



Indicators Manual

Genesis Financial Technologies Inc.

Finally Strategy Development and Back Testing Just Got Easier!

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Disclaimer:

Each function, and formula, in this manual is attributed as best as possible. There are some items that were developed by, or for, third party educators for public release. In some cases the educator in question is no longer associated with Genesis Financial Technologies, and has asked that their name be removed. In those cases, the developer of the function, or the idea that function is based upon, has been changed to Educator in order to acknowledge the third party nature of the design or development.

Key :

Under the name of the indicator or function, you will find a description of that indicator/function, and for some, the most common published uses. In the box under the graph, you will find the inputs that it requires, whether the inputs are required or optional, the type of indicator/function, and what that indicator/function will return if used in a filter criteria or filter. Also, you will find an example of the usage as well as an example written in Tradesense language.

<u>Inputs:</u> (Example #1) <i># of Bars</i>	<u>Req./Opt.:</u> (Ex. #2) <i>Req.</i>	<u>Type:</u> (Ex. #3) Indicator	<u>Returns:</u> None
<u>Filter Criteria Uses:</u> (Example Only) If A/D crosses above 75	<u>Syntax:</u> Crosses Above (Accumulation Distribution, 75)		

Indicator – An indicator is designed for charting purposes, so that the user can watch as the indicator reflects trend changes, and/or convergence/divergence between the price and indicator.

Functions – Functions are used to reference time periods, price bars, and/or certain data. Indicators are considered functions but, functions are not necessarily indicators.

Inputs – Inputs are the parameters that an indicator uses to calculate its formula. For Example: When using a moving average you can specify the number of bars that the average calculates by changing its input from 18 to 40. (Example #1) See page 111 for a list and definitions of all of the inputs.

Req./Opt. – This tells you whether or not the inputs for that indicator/function are required or optional. (Example #2)

Type – Type references what kind of function you are dealing with, whether it is a indicator, data, calendar, bars ago, math, or simply a price function. (Example #3)

Filter Criteria Uses – This is an example only, showing a common way to use that certain indicator/function in a filter criteria.

Syntax – This again, is only an example, showing how to write the criteria in our Tradesense language.

Trade Navigator Indicators

Accumulation/Distribution

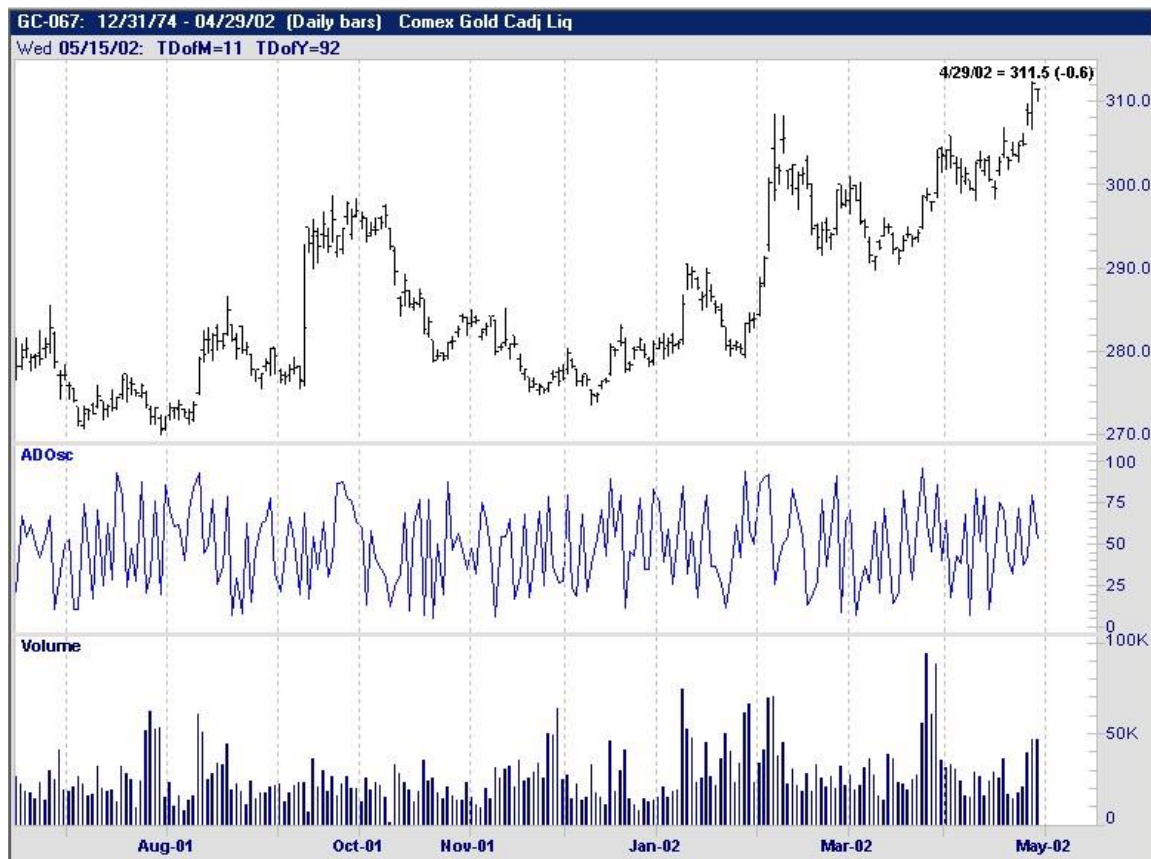
This is a market strength indicator that associates changes in price with the volume. It is based on the idea that the more volume associated with a price move, the greater the significance of the price move.



<u>Inputs:</u> None	<u>Req./Opt.:</u> None	<u>Type:</u> Indicator	<u>Returns:</u> Value of the Accumulation Distribution line.
<u>Filter Criteria Uses:</u> (Example Only) If A/D crosses above 75	<u>Syntax:</u> Crosses Above (Accumulation Distribution, 75)		

ADOSC

This is an Accumulation Distribution Oscillator that returns a value between 0 and 100 indicating the ratio of accumulation over distribution.



<u>Inputs:</u> None	<u>Req./Opt.:</u> None	<u>Type:</u> Indicator	<u>Returns:</u> Value of the ADOSC line.
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<u>Filter Criteria Uses:</u> (Example Only) If the ADOsc is crosses above 50	<u>Syntax:</u> Crosses Above (ADOsc, 50)
---	---

ADX

Average Directional Index was developed by Welles Wilder, and is used to measure the strength and integrity of a trending market. This is a momentum indicator that can be used in conjunction with many other indicators. The higher the number, the stronger the trend.



<u>Inputs:</u> <u>Bars used in Calculation</u> ShowInitialBars	<u>Req./Opt.:</u> <i>Req.</i> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Value of the ADX line
<u>Filter Criteria Uses:</u> (Example Only) If the ADX of 7 bars, not showing initial bars is at 55 or above	<u>Syntax:</u> ADX(7,F) >= 55		

ADXmod

This is a modified Average Directional Index (Preserves Sign of Trend). Our ADX uses the Absolute Value to keep the ADX from returning negative numbers. The ADXmod, does not use the Absolute Value, so it will return negative numbers when prices are in a down trend.



<u>Inputs:</u>	<u>Req./Opt.:</u>	<u>Type:</u>	<u>Returns:</u>
<u>Bars used in Calculation</u>	<i>Req.</i>	Indicator	Value of the ADXmod
<u>Show initial Bars</u>			
<u>Filter Criteria Uses:</u> (Example Only) If the ADXmod of 7 bars not using initial bars is greater than 30	<u>Syntax:</u> $ADXmod(7,F) > 30$		

ADXR

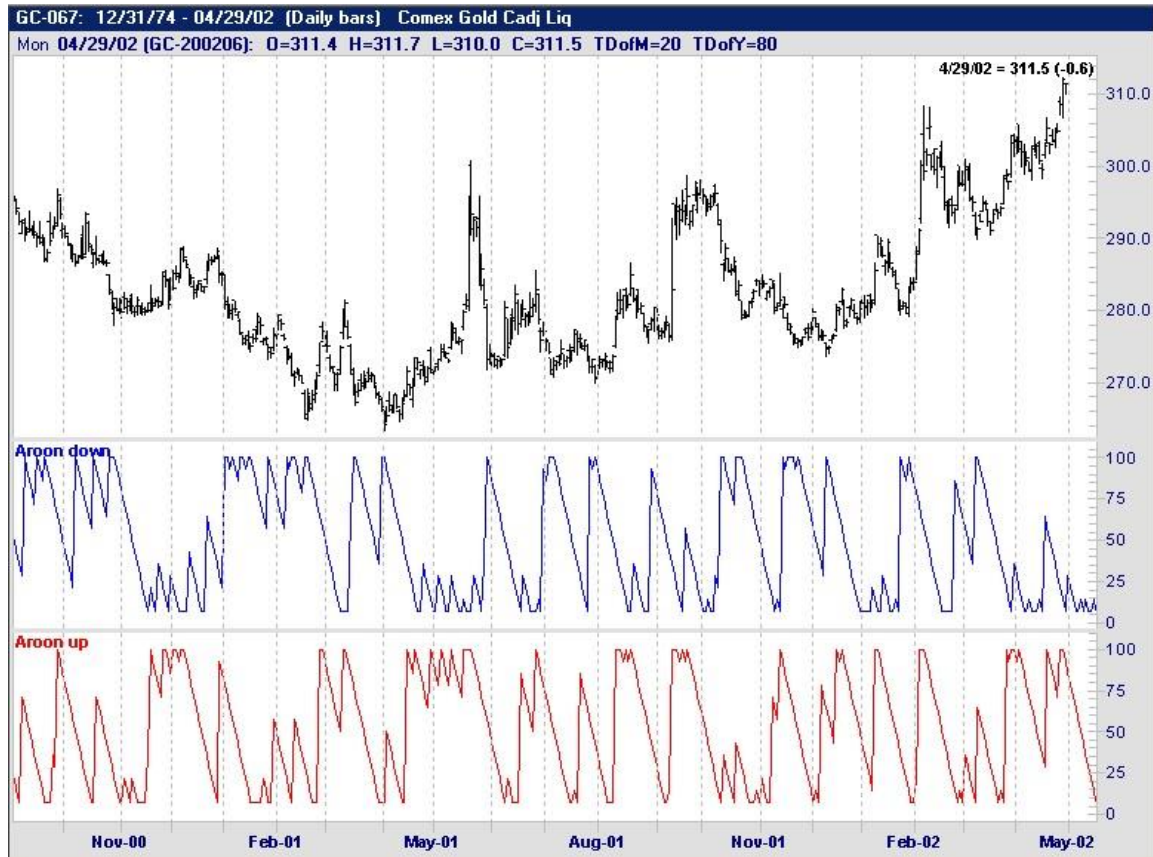
The Welles Wilder Average Directional Rating, is simply a smoothed version of the ADX. ADXR is calculated by taking two ADX values (current value and value X periods back), adding them, and then dividing by two.



<u>Inputs:</u> <u>Bars used in Calculation</u> <u>Show initial Bars</u>	<u>Req./Opt.:</u> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Value for the ADXR.
<u>Filter Criteria Uses:</u> (Example Only) If the ADXR of 7 bars not using the initial bars is greater than or equal to 25	<u>Syntax:</u> ADXR (7,F) >= 25		

Aroon UP and DOWN

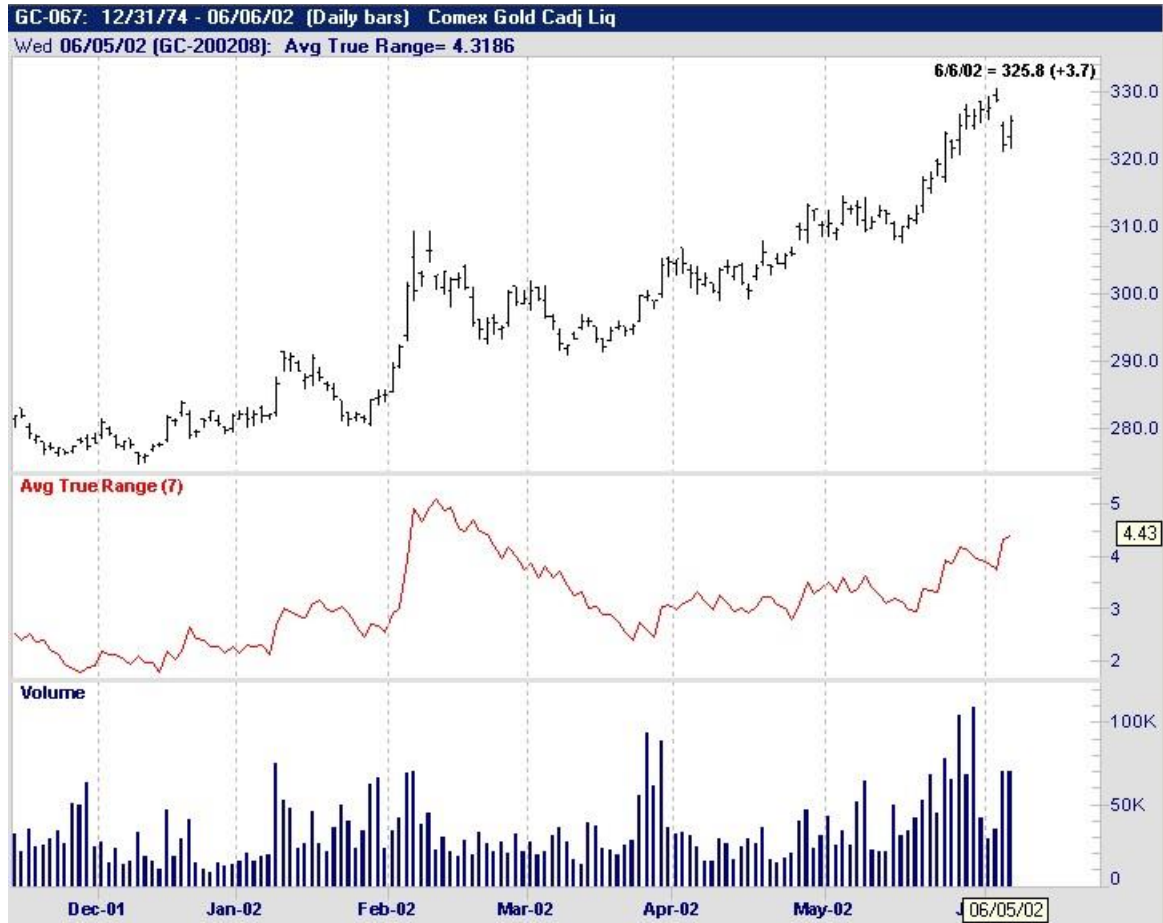
These were developed by Tushar Chande, and allow the user to anticipate the changes in a security from a trending movement to a trading range movement.



<u>Inputs:</u> <i>None</i>	<u>Req./Opt.:</u> <i>None</i>	<u>Type:</u> Indicator	<u>Returns:</u> Value of the Aroon lines.
<u>Filter Criteria Uses:</u> (Example Only) If the Aroon UP crosses below 50.	<u>Syntax:</u> Crosses Below(Aroon UP, 50)		

Avg. True Range

This is the average, of a specified number of true ranges using the Welles Wilder modified Moving Average.

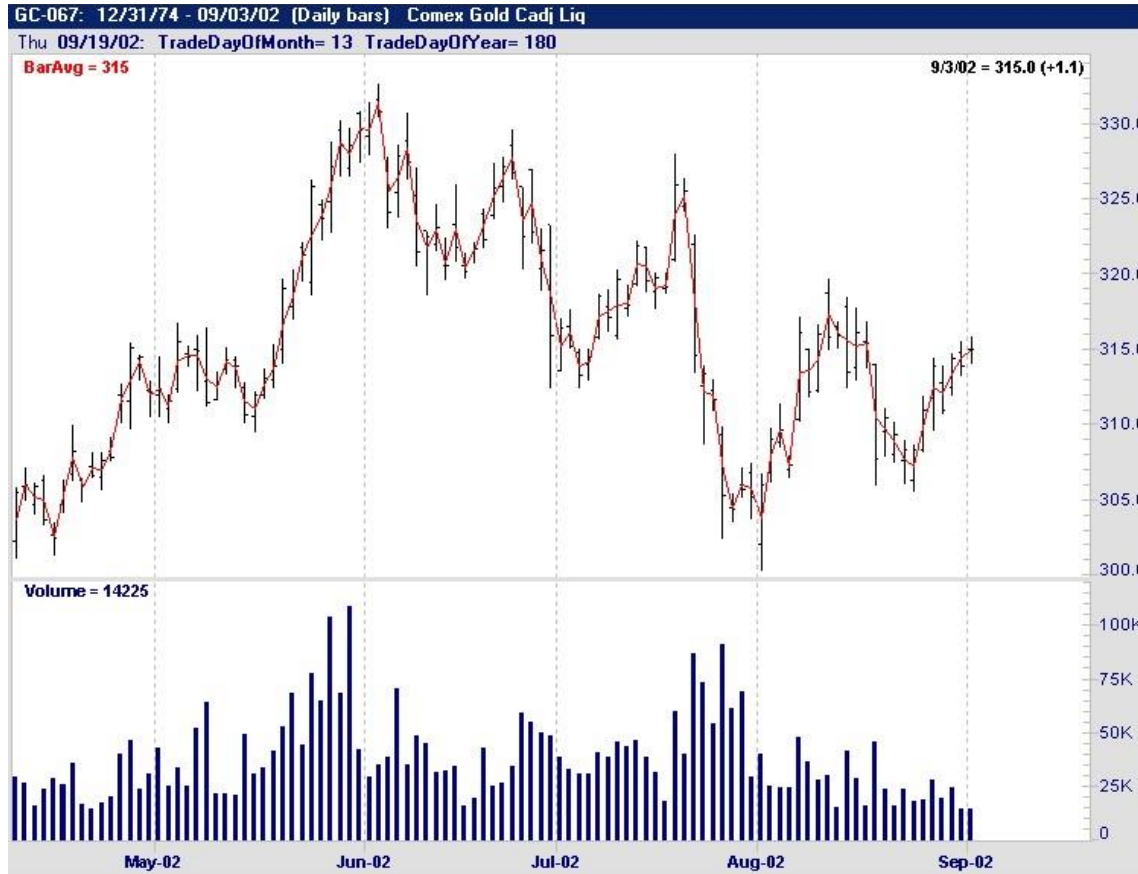


<u>Inputs:</u> <u>Num Bars</u> (defaults to 7)	<u>Req./Opt.:</u> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Average of the True Range of a specified # of bars
<u>Filter Criteria Uses:</u> (Example Only) If the ATR of 7 bars is greater than yesterdays ATR of 7 bars.	<u>Syntax:</u> Avg True Range (7) > Avg True Range (7).1		

AvgOHLC

This is the average price of a bar and is calculated as follows:

$$(\text{Open} + \text{Low} + \text{High} + \text{Close}) / 4$$

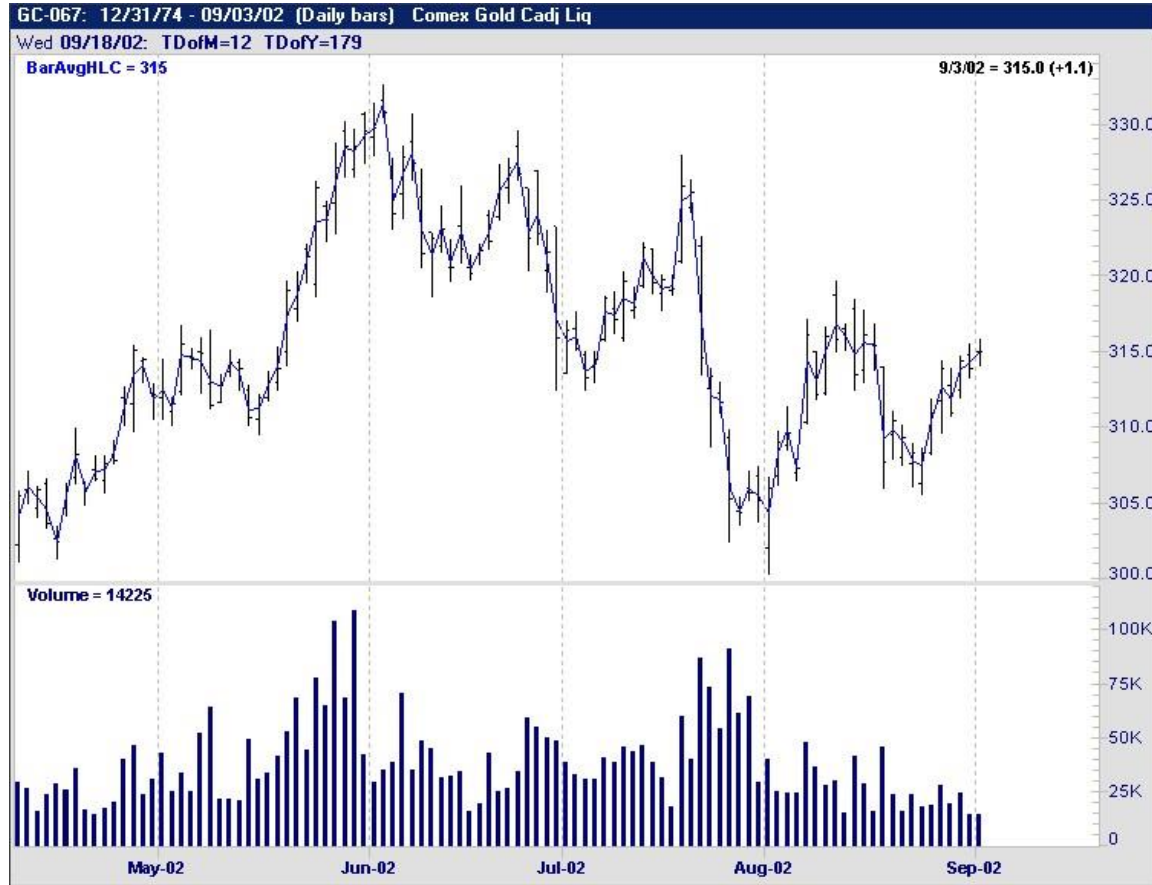


<u>Inputs:</u> <i>None</i>	<u>Req./Opt.:</u> <i>None</i>	<u>Type:</u> Indicator	<u>Returns:</u> Average Price of Bar.
<u>Filter Criteria Uses:</u> (Example Only) If Yesterdays AvgOHLC is less than today's AvgOHLC.	<u>Syntax:</u> IF AvgOHLC.1 < AvgOHLC		

AvgHLC

This will calculate a particular bar's average disregarding the open price of the bar.

$(\text{High} + \text{Low} + \text{Close}) / 3$



<u>Inputs:</u> <i>None</i>	<u>Req./Opt.:</u> <i>None</i>	<u>Type:</u> Indicator	<u>Returns:</u> Average price of bar excluding Open
<u>Filter Criteria Uses:</u> (Example Only) If yesterdays BarAvgHLC is less than today's BarAvgHLC.	<u>Syntax:</u> IF AvgHLC.1 < AvgHLC		

Bollinger Bands

These are trading bands that are plotted at a standard deviation above or below the Moving Average. When using standard deviations as opposed to fixed percentages, the upper and lower bands will adjust in accordance to volatility. Overbought signals are produced when the price gets closer to the upper Bollinger Band. Oversold signals develop when prices move closer to the lower Bollinger Band.



<u>Inputs:</u> <i>Expression</i> <i>Bars used in Average</i> <i>NumStdDevs</i>	<u>Req./Opt.:</u> <i>Req.</i> <i>Req.</i> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Bollinger Band value for bar.
<u>Filter Criteria Uses:</u> (Example Only) If the close moves above the top Bollinger band, with a StdDev of 2, 3 days ago.	<u>Syntax:</u> CrossesAbove (Close, BollingerBandUpper (Close,18,2).3		

Cashflow Accumulation

This is an accumulation distribution indicator (Cumulative sum of the price change x volume for each bar).



<u>Inputs:</u> <i>PriceMode</i> (see page 115)	<u>Req./Opt.:</u> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Value of the Cash Flow Accumulation line.
<u>Filter Criteria Uses:</u> (Example Only) If the Cash Flow Accumulation of 3 bars is the highest it has been in the last 60 days.	<u>Syntax:</u> Highest (CashFlow Accumulation (3), 60)		

CCI

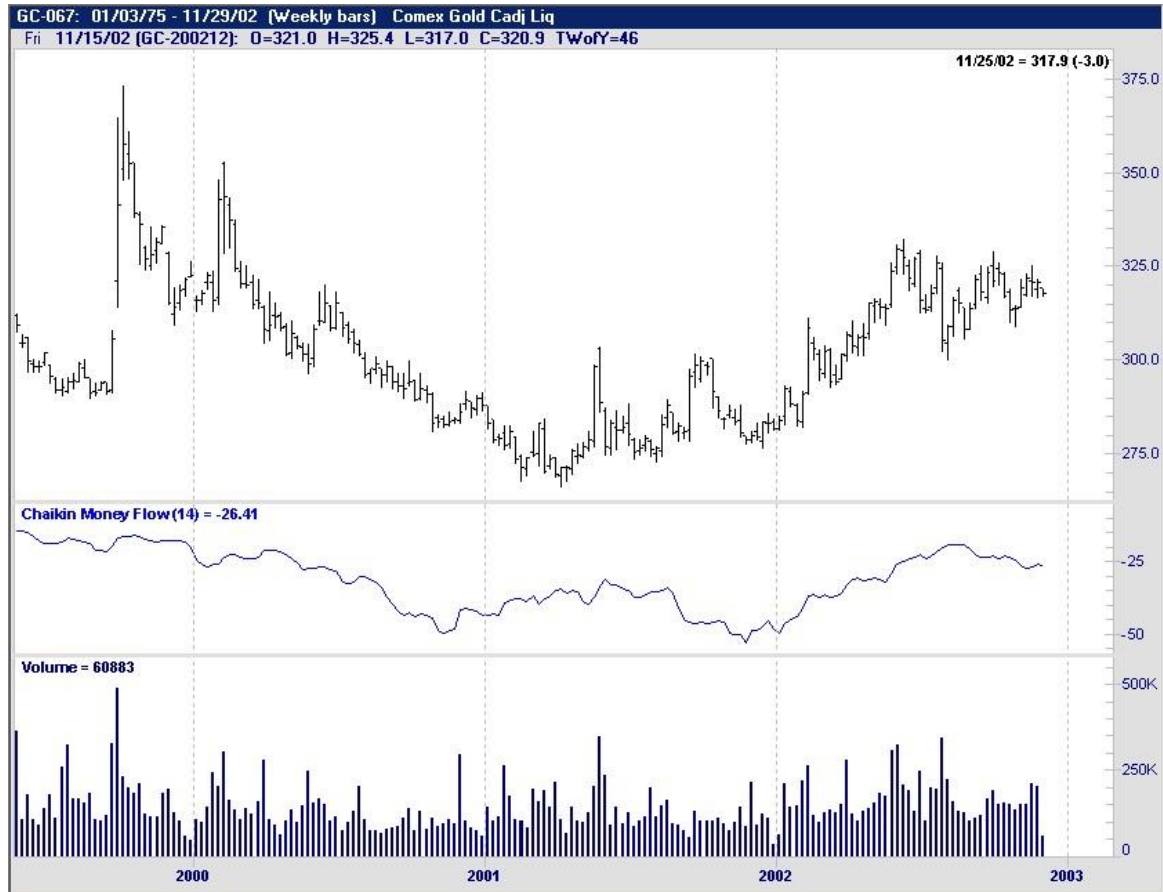
Originally designed for commodities, this indicator also works well with other securities such as stocks and Mutual Funds. Uses include, finding divergence between the price and the CCI itself, and also pin pointing overbought and oversold conditions.



<u>Inputs:</u> Expression (see page 115) Period	<u>Req./Opt.:</u> Opt. Req.	<u>Type:</u> Indicator	<u>Returns:</u> Value of the CCI.
<u>Filter Criteria Uses:</u> (Example Only) If the CCI is greater than 3 days ago and the close is lower than 3 days ago.	<u>Syntax:</u> CCI(21) > CCI(21).3 And Close < Close.3		

Chaikin Money Flow

This indicator was developed by Marc Chaikin (as all of the Chaikin indicators are), based on the idea that buying support is signaled by an increase in volume and frequent closes in the top half of the daily range. It is calculated by summing the Accumulation Distribution for the last 14 days and then dividing by the sum of the volume of the last 14 days. Readings above zero signal accumulation, and readings below zero indicate distribution. The idea is that the higher the value the stronger the signal.



<u>Inputs:</u> <u>Bars used in Sum</u>	<u>Req./Opt.:</u> <i>Opt.</i> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Value of the CCI.
<u>Filter Criteria Uses:</u> (Example Only) If the Chaikin Money Flow was below zero yesterday but above zero today.	<u>Syntax:</u> Chaikin Money Flow (14).1 < 0 and Chaikin Money Flow (14) > 0		

Chaikin Oscillator

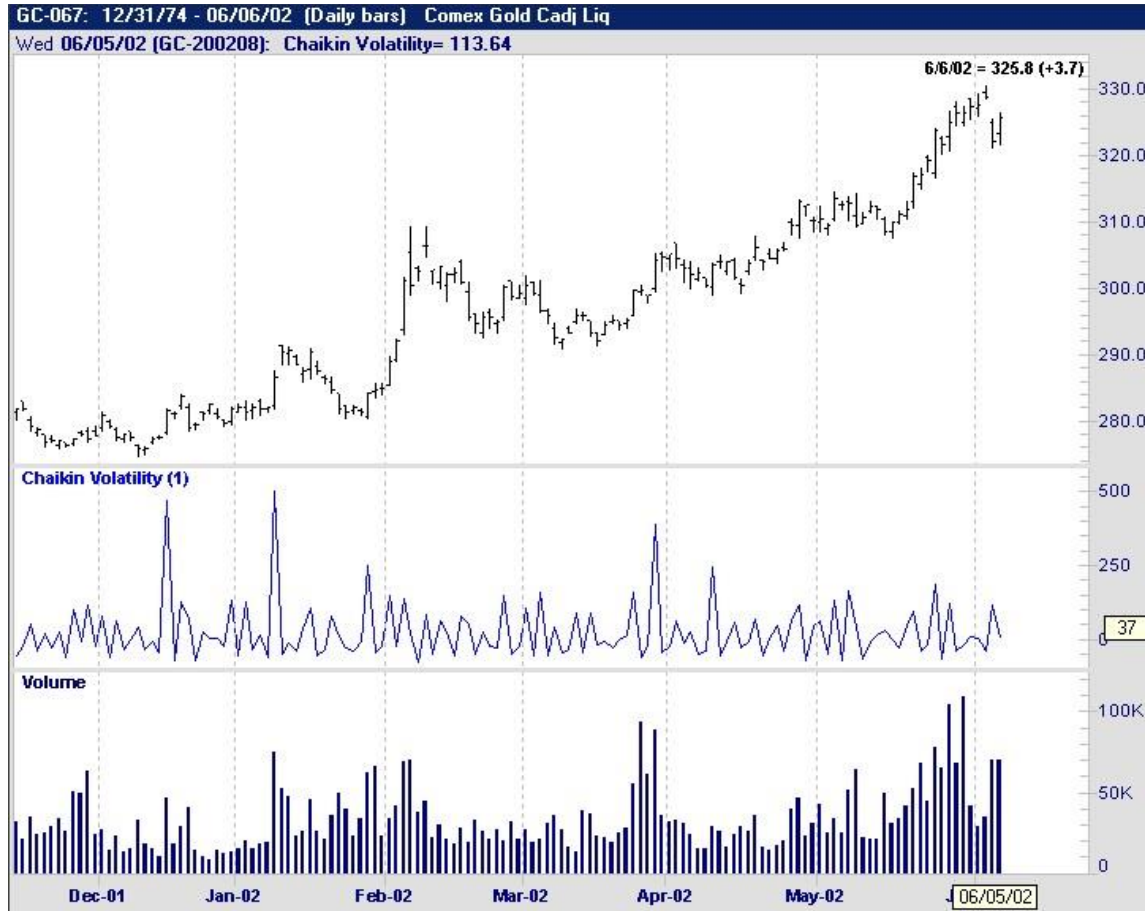
This is an oscillator indicator that uses the Moving Averages of the Accumulation Distribution lines, and is used to spot the overbought/oversold conditions. Usually an exponential Moving Average of 3 and 10 bars is used to calculate this indicator.



<u>Inputs:</u> <i>FastPeriod</i> <i>SlowPeriod</i>	<u>Req./Opt.:</u> <i>Req.</i> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> None
<u>Filter Criteria Uses:</u> (Example Only) If the Chaikin Oscillator using 3 for the fast period and 10 for the slow, is at the highest point it has been in the last 100 days.	<u>Syntax:</u> Highest (Chaikin Osc (3,10), 100)		

Chaikin Volatility

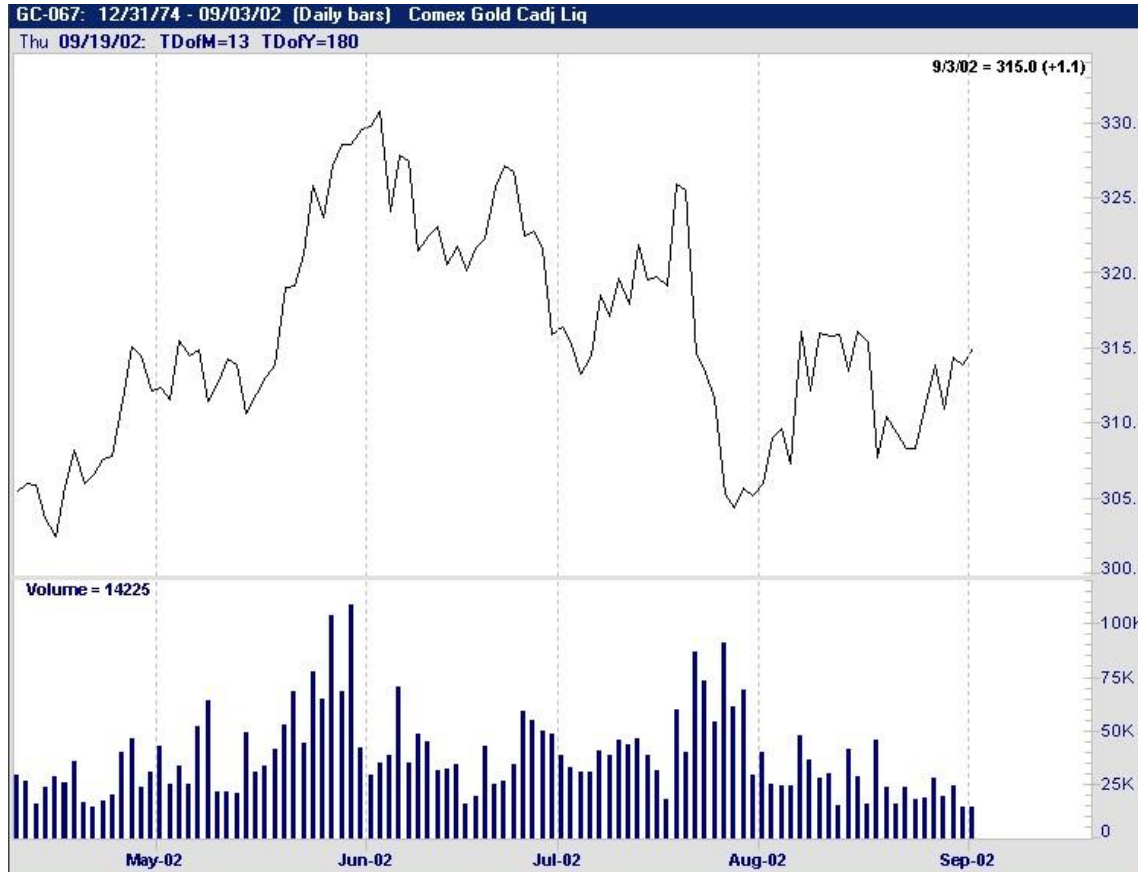
This indicator calculates the spread between the highs and lows of the security.



<u>Inputs:</u> <u>Period</u>	<u>Req./Opt.:</u> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Value of the Chaikin Volatility for specified Period.
<u>Filter Criteria Uses:</u> (Example Only) If the Chaikin Volatility using a period of 1 is at the highest it has been in the last month.	<u>Syntax:</u> Highest (Chaikin Volatility (1), 30)		

Close

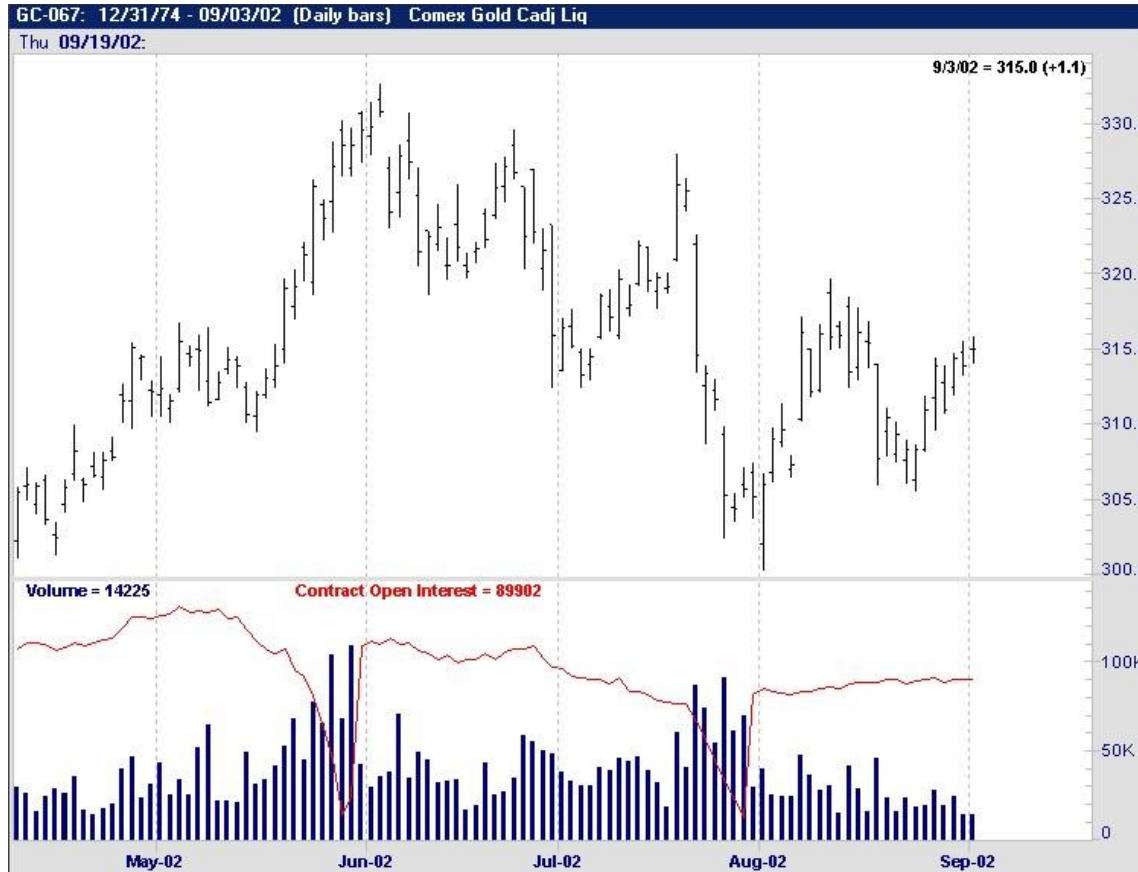
This function is used to reference the close of the day. Our graph below is plotting the price as a close line.



<u>Inputs:</u> None	<u>Req./Opt.:</u> None	<u>Type:</u> Data	<u>Returns:</u> Close value of the current bar.
<u>Filter Criteria Uses:</u> (Example Only) If the close today is less than yesterdays close.	<u>Syntax:</u> Close < Close.1		

Contract Open Interest

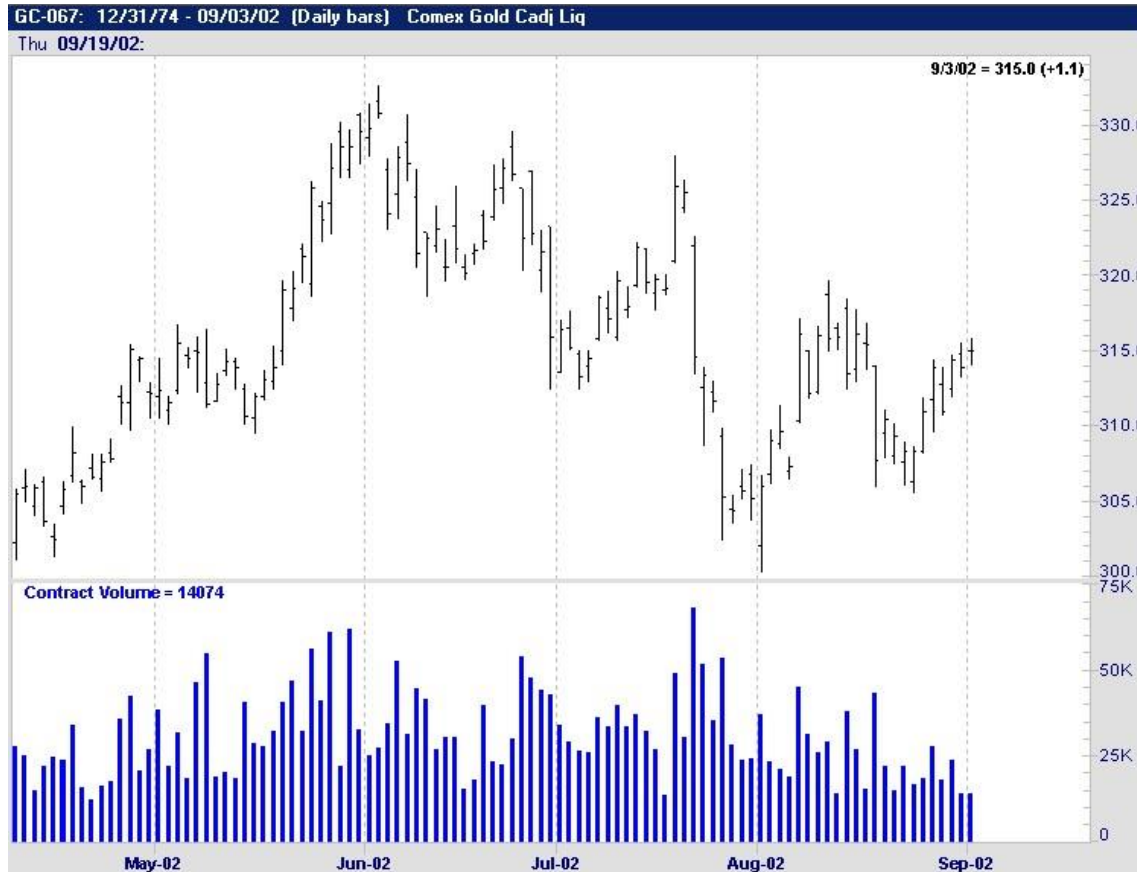
This is the open interest on an individual commodity contract, as opposed to the sum total of Open Interest for all active contracts (Total Open Interest). Open Interest is the amount of commodity contracts that have yet to be either exercised, delivered, or offset by an opposite transaction.



<u>Inputs:</u>	<u>Req./Opt.:</u>	<u>Type:</u>	<u>Returns:</u>
None	None	Data	Array of Numbers
<u>Filter Criteria Uses:</u> (Example Only) If the Contract Open Interest is greater than 100,000.	<u>Syntax:</u> Contract Open Interest > 100,000		

Contract Volume

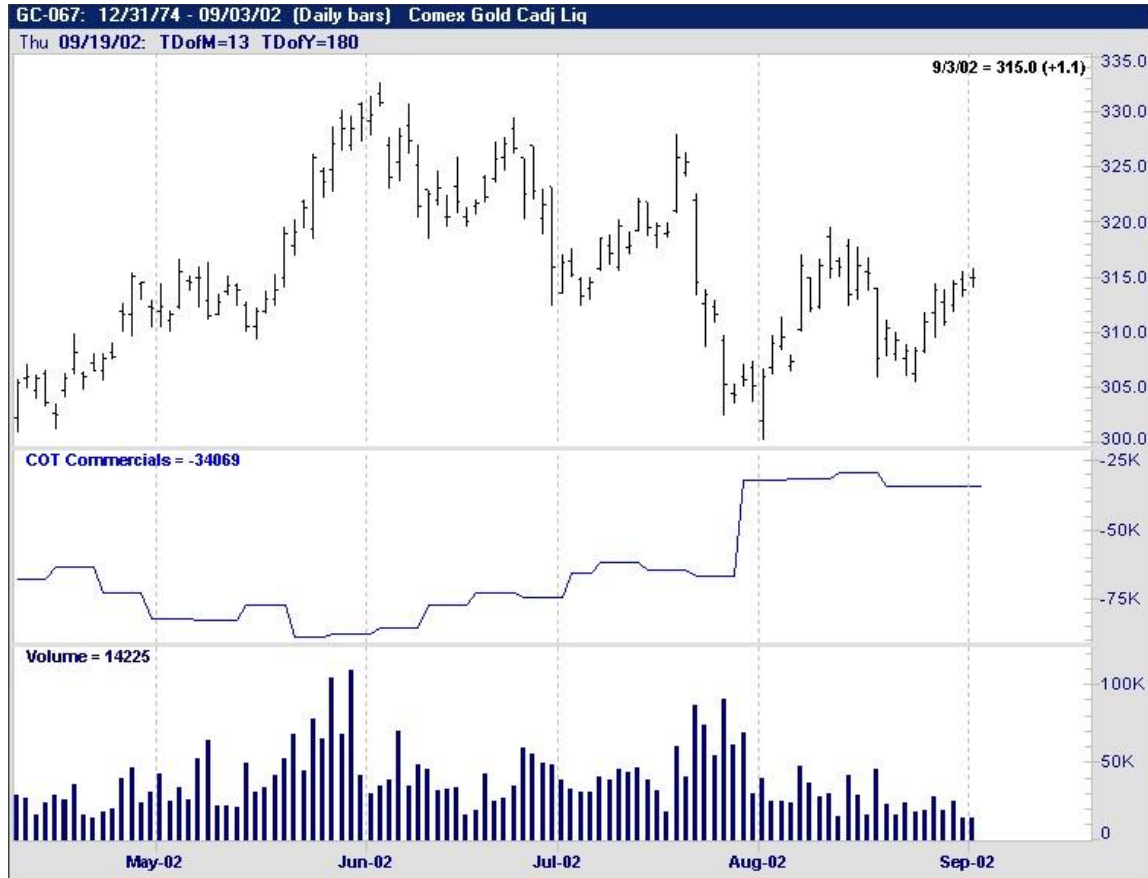
This is the volume on an active commodity contract as opposed to the sum total of volume for all active contracts (Total Volume). Volume, is the number of security contracts that have been traded over a specified amount of time.



<u>Inputs:</u>	<u>Req./Opt.:</u>	<u>Type:</u>	<u>Returns:</u>
<i>None</i>	<i>None</i>	Data	Array of Numbers
<u>Filter Criteria Uses:</u> (Example Only)	<u>Syntax:</u>		
If the Contract Volume is greater than 50,000.	Contract Volume > 50,000		

COT Commercials(Net)

Commitment of Traders “Commercial” positions (Longs minus the Shorts). The Federal Government releases this data every Friday based on Tuesday’s report.



<u>Inputs:</u> <i>None</i>	<u>Req./Opt.:</u> <i>None</i>	<u>Type:</u> Data	<u>Returns:</u> Value of Longs minus Shorts
<u>Filter Criteria Uses:</u> (Example Only) If the COT Commercials are less than they were 7 days ago.	<u>Syntax:</u> COT Commercials < COT Commercials.7		

COT Commercial Index

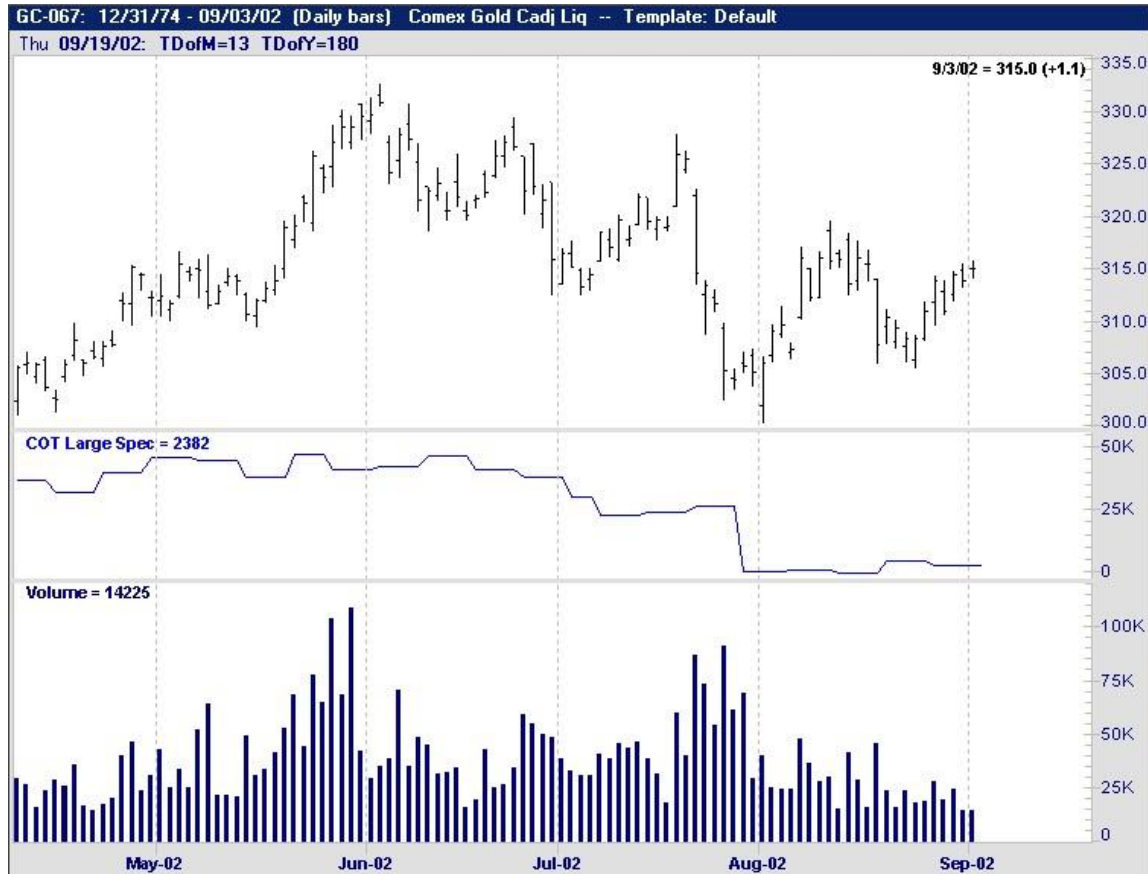
This is the COT Commercials as an “Index”. (Where it is now, relative to its Highest/Lowest over the specified number of bars)



<u>Inputs:</u> LookBackYears	<u>Req./Opt.:</u> None	<u>Type:</u> Indicator	<u>Returns:</u> Large Specas, Longs minus Shorts
<u>Filter Criteria Uses:</u> (Example Only) If the COT index crosses below the 25 line.	<u>Syntax:</u> Crosses Below (COT Commercials Index, 25)		

COT Large Specs

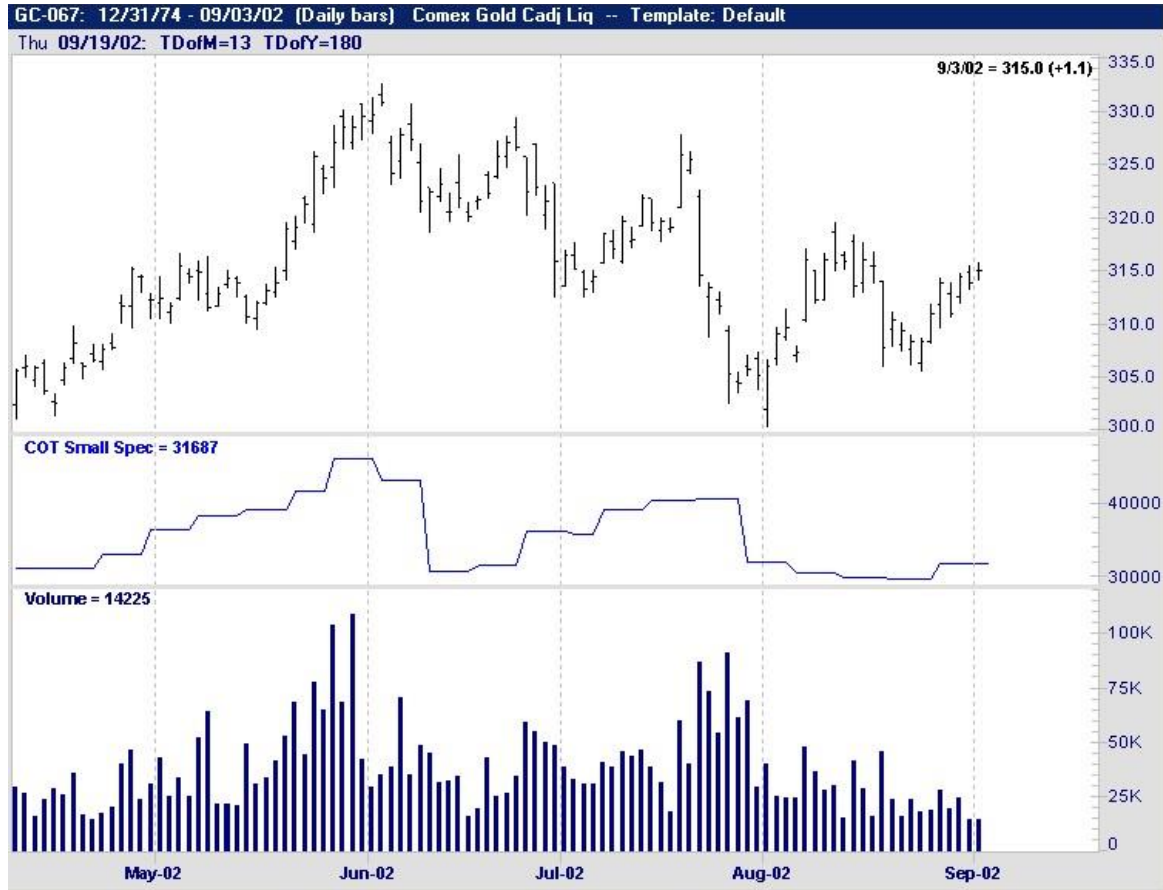
COT “Large speculator” positions (Longs minus the Shorts). Large speculators are classified as market participants who either hold or control a commodity or option position equaling or exceeding the exchange or CFTC reporting level.



<u>Inputs:</u> None	<u>Req./Opt.:</u> None	<u>Type:</u> Indicator	<u>Returns:</u> Value of Index over lookback period
<u>Filter Criteria Uses:</u> (Example Only) If the COT Large Specs are greater than they were 7 days ago.	<u>Syntax:</u> COT Large Specs > COT Large Specs.7		

COT Small Specs

COT “Small Speculator” positions (Longs minus the Shorts). Small speculators are classified as market participants who hold or control a commodity or option that do not exceed the exchange or CFTC report level.



<u>Inputs:</u> <i>None</i>	<u>Req./Opt.:</u> <i>None</i>	<u>Type:</u> Indicator	<u>Returns:</u> Small Specs, Longs minus Shorts.
<u>Filter Criteria Uses:</u> (Example Only) If the COT Small Specs are less than they were 14 days ago.	<u>Syntax:</u> COT Small Specs < COT Small Specs.14		

Cumulative Sum

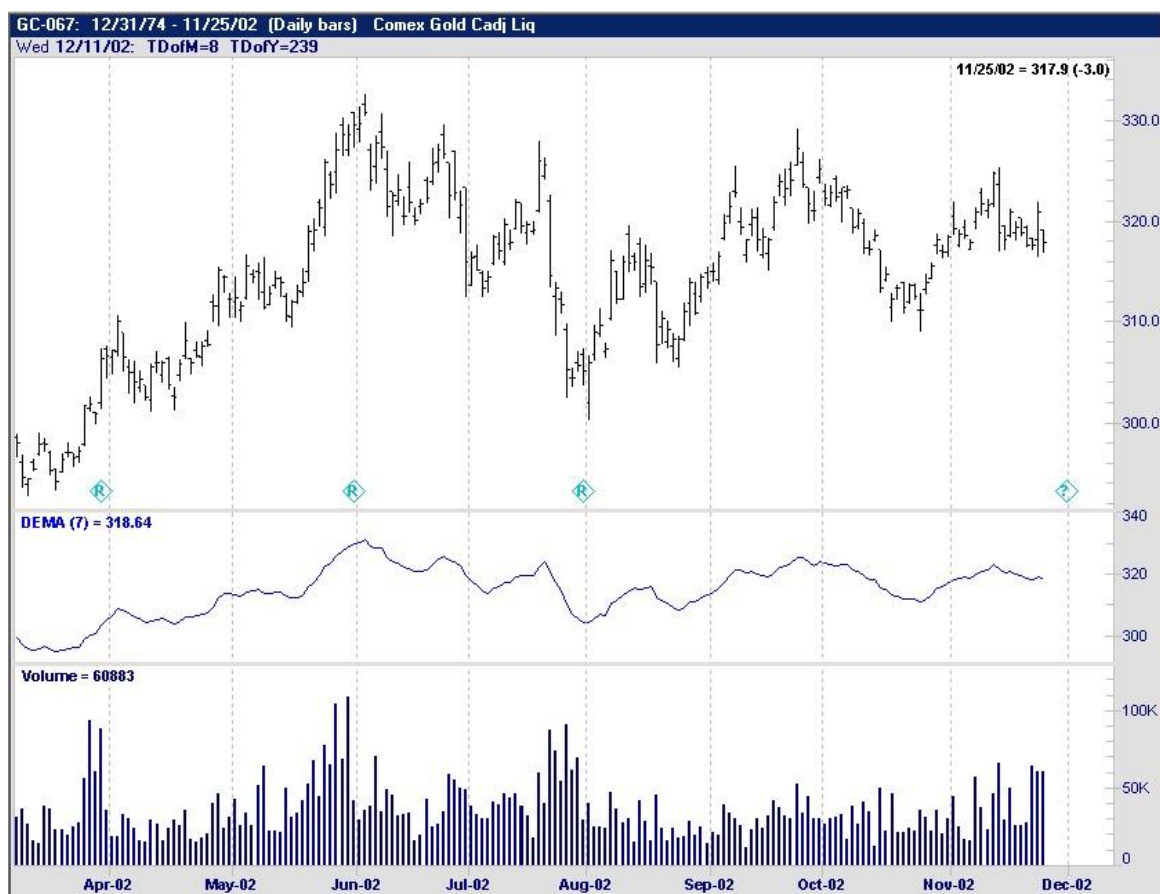
This is the sum of a series of numeric values.

<u>Inputs:</u> <i>Expression</i> <i>SignFilter</i>	<u>Req./Opt.:</u> <i>Req.</i> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Array of Numbers
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<p><u>Filter Criteria Uses:</u> (Example Only)</p> <p>If the Sum total of the current ADX positive values divided by the current ADX negative values is greater than it was 18 bars ago.</p>	<p><u>Syntax:</u></p> <p>CumulativeSum (ADXmod (7 , True) , 1) / CumulativeSum (ADXmod (7 , True) , -1) > CumulativeSum (ADXmod (7 , True) , 1).18/ CumulativeSum (ADXmod (7 , True) , -1).18</p>
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Dema

Developed by Patrick Mulloy, Dema is an acronym standing for Double Exponential Moving Average. It is a composite of a single exponential moving average and a double exponential moving average, providing a moving average with less lag than either one of the moving averages by themselves.



<u>Inputs:</u> <i>None</i>	<u>Req./Opt.:</u> <i>None</i>	<u>Type:</u> Indicator	<u>Returns:</u> Small Specs, Longs minus Shorts.
<u>Filter Criteria Uses:</u> (Example Only)	<u>Syntax:</u> COT Small Specs < COT Small Specs.14		

Detrend Oscillator

This is an indicator that is used to find the difference between the actual price and the Moving Average of the price. Detrended prices allow the user to easily spot market cycles as well as the overbought/oversold levels in a security.



<u>Inputs:</u> <i>Expression</i> <i>Bars Used in Average</i> <i>AvgMethod</i>	<u>Req./Opt.:</u> <i>Req.</i> <i>Req.</i> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Array of Numbers
<u>Filter Criteria Uses:</u> (Example Only) If the Detrend Osc. Of the close, 7 bars, in simple method is greater than zero.	<u>Syntax:</u> DetrendOsc(Close,7,1) > 0		

DMI (Plus and Minus)

Directional Movement Index, developed by Welles Wilder, is used as a trending indicator to identify whether a security is “trending”.



There is a DMI plus (red) and a DMI minus (blue) indicators on the chart above, that both require the *numbers of bars* used in the calculation.

<u>Inputs:</u> <u>Bars used in Calculation</u> <u>ShowInitialBars</u>	<u>Req./Opt.:</u> Req. Req.	<u>Type:</u> Indicator	<u>Returns:</u> Array of Numbers
<u>Filter Criteria Uses:</u> (Example Only) If the DMI+ of 7 bars crosses above the DMI- of 7 bars.	<u>Syntax:</u> Crosses Above(DMIplus(7), DMIminus(7))		

Dynamo

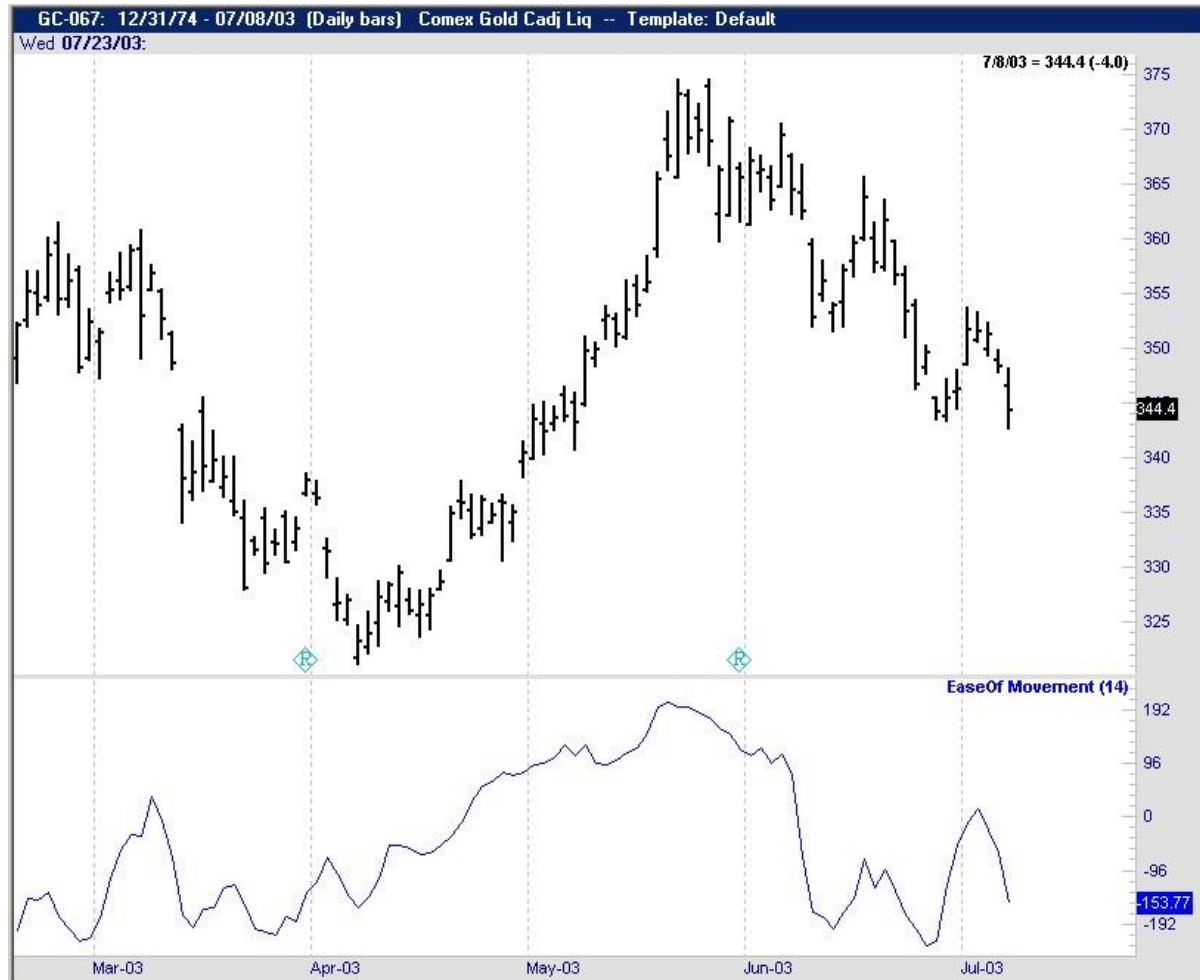
The Dynamic Momentum Index, developed by Tushar Chande, is used exactly like the DMI except the number of periods is interchangeable rather than fixed.



<u>Inputs:</u> <u>Expression</u>	<u>Req./Opt.:</u> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Array of Numbers
<u>Filter Criteria Uses:</u> (Example Only) If the Dynamo of the Close (default) crosses above 60.	<u>Syntax:</u> Crosses Above (Dynamo (Close), 60)		

Ease of Movement

This indicator is used to show the relationship between price changes and volume. Also, it shows how much volume it takes to move the prices in a market. When Ease of Movement returns a positive number, it means that the market has moved up from yesterday's values. When it returns a negative number, it means that the market has moved down from yesterday's values.



<u>Inputs:</u>	<u>Req./Opt.:</u>	<u>Type:</u>	<u>Returns:</u>
<u>Period</u>	<i>Req.</i>	Indicator	Either a Positive or Negative number.
<u>Filter Criteria Uses:</u> (Example Only) If Ease of Movement of 14 bars is less than zero.	<u>Syntax:</u> Ease of Movement(14) < 0		

Forecast Oscillator

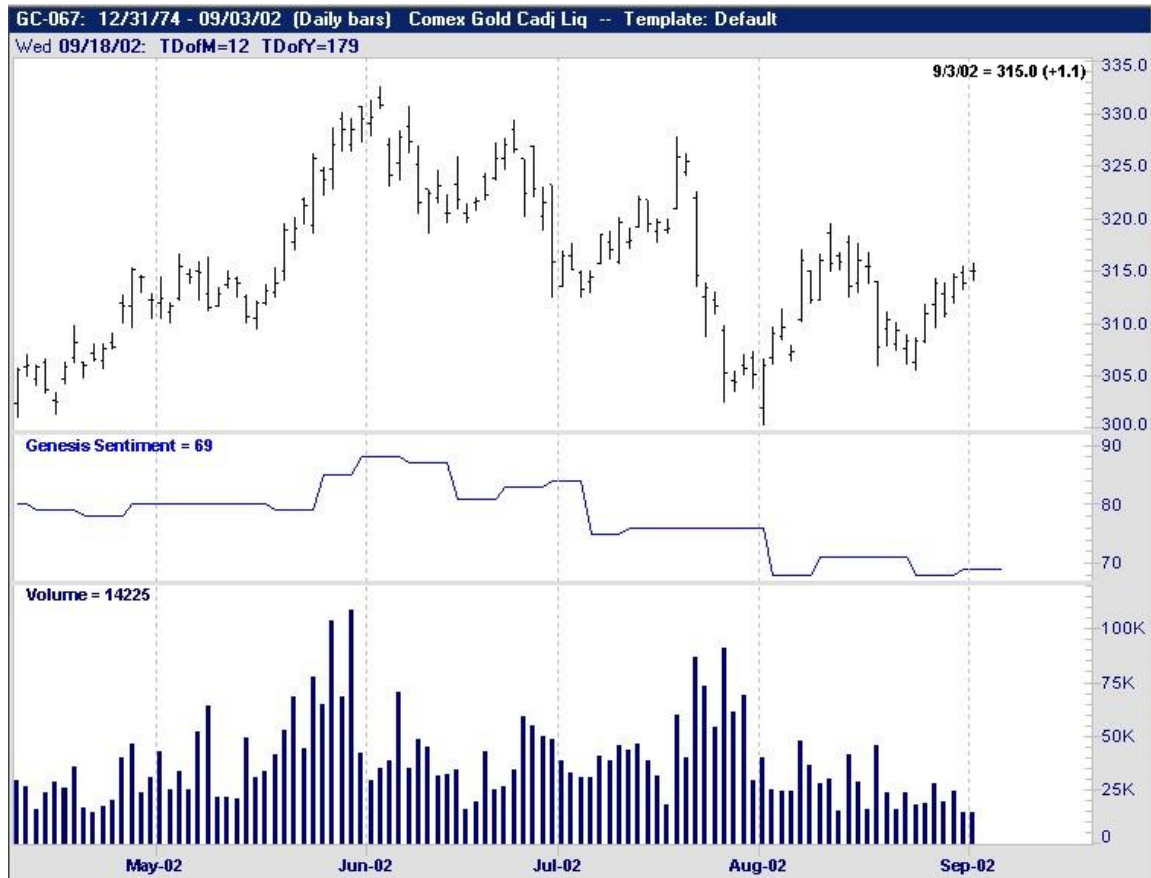
This indicator plots the percentage difference between the forecast prices and the actual prices, using an X-period linear regression line. If the Forecast Oscillator is above zero, it means that this oscillator is above the actual price. When it is below zero, then the oscillator is below the actual price. If the oscillator and price are equal, then the forecast oscillator will be plotted at zero.



<u>Inputs:</u> <i>Expression</i> <i># of Bars used for Regression</i>	<u>Req./Opt.:</u> <i>Req.</i> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Array of Numbers
<u>Filter Criteria Uses:</u> (Example Only) If the Forecast Oscillator of the close (using a regression line of 10) has crossed above the zero line.	<u>Syntax:</u> Crosses Above(Forecast Oscillator (Close,10), 0)		

Genesis Sentiment

Genesis Public Sentiment is created by combining several sources to provide the best possible indicator. Sentiment is a percentage-based indication of the Bullish/Bearish nature of the market for a given security. The number is read as a percent bullish. The “contrarian” view of this indicator is that if the majority feels that the market is bullish, there are few new buyers left to drive up the market and the market may have topped out. Conversely, a low or bearish number would indicate that the market might have bottomed out.



<u>Inputs:</u> None	<u>Req./Opt.:</u> None	<u>Type:</u> Indicator	<u>Returns:</u> Value for the Genesis Sentiment line.
<u>Filter Criteria Uses:</u> (Example Only) If the Genesis Sentiment is less than it was one month ago.	<u>Syntax:</u> Genesis Sentiment < Genesis Sentiment.30		

Genesis Sentiment Index

The Sentiment Index is based upon the Genesis Public Sentiment data. It is a percentage representation of the current Sentiment relative to the highest and lowest Sentiment over a period of time. If the Sentiment is at a new high for that time period, then the index will reach 100. If the Sentiment is at a new low for that time period, the index will reach 0.

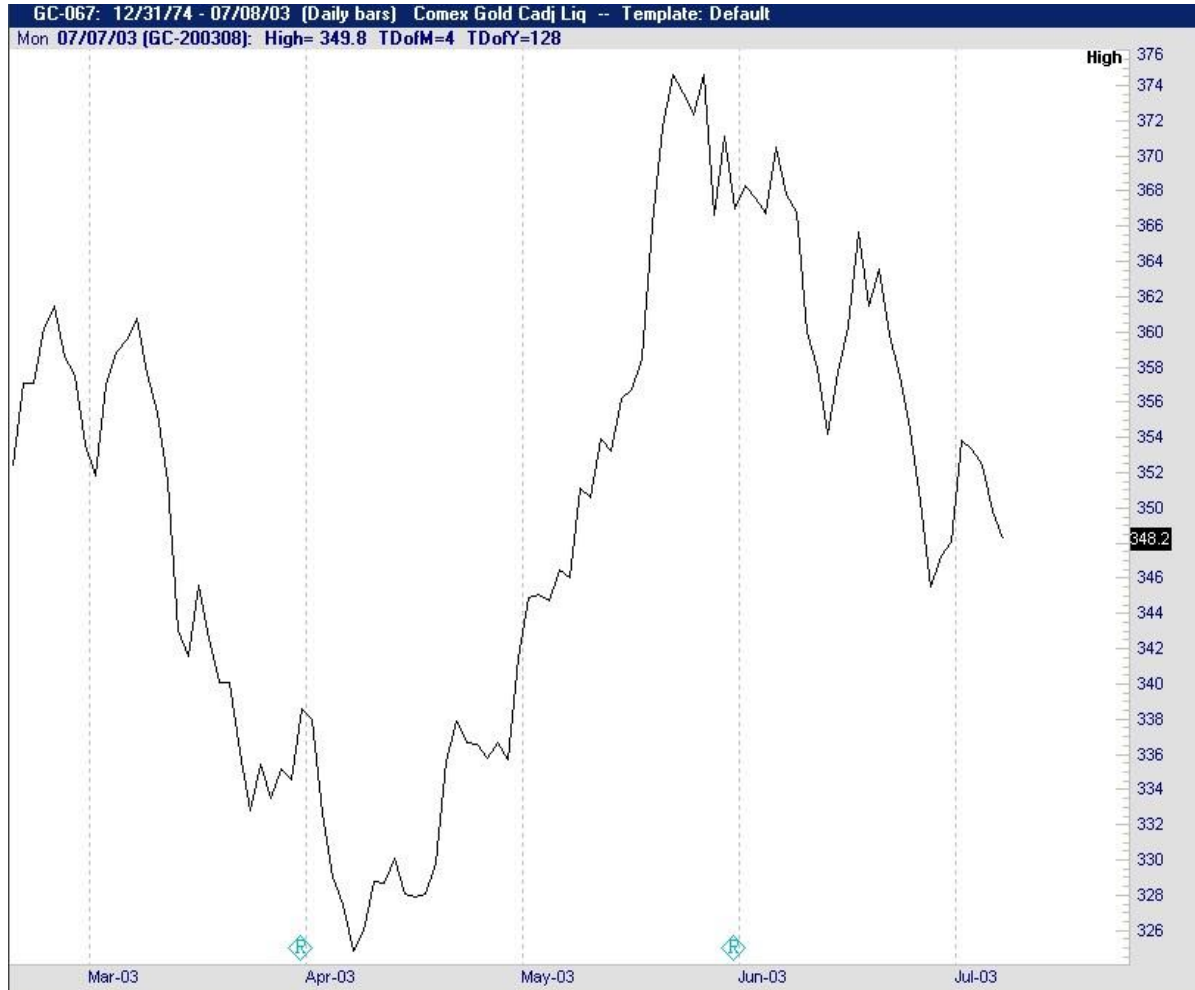


In this chart we see the Genesis Sentiment Index charted (blue) vs. the COT Commercials Index (red) based on a weekly.

<u>Inputs:</u> LookBackYears	<u>Req./Opt.:</u> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Value of the Genesis Sentiment Index line.
<u>Filter Criteria Uses:</u> (Example Only) When you want the Genesis Sentiment Index to be greater than 75.	<u>Syntax:</u> Genesis Sentiment Index (3) > 75		

High

This function is used to reference the high in a specified bar or time period. When using the High function keep in mind that it will use the current bar's high unless otherwise specified. Please see [TypesOfPriceCharts](#) (page 117) for further explanation of the High. Below we have just the highs graphed as a line.



<u>Inputs:</u> <i>None</i>	<u>Req./Opt.:</u> <i>None</i>	<u>Type:</u> Data	<u>Returns:</u> High value for a bar.
<u>Filter Criteria Uses:</u> (Example Only) If the high of todays bar is greater than the high of yesterdays bar.	<u>Syntax:</u> IF High > High.1		

Highest

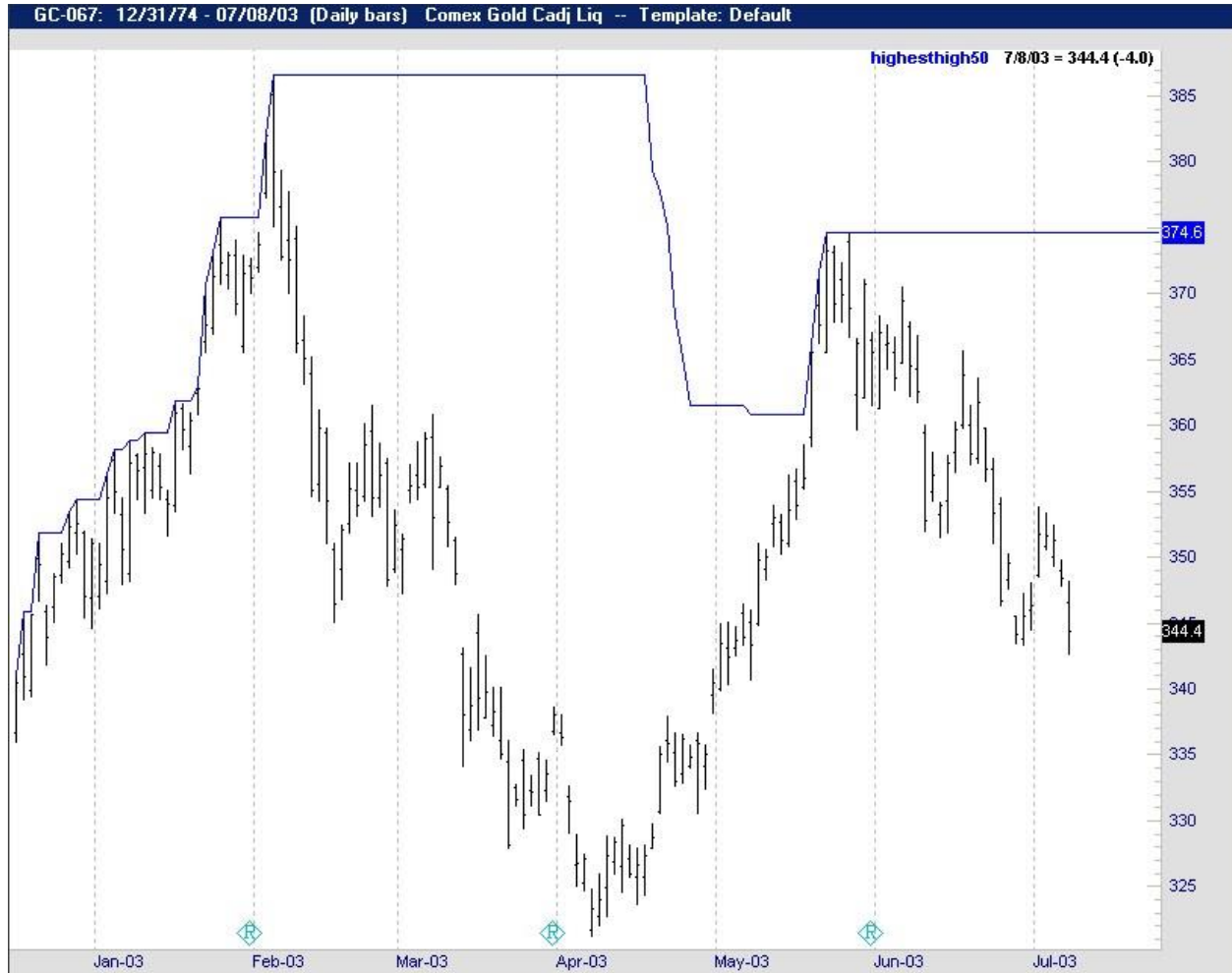
The Highest function is used to calculate the highest value in the last specified number of bars. Below we have the Highest opening prices of the previous 5 bars graphed as an indicator.



<u>Inputs:</u> <u>Expression</u> <i>Last N Bars</i>	<u>Req./Opt.:</u> <i>Req.</i> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Highest value of the expression in the last N bars.
<u>Filter Criteria Uses:</u> (Example Only) If the highest open in the last 5 bars is greater than the highest close in the last 5	<u>Syntax:</u> IF Highest (Open,5) > Highest (Close,5)		

Highest High

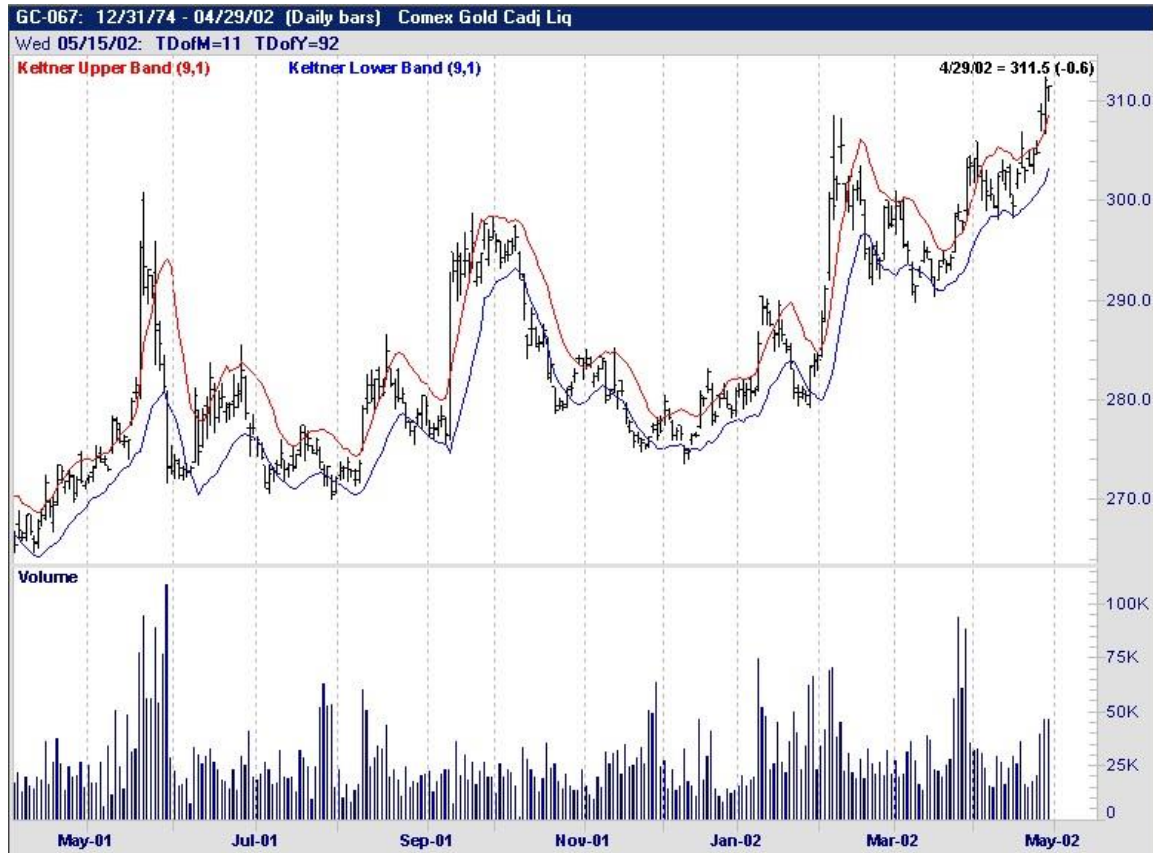
Our Highest High function is used to find the highest high in a market in the last specified number of bars. Below we have the Highest High of the last 50 bars graphed as an indicator.



<u>Inputs:</u> <u>Last N bars</u>	<u>Req./Opt.:</u> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Highest High value in the last N bars.
<u>Filter Criteria Uses:</u> (Example Only) If the highest high value in the last 50 days is less than the high yesterday.	<u>Syntax:</u> IF Highest High (50) < High.1		

Keltner Bands

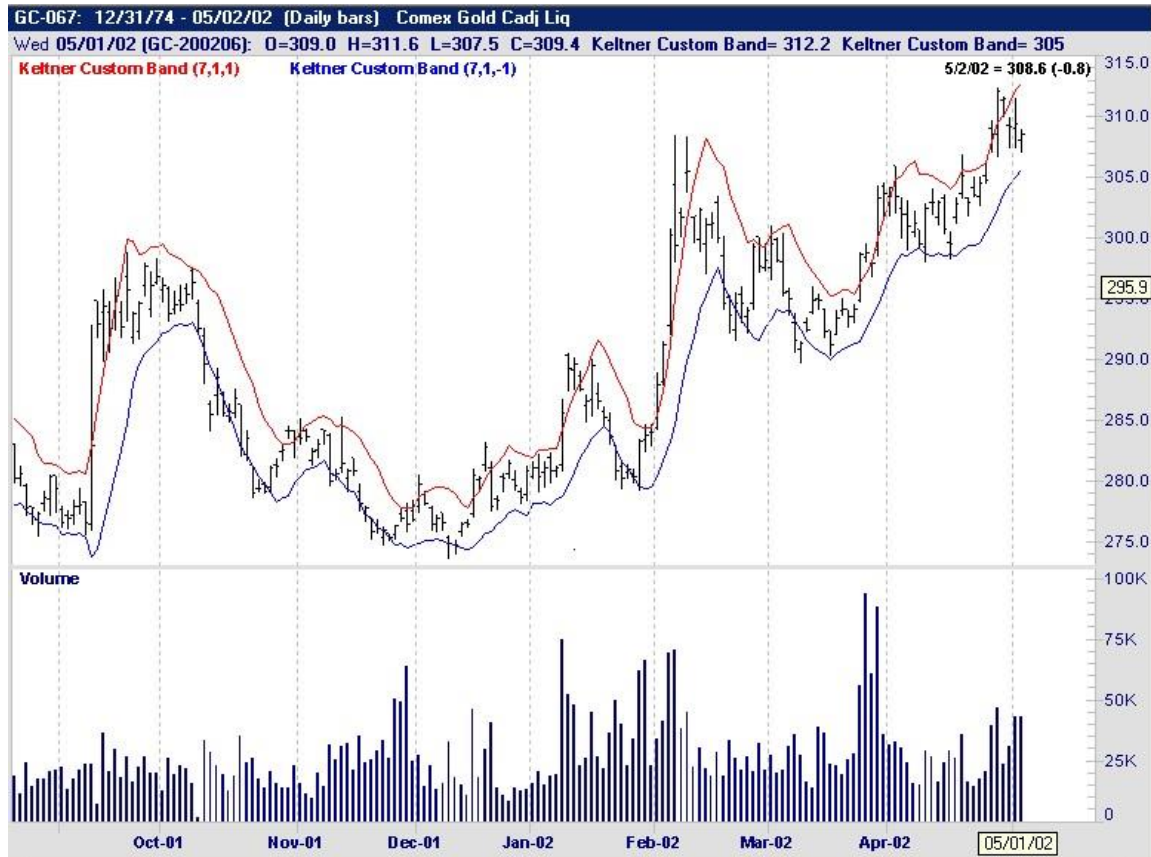
Keltner Bands are volatility-based indicators that create an envelope that uses the range of High and Low. Also, Keltner Bands can be used to identify overbought/oversold conditions. Keltner Lower Band uses the original formula for the Keltner Channel, $\text{MovingAvg}((\text{High} + \text{Low} + \text{Close})/3, \# \text{ of Bars}) - \text{MovingAvg}(\text{High} - \text{Low}, \# \text{ of Bars}) * \text{Factor}$. Keltner Upper Band uses the original formula for the Keltner Channel, $\text{MovingAvg}((\text{High} + \text{Low} + \text{Close})/3, \# \text{ of Bars}) + \text{MovingAvg}(\text{High} - \text{Low}, \# \text{ of Bars}) * \text{Factor}$.



<u>Inputs:</u> <u># of Bars</u> <u>Factor</u>	<u>Req./Opt.:</u> <i>Req.</i> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u>
<u>Filter Criteria Uses:</u> (Example Only) When you want the difference between the Keltner Upper and Lower bands today to be less than the difference between the two yesterday.	<u>Syntax:</u> Keltner Upper Band (9,1) – Keltner Lower Band (9,1) < Keltner Upper Band (9,1).1 – Keltner Lower Band (9,1).1		

Keltner Custom Band

Calculates a more customized envelope, specifying prices to average (e.g. Close, Mid prices, Typical price, etc.), number of bars, averaging method (1 = Simple, 2 = Exponential, etc.), and the factor for the band (make factor negative for lower band))



On the chart above we have created a Keltner Upper Band using 7 bars, with a simple method (1), and a factor of 1. Using 7 bars, with a simple method, and a factor of -1 creates the Keltner Lower Band.

<u>Inputs:</u> <i># of Bars</i> <i>Factor</i>	<u>Req./Opt.:</u> <i>Req.</i> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Value of the Custom Channels, that the user defines.
<u>Filter Criteria Uses:</u> (Example Only)	<u>Syntax:</u>		

Low

This function is used to reference the low of a bar. Keep in mind that when this Low function is used it automatically assumes that you are referencing the current bar's low unless otherwise specified. Below we have the low value of each bar graphed as a line.



<u>Inputs:</u> <i>None</i>	<u>Req./Opt.:</u> <i>None</i>	<u>Type:</u> Data	<u>Returns:</u> Low value of the current bar.
<u>Filter Criteria Uses:</u> (Example Only) If the low of yesterday is greater than the low today.	<u>Syntax:</u> IF Low.1 > Low		

Lowest

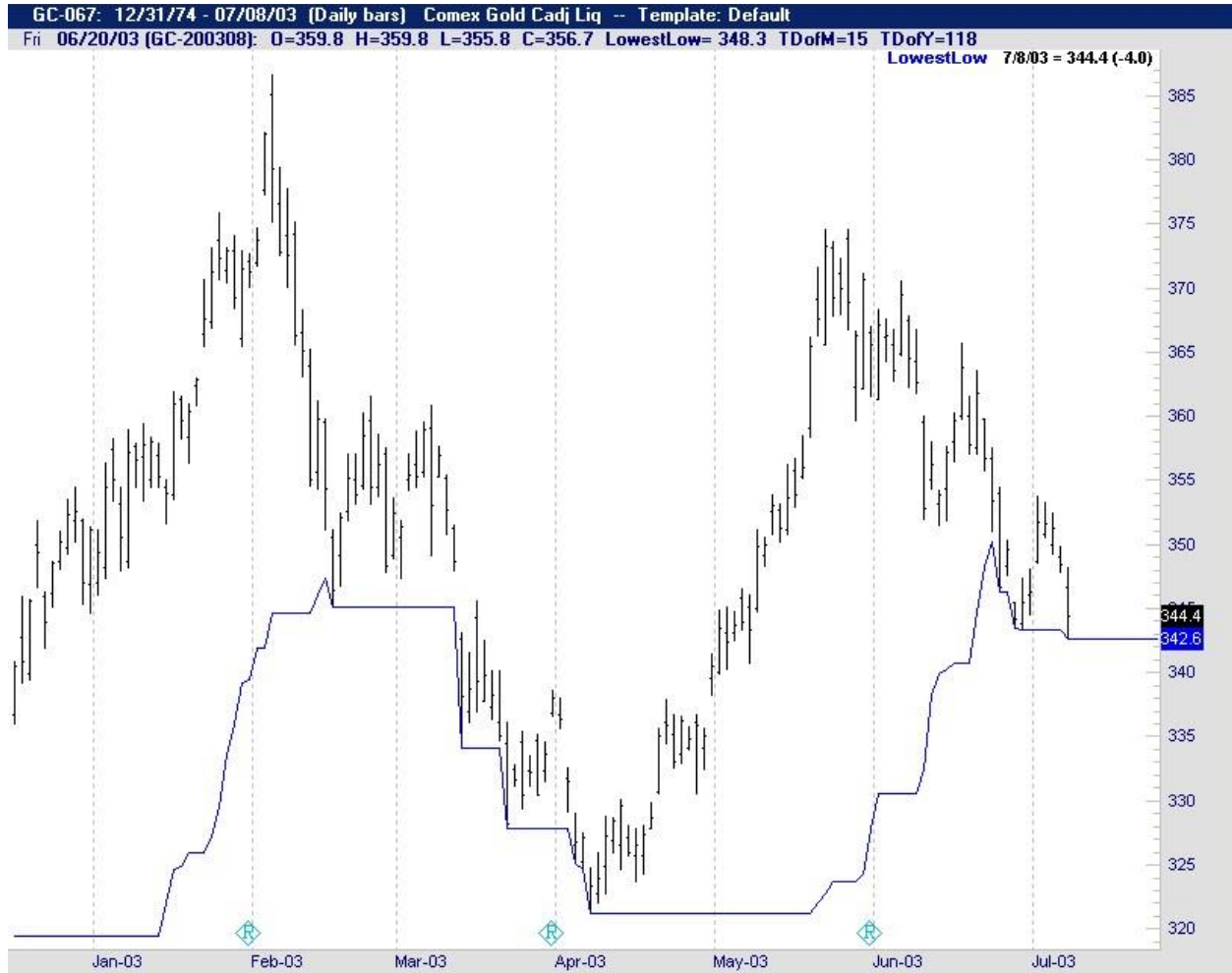
Used to calculate the lowest value in the last specified number of bars. Below we have the Lowest closing value of the previous 5 bars graphed as a line indicator.



<u>Inputs:</u> <u>Expression</u> <i>Last N bars</i>	<u>Req./Opt.:</u> <i>Req.</i> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Lowest value of specified expression , in specified # of bars.
<u>Filter Criteria Uses:</u> (Example Only) If the lowest close in the last 5 bars is less than or equal to todays close.	<u>Syntax:</u> IF Lowest (Close, 5) <= Close		

Lowest Low

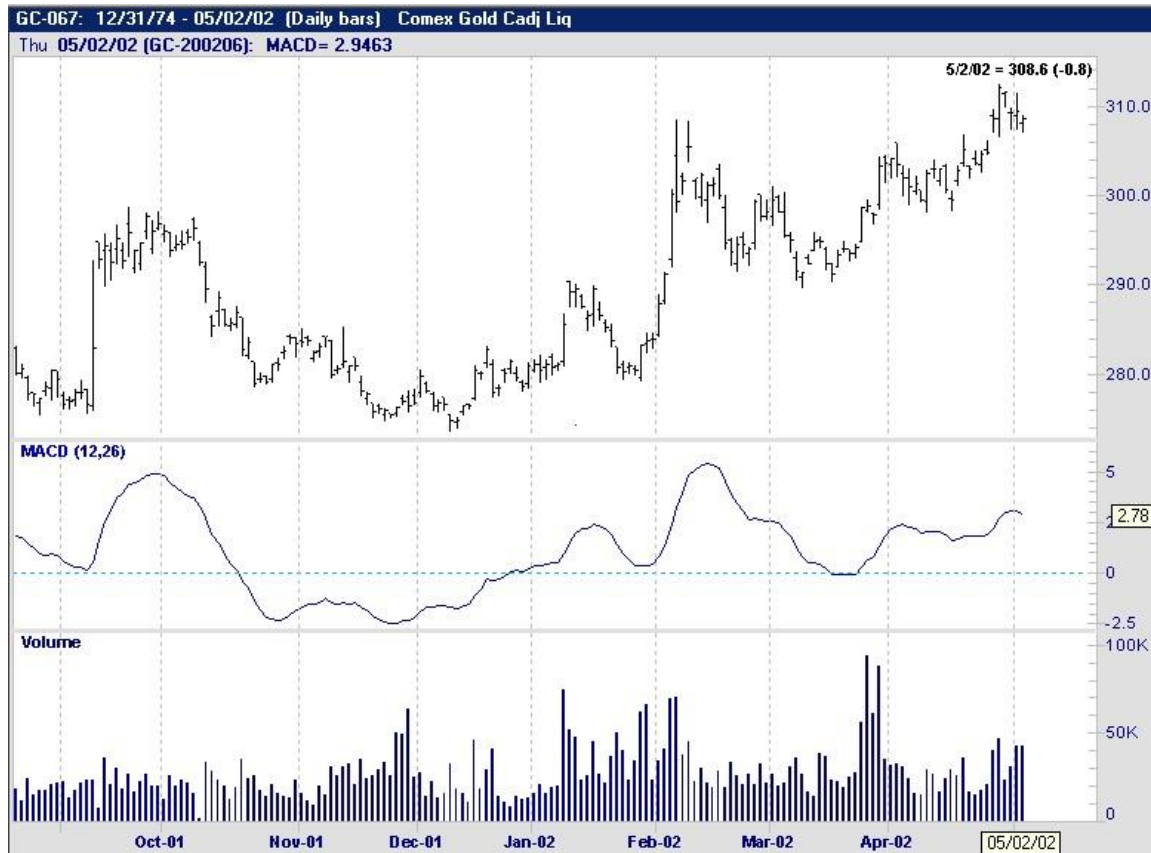
Used to reference the lowest low in a market in the last specified number of bars. Below we have the lowest low of the past 30 bars graphed as an indicator.



<u>Inputs:</u> <u>Last N bars</u>	<u>Req./Opt.:</u> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Lowest Low value in a specified # of Bars.
<u>Filter Criteria Uses:</u> (Example Only) If the lowest low of Bonds in the last 30 days is less than todays low of Bonds.	<u>Syntax:</u> IF Lowest Low (30) OF Bonds < Low OF Bonds		

MACD

Moving Average Convergence/Divergence is a trend following momentum indicator usually shows the relationship between a fast period moving average and a slow moving average of the price.



<u>Inputs:</u> <i>Expression</i> <i>FastPeriod</i> <i>SlowPeriod</i>	<u>Req./Opt.:</u> <i>Req.</i> <i>Req.</i> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Value of the MACD line, over/under zero.
<u>Filter Criteria Uses:</u> (Example Only) If the MACD has crossed below the zero line.	<u>Syntax:</u> IF Crosses Below (MACD (Close,12,26), 0)		

MACD Difference

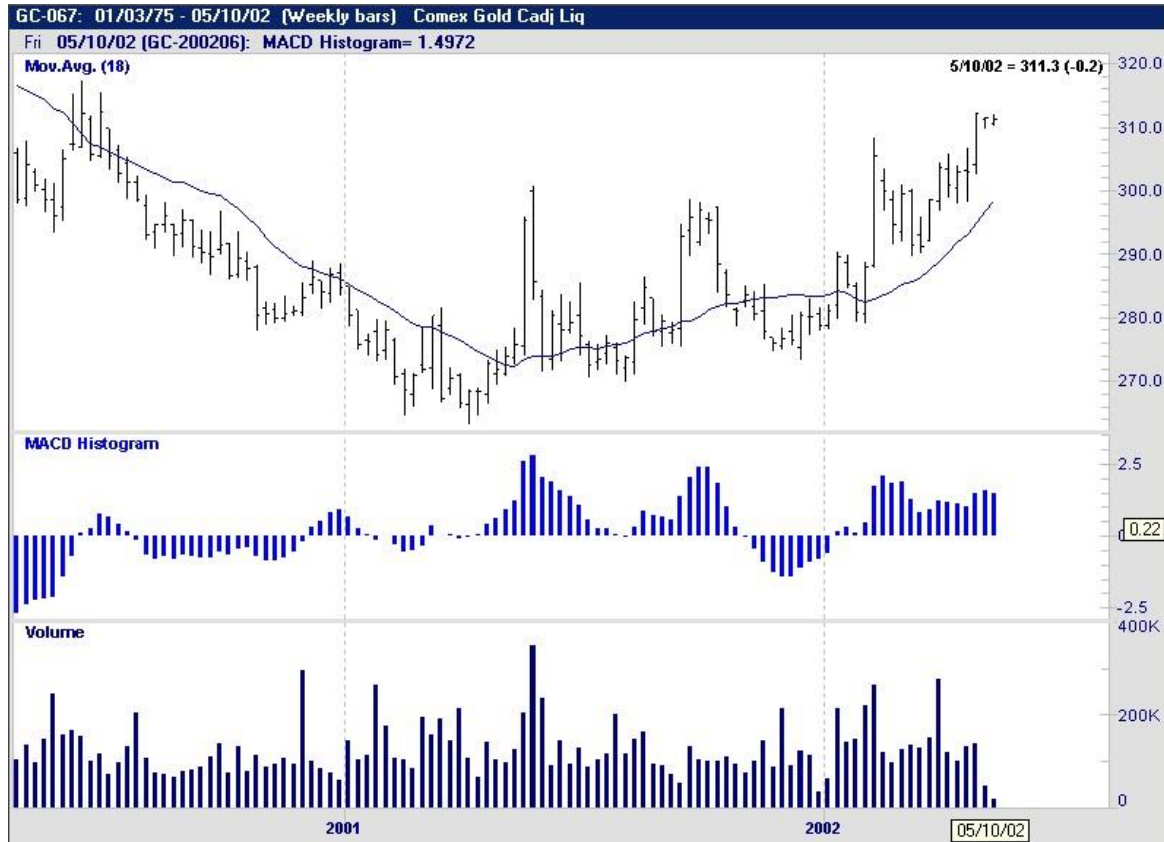
This is used to evaluate the difference between the MACD and its Exponential Moving Average. What makes this indicator different is that the value being displayed is the remainder of the MACD values taken from, not just its “Simple” moving average, but its Exponential moving average.



<u>Inputs:</u> <i>Expression</i> <i>Period1</i> <i>Period2</i> <i>Bars used in Average</i>	<u>Req./Opt.:</u> <i>Req.</i> <i>Req.</i> <i>Req.</i> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Difference between the MACD and its Exponential MovingAvg.
<u>Filter Criteria Uses:</u> (Example Only) If the MACD Difference line has crosses above the 0 line	<u>Syntax:</u> IF Crosses Above (MACD Difference (Close, 12, 26, 9), 0)		

MACD Histogram

This is a trend indicator that is used to track longer cycles than the regular MACD indicator using weekly or monthly charts. It also provides signals for trend changes well in advance of the MACD indicator itself, but should be confirmed by other indicators.



On the chart above, we have the MACD Histogram graphed on a weekly Gold continuous chart to show a longer cycle.

<u>Inputs:</u> None	<u>Req./Opt.:</u> Req	<u>Type:</u> Indicator	<u>Returns:</u>
<u>Filter Criteria Uses:</u> (Example Only) If the MACD Histogram is above 25.	<u>Syntax:</u> MACDHistogram > 25		

Mass Index

This is used to identify trend reversals by measuring the narrowing and widening between the average range of the high and low prices. Large Mass Index values indicate the widening of the average range between highs and lows.



<u>Inputs:</u> <u>Bars used in Average</u> <u>Bars to Sum</u>	<u>Req./Opt.:</u> Req. Req.	<u>Type:</u> Indicator	<u>Returns:</u> Value of the Mass Index.
<u>Filter Criteria Uses:</u> (Example Only) If the Mass Index crossed above 25 yesterday.	<u>Syntax:</u> CrossesAbove(MassIndex(9,25).1,25)		

McClellan Oscillator

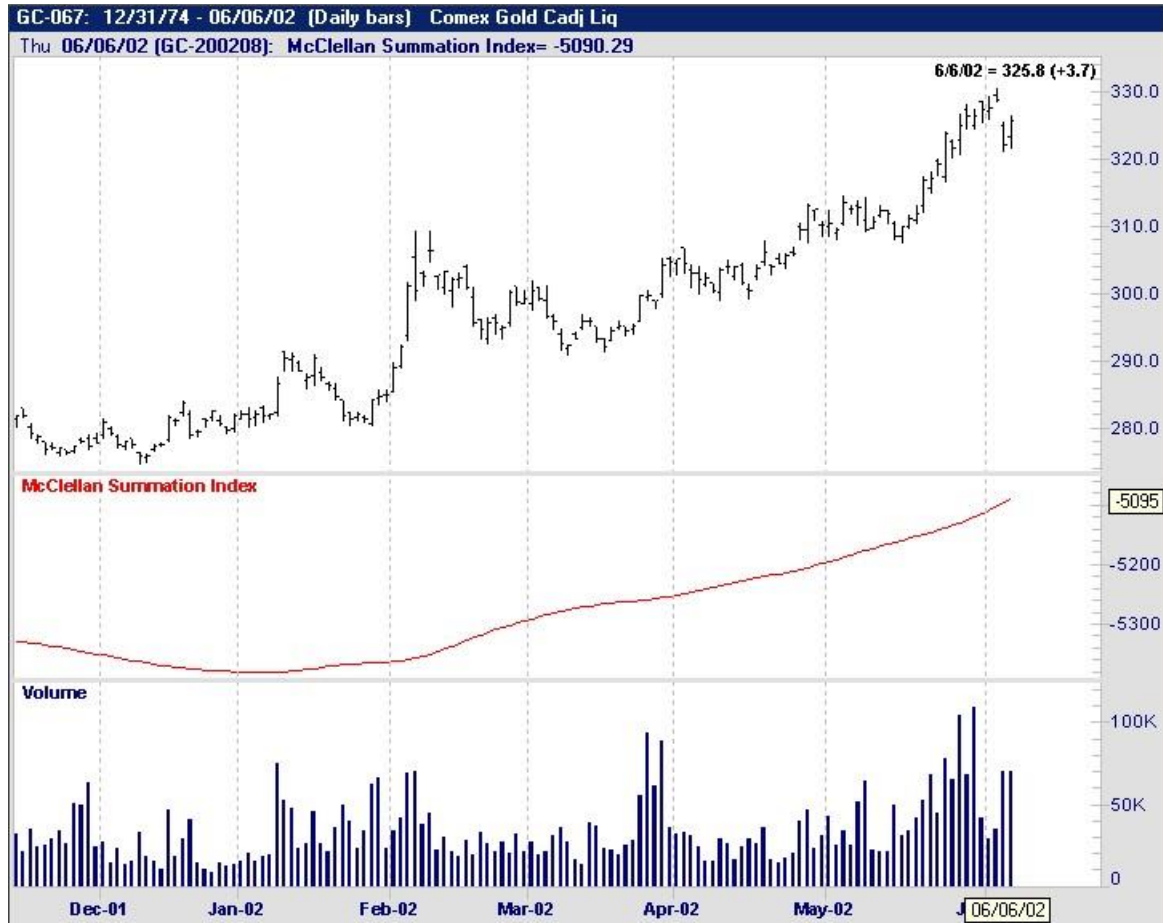
Developed by Sherman and Marion McClellan, the McClellan Oscillator is a widely used market breadth indicator. It calculates based on the smoothed difference between the advancing and declining issues of the New York Stock Market.



<u>Inputs:</u> <i>None</i>	<u>Req./Opt.:</u> <i>None</i>	<u>Type:</u> Indicator	<u>Returns:</u> Value of the McClellan Oscillator.
<u>Filter Criteria Uses:</u> (Example Only) If the close today is a down close from yesterday and the McClellan Oscillator is greater than it was yesterday.	<u>Syntax:</u> $\text{Close} < \text{Close.1 and McClellanOsc} > \text{McClellanOsc.1}$		

McClellan Summation Index

This is another market breadth indicator that is very similar to the McClellan Oscillator, but is used for longer-term major market moves. Sherman and Marion McClellan developed McClellan Summation Index.



<u>Inputs:</u> <i>None</i>	<u>Req./Opt.:</u> <i>None</i>	<u>Type:</u> Indicator	<u>Returns:</u> Value of the McClellan Summation Index.
<u>Filter Criteria Uses:</u> (Example Only) If there was a down close today, and the McClellan Summation Index is greater than it was yesterday.	<u>Syntax:</u> $\text{Close} < \text{Close.1}$ and $\text{McClellanSummationIndex} > \text{McClellanSummationIndex.1}$		

MoneyFlowIndex

Money Flow Index is a momentum indicator based on the ratio of positive vs. negative money flow. In other words, it measures the amount of money that flows in and out of a given security. Like the RSI, MFI measures the internal strength of a security, but the MFI also uses volume in its calculation.



<u>Inputs:</u> <u>Period</u>	<u>Req./Opt.:</u> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Value of the Money Flow Index.
<u>Filter Criteria Uses:</u> (Example Only) If the MoneyFlowIndex is the highest it has been in 20 days.	<u>Syntax:</u> Highest (MoneyFlowIndex (14), 20)		

Mid Price

Used to calculate the middle price of a price bar $(High + Low)/2$. Below we have the Mid Price of each bar graphed as an indicator.



<u>Inputs:</u> None	<u>Req./Opt.:</u> None	<u>Type:</u> Indicator	<u>Returns:</u> Value of the middle price of a bar.
<u>Filter Criteria Uses:</u> (Example Only) If the Mid Price of yesterdays bar is greater than the Mid Price of the current bar.	<u>Syntax:</u> Mid Price.1 > Mid Price		

Momentum

This indicator is an overbought/oversold indicator, used to find the difference between the current price bar and a price bar X bars ago. It is calculated by taking the value of the current bar and subtracting it from the value of a bar "X" bars ago ("X" specified by the user).



<u>Inputs:</u> <u>Expression</u> <u>NumBars</u>	<u>Req./Opt.:</u> <i>Req.</i> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Value of the Momentum line.
<u>Filter Criteria Uses:</u> (Example Only) If the Momentum of 14 bars today is the highest it has been for 1 month.	<u>Syntax:</u> Highest (Momentum (Close,14), 30)		

Momentum Oscillator

Developed by Tushar Chande, the Momentum Oscillator can be used in many different ways. It can be used to spot overbought/oversold conditions as well as measuring the trend of a market, much like the [VHF](#) indicator. Many use this indicator for defining setup conditions, based on the particular trend the market is in. It also moves in a range from -100 to +100, enabling the zero line to act as a middle line.



<u>Inputs:</u> <u>Period</u>	<u>Req./Opt.:</u> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Value of the Oscillator in a range from -100 to +100.
<u>Filter Criteria Uses:</u> (Example Only) If the Momentum Oscillator of 14 bars crossed above the zero line yesterday.	<u>Syntax:</u> Crosses Above (MomentumOsc(14).1, 0)		

Moving Average

Used to show the average value of a security over a specified amount of time in “simple” method. When values of the security change, their average changes with them. Simple, Weighted, Exponential, and modified Exponential are among the most popular Moving Averages methods (please refer to page 111 for more information on [Methods](#)).



In the chart above, we have a 40 day Moving Average plotted on a Daily chart with volume displayed below.

<u>Inputs:</u> Expression <u># of Bars used (in Average)</u>	<u>Req./Opt.:</u> <i>Req.</i> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Average value of the Expression, over the specified amount of days.
<u>Filter Criteria Uses:</u> (Example Only) If the 18 bar Moving Average of close crosses above the 40 bar Moving Average of the close.	<u>Syntax:</u> Crosses Above (MovingAvg(Close,18), MovingAvg(40))		

Moving Average Method

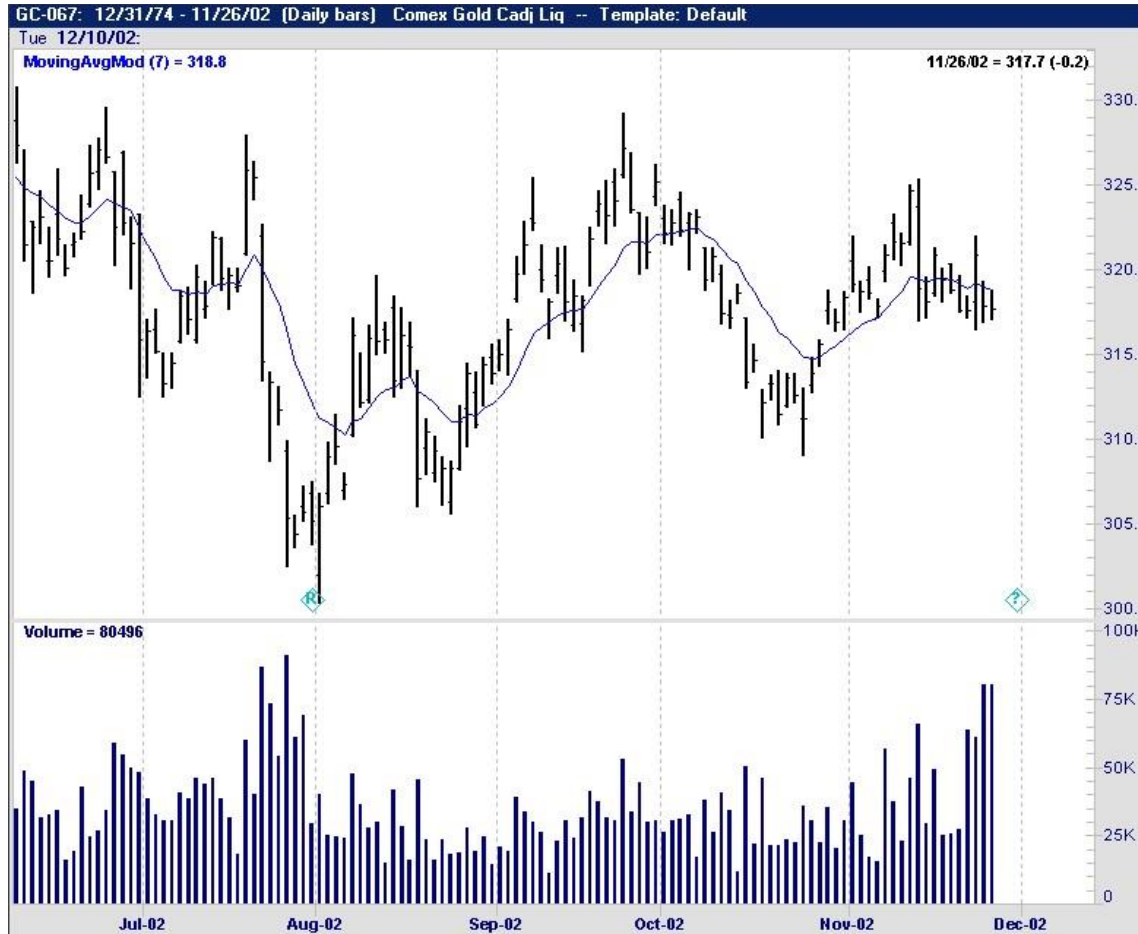
Used to show the average value of a security over a specified amount of time giving the user the choice of the “Method”. Please click on the blue “Method” link below to find out more about Methods (page 111).



<u>Inputs:</u> Expression Bars used in Average Method	<u>Req./Opt.:</u> Req. Req. Req.	<u>Type:</u> Indicator	<u>Returns:</u> Average value of the Expression, over the specified amount of days, in a user defined method.
<u>Filter Criteria Uses:</u> (Example Only) If the weighted 18 bar Moving Average of the close crosses above the weighted 40 bar Moving Average of close.	<u>Syntax:</u> Crosses Above (MovingAvgMethod (Close,18,3), MovingAvgMethod (Close,40,3))		

MovingAverageMod

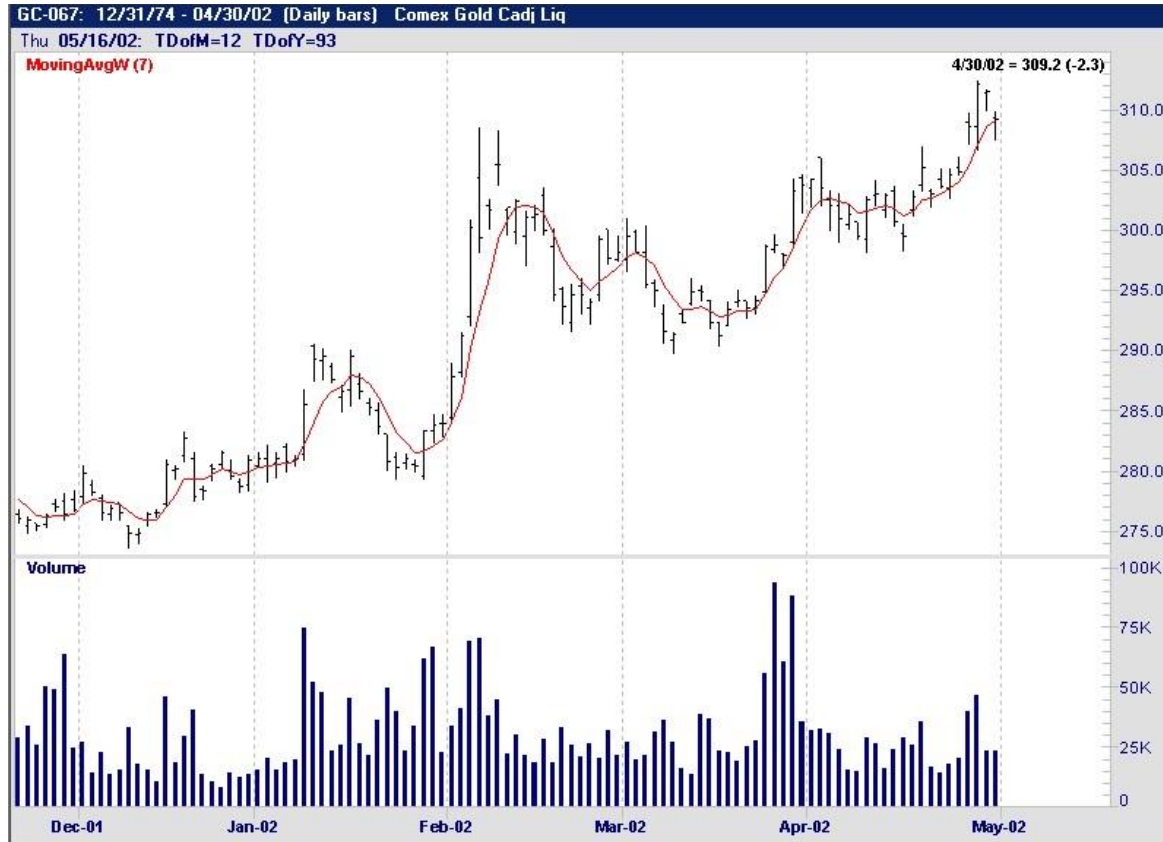
This is the average of a series of numeric values, using a “Modified Smoothing” method. This indicator/function was created by Joe Dinapolli, and is, in simple terms, a short cut to long hand calculation of a modified exponential moving average. Unfortunately, the calculation for the Moving AverageMod is very in depth and we are unable to expand on it in this appendix.



<p><u>Inputs:</u></p> <p><i>Expression</i></p> <p><u><i>Bars used in Average</i></u></p>	<p><u>Req./Opt.:</u></p> <p><i>Req.</i></p> <p><i>Req.</i></p>	<p><u>Type:</u></p> <p>Indicator</p>	<p><u>Returns:</u></p> <p>Average value of the Expression, over the specified amount of days, in a user defined method.</p>
<p><u>Filter Criteria Uses: (Example Only)</u></p> <p>If the Modified 18 bar Moving Average of the close crosses above the Modified 40 bar Moving Average of Moving Average Weighted close</p>	<p><u>Syntax:</u></p> <p>Crosses Above (MovingAvgMod (Close,18), MovingAvgMod (Close,40))</p>		

MovingAverageWeighted

Used to show the average value of a security over a specified amount of time in a “Weighted” method.

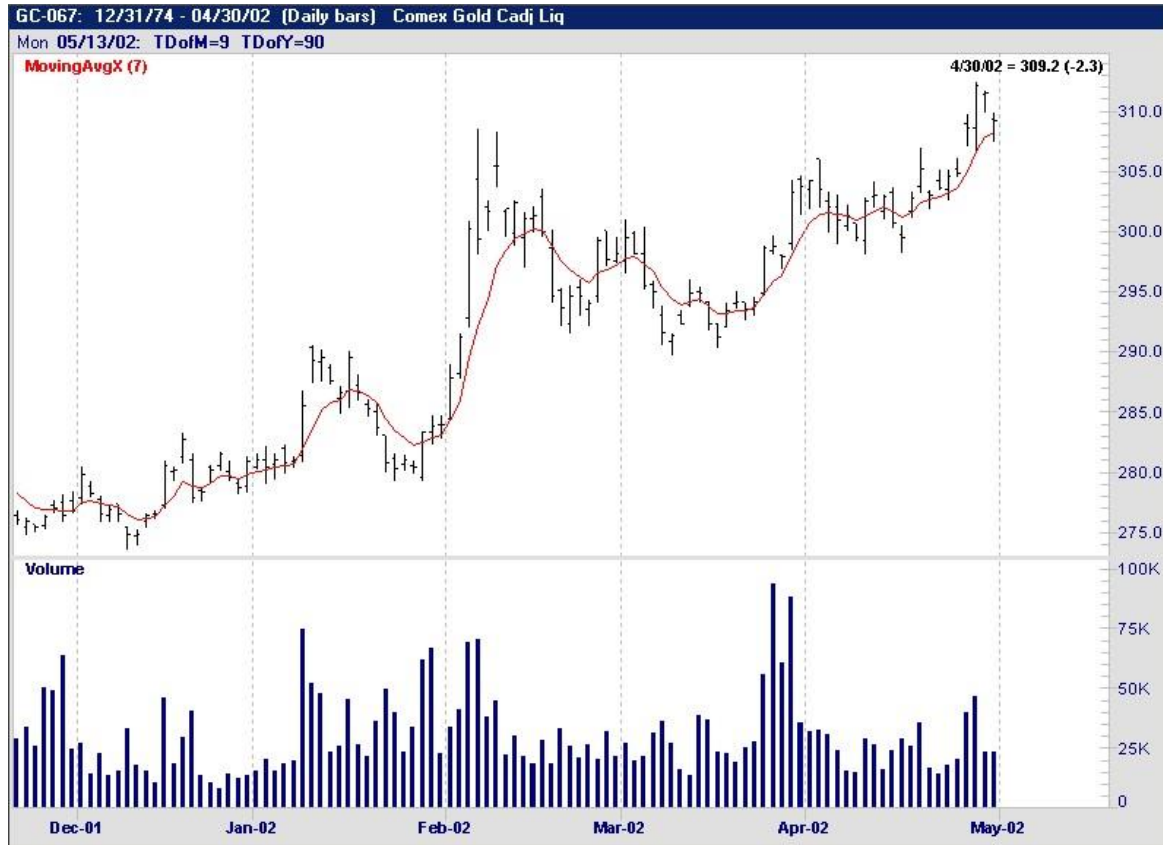


In the chart above we have graphed a Weighted Moving Average of seven bars on a Gold continuous contract.

<u>Inputs:</u> Expression <u>Bars used in Average</u>	<u>Req./Opt.:</u> Req. Req.	<u>Type:</u> Indicator	<u>Returns:</u> The weighted average of a specified number of bars.
<u>Filter Criteria Uses:</u> (Example Only) If the weighted 18 bar Moving Average of the highs crosses below the 40 bar Moving Average of the highs.	<u>Syntax:</u> Crosses Below (MovingAvgW (High,18), MovingAvgW (High,40))		

Moving Average Exponential

Used to show the average value of a security over a specified amount of time in an “Exponential” method.

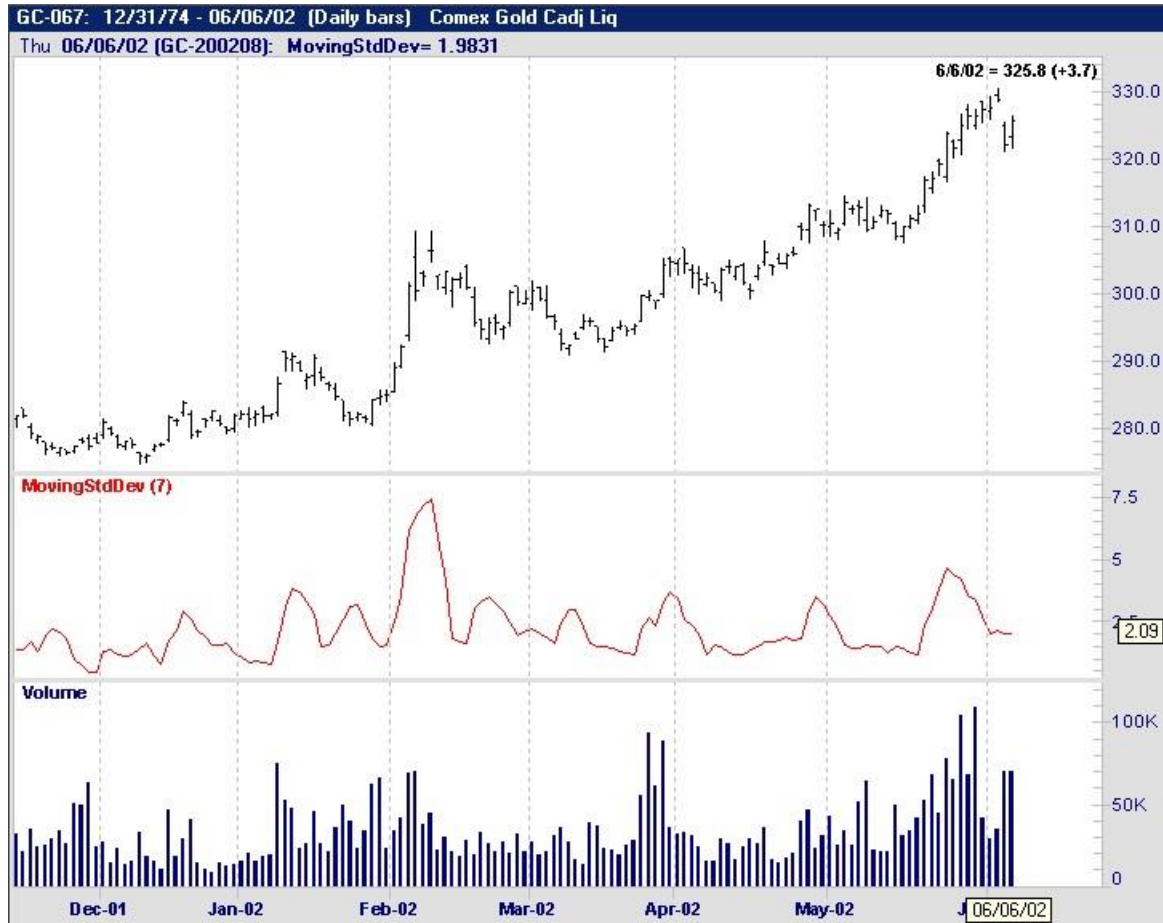


In the chart above we have graphed an Exponential Moving Average of seven bars on a Gold continuous contract.

<u>Inputs:</u> <u>Expression</u> <u>Bars used in Average</u>	<u>Req./Opt.:</u> <i>Req.</i> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> The exponential average of a specified number of bars.
<u>Filter Criteria Uses:</u> (Example Only) If the Exponential 18 bar Moving Average of the closes crosses above the Exponential 40 bar Moving Average of the closes.	<u>Syntax:</u> Crosses Above (MovingAvgX (Close,18), MovingAvgX (Close,40)).		

MovingStdDev

This indicator shows the moving standard deviation of a specified series of numbers.



On the chart above we have the Moving standard deviation of 7 bars graphed on a Gold continuous chart. The default expression for this indicator (as well as all other Moving Average indicators) is the Close.

<u>Inputs:</u> Expression NumBars	<u>Req./Opt.:</u> <i>Req.</i> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> A series of numbers.
<u>Filter Criteria Uses:</u> (Example Only) When you want the low less than the close subtracted from the MovingStdDev of the close.	<u>Syntax:</u> $\text{Low} < (\text{Close} - \text{MovingStdDev}(\text{Close}, 7))$		

Moving Sum

This is used to sum a series of numeric values.



<u>Inputs:</u> Expression (defaults to close) Period (set this to 0 to sum all bars) SignFilter	<u>Req./Opt.:</u> Req. Req. Req.	<u>Type:</u> Indicator	<u>Returns:</u> The sum of a specified number of values.
<u>Filter Criteria Uses:</u> (Example Only) If the 14 bar Moving Sum using a sign filter of 0 (filtering for all numbers) is the highest it has been in the last 20 days.	<u>Syntax:</u> Highest (Moving Sum (Close,14,0), 20)		

Number True

This indicator returns the number of true conditions that are included as the inputs. Returns number of true conditions for 9 or less conditions that user designates.

<u>Inputs:</u> Conditions 1-9	<u>Req./Opt.:</u> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> The number of true conditions that have been specified.
<u>Filter Criteria Uses:</u> (Example Only) If you want at least 2 of the following conditions to be true: ADX(7) > 50 Close > Close.8 StochK(14,3) < 25 Inside Bar	<u>Syntax:</u> NumberTrue (ADX(7) > 50, Close > Close.8, StochK(14,3) < 25, InsideBar) >= 2		

Our example above shows that there must be at least 2 of the 4 conditions met before the action to buy or sell takes place.

OBOI

This is the On Balance Open Interest momentum indicator that relates Open Interest of a security to the price changes of that security. It calculates for an X period of time, taking the sum of the Open Interest for up days minus the Open Interest for down days. An *up day* is defined as an opening that is greater than the close of the day before. A *down day* is defined as a day that opens less than the close of the day before.



On the chart above we have the OBOI graphed above the volume and open interest, to show the relationship between the OBOI, open interest and the price.

<u>Inputs:</u> None	<u>Req./Opt.:</u> None	<u>Type:</u> Indicator	<u>Returns:</u> Value of the OBOI line.
<u>Filter Criteria Uses:</u> (Example Only) If the OBOI is greater than it was yesterday, and the close today is greater than the close yesterday.	<u>Syntax:</u> OBOI > OBOI.1 and Close > Close.1		

OBV

This is an On Balance Volume momentum indicator that relates the Volume of a security to the price changes of that security.



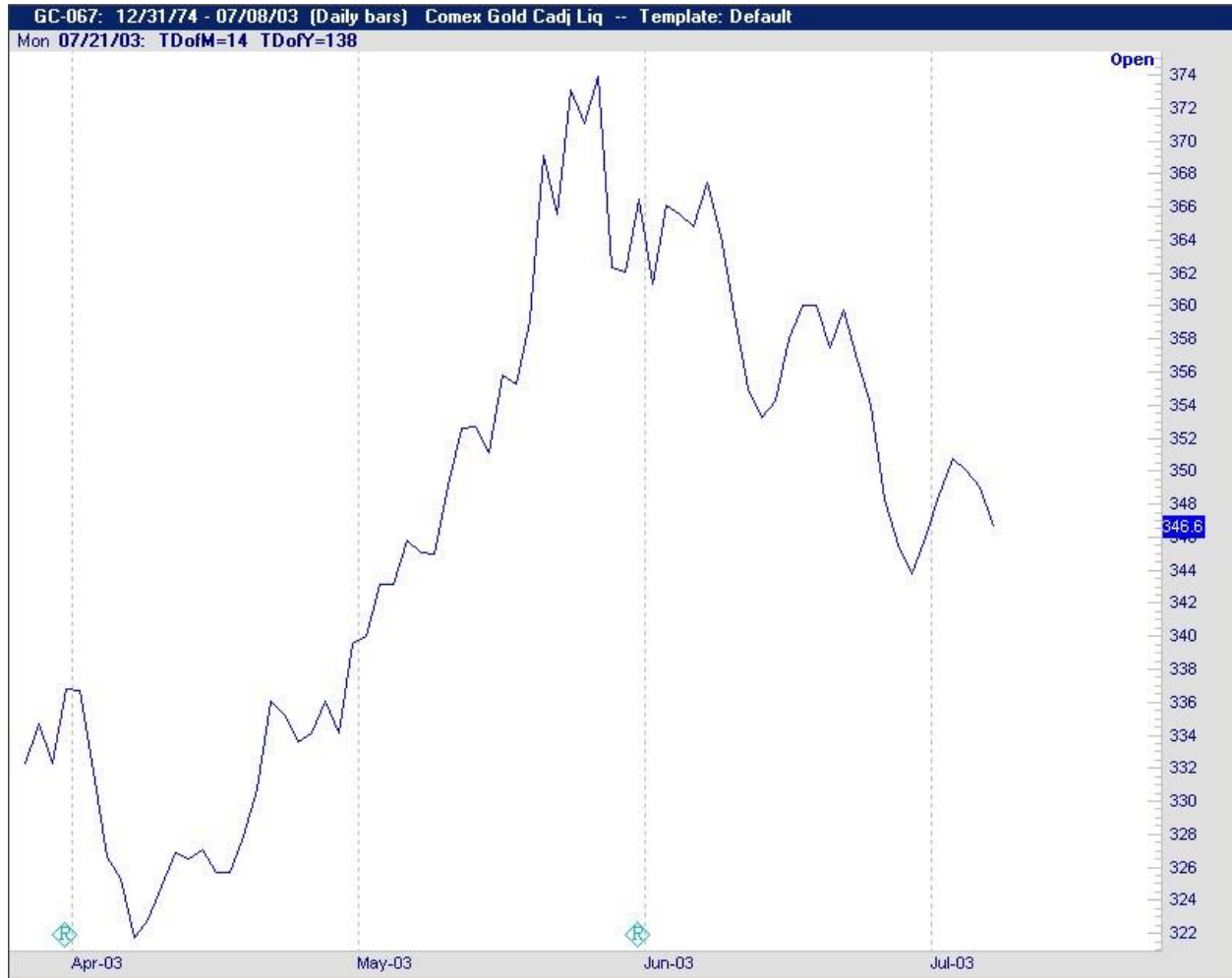
On the chart above we have graphed the OBV above the volume but below the price to show the relationship between the volume and price changes.

<u>Inputs:</u> <i>None</i>	<u>Req./Opt.:</u> <i>None</i>	<u>Type:</u> Indicator	<u>Returns:</u> Value of the OBV line.
<u>Filter Criteria Uses:</u> (Example Only) If the OBV is the greatest it has been in the last month.	<u>Syntax:</u> Highest (OBV, 30)		

Open

This is an expression that is used to reference the Opening price of a given security. To find the descriptions of different types of price charts, please click on the following link:

[TypesOfPriceCharts](#) Below we have the Opening price of each bar graphed as a line chart.



<u>Inputs:</u> <i>None</i>	<u>Req./Opt.:</u> <i>None</i>	<u>Type:</u> Indicator	<u>Returns:</u> The value of the Open price of todays bar.
<u>Filter Criteria Uses:</u> (Example Only) If the open today is greater than the open 3 days ago.	<u>Syntax:</u> If Open > Open.3		

Open Interest

This is used to reference the total number of open transactions of a given security. It is calculated, using only open transactions that have not yet been offset by an opposite transaction or filled by the delivery of the commodity. Many think of this as the number of open transactions held overnight based on pit trading.

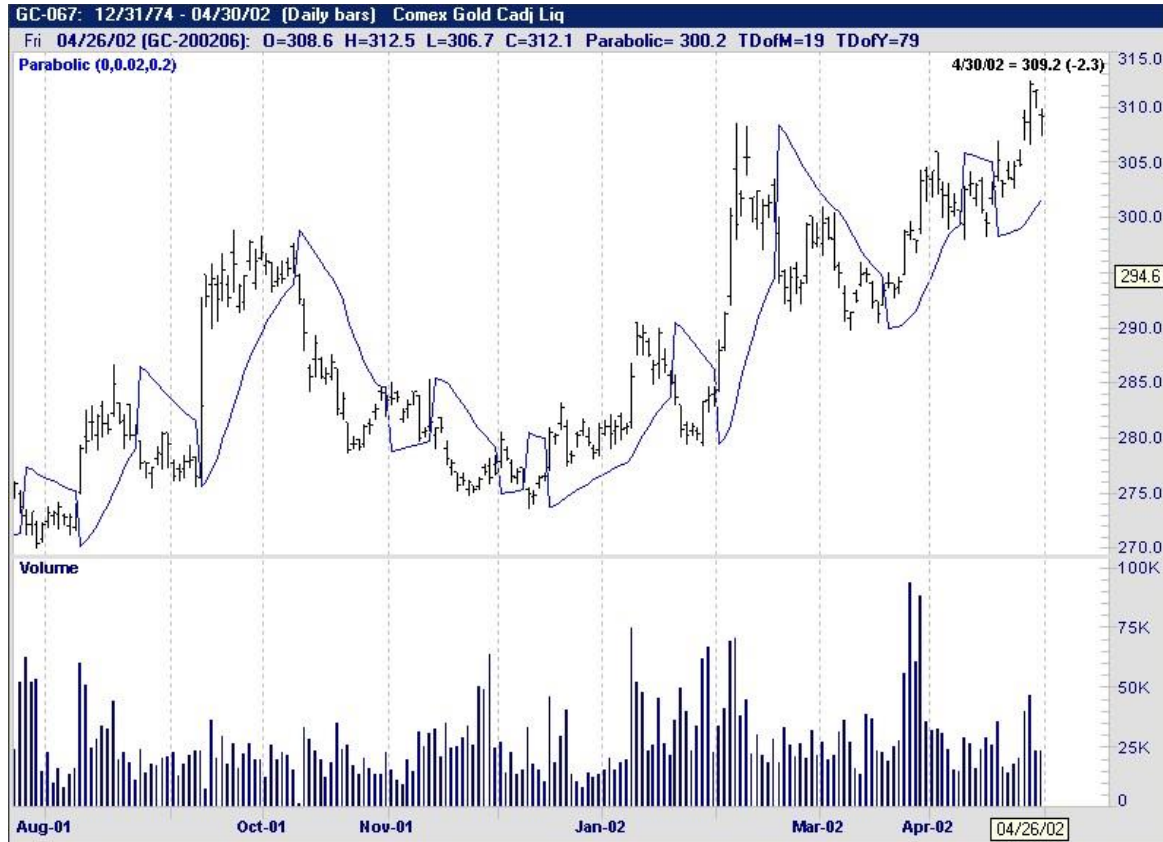


On the chart above we have the Open Interest overlayed on the volume, on a Gold continuous contract.

<u>Inputs:</u> None	<u>Req./Opt.:</u> None	<u>Type:</u> Data	<u>Returns:</u> Value of the Open Interest on a given price bar.
<u>Filter Criteria Uses:</u> (Example Only) If the Open Interest is less than it was 3 days ago.	<u>Syntax:</u> Open Interest < Open Interest.3		

Parabolic

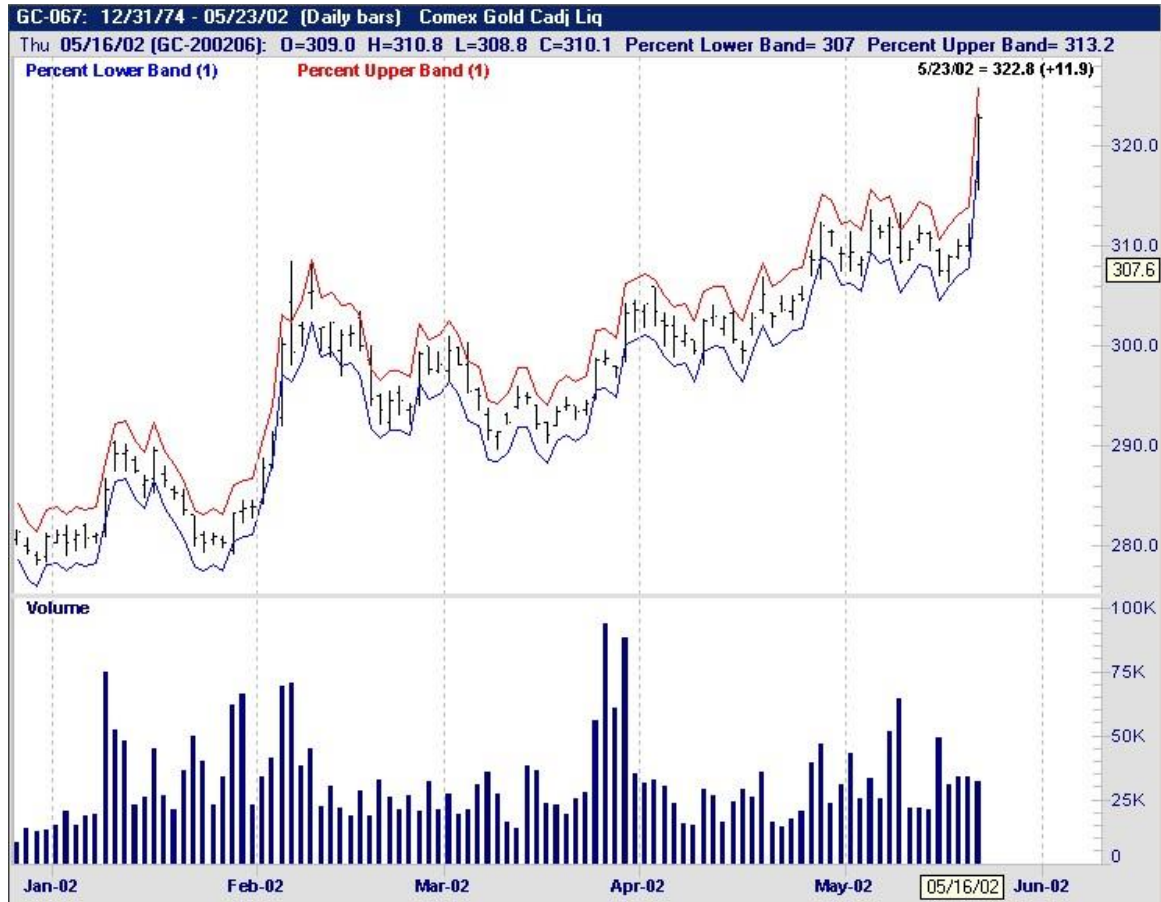
This was developed by Wells Wilder, and is used to set stop prices for trailing stops. It is usually referred to as the Parabolic SAR (Stop and Reverse). Many use this indicator to set stops for Stop and Reversal patterns.



<u>Inputs:</u> UpLow AF MaxAF	<u>Req./Opt.:</u> <i>Req.</i> <i>Req.</i> <i>Req.</i>	<u>Type:</u> Data	<u>Returns:</u> Value of the Parabolic line according to the Parabolic formula.
<u>Filter Criteria Uses:</u> (Example Only) If the Parabolic, using UpLow of 0 (looking for All positions), AF of .02, and a MaxAF of .2 crosses below the close yesterday.	<u>Syntax:</u> Crosses Below (Parabolic (0, .02, .2), close.1)		

Percent Bands

Percent Upper and Lower bands are used to create user defined trading bands. These are plotted at a standard deviated percent from the closes.



<u>Inputs:</u> <u>Percent</u>	<u>Req./Opt.:</u> <i>Req</i>	<u>Type:</u> Indicator	<u>Returns:</u> Value of the referenced percent band.
<u>Filter Criteria Uses:</u> (Example Only) These are usually used for Trading Systems, and charting, not for filters.	<u>Syntax:</u>		

Percent R

This momentum indicator was developed by a third party Educator, and is commonly used to find overbought/oversold conditions in a market. Overbought conditions will read in a range of 80 to 100 percent. Oversold conditions will read in a range from 0 to 20 percent.

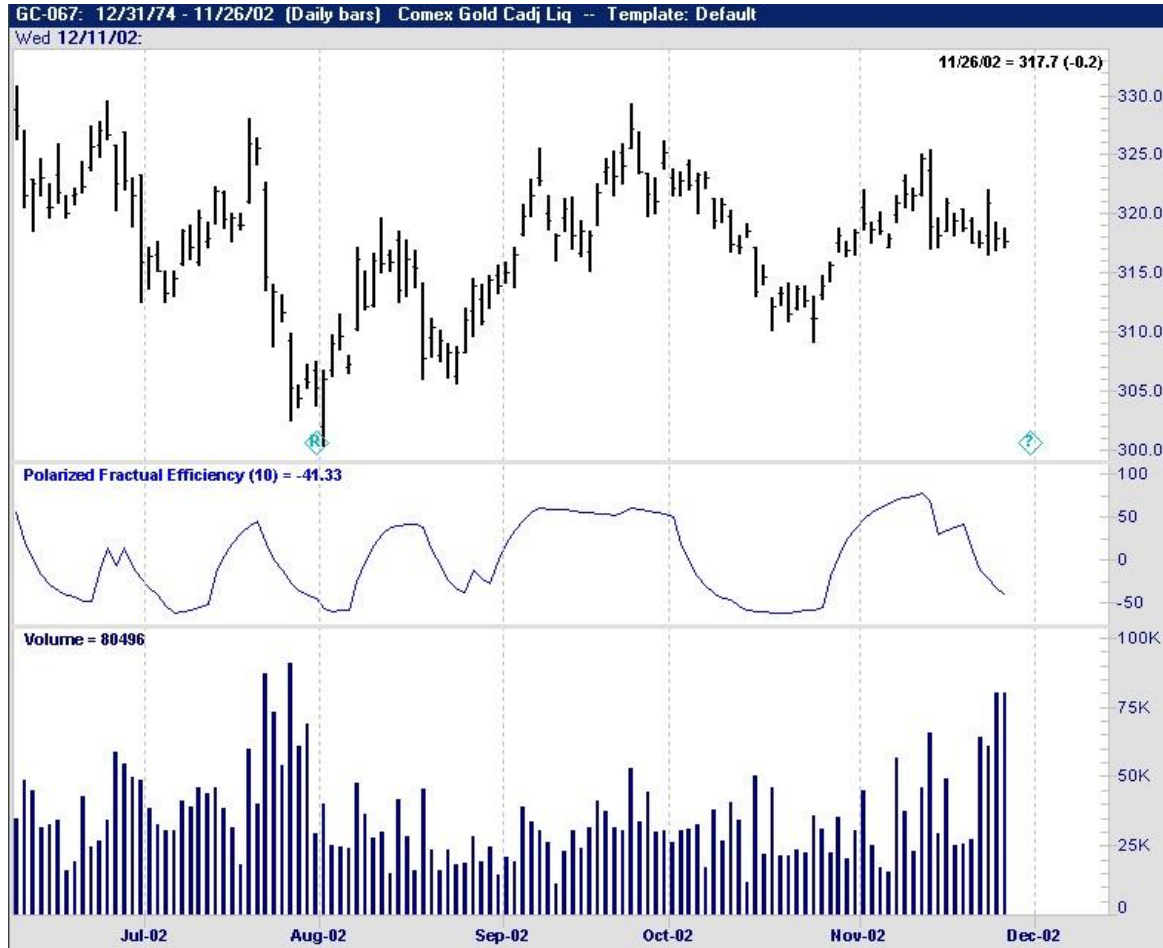


On the chart above we have a 14 bar Percent R graphed under the price pane, on a Gold continuous contract.

<u>Inputs:</u> <u>Bars used in Calculation</u>	<u>Req./Opt.:</u> Req.	<u>Type:</u> Indicator	<u>Returns:</u> Value of the Percent R indicator.
<u>Filter Criteria Uses:</u> (Example Only) If the 14 bar Percent R indicator crossed above the 80 line.	<u>Syntax:</u> Crosses Above (Percent R(14), 80)		

Polarized Fractal Efficiency

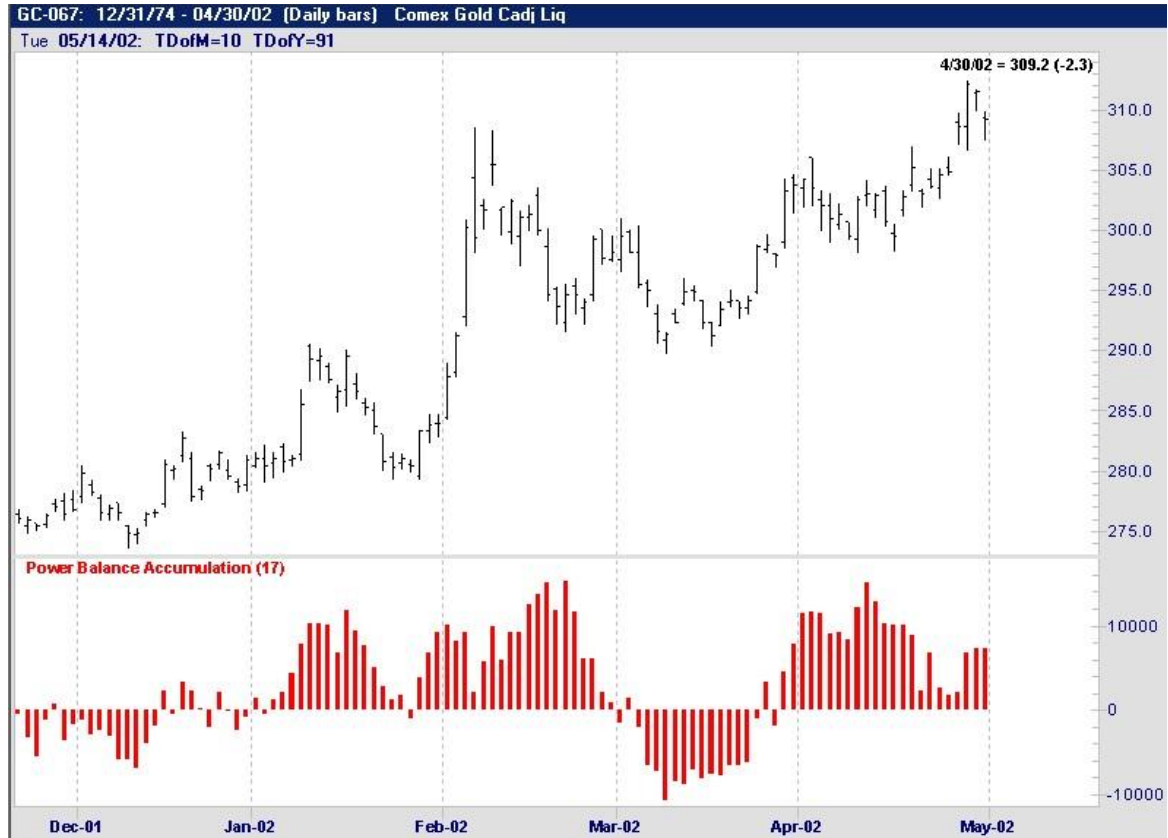
This was created by Hans Hannula, and is used to measure the efficiency of prices travelling between two points in time.



<u>Inputs:</u> <u>Period</u>	<u>Req./Opt.:</u> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Value of the Percent R indicator.
<u>Filter Criteria Uses:</u> (Example Only) If the Polarized Fractal Efficiency using period of 10 bars is above 50.	<u>Syntax:</u> PolarizedFractalEfficiency (10) > 50		

Power Balance Accumulation

Power Balance Accumulation, a.k.a Balance of Power is an accumulation/distribution indicator that uses a moving average of the price direction as well as volume in its calculation. According to Igor Livshin in Stocks and Commodities magazine “This indicator measures the strength of the bulls vs. the bears by assessing the ability of each to push prices to extreme levels”.



<u>Inputs:</u> <u>NumBars</u>	<u>Req./Opt.:</u> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Value of the Power Balance Accumulation indicator
<u>Filter Criteria Uses:</u> (Example Only) If the 17 bar Power Balance Accumulation indicator is greater than the zero line.	<u>Syntax:</u> Power Balance Accumulation (17) > 0		

Projected High

This indicator uses the True Highs and True Lows (ignoring inside bars) to calculate the Project high.



On the chart above we have the Projected High (in Blue) graphed against the Projected Low (in Red) on a Gold continuous contract.

<u>Inputs:</u> <i>None</i>	<u>Req./Opt.:</u> <i>None</i>	<u>Type:</u> Indicator	<u>Returns:</u> Value of the Projected High line.
<u>Filter Criteria Uses:</u> (Example Only) If the close is greater than the Projected High.	<u>Syntax:</u> Close > Projected High		

Projected Low

This indicator uses the True Highs and True Lows (ignoring inside bars) to calculate the Project Low.



<u>Inputs:</u> <i>None</i>	<u>Req./Opt.:</u> <i>None</i>	<u>Type:</u> Indicator	<u>Returns:</u> Value of the Projected Low line.
<u>Filter Criteria Uses:</u> (Example Only) If the close is less than the Projected Low.	<u>Syntax:</u> $\text{Close} < \text{Projected Low}$		

Qstick

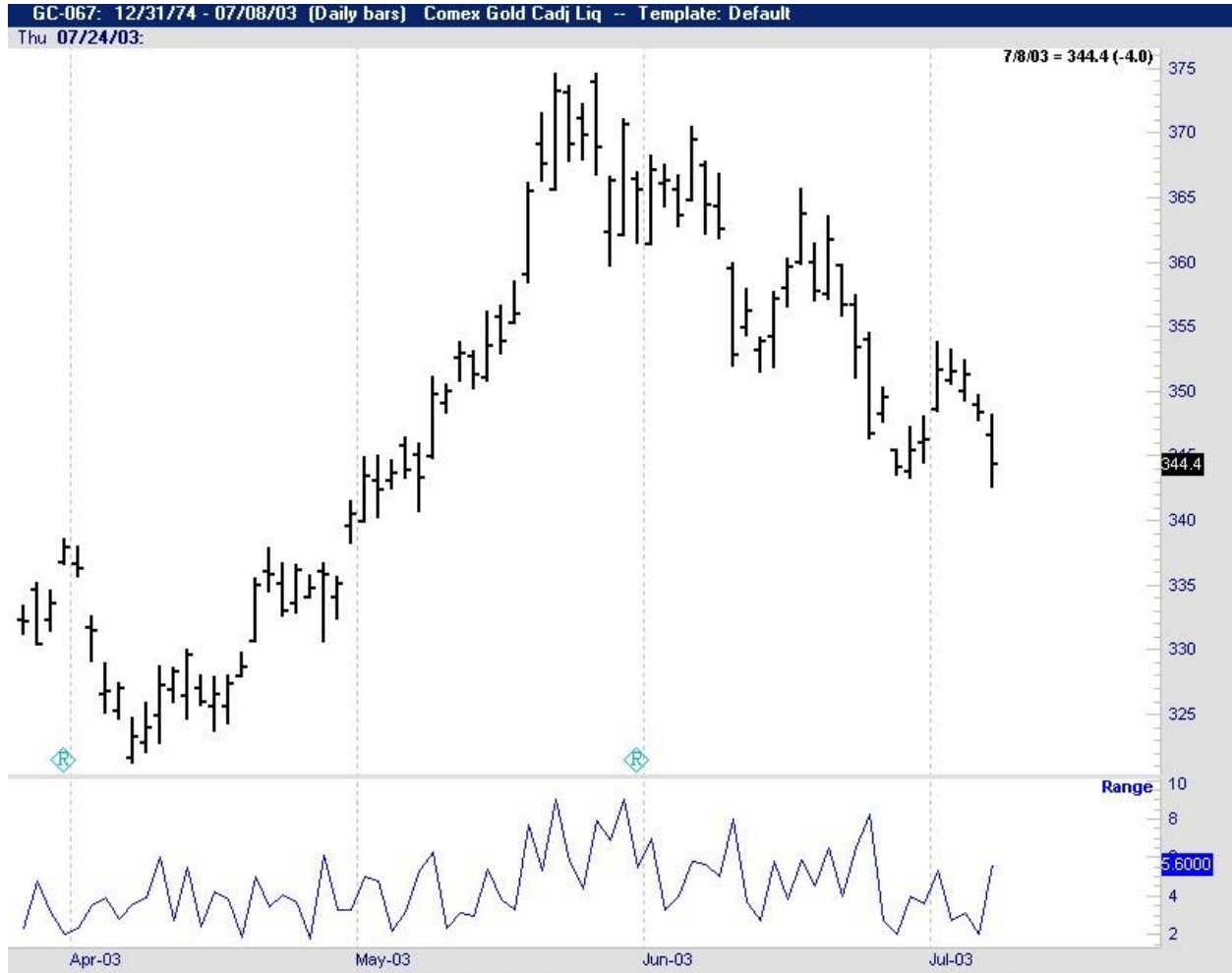
Developed by Tushar Chande, this indicator is used to calculate the difference between the open and close prices in candlestick charts. Qstick uses a Moving Average of the open minus close prices to calculate its figures for a specified amount of time.



<u>Inputs:</u> <u>Bars used for Moving Average</u>	<u>Req./Opt.:</u> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Value of the Qstick indicator.
<u>Filter Criteria Uses:</u> (Example Only) If the 7 bar Qstick indicator crosses below the zero line.	<u>Syntax:</u> Crosses Below (Qstick(7), 0)		

Range

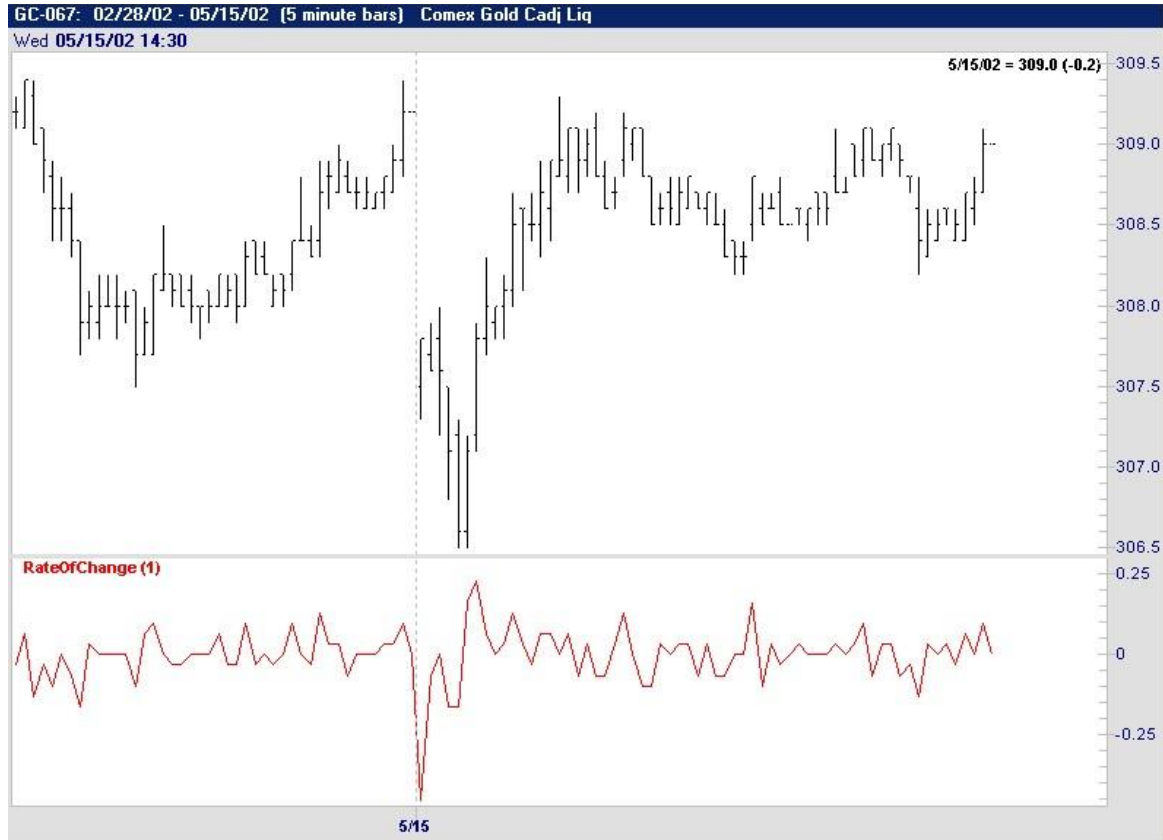
This function/indicator is used to return the value of the range (High – Low) of a price bar. Below we have the range of each bar plotted as an indicator.



<u>Inputs:</u> None	<u>Req./Opt.:</u> None	<u>Type:</u> Indicator	<u>Returns:</u> Value of the range.
<u>Filter Criteria Uses:</u> (Example Only) If today's range is less than yesterdays range.	<u>Syntax:</u> IF Range < Range.1		

Rate of Change

Rate of Change, a.k.a ROC produces the rate of change as a percentage between the current bar and N-bars ago. It is very similar to the Momentum indicator, but Momentum uses the difference of the prices to calculate, and ROC uses a ratio of the prices.

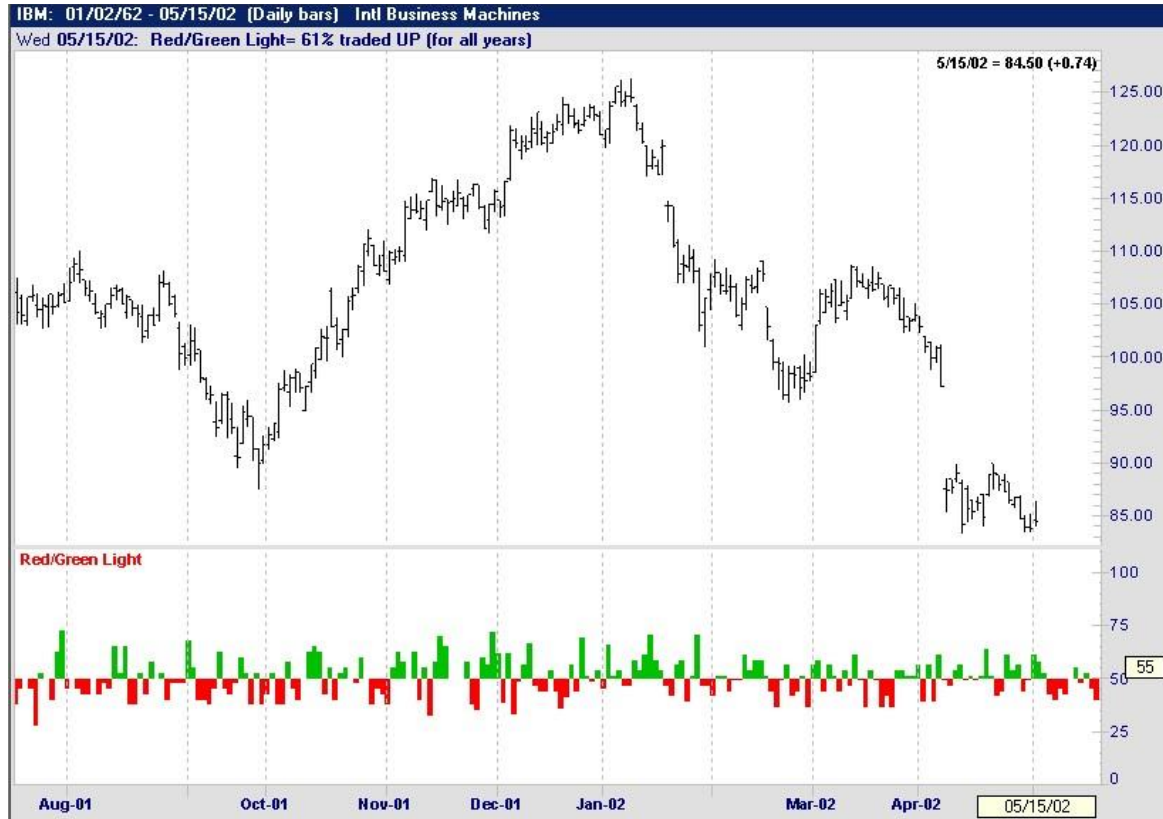


On the chart above we have used a 5 minute intraday chart to show the correlation between the Rate of Change and the price movement for a complete trading day.

<u>Inputs:</u> <u>Expression</u> <u>NumBars</u>	<u>Req./Opt.:</u> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Value (as Percentage) of the current price divided by the price N bars ago.
<u>Filter Criteria Uses:</u> (Example Only) If the 1 bar Rate Of Change is above zero for two ticks in a row.	<u>Syntax:</u> Rate Of Change (Close,1).2 > 0 and Rate Of Change (Close,1).1 > 0		

Red Light Green Light

This indicator is most commonly used to spot bear and/or bull conditions (as a percentage) in a market, and is calculated in a comparative analysis of past trends. The percentages will tell you whether the security has traded up comparatively to the past, or it has traded down as compared to all years that it has traded for that particular day.



On the chart above we have graphed the Red Light Green Light (study) on an IBM daily chart to show the display of this indicator.

<u>Inputs:</u> None	<u>Req./Opt.:</u> Req.	<u>Type:</u> Indicator	<u>Returns:</u>
<u>Filter Criteria Uses:</u> (Example Only) If the Red Light Green Light indicator is greater than 50 for two days in a row.	<u>Syntax:</u> Red/Green Light.2 > 50 and Red/Green Light.1 > 50		

Regression Oscillator

Some refer to this indicator as “Time Series Forecast” or “Moving Linear Regression”. Based on the Linear Regression line, it is used to find a predicted price for a period of time based on the slope of the regression line.



<u>Inputs:</u> <u>Bars used for Regression</u> (defaults to 14 bars)	<u>Req./Opt.:</u> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Value of the Regression Oscillator.
<u>Filter Criteria Uses:</u> (Example Only) If the Regression Oscillator of 14 bars crossed above the close.	<u>Syntax:</u> Crosses Above (Regression Oscillator(14), Close)		

Regression Slope

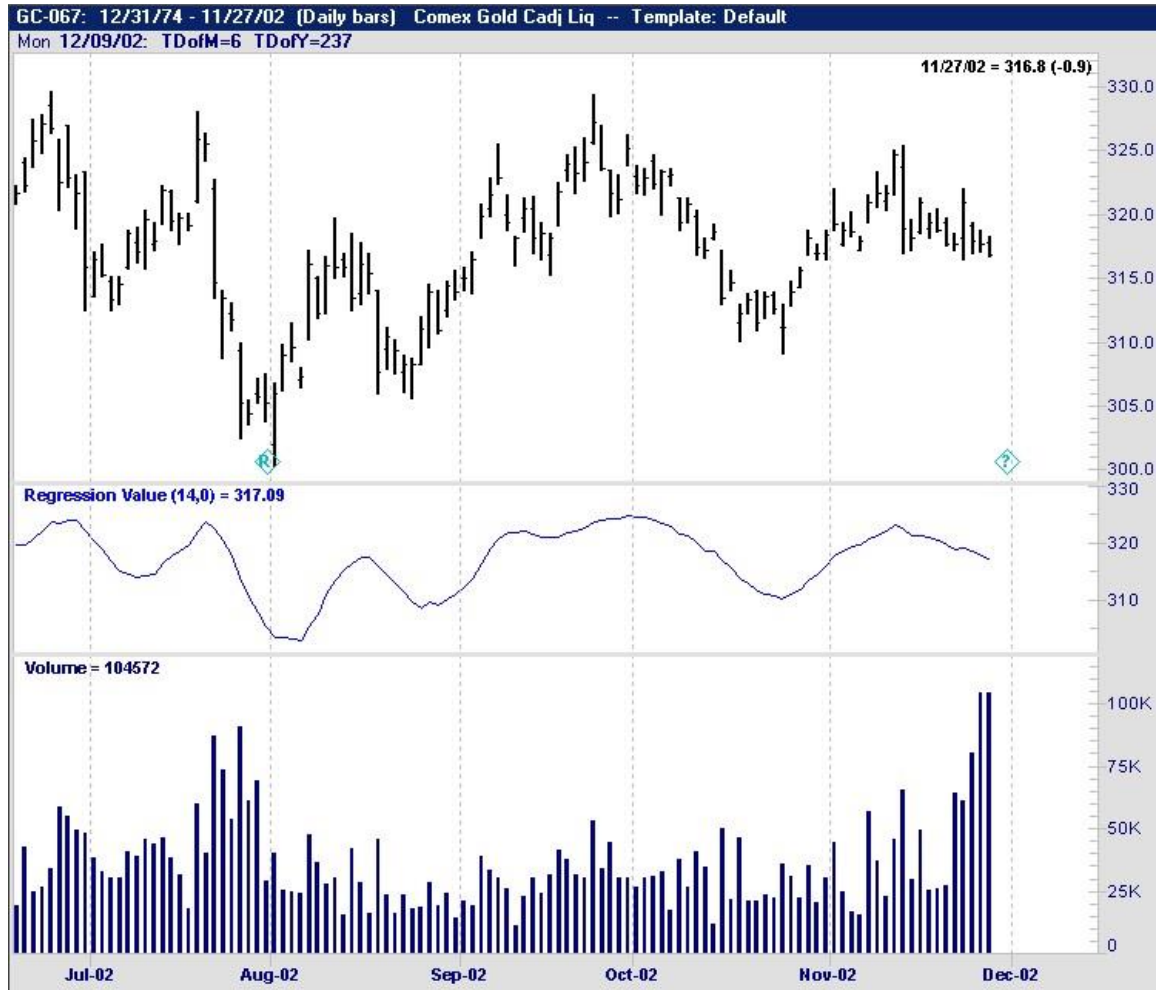
This indicator returns the slope of a linear regression calculation. Many will know this by referring to it as the “Rise over Run”. Its slope shows how much prices are expected to change over a certain amount of time.



<u>Inputs:</u> <i>Expression</i> <u><i>Bars used in Regression</i></u> <i>(defaults to 14 bars)</i>	<u>Req./Opt.:</u> <i>Req.</i> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Value of the Regression Slope line.
<u>Filter Criteria Uses:</u> (Example Only) If the 14 bar Regression Slope of the Regression Oscillator is at the highest it has been in 14 days.	<u>Syntax:</u> Highest (Regression Slope (RegressionOscillator (14),14), 14)		

Regression Value

This is used to find the projected value of a linear regression for a specified bar.



<p><u>Inputs:</u></p> <p>Expression</p> <p>Bars used in Regression (defaults to 14 bars)</p> <p>ValueBar</p>	<p><u>Req./Opt.:</u></p> <p>Req.</p> <p>Req.</p> <p>Req.</p>	<p><u>Type:</u></p> <p>Indicator</p>	<p><u>Returns:</u></p> <p>Value of the Regression Slope line.</p>
<p><u>Filter Criteria Uses:</u> (Example Only)</p> <p>If the 14 bar Regression Value, using 2 for the ValueBar, of the close is at the highest it has been in 14 days.</p>	<p><u>Syntax:</u></p> <p>Highest (Regression Value (Close,14,2), 14)</p>		

RSI

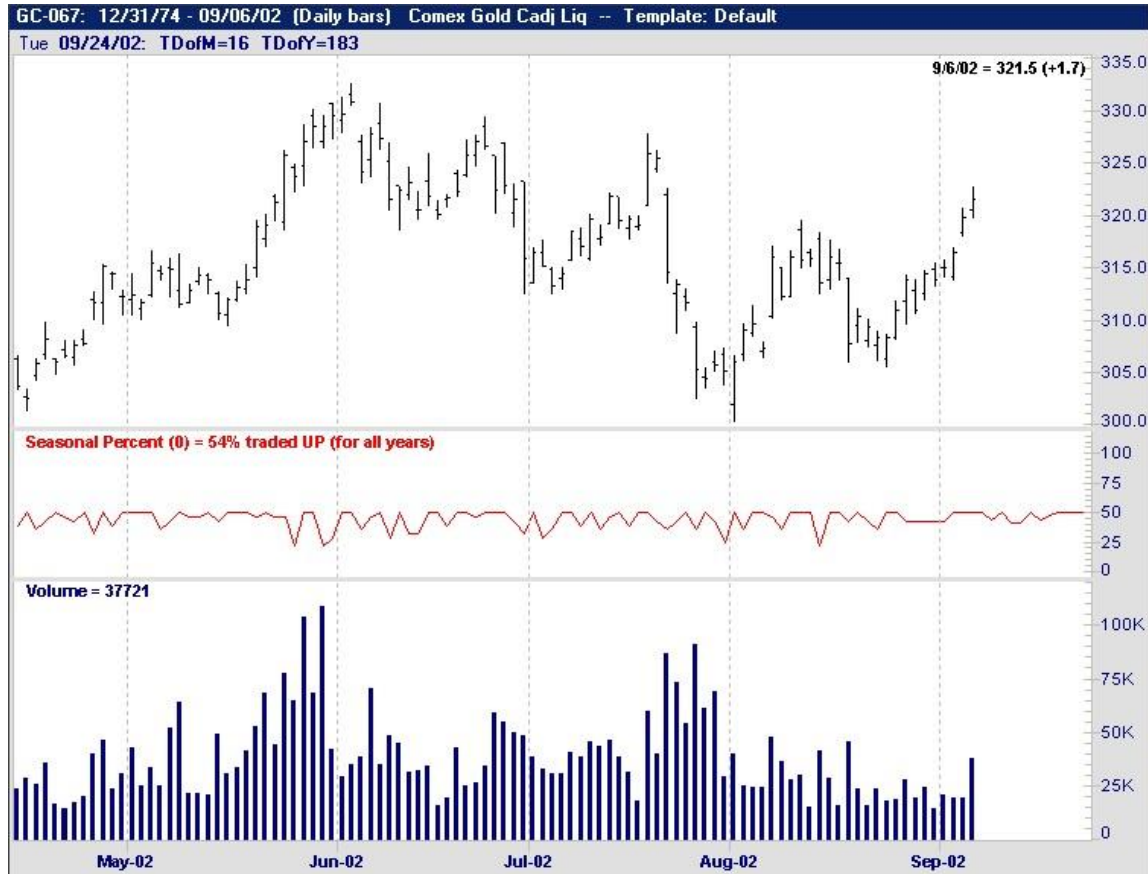
This is the standard Relative Strength Index developed by Welles Wilder. RSI is a very popular price oscillator used to find divergence as well as overbought/oversold conditions in a market. It is also used to measure the internal strength of a security.



<u>Inputs:</u> <u>Bars used in Calculation</u> (defaults to 7 bars) <u>ShowInitialBars</u>	<u>Req./Opt.:</u> Req. Req.	<u>Type:</u> Indicator	<u>Returns:</u> Value of the RSI indicator.
<u>Filter Criteria Uses:</u> (Example Only) If the 7 bar RSI has broken above the 75 line.	<u>Syntax:</u> Crosses Above (RSI(7,F), 75)		

Seasonal Percent

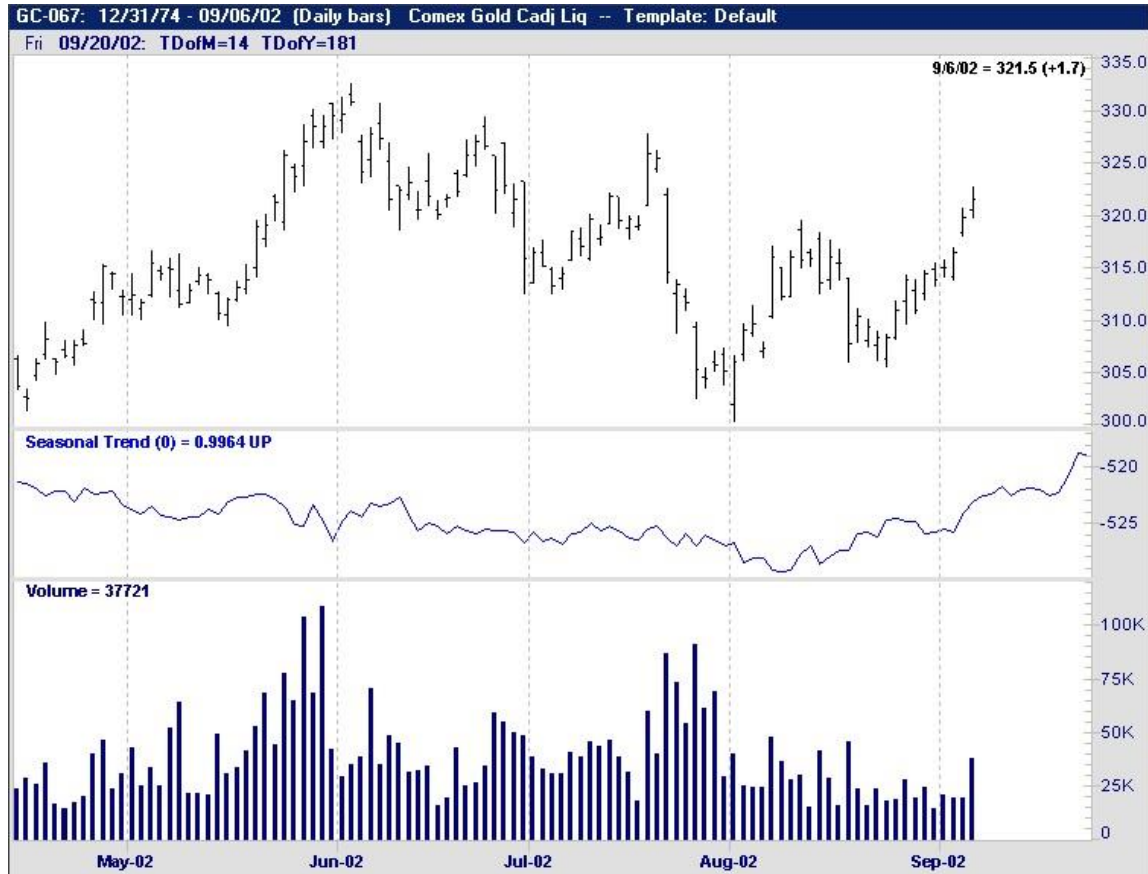
This indicator is used to find the up/down change of a bar as a percentage relative to past actions. It will return the up/down change of a bar compared to all years it has traded on that particular trading day of year.



<u>Inputs:</u> <i>UseAnnualDetrend</i>	<u>Req./Opt.:</u> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Percentage that the security has changed for that trading day.
<u>Filter Criteria Uses:</u> (Example Only) If the Seasonal Percent indicator factoring in the annual detrend is at or above 50 percent.	<u>Syntax:</u> Seasonal Percent (0) >= 50		

Seasonal Trend

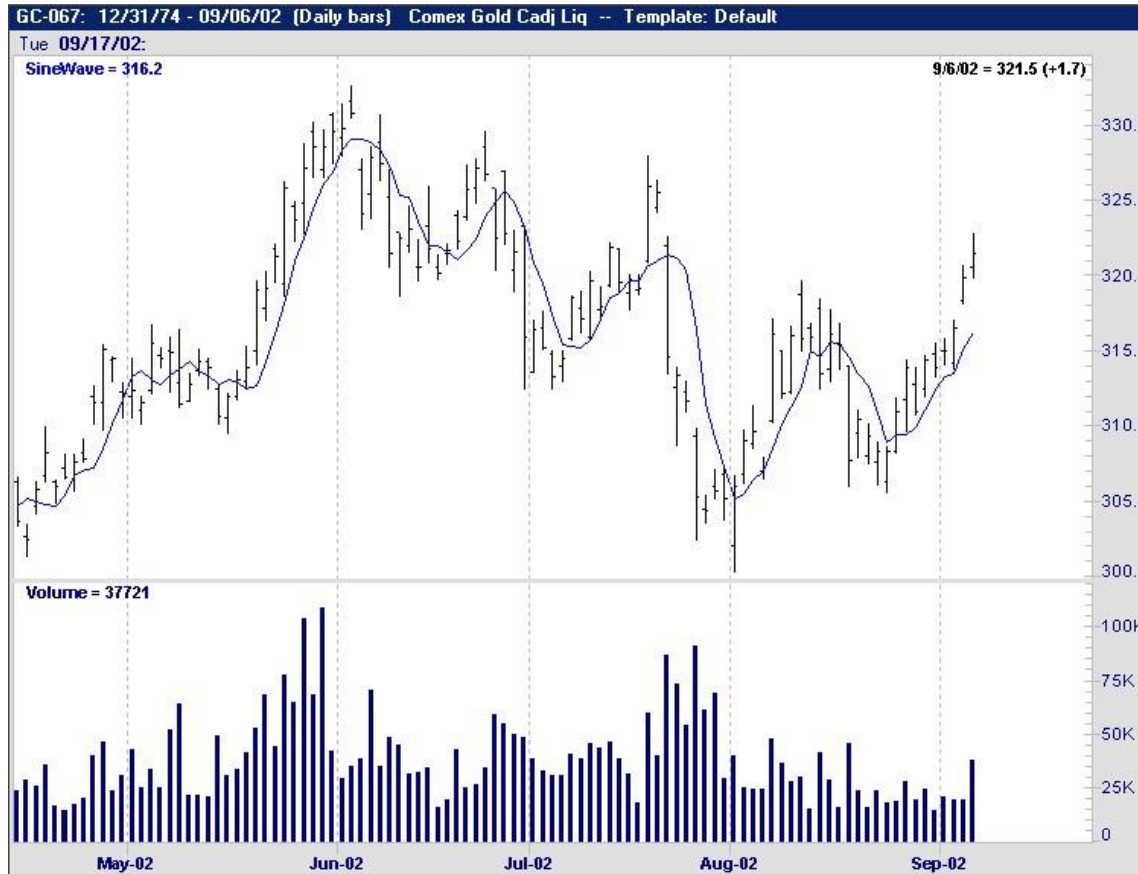
This indicator measures the trend of the security based on seasonal data.



<u>Inputs:</u> UseAnnualDetrend	<u>Req./Opt.:</u> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Value of the Seasonal Trend line.
<u>Filter Criteria Uses:</u> (Example Only) If the Seasonal Trend (using 0 for the Annual Detrend) is the highest it has been in 2 days.	<u>Syntax:</u> Highest (Seasonal Trend (0), 2)		

SineWave

Developed by Patrick Lafferty, this is the sine weighted moving average.



<u>Inputs:</u> None	<u>Req./Opt.:</u> None	<u>Type:</u> Indicator	<u>Returns:</u> Value of the Sign Wave line.
<u>Filter Criteria Uses:</u> (Example Only) If the Sine Wave indicator crosses below the low.	<u>Syntax:</u> Crosses Below (Sine Wave, Low)		

STD Devs As Value

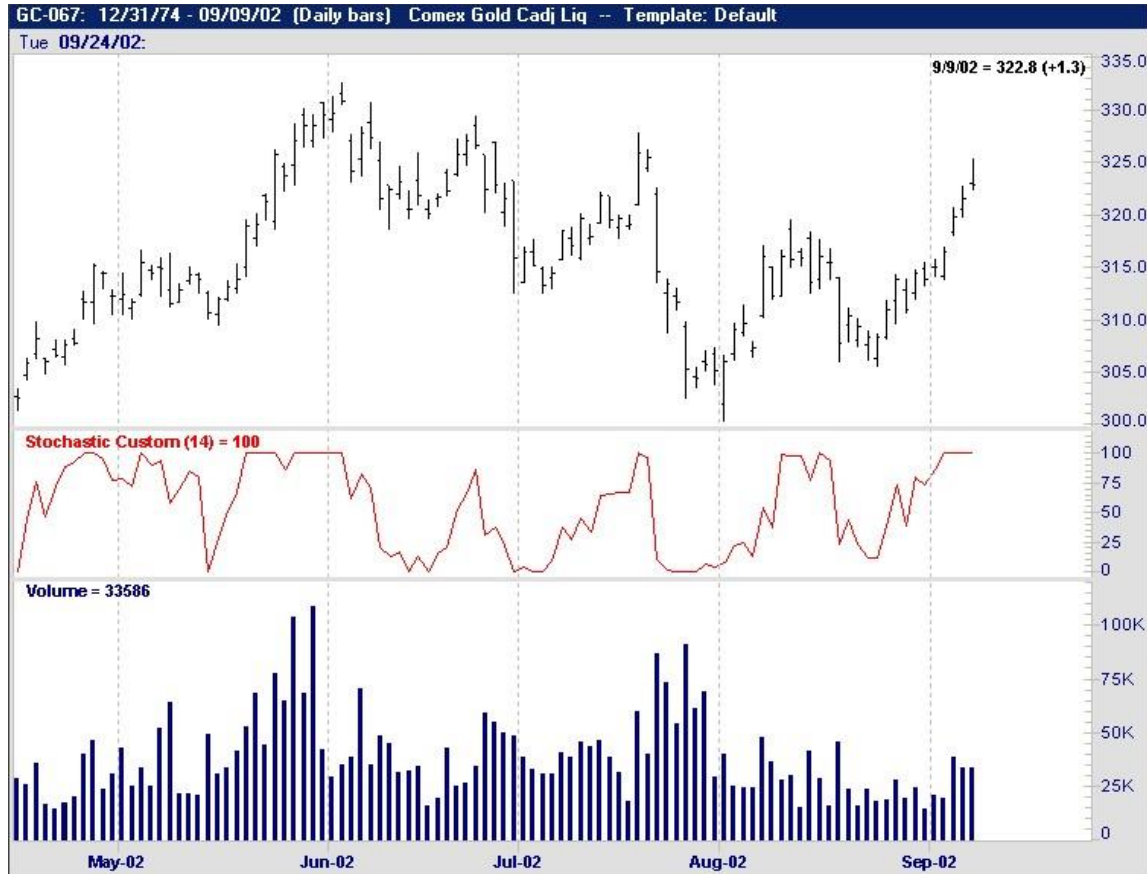
This returns the value at the specified number of standard deviations from the expressions average. If NumStdDevs is negative, then the value returned will be below the average.



<u>Inputs:</u> Expression (defaults to Close) NumBars NumStdDevs	<u>Req./Opt.:</u> Req. Req. Req.	<u>Type:</u> Math	<u>Returns:</u> The value at the number of standard deviations from the expressions average.
<u>Filter Criteria Uses:</u> (Example Only) If the Std Dev As Value of 7 bars (using 1 as the NumStdDevs) is below the High.	<u>Syntax:</u> StdDevAsValue (7,1) < High		

Stochastics Custom

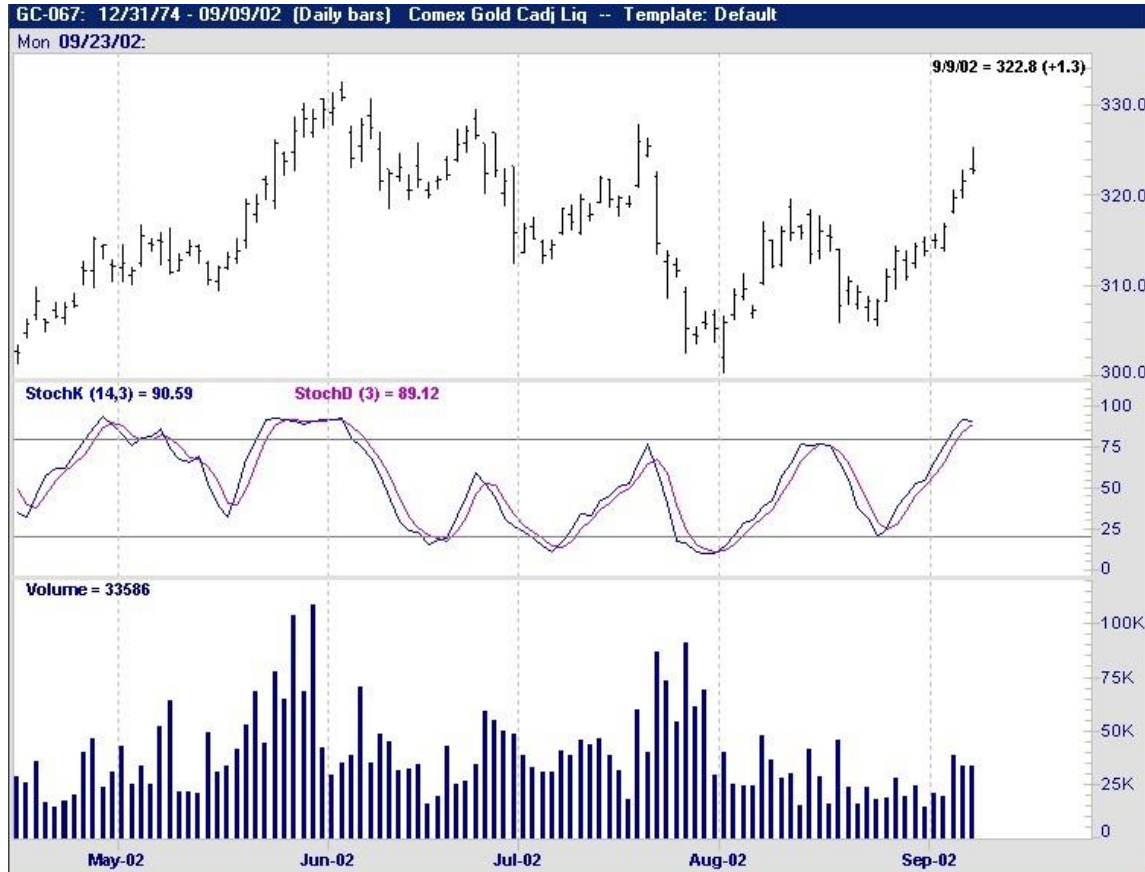
This indicator allows the user to define the parameters for a Stochastic indicator. The current value is expressed as a percentage between the lowest and highest that it has been over the previous X number of bars. The numbers will be between 0 (when at the lowest) to 100 (when at the highest). By default Stochastic Custom will calculate by using the close of each bar.



<p><u>Inputs:</u></p> <p><u>Expression</u> (only for FilterCriteria, Custom Indicator, or Highlight Bar)</p> <p><u>Bars used in Calculation</u></p>	<p><u>Req./Opt.:</u></p> <p>Req.</p>	<p><u>Type:</u></p> <p>Indicator</p>	<p><u>Returns:</u></p> <p>Value of the StochCustom line in a range from 0 to 100.</p>
<p><u>Filter Criteria Uses:</u> (Example Only)</p> <p>If the 14 bar Stochastic Custom (of the Close) indicator crosses below the zero line.</p>	<p><u>Syntax:</u></p> <p>Crosses Below (StochCustom(Close,14), 0)</p>		

Stochastics %K, %D

This indicator has two forms, a Stoch %K, and a Stoch %D. Stochastics measures the closing price of a security and its relationship to its high/low values over a specified amount of time. %D is the smoothed %K, and %K is the smoothed %R. A large number in either the %K or %D fields will result in a slower or smoother oscillator.

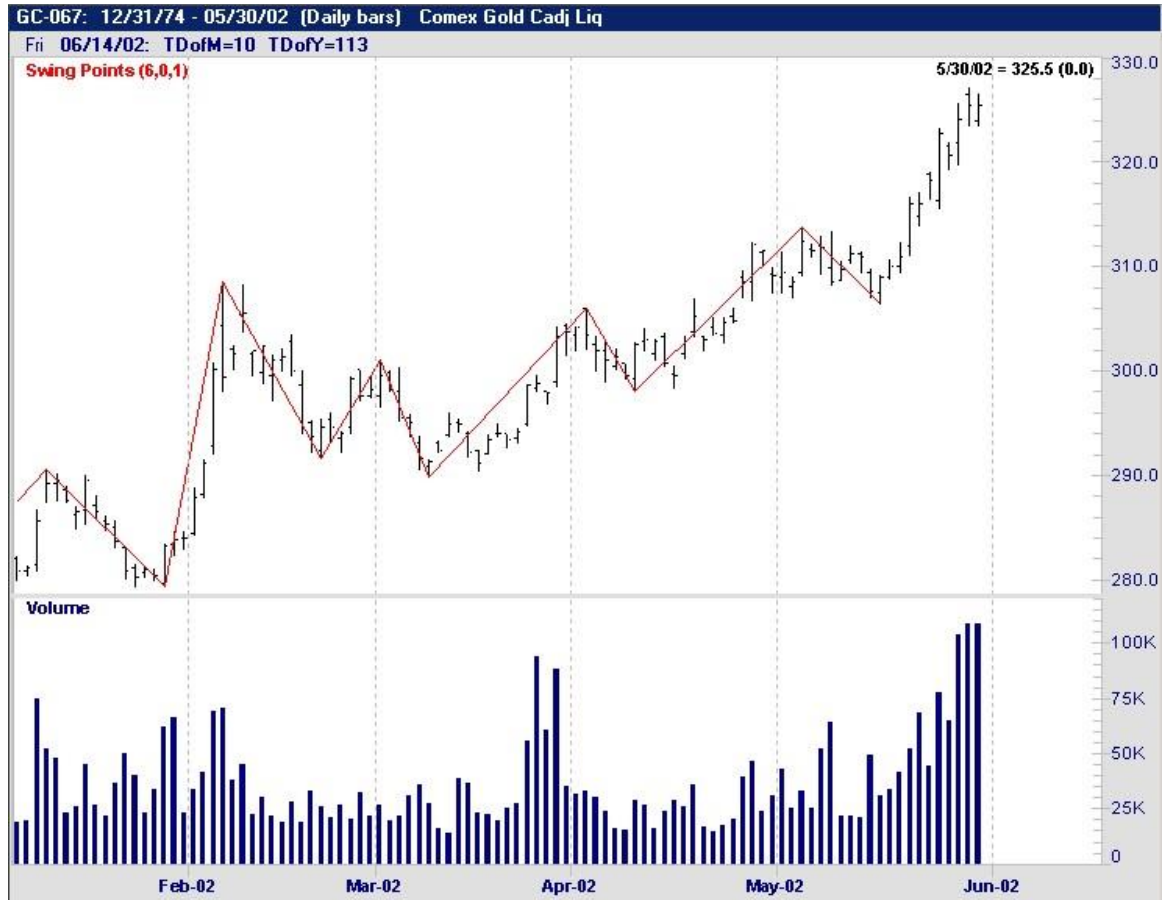


Inputs: StochK	Req./Opt.:	Type:	Returns:
<u># of Bars</u> (used in calculation) (defaults to 14)	Req.	Indicator	Value of the Stochastics %K line.
<u>PercentK</u>			

Inputs: StochD	Req./Opt.:	Type:	Returns:
<u># of Bars</u> (used in calculation) (defaults to 14)	Req.	Indicator	Value of the Stochastics %D line.
<u>PercentK</u> (defaults to 3)	Req.		
<u>PercentD</u> (defaults to 3)	Req.		

Swing Points

Swing Points are used solely for charting purposes. They allow the user to analyze prices as they swing from major highs to major lows and vice versa.



<p><u>Inputs:</u></p> <p>Strength</p> <p>SwingPointMethod</p> <p>AltMode</p>	<p><u>Req./Opt.:</u></p> <p><i>Req.</i></p> <p><i>Req.</i></p> <p><i>Req.</i></p>	<p><u>Type:</u></p> <p>Indicator</p>	<p><u>Returns:</u></p> <p><i>None</i></p>
<p><u>Filter Criteria Uses:</u> (Example Only)</p> <p>This indicator is only used for charting purposes.</p>	<p><u>Syntax:</u></p>		

TEMA

Developed by Patrick Mulloy, this trend indicator is an acronym standing for “Triple Exponential Moving Average”. Although you would think that it is just a moving average of a moving average of a moving average, it is actually a composite of a single exponential MA, a double exponential MA, and a triple MA. TEMA was basically designed to lessen the lag of a regular exponential moving average



<u>Inputs:</u>	<u>Req./Opt.:</u>	<u>Type:</u>	<u>Returns:</u>
<u>Expression</u>	<i>Req.</i>	Indicator	Value of the TEMA line.
<u>Period</u>	<i>Req.</i>		

Filter Criteria Uses: (Example Only)

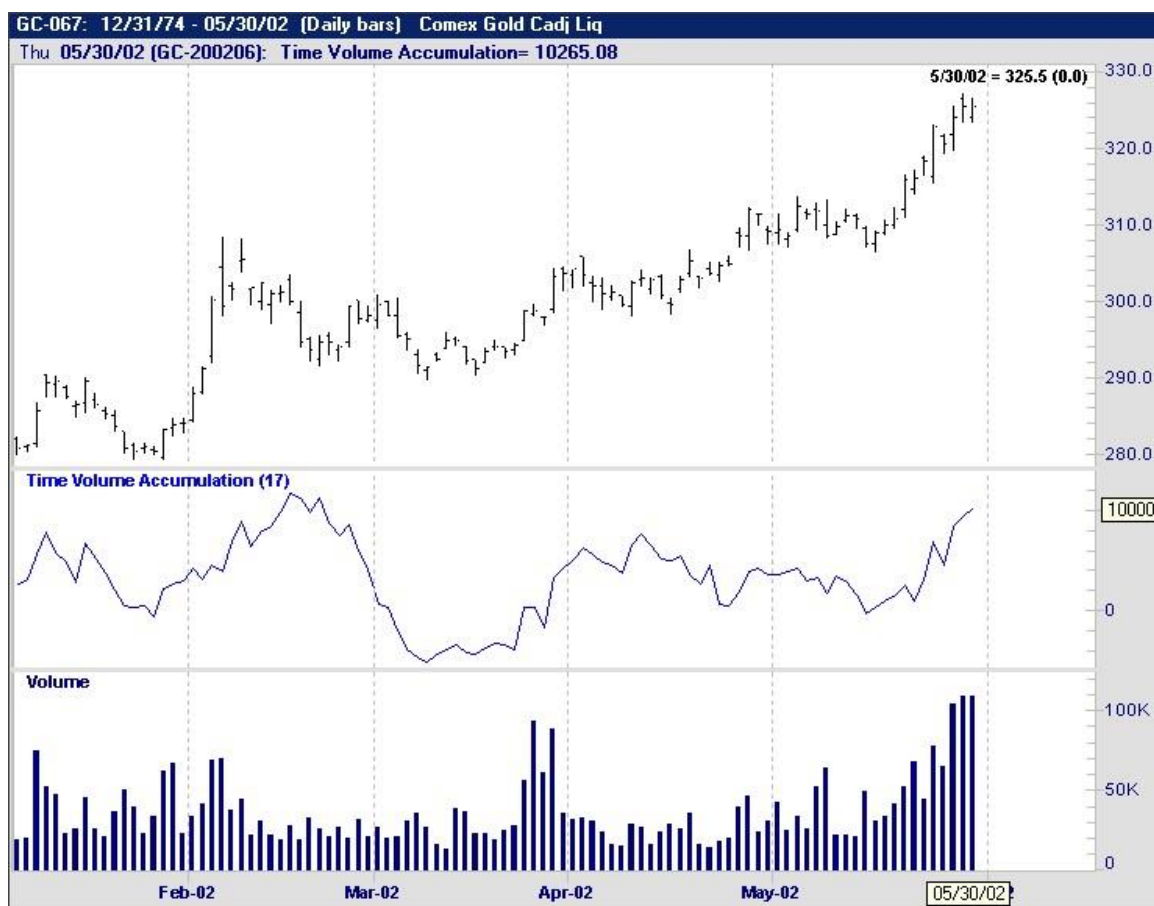
If the TEMA indicator crosses below the high yesterday.

Syntax:

Crosses Below (TEMA(7), High.1)

Time Volume Accumulation

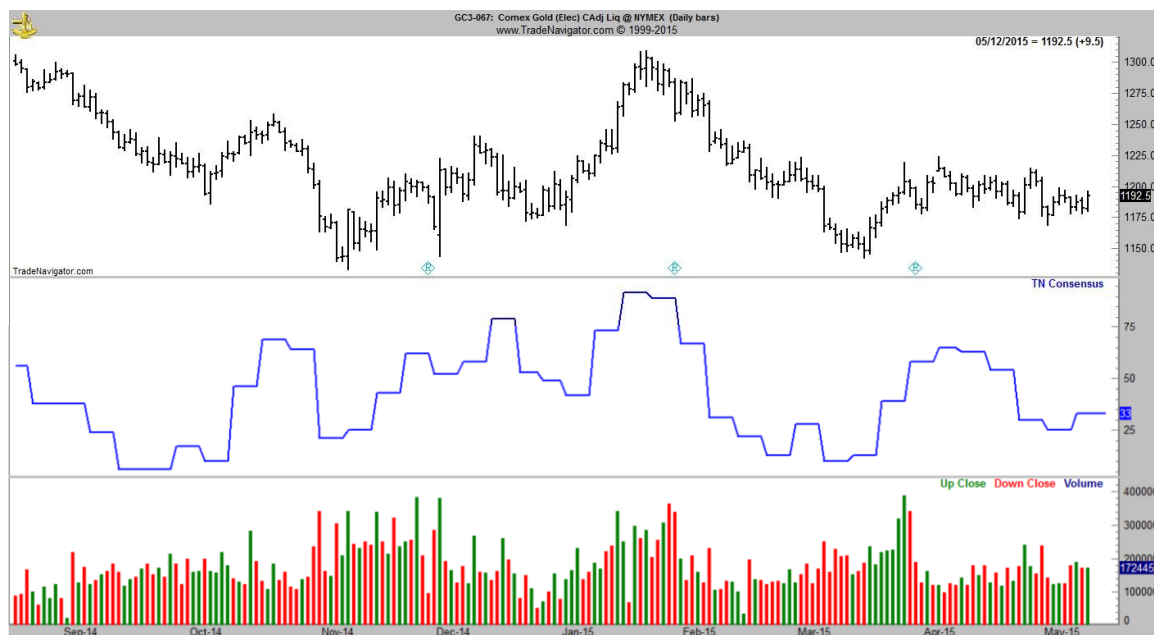
The Time Volume Accumulation indicator is an accumulation/distribution indicator utilizing a moving average of price change and volume.



<u>Inputs:</u> <u>NumBars</u> (defaults to 17)	<u>Req./Opt.:</u> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Value of the Time Volume Accumulation line.
<u>Filter Criteria Uses:</u> (Example Only) If the 17 bar Time Volume Accumulation indicator is less than it was yesterday and the close is greater than it was yesterday.	<u>Syntax:</u> Time Volume Accumulation(17) < Time Volume Accumulation(17).1 and Close > Close.1		

TN Consensus

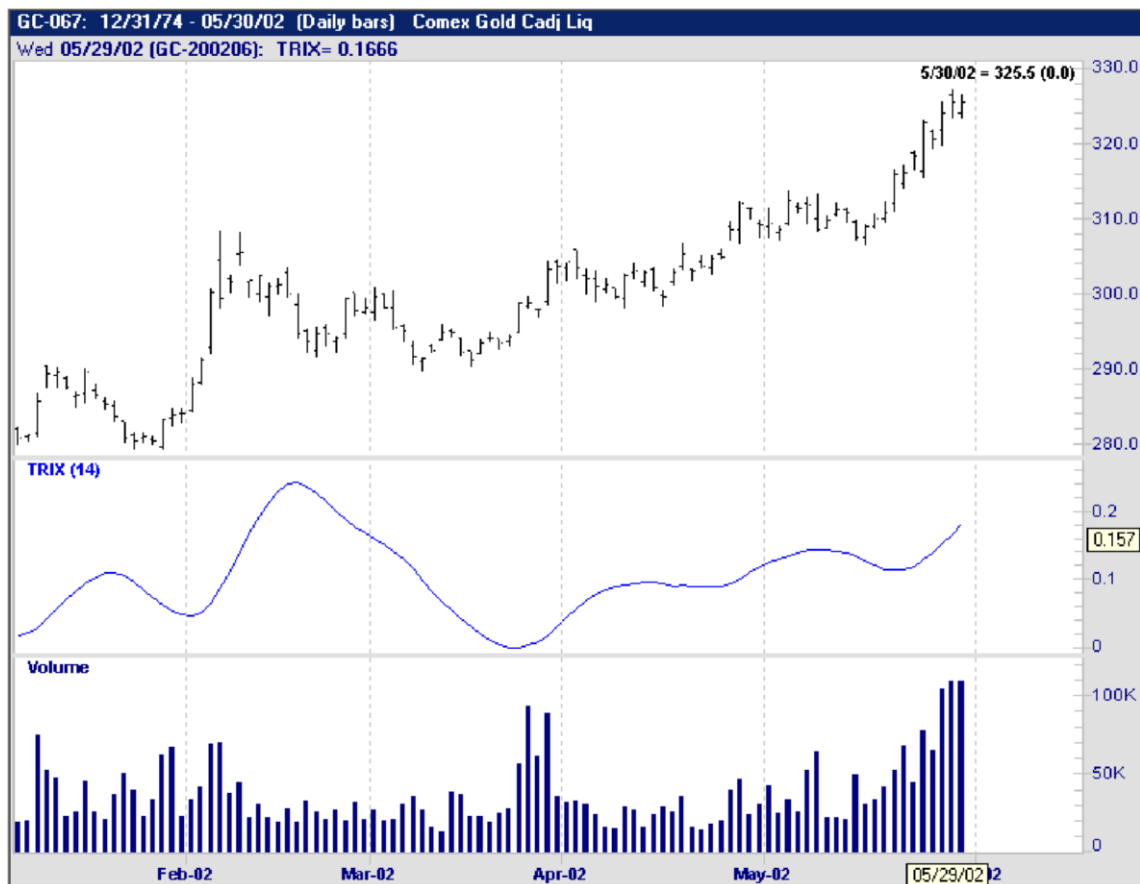
TN Consensus is a precise measure of investor sentiment, which will help users find when the majority of advisors are bullish and when they are bearish.



<u>Inputs:</u> None	<u>Req./Opt.:</u> None	<u>Type:</u> Data	<u>Returns:</u> Value of the TN Consensus line.
<u>Filter Criteria Uses:</u> (Example Only) If the TN Consensus crosses above the 50 line.	<u>Syntax:</u> IF Crosses Above (TN Consensus, 50)		

TRIX

This is a momentum indicator that is used to calculate the rate of change in percentages of a triple smoothed exponential moving average. It also uses the close to calculate the exponential moving average. Oscillating around the zero line, the exponential smoothing cuts out any insignificant cycles.



<u>Inputs:</u> <i><u>Expression</u></i> (for the exponential moving average) <i><u>Period</u></i>	<u>Req./Opt.:</u> <i>Req.</i> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Value of the TRIX line.
<u>Filter Criteria Uses:</u> (Example Only) If the Trix of 14 bars is greatest it has been in 20 days.	<u>Syntax:</u> Highest (Trix (Close,14), 20)		

True High

This is the higher value of the current bar's high, or the previous bar's close. Below we have each bar's True High represented as a line indicator.



<u>Inputs:</u> None	<u>Req./Opt.:</u> Req.	<u>Type:</u> Indicator	<u>Returns:</u> Value of the highest of either the current high, or the previous close.
<u>Filter Criteria Uses:</u> (Example Only) If the True High today is greater than the True High of 30 days ago.	<u>Syntax:</u> TrueHigh > TrueHigh.30		

True Low

This is the lower value of the current bar's low, or the previous bar's close. Below we have each bar's True Low represented as a line indicator.



<u>Inputs:</u> None	<u>Req./Opt.:</u> None	<u>Type:</u> Data	<u>Returns:</u> The True Low of a specified bar.
<u>Filter Criteria Uses:</u> (Example Only) If the True Low is lower than 30 days ago.	<u>Syntax:</u> TrueLow < TrueLow.30		

True Range

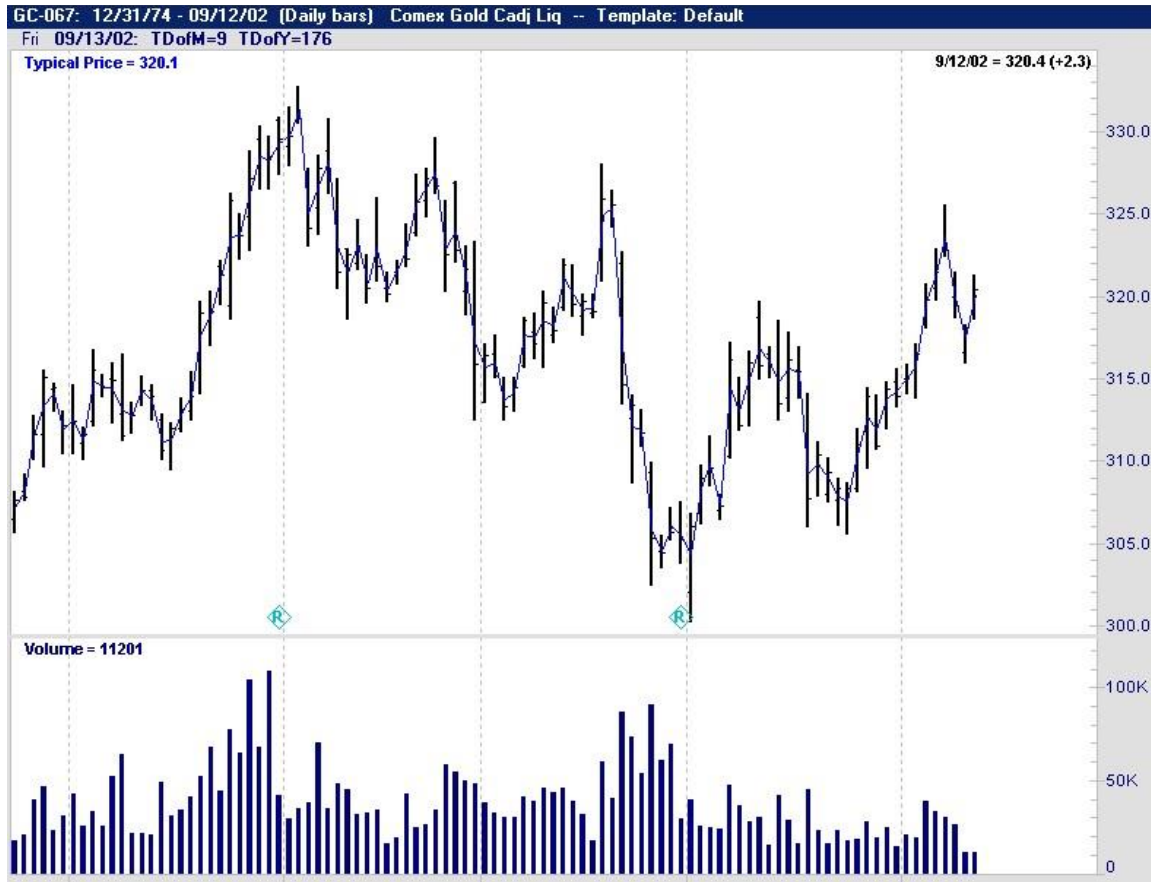
This function/indicator is calculated by taking the True High – True Low. Please see [TrueHigh](#) and [TrueLow](#) (pages 95 and 96) for further explanations.



<u>Inputs:</u> None	<u>Req./Opt.:</u> None	<u>Type:</u> Data	<u>Returns:</u>
<u>Filter Criteria Uses:</u> (Example Only) If the True Range is greater than it was 10 days ago.	<u>Syntax:</u> True Range > True Range.10		

Typical Price

This is calculated by taking the average of the high, low, and close of a bar, and then dividing by three.



<u>Inputs:</u>	<u>Req./Opt.:</u>	<u>Type:</u>	<u>Returns:</u>
None	Req.	Indicator	(High + Low + Close)/ 3

Filter Criteria Uses: (Example Only)

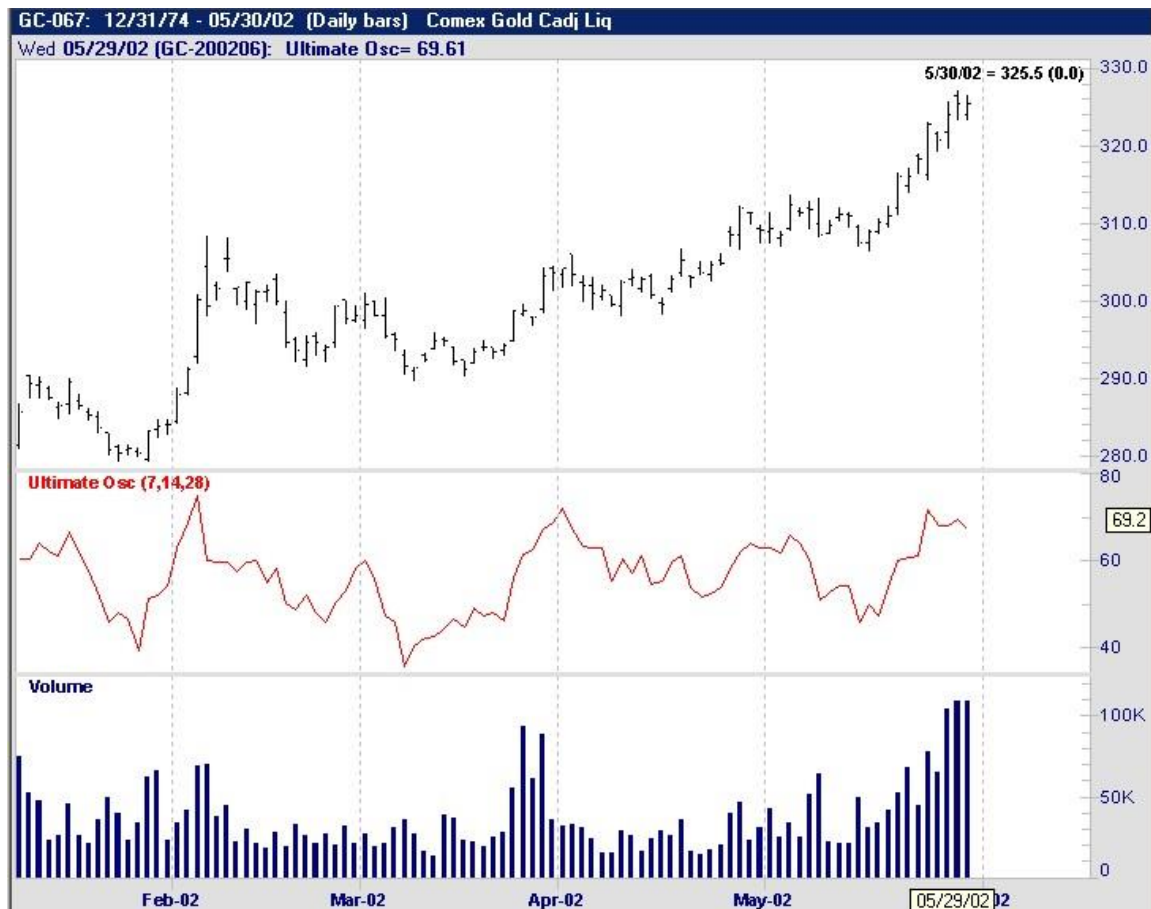
If the Typical Price for today is greater than the Typical Price of yesterday.

Syntax:

Typical Price > Typical Price.1

Ultimate Oscillator

This is the Ultimate Oscillator developed by a third party Educator, that uses weighted periods of 7,14 and 28 in the averages. 7 being the fast period, 14 being the medium period and 28 being the slow period. The original Educator adds that there is a bullish divergence when the price makes a lower low but the Ultimate Oscillator does not. A bearish divergence is when the price makes a higher high when the Ultimate Oscillator does not.



<u>Inputs:</u> <i>FastBars</i> <i>Medium Bars</i> <i>SlowBars</i>	<u>Req./Opt.:</u> <i>Req.</i> <i>Req.</i> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Value of the Ultimate Oscillator line.
<u>Filter Criteria Uses:</u> (Example Only) If the Ultimate Oscillator using 7,14,28 crosses above 60.	<u>Syntax:</u> Crosses Above (UltimateOsc (7,14,28), 60)		

VHF

This is the Vertical Horizontal Filter indicator that is used to help determine if a security is in a trending movement or a sideways movement. There are 3 ways of using this indicator:

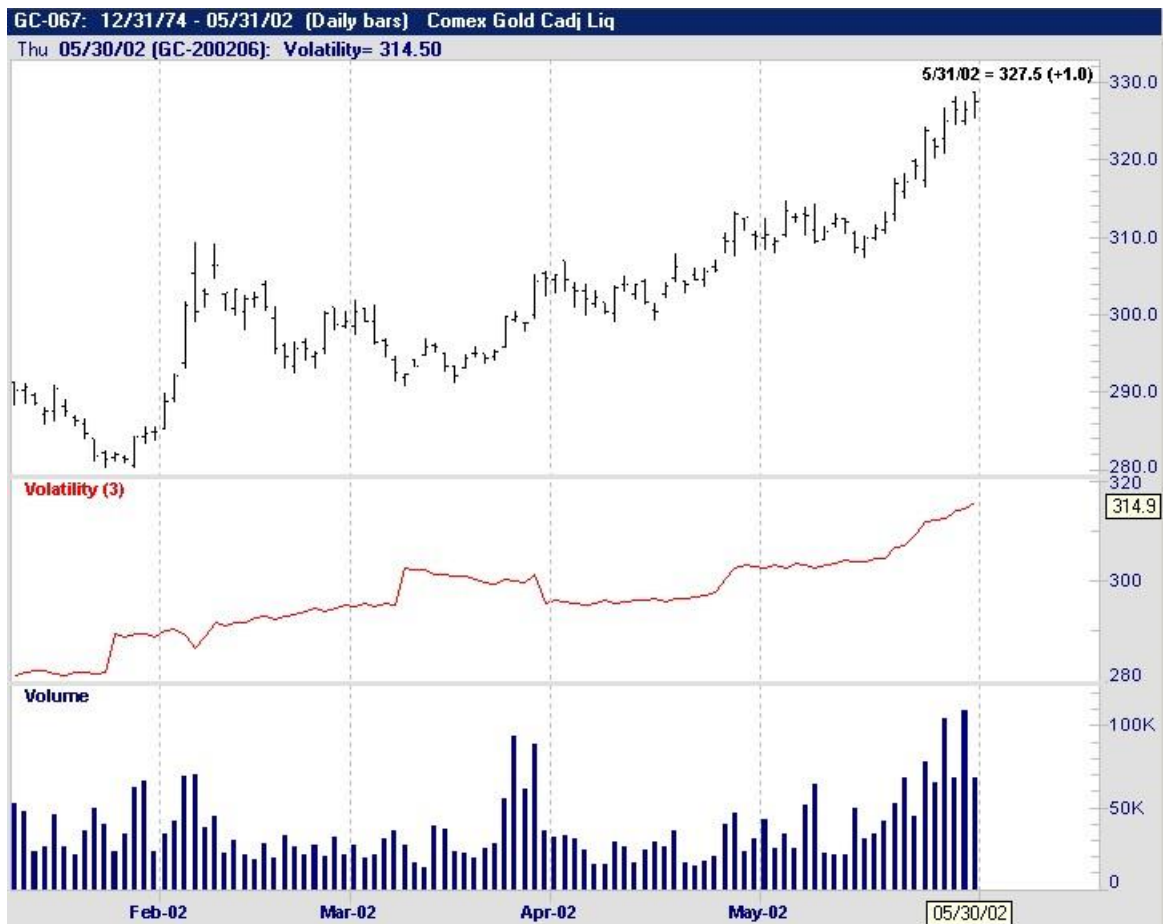
1. Helps in determining the degree at which the security is trending. The higher the VHF, the higher the degree of trend.
2. You can also use the general direction of the VHF to tell whether a trending or sideways phase is developing.
3. Also, some use this indicator as a contrarian indicator.



<u>Inputs:</u> <u>Period</u>	<u>Req./Opt.:</u> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Value of the VHF line.
<u>Filter Criteria Uses:</u> (Example Only) If the VHF using a period of 14 is at the highest point in 30 days.	<u>Syntax:</u> Highest (VHF(14), 30)		

Volatility

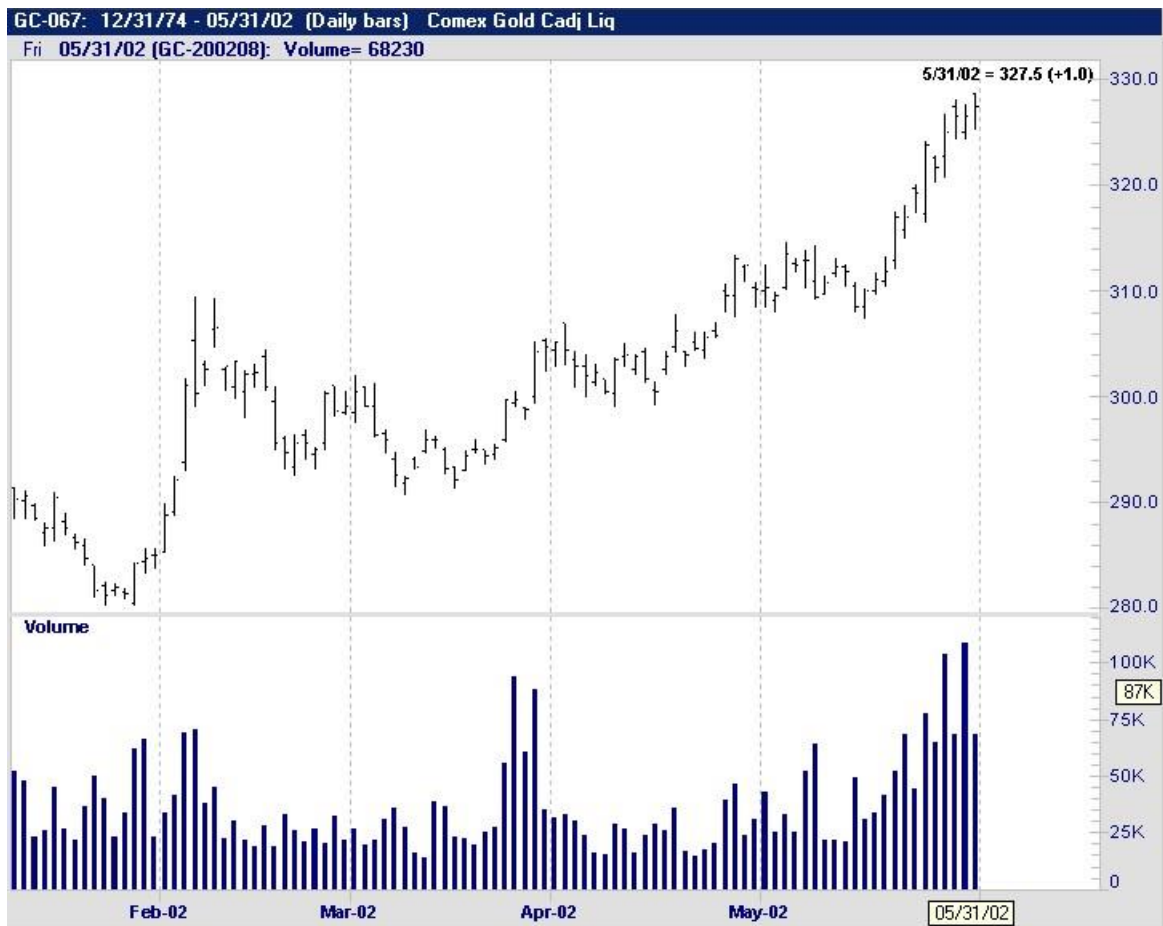
This is Welles Wilders volatility indicator that is calculated by using the Average True Range of 7 bars.



<u>Inputs:</u> <i>K</i> (defaults to 3)	<u>Req./Opt.:</u> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Value of the Volatility line.
<u>Filter Criteria Uses:</u> (Example Only) If the Volatility of 3 bars is at the highest it has been in 20 days.	<u>Syntax:</u> Highest (Volatility (3), 20)		

Volume

This is the volume of the current price bar. Please remember that volume is not released until the following trading day (one-day delay). Volume that is displayed for Genesis Indices is the total amount of ticks for that particular index.



<u>Inputs:</u> None	<u>Req./Opt.:</u> None	<u>Type:</u> Data	<u>Returns:</u> Volume for the current bar.
<u>Filter Criteria Uses:</u> (Example Only) If the Volume is the highest it has been in 30 days.	<u>Syntax:</u> Highest (Volume, 30)		

Volume Oscillator

This is an indicator that is calculated by subtracting a fast moving average of the volume from a slow moving average of the volume.



<p><u>Inputs:</u></p> <p><i>FastBars</i> (defaults to 14)</p> <p><i>SlowBars</i> (defaults to 34)</p>	<p><u>Req./Opt.:</u></p> <p><i>Req.</i> <i>Req.</i></p>	<p><u>Type:</u></p> <p>Indicator</p>	<p><u>Returns:</u></p> <p>Value of the Volume Oscillator line.</p>
<p><u>Filter Criteria Uses:</u> (Example Only)</p> <p>If the Volume Oscillator using 14, and 34 crosses above zero.</p>	<p><u>Syntax:</u></p> <p>Crosses Above (VolumeOsc (14, 34), 0)</p>		

Volume ROC

This is the Volume Rate of Change, which calculates the rate of change of the volume in the period that is specified. It is used to show the speed at which the volume is changing.



<u>Inputs:</u> <u>Period</u>	<u>Req./Opt.:</u> <i>Req.</i>	<u>Type:</u> Indicator	<u>Returns:</u> Value of the Volume ROC line.
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Filter Criteria Uses: (Example Only)

If the Volume ROC using a period of 1 crosses below zero.

Syntax:

Crosses Below (VolumeROC (1), 0)

AccumDist

This was developed by a third party Educator, to identify whether buyers or sellers control the market. *Accumulation* is used as a term to describe a market controlled by buyers, and *Distribution* is a term used to describe a market controlled by sellers. Distribution is when the price makes new highs but the A/D is failing to make new highs.

Accumulation is when the prices make new lows but the A/D has failed to make new lows.



<u>Inputs:</u> None	<u>Req./Opt.:</u> Req. Req.	<u>Type:</u> Indicator	<u>Returns:</u> Value of the Williams Accumulation/ Distribution line.
<u>Filter Criteria Uses:</u> (Example Only) If the close is the lowest close in 20 days, but the A/D is not the lowest it has been in 20 days.	<u>Syntax:</u> Lowest (Close, 20) and not Lowest (Williams A/D, 20)		

Studies:

ADX – This study includes only the ADX line in a single pane by itself.

Bollinger Bands – This study includes the Bollinger Upper and Lower bands, and also a Moving Average of 18 bars.

Cash Flow Accumulation – This study includes the Cash Flow Accumulation indicator in a single pane by itself. It uses a price mode of 3 as a default, which means that it uses the close in its calculation.

COT Net Postions – This study includes the COT Net Commercial, COT Large Speculators, COT Small Speculators, and a zero line. These are all in the same pane to show divergence between the speculators.

COT Sentiment – This study includes the COT Sentiment Index with a 3 year look-back, Genesis Sentiment with a 3 year look-back, and the TN Consensus.

DMI – This study includes the 7 bar DMI plus and the 7 bar DMI minus indicators in one pane.

Inside & Outside Bars – These are displayed solely as highlight bars, showing you the inside days in one color and the outside days in another.

Keltner Channels – This study includes the Keltner Upper band, Keltner Lower band, and a 18 bar moving Average.

MACD – This study includes the MACD with a fast period of 12, a slow period of 26, an exponential Moving Average of 9 bars, and finally the Difference line.

Market Spread – This study allows the user to spread a future contract against another security to find the difference between the two. The Spread difference, and price bars for the other security is what will be found in that particular pane. By default we use the \$SPX (S & P 500 Index) in the Market Spread study.

Percent Bands – This study will be placed on top of the Price pane, including the Percent upper band, Percent Lower Band, and a Moving Average Method of 18 bars using the simple method.

Power Balance Accumulation – This study will only include the Power Balance Accumulation of 7 bars.

Relative Strength Ratio – This study shows the Relative Strength Ratio line as well as user defined security prices in one pane.

RSI – This study is simply the RSI line as well as horizontal lines indicating overbought/oversold conditions at 20 and 80.

Seasonals – This study is comprised of the Seasonal Percent indicator as well as the Seasonal Trend indicator.

Stochastics – This study is comprised of the StochK of 14 bars with a 3 bar smoothing factor, as well as the StochD using 3 bars. It will also provide the overbought/oversold lines at 20 and 80.

Time Volume Accumulation – This study will provide the user with the TVA line as well as a zero line.

Turtle Channels – This study is comprised of highlight bars indicating the Lowest Low of 20 bars, and the Highest High of 20 bars.

Up & Down Bars – This study will highlight all bars that are Up or Down bars using different colors to designate Up/Down bars.

Volume – This study is simply the Volume of a particular security, in Histogram format.

Volume & OI – This study is comprised of the Volume of a security as well as the Open Interest line in the same pane.

Wilders Parabolic – This study is the Parabolic indicator set up as Welles Wilder sets it up. It uses a [UpLow](#) of 0, [AF](#) of .02, and a [MaxAF](#) of .2.

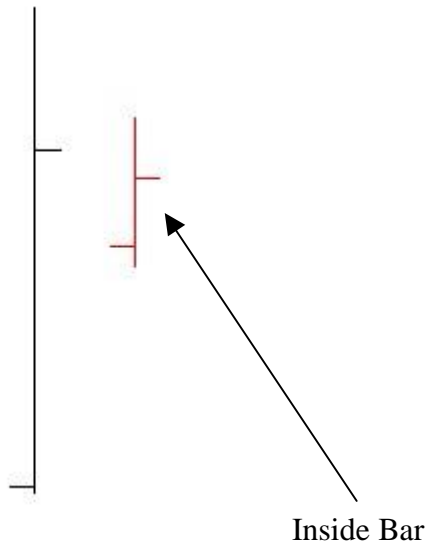
Wilders Volatility – This study is simply the Volatility line with K being 3. It is plotted in the top pane with the price of the security.

Highlight Bars:

Common Highlight Bars:

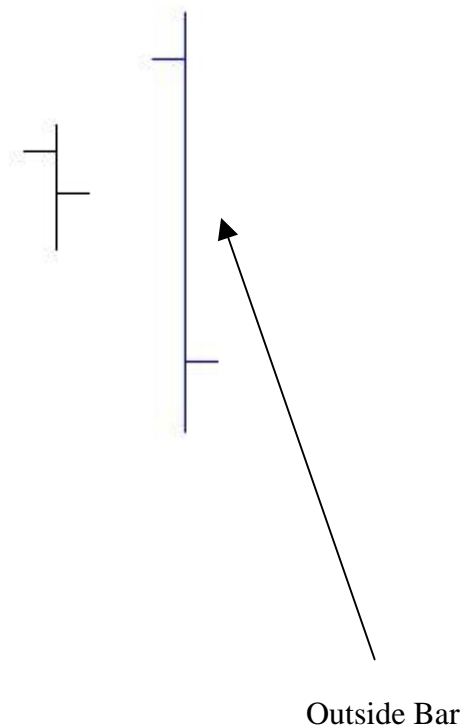
Higher – This will show all bars that have a higher close than “N” bars ago. “N” being the amount of bars, specified by the user.

Inside Bar – This will show all bars that did not trade higher nor lower than the previous bar.



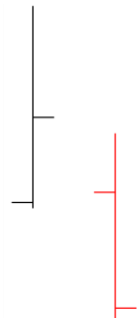
Lower - This will show all bars that have a lower close than “N” bars ago.

Outside Bar – This will show all bars that traded higher and lower than the previous bar (higher high and lower low).



All Highlight Bars:

Down Range – This is a bar that has a lower low and a lower high than the previous bar.



Friday – This pattern will highlight all bars that are Fridays.

Friday Before Options Expire – This pattern will highlight all bars that are the Friday before the option expires.

Monday – This pattern will highlight all bars that are Mondays.

Tuesday – This pattern will highlight all bars that are Tuesdays.

Wednesday - This pattern will highlight all bars that are Wednesday.

Thursday – This pattern will highlight all bars that are Thursdays.

Up Range – This is a bar that has a higher low, as well as a higher high than the previous bar.



Inputs:

AltMode – Use one of the following as the AltMode parameter:

0 – This will not alternate highs or lows, showing all possible swing points. 1 – This inserts alternates between two like swings. IE. If there are two high swing points in a row, this altmode inserts a low swing point at the lowest low between them. 2 – This will force the confirmation of opposite swings. IE If there is a high swing point, this altmode will ignore any additional high swings until after the next low swing.

Acceleration Factor - This is one of a progression of numbers starting at .02 and ending with .2. In the indicator Parabolic, AF is increased .02 for each day a new high was made. The defaults for Parabolic are .02 and a MaxAF of .2.

MaxAF – Is the maximum amount of acceleration factor that you would like the parabolic indicator to use. In Wilders Parabolic the default for MaxAF is .2.

Strength – This is the amount of bars that are needed for the swing point calculation. The number of bars that should be used depends on the SwingPointMethod, that can be found here: [SwingPointMethod](#)

Expression – This input can reference anything from Open, High, Low, and Closes, to Moving Averages and MACDs.

Price Mode - 0 = Open

1 = High

2 = Low

3 = Close

4 = Average of High and Low

5 = Average of Open and Close

6 = Average of High, Low and Close

7 = Average of Open, High, Low and Close

StdDev – This is the amount above and/or below a Moving Average, most commonly used in trading bands and many custom bands.

Fast Period, ShortTermAvg or Fast Bars – This is the smaller number of the two moving averages that are used, fast being the shorter moving average and slow being the longer moving average.

Slow Period, LongTermAvg or Slow Bars– This is the larger number of the two moving averages that are used, slow period being the longer moving average and fast period being the shorter moving average.

Period – This is the length of time that you want the indicator to calculate. If you want to calculate for the last 5 days, you would set the Period to 5.

Look-Back Years – This is the time period at which you want the COT index to calculate. Our default value for the look-back years is 3, but users have full control over this time period. To create a weekly or monthly look-back add a “.” before the number.

Look-Back Bars – This is the time period in which you would like certain indicators, such as Will-Val, to calculate.

SignFilter – This is a filter input that allows users to filter for just negative, just positive numbers, or all numbers.

Negative – (-1)

Positive – (+1)

All – (0)

Factor – This is simply the standard deviation from the Moving Average that is used. Make this negative for the lower band, and positive for the upper band.

Period 1 - This is the same as the [*FastPeriod*](#), referencing a fast moving average.

Period 2 – This is the same as the [*SlowPeriod*](#), referencing a slow moving average.

Methods – This is the type of average you would like the indicator to calculate.

1 – Simple

2 – Exponential

3 – Weighted

4 – Modified Exponential

Standard Moving Averages, a.k.a Simple moving averages, are calculated by adding the closing prices for the specified amount of days and then dividing them by the number of days that have been used to collect the close prices.

Weighted Moving Averages, are calculated by multiplying each previous day (specified amount of days) by a weight. It is designed to apply more weight on the current data and less weight on past data.

Exponential Moving Averages, are calculated by applying a percentage of the current closing price to yesterdays moving average values.

UpLow – This is what kind of position you want to calculate whether it is long, short or all positions available.

Long – Use the number (1)

Short – Use the number (-1)

All – Use the number (0)

Percent – This input is used to define the percent deviated from the specific indicator that is attached to the Percent Bands. IE. If you attach the percent bands to a 40 bar moving average, the percent deviated is deviating above/below the 40 bar moving average.

UseAnnualDetrend - Set this to “1” if you want to factor out the average annual trend out of the seasonal. Set this to “0” if you want to factor in the average annual trend.

NumStdDevs – This input is the number of Standard Deviations away from the average, specified by the user.

SwingPointMethod -

0 – Normal method that is used when the number of bars are higher/lower on both sides.

1 – Used when a bar closes below the low of the high day.

2 – Used when a bar closes below specified “X” number of consecutive closes.

3 – Used when a bar is completely below the low of the high day.

4 – Used to find any of #1-#3 conditions above.

5 – Used to find either #2 or #3.

Percent K – This parameter controls the smoothing of the %K stochastic calculation. Using 1 would make this a fast stochastic and a value of 3 would make it a slow stochastic.

Percent D – This parameter is the number of bars used to calculate the moving average of %K. By default the %K and %D are the same number, 3.

Show Initial Bars - The idea behind this input is that, for charting purposes using just the “bars used in the calculation” is sufficient, but for back testing purposes more bars are needed for accurate readings. So when set to False the calculation will use 10 times the amount of the “bars used in calculation”. Therefore we recommend for charting purposes set this input to True, but for back-testing, the recommendation is to set it to False.

ValueBar – This specifies the bar relative to the current bar. Negative numbers will project into the future.

Operators:

Operators allow users to separate functions, as well as relate them together. By using these operators, it will allow you to input more than one condition into criteria/rules in both the Chart Navigator and our back-testing software System Navigator.

Ex: IF Close > Open.1 And MovingAvg (Close, 18) > MovingAvg (Close, 40)

In the example above we are using a “>” sign which is a very commonly used operator within our Tradesense language. Also, we used “And” to add another condition to our rule. Following is a list of operators that are available to use within the softwares.

> This is used when you want one function to be greater than the function following the operator.

>= This is used when you want one function to be greater than, or at least equal to, the function following the operator.

< This is used when you want one function to be less than the function that follows the operator.

<= This used when you want one function to be less than, or at least equal to, to the function that follows the operator.

< > This is used when you do not want a function to equal the function that follows the operator.

= This is used when you want two functions to equal one another.

+ This is used to add one or more values together.

- This is used to subtract one or more values from each other.

/ This is used to divide one or more values.

* The asterick sign allows you to multiply two values.

AND This is used when you want to have two or more conditions in a criteria/rule to be true before any action takes place. (Ex: IF Close > Open.1 **AND** Open.1 < Open)

OR This is used when you want one, of a number of conditions, to be true before an action takes place. (Ex: IF Monday **OR** Thursday)

NOT This is usually used in conjunction with the “AND” operator to specify that you do not want a function to be true. (Ex: IF Monday **AND NOT** Inside Day) In the example above, the software will only execute the action or filter if today is Monday and today’s bar is not an inside day.

OF This operator can be used to reference other symbols and bar periods. This operator can be used for highlight bars, indicators and parts of strategy rules, but it cannot be used in a criteria. This is because the criteria are hard coded to reference only daily or weekly data depending on how it is set in the criteria box. There are three ways to use the ‘*of*’ operator.

This is how you reference both another symbol and bar period:

Of “Symbol, Bar period”

Example: Close Of “SP-067, 13 Minutes”

This is how you reference only a different symbol:

Of “Symbol”

Example: MovingAvg (Close, 7) Of “ES-067”

This is how you reference a different time frame (*note: there is a comma inside the quote*):

Of “, Bar Period”

Example: Range Of “, Daily”

Types of Price Charts:

OHLC:

This stands for Open, High, Low, Close bars. Open being the left most point, high being the very top point of the bar, low being the very bottom point of the bar, and close being the right most point.



Line Chart:

One of the simplest charts to follow are close line charts. A single line represents the securities closing price of the day. The line will not show the open, high, or low of the day, only the close. On Genesis charts, the open, high, low, and close prices are displayed at the top of the chart, but the close line only tracks the closes.



Candle Stick:

A Japanese charting bar, developed in 1600, was used as a method of analyzing their rice contract prices. In many ways the candle stick chart is similar to the OHLC bar, but many use this method of charting to show the relationship between the open and close prices. An upper shadow, real body, and lower shadow make up the main segments to a candle stick bar. The high is represented by the upper shadow, the real body is filled in if the close is less than the open, (empty otherwise), and the low is represented as the lower shadow. If the open is greater than the close, then the open is represented as the upper boundary of the real body, and the close is represented by the lower most boundary of the real body. You can tell if the open is greater than the close if the real body is filled in.

