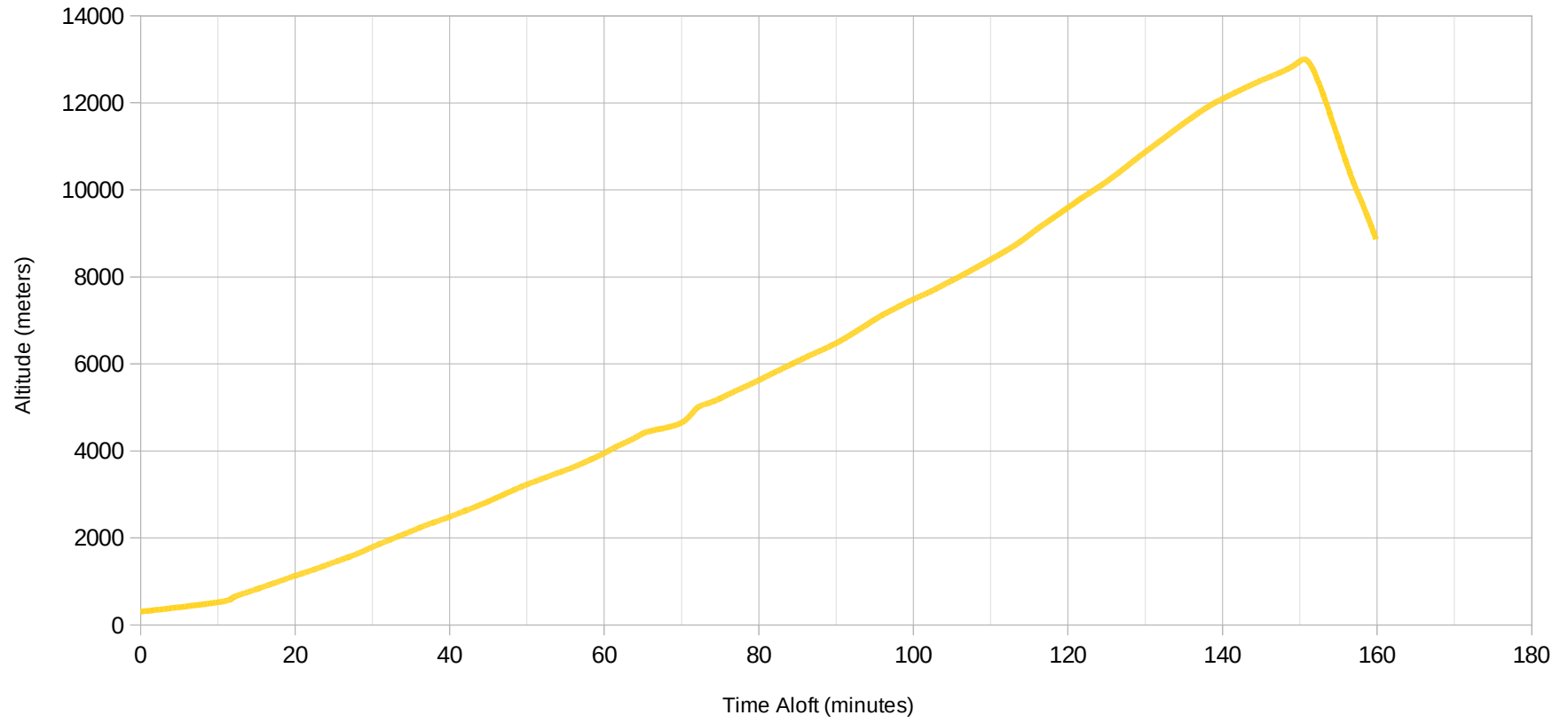


Flight Data Report

Skytracker With SBS-13 (Hydrogen)

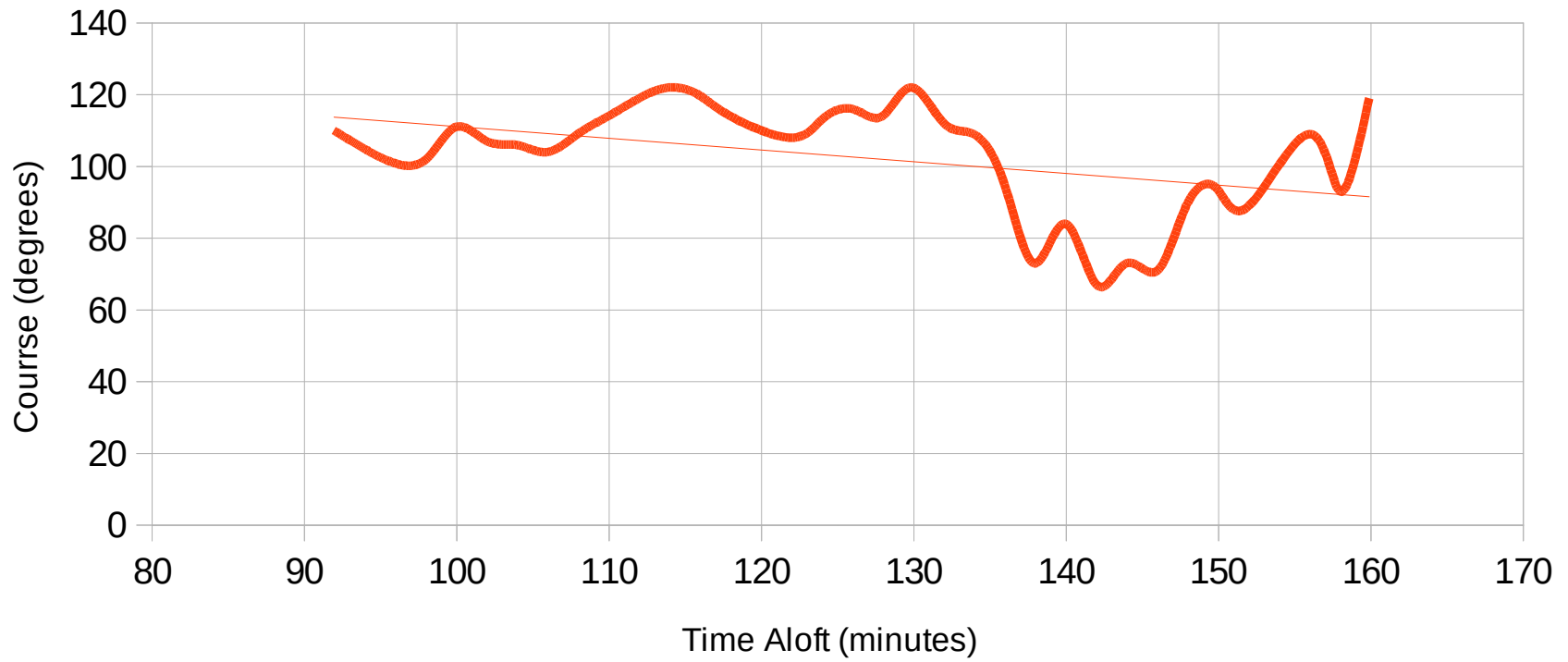
19 August 2019



Flight Data Report

Skytracker With SBS-13 (Hydrogen)

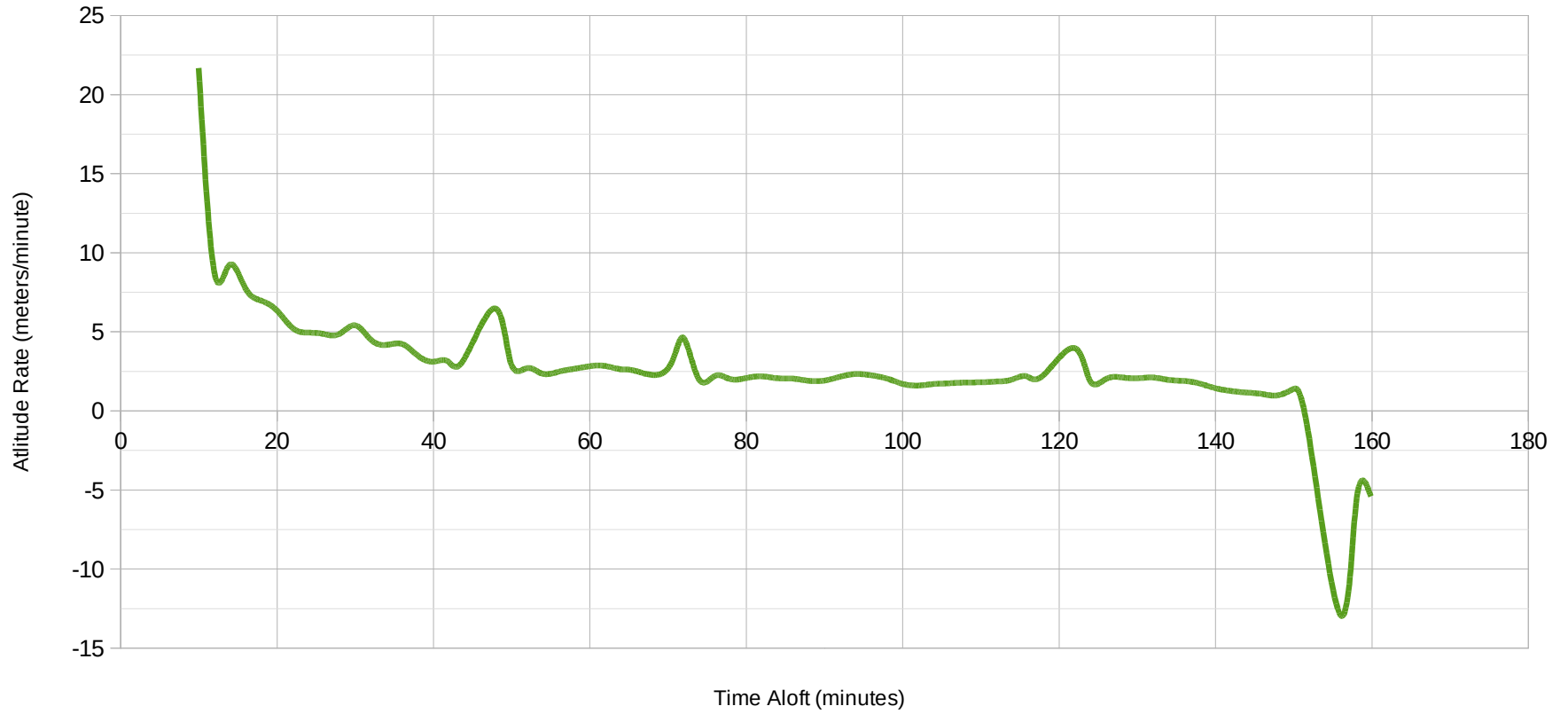
19 August 2019



Flight Data Report

Skytracker With SBS-13 (Hydrogen)

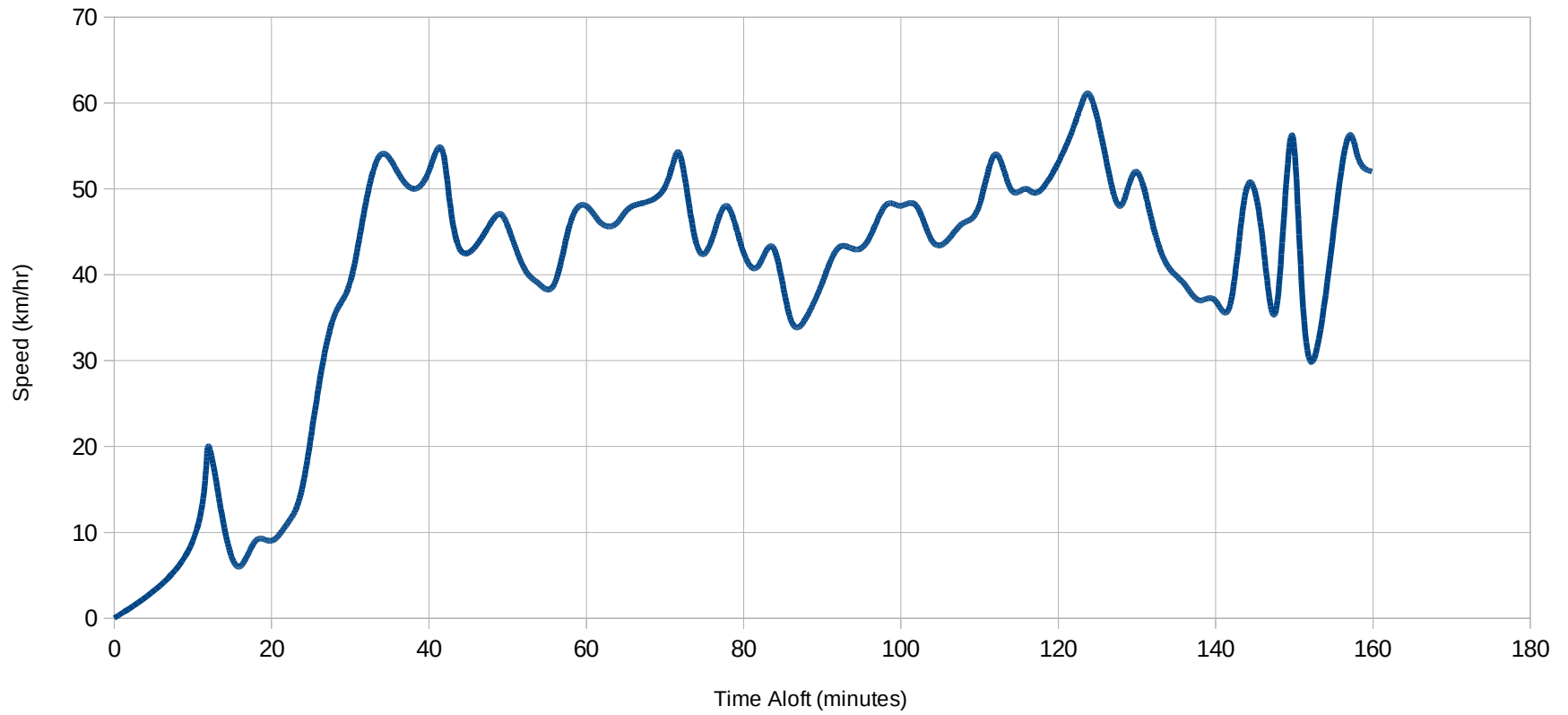
19 August 2019



Flight Data Report

Skytracker With SBS-13 (Hydrogen)

19 August 2019



Flight Data Report

| time | lasttime | lat | lng | aloft | speed | course | altitude | rate | comment |
|-------------------|------------------|------------|------------|------------------|-------|--------|----------|------------------|--------------------|
| 08/19/19 12:57 PM | 43696.5397569445 | 40.9922787 | -81.525385 | | 0 | 0 | 300.2 | | launch |
| 08/19/19 01:07 PM | 43696.5467013889 | 40.99533 | -81.52417 | 9.99999993829988 | 9 | 103 | 516.94 | 21.6740001337288 | 05 4.34 27 517 3 |
| 08/19/19 01:09 PM | 43696.5480555556 | 40.99217 | -81.5185 | 11.9499999855179 | 20 | 144 | 623.01 | 8.87615063837196 | 10 4.34 29 623 4 |
| 08/19/19 01:11 PM | 43696.5494097222 | 40.98783 | -81.51483 | 13.8999998965301 | 11 | 141 | 751.03 | 9.21007201100472 | 11 4.34 29 751 5 |
| 08/19/19 01:13 PM | 43696.5508333333 | 40.98633 | -81.512 | 15.9499998728279 | 6 | 116 | 874.78 | 7.75862075151599 | 11 4.34 30 875 6 |
| 08/19/19 01:15 PM | 43696.5522453704 | 40.98483 | -81.50917 | 17.9833333042916 | 9 | 128 | 1000.05 | 6.96589435786664 | 11 4.36 29 1000 7 |
| 08/19/19 01:17 PM | 43696.5536458333 | 40.98317 | -81.50517 | 19.9999998765998 | 9 | 102 | 1126.85 | 6.34000003911787 | 10 4.38 30 1127 8 |
| 08/19/19 01:19 PM | 43696.5550347222 | 40.98333 | -81.50217 | 21.9999998935964 | 11 | 79 | 1242.06 | 5.2368182071462 | 10 4.40 28 1242 9 |
| 08/19/19 01:21 PM | 43696.5563310185 | 40.98333 | -81.4965 | 23.8666665670462 | 15 | 101 | 1360.02 | 4.94245812118869 | 11 4.42 27 1360 10 |
| 08/19/19 01:23 PM | 43696.5576967593 | 40.982 | -81.488 | 25.8333333162591 | 26 | 96 | 1485.9 | 4.872774196769 | 11 4.44 26 1486 11 |
| 08/19/19 01:25 PM | 43696.5591319444 | 40.9795 | -81.476 | 27.8999998583458 | 35 | 107 | 1620.93 | 4.83978497080916 | 11 4.48 27 1621 12 |
| 08/19/19 01:27 PM | 43696.5605671296 | 40.9755 | -81.4615 | 29.9666665471159 | 39 | 107 | 1783.08 | 5.41101225740458 | 11 4.50 26 1783 13 |
| 08/19/19 01:29 PM | 43696.5619212963 | 40.97067 | -81.44517 | 31.9166665943339 | 48 | 113 | 1927.86 | 4.53618799983649 | 11 4.50 26 1928 14 |
| 08/19/19 01:31 PM | 43696.5633101852 | 40.96517 | -81.42583 | 33.9166666113306 | 54 | 107 | 2068.98 | 4.1607862475747 | 11 4.52 26 2069 15 |
| 08/19/19 01:33 PM | 43696.5647569444 | 40.96117 | -81.40533 | 35.9999998554122 | 52 | 99 | 2221.08 | 4.22500001696899 | 11 4.52 24 2221 16 |
| 08/19/19 01:35 PM | 43696.5661226852 | 40.95867 | -81.38467 | 37.9666666151024 | 50 | 101 | 2353.97 | 3.50017559737885 | 11 4.54 25 2354 17 |
| 08/19/19 01:37 PM | 43696.5675231481 | 40.95533 | -81.3645 | 39.9833331874106 | 52 | 104 | 2478.02 | 3.1025427374589 | 11 4.56 23 2478 18 |
| 08/19/19 01:39 PM | 43696.5688194444 | 40.95083 | -81.34383 | 41.8499998608604 | 54 | 102 | 2609.09 | 3.13189965198976 | 11 4.56 23 2609 19 |
| 08/19/19 01:41 PM | 43696.5702546296 | 40.94817 | -81.32467 | 43.9166665496305 | 43 | 97 | 2752.04 | 3.25502847167262 | 11 4.58 23 2752 20 |
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| 08/19/19 01:47 PM | 43696.5743865741 | 40.95117 | -81.26817 | 49.8666666308418 | 46 | 83 | 3215.94 | 3.08663101826026 | 10 4.64 21 3216 23 |
| 08/19/19 01:49 PM | 43696.5758449074 | 40.95267 | -81.25033 | 51.9666665769182 | 41 | 82 | 3356.15 | 2.69807569420426 | 10 4.62 20 3356 24 |
| 08/19/19 01:51 PM | 43696.5771875000 | 40.95417 | -81.23433 | 53.8999999221414 | 39 | 85 | 3482.95 | 2.35250464161711 | 10 4.66 19 3483 25 |
| 08/19/19 01:53 PM | 43696.5786458333 | 40.9545 | -81.2185 | 55.9999998786952 | 39 | 89 | 3621.02 | 2.46553571962645 | 10 4.66 19 3621 26 |
| 08/19/19 01:55 PM | 43696.5800231481 | 40.95433 | -81.2015 | 57.9833331832197 | 46 | 92 | 3774.95 | 2.65472837709418 | 10 4.66 18 3775 27 |
| 08/19/19 01:57 PM | 43696.5814236111 | 40.9535 | -81.18233 | 59.9999999022111 | 48 | 91 | 3944.11 | 2.81933333792833 | 10 4.68 17 3944 28 |
| 08/19/19 01:59 PM | 43696.5827314815 | 40.9535 | -81.1635 | 61.8833332881331 | 46 | 89 | 4119.98 | 2.84196068077226 | 09 4.70 15 4120 29 |
| 08/19/19 02:01 PM | 43696.5841319444 | 40.95367 | -81.14483 | 63.8999998604413 | 46 | 87 | 4287.93 | 2.62832551434752 | 10 4.70 14 4288 30 |
| 08/19/19 02:03 PM | 43696.5855671296 | 40.9535 | -81.12617 | 65.9666665492114 | 48 | 92 | 4453.13 | 2.50429510299357 | 10 4.74 14 4453 31 |
| 08/19/19 02:05 PM | 43696.5882986111 | 40.95267 | -81.1065 | 69.8999999114312 | 50 | 93 | 4635.09 | 2.60314735666034 | 00 4.74 10 33 |
| 08/19/19 02:09 PM | 43696.5896990741 | 40.9505 | -81.067 | 71.9166666304227 | 54 | 95 | 4968.24 | 4.63244496177842 | 11 4.78 10 4968 34 |
| 08/19/19 02:11 PM | 43696.5910763889 | 40.94817 | -81.047 | 73.8999999349471 | 44 | 100 | 5119.12 | 2.0416779449637 | 10 4.78 10 5119 35 |
| 08/19/19 02:13 PM | 43696.5925000000 | 40.94433 | -81.02967 | 75.9499999217223 | 44 | 108 | 5286.15 | 2.19921000884989 | 10 4.78 8 5286 36 |
| 08/19/19 02:15 PM | 43696.5938310185 | 40.939 | -81.012 | 77.8666665649507 | 48 | 109 | 5443.12 | 2.01588185194838 | 10 4.78 10 5443 37 |
| 08/19/19 02:17 PM | 43696.5952083333 | 40.935 | -80.99417 | 79.8499998799525 | 43 | 108 | 5607.1 | 2.05360050402668 | 10 4.80 8 5607 38 |
| 08/19/19 02:19 PM | 43696.5966087963 | 40.93133 | -80.9785 | 81.866666598944 | 41 | 111 | 5786.02 | 2.1855048878014 | 10 4.80 7 5786 39 |
| 08/19/19 02:21 PM | 43696.5980092593 | 40.92683 | -80.96267 | 83.8833333179355 | 43 | 107 | 5959.14 | 2.06381879632559 | 09 4.80 6 5959 40 |
| 08/19/19 02:23 PM | 43696.5994212963 | 40.92367 | -80.94733 | 85.9166665922385 | 35 | 106 | 6134.1 | 2.03639185433441 | 09 4.82 5 6134 41 |
| 08/19/19 02:25 PM | 43696.6008449074 | 40.91933 | -80.93383 | 87.9666665790137 | 35 | 114 | 6301.13 | 1.89878742136909 | 08 4.82 5 6301 42 |

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| | | | | | | | | | |
|-------------------|------------------|----------|-----------|------------------|----|-----|---------|-------------------|----------------------|
| 08/19/19 02:27 PM | 43696.6022569445 | 40.9145 | -80.91983 | 90.0000000628643 | 39 | 116 | 6473.04 | 1.91011110977691 | 09 4.82 4 6473 43 |
| 08/19/19 02:29 PM | 43696.6035995370 | 40.90917 | -80.9045 | 91.9333332614042 | 43 | 110 | 6670.24 | 2.14503263402056 | 09 4.86 3 6670 44 |
| 08/19/19 02:31 PM | 43696.6049652778 | 40.90533 | -80.888 | 93.9000000210945 | 43 | 105 | 6888.18 | 2.3209797651868 | 10 4.86 2 6888 45 |
| 08/19/19 02:33 PM | 43696.6063194444 | 40.90233 | -80.871 | 95.8499999216292 | 44 | 101 | 7104.28 | 2.25456442542192 | 10 4.88 1 7104 46 |
| 08/19/19 02:35 PM | 43696.6078125000 | 40.8995 | -80.853 | 97.9999999841675 | 48 | 102 | 7304.23 | 2.0403061227786 | 10 4.88 -4 7304 47 |
| 08/19/19 02:37 PM | 43696.6091550926 | 40.89517 | -80.83467 | 99.9333333293907 | 48 | 111 | 7475.22 | 1.71104069386338 | 10 4.88 -7 7475 48 |
| 08/19/19 02:39 PM | 43696.6105787037 | 40.89017 | -80.8165 | 101.983333316166 | 48 | 107 | 7638.29 | 1.59898676281206 | 10 4.90 -4 7638 49 |
| 08/19/19 02:41 PM | 43696.6119212963 | 40.886 | -80.79933 | 103.916666661389 | 44 | 106 | 7814.16 | 1.6924137931894 | 10 4.92 -6 7814 50 |
| 08/19/19 02:43 PM | 43696.6133217593 | 40.882 | -80.78167 | 105.933333380381 | 44 | 104 | 7998.26 | 1.73788546178323 | 10 4.94 -7 7998 51 |
| 08/19/19 02:45 PM | 43696.6147106482 | 40.87833 | -80.765 | 107.933333397377 | 46 | 109 | 8191.2 | 1.78758492790781 | 09 4.96 -9 8191 52 |
| 08/19/19 02:47 PM | 43696.6161111111 | 40.87283 | -80.74717 | 109.949999969685 | 48 | 114 | 8389.32 | 1.80190995956912 | 09 4.94 -11 8389 53 |
| 08/19/19 02:49 PM | 43696.6175231482 | 40.86583 | -80.72917 | 111.983333390672 | 54 | 119 | 8596.27 | 1.84804286257511 | 08 4.96 -15 8596 54 |
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| 08/19/19 02:59 PM | 43696.6244097222 | 40.83167 | -80.639 | 121.899999955203 | 57 | 108 | 9821.27 | 3.97817883657269 | 09 5.02 -22 9821 59 |
| 08/19/19 03:01 PM | 43696.6258333333 | 40.8265 | -80.61683 | 123.949999941979 | 61 | 113 | 10058.4 | 1.91311012594594 | 09 5.02 -24 10058 60 |
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| 08/19/19 03:05 PM | 43696.6285995370 | 40.81267 | -80.57783 | 127.9333332635 | 48 | 114 | 10581.4 | 2.11805628046831 | 09 5.02 -27 10581 62 |
| 08/19/19 03:07 PM | 43696.6299421296 | 40.80617 | -80.5595 | 129.866666608723 | 52 | 122 | 10848.4 | 2.05595482637933 | 09 5.04 -29 10848 63 |
| 08/19/19 03:09 PM | 43696.6314120370 | 40.79933 | -80.54267 | 131.983333267272 | 46 | 112 | 11126.4 | 2.10617502315295 | 09 5.04 -31 11126 64 |
| 08/19/19 03:11 PM | 43696.6327662037 | 40.7935 | -80.52667 | 133.93333331449 | 41 | 109 | 11388.6 | 1.95716774542219 | 09 5.06 -33 11388 65 |
| 08/19/19 03:13 PM | 43696.6341666667 | 40.791 | -80.51 | 135.950000033481 | 39 | 95 | 11645.5 | 1.88995954348454 | 09 5.04 -35 11645 66 |
| 08/19/19 03:15 PM | 43696.6355324074 | 40.79183 | -80.493 | 137.916666646488 | 37 | 73 | 11884.5 | 1.73271299119007 | 09 5.08 -37 11884 67 |
| 08/19/19 03:17 PM | 43696.6369444444 | 40.79483 | -80.47667 | 139.949999920791 | 37 | 84 | 12085.3 | 1.43522686755044 | 09 5.02 -36 12085 68 |
| 08/19/19 03:19 PM | 43696.6383680556 | 40.79767 | -80.45967 | 142.00000005425 | 37 | 67 | 12263.3 | 1.25352112628167 | 09 5.06 -38 12263 69 |
| 08/19/19 03:21 PM | 43696.6397222222 | 40.8005 | -80.44283 | 143.949999954784 | 50 | 73 | 12429.4 | 1.15401181001862 | 09 5.04 -38 12429 70 |
| 08/19/19 03:23 PM | 43696.6411458333 | 40.802 | -80.4255 | 145.99999994156 | 44 | 71 | 12584.6 | 1.06260274015136 | 09 5.04 -38 12584 71 |
| 08/19/19 03:25 PM | 43696.6424537037 | 40.80133 | -80.40883 | 147.883333317004 | 37 | 89 | 12728.5 | 0.972861490020649 | 09 5.06 -39 12728 72 |
| 08/19/19 03:27 PM | 43696.6438194445 | 40.79983 | -80.39 | 149.850000066217 | 56 | 94 | 12931.4 | 1.35462128735603 | 08 5.02 -38 12931 73 |
| 08/19/19 03:29 PM | 43696.6453125000 | 40.79717 | -80.36917 | 151.999999982072 | 30 | 89 | 12662.6 | -1.76861842126123 | 07 3.78 -47 12662 74 |
| 08/19/19 03:33 PM | 43696.6480787037 | 40.79417 | -80.33633 | 155.98333331407 | 52 | 109 | 10648.5 | -12.9124051730873 | 08 3.94 -37 10648 76 |
| 08/19/19 03:35 PM | 43696.6494791667 | 40.78983 | -80.3175 | 158.000000033062 | 54 | 93 | 9728.3 | -5.82398734055347 | 09 3.90 -31 9728 77 |
| 08/19/19 03:37 PM | 43696.6507870370 | 40.78467 | -80.2985 | 159.883333261823 | 52 | 119 | 8863.28 | -5.41032002743808 | 09 3.82 -26 8863 78 |

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