PhaseTrader®
Indicators

NetPremium Indicator
Advanced Tuning Concepts

NetPremium Indicator

NetPremium measures the flow of money in and out of near-the-money options with the idea that the options market tends to lead the stock market. In-the-money option premiums are calculated after subtracting the difference between the trading price and the strike. These values are added to the total for out-of-the-money option premiums. The final calculation subtracts net put premium from net call premium. A Negative Net result signals excess spending on the put side while positive NetPremium is linked to excess spending on the call side. Persistent strength or weakness is an excellent measure of overall sentiment. For example, the slide on this page reveals an excess of strong positive bets flowing into Apple options with 1 day remaining before 4th quarter earnings. Features on the chart tend to precede movements of the stock even though they are all positive. Indicator results are complex because they represent buying and selling of puts and calls both in and out-of-the-money.

Format Indicator: !!!Net_Premium_4

General | Inputs | Alerts | Style | Color | Scaling | Advanced

Name	Value
AvgWindow	5
IntervalSeconds	300
DaysBack	10
HL_Gap_Limit	2
Symbol1	"AAPL 150130C115"
Symbol2	"AAPL 150130C113"
Symbol3	"AAPL 150130C111"
Symbol4	"AAPL 150130C109"
Symbol5	"AAPL 150130P115"
Symbol6	"AAPL 150130P113"
Symbol7	"AAPL 150130P111"
Symbol8	"AAPL 150130P109"
AlertOffOn_01	0
AlertUp	10000
AlertDown	-10000
AlertUpStr	"Up"
AlertDownStr	"Down"
ColorUp	green
ColorDown	red

The input screen allows 8 strikes to be entered – typically 4 calls and 4 puts spanning the range of the chart so that in and out-of-the-money options are included on both sides.

"IntervalSeconds" should be set to match the stock chart (300 seconds in this case for 5 minute bars).

"HL_Gap_Limit" is designed to eliminate bad prints containing very large price distortions. The value entered represents a percentage threshold (high-low)/low for eliminating bars in the calculation. If, for example, an option price appears to swing from $5.00 to $1.50 in the same bar, it is assumed that one of the extremes results from a bad feed. In any case, the average price of the option over the life of the bar is assumed to be inaccurate because of the discrepancy. Raising the threshold very high eliminates the test; lowering it eliminates bars marking large price swings. The number is directly converted to a percentage - i.e. 2 = 2X or 200% meaning that bars where the high is 2X the low are eliminated.

"AvgWindow" sets a moving window length for the calculation.

Note: In most cases the Price Provider Engine will not display historical option prices beyond 4 days.

The end of a sustained rally is often marked with a sharp downward spike.

This chart follows monthly options for SPY (23 days remaining before expiration).

Net premium is strongly negative and a strong downward spike develops as the final peak on the chart forms near the market close on 1/22.

Net premium at this point exceeded $1 million per 5 minutes across 4 strikes (200, 202, 204, 206). In this regard it is important to stress that the calculation includes only "net" premium – i.e. excess premium above any in-the-money amounts.

The S&P fell 23 points the next day (1/23).

Options are much less liquid than stock – even for tickers that are heavily traded by institutions. An effective tuning strategy is to chart very fast bars (10 seconds below) and average the options data across several bars (20 below). The brief timeframe of each bar assures that average option prices for each bar closely match the spot price of the stock. The goal is to watch for large features like the strong shift to put buying that occurred near the top of the 8 point/45 minute S&P rally ($0.80 for SPY) that flattened out at 13:52. Tuning parameters for this indicator are displayed on the next chart.

Tuning parameters for SPY 10 second bar chart (previous page) 1/26/2016 between 13:08 and 15:38 (previous chart). Strikes were chosen to bracket the trading price of the underlying and the average window was extended to 20 bars (200 seconds or the approximate length of the sharp rally marked with an arrow).
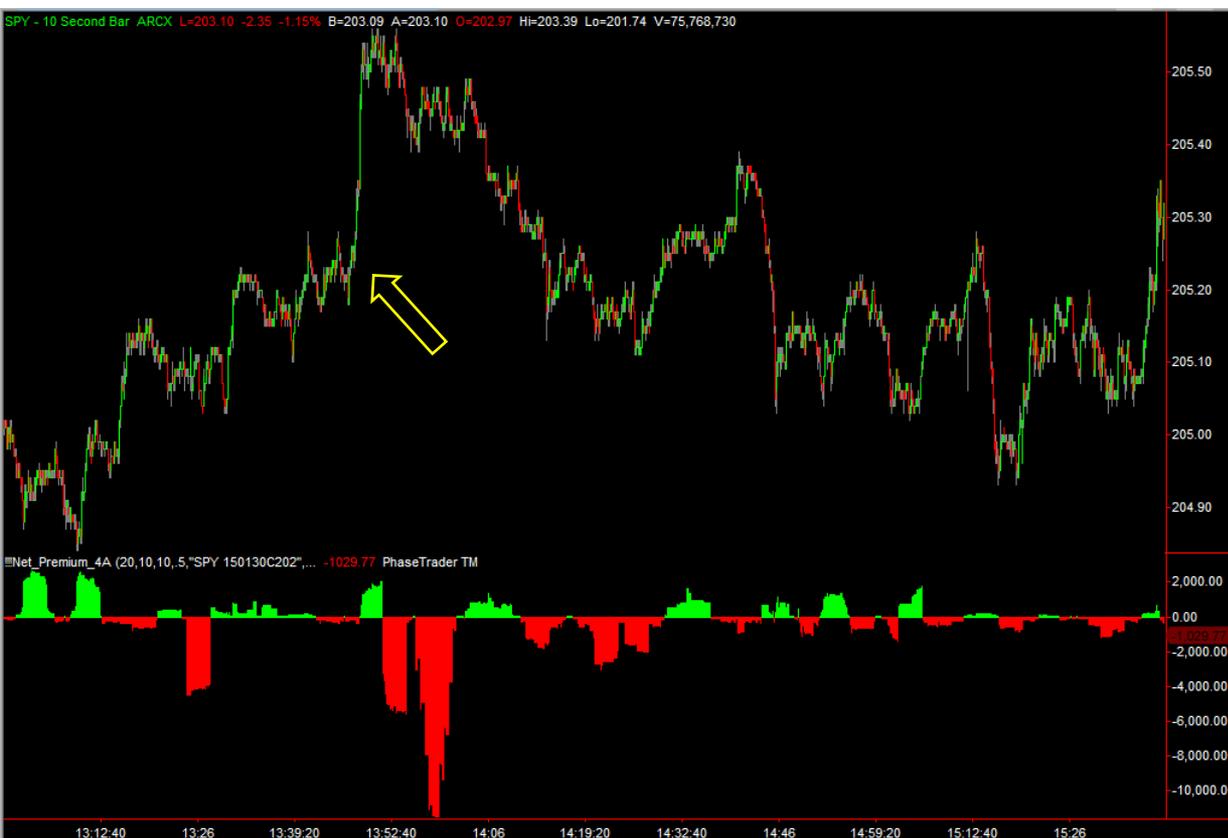
Name	Value
AvgWindow	20
IntervalSeconds	10
DaysBack	10
HL_Gap_Limit	.5
Symbol1	"SPY 150130C202"
Symbol2	"SPY 150130C204"
Symbol3	"SPY 150130C206"
Symbol4	"SPY 150130C208"
Symbol5	"SPY 150130P202"
Symbol6	"SPY 150130P204"
Symbol7	"SPY 150130P206"
Symbol8	"SPY 150130P208"

Different strike combinations can help clarify subtle features on NetPremium charts. Strikes are listed for each of the traces at the left.

Trace #1: 4 strikes spanning the range from above to below the trading price of the stock in the final few minutes before the close.

Trace #2: 2 strikes below and 2 strikes above. In-the-money puts and calls matched against out-of-the-money puts and calls.

Trace #3: 3 strikes – below, at, and above the trading price. The center strike (109) is repeated simply to use up the input parameter and since it is at-the-money the effect is balanced (put versus call).

The bottom trace reveals 30 minutes of put preference as the stock was falling near the close. This feature was driven by aggressive trading of out-of-the-money 108 puts as the stock fell from $110 to $109 in the final 15 minutes of trading. The effect was masked in trace #2 by even more aggressive trading of $111 calls. This determination was made by charting each of the strikes separately. Both volume and net premium paid for 108 puts and 111 calls climbed steeply just ahead of earnings.

Trace #2 displays aggressive buying of 108 puts that were $3 out-of-the-money, beginning 30 minutes ahead of the sharp decline. The effect was masked in traces #1 and #3 which included additional in-the-money calls (109, 110). Aggressive pricing for in-the-money calls and out-of-the-money puts is a distinctly negative sign. When investors expect a stock to fall, they overpay for OTM puts to gain leverage or close short put positions. It's not clear what drove aggressive purchasing of high delta ITM calls. These kinds of distortions frequently occur just ahead of earnings.

AAPL - 30 Second Bar NASDAQ L=115.40 2.30 2.03% B=0.00 A=0.00 O=112.45 Hi=112.48 Lo=109.03 V=95,568,749

Net_Premium_4A (10,30,10,1,"AAPL 150130C108",... 0.00 PhaseTrader TM

108, 109, 110, 111

Net_Premium_4A (10,30,10,1,"AAPL 150220C108",... 0.00 PhaseTrader TM

108, 108, 111, 111

Net_Premium_4A (10,30,10,1,"AAPL 150130C108",... 0.00 PhaseTrader TM

108, 109, 109, 110

The clearest results appear when a single large features dominates a chart built around strikes that span the entire trading day – in this case 202, 203, 204, 205 (earlier in the day SPY fell as low as 201.8; centered in this chart is the intraday high of 204.10). The large put premium that appeared at 14:29 preceded a 20 point drawdown of the S&P by 24 minutes. "Smart money" always plays a major role in index options trading.
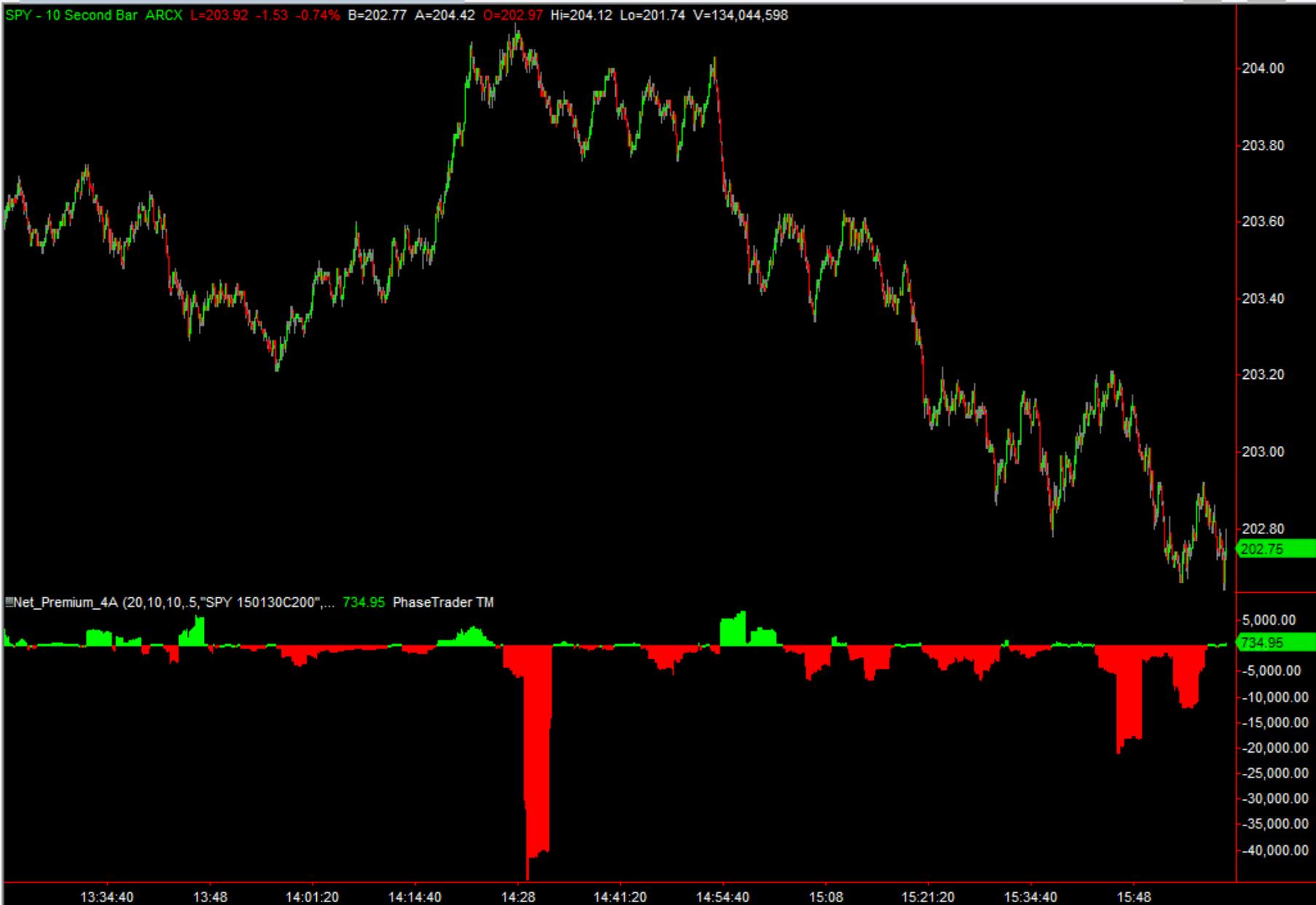
Advanced Tuning Discussion

Large scale reversals of short-term rallies can be clarified with tunings that smooth out most noise and only leave major signals. In this case, the FOMC drove a late December rally with "dovish" comments at their mid-December meeting followed by targeted public statements made by Fed Governors. Key to the chart was the large P2=20 combined with the NewPhaseFilter of 0.15. P2 sets the length of the internal calculation window and NewPhaseFilter adjusts an internal threshold that blocks the indicator calculation from resetting to 0. Long P2 values minimize the effect of a single large price change at the end of the window. Very long P2 values (50 or greater) can create a slight lag as several large price changes in the same direction will be required before the indicator recognizes that a reset condition exists. Increasing NewPhaseFilter adds no delay but decreases the sensitivity of the calculation. Raising the filter too high will make it impossible for the indicator to reset if the underlying reversals are modest in size. The right compromise decreases the sensitivity enough to eliminate noise while lengthening the internal calculation window enough to require that the reversal be part of a statistically significant trend. The best combination can only be found by trial and error, in part because the answer depends on the goals of the investor.
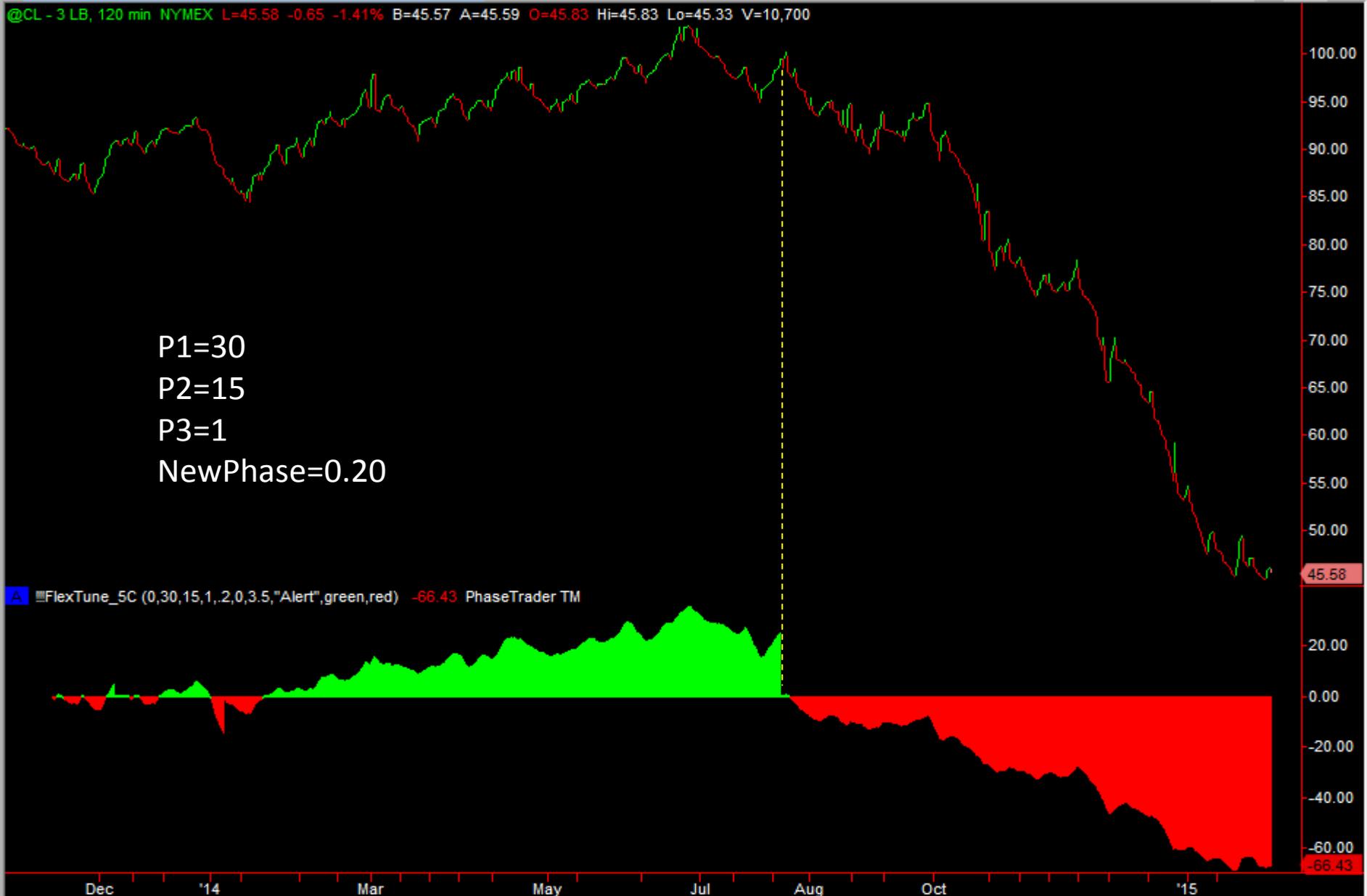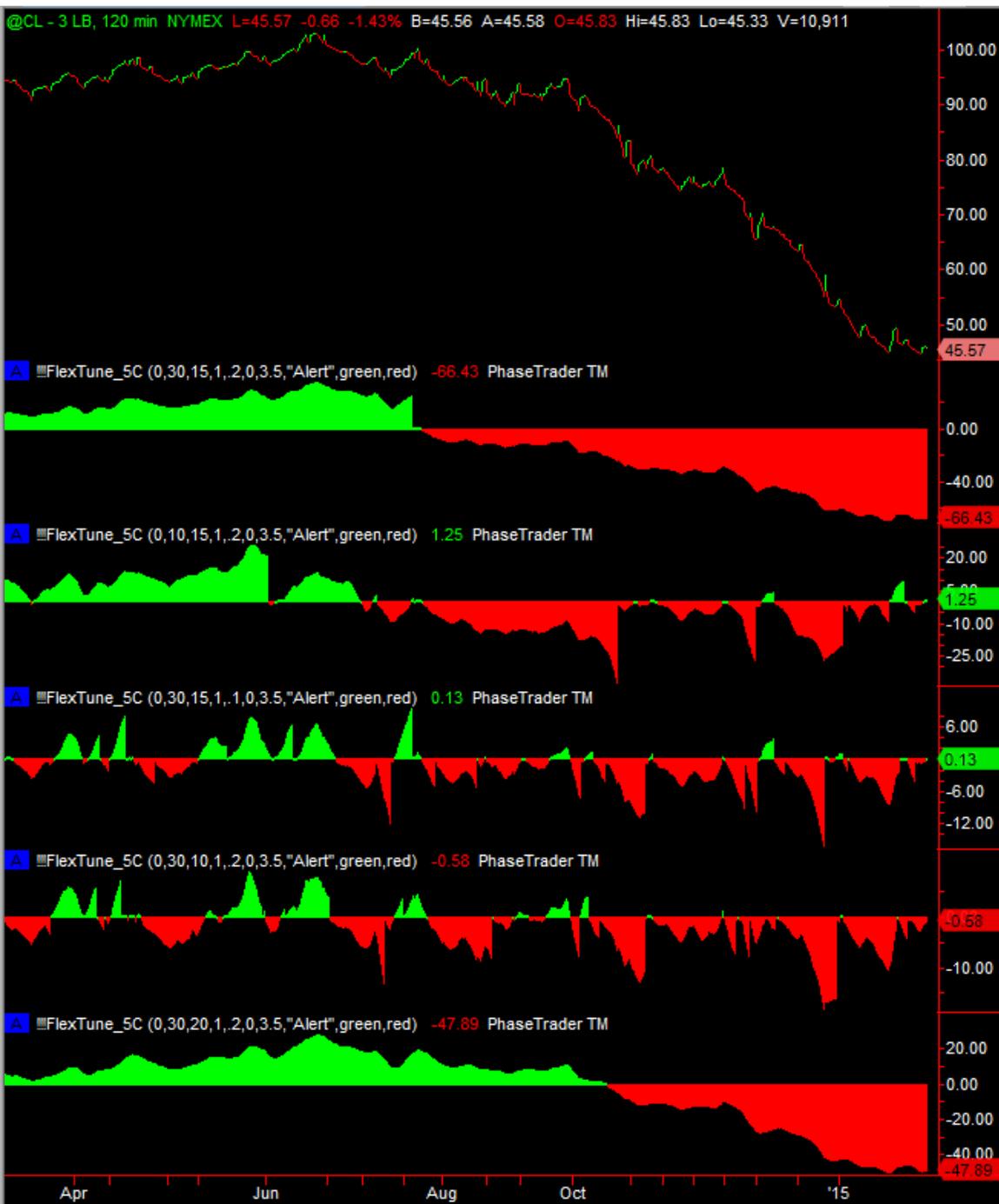

P1=30
P2=20
P3=1
NewPhase=0.15
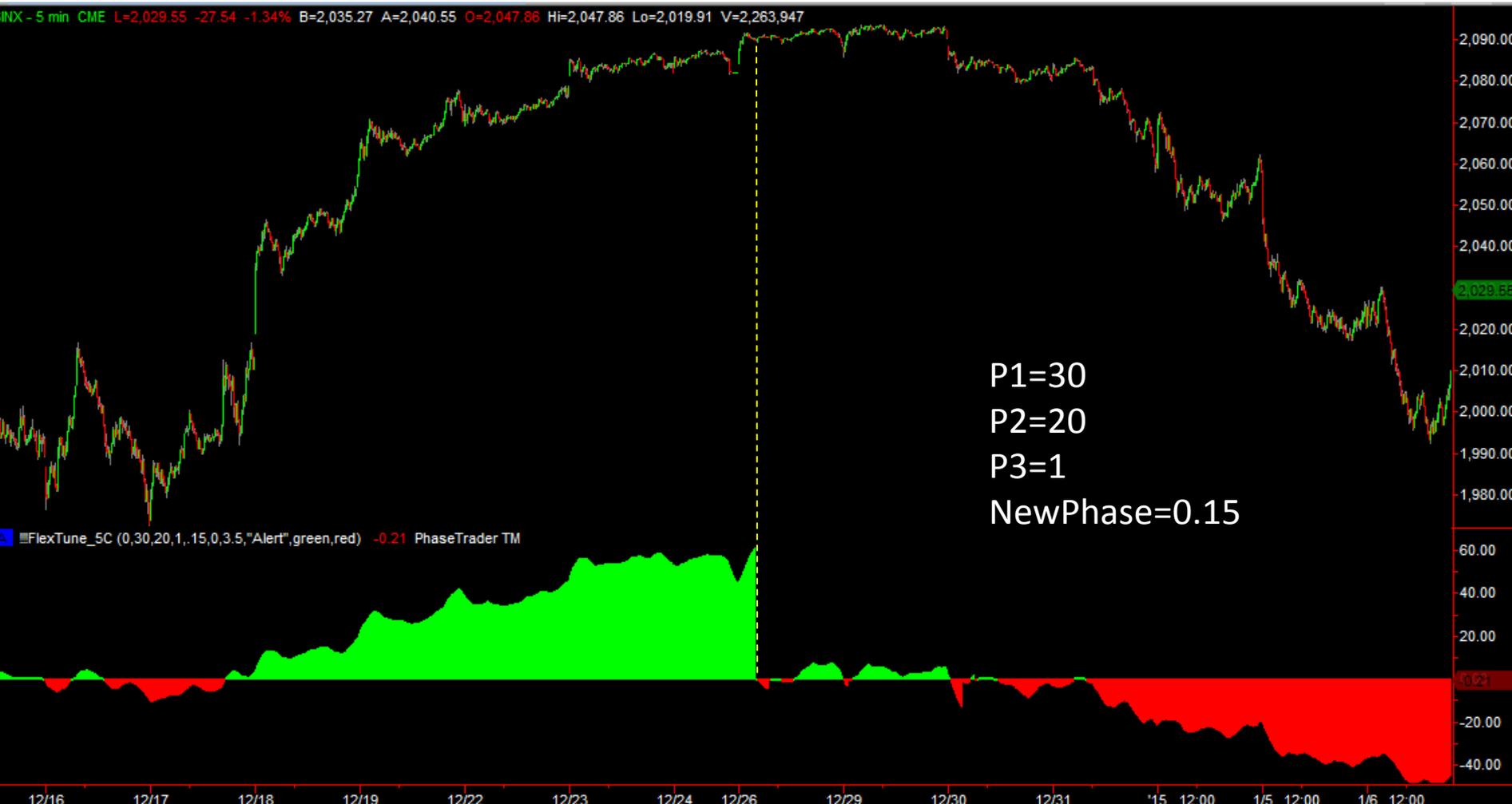
In this chart, the second tuning reduces the NewPhaseFilter from 0.15 to 0.12. Additional indicator resets reveal detail under the large scale trend visible in the first chart (and the previous slide). These signals can be traded as well as the more highly filtered version in chart #1.

Chart #3 completely replaces NewPhaseFilter with a much longer P2 value of 50 bars. This tuning introduces a minor amount of lag and because all indicator resets are allowed, the chart also displays too much noise to be useful.
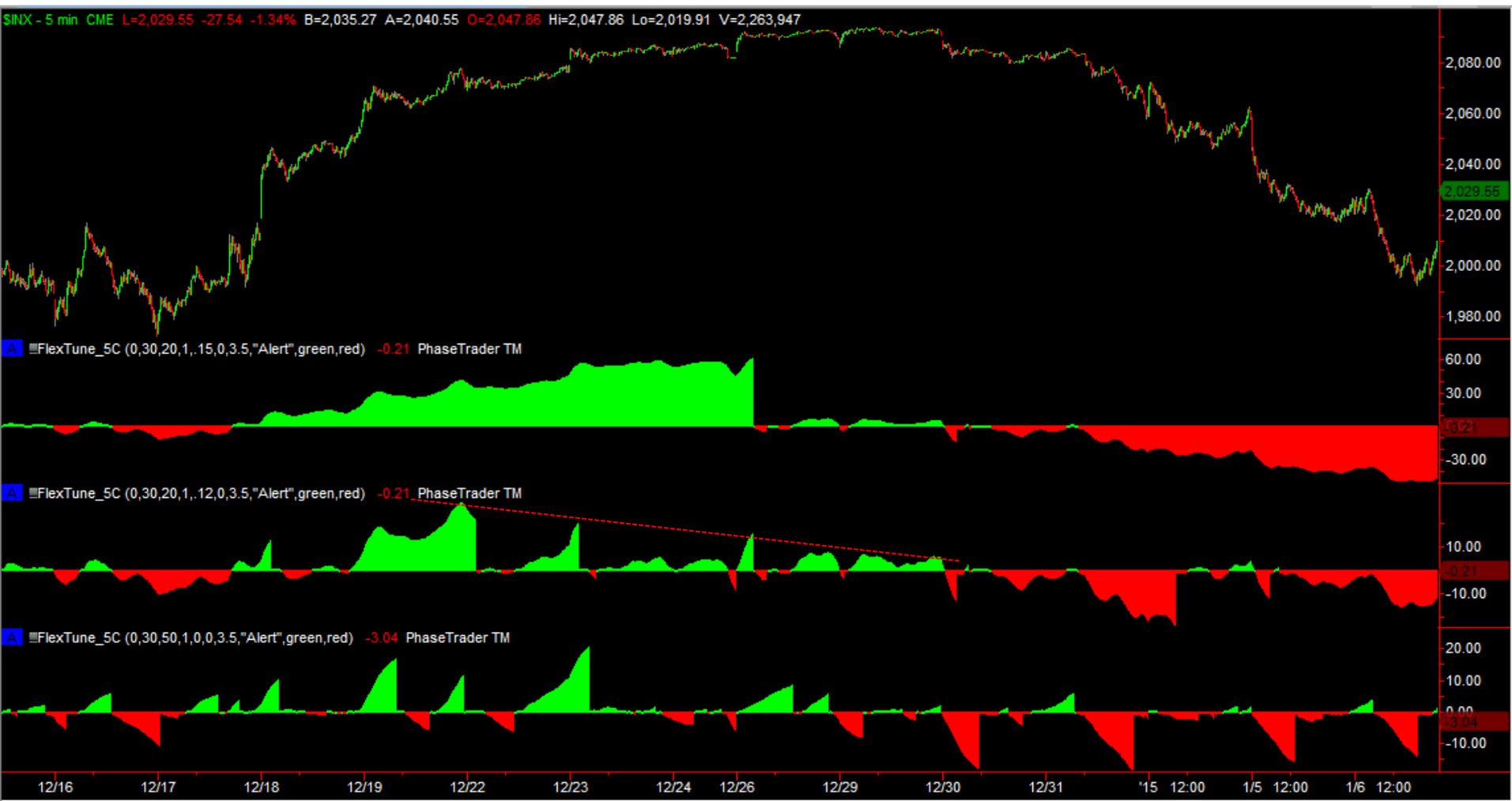
Line Break and Kagi charts provide the cleanest input to PhaseTrader®. Kagi charts use a preset reversal threshold set by the user while Line Break charts measure against previous closes (in this case 3 bars previous). PhaseTrader® is very sensitive to P1 in LB charts because volatility is very variable. In this tuning, NewPhase is set very high (0.2) because we are looking for a single major signal that a price reversal is about to start. P2 is just long enough to eliminate most noise.


@CL - 3 LB, 120 min NYMEX L=45.58 -0.65 -1.41% B=45.57 A=45.59 O=45.83 Hi=45.83 Lo=45.33 V=10,700

P1=30
P2=15
P3=1
NewPhase=0.20

A ◼FlexTune_5C (0,30,15,1,.2,0,3.5,"Alert",green,red) -66.43 PhaseTrader TM

@CL - 3 LB, 120 min NYMEX L=45.57 -0.66 -1.43% B=45.56 A=45.58 O=45.83 Hi=45.83 Lo=45.33 V=10,911

FlexTune_5C (0,30,15,1,.2,0,3.5,"Alert",green,red) -66.43 PhaseTrader TM

Optimized tuning for major reversal
P1=30, P2=15, NewPhaseFilter=0.2

FlexTune_5C (0,10,15,1,.2,0,3.5,"Alert",green,red) 1.25 PhaseTrader TM

Decrease P1 (more sensitive to volatility changes)
P1=10, P2=15, NewPhaseFilter=0.2
More signal / slightly more noise

FlexTune_5C (0,30,15,1,.1,0,3.5,"Alert",green,red) 0.13 PhaseTrader TM

Decrease NewPhaseFilter (lower reset threshold)
P1=30, P2=15, NewPhaseFilter=0.1
Too much noise – constant indicator resets

FlexTune_5C (0,30,10,1,.2,0,3.5,"Alert",green,red) -0.58 PhaseTrader TM

Decrease P2 (increase sensitivity to single price changes)
P1=30, P2=10, NewPhaseFilter=0.2
Too much noise – constant indicator resets

FlexTune_5C (0,30,20,1,.2,0,3.5,"Alert",green,red) -47.89 PhaseTrader TM

Increase P2 (decrease sensitivity to single price changes)
P1=30, P2=20, NewPhaseFilter=0.2
Too much lag – trailing indicator
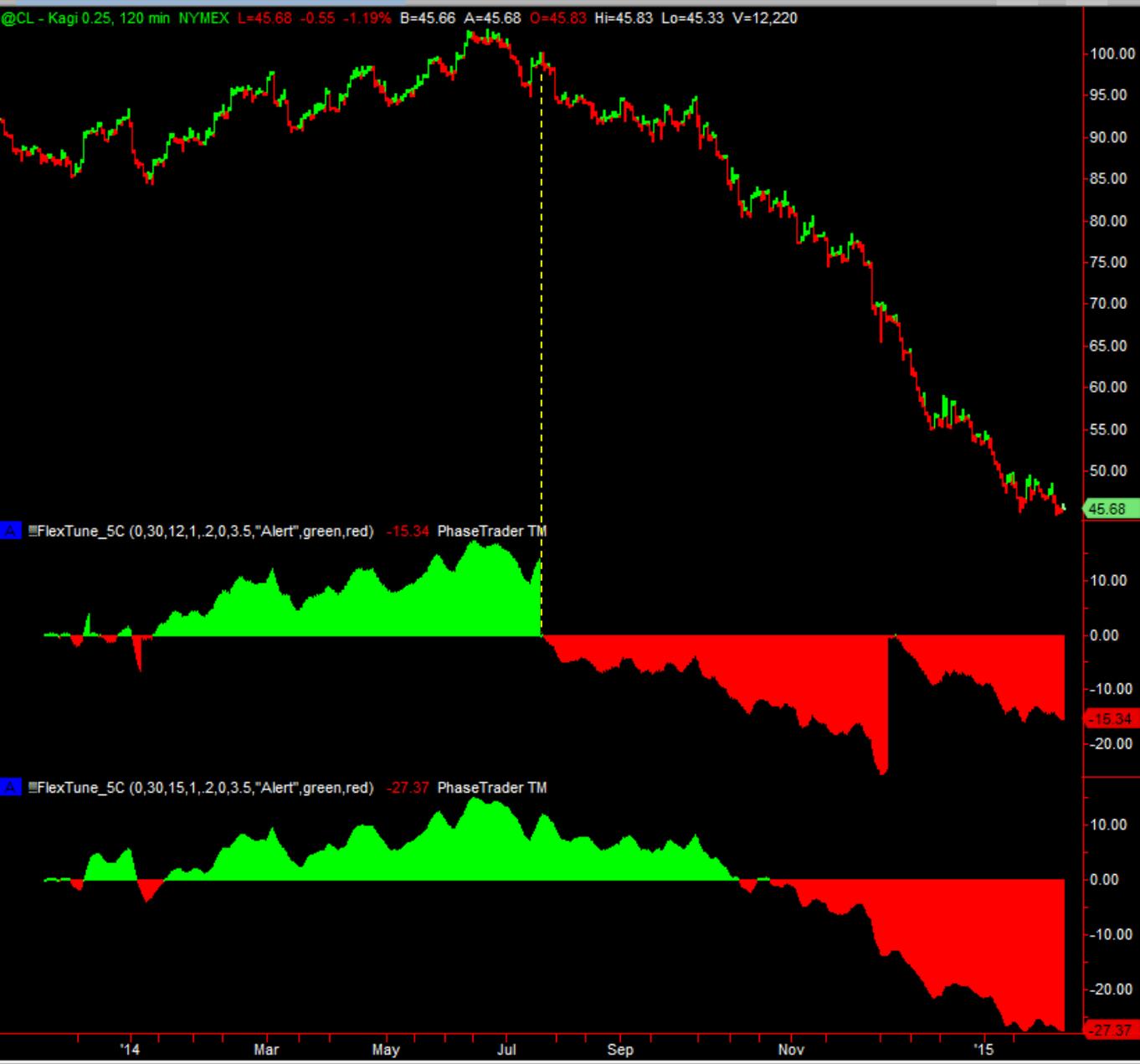
Kagi charts are also time and trade count independent. This example uses $0.25 reversals checking every 120 minutes.

Only a slight tuning difference produced identical results to the 3 Line Break chart (P2=12 versus P2=15).

Both charts are sensitive to changes in P2.

Non-resetting Phase has emerged as one of the most useful tuning options for long-term chart analysis. Raising NewPhaseFilter very high (999) completely prevents the indicator from resetting. Results are best charted as a continuous line instead of a histogram. Charts created this way represent improved versions of the original stock chart because they take into account the statistical significance of each underlying trend. Rallies and declines that are less significant appear flattened. Conversely, strong sustained moves tend to create higher peaks and lower valleys than the underlying stock chart. Algorithmic trading systems use a variety of mathematical models to achieve similar results.

Gold peaked on 10/21 at $1248 then fell back to $1138.

The top of the next rally was predicted by equivalent peaks on the Non-resetting Phase chart even though the new peak ($1307) was 59 points or 4.7% higher.

1/22 webinar: This chart was constructed with 15 stocks that led the market from 1/9 – 1/13 using a non-resetting tuning of the leading indicator (resets were prevented with a high value for "NewPhaseFilter" and the display was switched from histogram to line). The indicator trace closely follows the S&P with subtle but important differences. For example, the 1/13 peak appears larger than the 1/9 peak on the stock chart but lower on the indicator – a subtle sign that these key stocks are beginning to decline. The downward trajectory becomes more dramatic later in the transition to 1/14 at the right side of the chart. The market continued falling another 14 points after the leading composite non-resetting indicator posted this difference, bottoming out at 2:00 EST on 1/14 (off the right side of this chart). Stocks used in this analysis appear on the next slide.
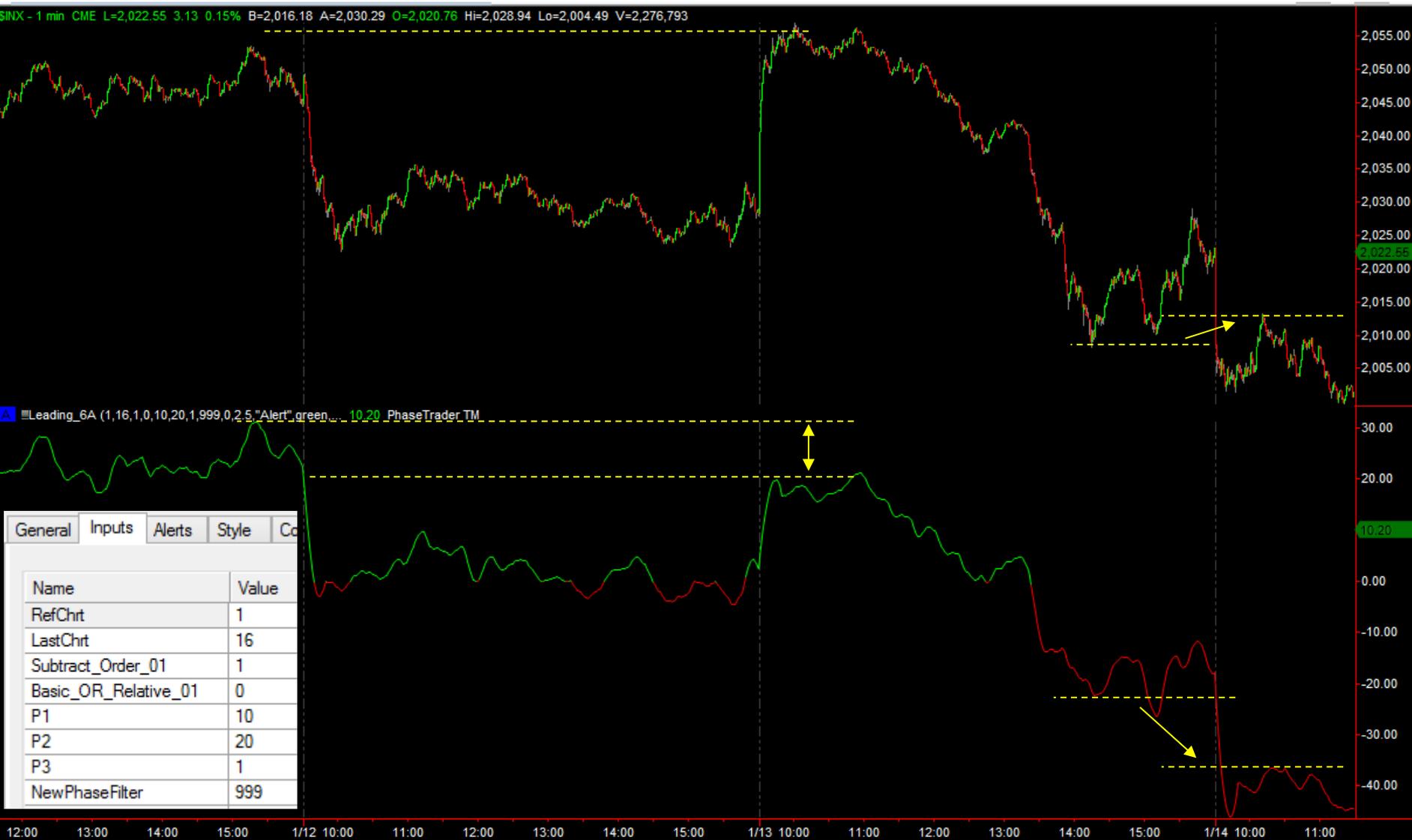
USDJPY (yen) is one of the most important leading indicators for U.S. equity markets because the carry trade causes money to flow from yen to U.S. dollar whenever the yen weakens.

In many timeframes, a chart of the S&P is almost indistinguishable from a chart of USDJPY. When the yen weakens (USDJPY rises), money flows into U.S. markets and the S&P rises.

The non-resetting tuning of Phase_Relative displayed in this chart reveals that the yen/S&P relationship flattened at the beginning of the year meaning that the yen is no longer weakening faster then the S&P is rallying.

This result is significant because excess weakness of the yen generates free cash flow for investment in U.S. markets.

Phase_Relative allows us to simplify a very noisy chart by subtracting market movements (in Stdev) from movements of the yen to create a virtual ticker that is then used for the Phase Calculation.

Charting the result in Non-resetting Phase terms adjusts this virtual ticker so that we can make meaningful comparisons of peaks and valleys.

Many important features appear in this chart: the Oct. decline is much less significant in the indicator than in the chart; the Nov. rally appears nearly flat; USDJPY strengthens and weakens in a way that continually returns the price to the indicator line; the 8/9 – 10/1 rally is much more significant on the indicator than the stock chart, meaning that the yen weakened much faster then the market rallied.

Non-resetting Phase correctly aligns peaks and valleys after the 1929 stock market crash. The recovery rally that stalled in 1937 peaked at a level that was technically equivalent to the 1929 peak even though it was 51% lower. The market became noticeably unstable once it crossed this point. The bottom of the crash (40) was equivalent to the 1926 peak at 165. These lines on the indicator define support and resistance levels that would have made excellent entry and exit points for long Dow trades.

END