

# Civil Report Card On GPS Performance

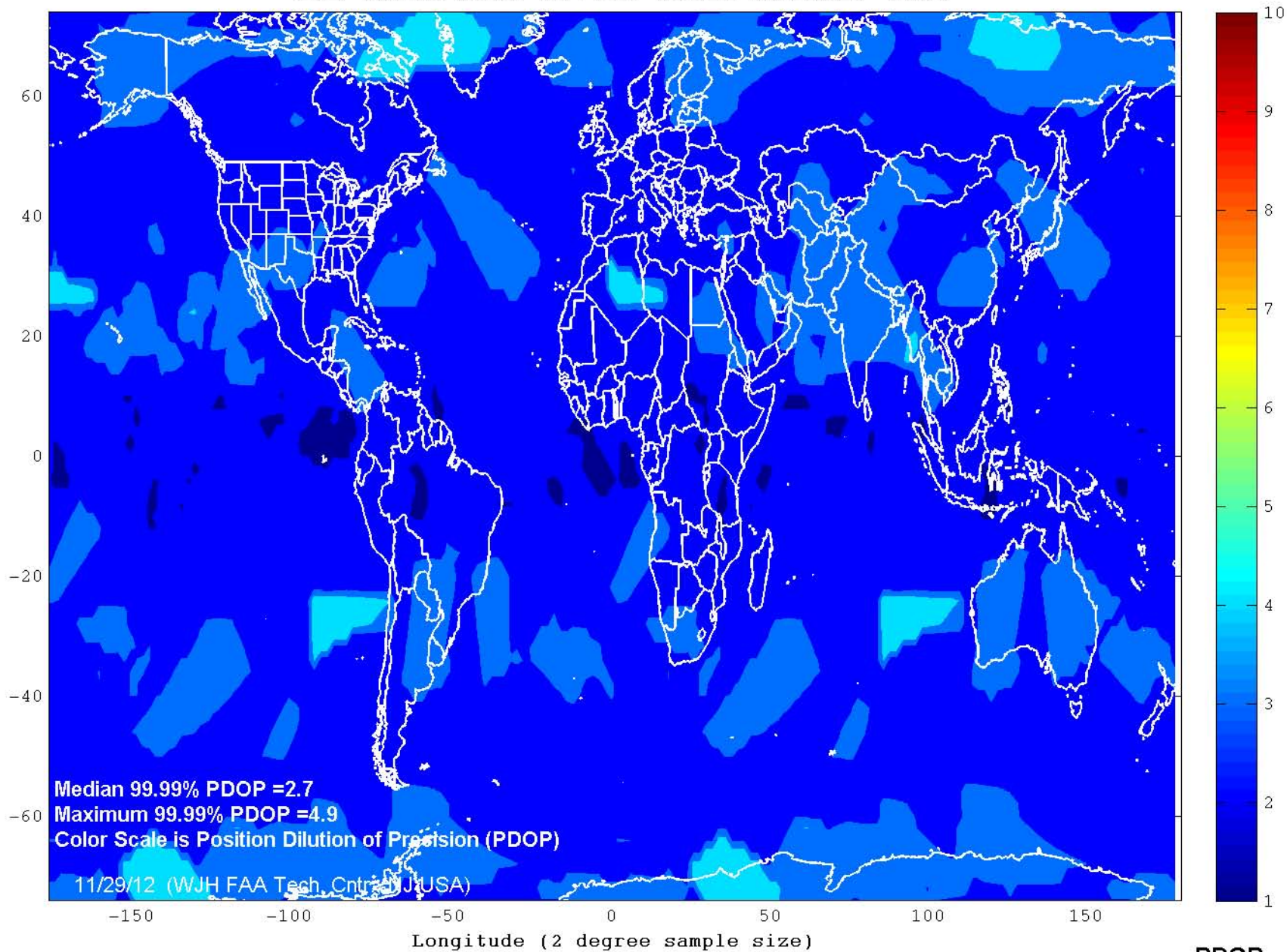
## October 2012

| Operational Performance Parameter                           | CY 2011           | Sep 2012          | Oct 2012        | Long term | Short term |
|-------------------------------------------------------------|-------------------|-------------------|-----------------|-----------|------------|
| <b>Availability Parameters</b>                              |                   |                   |                 |           |            |
| <i>Average Number of satellites usable</i>                  | 30.65             | 30.86             | 30.99           | ↑         | ↑          |
| <i>Average number of satellites usable in primary slots</i> | 23.78<br>(99.10%) | 23.98<br>(99.91%) | 24.00<br>(100%) | ↑         | ↑          |
| <i>Average availability of 6 satellites in view</i>         | 99.99%            | 99.99%            | 100%            | ↑         | ↑          |
| <b>99.99% Horizontal DOP</b>                                |                   |                   |                 |           |            |
| <i>Area Median</i>                                          | 1.5               | 1.4               | 1.3             | ↑         | ↑          |
| <i>Worst Site</i>                                           | 3.0               | 3.1               | 2.2             | ↑         | ↑          |
| <b>99.99% Vertical DOP</b>                                  |                   |                   |                 |           |            |
| <i>Area Median</i>                                          | 2.8               | 2.5               | 2.4             | ↑         | ↑          |
| <i>Worst Site</i>                                           | 5.8               | 10.2              | 4.5             | ↑         | ↑          |
| <b>99.99% Position DOP (PDOP)</b>                           |                   |                   |                 |           |            |
| <i>Area Median</i>                                          | 3.1               | 2.8               | 2.7             | ↑         | ↑          |
| <i>Worst Site</i>                                           | 6.5               | 10.6              | 4.9             | ↑         | ↑          |
| <b>100% RAIM Availability (HAL=185m)</b>                    |                   |                   |                 |           |            |
| <i>NPA Service Area (NSA)</i>                               | -                 | 86.00%            | 74.74%          | -         | ↓          |
| <i>World</i>                                                | -                 | 94.34%            | 67.43%          | -         | ↓          |
| <b>Accuracy Parameters</b>                                  |                   |                   |                 |           |            |
| <b>RMS Single Frequency User Range Error</b>                |                   |                   |                 |           |            |
| <i>Constellation Median</i>                                 | 1.95              | 2.02              | 2.25            | ↓         | ↓          |
| <i>Worst Satellite</i>                                      | 2.57              | 2.52              | 3.38            | ↓         | ↓          |
| <b>95% Horizontal Error</b>                                 |                   |                   |                 |           |            |
| <i>Area Median</i>                                          | 2.71              | 2.97              | 2.93            | ↓         | ↑          |
| <i>Worst Site</i>                                           | 10.10             | 8.16              | 9.28            | ↑         | ↓          |
| <i>Availability (% &lt;4.5m (historical 3-sigma))</i>       | 98.74%            | 99.91%            | 99.80%          | ↑         | ↓          |
| <b>95% Vertical Error</b>                                   |                   |                   |                 |           |            |
| <i>Area Median</i>                                          | 5.03              | 4.50              | 5.40            | ↓         | ↓          |
| <i>Worst Site</i>                                           | 10.39             | 11.16             | 10.87           | ↓         | ↑          |
| <i>Availability (% &lt; 9m (historical 3-sigma))</i>        | 99.53%            | 99.99%            | 99.88%          | ↑         | ↓          |

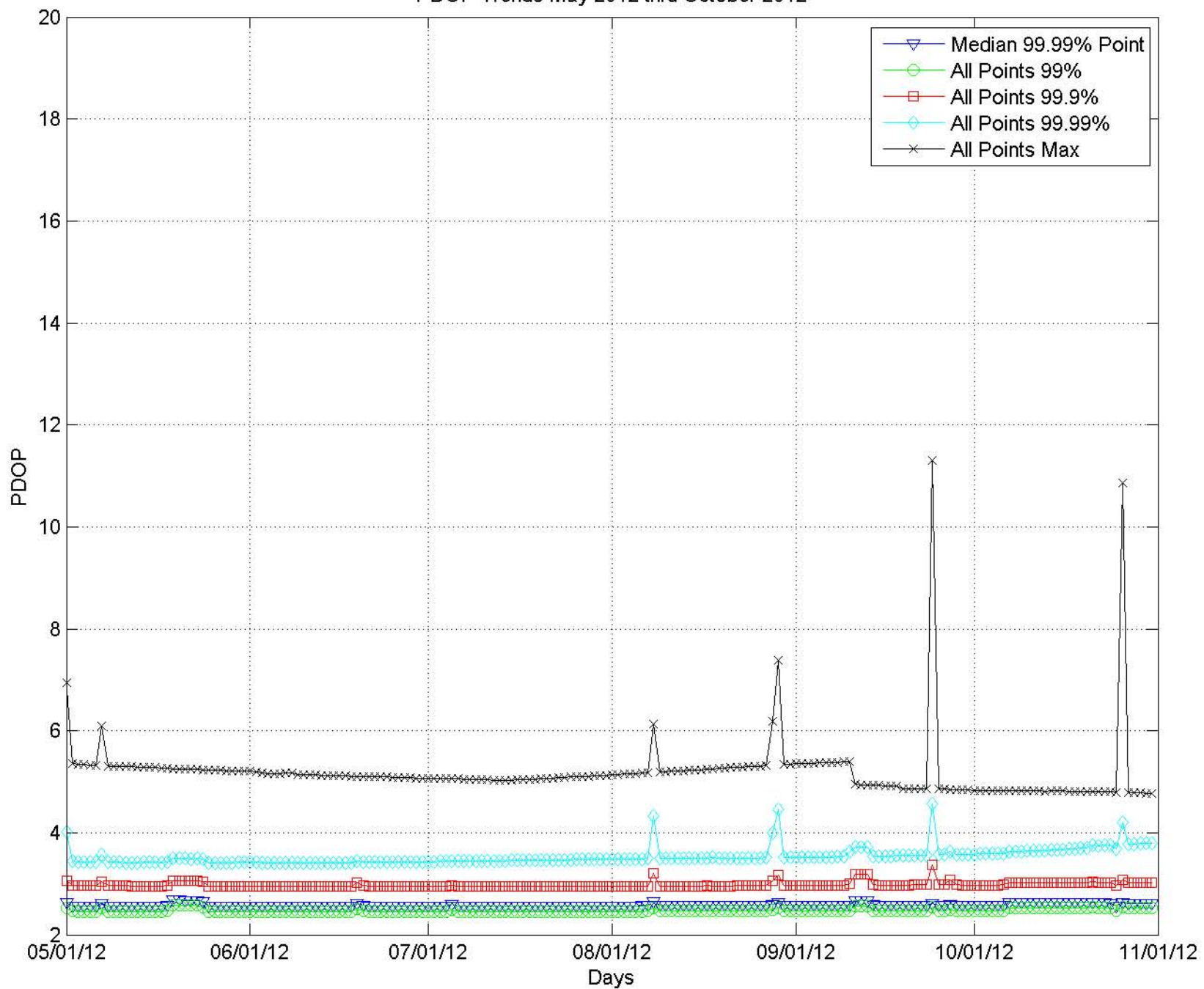
Key: ↑ improving ↓ worsening → no significant change

Long Term is current month vs. prior 24 months; Short Term is current month vs. prior month

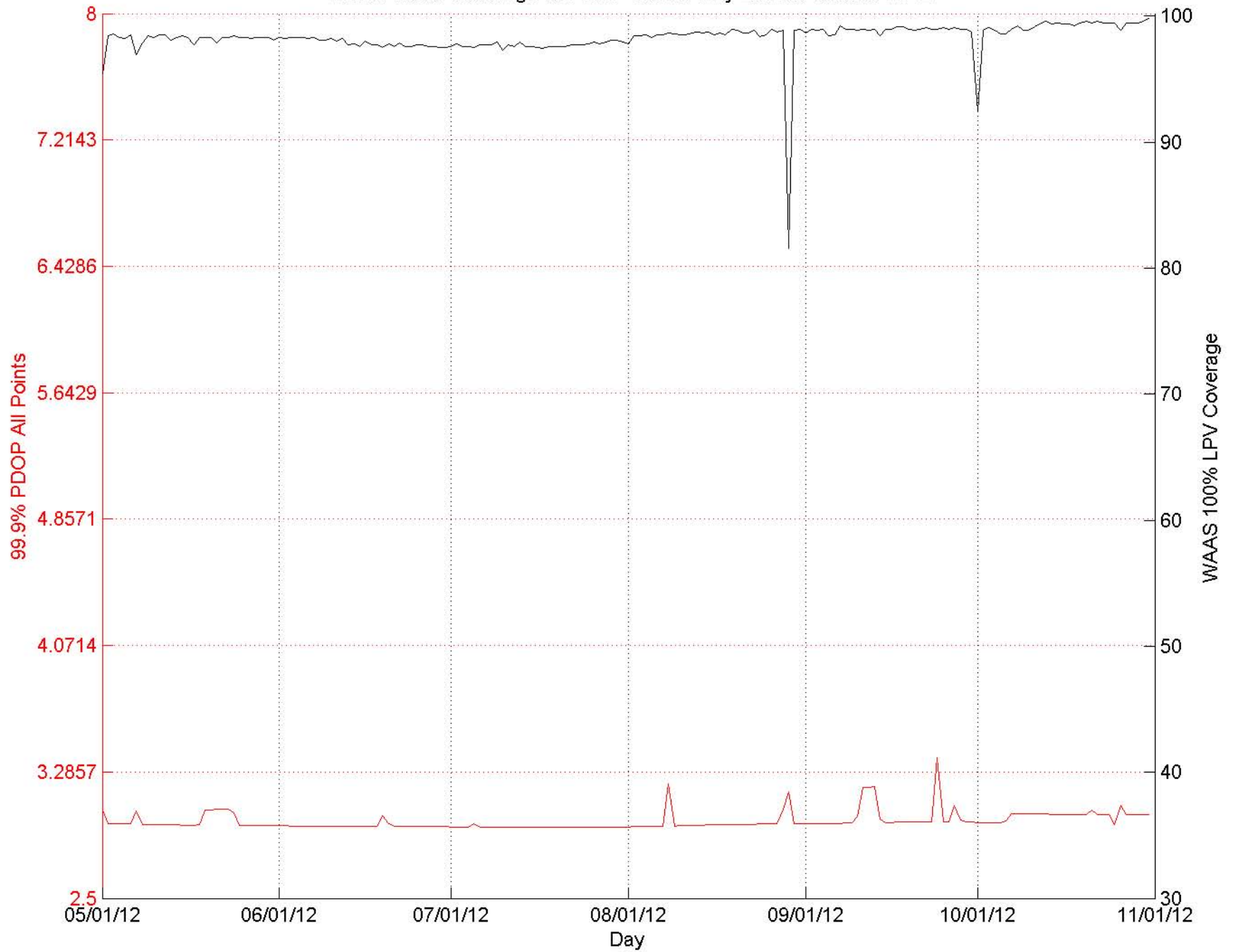
# GPS World PDOP 99.99% Index October 2012



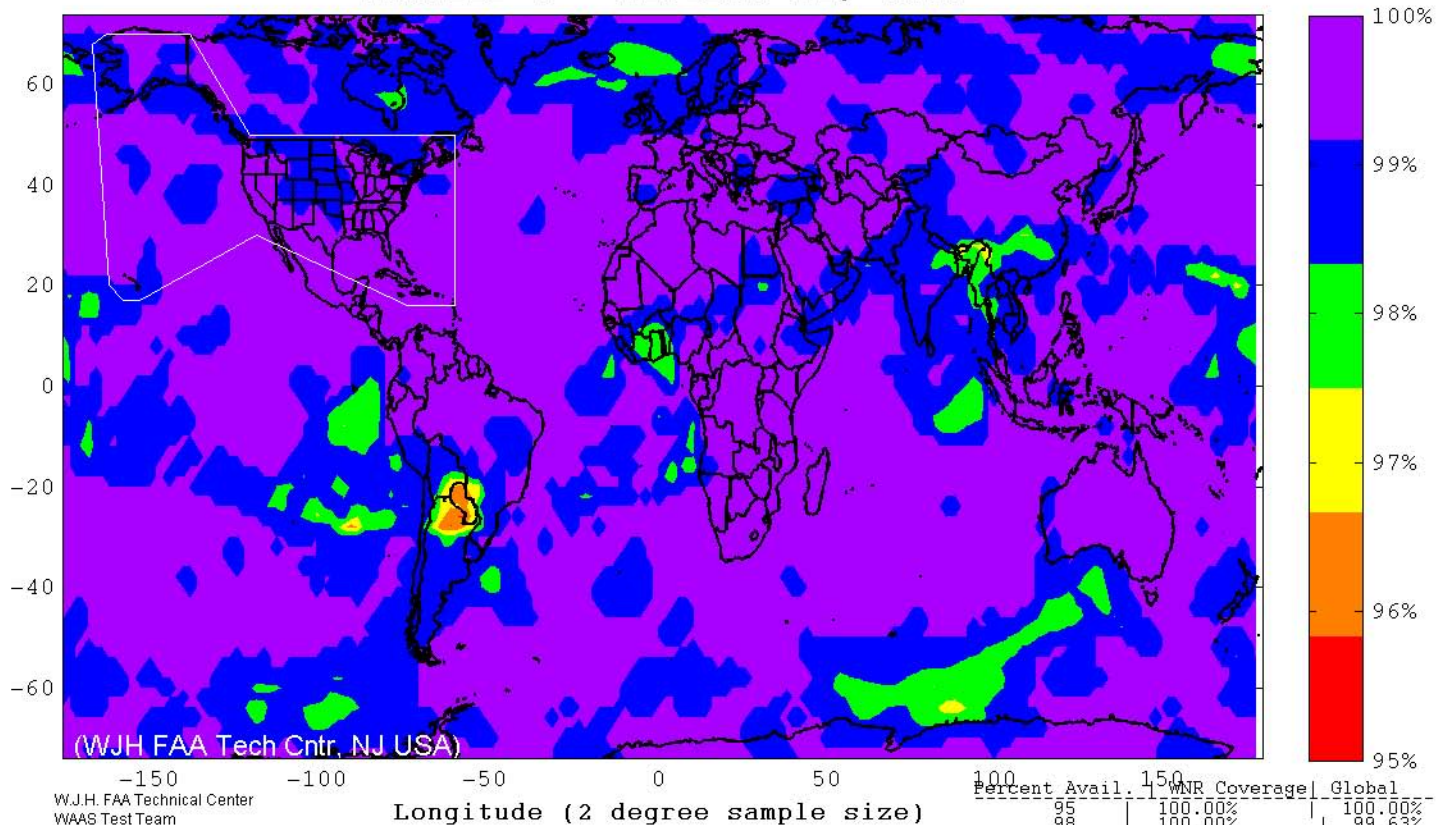
PDOP Trends May 2012 thru October 2012



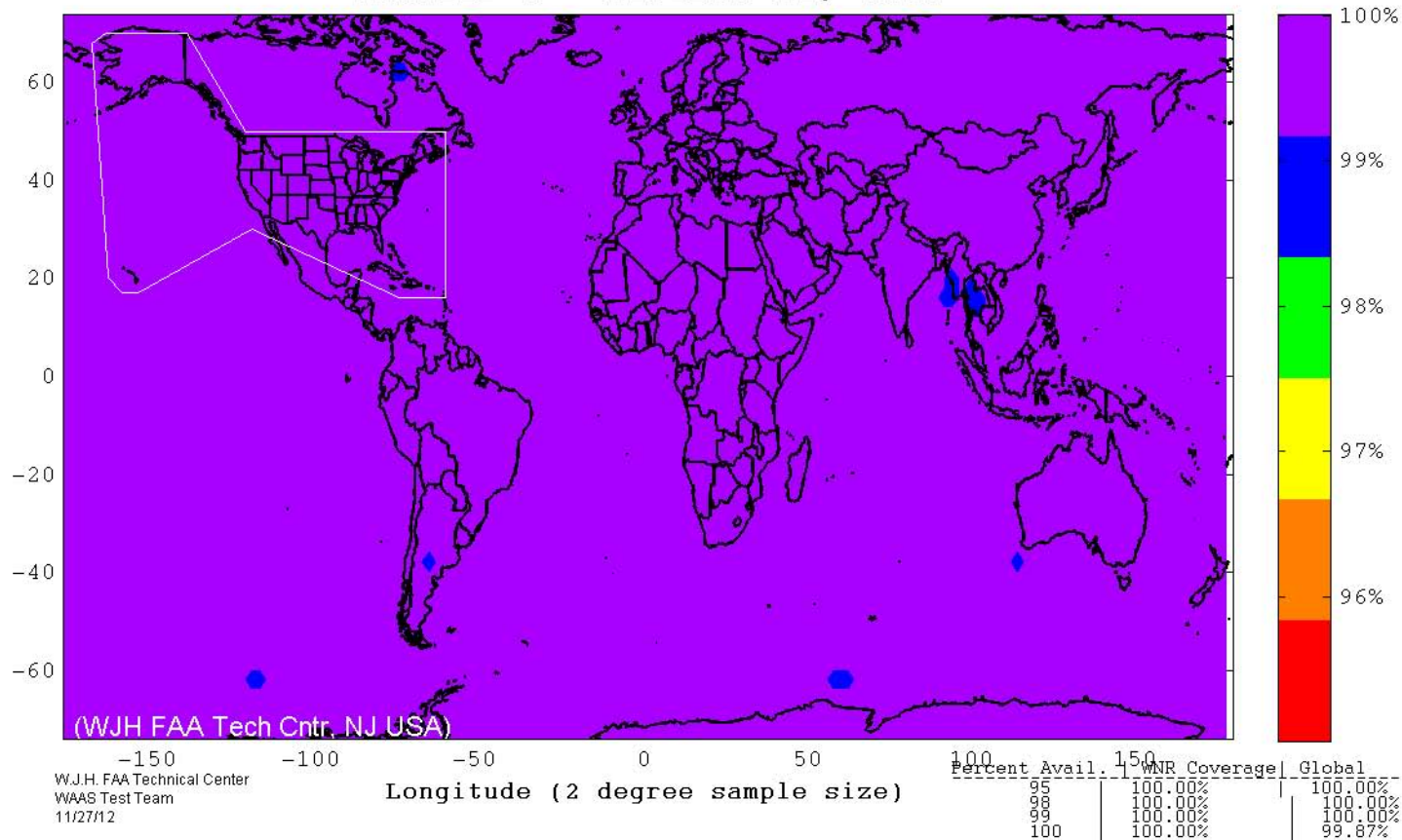
WAAS Conus Coverage vs PDOP Trends May 2012 to October 2012



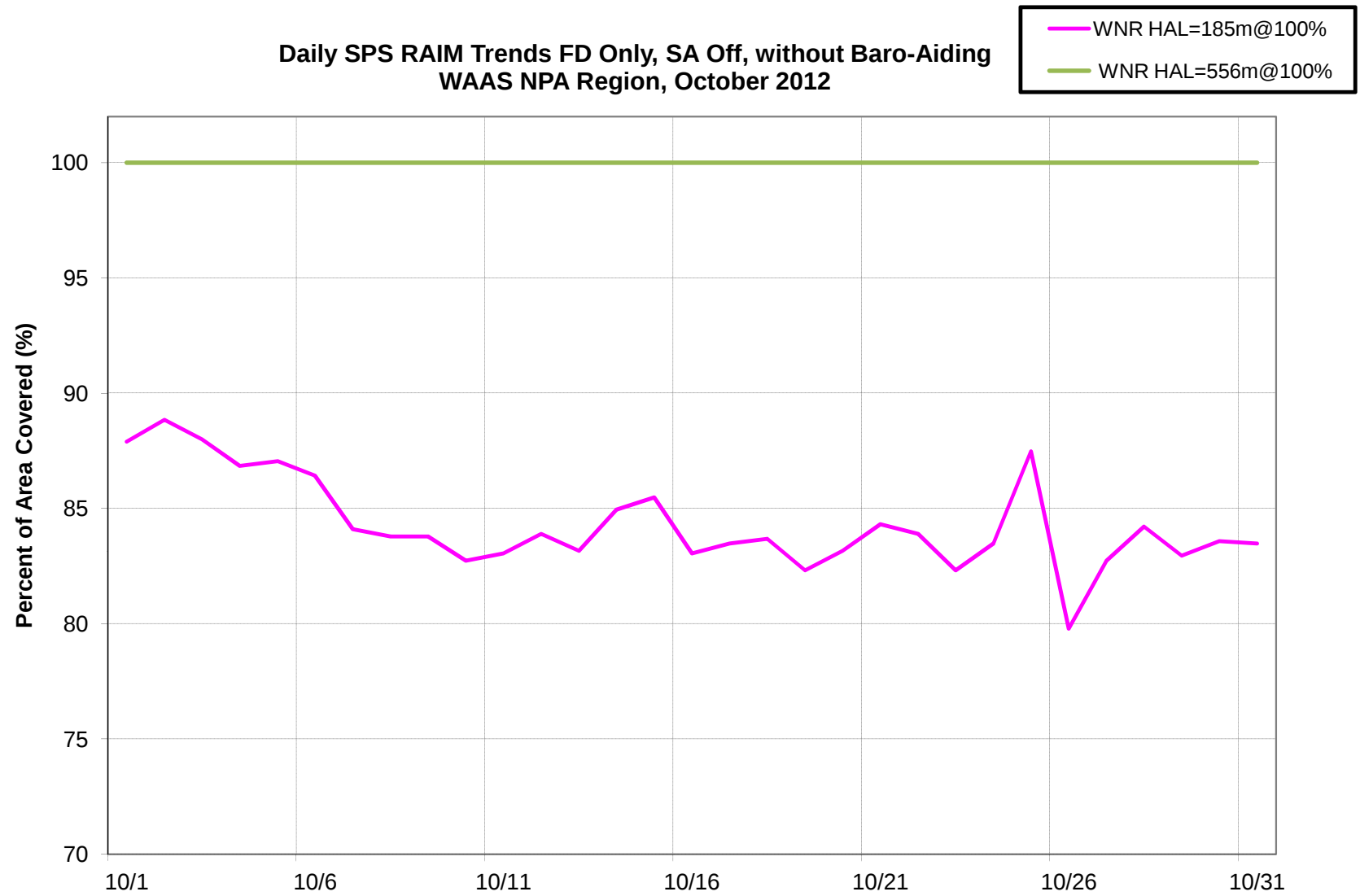
SPS RAIM RNP 0.1 (HAL = 185m) Availability  
 FD Only, SA Off, without Baro-Aiding  
 October 1 - October 31, 2012



SPS RAIM RNP 0.3 (HAL = 556m) Availability  
 FD Only, SA Off, without Baro-Aiding  
 October 1 - October 31, 2012



**Daily SPS RAIM Trends FD Only, SA Off, without Baro-Aiding  
WAAS NPA Region, October 2012**



**Daily SPS RAIM Trends FD Only, SA Off, without Baro-Aiding  
World Service Area, October 2012**

