

# WAAS Web Application Portal

## Non Precision Approach (NPA) and Standard Positioning Service (SPS) Summary Report

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## Overview of Non Precision Approach (NPA) and Standard Positioning Service (SPS) Summary Report

As part of the William J. Hughes Technical Center WAAS Test Team website ([www.nstb.tc.faa.gov](http://www.nstb.tc.faa.gov)), the WAAS Web Application Portal allows you to view the Non-Precision Approach (NPA) and Standard Positioning Service (SPS) Summary.

The NPA and SPS Summary portion of this website allows you to:

- View all NPA statistics for any date you choose (up to 6 years in the past)
- View Position Errors, AvCon failures, Data Outages, and SPS Range

The following shows you how to navigate the website. First, click on “WAAS Web Application Portal” (See red arrow).

**Welcome to the William J. Hughes Technical Center WAAS Test Team**

Please use the the navigation bar at the left to view our products. The real-time performance plots are created every three minutes, and all real-time plot pages update every two minutes. The real-time plots show up to the minute WAAS performance. The 24-hour performance plots show yesterdays performance using the total 24-hours of data. Any daily plot page updates every 24 hours. Real-time data files update every three minutes as well. Performance videos show animated performance data for the previous 24-hour period. They can be viewed in Windows media player. Please see video help for further assistance. Performance analysis reports are updated quarterly, and contain the most detailed analyses of GPS and WAAS performance. The WAAS technical reports coincide with links contained in the PAN reports and give detailed analysis on specific problem occurrences.

- Real-Time Interactive WAAS Performance Applications
  - [2D Display](#)
  - [3D Display](#)
  - (Requires Google Earth)
- Additional WAAS/GPS Web Applications
  - [WAAS Web Application Portal](#) ←



William J. Hughes FAA Technical Center

Once we click on “WAAS Web Application Portal”, we come to the screen below. To access the NPA and SPS Summary, click on “NPA SPS Summary” (See red arrow below).

## Welcome to The William J. Hughes Technical Center WAAS Test Team


### Interactive Web Application Portal

Disclaimer: The data on this website is for information only and should not be used for flight planning.

#### Real-Time Applications

- [OTE Display](#) - Real-Time Receiver Data Display
- [SMS Display](#) - Real-Time Service Monitoring Subsystem Display
- SBAS Display (Coming Soon) - Real-Time EGNOS / MSAS / WAAS Display

#### Reporting Applications

- [Airport Actual Outages](#) - Provides "rolled up" airport outage information on a geographic display
- [Airport Schedules](#) - Shows predicted airport schedules for the next two weeks
- [Interactive PAN Report](#) - Allows for interactive generation of select PAN Report Tables over a user specified period of time
-  [NPA SPS Summary](#) - Summary NPA SPS Statistics
- [PA Summary](#) - Summary PA Statistics
- [Rollup Display](#) - Displays aggregated airport and IGP statistics on a geographic display
- [SMS Animation Display](#) - Animates SMS data over user selected time periods on an interactive geographic display
- [UDREi Daily Graphs](#) - Displays savable UDREi GEO graphs for a given day

This is the view we see once we click on NPA SPS Summary within the WAAS Web Application Portal.

[Week 1786 Day 1 : \(31-MAR-2014\)](#)  
[Week 1786 Day 0 : \(30-MAR-2014\)](#)  
[Week 1785 Day 6 : \(29-MAR-2014\)](#)  
[Week 1785 Day 5 : \(28-MAR-2014\)](#)  
[Week 1785 Day 4 : \(27-MAR-2014\)](#)

## *NPA and SPS Summary Report*

Please Select Date

<b>Position Errors</b>	<b>AVCON Failures</b>	<b>Data Outages</b>	<b>SPS Range</b>	<input type="text"/>
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## Dates

Notice we can view the last 5 days (See #1 below) or we can click on the down arrow next to "Please Select Date" to pick a different date (See #2 below). These dates show the number of weeks that have elapsed since the GPS epoch date of Sunday, January 6, 1980, which was week 0. Sunday is defined as the start of a week and is always day 0; Monday is day 1; Tuesday is 2 and so on.

**1**

[Week 1786 Day 1 : \(31-MAR-2014\)](#)  
[Week 1786 Day 0 : \(30-MAR-2014\)](#)  
[Week 1785 Day 6 : \(29-MAR-2014\)](#)  
[Week 1785 Day 5 : \(28-MAR-2014\)](#)  
[Week 1785 Day 4 : \(27-MAR-2014\)](#)

### *NPA and SPS Summary Report*

**2**

Please Select Date

- Please Select Date
- Week 1786 Day 1 : (31-MAR-2014)
- Week 1786 Day 0 : (30-MAR-2014)
- Week 1785 Day 6 : (29-MAR-2014)
- Week 1785 Day 5 : (28-MAR-2014)
- Week 1785 Day 4 : (27-MAR-2014)
- Week 1785 Day 3 : (26-MAR-2014)
- Week 1785 Day 2 : (25-MAR-2014)
- Week 1785 Day 1 : (24-MAR-2014)
- Week 1785 Day 0 : (23-MAR-2014)
- Week 1784 Day 6 : (22-MAR-2014)
- Week 1784 Day 5 : (21-MAR-2014)
- Week 1784 Day 4 : (20-MAR-2014)
- Week 1784 Day 3 : (19-MAR-2014)
- Week 1784 Day 2 : (18-MAR-2014)
- Week 1784 Day 1 : (17-MAR-2014)
- Week 1784 Day 0 : (16-MAR-2014)
- Week 1783 Day 6 : (15-MAR-2014)
- Week 1783 Day 5 : (14-MAR-2014)
- Week 1783 Day 4 : (13-MAR-2014)
- Week 1783 Day 3 : (12-MAR-2014)
- Week 1783 Day 2 : (11-MAR-2014)
- Week 1783 Day 1 : (10-MAR-2014)
- Week 1783 Day 0 : (9-MAR-2014)
- Week 1782 Day 6 : (8-MAR-2014)
- Week 1782 Day 5 : (7-MAR-2014)
- Week 1782 Day 4 : (6-MAR-2014)
- Week 1782 Day 3 : (5-MAR-2014)
- Week 1782 Day 2 : (4-MAR-2014)
- Week 1782 Day 1 : (3-MAR-2014)

Position Errors AVCON Failures Data Outages SPS R

We are able to view the NPA and SPS Summary Report as far back as Week 1460 Day 3 or January 2, 2008 (See red arrow below). This is set by the WAAS team and can be changed as needed. Please note: You must pick a date in order to populate the data fields.

- [Week 1786 Day 1 : \(31-MAR-2014\)](#)
- [Week 1786 Day 0 : \(30-MAR-2014\)](#)
- [Week 1785 Day 6 : \(29-MAR-2014\)](#)
- [Week 1785 Day 5 : \(28-MAR-2014\)](#)
- [Week 1785 Day 4 : \(27-MAR-2014\)](#)

## *NPA and SPS Summary Report*

The screenshot shows a web application interface with a date selection dropdown menu. The dropdown is open, displaying a list of dates from Week 1460 Day 3 to Week 1464 Day 4. A red arrow points to the date 'Week 1460 Day 3 : (2-JAN-2008)' at the bottom of the list. The interface includes tabs for 'Position Errors', 'AVCON Failures', 'Data Outages', and 'SPS R...'. The date selection dropdown is titled 'Please Select Date' and has a scroll bar on the right side.

Date
Week 1464 Day 4 : (31-JAN-2008)
Week 1464 Day 3 : (30-JAN-2008)
Week 1464 Day 2 : (29-JAN-2008)
Week 1464 Day 1 : (28-JAN-2008)
Week 1464 Day 0 : (27-JAN-2008)
Week 1463 Day 6 : (26-JAN-2008)
Week 1463 Day 5 : (25-JAN-2008)
Week 1463 Day 4 : (24-JAN-2008)
Week 1463 Day 3 : (23-JAN-2008)
Week 1463 Day 2 : (22-JAN-2008)
Week 1463 Day 1 : (21-JAN-2008)
Week 1463 Day 0 : (20-JAN-2008)
Week 1462 Day 6 : (19-JAN-2008)
Week 1462 Day 5 : (18-JAN-2008)
Week 1462 Day 4 : (17-JAN-2008)
Week 1462 Day 3 : (16-JAN-2008)
Week 1462 Day 2 : (15-JAN-2008)
Week 1462 Day 1 : (14-JAN-2008)
Week 1462 Day 0 : (13-JAN-2008)
Week 1461 Day 6 : (12-JAN-2008)
Week 1461 Day 5 : (11-JAN-2008)
Week 1461 Day 4 : (10-JAN-2008)
Week 1461 Day 3 : (9-JAN-2008)
Week 1461 Day 2 : (8-JAN-2008)
Week 1461 Day 1 : (7-JAN-2008)
Week 1461 Day 0 : (6-JAN-2008)
Week 1460 Day 6 : (5-JAN-2008)
Week 1460 Day 5 : (4-JAN-2008)
Week 1460 Day 4 : (3-JAN-2008)
Week 1460 Day 3 : (2-JAN-2008)

## Position Errors

Once you choose a date, the following screen will appear. In this case, we chose Week 1786 Day 1: (31-MAR-2014). This means it is from a Monday 1,786 weeks since the GPS epoch (See the red arrow below).

We clicked on the Position Errors tab (See green box below). Position Errors show receiver-specific errors. These are errors in which the position solution tool is in Non-Precision Approach (NPA) mode. The NPA portion of the website does not use the WAAS ionospheric corrections. Also, NPA evaluates only in the horizontal direction. The position solution tool calculates the horizontal position errors and HPLs for each receiver location. All errors are given in meters (See #1 below). The NPA Max errors are shown in table #2. All Horizontal Errors > 3m are highlighted in orange.

#3 shows the vertical and horizontal SPS Position. Below this box lists the horizontal and vertical SPS maximum position errors. The receiver ID (RCVR) is a number used to uniquely identify each receiver. The ID is the hexadecimal representation of the receiver number.

Week 1784 Day 1: (27-MAR-2014)  
Week 1784 Day 4: (31-MAR-2014) → Week 1786 Day 1: (31-MAR-2014)

Coverage (100%, 99.9%, 99%) NPA Service Area RNP3: 100% 100% 100% NPA Service Area RNP1: 100% 100% 100% World GPS Maximum PDOP

**Position Errors** | AVCON Failures | Data Outages | SPS Range

Statistic	Horizontal Statistic
95% Maximum Error	Honolulu(7.65)
95% Minimum Error	Kansas City(1.28)
Maximum Error	Tapachula(10.8160)
Minimum Error	Kansas City(1.8870)

1

RCvr	City	Max Error
27329	Billings	2.58
27585	Albuquerque	2.1280
27841	Anchorage	3.2770
28353	Boston	2.7440
28609	Washington DC	2.8320
29377	Honolulu	9.5160
29634	Houston	2.8660
30401	Kansas City	1.8870
30657	Los Angeles	2.57
30913	Salt Lake City	2.1770
31169	Miami	3.7340
31681	Minneapolis	1.9520
32193	Oakland	2.8930
32449	Cleveland	2.4610
32705	Seattle	3.5290
32961	San Juan	4.30
33218	Atlanta	2.7510
33473	Juneau	3.2570
33729	Cold Bay	3.1440
33985	Fairbanks	4.8590
34241	Bethel	2.8180
34497	Kotzebue	4.43
34753	Barrow	4.4690
35009	Merida	7.2160
35777	Gander	2.8320
36545	Tapachula	10.8160
36801	San Jose Del Cabo	4.3830
37057	Iqaluit	3.5210

2

SPS Position		
Statistic	Vertical Statistic	Horizontal Statistic
Maximum 95%	Tapachula (11.0690)	Honolulu (9.1370)
Maximum Error	Tapachula (23.45)	Honolulu (11.1670)
Maximum DOP	Iqaluit (4.0450)	Cold Bay (2.1720)
Global 95%	(5.1310)	(3.7930)

3

SPS Max Errors				
RCVR	ID_HEX	CITY	HORZ	VERT
27329	6AC1	Billings	3.6540	5.5470
27585	6BC1	Albuquerque	3.4150	4.9160
27841	6CC1	Anchorage	5.44	6.4470
28353	6EC1	Boston	4.8540	6.24
28609	6FC1	Washington DC	4.7630	5.74
29377	72C1	Honolulu	11.1670	16.0890
29634	73C2	Houston	4.3770	6.7650
30401	76C1	Kansas City	4.74	5.2080
30657	77C1	Los Angeles	3.6970	5.6780
30913	78C1	Salt Lake City	3.7450	6.15
31169	79C1	Miami	5.3120	9.2790
31681	7BC1	Minneapolis	4.7650	4.9140
32193	7DC1	Oakland	4.9350	6.0360
32449	7EC1	Cleveland	4.7740	5.7530
32705	7FC1	Seattle	4.7940	6.0540
32961	80C1	San Juan	5.8820	13.0660
33218	81C2	Atlanta	5.4230	4.7320
33473	82C1	Juneau	3.8070	5.8510
33729	83C1	Cold Bay	4.6460	6.9230
33985	84C1	Fairbanks	5.4370	6.5810
34241	85C1	Bethel	5.7790	5.9070
34497	86C1	Kotzebue	5.9330	8.1520
34753	87C1	Barrow	4.8520	7.5370
35009	88C1	Merida	8.4970	16.5570
35777	8BC1	Gander	4.73	11.2110
36545	8EC1	Tapachula	10.3060	23.45
36801	8FC1	San Jose Del Cabo	6.4090	13.6010
37057	90C1	Iqaluit	4.9880	14.5240

## NPA Service Area RNP3 Coverage

Next, we will look at NPA Service Area RNP3 Coverage for Week 1786 Day 1: (31-MAR-2014). Notice the thin, red arrow pointing to the two areas listing the dates. To see the coverage, click on the NPA Service Area RNP3 coverage link to view the actual map for this day (See thick, red arrow below). RNP3 is the notation for the RNP 0.3 coverage area. The HPL must be less than 556 meters for RNP 0.3 to be available.

[Week 1786 Day 1 : \(31-MAR-2014\)](#)  
[Week 1786 Day 0 : \(30-MAR-2014\)](#)  
[Week 1785 Day 6 : \(29-MAR-2014\)](#)  
[Week 1785 Day 5 : \(28-MAR-2014\)](#)  
[Week 1785 Day 4 : \(27-MAR-2014\)](#)

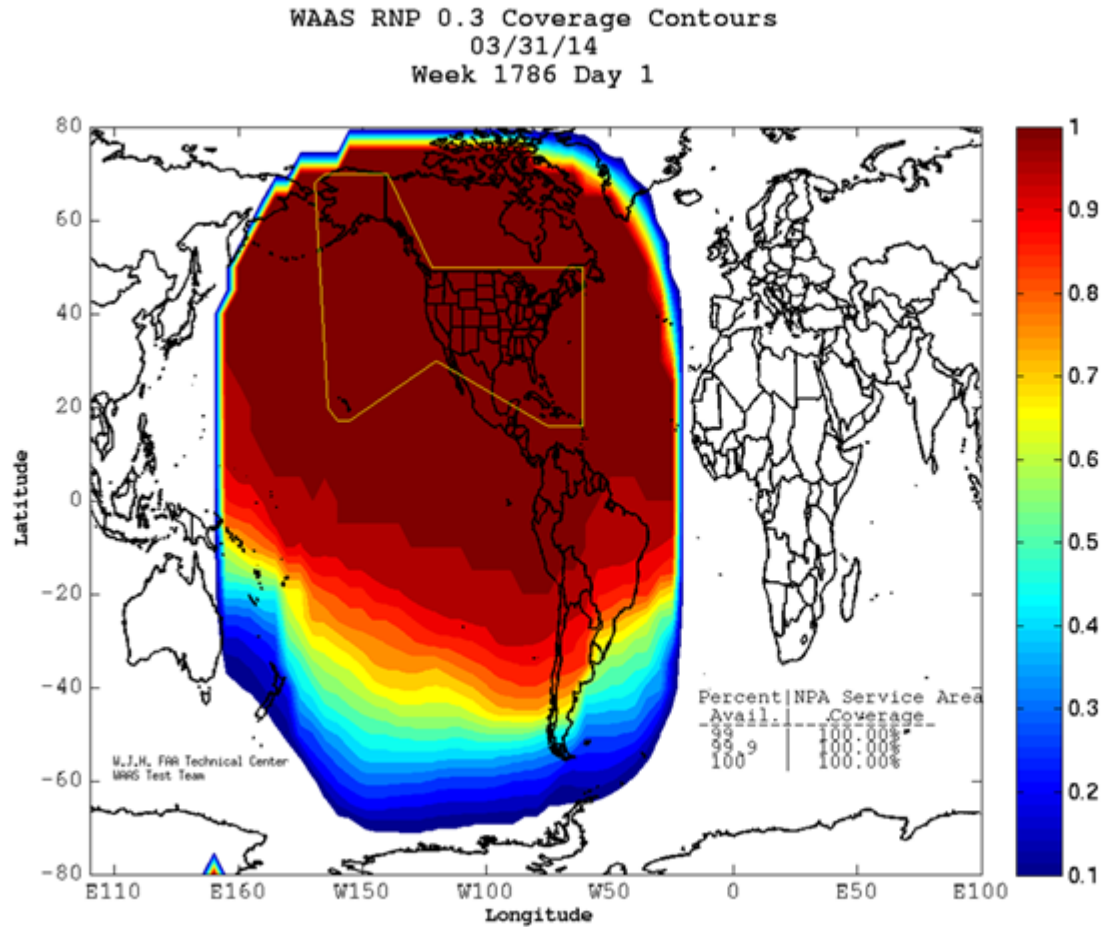
***NPA and SPS Summary Report***

Week 1786 Day 1 : (31-MAR-2014) ▾

**Coverage** (100%, 99.9%, 99%) [NPA Service Area RNP3: 100% 100% 100%](#) [NPA Service Area RNP1: 100% 100% 100%](#) [World GPS Maximum PDOP](#)

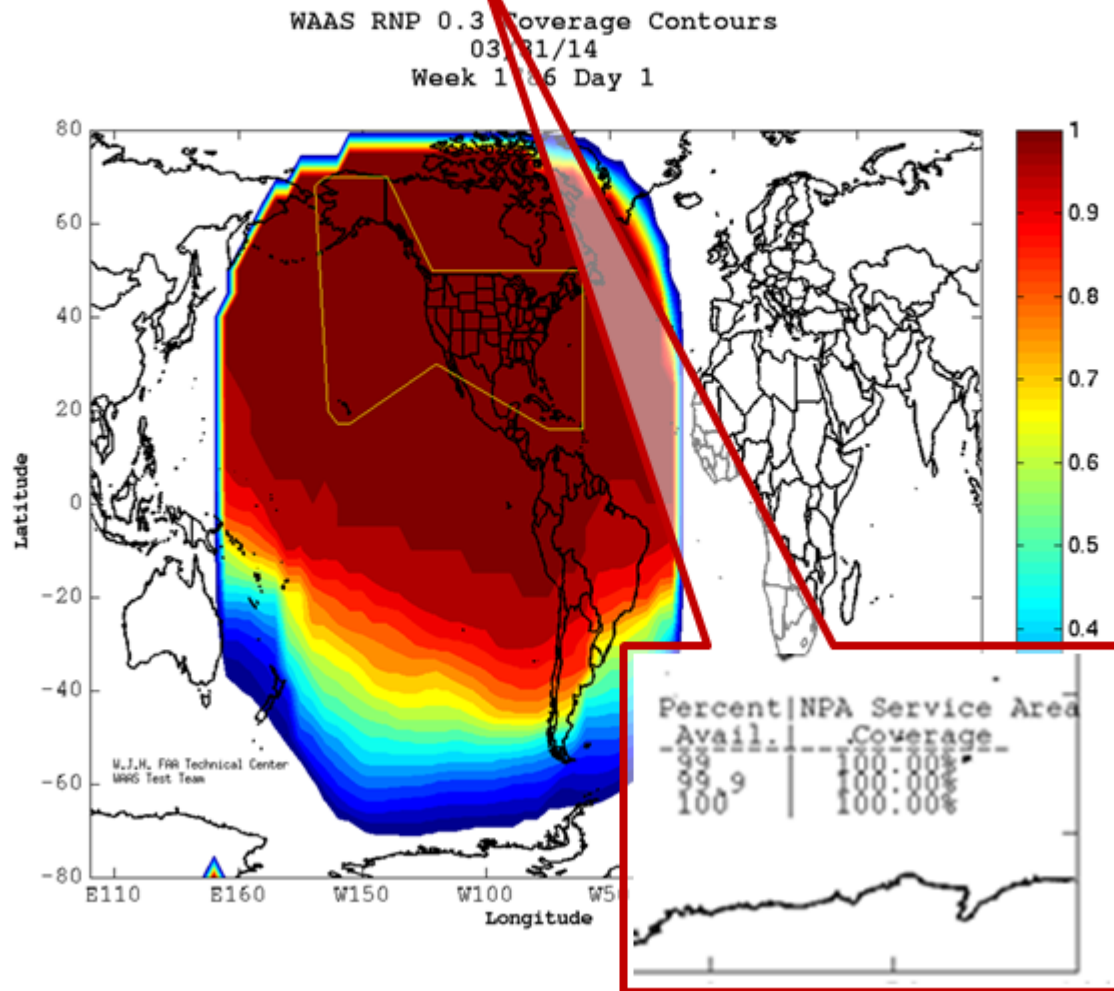


Once we click on the link, we see a screen similar to the one below. This daily 24-hour plot below depicts the Wide Area Augmentation System (WAAS) Required Navigation Performance 0.3 (RNP 0.3). For this plot, the day begins at 0:00 Greenwich Mean Time (GMT). The WAAS North American NPA Service Area is outlined by the yellow line in the diagram below. That coverage area is used to determine the percentage of RNP 0.3 coverage.



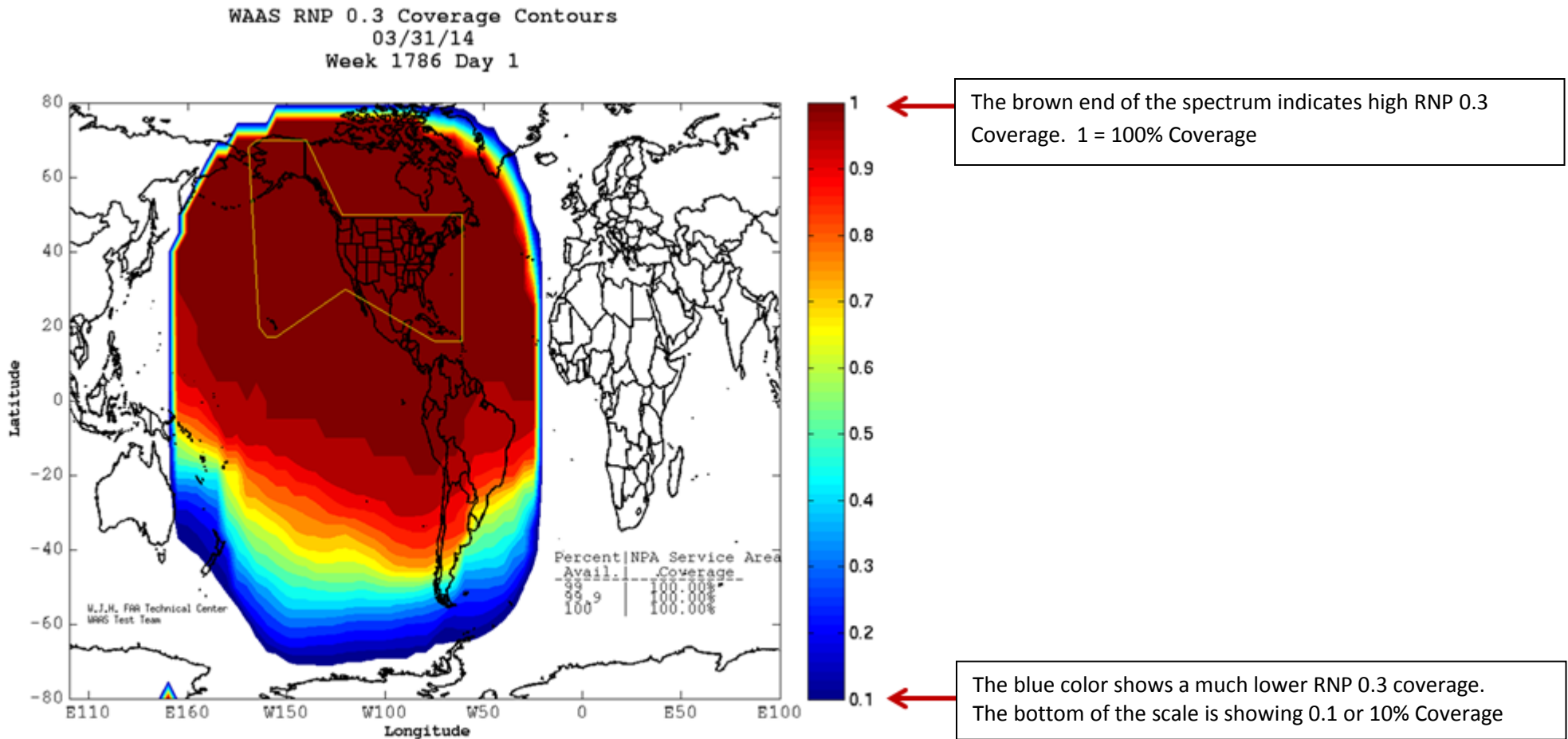
Percent of RNP 0.3 Coverage:

The table within the diagram shows the percentage of WAAS RNP 0.3 available in the Non Precision Approach, or NPA, Service Coverage Area. The table's first line shows that WAAS RNP 0.3 was available 99% of the time in 100% of the area covered in the NPA.



## RNP 0.3 Color Scale

The color scale shows the percent of WAAS RNP 0.3 Coverage.



The white area in the plot indicates WAAS LPV Coverage of <10%.

## NPA Service Area RNP1 Coverage

Next, we will look at NPA Service Area RNP1 Coverage for Week 1786 Day 1: (31-MAR-2014). To see the coverage, click on the NPA Service Area RNP1 coverage link to view the actual map for this day (See thick, red arrow below).

[Week 1786 Day 1 : \(31-MAR-2014\)](#)  
[Week 1786 Day 0 : \(30-MAR-2014\)](#)  
[Week 1785 Day 6 : \(29-MAR-2014\)](#)  
[Week 1785 Day 5 : \(28-MAR-2014\)](#)  
[Week 1785 Day 4 : \(27-MAR-2014\)](#)

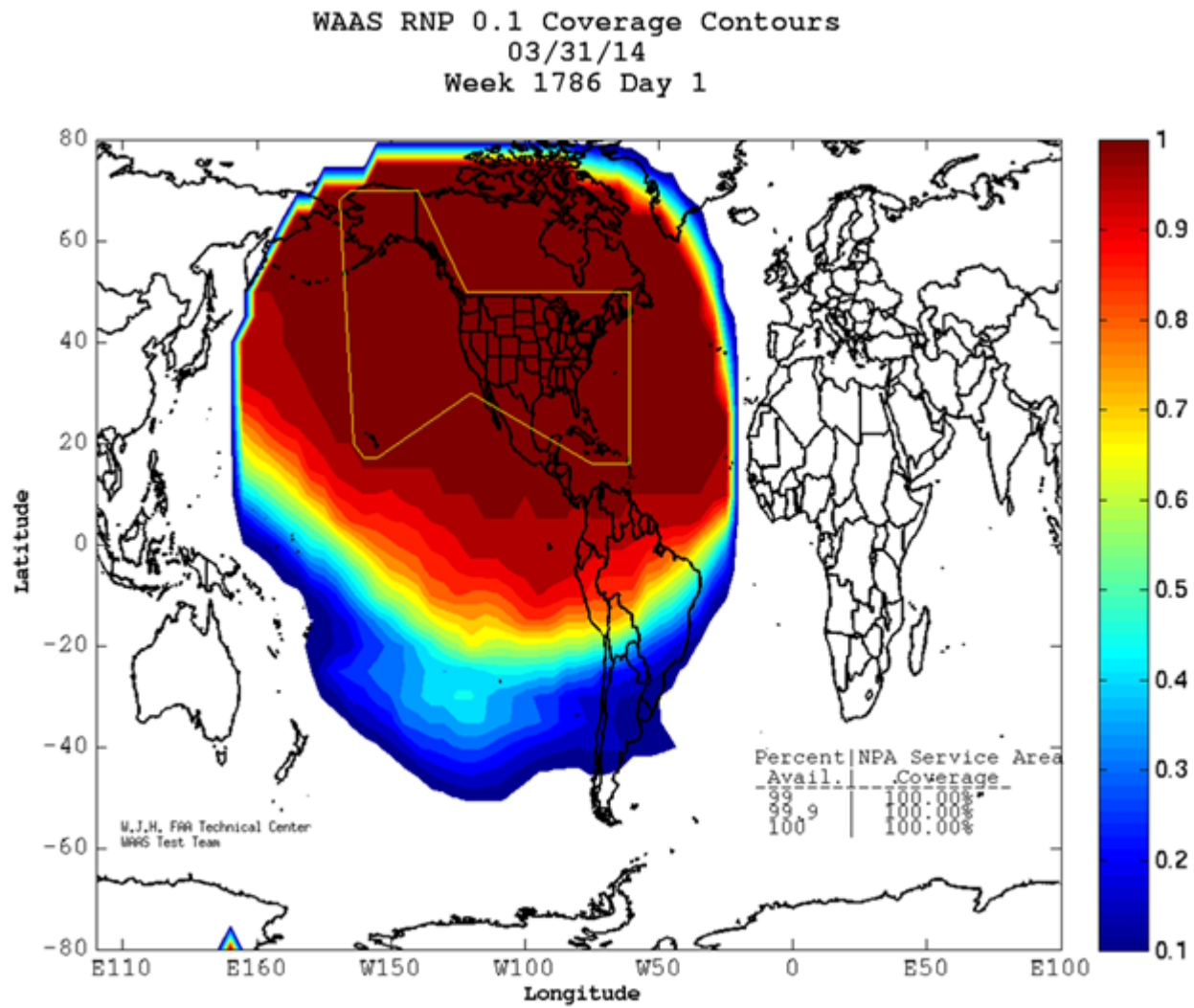
## *NPA and SPS Summary Report*

Week 1786 Day 1 : (31-MAR-2014) ▾

**Coverage** (100%, 99.9%, 99%) [NPA Service Area RNP3: 100% 100% 100%](#) [NPA Service Area RNP1: 100% 100% 100%](#) [World GPS Maximum PDOP](#)

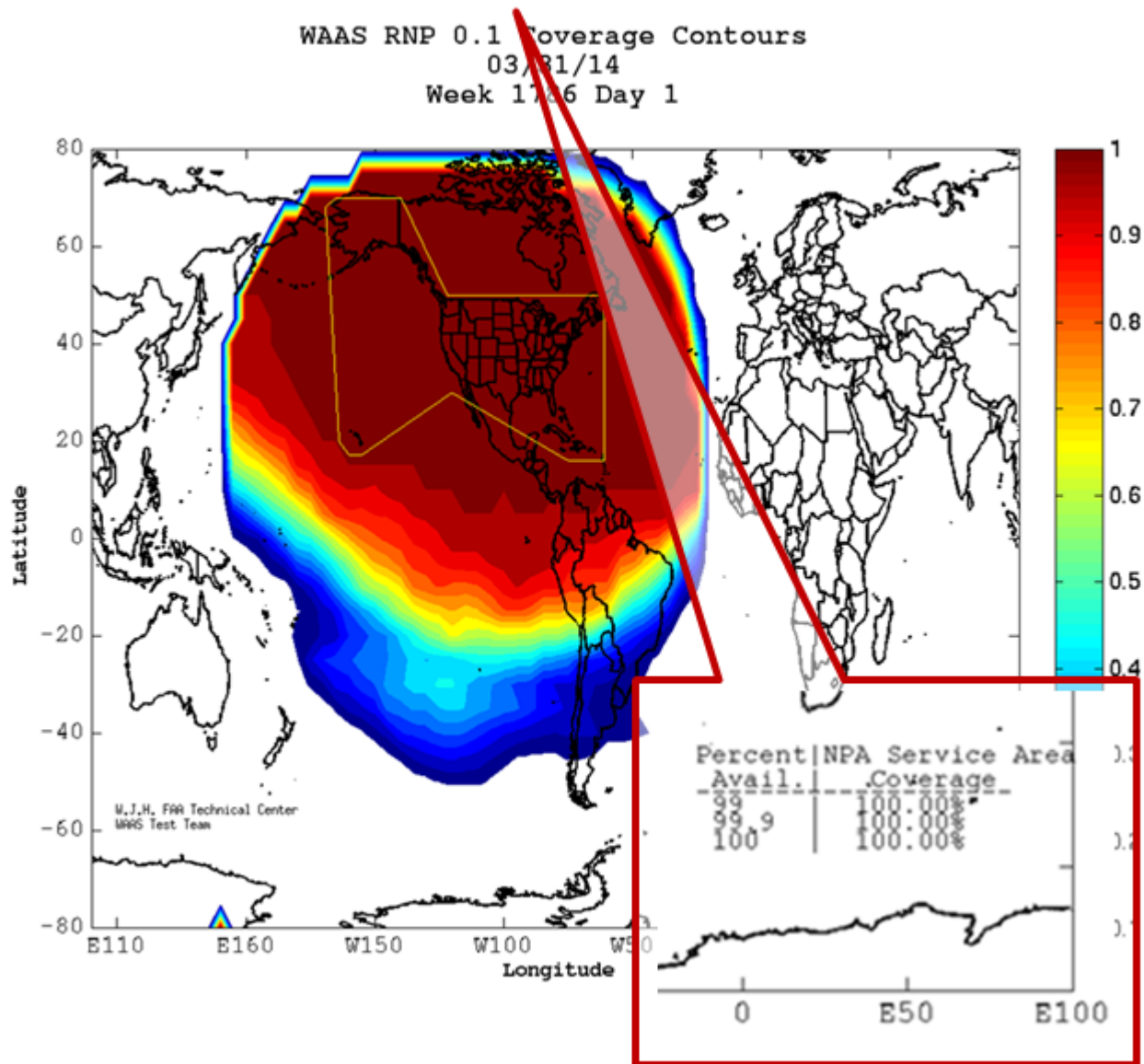


Once we click on the link, we see a screen similar to the one below. This daily 24-hour plot below depicts Required Navigation Performance 0.1 (RNP 0.1). For this plot, the day begins at 0:00 Greenwich Mean Time (GMT). The WAAS North American RNP 0.1 coverage area is outlined by the yellow line in the diagram below. RNP1 is the notation for the RNP 0.1 coverage area. The HPL must be less than 185 meters for RNP 0.1 to be available.



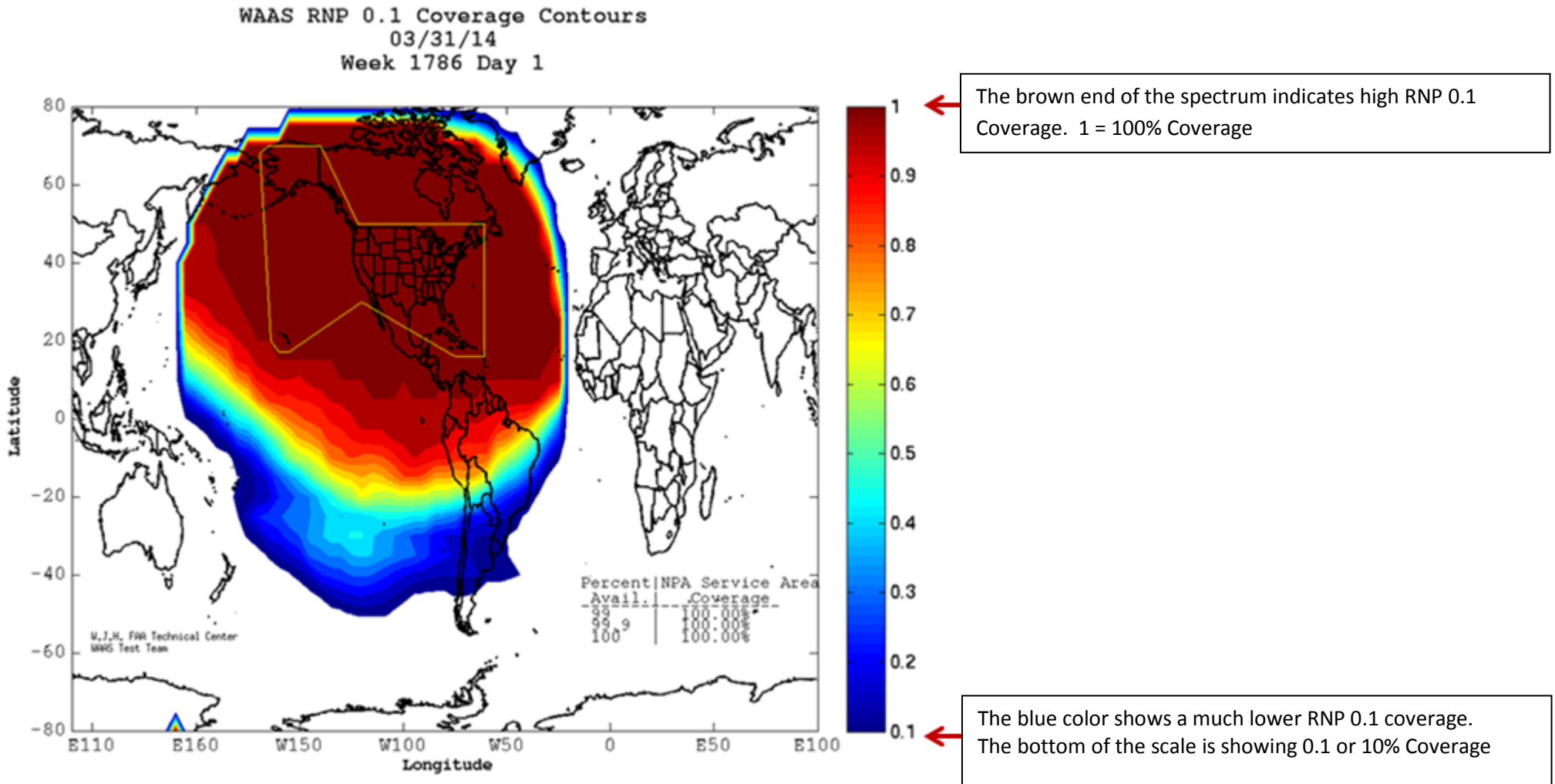
**Percent of RNP 0.1 Coverage:**

The table within the diagram shows the percentage of WAAS RNP 0.1 available in the Non Precision Approach, or NPA, Service Coverage Area. The table's first line shows that WAAS RNP 0.1 was available 99% of the time in 100% of the area covered in the NPA.



## RNP 0.1 Color Scale

The color scale shows the percent of WAAS RNP 0.1 Coverage.



The white area in the plot indicates WAAS LPV Coverage of <10%.

## World GPS Maximum PDOP

To see the World GPS Maximum PDOP, Click on the link (See thick, red arrow below).

[Week 1786 Day 1 : \(31-MAR-2014\)](#)

[Week 1786 Day 0 : \(30-MAR-2014\)](#)

[Week 1785 Day 6 : \(29-MAR-2014\)](#)

[Week 1785 Day 5 : \(28-MAR-2014\)](#)

[Week 1785 Day 4 : \(27-MAR-2014\)](#)

# *NPA and SPS Summary Report*

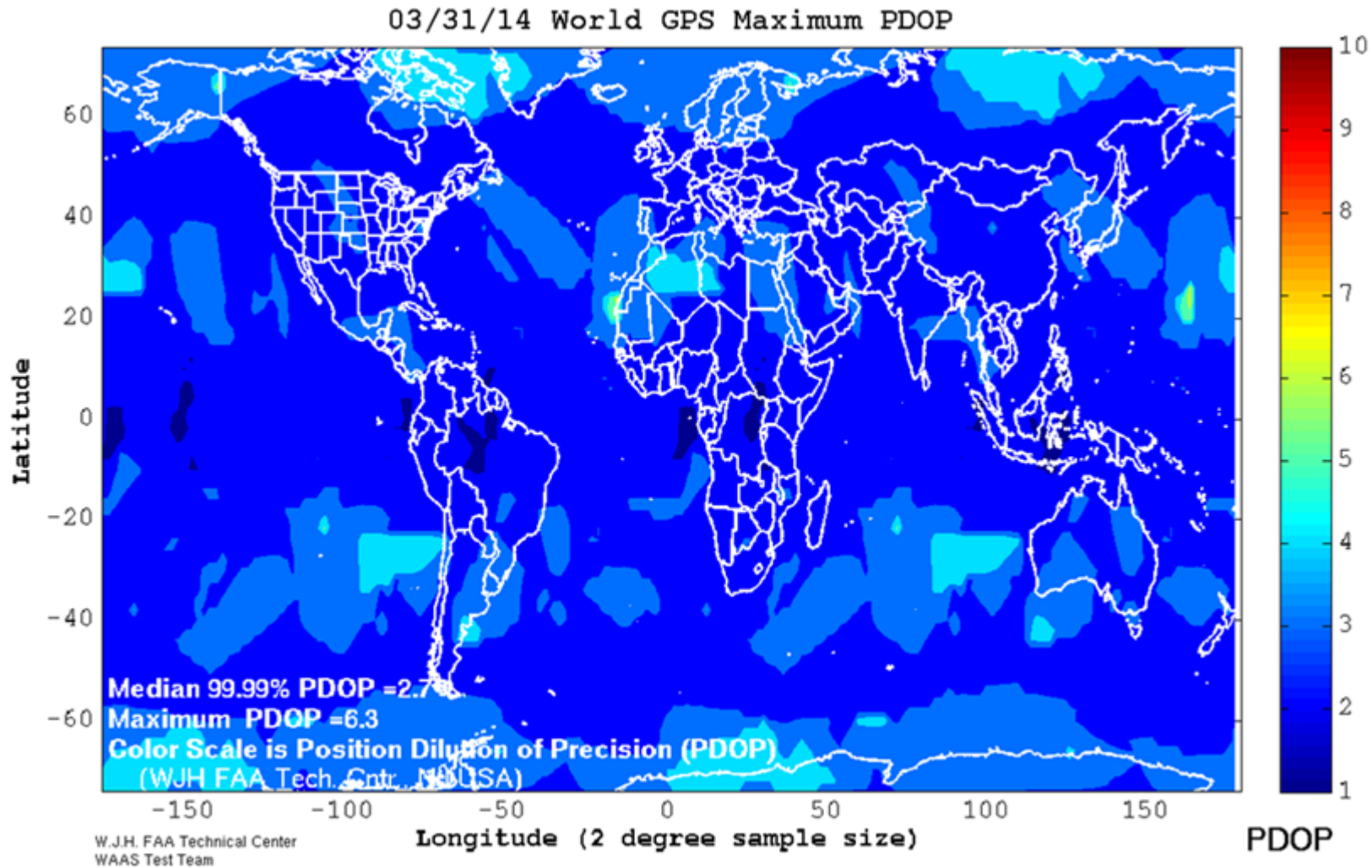
Week 1786 Day 1 : (31-MAR-2014) ▾

**Coverage** (100%, 99.9%, 99%) [NPA Service Area RNP3: 100% 100% 100%](#) [NPA Service Area RNP1: 100% 100% 100%](#) [World GPS Maximum PDOP](#)



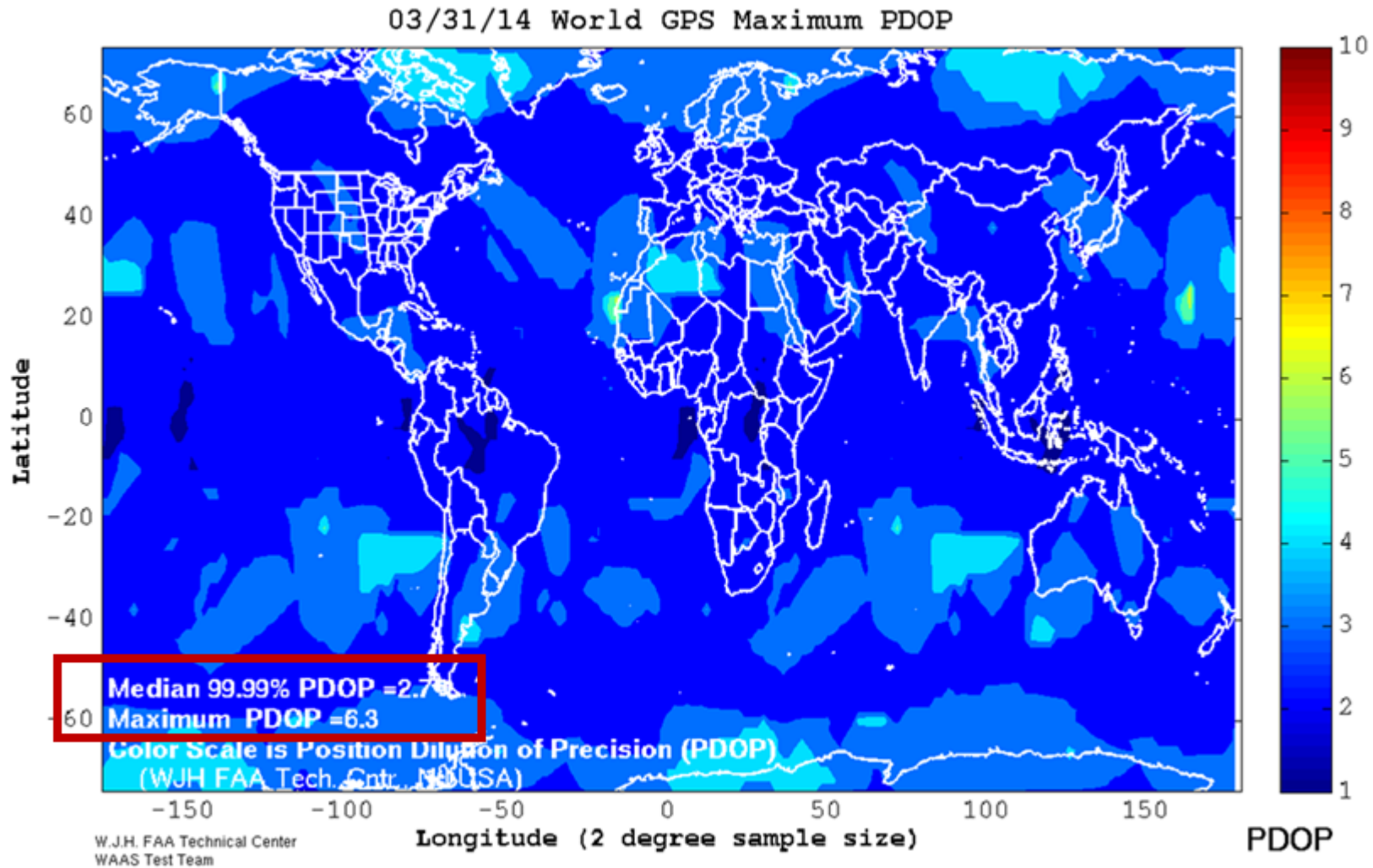


Once we click on the link, we see a screen similar to the one below. This daily 24-hour plot shows GPS SPS Maximum Position Dilution of Precision, or Max PDOP. For this plot, the day begins at 0:00 Greenwich Mean Time (GMT). The PDOP is calculated every minute in a 2 degree by 2 degree grid in longitude and latitude. Over the 24 hour period, the maximum calculated PDOP is determined for each grid point and then plotted.



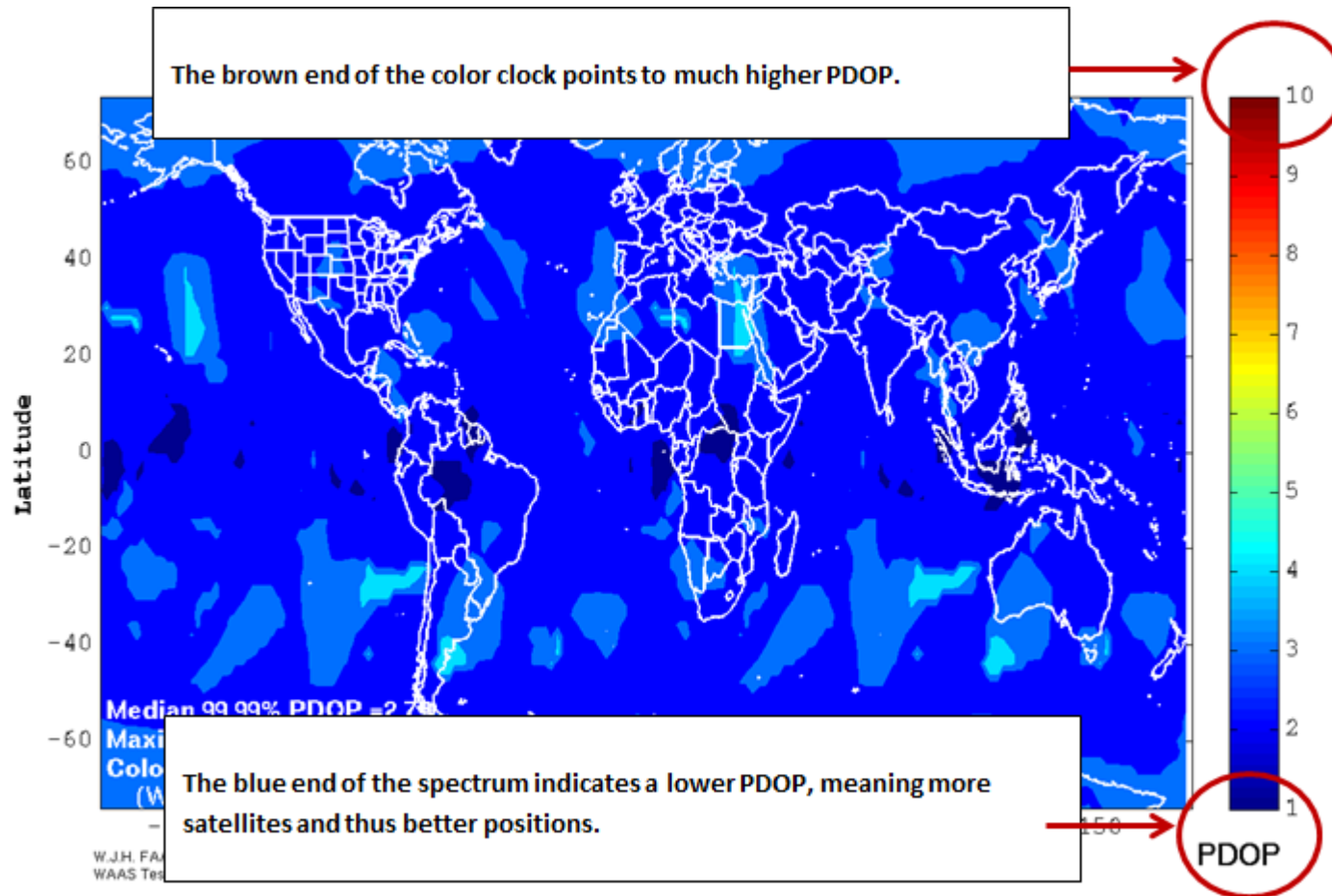
**Median and Maximum PDOP:**

For each grid point, the 99.99% PDOP during a 24 hour period is determined. Out of this set of data, the median 99.99% PDOP is identified and noted in the plot. In addition, the PDOP for all grid points over 24 hours is rank ordered and the maximum PDOP is noted in the plot (See red box below).



## PDOP Color Scale

The color block to the right of the diagram indicates Position Dilution of Precision, or PDOP.

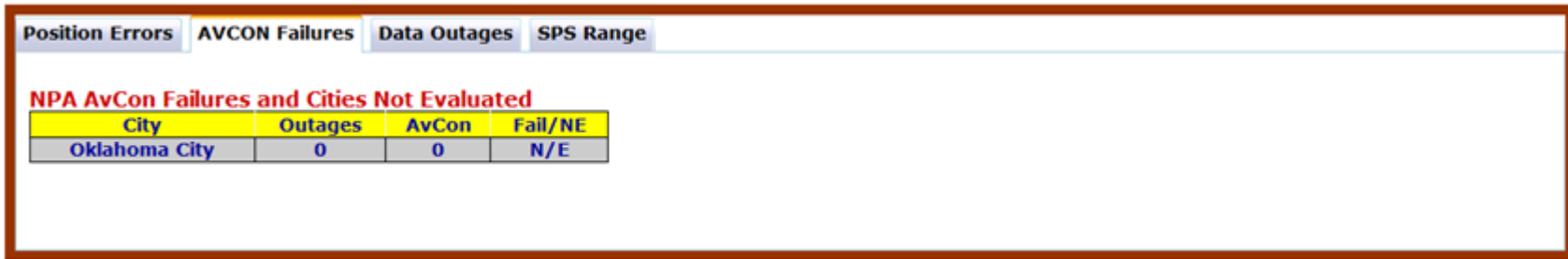


## AVCON Failures

We clicked the Availability Continuity, or “AVCON,” tab. AVCON is defined as receiver availability taking into account the continuity of service.

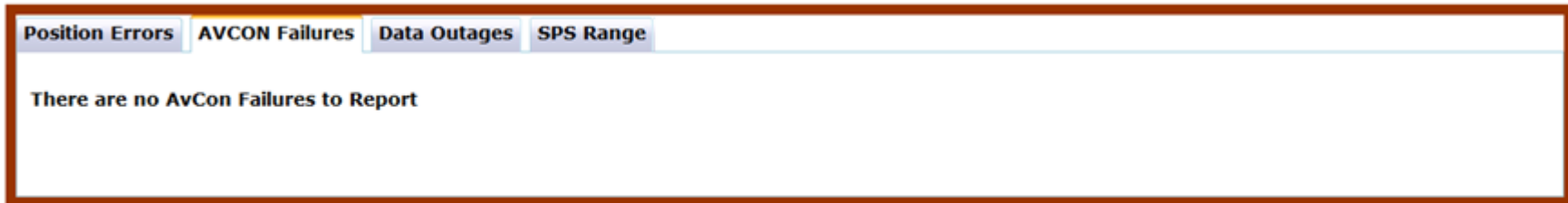
Avcon = Availability \* Continuity

The top box is an image of AVCON Failures data for Week 1786 Day 1, or March 31, 2014. This box shows NPA AVCON Failures and Cities Not Evaluated. Here we are looking at Oklahoma City.



City	Outages	AvCon	Fail/NE
Oklahoma City	0	0	N/E

The bottom box shows AVCON Failures data for Week 1778 Day 3, or February 5, 2014.



There are no AvCon Failures to Report

## Data Outages

The Data Outages tab shows us the number of seconds we did not receive data for a particular receiver. The top box shows the outage totals while the bottom box shows the continuity. Any outages >3 seconds are recorded in the bottom box. The bottom box also shows the Time Out and Time In in GMT Time of Week (GPS TOW) and GMT Time in parenthesis.

Please note: For the WAAS sites, one receiver from each Wide-area Reference Station (WRS) is chosen and shown in this tab.



Position Errors AVCON Failures **Data Outages** SPS Range

**Data Outages**


City	Number of Outages	Total Missed Seconds
Barrow	1	5
Bethel	1	5
Fairbanks	1	1
Kotzebue	2	10

*Times to Analyze For Data Outages(Times are GPS TOW (GMT Time))*  
*Times are only shown for data outages greater than 3 seconds*

City	Time_OUT	Time_IN	Number of Seconds
Barrow	149153 (17:25:38)	149159 (17:25:44)	5
Bethel	149153 (17:25:38)	149159 (17:25:44)	5
Kotzebue	149153 (17:25:38)	149159 (17:25:44)	5
Kotzebue	149159 (17:25:44)	149165 (17:25:50)	5

## SPS Range

Here we are looking at SPS Range. Only six (6) range receivers are shown. The values shown are the range errors calculated for each satellite and receiver. The sites are chosen to give a large footprint for the satellite observations. The orange highlighted boxes show the maximum range errors for each site. Note: You can also see the 95% range errors, mean range errors, and RMS range errors for each site by clicking on the appropriate boxes.



Position Errors		AVCON Failures		Data Outages		SPS Range	
Range 95%		Range Max		Range Mean		Range RMS	
SAT	BOSTON	LA	MIAMI	JUNEAU	MERIDA	HONOLULU	
1	7.24	3.94	6.85	4.11	13.07	1.69	
2	1.67	3.69	3.31	5.91	4.62	12.63	
3	6.39	5.40	6.78	8.94	8	5.06	
4	4.06	3.71	2.89	7.09	9.51	10.11	
5	3.73	5.27	2.70	7.63	5.08	7.51	
6	0	0	0	0	0	0	
7	6.52	4.85	7.73	6.26	12.35	7.57	
8	5.05	4.65	5.13	6.72	11.50	8.17	
9	5.75	4.31	8.31	7.50	13.87	9.33	
10	2.67	4.85	6.18	6.44	15.38	9.74	
11	4.64	3.88	6	7.25	12.77	1.98	
12	6.48	2.01	6.83	3.95	3.63	13.29	
13	5.47	4.81	5.32	7	24.94	7.81	
14	7.45	4.63	5.77	4.34	6.23	16.86	
15	3.56	3.81	2.84	5.36	3.22	9.57	
16	5.72	6.25	5.47	8.04	7.16	4.31	
17	6.12	2.88	8.39	4.30	13.54	13.42	
18	3.48	2.45	4.78	8.54	5.82	2.93	
19	4.38	4.20	4.86	9.36	8.03	2.83	
20	5.63	4.26	6.24	5.47	7.17	5.59	
21	6.57	2.98	6.02	3.16	4.38	12.99	
22	4.60	3.91	9.12	3.05	7.87	7.41	
23	5.66	5.54	7.53	5.08	16.01	2.82	
24	5.81	4.96	6.64	5.59	12.06	13.20	
25	6.54	2.68	5.92	6.11	5.05	14.33	
26	5.24	3.63	10.31	8.38	13.54	11.31	
27	5.11	5.53	6.57	7.66	8.12	3.81	
28	4.37	6.17	5.36	7.76	10.19	8.03	
29	6.33	3.72	7.58	8.80	4.35	12.84	
30	0	0	0	0	0	0	
31	7.40	3.89	6.91	8.72	8.12	14.86	
32	5.89	3.35	4.99	4.54	6.87	3.22	

This is the SPS 95% range errors. Notice the red highlighted box indicating this was clicked.

Position Errors		AVCON Failures		Data Outages		SPS Range			
		<b>Range 95%</b>		Range Max		Range Mean		Range RMS	
SAT	BOSTON	LA	MIAMI	JUNEAU	MERIDA	HONOLULU			
1	5.13	2.82	5.42	3	11.78	1.39			
2	1.47	2.68	2.91	3.32	2.22	9.56			
3	5.01	3.89	6	4.28	5.78	4.60			
4	3.46	2.04	2.58	3.74	7.84	9.16			
5	3.26	3.75	1.81	4.57	3.85	7.06			
6	0	0	0	0	0	0			
7	3.61	3.18	5.78	4.34	10.94	6.88			
8	4.28	4.24	4.22	4.72	10.15	7.57			
9	5.15	3.22	6.83	5.12	12.93	8.74			
10	1.91	3.62	3.30	3.60	3.01	8.35			
11	4.19	2.80	4.61	4.34	11.41	1.75			
12	3.42	1.77	3.80	2.72	3.19	10.71			
13	3.25	3.59	3.47	3.64	13.48	5.07			
14	4.96	3.72	4.62	2.53	5.77	9.86			
15	2.47	2.72	2.49	3.25	2.93	8.79			
16	4.17	4.71	4.28	3.89	6.73	3.24			
17	5.43	2.41	6.01	2.92	12	10.50			
18	1.81	1.96	2.86	4.95	3.07	2.47			
19	3.22	2.37	4.20	4.44	6.95	2.57			
20	3.56	2.81	4.52	2.85	6.46	4.11			
21	3.02	2.10	5.52	2.85	2.88	5.44			
22	2.75	3.22	7	2.27	5.79	3.99			
23	3.99	4.21	5.52	3.10	7.73	2.17			
24	4.98	3.89	5.74	4.56	6.72	11.07			
25	4.03	1.96	3.96	3.21	4.28	11.10			
26	3.36	3.15	8.23	4.86	12.17	9.40			
27	3.69	3.82	3.64	3.65	3.94	3.10			
28	4.19	5.75	4.34	5.69	8.95	5.64			
29	3.76	3.41	5.87	4.47	3.85	9.17			
30	0	0	0	0	0	0			
31	4.83	3.20	5.01	3.89	7.71	9.63			
32	4.74	2.39	4.03	2.46	6.35	1.91			

Here is the SPS mean range errors. Notice the red highlighted box indicating this was clicked:

Position Errors		AVCON Failures		Data Outages		SPS Range			
		Range 95%		Range Max		Range Mean		Range RMS	
SAT	BOSTON	LA	MIAMI	JUNEAU	MERIDA	HONOLULU			
1	-1.62	-0.60	-1.60	-0.70	-3.79	0.01			
2	0.32	0.91	1.52	-0.35	-0.26	0.94			
3	1.34	1.78	1.91	0.65	0.18	2.82			
4	-0.45	0.10	-0.22	-1.13	-1.97	-2.84			
5	-0.90	-0.93	0.58	-1.76	-0.56	-1.36			
6	0	0	0	0	0	0			
7	-1.10	-0.48	-0.99	-0.20	-3.60	-3.67			
8	0.14	0.66	-0.77	0.87	-3.31	-2.88			
9	-1.44	-0.87	-3.24	-1.28	-5.59	-5			
10	0.66	0.37	1.63	0.21	0.74	-0.46			
11	-0.42	-0.35	-0.59	0.36	-3.21	0.71			
12	-0.36	-0.06	0.35	-0.58	-0.82	-2.36			
13	-0.30	-0.12	0.14	-0.04	-0.57	-1.27			
14	-1.62	-1.05	-1.54	-0.50	-2.30	-0.31			
15	-0.70	0.21	0.71	-0.42	0.41	-1.21			
16	-0.75	-0.70	-0.66	-0.58	-2.66	-0.77			
17	-1.70	0.27	-1.57	-0.47	-3.74	-2.05			
18	-0.28	0.50	1.04	0.61	0.38	-0.29			
19	0.09	0.11	0.58	-0.43	-1.19	1.30			
20	-0.35	-0.80	-0.19	-0.61	-1.49	0.73			
21	-0.18	0.69	2.03	-0.81	1.13	-0.98			
22	0.37	1.42	1.73	0.51	1.12	1.80			
23	-0.82	-0.90	-0.91	-0.51	-2.56	-0.89			
24	-2.93	-1.64	-2.62	-2.15	-2.68	-4.47			
25	-0.67	-0.49	-0.32	-0.77	-1.38	-3.65			
26	-1.07	-0.02	-0.66	-0.76	-2.06	-1.95			
27	-0.50	-0.93	-0.21	-0.93	-1.05	-0.25			
28	1.29	3.05	1.05	1.93	-1.31	-0.53			
29	-1.53	-0.80	-0.84	-1.19	-0.72	-2.44			
30	0	0	0	0	0	0			
31	-1.70	-1.54	-1.63	-0.80	-3.55	-1.53			
32	0.43	-0.45	-1.17	-0.71	-2.08	0.96			



Here are the SPS Root Mean Square (RMS) range errors. Notice the red highlighted box indicating this was clicked:

Position Errors		AVCON Failures		Data Outages		SPS Range	
Range 95%		Range Max		Range Mean		Range RMS	
SAT	BOSTON	LA	MIAMI	JUNEAU	MERIDA	HONOLULU	
1	2.50	1.54	2.92	1.59	5.09	0.79	
2	0.79	1.76	1.74	1.70	1.31	5.54	
3	2.40	2.32	3.22	2.23	2.76	3.17	
4	1.59	0.97	1.32	1.92	3.14	4.53	
5	1.67	2.31	1.01	2.63	1.93	4.38	
6	0	0	0	0	0	0	
7	2.24	1.72	3.10	2.45	5.17	4.16	
8	1.98	1.92	2.27	2.66	5.06	3.96	
9	2.54	1.81	4.05	2.75	6.94	5.41	
10	0.98	2.08	1.89	1.72	2.29	4.07	
11	2.12	1.52	2.63	2.28	4.71	1.10	
12	1.74	1.21	1.77	1.38	1.56	5.80	
13	1.70	1.75	1.80	2	5.56	2.90	
14	2.39	2.05	2.37	1.37	3.05	4.70	
15	1.27	1.31	1.45	1.86	1.51	5.62	
16	2.05	2.30	2.35	2.27	3.85	1.52	
17	2.56	1.37	2.88	1.49	5.42	5.60	
18	1.01	1.17	1.65	2.22	1.66	1.28	
19	1.79	1.19	2.53	2.36	3.39	1.61	
20	1.85	1.39	2.37	1.56	3.29	1.80	
21	1.64	1.20	2.57	1.49	1.75	2.98	
22	1.36	1.93	2.90	1.44	2.44	2.35	
23	2.02	1.97	2.71	1.52	4.32	1.28	
24	3.22	2.23	3.22	2.68	3.64	6.81	
25	1.94	1.19	2.12	1.89	2.21	5.71	
26	1.75	1.45	3.46	2.23	4.50	4.74	
27	1.74	1.83	1.92	2.14	2.24	1.60	
28	1.95	3.39	2.23	3.08	3.93	2.69	
29	2.07	1.86	2.21	2.54	1.78	5.52	
30	0	0	0	0	0	0	
31	2.45	1.92	2.77	2.46	4.20	4.58	
32	2.27	1.26	2.16	1.33	3.40	1.17	