

# PROJECT 10073 RECORD CARD

|                                                                                                                                                                                                                                                                                                              |  |                                                                                                                                                                                                       |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. DATE<br>4 July 1963                                                                                                                                                                                                                                                                                       |  | 2. LOCATION<br>26.04N 127.53E (Far East)                                                                                                                                                              |  | 12. CONCLUSIONS<br><input type="checkbox"/> Was Balloon<br><input type="checkbox"/> Probably Balloon<br><input type="checkbox"/> Possibly Balloon<br><br><input type="checkbox"/> Was Aircraft<br><input type="checkbox"/> Probably Aircraft<br><input type="checkbox"/> Possibly Aircraft<br><br><input type="checkbox"/> Was Astronomical<br><input type="checkbox"/> Probably Astronomical<br><input type="checkbox"/> Possibly Astronomical |  |
| 3. DATE-TIME GROUP<br>Local _____<br>GMT 04/1125Z                                                                                                                                                                                                                                                            |  | 4. TYPE OF OBSERVATION<br><input checked="" type="checkbox"/> Ground-Visual <input type="checkbox"/> Ground-Radar<br><input type="checkbox"/> Air-Visual <input type="checkbox"/> Air-Intercept Radar |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |
| 5. PHOTOS<br><input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> No                                                                                                                                                                                                                          |  | 6. SOURCE<br>military                                                                                                                                                                                 |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |
| 7. LENGTH OF OBSERVATION<br>6 min                                                                                                                                                                                                                                                                            |  | 8. NUMBER OF OBJECTS<br>one                                                                                                                                                                           |  | 9. COURSE<br>NE                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |
|                                                                                                                                                                                                                                                                                                              |  |                                                                                                                                                                                                       |  | <input checked="" type="checkbox"/> Other Satellite<br><input type="checkbox"/> Insufficient Data for Evaluation<br><input type="checkbox"/> Unknown                                                                                                                                                                                                                                                                                            |  |
| 10. BRIEF SUMMARY OF SIGHTING<br>Obj appearing as 1st mag star observed at 200 deg azimuth 10 deg elevation in flight to 085 deg azimuth 17 deg elevation after steady flight with max altitude of 25 deg. Total duration observed 6 min. Disappeared suddenly. 7X BX used. Object believed to be Satellite. |  |                                                                                                                                                                                                       |  | 11. COMMENTS<br>At 04/1125Z ECHO was heading SE and not visible at the location of the observer. Possible observation of other visible satellite, such as 1961 Beta Theta. Case considered as a Satellite observation since all information conforms with this analysis.                                                                                                                                                                        |  |



NAVAL MESSAGE

UNCLASSIFIED

NAVY DEPARTMENT

|                                     |                         |            |          |
|-------------------------------------|-------------------------|------------|----------|
| PRECEDENCE<br>OPERATIONAL IMMEDIATE | (ACTION)<br>RELEASED BY | DRAFTED BY | EXT. NO. |
| OPERATIONAL IMMEDIATE               |                         |            |          |

AF IN : 26541 (4 Jul63) G/crp

O 041215Z

FM USS 009K

TO COMNAVPAC

AF DIST: NIN-9, XOP-1, XOPX-4, SAF-OS-3, DIA-25,  
DIA-CIIC-2 (44)

INFO ZEN/CTF 76

CTG 76.1

COMNAVFORJAPAN

CNO

CINCPACFLT

UNCLAS

UFO

A. CINCPACFLT INST 3820.3

1. OBJECT APPEARED AS WHIT, FIRST MAG STAR. APPEARED AS PINPOINT  
WHEN VIEWED WITH BINOCULARS.2. OBSERVER NOTED WHAT LOOKED LIKE MOVING STAR. FIRST OBSERVED  
ABT 200 TRUE ABT ALT 10 DEG. DISAPPEARED 285 TRUE ALT 17 DEG OBJECT  
WAS STEADY, CLIMBED TO ALT ABT 25 DEG BEFORE DESCENDING. DIS-  
APPEARED SUDDENLY. TIME OF SIGHTING AT ABT 300 UNK, BUT TIME  
TAKEN TO PASS FROM 0055 TO 0056 WAS 6 MIN.

3. GROUND VISUAL BY 7 POWER BINOCULARS LONG GLASS

1039 338.87  
-148  
190°

4. DISAPPEARED AT 041125Z, LATE DUSK. *Se → 20N*

5. SHIP LOCATED 26 04.25N, 127 53.5E

6. J. R. GRIFFIN, LCDR, CO, AGE 33 W. L. MORANDINI, ENS, OOD, AGE 25

T. H. GADDY, SN LOOKOUT, AGE 22 *[REDACTED]* SA OFF DUTY, AGE 18

L. H. HINES, LTJG, VJOD AGE 22

92...COG

SECNAV..UNSECNAV..ASST SECNAV (R&amp;D)..02..09..09B..09M..09D..03..33

34..35..05..06..07..72..76..94..IP..NAVAIDE..FLAGPLOT..BFR..CMC

JCS..CSA..CSAF..CIA..NIC..COGARD

ADVANCE COPIES DELIVERED

| CONTROL NO.   | CIRCUIT NO. | PAGE | OF | PAGES | TIME OF RECEIPT | DATE TIME GROUP |
|---------------|-------------|------|----|-------|-----------------|-----------------|
| 52167/WB/YO/2 | B 128       | 1    |    | 2     | 1510Z 04 JUL 63 | 041215Z JUL 63. |

UNCLASSIFIED



NAVAL MESSAGE

UNCLASSIFIED

NAVY DEPARTMENT

|            |          |             |            |          |
|------------|----------|-------------|------------|----------|
| PRECEDENCE | (ACTION) | RELEASED BY | DRAFTED BY | EXT. NO. |
|            | INFORM   |             |            |          |

7. CLEAR NIGHT, CEILING UNLIMITED CUMULUS CLOUDS, COVERAGE, 2 TENTH.
8. NO AIR TRAFFIC SIGHTED
9. PREPARED BY CO. BELIEVE OBJECT SATELLITE.
10. NO OTHER EVIDENCE. FIRST ACTUAL BRG TAKEN WHEN OBJECT WAS AT 066. INITIAL SIGHTING ESTIMATED BY TUCKER.

|             |             |      |    |       |                 |                 |
|-------------|-------------|------|----|-------|-----------------|-----------------|
| CONTROL NO. | CIRCUIT NO. | PAGE | OF | PAGES | TIME OF RECEIPT | DATE TIME GROUP |
| 52157       |             | 2    |    | 2     |                 | 041215Z JUL 63. |

UNCLASSIFIED



| SATELLITE 1960 IOTA 1 |        |                     |             |        |      |       |             |         |      |        |
|-----------------------|--------|---------------------|-------------|--------|------|-------|-------------|---------|------|--------|
| EQUATOR               |        | FOR OTHER LATITUDES |             |        |      |       |             |         |      |        |
| S-N                   |        |                     | SOUTH-NORTH |        |      |       | NORTH-SOUTH |         |      |        |
| TIME                  | LONG.  | LAT.                | TIME        | LONG.  | HT.  | BEAR. | TIME        | LONG.   | HT.  | BEAR.  |
| (UT)                  | (W)    |                     | CORR.       | CORR.  | (MI) | (N-E) | CORR.       | CORR.   | (MI) | (N-E)  |
| JUNE 30, 1963         |        |                     |             |        |      |       |             |         |      |        |
| 1 11.0                | 177.84 | 47.5                | 26.7        | -83.21 | 883  | 90.0° | 26.8        | -83.26  | 883  | 90.0°  |
| 3 6.0                 | 206.95 | 45.0                | 21.7        | -61.09 | 813  | 72.2° | 32.0        | -105.34 | 955  | 107.8° |
| 5 1.1                 | 236.06 | 40.0                | 17.7        | -45.86 | 764  | 60.7° | 36.3        | -120.48 | 1010 | 119.4° |
| 6 56.2                | 245.17 | 35.0                | 14.3        | -36.22 | 731  | 54.0° | 39.5        | -130.03 | 1047 | 126.1° |
| 8 51.2                | 244.28 | 30.0                | 12.4        | -28.86 | 707  | 49.4° | 42.4        | -137.30 | 1077 | 130.7° |
| 0 46.4                | 223.39 | 20.0                | 8.0         | -17.49 | 674  | 43.8° | 47.6        | -148.46 | 1121 | 136.5° |
| 2 41.4                | 252.50 | 0.                  | 0.          | 0.     | 655  | 40.0° | 57.3        | -165.51 | 1161 | 140.3° |
| 4 36.5                | 21.62  | -20.0               | -8.0        | 17.48  | 691  | 43.8° | -40.1       | 144.32  | 1141 | 136.5° |
| 6 31.5                | 50.73  | -30.0               | -12.4       | 28.84  | 731  | 49.4° | -42.9       | 137.17  | 1105 | 130.7° |
| 8 26.6                | 79.84  | -35.0               | -14.9       | 36.20  | 759  | 54.0° | -40.0       | 129.91  | 1079 | 126.1° |
| 0 21.7                | 108.95 | -40.0               | -17.8       | 45.83  | 796  | 60.7° | -36.7       | 120.37  | 1045 | 119.4° |
| 2 16.8                | 138.06 | -45.0               | -21.8       | 61.04  | 849  | 72.2° | -32.4       | 105.25  | 993  | 107.8° |
|                       |        | -47.5               | -27.0       | 83.14  | 921  | 90.0° | -27.0       | 83.19   | 921  | 90.0°  |
| JULY 1, 1963          |        |                     |             |        |      |       |             |         |      |        |
| 0 11.8                | 167.17 | 47.5                | 26.5        | -83.23 | 868  | 90.0° | 26.7        | -83.28  | 868  | 90.0°  |
| 2 6.9                 | 196.28 | 45.0                | 21.6        | -61.11 | 800  | 72.2° | 31.9        | -105.37 | 940  | 107.8° |
| 4 2.0                 | 225.39 | 40.0                | 17.7        | -45.88 | 752  | 60.7° | 36.1        | -120.52 | 996  | 119.4° |
| 6 57.0                | 234.40 | 35.0                | 14.3        | -36.23 | 721  | 54.0° | 39.3        | -130.07 | 1035 | 126.1° |
| 8 52.1                | 243.51 | 30.0                | 12.3        | -28.86 | 698  | 49.4° | 42.2        | -137.34 | 1066 | 130.7° |
| 0 47.2                | 222.72 | 20.0                | 8.0         | -17.49 | 663  | 43.8° | 47.4        | -148.41 | 1113 | 136.5° |
| 2 42.3                | 251.83 | 0.                  | 0.          | 0.     | 655  | 40.0° | 57.1        | -165.57 | 1160 | 140.3° |
| 4 37.4                | 20.94  | -20.0               | -8.0        | 17.49  | 697  | 43.8° | -40.3       | 144.27  | 1148 | 136.5° |
| 6 32.5                | 50.05  | -30.0               | -12.5       | 28.83  | 731  | 49.4° | -43.0       | 137.12  | 1116 | 130.7° |
| 8 27.6                | 79.16  | -35.0               | -14.9       | 36.19  | 751  | 54.0° | -40.1       | 129.87  | 1091 | 126.1° |
| 0 22.7                | 108.27 | -40.0               | -17.9       | 45.82  | 788  | 60.7° | -36.9       | 120.33  | 1058 | 119.4° |
| 2 17.8                | 137.38 | -45.0               | -21.9       | 61.02  | 841  | 72.2° | -32.5       | 105.21  | 1007 | 107.8° |
| 4 12.9                | 166.49 | -47.5               | -27.1       | 83.11  | 926  | 90.0° | -27.1       | 83.16   | 926  | 90.0°  |
| JULY 2, 1963          |        |                     |             |        |      |       |             |         |      |        |
| 0 7.7                 | 177.84 | 47.5                | 26.5        | -83.23 | 868  | 90.0° | 26.6        | -83.31  | 852  | 90.0°  |
| 2 2.8                 | 214.71 | 45.0                | 21.5        | -61.13 | 785  | 72.2° | 31.7        | -105.40 | 924  | 107.8° |
| 4 57.9                | 243.82 | 40.0                | 17.6        | -45.89 | 739  | 60.7° | 36.0        | -120.56 | 980  | 119.4° |
| 6 53.0                | 272.93 | 35.0                | 14.8        | -36.24 | 710  | 54.0° | 39.2        | -130.12 | 1020 | 126.1° |
| 8 48.0                | 302.04 | 30.0                | 12.3        | -28.87 | 680  | 49.5° | 42.0        | -137.39 | 1053 | 130.7° |
| 0 43.1                | 331.15 | 20.0                | 8.0         | -17.49 | 663  | 43.8° | 47.1        | -148.57 | 1103 | 136.5° |
| 2 38.2                | 0.26   | 0.                  | 0.          | 0.     | 657  | 40.0° | 56.8        | -165.63 | 1158 | 140.3° |
| 4 33.2                | 29.37  | -20.0               | -8.0        | 17.48  | 705  | 43.8° | -40.6       | 148.21  | 1154 | 136.5° |
| 6 28.3                | 58.48  | -30.0               | -12.5       | 28.83  | 742  | 49.4° | -43.3       | 137.07  | 1126 | 130.7° |
| 8 23.4                | 87.59  | -35.0               | -15.0       | 36.18  | 783  | 54.0° | -40.3       | 129.82  | 1103 | 126.1° |
| 0 18.4                | 116.70 | -40.0               | -17.9       | 45.86  | 822  | 60.7° | -37.0       | 120.29  | 1072 | 119.4° |
| 2 13.5                | 145.81 | -45.0               | -22.0       | 61.00  | 879  | 72.2° | -32.7       | 105.17  | 1023 | 107.8° |
|                       |        | -47.5               | -27.2       | 83.08  | 952  | 90.0° | -27.3       | 83.13   | 952  | 90.0°  |
| JULY 3, 1963          |        |                     |             |        |      |       |             |         |      |        |
| 0 8.6                 | 174.97 | 47.5                | 26.5        | -83.28 | 837  | 90.0° | 26.5        | -83.33  | 838  | 90.0°  |
| 2 3.6                 | 204.02 | 45.0                | 21.5        | -61.14 | 772  | 72.2° | 31.6        | -105.43 | 909  | 107.8° |
| 4 58.7                | 233.13 | 40.0                | 17.6        | -45.90 | 724  | 60.7° | 35.8        | -120.59 | 966  | 119.4° |
| 6 53.8                | 262.24 | 35.0                | 14.8        | -36.24 | 701  | 54.0° | 39.0        | -130.16 | 1006 | 126.1° |
| 8 48.8                | 291.35 | 30.0                | 12.3        | -28.87 | 672  | 49.5° | 41.8        | -137.44 | 1040 | 130.7° |
| 0 43.9                | 320.46 | 20.0                | 8.0         | -17.50 | 659  | 43.8° | 46.9        | -148.62 | 1093 | 136.5° |
| 2 39.0                | 349.57 | 0.                  | 0.          | 0.     | 659  | 40.0° | 56.6        | -165.69 | 1156 | 140.3° |
| 4 34.0                | 18.68  | -20.0               | -8.1        | 17.47  | 713  | 43.7° | -40.8       | 148.15  | 1159 | 136.5° |
| 6 29.1                | 47.79  | -30.0               | -12.5       | 28.87  | 763  | 49.4° | -43.5       | 137.02  | 1135 | 130.7° |
| 8 24.2                | 76.90  | -35.0               | -15.1       | 36.16  | 795  | 54.0° | -40.5       | 129.77  | 1114 | 126.1° |
| 0 19.2                | 106.01 | -40.0               | -18.0       | 45.79  | 836  | 60.7° | -37.2       | 120.24  | 1084 | 119.4° |
| 2 14.3                | 135.11 | -45.0               | -22.1       | 60.98  | 893  | 72.2° | -32.8       | 105.13  | 1037 | 107.8° |
| 4 9.4                 | 164.22 | -47.5               | -27.4       | 83.05  | 967  | 90.0° | -27.4       | 83.10   | 967  | 90.0°  |

| SATELLITE 1960 IOTA 1<br>FOR OTHER LATITUDES |              |       |               |                |             |                |               |                |             |                |
|----------------------------------------------|--------------|-------|---------------|----------------|-------------|----------------|---------------|----------------|-------------|----------------|
| EQUATOR<br>S-N                               |              | LAT.  | SOUTH-NORTH   |                |             |                | NORTH-SOUTH   |                |             |                |
| TIME<br>(UT)                                 | LONG.<br>(W) |       | TIME<br>CORR. | LONG.<br>CORR. | HT.<br>(MI) | BEAR.<br>(N-E) | TIME<br>CORR. | LONG.<br>CORR. | HT.<br>(MI) | BEAR.<br>(N-E) |
| JULY 4, 1963                                 |              |       |               |                |             |                |               |                |             |                |
| 1 4.4                                        | 173.33       | 47.5  | 26.4          | -83.30         | 822         | 90.0°          | 26.4          | -83.35         | 822         | 90.0°          |
| 2 59.5                                       | 222.44       | 45.0  | 21.4          | -61.15         | 759         | 72.2°          | 31.5          | -105.46        | 892         | 107.8°         |
| 4 54.6                                       | 251.55       | 40.0  | 17.6          | -45.90         | 717         | 60.7°          | 35.7          | -120.63        | 949         | 119.4°         |
| 6 49.6                                       | 280.66       | 35.0  | 14.7          | -36.25         | 691         | 54.0°          | 38.8          | -130.20        | 991         | 126.1°         |
| 8 44.7                                       | 309.77       | 30.0  | 12.3          | -28.98         | 674         | 49.5°          | 41.6          | -137.48        | 1026        | 130.7°         |
| 10 39.7                                      | 338.87       | 20.0  | 8.0           | -17.50         | 655         | 43.8°          | 46.7          | -148.67        | 1082        | 136.5°         |
| 12 34.8                                      | 7.98         | 0.    | 0.            | 0.             | 662         | 40.0°          | 56.3          | -165.75        | 1151        | 140.3°         |
| 14 29.9                                      | 37.09        | -20.0 | -8.1          | 17.47          | 723         | 43.7°          | -49.0         | 148.09         | 1164        | 136.5°         |
| 16 24.9                                      | 66.20        | -30.0 | -12.6         | 28.81          | 776         | 49.4°          | -43.7         | 136.96         | 1144        | 130.8°         |
| 18 20.0                                      | 95.31        | -35.0 | -15.1         | 36.15          | 809         | 54.0°          | -40.7         | 129.72         | 1125        | 126.1°         |
| 20 15.1                                      | 124.42       | -40.0 | -18.1         | 45.76          | 851         | 60.7°          | -37.4         | 120.19         | 1097        | 119.4°         |
| 22 10.1                                      | 153.52       | -45.0 | -22.2         | 60.95          | 909         | 72.2°          | -33.0         | 105.09         | 1051        | 107.8°         |
|                                              |              | -47.5 | -27.5         | 83.02          | 983         | 90.0°          | -27.5         | 83.07          | 983         | 90.0°          |
| JULY 5, 1963                                 |              |       |               |                |             |                |               |                |             |                |
| 0 5.2                                        | 182.63       | 47.5  | 26.3          | -83.32         | 808         | 90.0°          | 26.3          | -83.37         | 808         | 90.0°          |
| 2 0.3                                        | 211.74       | 45.0  | 21.4          | -61.16         | 747         | 72.2°          | 31.4          | -105.49        | 877         | 107.8°         |
| 3 55.3                                       | 240.85       | 40.0  | 17.5          | -45.91         | 707         | 60.7°          | 35.5          | -120.66        | 934         | 119.4°         |
| 5 50.4                                       | 269.96       | 35.0  | 14.7          | -36.25         | 684         | 54.0°          | 38.7          | -130.24        | 976         | 126.1°         |
| 7 45.4                                       | 299.06       | 30.0  | 12.3          | -28.88         | 668         | 49.5°          | 41.5          | -137.52        | 1012        | 130.7°         |
| 9 40.5                                       | 328.17       | 20.0  | 8.0           | -17.50         | 652         | 43.8°          | 46.5          | -148.72        | 1070        | 136.4°         |
| 11 35.6                                      | 357.28       | 0.    | 0.            | 0.             | 665         | 40.0°          | 56.1          | -165.80        | 1156        | 140.3°         |
| 13 30.6                                      | 76.39        | -20.0 | -8.1          | 17.46          | 733         | 43.7°          | -49.2         | 148.04         | 1167        | 136.5°         |
| 15 25.7                                      | 55.50        | -30.0 | -12.6         | 28.79          | 783         | 49.4°          | -43.9         | 136.91         | 1151        | 130.8°         |
| 17 20.7                                      | 84.60        | -35.0 | -15.2         | 36.13          | 822         | 54.0°          | -40.9         | 129.65         | 1134        | 126.1°         |
| 19 15.8                                      | 113.71       | -40.0 | -18.2         | 45.75          | 865         | 60.7°          | -37.6         | 120.15         | 1106        | 119.4°         |
| 21 10.9                                      | 142.82       | -45.0 | -22.3         | 60.93          | 924         | 72.2°          | -33.1         | 105.05         | 1065        | 107.8°         |
| 23 5.9                                       | 171.93       | -47.5 | -27.6         | 82.98          | 998         | 90.0°          | -27.6         | 83.03          | 998         | 90.0°          |
| JULY 6, 1963                                 |              |       |               |                |             |                |               |                |             |                |
| 1 1.0                                        | 201.03       | 47.5  | 26.2          | -83.34         | 793         | 90.0°          | 26.2          | -83.39         | 793         | 90.0°          |
| 2 56.0                                       | 230.14       | 45.0  | 21.3          | -61.17         | 734         | 72.2°          | 31.3          | -105.51        | 861         | 107.8°         |
| 4 51.1                                       | 259.25       | 40.0  | 17.5          | -45.92         | 697         | 60.7°          | 35.4          | -120.70        | 918         | 119.4°         |
| 6 46.2                                       | 288.36       | 35.0  | 14.7          | -36.26         | 676         | 54.0°          | 38.5          | -130.28        | 960         | 126.1°         |
| 8 41.2                                       | 317.46       | 30.0  | 12.3          | -28.88         | 662         | 49.5°          | 41.3          | -137.57        | 997         | 130.7°         |
| 10 36.3                                      | 346.57       | 20.0  | 8.0           | -17.49         | 650         | 43.8°          | 46.3          | -148.77        | 1057        | 136.4°         |
| 12 31.3                                      | 15.68        | 0.    | 0.            | 0.             | 670         | 40.0°          | 55.9          | -165.86        | 1140        | 140.3°         |
| 14 26.4                                      | 44.78        | -20.0 | -8.1          | 17.45          | 744         | 43.7°          | -49.5         | 147.98         | 1169        | 136.5°         |
| 16 21.5                                      | 73.89        | -30.0 | -12.7         | 28.78          | 801         | 49.4°          | -44.1         | 136.85         | 1158        | 130.8°         |
| 18 16.5                                      | 103.00       | -35.0 | -15.3         | 36.12          | 837         | 54.0°          | -41.2         | 129.61         | 1143        | 126.2°         |
| 20 11.6                                      | 132.11       | -40.0 | -18.3         | 45.72          | 881         | 60.7°          | -37.8         | 120.09         | 1120        | 119.4°         |
| 22 6.6                                       | 161.21       | -45.0 | -22.4         | 60.90          | 941         | 72.2°          | -33.3         | 105.00         | 1079        | 107.8°         |
|                                              |              | -47.5 | -27.8         | 82.95          | 1014        | 90.0°          | -27.8         | 83.00          | 1014        | 90.0°          |

# MODIFIED ORBITAL ELEMENTS FOR EARTH SATELLITE 1960 IOTA 1

REFERENCE TIME 1963 Y 6 M 22 D 1 H 15.89 M UT  
 INCLINATION 47.27 DEG.  
 ASCENDING NODE (LONG.) 144.80 DEG. WEST  
 PERIODE SWEEP INTERVAL ONE DAY -16.94 MIN.  
 ARGUMENT OF PERIGEE 336.51 DEG.  
 RATE OF CHANGE 0.27848 DEG. PER PERIOD  
 ANOMALISTIC PERIOD 115.172 MIN.  
 RATE OF CHANGE -0.00018 MIN. PER PERIOD  
 ECCENTRICITY 0.05051  
 RADIUS OF PERIGEE 4625.9 MILES  
 RADIUS OF APOGEE 5118.1 MILES  
 RATE OF CHANGE -0.13 MILES PER DAY  
 ASCENDING NODE (R.A.) 143.51 DEG.  
 RATE OF CHANGE -3.30020 DEG. PER DAY  
 LATITUDE OF PERIGEE -17.02 DEG.  
 READ-IN EXPECTED MAG. +1