

What's New in Grapher 20?

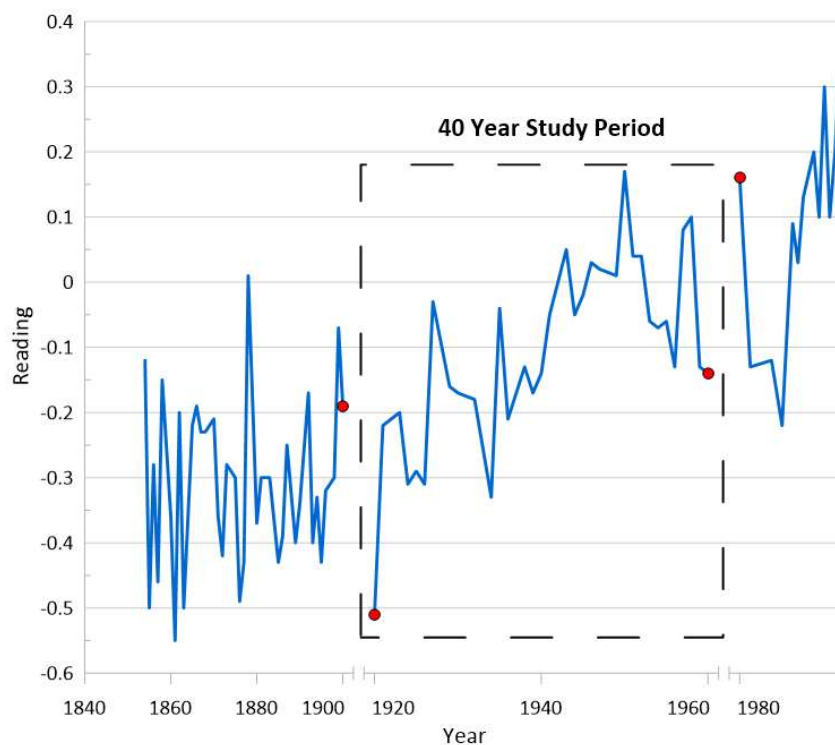
There are many exciting new features in Grapher! We know that even though graphing is the most fun part of your day, you need to transform your data into a story anyone can understand. Because of this, our focus this release was on you and your requests!

This version has increased the flexibility of Grapher's axes, added new functionality to plotting and legends, and even more customization than before. The top new features are listed below.

Axis improvements

1. Multiple breaks on a single axis

The Break Axis control has been greatly improved, allowing you to add more than one break to each axis; you can now add as many breaks as you want. Breaks can be formatted with your preferred symbol or break indicator, and positioned at the desired location along the axis.



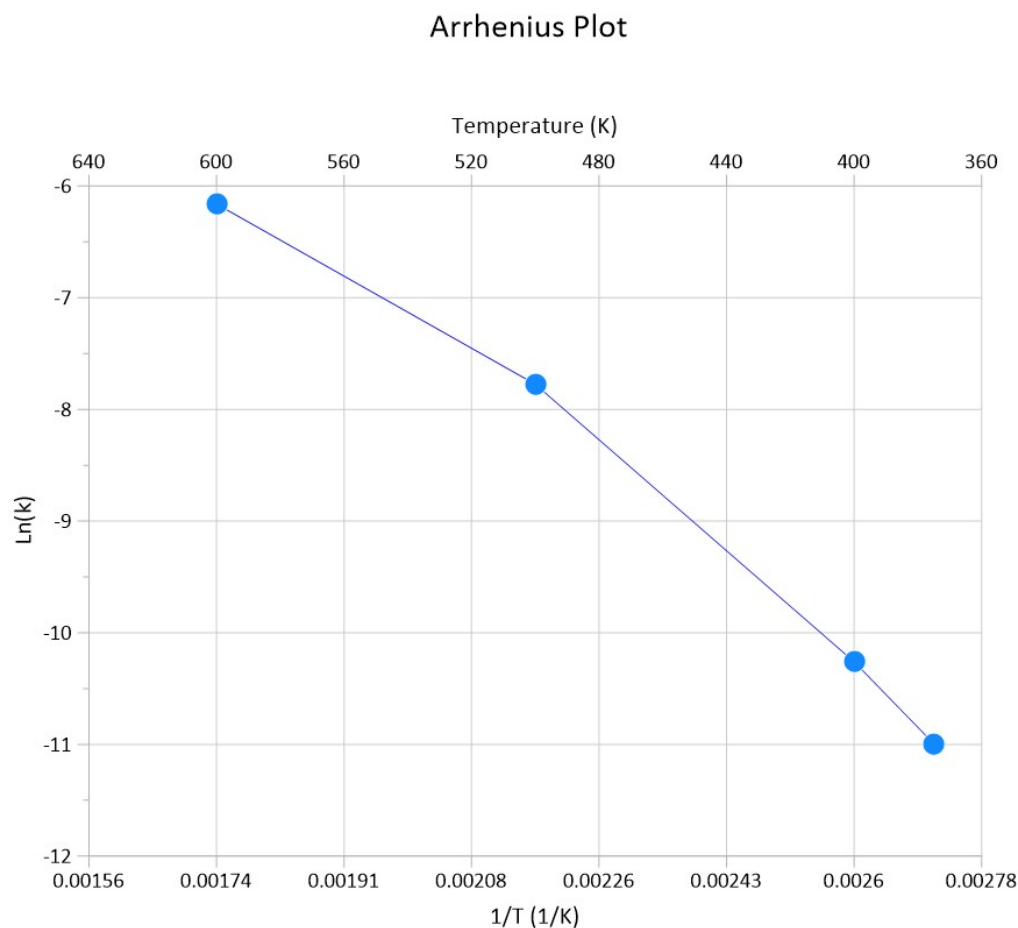
A Line/Scatter plot showing two breaks on the X Axis

2. Inverse relationships on linked axes

Axes can now be linked to each other using an inverse relationship between the parent and child axes. This new feature allows for plotting inverse relationships, such as the relationship between Temperature and Activation Energy as seen in the Arrhenius plot below. These link axis relationship may be functions of the form:

- $Y=1/X$
- $Y=X^{-n}$
- etc.

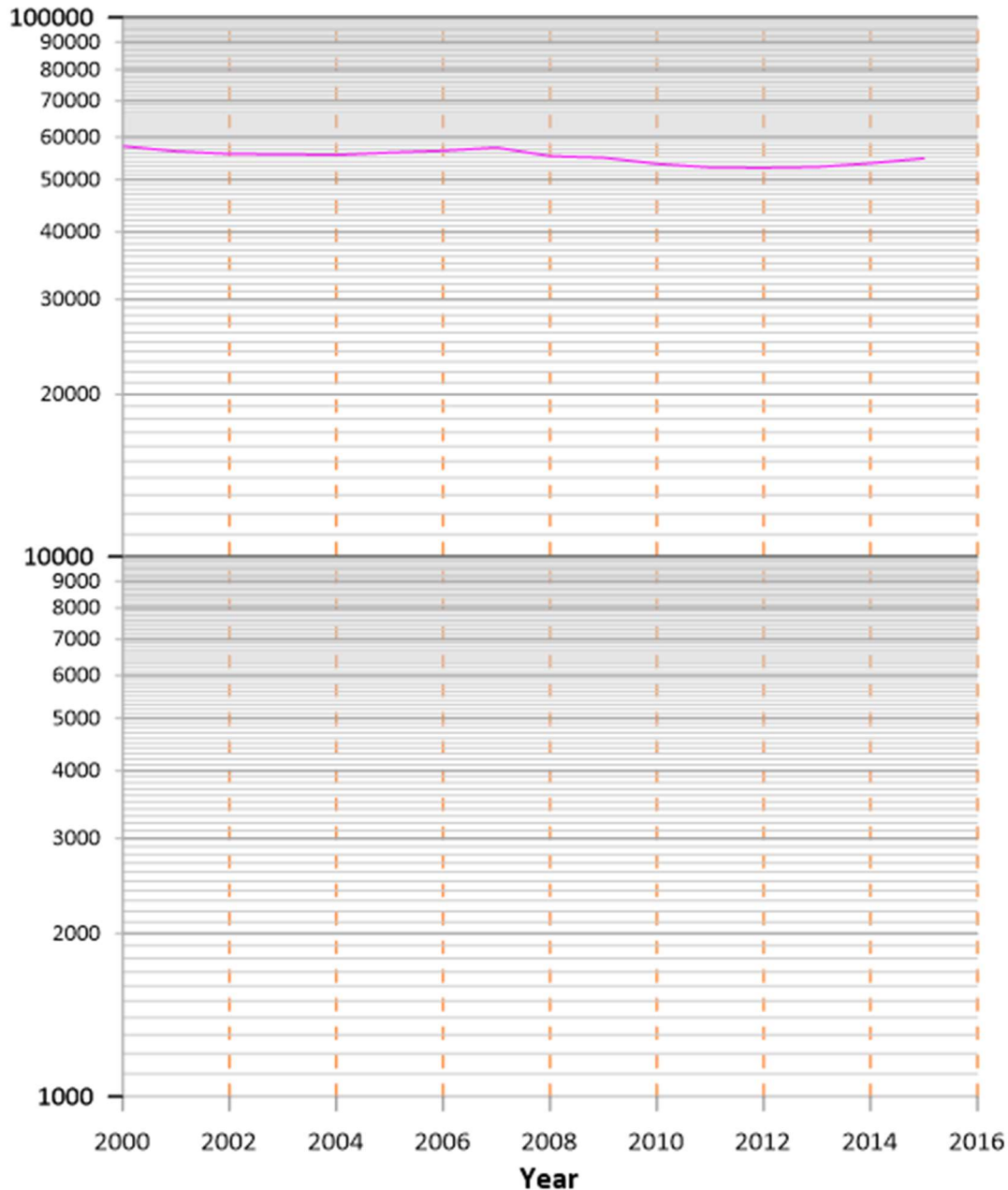
The new *Link tick position* option allows the tick marks and grid lines to be drawn evenly between the two linked axes, allowing for a clean and professional appearance of the plots.



Using Grapher's new *Inverse Linked Axis* function, temperature (K) is plotted using a *Linked X Axis* equation with the reciprocal of the temperature ($1/T$).

3. Minor tick divisions on Log10 and Ln scale axes

Specify exactly how many minor tick divisions/spaces you want on your axes. Previously only allowing 9 divisions between major ticks, you can now have control over how many minor ticks are displayed. Set this value to 90 to show additional decades between each division.



Grapher Beta now allows fine-grained control over Logarithmic axis tick divisions and grid lines.

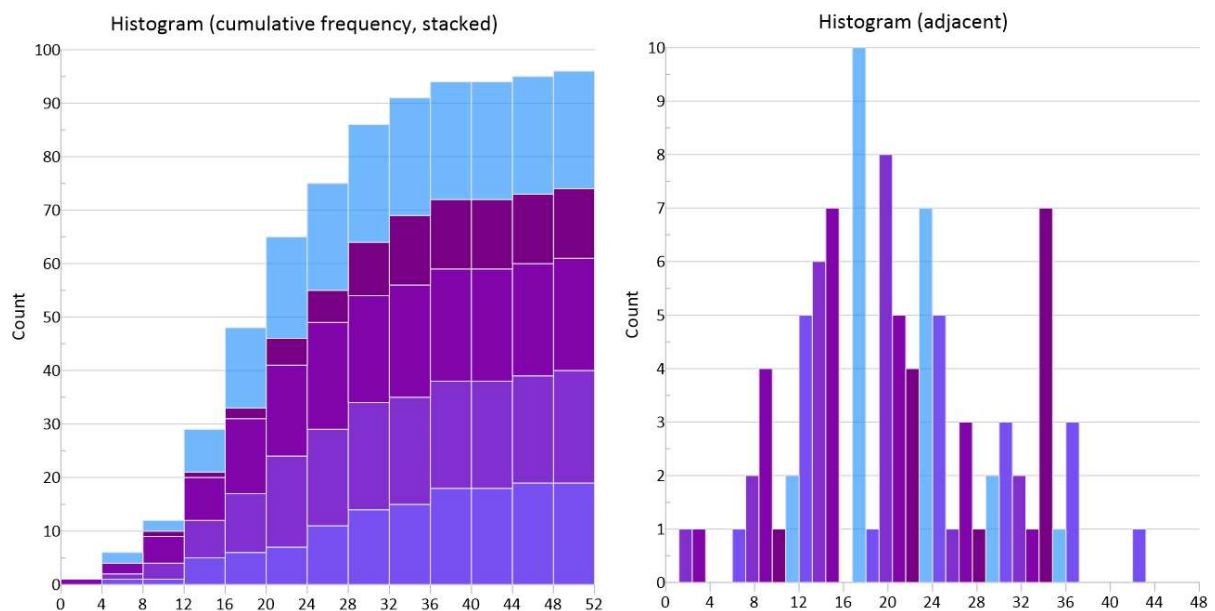
4. Tick labels - offset in X and Y directions

Get fine control over the positions of your tick mark labels on X and Y axes. Control the offset in both the X and Y directions to position your labels exactly where you need them.

Plot improvements

5. Stacked/Adjacent histograms

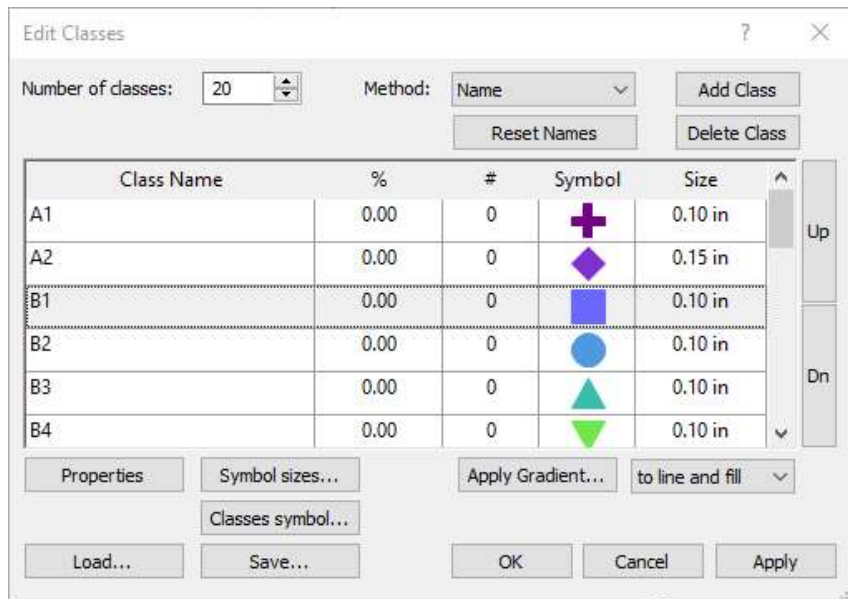
Similar to the Stacking option available for Grapher's Bar Charts, it is now possible to plot multiple Histogram sets together with the same Stacked or Adjacent settings. Easily compare distributions between datasets, such as changing patterns on annually collected data



Sets of five histograms using the new Stacked and Adjacent controls

6. Delete and Rearrange Class Scatter Plot classes

Individual classes can now be deleted and rearranged for both Text and Numeric type classes. Custom named classes can be easily restored to the default classes by clicking the Reset Names button.



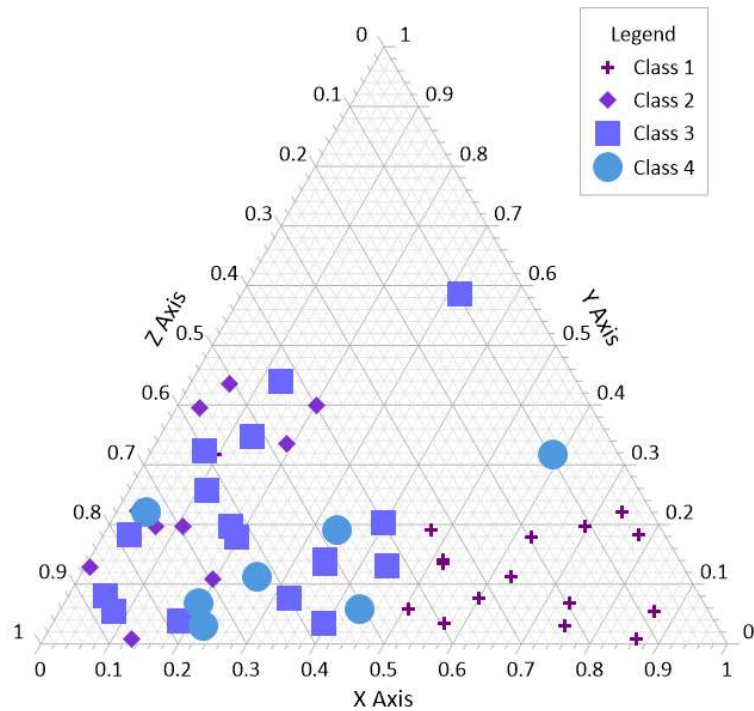
New functions in the Edit Classes dialog makes it much easier to customizing your classes; No need to modify data in the worksheet.

7. Legend improvements

Create Legends consistently throughout Grapher with the addition of the new Legend type: Plot Legend. This Legend type, created from the ribbon on the Graph Tools tab, will create all plot-specific legend types such as:

- Class Plot Legend
- Bubble Plot Legend
- Wind Speed Legend
- Color Scales
- etc.

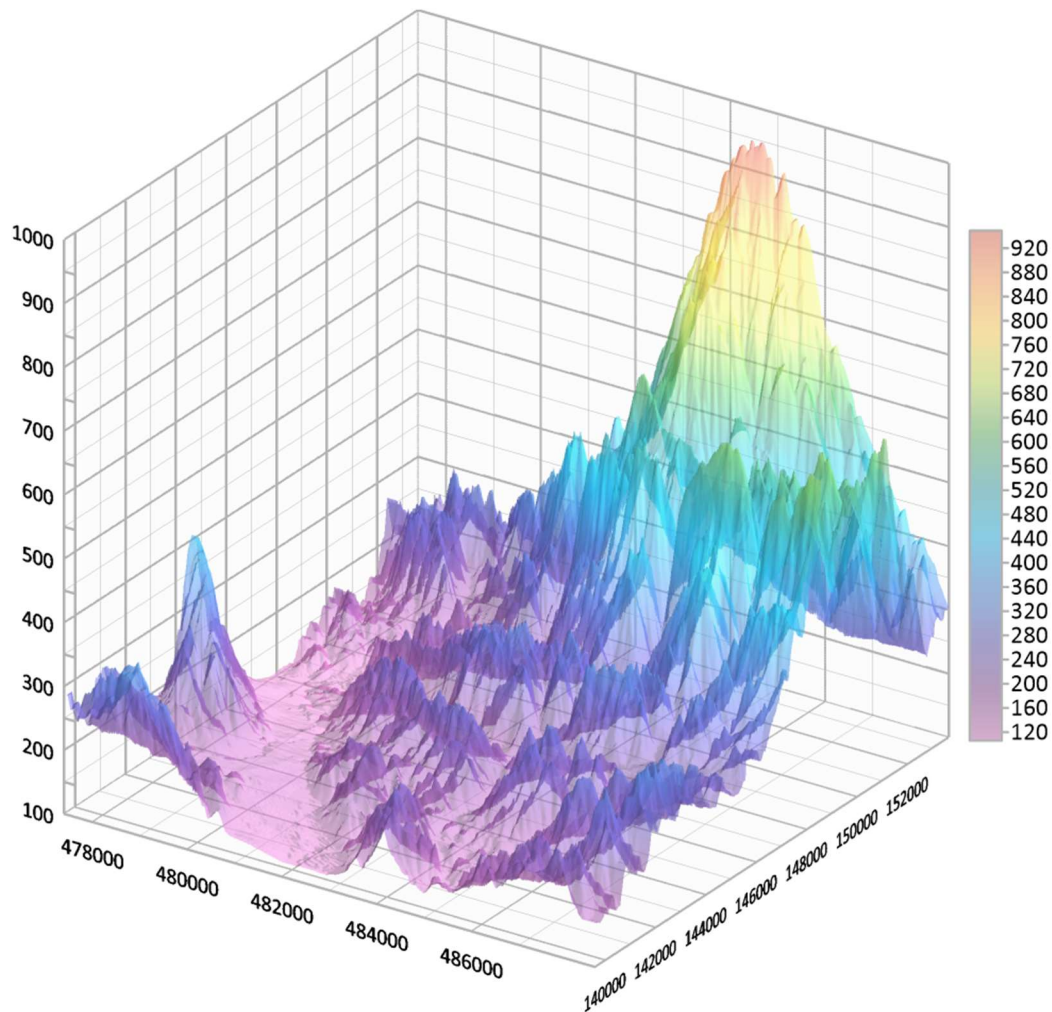
Controls for creating legends have been remove from the Property Manager, and instead are now are all created via the ribbon:



A Ternary Class plot using the new Plot Legend.

8. 3D Plot transparency

Improve the appearance of your exported 3D graphs, which now support plot transparency. Use all of the transparency controls in the Colormap Editor, including controlling transparency settings for individual Z values or ranges. Transparency is now supported in all 3D plot types including: 3D Surface and 3D Bubble plots.



A 3D Surface Grid plot showing applied transparency

General Improvements

9. Copy/Paste:

- **Duplicate page**

Duplicate an entire Page and all of the contents within. Pages are tabbed at the bottom of the Plot window. Right-clicking on the Page and selecting Duplicate from the menu duplicates the Page and any objects contained within, such as graphs and drawn objects

- **Duplicate objects**

The new Duplicate command on the ribbon will create an exact copy of any selected object. Duplicate graphs, plots, axes, and drawn objects such as text and polygons with ease.

- **Paste multiple plots into one Graph**

Pasting multiple plots into a new graph became easier with the *Apply to subsequent plots* control. This new field is a timesaver for those who are pasting multiple plots at once, removing the need to choose the correct Graph and Axes for each pasted plot individually

10. And more..

- Confidence Interval: Indicates which fit curve or equation was used to create the CI
- Custom fit curve: Add Function button added to the Property Manager
- Histograms: Automatic bins are reset bins when Worksheet or Data Filter changes
- Open Excel: This function has been removed from Grapher for stability. Use **File | Open** instead!
- File | Options: New control for using a static color instead of the Plot Palette gradient when adding plots via the Create button
- Plot Symbol: Get symbol and symbol line color from worksheet Color Column