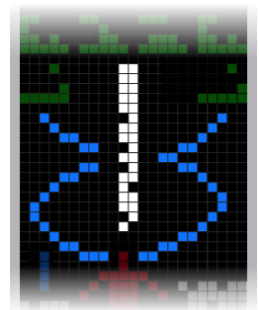


## SETI Messages and Deciphering Their Content

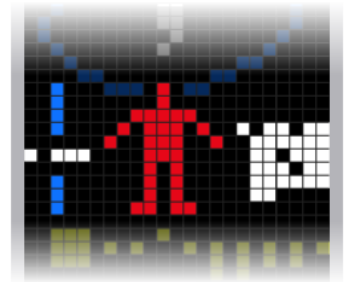
### A message from the aliens next door!

You (a humanoid alien on a planet 15 light-years away) have detected a clearly unnatural radio signal! You have successfully extracted the image sent in the message (on the lecture slide), and it's now up to you to determine what it all means. Let's go through 4 different parts of the message and see if you can decode it!

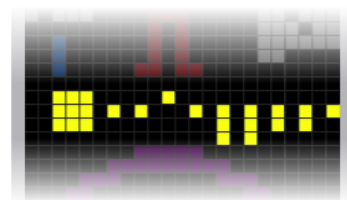
1. Your eyes are immediately drawn to the largest part of the image (to the right). What do you think it shows?



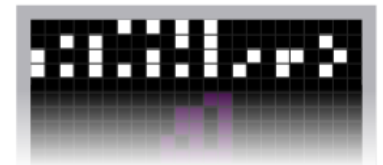
2. Next, you look below that weird spiral-y thing, and see more images — including something that looks kinda like yourself! What are the aliens who sent this hoping you learn from this part of the message? Any idea what that weird blob to the right of the body-looking thing is?



3. Right below that, you see a row of dots with varying size. What could this be? Do the sizes or shapes mean something? Why is there one dot above the rest?



4. Last, you look at this (random?) assortment of dots at the top of the message... what could that be?



## Discussion questions

Back to reality here on Earth: that message is an actual message we beamed into outer space in the 1970s! Now, as a human yourself, some of these messages will make sense... but as an alien? Let's discuss the message's content, as well as what you might send in a message to ETs.

1. First some quick math! How much more sensitive would the aliens' detector have to be to have detected the signal if they were twice as far from Earth?
2. Back to the message: what did you think of the content of the message? Was there any info you think shouldn't have been included? Is there any info you would add to the message?
3. Do you think the images that were sent conveyed information well? Are there any fundamental issues with how we decided to encode information in this message?
4. Consider the first part of the image: the DNA double helix. What are we assuming about aliens by hoping they can understand this part of the image? Is there any other biologically relevant information you would send instead?
5. There are serious debates about active SETI, or sending messages into space with the intent of them being discovered by extraterrestrials. What are some potential pros and cons to active SETI? Do you personally think that sending messages out is a good idea?