THE FAST RADIO BURST POPULATION

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University of Amsterdam

ASTRON

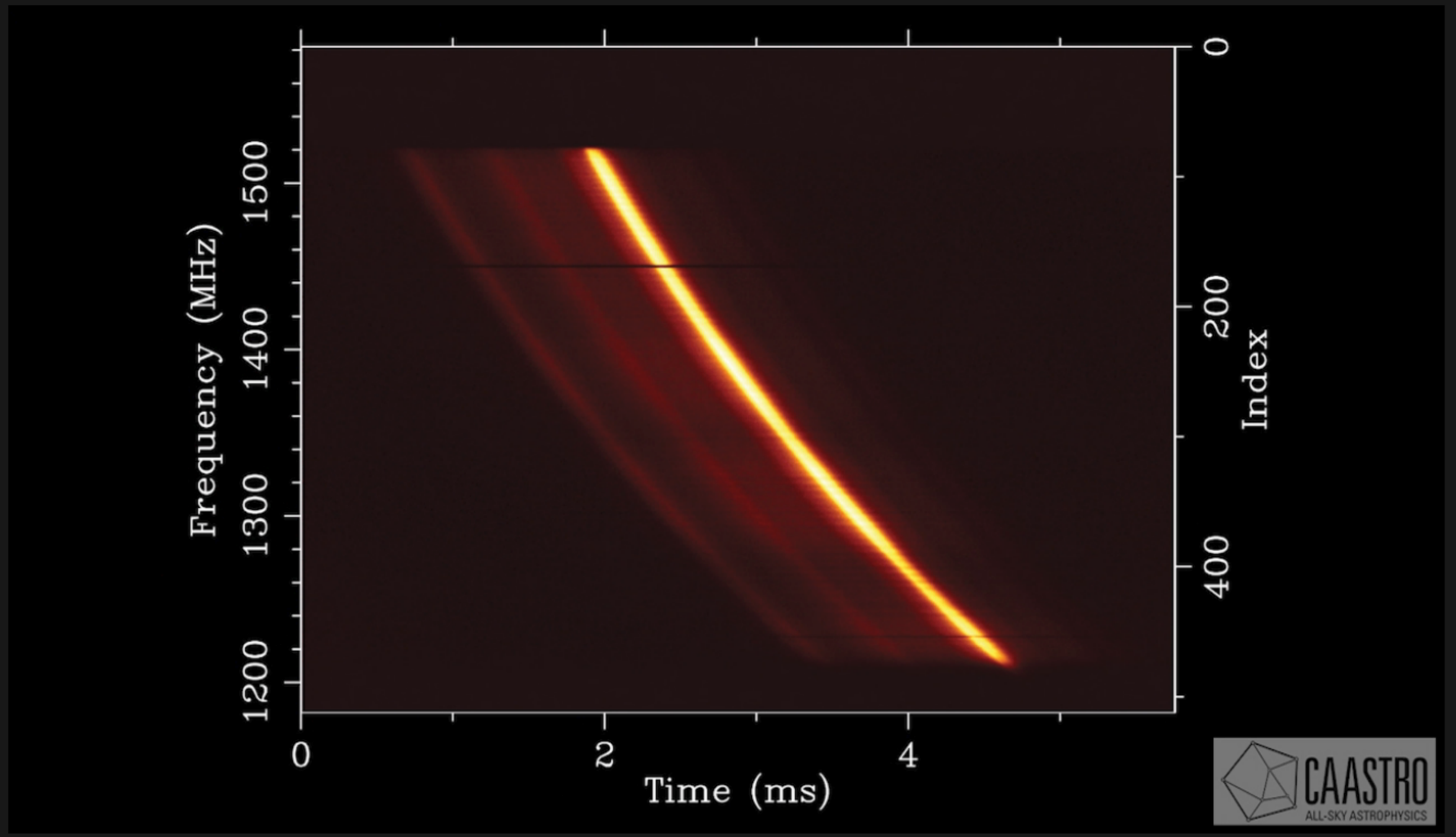


FIGURE: SWINBURNE ASTRONOMY PRODUCTIONS


2007
Lorimer Burst


2013
More FRBs

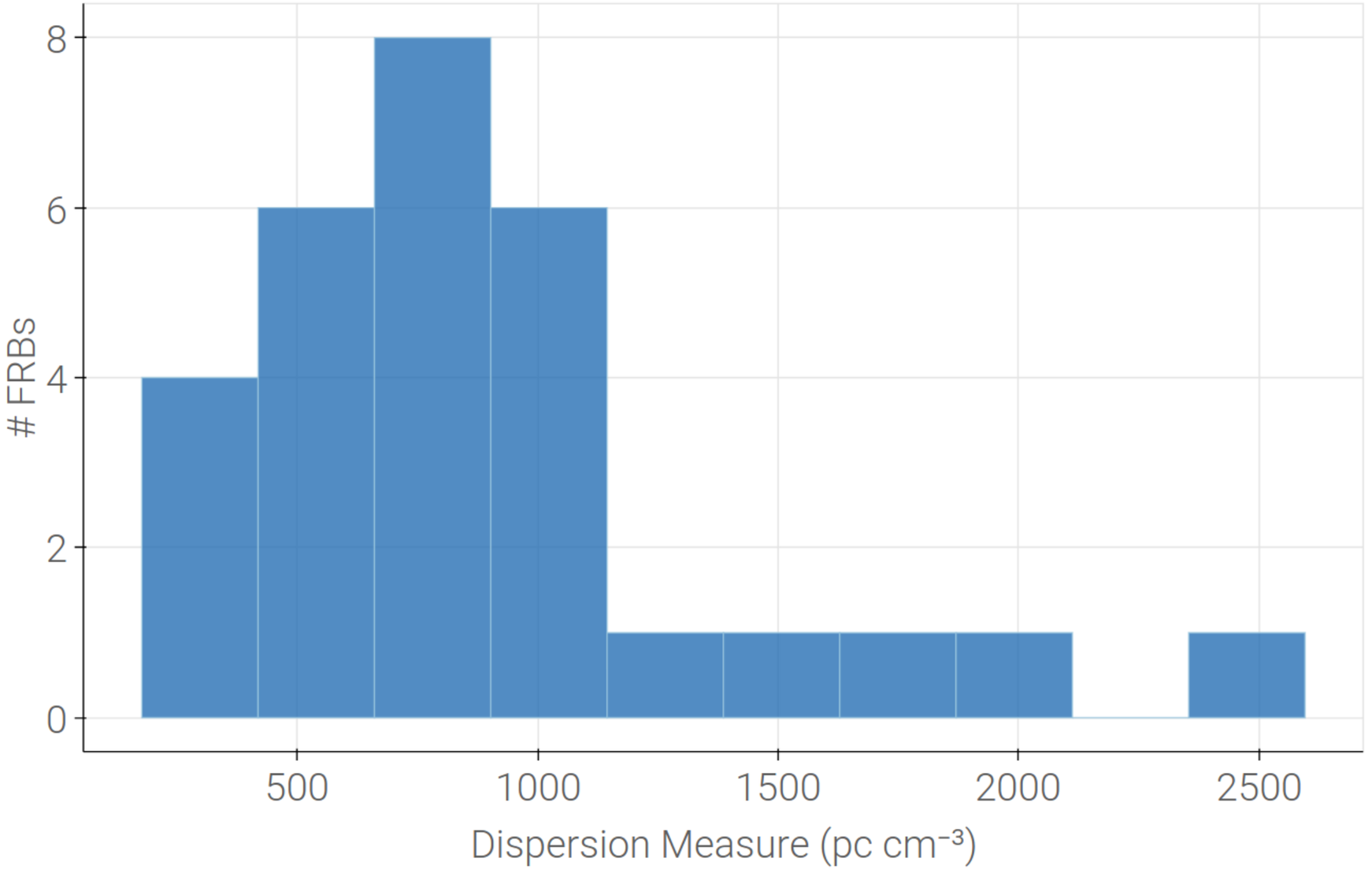

2014
Other observatories


2016
Repeater

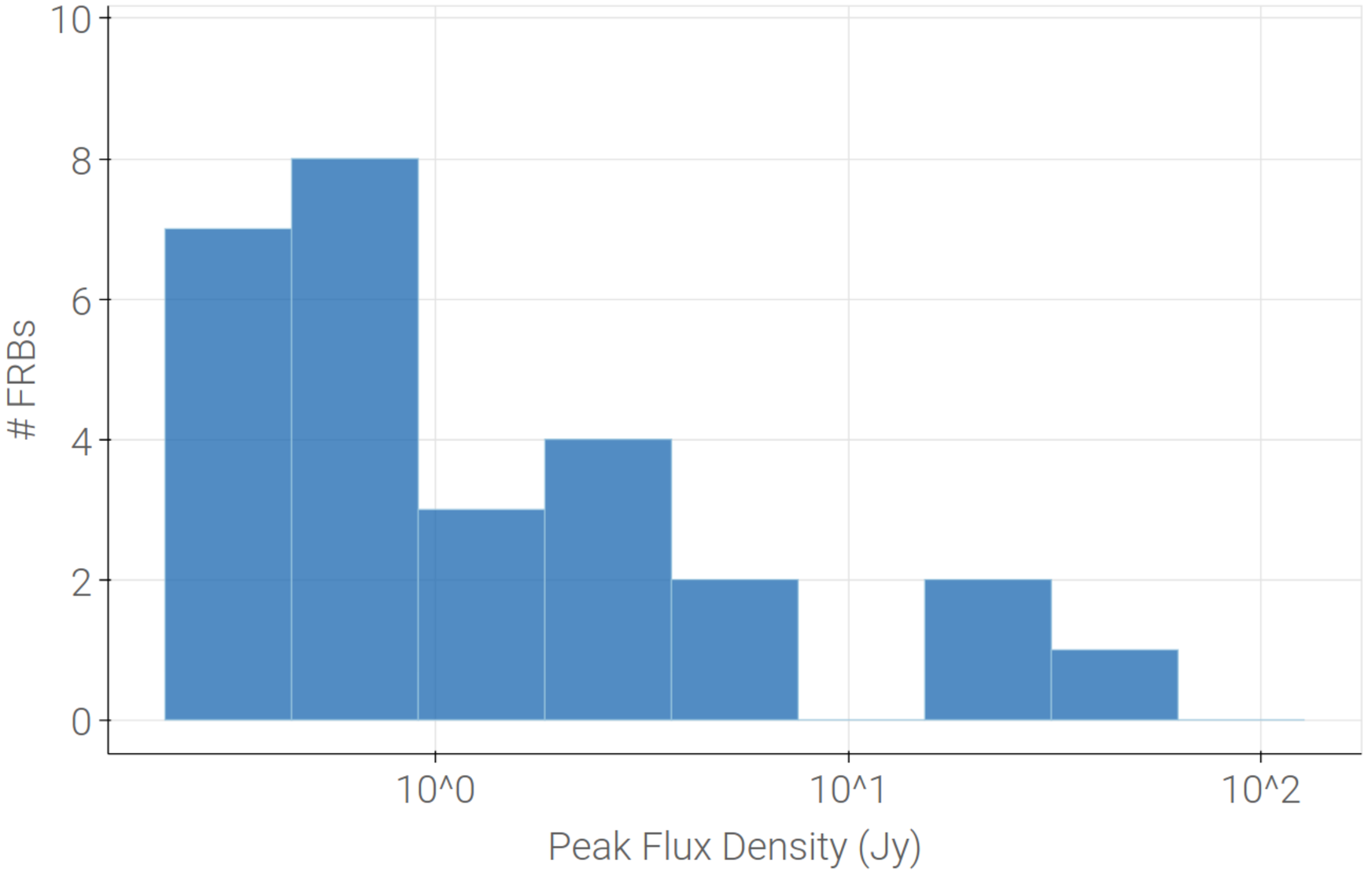
RATES

ORIGIN

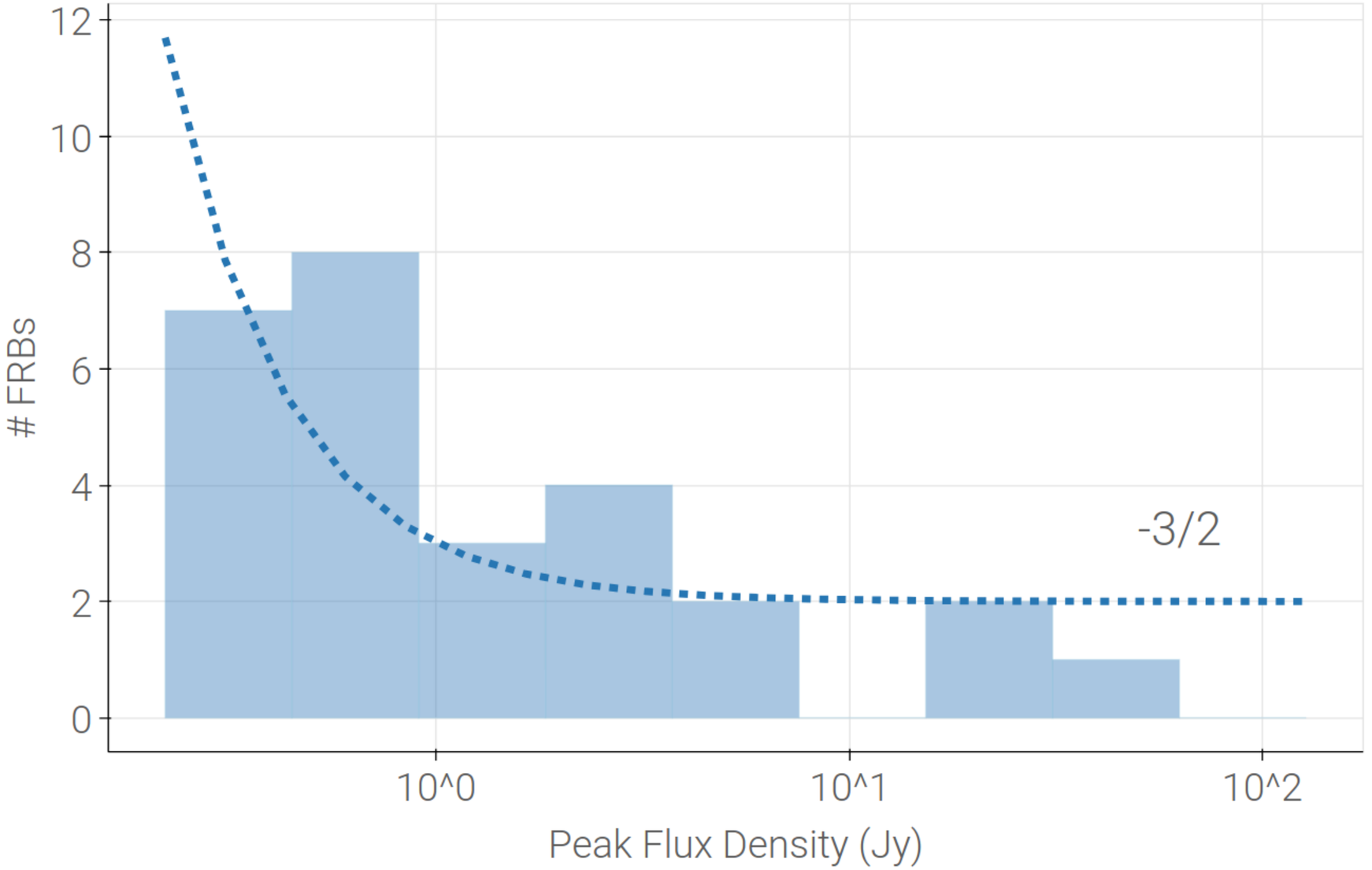
POPULATION



DATA: PETROFF+ 2016



DATA: PETROFF+ 2016



DATA: PETROFF+ 2016

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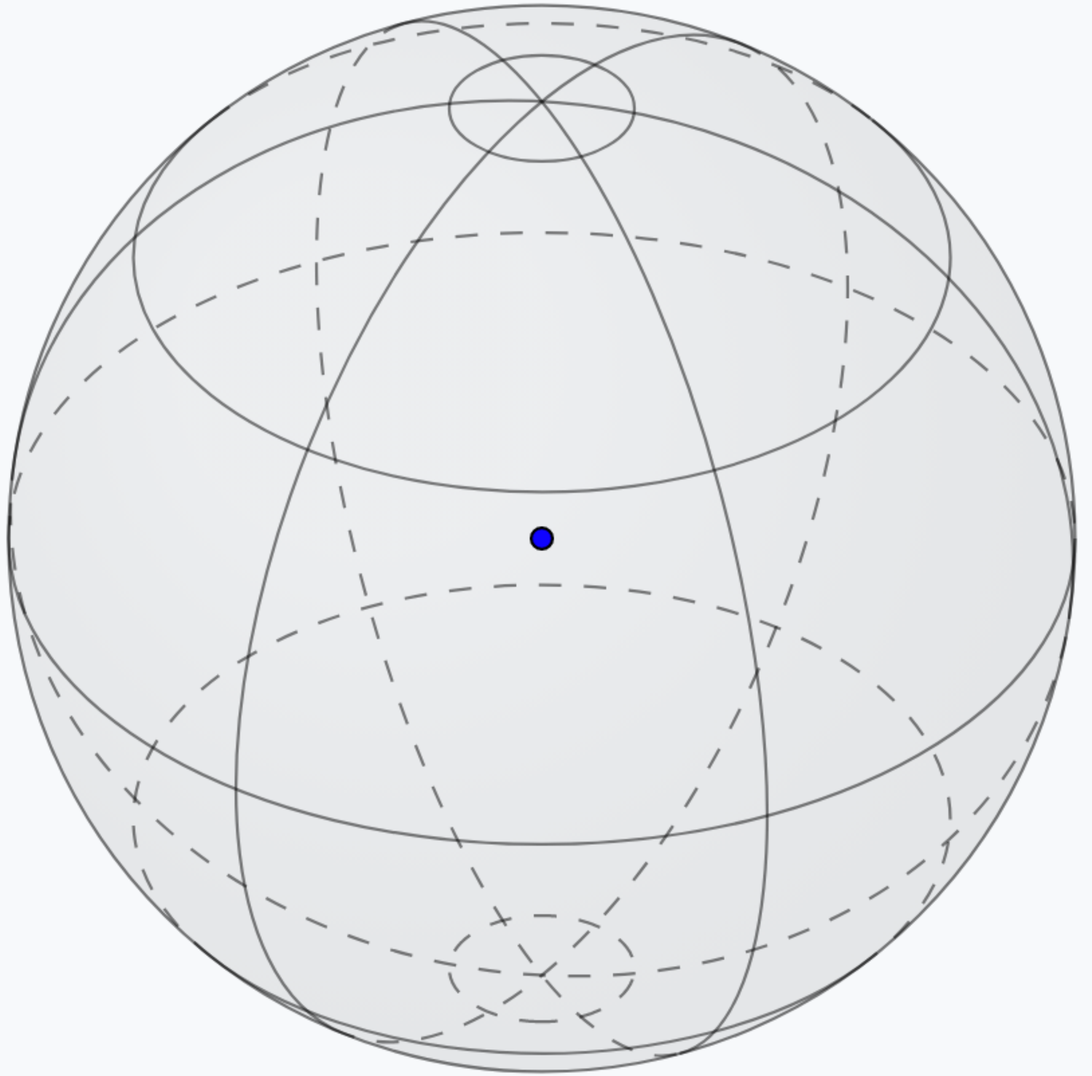
f-r-b-pop-py

Fast Radio Burst Population Synthesis

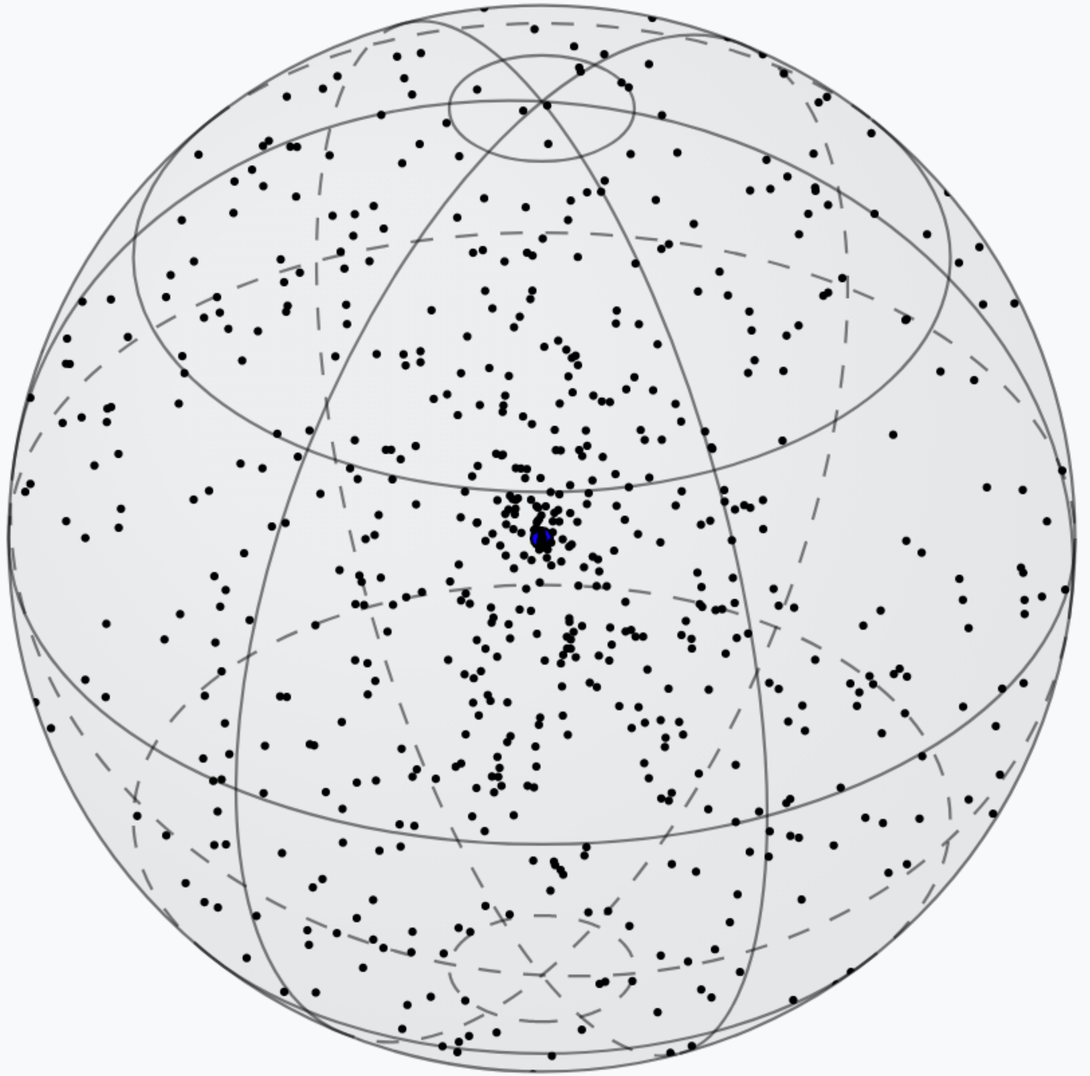
Population Synthesis

1. Volume



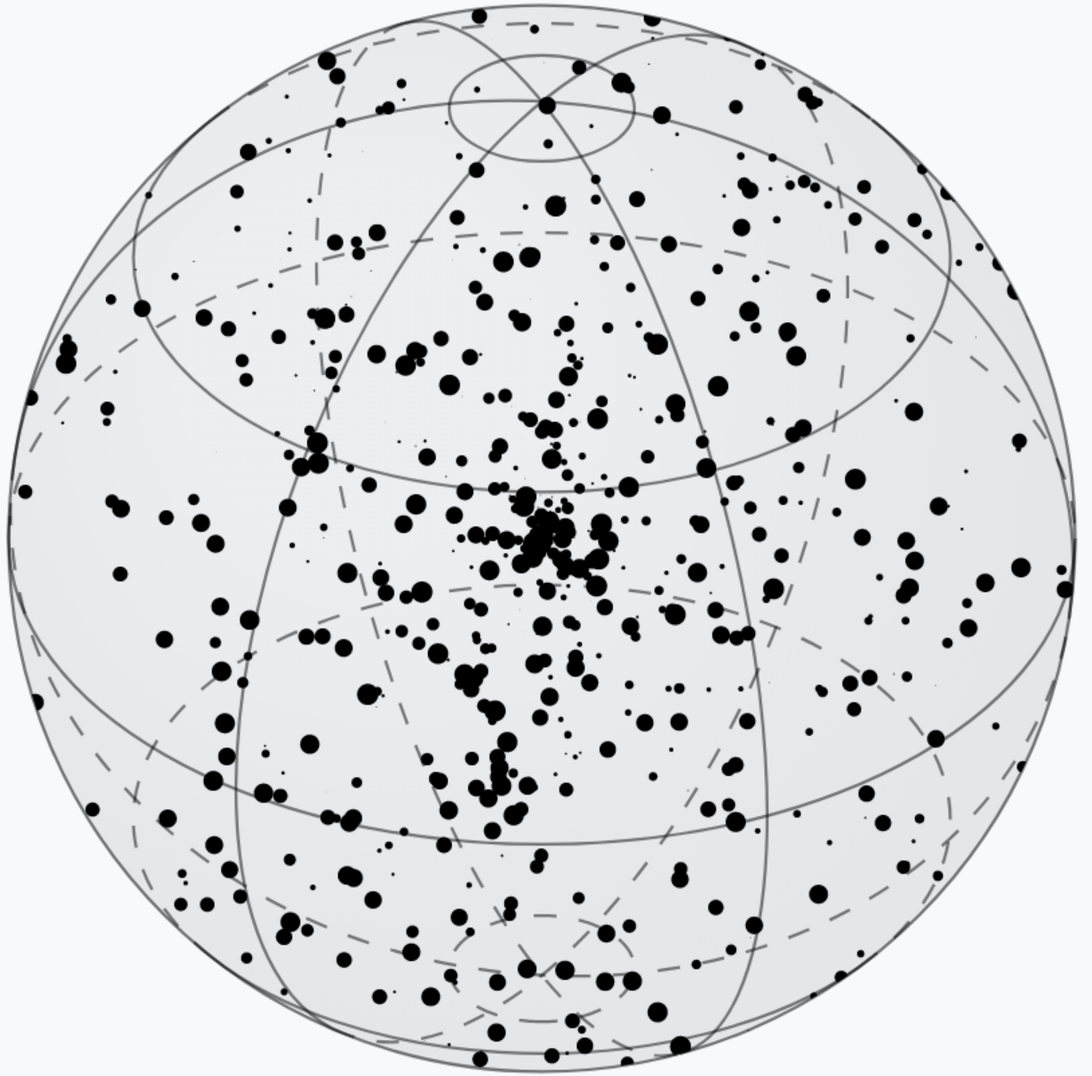
Population Synthesis

1. Volume
2. Populate



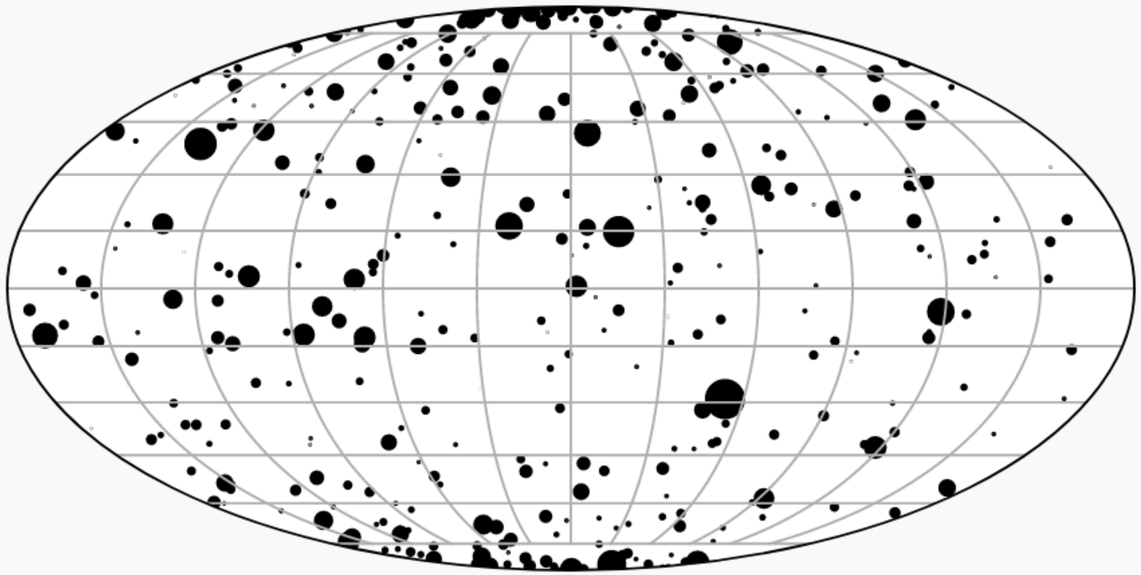
Population Synthesis

1. Volume
2. Populate
3. Properties



Population Synthesis

1. Volume
2. Populate
3. Properties
4. Survey



Population Synthesis

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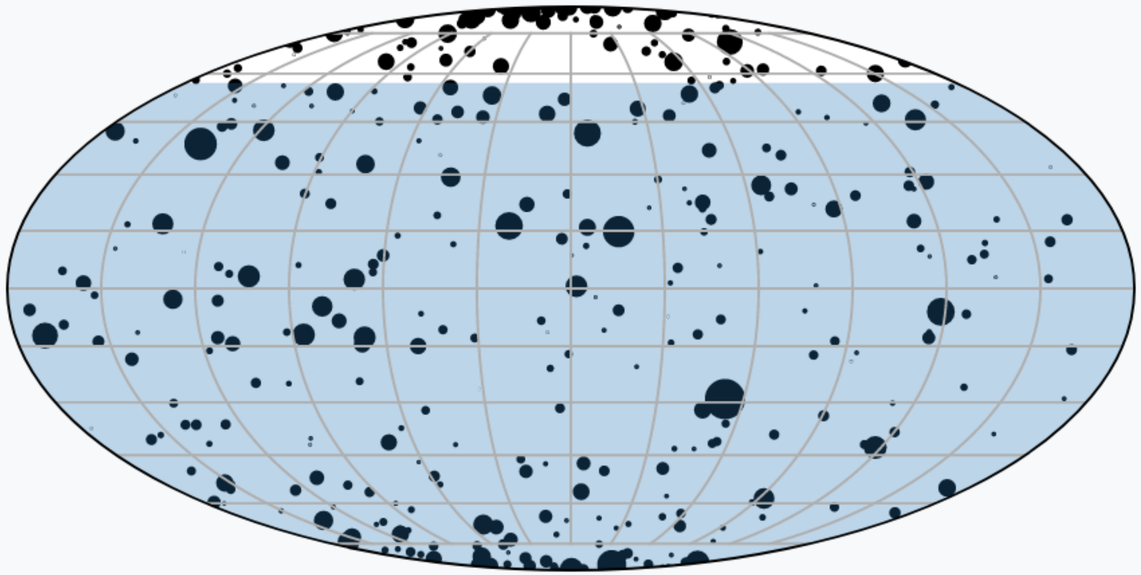
4. Survey



Population Synthesis

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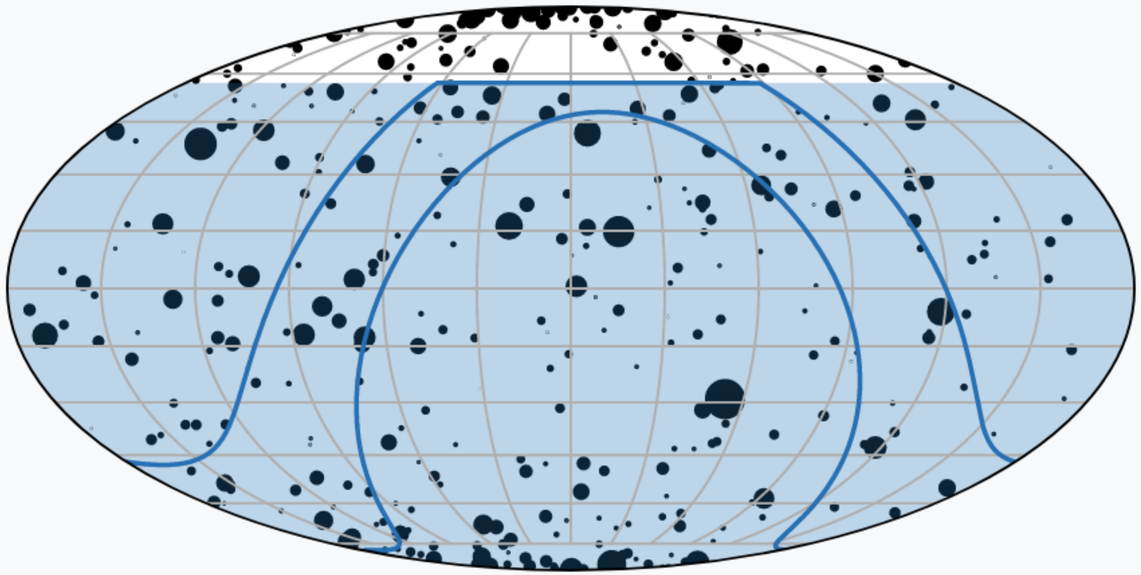

Population Synthesis

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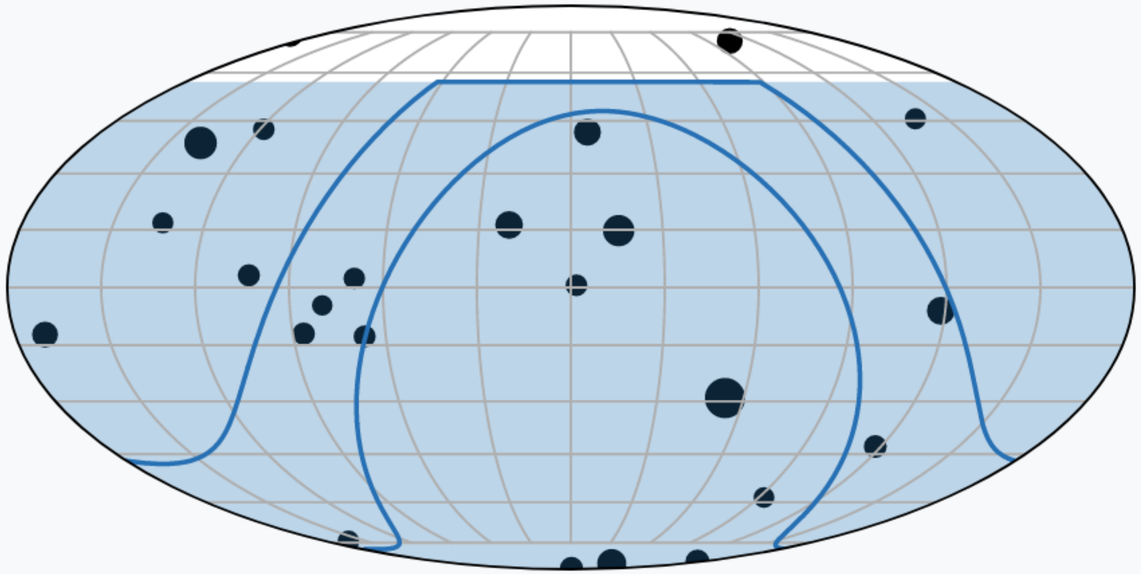

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Interact

Use the widgets below to inspect the FRB populations. Additional features include: hovering over plots to see various properties, switching between a scatter plot and histogram using the tabs and even toggling populations by clicking on the legend!

Galactic Latitude (degrees)

Galactic Longitude (degrees)

Adapt

Found the resulting populations don't seem to match up? Simply update your input to generate a new population, re-observe it and plot again!

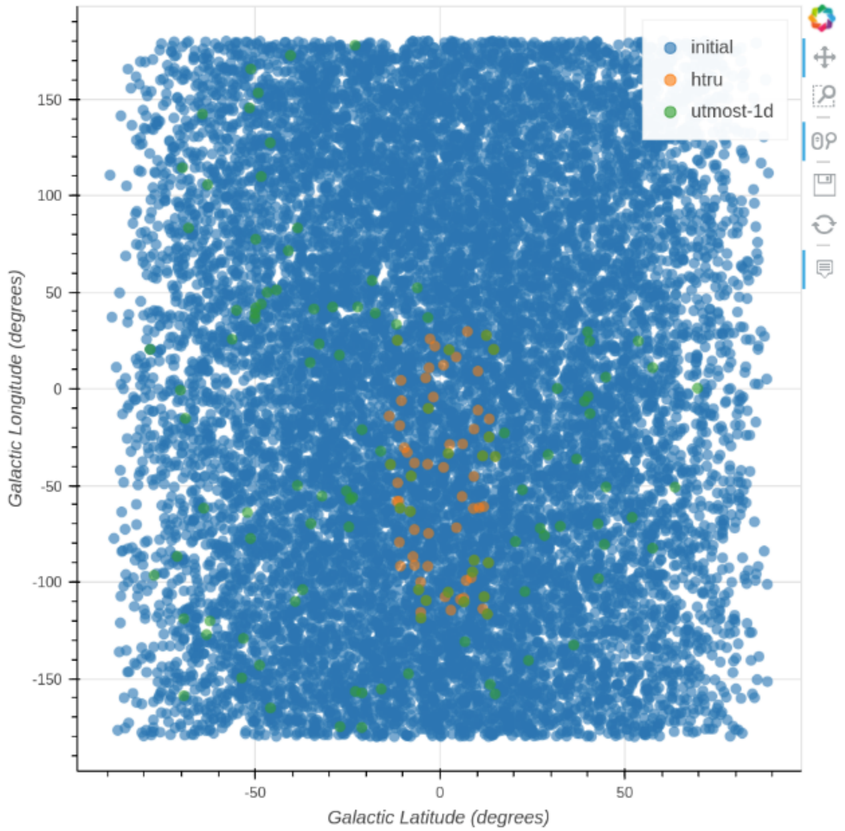
Cite

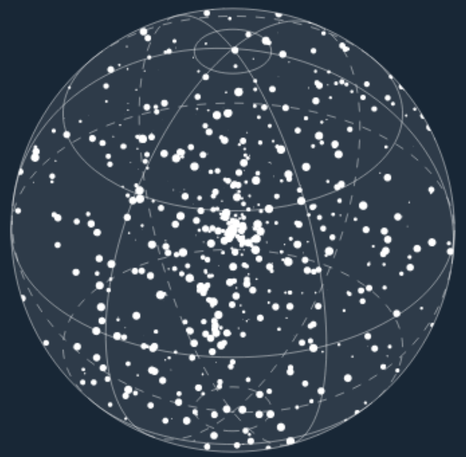
Want to use frbpoppy for your research? By all means - just cite us when you do!

Links

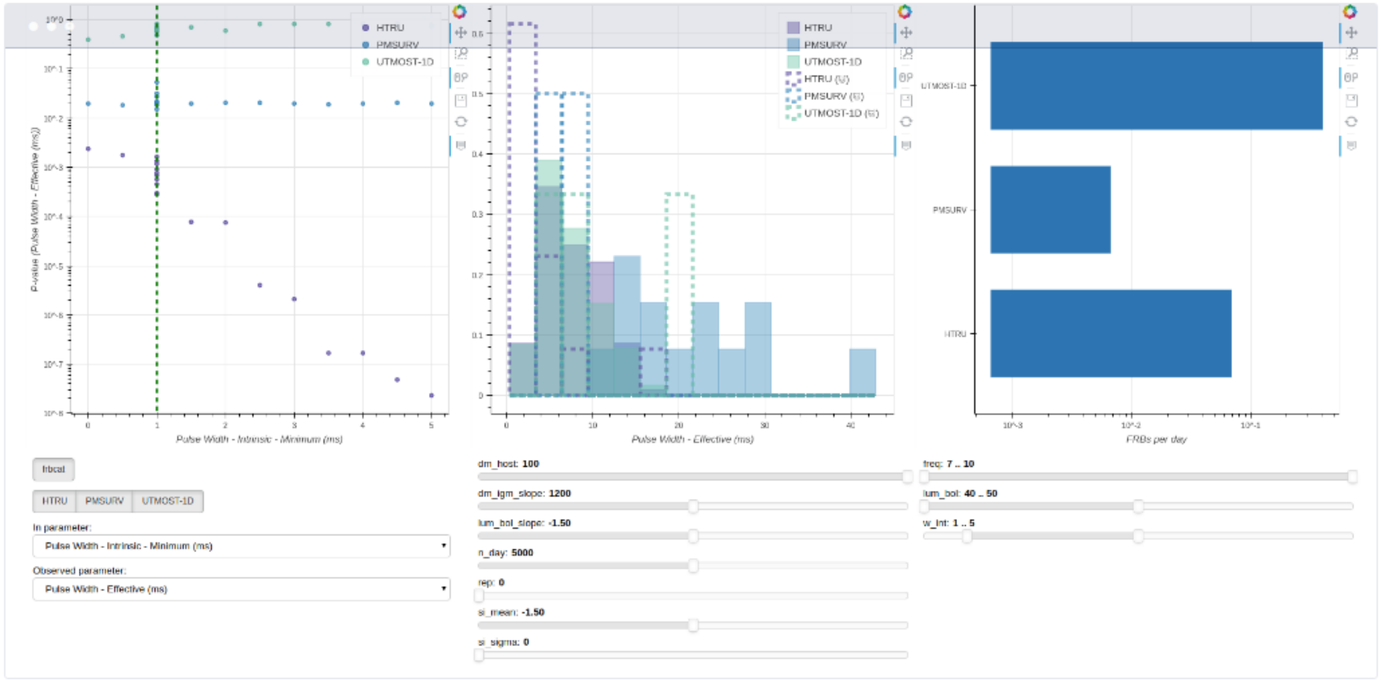
docs | code | issues | frbcat | david gardenier

scatter histogram





MONTE CARLO


HTRU
PMSURV
UTMOST-1D
Pulse Width - Intrinsic - Minimum (ms)
Pulse Width - Effective (ms)
HTRU (U)
PMSURV (U)
UTMOST-1D (U)
FRBs per day
frbcat
HTRU
PMSURV
UTMOST-1D
In parameter:
Pulse Width - Intrinsic - Minimum (ms)
Observed parameter:
Pulse Width - Effective (ms)
dm_host: 100
dm_igm_slope: 1200
lum_bol_slope: -1.50
n_day: 5000
rep: 0
si_mean: -1.50
si_sigma: 0
freq: 7 .. 10
lum_bol: 40 .. 50
w_int: 1 .. 5

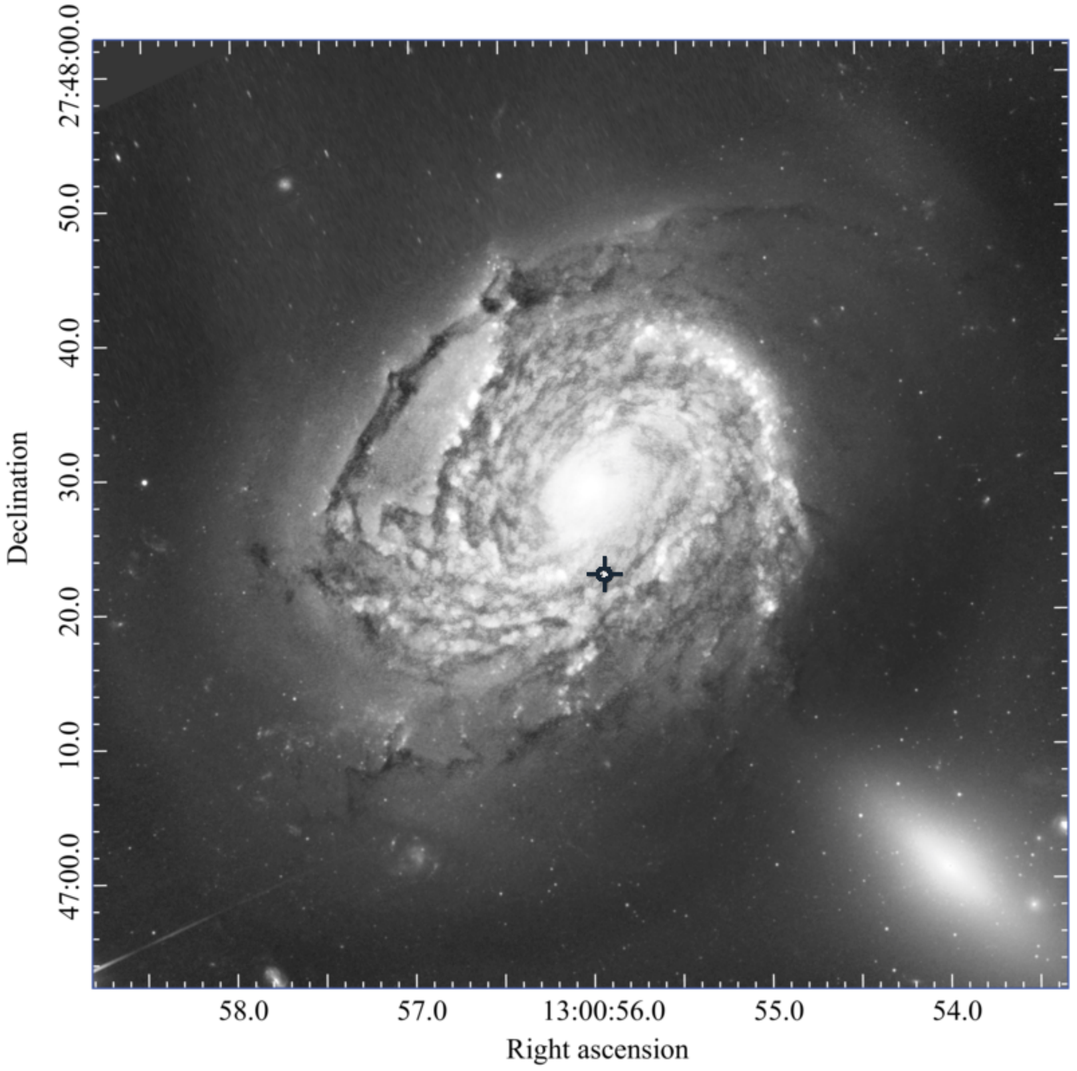


IMAGE: VAN LEEUWEN+ 2017


APERTIF


LOFAR

frbpoppy

By David Gardenier

Capable of ...

Constructing populations

Calculating FRB Rates

Comparing surveys

Improved with ...

Apertif + Lofar