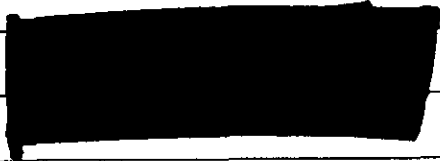


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*Data Book*

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*1024-2*

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In Accordance with E. O. 12958

on NOV 26 1997

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CORONA J FLIGHT DATA BOOK

SYSTEM NO. J-24

VEHICLE NO. 1619

MISSION NO. 1824-2

CAMERA NOS. 172/173

DATE 18-02-65

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SYSTEM NO. J-24  
VEHICLE NO. 1619  
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SYSTEM NO. J-24  
VEHICLE NO. 1619  
MISSION NO. 1824-2  
CAMERA NOS. 172/173

GENERAL FLIGHT DATA

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SLAVE CAMERA SERIAL NO. 173

S/I -1 SERIAL NO. D69/72/84

S/I -2 SERIAL NO. D64/82/66

LAUNCH DATE 89-22-65

REACTIVATION DATE 89-28-65

REACTIVATION ORBIT NO. 89  
ORBITAL PARAMETERS REV. 188

PERIOD 89.944 MIN. ECCENTRICITY 0.81459

PERIGEE 96.657 NM PERIGEE LAT. 31.517 DEG. N

APOGEE 281.458 NM INCL. ANGLE 88.857 DEG.

RECOVERY ORBIT NO. 161

RECOVERY DATE 18-82-65

PAGE 3

SYSTEM NO. J-24  
VEHICLE NO. 1619  
MISSION NO. 1824-2  
CAMERA NOS. 172/173

CYCLE PERIOD DATA

| V/H RAMP SETTING<br>LEVEL | AMPLITUDE | TIME UP<br>RAMP-SEC | ---CALIBRATED--- |       | ---IN-FLIGHT--- |       | ORBI<br>CYCLE PERIOD-SEC | NO. |
|---------------------------|-----------|---------------------|------------------|-------|-----------------|-------|--------------------------|-----|
|                           |           |                     | MASTER           | SLAVE | MASTER          | SLAVE |                          |     |
| 5                         | 5         | 269                 | 3.654            | 3.641 | 3.661           | 3.658 | 88                       |     |
| 5                         | 5         | 1865                | 2.242            | 2.248 | 2.244           | 2.248 | 95                       |     |
| 5                         | 5         | 1839                | 2.242            | 2.241 | 2.256           | 2.267 | 111                      |     |
| 5                         | 5         | 1985                | 2.241            | 2.248 | 2.263           | 2.249 | 127                      |     |
| 5                         | 5         | 1778                | 2.245            | 2.242 | 2.264           | 2.249 | 143                      |     |

PAGE 4

- A. 1824-2
- B. DRY
- C. FINAL PERFORMANCE ESTIMATE, PART ONE

~~SECRET~~

OPERATIONS SUMMARY

FWD PAN CAMERA NUMBER 172

| OPN NO | FRA | Q | LAT          | LONG   | HEIGHT | RANGE  | DA | H  | M | S  | LTIM | S-TIM |
|--------|-----|---|--------------|--------|--------|--------|----|----|---|----|------|-------|
| 73     | 2   | 2 | 5 ON 2 48 51 | 28 23E | 648213 | 663528 | 27 | 11 | 7 | 14 | 1228 | 48834 |

|         |        |   |    |    |     |     |         |         |    |    |    |    |      |       |       |
|---------|--------|---|----|----|-----|-----|---------|---------|----|----|----|----|------|-------|-------|
|         | OFF    | 2 | 48 | 5  | 28  | 38E | 637647  | 668866  | 27 | 11 | 7  | 26 | 1238 | 48846 |       |
| 81 8 8  | 4 ON   | 2 | 59 | 18 | 165 | 42W | 672891  | 696686  | 27 | 23 | 4  | 36 | 12   | 1     | 83876 |
|         | OFF    | 2 | 57 | 41 | 164 | 48W | 666818  | 698296  | 27 | 23 | 5  | 8  | 12   | 5     | 83188 |
| 84 9 1  | 28 ON  | 2 | 51 | 27 | 138 | 12E | 639953  | 663258  | 28 | 3  | 36 | 36 | 1217 | 12996 |       |
|         | OFF    | 2 | 48 | 15 | 131 | 23E | 629548  | 652454  | 28 | 3  | 37 | 25 | 1222 | 13845 |       |
| 84 9 2  | 112 ON | 2 | 45 | 31 | 132 | 15E | 621439  | 644849  | 28 | 3  | 38 | 6  | 1227 | 13886 |       |
|         | OFF    | 2 | 28 | 31 | 136 | 8E  | 588532  | 689918  | 28 | 3  | 42 | 28 | 1246 | 13348 |       |
| 85 9 1  | 16 ON  | 2 | 76 | 12 | 76  | 25E | 753585  | 781188  | 28 | 4  | 59 | 46 | 18   | 5     | 17986 |
|         | OFF    | 2 | 73 | 49 | 84  | 35E | 738475  | 765588  | 28 | 5  | 8  | 34 | 1838 | 18834 |       |
| 85 9 2  | 185 ON | 2 | 44 | 37 | 189 | 52E | 618286  | 648695  | 28 | 5  | 8  | 19 | 1227 | 18499 |       |
|         | OFF    | 2 | 28 | 37 | 113 | 28E | 588326  | 689696  | 28 | 5  | 12 | 18 | 1245 | 18738 |       |
| 86 5 1  | 26 ON  | 2 | 58 | 38 | 81  | 26E | 664167  | 688384  | 28 | 6  | 34 | 46 | 12   | 8     | 23686 |
|         | OFF    | 2 | 54 | 18 | 83  | 48E | 648281  | 671816  | 28 | 6  | 35 | 51 | 1218 | 23751 |       |
| 86 5 2  | 72 ON  | 2 | 48 | 36 | 85  | 57E | 629885  | 651982  | 28 | 6  | 37 | 18 | 1221 | 23838 |       |
|         | OFF    | 2 | 37 | 32 | 89  | 8E  | 688979  | 622823  | 28 | 6  | 48 | 5  | 1236 | 24885 |       |
| 86 5 3  | 34 ON  | 2 | 33 | 49 | 89  | 45E | 594489  | 616891  | 28 | 6  | 41 | 8  | 1248 | 24868 |       |
|         | OFF    | 2 | 28 | 39 | 98  | 41E | 588868  | 689421  | 28 | 6  | 42 | 17 | 1245 | 24137 |       |
| 87 8 1  | 147 ON | 2 | 68 | 28 | 57  | 31E | 671112  | 695598  | 28 | 8  | 4  | 15 | 1154 | 29855 |       |
|         | OFF    | 2 | 37 | 35 | 66  | 28E | 688575  | 622484  | 28 | 8  | 18 | 3  | 1235 | 29483 |       |
| 88 4 8  | 13 ON  | 1 | 39 | 38 | 113 | 53W | 1834381 | 1872696 | 28 | 9  | 14 | 55 | 139  | 33295 |       |
|         | OFF    | 1 | 42 | 38 | 113 | 8W  | 1828687 | 1858478 | 28 | 9  | 15 | 42 | 143  | 33342 |       |
| 88 4 1  | 66 ON  | 2 | 55 | 27 | 37  | 49E | 658494  | 674196  | 28 | 9  | 35 | 32 | 12   | 6     | 34532 |
|         | OFF    | 2 | 45 | 24 | 41  | 41E | 618251  | 648742  | 28 | 9  | 38 | 5  | 1224 | 34685 |       |
| 93 7 1  | 61 ON  | 3 | 25 | 38 | 68  | 55W | 722912  | 749345  | 28 | 17 | 25 | 29 | 1321 | 62729 |       |
|         | OFF    | 3 | 35 | 32 | 59  | 9W  | 781383  | 818836  | 28 | 17 | 28 | 8  | 1331 | 62888 |       |
| 95 7 1  | 21 ON  | 2 | 32 | 29 | 113 | 48W | 591516  | 613886  | 28 | 28 | 11 | 4  | 1235 | 72664 |       |
|         | OFF    | 2 | 29 | 19 | 113 | 14W | 588318  | 689688  | 28 | 28 | 11 | 51 | 1238 | 72711 |       |
| 98 3 1  | 48 ON  | 2 | 65 | 54 | 163 | 43E | 686178  | 711216  | 29 | 8  | 32 | 23 | 1127 | 1943  |       |
|         | OFF    | 2 | 59 | 36 | 169 | 8E  | 668438  | 684586  | 29 | 8  | 34 | 3  | 1158 | 2843  |       |
| 188 3 1 | 73 ON  | 2 | 52 | 8  | 127 | 39E | 632886  | 655844  | 29 | 3  | 35 | 53 | 12   | 6     | 12953 |
|         | OFF    | 2 | 48 | 53 | 131 | 11E | 684379  | 626358  | 29 | 3  | 38 | 41 | 1223 | 13121 |       |
| 182 8 1 | 65 ON  | 2 | 57 | 23 | 79  | 47E | 649177  | 672838  | 29 | 6  | 34 | 23 | 1153 | 23663 |       |
|         | OFF    | 2 | 47 | 24 | 84  | 3E  | 618516  | 641818  | 29 | 6  | 36 | 55 | 1213 | 23815 |       |
| 182 8 2 | 66 ON  | 2 | 41 | 37 | 85  | 43E | 685883  | 627881  | 29 | 6  | 38 | 23 | 1221 | 23983 |       |
|         | OFF    | 2 | 31 | 36 | 87  | 51E | 598826  | 611468  | 29 | 6  | 48 | 53 | 1232 | 24853 |       |
| 183 5 1 | 79 ON  | 2 | 47 | 32 | 61  | 22E | 618368  | 648855  | 29 | 8  | 6  | 58 | 1212 | 29218 |       |
|         | OFF    | 2 | 35 | 32 | 64  | 28E | 594363  | 615968  | 29 | 8  | 9  | 58 | 1227 | 29398 |       |
| 184 7 1 | 138 ON | 2 | 68 | 19 | 32  | 41E | 658262  | 682256  | 29 | 9  | 33 | 38 | 1144 | 34418 |       |
|         | OFF    | 2 | 39 | 27 | 48  | 58E | 688283  | 622818  | 29 | 9  | 38 | 48 | 1222 | 34728 |       |
| 184 7 2 | 41 ON  | 2 | 17 | 57 | 44  | 48E | 588294  | 689663  | 29 | 9  | 44 | 7  | 1242 | 35847 |       |
|         | OFF    | 2 | 11 | 39 | 45  | 28E | 595296  | 616927  | 29 | 9  | 45 | 48 | 1247 | 35148 |       |
| 186 6 1 | 92 ON  | 2 | 27 | 49 | 2   | 2W  | 586924  | 688242  | 29 | 12 | 41 | 32 | 1233 | 45692 |       |
|         | OFF    | 2 | 13 | 46 | 8   | 3W  | 592812  | 614358  | 29 | 12 | 45 | 8  | 1244 | 45988 |       |
| 111 9 1 | 21 ON  | 2 | 37 | 39 | 117 | 3W  | 595596  | 617238  | 29 | 28 | 8  | 41 | 1228 | 72521 |       |
|         | OFF    | 2 | 34 | 28 | 116 | 23W | 591632  | 613126  | 29 | 28 | 9  | 29 | 1223 | 72569 |       |
| 113 9 1 | 27 ON  | 2 | 66 | 18 | 176 | 6W  | 673687  | 698179  | 29 | 23 | 1  | 13 | 1116 | 82873 |       |
|         | OFF    | 2 | 62 | 8  | 172 | 14W | 657586  | 681472  | 29 | 23 | 2  | 28 | 1133 | 82948 |       |
| 115 7 1 | 55 ON  | 2 | 74 | 9  | 124 | 26E | 787786  | 733648  | 38 | 1  | 58 | 44 | 1816 | 7124  |       |
|         | OFF    | 2 | 66 | 4  | 138 | 45E | 671194  | 695675  | 38 | 2  | 1  | 4  | 1116 | 7264  |       |
| 116 7 1 | 73 ON  | 2 | 58 | 26 | 126 | 7E  | 619815  | 641535  | 38 | 3  | 35 | 1  | 1159 | 12981 |       |
|         | OFF    | 2 | 39 | 24 | 129 | 23E | 596483  | 618158  | 38 | 3  | 37 | 47 | 1215 | 13867 |       |
| 118 5 1 | 28 ON  | 2 | 74 | 11 | 56  | 28E | 784496  | 738235  | 38 | 6  | 28 | 26 | 1814 | 23386 |       |
|         | OFF    | 2 | 71 | 13 | 63  | 26E | 698132  | 715328  | 38 | 6  | 29 | 28 | 1843 | 23368 |       |
| 118 5 2 | 36 ON  | 2 | 52 | 56 | 79  | 58E | 624322  | 647841  | 38 | 6  | 34 | 11 | 1153 | 23651 |       |
|         | OFF    | 2 | 47 | 28 | 81  | 56E | 618323  | 632517  | 38 | 6  | 35 | 36 | 12   | 3     | 23736 |
| 118 5 3 | 93 ON  | 2 | 42 | 35 | 83  | 28E | 688757  | 622593  | 38 | 6  | 36 | 48 | 1218 | 23888 |       |
|         | OFF    | 2 | 28 | 38 | 86  | 14E | 586382  | 687679  | 38 | 6  | 48 | 16 | 1225 | 24816 |       |
| 119 2 1 | 21 ON  | 2 | 58 | 21 | 54  | 27E | 639794  | 663894  | 38 | 8  | 2  | 42 | 1148 | 28962 |       |
|         | OFF    | 2 | 55 | 8  | 56  | 12E | 629862  | 652789  | 38 | 8  | 3  | 32 | 1148 | 29812 |       |
| 119 2 2 | 34 ON  | 2 | 51 | 28 | 57  | 49E | 619787  | 642253  | 38 | 8  | 4  | 27 | 1155 | 29867 |       |
|         | OFF    | 2 | 46 | 17 | 59  | 39E | 687449  | 629535  | 38 | 8  | 5  | 45 | 12   | 4     | 28948 |

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|     |   |   |     |     |   |    |    |     |     |        |        |    |    |    |    |      |       |       |
|-----|---|---|-----|-----|---|----|----|-----|-----|--------|--------|----|----|----|----|------|-------|-------|
| 128 | 1 | 1 | 111 | ON  | 2 | 68 | 28 | 38  | 33E | 645582 | 669817 | 38 | 9  | 32 | 5  | 1134 | 34325 |       |
|     |   |   |     | OFF | 2 | 43 | 21 | 37  | 52E | 681151 | 623881 | 38 | 9  | 36 | 24 | 12   | 7     | 34584 |
| 127 | 9 | 1 | 17  | ON  | 2 | 35 | 39 | 118 | 48W | 589595 | 611813 | 38 | 28 | 7  | 31 | 1212 | 72451 |       |
|     |   |   |     | OFF | 2 | 33 | 8  | 118 | 9W  | 587738 | 689879 | 38 | 28 | 8  | 18 | 1215 | 72498 |       |
| 129 | 6 | 1 | 28  | ON  | 2 | 61 | 15 | 173 | 42W | 642858 | 666273 | 38 | 23 | 8  | 47 | 1125 | 82847 |       |
|     |   |   |     | OFF | 2 | 58 | 6  | 171 | 38W | 633864 | 656111 | 38 | 23 | 1  | 36 | 1135 | 82896 |       |
| 138 | 4 | 1 | 49  | ON  | 2 | 75 | 13 | 141 | 38E | 697944 | 723435 | 1  | 8  | 26 | 43 | 953  | 1683  |       |
|     |   |   |     | OFF | 2 | 68 | 12 | 156 | 45E | 666818 | 691134 | 1  | 8  | 28 | 48 | 1855 | 1728  |       |
| 131 | 4 | 1 | 54  | ON  | 2 | 74 | 13 | 122 | 14E | 691873 | 717135 | 1  | 1  | 56 | 54 | 18   | 5     | 7814  |
|     |   |   |     | OFF | 2 | 66 | 11 | 136 | 36E | 658321 | 682318 | 1  | 1  | 59 | 13 | 11   | 5     | 7153  |
| 133 | 4 | 1 | 88  | ON  | 2 | 42 | 5  | 184 | 6E  | 595841 | 617493 | 1  | 5  | 5  | 8  | 12   | 1     | 18388 |
|     |   |   |     | OFF | 2 | 28 | 34 | 186 | 53E | 586658 | 687958 | 1  | 5  | 8  | 29 | 1216 | 18589 |       |
| 133 | 4 | 2 | 27  | ON  | 2 | 23 | 51 | 187 | 37E | 588287 | 689572 | 1  | 5  | 9  | 39 | 1228 | 18579 |       |
|     |   |   |     | OFF | 2 | 19 | 38 | 188 | 13E | 591783 | 613283 | 1  | 5  | 18 | 41 | 1223 | 18641 |       |
| 134 | 9 | 1 | 145 | ON  | 2 | 58 | 27 | 78  | 51E | 618466 | 632666 | 1  | 6  | 32 | 54 | 1148 | 23574 |       |
|     |   |   |     | OFF | 2 | 28 | 32 | 84  | 16E | 586622 | 687929 | 1  | 6  | 38 | 22 | 1215 | 23982 |       |
| 136 | 3 | 1 | 187 | ON  | 2 | 59 | 25 | 29  | 11E | 632279 | 655297 | 1  | 9  | 38 | 28 | 1127 | 34228 |       |
|     |   |   |     | OFF | 2 | 43 | 24 | 35  | 53E | 596773 | 618468 | 1  | 9  | 34 | 24 | 1157 | 34464 |       |
| 142 | 4 | 1 | 17  | ON  | 2 | 48 | 48 | 99  | 6W  | 591827 | 613329 | 1  | 18 | 34 | 11 | 1157 | 66851 |       |
|     |   |   |     | OFF | 2 | 37 | 55 | 98  | 27W | 589313 | 618728 | 1  | 18 | 34 | 52 | 12   | 1     | 66892 |
| 143 | 8 | 1 | 28  | ON  | 2 | 38 | 38 | 121 | 14W | 589761 | 611186 | 1  | 28 | 4  | 32 | 1159 | 72272 |       |
|     |   |   |     | OFF | 2 | 35 | 31 | 128 | 33W | 587782 | 689849 | 1  | 28 | 5  | 18 | 12   | 3     | 72318 |
| 148 | 7 | 1 | 69  | ON  | 2 | 75 | 19 | 94  | 9E  | 688784 | 785545 | 2  | 3  | 24 | 2  | 948  | 12242 |       |
|     |   |   |     | OFF | 2 | 65 | 21 | 112 | 59E | 642443 | 665843 | 2  | 3  | 26 | 55 | 1858 | 12415 |       |
| 148 | 7 | 2 | 28  | ON  | 2 | 51 | 39 | 121 | 46E | 686932 | 628999 | 2  | 3  | 38 | 28 | 1137 | 12628 |       |
|     |   |   |     | OFF | 2 | 48 | 31 | 122 | 55E | 681283 | 623856 | 2  | 3  | 31 | 15 | 1142 | 12675 |       |
| 148 | 7 | 3 | 17  | ON  | 2 | 48 | 47 | 125 | 11E | 598997 | 612468 | 2  | 3  | 33 | 11 | 1153 | 12791 |       |
|     |   |   |     | OFF | 2 | 38 | 8  | 125 | 48E | 588877 | 618268 | 2  | 3  | 33 | 51 | 1157 | 12831 |       |
| 149 | 8 | 1 | 28  | ON  | 2 | 55 | 58 | 97  | 11E | 615848 | 638258 | 2  | 4  | 59 | 12 | 1127 | 17952 |       |
|     |   |   |     | OFF | 2 | 52 | 58 | 98  | 39E | 688934 | 631876 | 2  | 5  | 8  | 8  | 1134 | 18888 |       |
| 149 | 8 | 2 | 92  | ON  | 2 | 32 | 44 | 184 | 17E | 586859 | 688175 | 2  | 5  | 5  | 1  | 12   | 2     | 18381 |
|     |   |   |     | OFF | 2 | 18 | 39 | 186 | 29E | 596915 | 618686 | 2  | 5  | 8  | 38 | 1214 | 18518 |       |
| 149 | 8 | 3 | 18  | ON  | 3 | 2  | 42 | 189 | 2E  | 655146 | 679821 | 2  | 5  | 13 | 47 | 1229 | 18827 |       |
|     |   |   |     | OFF | 3 | 5  | 48 | 189 | 23E | 667727 | 692876 | 2  | 5  | 14 | 33 | 1232 | 18873 |       |
| 158 | 8 | 1 | 59  | ON  | 2 | 68 | 16 | 64  | 28E | 658688 | 674397 | 2  | 6  | 25 | 47 | 1843 | 23147 |       |
|     |   |   |     | OFF | 2 | 59 | 17 | 72  | 48E | 623535 | 646225 | 2  | 6  | 28 | 18 | 1118 | 23298 |       |
| 158 | 8 | 2 | 48  | ON  | 2 | 42 | 35 | 79  | 38E | 592488 | 614815 | 2  | 6  | 32 | 24 | 1158 | 23544 |       |
|     |   |   |     | OFF | 2 | 36 | 38 | 88  | 56E | 587839 | 689191 | 2  | 6  | 33 | 55 | 1157 | 23635 |       |
| 158 | 8 | 3 | 33  | ON  | 2 | 33 | 41 | 81  | 38E | 586991 | 688312 | 2  | 6  | 34 | 37 | 12   | 8     | 23677 |
|     |   |   |     | OFF | 2 | 28 | 34 | 82  | 25E | 587642 | 688987 | 2  | 6  | 35 | 53 | 12   | 5     | 23753 |
| 151 | 8 | 1 | 151 | ON  | 2 | 68 | 23 | 49  | 19E | 625986 | 648685 | 2  | 7  | 57 | 43 | 1115 | 28663 |       |
|     |   |   |     | OFF | 2 | 37 | 35 | 58  | 5E  | 588323 | 689694 | 2  | 8  | 3  | 29 | 1155 | 29889 |       |
| 152 | 1 | 1 | 127 | ON  | 2 | 59 | 32 | 27  | 17E | 623897 | 645771 | 2  | 9  | 27 | 46 | 1116 | 34866 |       |
|     |   |   |     | OFF | 2 | 48 | 31 | 34  | 48E | 598241 | 611683 | 2  | 9  | 32 | 34 | 1151 | 34354 |       |
| 152 | 1 | 2 | 59  | ON  | 2 | 16 | 16 | 38  | 58E | 681957 | 623837 | 2  | 9  | 38 | 34 | 1214 | 34714 |       |
|     |   |   |     | OFF | 2 | 6  | 46 | 48  | 7E  | 624598 | 647326 | 2  | 9  | 48 | 55 | 1221 | 34855 |       |
| 153 | 5 | 1 | 67  | ON  | 2 | 22 | 7  | 15  | 34E | 593389 | 614949 | 2  | 11 | 6  | 57 | 12   | 9     | 48817 |
|     |   |   |     | OFF | 2 | 11 | 47 | 16  | 55E | 611811 | 634868 | 2  | 11 | 9  | 38 | 1217 | 48178 |       |

## OPERATIONS SUMMARY

AFT PAN CAMERA NUMBER 173

| OPN | NO | FRA | Q   | LAT | LONG | HEIGHT | RANGE | DA  | H   | M      | S      | LTIM | S-TIM |    |    |      |       |       |
|-----|----|-----|-----|-----|------|--------|-------|-----|-----|--------|--------|------|-------|----|----|------|-------|-------|
| 73  | 2  | 2   | 5   | ON  | 2    | 49     | 45    | 28  | 8E  | 648213 | 663528 | 27   | 11    | 7  | 14 | 1227 | 48834 |       |
|     |    |     |     | OFF | 2    | 49     | 8     | 28  | 16E | 637647 | 668866 | 27   | 11    | 7  | 26 | 1228 | 48846 |       |
| 81  | 8  | 8   | 4   | ON  | 2    | 68     | 6     | 166 | 22W | 672891 | 696686 | 27   | 23    | 4  | 36 | 1159 | 83876 |       |
|     |    |     |     | OFF | 2    | 58     | 36    | 165 | 24W | 666818 | 698296 | 27   | 23    | 5  | 8  | 12   | 3     | 83188 |
| 84  | 9  | 1   | 28  | ON  | 2    | 52     | 21    | 129 | 47E | 639953 | 663258 | 28   | 3     | 36 | 36 | 1215 | 12996 |       |
|     |    |     |     | OFF | 2    | 49     | 8     | 131 | 1E  | 629548 | 652454 | 28   | 3     | 37 | 25 | 1221 | 13845 |       |
| 84  | 9  | 2   | 113 | ON  | 2    | 46     | 24    | 131 | 56E | 621439 | 644849 | 28   | 3     | 38 | 6  | 1225 | 13886 |       |
|     |    |     |     | OFF | 2    | 29     | 22    | 135 | 49E | 588532 | 689918 | 28   | 3     | 42 | 28 | 1245 | 13348 |       |
| 85  | 9  | 1   | 16  | ON  | 2    | 76     | 56    | 72  | 52E | 753585 | 781188 | 28   | 4     | 59 | 46 | 951  | 17986 |       |

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|     |   |   |     |     |   |    |    |     |     |        |        |   |    |     |    |      |       |
|-----|---|---|-----|-----|---|----|----|-----|-----|--------|--------|---|----|-----|----|------|-------|
| 131 | 4 | 1 | 55  | ON  | 2 | 74 | 59 | 119 | 44E | 691873 | 717135 | 1 | 1  | 56  | 54 | 955  | 7814  |
|     |   |   |     | OFF | 2 | 67 | 3  | 135 | 32E | 658321 | 682318 | 1 | 1  | 59  | 13 | 11   | 7153  |
| 133 | 4 | 1 | 89  | ON  | 2 | 42 | 56 | 183 | 49E | 595841 | 617493 | 1 | 5  | 5   | 8  | 12   | 18388 |
|     |   |   |     | OFF | 2 | 29 | 25 | 186 | 41E | 586658 | 687958 | 1 | 5  | 8   | 29 | 1215 | 18589 |
| 133 | 4 | 2 | 27  | ON  | 2 | 24 | 42 | 187 | 27E | 588287 | 689572 | 1 | 5  | 9   | 39 | 1219 | 18579 |
|     |   |   |     | OFF | 2 | 28 | 29 | 188 | 3E  | 591783 | 613283 | 1 | 5  | 18  | 41 | 1222 | 18641 |
| 134 | 9 | 1 | 145 | ON  | 2 | 51 | 19 | 78  | 28E | 618466 | 632666 | 1 | 6  | 32  | 54 | 1146 | 23574 |
|     |   |   |     | OFF | 2 | 29 | 23 | 84  | 4E  | 586622 | 687929 | 1 | 6  | 38  | 22 | 1214 | 23982 |
| 136 | 3 | 1 | 187 | ON  | 2 | 68 | 17 | 28  | 33E | 632279 | 655297 | 1 | 9  | 38  | 28 | 1124 | 34228 |
|     |   |   |     | OFF | 2 | 44 | 15 | 35  | 36E | 596773 | 618468 | 1 | 9  | 34  | 24 | 1156 | 34464 |
| 142 | 4 | 1 | 18  | ON  | 2 | 41 | 31 | 99  | 21W | 591827 | 613329 | 1 | 18 | 34  | 11 | 1156 | 66851 |
|     |   |   |     | OFF | 2 | 38 | 46 | 98  | 42W | 589313 | 618728 | 1 | 18 | 34  | 52 | 12   | 66892 |
| 143 | 8 | 1 | 28  | ON  | 2 | 39 | 28 | 121 | 28W | 589761 | 611186 | 1 | 28 | 4   | 32 | 1158 | 72272 |
|     |   |   |     | OFF | 2 | 36 | 22 | 128 | 47W | 587782 | 689849 | 1 | 28 | 5   | 18 | 12   | 72318 |
| 148 | 7 | 1 | 69  | ON  | 2 | 76 | 2  | 91  | 18E | 688784 | 785545 | 2 | 3  | -24 | -2 | 929  | 12242 |
|     |   |   |     | OFF | 2 | 66 | 13 | 112 | 1E  | 642443 | 665843 | 2 | 3  | 26  | 55 | 1855 | 12415 |
| 148 | 7 | 2 | 28  | ON  | 2 | 52 | 38 | 121 | 21E | 686932 | 628999 | 2 | 3  | 38  | 28 | 1135 | 12628 |
|     |   |   |     | OFF | 2 | 49 | 23 | 122 | 34E | 681283 | 623856 | 2 | 3  | 31  | 15 | 1141 | 12675 |
| 148 | 7 | 3 | 17  | ON  | 2 | 41 | 38 | 124 | 55E | 598997 | 612468 | 2 | 3  | 33  | 11 | 1152 | 12791 |
|     |   |   |     | OFF | 2 | 38 | 59 | 125 | 33E | 588877 | 618268 | 2 | 3  | 33  | 51 | 1156 | 12831 |
| 149 | 8 | 1 | 21  | ON  | 2 | 56 | 58 | 96  | 48E | 615848 | 638258 | 2 | 4  | 59  | 12 | 1125 | 17952 |
|     |   |   |     | OFF | 2 | 53 | 41 | 98  | 13E | 688934 | 631876 | 2 | 5  | 8   | 8  | 1132 | 18888 |
| 149 | 8 | 2 | 93  | ON  | 2 | 33 | 35 | 184 | 5E  | 586859 | 688175 | 2 | 5  | 5   | 1  | 12   | 18381 |
|     |   |   |     | OFF | 2 | 19 | 31 | 186 | 19E | 596915 | 618686 | 2 | 5  | 8   | 38 | 1213 | 18518 |
| 149 | 8 | 3 | 18  | ON  | 3 | 1  | 45 | 188 | 52E | 655146 | 679821 | 2 | 5  | 13  | 47 | 1229 | 18827 |
|     |   |   |     | OFF | 3 | 4  | 58 | 189 | 13E | 667727 | 692876 | 2 | 5  | 14  | 33 | 1231 | 18873 |
| 158 | 8 | 1 | 68  | ON  | 2 | 69 | 6  | 63  | 5E  | 658688 | 674397 | 2 | 6  | 25  | 47 | 1838 | 23147 |
|     |   |   |     | OFF | 2 | 68 | 8  | 72  | 3E  | 623535 | 646225 | 2 | 6  | 28  | 18 | 1116 | 23298 |
| 158 | 8 | 2 | 48  | ON  | 2 | 43 | 26 | 79  | 13E | 592488 | 614815 | 2 | 6  | 32  | 24 | 1149 | 23544 |
|     |   |   |     | OFF | 2 | 37 | 21 | 88  | 42E | 587839 | 689191 | 2 | 6  | 33  | 55 | 1156 | 23635 |
| 158 | 8 | 3 | 34  | ON  | 2 | 34 | 32 | 81  | 17E | 586991 | 688312 | 2 | 6  | 34  | 37 | 1159 | 23677 |
|     |   |   |     | OFF | 2 | 29 | 25 | 82  | 13E | 587642 | 688987 | 2 | 6  | 35  | 53 | 12   | 23753 |
| 151 | 8 | 1 | 153 | ON  | 2 | 61 | 15 | 48  | 39E | 625986 | 648685 | 2 | 7  | 57  | 43 | 1112 | 28663 |
|     |   |   |     | OFF | 2 | 38 | 25 | 57  | 51E | 588323 | 689694 | 2 | 8  | 3   | 29 | 1154 | 29889 |
| 152 | 1 | 1 | 128 | ON  | 2 | 68 | 23 | 26  | 39E | 623897 | 645771 | 2 | 9  | 27  | 46 | 1114 | 34866 |
|     |   |   |     | OFF | 2 | 41 | 22 | 34  | 32E | 598241 | 611683 | 2 | 9  | 32  | 34 | 1158 | 34354 |
| 152 | 1 | 2 | 68  | ON  | 2 | 17 | 8  | 38  | 48E | 681957 | 623837 | 2 | 9  | 38  | 34 | 1213 | 34714 |
|     |   |   |     | OFF | 2 | 7  | 48 | 39  | 57E | 624598 | 647326 | 2 | 9  | 48  | 55 | 1228 | 34855 |
| 153 | 5 | 1 | 68  | ON  | 2 | 22 | 59 | 15  | 23E | 593389 | 614949 | 2 | 11 | 6   | 57 | 12   | 48817 |
|     |   |   |     | OFF | 2 | 12 | 48 | 16  | 45E | 611811 | 634868 | 2 | 11 | 9   | 38 | 1216 | 48178 |

## PHOTOGRAPHIC SUMMARY

| FWD PAN CAMERA | NO  | 172  | 0.2258 | SLIT  | W/25  | FILTER | 3484 | FILM |       |       |       |       |
|----------------|-----|------|--------|-------|-------|--------|------|------|-------|-------|-------|-------|
| OPN NO         | FRA | FEET | ET     | S-EL  | S-DIR | EV     | FULL | INT  | PRI   |       |       |       |
| 73             | 2   | 2    | 5      | 13.2  | ON    | 277    | 48.7 | 25.8 | 11.97 | 12.87 | 11.47 | 18.87 |
|                |     |      |        |       | OFF   | 278    | 41.5 | 25.2 | 11.97 | 12.88 | 11.48 | 18.88 |
| 81             | 8   | 8    | 4      | 18.6  | ON    | 153    | 38.8 | 28.6 | 11.11 | 11.99 | 11.39 | 18.79 |
|                |     |      |        |       | OFF   | 153    | 32.3 | 28.9 | 11.11 | 12.88 | 11.48 | 18.88 |
| 84             | 9   | 1    | 28     | 52.9  | ON    | 275    | 38.4 | 21.9 | 11.96 | 12.86 | 11.46 | 18.86 |
|                |     |      |        |       | OFF   | 279    | 41.5 | 22.9 | 11.98 | 12.88 | 11.48 | 18.88 |
| 84             | 9   | 2    | 112    | 296.2 | ON    | 283    | 44.1 | 23.9 | 12.88 | 12.89 | 11.49 | 18.89 |
|                |     |      |        |       | OFF   | 296    | 59.4 | 34.7 | 12.86 | 12.18 | 11.58 | 18.98 |
| 85             | 9   | 1    | 16     | 42.3  | ON    | 225    | 12.1 | 18.8 | 11.67 | 11.28 | 18.68 | 18.88 |
|                |     |      |        |       | OFF   | 231    | 15.1 | 18.6 | 11.78 | 11.58 | 18.98 | 18.38 |
| 85             | 9   | 2    | 185    | 277.7 | ON    | 285    | 44.9 | 24.1 | 12.81 | 12.89 | 11.49 | 18.89 |
|                |     |      |        |       | OFF   | 296    | 59.3 | 34.4 | 12.86 | 12.18 | 11.58 | 18.98 |
| 86             | 5   | 1    | 26     | 68.8  | ON    | 264    | 31.5 | 19.8 | 11.98 | 11.99 | 11.39 | 18.79 |
|                |     |      |        |       | OFF   | 271    | 35.6 | 28.8 | 11.94 | 12.84 | 11.44 | 18.84 |
| 86             | 5   | 2    | 72     | 198.4 | ON    | 288    | 41.2 | 22.4 | 11.98 | 12.87 | 11.47 | 18.87 |
|                |     |      |        |       | OFF   | 292    | 51.5 | 27.3 | 12.84 | 12.18 | 11.58 | 18.98 |
| 86             | 5   | 3    | 34     | 89.9  | ON    | 294    | 54.9 | 29.8 | 12.85 | 12.18 | 11.58 | 18.98 |

# JUL 11

|     |   |   |     |         |        |       |       |       |       |       |       |
|-----|---|---|-----|---------|--------|-------|-------|-------|-------|-------|-------|
|     |   |   |     | OFF 297 | 59.4   | 34.8  | 12.86 | 12.10 | 11.58 | 10.98 |       |
| 87  | 8 | 1 | 147 | 388.8   | ON 278 | 29.5  | 19.3  | 11.93 | 11.97 | 11.37 | 10.77 |
|     |   |   |     | OFF 382 | 51.5   | 27.1  | 12.89 | 12.10 | 11.58 | 10.98 |       |
| 88  | 4 | 8 | 13  | 34.4    | ON 182 | -44.3 | 23.3  | 11.36 | 0.00  | 0.00  | 0.00  |
|     |   |   |     | OFF 183 | -41.4  | 22.2  | 11.37 | 0.00  | 0.00  | 0.00  |       |
| 88  | 4 | 1 | 66  | 174.6   | ON 285 | 34.5  | 20.1  | 12.81 | 12.83 | 11.43 | 10.83 |
|     |   |   |     | OFF 297 | 44.3   | 23.1  | 12.87 | 12.89 | 11.49 | 10.89 |       |
| 93  | 7 | 1 | 61  | 161.3   | ON 252 | 57.7  | 158.8 | 11.83 | 12.10 | 11.58 | 10.98 |
|     |   |   |     | OFF 236 | 48.6   | 156.1 | 11.73 | 12.10 | 11.58 | 10.98 |       |
| 95  | 7 | 1 | 21  | 55.5    | ON 387 | 56.4  | 28.3  | 12.11 | 12.10 | 11.58 | 10.98 |
|     |   |   |     | OFF 388 | 59.2   | 38.8  | 12.12 | 12.10 | 11.58 | 10.98 |       |
| 98  | 3 | 1 | 48  | 185.8   | ON 269 | 23.8  | 16.7  | 11.93 | 11.86 | 11.26 | 10.66 |
|     |   |   |     | OFF 288 | 38.4   | 17.5  | 11.98 | 11.98 | 11.38 | 10.78 |       |
| 100 | 3 | 1 | 73  | 193.1   | ON 292 | 38.8  | 18.6  | 12.84 | 12.85 | 11.45 | 10.85 |
|     |   |   |     | OFF 383 | 48.8   | 22.3  | 12.89 | 12.10 | 11.58 | 10.98 |       |
| 102 | 8 | 1 | 65  | 171.9   | ON 285 | 32.6  | 17.1  | 12.81 | 12.81 | 11.41 | 10.81 |
|     |   |   |     | OFF 297 | 42.5   | 19.5  | 12.87 | 12.88 | 11.48 | 10.88 |       |
| 102 | 8 | 2 | 66  | 174.6   | ON 382 | 48.1  | 21.5  | 12.89 | 12.10 | 11.58 | 10.98 |
|     |   |   |     | OFF 387 | 57.5   | 27.8  | 12.12 | 12.10 | 11.58 | 10.98 |       |
| 103 | 5 | 1 | 79  | 289.8   | ON 298 | 42.4  | 19.2  | 12.87 | 12.88 | 11.48 | 10.88 |
|     |   |   |     | OFF 386 | 53.9   | 24.2  | 12.11 | 12.10 | 11.58 | 10.98 |       |
| 104 | 7 | 1 | 138 | 365.8   | ON 276 | 29.6  | 16.3  | 11.96 | 11.97 | 11.37 | 10.77 |
|     |   |   |     | OFF 298 | 58.2   | 22.8  | 12.87 | 12.10 | 11.58 | 10.98 |       |
| 104 | 7 | 2 | 41  | 188.4   | ON 388 | 69.2  | 42.1  | 12.88 | 12.10 | 11.58 | 10.98 |
|     |   |   |     | OFF 296 | 73.4   | 56.5  | 12.86 | 12.10 | 11.58 | 10.98 |       |
| 106 | 6 | 1 | 92  | 243.3   | ON 382 | 61.8  | 28.9  | 12.89 | 12.10 | 11.58 | 10.98 |
|     |   |   |     | OFF 297 | 72.3   | 58.1  | 12.87 | 12.10 | 11.58 | 10.98 |       |
| 111 | 9 | 1 | 21  | 55.5    | ON 388 | 52.8  | 21.1  | 12.88 | 12.10 | 11.58 | 10.98 |
|     |   |   |     | OFF 381 | 55.1   | 22.7  | 12.89 | 12.10 | 11.58 | 10.98 |       |
| 113 | 9 | 1 | 27  | 71.4    | ON 269 | 23.4  | 14.1  | 11.92 | 11.85 | 11.25 | 10.65 |
|     |   |   |     | OFF 275 | 27.8   | 14.5  | 11.96 | 11.94 | 11.34 | 10.74 |       |
| 115 | 7 | 1 | 55  | 145.5   | ON 254 | 14.2  | 13.8  | 11.84 | 11.44 | 10.84 | 10.24 |
|     |   |   |     | OFF 278 | 23.5   | 13.8  | 11.93 | 11.85 | 11.25 | 10.65 |       |
| 116 | 7 | 1 | 73  | 193.1   | ON 291 | 39.6  | 15.8  | 12.84 | 12.86 | 11.46 | 10.86 |
|     |   |   |     | OFF 388 | 58.4   | 19.1  | 12.88 | 12.10 | 11.58 | 10.98 |       |
| 118 | 5 | 1 | 28  | 52.9    | ON 255 | 14.1  | 13.3  | 11.85 | 11.43 | 10.83 | 10.23 |
|     |   |   |     | OFF 261 | 17.7   | 13.1  | 11.88 | 11.64 | 11.84 | 10.44 |       |
| 118 | 5 | 2 | 36  | 95.2    | ON 289 | 37.8  | 14.9  | 12.83 | 12.85 | 11.45 | 10.85 |
|     |   |   |     | OFF 295 | 42.6   | 16.1  | 12.85 | 12.88 | 11.48 | 10.88 |       |
| 118 | 5 | 3 | 93  | 246.8   | ON 298 | 47.4  | 17.5  | 12.87 | 12.10 | 11.58 | 10.98 |
|     |   |   |     | OFF 382 | 68.7   | 24.5  | 12.89 | 12.10 | 11.58 | 10.98 |       |
| 119 | 2 | 1 | 21  | 55.5    | ON 283 | 31.5  | 13.9  | 12.88 | 11.99 | 11.39 | 10.79 |
|     |   |   |     | OFF 287 | 34.8   | 14.3  | 12.82 | 12.83 | 11.43 | 10.83 |       |
| 119 | 2 | 2 | 34  | 89.9    | ON 291 | 38.5  | 15.8  | 12.84 | 12.86 | 11.46 | 10.86 |
|     |   |   |     | OFF 296 | 43.7   | 16.2  | 12.86 | 12.89 | 11.49 | 10.89 |       |
| 120 | 1 | 1 | 111 | 293.6   | ON 277 | 29.5  | 13.4  | 11.97 | 11.97 | 11.37 | 10.77 |
|     |   |   |     | OFF 294 | 46.6   | 16.8  | 12.85 | 12.10 | 11.58 | 10.98 |       |
| 127 | 9 | 1 | 17  | 45.8    | ON 298 | 54.2  | 17.9  | 12.87 | 12.10 | 11.58 | 10.98 |
|     |   |   |     | OFF 298 | 56.8   | 19.1  | 12.87 | 12.10 | 11.58 | 10.98 |       |
| 129 | 6 | 1 | 28  | 52.9    | ON 278 | 28.4  | 11.8  | 11.97 | 11.95 | 11.35 | 10.75 |
|     |   |   |     | OFF 282 | 31.7   | 12.1  | 11.99 | 12.88 | 11.48 | 10.88 |       |
| 130 | 4 | 1 | 49  | 129.6   | ON 254 | 12.5  | 11.5  | 11.84 | 11.31 | 10.71 | 10.11 |
|     |   |   |     | OFF 267 | 28.9   | 11.2  | 11.92 | 11.77 | 11.17 | 10.57 |       |
| 131 | 4 | 1 | 54  | 142.8   | ON 257 | 13.8  | 11.2  | 11.86 | 11.41 | 10.81 | 10.21 |
|     |   |   |     | OFF 271 | 23.1   | 11.1  | 11.94 | 11.84 | 11.24 | 10.64 |       |
| 133 | 4 | 1 | 88  | 232.8   | ON 297 | 47.9  | 14.2  | 12.86 | 12.10 | 11.58 | 10.98 |
|     |   |   |     | OFF 298 | 61.2   | 19.8  | 12.87 | 12.10 | 11.58 | 10.98 |       |
| 133 | 4 | 2 | 27  | 71.4    | ON 296 | 65.6  | 23.4  | 12.86 | 12.10 | 11.58 | 10.98 |
|     |   |   |     | OFF 294 | 69.5   | 27.8  | 12.85 | 12.10 | 11.58 | 10.98 |       |
| 134 | 9 | 1 | 145 | 383.5   | ON 291 | 39.5  | 12.2  | 12.84 | 12.86 | 11.46 | 10.86 |
|     |   |   |     | OFF 298 | 61.2   | 19.5  | 12.87 | 12.10 | 11.58 | 10.98 |       |

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|     |   |   |     |       |         |      |       |       |       |       |       |
|-----|---|---|-----|-------|---------|------|-------|-------|-------|-------|-------|
| 136 | 3 | 1 | 187 | 283.8 | ON 281  | 38.2 | 18.7  | 11.99 | 11.98 | 11.38 | 18.78 |
|     |   |   |     |       | OFF 295 | 46.6 | 13.2  | 12.86 | 12.18 | 11.58 | 18.98 |
| 142 | 4 | 1 | 17  | 45.8  | ON 296  | 49.3 | 12.5  | 12.86 | 12.18 | 11.58 | 18.98 |
|     |   |   |     |       | OFF 297 | 52.1 | 13.2  | 12.87 | 12.18 | 11.58 | 18.98 |
| 143 | 8 | 1 | 28  | 52.9  | ON 297  | 51.4 | 12.8  | 12.87 | 12.18 | 11.58 | 18.98 |
|     |   |   |     |       | OFF 297 | 54.5 | 13.7  | 12.87 | 12.18 | 11.58 | 18.98 |
| 148 | 7 | 1 | 69  | 182.5 | ON 259  | 12.8 | 8.7   | 11.87 | 11.27 | 10.67 | 18.87 |
|     |   |   |     |       | OFF 276 | 23.7 | 8.3   | 11.96 | 11.86 | 11.26 | 18.66 |
| 148 | 7 | 2 | 28  | 52.9  | ON 291  | 38.1 | 9.3   | 12.84 | 12.85 | 11.45 | 18.85 |
|     |   |   |     |       | OFF 293 | 41.3 | 9.7   | 12.85 | 12.88 | 11.48 | 18.88 |
| 148 | 7 | 3 | 17  | 45.8  | ON 297  | 49.2 | 11.8  | 12.86 | 12.18 | 11.58 | 18.98 |
|     |   |   |     |       | OFF 297 | 51.9 | 11.7  | 12.87 | 12.18 | 11.58 | 18.98 |
| 149 | 8 | 1 | 28  | 52.9  | ON 288  | 33.7 | 8.6   | 12.82 | 12.82 | 11.42 | 18.82 |
|     |   |   |     |       | OFF 298 | 36.9 | 8.9   | 12.83 | 12.85 | 11.45 | 18.85 |
| 149 | 8 | 2 | 92  | 243.3 | ON 296  | 57.2 | 13.8  | 12.86 | 12.18 | 11.58 | 18.98 |
|     |   |   |     |       | OFF 289 | 71.8 | 21.9  | 12.83 | 12.18 | 11.58 | 18.98 |
| 149 | 8 | 3 | 18  | 47.6  | ON 261  | 82.8 | 119.6 | 11.88 | 12.18 | 11.58 | 18.98 |
|     |   |   |     |       | OFF 257 | 88.1 | 135.4 | 11.86 | 12.18 | 11.58 | 18.98 |
| 158 | 8 | 1 | 59  | 156.1 | ON 278  | 28.5 | 7.9   | 11.93 | 11.76 | 11.16 | 18.56 |
|     |   |   |     |       | OFF 282 | 38.2 | 8.2   | 11.99 | 11.98 | 11.38 | 18.78 |
| 158 | 8 | 2 | 48  | 185.8 | ON 296  | 47.4 | 18.2  | 12.86 | 12.18 | 11.58 | 18.98 |
|     |   |   |     |       | OFF 297 | 53.5 | 11.6  | 12.87 | 12.18 | 11.58 | 18.98 |
| 158 | 8 | 3 | 33  | 87.3  | ON 297  | 56.3 | 12.4  | 12.87 | 12.18 | 11.58 | 18.98 |
|     |   |   |     |       | OFF 296 | 61.4 | 14.4  | 12.86 | 12.18 | 11.58 | 18.98 |
| 151 | 8 | 1 | 151 | 399.4 | ON 283  | 29.8 | 8.8   | 12.88 | 11.96 | 11.36 | 18.76 |
|     |   |   |     |       | OFF 297 | 52.4 | 11.1  | 12.87 | 12.18 | 11.58 | 18.98 |
| 152 | 1 | 1 | 127 | 335.9 | ON 285  | 29.9 | 7.8   | 12.81 | 11.97 | 11.37 | 18.77 |
|     |   |   |     |       | OFF 297 | 49.4 | 18.1  | 12.87 | 12.18 | 11.58 | 18.98 |
| 152 | 1 | 2 | 59  | 156.1 | ON 286  | 73.3 | 23.3  | 12.81 | 12.18 | 11.58 | 18.98 |
|     |   |   |     |       | OFF 275 | 81.3 | 48.8  | 11.96 | 12.18 | 11.58 | 18.98 |
| 153 | 5 | 1 | 67  | 177.2 | ON 291  | 67.7 | 17.8  | 12.84 | 12.18 | 11.58 | 18.98 |
|     |   |   |     |       | OFF 281 | 77.4 | 38.6  | 11.99 | 12.18 | 11.58 | 18.98 |

### PHOTOGRAPHIC SUMMARY

| AFT | PAN | CAMERA | NO   | 173   | 0.1588  | SLIT  | W/21  | FILTER | 3484  | FILM  |       |
|-----|-----|--------|------|-------|---------|-------|-------|--------|-------|-------|-------|
| OPN | NO  | FRA    | FEET | ET    | S-EL    | S-DIR | EV    | FULL   | INT   | PRI   |       |
| 73  | 2   | 2      | 5    | 13.2  | ON 421  | 39.9  | 24.3  | 12.57  | 12.72 | 12.12 | 11.52 |
|     |     |        |      |       | OFF 422 | 48.6  | 24.6  | 12.57  | 12.72 | 12.12 | 11.52 |
| 81  | 8   | 8      | 4    | 18.6  | ON 234  | 29.9  | 19.7  | 11.72  | 12.62 | 12.82 | 11.42 |
|     |     |        |      |       | OFF 234 | 31.4  | 28.1  | 11.72  | 12.64 | 12.84 | 11.44 |
| 84  | 9   | 1      | 28   | 52.9  | ON 417  | 37.5  | 21.2  | 12.56  | 12.78 | 12.18 | 11.58 |
|     |     |        |      |       | OFF 424 | 48.6  | 22.3  | 12.58  | 12.72 | 12.12 | 11.52 |
| 84  | 9   | 2      | 113  | 298.9 | ON 429  | 43.2  | 23.3  | 12.68  | 12.74 | 12.14 | 11.54 |
|     |     |        |      |       | OFF 449 | 58.7  | 33.7  | 12.66  | 12.75 | 12.15 | 11.55 |
| 85  | 9   | 1      | 16   | 42.3  | ON 341  | 11.8  | 15.2  | 12.27  | 11.83 | 11.23 | 18.63 |
|     |     |        |      |       | OFF 358 | 14.1  | 16.8  | 12.38  | 12.88 | 11.48 | 18.88 |
| 85  | 9   | 2      | 187  | 283.8 | ON 431  | 44.1  | 23.4  | 12.68  | 12.74 | 12.14 | 11.54 |
|     |     |        |      |       | OFF 449 | 58.6  | 33.4  | 12.66  | 12.75 | 12.15 | 11.55 |
| 86  | 5   | 1      | 26   | 68.8  | ON 481  | 38.6  | 19.8  | 12.58  | 12.63 | 12.83 | 11.43 |
|     |     |        |      |       | OFF 411 | 34.8  | 28.8  | 12.54  | 12.68 | 12.88 | 11.48 |
| 86  | 5   | 2      | 73   | 193.1 | ON 424  | 48.3  | 21.8  | 12.58  | 12.72 | 12.12 | 11.52 |
|     |     |        |      |       | OFF 442 | 58.8  | 26.6  | 12.64  | 12.75 | 12.15 | 11.55 |
| 86  | 5   | 3      | 35   | 92.6  | ON 446  | 54.1  | 28.9  | 12.65  | 12.75 | 12.15 | 11.55 |
|     |     |        |      |       | OFF 449 | 58.7  | 33.1  | 12.66  | 12.75 | 12.15 | 11.55 |
| 87  | 8   | 1      | 148  | 391.5 | ON 489  | 28.6  | 18.4  | 12.53  | 12.68 | 12.88 | 11.48 |
|     |     |        |      |       | OFF 457 | 58.7  | 26.4  | 12.69  | 12.75 | 12.15 | 11.55 |
| 88  | 4   | 8      | 13   | 34.4  | ON 277  | -45.7 | 23.5  | 11.97  | 8.88  | 8.88  | 8.88  |
|     |     |        |      |       | OFF 279 | -42.9 | 22.3  | 11.98  | 8.88  | 8.88  | 8.88  |
| 88  | 4   | 1      | 67   | 177.2 | ON 432  | 33.6  | 19.4  | 12.61  | 12.67 | 12.87 | 11.47 |
|     |     |        |      |       | OFF 458 | 43.4  | 22.5  | 12.67  | 12.74 | 12.14 | 11.54 |
| 93  | 7   | 1      | 62   | 164.8 | ON 382  | 58.7  | 149.3 | 12.43  | 12.75 | 12.15 | 11.55 |

**OPANE**



|     |   |   |     |       |         |      |       |       |       |       |       |
|-----|---|---|-----|-------|---------|------|-------|-------|-------|-------|-------|
| 95  | 7 | 1 | 21  | 55.5  | OFF 358 | 49.6 | 155.9 | 12.34 | 12.75 | 12.15 | 11.55 |
|     |   |   |     |       | ON 465  | 55.7 | 27.5  | 12.71 | 12.75 | 12.15 | 11.55 |
|     |   |   |     |       | OFF 466 | 58.5 | 29.9  | 12.72 | 12.75 | 12.15 | 11.55 |
| 98  | 3 | 1 | 41  | 188.4 | ON 488  | 22.9 | 15.5  | 12.53 | 12.49 | 11.89 | 11.29 |
|     |   |   |     |       | OFF 424 | 29.4 | 16.6  | 12.58 | 12.62 | 12.82 | 11.42 |
| 188 | 3 | 1 | 74  | 195.7 | ON 442  | 37.1 | 18.8  | 12.64 | 12.78 | 12.18 | 11.58 |
|     |   |   |     |       | OFF 458 | 47.9 | 21.7  | 12.69 | 12.75 | 12.15 | 11.55 |
| 182 | 8 | 1 | 65  | 171.9 | ON 431  | 31.7 | 16.4  | 12.68 | 12.65 | 12.85 | 11.45 |
|     |   |   |     |       | OFF 458 | 41.6 | 18.9  | 12.66 | 12.73 | 12.13 | 11.53 |
| 182 | 8 | 2 | 67  | 177.2 | ON 458  | 47.3 | 28.9  | 12.69 | 12.75 | 12.15 | 11.55 |
|     |   |   |     |       | OFF 466 | 56.7 | 26.2  | 12.71 | 12.75 | 12.15 | 11.55 |
| 183 | 5 | 1 | 88  | 211.6 | ON 451  | 41.5 | 18.6  | 12.67 | 12.73 | 12.13 | 11.53 |
|     |   |   |     |       | OFF 464 | 53.1 | 23.5  | 12.71 | 12.75 | 12.15 | 11.55 |
| 184 | 7 | 1 | 138 | 365.8 | ON 416  | 28.7 | 15.4  | 12.55 | 12.61 | 12.81 | 11.41 |
|     |   |   |     |       | OFF 449 | 49.4 | 21.4  | 12.66 | 12.75 | 12.15 | 11.55 |
| 184 | 7 | 2 | 42  | 111.1 | ON 451  | 68.5 | 48.5  | 12.67 | 12.75 | 12.15 | 11.55 |
|     |   |   |     |       | OFF 445 | 72.9 | 53.9  | 12.65 | 12.75 | 12.15 | 11.55 |
| 186 | 6 | 1 | 92  | 243.3 | ON 455  | 68.3 | 27.9  | 12.68 | 12.75 | 12.15 | 11.55 |
|     |   |   |     |       | OFF 447 | 71.7 | 47.9  | 12.66 | 12.75 | 12.15 | 11.55 |
| 111 | 9 | 1 | 21  | 55.5  | ON 452  | 51.2 | 28.5  | 12.67 | 12.75 | 12.15 | 11.55 |
|     |   |   |     |       | OFF 453 | 54.3 | 22.1  | 12.68 | 12.75 | 12.15 | 11.55 |
| 113 | 9 | 1 | 27  | 71.4  | ON 485  | 22.4 | 13.8  | 12.51 | 12.47 | 11.87 | 11.27 |
|     |   |   |     |       | OFF 415 | 26.9 | 13.6  | 12.55 | 12.58 | 11.98 | 11.38 |
| 115 | 7 | 1 | 55  | 145.5 | ON 383  | 13.2 | 11.2  | 12.43 | 12.82 | 11.42 | 18.82 |
|     |   |   |     |       | OFF 486 | 22.5 | 12.6  | 12.52 | 12.48 | 11.88 | 11.28 |
| 116 | 7 | 1 | 73  | 193.1 | ON 439  | 38.7 | 15.2  | 12.63 | 12.71 | 12.11 | 11.51 |
|     |   |   |     |       | OFF 451 | 49.6 | 18.6  | 12.67 | 12.75 | 12.15 | 11.55 |
| 118 | 5 | 1 | 28  | 52.9  | ON 385  | 13.1 | 18.7  | 12.44 | 12.81 | 11.41 | 18.81 |
|     |   |   |     |       | OFF 393 | 16.7 | 11.3  | 12.47 | 12.24 | 11.64 | 11.84 |
| 118 | 5 | 2 | 37  | 97.9  | ON 435  | 36.2 | 14.3  | 12.62 | 12.69 | 12.89 | 11.49 |
|     |   |   |     |       | OFF 443 | 41.8 | 15.6  | 12.64 | 12.73 | 12.13 | 11.53 |
| 118 | 5 | 3 | 93  | 246.8 | ON 449  | 46.5 | 17.8  | 12.66 | 12.75 | 12.15 | 11.55 |
|     |   |   |     |       | OFF 454 | 59.9 | 23.7  | 12.68 | 12.75 | 12.15 | 11.55 |
| 119 | 2 | 1 | 21  | 55.5  | ON 426  | 38.6 | 13.1  | 12.59 | 12.63 | 12.83 | 11.43 |
|     |   |   |     |       | OFF 432 | 33.9 | 13.7  | 12.61 | 12.67 | 12.87 | 11.47 |
| 119 | 2 | 2 | 34  | 89.9  | ON 438  | 37.6 | 14.4  | 12.63 | 12.78 | 12.18 | 11.58 |
|     |   |   |     |       | OFF 445 | 42.8 | 15.7  | 12.65 | 12.73 | 12.13 | 11.53 |
| 128 | 1 | 1 | 112 | 296.2 | ON 428  | 28.5 | 12.6  | 12.57 | 12.68 | 12.88 | 11.48 |
|     |   |   |     |       | OFF 446 | 45.8 | 16.3  | 12.65 | 12.75 | 12.15 | 11.55 |
| 127 | 9 | 1 | 17  | 45.8  | ON 452  | 53.4 | 17.3  | 12.67 | 12.75 | 12.15 | 11.55 |
|     |   |   |     |       | OFF 453 | 56.8 | 18.5  | 12.67 | 12.75 | 12.15 | 11.55 |
| 129 | 6 | 1 | 21  | 55.5  | ON 422  | 27.5 | 11.8  | 12.57 | 12.59 | 11.99 | 11.39 |
|     |   |   |     |       | OFF 428 | 38.8 | 11.4  | 12.59 | 12.63 | 12.83 | 11.43 |
| 138 | 4 | 1 | 49  | 129.6 | ON 386  | 11.5 | 8.6   | 12.44 | 11.88 | 11.28 | 18.68 |
|     |   |   |     |       | OFF 486 | 19.9 | 9.9   | 12.52 | 12.39 | 11.79 | 11.19 |
| 131 | 4 | 1 | 55  | 145.5 | ON 398  | 12.8 | 8.7   | 12.46 | 11.99 | 11.39 | 18.79 |
|     |   |   |     |       | OFF 411 | 22.2 | 18.8  | 12.54 | 12.46 | 11.86 | 11.26 |
| 133 | 4 | 1 | 89  | 235.4 | ON 458  | 47.1 | 13.7  | 12.66 | 12.75 | 12.15 | 11.55 |
|     |   |   |     |       | OFF 452 | 68.4 | 19.1  | 12.67 | 12.75 | 12.15 | 11.55 |
| 133 | 4 | 2 | 27  | 71.4  | ON 449  | 64.8 | 22.4  | 12.66 | 12.75 | 12.15 | 11.55 |
|     |   |   |     |       | OFF 446 | 68.8 | 26.6  | 12.65 | 12.75 | 12.15 | 11.55 |
| 134 | 9 | 1 | 145 | 383.5 | ON 442  | 38.6 | 11.7  | 12.64 | 12.71 | 12.11 | 11.51 |
|     |   |   |     |       | OFF 452 | 68.4 | 18.8  | 12.67 | 12.75 | 12.15 | 11.55 |
| 136 | 3 | 1 | 187 | 283.8 | ON 426  | 29.3 | 18.8  | 12.59 | 12.62 | 12.82 | 11.42 |
|     |   |   |     |       | OFF 447 | 45.7 | 12.7  | 12.65 | 12.75 | 12.15 | 11.55 |
| 142 | 4 | 1 | 18  | 47.6  | ON 449  | 48.5 | 12.8  | 12.66 | 12.75 | 12.15 | 11.55 |
|     |   |   |     |       | OFF 458 | 51.2 | 12.8  | 12.66 | 12.75 | 12.15 | 11.55 |
| 143 | 8 | 1 | 28  | 52.9  | ON 458  | 58.5 | 12.3  | 12.66 | 12.75 | 12.15 | 11.55 |
|     |   |   |     |       | OFF 458 | 53.6 | 13.2  | 12.67 | 12.75 | 12.15 | 11.55 |
| 148 | 7 | 1 | 69  | 182.5 | ON 393  | 11.8 | 5.8   | 12.47 | 11.83 | 11.23 | 18.63 |
|     |   |   |     |       | OFF 419 | 22.8 | 7.3   | 12.56 | 12.48 | 11.88 | 11.28 |

**SECRET**

|     |   |   |     |       |         |      |       |       |       |       |       |
|-----|---|---|-----|-------|---------|------|-------|-------|-------|-------|-------|
| 148 | 7 | 2 | 28  | 52.9  | ON 442  | 37.2 | 8.8   | 12.64 | 12.78 | 12.18 | 11.58 |
|     |   |   |     |       | OFF 445 | 48.5 | 9.2   | 12.65 | 12.72 | 12.12 | 11.52 |
| 148 | 7 | 3 | 17  | 45.8  | ON 449  | 48.3 | 18.6  | 12.66 | 12.75 | 12.15 | 11.55 |
|     |   |   |     |       | OFF 458 | 51.8 | 11.2  | 12.67 | 12.75 | 12.15 | 11.55 |
| 149 | 8 | 1 | 21  | 55.5  | ON 437  | 32.8 | 8.1   | 12.62 | 12.66 | 12.86 | 11.46 |
|     |   |   |     |       | OFF 448 | 36.8 | 8.4   | 12.63 | 12.69 | 12.89 | 11.49 |
| 149 | 8 | 2 | 93  | 246.8 | ON 449  | 56.4 | 12.5  | 12.66 | 12.75 | 12.15 | 11.55 |
|     |   |   |     |       | OFF 438 | 78.2 | 28.8  | 12.63 | 12.75 | 12.15 | 11.55 |
| 149 | 8 | 3 | 18  | 47.6  | ON 397  | 82.5 | 113.3 | 12.48 | 12.75 | 12.15 | 11.55 |
|     |   |   |     |       | OFF 398 | 88.8 | 131.4 | 12.46 | 12.75 | 12.15 | 11.55 |
| 150 | 8 | 1 | 68  | 158.7 | ON 489  | 19.5 | 6.6   | 12.53 | 12.37 | 11.77 | 11.17 |
|     |   |   |     |       | OFF 428 | 29.3 | 7.5   | 12.59 | 12.61 | 12.81 | 11.41 |
| 150 | 8 | 2 | 48  | 185.8 | ON 448  | 46.5 | 9.8   | 12.66 | 12.75 | 12.15 | 11.55 |
|     |   |   |     |       | OFF 458 | 52.6 | 11.1  | 12.67 | 12.75 | 12.15 | 11.55 |
| 150 | 8 | 3 | 34  | 89.9  | ON 458  | 55.5 | 11.9  | 12.67 | 12.75 | 12.15 | 11.55 |
|     |   |   |     |       | OFF 449 | 68.6 | 13.8  | 12.66 | 12.75 | 12.15 | 11.55 |
| 151 | 8 | 1 | 153 | 484.7 | ON 438  | 28.1 | 7.2   | 12.68 | 12.68 | 12.88 | 11.48 |
|     |   |   |     |       | OFF 458 | 51.6 | 18.6  | 12.67 | 12.75 | 12.15 | 11.55 |
| 152 | 1 | 1 | 128 | 338.6 | ON 432  | 29.8 | 7.2   | 12.61 | 12.61 | 12.81 | 11.41 |
|     |   |   |     |       | OFF 458 | 48.6 | 9.7   | 12.66 | 12.75 | 12.15 | 11.55 |
| 152 | 1 | 2 | 68  | 158.7 | ON 434  | 72.5 | 22.8  | 12.61 | 12.75 | 12.15 | 11.55 |
|     |   |   |     |       | OFF 417 | 88.7 | 44.3  | 12.56 | 12.75 | 12.15 | 11.55 |
| 153 | 5 | 1 | 68  | 179.9 | ON 441  | 66.9 | 16.2  | 12.64 | 12.75 | 12.15 | 11.55 |
|     |   |   |     |       | OFF 426 | 76.7 | 28.4  | 12.59 | 12.75 | 12.15 | 11.55 |

**STELLAR-INDEX SUMMARY**

| CAMERA DATA | ET    | FILM FILTER | GRID | ASSEMBLY NO |
|-------------|-------|-------------|------|-------------|
| STELLAR     | 2.8   | 3481        | NONE | D64         |
| INDEX       | 1/500 | 3480        | W/21 | 66          |

**PERFORMANCE SUMMARY**

| OPN NO | FR | STEL FEET | INDX FEET | H    | M    | S  | Q  | LAT | LONG | OFF LAT | OFF LONG | SEC DUR |    |      |     |
|--------|----|-----------|-----------|------|------|----|----|-----|------|---------|----------|---------|----|------|-----|
| 84     | 9  | 1         | 3         | 0.38 | 0.59 | 3  | 36 | 36  | 2    | 51      | 138E     | 2       | 48 | 131E | 49  |
| 84     | 9  | 2         | 16        | 1.58 | 3.17 | 3  | 38 | 6   | 2    | 45      | 132E     | 2       | 28 | 136E | 254 |
| 85     | 9  | 1         | 2         | 0.28 | 0.48 | 4  | 59 | 46  | 2    | 76      | 76E      | 2       | 73 | 84E  | 48  |
| 85     | 9  | 2         | 15        | 1.48 | 2.97 | 5  | 8  | 19  | 2    | 44      | 189E     | 2       | 28 | 113E | 239 |
| 86     | 5  | 1         | 4         | 0.48 | 0.79 | 6  | 34 | 46  | 2    | 58      | 81E      | 2       | 54 | 83E  | 65  |
| 86     | 5  | 2         | 18        | 0.99 | 1.98 | 6  | 37 | 18  | 2    | 48      | 85E      | 2       | 37 | 89E  | 167 |
| 86     | 5  | 3         | 5         | 0.58 | 0.99 | 6  | 41 | 8   | 2    | 33      | 89E      | 2       | 28 | 98E  | 77  |
| 87     | 8  | 1         | 21        | 2.88 | 4.16 | 8  | 4  | 15  | 2    | 68      | 57E      | 2       | 37 | 66E  | 348 |
| 88     | 4  | 8         | 2         | 0.28 | 0.48 | 9  | 14 | 55  | 1    | 39      | 113W     | 1       | 42 | 113W | 47  |
| 88     | 4  | 1         | 9         | 0.89 | 1.78 | 9  | 35 | 32  | 2    | 55      | 37E      | 2       | 45 | 41E  | 153 |
| 93     | 7  | 1         | 9         | 0.89 | 1.78 | 17 | 25 | 29  | 3    | 25      | 68W      | 3       | 35 | 59W  | 151 |
| 95     | 7  | 1         | 3         | 0.38 | 0.59 | 28 | 11 | 4   | 2    | 32      | 113W     | 2       | 29 | 113W | 47  |
| 98     | 3  | 1         | 6         | 0.59 | 1.19 | 8  | 32 | 23  | 2    | 65      | 163E     | 2       | 59 | 169E | 188 |
| 100    | 3  | 1         | 18        | 0.99 | 1.98 | 3  | 35 | 53  | 2    | 52      | 127E     | 2       | 48 | 131E | 168 |
| 102    | 8  | 1         | 9         | 0.89 | 1.78 | 6  | 34 | 23  | 2    | 57      | 79E      | 2       | 47 | 84E  | 152 |
| 102    | 8  | 2         | 18        | 0.99 | 1.98 | 6  | 38 | 23  | 2    | 41      | 85E      | 2       | 31 | 87E  | 158 |
| 103    | 5  | 1         | 11        | 1.89 | 2.18 | 8  | 6  | 58  | 2    | 47      | 61E      | 2       | 35 | 64E  | 188 |
| 104    | 7  | 1         | 28        | 1.98 | 3.96 | 9  | 33 | 38  | 2    | 68      | 32E      | 2       | 39 | 48E  | 318 |
| 104    | 7  | 2         | 6         | 0.59 | 1.19 | 9  | 44 | 7   | 2    | 17      | 44E      | 2       | 11 | 45E  | 93  |
| 106    | 6  | 1         | 13        | 1.29 | 2.57 | 12 | 41 | 32  | 2    | 27      | 2W       | 2       | 13 | 8W   | 288 |
| 111    | 9  | 1         | 3         | 0.38 | 0.59 | 28 | 8  | 41  | 2    | 37      | 117W     | 2       | 34 | 116W | 48  |
| 113    | 9  | 1         | 4         | 0.48 | 0.79 | 23 | 1  | 13  | 2    | 66      | 176W     | 2       | 62 | 172W | 67  |
| 115    | 7  | 1         | 7         | 0.69 | 1.39 | 1  | 58 | 44  | 2    | 74      | 124E     | 2       | 66 | 138E | 148 |
| 116    | 7  | 1         | 11        | 1.89 | 2.18 | 3  | 35 | 1   | 2    | 58      | 126E     | 2       | 39 | 129E | 166 |
| 118    | 5  | 1         | 3         | 0.38 | 0.59 | 6  | 28 | 26  | 2    | 74      | 56E      | 2       | 71 | 63E  | 54  |
| 118    | 5  | 2         | 5         | 0.58 | 0.99 | 6  | 34 | 11  | 2    | 52      | 79E      | 2       | 47 | 81E  | 85  |
| 118    | 5  | 3         | 13        | 1.29 | 2.57 | 6  | 36 | 48  | 2    | 42      | 83E      | 2       | 28 | 86E  | 288 |
| 119    | 2  | 1         | 3         | 0.38 | 0.59 | 8  | 2  | 42  | 2    | 58      | 54E      | 2       | 55 | 56E  | 58  |

**SECRET**

|     |   |   |    |      |      |    |    |    |   |    |      |   |    |      |     |
|-----|---|---|----|------|------|----|----|----|---|----|------|---|----|------|-----|
| 119 | 2 | 2 | 5  | 0.50 | 0.99 | 8  | 4  | 27 | 2 | 51 | 57E  | 2 | 46 | 59E  | 78  |
| 120 | 1 | 1 | 16 | 1.58 | 3.17 | 9  | 32 | 5  | 2 | 60 | 30E  | 2 | 43 | 37E  | 259 |
| 127 | 9 | 1 | 2  | 0.20 | 0.40 | 20 | 7  | 31 | 2 | 35 | 118W | 2 | 33 | 118W | 39  |
| 129 | 6 | 1 | 3  | 0.30 | 0.59 | 23 | 8  | 47 | 2 | 61 | 173W | 2 | 58 | 171W | 49  |
| 130 | 4 | 1 | 7  | 0.69 | 1.39 | 0  | 26 | 43 | 2 | 75 | 141E | 2 | 68 | 156E | 125 |
| 131 | 4 | 1 | 8  | 0.79 | 1.58 | 1  | 56 | 54 | 2 | 74 | 122E | 2 | 66 | 136E | 139 |
| 133 | 4 | 1 | 12 | 1.19 | 2.38 | 5  | 5  | 8  | 2 | 42 | 104E | 2 | 28 | 106E | 201 |
| 133 | 4 | 2 | 4  | 0.40 | 0.79 | 5  | 9  | 39 | 2 | 23 | 107E | 2 | 19 | 100E | 62  |
| 134 | 9 | 1 | 21 | 2.08 | 4.16 | 6  | 32 | 54 | 2 | 50 | 78E  | 2 | 20 | 84E  | 328 |
| 136 | 3 | 1 | 15 | 1.48 | 2.97 | 9  | 30 | 20 | 2 | 59 | 29E  | 2 | 43 | 35E  | 244 |
| 142 | 4 | 1 | 3  | 0.30 | 0.59 | 10 | 34 | 11 | 2 | 40 | 99W  | 2 | 37 | 98W  | 41  |
| 143 | 8 | 1 | 3  | 0.30 | 0.59 | 20 | 4  | 32 | 2 | 30 | 121W | 2 | 35 | 120W | 46  |
| 148 | 7 | 1 | 9  | 0.89 | 1.78 | 3  | 24 | 2  | 2 | 75 | 94E  | 2 | 65 | 112E | 173 |
| 148 | 7 | 2 | 3  | 0.30 | 0.59 | 3  | 30 | 20 | 2 | 51 | 121E | 2 | 40 | 122E | 47  |
| 148 | 7 | 3 | 3  | 0.30 | 0.59 | 3  | 33 | 11 | 2 | 40 | 125E | 2 | 38 | 125E | 40  |
| 149 | 8 | 1 | 3  | 0.30 | 0.59 | 4  | 59 | 12 | 2 | 55 | 97E  | 2 | 52 | 90E  | 40  |
| 149 | 8 | 2 | 13 | 1.29 | 2.57 | 5  | 5  | 1  | 2 | 32 | 104E | 2 | 18 | 106E | 209 |
| 149 | 8 | 3 | 2  | 0.20 | 0.40 | 5  | 13 | 47 | 3 | 2  | 109E | 3 | 5  | 109E | 46  |
| 150 | 8 | 1 | 9  | 0.89 | 1.78 | 6  | 25 | 47 | 2 | 60 | 64E  | 2 | 59 | 72E  | 143 |
| 150 | 8 | 2 | 5  | 0.50 | 0.99 | 6  | 32 | 24 | 2 | 42 | 79E  | 2 | 36 | 80E  | 91  |
| 150 | 8 | 3 | 5  | 0.50 | 0.99 | 6  | 34 | 37 | 2 | 33 | 81E  | 2 | 28 | 82E  | 76  |
| 151 | 8 | 1 | 22 | 2.10 | 4.36 | 7  | 57 | 43 | 2 | 60 | 49E  | 2 | 37 | 50E  | 346 |
| 152 | 1 | 1 | 18 | 1.78 | 3.56 | 9  | 27 | 46 | 2 | 59 | 27E  | 2 | 40 | 34E  | 288 |
| 152 | 1 | 2 | 8  | 0.79 | 1.58 | 9  | 30 | 34 | 2 | 16 | 30E  | 2 | 6  | 40E  | 141 |
| 153 | 5 | 1 | 10 | 0.99 | 1.98 | 11 | 6  | 57 | 2 | 22 | 15E  | 2 | 11 | 16E  | 153 |

NOTE 1 TM DATA INDICATE NORMAL SYSTEM PERFORMANCE.  
 2 NOMINAL FILM OUTAGE WOULD OCCUR DURING THE LATTER PART OF OPERATION ON REV 153. AN ENGINEERING OPERATION ON REV 159 INDICATED COMPLETE FILM OUTAGE.

- A. 1024-2
- B. DRY
- C. FINAL PERFORMANCE ESTIMATE, PART TWO

**RATE ESTIMATE**

FWD PAN CAMERA NUMBER 172

| OPN NO | FR | R | A   | TUR/ | INST | INST    | SCAN RATE      | PCT RATE               |
|--------|----|---|-----|------|------|---------|----------------|------------------------|
|        |    |   |     | DUR  | CPS  | ANG VEL | R/SEC I/SEC    | CALIB REQD             |
| 73     | 2  | 2 | 5   | 6    | 4 ON | 1521    | 0.4147 0.03499 | 2.606 62.53 -3.8 -2.6  |
|        |    |   |     |      | OFF  | 12      | 0.4159 0.03509 | 2.613 62.71 -3.8 -2.7  |
| 81     | 0  | 0 | 4   | 6    | 4 ON | 0       | 0.2293 0.01935 | 1.441 34.50 -3.8 -76.1 |
|        |    |   |     |      | OFF  | 24      | 0.2293 0.01935 | 1.441 34.50 -3.8 -77.0 |
| 84     | 9  | 1 | 20  | 6    | 4 ON | 1498    | 0.4113 0.03471 | 2.504 62.03 -3.8 -3.4  |
|        |    |   |     |      | OFF  | 49      | 0.4170 0.03525 | 2.625 63.00 -3.8 -3.6  |
| 84     | 9  | 2 | 112 | 6    | 4 ON | 1587    | 0.4235 0.03573 | 2.661 63.06 -3.8 -3.6  |
|        |    |   |     |      | OFF  | 254     | 0.4431 0.03730 | 2.704 66.01 -3.8 -4.9  |
| 85     | 9  | 1 | 16  | 6    | 4 ON | 1092    | 0.3361 0.02036 | 2.112 50.69 -3.8 -6.4  |
|        |    |   |     |      | OFF  | 48      | 0.3450 0.02911 | 2.160 52.02 -3.8 -5.9  |
| 85     | 9  | 2 | 105 | 6    | 4 ON | 1605    | 0.4256 0.03591 | 2.674 64.17 -3.8 -3.7  |
|        |    |   |     |      | OFF  | 239     | 0.4431 0.03739 | 2.704 66.02 -3.8 -4.9  |
| 86     | 5  | 1 | 26  | 6    | 4 ON | 1397    | 0.3952 0.03334 | 2.403 59.59 -3.8 -3.5  |
|        |    |   |     |      | OFF  | 65      | 0.4054 0.03420 | 2.547 61.13 -3.8 -3.5  |
| 86     | 5  | 2 | 72  | 6    | 4 ON | 1549    | 0.4105 0.03531 | 2.630 63.11 -3.8 -3.5  |
|        |    |   |     |      | OFF  | 167     | 0.4360 0.03679 | 2.740 65.75 -3.8 -4.3  |
| 86     | 5  | 3 | 34  | 6    | 4 ON | 1771    | 0.4400 0.03713 | 2.765 66.35 -3.8 -4.5  |
|        |    |   |     |      | OFF  | 77      | 0.4432 0.03740 | 2.705 66.04 -3.8 -4.9  |
| 87     | 0  | 1 | 147 | 6    | 4 ON | 1370    | 0.4037 0.03407 | 2.537 60.00 -0.6 -0.2  |
|        |    |   |     |      | OFF  | 340     | 0.4511 0.03007 | 2.035 60.03 -0.6 -0.0  |
| 88     | 4  | 0 | 13  | 5    | 5 ON | 224     | 0.2720 0.02295 | 1.709 41.01 -0.6 6.9   |
|        |    |   |     |      | OFF  | 47      | 0.2741 0.02313 | 1.722 41.33 -0.6 6.3   |

|     |   |   |     |   |   |     |      |        |         |       |       |      |      |
|-----|---|---|-----|---|---|-----|------|--------|---------|-------|-------|------|------|
| 88  | 4 | 1 | 66  | 5 | 5 | ON  | 1461 | 0.4258 | 0.83593 | 2.675 | 64.28 | -0.6 | 1.8  |
|     |   |   |     |   |   | OFF | 153  | 0.4442 | 0.83748 | 2.791 | 66.98 | -0.6 | 0.7  |
| 93  | 7 | 1 | 61  | 5 | 5 | ON  | 2675 | 0.3761 | 0.83174 | 2.363 | 56.72 | -0.6 | 0.8  |
|     |   |   |     |   |   | OFF | 151  | 0.3527 | 0.82976 | 2.216 | 53.18 | -0.6 | 2.6  |
| 95  | 7 | 1 | 21  | 5 | 5 | ON  | 1818 | 0.4587 | 0.83878 | 2.882 | 69.17 | -0.6 | -0.8 |
|     |   |   |     |   |   | OFF | 47   | 0.4599 | 0.83881 | 2.898 | 69.35 | -0.6 | -1.1 |
| 98  | 3 | 1 | 48  | 5 | 5 | ON  | 1313 | 0.4826 | 0.83397 | 2.538 | 68.72 | -0.6 | 1.9  |
|     |   |   |     |   |   | OFF | 188  | 0.4183 | 0.83529 | 2.628 | 63.88 | -0.6 | 1.6  |
| 100 | 3 | 1 | 73  | 5 | 5 | ON  | 1537 | 0.4358 | 0.83677 | 2.738 | 65.71 | -0.6 | 1.2  |
|     |   |   |     |   |   | OFF | 168  | 0.4522 | 0.83816 | 2.841 | 68.19 | -0.6 | 0.1  |
| 102 | 8 | 1 | 65  | 5 | 5 | ON  | 1459 | 0.4254 | 0.83598 | 2.673 | 64.15 | -0.6 | 1.5  |
|     |   |   |     |   |   | OFF | 152  | 0.4439 | 0.83746 | 2.789 | 66.94 | -0.6 | 0.7  |
| 102 | 8 | 2 | 66  | 5 | 5 | ON  | 1698 | 0.4528 | 0.83814 | 2.848 | 68.16 | -0.6 | 0.2  |
|     |   |   |     |   |   | OFF | 158  | 0.4595 | 0.83877 | 2.887 | 69.29 | -0.6 | -0.8 |
| 103 | 5 | 1 | 79  | 5 | 5 | ON  | 1621 | 0.4452 | 0.83757 | 2.797 | 67.14 | -0.6 | 0.9  |
|     |   |   |     |   |   | OFF | 188  | 0.4579 | 0.83864 | 2.877 | 69.85 | -0.6 | -0.4 |
| 104 | 7 | 1 | 138 | 5 | 5 | ON  | 1427 | 0.4125 | 0.83481 | 2.592 | 62.21 | -2.5 | -0.1 |
|     |   |   |     |   |   | OFF | 318  | 0.4468 | 0.83763 | 2.882 | 67.25 | -2.5 | -2.1 |
| 104 | 7 | 2 | 41  | 5 | 5 | ON  | 2865 | 0.4478 | 0.83778 | 2.814 | 67.52 | -2.5 | -3.8 |
|     |   |   |     |   |   | OFF | 93   | 0.4428 | 0.83738 | 2.777 | 66.65 | -2.5 | -3.8 |
| 106 | 6 | 1 | 92  | 5 | 5 | ON  | 1923 | 0.4514 | 0.83889 | 2.836 | 68.87 | -2.5 | -3.2 |
|     |   |   |     |   |   | OFF | 288  | 0.4448 | 0.83746 | 2.789 | 66.95 | -2.5 | -3.8 |
| 111 | 9 | 1 | 21  | 5 | 5 | ON  | 1793 | 0.4486 | 0.83786 | 2.819 | 67.65 | -2.5 | -2.3 |
|     |   |   |     |   |   | OFF | 48   | 0.4582 | 0.83799 | 2.829 | 67.89 | -2.5 | -2.6 |
| 113 | 9 | 1 | 27  | 5 | 5 | ON  | 1358 | 0.4819 | 0.83391 | 2.525 | 68.61 | -2.5 | -0.2 |
|     |   |   |     |   |   | OFF | 67   | 0.4117 | 0.83474 | 2.587 | 62.88 | -2.5 | -0.4 |
| 115 | 7 | 1 | 55  | 5 | 5 | ON  | 1227 | 0.3888 | 0.83286 | 2.388 | 57.38 | -2.5 | -0.6 |
|     |   |   |     |   |   | OFF | 148  | 0.4829 | 0.83399 | 2.531 | 68.75 | -2.5 | -0.4 |
| 116 | 7 | 1 | 73  | 5 | 5 | ON  | 1613 | 0.4356 | 0.83676 | 2.737 | 65.69 | -2.5 | -1.1 |
|     |   |   |     |   |   | OFF | 166  | 0.4479 | 0.83779 | 2.814 | 67.54 | -2.5 | -2.3 |
| 118 | 5 | 1 | 28  | 5 | 5 | ON  | 1236 | 0.3815 | 0.83219 | 2.397 | 57.53 | -2.5 | -0.7 |
|     |   |   |     |   |   | OFF | 54   | 0.3982 | 0.83292 | 2.452 | 58.84 | -2.5 | -0.6 |
| 118 | 5 | 2 | 36  | 5 | 5 | ON  | 1581 | 0.4323 | 0.83648 | 2.716 | 65.19 | -2.5 | -1.8 |
|     |   |   |     |   |   | OFF | 85   | 0.4482 | 0.83715 | 2.766 | 66.39 | -2.5 | -1.6 |
| 118 | 5 | 3 | 93  | 5 | 5 | ON  | 1738 | 0.4457 | 0.83761 | 2.881 | 67.22 | -2.5 | -2.8 |
|     |   |   |     |   |   | OFF | 288  | 0.4513 | 0.83888 | 2.836 | 68.85 | -2.5 | -3.3 |
| 119 | 2 | 1 | 21  | 5 | 5 | ON  | 1581 | 0.4227 | 0.83566 | 2.656 | 63.74 | -2.5 | -0.7 |
|     |   |   |     |   |   | OFF | 58   | 0.4285 | 0.83615 | 2.692 | 64.61 | -2.5 | -1.8 |
| 119 | 2 | 2 | 34  | 5 | 5 | ON  | 1686 | 0.4358 | 0.83678 | 2.733 | 65.59 | -2.5 | -1.2 |
|     |   |   |     |   |   | OFF | 78   | 0.4418 | 0.83728 | 2.776 | 66.62 | -2.5 | -1.7 |
| 120 | 1 | 1 | 111 | 5 | 5 | ON  | 1474 | 0.4141 | 0.83494 | 2.682 | 62.45 | -3.7 | -1.8 |
|     |   |   |     |   |   | OFF | 259  | 0.4399 | 0.83712 | 2.764 | 66.34 | -3.7 | -3.3 |
| 127 | 9 | 1 | 17  | 5 | 5 | ON  | 1868 | 0.4456 | 0.83759 | 2.799 | 67.19 | -3.7 | -4.1 |
|     |   |   |     |   |   | OFF | 39   | 0.4468 | 0.83763 | 2.882 | 67.25 | -3.7 | -4.3 |
| 129 | 6 | 1 | 28  | 5 | 5 | ON  | 1486 | 0.4157 | 0.83588 | 2.612 | 62.69 | -3.7 | -1.8 |
|     |   |   |     |   |   | OFF | 49   | 0.4215 | 0.83557 | 2.649 | 63.56 | -3.7 | -2.1 |
| 130 | 4 | 1 | 49  | 5 | 5 | ON  | 1253 | 0.3798 | 0.83285 | 2.387 | 57.28 | -3.7 | -2.1 |
|     |   |   |     |   |   | OFF | 125  | 0.3998 | 0.83373 | 2.512 | 68.28 | -3.7 | -1.9 |
| 131 | 4 | 1 | 54  | 5 | 5 | ON  | 1275 | 0.3836 | 0.83237 | 2.418 | 57.85 | -3.7 | -2.1 |
|     |   |   |     |   |   | OFF | 139  | 0.4852 | 0.83419 | 2.546 | 61.18 | -3.7 | -1.9 |
| 133 | 4 | 1 | 88  | 5 | 5 | ON  | 1791 | 0.4432 | 0.83748 | 2.785 | 66.83 | -3.7 | -3.5 |
|     |   |   |     |   |   | OFF | 281  | 0.4452 | 0.83756 | 2.797 | 67.13 | -3.7 | -4.7 |
| 133 | 4 | 2 | 27  | 5 | 5 | ON  | 2862 | 0.4426 | 0.83734 | 2.781 | 66.74 | -3.7 | -5.8 |
|     |   |   |     |   |   | OFF | 62   | 0.4391 | 0.83785 | 2.759 | 66.22 | -3.7 | -5.1 |
| 134 | 9 | 1 | 145 | 5 | 5 | ON  | 1667 | 0.4353 | 0.83673 | 2.735 | 65.65 | -3.7 | -2.7 |
|     |   |   |     |   |   | OFF | 328  | 0.4451 | 0.83756 | 2.797 | 67.12 | -3.7 | -4.7 |
| 136 | 3 | 1 | 107 | 5 | 5 | ON  | 1538 | 0.4282 | 0.83545 | 2.648 | 63.36 | -4.2 | -2.5 |
|     |   |   |     |   |   | OFF | 244  | 0.4485 | 0.83717 | 2.768 | 66.42 | -4.2 | -3.9 |
| 142 | 4 | 1 | 17  | 5 | 5 | ON  | 1848 | 0.4428 | 0.83736 | 2.782 | 66.77 | -4.2 | -4.3 |
|     |   |   |     |   |   | OFF | 41   | 0.4435 | 0.83742 | 2.787 | 66.88 | -4.2 | -4.6 |
| 143 | 8 | 1 | 28  | 5 | 5 | ON  | 1874 | 0.4435 | 0.83742 | 2.787 | 66.88 | -4.2 | -4.5 |

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|     |   |   |     |   |   |     |      |        |         |       |       |      |      |
|-----|---|---|-----|---|---|-----|------|--------|---------|-------|-------|------|------|
| 148 | 7 | 1 | 69  | 5 | 5 | OFF | 46   | 0.4438 | 0.83745 | 2.789 | 66.93 | -4.2 | -4.8 |
|     |   |   |     |   |   | ON  | 1389 | 0.3873 | 0.83268 | 2.434 | 58.41 | -4.2 | -2.8 |
|     |   |   |     |   |   | OFF | 173  | 0.4128 | 0.83483 | 2.593 | 62.24 | -4.2 | -2.6 |
| 148 | 7 | 2 | 28  | 5 | 5 | ON  | 1695 | 0.4354 | 0.83674 | 2.736 | 65.66 | -4.2 | -3.3 |
|     |   |   |     |   |   | OFF | 47   | 0.4384 | 0.83699 | 2.754 | 66.18 | -4.2 | -3.6 |
| 148 | 7 | 3 | 17  | 5 | 5 | ON  | 1858 | 0.4432 | 0.83748 | 2.785 | 66.83 | -4.2 | -4.4 |
|     |   |   |     |   |   | OFF | 48   | 0.4437 | 0.83744 | 2.788 | 66.91 | -4.2 | -4.6 |
| 149 | 8 | 1 | 28  | 5 | 5 | ON  | 1634 | 0.4383 | 0.83631 | 2.784 | 64.89 | -4.2 | -2.9 |
|     |   |   |     |   |   | OFF | 48   | 0.4342 | 0.83663 | 2.728 | 65.47 | -4.2 | -3.2 |
| 149 | 8 | 2 | 92  | 5 | 5 | ON  | 1984 | 0.4431 | 0.83739 | 2.784 | 66.82 | -4.2 | -5.1 |
|     |   |   |     |   |   | OFF | 289  | 0.4317 | 0.83643 | 2.713 | 65.18 | -4.2 | -5.9 |
| 149 | 8 | 3 | 18  | 5 | 5 | ON  | 2589 | 0.3988 | 0.83297 | 2.455 | 58.93 | -4.2 | -6.8 |
|     |   |   |     |   |   | OFF | 46   | 0.3838 | 0.83238 | 2.411 | 57.87 | -4.2 | -5.8 |
| 150 | 8 | 1 | 59  | 5 | 5 | ON  | 1418 | 0.4231 | 0.83481 | 2.533 | 60.79 | -4.2 | -3.7 |
|     |   |   |     |   |   | OFF | 143  | 0.4216 | 0.83557 | 2.649 | 63.58 | -4.2 | -3.7 |
| 150 | 8 | 2 | 48  | 5 | 5 | ON  | 1887 | 0.4417 | 0.83727 | 2.775 | 66.61 | -4.2 | -4.4 |
|     |   |   |     |   |   | OFF | 91   | 0.4437 | 0.83744 | 2.788 | 66.91 | -4.2 | -4.8 |
| 150 | 8 | 3 | 33  | 5 | 5 | ON  | 1948 | 0.4438 | 0.83744 | 2.788 | 66.92 | -4.2 | -5.8 |
|     |   |   |     |   |   | OFF | 76   | 0.4424 | 0.83733 | 2.779 | 66.71 | -4.2 | -5.2 |
| 151 | 8 | 1 | 151 | 5 | 5 | ON  | 1568 | 0.4237 | 0.83575 | 2.662 | 63.89 | -4.2 | -2.8 |
|     |   |   |     |   |   | OFF | 346  | 0.4438 | 0.83745 | 2.789 | 66.93 | -4.2 | -4.7 |
| 152 | 1 | 1 | 127 | 5 | 5 | ON  | 1585 | 0.4255 | 0.83598 | 2.674 | 64.16 | -4.2 | -2.8 |
|     |   |   |     |   |   | OFF | 288  | 0.4434 | 0.83742 | 2.786 | 66.87 | -4.2 | -4.4 |
| 152 | 1 | 2 | 59  | 5 | 5 | ON  | 2234 | 0.4275 | 0.83687 | 2.686 | 64.47 | -4.2 | -6.8 |
|     |   |   |     |   |   | OFF | 141  | 0.4112 | 0.83478 | 2.584 | 62.81 | -4.2 | -6.8 |
| 153 | 5 | 1 | 67  | 5 | 5 | ON  | 2152 | 0.4348 | 0.83669 | 2.732 | 65.57 | -4.2 | -5.9 |
|     |   |   |     |   |   | OFF | 153  | 0.4281 | 0.83545 | 2.648 | 63.35 | -4.2 | -6.1 |

RATE ESTIMATE  
AFT PAN CAMERA NUMBER 173

| OPN NO | FR | R | A   | TUR/DUR | INST CPS | INST ANG VEL | SCAN R/SEC | RATE I/SEC | PCT CALIB | RATE REQD |       |      |       |
|--------|----|---|-----|---------|----------|--------------|------------|------------|-----------|-----------|-------|------|-------|
| 73     | 2  | 2 | 5   | 6       | 4        | ON           | 1521       | 0.4188     | 0.83534   | 2.631     | 63.16 | -2.9 | -1.5  |
|        |    |   |     |         |          | OFF          | 12         | 0.4288     | 0.83544   | 2.639     | 63.33 | -2.9 | -1.7  |
| 81     | 8  | 8 | 4   | 6       | 4        | ON           | 8          | 0.2331     | 0.81967   | 1.465     | 35.15 | -2.9 | -73.3 |
|        |    |   |     |         |          | OFF          | 24         | 0.2331     | 0.81967   | 1.465     | 35.15 | -2.9 | -75.8 |
| 84     | 9  | 1 | 28  | 6       | 4        | ON           | 1498       | 0.4154     | 0.83585   | 2.618     | 62.65 | -2.9 | -2.4  |
|        |    |   |     |         |          | OFF          | 49         | 0.4219     | 0.83568   | 2.651     | 63.62 | -2.9 | -2.6  |
| 84     | 9  | 2 | 113 | 6       | 4        | ON           | 1587       | 0.4276     | 0.83688   | 2.687     | 64.48 | -2.9 | -2.6  |
|        |    |   |     |         |          | OFF          | 254        | 0.4472     | 0.83774   | 2.818     | 67.44 | -2.9 | -3.9  |
| 85     | 9  | 1 | 16  | 6       | 4        | ON           | 1892       | 0.3481     | 0.82878   | 2.137     | 51.29 | -2.9 | -5.1  |
|        |    |   |     |         |          | OFF          | 48         | 0.3498     | 0.82945   | 2.193     | 52.63 | -2.9 | -4.7  |
| 85     | 9  | 2 | 187 | 6       | 4        | ON           | 1685       | 0.4297     | 0.83626   | 2.788     | 64.88 | -2.9 | -2.7  |
|        |    |   |     |         |          | OFF          | 239        | 0.4473     | 0.83774   | 2.811     | 67.45 | -2.9 | -3.9  |
| 86     | 5  | 1 | 26  | 6       | 4        | ON           | 1397       | 0.3993     | 0.83369   | 2.589     | 68.21 | -2.9 | -2.4  |
|        |    |   |     |         |          | OFF          | 65         | 0.4895     | 0.83455   | 2.573     | 61.75 | -2.9 | -2.5  |
| 86     | 5  | 2 | 73  | 6       | 4        | ON           | 1549       | 0.4227     | 0.83566   | 2.656     | 63.73 | -2.9 | -2.5  |
|        |    |   |     |         |          | OFF          | 167        | 0.4482     | 0.83714   | 2.766     | 66.38 | -2.9 | -3.3  |
| 86     | 5  | 3 | 35  | 6       | 4        | ON           | 1771       | 0.4442     | 0.83748   | 2.791     | 66.98 | -2.9 | -3.5  |
|        |    |   |     |         |          | OFF          | 77         | 0.4474     | 0.83775   | 2.811     | 67.47 | -2.9 | -3.9  |
| 87     | 8  | 1 | 148 | 6       | 4        | ON           | 1378       | 0.4877     | 0.83448   | 2.562     | 61.48 | 8.4  | 8.8   |
|        |    |   |     |         |          | OFF          | 348        | 0.4552     | 0.83841   | 2.868     | 68.64 | 8.4  | 8.1   |
| 88     | 4  | 8 | 13  | 5       | 5        | ON           | 224        | 0.2758     | 0.82327   | 1.733     | 41.59 | 8.4  | 8.2   |
|        |    |   |     |         |          | OFF          | 47         | 0.2779     | 0.82345   | 1.746     | 41.91 | 8.4  | 7.6   |
| 88     | 4  | 1 | 67  | 5       | 5        | ON           | 1461       | 0.4298     | 0.83626   | 2.788     | 64.81 | 8.4  | 2.7   |
|        |    |   |     |         |          | OFF          | 153        | 0.4482     | 0.83782   | 2.816     | 67.59 | 8.4  | 1.6   |
| 93     | 7  | 1 | 62  | 5       | 5        | ON           | 2675       | 0.3881     | 0.83287   | 2.388     | 57.31 | 8.4  | 1.8   |
|        |    |   |     |         |          | OFF          | 151        | 0.3566     | 0.83889   | 2.241     | 53.77 | 8.4  | 3.7   |
| 95     | 7  | 1 | 21  | 5       | 5        | ON           | 1818       | 0.4627     | 0.83985   | 2.988     | 69.78 | 8.4  | 8.1   |
|        |    |   |     |         |          | OFF          | 47         | 0.4648     | 0.83915   | 2.915     | 69.97 | 8.4  | -8.2  |
| 98     | 3  | 1 | 41  | 5       | 5        | ON           | 1313       | 0.4866     | 0.83431   | 2.555     | 61.32 | 8.4  | 2.8   |

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|     |   |   |     |   |   |         |        |         |       |       |      |      |
|-----|---|---|-----|---|---|---------|--------|---------|-------|-------|------|------|
| 188 | 3 | 1 | 74  | 5 | 5 | OFF 188 | 8.4223 | 8.83563 | 2.653 | 63.68 | 8.4  | 2.6  |
|     |   |   |     |   |   | ON 1537 | 8.4398 | 8.83711 | 2.763 | 66.32 | 8.4  | 2.1  |
|     |   |   |     |   |   | OFF 168 | 8.4563 | 8.83858 | 2.867 | 68.88 | 8.4  | 1.8  |
| 182 | 8 | 1 | 65  | 5 | 5 | ON 1459 | 8.4295 | 8.83624 | 2.698 | 64.76 | 8.4  | 2.4  |
|     |   |   |     |   |   | OFF 152 | 8.4479 | 8.83788 | 2.814 | 67.55 | 8.4  | 1.5  |
| 182 | 8 | 2 | 67  | 5 | 5 | ON 1698 | 8.4568 | 8.83848 | 2.865 | 68.77 | 8.4  | 1.8  |
|     |   |   |     |   |   | OFF 158 | 8.4636 | 8.83911 | 2.913 | 69.98 | 8.4  | 8.8  |
| 183 | 5 | 1 | 88  | 5 | 5 | ON 1621 | 8.4492 | 8.83791 | 2.823 | 67.74 | 8.4  | 1.8  |
|     |   |   |     |   |   | OFF 188 | 8.4628 | 8.83898 | 2.983 | 69.66 | 8.4  | 8.5  |
| 184 | 7 | 1 | 138 | 5 | 5 | ON 1427 | 8.4139 | 8.83493 | 2.681 | 62.42 | -2.2 | 8.3  |
|     |   |   |     |   |   | OFF 318 | 8.4472 | 8.83774 | 2.818 | 67.44 | -2.2 | -1.8 |
| 184 | 7 | 2 | 42  | 5 | 5 | ON 2865 | 8.4498 | 8.83789 | 2.821 | 67.71 | -2.2 | -3.5 |
|     |   |   |     |   |   | OFF 93  | 8.4433 | 8.83748 | 2.785 | 66.84 | -2.2 | -3.5 |
| 186 | 6 | 1 | 92  | 5 | 5 | ON 1923 | 8.4526 | 8.83819 | 2.844 | 68.25 | -2.2 | -2.9 |
|     |   |   |     |   |   | OFF 288 | 8.4452 | 8.83757 | 2.797 | 67.14 | -2.2 | -3.5 |
| 111 | 9 | 1 | 21  | 5 | 5 | ON 1793 | 8.4499 | 8.83796 | 2.827 | 67.84 | -2.2 | -2.8 |
|     |   |   |     |   |   | OFF 48  | 8.4515 | 8.83889 | 2.837 | 68.88 | -2.2 | -2.3 |
| 113 | 9 | 1 | 27  | 5 | 5 | ON 1358 | 8.4834 | 8.83484 | 2.534 | 68.83 | -2.2 | 8.1  |
|     |   |   |     |   |   | OFF 67  | 8.4131 | 8.83486 | 2.595 | 62.29 | -2.2 | -8.1 |
| 115 | 7 | 1 | 55  | 5 | 5 | ON 1227 | 8.3816 | 8.83228 | 2.397 | 57.54 | -2.2 | -8.2 |
|     |   |   |     |   |   | OFF 148 | 8.4843 | 8.83412 | 2.548 | 68.97 | -2.2 | -8.8 |
| 116 | 7 | 1 | 73  | 5 | 5 | ON 1613 | 8.4369 | 8.83687 | 2.745 | 65.89 | -2.2 | -8.8 |
|     |   |   |     |   |   | OFF 166 | 8.4491 | 8.83789 | 2.822 | 67.72 | -2.2 | -2.8 |
| 118 | 5 | 1 | 28  | 5 | 5 | ON 1236 | 8.3831 | 8.83232 | 2.487 | 57.76 | -2.2 | -8.3 |
|     |   |   |     |   |   | OFF 54  | 8.3917 | 8.83385 | 2.461 | 59.87 | -2.2 | -8.2 |
| 118 | 5 | 2 | 37  | 5 | 5 | ON 1581 | 8.4336 | 8.83659 | 2.724 | 65.39 | -2.2 | -8.7 |
|     |   |   |     |   |   | OFF 85  | 8.4415 | 8.83725 | 2.774 | 66.58 | -2.2 | -1.3 |
| 118 | 5 | 3 | 93  | 5 | 5 | ON 1738 | 8.4478 | 8.83772 | 2.889 | 67.48 | -2.2 | -1.7 |
|     |   |   |     |   |   | OFF 288 | 8.4525 | 8.83818 | 2.843 | 68.24 | -2.2 | -3.1 |
| 119 | 2 | 1 | 21  | 5 | 5 | ON 1581 | 8.4248 | 8.83578 | 2.664 | 63.94 | -2.2 | -8.3 |
|     |   |   |     |   |   | OFF 58  | 8.4298 | 8.83626 | 2.788 | 64.81 | -2.2 | -8.7 |
| 119 | 2 | 2 | 34  | 5 | 5 | ON 1686 | 8.4363 | 8.83681 | 2.741 | 65.79 | -2.2 | -8.9 |
|     |   |   |     |   |   | OFF 78  | 8.4431 | 8.83738 | 2.784 | 66.81 | -2.2 | -1.4 |
| 120 | 1 | 1 | 112 | 5 | 5 | ON 1474 | 8.4187 | 8.83533 | 2.631 | 63.14 | -2.6 | -8.7 |
|     |   |   |     |   |   | OFF 259 | 8.4446 | 8.83751 | 2.793 | 67.84 | -2.6 | -2.2 |
| 127 | 9 | 1 | 17  | 5 | 5 | ON 1868 | 8.4582 | 8.83799 | 2.829 | 67.89 | -2.6 | -3.8 |
|     |   |   |     |   |   | OFF 39  | 8.4586 | 8.83882 | 2.831 | 67.95 | -2.6 | -3.2 |
| 129 | 6 | 1 | 21  | 5 | 5 | ON 1486 | 8.4283 | 8.83546 | 2.641 | 63.38 | -2.6 | -8.7 |
|     |   |   |     |   |   | OFF 49  | 8.4261 | 8.83595 | 2.677 | 64.26 | -2.6 | -1.8 |
| 130 | 4 | 1 | 49  | 5 | 5 | ON 1253 | 8.3843 | 8.83243 | 2.415 | 57.95 | -2.6 | -8.9 |
|     |   |   |     |   |   | OFF 125 | 8.4843 | 8.83411 | 2.548 | 68.96 | -2.6 | -8.7 |
| 131 | 4 | 1 | 55  | 5 | 5 | ON 1275 | 8.3881 | 8.83275 | 2.439 | 58.53 | -2.6 | -8.9 |
|     |   |   |     |   |   | OFF 139 | 8.4897 | 8.83457 | 2.574 | 61.78 | -2.6 | -8.8 |
| 133 | 4 | 1 | 89  | 5 | 5 | ON 1791 | 8.4478 | 8.83779 | 2.814 | 67.53 | -2.6 | -2.4 |
|     |   |   |     |   |   | OFF 281 | 8.4498 | 8.83796 | 2.826 | 67.83 | -2.6 | -3.6 |
| 133 | 4 | 2 | 27  | 5 | 5 | ON 2862 | 8.4472 | 8.83773 | 2.818 | 67.44 | -2.6 | -3.9 |
|     |   |   |     |   |   | OFF 62  | 8.4438 | 8.83744 | 2.788 | 66.92 | -2.6 | -4.8 |
| 134 | 9 | 1 | 145 | 5 | 5 | ON 1667 | 8.4488 | 8.83712 | 2.764 | 66.35 | -2.6 | -1.6 |
|     |   |   |     |   |   | OFF 328 | 8.4496 | 8.83795 | 2.826 | 67.82 | -2.6 | -3.6 |
| 136 | 3 | 1 | 187 | 5 | 5 | ON 1538 | 8.4245 | 8.83582 | 2.667 | 64.81 | -3.1 | -1.5 |
|     |   |   |     |   |   | OFF 244 | 8.4449 | 8.83754 | 2.795 | 67.88 | -3.1 | -2.9 |
| 142 | 4 | 1 | 18  | 5 | 5 | ON 1848 | 8.4472 | 8.83773 | 2.818 | 67.43 | -3.1 | -3.3 |
|     |   |   |     |   |   | OFF 41  | 8.4479 | 8.83788 | 2.815 | 67.55 | -3.1 | -3.6 |
| 143 | 8 | 1 | 28  | 5 | 5 | ON 1874 | 8.4479 | 8.83779 | 2.814 | 67.54 | -3.1 | -3.5 |
|     |   |   |     |   |   | OFF 46  | 8.4482 | 8.83782 | 2.816 | 67.59 | -3.1 | -3.8 |
| 148 | 7 | 1 | 69  | 5 | 5 | ON 1389 | 8.3916 | 8.83384 | 2.461 | 59.25 | -3.1 | -1.7 |
|     |   |   |     |   |   | OFF 173 | 8.4171 | 8.83519 | 2.621 | 62.98 | -3.1 | -1.6 |
| 148 | 7 | 2 | 28  | 5 | 5 | ON 1695 | 8.4398 | 8.83711 | 2.763 | 66.32 | -3.1 | -2.3 |
|     |   |   |     |   |   | OFF 47  | 8.4428 | 8.83736 | 2.782 | 66.76 | -3.1 | -2.6 |
| 148 | 7 | 3 | 17  | 5 | 5 | ON 1858 | 8.4476 | 8.83777 | 2.812 | 67.53 | -3.1 | -3.3 |
|     |   |   |     |   |   | OFF 42  | 8.4481 | 8.83781 | 2.816 | 67.58 | -3.1 | -3.6 |

**SECRET**

**SECRET**

|     |   |   |     |   |   |     |      |        |         |       |       |      |      |
|-----|---|---|-----|---|---|-----|------|--------|---------|-------|-------|------|------|
| 149 | 8 | 1 | 21  | 5 | 5 | ON  | 1634 | 0.4347 | 0.23668 | 2.731 | 65.55 | -3.1 | -1.9 |
|     |   |   |     |   |   | OFF | 46   | 0.4386 | 0.23722 | 2.756 | 66.13 | -3.1 | -2.2 |
| 149 | 8 | 2 | 93  | 5 | 5 | ON  | 1984 | 0.4475 | 0.23776 | 2.812 | 67.49 | -3.1 | -4.1 |
|     |   |   |     |   |   | OFF | 269  | 0.4361 | 0.23682 | 2.742 | 65.76 | -3.1 | -4.9 |
| 149 | 8 | 3 | 18  | 5 | 5 | ON  | 2529 | 0.3951 | 0.23333 | 2.482 | 59.57 | -3.1 | -4.9 |
|     |   |   |     |   |   | OFF | 46   | 0.3888 | 0.23274 | 2.438 | 58.51 | -3.1 | -4.6 |
| 150 | 8 | 1 | 60  | 5 | 5 | ON  | 1410 | 0.4274 | 0.23438 | 2.568 | 61.44 | -3.1 | -2.6 |
|     |   |   |     |   |   | OFF | 143  | 0.4262 | 0.23594 | 2.676 | 64.23 | -3.1 | -2.6 |
| 150 | 8 | 2 | 40  | 5 | 5 | ON  | 1827 | 0.4461 | 0.23764 | 2.893 | 67.27 | -3.1 | -3.4 |
|     |   |   |     |   |   | OFF | 91   | 0.4481 | 0.23781 | 2.816 | 67.58 | -3.1 | -3.8 |
| 150 | 8 | 3 | 34  | 5 | 5 | ON  | 1940 | 0.4482 | 0.23782 | 2.816 | 67.58 | -3.1 | -3.9 |
|     |   |   |     |   |   | OFF | 76   | 0.4468 | 0.23778 | 2.827 | 67.37 | -3.1 | -4.1 |
| 151 | 8 | 1 | 153 | 5 | 5 | ON  | 1568 | 0.4282 | 0.23612 | 2.689 | 64.55 | -3.1 | -1.7 |
|     |   |   |     |   |   | OFF | 346  | 0.4482 | 0.23782 | 2.816 | 67.59 | -3.1 | -3.7 |
| 152 | 1 | 1 | 128 | 5 | 5 | ON  | 1585 | 0.4299 | 0.23627 | 2.721 | 64.82 | -3.1 | -1.8 |
|     |   |   |     |   |   | OFF | 288  | 0.4478 | 0.23779 | 2.814 | 67.53 | -3.1 | -3.4 |
| 152 | 1 | 2 | 60  | 5 | 5 | ON  | 2234 | 0.4319 | 0.23644 | 2.714 | 65.13 | -3.1 | -5.2 |
|     |   |   |     |   |   | OFF | 141  | 0.4155 | 0.23526 | 2.611 | 62.66 | -3.1 | -4.9 |
| 153 | 5 | 1 | 68  | 5 | 5 | ON  | 2152 | 0.4392 | 0.23786 | 2.762 | 66.23 | -3.1 | -4.6 |
|     |   |   |     |   |   | OFF | 153  | 0.4245 | 0.23581 | 2.667 | 64.81 | -3.1 | -5.2 |

**RAMP PROFILE**

R= 5 A= 5 PERIOD 3843  
 R 0.3658 A 0.2973

| TUR  | PER   | CPS    | ANG V   |
|------|-------|--------|---------|
| 000  | 3.724 | 0.2685 | 0.82423 |
| 100  | 3.711 | 0.2695 | 0.82437 |
| 200  | 3.672 | 0.2725 | 0.82464 |
| 300  | 3.686 | 0.2772 | 0.82583 |
| 400  | 3.521 | 0.2842 | 0.82569 |
| 500  | 3.422 | 0.2924 | 0.82644 |
| 600  | 3.389 | 0.3022 | 0.82734 |
| 700  | 3.191 | 0.3134 | 0.82835 |
| 800  | 3.071 | 0.3256 | 0.82945 |
| 900  | 2.952 | 0.3387 | 0.83263 |
| 1000 | 2.838 | 0.3523 | 0.83186 |
| 1100 | 2.730 | 0.3663 | 0.83313 |
| 1200 | 2.599 | 0.3848 | 0.83482 |
| 1300 | 2.484 | 0.4025 | 0.83641 |
| 1400 | 2.387 | 0.4192 | 0.83789 |
| 1500 | 2.307 | 0.4335 | 0.83922 |
| 1600 | 2.245 | 0.4455 | 0.84229 |
| 1700 | 2.202 | 0.4546 | 0.84112 |
| 1800 | 2.171 | 0.4626 | 0.84166 |
| 1900 | 2.162 | 0.4632 | 0.84188 |
| 2000 | 2.165 | 0.4622 | 0.84173 |
| 2100 | 2.186 | 0.4574 | 0.84137 |
| 2200 | 2.225 | 0.4495 | 0.84266 |
| 2300 | 2.286 | 0.4386 | 0.83967 |
| 2400 | 2.353 | 0.4252 | 0.83844 |
| 2500 | 2.443 | 0.4093 | 0.83782 |
| 2600 | 2.551 | 0.3922 | 0.83545 |
| 2700 | 2.676 | 0.3738 | 0.83382 |
| 2800 | 2.794 | 0.3578 | 0.83237 |
| 2900 | 2.926 | 0.3441 | 0.83112 |
| 3000 | 3.023 | 0.3388 | 0.82992 |
| 3100 | 3.143 | 0.3182 | 0.82878 |
| 3200 | 3.262 | 0.3066 | 0.82773 |
| 3300 | 3.377 | 0.2962 | 0.82679 |
| 3400 | 3.482 | 0.2872 | 0.82597 |
| 3500 | 3.574 | 0.2798 | 0.82531 |

**SECRET**

SECRET

|     |         |    |    |    |     |     |         |         |         |    |    |    |      |       |       |       |
|-----|---------|----|----|----|-----|-----|---------|---------|---------|----|----|----|------|-------|-------|-------|
|     | OFF     | 2  | 74 | 48 | 82  | 2E  | 738475  | 765588  | 28      | 5  | 8  | 34 | 1028 | 18499 |       |       |
| 85  | 9 2 187 | ON | 2  | 45 | 38  | 189 | 33E     | 618286  | 648695  | 28 | 5  | 8  | 19   | 1226  | 18499 |       |
|     | OFF     | 2  | 29 | 28 | 113 | 8E  | 588326  | 689696  | 28      | 5  | 12 | 18 | 1244 | 18738 |       |       |
| 86  | 5 1 26  | ON | 2  | 59 | 25  | 88  | 48E     | 664167  | 688384  | 28 | 6  | 34 | 46   | 1158  | 23686 |       |
|     | OFF     | 2  | 55 | 13 | 83  | 18E | 648281  | 671816  | 28      | 6  | 35 | 51 | 12   | 8     | 23751 |       |
| 86  | 5 2 73  | ON | 2  | 49 | 38  | 85  | 35E     | 629885  | 651982  | 28 | 6  | 37 | 18   | 1219  | 23838 |       |
|     | OFF     | 2  | 38 | 23 | 88  | 45E | 688979  | 622823  | 28      | 6  | 48 | 5  | 1235 | 24885 |       |       |
| 86  | 5 3 35  | ON | 2  | 34 | 48  | 89  | 32E     | 594489  | 616891  | 28 | 6  | 41 | 8    | 1239  | 24868 |       |
|     | OFF     | 2  | 29 | 38 | 98  | 29E | 588868  | 689421  | 28      | 6  | 42 | 17 | 1244 | 24137 |       |       |
| 87  | 8 1 148 | ON | 2  | 61 | 24  | 56  | 47E     | 671112  | 695598  | 28 | 8  | 4  | 15   | 1151  | 29855 |       |
|     | OFF     | 2  | 38 | 27 | 66  | 5E  | 688575  | 622484  | 28      | 8  | 18 | 3  | 1234 | 29483 |       |       |
| 88  | 4 8 13  | ON | 1  | 38 | 9   | 114 | 19W     | 1834381 | 1872696 | 28 | 9  | 14 | 55   | 137   | 33295 |       |
|     | OFF     | 1  | 41 | 11 | 113 | 36W | 1828687 | 1858478 | 28      | 9  | 15 | 42 | 141  | 33342 |       |       |
| 88  | 4 1 67  | ON | 2  | 56 | 21  | 37  | 17E     | 658494  | 674196  | 28 | 9  | 35 | 32   | 12    | 4     | 34532 |
|     | OFF     | 2  | 46 | 16 | 41  | 22E | 618251  | 648742  | 28      | 9  | 38 | 5  | 1223 | 34685 |       |       |
| 93  | 7 1 62  | ON | 3  | 24 | 27  | 61  | 8W      | 722912  | 749345  | 28 | 17 | 25 | 29   | 1328  | 62729 |       |
|     | OFF     | 3  | 34 | 24 | 59  | 27W | 781383  | 818836  | 28      | 17 | 28 | 8  | 1338 | 62888 |       |       |
| 95  | 7 1 21  | ON | 2  | 33 | 28  | 114 | 1W      | 591516  | 613886  | 28 | 28 | 11 | 4    | 1234  | 72664 |       |
|     | OFF     | 2  | 38 | 18 | 113 | 26W | 588318  | 689688  | 28      | 28 | 11 | 51 | 1238 | 72711 |       |       |
| 98  | 3 1 41  | ON | 2  | 66 | 49  | 162 | 38E     | 686178  | 711216  | 29 | 8  | 32 | 23   | 1122  | 1943  |       |
|     | OFF     | 2  | 68 | 38 | 168 | 19E | 668438  | 684586  | 29      | 8  | 34 | 3  | 1147 | 2843  |       |       |
| 188 | 3 1 74  | ON | 2  | 52 | 54  | 127 | 13E     | 632886  | 655844  | 29 | 3  | 35 | 53   | 12    | 4     | 12953 |
|     | OFF     | 2  | 41 | 45 | 138 | 54E | 684379  | 626358  | 29      | 3  | 38 | 41 | 1222 | 13121 |       |       |
| 182 | 8 1 65  | ON | 2  | 58 | 17  | 79  | 12E     | 649177  | 672838  | 29 | 6  | 34 | 23   | 1151  | 23663 |       |
|     | OFF     | 2  | 48 | 17 | 83  | 42E | 618516  | 641818  | 29      | 6  | 36 | 55 | 1211 | 23815 |       |       |
| 182 | 8 2 67  | ON | 2  | 42 | 29  | 85  | 26E     | 685883  | 627881  | 29 | 6  | 38 | 23   | 1228  | 23983 |       |
|     | OFF     | 2  | 32 | 27 | 87  | 39E | 598826  | 611468  | 29      | 6  | 48 | 53 | 1231 | 24853 |       |       |
| 183 | 5 1 88  | ON | 2  | 48 | 25  | 61  | 1E      | 618368  | 648855  | 29 | 8  | 6  | 58   | 1218  | 29218 |       |
|     | OFF     | 2  | 36 | 23 | 64  | 14E | 594363  | 615968  | 29      | 8  | 9  | 58 | 1226 | 29398 |       |       |
| 184 | 7 1 138 | ON | 2  | 61 | 13  | 31  | 59E     | 658262  | 682256  | 29 | 9  | 33 | 38   | 1141  | 34418 |       |
|     | OFF     | 2  | 48 | 18 | 48  | 43E | 688283  | 622818  | 29      | 9  | 38 | 48 | 1221 | 34728 |       |       |
| 184 | 7 2 42  | ON | 2  | 18 | 48  | 44  | 38E     | 588294  | 689663  | 29 | 9  | 44 | 7    | 1242  | 35847 |       |
|     | OFF     | 2  | 12 | 31 | 45  | 18E | 595296  | 616927  | 29      | 9  | 45 | 48 | 1246 | 35148 |       |       |
| 186 | 6 1 92  | ON | 2  | 28 | 48  | 2   | 13W     | 586924  | 688242  | 29 | 12 | 41 | 32   | 1232  | 45692 |       |
|     | OFF     | 2  | 14 | 38 | 8   | 13W | 592812  | 614358  | 29      | 12 | 45 | 8  | 1244 | 45988 |       |       |
| 111 | 9 1 21  | ON | 2  | 38 | 31  | 117 | 17W     | 595596  | 617238  | 29 | 28 | 8  | 41   | 1219  | 72521 |       |
|     | OFF     | 2  | 35 | 19 | 116 | 36W | 591632  | 613126  | 29      | 28 | 9  | 29 | 1223 | 72569 |       |       |
| 113 | 9 1 27  | ON | 2  | 67 | 4   | 177 | 11W     | 673687  | 698179  | 29 | 23 | 1  | 13   | 1112  | 82873 |       |
|     | OFF     | 2  | 62 | 53 | 173 | 1W  | 657586  | 681472  | 29      | 23 | 2  | 28 | 1138 | 82948 |       |       |
| 115 | 7 1 55  | ON | 2  | 74 | 57  | 121 | 53E     | 787786  | 733648  | 38 | 1  | 58 | 44   | 18    | 6     | 7124  |
|     | OFF     | 2  | 66 | 57 | 137 | 48E | 671194  | 695675  | 38      | 2  | 1  | 4  | 1111 | 7264  |       |       |
| 116 | 7 1 73  | ON | 2  | 51 | 18  | 125 | 43E     | 619815  | 641535  | 38 | 3  | 35 | 1    | 1157  | 12981 |       |
|     | OFF     | 2  | 48 | 15 | 129 | 8E  | 596483  | 618158  | 38      | 3  | 37 | 47 | 1214 | 13867 |       |       |
| 118 | 5 1 28  | ON | 2  | 74 | 58  | 53  | 55E     | 784496  | 738235  | 38 | 6  | 28 | 26   | 18    | 4     | 23386 |
|     | OFF     | 2  | 72 | 4  | 61  | 39E | 698132  | 715328  | 38      | 6  | 29 | 28 | 1835 | 23368 |       |       |
| 118 | 5 2 37  | ON | 2  | 53 | 49  | 79  | 24E     | 624322  | 647841  | 38 | 6  | 34 | 11   | 1151  | 23651 |       |
|     | OFF     | 2  | 48 | 12 | 81  | 36E | 618323  | 632517  | 38      | 6  | 35 | 36 | 12   | 2     | 23736 |       |
| 118 | 5 3 93  | ON | 2  | 43 | 26  | 83  | 3E      | 688757  | 622593  | 38 | 6  | 36 | 48   | 12    | 9     | 23888 |
|     | OFF     | 2  | 29 | 29 | 86  | 3E  | 586382  | 687679  | 38      | 6  | 48 | 16 | 1224 | 24816 |       |       |
| 119 | 2 1 21  | ON | 2  | 59 | 15  | 53  | 51E     | 639794  | 663894  | 38 | 8  | 2  | 42   | 1138  | 28962 |       |
|     | OFF     | 2  | 56 | 1  | 55  | 42E | 629862  | 652789  | 38      | 8  | 3  | 32 | 1146 | 29812 |       |       |
| 119 | 2 2 34  | ON | 2  | 52 | 21  | 57  | 24E     | 619787  | 642253  | 38 | 8  | 4  | 27   | 1154  | 29867 |       |
|     | OFF     | 2  | 47 | 9  | 59  | 19E | 687449  | 629535  | 38      | 8  | 5  | 45 | 12   | 3     | 29145 |       |
| 128 | 1 1 112 | ON | 2  | 61 | 14  | 29  | 52E     | 645582  | 669817  | 38 | 9  | 32 | 5    | 1131  | 34325 |       |
|     | OFF     | 2  | 44 | 12 | 37  | 35E | 681151  | 623881  | 38      | 9  | 36 | 24 | 12   | 6     | 34584 |       |
| 127 | 9 1 17  | ON | 2  | 36 | 29  | 118 | 54W     | 589595  | 611813  | 38 | 28 | 7  | 31   | 1211  | 72451 |       |
|     | OFF     | 2  | 33 | 51 | 118 | 22W | 587738  | 689879  | 38      | 28 | 8  | 18 | 1214 | 72498 |       |       |
| 129 | 6 1 21  | ON | 2  | 62 | 8   | 174 | 26W     | 642858  | 666273  | 38 | 23 | 8  | 47   | 1123  | 82847 |       |
|     | OFF     | 2  | 58 | 58 | 172 | 13W | 633864  | 656111  | 38      | 23 | 1  | 36 | 1132 | 82896 |       |       |
| 138 | 4 1 49  | ON | 2  | 75 | 57  | 138 | 46E     | 697944  | 723435  | 1  | 8  | 26 | 43   | 941   | 1688  |       |
|     | OFF     | 2  | 69 | 4  | 155 | 29E | 666818  | 691134  | 1       | 8  | 28 | 48 | 1858 | 172   |       |       |

CONF



SECRET

72725.167 53212.75693 72725.17133 2.21667 79 1  
33357.665 48174.37692 33357.76232 -2.21448 88 1

AU -0.25287552620 25 A1 8.9999999376310 00  
SIGMA 8.02668 NO. POINTS 13  
RATIO OF CLOCK TIME TO SYS TIME 0.1000003062370 01

ORDER FIT 2

| SYS TIME I/P | CL TIME I/P  | COMP SYS TM | DELTA ST | REV STA |
|--------------|--------------|-------------|----------|---------|
| 77929.957    | 123197.51992 | 77929.95770 | 0.02825  | 8 1     |
| 38452.145    | 152139.73992 | 38452.14652 | -2.22859 | 9 1     |
| 77824.792    | 189512.35292 | 77824.78832 | 0.02468  | 16 1    |
| 33158.697    | 231246.26392 | 33158.69760 | 0.02632  | 24 1    |
| 77923.647    | 276111.22492 | 77923.65650 | -0.02857 | 32 1    |
| 33248.947    | 317736.51592 | 33248.94520 | 0.02271  | 40 1    |
| 38653.847    | 323148.61892 | 38653.84790 | 0.02883  | 41 1    |
| 72524.187    | 356991.68392 | 72524.11880 | -2.02287 | 47 1    |
| 33217.858    | 424124.62692 | 33217.85850 | 0.02848  | 56 1    |
| 72642.779    | 443528.35792 | 72642.77850 | 0.02144  | 63 1    |
| 33342.682    | 498638.27892 | 33342.68750 | -0.02458 | 72 1    |
| 72725.187    | 53812.75692  | 72725.16992 | 0.01805  | 79 1    |
| 33357.685    | 48174.37692  | 33357.69720 | -2.01126 | 88 1    |

AU -0.25287561860 25 A1 8.999999975940 00  
A2 -0.87973442304780-13  
SIGMA 8.82648 NO. POINTS 13

CLOCK OPERATIONS

| OPN NO | FR  | H   | M  | S  | DEC | BINARY |                                |
|--------|-----|-----|----|----|-----|--------|--------------------------------|
| 73 2 1 | 39  | ON  | 11 | 5  | 51  | 497239 | 11101101000110100001111211000  |
|        |     | OFF | 11 | 7  | 26  | 497334 | 11101101001001011011011110000  |
| 81 8 0 | 4   | ON  | 23 | 4  | 36  | 3492   | 000000011010120010001000000    |
|        |     | OFF | 23 | 5  | 8   | 3516   | 00000001101011010011001100000  |
| 64 9 1 | 20  | ON  | 3  | 36 | 36  | 19813  | 000100101110010100100010000    |
|        |     | OFF | 3  | 37 | 25  | 19862  | 02201001011110001000111110000  |
| 64 9 2 | 112 | ON  | 3  | 38 | 6   | 19922  | 32201001011111010111000110000  |
|        |     | OFF | 3  | 42 | 22  | 22156  | 02001001100111000111001100000  |
| 65 9 1 | 16  | ON  | 4  | 59 | 46  | 24822  | 00010111101001110010110100000  |
|        |     | OFF | 5  | 8  | 34  | 24850  | 32001011110110010111001019000  |
| 65 9 2 | 125 | ON  | 5  | 8  | 19  | 25316  | 02201100001001001010101000000  |
|        |     | OFF | 5  | 12 | 18  | 25555  | 00001100001011110000000111000  |
| 66 5 1 | 26  | ON  | 6  | 34 | 46  | 32523  | 22201101000101110200010110000  |
|        |     | OFF | 6  | 35 | 51  | 32568  | 00001101001001011011001000000  |
| 66 5 2 | 72  | ON  | 6  | 37 | 18  | 32655  | 22201101000111000210000110000  |
|        |     | OFF | 6  | 40 | 5   | 32822  | 33001101011001001011001110000  |
| 66 5 3 | 34  | ON  | 6  | 41 | 2   | 32877  | 22001101011001001010101010000  |
|        |     | OFF | 6  | 42 | 17  | 32954  | 30001101100002010010000100000  |
| 67 8 1 | 147 | ON  | 8  | 4  | 15  | 35871  | 22100010001101011001000110000  |
|        |     | OFF | 8  | 12 | 3   | 36219  | 300100010000101010100001111000 |
| 68 4 0 | 13  | ON  | 9  | 14 | 55  | 42112  | 00010011001000000111100000000  |
|        |     | OFF | 9  | 15 | 42  | 42159  | 30010011001001100011100011000  |
| 88 4 1 | 66  | ON  | 9  | 35 | 32  | 41349  | 32010011101101101111110001000  |
|        |     | OFF | 9  | 38 | 5   | 41522  | 00010011110010100010100110000  |

DEACTIVATE / REACTIVATE

CLOCK SUMMARY

ORDER FIT 1

| SYS TIME I/P | CL TIME I/P  | COMP SYS TM | DELTA ST | REV STA |
|--------------|--------------|-------------|----------|---------|
| 72728.632    | 46219.83392  | 72728.63232 | 0.02862  | 95 1    |
| 33223.942    | 93815.15792  | 33223.94952 | -2.03658 | 104 1   |
| 72662.612    | 133251.81892 | 72662.60482 | 0.02614  | 111 1   |
| 33233.627    | 18224.82992  | 33233.63922 | -2.02125 | 120 1   |

SECRET

72568.177 219551.49398 72568.17733 3.32965 127 1  
 33116.697 266587.92591 33116.69259 2.32546 136 1  
 72337.869 385729.11298 72337.87388 -3.32385 143 1  
 32964.647 352755.89592 32964.65000 -3.32243 152 1  
 72178.423 391961.67498 72178.42333 3.32965 159 1

AD 8.2588882519D 85 A1 8.999999854979D 81  
 SIGMA 8.82363 NO. POINTS 9  
 RATIO OF CLOCK TIME TO SYS TIME 0.148888214532D 81

ORDER FIT 2

| SYS TIME I/P | CL TIME I/P  | COMP SYS TM | DELTA ST | REV | STA |
|--------------|--------------|-------------|----------|-----|-----|
| 72728.632    | 46919.83398  | 72728.63118 | 2.32186  | 95  | 1   |
| 33223.942    | 93815.15798  | 33223.94938 | -2.32633 | 124 | 1   |
| 72662.618    | 133251.81898 | 72662.62522 | 3.32582  | 111 | 1   |
| 33233.687    | 182224.82998 | 33233.68982 | -3.32181 | 123 | 1   |
| 72562.177    | 219551.42398 | 72562.17822 | -3.32322 | 127 | 1   |
| 33116.697    | 266587.92598 | 33116.69322 | 2.32474  | 136 | 1   |
| 72337.869    | 385729.11298 | 72337.87422 | -3.32421 | 143 | 1   |
| 32964.647    | 352755.89598 | 32964.64962 | -3.32168 | 152 | 1   |
| 72178.423    | 391961.67498 | 72178.42212 | 3.32184  | 159 | 1   |

AD 8.2588882265D 85 A1 8.999999885885D 83  
 A2 -3.7227922541644E-13  
 SIGMA 8.82356 NO. POINTS 9

CLOCK OPERATIONS

| OPN NO | FR  | H   | M   | S        | DEC    | BINARY                         |
|--------|-----|-----|-----|----------|--------|--------------------------------|
| 93     | 7 1 | 61  | ON  | 17 25 29 | 36928  | 000100011001100111011011000000 |
|        |     |     | OFF | 17 28 2  | 37871  | 000100011010110110100010011000 |
| 95     | 7 1 | 21  | ON  | 22 11 4  | 46855  | 0001011001010111001101011000   |
|        |     |     | OFF | 22 11 51 | 46982  | 0001011001011011011011110000   |
| 98     | 3 1 | 48  | ON  | 2 32 23  | 62534  | 0001101110100011000101110000   |
|        |     |     | OFF | 2 34 3   | 62634  | 0001101110111011100000010000   |
| 128    | 3 1 | 73  | ON  | 3 35 53  | 73545  | 0010001100010001101010010100   |
|        |     |     | OFF | 3 38 41  | 73713  | 0010001100100100010101011000   |
| 122    | 8 1 | 65  | ON  | 6 34 23  | 84255  | 001010000010110100000100011000 |
|        |     |     | OFF | 6 36 55  | 84427  | 00101000001111111100101011000  |
| 122    | 8 2 | 66  | ON  | 6 38 23  | 84494  | 0010100001001010001101011000   |
|        |     |     | OFF | 6 42 53  | 84644  | 0010100001011001000010100000   |
| 123    | 5 1 | 79  | ON  | 8 6 52   | 89881  | 00101010110100100000100101000  |
|        |     |     | OFF | 8 9 52   | 89981  | 0010101011101000000001001000   |
| 124    | 7 1 | 138 | ON  | 9 33 32  | 95881  | 00101101010011001100110101000  |
|        |     |     | OFF | 9 38 48  | 95319  | 00101101011100111001111011000  |
| 124    | 7 2 | 41  | ON  | 9 44 7   | 95638  | 0010110100110101000111110000   |
|        |     |     | OFF | 9 45 42  | 95731  | 0010110101001011110100111000   |
| 126    | 6 1 | 92  | ON  | 12 41 32 | 126283 | 0011001010101011111111110000   |
|        |     |     | OFF | 12 45 2  | 126491 | 00110010100011011011000111000  |
| 111    | 9 1 | 21  | ON  | 22 8 41  | 133112 | 0011111011110010000011000000   |
|        |     |     | OFF | 22 9 29  | 133162 | 0011111011111011000000000000   |
| 113    | 9 1 | 27  | ON  | 23 1 13  | 143464 | 0100010001010001011001000000   |
|        |     |     | OFF | 23 2 23  | 143531 | 0100010001110001101111110000   |
| 115    | 7 1 | 55  | ON  | 1 58 44  | 154115 | 0100100101111100110111011000   |
|        |     |     | OFF | 2 1 4    | 154255 | 01001001100011011111010011000  |
| 116    | 7 1 | 73  | ON  | 3 35 1   | 159892 | 0100100201111100001000100000   |
|        |     |     | OFF | 3 37 47  | 162258 | 0100100201010010010101001000   |
| 118    | 5 1 | 28  | ON  | 6 28 26  | 172297 | 01010001001101000011010101000  |
|        |     |     | OFF | 6 29 22  | 172351 | 01010001001110101100110011000  |
| 118    | 5 2 | 36  | ON  | 6 34 11  | 172642 | 0101000101011110010100101000   |
|        |     |     | OFF | 6 35 36  | 172727 | 01010001010100010110010101000  |
| 118    | 5 3 | 93  | ON  | 6 36 48  | 172799 | 01010001011100010111110011000  |
|        |     |     | OFF | 6 42 16  | 171227 | 0101000100010101111000001000   |
| 119    | 2 1 | 21  | ON  | 8 2 42   | 175953 | 010100111100110101000101000    |



|     |   |   |     |     |    |    |    |        |                                   |
|-----|---|---|-----|-----|----|----|----|--------|-----------------------------------|
| 119 | 2 | 2 | 34  | OFF | 3  | 3  | 32 | 176223 | 3131331111311331311113111333      |
|     |   |   |     | ON  | 3  | 4  | 27 | 176259 | 213133111113311331331111333       |
|     |   |   |     | OFF | 3  | 5  | 45 | 176137 | 3131331111111331331133131333      |
| 123 | 1 | 1 | 111 | ON  | 9  | 32 | 5  | 181316 | 3131331113311331331133133333      |
|     |   |   |     | OFF | 9  | 36 | 24 | 181575 | 313133113133133133111313131333    |
| 127 | 9 | 1 | 17  | ON  | 22 | 7  | 31 | 219442 | 211313331313331331313131313333    |
|     |   |   |     | OFF | 22 | 8  | 13 | 219481 | 311313331313133333311131313333    |
| 129 | 6 | 1 | 28  | ON  | 23 | 3  | 47 | 229636 | 3113131313311333113313313333      |
|     |   |   |     | OFF | 23 | 1  | 36 | 229687 | 31131311331111331113333311333     |
| 132 | 4 | 1 | 49  | ON  | 2  | 26 | 43 | 234994 | 3113133333311331113313313333      |
|     |   |   |     | OFF | 2  | 28 | 48 | 235119 | 311313333331113313333113311333    |
| 131 | 4 | 1 | 54  | ON  | 1  | 56 | 54 | 242486 | 3111331313133313311311311113333   |
|     |   |   |     | OFF | 1  | 59 | 13 | 242545 | 311133131313133113113311131333    |
| 133 | 4 | 1 | 86  | ON  | 5  | 5  | 8  | 251699 | 3111133333333333331111133311333   |
|     |   |   |     | OFF | 5  | 8  | 29 | 251987 | 3111133333331133113333331133333   |
| 133 | 4 | 2 | 27  | ON  | 5  | 9  | 39 | 251976 | 3111133333333311331133333311333   |
|     |   |   |     | OFF | 5  | 12 | 41 | 252332 | 3111133333331133113311333333333   |
| 134 | 9 | 1 | 145 | ON  | 6  | 32 | 54 | 256965 | 311113131333331111331133311333    |
|     |   |   |     | OFF | 6  | 33 | 22 | 257293 | 311113131313331111113311331333    |
| 136 | 3 | 1 | 127 | ON  | 9  | 32 | 22 | 267611 | 31111111331133113311331111333     |
|     |   |   |     | OFF | 9  | 34 | 24 | 267855 | 311111113311133113313313311333    |
| 142 | 4 | 1 | 17  | ON  | 12 | 34 | 11 | 328242 | 1333111333111133113313311333      |
|     |   |   |     | OFF | 12 | 34 | 52 | 328283 | 133311133313311113313331111333    |
| 143 | 8 | 1 | 28  | ON  | 22 | 4  | 32 | 325663 | 133313311133113311331133333333    |
|     |   |   |     | OFF | 22 | 5  | 18 | 325729 | 133313331113331331111111111333    |
| 148 | 7 | 1 | 69  | ON  | 3  | 24 | 2  | 332233 | 13311133133113311331111133133     |
|     |   |   |     | OFF | 3  | 26 | 55 | 332286 | 133111133133133333111133113333    |
| 148 | 7 | 2 | 28  | ON  | 3  | 32 | 28 | 332419 | 13311133133333133111133113333     |
|     |   |   |     | OFF | 3  | 31 | 15 | 332466 | 13311133133333333311133133333     |
| 146 | 7 | 3 | 17  | ON  | 3  | 33 | 11 | 332583 | 13311133133133111333333311333     |
|     |   |   |     | OFF | 3  | 33 | 51 | 332623 | 133111133133113313313313311333    |
| 149 | 8 | 1 | 28  | ON  | 4  | 59 | 12 | 337743 | 1331333333333333333311331333      |
|     |   |   |     | OFF | 5  | 2  | 3  | 337791 | 13313333333333333333333311333     |
| 149 | 8 | 2 | 92  | ON  | 5  | 5  | 1  | 338292 | 13313333333333333333333311333     |
|     |   |   |     | OFF | 5  | 3  | 33 | 338371 | 1331333333333333333333331331333   |
| 149 | 6 | 3 | 18  | ON  | 5  | 13 | 47 | 338618 | 1331333333333333333333331331333   |
|     |   |   |     | OFF | 5  | 14 | 33 | 338664 | 1331333333333333333333331331333   |
| 152 | 6 | 1 | 59  | ON  | 6  | 25 | 47 | 342938 | 1331333333333333333333331331333   |
|     |   |   |     | OFF | 6  | 23 | 17 | 343281 | 1331333333333333333333331331333   |
| 152 | 6 | 2 | 48  | ON  | 6  | 32 | 24 | 343335 | 1331333333333333333333331331333   |
|     |   |   |     | OFF | 6  | 33 | 55 | 343426 | 133133333333333333333333111331333 |
| 152 | 6 | 3 | 33  | ON  | 6  | 34 | 37 | 343468 | 133133333333333333333333111331333 |
|     |   |   |     | OFF | 6  | 35 | 53 | 343544 | 1331333333333333333333331331333   |
| 151 | 6 | 1 | 151 | ON  | 7  | 57 | 43 | 346434 | 133133333333333333333333111331333 |
|     |   |   |     | OFF | 8  | 3  | 29 | 348822 | 1331333333333333333333331331333   |
| 152 | 1 | 1 | 127 | ON  | 9  | 27 | 46 | 353657 | 1331333333333333333333331331333   |
|     |   |   |     | OFF | 9  | 32 | 34 | 354145 | 133133333333333333333333111331333 |
| 152 | 1 | 2 | 59  | ON  | 9  | 36 | 34 | 354326 | 1331333333333333333333331331333   |
|     |   |   |     | OFF | 9  | 42 | 55 | 354647 | 133133333333333333333333111331333 |
| 153 | 5 | 1 | 67  | ON  | 11 | 6  | 57 | 359828 | 1331333333333333333333331331333   |
|     |   |   |     | OFF | 11 | 9  | 32 | 359961 | 1331331133333333333333331331333   |

NOTE - ABOVE CLOCK DATA REFLECT ADJUSTMENTS MADE TO ORIGINAL DATA FOR DEACTIVATE / REACTIVATE ON REVS 89 AND 93

3720 3.698 2.2724 2.22445  
 3820 3.722 2.2667 2.22432

**RAMP PROFILE**

R= 6 A= 4 PERIOD 3842  
 B= 6.3523 A= 6.1113

| TUR  | PER   | CPS    | ANG V   |
|------|-------|--------|---------|
| -2   | 4.193 | 2.2355 | 2.22157 |
| 100  | 4.173 | 2.2398 | 2.22167 |
| 200  | 4.114 | 2.2431 | 2.22196 |
| 300  | 4.822 | 2.2487 | 2.22249 |
| 400  | 3.901 | 2.2563 | 2.22316 |
| 500  | 3.768 | 2.2659 | 2.22425 |
| 600  | 3.637 | 2.2773 | 2.22525 |
| 700  | 3.447 | 2.2921 | 2.22624 |
| 800  | 3.288 | 2.3042 | 2.22751 |
| 900  | 3.133 | 2.3192 | 2.22887 |
| 1000 | 2.987 | 2.3345 | 2.23028 |
| 1100 | 2.858 | 2.3529 | 2.23174 |
| 1200 | 2.687 | 2.3721 | 2.23366 |
| 1300 | 2.548 | 2.3925 | 2.23557 |
| 1400 | 2.431 | 2.4114 | 2.23721 |
| 1500 | 2.336 | 2.4261 | 2.23872 |
| 1600 | 2.263 | 2.4419 | 2.23997 |
| 1700 | 2.211 | 2.4524 | 2.24092 |
| 1800 | 2.178 | 2.4592 | 2.24153 |
| 1900 | 2.164 | 2.4622 | 2.24179 |
| 2000 | 2.172 | 2.4628 | 2.24168 |
| 2100 | 2.195 | 2.4556 | 2.24122 |
| 2200 | 2.242 | 2.4465 | 2.24033 |
| 2300 | 2.324 | 2.4342 | 2.23925 |
| 2400 | 2.392 | 2.4184 | 2.23784 |
| 2500 | 2.498 | 2.4023 | 2.23622 |
| 2600 | 2.629 | 2.3824 | 2.23441 |
| 2700 | 2.782 | 2.3594 | 2.23251 |
| 2800 | 2.931 | 2.3412 | 2.23066 |
| 2900 | 3.074 | 2.3254 | 2.22943 |
| 3000 | 3.225 | 2.3121 | 2.22822 |
| 3100 | 3.383 | 2.2956 | 2.22673 |
| 3200 | 3.543 | 2.2822 | 2.22553 |
| 3300 | 3.722 | 2.2723 | 2.22445 |
| 3400 | 3.847 | 2.2622 | 2.22351 |
| 3500 | 3.976 | 2.2515 | 2.22275 |
| 3600 | 4.281 | 2.2452 | 2.22216 |
| 3700 | 4.154 | 2.2487 | 2.22177 |
| 3800 | 4.192 | 2.2387 | 2.22159 |

**CLOCK SUMMARY**

| SYS TIME 1/P | CL TIME 1/P  | ORDER FIT | 1 | COMP SYS TM | DELTA ST | REV STA |
|--------------|--------------|-----------|---|-------------|----------|---------|
| 77989.957    | 133197.51992 |           |   | 77989.96892 | -0.00295 | 8 1     |
| 33452.145    | 152139.72992 |           |   | 38452.14882 | -0.00282 | 9 1     |
| 77824.792    | 189512.33292 |           |   | 77824.78852 | 0.00443  | 16 1    |
| 33153.627    | 231246.26392 |           |   | 33153.69692 | 0.00124  | 24 1    |
| 77923.647    | 276211.22492 |           |   | 77923.65512 | -0.00717 | 32 1    |
| 33243.947    | 317736.51392 |           |   | 33243.94352 | 0.00443  | 40 1    |
| 38653.247    | 323148.61892 |           |   | 38653.84622 | 0.00177  | 41 1    |
| 72524.127    | 356991.68392 |           |   | 72524.18912 | -0.00112 | 47 1    |
| 33217.252    | 434184.62692 |           |   | 33217.84912 | 0.00162  | 56 1    |
| 72642.779    | 443528.35792 |           |   | 72642.77772 | 0.00228  | 63 1    |
| 33342.662    | 492638.27292 |           |   | 33342.68772 | -3.00478 | 72 1    |