

# Eclipse January

Dawn workshop  
NOBUGS 2016  
Copenhagen

## Science working group

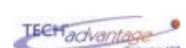
- Hosted by Eclipse Foundation
- Charter
- Collaboration with other groups:  
IoT, LocationTech, PTP

# Members

## Steering Committee



## Participating



UPPSALA  
UNIVERSITET

# January

- Initial SWG project
- Spun out from DAWN, EAVP, ICE
- Github
- RC1

# January

- DAWN Science
  - Datasets
- ICE form
  - Data structures
- EAVP geometry
  - 3D solids, surface meshes

# January Datasets

- N-dimensional array inspired by NumPy
- DataSet from GDA 7
- Generalized from doubles for SDA
- Migrated to DAWN Science
- Split off for project January

# January Datasets

- Creating datasets with DatasetFactory
  - Zeros, ones
  - Ranges (linear, logarithmic)
  - Java objects (arrays, lists, nested objects)
  - Samples from random distribution functions
- Arithmetic, logical, bitwise operations:
  - +,-,\*,/,%,pow
  - >, <, ==, !=, ||, &&, !, |, &, ^, ~, <<, >>, >>>

# January Datasets

- Maths, stats functions
  - Trigonometric or circular, hyperbolic
  - Exponential, logarithmic
  - Min, max, mean, median, quantiles, variance, covariance, skewness, kurtosis
- Linear algebra
  - Trace, norm, products
  - Decompositions



# January Datasets

- View, slice, transpose
- Broadcasting support
- In-memory, on-disk representations (lazy datasets), remote, streaming



# Future

- Collaboration with other SWG projects
- More NumPy/SciPy catch-up
- Common IO

[science.eclipse.org](http://science.eclipse.org)

[projects.eclipse.org/projects/technology.january](http://projects.eclipse.org/projects/technology.january)

[github.com/eclipse/january](https://github.com/eclipse/january)