

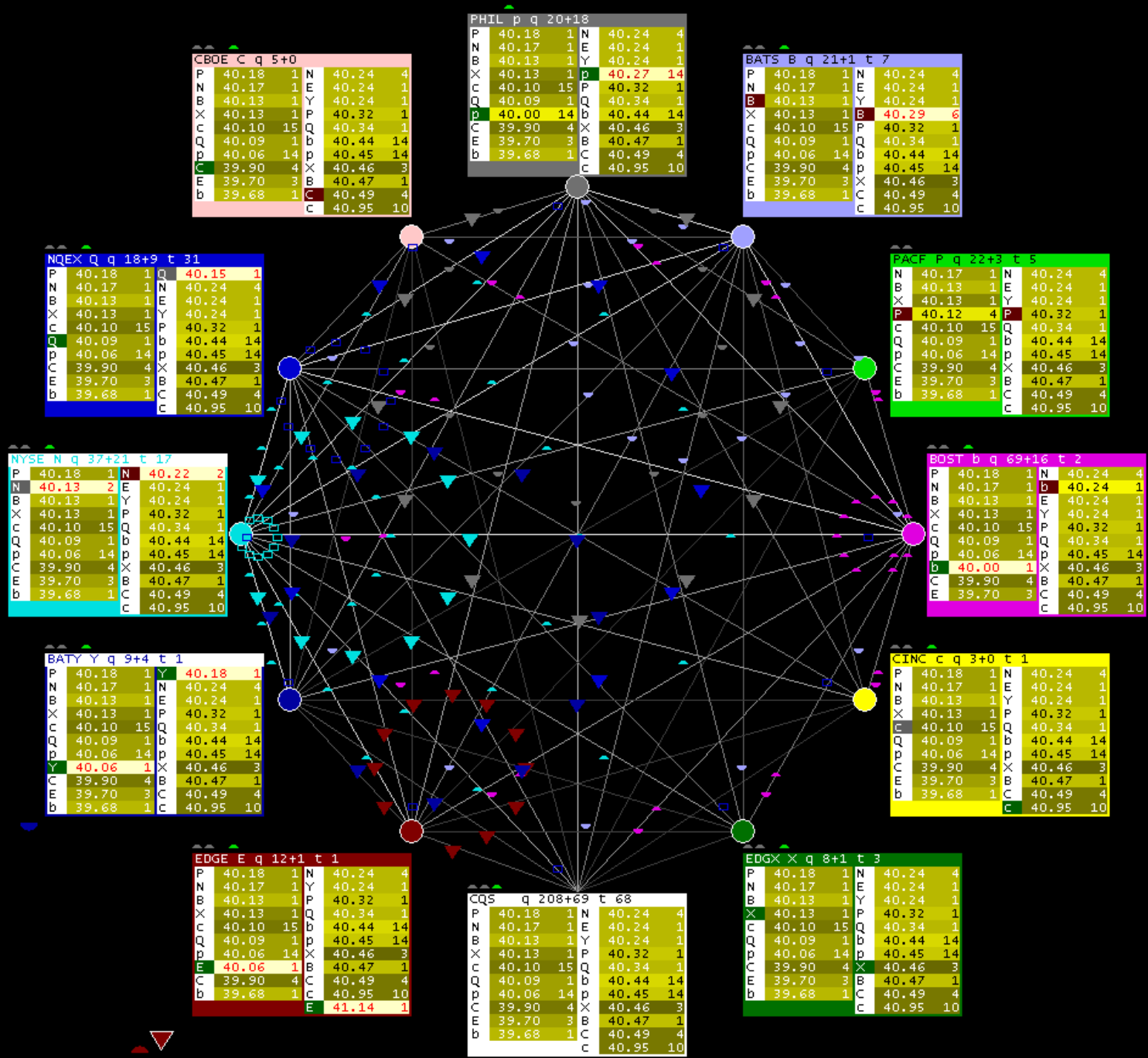
# Coexisting Without Colocation

HFT, our broken market structure, and how to fix it.

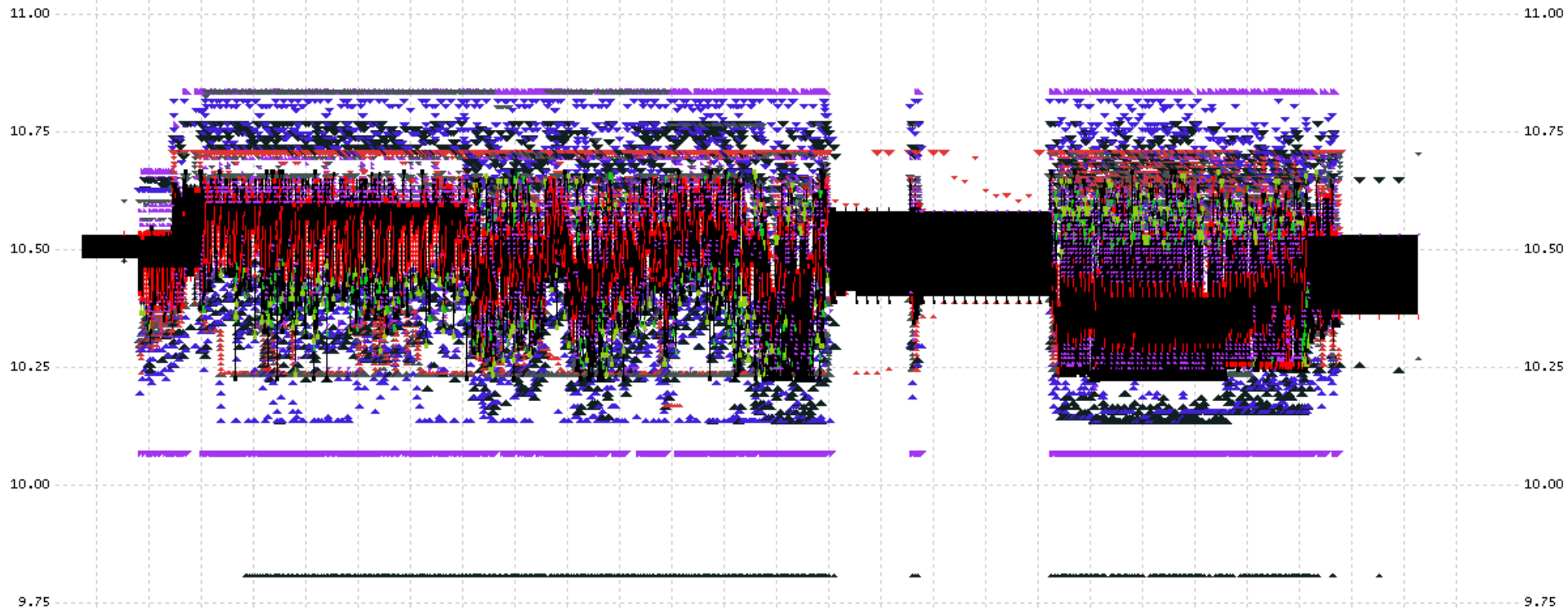
A Nanex presentation given by Eric Scott Hunsader

at SIG offices in NYC  
on February 23, 2012

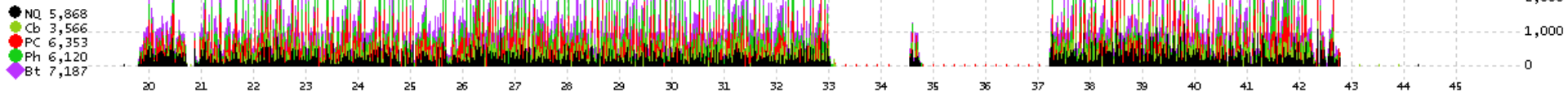
[www.nanex.net](http://www.nanex.net)

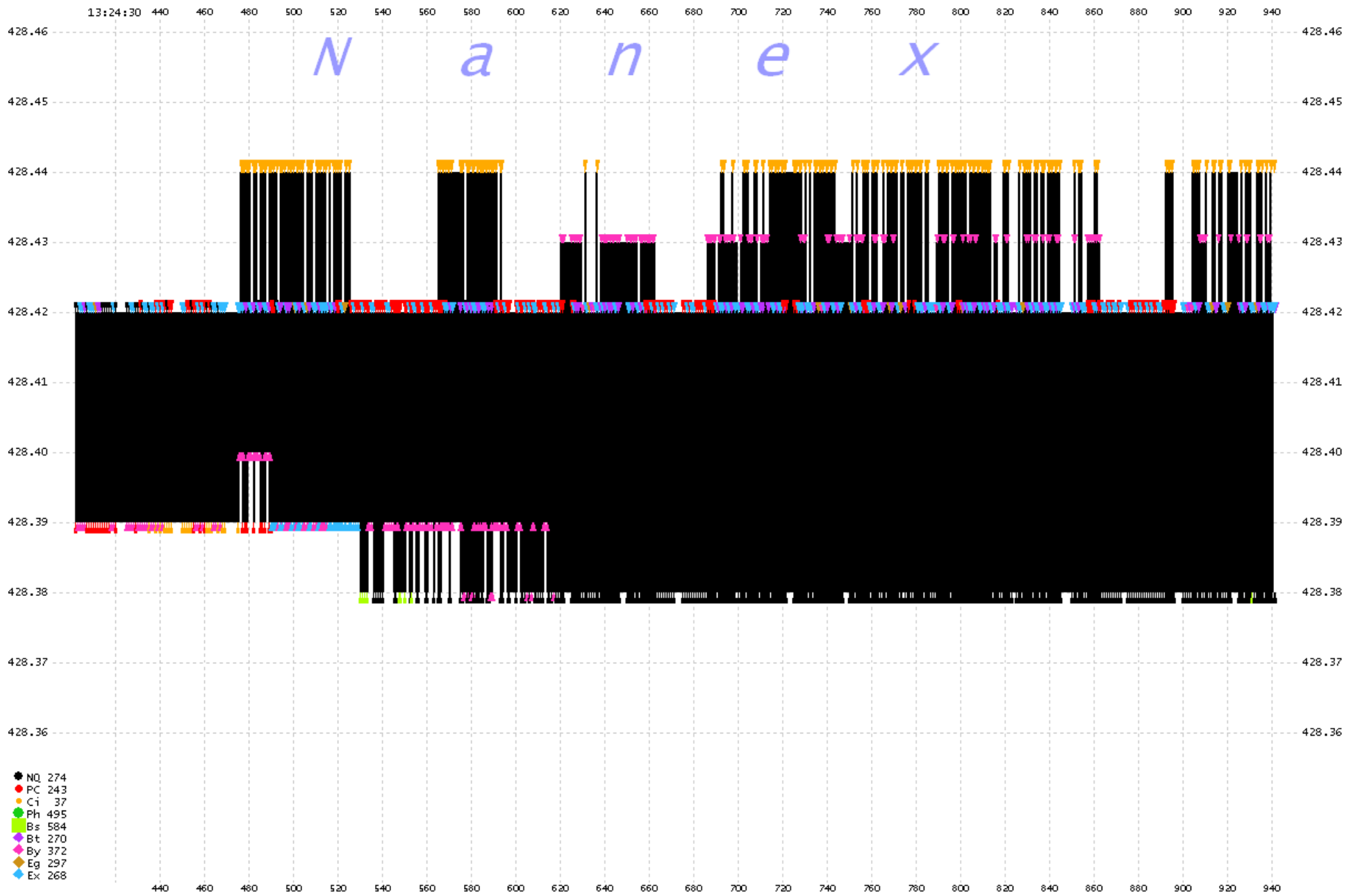


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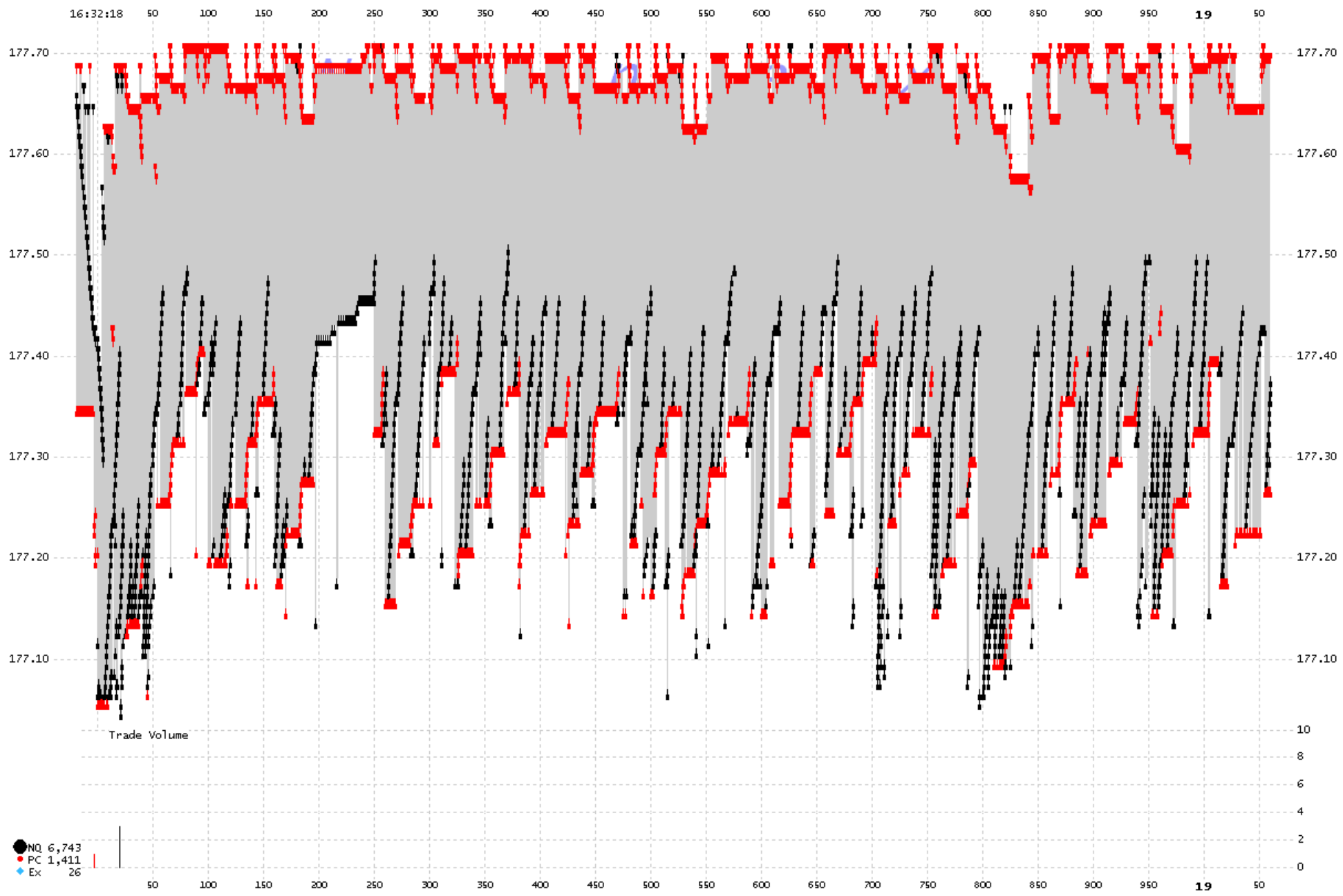


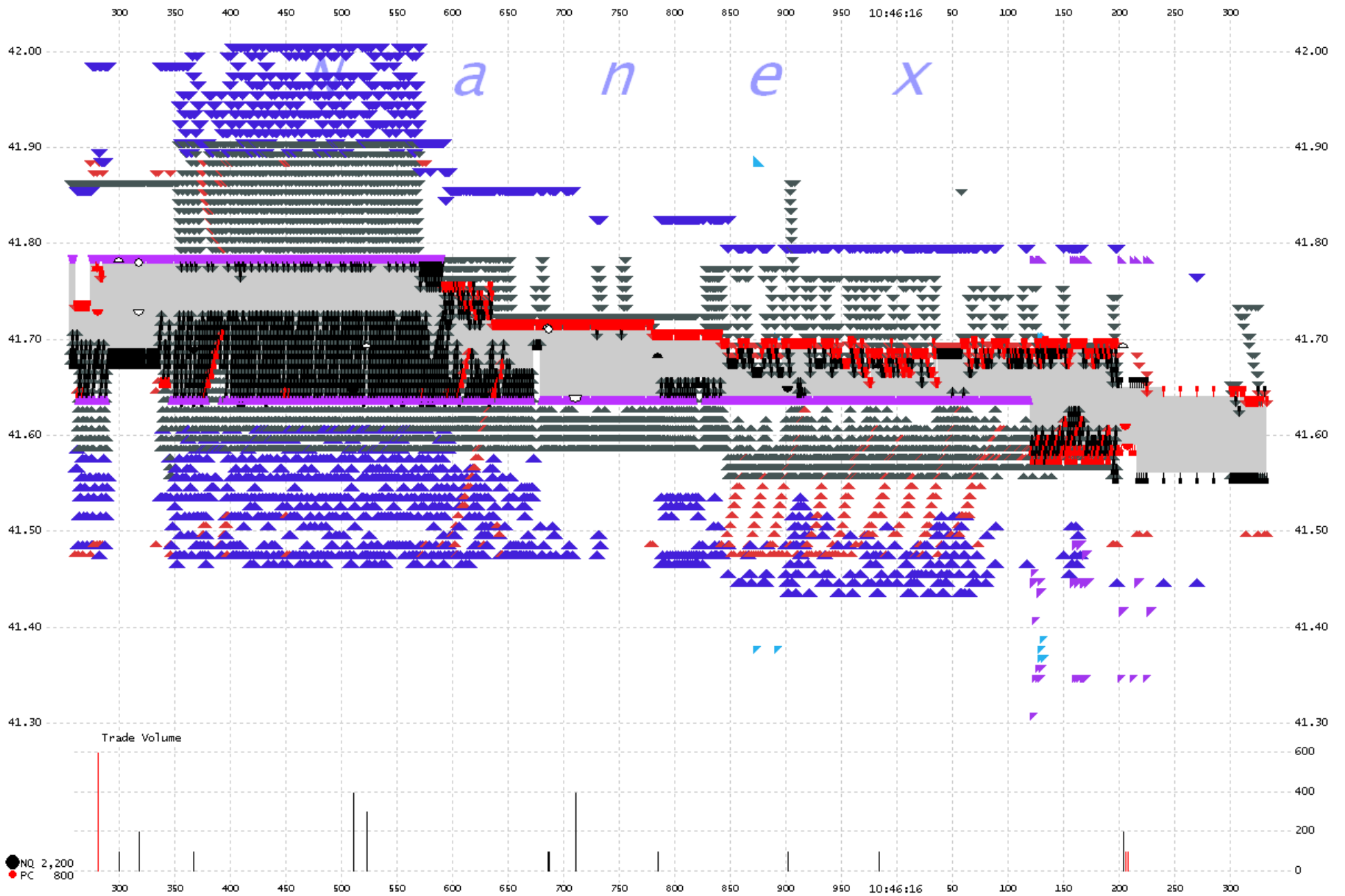
Quotes/Sec

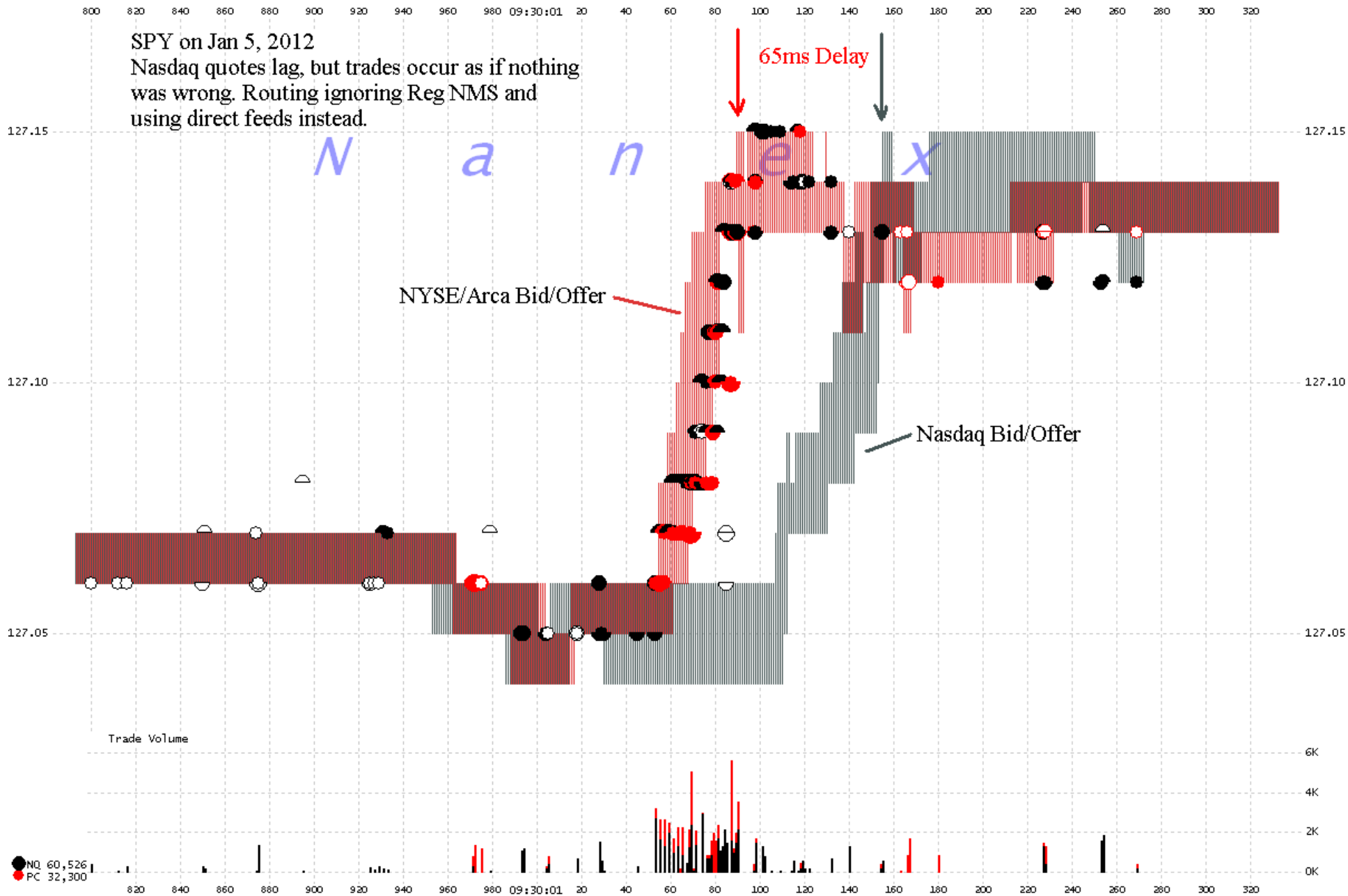


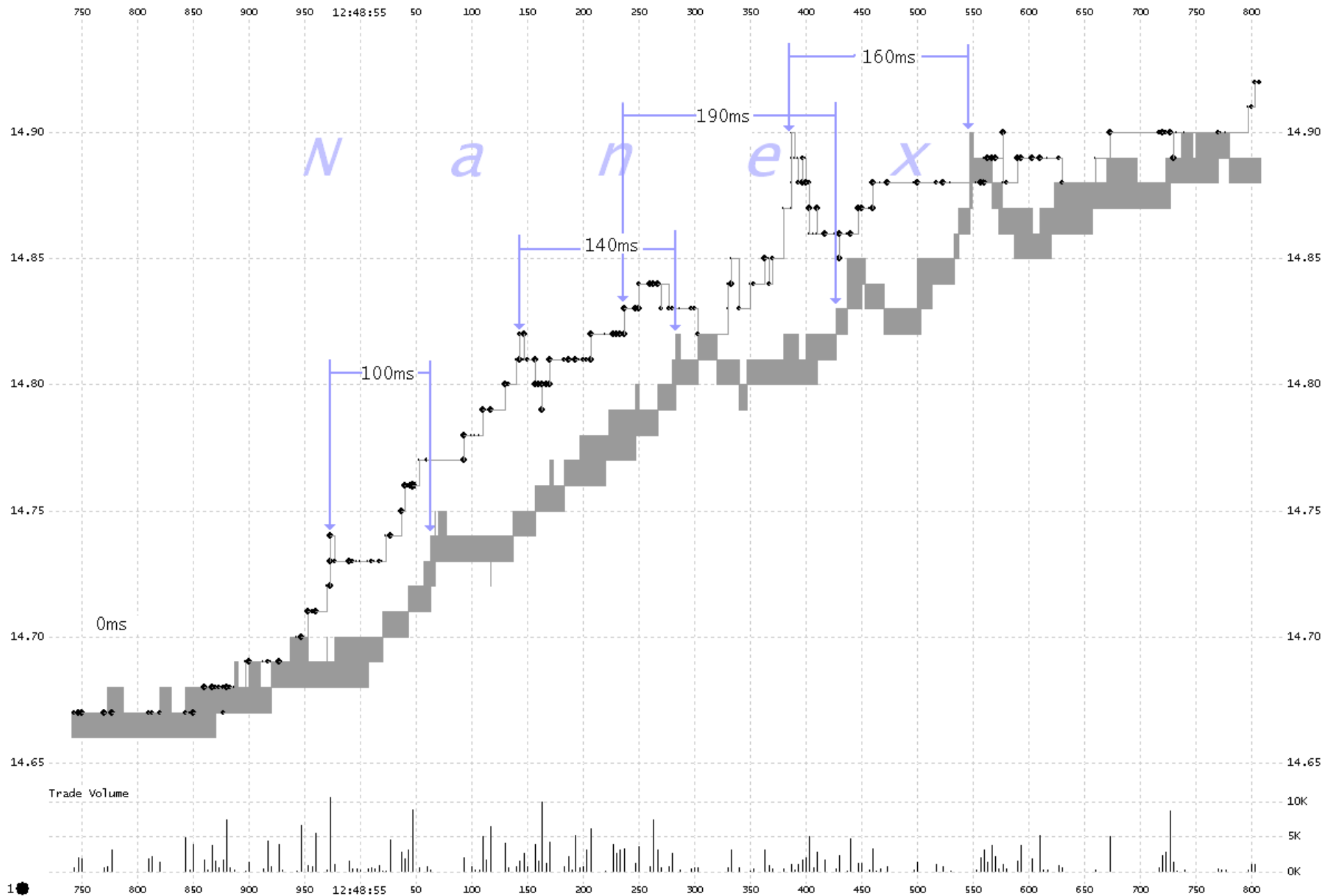


[www.nanex.net/aqck/2707.html](http://www.nanex.net/aqck/2707.html)

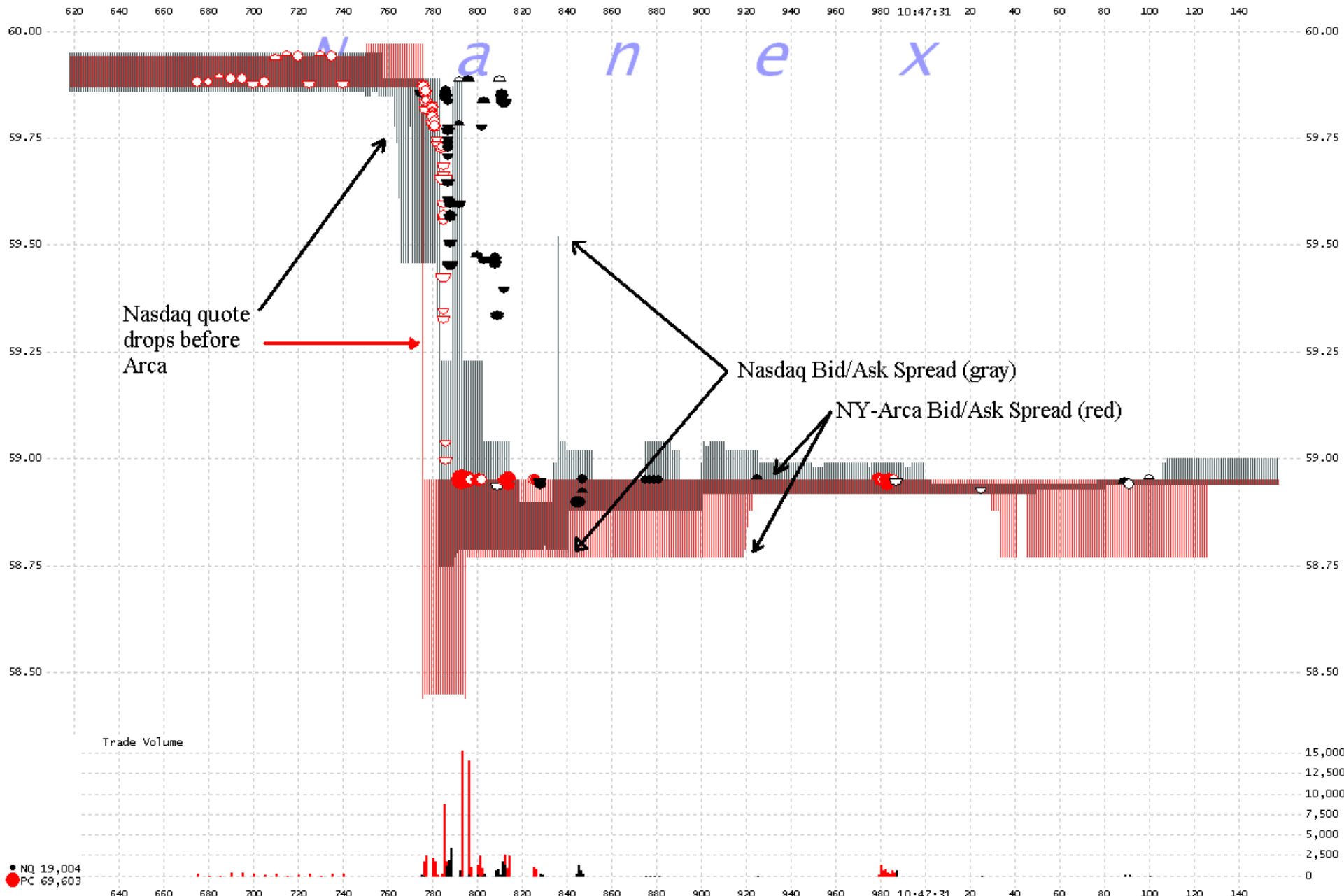


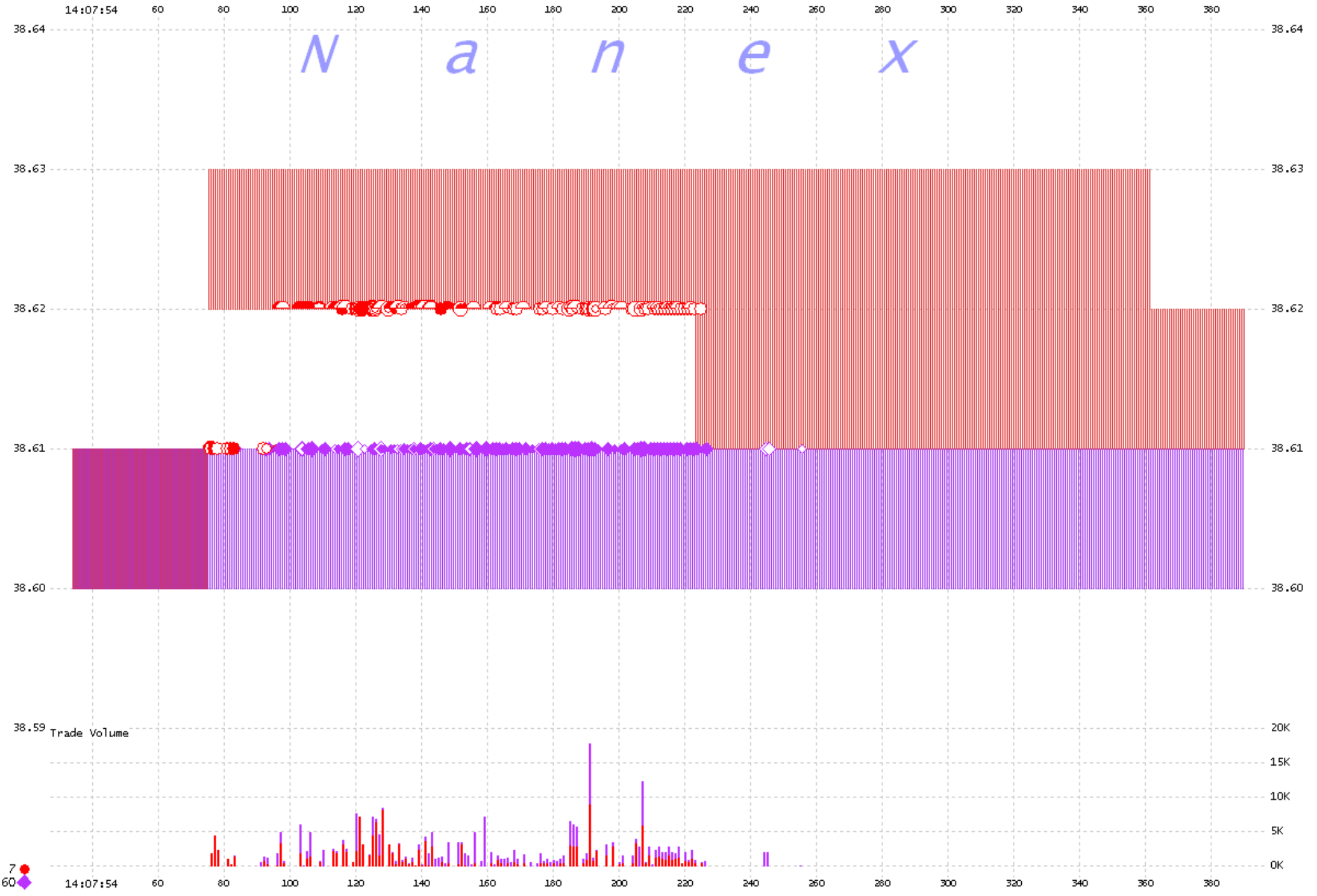




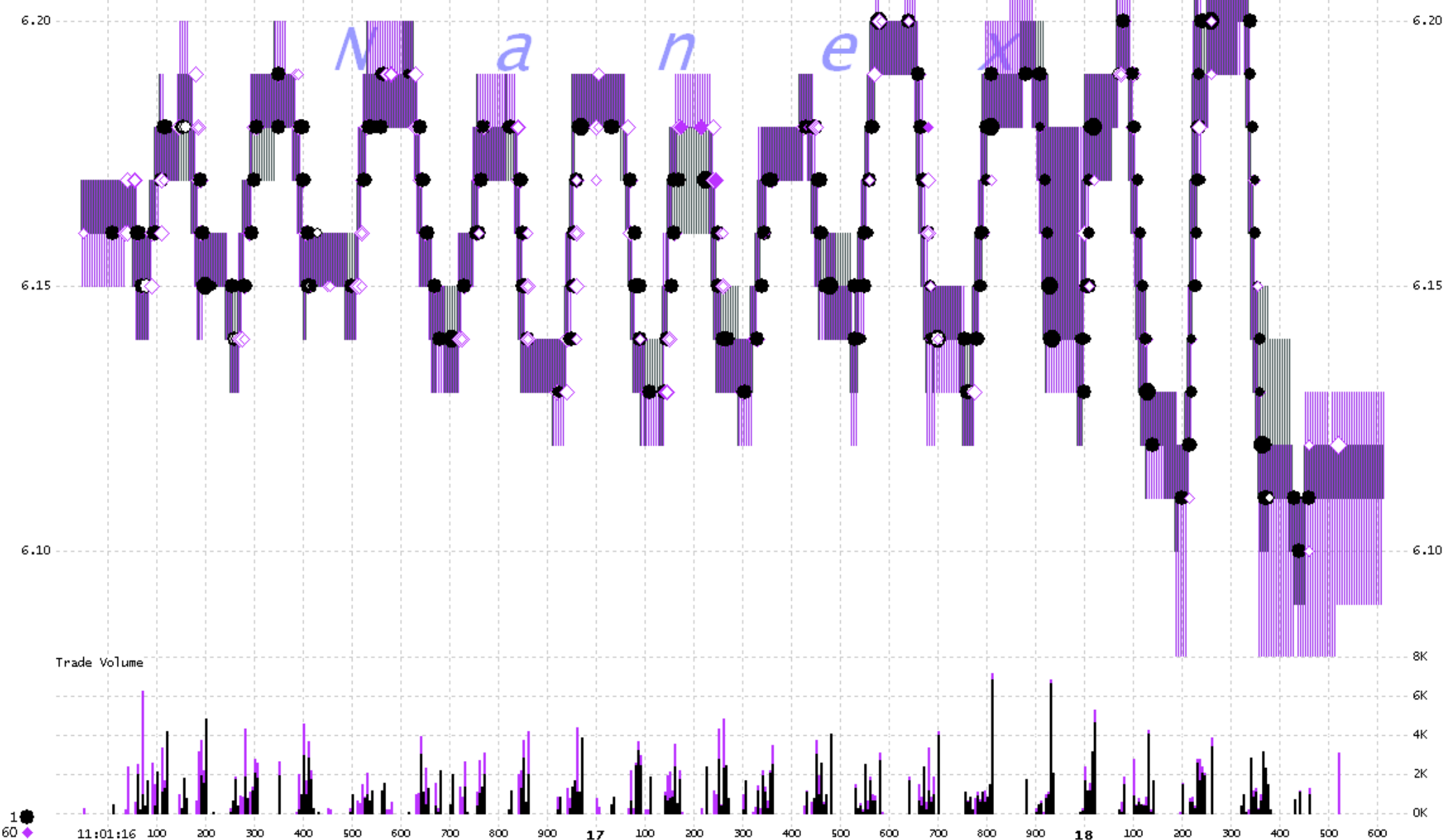


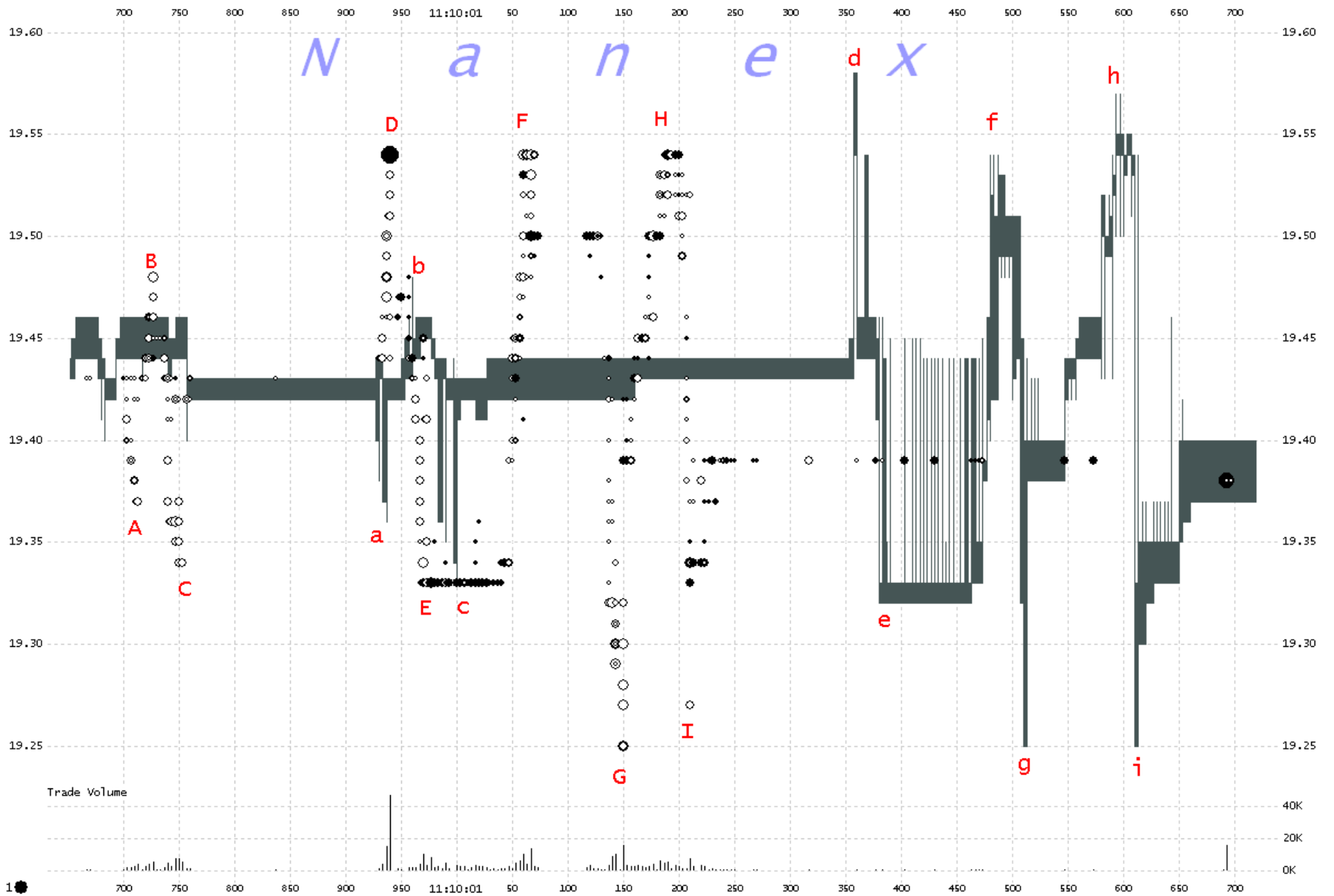
<http://www.nanex.net/Research/fantaseconds/fantaseconds.html>





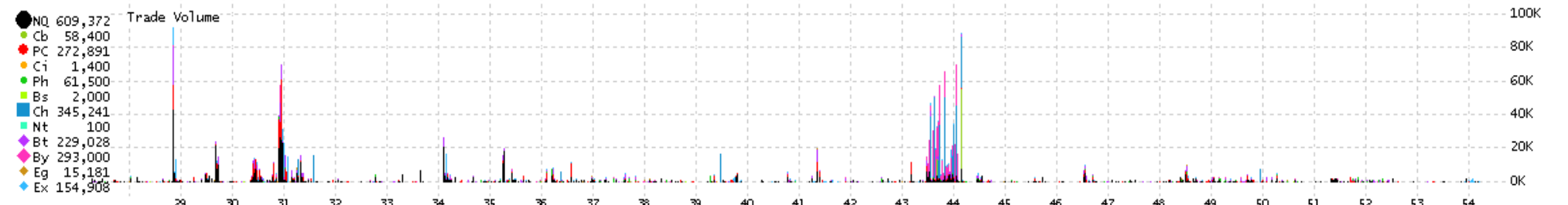
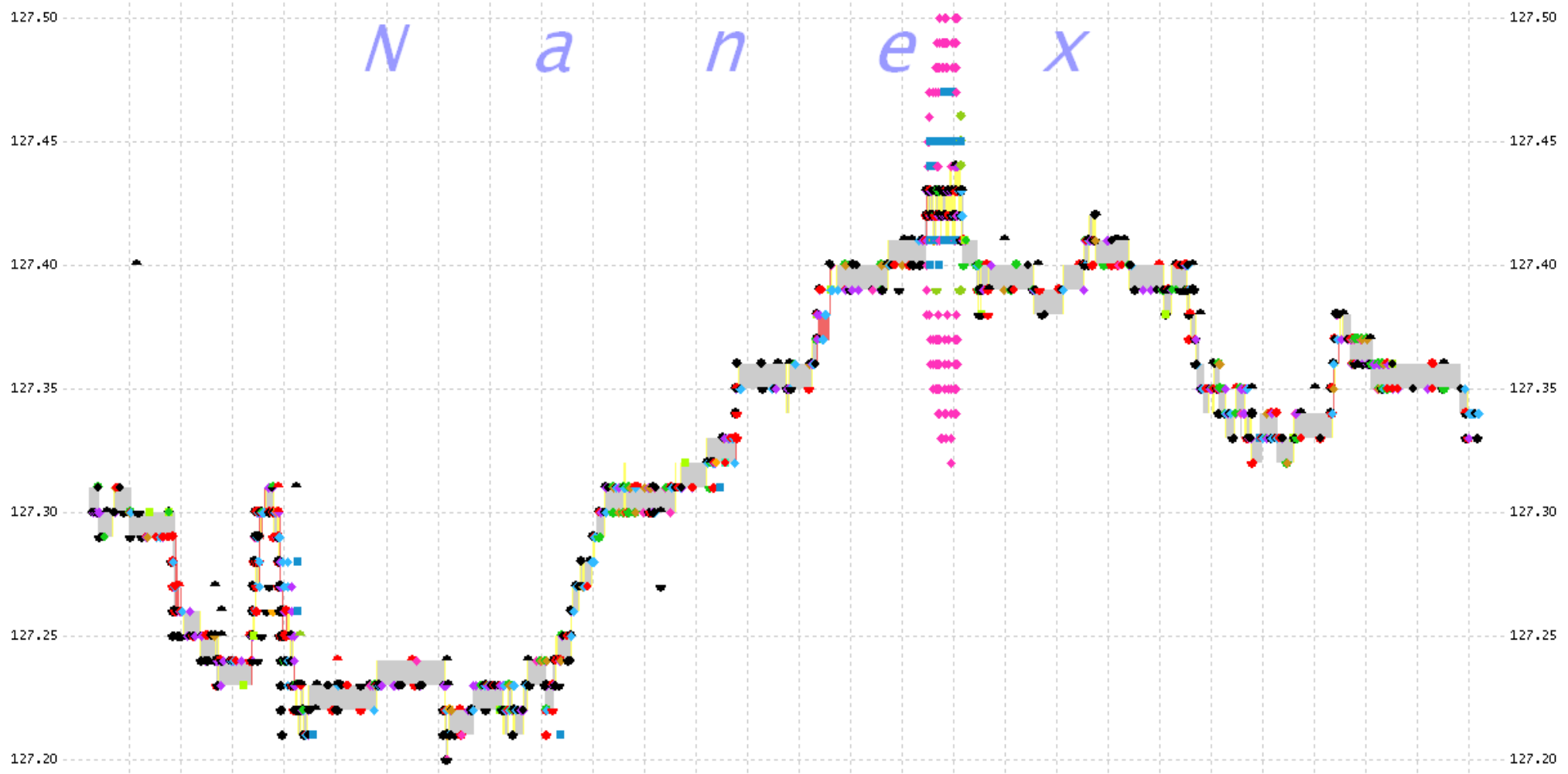
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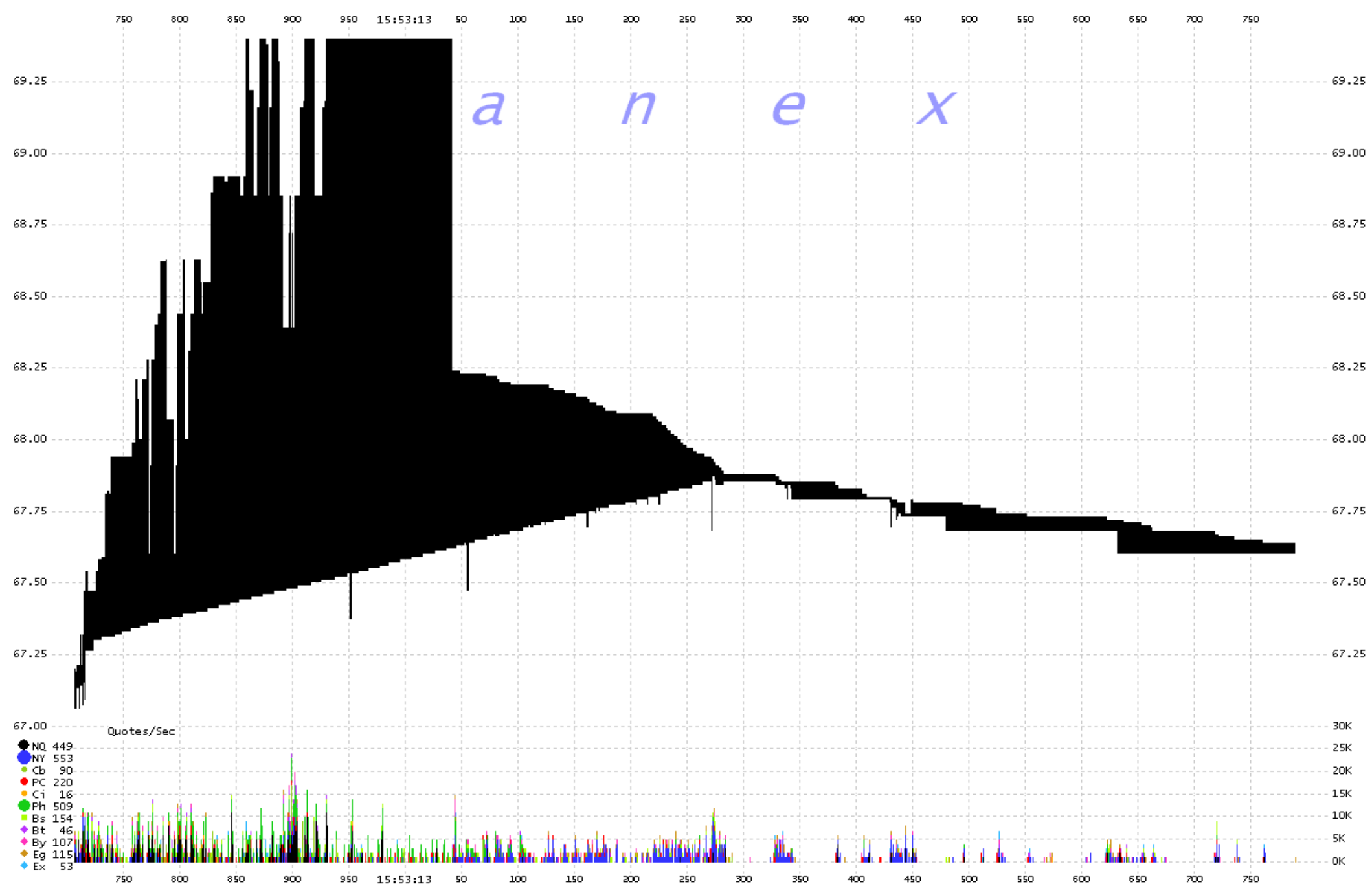


<http://www.nanex.net/Research/HighFreakVolatility/highfreakvolatility.html>

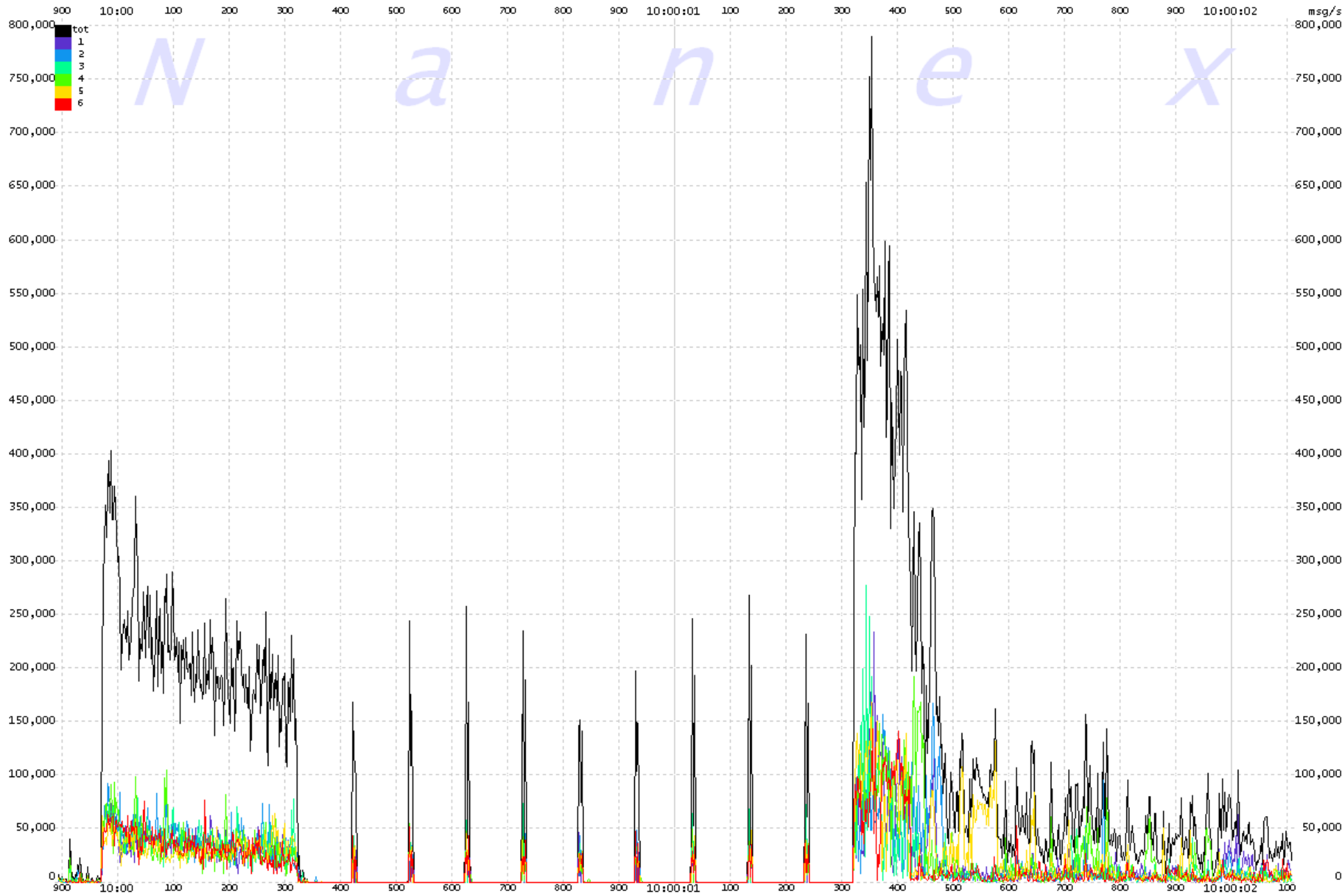
# N a n e x



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- PC 272,891
- C1 1,400
- Ph 61,500
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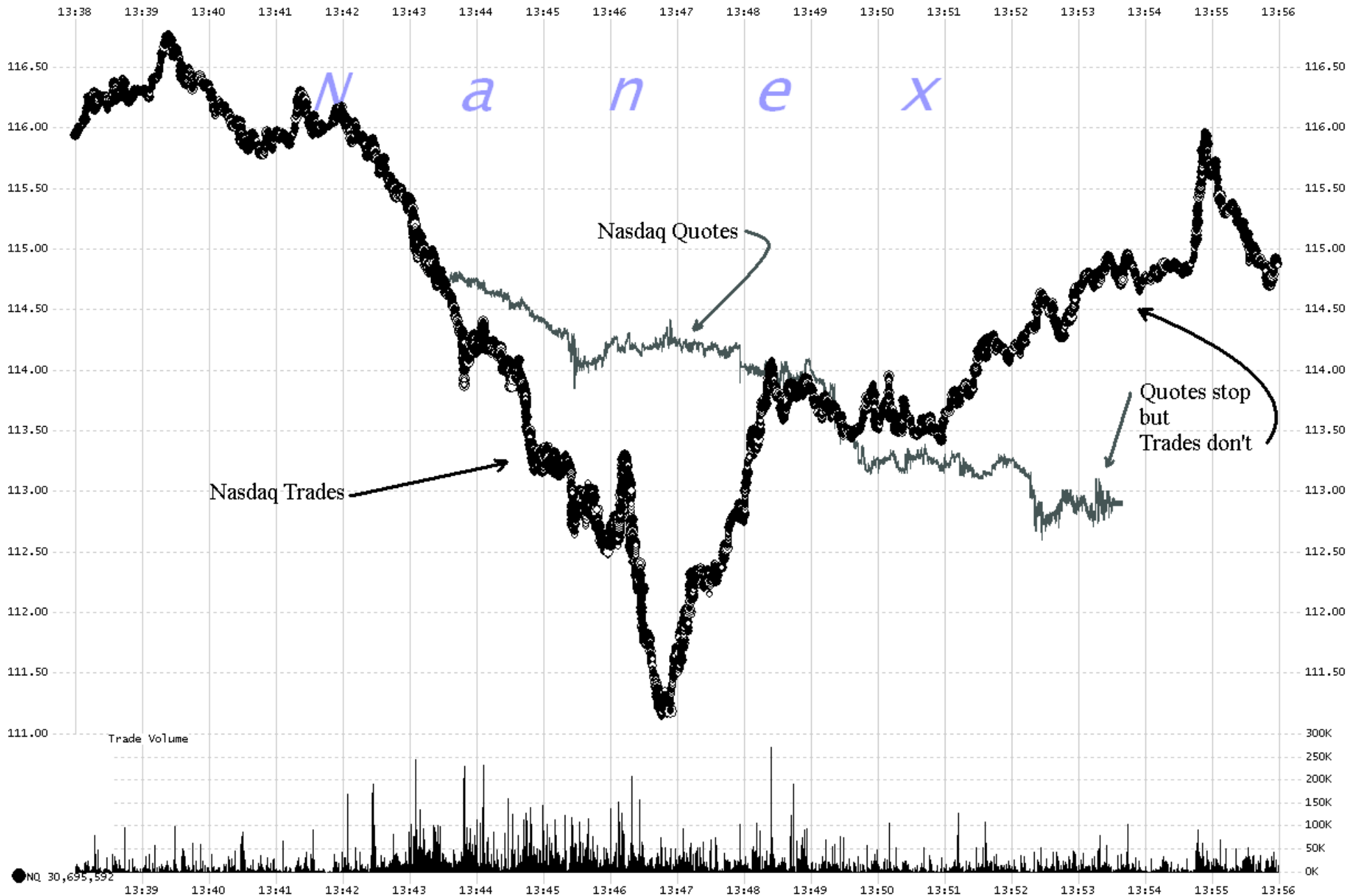
<http://www.nanex.net/StrangeDays/12142011.html>



[http://www.nanex.net/Research/UQDF\\_1550/UQDF1550.html](http://www.nanex.net/Research/UQDF_1550/UQDF1550.html)



<http://www.nanex.net/Research/29Sep2008/29Sep2008.html>



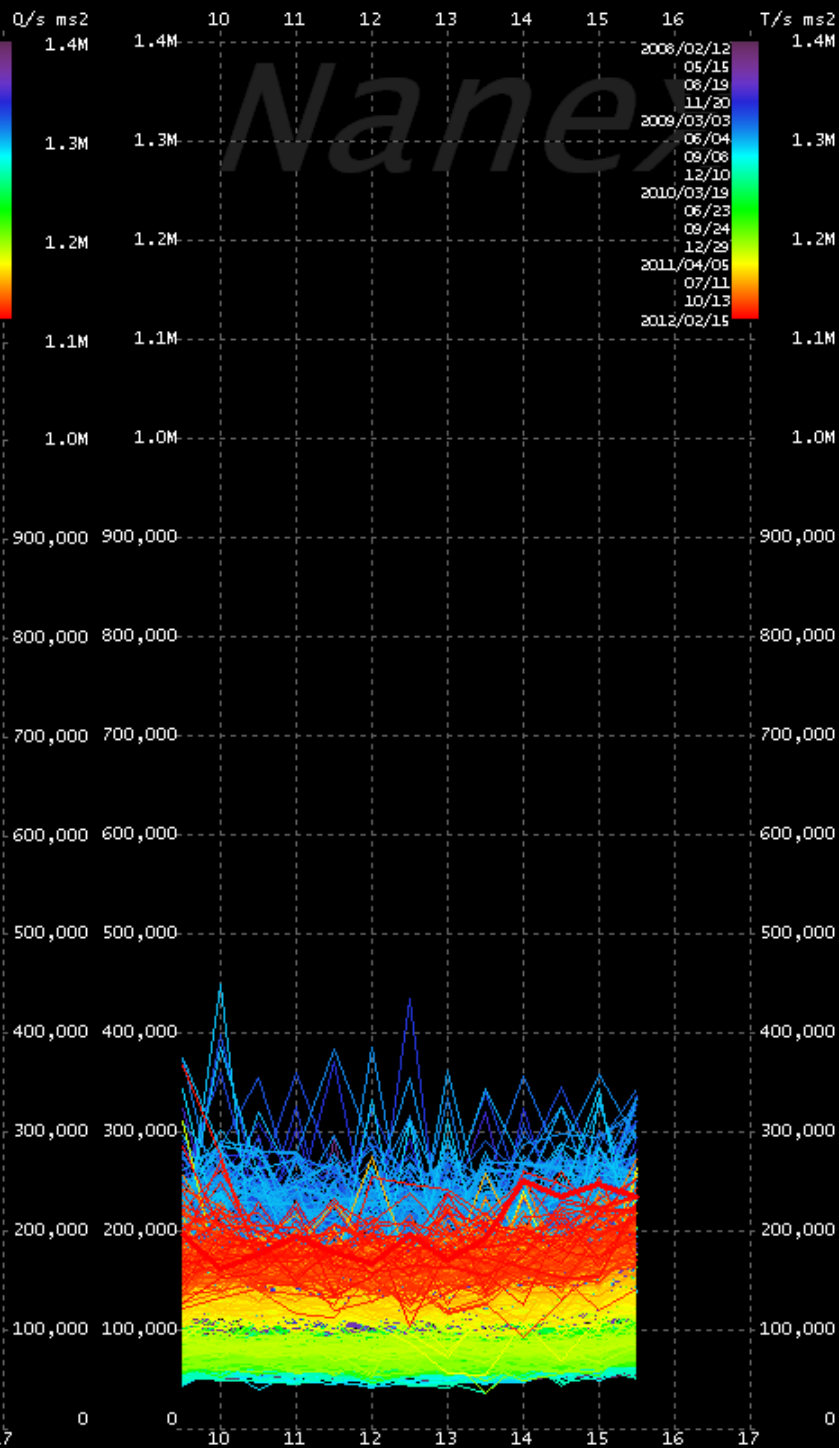
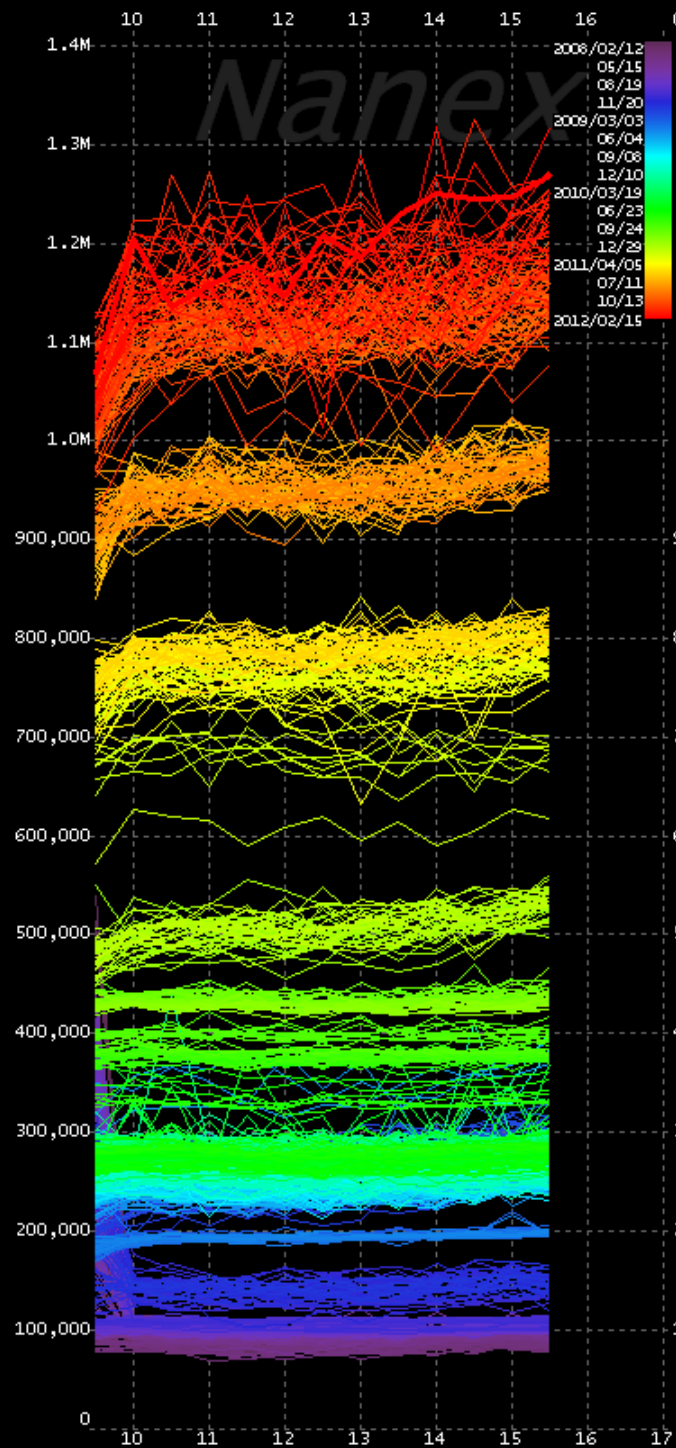
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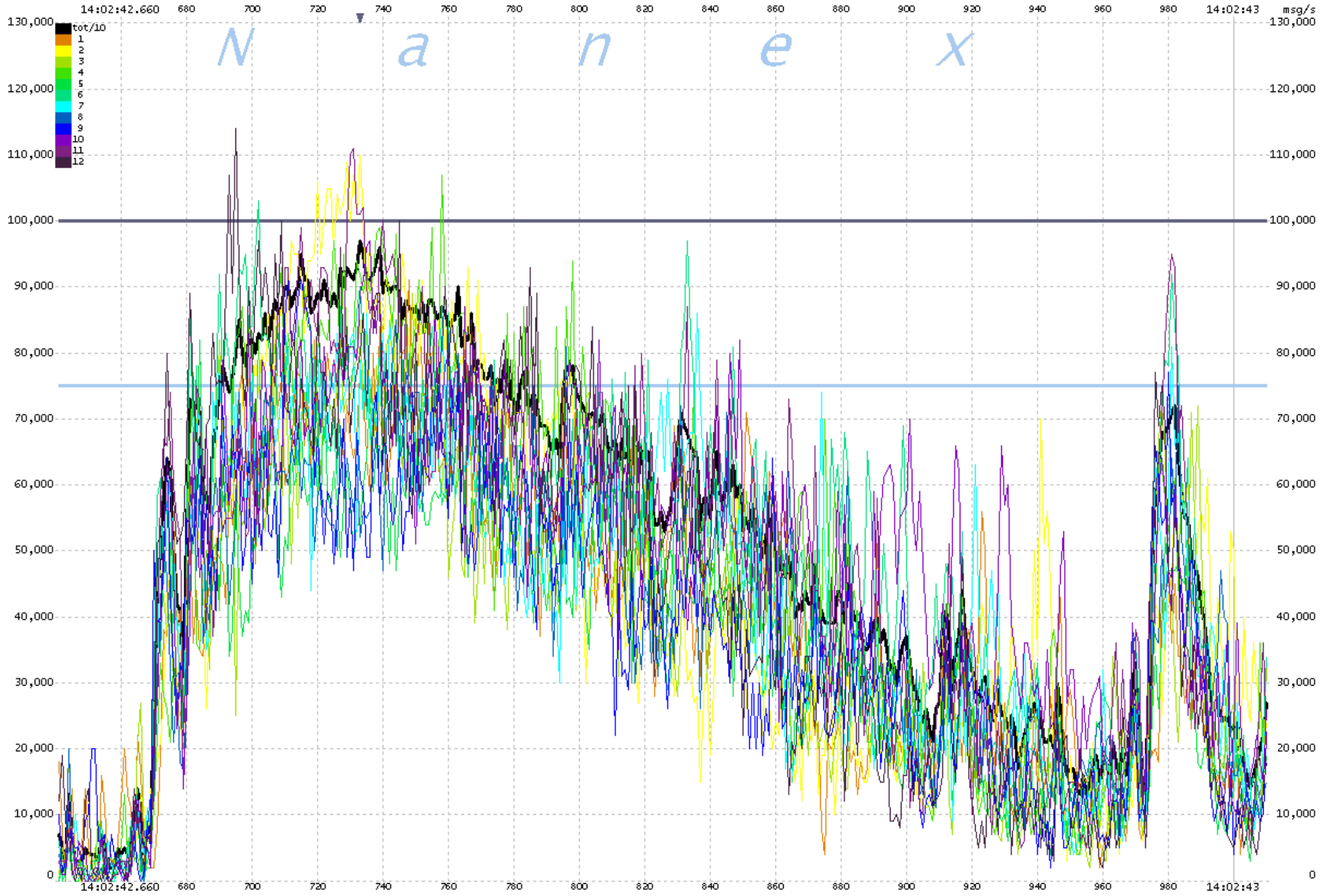
*Wednesday, August 24, 2011*

*\5\ The Exchange is also changing its policies and procedures under Regulation NMS governing the data feeds used by its execution system and routing engine. **Current policies state that those systems use data provided by the network processors.** In the future, those systems will use data provided either by the network processors or by proprietary feeds offered by certain exchanges directly to vendors.*

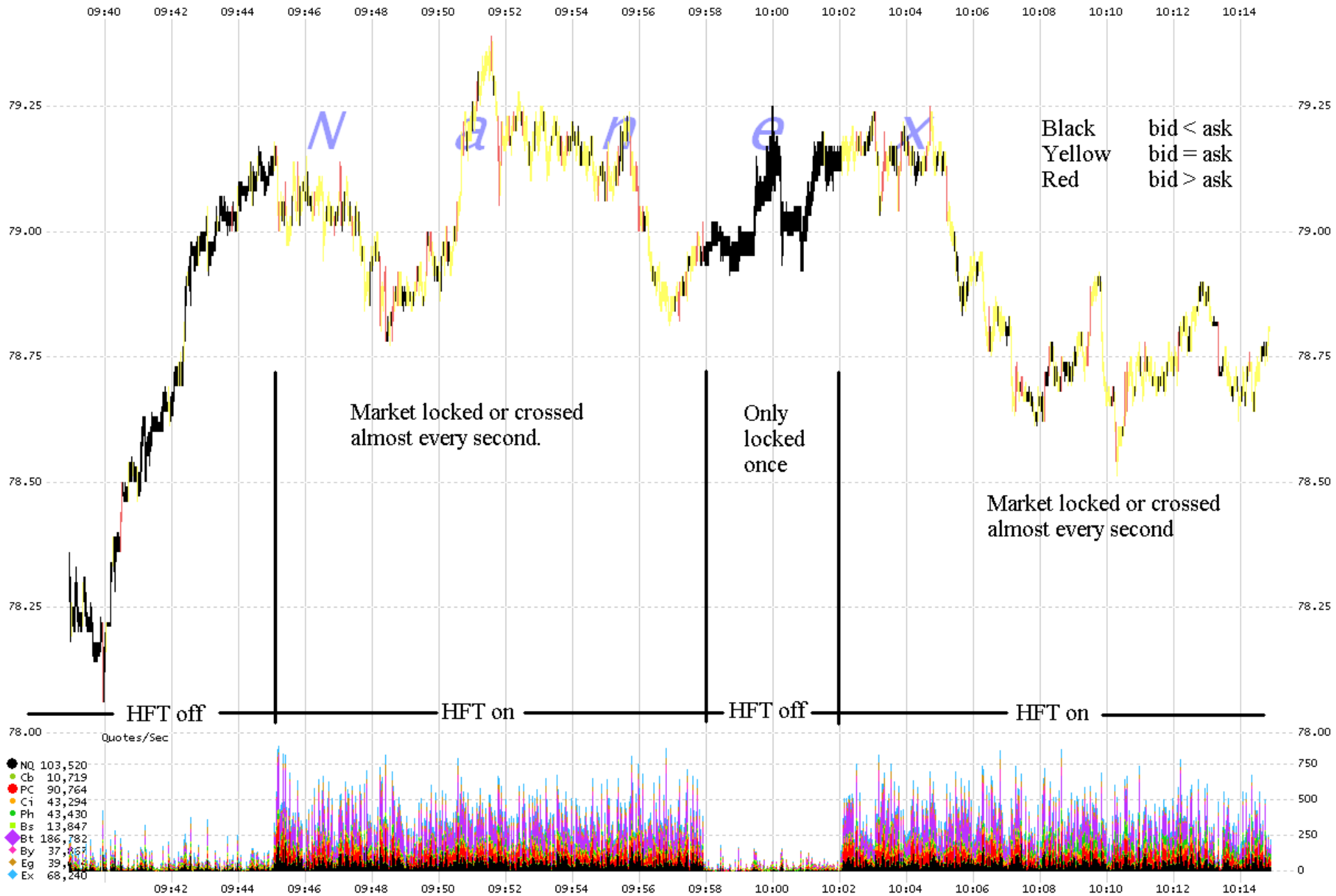
<http://www.gpo.gov/fdsys/pkg/FR-2011-08-24/html/2011-21610.htm>

<http://www.nanex.net/Research/RegNMSRecinded/RegNMSRecinded.html>

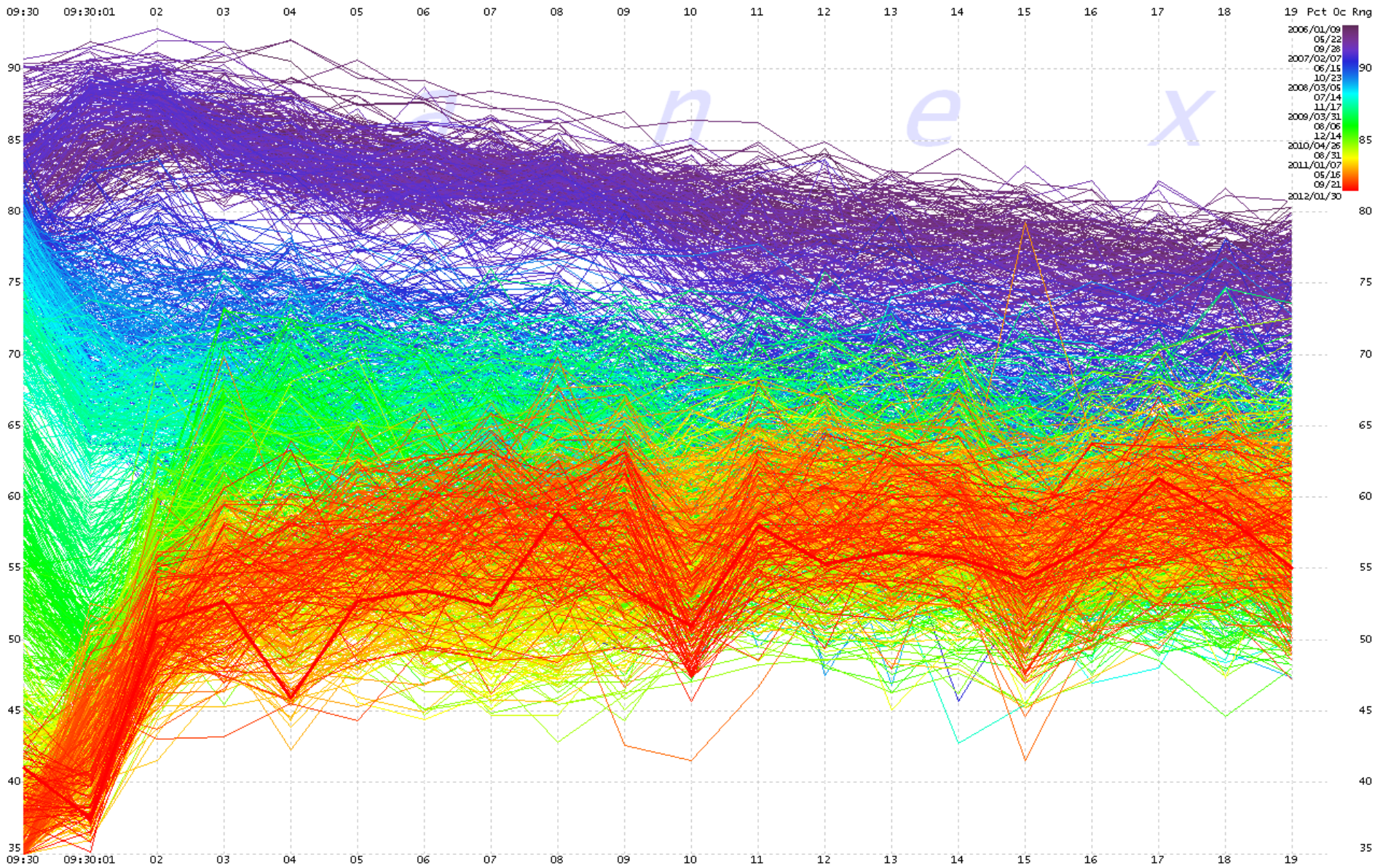




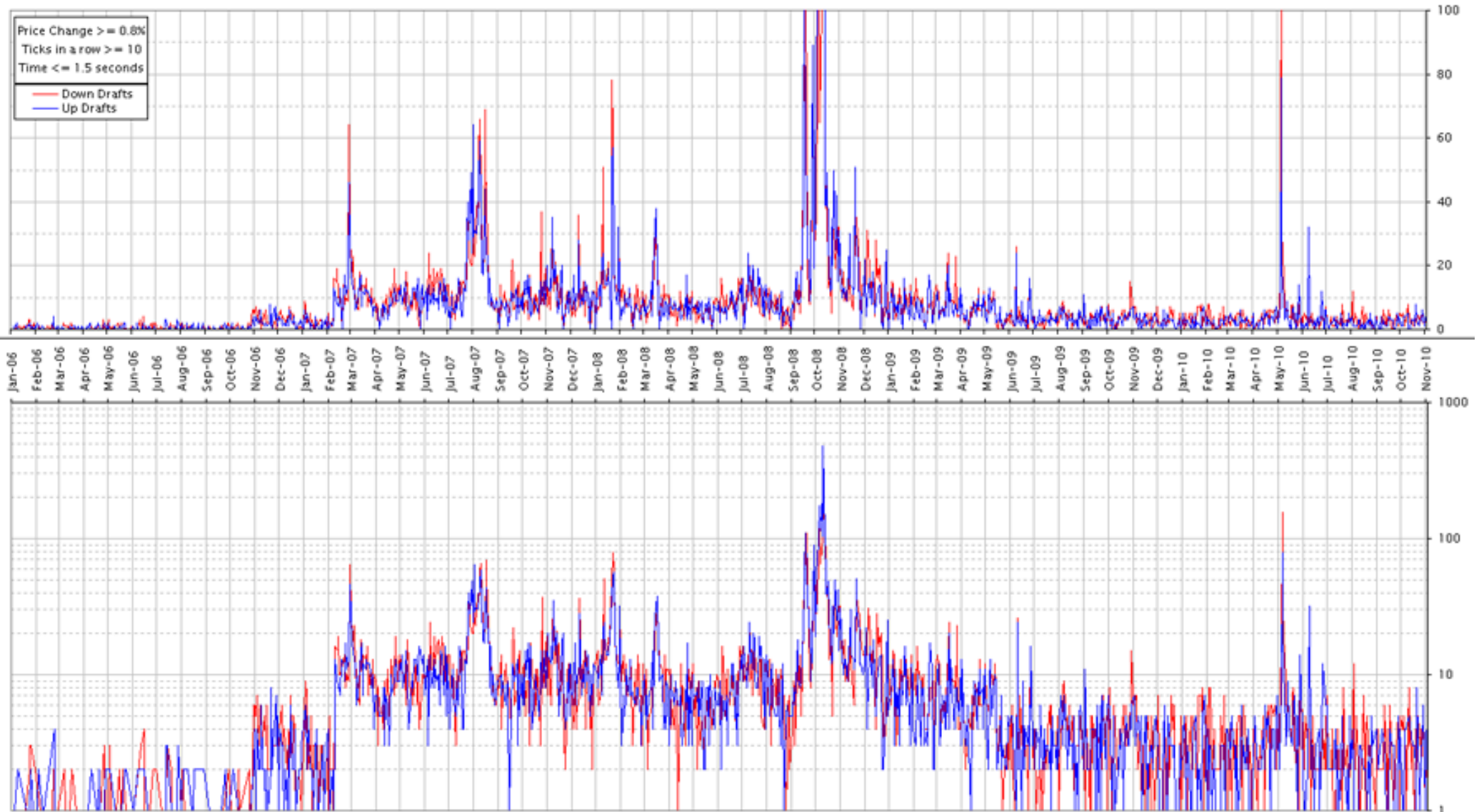
[http://www.nanex.net/RateResearch/CQSLines\\_070511.b.html](http://www.nanex.net/RateResearch/CQSLines_070511.b.html)



[www.nanex.net/aqck/2715.html](http://www.nanex.net/aqck/2715.html)  
[www.nanex.net/Research/NBBOSustainability/NBBOSustainability.html](http://www.nanex.net/Research/NBBOSustainability/NBBOSustainability.html)



<http://www.nanex.net/aqck/2790.html>  
<http://www.nanex.net/aqck/2805.html>  
<http://www.nanex.net/aqck/2806.html>



[http://www.nanex.net/FlashCrashEquities/FlashCrashAnalysis\\_Equities.html](http://www.nanex.net/FlashCrashEquities/FlashCrashAnalysis_Equities.html)

A simple, market based solution using existing Rules & Regulations and infrastructure. Virtually no changes to millions of existing systems and networks.

1. Time stamp at quote creation.
2. New quote condition *Immediate* does not set NBBO (flickering).
3. Enforce routing on network processors (SIP).

The Incentive: In 2011, exchange fees for CQS were approx \$500M, split by % of how often an exchange is at the NBBO.

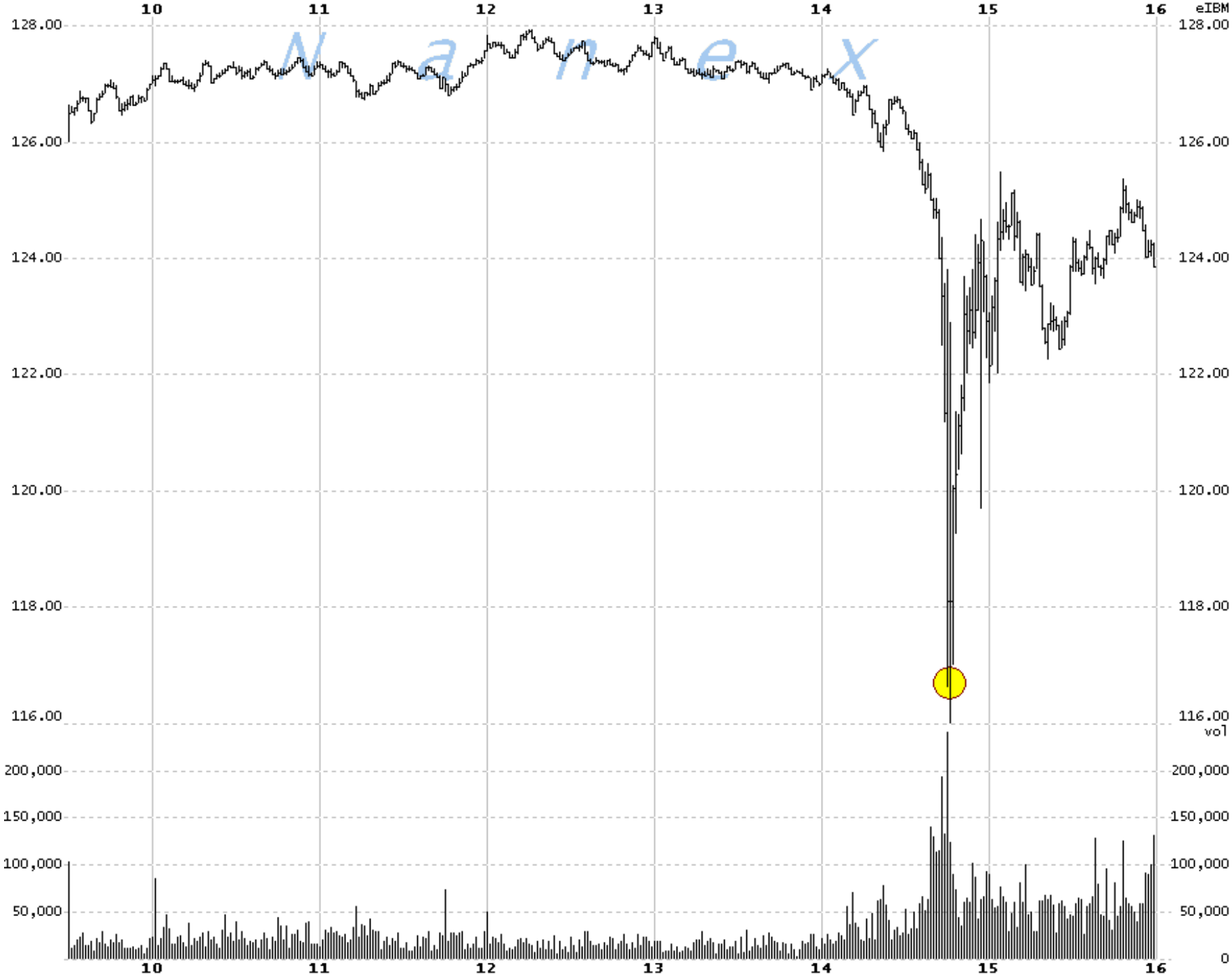
Also: Encourage fewer reporting exchanges (3 ideal). Clarify Reg NMS and then enforce evenly and fairly.

# Additional Research

<http://www.nanex.net/FlashCrash/OngoingResearch.html>

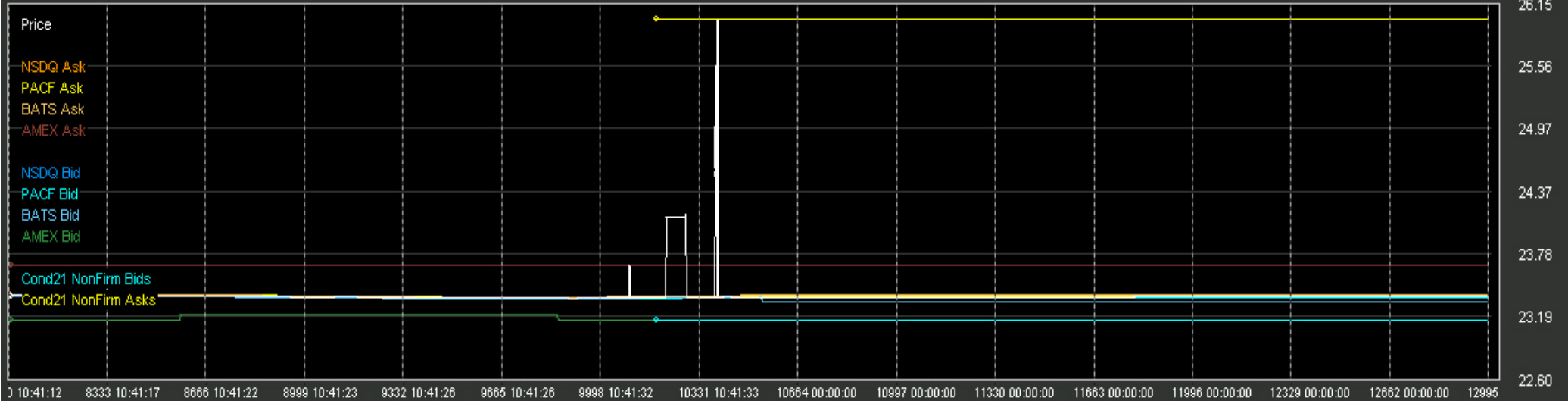


<http://www.nanex.net/Research/ClockDiff/UQDFClockDiff.html>

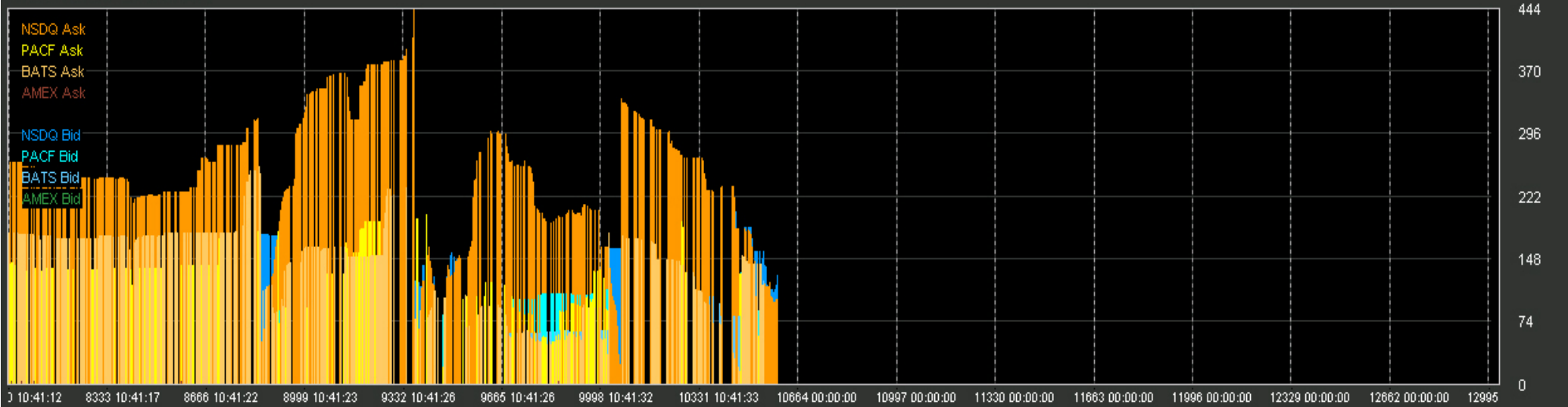


<http://www.nanex.net/research/LimitUpDown/LUD.Simulated.html>

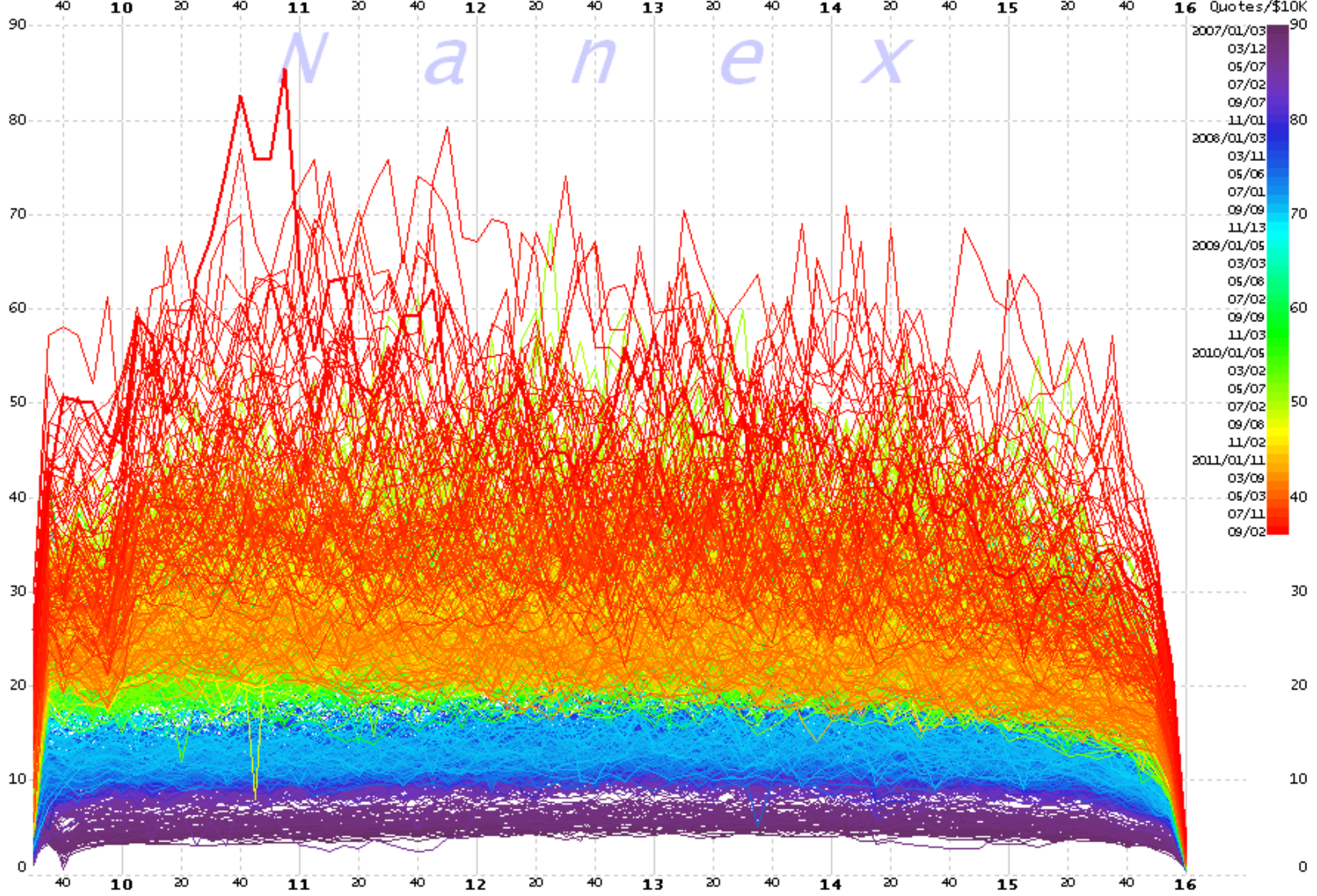
Prices for eCSCO on 07/29/2010



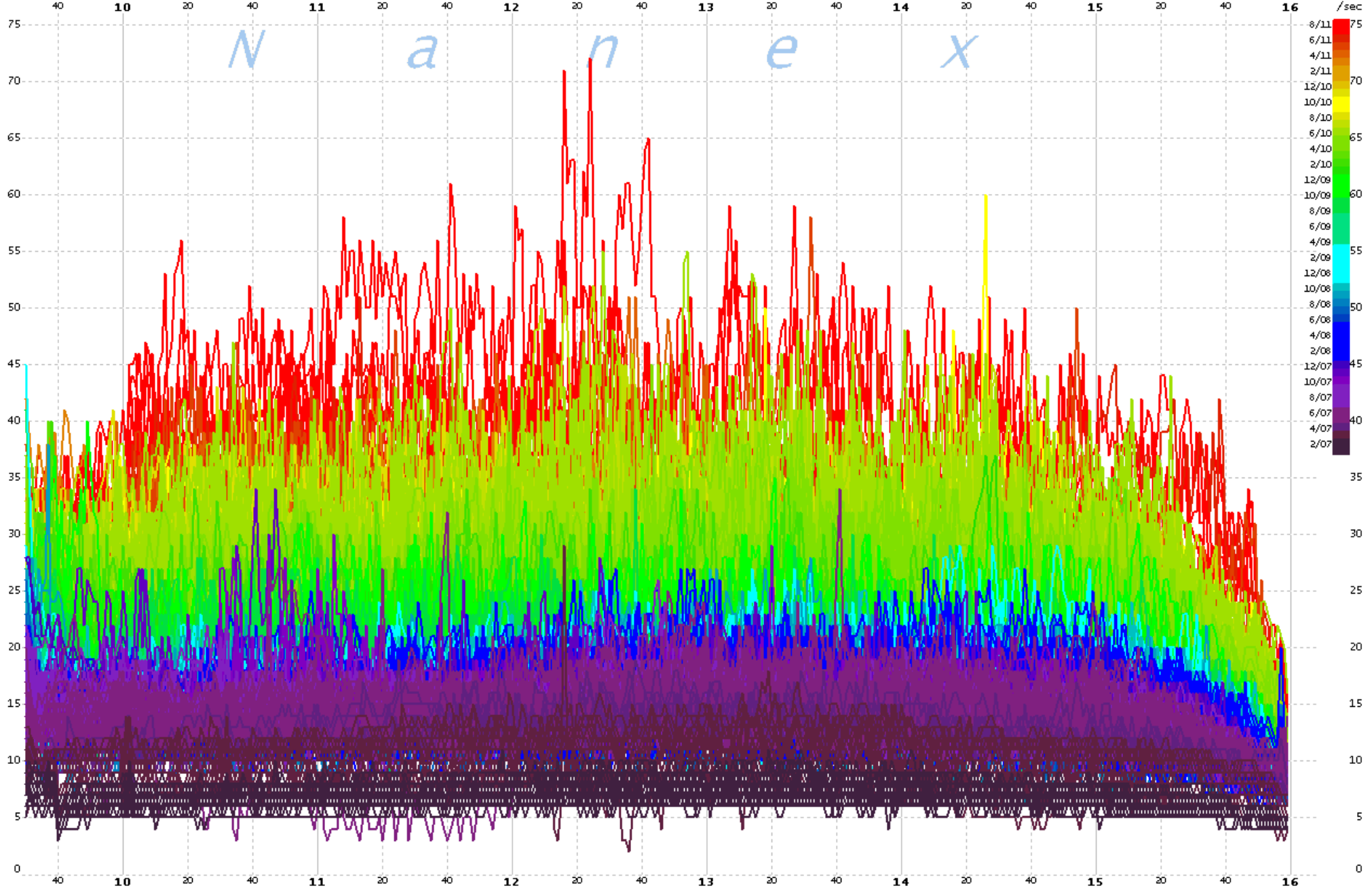
Sizes for eCSCO on 07/29/2010



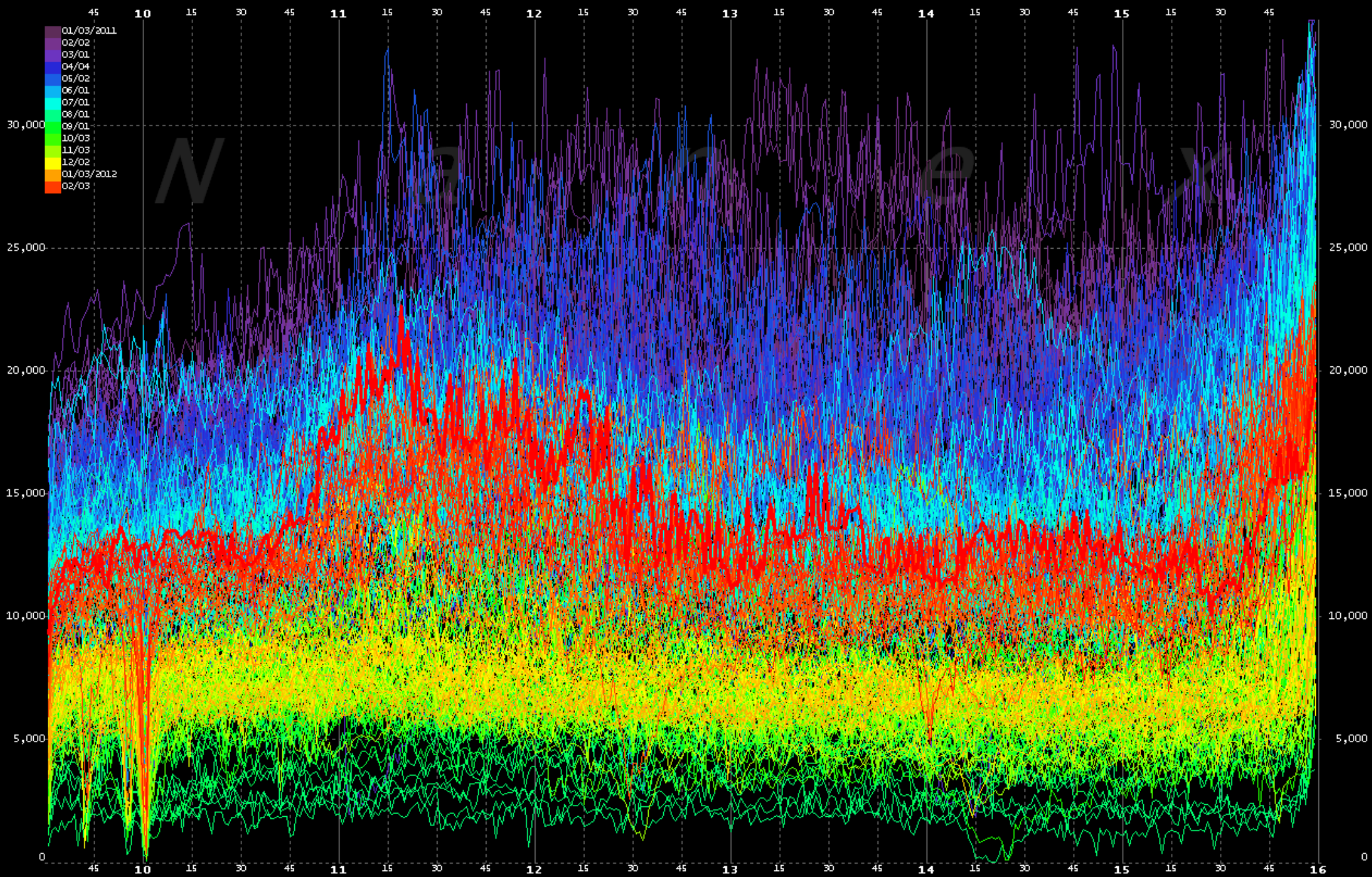
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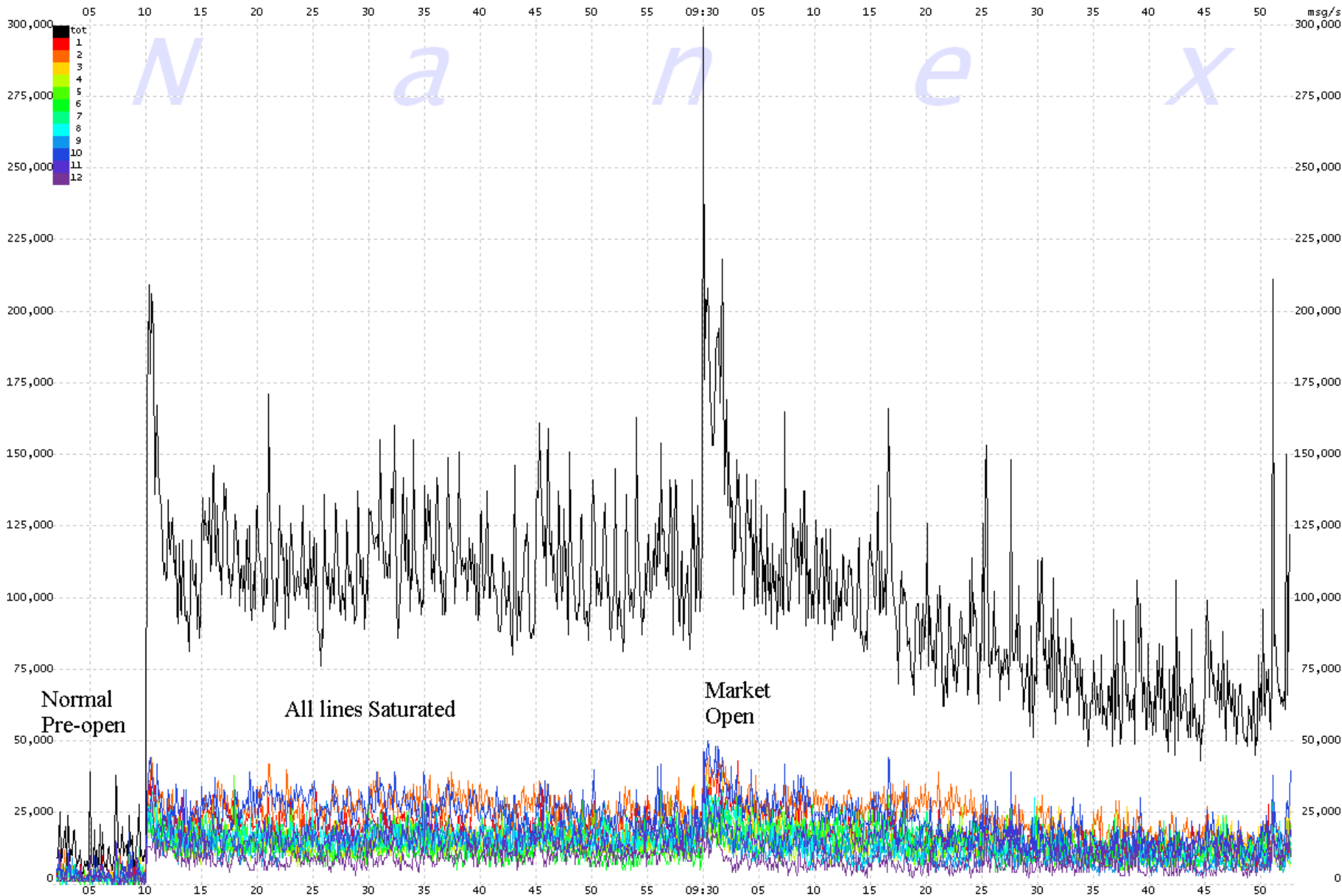
<http://www.nanex.net/Research/ExhibitA/ExhibitA.html>



<http://www.nanex.net/research/MsgRates/EquityMessageRates.html>

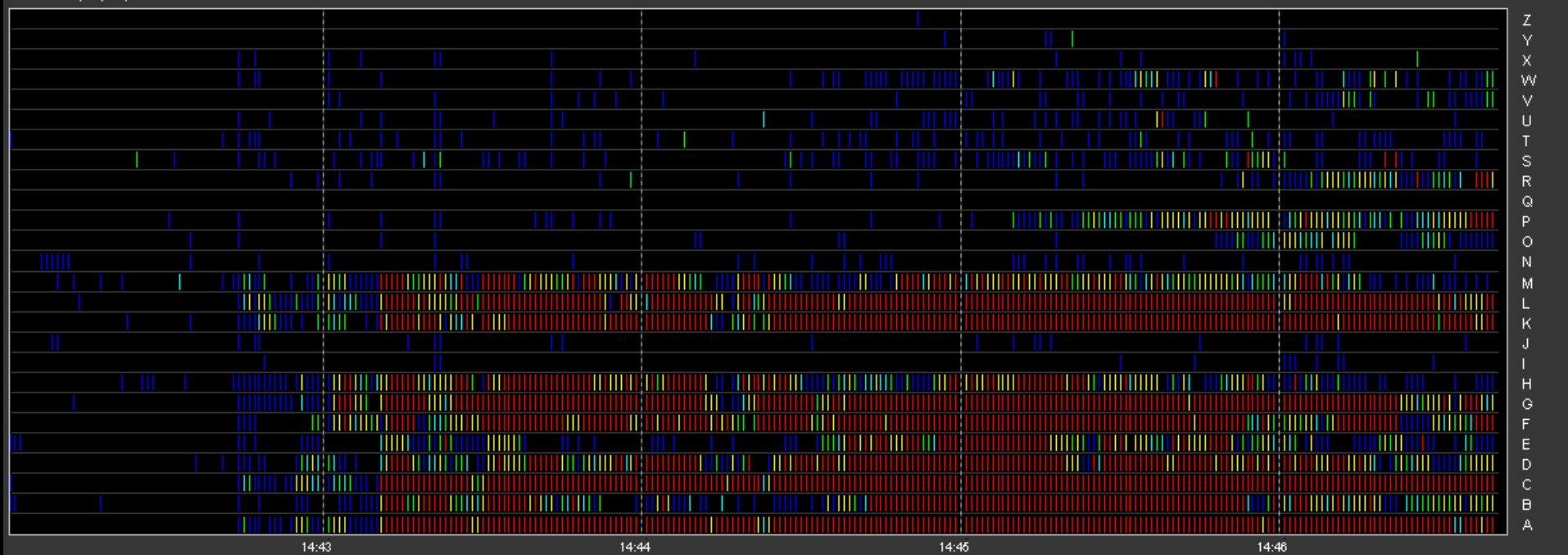


<http://www.nanex.net/Research/EMini2/EMini2.html>

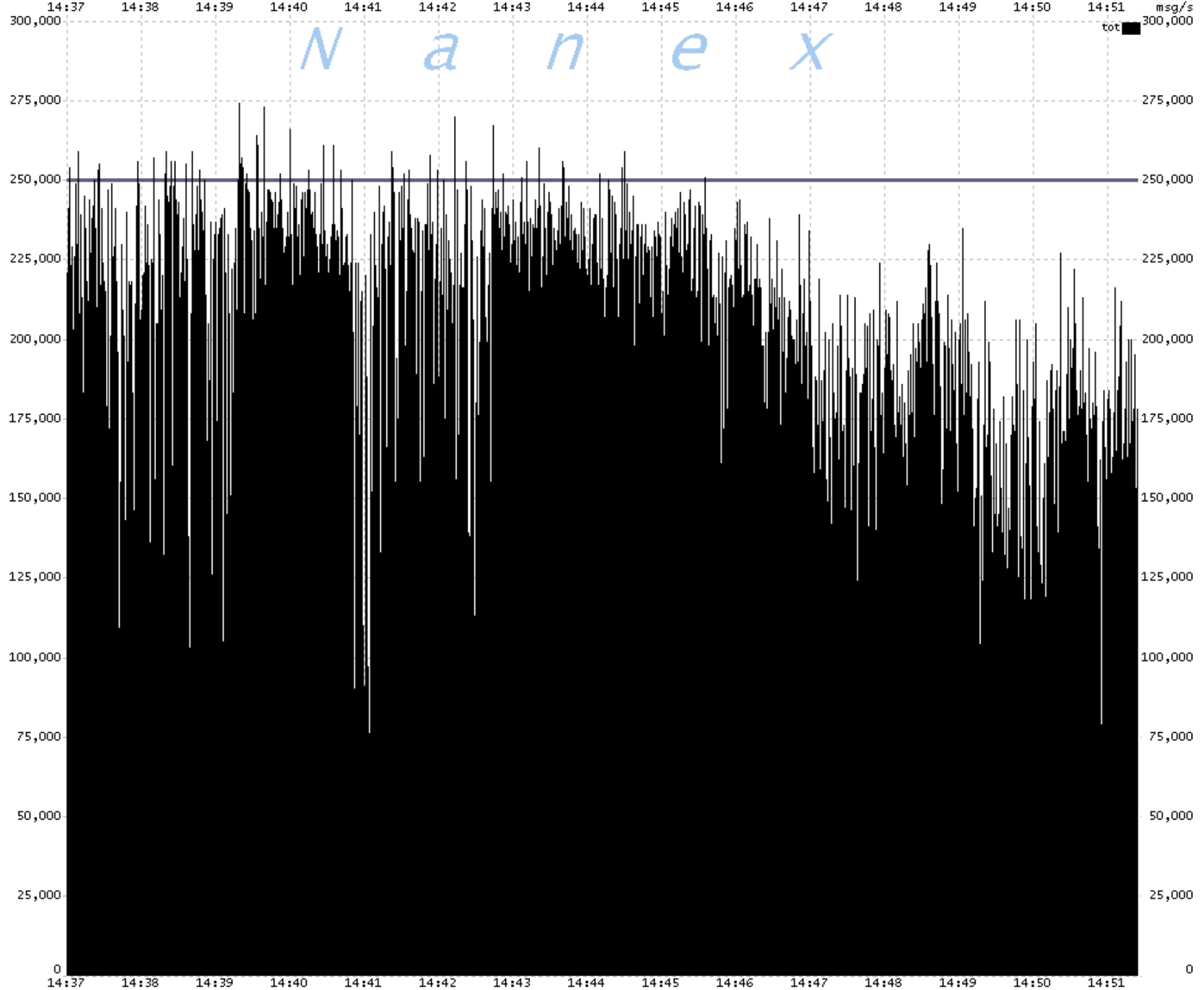


<http://www.nanex.net/aqck/2813.HTML>

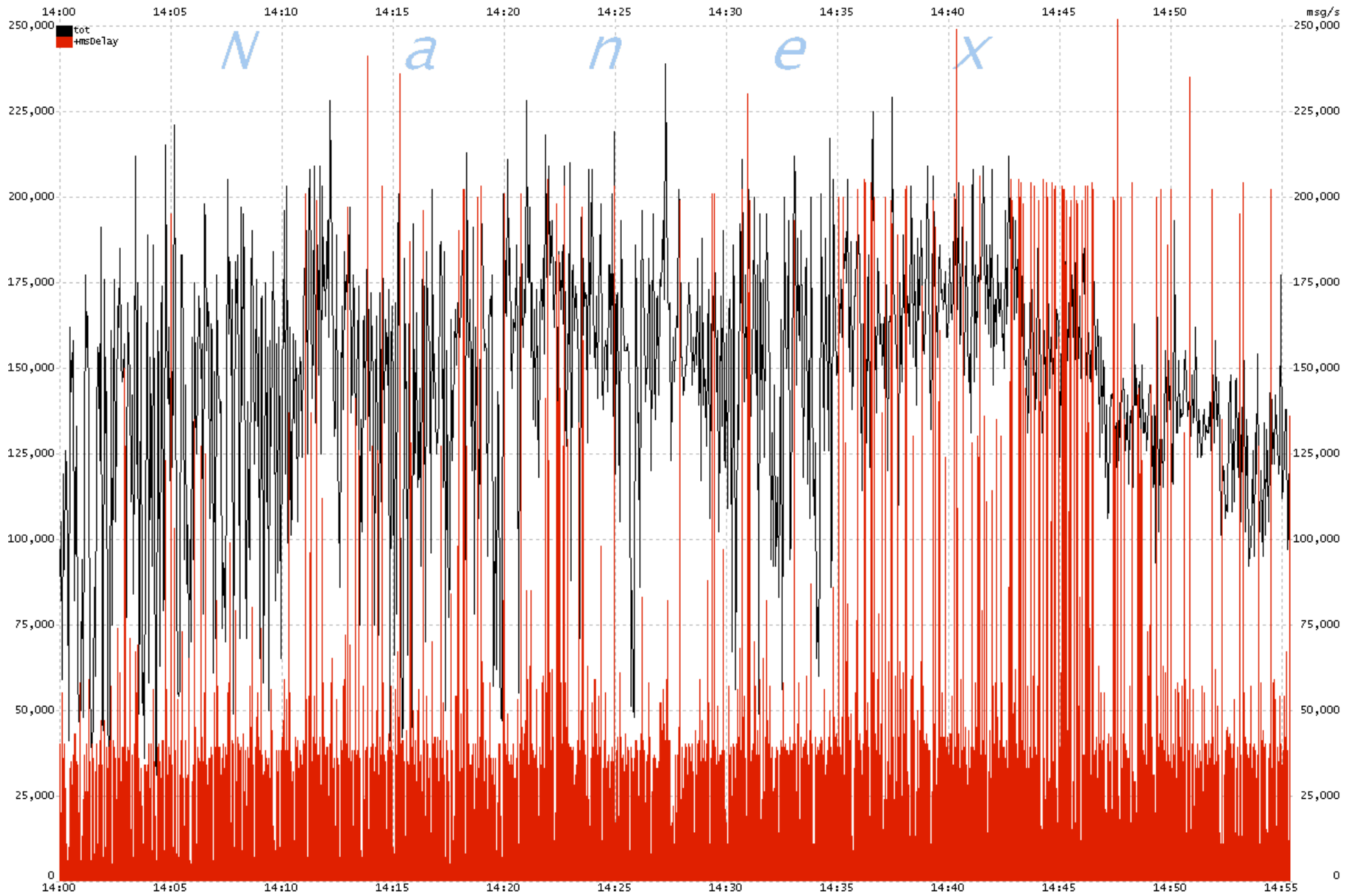
NYSE Delay By Alpha - Count1 - 05/06/2010



[http://www.nanex.net/20100506/FlashCrashAnalysis\\_Part3-1.html](http://www.nanex.net/20100506/FlashCrashAnalysis_Part3-1.html)

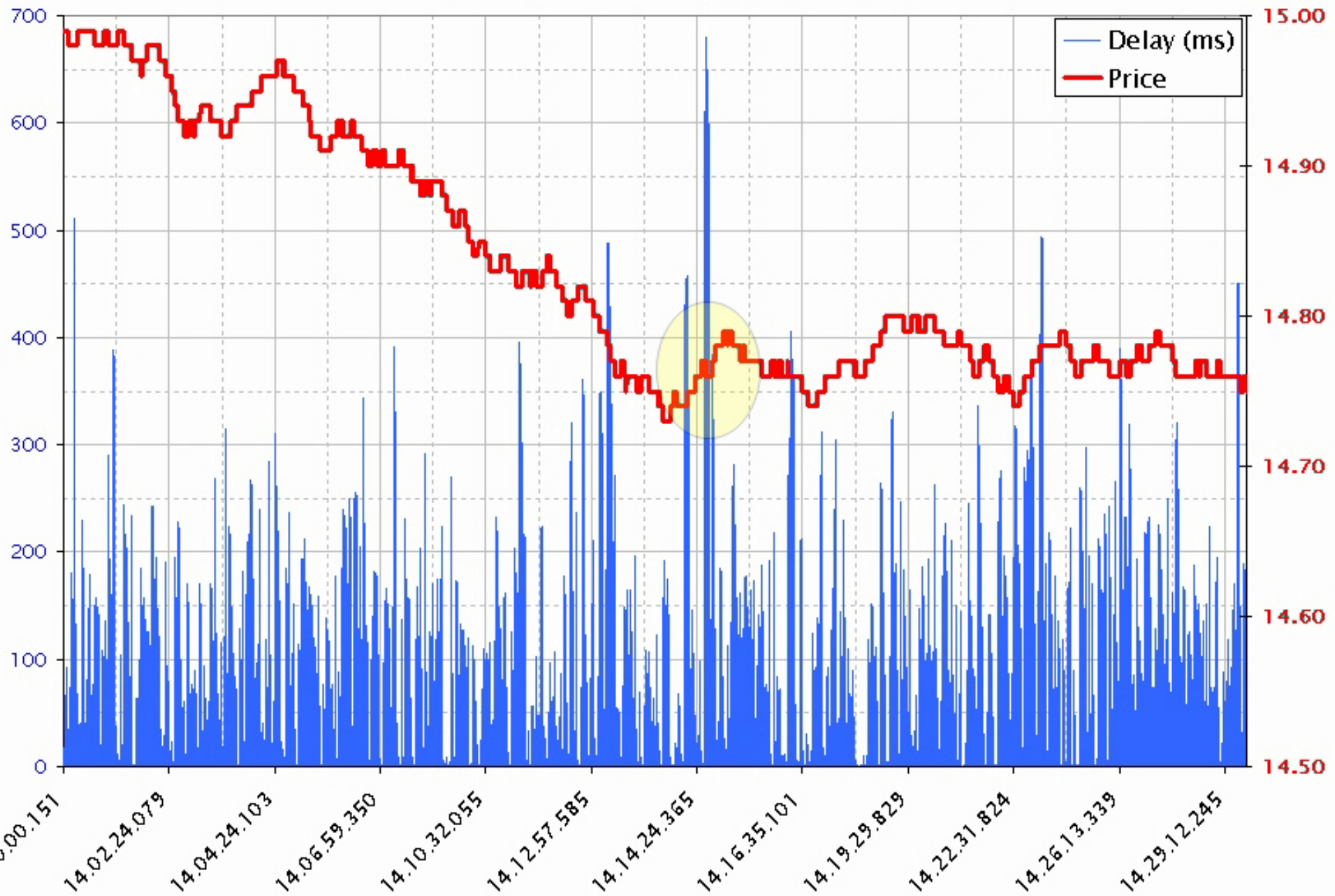


<http://www.nanex.net/Research/NewFlashCrash1/FlashCrash.CQS.Saturation.html>

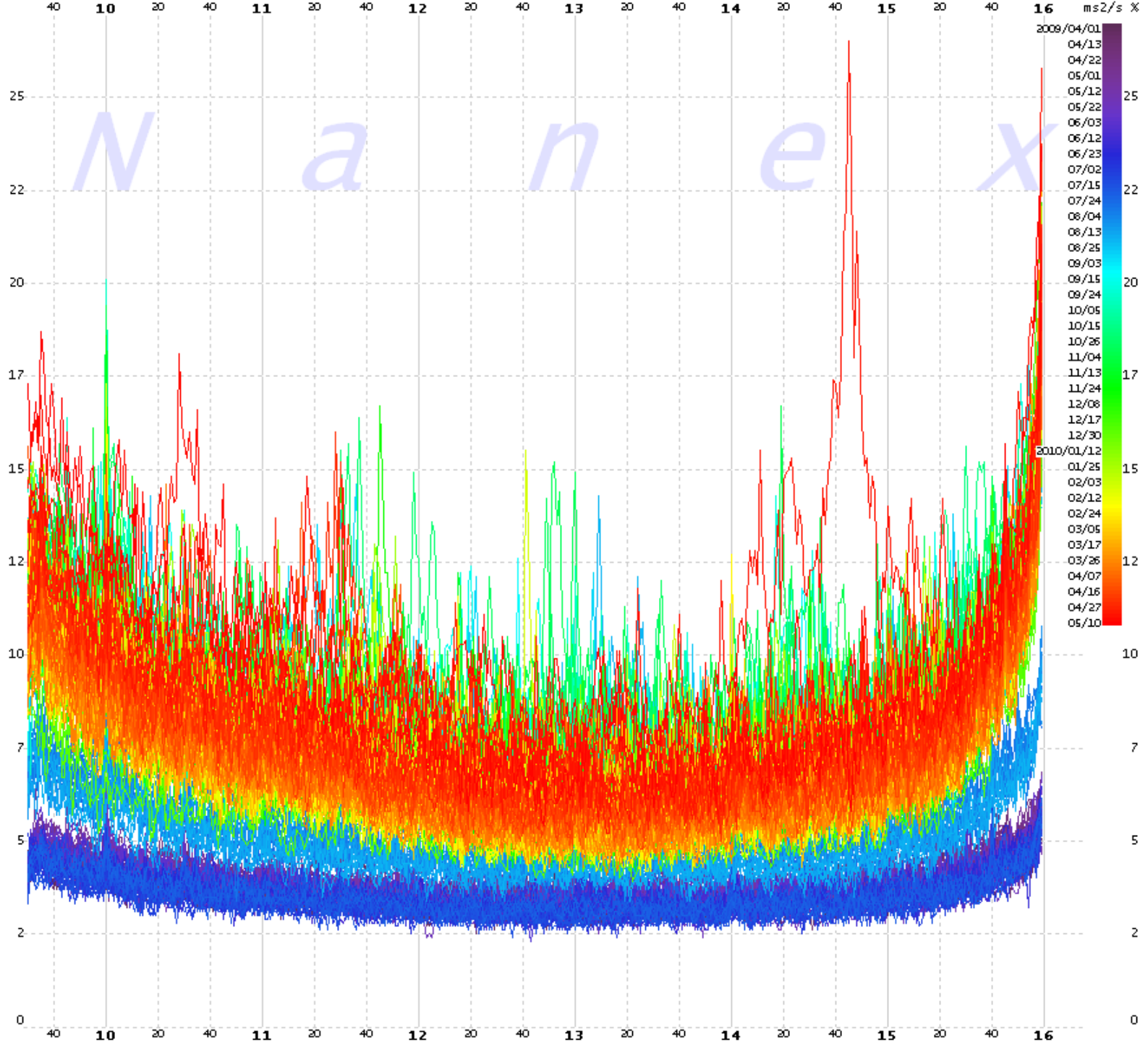


[www.nanex.net/Research/DirectFeedDelays/NewFlashCrash\\_DirectFeedDelays.html](http://www.nanex.net/Research/DirectFeedDelays/NewFlashCrash_DirectFeedDelays.html)

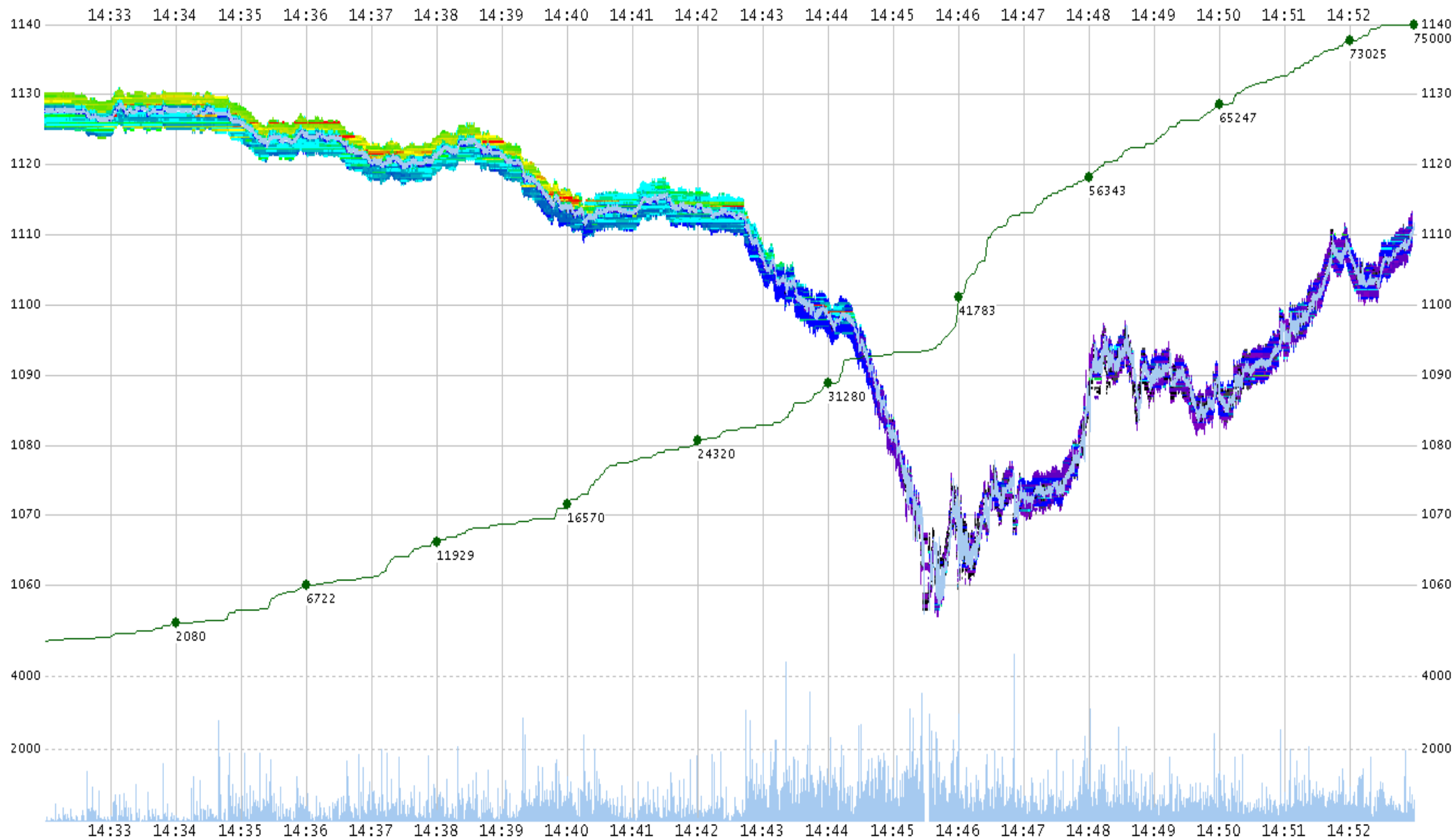
CQS vs Openbook Delay (7/21/2010)



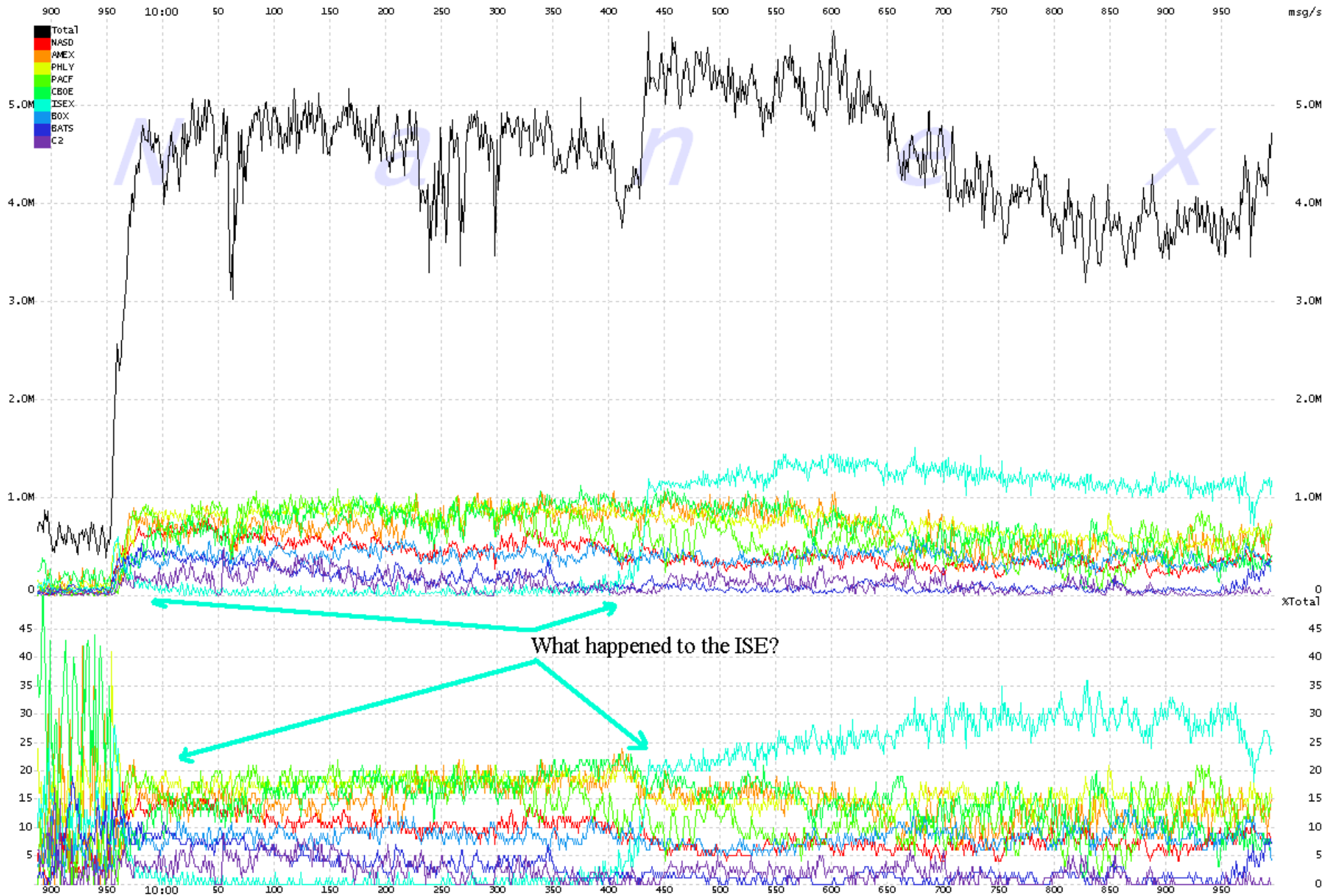
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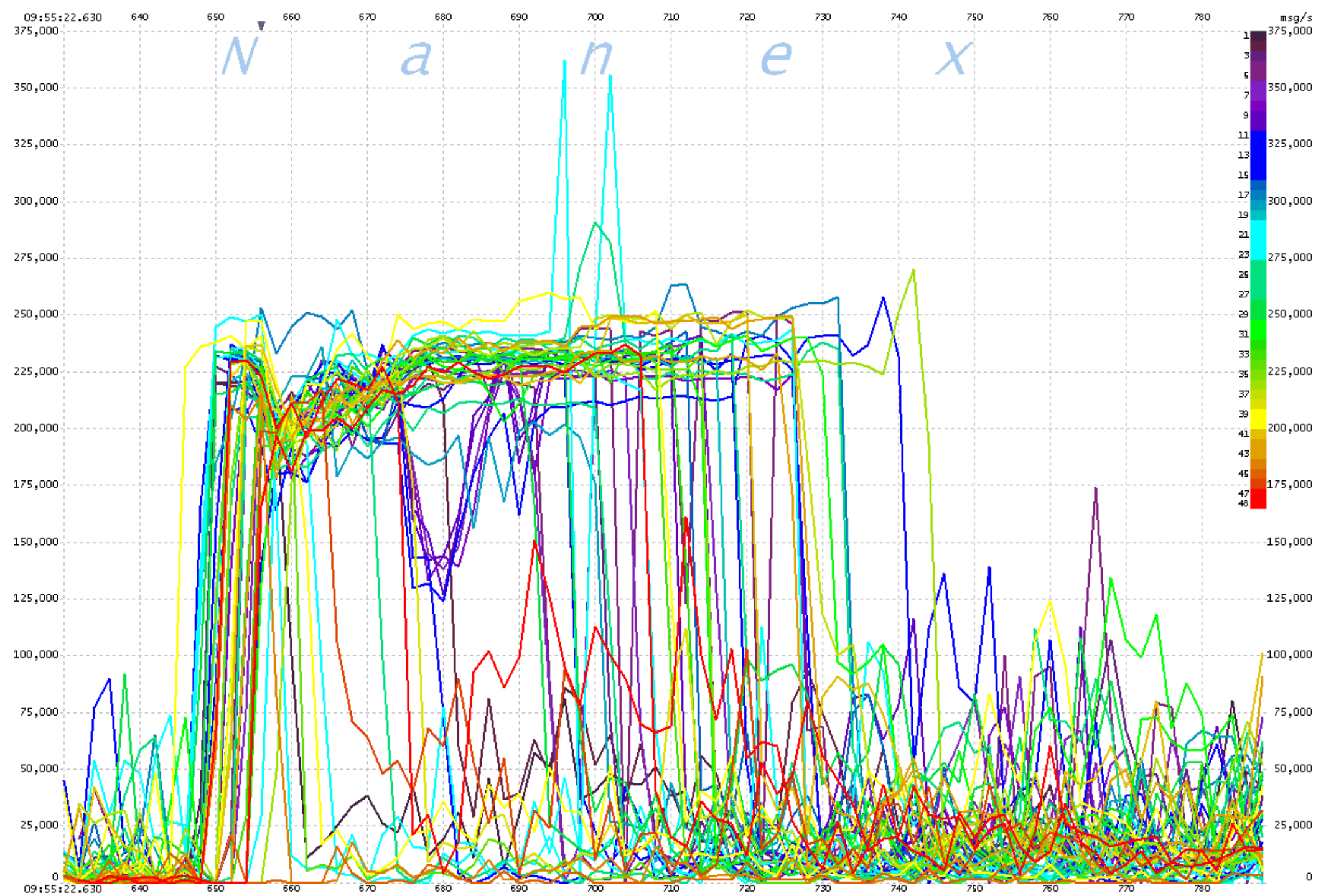
[http://www.nanex.net/Research/FC\\_FSR/FC\\_FeedSaturationRatio.html](http://www.nanex.net/Research/FC_FSR/FC_FeedSaturationRatio.html)



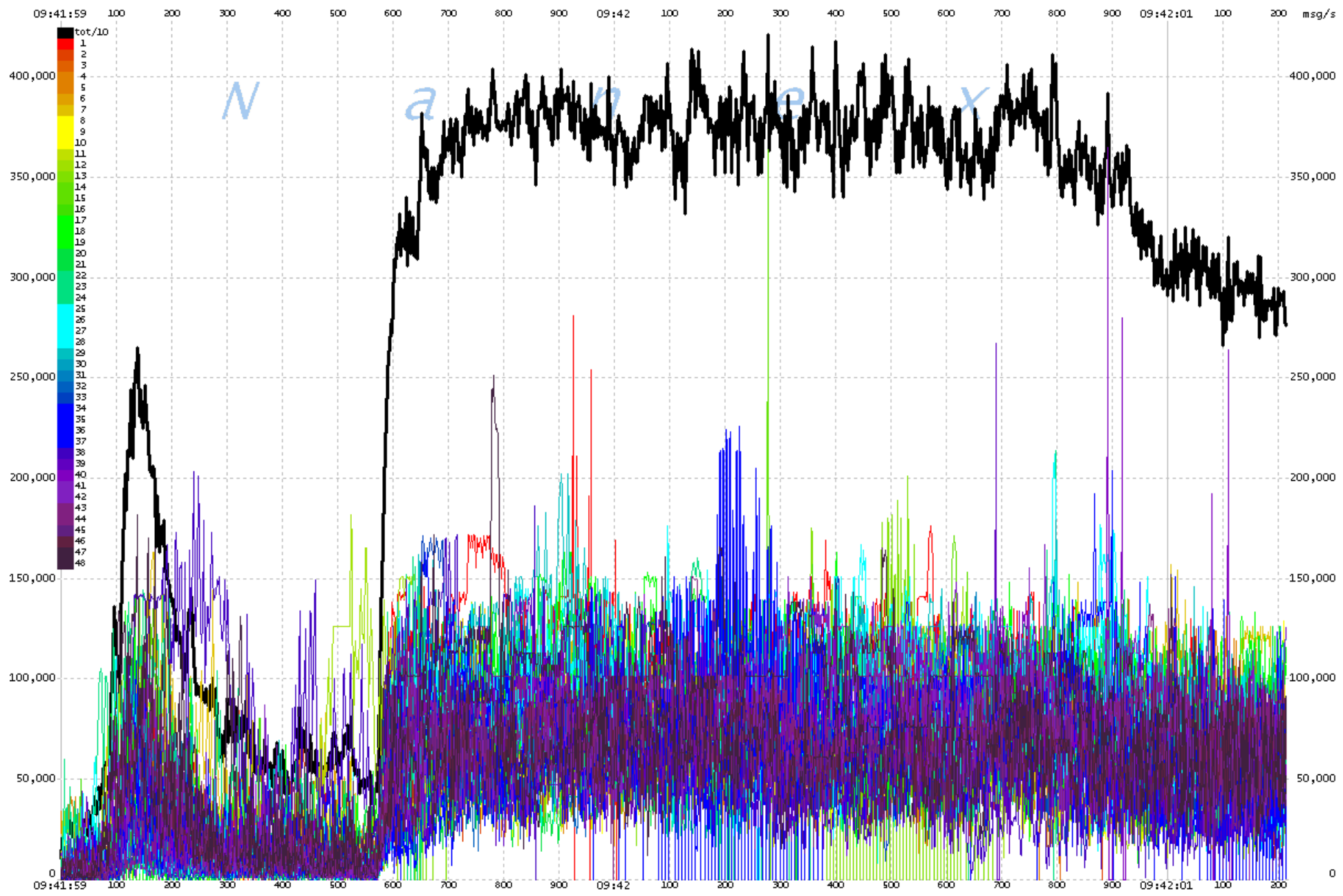
[http://www.nanex.net/FlashCrashFinal/FlashCrashAnalysis\\_WRIImages.html](http://www.nanex.net/FlashCrashFinal/FlashCrashAnalysis_WRIImages.html)



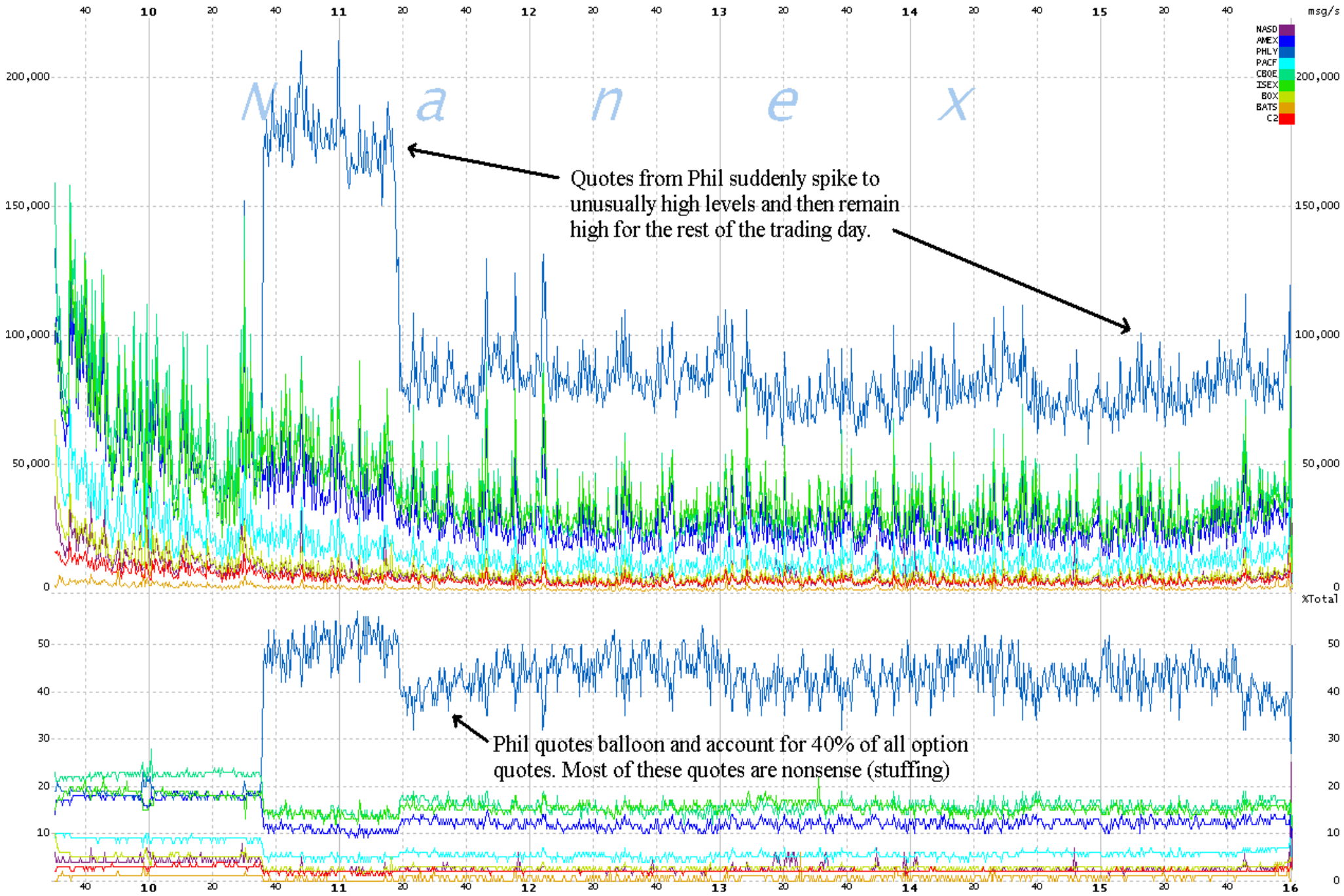
[www.nanex.net/aqck/2793.html](http://www.nanex.net/aqck/2793.html)  
[www.nanex.net/research/opra\\_121611/OPRA\\_12162011.html](http://www.nanex.net/research/opra_121611/OPRA_12162011.html)



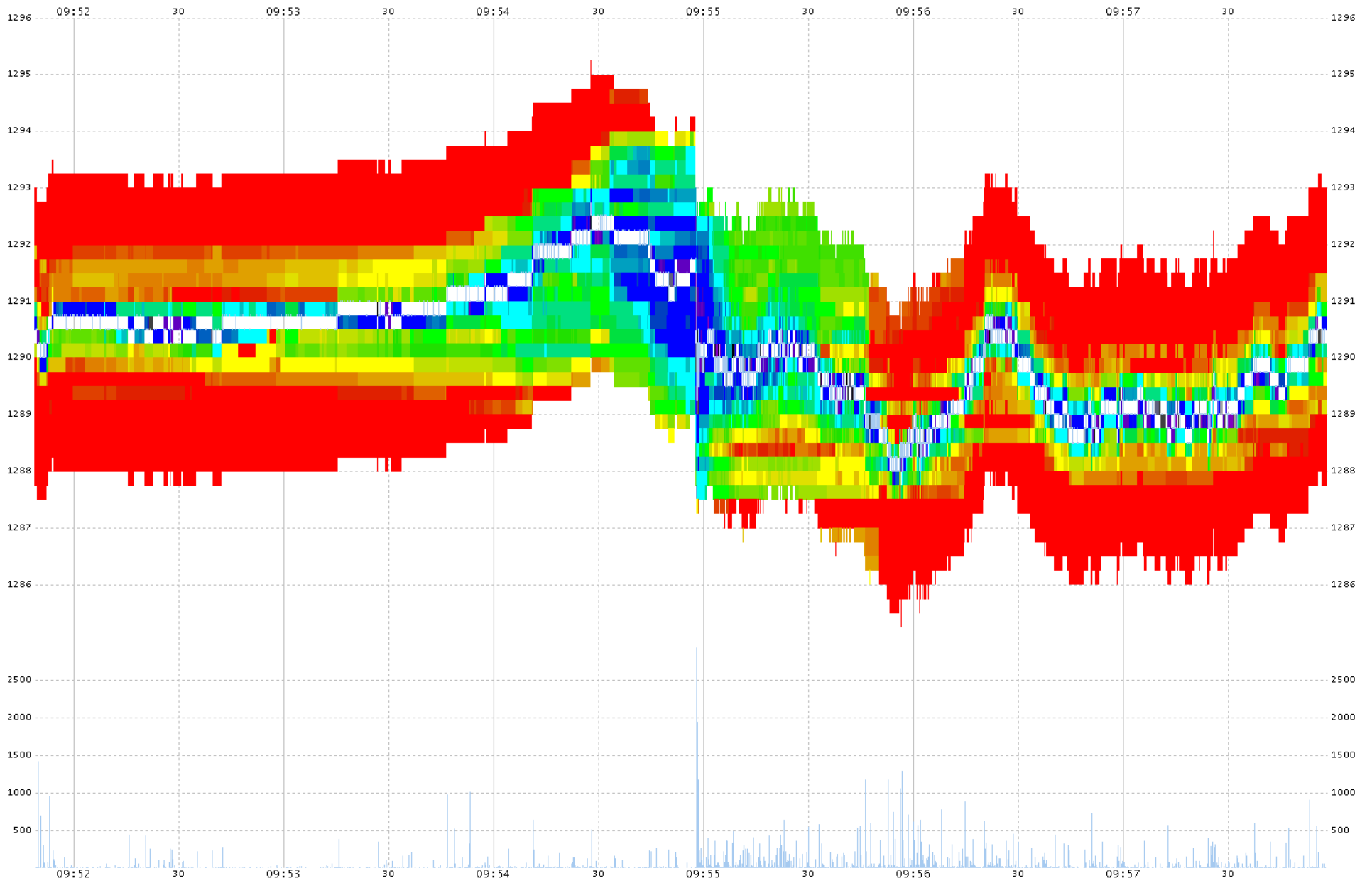
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[www.nanex.net/Research/EMini1/EMini1.html](http://www.nanex.net/Research/EMini1/EMini1.html)