UFO UpDates Mailing List

New Books On Space Eavesdropping

From: **Stig Agermose@online.pol.dk**
Date: Thu, 25 Jun 1998 03:34:11 +0200
Fwd Date: Thu, 25 Jun 1998 12:05:45 -0400
Subject: New Books On Space Eavesdropping

From the San Jose Mercury News.

http://www.mercurycenter.com:80/books/docs/seti21.htm

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Published Sunday, June 21, 1998, in the San Jose Mercury News

Caller ID for E.T.

Two authors delve into the science of eavesdropping in outer space

OTHER WORLDS: The Search for Life in the Universe

By Michael D. Lemonick
Simon & Schuster, 272 pp., $25

SHARING THE UNIVERSE: Perspectives on Extraterrestrial Life

By Seth Shostak
Berkeley Hills Books, 206 pp.,
$14.95 paperback

BY CHARLEY LINDSEY

"NOW, WE see through a glass dimly," wrote the apostle Paul. "But then, we shall see face to face."

Early Christians hoped their wishes would come true in a mere handful of years, but 20 centuries later, their heirs still pray to see God "face to face." Apostles of extraterrestrial life, though they believe in science and not necessarily in God, speak with much the same yearning.

The mission for both groups is how to occupy themselves until "the Lord's returning," or, in the case of the researchers who scan the skies, for a call from E.T. You could wait forever -- or the cosmic Teletype could start chattering tomorrow.

A pair of new books -- one by a seasoned science journalist, the other by one of the brains of Silicon Valley's own SETI (Search for Extra-Terrestrial Intelligence) Institute -- gives a taste of what the acolytes are up to in the real-world vigil for aliens.

It's cutting-edge science, a realm of fierce arguments and surprise. Only a few weeks ago, a California team not even mentioned in these books unveiled the first likely photo of a planet outside our solar system.

The task is a million light-years from "The X-Files" and the Halloween monsters carved up on slabs for tabloid TV shows. The true alien-seeker is a software-wrangler, a competitive academic, a roving grant-hound who occasionally admits to a bit of chagrin at the job's snicker factor .=BF.=BF. and then cheerfully, as Seth Shostak does, drags in references to "Star Trek," "Independence Day" and star dreck like "Night of the Lepus," a horror film about giant, mutant bunnies.

Shostak's "Sharing the Universe" reads like a lecture series by your physics department's liveliest professor. The public-programs scientist at the private, non-profit SETI Institute in Mountain View, Shostak knows the ropes of popular science: Make it fun, make it engaging, use your professional prowess to slip in some serious theory. His line of work is straining to hear signs of intelligent life through the background noise of the universe, and it also leads him plunging headlong into the squawk of popular culture.

"Hollywood aliens are like winter vegetables," he remarks. "There isn't much variety." Why is it, Shostak wonders, that the movies spawn star-faring monsters with "convincing tentacles, steely teeth and four quarts of mucus; yet they often still look a little like the guy next door"?

Or, at the other extreme, they look wrinkled, big-eyed and infantile -- "cute, harmless and here to help"?

No mere scoffer, Shostak enjoys discussing why the pop-culture extraterrestrials are such a predictable bunch: They reflect humanity's worst fears and brightest hopes. They remind us of snakes, insects and carnivores -- animals that make Earthlings shiver. They illuminate our mixed feelings about our feelings themselves: Wouldn't Mr. Spock be a nice improvement on sloppy humanity? Or is a truly cold-hearted alien, say, one of those supermarket "grays" with the empty eyes, a way of pointing to the hole we dread finding in our own hearts?

Of course, Shostak notes dryly, sometimes it's just easier to put an actor in a rubber suit than to fantasize from whole cloth.

Some of Shostak's best work is the way he brainstorms about real extraterrestrials, wherever they may be. You'd be hard-pressed to toss him a question about this highly speculative field he hasn't gnawed on.

Carbon-based life? Very likely, if life there is. Silicon had plenty of chances on Earth to be the star ingredient in the primordial soup, and it blew it. Tentacles and blobby bodies? Don't bet on it -- musculature without bones is inefficient, and single-celled beings can only get so big .=BF.=BF. besides, we're looking for aliens who can "hold up their end of the conversation," as Shostak says, and an overgrown amoeba would be prone to awkward silences.

Smart aliens will be not too small, not too big, both conclusions he bases on bio-engineering. Eyes and ears seem universally useful, plus a head to put them in (held high, the better to find food or diversion). They won't be coming here to eat us -- we'd be indigestible -- or to mate with us -- a little thing called DNA is standing in the way. Anyway, they could be self-reproducing machines. And the energy costs for coming to our part of the universe would be ludicrous.

Maybe the aliens can fly, Shostak muses, but they probably won't swim, at least full time -- an aquatic environment is thought to be too cushy to favor evolution of intelligence. Also, sea creatures wouldn't have telescopes or radio, and when it comes down to it, how would we ever find a being who wasn't beaming electromagnetic signals at us?

Which brings the reader to SETI and similar tantalizingly oblique efforts to bag otherworldly folk. The poignancy of Shostak's genial "infomercial" for cosmic eavesdropping is that we're highly unlikely ever to shake hands with any intelligent aliens, nor will our children's children. About all we can do is listen. The fun is in the brilliance of the chase: where to scan for a juicy world, how to decode

the bleeps we might someday overhear. Most of the book is about creating those strategies (though curiously, he never wastes a word on whether the search is worth doing).

Shostak may razz "Contact," whose heroine was based on a SETI colleague of Shostak's, radio astrophysicist Jill Tarter, but Hollywood does meet reality at one point. The search for E.T.'s radio traffic will be a flop -- until the instant it succeeds.

MICHAEL D. Lemonick's "Other Worlds" describes itself a bit defensively as "a work of journalism rather than a work of scholarship." That's a touch over-modest, because Lemonick's explanation of the exotic science is fluent and clear, proof that he has wrestled tough theories to the ground. His technical and historical chapters are cooler and more focused than Shostak's, bearing much of the tone of Time magazine, where Lemonick is a senior science writer.

His disclaimer, though, points out the perishability of his material. Astronomy is a fecund field; part of its thrill is that today's cutting-edge work can be tomorrow's washout.

Both Lemonick and Shostak write well about the famous Martian meteorite from Antarctica that might contain traces of microscopic life, but for the latest arguments you really need to have kept up your newspaper and magazine reading. The authors couldn't have known the Lunar Prospector was about to sniff out millions of tons of water on the moon, though they're well aware of the tantalizing slush beneath the icy wrapper of Jupiter's moon Europa.

Even as Lemonick asserts that the Hubble Space Telescope could never peer through the glare of a distant star to see orbiting planets, a team from the Extrasolar Research Institute in Pasadena announced May 28 that it had done exactly that: The Hubble, a modest older sister barely mentioned in Lemonick's discussion of future super-telescopes, had snapped a picture of a likely "proto-planet" in the constellation Taurus.

Hubble's coup will stir up planet-formation theories as well, an area that Lemonick explains thoroughly. He also leads fascinating field trips to the mountaintop telescopes, high-tech's high places, where the seekers perform their mysteries in the thin, cold air.

A minor blemish on Lemonick's work is its boys' club tone. It's possible it really is a man's world behind the radio dishes, but he emphasizes too heavily the scruffy fellows who carry his story, and describes them -- shirttails out, beards, wild-haired or balding -- too predictably. Female scientists (Tarter earns a few paragraphs) are almost as invisible as the purported aliens.

One featured male astronomer is described as bringing his girlfriend to a conference at Capri -- she has no last name and she spends the whole time shopping in boutiques. The detail has nothing to do with science and seems to be jerking a thumb at the "Few Girls Allowed" sign.

Both books utterly avoid mathematics, with the exception of a benchmark formula Shostak calls "more sorcery than science": the Drake equation. Concocted in 1961 by pioneer radio-astronomer Frank Drake, now SETI's president and a professor at UC-Santa Cruz, the equation is a set of talking points that tries to estimate the number of intelligent civilizations in our galaxy. The variables are all profoundly uncertain -- most pertinent, in our case, the variable for the amount of time between when a civilization invents radio and when it goes silent -- presumably by annihilating itself.

The equation says that ultimately the chances for shaking E.T.'s hand, or overhearing his talk radio, come down to how Earthlings treat each other. If we can do it well and kindly, it increases the likelihood that creatures all around the galaxy will have done the same.

But it is chilling to think of why the silence of space might be perpetual. It could mean Earth will go off the air, too.=BF

Charley Lindsey is a Mercury News copy editor.

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