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# Attempt to Shut Down Zombie Satellite Galaxy 15 Fails

By Charles Q. Choi, Space.com Contributor | May 5, 2010 11:02am ET

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The Galaxy 15 satellite is seen before its 2005 launch to geostationary orbit nearly 36,000 kilometers over the Earth's equator.

Credit: Orbital Sciences.

PARIS ? An attempt to shut down the electronics payload of the out-of-control communications satellite Galaxy 15 has failed, leaving the satellite - which ceased responding to ground commands last month - still in its uncontrolled "zombiesat" drift toward orbits occupied by other spacecraft, the satellite's fleet operator Intelsat said Tuesday.

[Galaxy 15](#) is closing in on the geostationary orbital slot occupied by another C-band satellite,

the AMC-11 spacecraft operated by SES World Skies, and with its stuck-on communications payload will be in a position to cause potentially severe interference with the SES satellite during a two-week period starting around May 23, according to Intelsat and SES estimates.

The unsuccessful attempt to shut down the so-called "zombiesat" ? a satellite industry term for failed satellites in orbit - occurred on Monday.

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In a Tuesday statement in response to [Space News inquiries](#), Intelsat said it is researching other ways to shut down Galaxy 15 once the satellite has passed through the AMC-11 position and enters ? for a limited period of time ? a stretch of orbital terrain unoccupied by other C-band spacecraft.

?We do not have an additional specific technical attempt identified at this time,? Intelsat said in the statement. ?But we will not give up, and expect to have other options to pursue at that time. We are now cooperating with other operators and customers to minimize potential service disruptions caused by interference.?

Galaxy 15 stopped responding to ground commands April 5 and since then has drifted out of its 133 degrees west longitude orbital slot on an eastward path along the geostationary arc at around 36,000 kilometers above the equator.

After sending between 150,000 and 200,000 commands to the satellite to coax it back into service, Intelsat was forced to scrap its [satellite-recovery](#) efforts and to resort, on Monday, to a limited-duration effort to force the satellite to shut down its transponders. This was to be accomplished by sending a stronger series of signals designed to cause Galaxy 15?s power system to malfunction and force a shutdown of the satellite?s payload.

That attempt, which Luxembourg-based, Washington-headquartered Intelsat had viewed as its last, best-understood option for Galaxy 15, was unsuccessful. With the satellite now nearing AMC-11, Intelsat is limited in what it can do besides assure itself of the satellite?s location. ?There is no active testing of the payload,? the company said in its Tuesday statement.

Sending radio signals strong enough to [force a satellite to shut down](#) could pose dangers to other spacecraft in the target area, which is why Intelsat had only a short window of time to ? pulse? Galaxy 15 with signals intended to trigger a failure of its power system. That period lasted about 30 minutes on Monday.

?Intelsat fully coordinated with neighboring operators the timing and the effects of this testing to neighboring spacecraft. It is our current understanding that no SES AMC-11 customers were affected by the disabling attempt,? Intelsat said.

Intelsat and Luxembourg-based SES have been closely coordinating interference-avoidance options since the initial Galaxy 15 failure, knowing that at predicted drift speeds the satellite will enter AMC-11's 131 degrees west slot to within 0.5 degrees of AMC-11 on or about May 23.

SES officials say they are devising an elaborate series of maneuvers to create a maximum distance between Galaxy 15 and AMC-11 during the period of maximum threat. While they cannot guarantee that there will be no interference to media customers using AMC-11, the SES officials believe they have the resources, including teleport facilities to reroute traffic, required to minimize the problem during this two-week period.

Continuing its eastward drift, Galaxy 15 will exit the AMC-11 orbital slot starting around June 7, when it is expected to have moved to 0.5 degrees to the east of the satellite.

At that point, a new opportunity will be open to Intelsat as there is no C-band satellite at the next orbital station of 129 degrees west.

What Intelsat might do to precipitate a shutdown remains unclear. Industry officials say the Galaxy 15 problem — a satellite operating at full payload power that is no longer under control — is unprecedented. Intelsat has said it is seeking advice from satellite operators and manufacturers — not just the Galaxy 15 builder, Orbital Sciences of Dulles, Va., but also other companies with more experience with in-orbit problems — on possible options to force a shutdown.

Current estimates are that Galaxy 15 will lose Earth orientation sometime in late July or early August. The exact date cannot be known. But when it loses Earth pointing, its solar arrays will lose their lock on the sun, draining the satellite's batteries and causing the satellite to shut down on its own.

Once the satellite leaves the vicinity of the AMC-11 and passes through the relatively safe neighborhood of 129 degrees west, it will enter a new neighborhood where it poses an interference threat similar to what AMC-11 now faces. But this time, it is only Intelsat-owned satellites and their customers at risk.

Galaxy 15 will be moving through the operating areas of Intelsat's Galaxy 13 in mid-July, and is expected to arrive at the Galaxy 14 neighborhood in late July. By mid-August, it will be at the orbital slot of Intelsat's Galaxy 18.

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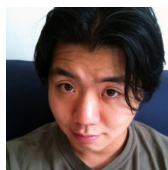
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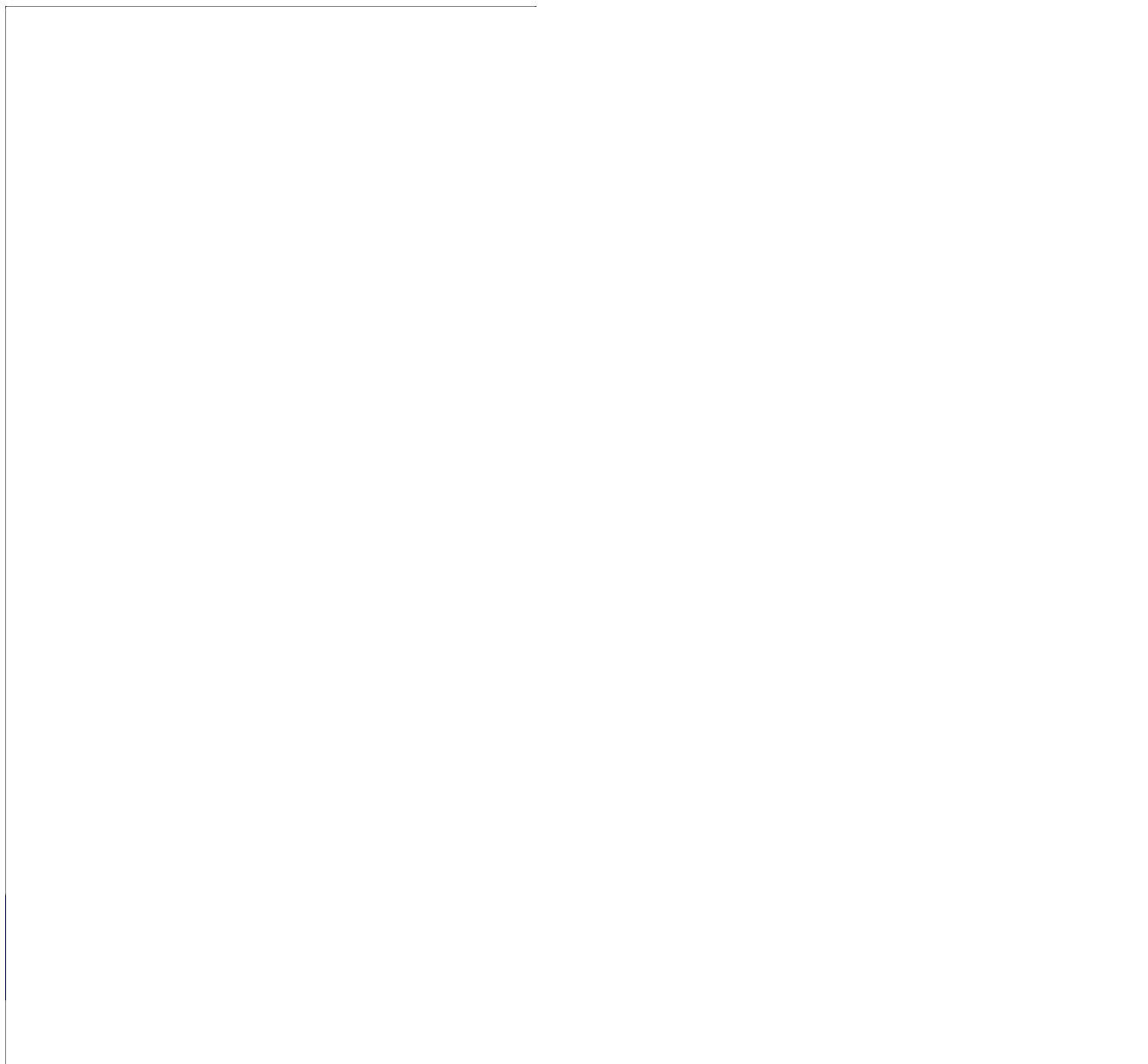
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Charles Q. Choi is a contributing writer for Space.com and Live Science. He covers all things human origins and astronomy as well as physics, animals and general science topics. Charles has a Master of Arts degree from the University of Missouri-Columbia, School of Journalism and a Bachelor of Arts degree from the University of South Florida. Charles has visited every continent on Earth, drinking rancid yak butter tea in Lhasa, snorkeling with sea lions in the Galapagos and even climbing an iceberg in Antarctica.

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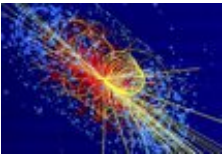
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