

# SETI

## Search for Extra-Terrestrial Intelligence (really a search for extraterrestrial radio transmission)

First (modern) proposers: Giuseppe Cocconi & Philip Morrison in (1959).  
First attempt “Project Ozma” 1960 by F. Drake.

The SETI Institute (directe by Jill Tarter) is the leader in SETI today

Searches focus on the radio for several reasons:

- fast (speed of light)
- inexpensive
- travels great distances through the galaxy (not absorbed by interstellar dust)
- Sun is not very radio-loud (you can observe at radio frequencies during the day)
- an intelligent choice (?)

scan radio frequencies 1420-1720 MHz

- the universe is very transparent at these frequencies
- 1420 MHz is a frequency associated with H and 1720 MHz is associated with OH; since these two compounds produce water, this is a logical band
- this range is called “the water hole”, in reference to where animals will congregate

Where to look?

There are over 45,000 stars within 200 pc of Earth!

Assumption: life requires a star like the Sun.

- main sequence, single, non-variable, not too young (>3 billion years)  
This still leaves 15,000 stars! Well, what are you waiting for - get to work!

We’ve been listening for nearly 45 years, but have found nothing reliable (repeatable). But we’ve only searched a miniscule fraction of the galaxy.

But this will soon change with the Allen Telescope Array coming on-line soon: world’s most powerful radio telescope receiver, dedicated to SETI.