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955 L'Enfant Plaza North, S.W.
Washington, D. C. 20024

B71 11012

date: November 8, 1971

to: Distribution

from: W. L. Piotrowski and P. J. Hickson

subject: Apollo 16 Groundtrack Separation
(Addendum to TM-71-2015-6) - Case 340

## ABSTRACT

An earlier study proposed utilizing plots of groundtrack separation to minimize redundant photographic coverage while meeting the photographic constraints. The data on the Apollo 16 groundtrack separations included in the earlier study have been superseded by recent groundtrack changes and by the addition of a second orbital plane change for science coverage (LOPC-2). Tables of the normal groundtrack separation distances are presented for the latest Apollo 16 mission profile including a LOPC-2 of 3° south. Each table lists the normal groundtrack separation distance as a function of lunar latitude for various numbers of revolutions between groundtracks. Tables are also included of the groundtrack separation distances for a potential LOPC-2 of 5° south.

(NASA-CR-124748) APOLLO 16 GROUNDTRACK SEPARATION, ADDENDUM TO TM-71-2015-6) (Bellcomm, Inc.) 28 p

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MEMORANDUM FOR FILE

## I. INTRODUCTION

An earlier study* presented a technique for minimizing Mapping Camera (MC) film usage by reducing redundant coverage while meeting the desired sidelap and for planning Panoramic Camera (PC) photography such that photographic contiguity was attained but redundant coverage minimized. The technique utilized plots of the groundtrack separation as a function of lunar latitude. The plots of groundtrack separation for Apollo 16 presented in the earlier study have been superseded due to recent changes in the groundtrack and by the addition of a second orbital plane change. This second plane change (LOPC-2) increases the orbital inclination in order to photograph additional areas of geological interest. In this memorandum the normal groundtrack separation distances are presented for the current Apollo 16 groundtracks. (For a detailed discussion of photographic planning using this data the reader is referred to the referenced study.)

## II. APOLLO 16 GROUNDTRACKS

The nominal Apollo 16 mission utilizes an approach azimuth of -90° to the Descartes landing site with an orbital inclination of 8.98° and a longitude of the descending node on rev 1 of 116.4°. The CSM plane change for rendezvous (LOPC-1) occurs on rev 40 and increases the orbital inclination to 10.40° while shifting the descending node approximately 6° eastward. After CSM/LM docking, the CSM remains in this orbit until rev 60 when a second orbital plane change for science coverage (LOPC-2) increases the orbital inclination to 13.40° with no nodal shift.

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* "Lunar Orbital Photographic Planning Charts for Candidate Apollo J-Missions," Bellcomm TM-71-2015-6, P. J. Hickson and W. L. Piotrowski, October 29, 1971.

## III. GROUNDTRACK SEPARATION

Figure 1 shows the general Apollo 16 groundtrack geometry for two arbitrary groundtracks with azimuths at the node $A_1$ and $A_2$ degrees and separated by a distance S, in degrees, on the equator. The normal separation distance from groundtrack 2 at latitude $\lambda$ to groundtrack 1 is shown as p. Values of p (in km) are given in Tables I-IX as a function of latitude (from .01° to the maximum latitude, both north and south) and as a function of the rev separation between groundtracks. (The rev separation between groundtracks is equivalent to the equatorial separation S in degrees when no node shift is involved.) Each table also indicates the lengths of arc $\omega_1$ and $\omega_2$ along the respective groundtracks between the lunar equator and the indicated latitude. Values of p are determined for the following cases:

1. between CSM circularization and LOPC-1 (Tables Ia and Ib)

   $A_1 = A_2 = 8.98°$

2. across LOPC-1 (Tables IIa and IIb)

   $A_1 = 8.98°$

   $A_2 = 10.40°$

   node shift 6° eastward

3. between LOPC-1 and LOPC-2 (Tables IIIa and IIIb)

   $A_1 = A_2 = 10.40°$

4. across LOPC-2 (Tables IVa and IVb)

   $A_1 = 10.40°$

   $A_2 = 13.40°$

5. between LOPC-2 and TEI (Tables Va and Vb)

   $A_1 = A_2 = 13.40°$

6. between CSM circularization and post-LOPC-2 (Tables VIa and VIb)

$A_1 = 8.98°$

$A_2 = 13.40°$

## IV. PHOTOGRAPHIC PLANNING

Tables Ia and Ib indicate that between CSM circularization and LOPC-1, $\geq$55% MC sidelap (groundtrack separation $\leq$74 km along the entire track) can be attained with photo-passes every 15th rev and rectified-PC contiguity (groundtrack separation $\leq$165 km everywhere) can be attained with photo-passes every 35th rev. Tables IIa and IIb indicate that up to 18 revs can elapse between the last MC photo-pass prior to and the first photo-pass after LOPC-1 for $\geq$55% MC sidelap, and up to 37 revs between successive PC passes for rectified-PC contiguity. Similarly, between LOPC-1 and LOPC-2, the respective maximum rev separation allowed is 13 and 30 and after LOPC-2, 10 and 23.**

Across LOPC-2, however, a $\geq$55% MC sidelap is not possible at all points along the groundtrack even when no more than one revolution elapses between the last photo-pass prior to and the first photo-pass after LOPC-2, since $|A_1-A_2| > 2.44°$.

MAXIMUM NUMBER OF REVOLUTIONS BETWEEN SUCCESSIVE PHOTO-PASSES TO ACHIEVE CONSTRAINT

| | 3° South LOPC-2 | | 5° South LOPC-2 | |
|---|---|---|---|---|
| | MC $\geq$55% Sidelap | MC/Rectified-PC Contiguity | MC $\geq$55% Sidelap | MC/Rectified-PC Contiguity |
| Pre-LOPC-1 | 15 | 35 | 15 | 35 |
| Across LOPC-1 | 18 | 37 | 18 | 37 |
| Post-LOPC-1 | 13 | 30 | 13 | 30 |
| Across LOPC-2 | -(<1) | 22 | -(<1) | 10 |
| Post-LOPC-2 | 10 | 23 | 9 | 20 |

** Using the photographic planning technique suggested in the earlier study will require interpolation of the tables. In the earlier study only selected portions of similar tables were plotted to facilitate quick estimates.

Nevertheless, rectified-PC contiguity can be attained across LOPC-2 when no more than 22 revs elapse between the last PC photo-pass prior to and the first photo-pass after the plane change. These results are summarized in the summary chart. Lastly, the photographic overlap between the first and last photographic passes can be determined from Tables VIa and VIb.

For a potential plane change for science (LOPC-2) of 5° (15.40° inclination post-LOPC-2), the respective ground-track separations are shown in Table VII (across LOPC-2), Table VIII (post-LOPC-2) and Table IX (between CSM circularization and post-LOPC-2). The maximum number of revolutions that can elapse between successive photo-passes to achieve the constraints are also summarized in the above table.

W. L. Piotrowski

W. L. Piotrowski

P. J. Hickson

P. J. Hickson

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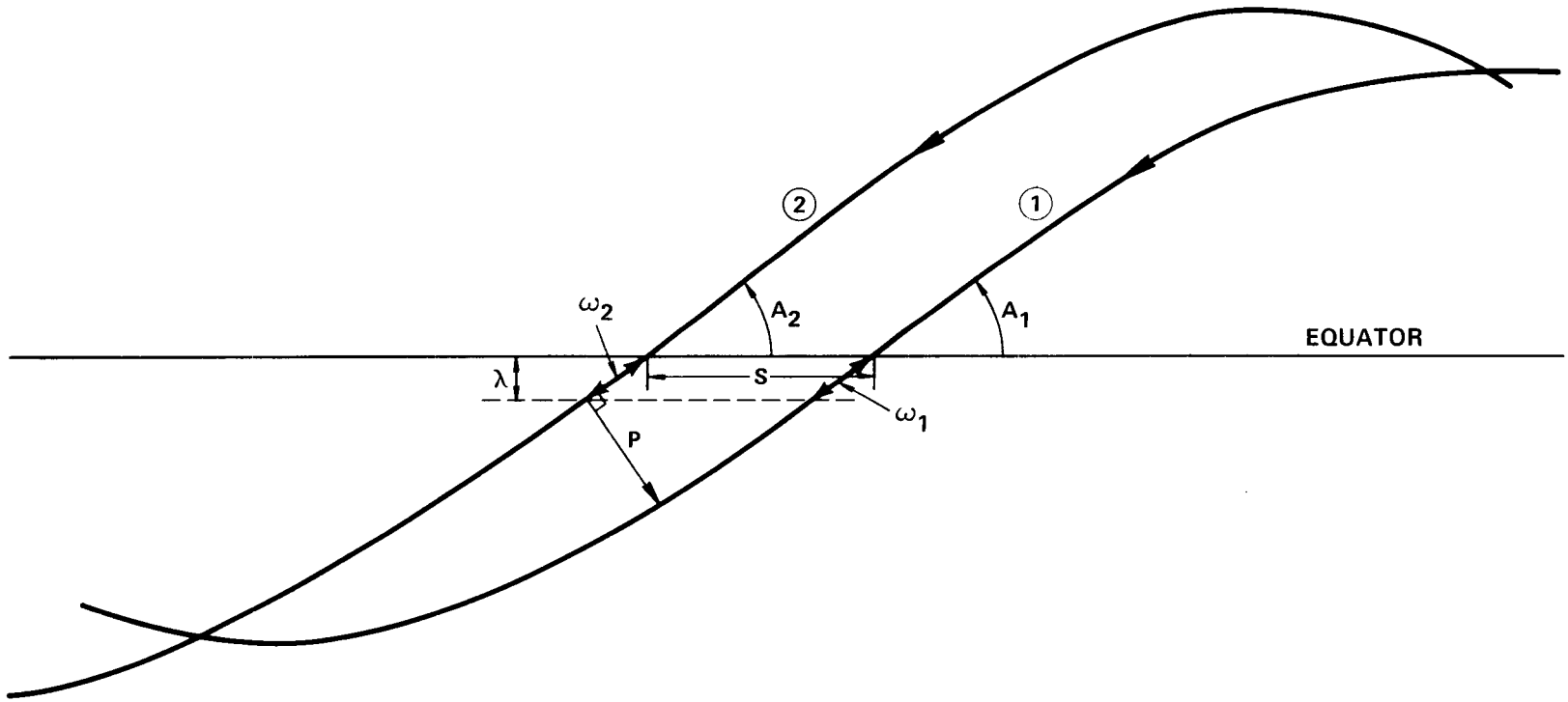


FIGURE 1 - REFERENCE GEOMETRY FOR DETERMINING APOLLO 16 GROUNDTRACK SEPARATION

Table Ia

** MINIMUM DISTANCE BETWEEN ORBIT GROUND TRACKS** APOLLO 16-

FOR REVOLUTION SEPARATION ON THE LUNAR EQUATOR IN DEGREES,AND LATITUDE IN DEG.
MINIMUM REV SEPARATION AT LATITUDE IN KILOMETERS
( MEASURED FROM TRACK 2 )

A(1)= 9.98
A(2)= 8.98

| REV | LATITUDE -8.98 | -8.00 | -7.00 | -6.00 | -5.00 | -4.00 | -3.00 | -2.00 | -1.00 | -.01 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. | -.1 | 2.1 | 2.9 | 3.5 | 3.9 | 4.2 | 4.4 | 4.6 | 4.7 | 4.7 |
| 2. | -.2 | 4.1 | 5.8 | 6.9 | 7.8 | 8.4 | 8.9 | 9.2 | 9.4 | 9.5 |
| 3. | -.4 | 6.1 | 8.6 | 10.3 | 11.6 | 12.5 | 13.3 | 13.8 | 14.1 | 14.2 |
| 4. | -.7 | 8.0 | 11.3 | 13.6 | 15.3 | 16.6 | 17.6 | 18.3 | 18.7 | 18.9 |
| 5. | -1.0 | 9.8 | 14.0 | 16.9 | 19.0 | 20.7 | 21.9 | 22.8 | 23.4 | 23.6 |
| 6. | -1.5 | 11.5 | 16.6 | 20.1 | 22.7 | 24.7 | 26.2 | 27.3 | 28.0 | 28.4 |
| 7. | -2.0 | 13.2 | 19.1 | 23.2 | 26.3 | 28.7 | 30.5 | 31.8 | 32.6 | 33.1 |
| 8. | -2.6 | 14.8 | 21.6 | 26.3 | 29.9 | 32.6 | 34.7 | 36.2 | 37.2 | 37.8 |
| 9. | -3.3 | 16.3 | 23.9 | 29.3 | 33.4 | 36.5 | 38.9 | 40.6 | 41.8 | 42.4 |
| 10. | -4.1 | 17.7 | 26.3 | 32.3 | 36.8 | 40.3 | 43.0 | 45.0 | 46.4 | 47.1 |
| 11. | -4.9 | 19.1 | 28.5 | 35.2 | 40.2 | 44.1 | 47.1 | 49.4 | 50.9 | 51.8 |
| 12. | -5.9 | 20.3 | 30.7 | 38.0 | 43.5 | 47.9 | 51.2 | 53.7 | 55.4 | 56.4 |
| 13. | -6.9 | 21.5 | 32.8 | 40.7 | 46.8 | 51.5 | 55.2 | 58.0 | 59.9 | 61.0 |
| 14. | -8.0 | 22.6 | 34.8 | 43.4 | 50.0 | 55.2 | 59.2 | 62.2 | 64.3 | 65.6 |
| 15. | -9.1 | 23.7 | 36.8 | 46.1 | 53.2 | 58.8 | 63.1 | 66.4 | 68.8 | 70.2 |
| 16. | -10.4 | 24.6 | 38.6 | 48.6 | 56.3 | 62.3 | 67.0 | 70.6 | 73.2 | 74.8 |
| 17. | -11.7 | 25.5 | 40.5 | 51.1 | 59.3 | 65.8 | 70.8 | 74.7 | 77.5 | 79.3 |
| 18. | -13.1 | 26.3 | 42.2 | 53.5 | 62.3 | 69.2 | 74.6 | 78.8 | 81.9 | 83.9 |
| 19. | -14.6 | 27.0 | 43.8 | 55.9 | 65.2 | 72.5 | 78.4 | 82.9 | 86.2 | 88.3 |
| 20. | -16.2 | 27.6 | 45.4 | 58.1 | 68.0 | 75.8 | 82.1 | 86.9 | 90.4 | 92.8 |
| 21. | -17.8 | 28.2 | 46.9 | 60.4 | 70.8 | 79.1 | 85.7 | 90.8 | 94.7 | 97.3 |
| 22. | -19.5 | 28.7 | 48.3 | 62.5 | 73.5 | 82.3 | 89.3 | 94.8 | 98.9 | 101.7 |
| 23. | -21.3 | 29.1 | 49.7 | 64.6 | 76.1 | 85.4 | 92.8 | 98.6 | 103.0 | 106.0 |
| 24. | -23.2 | 29.4 | 50.9 | 66.5 | 78.7 | 88.5 | 96.3 | 102.5 | 107.1 | 110.4 |
| 25. | -25.2 | 29.6 | 52.1 | 68.5 | 81.2 | 91.5 | 99.7 | 106.2 | 111.2 | 114.7 |
| 26. | -27.2 | 29.7 | 53.2 | 70.3 | 83.7 | 94.4 | 103.1 | 110.0 | 115.3 | 119.0 |
| 27. | -29.3 | 29.8 | 54.3 | 72.1 | 86.0 | 97.3 | 106.4 | 113.7 | 119.3 | 123.2 |
| 28. | -31.5 | 29.8 | 55.2 | 73.7 | 88.3 | 100.1 | 109.6 | 117.3 | 123.2 | 127.5 |
| 29. | -33.7 | 29.7 | 56.1 | 75.4 | 90.5 | 102.8 | 112.8 | 120.9 | 127.1 | 131.6 |
| 30. | -36.0 | 29.5 | 56.9 | 76.9 | 92.7 | 105.5 | 116.0 | 124.4 | 131.0 | 135.8 |
| 31. | -38.4 | 29.2 | 57.6 | 78.4 | 94.8 | 108.1 | 119.0 | 127.8 | 134.8 | 139.9 |
| 32. | -40.9 | 28.9 | 58.2 | 79.7 | 96.8 | 110.7 | 122.0 | 131.3 | 138.5 | 143.9 |
| 33. | -43.4 | 28.5 | 58.8 | 81.0 | 98.7 | 113.1 | 125.0 | 134.6 | 142.2 | 147.9 |
| 34. | -46.0 | 28.0 | 59.2 | 82.3 | 100.6 | 115.5 | 127.9 | 137.9 | 145.9 | 151.9 |
| 35. | -48.7 | 27.4 | 59.6 | 83.4 | 102.4 | 117.9 | 130.7 | 141.1 | 149.5 | 155.8 |
| 36. | -51.4 | 26.7 | 59.9 | 84.5 | 104.1 | 120.1 | 133.4 | 144.3 | 153.1 | 159.7 |
| 37. | -54.2 | 25.9 | 60.2 | 85.5 | 105.7 | 122.3 | 136.1 | 147.4 | 156.6 | 163.5 |
| 38. | -57.1 | 25.1 | 60.3 | 86.4 | 107.3 | 124.5 | 138.7 | 150.5 | 160.0 | 167.3 |
| 39. | -60.0 | 24.2 | 60.4 | 87.2 | 108.7 | 126.5 | 141.3 | 153.5 | 163.4 | 171.0 |
| 40. | -63.0 | 23.2 | 60.3 | 87.9 | 110.1 | 128.5 | 143.8 | 156.4 | 166.7 | 174.7 |

ARC ALONG GROUND TRACK BETWEEN EQUATOR AND LATITUDE L ( W )

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| -90.00 | -63.08 | -51.33 | -42.04 | -33.94 | -26.54 | -19.59 | -12.92 | -6.42 | -.06 |
| -90.00 | -63.08 | -51.33 | -42.04 | -33.94 | -26.54 | -19.59 | -12.92 | -6.42 | -.06 |

Table Ib

** MINIMUM DISTANCE BETWEEN ORBIT GROUND TRACKS** APOLLO 16-

FOR REVOLUTION SEPARATION ON THE LUNAR EQUATOR IN DEGREES,AND LATITUDE IN DEG.
MINIMUM REV SEPARATION AT LATITUDE IN KILOMETERS
( MEASURED FROM TRACK 2 )

A(1)= 8.98
A(2)= 8.98

| REV | LATITUDE .01 | 1.00 | 2.00 | 3.00 | 4.00 | 5.00 | 6.00 | 7.00 | 8.00 | 8.98 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. | 4.7 | 4.7 | 4.6 | 4.5 | 4.3 | 4.0 | 3.6 | 3.0 | 2.2 | .1 |
| 2. | 9.5 | 9.4 | 9.3 | 9.0 | 8.5 | 7.9 | 7.1 | 6.0 | 4.4 | .2 |
| 3. | 14.2 | 14.2 | 13.9 | 13.5 | 12.9 | 12.0 | 10.8 | 9.2 | 6.8 | .4 |
| 4. | 18.9 | 18.9 | 18.6 | 18.0 | 17.2 | 16.1 | 14.5 | 12.3 | 9.2 | .7 |
| 5. | 23.6 | 23.6 | 23.3 | 22.6 | 21.6 | 20.2 | 18.2 | 15.6 | 11.6 | 1.0 |
| 6. | 28.4 | 28.3 | 28.0 | 27.2 | 26.0 | 24.3 | 22.0 | 18.9 | 14.2 | 1.5 |
| 7. | 33.1 | 33.1 | 32.7 | 31.8 | 30.5 | 28.5 | 25.9 | 22.2 | 16.8 | 2.0 |
| 8. | 37.8 | 37.8 | 37.4 | 36.4 | 34.9 | 32.8 | 29.8 | 25.6 | 19.4 | 2.6 |
| 9. | 42.4 | 42.5 | 42.1 | 41.1 | 39.4 | 37.1 | 33.7 | 29.1 | 22.2 | 3.3 |
| 10. | 47.1 | 47.3 | 46.8 | 45.8 | 44.0 | 41.4 | 37.7 | 32.6 | 25.0 | 4.1 |
| 11. | 51.8 | 52.0 | 51.6 | 50.4 | 48.5 | 45.7 | 41.8 | 36.2 | 27.8 | 4.9 |
| 12. | 56.4 | 56.7 | 56.3 | 55.1 | 53.1 | 50.1 | 45.8 | 39.8 | 30.8 | 5.9 |
| 13. | 61.0 | 61.4 | 61.0 | 59.8 | 57.7 | 54.5 | 49.9 | 43.5 | 33.8 | 6.9 |
| 14. | 65.7 | 66.1 | 65.8 | 64.5 | 62.3 | 58.9 | 54.1 | 47.2 | 36.8 | 8.0 |
| 15. | 70.2 | 70.8 | 70.5 | 69.2 | 66.9 | 63.4 | 58.3 | 51.0 | 40.0 | 9.2 |
| 16. | 74.8 | 75.5 | 75.2 | 74.0 | 71.6 | 67.9 | 62.5 | 54.9 | 43.1 | 10.4 |
| 17. | 79.4 | 80.2 | 80.0 | 78.7 | 76.2 | 72.4 | 66.8 | 58.7 | 46.4 | 11.7 |
| 18. | 83.9 | 84.8 | 84.7 | 83.4 | 80.9 | 76.9 | 71.1 | 62.7 | 49.7 | 13.2 |
| 19. | 88.4 | 89.4 | 89.4 | 88.1 | 85.6 | 81.5 | 75.4 | 66.6 | 53.1 | 14.6 |
| 20. | 92.9 | 94.1 | 94.1 | 92.9 | 90.3 | 86.1 | 79.8 | 70.7 | 56.5 | 16.2 |
| 21. | 97.3 | 98.7 | 98.8 | 97.6 | 95.0 | 90.7 | 84.2 | 74.7 | 60.0 | 17.9 |
| 22. | 101.7 | 103.2 | 103.5 | 102.3 | 99.7 | 95.3 | 88.6 | 78.8 | 63.5 | 19.6 |
| 23. | 106.1 | 107.8 | 108.1 | 107.1 | 104.4 | 99.9 | 93.1 | 83.0 | 67.1 | 21.4 |
| 24. | 110.5 | 112.3 | 112.8 | 111.8 | 109.1 | 104.6 | 97.6 | 87.1 | 70.7 | 23.2 |
| 25. | 114.8 | 116.8 | 117.4 | 116.5 | 113.9 | 109.2 | 102.1 | 91.4 | 74.4 | 25.2 |
| 26. | 119.1 | 121.3 | 122.1 | 121.2 | 118.6 | 113.9 | 106.6 | 95.6 | 78.2 | 27.2 |
| 27. | 123.3 | 125.8 | 126.7 | 125.9 | 123.3 | 118.6 | 111.2 | 99.9 | 82.0 | 29.3 |
| 28. | 127.5 | 130.2 | 131.3 | 130.6 | 128.1 | 123.3 | 115.7 | 104.2 | 85.8 | 31.5 |
| 29. | 131.7 | 134.6 | 135.8 | 135.3 | 132.8 | 128.0 | 120.3 | 108.6 | 89.7 | 33.7 |
| 30. | 135.8 | 139.0 | 140.4 | 140.0 | 137.5 | 132.7 | 125.0 | 113.0 | 93.6 | 36.1 |
| 31. | 139.9 | 143.3 | 144.9 | 144.6 | 142.3 | 137.5 | 129.6 | 117.4 | 97.6 | 38.4 |
| 32. | 144.0 | 147.6 | 149.4 | 149.3 | 147.0 | 142.2 | 134.3 | 121.9 | 101.7 | 40.9 |
| 33. | 148.0 | 151.9 | 153.9 | 153.9 | 151.7 | 146.9 | 138.9 | 126.3 | 105.7 | 43.4 |
| 34. | 152.0 | 156.1 | 158.3 | 158.5 | 156.4 | 151.7 | 143.6 | 130.9 | 109.8 | 46.0 |
| 35. | 155.9 | 160.3 | 162.7 | 163.1 | 161.1 | 156.4 | 148.3 | 135.4 | 114.0 | 48.7 |
| 36. | 159.8 | 164.5 | 167.1 | 167.6 | 165.8 | 161.1 | 153.0 | 139.9 | 118.2 | 51.4 |
| 37. | 163.6 | 168.6 | 171.5 | 172.2 | 170.5 | 165.9 | 157.7 | 144.5 | 122.4 | 54.3 |
| 38. | 167.4 | 172.6 | 175.8 | 176.7 | 175.1 | 170.6 | 162.4 | 149.1 | 126.7 | 57.1 |
| 39. | 171.2 | 176.7 | 180.1 | 181.2 | 179.8 | 175.3 | 167.2 | 153.7 | 131.0 | 60.1 |
| 40. | 174.9 | 180.7 | 184.3 | 185.7 | 184.4 | 180.1 | 171.9 | 158.4 | 135.3 | 63.1 |

ARC ALONG GROUND TRACK BETWEEN EQUATOR AND LATITUDE L ( W )

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| .06 | 6.42 | 12.92 | 19.59 | 26.54 | 33.94 | 42.04 | 51.33 | 63.08 | 89.98 |
| .06 | 6.42 | 12.92 | 19.59 | 26.54 | 33.94 | 42.04 | 51.33 | 63.08 | 89.98 |

Table IIa

** MINIMUM DISTANCE BETWEEN ORBIT GROUND TRACKS** APOLLO 16- DESCARTES

FOR REVOLUTION SEPARATION ON THE LUNAR EQUATOR IN DEGREES,AND LATITUDE IN DEG.
MINIMUM REV SEPARATION AT LATITUDE IN KILOMETERS
( MEASURED FROM TRACK 2 )

A(1)= 8.98
A(2)= 10.40

| REV | LATITUDE | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | -10.40 | -10.00 | -9.00 | -8.98 | -8.00 | -7.00 | -6.00 | -5.00 | -4.00 | -3.00 | -2.00 | -1.00 | -.01 |
| 6. | -43.1 | -40.2 | -35.0 | -34.9 | -30.2 | -25.6 | -21.1 | -16.7 | -12.3 | -8.0 | -3.7 | .5 | 4.7 |
| 7. | -43.2 | -39.0 | -32.7 | -32.6 | -27.3 | -22.2 | -17.3 | -12.6 | -8.0 | -3.5 | .9 | 5.2 | 9.4 |
| 8. | -43.4 | -37.9 | -30.6 | -30.4 | -24.5 | -18.9 | -13.6 | -8.5 | -3.7 | 1.0 | 5.5 | 9.9 | 14.2 |
| 9. | -43.7 | -36.9 | -28.5 | -28.3 | -21.7 | -15.6 | -9.9 | -4.5 | .6 | 5.4 | 10.1 | 14.6 | 18.9 |
| 10. | -44.1 | -36.0 | -26.4 | -26.3 | -18.9 | -12.3 | -6.3 | -.6 | 4.8 | 9.9 | 14.7 | 19.3 | 23.6 |
| 11. | -44.5 | -35.1 | -24.4 | -24.3 | -16.3 | -9.1 | -2.7 | 3.3 | 9.0 | 14.2 | 19.2 | 23.9 | 28.3 |
| 12. | -45.1 | -34.3 | -22.6 | -22.4 | -13.7 | -6.0 | .9 | 7.2 | 13.1 | 18.6 | 23.7 | 28.6 | 33.0 |
| 13. | -45.7 | -33.6 | -20.7 | -20.5 | -11.2 | -3.0 | 4.3 | 11.0 | 17.2 | 22.9 | 28.2 | 33.2 | 37.7 |
| 14. | -46.4 | -33.0 | -19.0 | -18.8 | -8.7 | .0 | 7.8 | 14.8 | 21.2 | 27.2 | 32.7 | 37.8 | 42.4 |
| 15. | -47.1 | -32.5 | -17.3 | -17.1 | -6.3 | 2.9 | 11.1 | 18.5 | 25.3 | 31.4 | 37.1 | 42.4 | 47.1 |
| 16. | -48.0 | -32.0 | -15.8 | -15.5 | -4.0 | 5.8 | 14.4 | 22.2 | 29.2 | 35.7 | 41.5 | 46.9 | 51.7 |
| 17. | -48.9 | -31.7 | -14.2 | -14.0 | -1.8 | 8.6 | 17.7 | 25.8 | 33.2 | 39.8 | 45.9 | 51.4 | 56.4 |
| 18. | -49.9 | -31.4 | -12.8 | -12.5 | .4 | 11.3 | 20.9 | 29.4 | 37.0 | 44.0 | 50.3 | 56.0 | 61.0 |
| 19. | -51.0 | -31.2 | -11.5 | -11.1 | 2.5 | 14.0 | 24.0 | 32.9 | 40.9 | 48.1 | 54.6 | 60.4 | 65.6 |
| 20. | -52.2 | -31.0 | -10.2 | -9.8 | 4.5 | 16.6 | 27.1 | 36.3 | 44.6 | 52.1 | 58.9 | 64.9 | 70.2 |
| 21. | -53.5 | -31.0 | -9.0 | -8.6 | 6.5 | 19.1 | 30.1 | 39.7 | 48.4 | 56.1 | 63.1 | 69.3 | 74.8 |
| 22. | -54.8 | -31.0 | -7.9 | -7.5 | 8.3 | 21.6 | 33.0 | 43.1 | 52.1 | 60.1 | 67.3 | 73.7 | 79.3 |
| 23. | -56.2 | -31.1 | -6.8 | -6.4 | 10.1 | 24.0 | 35.9 | 46.4 | 55.7 | 64.0 | 71.5 | 78.1 | 83.9 |
| 24. | -57.7 | -31.3 | -5.9 | -5.5 | 11.9 | 26.3 | 38.7 | 49.6 | 59.3 | 67.9 | 75.6 | 82.4 | 88.4 |
| 25. | -59.3 | -31.6 | -5.0 | -4.6 | 13.5 | 28.6 | 41.5 | 52.8 | 62.8 | 71.8 | 79.7 | 86.7 | 92.8 |
| 26. | -60.9 | -32.0 | -4.2 | -3.7 | 15.1 | 30.7 | 44.1 | 55.9 | 66.3 | 75.5 | 83.8 | 91.0 | 97.3 |
| 27. | -62.6 | -32.4 | -3.5 | -3.0 | 16.6 | 32.9 | 46.8 | 58.9 | 69.7 | 79.3 | 87.8 | 95.2 | 101.7 |
| 28. | -64.4 | -32.9 | -2.8 | -2.3 | 18.0 | 34.9 | 49.3 | 61.9 | 73.1 | 83.0 | 91.7 | 99.4 | 106.1 |
| 29. | -66.3 | -33.6 | -2.3 | -1.8 | 19.3 | 36.8 | 51.8 | 64.8 | 76.4 | 86.6 | 95.6 | 103.6 | 110.4 |
| 30. | -68.2 | -34.2 | -1.8 | -1.3 | 20.6 | 38.7 | 54.2 | 67.7 | 79.6 | 90.2 | 99.5 | 107.7 | 114.8 |
| 31. | -70.3 | -35.0 | -1.4 | -.9 | 21.8 | 40.5 | 56.5 | 70.5 | 82.8 | 93.7 | 103.3 | 111.8 | 119.0 |
| 32. | -72.4 | -35.9 | -1.1 | -.5 | 22.9 | 42.3 | 58.8 | 73.2 | 85.9 | 97.2 | 107.1 | 115.8 | 123.3 |
| 33. | -74.5 | -36.8 | -.8 | -.3 | 23.9 | 43.9 | 61.0 | 75.9 | 89.0 | 100.6 | 110.8 | 119.8 | 127.5 |
| 34. | -76.8 | -37.8 | -.7 | -.1 | 24.9 | 45.5 | 63.1 | 78.5 | 92.0 | 104.0 | 114.5 | 123.8 | 131.7 |
| 35. | -79.1 | -38.9 | -.6 | .0 | 25.7 | 47.0 | 65.2 | 81.0 | 94.9 | 107.3 | 118.1 | 127.7 | 135.8 |
| 36. | -81.5 | -40.1 | -.6 | .0 | 26.5 | 48.5 | 67.2 | 83.5 | 97.8 | 110.5 | 121.7 | 131.5 | 139.9 |
| 37. | -83.9 | -41.3 | -.7 | -.1 | 27.2 | 49.8 | 69.1 | 85.8 | 100.6 | 113.7 | 125.2 | 135.3 | 144.0 |
| 38. | -86.5 | -42.7 | -.9 | -.2 | 27.8 | 51.1 | 70.9 | 88.2 | 103.4 | 116.8 | 128.7 | 139.1 | 148.0 |
| 39. | -89.1 | -44.1 | -1.2 | -.5 | 28.4 | 52.3 | 72.7 | 90.4 | 106.1 | 119.9 | 132.1 | 142.8 | 152.0 |
| 40. | -91.7 | -45.6 | -1.5 | -.8 | 28.8 | 53.4 | 74.3 | 92.6 | 108.7 | 122.9 | 135.5 | 146.5 | 155.9 |
| 41. | -94.5 | -47.1 | -1.9 | -1.2 | 29.2 | 54.4 | 75.9 | 94.7 | 111.2 | 125.8 | 138.8 | 150.1 | 159.8 |
| 42. | -97.3 | -48.8 | -2.4 | -1.7 | 29.5 | 55.4 | 77.5 | 96.7 | 113.7 | 128.7 | 142.0 | 153.7 | 163.7 |
| 43. | -100.2 | -50.5 | -3.0 | -2.3 | 29.7 | 56.3 | 78.9 | 98.7 | 116.1 | 131.5 | 145.2 | 157.2 | 167.5 |
| 44. | -103.1 | -52.3 | -3.7 | -2.9 | 29.9 | 57.1 | 80.3 | 100.6 | 118.4 | 134.3 | 148.3 | 160.6 | 171.2 |
| 45. | -106.1 | -54.2 | -4.4 | -3.6 | 29.9 | 57.8 | 81.6 | 102.4 | 120.7 | 137.0 | 151.4 | 164.0 | 174.9 |

ARC ALONG GROUND TRACK BETWEEN EQUATOR AND LATITUDE L ( W )

.00 .00 .00 -90.00 -63.08 -51.33 -42.04 -33.94 -26.54 -19.59 -12.92 -6.42 -.06
-90.00 -74.14 -60.06 -59.85 -50.44 -42.46 -35.38 -28.87 -22.73 -16.85 -11.15 -5.55 -.06

Table IIb

** MINIMUM DISTANCE BETWEEN ORBIT GROUND TRACKS** APOLLO 16- DESCARTES

FOR REVOLUTION SEPARATION ON THE LUNAR EQUATOR IN DEGREES,AND LATITUDE IN DEG.
MINIMUM REV SEPARATION AT LATITUDE IN KILOMETERS
( MEASURED FROM TRACK 2 )

A(1)= 8.98
A(2)= 10.40

| REV | LATITUDE .01 | 1.00 | 2.00 | 3.00 | 4.00 | 5.00 | 6.00 | 7.00 | 8.00 | 8.98 | 9.00 | 10.00 | 10.40 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6. | 4.8 | 8.9 | 13.0 | 17.0 | 21.0 | 25.0 | 28.8 | 32.6 | 36.3 | 39.7 | 39.7 | 42.8 | 43.1 |
| 7. | 9.5 | 13.6 | 17.7 | 21.6 | 25.4 | 29.2 | 32.8 | 36.2 | 39.4 | 42.1 | 42.2 | 44.2 | 43.2 |
| 8. | 14.2 | 18.3 | 22.3 | 26.2 | 29.9 | 33.4 | 36.7 | 39.8 | 42.5 | 44.7 | 44.7 | 45.7 | 43.4 |
| 9. | 19.0 | 23.1 | 27.0 | 30.8 | 34.4 | 37.7 | 40.8 | 43.5 | 45.8 | 47.3 | 47.3 | 47.2 | 43.7 |
| 10. | 23.7 | 27.8 | 31.7 | 35.4 | 38.9 | 42.0 | 44.8 | 47.2 | 49.1 | 50.0 | 50.0 | 48.9 | 44.1 |
| 11. | 28.4 | 32.5 | 36.4 | 40.1 | 43.4 | 46.3 | 48.9 | 51.0 | 52.4 | 52.8 | 52.7 | 50.6 | 44.5 |
| 12. | 33.1 | 37.3 | 41.2 | 44.7 | 47.9 | 50.7 | 53.1 | 54.8 | 55.8 | 55.6 | 55.6 | 52.4 | 45.1 |
| 13. | 37.8 | 42.0 | 45.9 | 49.4 | 52.5 | 55.1 | 57.2 | 58.7 | 59.3 | 58.5 | 58.4 | 54.3 | 45.7 |
| 14. | 42.5 | 46.7 | 50.6 | 54.1 | 57.1 | 59.6 | 61.5 | 62.6 | 62.8 | 61.4 | 61.4 | 56.2 | 46.4 |
| 15. | 47.2 | 51.5 | 55.4 | 58.8 | 61.7 | 64.0 | 65.7 | 66.6 | 66.3 | 64.4 | 64.4 | 58.2 | 47.2 |
| 16. | 51.8 | 56.2 | 60.1 | 63.5 | 66.3 | 68.5 | 70.0 | 70.6 | 70.0 | 67.5 | 67.4 | 60.3 | 48.0 |
| 17. | 56.5 | 60.9 | 64.8 | 68.2 | 70.9 | 73.0 | 74.3 | 74.6 | 73.6 | 70.6 | 70.5 | 62.5 | 48.9 |
| 18. | 61.1 | 65.6 | 69.6 | 72.9 | 75.6 | 77.6 | 78.7 | 78.7 | 77.4 | 73.8 | 73.7 | 64.7 | 50.0 |
| 19. | 65.7 | 70.3 | 74.3 | 77.6 | 80.3 | 82.1 | 83.1 | 82.9 | 81.1 | 77.1 | 77.0 | 67.0 | 51.0 |
| 20. | 70.3 | 75.0 | 79.0 | 82.4 | 85.0 | 86.7 | 87.5 | 87.1 | 85.0 | 80.4 | 80.3 | 69.4 | 52.2 |
| 21. | 74.9 | 79.6 | 83.7 | 87.1 | 89.7 | 91.3 | 91.9 | 91.3 | 88.8 | 83.8 | 83.6 | 71.9 | 53.5 |
| 22. | 79.4 | 84.3 | 88.5 | 91.8 | 94.4 | 95.9 | 96.4 | 95.5 | 92.8 | 87.2 | 87.1 | 74.4 | 54.8 |
| 23. | 84.0 | 88.9 | 93.2 | 96.6 | 99.1 | 100.6 | 100.9 | 99.8 | 96.7 | 90.7 | 90.5 | 77.0 | 56.2 |
| 24. | 88.5 | 93.6 | 97.9 | 101.3 | 103.8 | 105.2 | 105.4 | 104.1 | 100.7 | 94.3 | 94.1 | 79.6 | 57.7 |
| 25. | 92.9 | 98.2 | 102.6 | 106.0 | 108.5 | 109.9 | 110.0 | 108.5 | 104.8 | 97.9 | 97.7 | 82.4 | 59.3 |
| 26. | 97.4 | 102.7 | 107.2 | 110.8 | 113.2 | 114.6 | 114.5 | 112.8 | 108.9 | 101.5 | 101.3 | 85.2 | 60.9 |
| 27. | 101.8 | 107.3 | 111.9 | 115.5 | 118.0 | 119.3 | 119.1 | 117.3 | 113.0 | 105.2 | 105.0 | 88.0 | 62.6 |
| 28. | 106.2 | 111.8 | 116.5 | 120.2 | 122.7 | 124.0 | 123.7 | 121.7 | 117.2 | 109.0 | 108.7 | 90.9 | 64.4 |
| 29. | 110.6 | 116.4 | 121.2 | 124.9 | 127.4 | 128.7 | 128.4 | 126.2 | 121.4 | 112.8 | 112.5 | 93.9 | 66.3 |
| 30. | 114.9 | 120.9 | 125.8 | 129.6 | 132.2 | 133.4 | 133.0 | 130.7 | 125.6 | 116.6 | 116.4 | 97.0 | 68.3 |
| 31. | 119.2 | 125.3 | 130.4 | 134.3 | 136.9 | 138.1 | 137.7 | 135.2 | 129.9 | 120.5 | 120.3 | 100.1 | 70.3 |
| 32. | 123.4 | 129.8 | 135.0 | 139.0 | 141.6 | 142.9 | 142.4 | 139.7 | 134.3 | 124.5 | 124.2 | 103.3 | 72.4 |
| 33. | 127.7 | 134.2 | 139.5 | 143.6 | 146.4 | 147.6 | 147.0 | 144.3 | 138.6 | 128.5 | 128.2 | 106.5 | 74.5 |
| 34. | 131.8 | 138.5 | 144.1 | 148.3 | 151.1 | 152.3 | 151.7 | 148.9 | 143.0 | 132.5 | 132.2 | 109.8 | 76.8 |
| 35. | 136.0 | 142.9 | 148.6 | 152.9 | 155.8 | 157.1 | 156.4 | 153.5 | 147.4 | 136.6 | 136.3 | 113.2 | 79.1 |
| 36. | 140.1 | 147.2 | 153.0 | 157.5 | 160.5 | 161.8 | 161.2 | 158.1 | 151.8 | 140.7 | 140.4 | 116.6 | 81.5 |
| 37. | 144.2 | 151.5 | 157.5 | 162.1 | 165.2 | 166.5 | 165.9 | 162.8 | 156.3 | 144.8 | 144.5 | 120.1 | 84.0 |
| 38. | 148.2 | 155.7 | 161.9 | 166.7 | 169.8 | 171.2 | 170.6 | 167.4 | 160.8 | 149.0 | 148.7 | 123.6 | 86.5 |
| 39. | 152.2 | 159.9 | 166.3 | 171.2 | 174.5 | 176.0 | 175.3 | 172.1 | 165.3 | 153.3 | 152.9 | 127.2 | 89.1 |
| 40. | 156.1 | 164.1 | 170.7 | 175.7 | 179.1 | 180.7 | 180.1 | 176.8 | 169.9 | 157.6 | 157.2 | 130.8 | 91.8 |
| 41. | 160.0 | 168.2 | 175.0 | 180.2 | 183.8 | 185.4 | 184.8 | 181.5 | 174.5 | 161.9 | 161.5 | 134.5 | 94.5 |
| 42. | 163.9 | 172.3 | 179.3 | 184.7 | 188.4 | 190.1 | 189.5 | 186.2 | 179.0 | 166.2 | 165.8 | 138.3 | 97.3 |
| 43. | 167.6 | 176.4 | 183.6 | 189.2 | 193.0 | 194.8 | 194.3 | 190.9 | 183.7 | 170.6 | 170.2 | 142.1 | 100.2 |
| 44. | 171.4 | 180.4 | 187.8 | 193.6 | 197.5 | 199.5 | 199.0 | 195.6 | 188.3 | 175.0 | 174.6 | 145.9 | 103.1 |
| 45. | 175.1 | 184.3 | 192.0 | 198.0 | 202.1 | 204.1 | 203.7 | 200.4 | 192.9 | 179.4 | 179.0 | 149.8 | 106.1 |

ARC ALONG GROUND TRACK BETWEEN EQUATOR AND LATITUDE L ( W )

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| .06 | 6.42 | 12.92 | 19.59 | 26.54 | 33.94 | 42.04 | 51.33 | 63.08 | 89.98 | .00 | .00 | .00 |
| .06 | 5.55 | 11.15 | 16.85 | 22.73 | 28.87 | 35.38 | 42.46 | 50.44 | 59.85 | 60.06 | 74.14 | 89.99 |

Table IIIa

** MINIMUM DISTANCE BETWEEN ORBIT GROUND TRACKS** APOLLO 16-

FOR REVOLUTION SEPARATION ON THE LUNAR EQUATOR IN DEGREES,AND LATITUDE IN DEG.
MINIMUM REV SEPARATION AT LATITUDE IN KILOMETERS
( MEASURED FROM TRACK 2 )

A(1)= 10.40
A(2)= 10.40

| REV | LATITUDE | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | -10.40 | -10.00 | -9.00 | -8.00 | -7.00 | -6.00 | -5.00 | -4.00 | -3.00 | -2.00 | -1.00 | -.01 |
| 1. | .0 | 1.5 | 2.7 | 3.5 | 4.0 | 4.5 | 4.8 | 5.0 | 5.2 | 5.4 | 5.4 | 5.5 |
| 2. | -.2 | 2.8 | 5.3 | 6.8 | 8.0 | 8.8 | 9.5 | 10.0 | 10.4 | 10.7 | 10.9 | 10.9 |
| 3. | -.4 | 4.1 | 7.8 | 10.1 | 11.8 | 13.1 | 14.2 | 15.0 | 15.6 | 16.0 | 16.3 | 16.4 |
| 4. | -.7 | 5.3 | 10.3 | 13.4 | 15.6 | 17.4 | 18.8 | 19.9 | 20.7 | 21.3 | 21.7 | 21.9 |
| 5. | -1.2 | 6.3 | 12.6 | 16.5 | 19.4 | 21.6 | 23.4 | 24.8 | 25.8 | 26.6 | 27.1 | 27.3 |
| 6. | -1.7 | 7.3 | 14.9 | 19.6 | 23.1 | 25.8 | 27.9 | 29.6 | 30.9 | 31.9 | 32.5 | 32.8 |
| 7. | -2.3 | 8.2 | 17.1 | 22.6 | 26.7 | 29.8 | 32.4 | 34.4 | 35.9 | 37.1 | 37.8 | 38.2 |
| 8. | -3.0 | 9.0 | 19.2 | 25.5 | 30.2 | 33.9 | 36.8 | 39.1 | 40.9 | 42.3 | 43.2 | 43.7 |
| 9. | -3.8 | 9.8 | 21.2 | 28.3 | 33.7 | 37.8 | 41.2 | 43.8 | 45.9 | 47.4 | 48.5 | 49.1 |
| 10. | -4.7 | 10.4 | 23.1 | 31.1 | 37.0 | 41.7 | 45.5 | 48.4 | 50.8 | 52.6 | 53.8 | 54.5 |
| 11. | -5.7 | 10.9 | 25.0 | 33.8 | 40.4 | 45.5 | 49.7 | 53.0 | 55.7 | 57.7 | 59.0 | 59.9 |
| 12. | -6.7 | 11.3 | 26.7 | 36.4 | 43.6 | 49.3 | 53.9 | 57.6 | 60.5 | 62.7 | 64.3 | 65.2 |
| 13. | -7.9 | 11.7 | 28.4 | 38.9 | 46.8 | 53.0 | 58.0 | 62.1 | 65.3 | 67.7 | 69.5 | 70.6 |
| 14. | -9.2 | 11.9 | 30.0 | 41.3 | 49.8 | 56.6 | 62.1 | 66.5 | 70.0 | 72.7 | 74.7 | 75.9 |
| 15. | -10.5 | 12.1 | 31.4 | 43.6 | 52.8 | 60.2 | 66.1 | 70.9 | 74.7 | 77.7 | 79.8 | 81.2 |
| 16. | -12.0 | 12.1 | 32.8 | 45.9 | 55.8 | 63.6 | 70.0 | 75.2 | 79.3 | 82.6 | 85.0 | 86.5 |
| 17. | -13.5 | 12.1 | 34.1 | 48.1 | 58.6 | 67.0 | 73.9 | 79.5 | 83.9 | 87.4 | 90.0 | 91.8 |
| 18. | -15.1 | 12.0 | 35.3 | 50.2 | 61.4 | 70.4 | 77.7 | 83.7 | 88.5 | 92.3 | 95.1 | 97.0 |
| 19. | -16.8 | 11.8 | 36.5 | 52.2 | 64.1 | 73.6 | 81.4 | 87.8 | 93.0 | 97.0 | 100.1 | 102.2 |
| 20. | -18.6 | 11.4 | 37.5 | 54.1 | 66.7 | 76.8 | 85.1 | 91.9 | 97.4 | 101.8 | 105.1 | 107.4 |
| 21. | -20.5 | 11.0 | 38.4 | 55.9 | 69.2 | 79.9 | 88.7 | 95.9 | 101.8 | 106.4 | 110.0 | 112.5 |
| 22. | -22.5 | 10.5 | 39.3 | 57.6 | 71.7 | 82.9 | 92.2 | 99.8 | 106.1 | 111.1 | 114.9 | 117.6 |
| 23. | -24.6 | 9.9 | 40.0 | 59.3 | 74.0 | 85.9 | 95.7 | 103.7 | 110.3 | 115.7 | 119.8 | 122.7 |
| 24. | -26.8 | 9.2 | 40.7 | 60.9 | 76.3 | 88.8 | 99.0 | 107.6 | 114.6 | 120.2 | 124.6 | 127.7 |
| 25. | -29.0 | 8.4 | 41.2 | 62.3 | 78.5 | 91.6 | 102.4 | 111.3 | 118.7 | 124.7 | 129.3 | 132.7 |
| 26. | -31.3 | 7.6 | 41.7 | 63.7 | 80.6 | 94.3 | 105.6 | 115.0 | 122.8 | 129.1 | 134.0 | 137.7 |
| 27. | -33.7 | 6.6 | 42.1 | 65.0 | 82.6 | 96.9 | 108.7 | 118.6 | 126.8 | 133.5 | 138.7 | 142.6 |
| 28. | -36.3 | 5.5 | 42.4 | 66.2 | 84.5 | 99.4 | 111.8 | 122.2 | 130.7 | 137.8 | 143.3 | 147.5 |
| 29. | -38.8 | 4.4 | 42.5 | 67.3 | 86.4 | 101.9 | 114.8 | 125.6 | 134.6 | 142.0 | 147.9 | 152.3 |
| 30. | -41.5 | 3.1 | 42.6 | 68.3 | 88.1 | 104.3 | 117.8 | 129.0 | 138.5 | 146.2 | 152.4 | 157.1 |
| 31. | -44.3 | 1.8 | 42.6 | 69.2 | 89.8 | 106.6 | 120.6 | 132.4 | 142.2 | 150.3 | 156.9 | 161.8 |
| 32. | -47.1 | .3 | 42.5 | 70.0 | 91.4 | 108.8 | 123.4 | 135.6 | 145.9 | 154.4 | 161.3 | 166.5 |
| 33. | -50.0 | -1.2 | 42.3 | 70.8 | 92.8 | 110.9 | 126.0 | 138.8 | 149.5 | 158.4 | 165.6 | 171.2 |
| 34. | -53.0 | -2.8 | 42.1 | 71.4 | 94.2 | 113.0 | 128.7 | 141.9 | 153.1 | 162.4 | 169.9 | 175.8 |
| 35. | -56.1 | -4.5 | 41.7 | 72.0 | 95.5 | 114.9 | 131.2 | 144.9 | 156.5 | 166.2 | 174.2 | 180.3 |

ARC ALONG GROUND TRACK BETWEEN EQUATOR AND LATITUDE L ( W )

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -90.00 | -74.14 | -60.06 | -50.44 | -42.46 | -35.38 | -28.87 | -22.73 | -16.85 | -11.15 | -5.55 | -.06 |
| -90.00 | -74.14 | -60.06 | -50.44 | -42.46 | -35.38 | -28.87 | -22.73 | -16.85 | -11.15 | -5.55 | -.06 |

Table IIIb

** MINIMUM DISTANCE BETWEEN ORBIT GROUND TRACKS** APOLLO 16-

FOR REVOLUTION SEPARATION ON THE LUNAR EQUATOR IN DEGREES,AND LATITUDE IN DEG.
MINIMUM REV SEPARATION AT LATITUDE IN KILOMETERS
( MEASURED FROM TRACK 2 )

A(1)= 10.40
A(2)= 10.40

| REV | LATITUDE .01 | 1.00 | 2.00 | 3.00 | 4.00 | 5.00 | 6.00 | 7.00 | 8.00 | 9.00 | 10.00 | 10.40 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | 5.5 | 5.4 | 5.4 | 5.2 | 5.0 | 4.8 | 4.5 | 4.0 | 3.5 | 2.7 | 1.5 | .0 |
| 2. | 10.9 | 10.9 | 10.8 | 10.5 | 10.2 | 9.7 | 9.0 | 8.2 | 7.1 | 5.6 | 3.2 | .2 |
| 3. | 16.4 | 16.4 | 16.2 | 15.8 | 15.3 | 14.6 | 13.6 | 12.4 | 10.8 | 8.6 | 4.9 | .4 |
| 4. | 21.9 | 21.9 | 21.6 | 21.2 | 20.5 | 19.5 | 18.3 | 16.7 | 14.5 | 11.6 | 6.7 | .8 |
| 5. | 27.3 | 27.3 | 27.1 | 26.5 | 25.7 | 24.5 | 23.0 | 21.0 | 18.3 | 14.7 | 8.6 | 1.2 |
| 6. | 32.8 | 32.8 | 32.5 | 31.9 | 30.9 | 29.5 | 27.7 | 25.3 | 22.2 | 17.8 | 10.6 | 1.7 |
| 7. | 38.2 | 38.3 | 38.0 | 37.3 | 36.2 | 34.6 | 32.5 | 29.8 | 26.1 | 21.1 | 12.7 | 2.3 |
| 8. | 43.7 | 43.8 | 43.4 | 42.7 | 41.4 | 39.7 | 37.3 | 34.2 | 30.1 | 24.4 | 14.8 | 3.0 |
| 9. | 49.1 | 49.2 | 48.9 | 48.1 | 46.7 | 44.8 | 42.2 | 38.8 | 34.2 | 27.8 | 17.1 | 3.8 |
| 10. | 54.5 | 54.7 | 54.4 | 53.5 | 52.1 | 50.0 | 47.1 | 43.4 | 38.3 | 31.3 | 19.4 | 4.7 |
| 11. | 59.9 | 60.1 | 59.8 | 59.0 | 57.4 | 55.2 | 52.1 | 48.0 | 42.5 | 34.8 | 21.8 | 5.7 |
| 12. | 65.3 | 65.6 | 65.3 | 64.4 | 62.8 | 60.4 | 57.1 | 52.7 | 46.8 | 38.4 | 24.3 | 6.8 |
| 13. | 70.6 | 71.0 | 70.8 | 69.9 | 68.2 | 65.6 | 62.1 | 57.4 | 51.1 | 42.1 | 26.9 | 7.9 |
| 14. | 75.9 | 76.5 | 76.3 | 75.3 | 73.6 | 70.9 | 67.2 | 62.2 | 55.4 | 45.9 | 29.6 | 9.2 |
| 15. | 81.2 | 81.9 | 81.7 | 80.8 | 79.0 | 76.2 | 72.3 | 67.0 | 59.9 | 49.7 | 32.3 | 10.5 |
| 16. | 86.5 | 87.3 | 87.2 | 86.3 | 84.4 | 81.5 | 77.5 | 71.9 | 64.3 | 53.6 | 35.2 | 12.0 |
| 17. | 91.8 | 92.6 | 92.6 | 91.7 | 89.9 | 86.9 | 82.6 | 76.8 | 68.9 | 57.5 | 38.1 | 13.5 |
| 18. | 97.0 | 98.0 | 98.1 | 97.2 | 95.3 | 92.3 | 87.9 | 81.8 | 73.5 | 61.5 | 41.1 | 15.1 |
| 19. | 102.2 | 103.4 | 103.5 | 102.7 | 100.8 | 97.6 | 93.1 | 86.8 | 78.1 | 65.6 | 44.2 | 16.9 |
| 20. | 107.4 | 108.7 | 109.0 | 108.2 | 106.2 | 103.0 | 98.4 | 91.8 | 82.8 | 69.8 | 47.3 | 18.7 |
| 21. | 112.5 | 114.0 | 114.4 | 113.6 | 111.7 | 108.5 | 103.6 | 96.9 | 87.5 | 74.0 | 50.5 | 20.6 |
| 22. | 117.7 | 119.2 | 119.8 | 119.1 | 117.2 | 113.9 | 108.9 | 102.0 | 92.3 | 78.3 | 53.8 | 22.5 |
| 23. | 122.7 | 124.5 | 125.1 | 124.5 | 122.7 | 119.3 | 114.3 | 107.1 | 97.1 | 82.6 | 57.2 | 24.6 |
| 24. | 127.8 | 129.7 | 130.5 | 130.0 | 128.1 | 124.8 | 119.6 | 112.3 | 102.0 | 87.0 | 60.7 | 26.8 |
| 25. | 132.8 | 134.9 | 135.8 | 135.4 | 133.6 | 130.2 | 125.0 | 117.5 | 106.9 | 91.4 | 64.2 | 29.0 |
| 26. | 137.7 | 140.1 | 141.1 | 140.8 | 139.1 | 135.7 | 130.4 | 122.7 | 111.9 | 95.9 | 67.8 | 31.4 |
| 27. | 142.7 | 145.2 | 146.4 | 146.2 | 144.5 | 141.2 | 135.8 | 128.0 | 116.9 | 100.5 | 71.5 | 33.8 |
| 28. | 147.5 | 150.3 | 151.7 | 151.6 | 150.0 | 146.6 | 141.2 | 133.3 | 121.9 | 105.1 | 75.2 | 36.3 |
| 29. | 152.4 | 155.4 | 156.9 | 157.0 | 155.5 | 152.1 | 146.7 | 138.6 | 127.0 | 109.7 | 79.1 | 38.9 |
| 30. | 157.2 | 160.4 | 162.1 | 162.4 | 160.9 | 157.6 | 152.1 | 143.9 | 132.1 | 114.4 | 82.9 | 41.5 |
| 31. | 161.9 | 165.4 | 167.3 | 167.7 | 166.3 | 163.1 | 157.6 | 149.3 | 137.2 | 119.2 | 86.9 | 44.3 |
| 32. | 166.6 | 170.3 | 172.5 | 173.0 | 171.8 | 168.5 | 163.0 | 154.7 | 142.4 | 124.0 | 90.9 | 47.1 |
| 33. | 171.3 | 175.2 | 177.6 | 178.3 | 177.2 | 174.0 | 168.5 | 160.1 | 147.6 | 128.9 | 95.0 | 50.1 |
| 34. | 175.9 | 180.1 | 182.7 | 183.5 | 182.5 | 179.5 | 174.0 | 165.5 | 152.9 | 133.8 | 99.1 | 53.1 |
| 35. | 180.4 | 184.9 | 187.7 | 188.8 | 187.9 | 184.9 | 179.5 | 170.9 | 158.1 | 138.7 | 103.3 | 56.1 |

ARC ALONG GROUND TRACK BETWEEN EQUATOR AND LATITUDE L ( W )

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| .06 | 5.55 | 11.15 | 16.85 | 22.73 | 28.87 | 35.38 | 42.46 | 50.44 | 60.06 | 74.14 | 89.99 |
| .06 | 5.55 | 11.15 | 16.85 | 22.73 | 28.87 | 35.38 | 42.46 | 50.44 | 60.06 | 74.14 | 89.99 |

Table IVa

** MINIMUM DISTANCE BETWEEN ORBIT GROUND TRACKS** APOLLO 16- 3 DEG LOPC(2)

FOR REVOLUTION SEPARATION ON THE LUNAR EQUATOR IN DEGREES,AND LATITUDE IN DEG.
MINIMUM REV SEPARATION AT LATITUDE IN KILOMETERS
( MEASURED FROM TRACK 2 )
A(1)= 10.40
A(2)= 13.40

| REV | LATITUDE -13.40 | -13.00 | -12.00 | -11.00 | -10.40 | -10.00 | -9.00 | -8.00 | -7.00 | -6.00 | -5.00 | -4.00 | -3.00 | -2.00 | -1.00 | -.01 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | -91.0 | -87.1 | -79.3 | -71.9 | -67.5 | -64.6 | -57.4 | -50.3 | -43.3 | -36.2 | -29.2 | -22.2 | -15.2 | -8.3 | -1.4 | 5.4 |
| 2. | -91.2 | -85.9 | -77.0 | -68.9 | -64.2 | -61.1 | -53.5 | -46.0 | -38.7 | -31.4 | -24.2 | -17.0 | -9.9 | -2.9 | 4.1 | 10.9 |
| 3. | -91.4 | -84.8 | -74.8 | -66.0 | -60.9 | -57.7 | -49.6 | -41.8 | -34.1 | -26.6 | -19.2 | -11.9 | -4.6 | 2.5 | 9.5 | 16.4 |
| 4. | -91.8 | -83.8 | -72.7 | -63.1 | -57.8 | -54.3 | -45.8 | -37.6 | -29.6 | -21.9 | -14.2 | -6.7 | .6 | 7.8 | 14.9 | 21.8 |
| 5. | -92.2 | -82.9 | -70.6 | -60.4 | -54.7 | -51.0 | -42.1 | -33.5 | -25.2 | -17.2 | -9.3 | -1.7 | 5.8 | 13.2 | 20.4 | 27.3 |
| 6. | -92.7 | -82.1 | -68.7 | -57.7 | -51.7 | -47.8 | -38.4 | -29.5 | -20.9 | -12.5 | -4.5 | 3.4 | 11.0 | 18.5 | 25.8 | 32.8 |
| 7. | -93.3 | -81.4 | -66.8 | -55.1 | -48.7 | -44.6 | -34.8 | -25.5 | -16.5 | -7.9 | .4 | 8.4 | 16.2 | 23.8 | 31.2 | 38.2 |
| 8. | -94.0 | -80.8 | -65.1 | -52.6 | -45.9 | -41.5 | -31.2 | -21.5 | -12.3 | -3.4 | 5.1 | 13.4 | 21.4 | 29.1 | 36.5 | 43.7 |
| 9. | -94.8 | -80.2 | -63.4 | -50.2 | -43.1 | -38.5 | -27.8 | -17.7 | -8.1 | 1.1 | 9.9 | 18.3 | 26.5 | 34.3 | 41.9 | 49.1 |
| 10. | -95.7 | -79.8 | -61.8 | -47.9 | -40.4 | -35.6 | -24.4 | -13.9 | -3.9 | 5.5 | 14.6 | 23.2 | 31.5 | 39.5 | 47.2 | 54.5 |
| 11. | -96.7 | -79.5 | -60.3 | -45.6 | -37.8 | -32.8 | -21.1 | -10.1 | .1 | 9.9 | 19.2 | 28.1 | 36.6 | 44.7 | 52.5 | 59.9 |
| 12. | -97.7 | -79.2 | -58.9 | -43.5 | -35.2 | -30.0 | -17.8 | -6.5 | 4.2 | 14.2 | 23.8 | 32.9 | 41.6 | 49.9 | 57.8 | 65.3 |
| 13. | -98.9 | -79.1 | -57.6 | -41.4 | -32.8 | -27.3 | -14.6 | -2.9 | 8.1 | 18.5 | 28.3 | 37.7 | 46.5 | 55.0 | 63.1 | 70.6 |
| 14. | -100.2 | -79.0 | -56.3 | -39.4 | -30.4 | -24.7 | -11.5 | .6 | 12.0 | 22.7 | 32.8 | 42.4 | 51.5 | 60.1 | 68.3 | 76.0 |
| 15. | -101.5 | -79.0 | -55.2 | -37.5 | -28.1 | -22.2 | -8.5 | 4.1 | 15.8 | 26.8 | 37.2 | 47.0 | 56.4 | 65.2 | 73.5 | 81.3 |
| 16. | -103.0 | -79.2 | -54.2 | -35.6 | -25.9 | -19.8 | -5.6 | 7.4 | 19.6 | 30.9 | 41.6 | 51.7 | 61.2 | 70.2 | 78.7 | 86.6 |
| 17. | -104.5 | -79.4 | -53.2 | -33.9 | -23.8 | -17.5 | -2.7 | 10.7 | 23.2 | 34.9 | 45.9 | 56.2 | 66.0 | 75.2 | 83.8 | 91.9 |
| 18. | -106.1 | -79.7 | -52.3 | -32.3 | -21.8 | -15.2 | .0 | 14.0 | 26.9 | 38.9 | 50.2 | 60.8 | 70.7 | 80.1 | 88.9 | 97.1 |
| 19. | -107.8 | -80.1 | -51.6 | -30.7 | -19.8 | -13.0 | 2.7 | 17.1 | 30.4 | 42.8 | 54.4 | 65.2 | 75.4 | 85.0 | 94.0 | 102.3 |
| 20. | -109.6 | -80.6 | -50.9 | -29.3 | -18.0 | -10.9 | 5.4 | 20.2 | 33.9 | 46.6 | 58.5 | 69.6 | 80.1 | 89.9 | 99.0 | 107.5 |
| 21. | -111.5 | -81.2 | -50.3 | -27.9 | -16.2 | -8.9 | 7.9 | 23.2 | 37.3 | 50.4 | 62.6 | 74.0 | 84.7 | 94.7 | 104.0 | 112.7 |
| 22. | -113.5 | -81.9 | -49.8 | -26.6 | -14.5 | -7.0 | 10.4 | 26.1 | 40.6 | 54.1 | 66.6 | 78.3 | 89.2 | 99.5 | 109.0 | 117.8 |
| 23. | -115.6 | -82.7 | -49.4 | -25.4 | -12.9 | -5.2 | 12.7 | 29.0 | 43.9 | 57.7 | 70.5 | 82.5 | 93.8 | 104.2 | 113.9 | 122.9 |
| 24. | -117.8 | -83.6 | -49.1 | -24.3 | -11.4 | -3.4 | 15.0 | 31.7 | 47.1 | 61.2 | 74.4 | 86.7 | 98.2 | 108.9 | 118.8 | 127.9 |
| 25. | -120.0 | -84.6 | -48.9 | -23.3 | -10.0 | -1.8 | 17.2 | 34.4 | 50.2 | 64.7 | 78.3 | 90.9 | 102.6 | 113.5 | 123.7 | 132.9 |
| 26. | -122.3 | -85.6 | -48.8 | -22.4 | -8.7 | -.2 | 19.3 | 37.0 | 53.2 | 68.1 | 82.0 | 94.9 | 106.9 | 118.1 | 128.5 | 137.9 |
| 27. | -124.8 | -86.8 | -48.8 | -21.6 | -7.5 | 1.3 | 21.4 | 39.5 | 56.1 | 71.5 | 85.7 | 98.9 | 111.2 | 122.6 | 133.2 | 142.9 |
| 28. | -127.3 | -88.0 | -48.9 | -20.8 | -6.4 | 2.6 | 23.3 | 42.0 | 59.0 | 74.7 | 89.3 | 102.9 | 115.4 | 127.1 | 137.9 | 147.8 |
| 29. | -129.8 | -89.4 | -49.1 | -20.2 | -5.3 | 3.9 | 25.2 | 44.3 | 61.8 | 77.9 | 92.9 | 106.7 | 119.6 | 131.5 | 142.6 | 152.6 |
| 30. | -132.5 | -90.8 | -49.3 | -19.7 | -4.4 | 5.1 | 26.9 | 46.6 | 64.5 | 81.0 | 96.3 | 110.5 | 123.7 | 135.9 | 147.2 | 157.4 |
| 31. | -135.3 | -92.4 | -49.7 | -19.2 | -3.5 | 6.2 | 28.6 | 48.7 | 67.1 | 84.1 | 99.7 | 114.3 | 127.7 | 140.2 | 151.7 | 162.2 |
| 32. | -138.1 | -94.0 | -50.1 | -18.9 | -2.7 | 7.3 | 30.2 | 50.8 | 69.7 | 87.0 | 103.1 | 117.9 | 131.7 | 144.5 | 156.2 | 166.9 |
| 33. | -141.0 | -95.7 | -50.7 | -18.6 | -2.1 | 8.2 | 31.7 | 52.9 | 72.2 | 89.9 | 106.3 | 121.5 | 135.6 | 148.7 | 160.7 | 171.6 |
| 34. | -144.0 | -97.5 | -51.3 | -18.4 | -1.5 | 9.0 | 33.1 | 54.8 | 74.5 | 92.7 | 109.5 | 125.1 | 139.5 | 152.8 | 165.1 | 176.2 |
| 35. | -147.1 | -99.4 | -52.1 | -18.4 | -1.0 | 9.7 | 34.4 | 56.6 | 76.8 | 95.4 | 112.6 | 128.5 | 143.3 | 156.9 | 169.4 | 180.8 |

ARC ALONG GROUND TRACK BETWEEN EQUATOR AND LATITUDE L ( W )

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| .00 | .00 | .00 | .00 | -90.00 | -74.14 | -60.06 | -50.44 | -42.46 | -35.38 | -28.87 | -22.73 | -16.85 | -11.15 | -5.55 | -.06 |
| -90.00 | -76.09 | -63.79 | -55.42 | -51.16 | -48.53 | -42.46 | -36.91 | -31.73 | -26.81 | -22.09 | -17.52 | -13.05 | -8.66 | -4.32 | -.04 |

Table IVb

** MINIMUM DISTANCE BETWEEN ORBIT GROUND TRACKS** APOLLO 16- 3 DEG LOPC(2)

FOR REVOLUTION SEPARATION ON THE LUNAR EQUATOR IN DEGREES,AND LATITUDE IN DEG.
MINIMUM REV SEPARATION AT LATITUDE IN KILOMETERS
( MEASURED FROM TRACK 2 )

A(1)= 10.40
A(2)= 13.40

| REV | LATITUDE .01 | 1.00 | 2.00 | 3.00 | 4.00 | 5.00 | 6.00 | 7.00 | 8.00 | 9.00 | 10.00 | 10.40 | 11.00 | 12.00 | 13.00 | 13.40 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | 5.6 | 12.3 | 19.1 | 25.9 | 32.7 | 39.3 | 46.0 | 52.6 | 59.1 | 65.5 | 71.9 | 74.4 | 78.1 | 84.1 | 89.7 | 91.0 |
| 2. | 11.0 | 17.8 | 24.6 | 31.3 | 37.9 | 44.5 | 50.9 | 57.3 | 63.6 | 69.7 | 75.6 | 77.9 | 81.3 | 86.7 | 91.1 | 91.2 |
| 3. | 16.5 | 23.3 | 30.0 | 36.7 | 43.2 | 49.6 | 55.9 | 62.1 | 68.1 | 73.9 | 79.4 | 81.5 | 84.6 | 89.3 | 92.7 | 91.4 |
| 4. | 22.0 | 28.8 | 35.5 | 42.1 | 48.5 | 54.8 | 61.0 | 66.9 | 72.6 | 78.1 | 83.3 | 85.2 | 88.0 | 92.0 | 94.3 | 91.8 |
| 5. | 27.5 | 34.3 | 41.0 | 47.5 | 53.9 | 60.0 | 66.0 | 71.8 | 77.3 | 82.4 | 87.2 | 89.0 | 91.4 | 94.8 | 96.0 | 92.2 |
| 6. | 32.9 | 39.7 | 46.4 | 52.9 | 59.2 | 65.3 | 71.1 | 76.7 | 81.9 | 86.8 | 91.2 | 92.8 | 94.9 | 97.6 | 97.9 | 92.7 |
| 7. | 38.4 | 45.2 | 51.9 | 58.4 | 64.6 | 70.6 | 76.3 | 81.6 | 86.6 | 91.2 | 95.2 | 96.7 | 98.5 | 100.6 | 99.8 | 93.3 |
| 8. | 43.8 | 50.7 | 57.4 | 63.8 | 70.0 | 75.9 | 81.4 | 86.6 | 91.4 | 95.7 | 99.4 | 100.6 | 102.2 | 103.6 | 101.7 | 94.0 |
| 9. | 49.2 | 56.2 | 62.9 | 69.3 | 75.4 | 81.2 | 86.6 | 91.6 | 96.2 | 100.2 | 103.5 | 104.6 | 105.9 | 106.7 | 103.8 | 94.8 |
| 10. | 54.6 | 61.6 | 68.4 | 74.8 | 80.8 | 86.5 | 91.8 | 96.7 | 101.1 | 104.8 | 107.8 | 108.7 | 109.7 | 109.9 | 106.0 | 95.7 |
| 11. | 60.0 | 67.1 | 73.8 | 80.2 | 86.3 | 91.9 | 97.1 | 101.8 | 106.0 | 109.4 | 112.1 | 112.8 | 113.6 | 113.2 | 108.2 | 96.7 |
| 12. | 65.4 | 72.5 | 79.3 | 85.7 | 91.7 | 97.3 | 102.4 | 106.9 | 110.9 | 114.1 | 116.4 | 117.0 | 117.5 | 116.5 | 110.6 | 97.8 |
| 13. | 70.8 | 78.0 | 84.8 | 91.2 | 97.2 | 102.7 | 107.7 | 112.1 | 115.9 | 118.9 | 120.9 | 121.3 | 121.5 | 119.9 | 113.0 | 98.9 |
| 14. | 76.1 | 83.4 | 90.3 | 96.7 | 102.6 | 108.1 | 113.0 | 117.3 | 120.9 | 123.6 | 125.3 | 125.6 | 125.5 | 123.4 | 115.5 | 100.2 |
| 15. | 81.4 | 88.8 | 95.7 | 102.2 | 108.1 | 113.5 | 118.3 | 122.5 | 125.9 | 128.5 | 129.8 | 130.0 | 129.7 | 126.9 | 118.1 | 101.5 |
| 16. | 86.7 | 94.2 | 101.2 | 107.6 | 113.6 | 119.0 | 123.7 | 127.8 | 131.0 | 133.3 | 134.4 | 134.4 | 133.8 | 130.6 | 120.7 | 103.0 |
| 17. | 92.0 | 99.5 | 106.6 | 113.1 | 119.1 | 124.4 | 129.1 | 133.0 | 136.1 | 138.2 | 139.0 | 138.9 | 138.1 | 134.3 | 123.5 | 104.5 |
| 18. | 97.3 | 104.9 | 112.0 | 118.6 | 124.5 | 129.9 | 134.5 | 138.3 | 141.3 | 143.2 | 143.7 | 143.5 | 142.4 | 138.0 | 126.3 | 106.1 |
| 19. | 102.5 | 110.2 | 117.4 | 124.0 | 130.0 | 135.3 | 139.9 | 143.7 | 146.5 | 148.2 | 148.4 | 148.0 | 146.7 | 141.8 | 129.2 | 107.9 |
| 20. | 107.7 | 115.5 | 122.8 | 129.5 | 135.5 | 140.8 | 145.3 | 149.0 | 151.7 | 153.2 | 153.2 | 152.7 | 151.2 | 145.7 | 132.2 | 109.7 |
| 21. | 112.8 | 120.8 | 128.2 | 134.9 | 141.0 | 146.3 | 150.8 | 154.4 | 156.9 | 158.3 | 158.0 | 157.4 | 155.6 | 149.7 | 135.3 | 111.6 |
| 22. | 118.0 | 126.1 | 133.6 | 140.4 | 146.4 | 151.8 | 156.2 | 159.7 | 162.2 | 163.4 | 162.9 | 162.1 | 160.1 | 153.7 | 138.4 | 113.5 |
| 23. | 123.0 | 131.3 | 138.9 | 145.8 | 151.9 | 157.2 | 161.7 | 165.1 | 167.5 | 168.5 | 167.8 | 166.9 | 164.7 | 157.8 | 141.7 | 115.6 |
| 24. | 128.1 | 136.5 | 144.2 | 151.2 | 157.4 | 162.7 | 167.1 | 170.6 | 172.8 | 173.7 | 172.7 | 171.7 | 169.3 | 162.0 | 145.0 | 117.8 |
| 25. | 133.1 | 141.7 | 149.5 | 156.6 | 162.8 | 168.2 | 172.6 | 176.0 | 178.1 | 178.8 | 177.7 | 176.6 | 174.0 | 166.2 | 148.4 | 120.0 |
| 26. | 138.1 | 146.8 | 154.8 | 161.9 | 168.3 | 173.7 | 178.1 | 181.4 | 183.5 | 184.1 | 182.7 | 181.5 | 178.8 | 170.5 | 151.8 | 122.4 |
| 27. | 143.1 | 151.9 | 160.0 | 167.3 | 173.7 | 179.1 | 183.6 | 186.9 | 188.9 | 189.3 | 187.8 | 186.5 | 183.5 | 174.8 | 155.3 | 124.8 |
| 28. | 148.0 | 157.0 | 165.2 | 172.6 | 179.1 | 184.6 | 189.0 | 192.3 | 194.3 | 194.6 | 192.9 | 191.5 | 188.3 | 179.2 | 158.9 | 127.3 |
| 29. | 152.8 | 162.0 | 170.4 | 177.9 | 184.5 | 190.0 | 194.5 | 197.8 | 199.7 | 199.9 | 198.0 | 196.5 | 193.2 | 183.7 | 162.6 | 129.9 |
| 30. | 157.6 | 167.0 | 175.6 | 183.2 | 189.9 | 195.5 | 200.0 | 203.3 | 205.1 | 205.2 | 203.2 | 201.6 | 198.1 | 188.2 | 166.3 | 132.5 |
| 31. | 162.4 | 172.0 | 180.7 | 188.4 | 195.2 | 200.9 | 205.5 | 208.7 | 210.5 | 210.6 | 208.4 | 206.7 | 203.1 | 192.7 | 170.2 | 135.3 |
| 32. | 167.1 | 176.9 | 185.8 | 193.7 | 200.5 | 206.3 | 210.9 | 214.2 | 216.0 | 215.9 | 213.6 | 211.8 | 208.0 | 197.3 | 174.0 | 138.1 |
| 33. | 171.8 | 181.8 | 190.8 | 198.9 | 205.9 | 211.7 | 216.4 | 219.7 | 221.4 | 221.3 | 218.8 | 217.0 | 213.1 | 202.0 | 178.0 | 141.1 |
| 34. | 176.5 | 186.6 | 195.8 | 204.0 | 211.2 | 217.1 | 221.8 | 225.2 | 226.9 | 226.7 | 224.1 | 222.2 | 218.1 | 206.7 | 182.0 | 144.1 |
| 35. | 181.0 | 191.4 | 200.8 | 209.2 | 216.4 | 222.5 | 227.3 | 230.6 | 232.4 | 232.1 | 229.4 | 227.4 | 223.2 | 211.5 | 186.1 | 147.1 |

ARC ALONG GROUND TRACK BETWEEN EQUATOR AND LATITUDE L ( W )

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| .06 | 5.55 | 11.15 | 16.85 | 22.73 | 28.87 | 35.38 | 42.46 | 50.44 | 60.06 | 74.14 | 89.99 | .00 | .00 | .00 | .00 |
| .04 | 4.32 | 8.66 | 13.05 | 17.52 | 22.09 | 26.81 | 31.73 | 36.91 | 42.46 | 48.53 | 51.16 | 55.42 | 63.79 | 76.09 | 89.99 |

Table Va

** MINIMUM DISTANCE BETWEEN ORBIT GROUND TRACKS** APOLLO 16- 3 DEG LOPC(2)

FOR REVOLUTION SEPARATION ON THE LUNAR EQUATOR IN DEGREES,AND LATITUDE IN DEG.
MINIMUM REV SEPARATION AT LATITUDE IN KILOMETERS
( MEASURED FROM TRACK 2 )
A(1)= 13.40
A(2)= 13.40

| REV | LATITUDE -13.40 | -13.00 | -12.00 | -11.00 | -10.00 | -9.00 | -8.00 | -7.00 | -6.00 | -5.00 | -4.00 | -3.00 | -2.00 | -1.00 | -.01 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | -.1 | 1.6 | 3.0 | 3.9 | 4.6 | 5.1 | 5.6 | 5.9 | 6.2 | 6.5 | 6.7 | 6.8 | 6.9 | 7.0 | 7.0 |
| 2. | -.2 | 3.1 | 6.0 | 7.8 | 9.1 | 10.2 | 11.1 | 11.8 | 12.4 | 12.9 | 13.3 | 13.6 | 13.9 | 14.0 | 14.1 |
| 3. | -.5 | 4.5 | 8.8 | 11.5 | 13.6 | 15.2 | 16.5 | 17.6 | 18.6 | 19.3 | 19.9 | 20.4 | 20.8 | 21.0 | 21.1 |
| 4. | -1.0 | 5.8 | 11.6 | 15.2 | 17.9 | 20.1 | 21.9 | 23.4 | 24.6 | 25.7 | 26.5 | 27.2 | 27.6 | 27.9 | 28.1 |
| 5. | -1.5 | 7.0 | 14.2 | 18.7 | 22.1 | 24.9 | 27.2 | 29.1 | 30.7 | 32.0 | 33.0 | 33.9 | 34.5 | 34.9 | 35.1 |
| 6. | -2.1 | 8.0 | 16.7 | 22.1 | 26.3 | 29.6 | 32.4 | 34.7 | 36.6 | 38.2 | 39.5 | 40.5 | 41.3 | 41.8 | 42.1 |
| 7. | -2.9 | 9.0 | 19.1 | 25.5 | 30.3 | 34.3 | 37.5 | 40.2 | 42.5 | 44.4 | 45.9 | 47.2 | 48.1 | 48.7 | 49.1 |
| 8. | -3.8 | 9.8 | 21.4 | 28.7 | 34.3 | 38.8 | 42.5 | 45.7 | 48.3 | 50.5 | 52.3 | 53.8 | 54.9 | 55.6 | 56.1 |
| 9. | -4.8 | 10.5 | 23.5 | 31.8 | 38.1 | 43.3 | 47.5 | 51.1 | 54.1 | 56.6 | 58.7 | 60.3 | 61.6 | 62.5 | 63.0 |
| 10. | -6.0 | 11.0 | 25.6 | 34.8 | 41.9 | 47.6 | 52.4 | 56.4 | 59.8 | 62.6 | 64.9 | 66.8 | 68.3 | 69.3 | 70.0 |
| 11. | -7.2 | 11.5 | 27.5 | 37.7 | 45.5 | 51.9 | 57.2 | 61.6 | 65.4 | 68.5 | 71.2 | 73.3 | 74.9 | 76.1 | 76.9 |
| 12. | -8.6 | 11.8 | 29.3 | 40.5 | 49.1 | 56.1 | 61.9 | 66.8 | 70.9 | 74.4 | 77.3 | 79.7 | 81.5 | 82.9 | 83.8 |
| 13. | -10.1 | 12.1 | 31.1 | 43.2 | 52.5 | 60.1 | 66.5 | 71.8 | 76.4 | 80.2 | 83.4 | 86.0 | 88.1 | 89.6 | 90.6 |
| 14. | -11.7 | 12.1 | 32.6 | 45.8 | 55.9 | 64.1 | 71.0 | 76.8 | 81.8 | 86.0 | 89.5 | 92.4 | 94.6 | 96.3 | 97.5 |
| 15. | -13.4 | 12.1 | 34.1 | 48.2 | 59.1 | 68.0 | 75.4 | 81.7 | 87.1 | 91.7 | 95.5 | 98.6 | 101.1 | 103.0 | 104.3 |
| 16. | -15.2 | 12.0 | 35.5 | 50.6 | 62.3 | 71.8 | 79.8 | 86.6 | 92.3 | 97.3 | 101.4 | 104.8 | 107.6 | 109.6 | 111.1 |
| 17. | -17.2 | 11.7 | 36.7 | 52.8 | 65.3 | 75.5 | 84.0 | 91.3 | 97.5 | 102.8 | 107.3 | 111.0 | 113.9 | 116.2 | 117.8 |
| 18. | -19.2 | 11.3 | 37.9 | 55.0 | 68.2 | 79.0 | 88.2 | 95.9 | 102.6 | 108.3 | 113.1 | 117.0 | 120.3 | 122.8 | 124.6 |
| 19. | -21.4 | 10.8 | 38.9 | 57.0 | 71.0 | 82.5 | 92.2 | 100.5 | 107.6 | 113.6 | 118.8 | 123.1 | 126.6 | 129.3 | 131.3 |
| 20. | -23.7 | 10.2 | 39.8 | 58.9 | 73.7 | 85.9 | 96.2 | 105.0 | 112.5 | 119.0 | 124.4 | 129.0 | 132.8 | 135.8 | 137.9 |
| 21. | -26.1 | 9.5 | 40.6 | 60.7 | 76.3 | 89.2 | 100.0 | 109.3 | 117.3 | 124.2 | 130.0 | 134.9 | 139.0 | 142.2 | 144.5 |
| 22. | -28.6 | 8.6 | 41.2 | 62.4 | 78.8 | 92.3 | 103.8 | 113.6 | 122.1 | 129.3 | 135.6 | 140.8 | 145.1 | 148.5 | 151.1 |
| 23. | -31.3 | 7.6 | 41.7 | 63.9 | 81.2 | 95.4 | 107.5 | 117.8 | 126.7 | 134.4 | 141.0 | 146.6 | 151.2 | 154.8 | 157.6 |
| 24. | -34.0 | 6.5 | 42.2 | 65.4 | 83.4 | 98.4 | 111.0 | 121.9 | 131.3 | 139.4 | 146.4 | 152.3 | 157.2 | 161.1 | 164.1 |
| 25. | -36.9 | 5.3 | 42.5 | 66.7 | 85.6 | 101.2 | 114.5 | 125.9 | 135.8 | 144.3 | 151.7 | 157.9 | 163.1 | 167.3 | 170.5 |
| 26. | -39.9 | 4.0 | 42.6 | 67.9 | 87.6 | 103.9 | 117.8 | 129.8 | 140.2 | 149.1 | 156.9 | 163.5 | 169.0 | 173.4 | 176.9 |
| 27. | -42.9 | 2.5 | 42.7 | 69.0 | 89.5 | 106.6 | 121.1 | 133.6 | 144.5 | 153.9 | 162.0 | 168.9 | 174.8 | 179.5 | 183.2 |
| 28. | -46.1 | .9 | 42.6 | 70.0 | 91.3 | 109.1 | 124.2 | 137.3 | 148.7 | 158.5 | 167.1 | 174.4 | 180.5 | 185.6 | 189.5 |
| 29. | -49.4 | -.7 | 42.5 | 70.8 | 93.0 | 111.5 | 127.3 | 140.9 | 152.8 | 163.1 | 172.0 | 179.7 | 186.2 | 191.5 | 195.7 |
| 30. | -52.9 | -2.6 | 42.2 | 71.6 | 94.6 | 113.8 | 130.2 | 144.4 | 156.8 | 167.6 | 176.9 | 185.0 | 191.8 | 197.4 | 201.9 |
| 31. | -56.4 | -4.5 | 41.7 | 72.2 | 96.1 | 116.0 | 133.0 | 147.8 | 160.7 | 171.9 | 181.7 | 190.2 | 197.3 | 203.3 | 208.0 |
| 32. | -60.0 | -6.5 | 41.2 | 72.7 | 97.4 | 118.1 | 135.7 | 151.1 | 164.5 | 176.2 | 186.4 | 195.3 | 202.8 | 209.1 | 214.1 |
| 33. | -63.7 | -8.7 | 40.5 | 73.0 | 98.7 | 120.0 | 138.4 | 154.3 | 168.2 | 180.4 | 191.1 | 200.3 | 208.2 | 214.8 | 220.1 |
| 34. | -67.6 | -11.0 | 39.8 | 73.3 | 99.8 | 121.9 | 140.9 | 157.4 | 171.8 | 184.5 | 195.6 | 205.2 | 213.5 | 220.4 | 226.0 |
| 35. | -71.5 | -13.4 | 38.9 | 73.4 | 100.8 | 123.6 | 143.2 | 160.3 | 175.3 | 188.5 | 200.0 | 210.1 | 218.7 | 226.0 | 231.9 |
| | ARC ALONG GROUND TRACK BETWEEN EQUATOR AND LATITUDE L ( ° ) | | | | | | | | | | | | | | |
| | -90.00 | -76.09 | -63.79 | -55.42 | -48.53 | -42.46 | -36.91 | -31.73 | -26.81 | -22.09 | -17.52 | -13.05 | -8.66 | -4.32 | -.04 |
| | -90.00 | -76.09 | -63.79 | -55.42 | -48.53 | -42.46 | -36.91 | -31.73 | -26.81 | -22.09 | -17.52 | -13.05 | -8.66 | -4.32 | -.04 |

Table Vb

•• MINIMUM DISTANCE BETWEEN ORBIT GROUND TRACKS•• APOLLO 16- 3 DEG LOPC(2)

FOR REVOLUTION SEPARATION ON THE LUNAR EQUATOR IN DEGREES,AND LATITUDE IN DEG.
MINIMUM REV SEPARATION AT LATITUDE IN KILOMETERS
( MEASURED FROM TRACK 2 )
A(1)= 13.40
A(2)= 13.40

| REV | LATITUDE .01 | 1.00 | 2.00 | 3.00 | 4.00 | 5.00 | 6.00 | 7.00 | 8.00 | 9.00 | 10.00 | 11.00 | 12.00 | 13.00 | 13.40 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | 7.0 | 7.0 | 7.0 | 6.9 | 6.7 | 6.5 | 6.3 | 6.0 | 5.7 | 5.2 | 4.7 | 4.0 | 3.2 | 1.8 | .1 |
| 2. | 14.1 | 14.0 | 13.9 | 13.7 | 13.5 | 13.1 | 12.7 | 12.1 | 11.4 | 10.5 | 9.5 | 8.2 | 6.4 | 3.6 | .2 |
| 3. | 21.1 | 21.1 | 20.9 | 20.7 | 20.3 | 19.7 | 19.1 | 18.2 | 17.2 | 15.9 | 14.4 | 12.4 | 9.8 | 5.6 | .5 |
| 4. | 28.1 | 28.1 | 27.9 | 27.6 | 27.1 | 26.4 | 25.5 | 24.4 | 23.0 | 21.4 | 19.3 | 16.7 | 13.3 | 7.7 | 1.0 |
| 5. | 35.1 | 35.1 | 34.9 | 34.5 | 33.9 | 33.1 | 32.0 | 30.6 | 29.0 | 26.9 | 24.4 | 21.2 | 16.8 | 9.9 | 1.5 |
| 6. | 42.1 | 42.1 | 41.9 | 41.5 | 40.8 | 39.8 | 38.5 | 36.9 | 35.0 | 32.5 | 29.5 | 25.7 | 20.5 | 12.2 | 2.2 |
| 7. | 49.1 | 49.2 | 49.0 | 48.5 | 47.7 | 46.6 | 45.1 | 43.3 | 41.0 | 38.2 | 34.7 | 30.3 | 24.3 | 14.6 | 2.9 |
| 8. | 56.1 | 56.2 | 56.0 | 55.5 | 54.6 | 53.4 | 51.8 | 49.7 | 47.1 | 43.9 | 40.0 | 35.0 | 28.2 | 17.2 | 3.8 |
| 9. | 63.0 | 63.2 | 63.0 | 62.5 | 61.6 | 60.2 | 58.4 | 56.1 | 53.3 | 49.8 | 45.4 | 39.8 | 32.2 | 19.8 | 4.8 |
| 10. | 70.0 | 70.2 | 70.1 | 69.5 | 68.5 | 67.1 | 65.1 | 62.6 | 59.5 | 55.6 | 50.8 | 44.6 | 36.3 | 22.6 | 6.0 |
| 11. | 76.9 | 77.2 | 77.1 | 76.5 | 75.5 | 73.9 | 71.9 | 69.2 | 65.8 | 61.6 | 56.3 | 49.6 | 40.4 | 25.5 | 7.2 |
| 12. | 83.8 | 84.2 | 84.1 | 83.5 | 82.5 | 80.9 | 78.6 | 75.8 | 72.1 | 67.6 | 61.9 | 54.6 | 44.7 | 28.5 | 8.6 |
| 13. | 90.7 | 91.1 | 91.1 | 90.6 | 89.5 | 87.8 | 85.4 | 82.4 | 78.5 | 73.7 | 67.6 | 59.7 | 49.1 | 31.6 | 10.1 |
| 14. | 97.5 | 98.1 | 98.1 | 97.6 | 96.5 | 94.7 | 92.3 | 89.1 | 85.0 | 79.8 | 73.3 | 65.0 | 53.6 | 34.8 | 11.7 |
| 15. | 104.3 | 105.0 | 105.1 | 104.6 | 103.5 | 101.7 | 99.1 | 95.8 | 91.5 | 86.0 | 79.1 | 70.2 | 58.1 | 38.1 | 13.4 |
| 16. | 111.1 | 111.9 | 112.1 | 111.7 | 110.5 | 108.7 | 106.0 | 102.5 | 98.0 | 92.3 | 85.0 | 75.6 | 62.8 | 41.5 | 15.2 |
| 17. | 117.9 | 118.8 | 119.1 | 118.7 | 117.5 | 115.7 | 112.9 | 109.3 | 104.6 | 98.6 | 90.9 | 81.1 | 67.5 | 45.0 | 17.2 |
| 18. | 124.6 | 125.7 | 126.0 | 125.7 | 124.6 | 122.7 | 119.9 | 116.1 | 111.2 | 104.9 | 96.9 | 86.6 | 72.3 | 48.7 | 19.2 |
| 19. | 131.3 | 132.5 | 133.0 | 132.7 | 131.6 | 129.7 | 126.8 | 122.9 | 117.8 | 111.3 | 103.0 | 92.2 | 77.3 | 52.4 | 21.4 |
| 20. | 137.9 | 139.3 | 139.9 | 139.7 | 138.6 | 136.7 | 133.8 | 129.8 | 124.5 | 117.8 | 109.1 | 97.9 | 82.3 | 56.2 | 23.7 |
| 21. | 144.5 | 146.1 | 146.8 | 146.7 | 145.7 | 143.7 | 140.8 | 136.7 | 131.3 | 124.3 | 115.3 | 103.6 | 87.3 | 60.2 | 26.1 |
| 22. | 151.1 | 152.8 | 153.7 | 153.6 | 152.7 | 150.7 | 147.8 | 143.6 | 138.0 | 130.8 | 121.6 | 109.4 | 92.5 | 64.2 | 28.7 |
| 23. | 157.6 | 159.5 | 160.5 | 160.6 | 159.7 | 157.6 | 154.8 | 150.5 | 144.8 | 137.4 | 127.9 | 115.3 | 97.8 | 68.3 | 31.3 |
| 24. | 164.1 | 166.2 | 167.3 | 167.5 | 166.7 | 164.8 | 161.8 | 157.5 | 151.7 | 144.1 | 134.2 | 121.2 | 103.1 | 72.6 | 34.1 |
| 25. | 170.6 | 172.8 | 174.1 | 174.4 | 173.7 | 171.8 | 168.8 | 164.4 | 158.5 | 150.8 | 140.6 | 127.2 | 108.5 | 76.9 | 36.9 |
| 26. | 176.9 | 179.4 | 180.9 | 181.3 | 180.6 | 178.9 | 175.8 | 171.4 | 165.4 | 157.5 | 147.1 | 133.3 | 114.0 | 81.3 | 39.9 |
| 27. | 183.3 | 185.9 | 187.6 | 188.1 | 187.6 | 185.9 | 182.9 | 178.4 | 172.3 | 164.2 | 153.6 | 139.5 | 119.6 | 85.8 | 43.0 |
| 28. | 189.6 | 192.4 | 194.3 | 195.0 | 194.5 | 192.9 | 189.9 | 185.4 | 179.2 | 171.0 | 160.1 | 145.7 | 125.2 | 90.5 | 46.2 |
| 29. | 195.8 | 198.9 | 200.9 | 201.8 | 201.5 | 199.9 | 196.9 | 192.4 | 186.2 | 177.8 | 166.7 | 151.9 | 131.0 | 95.2 | 49.5 |
| 30. | 202.0 | 205.3 | 207.5 | 208.5 | 208.4 | 206.9 | 203.9 | 199.5 | 193.2 | 184.7 | 173.4 | 158.2 | 136.8 | 100.0 | 52.9 |
| 31. | 208.1 | 211.7 | 214.1 | 215.3 | 215.2 | 213.8 | 211.0 | 206.5 | 200.1 | 191.5 | 180.1 | 164.6 | 142.6 | 104.9 | 56.4 |
| 32. | 214.2 | 218.0 | 220.6 | 222.0 | 222.1 | 220.8 | 218.0 | 213.5 | 207.1 | 198.4 | 186.8 | 171.0 | 148.5 | 109.9 | 60.0 |
| 33. | 220.1 | 224.2 | 227.1 | 228.6 | 228.9 | 227.7 | 225.0 | 220.6 | 214.1 | 205.3 | 193.5 | 177.5 | 154.5 | 114.9 | 63.8 |
| 34. | 226.1 | 230.4 | 233.5 | 235.3 | 235.7 | 234.6 | 232.0 | 227.6 | 221.2 | 212.3 | 200.3 | 184.0 | 160.6 | 120.1 | 67.6 |
| 35. | 232.0 | 236.5 | 239.9 | 241.8 | 242.4 | 241.5 | 239.0 | 234.6 | 228.2 | 219.3 | 207.1 | 190.5 | 166.7 | 125.3 | 71.6 |

ARC ALONG GROUND TRACK BETWEEN EQUATOR AND LATITUDE L ( W )

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| .04 | 4.32 | 8.66 | 13.05 | 17.52 | 22.09 | 26.81 | 31.73 | 36.91 | 42.46 | 48.53 | 55.42 | 63.79 | 76.09 | 89.99 |
| .04 | 4.32 | 8.66 | 13.05 | 17.52 | 22.09 | 26.81 | 31.73 | 36.91 | 42.46 | 48.53 | 55.42 | 63.79 | 76.09 | 89.99 |

Table VIa

** MINIMUM DISTANCE BETWEEN ORBIT GROUND TRACKS** APOLLO 16- 3 DEG LOPC(2)

FOR REVOLUTION SEPARATION ON THE LUNAR EQUATOR IN DEGREES,AND LATITUDE IN DEG.
MINIMUM REV SEPARATION AT LATITUDE IN KILOMETERS
( MEASURED FROM TRACK 2 )
A(1)= 8.98
A(2)= 13.40

| REV | LATITUDE -13.40 | -13.00 | -12.00 | -11.00 | -10.00 | -9.00 | -8.98 | -8.00 | -7.00 | -6.00 | -5.00 | -4.00 | -3.00 | -2.00 | -1.00 | -.01 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | -134.1 | -129.1 | -118.3 | -107.8 | -97.4 | -87.1 | -86.9 | -76.9 | -66.6 | -56.4 | -46.1 | -35.9 | -25.7 | -15.5 | -5.4 | 4.6 |
| 2. | -134.2 | -128.0 | -116.3 | -105.2 | -94.4 | -83.7 | -83.5 | -73.1 | -62.6 | -52.2 | -41.8 | -31.4 | -21.1 | -10.9 | -.7 | 9.4 |
| 3. | -134.4 | -127.1 | -114.4 | -102.7 | -91.4 | -80.4 | -80.1 | -69.5 | -58.7 | -48.0 | -37.5 | -27.0 | -16.5 | -6.2 | 4.1 | 14.1 |
| 4. | -134.7 | -126.3 | -112.6 | -100.3 | -88.5 | -77.1 | -76.8 | -65.9 | -54.8 | -43.9 | -33.2 | -22.5 | -12.0 | -1.6 | 8.8 | 18.9 |
| 5. | -135.1 | -125.5 | -110.8 | -97.9 | -85.7 | -73.8 | -73.6 | -62.3 | -51.0 | -39.9 | -28.9 | -18.1 | -7.5 | 3.1 | 13.5 | 23.6 |
| 6. | -135.5 | -124.8 | -109.1 | -95.6 | -82.9 | -70.7 | -70.4 | -58.8 | -47.2 | -35.9 | -24.7 | -13.8 | -3.0 | 7.7 | 18.1 | 28.3 |
| 7. | -136.1 | -124.2 | -107.5 | -93.4 | -80.1 | -67.5 | -67.3 | -55.3 | -43.5 | -31.9 | -20.5 | -9.4 | 1.5 | 12.3 | 22.8 | 33.1 |
| 8. | -136.7 | -123.6 | -106.0 | -91.2 | -77.5 | -64.5 | -64.2 | -51.9 | -39.8 | -28.0 | -16.4 | -5.1 | 6.0 | 16.8 | 27.5 | 37.8 |
| 9. | -137.4 | -123.2 | -104.6 | -89.1 | -74.9 | -61.5 | -61.2 | -48.6 | -36.2 | -24.1 | -12.3 | -.8 | 10.4 | 21.4 | 32.1 | 42.5 |
| 10. | -138.1 | -122.8 | -103.2 | -87.1 | -72.4 | -58.5 | -58.3 | -45.3 | -32.6 | -20.2 | -8.3 | 3.4 | 14.8 | 25.9 | 36.7 | 47.2 |
| 11. | -139.0 | -122.5 | -101.9 | -85.1 | -69.9 | -55.7 | -55.4 | -42.1 | -29.1 | -16.5 | -4.2 | 7.6 | 19.2 | 30.4 | 41.3 | 51.8 |
| 12. | -139.9 | -122.3 | -100.7 | -83.3 | -67.6 | -52.9 | -52.6 | -38.9 | -25.6 | -12.7 | -.3 | 11.8 | 23.5 | 34.8 | 45.9 | 56.5 |
| 13. | -140.9 | -122.2 | -99.6 | -81.5 | -65.2 | -50.1 | -49.8 | -35.8 | -22.2 | -9.0 | 3.6 | 15.9 | 27.8 | 39.3 | 50.4 | 61.1 |
| 14. | -142.0 | -122.1 | -98.5 | -79.8 | -63.0 | -47.5 | -47.2 | -32.8 | -18.8 | -5.4 | 7.5 | 20.0 | 32.0 | 43.7 | 55.0 | 65.8 |
| 15. | -143.2 | -122.2 | -97.5 | -78.1 | -60.8 | -44.9 | -44.6 | -29.8 | -15.5 | -1.8 | 11.4 | 24.0 | 36.3 | 48.1 | 59.5 | 70.4 |
| 16. | -144.5 | -122.3 | -96.6 | -76.5 | -58.7 | -42.3 | -42.0 | -26.9 | -12.3 | 1.7 | 15.1 | 28.0 | 40.5 | 52.4 | 64.0 | 74.9 |
| 17. | -145.8 | -122.5 | -95.8 | -75.1 | -56.7 | -39.9 | -39.5 | -24.0 | -9.1 | 5.2 | 18.9 | 32.0 | 44.6 | 56.7 | 68.4 | 79.5 |
| 18. | -147.2 | -122.8 | -95.1 | -73.6 | -54.8 | -37.5 | -37.1 | -21.3 | -6.0 | 8.6 | 22.6 | 35.9 | 48.7 | 61.0 | 72.8 | 84.1 |
| 19. | -148.7 | -123.1 | -94.4 | -72.3 | -52.9 | -35.1 | -34.8 | -18.5 | -2.9 | 12.0 | 26.2 | 39.8 | 52.8 | 65.3 | 77.2 | 88.6 |
| 20. | -150.3 | -123.6 | -93.9 | -71.1 | -51.1 | -32.9 | -32.5 | -15.9 | .1 | 15.3 | 29.8 | 43.6 | 56.8 | 69.5 | 81.6 | 93.1 |
| 21. | -151.9 | -124.1 | -93.4 | -69.9 | -49.4 | -30.7 | -30.3 | -13.3 | 3.1 | 18.5 | 33.3 | 47.4 | 60.8 | 73.7 | 85.9 | 97.5 |
| 22. | -153.6 | -124.7 | -92.9 | -68.8 | -47.7 | -28.6 | -28.2 | -10.8 | 5.9 | 21.7 | 36.8 | 51.1 | 64.7 | 77.8 | 90.2 | 102.0 |
| 23. | -155.4 | -125.4 | -92.6 | -67.8 | -46.1 | -26.5 | -26.1 | -8.3 | 8.7 | 24.9 | 40.2 | 54.8 | 68.6 | 81.9 | 94.5 | 106.4 |
| 24. | -157.3 | -126.2 | -92.4 | -66.8 | -44.6 | -24.6 | -24.2 | -5.9 | 11.5 | 27.9 | 43.5 | 58.4 | 72.5 | 85.9 | 98.7 | 110.7 |
| 25. | -159.2 | -127.0 | -92.2 | -66.0 | -43.2 | -22.7 | -22.3 | -3.6 | 14.2 | 31.0 | 46.8 | 61.9 | 76.3 | 89.9 | 102.9 | 115.1 |
| 26. | -161.3 | -128.0 | -92.1 | -65.2 | -41.9 | -20.8 | -20.4 | -1.4 | 16.8 | 33.9 | 50.1 | 65.5 | 80.0 | 93.9 | 107.1 | 119.4 |
| 27. | -163.4 | -129.0 | -92.1 | -64.5 | -40.6 | -19.1 | -18.7 | .8 | 19.3 | 36.8 | 53.3 | 68.9 | 83.7 | 97.8 | 111.2 | 123.7 |
| 28. | -165.5 | -130.1 | -92.2 | -63.9 | -39.4 | -17.4 | -17.0 | 2.9 | 21.8 | 39.6 | 56.4 | 72.3 | 87.4 | 101.7 | 115.2 | 127.9 |
| 29. | -167.8 | -131.2 | -92.4 | -63.3 | -38.3 | -15.8 | -15.4 | 4.9 | 24.2 | 42.4 | 59.5 | 75.7 | 91.0 | 105.5 | 119.3 | 132.1 |
| 30. | -170.1 | -132.5 | -92.6 | -62.9 | -37.3 | -14.3 | -13.9 | 6.8 | 26.5 | 45.0 | 62.5 | 79.0 | 94.6 | 109.3 | 123.3 | 136.3 |
| 31. | -172.5 | -133.8 | -92.9 | -62.5 | -36.4 | -12.9 | -12.4 | 8.7 | 28.8 | 47.7 | 65.4 | 82.2 | 98.0 | 113.0 | 127.2 | 140.4 |
| 32. | -174.9 | -135.3 | -93.3 | -62.2 | -35.5 | -11.5 | -11.1 | 10.5 | 31.0 | 50.2 | 68.3 | 85.4 | 101.5 | 116.7 | 131.1 | 144.5 |
| 33. | -177.5 | -136.7 | -93.8 | -62.0 | -34.7 | -10.2 | -9.8 | 12.2 | 33.1 | 52.7 | 71.1 | 88.5 | 104.9 | 120.4 | 135.0 | 148.6 |
| 34. | -180.1 | -138.3 | -94.4 | -61.9 | -34.0 | -9.0 | -8.6 | 13.9 | 35.2 | 55.1 | 73.9 | 91.5 | 108.2 | 123.9 | 138.8 | 152.6 |
| 35. | -182.7 | -140.0 | -95.1 | -61.8 | -33.4 | -7.9 | -7.4 | 15.5 | 37.2 | 57.5 | 76.5 | 94.5 | 111.5 | 127.5 | 142.5 | 156.5 |

Table VIa (cont'd.)

** MINIMUM DISTANCE BETWEEN ORBIT GROUND TRACKS** APOLLO 16- 3 DEG LOPC(2)

FOR REVOLUTION SEPARATION ON THE LUNAR EQUATOR IN DEGREES,AND LATITUDE IN DEG.
MINIMUM REV SEPARATION AT LATITUDE IN KILOMETERS
( MEASURED FROM TRACK 2 )

A(1)= 8.98
A(2)= 13.40

| REV | LATITUDE -13.40 | -13.00 | -12.00 | -11.00 | -10.00 | -9.00 | -8.98 | -8.00 | -7.00 | -6.00 | -5.00 | -4.00 | -3.00 | -2.00 | -1.00 | -.01 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 31. | -172.5 | -133.8 | -92.9 | -62.5 | -36.4 | -12.9 | -12.4 | 8.7 | 28.8 | 47.7 | 65.4 | 82.2 | 98.0 | 113.0 | 127.2 | 140.4 |
| 32. | -174.9 | -135.3 | -93.3 | -62.2 | -35.5 | -11.5 | -11.1 | 10.5 | 31.0 | 50.2 | 68.3 | 85.4 | 101.5 | 116.7 | 131.1 | 144.5 |
| 33. | -177.5 | -136.7 | -93.8 | -62.0 | -34.7 | -10.2 | -9.8 | 12.2 | 33.1 | 52.7 | 71.1 | 88.5 | 104.9 | 120.4 | 135.0 | 148.6 |
| 34. | -180.1 | -138.3 | -94.4 | -61.9 | -34.0 | -9.0 | -8.6 | 13.9 | 35.2 | 55.1 | 73.9 | 91.5 | 108.2 | 123.9 | 138.8 | 152.6 |
| 35. | -182.7 | -140.0 | -95.1 | -61.8 | -33.4 | -7.9 | -7.4 | 15.5 | 37.2 | 57.5 | 76.5 | 94.5 | 111.5 | 127.5 | 142.5 | 156.5 |
| 36. | -185.5 | -141.7 | -95.8 | -61.9 | -32.9 | -6.9 | -6.4 | 17.0 | 39.1 | 59.7 | 79.2 | 97.4 | 114.7 | 130.9 | 146.2 | 160.5 |
| 37. | -188.3 | -143.5 | -96.6 | -62.0 | -32.4 | -5.9 | -5.4 | 18.4 | 40.9 | 61.9 | 81.7 | 100.3 | 117.8 | 134.3 | 149.9 | 164.3 |
| 38. | -191.2 | -145.4 | -97.5 | -62.2 | -32.0 | -5.0 | -4.5 | 19.7 | 42.7 | 64.1 | 84.2 | 103.1 | 120.9 | 137.7 | 153.5 | 168.1 |
| 39. | -194.1 | -147.3 | -98.5 | -62.5 | -31.7 | -4.2 | -3.7 | 21.0 | 44.3 | 66.1 | 86.6 | 105.8 | 123.9 | 141.0 | 157.0 | 171.9 |
| 40. | -197.1 | -149.4 | -99.6 | -62.8 | -31.5 | -3.5 | -2.9 | 22.2 | 45.9 | 68.1 | 88.9 | 108.5 | 126.9 | 144.2 | 160.5 | 175.6 |
| 41. | -200.2 | -151.5 | -100.7 | -63.3 | -31.4 | -2.8 | -2.3 | 23.3 | 47.5 | 70.0 | 91.2 | 111.1 | 129.8 | 147.4 | 164.0 | 179.3 |
| 42. | -203.3 | -153.7 | -101.9 | -63.8 | -31.3 | -2.3 | -1.7 | 24.3 | 48.9 | 71.9 | 93.4 | 113.6 | 132.7 | 150.5 | 167.4 | 182.9 |
| 43. | -206.5 | -155.9 | -103.2 | -64.4 | -31.4 | -1.8 | -1.2 | 25.2 | 50.3 | 73.6 | 95.5 | 116.1 | 135.4 | 153.6 | 170.7 | 186.5 |
| 44. | -209.8 | -158.2 | -104.6 | -65.1 | -31.5 | -1.4 | -.8 | 26.1 | 51.6 | 75.3 | 97.6 | 118.5 | 138.1 | 156.6 | 174.0 | 190.0 |
| 45. | -213.1 | -160.7 | -106.1 | -65.9 | -31.7 | -1.1 | -.5 | 26.9 | 52.8 | 76.9 | 99.5 | 120.8 | 140.9 | 159.5 | 177.2 | 193.5 |
| 46. | -216.4 | -163.1 | -107.6 | -66.8 | -32.0 | -.8 | -.2 | 27.6 | 53.9 | 78.5 | 101.5 | 123.0 | 143.3 | 162.4 | 180.3 | 196.9 |
| 47. | -219.9 | -165.7 | -109.3 | -67.7 | -32.3 | -.7 | -.1 | 28.2 | 55.0 | 79.9 | 103.3 | 125.2 | 145.9 | 165.2 | 183.4 | 200.3 |
| 48. | -223.4 | -168.3 | -111.0 | -68.7 | -32.8 | -.6 | .0 | 28.8 | 55.9 | 81.3 | 105.0 | 127.3 | 148.3 | 168.0 | 186.4 | 203.6 |
| 49. | -226.9 | -171.0 | -112.7 | -69.9 | -33.3 | -.6 | .0 | 29.2 | 56.8 | 82.6 | 106.7 | 129.4 | 150.7 | 170.7 | 189.4 | 206.8 |
| 50. | -230.5 | -173.7 | -114.6 | -71.0 | -33.9 | -.7 | -.1 | 29.6 | 57.6 | 83.8 | 108.3 | 131.3 | 153.0 | 173.3 | 192.3 | 210.0 |
| 51. | -234.2 | -176.6 | -116.5 | -72.3 | -34.6 | -.9 | -.3 | 29.9 | 58.4 | 85.0 | 109.8 | 133.2 | 155.2 | 175.8 | 195.2 | 213.1 |
| 52. | -237.9 | -179.5 | -118.5 | -73.7 | -35.4 | -1.2 | -.5 | 30.1 | 59.0 | 86.0 | 111.3 | 135.0 | 157.3 | 178.3 | 197.9 | 216.1 |
| 53. | -241.7 | -182.4 | -120.6 | -75.1 | -36.2 | -1.5 | -.9 | 30.2 | 59.6 | 87.0 | 112.7 | 136.8 | 159.4 | 180.7 | 200.6 | 219.1 |
| 54. | -245.5 | -185.5 | -122.8 | -76.6 | -37.2 | -2.0 | -1.3 | 30.3 | 60.1 | 87.9 | 114.0 | 138.4 | 161.4 | 183.0 | 203.3 | 222.1 |
| 55. | -249.4 | -188.6 | -125.0 | -78.2 | -38.2 | -2.5 | -1.8 | 30.2 | 60.5 | 88.7 | 115.2 | 140.0 | 163.4 | 185.3 | 205.9 | 224.9 |
| 56. | -253.3 | -191.7 | -127.4 | -79.9 | -39.3 | -3.1 | -2.4 | 30.1 | 60.8 | 89.5 | 116.3 | 141.5 | 165.2 | 187.5 | 208.4 | 227.7 |
| 57. | -257.3 | -194.9 | -129.8 | -81.6 | -40.5 | -3.7 | -3.0 | 29.9 | 61.1 | 90.1 | 117.4 | 142.9 | 167.0 | 189.6 | 210.8 | 230.5 |
| 58. | -261.3 | -198.2 | -132.2 | -83.5 | -41.8 | -4.5 | -3.8 | 29.6 | 61.2 | 90.7 | 118.3 | 144.3 | 168.7 | 191.6 | 213.2 | 233.1 |
| 59. | -265.3 | -201.6 | -134.8 | -85.4 | -43.1 | -5.3 | -4.6 | 29.2 | 61.3 | 91.2 | 119.2 | 145.6 | 170.3 | 193.6 | 215.5 | 235.7 |
| 60. | -269.4 | -205.0 | -137.4 | -87.4 | -44.6 | -6.3 | -5.5 | 28.8 | 61.3 | 91.6 | 120.0 | 146.8 | 171.9 | 195.5 | 217.7 | 238.3 |
| 61. | -273.6 | -208.5 | -140.1 | -89.4 | -46.1 | -7.3 | -6.5 | 28.2 | 61.2 | 91.9 | 120.8 | 147.9 | 173.4 | 197.4 | 219.9 | 240.8 |
| 62. | -277.8 | -212.0 | -142.8 | -91.6 | -47.7 | -8.4 | -7.6 | 27.6 | 61.0 | 92.2 | 121.4 | 148.9 | 174.8 | 199.1 | 222.0 | 243.1 |
| 63. | -282.0 | -215.6 | -145.6 | -93.8 | -49.4 | -9.6 | -8.8 | 26.9 | 60.7 | 92.3 | 122.0 | 149.9 | 176.1 | 200.8 | 224.0 | 245.5 |
| 64. | -286.3 | -219.2 | -148.5 | -96.1 | -51.1 | -10.8 | -10.0 | 26.1 | 60.4 | 92.4 | 122.5 | 150.7 | 177.3 | 202.4 | 225.9 | 247.7 |
| 65. | -290.6 | -222.9 | -151.5 | -98.4 | -53.0 | -12.2 | -11.4 | 25.3 | 60.0 | 92.4 | 122.9 | 151.5 | 178.5 | 203.9 | 227.8 | 249.9 |

ARC ALONG GROUND TRACK BETWEEN EQUATOR AND LATITUDE L ( W )

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| .00 | .00 | .00 | .00 | .00 | .00 | -90.00 | -63.08 | -51.33 | -42.04 | -33.94 | -26.54 | -19.59 | -12.92 | -6.42 | -.06 |
| -90.00 | -76.09 | -63.79 | -55.42 | -48.53 | -42.46 | -42.34 | -36.91 | -31.73 | -26.81 | -22.09 | -17.52 | -13.05 | -8.66 | -4.32 | -.04 |

Table VIb

•• MINIMUM DISTANCE BETWEEN ORBIT GROUND TRACKS•• APOLLO 16- 3 DEG LOPC(2)

FOR REVOLUTION SEPARATION ON THE LUNAR EQUATOR IN DEGREES,AND LATITUDE IN DEG.
MINIMUM REV SEPARATION AT LATITUDE IN KILOMETERS
( MEASURED FROM TRACK 2 )

A(1)= 8.98
A(2)= 13.40

| REV | LATITUDE .01 | 1.00 | 2.00 | 3.00 | 4.00 | 5.00 | 6.00 | 7.00 | 8.00 | 8.98 | 9.00 | 10.00 | 11.00 | 12.00 | 13.00 | 13.40 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | 4.8 | 14.9 | 24.9 | 35.0 | 45.0 | 54.9 | 64.8 | 74.7 | 84.4 | 93.9 | 94.1 | 103.7 | 113.2 | 122.5 | 131.3 | 134.1 |
| 2. | 9.6 | 19.6 | 29.6 | 39.6 | 49.5 | 59.4 | 69.1 | 78.8 | 88.3 | 97.5 | 97.7 | 106.9 | 116.0 | 124.7 | 132.6 | 134.2 |
| 3. | 14.3 | 24.3 | 34.4 | 44.3 | 54.1 | 63.8 | 73.4 | 82.9 | 92.2 | 101.1 | 101.3 | 110.2 | 118.8 | 126.9 | 133.9 | 134.4 |
| 4. | 19.1 | 29.1 | 39.1 | 49.0 | 58.7 | 68.3 | 77.8 | 87.1 | 96.2 | 104.8 | 105.0 | 113.6 | 121.7 | 129.3 | 135.3 | 134.7 |
| 5. | 23.8 | 33.8 | 43.8 | 53.7 | 63.3 | 72.8 | 82.2 | 91.3 | 100.1 | 108.6 | 108.7 | 117.0 | 124.7 | 131.7 | 136.8 | 135.1 |
| 6. | 28.5 | 38.6 | 48.6 | 58.4 | 68.0 | 77.4 | 86.6 | 95.5 | 104.2 | 112.3 | 112.5 | 120.4 | 127.7 | 134.1 | 138.4 | 135.5 |
| 7. | 33.3 | 43.3 | 53.3 | 63.1 | 72.6 | 82.0 | 91.0 | 99.8 | 108.3 | 116.2 | 116.3 | 123.9 | 130.8 | 136.7 | 140.0 | 136.1 |
| 8. | 38.0 | 48.1 | 58.1 | 67.8 | 77.3 | 86.5 | 95.5 | 104.1 | 112.4 | 120.1 | 120.2 | 127.5 | 134.0 | 139.3 | 141.7 | 136.7 |
| 9. | 42.7 | 52.8 | 62.8 | 72.5 | 82.0 | 91.1 | 100.0 | 108.5 | 116.5 | 124.0 | 124.1 | 131.1 | 137.2 | 142.0 | 143.5 | 137.4 |
| 10. | 47.4 | 57.5 | 67.5 | 77.3 | 86.7 | 95.8 | 104.5 | 112.9 | 120.7 | 128.0 | 128.1 | 134.8 | 140.5 | 144.7 | 145.4 | 138.2 |
| 11. | 52.0 | 62.3 | 72.3 | 82.0 | 91.4 | 100.4 | 109.1 | 117.3 | 125.0 | 132.0 | 132.1 | 138.5 | 143.8 | 147.6 | 147.3 | 139.0 |
| 12. | 56.7 | 67.0 | 77.0 | 86.8 | 96.1 | 105.1 | 113.6 | 121.7 | 129.2 | 136.0 | 136.2 | 142.3 | 147.2 | 150.4 | 149.4 | 139.9 |
| 13. | 61.3 | 71.7 | 81.8 | 91.5 | 100.8 | 109.7 | 118.2 | 126.2 | 133.6 | 140.1 | 140.2 | 146.1 | 150.7 | 153.4 | 151.5 | 141.0 |
| 14. | 66.0 | 76.4 | 86.5 | 96.2 | 105.6 | 114.4 | 122.8 | 130.7 | 137.9 | 144.3 | 144.4 | 149.9 | 154.2 | 156.4 | 153.6 | 142.1 |
| 15. | 70.6 | 81.1 | 91.2 | 101.0 | 110.3 | 119.1 | 127.4 | 135.2 | 142.3 | 148.4 | 148.6 | 153.8 | 157.8 | 159.5 | 155.9 | 143.2 |
| 16. | 75.2 | 85.7 | 96.0 | 105.7 | 115.0 | 123.8 | 132.1 | 139.7 | 146.7 | 152.6 | 152.8 | 157.8 | 161.4 | 162.6 | 158.2 | 144.5 |
| 17. | 79.7 | 90.4 | 100.7 | 110.5 | 119.8 | 128.6 | 136.7 | 144.3 | 151.1 | 156.9 | 157.0 | 161.8 | 165.0 | 165.8 | 160.6 | 145.8 |
| 18. | 84.3 | 95.0 | 105.4 | 115.2 | 124.5 | 133.3 | 141.4 | 148.9 | 155.5 | 161.2 | 161.3 | 165.8 | 168.8 | 169.1 | 163.0 | 147.2 |
| 19. | 88.8 | 99.6 | 110.0 | 119.9 | 129.3 | 138.0 | 146.1 | 153.5 | 160.0 | 165.5 | 165.6 | 169.9 | 172.5 | 172.4 | 165.5 | 148.7 |
| 20. | 93.3 | 104.2 | 114.7 | 124.7 | 134.0 | 142.7 | 150.8 | 158.1 | 164.5 | 169.9 | 169.9 | 174.0 | 176.3 | 175.7 | 168.1 | 150.3 |
| 21. | 97.8 | 108.8 | 119.4 | 129.4 | 138.8 | 147.5 | 155.5 | 162.7 | 169.1 | 174.2 | 174.3 | 178.2 | 180.2 | 179.2 | 170.8 | 151.9 |
| 22. | 102.2 | 113.3 | 124.0 | 134.1 | 143.5 | 152.2 | 160.2 | 167.4 | 173.6 | 178.6 | 178.7 | 182.4 | 184.1 | 182.6 | 173.5 | 153.6 |
| 23. | 106.6 | 117.9 | 128.6 | 138.8 | 148.2 | 157.0 | 165.0 | 172.1 | 178.2 | 183.1 | 183.2 | 186.7 | 188.1 | 186.2 | 176.3 | 155.4 |
| 24. | 111.0 | 122.4 | 133.2 | 143.4 | 152.9 | 161.7 | 169.7 | 176.8 | 182.8 | 187.6 | 187.6 | 190.9 | 192.1 | 189.8 | 179.1 | 157.3 |
| 25. | 115.3 | 126.9 | 137.8 | 148.1 | 157.7 | 166.5 | 174.4 | 181.5 | 187.4 | 192.1 | 192.1 | 195.2 | 196.1 | 193.4 | 182.1 | 159.3 |
| 26. | 119.6 | 131.3 | 142.4 | 152.8 | 162.4 | 171.2 | 179.2 | 186.2 | 192.1 | 196.6 | 196.7 | 199.6 | 200.2 | 197.1 | 185.1 | 161.3 |
| 27. | 123.9 | 135.7 | 146.9 | 157.4 | 167.1 | 175.9 | 183.9 | 190.9 | 196.7 | 201.1 | 201.2 | 204.0 | 204.3 | 200.9 | 188.1 | 163.4 |
| 28. | 128.2 | 140.1 | 151.4 | 162.0 | 171.7 | 180.7 | 188.6 | 195.6 | 201.4 | 205.7 | 205.8 | 208.4 | 208.5 | 204.7 | 191.2 | 165.5 |
| 29. | 132.4 | 144.5 | 155.9 | 166.6 | 176.4 | 185.4 | 193.4 | 200.3 | 206.1 | 210.3 | 210.3 | 212.8 | 212.7 | 208.5 | 194.4 | 167.8 |
| 30. | 136.6 | 148.8 | 160.4 | 171.2 | 181.1 | 190.1 | 198.1 | 205.1 | 210.7 | 214.9 | 214.9 | 217.3 | 216.9 | 212.4 | 197.6 | 170.1 |
| 31. | 140.7 | 153.1 | 164.8 | 175.7 | 185.7 | 194.8 | 202.8 | 209.8 | 215.4 | 219.5 | 219.6 | 221.7 | 221.2 | 216.3 | 200.9 | 172.5 |
| 32. | 144.8 | 157.4 | 169.2 | 180.2 | 190.3 | 199.5 | 207.6 | 214.5 | 220.2 | 224.1 | 224.2 | 226.3 | 225.5 | 220.3 | 204.3 | 175.0 |
| 33. | 148.8 | 161.6 | 173.6 | 184.7 | 194.9 | 204.2 | 212.3 | 219.3 | 224.9 | 228.8 | 228.9 | 230.8 | 229.9 | 224.4 | 207.7 | 177.5 |
| 34. | 152.8 | 165.8 | 177.9 | 189.2 | 199.5 | 208.8 | 217.0 | 224.0 | 229.6 | 233.5 | 233.5 | 235.3 | 234.3 | 228.4 | 211.2 | 180.1 |
| 35. | 156.8 | 169.9 | 182.3 | 193.7 | 204.1 | 213.5 | 221.7 | 228.7 | 234.3 | 238.2 | 238.2 | 239.9 | 238.7 | 232.5 | 214.7 | 182.8 |

Table VIb (cont'd.)

** MINIMUM DISTANCE BETWEEN ORBIT GROUND TRACKS** APOLLO 16- 3 DEG LOPC(2)

FOR REVOLUTION SEPARATION ON THE LUNAR EQUATOR IN DEGREES,AND LATITUDE IN DEG.
MINIMUM REV SEPARATION AT LATITUDE IN KILOMETERS
( MEASURED FROM TRACK 2 )

A(1)= 8.98
A(2)= 13.40

| REV | LATITUDE .01 | 1.00 | 2.00 | 3.00 | 4.00 | 5.00 | 6.00 | 7.00 | 8.00 | 8.98 | 9.00 | 10.00 | 11.00 | 12.00 | 13.00 | 13.40 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 31. | 140.7 | 153.1 | 164.8 | 175.7 | 185.7 | 194.8 | 202.8 | 209.8 | 215.4 | 219.5 | 219.6 | 221.7 | 221.2 | 216.3 | 200.9 | 172.5 |
| 32. | 144.8 | 157.4 | 169.2 | 180.2 | 190.3 | 199.5 | 207.6 | 214.5 | 220.2 | 224.1 | 224.2 | 226.3 | 225.5 | 220.3 | 204.3 | 175.0 |
| 33. | 148.8 | 161.6 | 173.6 | 184.7 | 194.9 | 204.2 | 212.3 | 219.3 | 224.9 | 228.8 | 228.9 | 230.8 | 229.9 | 224.4 | 207.7 | 177.5 |
| 34. | 152.8 | 165.8 | 177.9 | 189.2 | 199.5 | 208.8 | 217.0 | 224.0 | 229.6 | 233.5 | 233.5 | 235.3 | 234.3 | 228.4 | 211.2 | 180.1 |
| 35. | 156.8 | 169.9 | 182.3 | 193.7 | 204.1 | 213.5 | 221.7 | 228.7 | 234.3 | 238.2 | 238.2 | 239.9 | 238.7 | 232.5 | 214.7 | 182.8 |
| 36. | 160.7 | 174.0 | 186.5 | 198.1 | 208.6 | 218.1 | 226.4 | 233.5 | 239.1 | 242.8 | 242.9 | 244.5 | 243.1 | 236.7 | 218.3 | 185.5 |
| 37. | 164.6 | 178.1 | 190.8 | 202.5 | 213.1 | 227.7 | 231.1 | 238.2 | 243.8 | 247.6 | 247.6 | 249.2 | 247.6 | 240.9 | 221.9 | 188.3 |
| 38. | 168.4 | 182.1 | 195.0 | 206.8 | 217.6 | 227.3 | 235.8 | 242.9 | 248.5 | 252.3 | 252.3 | 253.8 | 252.1 | 245.1 | 225.6 | 191.2 |
| 39. | 172.2 | 186.1 | 199.1 | 211.1 | 222.1 | 231.9 | 240.4 | 247.6 | 253.3 | 257.0 | 257.0 | 258.4 | 256.6 | 249.4 | 229.3 | 194.1 |
| 40. | 175.9 | 190.0 | 203.3 | 215.4 | 226.5 | 236.4 | 245.1 | 252.3 | 258.0 | 261.7 | 261.8 | 263.1 | 261.1 | 253.7 | 233.1 | 197.1 |
| 41. | 179.6 | 193.9 | 207.3 | 219.7 | 230.9 | 240.9 | 249.7 | 257.0 | 262.7 | 266.4 | 266.5 | 267.8 | 265.7 | 258.0 | 237.0 | 200.2 |
| 42. | 183.3 | 197.8 | 211.4 | 223.9 | 235.3 | 245.4 | 254.3 | 261.7 | 267.5 | 271.2 | 271.2 | 272.5 | 270.3 | 262.4 | 240.9 | 203.3 |
| 43. | 186.8 | 201.6 | 215.4 | 228.1 | 239.6 | 249.9 | 258.9 | 266.4 | 272.2 | 275.9 | 276.0 | 277.2 | 274.9 | 266.8 | 244.8 | 206.5 |
| 44. | 190.4 | 205.3 | 219.3 | 232.2 | 243.9 | 254.4 | 263.5 | 271.0 | 276.9 | 280.6 | 280.7 | 281.9 | 279.5 | 271.2 | 248.8 | 209.8 |
| 45. | 193.8 | 209.0 | 223.3 | 236.3 | 248.2 | 258.8 | 268.0 | 275.7 | 281.6 | 285.4 | 285.4 | 286.6 | 284.1 | 275.7 | 252.8 | 213.1 |
| 46. | 197.2 | 212.7 | 227.1 | 240.4 | 252.4 | 263.2 | 272.5 | 280.3 | 286.3 | 290.1 | 290.2 | 291.3 | 288.8 | 280.2 | 256.9 | 216.5 |
| 47. | 200.6 | 216.3 | 230.9 | 244.4 | 256.6 | 267.5 | 277.0 | 284.9 | 291.0 | 294.8 | 294.9 | 296.1 | 293.4 | 284.7 | 261.0 | 219.9 |
| 48. | 203.9 | 219.8 | 234.7 | 248.4 | 260.8 | 271.9 | 281.5 | 289.5 | 295.7 | 299.6 | 299.6 | 300.8 | 298.1 | 289.2 | 265.2 | 223.4 |
| 49. | 207.1 | 223.3 | 238.4 | 252.3 | 264.9 | 276.2 | 285.9 | 294.1 | 300.3 | 304.3 | 304.3 | 305.5 | 302.8 | 293.8 | 269.3 | 227.0 |
| 50. | 210.3 | 226.7 | 242.1 | 256.2 | 269.0 | 280.4 | 290.3 | 298.6 | 304.9 | 309.0 | 309.0 | 310.3 | 307.5 | 298.4 | 273.6 | 230.6 |
| 51. | 213.4 | 230.1 | 245.7 | 260.1 | 273.1 | 284.6 | 294.7 | 303.1 | 309.6 | 313.7 | 313.7 | 315.0 | 312.2 | 303.0 | 277.9 | 234.2 |
| 52. | 216.5 | 233.4 | 249.3 | 263.8 | 277.1 | 288.8 | 299.1 | 307.6 | 314.2 | 318.4 | 318.4 | 319.7 | 317.0 | 307.6 | 282.2 | 237.9 |
| 53. | 219.5 | 236.7 | 252.8 | 267.6 | 281.0 | 293.0 | 303.4 | 312.1 | 318.8 | 323.0 | 323.1 | 324.5 | 321.7 | 312.2 | 286.5 | 241.7 |
| 54. | 222.4 | 239.9 | 256.3 | 271.3 | 284.9 | 297.1 | 307.7 | 316.5 | 323.3 | 327.7 | 327.8 | 329.2 | 326.4 | 316.9 | 290.9 | 245.5 |
| 55. | 225.3 | 243.1 | 259.7 | 274.9 | 288.8 | 301.1 | 311.9 | 320.9 | 327.9 | 332.3 | 332.4 | 333.9 | 331.2 | 321.6 | 295.3 | 249.4 |
| 56. | 228.1 | 246.1 | 263.0 | 278.5 | 292.6 | 305.2 | 316.1 | 325.3 | 332.4 | 337.0 | 337.0 | 338.6 | 335.9 | 326.2 | 299.7 | 253.3 |
| 57. | 230.9 | 249.2 | 266.3 | 282.1 | 296.4 | 309.2 | 320.3 | 329.6 | 336.9 | 341.6 | 341.7 | 343.3 | 340.6 | 330.9 | 304.2 | 257.3 |
| 58. | 233.5 | 252.1 | 269.5 | 285.5 | 300.1 | 313.1 | 324.4 | 333.9 | 341.3 | 346.2 | 346.2 | 348.0 | 345.4 | 335.6 | 308.7 | 261.3 |
| 59. | 236.1 | 255.0 | 272.7 | 289.0 | 303.8 | 317.0 | 328.5 | 338.2 | 345.8 | 350.7 | 350.8 | 352.7 | 350.1 | 340.4 | 313.2 | 265.4 |
| 60. | 238.7 | 257.9 | 275.8 | 292.3 | 307.4 | 320.8 | 332.6 | 342.5 | 350.2 | 355.3 | 355.4 | 357.3 | 354.8 | 345.1 | 317.8 | 269.5 |
| 61. | 241.2 | 260.6 | 278.9 | 295.7 | 310.9 | 324.6 | 336.6 | 346.7 | 354.6 | 359.8 | 359.9 | 362.0 | 359.5 | 349.8 | 322.3 | 273.6 |
| 62. | 243.6 | 263.3 | 281.9 | 298.9 | 314.5 | 328.4 | 340.6 | 350.8 | 358.9 | 364.3 | 364.4 | 366.6 | 364.3 | 354.5 | 326.9 | 277.8 |
| 63. | 245.9 | 266.0 | 284.8 | 302.1 | 317.9 | 332.1 | 344.5 | 355.0 | 363.2 | 368.8 | 368.9 | 371.2 | 369.0 | 359.3 | 331.5 | 282.0 |
| 64. | 248.2 | 268.5 | 287.6 | 305.3 | 321.3 | 335.7 | 348.4 | 359.1 | 367.5 | 373.3 | 373.3 | 375.8 | 373.7 | 364.0 | 336.2 | 286.3 |
| 65. | 250.4 | 271.0 | 290.4 | 308.3 | 324.7 | 339.3 | 352.2 | 363.1 | 371.8 | 377.7 | 377.8 | 380.4 | 378.4 | 368.8 | 340.8 | 290.6 |
| | ARC ALONG GROUND TRACK BETWEEN EQUATOR AND LATITUDE L ( W ) | | | | | | | | | | | | | | | |
| | .06 | 6.42 | 12.92 | 19.59 | 26.54 | 33.94 | 42.04 | 51.33 | 63.08 | 89.98 | .00 | .00 | .00 | .00 | .00 | .00 |
| | .04 | 4.32 | 8.66 | 13.05 | 17.52 | 22.09 | 26.81 | 31.73 | 36.91 | 42.34 | 42.46 | 48.53 | 55.42 | 63.79 | 76.09 | 89.99 |

Table VIIa

** MINIMUM DISTANCE BETWEEN ORBIT GROUND TRACKS** APOLLO 16- 5 DEG LOPC(2)

FOR REVOLUTION SEPARATION ON THE LUNAR EQUATOR IN DEGREES,AND LATITUDE IN DEG.
MINIMUM REV SEPARATION AT LATITUDE IN KILOMETERS
( MEASURED FROM TRACK 2 )
A(1)= 10.40
A(2)= 15.40

| REV | LATITUDE -15.40 | -15.00 | -14.00 | -13.00 | -12.00 | -11.00 | -10.40 | -10.00 | -9.00 | -8.00 | -7.00 | -6.00 | -5.00 | -4.00 | -3.00 | -2.00 | -1.00 | -.01 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | -151.7 | -146.7 | -136.0 | -125.7 | -115.5 | -105.3 | -99.3 | -95.2 | -85.1 | -75.0 | -64.9 | -54.8 | -44.7 | -34.6 | -24.6 | -14.5 | -4.5 | 5.4 |
| 2. | -151.9 | -145.6 | -133.9 | -122.9 | -112.2 | -101.6 | -95.3 | -91.2 | -80.7 | -70.4 | -60.1 | -49.8 | -39.6 | -29.4 | -19.2 | -9.1 | 1.0 | 10.9 |
| 3. | -152.1 | -144.6 | -131.9 | -120.2 | -109.0 | -98.0 | -91.5 | -87.2 | -76.5 | -65.8 | -55.3 | -44.9 | -34.5 | -24.1 | -13.9 | -3.7 | 6.4 | 16.4 |
| 4. | -152.4 | -143.7 | -129.9 | -117.6 | -105.8 | -94.4 | -87.7 | -83.2 | -72.2 | -61.3 | -50.6 | -39.9 | -29.4 | -18.9 | -8.6 | 1.7 | 11.9 | 21.9 |
| 5. | -152.8 | -142.9 | -128.0 | -115.0 | -102.8 | -90.9 | -84.0 | -79.4 | -68.1 | -56.9 | -45.9 | -35.1 | -24.4 | -13.8 | -3.3 | 7.1 | 17.3 | 27.4 |
| 6. | -153.4 | -142.2 | -126.3 | -112.6 | -99.8 | -87.5 | -80.3 | -75.6 | -63.9 | -52.5 | -41.3 | -30.2 | -19.4 | -8.6 | 2.0 | 12.4 | 22.8 | 32.8 |
| 7. | -154.0 | -141.5 | -124.6 | -110.2 | -96.9 | -84.2 | -76.7 | -71.9 | -59.9 | -48.2 | -36.7 | -25.5 | -14.4 | -3.5 | 7.2 | 17.8 | 28.2 | 38.3 |
| 8. | -154.7 | -141.0 | -123.0 | -107.9 | -94.0 | -80.9 | -73.2 | -68.2 | -55.9 | -43.9 | -32.2 | -20.7 | -9.5 | 1.6 | 12.4 | 23.1 | 33.6 | 43.7 |
| 9. | -155.5 | -140.6 | -121.5 | -105.7 | -91.3 | -77.7 | -69.8 | -64.6 | -52.0 | -39.7 | -27.7 | -16.0 | -4.6 | 6.6 | 17.6 | 28.4 | 38.9 | 49.2 |
| 10. | -156.4 | -140.3 | -120.1 | -103.6 | -88.6 | -74.5 | -66.4 | -61.1 | -48.1 | -35.6 | -23.3 | -11.4 | .2 | 11.6 | 22.8 | 33.6 | 44.3 | 54.6 |
| 11. | -157.3 | -140.0 | -118.7 | -101.6 | -86.0 | -71.5 | -63.1 | -57.6 | -44.3 | -31.5 | -19.0 | -6.8 | 5.0 | 16.6 | 27.9 | 38.9 | 49.6 | 60.0 |
| 12. | -158.4 | -139.9 | -117.5 | -99.6 | -83.5 | -68.5 | -59.9 | -54.3 | -40.6 | -27.4 | -14.7 | -2.3 | 9.8 | 21.5 | 33.0 | 44.1 | 54.9 | 65.4 |
| 13. | -159.6 | -139.8 | -116.4 | -97.8 | -81.1 | -65.6 | -56.7 | -51.0 | -36.9 | -23.5 | -10.4 | 2.2 | 14.5 | 26.4 | 38.0 | 49.3 | 60.2 | 70.8 |
| 14. | -160.8 | -139.8 | -115.3 | -96.0 | -78.8 | -62.8 | -53.7 | -47.7 | -33.4 | -19.6 | -6.2 | 6.6 | 19.1 | 31.2 | 43.0 | 54.4 | 65.5 | 76.1 |
| 15. | -162.2 | -140.0 | -114.4 | -94.3 | -76.5 | -60.1 | -50.7 | -44.6 | -29.8 | -15.7 | -2.1 | 11.0 | 23.7 | 36.0 | 48.0 | 59.5 | 70.7 | 81.5 |
| 16. | -163.6 | -140.2 | -113.5 | -92.7 | -74.3 | -57.4 | -47.8 | -41.5 | -26.4 | -11.9 | 2.0 | 15.3 | 28.3 | 40.8 | 52.9 | 64.6 | 75.9 | 86.8 |
| 17. | -165.2 | -140.5 | -112.7 | -91.2 | -72.3 | -54.8 | -44.9 | -38.5 | -23.0 | -8.2 | 6.0 | 19.6 | 32.8 | 45.5 | 57.8 | 69.7 | 81.1 | 92.1 |
| 18. | -166.8 | -140.9 | -112.0 | -89.8 | -70.3 | -52.4 | -42.2 | -35.6 | -19.7 | -4.6 | 9.9 | 23.8 | 37.2 | 50.2 | 62.6 | 74.7 | 86.3 | 97.3 |
| 19. | -168.5 | -141.4 | -111.4 | -88.5 | -68.4 | -49.9 | -39.5 | -32.8 | -16.5 | -1.0 | 13.8 | 28.0 | 41.6 | 54.8 | 67.4 | 79.6 | 91.4 | 102.6 |
| 20. | -170.3 | -142.0 | -111.0 | -87.3 | -66.5 | -47.6 | -36.9 | -30.0 | -13.4 | 2.5 | 17.6 | 32.0 | 46.0 | 59.3 | 72.2 | 84.6 | 96.5 | 107.8 |
| 21. | -172.2 | -142.7 | -110.6 | -86.1 | -64.8 | -45.4 | -34.4 | -27.3 | -10.3 | 5.9 | 21.3 | 36.1 | 50.2 | 63.8 | 76.9 | 89.5 | 101.5 | 113.0 |
| 22. | -174.2 | -143.5 | -110.2 | -85.1 | -63.2 | -43.2 | -32.0 | -24.7 | -7.3 | 9.2 | 25.0 | 40.0 | 54.5 | 68.3 | 81.6 | 94.3 | 106.5 | 118.1 |
| 23. | -176.3 | -144.4 | -110.0 | -84.1 | -61.6 | -41.2 | -29.6 | -22.2 | -4.4 | 12.5 | 28.6 | 43.9 | 58.6 | 72.7 | 86.2 | 99.1 | 111.5 | 123.2 |
| 24. | -178.4 | -145.4 | -109.9 | -83.2 | -60.1 | -39.2 | -27.4 | -19.8 | -1.5 | 15.7 | 32.1 | 47.8 | 62.7 | 77.0 | 90.7 | 103.9 | 116.4 | 128.3 |
| 25. | -180.7 | -146.4 | -109.9 | -82.5 | -58.8 | -37.3 | -25.2 | -17.4 | 1.2 | 18.8 | 35.6 | 51.5 | 66.8 | 81.3 | 95.2 | 108.6 | 121.3 | 133.3 |
| 26. | -183.0 | -147.6 | -110.0 | -81.8 | -57.5 | -35.5 | -23.1 | -15.1 | 3.9 | 21.9 | 39.0 | 55.2 | 70.7 | 85.5 | 99.7 | 113.2 | 126.1 | 138.3 |
| 27. | -185.4 | -148.9 | -110.1 | -81.2 | -56.3 | -33.8 | -21.1 | -13.0 | 6.5 | 24.9 | 42.3 | 58.8 | 74.6 | 89.7 | 104.1 | 117.8 | 130.9 | 143.3 |
| 28. | -187.9 | -150.2 | -110.4 | -80.7 | -55.2 | -32.1 | -19.2 | -10.9 | 9.0 | 27.8 | 45.5 | 62.4 | 78.5 | 93.8 | 108.5 | 122.4 | 135.7 | 148.2 |
| 29. | -190.5 | -151.7 | -110.8 | -80.3 | -54.2 | -30.6 | -17.4 | -8.9 | 11.5 | 30.6 | 48.7 | 65.9 | 82.3 | 97.9 | 112.7 | 126.9 | 140.4 | 153.1 |
| 30. | -193.2 | -153.2 | -111.2 | -80.0 | -53.3 | -29.1 | -15.6 | -6.9 | 13.8 | 33.3 | 51.8 | 69.3 | 86.0 | 101.9 | 117.0 | 131.4 | 145.1 | 157.9 |
| 31. | -195.9 | -154.8 | -111.8 | -79.8 | -52.4 | -27.8 | -14.0 | -5.1 | 16.1 | 36.0 | 54.8 | 72.6 | 89.6 | 105.8 | 121.1 | 135.8 | 149.7 | 162.7 |
| 32. | -198.8 | -156.5 | -112.4 | -79.7 | -51.7 | -26.5 | -12.4 | -3.4 | 18.2 | 38.5 | 57.7 | 75.9 | 93.2 | 109.6 | 125.3 | 140.1 | 154.2 | 167.5 |
| 33. | -201.7 | -158.3 | -113.1 | -79.7 | -51.1 | -25.3 | -10.9 | -1.7 | 20.3 | 41.0 | 60.6 | 79.1 | 96.7 | 113.4 | 129.3 | 144.4 | 158.7 | 172.2 |
| 34. | -204.7 | -160.2 | -114.0 | -79.8 | -50.5 | -24.3 | -9.6 | -.1 | 22.3 | 43.4 | 63.4 | 82.2 | 100.1 | 117.1 | 133.3 | 148.6 | 163.2 | 176.8 |
| 35. | -207.8 | -162.2 | -114.9 | -80.0 | -50.1 | -23.3 | -8.3 | 1.3 | 24.3 | 45.8 | 66.1 | 85.3 | 103.5 | 120.8 | 137.2 | 152.8 | 167.6 | 181.4 |

ARC ALONG GROUND TRACK BETWEEN EQUATOR AND LATITUDE L ( W )

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| .00 | .00 | .00 | .00 | .00 | .00 | -90.00 | -74.14 | -60.06 | -50.44 | -42.46 | -35.38 | -28.87 | -22.73 | -16.85 | -11.15 | -5.55 | -.06 |
| -90.00 | -77.07 | -65.64 | -57.90 | -51.53 | -45.93 | -42.83 | -40.84 | -36.09 | -31.61 | -27.32 | -23.18 | -19.16 | -15.23 | -11.37 | -7.55 | -3.77 | -.04 |

Table VIIb

** MINIMUM DISTANCE BETWEEN ORBIT GROUND TRACKS** APOLLO 16- 5 DEG LOPC(2)

FOR REVOLUTION SEPARATION ON THE LUNAR EQUATOR IN DEGREES,AND LATITUDE IN DEG.
MINIMUM REV SEPARATION AT LATITUDE IN KILOMETERS
( MEASURED FROM TRACK 2 )
A(1)= 10.40
A(2)= 15.40

| REV | LATITUDE .01 | 1.00 | 2.00 | 3.00 | 4.00 | 5.00 | 6.00 | 7.00 | 8.00 | 9.00 | 10.00 | 10.40 | 11.00 | 12.00 | 13.00 | 14.00 | 15.00 | 15.40 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | 5.6 | 15.5 | 25.4 | 35.4 | 45.2 | 55.1 | 64.9 | 74.6 | 84.3 | 94.0 | 103.5 | 107.3 | 113.0 | 122.3 | 131.5 | 140.5 | 149.1 | 151.7 |
| 2. | 11.1 | 21.0 | 30.9 | 40.8 | 50.6 | 60.3 | 70.0 | 79.6 | 89.1 | 98.5 | 107.7 | 111.4 | 116.9 | 125.8 | 134.5 | 142.9 | 150.5 | 151.9 |
| 3. | 16.6 | 26.5 | 36.4 | 46.2 | 55.9 | 65.6 | 75.1 | 84.6 | 93.9 | 103.0 | 112.0 | 115.6 | 120.8 | 129.4 | 137.6 | 145.4 | 151.9 | 152.1 |
| 4. | 22.1 | 32.0 | 41.9 | 51.6 | 61.3 | 70.9 | 80.3 | 89.6 | 98.7 | 107.6 | 116.4 | 119.8 | 124.9 | 133.0 | 140.8 | 147.9 | 153.5 | 152.4 |
| 5. | 27.6 | 37.5 | 47.3 | 57.1 | 66.7 | 76.2 | 85.5 | 94.6 | 103.6 | 112.3 | 120.8 | 124.1 | 129.0 | 136.8 | 144.1 | 150.5 | 155.1 | 152.8 |
| 6. | 33.0 | 43.0 | 52.8 | 62.6 | 72.1 | 81.5 | 90.7 | 99.7 | 108.5 | 117.0 | 125.2 | 128.4 | 133.1 | 140.6 | 147.4 | 153.3 | 156.8 | 153.4 |
| 7. | 38.5 | 48.4 | 58.3 | 68.0 | 77.5 | 86.9 | 96.0 | 104.8 | 113.4 | 121.8 | 129.8 | 132.8 | 137.3 | 144.4 | 150.8 | 156.0 | 159.6 | 154.0 |
| 8. | 43.9 | 53.9 | 63.8 | 73.5 | 83.0 | 92.2 | 101.2 | 110.0 | 118.4 | 126.6 | 134.3 | 137.3 | 141.6 | 148.3 | 154.3 | 158.9 | 160.5 | 154.7 |
| 9. | 49.4 | 59.4 | 69.3 | 79.0 | 88.4 | 97.6 | 106.5 | 115.2 | 123.5 | 131.4 | 138.9 | 141.8 | 145.9 | 152.3 | 157.8 | 161.9 | 162.5 | 155.5 |
| 10. | 54.8 | 64.9 | 74.8 | 84.5 | 93.9 | 103.0 | 111.9 | 120.4 | 128.5 | 136.3 | 143.6 | 146.4 | 150.3 | 156.4 | 161.4 | 164.9 | 164.6 | 156.4 |
| 11. | 60.2 | 70.3 | 80.3 | 90.0 | 99.4 | 108.5 | 117.2 | 125.6 | 133.6 | 141.2 | 148.3 | 151.0 | 154.8 | 160.5 | 165.1 | 168.0 | 166.7 | 157.3 |
| 12. | 65.6 | 75.8 | 85.8 | 95.5 | 104.8 | 113.9 | 122.6 | 130.9 | 138.8 | 146.2 | 153.1 | 155.6 | 159.3 | 164.7 | 168.9 | 171.2 | 169.0 | 158.4 |
| 13. | 71.0 | 81.2 | 91.3 | 101.0 | 110.3 | 119.3 | 128.0 | 136.2 | 144.0 | 151.2 | 157.9 | 160.4 | 163.8 | 168.9 | 172.7 | 174.5 | 171.3 | 159.6 |
| 14. | 76.4 | 86.7 | 96.7 | 106.5 | 115.8 | 124.8 | 133.4 | 141.5 | 149.2 | 156.3 | 162.7 | 165.1 | 168.4 | 173.2 | 176.6 | 177.8 | 173.7 | 160.8 |
| 15. | 81.7 | 92.1 | 102.2 | 111.9 | 121.3 | 130.3 | 138.8 | 146.8 | 154.4 | 161.3 | 167.6 | 169.9 | 173.1 | 177.5 | 180.5 | 181.2 | 176.2 | 162.2 |
| 16. | 87.0 | 97.5 | 107.6 | 117.4 | 126.8 | 135.7 | 144.2 | 152.2 | 159.6 | 166.5 | 172.6 | 174.8 | 177.8 | 181.9 | 184.6 | 184.7 | 178.8 | 163.6 |
| 17. | 92.3 | 102.8 | 113.1 | 122.9 | 132.3 | 141.2 | 149.7 | 157.6 | 164.9 | 171.6 | 177.5 | 179.7 | 182.5 | 186.4 | 188.6 | 188.2 | 181.5 | 165.2 |
| 18. | 97.6 | 108.2 | 118.5 | 128.4 | 137.8 | 146.7 | 155.1 | 163.0 | 170.2 | 176.8 | 182.5 | 184.6 | 187.3 | 190.9 | 192.8 | 191.9 | 184.2 | 166.8 |
| 19. | 102.8 | 113.5 | 123.9 | 133.8 | 143.3 | 152.2 | 160.6 | 168.4 | 175.5 | 182.0 | 187.6 | 189.6 | 192.2 | 195.5 | 197.0 | 195.6 | 187.0 | 168.5 |
| 20. | 108.0 | 118.8 | 129.3 | 139.3 | 148.8 | 157.7 | 166.1 | 173.8 | 180.9 | 187.2 | 192.7 | 194.6 | 197.1 | 200.1 | 201.2 | 199.3 | 189.9 | 170.3 |
| 21. | 113.2 | 124.1 | 134.7 | 144.7 | 154.2 | 163.2 | 171.5 | 179.3 | 186.3 | 192.5 | 197.8 | 199.6 | 202.0 | 204.8 | 205.6 | 203.2 | 192.9 | 172.2 |
| 22. | 118.3 | 129.4 | 140.0 | 150.1 | 159.7 | 168.7 | 177.0 | 184.7 | 191.6 | 197.8 | 202.9 | 204.7 | 206.9 | 209.5 | 209.9 | 207.1 | 196.0 | 174.2 |
| 23. | 123.4 | 134.6 | 145.4 | 155.5 | 165.2 | 174.2 | 182.5 | 190.2 | 197.1 | 203.1 | 208.1 | 209.8 | 211.9 | 214.2 | 214.4 | 211.0 | 199.2 | 176.3 |
| 24. | 128.5 | 139.8 | 150.7 | 160.9 | 170.6 | 179.6 | 188.0 | 195.6 | 202.5 | 208.4 | 213.3 | 215.0 | 217.0 | 219.0 | 218.9 | 215.1 | 202.4 | 178.4 |
| 25. | 133.6 | 145.0 | 156.0 | 166.3 | 176.0 | 185.1 | 193.5 | 201.1 | 207.9 | 213.8 | 218.6 | 220.1 | 222.1 | 223.9 | 223.4 | 219.2 | 205.7 | 180.7 |
| 26. | 138.6 | 150.1 | 161.2 | 171.7 | 181.5 | 190.6 | 199.0 | 206.6 | 213.3 | 219.1 | 223.8 | 225.3 | 227.2 | 228.8 | 228.0 | 223.3 | 209.1 | 183.0 |
| 27. | 143.5 | 155.2 | 166.4 | 177.0 | 186.9 | 196.0 | 204.4 | 212.1 | 218.8 | 224.5 | 229.1 | 230.6 | 232.3 | 233.7 | 232.7 | 227.5 | 212.5 | 185.4 |
| 28. | 148.5 | 160.3 | 171.6 | 182.3 | 192.2 | 201.5 | 209.9 | 217.5 | 224.3 | 229.9 | 234.4 | 235.8 | 237.5 | 238.7 | 237.3 | 231.8 | 216.0 | 187.9 |
| 29. | 153.3 | 165.4 | 176.8 | 187.6 | 197.6 | 206.9 | 215.4 | 223.0 | 229.7 | 235.4 | 239.8 | 241.1 | 242.7 | 243.7 | 242.1 | 236.1 | 219.6 | 190.5 |
| 30. | 158.2 | 170.4 | 181.9 | 192.8 | 203.0 | 212.3 | 220.9 | 228.5 | 235.2 | 240.8 | 245.1 | 246.4 | 247.9 | 248.8 | 246.9 | 240.5 | 223.3 | 193.2 |
| 31. | 163.0 | 175.3 | 187.0 | 198.0 | 208.3 | 217.7 | 226.3 | 234.0 | 240.7 | 246.2 | 250.5 | 251.8 | 253.2 | 253.9 | 251.7 | 245.0 | 227.0 | 195.9 |
| 32. | 167.7 | 180.2 | 192.1 | 203.2 | 213.6 | 223.1 | 231.8 | 239.5 | 246.2 | 251.7 | 255.9 | 257.1 | 258.5 | 259.0 | 256.6 | 249.5 | 230.8 | 198.8 |
| 33. | 172.4 | 185.1 | 197.1 | 208.4 | 218.9 | 228.5 | 237.2 | 244.9 | 251.6 | 257.2 | 261.3 | 262.5 | 263.8 | 264.1 | 261.5 | 254.0 | 234.7 | 201.7 |
| 34. | 177.1 | 189.9 | 202.1 | 213.5 | 224.1 | 233.8 | 242.6 | 250.4 | 257.1 | 262.6 | 266.7 | 267.9 | 269.1 | 269.3 | 266.5 | 258.7 | 238.7 | 204.7 |
| 35. | 181.7 | 194.7 | 207.1 | 218.6 | 229.3 | 239.1 | 248.0 | 255.9 | 262.6 | 268.1 | 272.1 | 273.3 | 274.5 | 274.5 | 271.5 | 263.3 | 242.7 | 207.8 |

ARC ALONG GROUND TRACK BETWEEN EQUATOR AND LATITUDE L ( W )

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| .06 | 5.55 | 11.15 | 16.85 | 22.73 | 28.87 | 35.38 | 42.46 | 50.44 | 60.06 | 74.14 | 89.99 | .00 | .00 | .00 | .00 | .00 | .00 |
| .04 | 3.77 | 7.55 | 11.37 | 15.23 | 19.16 | 23.18 | 27.32 | 31.61 | 36.09 | 40.84 | 42.83 | 45.93 | 51.53 | 57.90 | 65.64 | 77.07 | 90.00 |

Table VIIIa

** MINIMUM DISTANCE BETWEEN ORBIT GROUND TRACKS** APOLLO 16- 5 DEG LOPC(2)

FOR REVOLUTION SEPARATION ON THE LUNAR EQUATOR IN DEGREES,AND LATITUDE IN DEG.
MINIMUM REV SEPARATION AT LATITUDE IN KILOMETERS
( MEASURED FROM TRACK 2 )
A(1)= 15.40
A(2)= 15.40

| REV | LATITUDE -15.40 | -15.00 | -14.00 | -13.00 | -12.00 | -11.00 | -10.00 | -9.00 | -8.00 | -6.00 | -4.00 | -2.00 | -.01 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | .0 | 1.8 | 3.3 | 4.2 | 5.0 | 5.6 | 6.1 | 6.5 | 6.8 | 7.4 | 7.8 | 8.0 | 8.1 |
| 2. | -.3 | 3.3 | 6.4 | 8.3 | 9.8 | 11.0 | 12.0 | 12.9 | 13.6 | 14.7 | 15.5 | 15.9 | 16.1 |
| 3. | -.6 | 4.8 | 9.4 | 12.3 | 14.6 | 16.4 | 17.9 | 19.2 | 20.3 | 22.0 | 23.1 | 23.9 | 24.2 |
| 4. | -1.1 | 6.2 | 12.3 | 16.2 | 19.2 | 21.6 | 23.7 | 25.4 | 26.9 | 29.2 | 30.8 | 31.8 | 32.2 |
| 5. | -1.7 | 7.4 | 15.1 | 19.9 | 23.7 | 26.8 | 29.3 | 31.5 | 33.4 | 36.3 | 38.4 | 39.7 | 40.2 |
| 6. | -2.4 | 8.4 | 17.7 | 23.6 | 28.1 | 31.8 | 34.9 | 37.6 | 39.8 | 43.4 | 45.9 | 47.5 | 48.2 |
| 7. | -3.3 | 9.4 | 20.2 | 27.1 | 32.4 | 36.8 | 40.4 | 43.5 | 46.2 | 50.4 | 53.4 | 55.3 | 56.3 |
| 8. | -4.3 | 10.2 | 22.6 | 30.5 | 36.6 | 41.6 | 45.8 | 49.4 | 52.5 | 57.4 | 60.9 | 63.1 | 64.2 |
| 9. | -5.5 | 10.8 | 24.8 | 33.8 | 40.7 | 46.3 | 51.1 | 55.1 | 58.6 | 64.2 | 68.3 | 70.9 | 72.2 |
| 10. | -6.8 | 11.4 | 26.9 | 36.9 | 44.6 | 50.9 | 56.3 | 60.8 | 64.8 | 71.1 | 75.6 | 78.6 | 80.2 |
| 11. | -8.2 | 11.8 | 28.9 | 39.9 | 48.4 | 55.4 | 61.3 | 66.4 | 70.8 | 77.8 | 82.9 | 86.3 | 88.1 |
| 12. | -9.7 | 12.0 | 30.8 | 42.8 | 52.1 | 59.8 | 66.3 | 71.9 | 76.7 | 84.4 | 90.1 | 93.9 | 96.0 |
| 13. | -11.4 | 12.1 | 32.5 | 45.6 | 55.7 | 64.1 | 71.2 | 77.3 | 82.5 | 91.0 | 97.3 | 101.5 | 103.9 |
| 14. | -13.2 | 12.1 | 34.1 | 48.2 | 59.2 | 68.3 | 75.9 | 82.6 | 88.3 | 97.5 | 104.4 | 109.0 | 111.7 |
| 15. | -15.2 | 12.0 | 35.5 | 50.7 | 62.6 | 72.3 | 80.6 | 87.7 | 93.9 | 104.0 | 111.4 | 116.5 | 119.5 |
| 16. | -17.3 | 11.7 | 36.9 | 53.1 | 65.8 | 76.3 | 85.1 | 92.8 | 99.5 | 110.3 | 118.4 | 124.0 | 127.3 |
| 17. | -19.5 | 11.3 | 38.0 | 55.4 | 68.9 | 80.1 | 89.6 | 97.8 | 104.9 | 116.6 | 125.3 | 131.4 | 135.1 |
| 18. | -21.9 | 10.7 | 39.1 | 57.5 | 71.9 | 83.8 | 93.9 | 102.7 | 110.3 | 122.8 | 132.1 | 138.7 | 142.8 |
| 19. | -24.3 | 10.0 | 40.0 | 59.5 | 74.7 | 87.4 | 98.1 | 107.4 | 115.5 | 128.8 | 138.9 | 146.0 | 150.4 |
| 20. | -26.9 | 9.2 | 40.8 | 61.4 | 77.5 | 90.8 | 102.2 | 112.1 | 120.7 | 134.9 | 145.5 | 153.2 | 158.1 |
| 21. | -29.7 | 8.3 | 41.5 | 63.1 | 80.1 | 94.1 | 106.2 | 116.6 | 125.7 | 140.8 | 152.2 | 160.4 | 165.7 |
| 22. | -32.6 | 7.2 | 42.0 | 64.7 | 82.6 | 97.4 | 110.0 | 121.1 | 130.7 | 146.6 | 158.7 | 167.5 | 173.2 |
| 23. | -35.6 | 5.9 | 42.4 | 66.2 | 84.9 | 100.5 | 113.8 | 125.4 | 135.5 | 152.3 | 165.1 | 174.5 | 180.7 |
| 24. | -38.7 | 4.6 | 42.6 | 67.6 | 87.1 | 103.4 | 117.4 | 129.6 | 140.3 | 158.0 | 171.5 | 181.5 | 188.1 |
| 25. | -42.0 | 3.0 | 42.7 | 68.8 | 89.2 | 106.3 | 120.9 | 133.7 | 144.9 | 163.5 | 177.8 | 188.4 | 195.5 |
| 26. | -45.3 | 1.4 | 42.7 | 69.8 | 91.2 | 109.0 | 124.3 | 137.7 | 149.4 | 168.9 | 184.0 | 195.2 | 202.8 |
| 27. | -48.9 | -.4 | 42.5 | 70.8 | 93.0 | 111.6 | 127.6 | 141.5 | 153.8 | 174.3 | 190.1 | 202.0 | 210.1 |
| 28. | -52.5 | -2.3 | 42.3 | 71.6 | 94.7 | 114.1 | 130.7 | 145.3 | 158.1 | 179.5 | 196.2 | 208.7 | 217.3 |
| 29. | -56.3 | -4.3 | 41.8 | 72.3 | 96.3 | 116.4 | 133.7 | 148.9 | 162.3 | 184.7 | 202.1 | 215.3 | 224.5 |
| 30. | -60.2 | -6.5 | 41.2 | 72.8 | 97.7 | 118.6 | 136.6 | 152.4 | 166.4 | 189.7 | 208.0 | 221.8 | 231.5 |
| 31. | -64.2 | -8.8 | 40.5 | 73.2 | 99.0 | 120.7 | 139.4 | 155.8 | 170.3 | 194.7 | 213.7 | 228.3 | 238.6 |
| 32. | -68.3 | -11.3 | 39.7 | 73.4 | 100.2 | 122.6 | 142.0 | 159.1 | 174.2 | 199.5 | 219.4 | 234.7 | 245.5 |
| 33. | -72.6 | -13.9 | 38.7 | 73.6 | 101.2 | 124.5 | 144.6 | 162.2 | 177.9 | 204.2 | 225.0 | 241.0 | 252.4 |
| 34. | -77.0 | -16.6 | 37.6 | 73.6 | 102.1 | 126.1 | 146.9 | 165.2 | 181.5 | 208.8 | 230.5 | 247.2 | 259.2 |
| 35. | -81.5 | -19.4 | 36.3 | 73.4 | 102.9 | 127.7 | 149.2 | 168.1 | 185.0 | 213.3 | 235.9 | 253.3 | 266.0 |

ARC ALONG GROUND TRACK BETWEEN EQUATOR AND LATITUDE L ( W )

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -90.00 | -77.07 | -65.64 | -57.90 | -51.53 | -45.93 | -40.84 | -36.09 | -31.61 | -23.18 | -15.23 | -7.55 | -.04 |
| -90.00 | -77.07 | -65.64 | -57.90 | -51.53 | -45.93 | -40.84 | -36.09 | -31.61 | -23.18 | -15.23 | -7.55 | -.04 |

Table VIIIb

** MINIMUM DISTANCE BETWEEN ORBIT GROUND TRACKS** APOLLO 16- 5 DEG LOPC(2)

FOR REVOLUTION SEPARATION ON THE LUNAR EQUATOR IN DEGREES,AND LATITUDE IN DEG.
MINIMUM REV SEPARATION AT LATITUDE IN KILOMETERS
( MEASURED FROM TRACK 2 )
A(1)= 15.40
A(2)= 15.40

| REV | LATITUDE .01 | 2.00 | 4.00 | 6.00 | 8.00 | 9.00 | 10.00 | 11.00 | 12.00 | 13.00 | 14.00 | 15.00 | 15.40 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | 8.1 | 8.0 | 7.8 | 7.4 | 6.9 | 6.5 | 6.1 | 5.6 | 5.0 | 4.3 | 3.4 | 1.8 | .0 |
| 2. | 16.1 | 16.0 | 15.6 | 14.9 | 13.9 | 13.2 | 12.4 | 11.4 | 10.2 | 8.8 | 6.9 | 3.9 | .3 |
| 3. | 24.2 | 24.0 | 23.5 | 22.4 | 20.9 | 19.9 | 18.7 | 17.2 | 15.5 | 13.4 | 10.5 | 6.0 | .6 |
| 4. | 32.2 | 32.1 | 31.4 | 30.0 | 28.0 | 26.7 | 25.1 | 23.2 | 20.9 | 18.0 | 14.3 | 8.3 | 1.1 |
| 5. | 40.2 | 40.1 | 39.3 | 37.6 | 35.2 | 33.5 | 31.5 | 29.2 | 26.4 | 22.8 | 18.1 | 10.7 | 1.7 |
| 6. | 48.3 | 48.2 | 47.2 | 45.3 | 42.4 | 40.4 | 38.1 | 35.3 | 31.9 | 27.7 | 22.1 | 13.2 | 2.4 |
| 7. | 56.3 | 56.2 | 55.2 | 53.0 | 49.7 | 47.4 | 44.7 | 41.5 | 37.6 | 32.7 | 26.2 | 15.8 | 3.3 |
| 8. | 64.3 | 64.3 | 63.1 | 60.8 | 57.0 | 54.5 | 51.4 | 47.8 | 43.4 | 37.8 | 30.5 | 18.6 | 4.3 |
| 9. | 72.2 | 72.3 | 71.1 | 68.6 | 64.4 | 61.6 | 58.2 | 54.2 | 49.2 | 43.0 | 34.8 | 21.5 | 5.5 |
| 10. | 80.2 | 80.4 | 79.1 | 76.4 | 71.8 | 68.8 | 65.1 | 60.6 | 55.2 | 48.4 | 39.2 | 24.6 | 6.8 |
| 11. | 88.1 | 88.4 | 87.2 | 84.2 | 79.3 | 76.0 | 72.0 | 67.2 | 61.2 | 53.8 | 43.8 | 27.7 | 8.2 |
| 12. | 96.0 | 96.5 | 95.2 | 92.1 | 86.9 | 83.3 | 79.0 | 73.8 | 67.4 | 59.3 | 48.5 | 31.0 | 9.7 |
| 13. | 103.9 | 104.5 | 103.2 | 100.0 | 94.5 | 90.7 | 86.1 | 80.5 | 73.6 | 64.9 | 53.3 | 34.4 | 11.4 |
| 14. | 111.7 | 112.5 | 111.3 | 107.9 | 102.1 | 98.1 | 93.2 | 87.3 | 79.9 | 70.6 | 58.2 | 37.9 | 13.2 |
| 15. | 119.6 | 120.5 | 119.3 | 115.9 | 109.8 | 105.6 | 100.4 | 94.1 | 86.3 | 76.5 | 63.2 | 41.6 | 15.2 |
| 16. | 127.3 | 128.5 | 127.4 | 123.9 | 117.5 | 113.1 | 107.7 | 101.0 | 92.8 | 82.4 | 68.3 | 45.4 | 17.3 |
| 17. | 135.1 | 136.5 | 135.5 | 131.9 | 125.3 | 120.7 | 115.0 | 108.0 | 99.4 | 88.4 | 73.5 | 49.3 | 19.5 |
| 18. | 142.8 | 144.4 | 143.5 | 139.9 | 133.1 | 128.3 | 122.4 | 115.1 | 106.0 | 94.5 | 78.9 | 53.3 | 21.9 |
| 19. | 150.5 | 152.3 | 151.6 | 147.9 | 140.9 | 135.9 | 129.8 | 122.2 | 112.7 | 100.7 | 84.3 | 57.5 | 24.3 |
| 20. | 158.1 | 160.2 | 159.6 | 155.9 | 148.8 | 143.7 | 137.3 | 129.4 | 119.5 | 106.9 | 89.8 | 61.7 | 26.9 |
| 21. | 165.7 | 168.1 | 167.6 | 164.0 | 156.7 | 151.4 | 144.8 | 136.6 | 126.4 | 113.3 | 95.5 | 66.1 | 29.7 |
| 22. | 173.2 | 176.0 | 175.6 | 172.0 | 164.6 | 159.2 | 152.4 | 143.9 | 133.4 | 119.8 | 101.2 | 70.6 | 32.6 |
| 23. | 180.7 | 183.8 | 183.6 | 180.1 | 172.5 | 167.0 | 160.0 | 151.3 | 140.4 | 126.3 | 107.1 | 75.2 | 35.6 |
| 24. | 188.2 | 191.5 | 191.6 | 188.1 | 180.5 | 174.8 | 167.7 | 158.7 | 147.4 | 132.9 | 113.0 | 79.9 | 38.7 |
| 25. | 195.5 | 199.3 | 199.6 | 196.2 | 188.5 | 182.7 | 175.4 | 166.2 | 154.6 | 139.6 | 119.0 | 84.8 | 42.0 |
| 26. | 202.9 | 207.0 | 207.5 | 204.2 | 196.5 | 190.6 | 183.2 | 173.7 | 161.8 | 146.4 | 125.1 | 89.7 | 45.3 |
| 27. | 210.2 | 214.6 | 215.5 | 212.3 | 204.5 | 198.6 | 190.9 | 181.3 | 169.1 | 153.2 | 131.4 | 94.8 | 48.9 |
| 28. | 217.4 | 222.3 | 223.4 | 220.3 | 212.5 | 206.5 | 198.8 | 188.9 | 176.4 | 160.1 | 137.7 | 100.0 | 52.5 |
| 29. | 224.5 | 229.8 | 231.2 | 228.4 | 220.6 | 214.5 | 206.6 | 196.6 | 183.8 | 167.1 | 144.0 | 105.3 | 56.3 |
| 30. | 231.6 | 237.4 | 239.1 | 236.4 | 228.6 | 222.5 | 214.5 | 204.3 | 191.3 | 174.2 | 150.5 | 110.6 | 60.2 |
| 31. | 238.7 | 244.8 | 246.9 | 244.4 | 236.7 | 230.5 | 222.4 | 212.1 | 198.8 | 181.3 | 157.1 | 116.1 | 64.2 |
| 32. | 245.6 | 252.3 | 254.7 | 252.4 | 244.7 | 238.5 | 230.4 | 219.9 | 206.3 | 188.5 | 163.7 | 121.7 | 68.3 |
| 33. | 252.5 | 259.7 | 262.4 | 260.4 | 252.8 | 246.6 | 238.3 | 227.7 | 213.9 | 195.8 | 170.5 | 127.5 | 72.6 |
| 34. | 259.3 | 267.0 | 270.1 | 268.3 | 260.9 | 254.6 | 246.3 | 235.6 | 221.6 | 203.1 | 177.3 | 133.3 | 77.0 |
| 35. | 266.1 | 274.2 | 277.8 | 276.2 | 268.9 | 262.7 | 254.3 | 243.5 | 229.3 | 210.5 | 184.1 | 139.2 | 81.5 |

ARC ALONG GROUND TRACK BETWEEN EQUATOR AND LATITUDE L ( W )

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| .04 | 7.55 | 15.23 | 23.18 | 31.61 | 36.09 | 40.84 | 45.93 | 51.53 | 57.90 | 65.64 | 77.07 | 90.00 |
| .04 | 7.55 | 15.23 | 23.18 | 31.61 | 36.09 | 40.84 | 45.93 | 51.53 | 57.90 | 65.64 | 77.07 | 90.00 |

Table IXa

** MINIMUM DISTANCE BETWEEN ORBIT GROUND TRACKS** APOLLO 16- 5 DEG LOPC(2)

FOR REVOLUTION SEPARATION ON THE LUNAR EQUATOR IN DEGREES,AND LATITUDE IN DEG.
MINIMUM REV SEPARATION AT LATITUDE IN KILOMETERS
( MEASURED FROM TRACK 2 )

A(1)= 8.98
A(2)= 15.40

| REV | LATITUDE -15.40 | -15.00 | -14.00 | -13.00 | -12.00 | -11.00 | -10.00 | -9.00 | -8.98 | -8.00 | -7.00 | -6.00 | -5.00 | -4.00 | -3.00 | -2.00 | -1.00 | -.01 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | -194.8 | -188.8 | -175.6 | -162.7 | -149.8 | -136.9 | -124.1 | -111.2 | -111.0 | -98.3 | -85.5 | -72.6 | -59.7 | -46.8 | -33.9 | -21.0 | -8.1 | 4.6 |
| 2. | -194.9 | -187.9 | -173.8 | -160.3 | -147.0 | -133.7 | -120.6 | -107.5 | -107.2 | -94.4 | -81.3 | -68.2 | -55.2 | -42.2 | -29.2 | -16.3 | -3.4 | 9.4 |
| 3. | -195.1 | -187.0 | -172.0 | -157.9 | -144.2 | -130.6 | -117.1 | -103.8 | -103.5 | -90.4 | -77.2 | -64.0 | -50.8 | -37.7 | -24.6 | -11.6 | 1.4 | 14.2 |
| 4. | -195.4 | -186.3 | -170.4 | -155.7 | -141.5 | -127.5 | -113.7 | -100.1 | -99.8 | -86.5 | -73.1 | -59.7 | -46.4 | -33.2 | -20.0 | -6.9 | 6.1 | 18.9 |
| 5. | -195.8 | -185.6 | -168.8 | -153.5 | -138.8 | -124.5 | -110.4 | -96.5 | -96.2 | -82.7 | -69.0 | -55.5 | -42.0 | -28.7 | -15.4 | -2.2 | 10.8 | 23.7 |
| 6. | -196.2 | -185.0 | -167.2 | -151.4 | -136.2 | -121.5 | -107.1 | -92.9 | -92.6 | -78.9 | -65.0 | -51.3 | -37.7 | -24.2 | -10.9 | 2.4 | 15.5 | 28.4 |
| 7. | -196.7 | -184.4 | -165.8 | -149.3 | -133.7 | -118.6 | -103.9 | -89.4 | -89.1 | -75.2 | -61.1 | -47.2 | -33.4 | -19.8 | -6.3 | 7.0 | 20.2 | 33.1 |
| 8. | -197.4 | -184.0 | -164.4 | -147.3 | -131.3 | -115.8 | -100.7 | -86.0 | -85.7 | -71.5 | -57.2 | -43.1 | -29.1 | -15.4 | -1.8 | 11.6 | 24.9 | 37.9 |
| 9. | -198.0 | -183.6 | -163.1 | -145.4 | -128.9 | -113.0 | -97.6 | -82.6 | -82.3 | -67.8 | -53.3 | -39.0 | -24.9 | -11.0 | 2.7 | 16.2 | 29.6 | 42.6 |
| 10. | -198.8 | -183.3 | -161.9 | -143.6 | -126.6 | -110.3 | -94.6 | -79.2 | -78.9 | -64.2 | -49.5 | -35.0 | -20.7 | -6.7 | 7.2 | 20.8 | 34.2 | 47.3 |
| 11. | -199.7 | -183.1 | -160.7 | -141.9 | -124.4 | -107.7 | -91.6 | -76.0 | -75.7 | -60.7 | -45.7 | -31.0 | -16.6 | -2.4 | 11.6 | 25.3 | 38.8 | 52.0 |
| 12. | -200.6 | -183.0 | -159.7 | -140.2 | -122.2 | -105.1 | -88.7 | -72.7 | -72.4 | -57.2 | -42.0 | -27.1 | -12.5 | 1.9 | 16.0 | 29.8 | 43.4 | 56.7 |
| 13. | -201.6 | -182.9 | -158.7 | -138.6 | -120.1 | -102.6 | -85.8 | -69.6 | -69.3 | -53.8 | -38.3 | -23.2 | -8.4 | 6.1 | 20.4 | 34.3 | 48.0 | 61.3 |
| 14. | -202.7 | -183.0 | -157.8 | -137.1 | -118.1 | -100.2 | -83.1 | -66.5 | -66.2 | -50.4 | -34.7 | -19.4 | -4.4 | 10.3 | 24.7 | 38.8 | 52.6 | 66.0 |
| 15. | -203.9 | -183.1 | -157.0 | -135.6 | -116.2 | -97.9 | -80.3 | -63.5 | -63.1 | -47.1 | -31.1 | -15.6 | -.4 | 14.5 | 29.0 | 43.2 | 57.1 | 70.6 |
| 16. | -205.1 | -183.3 | -156.2 | -134.3 | -114.3 | -95.6 | -77.7 | -60.5 | -60.1 | -43.8 | -27.6 | -11.8 | 3.6 | 18.6 | 33.3 | 47.6 | 61.6 | 75.2 |
| 17. | -206.5 | -183.6 | -155.6 | -133.0 | -112.5 | -93.3 | -75.1 | -57.6 | -57.2 | -40.6 | -24.2 | -8.1 | 7.5 | 22.7 | 37.5 | 52.0 | 66.1 | 79.8 |
| 18. | -207.9 | -184.0 | -155.0 | -131.8 | -110.8 | -91.2 | -72.6 | -54.7 | -54.4 | -37.5 | -20.7 | -4.5 | 11.3 | 26.7 | 41.7 | 56.3 | 70.6 | 84.3 |
| 19. | -209.4 | -184.4 | -154.5 | -130.6 | -109.2 | -89.1 | -70.1 | -51.9 | -51.6 | -34.4 | -17.4 | -.9 | 15.1 | 30.7 | 45.9 | 60.6 | 75.0 | 88.9 |
| 20. | -210.9 | -184.9 | -154.1 | -129.6 | -107.6 | -87.1 | -67.8 | -49.2 | -48.9 | -31.4 | -14.1 | 2.6 | 18.9 | 34.6 | 50.0 | 64.9 | 79.4 | 93.4 |
| 21. | -212.6 | -185.5 | -153.8 | -128.6 | -106.1 | -85.2 | -65.4 | -46.6 | -46.2 | -28.4 | -10.9 | 6.1 | 22.6 | 38.5 | 54.1 | 69.1 | 83.8 | 97.9 |
| 22. | -214.3 | -186.2 | -153.5 | -127.7 | -104.7 | -83.4 | -63.2 | -44.0 | -43.6 | -25.5 | -7.7 | 9.5 | 26.2 | 42.4 | 58.1 | 73.3 | 88.1 | 102.3 |
| 23. | -216.1 | -187.0 | -153.3 | -126.9 | -103.4 | -81.6 | -61.0 | -41.5 | -41.1 | -22.7 | -4.6 | 12.9 | 29.8 | 46.2 | 62.1 | 77.5 | 92.4 | 106.7 |
| 24. | -218.0 | -187.9 | -153.3 | -126.2 | -102.1 | -79.9 | -58.9 | -39.0 | -38.6 | -19.9 | -1.5 | 16.2 | 33.4 | 50.0 | 66.0 | 81.6 | 96.7 | 111.1 |
| 25. | -219.9 | -188.8 | -153.2 | -125.5 | -100.9 | -78.2 | -56.9 | -36.6 | -36.2 | -17.2 | 1.4 | 19.5 | 36.8 | 53.7 | 69.9 | 85.7 | 100.9 | 115.5 |
| 26. | -221.9 | -189.8 | -153.3 | -124.9 | -99.8 | -76.7 | -55.0 | -34.3 | -33.9 | -14.6 | 4.4 | 22.6 | 40.3 | 57.3 | 73.8 | 89.7 | 105.1 | 119.8 |
| 27. | -224.0 | -190.9 | -153.5 | -124.4 | -98.8 | -75.2 | -53.1 | -32.1 | -31.7 | -12.0 | 7.2 | 25.8 | 43.7 | 60.9 | 77.6 | 93.7 | 109.3 | 124.1 |
| 28. | -226.2 | -192.1 | -153.7 | -124.0 | -97.9 | -73.8 | -51.3 | -29.9 | -29.5 | -9.5 | 10.0 | 28.9 | 47.0 | 64.5 | 81.4 | 97.7 | 113.4 | 128.4 |
| 29. | -228.4 | -193.4 | -154.0 | -123.7 | -97.0 | -72.5 | -49.6 | -27.8 | -27.4 | -7.1 | 12.8 | 31.9 | 50.3 | 68.0 | 85.1 | 101.6 | 117.5 | 132.6 |
| 30. | -230.8 | -194.7 | -154.4 | -123.5 | -96.2 | -71.3 | -47.9 | -25.8 | -25.4 | -4.7 | 15.4 | 34.8 | 53.5 | 71.4 | 88.7 | 105.4 | 121.5 | 136.8 |
| 31. | -233.1 | -196.1 | -154.9 | -123.3 | -95.5 | -70.1 | -46.3 | -23.9 | -23.4 | -2.5 | 18.0 | 37.7 | 56.6 | 74.8 | 92.4 | 109.3 | 125.5 | 141.0 |
| 32. | -235.6 | -197.6 | -155.5 | -123.2 | -94.9 | -69.0 | -44.9 | -22.0 | -21.6 | -.2 | 20.6 | 40.5 | 59.7 | 78.2 | 95.9 | 113.0 | 129.5 | 145.1 |
| 33. | -238.1 | -199.2 | -156.2 | -123.2 | -94.4 | -68.0 | -43.4 | -20.2 | -19.8 | 1.9 | 23.0 | 43.3 | 62.7 | 81.4 | 99.4 | 116.7 | 133.4 | 149.2 |
| 34. | -240.7 | -200.8 | -156.9 | -123.3 | -93.9 | -67.1 | -42.1 | -18.5 | -18.0 | 4.0 | 25.4 | 46.0 | 65.7 | 84.6 | 102.9 | 120.4 | 137.2 | 153.2 |
| 35. | -243.4 | -202.6 | -157.7 | -123.5 | -93.6 | -66.3 | -40.8 | -16.8 | -16.4 | 6.0 | 27.7 | 48.6 | 68.6 | 87.8 | 106.3 | 124.0 | 141.0 | 157.2 |

Table IXa (cont'd.)

** MINIMUM DISTANCE BETWEEN ORBIT GROUND TRACKS** APOLLO 16- 5 DEG LOPC(2)

FOR REVOLUTION SEPARATION ON THE LUNAR EQUATOR IN DEGREES, AND LATITUDE IN DEG.
MINIMUM REV SEPARATION AT LATITUDE IN KILOMETERS
( MEASURED FROM TRACK 2 )
A(1)= 8.96
A(2)= 15.40

| REV | LATITUDE -15.40 | -15.00 | -14.00 | -13.00 | -12.00 | -11.00 | -10.00 | -9.00 | -8.00 | -6.00 | -7.00 | -6.00 | -5.00 | -4.00 | -3.00 | -2.00 | -1.00 | -.01 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 31. | -233.1 | -196.1 | -154.9 | -123.3 | -95.5 | -70.1 | -45.3 | -23.9 | -23.4 | -2.5 | 18.0 | 37.7 | 56.6 | 74.8 | 92.4 | 109.3 | 125.5 | 141.0 |
| 32. | -235.6 | -197.0 | -155.5 | -123.2 | -94.9 | -69.0 | -44.9 | -22.0 | -21.6 | -.2 | 20.6 | 40.3 | 59.7 | 78.2 | 95.9 | 113.0 | 129.5 | 145.1 |
| 33. | -238.1 | -199.2 | -156.2 | -123.2 | -94.4 | -68.0 | -43.4 | -20.2 | -19.9 | 1.9 | 23.0 | 43.0 | 62.7 | 81.4 | 99.4 | 116.7 | 133.4 | 149.2 |
| 34. | -240.7 | -200.8 | -156.9 | -123.3 | -93.9 | -67.1 | -42.1 | -18.5 | -18.0 | 4.0 | 25.4 | 46.0 | 65.7 | 84.8 | 102.9 | 120.4 | 137.2 | 153.2 |
| 35. | -243.4 | -202.8 | -157.7 | -123.5 | -93.6 | -66.3 | -41.8 | -16.8 | -16.4 | 6.0 | 27.7 | 48.0 | 68.6 | 87.8 | 106.3 | 124.0 | 141.0 | 157.2 |
| 36. | -246.1 | -204.4 | -158.6 | -123.7 | -93.3 | -65.5 | -39.7 | -15.3 | -14.8 | 7.9 | 30.0 | 51.1 | 71.4 | 90.9 | 109.6 | 127.8 | 144.8 | 161.1 |
| 37. | -248.9 | -206.2 | -159.6 | -124.1 | -93.1 | -64.8 | -38.6 | -13.8 | -13.3 | 9.7 | 32.2 | 53.0 | 74.2 | 93.9 | 112.9 | 131.1 | 148.5 | 165.0 |
| 38. | -251.8 | -208.2 | -160.6 | -124.5 | -93.0 | -64.3 | -37.5 | -12.4 | -11.8 | 11.5 | 34.3 | 56.0 | 76.9 | 96.9 | 116.1 | 134.5 | 152.1 | 168.9 |
| 39. | -254.8 | -210.2 | -161.8 | -125.0 | -92.9 | -63.7 | -36.6 | -11.0 | -10.5 | 13.2 | 36.3 | 58.4 | 79.5 | 99.8 | 119.3 | 137.9 | 155.8 | 172.7 |
| 40. | -257.8 | -212.4 | -163.0 | -125.6 | -93.0 | -63.3 | -35.7 | -9.8 | -9.3 | 14.8 | 38.3 | 60.7 | 82.1 | 102.7 | 122.4 | 141.2 | 159.3 | 176.4 |
| 41. | -260.8 | -214.5 | -164.3 | -126.2 | -93.1 | -63.0 | -34.9 | -8.6 | -8.1 | 16.4 | 40.2 | 62.9 | 84.6 | 105.4 | 125.4 | 144.5 | 162.8 | 180.1 |
| 42. | -264.0 | -216.8 | -165.7 | -127.0 | -93.3 | -62.7 | -34.2 | -7.5 | -7.0 | 17.8 | 42.0 | 65.0 | 87.0 | 108.1 | 128.4 | 147.7 | 165.3 | 183.8 |
| 43. | -267.2 | -219.1 | -167.1 | -127.8 | -93.6 | -62.5 | -33.6 | -6.5 | -5.9 | 19.2 | 43.7 | 67.1 | 89.4 | 110.8 | 131.3 | 150.9 | 169.6 | 187.4 |
| 44. | -270.4 | -221.5 | -168.7 | -128.7 | -94.0 | -62.4 | -33.1 | -5.5 | -5.0 | 20.5 | 45.4 | 69.0 | 91.7 | 113.4 | 134.1 | 154.0 | 173.0 | 190.9 |
| 45. | -273.7 | -224.0 | -170.3 | -129.7 | -94.4 | -62.4 | -32.6 | -4.7 | -4.1 | 21.8 | 46.9 | 71.0 | 93.9 | 115.9 | 136.9 | 157.0 | 176.3 | 194.4 |
| 46. | -277.1 | -226.6 | -172.0 | -130.8 | -95.0 | -62.4 | -32.3 | -3.9 | -3.4 | 22.9 | 48.5 | 72.8 | 96.1 | 118.3 | 139.6 | 160.0 | 179.5 | 197.9 |
| 47. | -280.6 | -229.2 | -173.8 | -132.0 | -95.6 | -62.6 | -32.0 | -3.2 | -2.7 | 24.0 | 49.9 | 74.6 | 98.1 | 120.7 | 142.3 | 162.9 | 182.6 | 201.3 |
| 48. | -284.0 | -231.9 | -175.7 | -133.2 | -96.3 | -62.8 | -31.8 | -2.6 | -2.0 | 25.0 | 51.2 | 76.2 | 100.1 | 123.0 | 144.9 | 165.8 | 185.7 | 204.6 |
| 49. | -287.6 | -234.7 | -177.6 | -134.5 | -97.1 | -63.1 | -31.6 | -2.1 | -1.5 | 25.9 | 52.5 | 77.9 | 102.1 | 125.2 | 147.4 | 168.5 | 188.8 | 207.8 |
| 50. | -291.2 | -237.5 | -179.6 | -135.9 | -98.0 | -63.5 | -31.6 | -1.6 | -1.0 | 26.7 | 53.7 | 79.4 | 103.9 | 127.4 | 149.8 | 171.3 | 191.7 | 211.1 |
| 51. | -294.9 | -240.4 | -181.7 | -137.4 | -98.9 | -64.0 | -31.6 | -1.3 | -.7 | 27.5 | 54.8 | 80.8 | 105.7 | 129.5 | 152.2 | 173.9 | 194.6 | 214.2 |
| 52. | -298.6 | -243.4 | -183.9 | -139.0 | -100.0 | -64.6 | -31.8 | -1.0 | -.4 | 28.2 | 55.8 | 82.2 | 107.4 | 131.5 | 154.5 | 176.5 | 197.5 | 217.3 |
| 53. | -302.3 | -246.4 | -186.1 | -140.6 | -101.1 | -65.2 | -32.0 | -.8 | -.2 | 28.7 | 56.8 | 83.5 | 109.0 | 133.4 | 156.7 | 179.0 | 200.3 | 220.3 |
| 54. | -306.2 | -249.5 | -188.4 | -142.3 | -102.3 | -66.0 | -32.3 | -.7 | .0 | 29.2 | 57.7 | 84.7 | 110.6 | 135.3 | 158.9 | 181.5 | 203.0 | 223.3 |
| 55. | -310.0 | -252.7 | -190.8 | -144.1 | -103.6 | -66.8 | -32.7 | -.6 | .0 | 29.7 | 58.5 | 85.9 | 112.1 | 137.1 | 161.0 | 183.8 | 205.6 | 226.2 |
| 56. | -314.0 | -255.9 | -193.3 | -146.0 | -105.0 | -67.7 | -33.1 | -.7 | .0 | 30.0 | 59.2 | 86.9 | 113.5 | 138.8 | 163.0 | 186.1 | 208.2 | 229.0 |
| 57. | -317.9 | -259.2 | -195.8 | -148.0 | -106.4 | -68.7 | -33.7 | -.8 | -.2 | 30.3 | 59.8 | 87.9 | 114.8 | 140.4 | 164.9 | 188.4 | 210.7 | 231.8 |
| 58. | -321.9 | -262.5 | -198.4 | -150.0 | -107.9 | -69.7 | -34.3 | -1.0 | -.4 | 30.4 | 60.3 | 88.8 | 116.0 | 142.0 | 166.8 | 190.5 | 213.2 | 234.5 |
| 59. | -326.0 | -266.0 | -201.1 | -152.1 | -109.5 | -70.9 | -35.0 | -1.3 | -.7 | 30.5 | 60.8 | 89.6 | 117.2 | 143.5 | 168.6 | 192.6 | 215.5 | 237.1 |
| 60. | -330.1 | -269.4 | -203.9 | -154.3 | -111.2 | -72.1 | -35.8 | -1.7 | -1.1 | 30.5 | 61.2 | 90.4 | 118.2 | 144.9 | 170.3 | 194.6 | 217.8 | 239.7 |
| 61. | -334.2 | -273.0 | -206.7 | -156.6 | -113.0 | -73.4 | -36.7 | -2.2 | -1.5 | 30.4 | 61.5 | 91.0 | 119.2 | 146.2 | 172.0 | 196.6 | 220.1 | 242.2 |
| 62. | -338.4 | -276.6 | -209.6 | -158.9 | -114.9 | -74.8 | -37.6 | -2.7 | -2.1 | 30.3 | 61.7 | 91.6 | 120.1 | 147.4 | 173.5 | 198.4 | 222.2 | 244.6 |
| 63. | -342.7 | -280.2 | -212.6 | -161.3 | -116.8 | -76.3 | -38.7 | -3.4 | -2.7 | 30.0 | 61.8 | 92.1 | 121.0 | 148.6 | 175.0 | 200.2 | 224.3 | 247.0 |
| 64. | -346.9 | -283.9 | -215.6 | -163.8 | -118.8 | -77.8 | -39.8 | -4.1 | -3.4 | 29.7 | 61.8 | 92.5 | 121.7 | 149.7 | 176.4 | 202.0 | 226.3 | 249.3 |
| 65. | -351.2 | -287.7 | -218.7 | -166.4 | -120.9 | -79.5 | -41.0 | -4.9 | -4.3 | 29.3 | 61.8 | 92.8 | 122.4 | 150.7 | 177.7 | 203.6 | 228.3 | 251.5 |

ARC ALONG GROUND TRACK BETWEEN EQUATOR AND LATITUDE L ( N )

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | -90.00 | -63.09 | -51.33 | -42.04 | -33.94 | -26.54 | -19.59 | -12.92 | -6.42 | -.06 |
| -90.00 | -77.07 | -65.64 | -57.90 | -51.53 | -45.93 | -41.84 | -36.09 | -36.00 | -31.01 | -27.32 | -23.16 | -19.16 | -15.23 | -11.37 | -7.55 | -3.77 | -.04 |

Table IXb

** MINIMUM DISTANCE BETWEEN ORBIT GROUND TRACKS** APOLLO 16- 5 DEG LOPC(2)

FOR REVOLUTION SEPARATION ON THE LUNAR EQUATOR IN DEGREES,AND LATITUDE IN DEG.
MINIMUM REV SEPARATION AT LATITUDE IN KILOMETERS
( MEASURED FROM TRACK 2 )

A(1)= 8.98
A(2)= 15.40

| REV | LATITUDE .01 | 1.00 | 2.00 | 3.00 | 4.00 | 5.00 | 6.00 | 7.00 | 8.00 | 8.98 | 9.00 | 10.00 | 11.00 | 12.00 | 13.00 | 14.00 | 15.00 | 15.40 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | 4.9 | 17.6 | 30.4 | 43.2 | 56.0 | 68.7 | 81.3 | 93.9 | 106.4 | 118.6 | 118.9 | 131.3 | 143.5 | 155.7 | 167.7 | 179.5 | 190.9 | 194.8 |
| 2. | 9.7 | 22.4 | 35.2 | 47.9 | 60.6 | 73.2 | 85.7 | 98.2 | 110.5 | 122.6 | 122.8 | 134.9 | 146.9 | 158.7 | 170.3 | 181.6 | 192.1 | 194.9 |
| 3. | 14.4 | 27.1 | 39.9 | 52.6 | 65.2 | 77.8 | 90.2 | 102.5 | 114.7 | 126.5 | 126.7 | 138.6 | 150.3 | 161.8 | 173.0 | 183.7 | 193.4 | 195.1 |
| 4. | 19.2 | 31.9 | 44.7 | 57.3 | 69.9 | 82.3 | 94.7 | 106.8 | 118.9 | 130.5 | 130.7 | 142.4 | 153.8 | 165.0 | 175.7 | 185.9 | 194.7 | 195.4 |
| 5. | 23.9 | 36.7 | 49.4 | 62.0 | 74.6 | 86.9 | 99.2 | 111.2 | 123.1 | 134.5 | 134.8 | 146.2 | 157.4 | 168.2 | 178.6 | 188.2 | 196.1 | 195.8 |
| 6. | 28.7 | 41.4 | 54.2 | 66.8 | 79.2 | 91.5 | 103.7 | 115.6 | 127.4 | 138.6 | 138.8 | 150.1 | 161.0 | 171.5 | 181.4 | 190.5 | 197.6 | 196.2 |
| 7. | 33.4 | 46.2 | 58.9 | 71.5 | 83.9 | 96.2 | 108.2 | 120.1 | 131.6 | 142.7 | 143.0 | 154.0 | 164.6 | 174.8 | 184.4 | 192.9 | 199.1 | 196.7 |
| 8. | 38.1 | 50.9 | 63.7 | 76.3 | 88.7 | 100.8 | 112.8 | 124.5 | 136.0 | 146.9 | 147.1 | 157.9 | 168.3 | 178.2 | 187.4 | 195.4 | 200.8 | 197.4 |
| 9. | 42.8 | 55.7 | 68.5 | 81.0 | 93.4 | 105.5 | 117.4 | 129.0 | 140.3 | 151.1 | 151.3 | 161.9 | 172.1 | 181.6 | 190.4 | 198.0 | 202.5 | 198.0 |
| 10. | 47.6 | 60.4 | 73.2 | 85.8 | 98.1 | 110.2 | 122.0 | 133.5 | 144.7 | 155.3 | 155.5 | 166.0 | 175.9 | 185.1 | 193.6 | 200.6 | 204.3 | 198.8 |
| 11. | 52.2 | 65.2 | 78.0 | 90.6 | 102.9 | 114.9 | 126.6 | 138.1 | 149.1 | 159.6 | 159.8 | 170.0 | 179.7 | 188.7 | 196.7 | 203.3 | 206.2 | 199.7 |
| 12. | 56.9 | 69.9 | 82.7 | 95.3 | 107.6 | 119.6 | 131.3 | 142.6 | 153.6 | 163.9 | 164.1 | 174.2 | 183.6 | 192.3 | 200.0 | 206.0 | 208.1 | 200.6 |
| 13. | 61.6 | 74.6 | 87.5 | 100.1 | 112.4 | 124.3 | 136.0 | 147.2 | 158.1 | 168.2 | 168.5 | 178.3 | 187.5 | 196.0 | 203.3 | 208.8 | 210.1 | 201.6 |
| 14. | 66.2 | 79.3 | 92.2 | 104.8 | 117.1 | 129.1 | 140.6 | 151.8 | 162.6 | 172.6 | 172.8 | 182.5 | 191.5 | 199.7 | 206.7 | 211.7 | 212.2 | 202.7 |
| 15. | 70.9 | 84.0 | 97.0 | 109.6 | 121.9 | 133.8 | 145.3 | 156.4 | 167.1 | 177.0 | 177.2 | 186.7 | 195.6 | 203.4 | 210.1 | 214.7 | 214.4 | 203.9 |
| 16. | 75.5 | 88.7 | 101.7 | 114.3 | 126.6 | 138.5 | 150.0 | 161.1 | 171.6 | 181.5 | 181.6 | 191.0 | 199.6 | 207.3 | 213.6 | 217.7 | 216.6 | 205.1 |
| 17. | 80.0 | 93.3 | 106.4 | 119.1 | 131.4 | 143.3 | 154.7 | 165.7 | 176.2 | 185.9 | 186.1 | 195.3 | 203.7 | 211.1 | 217.1 | 220.8 | 218.9 | 206.5 |
| 18. | 84.6 | 98.0 | 111.1 | 123.8 | 136.2 | 148.0 | 159.5 | 170.4 | 180.8 | 190.4 | 190.6 | 199.7 | 207.9 | 215.0 | 220.7 | 223.9 | 221.3 | 207.9 |
| 19. | 89.1 | 102.6 | 115.8 | 128.6 | 140.9 | 152.8 | 164.2 | 175.1 | 185.4 | 194.9 | 195.1 | 204.0 | 212.1 | 219.0 | 224.3 | 227.1 | 223.7 | 209.4 |
| 20. | 93.7 | 107.2 | 120.5 | 133.3 | 145.7 | 157.6 | 168.9 | 179.8 | 190.0 | 199.4 | 199.6 | 208.4 | 216.3 | 223.0 | 228.0 | 230.3 | 226.3 | 210.9 |
| 21. | 98.1 | 111.8 | 125.1 | 138.0 | 150.4 | 162.3 | 173.7 | 184.5 | 194.7 | 204.0 | 204.2 | 212.9 | 220.5 | 227.0 | 231.7 | 233.7 | 228.8 | 212.6 |
| 22. | 102.6 | 116.3 | 129.8 | 142.7 | 155.1 | 167.1 | 178.4 | 189.2 | 199.4 | 208.6 | 208.8 | 217.3 | 224.8 | 231.1 | 235.5 | 237.0 | 231.5 | 214.3 |
| 23. | 107.0 | 120.9 | 134.4 | 147.4 | 159.9 | 171.8 | 183.2 | 194.0 | 204.0 | 213.2 | 213.4 | 221.8 | 229.2 | 235.2 | 239.3 | 240.5 | 234.2 | 216.1 |
| 24. | 111.4 | 125.4 | 139.0 | 152.0 | 164.6 | 176.6 | 188.0 | 198.7 | 208.7 | 217.8 | 218.0 | 226.3 | 233.5 | 239.3 | 243.2 | 243.9 | 237.0 | 218.0 |
| 25. | 115.8 | 129.9 | 143.5 | 156.7 | 169.3 | 181.3 | 192.7 | 203.4 | 213.4 | 222.4 | 222.6 | 230.8 | 237.9 | 243.5 | 247.2 | 247.5 | 239.9 | 219.9 |
| 26. | 120.1 | 134.3 | 148.1 | 161.3 | 174.0 | 186.0 | 197.5 | 208.2 | 218.1 | 227.1 | 227.3 | 235.4 | 242.3 | 247.8 | 251.1 | 251.1 | 242.8 | 221.9 |
| 27. | 124.4 | 138.7 | 152.6 | 166.0 | 178.7 | 190.8 | 202.2 | 212.9 | 222.9 | 231.8 | 231.9 | 240.0 | 246.8 | 252.0 | 255.1 | 254.7 | 245.8 | 224.0 |
| 28. | 128.7 | 143.1 | 157.1 | 170.5 | 183.3 | 195.5 | 207.0 | 217.7 | 227.6 | 236.4 | 236.6 | 244.6 | 251.3 | 256.3 | 259.2 | 258.4 | 248.8 | 226.2 |
| 29. | 132.9 | 147.5 | 161.6 | 175.1 | 188.0 | 200.2 | 211.7 | 222.4 | 232.3 | 241.1 | 241.3 | 249.2 | 255.8 | 260.7 | 263.3 | 262.2 | 251.9 | 228.4 |
| 30. | 137.1 | 151.8 | 166.1 | 179.7 | 192.6 | 204.9 | 216.4 | 227.2 | 237.1 | 245.8 | 246.0 | 253.8 | 260.3 | 265.1 | 267.4 | 266.0 | 255.1 | 230.8 |
| 31. | 141.3 | 156.1 | 170.5 | 184.2 | 197.2 | 209.6 | 221.2 | 231.9 | 241.8 | 250.5 | 250.7 | 258.5 | 264.3 | 269.5 | 271.6 | 269.8 | 258.3 | 233.1 |
| 32. | 145.4 | 160.4 | 174.9 | 188.7 | 201.8 | 214.2 | 225.9 | 236.7 | 246.6 | 255.3 | 255.4 | 263.1 | 269.4 | 273.9 | 275.8 | 273.7 | 261.6 | 235.6 |
| 33. | 149.5 | 164.6 | 179.2 | 193.2 | 206.4 | 218.9 | 230.6 | 241.4 | 251.3 | 260.0 | 260.2 | 267.8 | 274.0 | 278.3 | 280.1 | 277.7 | 265.0 | 238.1 |
| 34. | 153.5 | 168.8 | 183.6 | 197.6 | 211.0 | 223.5 | 235.3 | 246.1 | 256.1 | 264.7 | 264.9 | 272.5 | 278.6 | 282.8 | 284.4 | 281.6 | 268.4 | 240.7 |
| 35. | 157.5 | 173.0 | 187.9 | 202.1 | 215.5 | 228.1 | 239.9 | 250.9 | 260.8 | 269.5 | 269.6 | 277.2 | 283.2 | 287.3 | 288.7 | 285.7 | 271.9 | 243.4 |

Table IXb (cont'd.)

** MINIMUM DISTANCE BETWEEN ORBIT GROUND TRACKS** APOLLO 16- 5 DEG LOPC(2)

FOR REVOLUTION SEPARATION ON THE LUNAR EQUATOR IN DEGREES, AND LATITUDE IN DEG.
MINIMUM REV SEPARATION AT LATITUDE IN KILOMETERS
( MEASURED FROM TRACK 2 )
A(1)= 8.98
A(2)= 15.40

| REV | LATITUDE .01 | 1.00 | 2.00 | 3.00 | 4.00 | 5.00 | 6.00 | 7.00 | 8.00 | 8.98 | 9.00 | 10.00 | 11.00 | 12.00 | 13.00 | 14.00 | 15.00 | 15.40 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 31. | 141.3 | 156.1 | 170.5 | 184.2 | 197.2 | 209.6 | 221.2 | 231.9 | 241.8 | 250.5 | 250.7 | 258.5 | 264.8 | 269.5 | 271.6 | 269.6 | 258.3 | 233.1 |
| 32. | 145.4 | 160.4 | 174.9 | 188.7 | 201.8 | 214.2 | 225.9 | 236.7 | 246.6 | 255.3 | 255.4 | 263.1 | 268.4 | 273.9 | 275.8 | 273.7 | 261.6 | 235.6 |
| 33. | 149.5 | 164.6 | 179.2 | 193.2 | 206.4 | 218.9 | 230.6 | 241.4 | 251.3 | 260.0 | 261.2 | 267.8 | 274.0 | 278.5 | 280.1 | 277.7 | 265.0 | 238.1 |
| 34. | 153.5 | 168.8 | 183.6 | 197.8 | 211.0 | 223.5 | 235.3 | 246.1 | 256.1 | 264.7 | 264.9 | 272.5 | 278.6 | 282.8 | 284.4 | 281.6 | 268.4 | 240.7 |
| 35. | 157.5 | 173.0 | 187.9 | 202.1 | 215.5 | 228.1 | 239.9 | 250.9 | 260.8 | 269.5 | 269.6 | 277.2 | 283.2 | 287.5 | 288.7 | 285.7 | 271.9 | 243.4 |
| 36. | 161.4 | 177.1 | 192.1 | 206.4 | 220.0 | 232.7 | 244.6 | 255.6 | 265.5 | 274.2 | 274.4 | 281.9 | 287.9 | 291.9 | 293.1 | 289.7 | 275.4 | 246.1 |
| 37. | 165.3 | 181.1 | 196.4 | 210.8 | 224.5 | 237.3 | 249.3 | 260.3 | 270.3 | 279.0 | 279.1 | 286.6 | 292.5 | 296.4 | 297.5 | 293.9 | 279.0 | 248.9 |
| 38. | 169.2 | 185.2 | 200.5 | 215.1 | 228.9 | 241.8 | 253.9 | 265.0 | 275.0 | 283.7 | 283.9 | 291.4 | 297.2 | 301.0 | 301.9 | 298.0 | 282.6 | 251.6 |
| 39. | 173.0 | 189.2 | 204.7 | 219.4 | 233.3 | 246.4 | 258.5 | 269.6 | 279.7 | 288.4 | 288.6 | 296.1 | 301.9 | 305.6 | 306.3 | 302.2 | 286.3 | 254.8 |
| 40. | 176.8 | 193.1 | 208.8 | 223.7 | 237.7 | 250.9 | 263.1 | 274.3 | 284.4 | 293.2 | 293.3 | 300.8 | 306.6 | 310.2 | 310.8 | 306.4 | 290.0 | 257.8 |
| 41. | 180.5 | 197.0 | 212.9 | 227.9 | 242.1 | 255.3 | 267.7 | 279.0 | 289.1 | 297.9 | 298.1 | 305.6 | 311.3 | 314.8 | 315.3 | 310.7 | 293.8 | 260.8 |
| 42. | 184.1 | 200.8 | 216.9 | 232.1 | 246.4 | 259.8 | 272.2 | 283.6 | 293.9 | 302.6 | 302.8 | 310.3 | 316.0 | 319.5 | 319.8 | 315.0 | 297.6 | 264.0 |
| 43. | 187.7 | 204.6 | 220.9 | 236.2 | 250.7 | 264.2 | 276.7 | 288.2 | 298.5 | 307.4 | 307.5 | 315.0 | 320.8 | 324.2 | 324.4 | 319.3 | 301.5 | 267.2 |
| 44. | 191.3 | 208.4 | 224.8 | 240.3 | 254.9 | 268.6 | 281.2 | 292.8 | 303.2 | 312.1 | 312.3 | 319.8 | 325.5 | 328.8 | 328.9 | 323.7 | 305.5 | 270.4 |
| 45. | 194.8 | 212.1 | 228.7 | 244.4 | 259.1 | 272.9 | 285.7 | 297.4 | 307.9 | 316.8 | 317.0 | 324.5 | 330.2 | 333.5 | 333.5 | 328.1 | 309.4 | 273.7 |
| 46. | 198.2 | 215.7 | 232.5 | 248.4 | 263.3 | 277.2 | 290.1 | 301.9 | 312.5 | 321.5 | 321.7 | 329.3 | 335.0 | 338.2 | 338.1 | 332.5 | 313.5 | 277.1 |
| 47. | 201.6 | 219.3 | 236.3 | 252.4 | 267.4 | 281.5 | 294.6 | 306.4 | 317.1 | 326.2 | 326.3 | 334.0 | 339.7 | 342.9 | 342.8 | 337.0 | 317.5 | 280.6 |
| 48. | 204.9 | 222.9 | 240.1 | 256.3 | 271.5 | 285.8 | 299.9 | 310.9 | 321.7 | 330.8 | 331.0 | 338.7 | 344.4 | 347.7 | 347.4 | 341.5 | 321.6 | 284.0 |
| 49. | 208.2 | 226.4 | 243.8 | 260.2 | 275.6 | 290.0 | 303.3 | 315.4 | 326.3 | 335.3 | 335.7 | 343.4 | 349.2 | 352.4 | 352.1 | 346.0 | 325.8 | 287.6 |
| 50. | 211.4 | 229.8 | 247.4 | 264.0 | 279.6 | 294.2 | 307.6 | 319.9 | 330.8 | 340.1 | 340.3 | 348.1 | 353.9 | 357.1 | 356.7 | 350.5 | 330.0 | 291.2 |
| 51. | 214.6 | 233.2 | 251.0 | 267.8 | 283.6 | 298.3 | 311.9 | 324.3 | 335.3 | 344.7 | 344.9 | 352.8 | 358.6 | 361.8 | 361.4 | 355.1 | 334.2 | 294.9 |
| 52. | 217.7 | 236.5 | 254.5 | 271.5 | 287.5 | 302.4 | 316.1 | 328.7 | 339.9 | 349.3 | 349.5 | 357.5 | 363.3 | 366.8 | 366.1 | 359.7 | 338.5 | 298.6 |
| 53. | 220.7 | 239.8 | 258.0 | 275.2 | 291.4 | 306.5 | 320.4 | 333.0 | 344.3 | 353.9 | 354.1 | 362.1 | 368.1 | 371.3 | 370.8 | 364.3 | 342.8 | 302.3 |
| 54. | 223.7 | 243.0 | 261.4 | 278.9 | 295.2 | 310.5 | 324.5 | 337.3 | 348.8 | 358.5 | 358.7 | 366.8 | 372.8 | 376.0 | 375.5 | 368.9 | 347.1 | 306.2 |
| 55. | 226.6 | 246.1 | 264.8 | 282.5 | 299.0 | 314.4 | 329.7 | 341.6 | 353.2 | 363.0 | 363.2 | 371.4 | 377.5 | 380.8 | 380.3 | 373.5 | 351.5 | 310.0 |
| 56. | 229.4 | 249.2 | 268.1 | 286.0 | 302.7 | 318.4 | 332.8 | 345.9 | 357.6 | 367.5 | 367.7 | 376.0 | 382.1 | 385.5 | 385.0 | 378.2 | 355.9 | 314.0 |
| 57. | 232.2 | 252.2 | 271.4 | 289.5 | 306.4 | 322.2 | 336.8 | 350.1 | 361.9 | 372.0 | 372.2 | 380.6 | 386.8 | 390.2 | 389.7 | 382.8 | 360.3 | 317.9 |
| 58. | 234.9 | 255.2 | 274.6 | 292.9 | 310.1 | 326.1 | 340.8 | 354.3 | 366.3 | 376.5 | 376.7 | 385.2 | 391.5 | 394.9 | 394.5 | 387.5 | 364.8 | 321.9 |
| 59. | 237.6 | 258.1 | 277.7 | 296.3 | 313.6 | 329.9 | 344.8 | 358.4 | 370.6 | 380.9 | 381.1 | 389.7 | 396.1 | 399.7 | 399.2 | 392.2 | 369.3 | 326.0 |
| 60. | 240.1 | 260.9 | 280.8 | 299.6 | 317.2 | 333.6 | 348.7 | 362.5 | 374.8 | 385.3 | 385.5 | 394.3 | 400.8 | 404.4 | 403.9 | 396.9 | 373.8 | 330.1 |
| 61. | 242.6 | 263.7 | 283.8 | 302.8 | 320.7 | 337.3 | 352.6 | 366.6 | 379.1 | 389.7 | 389.9 | 398.8 | 405.4 | 409.0 | 408.7 | 401.6 | 378.4 | 334.2 |
| 62. | 245.1 | 266.4 | 286.8 | 306.0 | 324.1 | 340.9 | 356.4 | 370.6 | 383.2 | 394.0 | 394.2 | 403.2 | 410.0 | 413.7 | 413.4 | 406.4 | 382.9 | 338.4 |
| 63. | 247.5 | 269.0 | 289.7 | 309.1 | 327.4 | 344.5 | 360.2 | 374.6 | 387.4 | 398.3 | 398.5 | 407.7 | 414.5 | 418.4 | 418.1 | 411.1 | 387.5 | 342.7 |
| 64. | 249.8 | 271.6 | 292.5 | 312.2 | 330.7 | 348.0 | 364.0 | 378.5 | 391.5 | 402.6 | 402.8 | 412.1 | 419.1 | 423.0 | 422.8 | 415.8 | 392.1 | 346.9 |
| 65. | 252.0 | 274.1 | 295.3 | 315.2 | 334.0 | 351.5 | 367.6 | 382.4 | 395.6 | 406.8 | 407.0 | 416.5 | 423.6 | 427.7 | 427.5 | 420.6 | 396.8 | 351.2 |

ARC ALONG GROUND TRACK BETWEEN EQUATOR AND LATITUDE L ( W )

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| .00 | 6.42 | 12.92 | 19.59 | 26.54 | 33.94 | 42.04 | 51.33 | 63.08 | 89.98 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| .04 | 3.77 | 7.55 | 11.37 | 15.23 | 19.16 | 23.18 | 27.32 | 31.61 | 36.00 | 38.09 | 40.64 | 45.93 | 51.53 | 57.90 | 65.64 | 77.07 | 90.00 |