

Golden Cheetah v3.1 Release Notes

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1 Whats New

1.1 Major new features; Compare, Share and Merge

We have added a new feature to enable comparing rides and intervals across all the charts where it is sensible to try; performance plot, cp chart, histogram and QA charts all support compare. Additionally it is possible to compare trends across different seasons as well as histograms. And of course, these are also possible across athletes; so you can compare one athletes season or ride with another athletes season or ride.

Wherever it is sensible to compare things, we think it is now possible to compare things.

We have also unified upload to "cloud" across Strava, RideWithGPS and Cycling Analytics. With a single click you can upload to all services. We do not currently support Garmin Connect as they have closed their system and only work with commercial partners - for this reason we recommend storing data outside for future data security.

Lastly, it is now possible to merge data from different sources into a single ridefile. This is particularly useful when working with multiplied devices or integrating data from devices like the Moxy SM02 monitor.

1.2 General Enhancements

We have made the following general / UI enhancements:

- Open Athletes in Tabs - it is possible to open up all your athletes within a single window and switch tabs.
- ChartBar - the chartbar has become a toolbar item and is scrollable. This dramatically increases the screen estate available for displaying charts and data but also makes the UI less 'quirky' and align more to typical desktop application styles.
- Themes and better support for color customisation - we now have much more sophisticated support for color customisation and support across all the charts. Themes allow you to switch between light on dark and dark on light setups quickly and easily.
- Improved Interactivity - mouse over interactivity has been extended over the ride list and most charts for faster exploration of data and to provide a more fluid and dynamic user experience. This extends to isolating curves within a chart by hovering over the axis labels and automatically selecting intervals as you hover over their data in the QA and ride charts.
- Autofilter in Trends view - as well as advance data filtering within chart setup and the toolbar search box we have now added autofilters in the trends sidebar to make it simple to filter data based upon metadata e.g. all running files or rides on your TT bike.
- Specify athlete library location - You can now specify where data is stored to make it easier to integrate with backup or other synchronisation tools.
- Improved Dropbox support (CRC) - We will check the data within a ride has changed (as opposed to its timestamp) before refreshing metrics. This is to remove unnecessary metric refreshes when copying data between computers or synchronising using tools like Dropbox.

- Find intervals via matches, hills etc - The find intervals dialog will now find hills as well as sustained efforts using W' consumption (see support for W'bal).

1.3 Enhanced Device Support

We have fixed or enhanced device support for:

- Fixed up Tacx Fortius Support - Dave Waterworth has updated the original beta code for Fortius support to now make the Fortius and fully supported device in train view.
- Joule GPS updates - the latest firmware is now supported and no longer crashes GC (!).
- FIT ride file updates - better support for custom FIT sections that are being used by vendors to support localised data.
- Pedal Smoothness / Torque Effectiveness support - the Rotor and Vector data series are now extracted and stored in ridefiles and can be plotted alongside all the other ride data series on performance, scatter and histogram plots.
- Moxy support - we have added support for the Moxy SM02 monitor and can be imported and merged with ride data using the new merge dialog.

1.4 New Metrics Implemented

We have implemented a lot of new science in 3.1 and along with that there are a lot of associated metrics:

- Plot bests - It is now possible to plot user-defined durations for power bests. For example it is now possible to plot 13s power best, but we have extended this to cover all ride data series, so you can plot best durations for heartrate, speed, cadence and so on within a metric trends chart. This feature has been the most requested feature since LTM was implemented in 2010, so we've finally got there.
- Plot Model Estimates - With the new PD models we also derive estimates for W', CP et al using each of the models. These can then be plotted; an example 'CP History' plot in the trends view is provide as an example.
- W'bal implemented with metrics - The W'bal data series is derived from power data and can be plotted alongside all other ride data. It has also been implemented within the erg plot to assess ERG workouts before attempting them.
- TISS implemented - An an Ae TISS have been implemented and can be plotted as data series within a ride but also as inputs into a PMC chart. An example 'Stress' chart is provided to plot these in the Trends and Rides view.
- aPower - We have implemented Altitude Power to adjust recorded power to take into account the effect of altitude on vo2max and thus power output. This can be plotted alongside all other ride data series.
- Polarised Zones - Histogram chart will now plot power histograms in Polarised Zones as well as the more familiar Coggan 7 levels.
- Pacing Index / Fatigue Index - Experimentally added to help review interval efforts.

- W' work - To compliment W'bal and Work metrics we now isolate and can track how much W' energy is being expended. This is closely related to tracking Anaerobic training.
- Average Pedal Smoothness / Torque Efficiency - the Rotor/Vector metrics can be plotted alongside ride data but also as average metrics to track across weeks, months and seasons.

1.5 Chart Enhancements

We have made significant changes across all the charts in 3.1. These have been added to support the new models and science and also to try and enhance the utility and user experience.

- LTM Chart - It is now possible to select charts via a Chart selection sidebar thus reducing the number of charts needed to be pre-configured on the chart bar. We have also tidied up the LTM settings dialog and improved the UX for setting up charts in the first place. To support the new compare mode we have also added a Stack mode and a Data table mode to look at series in isolation or just review the numbers. It is also now possible to export the chart data to manipulate or analyse in other tools. Lastly, we have also added Labels and Quadratic trend lines to create charts that are more readable without resorting to tooltips and guess work.
- CP Chart - The critical power chart has seen a lot of new features added both to support the new PD models but also to provide the possibility to plot and compare intervals. The key new features include User selectable CP models and the ability to fine tune the search intervals used by each of the 4 models. It is also now possible to plot rates of change for power, heartrate etc and also to plot heat and heat by age. You can also plot a ride as percentge of best or as a centile. And as with the LTM charts it is also possible to export the PD data and model to review and assess in other tools.
- Ride Chart - It is now possible to plot lots of derived series; NP, W'bal, xPower, Delta etc and also to plot each series in its own chart with all series shown as a 'stack'. We have also finally added the ability to create and edit reference lines for power and have added an overlay to display interval data as you hover or select them in the plot.
- Summary Chart - It is mostly unchanged but will now also support displaying user defined metrics for Athlete Bests for the date range selected. It will also show model estimates that apply to the ride or for the date range being summarised.

1.6 Code refactoring and 300 issues fixed

Since we release 3.0 in June 2013 we've been busily updating the code to fix lots and lots of nits and errors, but also slowly adjusting the code to provide a better platform for new features.

We have deferred almost all features related to indoor training to a release 3.11 that is planned for the beginning of 2015 with development starting in August 2014.

However, some of the (boring, tehcnical) foundational things that changed in 3.1 include:

- QT 5.3 is now supported; so QT video support, QML, Qt Json, faster webkit and for the future, possible support for IOS and Android devices.
- QWT 6.1 with multiaxis is now supported; lots of bug fixes and better rendering on retina and high resolution displays.
- CP chart and AllPlot chart refactored to make it possible to extend functionality e.g. for new PD models and derived data series.

Some of the functionality that has been fixed include reinstated support for Strava and Twitter. We also have better native support for look-and-feel differences across the three platforms we currently support (Mac, Linux, Windows).

We have also adjusted the startup mechanism to make it possible to select a different athlete or create a new one if recovering from a fatal crash.

2 Contributors

2.1 Credits and Contributors

The main contributors continue to be Mark, Damien and Gareth, but a few new contributors have joined the team in the last year and the future looks promising. A particular shout out is deserved for Joern Rischmuller who has updated the GC Wiki to cover all functionality – so for the first time we have comprehensive user documentation.

The following have all made a contribution to 3.1:

Alejandro Martinez, Bruno Fernandez-Ruiz, Christian Stade-Schuldt, Damien Grauser, Dave Waterworth, Eric Johnson, Gareth Coco, Ilja Booiij, Jaime Jofre, Joern Rischmuller, Jon Beverley, Jon Escombe, KURASHIKI Satoru, Mark Liversedge, Rainer Clasen, Ralf Spenneberg, Simon Egli, Stig B. Drmnen, Tom Weichmann, Walter Brki and Alex Delli.