

## If the Sun was a Grapefruit

### A Scale-model Solar System

Here is a scaled-down mostly-edible model of our Solar System beginning with the Sun as a grapefruit. Feel free to substitute your favorite fruits, seeds, and spices. The scaling is from 14 billion to one!

Object	(D)iameter/(d)istance	Scale to	Model suggestion
Sun	$D = 1.4 \times 10^6 \text{ km}$	10 cm	Grapefruit
Mercury	$D = 4.9 \times 10^3 \text{ km}$ $d = 58 \times 10^6 \text{ km}$	0.35 mm 4.2 m	Salt grain Four big strides
Venus	$D = 12 \times 10^{10} \text{ km}$ $d = 108 \times 10^6 \text{ km}$	0.86 mm 7.7 m	Poppy seed Eight big strides
Earth	$D = 13 \times 10^3 \text{ km}$ $d = 108 \times 10^6 \text{ km}$	0.91 mm 10.7 m	Poppy seed 11 big strides
Moon	$D = 3.5 \times 10^3 \text{ km}$ $d \text{ (from Earth)} = 3.8 \times 10^5 \text{ km}$	0.25 mm 27 mm	Salt grain Width of adult thumb
Mars	$D = 6.8 \times 10^3 \text{ km}$ $d = 228 \times 10^6 \text{ km}$	0.48 mm 16.3 m	Salt grain 16 big strides
Jupiter	$D = 143 \times 10^3 \text{ km}$ $d = 778 \times 10^6 \text{ km}$	10.0 mm 55.6 m	Big blueberry 55 big strides (width of a football field)
Saturn	$D = 128 \times 10^3 \text{ km}$ $d = 1426 \times 10^6 \text{ km}$	8.57 mm 102 m	Allspice or pea 100 big strides (100 yard dash or length of a football field)
Uranus	$D = 51 \times 10^3 \text{ km}$ $d = 2868 \times 10^6 \text{ km}$	3.65 mm 205 m	Peppercorn 200 big strides (two football fields)
Neptune	$D = 45 \times 10^3 \text{ km}$ $d = 2868 \times 10^6 \text{ km}$	3.55 mm 321 m	Peppercorn 320 big strides (Tiger Wood's golf drive)
Pluto	$D = 2.4 \times 10^3 \text{ km}$ $d = 5900 \times 10^6 \text{ km}$	0.17 mm 421 m	Ground pepper Length of Boston Public Garden
Oort Cloud of Comets	$d = 7.5 \times 10^{12} \text{ km}$	536 km	Boston to Ottawa, ON
Alpha Centauri (nearest star)	$d = 4.0 \times 10^{13} \text{ km}$	2900 km	Boston to Denver, CO