

Frequency Coordination for the Long Wavelength Array (LWA)

Patrick C. Crane

Presentation to CORF

16 October 2006

Frequency Coordination Issues for the Long Wavelength Array

- Broadband over power lines (BPL)
- Reallocation of television channels for DTV
- Future of VHF channels 2-6

BPL Exclusion Zone for VLA

CFR 15.615(f)(1)(iii):

Very Large Array (VLA) radio astronomy observatory. Access BPL systems using overhead medium voltage power lines shall not operate in the frequency band 73.0 - 74.6 MHz, within 65 km of the coordinate 34° 04' 43.50" N, 107° 37' 03.82" W (the center of the Very Large Array antenna). Access BPL systems using overhead low voltage power lines or underground power lines shall not operate in the 73.0 - 74.6 MHz band within 47 km of that coordinate.

Protection for the LWA

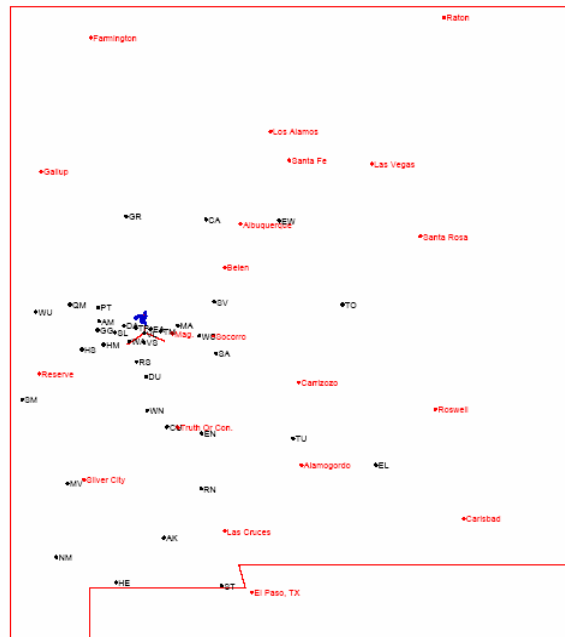
- Protect additional frequency bands
- Establish additional exclusion zones
 - Exclusion zone for each station?
 - Large exclusion zone for entire LWA?

Radio-Astronomy Allocations Used by the LWA

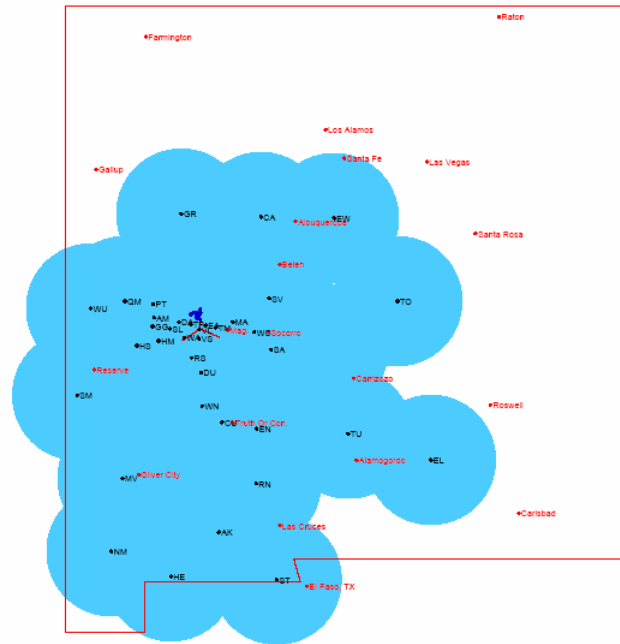
- 13.36-13.41 MHz (primary)
- 25.55-25.67 MHz (primary)
- 37.50-38.00 MHz (secondary)
- 38.00-38.25 MHz (primary shared)
- 73.00-74.60 MHz (primary)

- 1.705-80 MHz (BPL, Part 15)

Possible Configuration for LWA



LWA with Exclusion Zones



VHF Television Channels in the LWA Frequency Band

- Channel 2 (54-60 MHz)
- Channel 3 (60-66 MHz)
- Channel 4 (66-72 MHz)
- Channel 5 (76-82 MHz)
- Channel 6 (82-88 MHz)

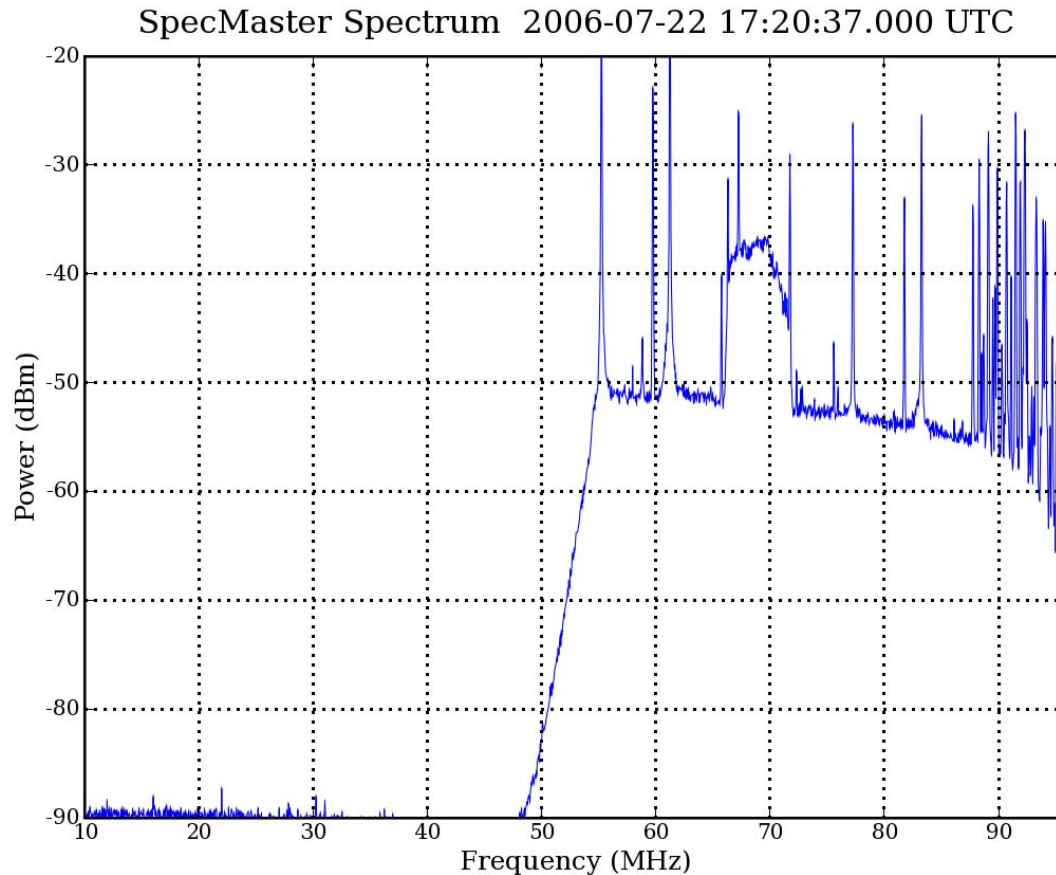
Recovered Analog Spectrum

- Includes channels 52-69 (698-806 MHz)
- 24 MHz reserved for public safety services
- Auction starts by 28 January 2008
- Proceeds deposited by 30 June 2008
- Analog broadcasts cease by 18 February 2009

Digital TV

- Full-power stations broadcast digitally by 18 February 2009
- Full-power digital stations and Class A stations restricted to “core” channels 2-51
- Final status of channels 2-6 unclear
- NPR for third and final DTV Table of Allotments was due August 2006
- Stations allowed to choose analog channel

DTV Channel 4 Seen at LWDA



LPTV Digital Channel 4 from Silver City?