EVLA-GBT Wide-Band Galactic Plane Survey

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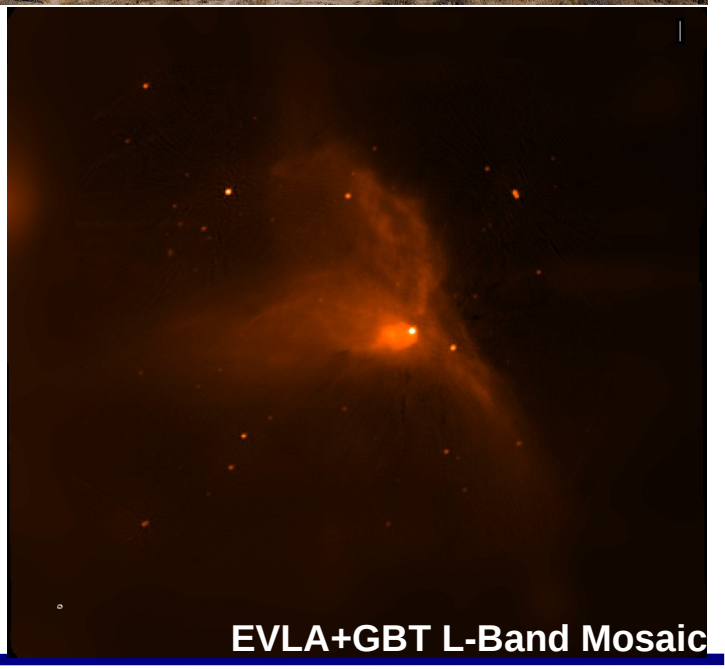

Survey Parameters

- L-Band: Continuum + RRL (18 H & C transitions) + HI + OH + H2CO
  - 7260 pointings @L-Band, ~10 min. per pointing: 35 uJy/b
  - Line imaging (2kHz channels): 9mJy/b @ 1GHz – 17mJy/b @ 2GHz
  - Faraday Depth: Sensitive to 10 – 25000 rad/m^2
- Continuum options: Combinations of D- & C-Array, L- & S-Band

Survey Name	Config & Band	Res. (arcmin)	RMS (uJy/b)	Total Time (hr)
CGPS		1.0 x 1.0	300	–
VLA-GBT Fixed Surface Brightness in D&C-array	D- & C-array @ L-Band	0.3 x 0.3	25.0	1331 x 2 1331 + 1331 x 9
VLA-GBT Fixed surface brightness at L & S-band	D-array @ L- & S-Band	0.5 x 0.5	25.0	1331 + 2874 1331 + 2874 x 4

- Cadences for transient source detection

No. of pieces	Total length (yr)	Time per piece (hr)	RMS per piece (uJy/b)	RMS per visit (uJy/b)
5	7.5	266	78	110 (2 visits per field) 156 (4 visits per field)
2	3.0	665	49	70 (2 visits per field) 98 (4 visits per field)

Survey Science

- Spectral Index and Continuum
  - Spectral Index: A new product – as against improvements over existing products
  - Continuum mapping: 10x improvement in sensitivity, 2x in resolution over CGPS
  - Young Galactic SNRs, HII regions, separation of thermal and non-thermal emission, studies of extended low density ionized (DIG) gas
- Spectral Lines
  - RRL: 18 in-band transitions allow separation between optical depth and non-LTE effects, sub-band stacking for weaker detection
  - OH: 4 in-band lines sample a wide range of interstellar conditions
  - HI in full polarization: Unique opportunity to measure very clean absorption line profiles for otherwise weak sources
- Develop imaging pipeline with Wide-field Wide-band Mosaic imaging algorithms