

Rayed Craters

What They Are

Rayed craters are impact craters on the moon with streaks of material extending away from them. Usually the material is lighter in color than the rest of the surface of the moon. Look carefully and you'll find many more rayed lunar craters than the ones listed here!

When To See Them

Tycho: The ray system is best seen for about 3 days before and after full moon.

Proclus: Proclus & its rays are best from about 6 to 16 days after new moon.

Messier A: The ray of Messier A is best from about 6 to 8 days after new, and again about 16 to 17 days after new. Not easy!

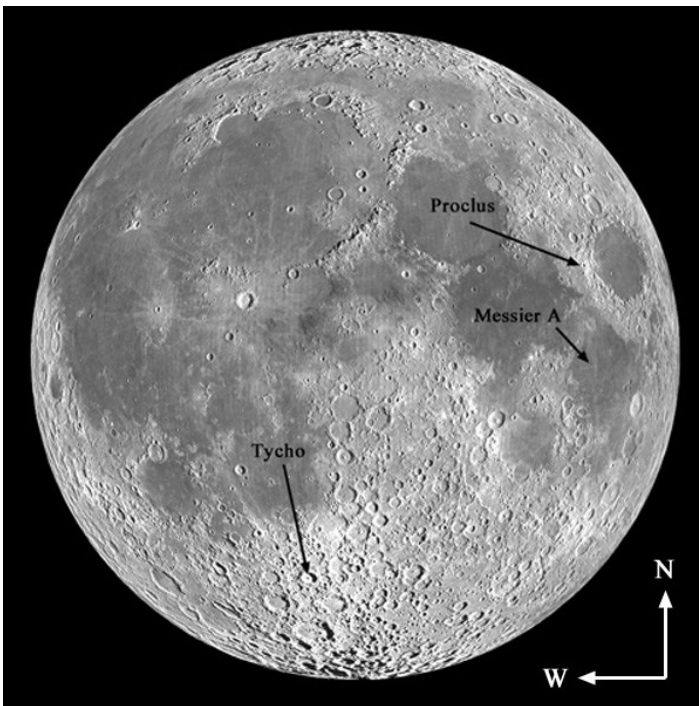
Where They Are

Rayed craters can be found all over the moon's face, but these are three of the most interesting.

Tycho: Located somewhat south of the moon's rough Great Peninsula, this crater is about 50 miles in diameter with a ray system that extends over much of the near side of the moon!

Proclus: This bright 17 mile wide crater with a small ray system is found on the western rim of Mare Crisium.

Messier A: This small 7 mile wide crater is found west of the center of Mare Fecunditatus. Just to its east is the near twin crater Messier. This will be a challenge to find!



Why They're Cool

Tycho's extensive ray system extends over 900 miles in some places. The rays lie on top of other features, indicating that the rays are younger than those other features.

The rays of Proclus are not symmetrical, forming a "butterfly pattern" probably indicating that the impactor hit at a low angle. Perhaps surprisingly, research shows that in a butterfly pattern the biggest rays extend at about right angles to the direction from which the impactor approached.

The Messier A ray system extends westward as a line. Messier and Messier A may have formed in the same, very low angle impact. Very large telescopes show Messier with a butterfly pattern ray system and Messier A with a linear system. Perhaps the impactor formed Messier then its remains formed Messier A and its ray.