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A New Mexico Diary

Thursday, 2013 December 26: It's Karen's 60th birthday party (there's a bit of anticipation here, as the actual birth date is a month hence). Seventeen people—Doug, Sherry, Jeff, Josie, Carl, Jeremy, and Eleanor Caves; Jeremy's girlfriend Maria; Alex and Ryan Tallant; Tom and Linda Archer; Daavid and Carin Kahn; Abby and Ben Hellwarth; plus Karen herself—gather for a week of celebration in Albuquerque and at sites throughout southern New Mexico. Today most of the party ventures to Crest House, at the high point of the Sandias, to see the rosy finches—seeing all three species at once is unique to the crest of the Sandias in winter—and then to snowshoe. Abby sits out the snowshoeing at Crest House, while Ben, Carin, Carl, Daavid, Doug, Eleanor, Jeremy, Josie, Linda, Maria, Sherry, and Tom, their snowshoes obtained by Karen in a city-wide borrowing frenzy, slog through the snow for the mile to and from Kiwanis hut, which sits on the edge of the cliff that overlooks our house 4,000 feet below. Karen stays behind to pick up Jeff, and he returns to the airport to pick up Alex and Ryan. The party complete, the evening is spent consuming New Mexican food at Casa de Kahn-Caves and exchanging gifts in a Secret-Santa exchange organized by Josie.

Sunday, 2013 December 29: After a couple of days in the Silver City area, staying at Bear Mountain Lodge and seeing a bit of the Gila, and a morning of dawdling at the splendid City of Rocks, the party makes a mad dash for Carlsbad. The dash is interrupted briefly when the car carrying Maria reveals—honesty is sometimes not the best policy—that she is not a US citizen and is directed to the secondary area at the Border Patrol station east of El Paso. We arrive in Carlsbad just in time, moments before our 6:15 pm Christmas-on-the-Pecos boat tour departs. The air is bracing, the festive lighting of private residences and businesses along the river spans kitsch to sublimity, and the frigid temperatures are relieved by the complimentary, perhaps radioactive WIPP blankets. Whatever. We enjoy 40 minutes of leisurely boating with compatriots on a wintry evening, not something any of the party regularly gets a chance to do.

Monday, 2013 December 30: All seventeen participants are up bright and early for a day at Carlsbad Caverns National Park. We take the elevator down 750 feet to the Big Room, where we join the 10:00 am Kings Palace Tour. Eleanor and Carl, the most claustrophobic of the party, opt out of the lights-out story-telling near the end of the tour; everyone else survives, suitably impressed that anyone could have explored the cave before reliable artificial lighting. After the Kings Palace Tour, the highlight is self-guided exploration of the Big Room, a natural limestone chamber that is 4,000 feet (1,220 m) long, 625 feet (190 m) wide, and 255 feet (78 m) high at the highest point. It's a phantasmagoria of formations, which pleasingly combine immensity with delicacy, all assembled by mindless geological processes without attention to style or design. Exiting by hiking out through the Natural Entrance, an opportunity available now because elevator repair has reduced service, the party enjoys a very late picnic-style lunch at 3 pm before driving away to Roswell for dinner.

Tuesday, 2013 December 31: It's back to Albuquerque after a morning in the Roswell area. Doug, Sherry, Karen, Carl, Eleanor, and Jeremy get up early for bird watching at Bitter Lake National Wildlife Refuge, where hunters punctuate the birding with shots that tumble ducks from the sky as the birders watch, and the remainder of the group tours the ostentatiously titled International UFO Museum and Research Center, where a touch of history is overwhelmed by a suffocating dose of conspiracy theory. We all meet at the Anderson Museum of Contemporary Art; discovered by Maria, the Museum is a big surprise, an interesting and varied collection of contemporary art supported by an artists-in-residence program. The birthday celebration concludes with a New Year's Eve party at the house.

Monday, 2014 February 10: Eleanor acquires a dog for the first time in her life. Black, with a couple of white spots, Lux was found in South Carolina on I-95. She is as sweet as a dog can be, but has a regrettable tendency to eat nearly anything within reach, including things not so good for her innards.

It is worth remembering that Eleanor's desire for a pet dog goes back a long way. Shortly after we moved to Albuquerque in 1992, she expressed this interest forcefully, but was repelled by Karen's allergy—physical and metaphysical—to dogs (Carl's not so keen, either). When asked by a friend when she might get a dog, Eleanor replied evenly, "When Mom dies."

Monday, 2014 March 10: Carl arrives in Brisbane early in the morning for a six-week stay. Before leaving the airport, he visits the Coffee Club for an inaugural flat white. The lady sitting next to him is conversing on her mobile phone in a clearly Australian accent and mentions to her interlocutor that the hummingbird feeders should be put up. Puzzled, Carl apologizes for eavesdropping and inquires why an Aussie is concerned about hummingbirds. He learns that she is very, very solicitous of the Anna's hummingbirds at her property in the Sierra foothills below Yosemite, from which she has just returned to Australia.

Monday, 2014 March 17: Carl sits down to lunch and discussion with colleague Warwick Bowen at Wordsmiths, a campus eatery a short walk from his UQ office. Suddenly, there is a loud splat, and Carl finds his head is the recipient of a direct hit from an Australian white ibis perched in the tree above. Warwick hurries off to find a napkin, but Carl opts for a bathroom near his office, where he washes his hair in the sink. Returning, he finds Warwick at a different table—the ibis being disinclined to move and the time between dumps being uncertain—and enjoys a lunch of mushroom risotto together with a discussion of superfluid films on microtoroids.

Sunday, 2014 March 30: Carl wakes to the dawn chorus in the Victorian bush about 70 miles north of Melbourne. He's at the house of Manfred Ruff, which sits on a bluff on Manfred's square mile of property, a mixture of forest and meadows, fronting on the cleared pastures of Victorian sheep country on one side and backing up against the forest of Heathcote-Graytown National Park on the other. In the guise of a business called Box-Ironbark Birding, Manfred guides guests around his property to see the birds he nurtures by managing his property for wildlife. Carl selects the all-day guided tour and is rewarded with one of the great birding days of his life. An Australian owl-nightjar, a small, secretive, owl-like bird, usually seen only as a pair of enormous eyes peering from a hole in a tree trunk, flushes from its hole and perches on a branch about 20 feet away, contemplating the two humans with its bottomless eyes. A crested bellbird tolls its five-note peal repeatedly, the call echoing through the forest, seeming to move from one side of the landscape to the other as the call crescendoes. Manfred says he rarely locates the source in this haze of ventriloquism, but lurching through the forest in the direction of the loudest peal, Carl and Manfred eventually sight this one, a male tolling its piercingly loud notes from a high, bare branch of a eucalypt about fifty yards away across a meadow. Manfred hears the manic chattering of a swift parrot. He hasn't seen one in years, so Carl is skeptical, but they follow the calls till Carl sights the green and scarlet foraging on the flowers of a eucalypt. Manfred hears the persistent whistles of a Gilbert's whistler and warns Carl that this is another bird often heard, but rarely seen as it scurries along the ground in thick, chest-high bush; they follow the calls nonetheless and at last a male, rufous throat patch on a grey background, pops to the top of a bush to sing as it surveys the surroundings. As the day draws to a close, they stumble onto a small flock of diamond firetails foraging across the ground; a small finch with red beak and eyes and flanks of white polka dots on a black background, the firetail's highlight is the rump that flashes crimson every time the bird faces away. At the end of the day, Carl discovers that he has seen 49 species, fifteen of which are added to his Australian life list—the swift parrot, sought unsuccessfully six years ago in Tasmania, is among these these—bringing the list to a total of 328.

Friday, 2014 April 4: Karen, at the end of the annual ALI-CLE conference on pension and benefits law in San Francisco, is joined by Carin for a late-afternoon ramble at Lands End and the Sutro Baths ruins in Golden Gate National Recreation Area. Wildflowers blanket the ground. Brief rain showers sweep in from the ocean. The views over the Pacific and the Golden Gate and across to the Marin headlands are unsurpassed. The two retire to salads/appetizers at Cliff House, the view still spectacular, and then retreat to Beach Blanket Babylon in the City to help celebrate its 40 years of music making. Karen misses out on seeing Jeremy, who departed the Bay Area on March 20 for four months in Zürich with Maria.

Saturday, 2014 April 5: Karen enjoys a walk along the Clarkia Trail in Edgewood County Park above Palo Alto with Jeff, Carin, Steve Honda and Nancy Hom, and Anne Rosenthal and Eric Geist. It's a beautiful California spring day, wild flowers blooming and butterflies flitting through the forest. The highlight is a little voyeurism as the party watches the mating of a pair of bramble green hairstreaks (tiny butterflies for those who are wondering). Anne takes dozens of pictures for her collection of wildlife photography. The party adjourns to Carin's house for a dinner of Indian food.

Saturday, 2014 May 3: Carl participates in Audubon New Mexico's Birdathon, 24 hours of birding with experts

(Carl is supposed to be one of the experts) in the vicinity of Socorro, New Mexico, all in the cause of raising money for ANM. Begun yesterday at 5:00 pm in the Bosque del Apache, the birding is rewarding indeed. In the Bosque del Apache, the seven samurai spot half a dozen male vermilion flycatchers, whose red head and breast, often fired by the sun, are the very definition of vermilion. Summer tanagers, solid scarlet, populate the trees around the Bosque's wetlands. In Water Canyon, leading up into the Magdalena Range west of Socorro, a hepatic tanager, brick red tinged with grey, flies overhead. A painted redstart, unexpected and north of its usual range, flits from one conifer branch to another, showing off its black head, black wings with a prominent white wing-patch, and brilliantly red breast. A red-naped sapsucker, bright red crown and neck standing out from a black-and-white body, flies from tree to tree in search of places to drill for sap. The appropriately named red-faced warbler bleats its song nearby and finally flies to a perch in plain view, singing loudly out of a bright red head with black crown and cheeks. It's a red-letter day of birding. Carl's species count yesterday is 44, and today he records 82. Fourteen of these are lifers, bringing his North American list into a tie at 328 with his Australian list. The birdathon group's overall tally for the 24 hours, 125 species, owes much to Carol Beidleman's extraordinary ear, Judy Liddell's overall expertise (Judy wrote the book on central New Mexico birding), and Peter Vennema's preternatural spotting and identification skills.

Tuesday, 2014 May 13: Midway through her early-morning walk in the Sandia foothills on a cold, gray morning, Karen and her companions find themselves pelted by snowflakes. No accumulation—too little snow and too warm for that—but the petulant snowstorm flings winter at us for a couple of hours. It is the latest spring snow we have seen in our neighborhood.

Monday, 2014 June 9: This is Eleanor's last day of a month in Fort Lauderdale, working at Nova Southeastern University in Dania Beach, where she has learned how to perform electro-retinography on the reflecting-superposition compound eyes of the shrimp she is studying. The work is tedious and repetitive, but done in a very nice building right next to the beach. She now has a lot of data, which contain some surprises: the shrimp have such poor spatial resolution that they can hardly see each other, and they have only one cone and thus see in black-and-white, which means that even if they could see each other, they wouldn't see any of their own bright colors. Something is going on here, which needs to be figured out, but there wouldn't be a puzzle without these new data. Eleanor plans to drive back to Durham tomorrow.

Tuesday, 2014 July 8: Eleanor is at the University of Washington's Friday Harbor Laboratory on San Juan Island, the westernmost of the several islands that lie between Washington and Victoria Island. She is participating in a five-week course on comparative invertebrate embryology. Today the class ventures from the east (Friday Harbor) side of the island to Lime Kiln State Park on the west side, which is only five miles from Victoria across the Haro Strait (her smartphone switches unprompted to Canadian roaming); the field trip is occasioned by a self-serving need to discuss a scientific paper in the presence of killer whales. As they approach the ocean at a point just south of the lighthouse, a pod of nearly twenty killer whales appears, frolicking and breaching just offshore. This is the first time Eleanor has seen orcas in the wild.

Wednesday, 2014 July 11: Carl, in Brisbane for a six-week stint, finds himself bereft of lunch-mates, buys a Subway sandwich, and proceeds to a low stone wall overlooking the UQ lake, to enjoy the view and the sunshine along with the sandwich. An Australian magpie, a bulky black-and-white butcherbird unrelated to North American and Eurasian magpies, perches on the wall a few feet away. Carl unwraps the sandwich and begins to lift it to his mouth for the first bite. Suddenly the magpie appears between his mouth and the sandwich, its claws digging into his hand. It makes off with a piece of bread in its beak. Carl retreats to his office to eat the sandwich under fluorescent lighting without a view, but undisturbed.

Thursday, 2014 July 17: Michael Vanner, a postdoc at UQ, has been reporting to Carl that he has seen a tawny frogmouth in the Great Court outside Carl's office at dusk. Odd nocturnal birds, with bulging eyes set in a broad face, frogmouths spend the day posing as a broken branch on any handy tree. Carl really wants to see one, so he and Michael proceed to the Court at 5:30 pm and, sure enough, at 5:45 they spot a frogmouth perched in a gum tree and, shortly thereafter, another in a nearby gum. The pair fly a couple of times to trees across the court, and eventually one perches atop a gargoyle on one of the handsome sandstone buildings, a sort of gargoyle on a gargoyle. After a few minutes, the pair fly out of the Court and away.

Jeremy and Maria are on the last of three days hut-hiking north-to-south along the Alta Via 1 in the Dolomites. They have been traveling in South Tyrol since Sunday, inadvertently following in the footsteps of the near-mythical Austrian queen, Sisi, and inadvertently celebrating Germany's World Cup victory with hordes of vacationing

Germans. On Monday, they stopped in Bolzano to see Ötzi, the 5,000-year-old Iceman. The discovery in the early 90s of Ötzi's mummified body high atop a ridge that marks the current Austrian-Italian border indicated that humans had crossed the Alps for millennia, the bronze axe found with him extended the Bronze Age a thousand years further into the past, and the study of his remains continues to provide fascinating glimpses into the cultures, diet, and health of people in the Bronze Age. Today Jeremy and Maria aim for a hut perched high atop a 1000-meter cliff overlooking Passo Falzarego, which marked the WW I front between Austria-Hungary and Italy. When they reach the hut, they enjoy a glass of white wine and an unparalleled view of nearly the entire Dolomites. Tomorrow it's back to Zürich.

Monday, 2014 July 21: It's a Kahn-Caves gathering in Seattle, taking advantage of the generous hospitality and garage apartment provided by Abe Lillard and Julia Kalmus. Jeremy arrives today from Europe. Carl arrived yesterday from Brisbane. Karen, who flew to Seattle on Thursday evening from Albuquerque, picked up Eleanor on Friday at Anacortes, Eleanor having taken the ferry from Friday Harbor. Tomorrow we depart on a six-day road trip through Oregon and northern California—none of us has ever spent any time here. We aim to end up in San Francisco next Sunday, where we are to meet Karen's brother Kenny and sister-in-law Mary, in San Francisco for a visit, at the Hong Kong Flower Restaurant in Millbrae for dinner.

Thursday, 2014 July 24: We get up early on a windy, chilly morning and drive to the northeast side of Crater Lake for the boat tour to Wizard Island and then around the lake. The cold and wind soon give way to a fine, sunny day, and we enjoy a pleasant ramble along the Cleetwood Cove Trail from the crater rim to the lakeshore a thousand feet below. The boat drops us at Wizard Island, where we ascend 750 feet to the top for a spectacular view of the entire crater and the supernally blue lake nestled within it. The exceptional clarity of the water combines with the high-altitude blue of the sky to produce a blue that is, well, beyond blue. Here we encounter a problem, one faced by every visitor to Crater Lake: how to describe that blue? Quintessentially blue? Bluer than blue? Indigo (between blue and violet)? Royal blue (deep blue, often with a purplish tinge)? Ultramarine (a vivid blue to purple-blue color)? The last two, with their hints of purple, are headed in the right direction. Perhaps ultramarine is the best choice, but in the end, the circularity of definitions, especially of our perceptions, is the problem. The best solution is to define ultramarine as the blue of Crater Lake, rather than the other way around. You have to see it yourself.

Friday, 2014 July 25: Having driven to Crescent City yesterday afternoon, we get up this morning for a walk through the redwoods east of the city. We choose the Boy Scout Tree Trail, two and a half miles of walking through one of the grandest stands of old-growth redwoods left on the northern California coast. As one ambles along, the enormous redwood trunks, nicely spaced across the forest floor, thrust upward to the sky, from which shafts of sunlight pierce the canopy and return to dapple the forest floor with a delightful play of light and shadow. The sense is one of light and spaciousness. Unlike a dense forest, where one feels trapped beneath and among the trees and yearns to escape into the light above, here the light is all around. Unlike the view from a mountain peak or the big sky of the Great Plains, where the scale is so grand that it reduces one to desolation, here the scale is large, even humbling, but not so large as to make one insignificant. This is what cathedrals are shooting for: God is up there, grander than you, but shining on you from not so far away as to be inaccessible. The difference is that here Nature does it better.

After lunch we turn south onto Highway 101 on a drive that will take us to dinner in the quirky little town of Ferndale and then to overnight lodging in Garberville. On the way, we detour from 101 to stroll through Fern Canyon in Prairie Creek Redwoods State Park, now a part of Redwood National Park. One enters the canyon from the beach and finds a world of green, the canyons walls covered extravagantly in ferns. The road to Fern Canyon passes through a second-growth forest of Douglas firs and redwoods. The forest floor is littered with enormous redwood stumps, which squat like enormous ottomans among the second growth. It is a sight to make one cry. The stumps can be imagined upward to become the magnificent redwood forest they once were, but that forest, what we would now consider a sacred space, is gone, sacrificed to the nearly incomprehensible myopia and greed of the 19th and early 20th centuries. Where we now imagine a cathedral of Nature, somehow they couldn't see anything but houses and decking and park benches and redwood panelling. We would be even more impatient with our ancestors if we did not know that we are they: the struggle to save ancient redwood forests continued till nearly the end of the 20th century—and what's that about global warming?

Saturday, 2014 July 26: We drive from Garberville to the ocean, up and down and over astonishingly steep hills, and arrive at mid-morning in Shelter Cove, one of the loneliest places in America. Stopping for coffee at The Fish Tank, we enjoy a grand spectacle from its deck—the Pacific in front of us, the Lost Coast stretching away to

the north, where we plan to walk once the coffee is consumed. We stroll several miles up the wide beach, framed on one side by cliffs topped with forest and on the other by the restless Pacific. At every small creek descending from the cliffs to the ocean, the beach is covered in Western and Heermann's gulls, which part to make way as we approach. Common murre, red-necked loons, and California sea lions frolic in the surf. At one creek, we spot the black, olive, grey, and bright yellow of a Townsend's warbler hopping around in the trees growing in the creek's tiny canyon. We find several pisaster starfish, all a healthy bright orange, unaffected by the wasting disease that is decimating their population. On our return, nearing Shelter Cover, we spot a common murre standing stolidly on a small headland extending into the ocean. It doesn't give ground as we approach, and when we surround it, we see the problem, a deep gash into its guts that has left it stranded here, without the will to fly away. Nearby a Western gull has a fish hook embedded in its mouth, a long piece of fishing line trailing from its beak. Karen takes a call that informs her that her secretary has committed suicide. A delightful walk of sun and surf and beach and cliffs ends with somber reminders of the fragility of life. Eleanor christens the site Desolation Beach.

Monday, 2014 July 28: Kenny, Mary, and Daavid join Karen, Jeremy, and Carl—Eleanor returned to North Carolina this morning—for the same walk along the cliffs that Karen did in April, followed by a pleasant lunch in the Cliff House restaurant.

Wednesday, 2014 August 13: Eleanor is in Morehead City at UNC's Institute of Marine Sciences getting certified as a Science Diver for the American Association of Underwater Science, a certification required for nearly any diving-related research. Today is a day for actual diving, and the local research on the ocean floor is rewarded by the find of a twenty-dollar bill, which Eleanor uses to buy Dunkin' Donuts for everyone in the class. She passes all the exams, but needs three more dives with a certified Science Diver to get her certificate. She hopes to fulfill this requirement in Florida in January: life is tough.

Monday, 2014 September 15: Carl bikes home from work on his carbon-frame Trek Madone. A stiff east wind blows steadily at 20 miles per hour, gusting to 30, conditions cyclists detest. Heading north on the bike trail that runs along Tramway Boulevard, he passes the small shopping center that contains a Smith's grocery store and discovers a new reason for outlawing single-use plastic bags. A bag blows into the chain and clogs the rear derailleur, which is sheared completely off the bike by the next half-cycle of pedaling. Examination of the carbon frame suggests there might be damage to the right chain stay and dropout, which hold the rear wheel in place. Karen picks Carl up, amid uncertainty about the future of the bike.

Sunday, 2014 September 21: Eleanor flew to California last Wednesday and re-instantiated her long-time friendships with Kate Lewis, oceanography PhD student, and Rose Stanley, environmental-law student, both at Stanford. The three of them drove to Kings Canyon on Thursday and prepared for backpacking a loop trail, recommended by Jeremy, out of Kings Canyon to Rae Lakes. Fourteen miles of gradual uphill up the Woods Creek Trail on the first day and another eight on the John Muir Trail on the second day brought them to a campsite near the uppermost of the Rae Lakes yesterday, with the high peaks of the southern Sierra reflected in the lake's sparkingly clear waters. Today they are up early to do the final two miles over Glen Pass, at 11,978 feet the highest point of the hike. It's an exhilarating day, clear but windy, the sun shining brightly out of a Sierra blue sky. After the pass, they quickly plunge into the Bubbs Creek drainage for the return to Kings Canyon.

Monday, 2014 September 22: Back in Palo Alto, Eleanor joins Jeremy, Uncle Doug, Aunt Sherry, and cousin Jeff for a dinner at the Calafia Café, which specializes in vegan recipes. Doug asks about the dessert of chia-seed pudding, the waiter demurs, but Doug goes for it anyway. The efforts of all are required to finish it off. Doug and Jeff spent the day in Santa Cruz, with Jeff surfing and Doug taking surfing lessons.

Thursday, 2014 October 9: A bobcat, tawny with black-tipped ears and tail, slinks from beneath the house under the kitchen window and goes into stalking mode as it creeps toward a live oak that is more like a bush than a tree. A covey of Gambel quail scurries past on the far side of the oak, but the cat pays no attention, fixated instead on something beneath the oak. After a tense minute waiting just outside the oak's skirt, the cat sits back on its haunches—and relaxes, peering about unconcernedly, curling and uncurling its short tail. Break over, the cat returns to a crouch, ready to pounce, and rushes beneath the oak—too late to catch the cottontail that flees the cover of the oak via a side exit. The cat emerges and saunters away, apparently unconcerned that it will have to try again for its next meal.

Saturday, 2014 October 18: Carl picks up his Trek bicycle at the local Trek Superstore. The bike has been to Trek headquarters in Wisconsin to have the dropout repaired, the local store has installed a new rear derailleur, and the bike is reputedly as good as new, all for just \$500, \$200 of which was covered by the warranty. All a

pretty stiff charge for one errant plastic bag.

Saturday, 2014 December 13: Karen and Carl leave the house just before 10:00 am and head to the CarMax dealership at Alameda and I-25 to get a valuation for Karen's Honda Civic. In late afternoon, the Civic traded in, they drive away from Mark's Casa Chevrolet in a new Chevrolet Volt.

Wednesday, 2014 December 17: Motoring slowly along the north side of the Bosque del Apache, the sun sinking low in the west, raindrops spitting at the car, Carl watches a bald eagle fly across a broad field to perch in a line of trees to the north. Hoping for a better view, he gets out of the car and turns to find a field, blazed golden by the sun, and a rainbow arcing high above, set off against the dark clouds of the passing storm. Beneath the rainbow a flock of a thousand snow geese feeds and then flushes, dancing like a thousand snowflakes against the backdrop of blue-black clouds. If this is winter, bring it on.

Wednesday, 2014 December 24: Jeremy, Maria, Eleanor, Karen, and Carl step onto Amtrak's Southwest Chief in Albuquerque at noon, headed to Chicago. We rumble out of Albuquerque, pass through Lamy south of Santa Fe, watch the sun set over the Sangre de Cristo range, and bed down in our sleeper cars as the train crosses from Colorado into Kansas.

Thursday, 2014 December 25: The party sleeps through Kansas, never getting even a clue as to what is right or wrong with it, and wakes up in Kansas City at dawn. We arrive in Chicago at mid-afternoon, take a cab from Union Station to O'Hare, where we rent a car to drive to Madison, arriving there at 6:40 pm, just under thirty hours after leaving Albuquerque and just at the time predicted by driving app as we left O'Hare. We join Doug and Sherry and family for a lovely Christmas dinner at their house on the west side of Lake Mendota.

Friday, 2014 December 26: Looking for a place to lunch, the Madison party shows up at a well-known Middleton diner, only to find it overwhelmed with others seeking to avoid Christmas-dinner left-overs. Walking down the street to a pizza place, we encounter the National Mustard Museum. Maria has indicated that she is distinctly unimpressed by the blandness and uniformity of American mustard, so after pizza, we tour the Museum, sampling a few of the store's multitude of mustards and looking through the Museum's 5,600 varieties from around the country and the world. Mustarded out, we adjourn to Barriques, a Middleton institution, for afternoon cappuccinos, lattes, chai lattes, and grasshoppers.

Monday, 2014 December 29: We returned to Chicago yesterday, where our good friend Vicky Wurman abandoned her apartment in Chicago's Near North for Eleanor, Karen, and Carl. Jeremy and Maria are staying at the nearby Public Chicago Hotel, home of the Pump Room and its master of self-aggrandizement, Chef Jean-Georges Vongerichten. We spend today at the Art Institute of Chicago, viewing the extensive collection, which really requires a day just to get started. There are impressive antiquities, Grant Wood's oddly menacing *American Gothic*, and the famous collection of impressionist art, including one of van Gogh's self-portraits and several of Monet's London scenes. We meet Karen's cousin Debbie Rothschild for dinner across the street, at the Russian Tea Room. The waiter is just the right combination of bluff and concern, recommending various Russian specialties that we thoroughly enjoy. Debbie has brought gifts for all of us, but in a difficult-to-manage triumph, Carl steals the check while she is temporarily occupied elsewhere. We are scheduled to scatter in a couple of days, Eleanor to North Carolina and Maria to Europe on New Year's Eve, Jeremy to California and Karen and Carl to New Mexico on New Year's Day.

Wednesday, 2015 April 8: Eleanor passes her preliminary examination at Duke, becoming all-but-dissertation (big "but," of course). Though she is nervous, the exam turns out to be enjoyable, with good advice coming from the five committee members, one of whom, the person she worked with at Nova Southeastern last June, participates by Skype from Florida.

Friday, 2015 June 2: Karen has driven her Volt nearly 5,000 miles since December and used less than five gallons of gasoline. Once winter eased its grip in March, the Volt's battery started delivering more than 40 miles per charge, which easily exceeds Karen's daily commute. Just to be sure she knew how to do a fill-up, she filled the tank on March 11 as she drove Carl to the airport for his departure to spend three months in Brisbane. Since then she hasn't used a drop of gasoline. After picking up Carl at the airport on his return from Australia, she hands the car over to him to drive home. The trip to the airport and subsequent errands bring the day's total to 50 miles, 45 provided by the battery and five by gasoline.

Sunday, 2015 June 7: Karen and Carl arrive at Berlin's Tegel Airport, where they are met by Jeremy and Maria, who trained to Berlin yesterday from Zürich. They take buses and trains to Potsdam, southwest of Berlin, where Maria's parents, Björn and Hildegard, live. Karen naps; Carl, who miraculously slept nearly all the way from

Chicago, doesn't. The two sets of parents meet at lunch, after Hildegard has conducted services at Potsdam's historic French Reformed Church. After lunch, Björn gives Karen, Carl, and Maria a tour of the extensive research facilities in the Albert Einstein Science Park, where he works at the German Research Center for Geosciences. The four then take a brisk, 4.5-mile walk through the woods to Caputh, where they find Hildegard, Jeremy, and Eleanor, who arrived in Berlin at noon, waiting at the Einsteinhaus. Between 1929 and 1932, Einstein spent extended summers at this wood-paneled summer house, which sits at the edge of the forest above the Schwielowsee, betokening the theoretical physicists' weakness for working in isolated settings that have a lovely view out the window. A quick visit with Maria's maternal grandparents, Ulrich and Helga, completes the afternoon's activities. The party boats back to Potsdam and adjourns to dinner at an Italian restaurant.

Tuesday, 2015 June 9: Maria, Jeremy, Eleanor, Karen, and Carl explore central Berlin. Lunch at a Tex-Mex cafe—we couldn't resist seeing what it served, which turns out to be a hybrid of German and Tex-Mex—is followed by an afternoon at the Deutsches Historisches Museum and then a walk, with Maria's high-school friend Roy, to Kreuzberg, one of the hippest hangouts in hyper-hip Berlin. Passing through the former Checkpoint Charlie on the way, in Kreuzberg we schlep up a 180-foot-high hill in Victoriapark, the highest hill in the city, where we find a monument to Prussian victories in the Napoleonic wars—we learn that the Prussians referred to the Battle of Waterloo as La Belle Alliance—and enjoy a grand view of the city. Roy guides us to dinner in a Kreuzberg beer garden, which brings things pleasantly back down to earth.

Thursday, 2015 June 11: Arriving in Frankfurt from Berlin at mid-day, Eleanor, Jeremy, Maria, Karen, and Carl are met by Eleanor's Cambridge compatriot, Matthias Grein, who shows us the town in four hours. First there is lunch at Zum Gemaltenhaus, a traditional Frankfurt restaurant; lunch comes with the famous apfelwein, grüne soße (green sauce), and handkäse mit musik (sour-milk cheese with onions, supposed to stimulate the music of passing gas), plus a peremptory waiter without whom the experience would not be complete. After lunch we walk to a bridge over the Main and then do the 328 steps up a narrow spiral staircase to the top of the steeple of the Frankfurter Dom for a grand view of the central business district and the Main. We top all this off with a quick gelato before re-embarking for the four-hour train journey to Bern.

Friday, 2015 June 12: Jeremy, Maria, Eleanor, Karen, and Carl get an early start from Bern, grabbing a breakfast of laugengipfeli (a pretzel croissant and a Swiss staple), at the Bern Bahnhof, and take the train to Meiringen, famous as the town from which Sherlock Holmes walked to his encounter with Moriarty at the top of Reichenbach Falls. We stroll up the valley of the Aare and shortly come to the deep and exceptionally narrow Aare gorge. The Aare plunges and splashes through the gorge, directing its force relentlessly against the rocks. Fortunately for us, the gorge is equipped with boardwalks and tunnels, which allow us to witness the grand struggle between water and rocks from just above, without having to get directly involved. At the upper end of the gorge, we find a magical door into the side of the mountain and join the train that tunnels from Meiringen to Innertkirchen.

Proceeding by bus to the base of the Triftbahn at Nesselthal, we begin a hike up the west side of the valley of the Triftwasser in late morning, proceeding through an Alpine landscape of forest and meadows. Maria departs at the upper Triftbahn station to return to Zürich—we'll see her again in a week—and the rest of us continue up the trail, now above treeline, to the Triftbrücke, a 170-m long suspension bridge that spans the valley. The massive Triftgletscher, source of the Triftwasser, looms above us, and the wind is howling like a banshee. The 75-km/h gusts leave the bridge writhing like the tail of a kite, but Jeremy and Eleanor venture to the center, where they look down 100 m to the turquoise Triftsee, formed just over a decade ago as the glacier retreated up the valley. Our goal now is the Windegghütte, an alpine hut perched on the side of the Mährenhorn at 1,867 m, 170 m above us and 750 m above our starting point. The trail proceeds up a steep, narrow ridge, which has been outfitted with rope and chains on the steepest sections. Though the wind tries its best to blow us off the ridge, we pass the test and arrive at the 47-bed hut safe and sound in early evening. One of only two parties at the hut today, we have an entire room of twelve slots to ourselves.

Saturday, 2015 June 13: The morning dawns cool, but sunny, the wind having blown itself out overnight. We enjoy a spectacular view of Triftwasser valley, the glacier hunkered at the top, the bridge a very thin line far below. After breakfast we set off straight up the mountain, planning to over the Furtwangsattel and descend to Guttannen, but snow fields bury the trail after we have climbed about 250 meters, so we reverse course, descending to the Windegghütte and from there starting down to Nesselthal along an easier route than the ridge we climbed yesterday. Nonetheless, the steep descent pounds the legs into putty. Karen elects to take the funicular to save the final two hours of hiking; she manages to board the unattended gondola and finds herself in Nesselthal a couple of hours before Jeremy, Eleanor, and Carl arrive, after descending the switchbackless trail on the east

side of the Triftwasser. We return to Bern, where we are staying at the apartment of Maria's sister, Merve, and her husband Cha; the three flights of stairs to the apartment reveal, on both the up and the down, the calf and thigh soreness left by the hike.

Monday, 2015 June 15: We take the train from Bern to Avenches, passing through the line between German and French. The attraction is that Avenches sits on and is surrounded by the ruins of Aventicum, the Roman capital of Helvetia. A remarkable museum of Roman artifacts occupies the medieval tower above the Roman amphitheatre; the English guidebook to the exhibits is the very definition of well-done, and the special exhibit of Roman glass on the top floor is absolutely exquisite. For lunch we sit in the amphitheater, which held 16,000 people at the end of the 2nd Century and is still in use. After lunch we walk a short way southeast of town, to see the ruins of a couple of temples and the Roman theatre, but have to cut that short to take the train to Erlach, where the plan is to walk to the end of the narrow peninsula, St. Petersinsel, which extends 5 km into the Bielersee, and to catch the boat to Biel at the end. Here, however, the rain that has been predicted since Friday comes on in force. Abandoning the walk, we spend half an hour sheltering in place under a narrow canopy at the Erlach boat stop. Karen worries that the agitated lake will prevent the boat's stopping for us, and it is true that nobody else is waiting, but that is probably because everybody else has the sense not to stand in the rain till the boat is approaching. It turns out that Swiss boats are hardier than a summer rainstorm, so we board right on schedule. The wind and rain abate as we voyage across the lake to Biel, and we all enjoy a Cardinal Speziale while watching the antics of house martins and red-crested pochards. We return to Bern for a late dinner. Tomorrow we travel by train to London, taking the TGV Lyria from Basel to Paris and the Eurostar on to London.

Tuesday, 2015 June 16: Arriving in London in late afternoon, we connect up with Kenny and Mary at our hotel near Russell Square. After dinner, we all walk to the Icebar for a pricey, late-evening drink. The hook is that you have your drink in a room made of ice while wearing a blue, floor-length robe with a white-fringed hood, sort of like an Arctic version of *The Leaky Cauldron* without the magic.

Wednesday, 2015 June 17: We wander south from our hotel, cross the Thames on Waterloo Bridge, and stroll along the south bank to Borough Market. While Karen, Kenny, and Mary shop, Jeremy, Eleanor, and Carl fetch lattes and flat whites from Monmouth, Eleanor's favorite London coffee shop, and then everyone gets to work finding lunch in a place where if you don't find what you're looking for, you aren't looking. Eleanor, Jeremy, and Carl select gourmet pies with mash and minty peas from Pieminister, and we all end up on a low wall in front of Southwark Cathedral to eat what we've collected. After lunch, we take a bus to The British Library to see the special exhibit commemorating the 800th anniversary of Magna Carta. The exhibit is more than just a few original copies, indeed far more interesting than we anticipated, so we end up skimming on the final bits and heading outside to find Daavid in time to rush off to dinner. There is a reason for the rush. We have tickets to see *The Audience* at 7:30 pm at the Apollo Theatre near Picadilly, and nobody wants to starve while watching the play. We decide on dinner at Jamie Oliver's Diner, his American-themed (is it the food or the dino decorations?) casual restaurant, which is just down the street from the Apollo. Still we end up quick-stepping to the Apollo, where the play presents an imaginative rendition of the Queen's private audiences with prime ministers from Churchill to Cameron. The prime ministers are, to some extent, caricatures, but it is touching to see the Queen (Kristen Scott Thomas) express genuine affection and concern for her favorite, Labour prime minister Harold Wilson (Nicholas Woodeson). We exit the play after a full day and walk back to the hotel, ready to rest in preparation for more adventure tomorrow.

Thursday, 2015 June 18: The four of us take the train to Cambridge—Kenny and Mary travel by car—and drag our luggage to Downing College, where Eleanor has arranged for us to spend the night. Eleanor goes off to work with Claire Spottiswoode, her Cambridge Master's advisor, but emerges at lunch to do battle with a fashion question that cannot be put off any longer. The wedding of Daavid and Sarah-Jane Parker (this is the original reason for our trip to Europe) is fast approaching—it's on Sunday. Eleanor must now deal with the conundrum that has, for nearly a year, occupied every American woman who is attending the wedding: "They want hats? Really? I don't do hats. . . . Ok, I get it. They want hats. I'll get one, but . . . what should I get?" Karen selected a black fascinator—where do they get these names?—from the web quite a while ago. Eleanor now finds that Cambridge offers the same selection as does everyplace else in the world. Wisely ignoring gratuitous input from her family in favor of the soothing attention of a Cambridge friend, Eleanor settles on a dark-blue fascinator. Whew! Just in time.

In the evening, we take the familiar walk along the Cam from Cambridge to Grantchester for dinner with Kenny and Mary at *The Green Man*. Under new management, with a new chef, the pub seems not to have figured out

how to produce food in a timely fashion or even at roughly the same time, but the food is still good. Perhaps by the next time we're here, the timing issues will have been worked out. We would hate to miss out on that walk.

Friday, 2015 June 19: We get up early to join Claire, one of the world's pre-eminent ornithologists and birders, for a morning of birding in the fens northeast of Cambridge. It's an odd, inverted landscape. We walk on ridges that carry drainage ditches and look down on the boggy landscape where the birds are. It's not clear how this system works, but we enjoy a delightful ramble, spotting with Claire's help the impressive great crested grebe; the marsh harrier and the European kestrel; the black-and-white pied avocet; a rare spotted redshank; loads of lapwings; the reed bunting; the lovely black, white, and rufous stonechat; and at the very end, a common cuckoo.

In the afternoon we take the slow train from Cambridge to Ipswich and on to Woodbridge and then a cab to the Ufford Park Hotel, where the wedding guests are gathering. There we find Kenny, the father of the groom, accompanied by Mary; Carin, the mother of the groom, accompanied by her sister Ulla from Stockholm; and Karen's other two brothers, Jay and Wally, who just arrived in England after ten days of traveling in France. In the evening, the wedding guests are bussed to Bruisyard Hall (since 1354, but modernized, we find), where the wedding party is staying, where most of the wedding events will take place, and where we now enjoy a dinner of turkey and accompaniments while getting to know other wedding guests. Maria arrives from Zürich as we get back to the hotel after dinner, completing our contingent of wedding guests.

Sunday, 2015 June 21: It's the summer solstice and time for a wedding. Sarah-Jane Parker and Daavid Kahn are married in a traditional Anglican service at St. Mary's Church in Ufford, parts of which go back to the 13th Century and in which SJ's mother was baptized. SJ and Daavid both look resplendent. Indeed everyone is dressed in their finest. Our party's hats look pretty good, Eleanor and Karen in their fascinators and Maria in a wide-brimmed, black straw hat she picked up from a street rack in Potsdam. Jeremy and Carl sport their best aboriginal-art ties. Karen, black fascinator firmly affixed, matching her dress and contrasting sharply with her white hair, reads with dignity and grace two passages from the *Song of Solomon*, which speak to us across the chasm of three millennia:

My beloved speaks and says to me:
 "Arise, my love, my fair one,
 and come away;
 for now the winter is past,
 the rain is over and gone.
 The flowers appear on the earth;
 the time of singing has come,
 and the voice of the turtle dove
 is heard in our land.
 The fig tree puts forth its figs,
 and the vines are in blossom;
 they give forth fragrance.
 Arise, my love, my fair one,
 and come away."

Set me as a seal upon your heart,
 as a seal upon your arm;
 for love is strong as death,
 passion fierce as the grave.
 Its flashes are flashes of fire,
 a raging flame.
 Many waters cannot quench love,
 neither can floods drown it.
 If one offered for love
 all the wealth of one's house,
 it would be utterly scorned.

The whole party adjourns to Bruisyard Hall for the wedding dinner and celebration, held in the converted barn at the estate.

Tuesday, 2015 July 7: Maria and Jeremy, in Bern to provide babysitting for Maria's niece Lina, hop into the Aare River, a major tributary of the Rhine that flows through Bern after draining much of the northwestern Alps. The river flows at a brisk pace—Jeremy estimates 20 km/h—and it appears that nearly the entire population of Bern is in it to escape the heat wave that is afflicting much of Europe. Maria and Jeremy discover that the flow is fast indeed, so fast that about 1 km above the desired exit, signs appear indicating ominously that the "final exit" is drawing nigh. Desperate to avoid being swept downstream, they struggle to the bank and grab one of the many handrails installed to prevent being swept away, only to be slammed violently into the bank by the force of the current. Jeremy observes that the native Bernese seem more adept at exiting—maybe it's just a matter of practice—so he and Maria scurry upstream to relive the experience and try the exit again.

Friday, 2015 July 17: Lux is in recovery after getting herself into big trouble yesterday by swallowing, foot by foot, the long string that made up Eleanor's door mat. By late afternoon, Lux was out cold on the operating table, her guts on the table beside her; in surgery lasting four hours, the vet made two cuts in the stomach and

four in the small intestine to extract the worst “linear foreign body” she has ever seen. Re-assembled, Lux spent the night in a recovery crate at the vet’s and returns home in remarkably good shape this morning, having survived an ill-advised snack and major surgery to remove it.

Monday, 2015 July 27: Karen and Carl arrive home from work on an ordinary day, and Carl trots down the driveway to pick up the mail. There’s a postcard from Maria and Jeremy on the top of the pile, with the writing facing up. Walking back up the driveway, Carl absorbs the straightforward announcement: “Dear parents! We are engaged!” Gratified, but not entirely surprised, Karen and Carl shoot off congratulatory e-mails to Maria in Zürich and to Jeremy wandering around somewhere in Kazakhstan. The wedding is planned for Potsdam roughly a year from now.

Thursday, 2015 August 13: Eleanor and boyfriend/co-worker Patrick Green are in the middle of fourteen days on Curaçao. They are staying at the CARMABI Marine Research Station, which is located on the beach at the opening of Piscaderabaai, where it is wedged between a Hilton and a bar called Pirate Bay. The coral reef in front of the station is a mess—most of it was dredged to make way for the Hilton’s pier, which was then destroyed in a hurricane, leaving behind a jumble of concrete, sunken boats, and recovering coral—but this disturbed seascape turns out to be perfect for cleaner shrimp, which are the focus of Eleanor’s PhD research. Eleanor and Patrick quickly locate ten cleaning stations to monitor, all on a sandy shelf at about 20 feet. Every day they deploy cameras around 7 am, dive for an hour, then hang out on the beach until 10 am, when they return to the water to collect the cameras. After downloading the footage, eating lunch, and exploring the island a bit, they repeat the routine in the evening.

Today is different. They skip their own evening dive to join some American aquarists from a group called SCORE on a dive to watch brain coral spawn. As the corals prepare to spawn, damselfish descend in huge schools to peck at the corals, eating the sperm/egg bundles. The damselfish cue the SCORE team to put a bag over the assaulted head of coral, to collect the bundles as they are released. They later culture the corals in their lab. The reef is beautiful, and Eleanor and Patrick swim around looking at eels, snapping shrimp, and fish galore. About 20 minutes before they surface, a group of nine or so pelagic squid appear and spend several minutes weaving about them, gliding and hanging in the water. On the way out of the water, they encounter a bait ball, an enormous school of small fish that swirls around in a vortex to avoid being eaten. They find that they can duck into the ball and be surrounded by the swirl of silvery fish. Just as they surface, the sun dives, and they are treated to a gorgeous tropical sunset to top off a special day.

Friday, 2015 October 2: Maria and Jeremy, Eleanor and Patrick are in Albuquerque for a premature celebration of Carl’s 65th birthday. Today they, plus Karen and Carl, start up the La Luz Trail at 11:00 am, the goal being to walk to the top of the Sandia Peak Tramway by late afternoon and to take the tram back down. It’s a beautiful fall day, at least initially, but by afternoon as the group ascends the rock slide, a foretaste of winter sweeps in with clouds and a blustery wind. As the group reaches the upper tram station, they find to their surprise that the last tram of the day is waiting just for them, the tram company having canceled the remainder of the schedule due to winds gusting beyond 45 miles per hour. The high winds stop the ride down short of the point where the upgoing and downgoing trams pass, just above the upper tower, but eventually the wind calms a bit, the trams pass one another, and the group reaches the lower tram station safely and walks the half mile to the house.

Saturday, 2015 October 3: We all get up early and, joined by Ivan Deutsch and visitor Trey Porto, depart for the Albuquerque International Balloon Fiesta at 5:40 am. A good thing, too, because it takes the full hour and twenty minutes to get to the launching field just in time for the start of the mass ascension at 7:00 am. It would be much faster, although perhaps more hazardous, to ride a bike all the way from the house, and even somewhat faster to abandon the car at the Sandia Casino and walk the final mile to the field—many people did just that, exemplifying a working strategy for future Fiesta forays. Fortunately, the frustrations of getting to the Fiesta melt away in the face of a delightful early morning: the group strolls the field as the sun rises into an azure sky punctuated with puffy white clouds and the brightly colored tear drops of hundreds of hot-air balloons.

Friday, 2015 November 6: Karen and Carl get in at the beginning by attending the 5:50 pm showing of what is called The Snoopy Movie at our house, but whose official title is *The Peanuts Movie*. The Peanuts crew emerges into three dimensions after years of being confined to two. The movie is very well done, hits all the right notes, and although the story appears to be about Charlie Brown, Snoopy is unquestionably the star.

Thursday, 2015 November 26: North Carolina exerts a pull on on the Caves side of the family: Josie and Eleanor live in Durham, Linda and Tom’s daughter Sonia and her husband Guy live in Greensboro, and last spring

Linda and Tom abandoned Arkansas in favor of North Carolina. For the third year in a row, Karen and Carl join in a Thanksgiving celebration in North Carolina. This morning Eleanor, Patrick, Karen, Carl, and Rachel Grey, visiting from Charleston for the Thanksgiving break, prepare their contributions to Thanksgiving dinner and then drive to Linda and Tom's new house west of Greensboro for a turkey dinner with more than all the trimmings. Already on site they find all the other North Carolinians, Doug and Sherry, Tom and Linda's daughter Natalie, and her daughter Holly, whose seventh birthday is Saturday.

Saturday, 2015 November 28: Yesterday the entire Thanksgiving contingent, plus a few additions who arrived yesterday, transited to Asheville, in the foothills of the Great Smokies. The group had a brief look at the grounds of the Biltmore estate and then did an evening tour of the house, the largest in America, decked out in its holiday finery. Today Eleanor, Patrick, Karen, Carl, and Rachel venture out of Asheville on an unseasonably warm day. They end up at the Devil's Courthouse, a rock outcropping just off the Blue Ridge Parkway southwest of Asheville, where they find that the devil shares a preference for spectacular views; the blue ridges run on and on, out of North Carolina and into neighboring South Carolina, Georgia, and Tennessee. After dinner at *Plant*, a vegan restaurant in Asheville, we adjourn to the French Broad Chocolate Lounge, an Asheville institution, for dessert. The specialty of the house is a sort of hot chocolate on steroids, called a liquid truffle, said to be "housemade ganache melted with organic half and half" (nobody complains, but ganache is already a mixture of chocolate and cream). Eleanor, Karen, and Carl are left to wonder whether this concoction beats the liquid chocolate we had in Potsdam last June. We will get a second chance at that next summer: Maria and Jeremy have scheduled their wedding for July 15 in Potsdam.

Sunday, 2015 December 13: After a year with the Volt, Karen has driven it about 9,000 miles and used 12.5 gallons of gasoline.

Saturday, 2015 December 26: With the temperature rising through 10°F, we stop for lunch along the road running north from Canyon Village in Yellowstone National Park. Behind us, Mount Washburn stands tall at 10,243 feet. Spread out before us are the Grand Canyon of the Yellowstone, the broad snowscape of Hayden Valley, Yellowstone Lake, the Red Mountains on the near horizon, and far away, at the edge of the world, the jagged profile of the Tetons. The snow is deep and tinged with hoarfrost that glitters like diamonds. The nearby conifers are thickly flocked with snow in Nature's preposterously flamboyant style. On a few bedraggled firs in front of us, the snow has melted, migrated to the tips of the needles, and refrozen into tiny spheres that burn with a fierce brilliance in the bright sunlight.

We are at the far point of a day-long snow-coach tour from Mammoth Hot Springs to the Grand Canyon. The party consists of Jeremy, Maria, Eleanor, Karen, Carl, Doug, Sherry, Jeff, his girlfriend Julie, Josie, and Ryan (Alex and new baby Adelaide stayed behind at the hotel). All of us arrived in Bozeman either on Christmas Eve or the day before (Kevin is scheduled to join us tomorrow), and we took a bus from Bozeman to Mammoth Hot Springs yesterday. Retreating from our lunch site, we track a group of three wolves, whose large paw prints line the road for nearly a mile. The tracks are fresh, but whether the wolves trod the road during our lunch or earlier, we cannot tell. We cross to the east side of the Yellowstone over Chittenden Memorial Bridge to take in the sublime view of the Lower Falls from Artist Point. As we cross back over the bridge, we spot two American dippers and two river otters frolicking in the icy waters below. The two-hour trip back to Mammoth takes us from the slanting rays of mid-afternoon to the early, but prolonged twilight of northern winter.

Sunday, 2015 December 27: Doug, Alex, Josie, Jeff, Julie, Jeremy, Maria, Karen, Carl, and Eleanor hop on a small bus at 7:00 am, nearly an hour before sunrise, for a winter wildlife safari into the Lamar Valley east of Mammoth Hot Springs. As the tour reaches its far point at the upper end of Soda Butte Canyon, the bus stops for a bathroom break at Pebble Creek Campground, and the temperature drops to -22°F, a temperature that leaves you gasping, suddenly sure that cold is a malevolent force that can and will suck the life right out of you. Leaving the campground, the bus enters Round Prairie, where a cry of "Three coyotes at eight o'clock" gives way immediately to "Those are wolves!" Despite the cold, everybody clambers out of the bus to get a good look. The three wolves, a third of the Lamar pack, are scavenging a kill about 100 yards off the road. A raven perches imperturbably on the kill and pecks away at it. The wolves grab pieces and scamper away to consume them. Two retreat to a ravine just behind the kill and so are out of sight except when they fetch a new piece to chew on, but the third wolf stays in plain view beyond the kill for the entire twenty minutes we spend looking at it. Then, the cold having sapped the heat from all of us, we clamber back onto the bus for a frigid ride back to Mammoth.

Monday, 2015 December 28: The entire party transits in a snow coach from Mammoth to Old Faithful this

afternoon. After dinner, Jeremy organizes a party of Maria, Eleanor, Karen, Carl, and Sherry to watch Old Faithful erupt. After a considerable wait, it erupts right on schedule at 8:48 pm with clouds of steam and vapor and a jet of water that disappears as it ascends into the inky blackness. Everyone is suitably impressed, except Karen, who complains with some justification that the darkness-truncated spectacle wasn't worth the frigid wait at 0°F.

Tuesday, 2015 December 29: It's a serene afternoon as Jeremy, Maria, Eleanor, Josie, Jeff, and Carl ski north from Old Faithful along the Firehole River to Biscuit Basin through a surreal landscape of dark-green forest, blindingly white snow, vivid blue skies, and vapor pouring from geysers and bubbling thermal pools. Emerging from a dense forest at Biscuit Basin, they find their way across the Firehole blocked by a couple of bison lolling by the side of the ski trail just across the river and so detour to cross the river on the road, only to find more and closer bison that have attracted the attention of a company of snowmobilers parked by the side of the road. After walking the boardwalk at Biscuit Basin, the party skis back to Snow Lodge as the sun dips toward the horizon taking the temperature with it. The final score of falls: Jeff 0, Josie 0, Eleanor 0, Maria 1, Carl 2, and Jeremy 9. Doug consoles the fallers with a version of "no pain, no gain": if you don't fall, you're not trying.

The whole party, minus Eleanor and Julie, who decide to skip the 1°F adventure, slips into 1940s Bombardier snow coaches at 7:00 pm for an evening tour of Steam, Stars, and Winter Soundscapes in the Upper Geyser Basin. Geyser-effect snow sprinkles from a star-studded sky as the party visits Kepler Cascades and Biscuit Basin, but the highlight comes after they traipse through the snow to Black Sand Pool. Sitting on the ground at the edge of the pool, they wait for . . . something. Then, thump thump . . . thump thump—four deep bass tremors shake the ground, followed by a brief gurgling from the steaming pool. The troll awakens, shakes his cage, and burps in irritation before going back to sleep. He repeats his performance several times over the course of fifteen minutes.

Wednesday, 2015 December 30: Eleanor, Josie, and Carl enjoy a bracing morning ski as the temperature hovers in the low single digits. The bubbling Punch Bowl tempts with a hot drink, but the party resists and proceeds to the Black Sand Pool to hear and feel the thumping of the troll below.

Karen, Carl, Jeremy, Maria, Eleanor, Doug, Kevin, and Jeff set off from Snow Lodge for Grand Geyser at 4:30 pm, an eruption predicted for 5:50 pm, but with a large variance of ± 75 minutes. The sun sets at 4:45 pm and leaves behind a blaze of salmon and peach that is fading to a sliver of pink as the group arrives at Grand Geyser at 5:05 pm. They are rewarded immediately with two quite grand eruptions, which spray hot water to well above a hundred feet, accompanied by side eruptions of Grand's sidekick Vent. The show stops suddenly, and the party retreats to Snow Lodge for dinner.

Thursday, 2015 December 31: After a morning transit from Snow Lodge at Old Faithful to Mammoth Hot Springs Hotel, Jeremy organizes an afternoon expedition to his favorite swimming hole, on the Gardiner River two miles below the hotel. Jeremy, Maria, Eleanor, Carl, Kevin, Jeff, and Josie brave the 15°F temperature, scurrying along a quarter-mile track from the parking area to the entry point into the river. There is a rapid shedding to swim suits, and then they slip gingerly, one by one, into the river. They make their way upriver toward the point where the hot water from Boiling River pours into the frigid waters of the Gardiner, producing a narrow band of tolerable temperature near the west bank. It is theoretically possible to choose the temperature one wants, ranging from scalding to freezing, but the actuality is that the river's eddies move the tolerable band around so fitfully that one is exposed to all possibilities. The fun lies in tracking the tolerable band, and the party enjoys a delightful, but necessarily attentive 45-minute soak. After exiting, there is a frantic re-clothing, hair frozen into whatever shape it had on leaving the river, and then a scamper back to the parking lot. It is a unique experience—the party volunteers awesome, invigorating, startling, thrilling, dynamic, fickle, and unsteady—and a perfect way to wash away the cares of 2015 and to prepare for the entry of 2016 this evening.

The whole party, thirteen adults and one infant, assembles after dinner in the hotel's Map Room to celebrate the approaching new year with a gift exchange organized by Eleanor. Tomorrow it's back to Bozeman, from which everyone is scheduled to scatter either tomorrow or Saturday.

Friday, 2016 January 16: In Bozeman now, we enjoy a little afternoon downtime at the Western Heritage Inn after the rigors of Yellowstone. Karen takes a well-deserved nap, a rare example of her running out of gas, even for an instant, on a vacation.

Saturday, 2016 January 23: Karen and Carl see *Star Wars: The Force Awakens* in IMAX 3D. Nice to see the old gang and to be introduced to their progeny, but did anyone consider changing the plot a tad?

Monday, 2016 January 26: Carl drives onto campus following a big, black pickup truck that's sporting three bumper stickers. The first leads with an American flag and then FIGHT FOR FREEDOM. The other two declare

CARRY A BIG GLOCK and HILLARY FOR PRISON 2016. Expanding human freedom and dignity is a worthy goal—perhaps the most worthy—so how is it that invocations of freedom now make us cringe?

Saturday, 2016 January 30: A New Mexico sunrise: the sun, rising behind the Sandias, dapples the sky a delicate pink all the way to the western horizon. A New Mexico sunset: the sun sinks below the western horizon and sets the sky ablaze with blaring yellow, orange, and red. Instead of reveille to wake up to and taps to end the day, the sky does it the other way around: *Prélude à l'après-midi d'un faune* to get things started, *Also sprach Zarathustra* to bring down the curtain; chamomile at dawn and a shot of espresso at dusk.

Friday, 2016 February 12: The world is abuzz with the announcement yesterday that the two LIGO interferometers, one in Hanford, Washington, the other in Livingston, Louisiana, detected last September the gravitational waves emitted when two humongous black holes, each with the mass of about 30 suns, coalesced about 1.3 billion years ago. In 1981 Carl explained the origin of the fundamental quantum-mechanical noise that limits the sensitivity of these interferometric detectors and suggested using “squeezed light” to make the detectors work better; not used presently in the LIGO interferometers, squeezed light is likely to be incorporated before the end of the decade.

Karen finds a *New Yorker* post about the detection by Nicola Twilley and sends it on to the family. Eleanor has already asked Carl, “What do you think??? Will it happen? Are you excited?!!” by which she is enquiring whether Kip Thorne, Carl’s PhD supervisor at Caltech, will win the Nobel Prize. Carl replies that she can count on it, this year, he predicts. On reading the Twilley piece, Eleanor pays another tribute to Kip and the whole LIGO team: “Very cool, a great article! I especially enjoyed the section on the absolutely absurdly perfect and expensive optics present at the heart of LIGO. Hard even to imagine how we can construct such things. Also hard to imagine convincing the NSF to give you almost 300 million dollars that you admit won’t work the first time around. Now *that’s* grant-writing.”

Best Wishes,

Carl

Karen

CMC/TeX

P.S. The photos show

Sunrise, sunset, New Mexico style, 2016 January 30;

Abby, Jeremy, Maria, Ben, Josie, Eleanor, Daavid, and Carin enjoying dinner at the house during Karen’s week-long 60th birthday party;

Maria, Jeremy, Karen, Daavid, and Abby a few days later in the Gila;

Jeremy, Eleanor, and Karen on the Lost Coast;

Wizard Island surrounded by Crater-Lake blue and accompanied by Jeremy, Karen, and Eleanor;

Bosque del Apache in December;

Eleanor with \$20 recovered from the ocean floor;

Karen, Jeremy, Carl, and Eleanor at the SJ-Daavid wedding at St. Mary’s Church in Ufford (note the fascinators and aboriginal-art ties);

Karen, Jeremy, and Eleanor lunching on the top row of the Roman amphitheater in Avenches;

Jay, Jeremy, and Wally at the wedding;

Eleanor, Daavid, Jeremy, and Maria at Bruisyard Hall after the wedding;

Maria, Jeremy, Eleanor, and Patrick at the Balloon Fiesta;

Ryan, Josie, Sherry, Karen, Eleanor, Jeremy, Jeff, Maria, Julie, and Carl clustered around a snow coach on their way to the Grand Canyon of the Yellowstone;

Patrick, Eleanor, Rachel, and Karen at the Devil’s Courthouse;

Maria and Eleanor in the relative warmth of a Yellowstone snow coach;

Carl, Eleanor, and Karen on the slopes of Mt. Washburn;
and Maria, Jeff, Josie, Jeremy, and Eleanor skiing north of Old Faithful.