

Motley number 3

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2013-A Great Year!

We are still traveling as much as possible with the motto: do it now while you can!



This year we started off with a cruise that took us from Costa Rica, through the Panama Canal to Colombia, Aruba, Curaçao, Antigua, St. Barts and St. Martin. A highlight (and something Hilary will not be doing again!) was ziplining in Antigua:

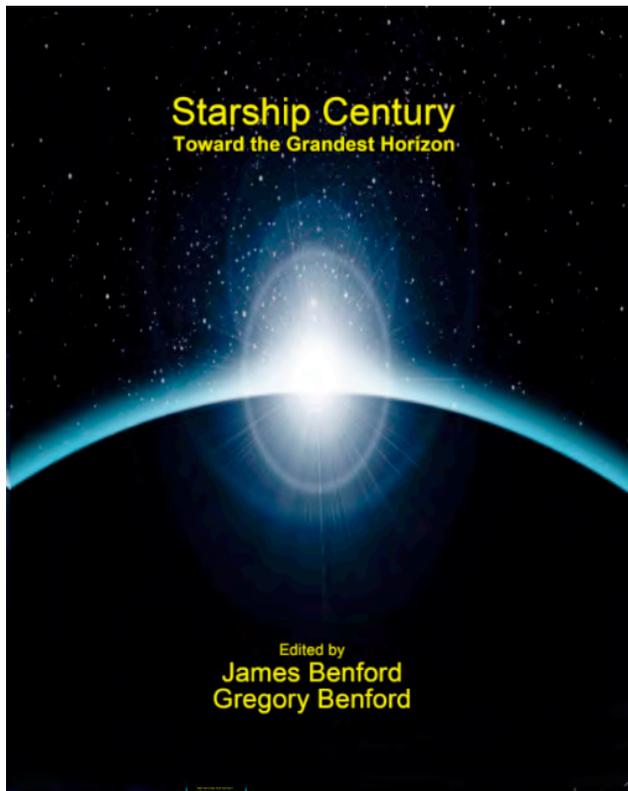


But our Big Trip of the year was about a month in Europe. We started in London where Greg & I attended a symposium based on our book (more about that later). Then it was on to Venice, one of our favorite cities, where we were joined by Greg's wife Elisabeth. After a few days here, we embarked on a cruise ship and sailed down the Dalmatian coast (Koper, Dubrovnik, Kotor) and then on to the Greek islands (Corfu, Santorini, Crete, Rhodes). From there, we went up through the Aegean, stopping in Ephesus to visit Miletus and Didyma, and eventually to Istanbul where we disembarked and spent 5 fascinating days.



The book Greg & I did, *Starship Century*, with such luminaries as Freeman Dyson and Martin Rees contributing, was the focus of several Symposia. The principal events were two-day *Starship Century* Symposium at the new Arthur C. Clarke Center celebrated the rollout for the Human Imagination at UC San Diego in May.

Attendance was about 250 people. You can see it all online at the book's website, starshipcentury.com. There was a 2nd symposium in London in October as well as a series of book-related events in southern and northern California. There was an article in *The Economist* in October about the London meeting.



On top of all that there are countless phone interviews and Internet appearances. We're going to donate the profits of the book to fund research on interstellar matters. (If you buy the book please get it through the above website because that will maximize the research funding funds.) I feel that starships are the next big horizon of our expansion into space and that this century will see the beginning of serious efforts to explore beyond the solar system; the

book describes the challenge and present understanding. I feel now that I've done quite enough on interstellar matters! For one thing, I'm now in negotiation for a 3rd edition of my textbook, *High-Power Microwaves*. And this year, I'm planning on a makeover of the garden.

Wife Hilary is also writing again, two novels based on the life of Joanna Plantagenet, the sister of Richard the Lion Heart. The first volume has gone to her agent and is being offered to various New York publishers and she's working on the second volume. Keep fingers crossed!

Family, of course, is always important. Vanessa and Peter are now in their new custom-built house in the suburbs of Melbourne. Their children are Jack, 8, Anna, 6, and my namesake, little James, 11/2. We flew down to spend December with

Son Dominic and Trudi are still in Maryland, he working for NASA and she for an advertising agency in Georgetown. He was furloughed when the government shut down, which was frustrating for him as he could not work on his projects. The twins, now 8, are both flourishing, Harrison playing the piano and entering scrabble tournaments and Audrey participating in competitive swimming.

I continue to stay very active, with yoga, swimming and gardening, and have taken up cooking, so we make dinner together these days.

I traveled for 102 days last year, 28% of the time! Will do less in 2014!

Next issue of *Motley*: mailing comments!

Sunshine Technopolis: Southern California's Utopian Futures

Gregory Benford

At first glance, southern California seems an unlikely place to build a world-class technical-scientific complex. The weather promises sunny beaches and mild breezes, not the chilly, gloomy ambience of an MIT or Harvard.

Yet that is what drew me here in 1963, to get a doctorate in physics at UCSD. The dream was as obvious as the weather — and there was surfing. Mostly, though, an idea drew me—the future; the stuff of science fiction.

Writers have envisioned SoCal as a potential paradise, perhaps more than any other part of America. There were many pessimists such as Nathanael West in *Day of the Locust*, and hardboiled noir emerged from the Raymond Chandler decades of the 1930s-50s, but the optimists prevailed, as we have seen.

History matters here. The SoCal industrial behemoth millions dwell within had its origins written plainly across the late nineteenth Century. Weather is not just a comfort — it shapes human enterprises. Mt. Wilson and then Mt. Palomar drew the Andrew Carnegie Foundation to build the biggest optical telescopes because they offered the best astronomical “seeing” conditions in North America.

Clarity and dependable sunlight led to Hollywood's dominance over New York. Being able to train troops out of doors drew Marines to Camp Pendelton and the Army Air Force to Edwards and other air bases.

“There is going to be a Detroit of the aircraft industry. Why not here in Los Angeles?” businessman E.J. Clapp wrote in 1926, pointing out the ease of building aircraft outdoors and flying them in clear skies. Allen Scott's study of techno-growth, *Technopolis*, shows that weather was less determining than was determination itself.

Immigrants here had already crossed many horizons; they were willing to venture on conceptually as well. Clapp's boosterism flowed into a rising tide of synergistic effects as each imported technical skill fed others. Optical trickery made better movies and bomb-sights alike. Machinists at lathes could turn out better oil drills or tank barrels or airplane exhausts. Switching talent from one field to another enabled skilled workers to navigate the ebb and flow of industrial currents.

But the Southland's new industries did not resemble William Blake's nineteenth century Satanic mills. They seldom gave us views like the Long Beach refineries, though oil played a major role in drawing wealth from and to the region. Many new methods of extraction were pioneered in the Long Beach fields. Raymond Chandler got himself fired from his oil company executive job in the early 1930s, partly because he was a drunk

and partly because he could not keep up with the pace of change in the industry. This lucky failure gave us his classic wise-cracking skepticism about the mean streets that were spreading over the obliging land.

Spreading innovation was always crucial. SoCal offered not the old way but the freeway. Key to this culture was a new idea: tools open us to fresh possibility faster than theories. Through Mt. Wilson's clear air Edmund Hubble discovered that the universe was expanding. Einstein came to Caltech to confer with Hubble, who had directly shown what Einstein had not ventured to propose — a universe growing larger, not static.

The race for insight and new products alike came from mobile intellectual resources, not from highly fixed natural resources, the old form of wealth. Quick minds gathered in close clusters were the crucial elements, realized early by a state that built a new kind of bridging institution — the University of California, the greatest of public universities. Few now realize how revolutionary UC's close concert of university abstraction and business practicality was in the early decades of the twentieth century.

From the beginning, UC was a driver of the economy. At UC Davis the system enshrined viticulture as a legitimate intellectual pursuit, fostering the nation's leading wine industry. Oceanographers at UCSD invented the wet suit, only to have a UC committee recommend not bothering to patent it because only scientists would use it. Medical radiation therapy got its momentum from high-energy physics at UC Berkeley, where Ernest Lawrence's cyclotron provided the particles. Orange grove yields grew using the lore discovered at an agricultural field station in Riverside, later the kernel of UCR.

Building our paradise, we Californians shamelessly mirrored the best of the Other Coast. Stanford was like Harvard, Caltech (CIT, like MIT), Scripps Institute of Oceanography in La Jolla (like Woods Hole in the Massachusetts Cape).

If San Francisco was somewhat like Boston, though, LA was like nothing in the East. For a while it seemed more like brawling Chicago, its cultural currents making for tricky navigation, as the novel and film *LA Confidential* showed so well. LA's Old Money scarcely dated back more than a few generations, and usually kept its cash in real estate, where it grew fast. Hammett and Chandler wove their noir visions of the seamy underside in the 1930s and 1940s. Robert A. Heinlein lived in the LA area alongside such SF authors as Jack Williamson and L. Ron Hubbard. Their tech-centered SF was crucial to the Golden Age of the genre.

Such newcomers brought a sense of open horizons. Though the Other Coast had invented and first developed the airplane, their advantages yielded to our sheer energy. By the 1950s the aerospace-electronics complex bestrode the largest high-tech industrial region in the world, a rank it holds today. The Jet Propulsion Lab and Ramo-Wooldridge provided the first U.S. space satellite, Explorer, in 1958. A year later,

Rocketdyne's Redstone engine drove the first Project Mercury flights. The Shuttle lifts off from Cape Canaveral, but it lands at Edwards Air Force Base. Meanwhile the U.S.'s most active spaceport is at Vandenberg, at SoCal's northern edge.

In aerospace and electronics especially, SoCal pioneered the new high-tech hierarchy: well-paid managers, scientists and engineers, underpinned by a vast stratum of laborers who assembled and built the molded plastics, aluminum cowlings, printed circuit boards, and, lately, personal computers. Growth was cutthroat and unregulated among this understorey. Price gouging and lurching job growth brought their Darwinnings of the small capital firms that came and went like vagrant, failed species in evolution's grand opera.

Californians did not stay put when firms went bust. They could cruise the mile-equals-a-minute freeways to new frontiers, where towns became mere off-ramps. A mobile cadre of people used to living by their wits made innovation paradoxically routine.

Today, nestled around my campus, UC Irvine, are brightly growing new-techs like medical device manufacture and biotechnology. Broadcom Corp is entirely on the campus itself, because UCI has ushered onto the campus the research labs owned by private companies, which will hand them over a few decades hence. Not that older industries will not recede as these advance. It seems unlikely that a Dickensian jungle of faltering assembly plants and techno-sweatshop sociology could grow.

So far SoCal has uniquely managed the handoff from one tired wonder-tech to the newest, unlike Massachusetts' Route 128, which is declining in clout and profits. Route 128 ceded its comparative advantages in computer design and manufacturing both to the Stanford-inspired Silicon Valley and to burgeoning assembly complexes in the San Gabriel Valley and San Diego.

California's secret seems to be its decentralized, experimental style, easy-going only in appearances. Technology workers learned to value collaboration and collective learning among a jostling, competitive crowd of hungry start-ups. Route 128 settled into its middle age with a complacent band of a few self-sufficient corporations who learned little from each other. They tried to innovate by pyramid management, rather than draw innovation up from the grunts laboring below. Think 1970s Detroit for a comparison.

Only slowly did a basic aspect of SoCal sink in — its great driver was no longer weather or agriculture. The pace was set by the Technopolis style SoCal has done more to invent than any other region on the planet. The complex gained great advantage from innovations developed locally, and thus applied most immediately here. After 1990, the decline of aerospace forced many engineers to find hot new jobs in Hollywood special effects teams. Heads-up pilot displays for real fighter planes led to great simulation games bought by twelve-year-olds.

Writers pondered this. It is no accident that much modern *science fiction* thinking has anchored in Southern California. Philip K. Dick, long-term resident of Orange County, gave us the remarkable future vision of *Blade Runner*, a noir LA where artificial human replicants struggle to live, and fail. This is a dark world indeed, its only oddity the constant rain in a dry land.

It is striking that older science fiction writers like Isaac Asimov and Arthur C. Clarke, both proselytizers for the beneficence of technological advance, depicted no actual American utopias. Unless, that is, they meant a future across the whole sprawling solar system, full of opportunities, as their version of as close to utopia as humanity could get.

The 1960s gave us many rural, back-to-the-earth visions, but more recently several Californians have realized that California cannot return to the land and keep its many millions. So they thought of more realistic themes.

A robustly libertarian line taken by Larry Niven and Jerry Pournelle in their quasi-utopian “arcology” or “keep” in *Oath of Fealty* dealt with the growing sense of insecurity and class division. The novel envisions a return to closed communities, basically a return to secure towns, in an arcology in south Los Angeles. Urban violence and crime force people into their own retreats, ignoring governmental attempts to interfere. The community instead defends its wealthy inhabitants from freaks and terrorists, and keeps on innovating.

Oath of Fealty explicitly shows ebooks and heightened, smart security — accurate forecasts. They also caught the feel of a future that may feel familiar. Consider today in Orange County and LA, from the viewpoint of prosperous citizen X. He gets up in the morning and leaves his guard-gated community (government’s police fail to keep people safe at home), drops his children off at a private school (many government schools fail their students), drives to work on a private toll road (government roads are jammed, since cities zone for this), goes to work in a building with a private security staff and ships his goods by private companies like FedEx (who outperform the USPO). We all know someone like X, or may be X ourselves. All this *Oath of Fealty* either describes or implies.

Added to this novel are those Niven and Pournelle wrote with black SF writer Steven Barnes, centered around social issues in future, high-tech LA vistas. These plus *Oath of Fealty* are the most extended discussions of future SoCal society ever done.

Kim Stanley Robinson’s “Three Californias” sequence is set in three versions of Orange County, a small county that got its start after noting the triumphs and tragedies of LA. These novels are notable for ambition as his thought experiments unfold. All are technology-driven. *The Wild Shore* shows an American SF pastoral after a catastrophe. In *The Gold Coast*, Orange County several decades later is polluted, corrupt, desperately overcrowded — alas, much like our present. Ecological degradation

proceeds in *Pacific Edge*, but Orange County has benefited from restrictions on corporate size and strict controls over land use and pollution. People play softball pretty constantly, an implausible centering sport that somehow controls the vagrant social forces. This, too, is nostalgic of Robinson's own past: he grew up in Orange. He seems to feel that humane Utopias can emerge from an increasingly disaster-prone real world. For him, the alternative to making the world better is allowing it to become fatally worse.

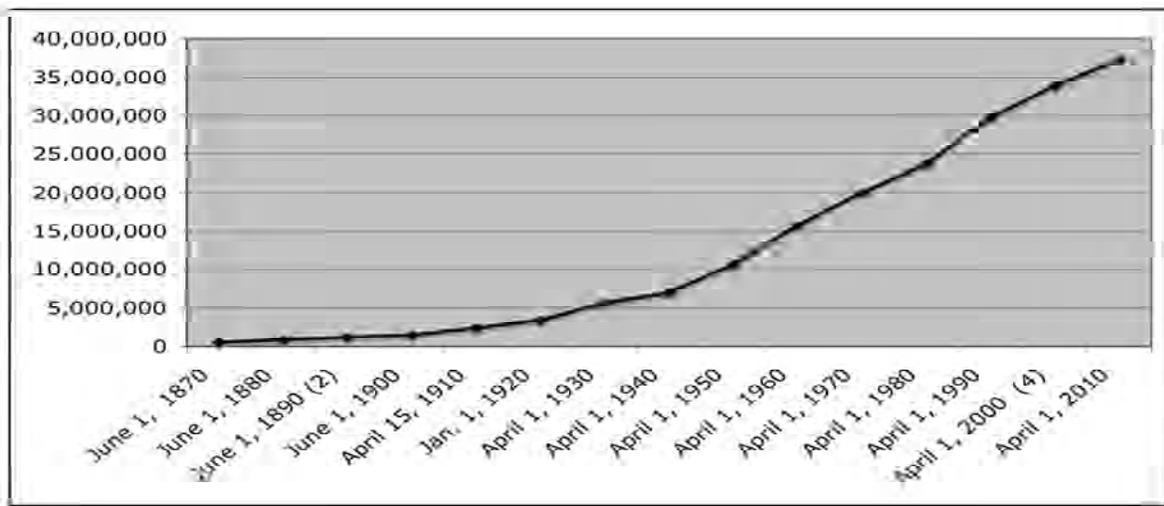
SF writers still ask: Whither Technopolis?

I've set several novels and short stories in Orange County, where I live. I depicted dikes keeping the expanding ocean out of Huntington Beach; a cryonics firm that freezes the dead, with much opposition (*Chiller*); a black woman physicist who makes a big discovery at UC Irvine and can't fit into a future Orange County scene (*Cosm*). These all show future SoCals under pressures that mount steadily.

SoCal sees ahead an era of limits, if only because it cannot build 'burbs to the Arizona border. Our disjointed mosaic of seven counties and 200 cities is failing the world's biggest and best Technopolis at the most basic, seldom mentioned level — infrastructure. Traffic now compels decisions about location and office hours. Air pollution limits what shops can set up in the region, so that some painting and finishing gets shipped to who-cares Nevada. Even the techno-triumph of our water system is straining to carry so much water to agriculture, which drinks 80% of the supply (yet adds less than 5% to its GDP). And the public schools woefully fail many students, leaving corporations to train them later — or maybe just leave for lower-tax states. Northern California has echoed SoCal's earlier techno patterns, outstandingly through computers. Stanford generated much of that, but many other industries blossomed — biotech, aircraft, and offshoots of the Lawrence Radiation Labs.

There are limited techno-solutions to such problems, and we Californians will probably try them all. SoCal could easily become the premier electric car complex for the world, not just the US — but we'd need a lot of expensive green electricity, and our anti-nuclear fear mongers are still powerful; opposition to the San Onofre nuclear plant was an element in its permanent closure in 2013. Biotech can find drought-resistant genes to tailor our commercial crops, while we landscape with drought-tolerant native plants. Tele-commuting of great power can keep more of us working at home. More computers might marginally help some schools.

I suspect Technopolis is about to realize that it must have a regional government with imagination comparable to its own, private visions. No more municipal workers hired to fill out ethnic quotas or just provide jobs, jobs, jobs. No more constant bickering over local traffic and managerial levels. No streets jackhammered up again and again because utilities do not cooperate on timing. When the Technopolis glimpses such a possibility, politics-as-usual had better clear out of the way.



California population swells

The last year has seen the fifth straight year of recession for California. Seldom since the Great Depression has the state seen such chaos. The voter revolt of 2003 onward, bringing about the first recall vote on a governor, seems to be in part anger over the breakdown of infrastructure — roads, health care, and schools, particularly. These are over-stretched by the added burden of a huge illegal immigration. (The left's latest response seems to be to try to ban the term, an Orwellian language-managing tactic.)

No one seems willing to stem the tide of population, not even environmentalists. A recent census analysis of emigration showed that the top-end Californians in both education and income are leaving, mostly for other western states, while many unskilled flock in. California has 12% of the US population and 32% of its welfare recipients. It also has the highest income tax in the USA, 13% at the top. This further weakens the foundation for a further flowering of technoculture.

None of this promises a new burgeoning of technical industrial growth. Yet that is how California has won its image as a golden state, above the flowing tides of commerce, always nose-to-the-grindstone. So we may be seeing a sea change, in the state with so much coastline. With nearby ally Silicon Valley, innovation may yet find its way to solid political power.

Plainly the state has exceeded its political ability to organize for prosperity. It has the ninth largest economy in the world, yet none of the vital controls that nation-states enjoy. It cannot manage its borders, design all its taxes, or make most of the laws that govern it. It could well be that California is approaching the limits of the Federal Republic model and will have to become an independent country to maintain its founding dream.

We are witnessing the over-stressed crumbling of a system that worked for most of the twentieth century. Whether the establishment can form a new political coalition, capable of using ideas from the right (private investment) and the left (wise state investment), plus greater regional control (generally a left position, as described above) — is an open question. Certainly one of the best ways to chart the region's course could be through SF works that envision how its changing society can deal with the *50 million* population the US Census projects for California in 2050.