International Centre for Radio Astronomy Research

MWA v TGSS: Finding Low Surface Brightness Sources

Ben Quici & Nick Seymour (ICRAR/Curtin)

SPARCSVII – #sparcs7- 19th July 2017

Curtin University

The University of Western Australia

A Tale of Two Surveys

TGSS

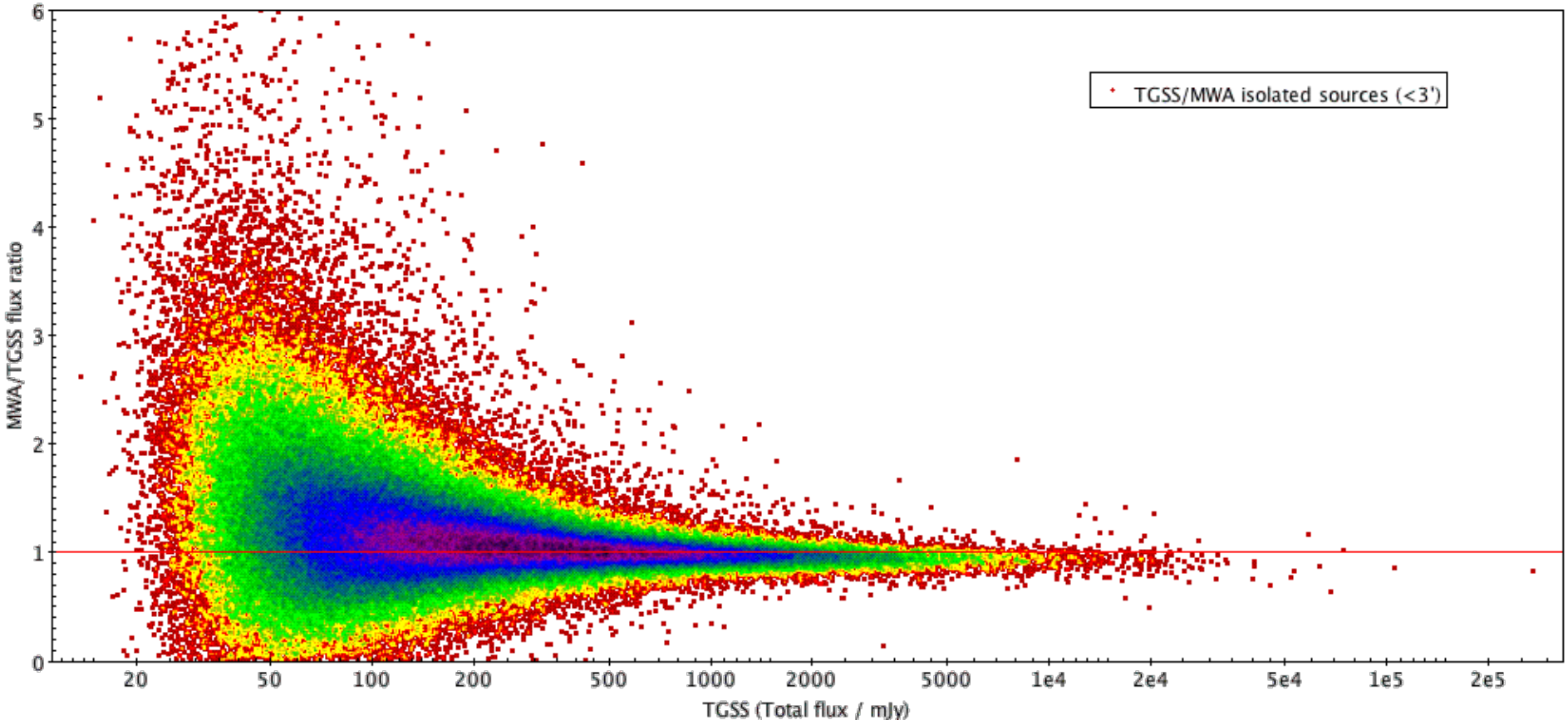
MWA

A Tale of Two Surveys

TGSS

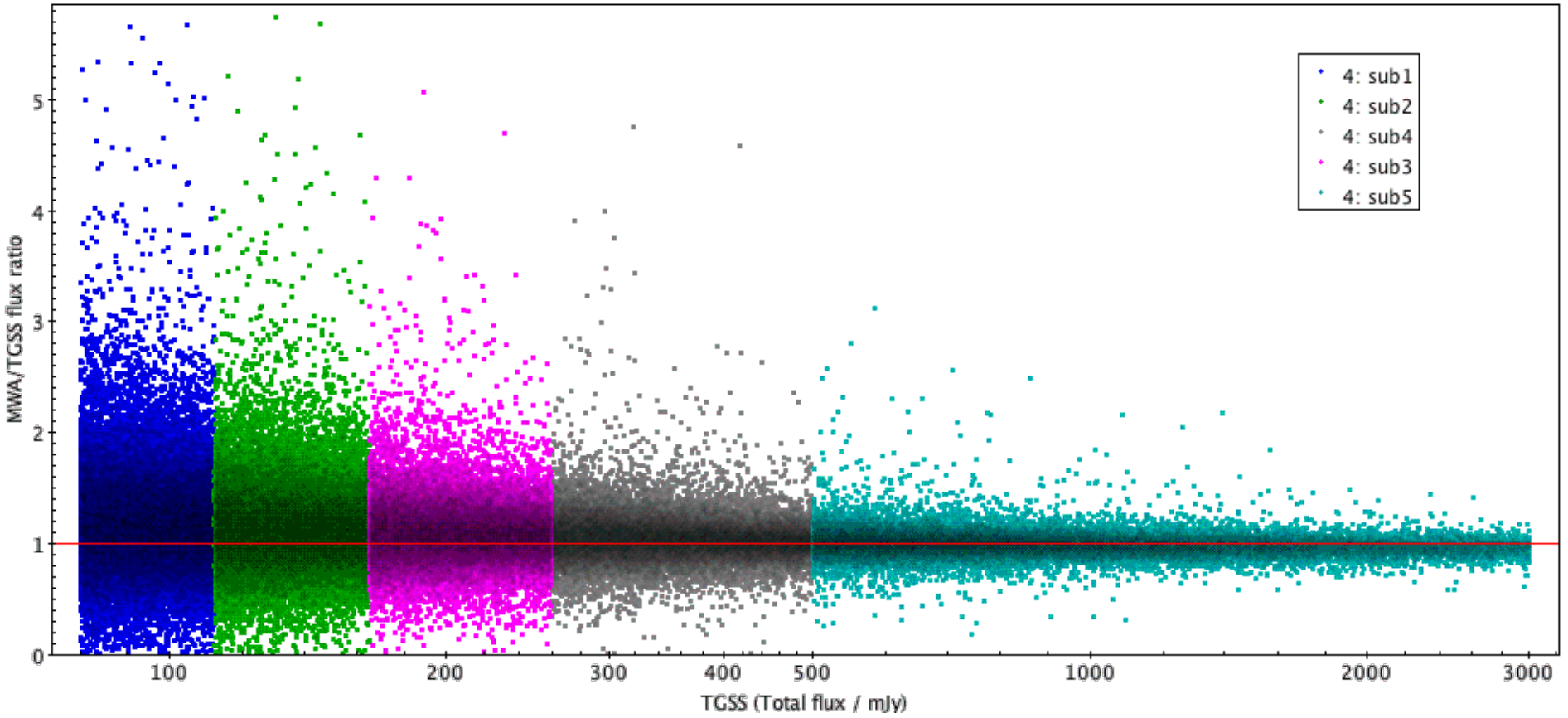
MWA

A Tale of Two Surveys



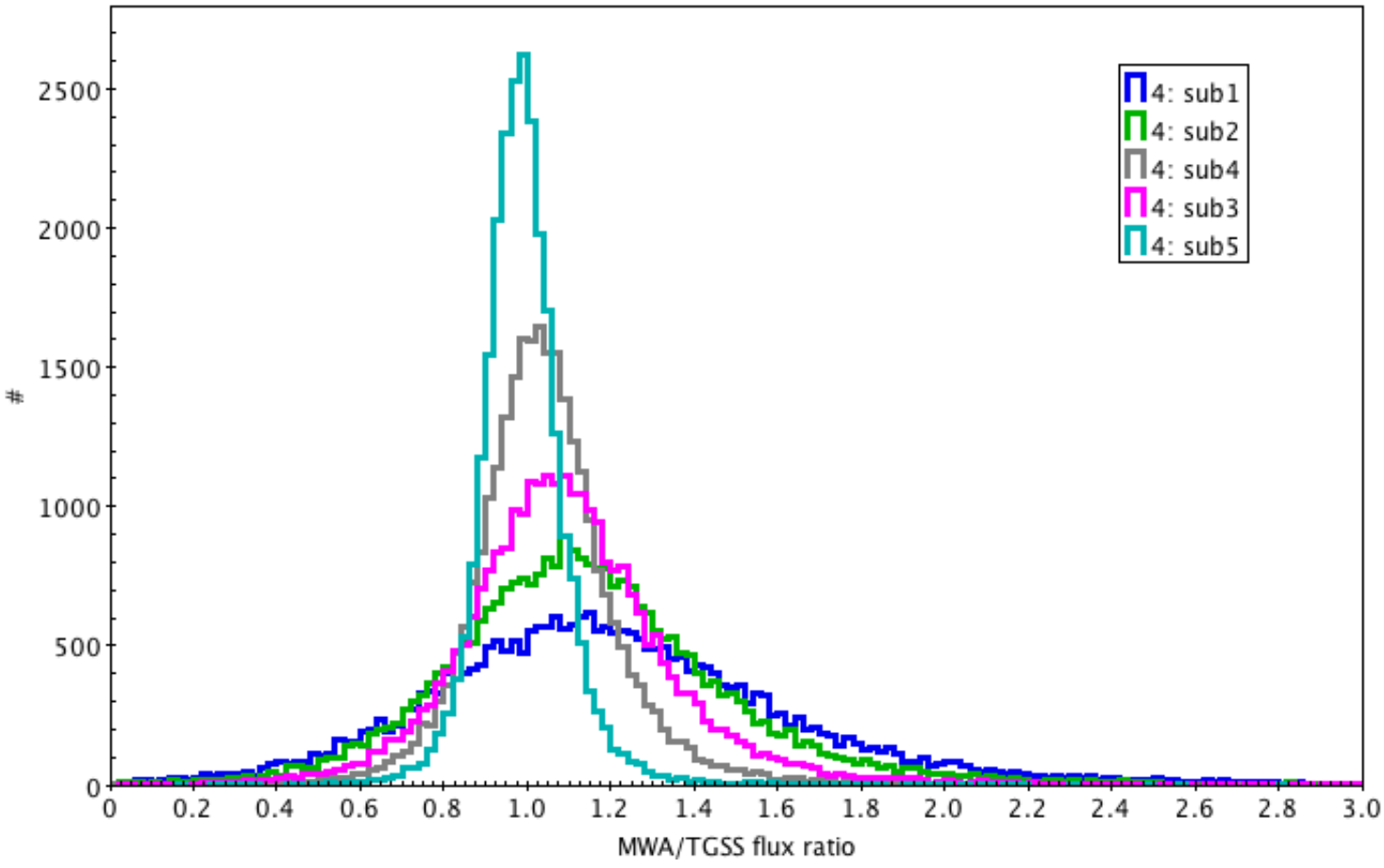
Flux Ratio at 151MHz

A Tale of Two Surveys



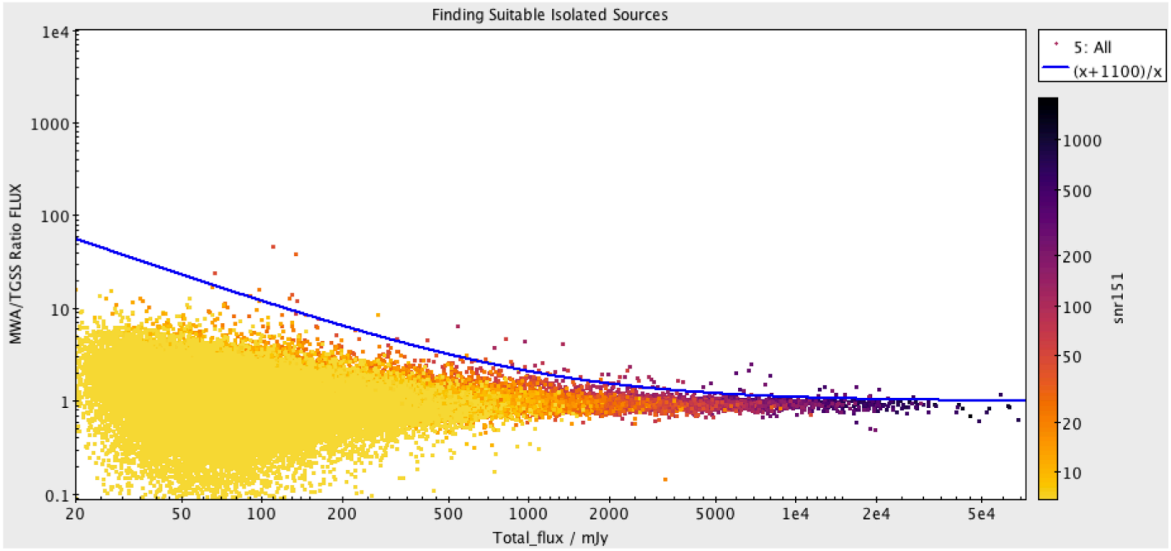
5 subsamples

A Tale of Two Surveys

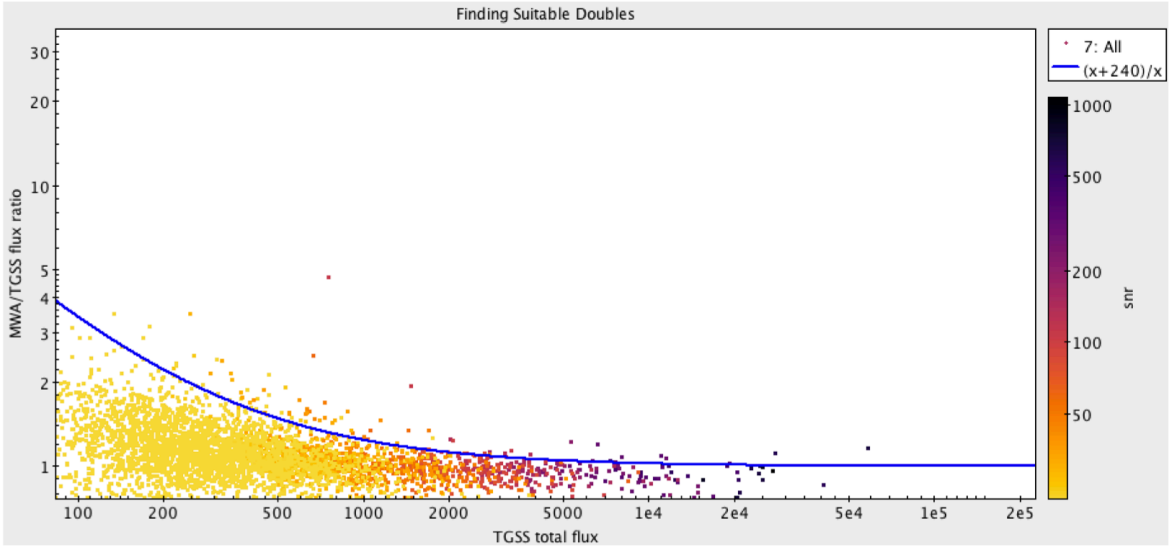


5 subsamples

Selecting Extreme Sources

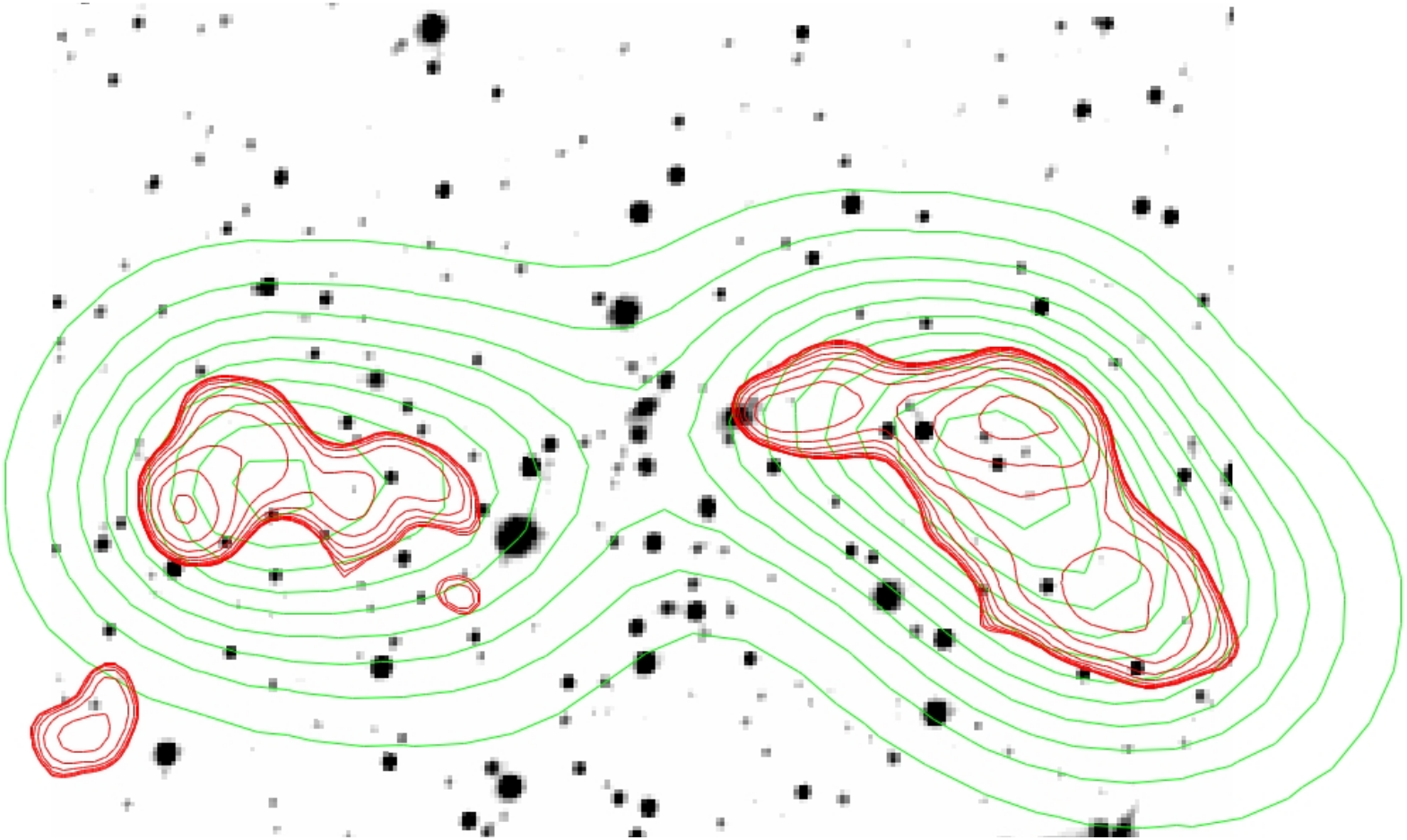


Isolated Single Sources



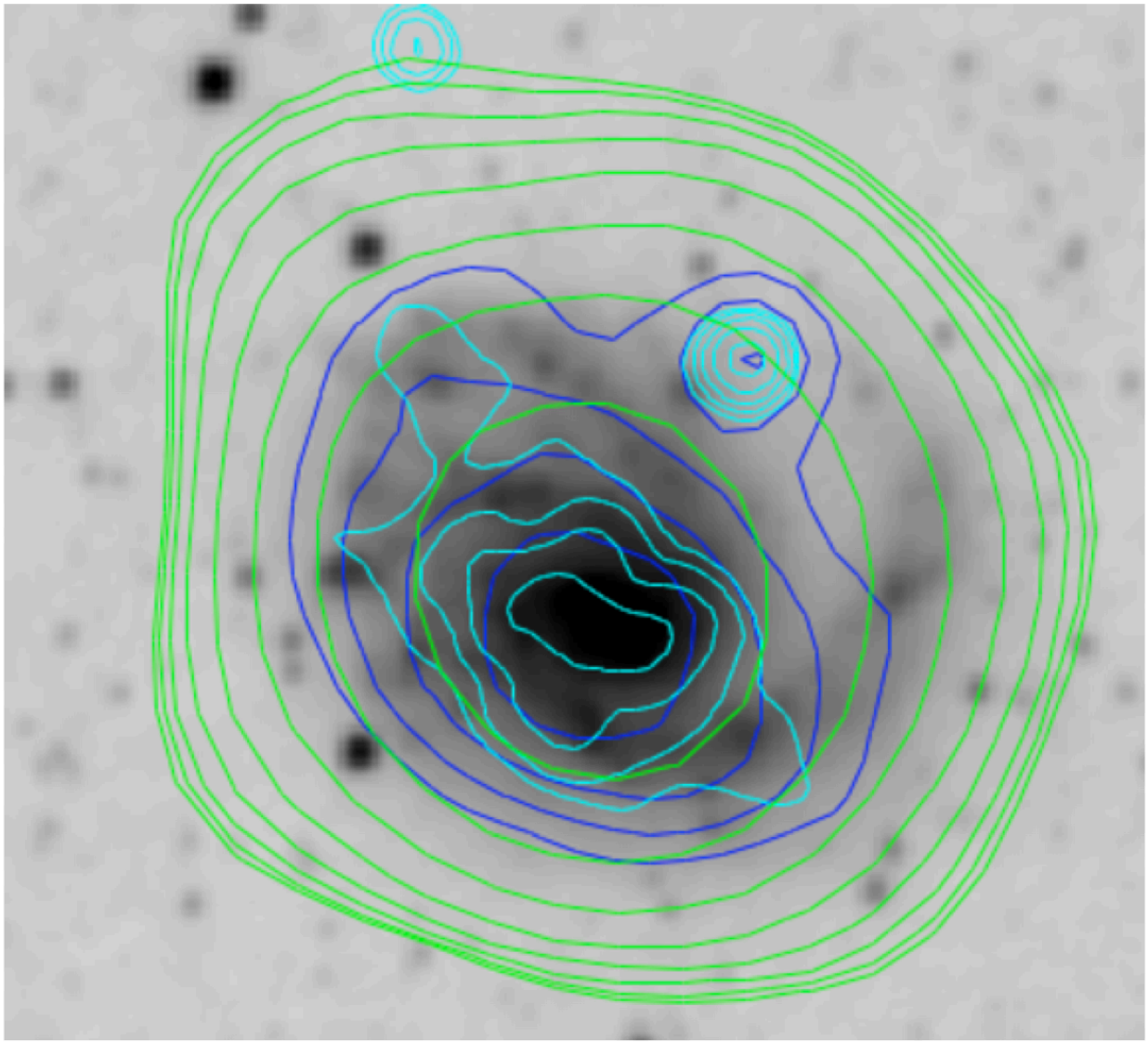
Double TGSS Sources

Interesting Sources



PKS0800-09 @z=0.0865 (probably) LAS > 1Mpc

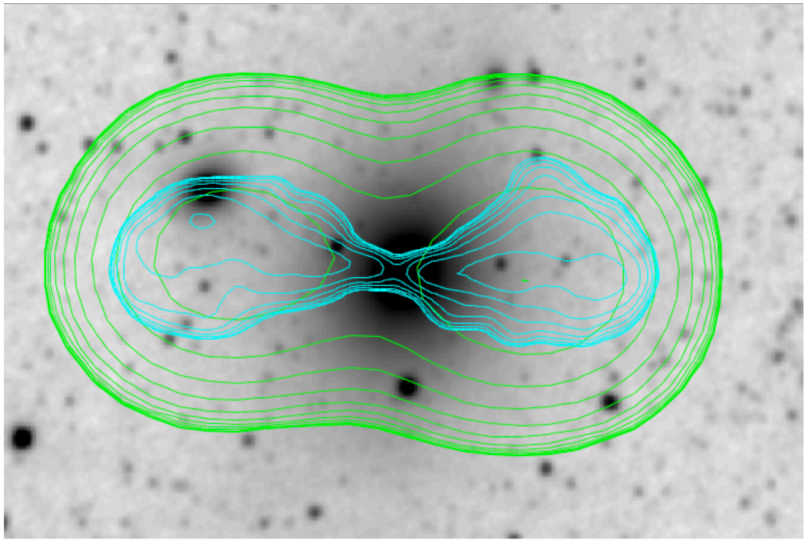
Interesting Sources

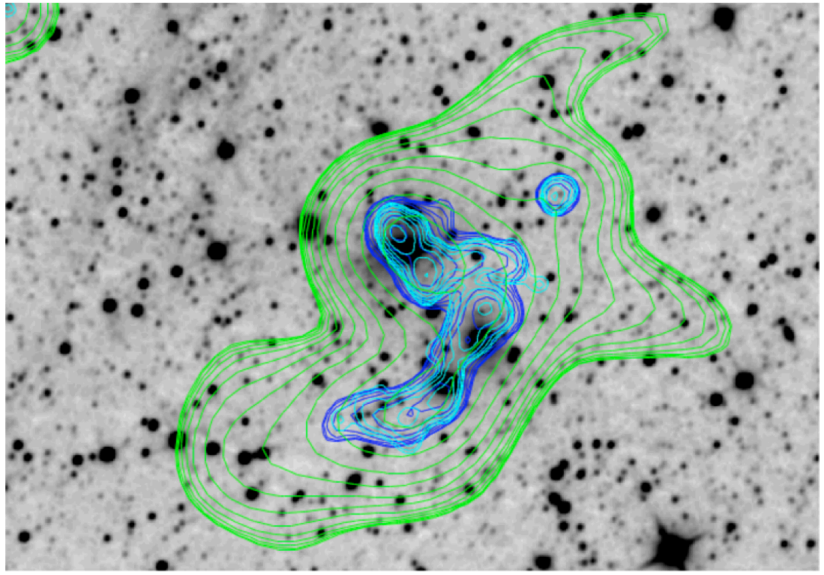


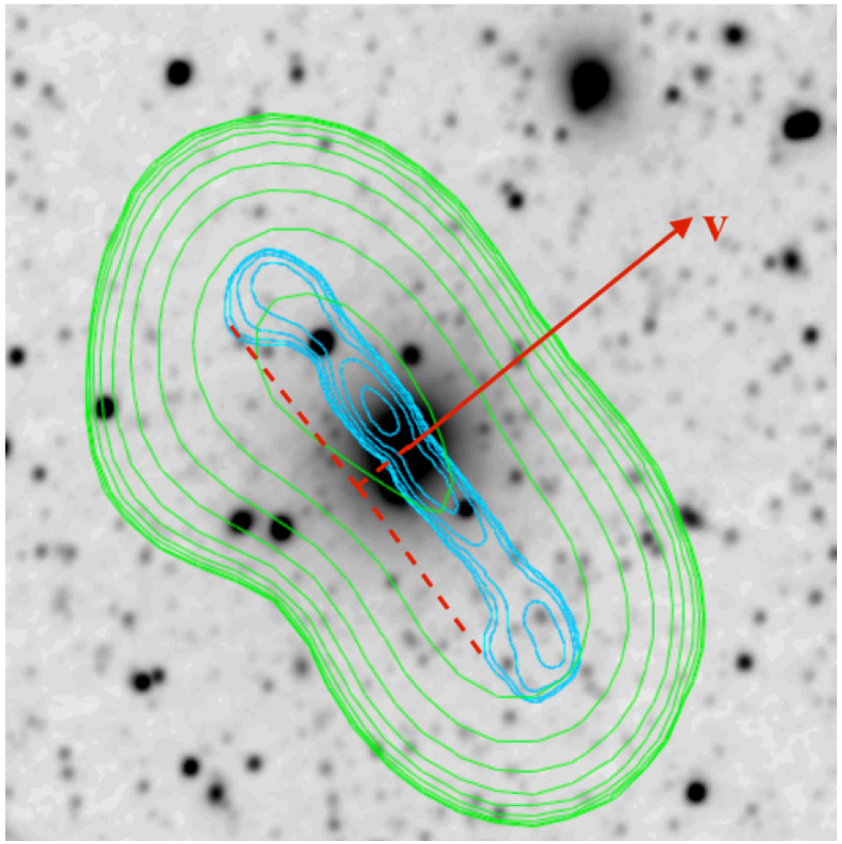
Messier 99

WISE
MWA
TGSS
NVSS

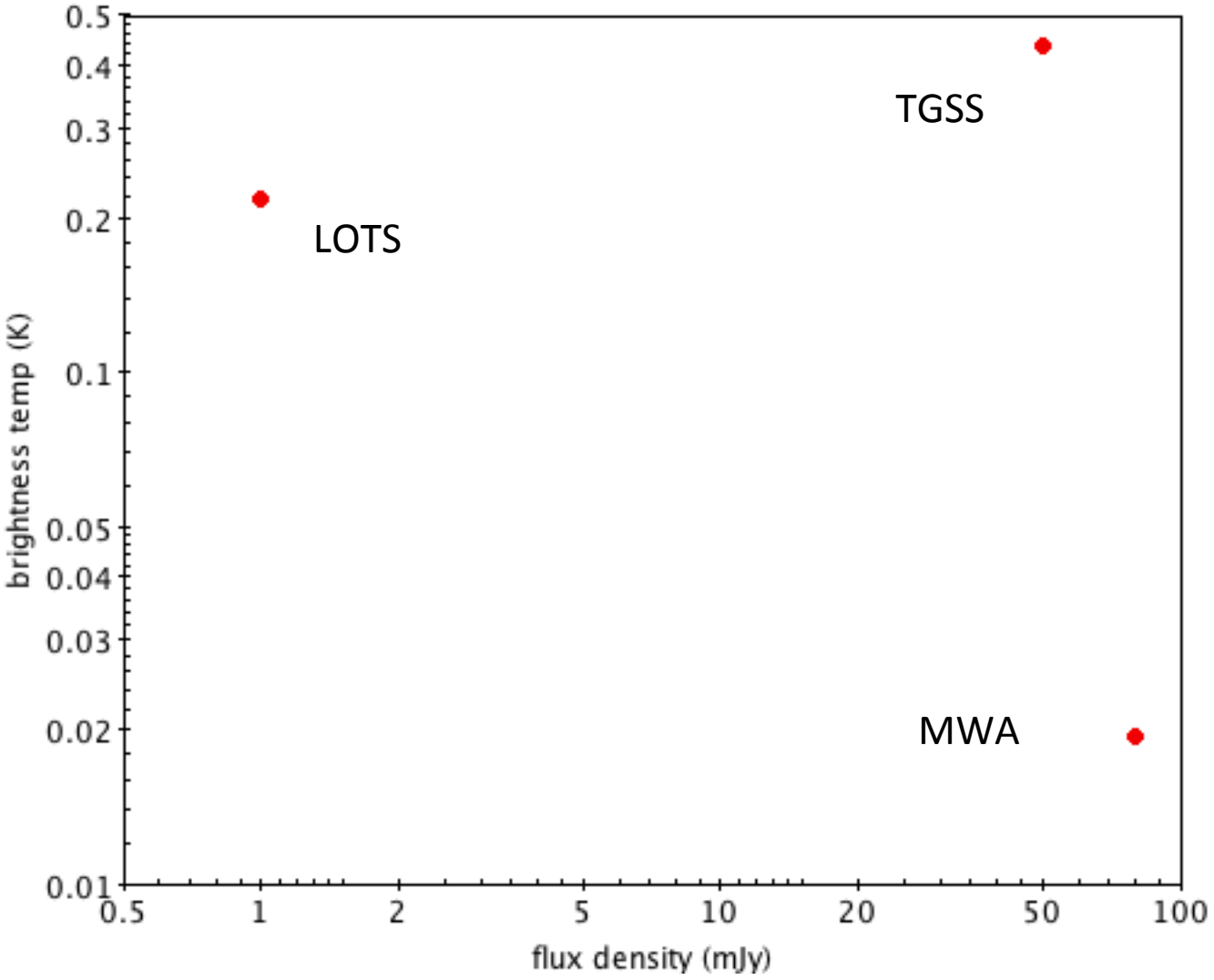
Rogues Gallery



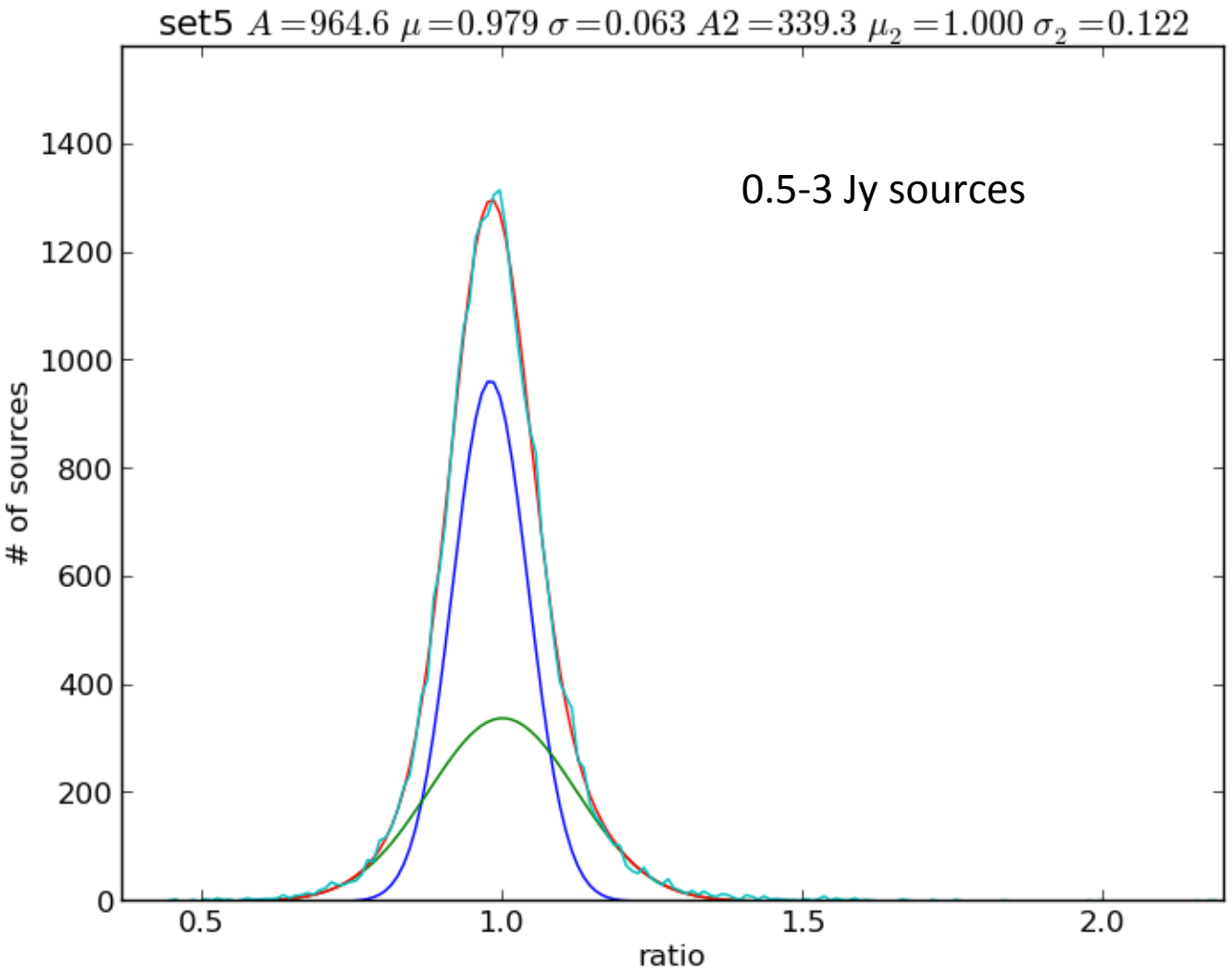




Flux Density v Brightness Temp



Quantifying the Excess



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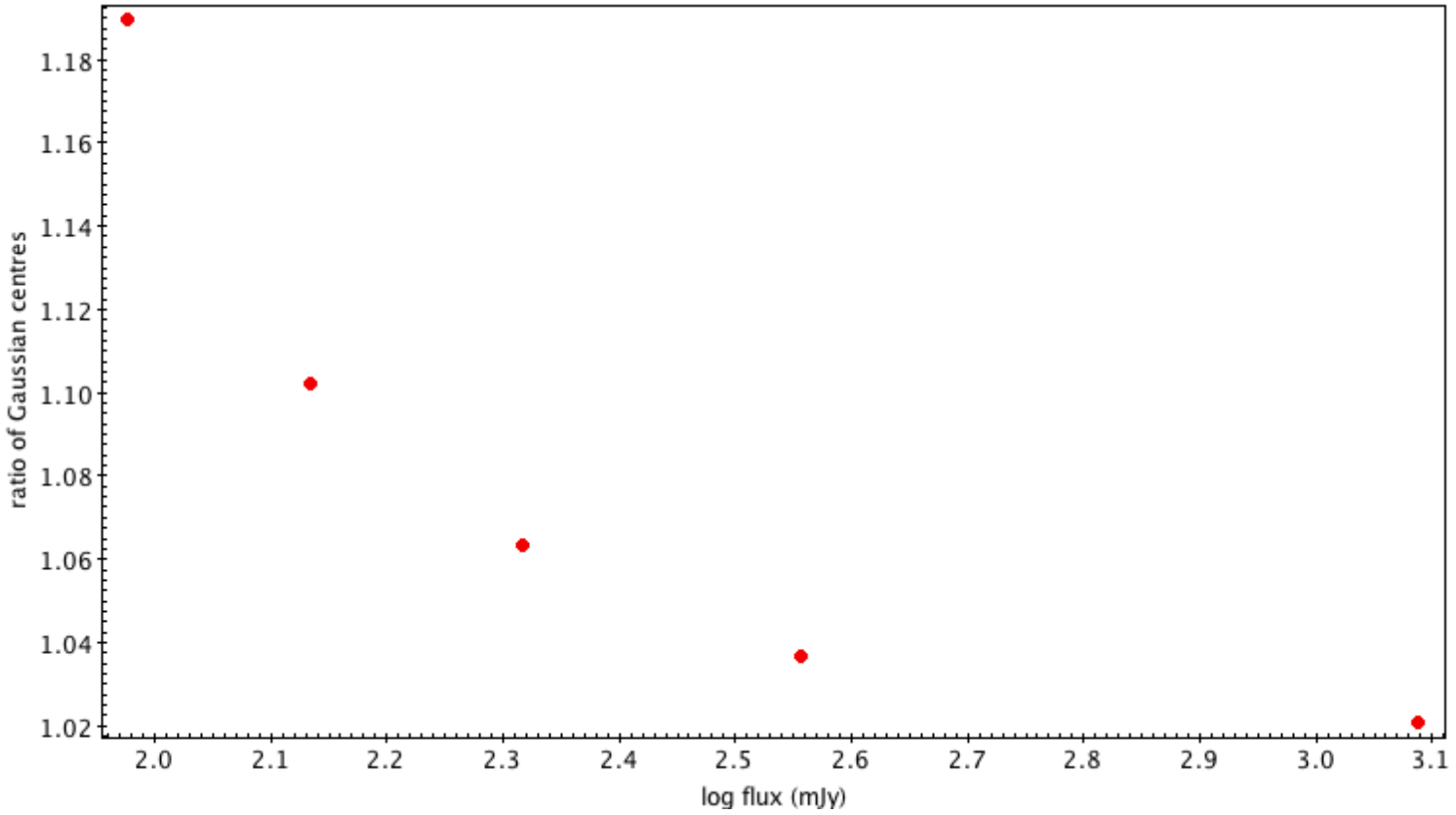
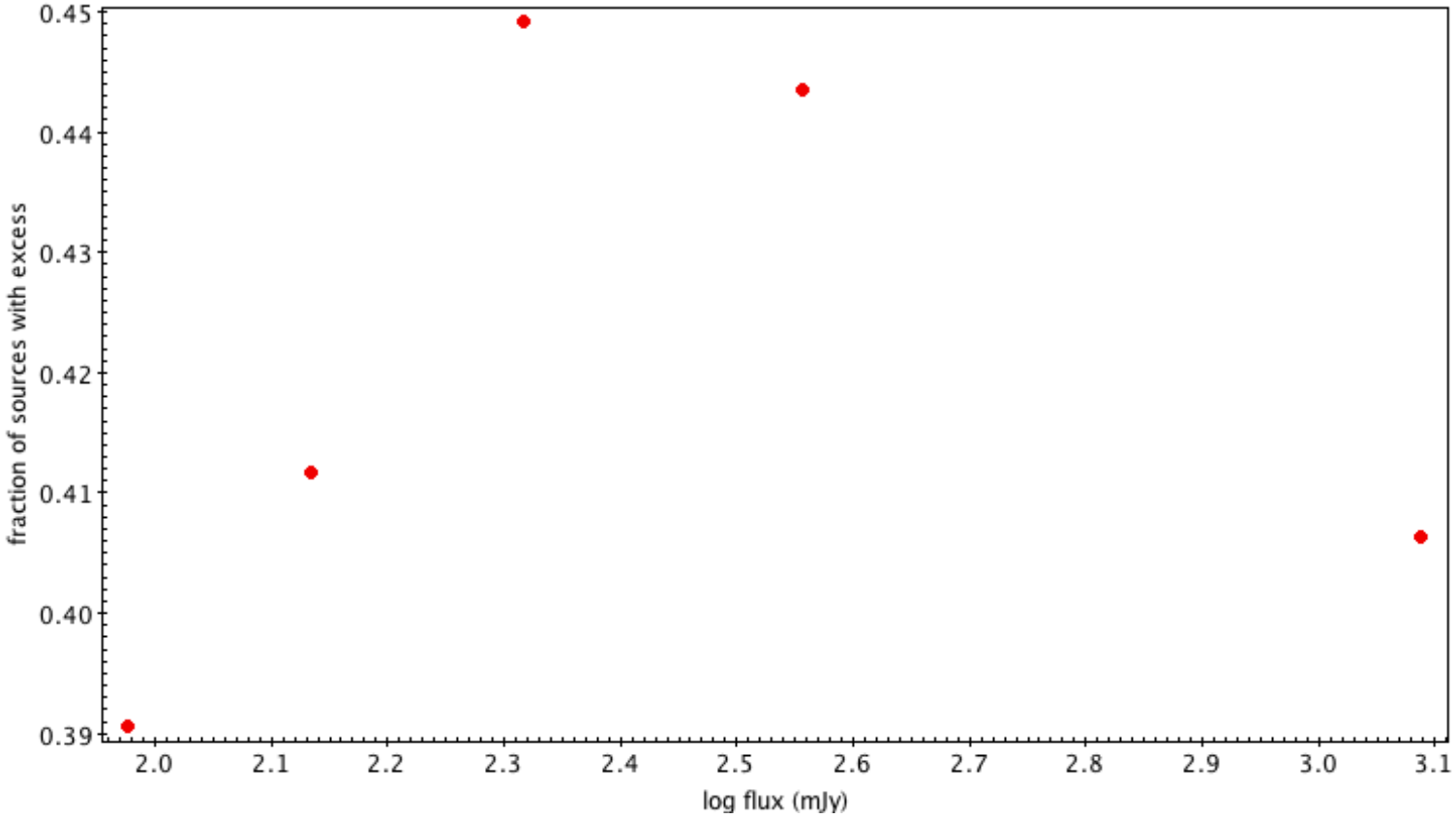


Quantifying the Excess



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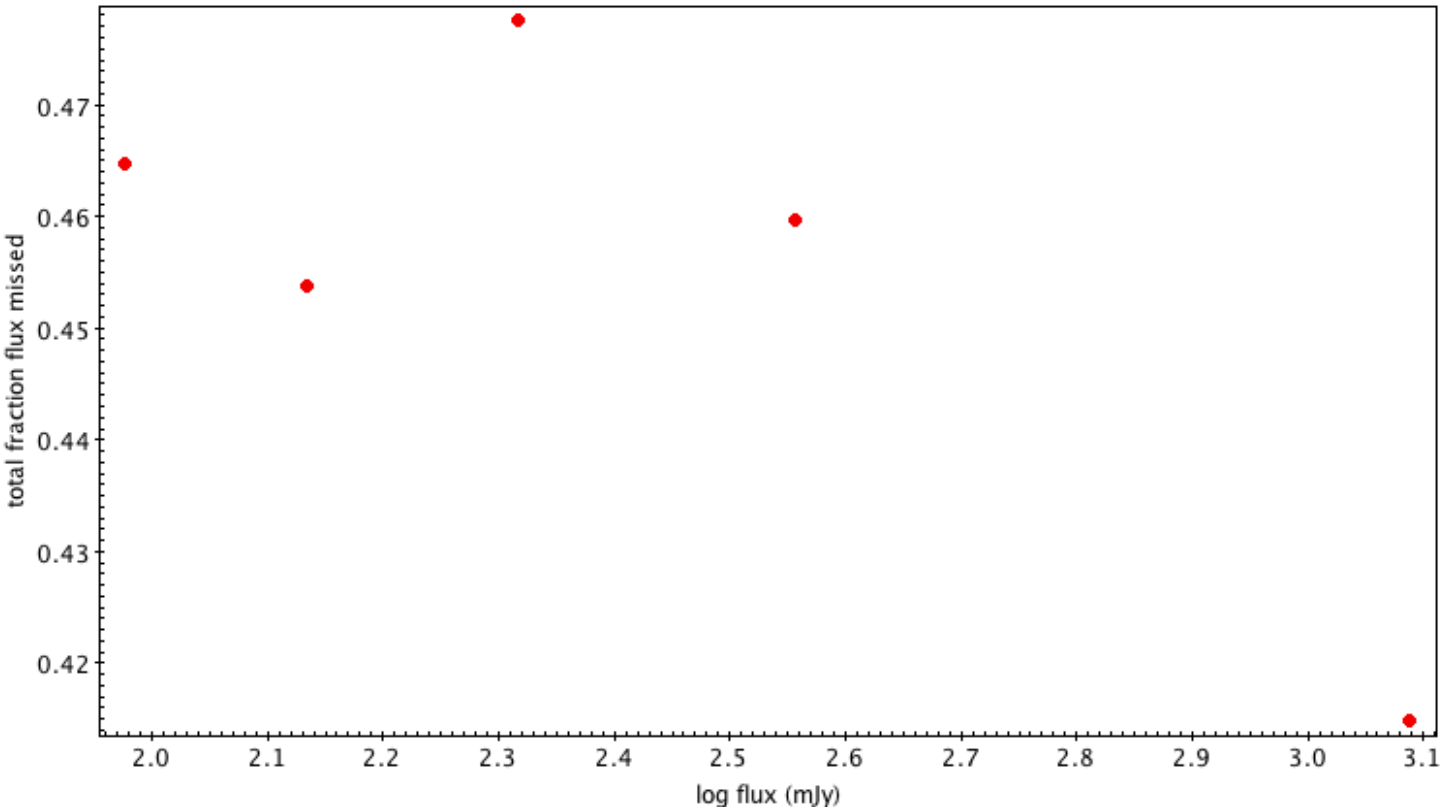

Conclusions

- GLEAM and TGSS are complimentary surveys
  - TGSS provides the resolution
  - GLEAM provides the extended emission
- TGSS misses 40 % of the flux
- Interesting extended sources
- Future work will included feathering of the images

ICRAR

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We acknowledge the Wajarri Yamatji people as the traditional owners of the observatory site.

Curtin University

The Government of Western Australia

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