

USN support of KA-SAT from Hawaii

KA-SAT launches from the Baikonur Cosmodrome, Kazakhstan on the Proton launch vehicle. Nominal lift-off time schedule is: December 19th, 2010 at 21:47:00 UTC. USN will only support the Launch and Early Orbit (LEOP) phase of the mission.

Sequence of events for support of KA-SAT from USN-Hawaii:

Event	Date	Time
Launch	19 - Dec	21:47:00 UTC
Separation	20 -Dec	06:59:00 UTC
Hawaii AOS (pass#1)	20 -Dec	12:35:46 UTC
Hawaii LOS	20 -Dec	23:27:54 UTC
Hawaii AOS (pass#2)	21 -Dec	11:52:48 UTC
Hawaii end of pass but not LOS	21 -Dec	17:16:00 UTC
Orbital maneuver burn #1 (visible during burn)	21 -Dec	17:16:00 UTC
Hawaii beginning of pass still visible from pass#2 (pass#3)	21 -Dec	17:16:00 UTC
Hawaii LOS	21 -Dec	23:12:03 UTC
Hawaii AOS (pass#4)	22 -Dec	13:21:21 UTC
Hawaii LOS	23 -Dec	01:47:43 UTC
Orbital maneuver burn #2	23 -Dec	08:15:00 UTC
Hawaii AOS (pass#5)	23 -Dec	18:40:33 UTC
Hawaii end of pass but not LOS	24 -Dec	16:45:00 UTC
Orbital maneuver burn #3 (visible during burn)	24 -Dec	16:45:00 UTC
Hawaii AOS (pass#6)	24 -Dec	16:45:00 UTC
Hawaii LOS	25 -Dec	02:13:53 UTC
Hawaii End of Mission	25 -Dec	02:13:53 UTC

Detailed pass support

USN will support KA-SAT for a total of 6 passes starting 20-Dec thru 25-Dec. Not all possible visibility times will be supported. Actual support details and times for each pass are shown below.

Injection and Pass #1 and #2

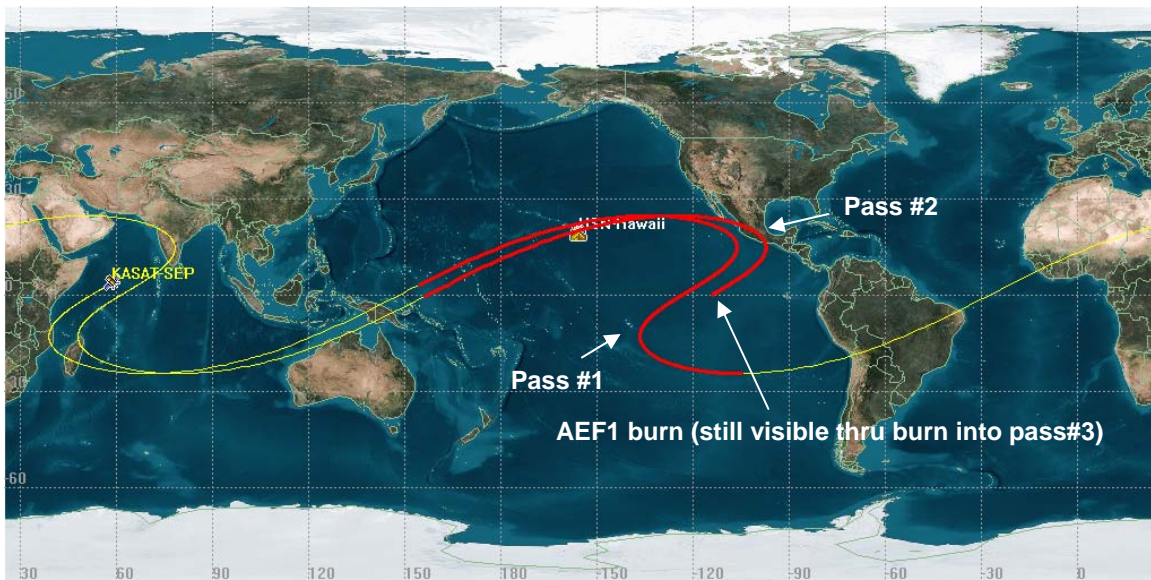
Facility-Hawaii-Sensor-13m-To-Satellite-**KA-SAT-injection**: Access Summary Report

PASS	Start Time (UTCG)	Stop Time (UTCG)
1	20 Dec 2010 12:35:46	20 Dec 2010 23:27:54
2	21 Dec 2010 11:52:48	21 Dec 2010 17:16:00

Spacecraft Injection NORAD TLE:

KA-SAT

```
1 99999U 10992ZZZ 10354.29097222 .00000000 00000-0 +00000-0 3 14  
2 99999 24.4792 65.9814 6136945 357.2465 188.8883 2.05677771 17
```



USN Hawaii coverage of KA-SAT Pass #1 and #2.

Pass #3 and #4 (Post maneuver burn#1)

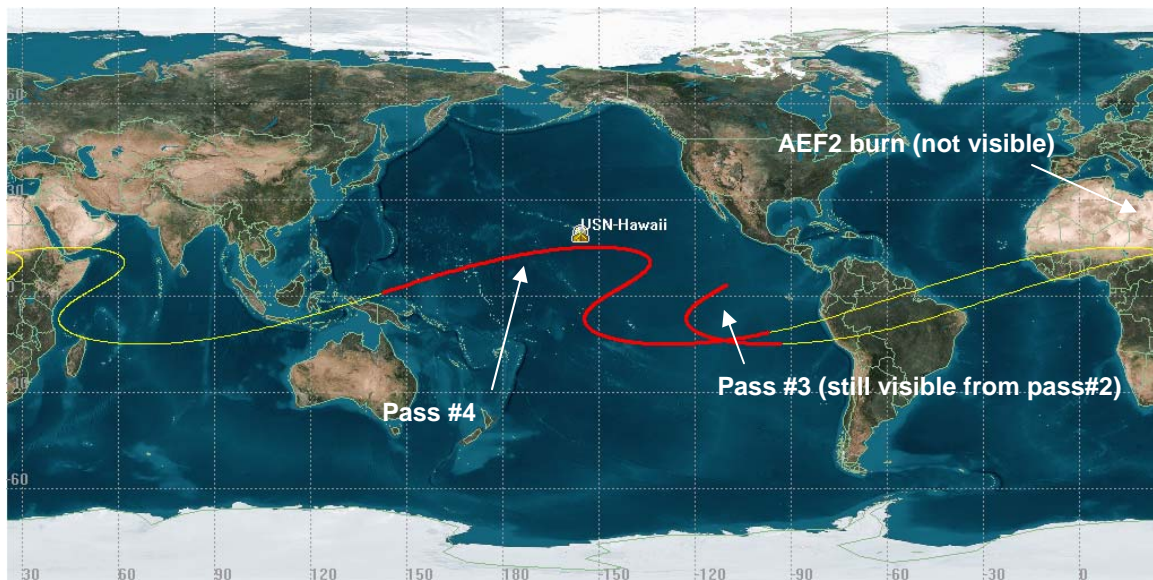
Facility-Hawaii-Sensor-13m-To-Satellite-KA-SAT-post-burn#1: Access Summary Report

Pass	Start Time (UTCG)	Stop Time (UTCG)
3	21 Dec 2010 17:16:00	21 Dec 2010 23:12:03
4	22 Dec 2010 13:21:21	23 Dec 2010 01:47:43

Spacecraft post burn#1 TLE:

KASAT AEF1

```
1 99999U 10992ZZZ 10355.76736111 .00000000 00000-0 +00000-0 3 14  
2 99999 15.0781 70.9593 5000521 352.2371 199.8547 1.84240898 12
```



USN Hawaii coverage of KA-SAT pass #3 and #4

Pass #5 (Post maneuver burn#2)

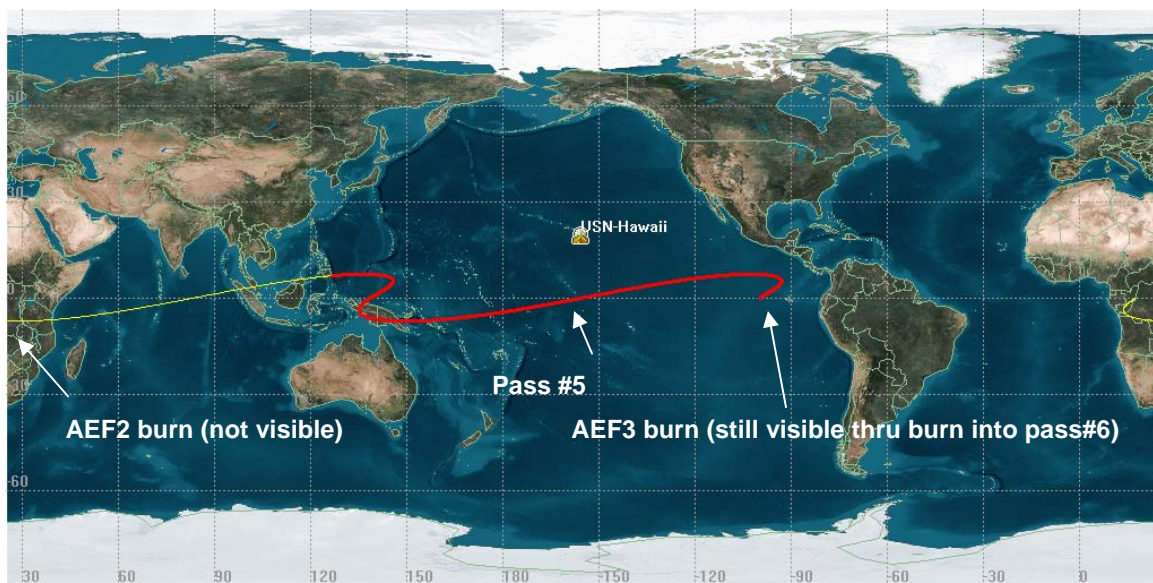
Facility-Hawaii-Sensor-13m-To-Satellite-KA-SAT-post-burn#2: Access Summary Report

Pass	Start Time (UTCG)	Stop Time (UTCG)
5	23 Dec 2010 18:40:33	24 Dec 2010 16:45:00

Spacecraft post burn #2 TLE:

KSAT AEF2

```
1 99999U 10992ZZZ 10357.39930556 .00000000 00000-0 +00000-0 3 14  
2 99999 7.2827 70.2233 3151947 353.3438 196.8225 1.51231191 13
```



USN Hawaii coverage of KA-SAT pass #5

Pass #6 (Post maneuver burn#3)

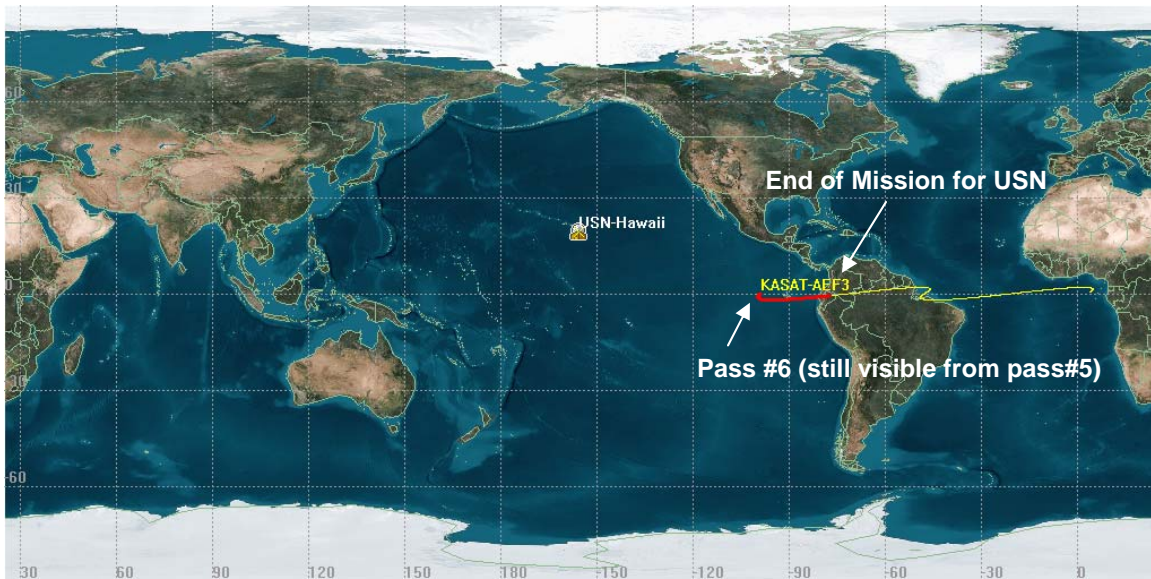
Facility-Hawaii-Sensor-13m-To-Satellite-KA-SAT-post-burn#3: Access Summary Report

Pass	Start Time (UTCG)	Stop Time (UTCG)
6	24 Dec 2010 16:45:00	25 Dec 2010 02:13:53

Spacecraft post burn #3 TLE:

KASAT AEF3

```
1 99999U 10992ZZZ 10358.71527778 .00000000 00000-0 +00000-0 3 19  
2 99999 1.9549 69.3473 1065056 354.7667 189.7329 1.16727944 15
```



End of Mission support for USN