



Advanced Spectrum Policy Course

Lecture I: NRAO Panel Discussion

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Advanced Spectrum Policy

1. Introduction
- 2. Lecture 1 NRAO Panel Discussion**
3. Lecture 2 Federal Spectrum Policy
4. Lecture 3 FCC and NTIA and OSTP
5. Lecture 4 FCC Rulemaking Process
6. Lecture 5 Congressional Involvement in Spectrum Policy
7. Lecture 6 International Spectrum Policy
8. Lecture 7 Competition and New Use Cases

Lecture 1: NRAO Panel Discussion

I.1. Unique Spectrum Challenges in Radio Astronomy

I.2. Space Congestion and Growing Challenges

I.3. Radar Interference and Coordination

I.4. Other Topics

I.5. In the News

I.6. Assignment

Video: NRAO Panel Discussion



Panel Discussion with NRAO Spectrum Policy Experts

1.1. Unique Spectrum Challenges in Radio Astronomy

1.1.1. The National Radio Quiet Zone

1.1.2. Coordination Beyond Protected Zones

1.1.3. Types of Interference

1.1.4. Innovative Private Coordination Solutions

1.1.5. The Sensitivity Challenge

I.2. Space Congestion and Growing Challenges

I.2.1. Unintended Electromagnetic Radiation

I.2.2. Coordination Complexities with Multiple Operators

I.2.3. New Interference Calculation Methods

1.3. Radar Interference and Coordination

1.3.1. NRAO's Radar Development

1.3.2. Commercialization of Federal Spectrum

1.3.3. Competing Interests in Spectrum Allocation

I.4. Other Topics

I.4.1. Spectrum Encroachment at Higher Frequencies

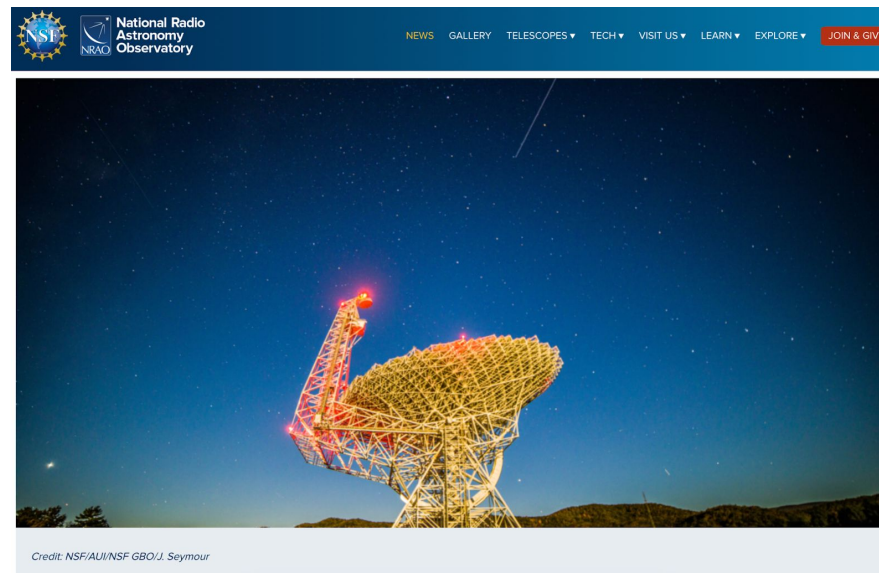
I.4.2. The Next Generation Very Large Array

I.4.3. Consumer Electronics and Increasing RFI

I.4.4. International Coordination Frameworks

1.5. In the News

NRAO, News Release, “Astronomers, Satellite Internet Provider Develop New System to Share the Sky,” Aug 9, 2024,
<https://public.nrao.edu/news/astronomers-satellite-internet-provider-develops-new-system-to-share-the-sky/>



I.6. Assignment

NRAO TELESCOPES

ALMA



Atacama Large Millimeter/submillimeter Array

The Atacama Large Millimeter/submillimeter Array in the Atacama Desert, Chile, is the most complex observatory ever built.

[VISIT](#)

VLBA



Very Long Baseline Array

The Very Long Baseline Array (VLBA) is ten radio telescopes stationed across 5,351 miles. It's the world's sharpest, dedicated telescope array.

VLA



Very Large Array

The VLA is the most advanced radio telescope array on Earth, a customizable interferometer that spans up to 22 miles across.

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I.7. Assignment

Understand the unique spectrum management challenges faced by the radio astronomy community, including interference sources, coordination mechanisms, and policy tensions with commercial and defense interests. Explore innovative solutions and international frameworks addressing growing space congestion and radio frequency interference (RFI).



www.nrao.edu
science.nrao.edu
public.nrao.edu

*The National Radio Astronomy Observatory is a facility of the National Science
Foundation
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