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## Ten Day Old Moon‡

The Waxing Gibbous Moon will be visible during the late afternoon, setting several hours after midnight. It transits around mid-evening, which makes observing ideal on this night, as one may view through the least atmosphere in dark skies without requiring a late night of observing.

**Key Features to Observe Tonight**

What is probably the nicest mare is now completely revealed: the **Mare Imbrium**. It is for the most part a smooth ellipse bounded by mountain ranges separated by small breaks. They are, in clockwise order with north up, the **Alps**, the **Caucasus**, the **Apennines** and the **Carpathian** **Mountains**. It seems clear from even a casual observation tonight that the huge basin is the result of a single gigantic impact.

In the far north, the long, narrow **Mare Frigoris** is tonight almost fully revealed. The dark floored crater **Plato** (sometimes called **Great Black Lake**) is on the northern shore of the Imbrium and becomes quite prominent tonight. One of the darkest spots on the Moon, it also ranks among the most interesting craters. The floor is almost featureless in small telescopes, but in larger instruments, tiny craterlets appear, whose number and visibility seems to be oddly variable; it is hypothesized that slight volcanic hazes (**TLP**) cover this and some other areas of the Moon.

South of Plato, on the Imbrium plain, is a set of three craters in the east, near the **Apennine** **Mountains**, namely: **Aristillus**, **Autolycus** and **Archimedes**. They are easy to identify and are quite interesting to view. **Luna 2**, which was the first spacecraft to hit the Moon, landed somewhere near Autolycus in this area in 1959.

The finest crater of all, **Copernicus**, lies just outside the Mare Imbrium in the south. It is a perfectly formed crater, with very high walls and a superb central peak. It lies slightly above the general plain of the surrounding Imbrium, at the center of the second-largest ray system. When the lighting is just right, Copernicus is a extraordinary object. It contends with **Tycho** (first seen two nights ago) near southern cusp for the title of most spectacular ray crater.

On the northwestern edge of Mare Imbrium lies the splendid **Sinus Iridium**, another smooth plain, this one ringed by the **Jura** **Mountains**. The Juras make a fine sight even in binoculars. The small crater **Bianchini** has impacted in a picturesque way in the middle of the Juras. Sinus Iridium is a semicircular formation, the remains of a once noble crater that had its floor flooded and its southern wall destroyed by the relentless boiling lava released after the impact. When the phase is right the Jura Mountains appear over the terminator something like a scimitar.

Southwest of Copernicus in the smooth **Oceanus** **Procellarum**, past the crater **Reinhold**, is the smaller crater **Lansberg**, notable for its massively thick walls. Continuing south, the **Riphaeus** **Mountains** are conspicuous tonight against their bright surroundings.

Further south still, a pair of small, identical rings show bright against the dark background of the Mare Nubium. These craters are **Campanus** and **Mercator**.

At the center of the largest ray system, **Tycho**, has streaks of ejecta which extend for a thousand miles over the rugged, bleak landscape.

South of Tycho is the Moon's very impressive crater **Clavius**, the second largest crater (after the nearby **Bailly**). Even binoculars will show the string of good sized craters spread across its floor.

‡with permission from **Lunar Discoverer User's Manual** by Robert Duvall, 2013

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