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## Letters

### Trash the tally?

In "Tallying Orbital Trash" (SN: 7/14/90, p.29), Jonathan Eberhart says there are presently at least 7,000 pieces of debris in space. If that much has accumulated in the few years of space exploration, it is logical to assume it will continue to accumulate.

He says NASA is planning to spend \$30 million to take "a detailed census of our planet's blanket of orbiting debris" and "to assess the perils posed by space junk and the need for equipping the space station with protection systems."

Since we already know the debris is there, why aren't those millions spent for developing a machine to collect it and bring it back to Earth? Just tabulating the amount and size will not keep space from becoming even more of a junkyard, increasing the dangers of traveling and working there.

A.F. Martin  
Gourie, Iowa

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Cover: Ravaged by an era of overhunting, predator introduction and habitat destruction, some islands that once cradled huge colonies of nesting seabirds now sit practically empty. Scientists seeking to restore avian diversity are using decoys and recorded greetings to entice homeless young seabirds back to their ancestral homes. Shown here is an Atlantic puffin consorting with two wooden colony-mates on Eastern Egg Rock, an island off the coast of Maine. (Photo by Stephen W. Kress)

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It seems ridiculous to tabulate our garbage in space — and at a cost of \$30 million. An alternative might be a space vacuum cleaner, possibly working on the principle of magnetism, with a disposable "bag" that could be dropped on command in some remote area of Earth. At least this might clear the space lanes of metallic trash. To help pay for the cleanup, we might also impose a littering fine on future space orbiters.

Elizabeth Morrisson  
Holliston, Mass.

### 18th-century Tourette

Although Georges Gilles de la Tourette in 1885 described the syndrome now named for him ("The Ticcing Link," SN: 7/21/90, p.42), a quite detailed clinical description was provided by James Boswell in his *Life of Dr. Johnson*, published in 1791. To anyone familiar with that work, Bruce Bower's description of mild cases of Tourette's syndrome immediately recalls Samuel Johnson.

Johnson (1709-1784) displayed such regular and repetitive grunts, mutters and gesticulations as to render him, as his good friend Mrs. Thrale put it, "a sad man in a public place," where people stared in a very disagreeable manner. Johnson was obsessive-compulsive, counting his steps so that his left (or perhaps right; no one dared ask) foot struck the threshold, and he clearly suffered from deep depression and anxiety. At the table he attacked his meal with such singleminded ferocity as to be, as Boswell put it, disgusting to those whose sensations were delicate. Although he could be abstemious, he was never temperate in eating or drinking.

Bower's description of the "rapid and tensely connected stream of ideas . . . at times expressed in creative and amusing ways" is a fair summary of the wit for which Johnson was famous. Mrs. Thrale mentions his extraordi-

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bodies, note Kissileff and his colleagues at the Columbia University College of Physicians and Surgeons.

According to another paper in the same journal, high-protein diets can suppress appetite—at least in monkeys. By a feat of surreptitious plumbing, a Baltimore research team bypassed finicky monkey noses and taste buds to feed four monkeys a dietary supplement containing 50 percent protein. Anticipating that the animals might change their eating habits when presented with the modified diet—and thus throw a primate-wrench into the experiment—the scientists implanted tubes into the monkeys' stomachs and connected them to food-delivery pumps. The monkeys, trained to feed at nozzles connected to other suction-activated pumps, unknowingly triggered both pumps with each oral feeding, thus getting a measured double-dose of food.

The protein-boosted diet caused the monkeys to eat less overall, dropping their total calorie intake by 25 percent, report Judy S. Hannah, Anil K. Dubey and Barbara C. Hansen of the University of Maryland School of Medicine. The finding, they say, adds to the body of evidence suggesting that high-protein diets can aid in weight reduction.

"A high-protein diet does appear to have an appetite-suppressing effect, and of course, if you want to lose weight, that could be beneficial," Hannah says. She warns, however, that people with kidney problems, high blood pressure or diabetes should not undertake a high-protein diet on their own. "In fact, anyone should always consult a physician before making major dietary changes." □

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nary gift for poetic improvisation, which he demonstrated by producing immediate English versions of French, Italian or Latin verse and rhyming, scanning verses on such trivia as children's hats. A world-class procrastinator, he produced some of his best-known essays at the last moment at great speed and apparently never revised his work. Although functioning at a high artistic and intellectual level, Samuel Johnson recalls Dr. Oliver Sacks' "Witty Ticky Ray" in his ability to adapt his disability to creative ends.

Thinking of Johnson as a Tourette rather than a gross eccentric enhances our appreciation for his achievements and for the 18th-century ability to appreciate talent while overlooking what we today would call pathology.

Donald R. DeGlopper  
Bethesda, Md.

Many researchers indeed cite Dr. Johnson as an early documented case of Tourette's syndrome.

— B. Bower

#### Solar vs. sidereal days

Earth rotates on its axis every 23 hours and 56 minutes, yet an Earth day is 24 hours. Likewise, Earth rotates 366.26 times per year, yet an Earth year has only 365.26 days. The reason for these differences is that, as commonly defined, days are measured relative to the sun ("solar days") while rotations are measured relative to the stars. Consistent with this, if Earth did not rotate at all, it would still experience a day, actually an "inverse" day, for each orbit around the sun ("inverse" meaning the sun would rise in the west and set in the east). This accounts for Earth's "missing" day after 366.26 rotations each year and also for the "extra" 4 minutes (1/366.26 day) required beyond a rotation period in order to complete a day.

For other planets the magnitude of this effect can be fairly astounding—an interesting and

important fact that was not included in your discussion of Mercury's cyclic solar exposure ("Cold message from Mercury's hot poles," SN: 6/16/90, p.375). You state that "a Mercury year lasts but 1½ Mercury days" and that "Mercury [turns] three times on its axis for every two trips it makes around the sun." Clearly, you are referring to "sidereal days" (synonymous with rotations) instead of solar days, despite the discussion's solar context. While sidereal and solar days differ by only 0.27 percent on Earth, they differ by 200 percent on Mercury.

The "inverse" day resulting from Mercury's orbit leaves that planet with a net of only ½ solar day per year. In other words, a stationary observer on Mercury would experience alternating years of daylight and darkness. Thus, each longitude directly faces the sun at only one point (and always at the same point) during each two treks along Mercury's highly elliptical orbit. This results in only two longitudes (180° apart) ever directly facing the sun at the orbit's perihelion, and consequently results in the occurrence of the equatorial "hot poles."

Robert E. Crippen  
Jet Propulsion Laboratory  
Pasadena, Calif.

#### CORRECTION

In "Sweet tooth, rotten kid: A theory gone sour" (SN: 8/11/90, p.84), the name of the California State University scientist who commented on the sugar study was misspelled. The correct spelling is Stephen Schoenthaler.

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burrow D-17 came up speckled with tell-tale white fragments. Sometime late in the '88 season, unbeknownst to the observers, a dark-rumped petrel had laid an egg.

The team repeated the experiment in '89 and '90, adding a total of 140 artificial burrows. Each year, the number of night visitors increased, and more of them lingered through the day. Podolsky and crew found birds sitting in burrows during morning checks in 1989, with burrow D-17 again housing incubating petrels. This summer, the number of nesting petrels tentatively stands at one pair. With the verdict still out on some suspiciously busy burrows, Podolsky is optimistic that the count will rise before the birds head out to sea in a few months for the winter.

**A**t the suggestion that a handful of petrel nests seems a modest return for 220 hand-dug burrows and three seasons of avian advertising blitzes, Podolsky smiles like a salesman

about to close a million-dollar deal. For he knows the nature of his customers.

The dark-rumped petrel often lives into its 30s and takes eight years to mature—an unusually long time for a bird of its size. "When we play our recordings, we don't appear to lure in breeders, we appear to only lure in young prospectors," Podolsky says. "We think they start returning to the island at 2 years old and continue to prospect until they're 8 years old." That leaves a comforting window of time before the return on his investment comes due. And in light of the finding that young petrels have already perused more than 70 percent of the 220 artificial burrows, the prospect of a petrel boomtown becomes easier to envision.

Podolsky and Kress see an expanding global need for their services, and they may be the world's only salesmen to view a rising demand as sad news. Dark-rumped petrels of the Galápagos and Hawaiian islands face a continuing threat from expanding agriculture and introduced predators, they say. And seabird situations around the world look sim-

ilarly grim. Of the approximate 270 species of seabirds worldwide, 30 are listed as endangered or threatened.

"Ultimately, our responsibility as biologists is to maintain the biological richness, the natural heritage of this planet," says Podolsky. "It's like the rivet puller analogy by [ecologist] Paul Ehrlich: You start pulling rivets from an airplane and nothing seems to happen. But there comes a point. . . ."

For now, most of the ornithologists' efforts are mere stopgaps, helping to settle and protect new colonies of endangered seabirds until less predator-infested island homes can be found. For some birds, however, the menaces aren't limited to rats, gulls, pigs and people.

Consider the short-tailed albatross. All but seven of the last 100 or so breeding pairs nest on Tori Shima Island off Japan. "The idea is to lure them to the other side of the island," says Podolsky. In the meantime, the heart of the short-tailed albatross population innocently gathers each fall to lay its precious eggs in the shadow of an active volcano. □