

P-3B CARB Flight Plan E – Ships and Stuff
To be flown Tue 24 Jun 2008

Objectives in order of Priority

- 1) Ship emission regional study and characterization with cloud effects as possible - TBD
- 2) Morning ship study off San Francisco
- 3) Afternoon ship study of Los Angeles
- 4) TERRA and AQUA profiles near SF and LA w. comparisons to PM2.5
- 5) Profiles in onshore flow and fire influenced column
- 6) Low altitude Salinas and Central Valley run

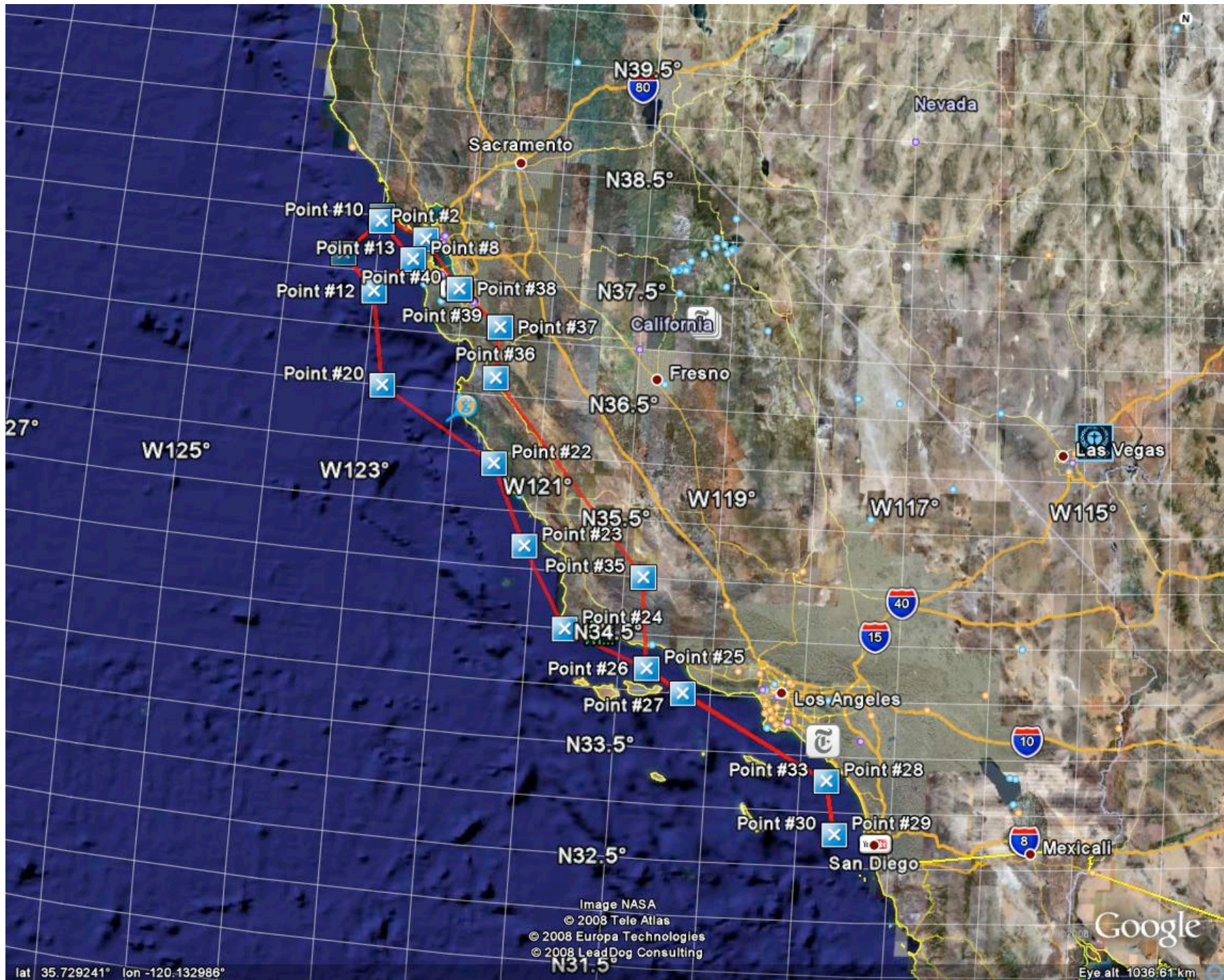
Note: Timing and altitudes may change but general areas and objectives are as indicated. Ship operations will be hands on and subject to conditions (ie. Unpredictable)

Circles are defined in terms of north, east, south and west points (diamonds in Google)

| WP # | Lat (+- 90) | Lon (+- 180) | Speed (m/s) | De-lay T (min) | Alti-tude (m) | Cum Leg T (h:m) | UTC (h:m) | Local T (h:m) | Leg T (h:m) | Dist (km) | Cum Dist (km) | Dist (nm) | Cum Dist (nm) | Speed (kt) | Alti-tude (kft) | Comments |
|------|-------------|--------------|-------------|----------------|---------------|-----------------|-----------|---------------|-------------|-----------|---------------|-----------|---------------|------------|-----------------|---------------------------|
| 1 | 37.409 | -122.05 | 150 | 0 | 0 | 0:00 | 17:00 | 10:00 | 0:00 | 0 | 0 | 0 | 0 | 292 | 0 | Leave Ames |
| 2 | 37.821 | 122.478 | 130 | 0 | 500 | 0:07 | 17:07 | 10:07 | 0:07 | 59.3 | 59.3 | 32.01 | 32.01 | 253 | 1.64 | Golden Gate |
| 3 | 38 | -123 | 140 | 10 | 3000 | 0:23 | 17:23 | 10:23 | 0:17 | 49.9 | 109 | 26.94 | 58.95 | 272 | 9.84 | Pt Reyes - look for ships |
| 4 | 37.95 | -123 | 140 | 1 | 60 | 0:25 | 17:25 | 10:25 | 0:02 | 5.56 | 115 | 3 | 61.95 | 272 | 0.2 | |
| 5 | 37.95 | -123 | 140 | 1 | 60 | 0:26 | 17:26 | 10:26 | 0:01 | 0 | 115 | 0 | 61.95 | 272 | 0.2 | start 100m ship circle |
| 6 | 37.634 | 123.389 | 140 | 1 | 100 | 0:33 | 17:33 | 10:33 | 0:07 | 49 | 164 | 26.46 | 88.41 | 272 | 0.33 | |
| 7 | 37.323 | -123 | 140 | 1 | 100 | 0:40 | 17:40 | 10:40 | 0:07 | 48.7 | 212 | 26.3 | 114.72 | 272 | 0.33 | |
| 8 | 37.634 | -122.6 | 140 | 1 | 100 | 0:47 | 17:47 | 10:47 | 0:07 | 49.4 | 262 | 26.67 | 141.39 | 272 | 0.33 | |
| 9 | 37.95 | -123 | 140 | 1 | 100 | 0:54 | 17:54 | 10:54 | 0:07 | 49.7 | 312 | 26.83 | 168.22 | 272 | 0.33 | |
| 10 | 37.95 | -123 | 140 | 2 | 400 | 0:56 | 17:56 | 10:56 | 0:02 | 0 | 312 | 0 | 168.22 | 272 | 1.31 | start 400m ship circle |
| 11 | 37.634 | 123.389 | 140 | 1 | 400 | 1:02 | 18:02 | 11:02 | 0:07 | 49 | 361 | 26.46 | 194.68 | 272 | 1.31 | |
| 12 | 37.323 | -123 | 140 | 1 | 400 | 1:09 | 18:09 | 11:09 | 0:07 | 48.7 | 409 | 26.3 | 220.99 | 272 | 1.31 | |
| 13 | 37.634 | -122.6 | 140 | 1 | 400 | 1:16 | 18:16 | 11:16 | 0:07 | 49.4 | 459 | 26.67 | 247.66 | 272 | 1.31 | |
| 14 | 37.95 | -123 | 140 | 1 | 400 | 1:23 | 18:23 | 11:23 | 0:07 | 49.7 | 508 | 26.83 | 274.49 | 272 | 1.31 | |
| 15 | 37.95 | -123 | 140 | 2 | 800 | 1:25 | 18:25 | 11:25 | 0:02 | 0 | 508 | 0 | 274.49 | 272 | 2.63 | start 800m |

| | | | | | | | | | | | | | | | | ship circle |
|----|--------|---------|-----|----|------|------|-------|-------|------|------|------|-------|--------|-----|------|-------------|
| 16 | | - | | | | | | | | | | | | | | |
| | 37.634 | 123.389 | 140 | 1 | 800 | 1:32 | 18:32 | 11:32 | 0:07 | 49 | 557 | 26.46 | 300.95 | 272 | 2.63 | |
| 17 | 37.323 | -123 | 140 | 1 | 800 | 1:39 | 18:39 | 11:39 | 0:07 | 48.7 | 606 | 26.3 | 327.25 | 272 | 2.63 | |
| 18 | | | | | | | | | | | | | | | | Terra |
| | 37.323 | -123 | 140 | 20 | 7000 | 1:59 | 18:59 | 11:59 | 0:20 | 0 | 606 | 0 | 327.25 | 272 | 23 | Profile |
| 19 | | | | | | | | | | | | | | | | (11:47) |
| | 37.323 | -123 | 140 | 0 | 7000 | 1:59 | 18:59 | 11:59 | 0:00 | 0 | 606 | 0 | 327.25 | 272 | 23 | end profile |
| 20 | | | | | | | | | | | | | | | | -radiation |
| | 36.5 | -122.8 | 140 | 20 | 60 | 2:30 | 19:30 | 12:30 | 0:32 | 93.1 | 699 | 50.28 | 377.53 | 272 | 0.2 | leg |
| 21 | 36.5 | -122.8 | 140 | 0 | 300 | 2:30 | 19:30 | 12:30 | 0:00 | 0 | 699 | 0 | 377.53 | 272 | 0.98 | Spiral |
| 22 | | | | | | | | | | | | | | | | down here |
| | 35.9 | -121.5 | 140 | 0 | 500 | 2:46 | 19:46 | 12:46 | 0:16 | 134 | 833 | 72.51 | 450.05 | 272 | 1.64 | 300m leg |
| 23 | | | | | | | | | | | | | | | | 500m over |
| | 35.2 | -121.1 | 140 | 0 | 100 | 2:56 | 19:56 | 12:56 | 0:11 | 85.8 | 919 | 46.32 | 496.37 | 272 | 0.33 | ocean |
| 24 | | | | | | | | | | | | | | | | 100m over |
| | 34.5 | -120.6 | 140 | 0 | 800 | 3:07 | 20:07 | 13:07 | 0:11 | 90.2 | 1009 | 48.69 | 545.05 | 272 | 2.63 | ocean |
| 25 | | | | | | | | | | | | | | | | end 100m |
| | 34.2 | -119.7 | 140 | 0 | 1500 | 3:17 | 20:17 | 13:17 | 0:11 | 89.1 | 1098 | 48.08 | 593.13 | 272 | 4.92 | leg |
| 26 | | | | | | | | | | | | | | | | climb to |
| | 34.2 | -119.7 | 140 | 0 | 100 | 3:17 | 20:17 | 13:17 | 0:00 | 0 | 1098 | 0 | 593.13 | 272 | 0.33 | survey |
| 27 | | | | | | | | | | | | | | | | start |
| | 34 | -119.3 | 140 | 40 | 100 | 4:02 | 21:02 | 14:02 | 0:46 | 43 | 1141 | 23.22 | 616.35 | 272 | 0.33 | playing |
| 28 | | | | | | | | | | | | | | | | with ships |
| | 33.28 | 117.716 | 140 | 15 | 4000 | 4:37 | 21:37 | 14:37 | 0:35 | 167 | 1308 | 90.15 | 706.5 | 272 | 13.1 | stop |
| 29 | | | | | | | | | | | | | | | | playing |
| | 32.8 | -117.6 | 140 | 0 | 4000 | 4:44 | 21:44 | 14:44 | 0:07 | 54.4 | 1363 | 29.39 | 735.89 | 272 | 13.1 | withships |
| 30 | | | | | | | | | | | | | | | | stop |
| | 32.8 | -117.6 | 140 | 15 | 4000 | 4:59 | 21:59 | 14:59 | 0:15 | 0 | 1363 | 0 | 735.89 | 272 | 13.1 | playing |
| 31 | | | | | | | | | | | | | | | | withships |
| | 32.8 | -117.6 | 140 | 0 | 100 | 4:59 | 21:59 | 14:59 | 0:00 | 0 | 1363 | 0 | 735.89 | 272 | 0.33 | stop |
| 32 | | | | | | | | | | | | | | | | playing |
| | 32.8 | -117.6 | 140 | 50 | 100 | 5:49 | 22:49 | 15:49 | 0:50 | 0 | 1363 | 0 | 735.89 | 272 | 0.33 | withships |
| 33 | | | | | | | | | | | | | | | | stop |
| | 33.28 | 117.716 | 140 | 0 | 100 | 5:55 | 22:55 | 15:55 | 0:07 | 54.4 | 1417 | 29.39 | 765.27 | 272 | 0.33 | playing |

| | | | | | | | | | | | | | | | | |
|----|--------|---------|-----|----|------|-------|-------|-------|------|------|------|-------|--------|-----|------|------------------------------|
| 34 | | | | | | | | | | | | | | | | stop playing withships |
| | 34.2 | -119.7 | 140 | 0 | 500 | 6:20 | 23:20 | 16:20 | 0:25 | 210 | 1627 | 113.3 | 878.62 | 272 | 1.64 | |
| 35 | 35 | -119.8 | 140 | 0 | 500 | 6:31 | 23:31 | 16:31 | 0:11 | 89.4 | 1717 | 48.26 | 926.87 | 272 | 1.64 | |
| 36 | 36.65 | -121.56 | 140 | 0 | 600 | 0.292 | 0:00 | 17:00 | 0:29 | 242 | 1959 | 130.9 | 1057.8 | 272 | 1.97 | |
| 37 | | | | | | | | | | | | | | | | spiral down radiation |
| | 37.1 | -121.56 | 140 | 15 | 4000 | 7:21 | 0:21 | 17:21 | 0:21 | 50 | 2009 | 27 | 1084.8 | 272 | 13.1 | Land |
| 38 | | | | | | | | | | | | | | | | Ames |
| | 37.409 | -122.05 | 150 | 0 | 600 | 7:27 | 0:27 | 17:27 | 0:07 | 55.3 | 2064 | 29.87 | 1114.6 | 292 | 1.97 | spiral down |
| 39 | | | | | | | | | | | | | | | | radiation |
| | 37.1 | -121.56 | 140 | 15 | 4000 | 7:48 | 0:48 | 17:48 | 0:22 | 55.3 | 2120 | 29.87 | 1144.5 | 272 | 13.1 | Land |
| 40 | | | | | | | | | | | | | | | | Ames |
| | 37.409 | -122.05 | 150 | 0 | 600 | 7:55 | 0:55 | 17:55 | 0:07 | 55.3 | 2175 | 29.87 | 1174.4 | 292 | 1.97 | |



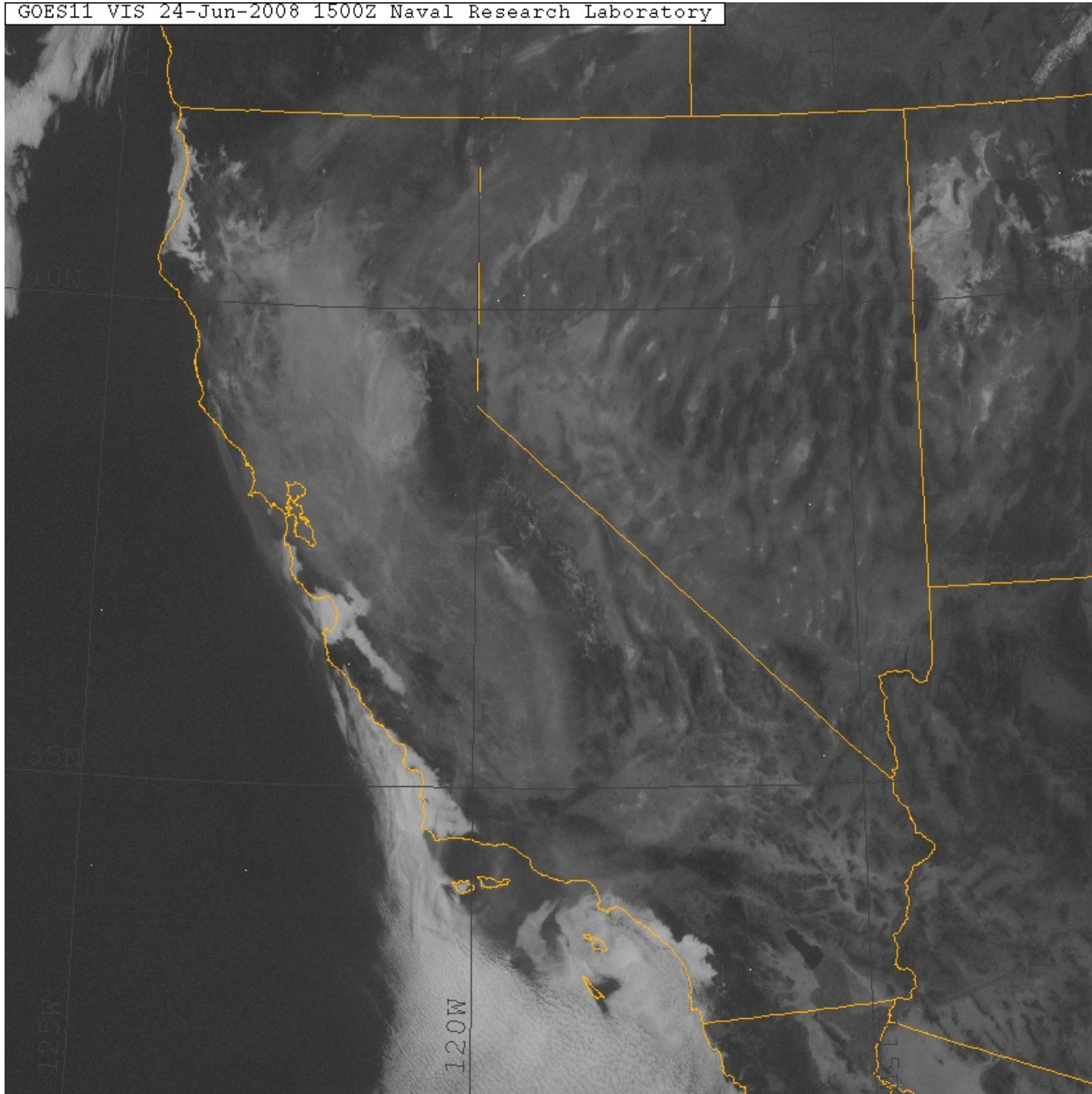
lat 35.729241° lon -120.132986°

Image NASA
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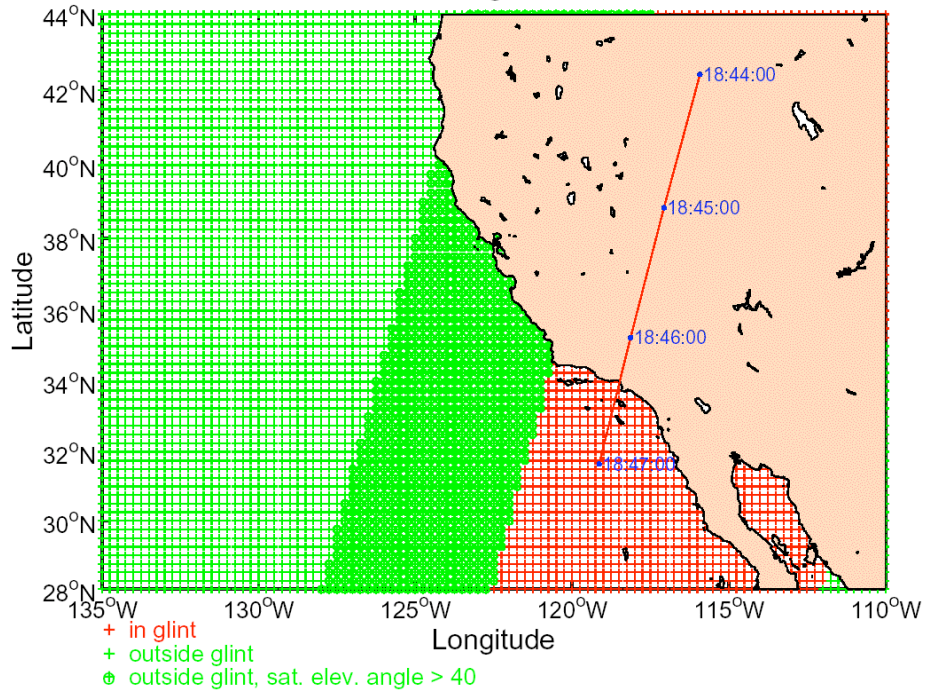
Google

Eye alt. 1036.61 km

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Terra Orbital Predict and glint mask Plot,2008/06/24



Aqua Orbital Predict and glint mask Plot,2008/06/24

