The enormous disk of sail strained at its rigging, already filled with the wind that blew between the worlds. In three minutes the race would begin, yet now John Merton felt more relaxed, more at peace, than at any time for the past year. Whatever happened when the Commodore gave the starting signal, whether \textit{Diana} carried him to victory or defeat, he had achieved his ambition. After a lifetime spent in designing ships for others, now he would sail his own.

“T minus two minutes,” said the cabin radio. “Please confirm your readiness.”

One by one, the other skippers answered. Merton recognized all the voices—some tense, some calm—for they were the voices of his friends and rivals. On the four inhabited worlds, there were scarcely twenty men who could sail a sun yacht; and they were all here, on the starting line or aboard the escort vessels, orbiting twenty-two thousand miles above the equator.

“Number One, \textit{Gossamer}—ready to go.”
“Number Two, \textit{Santa Maria}—all O.K.”
“Number Three, \textit{Sunbeam}—O.K.”
“Number Four, \textit{Woomera}—all systems go.”

Merton smiled at that last echo from the early, primitive days of astronautics. But it had become part of the tradition of space; and there were times when a man needed to evoke the shades of those who had gone before him to the stars.

“Number Five, \textit{Lebedev}—we’re ready.”
“Number Six, \textit{Arachne}—O.K.”

Now it was his turn, at the end of the line; strange to think that the words he was speaking in this tiny cabin were being heard by at least five billion people.

“Number Seven, \textit{Diana}—ready to start.”

“Number Eight acknowledged.” The voice from the judge’s launch was impersonal. “Now \textit{T minus one minute},”

Merton scarcely heard it; for the last time, he was checking the tension in the rigging. The needles of all the dynamometers were steady; the immense sail was taut, its mirror surface sparkling and glittering gloriously in the sun.

To Merton, floating weightless at the periscope, it seemed to fill the sky. As it well might—for out there were fifty million square feet of sail, linked to his capsule by almost a hundred miles of rigging. All the canvas of all the tea-clippers that had once raced like clouds across the China seas, sewn into one gigantic sheet, could not match the single sail that \textit{Diana} had spread beneath the sun. Yet it was little more substantial than a soap bubble; that two square miles of aluminized plastic was only a few millionths of an inch thick.

“\textit{T minus ten seconds. All recording cameras on.”}

Something so huge, yet so frail, was hard for the mind to grasp. And it was harder still to realize that this fragile mirror could tow them free of Earth, merely by the power of the sunlight it would trap.

“\ldots five, four, three, two, one, \textit{cut!”}

Seven knife blades sliced through the seven thin lines tethering the yachts to the mother ships that had assembled and serviced them.
Until this moment, all had been circling Earth together in a rigidly held formation, but now the yachts would begin to disperse, like dandelion seeds drifting before the breeze. And the winner would be the one that first drifted past the moon.

###

Aboard Diana, nothing seemed to be happening. But Merton knew better; though his body would feel no thrust, the instrument board told him he was now accelerating at almost one-thousandth of a gravity. For a rocket, that figure would have been ludicrous—but this was the first time any solar yacht had attained it. Diana's design was sound; the vast sail was living up to his calculations. At this rate, two circuits of Earth would build up his speed to escape velocity—then he would head out for the moon, with the full force of the sun behind him.

The full force of the sun. He smiled wryly, remembering all his attempts to explain solar sailing to those lecture audiences back on Earth. That had been the only way he could raise money, in those early days. He might be Chief Designer of Cosmodyne Corporation, with a whole string of successful spaceships to his credit, but his firm had not been exactly enthusiastic about his hobby.

"Hold your hands out to the sun," he'd said. "What do you feel? Heat, of course. But there’s pressure as well—though you’ve never noticed it, because it’s so tiny. Over the area of your hands, it only comes to about a millionth of an ounce.

"But out in space, even a pressure as small as that can be important—for it’s acting all the time, hour after hour, day after day. Unlike rocket fuel, it’s free and unlimited. If we want to, we can use it; we can build sails to catch the radiation blowing from the sun."

At that point, he would pull out a few square yards of sail material and toss it toward the audience. The silvery film would coil and twist like smoke, then drift slowly to the ceiling in the hot-air currents.

"You can see how light it is," he’d continue. "A square mile weighs only a ton, and can collect five pounds of radiation pressure. So it will start moving—and we can let it tow us along, if we attach rigging to it.

"Of course, its acceleration will be tiny—about a thousandth of a G. That doesn’t seem much, but let’s see what it means.

"It means that in the first second, we’ll move about a fifth of an inch. I suppose a healthy snail could do better than that. But after a minute, we’ve covered sixty feet, and will be doing just over a mile an hour. That’s not bad, for something driven by pure sunlight! After an hour, we’re forty miles from our starting point, and will be moving at eighty miles an hour. Please remember that in space there’s no friction, so once you start anything moving, it will keep going forever. You’ll be surprised when I tell you what our thousandth-of-a-G sailing boat will be doing at the end of a day’s run. Almost two thousand miles an hour! If it starts from orbit—as it has to, of course—it can reach escape velocity in a couple of days. And all without burning a single drop of fuel!"

Well, he’d convinced them, and in the end he’d even convinced Cosmodyne. Over the last twenty years, a new sport had come into being. It had been called the sport of billionaires, and that was true—but it was beginning to pay for itself in terms of publicity and television coverage. The prestige of four continents and two worlds was riding on this race, and it had the biggest audience in history.

###

Diana had made a good start; time to take a look at the opposition. Moving very gently. Though there were shock absorbers between the control capsule and the delicate rigging, he was determined to run no risks. Merton stationed himself at the periscope.
There they were, looking like strange silver flowers planted in the dark fields of space. The nearest, South America’s *Santa Maria*, was only fifty miles away; it bore a resemblance to a boy’s kite—but a kite more than a mile on its side. Farther away, the University of Astrograd’s *Lebedev* looked like a Maltese cross; the sails that formed the four arms could apparently be tilted for steering purposes. In contrast, the Federation of Australasia’s *Woomera* was a simple parachute, four miles in circumference. General Spacecraft’s *Arachne*, as its name suggested, looked like a spiderweb—and had been built on the same principles, by robot shuttles spiraling out from a central point. Eurospace Corporation’s *Gossamer* was an identical design, on a slightly smaller scale. And the Republic of Mar’s *Sunbeam* was a flat ring, with a half-mile-wide hole in the center, spinning slowly so that centrifugal force gave it stiffness. That was an old idea, but no one had ever made it work. Merton was fairly sure that the colonials would be in trouble when they started to turn.

That would not be for another six hours, when the yachts had moved along the first quarter of their slow and stately twenty-four-hour orbit. Here at the beginning of the race, they were all heading directly away from the sun—running, as it were, before the solar wind. One had to make the most of this lap, before the boats swung round to the other side of Earth and then started to head back into the sun.

Time for the first check, Merton told himself, while he had no navigational worries. With the periscope, he made a careful examination of the sail, concentrating on the points where the rigging was attached to it. The shroud lines—narrow bands of unsilvered plastic film—would have been completely invisible had they not been coated with fluorescent paint. Now they were taut lines of colored light, dwindling away for hundreds of yards toward that gigantic sail. Each had its own electric windlass, not much bigger than a game fisherman’s reel. The little windlasses were continually turning, playing lines in or out, as the autopilot kept the sail trimmed at the correct angle to the sun.

The play of sunlight on the great flexible mirror was beautiful to watch. It was undulating in slow, stately oscillations, sending multiple images of the sun marching across the heavens, until they faded away at the edges of the sail. Such leisurely vibrations were to be expected in this vast and flimsy structure; they were usually quite harmless, but Merton watched them carefully. Sometimes they could build up to the catastrophic undulations known as the wriggles, which could tear a sail to pieces.

When he was satisfied that everything was shipshape, he swept the periscope around the sky, rechecking the positions of his rivals. It was as he had hoped; the weeding-out process had begun, as the less efficient boats fell astern. But the real test would come when they passed into the shadow of Earth; then maneuverability would count as much as speed.

It seemed a strange thing to do, now that the race had just started, but it might be a good idea to get some sleep. The two-man crews on the other boats could take it in turns, but Merton had no one to relieve him. He must rely on his physical resources—like that other solitary seaman Joshua Slocum, in his tiny *Spray*. The American skipper had sailed *Spray* single-handed round the world; he could never have dreamed that, two centuries later, a man would be sailing single-handed from Earth to moon—inspired, at least partly, by his example.

Merton snapped the elastic bands of the cabin seat around his waist and legs, then placed the electrodes of the sleep-inducer on his forehead. He set the timer for three hours, and relaxed.

Very gently, hypnotically, the electronic pulses throbbed in the frontal lobes of his brain. Colored spirals of light expanded beneath his closed eyelids, widening outward to infinity. Then—nothing . . .

The brazen clamor of the alarm dragged him back from his dreamless sleep. He was instantly awake, his eyes scanning the instrument panel. Only two hours had passed—but above the accelerometer, a red light was flashing. Thrust was falling; *Diana* was losing power.

###
Merton’s first thought was that something had happened to the sail; perhaps the anti-spin devices had failed and the rigging had become twisted. Swiftly, he checked the meters that showed the tension in the shroud lines. Strange, on one side of the sail they were reading normally—but on the other, the pull was dropping slowly even as he watched.

In sudden understanding, Merton grabbed the periscope, switched to wide-angle vision, and started to scan the edge of the sail. Yes—there was the trouble, and it could have only one cause.

A huge, sharp-edged shadow had begun to slide across the gleaming silver of the sail. Darkness was falling upon Diana, as if a cloud had passed between her and the sun. And in the dark, robbed of the rays that drove her, she would lose all thrust and drift helplessly through space.

But, of course, there were no clouds here, more than twenty thousand miles above Earth. If there was a shadow, it must be made by man.

Merton grinned as he swung the periscope toward the sun, switching in the filters that would allow him to look full into its blazing face without being blinded.

“Maneuver 4a,” he muttered to himself. “We’ll see who can play best at that game.”

It looked as if a giant planet was crossing the face of the sun. A great black disk had bitten deep into its edge. Twenty miles astern, Gossamer was trying to arrange an artificial eclipse—specially for Diana’s benefit.

The maneuver was a perfectly legitimate one; back in the days of ocean racing, skippers had often tried to rob each other of the wind. With any luck, you could leave your rival becalmed, with his sails collapsing around him—and be well ahead before he could undo the damage.

Merton had no intention of being caught so easily. There was plenty of time to take evasive action; things happened very slowly when you were running a solar sailing boat. It would be at least twenty minutes before Gossamer could slide completely across the face of the sun, and leave him in darkness.

Diana’s tiny computer—the size of a matchbox, but the equivalent of a thousand human mathematicians—considered the problem for a full second and then flashed the answer. He’d have to open control panels three and four, until the sail had developed an extra twenty degrees of tilt; then the radiation pressure would blow him out of Gossamer’s dangerous shadow, back into the full blast of the sun. It was a pity to interfere with the autopilot, which had been carefully programmed to give the fastest possible run—but that, after all, was why he was here. This was what made solar yachting a sport, rather than a battle between computers.

Out went control lines one to six, slowly undulating like sleepy snakes as they momentarily lost their tension. Two miles away, the triangular panels began to open lazily, spilling sunlight through the sail. Yet, for a long time, nothing seemed to happen. It was hard to grow accustomed to this slow-motion world, where it took minutes for the effects of any action to become visible to the eye. Then Merton saw that the sail was indeed tipping toward the sun—and that Gossamer’s shadow was sliding harmlessly away, its cone of darkness lost in the deeper night of space.

Long before the shadow had vanished and the disk of the sun had cleared again, he reversed the tilt and brought Diana back on course. Her new momentum would carry her clear of the danger; no need to overdo it, and upset his calculations by side-stepping too far. That was another rule that was hard to learn. The very moment you had started something happening in space, it was already time to think about stopping it.

He reset the alarm, ready for the next natural or man-made emergency; perhaps Gossamer, or one of the other contestants, would try the same trick again. Meanwhile, it was time to eat, though he did not feel particularly hungry. One used little physical energy in space, and it was easy to forget about food. Easy—and dangerous; for when an emergency arose, you might not have the reserves needed to deal with it.
He broke open the first of the meal packets, and inspected it without enthusiasm. The name on the label—spacetasties—was enough to put him off. And he had grave doubts about the promise printed underneath. Guaranteed Crumbless. It had been said that crumbs were a greater danger to space vehicles than meteorites. They could drift into the most unlikely places, causing short circuits, blocking vital jets that were supposed to be hermetically sealed.

Still, the liverwurst went down pleasantly enough; so did the chocolate and the pineapple puree. The plastic coffee bulb was warming on the electric heater when the outside world broke in on his solitude. The radio operator on the Commodore’s launch routed a call to him.

“Dr. Merton? If you can spare the time, Jeremy Blair would like a few words with you.” Blair was one of the more responsible news commentators, and Merton had been on his program many times. He could refuse to be interviewed, of course, but he liked Blair, and at the moment he could certainly not claim to be too busy. “I’ll take it,” he answered.

“Hello, Dr. Merton,” said the commentator immediately. “Glad you can spare a few minutes. And congratulations—you seem to be ahead of the field.”

“Too early in the game to be sure of that,” Merton answered cautiously.

“Tell me, doctor—why did you decide to sail Diana yourself? Just because it’s never been done before?”

“Well, isn’t that a very good reason? But it wasn’t the only one, of course.” He paused, choosing his words carefully. “You know how critically the performance of a sun yacht depends on its mass. A second man, with all his supplies, would mean another five hundred pounds. That could easily be the difference between winning and losing.”

“And you’re quite certain that you can handle Diana alone?”

“Reasonably sure, thanks to the automatic controls I’ve designed. My main job is to supervise and make decisions.”

“But—two square miles of sail! It just doesn’t seem possible for one man to cope with all that!” Merton laughed. “Why not? Those two square miles produce a maximum pull of just ten pounds. I can exert more force with my little finger.”

“Well, thank you, doctor. And good luck.”

As the commentator signed off, Merton felt a little ashamed of himself. For his answer had been only part of the truth; and he was sure that Blair was shrewd enough to know it.

There was just one reason why he was here, alone in space. For almost forty years he had worked with teams of hundreds or even thousands of men, helping to design the most complex vehicles that the world had ever seen. For the last twenty years he had led one of those teams, and watched his creations go soaring to the stars. (But there were failures that he could never forget, even though the fault had not been his.) He was famous, with a successful career behind him. Yet he had never done anything by himself; always he had been one of an army.

This was his very last chance of individual achievement, and he would share it with no one. There would be no more solar yachting for at least five years, as the period of the quiet sun ended and the cycle of bad weather began, with radiation storms bursting through the solar system. When it was safe again for these frail, unshielded craft to venture aloft, he would be too old. If, indeed, he was not too old already . . .

He dropped the empty food containers into the waste disposal, and turned once more to the periscope. At first, he could find only five of the other yachts; there was no sign of Woomera. It took him several minutes to locate her—a dim, star-eclipsing phantom, neatly caught in the shadow of Lebedev. He could imagine the frantic efforts the Australasians were making to extricate themselves, and wondered how they had fallen into the trap. It suggested that Lebedev was unusually maneuverable; she would bear watching, though she was too far away to menace Diana at the moment.
Now Earth had almost vanished. It had waned to a narrow, brilliant bow of light that was moving steadily toward the sun. Dimly outlined within that burning bow was the night side of the planet, with the phosphorescent gleams of great cities showing here and there through gaps in the clouds. The disk of darkness had already blanked out a huge section of the Milky Way; in a few minutes, it would start to encroach upon the sun.

The light was fading. A purple, twilight hue—the glow of many sunsets, thousands of miles below—was falling across the sail, as Diana slipped silently into the shadow of Earth. The sun plummeted below that invisible horizon. Within minutes, it was night.

Merton looked back along the orbit he had traced now a quarter of the way around the world. One by one he saw the brilliant stars of the other yachts wink out, as they joined him in the brief night. It would be an hour before the sun emerged from that enormous black shield, and through all that time they would be completely helpless, coasting without power.

He switched on the external spotlight and started to search the now darkened sail with its beam. Already, the thousands of acres of film were beginning to wrinkle and become flaccid; the shroud lines were slackening, and must be wound in lest they become entangled. But all this was expected; everything was going as planned.

Forty miles astern, Arachne and Santa Maria were not so lucky. Merton learned of their troubles when the radio burst into life on the emergency circuit.

"Number Two, Number Six—this is Control. You are on a collision course. Your orbits will intersect in sixty-five minutes! Do you require assistance?"

There was a long pause while the two skippers digested this bad news. Merton wondered who was to blame; perhaps one yacht had been trying to shadow the other, and had not completed the maneuver before they were both caught in darkness. Now there was nothing that either could do; they were slowly but inexorably converging, unable to change course by a fraction of a degree.

Yet, sixty-five minutes! That would just bring them out into sunlight again, as they emerged from the shadow of Earth. They still had a slim chance, if their sails could snatch enough power to avoid a crash. There must be some frantic calculations going on, aboard Arachne and Santa Maria.

Arachne answered first; her reply was just what Merton had expected.

"Number Six calling Control. We don’t need assistance, thank you. We’ll work this out for ourselves."

I wonder, thought Merton. But at least it will be interesting to watch. The first real drama of the race was approaching—exactly above the line of midnight on sleeping Earth.

For the next hour, Merton’s own sail kept him too busy to worry about Arachne and Santa Maria. It was hard to keep a good watch on that fifty million square feet of dim plastic out there in the darkness, illuminated only by his narrow spotlight and the rays of the still distant moon. From now on, for almost half his orbit around Earth, he must keep the whole of this immense area edge-on to the sun. During the next twelve or fourteen hours, the sail would be a useless encumbrance; for he would be heading into the sun, and its rays could only drive him backward along his orbit. It was a pity that he could not furl the sail completely, until he was ready to use it again. But no one had yet found a practical way of doing this.

Far below, there was the first hint of dawn along the edge of Earth. In ten minutes, the sun would emerge from its eclipse; the coasting yachts would come to life again as the blast of radiation struck their sails. That would be the moment of crisis for Arachne and Santa Maria—and, indeed, for all of them.

Merton swung the periscope until he found the two dark shadows drifting against the stars. They were very close together—perhaps less than three miles apart. They might, he decided, just be able to make it . . .
Dawn flashed like an explosion along the rim of Earth, as the sun rose out of the Pacific. The sail and shroud lines glowed a brief crimson, then gold, then blazed with the pure white light of day. The needles of the dynamometers began to lift from their zeros—but only just. Diana was still almost completely weightless, for with the sail pointing toward the sun, her acceleration was now only a few millionths of a gravity.

But Arachne and Santa Maria were crowding on all the sail they could manage, in their desperate attempt to keep apart. Now, while there was less than two miles between them, their glittering plastic clouds were unfurling and expanding with agonizing slowness, as they felt the first delicate push of the sun’s rays. Almost every TV screen on Earth would be mirroring this protracted drama; and even now, at this very last minute, it was impossible to tell what the outcome would be.

The two skippers were stubborn men. Either could have cut his sail, and fallen back to give the other a chance; but neither would do so. Too much prestige, too many millions, too many reputations were at stake. And so, silently and softly as snowflakes falling on a winter night, Arachne and Santa Maria collided.

The square kite crawled almost imperceptibly into the circular spider’s web; the long ribbons of the shroud lines twisted and tangled together with dreamlike slowness. Even aboard Diana, busy with his own rigging, Merton could scarcely tear his eyes away from this silent, long-drawn-out disaster.

For more than ten minutes the billowing, shining clouds continued to merge into one inextricable mass. Then the crew capsules tore loose and went their separate ways, missing each other by hundreds of yards. With a flare of rockets, the safety launches hurried to pick them up.

That leaves five of us, thought Merton. He felt sorry for the skippers who had so thoroughly eliminated each other, only a few hours after the start of the race; but they were young men, and would have another chance.

Within minutes, the five had dropped to four. From the very beginning, Merton had had doubts about the slowly rotating Sunbeam. Now he saw them justified.

The Martian ship had failed to tack properly; her spin had given her too much stability. Her great ring of a sail was turning to face the sun, instead of being edge-on to it. She was being blown back along her course at almost her maximum acceleration.

That was about the most maddening thing that could happen to a skipper—worse even than a collision, for he could blame only himself. But no one would feel much sympathy for the frustrated colonials, as they dwindled slowly astern. They had made too many brash boasts before the race, and what had happened to them was poetic justice.

Yet it would not do to write off Sunbeam completely. With almost half a million miles still to go, she might still pull ahead. Indeed, if there were a few more casualties, she might be the only one to complete the race. It had happened before.

However, the next twelve hours were uneventful, as Earth waxed in the sky from new to full. There was little to do while the fleet drifted around the unpowered half of its orbit, but Merton did not find the time hanging heavily on his hands. He caught a few hours’ sleep, ate two meals, wrote up his log, and became involved in several more radio interviews. Sometimes, though rarely, he talked to the other skippers, exchanging greetings and friendly taunts. But most of the time he was content to float in weightless relaxation, beyond all the cares of Earth, happier than he had been for many years. He was—as far as any man could be in space—master of his own fate, sailing the ship upon which he had lavished so much skill, so much love, that she had become part of his very being.

The next casualty came when they were passing the line between Earth and sun, and were just beginning the powered half of the orbit. Aboard Diana, Merton saw the great sail stiffen as it tilted to catch the rays that drove it. The acceleration began to climb up from the microgravities, though it would be hours yet before it would reach its maximum value.
It would never reach it for Gossamer. The moment when power came on again was always critical, and she failed to survive it.

Blair’s radio commentary, which Merton had left running at low volume, alerted him with the news: “Hello, Gossamer has the wriggles!” He hurried to the periscope, but at first could see nothing wrong with the great circular disk of Gossamer’s sail. It was difficult to study it, as it was almost edge-on to him and so appeared as a thin ellipse; but presently he saw that it was twisting back and forth in slow, irresistible oscillations. Unless the crew could damp out these waves, by properly timed but gentle tugs on the shroud lines, the sail would tear itself to pieces.

###

They did their best, and after twenty minutes it seemed that they had succeeded. Then, somewhere near the center of the sail, the plastic film began to rip. It was slowly driven outward by the radiation pressure like smoke coiling upward from a fire. Within a quarter of an hour, nothing was left but the delicate tracery of the radial spars that had supported the great web. Once again there was a flare of rockets, as a launch moved in to retrieve the Gossamer’s capsule and her dejected crew.

“Getting rather lonely up here, isn’t it?” said a conversational voice over the ship-to-ship radio.

“Not for you, Dimitri,” retorted Merton. “You’ve still got company back there at the end of the field. I’m the one who’s lonely, up here in front.” It was not an idle boast. By this time Diana was three hundred miles ahead of the next competitor, and his lead should increase still more rapidly in the hours to come.

Aboard Lebedev, Dimitri Markoff gave a good-natured chuckle. He did not sound, Merton thought, at all like a man who had resigned himself to defeat.

“Remember the legend of the tortoise and the hare,” answered the Russian. “A lot can happen in the next quarter-million miles.”

It happened much sooner than that, when they had completed their first orbit of Earth and were passing the starting line again—though thousands of miles higher, thanks to the extra energy the sun’s rays had given them. Merton had taken careful sights on the other yachts, and had fed the figures into the computer. The answer it gave for Woomera was so absurd that he immediately did a recheck.

There was no doubt of it—the Australasians were catching up at a fantastic rate. No solar yacht could possibly have such an acceleration, unless—

A swift look through the periscope gave the answer. Woomera’s rigging, pared back to the very minimum of mass, had given way. It was her sail alone, still maintaining its shape, that was racing up behind him like a handkerchief blown before the wind. Two hours later it fluttered past, less than twenty miles away. But long before that, the Australasians had joined the growing crowd aboard the Commodore’s launch.

So now it was a straight fight between Diana and Lebedev—for though the Martians had not given up, they were a thousand miles astern and no longer counted as a serious threat. For that matter, it was hard to see what Lebedev could do to overtake Diana’s lead. But all the way around the second lap—through eclipse again, and the long, slow drift against the sun—Merton felt a growing unease.

He knew the Russian pilots and designers. They had been trying to win this race for twenty years, and after all, it was only fair that they should, for had not Pyotr Nikolayevich Lebedev been the first man to detect the pressure of sunlight, back at the very beginning of the twentieth century? But they had never succeeded.

And they would never stop trying. Dimitri was up to something—and it would be spectacular.

Aboard the official launch, a thousand miles behind the racing yachts, Commodore van Stratten looked at the radiogram with angry dismay. It had traveled more than a hundred million miles, from the
chain of solar observatories swinging high above the blazing surface of the sun, and it brought the worst possible news.

The Commodore—his title, of course, was purely honorary; back on Earth he was Professor of Astrophysics at Harvard—had been half-expecting it. Never before had the race been arranged so late in the season; there had been many delays, they had gambled, and now it seemed they might all lose.

Deep beneath the surface of the sun, enormous forces were gathering. At any moment, the energies of a million hydrogen bombs might burst forth in the awesome explosion known as a solar flare. Climbing at millions of miles an hour, an invisible fireball many times the size of Earth would leap from the sun and head out across space.

The cloud of electrified gas would probably miss Earth completely. But if it did not, it would arrive in just over a day. Spaceships could protect themselves, with their shielding and their powerful magnetic screen. But the lightly built solar yachts, with their paper-thin walls, were defenseless against such a menace. The crews would have to be taken off, and the race abandoned.

John Merton still knew nothing of this as he brought Diana around Earth for the second time. If all went well, this would be the last circuit, both for him and for the Russians. They had spiraled upward by thousands of miles, gaining energy from the sun’s rays. On this lap, they should escape from Earth completely—and head outward on the long run to the moon. It was a straight race now. Sunbeam’s crew had finally withdrawn, exhausted, after battling valiantly with their spinning sail for more than a hundred thousand miles.

Merton did not feel tired; he had eaten and slept well, and Diana was behaving herself admirably. The autopilot, tensioning the rigging like a busy little spider, kept the great sail trimmed to the sun more accurately than any human skipper. Though by this time the two square miles of plastic sheet must have been riddled by hundreds of micrometeorites, the pin-head-sized punctures had produced no falling off to thrust.

He had only two worries. The first was shroud line number eight, which could no longer be adjusted properly. Without any warning, the reel had jammed; even after all these years of astronautical engineering, bearings sometimes seized up in vacuum. He could neither lengthen nor shorten the line, and would have to navigate as best he could with the others. Luckily, the most difficult maneuvers were over. From now on, Diana would have the sun behind her as she sailed straight down the solar wind. And as the old-time sailors often said, it was easy to handle a boat when the wind was blowing over your shoulder.

His other worry was Lebedev, still dogging his heels three hundred miles astern. The Russian yacht had shown remarkable maneuverability thanks to the four great panels that could be tilted around the central sail. All her flip-overs as she rounded Earth had been carried out with superb precision; but to gain maneuverability she must have sacrificed speed. You could not have it both ways. In the long, straight haul ahead, Merton should be able to hold his own. Yet he could not be certain of victory until, three or four days from now, Diana went flashing past the far side of the moon.

And then, in the fiftieth hour of the race, near the end of the second orbit around Earth, Markoff sprang his little surprise.

“Hello, John,” he said casually, over the ship-to-ship circuit. “I’d like you to watch this. It should be interesting.”

Merton drew himself across to the periscope and turned up the magnification to the limit. There in the field of view, a most improbable sight against the background of the stars, was the glittering Maltese cross of Lebedev, very small but very clear. And then, as he watched, the four arms of the cross slowly detached themselves from the central square and went drifting away, with all their spars and rigging, into space.

Markoff had jettisoned all unnecessary mass, now that he was coming up to escape velocity and need no longer plod patiently around Earth, gaining momentum on each circuit. From now on, Lebedev would be almost unsteerable—but that did not matter. All the tricky navigation lay behind her. It was as if
an old-time yachtsman had deliberately thrown away his rudder and heavy keel—knowing that the rest of the race would be straight downwind over a calm sea.

“Congratulations, Dimitri,” Merton radioed. “It’s a neat trick. But it’s not good enough—you can’t catch up now.”

“I’ve not finished yet,” the Russian answered. “There’s an old winter’s tale in my country, about a sleigh being chased by wolves. To save himself, the driver has to throw off the passengers one by one. Do you see the analogy?”

Merton did, all too well. On this final lap, Dimitri no longer needed his co-pilot. *Lebedev* could really be stripped down for action.

“Alexis won’t be very happy about this,” Merton replied. “Besides, it’s against the rules.”

“Alexis isn’t happy, but I’m the captain. He’ll just have to wait around for ten minutes until the Commodore picks him up. And the regulations say nothing about the size of the crew—you should know that.”

Merton did not answer. He was too busy doing some hurried calculations, based on what he knew of *Lebedev’s* design. By the time he had finished, he knew that the race was still in doubt. *Lebedev* would be catching up with him at just about the time he hoped to pass the moon.

But the outcome of the race was already being decided, ninety-two million miles away.

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On Solar Observatory Three, far inside the orbit of Mercury, the automatic instruments recorded the whole history of the flare. A hundred million square miles of the sun’s surface suddenly exploded in such blue-white fury that, by comparison, the rest of the disk paled to a dull glow. Out of that seething inferno, twisting and turning like a living creature, in the magnetic fields of its own creation, soared the electrified plasma of the great flare. Ahead of it, moving at the speed of light, went the warning flash of ultraviolet and x-rays. That would reach Earth in eight minutes, and was relatively harmless. Not so the charged atoms that were following behind at their leisurely four million miles an hour—and which, in just over a day, would engulf *Diana, Lebedev*, and their accompanying little fleet in a cloud of lethal radiation.

The Commodore left his decision to the last possible minute. Even when the jet of plasma had been tracked past the orbit of Venus, there was a chance that it might miss Earth. But when it was less than four hours away, and had already been picked up by the moon-based radar network, he knew that there was no hope. All solar sailing was over for the next five or six years until the sun was quiet again.

A great sigh of disappointment swept across the solar system. *Diana* and *Lebedev* were halfway between Earth and moon, running neck and neck—and now no one would ever know which was the better boat. The enthusiasts would argue the result for years; history would merely record: race cancelled owing to solar storm.

When John Merton received the order, he felt a bitterness he had not known since childhood. Across the years, sharp and clear, came the memory of his tenth birthday. He had been promised an exact scale model of the famous spaceship *Morning Star*, and for weeks had been planning how he would assemble it, where he would hang it up in his bedroom. And then, at the last moment, his father had broken the news. “I’m sorry, John—it costs too much money. Maybe next year . . .”

Half a century and a successful lifetime later, he was a heartbroken boy again.

For a moment, he thought of disobeying the Commodore. Suppose he sailed on, ignoring the warning? Even if the race were abandoned, he could make a crossing to the moon that would stand in the record books for generations.
But that would be worse than stupidity. It would be suicide—and a very unpleasant form of suicide. He had seen men die of radiation poisoning, when the magnetic shielding of their ships had failed in deep space. No—nothing was worth that . . .

He felt as sorry for Dimitri Markoff as for himself; they both deserved to win, and now victory would go to neither. No man could argue with the sun in one of its rages, even though he might ride upon its beams to the edge of space.

Only fifty miles astern now, the Commodore’s launch was drawing alongside Lebedev, preparing to take off her skipper. There went the silver sail, as Dimitri—with feeling that he would share—cut the rigging. The tiny capsule would be taken back to Earth, perhaps to be used again—but a sail was spread for one voyage only.

He could press the jettison button now, and save his rescuers a few minutes of time. But he could not do so. He wanted to stay aboard to the very end, on the little boat that had been for so long a part of his dreams and his life. The great sail was spread now at right angles to the sun, exerting its utmost thrust. Long ago it had torn him clear of Earth—and Diana was still gaining speed.

Then, out of nowhere, beyond all doubt or hesitation, he knew what must be done. For the last time, he sat down before the computer that had navigated him halfway to the moon.

When he had finished, he packed the log and his few personal belongings. Clumsily—for he was out of practice, and it was not an easy job to do by oneself—he climbed into the emergency survival suit. He was just sealing the helmet when the Commodore’s voice called over the radio. “We’ll be alongside in five minutes, Captain. Please cut your sail so we won’t foul it.”

John Merton, first and last skipper of the sun yacht Diana, hesitated for a moment. He looked for the last time around the tiny cabin, with its shining instruments and its neatly arranged controls, now all locked in their final positions. Then he said to the microphone: “I’m abandoning ship. Take your time to pick me up. Diana can look after herself.”

There was no reply from the Commodore, and for that he was grateful. Professor van Stratten would have guessed what was happening—and would know that, in these final moments, he wished to be left alone.

He did not bother to exhaust the airlock, and the rush of escaping gas blew him gently out into space; the thrust he gave her then was his last gift to Diana. She dwindled away from him, sail glittering splendidly in the sunlight that would be hers for centuries to come. Two days from now she would flash past the moon; but the moon, like Earth, could never catch her. Without his mass to slow her down, she would gain two thousand miles an hour in every day of sailing. In a month, she would be traveling faster than any ship that man had ever built.

As the sun’s rays weakened with distance, so her acceleration would fall. But even at the orbit of Mars, she would be gaining a thousand miles an hour in every day. Long before then, she would be moving too swiftly for the sun itself to hold her. Faster than any comet that had ever streaked in from the stars, she would be heading out into the abyss.

The glare of rockets, only a few miles away, caught Merton’s eye. The launch was approaching to pick him up at thousands of times the acceleration that Diana could ever attain. But engines could burn for a few minutes only, before they exhausted their fuel—while Diana would still be gaining speed, driven outward by the sun’s eternal fires, for ages yet to come.

“Goodbye, little ship,” said John Merton. “I wonder what eyes will see you next, how many thousand years from now.”

At last he felt at peace, as the blunt torpedo of the launch nosed up beside him. He would never win the race to the moon; but his would be the first of all man’s ships to set sail on the long journey to the stars.
Arthur C. Clarke is from Somerset in England, although he now makes his home in Sri Lanka on the other side of the world. He is well known for his television appearances commenting on the moon flights, as well as for the motion pictures 2001: A Space Odyssey and 2010: Odyssey Two. Yet his reputation rests first upon his excellent science fiction novels like A Fall of Moondust and Childhood’s End, as well as classic short stories such as “The Billion Names of God” and “The Star.”

When it first appeared, this story was entitled “Sunjammer.” (I didn’t know about the Poul Anderson story of the same title. Besides, I like “The Wind from the Sun” better now.) Many of the bright men and women working to develop solar sails have told me that their lifelong interest began when they first read this story back in the 1960s. Flatterers!