26 DEG

PHOTO ILLUMINATION
SUN AZIM 86.09 DEG
INCID ANG 57.11 DEG
EMISS ANG 2.32 DEG
PHASE ANG 58.53 DEG
ALPHA -1.44 DEG

PRINCIPAL POINT
LATITUDE -3.23 DEG
LONGITUDE -22.42 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.68 DEG AB 42.6 KM
A LONG -21.68 DEG BC 36.0 KM
B LAT -4.05 DEG CD 41.7 KM
B LONG -21.98 DEG DA 35.3 KM
C LAT -3.78 DEG TILT DISTANCE 3.1
C LONG -23.14 DEG
D LAT -2.44 DEG
D LONG -22.82 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.95 DEG AB 18.6 KM
A LONG -22.28 DEG BC 4.7 KM
B LAT -3.55 DEG CD 18.6 KM
B LONG -22.41 DEG DA 4.7 KM
C LAT -3.51 DEG TILT DISTANCE 23.9
C LONG -22.56 DEG
D LAT -2.91 DEG
D LONG -22.43 DEG

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MISSION/
FRAME NO.
1164

TIME
660828
062633.57

S/C POSITION
ALT 51.76 KM
ALT RT 0.0738 KM/SEC
LAT -3.20 DEG
LONG -22.33 DEG

S/C ORIENTATION
TILT ANG 2.37 DEG
TILT AZIM 136.96 DEG
SWING ANG 304.20 DEG
N.DEV. 347.27 DEG

PHOTO ILLUMINATION
SUN AZIM 86.06 DEG
INCID ANG 56.97 DEG
EMISS ANG 2.44 DEG
PHASE ANG 58.53 DEG
ALPHA -1.58 DEG

PRINCIPAL POINT
LATITUDE -3.26 DEG
LONGITUDE -22.28 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.71 DEG AB 42.8 KM
A LONG -21.54 DEG BC 36.1 KM
B LAT -4.09 DEG CD 41.8 KM
B LONG -21.84 DEG DA 35.4 KM
C LAT -3.81 DEG TILT DISTANCE
C LONG -23.00 DEG 3.3
D LAT -2.46 DEG
D LONG -22.69 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.97 DEG AB 18.7 KM
A LONG -22.14 DEG BC 4.7 KM
B LAT -3.57 DEG CD 18.6 KM
B LONG -22.28 DEG DA 4.7 KM
C LAT -3.54 DEG TILT DISTANCE
C LONG -22.43 DEG 25.1
D LAT -2.94 DEG
D LONG -22.29 DEG

MISSION/
FRAME NO.
1165

TIME
660828
062635.80

S/C POSITION
ALT 51.93 KM
ALT RT 0.0750 KM/SEC
LAT -3.23 DEG
LONG -22.20 DEG

S/C ORIENTATION
TILT ANG 2.48 DEG
TILT AZIM 135.13 DEG
SWING ANG 302.38 DEG
N.DEV. 347.28 DEG

PHOTO ILLUMINATION
SUN AZIM 86.02 DEG
INCID ANG 56.84 DEG
EMISS ANG 2.55 DEG
PHASE ANG 58.53 DEG
ALPHA -1.71 DEG

PRINCIPAL POINT
LATITUDE -3.28 DEG
LONGITUDE -22.15 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.73 DEG AB 43.0 KM
A LONG -21.40 DEG BC 36.3 KM
B LAT -4.12 DEG CD 41.9 KM
B LONG -21.70 DEG DA 35.6 KM
C LAT -3.84 DEG TILT DISTANCE
C LONG -22.87 DEG 3.4
D LAT -2.49 DEG
D LONG -22.55 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -3.00 DEG AB 18.8 KM
A LONG -22.00 DEG BC 4.7 KM
B LAT -3.60 DEG CD 18.7 KM
B LONG -22.14 DEG DA 4.7 KM
C LAT -3.57 DEG TILT DISTANCE
C LONG -22.29 DEG 26.3
D LAT -2.97 DEG
D LONG -22.15 DEG

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MISSION/
FRAME NO.
1166

TIME 66CE28
YR,MO,DY 062638.04
HR,MI,SEC
S/C POSITION
ALT 52.17 KM
LAT RT 0.0761 KM/SEC
LONG -3.26 DEG
S/C ORIENTATION
TILT ANG 2.59 DEG
TILT AZIM 133.45 DEG
SWING ANG 300.70 DEG
N.DEV. 347.29 DEG
PHOTO ILLUMINATION
SUN AZIM 85.99 DEG
INCID ANG 56.70 DEG
EMISS ANG 2.67 DEG
PHASE ANG 58.53 DEG
ALPHA -1.85 DEG
PRINCIPAL POINT
LATITUDE -3.31 DEG
LONGITUDE -22.01 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -2.76 DEG AB 43.2 KM
A LONG -21.26 DEG BC 36.4 KM
B LAT -4.15 DEG CD 42.0 KM
B LONG -21.56 DEG DA 35.7 KM
C LAT -3.87 DEG TILT DISTANCE
C LONG -22.73 DEG 3.6
D LAT -2.52 DEG
D LONG -22.41 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -3.03 DEG AB 18.8 KM
A LONG -21.86 DEG BC 4.7 KM
B LAT -3.63 DEG CD 18.8 KM
B LONG -23.00 DEG DA 4.7 KM
C LAT -3.60 DEG TILT DISTANCE
C LONG -22.15 DEG 27.5
D LAT -2.99 DEG
D LONG -22.01 DEG

MISSION/
FRAME NO.
1167

TIME 66CE28
YR,MO,DY 062E40.29
HR,MI,SEC
S/C POSITION
ALT 52.27 KM
LAT RT 0.0772 KM/SEC
LONG -3.29 DEG
S/C ORIENTATION
TILT ANG 2.71 DEG
TILT AZIM 131.91 DEG
SWING ANG 299.17 DEG
N.DEV. 347.30 DEG
PHOTO ILLUMINATION
SUN AZIM 85.96 DEG
INCID ANG 56.56 DEG
EMISS ANG 2.79 DEG
PHASE ANG 58.53 DEG
ALPHA -1.99 DEG
PRINCIPAL POINT
LATITUDE -3.34 DEG
LONGITUDE -21.87 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -2.78 DEG AB 43.4 KM
A LONG -21.12 DEG BC 36.5 KM
B LAT -4.18 DEG CD 42.1 KM
B LONG -21.42 DEG DA 35.8 KM
C LAT -3.90 DEG TILT DISTANCE
C LONG -22.59 DEG 3.8
D LAT -2.54 DEG
D LONG -22.27 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -3.06 DEG AB 18.9 KM
A LONG -21.72 DEG BC 4.8 KM
B LAT -3.66 DEG CD 18.8 KM
B LONG -21.86 DEG DA 4.7 KM
C LAT -3.63 DEG TILT DISTANCE
C LONG -22.01 DEG 28.8
D LAT -3.02 DEG
D LONG -21.88 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.
1168

YR.MO.DY 660E28
PR.MI.SEC 062E42.55
TIME 062E42.55
S/C POSITION
ALT 52.45 KM
LAT RT 0.0784 KM/SEC
LONG -3.31 DEG
S/C ORIENTATION
TILT ANG 2.83 DEG
TILT AZIM 130.49 DEG
SWING ANG 297.75 DEG
N.DEV. 347.31 DEG
PHOTO ILLUMINATION
SUN AZIM 85.92 DEG
INCID ANG 56.43 DEG
EMISS ANG 2.92 DEG
PHASE ANG 58.53 DEG
ALPHA -2.12 DEG
PRINCIPAL POINT
LATITUDE -3.37 DEG
LONGITUDE -21.73 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -2.81 DEG AB 43.5 KM
A LONG -20.97 DEG BC 36.7 KM
B LAT -4.21 DEG CD 42.2 KM
B LONG -21.28 DEG DA 36.0 KM
C LAT -3.93 DEG TILT DISTANCE
C LONG -22.45 DEG 3.9
D LAT -2.57 DEG
D LONG -22.14 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -3.08 DEG AB 19.0 KM
A LONG -21.58 DEG BC 4.8 KM
B LAT -3.69 DEG CD 18.9 KM
B LONG -21.72 DEG DA 4.7 KM
C LAT -3.66 DEG TILT DISTANCE
C LONG -21.87 DEG 30.0
D LAT -3.05 DEG
D LONG -21.74 DEG

MISSION/
FRAME NO.
1169

YR.MO.DY 660E28
PR.MI.SEC 062E44.83
TIME 062E44.83
S/C POSITION
ALT 52.63 KM
LAT RT 0.0795 KM/SEC
LONG -3.34 DEG
S/C ORIENTATION
TILT ANG 2.95 DEG
TILT AZIM 129.17 DEG
SWING ANG 296.44 DEG
N.DEV. 347.32 DEG
PHOTO ILLUMINATION
SUN AZIM 85.89 DEG
INCID ANG 56.29 DEG
EMISS ANG 3.04 DEG
PHASE ANG 58.53 DEG
ALPHA -2.26 DEG
PRINCIPAL POINT
LATITUDE -3.40 DEG
LONGITUDE -21.59 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -2.84 DEG AB 43.7 KM
A LONG -20.83 DEG BC 36.8 KM
B LAT -4.25 DEG CD 42.3 KM
B LONG -21.13 DEG DA 36.1 KM
C LAT -3.96 DEG TILT DISTANCE
C LONG -22.32 DEG 4.1
D LAT -2.60 DEG
D LONG -22.00 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -3.11 DEG AB 19.0 KM
A LONG -21.44 DEG BC 4.8 KM
B LAT -3.72 DEG CD 18.9 KM
B LONG -21.58 DEG DA 4.8 KM
C LAT -3.69 DEG TILT DISTANCE
C LONG -21.73 DEG 31.3
D LAT -3.08 DEG
D LONG -21.60 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

MISSION/
FRAME NO.

1170 YR.MO.DY 660828
HR.MI.SEC 062847.11

S/C POSITION
ALT 52.81 KM
ALT RT 0.0806 KM/SEC
LAT -3.37 DEG
LONG -21.52 DEG

S/C ORIENTATION
TILT ANG 3.08 DEG
TILT AZIM 127.96 DEG
SWING ANG 295.24 DEG
N.DEV. 347.33 DEG

PHOTO ILLUMINATION
SUN AZIM 85.86 DEG
INCID ANG 58.15 DEG
EMISS ANG 3.17 DEG
PHASE ANG 58.53 DEG
ALPHA -2.40 DEG

PRINCIPAL POINT
LATITUDE -3.43 DEG
LONGITUDE -21.45 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.86 DEG AB 43.9 KM
A LONG -20.68 DEG BC 36.9 KM
B LAT -4.28 DEG CD 42.4 KM
B LONG -20.59 DEG DA 36.2 KM
C LAT -3.59 DEG TILT DISTANCE 4.3
C LONG -22.18 DEG
D LAT -2.62 DEG
D LONG -21.86 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -3.14 DEG AB 19.1 KM
A LONG -21.30 DEG BC 4.8 KM
B LAT -3.75 DEG CD 19.0 KM
B LONG -21.44 DEG DA 4.8 KM
C LAT -3.72 DEG TILT DISTANCE 32.7
C LONG -21.59 DEG
D LAT -3.11 DEG
D LONG -21.45 DEG

MISSION/
FRAME NO.

1171 YR.MO.DY 660828
HR.MI.SEC 062849.40

S/C POSITION
ALT 52.99 KM
ALT RT 0.0818 KM/SEC
LAT -3.40 DEG
LONG -21.38 DEG

S/C ORIENTATION
TILT ANG 3.20 DEG
TILT AZIM 126.84 DEG
SWING ANG 294.12 DEG
N.DEV. 347.34 DEG

PHOTO ILLUMINATION
SUN AZIM 85.82 DEG
INCID ANG 58.01 DEG
EMISS ANG 3.30 DEG
PHASE ANG 58.53 DEG
ALPHA -2.54 DEG

PRINCIPAL POINT
LATITUDE -3.46 DEG
LONGITUDE -21.31 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.89 DEG AB 44.1 KM
A LONG -20.54 DEG BC 37.1 KM
B LAT -4.31 DEG CD 42.5 KM
B LONG -20.85 DEG DA 36.4 KM
C LAT -4.02 DEG TILT DISTANCE 4.4
C LONG -22.04 DEG
D LAT -2.65 DEG
D LONG -21.72 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -3.17 DEG AB 19.2 KM
A LONG -21.16 DEG BC 4.8 KM
B LAT -3.78 DEG CD 19.1 KM
B LONG -21.30 DEG DA 4.8 KM
C LAT -3.75 DEG TILT DISTANCE 34.0
C LONG -21.45 DEG
D LAT -3.13 DEG
D LONG -21.31 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/10/71

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MISSION/
FRAME NO.

1172
YR.MO.DY
660228
HR.MI.SEC
082551.70

S/C POSITION
ALT 53.18 KM
ALT RT 0.0830 KM/SEC
LAT -3.43 DEG
LONG -21.25 DEG

S/C ORIENTATION
TILT ANG 3.33 DEG
TILT AZIM 125.80 DEG
SWING ANG 293.09 DEG
N.DEV. 347.35 DEG

PHOTO ILLUMINATION
SUN AZIM 85.79 DEG
INCID ANG 55.87 DEG
EMISS ANG 3.43 DEG
PHASE ANG 58.53 DEG
ALPHA -2.68 DEG

PRINCIPAL POINT
LATITUDE -3.49 DEG
LONGITUDE -21.16 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -2.92 DEG AB 44.3 KM
A LONG -20.39 DEG BC 37.2 KM
B LAT -4.35 DEG CD 42.7 KM
B LONG -20.70 DEG DA 36.5 KM
C LAT -4.05 DEG TILT DISTANCE 4.6
C LONG -21.90 DEG
D LAT -2.68 DEG
D LONG -21.57 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -3.19 DEG AB 19.2 KM
A LONG -21.02 DEG BC 4.8 KM
B LAT -3.81 DEG CD 19.1 KM
B LONG -21.15 DEG DA 4.8 KM
C LAT -3.78 DEG TILT DISTANCE 35.4
C LONG -21.31 DEG
D LAT -3.16 DEG
D LONG -21.17 DEG

MISSION/
FRAME NO.

1173
YR.MO.DY
660228
HR.MI.SEC
132158.71

S/C POSITION
ALT 54.74 KM
ALT RT 0.0991 KM/SEC
LAT -3.91 DEG
LONG -22.92 DEG

S/C ORIENTATION
TILT ANG 24.29 DEG
TILT AZIM 139.23 DEG
SWING ANG 313.82 DEG
N.DEV. 357.46 DEG

PHOTO ILLUMINATION
SUN AZIM 84.76 DEG
INCID ANG 53.70 DEG
EMISS ANG 25.11 DEG
PHASE ANG 70.30 DEG
ALPHA -18.59 DEG

PRINCIPAL POINT
LATITUDE -4.53 DEG
LONGITUDE -22.39 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -3.79 DEG AB 61.5 KM
A LONG -21.63 DEG BC 53.4 KM
B LAT -5.82 DEG CD 46.8 KM
B LONG -21.46 DEG DA 39.1 KM
C LAT -5.29 DEG TILT DISTANCE 36.1
C LONG -23.15 DEG
D LAT -3.77 DEG
D LONG -22.52 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -4.18 DEG AB 23.3 KM
A LONG -22.28 DEG BC 6.2 KM
B LAT -4.59 DEG CD 22.5 KM
B LONG -22.30 DEG DA 5.4 KM
C LAT -4.91 DEG TILT DISTANCE 74.4
C LONG -22.50 DEG
D LAT -4.17 DEG
D LONG -22.46 DEG

LUNAR CRBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.

1174
YR,MO,DY 66CE28
HR,MI,SEC 2000 0.71

S/C POSITION
ALT 72.12 KM
ALT RT -0.1567 KM/SEC
LAT 2.41 DEG
LONG -57.12 DEG

S/C ORIENTATION
TILT ANG 17.57 DEG
TILT AZIM 233.47 DEG
SWING ANG 52.06 DEG
N.DEV. 357.19 DEG

PHOTO ILLUMINATION
SUN AZIM 88.63 DEG
INCID ANG 85.28 DEG
FRISS ANG 18.43 DEG
PHASE ANG 70.39 DEG
ALPHA 14.80 DEG

PRINCIPAL POINT
LATITUDE 1.96 DEG
LONGITUDE -57.73 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.85 DEG AB 58.3 KM
A LONG -56.92 DEG BC 60.7 KM
B LAT 0.92 DEG CD 70.9 KM
B LONG -56.89 DEG DA 50.4 KM
C LAT 0.69 DEG TILT DISTANCE 25.4
C LONG -58.88 DEG
D LAT 3.01 DEG
D LONG -52.58 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.40 DEG AB 27.6 KM
A LONG -57.60 DEG BC 7.4 KM
B LAT 1.49 DEG CD 28.3 KM
B LONG -57.64 DEG DA 6.8 KM
C LAT 1.48 DEG TILT DISTANCE 93.7
C LONG -57.88 DEG
D LAT 2.41 DEG
D LONG -57.82 DEG

MISSION/
FRAME NO.

1175
YR,MO,DY 66CE29
HR,MI,SEC 030535.81

S/C POSITION
ALT 50.14 KM
ALT RT 0.0551 KM/SEC
LAT -2.91 DEG
LONG -35.62 DEG

S/C ORIENTATION
TILT ANG 19.78 DEG
TILT AZIM 148.40 DEG
SWING ANG 323.88 DEG
N.DEV. 357.17 DEG

PHOTO ILLUMINATION
SUN AZIM 86.21 DEG
INCID ANG 59.53 DEG
EMISS ANG 20.38 DEG
PHASE ANG 70.41 DEG
ALPHA -12.32 DEG

PRINCIPAL POINT
LATITUDE -3.41 DEG
LONGITUDE -35.31 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.77 DEG AB 50.9 KM
A LONG -34.67 DEG BC 43.9 KM
B LAT -4.44 DEG CD 42.8 KM
B LONG -34.57 DEG DA 33.7 KM
C LAT -4.13 DEG TILT DISTANCE 28.7
C LONG -35.99 DEG
D LAT -2.74 DEG
D LONG -35.79 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -3.11 DEG AB 20.4 KM
A LONG -35.22 DEG BC 5.2 KM
B LAT -3.78 DEG CD 19.9 KM
B LONG -35.24 DEG DA 4.7 KM
C LAT -3.75 DEG TILT DISTANCE 18.7
C LONG -35.41 DEG
D LAT -3.10 DEG
D LONG -35.37 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.

1176
YR. MO. DY 660829
HR. MI. SEC 063159.01

S/C POSITION
ALT 50.78 KM
ALT RT 0.0587 KM/SEC
LAT -3.01 DEG
LONG -37.05 DEG

S/C ORIENTATION
TILT ANG 0.80 DEG
TILT AZIM 148.62 DEG
SWING ANG 316.14 DEG
N.DEV. 347.52 DEG

PHOTO ILLUMINATION
SUN AZIM 86.44 DEG
INCID ANG 59.49 DEG
EMISS ANG 0.82 DEG
PHASE ANG 59.87 DEG
ALPHA -C.39 DEG

PRINCIPAL POINT
LATITUDE -3.03 DEG
LONGITUDE -37.04 DEG

MEDIUM RESOLUTION

CORNER COORDINATE
A LAT -2.49 DEG
A LONG -36.32 DEG
B LAT -3.83 DEG
B LONG -26.61 DEG
C LAT -3.58 DEG
C LONG -37.74 DEG
D LAT -2.25 DEG
D LONG -37.44 DEG

SIDE LENGTH
AB 41.5 KM
BC 35.2 KM
CD 41.3 KM
DA 34.9 KM
TILT DISTANCE 1.1

HIGH RESOLUTION

CORNER COORDINATE
A LAT -2.75 DEG
A LONG -36.90 DEG
B LAT -3.35 DEG
B LONG -37.03 DEG
C LAT -3.31 DEG
C LONG -37.18 DEG
D LAT -2.72 DEG
D LONG -37.04 DEG

SIDE LENGTH
AB 18.3 KM
BC 4.6 KM
CD 18.3 KM
DA 4.6 KM
TILT DISTANCE 8.4

MISSION/
FRAME NO.

1177
YR. MO. DY 660825
HR. MI. SEC 0632 1.24

S/C POSITION
ALT 50.91 KM
ALT RT 0.0598 KM/SEC
LAT -3.04 DEG
LONG -36.91 DEG

S/C ORIENTATION
TILT ANG 0.89 DEG
TILT AZIM 142.19 DEG
SWING ANG 309.72 DEG
N.DEV. 347.53 DEG

PHOTO ILLUMINATION
SUN AZIM 86.41 DEG
INCID ANG 59.35 DEG
EMISS ANG 0.92 DEG
PHASE ANG 59.87 DEG
ALPHA -0.52 DEG

PRINCIPAL POINT
LATITUDE -3.06 DEG
LONGITUDE -36.99 DEG

MEDIUM RESOLUTION

CORNER COORDINATE
A LAT -2.52 DEG
A LONG -26.18 DEG
B LAT -3.86 DEG
B LONG -36.47 DEG
C LAT -3.61 DEG
C LONG -37.61 DEG
D LAT -2.28 DEG
D LONG -37.31 DEG

SIDE LENGTH
AB 41.7 KM
BC 35.3 KM
CD 41.4 KM
DA 35.0 KM
TILT DISTANCE 1.2

HIGH RESOLUTION

CORNER COORDINATE
A LAT -2.78 DEG
A LONG -36.76 DEG
B LAT -3.37 DEG
B LONG -36.89 DEG
C LAT -3.34 DEG
C LONG -37.04 DEG
D LAT -2.75 DEG
D LONG -36.91 DEG

SIDE LENGTH
AB 18.3 KM
BC 4.6 KM
CD 18.3 KM
DA 4.6 KM
TILT DISTANCE 9.4

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.
1178

TIME
660E25
0632 3.48

S/C POSITION
ALT 51.05 KM
TILT ANG 1.00 DEG
INCID ANZ 86.38 DEG
EMISS ANG 1.03 DEG
PHASE ANG 59.87 DEG
ALPHA -0.66 DEG

S/C ORIENTATION
TILT ANG 137.07 DEG
SWING ANG 304.60 DEG
N.DEV. 347.54 DEG

PHOTO ILLUMINATION
SUN AZIM 86.38 DEG
INCID ANZ 86.38 DEG
EMISS ANG 1.03 DEG
PHASE ANG 59.87 DEG
ALPHA -0.66 DEG

PRINCIPAL POINT
LATITUDE -3.09 DEG
LONGITUDE -36.75 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.55 DEG AB 41.9 KM
A LONG -36.63 DEG BC 35.4 KM
B LAT -3.90 DEG CD 41.4 KM
B LONG -36.33 DEG DA 35.1 KM
C LAT -3.64 DEG TILT DISTANCE 1.4
C LONG -37.47 DEG
D LAT -2.30 DEG
D LONG -37.17 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.81 DEG AB 18.4 KM
A LONG -36.62 DEG BC 4.6 KM
B LAT -3.40 DEG CD 18.4 KM
B LONG -36.75 DEG DA 4.6 KM
C LAT -3.37 DEG TILT DISTANCE 10.6
C LONG -36.90 DEG
D LAT -2.78 DEG
D LONG -36.77 DEG

MISSION/
FRAME NO.
1179

TIME
660E25
0632 5.72

S/C POSITION
ALT 51.18 KM
TILT ANG 1.12 DEG
INCID ANZ 86.35 DEG
EMISS ANG 1.15 DEG
PHASE ANG 59.87 DEG
ALPHA -0.80 DEG

S/C ORIENTATION
TILT ANG 132.96 DEG
SWING ANG 300.50 DEG
N.DEV. 347.55 DEG

PHOTO ILLUMINATION
SUN AZIM 86.35 DEG
INCID ANZ 86.35 DEG
EMISS ANG 1.15 DEG
PHASE ANG 59.87 DEG
ALPHA -0.80 DEG

PRINCIPAL POINT
LATITUDE -3.12 DEG
LONGITUDE -36.62 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.57 DEG AB 42.0 KM
A LONG -35.89 DEG BC 35.5 KM
B LAT -3.93 DEG CD 41.5 KM
B LONG -36.19 DEG DA 35.2 KM
C LAT -3.67 DEG TILT DISTANCE 1.5
C LONG -37.33 DEG
D LAT -2.33 DEG
D LONG -37.03 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.84 DEG AB 18.5 KM
A LONG -36.48 DEG BC 4.6 KM
B LAT -3.43 DEG CD 18.4 KM
B LONG -36.61 DEG DA 4.6 KM
C LAT -3.40 DEG TILT DISTANCE 11.8
C LONG -36.76 DEG
D LAT -2.81 DEG
D LONG -36.63 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.
1180

TIME 660E29
YR,MO,DY 0632 7.98
HR,MI,SEC 0632 7.98

S/C POSITION
ALT 51.32 KM
ALT RT 0.0632 KM/SEC
LAT -3.12 DEG
LONG -36.51 DEG

S/C ORIENTATION
TILT ANG 1.24 DEG
TILT AZIM 129.61 DEG
SWING ANG 297.15 DEG
N.DEV. 347.56 DEG

PHOTO ILLUMINATION
SUN AZIM 86.32 DEG
INCID ANG 58.94 DEG
EMISS ANG 1.27 DEG
PHASE ANG 59.87 DEG
ALPHA -0.93 DEG

PRINCIPAL POINT
LATITUDE -3.15 DEG
LONGITUDE -36.48 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.60 DEG AB 42.2 KM
A LONG -35.75 DEG BC 35.6 KM
B LAT -3.56 DEG CD 41.6 KM
B LONG -36.05 DEG DA 35.3 KM
C LAT -3.70 DEG TILT DISTANCE 1.7
C LONG -37.19 DEG
D LAT -2.36 DEG
D LONG -36.89 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.87 DEG AB 18.5 KM
A LONG -36.34 DEG BC 4.7 KM
B LAT -3.46 DEG CD 18.5 KM
B LONG -36.47 DEG DA 4.6 KM
C LAT -3.43 DEG TILT DISTANCE 13.1
C LONG -36.62 DEG
D LAT -2.83 DEG
D LONG -36.49 DEG

MISSION/
FRAME NO.
1181

TIME 660E29
YR,MO,DY 063210.24
HR,MI,SEC 063210.24

S/C POSITION
ALT 51.47 KM
ALT RT 0.0644 KM/SEC
LAT -3.15 DEG
LONG -36.38 DEG

S/C ORIENTATION
TILT ANG 1.36 DEG
TILT AZIM 126.85 DEG
SWING ANG 294.40 DEG
N.DEV. 347.56 DEG

PHOTO ILLUMINATION
SUN AZIM 86.29 DEG
INCID ANG 58.80 DEG
EMISS ANG 1.40 DEG
PHASE ANG 59.87 DEG
ALPHA -1.07 DEG

PRINCIPAL POINT
LATITUDE -3.18 DEG
LONGITUDE -36.34 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.62 DEG AB 42.3 KM
A LONG -35.61 DEG BC 35.7 KM
B LAT -3.59 DEG CD 41.7 KM
B LONG -36.50 DEG DA 35.4 KM
C LAT -3.73 DEG TILT DISTANCE 1.9
C LONG -37.05 DEG
D LAT -2.38 DEG
D LONG -36.75 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.89 DEG AB 18.6 KM
A LONG -36.20 DEG BC 4.7 KM
B LAT -3.49 DEG CD 18.5 KM
B LONG -36.33 DEG DA 4.7 KM
C LAT -3.46 DEG TILT DISTANCE 14.4
C LONG -36.48 DEG
D LAT -2.86 DEG
D LONG -36.35 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
 FRAME NO. 1183
 YR. MO. DY 660825
 PR. MI. SEC 063214.80

S/C POSITION ALT 51.62 KM
 ALT RT 0.0655 KM/SEC
 LAT -3.18 DEG
 LONG -36.24 DEG

S/C ORIENTATION TILT ANG 1.49 DEG
 TILT AZIM 124.54 DEG
 SWING ANG 292.10 DEG
 N.DEV. 347.57 DEG

PHOTO ILLUMINATION SUN AZIM 86.25 DEG
 INCID ANG 58.57 DEG
 EMISS ANG 1.53 DEG
 PHASE ANG 59.87 DEG
 ALPHA -1.21 DEG

PRINCIPAL POINT LATITUDE -3.20 DEG
 LONGITUDE -36.20 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -2.92 DEG AB 18.6 KM
 A LONG -36.06 DEG BC 4.7 KM
 B LAT -3.52 DEG CD 18.6 KM
 B LONG -35.19 DEG DA 4.7 KM
 C LAT -3.49 DEG TILT DISTANCE 15.7
 C LONG -36.34 DEG
 D LAT -2.89 DEG
 D LONG -35.21 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -2.65 DEG AB 42.5 KM
 A LONG -35.46 DEG BC 35.8 KM
 B LAT -4.02 DEG CD 41.8 KM
 B LONG -35.76 DEG DA 35.5 KM
 C LAT -3.75 DEG TILT DISTANCE 2.0
 C LONG -36.92 DEG
 D LAT -2.41 DEG
 D LONG -36.61 DEG

MISSION/
 FRAME NO. 1183
 YR. MO. DY 660825
 PR. MI. SEC 063214.80

S/C POSITION ALT 51.77 KM
 ALT RT 0.0667 KM/SEC
 LAT -3.21 DEG
 LONG -36.10 DEG

S/C ORIENTATION TILT ANG 1.62 DEG
 TILT AZIM 122.59 DEG
 SWING ANG 290.16 DEG
 N.DEV. 347.58 DEG

PHOTO ILLUMINATION SUN AZIM 86.23 DEG
 INCID ANG 58.53 DEG
 EMISS ANG 1.66 DEG
 PHASE ANG 59.87 DEG
 ALPHA -1.35 DEG

PRINCIPAL POINT LATITUDE -3.23 DEG
 LONGITUDE -36.06 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -2.95 DEG AB 18.7 KM
 A LONG -35.92 DEG BC 4.7 KM
 B LAT -3.55 DEG CD 18.6 KM
 B LONG -36.05 DEG DA 4.7 KM
 C LAT -3.52 DEG TILT DISTANCE 17.1
 C LONG -36.20 DEG
 D LAT -2.92 DEG
 D LONG -36.07 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -2.68 DEG AB 42.7 KM
 A LONG -35.32 DEG BC 35.9 KM
 B LAT -4.05 DEG CD 41.9 KM
 B LONG -35.62 DEG DA 35.6 KM
 C LAT -3.78 DEG TILT DISTANCE 2.2
 C LONG -36.78 DEG
 D LAT -2.44 DEG
 D LONG -36.47 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.

1184
YR.NO.DY 66CE9
HR.MI.SEC 055643.73

S/C POSITION
ALT 48.78 KM
ALT RT 0.0123 KM/SEC
LAT -1.91 DEG
LONG -44.58 DEG

S/C ORIENTATION
TILT ANG 0.98 DEG
TILT AZIM 300.05 DEG
SWING ANG 108.74 DEG
N.DEV. 347.98 DEG

PHOTO ILLUMINATION
SUN AZIM 87.44 DEG
INCID ANG 65.05 DEG
EMISS ANG 1.91 DEG
PHASE ANG 64.20 DEG
ALPHA 0.84 DEG

PRINCIPAL POINT
LATITUDE -1.89 DEG
LONGITUDE -44.40 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -1.37 DEG AB 39.5 KM
A LONG -42.72 DEG BC 33.5 KM
B LAT -2.65 DEG CD 40.0 KM
B LONG -42.59 DEG DA 33.7 KM
C LAT -2.42 DEG TILT DISTANCE
C LONG -45.08 DEG 1.3
D LAT -1.13 DEG
D LONG -44.60 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -1.62 DEG AB 17.5 KM
A LONG -44.27 DEG BC 4.4 KM
B LAT -2.19 DEG CD 17.6 KM
B LONG -44.39 DEG DA 4.4 KM
C LAT -2.16 DEG TILT DISTANCE
C LONG -44.53 DEG 10.3
D LAT -1.59 DEG
D LONG -44.41 DEG

MISSION/
FRAME NO.

1185
YR.NO.DY 66OE29
HR.MI.SEC 095645.82

S/C POSITION
ALT 48.78 KM
ALT RT 0.0133 KM/SEC
LAT -1.93 DEG
LONG -44.25 DEG

S/C ORIENTATION
TILT ANG 0.86 DEG
TILT AZIM 302.75 DEG
SWING ANG 110.74 DEG
N.DEV. 347.99 DEG

PHOTO ILLUMINATION
SUN AZIM 87.42 DEG
INCID ANG 64.92 DEG
EMISS ANG 0.88 DEG
PHASE ANG 64.20 DEG
ALPHA 0.72 DEG

PRINCIPAL POINT
LATITUDE -1.92 DEG
LONGITUDE -44.27 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -1.40 DEG AB 39.6 KM
A LONG -43.59 DEG BC 33.6 KM
B LAT -2.67 DEG CD 40.0 KM
B LONG -43.86 DEG DA 33.7 KM
C LAT -2.45 DEG TILT DISTANCE
C LONG -44.95 DEG 1.1
D LAT -1.16 DEG
D LONG -44.67 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -1.65 DEG AB 17.6 KM
A LONG -44.14 DEG BC 4.4 KM
B LAT -2.22 DEG CD 17.6 KM
B LONG -44.26 DEG DA 4.4 KM
C LAT -2.19 DEG TILT DISTANCE
C LONG -44.40 DEG 9.1
D LAT -1.62 DEG
D LONG -44.28 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

MISSION/
 FRAME NO.
 1186

YR.MO.DY 660829
 PR.MI.SEC 095647.91

TIME
 ALT 48.81 KM
 ALT RT 0.0144 KM/SEC
 LAT -1.96 DEG
 LONG -44.13 DEG

S/C POSITION
 ALT 48.81 KM
 ALT RT 0.0144 KM/SEC
 LAT -1.96 DEG
 LONG -44.13 DEG

S/C ORIENTATION
 TILT ANG 0.74 DEG
 TILT AZIM 306.33 DEG
 SWING ANG 114.32 DEG
 N.DEV. 347.99 DEG

PHOTO ILLUMINATION
 SUN AZIM 87.40 DEG
 INCID ANG 64.79 DEG
 EMISS ANG 0.76 DEG
 PHASE ANG 64.20 DEG
 ALPHA 0.59 DEG

PRINCIPAL POINT
 LATITUDE -1.95 DEG
 LONGITUDE -44.14 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -1.68 DEG AB 17.6 KM
 A LONG -44.01 DEG BC 4.4 KM
 B LAT -2.25 DEG CD 17.6 KM
 B LONG -44.13 DEG DA 4.4 KM
 C LAT -2.22 DEG TILT DISTANCE 7.8
 C LONG -44.27 DEG
 D LAT -1.65 DEG
 D LONG -44.15 DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -1.42 DEG AB 39.6 KM
 A LONG -43.46 DEG BC 33.6 KM
 B LAT -2.70 DEG CD 40.0 KM
 B LONG -43.73 DEG DA 33.8 KM
 C LAT -2.48 DEG TILT DISTANCE 1.0
 C LONG -44.82 DEG
 D LAT -1.18 DEG
 D LONG -44.55 DEG

MISSION/
 FRAME NO.
 1187

YR.MO.DY 660829
 PR.MI.SEC 095650.00

TIME
 ALT 48.84 KM
 ALT RT 0.0155 KM/SEC
 LAT -1.99 DEG
 LONG -44.00 DEG

S/C POSITION
 ALT 48.84 KM
 ALT RT 0.0155 KM/SEC
 LAT -1.99 DEG
 LONG -44.00 DEG

S/C ORIENTATION
 TILT ANG 0.62 DEG
 TILT AZIM 311.24 DEG
 SWING ANG 119.23 DEG
 N.DEV. 348.00 DEG

PHOTO ILLUMINATION
 SUN AZIM 87.38 DEG
 INCID ANG 64.66 DEG
 EMISS ANG 0.64 DEG
 PHASE ANG 64.20 DEG
 ALPHA 0.46 DEG

PRINCIPAL POINT
 LATITUDE -1.97 DEG
 LONGITUDE -44.01 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -1.70 DEG AB 17.6 KM
 A LONG -43.88 DEG BC 4.4 KM
 B LAT -2.27 DEG CD 17.6 KM
 B LONG -44.00 DEG DA 4.4 KM
 C LAT -2.24 DEG TILT DISTANCE 6.6
 C LONG -44.15 DEG
 D LAT -1.67 DEG
 D LONG -44.02 DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -1.45 DEG AB 39.7 KM
 A LONG -43.33 DEG BC 33.6 KM
 B LAT -2.73 DEG CD 40.0 KM
 B LONG -43.60 DEG DA 33.8 KM
 C LAT -2.50 DEG TILT DISTANCE 0.8
 C LONG -44.69 DEG
 D LAT -1.21 DEG
 D LONG -44.42 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.
1188

YR.NO.DY 660E29
HR.MI.SEC 095652.10
TIME 48.88 KM
S/C POSITION ALT 0.0165 KM/SEC
LAT -2.01 DEG
LONG -43.87 DEG
S/C ORIENTATION TILT ANG 0.52 DEG
TILT AZIM 318.31 DEG
SWING ANG 126.31 DEG
N.DEV. 348.00 DEG
PHOTO ILLUMINATION SUN AZIM 87.36 DEG
INCID ANG 64.53 DEG
EMISS ANG 0.53 DEG
PHASE ANG 64.20 DEG
ALPHA 0.33 DEG
PRINCIPAL POINT LATITUDE -2.00 DEG
LONGITUDE -43.88 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -1.47 DEG AB 39.8 KM
A LONG -43.19 DEG BC 33.7 KM
B LAT -2.76 DEG CD 40.0 KM
B LONG -43.47 DEG DA 33.8 KM
C LAT -2.53 DEG TILT DISTANCE 0.7
C LONG -44.56 DEG
D LAT -1.24 DEG
D LONG -44.29 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -1.73 DEG AB 17.6 KM
A LONG -43.75 DEG BC 4.4 KM
B LAT -2.30 DEG CD 17.6 KM
B LONG -43.87 DEG DA 4.4 KM
C LAT -2.27 DEG TILT DISTANCE 5.4
C LONG -44.02 DEG
D LAT -1.70 DEG
D LONG -43.90 DEG

MISSION/
FRAME NO.
1189

YR.NO.DY 660E29
HR.MI.SEC 095654.20
TIME 48.91 KM
S/C POSITION ALT 0.0176 KM/SEC
LAT -2.04 DEG
LONG -43.75 DEG
S/C ORIENTATION TILT ANG 0.42 DEG
TILT AZIM 328.87 DEG
SWING ANG 136.88 DEG
N.DEV. 348.01 DEG
PHOTO ILLUMINATION SUN AZIM 87.34 DEG
INCID ANG 64.41 DEG
EMISS ANG 0.43 DEG
PHASE ANG 64.20 DEG
ALPHA 0.20 DEG
PRINCIPAL POINT LATITUDE -2.03 DEG
LONGITUDE -43.75 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -1.50 DEG AB 39.8 KM
A LONG -43.06 DEG BC 33.7 KM
B LAT -2.79 DEG CD 40.0 KM
B LONG -43.34 DEG DA 33.8 KM
C LAT -2.56 DEG TILT DISTANCE 0.5
C LONG -44.43 DEG
D LAT -1.27 DEG
D LONG -44.16 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -1.76 DEG AB 17.6 KM
A LONG -43.62 DEG BC 4.4 KM
B LAT -2.33 DEG CD 17.6 KM
B LONG -43.74 DEG DA 4.4 KM
C LAT -2.30 DEG TILT DISTANCE 4.4
C LONG -43.69 DEG
D LAT -1.73 DEG
D LONG -43.77 DEG

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MISSION/
FRAME NO.

1190
YR.MO.DY 660829
HR.MI.SEC 095656.30

S/C POSITION
ALT 48.95 KM
ALT RT 0.0187 KM/SEC
LAT -2.06 DEG
LONG -43.62 DEG

S/C ORIENTATION
TILT ANG 0.34 DEG
TILT AZIM 344.78 DEG
SWING ANG 152.79 DEG
N.DEV. 348.01 DEG

PHOTO ILLUMINATION
SUN AZIM 87.32 DEG
INCID ANG 64.28 DEG
EMISS ANG 0.35 DEG
PHASE ANG 64.20 DEG
ALPHA 0.08 DEG

PRINCIPAL POINT
LATITUDE -2.05 DEG
LONGITUDE -43.63 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -1.53 DEG AB 39.9 KM
A LONG -42.53 DEG BC 33.7 KM
B LAT -2.81 DEG CD 40.0 KM
B LONG -43.21 DEG DA 33.9 KM
C LAT -2.58 DEG TILT DISTANCE 0.4
C LONG -44.30 DEG
D LAT -1.29 DEG
D LONG -44.03 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -1.78 DEG AB 17.6 KM
A LONG -43.49 DEG BC 4.4 KM
B LAT -2.35 DEG CD 17.6 KM
B LONG -43.61 DEG DA 4.4 KM
C LAT -2.32 DEG TILT DISTANCE 3.6
C LONG -43.76 DEG
D LAT -1.75 DEG
D LONG -43.64 DEG

MISSION/
FRAME NO.

1191
YR.MO.DY 660829
HR.MI.SEC 095658.40

S/C POSITION
ALT 48.99 KM
ALT RT 0.0198 KM/SEC
LAT -2.09 DEG
LONG -43.50 DEG

S/C ORIENTATION
TILT ANG 0.31 DEG
TILT AZIM 6.63 DEG
SWING ANG 174.64 DEG
N.DEV. 348.02 DEG

PHOTO ILLUMINATION
SUN AZIM 87.30 DEG
INCID ANG 64.15 DEG
EMISS ANG 0.32 DEG
PHASE ANG 64.20 DEG
ALPHA -0.05 DEG

PRINCIPAL POINT
LATITUDE -2.08 DEG
LONGITUDE -43.50 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -1.55 DEG AB 40.0 KM
A LONG -42.80 DEG BC 33.7 KM
B LAT -2.84 DEG CD 40.0 KM
B LONG -43.08 DEG DA 33.9 KM
C LAT -2.61 DEG TILT DISTANCE 0.4
C LONG -44.17 DEG
D LAT -1.32 DEG
D LONG -43.90 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -1.81 DEG AB 17.6 KM
A LONG -43.36 DEG BC 4.4 KM
B LAT -2.38 DEG CD 17.6 KM
B LONG -43.48 DEG DA 4.4 KM
C LAT -2.35 DEG TILT DISTANCE 3.2
C LONG -43.63 DEG
D LAT -1.78 DEG
D LONG -43.51 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.

1192
YR.MO.DY 660E29
HR.MI.SEC 0557 0.50

S/C POSITION
ALT 49.03 KM
ALT RT 0.0208 KM/SEC
LAT -2.12 DEG
LONG -43.37 DEG

S/C ORIENTATION
TILT ANG 0.32 DEG
TILT AZIM 29.98 DEG
SWING ANG 198.00 DEG
N.DEV. 348.02 DEG

PHOTO ILLUMINATION
SUN AZIM 57.27 DEG
INCID ANG 64.02 DEG
EMISS ANG 0.33 DEG
PHASE ANG 64.20 DEG
ALPHA -0.18 DEG

PRINCIPAL POINT
LATITUDE -2.11 DEG
LONGITUDE -43.37 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -1.58 DEG AB 40.0 KM
A LONG -42.67 DEG BC 33.8 KM
B LAT -2.87 DEG CD 40.0 KM
B LONG -42.55 DEG DA 33.9 KM
C LAT -2.64 DEG TILT DISTANCE 0.4
C LONG -44.04 DEG
D LAT -1.35 DEG
D LONG -43.77 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -1.84 DEG AB 17.7 KM
A LONG -43.23 DEG BC 4.4 KM
B LAT -2.41 DEG CD 17.7 KM
B LONG -43.35 DEG DA 4.4 KM
C LAT -2.38 DEG TILT DISTANCE 3.4
C LONG -43.50 DEG
D LAT -1.81 DEG
D LONG -43.38 DEG

MISSION/
FRAME NO.

1193
YR.MO.DY 660E29
HR.MI.SEC 0957 2.61

S/C POSITION
ALT 49.08 KM
ALT RT 0.0219 KM/SEC
LAT -2.14 DEG
LONG -43.24 DEG

S/C ORIENTATION
TILT ANG 0.38 DEG
TILT AZIM 48.61 DEG
SWING ANG 216.64 DEG
N.DEV. 348.03 DEG

PHOTO ILLUMINATION
SUN AZIM 87.25 DEG
INCID ANG 63.89 DEG
EMISS ANG 0.40 DEG
PHASE ANG 64.20 DEG
ALPHA -0.31 DEG

PRINCIPAL POINT
LATITUDE -2.14 DEG
LONGITUDE -43.24 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -1.60 DEG AB 40.1 KM
A LONG -42.54 DEG BC 33.8 KM
B LAT -2.90 DEG CD 40.0 KM
B LONG -42.82 DEG DA 33.9 KM
C LAT -2.66 DEG TILT DISTANCE 0.5
C LONG -43.91 DEG
D LAT -1.37 DEG
D LONG -43.64 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -1.86 DEG AB 17.7 KM
A LONG -43.10 DEG BC 4.4 KM
B LAT -2.44 DEG CD 17.7 KM
B LONG -43.22 DEG DA 4.4 KM
C LAT -2.40 DEG TILT DISTANCE 4.0
C LONG -43.37 DEG
D LAT -1.83 DEG
D LONG -43.25 DEG

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.
1194

TIME 650829
YR.MO.DY 0957 4-72
HR.MI.SEC 0957 4-72

S/C POSITION
ALT 49.13 KM
ALT RT 0.0230 KM/SEC
LAT -2.17 DEG
LONG -43.12 DEG

S/C ORIENTATION
TILT ANG 0.47 DEG
TILT AZIM 61.22 DEG
SWING ANG 229.25 DEG
N.DEV. 348.03 DEG

PHOTO ILLUMINATION
SUN AZIM 87.23 DEG
INCID ANG 63.76 DEG
EMISS ANG 0.49 DEG
PHASE ANG 64.20 DEG
ALPHA -0.44 DEG

PRINCIPAL POINT
LATITUDE -2.16 DEG
LONGITUDE -43.11 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -1.63 DEG AB 40.2 KM
A LONG -42.41 DEG BC 33.8 KM
B LAT -2.93 DEG CD 40.0 KM
B LONG -42.68 DEG DA 34.0 KM
C LAT -2.69 DEG TILT DISTANCE
C LONG -43.78 DEG TILT DISTANCE 0.6
D LAT -1.40 DEG
D LONG -43.51 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -1.89 DEG AB 17.7 KM
A LONG -42.97 DEG BC 4.4 KM
B LAT -2.46 DEG CD 17.7 KM
B LONG -43.09 DEG DA 4.4 KM
C LAT -2.43 DEG TILT DISTANCE
C LONG -43.24 DEG TILT DISTANCE 5.0
D LAT -1.86 DEG
D LONG -43.12 DEG

MISSION/
FRAME NO.
1195

TIME 660829
YR.MO.DY 0957 6-83
HR.MI.SEC 0957 6-83

S/C POSITION
ALT 49.18 KM
ALT RT 0.0241 KM/SEC
LAT -2.19 DEG
LONG -42.99 DEG

S/C ORIENTATION
TILT ANG 0.58 DEG
TILT AZIM 69.57 DEG
SWING ANG 237.60 DEG
N.DEV. 348.04 DEG

PHOTO ILLUMINATION
SUN AZIM 87.21 DEG
INCID ANG 63.63 DEG
EMISS ANG 0.60 DEG
PHASE ANG 64.20 DEG
ALPHA -0.57 DEG

PRINCIPAL POINT
LATITUDE -2.19 DEG
LONGITUDE -42.98 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -1.66 DEG AB 40.2 KM
A LONG -42.28 DEG BC 33.9 KM
B LAT -2.55 DEG CD 40.0 KM
B LONG -42.55 DEG DA 34.0 KM
C LAT -2.72 DEG TILT DISTANCE
C LONG -43.65 DEG TILT DISTANCE 0.8
D LAT -1.43 DEG
D LONG -43.38 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -1.92 DEG AB 17.7 KM
A LONG -42.84 DEG BC 4.4 KM
B LAT -2.49 DEG CD 17.7 KM
B LONG -42.96 DEG DA 4.5 KM
C LAT -2.46 DEG TILT DISTANCE
C LONG -43.11 DEG TILT DISTANCE 6.1
D LAT -1.89 DEG
D LONG -42.99 DEG

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MISSION/
FRAME NO.
1196

YR. MO. DY 660829
HR. MI. SEC 0957.8.94
TIME 660829 0957.8.94
S/C POSITION
ALT. 49.23 KM
ALT RT 0.0251 KM/SEC
LAT -2.22 DEG
LONG -42.86 DEG
S/C ORIENTATION
TILT ANG 0.69 DEG
TILT AZIM 75.27 DEG
SWING ANG 243.31 DEG
N.DEV. 348.04 DEG
PHOTO ILLUMINATION
SUN AZIM 87.19 DEG
INCID ANG 63.51 DEG
EMISS ANG 0.71 DEG
PHASE ANG 64.20 DEG
ALPHA -0.70 DEG
PRINCIPAL POINT
LATITUDE -2.22 DEG
LONGITUDE -42.85 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -1.68 DEG AB 40.3 KM
A LONG -42.14 DEG BC 33.9 KM
B LAT -2.98 DEG CD 40.0 KM
B LONG -42.42 DEG DA 34.1 KM
C LAT -2.75 DEG TILT DISTANCE
C LONG -43.52 DEG TILT 0.9
D LAT -1.45 DEG
D LONG -43.24 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -1.94 DEG AB 17.7 KM
A LONG -42.71 DEG BC 4.5 KM
B LAT -2.52 DEG CD 17.7 KM
B LONG -42.83 DEG DA 4.5 KM
C LAT -2.49 DEG TILT DISTANCE
C LONG -42.98 DEG TILT 7.3
D LAT -1.91 DEG
D LONG -42.86 DEG

MISSION/
FRAME NO.
1197

YR. MO. DY 660829
HR. MI. SEC 0957.11.05
TIME 660829 0957.11.05
S/C POSITION
ALT. 49.28 KM
ALT RT 0.0262 KM/SEC
LAT -2.25 DEG
LONG -42.74 DEG
S/C ORIENTATION
TILT ANG 0.81 DEG
TILT AZIM 79.34 DEG
SWING ANG 247.39 DEG
N.DEV. 348.05 DEG
PHOTO ILLUMINATION
SUN AZIM 87.17 DEG
INCID ANG 63.38 DEG
EMISS ANG 0.83 DEG
PHASE ANG 64.20 DEG
ALPHA -0.83 DEG
PRINCIPAL POINT
LATITUDE -2.24 DEG
LONGITUDE -42.71 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -1.71 DEG AB 40.4 KM
A LONG -42.01 DEG BC 33.9 KM
B LAT -3.01 DEG CD 40.0 KM
B LONG -42.29 DEG DA 34.1 KM
C LAT -2.77 DEG TILT DISTANCE
C LONG -43.39 DEG TILT 1.1
D LAT -1.48 DEG
D LONG -43.11 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -1.97 DEG AB 17.8 KM
A LONG -42.58 DEG BC 4.5 KM
B LAT -2.54 DEG CD 17.7 KM
B LONG -42.70 DEG DA 4.5 KM
C LAT -2.51 DEG TILT DISTANCE
C LONG -42.85 DEG TILT 8.6
D LAT -1.94 DEG
D LONG -42.73 DEG

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.

1198 YR.MO.DY 660829
HR.MI.SEC 055713.17

S/C POSITION
ALT 49.34 KM
ALT RT 0.0273 KM/SEC
LAT -2.27 DEG
LONG -42.61 DEG

S/C ORIENTATION
TILT ANG 0.93 DEG
TILT AZIM 82.38 DEG
SWING ANG 250.43 DEG
N.DEV. 348.05 DEG

PHOTO ILLUMINATION
SUN AZIM 87.15 DEG
INCID ANG 63.25 DEG
EMISS ANG 0.96 DEG
PHASE ANG 64.20 DEG
ALPHA -0.95 DEG

PRINCIPAL POINT
LATITUDE -2.27 DEG
LONGITUDE -42.58 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -1.73 DEG AB 40.5 KM
A LONG -41.88 DEG BC 34.0 KM
B LAT -3.04 DEG CD 40.0 KM
B LONG -42.16 DEG DA 34.1 KM
C LAT -2.80 DEG TILT DISTANCE
C LONG -43.26 DEG 1.3
D LAT -1.51 DEG
D LONG -42.98 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.00 DEG AB 17.8 KM
A LONG -42.45 DEG BC 4.5 KM
B LAT -2.57 DEG CD 17.8 KM
B LONG -42.57 DEG DA 4.5 KM
C LAT -2.54 DEG TILT DISTANCE
C LONG -42.72 DEG 9.8
D LAT -1.97 DEG
D LONG -42.60 DEG

MISSION/
FRAME NO.

1199 YR.MO.DY 660829
HR.MI.SEC 095715.29

S/C POSITION
ALT 49.40 KM
ALT RT 0.0284 KM/SEC
LAT -2.30 DEG
LONG -42.48 DEG

S/C ORIENTATION
TILT ANG 1.06 DEG
TILT AZIM 84.70 DEG
SWING ANG 252.76 DEG
N.DEV. 348.06 DEG

PHOTO ILLUMINATION
SUN AZIM 87.12 DEG
INCID ANG 63.12 DEG
EMISS ANG 1.09 DEG
PHASE ANG 64.20 DEG
ALPHA -1.08 DEG

PRINCIPAL POINT
LATITUDE -2.30 DEG
LONGITUDE -42.45 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -1.76 DEG AB 40.6 KM
A LONG -41.75 DEG BC 34.0 KM
B LAT -3.07 DEG CD 40.0 KM
B LONG -42.03 DEG DA 34.2 KM
C LAT -2.83 DEG TILT DISTANCE
C LONG -43.12 DEG 1.4
D LAT -1.53 DEG
D LONG -42.65 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.02 DEG AB 17.8 KM
A LONG -42.32 DEG BC 4.5 KM
B LAT -2.60 DEG CD 17.8 KM
B LONG -42.44 DEG DA 4.5 KM
C LAT -2.57 DEG TILT DISTANCE
C LONG -42.59 DEG 11.2
D LAT -1.99 DEG
D LONG -42.46 DEG

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MISSION/
FRAME NO.

1200
YR.NO.DY 660229
HR.MI.SEC 132330.35

S/C POSITION
ALT 49.58 KM
ALT RT 0.0279 KM/SEC
LAT -2.31 DEG
LONG -44.39 DEG

S/C ORIENTATION
TILT ANG 0.51 DEG
TILT AZIM 313.98 DEG
SWING ANG 121.90 DEG
N.DEV. 347.92 DEG

PHOTO ILLUMINATION
SUN AZIM 87.14 DEG
INCID ANG 63.32 DEG
EMISS ANG 0.52 DEG
PHASE ANG 62.96 DEG
ALPHA 0.35 DEG

PRINCIPAL POINT
LATITUDE -2.30 DEG
LONGITUDE -44.40 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -1.77 DEG AB 40.3 KM
A LONG -43.70 DEG BC 34.1 KM
B LAT -3.07 DEG CD 40.5 KM
B LONG -43.58 DEG DA 34.3 KM
C LAT -2.84 DEG TILT DISTANCE
C LONG -45.09 DEG 0.7
D LAT -1.53 DEG
D LONG -44.61 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.03 DEG AB 17.8 KM
A LONG -44.27 DEG BC 4.5 KM
B LAT -2.60 DEG CD 17.9 KM
B LONG -44.39 DEG DA 4.5 KM
C LAT -2.57 DEG TILT DISTANCE
C LONG -44.53 DEG 5.3
D LAT -2.00 DEG
D LONG -44.41 DEG

MISSION/
FRAME NO.

1201
YR.NO.DY 660229
HR.MI.SEC 132332.50

S/C POSITION
ALT 49.64 KM
ALT RT 0.0290 KM/SEC
LAT -2.34 DEG
LONG -44.26 DEG

S/C ORIENTATION
TILT ANG 0.40 DEG
TILT AZIM 324.13 DEG
SWING ANG 132.05 DEG
N.DEV. 347.92 DEG

PHOTO ILLUMINATION
SUN AZIM 87.11 DEG
INCID ANG 63.19 DEG
EMISS ANG 0.41 DEG
PHASE ANG 62.96 DEG
ALPHA 0.22 DEG

PRINCIPAL POINT
LATITUDE -2.33 DEG
LONGITUDE -44.27 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -1.79 DEG AB 40.4 KM
A LONG -43.57 DEG BC 34.2 KM
B LAT -3.10 DEG CD 40.6 KM
B LONG -43.85 DEG DA 34.3 KM
C LAT -2.86 DEG TILT DISTANCE
C LONG -44.95 DEG 0.5
D LAT -1.55 DEG
D LONG -44.68 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.05 DEG AB 17.9 KM
A LONG -44.13 DEG BC 4.5 KM
B LAT -2.63 DEG CD 17.9 KM
B LONG -44.26 DEG DA 4.5 KM
C LAT -2.60 DEG TILT DISTANCE
C LONG -44.40 DEG 4.2
D LAT -2.02 DEG
D LONG -44.28 DEG

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MISSION/
FRAME NO.
1202

TIME 660E25
YR,MO,DY 132234.64
HR,MI,SEC
S/C POSITION ALT 49.70 KM
TILT ANG 0.32 DEG
SUN AZIM 87.09 DEG
INCID ANG 63.26 DEG
LAT -2.36 DEG
SWING ANG 148.34 DEG
EMISS ANG 0.33 DEG
LONG -44.13 DEG
N.DEV. 347.93 DEG
PHASE ANG 52.96 DEG
ALPHA 0.79 DEG

PRINCIPAL POINT
LATITUDE -2.34 DEG
LONGITUDE -44.14 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -1.82 DEG AB 40.5 KM
A LONG -43.43 DEG BC 34.2 KM
B LAT -2.53 DEG CD 43.6 KM
B LONG -43.72 DEG DA 34.4 KM
C LAT -2.89 DEG TILT DISTANCE 0.4
C LONG -44.22 DEG
D LAT -1.58 DEG
D LONG -44.54 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -2.08 DEG AB 17.9 KM
A LONG -44.00 DEG BC 4.5 KM
B LAT -2.66 DEG CD 17.9 KM
B LONG -44.12 DEG DA 4.5 KM
C LAT -2.63 DEG TILT DISTANCE 3.2
C LONG -44.27 DEG
D LAT -2.65 DEG
D LONG -44.15 DEG

MISSION/
FRAME NO.
1203

TIME 66CE25
YR,MO,DY 132236.79
HR,MI,SEC
S/C POSITION ALT 45.77 KM
TILT ANG 0.27 DEG
SUN AZIM 87.07 DEG
INCID ANG 62.93 DEG
LAT -2.39 DEG
SWING ANG 172.80 DEG
EMISS ANG 0.28 DEG
LONG -44.00 DEG
N.DEV. 347.94 DEG
PHASE ANG 52.96 DEG
ALPHA -0.24 DEG

PRINCIPAL POINT
LATITUDE -2.38 DEG
LONGITUDE -44.00 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -1.85 DEG AB 40.6 KM
A LONG -43.30 DEG BC 34.3 KM
B LAT -3.16 DEG CD 40.5 KM
B LONG -43.58 DEG DA 34.4 KM
C LAT -2.92 DEG TILT DISTANCE 0.3
C LONG -44.69 DEG
D LAT -1.61 DEG
D LONG -44.41 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -2.11 DEG AB 17.9 KM
A LONG -43.87 DEG BC 4.5 KM
B LAT -2.69 DEG CD 17.9 KM
B LONG -43.99 DEG DA 4.5 KM
C LAT -2.66 DEG TILT DISTANCE 2.8
C LONG -44.14 DEG
D LAT -2.68 DEG
D LONG -44.01 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.

1204 YR.MD.DY 640229
FR.MI.SEC 132336.94

S/C POSITION ALT 49.84 KM
ALT PT 0.0323 KM/SEC
LAT -2.42 DEG
LONG -43.87 DEG

S/C ORIENTATION TILT ANG 0.39 DEG
TILT AZIM 31.89 DEG
SWING ANG 199.83 DEG
N.DEV. 347.94 DEG

PHOTO ILLUMINATION SUN AZIM 87.74 DEG
INCID ANG 62.79 DEG
EMISS ANG 0.30 DEG
PHASE ANG 62.96 DEG
ALPHA -0.17 DEG

PRINCIPAL POINT LATITUDE -2.41 DEG
LONGITUDE -43.87 DEG

MEDIUM RESOLUTION CORNER COORDINATE SIDE LENGTH
A LAT -1.87 DEG AB 40.7 KM
A LONG -43.15 DEG BC 34.3 KM
B LAT -2.19 DEG CD 47.5 KM
B LONG -43.45 DEG DA 34.5 KM
C LAT -2.55 DEG TILT DISTANCE 0.4
C LONG -44.56 DEG
D LAT -1.64 DEG
D LONG -44.28 DEG

HIGH RESOLUTION CORNER COORDINATE SIDE LENGTH
A LAT -2.14 DEG AB 17.9 KM
A LONG -43.74 DEG BC 4.5 KM
B LAT -2.72 DEG CD 17.9 KM
B LONG -43.86 DEG DA 4.5 KM
C LAT -2.68 DEG TILT DISTANCE 3.0
C LONG -44.00 DEG
D LAT -2.10 DEG
D LONG -43.88 DEG

MISSION/
FRAME NO.

1205 YR.MD.DY 640229
FR.MI.SEC 132341.09

S/C POSITION ALT 49.91 KM
ALT PT 0.0334 KM/SEC
LAT -2.44 DEG
LONG -43.75 DEG

S/C ORIENTATION TILT ANG 0.36 DEG
TILT AZIM 52.21 DEG
SWING ANG 220.16 DEG
N.DEV. 347.95 DEG

PHOTO ILLUMINATION SUN AZIM 87.02 DEG
INCID ANG 62.06 DEG
EMISS ANG 0.37 DEG
PHASE ANG 62.96 DEG
ALPHA -0.30 DEG

PRINCIPAL POINT LATITUDE -2.44 DEG
LONGITUDE -43.74 DEG

MEDIUM RESOLUTION CORNER COORDINATE SIDE LENGTH
A LAT -1.90 DEG AB 43.9 KM
A LONG -43.63 DEG BC 34.4 KM
B LAT -2.21 DEG CD 40.6 KM
B LONG -43.31 DEG DA 34.5 KM
C LAT -2.58 DEG TILT DISTANCE 0.5
C LONG -44.42 DEG
D LAT -1.66 DEG
D LONG -44.14 DEG

HIGH RESOLUTION CORNER COORDINATE SIDE LENGTH
A LAT -2.16 DEG AB 18.0 KM
A LONG -43.60 DEG BC 4.5 KM
B LAT -2.74 DEG CD 18.0 KM
B LONG -43.73 DEG DA 4.5 KM
C LAT -2.71 DEG TILT DISTANCE 3.7
C LONG -43.87 DEG
D LAT -2.13 DEG
D LONG -43.75 DEG

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.

1206
TIME
66629
132243.24

YR. MO. DY
HR. MI. SEC

S/C POSITION
ALT 49.98 KM
ALT RT 0.0345 KM/SEC
LAT -2.47 DEG
LONG -43.62 DEG

S/C ORIENTATION
TILT ANG 0.45 DEG
TILT AZIM 54.97 DEG
SWING ANG 232.92 DEG
N.DEV. 347.95 DEG

PHOTO ILLUMINATION
SUN AZIM 87.00 DEG
INCID ANG 62.53 DEG
EMISS ANG 0.47 DEG
PHASE ANG 62.96 DEG
ALPHA -0.43 DEG

PRINCIPAL POINT
LATITUDE -2.45 DEG
LONGITUDE -43.59 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -1.52 DEG AB 40.9 KM
A LONG -42.50 DEG BC 34.4 KM
B LAT -2.24 DEG CD 40.7 KM
B LONG -42.18 DEG DA 34.5 KM
C LAT -3.00 DEG TILT DISTANCE 0.5
C LONG -44.29 DEG
D LAT -1.69 DEG
D LONG -44.81 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -2.19 DEG AB 18.0 KM
A LONG -43.47 DEG BC 4.5 KM
B LAT -2.77 DEG CD 18.0 KM
B LONG -43.59 DEG DA 4.5 KM
C LAT -2.74 DEG TILT DISTANCE 4.8
C LONG -43.74 DEG
D LAT -2.16 DEG
D LONG -43.62 DEG

MISSION/
FRAME NO.

1207
TIME
66629
132245.76

YR. MO. DY
HR. MI. SEC

S/C POSITION
ALT 50.05 KM
ALT RT 0.0355 KM/SEC
LAT -2.50 DEG
LONG -43.49 DEG

S/C ORIENTATION
TILT ANG 0.56 DEG
TILT AZIM 72.98 DEG
SWING ANG 240.94 DEG
N.DEV. 347.96 DEG

PHOTO ILLUMINATION
SUN AZIM 86.97 DEG
INCID ANG 62.40 DEG
EMISS ANG 0.58 DEG
PHASE ANG 62.96 DEG
ALPHA -0.56 DEG

PRINCIPAL POINT
LATITUDE -2.49 DEG
LONGITUDE -43.47 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -1.95 DEG AB 41.0 KM
A LONG -42.74 DEG BC 34.5 KM
B LAT -3.27 DEG CD 41.7 KM
B LONG -42.04 DEG DA 34.5 KM
C LAT -3.03 DEG TILT DISTANCE 0.8
C LONG -44.16 DEG
D LAT -1.72 DEG
D LONG -42.93 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -2.22 DEG AB 18.0 KM
A LONG -43.34 DEG BC 4.5 KM
B LAT -2.80 DEG CD 18.0 KM
B LONG -43.46 DEG DA 4.5 KM
C LAT -2.77 DEG TILT DISTANCE 5.9
C LONG -43.61 DEG
D LAT -2.19 DEG
D LONG -43.48 DEG

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.

1208
YR.MO.DY 660829
HR.MI.SEC 132347.55

S/C POSITION
ALT 50.13 KM
TILT RT 0.1367 KM/SEC
LAT -2.52 DEG
LONG -43.36 DEG

S/C ORIENTATION
TILT ANG 0.68 DEG
TILT AZIM 78.30 DEG
SWING ANG 246.26 DEG
N.DEV. 347.96 DEG

PHOTO ILLUMINATION
SUN AZIM 86.95 DEG
INCID ANG 62.27 DEG
EMISS ANG 0.70 DEG
PHASE ANG 62.96 DEG
ALPHA -0.70 DEG

PRINCIPAL POINT
LATITUDE -2.52 DEG
LONGITUDE -43.34 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -1.98 DEG AB 41.1 KM
A LONG -42.63 DEG BC 34.5 KM
B LAT -3.70 DEG CD 46.7 KM
B LONG -42.91 DEG DA 34.7 KM
C LAT -3.26 DEG TILT DISTANCE 9.9
C LONG -44.03 DEG
D LAT -1.74 DEG
D LONG -43.75 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.24 DEG AB 18.1 KM
A LONG -43.20 DEG BC 4.5 KM
B LAT -2.83 DEG CD 18.0 KM
B LONG -43.33 DEG DA 4.5 KM
C LAT -2.80 DEG TILT DISTANCE 7.2
C LONG -43.47 DEG
D LAT -2.21 DEG
D LONG -43.55 DEG

MISSION/
FRAME NO.

1209
YR.MO.DY 660829
HR.MI.SEC 132349.71

S/C POSITION
ALT 50.21 KM
TILT RT 0.0378 KM/SEC
LAT -2.55 DEG
LONG -43.23 DEG

S/C ORIENTATION
TILT ANG 0.81 DEG
TILT AZIM 82.01 DEG
SWING ANG 249.99 DEG
N.DEV. 347.97 DEG

PHOTO ILLUMINATION
SUN AZIM 96.93 DEG
INCID ANG 52.14 DEG
EMISS ANG 0.83 DEG
PHASE ANG 62.96 DEG
ALPHA -0.83 DEG

PRINCIPAL POINT
LATITUDE -2.55 DEG
LONGITUDE -43.21 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.50 DEG AB 41.2 KM
A LONG -42.49 DEG BC 34.5 KM
B LAT -3.33 DEG CD 40.8 KM
B LONG -42.77 DEG DA 34.7 KM
C LAT -3.09 DEG TILT DISTANCE 1.1
C LONG -43.89 DEG
D LAT -1.77 DEG
D LONG -43.61 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.27 DEG AB 18.1 KM
A LONG -43.07 DEG BC 4.5 KM
B LAT -2.85 DEG CD 18.1 KM
B LONG -43.19 DEG DA 4.5 KM
C LAT -2.82 DEG TILT DISTANCE 8.5
C LONG -43.34 DEG
D LAT -2.24 DEG
D LONG -43.22 DEG

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MISSION/
FRAME NO.
1210

TIME 56CE29
YR,MO,DY 132351.87
PR,MI,SEC

S/C POSITION
ALT 50.30 KM
ALT RT 0.0389 KM/SEC
LAT -2.58 DEG
LONG -43.10 DEG

S/C ORIENTATION
TILT ANG 0.93 DEG
TILT AZIM 84.74 DEG
SWING ANG 252.71 DEG
N.DEV. 347.98 DEG

PHOTO ILLUMINATION
SUN AZIM 86.90 DEG
INCID ANG 62.00 DEG
EMISS ANG 0.96 DEG
PHASE ANG 62.96 DEG
ALPHA -0.96 DEG

PRINCIPAL POINT
LATITUDE -2.57 DEG
LONGITUDE -43.07 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.03 DEG AB 41.3 KM
A LONG -42.35 DEG BC 34.6 KM
B LAT -3.36 DEG CD 40.8 KM
B LONG -42.64 DEG DA 34.8 KM
C LAT -3.11 DEG TILT DISTANCE 1.3
C LONG -43.76 DEG
D LAT -1.80 DEG
D LONG -43.48 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.30 DEG AB 18.1 KM
A LONG -42.94 DEG BC 4.5 KM
B LAT -2.88 DEG CD 18.1 KM
B LONG -43.06 DEG DA 4.6 KM
C LAT -2.85 DEG TILT DISTANCE 9.9
C LONG -43.21 DEG
D LAT -2.27 DEG
D LONG -43.08 DEG

MISSION/
FRAME NO.
1211

TIME 660E25
YR,MO,DY 132354.03
PR,MI,SEC

S/C POSITION
ALT 50.38 KM
ALT RT 0.0400 KM/SEC
LAT -2.60 DEG
LONG -42.97 DEG

S/C ORIENTATION
TILT ANG 1.06 DEG
TILT AZIM 86.80 DEG
SWING ANG 254.79 DEG
N.DEV. 347.98 DEG

PHOTO ILLUMINATION
SUN AZIM 86.88 DEG
INCID ANG 61.87 DEG
EMISS ANG 1.09 DEG
PHASE ANG 62.96 DEG
ALPHA -1.09 DEG

PRINCIPAL POINT
LATITUDE -2.60 DEG
LONGITUDE -42.94 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.05 DEG AB 41.4 KM
A LONG -42.22 DEG BC 34.7 KM
B LAT -3.39 DEG CD 40.8 KM
B LONG -42.51 DEG DA 34.9 KM
C LAT -3.14 DEG TILT DISTANCE 1.5
C LONG -43.63 DEG
D LAT -1.82 DEG
D LONG -43.35 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.32 DEG AB 18.2 KM
A LONG -42.80 DEG BC 4.6 KM
B LAT -2.91 DEG CD 18.1 KM
B LONG -42.93 DEG DA 4.6 KM
C LAT -2.88 DEG TILT DISTANCE 11.2
C LONG -43.07 DEG
D LAT -2.29 DEG
D LONG -42.95 DEG

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MISSION/
FRAME NO.
1212

YR. MO. DY 660829
HR. MI. SEC 132356.19

TIME
660829
132356.19

S/C POSITION
ALT 50.47 KM
ALT RT 0.0411 KM/SEC
LAT -2.63 DEG
LONG -42.84 DEG

S/C ORIENTATION
TILT ANG 1.19 DEG
TILT AZIM 88.43 DEG
SWING ANG 256.42 DEG
N.DEV. 347.99 DEG

PHOTO ILLUMINATION
SUN AZIM 86.85 DEG
INCID ANG 61.74 DEG
EMISS ANG 1.22 DEG
PHASE ANG 62.96 DEG
ALPHA -1.22 DEG

PRINCIPAL POINT
LATITUDE -2.63 DEG
LONGITUDE -42.81 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.08 DEG AB 41.5 KM
A LONG -42.08 DEG BC 34.8 KM
B LAT -3.42 DEG CD 40.9 KM
B LONG -42.37 DEG DA 34.9 KM
C LAT -3.17 DEG TILT DISTANCE
C LONG -43.49 DEG 1.6
D LAT -1.65 DEG
D LONG -42.21 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.35 DEG AB 18.2 KM
A LONG -42.57 DEG BC 4.6 KM
B LAT -2.94 DEG CD 18.2 KM
B LONG -42.79 DEG DA 4.6 KM
C LAT -2.91 DEG TILT DISTANCE
C LONG -42.94 DEG 12.6
D LAT -2.32 DEG
D LONG -42.82 DEG

MISSION/
FRAME NO.
1213

YR. MO. DY 660829
HR. MI. SEC 132358.36

TIME
660829
132358.36

S/C POSITION
ALT 50.56 KM
ALT RT 0.0422 KM/SEC
LAT -2.66 DEG
LONG -42.71 DEG

S/C ORIENTATION
TILT ANG 1.32 DEG
TILT AZIM 89.73 DEG
SWING ANG 257.73 DEG
N.DEV. 348.00 DEG

PHOTO ILLUMINATION
SUN AZIM 86.83 DEG
INCID ANG 61.61 DEG
EMISS ANG 1.36 DEG
PHASE ANG 62.96 DEG
ALPHA -1.36 DEG

PRINCIPAL POINT
LATITUDE -2.66 DEG
LONGITUDE -42.67 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.11 DEG AB 41.6 KM
A LONG -41.95 DEG BC 34.8 KM
B LAT -3.45 DEG CD 40.9 KM
B LONG -42.23 DEG DA 35.0 KM
C LAT -3.20 DEG TILT DISTANCE
C LONG -43.36 DEG 1.8
D LAT -1.88 DEG
D LONG -43.68 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.38 DEG AB 18.2 KM
A LONG -42.53 DEG BC 4.6 KM
B LAT -2.97 DEG CD 18.2 KM
B LONG -42.66 DEG DA 4.6 KM
C LAT -2.93 DEG TILT DISTANCE
C LONG -42.81 DEG 14.0
D LAT -2.35 DEG
D LONG -42.68 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

MISSION/
FRAME NO.
1214

TIME
660229
1324 2.70

S/C POSITION
ALT 50.65 KM
ALT RT 0.0433 KM/SEC
LAT -2.68 DEG
LONG -42.58 DEG

S/C ORIENTATION
TILT ANG 1.95 DEG
TILT AZIM 90.81 DEG
SWING ANG. 258.81 DEG
N.DEV. 348.00 DEG

PHOTO ILLUMINATION
SUN AZIM 86.80 DEG
INCID ANG 61.48 DEG
EMISS ANG 1.49 DEG
PHASE ANG 62.96 DEG
ALPHA -1.49 DEG

PRINCIPAL POINT
LATITUDE -2.68 DEG
LONGITUDE -42.54 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -2.13 DEG AB 41.7 KM
A LONG -41.81 DEG BC 34.9 KM
B LAT -2.48 DEG CD 41.0 KM
B LONG -42.10 DEG DA 35.1 KM
C LAT -3.23 DEG TILT DISTANCE 2.0
C LONG -42.23 DEG
D LAT -1.90 DEG
D LONG -42.56 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -2.40 DEG AB 18.3 KM
A LONG -42.40 DEG BC 4.6 KM
B LAT -2.99 DEG CD 19.2 KM
B LONG -42.53 DEG DA 4.6 KM
C LAT -2.96 DEG TILT DISTANCE 15.3
C LONG -42.67 DEG
D LAT -2.37 DEG
D LONG -42.55 DEG

MISSION/
FRAME NO.
1215

TIME
660229
1324 2.70

S/C POSITION
ALT 50.75 KM
ALT RT 0.0444 KM/SEC
LAT -2.71 DEG
LONG -42.45 DEG

S/C ORIENTATION
TILT ANG 1.58 DEG
TILT AZIM 91.70 DEG
SWING ANG 259.71 DEG
N.DEV. 348.01 DEG

PHOTO ILLUMINATION
SUN AZIM 86.78 DEG
INCID ANG 61.34 DEG
EMISS ANG 1.63 DEG
PHASE ANG 62.96 DEG
ALPHA -1.62 DEG

PRINCIPAL POINT
LATITUDE -2.71 DEG
LONGITUDE -42.40 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -2.16 DEG AB 41.8 KM
A LONG -41.67 DEG BC 35.0 KM
B LAT -3.51 DEG CD 41.0 KM
B LONG -41.96 DEG DA 35.1 KM
C LAT -3.26 DEG TILT DISTANCE 2.2
C LONG -42.69 DEG
D LAT -1.93 DEG
D LONG -42.61 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -2.43 DEG AB 18.3 KM
A LONG -42.27 DEG BC 4.6 KM
B LAT -3.02 DEG CD 18.3 KM
B LONG -42.39 DEG DA 4.6 KM
C LAT -2.99 DEG TILT DISTANCE 16.7
C LONG -42.54 DEG
D LAT -2.40 DEG
D LONG -42.41 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

MISSION/ FRAME NO. 2005 YR.NO.DY 661118 HR.MI.SEC 152452.91

TIME 661118 152452.91

S/C POSITION ALT 52.25 KM
 ALT RT -0.0476 KM/SEC
 LAT 4.24 DEG
 LONG 36.02 DEG

S/C ORIENTATION TILT ANG 1.23 DEG
 TILT AZIM 286.80 DEG
 SWING ANG 95.43 DEG
 N.DEV. 348.63 DEG

PHOTO ILLUMINATION SUN AZIM 91.47 DEG
 INCID. ANG 74.47 DEG
 EMISS ANG 1.26 DEG
 PHASE ANG 73.25 DEG
 ALPHA 1.22 DEG

PRINCIPAL POINT LATITUDE 4.25 DEG
 LONGITUDE 35.99 DEG

04/10/71

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MEDIUM RESOLUTION CORNER COORDINATE SIDE LENGTH
 A LAT 4.82 DEG AB 42.4 KM
 A LONG 36.72 DEG BC 36.1 KM
 B LAT 3.45 DEG CD 43.0 KM
 B LONG 36.44 DEG DA 36.2 KM
 C LAT 3.57 DEG TILT DISTANCE 1.6
 C LONG 35.27 DEG
 D LAT 5.07 DEG
 D LONG 35.54 DEG

HIGH RESOLUTION CORNER COORDINATE SIDE LENGTH
 A LAT 4.54 DEG AB 18.8 KM
 A LONG 36.13 DEG BC 4.7 KM
 B LAT 3.93 DEG CD 18.8 KM
 B LONG 35.00 DEG DA 4.7 KM
 C LAT 3.96 DEG TILT DISTANCE 13.0
 C LONG 35.85 DEG
 D LAT 4.57 DEG
 D LONG 35.97 DEG

MISSION/ FRAME NO. 2006 YR.NO.DY 661118 HR.MI.SEC 152455.03

S/C POSITION ALT 52.15 KM
 ALT RT -0.0465 KM/SEC
 LAT 4.21 DEG
 LONG 36.15 DEG

S/C ORIENTATION TILT ANG 1.10 DEG
 TILT AZIM 287.47 DEG
 SWING ANG 96.08 DEG
 N.DEV. 348.62 DEG

PHOTO ILLUMINATION SUN AZIM 91.48 DEG
 INCID ANG 74.34 DEG
 EMISS ANG 1.13 DEG
 PHASE ANG 73.25 DEG
 ALPHA 1.08 DEG

PRINCIPAL POINT LATITUDE 4.22 DEG
 LONGITUDE 36.12 DEG

MEDIUM RESOLUTION CORNER COORDINATE SIDE LENGTH
 A LAT 4.79 DEG AB 42.3 KM
 A LONG 36.85 DEG BC 36.0 KM
 B LAT 3.42 DEG CD 42.9 KM
 B LONG 36.57 DEG DA 36.1 KM
 C LAT 3.65 DEG TILT DISTANCE 1.5
 C LONG 35.40 DEG
 D LAT 5.04 DEG
 D LONG 35.68 DEG

HIGH RESOLUTION CORNER COORDINATE SIDE LENGTH
 A LAT 4.51 DEG AB 18.7 KM
 A LONG 36.26 DEG BC 4.7 KM
 B LAT 3.90 DEG CD 18.8 KM
 B LONG 36.14 DEG DA 4.7 KM
 C LAT 3.93 DEG TILT DISTANCE 11.6
 C LONG 35.98 DEG
 D LAT 4.54 DEG
 D LONG 36.10 DEG