

# Global 21-cm Signal II – Global Signal Experiments

**Moderator: Rich Bradley**

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## **Presentations:**

**12:20-12:35pm Preparing for the Moon with EDGES (Judd Bowman, ASU)**

**12:35-12:50pm Cosmic Twilight Polarimeter (CTP) (David Bordenave, NRAO)**

**12:50-01:05pm Status Report on DAPPER (Keith Tauscher, U. Colorado)**

**01:05-01:15pm Discussion**



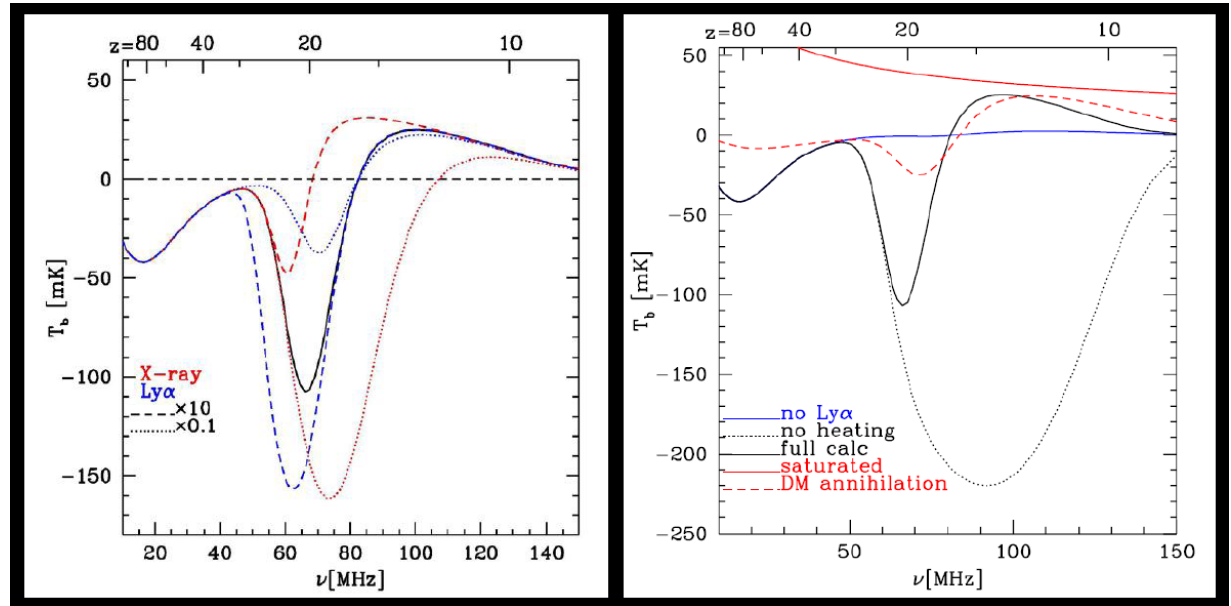
## Measurement Challenges

**#1: The signal is relatively weak.**

~ 10's of mK

**#2: The signal is not well-defined.**

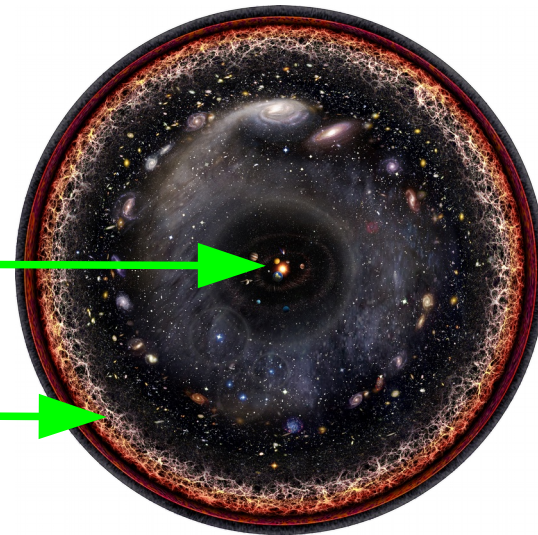
Spectral shape depends on the astrophysics



**#3: The signal is everywhere!**

We are here!

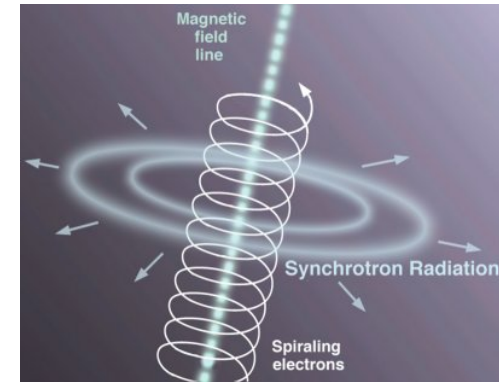
Signal originates from here!



## Measurement Challenges

### #4: Foreground radiation is strong in comparison.

Nearly a million times stronger!  
Regions of polarized emission



### #5: Radio frequency interference must be mitigated.

Both from "us" and "them"



### #6: The measurement corrupts the signal.

$$w = \frac{1}{2} A_e \iint_{\Omega} B(\theta, \phi) P_n(\theta, \phi) d\Omega$$

Output

Signal

Antenna

Ground effects and ionosphere too!

