

GEOPHYSICAL PLANETS OF THE SOLAR SYSTEM

Per the geophysical definition,¹ an object is a planet if:

- 1) it has never achieved nuclear fusion (substellar)
- 2) it is rounded by its own gravity (shape is spheroidal and regular)

According to this definition, Pluto, some asteroids, and the Earth's moon (AKA Luna) are planets. For objects in the Kuiper Belt and beyond, this chart features the most likely planet candidates and is subject to change. Objects that were formerly round and have since been deformed by impacts are included here as remnant planets and are marked with an asterisk.

Inner Planets

1 M Mercury 88 d 4,879 km 3.30E23 kg	
2 V Venus 225 d 12,104 km 4.87E24 kg	
3 E Earth 365 d 12,742 km 5.97E24 kg	3.1 Lu Luna 27 d 3,474 km 7.34E22 kg
4 A Mars 687 d 6,779 km 6.42E23 kg	

Asteroids

5 Ve* Vesta 1,326 d 525 km 2.59E20 kg
6 Ce Ceres 1,683 d 939 km 9.38E20 kg
7 Pa* Pallas 1,687 d 513 km 2.04E20 kg
8 In Interamnia 1,953 d 332 km 3.79E19 kg
9 Hy Hygiea 2,034 d 434 km 8.32E19 kg

Outer Planets

10 J Jupiter 4,333 d 139,822 km 1.90E27 kg	10.1 Io Io 1.8 d 3,643 km 8.93E22 kg	10.2 Eu Europa 3.6 d 3,122 km 4.80E22 kg	10.3 Ga Ganymede 7.2 d 5,268 km 1.48E23 kg	10.4 Ca Callisto 17 d 4,821 km 1.08E23 kg				
11 S Saturn 10,759 d 116,464 km 5.68E26 kg	11.1 Mi Mimas 0.9 d 396 km 3.75E19 kg	11.2 En Enceladus 1.4 d 504 km 1.08E20 kg	11.3 Te Tethys 1.9 d 1,062 km 6.17E20 kg	11.4 Di Dione 2.7 d 1,123 km 1.10E21 kg	11.5 Rh Rhea 4.5 d 1,528 km 2.31E21 kg	11.6 Ti Titan 16 d 5,149 km 1.35E23 kg	11.7 Ia Iapetus 79 d 1,469 km 1.81E21 kg	11.8 Ph* Phoebe 551 d 213 km 8.29E18 kg
12 U Uranus 30,689 d 50,724 km 8.68E25 kg	12.1 Pu Puck 0.8 d 162 km 2.90E18 kg	12.2 Mr Miranda 1.4 d 472 km 6.40E19 kg	12.3 Ar Ariel 2.5 d 1,158 km 1.25E21 kg	12.4 Um Umbriel 4.1 d 1,169 km 1.28E21 kg	12.5 Ta Titania 8.7 d 1,577 km 3.40E21 kg	12.6 Ob Oberon 13 d 1,523 km 3.08E21 kg		
13 N Neptune 60,182 d 49,244 km 1.02E26 kg	13.1 Pr* Proteus 1.1 d 420 km 4.40E19 kg	13.2 Tr Triton 5.9 d 2,707 km 2.14E22 kg						

Kuiper Belt Objects

14 Or Orcus 89,557 d 917 km 6.35E20 kg	15.1 Ch Charon 6.4 d 1,212 km 1.59E21 kg
15 Pl Pluto 90,560 d 2,377 km 1.30E22 kg	
16 Sa Salacia 100,073 d 846 km 4.92E20 kg	
17 Ha Haumea 103,647 d 1,560 km 4.01E21 kg	
18 Qu Quaoar 105,495 d 1,110 km 1.40E21 kg	
19 Ma Makemake 111,845 d 1,430 km 3.10E21 kg	

Scattered Disk Objects

20 Go Gonggong 202,003 d 1,230 km 1.75E21 kg
21 Er Eris 204,199 d 2,326 km 1.65E22 kg

Detached Objects

22 Se Sedna 4,160,000 d 995 km unknown
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Number

- Whole number if orbiting Sun
- Decimal point if orbiting other planet
- Ordered by increasing orbital period

Planet Name

Average Diameter

Mass

1 M Mercury 88 d 4,879 km 3.30E23 kg
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Symbol

- Überplanets (gravitationally dominant) are single letter
- Unterplanets (not gravitationally dominant) are double letter
- Asterisk (*) indicates remnant planet (once round but deformed by impacts)

Orbital Period

- with respect to Sun if orbiting Sun
- with respect to host planet if orbiting other planet

Terrestrial (rock)	Gas Giant (hydrogen, helium)	Glacial (rock, ice)
Asteroidal (rock, hydrates)	Ice Giant (other gases, ice)	

¹Runyon, Kirby D., et al. "A Geophysical Planet Definition." *Lunar and Planetary Sciences Conference XLVIII*. 2017.