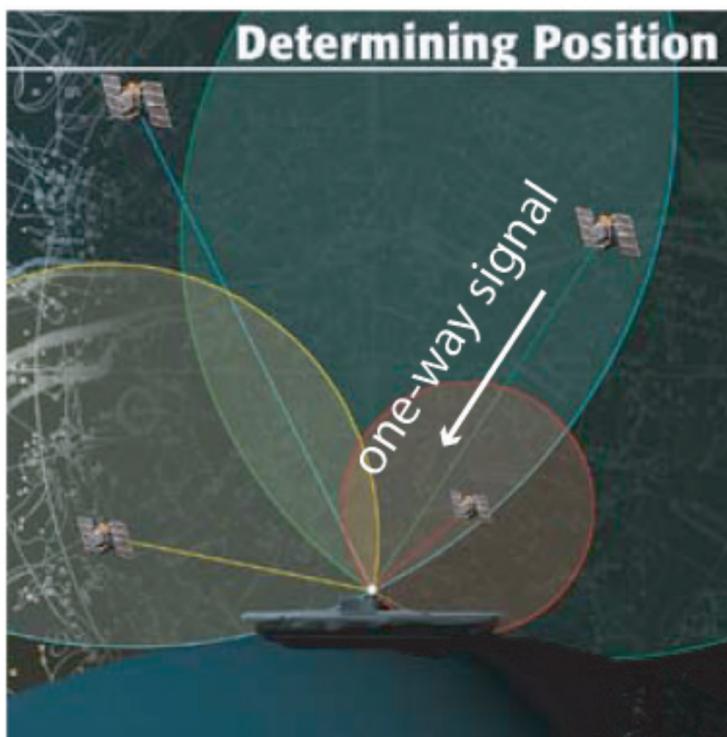


How GPS Works

How Does Your GPS Receiver Know Where You Are?



If you know where the satellites are ...

And you know how far you are from the satellites ...

Then you know where YOU are.

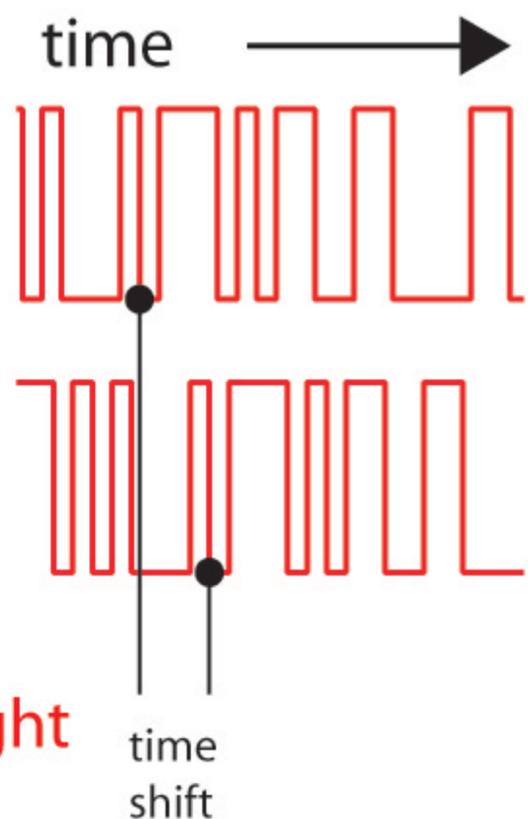
You know where the satellites are because they broadcast their positions.

You know how far you are from the satellites because the GPS code is tied to time. The receiver uses the code to measure how long it took the satellite signal to travel to the receiver.

code arriving from satellite

code generated by receiver

distance = time shift X speed of light



The satellite and receiver codes are time-shifted because it takes several hundredths of a second for the signal to travel to the receiver. The receiver shifts the codes until they match.

Your position is usually good to within 20 feet ...

You are here!



and almost always good to within 50 feet.