

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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04/13/71

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.
4005

YR.,MO.,DY
HR.,MI.,SEC

TIME
670511
154627.91

S/C POSITION
ALT 3512.53 KM
ALT RT -0.2452 KM/SEC
LAT -71.823 DEG
LONG 76.827 DEG

S/C ORIENTATION
TILT ANG 2.35 DEG
TILT AZIM 100.28 DEG
SWING ANG 267.49 DEG
N.DEV. 1.44 DEG

PHOTO ILLUMINATION
SUN AZIM 61.85 DEG
INCLD ANG 81.38 DEG
EMISS ANG 7.17 DEG
PHASE ANG 87.93 DEG
ALPHA -6.56 DEG

PRINCIPAL POINT
LATITUDE -71.59 DEG
LONGITUDE 91.31 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -37.42 DEG AB 173.4 KM
A LONG 21.11 DEG BC 277.1 KM
B LAT -41.23 DEG CD 866.9 KM
B LONG 10.34 DEG DA 861.9 KM
C LAT -26.91 DEG TILT DISTANCE 3.3
C LONG -24.72 DEG
D LAT -8.79 DEG
D LONG 34.11 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -48.49 DEG AB 321.3 KM
A LONG 99.73 DEG BC 332.9 KM
B LAT -82.34 DEG CD 303.7 KM
B LONG -149.15 DEG DA 333.7 KM
C LAT -84.30 DEG TILT DISTANCE 25.2
C LONG -39.02 DEG
D LAT -49.13 DEG
D LONG 82.97 DEG

MISSION/
FRAME NO.
4006

YR.,MO.,DY
HR.,MI.,SEC

TIME
670511
154627.91

S/C POSITION
ALT 3510.05 KM
ALT RT -0.2450 KM/SEC
LAT -71.13 DEG
LONG 76.336 DEG

S/C ORIENTATION
TILT ANG 2.38 DEG
TILT AZIM 97.53 DEG
SWING ANG 264.82 DEG
N.DEV. 1.41 DEG

PHOTO ILLUMINATION
SUN AZIM 61.88 DEG
INCLD ANG 81.22 DEG
EMISS ANG 7.20 DEG
PHASE ANG 87.93 DEG
ALPHA -6.72 DEG

PRINCIPAL POINT
LATITUDE -71.17 DEG
LONGITUDE 91.33 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -37.29 DEG AB 170.8 KM
A LONG 21.50 DEG BC 276.8 KM
B LAT -41.22 DEG CD 842.2 KM
B LONG 10.82 DEG DA 841.2 KM
C LAT -27.66 DEG TILT DISTANCE 3.3
C LONG -23.72 DEG
D LAT -5.30 DEG
D LONG 34.26 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -48.11 DEG AB 320.5 KM
A LONG 99.71 DEG BC 332.2 KM
B LAT -82.56 DEG CD 302.9 KM
B LONG -151.79 DEG DA 333.9 KM
C LAT -84.55 DEG TILT DISTANCE 25.3
C LONG -35.75 DEG
D LAT -48.76 DEG
D LONG 83.06 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.

4007 YR.MO.DY 67CE11
HR.MI.SEC 154438.11

S/C POSITION
ALT 3507.55 KM
ALT RT -0.2449 KM/SEC
LAT -71.02 DEG
LONG 76.45 DEG

S/C ORIENTATION
TILT ANG 2.40 DEG
TILT AZIM 94.79 DEG
SWING ANG 262.16 DEG
N.DEV. 1.38 DEG

PHOTO ILLUMINATION
SUN AZIM 61.91 DEG
INCID ANG 81.25 DEG
EMISS ANG 7.25 DEG
PHASE ANG 87.93 DEG
ALPHA -6.88 DEG

PRINCIPAL POINT
LATITUDE -70.83 DEG
LONGITUDE 91.34 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -37.16 DEG AB 168.2 KM
A LONG 21.89 DEG BC 276.7 KM
B LAT -41.21 DEG CD 820.5 KM
B LONG 11.31 DEG DA 824.4 KM
C LAT -28.32 DEG TILT DISTANCE 3.3
C LONG -23.44 DEG
D LAT -9.70 DEG
D LONG 34.39 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -47.73 DEG AB 319.8 KM
A LONG 99.68 DEG BC 331.5 KM
B LAT -82.76 DEG CD 302.2 KM
B LONG -154.59 DEG DA 334.2 KM
C LAT -84.78 DEG TILT DISTANCE 25.5
C LONG -32.15 DEG
D LAT -48.39 DEG
D LONG 83.15 DEG

MISSION/
FRAME NO.

4008 YR.MO.DY 67CE11
HR.MI.SEC 154448.21

S/C POSITION
ALT 3505.08 KM
ALT RT -0.2447 KM/SEC
LAT -70.91 DEG
LONG 76.54 DEG

S/C ORIENTATION
TILT ANG 2.42 DEG
TILT AZIM 92.11 DEG
SWING ANG 259.57 DEG
N.DEV. 1.36 DEG

PHOTO ILLUMINATION
SUN AZIM 61.94 DEG
INCID ANG 80.89 DEG
EMISS ANG 7.32 DEG
PHASE ANG 87.93 DEG
ALPHA -7.04 DEG

PRINCIPAL POINT
LATITUDE -70.49 DEG
LONGITUDE 91.35 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -37.02 DEG AB 165.8 KM
A LONG 22.27 DEG BC 276.5 KM
B LAT -41.20 DEG CD 891.7 KM
B LONG 11.79 DEG DA 894.6 KM
C LAT -26.21 DEG TILT DISTANCE 3.3
C LONG -24.68 DEG
D LAT -7.25 DEG
D LONG 34.09 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -47.34 DEG AB 319.1 KM
A LONG 99.66 DEG BC 330.9 KM
B LAT -82.94 DEG CD 301.5 KM
B LONG -157.50 DEG DA 334.4 KM
C LAT -84.99 DEG TILT DISTANCE 25.8
C LONG -28.30 DEG
D LAT -48.01 DEG
D LONG 83.24 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

MISSION/
FRAME NO.
4009

YR.MO.DY 670511
HR.MI.SEC 162437.91

S/C POSITION
ALT 2989.15 KM
ALT RT -0.1752 KM/SEC
LAT -42.02 DEG
LONG 86.28 DEG

S/C ORIENTATION
TILT ANG 4.25 DEG
TILT AZIM 91.57 DEG
SWING ANG 288.62 DEG
N.DEV. - 23.58 DEG

PHOTO ILLUMINATION
SUN AZIM 65.08 DEG
INCID ANG 65.23 DEG
EMISS ANG 11.63 DEG
PHASE ANG 76.22 DEG
ALPHA -11.04 DEG

PRINCIPAL POINT
LATITUDE -41.79 DEG
LONGITUDE 96.20 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -42.44 DEG AB 330.2 KM
A LONG 45.78 DEG BC 222.8 KM
B LAT -49.54 DEG CD 034.7 KM
B LONG 43.02 DEG DA 927.8 KM
C LAT -62.99 DEG TILT DISTANCE 5.9
C LONG -32.89 DEG
D LAT -7.21 DEG
D LONG 41.18 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -22.69 DEG AB 131.1 KM
A LONG 93.46 DEG BC 291.9 KM
B LAT -55.44 DEG CD 108.2 KM
B LONG 119.53 DEG DA 283.0 KM
C LAT -60.67 DEG TILT DISTANCE 45.3
C LONG 104.14 DEG
D LAT -26.10 DEG
D LONG 83.90 DEG

MISSION/
FRAME NO.
4010

YR.MO.DY 670511
HR.MI.SEC 162448.11

S/C POSITION
ALT 2987.37 KM
ALT RT -0.1748 KM/SEC
LAT -41.88 DEG
LONG 86.30 DEG

S/C ORIENTATION
TILT ANG 4.26 DEG
TILT AZIM 89.70 DEG
SWING ANG 286.76 DEG
N.DEV. 23.50 DEG

PHOTO ILLUMINATION
SUN AZIM 65.25 DEG
INCID ANG 65.07 DEG
EMISS ANG 11.67 DEG
PHASE ANG 76.22 DEG
ALPHA -11.19 DEG

PRINCIPAL POINT
LATITUDE -41.42 DEG
LONGITUDE 96.19 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -42.15 DEG AB 325.1 KM
A LONG 46.17 DEG BC 222.2 KM
B LAT -49.25 DEG CD 044.3 KM
B LONG 43.55 DEG DA 935.7 KM
C LAT -63.73 DEG TILT DISTANCE 5.9
C LONG -31.68 DEG
D LAT -6.69 DEG
D LONG 41.19 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -22.27 DEG AB 129.9 KM
A LONG 93.49 DEG BC 291.5 KM
B LAT -55.06 DEG CD 106.9 KM
B LONG 119.20 DEG DA 283.4 KM
C LAT -60.25 DEG TILT DISTANCE 45.5
C LONG 103.96 DEG
D LAT -25.71 DEG
D LONG 83.95 DEG

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MISSION/
FRAME NO.
4011

YR.MO.DY 670511
HR.MI.SEC 162658.21

S/C POSITION
ALT 2985.60 KM
ALT RT -0.1743 KM/SEC
LAT -41.74 DEG
LONG 86.32 DEG

S/C ORIENTATION
TILT ANG 4.28 DEG
TILT AZIM 87.87 DEG
SWING ANG 284.94 DEG
N.DEV. 23.43 DEG

PHOTO ILLUMINATION
SUN AZIM 65.41 DEG
INCID ANG 64.92 DEG
EMISS ANG 11.71 DEG
PHASE ANG 76.22 DEG
ALPHA -11.33 DEG

PRINCIPAL POINT
LATITUDE -41.04 DEG
LONGITUDE 96.19 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -41.85 DEG AB 320.1 KM
A LONG 46.54 DEG BC 221.6 KM
B LAT -48.56 DEG CD 066.1 KM
B LONG 44.05 DEG DA 943.9 KM
C LAT -64.09 DEG TILT DISTANCE 5.9
C LONG -31.46 DEG
D LAT -6.17 DEG
D LONG 41.19 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -21.86 DEG AB 128.9 KM
A LONG 93.52 DEG BC 291.1 KM
B LAT -54.58 DEG CD 105.6 KM
B LONG 118.88 DEG DA 283.8 KM
C LAT -59.83 DEG TILT DISTANCE 45.7
C LONG 103.78 DEG
D LAT -25.31 DEG
D LONG 84.00 DEG

MISSION/
FRAME NO.
4012

YR.MO.DY 670511
HR.MI.SEC 1627 8.31

S/C POSITION
ALT 2983.85 KM
ALT RT -0.1739 KM/SEC
LAT -41.61 DEG
LONG 86.34 DEG

S/C ORIENTATION
TILT ANG 4.30 DEG
TILT AZIM 86.05 DEG
SWING ANG 283.13 DEG
N.DEV. 23.35 DEG

PHOTO ILLUMINATION
SUN AZIM 65.57 DEG
INCID ANG 64.77 DEG
EMISS ANG 11.77 DEG
PHASE ANG 76.22 DEG
ALPHA -11.48 DEG

PRINCIPAL POINT
LATITUDE -40.67 DEG
LONGITUDE 96.16 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -41.56 DEG AB 315.3 KM
A LONG 46.50 DEG BC 221.1 KM
B LAT -48.67 DEG CD 074.7 KM
B LONG 44.55 DEG DA 952.7 KM
C LAT -64.84 DEG TILT DISTANCE 6.0
C LONG -29.97 DEG
D LAT -5.64 DEG
D LONG 41.19 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -21.44 DEG AB 127.9 KM
A LONG 93.55 DEG BC 290.7 KM
B LAT -54.31 DEG CD 104.4 KM
B LONG 118.57 DEG DA 284.2 KM
C LAT -59.41 DEG TILT DISTANCE 45.9
C LONG 103.61 DEG
D LAT -24.92 DEG
D LONG 84.06 DEG

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04/10/71

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.
4013

YR.MO.DY 670511
PR.MI.SEC 165E47.31

S/C POSITION ALT 2748.23 KM
ALT RT -0.0677 KM/SEC
LAT -14.42 DEG
LONG 89.21 DEG

S/C ORIENTATION TILT ANG 0.43 DEG
TILT AZIM 36.59 DEG
SWING ANG 221.73 DEG
N.DEV. 5.23 DEG

PHOTO ILLUMINATION SUN AZIM 82.29 DEG
INCID ANG 62.72 DEG
EMISS ANG 1.10 DEG
PHASE ANG 63.50 DEG
ALPHA -0.78 DEG

PRINCIPAL POINT LATITUDE -13.48 DEG
LONGITUDE 89.66 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 20.64 DEG AB 476.7 KM
A LONG 125.09 DEG BC 349.0 KM
B LAT -25.70 DEG CD 994.8 KM
B LONG 145.45 DEG DA 404.5 KM
C LAT -42.91 DEG TILT DISTANCE 0.6
C LONG 23.40 DEG
D LAT 11.60 DEG
D LONG 43.21 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 3.57 DEG AB 015.2 KM
A LONG 92.33 DEG BC 254.0 KM
B LAT -30.22 DEG CD 013.9 KM
B LONG 96.27 DEG DA 255.5 KM
C LAT -31.07 DEG TILT DISTANCE 4.5
C LONG 86.56 DEG
D LAT 2.79 DEG
D LONG 83.91 DEG

MISSION/
FRAME NO.
4014

YR.MO.DY 670511
PR.MI.SEC 165E57.51

S/C POSITION ALT 2747.54 KM
ALT RT -0.0671 KM/SEC
LAT -14.27 DEG
LONG 89.22 DEG

S/C ORIENTATION TILT ANG 0.56 DEG
TILT AZIM 28.42 DEG
SWING ANG 213.56 DEG
N.DEV. 5.24 DEG

PHOTO ILLUMINATION SUN AZIM 82.48 DEG
INCID ANG 62.64 DEG
EMISS ANG 1.46 DEG
PHASE ANG 63.50 DEG
ALPHA -0.87 DEG

PRINCIPAL POINT LATITUDE -13.48 DEG
LONGITUDE 89.66 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 21.66 DEG AB 485.6 KM
A LONG 126.16 DEG BC 338.1 KM
B LAT -28.30 DEG CD 957.2 KM
B LONG 144.88 DEG DA 421.9 KM
C LAT -43.40 DEG TILT DISTANCE 0.7
C LONG 20.74 DEG
D LAT 12.15 DEG
D LONG 42.56 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 4.01 DEG AB 015.2 KM
A LONG 92.37 DEG BC 253.6 KM
B LAT -29.79 DEG CD 013.8 KM
B LONG 96.27 DEG DA 255.8 KM
C LAT -30.63 DEG TILT DISTANCE 6.0
C LONG 86.62 DEG
D LAT 3.23 DEG
D LONG 83.94 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/19/71 PAGE 329

MISSION/
FRAME NO.

4016 YR.MO.DY 670511
HR.MI.SEC 1655 7.61

S/C POSITION
ALT 2746.87 KM
ALT RT -0.0664 KM/SEC
LAT -14.11 DEG
LONG 89.23 DEG

S/C ORIENTATION
TILT ANG 0.71 DEG
TILY AZIM 23.53 DEG
SWING ANG 208.67 DEG
N.DEV. 5.24 DEG

PHOTO ILLUMINATION
SUN AZIM 82.67 DEG
INCID ANG 62.55 DEG
EMISS ANG 1.82 DEG
PHASE ANG 63.50 DEG
ALPHA -0.96 DEG

PRINCIPAL POINT
LATITUDE -13.09 DEG
LONGITUDE 89.69 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 22.81 DEG AB 498.8 KM
A LONG 137.47 DEG BC 327.9 KM
B LAT -27.90 DEG CD 024.6 KM
B LONG 144.35 DEG DA 442.7 KM
C LAT -43.35 DEG TILT DISTANCE 0.9
C LONG 22.35 DEG
D LAT 12.71 DEG
D LONG 42.68 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 4.44 DEG AB 015.3 KM
A LONG 92.41 DEG BC 253.2 KM
B LAT -29.36 DEG CD 013.8 KM
B LONG 95.27 DEG DA 256.1 KM
C LAT -30.20 DEG TILT DISTANCE 7.5
C LONG 86.68 DEG
D LAT 3.66 DEG
D LONG 83.97 DEG

MISSION/
FRAME NO.

4016 YR.MO.DY 670511
HR.MI.SEC 165917.71

S/C POSITION
ALT 2746.20 KM
ALT RT -0.0658 KM/SEC
LAT -13.96 DEG
LONG 89.25 DEG

S/C ORIENTATION
TILT ANG 0.85 DEG
TILY AZIM 20.29 DEG
SWING ANG 205.43 DEG
N.DEV. 5.24 DEG

PHOTO ILLUMINATION
SUN AZIM 82.86 DEG
INCID ANG 62.47 DEG
EMISS ANG 2.20 DEG
PHASE ANG 63.50 DEG
ALPHA -1.04 DEG

PRINCIPAL POINT
LATITUDE -12.70 DEG
LONGITUDE 89.73 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 24.23 DEG AB 519.8 KM
A LONG 139.27 DEG BC 318.3 KM
B LAT -27.50 DEG CD 996.1 KM
B LONG 143.64 DEG DA 470.1 KM
C LAT -43.27 DEG TILT DISTANCE 1.1
C LONG 23.76 DEG
D LAT 13.28 DEG
D LONG 42.38 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 4.88 DEG AB 015.6 KM
A LONG 92.45 DEG BC 252.9 KM
B LAT -28.93 DEG CD 013.9 KM
B LONG 96.27 DEG DA 256.4 KM
C LAT -29.77 DEG TILT DISTANCE 9.0
C LONG 86.73 DEG
D LAT 4.09 DEG
D LONG 83.99 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/10/71 PAGE 321

MISSION/
FRAME NO.
4017

TIME 670E11
YR.MO.DY 172956.61
PR.MI.SEC 172956.61

S/C POSITION
ALT 2739.11 KM
ALT RT 0.0583 KM/SEC
LAT 13.89 DEG
LONG 91.45 DEG

S/C ORIENTATION
TILT ANG 0.66 DEG
TILT AZIM 290.01 DEG
SWING ANG 103.92 DEG
N.DEV. 354.17 DEG

PHOTO ILLUMINATION
SUN AZIM 97.50 DEG
INCID ANG 61.55 DEG
EMISS ANG 1.70 DEG
PHASE ANG 59.89 DEG
ALPHA 1.66 DEG

PRINCIPAL POINT
LATITUDE 14.24 DEG
LONGITUDE 90.44 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 34.33 DEG AB 865.0 KM
A LONG 159.26 DEG BC 014.8 KM
B LAT -29.76 DEG CD 505.1 KM
B LONG 139.38 DEG DA 405.9 KM
C LAT -11.77 DEG TILT DISTANCE 0.9
C LONG 39.51 DEG
D LAT 38.71 DEG
D LONG 29.68 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 30.57 DEG AB 009.6 KM
A LONG 97.18 DEG BC 253.6 KM
B LAT -2.98 DEG CD 012.5 KM
B LONG 92.83 DEG DA 254.4 KM
C LAT -2.20 DEG TILT DISTANCE 7.0
C LONG 84.48 DEG
D LAT 31.59 DEG
D LONG 87.44 DEG

MISSION/
FRAME NO.
4018

TIME 670E11
YR.MO.DY 1730 6.71
PR.MI.SEC 1730 6.71

S/C POSITION
ALT 2739.70 KM
ALT RT 0.0589 KM/SEC
LAT 14.04 DEG
LONG 91.45 DEG

S/C ORIENTATION
TILT ANG 0.71 DEG
TILT AZIM 301.92 DEG
SWING ANG 115.83 DEG
N.DEV. 354.17 DEG

PHOTO ILLUMINATION
SUN AZIM 97.72 DEG
INCID ANG 61.57 DEG
EMISS ANG 1.84 DEG
PHASE ANG 59.89 DEG
ALPHA 1.68 DEG

PRINCIPAL POINT
LATITUDE 14.63 DEG
LONGITUDE 90.47 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 34.36 DEG AB 836.7 KM
A LONG 159.66 DEG BC 014.0 KM
B LAT -29.66 DEG CD 513.9 KM
B LONG 139.26 DEG DA 428.9 KM
C LAT -11.07 DEG TILT DISTANCE 1.0
C LONG 40.61 DEG
D LAT 39.21 DEG
D LONG 27.70 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 31.01 DEG AB 010.0 KM
A LONG 97.25 DEG BC 253.4 KM
B LAT -2.55 DEG CD 012.9 KM
B LONG 92.87 DEG DA 254.8 KM
C LAT -1.78 DEG TILT DISTANCE 7.6
C LONG 84.53 DEG
D LAT 32.03 DEG
D LONG 87.45 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

MISSION/
FRAME NO.
4019

YR.,MO.,DY 670511
HR.,MI.,SEC 173016.91

S/C POSITION
ALT 2740.30 KM
ALT RT 0.0596 KM/SEC
LAT 14.19 DEG
LONG 91.47 DEG

S/C ORIENTATION
TILT ANG 0.80 DEG
TILT AZIM 311.87 DEG
SWING ANG 125.78 DEG
N.DEV. 354.17 DEG

PHOTO ILLUMINATION
SUN AZIM 97.95 DEG
INCID ANG 61.59 DEG
EMISS ANG 2.05 DEG
PHASE ANG 59.89 DEG
ALPHA 1.70 DEG

PRINCIPAL POINT
LATITUDE 15.03 DEG
LONGITUDE 90.50 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 25.84 DEG AB 400.2 KM
A LONG 143.81 DEG BC 016.8 KM
B LAT -25.45 DEG CD 531.8 KM
B LONG 139.24 DEG DA 460.6 KM
C LAT -10.39 DEG TILT DISTANCE 1.1
D LAT 39.72 DEG
D LONG 24.92 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 31.45 DEG AB 010.4 KM
A LONG 97.33 DEG BC 253.1 KM
B LAT -2.12 DEG CD 013.4 KM
B LONG 92.90 DEG DA 255.2 KM
C LAT -1.35 DEG TILT DISTANCE 8.4
D LAT 32.48 DEG
D LONG 87.47 DEG

MISSION/
FRAME NO.
4020

YR.,MO.,DY 670511
HR.,MI.,SEC 173027.01

S/C POSITION
ALT 2740.91 KM
ALT RT 0.0603 KM/SEC
LAT 14.34 DEG
LONG 91.49 DEG

S/C ORIENTATION
TILT ANG 0.90 DEG
TILT AZIM 319.72 DEG
SWING ANG 133.62 DEG
N.DEV. 354.17 DEG

PHOTO ILLUMINATION
SUN AZIM 98.17 DEG
INCID ANG 61.61 DEG
EMISS ANG 2.31 DEG
PHASE ANG 59.89 DEG
ALPHA 1.71 DEG

PRINCIPAL POINT
LATITUDE 15.42 DEG
LONGITUDE 90.54 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 30.24 DEG AB 403.6 KM
A LONG 144.55 DEG BC 020.6 KM
B LAT -29.65 DEG CD 756.0 KM
B LONG 139.25 DEG DA 472.9 KM
C LAT -9.75 DEG TILT DISTANCE 1.2
D LAT 41.80 DEG
D LONG 39.65 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 31.89 DEG AB 010.9 KM
A LONG 97.41 DEG BC 252.8 KM
B LAT -1.70 DEG CD 013.9 KM
B LONG 92.93 DEG DA 255.7 KM
C LAT -0.92 DEG TILT DISTANCE 9.5
D LAT 32.93 DEG
D LONG 87.48 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

MISSION/
FRAME NO.
4021

TIME
670511
180233.51

S/C POSITION
ALT 2979.20 KM
ALT RT 0.1727 KM/SEC
LAT 42.88 DEG
LONG 94.55 DEG

S/C ORIENTATION
TILT ANG 1.82 DEG
TILT AZIM 86.89 DEG
SWING ANG 249.42 DEG
N.DEV. 339.62 DEG

PHOTO ILLUMINATION
SUN AZIM 117.80 DEG
INCID ANG 62.96 DEG
EMISS ANG 4.94 DEG
PHASE ANG 57.34 DEG
ALPHA -4.40 DEG

PRINCIPAL POINT
LATITUDE 42.97 DEG
LONGITUDE 98.82 DEG

MEDIUM RESOLUTION

CORNER COORDINATE
A LAT 17.18 DEG
A LONG 151.52 DEG
B LAT -3.88 DEG
B LONG 142.31 DEG
C LAT 3.30 DEG
C LONG 36.74 DEG
D LAT 60.28 DEG
D LONG 2.48 DEG

SIDE LENGTH
AB 311.8 KM
BC 600.9 KM
CD 269.3 KM
DA 573.3 KM
TILT DISTANCE 2.5

HIGH RESOLUTION

CORNER COORDINATE
A LAT 57.38 DEG
A LONG 119.82 DEG
B LAT 23.97 DEG
B LONG 96.86 DEG
C LAT 26.71 DEG
C LONG 87.21 DEG
D LAT 61.96 DEG
D LONG 103.81 DEG

SIDE LENGTH
AB 109.6 KM
BC 276.7 KM
CD 100.4 KM
DA 280.3 KM
TILT DISTANCE 19.3

MISSION/
FRAME NO.
4022

TIME
670511
180243.61

S/C POSITION
ALT 2580.95 KM
ALT RT 0.1732 KM/SEC
LAT 43.02 DEG
LONG 94.58 DEG

S/C ORIENTATION
TILT ANG 1.84 DEG
TILT AZIM 82.70 DEG
SWING ANG 245.21 DEG
N.DEV. 339.53 DEG

PHOTO ILLUMINATION
SUN AZIM 118.04 DEG
INCID ANG 63.08 DEG
EMISS ANG 5.02 DEG
PHASE ANG 67.34 DEG
ALPHA -4.30 DEG

PRINCIPAL POINT
LATITUDE 43.34 DEG
LONGITUDE 98.91 DEG

MEDIUM RESOLUTION

CORNER COORDINATE
A LAT 17.44 DEG
A LONG 152.20 DEG
B LAT -2.57 DEG
B LONG 141.73 DEG
C LAT 1.92 DEG
C LONG 35.44 DEG
D LAT 60.00 DEG
D LONG 0.23 DEG

SIDE LENGTH
AB 312.7 KM
BC 580.2 KM
CD 330.2 KM
DA 005.2 KM
TILT DISTANCE 2.5

HIGH RESOLUTION

CORNER COORDINATE
A LAT 57.75 DEG
A LONG 120.24 DEG
B LAT 24.37 DEG
B LONG 96.91 DEG
C LAT 27.11 DEG
C LONG 87.23 DEG
D LAT 62.39 DEG
D LONG 104.06 DEG

SIDE LENGTH
AB 110.6 KM
BC 276.5 KM
CD 101.6 KM
DA 280.8 KM
TILT DISTANCE 19.6

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

MISSION/
FRAME NO.

4023 YR.NO.DY 67C511
HR.MI.SEC 1804 3.91

S/C POSITION
ALT 2982.72 KM
ALT RT 0.1736 KM/SEC
LAT 43.16 DEG
LONG 94.60 DEG

S/C ORIENTATION
TILT ANG 1.88 DEG
TILT AZIM 78.62 DEG
SWING ANG 241.11 DEG
N.DEV. 339.43 DEG

PHOTO ILLUMINATION
SUN AZIM 118.28 DEG
INCID ANG 63.19 DEG
EMISS ANG 5.13 DEG
PHASE ANG 67.34 DEG
ALPHA -4.19 DEG

PRINCIPAL POINT
LATITUDE 43.71 DEG
LONGITUDE 99.39 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 17.70 DEG AB 313.7 KM
A LONG 152.49 DEG BC 564.0 KM
B LAT -1.46 DEG CD 255.2 KM
B LONG 141.31 DEG DA 040.7 KM
C LAT 4.05 DEG TILT DISTANCE
C LONG 26.97 DEG TILT 2.6
D LAT 59.63 DEG
D LONG -2.20 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 58.12 DEG AB 111.7 KM
A LONG 120.68 DEG BC 276.3 KM
B LAT 24.78 DEG CD 102.8 KM
B LONG 96.97 DEG DA 281.3 KM
C LAT 27.51 DEG TILT DISTANCE
C LONG 87.26 DEG TILT 20.0
D LAT 62.81 DEG
D LONG 104.31 DEG

MISSION/
FRAME NO.

4024 YR.NO.DY 67C511
HR.MI.SEC 1804 3.91

S/C POSITION
ALT 2984.47 KM
ALT RT 0.1741 KM/SEC
LAT 43.29 DEG
LONG 94.62 DEG

S/C ORIENTATION
TILT ANG 1.93 DEG
TILT AZIM 74.77 DEG
SWING ANG 237.24 DEG
N.DEV. 339.34 DEG

PHOTO ILLUMINATION
SUN AZIM 118.53 DEG
INCID ANG 63.31 DEG
EMISS ANG 5.26 DEG
PHASE ANG 67.34 DEG
ALPHA -4.08 DEG

PRINCIPAL POINT
LATITUDE 44.08 DEG
LONGITUDE 99.09 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 17.95 DEG AB 314.9 KM
A LONG 182.79 DEG BC 550.8 KM
B LAT -0.49 DEG CD 296.4 KM
B LONG 140.59 DEG DA 080.4 KM
C LAT 3.15 DEG TILT DISTANCE
C LONG 36.10 DEG TILT 2.7
D LAT 59.13 DEG
D LONG -4.78 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 58.49 DEG AB 112.9 KM
A LONG 121.12 DEG BC 276.1 KM
B LAT 25.18 DEG CD 104.1 KM
B LONG 97.02 DEG DA 281.9 KM
C LAT 27.90 DEG TILT DISTANCE
C LONG 87.29 DEG TILT 20.5
D LAT 63.24 DEG
D LONG 104.56 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/ FRAME NO. 4025
 YR,MO,DY 57CE11
 PR,MI,SEC 231242.01

TIME 231242.01

S/C POSITION ALT 6109.67 KM
 ALT RT 0.0028 KM/SEC
 LAT -3.11 DEG
 LONG -92.94 DEG

S/C ORIENTATION TILT ANG 4.79 DEG
 TILT AZIM 101.23 DEG
 SWING ANG 130.94 DEG
 N.DEV. 180.31 DEG

PHOTO ILLUMINATION SUN AZIM 267.50 DEG
 INCID ANG 133.55 DEG
 EMISS ANG 19.28 DEG
 PHASE ANG 114.77 DEG
 ALPHA 18.98 DEG

PRINCIPAL POINT LATITUDE -3.92 DEG
 LONGITUDE -78.12 DEG

MEDIUM RESOLUTION SIDE LENGTH
 CORNER COORDINATE A LAT -48.50 DEG AB 377.5 KM
 A LONG -84.39 DEG BC 593.8 KM
 B LAT 77.92 DEG CD 932.4 KM
 B LONG -85.32 DEG DA 824.4 KM
 C LAT 40.22 DEG TILT DISTANCE 44.7
 C LONG -55.63 DEG
 D LAT -50.98 DEG
 D LONG -43.60 DEG

MISSION/ FRAME NO. 4026
 YR,MO,DY 57CE12
 PR,MI,SEC 042723.31

TIME 042723.31

S/C POSITION ALT 2586.36 KM
 ALT RT -3.1745 KM/SEC
 LAT -41.96 DEG
 LONG 79.66 DEG

S/C ORIENTATION TILT ANG 4.58 DEG
 TILT AZIM 99.21 DEG
 SWING ANG 295.13 DEG
 N.DEV. 24.20 DEG

PHOTO ILLUMINATION SUN AZIM 64.43 DEG
 INCID ANG 65.43 DEG
 EMISS ANG 12.54 DEG
 PHASE ANG 75.66 DEG
 ALPHA -11.34 DEG

PRINCIPAL POINT LATITUDE -42.74 DEG
 LONGITUDE 90.33 DEG

MEDIUM RESOLUTION SIDE LENGTH
 CORNER COORDINATE A LAT -42.57 DEG AB 321.3 KM
 A LONG 35.26 DEG BC 227.5 KM
 B LAT -50.25 DEG CD 937.7 KM
 B LONG 34.13 DEG DA 203.5 KM
 C LAT -63.81 DEG TILT DISTANCE 6.3
 C LONG -37.20 DEG
 D LAT 1.61 DEG
 D LONG 30.40 DEG

HIGH RESOLUTION SIDE LENGTH
 CORNER COORDINATE A LAT -23.85 DEG AB 136.6 KM
 A LONG 87.45 DEG BC 294.9 KM
 B LAT -56.33 DEG CD 112.5 KM
 B LONG 115.09 DEG DA 281.4 KM
 C LAT -61.79 DEG TILT DISTANCE 48.8
 C LONG 99.30 DEG
 D LAT -27.25 DEG
 D LONG 77.85 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/19/71 PAGE 326

MISSION/
FRAME NO.
4027

YR. MO. DY 670512
FR. MI. SEC 045932.41

S/C POSITION
ALT 2747.19 KM
ALT RT -0.2667 KM/SEC
LAT -14.35 DEG
LONG 82.59 DEG

S/C ORIENTATION
TILT ANG 0.55 DEG
TILT AZIM 175.08 DEG
SWING ANG 0.04 DEG
N.DEV. 4.98 DEG

PHOTO ILLUMINATION
SUN AZIM 81.87 DEG
INCID ANG 63.71 DEG
EMISS ANG 1.43 DEG
PHASE ANG 63.64 DEG
ALPHA 0.06 DEG

PRINCIPAL POINT
LATITUDE -15.22 DEG
LONGITUDE 82.67 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 25.51 DEG AB 24.7 KM
A LONG 133.26 DEG BC 417.5 KM
B LAT -30.70 DEG CD 455.4 KM
B LONG 140.54 DEG DA 559.9 KM
C LAT -28.83 DEG TILT DISTANCE 0.7
C LONG 25.32 DEG
D LAT 19.24 DEG
D LONG 26.55 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 1.94 DEG AB 014.5 KM
A LONG 85.40 DEG BC 255.9 KM
B LAT -31.82 DEG CD 014.5 KM
B LONG 89.36 DEG DA 253.4 KM
C LAT -32.66 DEG TILT DISTANCE 5.9
C LONG 79.41 DEG
D LAT 1.24 DEG
D LONG 77.06 DEG

MISSION/
FRAME NO.
4028

YR. MO. DY 670512
FR. MI. SEC 053040.21

S/C POSITION
ALT 2739.96 KM
ALT RT 0.0592 KM/SEC
LAT 13.94 DEG
LONG 84.83 DEG

S/C ORIENTATION
TILT ANG 1.85 DEG
TILT AZIM 258.61 DEG
SWING ANG 72.62 DEG
N.DEV. 354.67 DEG

PHOTO ILLUMINATION
SUN AZIM 98.30 DEG
INCID ANG 63.78 DEG
EMISS ANG 4.78 DEG
PHASE ANG 59.25 DEG
ALPHA 4.51 DEG

PRINCIPAL POINT
LATITUDE 13.34 DEG
LONGITUDE 81.88 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 38.86 DEG AB 261.3 KM
A LONG 152.85 DEG BC 025.9 KM
B LAT -32.96 DEG CD 860.4 KM
B LONG 130.29 DEG DA 472.5 KM
C LAT -2.13 DEG TILT DISTANCE 2.5
C LONG 34.24 DEG
D LAT 34.48 DEG
D LONG 15.35 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 29.55 DEG AB 009.1 KM
A LONG 88.21 DEG BC 256.6 KM
B LAT -4.03 DEG CD 017.2 KM
B LONG 84.31 DEG DA 254.0 KM
C LAT -3.43 DEG TILT DISTANCE 19.7
C LONG 75.84 DEG
D LAT 30.54 DEG
D LONG 78.58 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.

4025
YR.MO.DY 270512
PR.MI.SEC 063415.451
S/C POSITION ALT 2981.39 KM
ALT RT 0.1733 KM/SEC
LAT 42.89 DEG
LONG 87.94 DEG
S/C ORIENTATION TILT ANG 1.05 DEG
TILT AZIM 149.47 DEG
SWING ANG 313.28 DEG
N.DEV. 343.02 DEG
PHOTO ILLUMINATION SUN AZIM 114.13 DEG
INCID ANG 64.58 DEG
EMISS ANG 2.87 DEG
PHASE ANG 65.90 DEG
ALPHA -2.34 DEG
CORNER COORDINATE
A LAT 22.55 DEG
A LONG 164.75 DEG
B LAT 0.28 DEG
B LONG 125.47 DEG
C LAT 4.58 DEG
C LONG 26.89 DEG
D LAT 55.57 DEG
D LONG -1.09 DEG
MEDIUM RESOLUTION
CORNER COORDINATE
A LAT 22.55 DEG
A LONG 164.75 DEG
B LAT 0.28 DEG
B LONG 125.47 DEG
C LAT 4.58 DEG
C LONG 26.89 DEG
D LAT 55.57 DEG
D LONG -1.09 DEG
SIDE LENGTH
AB 296.7 KM
BC 527.5 KM
CD 613.9 KM
DA 999.5 KM
TILT DISTANCE 1.4
HIGH RESOLUTION
CORNER COORDINATE
A LAT 55.36 DEG
A LONG 107.01 DEG
B LAT 21.86 DEG
B LONG 89.23 DEG
C LAT 24.15 DEG
C LONG 78.51 DEG
D LAT 50.12 DEG
D LONG 91.21 DEG
SIDE LENGTH
AB 107.3 KM
BC 279.4 KM
CD 102.8 KM
DA 275.5 KM
TILT DISTANCE 11.2
PRINCIPAL POINT
LATITUDE 41.32 DEG
LONGITUDE 83.17 DEG

MISSION/
FRAME NO.

4030
YR.MO.DY 670512
PR.MI.SEC 0631 5.21
S/C POSITION ALT 2305.41 KM
ALT RT 0.2287 KM/SEC
LAT 63.17 DEG
LONG 53.00 DEG
S/C ORIENTATION TILT ANG 9.73 DEG
TILT AZIM 196.43 DEG
SWING ANG 10.92 DEG
N.DEV. 359.22 DEG
PHOTO ILLUMINATION SUN AZIM 112.34 DEG
INCID ANG 68.03 DEG
EMISS ANG 29.42 DEG
PHASE ANG 76.68 DEG
ALPHA -11.57 DEG
CORNER COORDINATE
A LAT 24.73 DEG
A LONG -155.34 DEG
B LAT 7. DEG
B LONG 7. DEG
C LAT 0. DEG
C LONG 48.67 DEG
D LAT -22.63 DEG
D LONG -22.63 DEG
MEDIUM RESOLUTION
CORNER COORDINATE
A LAT 24.73 DEG
A LONG -155.34 DEG
B LAT 7. DEG
B LONG 7. DEG
C LAT 0. DEG
C LONG 48.67 DEG
D LAT -22.63 DEG
D LONG -22.63 DEG
SIDE LENGTH
AB 640.9 KM
BC 7. KM
CD 0. KM
DA 643.7 KM
TILT DISTANCE 13.7
HIGH RESOLUTION
CORNER COORDINATE
A LAT 64.15 DEG
A LONG 96.32 DEG
B LAT 4.23 DEG
B LONG 90.19 DEG
C LAT 3.46 DEG
C LONG 77.02 DEG
D LAT 63.92 DEG
D LONG 73.90 DEG
SIDE LENGTH
AB 738.3 KM
BC 409.3 KM
CD 731.5 KM
DA 295.6 KM
TILT DISTANCE 04.7
PRINCIPAL POINT
LATITUDE 43.97 DEG
LONGITUDE 85.39 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 94/1077 PAGE 238

MISSION/
FRAME NO.

4032 YR.MO.DY 670512
HR.MI.SEC 154745.91

S/C POSITION
ALT 3504.93 KM
ALT RT -0.2448 KM/SEC
LAT -71.24 DEG
LONG 63.03 DEG

S/C ORIENTATION
TILT ANG 2.33 DEG
TILT AZIM 98.97 DEG
SWING ANG 266.19 DEG
N.DEV. 1.18 DEG

PHOTO ILLUMINATION
SUN AZIM 63.09 DEG
INCID ANG 81.72 DEG
EMISS ANG 7.05 DEG
PHASE ANG 88.26 DEG
ALPHA -5.55 DEG

PRINCIPAL POINT
LATITUDE -71.43 DEG
LONGITUDE 77.79 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -37.32 DEG AB 168.1 KM
A LONG 7.94 DEG BC 276.7 KM
B LAT -41.17 DEG CD 826.5 KM
B LONG -2.78 DEG DA 820.2 KM
C LAT -27.88 DEG TILT DISTANCE 3.2
C LONG -36.69 DEG
D LAT -9.53 DEG
D LONG 26.51 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -48.44 DEG AB 313.0 KM
A LONG 86.31 DEG BC 331.7 KM
B LAT -82.54 DEG CD 359.9 KM
B LONG -163.22 DEG DA 333.0 KM
C LAT -84.24 DEG TILT DISTANCE 24.8
C LONG -50.42 DEG
D LAT -49.03 DEG
D LONG 69.61 DEG

MISSION/
FRAME NO.

4033 YR.MO.DY 670512
HR.MI.SEC 1628 1.11

S/C POSITION
ALT 2584.56 KM
ALT RT -0.1742 KM/SEC
LAT -42.02 DEG
LONG 73.04 DEG

S/C ORIENTATION
TILT ANG 4.74 DEG
TILT AZIM 92.49 DEG
SWING ANG 259.41 DEG
N.DEV. 24.22 DEG

PHOTO ILLUMINATION
SUN AZIM 64.90 DEG
INCID ANG 65.15 DEG
EMISS ANG 12.98 DEG
PHASE ANG 77.40 DEG
ALPHA -12.32 DEG

PRINCIPAL POINT
LATITUDE -41.84 DEG
LONGITUDE 94.13 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -43.01 DEG AB 299.5 KM
A LONG 34.11 DEG BC 221.0 KM
B LAT -50.08 DEG CD 035.1 KM
B LONG 31.47 DEG DA 269.6 KM
C LAT -64.79 DEG TILT DISTANCE 6.5
C LONG -45.55 DEG
D LAT 4.11 DEG
D LONG 23.34 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -22.78 DEG AB 134.5 KM
A LONG 81.22 DEG BC 294.8 KM
B LAT -55.29 DEG CD 108.7 KM
B LONG 128.13 DEG DA 284.6 KM
C LAT -63.68 DEG TILT DISTANCE 51.6
C LONG 92.73 DEG
D LAT -26.31 DEG
D LONG 71.66 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/10/71 PAGE 329

MISSION/
FRAME NO. 4034

YR.MO.DY 670512
HR.MI.SEC 1700 8.91

TIME

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 2746.33 KM	TILT ANG 0.42 DEG	SUN AZIM 82.09 DEG	LATITUDE -14.71 DEG
ALT RT -0.0663 KM/SEC	TILT AZIM 116.77 DEG	INCID ANG 63.60 DEG	LONGITUDE 76.59 DEG
LAT -14.41 DEG	SWING ANG 301.68 DEG	EMISS ANG 1.09 DEG	
LONG 75.97 DEG	N.DEV. 5.07 DEG	PHASE ANG 64.50 DEG	
		ALPHA -0.91 DEG	

CORNER COORDINATE	HIGH RESOLUTION	CORNER COORDINATE	HIGH RESOLUTION
A LAT 18.30 DEG	SIDE LENGTH AB 480.0 KM	A LAT 2.56 DEG	SIDE LENGTH AB 014.6 KM
A LONG 120.45 DEG	BC 396.1 KM	A LONG 79.34 DEG	BC 255.1 KM
B LAT -25.87 DEG	CD 419.6 KM	B LAT -31.21 DEG	CD 012.9 KM
B LONG 136.03 DEG	DA 093.9 KM	B LONG 83.30 DEG	DA 254.1 KM
C LAT -37.86 DEG	TILT DISTANCE 0.5	C LAT -32.03 DEG	TILT DISTANCE 4.5
C LONG 23.88 DEG		C LONG 73.44 DEG	
D LAT -21.36 DEG		D LAT 1.81 DEG	
D LONG 15.51 DEG		D LONG 70.98 DEG	

MISSION/
FRAME NO. 4035

YR.MO.DY 670512
HR.MI.SEC 173116.41

TIME

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 2740.01 KM	TILT ANG 0.93 DEG	SUN AZIM 96.71 DEG	LATITUDE 13.63 DEG
ALT RT 0.0597 KM/SEC	TILT AZIM 260.60 DEG	INCID ANG 62.89 DEG	LONGITUDE 76.71 DEG
LAT 13.88 DEG	SWING ANG 74.35 DEG	EMISS ANG 2.41 DEG	
LONG 78.20 DEG	N.DEV. 354.09 DEG	PHASE ANG 60.59 DEG	
		ALPHA 2.30 DEG	

CORNER COORDINATE	HIGH RESOLUTION	CORNER COORDINATE	HIGH RESOLUTION
A LAT 35.34 DEG	SIDE LENGTH AB 056.6 KM	A LAT 29.86 DEG	SIDE LENGTH AB 009.6 KM
A LONG 147.07 DEG	BC 979.7 KM	A LONG 83.36 DEG	BC 254.8 KM
B LAT -25.74 DEG	CD 538.3 KM	B LAT -3.70 DEG	CD 013.7 KM
B LONG 124.44 DEG	DA 397.3 KM	B LONG 79.06 DEG	DA 253.7 KM
C LAT -15.00 DEG	TILT DISTANCE 1.3	C LAT -2.94 DEG	TILT DISTANCE 9.9
C LONG 19.55 DEG		C LONG 70.66 DEG	
D LAT 37.89 DEG		D LAT 30.89 DEG	
D LONG 15.90 DEG		D LONG 73.72 DEG	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

MISSION/
FRAME NO.
4036

TIME 670512
YR.NO.DY 180452.31
HR.MI.SEC

S/C POSITION
ALT 2982.45 KM
LAT 42.83 DEG
LONG 81.30 DEG

S/C ORIENTATION
TILT ANG 2.09 DEG
TILT AZIM 107.64 DEG
SWING ANG 270.58 DEG
N.DEV. 339.95 DEG

PHOTO ILLUMINATION
SUN AZIM 116.60 DEG
INCID ANG 62.79 DEG
EMISS ANG 5.68 DEG
PHASE ANG 68.44 DEG
ALPHA -5.65 DEG

PRINCIPAL POINT
LATITUDE 41.65 DEG
LONGITUDE 89.89 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 14.02 DEG AB 319.3 KM
A LONG 140.48 DEG BC 519.4 KM
B LAT 6.47 DEG CD 023.3 KM
B LONG 132.58 DEG DA 286.4 KM
C LAT 0.74 DEG TILT DISTANCE 2.9
C LONG 23.59 DEG
D LAT 57.42 DEG
D LONG -31.25 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 56.03 DEG AB 111.7 KM
A LONG 105.90 DEG BC 279.6 KM
B LAT 22.33 DEG CD 100.5 KM
B LONG 84.08 DEG DA 279.5 KM
C LAT 25.16 DEG TILT DISTANCE 22.2
C LONG 74.47 DEG
D LAT 60.44 DEG
D LONG 90.43 DEG

MISSION/
FRAME NO.
4038

TIME 670513
YR.NO.DY 042E45.81
HR.MI.SEC

S/C POSITION
ALT 2981.59 KM
LAT -42.02 DEG
LONG 66.45 DEG

S/C ORIENTATION
TILT ANG 4.82 DEG
TILT AZIM 98.06 DEG
SWING ANG 295.24 DEG
N.DEV. 24.82 DEG

PHOTO ILLUMINATION
SUN AZIM 64.75 DEG
INCID ANG 65.65 DEG
EMISS ANG 13.21 DEG
PHASE ANG 77.66 DEG
ALPHA -12.12 DEG

PRINCIPAL POINT
LATITUDE -42.64 DEG
LONGITUDE 77.77 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -43.55 DEG AB 301.4 KM
A LONG 26.56 DEG BC 222.3 KM
B LAT -51.01 DEG CD 010.0 KM
B LONG 24.01 DEG DA 254.4 KM
C LAT -63.23 DEG TILT DISTANCE 6.7
C LONG -55.96 DEG
D LAT 3.53 DEG
D LONG 16.68 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -23.78 DEG AB 137.2 KM
A LONG 74.65 DEG BC 296.0 KM
B LAT -56.00 DEG CD 111.5 KM
B LONG 102.78 DEG DA 282.0 KM
C LAT -61.57 DEG TILT DISTANCE 51.5
C LONG 87.17 DEG
D LAT -27.28 DEG
D LONG 65.08 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/10/71 PAGE 331

MISSION/
FRAME NO.
4039

YR.MO.DY 670613
PR.MI.SEC 050CE2.21

S/C POSITION ALT 2744.59 KH
ALT RT -0.0656 KM/SEC
LAT -14.39 DEG
LONG 69.36 DEG

S/C ORIENTATION TILT ANG 0.45 DEG
TILT AZIM 135.12 DEG
SWING ANG 320.05 DEG
N.DEV. 5.38 DEG

PHOTO ILLUMINATION SUN AZIM 82.17 DEG
INCID ANG 64.19 DEG
EMISS ANG 1.17 DEG
PHASE ANG 64.90 DEG
ALPHA -0.71 DEG

PRINCIPAL POINT LATITUDE -14.99 DEG
LONGITUDE 69.88 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 17.55 DEG AB 474.1 KM
A LONG 112.85 DEG BC 401.1 KM
B LAT -30.12 DEG CD 424.6 KM
B LONG 129.34 DEG DA 041.2 KM
C LAT -38.20 DEG TILT DISTANCE 0.6
C LONG 16.23 DEG
D LAT 20.28 DEG
D LONG 14.31 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.32 DEG AB 013.9 KM
A LONG 72.61 DEG BC 255.2 KM
B LAT -31.42 DEG CD 012.5 KM
B LONG 76.60 DEG DA 253.6 KM
C LAT -32.25 DEG TILT DISTANCE 4.8
C LONG 65.72 DEG
D LAT 1.58 DEG
D LONG 64.27 DEG

MISSION/
FRAME NO.
4040

YR.MO.DY 670613
PR.MI.SEC 053159.01

S/C POSITION ALT 2739.66 KH
ALT RT 0.0605 KM/SEC
LAT 13.90 DEG
LONG 71.57 DEG

S/C ORIENTATION TILT ANG 0.93 DEG
TILT AZIM 245.37 DEG
SWING ANG 59.39 DEG
N.DEV. 354.32 DEG

PHOTO ILLUMINATION SUN AZIM 96.40 DEG
INCID ANG 63.23 DEG
EMISS ANG 2.41 DEG
PHASE ANG 61.18 DEG
ALPHA 2.04 DEG

PRINCIPAL POINT LATITUDE 13.28 DEG
LONGITUDE 70.20 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 35.04 DEG AB 979.9 KM
A LONG 137.37 DEG BC 003.8 KM
B LAT -29.76 DEG CD 503.0 KM
B LONG 118.94 DEG DA 359.5 KM
C LAT -14.92 DEG TILT DISTANCE 1.3
C LONG 14.38 DEG
D LAT 37.04 DEG
D LONG 12.61 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 29.47 DEG AB 009.9 KM
A LONG 76.75 DEG BC 255.3 KM
B LAT -4.11 DEG CD 013.6 KM
B LONG 72.63 DEG DA 253.1 KM
C LAT -3.38 DEG TILT DISTANCE 9.9
C LONG 64.21 DEG
D LAT 30.45 DEG
D LONG 67.16 DEG

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MISSION/
FRAME NO.
4041

YR. MO. DY 670513
HR. MI. SEC 060535.21
TIME 670513 060535.21

S/C POSITION
ALT 2983.60 KM
ALT RT 0.1743 KM/SEC
LAT 42.85 DEG
LONG 74.64 DEG

S/C ORIENTATION
TILT ANG 2.53 DEG
TILT AZIM 109.55 DEG
SWING ANG 272.56 DEG
N.DEV. 339.50 DEG

PHOTO ILLUMINATION
SUN AZIM 116.70 DEG
INCID ANG 62.37 DEG
EMISS ANG 6.88 DEG
PHASE ANG 69.25 DEG
ALPHA -6.87 DEG

PRINCIPAL POINT
LATITUDE 41.26 DEG
LONGITUDE 80.11 DEG

MEDIUM RESOLUTION

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 46.59 DEG AB 426.6 KM
A LONG 25.59 DEG BC 227.6 KM
B LAT 39.27 DEG CD 018.0 KM
B LONG 28.81 DEG DA 300.8 KM
C LAT 1.83 DEG TILT DISTANCE 3.5
C LONG 15.93 DEG
D LAT 58.34 DEG
D LONG -40.65 DEG

CORNER COORDINATE SIDE LENGTH
A LAT 55.49 DEG AB 114.5 KM
A LONG 100.25 DEG BC 281.1 KM
B LAT 21.84 DEG CD 100.8 KM
B LONG 78.21 DEG DA 289.5 KM
C LAT 24.80 DEG TILT DISTANCE 26.9
C LONG 68.62 DEG
D LAT 59.98 DEG
D LONG 85.00 DEG

MISSION/
FRAME NO.
4042

YR. MO. DY 670513
HR. MI. SEC 0645 6.21
TIME 670513 0645 6.21

S/C POSITION
ALT 3493.71 KM
ALT RT 0.2443 KM/SEC
LAT 71.60 DEG
LONG 84.75 DEG

S/C ORIENTATION
TILT ANG 0.76 DEG
TILT AZIM 188.59 DEG
SWING ANG 357.38 DEG
N.DEV. 349.42 DEG

PHOTO ILLUMINATION
SUN AZIM 130.13 DEG
INCID ANG 76.47 DEG
EMISS ANG 2.28 DEG
PHASE ANG 77.69 DEG
ALPHA -1.23 DEG

PRINCIPAL POINT
LATITUDE 70.09 DEG
LONGITUDE 84.08 DEG

MEDIUM RESOLUTION

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 25.54 DEG AB 380.9 KM
A LONG 158.81 DEG BC 068.4 KM
B LAT 18.34 DEG CD 374.6 KM
B LONG 147.45 DEG DA 007.2 KM
C LAT 26.43 DEG TILT DISTANCE 1.0
C LONG 1.58 DEG
D LAT 33.47 DEG
D LONG -5.81 DEG

CORNER COORDINATE SIDE LENGTH
A LAT 80.80 DEG AB 303.2 KM
A LONG 177.68 DEG BC 329.5 KM
B LAT 46.95 DEG CD 302.9 KM
B LONG 86.05 DEG DA 324.1 KM
C LAT 47.96 DEG TILT DISTANCE 8.0
C LONG 69.98 DEG
D LAT 87.22 DEG
D LONG -66.35 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

MISSION/
FRAME NO.
4044

TIME
670513
154523.71

S/C POSITION
ALT 3497.58 KM
ALT RT -0.2449 KM/SEC
LAT -71.27 DEG
LONG 50.06 DEG

S/C ORIENTATION
TILT ANG 2.95 DEG
TILT AZIM 107.01 DEG
SWING ANG 274.69 DEG
N.DEV. 5.72 DEG

PHOTO ILLUMINATION
SUN AZIM 59.57 DEG
INCID ANG 81.12 DEG
EMISS ANG 8.97 DEG
PHASE ANG 88.95 DEG
ALPHA -7.86 DEG

PRINCIPAL POINT
LATITUDE -72.12 DEG
LONGITUDE 69.06 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -40.69 DEG AB 077.9 KM
A LONG -4.66 DEG BC 271.1 KM
B LAT -44.28 DEG CD 788.6 KM
B LONG -15.80 DEG DA 873.9 KM
C LAT -27.50 DEG TILT DISTANCE 4.1
C LONG -54.49 DEG
D LAT -7.25 DEG
D LONG 10.73 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -49.13 DEG AB 320.1 KM
A LONG 75.23 DEG BC 335.5 KM
B LAT -80.58 DEG CD 298.2 KM
B LONG -175.64 DEG DA 333.5 KM
C LAT -84.72 DEG TILT DISTANCE 31.6
C LONG -81.76 DEG
D LAT -50.24 DEG
D LONG 58.25 DEG

MISSION/
FRAME NO.
4045

TIME
670513
162531.71

S/C POSITION
ALT 2979.07 KM
ALT RT -0.1737 KM/SEC
LAT -42.04 DEG
LONG 59.88 DEG

S/C ORIENTATION
TILT ANG 5.08 DEG
TILT AZIM 96.45 DEG
SWING ANG 293.29 DEG
N.DEV. 24.82 DEG

PHOTO ILLUMINATION
SUN AZIM 64.71 DEG
INCID ANG 65.46 DEG
EMISS ANG 13.91 DEG
PHASE ANG 78.29 DEG
ALPHA -12.93 DEG

PRINCIPAL POINT
LATITUDE -42.42 DEG
LONGITUDE 71.80 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -43.26 DEG AB 282.5 KM
A LONG 21.53 DEG BC 220.8 KM
B LAT -50.91 DEG CD 039.1 KM
B LONG 18.75 DEG DA 239.3 KM
C LAT -64.12 DEG TILT DISTANCE 7.1
C LONG -62.74 DEG
D LAT 3.55 DEG
D LONG 11.34 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -23.51 DEG AB 138.1 KM
A LONG 68.71 DEG BC 297.4 KM
B LAT -55.73 DEG CD 110.6 KM
B LONG 96.81 DEG DA 203.3 KM
C LAT -61.29 DEG TILT DISTANCE 54.2
C LONG 81.22 DEG
D LAT -27.06 DEG
D LONG 59.13 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.

4046

YR.NO.DY 670513
HR.MI.SEC 170137.01

S/C POSITION
ALT 2742.64 KM
ALT RT -0.0652 KM/SEC
LAT -14.40 DEG
LONG 62.75 DEG

S/C ORIENTATION
TILT ANG 0.48 DEG
TILT AZIM 122.64 DEG
SWING ANG 307.31 DEG
N.DEV. 4.84 DEG

PHOTO ILLUMINATION
SUN AZIM 82.31 DEG
INCID ANG 64.52 DEG
EMISS ANG 1.23 DEG
PHASE ANG 65.46 DEG
ALPHA -0.95 DEG

PRINCIPAL POINT
LATITUDE -14.81 DEG
LONGITUDE 63.41 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 17.83 DEG AB 479.9 KM
A LONG 107.10 DEG BC 398.1 KM
B LAT -30.18 DEG CD 416.1 KM
B LONG 123.23 DEG DA 988.8 KM
C LAT -37.80 DEG TILT DISTANCE 0.6
C LONG 10.66 DEG
D LAT 19.87 DEG
D LONG 9.51 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.40 DEG AB 013.3 KM
A LONG 66.22 DEG BC 254.9 KM
B LAT -31.33 DEG CD 011.5 KM
B LONG 70.04 DEG DA 253.6 KM
C LAT -32.11 DEG TILT DISTANCE 5.0
C LONG 60.18 DEG
D LAT 1.69 DEG
D LONG 57.87 DEG

MISSION/
FRAME NO.

4047

YR.NO.DY 670513
HR.MI.SEC 173242.11

S/C POSITION
ALT 2738.48 KM
ALT RT 0.0609 KM/SEC
LAT 13.88 DEG
LONG 64.93 DEG

S/C ORIENTATION
TILT ANG 1.62 DEG
TILT AZIM 257.73 DEG
SWING ANG 71.12 DEG
N.DEV. 353.96 DEG

PHOTO ILLUMINATION
SUN AZIM 95.93 DEG
INCID ANG 64.89 DEG
EMISS ANG 4.18 DEG
PHASE ANG 60.94 DEG
ALPHA 3.94 DEG

PRINCIPAL POINT
LATITUDE 13.32 DEG
LONGITUDE 52.36 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 37.28 DEG AB 003.3 KM
A LONG 131.60 DEG BC 068.0 KM
B LAT -33.79 DEG CD 324.2 KM
B LONG 111.86 DEG DA 465.9 KM
C LAT -11.40 DEG TILT DISTANCE 2.2
C LONG 5.43 DEG
D LAT 36.33 DEG
D LONG -4.13 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 29.45 DEG AB 008.7 KM
A LONG 68.93 DEG BC 256.1 KM
B LAT -4.06 DEG CD 015.7 KM
B LONG 64.60 DEG DA 253.6 KM
C LAT -3.34 DEG TILT DISTANCE 17.2
C LONG 56.15 DEG
D LAT 30.54 DEG
D LONG 59.34 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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

MISSION/
FRAME NO.
4048

YR.HO.DY 670513
HR.MI.SEC 180618.11

S/C POSITION
ALT 2983.35 KM
ALT RT 0.1748 KM/SEC
LAT 42.84 DEG
LONG 67.95 DEG

S/C ORIENTATION
TILT ANG 1.90 DEG
TILT AZIM 118.61 DEG
SWING ANG 282.03 DEG
N.DEV. 340.97 DEG

PHOTO ILLUMINATION
SUN AZIM 114.84 DEG
INCID ANG 63.85 DEG
EMISS ANG 5.17 DEG
PHASE ANG 68.98 DEG
ALPHA -5.14 DEG

PRINCIPAL POINT
LATITUDE 41.21 DEG
LONGITUDE 71.77 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 15.25 DEG AB 324.7 KM
A LONG 139.58 DEG BC 490.9 KM
B LAT 7.67 DEG CD 511.8 KM
B LONG 117.88 DEG DA 234.7 KM
C LAT 13.31 DEG TILT DISTANCE
C LONG 17.13 DEG 2.6
D LAT 57.46 DEG
D LONG -40.43 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 55.79 DEG AB 111.3 KM
A LONG 90.92 DEG BC 289.3 KM
B LAT 21.75 DEG CD 101.3 KM
B LONG 70.28 DEG DA 278.1 KM
C LAT 24.45 DEG TILT DISTANCE
C LONG 60.65 DEG 20.2
D LAT 59.97 DEG
D LONG 75.47 DEG

MISSION/
FRAME NO.
4049

YR.HO.DY 670513
HR.MI.SEC 231648.01

S/C POSITION
ALT 6113.90 KM
ALT RT 0.0018 KM/SEC
LAT 0.18 DEG
LONG -119.47 DEG

S/C ORIENTATION
TILT ANG 3.46 DEG
TILT AZIM 35.59 DEG
SWING ANG 36.55 DEG
N.DEV. 179.24 DEG

PHOTO ILLUMINATION
SUN AZIM 277.31 DEG
INCID ANG 123.43 DEG
EMISS ANG 15.83 DEG
PHASE ANG 114.92 DEG
ALPHA 9.56 DEG

PRINCIPAL POINT
LATITUDE 10.22 DEG
LONGITUDE -112.19 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0. DEG AB 0. KM
A LONG 0. DEG BC 0. KM
B LAT 0. DEG CD 0. KM
B LONG 0. DEG DA 0. KM
C LAT 0. DEG TILT DISTANCE
C LONG 0. DEG 4.8
D LAT 0. DEG
D LONG 0. DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -27.97 DEG AB 372.8 KM
A LONG -121.04 DEG BC 367.1 KM
B LAT 67.60 DEG CD 433.1 KM
B LONG -127.61 DEG DA 582.0 KM
C LAT 62.98 DEG TILT DISTANCE
C LONG -73.14 DEG 36.9
D LAT -28.21 DEG
D LONG -99.14 DEG

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.

4050 YR.NO.DY 670513
HR.MI.SEC 231739.41

S/C POSITION
ALT 6113.97 KM
ALT RT 0.0007 KM/SEC
LAT -0.07 DEG
LONG -119.46 DEG

S/C ORIENTATION
TILT ANG 3.27 DEG
TILT AZIM 38.45 DEG
SWING ANG 39.42 DEG
N.DEV. 179.42 DEG

PHOTO ILLUMINATION
SUN AZIM 276.56 DEG
INCID ANG 123.63 DEG
EMISS ANG 14.95 DEG
PHASE ANG 114.82 DEG
ALPHA 9.59 DEG

PRINCIPAL POINT
LATITUDE 9.05 DEG
LONGITUDE -112.14 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0. DEG AB 0. KM
A LONG 0. DEG BC 0. KM
B LAT 0. DEG CD 0. KM
B LONG 0. DEG DA 0. KM
C LAT 0. DEG TILT DISTANCE 4.5
C LONG 0. DEG
D LAT 0. DEG
D LONG 0. DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -29.37 DEG AB 656.8 KM
A LONG -129.97 DEG BC 457.1 KM
B LAT 70.32 DEG CD 539.0 KM
B LONG -128.60 DEG DA 584.7 KM
C LAT 64.72 DEG TILT DISTANCE 34.9
C LONG -68.09 DEG
D LAT -29.63 DEG
D LONG -98.66 DEG

MISSION/
FRAME NO.

4051 YR.NO.DY 670513
HR.MI.SEC 231E 4.81

S/C POSITION
ALT 6113.98 KM
ALT RT 0.0001 KM/SEC
LAT -0.19 DEG
LONG -119.45 DEG

S/C ORIENTATION
TILT ANG 3.18 DEG
TILT AZIM 39.97 DEG
SWING ANG 40.94 DEG
N.DEV. 179.51 DEG

PHOTO ILLUMINATION
SUN AZIM 276.19 DEG
INCID ANG 123.73 DEG
EMISS ANG 14.53 DEG
PHASE ANG 114.83 DEG
ALPHA 9.61 DEG

PRINCIPAL POINT
LATITUDE 8.48 DEG
LONGITUDE -112.11 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0. DEG AB 0. KM
A LONG 0. DEG BC 0. KM
B LAT 0. DEG CD 0. KM
B LONG 0. DEG DA 0. KM
C LAT 0. DEG TILT DISTANCE 4.4
C LONG 0. DEG
D LAT 0. DEG
D LONG 0. DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -30.06 DEG AB 597.6 KM
A LONG -120.93 DEG BC 350.4 KM
B LAT 66.69 DEG CD 544.0 KM
B LONG -127.01 DEG DA 586.2 KM
C LAT 64.14 DEG TILT DISTANCE 33.9
C LONG -69.67 DEG
D LAT -30.34 DEG
D LONG -98.41 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.
4052

TIME 670514
YR.MO.DY 043024.21
PR.MI.SEC 043024.21

S/C POSITION
ALT 2976.44 KM
ALT RT -0.1738 KM/SEC
LAT -42.06 DEG
LONG 53.33 DEG

S/C ORIENTATION
TILT ANG 4.48 DEG
TILT AZIM 99.76 DEG
SWING ANG 297.20 DEG
N.DEV. 24.59 DEG

PHOTO ILLUMINATION
SUN AZIM 65.03 DEG
INCID ANG 65.93 DEG
EMISS ANG. 12.25 DEG
PHASE ANG 77.97 DEG
ALPHA -11.14 DEG

PRINCIPAL POINT
LATITUDE -42.91 DEG
LONGITUDE 63.81 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -43.52 DEG AB 316.0 KM
A LONG 12.50 DEG BC 223.3 KM
B LAT -50.99 DEG CD 563.7 KM
B LONG 5.36 DEG DA 198.3 KM
C LAT -62.69 DEG TILT DISTANCE 6.2
C LONG -67.34 DEG
D LAT 1.19 DEG
D LONG 3.44 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -24.13 DEG AB 132.0 KM
A LONG 60.72 DEG BC 293.2 KM
B LAT -56.35 DEG CD 108.7 KM
B LONG 88.56 DEG DA 279.8 KM
C LAT -61.86 DEG TILT DISTANCE 47.9
C LONG 72.95 DEG
D LAT -27.54 DEG
D LONG 51.17 DEG

MISSION/
FRAME NO.
4053

TIME 670514
YR.MO.DY 05022E.S1
PR.MI.SEC 05022E.S1

S/C POSITION
ALT 2740.23 KM
ALT RT -0.0651 KM/SEC
LAT -14.41 DEG
LONG 56.14 DEG

S/C ORIENTATION
TILT ANG 0.49 DEG
TILT AZIM 122.34 DEG
SWING ANG 307.79 DEG
N.DEV. 5.63 DEG

PHOTO ILLUMINATION
SUN AZIM 82.44 DEG
INCID ANG 64.97 DEG
EMISS ANG 1.26 DEG
PHASE ANG 65.94 DEG
ALPHA -9.97 DEG

PRINCIPAL POINT
LATITUDE -14.82 DEG
LONGITUDE 55.82 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 18.26 DEG AB 478.2 KM
A LONG 100.03 DEG BC 395.3 KM
B LAT -29.53 DEG CD 413.8 KM
B LONG 116.59 DEG DA 062.5 KM
C LAT -38.40 DEG TILT DISTANCE 0.6
C LONG 4.36 DEG
D LAT 20.70 DEG
D LONG 0.34 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.41 DEG AB 012.4 KM
A LONG 59.40 DEG BC 254.7 KM
B LAT -31.24 DEG CD 010.6 KM
B LONG 63.71 DEG DA 253.3 KM
C LAT -32.15 DEG TILT DISTANCE 5.2
C LONG 53.88 DEG
D LAT 1.59 DEG
D LONG 51.07 DEG

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MISSION/
FRAME NO.
4054

YR. MO. DY
HR. MI. SEC
670514
053333.01

S/C POSITION
ALT 2736.67 KM
ALT RT 0.0613 KM/SEC
LAT 13.89 DEG
LONG 58.29 DEG

S/C ORIENTATION
TILT ANG 1.00 DEG
TILT AZIM 259.22 DEG
SWING ANG 73.58 DEG
N.DEV. 354.72 DEG

PHOTO ILLUMINATION
SUN AZIM 96.17 DEG
INCID ANG 64.47 DEG
EMISS ANG 2.57 DEG
PHASE ANG 62.02 DEG
ALPHA 2.45 DEG

PRINCIPAL POINT
LATITUDE 13.59 DEG
LONGITUDE 56.73 DEG

MEDIUM RESOLUTION

CORNER COORDINATE
A LAT 35.84 DEG
A LONG 123.58 DEG
B LAT -30.68 DEG
B LONG 106.18 DEG
C LAT -14.59 DEG
C LONG 0.37 DEG
D LAT 37.28 DEG
D LONG -4.47 DEG

SIDE LENGTH
AB 965.9 KM
BC 628.6 KM
CD 512.7 KM
DA 397.2 KM
TILT DISTANCE
1.3

HIGH RESOLUTION

CORNER COORDINATE
A LAT 29.86 DEG
A LONG 63.13 DEG
B LAT -3.70 DEG
B LONG 59.22 DEG
C LAT -3.03 DEG
C LONG 50.82 DEG
D LAT 30.79 DEG
D LONG 53.49 DEG

SIDE LENGTH
AB 608.3 KM
BC 254.6 KM
CD 012.7 KM
DA 253.4 KM
TILT DISTANCE
13.6

MISSION/
FRAME NO.
4055

YR. MO. DY
HR. MI. SEC
670514
0607 6.51

S/C POSITION
ALT 2982.13 KM
ALT RT 0.1752 KM/SEC
LAT 42.84 DEG
LONG 61.25 DEG

S/C ORIENTATION
TILT ANG 1.91 DEG
TILT AZIM 102.02 DEG
SWING ANG 265.87 DEG
N.DEV. 341.00 DEG

PHOTO ILLUMINATION
SUN AZIM 115.15 DEG
INCID ANG 64.25 DEG
EMISS ANG 5.18 DEG
PHASE ANG 69.36 DEG
ALPHA -5.11 DEG

PRINCIPAL POINT
LATITUDE 42.07 DEG
LONGITUDE 65.57 DEG

MEDIUM RESOLUTION

CORNER COORDINATE
A LAT 16.18 DEG
A LONG 115.73 DEG
B LAT -5.30 DEG
B LONG 112.53 DEG
C LAT 2.42 DEG
C LONG 5.05 DEG
D LAT 60.12 DEG
D LONG -22.96 DEG

SIDE LENGTH
AB 314.5 KM
BC 671.6 KM
CD 257.8 KM
DA 874.7 KM
TILT DISTANCE
2.6

HIGH RESOLUTION

CORNER COORDINATE
A LAT 56.74 DEG
A LONG 85.40 DEG
B LAT 22.82 DEG
B LONG 64.12 DEG
C LAT 25.47 DEG
C LONG 54.43 DEG
D LAT 60.98 DEG
D LONG 69.46 DEG

SIDE LENGTH
AB 110.7 KM
BC 278.7 KM
CD 100.5 KM
DA 279.5 KM
TILT DISTANCE
20.3

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/10/71 PAGE 339

MISSION/
FRAME NO.
4056

YR. MO. DY 570514
HR. MI. SEC 064639.21
TIME
S/C POSITION ALT 3494.66 KH TILT ANG 0.76 DEG
ALT RT 0.2450 KH/SEC TILT AZIM 214.95 DEG
LAT 71.63 DEG SWING ANG 24.88 DEG
LONG 71.06 DEG N.DEV. 352.38 DEG
PHOTO ILLUMINATION SUN AZIM 126.81 DEG
INCID ANG 77.51 DEG
EMISS ANG 2.30 DEG
PHASE ANG 77.69 DEG
ALPHA -0.19 DEG
PRINCIPAL POINT
LATITUDE 70.35 DEG
LONGITUDE 68.44 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 21.89 DEG AB 884.2 KM
A LONG 160.06 DEG BC 568.6 KM
B LAT 24.13 DEG CD 551.7 KM
B LONG 133.02 DEG DA 067.7 KM
C LAT 24.57 DEG TILT DISTANCE 1.0
C LONG 133.74 DEG
D LAT 25.20 DEG
D LONG -25.53 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 81.84 DEG AB 302.0 KM
A LONG 167.49 DEG BC 329.5 KM
B LAT 47.34 DEG CD 304.4 KM
B LONG 72.01 DEG DA 324.5 KM
C LAT 47.99 DEG TILT DISTANCE 8.1
C LONG 55.84 DEG
D LAT 86.30 DEG
D LONG -67.39 DEG

MISSION/
FRAME NO.
4058

YR. MO. DY 670514
HR. MI. SEC 155118.21
TIME
S/C POSITION ALT 3493.64 KH TILT ANG 2.68 DEG
ALT RT -0.2456 KH/SEC TILT AZIM 100.37 DEG
LAT -71.36 DEG SWING ANG 268.72 DEG
LONG 37.31 DEG N.DEV. 4.51 DEG
PHOTO ILLUMINATION SUN AZIM 61.98 DEG
INCID ANG 81.53 DEG
EMISS ANG 8.10 DEG
PHASE ANG 89.04 DEG
ALPHA -7.52 DEG
PRINCIPAL POINT
LATITUDE -71.58 DEG
LONGITUDE 54.49 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -39.50 DEG AB 106.8 KM
A LONG -17.54 DEG BC 272.7 KM
B LAT -43.32 DEG CD 826.7 KM
B LONG -28.24 DEG DA 831.6 KM
C LAT -28.60 DEG TILT DISTANCE 3.7
C LONG -65.56 DEG
D LAT -9.04 DEG
D LONG -3.83 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -48.54 DEG AB 316.1 KM
A LONG 61.10 DEG BC 332.5 KM
B LAT -81.40 DEG CD 296.4 KM
B LONG 167.78 DEG DA 333.0 KM
C LAT -85.07 DEG TILT DISTANCE 28.6
C LONG -86.75 DEG
D LAT -49.53 DEG
D LONG 44.35 DEG

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MISSION/
FRAME NO.
4059

YR.NO.DY 67CE14
PR.MI.SEC 163121.81

S/C POSITION
ALT 2974.56 KM
ALT RT -0.1742 KM/SEC
LAT -42.11 DEG
LONG 46.79 DEG

S/C ORIENTATION
TILT ANG 7.57 DEG
TILT AZIM 89.42 DEG
SWING ANG 286.93 DEG
N.DEV. 22.95 DEG

PHOTO ILLUMINATION
SUN AZIM 68.54 DEG
INCID ANG 68.28 DEG
EMISS ANG 9.73 DEG
PHASE ANG 77.68 DEG
ALPHA -9.42 DEG

PRINCIPAL POINT
LATITUDE -41.75 DEG
LONGITUDE 55.05 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -41.85 DEG AB 349.6 KM
A LONG 4.32 DEG BC 223.5 KM
B LAT -48.56 DEG CD 014.1 KM
B LONG 1.48 DEG DA 086.1 KM
C LAT -61.62 DEG TILT DISTANCE 4.9
C LONG -71.23 DEG
D LAT -3.44 DEG
D LONG -2.81 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -22.73 DEG AB 119.0 KM
A LONG 52.46 DEG BC 286.3 KM
B LAT -55.50 DEG CD 100.2 KM
B LONG 77.37 DEG DA 279.9 KM
C LAT -60.52 DEG TILT DISTANCE 38.1
C LONG 62.17 DEG
D LAT -26.00 DEG
D LONG 42.95 DEG

MISSION/
FRAME NO.
4060

YR.NO.DY 670514
PR.MI.SEC 170325.51

S/C POSITION
ALT 2737.79 KM
ALT RT -0.0653 KM/SEC
LAT -14.43 DEG
LONG 49.54 DEG

S/C ORIENTATION
TILT ANG 0.71 DEG
TILT AZIM 319.31 DEG
SWING ANG 145.37 DEG
N.DEV. 5.89 DEG

PHOTO ILLUMINATION
SUN AZIM 83.55 DEG
INCID ANG 56.65 DEG
EMISS ANG 1.83 DEG
PHASE ANG 65.64 DEG
ALPHA 1.01 DEG

PRINCIPAL POINT
LATITUDE -13.58 DEG
LONGITUDE 48.79 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 19.43 DEG AB 416.0 KM
A LONG 50.10 DEG BC 026.4 KM
B LAT -23.89 DEG CD 493.0 KM
B LONG 117.64 DEG DA 426.8 KM
C LAT -36.97 DEG TILT DISTANCE 0.9
C LONG -4.68 DEG
D LAT 13.55 DEG
D LONG -3.48 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 3.86 DEG AB 010.1 KM
A LONG 51.21 DEG BC 252.5 KM
B LAT -29.72 DEG CD 012.0 KM
B LONG 55.47 DEG DA 255.1 KM
C LAT -30.71 DEG TILT DISTANCE 7.5
C LONG 45.89 DEG
D LAT 3.05 DEG
D LONG 42.80 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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04/10/71

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.
4061

TIME
670514
173428.21

S/C POSITION
ALT 2734.04 KM
ALT RT 0.0614 KM/SEC
LAT 13.87 DEG
LONG 51.63 DEG

S/C ORIENTATION
TILT ANG 1.21 DEG
TILT AZIM 278.36 DEG
SWING ANG 93.54 DEG
N.DEV. 355.66 DEG

PHOTO ILLUMINATION
SUN AZIM 96.16 DEG
INCLD ANG 65.37 DEG
EMISS ANG 3.10 DEG
PHASE ANG 62.27 DEG
ALPHA 3.10 DEG

PRINCIPAL POINT
LATITUDE 14.14 DEG
LONGITUDE 49.69 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 37.50 DEG AB 962.5 KM
A LONG 117.57 DEG BC 996.4 KM
B LAT -30.29 DEG CD 067.0 KM
B LONG 58.46 DEG DA 444.7 KM
C LAT -15.35 DEG TILT DISTANCE 1.6
C LONG -7.57 DEG
D LAT 36.15 DEG
D LONG -15.50 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 30.57 DEG AB 006.8 KM
A LONG 55.85 DEG BC 253.8 KM
B LAT -2.98 DEG CD 012.3 KM
B LONG 52.46 DEG DA 254.1 KM
C LAT -2.47 DEG TILT DISTANCE 12.8
C LONG 44.09 DEG
D LAT 31.38 DEG
D LONG 45.10 DEG

MISSION/
FRAME NO.
4062

TIME
670514
180758.91

S/C POSITION
ALT 2979.36 KM
ALT RT 0.1754 KM/SEC
LAT 42.81 DEG
LONG 54.52 DEG

S/C ORIENTATION
TILT ANG 2.00 DEG
TILT AZIM 95.76 DEG
SWING ANG 260.08 DEG
N.DEV. 341.21 DEG

PHOTO ILLUMINATION
SUN AZIM 115.03 DEG
INCLD ANG 64.56 DEG
EMISS ANG 5.44 DEG
PHASE ANG 69.80 DEG
ALPHA -5.25 DEG

PRINCIPAL POINT
LATITUDE 42.37 DEG
LONGITUDE 59.16 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 16.19 DEG AB 316.6 KM
A LONG 114.25 DEG BC 676.5 KM
B LAT -5.03 DEG CD 242.1 KM
B LONG 107.78 DEG DA 881.3 KM
C LAT 2.22 DEG TILT DISTANCE 2.7
C LONG -0.82 DEG
D LAT 60.08 DEG
D LONG -30.30 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 57.12 DEG AB 110.2 KM
A LONG 79.17 DEG BC 278.0 KM
B LAT 23.20 DEG CD 099.6 KM
B LONG 57.81 DEG DA 280.0 KM
C LAT 25.81 DEG TILT DISTANCE 21.3
C LONG 48.12 DEG
D LAT 61.33 DEG
D LONG 63.09 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.
4064

YR. MO. DY
670515
HR. MI. SEC
043229.71

S/C POSITION
ALT 2972.87 KM
ALT RT -0.1748 KM/SEC
LAT -42.14 DEG
LONG 40.27 DEG

S/C ORIENTATION
TILT ANG 4.40 DEG
TILT AZIM 96.60 DEG
SWING ANG 294.32 DEG
N.DEV. 24.65 DEG

PHOTO ILLUMINATION
SUN AZIM 66.96 DEG
INCID ANG 67.49 DEG
EMISS ANG 12.00 DEG
PHASE ANG 78.62 DEG
ALPHA -11.20 DEG

PRINCIPAL POINT
LATITUDE -42.56 DEG
LONGITUDE 50.55 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -43.71 DEG AB 310.6 KM
A LONG -0.40 DEG BC 232.4 KM
B LAT -50.78 DEG CD 016.8 KM
B LONG -3.35 DEG DA 197.5 KM
C LAT -62.19 DEG TILT DISTANCE
C LONG -82.89 DEG 6.1
D LAT 1.08 DEG
D LONG -5.83 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -23.74 DEG AB 128.2 KM
A LONG 47.44 DEG BC 291.9 KM
B LAT -55.91 DEG CD 105.2 KM
B LONG 74.86 DEG DA 280.1 KM
C LAT -61.38 DEG TILT DISTANCE
C LONG 59.50 DEG 45.9
D LAT -27.20 DEG
D LONG 37.92 DEG

MISSION/
FRAME NO.
4065

YR. MO. DY
670515
HR. MI. SEC
050433.01

S/C POSITION
ALT 2735.08 KM
ALT RT -0.0657 KM/SEC
LAT -14.44 DEG
LONG 42.95 DEG

S/C ORIENTATION
TILT ANG 0.36 DEG
TILT AZIM 143.31 DEG
SWING ANG 328.79 DEG
N.DEV. 5.57 DEG

PHOTO ILLUMINATION
SUN AZIM 82.78 DEG
INCID ANG 66.21 DEG
EMISS ANG 0.93 DEG
PHASE ANG 66.67 DEG
ALPHA -0.47 DEG

PRINCIPAL POINT
LATITUDE -14.90 DEG
LONGITUDE 43.30 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 17.42 DEG AB 453.3 KM
A LONG 25.20 DEG BC 377.4 KM
B LAT -29.68 DEG CD 423.2 KM
B LONG 100.54 DEG DA 994.0 KM
C LAT -38.50 DEG TILT DISTANCE
C LONG -10.25 DEG 0.5
D LAT 18.91 DEG
D LONG -11.31 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 2.28 DEG AB 009.9 KM
A LONG 45.87 DEG BC 254.2 KM
B LAT -31.29 DEG CD 009.1 KM
B LONG 50.14 DEG DA 252.8 KM
C LAT -32.21 DEG TILT DISTANCE
C LONG 40.32 DEG 3.8
D LAT 1.48 DEG
D LONG 37.56 DEG

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.
4056

YR,MO,DY	670515	S/C POSITION	ALT	2730.75 KM	S/C ORIENTATION	TILT ANG	1.23 DEG	PHOTO ILLUMINATION	SUN AZIM	95.69 DEG	PRINCIPAL POINT	LATITUDE	13.47 DEG
HR,MI,SEC	053533.51	ALT RT	0.0612 KM/SEC		TILT AZIM	258.31 DEG		INCID ANG	65.82 DEG		LONGITUDE	43.04 DEG	
		LAT	13.87 DEG		SWING ANG	72.44 DEG		EMISS ANG	3.15 DEG				
		LONG	44.98 DEG		N.DEV.	354.57 DEG		PHASE ANG	62.82 DEG				
								ALPHA	3.00 DEG				

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 36.76 DEG	AB 008.5 KM
A LONG 112.18 DEG	BC 976.2 KM
B LAT -33.48 DEG	CD 472.2 KM
B LONG 90.81 DEG	DA 422.2 KM
C LAT -14.56 DEG	TILT DISTANCE
D LAT 37.26 DEG	1.7
D LONG -20.69 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 29.66 DEG	AB 005.9 KM
A LONG 49.46 DEG	BC 254.5 KM
B LAT -3.81 DEG	CD 011.2 KM
B LONG 45.49 DEG	DA 252.8 KM
C LAT -3.14 DEG	TILT DISTANCE
C LONG 37.10 DEG	13.0
D LAT 30.62 DEG	
D LONG 39.87 DEG	

MISSION/
FRAME NO.
4067

YR,MO,DY	670515	S/C POSITION	ALT	2975.58 KM	S/C ORIENTATION	TILT ANG	1.76 DEG	PHOTO ILLUMINATION	SUN AZIM	113.64 DEG	PRINCIPAL POINT	LATITUDE	41.80 DEG
HR,MI,SEC	0609 0.81	ALT RT	0.1755 KM/SEC		TILT AZIM	108.11 DEG		INCID ANG	65.27 DEG		LONGITUDE	51.64 DEG	
		LAT	42.81 DEG		SWING ANG	271.73 DEG		EMISS ANG	4.77 DEG				
		LONG	47.79 DEG		N.DEV.	341.09 DEG		PHASE ANG	70.03 DEG				
								ALPHA	-4.77 DEG				

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 16.22 DEG	AB 320.0 KM
A LONG 120.40 DEG	BC 662.2 KM
B LAT -6.23 DEG	CD 508.8 KM
B LONG 58.47 DEG	DA 864.3 KM
C LAT 14.48 DEG	TILT DISTANCE
C LONG -2.58 DEG	2.4
D LAT 55.88 DEG	
D LONG -25.86 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 56.44 DEG	AB 107.5 KM
A LONG 71.08 DEG	BC 278.3 KM
B LAT 22.55 DEG	CD 098.1 KM
B LONG 50.19 DEG	DA 278.0 KM
C LAT 25.18 DEG	TILT DISTANCE
C LONG 40.56 DEG	18.7
D LAT 60.62 DEG	
D LONG 55.34 DEG	

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MISSION/
FRAME NO.
4068

TIME
670515
064226.61

YR.MO.DY
HR.MI.SEC

S/C POSITION
ALT 3487.77 KM
ALT RT 0.2457 KM/SEC
LAT 71.63 DEG
LONG 57.12 DEG

S/C ORIENTATION
TILT ANG 0.55 DEG
TILT AZIM 239.59 DEG
SWING ANG 50.38 DEG
N.DEV. 354.04 DEG

PHOTO ILLUMINATION
SUN AZIM 124.40 DEG
INCID ANG 78.51 DEG
EMISS ANG 1.96 DEG
PHASE ANG 77.78 DEG
ALPHA 0.72 DEG

PRINCIPAL POINT
LATITUDE 70.93 DEG
LONGITUDE 53.56 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 22.55 DEG AB 886.9 KM
A LONG 145.06 DEG BC 484.0 KM
B LAT 27.08 DEG CD 471.7 KM
B LONG 115.49 DEG DA 297.1 KM
C LAT 27.77 DEG TILT DISTANCE
C LONG 120.25 DEG 0.9
D LAT 32.00 DEG
D LONG 130.48 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 82.26 DEG AB 297.7 KM
A LONG 159.71 DEG BC 327.9 KM
B LAT 48.19 DEG CD 301.3 KM
B LONG 58.18 DEG DA 324.9 KM
C LAT 48.43 DEG TILT DISTANCE
C LONG 41.84 DEG 6.9
D LAT 85.40 DEG
D LONG -81.35 DEG

MISSION/
FRAME NO.
4070

TIME
670515
143335.21

YR.MO.DY
HR.MI.SEC

S/C POSITION
ALT 3456.53 KM
ALT RT -0.2471 KM/SEC
LAT -71.56 DEG
LONG 24.60 DEG

S/C ORIENTATION
TILT ANG 3.71 DEG
TILT AZIM 109.77 DEG
SWING ANG 276.05 DEG
N.DEV. 9.52 DEG

PHOTO ILLUMINATION
SUN AZIM 55.08 DEG
INCID ANG 80.31 DEG
EMISS ANG 11.25 DEG
PHASE ANG 89.95 DEG
ALPHA -9.69 DEG

PRINCIPAL POINT
LATITUDE -72.65 DEG
LONGITUDE 49.06 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -43.35 DEG AB 001.2 KM
A LONG -27.76 DEG BC 266.2 KM
B LAT -46.86 DEG CD 797.8 KM
B LONG -39.20 DEG DA 501.7 KM
C LAT -33.55 DEG TILT DISTANCE
C LONG -78.98 DEG 5.1
D LAT -15.16 DEG
D LONG -5.55 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -49.47 DEG AB 326.7 KM
A LONG 53.30 DEG BC 340.6 KM
B LAT -78.92 DEG CD 298.9 KM
B LONG 160.96 DEG DA 337.0 KM
C LAT -84.62 DEG TILT DISTANCE
C LONG -121.01 DEG 39.6
D LAT -51.06 DEG
D LONG 36.01 DEG

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MISSION/
FRAME NO.
4371

TIME
67C515
163344.11

S/C POSITION
ALT 2972.30 KM
ALT RT -0.1759 KM/SEC
LAT -42.22 DEG
LONG 33.74 DEG

S/C ORIENTATION
TILT ANG 5.50 DEG
TILT AZIM 103.19 DEG
SWING ANG 301.12 DEG
N.DEV. 26.92 DEG

PHOTO ILLUMINATION
SUN AZIM 58.69 DEG
INCID ANG 66.46 DEG
EMISS ANG 15.07 DEG
PHASE ANG 79.72 DEG
ALPHA -13.44 DEG

PRINCIPAL POINT
LATITUDE -43.69 DEG
LONGITUDE 46.67 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 23.52 DEG AB 312.2 KM
A LONG 42.45 DEG BC 223.4 KM
B LAT -53.09 DEG CD 945.5 KM
B LONG -8.08 DEG DA 179.4 KM
C LAT -65.13 DEG TILT DISTANCE 7.7
C LONG -85.51 DEG
D LAT 2.03 DEG
D LONG -18.20 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -25.11 DEG AB 147.1 KM
A LONG 42.84 DEG BC 301.2 KM
B LAT -56.45 DEG CD 117.7 KM
B LONG 74.02 DEG DA 280.8 KM
C LAT -62.58 DEG TILT DISTANCE 58.8
C LONG 59.42 DEG
D LAT -28.78 DEG
D LONG 33.28 DEG

MISSION/
FRAME NO.
4072

TIME
67C515
170547.51

S/C POSITION
ALT 2732.45 KM
ALT RT -0.0667 KM/SEC
LAT -14.56 DEG
LONG 36.35 DEG

S/C ORIENTATION
TILT ANG 1.23 DEG
TILT AZIM 131.22 DEG
SWING ANG 316.23 DEG
N.DEV. 5.45 DEG

PHOTO ILLUMINATION
SUN AZIM 82.16 DEG
INCID ANG 65.67 DEG
EMISS ANG 3.16 DEG
PHASE ANG 67.78 DEG
ALPHA -2.13 DEG

PRINCIPAL POINT
LATITUDE -15.77 DEG
LONGITUDE 37.86 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 17.03 DEG AB 743.6 KM
A LONG 81.65 DEG BC 475.4 KM
B LAT -29.16 DEG CD 391.2 KM
B LONG 195.18 DEG DA 151.0 KM
C LAT -39.36 DEG TILT DISTANCE 1.7
C LONG -14.29 DEG
D LAT 22.78 DEG
D LONG -17.98 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 1.28 DEG AB 612.0 KM
A LONG 43.54 DEG BC 255.6 KM
B LAT -32.35 DEG CD 008.1 KM
B LONG 44.89 DEG DA 251.6 KM
C LAT -33.20 DEG TILT DISTANCE 13.0
C LONG 34.89 DEG
D LAT 9.47 DEG
D LONG 32.27 DEG

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MISSION/
FRAME NO.
4073

YR.MD.DY 670515
FR.MI.SEC 173445.71

S/C POSITION
ALT 2726.54 KM
ALT RT C-2605 KM/SEC
LAT 13.82 DEG
LONG 38.33 DEG

S/C ORIENTATION
TILT ANG 0.94 DEG
TILT AZIM 209.36 DEG
SWING ANG 23.15 DEG
N-DEV. 353.94 DEG

PHOTO ILLUMINATION
SUN AZIM 95.43 DEG
INCID ANG 65.07 DEG
EMISS ANG 2.41 DEG
PHASE ANG 64.12 DEG
ALPHA 9.93 DEG

PRINCIPAL POINT
LATITUDE 12.51 DEG
LONGITUDE 37.59 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 23.63 DEG AB 599.4 KM
A LONG 105.34 DEG BC 436.4 KM
B LAT -20.88 DEG CD 497.2 KM
B LONG 75.48 DEG DA 483.3 KM
C LAT -15.10 DEG TILT DISTANCE
C LONG -15.65 DEG 1.3
D LAT 41.94 DEG
D LONG -20.42 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 28.53 DEG AB 006.7 KM
A LONG 44.20 DEG BC 254.7 KM
B LAT -4.93 DEG CD 028.3 KM
B LONG 39.95 DEG DA 250.8 KM
C LAT -4.10 DEG TILT DISTANCE
C LONG 31.55 DEG 10.0
D LAT 29.52 DEG
D LONG 34.79 DEG

MISSION/
FRAME NO.
4074

YR.MD.DY 670515
FR.MI.SEC 181028.21

S/C POSITION
ALT 2569.84 KM
ALT RT 0-1752 KM/SEC
LAT 42.75 DEG
LONG 41.06 DEG

S/C ORIENTATION
TILT ANG 2.30 DEG
TILT AZIM 119.86 DEG
SWING ANG 203.01 DEG
N-DEV. 340.30 DEG

PHOTO ILLUMINATION
SUN AZIM 113.20 DEG
INCID ANG. 64.78 DEG
EMISS ANG 6.25 DEG
PHASE ANG 70.94 DEG
ALPHA -6.16 DEG

PRINCIPAL POINT
LATITUDE 40.70 DEG
LONGITUDE 45.57 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 12.93 DEG AB 325.1 KM
A LONG 99.57 DEG BC 545.5 KM
B LAT 4.28 DEG CD 937.7 KM
B LONG 93.53 DEG DA 264.4 KM
C LAT 0.41 DEG TILT DISTANCE
C LONG -15.60 DEG 3.2
D LAT 58.22 DEG
D LONG -71.80 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 55.03 DEG AB 108.2 KM
A LONG 64.71 DEG BC 280.2 KM
B LAT 21.24 DEG CD 096.2 KM
B LONG 43.90 DEG DA 277.3 KM
C LAT 24.09 DEG TILT DISTANCE
C LONG 34.36 DEG 24.5
D LAT 59.28 DEG
D LONG 49.69 DEG

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MISSION/
FRAME NO.
4075

YR. MO. DY 670515
HR. MI. SEC 2321 4.21

S/C POSITION
ALT 6126.79 KM
ALT RT 0.0027 KM/SEC
LAT 0.06 DEG
LONG -145.96 DEG

S/C ORIENTATION
TILT ANG 1.20 DEG
TILT AZIM 1.32 DEG
SWING ANG 1.11 DEG
N.DEV. 179.77 DEG

PHOTO ILLUMINATION
SUN AZIM 272.48 DEG
INCL ANG 114.83 DEG
EMISS ANG 5.43 DEG
PHASE ANG 114.82 DEG
ALPHA 0.13 DEG

PRINCIPAL POINT
LATITUDE 4.29 DEG
LONGITUDE -145.86 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0. DEG AB 0. KM
A LONG 0. DEG BC 0. KM
B LAT 0. DEG CD 0. KM
B LONG 0. DEG DA 0. KM
C LAT 0. DEG TILT DISTANCE
C LONG 0. DEG 1.6
D LAT 0. DEG
D LONG 0. DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -36.05 DEG AB 427.5 KM
A LONG -157.98 DEG BC 619.3 KM
B LAT 52.57 DEG CD 428.4 KM
B LONG -162.57 DEG DA 582.4 KM
C LAT 52.48 DEG TILT DISTANCE
C LONG -128.47 DEG 12.7
D LAT -36.15 DEG
D LONG -134.02 DEG

MISSION/
FRAME NO.
4076

YR. MO. DY 670516
HR. MI. SEC 043513.81

S/C POSITION
ALT 2971.56 KM
ALT RT -0.1771 KM/SEC
LAT -42.21 DEG
LONG 27.23 DEG

S/C ORIENTATION
TILT ANG 4.54 DEG
TILT AZIM 97.68 DEG
SWING ANG 295.73 DEG
N.DEV. 25.25 DEG

PHOTO ILLUMINATION
SUN AZIM 67.20 DEG
INCL ANG 67.89 DEG
EMISS ANG 12.40 DEG
PHASE ANG 79.35 DEG
ALPHA -11.53 DEG

PRINCIPAL POINT
LATITUDE -42.77 DEG
LONGITUDE 37.87 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -44.25 DEG AB 304.2 KM
A LONG -13.27 DEG BC 222.3 KM
B LAT -51.32 DEG CD 958.0 KM
B LONG -16.24 DEG DA 308.7 KM
C LAT -64.24 DEG TILT DISTANCE
C LONG -92.80 DEG 6.3
D LAT 4.09 DEG
D LONG -25.01 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -24.02 DEG AB 130.0 KM
A LONG 34.55 DEG BC 292.9 KM
B LAT -55.96 DEG CD 106.3 KM
B LONG -62.69 DEG DA 280.0 KM
C LAT -61.57 DEG TILT DISTANCE
C LONG 47.39 DEG 48.5
D LAT -27.54 DEG
D LONG 25.05 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.
4077

YR.MO.DY 870516
HR.MI.SEC 053813.31

S/C POSITION
ALT 2729.57 KM
ALT RT -0.0677 KM/SEC
LAT -14.46 DEG
LONG 29.77 DEG

S/C ORIENTATION
TILT ANG 0.38 DEG
TILT AZIM 141.14 DEG
SWING ANG 326.93 DEG
N.DEV. 5.79 DEG

PHOTO ILLUMINATION
SUN AZIM 83.02 DEG
INCID ANG 67.08 DEG
EMISS ANG 0.98 DEG
PHASE ANG 67.60 DEG
ALPHA -1.52 DEG

PRINCIPAL POINT
LATITUDE -14.93 DEG
LONGITUDE 30.15 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 17.43 DEG AB 449.8 KM
A LONG 71.80 DEG BC 370.3 KM
B LAT -29.51 DEG CD 417.3 KM
B LONG 87.64 DEG DA 029.3 KM
C LAT -38.63 DEG TILT DISTANCE 0.5
C LONG -22.56 DEG
D LAT 15.63 DEG
D LONG -25.68 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.22 DEG AB 007.9 KM
A LONG 32.65 DEG BC 253.7 KM
B LAT -31.26 DEG CD 006.9 KM
B LONG 37.05 DEG DA 252.2 KM
C LAT -32.21 DEG TILT DISTANCE 4.0
C LONG 27.26 DEG
D LAT 1.40 DEG
D LONG 24.36 DEG

MISSION/
FRAME NO.
4078

YR.MO.DY 870516
HR.MI.SEC 053813.31

S/C POSITION
ALT 2722.09 KM
ALT RT 0.6599 KM/SEC
LAT 13.86 DEG
LONG 31.68 DEG

S/C ORIENTATION
TILT ANG 0.98 DEG
TILT AZIM 248.54 DEG
SWING ANG 63.19 DEG
N.DEV. 354.97 DEG

PHOTO ILLUMINATION
SUN AZIM 95.43 DEG
INCID ANG 66.36 DEG
EMISS ANG 2.51 DEG
PHASE ANG 64.13 DEG
ALPHA 2.22 DEG

PRINCIPAL POINT
LATITUDE 13.39 DEG
LONGITUDE 30.21 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 36.43 DEG AB 043.0 KM
A LONG 100.64 DEG BC 999.9 KM
B LAT -30.07 DEG CD 516.0 KM
B LONG 75.41 DEG DA 341.3 KM
C LAT -15.64 DEG TILT DISTANCE 1.3
C LONG -25.42 DEG
D LAT 36.46 DEG
D LONG -27.00 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 29.46 DEG AB 073.1 KM
A LONG 36.51 DEG BC 253.6 KM
B LAT -3.93 DEG CD 077.0 KM
B LONG 32.81 DEG DA 251.5 KM
C LAT -3.30 DEG TILT DISTANCE 17.4
C LONG 24.45 DEG
D LAT 30.74 DEG
D LONG 26.97 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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04/12/71

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.
4079

TIME 670516
YR.MO.DY 670516
HR.MI.SEC 061130.51

S/C POSITION
ALT 2963.81 KM
ALY RT 0.1750 KM/SEC
LAT 42.79 DEG
LONG 34.33 DEG

S/C ORIENTATION
TILT ANG 2.11 DEG
TILT AZIM 103.79 DEG
SWING ANG 268.07 DEG
N.DEV. 341.18 DEG

PHOTO ILLUMINATION
SUN AZIM 113.35 DEG
INCID ANG 55.50 DEG
EMISS ANG 5.73 DEG
PHASE ANG 71.20 DEG
ALPHA -5.70 DEG

PRINCIPAL POINT
LATITUDE 41.83 DEG
LONGITUDE 39.95 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 15.47 DEG AB 316.3 KM
A LONG 53.85 DEG BC 492.3 KM
B LAT 8.06 DEG CD 217.3 KM
B LONG 86.33 DEG DA 215.7 KM
C LAT 2.63 DEG TILT DISTANCE 2.9
C LONG -20.31 DEG
D LAT 57.82 DEG
D LONG -74.43 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 56.45 DEG AB 354.6 KM
A LONG 59.55 DEG BC 277.6 KM
B LAT 22.65 DEG CD 093.4 KM
B LONG 37.69 DEG DA 279.0 KM
C LAT 25.30 DEG TILT DISTANCE 22.5
C LONG 28.08 DEG
D LAT 60.59 DEG
D LONG 42.79 DEG

MISSION/
FRAME NO.
4080

TIME 670516
YR.MO.DY 670516
HR.MI.SEC 0651 7.01

S/C POSITION
ALT 3479.07 KM
ALY RT 0.2465 KM/SEC
LAT 71.89 DEG
LONG 43.34 DEG

S/C ORIENTATION
TILT ANG 0.84 DEG
TILT AZIM 147.04 DEG
SWING ANG 322.70 DEG
N.DEV. 353.08 DEG

PHOTO ILLUMINATION
SUN AZIM 128.92 DEG
INCID ANG 76.95 DEG
EMISS ANG 2.53 DEG
PHASE ANG 79.33 DEG
ALPHA -2.37 DEG

PRINCIPAL POINT
LATITUDE 79.45 DEG
LONGITUDE 36.99 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 36.49 DEG AB 424.6 KM
A LONG -41.59 DEG BC 297.2 KM
B LAT 31.69 DEG CD 351.5 KM
B LONG -31.23 DEG DA 811.2 KM
C LAT 30.55 DEG TILT DISTANCE 1.1
C LONG -20.48 DEG
D LAT 28.86 DEG
D LONG -61.26 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 81.89 DEG AB 299.3 KM
A LONG 146.07 DEG BC 328.0 KM
B LAT 47.47 DEG CD 295.3 KM
B LONG 50.16 DEG DA 323.2 KM
C LAT 48.24 DEG TILT DISTANCE 8.9
C LONG 34.21 DEG
D LAT 86.23 DEG
D LONG -87.99 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

04/10/71

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MISSION/
FRAME NO.
4082

YR. MO. DY
HR. MI. SEC

TIME
670515
153527.91

S/C POSITION
ALT 3502.94 KM
ALT RT -0.2490 KM/SEC
LAT -71.62 DEG
LONG 12.04 DEG

S/C ORIENTATION
TILT ANG 3.12 DEG
TILT AZIM 196.45 DEG
SWING ANG 272.99 DEG
N.DEV. 5.94 DEG

PHOTO ILLUMINATION
SUN AZIM 59.38 DEG
INCID ANG 81.29 DEG
EMISS ANG 9.44 DEG
PHASE ANG 89.67 DEG
ALPHA -8.41 DEG

PRINCIPAL POINT
LATITUDE -72.37 DEG
LONGITUDE 32.47 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -41.01 DEG AB 669.3 KM
A LONG -41.47 DEG BC 270.4 KM
B LAT -44.60 DEG CD 825.1 KM
B LONG -52.64 DEG DA 794.5 KM
C LAT -28.23 DEG TILT DISTANCE 4.3
C LONG -51.86 DEG
D LAT -5.54 DEG
D LONG -25.27 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -49.25 DEG AB 323.5 KM
A LONG 38.62 DEG BC 336.6 KM
B LAT -80.35 DEG CD 303.3 KM
B LONG 148.64 DEG DA 335.2 KM
C LAT -84.55 DEG TILT DISTANCE 33.2
C LONG -120.73 DEG
D LAT -50.43 DEG
D LONG 21.50 DEG

MISSION/
FRAME NO.
4083

YR. MO. DY
HR. MI. SEC

TIME
670516
163552.11

S/C POSITION
ALT 2971.86 KM
ALT RT -0.1786 KM/SEC
LAT -42.23 DEG
LONG 20.71 DEG

S/C ORIENTATION
TILT ANG 5.15 DEG
TILT AZIM 98.70 DEG
SWING ANG 297.06 DEG
N.DEV. 26.58 DEG

PHOTO ILLUMINATION
SUN AZIM 66.27 DEG
INCID ANG 67.24 DEG
EMISS ANG 14.08 DEG
PHASE ANG 80.18 DEG
ALPHA -13.04 DEG

PRINCIPAL POINT
LATITUDE -42.95 DEG
LONGITUDE 32.82 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -45.29 DEG AB 278.2 KM
A LONG -18.22 DEG BC 221.3 KM
B LAT -52.36 DEG CD 028.9 KM
B LONG -21.07 DEG DA 170.1 KM
C LAT -63.56 DEG TILT DISTANCE 7.2
C LONG -106.82 DEG
D LAT 1.21 DEG
D LONG -27.78 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -24.26 DEG AB 138.5 KM
A LONG 29.09 DEG BC 297.7 KM
B LAT -55.74 DEG CD 111.1 KM
B LONG 58.88 DEG DA 281.3 KM
C LAT -61.68 DEG TILT DISTANCE 55.0
C LONG 43.69 DEG
D LAT -27.96 DEG
D LONG 19.59 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 02/17/71 PAGE 35:

MISSION/
FRAME NO.
4084

YR. MO. DY
HR. MI. SEC
170656.81

TIME
670516
170656.81

S/C POSITION
ALT 2726.81 KM
ALT RT -0.0691 KM/SEC
LAT -14.45 DEG
LONG 23.19 DEG

S/C ORIENTATION
TILT ANG 3.82 DEG
TILT AZIM 124.97 DEG
SWING ANG 310.81 DEG
N.DEV. 5.74 DEG

PHOTO ILLUMINATION
SUN AZIM 82.82 DEG
INCID ANG 66.38 DEG
EMISS ANG 2.12 DEG
PHASE ANG 58.47 DEG
ALPHA -1.59 DEG

PRINCIPAL POINT
LATITUDE -15.19 DEG
LONGITUDE 24.28 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 17.77 DEG AB 510.4 KM
A LONG 67.56 DEG BC 431.9 KM
B LAT -25.72 DEG CD 836.7 KM
B LONG 88.42 DEG DA 996.3 KM
C LAT -45.22 DEG TILT DISTANCE 1.1
C LONG -47.45 DEG
D LAT 20.83 DEG
D LONG -30.35 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 1.91 DEG AB 703.3 KM
A LONG 26.84 DEG HC 254.1 KM
B LAT -31.59 DEG CD 375.4 KM
B LONG 31.28 DEG DA 257.6 KM
C LAT -32.49 DEG TILT DISTANCE 3.7
C LONG 21.41 DEG
D LAT 1.06 DEG
D LONG 19.57 DEG

MISSION/
FRAME NO.
4085

YR. MO. DY
HR. MI. SEC
173549.71

TIME
670516
173549.71

S/C POSITION
ALT 2716.93 KM
ALT RT 0.0587 KM/SEC
LAT 13.88 DEG
LONG 25.04 DEG

S/C ORIENTATION
TILT ANG 0.89 DEG
TILT AZIM 230.27 DEG
SWING ANG 44.26 DEG
N.DEV. 354.22 DEG

PHOTO ILLUMINATION
SUN AZIM 95.24 DEG
INCID ANG 66.48 DEG
EMISS ANG 2.28 DEG
PHASE ANG 64.88 DEG
ALPHA 1.59 DEG

PRINCIPAL POINT
LATITUDE 12.99 DEG
LONGITUDE 23.94 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 34.87 DEG AB 982.3 KM
A LONG 51.77 DEG BC 424.0 KM
B LAT -18.85 DEG CD 503.8 KM
B LONG 63.85 DEG DA 298.8 KM
C LAT -14.54 DEG TILT DISTANCE 1.2
C LONG -25.78 DEG
D LAT 36.29 DEG
D LONG -25.38 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 29.00 DEG AB 501.9 KM
A LONG 30.45 DEG BC 253.4 KM
B LAT -4.31 DEG CD 004.7 KM
B LONG 26.34 DEG DA 253.5 KM
C LAT -3.54 DEG TILT DISTANCE 9.4
C LONG 17.99 DEG
D LAT 29.57 DEG
D LONG 21.01 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 30/10/73 PAGE 352

MISSION/
FRAME NO.
4086

YR. MO. DY 570516
HR. MI. SEC 1613 2.31

S/C POSITION
ALT 2956.11 KM
ALT RT 0.1744 KM/SEC
LAT 42.80 DEG
LONG 27.61 DEG

S/C ORIENTATION
TILT ANG 1.90 DEG
TILT AZIM 122.97 DEG
SWING ANG 295.75 DEG
N.DEV. 341.36 DEG

PHOTO ILLUMINATION
SUN AZIM 111.57 DEG
INCID ANG 66.34 DEG
EMISS ANG 5.13 DEG
PHASE ANG 71.35 DEG
ALPHA -5.92 DEG

PRINCIPAL POINT
LATITUDE 47.02 DEG
LONGITUDE 31.25 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 17.27 DEG AB 259.5 KM
A LONG 59.22 DEG BC 643.7 KM
B LAT -5.82 DEG CD 495.0 KM
B LONG 78.03 DEG DA 211.4 KM
C LAT 13.27 DEG TILT DISTANCE 2.6
C LONG -22.66 DEG
D LAT 57.54 DEG
D LONG -80.57 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 55.56 DEG AB 103.9 KM
A LONG 49.84 DEG BC 277.9 KM
B LAT 21.70 DEG CD 391.2 KM
B LONG 29.89 DEG DA 275.1 KM
C LAT 24.34 DEG TILT DISTANCE 23.2
C LONG 20.34 DEG
D LAT 59.58 DEG
D LONG 34.59 DEG

MISSION/
FRAME NO.
4088

YR. MO. DY 670517
HR. MI. SEC 243632.21

S/C POSITION
ALT 2973.34 KM
ALT RT -0.1804 KM/SEC
LAT -42.26 DEG
LONG 14.19 DEG

S/C ORIENTATION
TILT ANG 4.59 DEG
TILT AZIM 96.82 DEG
SWING ANG 295.32 DEG
N.DEV. 25.77 DEG

PHOTO ILLUMINATION
SUN AZIM 67.75 DEG
INCID ANG 68.34 DEG
EMISS ANG 12.53 DEG
PHASE ANG 80.04 DEG
ALPHA -11.76 DEG

PRINCIPAL POINT
LATITUDE -42.77 DEG
LONGITUDE 24.94 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 144.51 DEG AB 303.3 KM
A LONG -26.22 DEG BC 222.2 KM
B LAT -51.59 DEG CD 544.3 KM
B LONG -25.11 DEG DA 278.1 KM
C LAT -61.22 DEG TILT DISTANCE 6.4
C LONG -105.14 DEG
D LAT 21.05 DEG
D LONG -37.62 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -23.94 DEG AB 131.0 KM
A LONG 21.45 DEG BC 201.4 KM
B LAT -55.72 DEG CD 107.0 KM
B LONG 49.93 DEG DA 286.4 KM
C LAT -51.44 DEG TILT DISTANCE 49.0
C LONG 34.82 DEG
D LAT -27.54 DEG
D LONG 11.96 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/10/71 PAGE 353

MISSION/
FRAME NO.
4089

YR,MO,DY 670817
HR,MI,SEC 051244.31

S/C POSITION
ALT 2724.42 KM
ALT RT -0.0710 KM/SEC
LAT -14.45 DEG
LONG 16.59 DEG

S/C ORIENTATION
TILT ANG 0.45 DEG
TILT AZIM 154.35 DEG
SWING ANG 340.12 DEG
N.DEV. 5.85 DEG

PHOTO ILLUMINATION
SUN AZIM 83.23 DEG
INCLD ANG 68.08 DEG
EMISS ANG 1.16 DEG
PHASE ANG 68.46 DEG
ALPHA -0.39 DEG

PRINCIPAL POINT
LATITUDE -15.09 DEG
LONGITUDE 16.90 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 16.81 DEG AB 442.8 KM
A LONG 57.82 DEG BC 369.9 KM
B LAT -25.67 DEG CD 418.6 KM
B LONG 74.24 DEG DA 972.3 KM
C LAT -38.52 DEG TILT DISTANCE
C LONG -36.80 DEG 0.6
D LAT 18.54 DEG
D LONG -37.40 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.00 DEG AB 095.9 KM
A LONG 19.37 DEG BC 253.4 KM
B LAT -31.42 DEG CD 005.2 KM
B LONG 23.81 DEG DA 251.5 KM
C LAT -32.37 DEG TILT DISTANCE
C LONG 14.02 DEG 4.8
D LAT 1.17 DEG
D LONG 11.10 DEG

MISSION/
FRAME NO.
4090

YR,MO,DY 670517
HR,MI,SEC 054134.61

S/C POSITION
ALT 2711.29 KM
ALT RT 0.0572 KM/SEC
LAT 13.89 DEG
LONG 18.40 DEG

S/C ORIENTATION
TILT ANG 1.57 DEG
TILT AZIM 266.96 DEG
SWING ANG 81.96 DEG
N.DEV. 355.59 DEG

PHOTO ILLUMINATION
SUN AZIM 95.02 DEG
INCLD ANG 68.43 DEG
EMISS ANG 4.03 DEG
PHASE ANG 64.44 DEG
ALPHA 3.98 DEG

PRINCIPAL POINT
LATITUDE 13.75 DEG
LONGITUDE 15.87 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 39.30 DEG AB 022.6 KM
A LONG 86.83 DEG BC 974.3 KM
B LAT -31.58 DEG CD 421.9 KM
B LONG 43.56 DEG DA 469.5 KM
C LAT -14.01 DEG TILT DISTANCE
C LONG -41.53 DEG 2.1
D LAT 35.43 DEG
D LONG -52.09 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 29.96 DEG AB 997.9 KM
A LONG 21.89 DEG BC 252.7 KM
B LAT -3.30 DEG CD 004.9 KM
B LONG 18.56 DEG DA 251.7 KM
C LAT -2.81 DEG TILT DISTANCE
C LONG 10.22 DEG 16.7
D LAT 30.78 DEG
D LONG 12.30 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/10/71 PAGE 354

MISSION/
FRAME NO.
4091
YR. MO. DY
670517
HR. MI. SEC
061436.81

S/C POSITION
ALT 2947.29 KM
ALT RT 0.1736 KM/SEC
LAT 42.80 DEG
LONG 20.90 DEG

S/C ORIENTATION
TILT ANG 2.14 DEG
TILT AZIM 100.54 DEG
SWING ANG 265.21 DEG
N.DEV. 341.48 DEG

PHOTO ILLUMINATION
SUN AZIM 112.55 DEG
INCLD ANG. 66.30 DEG
EMISS ANG 5.78 DEG
PHASE ANG 72.01 DEG
ALPHA -5.72 DEG

PRINCIPAL POINT
LATITUDE 42.03 DEG
LONGITUDE 25.73 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 16.30 DEG AB 313.3 KM
A LONG 80.32 DEG BC 468.1 KM
B LAT 9.07 DEG CD 229.2 KM
B LONG 72.72 DEG DA 277.8 KM
C LAT 0.82 DEG TILT DISTANCE 2.9
C LONG -33.74 DEG
D LAT 56.27 DEG
D LONG -91.64 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 55.66 DEG AB 098.4 KM
A LONG 45.11 DEG BC 275.7 KM
B LAT 23.00 DEG CD 087.1 KM
B LONG 24.49 DEG DA 276.7 KM
C LAT 25.58 DEG TILT DISTANCE 22.8
C LONG 14.90 DEG
D LAT 60.72 DEG
D LONG 29.28 DEG

MISSION/
FRAME NO.
4092
YR. MO. DY
670517
HR. MI. SEC
065356.91

S/C POSITION
ALT 3457.20 KM
ALT RT 0.2469 KM/SEC
LAT 71.92 DEG
LONG 29.48 DEG

S/C ORIENTATION
TILT ANG 0.58 DEG
TILT AZIM 129.79 DEG
SWING ANG 306.46 DEG
N.DEV. 354.09 DEG

PHOTO ILLUMINATION
SUN AZIM 127.43 DEG
INCLD ANG 77.79 DEG
EMISS ANG 1.73 DEG
PHASE ANG 79.51 DEG
ALPHA -1.72 DEG

PRINCIPAL POINT
LATITUDE 71.16 DEG
LONGITUDE 32.23 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 15.80 DEG AB 872.7 KM
A LONG 114.76 DEG BC 293.3 KM
B LAT 32.42 DEG CD 966.2 KM
B LONG -44.73 DEG DA 816.3 KM
C LAT 16.05 DEG TILT DISTANCE 0.8
C LONG -39.03 DEG
D LAT 27.86 DEG
D LONG -74.83 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 82.08 DEG AB 289.1 KM
A LONG 138.66 DEG BC 324.5 KM
B LAT 48.57 DEG CD 285.8 KM
B LONG 37.12 DEG DA 322.1 KM
C LAT 49.21 DEG TILT DISTANCE 6.1
C LONG 20.80 DEG
D LAT 85.60 DEG
D LONG -104.66 DEG

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/10/71 PAGE 355

MISSION/ 4054
 FRAME NO.
 YR. MO. DY 670517
 HR. MI. SEC 1600 E.11
 TIME
 S/C POSITION
 ALT 3516.92 KM
 ALT RT -0.2515 KM/SEC
 LAT -71.70 DEG
 LONG -0.67 DEG
 S/C ORIENTATION
 TILT ANG 3.17 DEG
 TILT AZIM 103.51 DEG
 SWING ANG 270.54 DEG
 N.DEV. 5.79 DEG
 PHOTO ILLUMINATION
 SUN AZIM 59.44 DEG
 INCID ANG 81.19 DEG
 EMISS ANG 9.52 DEG
 PHASE ANG 89.98 DEG
 ALPHA -8.81 DEG
 PRINCIPAL POINT
 LATITUDE -72.11 DEG
 LONGITUDE 20.19 DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -41.01 DEG AB 084.3 KM
 A LONG -54.28 DEG BC 271.3 KM
 B LAT -44.72 DEG CD 868.5 KM
 B LONG -65.63 DEG DA 824.3 KM
 C LAT -28.23 DEG TILT DISTANCE 4.4
 C LONG -105.27 DEG
 D LAT -5.55 DEG
 D LONG -38.48 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -48.77 DEG AB 329.4 KM
 A LONG 25.84 DEG BC 337.8 KM
 B LAT -80.17 DEG CD 305.6 KM
 B LONG 133.55 DEG DA 337.5 KM
 C LAT -84.86 DEG TILT DISTANCE 33.6
 C LONG -135.37 DEG
 D LAT -50.07 DEG
 D LONG 8.77 DEG

MISSION/
 FRAME NO.
 4095

YR. MO. DY 670517
 HR. MI. SEC 164053.41
 TIME
 S/C POSITION
 ALT 2975.52 KM
 ALT RT -0.1824 KM/SEC
 LAT -42.27 DEG
 LONG 7.54 DEG
 S/C ORIENTATION
 TILT ANG 4.71 DEG
 TILT AZIM 95.63 DEG
 SWING ANG 293.90 DEG
 N.DEV. 25.69 DEG
 PHOTO ILLUMINATION
 SUN AZIM 67.90 DEG
 INCID ANG 68.38 DEG
 EMISS ANG 12.87 DEG
 PHASE ANG 80.50 DEG
 ALPHA -12.19 DEG
 PRINCIPAL POINT
 LATITUDE -42.54 DEG
 LONGITUDE 18.79 DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -44.38 DEG AB 297.3 KM
 A LONG -32.18 DEG BC 221.6 KM
 B LAT -51.46 DEG CD 034.7 KM
 B LONG -34.57 DEG DA 228.3 KM
 C LAT -63.29 DEG TILT DISTANCE 6.5
 C LONG -117.61 DEG
 D LAT 2.08 DEG
 D LONG -42.63 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -23.72 DEG AB 132.6 KM
 A LONG 15.25 DEG BC 294.3 KM
 B LAT -55.57 DEG CD 107.6 KM
 B LONG 43.65 DEG DA 281.4 KM
 C LAT -61.27 DEG TILT DISTANCE 50.3
 C LONG 28.52 DEG
 D LAT -27.34 DEG
 D LONG 5.75 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

MISSION/
FRAME NO.
4096

TIME
YR.MO.DY
HR.MI.SEC

S/C POSITION
ALT 2722.28 KM
ALT RT -0.0732 KM/SEC
LAT -14.45 DEG
LONG 9.99 DEG

S/C ORIENTATION
TILT ANG 0.62 DEG
TILT AZIM 138.22 DEG
SWING ANG 323.90 DEG
N.DEV. 5.86 DEG

PHOTO ILLUMINATION
SUN AZIM 83.22 DEG
INCID ANG 68.20 DEG
EMISS ANG 1.60 DEG
PHASE ANG 69.13 DEG
ALPHA -0.93 DEG

PRINCIPAL POINT
LATITUDE -15.18 DEG
LONGITUDE 10.67 DEG

CORNER COORDINATE SIDE LENGTH
A LAT 17.05 DEG AB 464.2 KM
A LONG 52.33 DEG BC 384.2 KM
B LAT -29.73 DEG CD 403.8 KM
B LONG 70.28 DEG DA 007.5 KM
C LAT -38.54 DEG TILT DISTANCE 0.8
C LONG -41.87 DEG
D LAT 20.10 DEG
D LONG -44.59 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 1.89 DEG AB 005.8 KM
A LONG 13.15 DEG BC 253.4 KM
B LAT -31.52 DEG CD 084.1 KM
B LONG 17.62 DEG DA 251.2 KM
C LAT -32.46 DEG TILT DISTANCE 6.6
C LONG 7.81 DEG
D LAT 1.05 DEG
D LONG 4.90 DEG

MISSION/
FRAME NO.
4097

TIME
YR.MO.DY
HR.MI.SEC

S/C POSITION
ALT 2705.31 KM
ALT RT 0.0554 KM/SEC
LAT 13.90 DEG
LONG 11.76 DEG

S/C ORIENTATION
TILT ANG 1.44 DEG
TILT AZIM 245.81 DEG
SWING ANG 60.19 DEG
N.DEV. 35.82 DEG

PHOTO ILLUMINATION
SUN AZIM 94.67 DEG
INCID ANG 68.45 DEG
EMISS ANG 3.69 DEG
PHASE ANG 65.25 DEG
ALPHA 3.19 DEG

PRINCIPAL POINT
LATITUDE 12.97 DEG
LONGITUDE 9.65 DEG

CORNER COORDINATE SIDE LENGTH
A LAT 37.81 DEG AB 987.8 KM
A LONG 75.05 DEG BC 971.0 KM
B LAT -31.18 DEG CD 431.2 KM
B LONG 57.80 DEG DA 335.8 KM
C LAT -14.70 DEG TILT DISTANCE 2.0
C LONG -47.28 DEG
D LAT 36.00 DEG
D LONG -48.58 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 28.95 DEG AB 996.8 KM
A LONG 15.87 DEG BC 253.0 KM
B LAT -4.22 DEG CD 002.4 KM
B LONG 12.16 DEG DA 249.7 KM
C LAT -3.61 DEG TILT DISTANCE 15.3
C LONG 3.81 DEG
D LAT 29.86 DEG
D LONG 6.45 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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04/10/71

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.
4098

TIME
670E17
181E25.41

S/C POSITION
ALT 2937.53 KM
ALT RT 0.1725 KM/SEC
LAT 42.81 DEG
LONG 14.21 DEG

S/C ORIENTATION
TILT ANG 2.19 DEG
TILT AZIM 118.24 DEG
SWING ANG 282.30 DEG
N.DEV. 341.30 DEG

PHOTO ILLUMINATION
SUN AZIM 111.24 DEG
INCID ANG 66.64 DEG
EMISS ANG 5.89 DEG
PHASE ANG 72.44 DEG
--ALPHA --5.81 DEG

PRINCIPAL POINT
LATITUDE 40.97 DEG
LONGITUDE 18.53 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 14.89 DEG AB 301.9 KM
A LONG 86.49 DEG BC 466.9 KM
B LAT 7.58 DEG CD 506.9 KM
B LONG 64.63 DEG DA 188.9 KM
C LAT 1.80 DEG TILT DISTANCE
C LONG -40.43 DEG 3.0
D LAT 58.50 DEG
D LONG -95.45 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 55.41 DEG AB 095.0 KM
A LONG 37.79 DEG BC 276.6 KM
B LAT 21.77 DEG CD 083.8 KM
B LONG 17.22 DEG DA 274.0 KM
C LAT 24.43 DEG TILT DISTANCE
C LONG 7.71 DEG 23.3
D LAT 59.41 DEG
D LONG 21.96 DEG

MISSION/
FRAME NO.
4099

TIME
670E17
232421.21

S/C POSITION
ALT 6142.23 KM
ALT RT 0.0098 KM/SEC
LAT 0.11 DEG
LONG -172.38 DEG

S/C ORIENTATION
TILT ANG 2.36 DEG
TILT AZIM 293.95 DEG
SWING ANG 293.86 DEG
N.DEV. 180.53 DEG

PHOTO ILLUMINATION
SUN AZIM 271.47 DEG
INCID ANG 105.12 DEG
EMISS ANG 10.77 DEG
PHASE ANG 115.04 DEG
ALPHA --9.88 DEG

PRINCIPAL POINT
LATITUDE 3.51 DEG
LONGITUDE 179.92 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0. DEG AB 0. KM
A LONG 0. DEG BC 0. KM
B LAT 0. DEG CD 0. KM
B LONG 0. DEG DA 0. KM
C LAT 0. DEG TILT DISTANCE
C LONG 0. DEG 3.2
D LAT 0. DEG
D LONG 0. DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT. -38.26 DEG AB 483.61 KM
A LONG 163.83 DEG BC 675.91 KM
B LAT 52.69 DEG CD 394.3 KM
B LONG 154.23 DEG DA 610.9 KM
C LAT 49.98 DEG TILT DISTANCE
C LONG -169.72 DEG 25.1
D LAT -37.21 DEG
D LONG -170.50 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/10/71 PAGE 358

MISSION/
FRAME NO.
4100

YR.MO.DY 470512
HR.MI.SEC 044236.71

S/C POSITION
ALT 2978.20 KM
ALT RT -0.1845 KM/SEC
LAT -42.26 DEG
LONG 1.05 DEG

S/C ORIENTATION
TILT ANG 4.78 DEG
TILT AZIM 96.97 DEG
SWING ANG 295.36 DEG
N.DEV. 25.98 DEG

PHOTO ILLUMINATION
SUN AZIM 68.05 DEG
INCID ANG 68.65 DEG
EMISS ANG 13.07 DEG
PHASE ANG 80.89 DEG
ALPHA -12.30 DEG

PRINCIPAL POINT
LATITUDE -42.72 DEG
LONGITUDE 12.29 DEG

MEDIUM RESOLUTION

CORNER COORDINATE
A LAT -44.68 DEG
A LONG -32.84 DEG
B LAT -51.76 DEG
B LONG -41.70 DEG
C LAT -43.54 DEG
C LONG -123.54 DEG
D LAT 3.23 DEG
D LONG -50.11 DEG

SIDE LENGTH
AB 299.9 KM
BC 222.1 KM
CD 013.9 KM
DA 274.6 KM
TILT DISTANCE 6.6

HIGH RESOLUTION

CORNER COORDINATE
A LAT -23.93 DEG
A LONG 8.74 DEG
B LAT -55.69 DEG
B LONG 37.62 DEG
C LAT -61.48 DEG
C LONG 22.45 DEG
D LAT -27.57 DEG
D LONG -0.77 DEG

SIDE LENGTH
AB 135.3 KM
BC 295.3 KM
CD 110.0 KM
DA 281.4 KM
TILT DISTANCE 51.0

MISSION/
FRAME NO.
4101

YR.MO.DY 670512
HR.MI.SEC 051443.91

S/C POSITION
ALT 2720.45 KM
ALT RT -0.0756 KM/SEC
LAT -14.45 DEG
LONG 3.38 DEG

S/C ORIENTATION
TILT ANG 0.55 DEG
TILT AZIM 150.14 DEG
SWING ANG 336.12 DEG
N.DEV. 6.10 DEG

PHOTO ILLUMINATION
SUN AZIM 83.42 DEG
INCID ANG 68.90 DEG
EMISS ANG 1.41 DEG
PHASE ANG 69.46 DEG
ALPHA -0.57 DEG

PRINCIPAL POINT
LATITUDE -15.19 DEG
LONGITUDE 3.83 DEG

MEDIUM RESOLUTION

CORNER COORDINATE
A LAT 16.78 DEG
A LONG 44.62 DEG
B LAT -29.58 DEG
B LONG 61.53 DEG
C LAT -39.21 DEG
C LONG -49.53 DEG
D LAT 15.82 DEG
D LONG -52.32 DEG

SIDE LENGTH
AB 447.6 KM
BC 373.0 KM
CD 412.0 KM
DA 029.8 KM
TILT DISTANCE 0.7

HIGH RESOLUTION

CORNER COORDINATE
A LAT 1.87 DEG
A LONG -31.49 DEG
B LAT -31.49 DEG
B LONG 10.83 DEG
C LAT -32.48 DEG
C LONG 1.04 DEG
D LAT 1.00 DEG
D LONG -2.02 DEG

SIDE LENGTH
AB 004.7 KM
BC 253.2 KM
CD 003.7 KM
DA 251.0 KM
TILT DISTANCE 5.8

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

MISSION/
 FRAME NO.
 4132

YR.MO.DY 670518
 HR.MI.SEC 054527.31

TIME 054527.31

S/C POSITION
 ALT 2699.16 KM
 LAT 0.0532 KM/SEC
 LONG 13.88 DEG
 S.14 DEG

S/C ORIENTATION
 TILT ANG 1.12 DEG
 TILT AZIM 237.85 DEG
 SWING ANG 52.76 DEG
 N.DEV. 355.23 DEG

PHOTO ILLUMINATION
 SUN AZIM 94.67 DEG
 INCID ANG 68.35 DEG
 EMISS ANG 2.85 DEG
 PHASE ANG 66.09 DEG
 ALPHA 2.25 DEG

PRINCIPAL POINT
 LATITUDE 12.96 DEG
 LONGITUDE 3.63 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 32.62 DEG AB 929.0 KM
 A LONG 70.26 DEG BC 588.1 KM
 B LAT -30.37 DEG CD 599.4 KM
 B LONG 53.02 DEG DA 289.3 KM
 C LAT -16.32 DEG TILT DISTANCE 1.5
 C LONG -51.52 DEG
 D LAT 35.50 DEG
 D LONG -50.69 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 29.96 DEG AB 994.8 KM
 A LONG 9.74 DEG BC 251.9 KM
 B LAT -4.18 DEG CD 998.8 KM
 B LONG 6.29 DEG DA 248.9 KM
 C LAT -3.59 DEG TILT DISTANCE 11.9
 C LONG -2.03 DEG
 D LAT 29.77 DEG
 D LONG 0.35 DEG

MISSION/
 FRAME NO.
 4133

YR.MO.DY 670518
 HR.MI.SEC 061615.41

TIME 061615.41

S/C POSITION
 ALT 2526.59 KM
 LAT 0.1710 KM/SEC
 LONG 42.76 DEG
 7.57 DEG

S/C ORIENTATION
 TILT ANG 1.72 DEG
 TILT AZIM 107.73 DEG
 SWING ANG 272.39 DEG
 N.DEV. 342.22 DEG

PHOTO ILLUMINATION
 SUN AZIM 110.71 DEG
 INCID ANG 67.72 DEG
 EMISS ANG 4.52 DEG
 PHASE ANG 72.35 DEG
 ALPHA -4.62 DEG

PRINCIPAL POINT
 LATITUDE 41.81 DEG
 LONGITUDE 11.28 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 20.80 DEG AB 973.9 KM
 A LONG 77.74 DEG BC 555.5 KM
 B LAT -2.08 DEG CD 936.7 KM
 B LONG 55.14 DEG DA 205.9 KM
 C LAT 1.55 DEG TILT DISTANCE 2.4
 C LONG -47.60 DEG
 D LAT 56.41 DEG
 D LONG -100.58 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 56.50 DEG AB 888.4 KM
 A LONG 29.78 DEG BC 273.5 KM
 B LAT 22.88 DEG CD 079.5 KM
 B LONG 19.24 DEG DA 273.1 KM
 C LAT 25.33 DEG TILT DISTANCE 18.3
 C LONG 7.71 DEG
 D LAT 63.35 DEG
 D LONG 14.13 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.
4104

YR.MO.DY 670512
HR.MI.SEC 0657 7.91

S/C POSITION
ALT 3427.69 KM
ALT RT 0.2466 KM/SEC
LAT 71.87 DEG
LONG 15.88 DEG

S/C ORIENTATION
TILT ANG 0.85 DEG
TILT AZIM 153.63 DEG
SWING ANG 330.36 DEG
N.DEV. 354.65 DEG

PHOTO ILLUMINATION
SUN AZIM 125.41 DEG
INCID ANG 77.78 DEG
EMISS ANG 2.53 DEG
PHASE ANG 79.96 DEG
ALPHA -2.19 DEG

PRINCIPAL POINT
LATITUDE 70.35 DEG
LONGITUDE 18.13 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 26.11 DEG AB 458.0 KM
A LONG 58.10 DEG BC 918.4 KM
B LAT 16.66 DEG CD 588.7 KM
B LONG 67.73 DEG DA 640.8 KM
C LAT 14.62 DEG TILT DISTANCE
C LONG -52.90 DEG 1.1
D LAT 32.27 DEG
D LONG -65.81 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 82.64 DEG AB 278.9 KM
A LONG 116.93 DEG BC 323.1 KM
B LAT 47.77 DEG CD 275.9 KM
B LONG 23.18 DEG DA 317.9 KM
C LAT 48.36 DEG TILT DISTANCE
C LONG 7.20 DEG 9.0
D LAT 86.23 DEG
D LONG -103.96 DEG

MISSION/
FRAME NO.
4106

YR.MO.DY 670512
HR.MI.SEC 1604 5.71

S/C POSITION
ALT 3534.50 KM
ALT RT -0.2541 KM/SEC
LAT -71.71 DEG
LONG -13.37 DEG

S/C ORIENTATION
TILT ANG 3.44 DEG
TILT AZIM 104.48 DEG
SWING ANG 271.99 DEG
N.DEV. 9.12 DEG

PHOTO ILLUMINATION
SUN AZIM 57.96 DEG
INCID ANG 80.95 DEG
EMISS ANG 10.49 DEG
PHASE ANG 90.39 DEG
ALPHA -9.57 DEG

PRINCIPAL POINT
LATITUDE -72.16 DEG
LONGITUDE 9.45 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -41.99 DEG AB 679.3 KM
A LONG -67.67 DEG BC 271.0 KM
B LAT -45.69 DEG CD 873.3 KM
B LONG -78.39 DEG DA 741.9 KM
C LAT -25.64 DEG TILT DISTANCE
C LONG -119.05 DEG 4.8
D LAT -12.75 DEG
D LONG -50.40 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -48.61 DEG AB 399.0 KM
A LONG 13.83 DEG BC 341.7 KM
B LAT -79.22 DEG CD 312.7 KM
B LONG 119.97 DEG DA 340.6 KM
C LAT -84.92 DEG TILT DISTANCE
C LONG -157.46 DEG 36.6
D LAT -50.19 DEG
D LONG -3.34 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.
4107

TIME
670E18
164442.31

S/C POSITION
ALT 2981.85 KM
ALT RT -0.1868 KM/SEC
LAT -42.26 DEG
LONG -5.42 DEG

S/C ORIENTATION
TILT ANG 5.24 DEG
TILT AZIM 94.94 DEG
SWING ANG 292.89 DEG
N.DEV. 25.87 DEG

PHOTO ILLUMINATION
SUN AZIM 57.93 DEG
INCID ANG 68.36 DEG
EMISS ANG 13.80 DEG
PHASE ANG 81.46 DEG
ALPHA -13.16 DEG

PRINCIPAL POINT
LATITUDE -42.41 DEG
LONGITUDE -5.45 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -44.45 DEG AB 287.3 KM
A LONG -44.13 DEG BC 221.3 KM
B LAT -51.53 DEG CD 325.8 KM
B LONG -46.80 DEG DA 322.2 KM
C LAT -64.79 DEG TILT DISTANCE 7.3
C LONG -129.55 DEG
D LAT 5.27 DEG
D LONG -56.38 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -23.51 DEG AB 138.5 KM
A LONG 2.97 DEG BC 297.3 KM
B LAT -55.37 DEG CD 111.2 KM
B LONG 31.75 DEG DA 283.6 KM
C LAT -61.15 DEG TILT DISTANCE 53.8
C LONG 16.55 DEG
D LAT -27.21 DEG
D LONG -6.56 DEG

MISSION/
FRAME NO.
4108

TIME
670E18
171651.01

S/C POSITION
ALT 2719.03 KM
ALT RT -0.0782 KM/SEC
LAT -14.45 DEG
LONG -3.17 DEG

S/C ORIENTATION
TILT ANG 0.51 DEG
TILT AZIM 77.03 DEG
SWING ANG 262.53 DEG
N.DEV. 5.71 DEG

PHOTO ILLUMINATION
SUN AZIM 83.78 DEG
INCID ANG 68.87 DEG
EMISS ANG 1.32 DEG
PHASE ANG 70.18 DEG
ALPHA -1.31 DEG

PRINCIPAL POINT
LATITUDE -14.25 DEG
LONGITUDE -2.36 DEG

MEDIUM RESOLUTION'

CORNER COORDINATE SIDE LENGTH
A LAT 19.64 DEG AB 464.2 KM
A LONG 41.85 DEG BC 336.6 KM
B LAT -28.68 DEG CD 505.4 KM
B LONG 54.72 DEG DA 657.3 KM
C LAT -44.49 DEG TILT DISTANCE 0.7
C LONG -48.14 DEG
D LAT 21.56 DEG
D LONG -58.04 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.94 DEG AB 204.5 KM
A LONG 0.20 DEG BC 251.9 KM
B LAT -30.45 DEG CD 002.2 KM
B LONG 4.44 DEG DA 252.2 KM
C LAT -31.35 DEG TILT DISTANCE 5.4
C LONG -5.21 DEG
D LAT 2.09 DEG
D LONG -9.10 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/10/71 PAGE 362

MISSION/
FRAME NO.
4109

YR.MO.DY 670518
HR.MI.SEC 174731.71

S/C POSITION
ALT 2693.06 KM
ALT PT C-3508 KM/SEC
LAT 13.89 DEG
LONG -2.48 DEG

S/C ORIENTATION
TILT ANG 1.31 DEG
TILT AZIM 267.35 DEG
SWING ANG 81.87 DEG
N.DEV. 355.02 DEG

PHOTO ILLUMINATION
SUN AZIM 94.69 DEG
INCID ANG 69.47 DEG
EMISS ANG 3.35 DEG
PHASE ANG 66.16 DEG
ALPHA 3.32 DEG

PRINCIPAL POINT
LATITUDE 13.79 DEG
LONGITUDE -3.58 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 38.28 DEG AB 916.1 KM
A LONG 87.44 DEG BC 922.7 KM
B LAT -30.63 DEG CD 503.7 KM
B LONG 43.26 DEG DA 593.1 KM
C LAT -14.75 DEG TILT DISTANCE 1.8
C LONG -55.82 DEG
D LAT 37.11 DEG
D LONG -66.88 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 29.83 DEG AB 991.2 KM
A LONG 2.62 DEG BC 250.6 KM
B LAT -3.16 DEG CD 997.0 KM
B LONG -1.04 DEG DA 249.7 KM
C LAT -2.57 DEG TILT DISTANCE 13.9
C LONG -9.31 DEG
D LAT 30.72 DEG
D LONG -6.88 DEG

MISSION/
FRAME NO.
4110

YR.MO.DY 670518
HR.MI.SEC 182012.71

S/C POSITION
ALT 2515.84 KM
ALT RT 0.1696 KM/SEC
LAT 42.77 DEG
LONG 0.86 DEG

S/C ORIENTATION
TILT ANG 1.09 DEG
TILT AZIM 94.72 DEG
SWING ANG 259.91 DEG
N.DEV. 342.52 DEG

PHOTO ILLUMINATION
SUN AZIM 109.58 DEG
INCID ANG 69.24 DEG
EMISS ANG 2.93 DEG
PHASE ANG 72.10 DEG
ALPHA -2.86 DEG

PRINCIPAL POINT
LATITUDE 42.59 DEG
LONGITUDE 3.35 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 25.72 DEG AB 913.0 KM
A LONG 65.10 DEG BC 417.9 KM
B LAT 4.33 DEG CD 510.6 KM
B LONG 42.44 DEG DA 900.3 KM
C LAT 14.43 DEG TILT DISTANCE 1.5
C LONG -50.69 DEG
D LAT 57.52 DEG
D LONG -87.77 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 57.36 DEG AB 081.7 KM
A LONG 21.88 DEG BC 270.8 KM
B LAT 23.90 DEG CD 076.2 KM
B LONG 2.33 DEG DA 271.9 KM
C LAT 26.20 DEG TILT DISTANCE 11.6
C LONG -7.22 DEG
D LAT 61.19 DEG
D LONG 5.92 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA.

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/10/71 PAGE 363

MISSION/
FRAME NO. 4112
YR.MO.DY 67CE1S
FR.MI.SEC 04449.51

S/C POSITION ALT 2986.04 KH
ALT RT -0.1891 KM/SEC
LAT -42.26 DEG
LONG -12.09 DEG

S/C ORIENTATION TILT ANG 4.56 DEG
TILT AZIM 95.89 DEG
SWING ANG 294.35 DEG
N.DEV. 25.58 DEG

PHOTO ILLUMINATION SUN AZIM 69.16 DEG
INCID ANG 69.58 DEG
EMISS ANG 12.50 DEG
PHASE ANG 81.41 DEG
ALPHA -11.88 DEG

PRINCIPAL POINT LATITUDE -42.58 DEG
LONGITUDE -1.35 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -44.32 DEG AB 316.2 KM
A LONG -52.63 DEG BC 223.0 KM
B LAT -51.43 DEG CD 042.8 KM
B LONG -55.51 DEG DA 253.8 KM
C LAT -61.52 DEG TILT DISTANCE 6.3
C LONG -138.77 DEG
D LAT 2.01 DEG
D LONG -63.25 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -23.71 DEG AB 135.4 KM
A LONG -4.82 DEG BC 294.5 KM
B LAT -55.66 DEG CD 111.2 KM
B LONG 23.64 DEG DA 281.9 KM
C LAT -61.38 DEG TILT DISTANCE 48.7
C LONG 8.48 DEG
D LAT -27.32 DEG
D LONG -14.34 DEG

MISSION/
FRAME NO. 4113
YR.MO.DY 67CE19
HR.MI.SEC 0515 0.01

S/C POSITION ALT 2718.03 KM
ALT RT -0.0809 KM/SEC
LAT -14.45 DEG
LONG -9.81 DEG

S/C ORIENTATION TILT ANG 0.22 DEG
TILT AZIM 123.78 DEG
SWING ANG 309.59 DEG
N.DEV. 5.89 DEG

PHOTO ILLUMINATION SUN AZIM 83.92 DEG
INCID ANG 69.90 DEG
EMISS ANG 0.56 DEG
PHASE ANG 70.34 DEG
ALPHA -0.43 DEG

PRINCIPAL POINT LATITUDE -14.64 DEG
LONGITUDE -9.51 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 17.75 DEG AB 433.0 KM
A LONG 31.50 DEG BC 336.8 KM
B LAT -25.05 DEG CD 408.5 KM
B LONG 46.04 DEG DA 000.5 KM
C LAT -28.18 DEG TILT DISTANCE 0.3
C LONG -61.39 DEG
D LAT 15.22 DEG
D LONG -64.77 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.49 DEG AB 003.2 KM
A LONG -7.05 DEG BC 252.1 KM
B LAT -30.84 DEG CD 002.5 KM
B LONG -2.87 DEG DA 251.5 KM
C LAT -31.80 DEG TILT DISTANCE 2.3
C LONG -12.36 DEG
D LAT 1.65 DEG
D LONG -15.23 DEG

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MISSION/
FRAME NO.

4114
YR. MO. DY
HR. MI. SEC

TIME
670519
054538.21

S/C POSITION
ALT 2687.23 KM
ALT RT 0.0484 KM/SEC
LAT 13.89 DEG
LONG -8.09 DEG

S/C ORIENTATION
TILT ANG 1.83 DEG
TILT AZIM 261.76 DEG
SWING ANG 76.86 DEG
N.DEV. 355.55 DEG

PHOTO ILLUMINATION
SUN AZIM 94.22 DEG
INCID ANG 70.68 DEG
EMISS ANG 4.56 DEG
PHASE ANG 65.15 DEG
ALPHA 4.53 DEG

PRINCIPAL POINT
LATITUDE 13.45 DEG
LONGITUDE -13.97 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT. 39.39 DEG AB 841.5 KM
A LONG 53.50 DEG BC 508.2 KM
B LAT -31.42 DEG CD 378.3 KM
B LONG 35.42 DEG DA 414.8 KM
C LAT -13.83 DEG TILT DISTANCE
C LONG -65.27 DEG 2.5
D LAT 34.91 DEG
D LONG -75.50 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 29.47 DEG AB 588.9 KM
A LONG -5.95 DEG BC 251.2 KM
B LAT -3.47 DEG CD 996.7 KM
B LONG -8.33 DEG DA 249.3 KM
C LAT -3.00 DEG TILT DISTANCE
C LONG -15.82 DEG 19.4
D LAT 33.30 DEG
D LONG -14.50 DEG

MISSION/
FRAME NO.

4115
YR. MO. DY
HR. MI. SEC

TIME
670519
042212.31

S/C POSITION
ALT 2905.18 KM
ALT RT 0.1680 KM/SEC
LAT 42.75 DEG
LONG -5.70 DEG

S/C ORIENTATION
TILT ANG 1.36 DEG
TILT AZIM 101.26 DEG
SWING ANG 266.58 DEG
N.DEV. 343.29 DEG

PHOTO ILLUMINATION
SUN AZIM 129.53 DEG
INCID ANG 69.05 DEG
EMISS ANG 3.55 DEG
PHASE ANG 72.68 DEG
ALPHA -3.63 DEG

PRINCIPAL POINT
LATITUDE 42.27 DEG
LONGITUDE -2.67 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 25.10 DEG AB 924.3 KM
A LONG 60.35 DEG BC 437.1 KM
B LAT 2.59 DEG CD 212.3 KM
B LONG 37.57 DEG DA 804.9 KM
C LAT 1.41 DEG TILT DISTANCE
C LONG -62.11 DEG 1.9
D LAT 58.35 DEG
D LONG -88.63 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 57.14 DEG AB 078.6 KM
A LONG 15.34 DEG BC 270.5 KM
B LAT 23.58 DEG CD 071.7 KM
B LONG -3.38 DEG DA 270.9 KM
C LAT 25.81 DEG TILT DISTANCE
C LONG -12.93 DEG 14.5
D LAT 63.77 DEG
D LONG -3.58 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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04/10/77

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.
4116

TIME 670519
YR.MO.DY 070C40.91
PR.MI.SEC 070C40.91

S/C POSITION ALT 3397.00 KM
TILT ANG 3.64 DEG
TILT AZIM 148.23 DEG
LAT 71.83 DEG
LONG 2.48 DEG

S/C ORIENTATION SWING ANG 325.82 DEG
N.DEV. 355.69 DEG

PHOTO ILLUMINATION SUN AZIM 124.13 DEG
INCID ANG 78.38 DEG
EMISS ANG 1.90 DEG
PHASE ANG 80.09 DEG
ALPHA -1.71 DEG

PRINCIPAL POINT LATITUDE 70.93 DEG
LONGITUDE 4.49 DEG

CORNER COORDINATE SIDE LENGTH
A LAT 25.20 DEG AB 361.6 KM
A LONG 84.94 DEG BC 913.5 KM
B LAT 23.26 DEG CD 630.1 KM
B LONG 73.36 DEG DA 609.2 KM
C LAT 14.55 DEG TILT DISTANCE 0.9
D LAT 32.24 DEG
D LONG -58.83 DEG

HIGH RESOLUTION CORNER COORDINATE SIDE LENGTH
A LAT 82.98 DEG AB 265.8 KM
A LONG 107.48 DEG BC 319.3 KM
B LAT 48.60 DEG CD 263.3 KM
B LONG 17.18 DEG DA 315.6 KM
C LAT 49.07 DEG TILT DISTANCE 5.8
D LAT 85.77 DEG
D LONG -118.02 DEG

MISSION/
FRAME NO.
4118

TIME 670519
YR.MO.DY 160E 4.91
PR.MI.SEC 160E 4.91

S/C POSITION ALT 3554.96 KM
TILT ANG 2.99 DEG
TILT AZIM 107.08 DEG
LAT -71.67 DEG
LONG -26.89 DEG

S/C ORIENTATION SWING ANG 274.61 DEG
N.DEV. 6.47 DEG

PHOTO ILLUMINATION SUN AZIM 62.01 DEG
INCID ANG 82.16 DEG
EMISS ANG 9.14 DEG
PHASE ANG 90.37 DEG
ALPHA -8.24 DEG

PRINCIPAL POINT LATITUDE -72.49 DEG
LONGITUDE -5.99 DEG

CORNER COORDINATE SIDE LENGTH
A LAT -40.08 DEG AB 155.2 KM
A LONG -82.21 DEG BC 276.2 KM
B LAT -43.61 DEG CD 761.3 KM
B LONG -92.52 DEG DA 924.9 KM
C LAT -26.19 DEG TILT DISTANCE 4.1
D LAT -7.82 DEG
D LONG -66.53 DEG

HIGH RESOLUTION CORNER COORDINATE SIDE LENGTH
A LAT -49.05 DEG AB 343.3 KM
A LONG -1.13 DEG BC 341.6 KM
B LAT -79.86 DEG CD 320.4 KM
B LONG 110.61 DEG DA 339.5 KM
C LAT -84.11 DEG TILT DISTANCE 71.8
D LAT -50.26 DEG
D LONG -18.40 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/10/71 PAGE 366

MISSION/
FRAME NO.
4119

YR.MO.DY
FR.MI.SEC
670519
164655.01

S/C POSITION
ALT 2990.55 KM
ALT RT -0.1913 KM/SEC
LAT -42.26 DEG
LONG -18.74 DEG

S/C ORIENTATION
TILT ANG 4.78 DEG
TILT AZIM 97.42 DEG
SWING ANG 295.42 DEG
N.DEV. 25.55 DEG

PHOTO ILLUMINATION
SUN AZIM 69.06 DEG
INCID ANG 69.65 DEG
EMISS ANG 13.12 DEG
PHASE ANG 81.98 DEG
ALPHA -12.39 DEG

PRINCIPAL POINT
LATITUDE -42.79 DEG
LONGITUDE -7.44 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -44.45 DEG AB 314.5 KM
A LONG -88.78 DEG BC 223.2 KM
B LAT -51.59 DEG CD 567.7 KM
B LONG -61.74 DEG DA 209.1 KM
C LAT -64.55 DEG TILT DISTANCE 6.6
C LONG -139.63 DEG
D LAT 1.28 DEG
D LONG -68.27 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -23.90 DEG AB 140.4 KM
A LONG -19.88 DEG BC 296.7 KM
B LAT -55.91 DEG CD 114.8 KM
B LONG 18.01 DEG DA 282.7 KM
C LAT -61.68 DEG TILT DISTANCE 51.1
C LONG 2.61 DEG
D LAT -27.51 DEG
D LONG -20.45 DEG

MISSION/
FRAME NO.
4120

YR.MO.DY
FR.MI.SEC
670519
1721 6.71

S/C POSITION
ALT 2717.50 KM
ALT RT -0.0836 KM/SEC
LAT -14.46 DEG
LONG -16.43 DEG

S/C ORIENTATION
TILT ANG 0.50 DEG
TILT AZIM 77.37 DEG
SWING ANG 263.07 DEG
N.DEV. 5.82 DEG

PHOTO ILLUMINATION
SUN AZIM 84.03 DEG
INCID ANG 69.89 DEG
EMISS ANG 1.28 DEG
PHASE ANG 71.16 DEG
ALPHA -1.27 DEG

PRINCIPAL POINT
LATITUDE -14.29 DEG
LONGITUDE -15.64 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 15.57 DEG AB 461.1 KM
A LONG 28.29 DEG BC 333.9 KM
B LAT -28.60 DEG CD 905.4 KM
B LONG 41.26 DEG DA 054.6 KM
C LAT -44.61 DEG TILT DISTANCE 0.7
C LONG -81.65 DEG
D LAT 21.40 DEG
D LONG -72.32 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 2.90 DEG AB 003.8 KM
A LONG -13.12 DEG BC 251.7 KM
B LAT -30.45 DEG CD 031.6 KM
B LONG -8.81 DEG DA 252.0 KM
C LAT -31.37 DEG TILT DISTANCE 5.3
C LONG -18.45 DEG
D LAT 2.05 DEG
D LONG -21.41 DEG

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.
4121

TIME 670515 175142.81
 YR.MO.DY 04.04.71
 PR.MI.SEC 175142.81

S/C POSITION ALT 2681.87 KM
 ALT RT 0.0459 KM/SEC
 LAT 13.87 DEG
 LONG -14.69 DEG

S/C ORIENTATION TILT ANG 1.32 DEG
 TILT AZIM 268.42 DEG
 SWING ANG 82.70 DEG
 N.DEV. 354.78 DEG

PHOTO ILLUMINATION SUN AZIM 94.40 DEG
 INCID ANG 70.42 DEG
 ENISS ANG 3.37 DEG
 PHASE ANG 67.07 DEG
 ALPHA 3.35 DEG

PRINCIPAL POINT LATITUDE 13.91 DEG
 LONGITUDE -15.80 DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 37.58 DEG AB 928.7 KM
 A LONG 53.59 DEG BC 929.5 KM
 B LAT -31.59 DEG CD 517.2 KM
 B LONG 36.20 DEG DA 369.5 KM
 C LAT -14.74 DEG TILT DISTANCE 1.8
 C LONG -73.01 DEG
 D LAT 37.26 DEG
 D LONG -76.75 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 29.76 DEG AB 987.0 KM
 A LONG -10.55 DEG BC 249.4 KM
 B LAT -3.07 DEG CD 992.7 KM
 B LONG -14.34 DEG DA 248.7 KM
 C LAT -2.45 DEG TILT DISTANCE 14.1
 C LONG -22.57 DEG
 D LAT 30.69 DEG
 D LONG -20.00 DEG

MISSION/
FRAME NO.
4122

TIME 670515 182411.31
 YR.MO.DY 04.04.71
 PR.MI.SEC 182411.31

S/C POSITION ALT 2895.05 KM
 ALT RT 0.1664 KM/SEC
 LAT 42.76 DEG
 LONG -12.27 DEG

S/C ORIENTATION TILT ANG 1.60 DEG
 TILT AZIM 105.91 DEG
 SWING ANG 270.34 DEG
 N.DEV. 342.42 DEG

PHOTO ILLUMINATION SUN AZIM 109.10 DEG
 INCID ANG 69.29 DEG
 ENISS ANG 3.74 DEG
 PHASE ANG 73.03 DEG
 ALPHA -3.74 DEG

PRINCIPAL POINT LATITUDE 42.07 DEG
 LONGITUDE -9.24 DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 24.62 DEG AB 926.4 KM
 A LONG 52.75 DEG BC 431.7 KM
 B LAT 2.35 DEG CD 565.3 KM
 B LONG 30.77 DEG DA 222.4 KM
 C LAT 0.83 DEG TILT DISTANCE 1.9
 C LONG -65.82 DEG
 D LAT 55.11 DEG
 D LONG -122.38 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 56.67 DEG AB 074.8 KM
 A LONG 8.92 DEG BC 269.8 KM
 B LAT 23.42 DEG CD 067.8 KM
 B LONG -10.25 DEG DA 269.7 KM
 C LAT 25.77 DEG TILT DISTANCE 14.9
 C LONG -19.71 DEG
 D LAT 60.44 DEG
 D LONG -6.62 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.
4123

YR.MO.DY 670219
HR.MI.SEC 232753.61

S/C POSITION
ALT 6151.35 KM
ALT RT 0.0194 KM/SEC
LAT -2.00 DEG
LONG 161.26 DEG

S/C ORIENTATION
TILT ANG 2.45 DEG
TILT AZIM 44.76 DEG
SWING ANG 64.01 DEG
N.DEV. 199.03 DEG

PHOTO ILLUMINATION
SUN AZIM 271.07 DEG
INCID ANG 112.05 DEG
EMISS ANG 2.04 DEG
PHASE ANG 110.63 DEG
ALPHA 1.42 DEG

PRINCIPAL POINT
LATITUDE 1.11 DEG
LONGITUDE 162.39 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0. DEG AB 0. KM
A LONG 0. DEG BC 0. KM
B LAT 0. DEG CD 0. KM
B LONG 0. DEG DA 0. KM
C LAT 0. DEG TILT DISTANCE 0.5
C LONG 0. DEG
D LAT 0. DEG
D LONG 0. DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -42.89 DEG AB 385.2 KM
A LONG 167.87 DEG BC 604.2 KM
B LAT 38.00 DEG CD 397.3 KM
B LONG 133.27 DEG DA 598.2 KM
C LAT 47.29 DEG TILT DISTANCE 4.7
C LONG 157.64 DEG
D LAT -34.76 DEG
D LONG -168.77 DEG

MISSION/
FRAME NO.
4124

YR.MO.DY 670520
HR.MI.SEC 045055.21

S/C POSITION
ALT 2994.47 KM
ALT RT -0.1932 KM/SEC
LAT -42.21 DEG
LONG -25.42 DEG

S/C ORIENTATION
TILT ANG 4.80 DEG
TILT AZIM 99.27 DEG
SWING ANG 297.51 DEG
N.DEV. 25.96 DEG

PHOTO ILLUMINATION
SUN AZIM 69.38 DEG
INCID ANG 70.19 DEG
EMISS ANG 13.18 DEG
PHASE ANG 82.35 DEG
ALPHA -12.33 DEG

PRINCIPAL POINT
LATITUDE -43.00 DEG
LONGITUDE -14.08 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -44.81 DEG AB 322.9 KM
A LONG -65.81 DEG BC 224.2 KM
B LAT -51.53 DEG CD 598.6 KM
B LONG -68.50 DEG DA 279.2 KM
C LAT -62.51 DEG TILT DISTANCE 6.7
C LONG -150.81 DEG
D LAT 2.85 DEG
D LONG -76.51 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -24.16 DEG AB 147.4 KM
A LONG -17.64 DEG BC 297.5 KM
B LAT -55.08 DEG CD 177.9 KM
B LONG 11.78 DEG DA 282.4 KM
C LAT -61.95 DEG TILT DISTANCE 51.2
C LONG -3.55 DEG
D LAT -27.78 DEG
D LONG -27.21 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.
4125

YR.MO.DY 670520
PR.MI.SEC 055347.71

S/C POSITION
ALT 2716.97 KM
ALT RT -0.0859 KM/SEC
LAT -14.40 DEG
LONG -23.06 DEG

S/C ORIENTATION
TILT ANG. 0.32 DEG
TILT AZIM 170.63 DEG
SWING ANG 356.19 DEG
N.DEV. 5.58 DEG

PHOTO ILLUMINATION
SUN AZIM 84.15 DEG
INCID ANG 71.12 DEG
EMISS ANG 0.82 DEG
PHASE ANG 71.17 DEG
ALPHA -0.75 DEG.

PRINCIPAL POINT
LATITUDE -14.89 DEG
LONGITUDE -23.97 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 29.14 DEG AB 087.6 KM
A LONG 29.20 DEG BC 247.7 KM
B LAT -29.65 DEG CD 419.9 KM
B LONG 32.37 DEG DA 583.8 KM
C LAT -28.44 DEG TILT DISTANCE 0.4
C LONG -76.65 DEG
D LAT 15.16 DEG
D LONG -78.45 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.16 DEG AB 902.6 KM
A LONG -29.44 DEG BC 252.4 KM
B LAT -31.17 DEG CD 302.6 KM
B LONG -16.22 DEG DA 251.0 KM
C LAT -32.09 DEG TILT DISTANCE 3.4
C LONG -25.95 DEG
D LAT 1.38 DEG
D LONG -28.70 DEG

MISSION/
FRAME NO.
4126

YR.MO.DY 670520
PR.MI.SEC 055347.71

S/C POSITION
ALT 2677.29 KM
ALT RT 0.0438 KM/SEC
LAT 13.93 DEG
LONG -21.27 DEG

S/C ORIENTATION
TILT ANG 1.32 DEG
TILT AZIM 238.37 DEG
SWING ANG 52.95 DEG
N.DEV. 354.95 DEG

PHOTO ILLUMINATION
SUN AZIM 94.02 DEG
INCID ANG 73.48 DEG
EMISS ANG 3.35 DEG
PHASE ANG 67.78 DEG
ALPHA 2.68 DEG

PRINCIPAL POINT
LATITUDE 12.85 DEG
LONGITUDE -23.35 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 37.51 DEG AB 506.3 KM
A LONG 43.72 DEG BC 007.2 KM
B LAT -32.15 DEG CD 495.2 KM
B LONG 26.50 DEG DA 263.0 KM
C LAT -16.14 DEG TILT DISTANCE 1.8
C LONG -79.25 DEG
D LAT 35.38 DEG
D LONG -76.56 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 28.67 DEG AB 985.6 KM
A LONG -16.94 DEG BC 250.2 KM
B LAT -4.16 DEG CD 991.2 KM
B LONG -20.51 DEG DA 245.7 KM
C LAT -3.55 DEG TILT DISTANCE 14.0
C LONG -28.77 DEG
D LAT 29.53 DEG
D LONG -25.22 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/10/71 PAGE 370

MISSION/
FRAME NO.
4127

YR. MO. DY
HR. MI. SEC
070920
082110.21

S/C POSITION
ALT 2866.38 KM
ALT RT 0.1650 KM/SEC
LAT 42.80 DEG
LONG -18.79 DEG

S/C ORIENTATION
TILT ANG 2.23 DEG
TILT AZIM 114.08 DEG
SWING ANG 278.30 DEG
N.DEV. 341.33 DEG

PHOTO ILLUMINATION
SUN AZIM 109.57 DEG
INCID ANG 68.24 DEG
EMISS ANG 5.93 DEG
PHASE ANG 74.13 DEG
ALPHA .. -5.89 DEG

PRINCIPAL POINT
LATITUDE 41.20 DEG
LONGITUDE -14.29 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 16.67 DEG AB 237.7 KM
A LONG 54.17 DEG BC 587.7 KM
B LAT -4.72 DEG CD 972.0 KM
B LONG 31.65 DEG DA 134.5 KM
C LAT 1.28 DEG TILT DISTANCE
C LONG -72.32 DEG 3.1
D LAT 59.28 DEG
D LONG -125.12 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 55.43 DEG AB 075.2 KM
A LONG 3.97 DEG BC 271.3 KM
B LAT 22.41 DEG CD 044.1 KM
B LONG -15.57 DEG DA 269.5 KM
C LAT 25.02 DEG TILT DISTANCE
C LONG -24.94 DEG 23.7
D LAT 59.34 DEG
D LONG -10.93 DEG

MISSION/
FRAME NO.
4128

YR. MO. DY
HR. MI. SEC
070920
079416.91

S/C POSITION
ALT 3369.22 KM
ALT RT 2.2454 KM/SEC
LAT 71.89 DEG
LONG -13.32 DEG

S/C ORIENTATION
TILT ANG 1.03 DEG
TILT AZIM 171.24 DEG
SWING ANG 347.32 DEG
N.DEV. 355.25 DEG

PHOTO ILLUMINATION
SUN AZIM 122.30 DEG
INCID ANG 78.35 DEG
EMISS ANG 3.02 DEG
PHASE ANG 80.31 DEG
ALPHA .. -1.97 DEG

PRINCIPAL POINT
LATITUDE 69.92 DEG
LONGITUDE -9.43 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 24.07 DEG AB 751.2 KM
A LONG 83.28 DEG BC 858.2 KM
B LAT 25.01 DEG CD 342.3 KM
B LONG 56.58 DEG DA 512.7 KM
C LAT 31.67 DEG TILT DISTANCE
C LONG -82.54 DEG 1.4
D LAT 34.49 DEG
D LONG -110.80 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 83.13 DEG AB 256.8 KM
A LONG 82.97 DEG BC 318.2 KM
B LAT 47.67 DEG CD 255.2 KM
B LONG -4.17 DEG DA 311.5 KM
C LAT 48.17 DEG TILT DISTANCE
C LONG -19.88 DEG 10.9
D LAT 86.44 DEG
D LONG -116.82 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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04/19/71

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.
4129

YR.MO.DY 076520
HR.MI.SEC 161143.11
TIME 076520
S/C POSITION ALT 3574.83 KM
ALI RT -0.2585 KM/SEC
LAT -71.63 DEG
LONG -40.64 DEG
S/C ORIENTATION TILT ANG 4.39 DEG
TILT AZIM 46.58 DEG
SWING ANG 211.11 DEG
N.DEV. 357.56 DEG
PHOTO ILLUMINATION SUN AZIM 69.34 DEG
INCID ANG 81.31 DEG
EMISS ANG 12.62 DEG
PHASE ANG 91.53 DEG
ALPHA -19.27 DEG
PRINCIPAL POINT LATITUDE -55.73 DEG
LONGITUDE -25.25 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -27.79 DEG AB 423.9 KM
A LONG -87.51 DEG BC 319.1 KM
B LAT -36.39 DEG CD 594.4 KM
B LONG -56.45 DEG DA 445.5 KM
C LAT -34.55 DEG TILT DISTANCE 5.7
C LONG -128.41 DEG
D LAT -28.82 DEG
D LONG -87.28 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -38.66 DEG AB 397.5 KM
A LONG -15.98 DEG BC 327.5 KM
B LAT -84.23 DEG CD 375.1 KM
B LONG 31.27 DEG DA 358.3 KM
C LAT -81.14 DEG TILT DISTANCE 43.7
C LONG -83.59 DEG
D LAT -72.76 DEG
D LONG -71.51 DEG

MISSION/
FRAME NO.
4131

YR.MO.DY 076520
HR.MI.SEC 15252.81
TIME 076520
S/C POSITION ALT 2999.02 KM
ALI RT -0.1550 KM/SEC
LAT -42.20 DEG
LONG -32.12 DEG
S/C ORIENTATION TILT ANG 5.31 DEG
TILT AZIM 52.41 DEG
SWING ANG 251.55 DEG
N.DEV. 23.30 DEG
PHOTO ILLUMINATION SUN AZIM 73.97 DEG
INCID ANG 70.47 DEG
EMISS ANG 13.79 DEG
PHASE ANG 82.84 DEG
ALPHA -12.48 DEG
PRINCIPAL POINT LATITUDE -36.51 DEG
LONGITUDE -23.47 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -38.14 DEG AB 325.8 KM
A LONG -75.17 DEG BC 231.3 KM
B LAT -45.42 DEG CD 291.8 KM
B LONG -76.42 DEG DA 315.3 KM
C LAT -65.74 DEG TILT DISTANCE 7.3
C LONG -158.69 DEG
D LAT 3.89 DEG
D LONG -83.78 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -15.79 DEG AB 143.1 KM
A LONG -25.10 DEG BC 286.7 KM
B LAT -49.81 DEG CD 115.3 KM
B LONG -4.00 DEG DA 298.4 KM
C LAT -54.71 DEG TILT DISTANCE 53.5
C LONG -17.29 DEG
D LAT -19.89 DEG
D LONG -35.52 DEG

LUNAR ORSITEF PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.

4132
YR.MO.DY 670520
HR.MI.SEC 1725 6.71

S/C POSITION
ALT 2717.38 KM
ALT RT -0.0882 KM/SEC
LAT -16.42 DEG
LONG -29.69 DEG

S/C ORIENTATION
TILT ANG 3.35 DEG
TILT AZIM 1.11 DEG
SWING ANG 198.70 DEG
N.DEV. 6.90 DEG

PHOTO ILLUMINATION
SUN AZIM 86.21 DEG
INCID ANG 71.14 DEG
SMISS ANG 8.63 DEG
PHASE ANG 72.09 DEG
ALPHA -1.17 DEG

PRINCIPAL POINT
LATITUDE -9.14 DEG
LONGITUDE -29.59 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 15.57 DEG AB 869.2 KM
A LONG 12.10 DEG BC 394.2 KM
B LAT -10.48 DEG CD 723.1 KM
B LONG 32.57 DEG DA 536.3 KM
C LAT -47.16 DEG TILT DISTANCE
C LONG -57.65 DEG 4.0
D LAT 18.73 DEG
D LONG -85.19 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 9.42 DEG AB 624.7 KM
A LONG -27.33 DEG RC 283.9 KM
B LAT -24.65 DEG CD 223.3 KM
B LONG -23.00 DEG DA 261.2 KM
C LAT -25.70 DEG TILT DISTANCE
C LONG -31.90 DEG 75.7
D LAT 8.32 DEG
D LONG -35.99 DEG

MISSION/
FRAME NO.

4133
YR.MO.DY 670520
HR.MI.SEC 175539.71

S/C POSITION
ALT 2673.44 KM
ALT RT 0.0416 KM/SEC
LAT 13.91 DEG
LONG -27.86 DEG

S/C ORIENTATION
TILT ANG 3.32 DEG
TILT AZIM 340.18 DEG
SWING ANG 155.99 DEG
N.DEV. 356.53 DEG

PHOTO ILLUMINATION
SUN AZIM 95.85 DEG
INCID ANG 71.49 DEG
SMISS ANG 8.45 DEG
PHASE ANG 67.95 DEG
ALPHA 3.37 DEG

PRINCIPAL POINT
LATITUDE 18.73 DEG
LONGITUDE -29.59 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 26.58 DEG AR 429.1 KM
A LONG 28.66 DEG BC 882.7 KM
B LAT -30.38 DEG CD 552.9 KM
B LONG 16.01 DEG DA 291.5 KM
C LAT -16.60 DEG TILT DISTANCE
C LONG -84.24 DEG 4.5
D LAT 32.27 DEG
D LONG -64.08 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 35.88 DEG AB 803.0 KM
A LONG -23.41 DEG RC 242.8 KM
B LAT 2.55 DEG CD 906.5 KM
B LONG -26.79 DEG DA 256.5 KM
C LAT 2.98 DEG TILT DISTANCE
C LONG -34.80 DEG 75.4
D LAT 36.67 DEG
D LONG -37.89 DEG

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MISSION/
FRAME NO.
4134

TIME
670.520

S/C POSITION
ALT 2878.49 KM
ALT RT 0.1635 KM/SEC
LAT 42.80 DEG
LONG -25.30 DEG

S/C ORIENTATION
TILT ANG 3.71 DEG
TILT AZIM 53.03 DEG
SWING ANG 218.15 DEG
N.DEV. 339.70 DEG

PHOTO ILLUMINATION
SUN AZIM 113.25 DEG
INCID ANG 68.57 DEG
EMISS ANG 9.50 DEG
PHASE ANG 74.43 DEG
ALPHA -6.06 DEG

PRINCIPAL POINT
LATITUDE 45.31 DEG
LONGITUDE -18.14 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 18.62 DEG AB 373.7 KM
A LONG 41.30 DEG BC 405.4 KM
B LAT 6.68 DEG CD 170.3 KM
B LONG 23.33 DEG DA 018.1 KM
C LAT -1.21 DEG TILT DISTANCE
C LONG -77.25 DEG 5.1
D LAT 60.07 DEG
D LONG -127.83 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 60.84 DEG AB 091.8 KM
A LONG 5.71 DEG BC 263.5 KM
B LAT 28.44 DEG CD 078.9 KM
B LONG -19.89 DEG DA 278.3 KM
C LAT 30.92 DEG TILT DISTANCE
C LONG -29.49 DEG 39.5
D LAT 65.51 DEG
D LONG -12.05 DEG

MISSION/
FRAME NO.
4136

TIME
670.521

S/C POSITION
ALT 3002.95 KM
ALT RT -0.1964 KM/SEC
LAT -42.16 DEG
LONG -38.84 DEG

S/C ORIENTATION
TILT ANG 4.83 DEG
TILT AZIM 97.13 DEG
SWING ANG 295.40 DEG
N.DEV. 25.98 DEG

PHOTO ILLUMINATION
SUN AZIM 70.32 DEG
INCID ANG 70.76 DEG
EMISS ANG 13.29 DEG
PHASE ANG 83.36 DEG
ALPHA -12.65 DEG

PRINCIPAL POINT
LATITUDE -42.65 DEG
LONGITUDE -27.40 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -44.56 DEG AB 327.2 KM
A LONG -78.89 DEG BC 224.1 KM
B LAT -51.70 DEG CD 596.9 KM
B LONG -81.83 DEG DA 233.1 KM
C LAT -63.73 DEG TILT DISTANCE
C LONG -162.55 DEG 6.7
D LAT 1.53 DEG
D LONG -88.78 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -23.69 DEG AB 146.1 KM
A LONG -30.96 DEG BC 298.5 KM
B LAT -55.72 DEG CD 120.0 KM
B LONG -1.72 DEG DA 284.1 KM
C LAT -61.58 DEG TILT DISTANCE
C LONG -17.05 DEG 51.6
D LAT -27.36 DEG
D LONG -40.53 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.
4137

YR.NO.DY
FR.MI.SEC

TIME
670521
052451.21

S/C POSITION
ALT 2718.01 KM
ALT RT -0.0500 KM/SEC
LAT -14.40 DEG
LONG -36.33 DEG

S/C ORIENTATION
TILT ANG 0.74 DEG
TILT AZIM 119.54 DEG
SWING ANG 305.04 DEG
N.DEV. 5.77 DEG

PHOTO ILLUMINATION
SUN AZIM 84.12 DEG
INCID ANG 71.23 DEG
EMISS ANG 1.91 DEG
PHASE ANG 72.80 DEG
ALPHA -1.57 DEG

PRINCIPAL POINT
LATITUDE -14.58 DEG
LONGITUDE -36.33 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 17.53 DEG AB 485.4 KM
A LONG 7.80 DEG BC 393.2 KM
B LAT -29.50 DEG CD 811.1 KM
B LONG 26.23 DEG DA 028.2 KM
C LAT -44.56 DEG TILT DISTANCE 1.0
C LONG -102.77 DEG
D LAT 21.59 DEG
D LONG -91.07 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.09 DEG AB 004.7 KM
A LONG -32.74 DEG BC 253.0 KM
B LAT -31.29 DEG CD 001.9 KM
B LONG -28.35 DEG DA 251.0 KM
C LAT -32.19 DEG TILT DISTANCE 7.9
C LONG -38.12 DEG
D LAT 1.24 DEG
D LONG -47.99 DEG

MISSION/
FRAME NO.
4138

YR.NO.DY
FR.MI.SEC

TIME
670521
055723.81

S/C POSITION
ALT 2670.69 KM
ALT RT 0.0399 KM/SEC
LAT 13.92 DEG
LONG -34.43 DEG

S/C ORIENTATION
TILT ANG 1.28 DEG
TILT AZIM 263.82 DEG
SWING ANG 78.40 DEG
N.DEV. 355.05 DEG

PHOTO ILLUMINATION
SUN AZIM 93.97 DEG
INCID ANG 71.58 DEG
EMISS ANG 3.26 DEG
PHASE ANG 68.48 DEG
ALPHA 3.20 DEG

PRINCIPAL POINT
LATITUDE 13.79 DEG
LONGITUDE -36.05 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 38.39 DEG AB 945.1 KM
A LONG 32.38 DEG BC 959.8 KM
B LAT -32.04 DEG CD 522.1 KM
B LONG 11.81 DEG DA 321.2 KM
C LAT -15.24 DEG TILT DISTANCE 1.7
C LONG -92.06 DEG
D LAT 36.68 DEG
D LONG -95.13 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 29.59 DEG AB 982.9 KM
A LONG -30.33 DEG BC 248.5 KM
B LAT -3.11 DEG CD 988.4 KM
B LONG -33.92 DEG DA 247.4 KM
C LAT -2.53 DEG TILT DISTANCE 13.6
C LONG -42.12 DEG
D LAT 30.47 DEG
D LONG -39.72 DEG

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MISSION/
FRAME NO.
4139

TIME
67C521
662540.01

YR.NO.DY
PR.MI.SEC

S/C POSITION
ALT 2872.43 KM
ALT RT 0.1622 KM/SEC
LAT 42.81 DEG
LONG -31.79 DEG

S/C ORIENTATION
TILT ANG 1.62 DEG
TILT AZIM 102.80 DEG
SWING ANG 267.20 DEG
N.DEV. 342.05 DEG

PHOTO ILLUMINATION
SUN AZIM 108.58 DEG
INCID ANG 69.76 DEG
EMISS ANG 4.32 DEG
PHASE ANG 74.07 DEG
ALPHA -4.31 DEG

CORNER COORDINATE
A LAT 56.58 DEG
A LONG -10.00 DEG
B LAT 23.68 DEG
B LONG -29.35 DEG
C LAT 35.07 DEG
C LONG -39.73 DEG
D LAT 67.38 DEG
D LONG -25.25 DEG

PRINCIPAL POINT
LATITUDE 42.16 DEG
LONGITUDE -28.25 DEG

MEDIUM RESOLUTION

CORNER COORDINATE
A LAT 23.50 DEG
A LONG 34.36 DEG
B LAT 2.28 DEG
B LONG 11.89 DEG
C LAT 2.12 DEG
C LONG -86.75 DEG
D LAT 57.20 DEG
D LONG -140.49 DEG

SIDE LENGTH
AB 922.2 KM
BC 422.1 KM
CD 137.2 KM
DA 141.3 KM

TILT DISTANCE
2.2

HIGH RESOLUTION

CORNER COORDINATE
A LAT 56.58 DEG
A LONG -10.00 DEG
B LAT 23.68 DEG
B LONG -29.35 DEG
C LAT 35.07 DEG
C LONG -39.73 DEG
D LAT 67.38 DEG
D LONG -25.25 DEG

SIDE LENGTH
AB 527.1 KM
BC 217.7 KM
CD 658.9 KM
DA 268.1 KM

TILT DISTANCE
17.3

MISSION/
FRAME NO.
4140

TIME
67C521
6702 0.91

YR.NO.DY
PR.MI.SEC

S/C POSITION
ALT 3355.16 KM
ALT RT 0.2452 KM/SEC
LAT 72.21 DEG
LONG -22.53 DEG

S/C ORIENTATION
TILT ANG 1.18 DEG
TILT AZIM 117.64 DEG
SWING ANG 297.49 DEG
N.DEV. 353.99 DEG

PHOTO ILLUMINATION
SUN AZIM 127.74 DEG
INCID ANG 77.53 DEG
EMISS ANG 3.45 DEG
PHASE ANG 83.94 DEG
ALPHA -7.44 DEG

CORNER COORDINATE
A LAT 41.95 DEG
A LONG -102.74 DEG
B LAT 27.72 DEG
B LONG -90.28 DEG
C LAT 25.14 DEG
C LONG -61.32 DEG
D LAT 47.71 DEG
D LONG -118.12 DEG

PRINCIPAL POINT
LATITUDE 71.25 DEG
LONGITUDE -15.91 DEG

MEDIUM RESOLUTION

CORNER COORDINATE
A LAT 41.95 DEG
A LONG -102.74 DEG
B LAT 27.72 DEG
B LONG -90.28 DEG
C LAT 25.14 DEG
C LONG -61.32 DEG
D LAT 47.71 DEG
D LONG -118.12 DEG

SIDE LENGTH
AB 107.2 KM
BC 274.3 KM
CD 225.6 KM
DA 284.4 KM

TILT DISTANCE
1.5

HIGH RESOLUTION

CORNER COORDINATE
A LAT 43.25 DEG
A LONG 84.15 DEG
B LAT 49.01 DEG
B LONG -11.38 DEG
C LAT 49.77 DEG
C LONG -27.41 DEG
D LAT 96.41 DEG
D LONG -145.88 DEG

SIDE LENGTH
AB 552.5 KM
BC 315.9 KM
CD 245.4 KM
DA 312.2 KM

TILT DISTANCE
12.5

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MISSION/
FRAME NO.
4142

YR.MO.DY
HR.MI.SEC

TIME
670E21
165E 5.21

S/C POSITION
ALT 3006.60 KM
ALT RT -0.1974 KM/SEC
LAT -42.14 DEG
LONG -45.58 DEG

S/C ORIENTATION
TILT ANG 5.16 DEG
TILT AZIM 93.45 DEG
SWING ANG 291.31 DEG
N.DEV. 25.91 DEG

PHOTO ILLUMINATION
SUN AZIM 70.41 DEG
INCID ANG 70.47 DEG
EMISS ANG 14.21 DEG
PHASE ANG 84.24 DEG
ALPHA -13.80 DEG

PRINCIPAL POINT
LATITUDE -42.04 DEG
LONGITUDE -33.37 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -44.18 DEG AB 308.9 KM
A LONG -83.57 DEG BC 222.2 KM
B LAT -51.31 DEG CD 323.3 KM
B LONG -86.57 DEG DA 259.1 KM
C LAT -65.56 DEG TILT DISTANCE 7.2
C LONG -167.18 DEG
D LAT 3.23 DEG
D LONG -54.54 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -32.92 DEG AB 149.2 KM
A LONG -36.85 DEG BC 200.8 KM
B LAT -55.05 DEG CD 120.5 KM
B LONG -7.91 DEG DA 287.2 KM
C LAT -60.90 DEG TILT DISTANCE 55.1
C LONG -23.16 DEG
D LAT -25.70 DEG
D LONG -45.45 DEG

MISSION/
FRAME NO.
4143

YR.MO.DY
HR.MI.SEC

TIME
670E21
172E21.61

S/C POSITION
ALT 2719.10 KM
ALT RT -0.0915 KM/SEC
LAT -14.41 DEG
LONG -42.98 DEG

S/C ORIENTATION
TILT ANG 0.98 DEG
TILT AZIM 85.79 DEG
SWING ANG 271.17 DEG
N.DEV. 5.75 DEG

PHOTO ILLUMINATION
SUN AZIM 94.33 DEG
INCID ANG 71.19 DEG
EMISS ANG 2.50 DEG
PHASE ANG 73.69 DEG
ALPHA -2.50 DEG

PRINCIPAL POINT
LATITUDE -24.37 DEG
LONGITUDE -41.41 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 21.79 DEG AB 529.7 KM
A LONG 7.02 DEG BC 405.9 KM
B LAT -28.47 DEG CD 595.0 KM
B LONG 21.53 DEG DA 999.9 KM
C LAT -46.57 DEG TILT DISTANCE 1.3
C LONG -111.25 DEG
D LAT 22.22 DEG
D LONG -56.13 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 2.91 DEG AB 275.3 KM
A LONG -38.81 DEG BC 200.4 KM
B LAT -33.51 DEG CD 120.5 KM
B LONG -74.51 DEG DA 252.3 KM
C LAT -31.39 DEG TILT DISTANCE 13.4
C LONG -44.18 DEG
D LAT 2.22 DEG
D LONG -47.17 DEG

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MISSION/
FRAME NO.
4144

TIME
670521
1831 9.21

S/C POSITION
ALT 2668.98 KM
ALT RT 0.0383 KM/SEC
LAT 13.90 DEG
LONG -41.01 DEG

S/C ORIENTATION
TILT ANG 0.48 DEG
TILT AZIM 280.39 DEG
SWING ANG 94.34 DEG
N.DEV. 354.13 DEG

PHOTO ILLUMINATION
SUN AZIM 94.27 DEG
INCID ANG 70.93 DEG
EMISS ANG 1.23 DEG
-PHASE ANG -69.71 DEG
ALPHA 1.22 DEG

PRINCIPAL POINT
LATITUDE 14.03 DEG
LONGITUDE -41.76 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 35.15 DEG AB 961.8 KM
A LONG 29.73 DEG BC 941.0 KM
B LAT -30.01 DEG CD 412.8 KM
B LONG 6.25 DEG DA 271.0 KM
C LAT -10.07 DEG TILT DISTANCE 0.6
C LONG -88.05 DEG
D LAT 37.57 DEG
D LONG -94.44 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 29.89 DEG AB 983.2 KM
A LONG -35.22 DEG BC 247.1 KM
B LAT -2.76 DEG CD 985.3 KM
B LONG -39.42 DEG DA 247.3 KM
C LAT -1.99 DEG TILT DISTANCE 5.1
C LONG -47.55 DEG
D LAT 30.87 DEG
D LONG -44.62 DEG

MISSION/
FRAME NO.
4145

TIME
670521
1831 9.21

S/C POSITION
ALT 2868.11 KM
ALT RT 0.1612 KM/SEC
LAT 42.81 DEG
LONG -38.27 DEG

S/C ORIENTATION
TILT ANG 2.05 DEG
TILT AZIM 96.58 DEG
SWING ANG 259.64 DEG
N.DEV. 340.01 DEG

PHOTO ILLUMINATION
SUN AZIM 109.12 DEG
INCID ANG 69.35 DEG
EMISS ANG 5.45 DEG
PHASE ANG 74.72 DEG
ALPHA -5.38 DEG

PRINCIPAL POINT
LATITUDE 42.33 DEG
LONGITUDE -33.70 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 17.85 DEG AB 979.5 KM
A LONG 34.63 DEG BC 466.9 KM
B LAT -0.79 DEG CD 126.1 KM
B LONG 7.23 DEG DA 236.2 KM
C LAT 2.03 DEG TILT DISTANCE 2.8
C LONG -92.77 DEG
D LAT 57.16 DEG
D LONG -155.02 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 56.29 DEG AB 057.4 KM
A LONG -14.35 DEG BC 267.3 KM
B LAT 23.96 DEG CD 057.3 KM
B LONG -35.44 DEG DA 269.2 KM
C LAT 26.62 DEG TILT DISTANCE 21.8
C LONG -44.76 DEG
D LAT 60.49 DEG
D LONG -29.37 DEG

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MISSION/
FRAME NO.
4146

YR.MO.DY
HR.MI.SEC

TIME
670521
233024.91

S/C POSITION
ALT 6147.89 KM
ALT RT 0.0273 KM/SEC
LAT 0.16 DEG
LONG 134.86 DEG

S/C ORIENTATION
TILT ANG 0.82 DEG
TILT AZIM 25.12 DEG
SWING ANG 44.82 DEG
N.DEV. 199.62 DEG

PHOTO ILLUMINATION
SUN AZIM 271.70 DEG
INCID ANG 110.12 DEG
EMISS ANG 3.73 DEG
PHASE ANG 108.60 DEG
ALPHA 1.56 DEG

PRINCIPAL POINT
LATITUDE 2.79 DEG
LONGITUDE 136.09 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT C DEG AB 0. KM
A LONG C DEG BC 0. KM
B LAT C DEG CD 0. KM
B LONG C DEG DA 0. KM
C LAT C DEG TILT DISTANCE 1.1
C LONG 0. DEG
D LAT 0. DEG
D LONG 0. DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -43.04 DEG AB 393.9 KM
A LONG 141.69 DEG BC 512.1 KM
B LAT 43.44 DEG CD 409.7 KM
B LONG 105.28 DEG DA 593.5 KM
C LAT 50.60 DEG TILT DISTANCE 8.7
C LONG 130.62 DEG
D LAT -32.16 DEG
D LONG 164.12 DEG

MISSION/
FRAME NO.
4147

YR.MO.DY
HR.MI.SEC

TIME
670521
233056.51

S/C POSITION
ALT 6148.74 KM
ALT RT 0.0286 KM/SEC
LAT 0.00 DEG
LONG 134.87 DEG

S/C ORIENTATION
TILT ANG 0.69 DEG
TILT AZIM 31.43 DEG
SWING ANG 51.13 DEG
N.DEV. 199.64 DEG

PHOTO ILLUMINATION
SUN AZIM 271.45 DEG
INCID ANG 110.19 DEG
EMISS ANG 3.14 DEG
PHASE ANG 108.60 DEG
ALPHA 1.62 DEG

PRINCIPAL POINT
LATITUDE 2.09 DEG
LONGITUDE 136.14 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT C DEG AB 0. KM
A LONG G DEG BC 0. KM
B LAT C DEG CD 0. KM
B LONG 0 DEG DA 0. KM
C LAT 0 DEG TILT DISTANCE 0.9
C LONG 0. DEG
D LAT 0. DEG
D LONG 0. DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -41.13 DEG AB 387.1 KM
A LONG 141.90 DEG BC 609.0 KM
B LAT 39.35 DEG CD 403.8 KM
B LONG 105.99 DEG DA 595.3 KM
C LAT 49.20 DEG TILT DISTANCE 7.3
C LONG 130.84 DEG
D LAT -33.11 DEG
D LONG 164.63 DEG

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MISSION/
FRAME NO.
4148

YR.MO.DY 670522
PR.MI.SEC 045722.21

TIME 670522
045722.21

S/C POSITION
ALT 3009.38 KM
ALT RT -0.1980 KM/SEC
LAT -42.11 DEG
LONG -52.33 DEG

S/C ORIENTATION
TILT ANG 4.62 DEG
TILT AZIM 99.63 DEG
SWING ANG 297.27 DEG
N.DEV. 25.10 DEG

PHOTO ILLUMINATION
SUN AZIM 71.55 DEG
INCID ANG 72.12 DEG
EMISS ANG 12.73 DEG
PHASE ANG 84.07 DEG
ALPHA -12.00 DEG

PRINCIPAL POINT
LATITUDE -42.95 DEG
LONGITUDE -41.38 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -44.15 DEG AB 349.3 KM
A LONG -93.33 DEG BC 285.9 KM
B LAT -51.30 DEG CD 971.7 KM
B LONG -56.56 DEG DA 251.4 KM
C LAT -62.23 DEG TILT DISTANCE
C LONG -174.62 DEG 6.4
D LAT 1.69 DEG
D LONG -102.75 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -23.97 DEG AB 147.1 KM
A LONG -44.66 DEG BC 297.9 KM
B LAT -56.36 DEG CD 122.5 KM
B LONG -15.83 DEG DA 283.5 KM
C LAT -62.08 DEG TILT DISTANCE
C LONG -31.58 DEG 49.3
D LAT -27.49 DEG
D LONG -54.30 DEG

MISSION/
FRAME NO.
4149

YR.MO.DY 670522
PR.MI.SEC 045739.51

TIME 670522
045739.51

S/C POSITION
ALT 2726.27 KM
ALT RT -0.7924 KM/SEC
LAT -14.40 DEG
LONG -49.64 DEG

S/C ORIENTATION
TILT ANG 0.68 DEG
TILT AZIM 127.79 DEG
SWING ANG 312.97 DEG
N.DEV. 5.41 DEG

PHOTO ILLUMINATION
SUN AZIM 84.42 DEG
INCID ANG 72.45 DEG
EMISS ANG 1.75 DEG
PHASE ANG 73.75 DEG
ALPHA -1.29 DEG

PRINCIPAL POINT
LATITUDE -15.05 DEG
LONGITUDE -48.76 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 17.26 DEG AB 475.5 KM
A LONG -6.16 DEG BC 388.5 KM
B LAT -29.54 DEG CD 393.2 KM
B LONG 11.85 DEG DA 095.1 KM
C LAT -38.37 DEG TILT DISTANCE
C LONG -100.25 DEG 0.9
D LAT 21.02 DEG
D LONG -103.71 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 2.00 DEG AB 005.3 KM
A LONG -46.12 DEG BC 253.2 KM
B LAT -31.43 DEG CD 003.0 KM
B LONG -41.95 DEG DA 251.1 KM
C LAT -32.28 DEG TILT DISTANCE
C LONG -51.75 DEG 7.2
D LAT 1.21 DEG
D LONG -54.38 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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04/13/71

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.

4150
YR.HO.DY 670523
HR.MI.SEC 060011.81

S/C POSITION
ALT 2668.38 KM
ALT RT 0.0374 KM/SEC
LAT 13.91 DEG
LONG -47.59 DEG

S/C ORIENTATION
TILT ANG 1.33 DEG
TILT AZIM 234.01 DEG
SWING ANG 48.11 DEG
N.DEV. 354.44 DEG

PHOTO ILLUMINATION
SUN AZIM 93.45 DEG
INCID ANG 72.21 DEG
EMISS ANG 3.39 DEG
PHASE ANG 69.63 DEG
ALPHA 2.57 DEG

PRINCIPAL POINT
LATITUDE 12.70 DEG
LONGITUDE -49.29 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 37.22 DEG AB 932.0 KM
A LONG 18.84 DEG BC 939.7 KM
B LAT -31.15 DEG CD 524.5 KM
B LONG -1.39 DEG DA 240.2 KM
C LAT -16.68 DEG TILT DISTANCE
C LONG -106.64 DEG TILT 1.8
D LAT 25.43 DEG
D LONG -101.35 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 28.38 DEG AB 983.5 KM
A LONG -43.06 DEG BC 249.5 KM
B LAT -4.32 DEG CD 987.9 KM
B LONG -45.90 DEG DA 245.6 KM
C LAT -3.64 DEG TILT DISTANCE
C LONG -55.13 DEG TILT 14.2
D LAT 29.31 DEG
D LONG -52.28 DEG

MISSION/
FRAME NO.

4151
YR.HO.DY 670522
HR.MI.SEC 063227.51

S/C POSITION
ALT 2865.88 KM
ALT RT 0.1605 KM/SEC
LAT 42.84 DEG
LONG -44.74 DEG

S/C ORIENTATION
TILT ANG 2.36 DEG
TILT AZIM 118.62 DEG
SWING ANG 281.94 DEG
N.DEV. 340.45 DEG

PHOTO ILLUMINATION
SUN AZIM 108.28 DEG
INCID ANG 69.15 DEG
EMISS ANG 6.26 DEG
PHASE ANG 75.25 DEG
ALPHA -6.10 DEG

PRINCIPAL POINT
LATITUDE 40.89 DEG
LONGITUDE -47.20 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 16.49 DEG AB 192.2 KM
A LONG 26.53 DEG BC 588.8 KM
B LAT -5.74 DEG CD 588.0 KM
B LONG 5.69 DEG DA 149.5 KM
C LAT 0.61 DEG TILT DISTANCE
C LONG -98.58 DEG TILT 3.2
D LAT 55.78 DEG
D LONG -158.69 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 54.78 DEG AB 968.1 KM
A LONG -21.97 DEG BC 269.9 KM
B LAT 22.17 DEG CD 056.5 KM
B LONG -41.78 DEG DA 267.4 KM
C LAT 24.90 DEG TILT DISTANCE
C LONG -51.04 DEG TILT 25.1
D LAT 58.79 DEG
D LONG -36.39 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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

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MISSION/
FRAME NO.
4152

TIME
67C522
071043.71

S/C POSITION
ALT 3344.90 KM
ALT RT 0.2445 KM/SEC
LAT 72.22 DEG
LONG -34.79 DEG

S/C ORIENTATION
TILT ANG 1.54 DEG
TILT AZIM 142.91 DEG
SWING ANG 331.09 DEG
N.DEV. 353.36 DEG

PHOTO ILLUMINATION
SUN AZIM 126.43 DEG
INCID ANG 75.99 DEG
EMISS ANG 4.51 DEG
PHASE ANG 81.19 DEG
ALPHA -4.21 DEG

PRINCIPAL POINT
LATITUDE 59.78 DEG
LONGITUDE -29.61 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 20.47 DEG AB 741.8 KM
A LONG 45.86 DEG BC 276.4 KM
B LAT 36.54 DEG CD 951.7 KM
B LONG -102.71 DEG DA 756.9 KM
C LAT 21.82 DEG TILT DISTANCE
C LONG -54.62 DEG 2.1
D LAT 28.18 DEG
D LONG -146.16 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 82.38 DEG AB 251.8 KM
A LONG 59.34 DEG AC 317.3 KM
B LAT 47.43 DEG CD 245.2 KM
B LONG -25.21 DEG DA 359.2 KM
C LAT 48.28 DEG TILT DISTANCE
C LONG -49.81 DEG 15.4
D LAT 87.34 DEG
D LONG -136.03 DEG

MISSION/
FRAME NO.
4154

TIME
67C522
161555.31

S/C POSITION
ALT 3613.43 KM
ALT RT -9.2602 KM/SEC
LAT -72.08 DEG
LONG -69.24 DEG

S/C ORIENTATION
TILT ANG 5.17 DEG
TILT AZIM 105.18 DEG
SWING ANG 267.80 DEG
N.DEV. 16.00 DEG

PHOTO ILLUMINATION
SUN AZIM 52.20 DEG
INCID ANG 79.22 DEG
EMISS ANG 15.12 DEG
PHASE ANG 94.49 DEG
ALPHA -15.31 DEG

PRINCIPAL POINT
LATITUDE -71.70 DEG
LONGITUDE -33.57 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -45.37 DEG AB 332.7 KM
A LONG -115.08 DEG BC 257.7 KM
B LAT -45.35 DEG CD 755.2 KM
B LONG -126.76 DEG DA 527.8 KM
C LAT -43.23 DEG TILT DISTANCE
C LONG -165.88 DEG 7.2
D LAT -21.23 DEG
D LONG -94.65 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -45.61 DEG AB 399.9 KM
A LONG -32.55 DEG BC 363.6 KM
B LAT -75.94 DEG CD 347.8 KM
B LONG 66.38 DEG DA 366.1 KM
C LAT -84.74 DEG TILT DISTANCE
C LONG 123.45 DEG 55.2
D LAT -49.55 DEG
D LONG -50.17 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/10/71 PAGE 382

MISSION/
FRAME NO.
4155

YR.MO.DY 670222
PR.MI.SEC 165226.41

S/C POSITION
ALT 3011.09 KM
ALT RT -0.1982 KM/SEC
LAT -42.07 DEG
LONG -59.07 DEG

S/C ORIENTATION
TILT ANG 4.30 DEG
TILT AZIM 95.99 DEG
SWING ANG 293.53 DEG
N.DEV. 24.37 DEG

PHOTO ILLUMINATION
SUN AZIM 72.75 DEG
INCID ANG 72.95 DEG
EMISS ANG 11.84 DEG
PHASE ANG 84.33 DEG
ALPHA -11.41 DEG

PRINCIPAL POINT
LATITUDE -42.41 DEG
LONGITUDE -48.89 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -43.27 DEG AB 361.1 KM
A LONG -100.47 DEG BC 225.6 KM
B LAT -50.42 DEG CD 552.7 KM
B LONG -103.54 DEG DA 304.2 KM
C LAT -63.29 DEG TILT DISTANCE 6.0
C LONG -176.80 DEG
D LAT 2.72 DEG
D LONG -110.54 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -23.30 DEG AB 142.3 KM
A LONG -81.93 DEG BC 295.4 KM
B LAT -55.98 DEG CD 119.2 KM
B LONG -24.39 DEG DA 283.9 KM
C LAT -61.49 DEG TILT DISTANCE 45.9
C LONG -40.01 DEG
D LAT -26.77 DEG
D LONG -61.55 DEG

MISSION/
FRAME NO.
4156

YR.MO.DY 670522
PR.MI.SEC 173043.11

S/C POSITION
ALT 2721.54 KM
ALT RT -0.0928 KM/SEC
LAT -14.39 DEG
LONG -56.29 DEG

S/C ORIENTATION
TILT ANG 0.43 DEG
TILT AZIM 136.05 DEG
SWING ANG 321.40 DEG
N.DEV. 5.98 DEG

PHOTO ILLUMINATION
SUN AZIM 84.73 DEG
INCID ANG 73.36 DEG
EMISS ANG 1.10 DEG
PHASE ANG 74.05 DEG
ALPHA -0.70 DEG

PRINCIPAL POINT
LATITUDE -14.88 DEG
LONGITUDE -55.80 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 17.17 DEG AB 447.9 KM
A LONG -14.05 DEG BC 361.4 KM
B LAT -29.72 DEG CD 406.8 KM
B LONG 1.72 DEG DA 200.0 KM
C LAT -38.27 DEG TILT DISTANCE 0.6
C LONG -108.19 DEG
D LAT 15.53 DEG
D LONG -110.75 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.21 DEG AB 905.0 KM
A LONG -53.21 DEG BC 252.9 KM
B LAT -31.21 DEG CD 003.8 KM
B LONG -49.03 DEG DA 251.4 KM
C LAT -32.09 DEG TILT DISTANCE 4.5
C LONG -58.79 DEG
D LAT 1.42 DEG
D LONG -61.48 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/17/77 PAGE 387

MISSION/
FRAME NO.
4157

YR. MO. DY 67 2 22
HR. MI. SEC 18 33 33.11

S/C POSITION
ALT 2668.78 KM
ALT RT 0.3369 KM/SEC
LAT 13.91 DEG
LONG -54.17 DEG

S/C ORIENTATION
TILT ANG 1.38 DEG
TILT, AZIM 255.07 DEG
SWING ANG 59.44 DEG
N.DEV. 354.84 DEG

PHOTO ILLUMINATION
SUN AZIM 93.42 DEG
INCID ANG 73.11 DEG
EMISS ANG 3.49 DEG
PHASE ANG 59.80 DEG
ALPHA 3.30 DEG

PRINCIPAL POINT
LATITUDE 13.36 DEG
LONGITUDE -55.27 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 32.51 DEG AB 010.5 KM
A LONG 15.46 DEG BC 967.3 KM
B LAT -32.46 DEG CD 489.9 KM
B LONG -7.85 DEG DA 299.7 KM
C LAT -15.17 DEG TILT DISTANCE 1.9
C LONG -112.45 DEG
D LAT 36.29 DEG
D LONG -113.37 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 29.17 DEG AB 582.4 KM
A LONG -50.13 DEG BC 248.9 KM
B LAT -3.51 DEG CD 989.0 KM
B LONG -53.80 DEG DA 246.8 KM
C LAT -2.91 DEG TILT DISTANCE 14.6
C LONG -62.01 DEG
D LAT 30.07 DEG
D LONG -59.45 DEG

MISSION/
FRAME NO.
4158

YR. MO. DY 67 2 22
HR. MI. SEC 18 33 33.11

S/C POSITION
ALT 2865.52 KM
ALT RT 0.1601 KM/SEC
LAT 42.85 DEG
LONG -51.22 DEG

S/C ORIENTATION
TILT ANG 1.57 DEG
TILT, AZIM 106.83 DEG
SWING ANG 270.57 DEG
N.DEV. 341.50 DEG

PHOTO ILLUMINATION
SUN AZIM 137.65 DEG
INCID ANG 73.45 DEG
EMISS ANG 4.44 DEG
PHASE ANG 74.88 DEG
ALPHA -4.43 DEG

PRINCIPAL POINT
LATITUDE 41.99 DEG
LONGITUDE -47.65 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 23.51 DEG AB 521.2 KM
A LONG 14.27 DEG BC 424.1 KM
B LAT 1.36 DEG CD 575.7 KM
B LONG -7.77 DEG DA 217.5 KM
C LAT 2.56 DEG TILT DISTANCE 2.3
C LONG -106.16 DEG
D LAT 26.16 DEG
D LONG -164.53 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 55.23 DEG AB 364.6 KM
A LONG -29.36 DEG BC 267.4 KM
B LAT 23.53 DEG CD 056.3 KM
B LONG -44.94 DEG DA 267.3 KM
C LAT 25.99 DEG TILT DISTANCE 17.8
C LONG -58.29 DEG
D LAT 60.11 DEG
D LONG -44.45 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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04/13/71

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.

4160 YR.MO.DY
FR.MI.SEC

TIME

57C523 345516.71

S/C POSITION
ALT 3012.07 KM
ALT RT -0.1980 KM/SEC
LAT -42.03 DEG
LONG -65.83 DEG

S/C ORIENTATION
TILT ANG 4.76 DEG
TILT AZIM 99.03 DEG
SWING ANG 296.34 DEG
N.DEV. 24.97 DEG

PHOTO ILLUMINATION
SUN AZIM 72.28 DEG
INCID ANG 72.74 DEG
EMISS ANG 13.12 DEG
PHASE ANG 85.18 DEG
ALPHA -12.48 DEG

PRINCIPAL POINT
LATITUDE -42.79 DEG
LONGITUDE -54.52 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -44.02 DEG AB 343.6 KM
A LONG -106.18 DEG BC 225.4 KM
B LAT -51.15 DEG CD 006.5 KM
B LONG -109.33 DEG DA 311.6 KM
C LAT -61.84 DEG TILT DISTANCE 6.6
C LONG 179.45 DEG
D LAT 2.80 DEG
D LONG -116.74 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -31.76 DEG AB 149.5 KM
A LONG -57.73 DEG RC 299.1 KM
B LAT -56.24 DEG CD 123.7 KM
B LONG -28.96 DEG DA 284.5 KM
C LAT -61.94 DEG TILT DISTANCE 50.8
C LONG -44.77 DEG
D LAT -27.29 DEG
D LONG -67.38 DEG

MISSION/
FRAME NO.

4161 YR.MO.DY
FR.MI.SEC

TIME

67C523 053134.11

S/C POSITION
ALT 2722.65 KM
ALT RT -0.0927 KM/SEC
LAT -14.36 DEG
LONG -62.94 DEG

S/C ORIENTATION
TILT ANG 0.77 DEG
TILT AZIM 129.88 DEG
SWING ANG 314.84 DEG
N.DEV. 5.22 DEG

PHOTO ILLUMINATION
SUN AZIM 84.66 DEG
INCID ANG 73.46 DEG
EMISS ANG 1.97 DEG
PHASE ANG 74.86 DEG
ALPHA -1.40 DEG

PRINCIPAL POINT
LATITUDE -15.13 DEG
LONGITUDE -61.98 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 17.67 DEG AB 489.5 KM
A LONG -15.14 DEG BC 407.9 KM
B LAT -30.22 DEG CD 393.7 KM
B LONG 0.15 DEG DA 048.4 KM
C LAT -38.37 DEG TILT DISTANCE 1.0
C LONG -112.73 DEG
D LAT 22.05 DEG
D LONG -112.67 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 1.91 DEG AB 005.5 KM
A LONG -59.28 DEG BC 253.6 KM
B LAT -31.57 DEG CD 004.0 KM
B LONG -55.21 DEG DA 251.2 KM
C LAT -32.39 DEG TILT DISTANCE 8.1
C LONG -65.04 DEG
D LAT 1.15 DEG
D LONG -67.55 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 0A/19/71 PAGE 285

MISSION/
FRAME NO.
4162

YR.NO.,DY 570523
HR.,MI.,SEC 0602 7.51

S/C POSITION
ALT 2669.91 KM
ALT RT 0.0368 KM/SEC
LAT 13.93 DEG
LONG -60.75 DEG

S/C ORIENTATION
TILT ANG 1.01 DEG
TILT AZIM 243.18 DEG
SWING ANG 57.01 DEG
N.DEV. 354.14 DEG

PHOTO ILLUMINATION
SUN AZIM 93.41 DEG
INCID ANG 72.91 DEG
EMISS ANG 2.56 DEG
PHASE ANG 79.71 DEG
ALPHA 2.20 DEG

PRINCIPAL POINT
LATITUDE 13.22 DEG
LONGITUDE -62.17 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 36.42 DEG AB 953.1 KM
A LONG 6.54 DEG BC 937.3 KM
B LAT -30.88 DEG CD 463.5 KM
B LONG -14.82 DEG DA 253.7 KM
C LAT -13.43 DEG TILT DISTANCE 1.4
D LAT 36.41 DEG
D LONG -114.78 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 28.95 DEG AB 983.5 KM
A LONG -55.78 DEG BC 248.8 KM
B LAT -3.72 DEG CD 987.2 KM
B LONG -59.86 DEG DA 246.3 KM
C LAT -2.98 DEG TILT DISTANCE 10.7
D LAT 29.93 DEG
D LONG -65.05 DEG

MISSION/
FRAME NO.
4163

YR.NO.,DY 670523
HR.,MI.,SEC 063426.11

S/C POSITION
ALT 2866.65 KM
ALT RT 0.1600 KM/SEC
LAT 42.87 DEG
LONG -57.71 DEG

S/C ORIENTATION
TILT ANG 2.19 DEG
TILT AZIM 115.92 DEG
SWING ANG 278.83 DEG
N.DEV. 340.23 DEG

PHOTO ILLUMINATION
SUN AZIM 107.65 DEG
INCID ANG 69.93 DEG
EMISS ANG 5.81 DEG
PHASE ANG 75.63 DEG
ALPHA -5.71 DEG

PRINCIPAL POINT
LATITUDE 41.21 DEG
LONGITUDE -53.38 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 18.61 DEG AB 098.2 KM
A LONG 11.53 DEG BC 576.0 KM
B LAT -6.15 DEG CD 000.4 KM
B LONG -8.65 DEG DA 140.2 KM
C LAT 0.84 DEG TILT DISTANCE 3.0
D LAT 55.74 DEG
D LONG -171.00 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 55.09 DEG AB 067.4 KM
A LONG -34.90 DEG BC 249.3 KM
B LAT 22.58 DEG CD 056.6 KM
B LONG -55.05 DEG DA 267.5 KM
C LAT 25.30 DEG TILT DISTANCE 23.3
D LAT 59.16 DEG
D LONG -49.41 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/10/71 PAGE 386

MISSION/
FRAME NO.
4164

YR. MO. DY
PR. MI. SEC

TIME
S/C POSITION
ALT FT
LAT
LONG

S/C ORIENTATION
TILT ANG
TILT AZIM
SWING ANG
N.DEV.

PHOTO ILLUMINATION
SUN AZIM
INCID ANG
EMISS ANG
PHASE ANG
ALPHA

PRINCIPAL POINT
LATITUDE
LONGITUDE

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 42.72 DEG AB 68.7 KM
A LONG -124.59 DEG BC 27.5 KM
B LAT 32.35 DEG CD 63.5 KM
B LONG -114.27 DEG DA 737.3 KM
C LAT 24.22 DEG TILT DISTANCE 1.9
C LONG -108.93 DEG
D LAT 25.26 DEG
D LONG -155.86 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 81.78 DEG AB 250.9 KM
A LONG 48.59 DEG BC 316.6 KM
B LAT 47.93 DEG CD 243.8 KM
B LONG -37.96 DEG DA 310.6 KM
C LAT 48.93 DEG TILT DISTANCE 15.1
C LONG -53.68 DEG
D LAT 87.66 DEG
D LONG -165.21 DEG

MISSION/
FRAME NO.
4165

YR. MO. DY
PR. MI. SEC

TIME
S/C POSITION
ALT FT
LAT
LONG

S/C ORIENTATION
TILT ANG
TILT AZIM
SWING ANG
N.DEV.

PHOTO ILLUMINATION
SUN AZIM
INCID ANG
EMISS ANG
PHASE ANG
ALPHA

PRINCIPAL POINT
LATITUDE
LONGITUDE

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 16.76 DEG AB 116.8 KM
A LONG 155.14 DEG BC 418.2 KM
B LAT 27.23 DEG CD 591.9 KM
B LONG 168.91 DEG DA 330.0 KM
C LAT 25.42 DEG TILT DISTANCE 10.5
C LONG -156.40 DEG
D LAT -1.49 DEG
D LONG 154.61 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -4.99 DEG AB 478.3 KM
A LONG 66.84 DEG BC 881.0 KM
B LAT 55.85 DEG CD 197.5 KM
B LONG 20.71 DEG DA 796.4 KM
C LAT 78.34 DEG TILT DISTANCE 81.3
C LONG 41.92 DEG
D LAT 4.04 DEG
D LONG 91.79 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/10/71 PAGE 1113

MISSION/
FRAME NO.
4169

YR.MO.DY 670523
HR.MI.SEC 17328.81

S/C POSITION
ALT 2722.14 KM
ALT RT -0.0912 KM/SEC
LAT -14.14 DEG
LONG -69.56 DEG

S/C ORIENTATION
TILT ANG 0.38 DEG
TILT AZIM 103.71 DEG
SWING ANG 288.74 DEG
N.DEV. 5.29 DEG

PHOTO ILLUMINATION
SUN AZIM 84.87 DEG
INCID ANG 73.50 DEG
EMISS ANG 2.25 DEG
PHASE ANG 75.65 DEG
ALPHA -2.15 DEG

PRINCIPAL POINT
LATITUDE -14.45 DEG
LONGITUDE -58.18 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 19.48 DEG AB 519.1 KM
A LONG -22.35 DEG BC 422.7 KM
B LAT -25.33 DEG CD 895.8 KM
B LONG -4.10 DEG DA 548.9 KM
C LAT -45.39 DEG TILT DISTANCE
C LONG -137.39 DEG 1.2
D LAT 21.64 DEG
D LONG -121.87 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 2.58 DEG AB 866.7 KM
A LONG -65.45 DEG BC 253.1 KM
B LAT -30.80 DEG CD 072.9 KM
B LONG -61.41 DEG DA 251.9 KM
C LAT -31.61 DEG TILT DISTANCE
C LONG -71.14 DEG 9.3
D LAT 1.88 DEG
D LONG -73.74 DEG

MISSION/
FRAME NO.
4169

YR.MO.DY 670523
HR.MI.SEC 1803 2.01

S/C POSITION
ALT 2672.02 KM
ALT RT 0.0382 KM/SEC
LAT 14.14 DEG
LONG -67.33 DEG

S/C ORIENTATION
TILT ANG 0.78 DEG
TILT AZIM 248.53 DEG
SWING ANG 62.11 DEG
N.DEV. 353.85 DEG

PHOTO ILLUMINATION
SUN AZIM 93.49 DEG
INCID ANG 73.14 DEG
EMISS ANG 1.99 DEG
PHASE ANG 71.34 DEG
ALPHA 1.80 DEG

PRINCIPAL POINT
LATITUDE 13.69 DEG
LONGITUDE -68.49 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 35.75 DEG AB 019.5 KM
A LONG 2.75 DEG BC 955.3 KM
B LAT -30.84 DEG CD 439.3 KM
B LONG -20.51 DEG DA 259.1 KM
C LAT -11.75 DEG TILT DISTANCE
C LONG -117.75 DEG 1.0
D LAT 37.13 DEG
D LONG -121.02 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 29.44 DEG AB 984.2 KM
A LONG -61.93 DEG BC 248.4 KM
B LAT -3.23 DEG CD 987.3 KM
B LONG -65.24 DEG DA 246.8 KM
C LAT -2.44 DEG TILT DISTANCE
C LONG -74.42 DEG 8.3
D LAT 30.47 DEG
D LONG -71.27 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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04/10/71

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.
4170

TIME
670523
123518.31

S/C POSITION
ALT 2870.53 KM
ALT RT 0.1607 KM/SEC
LAT 43.00 DEG
LONG -64.22 DEG

S/C ORIENTATION
TILT ANG 2.19 DEG
TILT AZIM 198.25 DEG
SWING ANG 270.83 DEG
N.DEV. 339.57 DEG

PHOTO ILLUMINATION
SUN AZIM 107.74 DEG
INCID ANG 73.18 DEG
EMISS ANG 5.81 DEG
PHASE ANG 75.98 DEG
ALPHA -5.80 DEG

PRINCIPAL POINT
LATITUDE 41.77 DEG
LONGITUDE -59.60 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 16.50 DEG AB 199.8 KM
A LONG 7.61 DEG BC 568.5 KM
B LAT -5.70 DEG CD 999.5 KM
B LONG -15.72 DEG DA 146.0 KM
C LAT 0.24 DEG TILT DISTANCE 3.0
C LONG -120.15 DEG
D LAT 59.88 DEG
D LONG -178.26 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 55.55 DEG AB 068.8 KM
A LONG -40.45 DEG RC 268.9 KM
B LAT 23.24 DEG CD 057.8 KM
B LONG -61.49 DEG DA 268.7 KM
C LAT 26.01 DEG TILT DISTANCE 23.3
C LONG -70.77 DEG
D LAT 59.79 DEG
D LONG -55.09 DEG

MISSION/
FRAME NO.
4171

TIME
670524
012656.71

S/C POSITION
ALT 5800.00 KM
ALT RT -0.1259 KM/SEC
LAT -34.03 DEG
LONG 110.74 DEG

S/C ORIENTATION
TILT ANG 118.92 DEG
TILT AZIM 307.96 DEG
SWING ANG 37.86 DEG
N.DEV. 344.84 DEG

PHOTO ILLUMINATION
SUN AZIM 269.11 DEG
INCID ANG 94.21 DEG
EMISS ANG 137.86 DEG
PHASE ANG 114.05 DEG
ALPHA -29.02 DEG

PRINCIPAL POINT
LATITUDE -21.34 DEG
LONGITUDE 94.79 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0. DEG AB 0. KM
A LONG 0. DEG BC 0. KM
B LAT 0. DEG CD 0. KM
B LONG 0. DEG DA 0. KM
C LAT 0. DEG TILT DISTANCE 44.6
C LONG 0. DEG
D LAT 0. DEG
D LONG 0. DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0. DEG AB 0. KM
A LONG 0. DEG BC 0. KM
B LAT 0. DEG CD 0. KM
B LONG 0. DEG DA 0. KM
C LAT 0. DEG TILT DISTANCE 05.4
C LONG 0. DEG
D LAT 0. DEG
D LONG 0. DEG

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/10/71 PAGE 390

MISSION/
FRAME NO.
4172

YR. MO. DY 67GE24
HR. MI. SEC 350C29.11

S/C POSITION
ALT 3010.73 KM
ALT RT -0.1969 KM/SEC
LAT -41.98 DEG
LONG -79.24 DEG

S/C ORIENTATION
TILT ANG 4.76 DEG
TILT AZIM 100.34 DEG
SWING ANG 297.27 DEG
N.DEV. 24.62 DEG

PHOTO ILLUMINATION
SUN AZIM 73.13 DEG
INCID ANG 73.67 DEG
EMISS ANG 13.12 DEG
PHASE ANG 86.06 DEG
ALPHA -12.44 DEG

PRINCIPAL POINT
LATITUDE -42.94 DEG
LONGITUDE -67.94 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -43.51 DEG AB 344.0 KM
A LONG -119.83 DEG BC 225.6 KM
B LAT -51.03 DEG CD 952.2 KM
B LONG -122.89 DEG DA 273.8 KM
C LAT -63.01 DEG TILT DISTANCE 6.5
C LONG 161.22 DEG
D LAT 3.01 DEG
D LONG -125.22 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -23.92 DEG AB 149.5 KM
A LONG -71.02 DEG BC 299.1 KM
B LAT -56.51 DEG CD 123.9 KM
B LONG -42.37 DEG DA 284.0 KM
C LAT -62.15 DEG TILT DISTANCE 50.8
C LONG -58.38 DEG
D LAT -27.39 DEG
D LONG -80.69 DEG

MISSION/
FRAME NO.
4173

YR. MO. DY 67GE24
HR. MI. SEC 053243.11

S/C POSITION
ALT 2724.03 KM
ALT RT -0.0916 KM/SEC
LAT -14.37 DEG
LONG -76.23 DEG

S/C ORIENTATION
TILT ANG 0.56 DEG
TILT AZIM 116.66 DEG
SWING ANG 301.46 DEG
N.DEV. 5.01 DEG

PHOTO ILLUMINATION
SUN AZIM 85.08 DEG
INCID ANG 74.63 DEG
EMISS ANG 1.45 DEG
PHASE ANG 75.87 DEG
ALPHA -1.24 DEG

PRINCIPAL POINT
LATITUDE -14.77 DEG
LONGITUDE -75.41 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 17.73 DEG AB 470.8 KM
A LONG -32.04 DEG BC 375.1 KM
B LAT -29.95 DEG CD 855.3 KM
B LONG -16.00 DEG DA 965.4 KM
C LAT -44.17 DEG TILT DISTANCE 0.7
C LONG -147.15 DEG
D LAT 20.32 DEG
D LONG -128.97 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.34 DEG AB 006.4 KM
A LONG -72.65 DEG BC 253.2 KM
B LAT -31.16 DEG CD 004.3 KM
B LONG -68.76 DEG DA 251.8 KM
C LAT -31.95 DEG TILT DISTANCE 6.0
C LONG -78.53 DEG
D LAT 1.60 DEG
D LONG -80.94 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/ FRAME NO. 4174	TIME 576224	S/C POSITION ALT 2673.04 KM LAT 2.0377 KM/SEC LONG 13.91 DEG	S/C ORIENTATION TILT ANG 1.34 DEG TILT AZIM 255.11 DEG SWING ANG 58.60 DEG N.DEV. 353.95 DEG	PHOTO ILLUMINATION SUN AZIM 53.02 DEG INCID ANG 74.49 DEG EMISS ANG 3.40 DEG PHASE ANG 71.27 DEG ALPHA 3.22 DEG	PRINCIPAL POINT LATITUDE 13.37 DEG LONGITUDE -76.00 DEG
MEDIUM RESOLUTION					
CORNER COORDINATE	SIDE LENGTH				
A LAT 37.33 DEG	AB 927.5 KM				
A LONG -7.51 DEG	BC 531.9 KM				
B LAT -32.01 DEG	CD 485.4 KM				
B LONG -25.18 DEG	DA 266.6 KM				
C LAT -14.28 DEG	TILT DISTANCE 1.8				
C LONG -122.04 DEG					
D LAT 37.02 DEG					
D LONG -122.81 DEG					
HIGH RESOLUTION					
CORNER COORDINATE	SIDE LENGTH				
A LAT 29.11 DEG	AB 984.1 KM				
A LONG -69.57 DEG	BC 249.3 KM				
B LAT -3.57 DEG	CD 989.5 KM				
B LONG -73.78 DEG	DA 247.1 KM				
C LAT -2.84 DEG	TILT DISTANCE 14.2				
C LONG -82.00 DEG					
D LAT 30.15 DEG					
D LONG -78.88 DEG					

MISSION/ FRAME NO. 4175	TIME 673224	S/C POSITION ALT 2871.66 KM LAT 0.1605 KM/SEC LONG 42.86 DEG	S/C ORIENTATION TILT ANG 2.73 DEG TILT AZIM 116.50 DEG SWING ANG 279.58 DEG N.DEV. 340.50 DEG	PHOTO ILLUMINATION SUN AZIM 106.76 DEG INCID ANG 70.80 DEG EMISS ANG 5.40 DEG PHASE ANG 76.07 DEG ALPHA -5.28 DEG	PRINCIPAL POINT LATITUDE 41.29 DEG LONGITUDE -55.78 DEG
MEDIUM RESOLUTION					
CORNER COORDINATE	SIDE LENGTH				
A LAT 26.28 DEG	AB 977.1 KM				
A LONG -3.47 DEG	BC 564.3 KM				
B LAT -6.08 DEG	CD 939.0 KM				
B LONG -23.13 DEG	DA 186.9 KM				
C LAT 2.64 DEG	TILT DISTANCE 2.8				
C LONG -128.23 DEG					
D LAT 58.35 DEG					
D LONG 174.73 DEG					
HIGH RESOLUTION					
CORNER COORDINATE	SIDE LENGTH				
A LAT 55.26 DEG	AB 068.6 KM				
A LONG -48.39 DEG	BC 269.4 KM				
B LAT 22.64 DEG	CD 058.6 KM				
B LONG -68.38 DEG	DA 267.7 KM				
C LAT 25.31 DEG	TILT DISTANCE 21.6				
C LONG -77.67 DEG					
D LAT 59.30 DEG					
D LONG -63.00 DEG					

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/16/71 PAGE 392

MISSION/
FRAME NO.
4176

TIME
670524
071412.71

YR.,MO.,DY
HR.,MI.,SEC
071412.71

S/C POSITION
ALT 3353.82 KM
LAT RT 0.2444 KM/SEC
LONG 72.28 DEG
-55.77 DEG

S/C ORIENTATION
TILT ANG 1.46 DEG
TILT AZIM 142.72 DEG
SWING ANG 319.57 DEG
N.DEV. 352.20 DEG

PHOTO ILLUMINATION
SUN AZIM 125.68 DEG
INCID ANG 77.25 DEG
EMISS ANG 4.28 DEG
PHASE ANG 81.23 DEG
ALPHA -3.98 DEG

PRINCIPAL POINT
LATITUDE 69.97 DEG
LONGITUDE -54.78 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 42.01 DEG AB 114.5 KM
A LONG -135.34 DEG BC 277.2 KM
B LAT 37.16 DEG CD 054.9 KM
B LONG -129.24 DEG DA 756.5 KM
C LAT 21.96 DEG TILT DISTANCE
C LONG -121.33 DEG 2.0
D LAT 28.69 DEG
D LONG -172.00 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 81.96 DEG AB 254.5 KM
A LONG 34.14 DEG RC 317.8 KM
B LAT -47.58 DEG CD 248.1 KM
B LONG -51.01 DEG DA 310.3 KM
C LAT 48.52 DEG TILT DISTANCE
C LONG -66.69 DEG 15.5
D LAT 87.61 DEG
D LONG -171.32 DEG

MISSION/
FRAME NO.
4177

TIME
670524
094528.41

YR.,MO.,DY
HR.,MI.,SEC
094528.41

S/C POSITION
ALT 5491.85 KM
LAT RT 0.1698 KM/SEC
LONG 33.96 DEG
99.33 DEG

S/C ORIENTATION
TILT ANG 7.56 DEG
TILT AZIM 290.06 DEG
SWING ANG 282.31 DEG
N.DEV. 191.42 DEG

PHOTO ILLUMINATION
SUN AZIM 258.73 DEG
INCID ANG 75.23 DEG
EMISS ANG 33.23 DEG
PHASE ANG 107.72 DEG
ALPHA -32.60 DEG

PRINCIPAL POINT
LATITUDE 38.81 DEG
LONGITUDE 67.85 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 17.24 DEG AB 130.5 KM
A LONG 146.49 DEG BC 420.5 KM
B LAT 27.71 DEG CD 512.3 KM
B LONG 156.43 DEG DA 339.9 KM
C LAT 30.77 DEG TILT DISTANCE
C LONG -172.23 DEG 10.6
D LAT -0.99 DEG
D LONG 141.59 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -4.73 DEG AB 452.6 KM
A LONG 54.41 DEG BC 886.9 KM
B LAT 55.37 DEG CD 205.4 KM
B LONG 6.67 DEG DA 784.4 KM
C LAT 78.14 DEG TILT DISTANCE
C LONG 25.47 DEG 81.0
D LAT 4.17 DEG
D LONG 78.98 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.
4178

TIME 570524
YR.MO.DY 132533.21
HR.MI.SEC
S/C POSITION ALT 5795.24 KM
ALT RT -0.1263 KM/SEC
LAT -33.98 DEG
LONG 104.14 DEG
S/C ORIENTATION TILT ANG 5.26 DEG
TILT AZIM 264.17 DEG
SWING ANG 274.97 DEG
N.DEV. 178.99 DEG
PHOTO ILLUMINATION SUN AZIM 271.85 DEG
INCID ANG 88.54 DEG
EMISS ANG 23.42 DEG
PHASE ANG 111.88 DEG
ALPHA -23.34 DEG
PRINCIPAL POINT LATITUDE -33.87 DEG
LONGITUDE 82.21 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT C DEG AB 0. KM
A LONG C DEG BC 0. KM
B LAT 0 DEG CD 0. KM
B LONG 0 DEG DA 0. KM
C LAT 0 DEG TILT DISTANCE 7.3
C LONG 0 DEG
D LAT 0 DEG
D LONG 0 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -67.04 DEG AB 452.3 KM
A LONG 20.50 DEG BC 880.6 KM
B LAT 18.22 DEG CD 241.0 KM
B LONG 58.90 DEG DA 731.7 KM
C LAT 7.38 DEG TILT DISTANCE 56.1
C LONG 86.97 DEG
D LAT -72.86 DEG
D LONG 94.71 DEG

MISSION/
FRAME NO.
4179

TIME 670524
YR.MO.DY 161523.81
HR.MI.SEC
S/C POSITION ALT 3591.83 KM
ALT RT -0.2588 KM/SEC
LAT -71.38 DEG
LONG -96.22 DEG
S/C ORIENTATION TILT ANG 3.64 DEG
TILT AZIM 86.54 DEG
SWING ANG 246.42 DEG
N.DEV. 0.37 DEG
PHOTO ILLUMINATION SUN AZIM 68.15 DEG
INCID ANG 82.85 DEG
EMISS ANG 11.24 DEG
PHASE ANG 94.08 DEG
ALPHA -11.23 DEG
PRINCIPAL POINT LATITUDE -69.52 DEG
LONGITUDE -74.07 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -36.28 DEG AB 196.5 KM
A LONG -140.73 DEG BC 280.2 KM
B LAT -41.21 DEG CD 612.4 KM
B LONG -150.87 DEG DA 439.5 KM
C LAT -35.29 DEG TILT DISTANCE 5.0
C LONG 173.75 DEG
D LAT -24.53 DEG
D LONG -131.03 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -44.69 DEG AB 370.4 KM
A LONG -64.62 DEG BC 340.4 KM
B LAT -83.09 DEG CD 342.8 KM
B LONG 31.86 DEG DA 354.4 KM
C LAT -85.11 DEG TILT DISTANCE 38.8
C LONG 175.14 DEG
D LAT -45.77 DEG
D LONG -81.21 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.
4180

YR. MO. DY
HR. MI. SEC
57C524
170C54.31

S/C POSITION
ALT 3009.00 KM
LAT -0.1963 KM/SEC
LONG -85.85 DEG

S/C ORIENTATION
TILT ANG 4.60 DEG
TILT AZIM 85.24 DEG
SWING ANG 282.69 DEG
N.DEV. 24.22 DEG

PHOTO ILLUMINATION
SUN AZIM 74.57 DEG
INCID ANG 73.95 DEG
EMISS ANG 12.65 DEG
PHASE ANG 86.58 DEG
ALPHA -12.63 DEG

PRINCIPAL POINT
LATITUDE -40.83 DEG
LONGITUDE -75.22 DEG

MEDIUM RESOLUTION

CORNER COORDINATE
A LAT -42.17 DEG
A LONG -124.56 DEG
B LAT -45.32 DEG
B LONG -127.28 DEG
C LAT -63.57 DEG
C LONG 151.58 DEG
D LAT -6.43 DEG
D LONG -130.46 DEG

SIDE LENGTH
AB 329.6 KM
BC 222.1 KM
CD 136.7 KM
DA 953.5 KM
TILT DISTANCE
6.4

HIGH RESOLUTION

CORNER COORDINATE
A LAT -21.41 DEG
A LONG -78.15 DEG
B LAT -54.26 DEG
B LONG -51.95 DEG
C LAT -59.63 DEG
C LONG -65.96 DEG
D LAT -25.07 DEG
D LONG -87.72 DEG

SIDE LENGTH
AB 140.5 KM
BC 295.2 KM
CD 114.8 KM
DA 288.2 KM
TILT DISTANCE
49.1

MISSION/
FRAME NO.
4181

YR. MO. DY
HR. MI. SEC
67C524
1733 6.71

S/C POSITION
ALT 2723.92 KM
LAT -0.0908 KM/SEC
LONG -14.40 DEG

S/C ORIENTATION
TILT ANG 0.93 DEG
TILT AZIM 25.84 DEG
SWING ANG 212.07 DEG
N.DEV. 5.36 DEG

PHOTO ILLUMINATION
SUN AZIM 85.69 DEG
INCID ANG 75.16 DEG
EMISS ANG 2.39 DEG
PHASE ANG 76.40 DEG
ALPHA -1.25 DEG

PRINCIPAL POINT
LATITUDE -13.09 DEG
LONGITUDE -82.18 DEG

MEDIUM RESOLUTION

CORNER COORDINATE
A LAT 23.80 DEG
A LONG -33.17 DEG
B LAT -27.52 DEG
B LONG -28.35 DEG
C LAT -44.82 DEG
C LONG -151.67 DEG
D LAT 12.19 DEG
D LONG -127.58 DEG

SIDE LENGTH
AB 509.4 KM
BC 292.1 KM
CD 042.9 KM
DA 442.7 KM
TILT DISTANCE
1.3

HIGH RESOLUTION

CORNER COORDINATE
A LAT 4.35 DEG
A LONG -79.51 DEG
B LAT -29.17 DEG
B LONG -75.63 DEG
C LAT -30.01 DEG
C LONG -85.11 DEG
D LAT 3.54 DEG
D LONG -87.89 DEG

SIDE LENGTH
AB 007.4 KM
BC 350.8 KM
CD 005.2 KM
DA 254.4 KM
TILT DISTANCE
9.9

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.
4182

TIME 670224 1836 7.51
YF,MO,DY 670224
PH,MI,SEC 1836 7.51

S/C POSITION ALT 2674.33 KM
ALT RT 0.2384 KM/SEC
LAT 13.88 DEG
LONG -80.57 DEG

S/C ORIENTATION TILT ANG 1.24 DEG
TILT, AZIM 329.44 DEG
SWING ANG 143.96 DEG
N.DEV. 354.26 DEG

PHOTO ILLUMINATION SUN AZIM 92.72 DEG
INCID ANG 73.94 DEG
EMISS ANG 2.64 DEG
PHASE ANG 72.46 DEG
ALPHA 1.47 DEG

PRINCIPAL POINT LATITUDE 15.25 DEG
LONGITUDE -81.41 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 25.22 DEG AB 784.4 KM
A LONG -12.62 DEG BC 977.1 KM
B LAT -31.18 DEG CD 557.3 KM
B LONG -22.82 DEG DA 350.9 KM
C LAT -17.94 DEG TILT DISTANCE 1.4
C LONG -136.71 DEG
D LAT 39.74 DEG
D LONG -141.43 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 31.28 DEG AB 984.2 KM
A LONG -74.76 DEG BC 245.1 KM
B LAT -1.37 DEG CD 989.2 KM
B LONG -79.05 DEG DA 249.7 KM
C LAT -7.53 DEG TILT DISTANCE 11.0
C LONG -87.15 DEG
D LAT 32.37 DEG
D LONG -84.40 DEG

MISSION/
FRAME NO.
4183

TIME 670224 1836 7.51
YF,MO,DY 670224
PH,MI,SEC 1836 7.51

S/C POSITION ALT 2874.45 KM
ALT RT 0.1611 KM/SEC
LAT 42.84 DEG
LONG -77.39 DEG

S/C ORIENTATION TILT ANG 2.82 DEG
TILT, AZIM 79.44 DEG
SWING ANG 242.58 DEG
N.DEV. 338.73 DEG

PHOTO ILLUMINATION SUN AZIM 198.91 DEG
INCID ANG 70.16 DEG
EMISS ANG 7.52 DEG
PHASE ANG 77.00 DEG
ALPHA -6.86 DEG

PRINCIPAL POINT LATITUDE 43.53 DEG
LONGITUDE -71.02 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 15.92 DEG AB 322.5 KM
A LONG -15.50 DEG BC 588.6 KM
B LAT -4.76 DEG CD 575.3 KM
B LONG -25.77 DEG DA 239.4 KM
C LAT 5.15 DEG TILT DISTANCE 3.9
C LONG -127.54 DEG
D LAT 58.86 DEG
D LONG 165.52 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 57.35 DEG AB 075.7 KM
A LONG -49.75 DEG BC 266.8 KM
B LAT 25.35 DEG CD 063.8 KM
B LONG -73.11 DEG DA 273.8 KM
C LAT 28.13 DEG TILT DISTANCE 30.1
C LONG -82.48 DEG
D LAT 61.91 DEG
D LONG -65.28 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/10/71 PAGE 395

MISSION/
FRAME NO.
4184

TIME
470525
012032.01

S/C POSITION
ALT 5790.15 KM
ALT RT -2.1273 KM/SEC
LAT -34.03 DEG
LONG 97.52 DEG

S/C ORIENTATION
TILT ANG 6.57 DEG
TILT AZIM 259.11 DEG
SWING ANG 269.51 DEG
N.DEV. 174.87 DEG

PHOTO ILLUMINATION
SUN AZIM 275.83 DEG
INCID ANG 83.06 DEG
EMISS ANG 29.73 DEG
PHASE ANG 112.78 DEG
ALPHA -29.72 DEG

PRINCIPAL POINT
LATITUDE -35.18 DEG
LONGITUDE 59.32 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -16.19 DEG AB 771.8 KM
A LONG 159.64 DEG BC 449.6 KM
B LAT -3.58 DEG CD 531.9 KM
B LONG 150.57 DEG DA 791.5 KM
C LAT -2.55 DEG TILT DISTANCE 9.2
C LONG 150.65 DEG
D LAT -16.59 DEG
D LONG 160.95 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -54.64 DEG AB 434.6 KM
A LONG -18.67 DEG RC 118.2 KM
B LAT 19.76 DEG CD 255.4 KM
B LONG 42.16 DEG DA 405.0 KM
C LAT 4.85 DEG TILT DISTANCE 70.3
C LONG 76.07 DEG
D LAT -75.91 DEG
D LONG 55.11 DEG

MISSION/
FRAME NO.
4185

TIME
670525
013035.91

S/C POSITION
ALT 5789.66 KM
ALT RT -0.1274 KM/SEC
LAT -34.05 DEG
LONG 97.52 DEG

S/C ORIENTATION
TILT ANG 6.57 DEG
TILT AZIM 258.93 DEG
SWING ANG 269.33 DEG
N.DEV. 174.81 DEG

PHOTO ILLUMINATION
SUN AZIM 275.86 DEG
INCID ANG 83.05 DEG
EMISS ANG 29.73 DEG
PHASE ANG 112.78 DEG
ALPHA -29.73 DEG

PRINCIPAL POINT
LATITUDE -35.27 DEG
LONGITUDE 59.30 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -16.25 DEG AB 771.8 KM
A LONG 159.70 DEG BC 449.5 KM
B LAT -4.09 DEG CD 531.7 KM
B LONG 150.58 DEG DA 791.5 KM
C LAT -2.67 DEG TILT DISTANCE 9.2
C LONG 150.65 DEG
D LAT -17.34 DEG
D LONG 161.02 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -57.29 DEG AB 365.0 KM
A LONG -11.65 DEG BC 077.9 KM
B LAT 18.54 DEG CD 255.3 KM
B LONG 43.34 DEG DA 497.6 KM
C LAT 9.70 DEG TILT DISTANCE 70.3
C LONG 76.09 DEG
D LAT -76.04 DEG
D LONG 54.81 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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34/10/73

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.

4186
YR.NO.DY 57C525
HR.MI.SEC 050122.91
TIME
S/C POSITION ALT 3005.60 KM
ALT RT -0.195A KM/SEC
LAT -41.96 DEG
LONG -92.48 DEG
S/C ORIENTATION TILT ANG 4.72 DEG
TILT AZIM 95.87 DEG
SWING ANG 292.95 DEG
N.DEV. 24.53 DEG
PHOTO ILLUMINATION SUN AZIM 74.18 DEG
INCID ANG 74.36 DEG
EMISS ANG 12.99 DEG
PHASE ANG 86.97 DEG
ALPHA -12.63 DEG
PRINCIPAL POINT LATITUDE -42.27 DEG
LONGITUDE -91.34 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -43.41 DEG AB 331.4 KM
A LONG -132.27 DEG BC 233.8 KM
B LAT -50.53 DEG CD 999.5 KM
B LONG -135.19 DEG DA 273.8 KM
C LAT -63.76 DEG TILT DISTANCE 6.5
C LONG 147.79 DEG
D LAT 3.28 DEG
D LONG -142.45 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -23.17 DEG AB 144.5 KM
A LONG -84.38 DEG BC 297.6 KM
B LAT -55.77 DEG CD 118.8 KM
B LONG -55.56 DEG DA 284.9 KM
C LAT -61.32 DEG TILT DISTANCE 50.4
C LONG -72.21 DEG
D LAT -25.70 DEG
D LONG -94.03 DEG

MISSION/
FRAME NO.

4187
YR.NO.DY 57C525
HR.MI.SEC 053333.51
TIME
S/C POSITION ALT 2722.78 KM
ALT RT -0.0897 KM/SEC
LAT -14.36 DEG
LONG -89.48 DEG
S/C ORIENTATION TILT ANG 0.47 DEG
TILT AZIM 145.83 DEG
SWING ANG 330.41 DEG
N.DEV. 4.70 DEG
PHOTO ILLUMINATION SUN AZIM 85.40 DEG
INCID ANG 76.76 DEG
EMISS ANG 1.20 DEG
PHASE ANG 76.66 DEG
ALPHA -0.60 DEG
PRINCIPAL POINT LATITUDE -14.97 DEG
LONGITUDE -89.05 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 16.36 DEG AB 447.7 KM
A LONG -47.24 DEG BC 368.2 KM
B LAT -30.50 DEG CD 411.4 KM
B LONG -31.39 DEG DA 995.0 KM
C LAT -27.86 DEG TILT DISTANCE 6.6
C LONG -142.22 DEG
D LAT 20.28 DEG
D LONG -142.50 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.07 DEG AB 005.5 KM
A LONG -86.24 DEG BC 251.2 KM
B LAT -31.41 DEG CD 024.4 KM
B LONG -82.53 DEG DA 251.4 KM
C LAT -32.17 DEG TILT DISTANCE 4.9
C LONG -92.23 DEG
D LAT 1.40 DEG
D LONG -94.52 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

PAGE 39A

04/10/71

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.

4188

YR.,MO.,DY 070525
HR.,MI.,SEC 0604 2.61

S/C POSITION
ALT 2675.39 KM
ALT RT 0.0396 KM/SEC
LAT 13.92 DEG
LONG -87.19 DEG

S/C ORIENTATION
TILT ANG 1.32 DEG
TILT AZIM 255.05 DEG
SWING ANG 68.71 DEG
N.DEV. 354.12 DEG

PHOTO ILLUMINATION
SUN AZIM 92.74 DEG
INCID ANG 75.49 DEG
EMISS ANG 3.37 DEG
PHASE ANG 72.29 DEG
ALPHA. 3.19 DEG

PRINCIPAL POINT
LATITUDE 13.38 DEG
LONGITUDE -89.22 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 37.53 DEG AB 957.6 KM
A LONG -15.58 DEG BC 951.3 KM
B LAT -32.24 DEG CD 485.2 KM
B LONG -41.75 DEG DA 303.8 KM
C LAT -14.42 DEG TILT DISTANCE 1.5
C LONG -145.20 DEG
D LAT 36.52 DEG
D LONG -146.18 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 29.16 DEG AB 985.0 KM
A LONG -82.83 DEG BC 249.5 KM
B LAT -3.56 DEG CD 990.4 KM
B LONG -86.95 DEG DA 247.3 KM
C LAT -2.85 DEG TILT DISTANCE 14.1
C LONG -95.17 DEG
D LAT 30.17 DEG
D LONG -92.16 DEG

MISSION/
FRAME NO.

4189

YR.,MO.,DY 070525
HR.,MI.,SEC 063035.91

S/C POSITION
ALT 2877.75 KM
ALT RT 0.1620 KM/SEC
LAT 42.88 DEG
LONG -84.00 DEG

S/C ORIENTATION
TILT ANG 1.92 DEG
TILT AZIM 110.11 DEG
SWING ANG 273.16 DEG
N.DEV. 340.43 DEG

PHOTO ILLUMINATION
SUN AZIM 106.12 DEG
INCID ANG 71.63 DEG
EMISS ANG 5.11 DEG
PHASE ANG 76.70 DEG
ALPHA -5.37 DEG

PRINCIPAL POINT
LATITUDE 41.71 DEG
LONGITUDE -79.99 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 20.47 DEG AB 954.0 KM
A LONG -15.06 DEG BC 904.4 KM
B LAT -2.83 DEG CD 998.8 KM
B LONG -32.26 DEG DA 127.4 KM
C LAT 1.65 DEG TILT DISTANCE 2.5
C LONG -139.51 DEG
D LAT 55.29 DEG
D LONG 165.43 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 55.73 DEG AB 070.4 KM
A LONG -61.25 DEG BC 269.2 KM
B LAT 23.12 DEG CD 060.7 KM
B LONG -81.62 DEG DA 268.7 KM
C LAT 25.76 DEG TILT DISTANCE 20.4
C LONG -90.95 DEG
D LAT 59.62 DEG
D LONG -73.08 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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

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MISSION/
FRAME NO.
4190

TIME
670525
0947 5.51

S/C POSITION
ALT 3373.20 KM
LAT RT 0.2457 KM/SEC
LAT 72.71 DEG
LONG -72.45 DEG

S/C ORIENTATION
TILT ANG 1.90 DEG
TILT AZIM 125.51 DEG
SWING ANG 305.23 DEG
N.DEV. 352.33 DEG

PHOTO ILLUMINATION
SUN AZIM 129.20 DEG
INCL ANG 76.50 DEG
EMISS ANG 5.60 DEG
PHASE ANG 82.08 DEG
ALPHA -5.58 DEG

PRINCIPAL POINT
LATITUDE 70.34 DEG
LONGITUDE -53.47 DEG

MEDIUM RESOLUTION
CORNER COORDINATE
A LAT 43.43 DEG
A LONG -147.50 DEG
B LAT 38.76 DEG
B LONG -137.25 DEG
C LAT 25.99 DEG
C LONG -128.38 DEG
D LAT 30.47 DEG
D LONG 176.55 DEG

SIDE LENGTH
AB 060.3 KM
BC 272.9 KM
CD 018.5 KM
DA 707.3 KM
TILT DISTANCE 2.6

HIGH RESOLUTION
CORNER COORDINATE
A LAT 81.80 DEG
A LONG 29.15 DEG
B LAT 47.69 DEG
B LONG -59.38 DEG
C LAT 49.76 DEG
C LONG -75.25 DEG
D LAT 87.41 DEG
D LONG 173.19 DEG

SIDE LENGTH
AB 265.3 KM
BC 321.0 KM
CD 254.7 KM
DA 313.1 KM
TILT DISTANCE 20.2

MISSION/
FRAME NO.
4191

TIME
670525
0947 5.51

S/C POSITION
ALT 5503.39 KM
LAT RT 0.1682 KM/SEC
LAT 33.95 DEG
LONG 86.05 DEG

S/C ORIENTATION
TILT ANG 7.70 DEG
TILT AZIM 288.89 DEG
SWING ANG 281.87 DEG
N.DEV. 192.25 DEG

PHOTO ILLUMINATION
SUN AZIM 257.65 DEG
INCL ANG 73.68 DEG
EMISS ANG 33.98 DEG
PHASE ANG 106.97 DEG
ALPHA -33.40 DEG

PRINCIPAL POINT
LATITUDE 38.30 DEG
LONGITUDE 53.79 DEG

MEDIUM RESOLUTION
CORNER COORDINATE
A LAT 17.59 DEG
A LONG 132.69 DEG
B LAT 28.61 DEG
B LONG 142.41 DEG
C LAT 32.12 DEG
C LONG 175.60 DEG
D LAT -0.78 DEG
D LONG 128.27 DEG

SIDE LENGTH
AB 121.4 KM
BC 418.9 KM
CD 524.1 KM
DA 326.8 KM
TILT DISTANCE 10.3

HIGH RESOLUTION
CORNER COORDINATE
A LAT -5.28 DEG
A LONG 40.10 DEG
B LAT 53.43 DEG
B LONG -9.33 DEG
C LAT 77.07 DEG
C LONG 9.39 DEG
D LAT 3.66 DEG
D LONG 65.44 DEG

SIDE LENGTH
AB 523.0 KM
BC 937.8 KM
CD 214.0 KM
DA 815.9 KM
TILT DISTANCE 82.6

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/13/71 PAGE 407

MISSION/
FRAME NO.
4192

YR.MO.DY 670525
PR.MI.SEC 3547 9.01

S/C POSITION
ALT 5503.98 KM
ALT RT 0.1681 KM/SEC
LAT 33.93 DEG
LONG 86.05 DEG

S/C ORIENTATION
TILT ANG 7.59 DEG
TILT AZIM 288.76 DEG
SWING ANG 281.73 DEG
N.DEV. 192.19 DEG

PHOTO ILLUMINATION
SUN AZIM 257.70 DEG
INCID ANG 73.70 DEG
EMISS ANG 33.94 DEG
PHASE ANG 106.97 DEG
ALPHA -33.38 DEG

PRINCIPAL POINT
LATITUDE 38.22 DEG
LONGITUDE 53.84 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 17.90 DEG AB 123.0 KM
A LONG 132.69 DEG BC 419.8 KM
B LAT 28.63 DEG CD 621.7 KM
B LONG 142.38 DEG DA 330.7 KM
C LAT 30.72 DEG TILT DISTANCE 10.7
C LONG 178.70 DEG
D LAT -0.32 DEG
D LONG 128.32 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -6.44 DEG AB 527.4 KM
A LONG 47.36 DEG BC 931.3 KM
B LAT 53.54 DEG CD 212.3 KM
B LONG -8.76 DEG DA 817.7 KM
C LAT 77.04 DEG TILT DISTANCE 82.5
C LONG 10.24 DEG
D LAT 3.55 DEG
D LONG 65.44 DEG

MISSION/
FRAME NO.
4193

YR.MO.DY 670525
PR.MI.SEC 162427.51

S/C POSITION
ALT 3519.21 KM
ALT RT -0.2554 KM/SEC
LAT -58.87 DEG
LONG -107.44 DEG

S/C ORIENTATION
TILT ANG 4.80 DEG
TILT AZIM 70.10 DEG
SWING ANG 231.91 DEG
N.DEV. 0.61 DEG

PHOTO ILLUMINATION
SUN AZIM 58.50 DEG
INCID ANG 80.69 DEG
EMISS ANG 14.66 DEG
PHASE ANG 94.63 DEG
ALPHA -13.97 DEG

PRINCIPAL POINT
LATITUDE -63.89 DEG
LONGITUDE -85.97 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -35.64 DEG AB 691.1 KM
A LONG -147.49 DEG BC 278.9 KM
B LAT -41.24 DEG CD 875.5 KM
B LONG -156.17 DEG DA 387.8 KM
C LAT -28.32 DEG TILT DISTANCE 6.7
C LONG 150.46 DEG
D LAT -21.32 DEG
D LONG -139.56 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -37.95 DEG AB 374.8 KM
A LONG -77.24 DEG BC 330.7 KM
B LAT -81.89 DEG CD 239.6 KM
B LONG -31.48 DEG DA 369.4 KM
C LAT -83.58 DEG TILT DISTANCE 51.2
C LONG -128.50 DEG
D LAT -39.54 DEG
D LONG -92.40 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/10/71 PAGE 401

MISSION/
FRAME NO.
4194

TIME
670525
170147.31

S/C POSITION
ALT 3002.79 KM
ALT RT -0.1949 KM/SEC
LAT -42.01 DEG
LONG -99.09 DEG

S/C ORIENTATION
TILT ANG 5.31 DEG
TILT AZIM 100.18 DEG
SWING ANG 297.39 DEG
NADEV. 25.78 DEG

PHOTO ILLUMINATION
SUN AZIM 73.29 DEG
INCID ANG 73.91 DEG
EMISS ANG 14.63 DEG
PHASE ANG 87.83 DEG
ALPHA -13.97 DEG

PRINCIPAL POINT
LATITUDE -42.97 DEG
LONGITUDE -86.50 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -44.77 DEG AB 308.4 KM
A LONG -137.83 DEG BC 223.7 KM
B LAT -51.88 DEG CD 947.3 KM
B LONG -140.88 DEG DA 374.9 KM
C LAT -65.35 DEG TILT DISTANCE 7.4
C LONG 141.16 DEG
D LAT 6.84 DEG
D LONG -150.08 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -24.04 DEG AB 153.9 KM
A LONG -89.94 DEG BC 302.7 KM
B LAT -56.15 DEG CD 124.7 KM
B LONG -60.00 DEG DA 284.9 KM
C LAT -62.06 DEG TILT DISTANCE 56.7
C LONG -75.82 DEG
D LAT -27.68 DEG
D LONG -99.59 DEG

MISSION/
FRAME NO.
4195

TIME
670525
173356.31

S/C POSITION
ALT 2721.39 KM
ALT RT -0.0890 KM/SEC
LAT -14.40 DEG
LONG -96.11 DEG

S/C ORIENTATION
TILT ANG 0.98 DEG
TILT AZIM 109.40 DEG
SWING ANG 294.21 DEG
NADEV. 5.21 DEG

PHOTO ILLUMINATION
SUN AZIM 85.25 DEG
INCID ANG 75.53 DEG
EMISS ANG 2.52 DEG
PHASE ANG 77.84 DEG
ALPHA -2.31 DEG

PRINCIPAL POINT
LATITUDE -14.91 DEG
LONGITUDE -94.60 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 18.86 DEG AB 806.3 KM
A LONG -48.51 DEG BC 444.9 KM
B LAT -29.42 DEG CD 840.6 KM
B LONG -28.68 DEG DA 049.2 KM
C LAT -45.12 DEG TILT DISTANCE 1.3
C LONG -160.55 DEG
D LAT 23.34 DEG
D LONG -150.51 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.18 DEG AB 006.8 KM
A LONG -91.85 DEG BC 253.4 KM
B LAT -31.31 DEG CD 002.7 KM
B LONG -87.80 DEG DA 251.6 KM
C LAT -32.10 DEG TILT DISTANCE 10.4
C LONG -97.60 DEG
D LAT 1.39 DEG
D LONG -100.13 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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04/10/71

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION/
FRAME NO.

4196
YR.NO.DY 670525
HR.MI.SEC 180430.81

S/C POSITION
ALT 2875.44 KM
LAT 0.0404 KM/SEC
LONG 13.88 DEG
N.DEV. -93.82 DEG

S/C ORIENTATION
TILT ANG 0.93 DEG
TILT AZIM 224.92 DEG
SWING ANG 38.29 DEG
N.DEV. 353.59 DEG

PHOTO ILLUMINATION
SUN AZIM 92.70 DEG
INCID ANG 75.02 DEG
EMISS ANG 2.37 DEG
PHASE ANG 73.44 DEG
ALPHA 1.57 DEG

PRINCIPAL POINT
LATITUDE 12.86 DEG
LONGITUDE -94.86 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 35.03 DEG AB 581.2 KM
A LONG -25.60 DEG BC 921.2 KM
B LAT -25.86 DEG CD 447.2 KM
B LONG -47.64 DEG DA 442.2 KM
C LAT -13.01 DEG TILT DISTANCE
C LONG -145.28 DEG 1.3
D LAT 42.52 DEG
D LONG -163.68 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 28.53 DEG AB 986.4 KM
A LONG -88.28 DEG BC 249.6 KM
B LAT -4.21 DEG CD 989.0 KM
B LONG -92.67 DEG DA 246.3 KM
C LAT -3.37 DEG TILT DISTANCE
C LONG -100.89 DEG 9.9
D LAT 29.57 DEG
D LONG -97.52 DEG

MISSION/
FRAME NO.

4197
YR.NO.DY 670525
HR.MI.SEC 183658.61

S/C POSITION
ALT 2879.33 KM
LAT 0.1626 KM/SEC
LONG 42.84 DEG
N.DEV. -90.66 DEG

S/C ORIENTATION
TILT ANG 2.52 DEG
TILT AZIM 115.41 DEG
SWING ANG 278.00 DEG
N.DEV. 339.41 DEG

PHOTO ILLUMINATION
SUN AZIM 106.17 DEG
INCID ANG 71.09 DEG
EMISS ANG 6.70 DEG
PHASE ANG 77.63 DEG
ALPHA -6.55 DEG

PRINCIPAL POINT
LATITUDE 40.93 DEG
LONGITUDE -85.66 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 14.53 DEG AB 309.1 KM
A LONG -33.73 DEG BC 433.8 KM
B LAT 6.75 DEG CD 603.3 KM
B LONG -40.46 DEG DA 199.3 KM
C LAT 2.60 DEG TILT DISTANCE
C LONG -144.08 DEG 3.5
D LAT 59.78 DEG
D LONG 151.82 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 54.66 DEG AB 074.0 KM
A LONG -66.78 DEG BC 271.3 KM
B LAT 22.17 DEG CD 061.4 KM
B LONG -87.56 DEG DA 269.5 KM
C LAT 25.06 DEG TILT DISTANCE
C LONG -96.63 DEG 26.8
D LAT 58.90 DEG
D LONG -81.12 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA .

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

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MISSION/
FRAME NO.
419B

TIME
670526
013214.81

YR,MO, DY
HR,MI,SEC

S/C POSITION
ALT 5781.45 KM
ALT RT -0.1289 KM/SEC
LAT -34.03 DEG
LONG 84.20 DEG

S/C ORIENTATION
TILT ANG 6.76 DEG
TILT AZIM 274.46 DEG
SWING ANG 284.75 DEG
N.DEV. 178.20 DEG

PHOTO ILLUMINATION
SUN AZIM 275.29 DEG
INCID ANG 82.13 DEG
EMISS ANG 30.64 DEG
PHASE ANG 111.87 DEG
ALPHA -29.81 DEG

PRINCIPAL POINT
LATITUDE -29.95 DEG
LONGITUDE 55.71 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -11.47 DEG AB 717.7 KM
A LONG 141.36 DEG BC 493.7 KM
B LAT 4.46 DEG CD 590.5 KM
B LONG 137.64 DEG DA 231.3 KM
C LAT 6.63 DEG TILT DISTANCE 9.4
C LONG 138.10 DEG
D LAT -18.36 DEG
D LONG 166.83 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -59.97 DEG AB 696.9 KM
A LONG 5.03 DEG BC 895.2 KM
B LAT 11.31 DEG CD 342.2 KM
B LONG 35.78 DEG DA 759.5 KM
C LAT 18.00 DEG TILT DISTANCE 72.3
C LONG 59.27 DEG
D LAT -65.81 DEG
D LONG 62.50 DEG

MISSION/
FRAME NO.
4199

TIME
670526
013218.51

YR,MO, DY
HR,MI,SEC

S/C POSITION
ALT 5780.97 KM
ALT RT -0.1290 KM/SEC
LAT -34.05 DEG
LONG 84.20 DEG

S/C ORIENTATION
TILT ANG 6.75 DEG
TILT AZIM 274.29 DEG
SWING ANG 284.59 DEG
N.DEV. 179.16 DEG

PHOTO ILLUMINATION
SUN AZIM 275.31 DEG
INCID ANG 82.13 DEG
EMISS ANG 30.62 DEG
PHASE ANG 111.87 DEG
ALPHA -29.81 DEG

PRINCIPAL POINT
LATITUDE -29.14 DEG
LONGITUDE 56.70 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -11.65 DEG AB 716.8 KM
A LONG 141.40 DEG BC 492.3 KM
B LAT 4.31 DEG CD 588.5 KM
B LONG 137.60 DEG DA 247.1 KM
C LAT 6.47 DEG TILT DISTANCE 9.4
C LONG 128.03 DEG
D LAT -18.14 DEG
D LONG 167.36 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -60.00 DEG AB 700.4 KM
A LONG 4.70 DEG BC 890.9 KM
B LAT 11.07 DEG CD 339.5 KM
B LONG 35.92 DEG DA 771.1 KM
C LAT 17.77 DEG TILT DISTANCE 72.3
C LONG 59.34 DEG
D LAT -66.91 DEG
D LONG 62.42 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/10/71 PAGE 404

MISSION/
FRAME NO.
4200

TIME
670526
0605 2.51

YR.MO.DY
670526
HR.MI.SEC
063428.51

S/C POSITION
ALT 2718.95 KM
ALT RT -0.0882 KM/SEC
LAT -14.39 DEG
LONG -102.71 DEG

S/C ORIENTATION
TILT ANG 0.69 DEG
TILT AZIM 118.10 DEG
SWING ANG 302.70 DEG
N.DEV. 4.86 DEG

PHOTO ILLUMINATION
SUN AZIM 85.52 DEG
INCID ANG 76.51 DEG
EMISS ANG 1.78 DEG
PHASE ANG 78.02 DEG
ALPHA -1.51 DEG

PRINCIPAL POINT
LATITUDE -14.90 DEG
LONGITUDE -101.72 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 17.48 DEG AB 480.4 KM
A LONG -58.14 DEG BC 385.4 KM
B LAT -30.19 DEG CD 810.9 KM
B LONG -40.92 DEG DA 982.6 KM
C LAT -44.01 DEG TILT DISTANCE 0.9
C LONG -168.95 DEG
D LAT 21.34 DEG
D LONG -155.72 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.15 DEG AB 004.9 KM
A LONG -98.91 DEG BC 282.9 KM
B LAT -31.30 DEG CD 082.3 KM
B LONG -95.10 DEG DA 251.2 KM
C LAT -32.06 DEG TILT DISTANCE 7.4
C LONG -104.88 DEG
D LAT 1.43 DEG
D LONG -107.18 DEG

MISSION/
FRAME NO.
4201

TIME
670526
0605 2.51

YR.MO.DY
670526
HR.MI.SEC
063428.51

S/C POSITION
ALT 2674.74 KM
ALT RT 0.0414 KM/SEC
LAT 13.90 DEG
LONG -100.46 DEG

S/C ORIENTATION
TILT ANG 1.20 DEG
TILT AZIM 263.32 DEG
SWING ANG 76.93 DEG
N.DEV. 354.04 DEG

PHOTO ILLUMINATION
SUN AZIM 92.55 DEG
INCID ANG 76.41 DEG
EMISS ANG 3.06 DEG
PHASE ANG 73.40 DEG
ALPHA 3.01 DEG

PRINCIPAL POINT
LATITUDE 13.68 DEG
LONGITUDE -102.35 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 37.03 DEG AB 919.7 KM
A LONG -34.79 DEG BC 950.0 KM
B LAT -32.14 DEG CD 507.7 KM
B LONG -54.58 DEG DA 314.2 KM
C LAT -13.53 DEG TILT DISTANCE 1.6
C LONG -156.97 DEG
D LAT 37.46 DEG
D LONG -160.04 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 29.49 DEG AB 984.5 KM
A LONG -95.90 DEG BC 248.9 KM
B LAT -3.21 DEG CD 989.6 KM
B LONG -100.10 DEG DA 247.7 KM
C LAT -2.48 DEG TILT DISTANCE 12.8
C LONG -108.30 DEG
D LAT 30.52 DEG
D LONG -105.27 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.
4202

YR.NO.DY	570526	S/C POSITION	ALT 5515.29 KM	S/C ORIENTATION	TILT ANG 7.26 DEG	PHOTO ILLUMINATION	SUN AZIM 259.28 DEG	PRINCIPAL POINT	LATITUDE 35.53 DEG
HR.MI.SEC	094838.81	ALT RT	0.1671 KM/SEC	TILT AZIM	282.22 DEG	INCID ANG	74.11 DEG	LONGITUDE	42.88 DEG
		LAT	33.97 DEG	SWING ANG	275.47 DEG	EMISS ANG	31.84 DEG		
		LONG	72.86 DEG	N.DEV.	189.83 DEG	PHASE ANG	105.81 DEG		
						ALPHA	-31.72 DEG		

MEDIUM RESOLUTION		HIGH RESOLUTION	
CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT 14.26 DEG	AB 199.9 KM	A LAT -13.10 DEG	AB 712.7 KM
A LONG 120.28 DEG	BC 415.1 KM	A LONG 25.30 DEG	BC 026.6 KM
B LAT 25.51 DEG	CD 590.3 KM	B LAT 52.95 DEG	CD 158.7 KM
B LONG 128.68 DEG	DA 539.2 KM	B LONG -31.65 DEG	DA 901.6 KM
C LAT 30.55 DEG	TILT DISTANCE 10.1	C LAT 74.38 DEG	TILT DISTANCE 77.7
C LONG 160.80 DEG		C LONG 23.89 DEG	
D LAT -6.76 DEG		D LAT -0.51 DEG	
D LONG 118.52 DEG		D LONG 52.89 DEG	

MISSION/
FRAME NO.
4203

YR.NO.DY	670526	S/C POSITION	ALT 5515.91 KM	S/C ORIENTATION	TILT ANG 7.25 DEG	PHOTO ILLUMINATION	SUN AZIM 259.33 DEG	PRINCIPAL POINT	LATITUDE 35.45 DEG
HR.MI.SEC	094842.51	ALT RT	0.1670 KM/SEC	TILT AZIM	282.07 DEG	INCID ANG	74.13 DEG	LONGITUDE	42.92 DEG
		LAT	33.95 DEG	SWING ANG	275.31 DEG	EMISS ANG	31.82 DEG		
		LONG	72.86 DEG	N.DEV.	189.77 DEG	PHASE ANG	105.81 DEG		
						ALPHA	-31.70 DEG		

MEDIUM RESOLUTION		HIGH RESOLUTION	
CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT 14.15 DEG	AB 202.3 KM	A LAT -13.35 DEG	AB 720.8 KM
A LONG 120.28 DEG	BC 415.1 KM	A LONG 25.18 DEG	BC 108.7 KM
B LAT 25.42 DEG	CD 636.3 KM	B LAT 51.24 DEG	CD 158.2 KM
B LONG 128.65 DEG	DA 545.4 KM	B LONG -36.42 DEG	DA 906.0 KM
C LAT 29.32 DEG	TILT DISTANCE 10.1	C LAT 74.29 DEG	TILT DISTANCE 77.7
C LONG 163.66 DEG		C LONG 24.36 DEG	
D LAT -6.55 DEG		D LAT -0.63 DEG	
D LONG 118.62 DEG		D LONG 52.89 DEG	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.
5005

TIME
470806
1122 2.60

YR.MO.DY
HR.MI.SEC

S/C POSITION ALT 2646.57 KM
ALT RT 0.6601 KM/SEC
LAT 58.97 DEG
LONG -81.16 DEG
S/C ORIENTATION
TILT ANG 9.70 DEG
TILT AZIM 285.81 DEG
SWING ANG 90.22 DEG
N.DEV. 9.88 DEG

PHOTO ILLUMINATION
SUN AZIM 259.55 DEG
INCID ANG 82.23 DEG
EMISS ANG 25.18 DEG
PHASE ANG 107.41 DEG
ALPHA -25.18 DEG
PRINCIPAL POINT
LATITUDE 59.69 DEG
LONGITUDE -111.74 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 52.00 DEG AB 684.1 KM
A LONG 35.29 DEG BC 671.8 KM
B LAT 4.22 DEG CD 0. KM
B LONG -75.07 DEG DA 708.4 KM
C LAT 0. DEG TILT DISTANCE
C LONG 0. DEG 13.6
D LAT 66.78 DEG
D LONG 89.13 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 76.76 DEG AB 998.1 KM
A LONG -110.82 DEG BC 292.3 KM
B LAT 43.52 DEG CD 047.6 KM
B LONG -102.83 DEG DA 292.6 KM
C LAT 41.15 DEG TILT DISTANCE
C LONG -115.51 DEG 04.0
D LAT 73.13 DEG
D LONG -146.08 DEG

MISSION/
FRAME NO.
5006

TIME
470806
1122 5.32

YR.MO.DY
HR.MI.SEC

S/C POSITION ALT 2648.37 KM
ALT RT 0.6599 KM/SEC
LAT 58.94 DEG
LONG -81.15 DEG
S/C ORIENTATION
TILT ANG 9.69 DEG
TILT AZIM 285.66 DEG
SWING ANG 90.05 DEG
N.DEV. 9.79 DEG

PHOTO ILLUMINATION
SUN AZIM 259.62 DEG
INCID ANG 82.26 DEG
EMISS ANG 25.15 DEG
PHASE ANG 107.41 DEG
ALPHA -25.15 DEG
PRINCIPAL POINT
LATITUDE 59.63 DEG
LONGITUDE -111.66 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 52.12 DEG AB 687.4 KM
A LONG 39.05 DEG BC 686.3 KM
B LAT 3.76 DEG CD 0. KM
B LONG -75.03 DEG DA 710.2 KM
C LAT 0. DEG TILT DISTANCE
C LONG 0. DEG 13.6
D LAT 66.99 DEG
D LONG 89.02 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 76.70 DEG AB 998.8 KM
A LONG -110.61 DEG BC 292.5 KM
B LAT 43.43 DEG CD 048.2 KM
B LONG -102.80 DEG DA 292.6 KM
C LAT 41.07 DEG TILT DISTANCE
C LONG -115.47 DEG 03.9
D LAT 73.10 DEG
D LONG -145.82 DEG