

The background image is a composite of financial data visualizations. On the left, there are vertical bars in green and red, resembling a bar chart. In the center and right, there are line graphs with blue and red lines, and a candlestick chart. The overall theme is financial analytics and data visualization.

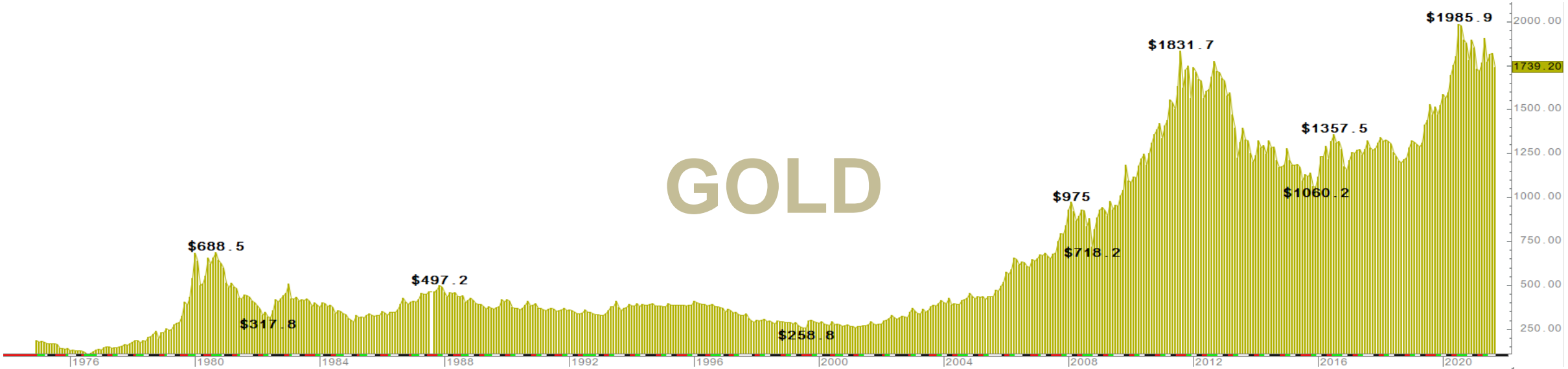
Charting and Analytics of Precious Metals

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GOLD



SILVER





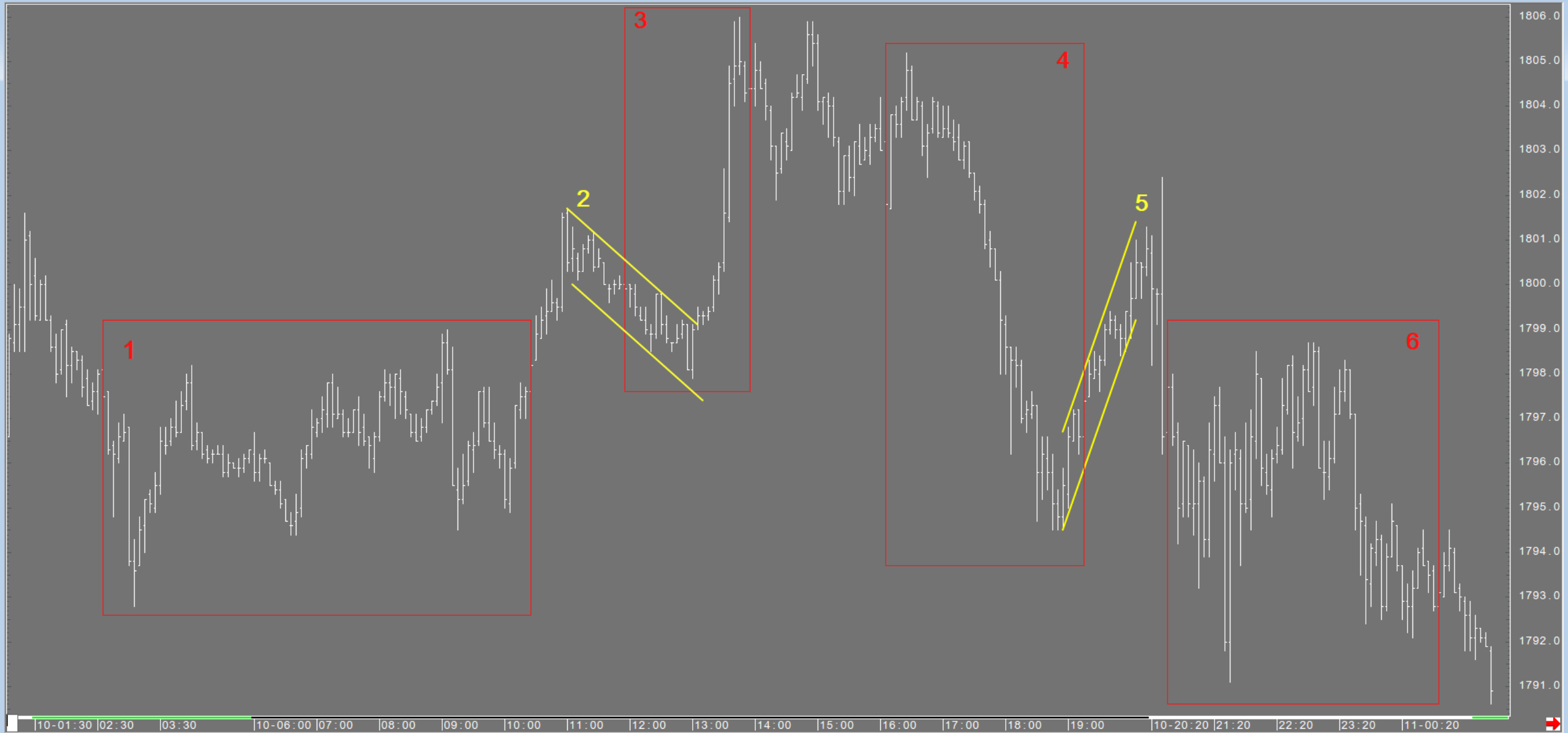
“The trend is your friend.....”



Different types of trends:

-**Linear:** a linear trend is observed when the line that appears to best fit the set of data studied is a straight line (as opposed to a curved line). Whether it is upward, downward or straight makes no difference. In technical analysis, a certain degree of approximation is allowed.

-**Exponential:** an exponential trend line fits numbers raised to an exponent, meaning a set of values that raise in a very rapid manner.





Linear vs non-linear



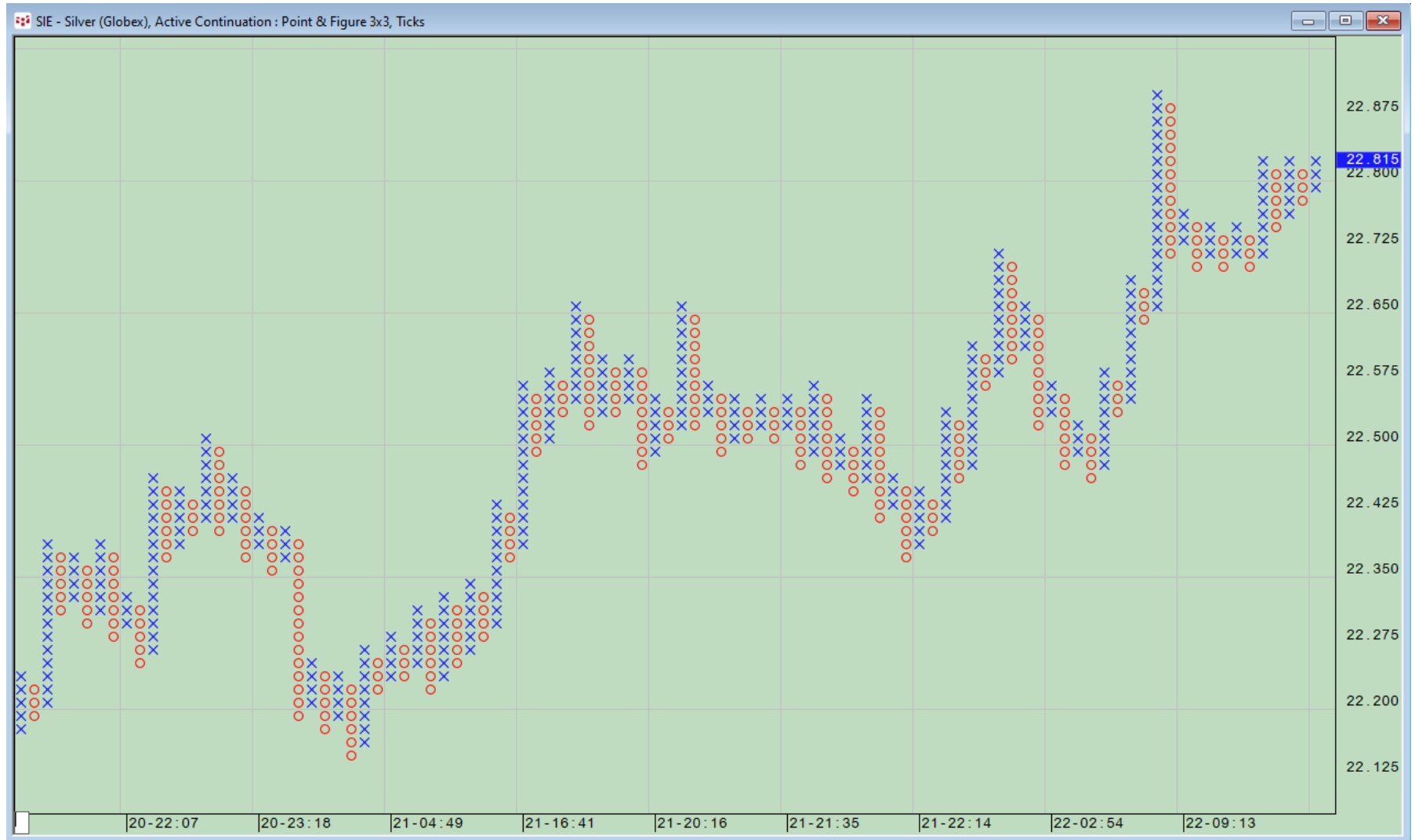
A solution to transform charting into a more manageable data series is to use more linear chart types. To do so usually means removing the time aspect in the data.

There are a few examples of more or less linear data series, such as:

- Point and Figure
- Constant Volume bar
- TFlow
- Renko
- Range Bar

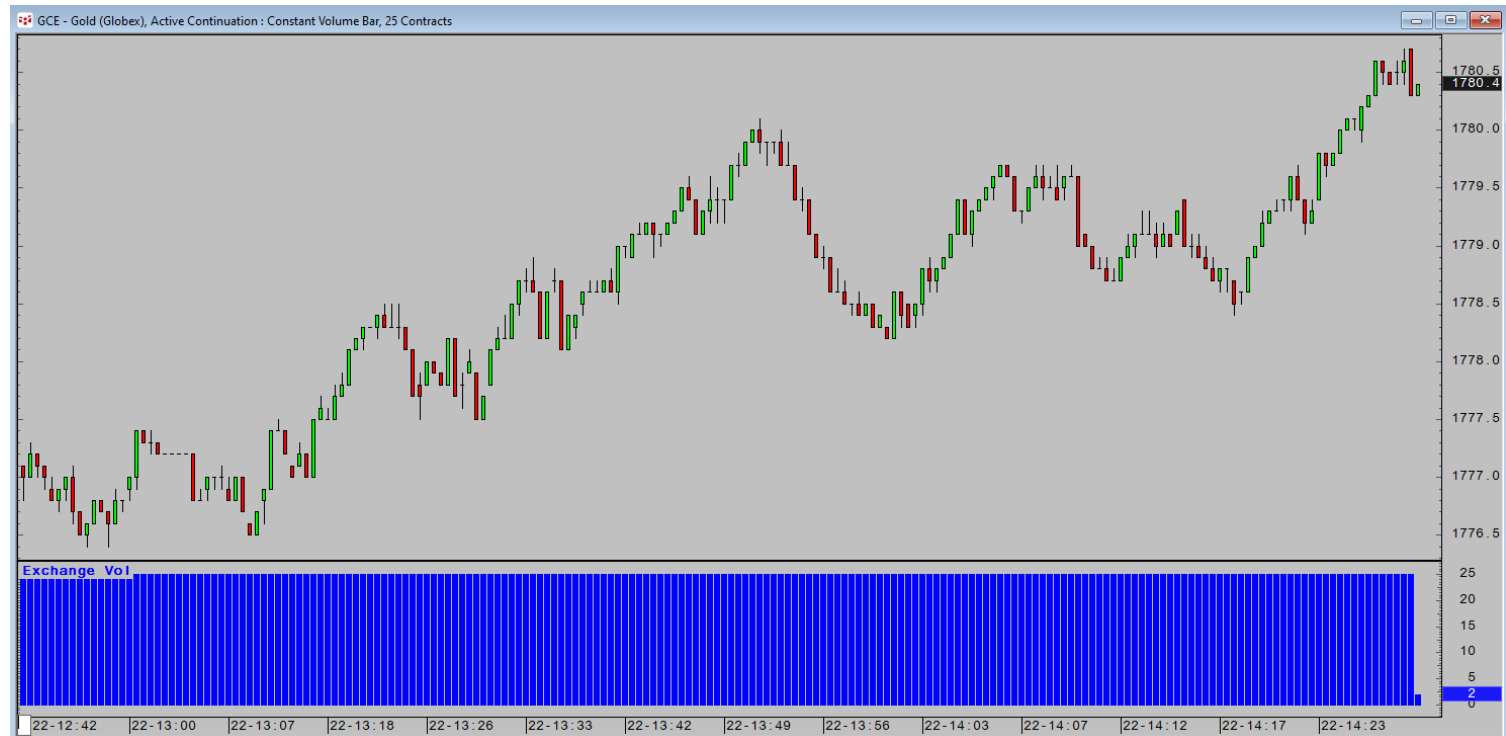
Point and Figure (P&F)

Instead of plotting price over time, these charts plot the changes of direction in price on a graph-like grid. The grid shows a column of **Xs** as the price rises followed by a column of **O**s as the price falls. The change in columns is determined by how many ticks the price pulls back in the opposite direction.



Constant Volume Bar (CVB)

CVB bars are built based on volume - tick or exchange volume when available. Each bar in a Constant Volume Bar chart contains a specified volume level. This volume level is reached by accumulating the volume/ticks of each of the underlying bars. When that level is reached or when a new session begins, the next Constant Volume Bar begins to accumulate volume from the underlying bars.



TFlow

TFlow offers not only quote data, but also depth of market data. TFlow are built from a DOM data and consist of:

- Low that indicates the lowest bid traded at the start of the bar. If no trades occurred at the bid, this value is the highest bid.
- High that indicates the highest ask traded at the start of the bar. If no trades occurred at the ask, this value is the lowest ask.
- Bid volume (BV) that indicates the volume of the trades at the bid side accumulated over the bar.
- Ask volume (AV) that indicates the volume of the trades at the ask side, accumulated over the bar.

The current TFlow bar is closed and a new bar opened when any of the following price conditions occur (except Fixed Income):

- Last trade is greater than the bar's high.
- Last trade is lower than the bar's low.
- Best bid is greater than or equal to the bar's high and best bid is not equal to best ask.
- Best ask is less than or equal to the bar's low and best ask is not equal to best bid.
- Best bid is greater than traded bid of the current bar.
- Best ask is less than traded ask of the current bar.
- The first tick occurs in a new session.



Renko

A Renko chart is a chart constructed of bricks that indicate price movement as a way to help expose trends and support and resistance levels. A brick is created each time the price exceeds the top or bottom of the previous brick by some amount, which you set in preferences.



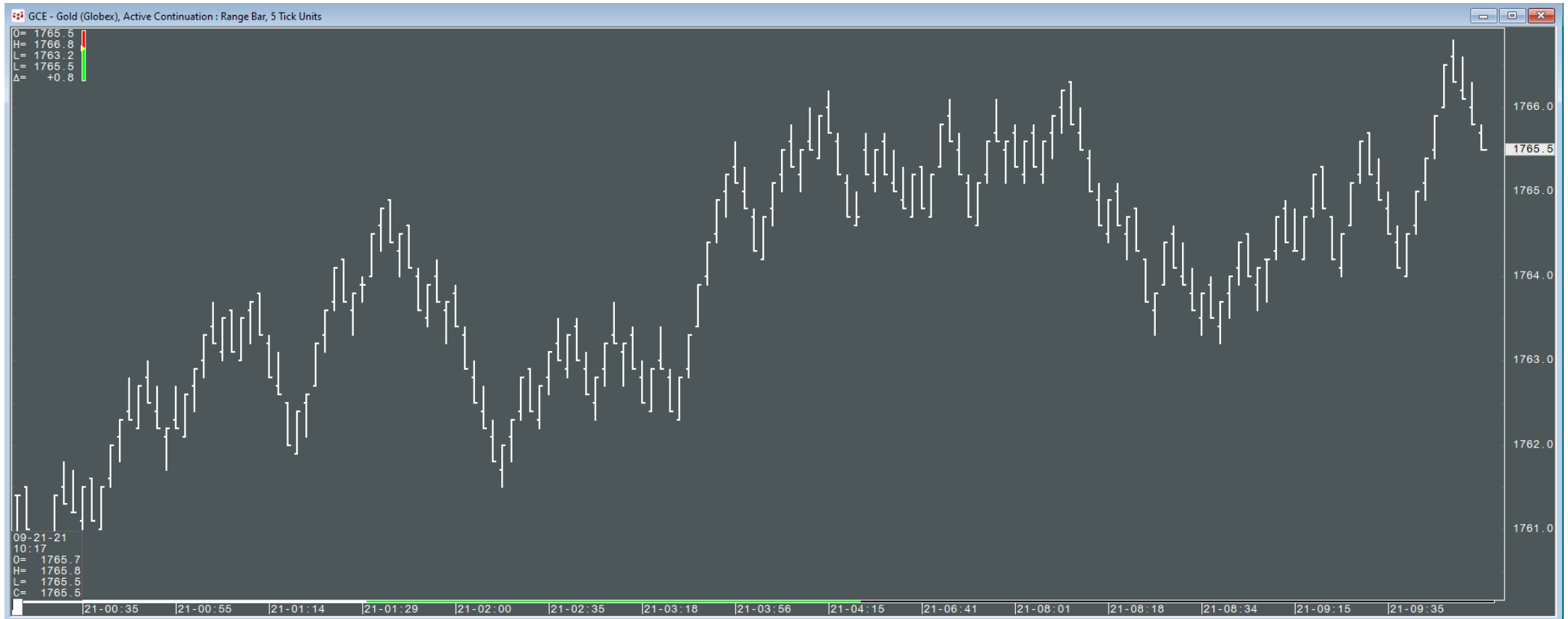
Renko

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Range Bar

A Range Bar chart is chart constructed of bars that indicate price movement as a way to help expose trends and volatility. A bar is created each time a trade occurs outside of the previous bar's stated price range, which you set in preferences.

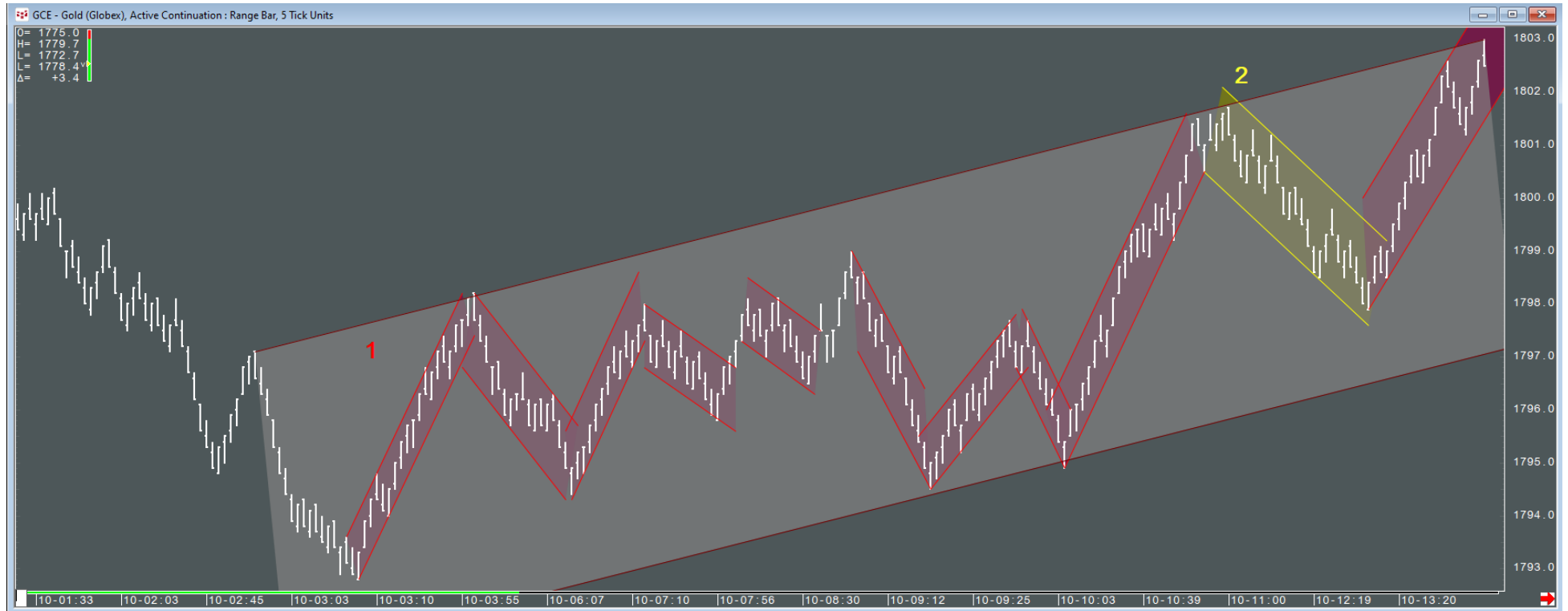




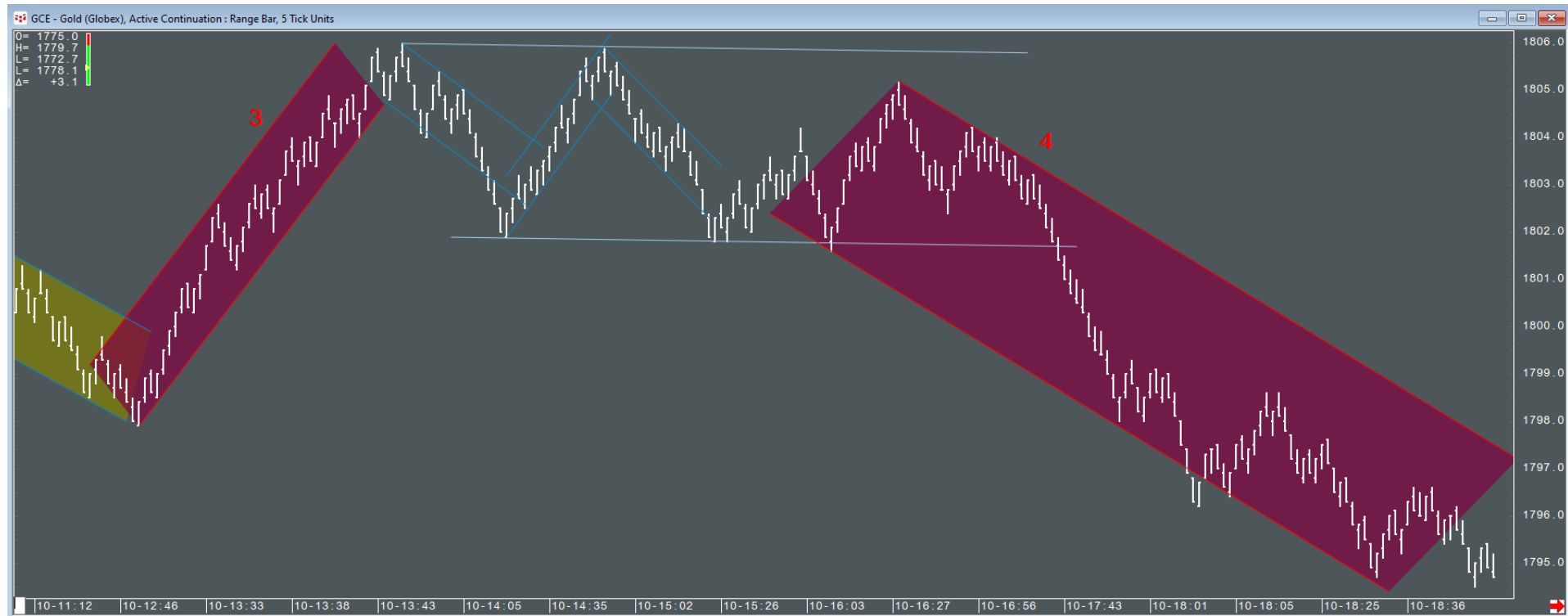
How does this make this chart type more interesting?

- 1) The distortion created by swift moves on timed bars are now represented linearly.
- 2) Periods of inactivity are eliminated
- 3) Indicators such as RSI, Moving Averages are less reactive and provide better signals
- 4) The ability to know when a potential new bar will be built (break of bar's high or low)
- 5) Ability to project certain indicators' values in advance

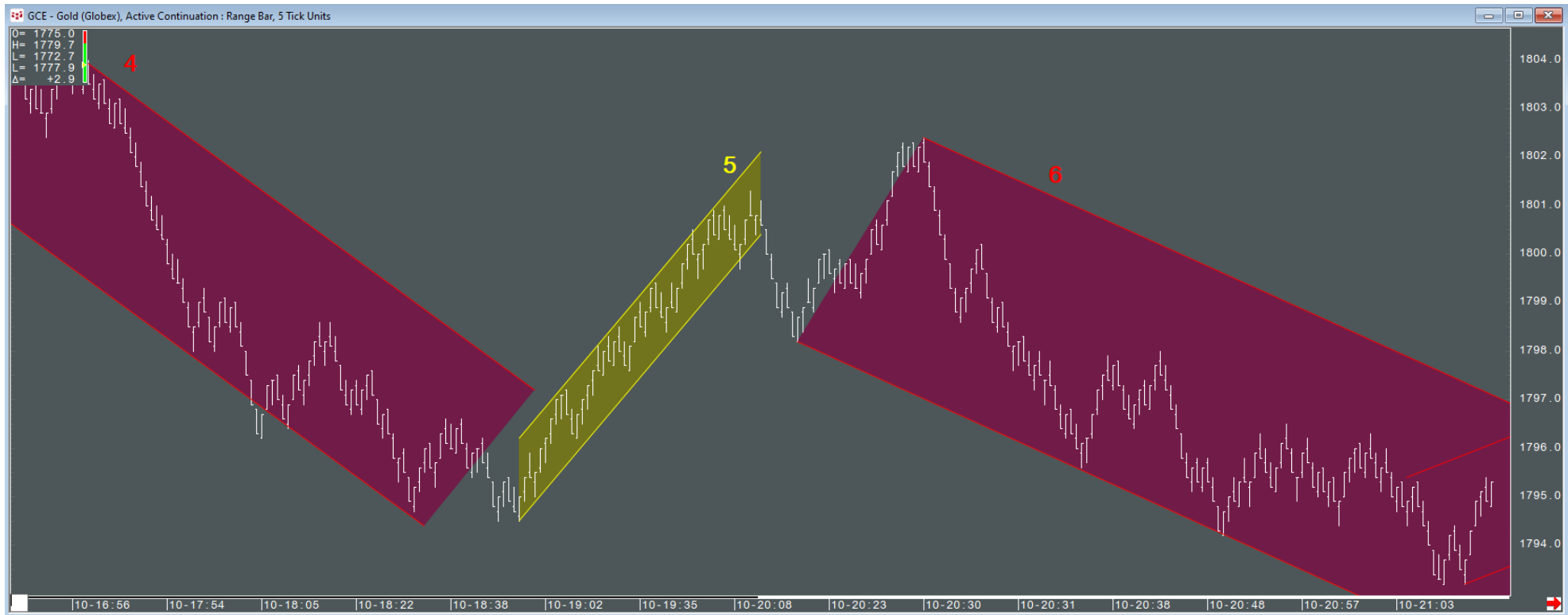
Charts comparison



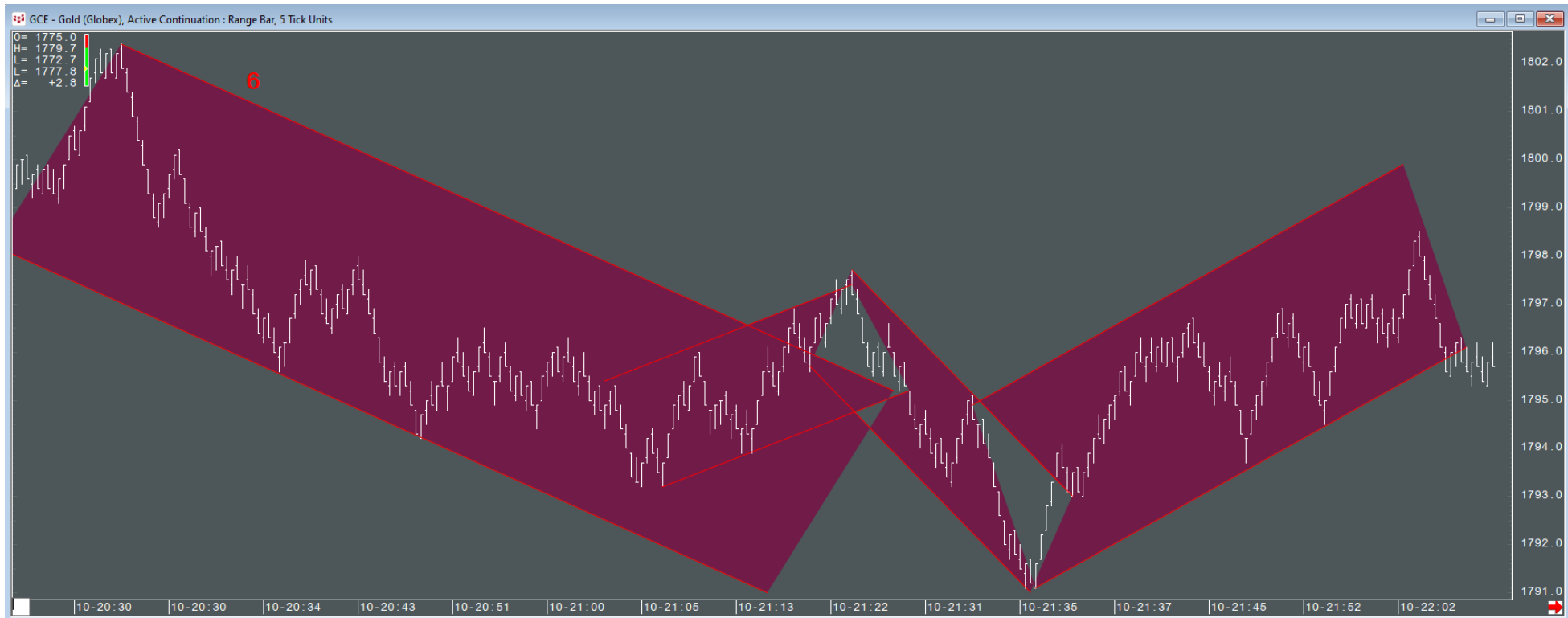
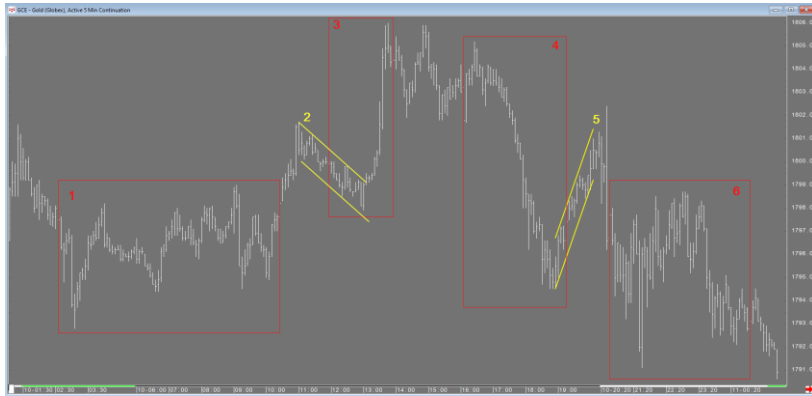
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