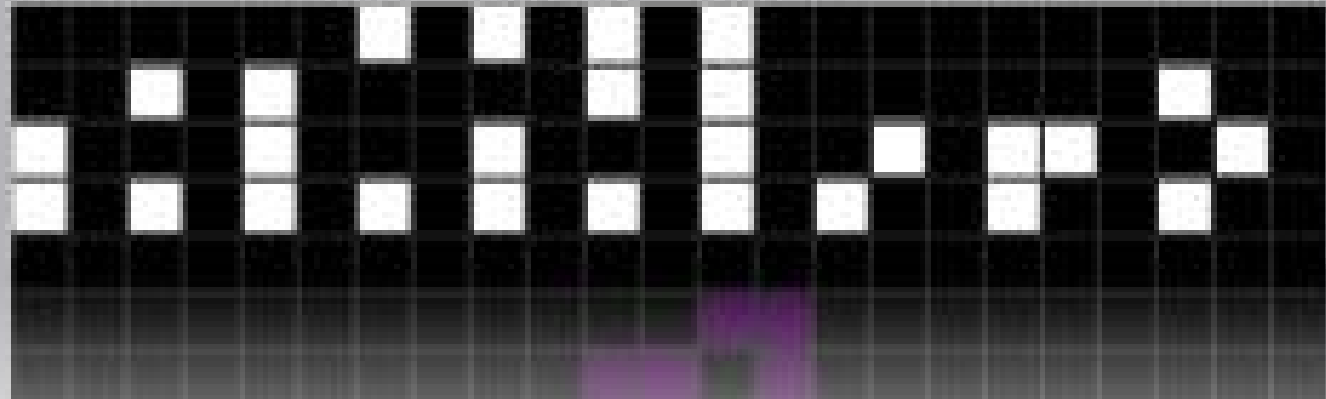




# Décodons ensemble le message d'Arecibo

Pascal ANDRE 12 février 2021



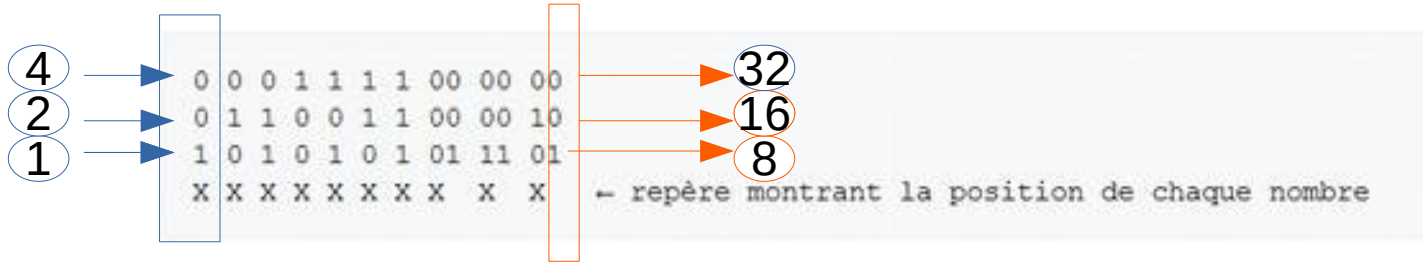
0 0 0 1 1 1 1 00 00 00

0 1 1 0 0 1 1 00 00 10

1 0 1 0 1 0 1 01 11 01

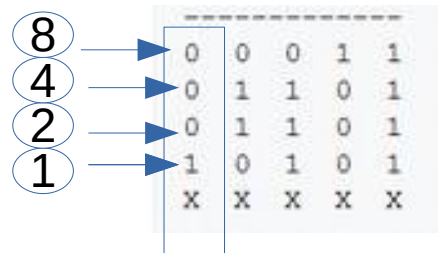
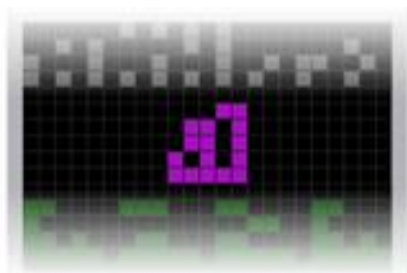
X X X X X X X X X X ← repère montrant la position de chaque nombre

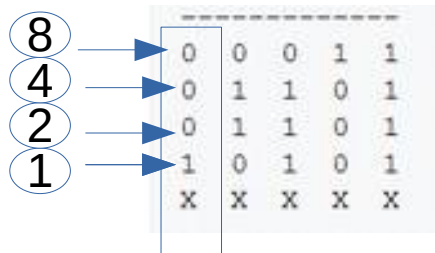
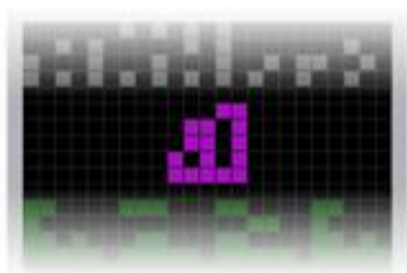
*Crédit illustrations Wikipédia message d'Arecibo*



```
0 0 0 1 1 1 1 00 00 00
0 1 1 0 0 1 1 00 00 10
1 0 1 0 1 0 1 01 11 01
X X X X X X X X X X  ← repère montrant la position de chaque nombre
```

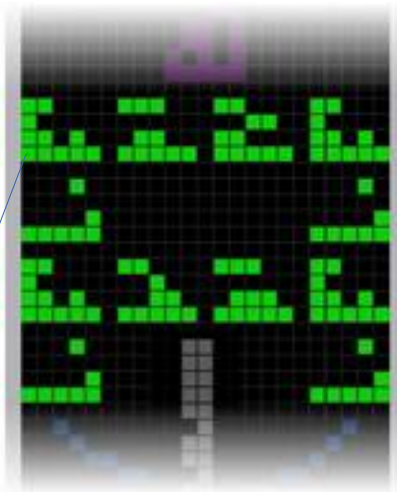
1 2 3 4 5 6 7 8 9 10



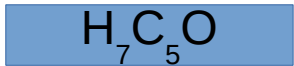


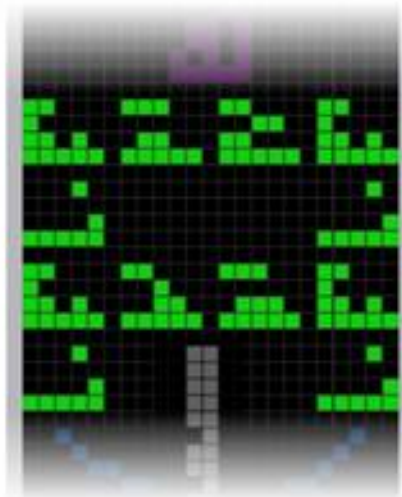
→ 16 7 8 15 ??



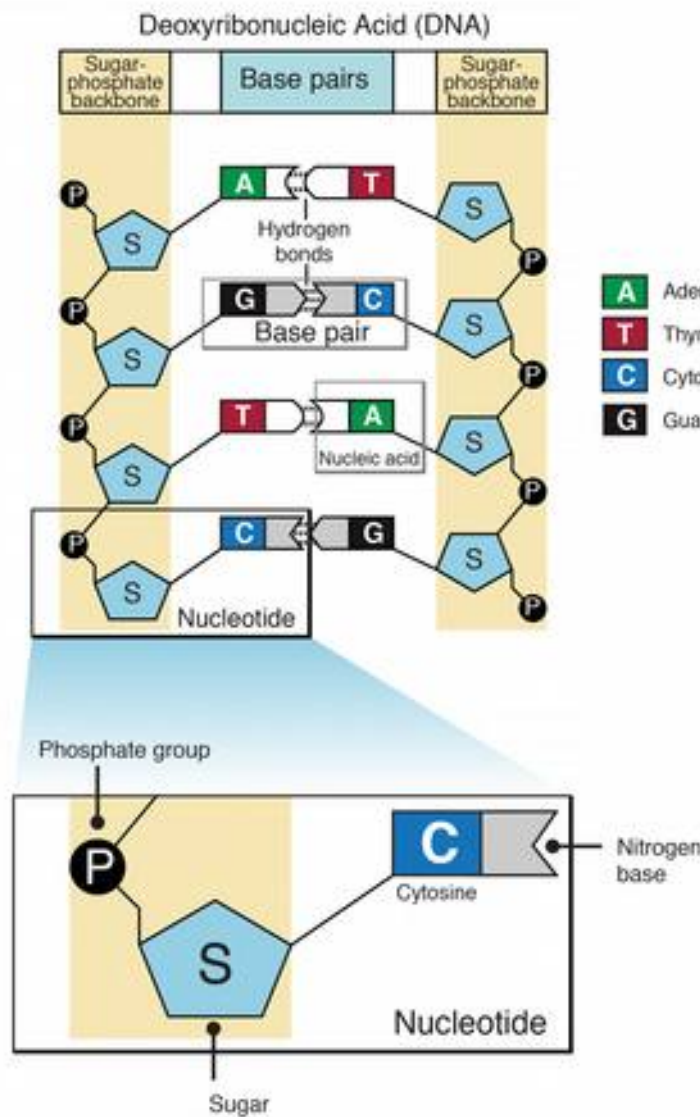


```
1 1 0 0 0
1 0 0 0 0
1 1 0 1 0
X X X X X
-----
7 5 0 1 0
H C N O P  <- toujours classés selon l'ordre des éléments constituant l'ADN (voir section ci-dessus)
```





Désoxyribose ( $C_5H_7O$ )	Adenine ( $C_5H_4N_5$ )	Thymine ( $C_5H_5N_2O_2$ )	Désoxyribose ( $C_5H_7O$ )
Phosphate ( $PO_4$ )			Phosphate ( $PO_4$ )
Désoxyribose ( $C_5H_7O$ )	Cytosine ( $C_4H_4N_3O$ )	Guanine ( $C_5H_4N_5O$ )	Désoxyribose ( $C_5H_7O$ )
Phosphate ( $PO_4$ )			Phosphate ( $PO_4$ )





Sucre :  $C_n (H_2O)_n$

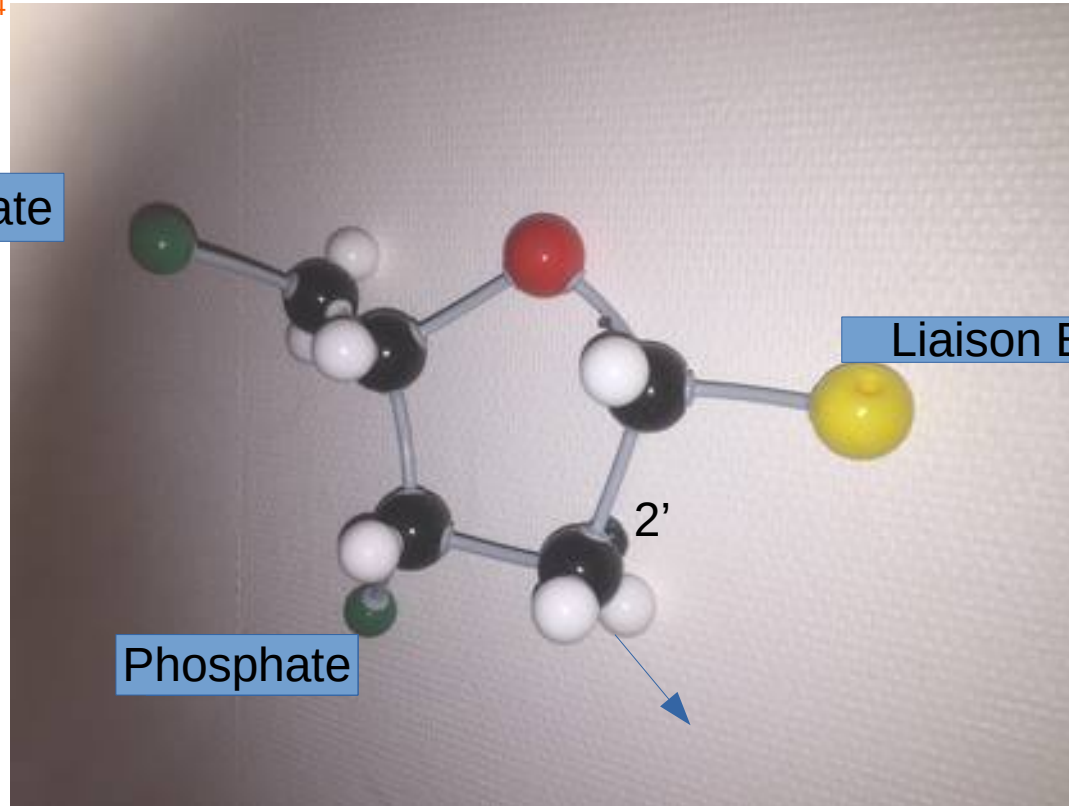
Ex Ribose  $C_5 H_{10} O_5$

> 2' Desoxyribose  $C_5 H_{10} O_4$

Désoxyribose  
( $C_5H_7O$ )

Phosphate

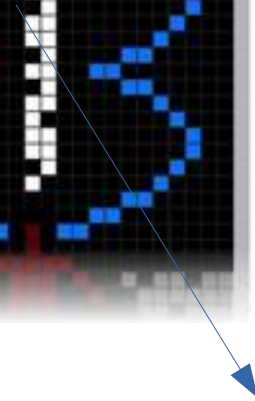
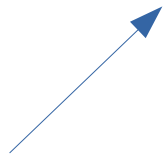
Il manque 3 atomes H  
et 3 atomes O ?



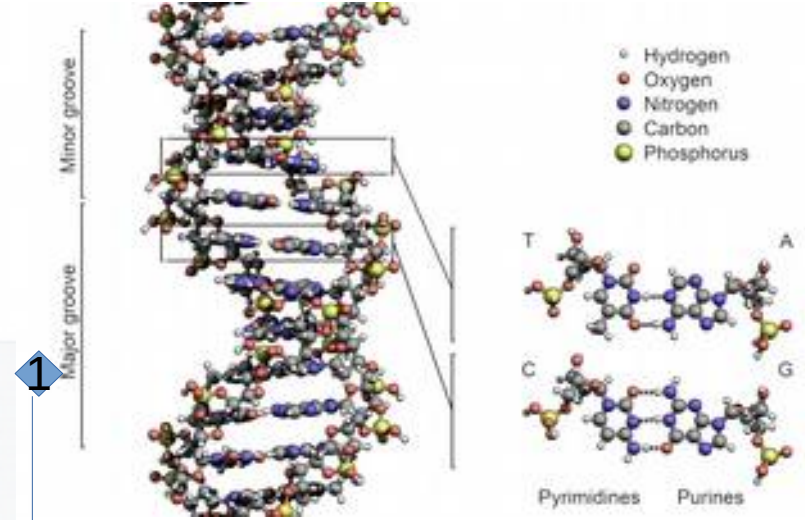
Liaison Bases A,T,G,C

Phosphate

3 oxygènes (OH) ont été engagés dans les liaisons Phosphate ainsi que dans le liaison avec la base

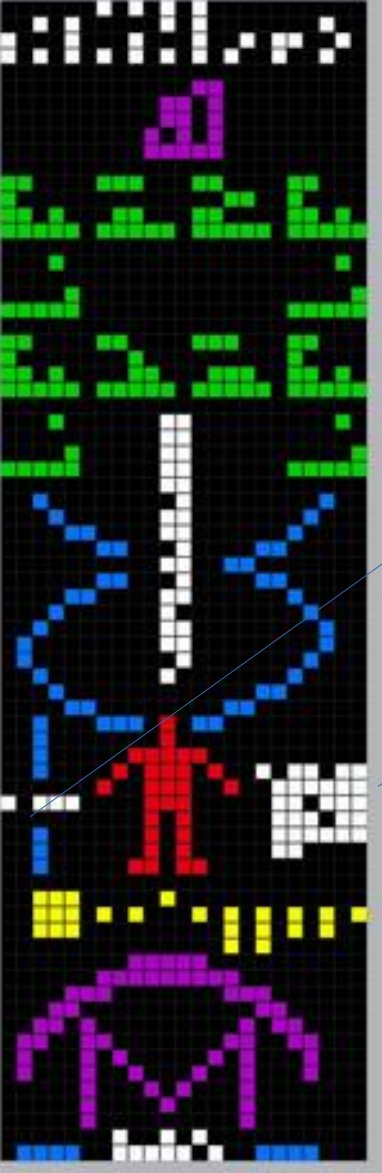


2  
 11  
 11  
 11  
 11  
 11  
 01  
 11  
 11  
 01  
 11  
 11  
 10  
 11  
 11  
 01  
 X



11111111 11110111 11111011 01011110

4 294 441 822 Nb paires bases



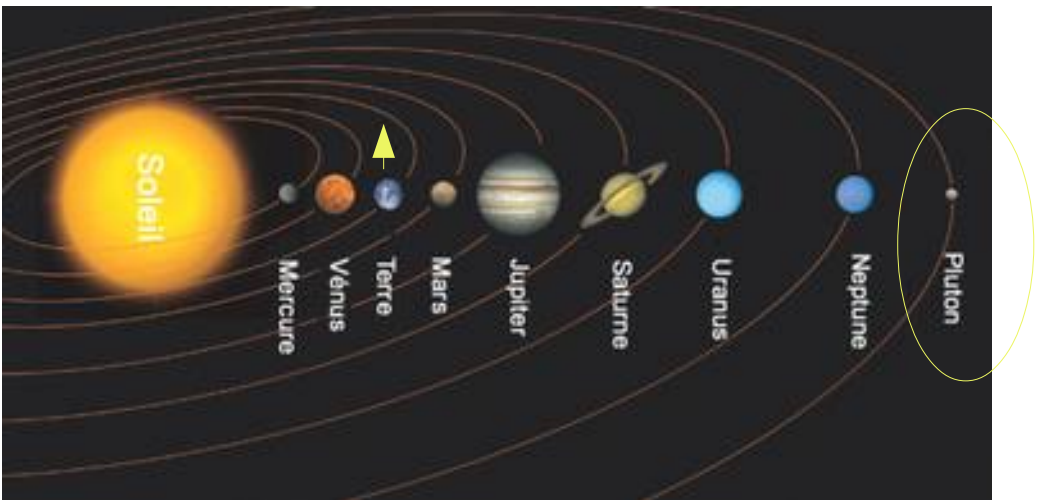
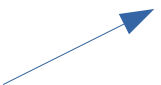
Λ	X011011
	111111
	110111
X0111	111011
	111111
v	110000

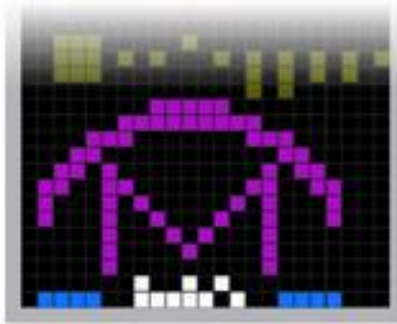
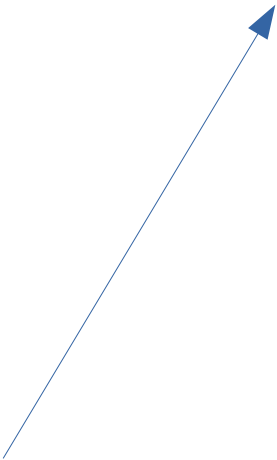
1110 (binary) = 14 (decimal)

011011 111111 110111 111011 111111 110110 (binary)  
= 4,292,853,750 (decimal)

Population en 1974

Notre taille 14 à multiplier par 126mm = longueur d'onde du message = 1764mm

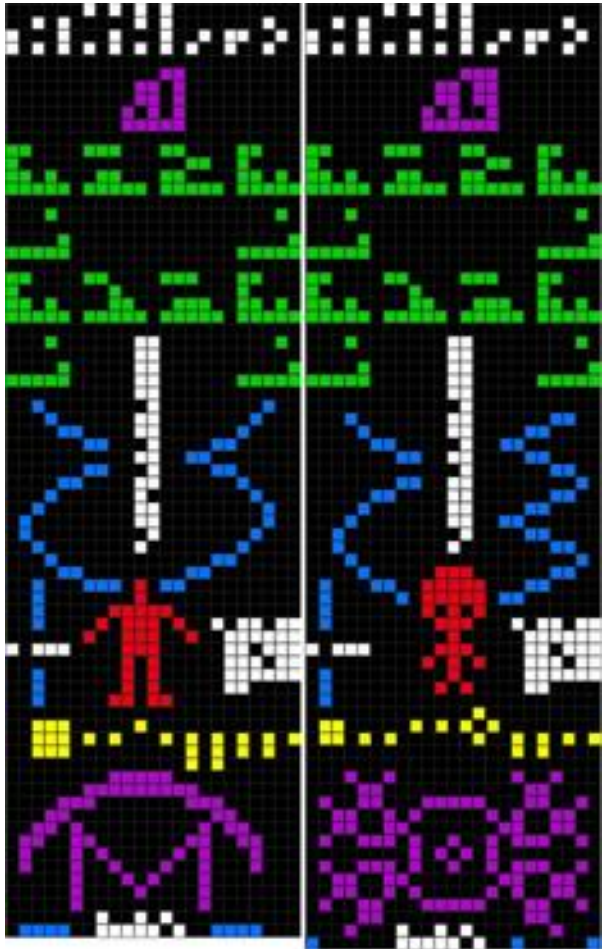




```
100101  
<--- 111110X --->
```

```
100101 111110 (binary) = 2,430 (decimal)
```

2430x 126= 306180mm  
306 m diamètre du radiotélescope



La réponse des  
aliens...



Vous avez toutes les clés pour la décoder !

