

## USN support of COSMO SkyMed-2 (FM#2) from Alaska

COSMO SkyMed-2 (FM#2) is the second in a series of a 4 spacecraft family earth imaging satellites. COSMO-SkyMed-2 launches from Vandenberg Air force Base, California on a Boeing Delta-II launch vehicle. Nominal lift-off time is scheduled for: **December 6<sup>th</sup>, 2007 at 00:20:00 UTC**. The launch window remains open until 00:33:00 UTC. All analysis is based on a nominal launch at 00:20:00 UTC.

The spacecraft is a Low Earth Orbiting (LEO) in a Sun-synchronous repeating track orbit with a nominal 4:00am local time equator crossing. This orbit allows a nominal 10 visibilities over the USN Alaska station every day. Each spacecraft contact is on the order of 11 minutes (mean time) each.

The mission consists of a maximum of 77 passes taken from the USN tracking station in Alaska. Not all passes will be taken. The following list contains all possible contacts:

### Facility-Alaska-Sensor-13m-To-Satellite-FM#2: Access Summary Report

#### 13m-To-FM#2

| Access | Start Time (UTCG)       | Stop Time (UTCG)        | Duration (sec) |
|--------|-------------------------|-------------------------|----------------|
| 1      | 6 Dec 2007 02:20:30.540 | 6 Dec 2007 02:30:01.050 | 570.510        |
| 2      | 6 Dec 2007 03:56:29.347 | 6 Dec 2007 04:09:03.123 | 753.776        |
| 3      | 6 Dec 2007 05:32:47.660 | 6 Dec 2007 05:45:38.982 | 771.322        |
| 4      | 6 Dec 2007 07:09:00.691 | 6 Dec 2007 07:20:30.825 | 690.134        |
| 5      | 6 Dec 2007 08:44:45.200 | 6 Dec 2007 08:54:25.774 | 580.574        |
| 6      | 6 Dec 2007 10:19:29.857 | 6 Dec 2007 10:28:37.428 | 547.572        |
| 7      | 6 Dec 2007 11:53:23.644 | 6 Dec 2007 12:03:54.021 | 630.377        |
| 8      | 6 Dec 2007 13:27:38.195 | 6 Dec 2007 13:39:55.817 | 737.622        |
| 9      | 6 Dec 2007 15:03:15.163 | 6 Dec 2007 15:16:13.770 | 778.607        |
| 10     | 6 Dec 2007 16:40:54.161 | 6 Dec 2007 16:52:27.261 | 693.100        |
| 11     | 6 Dec 2007 18:21:41.424 | 6 Dec 2007 18:27:48.593 | 367.168        |
| 12     | 7 Dec 2007 02:38:22.999 | 7 Dec 2007 02:48:46.131 | 623.132        |
| 13     | 7 Dec 2007 04:14:28.757 | 7 Dec 2007 04:27:16.127 | 767.369        |
| 14     | 7 Dec 2007 05:50:47.559 | 7 Dec 2007 06:03:29.727 | 762.168        |
| 15     | 7 Dec 2007 07:26:57.366 | 7 Dec 2007 07:38:06.564 | 669.198        |
| 16     | 7 Dec 2007 09:02:33.000 | 7 Dec 2007 09:11:58.468 | 565.468        |
| 17     | 7 Dec 2007 10:37:05.024 | 7 Dec 2007 10:46:20.881 | 555.857        |
| 18     | 7 Dec 2007 12:10:56.691 | 7 Dec 2007 12:21:48.511 | 651.820        |
| 19     | 7 Dec 2007 13:45:22.986 | 7 Dec 2007 13:57:55.123 | 752.136        |
| 20     | 7 Dec 2007 15:21:19.974 | 7 Dec 2007 15:34:13.788 | 773.814        |
| 21     | 7 Dec 2007 16:59:26.643 | 7 Dec 2007 17:10:23.525 | 656.882        |
| 22     | 7 Dec 2007 18:41:21.102 | 7 Dec 2007 18:45:05.468 | 224.366        |
| 23     | 8 Dec 2007 01:21:23.991 | 8 Dec 2007 01:25:47.274 | 263.282        |
| 24     | 8 Dec 2007 02:56:17.904 | 8 Dec 2007 03:07:23.887 | 665.983        |
| 25     | 8 Dec 2007 04:32:28.591 | 8 Dec 2007 04:45:24.509 | 775.918        |
| 26     | 8 Dec 2007 06:08:47.196 | 8 Dec 2007 06:21:17.116 | 749.921        |
| 27     | 8 Dec 2007 07:44:52.935 | 8 Dec 2007 07:55:40.678 | 647.743        |

|    |                          |                          |         |
|----|--------------------------|--------------------------|---------|
| 28 | 8 Dec 2007 09:20:18.452  | 8 Dec 2007 09:29:32.411  | 553.959 |
| 29 | 8 Dec 2007 10:54:38.649  | 8 Dec 2007 11:04:06.885  | 568.236 |
| 30 | 8 Dec 2007 12:28:31.100  | 8 Dec 2007 12:39:44.384  | 673.284 |
| 31 | 8 Dec 2007 14:03:11.051  | 8 Dec 2007 14:15:54.893  | 763.843 |
| 32 | 8 Dec 2007 15:39:29.301  | 8 Dec 2007 15:52:13.617  | 764.316 |
| 33 | 8 Dec 2007 17:18:05.855  | 8 Dec 2007 17:28:18.050  | 612.195 |
| 34 | 9 Dec 2007 01:38:47.788  | 9 Dec 2007 01:45:19.028  | 391.240 |
| 35 | 9 Dec 2007 03:14:14.517  | 9 Dec 2007 03:25:55.172  | 700.655 |
| 36 | 9 Dec 2007 04:50:28.701  | 9 Dec 2007 05:03:28.527  | 779.825 |
| 37 | 9 Dec 2007 06:26:46.459  | 9 Dec 2007 06:39:01.380  | 734.921 |
| 38 | 9 Dec 2007 08:02:47.176  | 9 Dec 2007 08:13:13.639  | 626.463 |
| 39 | 9 Dec 2007 09:38:01.441  | 9 Dec 2007 09:47:08.102  | 546.661 |
| 40 | 9 Dec 2007 11:12:11.241  | 9 Dec 2007 11:21:55.303  | 584.062 |
| 41 | 9 Dec 2007 12:46:07.328  | 9 Dec 2007 12:57:41.426  | 694.098 |
| 42 | 9 Dec 2007 14:21:02.637  | 9 Dec 2007 14:33:54.994  | 772.358 |
| 43 | 9 Dec 2007 15:57:43.409  | 9 Dec 2007 16:10:13.086  | 749.678 |
| 44 | 9 Dec 2007 17:36:52.735  | 9 Dec 2007 17:46:10.049  | 557.314 |
| 45 | 10 Dec 2007 01:56:27.816 | 10 Dec 2007 02:04:29.202 | 481.386 |
| 46 | 10 Dec 2007 03:32:12.385 | 10 Dec 2007 03:44:20.598 | 728.213 |
| 47 | 10 Dec 2007 05:08:28.957 | 10 Dec 2007 05:21:28.428 | 779.471 |
| 48 | 10 Dec 2007 06:44:45.202 | 10 Dec 2007 06:56:42.812 | 717.611 |
| 49 | 10 Dec 2007 08:20:39.851 | 10 Dec 2007 08:30:45.960 | 606.109 |
| 50 | 10 Dec 2007 09:55:41.949 | 10 Dec 2007 10:04:45.954 | 544.005 |
| 51 | 10 Dec 2007 11:29:43.368 | 10 Dec 2007 11:39:45.916 | 602.548 |
| 52 | 10 Dec 2007 13:03:45.779 | 10 Dec 2007 13:15:39.437 | 713.658 |
| 53 | 10 Dec 2007 14:38:57.976 | 10 Dec 2007 14:51:55.312 | 777.336 |
| 54 | 10 Dec 2007 16:16:02.594 | 10 Dec 2007 16:28:12.030 | 729.437 |
| 55 | 10 Dec 2007 17:55:48.814 | 10 Dec 2007 18:03:58.132 | 489.317 |
| 56 | 11 Dec 2007 02:14:15.190 | 11 Dec 2007 02:23:26.799 | 551.609 |
| 57 | 11 Dec 2007 03:50:11.177 | 11 Dec 2007 04:02:40.641 | 749.463 |
| 58 | 11 Dec 2007 05:26:29.236 | 11 Dec 2007 05:39:24.416 | 775.180 |
| 59 | 11 Dec 2007 07:02:43.276 | 11 Dec 2007 07:14:21.723 | 698.447 |
| 60 | 11 Dec 2007 08:38:30.712 | 11 Dec 2007 08:48:18.192 | 587.480 |
| 61 | 11 Dec 2007 10:13:20.094 | 11 Dec 2007 10:22:26.245 | 546.152 |
| 62 | 11 Dec 2007 11:47:15.613 | 11 Dec 2007 11:57:38.494 | 622.881 |
| 63 | 11 Dec 2007 13:21:26.819 | 11 Dec 2007 13:33:38.247 | 731.428 |
| 64 | 11 Dec 2007 14:56:57.288 | 11 Dec 2007 15:09:55.731 | 778.443 |
| 65 | 11 Dec 2007 16:34:27.220 | 11 Dec 2007 16:46:10.200 | 702.980 |
| 66 | 11 Dec 2007 18:14:57.002 | 11 Dec 2007 18:21:39.547 | 402.545 |
| 67 | 12 Dec 2007 02:32:06.834 | 12 Dec 2007 02:42:15.037 | 608.203 |
| 68 | 12 Dec 2007 04:08:10.641 | 12 Dec 2007 04:20:55.649 | 765.008 |
| 69 | 12 Dec 2007 05:44:29.426 | 12 Dec 2007 05:57:16.730 | 767.304 |
| 70 | 12 Dec 2007 07:20:40.510 | 12 Dec 2007 07:31:58.458 | 677.949 |
| 71 | 12 Dec 2007 08:56:19.502 | 12 Dec 2007 09:05:50.911 | 571.410 |
| 72 | 12 Dec 2007 10:30:56.139 | 12 Dec 2007 10:40:09.112 | 552.973 |
| 73 | 12 Dec 2007 12:04:48.529 | 12 Dec 2007 12:15:32.784 | 644.255 |
| 74 | 12 Dec 2007 13:39:10.750 | 12 Dec 2007 13:51:37.702 | 746.952 |
| 75 | 12 Dec 2007 15:15:00.799 | 12 Dec 2007 15:27:56.132 | 775.333 |
| 76 | 12 Dec 2007 16:52:57.736 | 12 Dec 2007 17:04:07.285 | 669.549 |
| 77 | 12 Dec 2007 18:34:24.953 | 12 Dec 2007 18:39:06.753 | 281.799 |

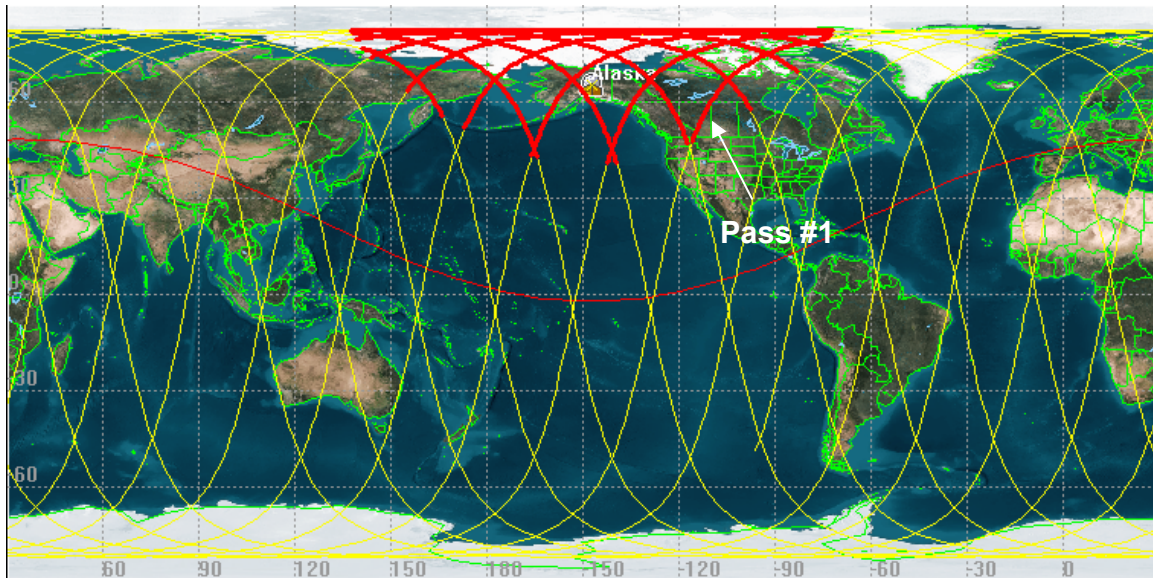
## Injection and Pass #1

| Access | Start Time (UTCG)       | Stop Time (UTCG)        | Duration (sec) |
|--------|-------------------------|-------------------------|----------------|
| 1      | 6 Dec 2007 02:20:30.540 | 6 Dec 2007 02:30:01.050 | 570.510        |

## Spacecraft Nominal Two Line elements:

FM#2

```
1 00020U 05001F 07340.14556713 .00000000 00000-0 -55870-4 0 99993  
2 00020 97.8652 167.3955 0018616 90.6877 262.0550 14.82213313000004
```



**USN Alaska coverage of COSMO SkyMed-2 (FM#2):  
Chart shows first day of passes (contacts 1 – 11)**