```
             5.878    E12
             58.78    E11
             587.8    E10
             5878.    E9
            58780.    E8
           587800.    E7
          5878000.    E6
         58780000.    E5
        587800000.    E4
       5878000000.    E3
      58780000000.    E2
     587800000000.    E1
    5878000000000.    E0
5,878,000,000,000
```

Figure 9-1: Scientific notation and the light year.

When you enter E numbers in the compiler, use the proper E format. To display the numbers in E format with `printf()`, you can use the `%e` placeholder. To see how it works, replace the `%f` in the JUPITER.C program with `%e`, save the change to disk, recompile, and run the result. The output is in E notation, something like the following:

```
Jupiter is 8.223886e-05 light years from the sun.
```

If the E has a negative number in front of it, as shown in this example, you hop the decimal point to the left *nn* places, to indicate very small numbers. You would translate the preceding value into the following:

```
.00008223886
```

- Scientific, or E, notation is required when numbers contain too many digits for the C compiler to eat.
- A negative E number means that the value is very small. Remember to move the decimal point to the *left* rather than to the right when you see this type of number.
- Some compilers allow you to use the `%E` (big E) placeholder in `printf()` to display scientific-notation numbers with a big E in them.