

Turning Tides

unraveling the
relationship
between the moon
and our maritime
experiences.

Text by Carmen Winant

“The tides, when the Moon swung closer, rose so high nobody could hold them back. There were nights when the Moon was full and very, very low, and the tide was so high that the Moon missed a dunking in the sea by a hair’s-breadth.”

—Italo Calvino, “The Distance of the Moon”

We turn the tide, are tided over, drift with the tide. These linguistic metaphors for the continual rise and fall of the ocean have been harnessed by writers the world over to describe romance, life force (or respiration), renewal, temperament, the steadiness of life and also its inevitable disappointments. The Oxford dictionary defines the tide as *a powerful surge of feeling*, which is perhaps the most astute understanding of the phenomenon I’ve ever heard.

Most non-experts are aware of the relationship between the moon and the tide, and they usually agree that it seems almost metaphysical. It’s easy to figure that gravity, proximity, lunar phases, atmosphere, solar system, eclipses, magnetism, relativity, mass, the earth’s axis and its distance to the sun play a part in how the sea rises and falls, but the physics are more uncertain. How do the sea and the sky communicate and transmute energy? Like any dependent relationship, symbiosis is complicated and uneven; they both need one another, but in very different ways.

The story is complicated so I’ll make it simple: the moon orbits around earth and together they rotate around the sun. As it rotates, the moon pulls at the earth—like a magnet in search of a reverse charge—trying to draw it ever closer. But the dense satellite is no match for our planet, which is three times larger and exerts ten million times the gravity. We hold on. What the moon *can* do, the only thing it can muster with its limited gravitational force, is attract the water. Water is harder to hold onto than land (perhaps you’ve noticed that you can’t catch it?) since it’s not rooted and is always moving. Oceans appear to bulge at the horizon line not only because the earth is round, but in fact because they are reaching away from the ground and towards the moon. Another slightly more subdued bulge, called a ‘sympathetic bulge,’ occurs on the side of the earth not facing the moon. And throughout this routine choreography, the earth never ceases to rotate on its axis,

causing inconsistencies in the sea level as it reaches shore. These are tides, as we know them: every twelve hours and twenty-five minutes (as the moon is also rotating along with the earth), oceans on both sides of the globe rise and fall, rise and fall as whole oceans are stretched and released, stretched and released.

I'll return to the sun here, which is often left out of the story as it has less gravity than the moon and is also a little less sexy, a little too brassy. When the moon is big and ripe—a full moon, for instance—it's *because* it has aligned with the sun relative to the earth and formed a single, straight line in outer space. As a result of level positioning, the moon's magnetism is combined with that of the sun, which also pulls at the earth with distant gravitational force. On those nights—called 'spring tides'—high tides are very high and low tides are very low. The sea is wild and bridled all at once. It's an invisible lure, a pitch frequency, a siren song.

Four times a year the sun and the moon stand at a right angle to one another; they are perpendicular to one another with regard to the earth. These are quarter moons and they cause 'neap tides.' During these episodes, the "bulges" in the ocean cancel one another out, and the high and low tides are very, very weak. Perhaps you've noticed.

Here's a story about the spring tide and the neap tide: In the twenty-nine year history of Alcatraz, the water-bound penitentiary, thirty-six prisoners attempted to escape from the island and cross the mile and half of water to shore. Of them, only five men remain unaccounted for, all of whom fled at night. Unlike the others who relied on tricks and diversions, it is reported that these men studied the San Francisco Bay. They understood, somehow, that the moon (it's shape, it's size, it's relative closeness to the earth) profoundly affected the water's swell, and the tides were their only real chance of absconding to freedom. They patiently observed from their cell windows, these old and young men—many of them feared gangsters, though a few petty criminals—that when the moon was full, the Bay was at its most wild. After waiting until the just right evening, the prisoners took their leave of that place only when they could be carried out. The water that held the prisoners captive on that rock was the only agent that could set them free of it.

How did they know the time was right? A powerful surge of feelings. An innate sense. A strong attraction. It's metaphysical that way.

