

| opband_key | satellite_key | freq_lower_mhz | freq_upper_mhz | freq_lower_num | freq_upper_num |
|------------|---------------|----------------|----------------|----------------|----------------|
| 3          | 2             | 30129          | 30165          | 30129          | 30165          |
| 6          | 2             | 20329          | 20365          | 20329          | 20365          |

| freq_lower_unit | freq_upper_unit | tr_mode | nature_flag |
|-----------------|-----------------|---------|-------------|
| M               | M               | R       |             |
| M               | M               | T       |             |

| condition_key | opband_key | condition_code |
|---------------|------------|----------------|
|---------------|------------|----------------|

| opband_nature | opband_key | nature_of_service | other_nature_text |
|---------------|------------|-------------------|-------------------|
| 4             |            | 3OTHR             | In Orbit Testing  |
| 7             |            | 6OTHR             | In Orbit Testing  |

| orbit_key | nongeo_key | plane_number | number_sats | inclination_angle | period |
|-----------|------------|--------------|-------------|-------------------|--------|
|-----------|------------|--------------|-------------|-------------------|--------|

| attachment key | id  | file type | document store |
|----------------|-----|-----------|----------------|
| 1433           | 104 |           | [FormatInfo]   |
| 1434           | 103 | %PDF-1.4  | %â             |
| 1623           | 104 |           | [FormatInfo]   |
| 1624           | 103 | %PDF-1.4  | %â             |
| 2006           | 104 |           | [FormatInfo]   |
| 2440           | 104 |           | [FormatInfo]   |
| 3679           | 104 |           | [FormatInfo]   |
| 5379           | 104 |           | [FormatInfo]   |

|               |
|---------------|
| pdf_bandwidth |
| 4kHz          |
| 1MHz          |

| phase_key | nongeo_key | plane_number | satellite_number | phase_angle |
|-----------|------------|--------------|------------------|-------------|
|-----------|------------|--------------|------------------|-------------|

|              |               |              |               |                 |              |
|--------------|---------------|--------------|---------------|-----------------|--------------|
| physical_key | satellite_key | mass_spcraft | mass_fuel_etc | mass_fuel_orbit | mass_spcraft |
|--------------|---------------|--------------|---------------|-----------------|--------------|

| polarization |
|--------------|
| H            |
| V            |
| L            |
| R            |

| satellite_key | filing_key | satellite_name | construction_be | construction_be | construction_en |
|---------------|------------|----------------|-----------------|-----------------|-----------------|
| 2             | 1          | SPAINSAT       |                 |                 |                 |

| construction_en | est_launch_beg | est_launch_end | est_launch_end | est_first_use_da |
|-----------------|----------------|----------------|----------------|------------------|
|                 |                |                | 2/21/2006      | 4/2/2006         |

| est first use m | expected lifetime | req construction | req construction | req launch beg | req launch end |
|-----------------|-------------------|------------------|------------------|----------------|----------------|
|                 |                   |                  |                  |                |                |

| common carrier | no transponder | no comcar trar | total bandwidth | total comcar ba | orbit type | gso |
|----------------|----------------|----------------|-----------------|-----------------|------------|-----|
| N              | 1              |                | 36              |                 | Y          |     |

| orbit_type | ngso | ttc_controlled | smeet_pfd_limits | meet_coverage | meet_emission |
|------------|------|----------------|------------------|---------------|---------------|
|            |      | Y              | n                | n             | n             |

| condition_key | satellite_key | condition_code |
|---------------|---------------|----------------|
|---------------|---------------|----------------|

| callsign | satellite_alias | itu_network_nr | fact_construction | fact_construction | fact_launch_date |
|----------|-----------------|----------------|-------------------|-------------------|------------------|
|----------|-----------------|----------------|-------------------|-------------------|------------------|

| service_area_key | satellite_key | service_area_id | assoc_stn_type | sarea_data_ref | description   |
|------------------|---------------|-----------------|----------------|----------------|---------------|
| 9                | 21            |                 | S              | Spainsat-Rx-30 | IBRX beam ser |
| 10               | 22            |                 | S              | Spainsat-Tx-20 | KATR beam se  |

| gxl_attachment | pdf_attachment | pdf_data_refer |
|----------------|----------------|----------------|
| 1433           | 1434           | SPAINSAT_IB    |
| 1623           | 1624           | SPAINSAT_KA    |

| condition_key | service_area_key | condition_code |
|---------------|------------------|----------------|
|---------------|------------------|----------------|

| service_area_g | service_area_ke | ntc_id    | adm | ntwk_org | sat_name |
|----------------|-----------------|-----------|-----|----------|----------|
| 20             | 9               | 105500093 | E   |          | SPAINSAT |
| 60             | 10              | 105500093 | E   |          | SPAINSAT |
| 1318           | 9               | 105500093 | E   |          | SPAINSAT |
| 1435           | 10              | 105500093 | E   |          | SPAINSAT |

| long_nom | n_diag |
|----------|--------|
| -30.3    | 1      |
| -30.3    | 1      |
| -30.3    | 1      |
| -30.3    | 1      |

| service_area_h | service_area_g | beam_id | emi_rcp | polar_disc | reason |
|----------------|----------------|---------|---------|------------|--------|
| 21             | 20             | IBRX    | R       |            | C      |
| 61             | 60             | KATR    | e       |            | C      |
| 1319           | 1318           | IBRX    | R       |            | C      |
| 1436           | 1435           | KATR    | E       |            | C      |

| service_area_na | area_no | num_regions | n_exrgn |
|-----------------|---------|-------------|---------|
| -2DB            | 1       | 1           | 0       |
| -2DB            | 1       | 1           | 0       |
| -7DB            | 1       | 1           | 0       |
| -7DB            | 1       | 1           | 0       |

## SERVICE\_AREA\_POINT

2/1/2006

| service_area_p | service_area_re | ppoint_no | lon      | lat     |
|----------------|-----------------|-----------|----------|---------|
| 1321           | 1320            | 1         | -89.9967 | 43.9332 |
| 1322           | 1320            | 2         | -90.2793 | 43.4453 |
| 1323           | 1320            | 3         | -90.252  | 43.0743 |
| 1324           | 1320            | 4         | -90.1602 | 42.8841 |
| 1325           | 1320            | 5         | -90.1033 | 42.7623 |
| 1326           | 1320            | 6         | -89.6106 | 42.1065 |
| 1327           | 1320            | 7         | -89.539  | 42.0305 |
| 1328           | 1320            | 8         | -89.4512 | 41.9413 |
| 1329           | 1320            | 9         | -88.8551 | 41.4041 |
| 1330           | 1320            | 10        | -88.6606 | 41.2328 |
| 1331           | 1320            | 11        | -88.3811 | 40.9802 |
| 1332           | 1320            | 12        | -88.0902 | 40.7574 |
| 1333           | 1320            | 13        | -87.6558 | 40.4596 |
| 1334           | 1320            | 14        | -87.2947 | 40.2042 |
| 1335           | 1320            | 15        | -86.7556 | 39.8097 |
| 1336           | 1320            | 16        | -86.5733 | 39.6995 |
| 1337           | 1320            | 17        | -86.5116 | 39.6624 |
| 1338           | 1320            | 18        | -86.3875 | 39.5874 |
| 1339           | 1320            | 19        | -85.7009 | 39.1616 |
| 1340           | 1320            | 20        | -85.3717 | 38.951  |
| 1341           | 1320            | 21        | -84.905  | 38.6607 |
| 1342           | 1320            | 22        | -84.1217 | 38.2205 |
| 1343           | 1320            | 23        | -83.2919 | 37.7413 |
| 1344           | 1320            | 24        | -82.7812 | 37.4634 |
| 1345           | 1320            | 25        | -82.4821 | 37.3076 |
| 1346           | 1320            | 26        | -82.0753 | 37.0924 |
| 1347           | 1320            | 27        | -81.6743 | 36.8765 |
| 1348           | 1320            | 28        | -81.3698 | 36.7225 |
| 1349           | 1320            | 29        | -80.8556 | 36.4679 |
| 1350           | 1320            | 30        | -80.2533 | 36.1866 |
| 1351           | 1320            | 31        | -80.0323 | 36.0827 |
| 1352           | 1320            | 32        | -79.8347 | 35.9893 |
| 1353           | 1320            | 33        | -79.1993 | 35.7072 |
| 1354           | 1320            | 34        | -78.5611 | 35.4307 |
| 1355           | 1320            | 35        | -78.3682 | 35.346  |
| 1356           | 1320            | 36        | -78.1584 | 35.2625 |
| 1357           | 1320            | 37        | -77.5149 | 35.0114 |
| 1358           | 1320            | 38        | -76.9752 | 34.819  |
| 1359           | 1320            | 39        | -76.6495 | 34.7056 |
| 1360           | 1320            | 40        | -76.2246 | 34.5562 |
| 1361           | 1320            | 41        | -75.7743 | 34.4143 |
| 1362           | 1320            | 42        | -75.4737 | 34.3331 |
| 1363           | 1320            | 43        | -74.8641 | 34.1713 |
| 1364           | 1320            | 44        | -74.3541 | 34.0427 |
| 1365           | 1320            | 45        | -74.0521 | 33.99   |
| 1366           | 1320            | 46        | -73.93   | 33.9705 |

## SERVICE\_AREA\_POINT

2/1/2006

| service_area_pk | service_area_ref | point_no | lon      | lat     |
|-----------------|------------------|----------|----------|---------|
| 1367            | 1320             | 47       | -73.6268 | 33.9221 |
| 1368            | 1320             | 48       | -72.9534 | 33.8195 |
| 1369            | 1320             | 49       | -72.7057 | 33.8106 |
| 1370            | 1320             | 50       | -72.3184 | 33.7971 |
| 1371            | 1320             | 51       | -71.8911 | 33.7825 |
| 1372            | 1320             | 52       | -71.4383 | 33.8252 |
| 1373            | 1320             | 53       | -70.9627 | 33.8847 |
| 1374            | 1320             | 54       | -70.6761 | 33.9466 |
| 1375            | 1320             | 55       | -70.2651 | 34.0964 |
| 1376            | 1320             | 56       | -70.0258 | 34.1893 |
| 1377            | 1320             | 57       | -69.5913 | 34.4659 |
| 1378            | 1320             | 58       | -69.3728 | 34.6451 |
| 1379            | 1320             | 59       | -69.2449 | 34.8106 |
| 1380            | 1320             | 60       | -69.008  | 35.2546 |
| 1381            | 1320             | 61       | -68.9141 | 35.587  |
| 1382            | 1320             | 62       | -68.9235 | 36.0105 |
| 1383            | 1320             | 63       | -68.9511 | 36.2374 |
| 1384            | 1320             | 64       | -69.0262 | 36.6092 |
| 1385            | 1320             | 65       | -69.1595 | 36.9266 |
| 1386            | 1320             | 66       | -69.3074 | 37.257  |
| 1387            | 1320             | 67       | -69.4948 | 37.5837 |
| 1388            | 1320             | 68       | -69.8213 | 38.0423 |
| 1389            | 1320             | 69       | -70.212  | 38.5219 |
| 1390            | 1320             | 70       | -70.454  | 38.7671 |
| 1391            | 1320             | 71       | -71.0945 | 39.3842 |
| 1392            | 1320             | 72       | -71.1474 | 39.4261 |
| 1393            | 1320             | 73       | -71.2066 | 39.4722 |
| 1394            | 1320             | 74       | -71.8645 | 39.9707 |
| 1395            | 1320             | 75       | -72.3029 | 40.2871 |
| 1396            | 1320             | 76       | -72.6344 | 40.5032 |
| 1397            | 1320             | 77       | -73.1424 | 40.8019 |
| 1398            | 1320             | 78       | -73.4515 | 40.9798 |
| 1399            | 1320             | 79       | -73.6765 | 41.1064 |
| 1400            | 1320             | 80       | -74.2891 | 41.4297 |
| 1401            | 1320             | 81       | -75.0758 | 41.8046 |
| 1402            | 1320             | 82       | -75.1666 | 41.845  |
| 1403            | 1320             | 83       | -75.2477 | 41.881  |
| 1404            | 1320             | 84       | -76.0557 | 42.2324 |
| 1405            | 1320             | 85       | -76.9506 | 42.5808 |
| 1406            | 1320             | 86       | -77.0144 | 42.605  |
| 1407            | 1320             | 87       | -77.917  | 42.9246 |
| 1408            | 1320             | 88       | -78.7789 | 43.1915 |
| 1409            | 1320             | 89       | -78.8915 | 43.2237 |
| 1410            | 1320             | 90       | -79.0272 | 43.2623 |
| 1411            | 1320             | 91       | -79.8696 | 43.4996 |
| 1412            | 1320             | 92       | -80.569  | 43.6746 |

## SERVICE\_AREA\_POINT

2/1/2006

| service_area_pc | service_area_re | point_no | lon       | lat     |
|-----------------|-----------------|----------|-----------|---------|
| 1413            | 1320            | 93       | -80.8817  | 43.7421 |
| 1414            | 1320            | 94       | -81.3336  | 43.8356 |
| 1415            | 1320            | 95       | -81.9089  | 43.9537 |
| 1416            | 1320            | 96       | -82.3136  | 44.0362 |
| 1417            | 1320            | 97       | -82.9463  | 44.1487 |
| 1418            | 1320            | 98       | -83.952   | 44.2791 |
| 1419            | 1320            | 99       | -84.0111  | 44.2868 |
| 1420            | 1320            | 100      | -85.0916  | 44.422  |
| 1421            | 1320            | 101      | -85.6539  | 44.4479 |
| 1422            | 1320            | 102      | -86.2064  | 44.4742 |
| 1423            | 1320            | 103      | -87.0628  | 44.5148 |
| 1424            | 1320            | 104      | -87.2451  | 44.5132 |
| 1425            | 1320            | 105      | -87.3367  | 44.5103 |
| 1426            | 1320            | 106      | -87.7366  | 44.4763 |
| 1427            | 1320            | 107      | -88.5137  | 44.4144 |
| 1428            | 1320            | 108      | -88.6879  | 44.4008 |
| 1429            | 1320            | 109      | -88.904   | 44.3627 |
| 1430            | 1320            | 110      | -89.8127  | 44.0473 |
| 1431            | 1320            | 111      | -89.888   | 44.0132 |
| 1432            | 1320            | 112      | -89.9967  | 43.9332 |
| 1438            | 1437            | 1        | -107.7574 | 45.4091 |
| 1439            | 1437            | 2        | -107.1816 | 44.8771 |
| 1440            | 1437            | 3        | -107.0007 | 44.8551 |
| 1441            | 1437            | 4        | -106.0718 | 44.7362 |
| 1442            | 1437            | 5        | -105.2525 | 44.6216 |
| 1443            | 1437            | 6        | -105.1382 | 44.6049 |
| 1444            | 1437            | 7        | -105.0152 | 44.5867 |
| 1445            | 1437            | 8        | -104.0328 | 44.4342 |
| 1446            | 1437            | 9        | -103.0857 | 44.2746 |
| 1447            | 1437            | 10       | -102.3209 | 44.1367 |
| 1448            | 1437            | 11       | -101.9681 | 44.0702 |
| 1449            | 1437            | 12       | -101.144  | 43.8548 |
| 1450            | 1437            | 13       | -100.9886 | 43.8011 |
| 1451            | 1437            | 14       | -100.6852 | 43.6932 |
| 1452            | 1437            | 15       | -100.0056 | 43.4372 |
| 1453            | 1437            | 16       | -99.673   | 43.3076 |
| 1454            | 1437            | 17       | -99.0427  | 43.0582 |
| 1455            | 1437            | 18       | -98.6561  | 42.9072 |
| 1456            | 1437            | 19       | -98.2407  | 42.7426 |
| 1457            | 1437            | 20       | -98.1115  | 42.6901 |
| 1458            | 1437            | 21       | -97.8577  | 42.5883 |
| 1459            | 1437            | 22       | -97.163   | 42.3115 |
| 1460            | 1437            | 23       | -96.7964  | 42.1586 |
| 1461            | 1437            | 24       | -96.2378  | 41.9158 |
| 1462            | 1437            | 25       | -95.6896  | 41.6658 |
| 1463            | 1437            | 26       | -95.4352  | 41.5458 |

## SERVICE\_AREA\_POINT

2/1/2006

| service_area_pc | service_area_re | point no | lon      | lat     |
|-----------------|-----------------|----------|----------|---------|
| 1464            | 1437            | 27       | -95.3475 | 41.5038 |
| 1465            | 1437            | 28       | -95.1698 | 41.4235 |
| 1466            | 1437            | 29       | -94.4355 | 41.1022 |
| 1467            | 1437            | 30       | -94.0316 | 40.923  |
| 1468            | 1437            | 31       | -93.5427 | 40.699  |
| 1469            | 1437            | 32       | -92.6835 | 40.2854 |
| 1470            | 1437            | 33       | -91.7989 | 39.8629 |
| 1471            | 1437            | 34       | -91.2912 | 39.6278 |
| 1472            | 1437            | 35       | -90.9346 | 39.4582 |
| 1473            | 1437            | 36       | -90.3529 | 39.1733 |
| 1474            | 1437            | 37       | -90.0869 | 39.0396 |
| 1475            | 1437            | 38       | -89.9294 | 38.9595 |
| 1476            | 1437            | 39       | -89.235  | 38.6197 |
| 1477            | 1437            | 40       | -88.5281 | 38.2851 |
| 1478            | 1437            | 41       | -88.3941 | 38.2202 |
| 1479            | 1437            | 42       | -88.1935 | 38.1222 |
| 1480            | 1437            | 43       | -87.5556 | 37.8035 |
| 1481            | 1437            | 44       | -87.1343 | 37.5932 |
| 1482            | 1437            | 45       | -86.7264 | 37.392  |
| 1483            | 1437            | 46       | -86.1656 | 37.1242 |
| 1484            | 1437            | 47       | -85.8977 | 36.9951 |
| 1485            | 1437            | 48       | -85.6981 | 36.898  |
| 1486            | 1437            | 49       | -85.0721 | 36.5878 |
| 1487            | 1437            | 50       | -84.2682 | 36.2029 |
| 1488            | 1437            | 51       | -84.1613 | 36.1509 |
| 1489            | 1437            | 52       | -83.4256 | 35.8069 |
| 1490            | 1437            | 53       | -82.7367 | 35.478  |
| 1491            | 1437            | 54       | -82.6124 | 35.4209 |
| 1492            | 1437            | 55       | -82.4721 | 35.356  |
| 1493            | 1437            | 56       | -81.7875 | 35.0418 |
| 1494            | 1437            | 57       | -81.1639 | 34.7597 |
| 1495            | 1437            | 58       | -80.9681 | 34.675  |
| 1496            | 1437            | 59       | -80.7711 | 34.5892 |
| 1497            | 1437            | 60       | -80.1391 | 34.3152 |
| 1498            | 1437            | 61       | -79.4941 | 34.0407 |
| 1499            | 1437            | 62       | -79.3146 | 33.9658 |
| 1500            | 1437            | 63       | -79.1494 | 33.8979 |
| 1501            | 1437            | 64       | -78.4808 | 33.6217 |
| 1502            | 1437            | 65       | -77.7005 | 33.3226 |
| 1503            | 1437            | 66       | -77.5976 | 33.2845 |
| 1504            | 1437            | 67       | -77.2125 | 33.1415 |
| 1505            | 1437            | 68       | -76.7869 | 32.9935 |
| 1506            | 1437            | 69       | -76.1059 | 32.7542 |
| 1507            | 1437            | 70       | -75.9326 | 32.6988 |
| 1508            | 1437            | 71       | -75.6739 | 32.6156 |
| 1509            | 1437            | 72       | -75.0563 | 32.428  |

## SERVICE\_AREA\_POINT

2/1/2006

| service_area_pc | service_area_re | point_no | lon      | lat     |
|-----------------|-----------------|----------|----------|---------|
| 1510            | 1437            | 73       | -74.6737 | 32.32   |
| 1511            | 1437            | 74       | -74.1667 | 32.1786 |
| 1512            | 1437            | 75       | -73.4175 | 32.008  |
| 1513            | 1437            | 76       | -73.2959 | 31.9824 |
| 1514            | 1437            | 77       | -73.1507 | 31.9518 |
| 1515            | 1437            | 78       | -72.3101 | 31.7878 |
| 1516            | 1437            | 79       | -71.9613 | 31.7432 |
| 1517            | 1437            | 80       | -71.3265 | 31.6619 |
| 1518            | 1437            | 81       | -70.6751 | 31.6205 |
| 1519            | 1437            | 82       | -70.2872 | 31.6088 |
| 1520            | 1437            | 83       | -69.7282 | 31.6086 |
| 1521            | 1437            | 84       | -69.4374 | 31.6346 |
| 1522            | 1437            | 85       | -69.1646 | 31.6592 |
| 1523            | 1437            | 86       | -68.5289 | 31.7494 |
| 1524            | 1437            | 87       | -68.2522 | 31.8169 |
| 1525            | 1437            | 88       | -67.8736 | 31.9157 |
| 1526            | 1437            | 89       | -67.5693 | 32.0252 |
| 1527            | 1437            | 90       | -67.1348 | 32.2318 |
| 1528            | 1437            | 91       | -66.8172 | 32.421  |
| 1529            | 1437            | 92       | -66.3492 | 32.7863 |
| 1530            | 1437            | 93       | -66.2372 | 32.9179 |
| 1531            | 1437            | 94       | -66.1341 | 33.0515 |
| 1532            | 1437            | 95       | -65.8232 | 33.5115 |
| 1533            | 1437            | 96       | -65.6727 | 33.9024 |
| 1534            | 1437            | 97       | -65.592  | 34.2103 |
| 1535            | 1437            | 98       | -65.5304 | 34.8907 |
| 1536            | 1437            | 99       | -65.5329 | 35.0051 |
| 1537            | 1437            | 100      | -65.5603 | 35.2555 |
| 1538            | 1437            | 101      | -65.6782 | 35.9087 |
| 1539            | 1437            | 102      | -65.7013 | 35.9863 |
| 1540            | 1437            | 103      | -65.7291 | 36.0637 |
| 1541            | 1437            | 104      | -66.0808 | 36.9426 |
| 1542            | 1437            | 105      | -66.2224 | 37.1913 |
| 1543            | 1437            | 106      | -66.609  | 37.8477 |
| 1544            | 1437            | 107      | -66.6911 | 37.9543 |
| 1545            | 1437            | 108      | -66.8387 | 38.1448 |
| 1546            | 1437            | 109      | -67.1849 | 38.5835 |
| 1547            | 1437            | 110      | -67.447  | 38.9009 |
| 1548            | 1437            | 111      | -67.8104 | 39.2714 |
| 1549            | 1437            | 112      | -68.1192 | 39.576  |
| 1550            | 1437            | 113      | -68.3723 | 39.8219 |
| 1551            | 1437            | 114      | -68.48   | 39.9201 |
| 1552            | 1437            | 115      | -68.7164 | 40.1277 |
| 1553            | 1437            | 116      | -69.1957 | 40.5121 |
| 1554            | 1437            | 117      | -69.4519 | 40.7136 |
| 1555            | 1437            | 118      | -69.9392 | 41.0793 |

## SERVICE\_AREA\_POINT

2/1/2006

| service_area | service_area_re | point_no | lon      | lat     |
|--------------|-----------------|----------|----------|---------|
| 1556         | 1437            | 119      | -70.4415 | 41.427  |
| 1557         | 1437            | 120      | -70.6766 | 41.5783 |
| 1558         | 1437            | 121      | -70.8015 | 41.6583 |
| 1559         | 1437            | 122      | -71.5289 | 42.1136 |
| 1560         | 1437            | 123      | -72.0391 | 42.4091 |
| 1561         | 1437            | 124      | -72.3636 | 42.5944 |
| 1562         | 1437            | 125      | -72.8211 | 42.8417 |
| 1563         | 1437            | 126      | -73.2241 | 43.0478 |
| 1564         | 1437            | 127      | -73.5411 | 43.2072 |
| 1565         | 1437            | 128      | -74.1099 | 43.471  |
| 1566         | 1437            | 129      | -74.794  | 43.7777 |
| 1567         | 1437            | 130      | -75.0204 | 43.8778 |
| 1568         | 1437            | 131      | -75.2139 | 43.9628 |
| 1569         | 1437            | 132      | -75.9406 | 44.2662 |
| 1570         | 1437            | 133      | -76.7659 | 44.5867 |
| 1571         | 1437            | 134      | -76.893  | 44.6338 |
| 1572         | 1437            | 135      | -77.0183 | 44.6779 |
| 1573         | 1437            | 136      | -77.8581 | 44.9674 |
| 1574         | 1437            | 137      | -78.7061 | 45.2469 |
| 1575         | 1437            | 138      | -78.8498 | 45.2913 |
| 1576         | 1437            | 139      | -79.0028 | 45.3385 |
| 1577         | 1437            | 140      | -79.8444 | 45.5948 |
| 1578         | 1437            | 141      | -80.6463 | 45.8232 |
| 1579         | 1437            | 142      | -80.8667 | 45.8832 |
| 1580         | 1437            | 143      | -81.1133 | 45.95   |
| 1581         | 1437            | 144      | -81.8956 | 46.1463 |
| 1582         | 1437            | 145      | -82.5708 | 46.3068 |
| 1583         | 1437            | 146      | -82.9462 | 46.3948 |
| 1584         | 1437            | 147      | -83.3931 | 46.4987 |
| 1585         | 1437            | 148      | -84.0022 | 46.631  |
| 1586         | 1437            | 149      | -84.5016 | 46.7338 |
| 1587         | 1437            | 150      | -85.0768 | 46.8385 |
| 1588         | 1437            | 151      | -85.8515 | 46.9775 |
| 1589         | 1437            | 152      | -86.1678 | 47.0338 |
| 1590         | 1437            | 153      | -86.4091 | 47.0766 |
| 1591         | 1437            | 154      | -87.2497 | 47.2245 |
| 1592         | 1437            | 155      | -88.0838 | 47.3459 |
| 1593         | 1437            | 156      | -88.3242 | 47.3767 |
| 1594         | 1437            | 157      | -88.4401 | 47.3915 |
| 1595         | 1437            | 158      | -89.4733 | 47.5239 |
| 1596         | 1437            | 159      | -90.215  | 47.6186 |
| 1597         | 1437            | 160      | -90.5966 | 47.6673 |
| 1598         | 1437            | 161      | -91.1217 | 47.7344 |
| 1599         | 1437            | 162      | -91.7228 | 47.7912 |
| 1600         | 1437            | 163      | -92.1143 | 47.8244 |
| 1601         | 1437            | 164      | -92.8535 | 47.8882 |

## SERVICE\_AREA\_POINT

2/1/2006

| service_area_p | service_area_re | point_no | lon       | lat     |
|----------------|-----------------|----------|-----------|---------|
| 1602           | 1437            | 165      | -94.0007  | 47.9898 |
| 1603           | 1437            | 166      | -95.1256  | 48.0924 |
| 1604           | 1437            | 167      | -95.9291  | 48.1431 |
| 1605           | 1437            | 168      | -96.2842  | 48.1593 |
| 1606           | 1437            | 169      | -96.8513  | 48.1871 |
| 1607           | 1437            | 170      | -97.4977  | 48.0416 |
| 1608           | 1437            | 171      | -98.5861  | 48.2125 |
| 1609           | 1437            | 172      | -99.6299  | 48.3713 |
| 1610           | 1437            | 173      | -99.8527  | 48.4045 |
| 1611           | 1437            | 174      | -100.8311 | 48.548  |
| 1612           | 1437            | 175      | -101.8228 | 48.6892 |
| 1613           | 1437            | 176      | -102.0025 | 48.7144 |
| 1614           | 1437            | 177      | -102.1852 | 48.7397 |
| 1615           | 1437            | 178      | -103.0847 | 48.8627 |
| 1616           | 1437            | 179      | -103.9707 | 48.9801 |
| 1617           | 1437            | 180      | -104.2605 | 49.0178 |
| 1618           | 1437            | 181      | -104.5573 | 49.056  |
| 1619           | 1437            | 182      | -105.2835 | 49.1478 |
| 1620           | 1437            | 183      | -105.9314 | 49.2278 |
| 1621           | 1437            | 184      | -106.1892 | 49.2591 |
| 1622           | 1437            | 185      | -106.818  | 49.1608 |

| service_area_re | service_area_he | region_no | region_name | discrete_sw | num_points |
|-----------------|-----------------|-----------|-------------|-------------|------------|
| 22              | 21              | 1         | -2DB        | N           | 35         |
| 62              | 61              | 1         | -2DB        | N           | 37         |
| 1320            | 1319            | 1         | -7.00       | N           | 112        |
| 1437            | 1436            | 1         | -7.00       | N           | 185        |

| state_code | state_name  |
|------------|-------------|
| AK         | ALASKA      |
| AL         | ALABAMA     |
| AR         | ARKANSAS    |
| AS         | AMERICAN SA |
| AZ         | ARIZONA     |
| CA         | CALIFORNIA  |
| CO         | COLORADO    |
| CT         | CONNECTICU  |
| DC         | DISTRICT OF |
| DE         | DELAWARE    |
| FL         | FLORIDA     |
| GA         | GEORGIA     |
| GU         | GUAM        |
| HI         | HAWAII      |
| IA         | IOWA        |
| ID         | IDAHO       |
| IL         | ILLINOIS    |
| IN         | INDIANA     |
| KS         | KANSAS      |
| KY         | KENTUCKY    |
| LA         | LOUISIANA   |
| MA         | MASSACHUSE  |
| MD         | MARYLAND    |
| ME         | MAINE       |
| MI         | MICHIGAN    |
| MN         | MINNESOTA   |
| MO         | MISSOURI    |
| MP         | NORTHERN M  |
| MS         | MISSISSIPPI |
| MT         | MONTANA     |
| NC         | NORTH CARO  |
| ND         | NORTH DAKO  |
| NE         | NEBRASKA    |
| NH         | NEW HAMPSH  |
| NJ         | NEW JERSEY  |
| NM         | NEW MEXICO  |
| NV         | NEVADA      |
| NY         | NEW YORK    |
| OH         | OHIO        |
| OK         | OKLAHOMA    |
| OR         | OREGON      |
| PA         | PENNSYLVANI |
| PR         | PUERTO RICO |
| RI         | RHODE ISLAN |
| SC         | SOUTH CARO  |
| SD         | SOUTH DAKO  |

| state_code | state_name   |
|------------|--------------|
| TN         | TENNESSEE    |
| TX         | TEXAS        |
| UT         | UTAH         |
| VA         | VIRGINIA     |
| VI         | VIRGIN ISLAN |
| VT         | VERMONT      |
| WA         | WASHINGTON   |
| WI         | WISCONSIN    |
| WV         | WEST VIRGINI |
| WY         | WYOMING      |

|            |
|------------|
| system_key |
| 5379       |

| transponder_key | satellite_key | transponder_id | transponder_gain | receive_channel | receive_beam |
|-----------------|---------------|----------------|------------------|-----------------|--------------|
| 16              | 21            |                | 1201             |                 | IBRX         |

| transmit channel | transmit beam |
|------------------|---------------|
| 2                | KATR          |

| condition_key | transponder_key | condition_code |
|---------------|-----------------|----------------|
|---------------|-----------------|----------------|

| tr_mode |
|---------|
| T       |
| R       |

| ttc_comm |
|----------|
| T        |
| C        |

| ttc_station_key | satellite_key | callsign | city       | county     | country_code |
|-----------------|---------------|----------|------------|------------|--------------|
| 17              | 2             | E040286  | Clarksburg | Montgomery | USA          |

| state_code | street1     | street2 | telephone    | zip_code |
|------------|-------------|---------|--------------|----------|
| MD         | 22021 COMSA |         | 240-420-8999 | 20871    |

|             |               |                |                |            |           |
|-------------|---------------|----------------|----------------|------------|-----------|
| typical_key | satellite_key | transponder_id | transponder_id | digital_id | analog_id |
|-------------|---------------|----------------|----------------|------------|-----------|

| condition_key | typical_key | condition_code |
|---------------|-------------|----------------|
|---------------|-------------|----------------|

| video_standard |
|----------------|
| HDTV           |
| NTSC           |
| PAL            |
| SECAM          |

| yes_no |
|--------|
| Y      |
| N      |

| beam point key | beam contour | point no | x       | y      |
|----------------|--------------|----------|---------|--------|
| 1627           | 1626         | 1        | -77.655 | 38.977 |
| 1629           | 1628         | 1        | -76.155 | 36.23  |
| 1630           | 1628         | 2        | -76.279 | 36.262 |
| 1631           | 1628         | 3        | -78.504 | 37.15  |
| 1632           | 1628         | 4        | -78.846 | 37.312 |
| 1633           | 1628         | 5        | -80.662 | 38.347 |
| 1634           | 1628         | 6        | -82.059 | 39.368 |
| 1635           | 1628         | 7        | -82.94  | 40.362 |
| 1636           | 1628         | 8        | -83.072 | 40.895 |
| 1637           | 1628         | 9        | -82.862 | 41.286 |
| 1638           | 1628         | 10       | -82.351 | 41.562 |
| 1639           | 1628         | 11       | -80.882 | 41.673 |
| 1640           | 1628         | 12       | -79.026 | 41.427 |
| 1641           | 1628         | 13       | -76.877 | 40.827 |
| 1642           | 1628         | 14       | -76.569 | 40.707 |
| 1643           | 1628         | 15       | -74.349 | 39.598 |
| 1644           | 1628         | 16       | -74.063 | 39.392 |
| 1645           | 1628         | 17       | -73.073 | 38.594 |
| 1646           | 1628         | 18       | -72.337 | 37.655 |
| 1647           | 1628         | 19       | -72.231 | 37.328 |
| 1648           | 1628         | 20       | -72.173 | 36.776 |
| 1649           | 1628         | 21       | -72.521 | 36.224 |
| 1650           | 1628         | 22       | -73.027 | 35.987 |
| 1651           | 1628         | 23       | -73.436 | 35.877 |
| 1652           | 1628         | 24       | -74.691 | 35.911 |
| 1653           | 1628         | 25       | -76.155 | 36.23  |
| 1655           | 1654         | 1        | -76.056 | 35.375 |
| 1656           | 1654         | 2        | -77.066 | 35.705 |
| 1657           | 1654         | 3        | -78.893 | 36.452 |
| 1658           | 1654         | 4        | -79.457 | 36.719 |
| 1659           | 1654         | 5        | -80.968 | 37.492 |
| 1660           | 1654         | 6        | -82.74  | 38.531 |
| 1661           | 1654         | 7        | -84.255 | 39.569 |
| 1662           | 1654         | 8        | -85.442 | 40.599 |
| 1663           | 1654         | 9        | -86.163 | 41.605 |
| 1664           | 1654         | 10       | -86.206 | 41.777 |
| 1665           | 1654         | 11       | -85.963 | 42.54  |
| 1666           | 1654         | 12       | -85.816 | 42.669 |
| 1667           | 1654         | 13       | -84.5   | 42.99  |
| 1668           | 1654         | 14       | -82.742 | 42.99  |
| 1669           | 1654         | 15       | -80.714 | 42.729 |
| 1670           | 1654         | 16       | -78.496 | 42.212 |
| 1671           | 1654         | 17       | -76.861 | 41.67  |
| 1672           | 1654         | 18       | -76.074 | 41.365 |
| 1673           | 1654         | 19       | -74.296 | 40.509 |
| 1674           | 1654         | 20       | -73.199 | 39.829 |

| beam_point_key | beam_contour | point_no | x       | y      |
|----------------|--------------|----------|---------|--------|
| 1675           | 1654         | 21       | -72.654 | 39.457 |
| 1676           | 1654         | 22       | -71.558 | 38.474 |
| 1677           | 1654         | 23       | -70.852 | 37.54  |
| 1678           | 1654         | 24       | -70.501 | 36.65  |
| 1679           | 1654         | 25       | -70.5   | 36.618 |
| 1680           | 1654         | 26       | -70.616 | 35.808 |
| 1681           | 1654         | 27       | -70.816 | 35.519 |
| 1682           | 1654         | 28       | -71.555 | 35.037 |
| 1683           | 1654         | 29       | -71.587 | 35.022 |
| 1684           | 1654         | 30       | -72.601 | 34.832 |
| 1685           | 1654         | 31       | -73.818 | 34.871 |
| 1686           | 1654         | 32       | -75.272 | 35.141 |
| 1687           | 1654         | 33       | -76.056 | 35.375 |
| 1689           | 1688         | 1        | -75.03  | 34.463 |
| 1690           | 1688         | 2        | -76.238 | 34.802 |
| 1691           | 1688         | 3        | -78.231 | 35.526 |
| 1692           | 1688         | 4        | -78.295 | 35.552 |
| 1693           | 1688         | 5        | -80.579 | 36.592 |
| 1694           | 1688         | 6        | -81.044 | 36.834 |
| 1695           | 1688         | 7        | -82.561 | 37.631 |
| 1696           | 1688         | 8        | -84.365 | 38.678 |
| 1697           | 1688         | 9        | -86.002 | 39.733 |
| 1698           | 1688         | 10       | -87.42  | 40.79  |
| 1699           | 1688         | 11       | -88.489 | 41.836 |
| 1700           | 1688         | 12       | -88.614 | 42.021 |
| 1701           | 1688         | 13       | -89.015 | 42.849 |
| 1702           | 1688         | 14       | -88.946 | 43.285 |
| 1703           | 1688         | 15       | -88.305 | 43.754 |
| 1704           | 1688         | 16       | -88.008 | 43.884 |
| 1705           | 1688         | 17       | -86.346 | 44.074 |
| 1706           | 1688         | 18       | -84.327 | 43.999 |
| 1707           | 1688         | 19       | -82.124 | 43.716 |
| 1708           | 1688         | 20       | -79.799 | 43.226 |
| 1709           | 1688         | 21       | -78.155 | 42.746 |
| 1710           | 1688         | 22       | -77.359 | 42.491 |
| 1711           | 1688         | 23       | -74.935 | 41.497 |
| 1712           | 1688         | 24       | -74.759 | 41.412 |
| 1713           | 1688         | 25       | -72.907 | 40.391 |
| 1714           | 1688         | 26       | -71.658 | 39.497 |
| 1715           | 1688         | 27       | -71.48  | 39.362 |
| 1716           | 1688         | 28       | -70.474 | 38.389 |
| 1717           | 1688         | 29       | -69.798 | 37.461 |
| 1718           | 1688         | 30       | -69.517 | 36.82  |
| 1719           | 1688         | 31       | -69.416 | 36.57  |
| 1720           | 1688         | 32       | -69.353 | 35.717 |
| 1721           | 1688         | 33       | -69.513 | 35.261 |

| beam_point key | beam_contour | point no | x       | y      |
|----------------|--------------|----------|---------|--------|
| 1722           | 1688         | 34       | -69.763 | 34.91  |
| 1723           | 1688         | 35       | -70.145 | 34.583 |
| 1724           | 1688         | 36       | -71.006 | 34.225 |
| 1725           | 1688         | 37       | -71.242 | 34.188 |
| 1726           | 1688         | 38       | -72.031 | 34.076 |
| 1727           | 1688         | 39       | -73.222 | 34.116 |
| 1728           | 1688         | 40       | -74.604 | 34.348 |
| 1729           | 1688         | 41       | -75.03  | 34.463 |
| 1731           | 1730         | 1        | -77.161 | 34.625 |
| 1732           | 1730         | 2        | -77.476 | 34.736 |
| 1733           | 1730         | 3        | -79.755 | 35.67  |
| 1734           | 1730         | 4        | -79.776 | 35.68  |
| 1735           | 1730         | 5        | -81.91  | 36.705 |
| 1736           | 1730         | 6        | -83.439 | 37.52  |
| 1737           | 1730         | 7        | -83.878 | 37.747 |
| 1738           | 1730         | 8        | -85.753 | 38.805 |
| 1739           | 1730         | 9        | -87.52  | 39.877 |
| 1740           | 1730         | 10       | -89.139 | 40.959 |
| 1741           | 1730         | 11       | -89.947 | 41.61  |
| 1742           | 1730         | 12       | -90.508 | 42.04  |
| 1743           | 1730         | 13       | -91.53  | 43.109 |
| 1744           | 1730         | 14       | -91.729 | 43.529 |
| 1745           | 1730         | 15       | -91.716 | 44.112 |
| 1746           | 1730         | 16       | -91.447 | 44.455 |
| 1747           | 1730         | 17       | -90.049 | 44.878 |
| 1748           | 1730         | 18       | -89.671 | 44.897 |
| 1749           | 1730         | 19       | -88.068 | 44.981 |
| 1750           | 1730         | 20       | -85.792 | 44.849 |
| 1751           | 1730         | 21       | -83.396 | 44.536 |
| 1752           | 1730         | 22       | -80.93  | 44.041 |
| 1753           | 1730         | 23       | -80.648 | 43.967 |
| 1754           | 1730         | 24       | -78.425 | 43.356 |
| 1755           | 1730         | 25       | -76.222 | 42.567 |
| 1756           | 1730         | 26       | -75.839 | 42.412 |
| 1757           | 1730         | 27       | -73.665 | 41.387 |
| 1758           | 1730         | 28       | -73.092 | 41.06  |
| 1759           | 1730         | 29       | -71.86  | 40.304 |
| 1760           | 1730         | 30       | -70.564 | 39.289 |
| 1761           | 1730         | 31       | -69.632 | 38.325 |
| 1762           | 1730         | 32       | -68.981 | 37.4   |
| 1763           | 1730         | 33       | -68.579 | 36.51  |
| 1764           | 1730         | 34       | -68.441 | 35.653 |
| 1765           | 1730         | 35       | -68.486 | 35.353 |
| 1766           | 1730         | 36       | -68.651 | 34.833 |
| 1767           | 1730         | 37       | -68.943 | 34.421 |
| 1768           | 1730         | 38       | -69.403 | 34.06  |

| beam_point_key | beam_contour | point_no | x       | y      |
|----------------|--------------|----------|---------|--------|
| 1769           | 1730         | 39       | -69.673 | 33.893 |
| 1770           | 1730         | 40       | -70.569 | 33.599 |
| 1771           | 1730         | 41       | -71.604 | 33.486 |
| 1772           | 1730         | 42       | -72.776 | 33.528 |
| 1773           | 1730         | 43       | -74.107 | 33.731 |
| 1774           | 1730         | 44       | -75.646 | 34.118 |
| 1775           | 1730         | 45       | -77.161 | 34.625 |
| 1777           | 1776         | 1        | -75.514 | 33.677 |
| 1778           | 1776         | 2        | -76.915 | 34.12  |
| 1779           | 1776         | 3        | -78.538 | 34.733 |
| 1780           | 1776         | 4        | -79     | 34.92  |
| 1781           | 1776         | 5        | -80.928 | 35.766 |
| 1782           | 1776         | 6        | -81.831 | 36.209 |
| 1783           | 1776         | 7        | -83.041 | 36.802 |
| 1784           | 1776         | 8        | -85.028 | 37.85  |
| 1785           | 1776         | 9        | -86.954 | 38.917 |
| 1786           | 1776         | 10       | -88.846 | 40.004 |
| 1787           | 1776         | 11       | -90.684 | 41.112 |
| 1788           | 1776         | 12       | -92.383 | 42.231 |
| 1789           | 1776         | 13       | -93.802 | 43.339 |
| 1790           | 1776         | 14       | -93.814 | 43.348 |
| 1791           | 1776         | 15       | -94.707 | 44.433 |
| 1792           | 1776         | 16       | -94.772 | 44.738 |
| 1793           | 1776         | 17       | -94.106 | 45.378 |
| 1794           | 1776         | 18       | -93.96  | 45.459 |
| 1795           | 1776         | 19       | -92.135 | 45.772 |
| 1796           | 1776         | 20       | -89.721 | 45.767 |
| 1797           | 1776         | 21       | -87.147 | 45.572 |
| 1798           | 1776         | 22       | -84.553 | 45.229 |
| 1799           | 1776         | 23       | -81.97  | 44.743 |
| 1800           | 1776         | 24       | -79.362 | 44.071 |
| 1801           | 1776         | 25       | -78.341 | 43.742 |
| 1802           | 1776         | 26       | -76.734 | 43.187 |
| 1803           | 1776         | 27       | -74.929 | 42.449 |
| 1804           | 1776         | 28       | -74.073 | 42.042 |
| 1805           | 1776         | 29       | -72.672 | 41.301 |
| 1806           | 1776         | 30       | -71.158 | 40.32  |
| 1807           | 1776         | 31       | -71.035 | 40.236 |
| 1808           | 1776         | 32       | -69.812 | 39.23  |
| 1809           | 1776         | 33       | -68.927 | 38.271 |
| 1810           | 1776         | 34       | -68.299 | 37.35  |
| 1811           | 1776         | 35       | -67.902 | 36.462 |
| 1812           | 1776         | 36       | -67.797 | 35.931 |
| 1813           | 1776         | 37       | -67.737 | 35.604 |
| 1814           | 1776         | 38       | -67.835 | 34.777 |
| 1815           | 1776         | 39       | -67.943 | 34.524 |

| beam_point_key | beam_contour | point_no | x        | y      |
|----------------|--------------|----------|----------|--------|
| 1816           | 1776         | 40       | -68.329  | 33.988 |
| 1817           | 1776         | 41       | -68.532  | 33.788 |
| 1818           | 1776         | 42       | -69.313  | 33.346 |
| 1819           | 1776         | 43       | -69.608  | 33.261 |
| 1820           | 1776         | 44       | -70.223  | 33.086 |
| 1821           | 1776         | 45       | -71.255  | 32.986 |
| 1822           | 1776         | 46       | -72.411  | 33.03  |
| 1823           | 1776         | 47       | -73.711  | 33.219 |
| 1824           | 1776         | 48       | -75.196  | 33.577 |
| 1825           | 1776         | 49       | -75.514  | 33.677 |
| 1827           | 1826         | 1        | -106.939 | 48.302 |
| 1828           | 1826         | 2        | -104.428 | 48.158 |
| 1829           | 1826         | 3        | -98.308  | 47.811 |
| 1830           | 1826         | 4        | -94.97   | 47.564 |
| 1831           | 1826         | 5        | -94.18   | 47.53  |
| 1832           | 1826         | 6        | -90.617  | 47.175 |
| 1833           | 1826         | 7        | -88.159  | 46.8   |
| 1834           | 1826         | 8        | -87.251  | 46.671 |
| 1835           | 1826         | 9        | -84.245  | 46.131 |
| 1836           | 1826         | 10       | -81.351  | 45.456 |
| 1837           | 1826         | 11       | -79.284  | 44.836 |
| 1838           | 1826         | 12       | -78.506  | 44.598 |
| 1839           | 1826         | 13       | -75.811  | 43.626 |
| 1840           | 1826         | 14       | -75.413  | 43.467 |
| 1841           | 1826         | 15       | -73.154  | 42.438 |
| 1842           | 1826         | 16       | -72.79   | 42.26  |
| 1843           | 1826         | 17       | -70.899  | 41.152 |
| 1844           | 1826         | 18       | -70.269  | 40.692 |
| 1845           | 1826         | 19       | -69.47   | 40.111 |
| 1846           | 1826         | 20       | -68.401  | 39.122 |
| 1847           | 1826         | 21       | -67.613  | 38.174 |
| 1848           | 1826         | 22       | -67.035  | 37.26  |
| 1849           | 1826         | 23       | -66.643  | 36.374 |
| 1850           | 1826         | 24       | -66.456  | 35.517 |
| 1851           | 1826         | 25       | -66.456  | 35.49  |
| 1852           | 1826         | 26       | -66.429  | 34.683 |
| 1853           | 1826         | 27       | -66.615  | 34.059 |
| 1854           | 1826         | 28       | -66.685  | 33.88  |
| 1855           | 1826         | 29       | -67.134  | 33.208 |
| 1856           | 1826         | 30       | -67.248  | 33.106 |
| 1857           | 1826         | 31       | -67.827  | 32.645 |
| 1858           | 1826         | 32       | -68.494  | 32.386 |
| 1859           | 1826         | 33       | -68.666  | 32.313 |
| 1860           | 1826         | 34       | -69.593  | 32.11  |
| 1861           | 1826         | 35       | -70.627  | 32.048 |
| 1862           | 1826         | 36       | -71.761  | 32.101 |

| beam_point_key | beam_contour | point_no | x         | y       |
|----------------|--------------|----------|-----------|---------|
| 1863           | 1826         | 37       | -73.01    | 32.271  |
| 1864           | 1826         | 38       | -74.404   | 32.576  |
| 1865           | 1826         | 39       | -75.358   | 32.854  |
| 1866           | 1826         | 40       | -75.979   | 33.028  |
| 1867           | 1826         | 41       | -77.785   | 33.639  |
| 1868           | 1826         | 42       | -78.468   | 33.9    |
| 1869           | 1826         | 43       | -79.974   | 34.502  |
| 1870           | 1826         | 44       | -80.973   | 34.927  |
| 1871           | 1826         | 45       | -82.962   | 35.859  |
| 1872           | 1826         | 46       | -83.175   | 35.954  |
| 1873           | 1826         | 47       | -85.346   | 37.003  |
| 1874           | 1826         | 48       | -87.394   | 38.065  |
| 1875           | 1826         | 49       | -89.469   | 39.153  |
| 1876           | 1826         | 50       | -91.674   | 40.28   |
| 1877           | 1826         | 51       | -94.075   | 41.454  |
| 1878           | 1826         | 52       | -96.726   | 42.682  |
| 1879           | 1826         | 53       | -99.732   | 43.98   |
| 1880           | 1826         | 54       | -101.282  | 44.639  |
| 1881           | 1826         | 55       | -103.724  | 45.422  |
| 1882           | 1826         | 56       | -107.444  | 46.302  |
| 1884           | 1883         | 1        | -106.2319 | 51.5747 |
| 1885           | 1883         | 2        | -104.6302 | 51.388  |
| 1886           | 1883         | 3        | -103.0311 | 51.1797 |
| 1887           | 1883         | 4        | -101.4352 | 50.948  |
| 1888           | 1883         | 5        | -99.843   | 50.6923 |
| 1889           | 1883         | 6        | -98.2548  | 50.413  |
| 1890           | 1883         | 7        | -96.6709  | 50.1101 |
| 1891           | 1883         | 8        | -95.0923  | 49.7808 |
| 1892           | 1883         | 9        | -93.5062  | 49.4896 |
| 1893           | 1883         | 10       | -91.9234  | 49.1807 |
| 1894           | 1883         | 11       | -90.3455  | 48.8481 |
| 1895           | 1883         | 12       | -88.7765  | 48.4761 |
| 1896           | 1883         | 13       | -87.2199  | 48.0546 |
| 1897           | 1883         | 14       | -85.6675  | 47.6182 |
| 1898           | 1883         | 15       | -84.0962  | 47.2563 |
| 1899           | 1883         | 16       | -82.5291  | 46.8759 |
| 1900           | 1883         | 17       | -80.9757  | 46.444  |
| 1901           | 1883         | 18       | -79.449   | 45.9244 |
| 1902           | 1883         | 19       | -77.9185  | 45.4163 |
| 1903           | 1883         | 20       | -76.4044  | 44.8615 |
| 1904           | 1883         | 21       | -74.8943  | 44.2957 |
| 1905           | 1883         | 22       | -73.3813  | 43.7377 |
| 1906           | 1883         | 23       | -71.8885  | 43.1285 |
| 1907           | 1883         | 24       | -70.4462  | 42.4088 |
| 1908           | 1883         | 25       | -69.0591  | 41.5901 |
| 1909           | 1883         | 26       | -67.8538  | 40.5203 |

| beam_point_key | beam_contour | point_no | x         | y       |
|----------------|--------------|----------|-----------|---------|
| 1910           | 1883         | 27       | -66.7593  | 39.3357 |
| 1911           | 1883         | 28       | -65.8476  | 38.0127 |
| 1912           | 1883         | 29       | -65.1958  | 36.5379 |
| 1913           | 1883         | 30       | -64.8295  | 34.9722 |
| 1914           | 1883         | 31       | -64.9484  | 33.3722 |
| 1915           | 1883         | 32       | -65.7464  | 31.9796 |
| 1916           | 1883         | 33       | -67.0239  | 31.0364 |
| 1917           | 1883         | 34       | -68.6225  | 30.8493 |
| 1918           | 1883         | 35       | -70.2332  | 30.8565 |
| 1919           | 1883         | 36       | -71.8307  | 31.0756 |
| 1920           | 1883         | 37       | -73.4186  | 31.356  |
| 1921           | 1883         | 38       | -74.9844  | 31.7405 |
| 1922           | 1883         | 39       | -76.5248  | 32.2171 |
| 1923           | 1883         | 40       | -78.071   | 32.6753 |
| 1924           | 1883         | 41       | -79.5982  | 33.1927 |
| 1925           | 1883         | 42       | -81.1104  | 33.7525 |
| 1926           | 1883         | 43       | -82.6148  | 34.3333 |
| 1927           | 1883         | 44       | -84.1069  | 34.9449 |
| 1928           | 1883         | 45       | -85.5705  | 35.621  |
| 1929           | 1883         | 46       | -86.9964  | 36.3736 |
| 1930           | 1883         | 47       | -88.491   | 36.9786 |
| 1931           | 1883         | 48       | -89.9786  | 37.5985 |
| 1932           | 1883         | 49       | -91.421   | 38.3196 |
| 1933           | 1883         | 50       | -92.8671  | 39.0333 |
| 1934           | 1883         | 51       | -94.3266  | 39.719  |
| 1935           | 1883         | 52       | -95.8097  | 40.352  |
| 1936           | 1883         | 53       | -97.3093  | 40.9444 |
| 1937           | 1883         | 54       | -98.8339  | 41.47   |
| 1938           | 1883         | 55       | -100.3669 | 41.9705 |
| 1939           | 1883         | 56       | -101.9251 | 42.3838 |
| 1940           | 1883         | 57       | -103.5    | 42.73   |
| 1941           | 1883         | 58       | -105.08   | 43.0529 |
| 1942           | 1883         | 59       | -106.6647 | 43.3516 |
| 1943           | 1883         | 60       | -108.2535 | 43.6276 |
| 1945           | 1944         | 1        | -106.6578 | 50.1701 |
| 1946           | 1944         | 2        | -105.1136 | 50.016  |
| 1947           | 1944         | 3        | -103.5717 | 49.841  |
| 1948           | 1944         | 4        | -102.0287 | 49.676  |
| 1949           | 1944         | 5        | -100.485  | 49.5163 |
| 1950           | 1944         | 6        | -98.9438  | 49.3349 |
| 1951           | 1944         | 7        | -97.4053  | 49.1322 |
| 1952           | 1944         | 8        | -95.8697  | 48.9079 |
| 1953           | 1944         | 9        | -94.3383  | 48.6576 |
| 1954           | 1944         | 10       | -92.8088  | 48.3945 |
| 1955           | 1944         | 11       | -91.2742  | 48.1641 |
| 1956           | 1944         | 12       | -89.7429  | 47.9123 |

## BEAM\_POINT

2/1/2006

| beam_point_key | beam_contour | point_no | x         | y       |
|----------------|--------------|----------|-----------|---------|
| 1957           | 1944         | 13       | -88.2155  | 47.6381 |
| 1958           | 1944         | 14       | -86.6923  | 47.3413 |
| 1959           | 1944         | 15       | -85.1759  | 47.0114 |
| 1960           | 1944         | 16       | -83.6655  | 46.6552 |
| 1961           | 1944         | 17       | -82.1669  | 46.2524 |
| 1962           | 1944         | 18       | -80.6709  | 45.84   |
| 1963           | 1944         | 19       | -79.1871  | 45.3867 |
| 1964           | 1944         | 20       | -77.7216  | 44.8764 |
| 1965           | 1944         | 21       | -76.2632  | 44.3459 |
| 1966           | 1944         | 22       | -74.8124  | 43.7953 |
| 1967           | 1944         | 23       | -73.3845  | 43.188  |
| 1968           | 1944         | 24       | -71.9951  | 42.4963 |
| 1969           | 1944         | 25       | -70.6427  | 41.7373 |
| 1970           | 1944         | 26       | -69.3603  | 40.8654 |
| 1971           | 1944         | 27       | -68.1724  | 39.8668 |
| 1972           | 1944         | 28       | -67.1083  | 38.7386 |
| 1973           | 1944         | 29       | -66.2559  | 37.4443 |
| 1974           | 1944         | 30       | -65.714   | 35.9941 |
| 1975           | 1944         | 31       | -65.5141  | 34.4654 |
| 1976           | 1944         | 32       | -66.0466  | 33.0206 |
| 1977           | 1944         | 33       | -67.1498  | 31.9511 |
| 1978           | 1944         | 34       | -68.6266  | 31.4921 |
| 1979           | 1944         | 35       | -70.1702  | 31.3579 |
| 1980           | 1944         | 36       | -71.7167  | 31.4813 |
| 1981           | 1944         | 37       | -73.2415  | 31.7674 |
| 1982           | 1944         | 38       | -74.7495  | 32.1339 |
| 1983           | 1944         | 39       | -76.2425  | 32.556  |
| 1984           | 1944         | 40       | -77.7162  | 33.0415 |
| 1985           | 1944         | 41       | -79.176   | 33.5682 |
| 1986           | 1944         | 42       | -80.6176  | 34.1426 |
| 1987           | 1944         | 43       | -82.0464  | 34.7483 |
| 1988           | 1944         | 44       | -83.4613  | 35.3849 |
| 1989           | 1944         | 45       | -84.8615  | 36.0538 |
| 1990           | 1944         | 46       | -86.2681  | 36.7095 |
| 1991           | 1944         | 47       | -87.6734  | 37.3674 |
| 1992           | 1944         | 48       | -89.0577  | 38.0688 |
| 1993           | 1944         | 49       | -90.4437  | 38.7667 |
| 1994           | 1944         | 50       | -91.8386  | 39.4468 |
| 1995           | 1944         | 51       | -93.2461  | 40.1004 |
| 1996           | 1944         | 52       | -94.6671  | 40.724  |
| 1997           | 1944         | 53       | -96.1031  | 41.3123 |
| 1998           | 1944         | 54       | -97.5513  | 41.8697 |
| 1999           | 1944         | 55       | -99.0192  | 42.3733 |
| 2000           | 1944         | 56       | -100.4953 | 42.8521 |
| 2001           | 1944         | 57       | -101.9863 | 43.2811 |
| 2002           | 1944         | 58       | -103.5007 | 43.6201 |

| beam_point_key | beam_contour | point_no | x         | y       |
|----------------|--------------|----------|-----------|---------|
| 2003           | 1944         | 59       | -105.0203 | 43.9345 |
| 2004           | 1944         | 60       | -106.5446 | 44.2257 |
| 2005           | 1944         | 61       | -108.0726 | 44.4967 |
| 2009           | 2008         | 1        | -76.869   | 38.64   |
| 2011           | 2010         | 1        | -77.487   | 35.761  |
| 2012           | 2010         | 2        | -79.453   | 36.632  |
| 2013           | 2010         | 3        | -80.078   | 36.937  |
| 2014           | 2010         | 4        | -82.157   | 38.1    |
| 2015           | 2010         | 5        | -83.946   | 39.267  |
| 2016           | 2010         | 6        | -85.373   | 40.429  |
| 2017           | 2010         | 7        | -86.323   | 41.572  |
| 2018           | 2010         | 8        | -86.403   | 41.824  |
| 2019           | 2010         | 9        | -86.207   | 42.635  |
| 2020           | 2010         | 10       | -85.975   | 42.832  |
| 2021           | 2010         | 11       | -84.494   | 43.197  |
| 2022           | 2010         | 12       | -82.514   | 43.194  |
| 2023           | 2010         | 13       | -80.197   | 42.862  |
| 2024           | 2010         | 14       | -77.654   | 42.203  |
| 2025           | 2010         | 15       | -76.197   | 41.679  |
| 2026           | 2010         | 16       | -74.85    | 41.095  |
| 2027           | 2010         | 17       | -73.525   | 40.395  |
| 2028           | 2010         | 18       | -71.83    | 39.231  |
| 2029           | 2010         | 19       | -70.86    | 38.28   |
| 2030           | 2010         | 20       | -70.728   | 38.143  |
| 2031           | 2010         | 21       | -70.637   | 38.003  |
| 2032           | 2010         | 22       | -70.104   | 37.114  |
| 2033           | 2010         | 23       | -69.931   | 36.138  |
| 2034           | 2010         | 24       | -70.088   | 35.582  |
| 2035           | 2010         | 25       | -70.362   | 35.221  |
| 2036           | 2010         | 26       | -70.848   | 34.886  |
| 2037           | 2010         | 27       | -71.919   | 34.602  |
| 2038           | 2010         | 28       | -73.233   | 34.605  |
| 2039           | 2010         | 29       | -74.824   | 34.889  |
| 2040           | 2010         | 30       | -76.778   | 35.485  |
| 2041           | 2010         | 31       | -77.487   | 35.761  |
| 2043           | 2042         | 1        | -75.13    | 33.709  |
| 2044           | 2042         | 2        | -75.253   | 33.741  |
| 2045           | 2042         | 3        | -77.273   | 34.427  |
| 2046           | 2042         | 4        | -78.438   | 34.89   |
| 2047           | 2042         | 5        | -79.862   | 35.508  |
| 2048           | 2042         | 6        | -81.038   | 36.051  |
| 2049           | 2042         | 7        | -83.367   | 37.219  |
| 2050           | 2042         | 8        | -84.077   | 37.614  |
| 2051           | 2042         | 9        | -85.54    | 38.404  |
| 2052           | 2042         | 10       | -87.605   | 39.61   |
| 2053           | 2042         | 11       | -89.552   | 40.835  |