

JBrowse and  
Circos Update

ER/SH

JBrowse

Plugins  
Metadata  
Themes

Circos

Q&A

# JBrowse and Circos Update

Eric Rasche & Saskia Hiltemann

2017-06-30

# Available Tracks

filter tracks

Tracks Available in Faceted List

Galaxy Metadata 

GCContentXY

2017-06-24

automated annotations

miro.gff3

Reference sequence

Reference sequence

Genome Track View Help Tools



0 20,000 40,000 60,000 80,000 100,000  
,000 42,500 45,000

Reference sequence 

Zoom in to see sequence

Zoom in to

GCContentXY 

miro.gff3 

Miro\_65 

nucleotide reductase, small subunit

Miro\_66

homing endonuclease  
Miro\_68 

Miro\_68

RNA ligase  
Miro\_69 

Miro\_69

homing endonuclease  
Miro\_70 

Miro\_70

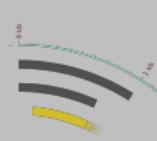
hypothetical cons

Miro\_73

nucleoside triphosphate hydro

Miro\_74

hypothetical conserved



# JBrowse

JBrowse and  
Circos Update

ER/SH

JBrowse

Plugins

Metadata

Themes

Circos

Q&A

## JBrowse Plugin Support! (GCContent, ComboTrackSelector, Bookmarks)

The screenshot shows the JBrowse interface with a GCContent track selected. A tooltip displays the value **0.456**. The track itself is a red line graph representing GC content across a genomic region.

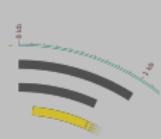
**Quick Bookmarks**

Save a bookmark of your current view. Double click on bookmark to load view in current window.

(optional) Description of bookmark  Add Bookmark

Genome	Location	Start	End	Description
data	Miro	9919	45702	I found an interesting feature

Clear Selections



# ComboTrackSelector

JBrowse and  
Circos Update

ER/SH

JBrowse  
Plugins  
Metadata  
Themes

Circos

Q&A

## Select Tracks

Back to browser Clear All Filters

Contains text | |

3 tracks

	Name	Tool ID	Tool Version	EDAM	Size	History Name	Owner	Dbkey
<input type="checkbox"/>	Reference sequence	...	...	...	...	...	...	...
<input type="checkbox"/>	miro.gff3	upload1	1.1.4	gff3	83.7 KB	Unnamed history	planemo@galaxyproject.org	?
<input type="checkbox"/>	...	...	...	...	...	...	...	...

My Tracks

- Currently Active
- Recently Used

EDAM

- 2 (no data)
- 1 gff3

History Name

- 2 (no data)
- 1 Unnamed history

Owner

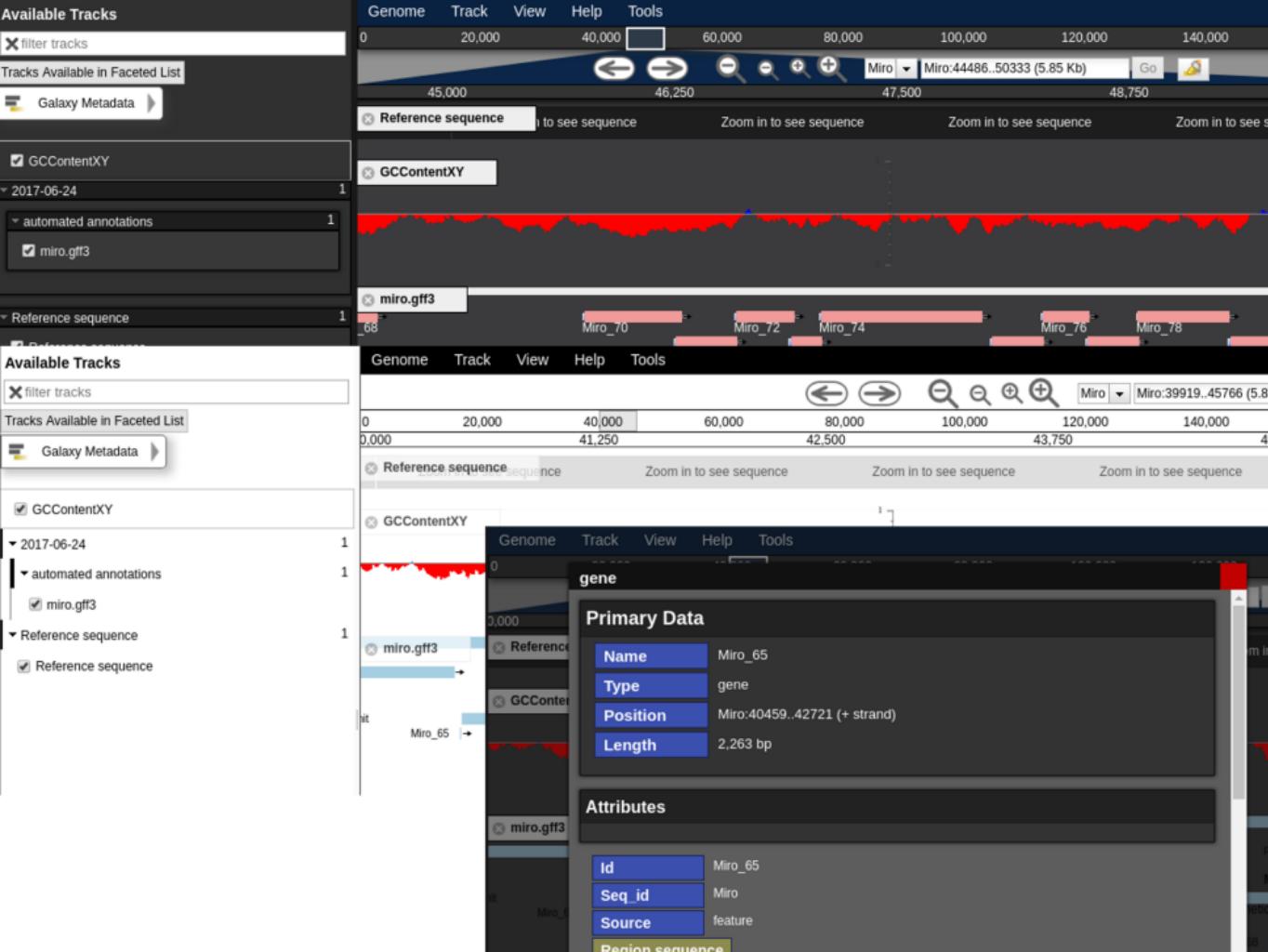
- 2 (no data)
- 1 planemo@galaxyproject.org

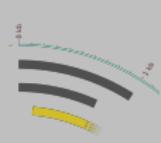
Tool ID

- 2 (no data)
- 1 upload1

Tool Version

- 2 (no data)
- 1 1.1.4





# Circos

JBrowse and  
Circos Update

ER/SH

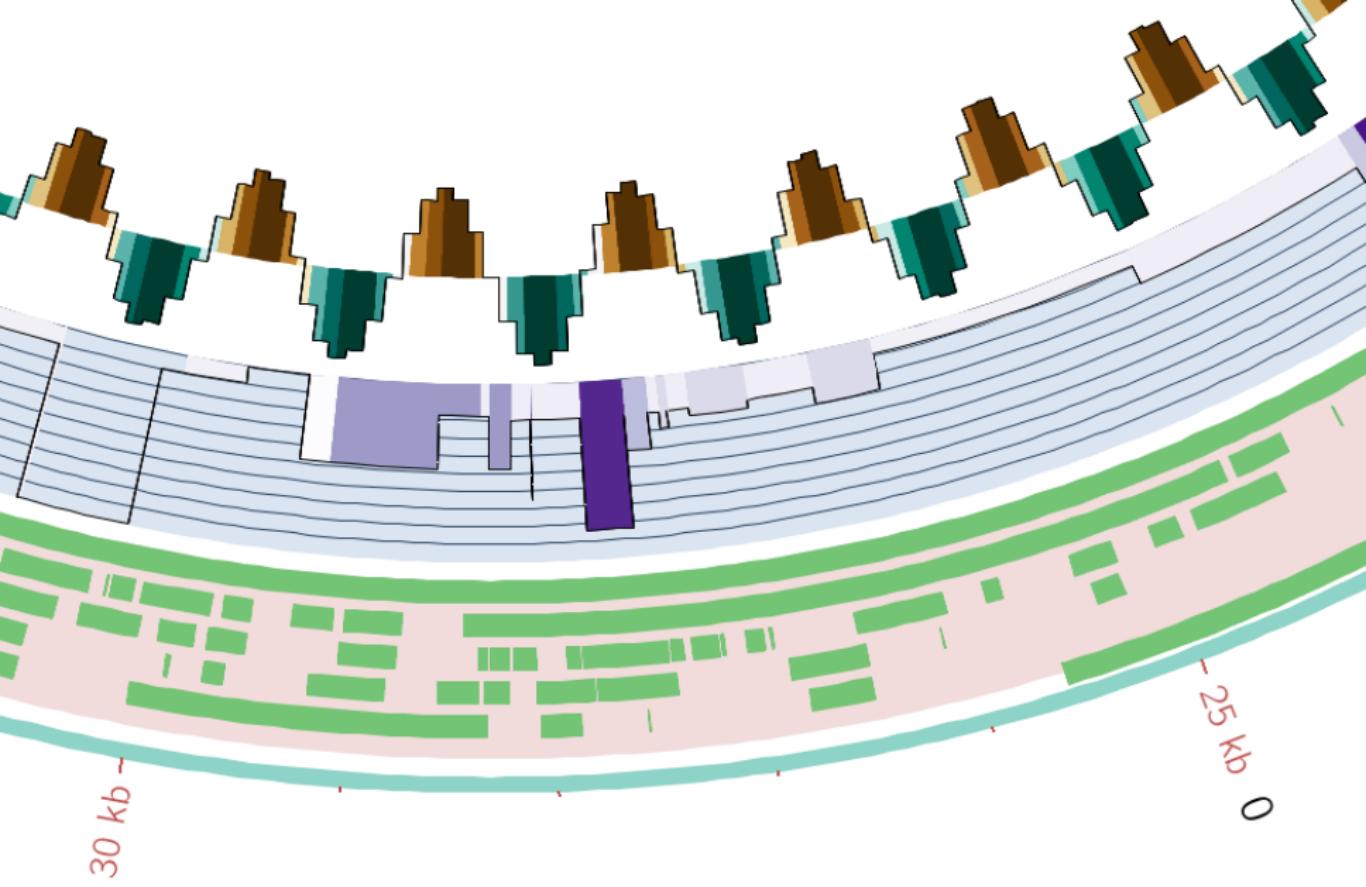
JBrowse

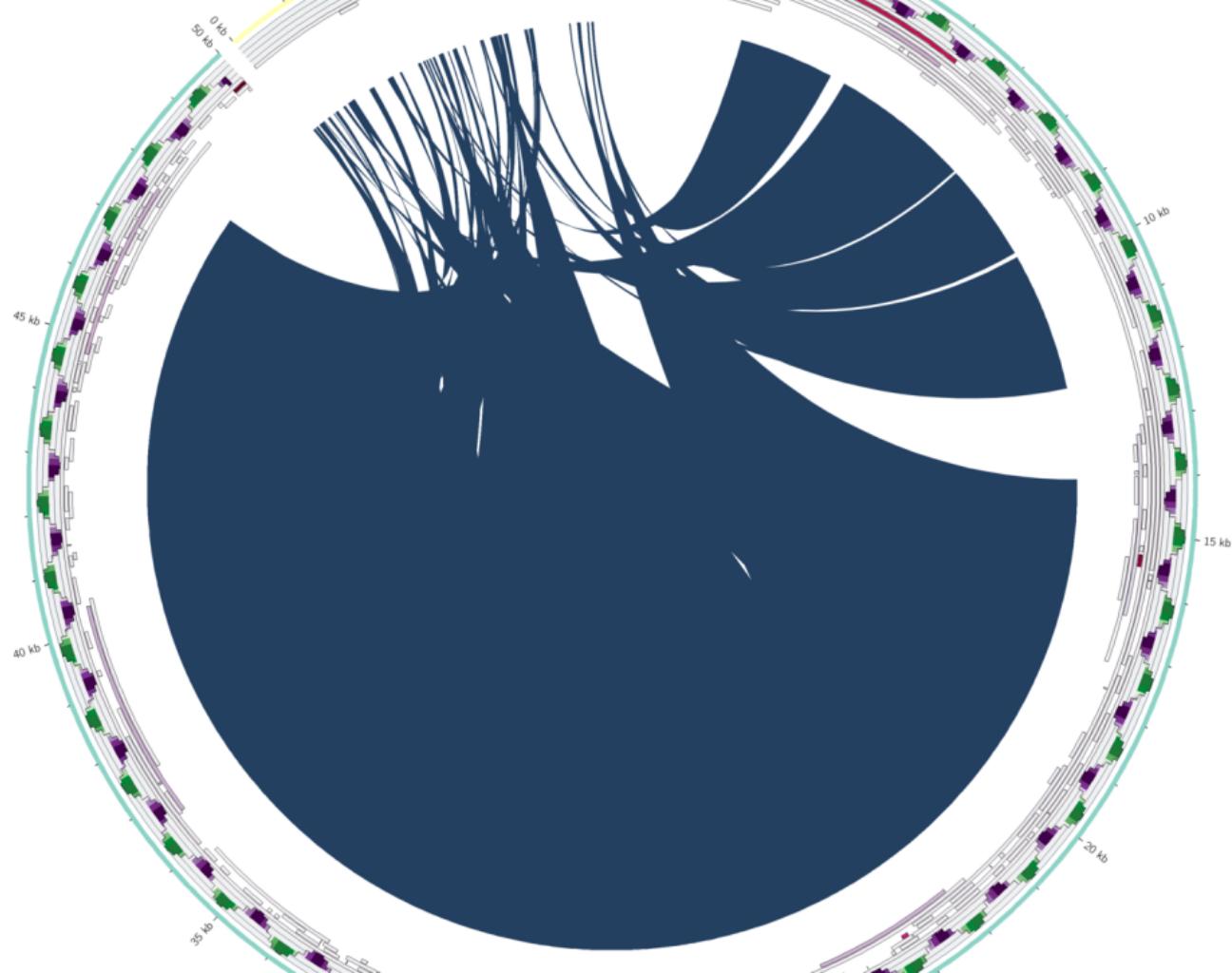
Plugins  
Metadata  
Themes

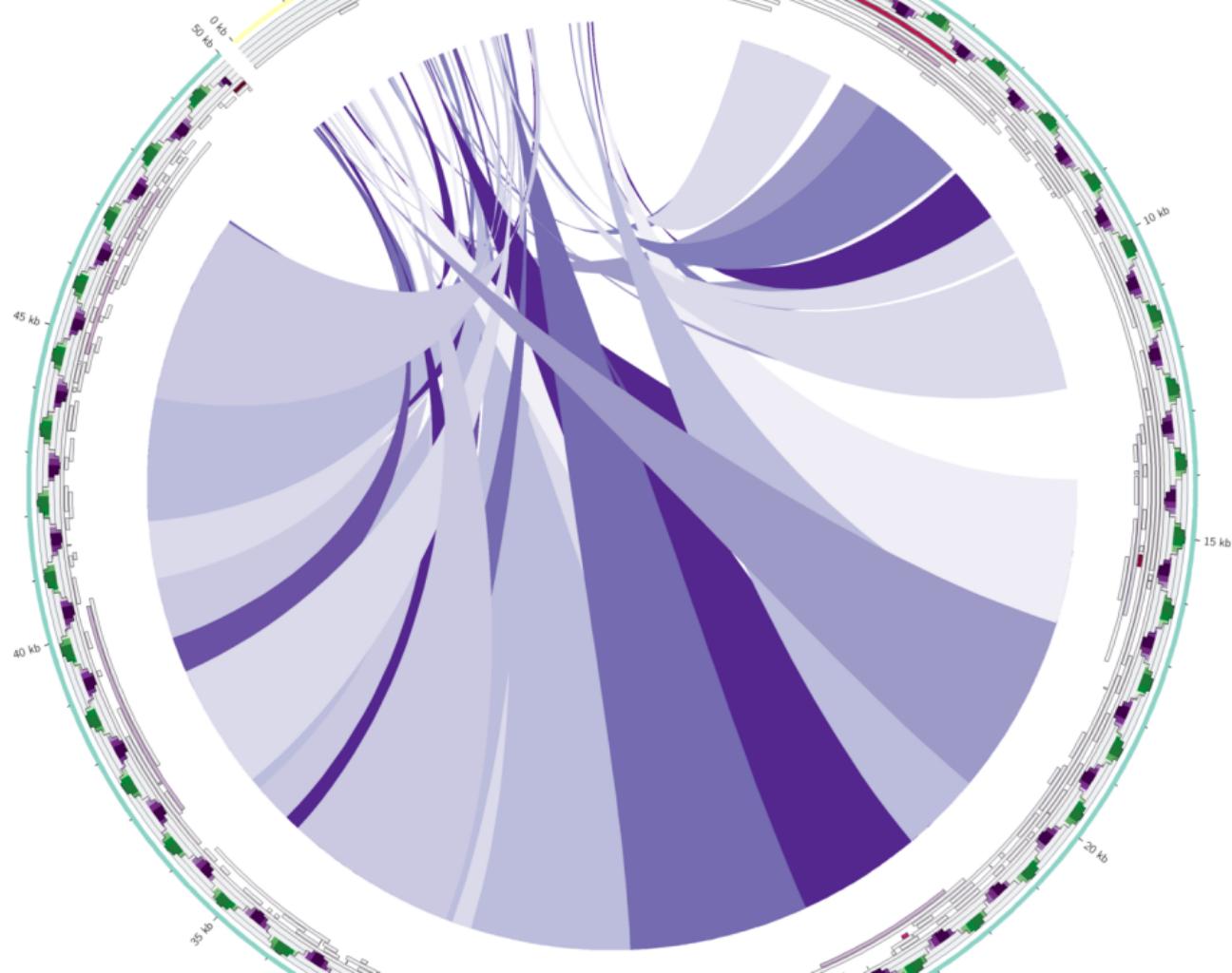
Circos

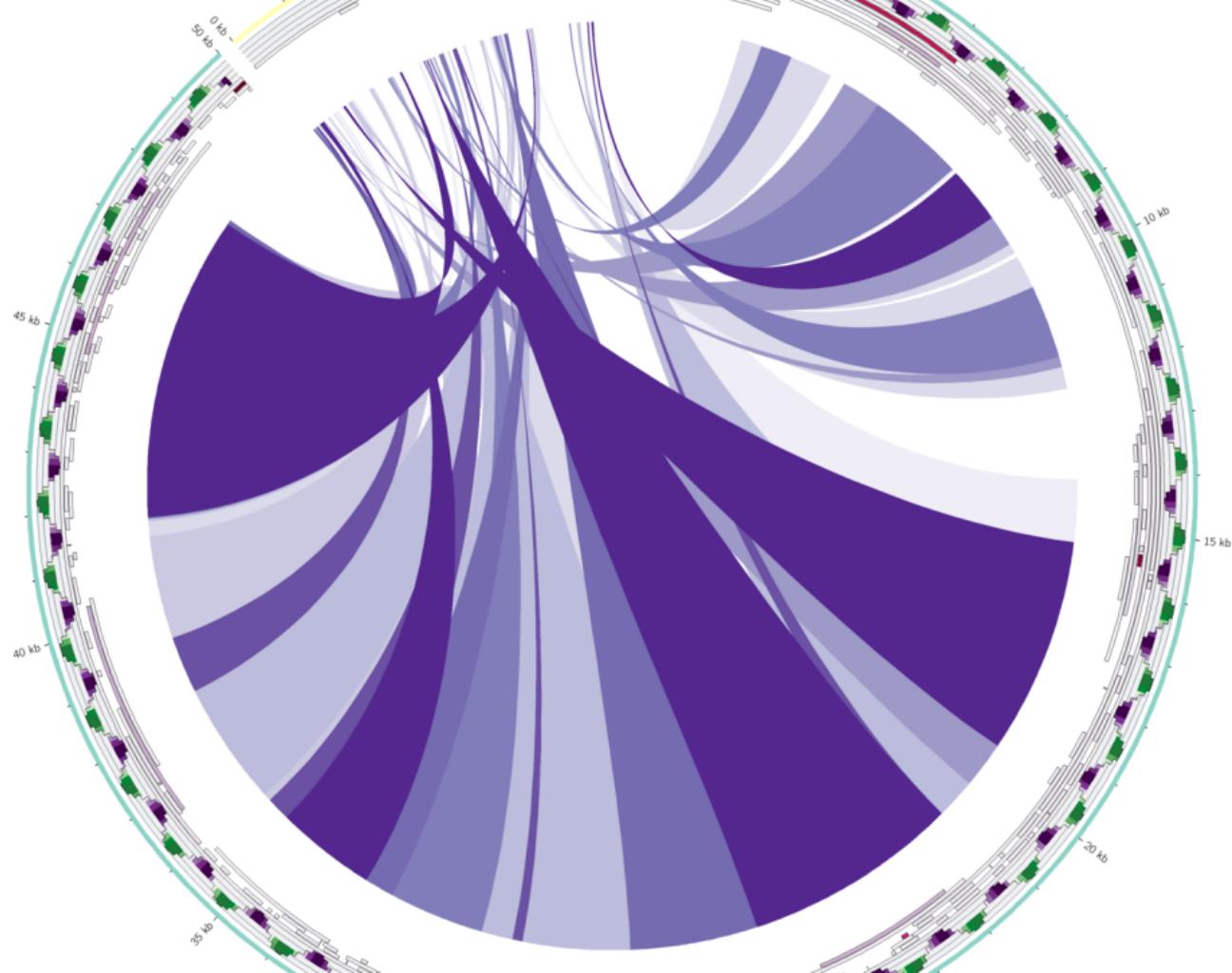
Q&A

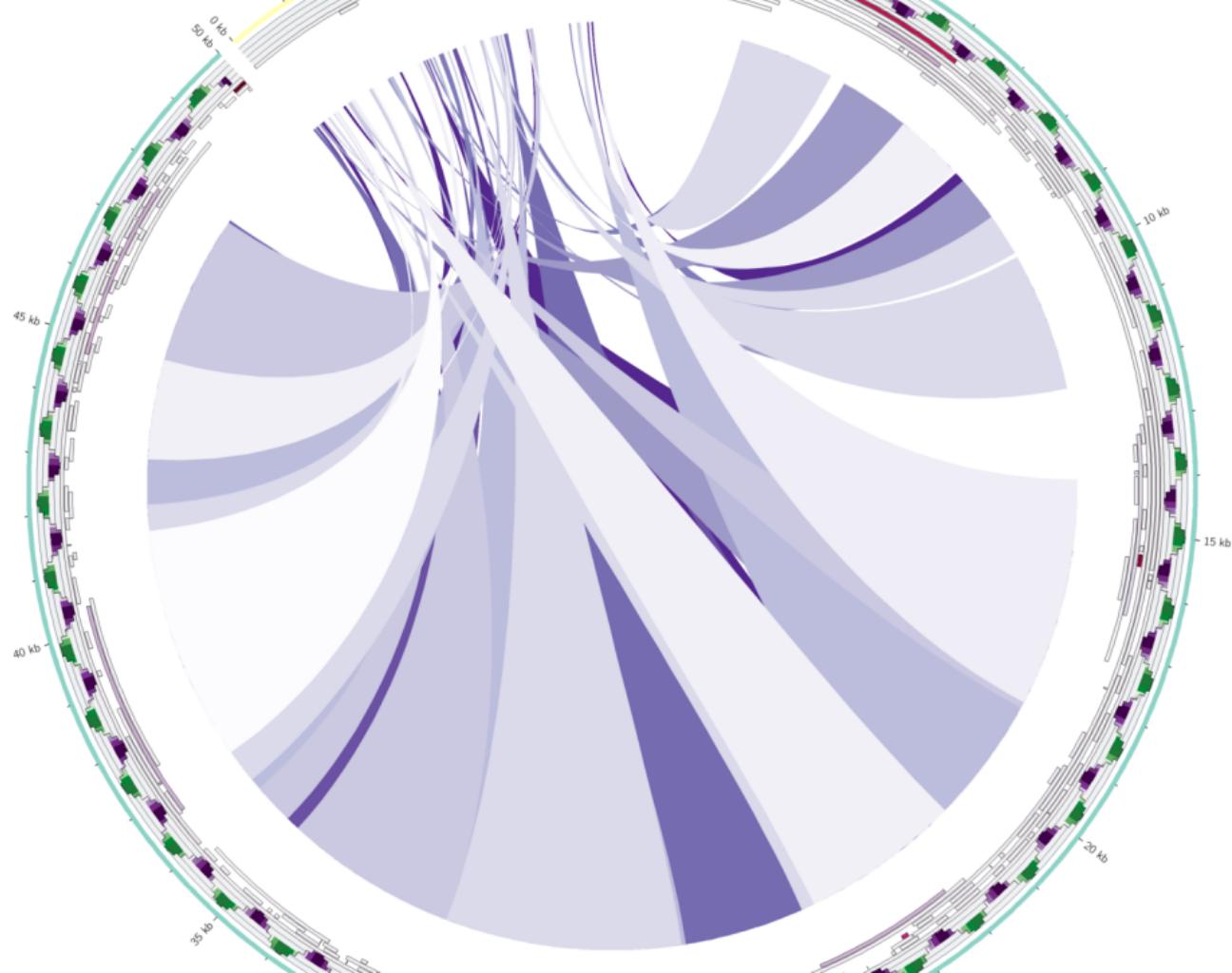
- Link support
- Now mostly feature-complete, support for all major circos features
- Soon in IUC











**Circle Rule** creates circle plots from standard feature matrix databases. (Galaxy Version 0.9-RC2) - Options

**Preference Center**

**Print History**

**Status** PASTS Sequence  
5 reads

**Oxygen**  
Nothing selected

Individual displays oxygen levels as part of the barcode configuration

**Merge in Configuration Options (Characteristics)**

**Spacing Between Diagrams**  
0mm

**Radius**  
0mm

**Thickness**  
1.0

**Labels**

**Show Label**  
 Yes  No

When set to yes, labels will be perpendicular to the tangent of the circle at the location of the label. Otherwise, they will be parallel to the tangent of the circle.

**Radius**  
1.0  
Radius

Select a color  
White

(0,0,1)  
1.0 mm per tick spacing will be in 100 (100 spacing of 1000) = every 100, labels and tick "size": 1x=1 mm size.

**Tick Order**  
2-D Tick Order

**Tick Spacing**  
1000.0  
Number of labels

Show tick labels  
 Yes  No

**Label Size**  
10.0

**Label Offset**  
1.0

**Label Format**  
Integer

**2-D Tick Group**

**Tick Spacing**  
1000.0  
Number of labels

**Tick Size**  
1.0

**Show Tick Labels**  
 Yes  No

**Label Size**  
10.0

**Label Offset**  
1.0

**Label Format**  
Integer

Invert Tick Group

**2-D Data**

**2-D Data Plot**

**Outside Radius**  
0.99

**Inside Radius**  
0.95

**Outer Thickness**  
0.15

**Outer Thickness**  
0.15  
Value: 0.15, the plot will have borders. i.e. Inverted values will be to the outside

**Plot Format**  
Histogram

**Highlight Data Source**  
0.99  
2.0 kg

**Actions**  
None

Actions have been selected, they will be treated as a stacked histogram

**Plot Feature Specific Options**

**Rule**  
Rule

**1: Rule**

**Conditions to Apply**  
1: Conditions to Apply

**Condition**  
Apply to Every Point

Insert Condition to Apply

**Actions to Apply**  
1: Actions to Apply

**Actions**  
Change Rule Color based on Value

**Fill Color**  
Solid

**Suspension Changes**

**Stroke Color**  
Select a color  
Black

**Outer Thickness**  
1

**Layers**  
20

**Thickness**  
0.0

**Inset Points**

**Padding**  
2.0

**Overline Behavior**  
Given: new layers are added as required

**Layer: Over New Color**  
 Select a color

**2: Rule**

**Conditions to Apply**  
2: Conditions to Apply

**Condition**  
Apply to Every Point

Insert Condition to Apply

**Actions to Apply**  
2: Actions to Apply

**Actions**  
Change Rule Color based on Value

**Fill Color**  
Suspension (Purple - Red)

**Expected minimum value of dataset**  
-1.0

**Expected maximum value of dataset**  
1.0

**Inset Color Scale**  
 Yes  No

Insert Actions to Apply

**Continue from**  
This is relative to the output you are currently in.

**3: Rule**

**Conditions to Apply**  
3: Conditions to Apply

**Condition**  
Apply to Every Point

Insert Condition to Apply

**Actions to Apply**  
3: Actions to Apply

**Actions**  
Change Rule Color based on Value

**Fill Color**  
Suspension (Purple - Red)

**Expected minimum value of dataset**  
-1.0

**Expected maximum value of dataset**  
1.0

**Inset Color Scale**  
 Yes  No

Insert Actions to Apply

**Continue from**  
This is relative to the output you are currently in.

**4: Rule**

**Conditions to Apply**  
4: Conditions to Apply

**Condition**  
Apply to Every Point

Insert Condition to Apply

**Actions to Apply**  
4: Actions to Apply

**Actions**  
Change 2-D Rule

**Static & Dynamic 2-D Rule**

**Dynamic Change is whenever applied**

**Fill Color**  
Deep violet (Purple)

**Expected minimum value of dataset**  
0

**Expected maximum value of dataset**  
2000

**Invert 2-D Rule Mapping**  
 Yes  No

**5: Actions to Apply**

**Action**  
Change Link Color

**Static / Dynamic Change**  
Dynamic Change is whenever applied

**Fill Color**  
Deep violet (Purple)

**Expected minimum value of dataset**  
0

**Expected maximum value of dataset**  
2000

**Invert Link Color Scale**  
 Yes  No

Insert Actions to Apply

**Continue from**  
This is relative to this one to be applied in addition to this rule. E.g. if one rule modifies tick size, and another action with continue from they could both be applied rather than whichever was encountered first.

**6: Insert 2-D Rule Plot**

**Link Tracks**  
Link

**7: Line Rule**

**Inside Radius**  
1.0

This is the radial position of the termination of the line, the relative values, it defines distance Base 1 there it is defined in terms of some diagram radius, otherwise it is defined in terms of the outer diagram radius

**Link Data Source**

**Link Type**  
In-line

Server with one or more. Format: <rule> starts with <rule> starts with

**Link Color**  
Solid

**Select a color**

**Thickness**  
1.0

In gray

**Outer Radius**  
0.1

The radial position of the third control point (or addition to the two positions defined by the link coordinates) used to calculate the angle of the line. If no points are given no angle will be used

**Advanced Settings**

**2-D Rule**

Optional. Overrides with a higher 2-D rule value draw on top of data sets with a lower value. Only useful if you want to draw on top of other rules.

**Create**  
0.95

*Note additional Bezier control points can be set by using the next mouse parameter. When drawn, points p3 and p4 will be calculated to give the lines a smooth curve. The p3 control point will cause along the line to follow the original p2 location and the intersection of p3 and p4. In the second example, p3 and p4 are at the same position as p1 (p2). In this case, creating no effect, because p1, p2 and p4 are at the same position as p3 (p2), the control points by Bezier\_order*

**Bezier Radius Party**  
0.75

*The bezier\_order, partly adjust the position of the p2 control point will cause along the line to follow the original p2 location and the intersection of p3 and p4. In the second example, p3 and p4 are at the same position as p1 (p2). In this case, creating no effect, because p1, p2 and p4 are at the same position as p3 (p2), the control points by Bezier\_order*

**Per-Link Rules**  
No

A set of parameters that can be used to rendering adjustment, colors, border, width, justify and font-size to give the lines a more dynamic, organic look. By combining each rule you can also draw multiple lines without the data series they would have certainly overlapped. Each parameter's parameter values are defined in terms of values: `print_params`. These are the minimum and maximum impositions by which the values can be perturbed.

**Rules**

**Print**

**1: Rule**

**Conditions to Apply**  
1: Conditions to Apply

**Condition**  
True (Always Applied)

Insert Condition to Apply

**Actions to Apply**  
1: Actions to Apply

**Actions**  
Change 2-D Rule

**Static & Dynamic 2-D Rule**

**Dynamic Change is whenever applied**

**Expected minimum value of dataset**  
2000

**Expected maximum value of dataset**  
2000

**Invert 2-D Rule Mapping**  
 Yes  No

**2: Actions to Apply**

**Action**  
Change Link Color

**Static / Dynamic Change**  
Dynamic Change is whenever applied

**Fill Color**  
Deep violet (Purple)

**Expected minimum value of dataset**  
0

**Expected maximum value of dataset**  
2000

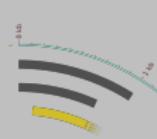
**Invert Link Color Scale**  
 Yes  No

Insert Actions to Apply

**Continue from**  
This is relative to this one to be applied in addition to this rule. E.g. if one rule modifies tick size, and another action with continue from they could both be applied rather than whichever was encountered first.

**3: Insert Link Data**

**Update**



# Q&A

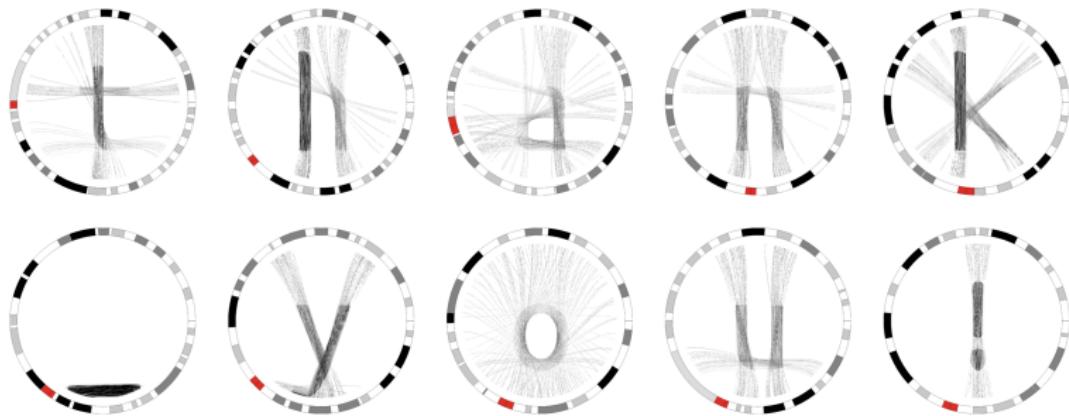
JBrowse and  
Circos Update

ER/SH

JBrowse  
Plugins  
Metadata  
Themes

Circos

Q&A



GitHub  
Work Email  
GPG Fingerprint

[github.com/erasche](https://github.com/erasche)  
[esr@tamu.edu](mailto:esr@tamu.edu)  
F063 D331 6E63 E7B5 23FD  
B9EA C527 B0FC 0AF6 3592

This material is based upon work supported by the National Science Foundation under Grant Number

1565146