disengagement from the Sinai, with the installation of U.S. observers. The accord is approved by Oct. 10, and Israeli troops begin leaving the peninsula for the first time since the 1973 war.

5 *Jaws* becomes the top-grossing film of all time.

Former Manson Family member Lynette Alice "Squeaky" Fromme tries to shoot President Ford and is immediately arrested in California. On Sept. 22, Sara Jane Moore also makes an unsuccessful assassination attempt on the president in San Francisco, and is likewise arrested.

6 Top of the charts: Glen Campbell's "Rhinestone Cowboy" (pop single); Jefferson Starship's *Red Octopus* (pop album).

8 The busing of Boston schoolchildren begins again amid protest demonstrations.

9 NASA's unmanned probe *Viking 2* takes off for Mars.

10 Bob Dylan joins swing bandleader Benny Goodman, bluesmen Sonny Terry and John Hammond Jr. and gospel singer Marion Williams in a TV tribute to legendary Columbia Records talent scout John Hammond. All of the event's performers had been Hammond's "discoveries"; he also signed and/or produced Billie Holiday, Bruce Springsteen and Stevie Ray Vaughan.

16 The delicate balance among Lebanon's religious groups begins to teeter out of control. Fighting erupts between Christian and Muslim factions, beginning a drawn-out civil war that will kill thousands and reduce Beirut to ruins.

18 Patty Hearst is arrested in her Bay Area hideout along with other surviving SLA members. Eighteen days later, ROLLING STONE makes headlines with its investigative account of the early days of Hearst's abduction and subsequent underground flight.

20 David Bowie's "Fame," hits #1 on the *Billboard* pop chart, his first to reach the top.

25 Soul singer Jackie Wilson collapses from a paralyzing heart attack while performing "Lonely Teardrops" in New Jersey. He will remain immobile and mute until his death in 1984.

1975 OCTOBER

1 Muhammad Ali defeats challenger and former heavyweight champion Joe Frazier at the

p.c. in the valley
by michael rogers

AS A NEW COLLEGE graduate in Palo Alto in the mid-Seventies, I had an interest in stringing words together to make prose and a knack for stringing wires together to make electronic gadgets. Growing up, I had always assumed I would support my quest for literary fame and fortune with an engineering job in some fluorescent cubicle at an obscure semiconductor company down Highway 101 in Sunnyvale. But then the opportunity beckoned to head north to San Francisco and become a ROLLING STONE writer. Now, twenty years after choosing Door Number Two, I'm writing this chapter for a fee only slightly higher than what my calculator-toting classmates who headed south to Intel pay to have the transmission fluid changed in their Ferraris.

Not that I mind: Rock & roll journalism was very good to me, and Ferraris are poor vehicles in heavy traffic. But I must admit that back then – even though I was a longtime subscriber to a little magazine called *Popular Electronics* – I entirely missed the historical significance of its January 1975 cover. That cover featured the MITS Altair 8800, the first personal-computer kit. The $397 Altair was a drab, boring box with blinking lights – a primitive fossil compared to today's personal computers. In fact, once you'd built the box, you still had to be exceedingly clever at programming in order to make the lights blink. Even so, a force had been set loose, and by the end of the decade much of today's computer landscape had already been shaped by a handful of powerful personalities, plus a hefty cultural hangover from the Sixties.

Regardless of my feckless career move, during the Seventies I continued to read *Popular Electronics* and remained drawn to the southward suburban sprawl then newly dubbed "Silicon Valley." I devoured the microcomputer enthusiast magazines (with whimsical titles like *Dr. Dobb's Journal of Tiny BASIC Calisthenics and Orthodontia*) and was a regular at the first hobbyist computer shows. The latter were ragtag high-tech bazaars of folding tables and hand-lettered signs advertising arcane electronic wares (BAUD RATE GENERATOR! TANTALUM CAPACITORS! IC EXTRACTORS!), gatherings sufficiently funky that business attire was defined as a clean T-shirt.

It didn't occur to me at first to write about my visits. Perhaps it was because there was absolutely nothing cool about electronics hobbyists in the mid-Seventies, unless you were one yourself, and even then you were probably plagued by wildly alternating moods of oblivious obsession and serious self-hatred. No fashion designer had yet glamorized nerdy eyeglasses or unkempt hair; there were no movies in which geeky yet oddly sexy young men and women solved crimes via keyboard and modem; there were no gilded techno-mansions rising on Seattle lakefronts. Sure, some guys were already making buckets of money in the old-style computer industry, but they were flattop engineer types who never did anything really stylish with their loot. For outsiders, this whole personal-computer scene tended to appear either unpleasantly weird or exceedingly dull.

The closest thing to sexy that the electronics hobbyists offered the normal world in the early Seventies was the "blue box," a homemade device that generated telephone-company dialing tones and allowed free long-distance calling. There was an underground college market for blue boxes – in fact, building and selling the contraband gadgets was the initial business venture for the soon-to-be-legendary Steves – Wozniak and Jobs. (Supposedly, inveterate prankster Wozniak's first free long-distance call was to the pope, in order to confess that he'd built a blue box.) But blue boxes were illegal, hard to use and ultimately appealed mostly to adolescent males intent on deconstructing the global phone network. Wozniak long remained an idol to young "phone phreaks" just cutting their teeth on Ma Bell; years later, wealthy from his Apple stock, semi-retired in a mansion above Silicon Valley, he would pick up his home telephone to hear dozens of kids from around the world on the line simultaneously yelling "Hey, Woz!"

At right: Steve Wozniak and Steve Jobs *(from left)* show off the Apple I; following page: The MITS Altair 8800

"Thrilla in Manila," in the Philippines.

Drummer Al Jackson Jr., the heartbeat of Booker T. & the MG's and a key part of the Stax Records sound behind soul legends Otis Redding, Sam & Dave, Wilson Pickett and countless others, is shot and killed by an intruder in his home.

7 At long last, John Lennon succeeds in his effort to become a legal American resident when a three-judge panel rules in his favor. Two days later, on his 35th birthday, John and Yoko celebrate the birth of their son, Sean Taro Ono Lennon.

11 NBC's *Saturday Night Live* premieres. George Carlin appears as the first guest host and the rookie cast includes John Belushi, Chevy Chase, Dan Aykroyd and Gilda Radner. A week later, the program begins its meteoric rise with a Simon & Garfunkel reunion.

12 Rod Stewart and the Faces perform their last show together at Long Island's Nassau Coliseum. Stewart will continue his successful solo career, while guitarist Ron Wood will sign on permanently with the Rolling Stones. The remaining members and Steve Marriott will re-form the Small Faces.

22 Due to financial pressures and low attendance, the World Football League falls apart 12 weeks into its second season.

The Cincinnati Reds down the Boston Red Sox in seven games to win the World Series.

27 Bruce Springsteen is featured on the cover of *Time* and *Newsweek* in the same week.

29 The Rolling Thunder Revue, Bob Dylan's ever-expanding folk-and-rock cavalcade concert, begins in Plymouth, MA. During the next few months, the loosely planned and roughly executed production will travel throughout the U.S., popping up guerrilla-style in various cities and featuring Joan Baez, Joni Mitchell, Ramblin' Jack Elliott, Bob Neuwirth, Allen Ginsberg, Roger McGuinn, Mick Ronson and many others.

31 Capricorn Records president Phil Walden produces the first of many Southern-rock benefits for Democratic presidential candidate, former Georgia governor Jimmy Carter. The Marshall Tucker

Like Jobs and Wozniak, many electronics hobbyists who started with blue boxes moved on to computers in the mid-Seventies. Intel had recently introduced a new item called a microprocessor, gathering thousands of transistors onto a single chip not much bigger than a Caribbean postage stamp. The microprocessor was initially intended for electronic calculators, when those were themselves still costly items. But hobbyists like Wozniak – who pored over the chip-company catalogs the way bookies read the *Racing Form* – quickly saw that it was now possible for an individual, rather than IBM or Sperry or Honeywell, to add some additional parts to these chips and create a computer. "Microcomputer" was the name first used to distinguish these new machines from the refrigerator-sized minicomputers (usually shared by many users) that at the start of the decade had represented the state of the art.

Ground zero of the microcomputer movement was the area around Stanford University, where the ambient culture shaped a deeper ethic that colors the industry to this day. By the mid-Seventies, of course, some trend-watchers saw the counterculture rapidly receding in the rearview mirror, but its influence remained strong. When, in 1977, one writer at ROLLING STONE proposed a satirical *Life* magazine–style photo-essay describing an isolated tribe of the last hippies left living in America, editor Jann Wenner rejected it: "You have to remember," he said, "some of our readers are still discovering that stuff." A case in point were the nerds of Silicon Valley, a few steps behind the Sixties beat but now bonding enthusiastically with everything from Power to the People to computer collectives.

The Homebrew Computer Club, for example, where the elite of the early computing days met regularly to swap plans and parts, was shepherded by an eloquent young hobbyist named Lee Felsenstein. His previous job had been with the *Berkeley Barb*, a newspaper noted equally for explicit sexual advertising and radical politics; Felsenstein cofounded Community Memory, a group devoted to making computer access available to every citizen for free, at least a full decade before most citizens had any idea they'd want such access in the first place. Added into that political mix was the influence of the Whole Earth Truck Store, a Palo Alto offshoot of Stewart Brand's *Whole Earth Catalog* of the Sixties, which rapidly moved into the new frontier of tiny computers. And nearby was the People's Computer Company, an organization that arose prior to the personal computer as a way for ordinary citizens to get access to time-sharing minicomputers, publishing books with titles like *My Computer Likes Me*.

Up in the hills above Silicon Valley, Jim Warren, a jolly, bearded fellow (whose penchant for nude hot-tub parties caused his departure from a teaching position at a Catholic college), turned his hand to small computers and launched the first West Coast Computer Faire (complete with precious Sixties spelling), at which the Apple II debuted. And a charismatic fellow named Ted Nelson (who likely inherited his stage presence from actress mom Celeste Holm) made regular public appearances to preach the virtues of Xanadu: a complex vision of a universal electronic world library in which all knowledge was linked to all other knowledge. Project Xanadu itself never happened – although more than a few believers pumped big dollars into the effort over the next couple of decades. Ironically, the Internet itself is now, rather on its own, taking the shape of Nelson's mid-Seventies vision.

As a result of these countercultural influences, many computerists of the Seventies shared both a profound mistrust of big business and a nearly religious belief that the computer was a tool of personal liberation. Even when the personal computerists went into business, their companies took names that mocked largeness or were simply silly. The Itty Bitty Machine Company lasted long enough for IBM's lawyers to draft a cease-and-desist letter; Kentucky Fried Computers had an only slightly longer life. Apple Computer, named for one of Steve Jobs's favorite fruits, is the last reminder of the days when whimsy was a more powerful force than one's marketing department.

Despite the excitement around the Homebrew Club, for most of the decade personal computers remained amazingly primitive. They initially stored their programs on cassette tapes, displayed text onscreen in big blocky capital letters and in general did very little of practical value. The buyers were almost entirely hobbyists – at that point, big businesses were perfectly happy with their mainframes and minicomputers ("Nobody ever got fired for buying IBM" was the corporate mantra, and IBM was years away from building a personal computer). Most small businesses still considered the Xerox machine the outer limit of technological risk-taking. Yet even so, the key personalities of the personal-computer industry were already well into the roles they would someday play on the global stage: models of the post-industrial capitalist for a new generation of entrepreneurs.

Consider Bill Gates. As a Harvard sophomore, Gates saw the MITS Altair 8800 on the cover of *Popular Electronics* and dropped out of school to develop, along with his buddy Paul Allen, the form of BASIC language needed to make its lights blink. Since no other language existed at the time, the first Micro-Soft (as it was then spelled) product was an instant hit. But Bill was soon unhappy, for he promptly collided with a prevailing notion spawned by Sixties idealism: "Information wants to be free." People were sharing Bill's software with one another, rather than purchasing new copies for themselves. He promptly challenged the personal-computer community with a testy "open letter" about how people should pay for his work rather than give copies to friends, and if they didn't, there wasn't going to be any more useful software coming from him, thank you very much.

The document was scathing, scornful and quite correct in asserting the importance of intellectual property rights. Computer hobbyists, however, immediately attacked Gates as a mercenary snake who wanted to own the Garden – in terms much like those used more than twenty years later by Microsoft's more contemporary critics.

About the time that Gates was standing up for intellectual property, Steve Jobs was cruising department-store aisles studying kitchen appliances in order to come up with a friendly look for the Apple II computer. (The 1976 Apple I computer had used the standard packaging of the era: a naked printed circuit board delivered in a plastic bag.) Thus, it was a watershed in personal-computer history when in 1977 he and Wozniak unveiled the sleek, beige-plastic Apple II, the first personal computer to look like something other than the interior of a telephone switchboard. The Apple II debut was at a five-thousand-dollar booth at the now-legendary first West Coast Computer Faire in the basement of San Francisco's grungy Civic Auditorium. The Apple II was astoundingly slick by the prevailing standard, but Jobs was only warming up. Ten years later and five blocks away, after a tempestuous departure from Apple, he would don black tie and rent the elegant Louise M. Davies Symphony Hall to unveil his brilliant but doomed Next computer – programming the stylish black cube's sound system to play a duet with a classical violinist.

The Seventies also shaped two key technologies for the remainder of the century. Indeed, one can argue that the personal computer and the Internet were also basically finished by the end of the decade and that the next twenty years have involved working out the details. In the mid-Seventies at a laboratory called Xerox PARC in the hills above Silicon Valley, a small band of blue-sky thinkers had built a desktop computer uncannily like the mainstream personal computer of the Nineties, featuring a mouse, icons, windowing graphics, a laser printer. But Xerox hesitated, and then in 1979 Steve Jobs – again cruising the aisles for ideas, this time at PARC – saw the work. He instantly realized that he was looking at the future, ultimately giving rise to the Lisa and Macintosh, which in turn led to Windows, as Bill Gates stamped the concept with his brand.

And the Internet, whose formal birthday is often given as 1969 (when it was the ARPAnet, linking a handful of universities and governmental and industrial research labs), actually added its most crucial ingredient in the Seventies. In an obscure but landmark experiment in 1977, researchers in the United States and Europe routed a computer signal from a moving van on San Francisco's Bayshore Freeway, via radio, landlines and satellites, over to London and then back to Los Angeles – traversing 94,000 miles and, as one researcher later recalled, "We didn't lose a bit." That "bit heard round the world" proved the viability of the TCP/IP system – the ability to send data seamlessly between totally different kinds of computer networks – that is today the fundamental technical underpinning of the global Internet.

By the end of the decade, I'd written a novel about the incredible story unfolding forty miles south of San Francisco. The book's editor, Michael Korda, an astute observer of popular culture, liked the manuscript but not the title: *Silicon Valley*. "Do people really have any idea where that is?" he asked. It was an excellent point, but like a stubborn computerist, I refused to change the name: As I saw it, Silicon Valley in the Seventies was the story. And while my recalcitrance about the title did not do the book's commercial prospects any good, in retrospect I was right.

Although it would be another five years before the locale became legendary, the odd characters of Silicon Valley had already mapped out the technology for the rest of the century. And more importantly, the Seventies had also created a state of mind that informed the technology. It was a cantankerous, idealistic and occasionally messianic attitude that now influences everything from antitrust debates to arguments over Internet censorship – a spirit that also shapes young computerists not even born the day the MITS Altair 8800 made the cover of *Popular Electronics*.